CONTRACTORS ROAD HEAVY EQUIPMENT AREA
(SWMU 055)
2023 ANNUAL GROUNDWATER MONITORING REPORT

KENNEDY SPACE CENTER, FLORIDA

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Revision 0

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CERTIFICATION AND APPROVAL

I hereby certify that in my professional judgment this document entitled *Contractors Road Heavy Equipment Area (SWMU 055) 2023 Annual Groundwater Monitoring Report* generally satisfies the requirements set forth in Chapter 471, Florida Statues. I have completed and/or been in responsible charge of work completed by qualified professionals working directly under my supervision, and the applicable portions of this document and associated work comply with Chapter 62-780, Florida Administrative Code (FAC) and Rule 62-780.400(1), FAC.

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LIST OF ACRONYMS AND ABBREVIATIONS

10xNADC	10 times natural attenuation default concentration
ADP	Advance Data Package
bgs	below ground surface
btoc	below top of casing
cDCE	*cis*-1,2-dichloroethene
CRHE	Contractors Road Heavy Equipment
CSM	conceptual site model
CVOC	chlorinated volatile organic compound
DEP	Department of Environmental Protection
DO	dissolved oxygen
DPT	direct push technology
EE	Engineering Evaluation
EPA	U.S. Environmental Protection Agency
FAC	Florida Administrative Code
ft	feet/foot
GCTL	groundwater cleanup target level
HCP	high concentration plume
HGL	HydroGeoLogic, Inc.
HS1	Hot Spot 1
HS2	Hot Spot 2
IDW	investigation-derived waste
IM	Interim Measure
IMWP	Interim Measures Work Plan
IWP	Implementation Work Plan
KSC	Kennedy Space Center
KSCRT	KSC Remediation Team
LCP	low concentration plume
LEL	lower explosive limit

µg/m^3	micrograms per cubic meter
µg/L	micrograms per liter
mg/L	milligrams per liter
MNA	monitored natural attenuation
mV	millivolt
NADC	natural attenuation default concentration
NASA	National Aeronautics and Space Administration
ng/L	nanograms per liter
ORP	oxidation-reduction potential
%	percent
PCE	tetrachloroethene
PFAS	per- and polyfluoroalkyl substances
PFNA	perfluorononanoic acid
PFOA	perfluorooctanoic acid
PFOS	perfluorooctanesulfonic acid
PFOSA	perfluorooctanesulfonamide
PFTeDA	perflouorotetradecanoic acid
pGCTL	provisional groundwater cleanup target level
RCRA	Resource Conservation and Recovery Act
RFI	RCRA Facility Investigation
RSL	Regional Screening Level
SAP	Sampling and Analysis Plan
SDG	sample delivery group
SOP	standard operating procedure
SSSG	sub-slab soil gas
S.U.	standard unit
SWMU	Solid Waste Management Unit
SZ	source zone
TCE	trichloroethene
tDCE	*trans*-1,2-dichloroethene
TDS	total dissolved solids
TRPH	total recoverable petroleum hydrocarbons
UIC	Underground Injection Control
USGS	U.S. Geological Survey

VC	vinyl chloride
VI	vapor intrusion
VISL	vapor intrusion screening level
VOC	volatile organic compound

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EXECUTIVE SUMMARY

This document presents a summary of activities completed in December 2023 to monitor and assess chlorinated volatile organic compound (CVOC) affected groundwater at the Contractors Road Heavy Equipment area, located at John F. Kennedy Space Center (KSC), Florida. The activities summarized include:

- Annual groundwater monitoring activities for Hot Spot 1 (HS1), Hot Spot 2 (HS2), the northern area, and the downgradient area; and
- Sub-slab soil gas (SSSG) sampling to investigate potential vapor intrusion (VI).

Groundwater Monitoring

The 2022 Sampling and Analysis Plan (SAP) specified the annual sampling of 15 monitoring wells in December 2023 for volatile organic compounds (VOCs) and four wells for 1,4-dioxane. Seven monitoring wells also were sampled in December 2023 for underground injection control (UIC) parameters (sodium, total dissolved solids [TDS], and total recoverable petroleum hydrocarbons [TRPH]).

In addition to sampling activities, groundwater levels were collected from 47 of 52 wells to evaluate the shallow, intermediate, and deep groundwater flow. The water level was not collected at MW0052 due to a large piece of equipment parked over the well. Obstructions were encountered at IW0014I and IW0015I, which ranged from 12.25 to 17.24 feet below top of casing. Monitoring well IW0016I could not be found using a handheld GPS and Schonstedt magnetic locator, and monitoring well IW0020I was located but was damaged beyond repair.

The groundwater monitoring results were used to evaluate VOC concentration changes in the HS1 area, HS2 area, northern area, and downgradient area. Trend plots were developed to graphically evaluate the monitoring well data. Additionally, concentration trends were evaluated using Mann-Kendall statistical analysis to provide lines of evidence of natural attenuation.

The results from the sitewide groundwater sampling are summarized below.

- Tetrachloroethene (PCE) and trichloroethene were not detected in groundwater samples collected from monitoring wells in 2023. *Cis*-1,2-dichloroethene (cDCE) detections were all below the State of Florida, Chapter 62-777 (Table 1), Florida Administrative Code (FAC) groundwater cleanup target level (GCTL). Vinyl chloride (VC) was the only contaminant of concern with detections above the GCTL in 2023. Target CVOC concentrations were below the GCTLs at four of the 15 wells sampled. Of the remaining 11 wells, cDCE exceeded the GCTL at one well; VC exceeded the GCTL at six wells; VC exceeded the natural attenuation default concentration (NADC) at four wells; and VC did not exceed 10 times the NADC (10xNADC) at any of the monitoring wells sampled.
- Of the two monitoring wells (MW0047 and MW0048) sampled within the footprint of the former bioremediation Interim Measure (IM) areas, one well (MW0048) was below the GCTLs.

- In HS1, outside of the former bioremediation IM area, VC was detected at concentrations greater than the GCTL in MW0029 (decreasing trend). The VC concentration in MW0058 (stable trend) was above the NADC.
- UIC monitoring conducted in HS1 indicated TDS exceeded the GCTL in 5 of the 6 monitoring wells. TRPH remained above the GCTL in 1 well (MW0047) in the former bioremediation IM area.
- In HS2, the sampling results for MW0031, MW0032, and MW0042 have varied over the years with MW0031 showing anomalous non-detections in 2019 for cDCE and VC and increasing back over NADC concentrations in 2020. VC concentrations at MW0031 and MW0042 remained above the NADC, and MW0031 had cDCE concentrations exceeding the GCTL. VC and cDCE concentrations were below their respective GCTLs at MW0032.
- In the northern area, VC concentrations at MW0019I remain above the NADC (probably decreasing trend), MW0034 concentrations decreased to below the NADC but remain above the GCTL (stable trend), and all contaminants of concern were below their GCTLs at MW0017I.
- VC sampling results from downgradient wells (MW0035, MW0039, and MW0041) indicate an exceedance of the GCTL in all three locations. Statistical analysis showed a decreasing trend at MW0035, but no trend was identified for MW0039 and MW0041.
- Subsurface conditions appear favorable for monitored natural attenuation based on field geochemical parameters (dissolved oxygen, pH, and oxidation-reduction potential); however, sampling results indicate a potential stall at VC across the site.
- Three out of the four wells sampled for 1,4-dioxane (MW0025, MW0035, and MW0039) exceeded the GCTL of 3.2 micrograms per liter. Statistical analysis indicates that 1,4-dioxane concentrations are decreasing in MW0025 (HS1 area) and increasing in MW0035 (downgradient area). A statistical analysis of 1,4-dioxane was not conducted for MW0039 because it has only been sampled three times for the analyte.
- Concentrations of perfluorooctanoic acid were detected in seven wells above the May 2023 U.S. Environmental Protection Agency (EPA) Regional Screening Level (RSL) for Resident Tap Water of 6 nanograms per liter (ng/L). Perfluorooctanesulfonic acid was detected above the EPA RSL of 4 ng/L in three wells and more than 10x the EPA RSL at four well locations. Concentrations of perfluorononanoic acid exceeded the RSL at IW0009S and were more than 10x the EPA RSL at IW0002S.
- The exit strategy and path forward for the site are to continue annual monitoring for CVOCs and/or 1,4-dioxane as presented in the 2023 SAP until additional remedies are implemented or the site is transitioned to long-term monitoring. UIC monitoring for TRPH and sodium will continue at select wells until results indicate that monitoring is no longer required within the Florida Department of Environmental Protection-defined Zone of Discharge. Consensus was reached at the April 2024 KSC Remediation Team (KSCRT) meeting to continue annual sampling of 15 wells for CVOCs, 4 wells for 1,4-dioxane, 3 wells for TRPH, 1 well for sodium (Decision 2404-D02), and 10 wells for per- and polyfluoroalkyl substances (Decision 2404-D03).

Vapor Intrusion Evaluation

VI activities were conducted in December 2023 to evaluate potential changes in CVOC concentrations in SSSG beneath the Heavy Equipment Office Building (K6-1996H) from implementation of the previous bioremediation IM. SSSG samples were collected from four previously installed sampling probes. The SSSG samples were analyzed for CVOCs, and results were provided to KSC's Aerospace Medicine and Occupational Health Branch.

Methane sampling was discontinued as concentrations have historically been well below the lower explosive limit of 5 percent or $50x10^6$ micrograms per cubic meter, and the enhanced bioremediation processes have decreased with consumption of the previously injected amendment. The recommendation to discontinue sampling for methane was presented to the KSCRT at the March 2022 meeting, and consensus was reached to conduct SSSG sampling for CVOCs only (Minute 2203-M03, Decision 2203-D04).

December 2023 SSSG sample results indicate that the target CVOCs (PCE, cDCE, *trans*-1,2-dichloroethene, and VC) were either not detected or were detected below their respective commercial and residential EPA vapor intrusion screening level (VISL) (assuming a carcinogenic risk of 10^{-6} and a hazard quotient of 1). PCE was detected at concentrations below the residential EPA VISL at all four SSSG sampling locations.

SSSG sampling results indicate that CVOCs in groundwater under the Heavy Equipment Office Building, along with degradation of the groundwater plume through previous IM activities, are not creating sub-slab vapors above the EPA residential VISL. Although CVOC concentrations in SSSG samples are below the EPA residential VISL, consensus was reached at the April 2024 KSCRT meeting to continue semi-annual sampling of the sampling points (Decision 2404-D06).

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1.0 INTRODUCTION

1.1 OVERVIEW

This document presents a summary of activities completed at the Contractors Road Heavy Equipment (CRHE) Area, located at Kennedy Space Center (KSC), Florida, in December 2023. The activities conducted at the CRHE Area include:

- Annual groundwater sampling activities associated with sitewide plume monitoring and Underground Injection Control (UIC) monitoring in the former bioremediation Interim Measure (IM) Hot Spot 1 (HS1) area; and
- Semiannual vapor intrusion (VI) evaluation activities.

This facility was designated Solid Waste Management Unit (SWMU) Number 055 (SWMU 055) under KSC's Resource Conservation and Recovery Act (RCRA) Corrective Action program.

HydroGeoLogic, Inc. (HGL) prepared this report for the National Aeronautics and Space Administration (NASA) under contract number 80KSC019F0096/80KSC019D0012, Technical Directive-04. An Advance Data Package (ADP) presentation of the elements of this report received KSC Remediation Team (KSCRT) agreement at the April 24, 2024, KSCRT meeting, and the final meeting minutes are included in **Appendix A**.

1.2 SITE HISTORY AND SETTING

The CRHE Area is located within KSC on the east-central Atlantic Coast of Florida, on Merritt Island, in Brevard County (**Figure 1-1**). The site is located within Section 18 of Township 22S, Range 37E, as shown on the U.S. Geological Survey's (USGS) 7.5-minute Orsino topographic quadrangle map (**Figure 1-2**).

The CRHE Area is approximately 23 acres in size and is located primarily to the east of State Road 3 (Kennedy Parkway) on either side of Contractors Road **(Figure 1-3**), approximately 0.5 mile north of Schwartz Road. The CRHE Area has been used for a variety of operations including heavy equipment storage and maintenance dating back to the construction of NASA's Vehicle Assembly Building and staging regulated and hazardous waste. Currently, the CRHE Area is used for heavy equipment storage and maintenance; hazardous waste is no longer stored on site.

Informally, several locations within the CRHE Area have been identified for convenience of discussion. These include the HS1 area, which is located within the eastern portion of the SWMU 055 boundary **(Figure 1-3**). The HS1 area has several buildings and support structures, including the Heavy Equipment Maintenance Shop (K6-1995), Hazardous Material Storage Shed (K6-1995A), Heavy Equipment Office Building (K6-1996H), and Astronaut Van Garages (K6-1997 and K6-1998). Hydraulically downgradient (west) of HS1 on the west side of Contractors Road is Hot Spot 2 (HS2). To the west of HS2 along Kennedy Parkway is the area referred to as the downgradient area. To the north of HS1, around Contractors Support Building #8 (K6-1896) and Covered Work Area (K6-1896A) and extending west across Contractors Road, is the area referred to as the northern area.

1.3 BACKGROUND

Chlorinated volatile organic compound (CVOC) groundwater impacts were identified in groundwater during the RCRA Facility Investigation (RFI) activities in the 1990s (NASA, 1999). The CVOCs of concern included tetrachloroethene (PCE), trichloroethene (TCE), *cis*-1,2-dichloroethene (cDCE), and vinyl chloride (VC) with concentrations greater than their respective State of Florida groundwater cleanup target levels (GCTLs). During these RFI activities, an approximately 5-acre area with cDCE and VC groundwater impacts was identified, but a CVOC source area was not identified.

The Corrective Measures Study concluded that the CVOC concentrations were attenuating and the GCTL would be met in approximately 10 years; therefore, monitored natural attenuation (MNA) was selected as the remedy (NASA, 2000). In 2005, the CRHE Area was incorporated into the Vehicle Assembly Building Long-Term Monitoring Program. However, increasing concentrations of cDCE and VC were observed from 2007 to 2009; therefore, supplemental assessment was recommended.

Supplemental site assessment activities (formerly referred to as Step 1 of the KSC Engineering Evaluation [EE] process) were conducted from 2009 to 2016 in the CRHE Area. During the assessment, a TCE source zone (SZ), defined as the area where TCE concentrations were greater than 1 percent (%) solubility (which is equal to 11,000 micrograms per liter [µg/L]), was identified within a portion of the site referred to as HS1. The identification of a TCE SZ resulted in the CRHE Area progressing to Remedial Alternatives Evaluation and IM Work Plans (IMWP) (formerly referred to as Step 2 and Step 3, respectively, of the KSC EE process) for two separate areas, the HS1 area and the remainder of the site. The Remedial Alternatives Evaluation and IMWP process for HS1 are summarized in the sub-sections below.

1.3.1 Hot Spot 1 Area

The HS1 area entered the Step 2 KSC EE process in 2013 after completion of the Step 1 EE (NASA, 2013) and resulted in the development of an IMWP (formerly referred to as Step 3 EE), HS1 ADP (NASA, 2014a) and *Bioremediation IMWP – Hot Spot 1* (NASA, 2014b). The IMWP provided a design for a bioremediation IM that targeted the TCE SZ area identified within HS1.

Prior to implementing the bioremediation IM, further supplemental assessment activities were completed to refine the TCE SZ area conceptual site model (CSM). The results of the supplemental assessment activities indicated that the TCE SZ area was larger than previously identified and that TCE SZ impacts were present upgradient of the previously delineated TCE SZ area. The supplemental assessment results were used to refine and revise the bioremediation IM design, which was presented in the *Hot Spot 1 Bioremediation Implementation Work Plan* (IWP) (NASA, 2016). The *Hot Spot 1 Bioremediation IWP* presented an approach that included implementing the bioremediation IM in phases. The first phase of the bioremediation IM would be implemented in the eastern TCE SZ area, and the second phase would be implemented in the western TCE SZ area.

1.3.1.1 Eastern Treatment Area

The first phase of the bioremediation IM was implemented in November and December 2016. The eastern bioremediation IM area included the eastern portion of the TCE SZ where the highest TCE concentrations were identified. This phase of the bioremediation IM was designed with a vertical treatment interval including the intervals where CVOC concentrations were greater than 10 times their respective Florida Department of Environmental Protection (DEP) natural attenuation default concentrations (10xNADCs) or herein also referred to as Hot Spots, approximately 8 to 50 feet (ft) below ground surface (bgs). Following the eastern bioremediation IM implementation, performance monitoring and UIC monitoring were performed quarterly for the first 6 months (March and June 2017) and semiannually thereafter. The KSCRT reached consensus to discontinue UIC monitoring for the eastern bioremediation IM area during the March 2018 meeting (Decision 1803-D17) because UIC parameters in the zone of discharge around the perimeter of the treatment area were below the applicable screening criteria for three consecutive sampling events. Locations within the treatment area remained above the UIC screening criteria.

The 2021 UIC monitoring data was presented to the KSCRT at the March 2022 meeting, and the Team reached consensus to sample three wells (MW0044, MW0047, and MW0056) for total recoverable petroleum hydrocarbons (TRPH) and two wells for sodium (MW0044 and MW0047), and to revise the sampling frequency for total dissolved solids (TDS) to a biennial basis beginning in 2023 for MW0025, MW0043, MW0044, MW0056, MW0057, and MW0058 (Decision 2203-D02).

1.3.1.2 Western Treatment Area

The second phase of the bioremediation IM began with supplemental sampling activities (direct push technology [DPT] groundwater sampling) that were completed within the western TCE SZ area in October and November 2017. The sampling results were used to update the CSM for the western TCE SZ area. The results indicated that the SZ area was smaller than previously identified, yet impacts of TCE, cDCE, and VC remained above their respective 10xNADCs. The second phase of the bioremediation IM (identified as the western bioremediation IM) was designed to treat the area west of the eastern bioremediation IM where cDCE concentrations were greater than their 10xNADCs and to target vertical intervals where CVOC concentrations were greater than their respective 10xNADCs. Details regarding the supplemental sampling results and the western bioremediation IM design are provided in the *Hot Spot 1 Bioremediation IWP Addendum* (NASA, 2018).

1.3.2 Vapor Intrusion Evaluation

Along with bioremediation IM activities, a VI evaluation was completed in December 2017 to evaluate if CVOC groundwater impacts located beneath the Heavy Equipment Office Building (K6-1996H) had the potential to migrate into the building. Sub-slab soil gas (SSSG) sampling results from December 2017 indicated that PCE and its daughter products were either not detected or were detected below the U.S. Environmental Protection Agency (EPA) VI Screening Levels (VISLs) (assuming a carcinogenic risk of 10^{-6} and a hazard quotient of 1). The two compounds detected in SSSG samples above their respective VISLs (chloroform and benzene) were not concerns for VI,

for reasons outlined in the *VI Evaluation – Activities and Results Memorandum* included in the *Hot Spot 1 Bioremediation IWP Addendum* (NASA, 2018). The 2018 memorandum indicated the source of chloroform was likely associated with the disinfection process (chlorination) of potable water and potential water line leaks and water usage. Additionally, the detection of benzene was not considered to be associated with groundwater contamination as it had not been detected in groundwater samples above the GCTL. NASA requested an evaluation of the potential source of SSSG benzene detections.

In October 2018, SSSG sampling was conducted to evaluate if there were changes to the methane and CVOC concentrations in SSSG following implementation of the western bioremediation IM just east of the Heavy Equipment Office Building. In addition, to evaluate the potential source of the benzene detected in previous SSSG samples, a site visit was completed, and soil sampling was performed in October and November 2018. The site visit was completed to evaluate if any chemicals stored on site could be the source of the benzene detected in the SSSG, and the soil sampling event was completed to evaluate if any petroleum-related soil impacts were present in shallow soil adjacent to the Heavy Equipment Office Building. The soil sampling results indicated that no compounds were detected above the Florida DEP residential soil cleanup target levels or leachability criteria in shallow soil samples collected above the water table (estimated to be approximately 4 ft below ground surface). These results indicated that no additional benzene investigation of soil or groundwater was required and confirmed that benzene is not a constituent of concern for the SSSG (NASA, 2019a). The results of the benzene investigation were presented to the KSCRT at the April 2019 meeting, and the Team concurred that no additional investigation was required for potential benzene VI from environmental media (Decision D1904-39). A memorandum regarding the SSSG sampling, including the data, was provided to KSC's Aerospace Medicine and Occupational Health Branch. Subsequently, annual SSSG sampling was conducted for only methane and CVOCs in 2019 and 2020. Based on the 2020 data, an increase in TCE concentration in the gas sample collected from VMP0001 was observed above its residential but below it commercial VISL. Therefore, NASA elected to initiate semiannual (wet/dry season) SSSG sampling in 2021 (NASA, 2021).

The 2021, 2022, and 2023 SSSG sample results indicated that the CVOCs (PCE, cDCE, *trans*-1,2-dichloroethene [tDCE], and VC) were either not detected or were detected below their respective commercial and residential EPA VISLs (assuming a carcinogenic risk of 10^{-6} and a hazard quotient of 1). Methane was detected only in December 2021 above the laboratory reporting limit at one location (VMP002). The estimated concentration reported of 512 J micrograms per cubic meter ($\mu g/m^3$) (0.000077 volume/volume percentage) was well below its lower explosive limit (LEL) of 5% or $50x10^6$ $\mu g/m^3$. There is no EPA VISL for methane. The 2023 SSSG analytical results were presented to the KSCRT at the April 2024 meeting (Minute 2404-M02), and consensus was reached to continue to conduct semiannual SSSG monitoring in June and December 2022 for CVOCs only (Minute 2404-M02, Decision 2404-D06).

1.3.3 Hot Spot 2, High Concentration Plume, and Low Concentration Plume

Supplemental assessment activities were performed across the CRHE Area (i.e., outside of the HS1 area) starting in 2009, and the results from activities completed from 2009 through 2014 were used to delineate the low concentration plume (LCP), the high concentration plume (HCP), and other hot spots (NASA, 2015b). Supplemental assessment activities completed from 2015 through

2017 were focused on the HS1 area. The CVOC groundwater impacts, which were delineated at the CRHE Area following the completion of supplemental sampling activities through 2017, are presented on **Figure 1-4**.

The LCP, HCP, and hot spots are defined as the areas where CVOC concentrations (TCE, cDCE, and/or VC) are present in groundwater at concentrations greater than their respective GCTLs (LCP), their respective NADCs (HCP), or their respective 10xNADCs (hot spots). In addition to HS1, supplemental sampling activities identified HS2, which is downgradient of HS1 and has cDCE and VC concentrations that are greater than their respective 10xNADCs, and five other hot spot areas where VC is the only CVOC that is greater than its 10xNADC. The sitewide supplemental assessment results were presented to the KSCRT in the HS2, HCP, and LCP site characterization (formerly referred to as a Step 1 EE) ADP (NASA, 2015a), and the CRHE Area was placed in a sitewide groundwater monitoring program that began in 2016.

Sitewide monitoring events conducted from May 2016 through December 2021 indicated the primary CVOC impacts were cDCE and VC, which were present above their respective NADCs in portions of the site. VC results from groundwater samples collected from the most hydraulically downgradient monitoring wells (MW0039 and MW0041) indicated that the LCP was potentially expanding. Additional information about the previous sitewide groundwater monitoring events is included in the *2022 Annual Groundwater Monitoring Report* (NASA, 2023).

1.3.4 Direct Push Technology Sampling

An extensive DPT investigation has been ongoing at the site since 2020 to update the CSM to show the current extent of the dissolved phase CVOC-affected groundwater and support remedial alternatives evaluation. The DPT samples have been analyzed by a mobile laboratory for target contaminants of concern, and a subset of these samples has been sent to a fixed-based laboratory for 1,4-dioxane analysis. DPT samples were not collected in 2023 due to standing water in target areas. See **Figure 1-5** DPT Groundwater Sampling Locations.

1.4 PURPOSE

This report summarizes field activities and presents results for the annual groundwater monitoring activities conducted in December 2023 throughout the CRHE Area and the semiannual wet/dry season VI evaluation activities associated with the bioremediation IM.

1.5 REPORT ORGANIZATION

The remainder of this report is organized as described below.

Section 2: Field Activities – This section provides a summary of the field activities completed in December 2023 in support of the annual sitewide groundwater monitoring and VI evaluation.

Section 3: Sitewide Groundwater Monitoring – This section provides a summary of the 2023 sitewide plume monitoring results.

Section 4: Vapor Intrusion Evaluation – This section provides a summary of the SSSG sampling results and VI evaluation.

Section 5: Laboratory Quality Assurance – This section provides a summary of the laboratory quality control criteria for the 2023 sampling event.

Section 6: Conclusions, Recommendations, and Exit Strategy – This section provides conclusions of the bioremediation IM performance monitoring, VI evaluation, and 2023 sitewide plume monitoring, and presents recommendations based on the results.

Section 7: References – This section provides a listing of the documents used in preparing this report.

2.0 FIELD ACTIVITIES

2.1 OVERVIEW

This section provides a summary of field activities completed in December 2023 in support of the sitewide groundwater monitoring. Groundwater sampling was conducted in accordance with the KSCRT Sampling and Analysis Plan (SAP) presented and approved at the April 2023 meeting (Minute 2304-M02, Decisions 2304-D02 through D04) and discussed in the 2022 annual report (NASA, 2023).

Monitoring well purging and sampling activities were conducted in general accordance with Florida DEP standard operating procedures (SOPs) (Florida DEP, 2018) and the KSCRT SAP (NASA, 2017). During monitoring well purging, HGL recorded the following geochemical parameters at regular intervals: pH, temperature, dissolved oxygen (DO), conductivity, oxidation-reduction potential (ORP), and turbidity.

Per- and polyfluoroalkyl substances (PFAS) are a class of compounds that are ubiquitous and present at low concentrations in many consumer products and some typical sampling equipment used in field activities. To prevent cross-contamination of PFAS from consumer products and sampling equipment to the samples, groundwater sampling of monitoring wells for PFAS was conducted in accordance with HGL's SOP for *PFAS Sampling Procedures* (HGL, 2021) and NASA's SOP for *Groundwater Sampling of Monitoring Wells and Analysis for PFAS* (NASA, 2019b).

The monitoring well locations are presented on **Figure 2-1**, and construction details are presented in **Table 2-1**. Investigation-derived waste (IDW) from field activities included purge and decontamination water from groundwater sampling activities. Liquid IDW was containerized in properly labeled, new 55-gallon drums. The drums were stored on NASA-provided spill pallets and secured with cargo straps to be properly disposed of by NASA.

Field forms documenting sitewide plume groundwater monitoring and SSSG sampling activities are provided in **Appendix B**; laboratory analytical data is included in **Appendix C**. Groundwater samples collected from site monitoring wells were submitted to fixed-based laboratories (SGS North America, Inc.) for analysis under chain-of-custody protocol. The SSSG samples were analyzed by Eurofins Air Toxics, LLC. The laboratories utilized in 2023 are certified under the National Environmental Laboratory Accreditation Program.

2.2 SITEWIDE GROUNDWATER MONITORING

The sitewide groundwater monitoring field activities included collecting sitewide depth-to-water measurements and plume monitoring groundwater samples in December 2023. A summary of those activities is provided below.

2.2.1 Sitewide Depth-to-Water Measurements

Prior to groundwater samples being collected during the December 2023 monitoring event, sitewide water level measurements were recorded from CRHE monitoring well locations that were

accessible within a 24-hour period. Water level measurements were collected from 49 of 52 monitoring well locations on December 14, 2023. A water level measurement could not be measured at IW0016I (not locatable), IW0020I (damaged beyond repair), and MW0052 (not accessible due to trailer). IW0014I had an obstruction at 17.24 ft, and IW0015I had an obstruction at 12.25 ft. Attempts to clear the obstruction in each well were unsuccessful.

2.2.2 Groundwater Sampling

The 2023 annual groundwater sampling event was conducted on December 15, 18, and 19. Groundwater samples were collected from 26 monitoring wells in December 2023 as shown on **Figure 2-1** and listed in **Tables 2-2** and **2-3**. The groundwater samples were analyzed for volatile organic compounds (VOCs) by EPA Method 8260D, and a subset of the samples was analyzed for 1,4-dioxane by EPA Method 8260C Select Ion Monitoring, UIC parameters (TRPH [FL PRO Method], TDS [Method SM19 2540C], and sodium [EPA Method 200.7]), and/or PFAS by EPA Method 537 as indicated in **Tables 2-2** and **2-3**.

2.3 VAPOR INTRUSION EVALUATION

A VI evaluation associated with the former bioremediation IMs included SSSG sampling from existing sampling probes CRHE-VMP01 through CRHE-VMP04 in the Heavy Equipment Office Building (K6-1996H). SSSG samples were collected on December 12, 2023, to evaluate potential VI risk due to CVOC groundwater impacts beneath the Heavy Equipment Office Building.

SSSG samples were collected following HGL procedures and EPA guidance from four sampling previously installed probes installed within the building as shown on **Figure 2-2**. A helium shroud was placed over the sample port in-line with the sample tubing and sample port, and helium was introduced into the shroud. A helium detector was used during purging to verify there were no leaks. During purging of the soil gas probes, the vapors were screened for VOCs, carbon dioxide, oxygen, and helium. Following purging, SSSG samples were collected using 1-liter SUMMA® canisters with 200 milliliter-per-minute flow controllers. Samples were analyzed for CVOCs using EPA Method TO-15 by Eurofins Air Toxics, LLC.

3.0 GROUNDWATER MONITORING

This section provides a summary of the results of the groundwater sampling activities completed in 2023. The sitewide sampling locations are divided into four general areas.

- HS1:
  - CVOCs in MW0025, MW0027, MW0029, MW0047, MW0048, and MW0058.
  - TRPH in MW0044, MW0047, and MW0056.
  - Sodium in MW0047.
  - TDS in MW0025, MW0043, MW0044, MW0056, MW0057, and MW0058.
  - 1,4-Dioxane in MW0025.
- HS2:
  - CVOCs in MW0031, MW0032, and MW0042.
- Northern Area:
  - CVOCs in IW0017I, IW0019I, and MW0034.
- Downgradient Area:
  - CVOCs at the downgradient edge of identified GCTL groundwater impacts (MW0035, MW0039, and MW0041).
  - 1,4-Dioxane in MW0035, MW0039, and MW0041.
- PFAS (sitewide distribution):
  - IW0001S, IW0002S, IW0004I, IW0009S, IW0013S, IW0017I, IW0019I, MW0024, MW0025, and MW0030.

Results from the sitewide groundwater elevation collection and sampling activities are provided in the following sub-sections.

3.1 SITEWIDE GROUNDWATER ELEVATIONS AND FLOW DIRECTION

Sitewide depth-to-water measurements collected in December 2023 are summarized in **Table 3-1**. Groundwater flow direction was evaluated for the shallow groundwater zone (0 to 15 ft bgs), intermediate groundwater zone (16 to 50 ft bgs), and deep groundwater zone (greater than 50 ft bgs). Groundwater flow contours for each zone are presented on **Figures 3-1** through **3-3**.

The groundwater flow in the shallow zone was generally to the west with a small component to the north in December (**Figure 3-1**). Groundwater flow is consistent with historical evaluations.

The groundwater flow in the intermediate zone was generally to the west over the majority of the site. Radial or near-radial flow is associated with a potentiometric high centered around the Heavy Equipment Shop and well MW004I in December 2023 **(Figure 3-2**). The groundwater flow in the intermediate zone has not had a consistent historical flow direction; however, there is generally a strong westerly component over the western portion of the site.

The groundwater flow in the deep zone was toward the west in December 2023 consistent with historical flow (**Figure 3-3**).

3.2 VOC GROUNDWATER SAMPLING RESULTS

Groundwater samples were collected from 15 wells during the December 2023 annual sampling event to monitor CVOCs. Four of the 15 monitoring wells (MW0025, MW0035, MW0039, and MW0041) also were sampled for 1,4-dioxane. The groundwater sampling results are presented in **Table 3-2** (CVOC and 1,4-dioxane results) and **Table 3-3** (geochemical parameters), and CVOC and 1,4-dioxane results are presented on **Figure 3-4** (HS1) and **Figure 3-5** (sitewide). In addition, the annual sampling results are presented on trend graphs for each well (**Appendix D**). Mann-Kendall statistical trend analyses for CVOCs and 1,4-dioxane at select monitoring wells that meet specific criteria are discussed in **Section 3.3** and summarized in **Table 3-4**. The Mann-Kendall statistical calculations are included in **Appendix E**.

The CVOC and 1,4-dioxane groundwater sampling results from December 2023 are summarized by the four areas (HS1, HS2, Northern Area, and Downgradient Area) in the following sub-sections.

3.2.1 Hot Spot 1

CVOC sampling was performed in December 2023 to monitor the former eastern bioremediation IM area (MW0047 and MW0048) and perimeter of the former eastern and western treatment areas within HS1 (MW0025, MW0027, MW0029, and MW0058). Additionally, a groundwater sample from monitoring well MW0025 was collected and analyzed for 1,4-dioxane.

The 2023 sampling results were compared to the respective GCTLs and NADCs. A summary of only VC and 1,4-dioxane results is provided below. PCE, TCE, cDCE, tDCE, and 1,1-dichoroethene were not detected above the GCTLs during 2023 sampling in the six HS1 monitoring wells.

- Three of the six monitoring wells sampled (MW0025, MW0027, and MW0048) were below the GCTLs in 2023 for CVOCs.
- VC concentrations were above the GCTL of 1 µg/L in two monitoring wells (MW0029 and MW0047). MW0029 had a concentration of 71.3 µg/L, and MW0047 had a concentration of 1.7 µg/L.
- One of the six monitoring wells sampled (MW0058) had a VC concentration above the NADC (100 µg/L). MW0058 had a concentration of 106 µg/L.
- In the most hydraulically downgradient well sampled in HS1 (MW0029), the VC concentration decreased to 71.3 µg/L from 92.8 J µg/L in June 2022
- 1,4-Dioxane was detected at MW0025 at 4.6 µg/L, which is above the GCTL of 3.2 µg/L.

The 2023 monitoring results indicate that the former bioremediation IMs have substantially reduced CVOC concentrations within the eastern and western bioremediation IM areas to below the GCTLs (**Figure 3-4**). The CVOC sampling results indicate decreasing concentrations outside

of the former bioremediation IM area in HS1 with only VC exceedances of the GCTL remaining. There was no visual evidence of the bioremediation substrate, SRS®-SD, observed in the purge water collected from the HS1 wells both within and outside the footprint of the bioremediation IM areas.

3.2.2 Hot Spot 2 Area

Sampling is performed in the HS2 area at three monitoring wells (MW0031, MW0032, and MW0042) to monitor the cDCE and VC impacts that have been previously detected at concentrations above their respective NADCs and GCTLs. In December 2023, cDCE detections were all below the GCTL and two of the three monitoring wells contained VC NADC (100 µg/L) exceedances. MW0031 reported a VC concentration of 245 µg/L, and MW0042 had a VC concentration of 101 µg/L.

3.2.3 Northern Area

Sampling is performed in the northern area to monitor VC impacts that were greater than the NADC and GCTL (IW0017I, IW0019I, and MW0034). One of the three monitoring wells (MW0034) reported a VC GCTL exceedance, and one other well (IW0019I) reported a NADC exceedance. The concentrations in the final monitoring well (IW0017I) were below the respective GCTLs for the first event since the 2005 baseline sampling event.

3.2.4 Downgradient Area

Sampling is performed to monitor the hydraulically downgradient edge of the VC GCTL groundwater impacts (MW0035, MW0039, and MW0041). All three monitoring well concentrations exceeded the GCTL for VC but other contaminants of concern were below their respective GCTLs. MW0039 and MW0041 had increased concentrations since the 2022 sampling event, while MW0035 showed a slight decrease in the VC concentration.

Groundwater samples from MW0035, MW0039, and MW0041 were analyzed for 1,4-dioxane to assess the constituent presence at the hydraulically downgradient edge of the CVOC-affected groundwater. The 1,4-dioxane concentration at MW0035 (6.7 µg/L) and MW0039 (5.7 µg/L) remained above the GCTL of 3.2 µg/L.

3.3 VOC TREND ANALYSIS

The trend graphs of TCE, cDCE, tDCE, and/or VC concentrations (**Appendix D**) and Mann-Kendall statistical evaluation (**Appendix E**) were used to evaluate the trend of CVOC and 1,4-dioxane concentrations in groundwater.

The Mann-Kendall analysis was performed on the CVOC sampling results from 13 wells and on the 1,4-dioxane results from two wells that met the following criteria: more than three data points; greater than 50% detection frequency; and concentrations detected greater than the GCTL historically. The Mann-Kendall results for monitoring wells with data that met the analysis criteria are summarized in **Table 3-4**, and a summary of the VC and 1,4-dioxane results is provided below.

TCE and tDCE have generally been below the GCTLs since 2017 and cDCE is now below the GCTLs in the monitored wells; therefore, they are not discussed below.

- VC Mann-Kendall results from sitewide monitoring wells were decreasing at six locations (IW0017I, MW0034, MW0027, MW0029, MW0042, and MW0035), probably decreasing (changed from stable) at IW0019I, stable at two locations (MW0031 and MW0058), and showed no trend at two locations (MW0039 and MW0041). Results were below the GCTL for MW0025 and MW0032, so a trend could not be calculated.
- 1,4-Dioxane Mann-Kendall results from monitoring wells were decreasing for HS1 well MW0025 and increasing for downgradient well MW0035.

Although VC concentrations in MW0025 and MW0032 indicate no statistical trend, cDCE and VC concentrations are less than their first sampling results in 2012.

3.4 UIC SAMPLING RESULTS

Groundwater monitoring was conducted in HS1 at seven monitoring wells (MW0025, MW0043, MW0044, MW0047, MW0056, MW0057, and MW0058) for UIC parameters (TRPH, sodium, and/or TDS). The UIC results are presented in **Table 3-5** and on **Figure 3-6** along with historical results.

In the three monitoring wells sampled for TRPH in HS1, one GCTL (5 milligrams per liter [mg/L]) exceedance was detected in the former bioremediation IM area at MW0047 (5.59 mg/L). MW0047 is located within the former eastern bioremediation IM area. Historical sampling data indicate that TRPH concentrations have decreased over time at MW0047 from 46 mg/L in December 2017 to 5.59 mg/L in December 2023. TRPH concentrations at MW0056 have substantially decreased from 66 mg/L in 2018 to 4.7 mg/L (below the GCTL) in 2023. The other monitoring well (MW0044) sampled for TRPH has remained below the GCTL since 2021.

One monitoring well (MW0047) sampled in HS1 for sodium in 2023 showed concentrations decreasing to 113 mg/L, which is below the GCTL of 160 mg/L. Additionally, TDS exceeded the GCTL of 5 mg/L in 5 of the 6 monitoring wells sampled.

3.5 PFAS SAMPLING RESULTS

A wastewater treatment plant formerly was located on the northeast side of the CRHE Area, as shown on **Figure 1-3**. As a follow up to the detections of PFAS above screening levels in that vicinity during the centerwide PFAS investigation (AECOM, 2022), groundwater samples were collected from 10 monitoring wells in December 2023 (IW0001S, IW0002S, IW0004I, IW0009S, IW0013S, IW0017I, IW0019I, MW0024, MW0025, and MW0030). The wells sampled for PFAS are located east of the vegetation corridor that borders State Road 3 (Kennedy Parkway) to the west and Contractors Road to the east. Analytical results were screened against the provisional GCTLs (pGCTLs) and EPA Regional Screening Levels (RSLs) for residential tap water (EPA,

2022). Future results may be screened by the 2024 maximum contaminant levels. Results are presented on **Figure 3-7** and in **Table 3-6** and summarized below.

- Concentrations of perfluorooctanoic acid (PFOA) above the EPA RSL of 6 nanograms per liter (ng/L) were detected in seven of the 10 wells (IW0001S, IW0002S, IW0004I, IW0009S, IW0019I, MW0024, and MW0030). Concentrations ranged from 7.6 ng/L to 24.9 ng/L.
- Concentrations of perfluorononanoic acid (PFNA) exceeded the EPA RSL of 6 ng/L at two of the 10 wells. IW0009S had a concentration of 9.4 ng/L, and IW0002S had a concentration of 65.1 ng/L, which is 10x the EPA RSL of 60 ng/L.
- Detections of perfluorooctanesulfonic acid (PFOS) above 10x the EPA RSL of 4 ng/L (40 ng/L) ranged from 54.5 ng/L to 143 ng/L in four of the 10 wells (IW0001S, IW0002S, IW0004I, and IW0009S). Additionally, PFOS concentrations above the EPA RSL ranged from 8.5 ng/L to 24.2 ng/L in three separate wells (IW0019I, MW0024, and MW0030).
- Four of the 10 wells reported pGCTL exceedances for PFOA+PFOS (MW0001S, MW0002S, MW0004I, and IW0009S).
- Various detections of PFAS also were observed; however, the reported concentrations were below their respective EPA RSLs (if the EPA RSL was available).

3.6 OTHER VOC DETECTIONS

The samples collected in December 2023 were analyzed for VOCs by EPA Method 8260D. Other analytes were detected above the laboratory detection limits. During the annual sampling event, the following nontarget CVOC analytes were detected at concentrations below their respective GCTLs:

- Acetone in one sample (MW0047) at a concentration of 31.6 µg/L.
- 2-Butanone (methyl ethyl ketone) in one sample (MW0047) at a concentration of 14.8 µg/L.
- Chlorobenzene in four samples (concentrations ranged from 0.51 J µg/L at MW0029 and MW0031 to 1.4 µg/L at MW0034).
- 1,1-Dichloroethane in one sample (MW0058) at a concentration of 0.47 J µg/L.
- Dichlorodifluoromethane in one sample (MW0029) at a concentration of 1 J µg/L.
- 4-Methyl-2-pentanone in one sample (MW0047) at a concentration of 2.5 J µg/L.
- Toluene in two samples (MW0027 reported a concentration of 0.90 J µg/L and MW0047 had a concentration of 0.73 J µg/L).

Methylene chloride was detected in one sample (IW0019I) at a concentration of 6.3 J µg/L. The concentration exceeded the GCTL of 5 µg/L.

3.7 FIELD GEOCHEMICAL PARAMETERS

The geochemical parameters collected during sitewide monitoring well sampling were used to evaluate if aquifer conditions are favorable for the natural reductive dechlorination of CVOCs. The field geochemical parameters collected during sitewide monitoring well sampling are summarized in **Table 3-3**. The following sub-sections provide an evaluation of select geochemical parameters collected during sitewide monitoring well sampling.

3.7.1 pH Evaluation

The desirable pH range for microbial activities is between approximately 5 and 9 standard units (S.U.) (Air Force Center for Engineering and the Environment, 2004). The groundwater pH measurements collected during the December 2023 annual monitoring event ranged from 6.04 (MW0044) to 7.44 (MW0057) S.U. (average 6.74 S.U.). The average pH remained near neutral pH of 7 S.U. and within the desirable range for microbial activity.

3.7.2 Dissolved Oxygen and Oxidation-Reduction Potential

The limited DO in groundwater and negative ORP values are indicative of suitable conditions for naturally occurring anaerobic reductive dechlorination of CVOCs. The DO and ORP measurements during the December 2023 annual monitoring event are detailed below.

- DO ranged from 0.08 mg/L in MW0039 to 3.69 mg/L in MW0047. The average DO was 0.61 mg/L.
- ORP ranged from -160.5 millivolts (mV) at MW0043 to -16.5 mV at MW0024. The average ORP was -74.2 mV.

Anaerobic bacteria are reported to function less effectively at DO concentrations over 0.5 mg/L (Wiedemeier et al., 2006). DO concentrations were near the desired concentration of 0.5 mg/L, and ORP values were less than 0 mV. These conditions are indicative of an anoxic reducing environment; therefore, the results indicate that subsurface conditions support the reductive dechlorination of CVOCs.

4.0 VAPOR INTRUSION EVALUATION

This section presents a summary of the SSSG sampling in the Heavy Equipment Office Building conducted in December 2023 to evaluate changes in CVOCs in the subsurface following the bioremediation IM implementation.

Sampling was conducted in the dry season in December 2023, and the SSSG sample results as presented in **Table 4-1** and on **Figure 4-1** indicate that the CVOCs (PCE, cDCE, tDCE, and VC) were either not detected or were detected below their respective commercial and residential EPA VISLs (assuming a carcinogenic risk of 10^{-6} and a hazard quotient of 1). PCE was detected at all four SSSG sampling locations (VMP0001, VMP0002, VMP0003, and VMP0004). TCE, cDCE, tDCE, 1,1DCE, and VC were not detected above the laboratory detection limit in the four SSSG sampling locations during the 2023 event.

The CVOCs in groundwater along with degradation of the groundwater plume through previous IM activities are not creating sub-slab vapors at concentrations above EPA VISLs.

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5.0 LABORATORY QUALITY ASSURANCE

The laboratories analyzed all annual samples using appropriate and standardized analytical methods. Trip blanks were prepared by the laboratory and submitted with each shipment of groundwater samples meant for VOC analysis. Equipment blanks and field blanks were collected in association with PFAS sampling only. Based on evaluation of the 2023 data, qualifications could be assigned as presented in the following sections and are supported by the laboratory report narratives included in **Appendix C**. All other results not specifically discussed below met the quality control criteria established for this project, including the method-defined holding times. All results are usable as reported to the Remediation Information System, and the results that could be qualified are a small subset of the total volume of data submitted.

As clarification, holding times are counted in hours from sample collection if the method specifies a holding time in hours. For instance, nitrate/nitrite must be analyzed within 48 hours from the time of collection. By comparison, holding times that are specified in days, such as the 14-day holding time for VOCs, are counted as calendar days; therefore, in the VOC example, the analysis must occur before midnight on the 15th day after sample collection. As a policy, SGS Orlando counts all holding times in minutes from the reported time of collection on the chain of custody, regardless of what guidance document the project follows. Analyses violating the laboratory's holding time definition, even by 1 second, are flagged automatically by the laboratory's software in footnotes on the sample results pages and the data package case narrative. The laboratory's automated holding time definition is not applicable to the data quality objectives for this project because the 14-day holding time for VOCs is counted as the number of calendar days from sample collection, rather than seconds or minutes. In addition, with regard to analyses reported as "confirmation run" in the case narrative and/or footnotes on the sample results pages, these analyses are meant to confirm issues that were noted in the associated original analysis that were suspected to affect the results, such as a matrix interference. Results are not reported from the confirmation runs unless explicitly stated in the footnotes on the sample results pages.

5.1 DECEMBER 2023 ANNUAL EVENT

For the PFAS analyses performed in sample delivery group (SDG) FC12099, in sample CRHE-MW0025-030.0-20231218, extracted internal standards 13C8-FOSA and 13C2-PFTeDA produced recoveries below the lower acceptance threshold. The affected perfluorooctanesulfonamide (PFOSA) and perflouorotetradecanoic acid (PFTeDA) results for sample CRHE-MW0025-030.0-20231218 were nondetections and should be qualified UJ.

For the PFAS analyses performed in SDG FC12099, in sample CRHE-MW0024-010.0-20231218, extracted internal standard 13C8-FOSA produced a recovery below the lower acceptance threshold. The affected PFOSA result for sample CRHE-MW0024-010.0-20231218 was a nondetection and should be qualified UJ.

For the PFAS analyses performed in SDG FC12099, in sample CRHE-IW0019I-040.0-20231218, extracted internal standard 13C2-PFTeDA produced a recovery below the lower acceptance threshold. The affected PFTeDA result for sample CRHE-IW0019I-040.0-20231218 was a nondetection and should be qualified UJ.

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6.0 CONCLUSIONS, RECOMMENDATIONS, AND EXIT STRATEGY

The contents of this report were presented at the April 2024 KSCRT meeting as the *2023 Annual Groundwater Monitoring ADP*. The KSCRT conditionally concurred with the recommendations presented below contingent upon Florida DEP review of this report. The final meeting minutes are included in **Appendix A**.

6.1 GROUNDWATER EVALUATION

The following sub-sections discuss the conclusions, recommendations, and exit strategy for the groundwater monitoring based on activities conducted and results obtained in December 2023.

6.1.1 Conclusions

Twenty-six monitoring wells were sampled in December 2023. A review of the 2023 groundwater monitoring data indicates the following:

- PCE and TCE were not detected in groundwater samples collected from monitoring wells in 2023. In 2023, the only target CVOCs detected at concentrations above the GCTLs were cDCE and VC.
- One of the two monitoring wells sampled within the footprint of the former bioremediation IM areas is below the GCTLs (MW0048). VC remains above the GCTL at MW0047 (1.7 µg/L).
- In HS1 outside of the former bioremediation IM area, VC was detected at a concentration greater than the NADC at MW0058 (stable trend) and greater than the GCTL at MW0027 (decreasing trend) and MW0029 (decreasing trend). The concentrations in MW0025 were below their respective GCTLs.
- UIC monitoring conducted in HS1 indicated TRPH remains above the GCTL in one well (MW0047) and TDS exceeds the GCTL in 5 of the 6 wells sampled.
- VC and cDCE concentrations generally decreased across the site in comparison with the 2022 sampling results.
- In HS2, the sampling results for MW0031, MW0032, and MW0042 have varied over the years with MW0031 showing anomalous nondetections for cDCE and VC in 2019 and increasing back over NADC concentrations in 2020. The VC concentrations in December 2023 were greater than the NADC at MW0031 and MW0042 but less than the 2022 results. Concentrations in MW0032 were all below their respective GCTLs.
- In the northern area, VC is above the NADC at MW0019I and above the GCTL at MW0034. Mann-Kendall statistics indicate stable VC concentrations at IW0019I and MW0034. Concentrations at IW0017I were all below their respective GCTLs.
- VC remains above the GCTL at downgradient wells MW0035, MW0039, and MW0041. MW0035 shows a decreasing trend while MW0039 and MW0041 show no statistical trend.

- Subsurface conditions appear favorable for MNA based on field geochemical parameters; however, sampling results indicate a potential stall at VC across the site.
- Three of the four wells (MW0025, MW0035, and MW0039) sampled for 1,4-dioxane exceeded the GCTL of 3.2 µg/L. The concentrations ranged from 4.6 µg/L (MW0025) to 6.7 µg/L (MW0035). Statistical analysis indicates that 1,4-dioxane concentrations are decreasing in MW0025 in HS1 and increasing downgradient in MW0035.

6.1.2 Recommendations

Based on the 2022 annual groundwater sampling results, it is recommended that annual sampling continue to alternate with the wet and dry season, with the next sampling event planned for August 2024. The SAP will be reviewed annually and modified as warranted by the results. The proposed SAP for 2024 is provided in **Table 6-1**, and sampling locations are presented on **Figure 6-1**. The proposed modifications from the 2023 SAP are summarized below.

- Abandon IW0014I and IW0015I due to obstructions at 17.2 ft below top of casing (btoc) and 6 ft btoc, respectively.
- Sample the same 10 wells for PFAS (IW0001S, IW0002S, IW0004I, IW0009S, IW0013S, IW0017I, IW0019I, MW0024, MW0025, and MW0030) to gather temporal data for the CRHE Area. Recommendations for further assessment of PFAS will be presented in a future Site Assessment Work Plan.

Additionally, it is recommended that the following be conducted to refine the current structure of the groundwater plume and monitoring well network:

- Conduct DPT groundwater sampling for CVOCs with select samples also analyzed for 1,4-dioxane:
  - To refine the LCP, HCP, and 10xNADC plume data gaps (in the northeast, southeast, west of the railroad tracks, and if feasible in the vegetated area between the railroad tracks and Kennedy Parkway); and
  - To update the CSM for development of potential approaches to address the remaining dissolved phase CVOC HCP and/or 10xNADC plumes.

6.1.3 Exit Strategy

Annual monitoring for CVOCs and 1,4-dioxane will continue until additional remedies are implemented and/or the site is transitioned to long term monitoring. UIC monitoring for TRPH and sodium will continue at select wells until results indicate that monitoring is no longer required within the Florida DEP-defined Zone of Discharge.

6.2 VAPOR INTRUSION EVALUATION

SSSG sampling results indicate that CVOCs in groundwater under the Heavy Equipment Office Building, along with degradation of the groundwater plume through previous IM activities, are not creating sub-slab vapors that may pose an unacceptable risk to the building occupants. Although

CVOC concentrations in SSSG samples are below EPA residential VISL, NASA has elected to continue wet/dry season vapor sampling to monitor whether further changes in the sub-slab CVOC concentrations in the four vapor probes are due to previous IM activities or plume movement.

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7.0 REFERENCES

AECOM, 2022. *Center-Wide Phase II and III Solid Waste Management Unit Assessment and Confirmatory Sampling Report for Per- and Polyfluorinated Alkyl Substances, Potential Release Location (PRL) No. 237, Kennedy Space Center, Florida*. August.

Air Force Center for Engineering and the Environment, 2004. *Principles and Practices of Enhanced Anaerobic Bioremediation of Chlorinated Solvents.* U.S. Department of Defense, Air Force Center for Environmental Excellence and the Environmental Security Technology Certification Program (ESTCP). Washington, DC.

U.S. Environmental Protection Agency (EPA), 2022. Regional Screening Levels, Resident Tapwater, THQ=0.1. May. Accessed July 7, 2022.

Florida Department of Environmental Protection (DEP), 2018. *Department of Environmental Protection Standard Operating Procedures for Field Activities, DEP-SOP-001/01*. Bureau of Laboratories, Environmental Assessment Section. April.

HydroGeoLogic, Inc. (HGL), 2021. *Per- and Polyfluoroalkyl Substances Sampling Procedures*. February.

National Aeronautics and Space Administration (NASA), 1999. *RCRA Facility Investigation Report Contractors Road Heavy Equipment Area (SWMU Group C Including Nos 15, 16, 31 and 55), Kennedy Space Center, Florida, (Revision 1),* (KSC-JJ-4698) prepared by HSW Environmental Group, Orlando, Florida. March.

NASA, 2000. *Corrective Measures Study Report Contractors Road Heavy Equipment Area (SWMU Group Including Nos 15, 16, 31 and 55, Kennedy Space Center, Florida, (Revision 0),* (KSC-JJ-5100) prepared by HSW Environmental Group, Orlando, Florida. February.

NASA, 2013. *Contractors Road Heavy Equipment Area (CRHE), SWMU 055, Step 1 Engineering Evaluation – Hot Spot 1, Advanced Data Package (Revision 0),* prepared by Geosyntec Consultants, Titusville, Florida. December.

NASA, 2014a. *Contractors Road Heavy Equipment Area (SWMU 055) Step 3 Engineering Evaluation Hot Spot 1, Kennedy Space Center, Florida, (Revision 0),* prepared by Geosyntec Consultants, Titusville, Florida. May.

NASA, 2014b. *Contractors Road Heavy Equipment Area (SWMU 055) Bioremediation Interim Measures Work Plan – Hot Spot 1, Kennedy Space Center, Florida, (Revision 0),* prepared by Geosyntec Consultants, Titusville, Florida. May.

NASA, 2015a. *Contractors Road Heavy Equipment (CRHE) Area (SWMU 055) Step 1 Engineering Evaluation, Advanced Data Package (Revision 0),* prepared by Geosyntec Consultants, Titusville, Florida. April.

NASA, 2015b. *Contractors Road Heavy Equipment Area (SWMU 055) Corrective Measures Implementation Progress Report, Kennedy Space Center, Florida, (Revision 1),* prepared by Geosyntec Consultants, Pensacola, Florida. August.

NASA, 2016. *Contractors Road Heavy Equipment Area (SWMU 055) Hot Spot 1 Bioremediation Implementation Work Plan, Kennedy Space Center, Florida (Revision 0),* prepared by Geosyntec Consultants, Titusville, Florida. November.

NASA, 2017. *Sampling and Analysis Plan for the RCRA Corrective Action Program at the John F. Kennedy Space Center, Florida* (*Revision 5*), prepared by Geosyntec Consultants, Boca Raton, Florida. August.

NASA, 2018. *Contractors Road Heavy Equipment Area (SWMU 055), Hot Spot 1 Bioremediation Implementation Work Plan Addendum (Revision 0),* prepared by Geosyntec Consultants, Titusville, Florida. May.

NASA, 2019a. *Contractor's Road Heavy Equipment Area (SWMU 055) Hot Spot 1 Bioremediation Interim Measure Implementation, Hot Spot 1 Bioremediation Interim Measure Performance Monitoring, and Site-Wide Interim Groundwater Monitoring Report, Kennedy Space Center, Florida, (Revision 0),* prepared by Geosyntec Consultants, Titusville, Florida. September.

NASA, 2019b. *Standard Operating Procedure for Groundwater Sampling of Monitoring Wells and Analysis of Per- and Polyfluoroalkyl Substances*. July.

NASA, 2021. *Contractors Road Heavy Equipment Area (CRHE), SWMU 055, 2020 Annual Groundwater Monitoring Report*, prepared by HydroGeoLogic, Inc., Merritt Island, Florida. June.

NASA, 2022. *Contractors Road Heavy Equipment Area (CRHE), SWMU 055, 2021 Annual Groundwater Monitoring Advanced Data Package*, prepared by HydroGeoLogic, Inc., Merritt Island, Florida. March.

NASA, 2023. *Contractors Road Heavy Equipment Area (CRHE), SWMU 055, 2022 Annual Groundwater Monitoring Advanced Data Package*, prepared by HydroGeoLogic, Inc., Merritt Island, Florida. April.

Wiedemeier, Todd H., Michael J. Barden, Patrick E. Haas, and W. Zachary Dickson, 2006. *Designing Monitoring Programs to Effectively Evaluate the Performance of Natural Attenuation*. In David M. Nielsen, Handbook of Environmental Site Characterization and Groundwater Monitoring (573-637), Boca Raton, FL: CRC Press.

TABLES

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Table 2-1
Monitoring Well Construction Details
2023 Annual Groundwater Monitoring Report
Contractors Road Heavy Equipment Area, Kennedy Space Center, Florida

Well ID	TOC Elevation (ft NAVD88)	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)
CRHE-IW0001S	4.47	3	13
CRHE-IW0002S	5.77	3	13
CRHE-IW0003S	4.56	2.5	12.5
CRHE-IW0004I	5.60	30	40
CRHE-IW0004S	5.71	3	13
CRHE-IW0005S	5.58	3	13
CRHE-IW0006S	4.37	2	12
CRHE-IW0007S	6.04	0.5	10.5
CRHE-IW0008S	5.52	2	12
CRHE-IW0009S	4.24	2	12
CRHE-IW0010S	4.46	1.5	11.5
CRHE-IW0011S	6.28	2	12
CRHE-IW0012S	6.65	2	12
CRHE-IW0013S	5.10	2.5	12.5
CRHE-IW0014D	5.23	65	70
CRHE-IW0014I	5.01	35	45
CRHE-IW0015I	5.14	35	45
CRHE-IW0016I	4.45	35	45
CRHE-IW0017I	5.37	25	35
CRHE-IW0018I	4.57	35	45
CRHE-IW0019I	5.32	35	45
CRHE-IW0020I	5.42	40	50
CRHE-IW0021I	2.54	40	50
CRHE-IW003M	7.04	45	50
CRHE-MW0022	4.60	60	70
CRHE-MW0023	5.45	60	70
CRHE-MW0024	4.00	5	15
CRHE-MW0025	4.16	25	35
CRHE-MW0026	4.36	30	40
CRHE-MW0027	4.51	40	50
CRHE-MW0028	5.58	35	45
CRHE-MW0029	4.56	40	50
CRHE-MW0030	5.26	5	15
CRHE-MW0031	5.17	40	50
CRHE-MW0032	5.78	40	50
CRHE-MW0033	6.35	40	50
CRHE-MW0034	5.40	30	40
CRHE-MW0035	5.34	40	50
CRHE-MW0036	4.92	5	15
CRHE-MW0037	5.07	25	35
CRHE-MW0038	3.23	5	15
CRHE-MW0039	3.22	25	35
CRHE-MW0040	NS	65	75
CRHE-MW0041	3.05	30	40
CRHE-MW0042	6.36	35	45
CRHE-MW0043	4.71	41	45
CRHE-MW0044	4.34	40	45
CRHE-MW0045	4.59	26	30
CRHE-MW0046	4.14	16	21
CRHE-MW0047	4.09	21	25
CRHE-MW0048	3.89	28	33
CRHE-MW0049	3.82	33	38
CRHE-MW0050	4.27	36	40
CRHE-MW0051	4.10	35	40
CRHE-MW0052	3.96	40	45
CRHE-MW0053	4.64	30	35
CRHE-MW0054	4.54	45	50
CRHE-MW0055	4.75	40	45
CRHE-MW0056	4.86	35	40
CRHE-MW0057	5.36	30	40
CRHE-MW0058	5.25	40	50

Notes:
CRHE = Contractors Road Heavy Equipment
ft = feet
bgs = below ground surface
NAVD88 = North American Vertical Datum of 1988
NS = not surveyed
TOC = top of casing

Table 2-2
2023 Sampling and Analysis Plan
2023 Annual Groundwater Monitoring Report
Contractors Road Heavy Equipment Area, Kennedy Space Center, Florida

CRHE Area	Location	Screen Interval (ft bgs)	Analysis					Rationale
			CVOCs by EPA Method 8260D	TRPH by FL-PRO Method	Sodium by EPA Method 200.7	TDS[1] by SM19 2540C (Biennial)	1,4-Dioxane by EPA Method 8260C SIM	
Hot Spot 1	CRHE-MW0025	25 to 35	X			X	X	Monitor outside southeastern edge of bioremediation Interim Measure area for CVOCs and 1,4-dioxane.
	CRHE-MW0027	40 to 50	X					Monitor Hot Spot 1, located adjacent to bioremediation Interim Measure area (VC exceeds GCTL).
	CRHE-MW0029	40 to 50	X					Monitor downgradient of bioremediation Interim Measure area where VC exceeds GCTL.
	CRHE-MW0043	41 to 45				X		UIC monitoring in western treatment area.
	CRHE-MW0044	40 to 45		X		X		UIC parameter TRPH exceedance of GCTL; monitor until two consecutive concentrations below the GCTL.
	CRHE-MW0047	21 to 25	X	X	X			Monitor interior, eastern portion of bioremediation Interim Measure area where VC and TRPH exceed GCTLs.
	CRHE-MW0048	28 to 33	X					Monitor interior, eastern portion of bioremediation Interim Measure area where VC exceeds GCTL.
	CRHE-MW0056	35 to 40		X		X		UIC parameter TRPH exceedance of GCTL; monitor until two consecutive concentrations below the GCTL.
	CRHE-MW0057	30 to 40				X		UIC monitoring west of treatment area.
	CRHE-MW0058	40 to 50	X			X		Monitor downgradient of bioremediation Interim Measure area where VC exceeds NADC.
Hot Spot 2	CRHE-MW0031	40 to 50	X					Monitor VC exceedance of NADC.
	CRHE-MW0032	40 to 50	X					VC greater than GCTLs and downgradient of a previously identified VC Hot Spot.
	CRHE-MW0042	35 to 45	X					VC greater than NADC.
Northern Area	CRHE-IW0017I	25 to 35	X					VC greater than GCTL.
	CRHE-IW0019I	35 to 45	X					VC greater than NADC.
	CRHE-MW0034	30 to 40	X					
Downgradient	CRHE-MW0035	40 to 50	X				X	Provides downgradient monitoring; VC and 1,4-dioxane greater than GCTL.
	CRHE-MW0039	25 to 35	X				X	
	CRHE-MW0041	30 to 40	X				X	Provides downgradient monitoring; VC greater than GCTL; monitor 1,4-dioxane detections at MW0035 and MW0039.

Notes:
CRHE = Contractors Road Heavy Equipment
CVOC = chlorinated volatile organic compound
EPA = U.S. Environmental Protection Agency
ft bgs = feet below ground surface
GCTL = groundwater cleanup target level
NADC = natural attenuation default concentration
SIM = select ion monitoring
TDS = total dissolved solids
TRPH = total recoverable petroleum hydrocarbons
UIC = underground injection control
VC = vinyl chloride

Table 2-3
2023 PFAS Sampling and Analysis Plan
2023 Annual Groundwater Monitoring Report
Contractors Road Heavy Equipment Area, Kennedy Space Center, Florida

Location	Screen Interval (ft bgs)	Analysis
		PFAS by EPA Method 537M
CRHE-IW0001S	3 to 13	X
CRHE-IW0002S	3 to 13	X
CRHE-IW0004I	30 to 40	X
CRHE-IW0009S	2 to 12	X
CRHE-IW0013S	2.5 to 12.5	X
CRHE-IW0017I	25 to 35	X
CRHE-IW0019I	35 to 45	X
CRHE-MW0024	5 to 15	X
CRHE-MW0025	25 to 35	X
CRHE-MW0030	5 to 15	X

Notes:
CRHE = Contractors Road Heavy Equipment
EPA = U.S. Environmental Protection Agency
ft bgs = feet below ground surface
PFAS = per- and polyfluoroalkyl substances

Table 3-1
Sitewide Monitoring Well Groundwater Elevations
2023 Annual Groundwater Monitoring Report
Contractors Road Heavy Equipment Area, Kennedy Space Center, Florida

Location	Screen Interval (ft bgs)	TOC Elevation (ft NAVD88)	22-Jun-22		14-Dec-23	
			Depth to Water (ft BTOC)	Groundwater Elevation (ft NAVD88)	Depth to Water (ft BTOC)	Groundwater Elevation (ft NAVD88)
CRHE-IW0001S	3 to 13	4.47	2.76	1.71	1.96	2.51
CRHE-IW0002S	3 to 13	5.77	4.19	1.58	3.46	2.31
CRHE-IW0004I	30 to 40	5.60	3.98	1.62	3.17	2.43
CRHE-IW0004S	3 to 13	5.71	NM	NC	2.38	3.33
CRHE-IW0009S	2 to 12	4.24	2.61	1.63	1.95	2.29
CRHE-IW0013S	2.5 to 12.5	5.10	3.50	1.60	2.75	2.35
CRHE-IW0014D	65 to 70	5.23	3.69	1.54	2.85	2.38
CRHE-IW0014I	35 to 45	5.01	3.47***	NC***	2.71***	NC***
CRHE-IW0015I	35 to 45	5.14	3.85***	NC***	2.86***	NC***
CRHE-IW0016I	35 to 45	4.45	NM	NC	NM	NC
CRHE-IW0017I	25 to 35	5.37	3.85	1.52	2.85	2.52
CRHE-IW0018I	35 to 45	4.57	NM	NC	2.15	2.42
CRHE-IW0019I	35 to 45	5.32	3.70	1.62	2.94	2.38
CRHE-IW0020I	40 to 50	5.42	NM	NC	NM****	NC
CRHE-IW0021I	40 to 50	2.54	1.21	1.33	0.56	1.98
CRHE-MW0022	60 to 70	4.60	3.09	1.51	2.31	2.29
CRHE-MW0023	60 to 70	5.45	4.09	1.36	3.30	2.15
CRHE-MW0024	5 to 15	4.00	2.55	1.45	1.74	2.26
CRHE-MW0025	25 to 35	4.16	2.70	1.46	1.91	2.25
CRHE-MW0026	30 to 40	4.36	2.94	1.42	2.11	2.25
CRHE-MW0027	40 to 50	4.51	3.15	1.36	2.28	2.23
CRHE-MW0028	35 to 45	5.58	4.09	1.49	3.26	2.32
CRHE-MW0029	40 to 50	4.56	3.11	1.45	2.32	2.24
CRHE-MW0030	5 to 15	5.26	3.90	1.36	3.15	2.11
CRHE-MW0031	40 to 50	5.17	3.93	1.24	3.03	2.14
CRHE-MW0032	40 to 50	5.78	4.40	1.38	3.59	2.19
CRHE-MW0033	40 to 50	6.35	5.03	1.32	4.33	2.02
CRHE-MW0034	30 to 40	5.40	4.23	1.17	3.39	2.01
CRHE-MW0035	40 to 50	5.34	4.04	1.30	3.44	1.90
CRHE-MW0036	5 to 15	4.92	3.81	1.11	3.06	1.86
CRHE-MW0037	25 to 35	5.07	3.86	1.21	3.22	1.85
CRHE-MW0038	5 to 15	3.23	2.07	1.16	1.43	1.80
CRHE-MW0039	25 to 35	3.22	2.06	1.16	1.45	1.77
CRHE-MW0040	65 to 75	NS	2.90	NC	2.08	NC
CRHE-MW0041	30 to 40	3.05	1.99	1.06	1.18	1.87
CRHE-MW0042	35 to 45	6.36	4.99	1.37	4.22	2.14
CRHE-MW0043	41 to 45	4.71	3.11	1.60	2.32	2.39
CRHE-MW0044	40 to 45	4.34	2.92	1.42	2.08	2.26
CRHE-MW0045	26 to 30	4.59	3.07	1.52	2.30	2.29
CRHE-MW0046	16 to 21	4.14	3.39	0.75	1.85	2.29
CRHE-MW0047	21 to 25	4.09	3.39	0.70	1.85	2.24
CRHE-MW0048	28 to 33	3.89	2.38	1.51	1.61	2.28
CRHE-MW0049	33 to 38	3.82	2.41	1.41	1.59	2.23
CRHE-MW0050	36 to 40	4.27	2.81	1.46	2.00	2.27
CRHE-MW0051	35 to 40	4.10	2.73	1.37	1.80	2.30
CRHE-MW0052	40 to 45	3.96	NM*	NC*	NM*	NC*
CRHE-MW0053	30 to 35	4.64	3.13	1.51	2.37	2.27
CRHE-MW0054	45 to 50	4.54	3.11	1.43	2.28	2.26
CRHE-MW0055	40 to 45	4.75	3.21	1.54	2.45	2.30
CRHE-MW0056	35 to 40	4.86	3.19	1.67	2.61	2.25
CRHE-MW0057	30 to 40	5.36	3.84	1.52	3.10	2.26
CRHE-MW0058	40 to 50	5.25	3.73	1.52	2.97	2.28

Notes:

* = Could not access due to large equipment parked over well.

** = Could not access due to nearby yellow jacket nest safety concerns.

*** = Groundwater elevation was not calculated because the total well depth could not be measured due to obstructions.

**** = Groundwater elevation was not measured due to well being destroyed beyond repair.

CRHE-MW0016I has not been located for several past sampling events and is presumed destroyed.

CRHE-MW0018I and CRHE-MW0020I were discovered in December 2023.

TOC was resurveyed for monitoring well CRHE-IW0014I in 2018, after its well pad was replaced.

BTOC = below top of casing

bgs = below ground surface

ft = feet

NAVD88 = North American Vertical Datum 1988

NC = not calculated

NM = not measured

NS = not surveyed

TOC = top of casing

Table 3-2
Sitewide Well Sampling Results: CVOCs and 1,4-Dioxane
2023 Annual Groundwater Monitoring Report
Contractors Road Heavy Equipment Area, Kennedy Space Center, Florida

Location	Screen Interval (ft bgs)	Sample Date	TCE	*cDCE*	*tDCE*	VC	1,4-Dioxane
		GCTL (µg/L)	**3**	**70**	**100**	**1**	**3.2**
		NADC (µg/L)	**300**	**700**	**1,000**	**100**	**320**
CRHE-IW0017I	25 to 35	05/06/2005	0.50 U	**0.64 J**	0.50 U	**142**	--
		10/27/2005	2.5 U	2.5 U	2.5 U	**140**	--
		05/09/2006	0.70 U	0.70 U	0.50 U	**56**	--
		05/15/2006	0.50 U	0.50 U	0.50 U	**114**	--
		11/07/2006	0.50 U	**0.57 I**	0.50 U	**111**	--
		05/16/2007	0.50 U	0.50 U	0.50 U	**98**	--
		11/12/2007	0.38 U	0.28 U	0.20 U	**122**	--
		05/20/2008	0.32 U	**0.48 I**	0.45 U	**84**	--
		11/10/2008	0.32 U	**0.49 I**	0.45 U	**92**	--
		05/15/2009	0.32 U	**0.49 I**	0.45 U	**76**	--
		11/10/2009	0.15 U	**0.32 I**	0.13 U	**91**	--
		03/20/2012	0.16 U	**0.52 I**	**0.27 I**	**90**	--
		06/01/2016	0.61 U	0.65 U	0.67 U	**23**	--
		12/12/2017	0.61 U	0.65 U	0.67 U	**36**	--
		06/26/2018	0.61 U	0.32 U	0.39 U	**25**	--
		12/06/2019	1.0 U	**0.31 J**	**0.45 J**	**24.4**	--
		06/19/2020	0.50 U	0.50 U	**0.32 J**	**23.4**	--
		12/09/2021	0.50 U	0.50 U	**0.50 J**	**16.3**	--
		06/23/2022	0.50 U	0.50 U	0.50 U	**21.3 J**	--
		12/18/2023	0.50 U	0.50 U	0.50 U	0.50 U	--
CRHE-IW0019I	35 to 45	05/16/2007	0.50 U	**425**	**5.8**	**253**	--
		11/12/2007	3.8 U	**525**	2.0 U	**267**	--
		05/20/2008	0.32 U	**327**	**5.1**	**215**	--
		11/11/2008	3.2 U	**810**	**10**	**336**	--
		05/15/2009	3.2 U	**753**	**12.5**	**324**	--
		11/10/2009	0.15 U	**830**	**16**	**380**	--
		03/20/2012	0.16 U	**1,000**	**18**	**530**	--
		12/11/2013	1.6 U	**510**	**10.8**	**360**	1 U
		06/01/2016	0.61 U	**270**	**11**	**350**	--
		12/12/2017	0.61 U	**51**	**11**	**450**	--
		06/26/2018	0.61 U	**21**	**8.9**	**280**	--
		12/06/2019	0.50 U	**1.4**	**5.7**	**199**	--
		06/19/2020	0.50 U	**1.2**	**5.9**	**227**	--
		12/09/2021	0.50 U	**0.77 J**	**5.4**	**220**	--
		06/23/2022	0.50 U	0.50 U	**4.9**	**171 J**	--
		12/18/2023	1.3 U	1.3 U	**3.3**	**172**	--
CRHE-MW0025	25 to 35	03/21/2012	**0.6 I**	**9,700**	**75**	**7,600**	--
		12/11/2013	63 U	**8,900**	**97.6 I**	**13,100**	**14.5**
		06/01/2016	12 U	**4,600**	**76**	**7,200**	**11**
		12/14/2017	31 U	**24,000**	**330**	**24,000**	**42**
		03/28/2018	310 U	**13,000**	190 U	**19,000 J3**	--
		06/25/2018	12 U	**11,000**	**150**	**10,000**	**20**
		11/09/2018	31 U	**6,600**	**120**	**13,000**	--
		12/05/2019	10 U	**871**	**17.9J**	**1,520**	**7.8**
		06/19/2020	13 U	**972**	**16 J**	**2,260**	**4.7**
		12/03/2020	0.50 U	**14.5**	**1.6**	**231 J***	--
		12/09/2021	0.50 U	0.50 U	0.50 U	**9.4**	**3.3**
		06/23/2022	5.0 UJ	**514 J**	5.0 UJ	**1,010 J**	**5.3 J**
		12/18/2023	0.50 U	0.50 U	0.50 U	0.50 U	**4.6**
CRHE-MW0027	40 to 50	03/21/2012	**1.3**	**790**	**14**	**1,700**	--
		06/01/2016	0.61 U	0.65 U	0.67 U	0.71 U	--
		12/14/2017	15 U	**5,400**	**59**	**1,400**	--
		06/25/2018	12 U	**15,000**	**140**	**3,300**	--
		12/05/2019	0.50 U	**27.5**	0.50 U	**377**	--
		06/23/2020	5.0 U	**216**	5.0 U	**904**	--
		12/03/2020	1.0 U	**87.4**	1.0 U	**479 J***	--
		12/09/2021	0.50 U	0.50 U	0.50 U	**59.5**	--
		06/27/2022	0.50 U	0.50 U	0.50 U	**11.9 J**	--
		12/19/2023	0.50 U	0.50 U	0.50 U	0.50 U	--
CRHE-MW0029	40 to 50	03/21/2012	**140**	**420**	**13**	**100**	--
		12/11/2013	**398**	**1,650**	**31.8**	**339**	**1.3 I**
		06/01/2016	**100**	**3,700**	**62**	**430**	**2.4**
		12/13/2017	0.61 U	**580**	**19**	**210**	**2.1 I**
		06/26/2018	1.2 U	**880**	**18**	**290**	**1.5 I**
		12/06/2019	0.50 U	**30.4**	**5.5**	**77.1**	**1.8**
		06/22/2020	0.50 U	**10.6**	**2.9**	**41.4**	--
		12/09/2021	0.50 U	**3.9**	**0.67 J**	**10.8**	--
		06/27/2022	0.50 U	**4.9**	**1.2**	**92.8 J**	--
		12/15/2023	1.0 U	**1.8**	**0.54 J**	**71.3**	--

Table 3-2 (continued)
Sitewide Well Sampling Results: CVOCs and 1,4-Dioxane
2023 Annual Groundwater Monitoring Report
Contractors Road Heavy Equipment Area, Kennedy Space Center, Florida

Location	Screen Interval (ft bgs)	Sample Date	TCE	*cDCE*	*tDCE*	VC	1,4-Dioxane
CRHE-MW0031	40 to 50	03/19/2012	1.5	59	6	200	--
		06/01/2016	6.1 U	2,600	94	450	--
		12/13/2017	1.2 U	1,400	67	550	--
		06/26/2018	6.1 U	1,500	60	890	--
		12/06/2019	0.50 U	0.50 U	0.50 U	0.50 U	--
		06/23/2020	10 U	915	24.6	931	--
		12/08/2021	10 U	37.1	10U	143	2.2
		06/27/2022	2.5 UJ	125 J	5.1 J	329 J	--
		12/15/2023	2.5 U	18.0	3.5	245	--
CRHE-MW0032	40 to 50	03/19/2012	0.16 U	13	8.2	83	--
		06/01/2016	0.61 U	3.7	2.1	93	--
		12/14/2017	0.61 U	2.6	1.0	30	--
		06/26/2018	1.2 U	3.2	14	380	--
		12/06/2019	0.50 U	4.6	5.6	135	--
		06/23/2020	1.3 U	154	2.3 J	50.8	--
		12/09/2021	0.50 U	0.50 U	0.50 U	2.0	--
		06/27/2022	0.50 U	2.5	0.50 U	7.2 J	--
		12/18/2023	0.50 U	0.81 J	0.50 U	0.85 J	--
CRHE-MW0034	30 to 40	03/20/2012	0.16 U	12	0.12 U	150	--
		06/02/2016	0.61 U	14	0.67 U	170	--
		12/13/2017	0.61 U	11	0.67 U	190	--
		06/26/2018	0.61 U	8.2	0.53 I	140	--
		12/06/2019	0.50 U	6.7	0.53 J	98.5	--
		06/24/2020	0.50 U	18	0.80 J	148	--
		12/08/2021	0.50 U	5.1	0.50 U	115	--
		06/28/2022	0.50 U	8.3	0.55 J	147 J	--
		12/19/2023	0.50 U	2.0	0.50 U	76.1	--
CRHE-MW0035	40 to 50	03/20/2012	0.16 U	0.55 I	0.44 I	130	--
		12/11/2013	0.31 U	0.83 I	2.3	477	3.9
		06/02/2016	0.61 U	1.0	2.3	150	4.4
		12/14/2017	0.61 U	0.65 U	1.6	14	5.1
		06/26/2018	0.61 U	0.39 I	1.4 I	4.1	5.4
		12/05/2019	0.50 U	0.95 J	0.97 J	9.4	5.1
		06/23/2020	0.50 U	1.7	1.7	23.4	6.1
		12/08/2021	0.50 U	1.3	0.63 J	16.0	5.8
		06/27/2022	0.50 U	0.50 U	1.1	8.7 J	5.9
		12/18/2023	0.50 U	0.57 J	0.50 U	4.5	6.7
CRHE-MW0039	25 to 35	03/19/2012	0.16 U	0.49 I	0.43 I	92	--
		06/02/2016	0.61 U	0.65 U	2.0	96	--
		12/13/2017	0.61 U	0.65 U	0.67 U	1.5	--
		06/26/2018	0.61 U	0.32 U	0.39 U	1.1	--
		12/05/2019	0.50 U	0.50 U	0.50 U	2.9	--
		06/23/2020	0.50 U	0.49 J	1.7	64.1	--
		12/08/2021	0.50 U	0.50 U	0.50 U	0.50 U	3.5
		06/27/2022	0.50 U	0.50 U	0.50 U	0.50 UJ	3.4
		12/19/2023	0.50 U	0.50 U	0.50 U	3.8	5.7
CRHE-MW0041	30 to 40	06/02/2016	0.61 U	47	1.3	86	--
		12/13/2017	0.61 U	0.65 U	0.67 U	3.4	--
		06/26/2018	0.61 U	0.32 U	0.39 U	1.1	--
		12/05/2019	0.50 U	22.2	0.80 J	33.7	--
		06/23/2020	1.3 U	91	3.6	212	--
		12/08/2021	0.50 U	30.6	0.98 J	56.1	2.7
		06/27/2022	0.50 U	9.0	0.69 J	55.3 J	2.6
		12/19/2023	0.50 U	4.2	0.71 J	98.4	2.6
CRHE-MW0042	35 to 45	06/02/2016	1.2 U	10	8.1	850	--
		12/13/2017	1.2 U	8.5	15	1,400	--
		06/26/2018	3.1 U	7.9	14	740	--
		12/06/2019	1.3 U	12.5	10.3	1,240	--
		06/24/2020	0.50 U	13.5	14.4	994	--
		12/08/2021	13 U	13 U	13 U	327	0.50 U
		06/28/2022	2.5 U	6.0 J	4.9 J	366	--
		12/19/2023	0.50 U	2.9	2.9	101	--
CRHE-MW0047	21 to 25	10/18/2016	31,000	62,000	2,300	950 I	--
		03/22/2017	57	240	46	470	--
		06/28/2017	7.1	190	36	360	--
		12/14/2017	2.7	8.2	51	780	--
		06/26/2018	0.61 U	2.5	51	130	--
		11/09/2018	0.61 U	2.1	40	36	--
		12/05/2019	0.48 J	0.90 J	21.9	10.4	--
		06/22/2020	0.50 U	4.2	9.7	6.0	--
		12/09/2021	0.50 U	0.50 U	4.0	1.3	--
		06/24/2022	0.50 UJ	0.50 UJ	2.6 J	1.8 J	--
		12/15/2023	0.36 J	0.50 U	1.1	1.7	--

Table 3-2 (continued)
Sitewide Well Sampling Results: CVOCs and 1,4-Dioxane
2023 Annual Groundwater Monitoring Report
Contractors Road Heavy Equipment Area, Kennedy Space Center, Florida

Location	Screen Interval (ft bgs)	Sample Date	TCE	*cDCE*	*tDCE*	VC	1,4-Dioxane
CRHE-MW0048	28 to 33	10/17/2016	**140,000**	**66,000**	1,300 U	**2,500**	--
		03/22/2017	**5.5**	**230**	**170**	**1,800**	--
		06/29/2017	31 U	**390**	**300**	**11,000**	--
		12/13/2017	15 U	**740**	**240**	**18,000**	--
		06/27/2018	12 U	**950**	**190**	**15,000**	--
		11/08/2018	0.61 U	**51**	**110**	**8,700**	--
		12/05/2019	25 U	**949**	**209**	**24,600**	--
		06/22/2020	2.5 U	**3.5 J**	**59.3**	**4,440 J**	--
		12/03/2020	0.50 U	0.50 U	**5.4**	**5.0**	--
		12/09/2021	0.50 U	0.50 U	0.50 U	0.50 U	--
		06/24/2022	0.50 U	0.50 U	0.50 U	0.50 UJ	--
		12/15/2023	0.50 U	0.50 U	0.50 U	0.50 U	--
CRHE-MW0058	40 to 50	03/29/2018	**1,400**	**4,300**	**98**	**530**	--
		11/13/2018	1.2 U	**23**	**42**	**350**	--
		12/06/2019	1.0 U	**87.2**	**5.2**	**97.3**	--
		06/22/2020	1.0 U	**128**	**10.9**	**170**	--
		12/03/2020	2.5 U	**302**	**8.7**	**203**	--
		12/09/2021	0.50 U	**2.1**	**1.2**	**103**	--
		06/27/2022	2.5 U	**10.1**	**4.0 J**	**500 J**	--
		12/15/2023	2.5 U	**1.9**	**0.84 J**	**106**	--

Notes:

6/22/20* = 1,4-Dioxane sample was collected on 8/19/2020.

1. U indicates not detected above method detection limit.
2. UJ not detected, the reporting limit is estimated
3. J indicates estimated value.
4. I indicates result is between the method detection limit and the practical quantitation limit.
5. J* indicates an estimated value; value from second run which was one day beyond hold time.
6. **Bold** indicates analyte detected.
7. Yellow shading and bold indicates analyte detected above the groundwater cleanup target level (GCTL).
8. Orange shading and bold denotes greater than the natural attenuation default concentration (NADC).
9. Red shading and bold denotes 10 times greater than the NADC.
10. -- not analyzed.
11. GCTL is from the Final Technical Report: Development of Cleanup Target Levels (CTLs) for Chapter 62-777, Florida Administrative Code (F.A.C.), University of Florida, February 2005.

µg/L = micrograms per liter
cDCE = cis-1,2-dichloroethene
ft bgs = feet below ground surface
PCE = tetrachloroethene
TCE = trichloroethene
tDCE = trans-1,2-dichloroethene
VC = vinyl chloride

Table 3-3
Geochemical Parameters
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Location	Screen Interval (ft bgs)	Date	Temperature (°C)	pH (Standard Units)	Conductivity (mS/cm)	Turbidity (NTU)	ORP (mV)	Dissolved Oxygen (mg/L)	Color
CRHE-MW0001S	3 to 13	6/23/2022	27.0	6.80	0.839	1.85	-91.2	0.09	clear
		12/18/2023	23.5	6.41	0.4144	3.9	1.3	0.18	clear
CRHE-MW0002S	3 to 13	6/23/2022	28.1	7.19	0.475	1.6	-36.2	0.29	clear
		12/18/2023	22.6	7.44	0.3087	6.54	5.6	1.36	clear
CRHE-IW0004I	30 to 40	12/18/2023	23.6	7.14	0.655	1.82	-46.4	0.13	clear
CRHE-MW0004I	30 to 40	6/23/2022	26.5	7.18	0.692	2.16	15.5	0.06	clear
CRHE-MW0009S	2 to 12	6/24/2022	25.5	6.88	0.872	3.6	-69.0	0.08	clear
		12/18/2023	22	6.90	0.4404	6.9	-49.6	0.21	clear
CRHE-MW0013S	2.5 to 12.5	6/23/2022	28.8	7.09	0.595	6.9	-115.9	0.06	clear
		12/18/2023	24.5	6.90	0.3073	6.0	88.9	5.56	clear
CRHE-IW0017I	25 to 35	3/20/2012	24.62	7.72	1.443	1.2	-112.0	1.15	clear
		6/1/2016	26.39	6.59	0.884	7.1	-15.2	0.14	clear
		12/12/2017	24.40	7.07	0.830	NR	-28.7	0.38 *	clear
		6/26/2018	25.15	7.08	0.737	5.4	12.2	0.19	clear
		12/6/2019	24.4	6.91	0.751	4.7	-80.4	0.30	clear
		6/19/2020	25.0	7.10	1.307	9.8	115.5	0.11	clear
		12/9/2021	24.5	7.02	0.763	13.9	-68.5	0.16	clear
		6/23/2022	25.7	7.02	0.745	19.2	-60.0	0.06	clear
		12/18/2023	23.9	7.28	0.168	16.1	-74.3	0.43	clear
CRHE-IW0019I	35 to 45	3/20/2012	23.97	7.35	1.275	13.2	-91.5	2.50	clear
		12/11/2013	24.29	7.04	1.035	14.7	-33.0	0.17	clear
		6/1/2016	26.11	6.41	1.034	17.7	-85.2	0.14	clear
		12/12/2017	24.46	7.21	0.945	3.0	-23.4	0.39 *	clear
		6/26/2018	25.47	7.24	0.824	15.5	-35.0	0.10	clear
		12/6/2019	24.50	7.05	0.845	6.3	-89.3	3.18	clear
		6/19/2020	25.40	7.27	1.460	8.7	67.9	0.18	clear
		12/9/2021	23.80	7.16	0.828	3.8	-84.9	0.17	clear
		6/23/2022	27.30	7.11	0.926	11.1	-58.0	0.09	clear
		12/18/2023	23.50	6.57	0.714	6.6	-78.5	0.24	clear
CRHE-MW0024	5 to 15	6/23/2022	28.10	6.54	0.970	5.53	-27.1	0.05	clear
		12/18/2023	22.70	6.58	0.882	7.14	-16.5	0.28	clear
CRHE-MW0025	25 to 35	3/21/2012	22.54	7.18	0.336	15.0	6.3	0.66	clear
		12/11/2013	23.39	6.77	1.536	18.1	-47.2	0.13	clear
		6/1/2016	27.06	6.44	1.585	18.3	-111.2	0.13	clear
		10/18/2016	25.07	6.31	1.271	16.8	-16.1	0.18	clear
		3/24/2017	23.91	6.42	1.209	33.5	-65.1	0.58	clear
		6/28/2017	25.62	6.97	1.377	12.2	-70.3	0.29	clear
		12/14/2017	24.15	6.61 *	1.500	4.7	-51.1	0.65 *	clear with small, white particulates
		6/25/2018	25.60	7.27	1.610	3.5	-23.3	0.03	clear
		12/5/2019	23.30	6.67	1.639	19.6	-77.3	0.12	clear
		6/19/2020	25.10	6.85	1.369	4.7	-38.4	0.09	clear
		12/9/2021	24.20	6.86	1.602	7.1	-218.1	0.16	clear
		6/23/2022	27.2	6.83	1.658	5.49	-83.5	0.04	clear
		12/18/2023	22.8	6.72	1.440	4.13	-62.3	0.80	clear

Table 3-3 (continued)
Geochemical Parameters
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Location	Screen Interval (ft bgs)	Date	Temperature (°C)	pH (Standard Units)	Conductivity (mS/cm)	Turbidity (NTU)	ORP (mV)	Dissolved Oxygen (mg/L)	Color
CRHE-MW0027	40 to 50	3/21/2012	24.11	7.22	0.602	14.2	-69.5	0.20	clear
		6/1/2016	26.36	6.44	1.753	50.9	-109.8	0.07	gray
		12/14/2017	24.80	6.71	1.570	10.9	-77.3	0.49	clear
		6/25/2018	27.40	7.03	1.880	13.6	-19.8	0.01	clear
		12/6/2019	24.90	6.62	1.979	19.8	-127.3	0.12	clear
		6/23/2020	27.30	6.97	2.918	20.0	-8.2	0.08	clear
		12/9/2021	25.90	6.67	1.741	8.2	-59.0	0.24	clear
		6/27/2022	28.3	6.63	1.368	10.10	-54.4	0.16	clear
		12/19/2023	23.8	6.71	1.643	10.20	-51.7	0.12	clear
CRHE-MW0029	40 to 50	3/21/2012	24.47	7.58	1.369	18.4	-165.2	0.30	clear
		12/11/2013	24.54	6.90	2.889	7.6	-28.9	0.16	clear
		6/2/2016	25.05	6.52	2.693*	13.7	-88.4	0.20	clear
		12/13/2017	24.76	7.19 *	2.411	0.8	-56.8	0.32	clear, reddish specs in sample
		6/26/2018	26.70	7.12	2.160	1.7	-17.4	0.18	clear
		12/6/2019	24.50	6.89	1.989	1.3	-81.1	1.47	clear
		6/22/2020	26.40	7.12	3.381	2.0	50.7	0.12	clear
		12/9/2021	24.50	7.14	1.067	7.2	-78.8	0.24	clear
		6/27/2022	27	6.78	1.262	4.6	-62.4	0.15	clear
		12/15/2023	25	6.97	1.075	5.0	-102.2	0.21	Clear
CRHE-MW0030	5 to 15	6/27/2022	27.4	6.77	0.676	8.5	-88.5	0.15	clear
		12/18/2023	23.3	7.10	0.369	2.9	-93.7	0.14	clear
CRHE-MW0031	40 to 50	3/19/2012	23.65	7.24	1.295	24.5	-122.8	0.37	clear
		6/1/2016	25.28	6.35	2.442	6.3	-90.6	0.15	clear
		12/13/2017	24.00	6.21	1.930	12.9 *	-195.0	0.18 *	clear
		6/26/2018	26.60	7.19	2.210	6.0	-26.2	0.15	clear
		12/6/2019	25.20	8.75	2.173	2.1	61.6	0.17	clear
		6/23/2020	27.60	7.01	4.381	7.6	4.6	0.11	clear
		12/8/2021	25.00	6.92	1.694	19.4	-86.9	0.04	clear
		6/27/2022	27.1	6.92	2.008	17.6	-49.4	0.13	clear
		12/15/2023	24.3	6.92	1.428	2.6	-81.3	0.25	clear
CRHE-MW0032	40 to 50	3/19/2012	24.71	7.53	3.108	8.7	-121.3	0.54	clear
		6/1/2016	26.52	6.58	2.171	18.3	-110.8	0.06	clear
		12/14/2017	26.20	6.79	1.750	11.1	-103.7	0.52	clear
		6/26/2018	27.80	6.90	1.470	8.2	-17.2	0.13	clear
		12/6/2019	26.60	6.75	1.855	30.8	-60.5	0.20	cloudy
		6/23/2020	28.50	7.14	3.580	9.9	-24.6	0.09	clear
		12/9/2021	26.50	7.01	1.149	12.8	-83.6	0.17	clear
		6/27/2022	28.30	7.00	1.375	14.4	-69.2	0.14	clear
		12/18/2023	25.80	6.99	1.007	9.5	-70.4	0.20	clear
CRHE-MW0034	30 to 40	3/20/2012	25.05	7.37	1.955	13.9	-206.1	0.15	clear
		6/2/2016	23.38	6.57	1.394*	18.1	-121.2	0.10	clear
		12/13/2017	22.50	6.60	1.230	6.4 *	22.0	0.32 *	clear
		6/26/2018	24.40	7.23	1.280	9.9	-55.7	0.10	clear
		12/6/2019	23.20	7.04	1.075	18.2	-105.2	0.26	clear
		6/24/2020	24.10	7.27	1.033	9.8	-93.5	0.08	clear
		12/8/2021	23.00	7.12	1.049	19.7	-95.7	0.14	clear
		6/28/2022	23.99	7.04	1.165	11.6	-86.4	0.13	clear
		12/19/2023	22.60	6.52	0.932	16.0	-105.6	0.09	clear

Table 3-3 (continued)
Geochemical Parameters
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Location	Screen Interval (ft bgs)	Date	Temperature (°C)	pH (Standard Units)	Conductivity (mS/cm)	Turbidity (NTU)	ORP (mV)	Dissolved Oxygen (mg/L)	Color
CRHE-MW0035	40 to 50	3/20/2012	23.80	7.55	1.595	16.8	-210.1	0.62	clear
		12/11/2013	24.22	7.00	2.302	19.8	-67.6	0.10	clear
		6/2/2016	25.02	6.73	2.427	8.7	-120.6	0.11	clear
		12/14/2017	24.10	6.79	2.277	3.1	-38.7	0.37	clear
		6/26/2018	25.90	7.19	2.310	4.5	-49.1	0.22	clear
		12/6/2019	24.80	6.82	2.397	19.5	-81.6	0.14	clear
		6/23/2020	25.50	7.25	1.983	9.1	-109.9	0.14	clear
		12/8/2021	24.40	7.10	2.167	19.2	-103.0	0.00	clear
		6/27/2022	25.6	7.09	2.355	8.6	-63.4	0.22	clear
		12/18/2023	23.9	6.56	1.875	-	-98.5	0.27	-
CRHE-MW0039	25 to 35	3/19/2012	25.23	7.25	1.604	12.5	-175.6	0.19	clear
		6/2/2016	25.37	6.58	2.137*	11.8	-97.1	0.15	clear
		12/13/2017	24.50	6.42	2.210	1.9	-75.8	0.15	clear
		6/26/2018	25.68	7.15	2.177	10.0	-42.0	0.07	clear
		12/6/2019	24.90	6.97	2.036	8.9	-92.1	0.14	clear
		6/23/2020	26.8	7.17	3.596	6.1	-41.4	0.08	clear
		12/8/2021	25	7.05	2.208	6.7	-86.4	0.04	clear
		6/27/2022	27.33	6.88	2.275	20.0	-54.0	0.15	clear
		12/19/2023	24.4	6.47	1.888	5.1	-106.1	0.08	clear
CRHE-MW0041	5 to 15	6/2/2016	25.58	6.84	2.388*	16.1	-170.4	0.08	clear
		12/13/2017	24.50	6.52	2.360	8.3 *	-79.2	0.10 *	clear
		6/26/2018	25.53	7.18	2.316	7.8	-48.4	0.20	clear
		12/6/2019	25.00	6.73	2.563	19.1	-65.5	0.19	clear
		6/23/2020	26.8	7.13	4.187	3.4	-5.4	0.10	clear
		12/8/2021	24.9	7.04	2.496	12.9	-88.3	0.00	clear
		6/27/2022	28.07	6.88	2.589	11.4	-56.8	0.20	clear
		12/19/2023	24.2	7.07	2.673	3.7	-91.4	0.20	clear
CRHE-MW0042	5 to 15	6/2/2016	23.80	6.81	1.721*	9.8	-185.3	0.07	clear
		12/13/2017	19.50	6.52	1.520	4.7	146.2	1.10	clear
		6/26/2018	24.30	7.04	1.600	12.9	-58.0	0.06	clear
		12/6/2019	23.60	6.85	1.371	9.7	-101.0	0.27	clear
		6/24/2020	23.90	7.11	1.312	5.2	-103.0	0.10	clear
		12/8/2021	23.50	6.97	1.316	3.9	-106.0	0.00	clear
		6/28/2022	24.41	6.89	1.434	5.88	-83.7	0.21	clear
		12/19/2023	23.10	6.33	1.173	6.65	-99.9	0.09	clear
CRHE-MW0043	41 to 45	12/19/2023	23.50	6.41	0.857	10.30	-160.5	0.13	clear
CRHE-MW0044	40 to 45	10/18/2016	25.53	6.60	1.675	5.2	-100.3	0.13	clear
		3/23/2017	25.41	6.45	2.060	46.7	-322.0	0.22	white blobs
		06/29/2017	25.61	6.59	2.560	4.1	-273.1	0.69	clear
		12/14/2017	24.10	6.09	2.890	11.3	-280.1	0.30	clear
		6/26/2018	26.83	6.81	2.502	NR	-257.4	0.15	clear
		11/12/2018	25.91	6.27	3.148	9.5	-254.0	0.4	clear/small bubbles
		12/5/2019	23.80	6.28	3.914	68.3	-299.4	0.11	clear
		6/23/2020	25.90	6.58	2.934	8.9	-174.5	0.19	clear
		12/9/2021	25.1	6.52	2.482	8.64	-291.3	0.15	clear
		6/27/2022	26.4	6.40	2.588	16.70	-134.5	0.16	clear
		12/15/2023	24.5	6.05	1.700	18.02	-154.4	0.26	Clear

Table 3-3 (continued)
Geochemical Parameters
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Location	Screen Interval (ft bgs)	Date	Temperature (°C)	pH (Standard Units)	Conductivity (mS/cm)	Turbidity (NTU)	ORP (mV)	Dissolved Oxygen (mg/L)	Color
CRHE-MW0047	21 to 25	10/18/2016	25.97	6.60	1.089	9.7	-392.1	0.14	clear
		3/22/2017	24.98	6.08	2.563	215.0	-279.3	0.35	cloudy white
		06/28/2017	26.61	6.26	3.014	4.4	-250.9	0.18	clear
		12/14/2017	24.72	6.05 *	3.981	9.3	-229.5	0.33 *	clear with suspended black and white particulates
		6/26/2018	26.59	6.59	3.839	16.3	-169.0	0.27	clear
		11/9/2018	27.35	6.12	4.340	14.6	-237.3	0.48	clear w/bubbles and black particles
		12/5/2019	22.80	6.47	5.116	9.6	-222.7	1.80	clear
		6/22/2020	27.20	6.77	4.550	9.8	-141.6	0.07	clear
		12/9/2021	24.80	6.74	2.691	13.4	-115.1	0.10	clear
		6/24/2022	27.2	6.65	3.013	14.8	-147.2	0.08	clear
		12/15/2023	24.5	6.28	2.471	14.3	-153.9	3.69	Clear/mild odor
CRHE-MW0048	28 to 33	10/17/2016	25.63	6.68	1.181	7.3	-423.0	0.27	clear
		3/22/2017	24.59	6.62	1.668	5.5	-286.1	0.21	clear
		06/29/2017	25.19	6.72	1.870	5.8	-227.3	0.95	clear
		12/13/2017	24.27	7.13 *	1.823	2.4	-214.7	0.48	clear with black particulates
		6/27/2018	25.53	6.91	1.928	11.9	-188.9	0.24	clear
		11/8/2018	25.74	6.55	2.315	7.5	-187.6	0.20	clear/small bubbles
		12/5/2019	23.40	6.58	1.726	5.7	-233.1	0.41	clear
		8/19/2020	26.00	6.57	1.864	4.3	-145.5	0.05	clear
		12/3/2020	24.50	6.54	1.800	3.3	-149.9	0.08	clear
		12/9/2021	24.60	6.62	1.775	3.3	-269.6	0.15	clear
		6/24/2022	26.1	6.59	1.722	5.27	-75.9	0.06	clear
		12/15/2023	24.2	6.05	1.363	3.28	-104.5	0.45	
CRHE-MW0056	35 to 40	3/29/2018	25.98	6.91	1.443	2.7	-134.5	0.26	clear
		11/8/2018	27.59	6.20	2.722	97.1	-279.5	0.22	cloudy
		12/5/2019	26.00	6.34	3.411	16.8	-221.3	0.50	clear
		6/23/2020	28.40	6.57	2.518	11.7	-129.6	0.12	clear
		12/3/2020	26.20	6.38	1.851	14.9	-145.2	0.09	cloudy/EVO
		12/9/2021	26.60	6.54	1.885	19.2	-145.8	0.10	gray
		6/27/2022	29.36	6.32	1.889	5.2	-114.8	0.08	gray
		12/15/2023	26.1	6.47	1.578	8.4	-84.3	0.12	clear
CRHE-MW0057	30 to 40	12/15/2023	24.7	7.44	0.371	9.3	-55.7	0.24	clear

Table 3-3 (continued)
Geochemical Parameters
2023 Annual Groundwater Monitoring Report
Contractors Road Heavy Equipment Area, Kennedy Space Center, Florida

Location	Screen Interval (ft bgs)	Date	Temperature (°C)	pH (Standard Units)	Conductivity (mS/cm)	Turbidity (NTU)	ORP (mV)	Dissolved Oxygen (mg/L)	Color
CRHE-MW0058	40 to 50	3/29/2018	25.20	6.87	2.096	17.9	-120.4	0.15	clear
		11/13/2018	25.95	6.46	2.028	3.0	-70.9	0.25	clear/small bubbles and particles
		12/6/2019	23.90	6.72	1.936	3.8	-49.8	0.17	clear
		6/22/2020	25.0	6.93	2.742	7.0	-4.8	0.10	clear
		12/3/2020	24.9	6.86	1.445	1.3	-87.4	0.12	clear
		12/9/2021	24.5	7.04	0.732	7.1	-69.6	0.19	clear
		6/27/2022	27.69	6.82	1.261	4.41	-31.6	0.14	clear
		12/15/2023	24.7	6.95	1.061	4.98	-83.7	0.18	clear/no odor

Notes:
°C = degrees Celsius
EVO = emulsified vegetable oil
ft bgs = feet below ground surface
mS/cm = millisiemens per centimeter
mg/L = milligrams per liter
mV = millivolts
NR = not recorded
NTU = Nephelometric Turbidity Units
ORP = oxidation-reduction potential
* indicates parameter failed continuing calibration verification.

Table 3-4
Mann-Kendall Analysis Summary
2023 Annual Groundwater Monitoring Report
Contractors Road Heavy Equipment Area, Kennedy Space Center, Florida

CRHE Area	Location	Screen Interval (ft bgs)	Concentration Trend		
			cDCE	**VC**	**1,4-Dioxane**
Northern Area	CRHE-IW0017I	25 to 35	<GCTL	**D**	--
	CRHE-IW0019I	35 to 45	<GCTL	**S**	--
	CRHE-MW0034	30 to 40	<GCTL	**S**	--
Hot Spot 1 (Outside of Bioremediation Area)	CRHE-MW0025	25 to 35	**D**	**D**	**D**
	CRHE-MW0027	40 to 50	<GCTL	**PD**	--
	CRHE-MW0029	40 to 50	<GCTL	**D**	--
	CRHE-MW0047	21 to 25	<GCTL	**D**	--
	CRHE-MW0058	40 to 50	<GCTL	**S**	--
Hot Spot 2	CRHE-MW0031	40 to 50	**No Trend**	**No Trend**	--
	CRHE-MW0032	40 to 50	<GCTL	**No Trend**	--
	CRHE-MW0042	35 to 45	<GCTL	**S**	--
Downgradient	CRHE-MW0035	40 to 50	<GCTL	**PD**	**I**
	CRHE-MW0041	30 to 40	<GCTL	**No Trend**	--

Notes:

1. Bold indicates the Mann-Kendall analysis was completed for a given monitoring well.
2. S indicates a stable trend.
3. I indicates an increasing trend.
4. PD indicates a probably decreasing trend.
5. D indicates a decreasing trend.
6. No Trend indicates there was no trend detected by the Mann-Kendall analysis.
7. <GCTL indicates compound is less than GCTL.

cDCE = cis-1,2-dichloroethene
CRHE = Contractors Road Heavy Equipment
ft bgs = feet below ground surface
GCTL = groundwater cleanup target level
VC = vinyl chloride

Table 3-5
Bioremediation IM Monitoring Well Sampling Results: UIC Parameters
2023 Annual Groundwater Monitoring Report
Contractors Road Heavy Equipment Area, Kennedy Space Center, Florida

Location	Screen Interval (ft bgs)	Sample Date	Concentration (mg/L)		
			TRPH	TDS	Sodium
GCTL or KSC Background Value			**5**	**500**	**160**
CRHE-MW0017I (Site Specific Background Well)	25 to 35	12/9/2021	**--**	**482**	**15,100**
CRHE-MW0025	25 to 35	10/18/2016	0.37 U	**870**	**140**
		03/24/2017	0.16 U	**860**	**120**
		06/28/2017	0.16 U	**780**	**100 J3**
		12/14/2017	0.31 U	**920**	**110**
		11/09/2018	0.33 U	**790**	**100**
		12/05/2019	**0.717**	**896**	**137**
		12/09/2021	**0.856**	**1010**	**129**
		12/18/2023	--	**940**	--
CRHE-MW0043	41 to 45	10/17/2016	0.37 U	**1,100**	**180**
		03/23/2017	0.17 U	**960**	**150**
		06/28/2017	0.16 U	**940**	**150**
		12/14/2017	0.31 U	**1,100**	**180**
		11/13/2018	**8.7**	**2,300**	**97**
		06/23/2020	**1.45**	**1,580**	**88.8**
		12/03/2020	**1.5**	**1,340**	**110**
		12/09/2021	**0.787**	**904**	**129**
		12/19/2023	--	**574**	--
CRHE-MW0044	40 to 45	10/17/2016	0.37 U	**1,200**	**180**
		03/23/2017	**120**	**1,600**	**150**
		06/29/2017	**12**	**1,900**	**160**
		12/14/2017	**8.4**	**2,700**	**180**
		12/9/2021	**3.82**	**1,760**	**113**
		6/27/2022	**2.63**	--	**108**
		12/15/2023	**1.1**	**1,280**	--
CRHE-MW0047	21 to 25	10/18/2016	0.38 U	**750**	**40**
		03/22/2017	**50**	**1,800**	**160**
		06/28/2017	**68**	**2,500**	**150**
		12/14/2017	**46**	**4,300**	**180**
		12/9/2021	**8.45**	**2,620**	**140**
		6/24/2022	**5.66**	--	**195**
		12/15/2023	**5.59**	--	**113**
CRHE-MW0056	35 to 40	11/08/2018	**66**	**2,500**	**88**
		12/05/2019	**12.3**	**3,100**	--
		06/23/2020	**13.9**	**2,770**	**83**
		12/03/2020	**8.86**	**1,480**	**93**
		12/09/2021	**8.31**	**1,330**	**87.5**
		06/27/2022	**0.217 J**	--	--
		12/15/2023	**4.7**	**1,090**	--
CRHE-MW0057	30 to 40	11/13/2018	0.32 U	**450**	**14**
		12/06/2019	0.20 U	**472**	**13.8**
		06/19/2020	**0.234**	**508**	**13.4**
		12/09/2021	**0.410**	**444**	**15**
		12/15/2023	--	**222**	--
CRHE-MW0058	30 to 40	11/13/2018	0.32 U	**1,300**	**200**
		12/06/2019	**0.199 J**	**1,280**	**204**
		06/22/2020	**0.495**	**1,240**	**174**
		12/03/2020	**0.523**	**900**	**126**
		12/09/2021	**0.684**	**742**	**88**
		12/15/2023	--	**646**	--

Notes:

1. Bold indicates analyte detected.
2. Blue shading and bold indicates concentration greater than the groundwater cleanup target level (GCTL).
3. NC indicates no criteria.
4. U indicates not detected above method detection limit.
5. J indicates estimated value
6. J3 indicates estimated value; spike recovery or relative percent difference were outside of criteria.
7. -- not analyzed.
8. GCTL is from the Final Technical Report: Development of Cleanup Target Levels (CTLs) for Chapter 62-777, Florida Administrative Code (F.A.C.), University of Florida, February 2005.

mg/L = milligrams per liter

ft bgs = feet below ground surface

CRHE = Contractors Road Heavy Equipment

KSC = Kennedy Space Center

TDS = total dissolved solids

TRPH = total recoverable petroleum hydrocarbons

UIC = underground injection control

Table 3-6
PFAS Sampling Results
2023 Annual Groundwater Monitoring Report
Contractors Road Heavy Equipment Area, Kennedy Space Center, Florida

		Analyte	PFBA	PFPeA	PFHxA	PFHpA	PFOA	PFNA	PFDA	PFUnA	PFDoA	PFTriA	PFTeA	PFBS	PFPeS	PFHxS	PFHpS	PFOS	PFNS	PFDS	PFOSA	NMeFOSAA	NEtFOSAA	4:2 FTS	6:2 FTS	8:2 FTS	HFPO-DA
		EPA RSL (ng/L)[1]	1850	N/A	992	N/A	6	5.9	N/A	602	N/A	N/A	N/A	600	N/A	40	N/A	4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6
Location	**Screen Interval (ft bgs)**	**Sample Date**	**PFAS by Method EPA 537M QSM5.3 B-15**																								
CRHE-IW0001S	3 to 13	6/23/2022	**296**	**4.0 J**	**7.2 J**	**7.2 J**	**30.5**	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	**2.8 J**	**2.9 J**	**33.2**	**4.2 J**	**89.9**	4.0 U	4.0 U	4.0 U	8.0 U	8.0 U	8.0 U	8.0 U	8.0 U	8.0 U
		12/18/2023	**157**	**2.1 J**	**2.4 J**	**2.6 J**	**17.5**	8.0 U	8.0 U	8.0 U	8.0 U	8.0 U	8.0 U	8.0 U	8.0 U	**9**	8.0 U	**54.5**	8.0 U	8.0 U	40 U	16 U	16 U	16 U	16 U	16 U	16 U
CRHE-IW0002S	3 to 13	6/23/2022	**35.9**	**15**	**12.5**	**12.7**	**26.1**	**61.9**	**17.1**	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	**2.5 J**	4.0 U	**131**	4.0 U	4.0 U	4.0 U	8.0 U	8.0 U	8.0 U	8.0 U	8.0 U	8.0 U
		12/18/2023	**55.3**	**10.4**	**7.7 J**	**6.2 J**	**22.1**	**65.1**	**7.4 J**	8.3 U	8.3 U	8.3 U	8.3 U	8.3 U	8.3 U	8.3 U	8.3 U	**143**	8.3 U	8.3 U	8.3 U	17 U	17 U	17 U	17 U	17 U	17 U
CRHE-IW0004I	30 to 40	6/23/2022	**36.1**	**40.9**	**33.4**	**29.4**	**31.8**	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	**20.9**	4.0 U	**34.1**	4.0 U	4.0 U	4.0 UJ	8.0 U	8.0 U	8.0 U	8.0 U	8.0 U	8.0 UJ
		12/18/2023	**42.2**	**3.5 J**	**4.7 J**	**4.9 J**	**17.6**	8.3 U	8.3 U	8.3 U	8.3 U	8.3 U	8.3 U	**16.4**	8.3 U	**8.6**	8.3 U	**108**	8.3 U	8.3 U	42 U	17 U	17 U	17 U	17 U	17 U	17 U
CRHE-IW0009S	2 to 12	6/24/2022	**328**	**44.5**	**34.2**	**32.4**	**34.8**	**4.5 J**	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	**9.3**	**4.4 J**	**36.9**	**3.5 J**	**71.2**	4.0 U	4.0 U	4.0 U	8.0 U	8.0 U	8.0 U	8.0 U	8.0 U	8.0 U
		12/18/2023	**32.4**	**20.5**	**13.5**	**12.2**	**15.5**	**9.4**	**3.1 J**	8.3 U	8.3 U	8.3 U	8.3 U	**2.4 J**	8.3 U	**16.8**	8.3 U	**99.1**	8.3 U	8.3 U	8.3 U	17 U	17 U	17 U	17 U	17 U	17 U
CRHE-IW0013S	2.5 to 12.5	6/23/2022	**40.9**	**4.3 J**	**4.0 J**	**4.4 J**	**7.3 J**	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	**2.1 J**	4.0 U	**18.6**	4.0 U	4.0 U	4.0 U	8.0 U	8.0 U	8.0 U	8.0 U	8.0 U	8.0 U
		12/18/2023	**17**	8.3 U	8.3 U	8.3 U	8.3 U	8.3 U	8.3 U	8.3 U	8.3 U	8.3 U	8.3 U	8.3 U	8.3 U	8.3 U	8.3 U	**3.2 J**	8.3 U	8.3 U	8.3 U	17 U	17 U	17 U	17 U	17 U	17 U
CRHE-IW0017I	25 to 35	6/23/2022	**7.6 J**	**2.9 J**	**4.3 J**	**2.6 J**	**10.7**	4.2 U	4.2 U	4.2 U	4.2 U	4.2 U	4.2 U	**2.2 J**	4.2 U	**14.5**	4.2 U	**2.3 J**	4.2 U	4.2 U	4.2 U	8.3 U	8.3 U	8.3 U	8.3 U	8.3 U	8.3 U
		12/18/2023	**7.1 J**	8.3 U	8.3 U	8.3 U	8.3 U	8.3 U	8.3 U	8.3 U	8.3 U	8.3 U	8.3 U	8.3 U	8.3 U	8.3 U	8.3 U	8.3 U	8.3 U	8.3 U	8.3 U	17 U	17 U	17 U	17 U	17 U	17 U
CRHE-IW0019I	35 to 45	6/23/2022	8.3 U	**6.0 J**	**6.1 J**	**5.5 J**	**14.6**	4.2 U	4.2 U	4.2 U	4.2 U	4.2 U	4.2 U	4.2 U	4.2 U	**4.1 J**	4.2 U	**9.8**	4.2 U	4.2 U	4.2 UJ	8.3 U	8.3 U	8.3 U	8.3 U	8.3 U	8.3 UJ
		12/18/2023	16 U	**6.7 J**	**6.8 J**	**5.2 J**	**15**	8.0 U	8.0 U	8.0 U	8.0 U	8.0 U	8.0 U	8.0 U	8.0 U	**5.1 J**	8.0 U	**11.1**	8.0 U	8.0 U	8.0 U	16 U	16 U	16 U	16 U	16 U	16 U
CRHE-MW0024	5 to 15	6/23/2022	**45.6**	**3.4 J**	**5.6 J**	**5.8 J**	**26.4**	4.0 U	4.0 U	4.0 U	20 U	20 U	4.0 U	**17.1**	4.0 U	**12.4**	**2.5 J**	**143**	4.0 U	4.0 U	4.0 U	8.0 U	8.0 U	8.0 U	8.0 U	8.0 U	8.0 U
		12/18/2023	**24.3**	**34.9**	**27.3**	**24.7**	**24.9**	8.3 U	8.3 U	8.3 U	8.3 U	8.3 U	8.3 U	**7.8 J**	**2.3 J**	**20.9**	8.3 U	**24.2**	8.3 U	8.3 U	42 U	17 U	17 U	17 U	17 U	17 U	17 U
CRHE-MW0025	25 to 35	6/23/2022	8.0 U	**3.5 J**	**6.1 J**	**2.0 J**	**4.2 J**	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	**8.1**	4.0 U	4.0 U	4.0 U	4.0 U	4.0 UJ	8.0 U	8.0 U	8.0 U	8.0 U	8.0 U	8.0 UJ
		12/18/2023	16 U	**4.3 J**	**3.2 J**	8.0 U	**3.3 J**	8.0 U	8.0 U	8.0 U	8.0 U	8.0 U	8.0 U	8.0 U	**2.1 J**	**6.9 J**	8.0 U	8.0 U	8.0 U	8.0 U	40 U	16 U	16 U	16 U	16 U	16 U	16 U
CRHE-MW0030	5 to 15	6/27/2022	**144**	**103**	**77.8**	**123**	**36.7**	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	**2.7**	4.0 U	**18.9**	4.0 U	**18.5**	4.0 U	4.0 U	20 U	8.0 U	8.0 U	8.0 U	8.0 U	8.0 U	8.0 U
		12/18/2023	**69.4**	**10**	**6.2 J**	**7.7 J**	**7.6 J**	8.3 U	8.3 U	8.3 U	8.3 U	8.3 U	8.3 U	8.3 U	8.3 U	8.3 U	8.3 U	**8.5**	8.3 U	8.3 U	8.3 U	17 U	18 U	19 U	20 U	21 U	22 U

Notes
[1]EPA, 2022. Regional Screening Level (RSL) Resident Tapwater Table (target cancer risk=1E-06, hazard quotient=0.1).
The provisional state of Florida groundwater cleanup target level (pGCTL) for PFOA, PFOS, and summation of PFOA/PFOS is 70 ng/L.
The following 2023 sample results were above the pGCTL for PFOS+PFOS: IW0001S, IW0002S, IW0004I, and IW0009S.

CRHE = Contractors Road Heavy Equipment
EPA = U.S. Environmental Protection Agency
ft bgs = feet below ground surface
ng/L = nanograms per liter
N/A = not applicable
PFAS = per- and polyfluoroalkyl substances

Analyte acronyms:
PFBA = Perfluorobutanoic acid
PFPeA = Perfluoropentanoic acid
PFHxA = Perfluorohexanoic acid
PFHpA = Perfluoroheptanoic acid
PFOA = Perfluorooctanoic acid
PFNA = Perfluorononanoic acid
PFDA = Perfluorodecanesulfonic acid
PFUnA = Perfluoroundecanoic acid
PFDoA = Perfluorodecanoic acid
PFTriA = Perfluorotridecanoic acid
PFTeA = Perfluorotetradecanoic acid
PFBS = Perfluorobutanesulfonic acid
PFPeS = Perfluoropentanesulfonic acid
PFHxS = Perfluorohexanesulfonic acid
PFHpS = Perfluoroheptanesulfonic acid
PFOS = Perfluorooctanesulfonic acid
PFNS = Perfluorononanesulfonic acid
PFDS = Perfluorododecanoic acid
PFOSA = Perfluorooctanesulfonamide
NMeFOSAA = N-methylperfluorooctanesulfonamidoacetic acid
NEtFOSAA = N-ethylperfluorooctanesulfonamidoacetic acid
4:2 FTS = 4:2 Fluorotelomer sulfonate
6:2 FTS = 6:2 Fluorotelomer sulfonate
8:2 FTS = 8:2 Fluorotelomer sulfonate
HFPO-DA = Hexafluoropropylene oxide dimer acid

Bolded results indicate the analyte was detected at the specified concentration.
Yellow highlight indicates the analyte exceeded the EPA RSL but less than 10x the EPA RSL.
Orange highlight indicates the analyte exceeded more than 10X the EPA RSL but was less than 100X the EPA RSL.
J = indicates an estimated value
U = analyte was not detected, value is the reporting limit

Table 4-1
Sub-Slab Soil Gas Sampling Results: CVOCs
2023 Annual Groundwater Monitoring Report
Contractors Road Heavy Equipment Area, Kennedy Space Center, Florida

Location	Sample Date	Concentration (µg/m^3)						
Parameter		PCE	TCE	*cDCE*	*tDCE*	1,1-DCE	VC	Methane
EPA VISL for Sub-Slab Soil Gas (10^{-6} carcinogen risk, residential)		**360**	**15.9**	**NA**	**NA**	**6,950**	**5.59**	**NA**
EPA VISL for Sub-Slab Soil Gas (10^{-6} carcinogen risk, commercial)		**1,570**	**99.7**	**NA**	**NA**	**29,200**	**92.9**	**NA**
CRHE-VMP0001	12/02/2017	**21**	**3.9 J**	0.79 U	0.79 U	0.79 U	0.51 U	3,000 U
	10/24/2018	**12 J**	0.97 U	0.48 U	0.34 U	0.56 U	0.31 U	3,000 U
	06/05/2019	**11 J**	0.97 U	0.48 U	0.34 U	0.56 U	0.31 U	3,000 U
	06/17/2020	**5.0 I**	**17.5**	**2.57 I**	0.64 U	0.80 U	1.71 U	931,000 U
	06/08/2021	**2.90 J**	**5.37 J**	0.87 U	1.03 U	0.67 U	0.74 U	386 U
	12/07/2021	**6.62 J**	4.28 U	3.12 U	3.12 U	3.12 U	1.95 U	1064 U
	07/19/2022	**3.32 J**	5.32 U	3.93 U	3.93 U	3.93 U	2.53 U	--
	12/09/2022	**4.07 J**	5.37 U	3.96 U	3.96 U	3.97 U	2.56 U	--
	12/12/2023	**9.5**	5.91 U	4.36 U	4.36 U	4.36 U	2.81 U	--
CRHE-VMP0002	12/02/2017	**31**	1.1 U	0.79 U	0.79 U	0.79 U	0.51 U	3,000 U
	10/24/2018	**29**	0.97 U	0.48 U	0.34 U	0.56 U	0.31 U	3,000 U
	06/05/2019	**27**	0.97 U	0.48 U	0.34 U	0.56 U	0.31 U	3,000 U
	06/17/2020	**22**	0.82 U	1.08 U	0.64 U	0.80 U	1.71 U	998,000 U
	06/08/2021	**6.55 J**	0.98 U	0.83 U	0.99 U	0.67 U	0.74 U	**512 J**
	12/07/2021	**22.1**	3.90 U	2.84 U	2.84 U	2.84 U	1.78 U	732 U
	07/19/2022	**4.61 J**	5.21 U	3.85 U	3.85 U	3.85 U	2.48 U	--
	12/09/2022	**8.14**	5.37 U	3.96 U	3.96 U	3.97 U	2.56 U	--
	12/12/2023	**17.64**	5.16 U	3.81 U	3.81 U	3.81 U	2.45 U	--
CRHE-VMP0003	12/02/2017	**15**	1.1 U	0.79 U	0.79 U	0.79 U	0.51 U	3,000 U
	10/24/2018	**15**	0.97 U	0.48 U	0.34 U	0.56 U	0.31 U	3,000 U
	06/05/2019	**13 J**	0.97 U	0.48 U	0.34 U	0.56 U	0.31 U	3,000 U
	06/17/2020	**14.1**	**0.23 I**	1.08 U	0.64 U	0.80 U	1.71 U	**3925000**
	06/08/2021	**4.89 J**	0.87 U	0.79 U	0.91 U	0.59 U	0.69 U	353 U
	12/07/2021	**9.65**	**4.12**	3.00 U	3.00 U	3.00 U	1.88 U	798 U
	07/19/2022	**3.32 J**	5.32 U	3.93 U	3.93 U	3.93 U	2.53 U	--
	12/09/2022	**3.73 J**	5.27 U	3.89 U	3.89 U	3.89 U	2.51 U	--
	12/12/2023	**8.14**	5.16 U	3.81 U	3.81 U	3.81 U	2.45 U	--
CRHE-VMP0004	12/02/2017	**2.8 J**	1.1 U	0.79 U	0.79 U	0.79 U	0.51 U	3,000 U
	10/24/2018	**2.7 J**	0.97 U	0.48 U	0.34 U	0.56 U	0.31 U	**4,000 J**
	06/05/2019	**2.5 J**	0.97 U	0.48 U	0.34 U	0.56 U	0.31 U	3,000 U
	06/17/2020	**1.7 I**	0.82 U	1.08 U	0.64 U	0.80 U	1.71 U	998,000 U
	06/08/2021	**1.03 J**	0.92 U	0.83 U	0.99 U	0.63 U	0.72 U	373 U
	12/07/2021	**2.28 J**	4.06 U	2.96 U	2.96 U	2.96 U	1.85 U	798 U
	07/19/2022	6.58 U	5.21 U	3.85 U	3.85 U	3.85 U	2.48 U	--
	12/09/2022	**1.7 J**	5.37 U	3.96 U	3.96 U	3.97 U	2.56 U	--
	12/12/2023	**1.9 J**	5.32 U	3.93 U	3.93 U	3.93 U	2.53 U	--
EB-20210608-01	06/08/2021	0.69 U	0.92 U	0.83 U	0.99 U	0.63 U	0.72 U	**1331**
EB-20211207-01	12/07/2021	**2.62 J**	3.90 U	2.84 U	2.84 U	2.84 U	1.78 U	**1530**
FB-20210608-01	06/08/2021	0.69 U	0.92 U	0.83 U	0.99 U	0.63 U	0.72 U	**1198 J**
FB-20211207-01	12/07/2021	4.96 U	3.90 U	2.84 U	2.84 U	2.84 U	1.78 U	**1597**
FB-20220719-01	07/19/2022	6.44 U	5.11 U	3.77 U	3.77 U	3.77 U	2.43 U	--
FB-20221209-01	12/09/2022	6.72 U	5.32 U	3.93 U	3.93 U	3.93 U	2.53 U	--
FB-20231212-01	12/12/2023	6.38 U	5.05 U	3.73 U	3.73 U	3.73 U	2.4 U	--

Notes:

1. EPA VISL indicates the U.S. Environmental Protection Agency (EPA) Vapor Intrusion Screening Level (VISL) on-line calculator, November 2018 Regional Screening Levels (hazard quotient of 1).
2. I indicates result is between the method detection limit and the practical quantitation limit.
4. J indicates an estimated value.
3. U indicates the value was reported as below the reporting limit; therefore, the reporting limit is shown.
4. **Bold** indicates analyte detected.
6. **--** not analyzed.
7. June 2020 and 2022 sample results were all reported by laboratory in parts per billion for all constituents except methane. Results were converted to µg/m3 based on volume of air of 24.05 L/mol.
5. June 2020 and 2021 methane sample results were reported by laboratory in % volume/volume. Results were converted to µg/m3 based on volume of air of 24.05 L/mol.
6. NA indicates the screening criteria has not been established.

µg/m3 = micrograms per cubic meter

1,1-DCE = 1,1-Dichloroethene

cDCE = cis-1,2-Dichloroethene

CVOC = chlorinated volatile organic compound

PCE = Tetrachloroethene

TCE = Trichloroethene

tDCE = trans-1,2-Dichloroethene

Table 6-1
2024 Annual Sampling and Analysis Plan
2023 Annual Groundwater Monitoring Report
Contractors Road Heavy Equipment Area, Kennedy Space Center, Florida

CRHE Area	Location	Screen Interval (ft bls)	Analysis					Rationale
			CVOCs using EPA Method 8260B	Total Recoverable Hydrocarbons by FL-PRO	Sodium by EPA Method 200.7	Total Dissolved Solids[1] by SM19 2540C (Biennial)	1,4-Dioxane using EPA Method 8260C SIM	
Hot Spot 1	CRHE-MW0025	25 to 35	X			X	X	Monitor outside southeastern edge of bioremediation Interim Measure area for CVOCs and 1,4-dioxane.
	CRHE-MW0027	40 to 50	X					Monitor Hot Spot 1, located adjacent to bioremediation Interim Measure area (VC exceeds GCTL).
	CRHE-MW0029	40 to 50	X					Monitor downgradient of bioremediation Interim Measure area where VC exceeds GCTL.
	CRHE-MW0043	41 to 45				X		UIC monitoring in western treatment area.
	CRHE-MW0044	40 to 45		X		X		UIC parameter TRPH exceedance of GCTL; monitor until two consecutive concentrations below the GCTL.
	CRHE-MW0047	21 to 25	X	X	X			Monitor interior, eastern portion of bioremediation Interim Measure area where VC and TRPH exceed GCTLs.
	CRHE-MW0048	28 to 33	X					Monitor interior, eastern portion of bioremediation Interim Measure area where VC exceeds GCTL.
	CRHE-MW0056	35 to 40		X		X		UIC parameter TRPH exceedance of GCTL; monitor until two consecutive concentrations below the GCTL.
	CRHE-MW0057	30 to 40				X		UIC monitoring west of treatment area.
	CRHE-MW0058	40 to 50	X			X		Monitor downgradient of bioremediation Interim Measure area where VC exceeds NADC.
Hot Spot 2	CRHE-MW0031	40 to 50	X					Monitor VC exceedance of NADC.
	CRHE-MW0032	40 to 50	X					VC greater than GCTLs and downgradient of a previously identified VC Hot Spot.
	CRHE-MW0042	35 to 45	X					VC greater than NADC.
Northern Area	CRHE-IW0017I	25 to 35	X					VC greater than GCTL.
	CRHE-IW0019I	35 to 45	X					VC greater than NADC.
	CRHE-MW0034	30 to 40	X					VC greater than NADC.
Downgradient	CRHE-MW0035	40 to 50	X				X	Provides downgradient monitoring; VC and 1,4-dioxane greater than GCTL.
	CRHE-MW0039	25 to 35	X				X	Provides downgradient monitoring; VC and 1,4-dioxane greater than GCTL.
	CRHE-MW0041	30 to 40	X				X	Provides downgradient monitoring; VC greater than GCTL; monitor 1,4-dioxane detections at MW0035 and MW0039.

Notes:

[1]. For total dissolved solids, biennial sampling beginning in 2023.

cDCE = cis-1,2-dichloroethene

CRHE = Contractors Road Heavy Equipment

CVOC = chlorinated volatile organic compound

EPA = U.S. Environmental Protection Agency

ft bls = feet below land surface.

GCTL = groundwater cleanup target level

NADC = natural attenuation default concentration

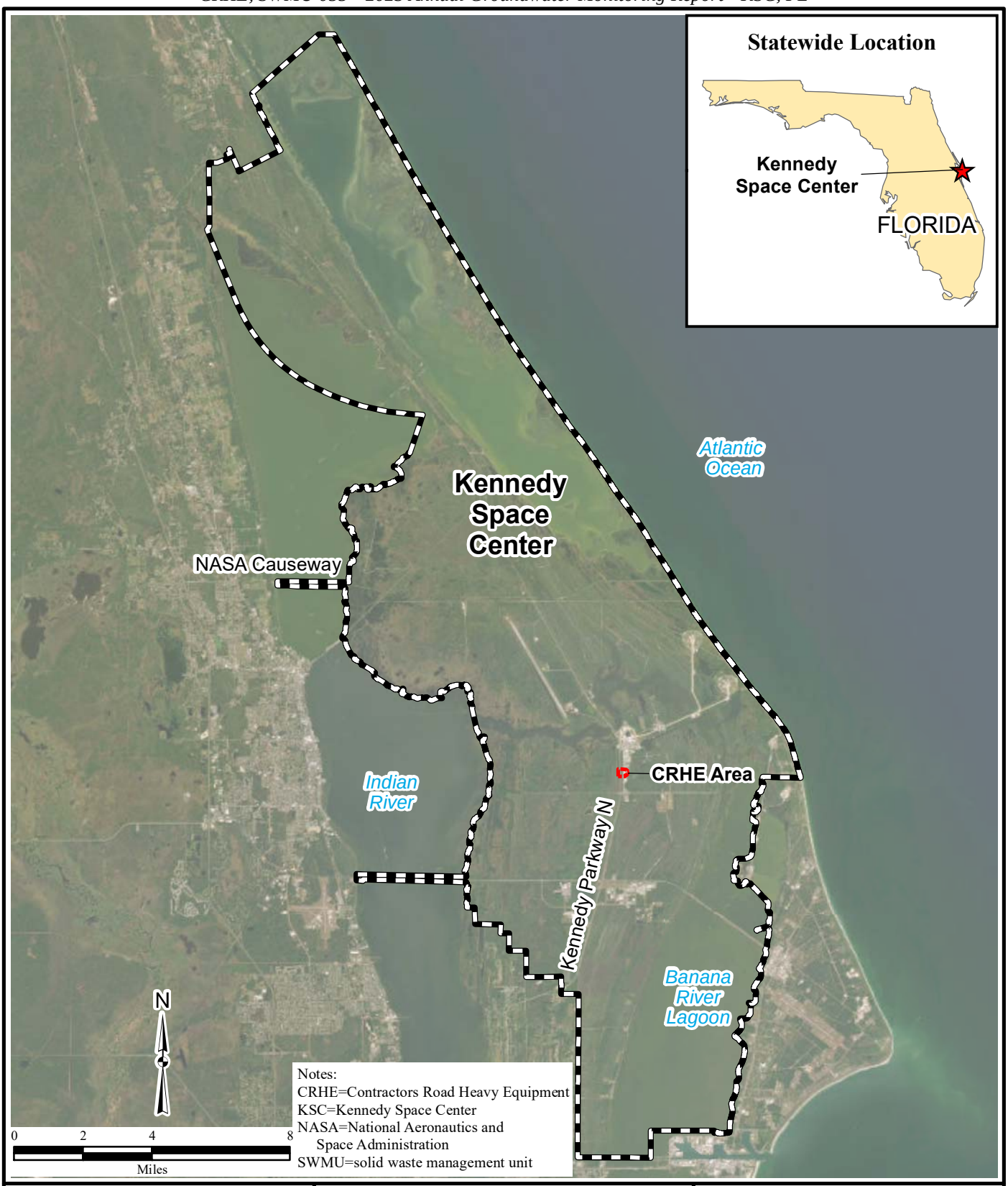
TDS = total dissolved solids

UIC = underground injection control

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FIGURES

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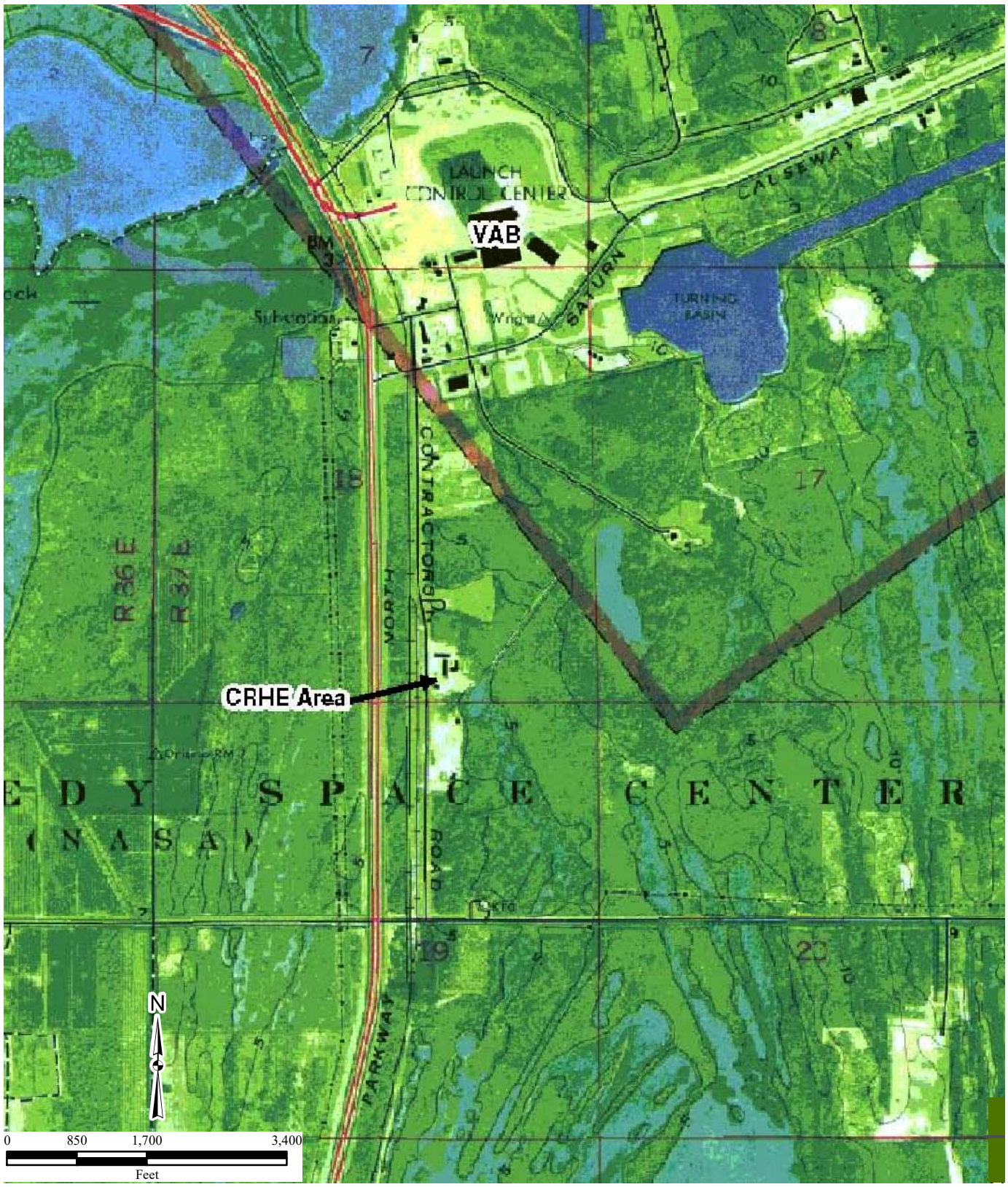


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2/28/2024 TB
Source: HGL, 3E Consultants
ArcGIS Online Imagery

Legend

- Site Location
- CRHE Area
- Kennedy Space Center

Figure 1-1
Site Location Map



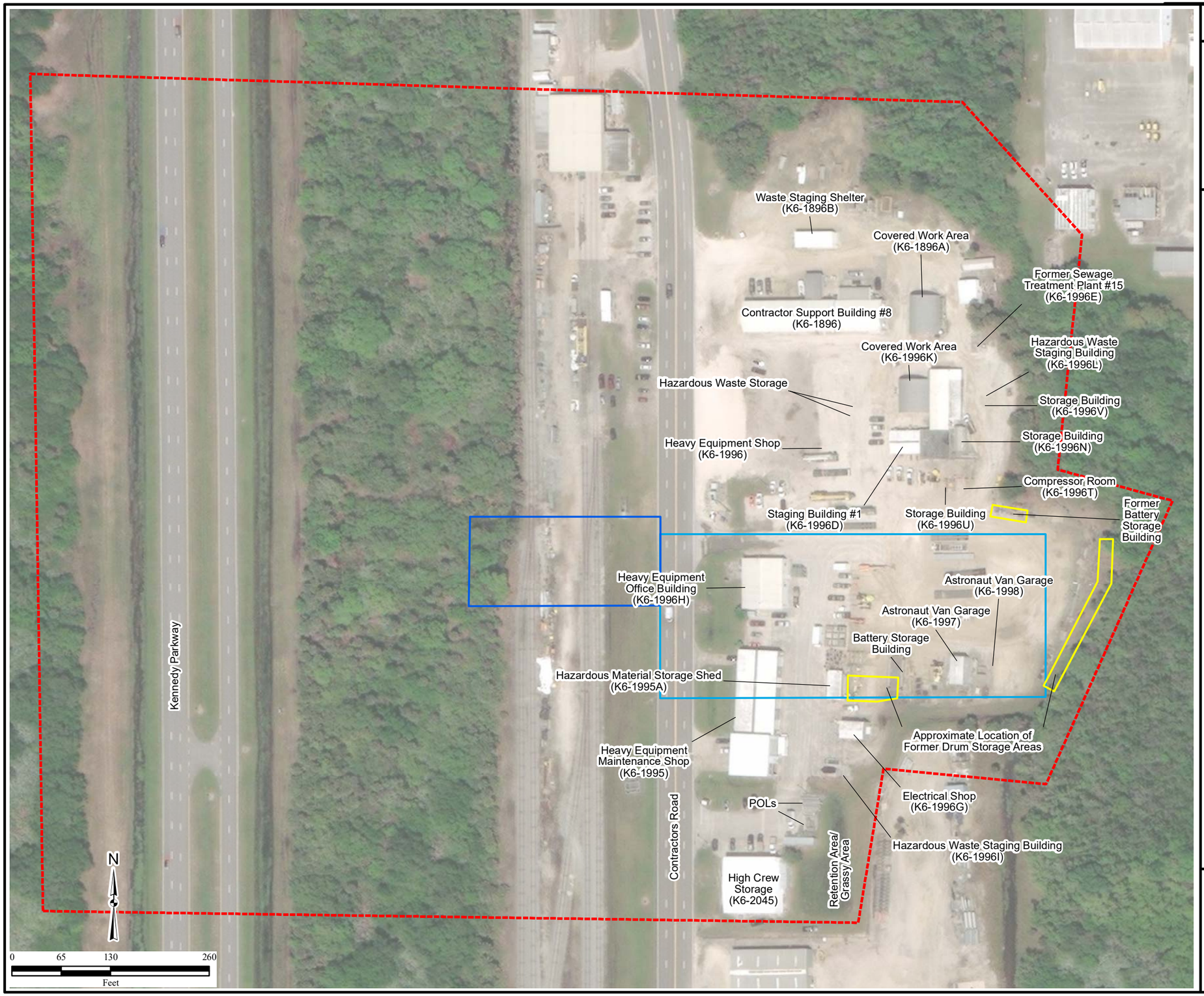
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2/28/2024 TB
Source: HGL, USGS 7.5 Minute Orsino Quadrangle [USGS 1976]

Legend

Notes:
CRHE=Contractors Road Heavy Equipment
KSC=Kennedy Space Center
NASA=National Aeronautics and Space Administration
SWMU=solid waste management unit
USGS=U.S. Geological Survey
VAB=Vehicle Assembly Building

Figure 1-2
USGS Topographic Map

Figure 1-3
CRHE Area Site Map



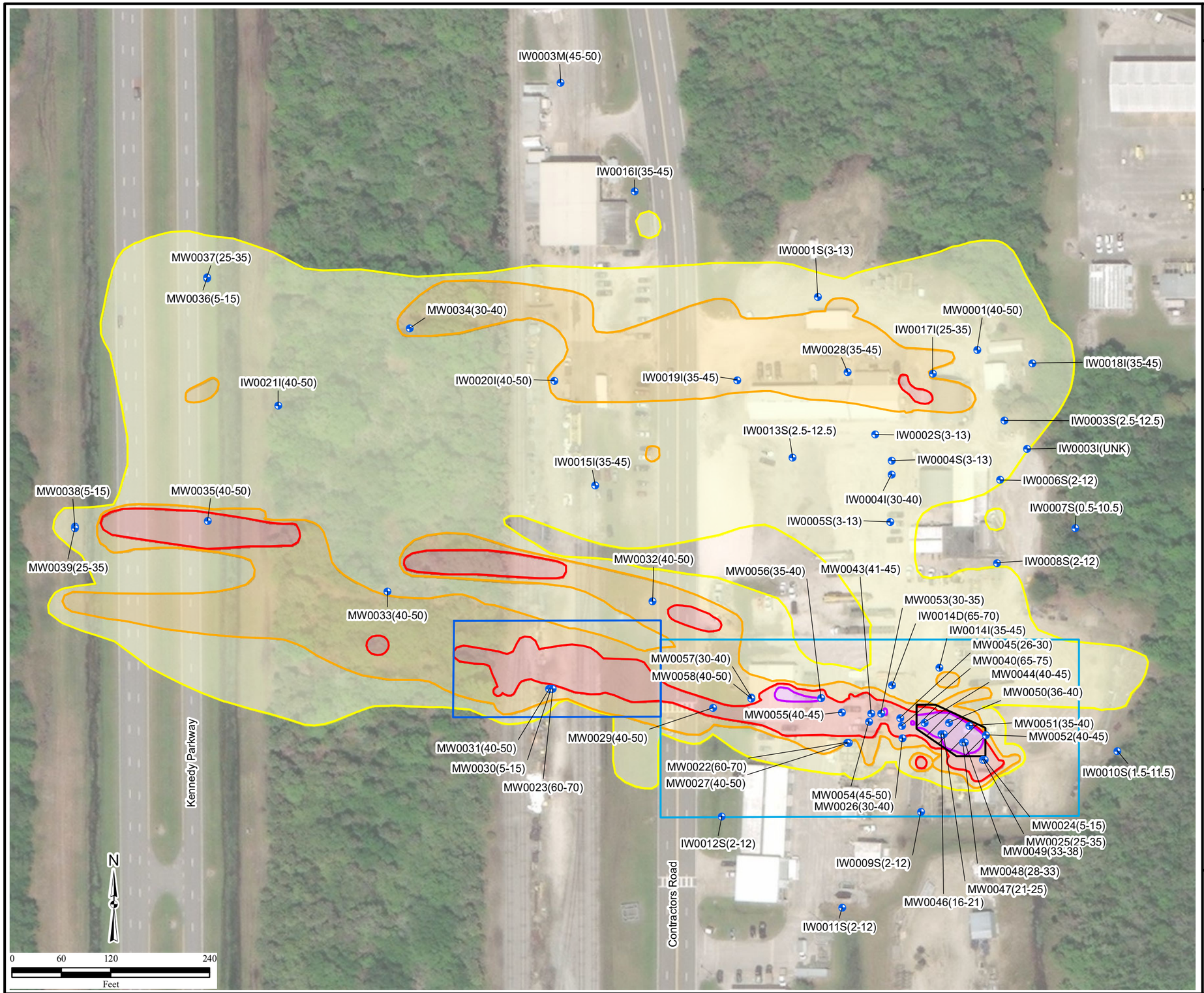
Legend

- Approximate Location of Former Drum Storage Area; Former Battery Storage Building
- CRHE Area
- Hot Spot 1 Area
- Hot Spot 2 Area

Notes:
CRHE=Contractors Road Heavy Equipment
KSC=Kennedy Space Center
POL=petroleum, oil, lubricants
SWMU=solid waste management unit

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Source: HGL, ArcGIS Online Imagery

Figure 1-4
Overall CVOC Plumes in 2017



Legend

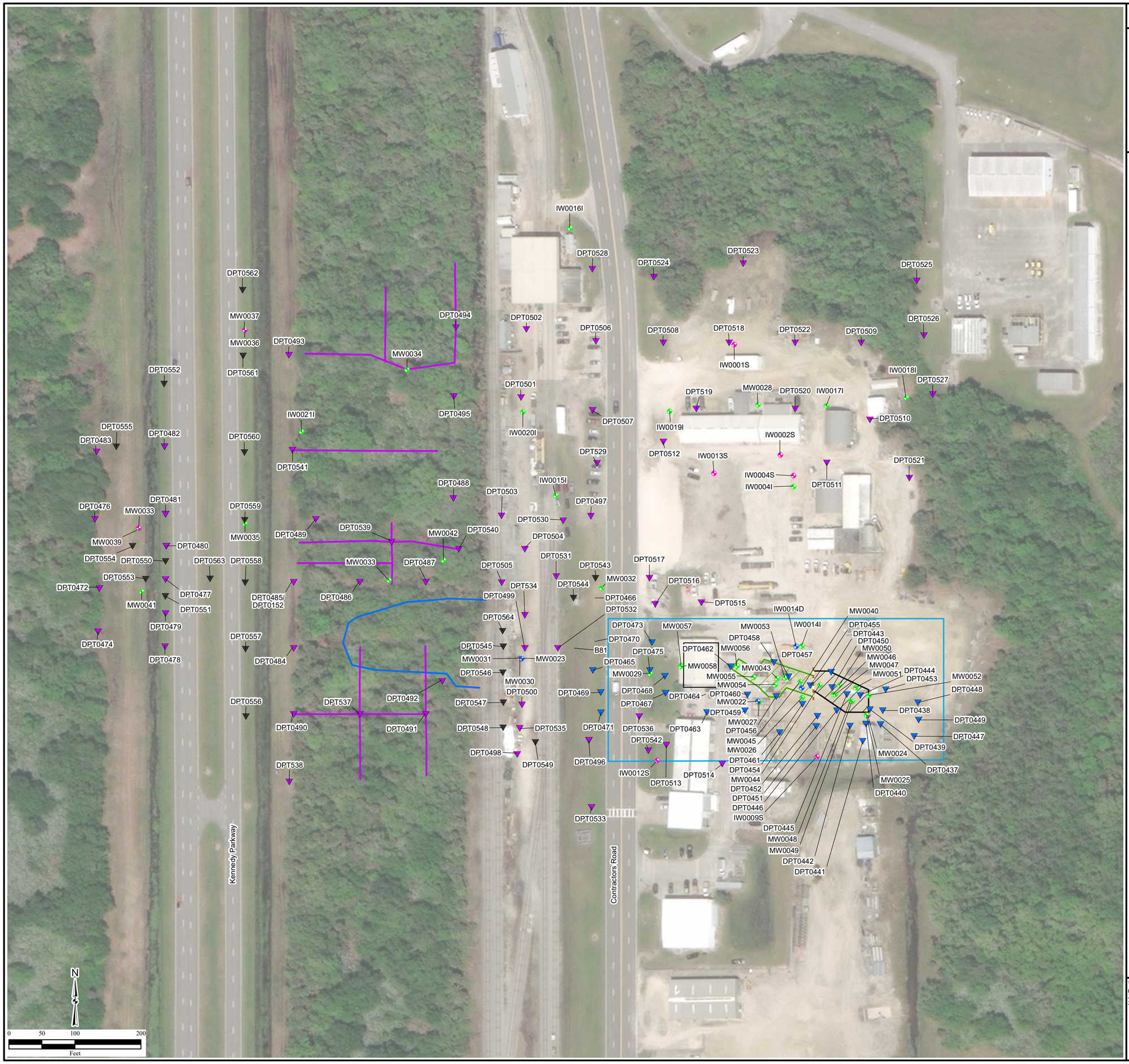
- Monitoring Well
- MW0001(40-50) Monitoring Well ID (Screen Interval)
- Low Concentration Plume (Overall CVOC GCTL)
- High Concentration Plume (Overall CVOC NADC)
- Overall CVOC 10xNADC Isopleth
- Source Zone (11,000 µg/L TCE)
- Approximate Eastern Bioremediation Treatment Area
- Hot Spot 1 Area
- Hot Spot 2 Area

Notes:
Screen interval is presented in feet below land surface.
Plumes were developed using direct push technology sampling data collected through 2017.
Overall CVOC isopleths are composed of overall TCE, cis1,2-dichloroethene, and vinyl chloride plumes.

10xNADC=concentrations above ten times the NADC
CVOC=chlorinated volatile organic compound
CRHE=Contractors Road Heavy Equipment
GCTL=State of Florida groundwater cleanup target level
ID=Identification
KSC=Kennedy Space Center
µg/L=microgram per liter
NADC=natural attenuation default concentration
SWMU=solid waste management unit
TCE=trichloroethene

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2/24/2025 TB
Source: HGL, ArcGIS Online Imagery

Figure 1-5
2020-2022 DPT Groundwater Sampling Locations



Legend

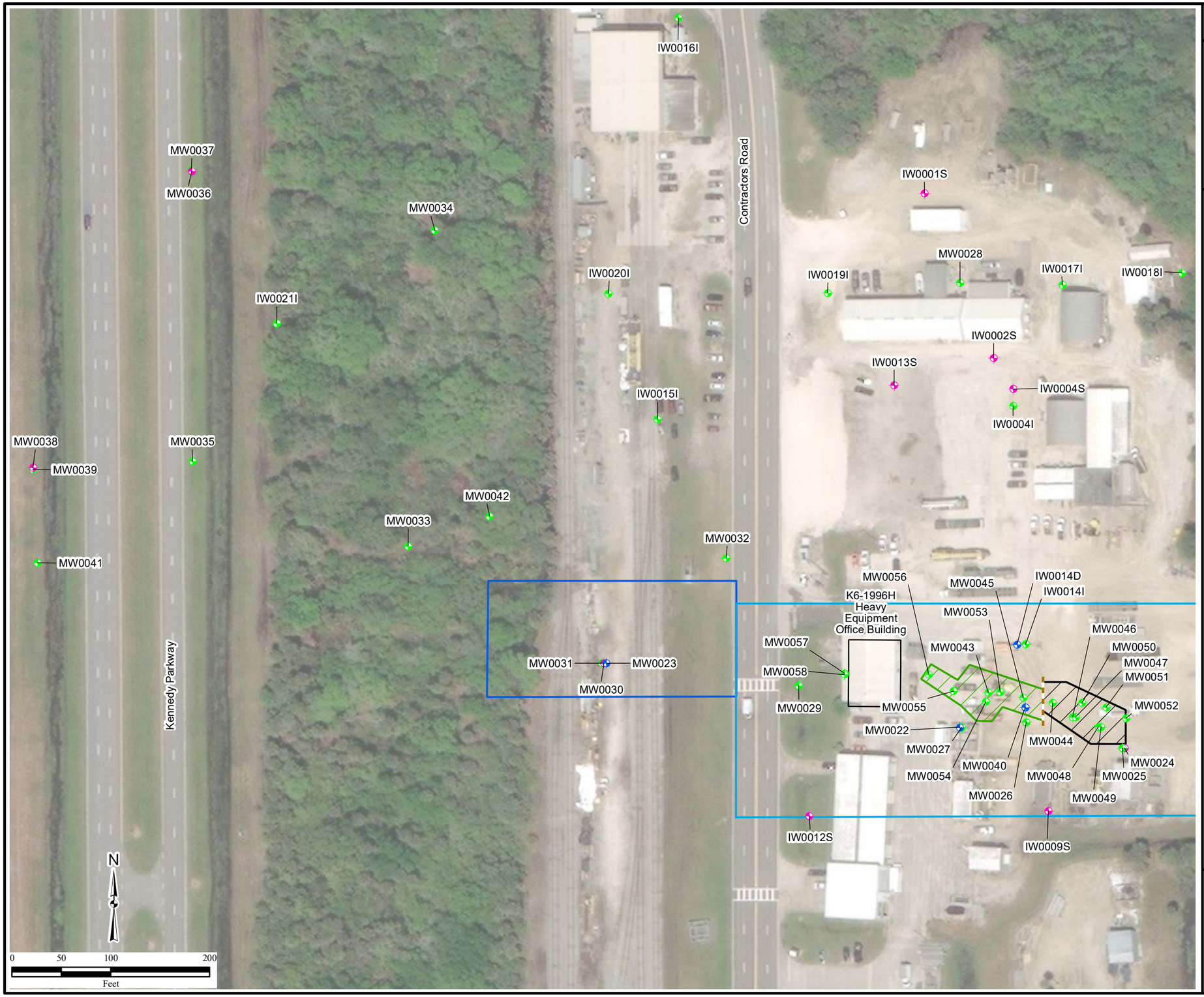
- Monitoring Well Shallow
- Monitoring Well Intermediate
- Monitoring Well Deep
- DPT Sample 2020
- DPT Sample 2021
- DPT Sample 2022
- Divide between Eastern and Western IM Treatment Areas
- 2022 Vegetation Path Cleared
- Low Drainage Area with Standing Water Preventing Access
- Approximate Eastern Bioremediation Treatment Area
- Approximate Western Bioremediation Treatment Area
- Hot Spot 1 Area
- Approximate Building Outline

Notes:
All monitoring well and DPT locations begin with CRHE- prefix

DPT=direct push technology
IM=interim measure

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3/19/2024 TB
Source: HGL,
ArcGIS Online Imagery

Figure 2-1
Groundwater
Monitoring Well Location Map



Legend

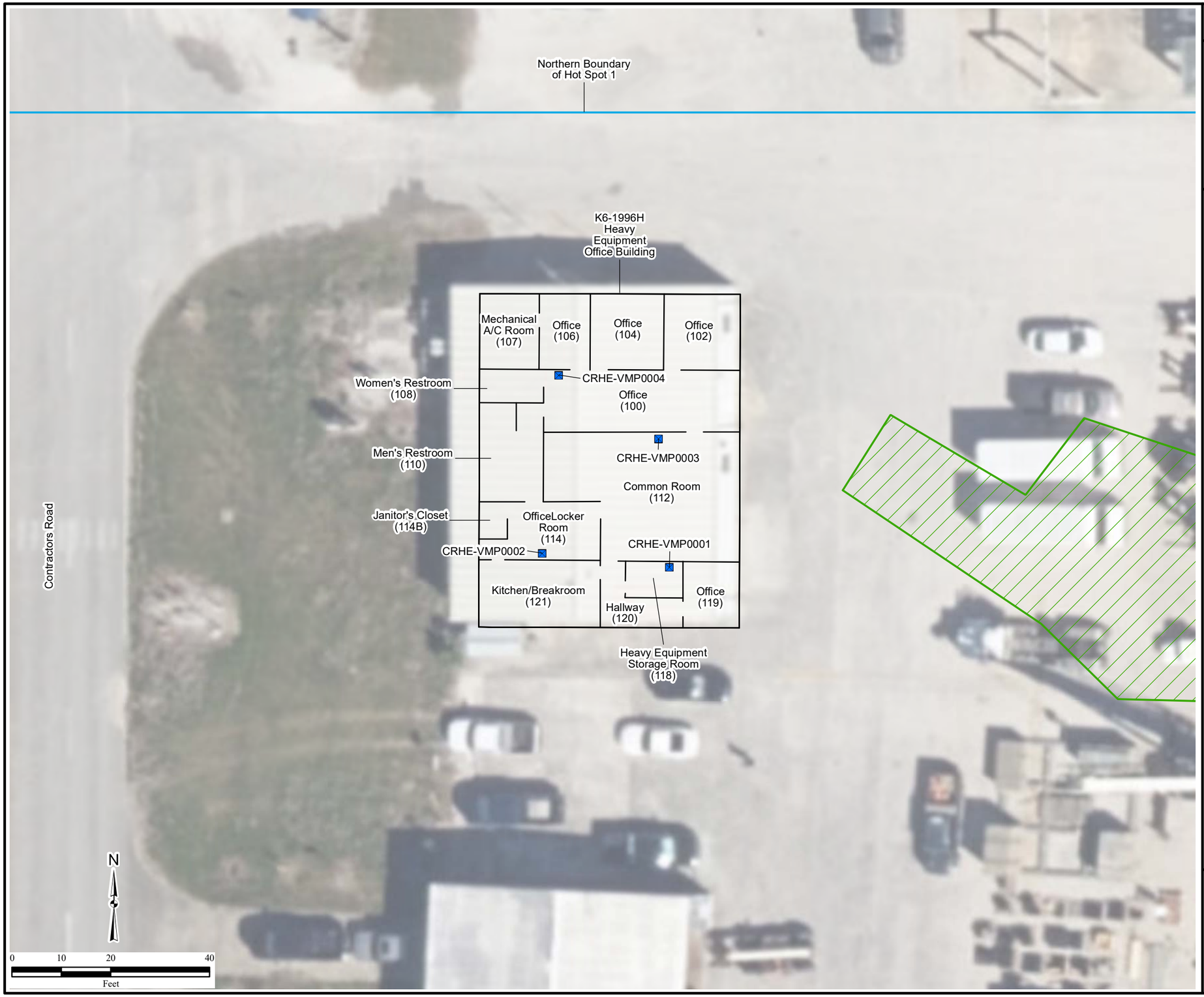
- Monitoring Well Shallow
- Monitoring Well Intermediate
- Monitoring Well Deep
- Divide between Eastern and Western IM Treatment Areas
- Approximate Eastern Bioremediation Treatment Area
- Approximate Western Bioremediation Treatment Area
- Hot Spot 1 Area
- Hot Spot 2 Area
- Approximate Building Outline

Notes:
Bioremediation activities for Eastern Hot Spot 1 completed in December 2016.
All monitoring well locations have prefix "CRHE-".
Eastern and Western Hot Spot 1 Area Divide indicates where the Hot Spot 1 TCE SZ is divided into two areas, the eastern TCE SZ area and the western TCE SZ area.
Bioremediation activities for Western Hot Spot 1 Area completed in May 2018.

CRHE=Contractors Road Heavy Equipment
IM=Interim Measure
KSC=Kennedy Space Center
SWMU=solid waste management unit
SZ=Source Zone
TCE=trichloroethene

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2/28/2024 TB
Source: HGL,
ArcGIS Online Imagery

Figure 2-2
Sub-Slab Soil Gas Sampling Locations



Legend

- Approximate Sub-Slab Soil Gas Sampling Location
- Approximate Western Bioremediation Treatment Area
- Hot Spot 1 Area
- Approximate Building Outline

Notes:
Locations of interior walls of building are approximate.
Sub-slab soil gas locations are approximate.
All sampling locations have prefix "CRHE-".

CRHE=Contractors Road Heavy Equipment
KSC=Kennedy Space Center
SWMU=solid waste management unit

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3/19/2024 TB
Source: HGL,
ArcGIS Online Imagery

Figure 3-1
Potentiometric Surface Map
Shallow Groundwater Zone
December 14, 2023



Legend

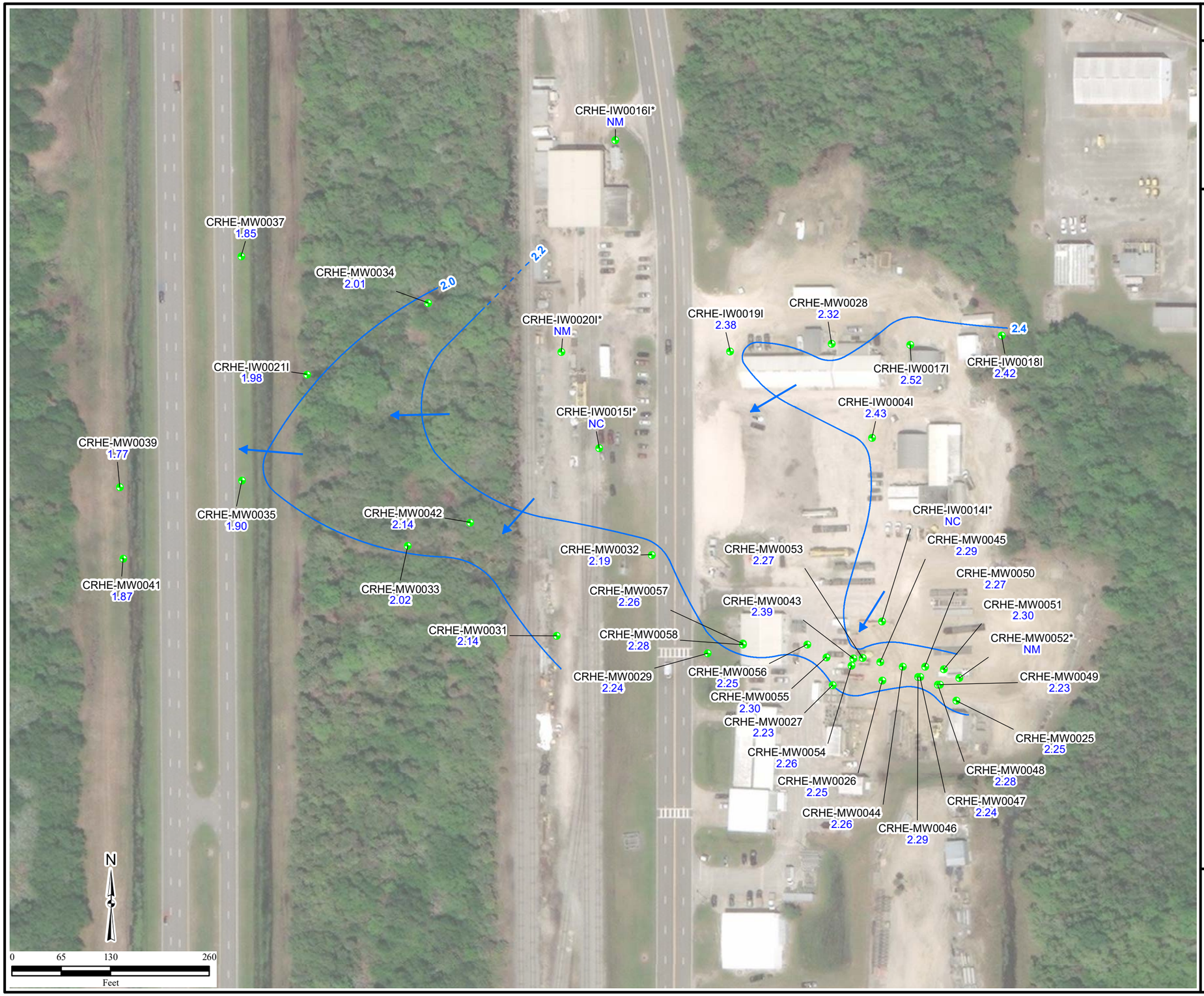
- Shallow Monitoring Well
- 1.43 — Groundwater Elevation (ft NAVD88)
- −1.75− — Groundwater Elevation Contour (ft NAVD88)
- → Groundwater Flow Direction

Notes:
Static depth-to-water measurement could not be collected at CRHE-IW004S due to an obstruction at approximately 2 ft below top of casing, thus, the groundwater elevation could not be calculated.
Elevation is referenced to the NAVD88.
Shallow monitoring wells are screened between 0 and 15 ft below ground surface.

CRHE=Contractors Road Heavy Equipment
ft=feet
KSC=Kennedy Space Center
NAVD88=North American Datum of 1988
SWMU=solid waste management unit

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3/5/2024 TB
Source: HGL, 3E Consultants
ArcGIS Online Imagery
2015 Brevard County Imagery

Figure 3-2
Potentiometric Surface Map
Intermediate Groundwater Zone
December 14, 2023



Legend

- Intermediate Monitoring Well
- 1.77 — Groundwater Elevation (ft NAVD88)
- −1.40− — Groundwater Elevation Contour (ft NAVD88)
- Groundwater Flow Direction

Notes:
Groundwater elevations could not be calculated for CRHE-IW0014I and CRHE-IW0015I due to obstructions ranging from 12.25 to 17.24 ft below top of casing.
Monitoring well CRHE-IW0016I could not be located and is presumed destroyed.
Monitoring wells CRHE-MW0018I and CRHE-MW0020I were discovered during December 2023. Groundwater elevation could not be measured for CRHE-MW0020I due to well being found destroyed beyond repair.
Static depth-to-water could not be measured for CRHE-MW0052 due to large piece of equipment parked over the well.
Elevation is referenced to the NAVD88.
Intermediate monitoring wells are screened between 16 and 50 ft below ground surface.

*=Data not used to contour groundwater elevation
CRHE=Contractors Road Heavy Equipment
ft=feet
KSC=Kennedy Space Center
NAVD88=North America Datum of 1988
NC=not calculated
NM=not measured
SWMU=solid waste management unit

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3/5/2024 TB
Source: HGL,
ArcGIS Online Imagery

Figure 3-3
Potentiometric Surface Map
Deep Groundwater Zone
December 14, 2023



Legend

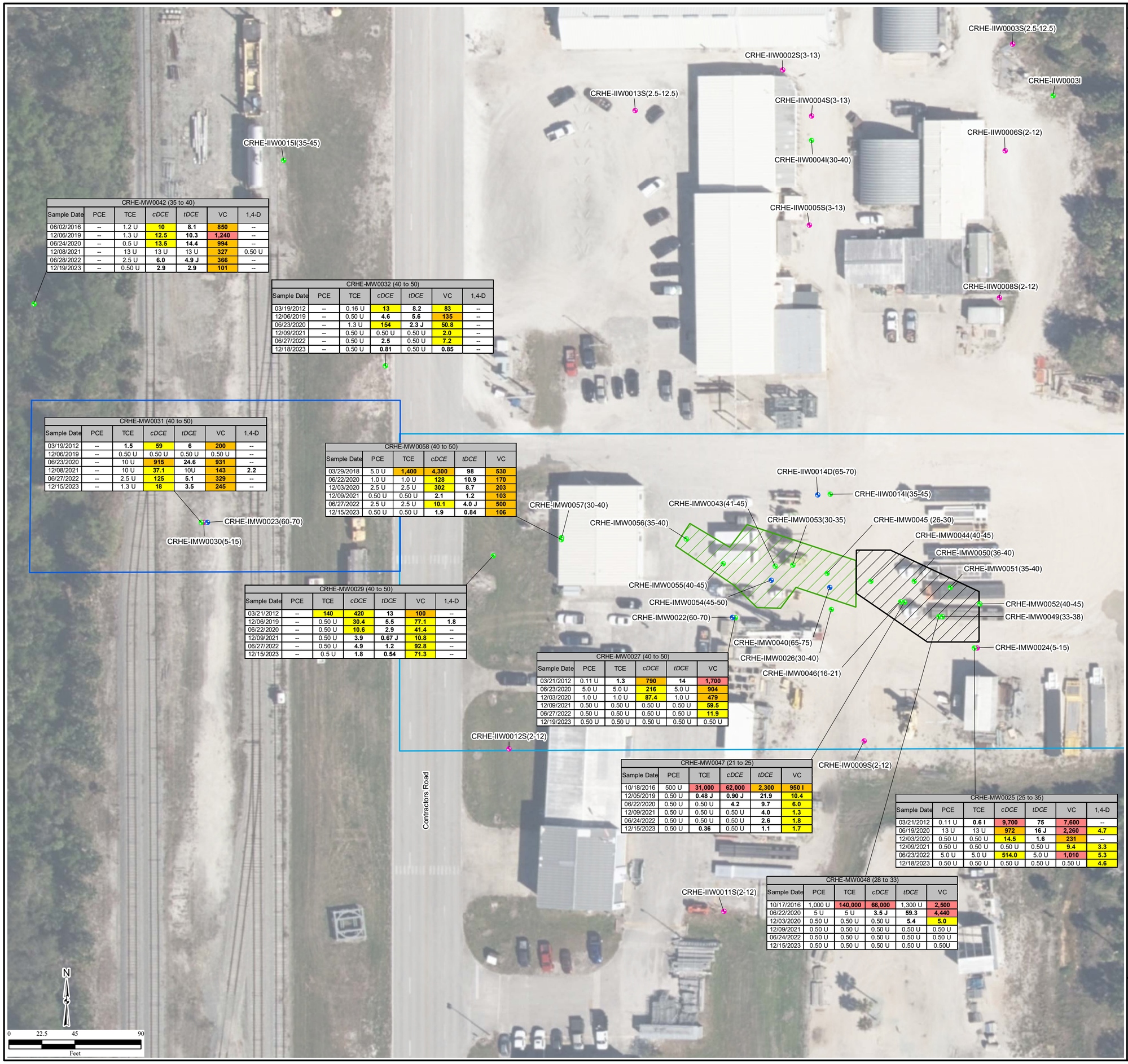
- Deep Monitoring Well
- 2.15 — Groundwater Elevation (ft NAVD88)
- −2.20− — Groundwater Elevation Contour (ft NAVD88, dashed where inferred)
- → Groundwater Flow Direction

Notes:
CRHE-MW0040 was installed July 2, 2013 but not surveyed; therefore, groundwater elevation can not be calculated.
Elevation is referenced to the NAVD88.
Deep monitoring wells are screened greater than 50 ft below ground surface.

CRHE=Contractors Road Heavy Equipment
ft=feet
KSC=Kennedy Space Center
NAVD88=North America Datum of 1988
NC=not calculated
SWMU=solid waste management unit

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3/5/2024 TB
Source: HGL, ArcGIS Online Imagery

Figure 3-4
Hot Spot 1 and 2
Monitoring Well Sampling Results: CVOC



CRHE-MW0042 (35 to 40)

Sample Date	PCE	TCE	*cDCE*	*tDCE*	VC	1,4-D
06/02/2016	--	1.2 U	**10**	**8.1**	**850**	--
12/06/2019	--	1.3 U	**12.5**	**10.3**	**1,240**	--
06/24/2020	--	0.5 U	**13.5**	**14.4**	**994**	--
12/08/2021	--	13 U	13 U	13 U	**327**	0.50 U
06/28/2022	--	2.5 U	**6.0**	**4.9 J**	**366**	--
12/19/2023	--	0.50 U	**2.9**	**2.9**	**101**	--

CRHE-MW0032 (40 to 50)

Sample Date	PCE	TCE	*cDCE*	*tDCE*	VC	1,4-D
03/19/2012	--	0.16 U	**13**	**8.2**	**83**	--
12/06/2019	--	0.50 U	**4.6**	**5.6**	**135**	--
06/23/2020	--	1.3 U	**154**	**2.3 J**	**50.8**	--
12/09/2021	--	0.50 U	0.50 U	0.50 U	**2.0**	--
06/27/2022	--	0.50 U	**2.5**	0.50 U	**7.2**	--
12/18/2023	--	0.50 U	**0.81**	0.50 U	**0.85**	--

CRHE-MW0031 (40 to 50)

Sample Date	PCE	TCE	*cDCE*	*tDCE*	VC	1,4-D
03/19/2012	--	**1.5**	**59**	**6**	**200**	--
12/06/2019	--	0.50 U	0.50 U	0.50 U	0.50 U	--
06/23/2020	--	10 U	**915**	**24.6**	**931**	--
12/08/2021	--	10 U	**37.1**	10U	**143**	**2.2**
06/27/2022	--	2.5 U	**125**	**5.1**	**329**	--
12/15/2023	--	1.3 U	**18**	**3.5**	**245**	--

CRHE-MW0058 (40 to 50)

Sample Date	PCE	TCE	*cDCE*	*tDCE*	VC
03/29/2018	5.0 U	**1,400**	**4,300**	**98**	**530**
06/22/2020	1.0 U	1.0 U	**128**	**10.9**	**170**
12/03/2020	2.5 U	2.5 U	**302**	**8.7**	**203**
12/09/2021	0.50 U	0.50 U	**2.1**	**1.2**	**103**
06/27/2022	2.5 U	2.5 U	**10.1**	**4.0 J**	**500**
12/15/2023	0.50 U	0.50 U	**1.9**	**0.84**	**106**

CRHE-MW0029 (40 to 50)

Sample Date	PCE	TCE	*cDCE*	*tDCE*	VC	1,4-D
03/21/2012	--	**140**	**420**	**13**	**100**	--
12/06/2019	--	0.50 U	**30.4**	**5.5**	**77.1**	**1.8**
06/22/2020	--	0.50 U	**10.6**	**2.9**	**41.4**	--
12/09/2021	--	0.50 U	**3.9**	**0.67 J**	**10.8**	--
06/27/2022	--	0.50 U	**4.9**	**1.2**	**92.8**	--
12/15/2023	--	0.5 U	**1.8**	**0.54**	**71.3**	--

CRHE-MW0027 (40 to 50)

Sample Date	PCE	TCE	*cDCE*	*tDCE*	VC
03/21/2012	0.11 U	**1.3**	**790**	**14**	**1,700**
06/23/2020	5.0 U	5.0 U	**216**	5.0 U	**904**
12/03/2020	1.0 U	1.0 U	**87.4**	1.0 U	**479**
12/09/2021	0.50 U	0.50 U	0.50 U	0.50 U	**59.5**
06/27/2022	0.50 U	0.50 U	0.50 U	0.50 U	**11.9**
12/19/2023	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U

CRHE-MW0047 (21 to 25)

Sample Date	PCE	TCE	*cDCE*	*tDCE*	VC
10/18/2016	500 U	**31,000**	**62,000**	**2,300**	**950 I**
12/05/2019	0.50 U	**0.48 J**	**0.90 J**	**21.9**	**10.4**
06/22/2020	0.50 U	0.50 U	**4.2**	**9.7**	**6.0**
12/09/2021	0.50 U	0.50 U	0.50 U	**4.0**	**1.3**
06/24/2022	0.50 U	0.50 U	0.50 U	**2.6**	**1.8**
12/15/2023	0.50 U	**0.36**	0.50 U	**1.1**	**1.7**

CRHE-MW0025 (25 to 35)

Sample Date	PCE	TCE	*cDCE*	*tDCE*	VC	1,4-D
03/21/2012	0.11 U	**0.6 I**	**9,700**	**75**	**7,600**	--
06/19/2020	13 U	13 U	**972**	**16 J**	**2,260**	**4.7**
12/03/2020	0.50 U	0.50 U	**14.5**	**1.6**	**231**	--
12/09/2021	0.50 U	0.50 U	0.50 U	0.50 U	**9.4**	**3.3**
06/23/2022	5.0 U	5.0 U	**514.0**	5.0 U	**1,010**	**5.3**
12/18/2023	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	**4.6**

CRHE-MW0048 (28 to 33)

Sample Date	PCE	TCE	*cDCE*	*tDCE*	VC
10/17/2016	1,000 U	**140,000**	**66,000**	1,300 U	**2,500**
06/22/2020	5 U	5 U	**3.5 J**	**59.3**	**4,440**
12/03/2020	0.50 U	0.50 U	0.50 U	**5.4**	**5.0**
12/09/2021	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
06/24/2022	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
12/15/2023	0.50 U	0.50 U	0.50 U	0.50 U	0.50U

Legend

- Monitoring Well Shallow
- Monitoring Well Intermediate
- Monitoring Well Deep
- CRHE-IW0008S (2-12) — Monitoring Well ID (Screen Interval)
- Approximate Former Eastern Bioremediation Treatment Area
- Approximate Former Western Bioremediation Treatment Area
- Hot Spot 1 Area

Screening Criteria	Concentration (µg/L)				
	TCE	cDCE	tDCE	VC	1,4-D
GCTL	3	70	100	1	3.2
NADC	300	700	1,000	100	320

Notes:
Screen interval is presented in feet below ground surface.

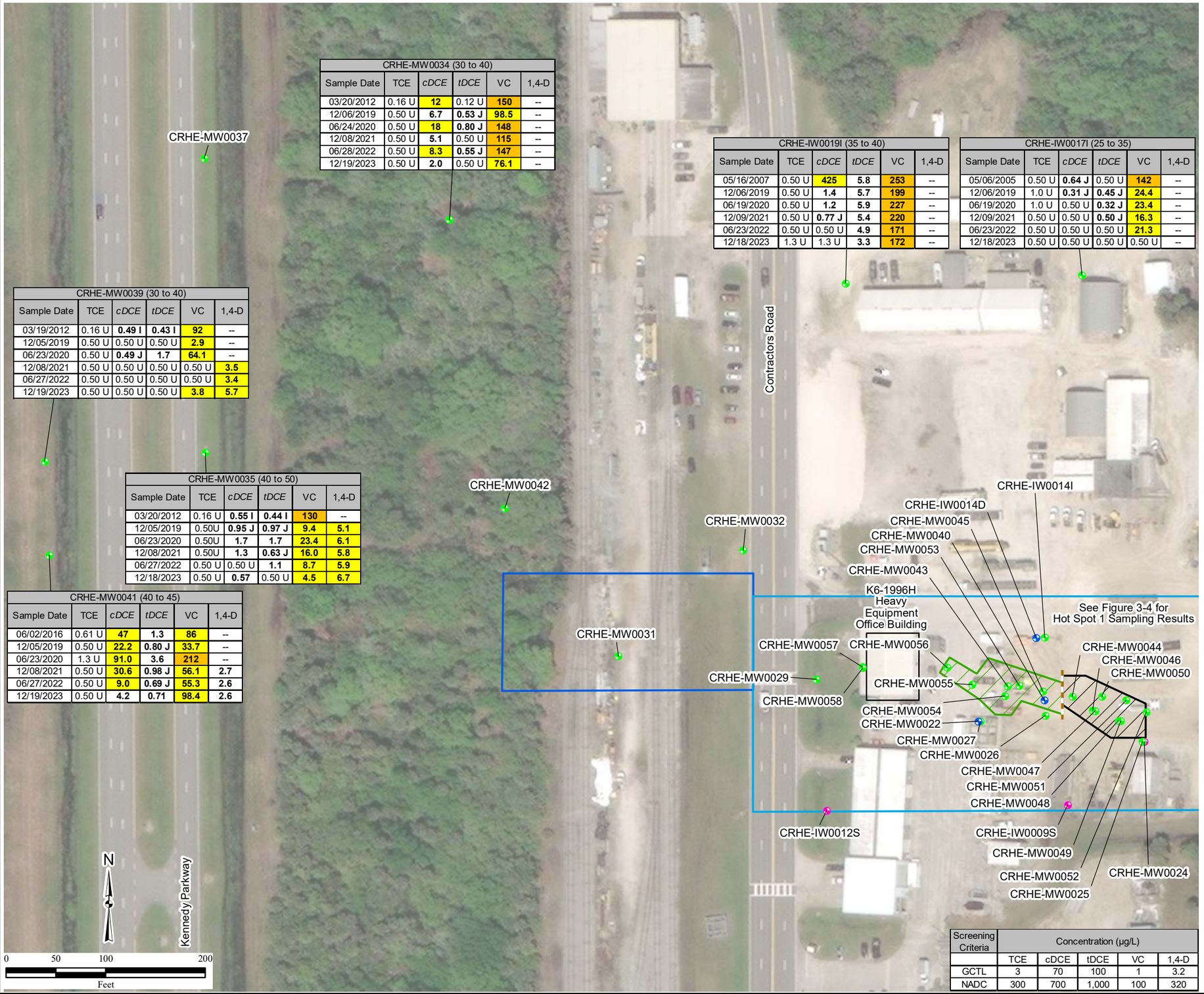
Bold=Indicates analyte was detected.
Yellow=Measured concentration greater than GCTL
Orange=Measured concentration greater than NADC
Red=Measured concentration 10X than NADC

6/22/2020*=1,4 Dioxane sample collected on 8/19/2020.
10xNADC=concentrations above ten times the NADC
1,4-D=1,4-Dioxane
CVOC=chlorinated volatile organic compound
cDCE=cis-1,2-dichloroethene
CRHE=Contractors Road Heavy Equipment
tDCE=trans-1,2-dichloroethene
VC=vinyl chloride

GCTL=groundwater cleanup target level
I=result is between the method detection limit and the practical quantitation limit
ID=Identification
IM=interim measure
J*=an estimated value from second run which was one day beyond hold time.
J**=an estimated value as sample was not preserved to pH less than 2 and not analyzed within 7 day adjusted hold time.
J3 = an estimated value; value may not be accurate. Spike recovery or relative percent difference outside of criteria.
KSC=Kennedy Space Center
µg/L=micrograms per liter
NADC=natural attenuation default concentration
PCE=tetrachloroethene
SWMU=solid waste management unit
TCE=trichloroethene
U=not detected above method detection limit

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3/5/2024 TB
Source: HGL, KSC
ArcGIS Online Imagery

Figure 3-5
Sitewide
Groundwater Monitoring Well
Sampling Results



Legend

- Monitoring Well Shallow
- Monitoring Well Intermediate
- Monitoring Well Deep
- CRHE-IW0017I(25 to 35) Monitoring Well ID (Screen Interval)
- Divide between Eastern and Western IM Treatment Areas
- Approximate Eastern Bioremediation Treatment Area
- Approximate Western Bioremediation Treatment Area
- Hot Spot 1 Area
- Hot Spot 2 Area
- Approximate Building Outline

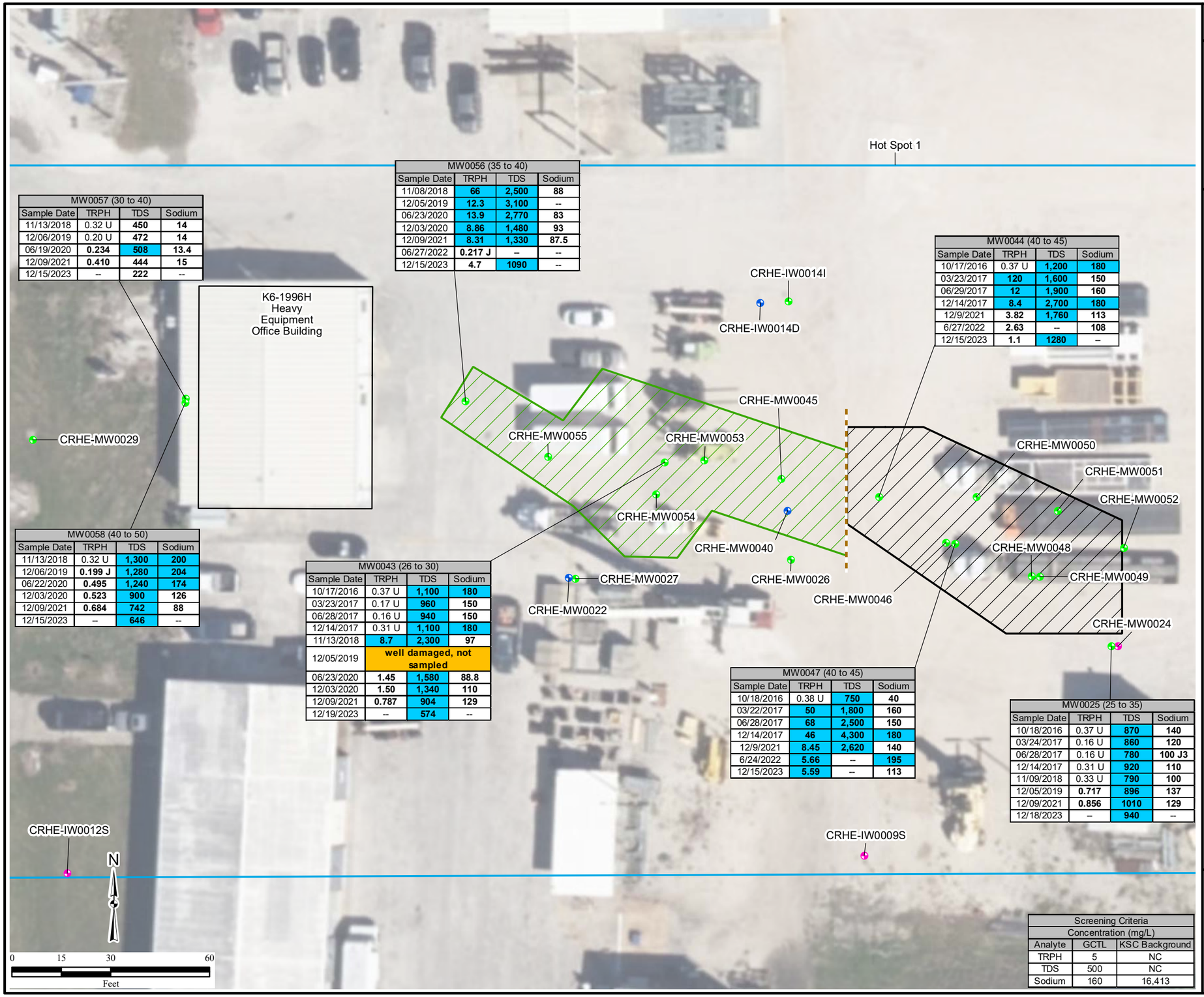
Notes:
Screen interval is presented in feet below ground surface.
Results and screening criteria are presented in µg/L.
Eastern and Western Hot Spot 1 Area Divide indicates where the Hot Spot 1 TCE SZ is divided into two areas, the eastern TCE SZ area and the western TCE SZ area.

<BOL>=Indicates analyte was detected.
Yellow=Measured concentration greater than GCTL
Orange=Measured concentration greater than NADC
Red=Measured concentration 10X than NADC

--=not analyzed
*=Sampled on 8/19/20
6/22/2020*=1,4-Dioxane sample collected on 8/19/2020
1,4-D=1,4-Dioxane
10xNADC=concentrations above ten times the NADC
cDCE=cis,1,2-dichloroethene
CRHE=Contractors Road Heavy Equipment
GCTL=groundwater cleanup target level
I=result is between the method detection limit and the practical quantitation limit
ID=Identification
IM=Interim Measure
J=estimated value
KSC=Kennedy Space Center
µg/L=microgram per liter
NADC=natural attenuation default concentration
SWMU=solid waste management unit
SZ=Source Zone
TCE=trichloroethene
tDCE=trans,1,2-dichloroethene
U=not detected above method detection limit
VC=vinyl chloride

\\srv-gst-01\hglgis\KSC_NS1002\CRHEA\Annual_Report\2023\(3-05)SW_GW_Results.mxd
3/5/2024 TB
Source: HGL, ArcGIS Online Imagery

Figure 3-6
Hot Spot 1
Monitoring Well Sampling Results: UIC Parameters



MW0057 (30 to 40)			
Sample Date	TRPH	TDS	Sodium
11/13/2018	0.32 U	**450**	**14**
12/06/2019	0.20 U	**472**	**14**
06/19/2020	**0.234**	**508**	**13.4**
12/09/2021	**0.410**	**444**	**15**
12/15/2023	--	**222**	--

MW0056 (35 to 40)			
Sample Date	TRPH	TDS	Sodium
11/08/2018	**66**	**2,500**	**88**
12/05/2019	**12.3**	**3,100**	--
06/23/2020	**13.9**	**2,770**	**83**
12/03/2020	**8.86**	**1,480**	**93**
12/09/2021	**8.31**	**1,330**	**87.5**
06/27/2022	**0.217 J**	--	--
12/15/2023	**4.7**	**1090**	--

MW0044 (40 to 45)			
Sample Date	TRPH	TDS	Sodium
10/17/2016	0.37 U	**1,200**	**180**
03/23/2017	**120**	**1,600**	**150**
06/29/2017	**12**	**1,900**	**160**
12/14/2017	**8.4**	**2,700**	**180**
12/9/2021	**3.82**	**1,760**	**113**
6/27/2022	**2.63**	--	**108**
12/15/2023	**1.1**	**1280**	--

MW0058 (40 to 50)			
Sample Date	TRPH	TDS	Sodium
11/13/2018	0.32 U	**1,300**	**200**
12/06/2019	**0.199 J**	**1,280**	**204**
06/22/2020	**0.495**	**1,240**	**174**
12/03/2020	**0.523**	**900**	**126**
12/09/2021	**0.684**	**742**	**88**
12/15/2023	--	**646**	--

MW0043 (26 to 30)			
Sample Date	TRPH	TDS	Sodium
10/17/2016	0.37 U	**1,100**	**180**
03/23/2017	0.17 U	**960**	**150**
06/28/2017	0.16 U	**940**	**150**
12/14/2017	0.31 U	**1,100**	**180**
11/13/2018	**8.7**	**2,300**	**97**
12/05/2019	**well damaged, not sampled**		
06/23/2020	**1.45**	**1,580**	**88.8**
12/03/2020	**1.50**	**1,340**	**110**
12/09/2021	**0.787**	**904**	**129**
12/19/2023	--	**574**	--

MW0047 (40 to 45)			
Sample Date	TRPH	TDS	Sodium
10/18/2016	0.38 U	**750**	**40**
03/22/2017	**50**	**1,800**	**160**
06/28/2017	**68**	**2,500**	**150**
12/14/2017	**46**	**4,300**	**180**
12/9/2021	**8.45**	**2,620**	**140**
6/24/2022	**5.66**	--	**195**
12/15/2023	**5.59**	--	**113**

MW0025 (25 to 35)			
Sample Date	TRPH	TDS	Sodium
10/18/2016	0.37 U	**870**	**140**
03/24/2017	0.16 U	**860**	**120**
06/28/2017	0.16 U	**780**	**100 J3**
12/14/2017	0.31 U	**920**	**110**
11/09/2018	0.33 U	**790**	**100**
12/05/2019	**0.717**	**896**	**137**
12/09/2021	**0.856**	**1010**	**129**
12/18/2023	--	**940**	--

Screening Criteria		
Concentration (mg/L)		
Analyte	GCTL	KSC Background
TRPH	5	NC
TDS	500	NC
Sodium	160	16,413

Legend

- Monitoring Well Shallow
- Monitoring Well Intermediate
- Monitoring Well Deep
- CRHE-IW0008S (2-12) Monitoring Well ID (Screen Interval)
- Divide between Eastern and Western IM Treatment Areas
- Approximate Eastern Bioremediation Treatment Area
- Approximate Western Bioremediation Treatment Area
- Hot Spot 1 Area
- Approximate Building Outline

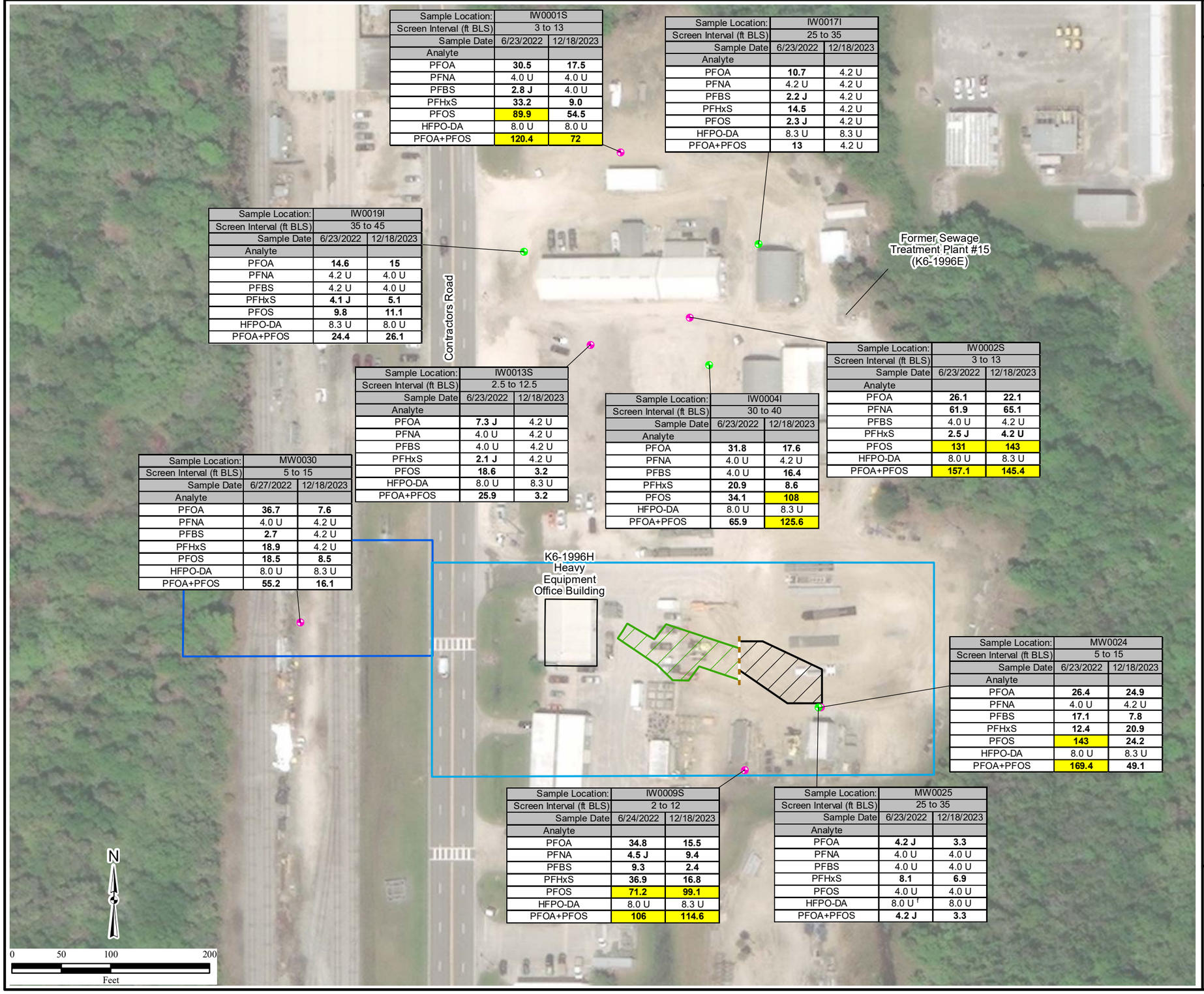
Notes:
To evaluate site-specific background concentrations, a groundwater sample was collected from CRHE-MW0017I for TDS and sodium in December 2021.
Results and screening criteria are presented in ug/L and mg/L for TOC.
Bioremediation activities for Eastern Hot Spot 1 completed in December 2016.
All monitoring well locations have prefix "CRHE-".
Eastern and Western Hot Spot 1 Area Divide indicates where the Hot Spot 1 TCE SZ is divided into two areas, the eastern TCE SZ area and the western TCE SZ area.
Bioremediation activities for Western Hot Spot 1 Area completed in May 2018.
The GCTL for TDS is a secondary standard based on an organoleptic criterion.

Bold=Analyte detected
Blue=concentration greater than the primary Florida Department of Environmental Protection and KSC background concentration

--=not analyzed
CRHE=Contractors Road Heavy Equipment
GCTL=groundwater cleanup target level
ID=identification
IM=Interim Measure
J=reported value is between the MDL and the practical quantitation limit
J3=an estimated value; value may not be accurate. Spike recovery or relative percent difference outside of criteria.
KSC=Kennedy Space Center
MDL=method detection limit
µg/L=microgram per liter
mg/l=milligram per liter
NA=not applicable
NC=not calculated
SWMU=solid waste management unit
SZ=Source Zone
TCE=trichloroethene
TDS=total dissolved solids
TRPH=total recoverable petroleum hydrocarbon
U=analyte was not detected above the MDL
UIC=underground injection control

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2/25/2025 TB
Source: HGL,
ArcGIS Online Imagery

Figure 3-7
Monitoring Well Sampling Results Summary: PFAS



Sample Location:	IW0001S	
Screen Interval (ft BLS)	3 to 13	
Sample Date	6/23/2022	12/18/2023
Analyte		
PFOA	**30.5**	**17.5**
PFNA	4.0 U	4.0 U
PFBS	**2.8 J**	4.0 U
PFHxS	**33.2**	**9.0**
PFOS	**89.9**	**54.5**
HFPO-DA	8.0 U	8.0 U
PFOA+PFOS	**120.4**	**72**

Sample Location:	IW0017I	
Screen Interval (ft BLS)	25 to 35	
Sample Date	6/23/2022	12/18/2023
Analyte		
PFOA	**10.7**	4.2 U
PFNA	4.2 U	4.2 U
PFBS	**2.2 J**	4.2 U
PFHxS	**14.5**	4.2 U
PFOS	**2.3 J**	4.2 U
HFPO-DA	8.3 U	8.3 U
PFOA+PFOS	**13**	4.2 U

Sample Location:	IW0019I	
Screen Interval (ft BLS)	35 to 45	
Sample Date	6/23/2022	12/18/2023
Analyte		
PFOA	**14.6**	**15**
PFNA	4.2 U	4.0 U
PFBS	4.2 U	4.0 U
PFHxS	**4.1 J**	**5.1**
PFOS	**9.8**	**11.1**
HFPO-DA	8.3 U	8.0 U
PFOA+PFOS	**24.4**	**26.1**

Sample Location:	IW0013S	
Screen Interval (ft BLS)	2.5 to 12.5	
Sample Date	6/23/2022	12/18/2023
Analyte		
PFOA	**7.3 J**	4.2 U
PFNA	4.0 U	4.2 U
PFBS	4.0 U	4.2 U
PFHxS	**2.1 J**	4.2 U
PFOS	**18.6**	**3.2**
HFPO-DA	8.0 U	8.3 U
PFOA+PFOS	**25.9**	**3.2**

Sample Location:	IW0004I	
Screen Interval (ft BLS)	30 to 40	
Sample Date	6/23/2022	12/18/2023
Analyte		
PFOA	**31.8**	**17.6**
PFNA	4.0 U	4.2 U
PFBS	4.0 U	**16.4**
PFHxS	**20.9**	**8.6**
PFOS	**34.1**	**108**
HFPO-DA	8.0 U	8.3 U
PFOA+PFOS	**65.9**	**125.6**

Sample Location:	IW0002S	
Screen Interval (ft BLS)	3 to 13	
Sample Date	6/23/2022	12/18/2023
Analyte		
PFOA	**26.1**	**22.1**
PFNA	**61.9**	**65.1**
PFBS	4.0 U	4.2 U
PFHxS	**2.5 J**	**4.2 U**
PFOS	**131**	**143**
HFPO-DA	8.0 U	8.3 U
PFOA+PFOS	**157.1**	**145.4**

Sample Location:	MW0030	
Screen Interval (ft BLS)	5 to 15	
Sample Date	6/27/2022	12/18/2023
Analyte		
PFOA	**36.7**	**7.6**
PFNA	4.0 U	4.2 U
PFBS	**2.7**	4.2 U
PFHxS	**18.9**	4.2 U
PFOS	**18.5**	**8.5**
HFPO-DA	8.0 U	8.3 U
PFOA+PFOS	**55.2**	**16.1**

Sample Location:	MW0024	
Screen Interval (ft BLS)	5 to 15	
Sample Date	6/23/2022	12/18/2023
Analyte		
PFOA	**26.4**	**24.9**
PFNA	4.0 U	4.2 U
PFBS	**17.1**	**7.8**
PFHxS	**12.4**	**20.9**
PFOS	**143**	**24.2**
HFPO-DA	8.0 U	8.3 U
PFOA+PFOS	**169.4**	**49.1**

Sample Location:	IW0009S	
Screen Interval (ft BLS)	2 to 12	
Sample Date	6/24/2022	12/18/2023
Analyte		
PFOA	**34.8**	**15.5**
PFNA	**4.5 J**	**9.4**
PFBS	**9.3**	**2.4**
PFHxS	**36.9**	**16.8**
PFOS	**71.2**	**99.1**
HFPO-DA	8.0 U	8.3 U
PFOA+PFOS	**106**	**114.6**

Sample Location:	MW0025	
Screen Interval (ft BLS)	25 to 35	
Sample Date	6/23/2022	12/18/2023
Analyte		
PFOA	**4.2 J**	**3.3**
PFNA	4.0 U	4.0 U
PFBS	4.0 U	4.0 U
PFHxS	**8.1**	**6.9**
PFOS	4.0 U	4.0 U
HFPO-DA	8.0 U [r]	8.0 U
PFOA+PFOS	**4.2 J**	**3.3**

Legend

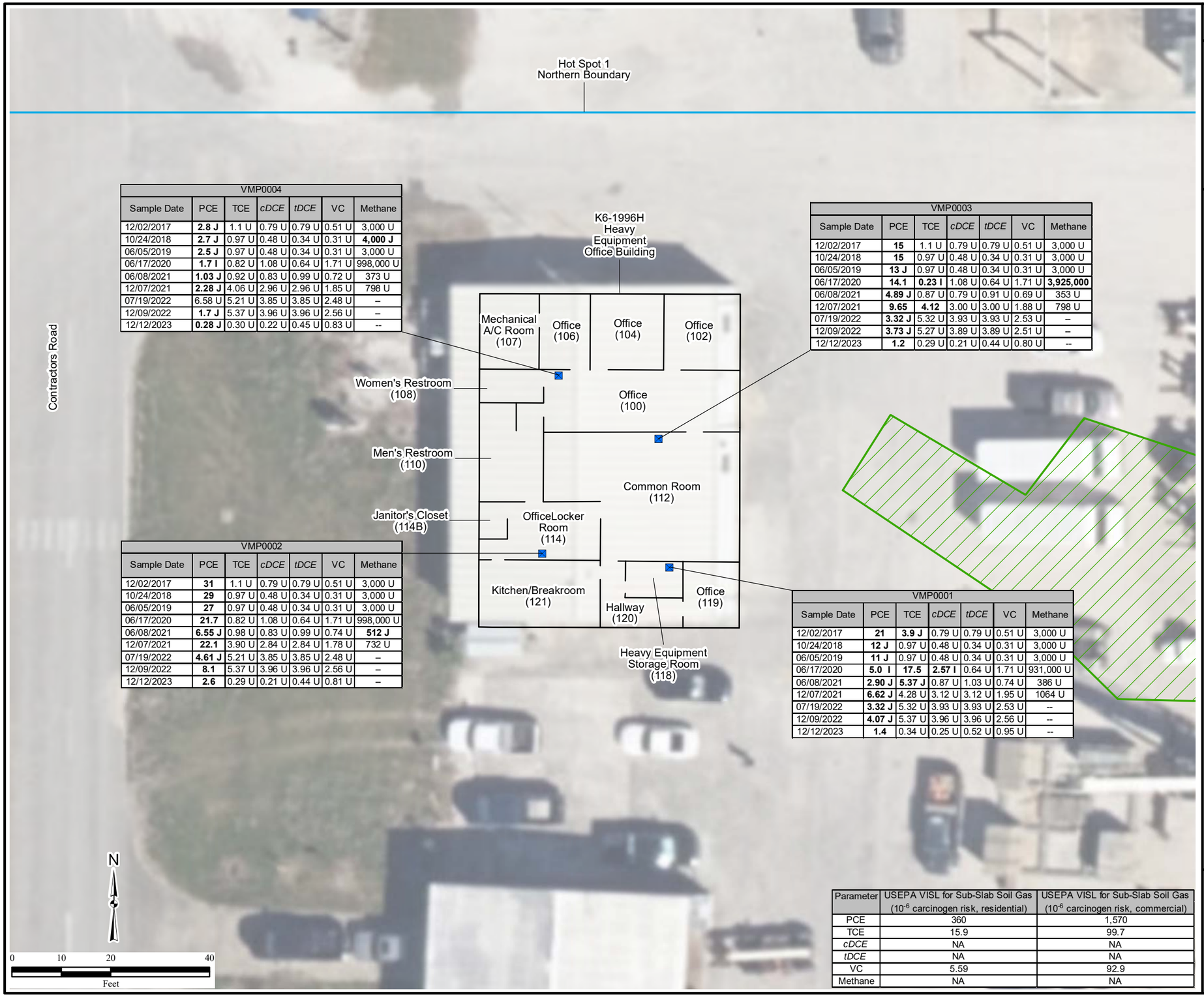
- Monitoring Well Shallow
- Monitoring Well Intermediate
- Monitoring Well Deep
- Divide between Eastern and Western IM Treatment Areas
- Approximate Eastern Bioremediation Treatment Area
- Approximate Western Bioremediation Treatment Area
- Hot Spot 1 Area
- Hot Spot 2 Area
- Approximate Building Outline

Notes:
Results and screening criteria are presented in ng/L.
Eastern and Western Hot Spot 1 Area Divide indicates where the Hot Spot 1 TCE SZ is divided into two areas, the eastern TCE SZ area and the western TCE SZ area.
Bold=Indicates the analyte was detected at the specified concentration
Yellow=analyte exceeded the EPA pGCTL
[1]=EPA, 2022. Regional Screening Level (RSL) Resident Tapwater Table (TR=1E-06, HQ=0.1)
CRHE=Contractors Road Heavy Equipment
EPA=U.S. Environmental Protection Agency
ft bls=feet below land surface
HFPO-DA=Hexafluoropropylene oxide dimer acid
IM=interim measure
J=indicates an estimated value
KSC=Kennedy Space Center
ng/L=nanograms per liter
N/A=not applicable
pGCTL=provisional groudwater cleanup target level
PFAS=per- and polyfluoroalkyl substances
PFOA=Perfluorooctanoic acid
PFNA=Perfluorononanoic acid
PFBS=Perfluorobutanesulfonic acid
PFHxS=Perfluorohexanesulfonic acid
PFOS=Perfluorooctanesulfonic acid
RSL= Regional Screening Level
SWMU=solid waste management unit
SZ=Source Zone
TCE=trichloroethene
U=analyte was not detected above the reporting limit

PFAS Analyte	[1]EPA RSL (ng/L)	[1]10xEPA RSL (ng/L)	pGCTL (ng/L)
PFOA	6	60	70
PFNA	6	60	N/A
PFBS	600	6000	N/A
PFHxS	40	400	N/A
PFOS	4	40	70
HFPO-DA	6	60	N/A

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4/1/2024 TB
Source: HGL,
ArcGIS Online Imagery

Figure 4-1
Sub-Slab Soil Gas Sampling Results
CVOCs and Methane



VMP0004

Sample Date	PCE	TCE	*cDCE*	*tDCE*	VC	Methane
12/02/2017	**2.8 J**	1.1 U	0.79 U	0.79 U	0.51 U	3,000 U
10/24/2018	**2.7 J**	0.97 U	0.48 U	0.34 U	0.31 U	**4,000 J**
06/05/2019	**2.5 J**	0.97 U	0.48 U	0.34 U	0.31 U	3,000 U
06/17/2020	**1.7 I**	0.82 U	1.08 U	0.64 U	1.71 U	998,000 U
06/08/2021	**1.03 J**	0.92 U	0.83 U	0.99 U	0.72 U	373 U
12/07/2021	**2.28 J**	4.06 U	2.96 U	2.96 U	1.85 U	798 U
07/19/2022	6.58 U	5.21 U	3.85 U	3.85 U	2.48 U	--
12/09/2022	**1.7 J**	5.37 U	3.96 U	3.96 U	2.56 U	--
12/12/2023	**0.28 J**	0.30 U	0.22 U	0.45 U	0.83 U	--

VMP0003

Sample Date	PCE	TCE	*cDCE*	*tDCE*	VC	Methane
12/02/2017	**15**	1.1 U	0.79 U	0.79 U	0.51 U	3,000 U
10/24/2018	**15**	0.97 U	0.48 U	0.34 U	0.31 U	3,000 U
06/05/2019	**13 J**	0.97 U	0.48 U	0.34 U	0.31 U	3,000 U
06/17/2020	**14.1**	**0.23 I**	1.08 U	0.64 U	1.71 U	**3,925,000**
06/08/2021	**4.89 J**	0.87 U	0.79 U	0.91 U	0.69 U	353 U
12/07/2021	**9.65**	**4.12**	3.00 U	3.00 U	1.88 U	798 U
07/19/2022	**3.32 J**	5.32 U	3.93 U	3.93 U	2.53 U	--
12/09/2022	**3.73 J**	5.27 U	3.89 U	3.89 U	2.51 U	--
12/12/2023	**1.2**	0.29 U	0.21 U	0.44 U	0.80 U	--

VMP0002

Sample Date	PCE	TCE	*cDCE*	*tDCE*	VC	Methane
12/02/2017	**31**	1.1 U	0.79 U	0.79 U	0.51 U	3,000 U
10/24/2018	**29**	0.97 U	0.48 U	0.34 U	0.31 U	3,000 U
06/05/2019	**27**	0.97 U	0.48 U	0.34 U	0.31 U	3,000 U
06/17/2020	**21.7**	0.82 U	1.08 U	0.64 U	1.71 U	998,000 U
06/08/2021	**6.55 J**	0.98 U	0.83 U	0.99 U	0.74 U	**512 J**
12/07/2021	**22.1**	3.90 U	2.84 U	2.84 U	1.78 U	732 U
07/19/2022	**4.61 J**	5.21 U	3.85 U	3.85 U	2.48 U	--
12/09/2022	**8.1**	5.37 U	3.96 U	3.96 U	2.56 U	--
12/12/2023	**2.6**	0.29 U	0.21 U	0.44 U	0.81 U	--

VMP0001

Sample Date	PCE	TCE	*cDCE*	*tDCE*	VC	Methane
12/02/2017	**21**	**3.9 J**	0.79 U	0.79 U	0.51 U	3,000 U
10/24/2018	**12 J**	0.97 U	0.48 U	0.34 U	0.31 U	3,000 U
06/05/2019	**11 J**	0.97 U	0.48 U	0.34 U	0.31 U	3,000 U
06/17/2020	**5.0 I**	**17.5**	**2.57 I**	0.64 U	1.71 U	931,000 U
06/08/2021	**2.90 J**	**5.37 J**	0.87 U	1.03 U	0.74 U	386 U
12/07/2021	**6.62 J**	4.28 U	3.12 U	3.12 U	1.95 U	1064 U
07/19/2022	**3.32 J**	5.32 U	3.93 U	3.93 U	2.53 U	--
12/09/2022	**4.07 J**	5.37 U	3.96 U	3.96 U	2.56 U	--
12/12/2023	**1.4**	0.34 U	0.25 U	0.52 U	0.95 U	--

Parameter	USEPA VISL for Sub-Slab Soil Gas (10^{-6} carcinogen risk, residential)	USEPA VISL for Sub-Slab Soil Gas (10^{-6} carcinogen risk, commercial)
PCE	360	1,570
TCE	15.9	99.7
cDCE	NA	NA
tDCE	NA	NA
VC	5.59	92.9
Methane	NA	NA

Legend

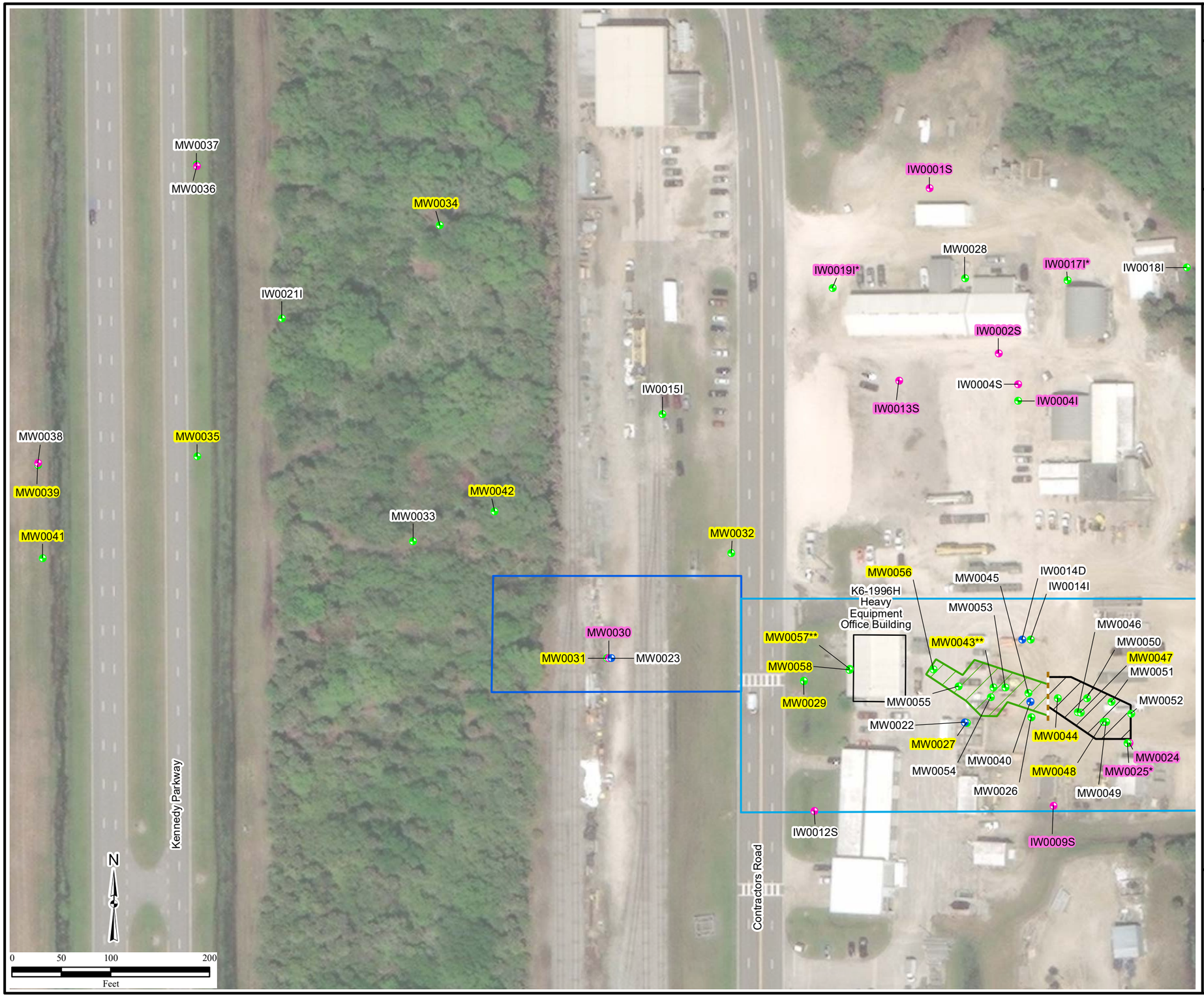
- Approximate Sub-Slab Soil Gas Sampling Location
- Approximate Western Bioremediation Treatment Area
- Hot Spot 1 Area
- Approximate Building Outline

Notes:
Sub-slab soil gas results are presented in µg/m3.
The USEPA VISL was calculated using the on-line calculator, November 2018 Regional Screening Levels, residential exposure scenario (carcinogenic risk of 1x10-6; hazard quotient of 1).
Locations of interior walls of building are approximate.
Sub-slab soil gas locations are approximate.
All sampling locations have prefix "CRHE-".

Bold=detected value greater than residential VISL but less than industrial VISL
cDCE=cis-1,2-Dichloroethene
CRHE=Contractors Road Heavy Equipment
CVOC=chlorinated volatile organic compound
J=an estimated value, detected between the method detection limit and the reporting limit
KSC=Kennedy Space Center
µg/m3=microgram per cubic meter
NA=not established
PCE=tetrachloroethene
SWMU=solid waste management unit
TCE=trichloroethene
tDCE=trans-1,2-Dichloroethene
U=analyte was not detected above the reporting limit
USEPA=United States Environmental Protection Agency
VISL=Vapor Intrusion Screening Level
VMP=vapor monitoring point
VC= vinyl chloride

\\srv-gst-01\hglgis\KSC_NS1002\CRHEA\Annual_Report\2023\(4-01)SubSlab_SG_Results.mxd
2/25/2025 TB
Source: HGL,
ArcGIS Online Imagery

Figure 6-1
Proposed 2024
Monitoring Well
Sampling Locations



Legend

- Monitoring Well Shallow
- Monitoring Well Intermediate
- Monitoring Well Deep
- MW0025 — Monitoring Well Proposed for VOC and/or UIC Sampling in 2024
- IW0001S — Monitoring Well Proposed for PFAS Sampling in 2024
- Divide between Eastern and Western IM Treatment Areas
- Approximate Eastern Bioremediation Treatment Area
- Approximate Western Bioremediation Treatment Area
- Hot Spot 1 Area
- Hot Spot 2 Area
- Approximate Building Outline

Notes:
*=Indicates monitoring well included in the Annual Sampling and Analysis Plan to be additionally sampled for PFAS.
**=Indicates monitoring well included in the Annual Sampling and Analysis Plan to be sampled on a biennial basis.
All monitoring well locations have prefix "CRHE-".
Eastern and Western Hot Spot 1 Area Divide indicates where the Hot Spot 1 TCE SZ is divided into two areas, the eastern TCE SZ area and the western TCE SZ area.

CRHE=Contractors Road Heavy Equipment
IM=Interim Measure
KSC=Kennedy Space Center
PFAS=per- and polyfluoroalkyl substances
SWMU=solid waste management unit
SZ=Source Zone
TCE=trichloroethene
UIC=underground injection controls
VOC=volatile organic compound

\\srv-gst-01\hglgis\KSC_NS1002\CRHEA\Annual_Report\2023\(7-01)Prop_2024_MW_Samp_Locs.mxd
4/5/2024 TB
Source: HGL, ArcGIS Online Imagery

APPENDIX A

KSC REMEDIATION TEAM
MEETING MINUTES AND DECISIONS

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Revision 1 Meeting Minutes for April 24, 2024

Attendees:

1. TJ Touran/FDEP
2. Natasha Darre/NASA
3. Deda Johansen/NASA
4. Anne Chrest/NASA
5. Chris Adkison/NASA
6. Michelle Moore/NEMCON
7. Mark Jonnet/Tetra Tech
8. Mark Speranza/Tetra Tech
9. Debbie Wilson/Tetra Tech
10. Chris Marshall/AECOM
11. Jennifer Gootee/AECOM
12. Justin Vojak/HGL
13. Jason Bublitz/HGL
14. Tim Jellett/ HGL
15. Richard Smith/HGL

2404-M01 Michelle Moore/NEMCON

Meeting Minutes and Miscellaneous Items

Objective:

Test consensus on February 2024 Team meeting minutes.

Discussion:

Team consensus was reached that Revision 1 of the meeting minutes and action/decision items for the February 2024 Team meeting will become final. Team members acknowledged and did not object to the fact that these meeting minutes may become public record as part of a final report at a later date **(2404-D01).**

FDEP's TJ Touran provided an update on the program. Scott Miller will be taking over Patrick Space Force Base and Cape Canaveral Space Force Station. TJ will be focused on managing the KSC installation, as well as the grant applications and budgeting for the Federal Programs team since he has a business background.

Results: Decision Item 2404-D01

2404-M02 Jason Bublitz/HGL

Contractors Road Heavy Equipment Area (SWMU 055) Annual Long-Term Monitoring:

Objective: The objective of the ADP is to summarize the site description, history, previous investigations, present the December 2023

annual groundwater monitoring activities and 2024 recommendations, discuss sub-slab soil gas (SSSG) sampling activities and results, and the path forward/team consensus.

Discussion:

Annual Groundwater Monitoring

The annual groundwater monitoring sampling activities at CRHE Area were completed on December 2023. The results are presented along with a summary of the site assessment history, background, and ongoing direct-push technology (DPT) investigation. The sampling and analysis plan specified the sampling of 15 annual monitoring wells for volatile organic compounds (VOCs), 7 wells for UIC parameters (total recoverable petroleum hydrocarbons [TRPH] and/or sodium), 4 wells for 1,4-dioxane, 10 wells for per- and polyfluoroalkyl substances (PFAS), collect depth to water measurements from the site-wide monitoring wells, and conduct Mann-Kendall analysis on applicable monitoring wells.

The results indicated that VOC concentrations have generally decreased across the site in comparison to historical events, 1,4-dioxane concentrations statistically increased downgradient and decreased at hot spot 1, and conditions across the site are favorable for natural attenuation. For UIC parameters, TRPH remained above the groundwater cleanup target level (GCTL) at one monitoring well in the former bioremediation area and TDS exceeded the GCTL in 5 of the 6 monitoring wells sampled. PFAS concentrations exceeded the provisional GCTLs in 3 of the 10 monitoring wells sampled.

The recommendations are to: continue annual groundwater monitoring in 2024 for the 15 monitoring wells for VOCs, 4 wells for 1,4-dioxane, 3 wells for TRPH, one well for sodium, and 10 wells for PFAS; and to collect site-wide depth to water measurements.

The Team reached consensus to conduct annual sampling (December 2024) to include: Sampling 15 wells for CVOCs (HS1: MW0025, MW0027, MW0029, MW0047, MW0048 and MW0058, HS2: MW0031, MW0032, MW0042, Northern Area: IW007I, IW0019I, MW0034, and Downgradient: MW0035, MW0039, MW0041); sampling 4 wells for 1,4-dioxane (HS 1: MW0025, Downgradient: MW0035, MW0039, MW0041); sampling 3 wells for TRPH: HS1:

MW0044, MW0047, MW0056; and sampling 1 well for sodium: HS1: MW0047 **(2404-D02).**

The Team reached consensus to conduct annual sampling to collect depth to water measurements from site-wide monitoring wells (up to 48 monitoring wells); abandon IW0014I and IW0015I due to obstructions at 17.2 and 6ft btoc and to generate Mann-Kendall statistics for all applicable wells (that meet the criteria for using Mann-Kendall) **(2404-D03).**

The Team reached consensus to sample 10 wells for PFAS (IW0001S, IW0002S, IW0004I, IW0009S, IW0013S, IW0017I, IW0019I, MW0024, MW0025, and MW0030 **(2404-D04).**

The Team reached consensus to prepare and present site characterization ADP in 2024 to address the remaining dissolved phased CVOC HCP and/or 10XNADC plume**(2404-D05).**

FDEP noted there is heavy vegetation on the west side of the site and inquired if there was a well on the west side of MW0042? Do we know if the plume is migrating westward? HGL responded that the plume does appear to be migrating westward. The Team has conducted DPT in the western area and have some clean points. However, the 2020-2022 data shows migration. The 2017 data was also shown. The Team is in the process of preparing the site characterization ADP.

FDEP noted that MNA was mentioned here and asked if this has been calculated for the site? HGL responded it has not been calculated yet. NASA anticipates another IM to help knock down some of the hot spot and high concentration plums and the Team are preparing to present site characterization in June and RAE on the heels of that.

Vapor Intrusion

Vapor intrusion SSSG sampling was conducted during the dry season of 2023 (December). The results and background are included in the presentation. Sampling consisted of collecting SSSG samples from 4 monitoring points. All SSSG results were below the residential vapor intrusion screening level (VISL) and tetrachloroethene (PCE) detections were lower than the 2022 wet/dry season sampling.

Test consensus to continue SSSG sampling for chlorinated VOCs in June and December 2024, to evaluate if there are changes in SSSG at the four sampling points due to previous interim measure activities or plume movement **(2404-D06).**

Results: Decision Item 2404-D02 through D06

2404-M08 KSCRT

Miscellaneous Discussion

2024 Meeting Dates (will continue the hybrid option in 2024)

- June 12th and 13th (hybrid meeting)
- August 6th and 7th
- October 1st and 2nd
- December 3rd and 4th

FDEP

15-20-minute FDEP update by Program Manager
Anne Chrest is the team leader next meeting so email topics to this individual after the meeting is over.

APPENDIX B

FIELD FORMS
(ELECTRONIC ONLY)

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SAFETY MEETING/TRAINING LOG

- [x] Tailgate (daily)
- [ ] Activity Hazard Analysis
- [ ] Pre-Task Hazard Analysis (prior to new task or operation)
- [ ] Site Safety Orientation (new personnel)
- [ ] Supervisor's (monthly)
- [ ] Supervisor's (weekly)
- [ ] UXO Awareness
- [ ] Asbestos Awareness
- [ ] Health and Safety Plan Addendum: _____
- [ ] Other: ___

Date/Time: 12/12/2023

Client: NASA/KSC

Location: CRHEA - Heavy Equipment Office Building (K6-1996H)

Job No.: NS1004.05.15

Meeting/training conducted by: _____

Work Activities: Sub-Slab Soil Gas Sampling (Vapor Intrusion Sampling)

Safety / Training Topics Presented

Chemical Hazards: CVOCs

Physical Hazards: Proper Lifting, Slips, Trips, and Falls, Hand Tools, Pinch Points

Specific Safety Topic(s): Pinch Points

Specific Training Covered: _____

Attendees

Name Printed and Employee Number:	Signature:
Robert Lynch	
Brandon Schneider	

HYDROGEOLOGIC, INC.
VAPOR INTRUSION SAMPLING - FIELD DATA FORM

SUMMA CANISTER LOG

Site Number/Name: CRHE Building Number: K6-1996H

Summa Canister Serial No.	Flow Controller Serial No.	Start Vacuum (in-Hg) Date: 12-12-23 Time:	End Vacuum (in-Hg) Date: 12-12-23 Time:	Sample Station	Sample Number
IL2958	23992	0948 (-30)	0953 (-5)	VMP0001	1
IL1774	25272	1019 (-30)	1024 (-5)	VMP0002	1
IL3787	23786	1106 (-30)	1111 (-5)	VMP0003	1
IL2874	26663	1138 (-30)	1143 (-5)	VMP0004	1
IL4560	25194	1146 (-30)	1151 (-5)	FIELD BLANK	1

Recorded By (Sign/Date): Robert Lynch 12-12-2023

Page 1 of 1

Location CRREL - BLDG KE-1996H Date 12-12-2023

Project / Client NASA / KSC

PURPOSE: Conduct vapor intrusion monitoring

EQUIPMENT: miniRAE 3000, GEM 5000 Ingsbox, helium shroud, helium (32L) MGD 2002, HDPE Tubing, Silicone tubing, 5 - 1L Summa canisters, flow controllers, nitrile gloves

PERSONNEL: Rob L., Brandon S. Heavy Equipment office personnel (approx. 5)

0800 - All personnel onsite. Checked in with Heavy Equipment Office manager

Began clearing equipment out of closet where VMP0001 is located

0825 - Calibrated PID
- Ambient - 0.0 ppm
- 100 STD - 99.7 ppm

0834 - Background concentrations on VMP0001

PID	CH_4	CO_2	O_2	CO
0.0 ppm	0%	0.1%	20.7	0%

0836 - Began set up on VMP0001

Rite in the Rain

Location CRHEA - KSC, FL Date 12-12-23

Project / Client NASA

0925 - Began filling He shroud

0928 - [He] in shroud : 11.5 %

START	END	cum vol	CH4	CO2	O2	He	VOCs
0929	0934	1 L	0.0	12.1	10.2	0 %	0.1 ppm
0935	0940	2 L	0.0	11.7	7.6	0 %	0.0 ppm
0941	0946	3 L	0.0	11.4	9.5	0 %	0.0 ppm

0947 - Shut-in leak test on Summa canister 1L2958 w/ Flow controller 23992 : -30 Hg

0948 - Began VMP0001 sample collection

0953 - Finished VMP0001 sample collection Final: 5 Hg

0958 - Began setup at VMP0002

Background concentrations

PID	CH4	CO2	O2	CO
0.0	0.0 %	0.1 %	20.8 %	0.0 %

1000 - Began filling helium shroud

1003 - [He] in shroud : 10.8 %

START	END	cum vol	CH4	CO2	O2	He	VOCs
1005	1010	1 L	0.0	0.4	19.1	0 %	0 ppm
1011	1016	2 L	0.0	5.5	16.3	0 %	0 ppm
1017	1022	3 L	0.0	8.9	9.9	0 %	0 ppm

Shut-in leak test on Summa canister 1L1774 w/ flow controller

Location CRHEA Date 12-12-23

Project / Client NASA

Flow controller 25272 : -30 Hg

1019 - Began sample collection at VMP0002

1024 - Finished VMP0002 sample collection Final: -5 Hg

1036 - Began setup at VMP0003

Background concentrations

PID	CH4	CO2	O2	CO
0 ppm	0 %	0.1 %	20.8 %	0 %

1045 - Began filling Helium shroud

1047 - [He] in shroud : 11.2

START	END	cum vol	CH4	CO2	O2	He	PID
1048	1053	1 L	0	12.9	3.6 %	0 %	0 ppm
1054	1059	2 L	0 %	7.0	3.2 %	0 %	0 ppm
1100	1105	3 L	0 %	13.0	2.4 %	0 %	0 ppm

@ 1048 CO_2 12.9 %; O_2 = 3.6 %

1106 - Began VMP0003 sample collection

Shut-in leak test on Summa canister 1L3787 w/ flow controller 23786 : -5 Hg

1111 - Finished VMP0003 sample collection. Final: -5 Hg

Rite in the Rain

Location CRHEA - KSC, FL Date 12.12.23

Project / Client NASA

1115 - Began setup at VMP0004

Background concentrations

PID	CH_4	CO_2	O_2	CO
0 ppm	0 %	0.1 %	20.9 %	0

1116 - Began filling He shroud

1118 - Final [He] in shroud : 12 %

START	END	Cum VOL	CH_4	CO_2	O_2	He	PID
1119	1124	1L	0	9.0	9.2	0 %	0
1125	1130	2L	0 %	9.1	8.2	0 %	0
1131	1136	3L	0 %	8.8	8.4	0 %	0

1137 - Shut-in leak test on Summa canister 1L2874 w/ flow controller 26665 : -30 Hg

1138 - Began VMP0004 sample collection

1143 - Finished VMP0004 sample collection. Final : -5 Hg

1145 - Background concentrations for Field blank

PID	CH_4	CO_2	O_2	CO
0 ppm	0.10	0.1	20.9	0

Shut-in leak test on Summa Canister 1L 4560 w/ flow controller 25199 : -30 Hg

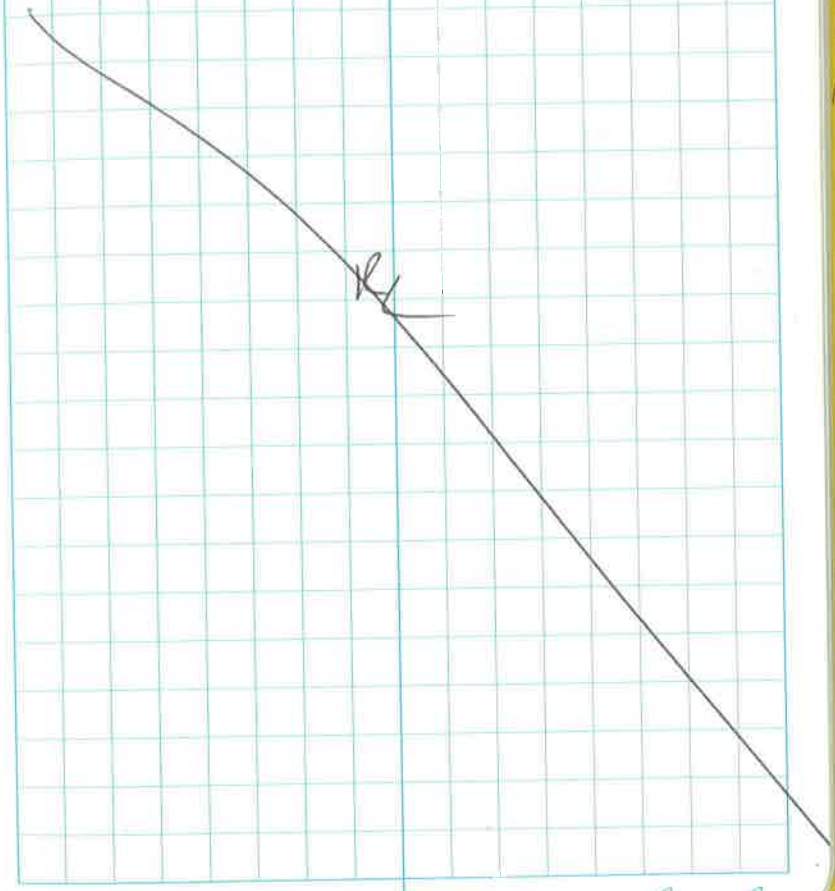
Location CRHEA - KSC, FL Date 12-12-23

Project / Client NASA

1146 - Began field blank sample collection

1151 - Finished ~~VMP0~~ Field blank sample collection : -5 Hg

1200 - Site secure, all personal offsite.



HGL

SAFETY MEETING/TRAINING LOG

- [x] Tailgate (daily)
- [ ] Activity Hazard Analysis
- [ ] Pre-Task Hazard Analysis (prior to new task or operation)
- [ ] Site Safety Orientation (new personnel)
- [ ] Supervisor's (monthly)
- [ ] Supervisor's (weekly)
- [ ] UXO Awareness
- [ ] Asbestos Awareness
- [ ] Health and Safety Plan Addendum: _____
- [ ] Other: ___

Date/Time: 12/14/2023 Client: NASA/KSC

Location: CRHEA Job No.: NS1004.05.07

Meeting/training conducted by: Meghan West

Work Activities: water level sampling

Safety / Training Topics Presented

Chemical Hazards: VOCs, 1,4-dioxane, TRPH, Na, PFAS, TDS

Physical Hazards: slips, trips, falls, pinch points, biologicals, struck by

Specific Safety Topic(s): biologicals

Specific Training Covered: Be aware of your surroundings, & wear bug spray as needed.

Attendees

Name Printed and Employee Number:	Signature:
Meghan West	Meghan West
William Duttenhaver	
Brandon Schmidt	

HGL **STATIC WATER LEVEL FORM**

PROJECT NAME: CRHEA GW Sampling **DATE:** 12/14/2023

WATER LEVEL INDICATOR ID#: 361494

LOCATION: CRHEA - NASA/KSC

(CRHE-) Well ID	Time Gauged	DTW (ft BTOC)	Total Well Depth* (ft BTOC)	Notes
MW0033	1042	4.33	51.95	
MW0042	1048	4.22	48.73	
MW0021I	1057	0.56	49.31	
MW0034	1108	3.39	42.90	
MW0041	1121	1.18	40.01	
MW0039	1126	1.45	35.07	
MW0038	1129	1.47	14.98	
MW0035	1142	3.44	50.02	
MW0036	1156	3.06	15.05	
MW0037	1158	3.22	35.12	
MW0015I	1204	2.86	— fish tape could not break through hard bottom	obstruction at 12.25
MW0031	1210	3.03	50.09	
MW0030	1215	3.15	14.99	
MW0023	1217	3.30	69.68	
MW0032	1223	3.59	50.03	
IW0016I	1205	—	— never found, destroyed when culvert was installed	used topcon GPS & Schmidt
IW0020I	1237	—	— found broken beyond repair	
IW0001S	1242	1.96	13.28	
MW0028	1248	3.26	45.21	
IW0019I	1254	2.94	44.62	
IW0013S	1300	2.75	13.00	
IW0004I	1305	3.17	40.01	

*Note: Total well depth to be measured at time of gauging

Sampler Brandon Schmidt & Meghan West **Observer** Brandon Schmidt & Meghan West

HGL **STATIC WATER LEVEL FORM**

PROJECT NAME: CRHEA GW sampling DATE: 12/14/2023

WATER LEVEL INDICATOR ID#: 361494

LOCATION: CRHEA-NASA|KSC

(CRHE)-Well ID	Time Gauged	DTW (ft BTOC)	Total Well Depth* (ft BTOC)	Notes
IW0004S	1311	2.38	12.32	
IW0002S	1315	3.46	12.91	needs new well cap 2"
~~IW0001I~~ IW0017I	1322	2.85	34.57	
IW0018I	1325	2.15	44.63	
IW0014I	1332	2.71	17.24 (obstruction)	fish tape could not break through hard bottom
IW0014D	1336	2.85	70.64	
MW0045	1345	2.30	30.09	
MW0040	1348	2.08	70.97	4' short of installed depth
MW0026	1358	2.11	39.36	
MW0044	1402	2.08	44.96	
MW0047	1409	1.85	24.93	
MW0046	1413	1.85	20.90	
MW0025	1420	1.91	34.93	
MW0024	1423	1.74	15.00	
MW0048	1426	1.61	33.02	
MW0049	1430	1.59	37.99	
MW0050	1434	2.00	39.93	
MW0051	1438	1.80	39.91	
~~MW0025~~ MW0052	1442	———	———	well not accessible due to trailer - low boy
MW0056	1450	2.61	40.10	
MW0055	1454	2.45	44.97	
MW0043	1459	2.32	44.84	

*Note: Total well depth to be measured at time of gauging

Sampler Brandon Schmidt & Meghan West Observer Brandon Schmidt & Meghan West

HGL STATIC WATER LEVEL FORM

PROJECT NAME: CRHEA GW Sampling DATE: 12/14/2023

WATER LEVEL INDICATOR ID#: 361494

LOCATION: CRHEA - NASA / MSC

(CRHE-) Well ID	Time Gauged	DTW (ft BTOC)	Total Well Depth* (ft BTOC)	Notes
MW0053	1503	2.37	33.69	
MW0054	1506	2.28	52.10	
MW0022	1510	2.31	69.69	
MW0027	1516	2.28	50.12	
MW0057	1524	3.10	40.07	
MW0058	1528	2.97	50.23	
MW0029	1533	2.32	50.29	
IW0009S	1544	1.95	12.33	

*Note: Total well depth to be measured at time of gauging

Sampler Meghan West & Brandon Schmidt Observer Brandon Schmidt & Meghan West

Location CRHEA Date 12/13/2023

Project / Client NASA NS10041.05.07

Purpose - collect monitoring well static water levels

Crew - Brandon Schmidt (HGL), William Duttenhaver (HGL), & Meghan West (HGL)

Equipment - work trucks, hand tools, water level meter #3614494, Schonstedt, Topcon, fish tape, decon supplies (potable water, DI water, Luminox), nitrile gloves

Weather - Hi - 73°, Low - 65°, overcast, wind - 19mph ENE

0600 - all personnel met at CCSFS field office to load trucks & prepare paper work.

0650 - perform TGSM

0657 - mob to site.

0715 - all personnel arrived on site & began uncapping monitoring wells in preparation for static water level sampling.

1012 - completed un-capping wells.

1017 - inspected well ~~MW-IW0004S~~ IW001HI for obstructions. It is ~~still~~ obstructed at 17.24ft. Fish tape could not break through hard bottom.

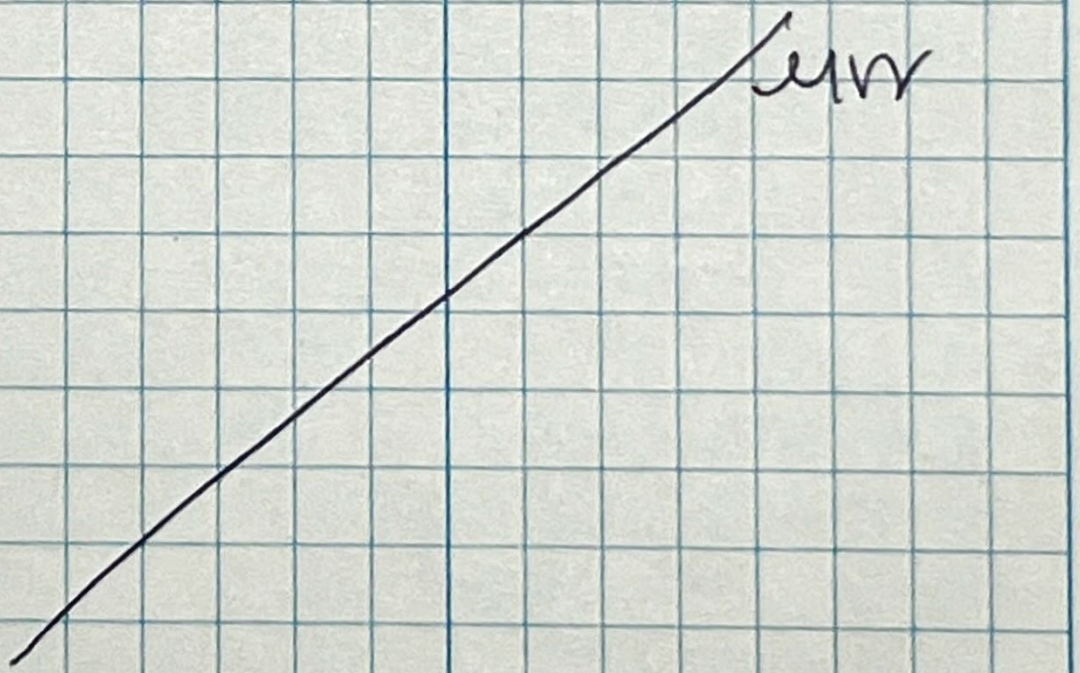
1022 - inspected well IW0004S for obstructions. There were no obstructions.

1029 - inspected well IW0015I for obstructions. It ~~was~~ is obstructed at 12.25 ft. Fish tape could not

Location CRHEA Date 12/13/2023

Project / Client NASA NS1004.05.07

break through hard bottom.
1042 - Began water level sampling.
1137 - well IW0020I was found broken beyond repair, used TopCon GPS and Schonstedt to attempt to locate.
1205 - well IW0016I was never found. - Destroyed when culvert was installed.
1544 - completed water level sampling. See static water level forms for details.
1600 - MOB to CCSFS field office. All personnel off site.
1620 - arrived at CCSFS field office. Unload trucks. End of day.



Rite in the Rain

HGL

SAFETY MEETING/TRAINING LOG

- [x] Tailgate (daily)
- [ ] Activity Hazard Analysis
- [ ] Pre-Task Hazard Analysis (prior to new task or operation)
- [ ] Site Safety Orientation (new personnel)
- [ ] Supervisor's (monthly)
- [ ] Supervisor's (weekly)
- [ ] UXO Awareness
- [ ] Asbestos Awareness
- [ ] Health and Safety Plan Addendum: ____
- [ ] Other: ___

Date/Time: 12/15/2023 Client: NASA

Location: CRHEA Job No.: NS1004.05.06

Meeting/training conducted by: _____

Work Activities: MW groundwater sampling

Safety / Training Topics Presented

Chemical Hazards: VOCs, 1,4-dioxane, TRPH, Na, PFAS, TDS

Physical Hazards: slips, trips, falls, pinch points, biologicals, struck by

Specific Safety Topic(s): Struck by

Specific Training Covered: Be aware of your surroundings, wear bright colors, pay attention to local traffic, both on road & in parking lots.

Attendees

Name Printed and Employee Number:	Signature:
Meghan West	Meghan West
Brandon Schmidt	Brandon Schmidt

DEP Form FD 9000-24: GROUNDWATER SAMPLING LOG

SITE NAME	SITE LOCATION	
CRHE Area	KSC Florida	
WELL NO: CRHE-MW0057	SAMPLE ID: CRHE-MW0057-035.0-20231215	DATE: 12/15/2023

PURGING DATA

WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): 1/4 3/16 mw	WELL SCREEN INTERVAL DEPTH: 30 feet to 40 feet	STATIC DEPTH TO WATER (feet): 3.16	PURGE PUMP TYPE OR BAILER: PP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (feet – feet) X liters/foot = liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= ml + (5.3 ml/foot X 36 feet) + 200 mL/~~liters~~ = 390.8 mL/~~liters~~ x 3 = 1172.4 mL

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 35	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 35	PURGING INITIATED AT: 0904	PURGING ENDED AT: 0932	TOTAL VOLUME PURGED (~~gallons~~ liters): 5.6

TIME	VOLUME PURGED (liters)	CUMUL. VOLUME PURGED (liters)	PURGE RATE (ml/min)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	Notes
0914	2.0	2.0	200	3.21	7.48	24.7	351.2	0.26	41.4	-57.9	Clear/no odor
0917	0.6	2.6	200	3.21	7.47	24.7	353.2	0.33	28.4	-57.2	"
0920	0.6	3.2	200	3.21	7.47	24.7	355.0	0.33	20.3	-54.9	"
0923	0.6	3.8	200	3.21	7.47	24.8	355.4	0.27	20.3	-55.3	"
0926	0.6	4.4	200	3.21	7.46	24.8	363.0	0.29	11.9	-55.3	"
0929	0.6	5.0	200	3.21	7.46	24.8	365.4	0.23	10.5	-55.8	"
0932	0.6	5.6	200	3.21	7.44	24.7	371.4	0.24	9.32	-55.7	"

WELL CAPACITY (Liters Per Foot): 0.75" = 0.076; 1" = 0.151; 1.25" = 0.227; 2" = 0.606; 3" = 1.401; 4" = 2.461; 5" = 3.861; 6" = 5.565; 12" = 22.258
TUBING INSIDE DIA. CAPACITY (ml./Ft.): 1/8" = 2.271; 3/16" = 5.300; 1/4" = 9.842; 5/16" = 15.142; 3/8" = 22.712; 1/2" = 37.854; 5/8" = 60.567

PURGING EQUIPMENT CODES: B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; O = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION	SAMPLER(S) SIGNATURE(S)	SAMPLING INITIATED AT: 0934	SAMPLING ENDED AT: 0937
Meghan West	Meghan West		

PUMP OR TUBING DEPTH IN WELL (feet): 35	TUBING MATERIAL CODE: HDPE	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm

FIELD DECONTAMINATION: PUMP Y (N) TUBING Y (N (replaced)) DUPLICATE: Y (N)

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
	1	HDPE	250 mL	none	N/A	N/A	TDS USING SM19 2540 C	APP	200

REMARKS:

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; HDPE = High Density Polyethylene; LDPE = Low Density Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

SAMPLING EQUIPMENT CODES: APP = After (Through) Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); O = Other (Specify)

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.
2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units Temperature: ± 0.2 °C Specific Conductance: ± 5% Dissolved Oxygen: all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) Turbidity: all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

DEP Form FD 9000-24: GROUNDWATER SAMPLING LOG

SITE NAME: CRHE Area	SITE LOCATION: KSC Florida	
WELL NO: CRHE-MW0058	SAMPLE ID: CRHE-MW0058-045.0-20231215	DATE: 12/15/2023

PURGING DATA

WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): 1/4 ~~3/16~~ mm	WELL SCREEN INTERVAL DEPTH: 40 feet to 50 feet	STATIC DEPTH TO WATER (feet): 3.02	PURGE PUMP TYPE OR BAILER: PP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (feet – feet) X liters/foot = liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= ml + (5.3 ml/foot X 46 feet) + 200 ~~liters~~ mL = 443.8 ~~liters~~ mL x3 = 1331.4

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 45	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 45	PURGING INITIATED AT: 0953	PURGING ENDED AT: 1015	TOTAL VOLUME PURGED (~~gallons~~ liters): 4.4

TIME	VOLUME PURGED (liters)	CUMUL. VOLUME PURGED (liters)	PURGE RATE (ml/min)	DEPTH TO WATER (feet)	pH (standard units)	TEMP (°C)	COND (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	Notes
1003	2.0	2.0	200	3.02	6.95	24.6	1064	0.23	6.82	-75.7	clear, no odor
1006	0.6	2.6	200	3.02	6.97	24.6	1065	0.20	5.87	-79.6	"
1009	0.6	3.2	200	3.02	6.93	24.7	1063	0.19	5.88	-80.6	"
1012	0.6	3.8	200	3.02	6.94	24.7	1062	0.19	5.06	-81.8	"
1015	0.6	4.4	200	3.02	6.95	24.7	1061	0.18	4.98	-83.7	"

WELL CAPACITY (Liters Per Foot): 0.75" = 0.076; 1" = 0.151; 1.25" = 0.227; 2" = 0.606; 3" = 1.401; 4" = 2.461; 5" = 3.861; 6" = 5.565; 12" = 22.258
TUBING INSIDE DIA. CAPACITY (ml./Ft.): 1/8" = 2.271; 3/16" = 5.300; 1/4" = 9.842; 5/16" = 15.142; 3/8" = 22.712; 1/2" = 37.854; 5/8" = 60.567

PURGING EQUIPMENT CODES: B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; O = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Meghan West	SAMPLER(S) SIGNATURE(S): Meghan West	SAMPLING INITIATED AT: 1017	SAMPLING ENDED AT: 1028
PUMP OR TUBING DEPTH IN WELL (feet): 45	TUBING MATERIAL CODE: HDPE	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y N (replaced)	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
	3	CG	40 mL	HCL	N/A	N/A	CVOC's by 8260B	APP	200
	1	HDPE	250 mL	none	N/A	N/A	TDS ~~SM 2540C~~ MW 2540C	APP	200

REMARKS:

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; HDPE = High Density Polyethylene; LDPE = Low Density Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

SAMPLING EQUIPMENT CODES: APP = After (Through) Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); O = Other (Specify)

NOTES: 1. **The above do not constitute all of the information required by Chapter 62-160, F.A.C.**
2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2), optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

DEP Form FD 9000-24: GROUNDWATER SAMPLING LOG

SITE NAME	SITE LOCATION	
CRHE Area	KSC Florida	
WELL NO: CRHE-MW00417	SAMPLE ID: CRHE-MW00417-023.0-20231215	DATE: 12-15-23

PURGING DATA

WELL DIAMETER (inches):	TUBING DIAMETER (inches): 1/4	WELL SCREEN INTERVAL DEPTH: 21 feet to 25 feet	STATIC DEPTH TO WATER (feet): 1.85	PURGE PUMP TYPE OR BAILER: PP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (feet – feet) X liters/foot = liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= ml + (5.3 ml/foot X 26 feet) + 200 ml = 337.8 ml

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 23	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 23	PURGING INITIATED AT: 9:09	PURGING ENDED AT: 10:45	TOTAL VOLUME PURGED (gallons): 2.5

TIME	VOLUME PURGED (liters)	CUMUL VOLUME PURGED (liters)	PURGE RATE (ml/min)	DEPTH TO WATER (feet)	pH (standard units)	TEMP (°C)	COND (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	Notes
9:09	0	0	200	1.85							
9:19	2.0	2.0	↓	8.62	6.33	24.1	2636	1.62	45.6	-129.7	clear/silt/odor
9:22	0.6	2.6		8.63	6.33	24.3	2641	1.69	47.2	-135.6	↓
9:25	0.6	3.2		8.63	6.33	24.4	2634	2.48	50.0	-141.8	
9:28	0.6	3.8		8.63	6.33	24.4	2586	2.58	54.0	-149.9	stopped purging
10:00											resumed purging
10:10	2.0	5.8		8.67	6.20	24.1	2439	1.40	34.2	-159.2	
10:20	2.0	7.8		8.67	6.24	24.3	2452	2.64	19.8	-157.0	
10:23	0.6	8.4		8.67	6.26	24.3	2459	3.61	18.6	-153.8	
10:26	0.6	9.0			6.27	24.4	2461	3.65	16.2	-153.5	↓
10:29	0.6	9.6	↓		6.28	24.5	2471	3.69	14.3	-153.9	

WELL CAPACITY (Liters Per Foot) 0.75" = 0.076; 1" = 0.151; 1.25" = 0.227; 2" = 0.606; 3" = 1.401; 4" = 2.461; 5" = 3.861; 6" = 5.565; 12" = 22.258
TUBING INSIDE DIA. CAPACITY (ml./Ft.) 1/8" = 2.271; 3/16" = 5.300; 1/4" = 9.842; 5/16" = 15.142; 3/8" = 22.712; 1/2" = 37.854; 5/8" = 60.567

PURGING EQUIPMENT CODES: B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; O = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Brandon Schmidt	SAMPLER(S) SIGNATURE(S): Brandon Schmidt	SAMPLING INITIATED AT: 10:32	SAMPLING ENDED AT: 10:45
PUMP OR TUBING DEPTH IN WELL (feet): ~~26~~ 23	TUBING MATERIAL CODE: HDPE	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y N (replaced)	DUPLICATE: Y N	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
	3	CG	40	HCL	NA	NA	VOC 8260		200
	2	AG	250	H2SO4	NA	NA	TRH		↓
	1	HDPE	250	HNO3	NA	NA	NA-Sodium		

REMARKS: water level drew down 7+ ft and stabalized around 6.3 ft, turned pump off and let recharge and same result

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; HDPE = High Density Polyethylene; LDPE = Low Density Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

SAMPLING EQUIPMENT CODES: APP = After (Through) Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); O = Other (Specify)

NOTES: 1. **The above do not constitute all of the information required by Chapter 62-160, F.A.C.**
2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

DEP Form FD 9000-24: GROUNDWATER SAMPLING LOG

SITE NAME: CRHE Area	SITE LOCATION: KSC Florida	
WELL NO: CRHE-MW0029	SAMPLE ID: CRHE-MW0029-045.0-20231215	DATE: 12/15/2023

PURGING DATA

WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): 1/4	WELL SCREEN INTERVAL DEPTH: 40 feet to 50 feet	STATIC DEPTH TO WATER (feet): 2.35	PURGE PUMP TYPE OR BAILER: PP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (feet – feet) X liters/foot = liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= ml + (5.3 ml/foot X 46 feet) + 200 mL = 443.8 mL
+3 = 1331.4 mL

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 45	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 45	PURGING INITIATED AT: 1049	PURGING ENDED AT: 1111	TOTAL VOLUME PURGED ~~(gallons)~~ (liters): 4.4

TIME	VOLUME PURGED (liters)	CUMUL. VOLUME PURGED (liters)	PURGE RATE (ml/min)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	Notes
1059	2.0	2.0	200	2.4	6.98	25.0	1002	0.13	5.84	-102.6	clear, no odor
1102	0.6	2.6	200	2.4	6.98	25.0	1022	0.15	5.69	-102.7	"
1105	0.6	3.2	200	2.4	6.97	25.1	1061	0.28	5.15	-102.1	"
1108	0.6	3.8	200	2.4	6.94	25.1	1056	0.23	5.04	-102.4	"
1111	0.6	4.4	200	2.4	6.97	25.0	1075	0.21	4.95	-102.2	"

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.151; **1.25"** = 0.227; **2"** = 0.606; **3"** = 1.401; **4"** = 2.461; **5"** = 3.861; **6"** = 5.565; **12"** = 22.258
TUBING INSIDE DIA. CAPACITY (ml./Ft.): **1/8"** = 2.271; **3/16"** = 5.300; **1/4"** = 9.842; **5/16"** = 15.142; **3/8"** = 22.712; **1/2"** = 37.854; **5/8"** = 60.567

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Meghan West	SAMPLER(S) SIGNATURE(S): Meghan West	SAMPLING INITIATED AT: 1113	SAMPLING ENDED AT: 1120
PUMP OR TUBING DEPTH IN WELL (feet): 45	TUBING MATERIAL CODE: HDPE	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N (replaced))	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH			
	3	CG	40 mL	HCL	N/A	N/A	cVOCs 8260B	APP	200

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After (Through) Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. **The above do not constitute all of the information required by Chapter 62-160, F.A.C.**
2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

DEP Form FD 9000-24: GROUNDWATER SAMPLING LOG

SITE NAME	SITE LOCATION	
CRHE Area	KSC Florida	
WELL NO: CRHE-MW0048	SAMPLE ID: CRHE-MW0048-030.5-20231215	DATE: 12/15/23

PURGING DATA

WELL DIAMETER (inches):	TUBING DIAMETER (inches): 1/4	WELL SCREEN INTERVAL DEPTH: 28 feet to 33 feet	STATIC DEPTH TO WATER (feet): 1.64	PURGE PUMP TYPE OR BAILER: PP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (33 feet – feet) X liters/foot = liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= ml + (5.3 ml/foot X 33.5 feet) + 200 ml = 377.5 ml liters = 377.5 liters

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 30.5	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 30.5	PURGING INITIATED AT: 11:39	PURGING ENDED AT: 12:15	TOTAL VOLUME PURGED (gallons): 1.5

TIME	VOLUME PURGED (liters)	CUMUL. VOLUME PURGED (liters)	PURGE RATE (ml/min)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	Notes
11:39	0	0	200	1.64							
11:49	2.0	2.0	↓	1.76	6.41	24.2	258.5	0.29	4.84	-121.8	clear/mild odor
11:52	0.6	2.6		1.77	6.02	24.2	1000	0.30	4.21	-97.8	↓
11:55	0.6	3.2		1.77	6.05	24.2	1181	0.50	3.26	-97.1	
11:58	0.6	3.8			6.05	24.2	1272	0.53	3.35	-98.4	
12:01	0.6	4.4			6.05	24.2	1328	0.52	3.67	-99.9	
12:03	0.6	5.0			6.05	24.2	1352	0.49	3.33	-102.4	
12:06	0.6	5.6	↓		6.05	24.2	1363	0.45	3.28	-104.5	↓

WELL CAPACITY (Liters Per Foot): 0.75" = 0.076; 1" = 0.151; 1.25" = 0.227; 2" = 0.606; 3" = 1.401; 4" = 2.461; 5" = 3.861; 6" = 5.565; 12" = 22.258
TUBING INSIDE DIA. CAPACITY (ml./Ft.): 1/8" = 2.271; 3/16" = 5.300; 1/4" = 9.842; 5/16" = 15.142; 3/8" = 22.712; 1/2" = 37.854; 5/8" = 60.567

PURGING EQUIPMENT CODES: B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; O = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION	SAMPLER(S) SIGNATURE(S)	SAMPLING INITIATED AT: 12:09	SAMPLING ENDED AT: 12:15
Brandan Schmidt (HGL)	Brandan Schmidt		

PUMP OR TUBING DEPTH IN WELL (feet): 30.5	TUBING MATERIAL CODE: HDPE	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm

FIELD DECONTAMINATION: PUMP Y (N) TUBING Y (N (replaced)) DUPLICATE: Y (N)

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH			
	3	CG	40	HCL	NA	NA	VOC		200

REMARKS:

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; HDPE = High Density Polyethylene; LDPE = Low Density Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

SAMPLING EQUIPMENT CODES: APP = After (Through) Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); O = Other (Specify)

NOTES: 1. **The above do not constitute all of the information required by Chapter 62-160, F.A.C.**
2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)
pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

DEP Form FD 9000-24: GROUNDWATER SAMPLING LOG

SITE NAME: CRHE Area	SITE LOCATION: KSC Florida	
WELL NO: CRHE-MW0056	SAMPLE ID: CRHE-MW0056-037.5-20231215	DATE: 12/15/2023

PURGING DATA

WELL DIAMETER (inches):	TUBING DIAMETER (inches): 1/4	WELL SCREEN INTERVAL DEPTH: 35 feet to 40 feet	STATIC DEPTH TO WATER (feet): 2.61	PURGE PUMP TYPE OR BAILER: PP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (feet – feet) X liters/foot = liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= ml + (5.3 ml/foot X 44 feet) + 200 mL = 433.2 mL x 3 = 1299.6 mL

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 37.5	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 37.5	PURGING INITIATED AT: 1154	PURGING ENDED AT: 1216	TOTAL VOLUME PURGED (liters): 4.4

TIME	VOLUME PURGED (liters)	CUMUL. VOLUME PURGED (liters)	PURGE RATE (ml/min)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	Notes
1204	2.0	2.0	200	2.74	6.50	26.1	1578	0.31	14.6	-72.9	Clear no odor
1207	0.6	2.6	200	2.74	6.48	26.1	1580	0.20	12.9	-77.3	"
1210	0.6	3.2	200	2.74	6.49	26.0	1579	0.15	11.0	-80.1	"
1213	0.6	3.8	200	2.74	6.49	26.1	1576	0.12	9.19	-82.4	"
1216	0.6	4.4	200	2.74	6.47	26.1	1578	0.12	8.39	-84.3	"

WELL CAPACITY (Liters Per Foot): 0.75" = 0.076; 1" = 0.151; 1.25" = 0.227; 2" = 0.606; 3" = 1.401; 4" = 2.461; 5" = 3.861; 6" = 5.565; 12" = 22.258
TUBING INSIDE DIA. CAPACITY (ml./Ft.): 1/8" = 2.271; 3/16" = 5.300; 1/4" = 9.842; 5/16" = 15.142; 3/8" = 22.712; 1/2" = 37.854; 5/8" = 60.567

PURGING EQUIPMENT CODES: B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; O = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Meghan West	SAMPLER(S) SIGNATURE(S): Meghan West	SAMPLING INITIATED AT: 1218	SAMPLING ENDED AT: 1225
PUMP OR TUBING DEPTH IN WELL (feet): 37.5	TUBING MATERIAL CODE: HDPE	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N (replaced))	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH			
	2	AG	250mL	H_2SO_4	N/A	N/A	total Recoverable hydrocarbons by FLPro	APP	200
	1	HDPE	250mL	None	N/A	N/A	TDS using SM19 2540C	APP	200

REMARKS:

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; HDPE = High Density Polyethylene; LDPE = Low Density Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

SAMPLING EQUIPMENT CODES: APP = After (Through) Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); O = Other (Specify)

NOTES: 1. **The above do not constitute all of the information required by Chapter 62-160, F.A.C.**
2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

DEP Form FD 9000-24: GROUNDWATER SAMPLING LOG

SITE NAME: CRHE Area	SITE LOCATION: KSC Florida	
WELL NO: CRHE-MW0044	SAMPLE ID: CRHE-MW0044-042.5-20231215	DATE: 12-15-23

PURGING DATA

WELL DIAMETER (inches)	TUBING DIAMETER (inches): 1/4	WELL SCREEN INTERVAL DEPTH: 40 feet to 45 feet	STATIC DEPTH TO WATER (feet): 2.07	PURGE PUMP TYPE OR BAILER: PP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY (only fill out if applicable)

= (feet – feet) X liters/foot = liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME (only fill out if applicable)

= ml + (5.3 ml/foot X 45.5 feet) + 200 liters = 441.1 liters

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 42.5	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 42.5	PURGING INITIATED AT: 1301	PURGING ENDED AT: 1330	TOTAL VOLUME PURGED (gallons): 1

TIME	VOLUME PURGED (liters)	CUMUL. VOLUME PURGED (liters)	PURGE RATE (ml/min)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	Notes
1301	0	0	200	2.07							
1311	2.0	2.0	↓	2.10	6.04	24.6	1727	0.51	8.74	-138.6	clear/mild odor
1314	0.6	2.6	↓	2.11	6.05	24.5	1725	0.43	8.85	-141.0	↓
1317	0.6	3.2	↓	2.11	6.05	24.5	1719	0.38	10.2	-147.5	↓
1320	0.6	3.8	↓	2.11	6.04	24.5	1712	0.32	15.1	-152.0	↓
1323	0.6	4.4	↓	2.11	6.05	24.5	1700	0.26	19.2	-154.4	↓

WELL CAPACITY (Liters Per Foot): 0.75" = 0.076; 1" = 0.151; 1.25" = 0.227; 2" = 0.606; 3" = 1.401; 4" = 2.461; 5" = 3.861; 6" = 5.565; 12" = 22.258
TUBING INSIDE DIA. CAPACITY (ml./Ft.): 1/8" = 2.271; 3/16" = 5.300; 1/4" = 9.842; 5/16" = 15.142; 3/8" = 22.712; 1/2" = 37.854; 5/8" = 60.567

PURGING EQUIPMENT CODES: B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; O = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Brandon Schmidt	SAMPLER(S) SIGNATURE(S): Brandon Schmidt	SAMPLING INITIATED AT: 1325	SAMPLING ENDED AT: 1330
PUMP OR TUBING DEPTH IN WELL (feet): 42.5	TUBING MATERIAL CODE: HDPE	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N replaced)	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
	2	AG	40 250	~~HCL~~ H2SO4	NA	NA	TRH		200
	1	HDPE	250	NP	NA	NA	TDS		200

REMARKS:

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; HDPE = High Density Polyethylene; LDPE = Low Density Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

SAMPLING EQUIPMENT CODES: APP = After (Through) Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); O = Other (Specify)

NOTES: 1. **The above do not constitute all of the information required by Chapter 62-160, F.A.C.**
2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

DEP Form FD 9000-24: GROUNDWATER SAMPLING LOG

SITE NAME: CRHE Area	SITE LOCATION: KSC Florida	
WELL NO: CRHE-MW0031	SAMPLE ID: CRHE-MW0031-045.0-20231215	DATE: 12/15/2023

PURGING DATA

WELL DIAMETER (inches):	TUBING DIAMETER (inches): 1/4	WELL SCREEN INTERVAL DEPTH 40 feet to 50 feet	STATIC DEPTH TO WATER (feet): 3.06	PURGE PUMP TYPE OR BAILER:

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (feet – feet) X liters/foot = liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= ml + (565.3 ml/foot X 50 feet) + 200 mL = 465 mL × 3 = 1395.0 mL

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): ~~50~~ 45	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 45	PURGING INITIATED AT: 1305	PURGING ENDED AT: 1327	TOTAL VOLUME (liters) PURGED ~~(gallons)~~: 4.4

TIME	VOLUME PURGED (liters)	CUMUL VOLUME PURGED (liters)	PURGE RATE (ml/min)	DEPTH TO WATER (feet)	pH (standard units)	TEMP (°C)	COND (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	Notes
1315	2.0	2.0	200	3.07	6.90	24.4	1437	0.17	11.1	-78.9	clear no odor
1318	0.6	2.6	200	3.07	6.91	~~24~~ 24.4	1433	0.22	4.86	-80.2	"
1321	0.6	3.2	200	3.07	6.91	24.4	1434	0.20	3.97	-81.0	"
1324	0.6	3.8	200	3.07	6.92	24.3	1431	0.27	2.97	-81.2	"
1327	0.6	4.4	200	3.07	6.92	24.3	1428	0.25	2.60	-81.3	"

WELL CAPACITY (Liters Per Foot): 0.75" = 0.076; 1" = 0.151; 1.25" = 0.227; 2" = 0.606; 3" = 1.401; 4" = 2.461; 5" = 3.861; 6" = 5.565; 12" = 22.258
TUBING INSIDE DIA. CAPACITY (mL/Ft.): 1/8" = 2.271; 3/16" = 5.300; 1/4" = 9.842; 5/16" = 15.142; 3/8" = 22.712; 1/2" = 37.854; 5/8" = 60.567

PURGING EQUIPMENT CODES: B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; O = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Meghan West	SAMPLER(S) SIGNATURE(S): Meghan West	SAMPLING INITIATED AT: 1330	SAMPLING ENDED AT: 1336
PUMP OR TUBING DEPTH IN WELL (feet): 45	TUBING MATERIAL CODE: HDPE	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y N (replaced)	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH			
	3	CG	40 mL	HCL	N/A	N/A	CVOCs by 8260B	APP	200

REMARKS:

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; HDPE = High Density Polyethylene; LDPE = Low Density Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

SAMPLING EQUIPMENT CODES: APP = After (Through) Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); O = Other (Specify)

NOTES: 1. **The above do not constitute all of the information required by Chapter 62-160, F.A.C.**
2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

HGL

CALIBRATION LOG

Project Name: CRHEA

By: Meghan West

Project No.: NS1004.05.06

Page 1 of 2

Date/Time	Instrument	STD	STD CONC ppm	Meter Reading	Comments
12/15/2023 0600	YSI Pro Quarto 23H101235	conductivity	1.413 ms/cm	1.414	pass
"	"	DO%	saturated air	8.85	pass
"	"	pH	7	7.03	pass
"	"	pH	4	3.98	pass
"	"	pH	10	10.0	pass
"	"	ORP	240.0 mV	240.0	pass
12/15/2023 0625	Turbidity meter 23641773	NTU	0.02	0.02	pass
"	"	"	20	20.3	pass
"	"	"	100	100	pass
"	"	"	800	804	pass
				~~0~~ mv	

HGL

CALIBRATION LOG

Project Name: CRHEA

By: Brandon Schmidt

Project No.: NS1004.05.06

Page 2 of 2

Date/Time	Instrument	STD	STD CONC ppm	Meter Reading	Comments
12/15/23 6:30	Turbidity Meter 23074846	NTV	0.02	0.02	PASS
	↓	↓	20	20.4	PASS
			100	99.9	PASS
			800	797	PASS
12/15/23 6:45	YSI 0013548	DO	Sat Air	100.9	PASS
		Cond.	1.413 ms/cm	1.411	PASS
		pH	7	7.00	PASS
		pH	10	10.06	PASS
		pH	4	3.98	PASS
		ORP	240.0 mV	240.1	

Location CRHEA Date 12/15/2023

Project / Client NASA NS1004.05.06

Purpose - monitoring well sampling

Crew - Brandon Schmidt (HGL) & Meghan West (HGL)

Equipment - worktrucks, hand tools, nitrile gloves, water level meters (3614944 & 250554), YSI Pro Quartos (23H101235 & 23H101231) turbidy meters (23047736 & 23074846), decon supplies (5-gal buckets, potable water, DI water, Luminox) P-pumps, tubing

Weather - Hi - 73°, Lo - 65°, prec - 0%, wind 18mph ENE

0600 - all personnel arrive at CCSFS field office to load trucks, calibrate equipment, and prepare paperwork.
- conduct TGSM

8:15 - mob to site

BS ~~7:15~~ 9:04 Begin purge at CRHE-MW0057 @ 200 ml/min

9:37 Sample CRHE-MW0057-035.0-20231215
collected by MW
Analyzed for TDS

BS ~~1003~~ 953 Begin purge at CRHE-MW0058 @ 200 ml/min

1017 Sample CRHE-MW0058-045.0-20231215
collected by MW
Analyzed for VOCs & TDS

1032 Sample CRHE-MW0047-023.0-20231215
collected by BS
Analyzed for VOCs, TRH, Sodium (6 bottles)

well drew down over 7ft when purging. Pump was turned off to allow recharge but same result occured when pump was turned back on. Sampled when stabalized

1113: Sample CRHE-MW0029-045.0-20231215
collected by MW
Analyzed for VOC's (3 bottles)

1209: Sample CRHE-MW0048-030.5-20231215
collected by BS
Analyzed for VOC's (3 bottles)

1218: Sample CRHE-MW0056-037.5-20231215
collected by MW
Analyzed for TRH & TDS (3 bottles)

1325: Sample CRHE-MW0044-042.5-20231215
collected by BS
Analyzed for TRH & TDS (3 bottles)

1330: Sample CRHE-MW0031-045.0-20231215
collected by MW
Analyzed for VOC's (3 bottles)

1600: SGS courier picked up samples

1640: Emptied approx 11 gallons of purge groundwater into drum # 231269

1700: Back at field office
Done for the day

BS

Rite in the Rain

SAFETY MEETING/TRAINING LOG

- [x] Tailgate (daily)
- [ ] Activity Hazard Analysis
- [ ] Pre-Task Hazard Analysis (prior to new task or operation)
- [ ] Site Safety Orientation (new personnel)
- [ ] Supervisor's (monthly)
- [ ] Supervisor's (weekly)
- [ ] UXO Awareness
- [ ] Asbestos Awareness
- [ ] Health and Safety Plan Addendum: _____
- [ ] Other: ___

Date/Time: 12/18/2023 Client: NASA

Location: CRHEA Job No.: NS1004.05.06

Meeting/training conducted by: Meghan West

Work Activities: monitoring well sampling

Safety / Training Topics Presented

Chemical Hazards: VOCs, 1,4-dioxane, TRPH, Na, PFAS, TDS

Physical Hazards: slips, trips, falls, pinch points, biologicals, struck by

Specific Safety Topic(s): slips, trips, & falls

Specific Training Covered: be aware of your surroundings, wear safety boots with good traction, watch out for puddles and slippery surfaces.

Attendees

Name Printed and Employee Number:	Signature:
Meghan West	Meghan West
Brandon Schmidt	Brandon Schmidt

DEP Form FD 9000-24: GROUNDWATER SAMPLING LOG

SITE NAME: CRHE Area	SITE LOCATION: KSC Florida	
WELL NO: CRHE-MW0030	SAMPLE ID: CRHE-MW0030-010.0-20231218	DATE: 12/18/2023

PURGING DATA

WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): 1/4	WELL SCREEN INTERVAL DEPTH: 5 feet to 15 feet	STATIC DEPTH TO WATER (feet): 2.02	PURGE PUMP TYPE OR BAILER: PP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (feet – feet) X liters/foot = liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= ml + (5.3 ml/foot X 15 feet) + 200 ~~liters~~ mL = 279.5 ~~liters~~ mL ×3 = 838.5mL

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 10	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 10	PURGING INITIATED AT: 0825	PURGING ENDED AT: 0847	TOTAL VOLUME PURGED (~~gallons~~ liters): 4.4

TIME	VOLUME PURGED (liters)	CUMUL. VOLUME PURGED (liters)	PURGE RATE (ml/min)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	Notes
0835	2.0	2.0	200	2.03	7.10	22.9	363.9	0.22	6.51	-85.4	clear, no odor
0838	0.6	2.6	200	2.04	7.11	23.2	364.7	0.18	4.75	-89.4	"
0841	0.6	3.2	200	2.04	7.09	23.2	366.8	0.17	3.55	-90.4	"
0844	0.6	3.8	200	2.04	7.09	23.3	368.4	0.15	2.91	-92.8	"
0847	0.6	4.4	200	2.04	7.10	23.3	369.4	0.14	2.92	-93.7	"

WELL CAPACITY (Liters Per Foot): 0.75" = 0.076; 1" = 0.151; 1.25" = 0.227; 2" = 0.606; 3" = 1.401; 4" = 2.461; 5" = 3.861; 6" = 5.565; 12" = 22.258
TUBING INSIDE DIA. CAPACITY (ml./Ft.): 1/8" = 2.271; 3/16" = 5.300; 1/4" = 9.842; 5/16" = 15.142; 3/8" = 22.712; 1/2" = 37.854; 5/8" = 60.567

PURGING EQUIPMENT CODES: B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; O = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Meghan West	SAMPLER(S) SIGNATURE(S): Meghan West	SAMPLING INITIATED AT: 0849	SAMPLING ENDED AT: 0852
PUMP OR TUBING DEPTH IN WELL (feet): 10	TUBING MATERIAL CODE: HDPE	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y N (replaced)	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
	2	HDPE	120mL	none	N/A	N/A	PFAS	APP	200

REMARKS:

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; HDPE = High Density Polyethylene; LDPE = Low Density Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

SAMPLING EQUIPMENT CODES: APP = After (Through) Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); O = Other (Specify)

NOTES: 1. **The above do not constitute all of the information required by Chapter 62-160, F.A.C.**
2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

DEP Form FD 9000-24: GROUNDWATER SAMPLING LOG

SITE NAME: CRHE Area	SITE LOCATION: KSC Florida	
WELL NO: CRHE-IW0001S	SAMPLE ID: CRHE-IW0001S-009.0-20231218	DATE: 12-18-23

PURGING DATA

WELL DIAMETER (inches): 2	TUBING DIAMETER (inches): 1/4	WELL SCREEN INTERVAL DEPTH: 3 feet to 13 feet	STATIC DEPTH TO WATER (feet): 0.98	PURGE PUMP TYPE OR BAILER: PP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (feet – feet) X liters/foot = liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= ml + (5.3 ml/foot X 11 feet) + 200 ml = 258 ml
liters liters

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 8	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 8	PURGING INITIATED AT: 9:03	PURGING ENDED AT: 9:32	TOTAL VOLUME PURGED (gallons): 1.3

TIME	VOLUME PURGED (liters)	CUMUL VOLUME PURGED (liters)	PURGE RATE (ml/min)	DEPTH TO WATER (feet)	pH (standard units)	TEMP (°C)	COND (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	Notes
9:03	0	0	200	0.98							
9:13	2.0	2.0	↓	1.08	6.43	23.5	351.4	0.33	7.76	53.3	clear/no odor
9:16	0.6	2.6		1.08	6.41	23.6	372.7	0.30	6.57	39.5	↓
9:19	0.6	3.2		1.08	6.42	23.5	382.7	0.27	6.60	26.8	
9:22	0.6	3.8		1.08	6.42	23.6	400.1	0.23	5.71	16.5	
9:25	0.6	4.4		1.08	6.43	23.6	402.4	0.20	4.65	8.4	
9:28	0.6	5.0	↓	1.08	6.41	23.5	414.4	0.18	3.90	1.3	↓

WELL CAPACITY (Liters Per Foot): 0.75" = 0.076; 1" = 0.151; 1.25" = 0.227; 2" = 0.606; 3" = 1.401; 4" = 2.461; 5" = 3.861; 6" = 5.565; 12" = 22.258
TUBING INSIDE DIA. CAPACITY (ml /Ft.): 1/8" = 2.271; 3/16" = 5.300; 1/4" = 9.842; 5/16" = 15.142; 3/8" = 22.712; 1/2" = 37.854; 5/8" = 60.567

PURGING EQUIPMENT CODES: B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; O = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Brandon Schmidt	SAMPLER(S) SIGNATURE(S): Brandon Schmidt	SAMPLING INITIATED AT: 9:30	SAMPLING ENDED AT: 9:32
PUMP OR TUBING DEPTH IN WELL (feet): 8	TUBING MATERIAL CODE: HDPE	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N replaced)	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH			
	2	HDPE	120 ml	None	NA	NA	PFAS		200

REMARKS:

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; HDPE = High Density Polyethylene; LDPE = Low Density Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

SAMPLING EQUIPMENT CODES: APP = After (Through) Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); O = Other (Specify)

NOTES: 1. **The above do not constitute all of the information required by Chapter 62-160, F.A.C.**
2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

DEP Form FD 9000-24: GROUNDWATER SAMPLING LOG

SITE NAME: CRHE Area	SITE LOCATION: KSC Florida	
WELL NO: CRHE-1W00095	SAMPLE ID: CRHE-1W00095-007.0-20231218	DATE: 12/18/2023

PURGING DATA

WELL DIAMETER (inches): 2	TUBING DIAMETER (inches): 1/4	WELL SCREEN INTERVAL DEPTH: 2 feet to 12 feet	STATIC DEPTH TO WATER (feet): 1.05	PURGE PUMP TYPE OR BAILER: PP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY (only fill out if applicable)

= (feet – feet) X liters/foot = liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME (only fill out if applicable)

= ml + (5.3 ml/foot X ~~200~~ MW 12 feet) + 200 ~~liters~~ mL = 63 ~~liters~~ mL < 190.8 = mL

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 7	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 7	PURGING INITIATED AT: 0916	PURGING ENDED AT: 0938	TOTAL VOLUME PURGED (gallons): 4.4 liters

TIME	VOLUME PURGED (liters)	CUMUL VOLUME PURGED (liters)	PURGE RATE (ml/min)	DEPTH TO WATER (feet)	pH (standard units)	TEMP (°C)	COND (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	Notes
0926	2.0	2.0	200	1.10	6.93	21.9	442.6	0.12	12.6	-47.8	clear, no odor
0929	0.6	2.6	200	1.10	6.91	22.0	441.5	0.17	10.2	-49.4	"
0932	0.6	3.2	200	1.10	6.90	21.9	440.2	0.21	9.61	-49.0	"
0935	0.6	3.8	200	1.10	6.90	21.8	438.9	0.24	8.01	-49.0	"
0938	0.6	4.4	200	1.10	6.90	22.0	440.4	0.21	6.87	-49.6	"

WELL CAPACITY (Liters Per Foot): 0.75" = 0.076; 1" = 0.151; 1.25" = 0.227; 2" = 0.606; 3" = 1.401; 4" = 2.461; 5" = 3.861; 6" = 5.565; 12" = 22.258
TUBING INSIDE DIA. CAPACITY (mL/Ft.): 1/8" = 2.271; 3/16" = 5.300; 1/4" = 9.842; 5/16" = 15.142; 3/8" = 22.712; 1/2" = 37.854; 5/8" = 60.567

PURGING EQUIPMENT CODES: B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; O = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Meghan West	SAMPLER(S) SIGNATURE(S): Meghan	SAMPLING INITIATED AT: 0939	SAMPLING ENDED AT: 0942
PUMP OR TUBING DEPTH IN WELL (feet): 7	TUBING MATERIAL CODE:	FIELD-FILTERED: Y (N) Filtration Equipment Type	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP Y (N)	TUBING (Y) (N) (replaced)	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH			
	2	2 HDPE	120 mL	none	N/A	N/A	PFAS	APP	200

REMARKS:

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; HDPE = High Density Polyethylene; LDPE = Low Density Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

SAMPLING EQUIPMENT CODES: APP = After (Through) Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); O = Other (Specify)

NOTES: 1. **The above do not constitute all of the information required by Chapter 62-160, F.A.C.**

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU, optionally ± 5 NTU or ± 10% (whichever is greater)

DEP Form FD 9000-24: GROUNDWATER SAMPLING LOG

SITE NAME: CRHE Area	SITE LOCATION: KSC Florida	
WELL NO: CRHE-IW0019I	SAMPLE ID: CRHE-IW0019I-040.0-20231218	DATE: 12-18-23

PURGING DATA

WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): 1/4	WELL SCREEN INTERVAL DEPTH: 35 feet to 45 feet	STATIC DEPTH TO WATER (feet): 1.88	PURGE PUMP TYPE OR BAILER: PP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (feet – feet) X liters/foot = liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= ml + (5.3 ml/foot X 43 feet) + 200 ml = 427.9 ml

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 40	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 40	PURGING INITIATED AT: 9:59	PURGING ENDED AT: 1030	TOTAL VOLUME PURGED (gallons): 1.2

TIME	VOLUME PURGED (liters)	CUMUL VOLUME PURGED (liters)	PURGE RATE (ml/min)	DEPTH TO WATER (feet)	pH (standard units)	TEMP (°C)	COND (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	Notes
9:59	0	0	200	1.88							
10:09	2.0	2.0	↓	1.93	6.57	23.4	705	0.22	12.5	-70.2	clear/no odor
10:12	0.6	2.6	↓	1.93	6.57	23.4	711	0.22	11.3	-71.9	↓
10:15	0.6	3.2	↓	1.93	6.57	23.5	712	0.30	9.08	-74.6	↓
10:18	0.6	3.8	↓	1.93	6.57	23.6	714	0.32	7.47	-76.0	↓
10:21	0.6	4.4	↓	1.93	6.57	23.5	714	0.24	6.62	-78.5	↓

WELL CAPACITY (Liters Per Foot) 0.75" = 0.076; 1" = 0.151; 1.25" = 0.227; 2" = 0.606; 3" = 1.401; 4" = 2.461; 5" = 3.861; 6" = 5.565; 12" = 22.258
TUBING INSIDE DIA. CAPACITY (ml /Ft.): 1/8" = 2.271; 3/16" = 5.300; 1/4" = 9.842; 5/16" = 15.142; 3/8" = 22.712; 1/2" = 37.854; 5/8" = 60.567

PURGING EQUIPMENT CODES: B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; O = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Brandon Schmidt	SAMPLER(S) SIGNATURE(S): Brandon Schmidt	SAMPLING INITIATED AT: 1024	SAMPLING ENDED AT: 1030
PUMP OR TUBING DEPTH IN WELL (feet): 40	TUBING MATERIAL CODE: HDPE	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N (replaced))	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
	3	CG	40ml	HCL	NA	NA	VOCs		200
	2	HDPE	120ml	None	NA	NA	PFAS		200

REMARKS:

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; HDPE = High Density Polyethylene; LDPE = Low Density Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

SAMPLING EQUIPMENT CODES: APP = After (Through) Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); O = Other (Specify)

NOTES: 1. **The above do not constitute all of the information required by Chapter 62-160, F.A.C.**

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

DEP Form FD 9000-24: GROUNDWATER SAMPLING LOG

SITE NAME: CRHE Area	SITE LOCATION: KSC Florida	
WELL NO: CRHE-MW0025	SAMPLE ID: CRHE-MW0025-030.0-20231210	DATE: 12/18/2023

PURGING DATA

WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): 1/4	WELL SCREEN INTERVAL DEPTH: 25 feet to 35 feet	STATIC DEPTH TO WATER (feet): 0.96	PURGE PUMP TYPE OR BAILER: PP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (feet – feet) X liters/foot = liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= ml + (5.3 ml/foot X 34 feet) + 200 ~~mL liters~~ = ~~302 mL liters~~ 1406 mL (1.4 liters)

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 30	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 30	PURGING INITIATED AT: 1001	PURGING ENDED AT: 1029	TOTAL VOLUME PURGED ~~(gallons)~~ (liters): 5.6

TIME	VOLUME PURGED (liters)	CUMUL VOLUME PURGED (liters)	PURGE RATE (ml/min)	DEPTH TO WATER (feet)	pH (standard units)	TEMP (°C)	COND (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	Notes
1011	2.0	2.0	200	1.09	6.75	22.6	1440	0.65	18.6	-61.2	clear, no odor
1014	0.6	2.6	200	1.09	6.77	22.6	1432	0.63	13.8	-62.5	"
1017	0.6	3.2	200	1.09	6.78	22.6	1431	0.69	8.79	-63.2	"
1020	0.6	3.8	200	1.09	6.77	22.6	1429	0.88	6.29	-61.8	"
1023	0.6	4.4	200	1.09	6.77	23.0	1445	0.71	5.63	-62.2	"
1026	0.6	5.0	200	1.09	6.74	22.9	1446	0.68	9.68	-62.0	"
1029	0.6	5.6	200	~~1.09~~ 1.11	6.72	22.8	1440	0.80	4.13	-62.3	"

WELL CAPACITY (Liters Per Foot): 0.75" = 0.076; 1" = 0.151; 1.25" = 0.227; 2" = 0.606; 3" = 1.401; 4" = 2.461; 5" = 3.861; 6" = 5.565; 12" = 22.258
TUBING INSIDE DIA. CAPACITY (ml./Ft.): 1/8" = 2.271; 3/16" = 5.300; 1/4" = 9.842; 5/16" = 15.142; 3/8" = 22.712; 1/2" = 37.854; 5/8" = 60.567

PURGING EQUIPMENT CODES: B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; O = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Meghan West	SAMPLER(S) SIGNATURE(S): Meghan West	SAMPLING INITIATED AT: 1033	SAMPLING ENDED AT: 1100
PUMP OR TUBING DEPTH IN WELL (feet): 30	TUBING MATERIAL CODE: HDPE	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y N (replaced)	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH			
	3	CG	40 mL	HCL	N/A	N/A	VOCs by 8260	APP	200
	1	HDPE	250 mL	none	N/A	N/A	~~TDS Recoverable by SM 2540C~~ ~~Sulfate by 9056A~~ ~~Chloride by 9056A~~	APP	200
	3	CG	40 mL	HCL	N/A	N/A	1,4-Dioxane by 8260 SIM	APP	200
	2	HDPE	120 mL	none	N/A	N/A	PFAS	APP	200

REMARKS:

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; HDPE = High Density Polyethylene; LDPE = Low Density Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

SAMPLING EQUIPMENT CODES: APP = After (Through) Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); O = Other (Specify)

NOTES: 1. **The above do not constitute all of the information required by Chapter 62-160, F.A.C.**
2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2), optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

DEP Form FD 9000-24: GROUNDWATER SAMPLING LOG

SITE NAME: CRHE Area	SITE LOCATION: KSC Florida	
WELL NO: CRHE-IW00135	SAMPLE ID: CRHE-IW00135-0075-20231218	DATE: 12-18-23

PURGING DATA

WELL DIAMETER (inches): 2	TUBING DIAMETER (inches): 1/4	WELL SCREEN INTERVAL DEPTH: 2.5 feet to 12.5 feet	STATIC DEPTH TO WATER (feet): 1.71	PURGE PUMP TYPE OR BAILER: PP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (feet – feet) X liters/foot = liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= ml + (5.3 ml/foot X 10.5 feet) + 200 ml liters = 255.6 liters

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 7.5	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 7.5	PURGING INITIATED AT: 11:04	PURGING ENDED AT: 11:36	TOTAL VOLUME PURGED (gallons): 1.5

TIME	VOLUME PURGED (liters)	CUMUL. VOLUME PURGED (liters)	PURGE RATE (ml/min)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	Notes
1104	0	0	200	1.71							
1114	2.0	2.0	↓	1.76	6.80	23.7	359.1	5.83	10.0	85.0	clear/needs
1117	0.6	2.6		1.76	6.80	23.9	359.3	5.75	8.34	86.7	↓
1120	0.6	3.2		1.76	6.82	24.1	340.6	5.86	9.72	88.5	
1123	0.6	3.8		1.76	6.87	24.5	330.1	5.74	10.5	88.4	
1126	0.6	4.4		1.76	6.89	24.5	316.1	5.62	7.17	86.6	
1129	0.6	5.0		1.76	6.88	24.4	309.2	5.54	6.21	88.5	
1132	0.6	5.6	↓	1.76	6.90	24.5	307.3	5.56	6.00	88.9	↓

WELL CAPACITY (Liters Per Foot): 0.75" = 0.076; 1" = 0.151; 1.25" = 0.227; 2" = 0.606; 3" = 1.401; 4" = 2.461; 5" = 3.861; 6" = 5.565; 12" = 22.258
TUBING INSIDE DIA. CAPACITY (ml./Ft.): 1/8" = 2.271; 3/16" = 5.300; 1/4" = 9.842; 5/16" = 15.142; 3/8" = 22.712; 1/2" = 37.854; 5/8" = 60.567

PURGING EQUIPMENT CODES: B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; O = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Brandon Schmidt	SAMPLER(S) SIGNATURE(S): Brandon Schmt	SAMPLING INITIATED AT: 1134	SAMPLING ENDED AT: 1136
PUMP OR TUBING DEPTH IN WELL (feet): 7.5	TUBING MATERIAL CODE: HDPE	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N (replaced))	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH			
	2	HDPE	120 ml	None	NA	NA	PFAS		200

REMARKS:

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; HDPE = High Density Polyethylene; LDPE = Low Density Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

SAMPLING EQUIPMENT CODES: APP = After (Through) Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); O = Other (Specify)

NOTES: 1. **The above do not constitute all of the information required by Chapter 62-160, F.A.C.**
2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)
pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

DEP Form FD 9000-24: GROUNDWATER SAMPLING LOG

SITE NAME: CRHE Area	SITE LOCATION: KSC Florida	
WELL NO: CRHE-MW0024	SAMPLE ID: CRHE-MW0024-010.0-20231218	DATE: 12/18/2023

PURGING DATA

WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): 1/4	WELL SCREEN INTERVAL DEPTH: ~~15~~ 5 feet to 15 feet	STATIC DEPTH TO WATER (feet): 0.97	PURGE PUMP TYPE OR BAILER: PP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (feet – feet) X liters/foot = liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= ml + (5.3 ml/foot X 14 feet) + 200 liters = 274.2 ~~liters~~ mL ×3 822.6 = mL

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 10	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 10	PURGING INITIATED AT: 1121	PURGING ENDED AT: 1143	TOTAL VOLUME PURGED ~~(gallons)~~ (liters): 4.4

TIME	VOLUME PURGED (liters)	CUMUL. VOLUME PURGED (liters)	PURGE RATE (ml/min)	DEPTH TO WATER (feet)	pH (standard units)	TEMP (°C)	COND (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	Notes
1131	2.0	2.0	200	0.98	6.59	23.0	907	0.41	19.6	-7.2	clear no odor
1134	0.6	2.6	200	0.98	6.59	22.8	901	0.41	17.2	-9.9	"
1137	0.6	3.2	200	0.98	6.59	22.9	903	0.29	20.4	-11.9	"
1140	0.6	3.8	200	0.98	6.58	22.7	894	0.25	11.5	-15.3	"
1143	0.6	4.4	200	0.98	6.58	22.7	882	0.28	7.14	-16.5	"

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.151; **1.25"** = 0.227; **2"** = 0.606; **3"** = 1.401; **4"** = 2.461; **5"** = 3.861; **6"** = 5.565; **12"** = 22.258
TUBING INSIDE DIA. CAPACITY (mL/Ft.): **1/8"** = 2.271; **3/16"** = 5.300; **1/4"** = 9.842; **5/16"** = 15.142; **3/8"** = 22.712; **1/2"** = 37.854; **5/8"** = 60.567

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Meghan West	SAMPLER(S) SIGNATURE(S): Meghan West	SAMPLING INITIATED AT: 1145	SAMPLING ENDED AT: 1147
PUMP OR TUBING DEPTH IN WELL (feet): 10	TUBING MATERIAL CODE: HDPE	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N (replaced))	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH			
	2	HDPE	120 mL	none	N/A	N/A	PFAS	APP	200

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After (Through) Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. **The above do not constitute all of the information required by Chapter 62-160, F.A.C.**
2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

DEP Form FD 9000-24: GROUNDWATER SAMPLING LOG

SITE NAME: CRHE Area	SITE LOCATION: KSC Florida	
WELL NO: CRHE-IW0025	SAMPLE ID: CRHE-IW0025-008.0-20231218	DATE: 12/18/2023

PURGING DATA

WELL DIAMETER (inches): 2	TUBING DIAMETER (inches): 1/4	WELL SCREEN INTERVAL DEPTH: 3 feet to 13 feet	STATIC DEPTH TO WATER (feet): 2.45	PURGE PUMP TYPE OR BAILER: PP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (feet – feet) X liters/foot = liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= ml + (5.3 ml/foot X feet) + 200 mL ~~liters~~ = ~~liters~~ mL ~~x3~~ = mL

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 8	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 8	PURGING INITIATED AT: 1205	PURGING ENDED AT: 1227	TOTAL VOLUME PURGED (~~liters~~ gallons): 4.4

TIME	VOLUME PURGED (liters)	CUMUL. VOLUME PURGED (liters)	PURGE RATE (ml/min)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	Notes
1215	2.0	2.0	200	2.55	7.39	22.5	308.1	1.49	27.7	15.6	clear, no odor
1218	0.6	2.6	200	2.56	7.43	22.7	309.1	1.29	19.8	12.0	"
1221	0.6	3.2	200	2.56	7.45	22.6	310.9	1.39	8.03	7.3	"
1224	0.6	3.8	200	2.56	7.43	22.5	308.6	1.29	6.60	6.9	"
1227	0.6	4.4	200	2.56	7.44	22.6	308.7	1.36	6.54	5.6	"

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.151; **1.25"** = 0.227; **2"** = 0.606; **3"** = 1.401; **4"** = 2.461; **5"** = 3.861; **6"** = 5.565; **12"** = 22.258
TUBING INSIDE DIA. CAPACITY (ml./Ft.): **1/8"** = 2.271; **3/16"** = 5.300; **1/4"** = 9.842; **5/16"** = 15.142; **3/8"** = 22.712; **1/2"** = 37.854; **5/8"** = 60.567

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Meghan West	SAMPLER(S) SIGNATURE(S): Meghan West	SAMPLING INITIATED AT: 1229	SAMPLING ENDED AT: 1232
PUMP OR TUBING DEPTH IN WELL (feet): 8	TUBING MATERIAL CODE:	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N (replaced))	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH			
	2	HDPE	120mL	none	N/A	N/A	PFAS	APP	200

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After (Through) Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. **The above do not constitute all of the information required by Chapter 62-160, F.A..C.**
2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

DEP Form FD 9000-24: GROUNDWATER SAMPLING LOG

SITE NAME: CRHE Area	SITE LOCATION: KSC Florida	
WELL NO: CRHE-IW0004I	SAMPLE ID: CRHE-IW0004I-035.0-20231218	DATE: 12/18/2023

PURGING DATA

WELL DIAMETER (inches): 2	TUBING DIAMETER (inches): 1/4	WELL SCREEN INTERVAL DEPTH: 30 feet to 40 feet	STATIC DEPTH TO WATER (feet): 2.20	PURGE PUMP TYPE OR BAILER: PP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (feet – feet) X liters/foot = liters ×3 = 1220.1 mL

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= ml + (5.3 ml/foot X 39 feet) + 200 mL = 406.7 mL

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 35	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 35	PURGING INITIATED AT: 1256	PURGING ENDED AT: 1318	TOTAL VOLUME PURGED (~~gallons~~ liters): 4.4

TIME	VOLUME PURGED (liters)	CUMUL. VOLUME PURGED (liters)	PURGE RATE (ml/min)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	Notes
1306	~~1259 mw~~ 2.0	2.0	200	2.21	7.18	23.7	653	0.15	1.18	14.8	clear, needed
1309	~~1302 mw~~ 0.6	2.6	200	2.21	7.16	23.8	657	0.12	1.52	-19.7	"
1312	~~1305 mw~~ 0.6	3.2	200	2.21	7.15	23.6	655	0.14	1.41	-32.9	"
1315	~~1308 mw~~ 0.6	3.8	200	2.21	7.14	23.7	655	0.17	1.82	-42.8	"
1318	~~1311 mw~~ 0.6	4.4	200	2.21	7.14	23.6	655	0.13		-46.4	"

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.151; **1.25"** = 0.227; **2"** = 0.606; **3"** = 1.401; **4"** = 2.461; **5"** = 3.861; **6"** = 5.565; **12"** = 22.258
TUBING INSIDE DIA. CAPACITY (ml./Ft.): **1/8"** = 2.271; **3/16"** = 5.300; **1/4"** = 9.842; **5/16"** = 15.142; **3/8"** = 22.712; **1/2"** = 37.854; **5/8"** = 60.567

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Meghan West	SAMPLER(S) SIGNATURE(S): Meghan West	SAMPLING INITIATED AT: 1320	SAMPLING ENDED AT: 1323
PUMP OR TUBING DEPTH IN WELL (feet): 35	TUBING MATERIAL CODE:	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y N (replaced)	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
	2	HDPE	120 mL	none	N/A	N/A	PFAS	APP	200

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After (Through) Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. **The above do not constitute all of the information required by Chapter 62-160, F.A.C.**
2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)
pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

DEP Form FD 9000-24: GROUNDWATER SAMPLING LOG

SITE NAME: CRHE Area	SITE LOCATION: KSC Florida	
WELL NO: CRHE-IW0017I	SAMPLE ID: CRHE-IW0017I-030.0-20231128	DATE: 12-18-23

PURGING DATA

WELL DIAMETER (inches): 2	TUBING DIAMETER (inches): 1/4	WELL SCREEN INTERVAL DEPTH: 25 feet to 35 feet	STATIC DEPTH TO WATER (feet): 1.87	PURGE PUMP TYPE OR BAILER: PP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH − STATIC DEPTH TO WATER) X WELL CAPACITY (only fill out if applicable)
= (35 feet − 1.87 feet) X 0.606 liters/foot = 20 liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME (only fill out if applicable)
= ml + (5.3 ml/foot X 33 feet) + 200 liters = 374.9 liters

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 30	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 30	PURGING INITIATED AT: 1209	PURGING ENDED AT: 1328	TOTAL VOLUME PURGED (gallons): 3.41

TIME	VOLUME PURGED (liters)	CUMUL. VOLUME PURGED (liters)	PURGE RATE (ml/min)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	Notes
1209	0	0	200	1.87							
1219	2.0	2.0		2.66	8.19	24.0	70.7	7.07	53.1	59.6	clouds
1222	0.6	2.6		2.66	8.33	24.0	69.7	7.07	50.6	65.6	
1232	2.0	4.6		2.60	8.24	24.0	67.2	6.77	45.5	79.2	
1235											stopped pump
1240											started pump
1300	4.0	8.6		2.57	7.71	23.5	112	2.75	31.5	85.2	white particles
1303	0.6	9.2		2.57	7.45	23.9	137.6	1.60	32.9	33.1	
1306	0.6	9.8		2.57	7.36	23.9	152.3	0.95	27.9	-29.7	
1309	0.6	10.4		2.57	7.35	23.8	154.9	0.89	25.9	-43.5	
1312	0.6	11.0		2.57	7.31	23.8	158.3	0.68	20.1	-58.2	

WELL CAPACITY (Liters Per Foot): 0.75" = 0.076; 1" = 0.151; 1.25" = 0.227; 2" = 0.606; 3" = 1.401; 4" = 2.461; 5" = 3.861; 6" = 5.565; 12" = 22.258
TUBING INSIDE DIA. CAPACITY (ml./Ft.): 1/8" = 2.271; 3/16" = 5.300; 1/4" = 9.842; 5/16" = 15.142; 3/8" = 22.712; 1/2" = 37.854; 5/8" = 60.567

PURGING EQUIPMENT CODES: B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; O = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION:	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 1322	SAMPLING ENDED AT: 1329
PUMP OR TUBING DEPTH IN WELL (feet):	TUBING MATERIAL CODE:	FIELD-FILTERED: Y N Filtration Equipment Type:	FILTER SIZE: ____ µm

FIELD DECONTAMINATION: PUMP Y N TUBING Y N (replaced) DUPLICATE: Y N

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH			
	3	CG	40ml	HCL	NA	NA	VOCs		200
	2	HDPE	120ml	none	NA	NA	PFAS		200

REMARKS: continued recording on next sample page

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; HDPE = High Density Polyethylene; LDPE = Low Density Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

SAMPLING EQUIPMENT CODES: APP = After (Through) Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); O = Other (Specify)

NOTES: 1. **The above do not constitute all of the information required by Chapter 62-160, F.A.C.**
2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU, optionally ± 5 NTU or ± 10% (whichever is greater)

Continued

DEP Form FD 9000-24: GROUNDWATER SAMPLING LOG

SITE NAME: CRHE Area	SITE LOCATION: KSC Florida	
WELL NO.: CRHE-IW0017I	SAMPLE ID: CRHE-IW0017I-030.0-20231218	DATE: 12-18-23

PURGING DATA

WELL DIAMETER (inches):	TUBING DIAMETER (inches):	WELL SCREEN INTERVAL DEPTH: feet to feet	STATIC DEPTH TO WATER (feet):	PURGE PUMP TYPE OR BAILER:

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (feet – feet) X liters/foot = liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= ml + (ml/foot X feet) + liters = liters

INITIAL PUMP OR TUBING DEPTH IN WELL (feet):	FINAL PUMP OR TUBING DEPTH IN WELL (feet):	PURGING INITIATED AT: 1209	PURGING ENDED AT: 1328	TOTAL VOLUME PURGED (gallons): 3.4

TIME	VOLUME PURGED (liters)	CUMUL. VOLUME PURGED (liters)	PURGE RATE (ml/min)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	Notes
1315	0.6	11.6	200	2.57	7.31	23.8	162.3	0.56	19.0	-66.5	Clear White particles
1318	0.6	12.2	↓	2.57	7.27	24.0	163.7	0.54	18.2	-69.3	↓
1321	0.6	12.8	↓	2.57	7.28	23.9	169.2	0.43	16.1	-74.3	↓

WELL CAPACITY (Liters Per Foot): 0.75" = 0.076; 1" = 0.151; 1.25" = 0.227; 2" = 0.606; 3" = 1.401; 4" = 2.461; 5" = 3.861; 6" = 5.565; 12" = 22.258
TUBING INSIDE DIA. CAPACITY (ml./Ft.): 1/8" = 2.271; 3/16" = 5.300; 1/4" = 9.842; 5/16" = 15.142; 3/8" = 22.712; 1/2" = 37.854; 5/8" = 60.567

PURGING EQUIPMENT CODES: B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; O = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Brandon Schmidt	SAMPLER(S) SIGNATURE(S): Brandon Schmidt	SAMPLING INITIATED AT: 1322	SAMPLING ENDED AT: 1328
PUMP OR TUBING DEPTH IN WELL (feet): 30	TUBING MATERIAL CODE: HDPE	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N (replaced))	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH			
	3	CG	40 ml	HCL	NA	NA	VOCs		200
	2	HDPE	120 ml	none	NA	NA	PFAS		200

REMARKS: High turbidity, stopped pump and cleared out flow cell

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; HDPE = High Density Polyethylene; LDPE = Low Density Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

SAMPLING EQUIPMENT CODES: APP = After (Through) Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); O = Other (Specify)

NOTES: 1. **The above do not constitute all of the information required by Chapter 62-160, F.A.C.**
2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

DEP Form FD 9000-24: GROUNDWATER SAMPLING LOG

SITE NAME: CRHE Area	SITE LOCATION: KSC Florida	
WELL NO: ~~CRHE~~ CRHE-MW0032	SAMPLE ID: CRHE-MW0032-0450-20231218	DATE: 12/18/2023

PURGING DATA

WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): 1/4	WELL SCREEN INTERVAL DEPTH 40 feet to 50 feet	STATIC DEPTH TO WATER (feet): 2.49	PURGE PUMP TYPE OR BAILER: PP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (feet – feet) X liters/foot = liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= ml + (5.3 ml/foot X 49 feet) + 200 ~~liters~~ mL = 459.7 ~~liters~~ mL ×3 = 1,379.1 mL

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 45	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 45	PURGING INITIATED AT: 1410	PURGING ENDED AT: 1435	TOTAL VOLUME PURGED (~~gallons~~ liters): 5.0

TIME	VOLUME PURGED (liters)	CUMUL. VOLUME PURGED (liters)	PURGE RATE (ml/min)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	Notes
1420	2.0	2.0	200	2.51	6.95	26.2	981	0.21	19.9	-67.7	clear, no odor
1423	0.6	2.6	200	2.51	6.96	26.2	996	0.19	19.4	-68.8	"
1426	0.6	3.2	200	2.51	6.97	26.1	1007	0.28	14.2	-70.2	"
1429	0.6	3.8	200	2.51	6.96	25.8	1003	0.18	10.9	-69.9	"
1432	0.6	4.4	200	2.51	6.91	25.7	1008	0.22	10.3	-70.0	"
1435	0.6	5.0	200	2.51	6.99	25.8	1007	0.20	9.47	-70.41	"

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.151; **1.25"** = 0.227; **2"** = 0.606; **3"** = 1.401; **4"** = 2.461; **5"** = 3.861; **6"** = 5.565; **12"** = 22.258
TUBING INSIDE DIA. CAPACITY (ml./Ft.): **1/8"** = 2.271; **3/16"** = 5.300; **1/4"** = 9.842; **5/16"** = 15.142; **3/8"** = 22.712; **1/2"** = 37.854; **5/8"** = 60.567

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Meghan West	SAMPLER(S) SIGNATURE(S): Meghan West	SAMPLING INITIATED AT: 1437	SAMPLING ENDED AT: 1446
PUMP OR TUBING DEPTH IN WELL (feet): 45	TUBING MATERIAL CODE:	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N (replaced))	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH			
	3	CG	40mL	HCL	N/A	N/A	VOCs by 8260B	APP	200

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After (Through) Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. **The above do not constitute all of the information required by Chapter 62-160, F.A.C.**
2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

DEP Form FD 9000-24: GROUNDWATER SAMPLING LOG

SITE NAME: CRHE Area	SITE LOCATION: KSC Florida
WELL NO: CRHE-MW0035	SAMPLE ID: CRHE-MW0035-045.0-20231218 DATE: 12-18-23

PURGING DATA

WELL DIAMETER (inches): 2	TUBING DIAMETER (inches): 1/4	WELL SCREEN INTERVAL DEPTH: 40 feet to 50 feet	STATIC DEPTH TO WATER (feet): 2.38	PURGE PUMP TYPE OR BAILER: PP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (feet – feet) X liters/foot = liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= ml + (5.3 ml/foot X 48 feet) + 200 liters = liters

INITIAL PUMP OR TUBING DEPTH IN WELL (feet) 45	FINAL PUMP OR TUBING DEPTH IN WELL (feet) 45	PURGING INITIATED AT: 1426	PURGING ENDED AT: 1458	TOTAL VOLUME PURGED (gallons): 1.3

TIME	VOLUME PURGED (liters)	CUMUL VOLUME PURGED (liters)	PURGE RATE (ml/min)	DEPTH TO WATER (feet)	pH (standard units)	TEMP (°C)	COND (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	Notes
1426	0	0	200	2.38							
1436	2.0	2.0		2.40	6.57	23.8	1878	0.16	70.2	-92.8	
1439	0.6	2.6		2.41	6.57	23.9	1863	0.17	32.9	-91.3	
1442	0.6	3.2		2.41	6.56	23.8	1877	0.19	21.7	-95.0	
1445	0.6	3.8		2.41	6.56	23.9	1878	0.24	15.9	-96.7	
1448	0.6	4.4		2.41	6.56	23.9	1875	0.29	14.5	-97.2	
1451	0.6	5.0	↓	2.41	6.56	23.9	1875	0.27		-98.5	

WELL CAPACITY (Liters Per Foot): 0.75" = 0.076; 1" = 0.151; 1.25" = 0.227; 2" = 0.606; 3" = 1.401; 4" = 2.461; 5" = 3.861; 6" = 5.565; 12" = 22.258
TUBING INSIDE DIA. CAPACITY (ml./Ft.): 1/8" = 2.271; 3/16" = 5.300; 1/4" = 9.842; 5/16" = 15.142; 3/8" = 22.712; 1/2" = 37.854; 5/8" = 60.567

PURGING EQUIPMENT CODES: B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; O = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Brandon Schmidt	SAMPLER(S) SIGNATURE(S): Brandon Schmidt	SAMPLING INITIATED AT: 1452	SAMPLING ENDED AT: 1458
PUMP OR TUBING DEPTH IN WELL (feet): 45	TUBING MATERIAL CODE: HDPE	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N (replaced))	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH			
	3	CG	40	HCL	NA	NA	VOCs		200
	3	CG	40	HCL	NA	NA	1,4 Diox		200

REMARKS:

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; HDPE = High Density Polyethylene; LDPE = Low Density Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

SAMPLING EQUIPMENT CODES: APP = After (Through) Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); O = Other (Specify)

NOTES: 1. **The above do not constitute all of the information required by Chapter 62-160, F.A.C.**
2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

HGL

CALIBRATION LOG

Project Name: CRHEA

By: Meghan West

Project No.: NS1004.05.06

Page 1 of 2

Date/Time	Instrument	STD	STD CONC ppm	Meter Reading	Comments
12/18/2023 0607	GeoTech Turbidity Meter 23042773	NTU	0.02	0.02	pass
"	"	"	20	~~20.6~~ MW 20.4	pass
"	"	"	100	~~102~~ MW 101	pass
"	"	"	800	~~794~~ MW 804	pass
12/18/2023 0623	YSI Pro Quarto 23H101235	conductivity	1.413 ms/cm	1.415	pass
"	"	DO%	saturated air	99.7	pass
"	"	pH	7	6.97	pass
"	"	pH	4	3.99	pass
"	"	pH	10	9.99	pass
"	"	ORP	240mv	242.0	pass

HGL

CALIBRATION LOG

Project Name: CRHF GW Sampling

By: Brandon Schmidt

Project No.: NS1004.05.06

Page 2 of 2

Date/Time	Instrument	STD	STD CONC ppm	Meter Reading	Comments
	Turbidity meter 23074846	NTU	0.02	0.02	Pass
	↓	↓	20	21.4	Pass
			100	105	Pass
	↓	↓	800	804	Pass
	YSI Pro Quatro 00135418	Conductivity	1.413 ms/cm	1.414	Pass
	↓	DO	Sat. Air	99.6	Pass
		pH 7	7	7.00	Pass
		pH	10	10.08	Pass
		pH	4	3.99	Pass
	↓	ORP	240.0 mV	240.2	Pass

96

Location CRHE Area Date 12-18-23

Project / Client NASA NS1004.05.06

Purpose : Monitoring well sampling
Crew : B Schmidt, M West (H&L)
Equipment: worktrucks, hand tools, water level meters, YSI, turbidity meter, p-pumps, HDPE tubing, decon buckets
Weather : High 66 Low 54 Sunny

6:00	all personnel at field office calibrating equipment & gathering field supplies
8:00	Mob to CRHE
8:19	Sample CRHE-MW0030-010.0-20231218 collected by MW Analyzed for PFAS (2 bottles)
9:30	Sample CRHE-IW00015-008.0-20231218 collected by BS Analyzed for PFAS (2 bottles)
9:39	Sample CRHE-IW00095-007.0-20231218 collected by MW Analyzed for PFAS (2 bottles)
10:24	Sample CRHE-IW0019I-040.0-20231218 collected by BS Analyzed for VOCs & PFAS (5 bottles)
10:33	Sample CRHE-MW0025-030.0-20231218 collected by MW Analyzed for VOCs, TDS, 1,4 Diox, PFAS (4 bottles)

Location CRHE Area Date 12-18-23

Project / Client NASA NS1004.05.06

1134: Sample CRHE-IW00135-007.5-20231218
collected by BS
Analyzed for PFAS (2 bottles)

1145; BS ~~CRHH~~ Sample CRHE-MW0024-010.0-20231218
collected by MW
Analyzed for PFAS (2 bottles)

1229: Sample CRHE-IW00025-008.0-20231218
collected by MW
Analyzed for PFAS (2 bottles)

1320: Sample CRHE-IW0004I-035.0-20231218
collected by MW
Analyzed for PFAS (2 bottles)

1322: Sample CRHE-IW0017I-030.0-20231218
collected by BS
Analyzed for VOCs & PFAS (5 bottles)
- CRHE-IW0017I had higher turbidity, pump was shut off, flow cell cleaned. 0.64 well volumes were purged Stabilization was eventually reached

1437: Sample CRHE-MW0032-045.0-20231218
collected by MW
Analyzed for VOCs 3 bottles

Rite in the Rain

98

Location CRHE Area Date 12-18-23

Project / Client NASANS1004.05.06

1452	Sample CRHE-MW0035-045.0-20231218 collected by BS Analyzed for VOCs & 1,4 Dlox
1540	Emptied approx. 17.5 gallons of purged groundwater IDW into drum # 231269
1600	Back at field office done for the day

BS

HGL

SAFETY MEETING/TRAINING LOG

- [x] Tailgate (daily)
- [ ] Activity Hazard Analysis
- [ ] Pre-Task Hazard Analysis (prior to new task or operation)
- [ ] Site Safety Orientation (new personnel)
- [ ] Supervisor's (monthly)
- [ ] Supervisor's (weekly)
- [ ] UXO Awareness
- [ ] Asbestos Awareness
- [ ] Health and Safety Plan Addendum: _____
- [ ] Other: ___

Date/Time: 12/19/23

Client: NASA

Location: CRHEA

Job No.: NS1004.05.06

Meeting/training conducted by: Meghan West

Work Activities: monitoring well sampling

Safety / Training Topics Presented

Chemical Hazards: VOCs, 1,4-dioxane, TRPH, Na, PFAS, TDS

Physical Hazards: slips, trips, falls, pinchpoints, biologicals, struckby

Specific Safety Topic(s): working on a roadside

Specific Training Covered: wear bright clothing, be aware of your surroundings, always face traffic when you can.

Attendees

Name Printed and Employee Number:	Signature:
Meghan West	Meghan West
Brandon Schmidt	Brandon Schmidt

DEP Form FD 9000-24: GROUNDWATER SAMPLING LOG

SITE NAME: CRHE Area	SITE LOCATION: KSC Florida	
WELL NO: CRHE-MW0027	SAMPLE ID: CRHE-MW0027-045.0-20231219	DATE: 12/19/2023

PURGING DATA

WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): 1/4	WELL SCREEN INTERVAL DEPTH: 40 feet to 50 feet	STATIC DEPTH TO WATER (feet): ~~24~~ 21.44	PURGE PUMP TYPE OR BAILER: PP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (feet – feet) X liters/foot = liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= ml + (5.3 ml/foot X 50 feet) + 200 ~~mL liters~~ = 465 ~~mL liters~~ x3= 1395 mL

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 45	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 45	PURGING INITIATED AT: 0750	PURGING ENDED AT: 0855	TOTAL VOLUME PURGED ~~(gallons)~~ (Liters) ~~13.0~~ 13.0

TIME	VOLUME PURGED (liters)	CUMUL. VOLUME PURGED (liters)	PURGE RATE (ml/min)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	Notes
0800	2.0	2.0	200	1.45	~~6.71~~ 6.71 MW	23.9	1679	0.23	180	-43.4	cloudy, no odor
0803	0.6	2.6	200	1.45	6.72	23.9	1683	0.21	144	-45.2	"
0806	0.6	3.2	200	1.45	6.67	23.8	1675	0.23	111	-46.6	"
0809	0.6	3.8	200	1.45	6.70	23.5	1661	0.20	97.7	-47.7	"
0812	0.6	4.4	200	1.46	6.72	23.5	1647	0.22	82.9	-48.4	"
0815	0.6	5.0	200	1.46	6.68	22.4	1617	0.22	74.1	-48.4	"
0818	0.6	5.6	200	1.46	6.70	22.9	1622	0.21	73.5	-49.3	"
0821	0.6	6.2	200	1.46	6.73	23.2	1645	0.20	70.5	-49.7	"
0824	0.6	6.8	200	1.46	6.67	23.5	1666	0.19	53.8	-51.1	"
0827	0.6	7.4	200	1.46	6.69	23.7	1658	0.17	45.1	-52.1	"
0830	0.6	8.0	200	1.46	6.70	23.7	1650	0.15	41.3	-53.0	"

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.151; **1.25"** = 0.227; **2"** = 0.606; **3"** = 1.401; **4"** = 2.461; **5"** = 3.861; **6"** = 5.565; **12"** = 22.258
TUBING INSIDE DIA. CAPACITY (ml./Ft.): **1/8"** = 2.271; **3/16"** = 5.300; **1/4"** = 9.842; **5/16"** = 15.142; **3/8"** = 22.712; **1/2"** = 37.854; **5/8"** = 60.567

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Meghan West	SAMPLER(S) SIGNATURE(S): Meghan West	SAMPLING INITIATED AT: 0857	SAMPLING ENDED AT: 0907
PUMP OR TUBING DEPTH IN WELL (feet): 45	TUBING MATERIAL CODE: HDPE	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N (replaced))	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
	3	CG	40mL	HCl	N/A	N/A	cVOCs by method 8260B	APP	200

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After (Through) Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. **The above do not constitute all of the information required by Chapter 62-160, F.A.C.**
2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

DEP Form FD 9000-24: GROUNDWATER SAMPLING LOG

SITE NAME: CRHE Area	SITE LOCATION: KSC Florida	
WELL NO: CRHE-MW0027	SAMPLE ID: CRHE-MW0027-045.0-20231219	DATE: 12/19/2023

(continued)

PURGING DATA

WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): 1/4	WELL SCREEN INTERVAL DEPTH: 40 feet to 50 feet	STATIC DEPTH TO WATER (feet): 1.44	PURGE PUMP TYPE OR BAILER: PP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (feet – feet) X liters/foot = liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= ml + (5.3 ml/foot X 50 feet) + 200 mL ~~liters~~ = 465 mL ~~liters~~ x 3 = 1395 mL

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 45	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 45	PURGING INITIATED AT: 0750	PURGING ENDED AT: 0855	TOTAL VOLUME (Liters) PURGED ~~(gallons)~~: 13.0

TIME	VOLUME PURGED (liters)	CUMUL. VOLUME PURGED (liters)	PURGE RATE (ml/min)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	Notes
0840	2.0	10.0	200	1.46	6.66	23.4	1632	0.13	27.0	-38.4	clear, no odor
0843	0.6	10.6	200	1.46	6.71	23.5	1644	0.09	21.3	-44.8	"
0846	0.6	11.2	200	1.46	6.76	23.5	1643	0.07	17.4	-47.4	"
0849	0.6	11.8	200	1.46	6.70	23.8	1645	0.10	14.0	-49.2	"
0852	0.6	12.4	200	1.46	6.69	23.7	1646	0.13	11.9	-50.8	"
0855	0.6	13.0	200	1.46	6.71	23.8	1643	0.12	10.2	-51.7	"

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.151; **1.25"** = 0.227; **2"** = 0.606; **3"** = 1.401; **4"** = 2.461; **5"** = 3.861; **6"** = 5.565; **12"** = 22.258
TUBING INSIDE DIA. CAPACITY (ml./Ft.): **1/8"** = 2.271; **3/16"** = 5.300; **1/4"** = 9.842; **5/16"** = 15.142; **3/8"** = 22.712; **1/2"** = 37.854; **5/8"** = 60.567

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Meghan West	SAMPLER(S) SIGNATURE(S): Meghan West	SAMPLING INITIATED AT: 0857	SAMPLING ENDED AT: 0907
PUMP OR TUBING DEPTH IN WELL (feet): 45	TUBING MATERIAL CODE: HDPE	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N (replaced))	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
	3	CG	40 mL	HCL	N/A	N/A	cVOCs by method 8260B	APP	200

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After (Through) Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. **The above do not constitute all of the information required by Chapter 62-160, F.A.C.**
2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

DEP Form FD 9000-24: GROUNDWATER SAMPLING LOG

SITE NAME: CRHE Area	SITE LOCATION: KSC Florida	
WELL NO: CRHE-MW0043	SAMPLE ID: CRHE-MW0043-043.0-20231219	DATE: 12/19/23

PURGING DATA

WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): 1/4	WELL SCREEN INTERVAL DEPTH: 41 feet to 45 feet	STATIC DEPTH TO WATER (feet): 1.53	PURGE PUMP TYPE OR BAILER: PP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (feet – feet) X liters/foot = liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= ml + (5.3 ml/foot X 46 feet) + 200 ml = 443.8 ml liters = 443.8 liters

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 43	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 43	PURGING INITIATED AT: 7:56	PURGING ENDED AT: 8:21	TOTAL VOLUME PURGED (gallons): 1.2

TIME	VOLUME PURGED (liters)	CUMUL. VOLUME PURGED (liters)	PURGE RATE (ml/min)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	Notes
7:56	0	0	200	1.53							
8:06	2.0	2.0	↓	1.62	6.42	23.6	709	0.25	4.88	-132.2	clear w/ little particles
8:09	0.6	2.6		1.63	6.41	23.6	772	0.22	3.86	-147.9	↓
8:12	0.6	3.2		1.63	6.41	23.7	821	0.18	6.16	-155.9	
8:15	0.6	3.8		1.63	6.43	23.4	844	0.15	6.57	-159.2	
8:18	0.6	4.4	↓	1.63	6.41	23.5	857	0.13	10.3	-160.5	↓

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.151; **1.25"** = 0.227; **2"** = 0.606; **3"** = 1.401; **4"** = 2.461; **5"** = 3.861; **6"** = 5.565; **12"** = 22.258
TUBING INSIDE DIA. CAPACITY (ml./Ft.): **1/8"** = 2.271; **3/16"** = 5.300; **1/4"** = 9.842; **5/16"** = 15.142; **3/8"** = 22.712; **1/2"** = 37.854; **5/8"** = 60.567

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Brandon Schmidt	SAMPLER(S) SIGNATURE(S): Brandon Schmidt	SAMPLING INITIATED AT: 8:20	SAMPLING ENDED AT: 8:21
PUMP OR TUBING DEPTH IN WELL (feet): 43	TUBING MATERIAL CODE: HDPE	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N (replaced))	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH			
	1	HDPE	250	None	NA	NA	TDS by SM19	APP	200

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After (Through) Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. **The above do not constitute all of the information required by Chapter 62-160, F.A.C.**
2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

DEP Form FD 9000-24: GROUNDWATER SAMPLING LOG

SITE NAME: CRHE Area	SITE LOCATION: KSC Florida	
WELL NO: CRHE-MW0041	SAMPLE ID: CRHE-MW0041-035.0-20231219	DATE: 12/19/2023

PURGING DATA

WELL DIAMETER (inches):	TUBING DIAMETER (inches): 1/4	WELL SCREEN INTERVAL DEPTH: 30 feet to 40 feet	STATIC DEPTH TO WATER (feet): 0.35	PURGE PUMP TYPE OR BAILER: PP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (feet – feet) X liters/foot = liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= ml + (5.3 ml/foot X 39 feet) + 200 mL ~~liters~~ = 406.7 mL ~~liters~~ ×3 1220.1 = mL

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 35	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 35	PURGING INITIATED AT: 1002	PURGING ENDED AT: 1024	TOTAL VOLUME PURGED ~~(gallons)~~ (liters): 4.41

TIME	VOLUME PURGED (liters)	CUMUL. VOLUME PURGED (liters)	PURGE RATE (ml/min)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	Notes
1012	2.0	2.0	200	0.37	7.08	24.1	2763	0.12	13.2	-91.1	clear, no odor
1015	0.6	2.6	200	0.37	7.07	24.3	2746	0.11	8.67	-91.2	"
1018	0.6	3.2	200	0.37	7.08	24.1	2722	0.12	7.18	-91.4	"
1021	0.6	3.8	200	0.37	7.08	24.2	2695	0.13	4.08	-91.3	"
1024	0.6	4.4	200	0.37	7.07	24.2	2673	0.20	3.69	-91.4	"

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.151; **1.25"** = 0.227; **2"** = 0.606; **3"** = 1.401; **4"** = 2.461; **5"** = 3.861; **6"** = 5.565; **12"** = 22.258
TUBING INSIDE DIA. CAPACITY (ml./Ft.): **1/8"** = 2.271; **3/16"** = 5.300; **1/4"** = 9.842; **5/16"** = 15.142; **3/8"** = 22.712; **1/2"** = 37.854; **5/8"** = 60.567

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Meghan West	SAMPLER(S) SIGNATURE(S): Meghan West	SAMPLING INITIATED AT: 1027	SAMPLING ENDED AT: 1055
PUMP OR TUBING DEPTH IN WELL (feet): 35	TUBING MATERIAL CODE: HDPE	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y N (replaced)	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
	3	CG	40mL	HCL	N/A	N/A	CVOCs method 8260B	APP	200
	3	CG	40mL	HCL	N/A	N/A	1,4 Dioxane 8260 Sim	APP	200

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After (Through) Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. **The above do not constitute all of the information required by Chapter 62-160, F.A.C.**
2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

DEP Form FD 9000-24: GROUNDWATER SAMPLING LOG

SITE NAME: CRHE Area	SITE LOCATION: KSC Florida	
WELL NO: ~~CHRE~~ CRHE-MW0039	SAMPLE ID: ~~CHRE~~ CRHE-MW0039-030.0-20231219	DATE: 12-19-23

PURGING DATA

WELL DIAMETER (inches): 2	TUBING DIAMETER (inches): 1/4	WELL SCREEN INTERVAL DEPTH: 25 feet to 35 feet	STATIC DEPTH TO WATER (feet): 0.59	PURGE PUMP TYPE OR BAILER: PP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (feet – feet) X liters/foot = liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= ml + (5.3 ml/foot X 33 feet) + 200 ~~liters~~ ml = 374.9 ~~liters~~ ml

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 30	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 30	PURGING INITIATED AT: 1008	PURGING ENDED AT: 1038	TOTAL VOLUME PURGED (gallons): 1.2

TIME	VOLUME PURGED (liters)	CUMUL. VOLUME PURGED (liters)	PURGE RATE (ml/min)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	Notes
1008	0	0	200	0.59							
1018	2.0	2.0	↓	0.60	6.48	24.3	1892	0.14	11.8	-96.0	clear mild odor
1021	0.6	2.6		0.60	6.49	24.3	1883	0.12	11.0	-102.7	↓
1023	0.6	3.2		0.60	6.48	24.4	1887	0.11	9.03	-103.5	
1026	0.6	3.8		0.60	6.47	24.3	1886	0.09	6.02	-106.1	
1029	0.6	4.4	↓	0.60	6.47	24.4	1889	0.08	5.14	-106.1	↓

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.151; **1.25"** = 0.227; **2"** = 0.606; **3"** = 1.401; **4"** = 2.461; **5"** = 3.861; **6"** = 5.565; **12"** = 22.258
TUBING INSIDE DIA. CAPACITY (ml./Ft.): **1/8"** = 2.271; **3/16"** = 5.300; **1/4"** = 9.842; **5/16"** = 15.142; **3/8"** = 22.712; **1/2"** = 37.854; **5/8"** = 60.567

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Brandon Schmidt	SAMPLER(S) SIGNATURE(S): Brandon Schmidt	SAMPLING INITIATED AT: 1031	SAMPLING ENDED AT: 1038
PUMP OR TUBING DEPTH IN WELL (feet): 30	TUBING MATERIAL CODE: HDPE	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N (replaced))	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH			
	3	CG	40ml	HCL	NA	NA	VOCs	APP	200
	3	CG	40ml	HCL	NA	NA	1,4 Diox	APP	200

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After (Through) Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

DEP Form FD 9000-24: GROUNDWATER SAMPLING LOG

SITE NAME: CRHE Area	SITE LOCATION: KSC Florida	
WELL NO: CRHE-MW0034	SAMPLE ID: CRHE-MW0034-035.0-20231219	DATE: 12/19/2023

PURGING DATA

WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): 1/4	WELL SCREEN INTERVAL DEPTH: 30 feet to 40 feet	STATIC DEPTH TO WATER (feet): 2.28	PURGE PUMP TYPE OR BAILER: PP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (feet – feet) X liters/foot = liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= ml + (5.3 ml/foot X ~~MW~~ 40 feet) + 200 ~~liters~~ mL = 412 ~~liters~~ mL

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 35	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 35	PURGING INITIATED AT: 1215	PURGING ENDED AT: 1247	TOTAL VOLUME (liters) PURGED (~~gallons~~): 6.4

TIME	VOLUME PURGED (liters)	CUMUL. VOLUME PURGED (liters)	PURGE RATE (ml/min)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	Notes
~~1215~~	~~0~~	~~0~~	~~200~~	~~MW~~	~~6.55~~	~~22.2~~	~~907~~	~~0.16~~		~~-92.9~~	~~clear~~
1225	2.0	2.0	200	2.31	6.55	22.2	907	0.16	204	-92.9	cloudy
1230	1.0	3.0	200	2.31	6.52	22.4	924	0.15	75.3	-99.3	clear
1235	1.0	4.0	200	2.31	6.52	22.5	928	0.11	31.1	-101.7	clear
1238	0.6	4.6	200	2.31	6.52	22.6	930	0.10	21.3	-102.3	clear
1241	0.6	5.2	200	2.31	6.52	22.6	931	0.09	19.1	-103.9	clear
1244	0.6	5.8	200	2.31	6.51	22.6	931	0.09	17.7	-104.9	clear
1247	0.6	6.4	200	2.31	6.52	22.6	932	0.09	16.0	-105.6	clear

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.151; **1.25"** = 0.227; **2"** = 0.606; **3"** = 1.401; **4"** = 2.461; **5"** = 3.861; **6"** = 5.565; **12"** = 22.258
TUBING INSIDE DIA. CAPACITY (ml./Ft.): **1/8"** = 2.271; **3/16"** = 5.300; **1/4"** = 9.842; **5/16"** = 15.142; **3/8"** = 22.712; **1/2"** = 37.854; **5/8"** = 60.567

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Brandon Schmidt	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 1249	SAMPLING ENDED AT: 1252
PUMP OR TUBING DEPTH IN WELL (feet): 35	TUBING MATERIAL CODE: HDPE	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y ~~N~~ (replaced)	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH			
	3	CG	40mL	HGL	N/A	N/A	cVOC's	APP	200

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After (Through) Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

DEP Form FD 9000-24: GROUNDWATER SAMPLING LOG

SITE NAME: CRHE Area	SITE LOCATION: KSC Florida	
WELL NO: CRHE-MW0042	SAMPLE ID: CRHE-MW0042-040.0-20231219	DATE: 12/19/2023

PURGING DATA

WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): 1/4	WELL SCREEN INTERVAL DEPTH: 44 ~~35~~ feet to 45 ~~45~~ feet	STATIC DEPTH TO WATER (feet): 3.16	PURGE PUMP TYPE OR BAILER: PP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH ~~35~~ STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (feet – feet) X liters/foot = liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= ml + (5.3 ml/foot X 42 feet) + 200 ~~liters~~ mL = 4226 ~~liters~~ mL

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 40	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 40	PURGING INITIATED AT: 1324	PURGING ENDED AT: 1346	TOTAL VOLUME (Liters) PURGED ~~(gallons)~~: 4.4

TIME	VOLUME PURGED (liters)	CUMUL. VOLUME PURGED (liters)	PURGE RATE (ml/min)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	Notes
1324	0	0	200		6.38	23.0	1163	0.15		-88.7	MW
1334	2.0	2.0	200	3.21	6.38	23.0	1163	0.15	4.98	-88.7	clear
1337	0.6	2.6	200	3.22	6.38	23.1	1169	0.12	9.39	-93.5	clear mild odor
1340	0.6	3.2	200	3.22	6.38	23.0	1172	0.10	8.22	-97.7	clear mild odor
1343	0.6	3.8	200	3.22	6.38	23.0	1172	0.10	8.29	-98.8	clear mild odor
1346	0.6	4.4	200	3.22	6.33	23.1	1173	0.09	6.65	-99.9	clear mild odor

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.151; **1.25"** = 0.227; **2"** = 0.606; **3"** = 1.401; **4"** = 2.461; **5"** = 3.861; **6"** = 5.565; **12"** = 22.258
TUBING INSIDE DIA. CAPACITY (ml./Ft.): **1/8"** = 2.271; **3/16"** = 5.300; **1/4"** = 9.842; **5/16"** = 15.142; **3/8"** = 22.712; **1/2"** = 37.854; **5/8"** = 60.567

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Meghan West	SAMPLER(S) SIGNATURE(S): Meghan West	SAMPLING INITIATED AT: 1348	SAMPLING ENDED AT: 1353
PUMP OR TUBING DEPTH IN WELL (feet): 40	TUBING MATERIAL CODE: HDPE	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y N (replaced)	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH			
	~~1~~ 3	CG	~~250~~ 40 mL	~~NP~~ HCl	N/A	N/A	cVOC's	APP	200

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After (Through) Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

CALIBRATION LOG

Project Name: CRHEA

By: Meghan West

Project No.: NS1004.05.06

Page 1 of 2

Date/Time	Instrument	STD	STD CONC ppm	Meter Reading	Comments
12/19/23 0545	YSI Pro Quarto 23H101235	conductivity	1.413 ms/cm	1.416	pass
"	"	DO%	saturated air	9.08	pass
"	"	pH	7	6.98	pass
"	"	pH	4	3.99	pass
"	"	pH	10	10.00	pass
"	"	ORP	240 mv	240.1	pass
12/19/23	GeoTech Turbidity Meter 23064773	NTU	0.02	0.02	pass
"	"	"	20	20.1	pass
"	"	"	100	99.8	pass
"	"	"	800	799	pass

HGL

CALIBRATION LOG

Project Name: CRITE GW Sampling

By: Brandon Schmidt

Project No.: NS1004.05.06

Page 2 of 2

Date/Time	Instrument	STD	STD CONC ppm	Meter Reading	Comments
12/19/23 6:15	Turbidity Meter	NTU	0.02	0.02	Pass
		↓	20	21.1	Pass
			100	94.5	Pass
			800	800	Pass
12/19/23 6:30	YSI Pro Quatro	conductivity	1.413	1.414	Pass
		DO	Sat Air	100.4	Pass
		pH	7	7.00	Pass
		pH	10	10.00	Pass
		pH	4	3.97	Pass
		ORP	240.0 mV	240.1	Pass

Purpose- monitoring well sampling
Crew- Brandon Schmidt(HGL), Meghan West(HGL)
Equipment- work trucks, hand tools, nitrile gloves, water level meters (3614944 & 250554), YSI Pro Quartos (23H101235 & 23H101231), turbidity meters (23047173 & 23074846), decon supplies (5-gal buckets, potable water, DI water, Luminox), P-pumps, HDPE tubing, 15-gal totes
Weather - high-62°, low-47°, prec-0%, 9 mph NW wind
0545- personnel at field office, calibrating equipment, loading work trucks, and preparing paperwork
0700 - conduct TGSM
0715 - mob to CRHE
0730 - all personnel arrived on site
0750 - begin purge at CRHE-MW0027 @ 200 ml/min
0857 - sample CRHE-MW0027-045.0-20231219 collected by M.W, analyzed for CVOCs
0756 - begin purge at CRHE-MW0043 at 200 ml/min
0820 - sample CRHE-MW0043-043.0-20231219 collected by B.S., analyzed for TDS.
1002 - begin purge at CRHE-MW0041 at 200 ml/min
1027 - sample CRHE-MW0041-035.0-20231219 collected by M.W, analyzed for CVOCs & 1,4 dioxane.

Rite in the Rain

100 Location CRHE Date 12/19/2023

Project / Client NASA NS1004.05.06

1008- begin purge at CRHE-MW00039.

1031- sample CRHE-MW00039-030.0-20231219 collected by B.S., analyzed for CVOCs & 1,4 Dioxane

1215- begin purge at CRHE-MW00034

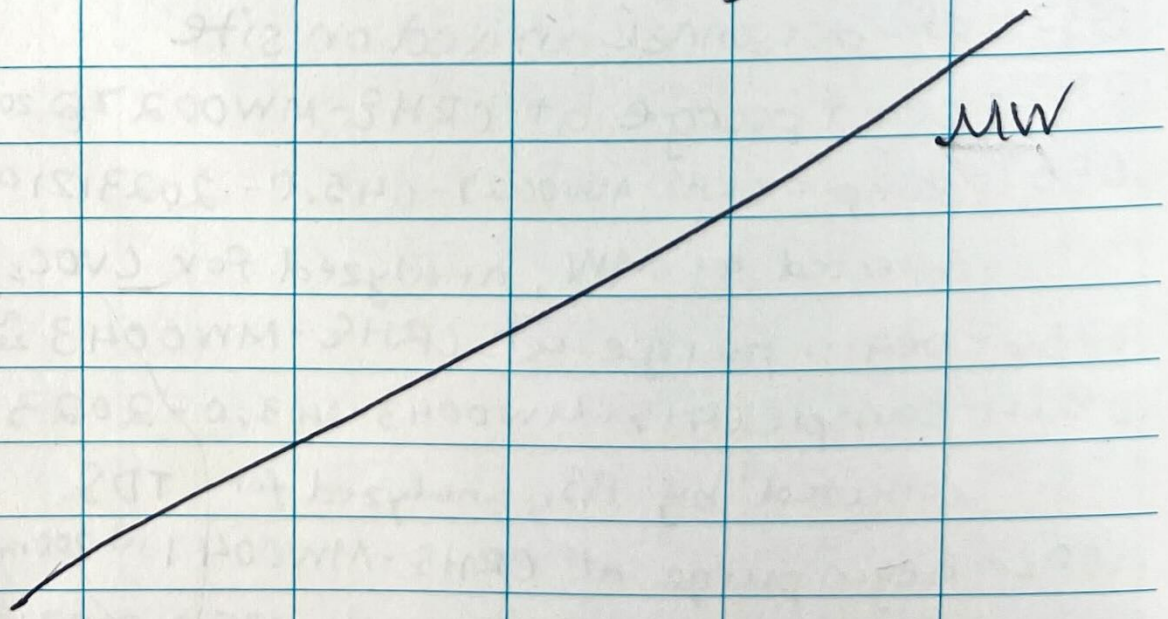
1249- sample CRHE-MW00034-035.0-20231219 collected by B.S., analyzed for CVOC's.

1324- begin purge at CRHE-MW00042

1348- sample CRHE-MW00042-040.0-20231219 collected by M.W., analyzed for CVOCs

MW 1415- mob to CCF IDW area, transferred approximately 10 gallons of decon and purge water into drum 231269.

1445- all personnel (all personnell offsite) arrive at CCSFS field office. QC and pack samples, unload trucks, end of day.



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APPENDIX C

LABORATORY ANALYTICAL DATA
(ELECTRONIC ONLY)

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National Aeronautics and
Space Administration

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Signature

12-1-20

Date

Company Name: SGS North America, Inc.
Company Representative Name: Caitlin Brice
Company Representative Title: General Manager
Company Address: 4405 Vineland Rd, Orlando, FL 32811
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Sepideh Saeed — Signature

03/06/25 — Date

Company Name: Eurofins ET Northern California, LLC (EETNC)
Company Representative Name: Sepideh Saeed
Company Representative Title: Business Unit Manager
Company Address: 180 Blue Ravine Road, Suite B, Folsom, CA 95630
Company Representative Phone: 916-985-1000
Company Representative E-Mail: airtoxics@et.eurofinsus.com

eurofins | Air Toxics

12/29/2023
Dr. Denise Rivers
HydroGeoLogic, Inc.
2405 N. Courtenay Parkway

Merritt Island FL 32953

Project Name: CRHEA - KSC, FL
Project #: NS1004.05.11
Workorder #: 2312355

Dear Dr. Denise Rivers

The following report includes the data for the above referenced project for sample(s) received on 12/13/2023 at Eurofins Air Toxics LLC.

The data and associated QC analyzed by TO-15 are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Eurofins Air Toxics LLC. for your air analysis needs. Eurofins Air Toxics Inc. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Brian Whittaker at 916-985-1000 if you have any questions regarding the data in this report.

Regards,



Brian Whittaker

Project Manager

eurofins | Air Toxics

WORK ORDER #: 2312355

Work Order Summary

CLIENT:	Dr. Denise Rivers HydroGeoLogic, Inc. 2405 N. Courtenay Parkway Merritt Island, FL 32953	**BILL TO:**	Accounts Payable HydroGeoLogic, Inc. 11107 Sunset Hills Rd. Suite 400 Reston, VA 20190
PHONE:		**P.O. #**	2021-00414
FAX:		**PROJECT #**	NS1004.05.11 CRHEA - KSC, FL
DATE RECEIVED:	12/13/2023	**CONTACT:**	Brian Whittaker
DATE COMPLETED:	12/27/2023		

FRACTION #	NAME	TEST	RECEIPT VAC./PRES.	FINAL PRESSURE
01A	CRHE-VMP0001-000.0-20231212	TO-15	7.8 "Hg	10 psi
01AA	CRHE-VMP0001-000.0-20231212 Lab Du	TO-15	7.8 "Hg	10 psi
02A	CRHE-VMP0002-000.0-20231212	TO-15	3.9 "Hg	10 psi
03A	CRHE-VMP0003-000.0-20231212	TO-15	3.9 "Hg	9.8 psi
04A	CRHE-VMP0004-000.0-20231212	TO-15	4.7 "Hg	9.9 psi
05A	CRHE-FB-20231212-01	TO-15	3.5 "Hg	9.9 psi
06A	Lab Blank	TO-15	NA	NA
07A	CCV	TO-15	NA	NA
07B	CCV	TO-15	NA	NA
08A	LCS	TO-15	NA	NA
08AA	LCSD	TO-15	NA	NA

CERTIFIED BY: Heidi Hayes DATE: 12/27/23

Technical Director

Certification numbers: AZ Licensure AZ0775, FL NELAP – E87680, LA NELAP – 02089, NH NELAP – 209222, NJ NELAP - CA016, NY NELAP - 11291, TX NELAP – T104704434-22-18, UT NELAP – CA009332022-14, VA NELAP - 12240, WA ELAP - C935
Name of Accreditation Body: NELAP/ORELAP (Oregon Environmental Laboratory Accreditation Program) CA300005-017
Eurofins Environment Testing Northern California, LLC certifies that the test results contained in this report meet all requirements of the 2016 TNI Standard.

This report shall not be reproduced, except in full, without the written approval of Eurofins Air Toxics, LLC.

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630
(916) 985-1000

LABORATORY NARRATIVE
DoD QSM - TO-15
HydroGeoLogic, Inc.
Workorder# 2312355

Five 1 Liter Summa Canister (100% Certified) samples were received on December 13, 2023. The laboratory performed analysis via EPA Method TO-15 using GC/MS in the full scan mode.

Please note the following narratives are project specific therefore may or may not be applicable to the associated sample set:

1) A Limit of Detection (LOD) and Method Detection Limit (MDL) study are not maintained for Total Xylenes and non-standard compounds.

2) Total Xylenes concentration is calculated by summing the individual concentrations of m,p-Xylene and o-Xylene.

3) Non-standard compounds may have different acceptance criteria than the standard TO-14A/TO-15 compound list as per contract or verbal agreement.

Receiving Notes

The Chain of Custody (COC) information for sample CRHE-FB-20231212-01 did not match the entry on the sample tag with regard to sample identification. The information on the COC was used to process and report the sample.

Analytical Notes

As per client project requirements, the laboratory has reported estimated values for target compound hits that are below the Reporting Limit but greater than the Method Detection Limit. Concentrations that are below the level at which the canister was certified may be false positives.

Samples were analyzed in one analytical batch on MSD-91 on 12/20/23. The initial continuing calibration verification (CCV) for the batch is reported as lab fraction 07A and the ending CCV is reported as lab fraction 07B.

Definition of Data Qualifying Flags

Eight qualifiers may have been used on the data analysis sheets and indicates as follows:

B - Compound present in laboratory blank greater than reporting limit (background subtraction not performed).

J - Estimated value.

S - Saturated peak.

Q - Exceeds quality control limits.

U - Compound analyzed for but not detected above the reporting limit, LOD, or MDL value. See data page for project specific U-flag definition.

UJ- Non-detected compound associated with low bias in the CCV

N - The identification is based on presumptive evidence.

File extensions may have been used on the data analysis sheets and indicates

as follows:
a-File was requantified
b-File was quantified by a second column and detector
r1-File was requantified for the purpose of reissue

EPA METHOD TO-15 GC/MS FULL SCAN
CRHEA - KSC, FL

Client ID:	CRHE-VMP0001-000.0-20231212		
Lab ID:	2312355-01A	**Date/Time Analyzed:**	12/20/23 09:04 PM
Date/Time Collected:	12/12/23 09:53 AM	**Dilution Factor:**	2.27
Media:	1 Liter Summa Canister (100% Certified)	**Instrument/Filename:**	msd91.i / 91122017

Compound	CAS#	MDL (ppbv)	LOD (ppbv)	Rpt. Limit (ppbv)	Amount (ppbv)
1,1-Dichloroethene	75-35-4	0.59	1.0	1.1	Not Detected U
cis-1,2-Dichloroethene	156-59-2	0.25	1.0	1.1	Not Detected U
Tetrachloroethene	127-18-4	0.29	1.0	1.1	1.4
trans-1,2-Dichloroethene	156-60-5	0.52	1.0	1.1	Not Detected U
Trichloroethene	79-01-6	0.34	1.0	1.1	Not Detected U
Vinyl Chloride	75-01-4	0.95	1.0	1.1	Not Detected U

U = The analyte was not detected above the MDL.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	75-127	117
4-Bromofluorobenzene	460-00-4	80-122	102
Toluene-d8	2037-26-5	84-115	100

EPA METHOD TO-15 GC/MS FULL SCAN
CRHEA - KSC, FL

Client ID:	CRHE-VMP0001-000.0-20231212 Lab Du		
Lab ID:	2312355-01AA	**Date/Time Analyzed:**	12/20/23 09:29 PM
Date/Time Collected:	12/12/23 09:53 AM	**Dilution Factor:**	2.27
Media:	1 Liter Summa Canister (100% Certified)	**Instrument/Filename:**	msd91.i / 91122018

Compound	CAS#	MDL (ppbv)	LOD (ppbv)	Rpt. Limit (ppbv)	Amount (ppbv)
1,1-Dichloroethene	75-35-4	0.59	1.0	1.1	Not Detected U
cis-1,2-Dichloroethene	156-59-2	0.25	1.0	1.1	Not Detected U
Tetrachloroethene	127-18-4	0.29	1.0	1.1	1.3
trans-1,2-Dichloroethene	156-60-5	0.52	1.0	1.1	Not Detected U
Trichloroethene	79-01-6	0.34	1.0	1.1	Not Detected U
Vinyl Chloride	75-01-4	0.95	1.0	1.1	Not Detected U

U = The analyte was not detected above the MDL.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	75-127	118
4-Bromofluorobenzene	460-00-4	80-122	101
Toluene-d8	2037-26-5	84-115	104

EPA METHOD TO-15 GC/MS FULL SCAN
CRHEA - KSC, FL

Client ID:	CRHE-VMP0002-000.0-20231212		
Lab ID:	2312355-02A	**Date/Time Analyzed:**	12/20/23 09:54 PM
Date/Time Collected:	12/12/23 10:24 AM	**Dilution Factor:**	1.93
Media:	1 Liter Summa Canister (100% Certified)	**Instrument/Filename:**	msd91.i / 91122019

Compound	CAS#	MDL (ppbv)	LOD (ppbv)	Rpt. Limit (ppbv)	Amount (ppbv)
1,1-Dichloroethene	75-35-4	0.50	0.87	0.96	Not Detected U
cis-1,2-Dichloroethene	156-59-2	0.21	0.87	0.96	Not Detected U
Tetrachloroethene	127-18-4	0.25	0.87	0.96	2.6
trans-1,2-Dichloroethene	156-60-5	0.44	0.87	0.96	Not Detected U
Trichloroethene	79-01-6	0.29	0.87	0.96	Not Detected U
Vinyl Chloride	75-01-4	0.81	0.87	0.96	Not Detected U

U = The analyte was not detected above the MDL.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	75-127	116
4-Bromofluorobenzene	460-00-4	80-122	102
Toluene-d8	2037-26-5	84-115	103

EPA METHOD TO-15 GC/MS FULL SCAN
CRHEA - KSC, FL

Client ID:	CRHE-VMP0003-000.0-20231212		
Lab ID:	2312355-03A	**Date/Time Analyzed:**	12/20/23 10:19 PM
Date/Time Collected:	12/12/23 11:11 AM	**Dilution Factor:**	1.92
Media:	1 Liter Summa Canister (100% Certified)	**Instrument/Filename:**	msd91.i / 91122020

Compound	CAS#	MDL (ppbv)	LOD (ppbv)	Rpt. Limit (ppbv)	Amount (ppbv)
1,1-Dichloroethene	75-35-4	0.50	0.86	0.96	Not Detected U
cis-1,2-Dichloroethene	156-59-2	0.21	0.86	0.96	Not Detected U
Tetrachloroethene	127-18-4	0.25	0.86	0.96	1.2
trans-1,2-Dichloroethene	156-60-5	0.44	0.86	0.96	Not Detected U
Trichloroethene	79-01-6	0.29	0.86	0.96	Not Detected U
Vinyl Chloride	75-01-4	0.80	0.86	0.96	Not Detected U

U = The analyte was not detected above the MDL.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	75-127	118
4-Bromofluorobenzene	460-00-4	80-122	102
Toluene-d8	2037-26-5	84-115	104

EPA METHOD TO-15 GC/MS FULL SCAN
CRHEA - KSC, FL

Client ID:	CRHE-VMP0004-000.0-20231212		
Lab ID:	2312355-04A	**Date/Time Analyzed:**	12/20/23 10:44 PM
Date/Time Collected:	12/12/23 11:43 AM	**Dilution Factor:**	1.98
Media:	1 Liter Summa Canister (100% Certified)	**Instrument/Filename:**	msd91.i / 91122021

Compound	CAS#	MDL (ppbv)	LOD (ppbv)	Rpt. Limit (ppbv)	Amount (ppbv)
1,1-Dichloroethene	75-35-4	0.51	0.89	0.99	Not Detected U
cis-1,2-Dichloroethene	156-59-2	0.22	0.89	0.99	Not Detected U
Tetrachloroethene	127-18-4	0.25	0.89	0.99	0.28 J
trans-1,2-Dichloroethene	156-60-5	0.45	0.89	0.99	Not Detected U
Trichloroethene	79-01-6	0.30	0.89	0.99	Not Detected U
Vinyl Chloride	75-01-4	0.83	0.89	0.99	Not Detected U

U = The analyte was not detected above the MDL.
J = Estimated value.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	75-127	118
4-Bromofluorobenzene	460-00-4	80-122	102
Toluene-d8	2037-26-5	84-115	104

EPA METHOD TO-15 GC/MS FULL SCAN
CRHEA - KSC, FL

Client ID:	CRHE-FB-20231212-01		
Lab ID:	2312355-05A	**Date/Time Analyzed:**	12/20/23 11:09 PM
Date/Time Collected:	12/12/23 11:51 AM	**Dilution Factor:**	1.89
Media:	1 Liter Summa Canister (100% Certified)	**Instrument/Filename:**	msd91.i / 91122022

Compound	CAS#	MDL (ppbv)	LOD (ppbv)	Rpt. Limit (ppbv)	Amount (ppbv)
1,1-Dichloroethene	75-35-4	0.49	0.85	0.94	Not Detected U
cis-1,2-Dichloroethene	156-59-2	0.20	0.85	0.94	Not Detected U
Tetrachloroethene	127-18-4	0.24	0.85	0.94	Not Detected U
trans-1,2-Dichloroethene	156-60-5	0.43	0.85	0.94	Not Detected U
Trichloroethene	79-01-6	0.28	0.85	0.94	Not Detected U
Vinyl Chloride	75-01-4	0.79	0.85	0.94	Not Detected U

U = The analyte was not detected above the MDL.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	75-127	114
4-Bromofluorobenzene	460-00-4	80-122	100
Toluene-d8	2037-26-5	84-115	102

EPA METHOD TO-15 GC/MS FULL SCAN
CRHEA - KSC, FL

Client ID:	Lab Blank		
Lab ID:	2312355-06A	**Date/Time Analyzed:**	12/20/23 12:34 PM
Date/Time Collected:	NA - Not Applicable	**Dilution Factor:**	1.00
Media:	NA - Not Applicable	**Instrument/Filename:**	msd91.i / 91122006e

Compound	CAS#	MDL (ppbv)	LOD (ppbv)	Rpt. Limit (ppbv)	Amount (ppbv)
1,1-Dichloroethene	75-35-4	0.26	0.45	0.50	Not Detected U
cis-1,2-Dichloroethene	156-59-2	0.11	0.45	0.50	Not Detected U
Tetrachloroethene	127-18-4	0.13	0.45	0.50	Not Detected U
trans-1,2-Dichloroethene	156-60-5	0.23	0.45	0.50	Not Detected U
Trichloroethene	79-01-6	0.15	0.45	0.50	Not Detected U
Vinyl Chloride	75-01-4	0.42	0.45	0.50	Not Detected U

U = The analyte was not detected above the MDL.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	75-127	114
4-Bromofluorobenzene	460-00-4	80-122	100
Toluene-d8	2037-26-5	84-115	102

EPA METHOD TO-15 GC/MS FULL SCAN
CRHEA - KSC, FL

Client ID:	CCV		
Lab ID:	2312355-07A	**Date/Time Analyzed:**	12/20/23 11:20 AM
Date/Time Collected:	NA - Not Applicable	**Dilution Factor:**	1.00
Media:	NA - Not Applicable	**Instrument/Filename:**	msd91.i / 91122003a

Compound	CAS#	%Recovery
1,1-Dichloroethene	75-35-4	113
cis-1,2-Dichloroethene	156-59-2	109
Tetrachloroethene	127-18-4	106
trans-1,2-Dichloroethene	156-60-5	114
Trichloroethene	79-01-6	108
Vinyl Chloride	75-01-4	119

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	75-127	106
4-Bromofluorobenzene	460-00-4	80-122	100
Toluene-d8	2037-26-5	84-115	103

EPA METHOD TO-15 GC/MS FULL SCAN
CRHEA - KSC, FL

Client ID:	CCV		
Lab ID:	2312355-07B	**Date/Time Analyzed:**	12/21/23 08:40 AM
Date/Time Collected:	NA - Not Applicable	**Dilution Factor:**	1.00
Media:	NA - Not Applicable	**Instrument/Filename:**	msd91.i / 91122030

Compound	CAS#	%Recovery
1,1-Dichloroethene	75-35-4	115
cis-1,2-Dichloroethene	156-59-2	111
Tetrachloroethene	127-18-4	105
trans-1,2-Dichloroethene	156-60-5	115
Trichloroethene	79-01-6	109
Vinyl Chloride	75-01-4	122

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	75-127	107
4-Bromofluorobenzene	460-00-4	80-122	97
Toluene-d8	2037-26-5	84-115	104

EPA METHOD TO-15 GC/MS FULL SCAN
CRHEA - KSC, FL

Client ID:	LCS		
Lab ID:	2312355-08A	**Date/Time Analyzed:**	12/20/23 11:44 AM
Date/Time Collected:	NA - Not Applicable	**Dilution Factor:**	1.00
Media:	NA - Not Applicable	**Instrument/Filename:**	msd91.i / 91122004a

Compound	CAS#	%Recovery
1,1-Dichloroethene	75-35-4	108
cis-1,2-Dichloroethene	156-59-2	110
Tetrachloroethene	127-18-4	103
trans-1,2-Dichloroethene	156-60-5	113
Trichloroethene	79-01-6	108
Vinyl Chloride	75-01-4	119

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	75-127	108
4-Bromofluorobenzene	460-00-4	80-122	100
Toluene-d8	2037-26-5	84-115	104

* % Recovery is calculated using unrounded analytical results.

EPA METHOD TO-15 GC/MS FULL SCAN
CRHEA - KSC, FL

Client ID:	LCSD		
Lab ID:	2312355-08AA	**Date/Time Analyzed:**	12/20/23 12:08 PM
Date/Time Collected:	NA - Not Applicable	**Dilution Factor:**	1.00
Media:	NA - Not Applicable	**Instrument/Filename:**	msd91.i / 91122005a

Compound	CAS#	%Recovery
1,1-Dichloroethene	75-35-4	110
cis-1,2-Dichloroethene	156-59-2	110
Tetrachloroethene	127-18-4	107
trans-1,2-Dichloroethene	156-60-5	115
Trichloroethene	79-01-6	109
Vinyl Chloride	75-01-4	120

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	75-127	108
4-Bromofluorobenzene	460-00-4	80-122	100
Toluene-d8	2037-26-5	84-115	104

* % Recovery is calculated using unrounded analytical results.

Analysis Request / Canister Chain of Custody

eurofins | Air Toxics

Eurofins Environment Testing Northern California, LLC
180 Blue Ravine Rd. Suite B, Folsom, CA 95630
Phone (800) 985-5955; Fax (916) 351-8279

Workorder #: 2312355

Instructions

page 1 of 1

Client: Denise Rivers, HGL
Site Name: CRHEA - KSC, FL
Project Manager: Robert Lynch
Sampler: Brandon Schmidt

Project Name: CRHEA - KSC, FL
Project #: NS1004.05.11
PO#:

Turnaround Time (Specify Below)
Standard ✓ Rush _____ (Surcharges will apply, per availability)
Samples received after 3PM PST are considered to be received on the following workday.
Requested Date (mm/dd/yy):
QR Number of Days:

Lab ID	Field Sample Identification (Location)	Canister Barcode #	Flow Controller Barcode #	Start Sampling Information		Stop Sampling Information		Requested Analyses: TO-15	Canister Vacuum/Pressure: Initial (in "Hg)	Final (in "Hg)	Lab Use Only: Receipt (in "Hg)	Lab Use Only: Final (in psi) Gas: N2 / He
				Date	Time	Date	Time					
01A	CRHE-VMP0001-0000.0-20231212	1L2958	23492	12-12-23	0978	12-12-23	0953	X	-30	-5		
02A	CRHE-VMP0002-0000.0-20231212	1L1774	25272	12-12-23	1019	12-12-23	1024	X	-30	-5		
03A	CRHE-VMP0003-0000.0-20231212	1L3787	23786	12-12-23	1106	12-12-23	1111	X	-30	-5		
04A	CRHE-VMP0004-0000.0-20231212	1L2874	26663	12-12-23	1138	12-12-23	1143	X	-30	-5		
05A	CRHE-FB-20231212-01	1L1560	25194	12-12-23	1146	12-12-23	1151	X	-30	-5		

Special Instructions/Notes:

Relinquished by: (Signature/Affiliation)	Date	Time	Received by: (Signature/Affiliation)	Date	Time
HGL	12-12-23	1300	CRESAT	12-13-23	1030
Relinquished by: (Signature/Affiliation)	Date	Time	Received by: (Signature/Affiliation)	Date	Time
Relinquished by: (Signature/Affiliation)	Date	Time	Received by: (Signature/Affiliation)	Date	Time

Shipper Name: FedEx

Lab Use Only
Custody Seals Intact? Yes No None
Condition:

Sample Transportation Notice: Relinquishing signature on this document indicates that samples are shipped in compliance with all applicable local, State, Federal, and international laws, regulations, and ordinances of any kind. Relinquishing signature also indicates agreement to hold harmless, defend, and indemnify Eurofins Air Toxics against any claim, demand, or action, of any kind, related to the collection, handling, of shipping of samples. D.O.T Hotline (800) 467-4922



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HYDROGEOLOGIC, INC.
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Automated Report



Technical Report for

Hydrogeologic, Inc.

CRHEA-GWIM; Contractors Rd, KSC, FL

NS1004.05.10

SGS Job Number: FC12031

Sampling Date: 12/15/23

Report to:

HGL, Inc
2405 N Courtenay Pkwy Suite 203
Merritt Island, FL 32953
jtracy@hgl.com; lnyland@hgl.com

ATTN: John Tracy

Total number of pages in report: **620**

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable unless noted in the narrative, comments or footnotes.

Norm Farmer
Technical Director

Client Service contact: Jean Dent-Smith 407-425-6700

Certifications: FL(E83510), LA(03051), KS(E-10327), NC(573), NJ(FL002), NY(12022), SC(96038001) DoD ELAP(ANAB L2229), AZ(AZ0806), CA(2937), TX(T104704404), PA(68-03573), VA(460177), AL, AK, AR, CT, IA, KY, MA, MI. MS, ND, NH, NV, OK, OR, IL, UT, VT, WA, WI, WV

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January 11, 2024

Ms. Linda Nyland
HydroGeoLogic, Inc.
2405 N. Courtenay Parkway, Suite 203
Merritt Island, Florida 32953

RE: SGS North America Inc. - Orlando job FC12031 Reissue

Dear Ms. Nyland,

The final report for job number FC12031 has been revised to reflect your requested changes. These following edits have been incorporated into the revised report.

8260 VOC reporting list has been edited to report our Standard TAL as per your request.

Please feel free to contact us if we can be of further assistance.

Sincerely,

SGS North America Inc. - Orlando

Florida ♦ 4405 Vineland Road ♦ Suite C-15 ♦ Orlando, FL 32811 ♦ tel: 407 425-6700 ♦ fax: 407 425-0707

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SGS North America Inc.

Sample Summary

Hydrogeologic, Inc.

Job No: FC12031

CRHEA-GWIM; Contractors Rd, KSC, FL
Project No: NS1004.05.10

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
FC12031-1	12/15/23	09:34	MWBS	12/15/23	AQ	Ground Water	CRHE-MW0057-035.0-20231215
FC12031-2	12/15/23	10:17	MWBS	12/15/23	AQ	Ground Water	CRHE-MW0058-045.0-20231215
FC12031-3	12/15/23	11:13	MWBS	12/15/23	AQ	Ground Water	CRHE-MW0029-045.0-20231215
FC12031-4	12/15/23	12:18	MWBS	12/15/23	AQ	Ground Water	CRHE-MW0056-037.5-20231215
FC12031-5	12/15/23	13:30	MWBS	12/15/23	AQ	Ground Water	CRHE-MW0031-045.0-20231215
FC12031-6	12/15/23	10:32	MWBS	12/15/23	AQ	Ground Water	CRHE-MW0047-023.0-20231215
FC12031-7	12/15/23	12:09	MWBS	12/15/23	AQ	Ground Water	CRHE-MW0048-030.5-20231215
FC12031-8	12/15/23	13:25	MWBS	12/15/23	AQ	Ground Water	CRHE-MW0044-042.5-20231215
FC12031-9	12/15/23	09:29	MWBS	12/15/23	AQ	Trip Blank Water	CRHE-TB-20231215-01

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: Hydrogeologic, Inc. **Job No:** FC12031

Site: CRHEA-GWIM; Contractors Rd, KSC, FL **Report Date:** 1/4/2024 2:22:51 PM

On 12/15/2023, 8 Sample(s), 1 Trip Blank(s), 0 Equip. Blank(s) and 0 Field Blank(s) were received at SGS North America Inc - Orlando. at a maximum corrected temperature of 3.4 C. Samples were intact and chemically preserved, unless noted below. A SGS North America Inc. - Orlando Job Number of FC12031 was assigned to the project.

Laboratory sample ID, client sample ID and dates of sample collection are detailed in the report's Results Summary Section. Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

MS Volatiles By Method SW846 8260D

Matrix: AQ **Batch ID:** V1A2022

Sample(s) FC11791-1MS, FC11791-1MSD were used as the QC samples indicated.

V1A2022-MB: Sample was treated with an anti-foaming agent.

FC12031-2: Sample was treated with an anti-foaming agent. Confirmation run.

FC12031-3: Sample was treated with an anti-foaming agent.

FC12031-9: Sample vial(s) contained bubbles greater than 6mm.

Matrix: AQ **Batch ID:** V1A2028

Sample(s) FC12194-13MS, FC12194-13MSD were used as the QC samples indicated.

V1A2028-MB: Sample was treated with an anti-foaming agent.

GC/LC Semi-volatiles By Method FLORIDA-PRO 2018

Matrix: AQ **Batch ID:** OP715

Sample(s) FC11891-1MS, FC11891-1MSD were used as the QC samples indicated.

Matrix Spike Recovery(s) for TPH (C8-C40) are outside control limits. Probable cause is due to matrix interference.

Matrix Spike Duplicate Recovery(s) for TPH (C8-C40) are outside control limits. Probable cause is due to matrix interference.

Metals Analysis By Method SW846 6010D

Matrix: AQ **Batch ID:** MP43346

Sample(s) FC11943-6DUP, FC11943-6MS, FC11943-6MSD, FC11943-6PS, FC11943-6SDL were used as the QC samples for metals.

General Chemistry By Method SM2540 C-15

Matrix: AQ **Batch ID:** GN96171

Sample(s) FC12044-2DUP were used as the QC samples for Solids, Total Dissolved.

SGS North America Inc. - Orlando certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting the Quality System precision, accuracy and completeness objectives except as noted. Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria. SGS North America Inc.- Orlando is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety.

Narrative prepared by:

_____

Kim Benham, Client Services *(Signature on File)*

Summary of Hits

Job Number: FC12031
Account: Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL
Collected: 12/15/23

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	LOQ	LOD	Units	Method
FC12031-1	**CRHE-MW0057-035.0-20231215**					
Solids, Total Dissolved		222	50	50	mg/l	SM2540 C-15
FC12031-2	**CRHE-MW0058-045.0-20231215**					
Chlorobenzene [a]		0.68 J	1.0	0.50	ug/l	SW846 8260D
1,1-Dichloroethane [a]		0.47 J	1.0	0.50	ug/l	SW846 8260D
cis-1,2-Dichloroethylene [a]		1.9	1.0	0.50	ug/l	SW846 8260D
trans-1,2-Dichloroethylene [a]		0.84 J	1.0	0.50	ug/l	SW846 8260D
Vinyl Chloride		106	5.0	2.5	ug/l	SW846 8260D
Solids, Total Dissolved		646	50	50	mg/l	SM2540 C-15
FC12031-3	**CRHE-MW0029-045.0-20231215**					
Chlorobenzene [a]		0.51 J	1.0	0.50	ug/l	SW846 8260D
Dichlorodifluoromethane [b]		1.0 J	2.0	1.0	ug/l	SW846 8260D
cis-1,2-Dichloroethylene [a]		1.8	1.0	0.50	ug/l	SW846 8260D
trans-1,2-Dichloroethylene [a]		0.54 J	1.0	0.50	ug/l	SW846 8260D
Vinyl Chloride [a]		71.3	1.0	0.50	ug/l	SW846 8260D
FC12031-4	**CRHE-MW0056-037.5-20231215**					
TPH (C8-C40)		4.70	0.27	0.20	mg/l	FLORIDA-PRO 2018
Solids, Total Dissolved		1090	50	50	mg/l	SM2540 C-15
FC12031-5	**CRHE-MW0031-045.0-20231215**					
Chlorobenzene		0.51 J	2.5	1.3	ug/l	SW846 8260D
cis-1,2-Dichloroethylene		18.0	2.5	1.3	ug/l	SW846 8260D
trans-1,2-Dichloroethylene		3.5	2.5	1.3	ug/l	SW846 8260D
Vinyl Chloride		245	2.5	1.3	ug/l	SW846 8260D
FC12031-6	**CRHE-MW0047-023.0-20231215**					
Acetone		31.6	25	20	ug/l	SW846 8260D
2-Butanone (MEK)		14.8	5.0	3.5	ug/l	SW846 8260D
trans-1,2-Dichloroethylene		1.1	1.0	0.50	ug/l	SW846 8260D
4-Methyl-2-pentanone (MIBK)		2.5 J	5.0	2.0	ug/l	SW846 8260D
Toluene		0.73 J	1.0	0.50	ug/l	SW846 8260D
Trichloroethylene		0.36 J	1.0	0.50	ug/l	SW846 8260D
Vinyl Chloride		1.7	1.0	0.50	ug/l	SW846 8260D
TPH (C8-C40)		5.59	0.28	0.21	mg/l	FLORIDA-PRO 2018
Sodium		113000	50000	10000	ug/l	SW846 6010D

Summary of Hits

Job Number: FC12031
Account: Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL
Collected: 12/15/23

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	LOQ	LOD	Units	Method
FC12031-7	**CRHE-MW0048-030.5-20231215**					
No hits reported in this sample.						
FC12031-8	**CRHE-MW0044-042.5-20231215**					
TPH (C8-C40)		1.10	0.28	0.21	mg/l	FLORIDA-PRO 2018
Solids, Total Dissolved		1280	50	50	mg/l	SM2540 C-15
FC12031-9	**CRHE-TB-20231215-01**					
No hits reported in this sample.						

(a) Sample was treated with an anti-foaming agent.
(b) Sample was treated with an anti-foaming agent. Associated ICV and CCV outside DOD QSM control limits high.

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	CRHE-MW0057-035.0-20231215		
Lab Sample ID:	FC12031-1	**Date Sampled:**	12/15/23
Matrix:	AQ - Ground Water	**Date Received:**	12/15/23
		Percent Solids:	n/a
Project:	CRHEA-GWIM; Contractors Rd, KSC, FL		

General Chemistry

Analyte	Result	LOQ	LOD	DL	Units	DF	Analyzed	By	Method
Solids, Total Dissolved	222	50	50	40	mg/l	1	12/19/23 11:30	CC	SM2540 C-15

LOQ = Limit of Quantitation DL = Detection Limit U = Indicates a result < LOD
LOD = Limit of Detection B = Analyte found in associated blank J = Indicates a result > = DL (MDL) but < LOQ

SGS North America Inc.

Report of Analysis

Client Sample ID:	CRHE-MW0058-045.0-20231215		
Lab Sample ID:	FC12031-2	**Date Sampled:**	12/15/23
Matrix:	AQ - Ground Water	**Date Received:**	12/15/23
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	CRHEA-GWIM; Contractors Rd, KSC, FL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	1A51531.D	1	12/19/23 15:36	JW	n/a	n/a	V1A2022
Run #2	1A51681.D	5	12/26/23 16:11	LT	n/a	n/a	V1A2028

	Purge Volume
Run #1	5.0 ml
Run #2	5.0 ml

VOA 8260 List

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
67-64-1	Acetone	20 U	25	20	10	ug/l	
71-43-2	Benzene	0.50 U	1.0	0.50	0.31	ug/l	
108-86-1	Bromobenzene	0.50 U	1.0	0.50	0.37	ug/l	
74-97-5	Bromochloromethane	0.50 U	1.0	0.50	0.45	ug/l	
75-27-4	Bromodichloromethane	0.50 U	1.0	0.50	0.24	ug/l	
75-25-2	Bromoform	0.50 U	1.0	0.50	0.41	ug/l	
78-93-3	2-Butanone (MEK)	3.5 U	5.0	3.5	2.0	ug/l	
104-51-8	n-Butylbenzene	0.50 U	1.0	0.50	0.23	ug/l	
135-98-8	sec-Butylbenzene	0.50 U	1.0	0.50	0.24	ug/l	
98-06-6	tert-Butylbenzene	0.50 U	1.0	0.50	0.31	ug/l	
75-15-0	Carbon Disulfide	1.0 U	2.0	1.0	0.53	ug/l	
56-23-5	Carbon Tetrachloride	0.50 U	1.0	0.50	0.36	ug/l	
108-90-7	Chlorobenzene	0.68	1.0	0.50	0.20	ug/l	J
75-00-3	Chloroethane	1.0 U	2.0	1.0	0.67	ug/l	
67-66-3	Chloroform	0.50 U	1.0	0.50	0.30	ug/l	
95-49-8	o-Chlorotoluene	0.50 U	1.0	0.50	0.22	ug/l	
106-43-4	p-Chlorotoluene	0.50 U	1.0	0.50	0.31	ug/l	
124-48-1	Dibromochloromethane	0.50 U	1.0	0.50	0.28	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	2.0 U	5.0	2.0	1.0	ug/l	
106-93-4	1,2-Dibromoethane	1.0 U	2.0	1.0	0.28	ug/l	
75-71-8	Dichlorodifluoromethane [b]	1.0 U	2.0	1.0	0.50	ug/l	
95-50-1	1,2-Dichlorobenzene	0.50 U	1.0	0.50	0.32	ug/l	
541-73-1	1,3-Dichlorobenzene	0.50 U	1.0	0.50	0.22	ug/l	
106-46-7	1,4-Dichlorobenzene	0.50 U	1.0	0.50	0.26	ug/l	
75-34-3	1,1-Dichloroethane	0.47	1.0	0.50	0.34	ug/l	J
107-06-2	1,2-Dichloroethane	0.50 U	1.0	0.50	0.31	ug/l	
75-35-4	1,1-Dichloroethylene	0.50 U	1.0	0.50	0.32	ug/l	
156-59-2	cis-1,2-Dichloroethylene	1.9	1.0	0.50	0.28	ug/l	
156-60-5	trans-1,2-Dichloroethylene	0.84	1.0	0.50	0.22	ug/l	J
78-87-5	1,2-Dichloropropane	0.50 U	1.0	0.50	0.43	ug/l	
142-28-9	1,3-Dichloropropane	0.50 U	1.0	0.50	0.31	ug/l	
594-20-7	2,2-Dichloropropane	0.50 U	1.0	0.50	0.24	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CRHE-MW0058-045.0-20231215		
Lab Sample ID:	FC12031-2	**Date Sampled:**	12/15/23
Matrix:	AQ - Ground Water	**Date Received:**	12/15/23
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	CRHEA-GWIM; Contractors Rd, KSC, FL		

VOA 8260 List

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
563-58-6	1,1-Dichloropropene	0.50 U	1.0	0.50	0.34	ug/l	
10061-01-5	cis-1,3-Dichloropropene	0.50 U	1.0	0.50	0.29	ug/l	
10061-02-6	trans-1,3-Dichloropropene	0.50 U	1.0	0.50	0.21	ug/l	
100-41-4	Ethylbenzene	0.50 U	1.0	0.50	0.36	ug/l	
87-68-3	Hexachlorobutadiene	1.0 U	2.0	1.0	0.30	ug/l	
591-78-6	2-Hexanone	5.0 U	10	5.0	2.0	ug/l	
98-82-8	Isopropylbenzene	0.50 U	1.0	0.50	0.22	ug/l	
99-87-6	p-Isopropyltoluene	0.50 U	1.0	0.50	0.21	ug/l	
74-83-9	Methyl Bromide [c]	4.0 U	5.0	4.0	2.0	ug/l	
74-87-3	Methyl Chloride	1.0 U	2.0	1.0	0.50	ug/l	
74-95-3	Methylene Bromide	0.50 U	2.0	0.50	0.37	ug/l	
75-09-2	Methylene Chloride	4.0 U	5.0	4.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	2.0 U	5.0	2.0	1.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	0.50 U	1.0	0.50	0.23	ug/l	
91-20-3	Naphthalene [d]	2.0 U	5.0	2.0	1.0	ug/l	
103-65-1	n-Propylbenzene	0.50 U	1.0	0.50	0.29	ug/l	
100-42-5	Styrene	0.50 U	1.0	0.50	0.22	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	0.50 U	1.0	0.50	0.28	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	0.50 U	1.0	0.50	0.30	ug/l	
127-18-4	Tetrachloroethylene	0.50 U	1.0	0.50	0.22	ug/l	
108-88-3	Toluene	0.50 U	1.0	0.50	0.30	ug/l	
87-61-6	1,2,3-Trichlorobenzene [d]	1.0 U	2.0	1.0	0.61	ug/l	
120-82-1	1,2,4-Trichlorobenzene	1.0 U	2.0	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	0.50 U	1.0	0.50	0.25	ug/l	
79-00-5	1,1,2-Trichloroethane	0.50 U	1.0	0.50	0.47	ug/l	
79-01-6	Trichloroethylene	0.50 U	1.0	0.50	0.35	ug/l	
75-69-4	Trichlorofluoromethane	1.0 U	2.0	1.0	0.50	ug/l	
96-18-4	1,2,3-Trichloropropane	1.0 U	2.0	1.0	0.63	ug/l	
95-63-6	1,2,4-Trimethylbenzene	0.50 U	1.0	0.50	0.32	ug/l	
108-67-8	1,3,5-Trimethylbenzene	0.50 U	1.0	0.50	0.27	ug/l	
108-05-4	Vinyl Acetate	5.0 U	10	5.0	2.0	ug/l	
75-01-4	Vinyl Chloride	106 [e]	5.0	2.5	2.0	ug/l	
	m,p-Xylene	1.0 U	2.0	1.0	0.47	ug/l	
95-47-6	o-Xylene	0.50 U	1.0	0.50	0.26	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	97%	101%	83-118%
17060-07-0	1,2-Dichloroethane-D4	105%	108%	79-125%
2037-26-5	Toluene-D8	102%	101%	85-112%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CRHE-MW0058-045.0-20231215		
Lab Sample ID:	FC12031-2	**Date Sampled:**	12/15/23
Matrix:	AQ - Ground Water	**Date Received:**	12/15/23
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	CRHEA-GWIM; Contractors Rd, KSC, FL		

VOA 8260 List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	102%	99%	83-118%

(a) Sample was treated with an anti-foaming agent.
(b) Associated ICV and CCV outside DOD QSM control limits high, sample is ND.
(c) Associated CCV outside of DOD QSM control limits high, sample is ND.
(d) Associated CCV outside DOD QSM control limits low.
(e) Result is from Run# 2

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CRHE-MW0058-045.0-20231215		
Lab Sample ID:	FC12031-2	**Date Sampled:**	12/15/23
Matrix:	AQ - Ground Water	**Date Received:**	12/15/23
		Percent Solids:	n/a
Project:	CRHEA-GWIM; Contractors Rd, KSC, FL		

General Chemistry

Analyte	Result	LOQ	LOD	DL	Units	DF	Analyzed	By	Method
Solids, Total Dissolved	646	50	50	40	mg/l	1	12/19/23 11:30	CC	SM2540 C-15

LOQ = Limit of Quantitation DL = Detection Limit U = Indicates a result < LOD
LOD = Limit of Detection B = Analyte found in associated blank J = Indicates a result > = DL (MDL) but < LOQ

SGS North America Inc.

Report of Analysis

Client Sample ID:	CRHE-MW0029-045.0-20231215		
Lab Sample ID:	FC12031-3	**Date Sampled:**	12/15/23
Matrix:	AQ - Ground Water	**Date Received:**	12/15/23
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	CRHEA-GWIM; Contractors Rd, KSC, FL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	1A51532.D	1	12/19/23 16:00	JW	n/a	n/a	V1A2022
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA 8260 List

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
67-64-1	Acetone	20 U	25	20	10	ug/l	
71-43-2	Benzene	0.50 U	1.0	0.50	0.31	ug/l	
108-86-1	Bromobenzene	0.50 U	1.0	0.50	0.37	ug/l	
74-97-5	Bromochloromethane	0.50 U	1.0	0.50	0.45	ug/l	
75-27-4	Bromodichloromethane	0.50 U	1.0	0.50	0.24	ug/l	
75-25-2	Bromoform	0.50 U	1.0	0.50	0.41	ug/l	
78-93-3	2-Butanone (MEK)	3.5 U	5.0	3.5	2.0	ug/l	
104-51-8	n-Butylbenzene	0.50 U	1.0	0.50	0.23	ug/l	
135-98-8	sec-Butylbenzene	0.50 U	1.0	0.50	0.24	ug/l	
98-06-6	tert-Butylbenzene	0.50 U	1.0	0.50	0.31	ug/l	
75-15-0	Carbon Disulfide	1.0 U	2.0	1.0	0.53	ug/l	
56-23-5	Carbon Tetrachloride	0.50 U	1.0	0.50	0.36	ug/l	
108-90-7	Chlorobenzene	0.51	1.0	0.50	0.20	ug/l	J
75-00-3	Chloroethane	1.0 U	2.0	1.0	0.67	ug/l	
67-66-3	Chloroform	0.50 U	1.0	0.50	0.30	ug/l	
95-49-8	o-Chlorotoluene	0.50 U	1.0	0.50	0.22	ug/l	
106-43-4	p-Chlorotoluene	0.50 U	1.0	0.50	0.31	ug/l	
124-48-1	Dibromochloromethane	0.50 U	1.0	0.50	0.28	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	2.0 U	5.0	2.0	1.0	ug/l	
106-93-4	1,2-Dibromoethane	1.0 U	2.0	1.0	0.28	ug/l	
75-71-8	Dichlorodifluoromethane [b]	1.0	2.0	1.0	0.50	ug/l	J
95-50-1	1,2-Dichlorobenzene	0.50 U	1.0	0.50	0.32	ug/l	
541-73-1	1,3-Dichlorobenzene	0.50 U	1.0	0.50	0.22	ug/l	
106-46-7	1,4-Dichlorobenzene	0.50 U	1.0	0.50	0.26	ug/l	
75-34-3	1,1-Dichloroethane	0.50 U	1.0	0.50	0.34	ug/l	
107-06-2	1,2-Dichloroethane	0.50 U	1.0	0.50	0.31	ug/l	
75-35-4	1,1-Dichloroethylene	0.50 U	1.0	0.50	0.32	ug/l	
156-59-2	cis-1,2-Dichloroethylene	1.8	1.0	0.50	0.28	ug/l	
156-60-5	trans-1,2-Dichloroethylene	0.54	1.0	0.50	0.22	ug/l	J
78-87-5	1,2-Dichloropropane	0.50 U	1.0	0.50	0.43	ug/l	
142-28-9	1,3-Dichloropropane	0.50 U	1.0	0.50	0.31	ug/l	
594-20-7	2,2-Dichloropropane	0.50 U	1.0	0.50	0.24	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CRHE-MW0029-045.0-20231215		
Lab Sample ID:	FC12031-3	**Date Sampled:**	12/15/23
Matrix:	AQ - Ground Water	**Date Received:**	12/15/23
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	CRHEA-GWIM; Contractors Rd, KSC, FL		

VOA 8260 List

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
563-58-6	1,1-Dichloropropene	0.50 U	1.0	0.50	0.34	ug/l	
10061-01-5	cis-1,3-Dichloropropene	0.50 U	1.0	0.50	0.29	ug/l	
10061-02-6	trans-1,3-Dichloropropene	0.50 U	1.0	0.50	0.21	ug/l	
100-41-4	Ethylbenzene	0.50 U	1.0	0.50	0.36	ug/l	
87-68-3	Hexachlorobutadiene	1.0 U	2.0	1.0	0.30	ug/l	
591-78-6	2-Hexanone	5.0 U	10	5.0	2.0	ug/l	
98-82-8	Isopropylbenzene	0.50 U	1.0	0.50	0.22	ug/l	
99-87-6	p-Isopropyltoluene	0.50 U	1.0	0.50	0.21	ug/l	
74-83-9	Methyl Bromide [c]	4.0 U	5.0	4.0	2.0	ug/l	
74-87-3	Methyl Chloride	1.0 U	2.0	1.0	0.50	ug/l	
74-95-3	Methylene Bromide	0.50 U	2.0	0.50	0.37	ug/l	
75-09-2	Methylene Chloride	4.0 U	5.0	4.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	2.0 U	5.0	2.0	1.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	0.50 U	1.0	0.50	0.23	ug/l	
91-20-3	Naphthalene [d]	2.0 U	5.0	2.0	1.0	ug/l	
103-65-1	n-Propylbenzene	0.50 U	1.0	0.50	0.29	ug/l	
100-42-5	Styrene	0.50 U	1.0	0.50	0.22	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	0.50 U	1.0	0.50	0.28	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	0.50 U	1.0	0.50	0.30	ug/l	
127-18-4	Tetrachloroethylene	0.50 U	1.0	0.50	0.22	ug/l	
108-88-3	Toluene	0.50 U	1.0	0.50	0.30	ug/l	
87-61-6	1,2,3-Trichlorobenzene [d]	1.0 U	2.0	1.0	0.61	ug/l	
120-82-1	1,2,4-Trichlorobenzene	1.0 U	2.0	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	0.50 U	1.0	0.50	0.25	ug/l	
79-00-5	1,1,2-Trichloroethane	0.50 U	1.0	0.50	0.47	ug/l	
79-01-6	Trichloroethylene	0.50 U	1.0	0.50	0.35	ug/l	
75-69-4	Trichlorofluoromethane	1.0 U	2.0	1.0	0.50	ug/l	
96-18-4	1,2,3-Trichloropropane	1.0 U	2.0	1.0	0.63	ug/l	
95-63-6	1,2,4-Trimethylbenzene	0.50 U	1.0	0.50	0.32	ug/l	
108-67-8	1,3,5-Trimethylbenzene	0.50 U	1.0	0.50	0.27	ug/l	
108-05-4	Vinyl Acetate	5.0 U	10	5.0	2.0	ug/l	
75-01-4	Vinyl Chloride	71.3	1.0	0.50	0.41	ug/l	
	m,p-Xylene	1.0 U	2.0	1.0	0.47	ug/l	
95-47-6	o-Xylene	0.50 U	1.0	0.50	0.26	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	94%		83-118%
17060-07-0	1,2-Dichloroethane-D4	103%		79-125%
2037-26-5	Toluene-D8	102%		85-112%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CRHE-MW0029-045.0-20231215		
Lab Sample ID:	FC12031-3	**Date Sampled:**	12/15/23
Matrix:	AQ - Ground Water	**Date Received:**	12/15/23
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	CRHEA-GWIM; Contractors Rd, KSC, FL		

VOA 8260 List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	102%		83-118%

(a) Sample was treated with an anti-foaming agent.
(b) Associated ICV and CCV outside DOD QSM control limits high.
(c) Associated CCV outside of DOD QSM control limits high, sample is ND.
(d) Associated CCV outside DOD QSM control limits low.

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	CRHE-MW0056-037.5-20231215		
Lab Sample ID:	FC12031-4	**Date Sampled:**	12/15/23
Matrix:	AQ - Ground Water	**Date Received:**	12/15/23
Method:	FLORIDA-PRO 2018 SW846 3510C	**Percent Solids:**	n/a
Project:	CRHEA-GWIM; Contractors Rd, KSC, FL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	JR00946587.D	1	12/19/23 23:14	EG	12/19/23 07:30	OP715	GJR792
Run #2							

	Initial Volume	Final Volume
Run #1	250 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
	TPH (C8-C40)	4.70	0.27	0.20	0.14	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	102%		66-139%
7194-86-7	Nonatriacontane	93%		40-129%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CRHE-MW0056-037.5-20231215		
Lab Sample ID:	FC12031-4	**Date Sampled:**	12/15/23
Matrix:	AQ - Ground Water	**Date Received:**	12/15/23
		Percent Solids:	n/a
Project:	CRHEA-GWIM; Contractors Rd, KSC, FL		

General Chemistry

Analyte	Result	LOQ	LOD	DL	Units	DF	Analyzed	By	Method
Solids, Total Dissolved	1090	50	50	40	mg/l	1	12/19/23 11:30	CC	SM2540 C-15

LOQ = Limit of Quantitation DL = Detection Limit U = Indicates a result < LOD
LOD = Limit of Detection B = Analyte found in associated blank J = Indicates a result > = DL (MDL) but < LOQ

SGS North America Inc.

Report of Analysis

Client Sample ID:	CRHE-MW0031-045.0-20231215		
Lab Sample ID:	FC12031-5	**Date Sampled:**	12/15/23
Matrix:	AQ - Ground Water	**Date Received:**	12/15/23
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	CRHEA-GWIM; Contractors Rd, KSC, FL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	1A51533.D	2.5	12/19/23 16:24	JW	n/a	n/a	V1A2022
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA 8260 List

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
67-64-1	Acetone	50 U	63	50	25	ug/l	
71-43-2	Benzene	1.3 U	2.5	1.3	0.78	ug/l	
108-86-1	Bromobenzene	1.3 U	2.5	1.3	0.92	ug/l	
74-97-5	Bromochloromethane	1.3 U	2.5	1.3	1.1	ug/l	
75-27-4	Bromodichloromethane	1.3 U	2.5	1.3	0.61	ug/l	
75-25-2	Bromoform	1.3 U	2.5	1.3	1.0	ug/l	
78-93-3	2-Butanone (MEK)	8.8 U	13	8.8	5.0	ug/l	
104-51-8	n-Butylbenzene	1.3 U	2.5	1.3	0.58	ug/l	
135-98-8	sec-Butylbenzene	1.3 U	2.5	1.3	0.61	ug/l	
98-06-6	tert-Butylbenzene	1.3 U	2.5	1.3	0.79	ug/l	
75-15-0	Carbon Disulfide	2.5 U	5.0	2.5	1.3	ug/l	
56-23-5	Carbon Tetrachloride	1.3 U	2.5	1.3	0.89	ug/l	
108-90-7	Chlorobenzene	0.51	2.5	1.3	0.50	ug/l	J
75-00-3	Chloroethane	2.5 U	5.0	2.5	1.7	ug/l	
67-66-3	Chloroform	1.3 U	2.5	1.3	0.75	ug/l	
95-49-8	o-Chlorotoluene	1.3 U	2.5	1.3	0.56	ug/l	
106-43-4	p-Chlorotoluene	1.3 U	2.5	1.3	0.77	ug/l	
124-48-1	Dibromochloromethane	1.3 U	2.5	1.3	0.69	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	5.0 U	13	5.0	2.6	ug/l	
106-93-4	1,2-Dibromoethane	2.5 U	5.0	2.5	0.69	ug/l	
75-71-8	Dichlorodifluoromethane [a]	2.5 U	5.0	2.5	1.3	ug/l	
95-50-1	1,2-Dichlorobenzene	1.3 U	2.5	1.3	0.81	ug/l	
541-73-1	1,3-Dichlorobenzene	1.3 U	2.5	1.3	0.54	ug/l	
106-46-7	1,4-Dichlorobenzene	1.3 U	2.5	1.3	0.64	ug/l	
75-34-3	1,1-Dichloroethane	1.3 U	2.5	1.3	0.85	ug/l	
107-06-2	1,2-Dichloroethane	1.3 U	2.5	1.3	0.78	ug/l	
75-35-4	1,1-Dichloroethylene	1.3 U	2.5	1.3	0.81	ug/l	
156-59-2	cis-1,2-Dichloroethylene	18.0	2.5	1.3	0.69	ug/l	
156-60-5	trans-1,2-Dichloroethylene	3.5	2.5	1.3	0.55	ug/l	
78-87-5	1,2-Dichloropropane	1.3 U	2.5	1.3	1.1	ug/l	
142-28-9	1,3-Dichloropropane	1.3 U	2.5	1.3	0.77	ug/l	
594-20-7	2,2-Dichloropropane	1.3 U	2.5	1.3	0.60	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CRHE-MW0031-045.0-20231215		
Lab Sample ID:	FC12031-5	**Date Sampled:**	12/15/23
Matrix:	AQ - Ground Water	**Date Received:**	12/15/23
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	CRHEA-GWIM; Contractors Rd, KSC, FL		

VOA 8260 List

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
563-58-6	1,1-Dichloropropene	1.3 U	2.5	1.3	0.84	ug/l	
10061-01-5	cis-1,3-Dichloropropene	1.3 U	2.5	1.3	0.73	ug/l	
10061-02-6	trans-1,3-Dichloropropene	1.3 U	2.5	1.3	0.54	ug/l	
100-41-4	Ethylbenzene	1.3 U	2.5	1.3	0.89	ug/l	
87-68-3	Hexachlorobutadiene	2.5 U	5.0	2.5	0.74	ug/l	
591-78-6	2-Hexanone	13 U	25	13	5.0	ug/l	
98-82-8	Isopropylbenzene	1.3 U	2.5	1.3	0.55	ug/l	
99-87-6	p-Isopropyltoluene	1.3 U	2.5	1.3	0.53	ug/l	
74-83-9	Methyl Bromide [b]	10 U	13	10	5.0	ug/l	
74-87-3	Methyl Chloride	2.5 U	5.0	2.5	1.3	ug/l	
74-95-3	Methylene Bromide	1.3 U	5.0	1.3	0.92	ug/l	
75-09-2	Methylene Chloride	10 U	13	10	5.0	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	5.0 U	13	5.0	2.5	ug/l	
1634-04-4	Methyl Tert Butyl Ether	1.3 U	2.5	1.3	0.57	ug/l	
91-20-3	Naphthalene [c]	5.0 U	13	5.0	2.5	ug/l	
103-65-1	n-Propylbenzene	1.3 U	2.5	1.3	0.72	ug/l	
100-42-5	Styrene	1.3 U	2.5	1.3	0.56	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	1.3 U	2.5	1.3	0.69	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	1.3 U	2.5	1.3	0.75	ug/l	
127-18-4	Tetrachloroethylene	1.3 U	2.5	1.3	0.54	ug/l	
108-88-3	Toluene	1.3 U	2.5	1.3	0.75	ug/l	
87-61-6	1,2,3-Trichlorobenzene [c]	2.5 U	5.0	2.5	1.5	ug/l	
120-82-1	1,2,4-Trichlorobenzene	2.5 U	5.0	2.5	1.3	ug/l	
71-55-6	1,1,1-Trichloroethane	1.3 U	2.5	1.3	0.62	ug/l	
79-00-5	1,1,2-Trichloroethane	1.3 U	2.5	1.3	1.2	ug/l	
79-01-6	Trichloroethylene	1.3 U	2.5	1.3	0.86	ug/l	
75-69-4	Trichlorofluoromethane	2.5 U	5.0	2.5	1.3	ug/l	
96-18-4	1,2,3-Trichloropropane	2.5 U	5.0	2.5	1.6	ug/l	
95-63-6	1,2,4-Trimethylbenzene	1.3 U	2.5	1.3	0.81	ug/l	
108-67-8	1,3,5-Trimethylbenzene	1.3 U	2.5	1.3	0.69	ug/l	
108-05-4	Vinyl Acetate	13 U	25	13	5.0	ug/l	
75-01-4	Vinyl Chloride	245	2.5	1.3	1.0	ug/l	
	m,p-Xylene	2.5 U	5.0	2.5	1.2	ug/l	
95-47-6	o-Xylene	1.3 U	2.5	1.3	0.64	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	94%		83-118%
17060-07-0	1,2-Dichloroethane-D4	104%		79-125%
2037-26-5	Toluene-D8	102%		85-112%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CRHE-MW0031-045.0-20231215		
Lab Sample ID:	FC12031-5	**Date Sampled:**	12/15/23
Matrix:	AQ - Ground Water	**Date Received:**	12/15/23
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	CRHEA-GWIM; Contractors Rd, KSC, FL		

VOA 8260 List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	101%		83-118%

(a) Associated ICV and CCV outside DOD QSM control limits high, sample is ND.
(b) Associated CCV outside of DOD QSM control limits high, sample is ND.
(c) Associated CCV outside DOD QSM control limits low.

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	CRHE-MW0047-023.0-20231215		
Lab Sample ID:	FC12031-6	**Date Sampled:**	12/15/23
Matrix:	AQ - Ground Water	**Date Received:**	12/15/23
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	CRHEA-GWIM; Contractors Rd, KSC, FL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	1A51534.D	1	12/19/23 16:48	JW	n/a	n/a	V1A2022
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA 8260 List

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
67-64-1	Acetone	31.6	25	20	10	ug/l	
71-43-2	Benzene	0.50 U	1.0	0.50	0.31	ug/l	
108-86-1	Bromobenzene	0.50 U	1.0	0.50	0.37	ug/l	
74-97-5	Bromochloromethane	0.50 U	1.0	0.50	0.45	ug/l	
75-27-4	Bromodichloromethane	0.50 U	1.0	0.50	0.24	ug/l	
75-25-2	Bromoform	0.50 U	1.0	0.50	0.41	ug/l	
78-93-3	2-Butanone (MEK)	14.8	5.0	3.5	2.0	ug/l	
104-51-8	n-Butylbenzene	0.50 U	1.0	0.50	0.23	ug/l	
135-98-8	sec-Butylbenzene	0.50 U	1.0	0.50	0.24	ug/l	
98-06-6	tert-Butylbenzene	0.50 U	1.0	0.50	0.31	ug/l	
75-15-0	Carbon Disulfide	1.0 U	2.0	1.0	0.53	ug/l	
56-23-5	Carbon Tetrachloride	0.50 U	1.0	0.50	0.36	ug/l	
108-90-7	Chlorobenzene	0.50 U	1.0	0.50	0.20	ug/l	
75-00-3	Chloroethane	1.0 U	2.0	1.0	0.67	ug/l	
67-66-3	Chloroform	0.50 U	1.0	0.50	0.30	ug/l	
95-49-8	o-Chlorotoluene	0.50 U	1.0	0.50	0.22	ug/l	
106-43-4	p-Chlorotoluene	0.50 U	1.0	0.50	0.31	ug/l	
124-48-1	Dibromochloromethane	0.50 U	1.0	0.50	0.28	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	2.0 U	5.0	2.0	1.0	ug/l	
106-93-4	1,2-Dibromoethane	1.0 U	2.0	1.0	0.28	ug/l	
75-71-8	Dichlorodifluoromethane [a]	1.0 U	2.0	1.0	0.50	ug/l	
95-50-1	1,2-Dichlorobenzene	0.50 U	1.0	0.50	0.32	ug/l	
541-73-1	1,3-Dichlorobenzene	0.50 U	1.0	0.50	0.22	ug/l	
106-46-7	1,4-Dichlorobenzene	0.50 U	1.0	0.50	0.26	ug/l	
75-34-3	1,1-Dichloroethane	0.50 U	1.0	0.50	0.34	ug/l	
107-06-2	1,2-Dichloroethane	0.50 U	1.0	0.50	0.31	ug/l	
75-35-4	1,1-Dichloroethylene	0.50 U	1.0	0.50	0.32	ug/l	
156-59-2	cis-1,2-Dichloroethylene	0.50 U	1.0	0.50	0.28	ug/l	
156-60-5	trans-1,2-Dichloroethylene	1.1	1.0	0.50	0.22	ug/l	
78-87-5	1,2-Dichloropropane	0.50 U	1.0	0.50	0.43	ug/l	
142-28-9	1,3-Dichloropropane	0.50 U	1.0	0.50	0.31	ug/l	
594-20-7	2,2-Dichloropropane	0.50 U	1.0	0.50	0.24	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CRHE-MW0047-023.0-20231215		
Lab Sample ID:	FC12031-6	**Date Sampled:**	12/15/23
Matrix:	AQ - Ground Water	**Date Received:**	12/15/23
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	CRHEA-GWIM; Contractors Rd, KSC, FL		

VOA 8260 List

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
563-58-6	1,1-Dichloropropene	0.50 U	1.0	0.50	0.34	ug/l	
10061-01-5	cis-1,3-Dichloropropene	0.50 U	1.0	0.50	0.29	ug/l	
10061-02-6	trans-1,3-Dichloropropene	0.50 U	1.0	0.50	0.21	ug/l	
100-41-4	Ethylbenzene	0.50 U	1.0	0.50	0.36	ug/l	
87-68-3	Hexachlorobutadiene	1.0 U	2.0	1.0	0.30	ug/l	
591-78-6	2-Hexanone	5.0 U	10	5.0	2.0	ug/l	
98-82-8	Isopropylbenzene	0.50 U	1.0	0.50	0.22	ug/l	
99-87-6	p-Isopropyltoluene	0.50 U	1.0	0.50	0.21	ug/l	
74-83-9	Methyl Bromide [b]	4.0 U	5.0	4.0	2.0	ug/l	
74-87-3	Methyl Chloride	1.0 U	2.0	1.0	0.50	ug/l	
74-95-3	Methylene Bromide	0.50 U	2.0	0.50	0.37	ug/l	
75-09-2	Methylene Chloride	4.0 U	5.0	4.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	2.5	5.0	2.0	1.0	ug/l	J
1634-04-4	Methyl Tert Butyl Ether	0.50 U	1.0	0.50	0.23	ug/l	
91-20-3	Naphthalene [c]	2.0 U	5.0	2.0	1.0	ug/l	
103-65-1	n-Propylbenzene	0.50 U	1.0	0.50	0.29	ug/l	
100-42-5	Styrene	0.50 U	1.0	0.50	0.22	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	0.50 U	1.0	0.50	0.28	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	0.50 U	1.0	0.50	0.30	ug/l	
127-18-4	Tetrachloroethylene	0.50 U	1.0	0.50	0.22	ug/l	
108-88-3	Toluene	0.73	1.0	0.50	0.30	ug/l	J
87-61-6	1,2,3-Trichlorobenzene [c]	1.0 U	2.0	1.0	0.61	ug/l	
120-82-1	1,2,4-Trichlorobenzene	1.0 U	2.0	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	0.50 U	1.0	0.50	0.25	ug/l	
79-00-5	1,1,2-Trichloroethane	0.50 U	1.0	0.50	0.47	ug/l	
79-01-6	Trichloroethylene	0.36	1.0	0.50	0.35	ug/l	J
75-69-4	Trichlorofluoromethane	1.0 U	2.0	1.0	0.50	ug/l	
96-18-4	1,2,3-Trichloropropane	1.0 U	2.0	1.0	0.63	ug/l	
95-63-6	1,2,4-Trimethylbenzene	0.50 U	1.0	0.50	0.32	ug/l	
108-67-8	1,3,5-Trimethylbenzene	0.50 U	1.0	0.50	0.27	ug/l	
108-05-4	Vinyl Acetate	5.0 U	10	5.0	2.0	ug/l	
75-01-4	Vinyl Chloride	1.7	1.0	0.50	0.41	ug/l	
	m,p-Xylene	1.0 U	2.0	1.0	0.47	ug/l	
95-47-6	o-Xylene	0.50 U	1.0	0.50	0.26	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	95%		83-118%
17060-07-0	1,2-Dichloroethane-D4	104%		79-125%
2037-26-5	Toluene-D8	103%		85-112%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CRHE-MW0047-023.0-20231215		
Lab Sample ID:	FC12031-6	**Date Sampled:**	12/15/23
Matrix:	AQ - Ground Water	**Date Received:**	12/15/23
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	CRHEA-GWIM; Contractors Rd, KSC, FL		

VOA 8260 List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	101%		83-118%

(a) Associated ICV and CCV outside DOD QSM control limits high, sample is ND.
(b) Associated CCV outside of DOD QSM control limits high, sample is ND.
(c) Associated CCV outside DOD QSM control limits low.

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID: CRHE-MW0047-023.0-20231215
Lab Sample ID: FC12031-6
Matrix: AQ - Ground Water
Method: FLORIDA-PRO 2018 SW846 3510C
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Date Sampled: 12/15/23
Date Received: 12/15/23
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	JR00946588.D	1	12/19/23 23:33	EG	12/19/23 07:30	OP715	GJR792
Run #2							

	Initial Volume	Final Volume
Run #1	240 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
	TPH (C8-C40)	5.59	0.28	0.21	0.14	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	92%		66-139%
7194-86-7	Nonatriacontane	83%		40-129%

U = Not detected LOD = Limit of Detection
LOQ = Limit of Quantitation DL = Detection Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CRHE-MW0047-023.0-20231215		
Lab Sample ID:	FC12031-6	**Date Sampled:**	12/15/23
Matrix:	AQ - Ground Water	**Date Received:**	12/15/23
		Percent Solids:	n/a
Project:	CRHEA-GWIM; Contractors Rd, KSC, FL		

Total Metals Analysis

Analyte	Result	LOQ	LOD	DL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Sodium	113000	50000	10000	2500	ug/l	5	12/30/23	01/03/24	LM	SW846 6010D [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA19942
(2) Prep QC Batch: MP43346

LOQ = Limit of Quantitation DL = Detection Limit U = Indicates a result < LOD
LOD = Limit of Detection B = Analyte found in associated blank J = Indicates a result > = DL (MDL) but < LOQ

SGS North America Inc.

Report of Analysis

Client Sample ID:	CRHE-MW0048-030.5-20231215		
Lab Sample ID:	FC12031-7	**Date Sampled:**	12/15/23
Matrix:	AQ - Ground Water	**Date Received:**	12/15/23
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	CRHEA-GWIM; Contractors Rd, KSC, FL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	1A51535.D	1	12/19/23 17:13	JW	n/a	n/a	V1A2022
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA 8260 List

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
67-64-1	Acetone	20 U	25	20	10	ug/l	
71-43-2	Benzene	0.50 U	1.0	0.50	0.31	ug/l	
108-86-1	Bromobenzene	0.50 U	1.0	0.50	0.37	ug/l	
74-97-5	Bromochloromethane	0.50 U	1.0	0.50	0.45	ug/l	
75-27-4	Bromodichloromethane	0.50 U	1.0	0.50	0.24	ug/l	
75-25-2	Bromoform	0.50 U	1.0	0.50	0.41	ug/l	
78-93-3	2-Butanone (MEK)	3.5 U	5.0	3.5	2.0	ug/l	
104-51-8	n-Butylbenzene	0.50 U	1.0	0.50	0.23	ug/l	
135-98-8	sec-Butylbenzene	0.50 U	1.0	0.50	0.24	ug/l	
98-06-6	tert-Butylbenzene	0.50 U	1.0	0.50	0.31	ug/l	
75-15-0	Carbon Disulfide	1.0 U	2.0	1.0	0.53	ug/l	
56-23-5	Carbon Tetrachloride	0.50 U	1.0	0.50	0.36	ug/l	
108-90-7	Chlorobenzene	0.50 U	1.0	0.50	0.20	ug/l	
75-00-3	Chloroethane	1.0 U	2.0	1.0	0.67	ug/l	
67-66-3	Chloroform	0.50 U	1.0	0.50	0.30	ug/l	
95-49-8	o-Chlorotoluene	0.50 U	1.0	0.50	0.22	ug/l	
106-43-4	p-Chlorotoluene	0.50 U	1.0	0.50	0.31	ug/l	
124-48-1	Dibromochloromethane	0.50 U	1.0	0.50	0.28	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	2.0 U	5.0	2.0	1.0	ug/l	
106-93-4	1,2-Dibromoethane	1.0 U	2.0	1.0	0.28	ug/l	
75-71-8	Dichlorodifluoromethane [a]	1.0 U	2.0	1.0	0.50	ug/l	
95-50-1	1,2-Dichlorobenzene	0.50 U	1.0	0.50	0.32	ug/l	
541-73-1	1,3-Dichlorobenzene	0.50 U	1.0	0.50	0.22	ug/l	
106-46-7	1,4-Dichlorobenzene	0.50 U	1.0	0.50	0.26	ug/l	
75-34-3	1,1-Dichloroethane	0.50 U	1.0	0.50	0.34	ug/l	
107-06-2	1,2-Dichloroethane	0.50 U	1.0	0.50	0.31	ug/l	
75-35-4	1,1-Dichloroethylene	0.50 U	1.0	0.50	0.32	ug/l	
156-59-2	cis-1,2-Dichloroethylene	0.50 U	1.0	0.50	0.28	ug/l	
156-60-5	trans-1,2-Dichloroethylene	0.50 U	1.0	0.50	0.22	ug/l	
78-87-5	1,2-Dichloropropane	0.50 U	1.0	0.50	0.43	ug/l	
142-28-9	1,3-Dichloropropane	0.50 U	1.0	0.50	0.31	ug/l	
594-20-7	2,2-Dichloropropane	0.50 U	1.0	0.50	0.24	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CRHE-MW0048-030.5-20231215		
Lab Sample ID:	FC12031-7	**Date Sampled:**	12/15/23
Matrix:	AQ - Ground Water	**Date Received:**	12/15/23
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	CRHEA-GWIM; Contractors Rd, KSC, FL		

VOA 8260 List

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
563-58-6	1,1-Dichloropropene	0.50 U	1.0	0.50	0.34	ug/l	
10061-01-5	cis-1,3-Dichloropropene	0.50 U	1.0	0.50	0.29	ug/l	
10061-02-6	trans-1,3-Dichloropropene	0.50 U	1.0	0.50	0.21	ug/l	
100-41-4	Ethylbenzene	0.50 U	1.0	0.50	0.36	ug/l	
87-68-3	Hexachlorobutadiene	1.0 U	2.0	1.0	0.30	ug/l	
591-78-6	2-Hexanone	5.0 U	10	5.0	2.0	ug/l	
98-82-8	Isopropylbenzene	0.50 U	1.0	0.50	0.22	ug/l	
99-87-6	p-Isopropyltoluene	0.50 U	1.0	0.50	0.21	ug/l	
74-83-9	Methyl Bromide [b]	4.0 U	5.0	4.0	2.0	ug/l	
74-87-3	Methyl Chloride	1.0 U	2.0	1.0	0.50	ug/l	
74-95-3	Methylene Bromide	0.50 U	2.0	0.50	0.37	ug/l	
75-09-2	Methylene Chloride	4.0 U	5.0	4.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	2.0 U	5.0	2.0	1.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	0.50 U	1.0	0.50	0.23	ug/l	
91-20-3	Naphthalene [c]	2.0 U	5.0	2.0	1.0	ug/l	
103-65-1	n-Propylbenzene	0.50 U	1.0	0.50	0.29	ug/l	
100-42-5	Styrene	0.50 U	1.0	0.50	0.22	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	0.50 U	1.0	0.50	0.28	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	0.50 U	1.0	0.50	0.30	ug/l	
127-18-4	Tetrachloroethylene	0.50 U	1.0	0.50	0.22	ug/l	
108-88-3	Toluene	0.50 U	1.0	0.50	0.30	ug/l	
87-61-6	1,2,3-Trichlorobenzene [c]	1.0 U	2.0	1.0	0.61	ug/l	
120-82-1	1,2,4-Trichlorobenzene	1.0 U	2.0	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	0.50 U	1.0	0.50	0.25	ug/l	
79-00-5	1,1,2-Trichloroethane	0.50 U	1.0	0.50	0.47	ug/l	
79-01-6	Trichloroethylene	0.50 U	1.0	0.50	0.35	ug/l	
75-69-4	Trichlorofluoromethane	1.0 U	2.0	1.0	0.50	ug/l	
96-18-4	1,2,3-Trichloropropane	1.0 U	2.0	1.0	0.63	ug/l	
95-63-6	1,2,4-Trimethylbenzene	0.50 U	1.0	0.50	0.32	ug/l	
108-67-8	1,3,5-Trimethylbenzene	0.50 U	1.0	0.50	0.27	ug/l	
108-05-4	Vinyl Acetate	5.0 U	10	5.0	2.0	ug/l	
75-01-4	Vinyl Chloride	0.50 U	1.0	0.50	0.41	ug/l	
	m,p-Xylene	1.0 U	2.0	1.0	0.47	ug/l	
95-47-6	o-Xylene	0.50 U	1.0	0.50	0.26	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	95%		83-118%
17060-07-0	1,2-Dichloroethane-D4	102%		79-125%
2037-26-5	Toluene-D8	102%		85-112%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CRHE-MW0048-030.5-20231215		
Lab Sample ID:	FC12031-7	**Date Sampled:**	12/15/23
Matrix:	AQ - Ground Water	**Date Received:**	12/15/23
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	CRHEA-GWIM; Contractors Rd, KSC, FL		

VOA 8260 List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	102%		83-118%

(a) Associated ICV and CCV outside DOD QSM control limits high, sample is ND.
(b) Associated CCV outside of DOD QSM control limits high, sample is ND.
(c) Associated CCV outside DOD QSM control limits low.

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	CRHE-MW0044-042.5-20231215		
Lab Sample ID:	FC12031-8	**Date Sampled:**	12/15/23
Matrix:	AQ - Ground Water	**Date Received:**	12/15/23
Method:	FLORIDA-PRO 2018 SW846 3510C	**Percent Solids:**	n/a
Project:	CRHEA-GWIM; Contractors Rd, KSC, FL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	JR00946589.D	1	12/19/23 23:53	EG	12/19/23 07:30	OP715	GJR792
Run #2							

	Initial Volume	Final Volume
Run #1	240 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
	TPH (C8-C40)	1.10	0.28	0.21	0.14	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	97%		66-139%
7194-86-7	Nonatriacontane	91%		40-129%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CRHE-MW0044-042.5-20231215		
Lab Sample ID:	FC12031-8	**Date Sampled:**	12/15/23
Matrix:	AQ - Ground Water	**Date Received:**	12/15/23
		Percent Solids:	n/a
Project:	CRHEA-GWIM; Contractors Rd, KSC, FL		

General Chemistry

Analyte	Result	LOQ	LOD	DL	Units	DF	Analyzed	By	Method
Solids, Total Dissolved	1280	50	50	40	mg/l	1	12/19/23 11:30	CC	SM2540 C-15

LOQ = Limit of Quantitation DL = Detection Limit U = Indicates a result < LOD
LOD = Limit of Detection B = Analyte found in associated blank J = Indicates a result > = DL (MDL) but < LOQ

SGS North America Inc.

Report of Analysis

Client Sample ID:	CRHE-TB-20231215-01		
Lab Sample ID:	FC12031-9	**Date Sampled:**	12/15/23
Matrix:	AQ - Trip Blank Water	**Date Received:**	12/15/23
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	CRHEA-GWIM; Contractors Rd, KSC, FL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	1A51518.D	1	12/19/23 10:19	JW	n/a	n/a	V1A2022
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA 8260 List

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
67-64-1	Acetone	20 U	25	20	10	ug/l	
71-43-2	Benzene	0.50 U	1.0	0.50	0.31	ug/l	
108-86-1	Bromobenzene	0.50 U	1.0	0.50	0.37	ug/l	
74-97-5	Bromochloromethane	0.50 U	1.0	0.50	0.45	ug/l	
75-27-4	Bromodichloromethane	0.50 U	1.0	0.50	0.24	ug/l	
75-25-2	Bromoform	0.50 U	1.0	0.50	0.41	ug/l	
78-93-3	2-Butanone (MEK)	3.5 U	5.0	3.5	2.0	ug/l	
104-51-8	n-Butylbenzene	0.50 U	1.0	0.50	0.23	ug/l	
135-98-8	sec-Butylbenzene	0.50 U	1.0	0.50	0.24	ug/l	
98-06-6	tert-Butylbenzene	0.50 U	1.0	0.50	0.31	ug/l	
75-15-0	Carbon Disulfide	1.0 U	2.0	1.0	0.53	ug/l	
56-23-5	Carbon Tetrachloride	0.50 U	1.0	0.50	0.36	ug/l	
108-90-7	Chlorobenzene	0.50 U	1.0	0.50	0.20	ug/l	
75-00-3	Chloroethane	1.0 U	2.0	1.0	0.67	ug/l	
67-66-3	Chloroform	0.50 U	1.0	0.50	0.30	ug/l	
95-49-8	o-Chlorotoluene	0.50 U	1.0	0.50	0.22	ug/l	
106-43-4	p-Chlorotoluene	0.50 U	1.0	0.50	0.31	ug/l	
124-48-1	Dibromochloromethane	0.50 U	1.0	0.50	0.28	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	2.0 U	5.0	2.0	1.0	ug/l	
106-93-4	1,2-Dibromoethane	1.0 U	2.0	1.0	0.28	ug/l	
75-71-8	Dichlorodifluoromethane [b]	1.0 U	2.0	1.0	0.50	ug/l	
95-50-1	1,2-Dichlorobenzene	0.50 U	1.0	0.50	0.32	ug/l	
541-73-1	1,3-Dichlorobenzene	0.50 U	1.0	0.50	0.22	ug/l	
106-46-7	1,4-Dichlorobenzene	0.50 U	1.0	0.50	0.26	ug/l	
75-34-3	1,1-Dichloroethane	0.50 U	1.0	0.50	0.34	ug/l	
107-06-2	1,2-Dichloroethane	0.50 U	1.0	0.50	0.31	ug/l	
75-35-4	1,1-Dichloroethylene	0.50 U	1.0	0.50	0.32	ug/l	
156-59-2	cis-1,2-Dichloroethylene	0.50 U	1.0	0.50	0.28	ug/l	
156-60-5	trans-1,2-Dichloroethylene	0.50 U	1.0	0.50	0.22	ug/l	
78-87-5	1,2-Dichloropropane	0.50 U	1.0	0.50	0.43	ug/l	
142-28-9	1,3-Dichloropropane	0.50 U	1.0	0.50	0.31	ug/l	
594-20-7	2,2-Dichloropropane	0.50 U	1.0	0.50	0.24	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CRHE-TB-20231215-01		
Lab Sample ID:	FC12031-9	**Date Sampled:**	12/15/23
Matrix:	AQ - Trip Blank Water	**Date Received:**	12/15/23
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	CRHEA-GWIM; Contractors Rd, KSC, FL		

VOA 8260 List

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
563-58-6	1,1-Dichloropropene	0.50 U	1.0	0.50	0.34	ug/l	
10061-01-5	cis-1,3-Dichloropropene	0.50 U	1.0	0.50	0.29	ug/l	
10061-02-6	trans-1,3-Dichloropropene	0.50 U	1.0	0.50	0.21	ug/l	
100-41-4	Ethylbenzene	0.50 U	1.0	0.50	0.36	ug/l	
87-68-3	Hexachlorobutadiene	1.0 U	2.0	1.0	0.30	ug/l	
591-78-6	2-Hexanone	5.0 U	10	5.0	2.0	ug/l	
98-82-8	Isopropylbenzene	0.50 U	1.0	0.50	0.22	ug/l	
99-87-6	p-Isopropyltoluene	0.50 U	1.0	0.50	0.21	ug/l	
74-83-9	Methyl Bromide [c]	4.0 U	5.0	4.0	2.0	ug/l	
74-87-3	Methyl Chloride	1.0 U	2.0	1.0	0.50	ug/l	
74-95-3	Methylene Bromide	0.50 U	2.0	0.50	0.37	ug/l	
75-09-2	Methylene Chloride	4.0 U	5.0	4.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	2.0 U	5.0	2.0	1.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	0.50 U	1.0	0.50	0.23	ug/l	
91-20-3	Naphthalene [d]	2.0 U	5.0	2.0	1.0	ug/l	
103-65-1	n-Propylbenzene	0.50 U	1.0	0.50	0.29	ug/l	
100-42-5	Styrene	0.50 U	1.0	0.50	0.22	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	0.50 U	1.0	0.50	0.28	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	0.50 U	1.0	0.50	0.30	ug/l	
127-18-4	Tetrachloroethylene	0.50 U	1.0	0.50	0.22	ug/l	
108-88-3	Toluene	0.50 U	1.0	0.50	0.30	ug/l	
87-61-6	1,2,3-Trichlorobenzene [d]	1.0 U	2.0	1.0	0.61	ug/l	
120-82-1	1,2,4-Trichlorobenzene	1.0 U	2.0	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	0.50 U	1.0	0.50	0.25	ug/l	
79-00-5	1,1,2-Trichloroethane	0.50 U	1.0	0.50	0.47	ug/l	
79-01-6	Trichloroethylene	0.50 U	1.0	0.50	0.35	ug/l	
75-69-4	Trichlorofluoromethane	1.0 U	2.0	1.0	0.50	ug/l	
96-18-4	1,2,3-Trichloropropane	1.0 U	2.0	1.0	0.63	ug/l	
95-63-6	1,2,4-Trimethylbenzene	0.50 U	1.0	0.50	0.32	ug/l	
108-67-8	1,3,5-Trimethylbenzene	0.50 U	1.0	0.50	0.27	ug/l	
108-05-4	Vinyl Acetate	5.0 U	10	5.0	2.0	ug/l	
75-01-4	Vinyl Chloride	0.50 U	1.0	0.50	0.41	ug/l	
	m,p-Xylene	1.0 U	2.0	1.0	0.47	ug/l	
95-47-6	o-Xylene	0.50 U	1.0	0.50	0.26	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	95%		83-118%
17060-07-0	1,2-Dichloroethane-D4	103%		79-125%
2037-26-5	Toluene-D8	103%		85-112%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CRHE-TB-20231215-01		
Lab Sample ID:	FC12031-9	**Date Sampled:**	12/15/23
Matrix:	AQ - Trip Blank Water	**Date Received:**	12/15/23
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	CRHEA-GWIM; Contractors Rd, KSC, FL		

VOA 8260 List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	98%		83-118%

(a) Sample vial(s) contained bubbles greater than 6mm.
(b) Associated ICV and CCV outside DOD QSM control limits high, sample is ND.
(c) Associated CCV outside of DOD QSM control limits high, sample is ND.
(d) Associated CCV outside DOD QSM control limits low.

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody
- QC Evaluation: DOD QSM5.x Limits

SGS North America Inc - Orlando

Chain of Custody

4405 Vineland Road, Suite C-15 Orlando, Fl 32811
TEL. 407-425-6700 FAX: 407-425-0707
www.sgs.com

SGS _ ORLANDO JOB #: FC12031 PAGE 1 OF 2

SGS - ORLANDO Quote: SKU #

Client / Reporting Information

Company Name: HydroGeoLogic, Inc.
Address: 2405 N. Courtney Parkway STE. 203
City: Merritt Island State: FL Zip: 32953
Project Contact: Denise Rivers Email: drivers@hgl.com
Phone #: 910-233-8460
Sampler(s) Name(s) (Printed)
Sampler 1: Meghan West Sampler 2: Brandon Schmidt

Project Information

Project Name:: CRHE Area
Street: Kennedy Pkwy.
City: Kennedy Space Center State: FL
Project #: ~~NS1004.05.01~~ NS1004.05.10
Fax #
Client Purchase Order #

Analytical Information

SGS Orlando Sample #	Field ID / Point of Collection	DATE	TIME	SAMPLED BY:	MATRIX	TOTAL # OF BOTTLES	CONTAINER INFORMATION: NONE	HCl	NaOH	H2SO4	NaOH+ZnAc	DI WATER	MECH	LCQSM537DODFL, LCMS+GENX	V8260CVC	FLPROLV	NA	TDS	V8260SIMDIOX
1	CRHE-MW0057-035.0-20231215	12/15/23	0934	MW	GW	1	X											X	
2	CRHE-MW0058-045.0-20231215	12/15/23	1017	MW	GW	4	X	X							X			X	
3	CRHE-MW0029-045.0-20231215	12/15/23	1113	MW	GW	3		X							X				
4	CRHE-MW0056-037.5-20231215	12/15/23	1218	MW	GW	3	X			X						X		X	
5	CRHE-MW0031-045.0-20231215	12/15/23	1330	MW	GW	3		X							X				

INITIAL ASSESSMENT

LABEL VERIFICATION

Matrix Codes

DW - Drinking Water
GW - Ground Water
WW - Water
SW - Surface Water
SO - Soil
SL- Sludge
OI - Oil
LIQ - Other Liquid
AIR - Air
SOL - Other Solid
WP - Wipe

LAB USE ONLY

Turnaround Time (Business days)

Std. 10 Business Days
7 Day *RUSH*
5 Day *RUSH*
3 Day *EMERGENCY*
2 Day *EMERGENCY*
1 Day *EMERGENCY*
Other
Approved By: / Date/Rush Code:
Emergency or Rush T/A Data Available VIA Email or Lablink

Data Deliverable Information

- [ ] COMMERCIAL "A" (RESULTS ONLY)
- [ ] COMMERCIAL "B" (RESULTS PLUS QC)
- [ ] REDT1 (EPA LEVEL 3)
- [ ] FULLT1 (EPA LEVEL 4)
- [ ] EDD'S

Comments / Remarks

Sample Custody must be documented below each time samples change possession, including courier delivery.

	Relinquished by Sampler/Affiliation	Date Time:	Received By/Affiliation	Relinquished By/Affiliation	Date Time:	Received By/Affiliation
1	Brandon Schmidt HGL	12-15-23 1600	2	3 12/15/23 1715		4 12/15/23 1715
5	Relinquished by/Affiliation	Date Time:	6 Received By/Affiliation	7 Relinquished By/Affiliation	Date Time:	8 Received By/Affiliation

Lab Use Only: Custody Seal in Place: Y N Temp Blank Provided: Y N Preserved Where Applicable: Y N Total # of Coolers: 1 Cooler Temperature (s) Celsius: 3.0 IR #1

FC12031: Chain of Custody
Page 1 of 5

SGS North America Inc - Orlando

Chain of Custody

4405 Vineland Road, Suite C-15 Orlando, Fl 32811
TEL. 407-425-6700 FAX: 407-425-0707
www.sgs.com

SGS _ ORLANDO JOB #: FC12031 PAGE 2 OF 2

SGS - ORLANDO Quote: STAFF

Client / Reporting Information

Company Name: HydroGeoLogic, Inc.
Address: 2405 N. Courtney Parkway STE. 203
City: Merritt Island State: FL Zip: 32953
Project Contact: Denise Rivers Email: drivers@hgl.com
Phone #: 910-233-8460
Sampler(s) Name(s) (Printed)
Sampler 1: Meghan West Sampler 2: Brandon Schmidt

Project Information

Project Name: CRHE Area
Street: Kennedy Pkwy.
City: Kennedy Space Center State: FL
Project #: ~~NS1004.05.01~~ NS1004.05.10
Fax #:
Client Purchase Order #:

Analytical Information

SGS Orlando Sample #	Field ID / Point of Collection	DATE	TIME	SAMPLED BY:	MATRIX	TOTAL # OF BOTTLES	CONTAINER INFORMATION: NONE	HCl	NaOH	HNO3	H2SO4	NAOH+ZNAC	DI WATER	MEOH	LCQSM537DODFL, LCMS+GENX	V8260CVC	FLPROLV	NA	TDS	V8260SIMDIOX	LAB USE ONLY
6	CRHE-MW0047-023.0-20231215	12/15/23	10:32	BS	GW	6		X		X	X					X	X	X			
7	CRHE-MW0048-030.5-20231215	12/15/23	12:09	BS	GW	3		X								X					
8	CRHE-MW0044-042.5-20231215	12/15/23	13:25	BS	GW	3	X				X						X		X		
9	CRHE-TB-20231215-01	12/15/23	09:29	BS	WW	2		X													

Matrix Codes: DW - Drinking Water; GW - Ground Water; WW - Water; SW - Surface Water; SO - Soil; SL - Sludge; OI - Oil; LIQ - Other Liquid; AIR - Air; SOL - Other Solid; WP - Wipe

Turnaround Time (Business days)

Std. 10 Business Days — Approved By: / Date/Rush Code:
7 Day *RUSH*
5 Day *RUSH*
3 Day *EMERGENCY*
2 Day *EMERGENCY*
1 Day *EMERGENCY*
Other
Emergency or Rush T/A Data Available VIA Email or Lablink

Data Deliverable Information

- [ ] COMMERCIAL "A" (RESULTS ONLY)
- [ ] COMMERCIAL "B" (RESULTS PLUS QC)
- [ ] REDT1 (EPA LEVEL 3)
- [ ] FULLT1 (EPA LEVEL 4)
- [ ] EDD'S

Comments / Remarks

Trip blank had head space from lab

Sample Custody must be documented below each time samples change possession, including courier delivery.

	Relinquished by Sampler/Affiliation	Date Time:	Received By/Affiliation	Relinquished By/Affiliation	Date Time:	Received By/Affiliation
1	Brandon Schmidt HGL	12-15-23 1600	2 12/15/23 16:00	3 12/15/23 17:15		4 12/15/23 1715
	Relinquished by/Affiliation	Date Time:	Received By/Affiliation	Relinquished By/Affiliation	Date Time:	Received By/Affiliation
	5		6	7		8

Lab Use Only: Custody Seal in Place: Y N Temp Blank Provided: Y N Preserved Where Applicable: Y N Total # of Coolers: ____ Cooler Temperature (s) Celsius: ____

5.1 5

FC12031: Chain of Custody
Page 2 of 5

SGS Sample Receipt Summary

Job Number: fc12031 **Client:** HGL **Project:** CRHE AREA

Date / Time Received: 12/15/2023 5:15:00 PM **Delivery Method:** SGS COURIER **Airbill #'s:** N/A

Cooler Temps (Raw Measured) °C: Cooler 1: (3.0);

Cooler Temps (Corrected) °C: Cooler 1: (3.4);

Cooler Information	Y	or	N
1. Custody Seals Present:	☑		☐
2. Custody Seals Intact:	☑		☐
3. Temp criteria achieved:	☑		☐
4. Cooler temp verification:	IR Gun		
5. Cooler media:	Ice (Bag)		

Trip Blank Information	Y	or	N	N/A
1. Trip Blank present / cooler:	☑		☐	☐
2. Trip Blank listed on COC:	☑		☐	☐

3. Type of TB Received	W	or	S	N/A
	☑		☐	☐

Sample Information	Y	or	N	N/A
1. Sample labels present on bottles:	☑		☐	
2. Samples presented properly	☑		☐	
3. Suffiient volume/containers recv'd for analysi	☑		☐	
4. Condition of sample:	Intact			
5. Sample recv'd within HT	☑		☐	
6. Dates/Times/IDs on COC match sample labe	☑		☐	
7. VOCs have headspace	☑		☐	☐
8. Bottles received for unspecified tests	☐		☑	
9. Compositing instructions clear	☐		☐	☑
10. Voa Soil Kits/Jars received past 48hrs?	☐		☐	☑
11. % Solids Jar Received?	☐		☐	☑
12. Residual Chlorine Present?	☐		☐	☑

Misc Information

Number of Encores: 25 Gram 5 Gram

Test Strip Lot #s: pH 0-3: 226422 pH 10-12:

Residual Chlorine Test Strip Lot #

Number of Lab Filtered Metals:

Other: (Specify) pH 1.0 - 12.0 222221

Comments TB HAS HEADSPACE

SM089-03
Rev. Date 12/7/17

JDS 12/16/23

Please log and analyze Trip Blank as received. Client noted Trip Blank was received with headspace on COC. Thank you.

FC12031: Chain of Custody
Page 4 of 5

Job Change Order: FC12031

Requested Date:	1/11/2024	**Received Date:**	12/15/2023
Account Name:	Hydrogeologic, Inc.	**Due Date:**	1/11/2024
Project Description:	CRHEA-GWIM; Contractors Rd, KSC, FL	**Deliverable:**	FULT1
C/O Initiated By:	JEAN_DENT **PM:** JDS	**TAT (Days):**	2

==========

Sample #: FC12031-2,3,5-7,9 **Dept:** RP

Client ID: **TAT:** 22

Change: Please re-issue report, VOC reporting list revised as per client request. Thank you.

FC12031: Chain of Custody
Page 5 of 5

Above Changes Per: Client, LindaNylan,via e-mail requ **Date/Time:** 1/11/2024

To Client: This Change Order is confirmation of the revisions, previously discussed with the Client Service Representative.

Page 1 of 1

QC Evaluation: DOD QSM5.x Limits

Job Number: FC12031
Account: Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL
Collected: 12/15/23

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
V1A2022	SW846 8260D						
V1A2022-BS	67-64-1	Acetone	BSP	REC	94	%	39-160
V1A2022-BS	71-43-2	Benzene	BSP	REC	91	%	79-120
V1A2022-BS	108-86-1	Bromobenzene	BSP	REC	89	%	80-120
V1A2022-BS	74-97-5	Bromochloromethane	BSP	REC	84	%	78-123
V1A2022-BS	75-27-4	Bromodichloromethane	BSP	REC	82	%	79-125
V1A2022-BS	75-25-2	Bromoform	BSP	REC	78	%	66-130
V1A2022-BS	78-93-3	2-Butanone (MEK)	BSP	REC	82	%	56-143
V1A2022-BS	104-51-8	n-Butylbenzene	BSP	REC	100	%	75-128
V1A2022-BS	135-98-8	sec-Butylbenzene	BSP	REC	90	%	77-126
V1A2022-BS	98-06-6	tert-Butylbenzene	BSP	REC	97	%	78-124
V1A2022-BS	75-15-0	Carbon Disulfide	BSP	REC	82	%	64-133
V1A2022-BS	56-23-5	Carbon Tetrachloride	BSP	REC	89	%	72-136
V1A2022-BS	108-90-7	Chlorobenzene	BSP	REC	90	%	82-118
V1A2022-BS	75-00-3	Chloroethane	BSP	REC	94	%	60-138
V1A2022-BS	67-66-3	Chloroform	BSP	REC	91	%	79-124
V1A2022-BS	95-49-8	o-Chlorotoluene	BSP	REC	93	%	79-122
V1A2022-BS	106-43-4	p-Chlorotoluene	BSP	REC	94	%	78-122
V1A2022-BS	124-48-1	Dibromochloromethane	BSP	REC	87	%	74-126
V1A2022-BS	96-12-8	1,2-Dibromo-3-chloropropane	BSP	REC	83	%	62-128
V1A2022-BS	106-93-4	1,2-Dibromoethane	BSP	REC	82	%	77-121
V1A2022-BS	75-71-8	Dichlorodifluoromethane	BSP	REC	99	%	32-152
V1A2022-BS	95-50-1	1,2-Dichlorobenzene	BSP	REC	90	%	80-119
V1A2022-BS	541-73-1	1,3-Dichlorobenzene	BSP	REC	88	%	80-119
V1A2022-BS	106-46-7	1,4-Dichlorobenzene	BSP	REC	88	%	79-118
V1A2022-BS	75-34-3	1,1-Dichloroethane	BSP	REC	83	%	77-125
V1A2022-BS	107-06-2	1,2-Dichloroethane	BSP	REC	91	%	73-128
V1A2022-BS	75-35-4	1,1-Dichloroethylene	BSP	REC	86	%	71-131
V1A2022-BS	156-59-2	cis-1,2-Dichloroethylene	BSP	REC	85	%	78-123
V1A2022-BS	156-60-5	trans-1,2-Dichloroethylene	BSP	REC	86	%	75-124
V1A2022-BS	78-87-5	1,2-Dichloropropane	BSP	REC	87	%	78-122
V1A2022-BS	142-28-9	1,3-Dichloropropane	BSP	REC	90	%	80-119
V1A2022-BS	594-20-7	2,2-Dichloropropane	BSP	REC	94	%	60-139
V1A2022-BS	563-58-6	1,1-Dichloropropene	BSP	REC	88	%	79-125
V1A2022-BS	10061-01-5	cis-1,3-Dichloropropene	BSP	REC	82	%	75-124
V1A2022-BS	10061-02-6	trans-1,3-Dichloropropene	BSP	REC	81	%	73-127
V1A2022-BS	100-41-4	Ethylbenzene	BSP	REC	87	%	79-121
V1A2022-BS	87-68-3	Hexachlorobutadiene	BSP	REC	97	%	66-134
V1A2022-BS	591-78-6	2-Hexanone	BSP	REC	87	%	57-139
V1A2022-BS	98-82-8	Isopropylbenzene	BSP	REC	90	%	72-131
V1A2022-BS	99-87-6	p-Isopropyltoluene	BSP	REC	91	%	77-127
V1A2022-BS	74-83-9	Methyl Bromide	BSP	REC	128	%	53-141
V1A2022-BS	74-87-3	Methyl Chloride	BSP	REC	87	%	50-139

* Sample used for QC is not from job FC12031

QC Evaluation: DOD QSM5.x Limits

Job Number: FC12031
Account: Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL
Collected: 12/15/23

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
V1A2022-BS	74-95-3	Methylene Bromide	BSP	REC	86	%	79-123
V1A2022-BS	75-09-2	Methylene Chloride	BSP	REC	94	%	74-124
V1A2022-BS	108-10-1	4-Methyl-2-pentanone (MIBK)	BSP	REC	92	%	67-130
V1A2022-BS	1634-04-4	Methyl Tert Butyl Ether	BSP	REC	85	%	71-124
V1A2022-BS	91-20-3	Naphthalene	BSP	REC	67	%	61-128
V1A2022-BS	103-65-1	n-Propylbenzene	BSP	REC	96	%	76-126
V1A2022-BS	100-42-5	Styrene	BSP	REC	87	%	78-123
V1A2022-BS	630-20-6	1,1,1,2-Tetrachloroethane	BSP	REC	88	%	78-124
V1A2022-BS	79-34-5	1,1,2,2-Tetrachloroethane	BSP	REC	86	%	71-121
V1A2022-BS	127-18-4	Tetrachloroethylene	BSP	REC	94	%	74-129
V1A2022-BS	108-88-3	Toluene	BSP	REC	94	%	80-121
V1A2022-BS	87-61-6	1,2,3-Trichlorobenzene	BSP	REC	74	%	69-129
V1A2022-BS	120-82-1	1,2,4-Trichlorobenzene	BSP	REC	77	%	69-130
V1A2022-BS	71-55-6	1,1,1-Trichloroethane	BSP	REC	92	%	74-131
V1A2022-BS	79-00-5	1,1,2-Trichloroethane	BSP	REC	84	%	80-119
V1A2022-BS	79-01-6	Trichloroethylene	BSP	REC	90	%	79-123
V1A2022-BS	75-69-4	Trichlorofluoromethane	BSP	REC	96	%	65-141
V1A2022-BS	96-18-4	1,2,3-Trichloropropane	BSP	REC	96	%	73-122
V1A2022-BS	95-63-6	1,2,4-Trimethylbenzene	BSP	REC	93	%	76-124
V1A2022-BS	108-67-8	1,3,5-Trimethylbenzene	BSP	REC	94	%	75-124
V1A2022-BS	108-05-4	Vinyl Acetate	BSP	REC	86	%	54-146
V1A2022-BS	75-01-4	Vinyl Chloride	BSP	REC	92	%	58-137
V1A2022-BS		m,p-Xylene	BSP	REC	94	%	80-121
V1A2022-BS	95-47-6	o-Xylene	BSP	REC	89	%	78-122
V1A2022-BS	1868-53-7	Dibromofluoromethane	BSP	SURR	95	%	80-119
V1A2022-BS	17060-07-0	1,2-Dichloroethane-D4	BSP	SURR	105	%	81-118
V1A2022-BS	2037-26-5	Toluene-D8	BSP	SURR	104	%	89-112
V1A2022-BS	460-00-4	4-Bromofluorobenzene	BSP	SURR	101	%	85-114
FC11791-1MS*	67-64-1	Acetone	MS	REC	84	%	39-160
FC11791-1MS*	71-43-2	Benzene	MS	REC	90	%	79-120
FC11791-1MS*	108-86-1	Bromobenzene	MS	REC	93	%	80-120
FC11791-1MS*	74-97-5	Bromochloromethane	MS	REC	88	%	78-123
FC11791-1MS*	75-27-4	Bromodichloromethane	MS	REC	84	%	79-125
FC11791-1MS*	75-25-2	Bromoform	MS	REC	75	%	66-130
FC11791-1MS*	78-93-3	2-Butanone (MEK)	MS	REC	82	%	56-143
FC11791-1MS*	104-51-8	n-Butylbenzene	MS	REC	98	%	75-128
FC11791-1MS*	135-98-8	sec-Butylbenzene	MS	REC	89	%	77-126
FC11791-1MS*	98-06-6	tert-Butylbenzene	MS	REC	95	%	78-124
FC11791-1MS*	75-15-0	Carbon Disulfide	MS	REC	81	%	64-133
FC11791-1MS*	56-23-5	Carbon Tetrachloride	MS	REC	84	%	72-136
FC11791-1MS*	108-90-7	Chlorobenzene	MS	REC	92	%	82-118
FC11791-1MS*	75-00-3	Chloroethane	MS	REC	95	%	60-138
FC11791-1MS*	67-66-3	Chloroform	MS	REC	91	%	79-124
FC11791-1MS*	95-49-8	o-Chlorotoluene	MS	REC	94	%	79-122
FC11791-1MS*	106-43-4	p-Chlorotoluene	MS	REC	94	%	78-122

* Sample used for QC is not from job FC12031

QC Evaluation: DOD QSM5.x Limits

Job Number: FC12031
Account: Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL
Collected: 12/15/23

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
FC11791-1MS*	124-48-1	Dibromochloromethane	MS	REC	86	%	74-126
FC11791-1MS*	96-12-8	1,2-Dibromo-3-chloropropane	MS	REC	85	%	62-128
FC11791-1MS*	106-93-4	1,2-Dibromoethane	MS	REC	86	%	77-121
FC11791-1MS*	75-71-8	Dichlorodifluoromethane	MS	REC	118	%	32-152
FC11791-1MS*	95-50-1	1,2-Dichlorobenzene	MS	REC	93	%	80-119
FC11791-1MS*	541-73-1	1,3-Dichlorobenzene	MS	REC	90	%	80-119
FC11791-1MS*	106-46-7	1,4-Dichlorobenzene	MS	REC	90	%	79-118
FC11791-1MS*	75-34-3	1,1-Dichloroethane	MS	REC	84	%	77-125
FC11791-1MS*	107-06-2	1,2-Dichloroethane	MS	REC	96	%	73-128
FC11791-1MS*	75-35-4	1,1-Dichloroethylene	MS	REC	85	%	71-131
FC11791-1MS*	156-59-2	cis-1,2-Dichloroethylene	MS	REC	87	%	78-123
FC11791-1MS*	156-60-5	trans-1,2-Dichloroethylene	MS	REC	83	%	75-124
FC11791-1MS*	78-87-5	1,2-Dichloropropane	MS	REC	90	%	78-122
FC11791-1MS*	142-28-9	1,3-Dichloropropane	MS	REC	92	%	80-119
FC11791-1MS*	594-20-7	2,2-Dichloropropane	MS	REC	86	%	60-139
FC11791-1MS*	563-58-6	1,1-Dichloropropene	MS	REC	90	%	79-125
FC11791-1MS*	10061-01-5	cis-1,3-Dichloropropene	MS	REC	82	%	75-124
FC11791-1MS*	10061-02-6	trans-1,3-Dichloropropene	MS	REC	81	%	73-127
FC11791-1MS*	100-41-4	Ethylbenzene	MS	REC	94	%	79-121
FC11791-1MS*	87-68-3	Hexachlorobutadiene	MS	REC	91	%	66-134
FC11791-1MS*	591-78-6	2-Hexanone	MS	REC	88	%	57-139
FC11791-1MS*	98-82-8	Isopropylbenzene	MS	REC	90	%	72-131
FC11791-1MS*	99-87-6	p-Isopropyltoluene	MS	REC	89	%	77-127
FC11791-1MS*	74-83-9	Methyl Bromide	MS	REC	101	%	53-141
FC11791-1MS*	74-87-3	Methyl Chloride	MS	REC	89	%	50-139
FC11791-1MS*	74-95-3	Methylene Bromide	MS	REC	91	%	79-123
FC11791-1MS*	75-09-2	Methylene Chloride	MS	REC	94	%	74-124
FC11791-1MS*	108-10-1	4-Methyl-2-pentanone (MIBK)	MS	REC	97	%	67-130
FC11791-1MS*	1634-04-4	Methyl Tert Butyl Ether	MS	REC	91	%	71-124
FC11791-1MS*	91-20-3	Naphthalene	MS	REC	64	%	61-128
FC11791-1MS*	103-65-1	n-Propylbenzene	MS	REC	95	%	76-126
FC11791-1MS*	100-42-5	Styrene	MS	REC	87	%	78-123
FC11791-1MS*	630-20-6	1,1,1,2-Tetrachloroethane	MS	REC	88	%	78-124
FC11791-1MS*	79-34-5	1,1,2,2-Tetrachloroethane	MS	REC	94	%	71-121
FC11791-1MS*	127-18-4	Tetrachloroethylene	MS	REC	90	%	74-129
FC11791-1MS*	108-88-3	Toluene	MS	REC	93	%	80-121
FC11791-1MS*	87-61-6	1,2,3-Trichlorobenzene	MS	REC	72	%	69-129
FC11791-1MS*	120-82-1	1,2,4-Trichlorobenzene	MS	REC	76	%	69-130
FC11791-1MS*	71-55-6	1,1,1-Trichloroethane	MS	REC	92	%	74-131
FC11791-1MS*	79-00-5	1,1,2-Trichloroethane	MS	REC	86	%	80-119
FC11791-1MS*	79-01-6	Trichloroethylene	MS	REC	87	%	79-123
FC11791-1MS*	75-69-4	Trichlorofluoromethane	MS	REC	107	%	65-141
FC11791-1MS*	96-18-4	1,2,3-Trichloropropane	MS	REC	103	%	73-122
FC11791-1MS*	95-63-6	1,2,4-Trimethylbenzene	MS	REC	94	%	76-124
FC11791-1MS*	108-67-8	1,3,5-Trimethylbenzene	MS	REC	94	%	75-124

* Sample used for QC is not from job FC12031

QC Evaluation: DOD QSM5.x Limits

Job Number: FC12031
Account: Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL
Collected: 12/15/23

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
FC11791-1MS*	108-05-4	Vinyl Acetate	MS	REC	91	%	54-146
FC11791-1MS*	75-01-4	Vinyl Chloride	MS	REC	95	%	58-137
FC11791-1MS*		m,p-Xylene	MS	REC	94	%	80-121
FC11791-1MS*	95-47-6	o-Xylene	MS	REC	88	%	78-122
FC11791-1MS*	1868-53-7	Dibromofluoromethane	MS	SURR	96	%	80-119
FC11791-1MS*	17060-07-0	1,2-Dichloroethane-D4	MS	SURR	106	%	81-118
FC11791-1MS*	2037-26-5	Toluene-D8	MS	SURR	101	%	89-112
FC11791-1MS*	460-00-4	4-Bromofluorobenzene	MS	SURR	100	%	85-114
FC11791-1MSD*	67-64-1	Acetone	MSD	REC	83	%	39-160
FC11791-1MSD*	67-64-1	Acetone	MSD	RPD	1	%	20
FC11791-1MSD*	71-43-2	Benzene	MSD	REC	88	%	79-120
FC11791-1MSD*	71-43-2	Benzene	MSD	RPD	2	%	20
FC11791-1MSD*	108-86-1	Bromobenzene	MSD	REC	91	%	80-120
FC11791-1MSD*	108-86-1	Bromobenzene	MSD	RPD	2	%	20
FC11791-1MSD*	74-97-5	Bromochloromethane	MSD	REC	84	%	78-123
FC11791-1MSD*	74-97-5	Bromochloromethane	MSD	RPD	5	%	20
FC11791-1MSD*	75-27-4	Bromodichloromethane	MSD	REC	82	%	79-125
FC11791-1MSD*	75-27-4	Bromodichloromethane	MSD	RPD	2	%	20
FC11791-1MSD*	75-25-2	Bromoform	MSD	REC	77	%	66-130
FC11791-1MSD*	75-25-2	Bromoform	MSD	RPD	3	%	20
FC11791-1MSD*	78-93-3	2-Butanone (MEK)	MSD	REC	80	%	56-143
FC11791-1MSD*	78-93-3	2-Butanone (MEK)	MSD	RPD	2	%	20
FC11791-1MSD*	104-51-8	n-Butylbenzene	MSD	REC	97	%	75-128
FC11791-1MSD*	104-51-8	n-Butylbenzene	MSD	RPD	2	%	20
FC11791-1MSD*	135-98-8	sec-Butylbenzene	MSD	REC	89	%	77-126
FC11791-1MSD*	135-98-8	sec-Butylbenzene	MSD	RPD	0	%	20
FC11791-1MSD*	98-06-6	tert-Butylbenzene	MSD	REC	94	%	78-124
FC11791-1MSD*	98-06-6	tert-Butylbenzene	MSD	RPD	2	%	20
FC11791-1MSD*	75-15-0	Carbon Disulfide	MSD	REC	79	%	64-133
FC11791-1MSD*	75-15-0	Carbon Disulfide	MSD	RPD	3	%	20
FC11791-1MSD*	56-23-5	Carbon Tetrachloride	MSD	REC	86	%	72-136
FC11791-1MSD*	56-23-5	Carbon Tetrachloride	MSD	RPD	3	%	20
FC11791-1MSD*	108-90-7	Chlorobenzene	MSD	REC	90	%	82-118
FC11791-1MSD*	108-90-7	Chlorobenzene	MSD	RPD	3	%	20
FC11791-1MSD*	75-00-3	Chloroethane	MSD	REC	91	%	60-138
FC11791-1MSD*	75-00-3	Chloroethane	MSD	RPD	4	%	20
FC11791-1MSD*	67-66-3	Chloroform	MSD	REC	90	%	79-124
FC11791-1MSD*	67-66-3	Chloroform	MSD	RPD	1	%	20
FC11791-1MSD*	95-49-8	o-Chlorotoluene	MSD	REC	93	%	79-122
FC11791-1MSD*	95-49-8	o-Chlorotoluene	MSD	RPD	1	%	20
FC11791-1MSD*	106-43-4	p-Chlorotoluene	MSD	REC	94	%	78-122
FC11791-1MSD*	106-43-4	p-Chlorotoluene	MSD	RPD	0	%	20
FC11791-1MSD*	124-48-1	Dibromochloromethane	MSD	REC	87	%	74-126
FC11791-1MSD*	124-48-1	Dibromochloromethane	MSD	RPD	1	%	20
FC11791-1MSD*	96-12-8	1,2-Dibromo-3-chloropropane	MSD	REC	87	%	62-128

* Sample used for QC is not from job FC12031

QC Evaluation: DOD QSM5.x Limits

Job Number: FC12031
Account: Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL
Collected: 12/15/23

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
FC11791-1MSD*	96-12-8	1,2-Dibromo-3-chloropropane	MSD	RPD	3	%	20
FC11791-1MSD*	106-93-4	1,2-Dibromoethane	MSD	REC	83	%	77-121
FC11791-1MSD*	106-93-4	1,2-Dibromoethane	MSD	RPD	4	%	20
FC11791-1MSD*	75-71-8	Dichlorodifluoromethane	MSD	REC	113	%	32-152
FC11791-1MSD*	75-71-8	Dichlorodifluoromethane	MSD	RPD	4	%	20
FC11791-1MSD*	95-50-1	1,2-Dichlorobenzene	MSD	REC	91	%	80-119
FC11791-1MSD*	95-50-1	1,2-Dichlorobenzene	MSD	RPD	2	%	20
FC11791-1MSD*	541-73-1	1,3-Dichlorobenzene	MSD	REC	91	%	80-119
FC11791-1MSD*	541-73-1	1,3-Dichlorobenzene	MSD	RPD	1	%	20
FC11791-1MSD*	106-46-7	1,4-Dichlorobenzene	MSD	REC	92	%	79-118
FC11791-1MSD*	106-46-7	1,4-Dichlorobenzene	MSD	RPD	2	%	20
FC11791-1MSD*	75-34-3	1,1-Dichloroethane	MSD	REC	81	%	77-125
FC11791-1MSD*	75-34-3	1,1-Dichloroethane	MSD	RPD	4	%	20
FC11791-1MSD*	107-06-2	1,2-Dichloroethane	MSD	REC	93	%	73-128
FC11791-1MSD*	107-06-2	1,2-Dichloroethane	MSD	RPD	3	%	20
FC11791-1MSD*	75-35-4	1,1-Dichloroethylene	MSD	REC	82	%	71-131
FC11791-1MSD*	75-35-4	1,1-Dichloroethylene	MSD	RPD	4	%	20
FC11791-1MSD*	156-59-2	cis-1,2-Dichloroethylene	MSD	REC	83	%	78-123
FC11791-1MSD*	156-59-2	cis-1,2-Dichloroethylene	MSD	RPD	5	%	20
FC11791-1MSD*	156-60-5	trans-1,2-Dichloroethylene	MSD	REC	82	%	75-124
FC11791-1MSD*	156-60-5	trans-1,2-Dichloroethylene	MSD	RPD	2	%	20
FC11791-1MSD*	78-87-5	1,2-Dichloropropane	MSD	REC	89	%	78-122
FC11791-1MSD*	78-87-5	1,2-Dichloropropane	MSD	RPD	1	%	20
FC11791-1MSD*	142-28-9	1,3-Dichloropropane	MSD	REC	93	%	80-119
FC11791-1MSD*	142-28-9	1,3-Dichloropropane	MSD	RPD	1	%	20
FC11791-1MSD*	594-20-7	2,2-Dichloropropane	MSD	REC	84	%	60-139
FC11791-1MSD*	594-20-7	2,2-Dichloropropane	MSD	RPD	3	%	20
FC11791-1MSD*	563-58-6	1,1-Dichloropropene	MSD	REC	89	%	79-125
FC11791-1MSD*	563-58-6	1,1-Dichloropropene	MSD	RPD	2	%	20
FC11791-1MSD*	10061-01-5	cis-1,3-Dichloropropene	MSD	REC	80	%	75-124
FC11791-1MSD*	10061-01-5	cis-1,3-Dichloropropene	MSD	RPD	2	%	20
FC11791-1MSD*	10061-02-6	trans-1,3-Dichloropropene	MSD	REC	81	%	73-127
FC11791-1MSD*	10061-02-6	trans-1,3-Dichloropropene	MSD	RPD	0	%	20
FC11791-1MSD*	100-41-4	Ethylbenzene	MSD	REC	95	%	79-121
FC11791-1MSD*	100-41-4	Ethylbenzene	MSD	RPD	1	%	20
FC11791-1MSD*	87-68-3	Hexachlorobutadiene	MSD	REC	88	%	66-134
FC11791-1MSD*	87-68-3	Hexachlorobutadiene	MSD	RPD	4	%	20
FC11791-1MSD*	591-78-6	2-Hexanone	MSD	REC	88	%	57-139
FC11791-1MSD*	591-78-6	2-Hexanone	MSD	RPD	0	%	20
FC11791-1MSD*	98-82-8	Isopropylbenzene	MSD	REC	88	%	72-131
FC11791-1MSD*	98-82-8	Isopropylbenzene	MSD	RPD	2	%	20
FC11791-1MSD*	99-87-6	p-Isopropyltoluene	MSD	REC	88	%	77-127
FC11791-1MSD*	99-87-6	p-Isopropyltoluene	MSD	RPD	1	%	20
FC11791-1MSD*	74-83-9	Methyl Bromide	MSD	REC	109	%	53-141
FC11791-1MSD*	74-83-9	Methyl Bromide	MSD	RPD	8	%	20

* Sample used for QC is not from job FC12031

QC Evaluation: DOD QSM5.x Limits

Job Number: FC12031
Account: Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL
Collected: 12/15/23

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
FC11791-1MSD*	74-87-3	Methyl Chloride	MSD	REC	86	%	50-139
FC11791-1MSD*	74-87-3	Methyl Chloride	MSD	RPD	3	%	20
FC11791-1MSD*	74-95-3	Methylene Bromide	MSD	REC	88	%	79-123
FC11791-1MSD*	74-95-3	Methylene Bromide	MSD	RPD	4	%	20
FC11791-1MSD*	75-09-2	Methylene Chloride	MSD	REC	91	%	74-124
FC11791-1MSD*	75-09-2	Methylene Chloride	MSD	RPD	3	%	20
FC11791-1MSD*	108-10-1	4-Methyl-2-pentanone (MIBK)	MSD	REC	95	%	67-130
FC11791-1MSD*	108-10-1	4-Methyl-2-pentanone (MIBK)	MSD	RPD	3	%	20
FC11791-1MSD*	1634-04-4	Methyl Tert Butyl Ether	MSD	REC	88	%	71-124
FC11791-1MSD*	1634-04-4	Methyl Tert Butyl Ether	MSD	RPD	4	%	20
FC11791-1MSD*	91-20-3	Naphthalene	MSD	REC	64	%	61-128
FC11791-1MSD*	91-20-3	Naphthalene	MSD	RPD	0	%	20
FC11791-1MSD*	103-65-1	n-Propylbenzene	MSD	REC	94	%	76-126
FC11791-1MSD*	103-65-1	n-Propylbenzene	MSD	RPD	2	%	20
FC11791-1MSD*	100-42-5	Styrene	MSD	REC	86	%	78-123
FC11791-1MSD*	100-42-5	Styrene	MSD	RPD	2	%	20
FC11791-1MSD*	630-20-6	1,1,1,2-Tetrachloroethane	MSD	REC	87	%	78-124
FC11791-1MSD*	630-20-6	1,1,1,2-Tetrachloroethane	MSD	RPD	1	%	20
FC11791-1MSD*	79-34-5	1,1,2,2-Tetrachloroethane	MSD	REC	91	%	71-121
FC11791-1MSD*	79-34-5	1,1,2,2-Tetrachloroethane	MSD	RPD	3	%	20
FC11791-1MSD*	127-18-4	Tetrachloroethylene	MSD	REC	87	%	74-129
FC11791-1MSD*	127-18-4	Tetrachloroethylene	MSD	RPD	2	%	20
FC11791-1MSD*	108-88-3	Toluene	MSD	REC	90	%	80-121
FC11791-1MSD*	108-88-3	Toluene	MSD	RPD	4	%	20
FC11791-1MSD*	87-61-6	1,2,3-Trichlorobenzene	MSD	REC	73	%	69-129
FC11791-1MSD*	87-61-6	1,2,3-Trichlorobenzene	MSD	RPD	1	%	20
FC11791-1MSD*	120-82-1	1,2,4-Trichlorobenzene	MSD	REC	74	%	69-130
FC11791-1MSD*	120-82-1	1,2,4-Trichlorobenzene	MSD	RPD	2	%	20
FC11791-1MSD*	71-55-6	1,1,1-Trichloroethane	MSD	REC	90	%	74-131
FC11791-1MSD*	71-55-6	1,1,1-Trichloroethane	MSD	RPD	3	%	20
FC11791-1MSD*	79-00-5	1,1,2-Trichloroethane	MSD	REC	84	%	80-119
FC11791-1MSD*	79-00-5	1,1,2-Trichloroethane	MSD	RPD	2	%	20
FC11791-1MSD*	79-01-6	Trichloroethylene	MSD	REC	84	%	79-123
FC11791-1MSD*	79-01-6	Trichloroethylene	MSD	RPD	4	%	20
FC11791-1MSD*	75-69-4	Trichlorofluoromethane	MSD	REC	105	%	65-141
FC11791-1MSD*	75-69-4	Trichlorofluoromethane	MSD	RPD	2	%	20
FC11791-1MSD*	96-18-4	1,2,3-Trichloropropane	MSD	REC	104	%	73-122
FC11791-1MSD*	96-18-4	1,2,3-Trichloropropane	MSD	RPD	1	%	20
FC11791-1MSD*	95-63-6	1,2,4-Trimethylbenzene	MSD	REC	93	%	76-124
FC11791-1MSD*	95-63-6	1,2,4-Trimethylbenzene	MSD	RPD	1	%	20
FC11791-1MSD*	108-67-8	1,3,5-Trimethylbenzene	MSD	REC	94	%	75-124
FC11791-1MSD*	108-67-8	1,3,5-Trimethylbenzene	MSD	RPD	0	%	20
FC11791-1MSD*	108-05-4	Vinyl Acetate	MSD	REC	89	%	54-146
FC11791-1MSD*	108-05-4	Vinyl Acetate	MSD	RPD	2	%	20
FC11791-1MSD*	75-01-4	Vinyl Chloride	MSD	REC	95	%	58-137

* Sample used for QC is not from job FC12031

QC Evaluation: DOD QSM5.x Limits

Job Number: FC12031
Account: Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL
Collected: 12/15/23

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
FC11791-1MSD*	75-01-4	Vinyl Chloride	MSD	RPD	0	%	20
FC11791-1MSD*		m,p-Xylene	MSD	REC	92	%	80-121
FC11791-1MSD*		m,p-Xylene	MSD	RPD	3	%	20
FC11791-1MSD*	95-47-6	o-Xylene	MSD	REC	87	%	78-122
FC11791-1MSD*	95-47-6	o-Xylene	MSD	RPD	1	%	20
FC11791-1MSD*	1868-53-7	Dibromofluoromethane	MSD	SURR	96	%	80-119
FC11791-1MSD*	17060-07-0	1,2-Dichloroethane-D4	MSD	SURR	105	%	81-118
FC11791-1MSD*	2037-26-5	Toluene-D8	MSD	SURR	103	%	89-112
FC11791-1MSD*	460-00-4	4-Bromofluorobenzene	MSD	SURR	101	%	85-114
V1A2022-MB	1868-53-7	Dibromofluoromethane	MB	SURR	93	%	80-119
V1A2022-MB	17060-07-0	1,2-Dichloroethane-D4	MB	SURR	101	%	81-118
V1A2022-MB	2037-26-5	Toluene-D8	MB	SURR	101	%	89-112
V1A2022-MB	460-00-4	4-Bromofluorobenzene	MB	SURR	103	%	85-114
FC12031-2	1868-53-7	Dibromofluoromethane	SAMP	SURR	97	%	80-119
FC12031-2	17060-07-0	1,2-Dichloroethane-D4	SAMP	SURR	105	%	81-118
FC12031-2	2037-26-5	Toluene-D8	SAMP	SURR	102	%	89-112
FC12031-2	460-00-4	4-Bromofluorobenzene	SAMP	SURR	102	%	85-114
FC12031-3	1868-53-7	Dibromofluoromethane	SAMP	SURR	94	%	80-119
FC12031-3	17060-07-0	1,2-Dichloroethane-D4	SAMP	SURR	103	%	81-118
FC12031-3	2037-26-5	Toluene-D8	SAMP	SURR	102	%	89-112
FC12031-3	460-00-4	4-Bromofluorobenzene	SAMP	SURR	102	%	85-114
FC12031-5	1868-53-7	Dibromofluoromethane	SAMP	SURR	94	%	80-119
FC12031-5	17060-07-0	1,2-Dichloroethane-D4	SAMP	SURR	104	%	81-118
FC12031-5	2037-26-5	Toluene-D8	SAMP	SURR	102	%	89-112
FC12031-5	460-00-4	4-Bromofluorobenzene	SAMP	SURR	101	%	85-114
FC12031-6	1868-53-7	Dibromofluoromethane	SAMP	SURR	95	%	80-119
FC12031-6	17060-07-0	1,2-Dichloroethane-D4	SAMP	SURR	104	%	81-118
FC12031-6	2037-26-5	Toluene-D8	SAMP	SURR	103	%	89-112
FC12031-6	460-00-4	4-Bromofluorobenzene	SAMP	SURR	101	%	85-114
FC12031-7	1868-53-7	Dibromofluoromethane	SAMP	SURR	95	%	80-119
FC12031-7	17060-07-0	1,2-Dichloroethane-D4	SAMP	SURR	102	%	81-118
FC12031-7	2037-26-5	Toluene-D8	SAMP	SURR	102	%	89-112
FC12031-7	460-00-4	4-Bromofluorobenzene	SAMP	SURR	102	%	85-114
FC12031-9	1868-53-7	Dibromofluoromethane	SAMP	SURR	95	%	80-119
FC12031-9	17060-07-0	1,2-Dichloroethane-D4	SAMP	SURR	103	%	81-118
FC12031-9	2037-26-5	Toluene-D8	SAMP	SURR	103	%	89-112
FC12031-9	460-00-4	4-Bromofluorobenzene	SAMP	SURR	98	%	85-114
V1A2028	SW846 8260D						
V1A2028-BS	75-01-4	Vinyl Chloride	BSP	REC	95	%	58-137
V1A2028-BS	1868-53-7	Dibromofluoromethane	BSP	SURR	98	%	80-119
V1A2028-BS	17060-07-0	1,2-Dichloroethane-D4	BSP	SURR	108	%	81-118
V1A2028-BS	2037-26-5	Toluene-D8	BSP	SURR	102	%	89-112
V1A2028-BS	460-00-4	4-Bromofluorobenzene	BSP	SURR	102	%	85-114

* Sample used for QC is not from job FC12031

QC Evaluation: DOD QSM5.x Limits

Job Number: FC12031
Account: Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL
Collected: 12/15/23

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
FC12194-13MS*	75-01-4	Vinyl Chloride	MS	REC	113	%	58-137
FC12194-13MS*	1868-53-7	Dibromofluoromethane	MS	SURR	99	%	80-119
FC12194-13MS*	17060-07-0	1,2-Dichloroethane-D4	MS	SURR	110	%	81-118
FC12194-13MS*	2037-26-5	Toluene-D8	MS	SURR	101	%	89-112
FC12194-13MS*	460-00-4	4-Bromofluorobenzene	MS	SURR	100	%	85-114
FC12194-13MSD*	75-01-4	Vinyl Chloride	MSD	REC	114	%	58-137
FC12194-13MSD*	75-01-4	Vinyl Chloride	MSD	RPD	1	%	20
FC12194-13MSD*	1868-53-7	Dibromofluoromethane	MSD	SURR	99	%	80-119
FC12194-13MSD*	17060-07-0	1,2-Dichloroethane-D4	MSD	SURR	111	%	81-118
FC12194-13MSD*	2037-26-5	Toluene-D8	MSD	SURR	101	%	89-112
FC12194-13MSD*	460-00-4	4-Bromofluorobenzene	MSD	SURR	99	%	85-114
V1A2028-MB	1868-53-7	Dibromofluoromethane	MB	SURR	97	%	80-119
V1A2028-MB	17060-07-0	1,2-Dichloroethane-D4	MB	SURR	105	%	81-118
V1A2028-MB	2037-26-5	Toluene-D8	MB	SURR	103	%	89-112
V1A2028-MB	460-00-4	4-Bromofluorobenzene	MB	SURR	100	%	85-114
FC12031-2	1868-53-7	Dibromofluoromethane	SAMP	SURR	101	%	80-119
FC12031-2	17060-07-0	1,2-Dichloroethane-D4	SAMP	SURR	108	%	81-118
FC12031-2	2037-26-5	Toluene-D8	SAMP	SURR	101	%	89-112
FC12031-2	460-00-4	4-Bromofluorobenzene	SAMP	SURR	99	%	85-114
MP43346	SW846 6010D						
MP43346-B1	7440-23-5	Sodium	BSP	REC	88.2	%	87-115
MP43346-S1*	7440-23-5	Sodium	MS	REC	85.6	%	87-115
MP43346-S2*	7440-23-5	Sodium	MSD	REC	86.9	%	87-115
MP43346-S2*	7440-23-5	Sodium	MSD	RPD	.9	%	20
MP43346-D1*	7440-23-5	Sodium	DUP	RPD	.7	%	20

* Sample used for QC is not from job FC12031

MS Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Instrument Performance Checks (BFB)
- Internal Standard Area Summaries
- Surrogate Recovery Summaries
- Initial and Continuing Calibration Summaries
- Run Sequence Reports

Method Blank Summary

Job Number: FC12031
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V1A2022-MB [a]	1A51514.D	1	12/19/23	JW	n/a	n/a	V1A2022

The QC reported here applies to the following samples: **Method:** SW846 8260D

FC12031-3, FC12031-5, FC12031-6, FC12031-7, FC12031-9

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	25	10	ug/l	
71-43-2	Benzene	ND	1.0	0.31	ug/l	
108-86-1	Bromobenzene	ND	1.0	0.37	ug/l	
74-97-5	Bromochloromethane	ND	1.0	0.45	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.24	ug/l	
75-25-2	Bromoform	ND	1.0	0.41	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.0	ug/l	
104-51-8	n-Butylbenzene	ND	1.0	0.23	ug/l	
135-98-8	sec-Butylbenzene	ND	1.0	0.24	ug/l	
98-06-6	tert-Butylbenzene	ND	1.0	0.31	ug/l	
75-15-0	Carbon Disulfide	ND	2.0	0.53	ug/l	
56-23-5	Carbon Tetrachloride	ND	1.0	0.36	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.20	ug/l	
75-00-3	Chloroethane	ND	2.0	0.67	ug/l	
67-66-3	Chloroform	ND	1.0	0.30	ug/l	
95-49-8	o-Chlorotoluene	ND	1.0	0.22	ug/l	
106-43-4	p-Chlorotoluene	ND	1.0	0.31	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.28	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5.0	1.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	2.0	0.28	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.50	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.32	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.22	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.26	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.34	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.31	ug/l	
75-35-4	1,1-Dichloroethylene	ND	1.0	0.32	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	1.0	0.28	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	1.0	0.22	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.43	ug/l	
142-28-9	1,3-Dichloropropane	ND	1.0	0.31	ug/l	
594-20-7	2,2-Dichloropropane	ND	1.0	0.24	ug/l	
563-58-6	1,1-Dichloropropene	ND	1.0	0.34	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.29	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.21	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.36	ug/l	

Method Blank Summary

Job Number: FC12031
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V1A2022-MB [a]	1A51514.D	1	12/19/23	JW	n/a	n/a	V1A2022

The QC reported here applies to the following samples: **Method:** SW846 8260D

FC12031-3, FC12031-5, FC12031-6, FC12031-7, FC12031-9

CAS No.	Compound	Result	RL	MDL	Units	Q
87-68-3	Hexachlorobutadiene	ND	2.0	0.30	ug/l	
591-78-6	2-Hexanone	ND	10	2.0	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	0.22	ug/l	
99-87-6	p-Isopropyltoluene	ND	1.0	0.21	ug/l	
74-83-9	Methyl Bromide	ND	5.0	2.0	ug/l	
74-87-3	Methyl Chloride	ND	2.0	0.50	ug/l	
74-95-3	Methylene Bromide	ND	2.0	0.37	ug/l	
75-09-2	Methylene Chloride	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	1.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.23	ug/l	
91-20-3	Naphthalene	ND	5.0	1.0	ug/l	
103-65-1	n-Propylbenzene	ND	1.0	0.29	ug/l	
100-42-5	Styrene	ND	1.0	0.22	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	0.28	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.30	ug/l	
127-18-4	Tetrachloroethylene	ND	1.0	0.22	ug/l	
108-88-3	Toluene	ND	1.0	0.30	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	2.0	0.61	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	2.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.25	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.47	ug/l	
79-01-6	Trichloroethylene	ND	1.0	0.35	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	0.50	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	2.0	0.63	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	1.0	0.32	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	1.0	0.27	ug/l	
108-05-4	Vinyl Acetate	ND	10	2.0	ug/l	
75-01-4	Vinyl Chloride	ND	1.0	0.41	ug/l	
	m,p-Xylene	ND	2.0	0.47	ug/l	
95-47-6	o-Xylene	ND	1.0	0.26	ug/l	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	93%	83-118%
17060-07-0	1,2-Dichloroethane-D4	101%	79-125%

Method Blank Summary

Job Number: FC12031
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V1A2022-MB [a]	1A51514.D	1	12/19/23	JW	n/a	n/a	V1A2022

The QC reported here applies to the following samples: **Method:** SW846 8260D

FC12031-3, FC12031-5, FC12031-6, FC12031-7, FC12031-9

CAS No.	Surrogate Recoveries		Limits
2037-26-5	Toluene-D8	101%	85-112%
460-00-4	4-Bromofluorobenzene	103%	83-118%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

(a) Sample was treated with an anti-foaming agent.

Method Blank Summary

Job Number: FC12031
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V1A2028-MB [a]	1A51664.D	1	12/26/23	LT	n/a	n/a	V1A2028

The QC reported here applies to the following samples: **Method:** SW846 8260D

FC12031-2

CAS No.	Compound	Result	RL	MDL	Units	Q
75-01-4	Vinyl Chloride	ND	1.0	0.41	ug/l	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	97%	83-118%
17060-07-0	1,2-Dichloroethane-D4	105%	79-125%
2037-26-5	Toluene-D8	103%	85-112%
460-00-4	4-Bromofluorobenzene	100%	83-118%

(a) Sample was treated with an anti-foaming agent.

Blank Spike Summary

Job Number: FC12031
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V1A2022-BS	1A51512.D	1	12/19/23	JW	n/a	n/a	V1A2022

The QC reported here applies to the following samples: **Method:** SW846 8260D

FC12031-3, FC12031-5, FC12031-6, FC12031-7, FC12031-9

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
67-64-1	Acetone	125	117	94	50-147
71-43-2	Benzene	25	22.7	91	81-122
108-86-1	Bromobenzene	25	22.2	89	80-121
74-97-5	Bromochloromethane	25	20.9	84	76-123
75-27-4	Bromodichloromethane	25	20.5	82	79-123
75-25-2	Bromoform	25	19.5	78	66-123
78-93-3	2-Butanone (MEK)	125	102	82	56-143
104-51-8	n-Butylbenzene	25	24.9	100	79-126
135-98-8	sec-Butylbenzene	25	22.5	90	83-133
98-06-6	tert-Butylbenzene	25	24.2	97	80-133
75-15-0	Carbon Disulfide	25	20.5	82	66-148
56-23-5	Carbon Tetrachloride	25	22.3	89	76-136
108-90-7	Chlorobenzene	25	22.6	90	82-124
75-00-3	Chloroethane	25	23.4	94	62-144
67-66-3	Chloroform	25	22.8	91	80-124
95-49-8	o-Chlorotoluene	25	23.2	93	81-127
106-43-4	p-Chlorotoluene	25	23.5	94	83-130
124-48-1	Dibromochloromethane	25	21.7	87	78-122
96-12-8	1,2-Dibromo-3-chloropropane	25	20.7	83	64-123
106-93-4	1,2-Dibromoethane	25	20.6	82	75-120
75-71-8	Dichlorodifluoromethane	25	24.7	99	42-167
95-50-1	1,2-Dichlorobenzene	25	22.6	90	82-124
541-73-1	1,3-Dichlorobenzene	25	22.0	88	84-125
106-46-7	1,4-Dichlorobenzene	25	22.1	88	78-120
75-34-3	1,1-Dichloroethane	25	20.7	83	81-122
107-06-2	1,2-Dichloroethane	25	22.7	91	75-125
75-35-4	1,1-Dichloroethylene	25	21.4	86	78-137
156-59-2	cis-1,2-Dichloroethylene	25	21.3	85	78-120
156-60-5	trans-1,2-Dichloroethylene	25	21.4	86	76-127
78-87-5	1,2-Dichloropropane	25	21.8	87	76-124
142-28-9	1,3-Dichloropropane	25	22.5	90	80-118
594-20-7	2,2-Dichloropropane	25	23.5	94	74-139
563-58-6	1,1-Dichloropropene	25	22.0	88	79-131
10061-01-5	cis-1,3-Dichloropropene	25	20.5	82	75-118
10061-02-6	trans-1,3-Dichloropropene	25	20.3	81	80-120
100-41-4	Ethylbenzene	25	21.7	87	81-121

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FC12031
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V1A2022-BS	1A51512.D	1	12/19/23	JW	n/a	n/a	V1A2022

The QC reported here applies to the following samples: **Method:** SW846 8260D

FC12031-3, FC12031-5, FC12031-6, FC12031-7, FC12031-9

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
87-68-3	Hexachlorobutadiene	25	24.2	97	75-142
591-78-6	2-Hexanone	125	109	87	61-129
98-82-8	Isopropylbenzene	25	22.5	90	83-132
99-87-6	p-Isopropyltoluene	25	22.8	91	79-130
74-83-9	Methyl Bromide	25	32.0	128	59-143
74-87-3	Methyl Chloride	25	21.8	87	50-159
74-95-3	Methylene Bromide	25	21.4	86	78-119
75-09-2	Methylene Chloride	25	23.4	94	69-135
108-10-1	4-Methyl-2-pentanone (MIBK)	125	115	92	66-122
1634-04-4	Methyl Tert Butyl Ether	25	21.2	85	72-117
91-20-3	Naphthalene	25	16.8	67	63-132
103-65-1	n-Propylbenzene	25	23.9	96	82-133
100-42-5	Styrene	25	21.8	87	78-119
630-20-6	1,1,1,2-Tetrachloroethane	25	22.0	88	77-122
79-34-5	1,1,2,2-Tetrachloroethane	25	21.4	86	72-120
127-18-4	Tetrachloroethylene	25	23.5	94	76-135
108-88-3	Toluene	25	23.4	94	80-120
87-61-6	1,2,3-Trichlorobenzene	25	18.6	74	68-131
120-82-1	1,2,4-Trichlorobenzene	25	19.2	77	73-129
71-55-6	1,1,1-Trichloroethane	25	23.1	92	75-130
79-00-5	1,1,2-Trichloroethane	25	20.9	84	76-119
79-01-6	Trichloroethylene	25	22.4	90	81-126
75-69-4	Trichlorofluoromethane	25	23.9	96	71-156
96-18-4	1,2,3-Trichloropropane	25	24.0	96	77-120
95-63-6	1,2,4-Trimethylbenzene	25	23.3	93	79-120
108-67-8	1,3,5-Trimethylbenzene	25	23.5	94	79-120
108-05-4	Vinyl Acetate	125	107	86	43-154
75-01-4	Vinyl Chloride	25	23.1	92	69-159
	m,p-Xylene	50	47.2	94	79-126
95-47-6	o-Xylene	25	22.2	89	80-127

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	95%	83-118%
17060-07-0	1,2-Dichloroethane-D4	105%	79-125%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FC12031
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V1A2022-BS	1A51512.D	1	12/19/23	JW	n/a	n/a	V1A2022

The QC reported here applies to the following samples: **Method:** SW846 8260D

FC12031-3, FC12031-5, FC12031-6, FC12031-7, FC12031-9

CAS No.	Surrogate Recoveries	BSP	Limits
2037-26-5	Toluene-D8	104%	85-112%
460-00-4	4-Bromofluorobenzene	101%	83-118%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FC12031
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V1A2028-BS	1A51662.D	1	12/26/23	LT	n/a	n/a	V1A2028

The QC reported here applies to the following samples: **Method:** SW846 8260D

FC12031-2

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
75-01-4	Vinyl Chloride	25	23.7	95	69-159

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	98%	83-118%
17060-07-0	1,2-Dichloroethane-D4	108%	79-125%
2037-26-5	Toluene-D8	102%	85-112%
460-00-4	4-Bromofluorobenzene	102%	83-118%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: FC12031
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
FC11791-1MS	1A51536.D	5	12/19/23	JW	n/a	n/a	V1A2022
FC11791-1MSD	1A51537.D	5	12/19/23	JW	n/a	n/a	V1A2022
FC11791-1	1A51516.D	1	12/19/23	JW	n/a	n/a	V1A2022

The QC reported here applies to the following samples: **Method:** SW846 8260D

FC12031-3, FC12031-5, FC12031-6, FC12031-7, FC12031-9

CAS No.	Compound	FC11791-1 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	ND		625	523	84	625	518	83	1	50-147/21
71-43-2	Benzene	ND		125	112	90	125	110	88	2	81-122/14
108-86-1	Bromobenzene	ND		125	116	93	125	114	91	2	80-121/14
74-97-5	Bromochloromethane	ND		125	110	88	125	105	84	5	76-123/14
75-27-4	Bromodichloromethane	ND		125	105	84	125	103	82	2	79-123/19
75-25-2	Bromoform	ND		125	94.2	75	125	96.8	77	3	66-123/21
78-93-3	2-Butanone (MEK)	ND		625	511	82	625	503	80	2	56-143/18
104-51-8	n-Butylbenzene	ND		125	123	98	125	121	97	2	79-126/16
135-98-8	sec-Butylbenzene	0.29	J	125	111	89	125	111	89	0	83-133/16
98-06-6	tert-Butylbenzene	ND		125	119	95	125	117	94	2	80-133/16
75-15-0	Carbon Disulfide	ND		125	101	81	125	98.5	79	3	66-148/23
56-23-5	Carbon Tetrachloride	ND		125	105	84	125	108	86	3	76-136/23
108-90-7	Chlorobenzene	ND		125	115	92	125	112	90	3	82-124/14
75-00-3	Chloroethane	ND		125	119	95	125	114	91	4	62-144/20
67-66-3	Chloroform	ND		125	114	91	125	113	90	1	80-124/15
95-49-8	o-Chlorotoluene	ND		125	117	94	125	116	93	1	81-127/15
106-43-4	p-Chlorotoluene	ND		125	118	94	125	118	94	0	83-130/15
124-48-1	Dibromochloromethane	ND		125	108	86	125	109	87	1	78-122/19
96-12-8	1,2-Dibromo-3-chloropropane	ND		125	106	85	125	109	87	3	64-123/18
106-93-4	1,2-Dibromoethane	ND		125	108	86	125	104	83	4	75-120/13
75-71-8	Dichlorodifluoromethane	ND		125	147	118	125	141	113	4	42-167/19
95-50-1	1,2-Dichlorobenzene	ND		125	116	93	125	114	91	2	82-124/14
541-73-1	1,3-Dichlorobenzene	ND		125	113	90	125	114	91	1	84-125/14
106-46-7	1,4-Dichlorobenzene	ND		125	113	90	125	115	92	2	78-120/15
75-34-3	1,1-Dichloroethane	1.6		125	107	84	125	103	81	4	81-122/15
107-06-2	1,2-Dichloroethane	ND		125	120	96	125	116	93	3	75-125/14
75-35-4	1,1-Dichloroethylene	ND		125	106	85	125	102	82	4	78-137/18
156-59-2	cis-1,2-Dichloroethylene	1.8		125	110	87	125	105	83	5	78-120/15
156-60-5	trans-1,2-Dichloroethylene	ND		125	104	83	125	102	82	2	76-127/17
78-87-5	1,2-Dichloropropane	ND		125	112	90	125	111	89	1	76-124/14
142-28-9	1,3-Dichloropropane	ND		125	115	92	125	116	93	1	80-118/13
594-20-7	2,2-Dichloropropane	ND		125	108	86	125	105	84	3	74-139/17
563-58-6	1,1-Dichloropropene	ND		125	113	90	125	111	89	2	79-131/16
10061-01-5	cis-1,3-Dichloropropene	ND		125	102	82	125	99.6	80	2	75-118/23
10061-02-6	trans-1,3-Dichloropropene	ND		125	101	81	125	101	81	0	80-120/22
100-41-4	Ethylbenzene	ND		125	118	94	125	119	95	1	81-121/14

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: FC12031
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
FC11791-1MS	1A51536.D	5	12/19/23	JW	n/a	n/a	V1A2022
FC11791-1MSD	1A51537.D	5	12/19/23	JW	n/a	n/a	V1A2022
FC11791-1	1A51516.D	1	12/19/23	JW	n/a	n/a	V1A2022

The QC reported here applies to the following samples: **Method:** SW846 8260D

FC12031-3, FC12031-5, FC12031-6, FC12031-7, FC12031-9

CAS No.	Compound	FC11791-1 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
87-68-3	Hexachlorobutadiene	ND		125	114	91	125	110	88	4	75-142/19
591-78-6	2-Hexanone	ND		625	550	88	625	552	88	0	61-129/18
98-82-8	Isopropylbenzene	ND		125	112	90	125	110	88	2	83-132/15
99-87-6	p-Isopropyltoluene	ND		125	111	89	125	110	88	1	79-130/16
74-83-9	Methyl Bromide	ND		125	126	101	125	136	109	8	59-143/19
74-87-3	Methyl Chloride	ND		125	111	89	125	108	86	3	50-159/19
74-95-3	Methylene Bromide	ND		125	114	91	125	110	88	4	78-119/14
75-09-2	Methylene Chloride	ND		125	117	94	125	114	91	3	69-135/16
108-10-1	4-Methyl-2-pentanone (MIBK)	ND		625	606	97	625	591	95	3	66-122/16
1634-04-4	Methyl Tert Butyl Ether	ND		125	114	91	125	110	88	4	72-117/14
91-20-3	Naphthalene	ND		125	80.5	64	125	80.5	64	0	63-132/25
103-65-1	n-Propylbenzene	ND		125	119	95	125	117	94	2	82-133/15
100-42-5	Styrene	ND		125	109	87	125	107	86	2	78-119/23
630-20-6	1,1,1,2-Tetrachloroethane	ND		125	110	88	125	109	87	1	77-122/19
79-34-5	1,1,2,2-Tetrachloroethane	ND		125	117	94	125	114	91	3	72-120/14
127-18-4	Tetrachloroethylene	14.0		125	126	90	125	123	87	2	76-135/16
108-88-3	Toluene	ND		125	116	93	125	112	90	4	80-120/14
87-61-6	1,2,3-Trichlorobenzene	ND		125	90.5	72	125	91.8	73	1	68-131/25
120-82-1	1,2,4-Trichlorobenzene	ND		125	95.0	76	125	92.7	74	2	73-129/20
71-55-6	1,1,1-Trichloroethane	1.8		125	117	92	125	114	90	3	75-130/16
79-00-5	1,1,2-Trichloroethane	ND		125	107	86	125	105	84	2	76-119/14
79-01-6	Trichloroethylene	0.65	J	125	110	87	125	106	84	4	81-126/15
75-69-4	Trichlorofluoromethane	ND		125	134	107	125	131	105	2	71-156/21
96-18-4	1,2,3-Trichloropropane	ND		125	129	103	125	130	104	1	77-120/16
95-63-6	1,2,4-Trimethylbenzene	ND		125	117	94	125	116	93	1	79-120/18
108-67-8	1,3,5-Trimethylbenzene	ND		125	118	94	125	118	94	0	79-120/19
108-05-4	Vinyl Acetate	ND		625	569	91	625	557	89	2	43-154/14
75-01-4	Vinyl Chloride	ND		125	119	95	125	119	95	0	69-159/18
	m,p-Xylene	ND		250	236	94	250	229	92	3	79-126/15
95-47-6	o-Xylene	ND		125	110	88	125	109	87	1	80-127/14

CAS No.	Surrogate Recoveries	MS	MSD	FC11791-1	Limits
1868-53-7	Dibromofluoromethane	96%	96%	94%	83-118%
17060-07-0	1,2-Dichloroethane-D4	106%	105%	102%	79-125%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: FC12031
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
FC11791-1MS	1A51536.D	5	12/19/23	JW	n/a	n/a	V1A2022
FC11791-1MSD	1A51537.D	5	12/19/23	JW	n/a	n/a	V1A2022
FC11791-1	1A51516.D	1	12/19/23	JW	n/a	n/a	V1A2022

The QC reported here applies to the following samples: **Method:** SW846 8260D

FC12031-3, FC12031-5, FC12031-6, FC12031-7, FC12031-9

CAS No.	Surrogate Recoveries	MS	MSD	FC11791-1	Limits
2037-26-5	Toluene-D8	101%	103%	103%	85-112%
460-00-4	4-Bromofluorobenzene	100%	101%	101%	83-118%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: FC12031
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
FC12194-13MS	1A51686.D	1	12/26/23	LT	n/a	n/a	V1A2028
FC12194-13MSD	1A51687.D	1	12/26/23	LT	n/a	n/a	V1A2028
FC12194-13	1A51678.D	1	12/26/23	LT	n/a	n/a	V1A2028

The QC reported here applies to the following samples: **Method:** SW846 8260D

FC12031-2

CAS No.	Compound	FC12194-13 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
75-01-4	Vinyl Chloride	1.0	U	25	28.2	113	25	28.4	114	1	69-159/18

CAS No.	Surrogate Recoveries	MS	MSD	FC12194-13	Limits
1868-53-7	Dibromofluoromethane	99%	99%	101%	83-118%
17060-07-0	1,2-Dichloroethane-D4	110%	111%	108%	79-125%
2037-26-5	Toluene-D8	101%	101%	103%	85-112%
460-00-4	4-Bromofluorobenzene	100%	99%	101%	83-118%

* = Outside of Control Limits.

Instrument Performance Check (BFB)

Job Number: FC12031
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample: V1A1985-BFB
Lab File ID: 1A50649.D
Instrument ID: GCMS1A
Injection Date: 11/15/23
Injection Time: 05:14

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	15.0 - 40.0% of mass 95	10728	21.9		Pass
75	30.0 - 60.0% of mass 95	23191	47.3		Pass
95	Base peak, 100% relative abundance	49019	100.0		Pass
96	5.0 - 9.0% of mass 95	3164	6.45		Pass
173	Less than 2.0% of mass 174	350	0.71	(0.84) [a]	Pass
174	50.0 - 100.0% of mass 95	41496	84.7		Pass
175	5.0 - 9.0% of mass 174	3204	6.54	(7.72) [a]	Pass
176	95.0 - 101.0% of mass 174	41616	84.9	(100.3) [a]	Pass
177	5.0 - 9.0% of mass 176	2859	5.83	(6.87) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
V1A1985-IC1985	1A50651.D	11/15/23	06:16	01:02	Initial cal 1
V1A1985-IC1985	1A50653.D	11/15/23	06:48	01:34	Initial cal 8
V2A1790-IC1945	1A50653.D	11/15/23	06:48	01:34	Initial cal 8
V1A1985-IC1985	1A50655.D	11/15/23	07:25	02:11	Initial cal 2
V1A1985-IC1985	1A50657.D	11/15/23	07:57	02:43	Initial cal 3
V1A1985-IC1985	1A50659.D	11/15/23	08:29	03:15	Initial cal 4
V1A1985-ICC1985	1A50661.D	11/15/23	09:01	03:47	Initial cal 5
V1A1985-IC1985	1A50663.D	11/15/23	09:33	04:19	Initial cal 6
V1A1985-IC1985	1A50665.D	11/15/23	10:05	04:51	Initial cal 7
V1A1985-ICV1985	1A50669.D	11/15/23	13:32	08:18	Initial cal verification 5

Instrument Performance Check (BFB)

Job Number: FC12031
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample: V1A2022-BFB
Lab File ID: 1A51510.D
Instrument ID: GCMS1A
Injection Date: 12/19/23
Injection Time: 07:04

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	15.0 - 40.0% of mass 95	15416	23.9		Pass
75	30.0 - 60.0% of mass 95	33891	52.6		Pass
95	Base peak, 100% relative abundance	64475	100.0		Pass
96	5.0 - 9.0% of mass 95	4403	6.83		Pass
173	Less than 2.0% of mass 174	593	0.92	(1.06) [a]	Pass
174	50.0 - 100.0% of mass 95	55904	86.7		Pass
175	5.0 - 9.0% of mass 174	3923	6.08	(7.02) [a]	Pass
176	95.0 - 101.0% of mass 174	54624	84.7	(97.7) [a]	Pass
177	5.0 - 9.0% of mass 176	3556	5.52	(6.51) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
V1A2022-CC1985	1A51511.D	12/19/23	07:28	00:24	Continuing cal 5
V1A2022-BS	1A51512.D	12/19/23	07:52	00:48	Blank Spike
V1A2022-MB	1A51514.D	12/19/23	08:41	01:37	Method Blank
FC11791-1	1A51516.D	12/19/23	09:30	02:26	(used for QC only; not part of job FC12031)
ZZZZZZ	1A51517.D	12/19/23	09:54	02:50	(unrelated sample)
FC12031-9	1A51518.D	12/19/23	10:19	03:15	CRHE-TB-20231215-01
ZZZZZZ	1A51519.D	12/19/23	10:44	03:40	(unrelated sample)
ZZZZZZ	1A51520.D	12/19/23	11:08	04:04	(unrelated sample)
ZZZZZZ	1A51521.D	12/19/23	11:32	04:28	(unrelated sample)
ZZZZZZ	1A51522.D	12/19/23	11:56	04:52	(unrelated sample)
ZZZZZZ	1A51523.D	12/19/23	12:21	05:17	(unrelated sample)
ZZZZZZ	1A51524.D	12/19/23	12:45	05:41	(unrelated sample)
ZZZZZZ	1A51525.D	12/19/23	13:09	06:05	(unrelated sample)
ZZZZZZ	1A51526.D	12/19/23	13:34	06:30	(unrelated sample)
ZZZZZZ	1A51527.D	12/19/23	13:58	06:54	(unrelated sample)
ZZZZZZ	1A51528.D	12/19/23	14:23	07:19	(unrelated sample)
ZZZZZZ	1A51529.D	12/19/23	14:47	07:43	(unrelated sample)
ZZZZZZ	1A51530.D	12/19/23	15:11	08:07	(unrelated sample)
FC12031-2	1A51531.D	12/19/23	15:36	08:32	CRHE-MW0058-045.0-20231215
FC12031-3	1A51532.D	12/19/23	16:00	08:56	CRHE-MW0029-045.0-20231215
FC12031-5	1A51533.D	12/19/23	16:24	09:20	CRHE-MW0031-045.0-20231215
FC12031-6	1A51534.D	12/19/23	16:48	09:44	CRHE-MW0047-023.0-20231215
FC12031-7	1A51535.D	12/19/23	17:13	10:09	CRHE-MW0048-030.5-20231215
FC11791-1MS	1A51536.D	12/19/23	17:37	10:33	Matrix Spike

Instrument Performance Check (BFB)

Job Number: FC12031
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample:	V1A2022-BFB	**Injection Date:**	12/19/23
Lab File ID:	1A51510.D	**Injection Time:**	07:04
Instrument ID:	GCMS1A		

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
FC11791-1MSD	1A51537.D	12/19/23	18:02	10:58	Matrix Spike Duplicate
V1A2022-ECC1985	1A51538.D	12/19/23	18:26	11:22	Ending cal 5

Instrument Performance Check (BFB)

Job Number: FC12031
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample: V1A2028-BFB
Lab File ID: 1A51660.D
Instrument ID: GCMS1A
Injection Date: 12/26/23
Injection Time: 07:39

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	15.0 - 40.0% of mass 95	16178	26.0		Pass
75	30.0 - 60.0% of mass 95	32979	52.9		Pass
95	Base peak, 100% relative abundance	62291	100.0		Pass
96	5.0 - 9.0% of mass 95	4307	6.91		Pass
173	Less than 2.0% of mass 174	441	0.71	(0.83) [a]	Pass
174	50.0 - 100.0% of mass 95	53139	85.3		Pass
175	5.0 - 9.0% of mass 174	4036	6.48	(7.60) [a]	Pass
176	95.0 - 101.0% of mass 174	50893	81.7	(95.8) [a]	Pass
177	5.0 - 9.0% of mass 176	3343	5.37	(6.57) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
V1A2028-CC1985	1A51661.D	12/26/23	08:03	00:24	Continuing cal 5
V1A2028-BS	1A51662.D	12/26/23	08:28	00:49	Blank Spike
V1A2028-MB	1A51664.D	12/26/23	09:16	01:37	Method Blank
ZZZZZZ	1A51666.D	12/26/23	10:05	02:26	(unrelated sample)
ZZZZZZ	1A51667.D	12/26/23	10:30	02:51	(unrelated sample)
ZZZZZZ	1A51668.D	12/26/23	10:54	03:15	(unrelated sample)
ZZZZZZ	1A51669.D	12/26/23	11:18	03:39	(unrelated sample)
ZZZZZZ	1A51670.D	12/26/23	11:43	04:04	(unrelated sample)
ZZZZZZ	1A51671.D	12/26/23	12:07	04:28	(unrelated sample)
ZZZZZZ	1A51672.D	12/26/23	12:31	04:52	(unrelated sample)
ZZZZZZ	1A51673.D	12/26/23	12:56	05:17	(unrelated sample)
ZZZZZZ	1A51674.D	12/26/23	13:20	05:41	(unrelated sample)
ZZZZZZ	1A51675.D	12/26/23	13:45	06:06	(unrelated sample)
ZZZZZZ	1A51676.D	12/26/23	14:09	06:30	(unrelated sample)
ZZZZZZ	1A51677.D	12/26/23	14:33	06:54	(unrelated sample)
FC12194-13	1A51678.D	12/26/23	14:58	07:19	(used for QC only; not part of job FC12031)
ZZZZZZ	1A51679.D	12/26/23	15:22	07:43	(unrelated sample)
ZZZZZZ	1A51680.D	12/26/23	15:47	08:08	(unrelated sample)
FC12031-2	1A51681.D	12/26/23	16:11	08:32	CRHE-MW0058-045.0-20231215
ZZZZZZ	1A51682.D	12/26/23	16:35	08:56	(unrelated sample)
ZZZZZZ	1A51683.D	12/26/23	17:00	09:21	(unrelated sample)
ZZZZZZ	1A51684.D	12/26/23	17:24	09:45	(unrelated sample)
ZZZZZZ	1A51685.D	12/26/23	17:48	10:09	(unrelated sample)
FC12194-13MS	1A51686.D	12/26/23	18:13	10:34	Matrix Spike

Instrument Performance Check (BFB)

Job Number: FC12031
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample:	V1A2028-BFB	**Injection Date:**	12/26/23
Lab File ID:	1A51660.D	**Injection Time:**	07:39
Instrument ID:	GCMS1A		

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
FC12194-13MSD	1A51687.D	12/26/23	18:37	10:58	Matrix Spike Duplicate
V1A2028-ECC1985	1A51688.D	12/26/23	19:02	11:23	Ending cal 5

Internal Standard Area Summary

Job Number: FC12031
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Check Std:	V1A2022-CC1985	**Injection Date:**	12/19/23
Lab File ID:	1A51511.D	**Injection Time:**	07:28
Instrument ID:	GCMS1A	**Method:**	SW846 8260D

	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT
Initial Cal [a]	213155	3.40	152111	5.35	80195	7.09
Check Std [b]	318422	3.40	225155	5.35	113440	7.10
Upper Limit [c]	636844	3.57	450310	5.52	226880	7.27
Lower Limit [d]	159211	3.23	112578	5.18	56720	6.93

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT
V1A2022-BS	321951	3.40	226420	5.35	115496	7.09
V1A2022-MB [e]	315864	3.40	225572	5.35	112397	7.09
FC11791-1	304489	3.40	213643	5.35	107240	7.09
ZZZZZZ	303611	3.40	213956	5.35	107825	7.09
FC12031-9 [f]	297828	3.40	209708	5.35	107403	7.09
ZZZZZZ	297002	3.40	206940	5.35	103825	7.10
ZZZZZZ	295133	3.40	209222	5.35	103513	7.10
ZZZZZZ	303175	3.40	212229	5.35	103538	7.09
ZZZZZZ	293756	3.40	204225	5.35	102588	7.09
ZZZZZZ	294787	3.40	209194	5.35	104181	7.09
ZZZZZZ	296834	3.40	213289	5.35	105593	7.10
ZZZZZZ	303761	3.40	216570	5.35	106182	7.10
ZZZZZZ	311153	3.40	216518	5.35	107815	7.10
ZZZZZZ	304857	3.40	213468	5.35	109661	7.10
ZZZZZZ	302589	3.40	214917	5.35	106516	7.09
ZZZZZZ	305745	3.40	214578	5.35	107930	7.09
ZZZZZZ	292158	3.40	206937	5.35	104833	7.09
FC12031-2 [e]	287563	3.40	203743	5.35	101449	7.09
FC12031-3 [e]	294961	3.40	205132	5.35	101836	7.09
FC12031-5	295051	3.40	207999	5.35	103466	7.09
FC12031-6	286472	3.40	200367	5.35	99134	7.09
FC12031-7	292184	3.40	207386	5.35	100812	7.09
FC11791-1MS	300932	3.40	215191	5.35	109665	7.09
FC11791-1MSD	306130	3.40	216143	5.35	108895	7.09
V1A2022-ECC1985	318384	3.40	226369	5.35	112528	7.10

IS 1 = Fluorobenzene
IS 2 = Chlorobenzene-D5
IS 3 = 1,4-Dichlorobenzene-d4

(a) Initial Cal is: V1A1985-ICC1985 1A50661.D 11/15/23 09:01
(b) Check Std Limit = -50 to + 100% of initial cal area.
(c) Upper Limit = + 100% of check standard area; Retention time + 0.167 minutes.

Internal Standard Area Summary

Job Number: FC12031
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Check Std:	V1A2022-CC1985	**Injection Date:**	12/19/23
Lab File ID:	1A51511.D	**Injection Time:**	07:28
Instrument ID:	GCMS1A	**Method:**	SW846 8260D

Lab	**IS 1**		**IS 2**		**IS 3**	
Sample ID	**AREA**	**RT**	**AREA**	**RT**	**AREA**	**RT**

(d) Lower Limit = -50% of check standard area; Retention time -0.167 minutes.
(e) Sample was treated with an anti-foaming agent.
(f) Sample vial(s) contained bubbles greater than 6mm.

Internal Standard Area Summary

Job Number: FC12031
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Check Std:	V1A2028-CC1985	**Injection Date:**	12/26/23
Lab File ID:	1A51661.D	**Injection Time:**	08:03
Instrument ID:	GCMS1A	**Method:**	SW846 8260D

	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT
Initial Cal [a]	213155	3.40	152111	5.35	80195	7.09
Check Std [b]	309968	3.40	224806	5.35	110640	7.10
Upper Limit [c]	619936	3.57	449612	5.52	221280	7.27
Lower Limit [d]	154984	3.23	112403	5.18	55320	6.93

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT
V1A2028-BS	309508	3.40	224519	5.35	112687	7.10
V1A2028-MB [e]	297564	3.40	211361	5.35	107849	7.10
ZZZZZZ	289997	3.40	206086	5.35	102206	7.09
ZZZZZZ	287679	3.40	204602	5.35	104243	7.09
ZZZZZZ	281239	3.40	203038	5.35	99502	7.09
ZZZZZZ	285366	3.40	202907	5.35	101900	7.09
ZZZZZZ	282233	3.40	203078	5.35	101185	7.09
ZZZZZZ	275293	3.40	199088	5.35	100373	7.09
ZZZZZZ	271102	3.40	195643	5.35	96919	7.10
ZZZZZZ	274696	3.40	197580	5.35	98368	7.10
ZZZZZZ	273260	3.40	194204	5.35	96017	7.10
ZZZZZZ	272175	3.40	196922	5.35	97697	7.09
ZZZZZZ	265422	3.40	192059	5.35	95319	7.09
ZZZZZZ	271475	3.40	194861	5.35	96905	7.10
FC12194-13	267705	3.40	191112	5.35	94928	7.09
ZZZZZZ	275932	3.40	194844	5.35	97651	7.10
ZZZZZZ	268243	3.40	194577	5.35	95240	7.09
FC12031-2	267411	3.40	190260	5.35	96038	7.09
ZZZZZZ	275060	3.40	200108	5.35	101003	7.10
ZZZZZZ	264038	3.40	186389	5.35	94215	7.10
ZZZZZZ	267428	3.40	189358	5.35	92952	7.09
ZZZZZZ	262985	3.40	189189	5.35	94824	7.10

IS 1 = Fluorobenzene
IS 2 = Chlorobenzene-D5
IS 3 = 1,4-Dichlorobenzene-d4

(a) Initial Cal is: V1A1985-ICC1985 1A50661.D 11/15/23 09:01
(b) Check Std Limit = -50 to + 100% of initial cal area.
(c) Upper Limit = + 100% of check standard area; Retention time + 0.167 minutes.
(d) Lower Limit = -50% of check standard area; Retention time -0.167 minutes.
(e) Sample was treated with an anti-foaming agent.

Surrogate Recovery Summary

Job Number: FC12031
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Method: SW846 8260D **Matrix:** AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3	S4
FC12031-2	1A51681.D	101	108	101	99
FC12031-2	1A51531.D	97	105	102	102
FC12031-3	1A51532.D	94	103	102	102
FC12031-5	1A51533.D	94	104	102	101
FC12031-6	1A51534.D	95	104	103	101
FC12031-7	1A51535.D	95	102	102	102
FC12031-9	1A51518.D	95	103	103	98
FC11791-1MS	1A51536.D	96	106	101	100
FC11791-1MSD	1A51537.D	96	105	103	101
FC12194-13MS	1A51686.D	99	110	101	100
FC12194-13MSD	1A51687.D	99	111	101	99
V1A2022-BS	1A51512.D	95	105	104	101
V1A2022-MB	1A51514.D	93	101	101	103
V1A2028-BS	1A51662.D	98	108	102	102
V1A2028-MB	1A51664.D	97	105	103	100

Surrogate Compounds	Recovery Limits
S1 = Dibromofluoromethane	83-118%
S2 = 1,2-Dichloroethane-D4	79-125%
S3 = Toluene-D8	85-112%
S4 = 4-Bromofluorobenzene	83-118%

Initial Calibration Summary

Job Number: FC12031
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample: V1A1985-ICC1985
Lab FileID: 1A50661.D

Response Factor Report MSVOA17

Method : C:\msdchem\1\MET...V1A_11-15-2023.M (RTE Integrator)
Title : SW-846 Method 5035A/8260B
Last Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration

Calibration Files
1 =1A50651.D 2 =1A50655.D 3 =1A50657.D 4 =1A50659.D
5 =1A50661.D 6 =1A50663.D 7 =1A50665.D 8 =1A50653.D

Compound	1	2	3	4	5	6	7	8	Avg	%RSD
1) I Fluorobenzene	ISTD									
2) Dichlorodifl	0.210	0.194	0.183	0.191	0.183	0.189	0.176	0.202	0.191	5.70
3) Chloromethan	0.368	0.269	0.266	0.292	0.277	0.259	0.249	0.311	0.286	13.36
4) 1,3-butadien		0.435	0.400	0.365	0.347	0.335	0.327	0.302	0.359	12.78
5) Vinyl Chlori	0.316	0.288	0.265	0.291	0.282	0.274	0.260	0.312	0.286	7.15
6) Bromomethane		0.107	0.094	0.107	0.100	0.101	0.096	0.118	0.103	7.94
7) Chloroethane	0.217	0.179	0.174	0.191	0.180	0.160	0.145	0.214	0.182	13.46
8) Trichloroflu	0.469	0.396	0.375	0.407	0.403	0.419	0.381	0.405	0.407	7.11
9) Ethyl Ether	0.273	0.264	0.234	0.249	0.247	0.240	0.239	0.246	0.249	5.31
10) Ethanol		0.007	0.006	0.006	0.006	0.005	0.005		0.006	13.74
11) 1,2-Dichloro	0.341	0.344	0.305	0.316	0.318	0.318	0.315	0.342	0.325	4.70
12) 1,1-Dichloro	0.417	0.462	0.429	0.438	0.428	0.427	0.426	0.426	0.432	3.13
13) Freon 113	0.232	0.268	0.250	0.241	0.248	0.250	0.245	0.236	0.246	4.39
14) Carbon Disul	0.871	0.885	0.777	0.796	0.762	0.759	0.738	0.812	0.800	6.66
15) Iodomethane	0.124	0.112	0.113	0.182	0.204	0.193	0.194	0.090	0.151	30.39
---- Linear regr., Force(0,0) ---- Coefficient = 0.9913										
Response Ratio = 0.00000 + 0.18808 *A										
16) Acrolein	0.085	0.077	0.073	0.078	0.074	0.074	0.073	0.082	0.077	6.03
17) Allyl chlori	0.509	0.400	0.398	0.403	0.390	0.385	0.374	0.446	0.413	10.65
18) Methylene Ch	1.048	0.690	0.510	0.458	0.427	0.408	0.386	0.705	0.579	39.00
---- Linear regr., Force(0,0) ---- Coefficient = 0.9944										
Response Ratio = 0.00000 + 0.42186 *A										
19) Acetone	0.150	0.127	0.115	0.122	0.115	0.111	0.109	0.145	0.124	12.66
20) Methyl aceta	0.368	0.360	0.308	0.332	0.325	0.317	0.317	0.358	0.336	6.84
21) trans-1,2-Di	0.426	0.454	0.419	0.446	0.431	0.424	0.418	0.452	0.434	3.41
22) Hexane	0.324	0.309	0.288	0.293	0.285	0.294	0.287	0.295	0.297	4.41
23) Methyl Tert	0.826	0.844	0.775	0.820	0.790	0.785	0.782	0.840	0.808	3.45
24) Acetonitrile	0.124	0.055	0.049	0.048	0.044	0.042	0.041	0.066	0.059	47.18
---- Linear regr., Force(0,0) ---- Coefficient = 0.9976										
Response Ratio = 0.00000 + 0.04345 *A										
25) Tert Butyl A	0.065	0.060	0.057	0.061	0.058	0.055	0.056	0.065	0.059	6.48
26) Di-isopropyl	0.991	1.087	0.971	1.024	1.006	1.009	0.994	1.032	1.014	3.45
27) Chloroprene	1.407	1.239	1.225	1.260	1.215	1.200	1.202	1.186	1.242	5.70
28) 1,1-Dichloro	0.562	0.592	0.544	0.575	0.558	0.546	0.545	0.582	0.563	3.24
29) Acrylonitril	0.160	0.154	0.149	0.152	0.148	0.145	0.145	0.150	0.150	3.20
30) ETBE	0.913	0.993	0.883	0.965	0.939	0.936	0.937	0.915	0.935	3.58
31) Vinyl acetat	0.779	0.724	0.752	0.773	0.743	0.764	0.764	0.736	0.754	2.51
32) cis-1,2-Dich	0.331	0.328	0.298	0.314	0.302	0.297	0.295	0.326	0.311	4.89
33) 2,2-Dichloro	0.405	0.411	0.379	0.399	0.385	0.378	0.374	0.411	0.393	3.95
34) Bromochlorom	0.163	0.167	0.154	0.166	0.157	0.148	0.138	0.169	0.158	6.67
35) Cyclohexane	0.521	0.586	0.538	0.538	0.545	0.543	0.542	0.541	0.544	3.41
36) Chloroform	0.520	0.545	0.501	0.528	0.510	0.503	0.500	0.527	0.517	3.11
37) Ethyl acetat	0.447	0.406	0.409	0.428	0.418	0.421	0.423	0.415	0.421	3.04

Initial Calibration Summary

Job Number: FC12031
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample: V1A1985-ICC1985
Lab FileID: 1A50661.D

38)	Tetrahydrofu	0.188	0.162	0.148	0.158	0.148	0.147	0.146	0.178	0.159	10.07
39)	Dibromofluor	0.294	0.294	0.299	0.296	0.297	0.287	0.292	0.299	0.295	1.40
40)	Carbon Tetra	0.413	0.416	0.397	0.401	0.403	0.397	0.406	0.374	0.401	3.19
41)	1,1,1-Trichl	0.443	0.445	0.417	0.440	0.428	0.431	0.426	0.437	0.433	2.24
42)	2-Butanone	0.234	0.212	0.195	0.217	0.207	0.202	0.200	0.217	0.210	5.91
43)	1,1-Dichloro	0.368	0.413	0.370	0.385	0.371	0.366	0.365	0.386	0.378	4.36
44)	tert-Butyl f	0.269	0.256	0.242	0.267	0.261	0.263	0.270	0.238	0.258	4.73
45)	Propionitril	0.080	0.067	0.063	0.064	0.060	0.058	0.057	0.068	0.065	11.46
46)	Methacryloni	0.283	0.239	0.230	0.246	0.236	0.236	0.237	0.248	0.244	6.78
47)	Benzene	1.141	1.178	1.064	1.135	1.095	1.072	1.065	1.129	1.110	3.78
48)	TAME	0.758	0.845	0.737	0.804	0.787	0.788	0.782	0.769	0.784	4.10
49)	1,2-Dichloro	0.314	0.314	0.321	0.328	0.330	0.339	0.344	0.320	0.326	3.42
50)	1,2-Dichloro	0.427	0.434	0.394	0.431	0.410	0.402	0.398	0.424	0.415	3.80
51)	Isobutyl Alc	0.043	0.037	0.037	0.037	0.035	0.031	0.027	0.039	0.036	13.91
52)	Tert Amyl Al	0.050	0.050	0.048	0.051	0.048	0.046	0.047	0.052	0.049	4.36
53)	Trichloroeth	0.325	0.334	0.299	0.311	0.301	0.298	0.298	0.316	0.310	4.39
54)	Methylcycloh	0.478	0.535	0.477	0.489	0.497	0.505	0.508	0.472	0.495	4.21
55)	Dibromometha	0.228	0.208	0.189	0.198	0.191	0.188	0.188	0.197	0.198	7.02
56)	1,2-Dichloro	0.312	0.337	0.307	0.320	0.311	0.304	0.303	0.320	0.314	3.62
57)	Bromodichlor	0.410	0.406	0.370	0.393	0.388	0.375	0.377	0.400	0.390	3.83
58)	Methyl metha	0.489	0.360	0.339	0.356	0.342	0.335	0.335	0.338	0.362	14.48
59)	1,4-Dioxane	0.003	0.005	0.004	0.004	0.004	0.004	0.004	0.004	0.004	10.00
60)	2-Chloroethy	0.146	0.177	0.167	0.188	0.180	0.185	0.183	0.105	0.166	16.83
		---- Linear regr., Force(0,0) ---- Coefficient = 0.9990									
		Response Ratio = 0.00000 + 0.18198 *A									
61)	cis-1,3-Dich	0.461	0.482	0.434	0.464	0.451	0.448	0.441	0.447	0.453	3.35
62)	I Chlorobenzene-d5	----------ISTD----------									
63)	Toluene-d8	1.335	1.321	1.344	1.324	1.331	1.341	1.359	1.325	1.335	0.95
64)	Toluene	1.682	1.730	1.564	1.628	1.575	1.563	1.575	1.684	1.625	4.06
65)	2-Nitropropa	0.211	0.161	0.147	0.164	0.161	0.164	0.165	0.180	0.169	11.24
66)	4-Methyl-2-p	0.629	0.581	0.549	0.603	0.579	0.575	0.591	0.615	0.590	4.30
67)	trans-1,3-Di	0.586	0.591	0.540	0.596	0.583	0.586	0.583	0.537	0.575	4.03
68)	Tetrachloroe	0.461	0.490	0.441	0.468	0.460	0.459	0.470	0.429	0.460	4.00
69)	Ethyl methac	0.497	0.473	0.459	0.488	0.469	0.466	0.475	0.469	0.475	2.61
70)	1,1,2-Trichl	0.324	0.347	0.312	0.336	0.326	0.321	0.318	0.339	0.328	3.61
71)	Dibromochlor	0.382	0.421	0.388	0.432	0.433	0.438	0.436	0.404	0.417	5.35
72)	1,3-Dichloro	0.614	0.638	0.578	0.620	0.602	0.592	0.589	0.592	0.603	3.28
73)	1,2-Dibromoe	0.448	0.441	0.395	0.427	0.412	0.412	0.410	0.416	0.420	4.18
74)	3,3-Dimethyl	0.084	0.077	0.075	0.078	0.075	0.078	0.087	0.075	0.079	5.76
75)	2-hexanone	0.618	0.564	0.542	0.582	0.550	0.550	0.584	0.584	0.572	4.38
76)	1-Chlorohexa	0.706	0.569	0.546	0.539	0.523	0.521	0.533	0.579	0.565	10.78
77)	Ethylbenzene	1.695	1.882	1.724	1.814	1.738	1.725	1.726	1.767	1.759	3.48
78)	Chlorobenzen	1.071	1.150	1.048	1.114	1.055	1.043	1.032	1.098	1.076	3.80
79)	1,1,1,2-Tetr	0.352	0.413	0.379	0.405	0.403	0.403	0.398	0.379	0.392	5.15
80)	m,p-Xylene	1.424	1.462	1.347	1.417	1.371	1.349	1.347	1.442	1.395	3.36
81)	o-Xylene	1.510	1.545	1.431	1.493	1.447	1.437	1.422	1.589	1.484	4.09
82)	Styrene	1.135	1.167	1.085	1.164	1.116	1.094	1.091	1.146	1.125	2.94
83)	Bromoform	0.271	0.282	0.260	0.288	0.288	0.292	0.292	0.276	0.281	4.08
84)	Isopropylben	1.690	1.806	1.709	1.780	1.715	1.686	1.672	1.762	1.728	2.83
85)	I 1,4-Dichlorobenzene-d	----------ISTD----------									
86)	4-Bromofluor	0.834	0.828	0.819	0.841	0.835	0.841	0.851	0.826	0.834	1.20
87)	cis-1,4-Dich	0.396	0.285	0.253	0.291	0.284	0.289	0.288	0.300	0.298	14.00
88)	n-Propylbenz	4.049	4.064	3.651	4.001	3.860	3.869	3.851	3.910	3.907	3.43
89)	Bromobenzene	0.968	0.917	0.833	0.863	0.840	0.834	0.832	0.854	0.867	5.70
90)	1,1,2,2-Tetr	1.023	1.094	0.936	1.031	0.990	0.985	0.997	1.047	1.013	4.66
91)	1,3,5-Trimet	2.690	2.853	2.543	2.785	2.659	2.621	2.628	2.673	2.682	3.63
92)	2-Chlorotolu	2.474	2.345	2.113	2.262	2.179	2.154	2.152	2.264	2.243	5.38

Initial Calibration Summary

Job Number: FC12031
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample: V1A1985-ICC1985
Lab FileID: 1A50661.D

93) trans-1,4-Di	0.429	0.399	0.360	0.400	0.383	0.381	0.387	0.386	0.391	5.04
94) 1,2,3-Trichl	0.276	0.302	0.261	0.291	0.281	0.277	0.279	0.267	0.279	4.60
95) Cyclohexanon	0.068	0.054	0.049	0.051	0.047	0.048	0.050	0.055	0.053	12.62
96) 4-Chlorotolu	2.355	2.399	2.187	2.370	2.277	2.247	2.248	2.432	2.314	3.74
97) tert-Butylbe	1.547	1.584	1.433	1.562	1.497	1.465	1.451	1.592	1.516	4.14
98) 1,2,4-Trimet	2.571	2.708	2.438	2.643	2.558	2.513	2.527	2.598	2.570	3.22
99) Pentachloroe	0.435	0.422	0.396	0.452	0.436	0.437	0.426	0.405	0.426	4.29
100) sec-Butylben	3.175	3.555	3.292	3.527	3.382	3.393	3.345	3.434	3.388	3.64
101) 4-Isopropylt	2.765	3.022	2.780	3.067	2.933	2.901	2.897	2.882	2.906	3.60
102) 1,3-Dichloro	1.576	1.648	1.482	1.602	1.562	1.517	1.513	1.620	1.565	3.70
103) 1,2,3-Trimet	2.538	2.677	2.413	2.611	2.527	2.490	2.491	2.674	2.553	3.68
104) 1,4-Dichloro	1.751	1.664	1.481	1.602	1.537	1.501	1.505	1.628	1.584	5.96
105) n-Butylbenze	1.237	1.327	1.235	1.378	1.320	1.301	1.303	1.336	1.305	3.73
106) Benzyl Chlor	0.375	0.355	0.332	0.392	0.364	0.368	0.375	0.343	0.363	5.28
107) 1,2-Dichloro	1.362	1.481	1.317	1.443	1.377	1.366	1.367	1.434	1.393	3.86
108) 1,2-Dibromo-	0.155	0.164	0.151	0.170	0.160	0.165	0.175	0.151	0.161	5.43
109) Hexachlorobu	0.259	0.335	0.318	0.346	0.335	0.340	0.342	0.311	0.323	8.78
110) 1,2,4-Trichl	0.766	0.772	0.717	0.786	0.772	0.777	0.797	0.797	0.773	3.29
111) Naphthalene	2.166	1.943	1.799	1.996	1.923	1.980	2.100	1.942	1.981	5.66
112) 1,2,3-Trichl	0.588	0.646	0.590	0.609	0.617	0.614	0.644	0.605	0.614	3.53

(#) = Out of Range ### Number of calibration levels exceeded format ###

V1A_11-15-2023.M Wed Nov 15 14:28:34 2023

Initial Calibration Verification

Job Number: FC12031
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample: V1A1985-ICV1985
Lab FileID: 1A50669.D

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\11-15-2023\1A50669.D Vial: 61
Acq On : 15 Nov 2023 1:32 pm Operator: jeniferw
Sample : ICV1985-5 Inst : MSVOA17
Misc : MS55275,V1A1985,,,,, Multiplr: 1.00
MS Integration Params: big.p

Method : C:\msdchem\1\MET...V1A_11-15-2023.M (RTE Integrator)
Title : SW-846 Method 5035A/8260B
Last Update : Wed Nov 15 13:56:01 2023
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1 I	Fluorobenzene	1.000	1.000	0.0	102	0.00	3.40
2	Dichlorodifluoromethane	0.191	0.267	-39.8#	148	0.00	1.02
3	Chloromethane	0.286	0.318	-11.2	117	0.00	1.13
4	1,3-butadiene	0.359	0.298	17.0	88	0.00	1.18
5	Vinyl Chloride	0.286	0.320	-11.9	116	0.00	1.17
6	Bromomethane	0.103	0.114	-10.7	116	0.00	1.34
7	Chloroethane	0.182	0.190	-4.4	108	0.00	1.40
8	Trichlorofluoromethane	0.407	0.443	-8.8	112	0.00	1.49
9	Ethyl Ether	0.249	0.254	-2.0	105	0.00	1.66
10	Ethanol	0.006	0.005	16.7	97	0.00	1.71
11	1,2-Dichlorotrifluoroetha	0.325	0.342	-5.2	110	0.00	1.74
12	1,1-Dichloroethene	0.432	0.435	-0.7	104	0.00	1.76
13	Freon 113	0.246	0.294	-19.5	121	0.00	1.78
14	Carbon Disulfide	0.800	0.780	2.5	104	0.00	1.78
	----------	Amount	Calc.	%Drift	----------		
15	Iodomethane	40.000	41.104	-2.8	97	0.00	1.83
	----------	AvgRF	CCRF	%Dev	----------		
16	Acrolein	0.077	0.080	-3.9	110	0.00	1.90
17	Allyl chloride	0.413	0.456	-10.4	119	0.00	1.99
	----------	Amount	Calc.	%Drift	----------		
18	Methylene Chloride	40.000	41.923	-4.8	106	0.00	2.04
	----------	AvgRF	CCRF	%Dev	----------		
19	Acetone	0.124	0.120	3.2	107	0.00	2.05
20	Methyl acetate	0.336	0.303	9.8	95	0.00	2.12
21	trans-1,2-Dichloroethene	0.434	0.435	-0.2	103	0.00	2.13
22	Hexane	0.297	0.314	-5.7	112	0.00	2.20
23	Methyl Tert Butyl Ether	0.808	0.808	0.0	104	0.00	2.19
	----------	Amount	Calc.	%Drift	----------		
24	Acetonitrile	400.000	461.068	-15.3	116	0.00	2.27
	----------	AvgRF	CCRF	%Dev	----------		
25	Tert Butyl Alcohol	0.059	0.058	1.7	102	0.00	2.21
26	Di-isopropyl ether	1.014	0.985	2.9	100	0.00	2.39
27	Chloroprene	1.242	1.178	5.2	99	0.00	2.43
28	1,1-Dichloroethane	0.563	0.534	5.2	98	0.00	2.44
29	Acrylonitrile	0.150	0.147	2.0	101	0.00	2.43
30	ETBE	0.935	0.958	-2.5	104	0.00	2.58

Initial Calibration Verification

Job Number: FC12031
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample: V1A1985-ICV1985
Lab FileID: 1A50669.D

31		Vinyl acetate	0.754	0.749	0.7	103	0.00	2.56
32		cis-1,2-Dichloroethene	0.311	0.297	4.5	100	0.00	2.72
33		2,2-Dichloropropane	0.393	0.411	-4.6	109	0.00	2.78
34		Bromochloromethane	0.158	0.159	-0.6	103	0.00	2.82
35		Cyclohexane	0.544	0.551	-1.3	103	0.00	2.86
36		Chloroform	0.517	0.507	1.9	101	0.00	2.86
37		Ethyl acetate	0.421	0.436	-3.6	106	0.00	2.91
38		Tetrahydrofuran	0.159	0.145	8.8	100	0.00	2.94
39	S	Dibromofluoromethane	0.295	0.289	2.0	99	0.00	2.96
40		Carbon Tetrachloride	0.401	0.404	-0.7	102	0.00	2.96
41		1,1,1-Trichloroethane	0.433	0.435	-0.5	104	0.00	2.99
42		2-Butanone	0.210	0.217	-3.3	107	0.00	3.00
43		1,1-Dichloropropene	0.378	0.389	-2.9	107	0.00	3.05
44		tert-Butyl formate	0.258	0.291	-12.8	114	0.00	3.10
45		Propionitrile	0.065	0.063	3.1	106	0.00	3.14
46		Methacrylonitrile	0.244	0.252	-3.3	109	0.00	3.17
47		Benzene	1.110	1.091	1.7	102	0.00	3.18
48		TAME	0.784	0.789	-0.6	102	0.00	3.25
49	S	1,2-Dichloroethane-d4	0.326	0.326	0.0	101	0.00	3.24
50		1,2-Dichloroethane	0.415	0.402	3.1	100	0.00	3.27
51		Isobutyl Alcohol	0.036	0.037	-2.8	107	0.00	3.26
52		Tert Amyl Alcohol	0.049	0.048	2.0	102	0.00	3.33
53		Trichloroethene	0.310	0.302	2.6	102	0.00	3.51
54		Methylcyclohexane	0.495	0.512	-3.4	105	0.00	3.53
55		Dibromomethane	0.198	0.191	3.5	102	0.00	3.74
56		1,2-Dichloropropane	0.314	0.319	-1.6	105	0.00	3.79
57		Bromodichloromethane	0.390	0.363	6.9	95	0.00	3.83
58		Methyl methacrylate	0.362	0.345	4.7	103	0.00	3.92
59		1,4-Dioxane	0.004	0.004	0.0	91	0.00	3.94
		----------	Amount	Calc.	%Drift		----------	
60		2-Chloroethyl vinyl ether	200.000	213.996	-7.0	110	0.00	4.17
		----------	AvgRF	CCRF	%Dev		----------	
61		cis-1,3-Dichloropropene	0.453	0.444	2.0	100	0.00	4.21
62	I	Chlorobenzene-d5	1.000	1.000	0.0	101	0.00	5.35
63	S	Toluene-d8	1.335	1.335	0.0	102	0.00	4.34
64		Toluene	1.625	1.597	1.7	103	0.00	4.37
65		2-Nitropropane	0.169	0.160	5.3	101	0.00	4.47
66		4-Methyl-2-pentanone	0.590	0.606	-2.7	106	0.00	4.58
67		trans-1,3-Dichloropropene	0.575	0.540	6.1	94	0.00	4.61
68		Tetrachloroethene	0.460	0.477	-3.7	105	0.00	4.64
69		Ethyl methacrylate	0.475	0.546	-14.9	118	0.00	4.73
70		1,1,2-Trichloroethane	0.328	0.314	4.3	98	0.00	4.72
71		Dibromochloromethane	0.417	0.436	-4.6	102	0.00	4.84
72		1,3-Dichloropropane	0.603	0.615	-2.0	104	0.00	4.90
73		1,2-Dibromoethane	0.420	0.409	2.6	101	0.00	5.00
74		3,3-Dimethyl-1-Butanol	0.079	0.079	0.0	106	0.00	5.13
75		2-hexanone	0.572	0.608	-6.3	112	0.00	5.14
76		1-Chlorohexane	0.565	0.591	-4.6	115	0.00	5.37
77		Ethylbenzene	1.759	1.680	4.5	98	0.00	5.40
78		Chlorobenzene	1.076	1.041	3.3	100	0.00	5.37
79		1,1,1,2-Tetrachloroethane	0.392	0.397	-1.3	100	0.00	5.41
80		m,p-Xylene	1.395	1.336	4.2	99	0.00	5.50
81		o-Xylene	1.484	1.385	6.7	97	0.00	5.81
82		Styrene	1.125	1.074	4.5	97	0.00	5.84
83		Bromoform	0.281	0.280	0.4	99	0.00	5.84
84		Isopropylbenzene	1.728	1.659	4.0	98	0.00	6.04

Initial Calibration Verification

Job Number: FC12031
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample: V1A1985-ICV1985
Lab FileID: 1A50669.D

85	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	98	0.00	7.10
86	S	4-Bromofluorobenzene	0.834	0.847	-1.6	100	0.00	6.24
87		cis-1,4-Dichloro-2-butene	0.298	0.367	-23.2#	127	0.00	6.27
88		n-Propylbenzene	3.907	3.839	1.7	98	0.00	6.35
89		Bromobenzene	0.867	0.875	-0.9	102	0.00	6.31
90		1,1,2,2-Tetrachloroethane	1.013	0.999	1.4	99	0.00	6.38
91		1,3,5-Trimethylbenzene	2.682	2.668	0.5	99	0.00	6.51
92		2-Chlorotoluene	2.243	2.126	5.2	96	0.00	6.46
93		trans-1,4-Dichloro-2-Bute	0.391	0.400	-2.3	103	0.00	6.51
94		1,2,3-Trichloropropane	0.279	0.300	-7.5	105	0.00	6.47
95		Cyclohexanone	0.053	0.077	-45.3#	161	0.00	6.48
96		4-Chlorotoluene	2.314	2.238	3.3	97	0.00	6.58
97		tert-Butylbenzene	1.516	1.472	2.9	97	0.00	6.75
98		1,2,4-Trimethylbenzene	2.570	2.546	0.9	98	0.00	6.81
99		Pentachloroethane	0.426	0.473	-11.0	107	0.00	6.75
100		sec-Butylbenzene	3.388	3.186	6.0	93	0.00	6.89
101		4-Isopropyltoluene	2.906	2.838	2.3	95	0.00	7.01
102		1,3-Dichlorobenzene	1.565	1.486	5.0	94	0.00	7.04
103		1,2,3-Trimethylbenzene	2.553	2.437	4.5	95	0.00	7.15
104		1,4-Dichlorobenzene	1.584	1.515	4.4	97	0.00	7.11
105		n-Butylbenzene	1.305	1.349	-3.4	100	0.00	7.35
106		Benzyl Chloride	0.363	0.397	-9.4	107	0.00	7.30
107		1,2-Dichlorobenzene	1.393	1.337	4.0	95	0.00	7.43
108		1,2-Dibromo-3-Chloropropa	0.161	0.163	-1.2	100	0.00	8.01
109		Hexachlorobutadiene	0.323	0.331	-2.5	97	0.00	8.52
110		1,2,4-Trichlorobenzene	0.773	0.757	2.1	96	0.00	8.51
111		Naphthalene	1.981	1.894	4.4	97	0.00	8.72
112		1,2,3-Trichlorobenzene	0.614	0.605	1.5	96	0.00	8.84

(#) = Out of Range SPCC's out = 0 CCC's out = 0
1A50661.D V1A_11-15-2023.M Wed Nov 15 14:28:44 2023

Continuing Calibration Summary

Job Number: FC12031
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample: V1A2022-CC1985
Lab FileID: 1A51511.D

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\12-19-2023\1A51511.D Vial: 2
Acq On : 19 Dec 2023 7:28 am Operator: jeniferw
Sample : CC1985-5 Inst : MSVOA17
Misc : MS55563,V1A2022,,,,, Multiplr: 1.00
MS Integration Params: big.p

Method : C:\msdchem\1\MET...V1A_11-15-2023.M (RTE Integrator)
Title : SW-846 Method 5035A/8260B
Last Update : Wed Nov 15 13:56:01 2023
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1 I	Fluorobenzene	1.000	1.000	0.0	149	0.00	3.40
2	Dichlorodifluoromethane	0.191	0.246	-28.8#	201#	0.00	1.02
3	Chloromethane	0.286	0.269	5.9	145	0.00	1.13
4	1,3-butadiene	0.359	0.315	12.3	136	0.00	1.18
5	Vinyl Chloride	0.286	0.279	2.4	148	0.00	1.17
6	Bromomethane	0.103	0.143	-38.8#	213#	0.00	1.35
7	Chloroethane	0.182	0.186	-2.2	154	0.00	1.41
8	Trichlorofluoromethane	0.407	0.432	-6.1	160	0.00	1.50
9	Ethyl Ether	0.249	0.203	18.5	123	0.00	1.66
10	Ethanol	0.006	0.003	50.0#	78	0.00	1.71
11	1,2-Dichlorotrifluoroetha	0.325	0.287	11.7	135	0.00	1.74
12	1,1-Dichloroethene	0.432	0.400	7.4	139	0.00	1.76
13	Freon 113	0.246	0.235	4.5	142	0.00	1.79
14	Carbon Disulfide	0.800	0.695	13.1	136	0.00	1.78
	----------	Amount	Calc.	%Drift	----------		
15	Iodomethane	40.000	47.814	-19.5	165	0.00	1.83
	----------	AvgRF	CCRF	%Dev	----------		
16	Acrolein	0.077	0.065	15.6	130	0.00	1.91
17	Allyl chloride	0.413	0.401	2.9	154	0.00	2.00
	----------	Amount	Calc.	%Drift	----------		
18	Methylene Chloride	40.000	36.437	8.9	134	0.00	2.04
	----------	AvgRF	CCRF	%Dev	----------		
19	Acetone	0.124	0.108	12.9	140	0.00	2.05
20	Methyl acetate	0.336	0.289	14.0	133	0.00	2.13
21	trans-1,2-Dichloroethene	0.434	0.378	12.9	131	0.00	2.13
22	Hexane	0.297	0.272	8.4	142	0.00	2.20
23	Methyl Tert Butyl Ether	0.808	0.701	13.2	133	0.00	2.20
	----------	Amount	Calc.	%Drift	----------		
24	Acetonitrile	400.000	319.902	20.0#	118	0.00	2.27
	----------	AvgRF	CCRF	%Dev	----------		
25	Tert Butyl Alcohol	0.059	0.037	37.3#	96	0.00	2.21
26	Di-isopropyl ether	1.014	0.874	13.8	130	0.00	2.40
27	Chloroprene	1.242	1.108	10.8	136	0.00	2.44
28	1,1-Dichloroethane	0.563	0.504	10.5	135	0.00	2.44
29	Acrylonitrile	0.150	0.137	8.7	137	0.00	2.44
30	ETBE	0.935	0.803	14.1	128	0.00	2.58

Continuing Calibration Summary

Job Number: FC12031 **Sample:** V1A2022-CC1985
Account: HGLFLMI Hydrogeologic, Inc. **Lab FileID:** 1A51511.D
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

31		Vinyl acetate	0.754	0.657	12.9	132	0.00	2.56
32		cis-1,2-Dichloroethene	0.311	0.277	10.9	137	0.00	2.72
33		2,2-Dichloropropane	0.393	0.351	10.7	136	0.00	2.78
34		Bromochloromethane	0.158	0.136	13.9	129	0.00	2.82
35		Cyclohexane	0.544	0.483	11.2	132	0.00	2.86
36		Chloroform	0.517	0.468	9.5	137	0.00	2.86
37		Ethyl acetate	0.421	0.373	11.4	133	0.00	2.91
38		Tetrahydrofuran	0.159	0.134	15.7	135	0.00	2.94
39	S	Dibromofluoromethane	0.295	0.284	3.7	143	0.00	2.96
40		Carbon Tetrachloride	0.401	0.361	10.0	134	0.00	2.96
41		1,1,1-Trichloroethane	0.433	0.414	4.4	145	0.00	2.99
42		2-Butanone	0.210	0.187	11.0	135	0.00	3.00
43		1,1-Dichloropropene	0.378	0.348	7.9	140	0.00	3.05
44		tert-Butyl formate	0.258	0.190	26.4#	109	0.00	3.10
45		Propionitrile	0.065	0.048	26.2#	120	0.00	3.14
46		Methacrylonitrile	0.244	0.221	9.4	140	0.00	3.17
47		Benzene	1.110	1.015	8.6	139	0.00	3.18
48		TAME	0.784	0.691	11.9	131	0.00	3.25
49	S	1,2-Dichloroethane-d4	0.326	0.349	-7.1	158	0.00	3.24
50		1,2-Dichloroethane	0.415	0.389	6.3	142	0.00	3.27
51		Isobutyl Alcohol	0.036	0.028	22.2#	117	0.00	3.26
52		Tert Amyl Alcohol	0.049	0.031	36.7#	98	0.00	3.32
53		Trichloroethene	0.310	0.287	7.4	142	0.00	3.51
54		Methylcyclohexane	0.495	0.445	10.1	134	0.00	3.53
55		Dibromomethane	0.198	0.173	12.6	135	0.00	3.74
56		1,2-Dichloropropane	0.314	0.267	15.0	128	0.00	3.79
57		Bromodichloromethane	0.390	0.342	12.3	132	0.00	3.83
58		Methyl methacrylate	0.362	0.283	21.8#	124	0.00	3.92
59		1,4-Dioxane	0.004	0.002	50.0#	73	0.00	3.94
		----------	Amount	Calc.	%Drift	----------		
60		2-Chloroethyl vinyl ether	200.000	153.279	23.4#	116	0.00	4.17
		----------	AvgRF	CCRF	%Dev	----------		
61		cis-1,3-Dichloropropene	0.453	0.385	15.0	128	0.00	4.21
62	I	Chlorobenzene-d5	1.000	1.000	0.0	148	0.00	5.35
63	S	Toluene-d8	1.335	1.385	-3.7	154	0.00	4.34
64		Toluene	1.625	1.545	4.9	145	0.00	4.37
65		2-Nitropropane	0.169	0.111	34.3#	102	0.00	4.47
66		4-Methyl-2-pentanone	0.590	0.560	5.1	143	0.00	4.58
67		trans-1,3-Dichloropropene	0.575	0.512	11.0	130	0.00	4.61
68		Tetrachloroethene	0.460	0.439	4.6	141	0.00	4.64
69		Ethyl methacrylate	0.475	0.457	3.8	144	0.00	4.73
70		1,1,2-Trichloroethane	0.328	0.286	12.8	130	0.00	4.71
71		Dibromochloromethane	0.417	0.364	12.7	124	0.00	4.84
72		1,3-Dichloropropane	0.603	0.539	10.6	132	0.00	4.90
73		1,2-Dibromoethane	0.420	0.352	16.2	126	0.00	5.00
74		3,3-Dimethyl-1-Butanol	0.079	0.057	27.8#	111	0.00	5.13
75		2-hexanone	0.572	0.501	12.4	135	0.00	5.14
76		1-Chlorohexane	0.565	0.597	-5.7	169	0.00	5.37
77		Ethylbenzene	1.759	1.607	8.6	137	0.00	5.40
78		Chlorobenzene	1.076	0.998	7.2	140	0.00	5.37
79		1,1,1,2-Tetrachloroethane	0.392	0.349	11.0	128	0.00	5.41
80		m,p-Xylene	1.395	1.332	4.5	144	0.00	5.50
81		o-Xylene	1.484	1.375	7.3	141	0.00	5.81
82		Styrene	1.125	1.003	10.8	133	0.00	5.84
83		Bromoform	0.281	0.245	12.8	126	0.00	5.84
84		Isopropylbenzene	1.728	1.590	8.0	137	0.00	6.04

Continuing Calibration Summary

Job Number: FC12031 **Sample:** V1A2022-CC1985
Account: HGLFLMI Hydrogeologic, Inc. **Lab FileID:** 1A51511.D
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

85	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	141	0.00	7.10
86	S	4-Bromofluorobenzene	0.834	0.846	-1.4	143	0.00	6.23
87		cis-1,4-Dichloro-2-butene	0.298	0.278	6.7	139	0.00	6.27
88		n-Propylbenzene	3.907	3.838	1.8	141	0.00	6.35
89		Bromobenzene	0.867	0.769	11.3	130	0.00	6.31
90		1,1,2,2-Tetrachloroethane	1.013	0.937	7.5	134	0.00	6.38
91		1,3,5-Trimethylbenzene	2.682	2.547	5.0	135	0.00	6.51
92		2-Chlorotoluene	2.243	2.158	3.8	140	0.00	6.45
93		trans-1,4-Dichloro-2-Bute	0.391	0.333	14.8	123	0.00	6.51
94		1,2,3-Trichloropropane	0.279	0.275	1.4	139	0.00	6.47
95		Cyclohexanone	0.053	0.029	45.3#	87	0.00	6.48
96		4-Chlorotoluene	2.314	2.268	2.0	141	0.00	6.58
97		tert-Butylbenzene	1.516	1.514	0.1	143	0.00	6.75
98		1,2,4-Trimethylbenzene	2.570	2.475	3.7	137	0.00	6.81
99		Pentachloroethane	0.426	0.401	5.9	130	0.00	6.74
100		sec-Butylbenzene	3.388	3.217	5.0	135	0.00	6.89
101		4-Isopropyltoluene	2.906	2.734	5.9	132	0.00	7.01
102		1,3-Dichlorobenzene	1.565	1.427	8.8	129	0.00	7.04
103		1,2,3-Trimethylbenzene	2.553	2.377	6.9	133	0.00	7.15
104		1,4-Dichlorobenzene	1.584	1.436	9.3	132	0.00	7.11
105		n-Butylbenzene	1.305	1.259	3.5	135	0.00	7.34
106		Benzyl Chloride	0.363	0.286	21.2#	111	0.00	7.30
107		1,2-Dichlorobenzene	1.393	1.289	7.5	132	0.00	7.43
108		1,2-Dibromo-3-Chloropropa	0.161	0.146	9.3	129	0.00	8.01
109		Hexachlorobutadiene	0.323	0.301	6.8	127	0.00	8.52
110		1,2,4-Trichlorobenzene	0.773	0.625	19.1	115	0.00	8.51
111		Naphthalene	1.981	1.428	27.9#	105	0.00	8.72
112		1,2,3-Trichlorobenzene	0.614	0.465	24.3#	106	0.00	8.84

(#) = Out of Range SPCC's out = 0 CCC's out = 0
1A50661.D V1A_11-15-2023.M Tue Dec 19 08:10:30 2023

Continuing Calibration Summary

Job Number: FC12031
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample: V1A2022-ECC1985
Lab FileID: 1A51538.D

Evaluate Continuing Calibration Report

Data File : X:\Orlando VOA\celin...022\V1A2022\1A51538.d Vial: 29
Acq On : 19 Dec 2023 6:26 pm Operator: jeniferw
Sample : ECC1985-5 Inst : MSVOA17
Misc : MS55574,V1A2022,,,,, Multiplr: 1.00
MS Integration Params: big.p

Method : X:\Orlando VOA\c...V1A_11-15-2023.M (RTE Integrator)
Title : SW-846 Method 5035A/8260B
Last Update : Wed Nov 15 13:56:01 2023
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 50% Max. Rel. Area : 200%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1 I	Fluorobenzene	1.000	1.000	0.0	149	0.00	3.40
2	Dichlorodifluoromethane	0.191	0.220	-15.2	179	0.00	1.03
3	Chloromethane	0.286	0.247	13.6	133	0.00	1.13
4	1,3-butadiene	0.359	0.301	16.2	130	0.00	1.19
5	Vinyl Chloride	0.286	0.265	7.3	141	0.00	1.17
6	Bromomethane	0.103	0.121	-17.5	180	0.00	1.35
7	Chloroethane	0.182	0.175	3.8	146	0.02	1.42
8	Trichlorofluoromethane	0.407	0.409	-0.5	151	0.00	1.50
9	Ethyl Ether	0.249	0.213	14.5	129	0.00	1.66
10	Ethanol	0.006	0.003	50.0	79	0.00	1.71
11	1,2-Dichlorotrifluoroetha	0.325	0.279	14.2	131	0.00	1.75
12	1,1-Dichloroethene	0.432	0.378	12.5	132	0.00	1.77
13	Freon 113	0.246	0.216	12.2	130	0.00	1.79
14	Carbon Disulfide	0.800	0.652	18.5	128	0.00	1.79
	----------	True	Calc.	% Drift	----------		
15	Iodomethane	40.000	41.037	-2.6	141	0.00	1.83
	----------	AvgRF	CCRF	% Dev	----------		
16	Acrolein	0.077	0.058	24.7	118	0.00	1.91
17	Allyl chloride	0.413	0.373	9.7	143	0.00	2.00
	----------	True	Calc.	% Drift	----------		
18	Methylene Chloride	40.000	37.846	5.4	140	0.00	2.05
	----------	AvgRF	CCRF	% Dev	----------		
19	Acetone	0.124	0.106	14.5	138	0.00	2.06
20	Methyl acetate	0.336	0.296	11.9	136	0.00	2.13
21	trans-1,2-Dichloroethene	0.434	0.371	14.5	129	0.00	2.14
22	Hexane	0.297	0.251	15.5	132	0.00	2.20
23	Methyl Tert Butyl Ether	0.808	0.705	12.7	133	0.00	2.20
	----------	True	Calc.	% Drift	----------		
24	Acetonitrile	400.000	331.900	17.0	122	0.00	2.27
	----------	AvgRF	CCRF	% Dev	----------		
25	Tert Butyl Alcohol	0.059	0.039	33.9	100	0.00	2.21
26	Di-isopropyl ether	1.014	0.903	10.9	134	0.00	2.40
27	Chloroprene	1.242	1.061	14.6	131	0.00	2.44
28	1,1-Dichloroethane	0.563	0.497	11.7	133	0.00	2.44
29	Acrylonitrile	0.150	0.132	12.0	133	0.00	2.44
30	ETBE	0.935	0.824	11.9	131	0.00	2.58

Continuing Calibration Summary

Job Number: FC12031 **Sample:** V1A2022-ECC1985
Account: HGLFLMI Hydrogeologic, Inc. **Lab FileID:** 1A51538.D
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

31		Vinyl acetate	0.754	0.629	16.6	126	0.00	2.57
32		cis-1,2-Dichloroethene	0.311	0.272	12.5	135	0.00	2.72
33		2,2-Dichloropropane	0.393	0.318	19.1	123	0.00	2.79
34		Bromochloromethane	0.158	0.133	15.8	126	0.00	2.83
35		Cyclohexane	0.544	0.466	14.3	128	0.00	2.87
36		Chloroform	0.517	0.470	9.1	138	0.00	2.87
37		Ethyl acetate	0.421	0.365	13.3	130	0.00	2.92
38		Tetrahydrofuran	0.159	0.119	25.2	120	0.00	2.95
39	S	Dibromofluoromethane	0.295	0.280	5.1	141	0.00	2.96
40		Carbon Tetrachloride	0.401	0.348	13.2	129	0.00	2.97
41		1,1,1-Trichloroethane	0.433	0.403	6.9	141	0.00	2.99
42		2-Butanone	0.210	0.186	11.4	134	0.00	3.00
43		1,1-Dichloropropene	0.378	0.334	11.6	134	0.00	3.06
44		tert-Butyl formate	0.258	0.189	26.7	108	0.00	3.10
45		Propionitrile	0.065	0.047	27.7	116	0.00	3.14
46		Methacrylonitrile	0.244	0.218	10.7	138	0.00	3.17
47		Benzene	1.110	0.992	10.6	135	0.00	3.18
48		TAME	0.784	0.702	10.5	133	0.00	3.25
49	S	1,2-Dichloroethane-d4	0.326	0.352	-8.0	159	0.00	3.24
50		1,2-Dichloroethane	0.415	0.392	5.5	143	0.00	3.27
51		Isobutyl Alcohol	0.036	0.029	19.4	121	0.00	3.26
52		Tert Amyl Alcohol	0.049	0.034	30.6	105	0.00	3.33
53		Trichloroethene	0.310	0.271	12.6	134	0.00	3.51
54		Methylcyclohexane	0.495	0.416	16.0	125	0.00	3.53
55		Dibromomethane	0.198	0.178	10.1	139	0.00	3.74
56		1,2-Dichloropropane	0.314	0.266	15.3	128	0.00	3.80
57		Bromodichloromethane	0.390	0.346	11.3	133	0.00	3.83
58		Methyl methacrylate	0.362	0.277	23.5	121	0.00	3.92
59		1,4-Dioxane	0.004	0.002	50.0	76	0.00	3.94
			True	Calc.	% Drift			
60		2-Chloroethyl vinyl ether	200.000	151.847	24.1	114	0.00	4.17
			AvgRF	CCRF	% Dev			
61		cis-1,3-Dichloropropene	0.453	0.387	14.6	128	0.00	4.21
62	I	Chlorobenzene-d5	1.000	1.000	0.0	149	0.00	5.35
63	S	Toluene-d8	1.335	1.368	-2.5	153	0.00	4.34
64		Toluene	1.625	1.497	7.9	141	0.00	4.37
65		2-Nitropropane	0.169	0.113	33.1	104	0.00	4.47
66		4-Methyl-2-pentanone	0.590	0.569	3.6	146	0.00	4.58
67		trans-1,3-Dichloropropene	0.575	0.516	10.3	132	0.00	4.61
68		Tetrachloroethene	0.460	0.443	3.7	143	0.00	4.64
69		Ethyl methacrylate	0.475	0.455	4.2	144	0.00	4.73
70		1,1,2-Trichloroethane	0.328	0.281	14.3	129	0.00	4.72
71		Dibromochloromethane	0.417	0.370	11.3	127	0.00	4.84
72		1,3-Dichloropropane	0.603	0.531	11.9	131	0.00	4.90
73		1,2-Dibromoethane	0.420	0.355	15.5	128	0.00	5.00
74		3,3-Dimethyl-1-Butanol	0.079	0.058	26.6	114	0.00	5.13
75		2-hexanone	0.572	0.513	10.3	139	0.00	5.14
76		1-Chlorohexane	0.565	0.467	17.3	133	0.00	5.37
77		Ethylbenzene	1.759	1.686	4.2	144	0.00	5.40
78		Chlorobenzene	1.076	0.994	7.6	140	0.00	5.37
79		1,1,1,2-Tetrachloroethane	0.392	0.352	10.2	130	0.00	5.41
80		m,p-Xylene	1.395	1.307	6.3	142	0.00	5.50
81		o-Xylene	1.484	1.359	8.4	140	0.00	5.81
82		Styrene	1.125	0.999	11.2	133	0.00	5.84
83		Bromoform	0.281	0.241	14.2	124	0.00	5.84
84		Isopropylbenzene	1.728	1.558	9.8	135	0.00	6.04

Continuing Calibration Summary

Job Number: FC12031 **Sample:** V1A2022-ECC1985
Account: HGLFLMI Hydrogeologic, Inc. **Lab FileID:** 1A51538.D
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

85	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	140	0.00	7.10
86	S	4-Bromofluorobenzene	0.834	0.857	-2.8	144	0.00	6.23
87		cis-1,4-Dichloro-2-butene	0.298	0.266	10.7	131	0.00	6.27
88		n-Propylbenzene	3.907	3.874	0.8	141	0.00	6.35
89		Bromobenzene	0.867	0.769	11.3	129	0.00	6.31
90		1,1,2,2-Tetrachloroethane	1.013	0.948	6.4	134	0.00	6.38
91		1,3,5-Trimethylbenzene	2.682	2.521	6.0	133	0.00	6.51
92		2-Chlorotoluene	2.243	2.168	3.3	140	0.00	6.45
93		trans-1,4-Dichloro-2-Bute	0.391	0.326	16.6	120	0.00	6.51
94		1,2,3-Trichloropropane	0.279	0.278	0.4	139	0.00	6.47
95		Cyclohexanone	0.053	0.029	45.3	87	0.00	6.48
96		4-Chlorotoluene	2.314	2.263	2.2	139	0.00	6.58
97		tert-Butylbenzene	1.516	1.507	0.6	141	0.00	6.74
98		1,2,4-Trimethylbenzene	2.570	2.460	4.3	135	0.00	6.80
99		Pentachloroethane	0.426	0.383	10.1	123	0.00	6.74
100		sec-Butylbenzene	3.388	3.192	5.8	132	0.00	6.89
101		4-Isopropyltoluene	2.906	2.708	6.8	130	0.00	7.01
102		1,3-Dichlorobenzene	1.565	1.449	7.4	130	0.00	7.04
103		1,2,3-Trimethylbenzene	2.553	2.408	5.7	134	0.00	7.14
104		1,4-Dichlorobenzene	1.584	1.462	7.7	133	0.00	7.11
105		n-Butylbenzene	1.305	1.264	3.1	134	0.00	7.34
106		Benzyl Chloride	0.363	0.236	35.0	91	0.00	7.29
107		1,2-Dichlorobenzene	1.393	1.305	6.3	133	0.00	7.43
108		1,2-Dibromo-3-Chloropropa	0.161	0.139	13.7	122	0.00	8.01
109		Hexachlorobutadiene	0.323	0.305	5.6	128	0.00	8.51
110		1,2,4-Trichlorobenzene	0.773	0.617	20.2	112	0.00	8.50
111		Naphthalene	1.981	1.451	26.8	106	0.00	8.71
112		1,2,3-Trichlorobenzene	0.614	0.475	22.6	108	0.00	8.84

(#) = Out of Range SPCC's out = 0 CCC's out = 0
1A50661.D V1A_11-15-2023.M Wed Dec 20 02:55:39 2023

Continuing Calibration Summary

Job Number: FC12031
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample: V1A2028-CC1985
Lab FileID: 1A51661.D

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\12-26-2023\1A51661.D Vial: 2
Acq On : 26 Dec 2023 8:03 am Operator: lianatr
Sample : CC1985-5 Inst : MSVOA17
Misc : MS55601,V1A2028,,,,, Multiplr: 1.00
MS Integration Params: big.p

Method : C:\msdchem\1\MET...V1A_11-15-2023.M (RTE Integrator)
Title : SW-846 Method 5035A/8260B
Last Update : Wed Nov 15 13:56:01 2023
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1 I	Fluorobenzene	1.000	1.000	0.0	145	0.00	3.40
2	Dichlorodifluoromethane	0.191	0.216	-13.1	172	0.00	1.02
3	Chloromethane	0.286	0.257	10.1	135	0.00	1.13
4	1,3-butadiene	0.359	0.281	21.7#	118	0.00	1.19
5	Vinyl Chloride	0.286	0.271	5.2	140	0.00	1.17
6	Bromomethane	0.103	0.125	-21.4#	182	0.00	1.35
7	Chloroethane	0.182	0.234	-28.6#	189	0.00	1.41
8	Trichlorofluoromethane	0.407	0.447	-9.8	161	0.00	1.50
9	Ethyl Ether	0.249	0.228	8.4	134	0.00	1.66
10	Ethanol	0.006	0.005	16.7	137	0.00	1.72
11	1,2-Dichlorotrifluoroetha	0.325	0.308	5.2	141	0.00	1.74
12	1,1-Dichloroethene	0.432	0.418	3.2	142	0.00	1.76
13	Freon 113	0.246	0.245	0.4	144	0.00	1.79
14	Carbon Disulfide	0.800	0.725	9.4	138	0.00	1.78
	----------	Amount	Calc.	%Drift	----------		
15	Iodomethane	40.000	31.712	20.7#	106	0.00	1.83
	----------	AvgRF	CCRF	%Dev	----------		
16	Acrolein	0.077	0.067	13.0	131	0.00	1.91
17	Allyl chloride	0.413	0.423	-2.4	158	0.00	2.00
	----------	Amount	Calc.	%Drift	----------		
18	Methylene Chloride	40.000	42.956	-7.4	154	0.00	2.04
	----------	AvgRF	CCRF	%Dev	----------		
19	Acetone	0.124	0.125	-0.8	159	0.00	2.05
20	Methyl acetate	0.336	0.325	3.3	146	0.00	2.13
21	trans-1,2-Dichloroethene	0.434	0.408	6.0	138	0.00	2.13
22	Hexane	0.297	0.301	-1.3	154	0.00	2.20
23	Methyl Tert Butyl Ether	0.808	0.741	8.3	136	0.00	2.20
	----------	Amount	Calc.	%Drift	----------		
24	Acetonitrile	400.000	401.763	-0.4	144	0.00	2.27
	----------	AvgRF	CCRF	%Dev	----------		
25	Tert Butyl Alcohol	0.059	0.053	10.2	134	0.00	2.21
26	Di-isopropyl ether	1.014	0.967	4.6	140	0.00	2.40
27	Chloroprene	1.242	1.148	7.6	137	0.00	2.44
28	1,1-Dichloroethane	0.563	0.531	5.7	138	0.00	2.44
29	Acrylonitrile	0.150	0.145	3.3	142	0.00	2.44
30	ETBE	0.935	0.870	7.0	135	0.00	2.58

Continuing Calibration Summary

Job Number: FC12031 **Sample:** V1A2028-CC1985
Account: HGLFLMI Hydrogeologic, Inc. **Lab FileID:** 1A51661.D
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

31		Vinyl acetate	0.754	0.665	11.8	130	0.00	2.57
32		cis-1,2-Dichloroethene	0.311	0.290	6.8	140	0.00	2.72
33		2,2-Dichloropropane	0.393	0.386	1.8	145	0.00	2.78
34		Bromochloromethane	0.158	0.133	15.8	123	0.00	2.83
35		Cyclohexane	0.544	0.532	2.2	142	0.00	2.86
36		Chloroform	0.517	0.507	1.9	145	0.00	2.86
37		Ethyl acetate	0.421	0.395	6.2	137	0.00	2.92
38		Tetrahydrofuran	0.159	0.134	15.7	132	0.00	2.95
39	S	Dibromofluoromethane	0.295	0.291	1.4	143	0.00	2.96
40		Carbon Tetrachloride	0.401	0.388	3.2	140	0.00	2.97
41		1,1,1-Trichloroethane	0.433	0.455	-5.1	155	0.00	2.99
42		2-Butanone	0.210	0.215	-2.4	151	0.00	3.00
43		1,1-Dichloropropene	0.378	0.373	1.3	146	0.00	3.06
44		tert-Butyl formate	0.258	0.216	16.3	120	0.00	3.10
45		Propionitrile	0.065	0.055	15.4	134	0.00	3.14
46		Methacrylonitrile	0.244	0.241	1.2	149	0.00	3.17
47		Benzene	1.110	1.077	3.0	143	0.00	3.18
48		TAME	0.784	0.731	6.8	135	0.00	3.25
49	S	1,2-Dichloroethane-d4	0.326	0.360	-10.4	159	0.00	3.24
50		1,2-Dichloroethane	0.415	0.425	-2.4	151	0.00	3.27
51		Isobutyl Alcohol	0.036	0.034	5.6	141	0.00	3.26
52		Tert Amyl Alcohol	0.049	0.044	10.2	135	0.00	3.33
53		Trichloroethene	0.310	0.295	4.8	142	0.00	3.51
54		Methylcyclohexane	0.495	0.481	2.8	141	0.00	3.53
55		Dibromomethane	0.198	0.185	6.6	141	0.00	3.74
56		1,2-Dichloropropane	0.314	0.288	8.3	135	0.00	3.80
57		Bromodichloromethane	0.390	0.365	6.4	137	0.00	3.83
58		Methyl methacrylate	0.362	0.308	14.9	131	0.00	3.92
59		1,4-Dioxane	0.004	0.004	0.0	137	0.00	3.94
		----------	Amount	Calc.	%Drift		----------	
60		2-Chloroethyl vinyl ether	200.000	167.027	16.5	123	0.00	4.17
		----------	AvgRF	CCRF	%Dev		----------	
61		cis-1,3-Dichloropropene	0.453	0.422	6.8	136	0.00	4.21
62	I	Chlorobenzene-d5	1.000	1.000	0.0	148	0.00	5.35
63	S	Toluene-d8	1.335	1.364	-2.2	151	0.00	4.34
64		Toluene	1.625	1.585	2.5	149	0.00	4.37
65		2-Nitropropane	0.169	0.121	28.4#	111	0.00	4.47
66		4-Methyl-2-pentanone	0.590	0.595	-0.8	152	0.00	4.58
67		trans-1,3-Dichloropropene	0.575	0.550	4.3	139	0.00	4.61
68		Tetrachloroethene	0.460	0.454	1.3	146	0.00	4.64
69		Ethyl methacrylate	0.475	0.455	4.2	143	0.00	4.73
70		1,1,2-Trichloroethane	0.328	0.293	10.7	133	0.00	4.72
71		Dibromochloromethane	0.417	0.387	7.2	132	0.00	4.84
72		1,3-Dichloropropane	0.603	0.556	7.8	136	0.00	4.90
73		1,2-Dibromoethane	0.420	0.371	11.7	133	0.00	5.00
74		3,3-Dimethyl-1-Butanol	0.079	0.069	12.7	136	0.00	5.13
75		2-hexanone	0.572	0.565	1.2	152	0.00	5.14
76		1-Chlorohexane	0.565	0.624	-10.4	176	0.00	5.37
77		Ethylbenzene	1.759	1.687	4.1	143	0.00	5.40
78		Chlorobenzene	1.076	1.040	3.3	146	0.00	5.37
79		1,1,1,2-Tetrachloroethane	0.392	0.369	5.9	135	0.00	5.41
80		m,p-Xylene	1.395	1.364	2.2	147	0.00	5.50
81		o-Xylene	1.484	1.424	4.0	145	0.00	5.81
82		Styrene	1.125	1.038	7.7	137	0.00	5.84
83		Bromoform	0.281	0.261	7.1	134	0.00	5.84
84		Isopropylbenzene	1.728	1.660	3.9	143	0.00	6.04

Continuing Calibration Summary

Job Number: FC12031 **Sample:** V1A2028-CC1985
Account: HGLFLMI Hydrogeologic, Inc. **Lab FileID:** 1A51661.D
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

85	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	138	0.00	7.10
86	S	4-Bromofluorobenzene	0.834	0.858	-2.9	142	0.00	6.23
87		cis-1,4-Dichloro-2-butene	0.298	0.374	-25.5#	181	0.00	6.27
88		n-Propylbenzene	3.907	4.128	-5.7	148	0.00	6.35
89		Bromobenzene	0.867	0.813	6.2	134	0.00	6.31
90		1,1,2,2-Tetrachloroethane	1.013	1.012	0.1	141	0.00	6.38
91		1,3,5-Trimethylbenzene	2.682	2.732	-1.9	142	0.00	6.51
92		2-Chlorotoluene	2.243	2.296	-2.4	145	0.00	6.45
93		trans-1,4-Dichloro-2-Bute	0.391	0.443	-13.3	160	0.00	6.51
94		1,2,3-Trichloropropane	0.279	0.284	-1.8	140	0.00	6.47
95		Cyclohexanone	0.053	0.045	15.1	133	0.00	6.48
96		4-Chlorotoluene	2.314	2.376	-2.7	144	0.00	6.58
97		tert-Butylbenzene	1.516	1.610	-6.2	148	0.00	6.75
98		1,2,4-Trimethylbenzene	2.570	2.634	-2.5	142	0.00	6.81
99		Pentachloroethane	0.426	0.434	-1.9	137	0.00	6.74
100		sec-Butylbenzene	3.388	3.419	-0.9	139	0.00	6.89
101		4-Isopropyltoluene	2.906	2.911	-0.2	137	0.00	7.01
102		1,3-Dichlorobenzene	1.565	1.551	0.9	137	0.00	7.04
103		1,2,3-Trimethylbenzene	2.553	2.548	0.2	139	0.00	7.15
104		1,4-Dichlorobenzene	1.584	1.548	2.3	139	0.00	7.11
105		n-Butylbenzene	1.305	1.362	-4.4	142	0.00	7.34
106		Benzyl Chloride	0.363	0.312	14.0	118	0.00	7.30
107		1,2-Dichlorobenzene	1.393	1.362	2.2	136	0.00	7.43
108		1,2-Dibromo-3-Chloropropa	0.161	0.159	1.2	138	0.00	8.01
109		Hexachlorobutadiene	0.323	0.304	5.9	125	0.00	8.52
110		1,2,4-Trichlorobenzene	0.773	0.631	18.4	113	0.00	8.51
111		Naphthalene	1.981	1.440	27.3#	103	0.00	8.72
112		1,2,3-Trichlorobenzene	0.614	0.467	23.9#	104	0.00	8.84

(#) = Out of Range SPCC's out = 0 CCC's out = 0
1A50661.D V1A_11-15-2023.M Tue Dec 26 08:19:11 2023

Continuing Calibration Summary

Job Number: FC12031
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample: V1A2028-ECC1985
Lab FileID: 1A51688.D

Evaluate Continuing Calibration Report

Data File : X:\Orlando VOA\celin...028\V1A2028\1A51688.d Vial: 29
Acq On : 26 Dec 2023 7:02 pm Operator: lianatr
Sample : ECC1985-5 Inst : MSVOA17
Misc : MS55614,V1A2028,,,,, Multiplr: 1.00
MS Integration Params: big.p

Method : X:\Orlando VOA\c...V1A_11-15-2023.M (RTE Integrator)
Title : SW-846 Method 5035A/8260B
Last Update : Wed Nov 15 13:56:01 2023
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 50% Max. Rel. Area : 200%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1 I	Fluorobenzene	1.000	1.000	0.0	138	0.00	3.40
2	Dichlorodifluoromethane	0.191	0.212	-11.0	159	0.00	1.02
3	Chloromethane	0.286	0.251	12.2	125	0.00	1.13
4	1,3-butadiene	0.359	0.304	15.3	121	0.00	1.19
5	Vinyl Chloride	0.286	0.267	6.6	130	0.00	1.17
6	Bromomethane	0.103	0.118	-14.6	163	0.00	1.35
7	Chloroethane	0.182	0.229	-25.8	175	0.00	1.41
8	Trichlorofluoromethane	0.407	0.442	-8.6	151	0.00	1.50
9	Ethyl Ether	0.249	0.225	9.6	125	0.00	1.66
10	Ethanol	0.006	0.005	16.7	131	0.00	1.71
11	1,2-Dichlorotrifluoroetha	0.325	0.284	12.6	123	0.00	1.74
12	1,1-Dichloroethene	0.432	0.379	12.3	122	0.00	1.76
13	Freon 113	0.246	0.214	13.0	119	0.00	1.78
14	Carbon Disulfide	0.800	0.625	21.9	113	0.00	1.78
	----------	True	Calc.	% Drift	----------		
15	Iodomethane	40.000	37.769	5.6	120	0.00	1.83
	----------	AvgRF	CCRF	% Dev	----------		
16	Acrolein	0.077	0.065	15.6	120	0.00	1.91
17	Allyl chloride	0.413	0.412	0.2	145	0.00	2.00
	----------	True	Calc.	% Drift	----------		
18	Methylene Chloride	40.000	37.260	6.9	127	0.00	2.04
	----------	AvgRF	CCRF	% Dev	----------		
19	Acetone	0.124	0.121	2.4	146	0.00	2.05
20	Methyl acetate	0.336	0.346	-3.0	147	0.00	2.13
21	trans-1,2-Dichloroethene	0.434	0.376	13.4	120	0.00	2.13
22	Hexane	0.297	0.269	9.4	130	0.00	2.20
23	Methyl Tert Butyl Ether	0.808	0.733	9.3	128	0.00	2.20
	----------	True	Calc.	% Drift	----------		
24	Acetonitrile	400.000	458.632	-14.7	156	0.00	2.27
	----------	AvgRF	CCRF	% Dev	----------		
25	Tert Butyl Alcohol	0.059	0.052	11.9	124	0.00	2.22
26	Di-isopropyl ether	1.014	0.952	6.1	130	0.00	2.40
27	Chloroprene	1.242	1.135	8.6	129	0.00	2.44
28	1,1-Dichloroethane	0.563	0.513	8.9	127	0.00	2.44
29	Acrylonitrile	0.150	0.142	5.3	131	0.00	2.44
30	ETBE	0.935	0.866	7.4	127	0.00	2.58

Continuing Calibration Summary

Job Number: FC12031 **Sample:** V1A2028-ECC1985
Account: HGLFLMI Hydrogeologic, Inc. **Lab FileID:** 1A51688.D
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

31		Vinyl acetate	0.754	0.599	20.6	111	0.00	2.57
32		cis-1,2-Dichloroethene	0.311	0.277	10.9	126	0.00	2.72
33		2,2-Dichloropropane	0.393	0.325	17.3	116	0.00	2.78
34		Bromochloromethane	0.158	0.133	15.8	117	0.00	2.83
35		Cyclohexane	0.544	0.464	14.7	117	0.00	2.86
36		Chloroform	0.517	0.499	3.5	135	0.00	2.86
37		Ethyl acetate	0.421	0.381	9.5	125	0.00	2.91
38		Tetrahydrofuran	0.159	0.131	17.6	122	0.00	2.95
39	S	Dibromofluoromethane	0.295	0.287	2.7	133	0.00	2.96
40		Carbon Tetrachloride	0.401	0.352	12.2	120	0.00	2.96
41		1,1,1-Trichloroethane	0.433	0.415	4.2	133	0.00	2.99
42		2-Butanone	0.210	0.214	-1.9	143	0.00	3.00
43		1,1-Dichloropropene	0.378	0.339	10.3	126	0.00	3.05
44		tert-Butyl formate	0.258	0.191	26.0	101	0.00	3.10
45		Propionitrile	0.065	0.059	9.2	135	0.00	3.14
46		Methacrylonitrile	0.244	0.254	-4.1	148	0.00	3.17
47		Benzene	1.110	1.032	7.0	130	0.00	3.18
48		TAME	0.784	0.728	7.1	127	0.00	3.25
49	S	1,2-Dichloroethane-d4	0.326	0.356	-9.2	148	0.00	3.24
50		1,2-Dichloroethane	0.415	0.430	-3.6	144	0.00	3.27
51		Isobutyl Alcohol	0.036	0.035	2.8	137	0.00	3.26
52		Tert Amyl Alcohol	0.049	0.042	14.3	121	0.00	3.33
53		Trichloroethene	0.310	0.282	9.0	129	0.00	3.51
54		Methylcyclohexane	0.495	0.423	14.5	117	0.00	3.53
55		Dibromomethane	0.198	0.185	6.6	133	0.00	3.74
56		1,2-Dichloropropane	0.314	0.281	10.5	124	0.00	3.80
57		Bromodichloromethane	0.390	0.358	8.2	127	0.00	3.83
58		Methyl methacrylate	0.362	0.313	13.5	126	0.00	3.92
59		1,4-Dioxane	0.004	0.004	0.0	128	0.00	3.94
			True	Calc.	% Drift			
60		2-Chloroethyl vinyl ether	200.000	155.769	22.1	108	0.00	4.17
			AvgRF	CCRF	% Dev			
61		cis-1,3-Dichloropropene	0.453	0.400	11.7	122	0.00	4.21
62	I	Chlorobenzene-d5	1.000	1.000	0.0	140	0.00	5.35
63	S	Toluene-d8	1.335	1.363	-2.1	143	0.00	4.34
64		Toluene	1.625	1.519	6.5	135	0.00	4.37
65		2-Nitropropane	0.169	0.113	33.1	98	0.00	4.47
66		4-Methyl-2-pentanone	0.590	0.619	-4.9	149	0.00	4.58
67		trans-1,3-Dichloropropene	0.575	0.534	7.1	128	0.00	4.61
68		Tetrachloroethene	0.460	0.422	8.3	128	0.00	4.63
69		Ethyl methacrylate	0.475	0.497	-4.6	148	0.00	4.73
70		1,1,2-Trichloroethane	0.328	0.299	8.8	128	0.00	4.72
71		Dibromochloromethane	0.417	0.367	12.0	119	0.00	4.84
72		1,3-Dichloropropane	0.603	0.558	7.5	129	0.00	4.90
73		1,2-Dibromoethane	0.420	0.364	13.3	123	0.00	5.00
74		3,3-Dimethyl-1-Butanol	0.079	0.067	15.2	124	0.00	5.13
75		2-hexanone	0.572	0.576	-0.7	146	0.00	5.14
76		1-Chlorohexane	0.565	0.458	18.9	122	0.00	5.37
77		Ethylbenzene	1.759	1.725	1.9	139	0.00	5.40
78		Chlorobenzene	1.076	1.005	6.6	133	0.00	5.37
79		1,1,1,2-Tetrachloroethane	0.392	0.365	6.9	127	0.00	5.41
80		m,p-Xylene	1.395	1.319	5.4	134	0.00	5.50
81		o-Xylene	1.484	1.383	6.8	133	0.00	5.81
82		Styrene	1.125	1.028	8.6	129	0.00	5.84
83		Bromoform	0.281	0.246	12.5	119	0.00	5.84
84		Isopropylbenzene	1.728	1.570	9.1	128	0.00	6.04

Continuing Calibration Summary

Job Number: FC12031 **Sample:** V1A2028-ECC1985
Account: HGLFLMI Hydrogeologic, Inc. **Lab FileID:** 1A51688.D
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

85	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	134	0.00	7.10
86	S	4-Bromofluorobenzene	0.834	0.831	0.4	133	0.00	6.23
87		cis-1,4-Dichloro-2-butene	0.298	0.305	-2.3	144	0.00	6.27
88		n-Propylbenzene	3.907	3.822	2.2	133	0.00	6.35
89		Bromobenzene	0.867	0.789	9.0	126	0.00	6.31
90		1,1,2,2-Tetrachloroethane	1.013	0.969	4.3	131	0.00	6.38
91		1,3,5-Trimethylbenzene	2.682	2.582	3.7	130	0.00	6.51
92		2-Chlorotoluene	2.243	2.172	3.2	134	0.00	6.45
93		trans-1,4-Dichloro-2-Bute	0.391	0.358	8.4	126	0.00	6.51
94		1,2,3-Trichloropropane	0.279	0.283	-1.4	135	0.00	6.47
95		Cyclohexanone	0.053	0.046	13.2	131	0.00	6.48
96		4-Chlorotoluene	2.314	2.276	1.6	134	0.00	6.58
97		tert-Butylbenzene	1.516	1.514	0.1	136	0.00	6.75
98		1,2,4-Trimethylbenzene	2.570	2.480	3.5	130	0.00	6.80
99		Pentachloroethane	0.426	0.413	3.1	127	0.00	6.75
100		sec-Butylbenzene	3.388	3.198	5.6	127	0.00	6.89
101		4-Isopropyltoluene	2.906	2.711	6.7	124	0.00	7.01
102		1,3-Dichlorobenzene	1.565	1.474	5.8	127	0.00	7.04
103		1,2,3-Trimethylbenzene	2.553	2.438	4.5	129	0.00	7.15
104		1,4-Dichlorobenzene	1.584	1.490	5.9	130	0.00	7.11
105		n-Butylbenzene	1.305	1.263	3.2	128	0.00	7.34
106		Benzyl Chloride	0.363	0.246	32.2	91	0.00	7.30
107		1,2-Dichlorobenzene	1.393	1.350	3.1	132	0.00	7.43
108		1,2-Dibromo-3-Chloropropa	0.161	0.145	9.9	122	0.00	8.01
109		Hexachlorobutadiene	0.323	0.272	15.8	109	0.00	8.52
110		1,2,4-Trichlorobenzene	0.773	0.598	22.6	104	0.00	8.50
111		Naphthalene	1.981	1.323	33.2	92	0.00	8.72
112		1,2,3-Trichlorobenzene	0.614	0.433	29.5	94	0.00	8.84

(#) = Out of Range SPCC's out = 0 CCC's out = 0
1A50661.D V1A_11-15-2023.M Wed Dec 27 00:27:50 2023

Run Sequence Report

Job Number: FC12031
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Run ID: V1A1985 **Method:** SW846 8260D **Instrument ID:** GCMS1A

Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
V1A1985-BFB	1A50649.D	11/15/23 05:14	n/a	BFB Tune
V1A1985-IC1985	1A50651.D	11/15/23 06:16	n/a	Initial cal 1
V1A1985-IC1985	1A50653.D	11/15/23 06:48	n/a	Initial cal 8
V1A1985-IC1985	1A50655.D	11/15/23 07:25	n/a	Initial cal 2
V1A1985-IC1985	1A50657.D	11/15/23 07:57	n/a	Initial cal 3
V1A1985-IC1985	1A50659.D	11/15/23 08:29	n/a	Initial cal 4
V1A1985-ICC1985	1A50661.D	11/15/23 09:01	n/a	Initial cal 5
V1A1985-IC1985	1A50663.D	11/15/23 09:33	n/a	Initial cal 6
V1A1985-IC1985	1A50665.D	11/15/23 10:05	n/a	Initial cal 7
V1A1985-ICV1985	1A50669.D	11/15/23 13:32	n/a	Initial cal verification 5

Run Sequence Report

Job Number: FC12031
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Run ID: V1A2022 **Method:** SW846 8260D **Instrument ID:** GCMS1A

Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
V1A2022-BFB	1A51510.D	12/19/23 07:04	n/a	BFB Tune
V1A2022-CC1985	1A51511.D	12/19/23 07:28	n/a	Continuing cal 5
V1A2022-BS	1A51512.D	12/19/23 07:52	n/a	Blank Spike
V1A2022-MB	1A51514.D	12/19/23 08:41	n/a	Method Blank
FC11791-1	1A51516.D	12/19/23 09:30	n/a	(used for QC only; not part of job FC12031)
ZZZZZZ	1A51517.D	12/19/23 09:54	n/a	(unrelated sample)
FC12031-9	1A51518.D	12/19/23 10:19	n/a	CRHE-TB-20231215-01
ZZZZZZ	1A51519.D	12/19/23 10:44	n/a	(unrelated sample)
ZZZZZZ	1A51520.D	12/19/23 11:08	n/a	(unrelated sample)
ZZZZZZ	1A51521.D	12/19/23 11:32	n/a	(unrelated sample)
ZZZZZZ	1A51522.D	12/19/23 11:56	n/a	(unrelated sample)
ZZZZZZ	1A51523.D	12/19/23 12:21	n/a	(unrelated sample)
ZZZZZZ	1A51524.D	12/19/23 12:45	n/a	(unrelated sample)
ZZZZZZ	1A51525.D	12/19/23 13:09	n/a	(unrelated sample)
ZZZZZZ	1A51526.D	12/19/23 13:34	n/a	(unrelated sample)
ZZZZZZ	1A51527.D	12/19/23 13:58	n/a	(unrelated sample)
ZZZZZZ	1A51528.D	12/19/23 14:23	n/a	(unrelated sample)
ZZZZZZ	1A51529.D	12/19/23 14:47	n/a	(unrelated sample)
ZZZZZZ	1A51530.D	12/19/23 15:11	n/a	(unrelated sample)
FC12031-2	1A51531.D	12/19/23 15:36	n/a	CRHE-MW0058-045.0-20231215
FC12031-3	1A51532.D	12/19/23 16:00	n/a	CRHE-MW0029-045.0-20231215
FC12031-5	1A51533.D	12/19/23 16:24	n/a	CRHE-MW0031-045.0-20231215
FC12031-6	1A51534.D	12/19/23 16:48	n/a	CRHE-MW0047-023.0-20231215
FC12031-7	1A51535.D	12/19/23 17:13	n/a	CRHE-MW0048-030.5-20231215
FC11791-1MS	1A51536.D	12/19/23 17:37	n/a	Matrix Spike
FC11791-1MSD	1A51537.D	12/19/23 18:02	n/a	Matrix Spike Duplicate
V1A2022-ECC1985	1A51538.D	12/19/23 18:26	n/a	Ending cal 5

Run Sequence Report

Job Number: FC12031
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Run ID: V1A2028 **Method:** SW846 8260D **Instrument ID:** GCMS1A

Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
V1A2028-BFB	1A51660.D	12/26/23 07:39	n/a	BFB Tune
V1A2028-CC1985	1A51661.D	12/26/23 08:03	n/a	Continuing cal 5
V1A2028-BS	1A51662.D	12/26/23 08:28	n/a	Blank Spike
V1A2028-MB	1A51664.D	12/26/23 09:16	n/a	Method Blank
ZZZZZZ	1A51666.D	12/26/23 10:05	n/a	(unrelated sample)
ZZZZZZ	1A51667.D	12/26/23 10:30	n/a	(unrelated sample)
ZZZZZZ	1A51668.D	12/26/23 10:54	n/a	(unrelated sample)
ZZZZZZ	1A51669.D	12/26/23 11:18	n/a	(unrelated sample)
ZZZZZZ	1A51670.D	12/26/23 11:43	n/a	(unrelated sample)
ZZZZZZ	1A51671.D	12/26/23 12:07	n/a	(unrelated sample)
ZZZZZZ	1A51672.D	12/26/23 12:31	n/a	(unrelated sample)
ZZZZZZ	1A51673.D	12/26/23 12:56	n/a	(unrelated sample)
ZZZZZZ	1A51674.D	12/26/23 13:20	n/a	(unrelated sample)
ZZZZZZ	1A51675.D	12/26/23 13:45	n/a	(unrelated sample)
ZZZZZZ	1A51676.D	12/26/23 14:09	n/a	(unrelated sample)
ZZZZZZ	1A51677.D	12/26/23 14:33	n/a	(unrelated sample)
FC12194-13	1A51678.D	12/26/23 14:58	n/a	(used for QC only; not part of job FC12031)
ZZZZZZ	1A51679.D	12/26/23 15:22	n/a	(unrelated sample)
ZZZZZZ	1A51680.D	12/26/23 15:47	n/a	(unrelated sample)
FC12031-2	1A51681.D	12/26/23 16:11	n/a	CRHE-MW0058-045.0-20231215
ZZZZZZ	1A51682.D	12/26/23 16:35	n/a	(unrelated sample)
ZZZZZZ	1A51683.D	12/26/23 17:00	n/a	(unrelated sample)
ZZZZZZ	1A51684.D	12/26/23 17:24	n/a	(unrelated sample)
ZZZZZZ	1A51685.D	12/26/23 17:48	n/a	(unrelated sample)
FC12194-13MS	1A51686.D	12/26/23 18:13	n/a	Matrix Spike
FC12194-13MSD	1A51687.D	12/26/23 18:37	n/a	Matrix Spike Duplicate
V1A2028-ECC1985	1A51688.D	12/26/23 19:02	n/a	Ending cal 5

MS Volatiles

Raw Data

Quantitation Report (QT Reviewed)

Data Path : D:\V1A2022\
Data File : 1A51531.d
Acq On : 19 Dec 2023 3:36 pm
Operator : jeniferw
Sample : FC12031-2
Misc : MS55575,V1A2022,,,,,
ALS Vial : 22 Sample Multiplier: 1

Quant Time: Dec 20 13:46:40 2023
Quant Method : X:\Orlando VOA\celinec\December 2023\12-20-2023\V1A2022\method\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration

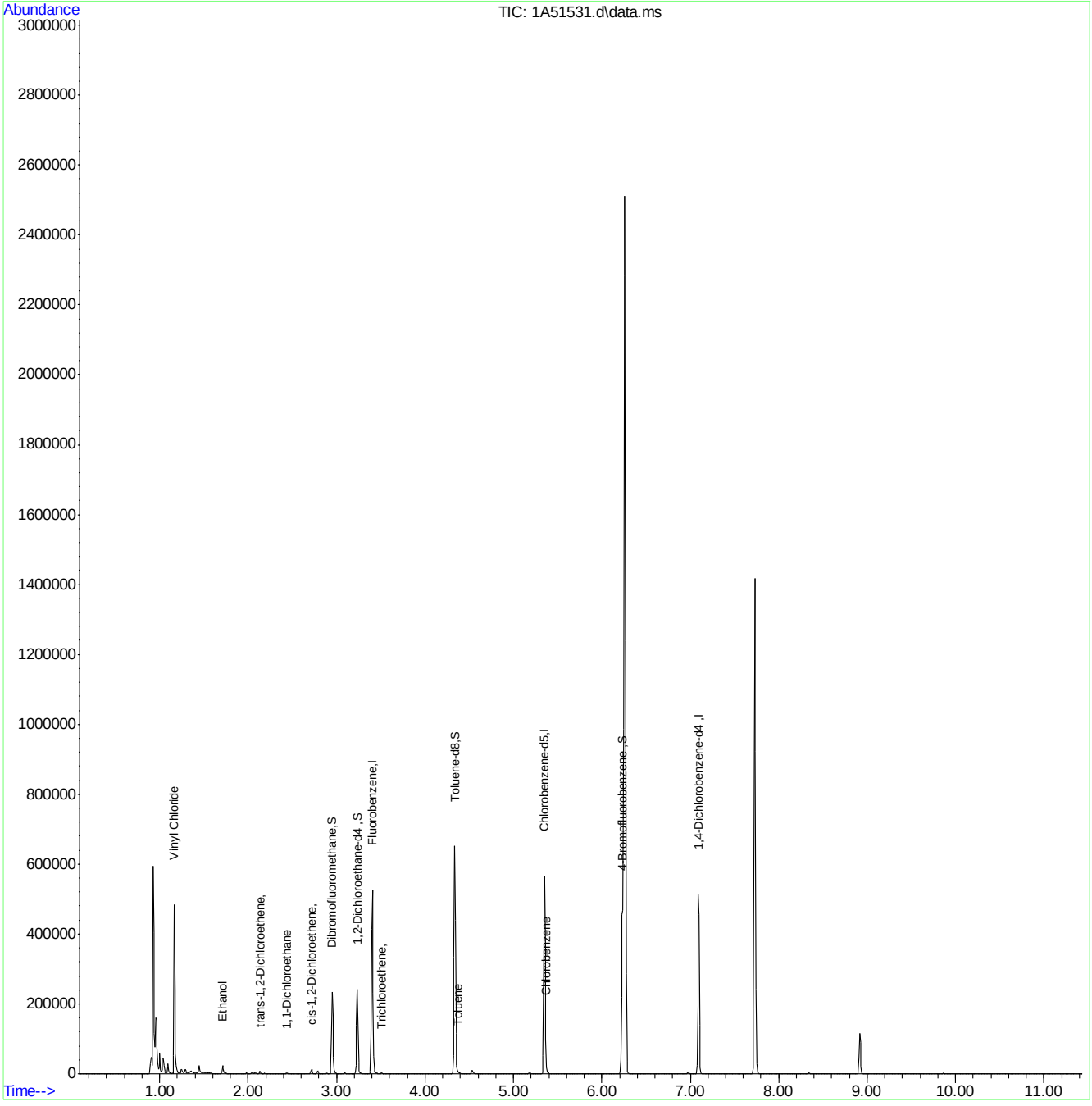
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	3.405	96	287563	50.00	ug/L	0.00
62) Chlorobenzene-d5	5.352	117	203743	50.00	ug/L	0.00
85) 1,4-Dichlorobenzene-d4	7.091	152	101449	50.00	ug/L	0.00
System Monitoring Compounds						
39) Dibromofluoromethane	2.951	113	82347	48.58	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 97.16%			
49) 1,2-Dichloroethane-d4	3.235	65	98194	52.34	ug/L	0.00
Spiked Amount 50.000	Range 79 - 125		Recovery = 104.68%			
63) Toluene-d8	4.336	98	278075	51.11	ug/L	0.00
Spiked Amount 50.000	Range 85 - 112		Recovery = 102.22%			
86) 4-Bromofluorobenzene	6.229	174	86339	51.00	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 102.00%			
Target Compounds						Qvalue
5) Vinyl Chloride	1.165	62	239015	145.42	ug/L	100
10) Ethanol	1.711	45	2490	76.06	ug/L	88
21) trans-1,2-Dichloroethene	2.135	61	2093	0.84	ug/L	90
28) 1,1-Dichloroethane	2.443	63	1533	0.47	ug/L	85
32) cis-1,2-Dichloroethene	2.720	96	3437	1.92	ug/L	95
53) Trichloroethene	3.512	95	464	0.26	ug/L	82
64) Toluene	4.367	91	1403	0.21	ug/L	87
78) Chlorobenzene	5.367	112	2980	0.68	ug/L	90

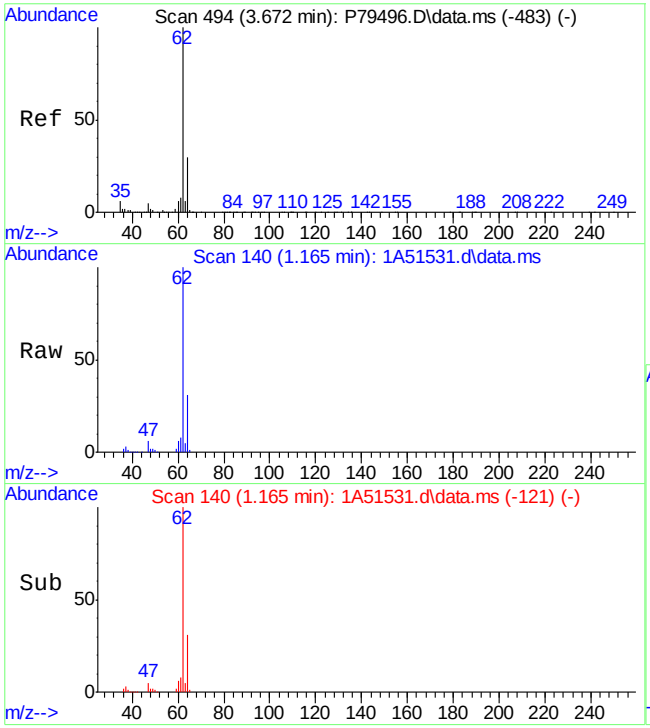
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : D:\V1A2022\
Data File : 1A51531.d
Acq On : 19 Dec 2023 3:36 pm
Operator : jeniferw
Sample : FC12031-2
Misc : MS55575,V1A2022,,,,,
ALS Vial : 22 Sample Multiplier: 1

Quant Time: Dec 20 13:46:40 2023
Quant Method : X:\Orlando VOA\celinec\December 2023\12-20-2023\V1A2022\method\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration

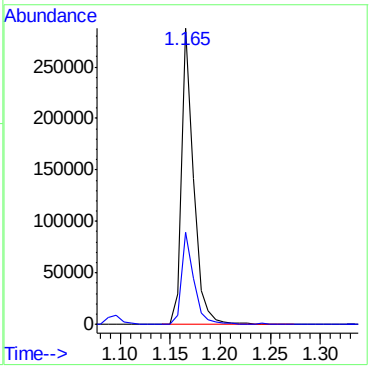


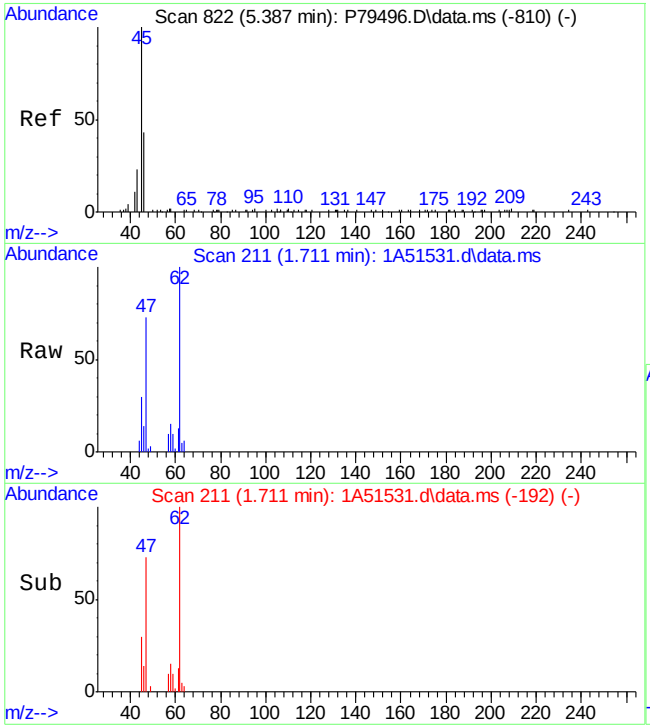


#5
Vinyl Chloride
Concen: 145.42 ug/L
RT: 1.165 min Scan# 140
Delta R.T. -0.000 min
Lab File: 1A51531.d
Acq: 19 Dec 2023 3:36 pm

Tgt Ion: 62 Resp: 239015

Ion	Ratio	Lower	Upper
62	100		
64	30.9	0.7	60.7

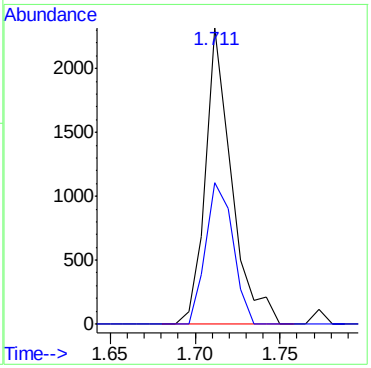


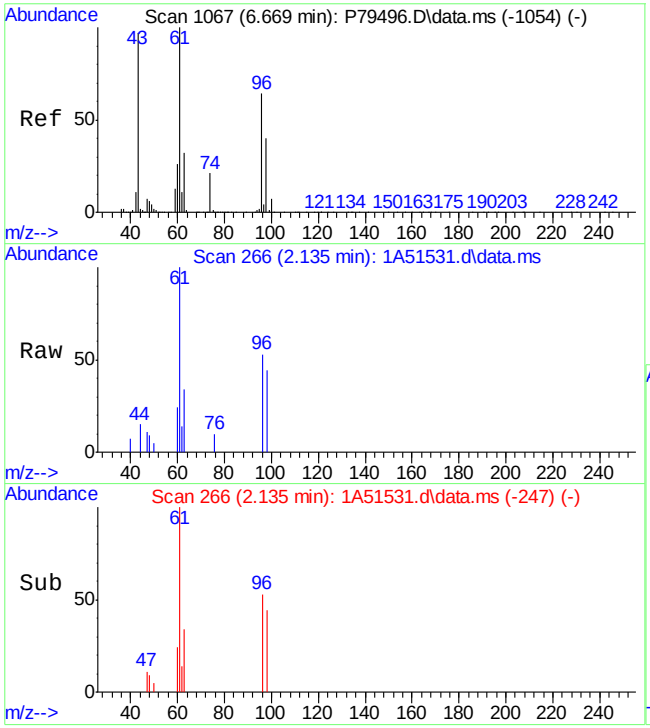


#10
Ethanol
Concen: 76.06 ug/L
RT: 1.711 min Scan# 211
Delta R.T. -0.008 min
Lab File: 1A51531.d
Acq: 19 Dec 2023 3:36 pm

Tgt Ion: 45 Resp: 2490

Ion	Ratio	Lower	Upper
45	100		
46	47.7	20.3	60.3

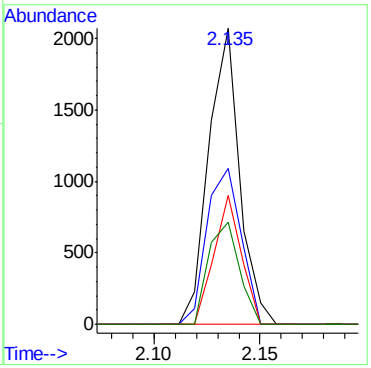


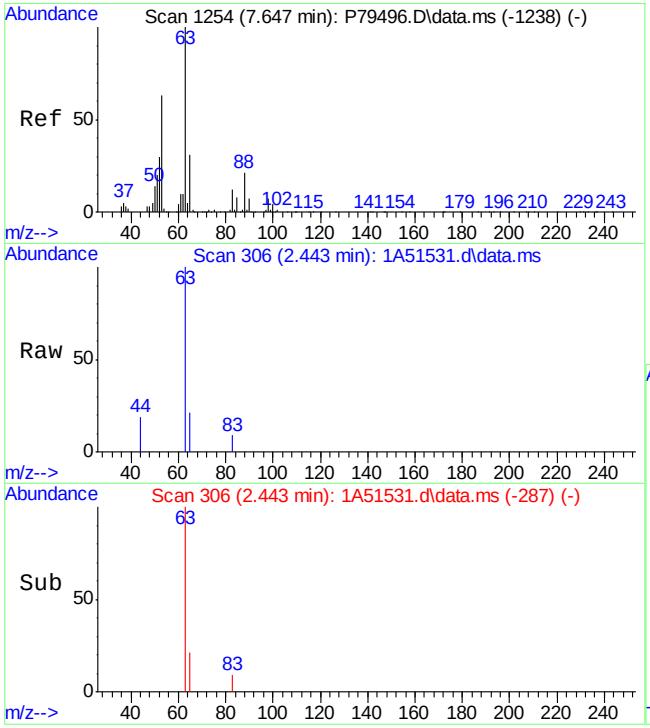


#21
trans-1,2-Dichloroethene
Concen: 0.84 ug/L
RT: 2.135 min Scan# 266
Delta R.T. -0.000 min
Lab File: 1A51531.d
Acq: 19 Dec 2023 3:36 pm

Tgt Ion: 61 Resp: 2093

Ion	Ratio	Lower	Upper
61	100		
96	52.5	37.3	97.3
98	43.6	16.1	76.1
63	34.4	3.3	63.3

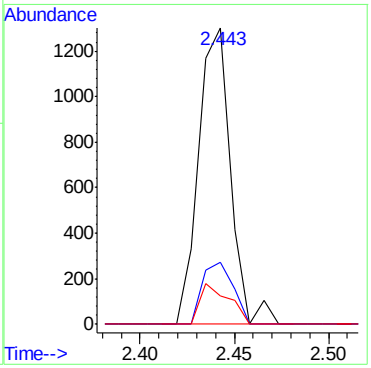


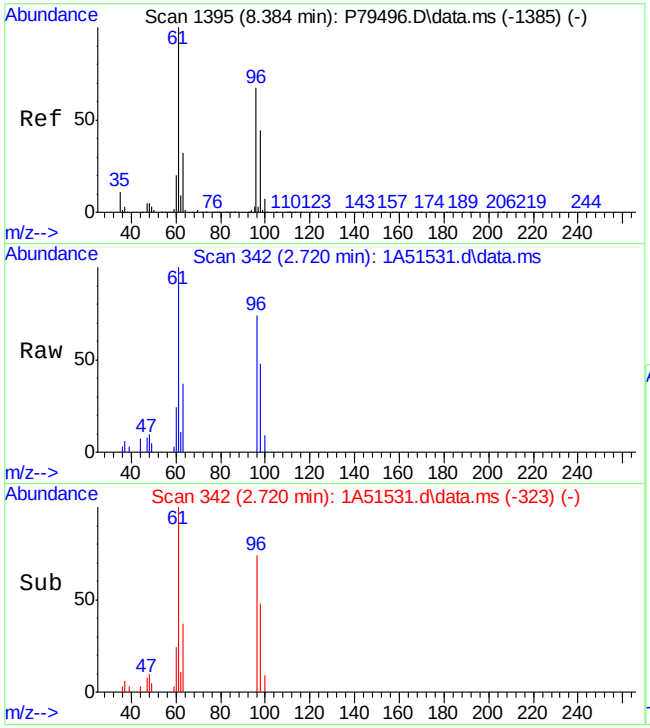


#28
1,1-Dichloroethane
Concen: 0.47 ug/L
RT: 2.443 min Scan# 306
Delta R.T. -0.000 min
Lab File: 1A51531.d
Acq: 19 Dec 2023 3:36 pm

Tgt Ion: 63 Resp: 1533

Ion	Ratio	Lower	Upper
63	100		
65	20.8	0.0	59.8
83	9.4	0.0	43.5

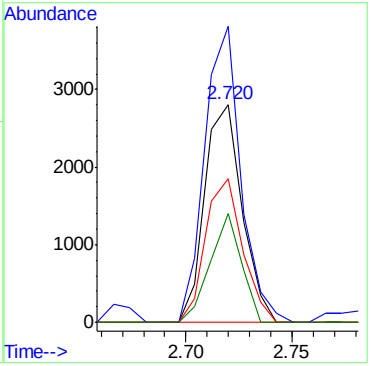


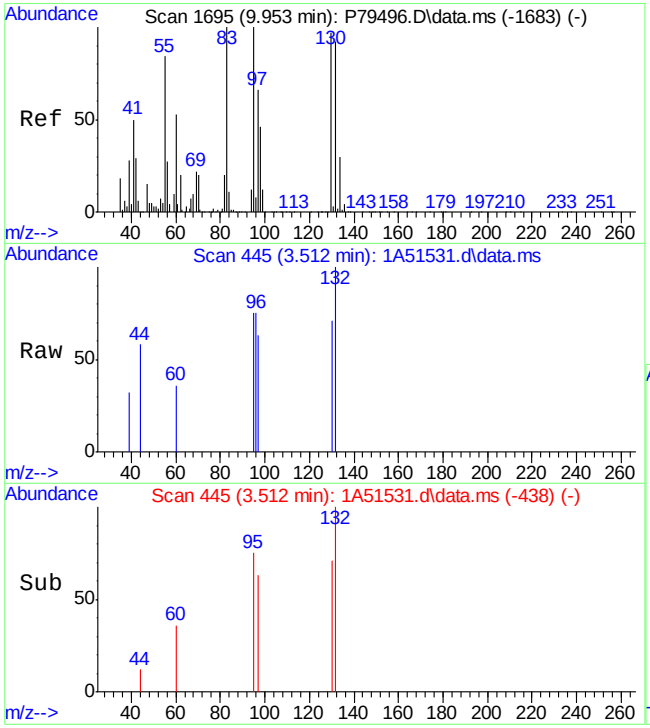


#32
cis-1,2-Dichloroethene
Concen: 1.92 ug/L
RT: 2.720 min Scan# 342
Delta R.T. -0.000 min
Lab File: 1A51531.d
Acq: 19 Dec 2023 3:36 pm

Tgt Ion: 96 Resp: 3437

Ion	Ratio	Lower	Upper
96	100		
61	135.8	101.3	161.3
98	65.8	34.7	94.7
63	49.9	12.0	72.0

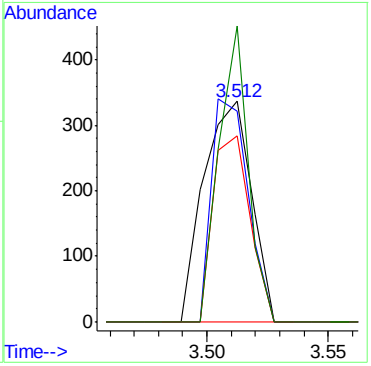


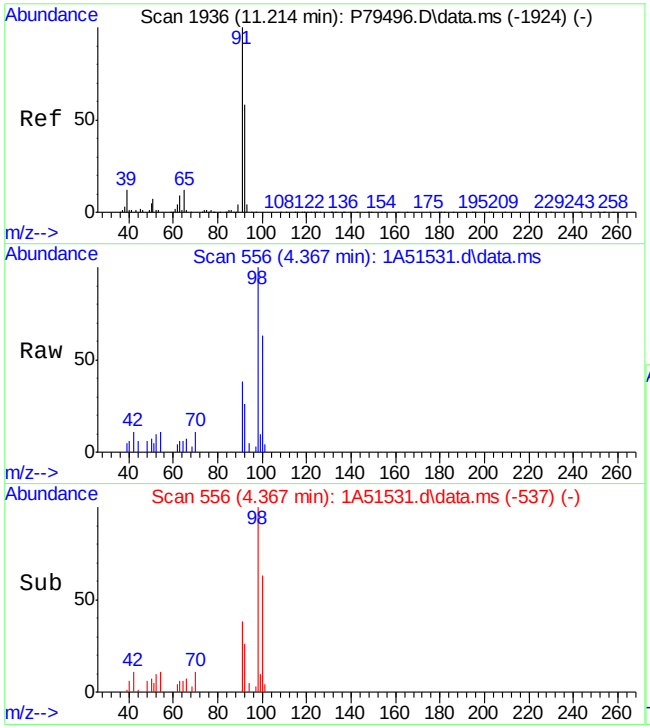


#53
Trichloroethene
Concen: 0.26 ug/L
RT: 3.512 min Scan# 445
Delta R.T. 0.007 min
Lab File: 1A51531.d
Acq: 19 Dec 2023 3:36 pm

Tgt Ion: 95 Resp: 464

Ion	Ratio	Lower	Upper
95	100		
130	95.5	76.8	136.8
97	84.3	34.1	94.1
132	134.1	81.1	141.1

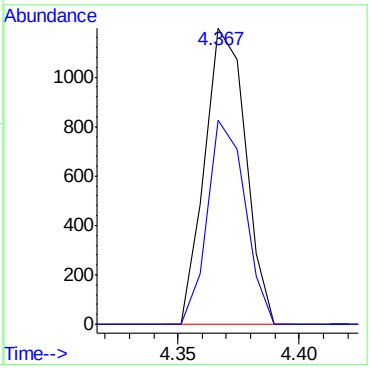


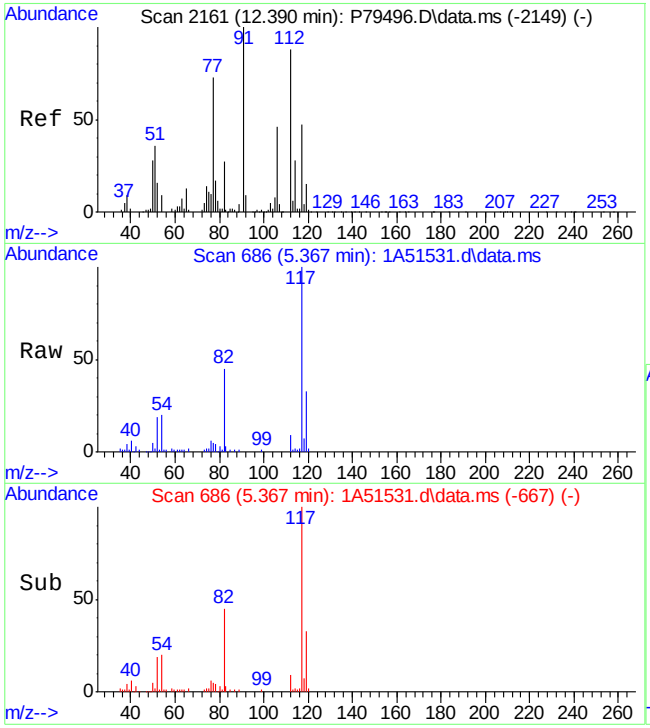


#64
Toluene
Concen: 0.21 ug/L
RT: 4.367 min Scan# 556
Delta R.T. -0.000 min
Lab File: 1A51531.d
Acq: 19 Dec 2023 3:36 pm

Tgt Ion: 91 Resp: 1403

Ion	Ratio	Lower	Upper
91	100		
92	69.0	29.5	89.5

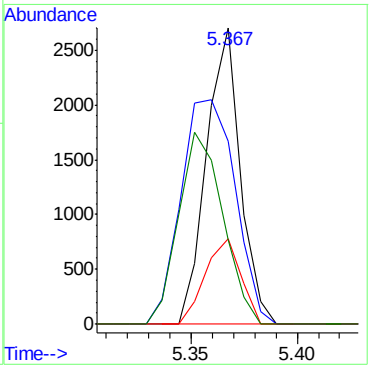




#78
Chlorobenzene
Concen: 0.68 ug/L
RT: 5.367 min Scan# 686
Delta R.T. -0.000 min
Lab File: 1A51531.d
Acq: 19 Dec 2023 3:36 pm

Tgt Ion:112 Resp: 2980

Ion	Ratio	Lower	Upper
112	100		
77	61.7	24.5	84.5
114	28.8	1.1	61.1
51	28.4	0.0	50.5



Quantitation Report (QT Reviewed)

Data Path : X:\Orlando VOA\celinec\December 2023\12-27-2023\V1A2028\V1A2028\
Data File : 1A51681.d
Acq On : 26 Dec 2023 4:11 pm
Operator : lianatr
Sample : FC12031-2 5X Inst : MSVOA17
Misc : MS55614,V1A2028,,,,,5
ALS Vial : 22 Sample Multiplier: 1

Quant Time: Dec 27 00:36:41 2023
Quant Method : X:\Orlando VOA\celinec\December 2023\12-27-2023\V1A2028\METHOD\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration

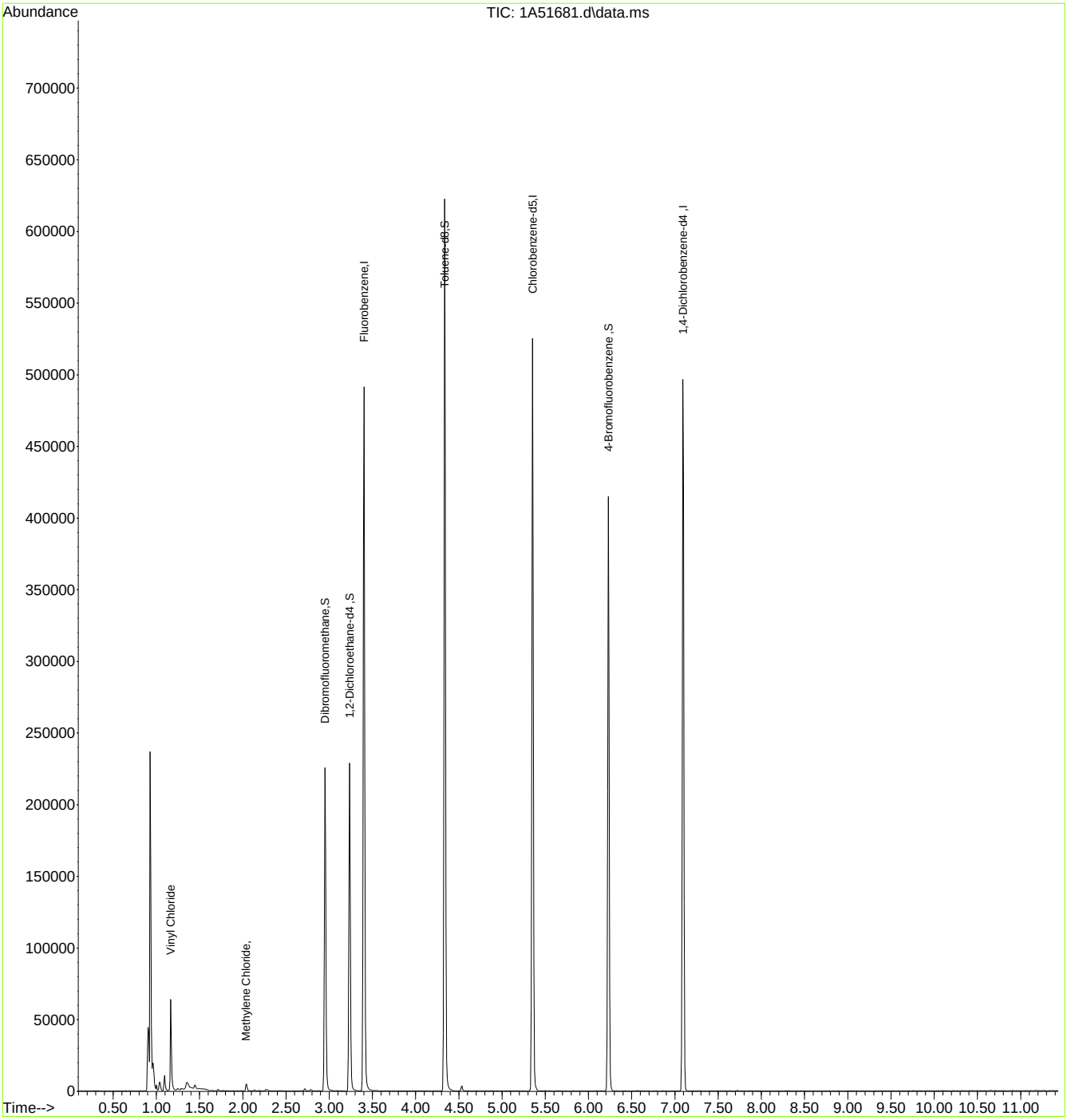
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	3.405	96	267411	50.00	ug/L	0.00
62) Chlorobenzene-d5	5.352	117	190260	50.00	ug/L	0.00
85) 1,4-Dichlorobenzene-d4	7.091	152	96038	50.00	ug/L	0.00
System Monitoring Compounds						
39) Dibromofluoromethane	2.951	113	79379	50.36	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 100.72%			
49) 1,2-Dichloroethane-d4	3.236	65	94373	54.09	ug/L	0.00
Spiked Amount 50.000	Range 79 - 125		Recovery = 108.18%			
63) Toluene-d8	4.336	98	255586	50.31	ug/L	0.00
Spiked Amount 50.000	Range 85 - 112		Recovery = 100.62%			
86) 4-Bromofluorobenzene	6.229	174	79322	49.50	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 99.00%			
Target Compounds						Qvalue
5) Vinyl Chloride	1.165	62	32511	21.2714	ug/L	98
18) Methylene Chloride	2.035	49	1922	0.8519	ug/L	87

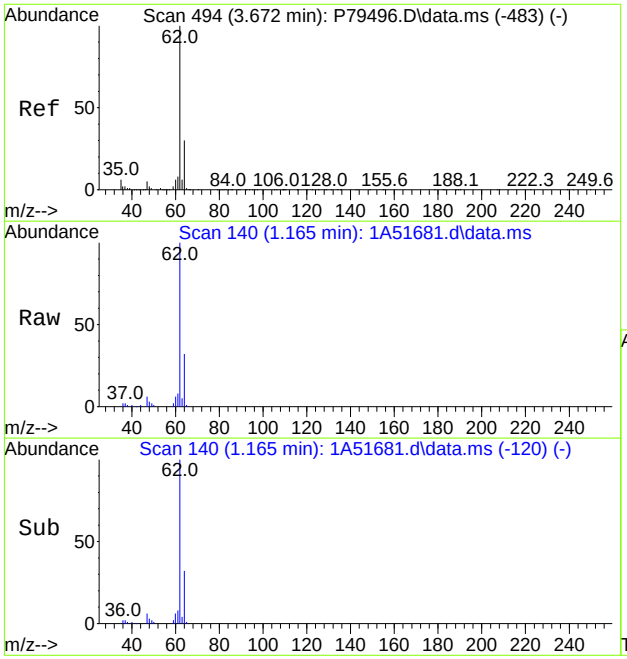
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : X:\Orlando VOA\celinec\December 2023\12-27-2023\V1A2028\V1A2028\
Data File : 1A51681.d
Acq On : 26 Dec 2023 4:11 pm
Operator : lianatr
Sample : FC12031-2 5X Inst : MSVOA17
Misc : MS55614,V1A2028,,,,,5
ALS Vial : 22 Sample Multiplier: 1

Quant Time: Dec 27 00:36:41 2023
Quant Method : X:\Orlando VOA\celinec\December 2023\12-27-2023\V1A2028\METHOD\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration

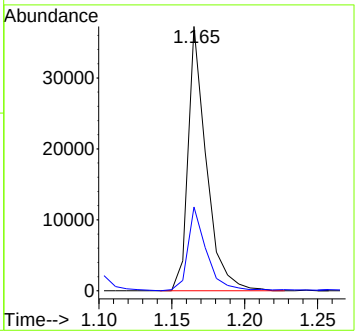


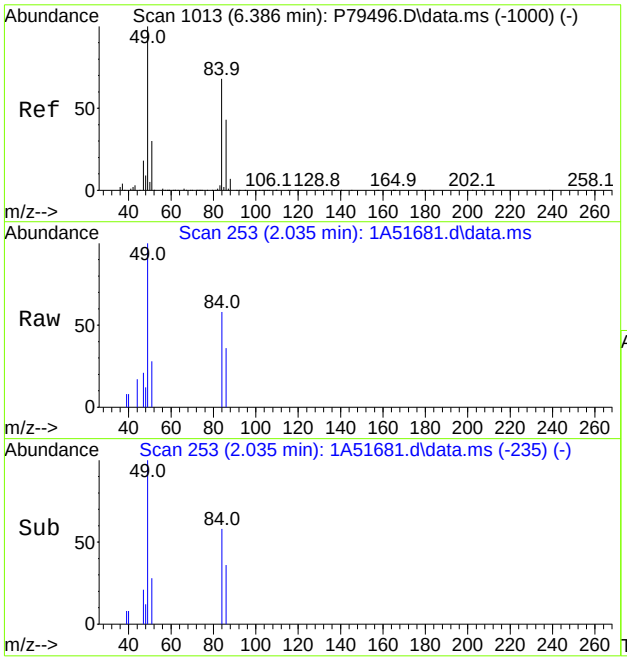


#5
Vinyl Chloride
Concen: 21.2714 ug/L
RT: 1.165 min Scan# 140
Delta R.T. 0.000 min
Lab File: 1A51681.d
Acq: 26 Dec 2023 4:11 pm

Tgt Ion: 62 Resp: 32511

Ion	Ratio	Lower	Upper
62	100		
64	31.7	0.7	60.7

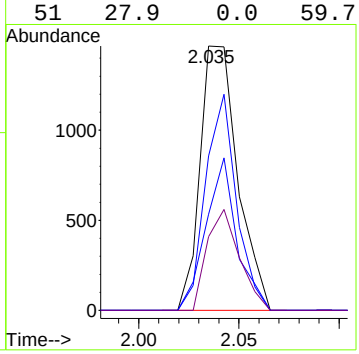




#18
Methylene Chloride
Concen: 0.8519 ug/L
RT: 2.035 min Scan# 253
Delta R.T. -0.008 min
Lab File: 1A51681.d
Acq: 26 Dec 2023 4:11 pm

Tgt Ion: 49 Resp: 1922

Ion	Ratio	Lower	Upper
49	100		
84	58.4	41.8	101.8
86	36.4	15.6	75.6
51	27.9	0.0	59.7



Quantitation Report (QT Reviewed)

Data Path : D:\V1A2022\
Data File : 1A51532.d
Acq On : 19 Dec 2023 4:00 pm
Operator : jeniferw
Sample : FC12031-3
Misc : MS55575,V1A2022,,,,,
ALS Vial : 23 Sample Multiplier: 1

Quant Time: Dec 20 13:50:12 2023
Quant Method : X:\Orlando VOA\celinec\December 2023\12-20-2023\V1A2022\method\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration

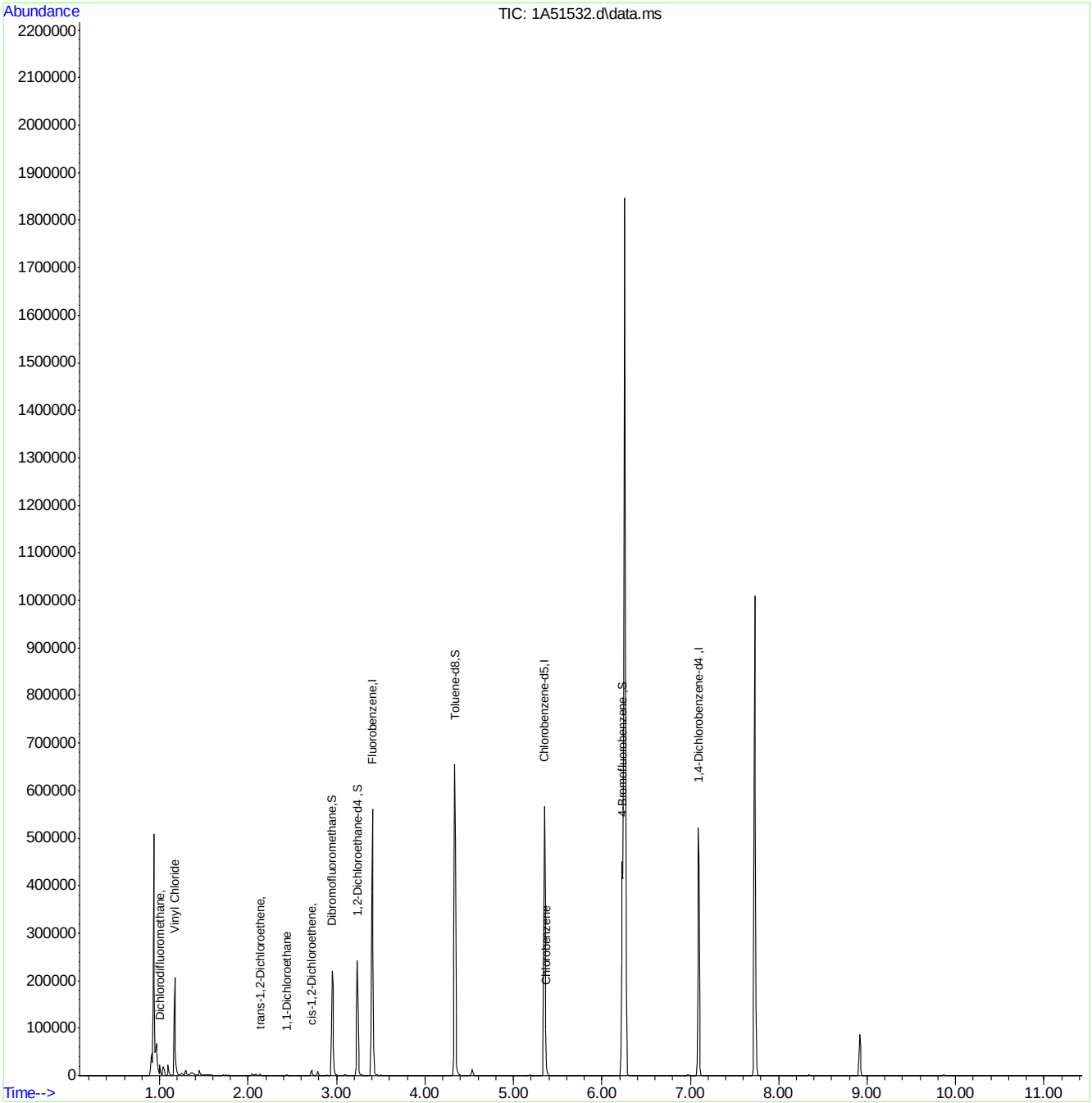
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	3.405	96	294961	50.00	ug/L	0.00
62) Chlorobenzene-d5	5.352	117	205132	50.00	ug/L	0.00
85) 1,4-Dichlorobenzene-d4	7.091	152	101836	50.00	ug/L	0.00
System Monitoring Compounds						
39) Dibromofluoromethane	2.951	113	81758	47.02	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 94.04%			
49) 1,2-Dichloroethane-d4	3.236	65	99183	51.54	ug/L	0.00
Spiked Amount 50.000	Range 79 - 125		Recovery = 103.08%			
63) Toluene-d8	4.336	98	280199	51.15	ug/L	0.00
Spiked Amount 50.000	Range 85 - 112		Recovery = 102.30%			
86) 4-Bromofluorobenzene	6.229	174	86535	50.92	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 101.84%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.004	85	1148	1.02	ug/L	95
5) Vinyl Chloride	1.173	62	120132	71.26	ug/L	100
21) trans-1,2-Dichloroethene	2.135	61	1382	0.54	ug/L	93
28) 1,1-Dichloroethane	2.443	63	1123	0.34	ug/L	99
32) cis-1,2-Dichloroethene	2.720	96	3392	1.85	ug/L	97
78) Chlorobenzene	5.367	112	2261	0.51	ug/L	90

(#) = qualifier out of range (m) = manual integration (+) = signals summed

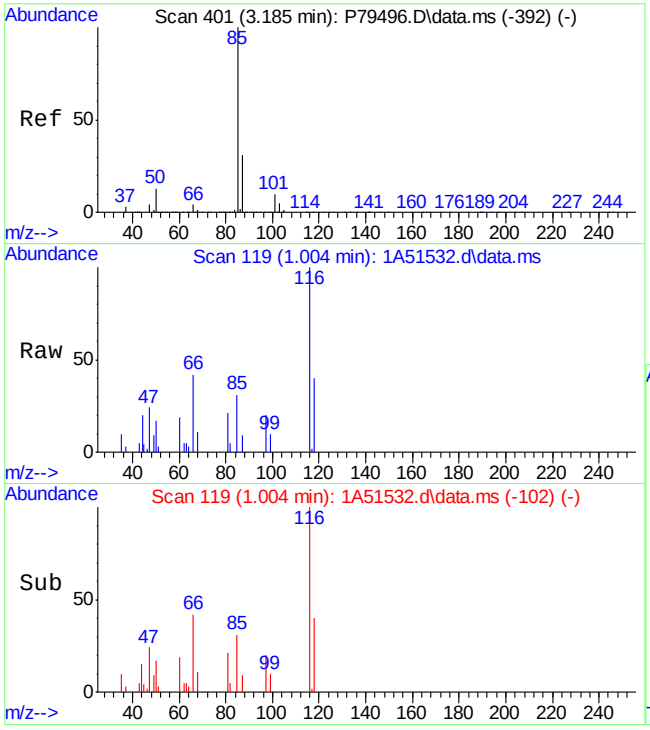
Quantitation Report (QT Reviewed)

Data Path : D:\V1A2022\
Data File : 1A51532.d
Acq On : 19 Dec 2023 4:00 pm
Operator : jeniferw
Sample : FC12031-3
Misc : MS55575,V1A2022,,,,,
ALS Vial : 23 Sample Multiplier: 1

Quant Time: Dec 20 13:50:12 2023
Quant Method : X:\Orlando VOA\celinec\December 2023\12-20-2023\V1A2022\method\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration



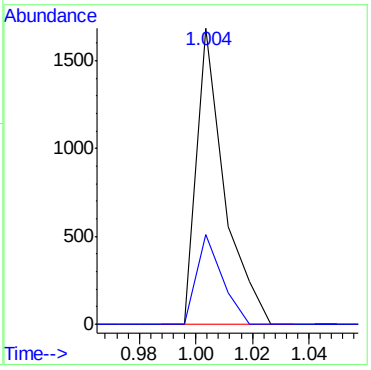
V1A_11-15-2023.M Wed Dec 20 13:57:20 2023 Page: 2

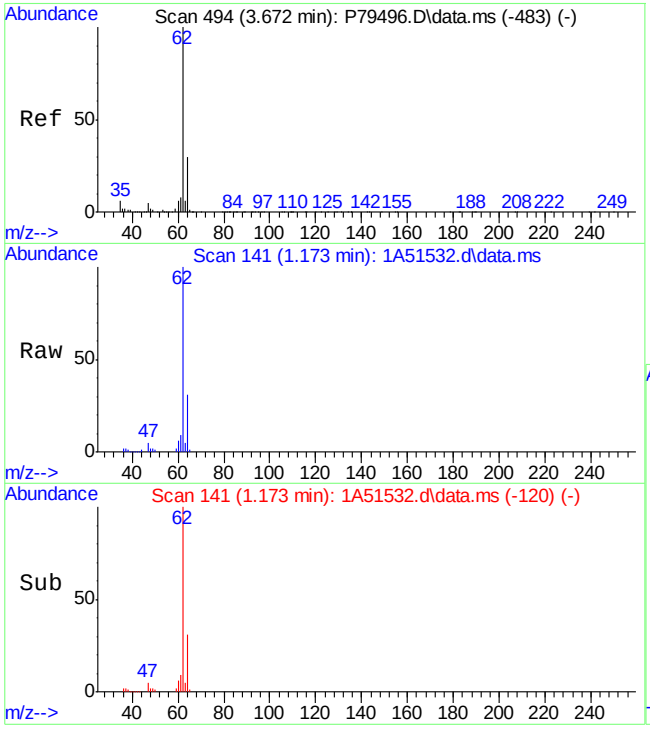


#2
Dichlorodifluoromethane
Concen: 1.02 ug/L
RT: 1.004 min Scan# 119
Delta R.T. -0.015 min
Lab File: 1A51532.d
Acq: 19 Dec 2023 4:00 pm

Tgt Ion: 85 Resp: 1148

Ion	Ratio	Lower	Upper
85	100		
87	30.5	3.4	63.4

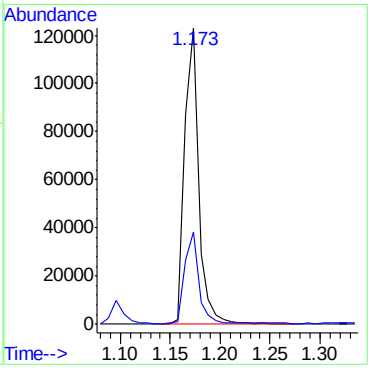


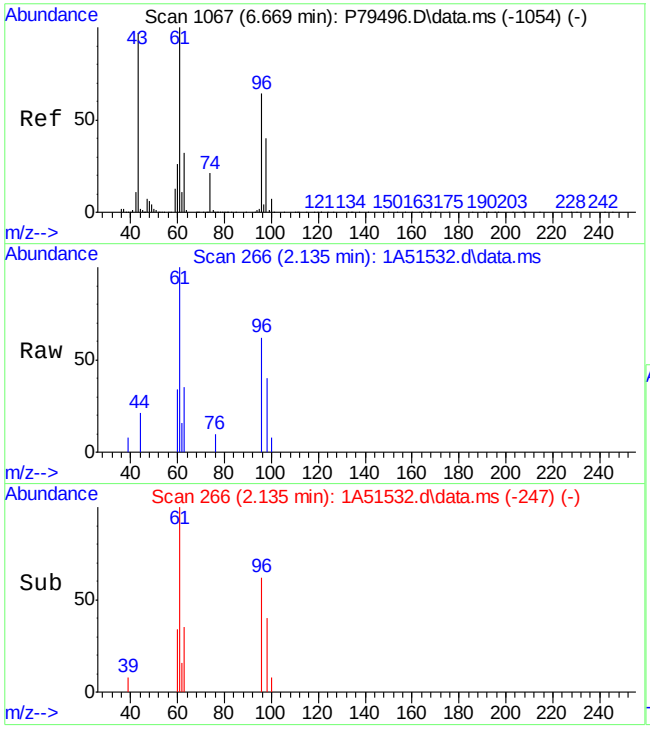


#5
Vinyl Chloride
Concen: 71.26 ug/L
RT: 1.173 min Scan# 141
Delta R.T. 0.008 min
Lab File: 1A51532.d
Acq: 19 Dec 2023 4:00 pm

Tgt Ion: 62 Resp: 120132

Ion	Ratio	Lower	Upper
62	100		
64	30.8	0.7	60.7

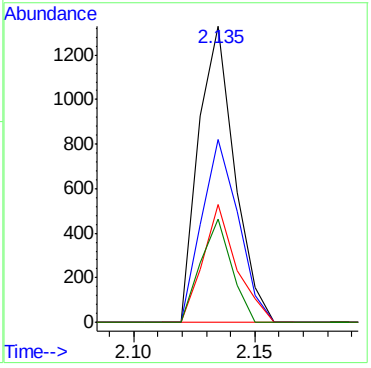


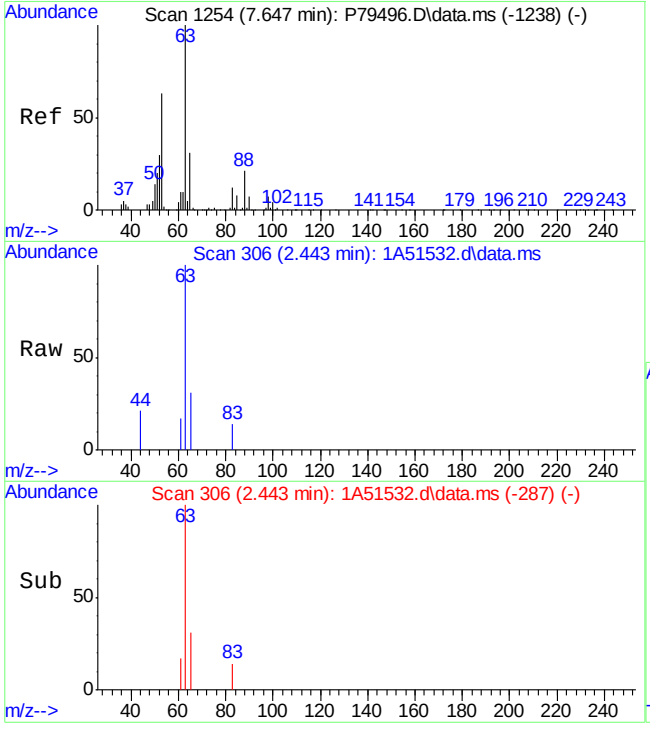


#21
trans-1,2-Dichloroethene
Concen: 0.54 ug/L
RT: 2.135 min Scan# 266
Delta R.T. -0.000 min
Lab File: 1A51532.d
Acq: 19 Dec 2023 4:00 pm

Tgt Ion: 61 Resp: 1382

Ion	Ratio	Lower	Upper
61	100		
96	61.6	37.3	97.3
98	39.7	16.1	76.1
63	34.8	3.3	63.3

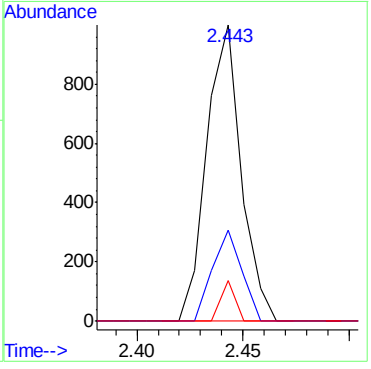


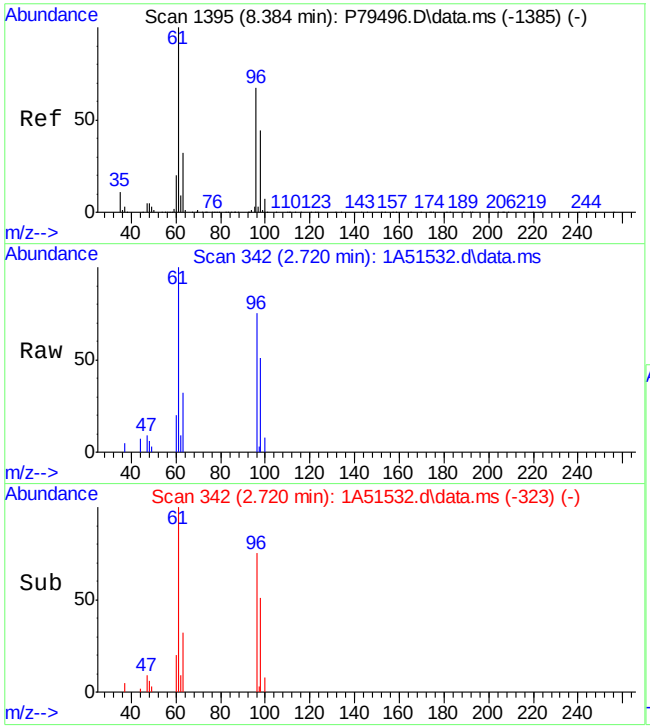


#28
1,1-Dichloroethane
Concen: 0.34 ug/L
RT: 2.443 min Scan# 306
Delta R.T. -0.000 min
Lab File: 1A51532.d
Acq: 19 Dec 2023 4:00 pm

Tgt Ion: 63 Resp: 1123

Ion	Ratio	Lower	Upper
63	100		
65	30.8	0.0	59.8
83	13.6	0.0	43.5

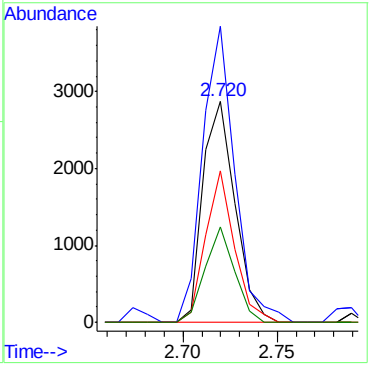


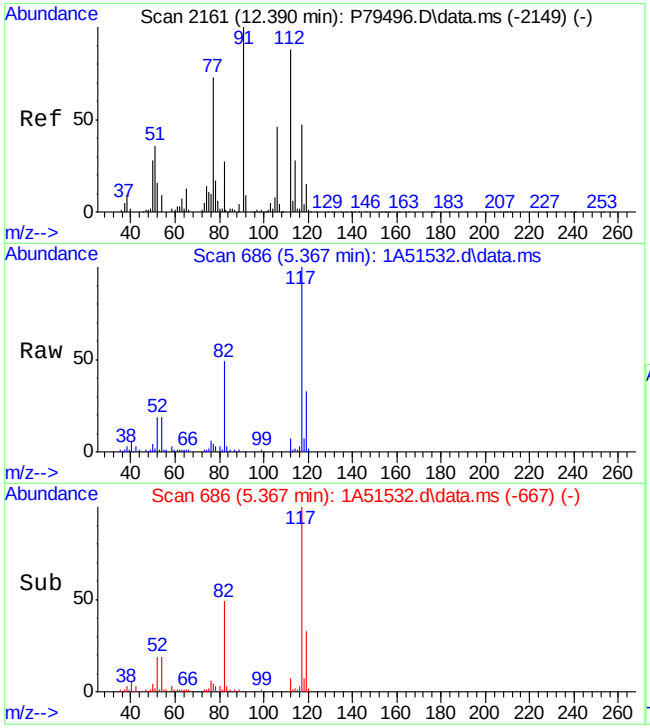


#32
cis-1,2-Dichloroethene
Concen: 1.85 ug/L
RT: 2.720 min Scan# 342
Delta R.T. -0.000 min
Lab File: 1A51532.d
Acq: 19 Dec 2023 4:00 pm

Tgt Ion: 96 Resp: 3392

Ion	Ratio	Lower	Upper
96	100		
61	134.0	101.3	161.3
98	68.5	34.7	94.7
63	43.3	12.0	72.0

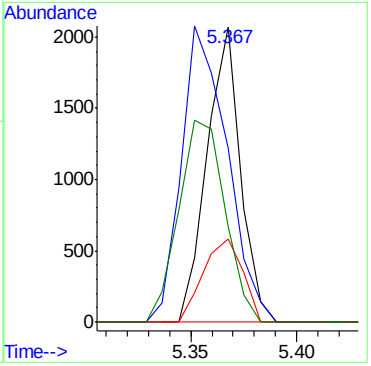




#78
Chlorobenzene
Concen: 0.51 ug/L
RT: 5.367 min Scan# 686
Delta R.T. -0.000 min
Lab File: 1A51532.d
Acq: 19 Dec 2023 4:00 pm

Tgt Ion:112 Resp: 2261

Ion	Ratio	Lower	Upper
112	100		
77	58.8	24.5	84.5
114	28.0	1.1	61.1
51	32.4	0.0	50.5



Quantitation Report (QT Reviewed)

Data Path : D:\V1A2022\
Data File : 1A51533.d
Acq On : 19 Dec 2023 4:24 pm
Operator : jeniferw
Sample : FC12031-5 2.5X
Misc : MS55575,V1A2022,,,,,2.5
ALS Vial : 24 Sample Multiplier: 1

Quant Time: Dec 20 13:52:18 2023
Quant Method : X:\Orlando VOA\celinec\December 2023\12-20-2023\V1A2022\method\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration

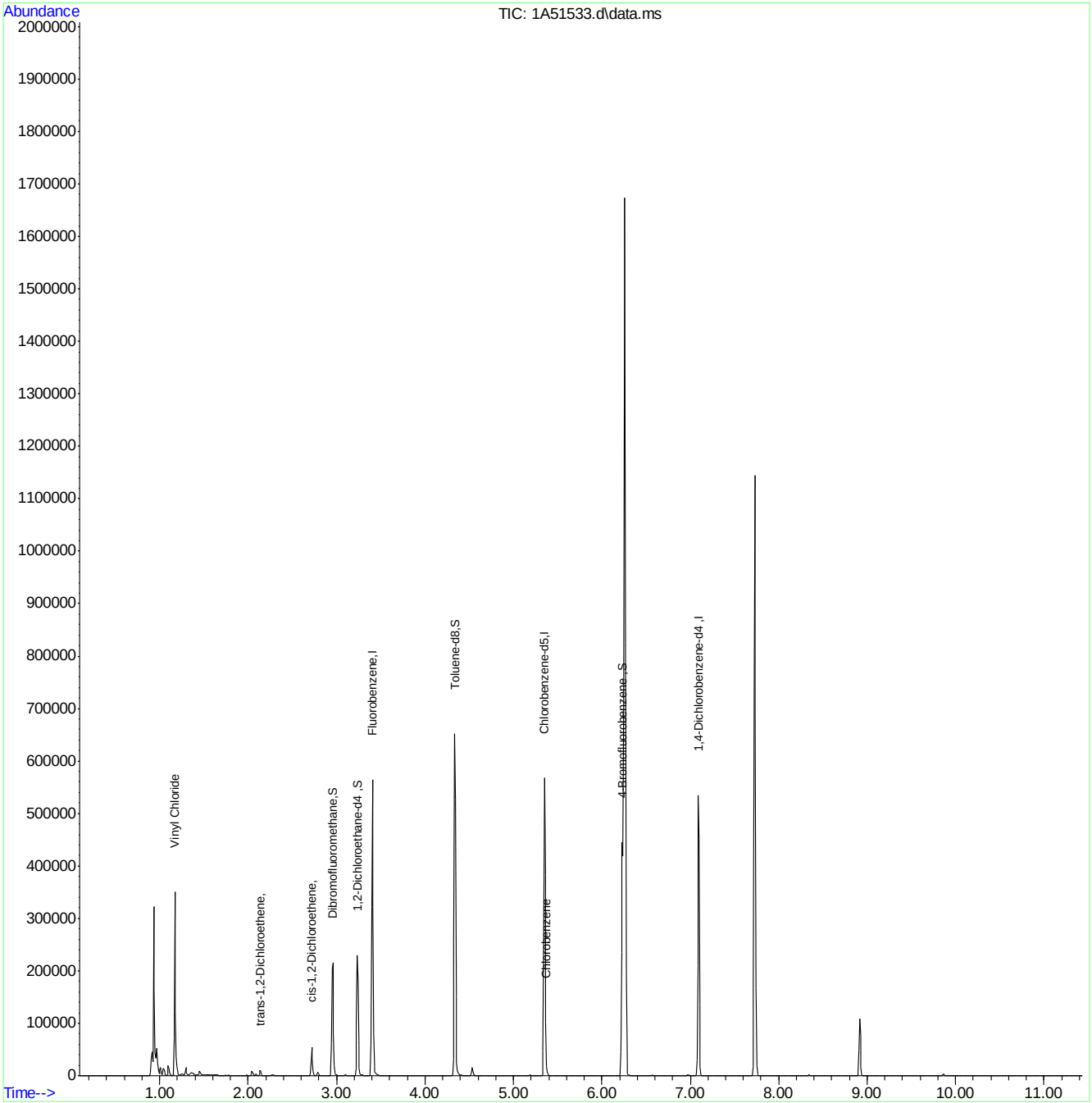
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	3.405	96	295051	50.00	ug/L	0.00
62) Chlorobenzene-d5	5.352	117	207999	50.00	ug/L	0.00
85) 1,4-Dichlorobenzene-d4	7.091	152	103466	50.00	ug/L	0.00
System Monitoring Compounds						
39) Dibromofluoromethane	2.958	113	81918	47.10	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 94.20%			
49) 1,2-Dichloroethane-d4	3.235	65	99745	51.82	ug/L	0.00
Spiked Amount 50.000	Range 79 - 125		Recovery = 103.64%			
63) Toluene-d8	4.336	98	282052	50.78	ug/L	0.00
Spiked Amount 50.000	Range 85 - 112		Recovery = 101.56%			
86) 4-Bromofluorobenzene	6.229	174	87604	50.74	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 101.48%			
Target Compounds						Qvalue
5) Vinyl Chloride	1.173	62	165215	97.97	ug/L	99
21) trans-1,2-Dichloroethene	2.135	61	3559	1.39	ug/L	82
32) cis-1,2-Dichloroethene	2.720	96	13209	7.19	ug/L	91
78) Chlorobenzene	5.367	112	911	0.20	ug/L	77

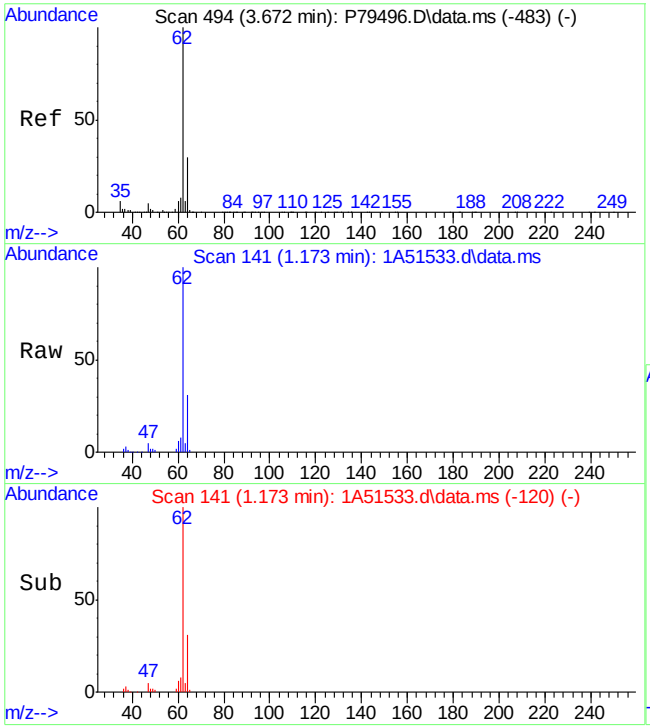
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : D:\V1A2022\
Data File : 1A51533.d
Acq On : 19 Dec 2023 4:24 pm
Operator : jeniferw
Sample : FC12031-5 2.5X
Misc : MS55575,V1A2022,,,,,2.5
ALS Vial : 24 Sample Multiplier: 1

Quant Time: Dec 20 13:52:18 2023
Quant Method : X:\Orlando VOA\celinec\December 2023\12-20-2023\V1A2022\method\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration

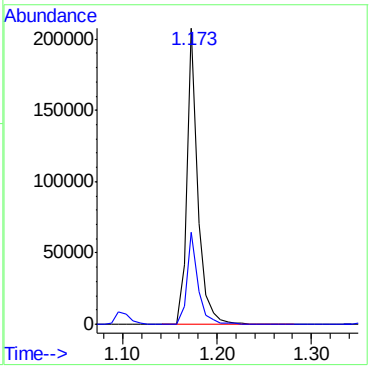


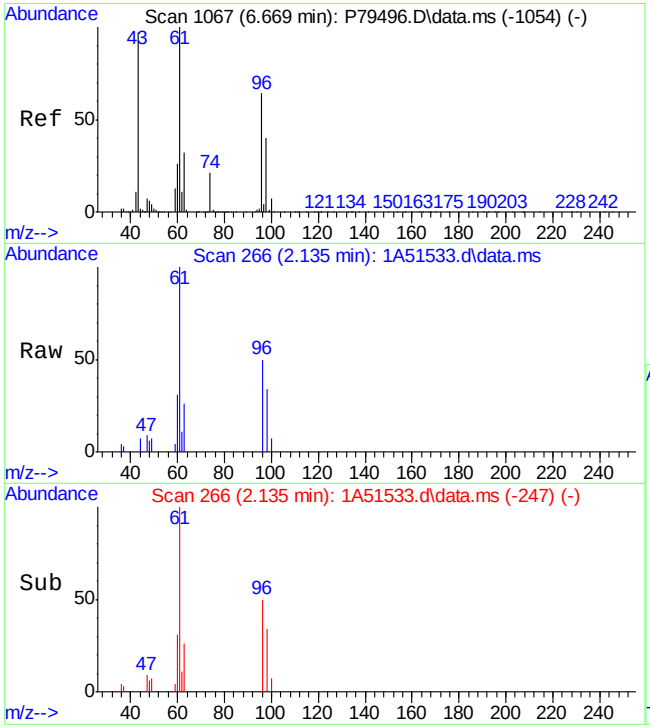


#5
Vinyl Chloride
Concen: 97.97 ug/L
RT: 1.173 min Scan# 141
Delta R.T. 0.008 min
Lab File: 1A51533.d
Acq: 19 Dec 2023 4:24 pm

Tgt Ion: 62 Resp: 165215

Ion	Ratio	Lower	Upper
62	100		
64	31.0	0.7	60.7

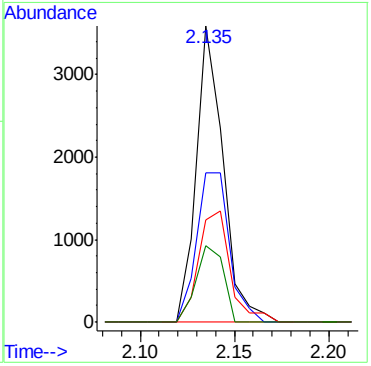


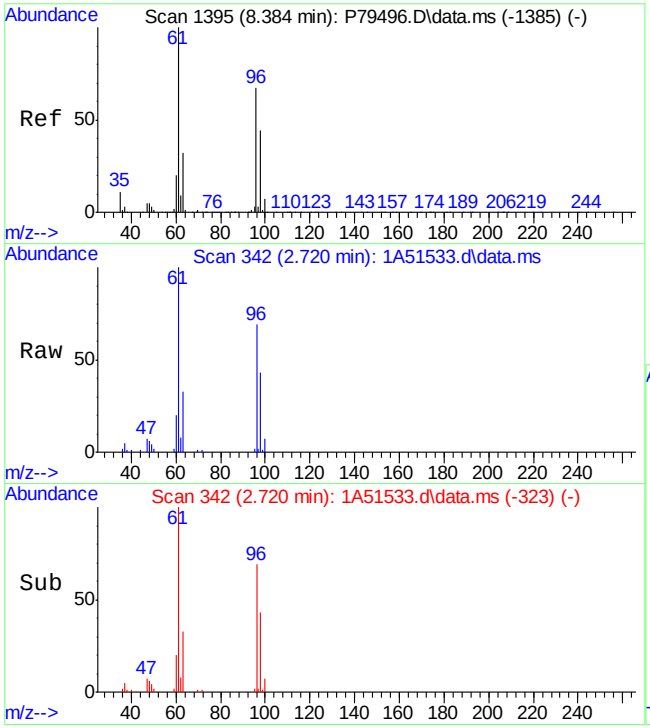


#21
trans-1,2-Dichloroethene
Concen: 1.39 ug/L
RT: 2.135 min Scan# 266
Delta R.T. -0.000 min
Lab File: 1A51533.d
Acq: 19 Dec 2023 4:24 pm

Tgt Ion: 61 Resp: 3559

Ion	Ratio	Lower	Upper
61	100		
96	50.5	37.3	97.3
98	34.3	16.1	76.1
63	25.8	3.3	63.3

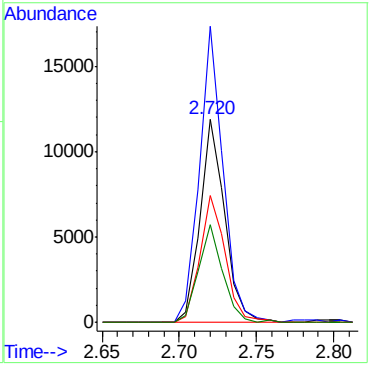


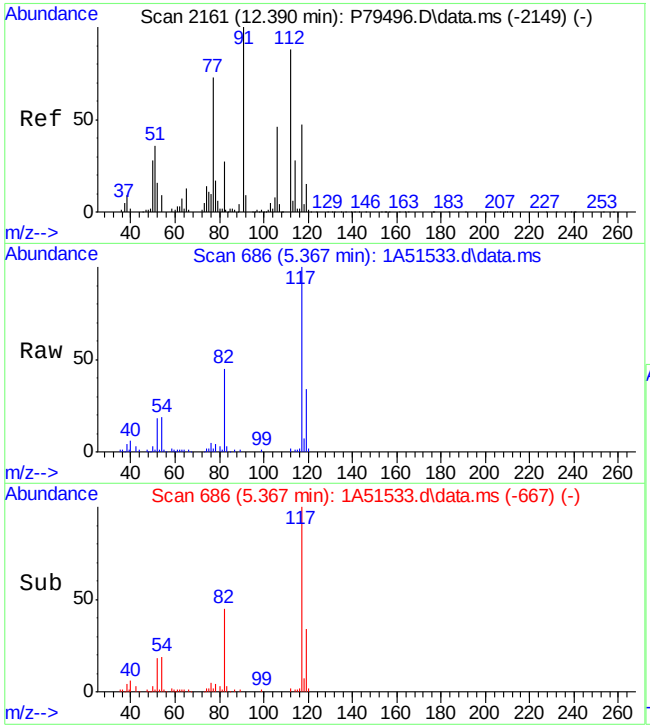


#32
cis-1,2-Dichloroethene
Concen: 7.19 ug/L
RT: 2.720 min Scan# 342
Delta R.T. -0.000 min
Lab File: 1A51533.d
Acq: 19 Dec 2023 4:24 pm

Tgt Ion: 96 Resp: 13209

Ion	Ratio	Lower	Upper
96	100		
61	145.7	101.3	161.3
98	62.2	34.7	94.7
63	48.2	12.0	72.0

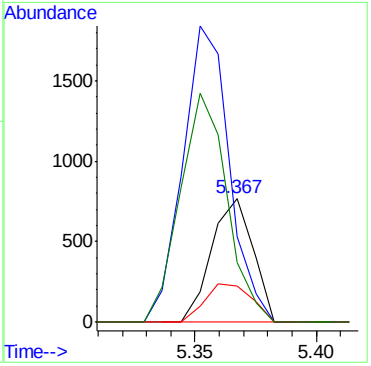




#78
Chlorobenzene
Concen: 0.20 ug/L
RT: 5.367 min Scan# 686
Delta R.T. -0.000 min
Lab File: 1A51533.d
Acq: 19 Dec 2023 4:24 pm

Tgt Ion:112 Resp: 911

Ion	Ratio	Lower	Upper
112	100		
77	69.2	24.5	84.5
114	29.0	1.1	61.1
51	48.1	0.0	50.5



Quantitation Report (QT Reviewed)

Data Path : D:\V1A2022\
Data File : 1A51534.d
Acq On : 19 Dec 2023 4:48 pm
Operator : jeniferw
Sample : FC12031-6
Misc : MS55575,V1A2022,,,,,
ALS Vial : 25 Sample Multiplier: 1

Quant Time: Dec 20 13:53:20 2023
Quant Method : X:\Orlando VOA\celinec\December 2023\12-20-2023\V1A2022\method\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration

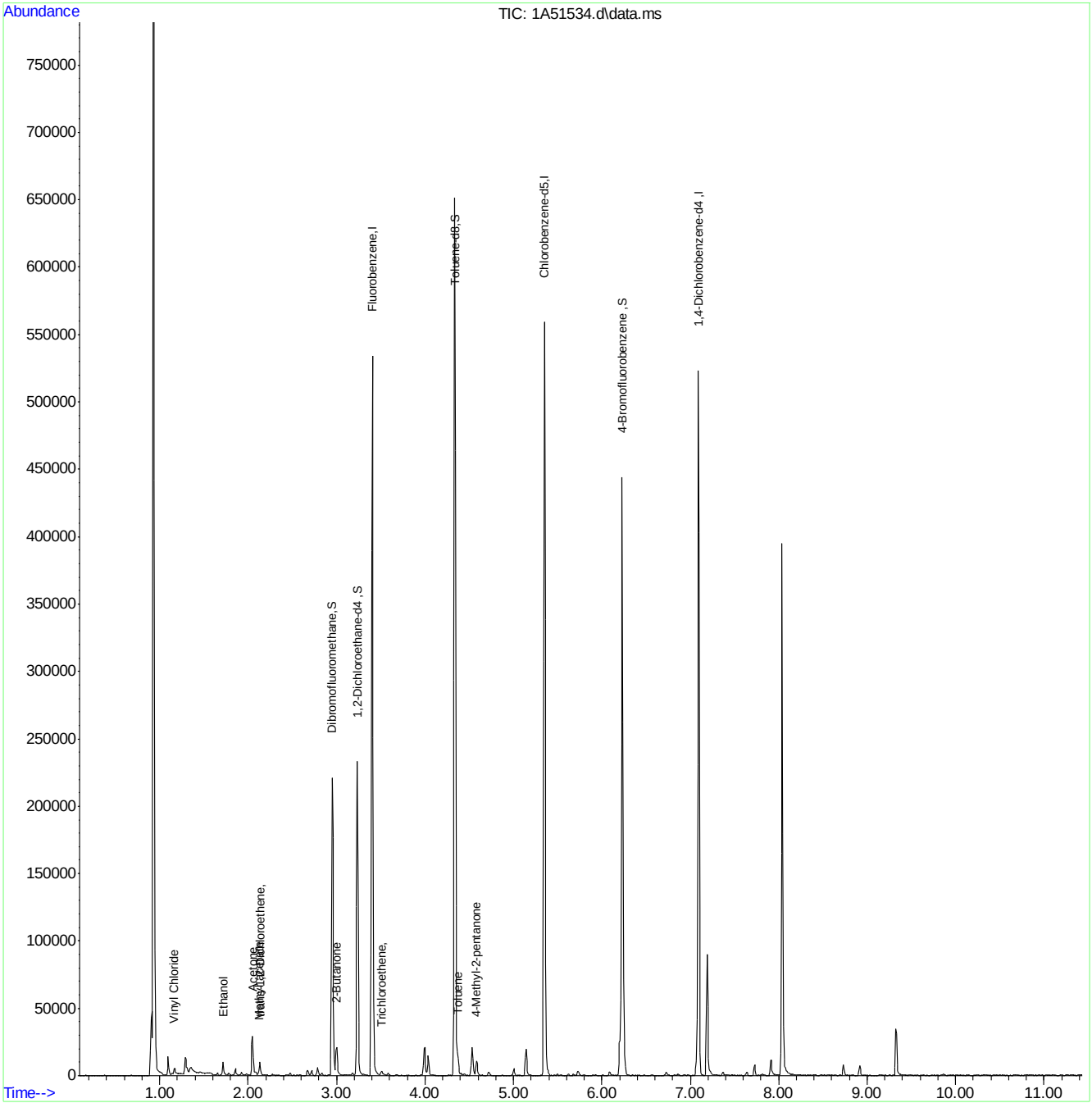
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	3.405	96	286472	50.00	ug/L	0.00
62) Chlorobenzene-d5	5.352	117	200367	50.00	ug/L	0.00
85) 1,4-Dichlorobenzene-d4	7.091	152	99134	50.00	ug/L	0.00
System Monitoring Compounds						
39) Dibromofluoromethane	2.951	113	80007	47.38	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 94.76%			
49) 1,2-Dichloroethane-d4	3.235	65	96761	51.77	ug/L	0.00
Spiked Amount 50.000	Range 79 - 125		Recovery = 103.54%			
63) Toluene-d8	4.336	98	274393	51.28	ug/L	0.00
Spiked Amount 50.000	Range 85 - 112		Recovery = 102.56%			
86) 4-Bromofluorobenzene	6.229	174	83389	50.41	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 100.82%			
Target Compounds						Qvalue
5) Vinyl Chloride	1.165	62	2738	1.67	ug/L	75
10) Ethanol	1.719	45	1381	42.34	ug/L	88
19) Acetone	2.050	43	22482	31.60	ug/L	97
20) Methyl acetate	2.127	43	3262	1.70	ug/L	95
21) trans-1,2-Dichloroethene	2.135	61	2658	1.07	ug/L	98
42) 2-Butanone	3.005	43	17904	14.85	ug/L	91
53) Trichloroethene	3.513	95	645	0.36	ug/L #	76
64) Toluene	4.375	91	4772	0.73	ug/L	91
66) 4-Methyl-2-pentanone	4.582	43	5940	2.51	ug/L	91

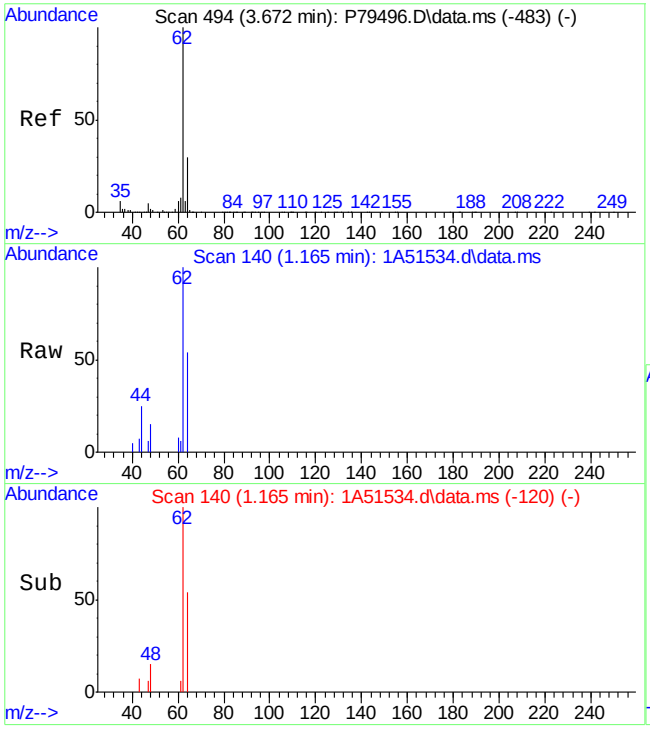
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : D:\V1A2022\
Data File : 1A51534.d
Acq On : 19 Dec 2023 4:48 pm
Operator : jeniferw
Sample : FC12031-6
Misc : MS55575,V1A2022,,,,,
ALS Vial : 25 Sample Multiplier: 1

Quant Time: Dec 20 13:53:20 2023
Quant Method : X:\Orlando VOA\celinec\December 2023\12-20-2023\V1A2022\method\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration

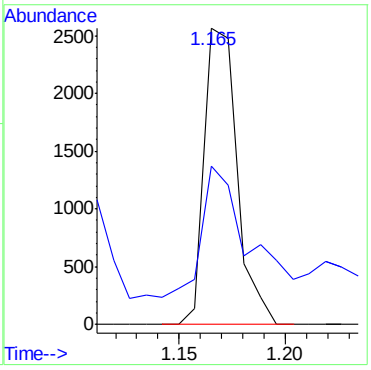


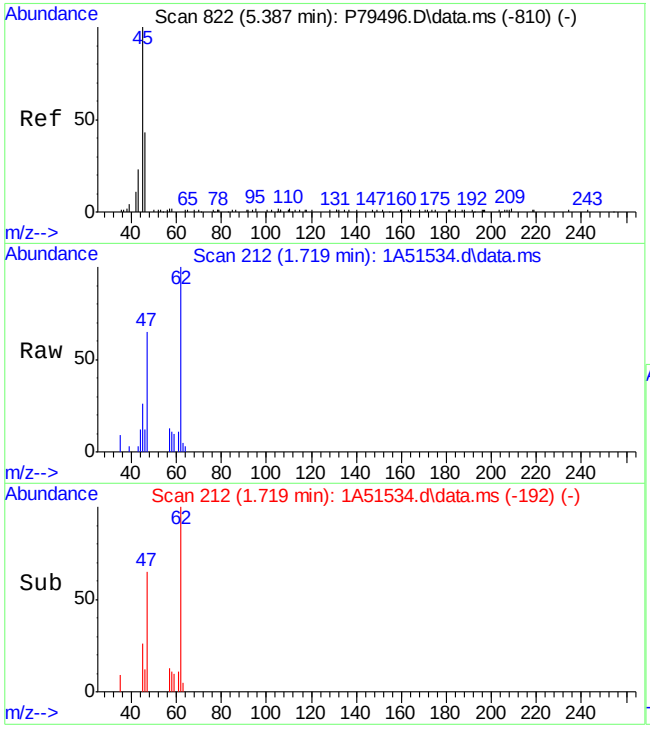


#5
Vinyl Chloride
Concen: 1.67 ug/L
RT: 1.165 min Scan# 140
Delta R.T. 0.000 min
Lab File: 1A51534.d
Acq: 19 Dec 2023 4:48 pm

Tgt Ion: 62 Resp: 2738

Ion	Ratio	Lower	Upper
62	100		
64	44.4	0.7	60.7

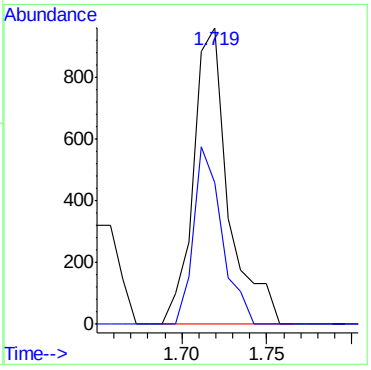


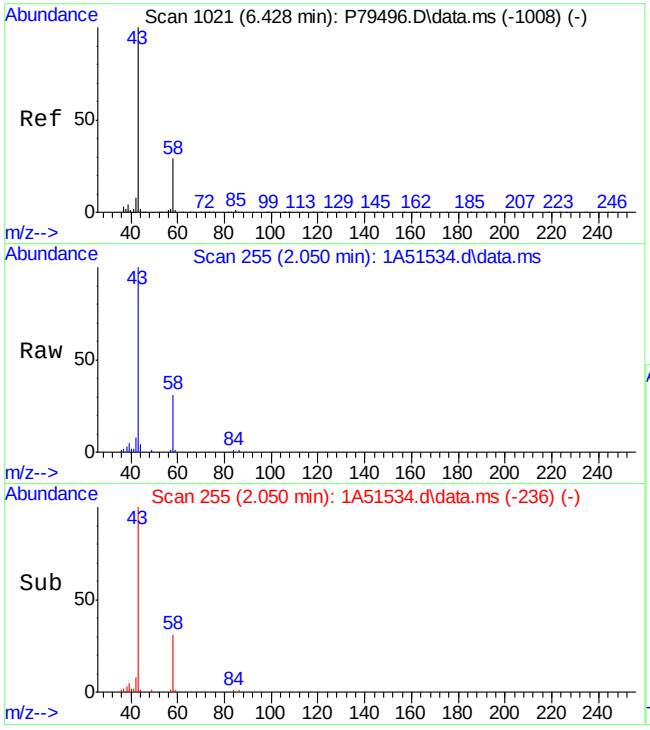


#10
Ethanol
Concen: 42.34 ug/L
RT: 1.719 min Scan# 212
Delta R.T. 0.000 min
Lab File: 1A51534.d
Acq: 19 Dec 2023 4:48 pm

Tgt Ion: 45 Resp: 1381

Ion	Ratio	Lower	Upper
45	100		
46	47.7	20.3	60.3

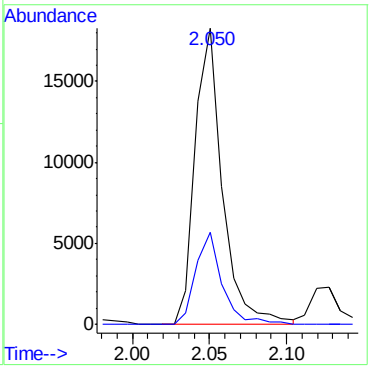


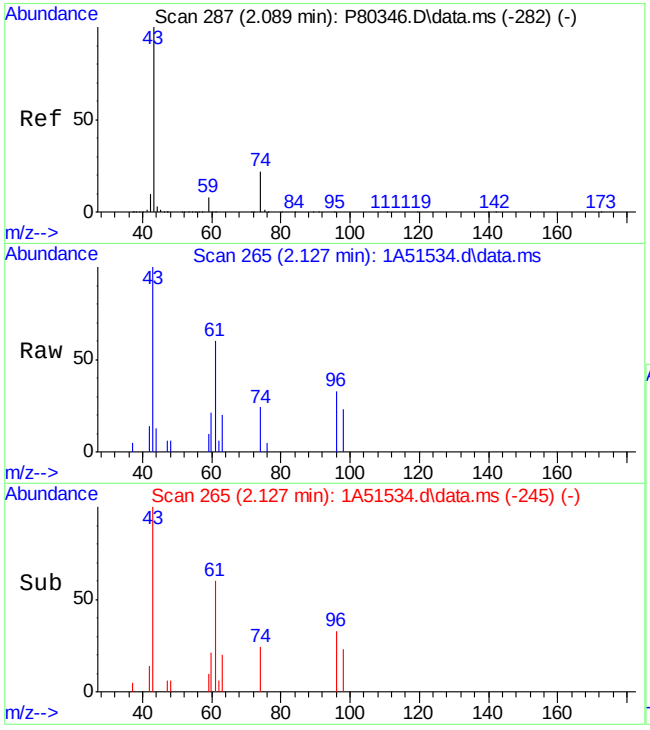


#19
Acetone
Concen: 31.60 ug/L
RT: 2.050 min Scan# 255
Delta R.T. -0.000 min
Lab File: 1A51534.d
Acq: 19 Dec 2023 4:48 pm

Tgt Ion: 43 Resp: 22482

Ion	Ratio	Lower	Upper
43	100		
58	31.1	0.0	59.6

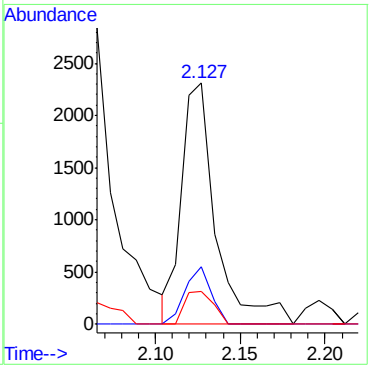


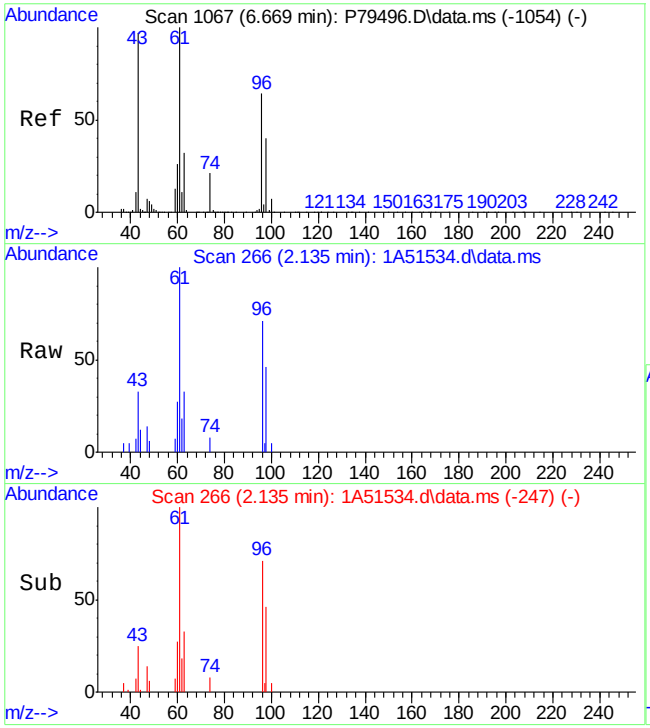


#20
Methyl acetate
Concen: 1.70 ug/L
RT: 2.127 min Scan# 265
Delta R.T. 0.008 min
Lab File: 1A51534.d
Acq: 19 Dec 2023 4:48 pm

Tgt Ion: 43 Resp: 3262

Ion	Ratio	Lower	Upper
43	100		
74	23.8	1.8	41.8
42	13.5	0.0	30.6

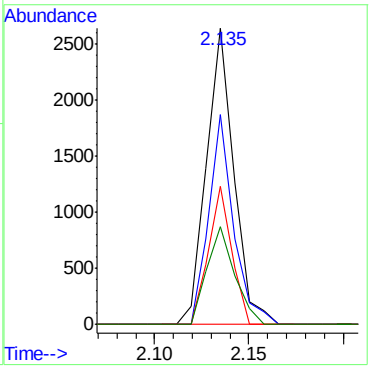


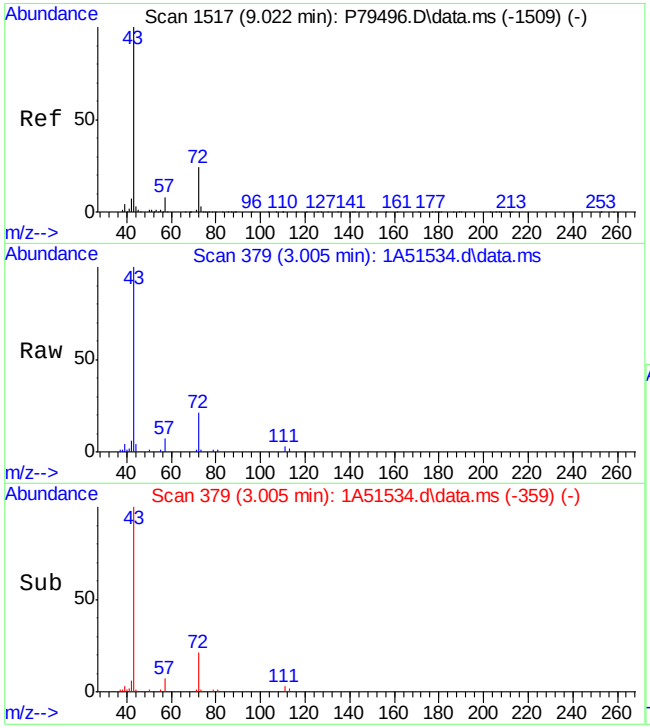


#21
trans-1,2-Dichloroethene
Concen: 1.07 ug/L
RT: 2.135 min Scan# 266
Delta R.T. -0.000 min
Lab File: 1A51534.d
Acq: 19 Dec 2023 4:48 pm

Tgt Ion: 61 Resp: 2658

Ion	Ratio	Lower	Upper
61	100		
96	70.7	37.3	97.3
98	46.5	16.1	76.1
63	32.9	3.3	63.3

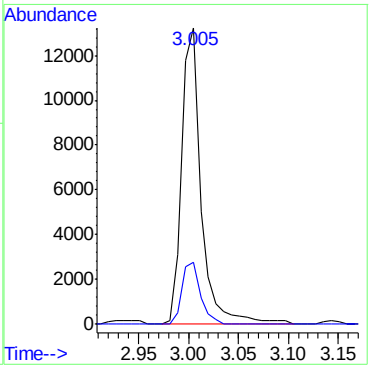


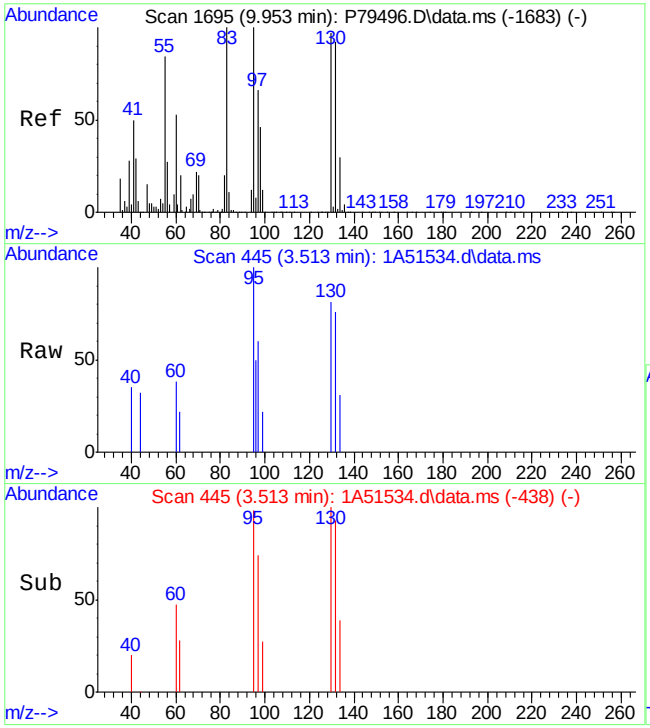


#42
2-Butanone
Concen: 14.85 ug/L
RT: 3.005 min Scan# 379
Delta R.T. 0.008 min
Lab File: 1A51534.d
Acq: 19 Dec 2023 4:48 pm

Tgt Ion: 43 Resp: 17904

Ion	Ratio	Lower	Upper
43	100		
72	20.8	0.0	55.5

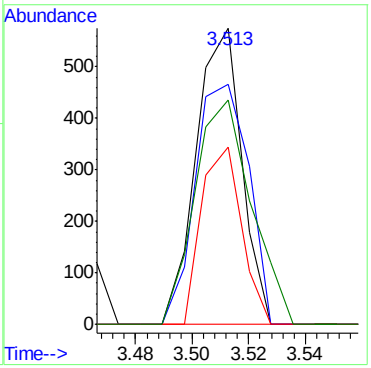


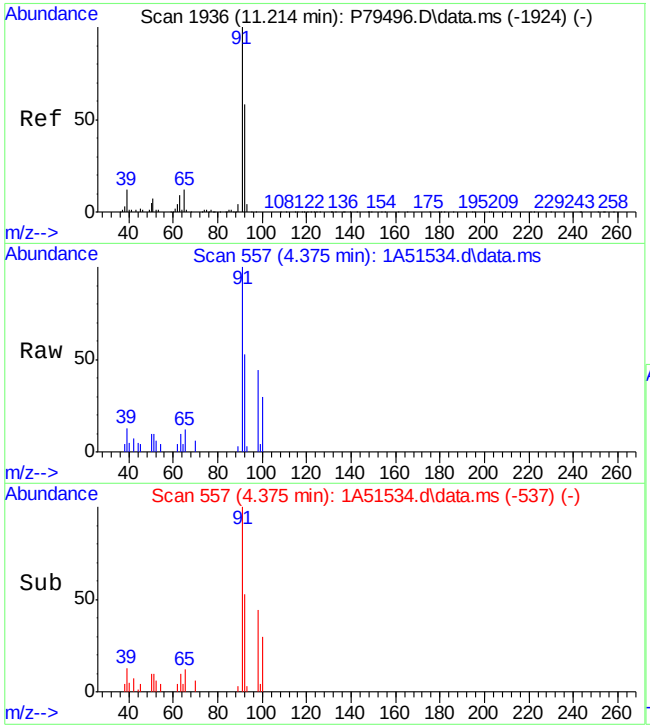


#53
Trichloroethene
Concen: 0.36 ug/L
RT: 3.513 min Scan# 445
Delta R.T. 0.008 min
Lab File: 1A51534.d
Acq: 19 Dec 2023 4:48 pm

Tgt Ion: 95 Resp: 645

Ion	Ratio	Lower	Upper
95	100		
130	81.2	76.8	136.8
97	60.0	34.1	94.1
132	75.8	81.1	141.1#

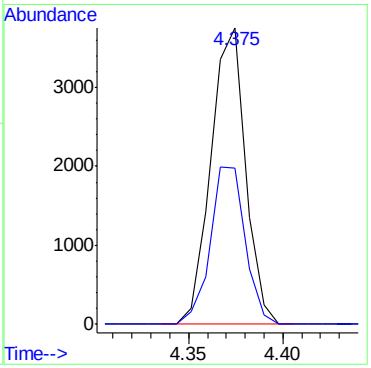


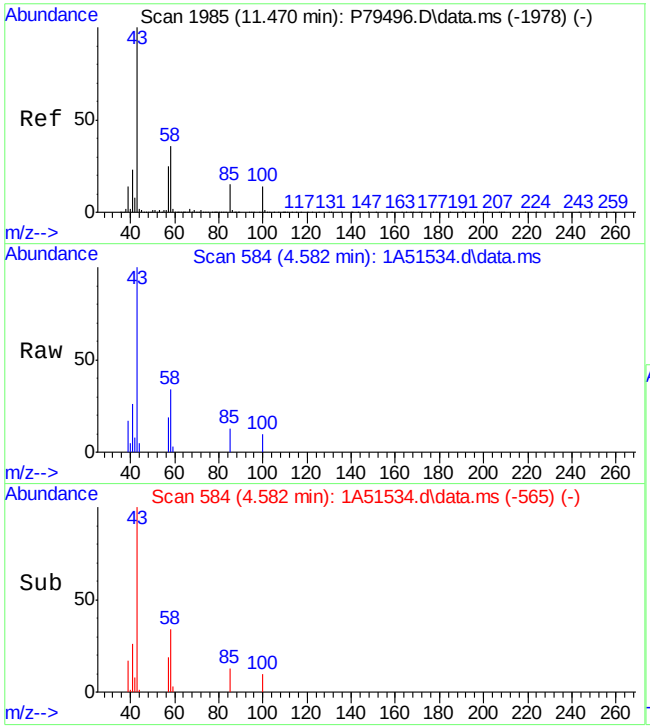


#64
Toluene
Concen: 0.73 ug/L
RT: 4.375 min Scan# 557
Delta R.T. 0.008 min
Lab File: 1A51534.d
Acq: 19 Dec 2023 4:48 pm

Tgt Ion: 91 Resp: 4772

Ion	Ratio	Lower	Upper
91	100		
92	52.8	29.5	89.5

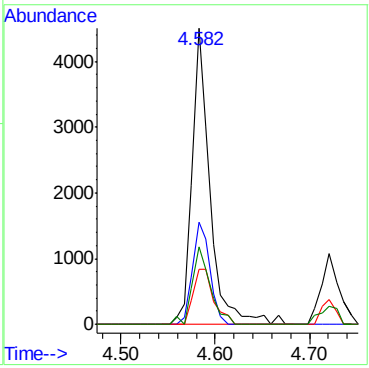




#66
4-Methyl-2-pentanone
Concen: 2.51 ug/L
RT: 4.582 min Scan# 584
Delta R.T. -0.000 min
Lab File: 1A51534.d
Acq: 19 Dec 2023 4:48 pm

Tgt Ion: 43 Resp: 5940

Ion	Ratio	Lower	Upper
43	100		
58	34.3	8.8	68.8
57	18.8	0.0	57.2
41	26.0	0.0	54.2



Quantitation Report (QT Reviewed)

Data Path : D:\V1A2022\
Data File : 1A51535.d
Acq On : 19 Dec 2023 5:13 pm
Operator : jeniferw
Sample : FC12031-7
Misc : MS55575,V1A2022,,,,,
ALS Vial : 26 Sample Multiplier: 1

Quant Time: Dec 20 13:55:50 2023
Quant Method : X:\Orlando VOA\celinec\December 2023\12-20-2023\V1A2022\method\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration

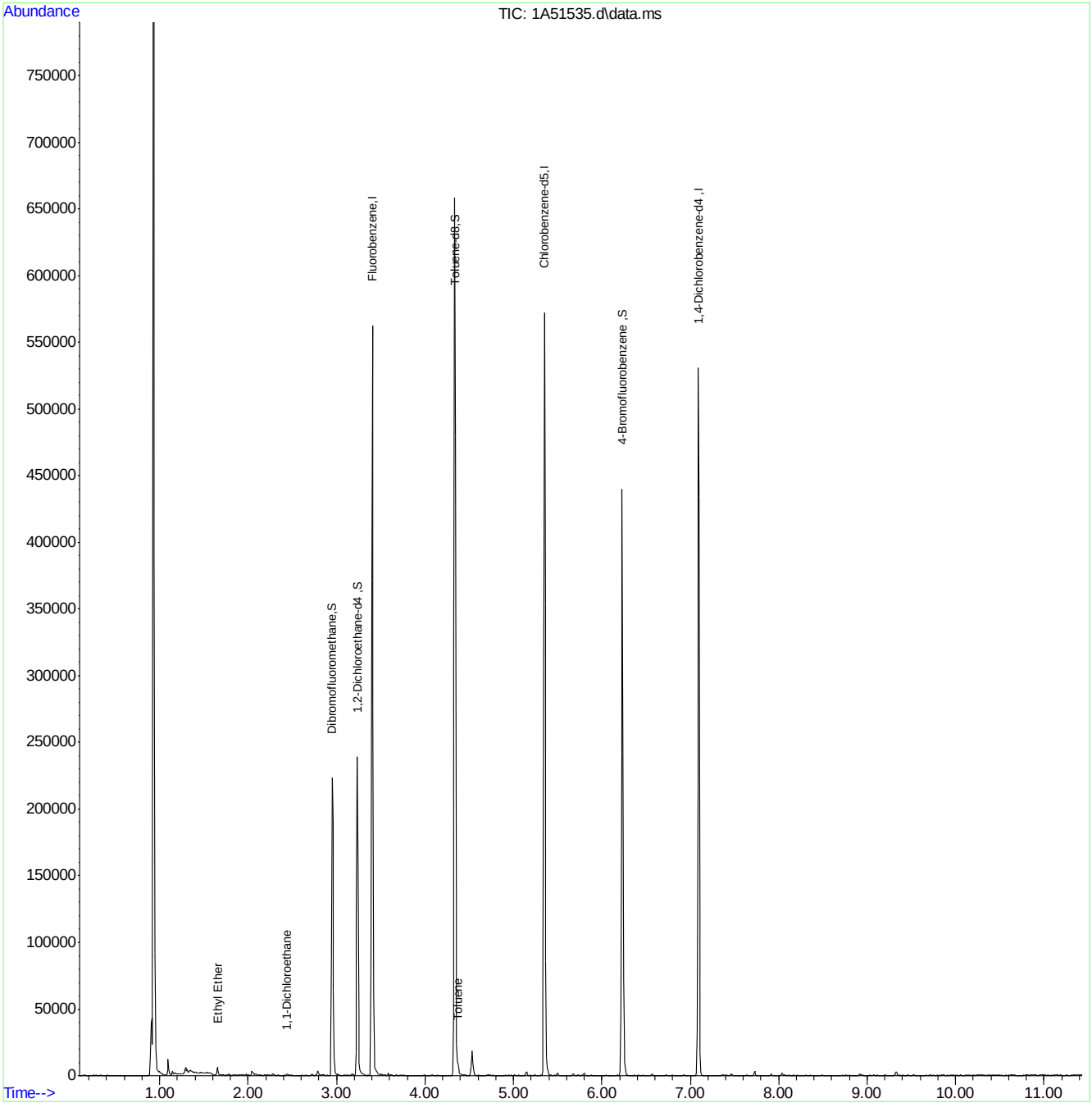
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	3.405	96	292184	50.00	ug/L	0.00
62) Chlorobenzene-d5	5.352	117	207386	50.00	ug/L	0.00
85) 1,4-Dichlorobenzene-d4	7.091	152	100812	50.00	ug/L	0.00
System Monitoring Compounds						
39) Dibromofluoromethane	2.951	113	81811	47.50	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 95.00%			
49) 1,2-Dichloroethane-d4	3.235	65	97188	50.98	ug/L	0.00
Spiked Amount 50.000	Range 79 - 125		Recovery = 101.96%			
63) Toluene-d8	4.336	98	282976	51.10	ug/L	0.00
Spiked Amount 50.000	Range 85 - 112		Recovery = 102.20%			
86) 4-Bromofluorobenzene	6.229	174	85676	50.93	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 101.86%			
Target Compounds						Qvalue
9) Ethyl Ether	1.658	59	1954	1.34	ug/L	92
28) 1,1-Dichloroethane	2.443	63	932	0.28	ug/L	92
64) Toluene	4.374	91	1946	0.29	ug/L	92

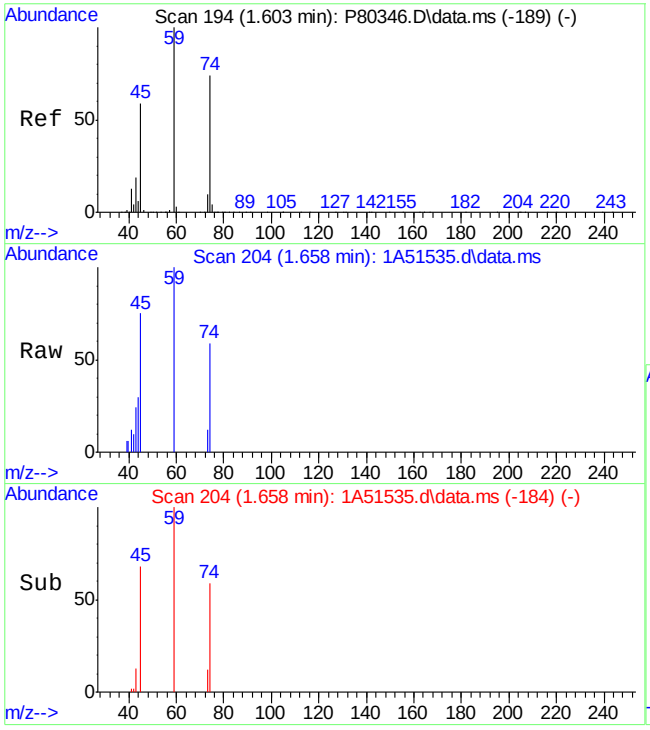
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : D:\V1A2022\
Data File : 1A51535.d
Acq On : 19 Dec 2023 5:13 pm
Operator : jeniferw
Sample : FC12031-7
Misc : MS55575,V1A2022,,,,,
ALS Vial : 26 Sample Multiplier: 1

Quant Time: Dec 20 13:55:50 2023
Quant Method : X:\Orlando VOA\celinec\December 2023\12-20-2023\V1A2022\method\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration

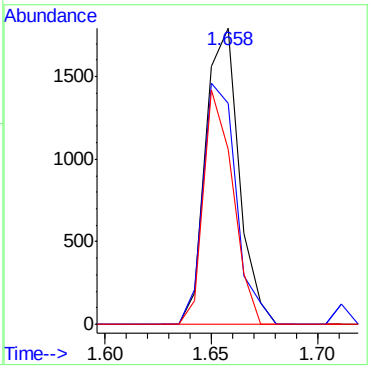


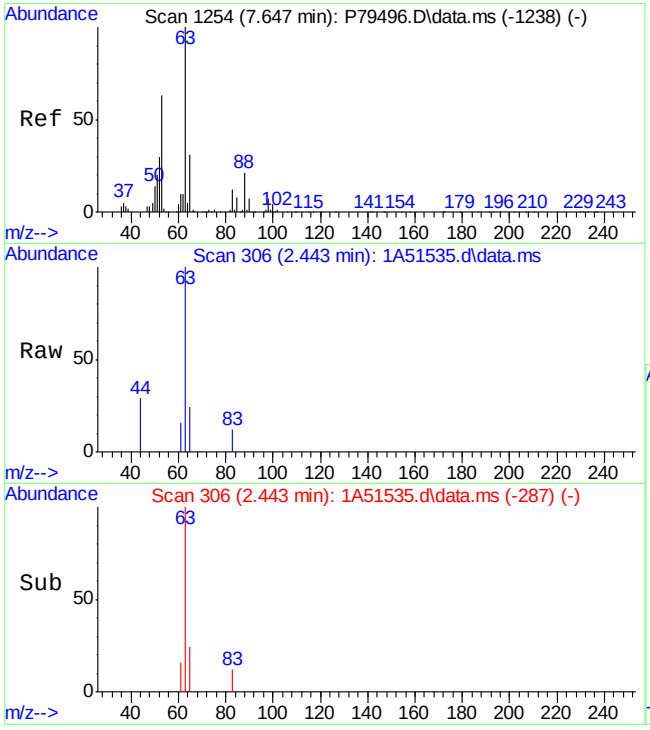


#9
Ethyl Ether
Concen: 1.34 ug/L
RT: 1.658 min Scan# 204
Delta R.T. 0.008 min
Lab File: 1A51535.d
Acq: 19 Dec 2023 5:13 pm

Tgt Ion: 59 Resp: 1954

Ion	Ratio	Lower	Upper
59	100		
45	74.6	54.8	94.8
74	59.2	52.2	92.2

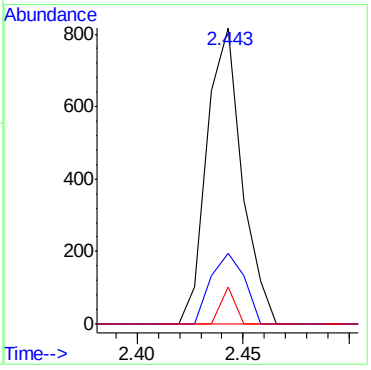


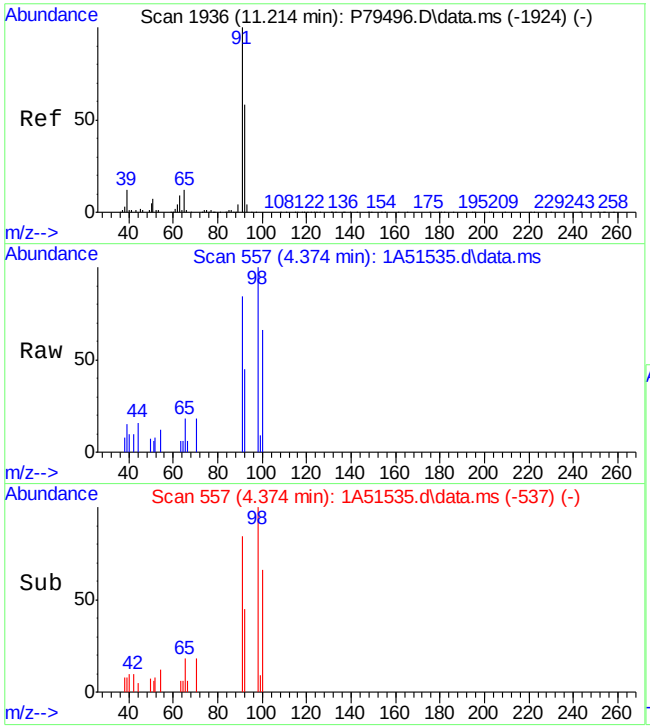


#28
1,1-Dichloroethane
Concen: 0.28 ug/L
RT: 2.443 min Scan# 306
Delta R.T. -0.000 min
Lab File: 1A51535.d
Acq: 19 Dec 2023 5:13 pm

Tgt Ion: 63 Resp: 932

Ion	Ratio	Lower	Upper
63	100		
65	23.7	0.0	59.8
83	12.5	0.0	43.5

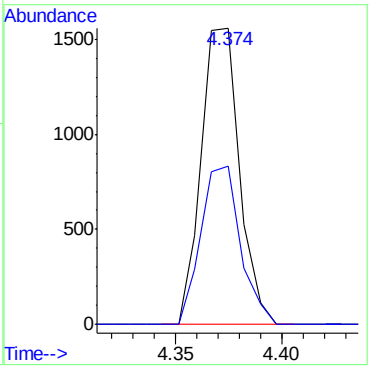




#64
Toluene
Concen: 0.29 ug/L
RT: 4.374 min Scan# 557
Delta R.T. 0.008 min
Lab File: 1A51535.d
Acq: 19 Dec 2023 5:13 pm

Tgt Ion: 91 Resp: 1946

Ion	Ratio	Lower	Upper
91	100		
92	53.4	29.5	89.5



Quantitation Report (QT Reviewed)

Data Path : D:\V1A2022\
Data File : 1A51518.d
Acq On : 19 Dec 2023 10:19 am
Operator : jeniferw
Sample : FC12031-9
Misc : MS55575,V1A2022,,,,,
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Dec 20 13:25:14 2023
Quant Method : X:\Orlando VOA\celinec\December 2023\12-20-2023\V1A2022\method\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration

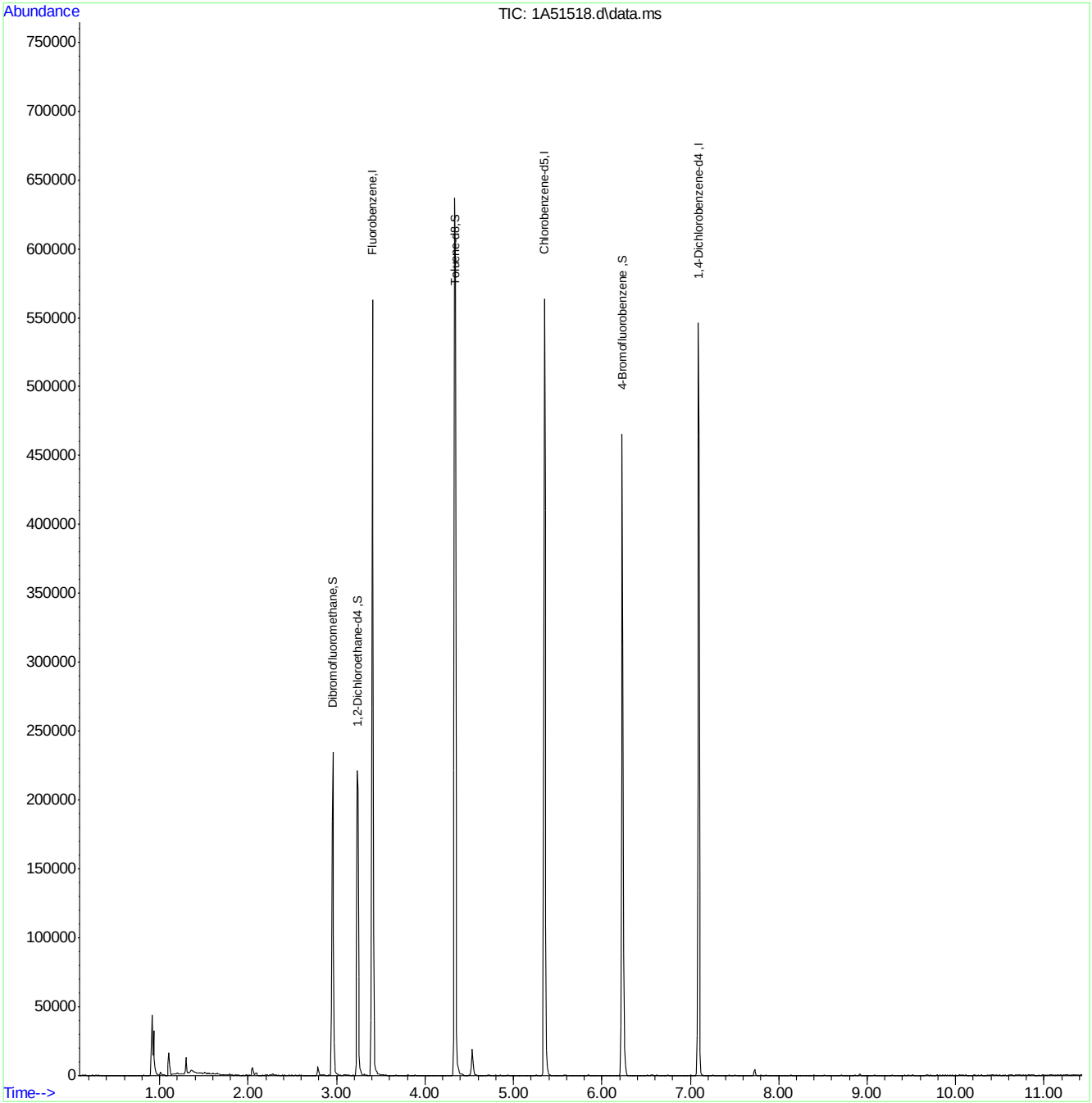
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	3.405	96	297828	50.00	ug/L	0.00
62) Chlorobenzene-d5	5.352	117	209708	50.00	ug/L	0.00
85) 1,4-Dichlorobenzene-d4	7.091	152	107403	50.00	ug/L	0.00
System Monitoring Compounds						
39) Dibromofluoromethane	2.958	113	83830	47.75	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 95.50%			
49) 1,2-Dichloroethane-d4	3.235	65	100202	51.57	ug/L	0.00
Spiked Amount 50.000	Range 79 - 125		Recovery = 103.14%			
63) Toluene-d8	4.336	98	289503	51.70	ug/L	0.00
Spiked Amount 50.000	Range 85 - 112		Recovery = 103.40%			
86) 4-Bromofluorobenzene	6.229	174	88252	49.24	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 98.48%			
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : D:\V1A2022\
Data File : 1A51518.d
Acq On : 19 Dec 2023 10:19 am
Operator : jeniferw
Sample : FC12031-9
Misc : MS55575,V1A2022,,,,,
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Dec 20 13:25:14 2023
Quant Method : X:\Orlando VOA\celinec\December 2023\12-20-2023\V1A2022\method\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration



Quantitation Report (QT/LSC Reviewed)

Data Path : C:\msdchem\1\DATA\12-19-2023\
Data File : 1A51514.D
Acq On : 19 Dec 2023 8:41 am
Operator : jeniferw
Sample : MB
Misc : MS55575,V1A2022,,,,,
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Dec 19 09:00:24 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration

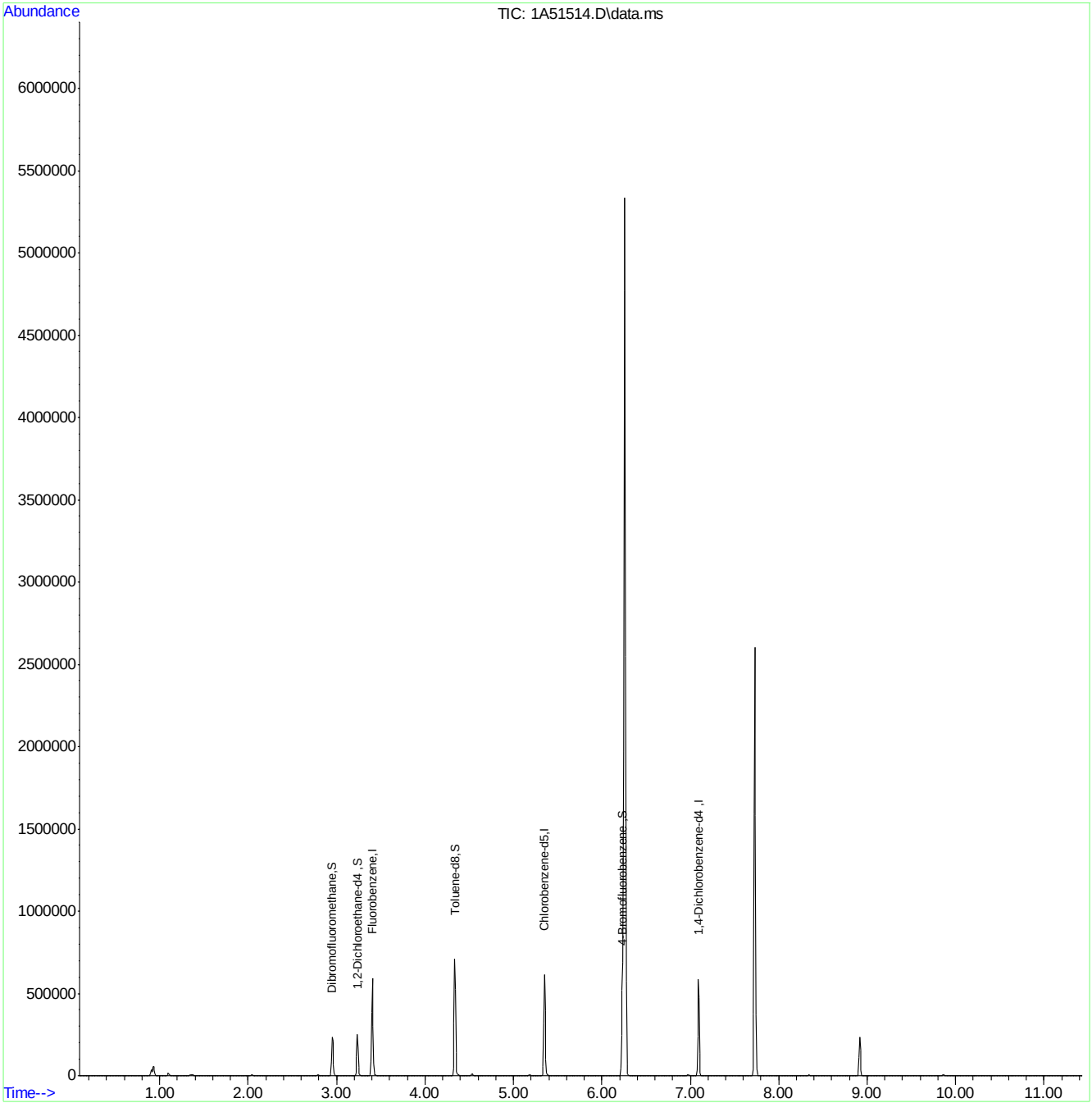
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	3.405	96	315864	50.00	ug/L	0.00
62) Chlorobenzene-d5	5.352	117	225572	50.00	ug/L	0.00
85) 1,4-Dichlorobenzene-d4	7.091	152	112397	50.00	ug/L	0.00
System Monitoring Compounds						
39) Dibromofluoromethane	2.950	113	86768	46.60	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 93.20%			
49) 1,2-Dichloroethane-d4	3.235	65	103640	50.29	ug/L	0.00
Spiked Amount 50.000	Range 79 - 125		Recovery = 100.58%			
63) Toluene-d8	4.336	98	304465	50.55	ug/L	0.00
Spiked Amount 50.000	Range 85 - 112		Recovery = 101.10%			
86) 4-Bromofluorobenzene	6.229	174	96194	51.29	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 102.58%			
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT/LSC Reviewed)

Data Path : C:\msdchem\1\DATA\12-19-2023\
Data File : 1A51514.D
Acq On : 19 Dec 2023 8:41 am
Operator : jeniferw
Sample : MB
Misc : MS55575,V1A2022,,,,,
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Dec 19 09:00:24 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\12-26-2023\
Data File : 1A51664.D
Acq On : 26 Dec 2023 9:16 am
Operator : lianatr
Sample : MB
Misc : MS55601,V1A2028,,,,,
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Dec 26 10:29:45 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration

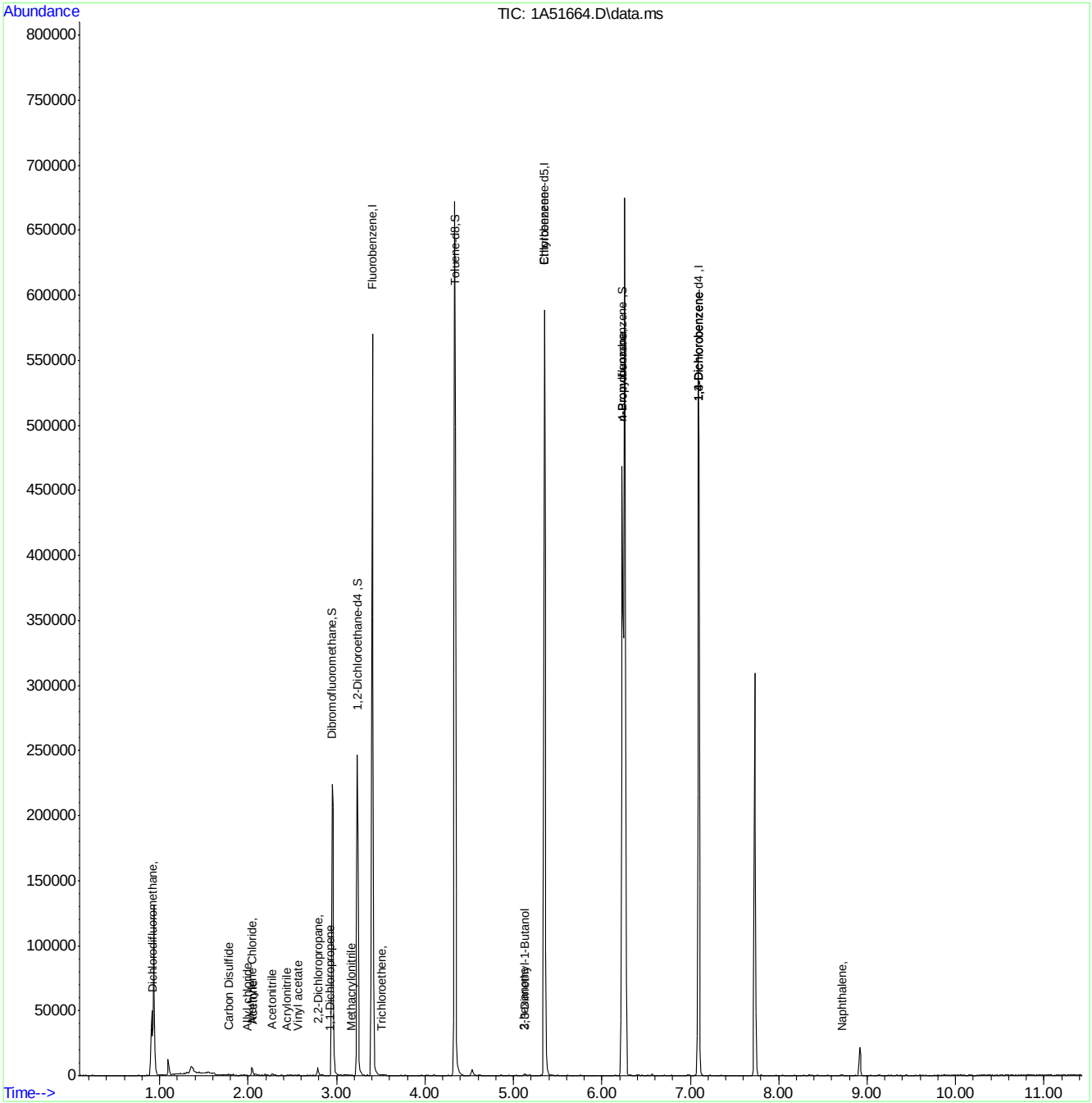
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Fluorobenzene	3.405	96	297564	50.00	ug/L		0.00
62) Chlorobenzene-d5	5.352	117	211361	50.00	ug/L		0.00
85) 1,4-Dichlorobenzene-d4	7.099	152	107849	50.00	ug/L		0.00
System Monitoring Compounds							
39) Dibromofluoromethane	2.951	113	85082	48.50	ug/L		0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 97.00%				
49) 1,2-Dichloroethane-d4	3.235	65	102184	52.63	ug/L		0.00
Spiked Amount 50.000	Range 79 - 125		Recovery = 105.26%				
63) Toluene-d8	4.336	98	289631	51.32	ug/L		0.00
Spiked Amount 50.000	Range 85 - 112		Recovery = 102.64%				
86) 4-Bromofluorobenzene	6.229	174	89939	49.98	ug/L		0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 99.96%				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	0.919	85	199	0.18	ug/L	#	40
14) Carbon Disulfide	1.781	76	566	0.12	ug/L		63
17) Allyl chloride	1.989	41	66	0.03	ug/L	#	28
18) Methylene Chloride	2.043	49	2198	0.88	ug/L		90
19) Acetone	2.050	43	1130	1.53	ug/L		80
24) Acetonitrile	2.273	41	1213	4.69	ug/L		92
29) Acrylonitrile	2.443	52	50	0.06	ug/L	#	55
31) Vinyl acetate	2.566	43	243	0.05	ug/L		77
33) 2,2-Dichloropropane	2.789	77	176	0.08	ug/L	#	51
43) 1,1-Dichloropropene	2.928	75	50	0.02	ug/L	#	32
46) Methacrylonitrile	3.166	41	124	0.09	ug/L	#	44
53) Trichloroethene	3.505	95	47	0.03	ug/L	#	1
74) 3,3-Dimethyl-1-Butanol	5.129	57	422	1.27	ug/L		98
75) 2-hexanone	5.121	43	98	0.04	ug/L	#	1
77) Ethylbenzene	5.352	91	397	0.05	ug/L	#	1
88) n-Propylbenzene	6.229	91	527	0.06	ug/L		50
102) 1,3-Dichlorobenzene	7.099	146	214	0.06	ug/L	#	1
104) 1,4-Dichlorobenzene	7.099	146	214	0.06	ug/L	#	1
111) Naphthalene	8.715	128	374	0.09	ug/L		66

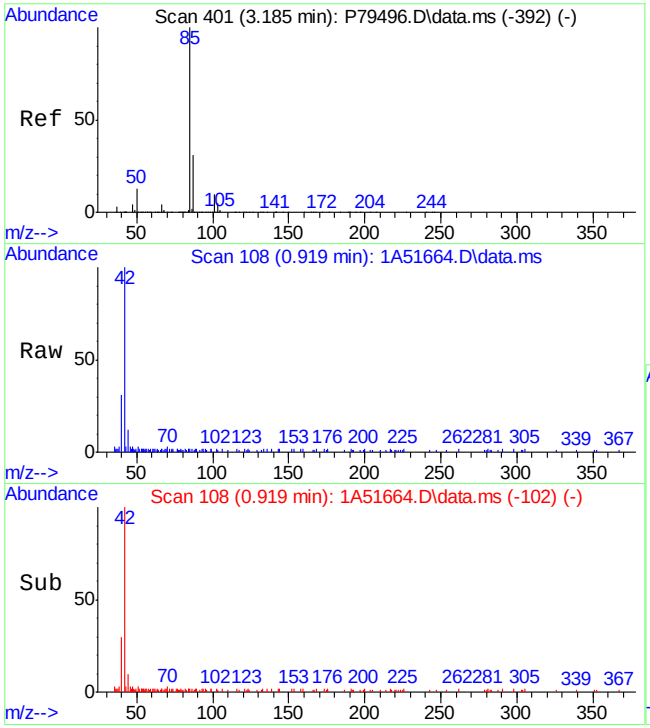
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\12-26-2023\
Data File : 1A51664.D
Acq On : 26 Dec 2023 9:16 am
Operator : lianatr
Sample : MB
Misc : MS55601,V1A2028,,,,,
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Dec 26 10:29:45 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration

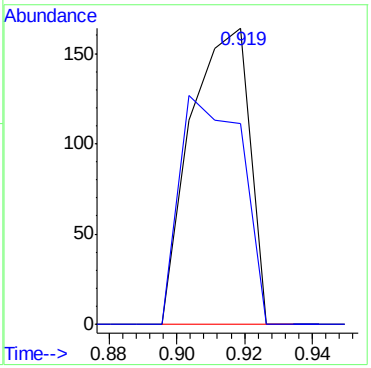


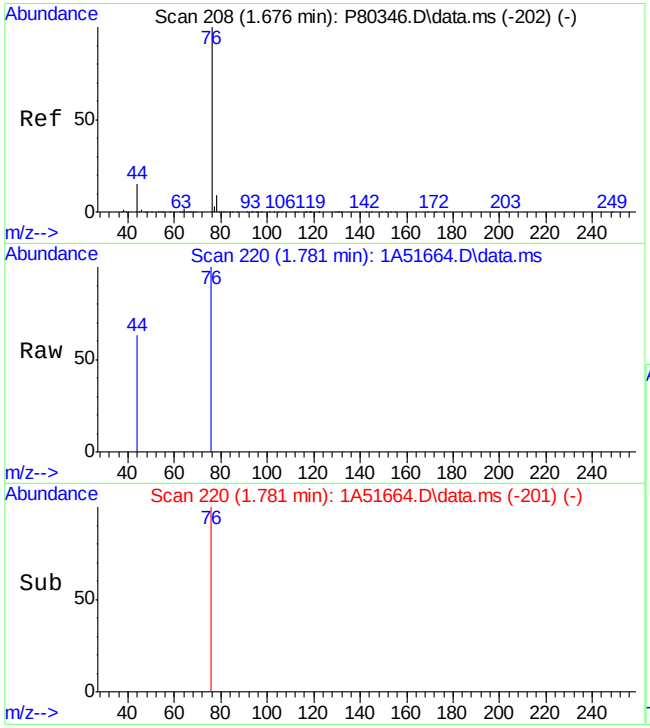


#2
Dichlorodifluoromethane
Concen: 0.18 ug/L
RT: 0.919 min Scan# 108
Delta R.T. -0.100 min
Lab File: 1A51664.D
Acq: 26 Dec 2023 9:16 am

Tgt Ion: 85 Resp: 199

Ion	Ratio	Lower	Upper
85	100		
87	67.7	3.4	63.4#

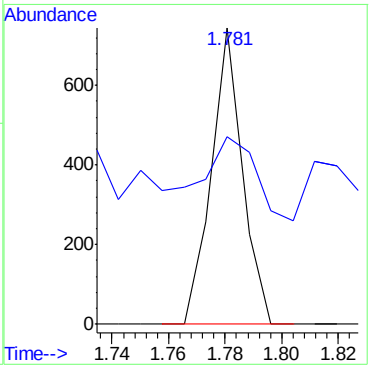


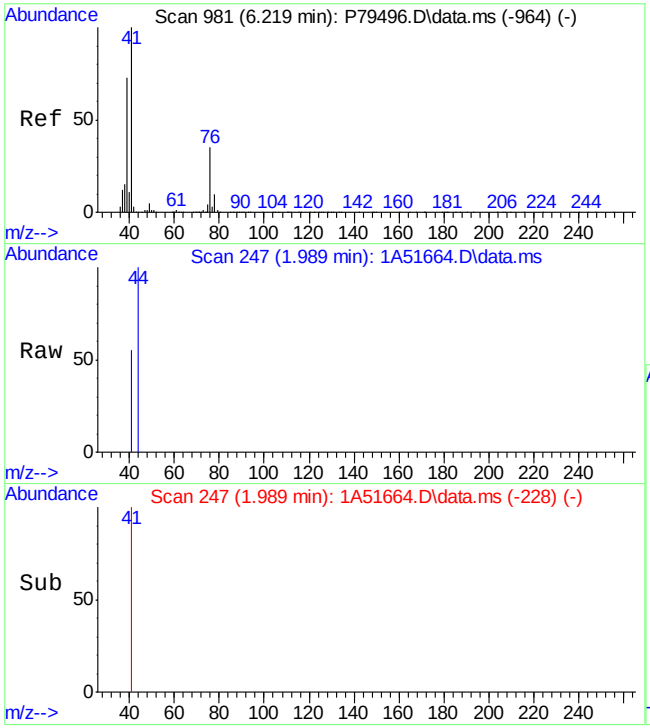


#14
Carbon Disulfide
Concen: 0.12 ug/L
RT: 1.781 min Scan# 220
Delta R.T. -0.000 min
Lab File: 1A51664.D
Acq: 26 Dec 2023 9:16 am

Tgt Ion: 76 Resp: 566

Ion	Ratio	Lower	Upper
76	100		
44	28.5	0.0	43.6

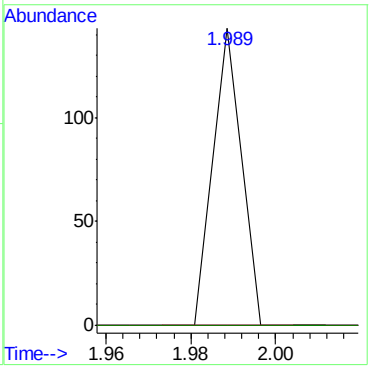


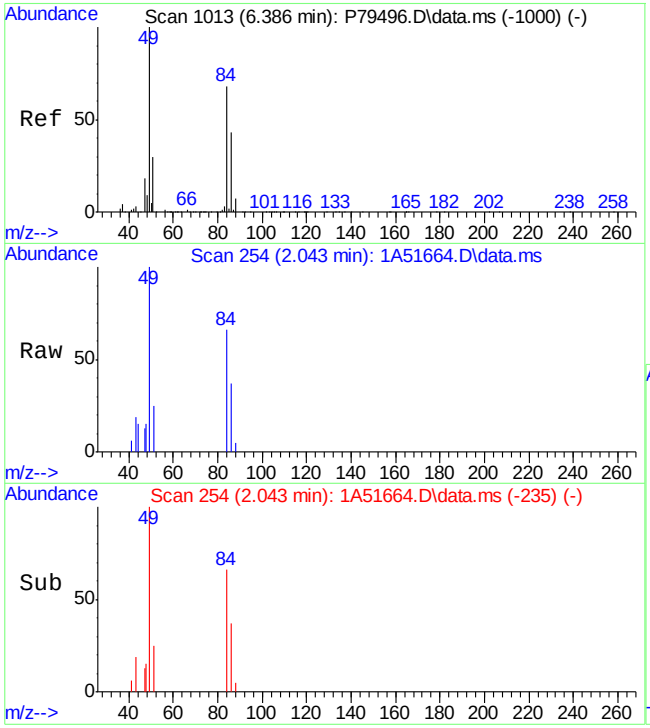


#17
Allyl chloride
Concen: 0.03 ug/L
RT: 1.989 min Scan# 247
Delta R.T. -0.000 min
Lab File: 1A51664.D
Acq: 26 Dec 2023 9:16 am

Tgt Ion: 41 Resp: 66

Ion	Ratio	Lower	Upper
41	100		
39	0.0	49.0	89.0#
38	0.0	0.0	34.1
76	0.0	19.5	59.5#

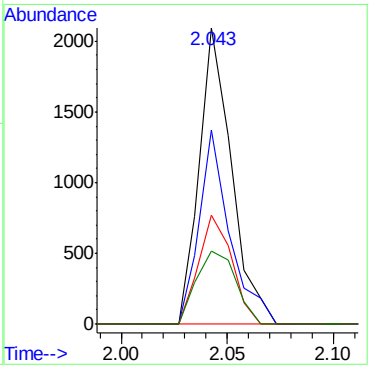


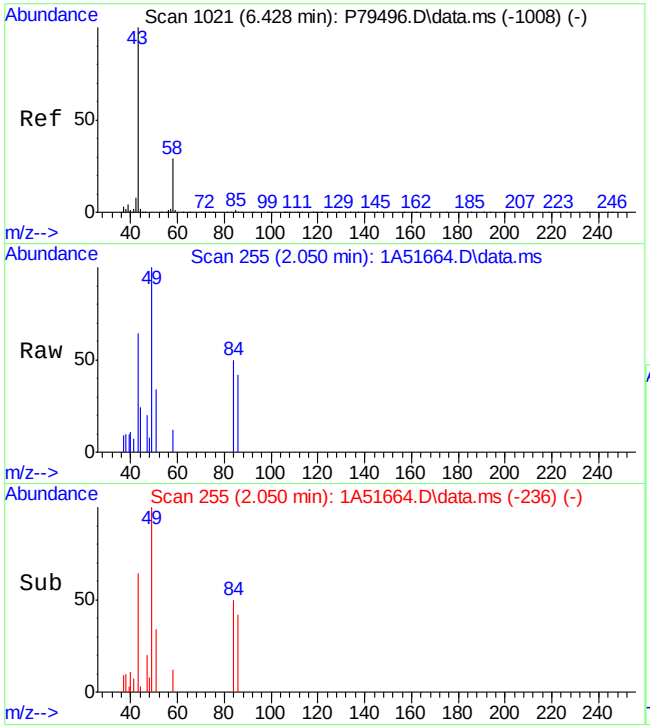


#18
Methylene Chloride
Concen: 0.88 ug/L
RT: 2.043 min Scan# 254
Delta R.T. -0.000 min
Lab File: 1A51664.D
Acq: 26 Dec 2023 9:16 am

Tgt Ion: 49 Resp: 2198

Ion	Ratio	Lower	Upper
49	100		
84	65.7	41.8	101.8
86	36.8	15.6	75.6
51	24.6	0.0	59.7

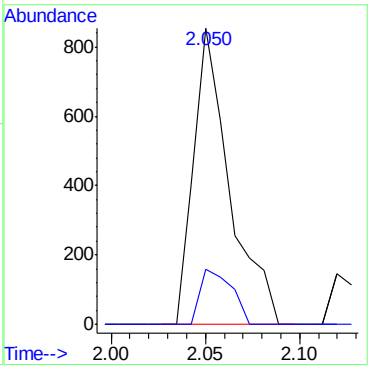


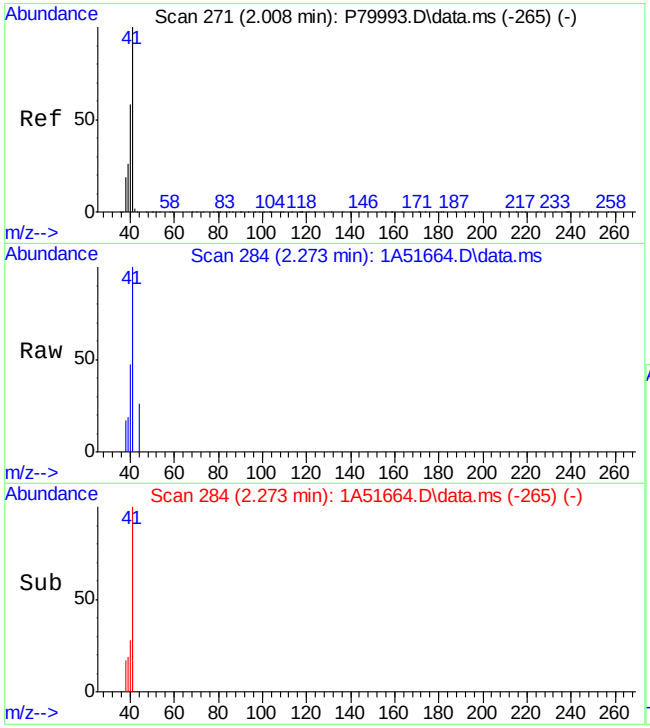


#19
Acetone
Concen: 1.53 ug/L
RT: 2.050 min Scan# 255
Delta R.T. -0.000 min
Lab File: 1A51664.D
Acq: 26 Dec 2023 9:16 am

Tgt Ion: 43 Resp: 1130

Ion	Ratio	Lower	Upper
43	100		
58	18.7	0.0	59.6

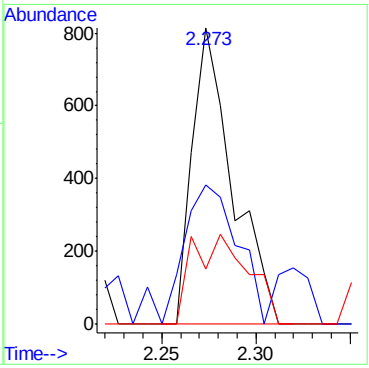


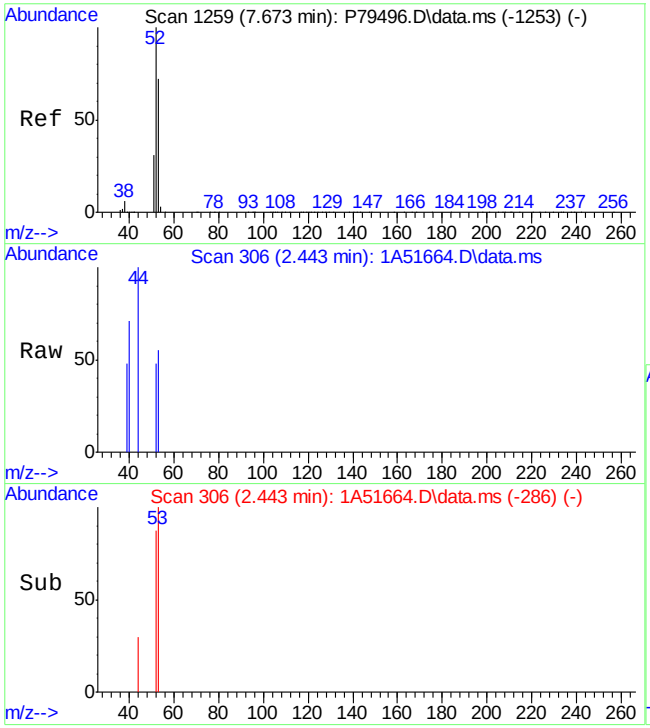


#24
Acetonitrile
Concen: 4.69 ug/L
RT: 2.273 min Scan# 284
Delta R.T. -0.001 min
Lab File: 1A51664.D
Acq: 26 Dec 2023 9:16 am

Tgt Ion: 41 Resp: 1213

Ion	Ratio	Lower	Upper
41	100		
40	47.2	34.1	74.1
39	18.8	1.1	41.1

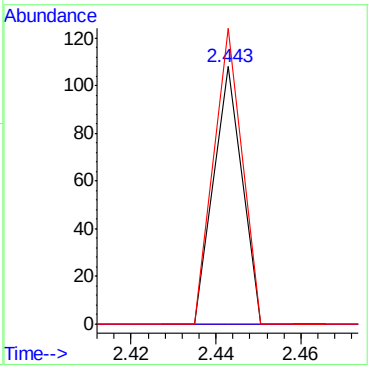


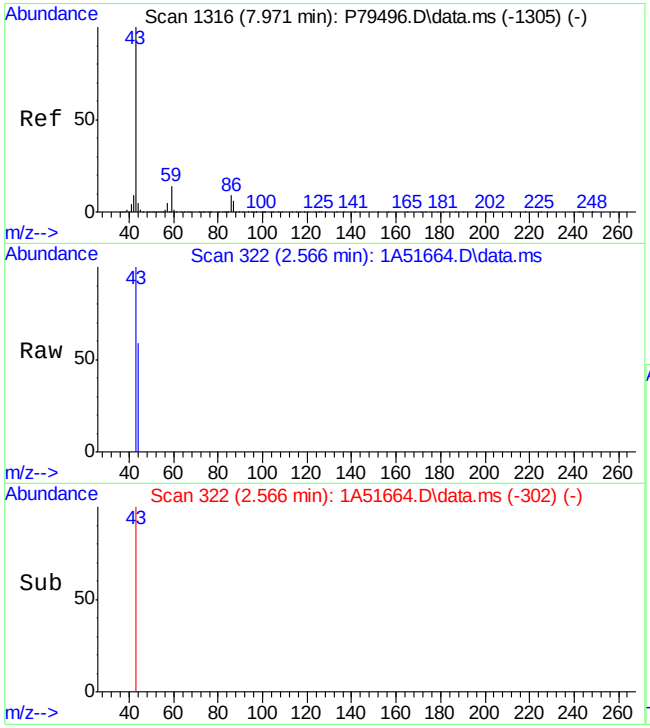


#29
Acrylonitrile
Concen: 0.06 ug/L
RT: 2.443 min Scan# 306
Delta R.T. 0.008 min
Lab File: 1A51664.D
Acq: 26 Dec 2023 9:16 am

Tgt Ion: 52 Resp: 50

Ion	Ratio	Lower	Upper
52	100		
51	0.0	22.8	82.8#
53	114.8	131.2	191.2#

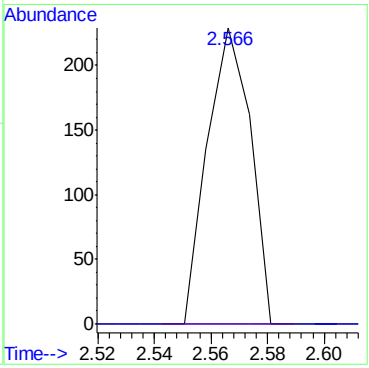


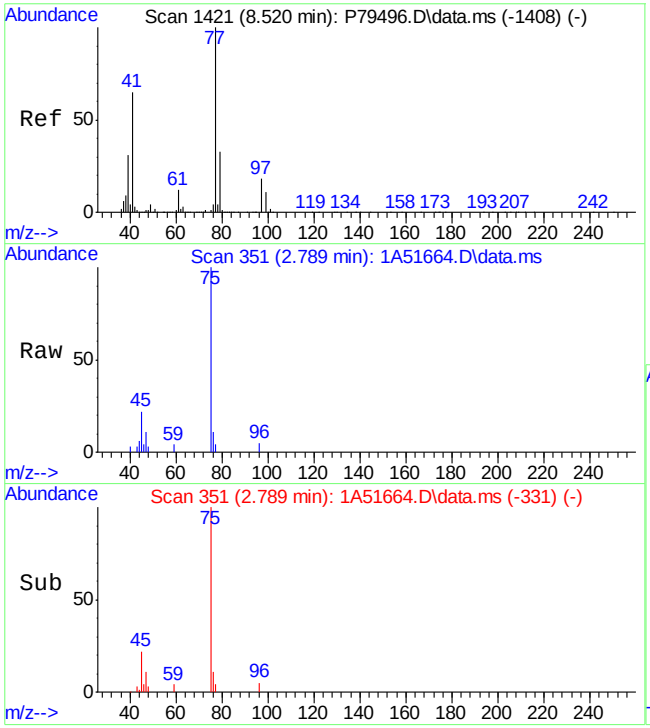


#31
Vinyl acetate
Concen: 0.05 ug/L
RT: 2.566 min Scan# 322
Delta R.T. 0.008 min
Lab File: 1A51664.D
Acq: 26 Dec 2023 9:16 am

Tgt Ion: 43 Resp: 243

Ion	Ratio	Lower	Upper
43	100		
42	0.0	0.0	38.3

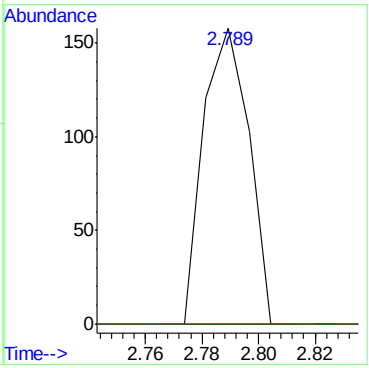


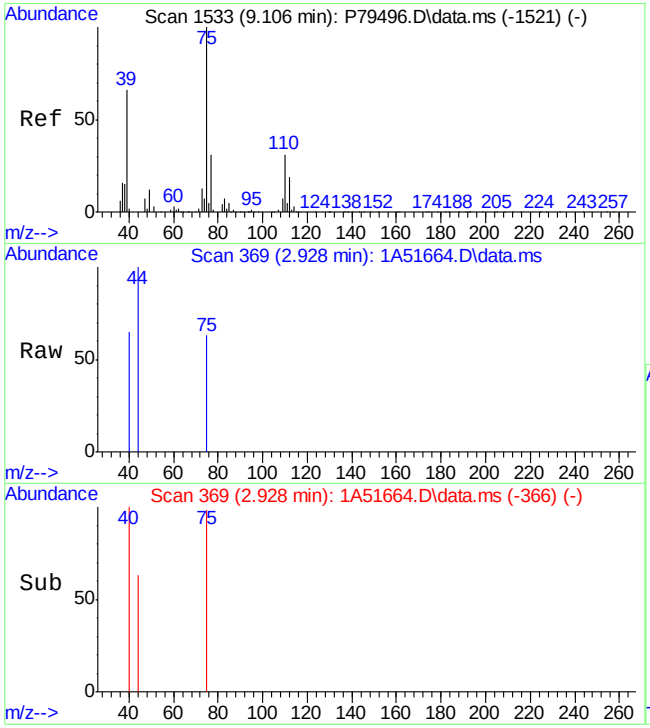


#33
2,2-Dichloropropane
Concen: 0.08 ug/L
RT: 2.789 min Scan# 351
Delta R.T. 0.008 min
Lab File: 1A51664.D
Acq: 26 Dec 2023 9:16 am

Tgt Ion: 77 Resp: 176

Ion	Ratio	Lower	Upper
77	100		
97	0.0	0.0	48.7
99	0.0	0.0	42.5
79	0.0	3.5	63.5#

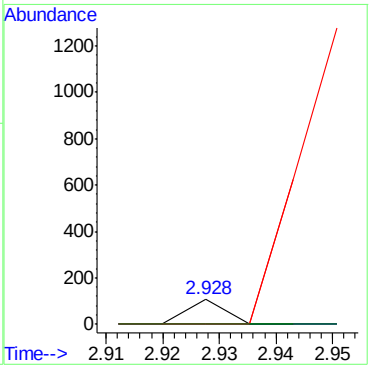


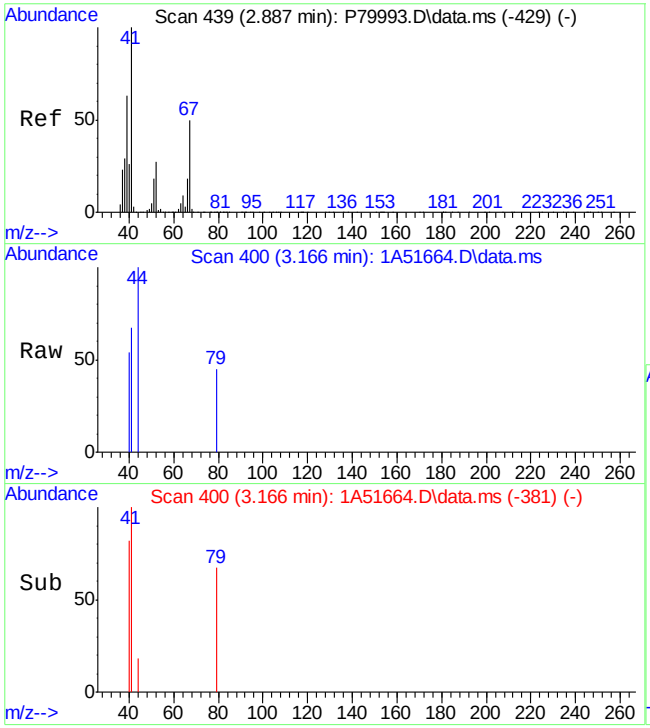


#43
1,1-Dichloropropene
Concen: 0.02 ug/L
RT: 2.928 min Scan# 369
Delta R.T. -0.123 min
Lab File: 1A51664.D
Acq: 26 Dec 2023 9:16 am

Tgt Ion: 75 Resp: 50

Ion	Ratio	Lower	Upper
75	100		
39	0.0	27.7	87.7#
110	0.0	4.9	64.9#
77	0.0	1.5	61.5#

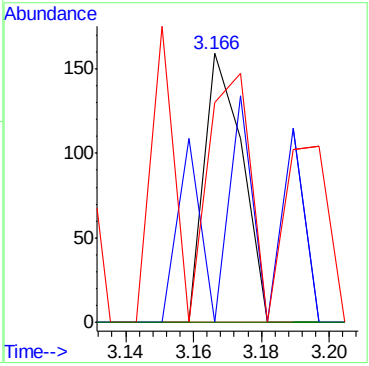


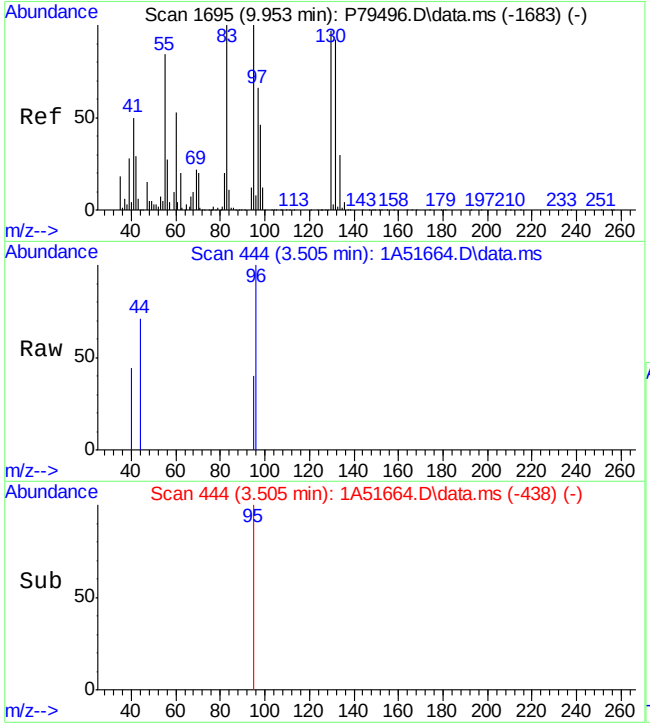


#46
Methacrylonitrile
Concen: 0.09 ug/L
RT: 3.166 min Scan# 400
Delta R.T. -0.000 min
Lab File: 1A51664.D
Acq: 26 Dec 2023 9:16 am

Tgt Ion: 41 Resp: 124

Ion	Ratio	Lower	Upper
41	100		
39	0.0	33.8	73.8#
40	17.6	5.7	45.7
52	0.0	10.8	50.8#

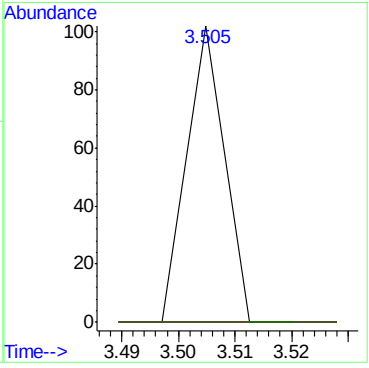


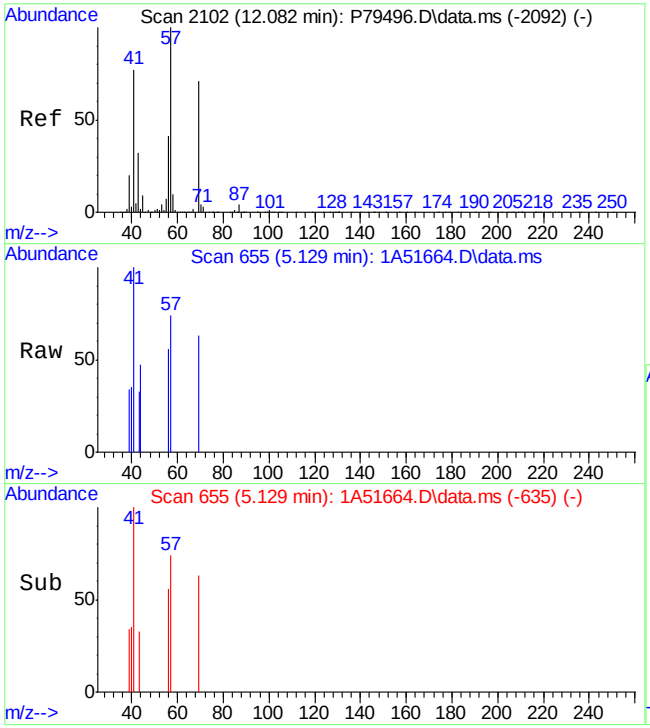


#53
Trichloroethene
Concen: 0.03 ug/L
RT: 3.505 min Scan# 444
Delta R.T. -0.000 min
Lab File: 1A51664.D
Acq: 26 Dec 2023 9:16 am

Tgt Ion: 95 Resp: 47

Ion	Ratio	Lower	Upper
95	100		
130	0.0	76.8	136.8#
97	0.0	34.1	94.1#
132	0.0	81.1	141.1#

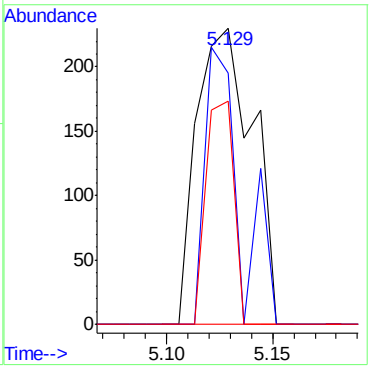


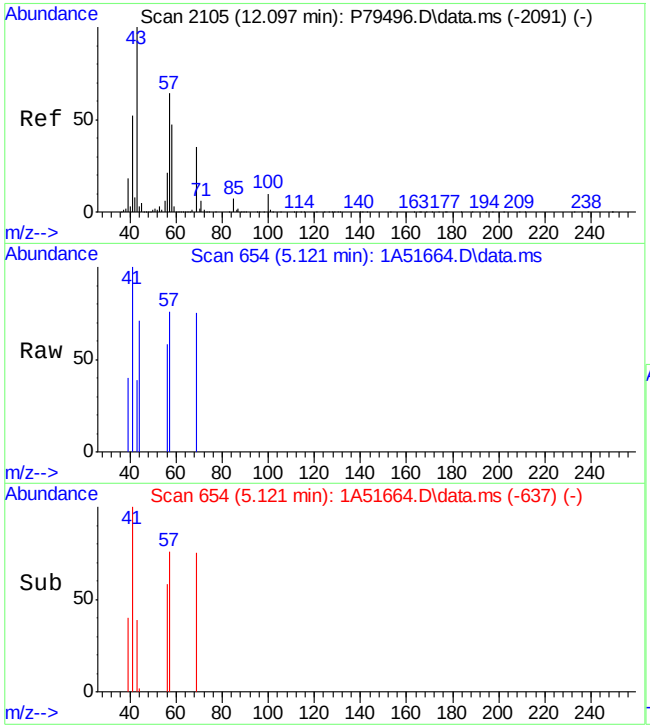


#74
3,3-Dimethyl-1-Butanol
Concen: 1.27 ug/L
RT: 5.129 min Scan# 655
Delta R.T. 0.008 min
Lab File: 1A51664.D
Acq: 26 Dec 2023 9:16 am

Tgt Ion: 57 Resp: 422

Ion	Ratio	Lower	Upper
57	100		
69	58.1	40.6	80.6
56	37.2	17.0	57.0

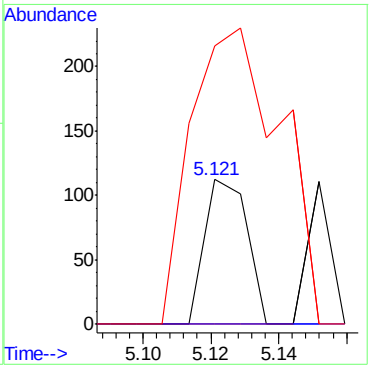


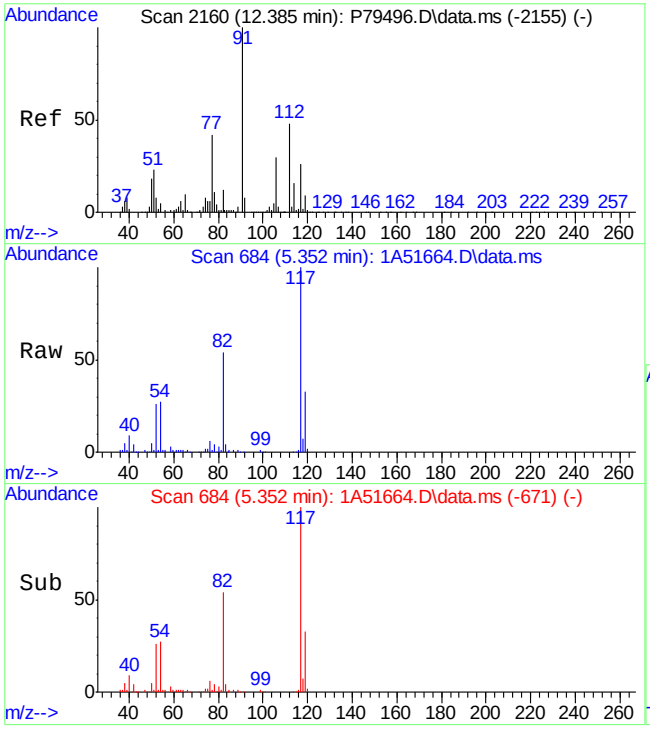


#75
2-hexanone
Concen: 0.04 ug/L
RT: 5.121 min Scan# 654
Delta R.T. -0.016 min
Lab File: 1A51664.D
Acq: 26 Dec 2023 9:16 am

Tgt Ion: 43 Resp: 98

Ion	Ratio	Lower	Upper
43	100		
58	0.0	22.5	82.5#
57	192.9	40.1	100.1#

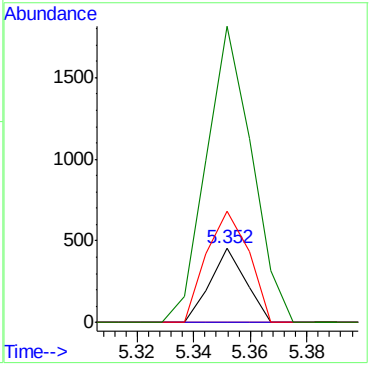


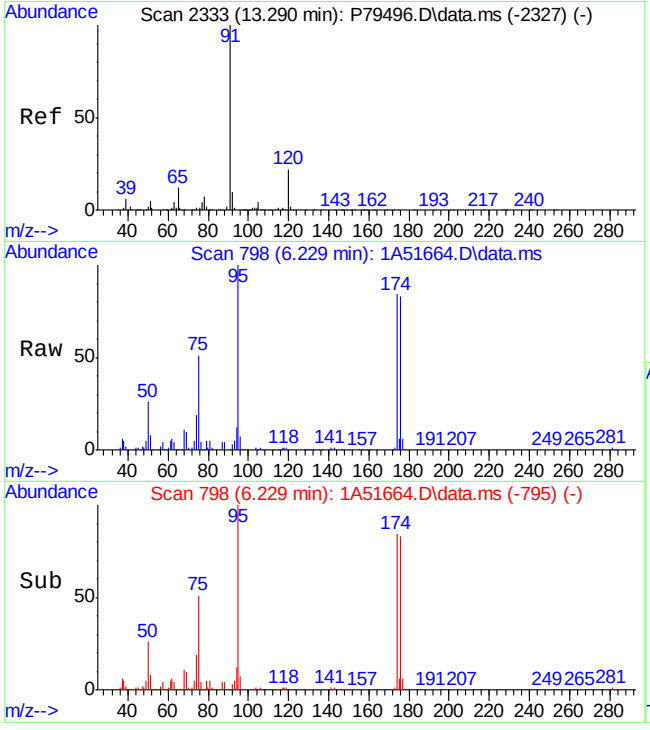


#77
Ethylbenzene
Concen: 0.05 ug/L
RT: 5.352 min Scan# 684
Delta R.T. -0.046 min
Lab File: 1A51664.D
Acq: 26 Dec 2023 9:16 am

Tgt Ion: 91 Resp: 397

Ion	Ratio	Lower	Upper
91	100		
106	0.0	2.0	62.0#
65	150.0	0.0	38.3#
51	398.0	0.0	40.1#

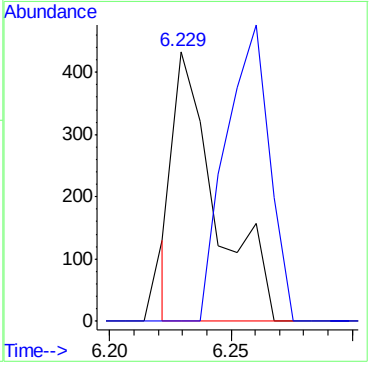


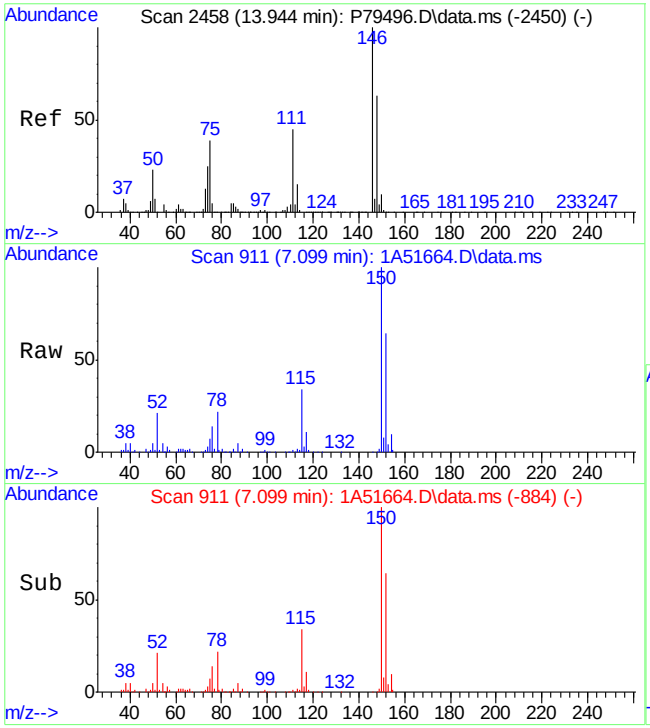


#88
n-Propylbenzene
Concen: 0.06 ug/L
RT: 6.229 min Scan# 798
Delta R.T. -0.123 min
Lab File: 1A51664.D
Acq: 26 Dec 2023 9:16 am

Tgt Ion: 91 Resp: 527

Ion	Ratio	Lower	Upper
91	100		
120	0.0	0.0	54.8

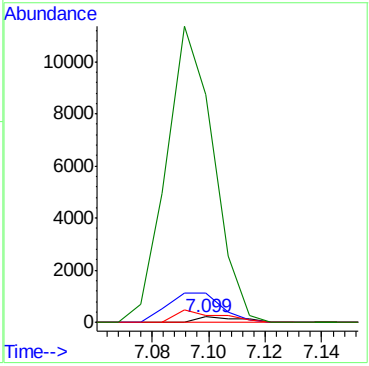


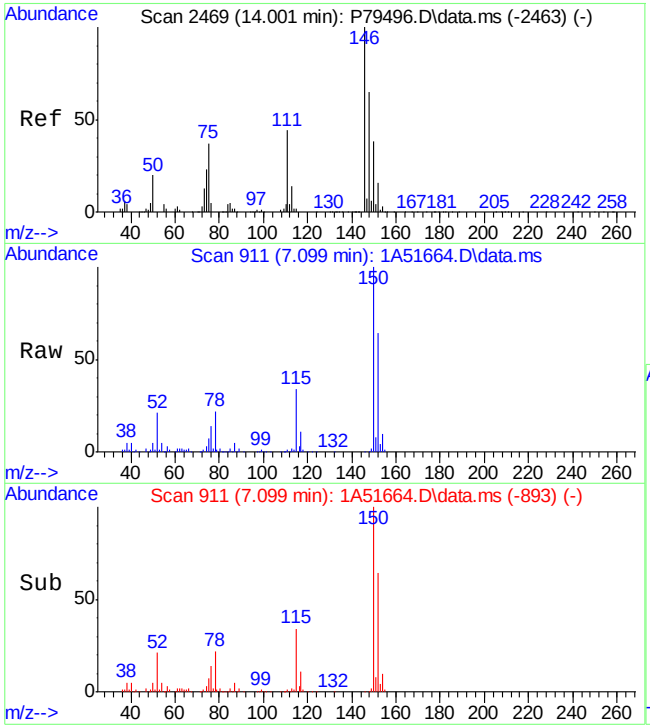


#102
1,3-Dichlorobenzene
Concen: 0.06 ug/L
RT: 7.099 min Scan# 911
Delta R.T. 0.061 min
Lab File: 1A51664.D
Acq: 26 Dec 2023 9:16 am

Tgt Ion:146 Resp: 214

Ion	Ratio	Lower	Upper
146	100		
111	554.0	5.5	65.5#
148	130.0	34.7	94.7#
75	4375.0	0.0	54.2#

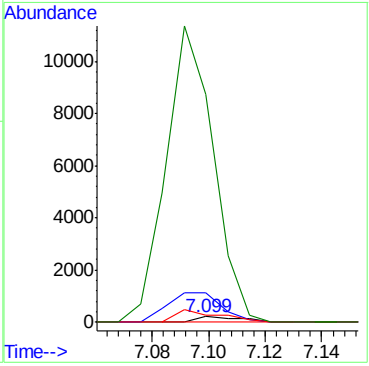


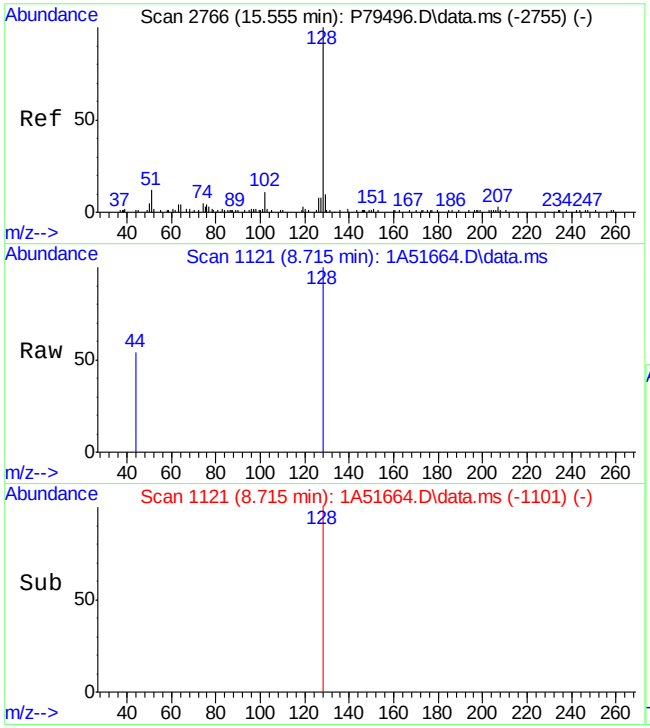


#104
1,4-Dichlorobenzene
Concen: 0.06 ug/L
RT: 7.099 min Scan# 911
Delta R.T. -0.008 min
Lab File: 1A51664.D
Acq: 26 Dec 2023 9:16 am

Tgt Ion:146 Resp: 214

Ion	Ratio	Lower	Upper
146	100		
111	554.0	8.0	68.0#
148	130.0	35.4	95.4#
75	4375.0	0.0	56.4#

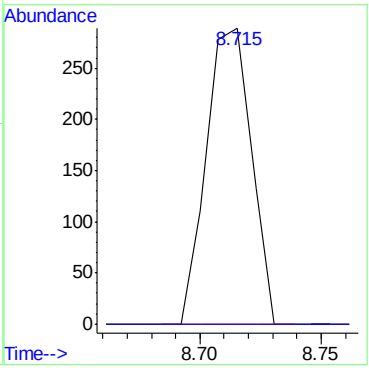




#111
Naphthalene
Concen: 0.09 ug/L
RT: 8.715 min Scan# 1121
Delta R.T. 0.008 min
Lab File: 1A51664.D
Acq: 26 Dec 2023 9:16 am

Tgt Ion:128 Resp: 374

Ion	Ratio	Lower	Upper
128	100		
127	0.0	0.0	43.5



Manual Integrations APPROVED (compounds with "m" flag)
Neil Christiana 12/21/23 03:47

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\12-19-2023\
Data File : 1A51512.D
Acq On : 19 Dec 2023 7:52 am
Operator : jeniferw
Sample : BS
Misc : MS55563,V1A2022,,,,,
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Dec 19 08:09:54 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	3.405	96	321951	50.00	ug/L	0.00
62) Chlorobenzene-d5	5.352	117	226420	50.00	ug/L	0.00
85) 1,4-Dichlorobenzene-d4	7.091	152	115496	50.00	ug/L	0.00
System Monitoring Compounds						
39) Dibromofluoromethane	2.951	113	89686	47.26	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 94.52%			
49) 1,2-Dichloroethane-d4	3.235	65	110551	52.63	ug/L	0.00
Spiked Amount 50.000	Range 79 - 125		Recovery = 105.26%			
63) Toluene-d8	4.336	98	313782	51.90	ug/L	0.00
Spiked Amount 50.000	Range 85 - 112		Recovery = 103.80%			
86) 4-Bromofluorobenzene	6.229	174	97693	50.69	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 101.38%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.019	85	30379	24.71	ug/L	100
3) Chloromethane	1.127	50	40230	21.84	ug/L	100
4) 1,3-butadiene	1.181	39	41045	17.77	ug/L	97
5) Vinyl Chloride	1.165	62	42479	23.08	ug/L	98
6) Bromomethane	1.342	94	21272	31.96	ug/L	94
7) Chloroethane	1.411	64	27442	23.38	ug/L	95
8) Trichlorofluoromethane	1.496	101	62698	23.93	ug/L	98
9) Ethyl Ether	1.650	59	35012	21.82	ug/L	93
10) Ethanol	1.704	45	6280	171.33	ug/L	89
11) 1,2-Dichlorotrifluoroe...	1.742	67	47504	22.72	ug/L	97
12) 1,1-Dichloroethene	1.758	61	59513	21.41	ug/L	98
13) Freon 113	1.781	101	40980	25.85	ug/L	93
14) Carbon Disulfide	1.781	76	105811	20.54	ug/L	90
15) Iodomethane	1.827	142	32866	27.14	ug/L	95
16) Acrolein	1.904	56	52083	105.18	ug/L	95
17) Allyl chloride	1.989	41	62190	23.38	ug/L	84
18) Methylene Chloride	2.043	49	63432	23.35	ug/L	92
19) Acetone	2.050	43	93341	116.74	ug/L	99
20) Methyl acetate	2.119	43	202285	93.61	ug/L	95
21) trans-1,2-Dichloroethene	2.135	61	59642	21.35	ug/L	97
22) Hexane	2.196	56	43459	22.73	ug/L	95
23) Methyl Tert Butyl Ether	2.189	73	110384	21.23	ug/L	94
24) Acetonitrile	2.266	41	59634	213.15	ug/L	98
25) Tert Butyl Alcohol	2.212	59	58374	152.53	ug/L	88
26) Di-isopropyl ether	2.389	45	137222	21.01	ug/L	93
27) Chloroprene	2.435	53	164675	20.60	ug/L	97
28) 1,1-Dichloroethane	2.443	63	74980	20.68	ug/L	99
29) Acrylonitrile	2.435	52	104204	107.60	ug/L	99
30) ETBE	2.581	59	127707	21.21	ug/L	98
31) Vinyl acetate	2.558	43	518888	106.81	ug/L	96
32) cis-1,2-Dichloroethene	2.720	96	42779	21.34	ug/L	96
33) 2,2-Dichloropropane	2.781	77	59552	23.55	ug/L	97
34) Bromochloromethane	2.820	128	21215	20.89	ug/L	91
35) Cyclohexane	2.858	56	72894	20.80	ug/L	91

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\12-19-2023\
Data File : 1A51512.D
Acq On : 19 Dec 2023 7:52 am
Operator : jeniferw
Sample : BS
Misc : MS55563,V1A2022,,,,,
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Dec 19 08:09:54 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
36) Chloroform	2.858	83	75817	22.79	ug/L		94
37) Ethyl acetate	2.912	43	300472	110.86	ug/L		98
38) Tetrahydrofuran	2.943	42	18072	17.62	ug/L		96
40) Carbon Tetrachloride	2.958	117	57493m	22.27	ug/L		
41) 1,1,1-Trichloroethane	2.989	97	64572	23.14	ug/L		94
42) 2-Butanone	2.997	43	137571	101.52	ug/L		89
43) 1,1-Dichloropropene	3.051	75	53469	21.96	ug/L		90
44) tert-Butyl formate	3.097	59	176570	106.22	ug/L		91
45) Propionitrile	3.143	54	84067	201.56	ug/L		99
46) Methacrylonitrile	3.166	41	357641	227.40	ug/L		96
47) Benzene	3.182	78	161968	22.66	ug/L		95
48) TAME	3.251	73	108650	21.53	ug/L	#	77
50) 1,2-Dichloroethane	3.274	62	60745	22.73	ug/L		94
51) Isobutyl Alcohol	3.251	43	93871	408.48	ug/L		89
52) Tert Amyl Alcohol	3.320	59	48216	153.23	ug/L		93
53) Trichloroethene	3.513	95	44784	22.41	ug/L		96
54) Methylcyclohexane	3.528	83	66662	20.91	ug/L		92
55) Dibromomethane	3.736	93	27311	21.37	ug/L		89
56) 1,2-Dichloropropane	3.790	63	44095	21.79	ug/L		92
57) Bromodichloromethane	3.828	83	51418	20.49	ug/L	#	95
58) Methyl methacrylate	3.920	41	47515	20.39	ug/L		91
59) 1,4-Dioxane	3.943	88	7530	275.53	ug/L		96
60) 2-Chloroethyl vinyl ether	4.167	63	110787	94.55	ug/L		96
61) cis-1,3-Dichloropropene	4.205	75	59855	20.50	ug/L		81
64) Toluene	4.367	91	172363	23.42	ug/L		98
65) 2-Nitropropane	4.467	41	54242	70.87	ug/L		87
66) 4-Methyl-2-pentanone	4.582	43	308151	115.28	ug/L		96
67) trans-1,3-Dichloropropene	4.613	75	52848	20.28	ug/L		91
68) Tetrachloroethene	4.628	166	48846	23.46	ug/L		97
69) Ethyl methacrylate	4.729	69	55897	26.01	ug/L		83
70) 1,1,2-Trichloroethane	4.713	83	31071	20.94	ug/L		94
71) Dibromochloromethane	4.844	129	40965	21.72	ug/L		96
72) 1,3-Dichloropropane	4.898	76	61347	22.46	ug/L		90
73) 1,2-Dibromoethane	4.998	107	39237	20.61	ug/L		93
74) 3,3-Dimethyl-1-Butanol	5.121	57	309061	867.53	ug/L		95
75) 2-hexanone	5.136	43	282461	109.11	ug/L		81
76) 1-Chlorohexane	5.367	91	70859m	27.72	ug/L		
77) Ethylbenzene	5.398	91	172512m	21.66	ug/L		
78) Chlorobenzene	5.367	112	110192	22.61	ug/L		97
79) 1,1,1,2-Tetrachloroethane	5.414	131	38926	21.95	ug/L		96
80) m,p-Xylene	5.498	91	297839	47.16	ug/L		99
81) o-Xylene	5.798	91	149188	22.20	ug/L		96
82) Styrene	5.837	104	110977	21.79	ug/L		95
83) Bromoform	5.837	173	24801	19.47	ug/L		97
84) Isopropylbenzene	6.045	105	175817	22.47	ug/L		99
87) cis-1,4-Dichloro-2-butene	6.268	53	15516	22.51	ug/L		80
88) n-Propylbenzene	6.352	91	215357	23.86	ug/L		98
89) Bromobenzene	6.306	156	44381	22.15	ug/L		91
90) 1,1,2,2-Tetrachloroethane	6.376	83	50015	21.38	ug/L		97
91) 1,3,5-Trimethylbenzene	6.506	105	145618	23.51	ug/L		98

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\12-19-2023\
Data File : 1A51512.D
Acq On : 19 Dec 2023 7:52 am
Operator : jeniferw
Sample : BS
Misc : MS55563,V1A2022,,,,,
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Dec 19 08:09:54 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration

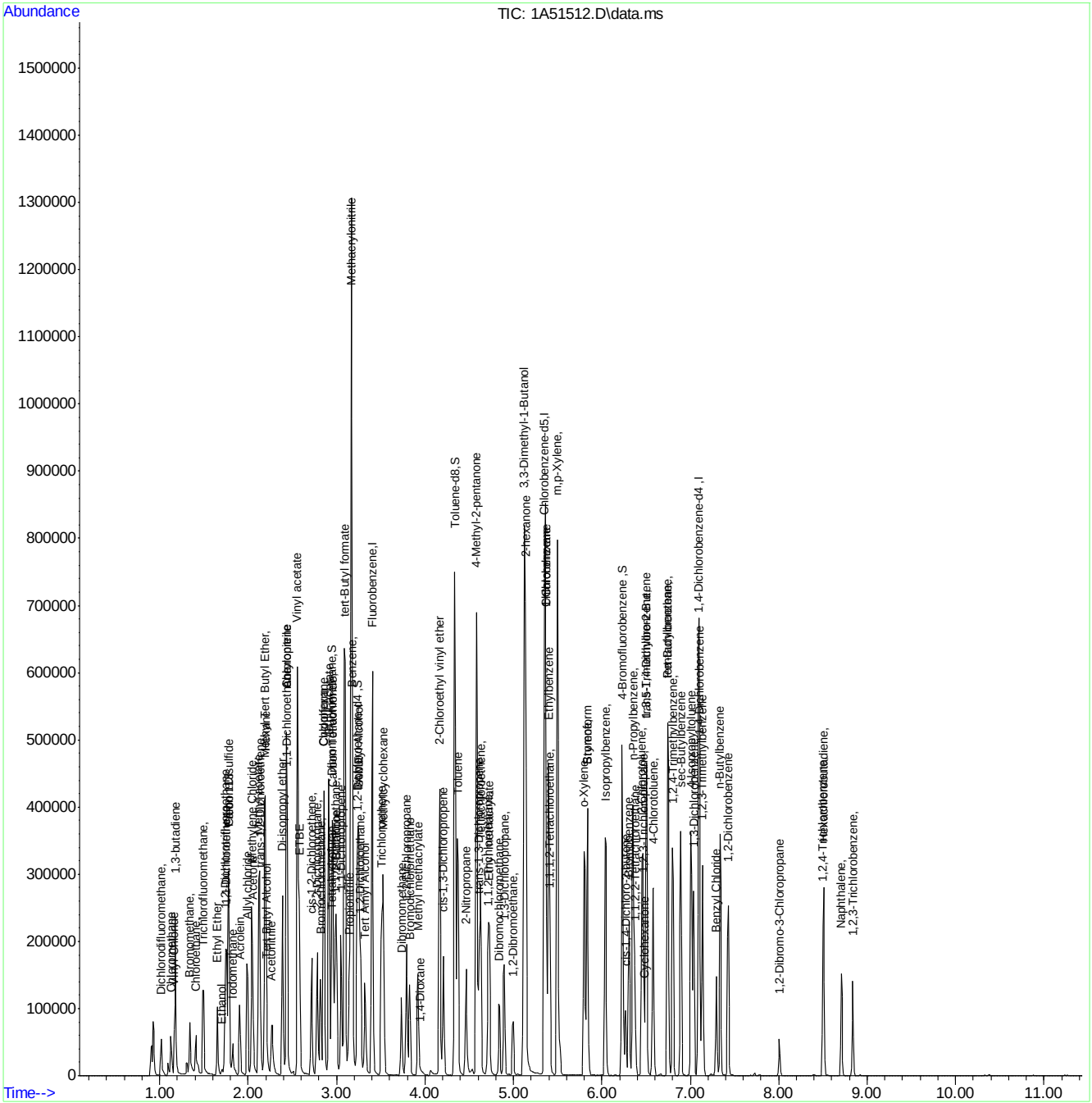
	Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
92)	2-Chlorotoluene	6.453	91	120223	23.21	ug/L		99
93)	trans-1,4-Dichloro-2-B...	6.506	53	18161	20.13	ug/L		82
94)	1,2,3-Trichloropropane	6.468	110	15476	23.99	ug/L		82
95)	Cyclohexanone	6.483	55	15782	129.83	ug/L		93
96)	4-Chlorotoluene	6.583	91	125520	23.48	ug/L		95
97)	tert-Butylbenzene	6.745	91	84630	24.16	ug/L		94
98)	1,2,4-Trimethylbenzene	6.799	105	138438	23.32	ug/L		99
99)	Pentachloroethane	6.745	167	24679	25.07	ug/L	#	82
100)	sec-Butylbenzene	6.891	105	175970	22.49	ug/L		97
101)	4-Isopropyltoluene	7.007	119	152759	22.76	ug/L		100
102)	1,3-Dichlorobenzene	7.037	146	79422	21.97	ug/L		96
103)	1,2,3-Trimethylbenzene	7.138	105	131469	22.30	ug/L		99
104)	1,4-Dichlorobenzene	7.107	146	80992	22.14	ug/L		97
105)	n-Butylbenzene	7.338	92	75065	24.91	ug/L		94
106)	Benzyl Chloride	7.291	126	14695	17.53	ug/L	#	81
107)	1,2-Dichlorobenzene	7.430	146	72647	22.57	ug/L		96
108)	1,2-Dibromo-3-Chloropr...	8.007	75	7710	20.70	ug/L	#	81
109)	Hexachlorobutadiene	8.507	225	18071	24.21	ug/L		90
110)	1,2,4-Trichlorobenzene	8.500	180	34320	19.22	ug/L		95
111)	Naphthalene	8.708	128	76670	16.75	ug/L		97
112)	1,2,3-Trichlorobenzene	8.838	180	26371	18.59	ug/L		93

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\12-19-2023\
Data File : 1A51512.D
Acq On : 19 Dec 2023 7:52 am
Operator : jeniferw
Sample : BS
Misc : MS55563,V1A2022,,,,,
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Dec 19 08:09:54 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration



Manual Integration Approval Summary

Sample Number: V1A2022-BS
Lab FileID: 1A51512.D
Injection Time: 12/19/23 07:52

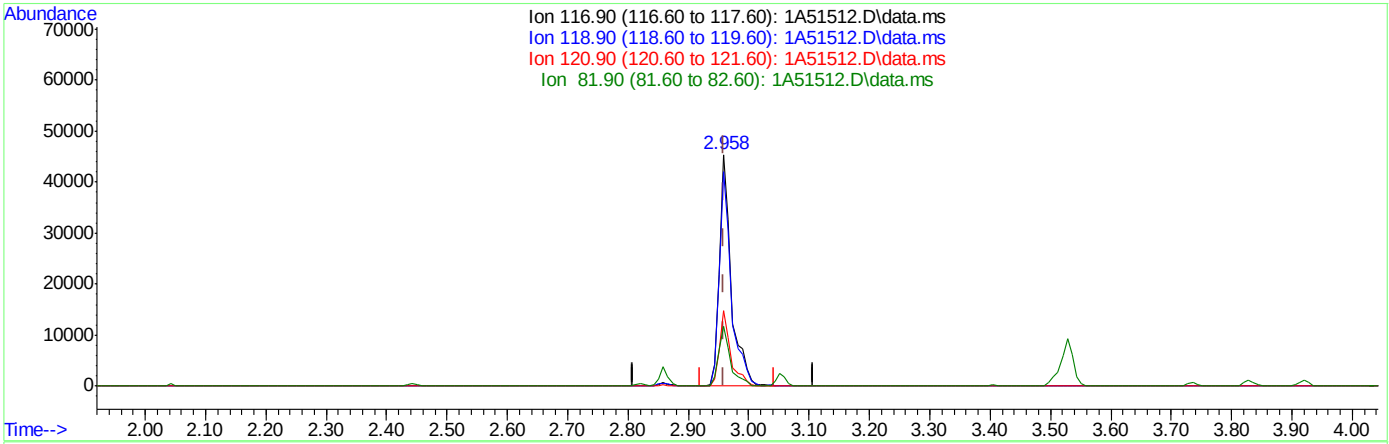
Method: SW846 8260D
Analyst approved: 12/19/23 08:12 Jenifer Willis
Supervisor approved: 12/21/23 03:47 Neil Christiana

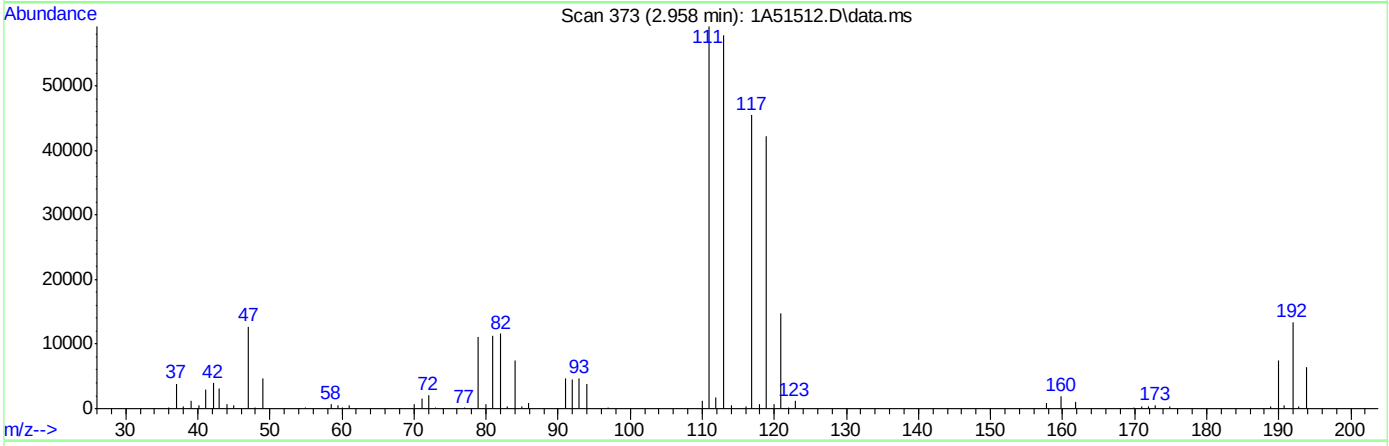
Parameter	CAS	Sig#	R.T. (min.)	Reason
Carbon Tetrachloride	56-23-5		2.96	Overlapping peak
1-Chlorohexane	544-10-5		5.37	Overlapping peak
Ethylbenzene	100-41-4		5.40	Overlapping peak

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\12-19-2023\
Data File : 1A51512.D
Acq On : 19 Dec 2023 7:52 am
Operator : jeniferw
Sample : BS
Misc : MS55563,V1A2022,,,,,
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Dec 19 08:08:59 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration





TIC: 1A51512.D\data.ms

(40) Carbon Tetrachloride ( )

2.958min (-0.000) 24.54ug/L

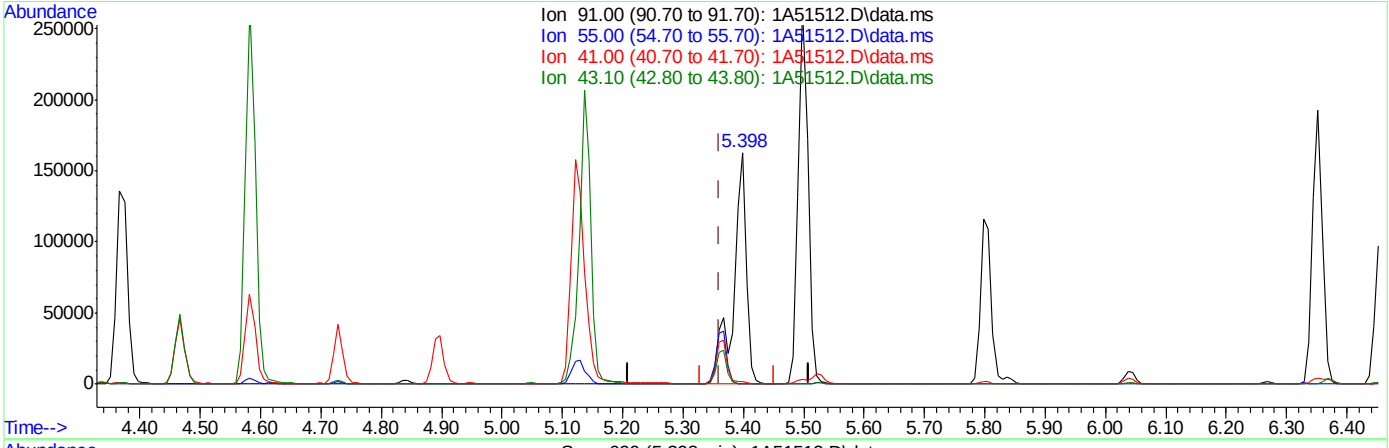
response 63365

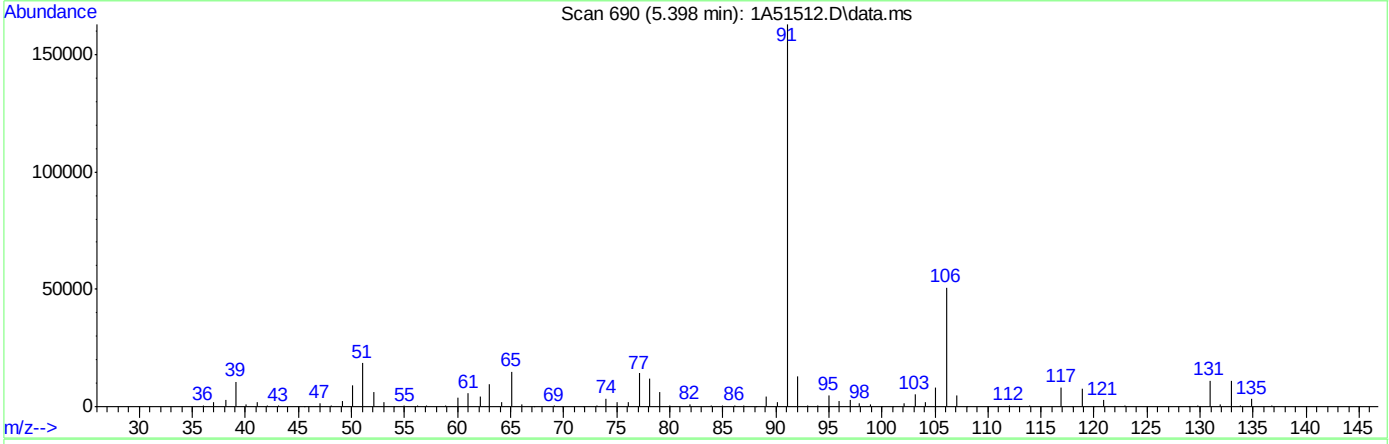
Ion	Exp%	Act%
116.90	100	100
118.90	94.50	92.74
120.90	31.10	32.40
81.90	25.40	25.58

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\12-19-2023\
Data File : 1A51512.D
Acq On : 19 Dec 2023 7:52 am
Operator : jeniferw
Sample : BS
Misc : MS55563,V1A2022,,,,,
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Dec 19 08:08:59 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration





TIC: 1A51512.D\data.ms

(76) 1-Chlorohexane

5.398min (+0.038) 95.22ug/L

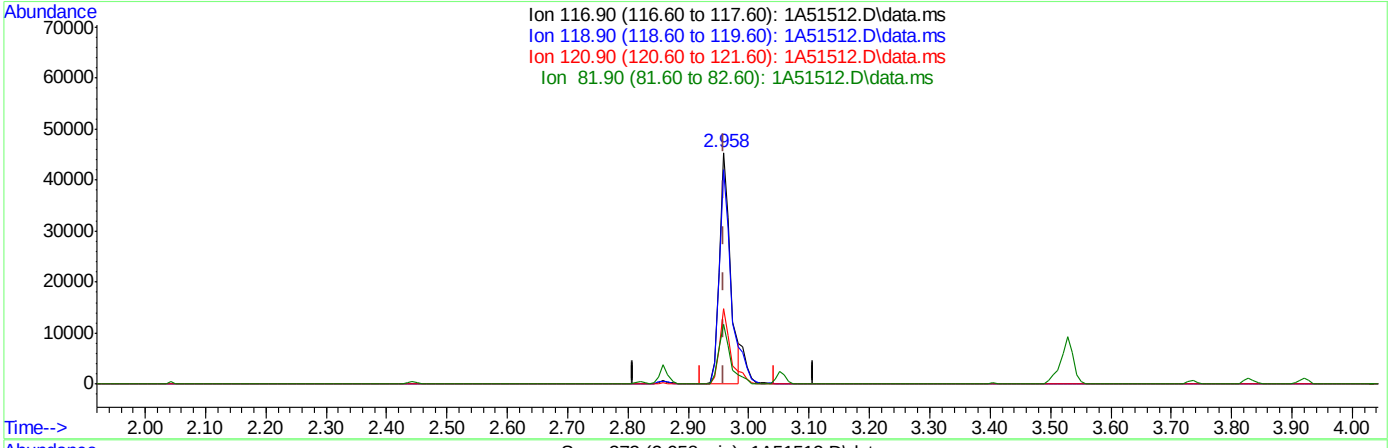
response 243406

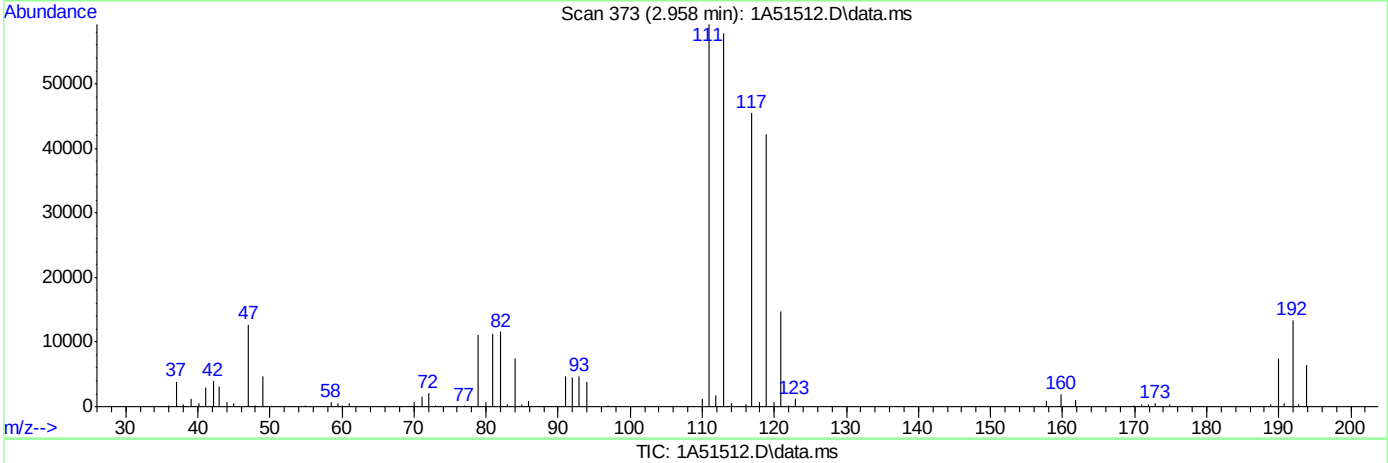
Ion	Exp%	Act%
91.00	100	100
55.00	74.60	0.28#
41.00	53.90	0.87#
43.10	42.90	0.14#

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\12-19-2023\
Data File : 1A51512.D
Acq On : 19 Dec 2023 7:52 am
Operator : jeniferw
Sample : BS
Misc : MS55563,V1A2022,,,,,
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Dec 19 08:08:59 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration





TIC: 1A51512.D\data.ms

(40) Carbon Tetrachloride ( )

2.958min (-0.000) 22.27ug/L m

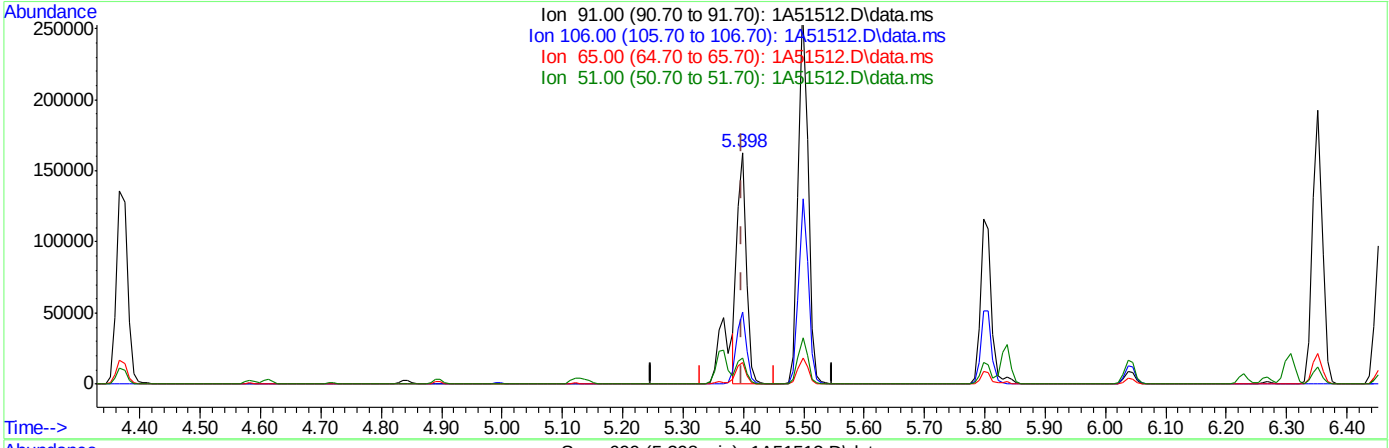
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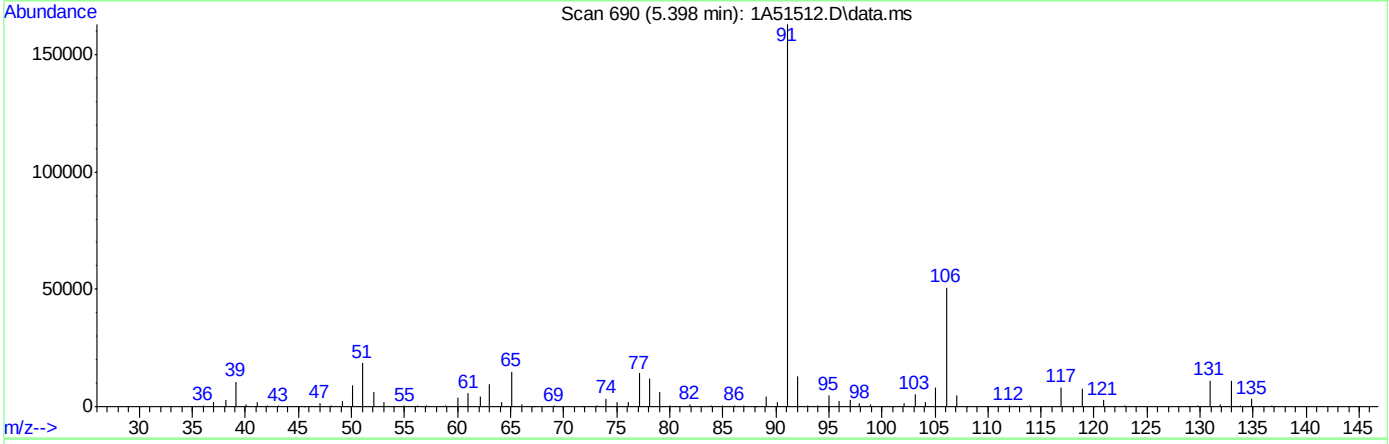
Ion	Exp%	Act%
116.90	100	100
118.90	94.50	92.74
120.90	31.10	32.40
81.90	25.40	25.58

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\12-19-2023\
Data File : 1A51512.D
Acq On : 19 Dec 2023 7:52 am
Operator : jeniferw
Sample : BS
Misc : MS55563,V1A2022,,,,,
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Dec 19 08:08:59 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration





TIC: 1A51512.D\data.ms

(77) Ethylbenzene

5.398min (-0.000) 21.66ug/L m

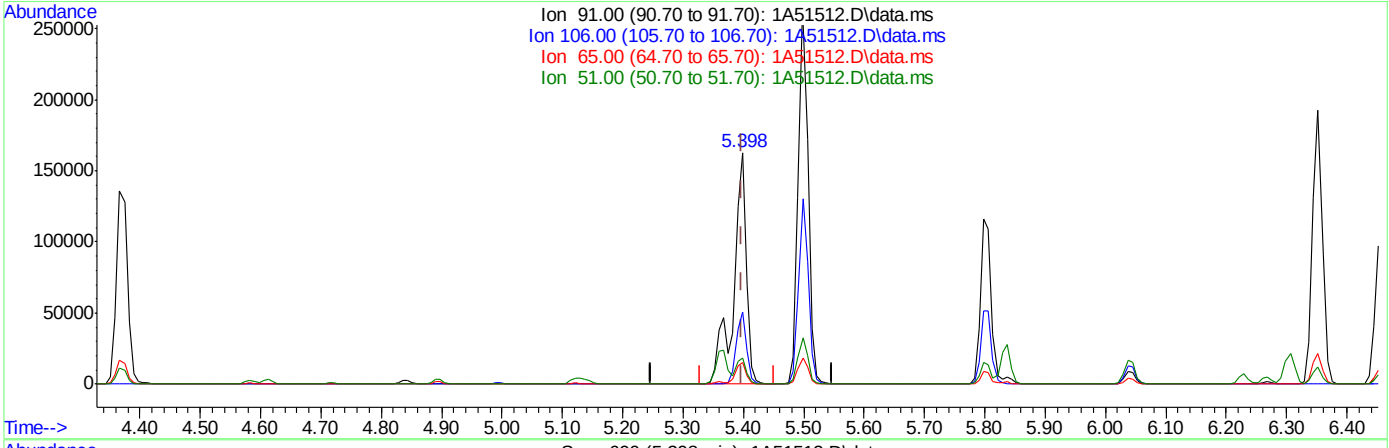
response 172512

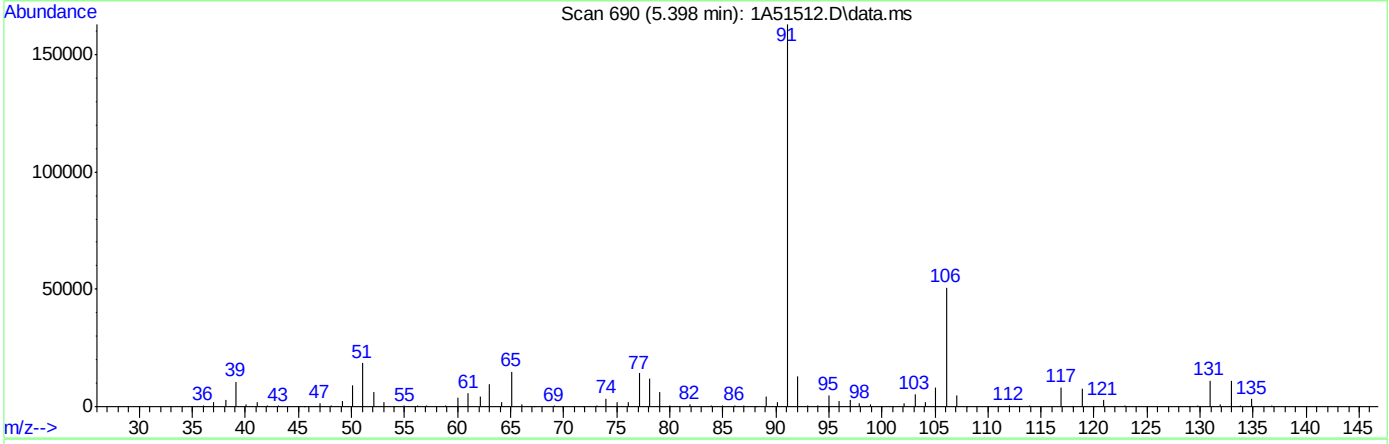
Ion	Exp%	Act%
91.00	100	100
106.00	32.00	31.17
65.00	8.30	9.17
51.00	10.10	11.38

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\12-19-2023\
Data File : 1A51512.D
Acq On : 19 Dec 2023 7:52 am
Operator : jeniferw
Sample : BS
Misc : MS55563,V1A2022,,,,,
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Dec 19 08:08:59 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration





TIC: 1A51512.D\data.ms

(77) Ethylbenzene

5.398min (-0.000) 30.56ug/L

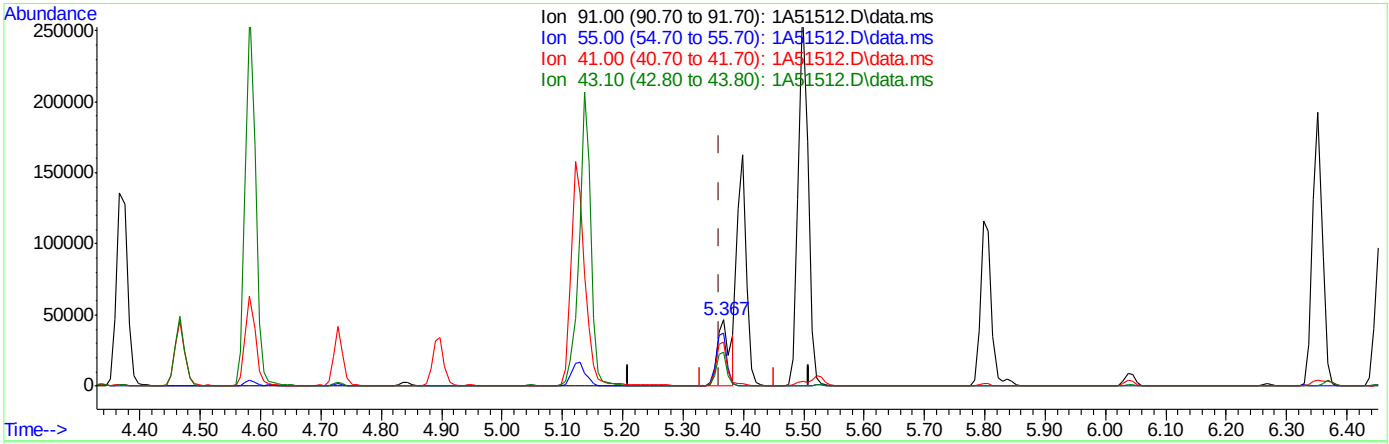
response 243406

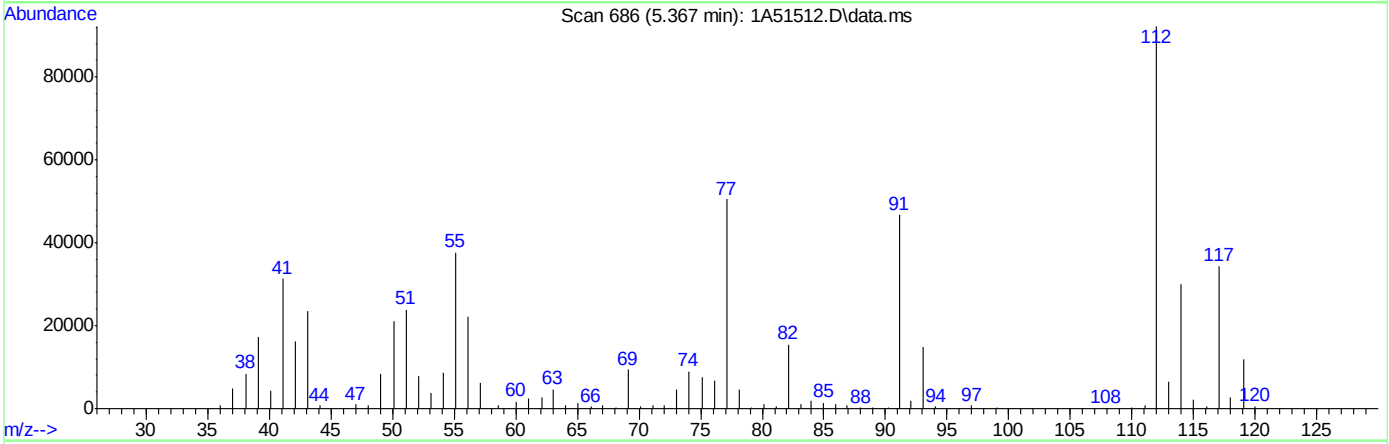
Ion	Exp%	Act%
91.00	100	100
106.00	32.00	31.17
65.00	8.30	9.17
51.00	10.10	11.38

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\12-19-2023\
Data File : 1A51512.D
Acq On : 19 Dec 2023 7:52 am
Operator : jeniferw
Sample : BS
Misc : MS55563,V1A2022,,,,,
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Dec 19 08:08:59 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration





TIC: 1A51512.D\data.ms

(76) 1-Chlorohexane

5.367min (+0.008) 27.72ug/L m

response 70859

Ion	Exp%	Act%
91.00	100	100
55.00	74.60	80.58
41.00	53.90	67.15
43.10	42.90	50.69

Manual Integrations APPROVED (compounds with "m" flag)
Neil Christiana 12/27/23 10:23

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\12-26-2023\
Data File : 1A51662.D
Acq On : 26 Dec 2023 8:28 am
Operator : lianatr
Sample : BS
Misc : MS55601,V1A2028,,,,,
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Dec 26 08:41:32 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	3.405	96	309508	50.00	ug/L	0.00
62) Chlorobenzene-d5	5.352	117	224519	50.00	ug/L	0.00
85) 1,4-Dichlorobenzene-d4	7.099	152	112687	50.00	ug/L	0.00
System Monitoring Compounds						
39) Dibromofluoromethane	2.958	113	89195	48.89	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 97.78%			
49) 1,2-Dichloroethane-d4	3.235	65	109328	54.14	ug/L	0.00
Spiked Amount 50.000	Range 79 - 125		Recovery = 108.28%			
63) Toluene-d8	4.336	98	305564	50.97	ug/L	0.00
Spiked Amount 50.000	Range 85 - 112		Recovery = 101.94%			
86) 4-Bromofluorobenzene	6.229	174	95732	50.91	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 101.82%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.019	85	30631	25.91	ug/L	97
3) Chloromethane	1.134	50	37355	21.10	ug/L	99
4) 1,3-butadiene	1.180	39	41548	18.71	ug/L	95
5) Vinyl Chloride	1.173	62	41927	23.70	ug/L	98
6) Bromomethane	1.342	94	18714	29.25	ug/L	92
7) Chloroethane	1.411	64	33974	30.11	ug/L	98
8) Trichlorofluoromethane	1.496	101	66423	26.38	ug/L	95
9) Ethyl Ether	1.658	59	38153	24.73	ug/L	93
10) Ethanol	1.711	45	17573	498.70	ug/L	98
11) 1,2-Dichlorotrifluoroe...	1.742	67	51979	25.86	ug/L	88
12) 1,1-Dichloroethene	1.758	61	64294	24.06	ug/L	95
13) Freon 113	1.781	101	44887	29.45	ug/L	91
14) Carbon Disulfide	1.781	76	116205	23.47	ug/L	86
15) Iodomethane	1.827	142	24667	21.19	ug/L	98
16) Acrolein	1.912	56	54995	115.52	ug/L	99
17) Allyl chloride	1.996	41	64292	25.14	ug/L	88
18) Methylene Chloride	2.042	49	76401	29.26	ug/L	89
19) Acetone	2.050	43	105680	137.49	ug/L	95
20) Methyl acetate	2.127	43	238772	114.94	ug/L	96
21) trans-1,2-Dichloroethene	2.135	61	63739	23.74	ug/L	92
22) Hexane	2.196	56	49862	27.13	ug/L	94
23) Methyl Tert Butyl Ether	2.196	73	121381	24.28	ug/L	81
24) Acetonitrile	2.273	41	76249	283.50	ug/L	98
25) Tert Butyl Alcohol	2.212	59	85064	231.20	ug/L	84
26) Di-isopropyl ether	2.396	45	149711	23.85	ug/L	92
27) Chloroprene	2.443	53	176507	22.96	ug/L	96
28) 1,1-Dichloroethane	2.443	63	83401	23.93	ug/L	97
29) Acrylonitrile	2.443	52	113661	122.08	ug/L	98
30) ETBE	2.581	59	140992	24.36	ug/L	95
31) Vinyl acetate	2.566	43	559579	119.82	ug/L	96
32) cis-1,2-Dichloroethene	2.720	96	44484	23.08	ug/L	94
33) 2,2-Dichloropropane	2.781	77	63255	26.01	ug/L	98
34) Bromochloromethane	2.820	128	21351	21.87	ug/L #	78
35) Cyclohexane	2.858	56	80416	23.87	ug/L	89

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\12-26-2023\
Data File : 1A51662.D
Acq On : 26 Dec 2023 8:28 am
Operator : lianatr
Sample : BS
Misc : MS55601,V1A2028,,,,,
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Dec 26 08:41:32 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration

	Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
36)	Chloroform	2.858	83	79431	24.83	ug/L		92
37)	Ethyl acetate	2.912	43	341951	131.23	ug/L		96
38)	Tetrahydrofuran	2.951	42	20820	21.12	ug/L		92
40)	Carbon Tetrachloride	2.958	117	59167m	23.84	ug/L		
41)	1,1,1-Trichloroethane	2.989	97	67973	25.34	ug/L		94
42)	2-Butanone	3.004	43	159288	122.27	ug/L		91
43)	1,1-Dichloropropene	3.058	75	59595	25.47	ug/L		94
44)	tert-Butyl formate	3.097	59	200299	125.34	ug/L		93
45)	Propionitrile	3.143	54	97265	242.58	ug/L		99
46)	Methacrylonitrile	3.166	41	387704	256.42	ug/L		97
47)	Benzene	3.181	78	168859	24.58	ug/L		93
48)	TAME	3.251	73	116663	24.05	ug/L		90
50)	1,2-Dichloroethane	3.274	62	67659	26.33	ug/L		93
51)	Isobutyl Alcohol	3.258	43	114259	517.18	ug/L		97
52)	Tert Amyl Alcohol	3.328	59	69165	228.64	ug/L		93
53)	Trichloroethene	3.512	95	47211	24.58	ug/L		91
54)	Methylcyclohexane	3.528	83	70473	22.99	ug/L		93
55)	Dibromomethane	3.736	93	29806	24.26	ug/L		86
56)	1,2-Dichloropropane	3.789	63	46649	23.98	ug/L		94
57)	Bromodichloromethane	3.828	83	54637	22.65	ug/L	#	96
58)	Methyl methacrylate	3.920	41	50633	22.61	ug/L		87
59)	1,4-Dioxane	3.943	88	12480	475.01	ug/L		93
60)	2-Chloroethyl vinyl ether	4.167	63	117678	104.47	ug/L		94
61)	cis-1,3-Dichloropropene	4.213	75	65359	23.29	ug/L		85
64)	Toluene	4.374	91	180915	24.79	ug/L		99
65)	2-Nitropropane	4.467	41	62502	82.35	ug/L		85
66)	4-Methyl-2-pentanone	4.582	43	340688	128.54	ug/L		95
67)	trans-1,3-Dichloropropene	4.613	75	59703	23.11	ug/L		87
68)	Tetrachloroethene	4.628	166	51423	24.91	ug/L		94
69)	Ethyl methacrylate	4.728	69	55239	25.92	ug/L		83
70)	1,1,2-Trichloroethane	4.721	83	33033	22.45	ug/L		95
71)	Dibromochloromethane	4.844	129	44388	23.73	ug/L		97
72)	1,3-Dichloropropane	4.898	76	66798	24.66	ug/L		86
73)	1,2-Dibromoethane	4.998	107	42312	22.42	ug/L		97
74)	3,3-Dimethyl-1-Butanol	5.129	57	396887	1123.49	ug/L		97
75)	2-hexanone	5.136	43	331243	129.03	ug/L		89
76)	1-Chlorohexane	5.367	91	54433m	21.47	ug/L		
77)	Ethylbenzene	5.398	91	200558m	25.39	ug/L		
78)	Chlorobenzene	5.367	112	114645	23.72	ug/L		95
79)	1,1,1,2-Tetrachloroethane	5.413	131	40704	23.15	ug/L		95
80)	m,p-Xylene	5.498	91	312410	49.88	ug/L		98
81)	o-Xylene	5.806	91	156478	23.48	ug/L		99
82)	Styrene	5.837	104	117444	23.25	ug/L		95
83)	Bromoform	5.837	173	28072	22.23	ug/L		97
84)	Isopropylbenzene	6.044	105	182981	23.59	ug/L		98
87)	cis-1,4-Dichloro-2-butene	6.268	53	20050	29.81	ug/L	#	81
88)	n-Propylbenzene	6.352	91	220405	25.03	ug/L		98
89)	Bromobenzene	6.306	156	46331	23.70	ug/L		88
90)	1,1,2,2-Tetrachloroethane	6.375	83	55564	24.34	ug/L		95
91)	1,3,5-Trimethylbenzene	6.506	105	150663	24.93	ug/L		99

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\12-26-2023\
Data File : 1A51662.D
Acq On : 26 Dec 2023 8:28 am
Operator : lianatr
Sample : BS
Misc : MS55601,V1A2028,,,,,
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Dec 26 08:41:32 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration

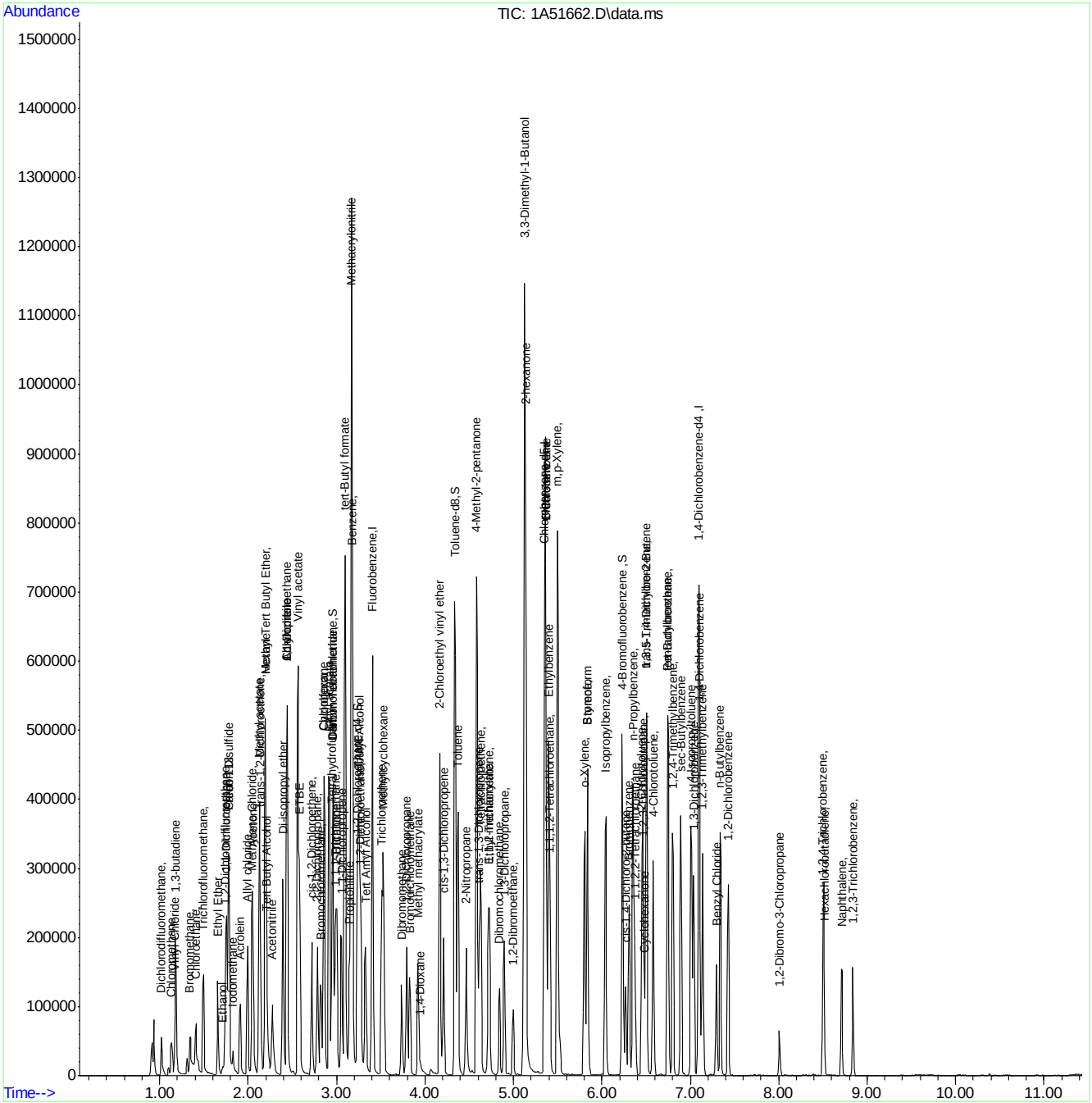
	Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
92)	2-Chlorotoluene	6.452	91	127163	25.16	ug/L		97
93)	trans-1,4-Dichloro-2-B...	6.506	53	23938	27.19	ug/L		86
94)	1,2,3-Trichloropropane	6.468	110	17507	27.82	ug/L		77
95)	Cyclohexanone	6.483	55	25020	210.96	ug/L		95
96)	4-Chlorotoluene	6.583	91	131670	25.24	ug/L		98
97)	tert-Butylbenzene	6.745	91	87602	25.63	ug/L		94
98)	1,2,4-Trimethylbenzene	6.799	105	142876	24.67	ug/L		99
99)	Pentachloroethane	6.745	167	25292	26.33	ug/L	#	86
100)	sec-Butylbenzene	6.891	105	179206	23.47	ug/L		97
101)	4-Isopropyltoluene	7.007	119	155769	23.78	ug/L		96
102)	1,3-Dichlorobenzene	7.037	146	83563	23.69	ug/L		95
103)	1,2,3-Trimethylbenzene	7.137	105	138488	24.07	ug/L		99
104)	1,4-Dichlorobenzene	7.107	146	85408	23.93	ug/L		95
105)	n-Butylbenzene	7.337	92	76873	26.15	ug/L		95
106)	Benzyl Chloride	7.299	126	17239	21.08	ug/L		97
107)	1,2-Dichlorobenzene	7.430	146	74668	23.78	ug/L		97
108)	1,2-Dibromo-3-Chloropr...	8.007	75	9073	24.97	ug/L	#	79
109)	Hexachlorobutadiene	8.515	225	17172	23.58	ug/L		95
110)	1,2,4-Trichlorobenzene	8.500	180	35682	20.49	ug/L		94
111)	Naphthalene	8.715	128	83860	18.78	ug/L		100
112)	1,2,3-Trichlorobenzene	8.838	180	26479	19.13	ug/L		95

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\12-26-2023\
Data File : 1A51662.D
Acq On : 26 Dec 2023 8:28 am
Operator : lianatr
Sample : BS
Misc : MS55601,V1A2028,,,,,
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Dec 26 08:41:32 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration



Manual Integration Approval Summary

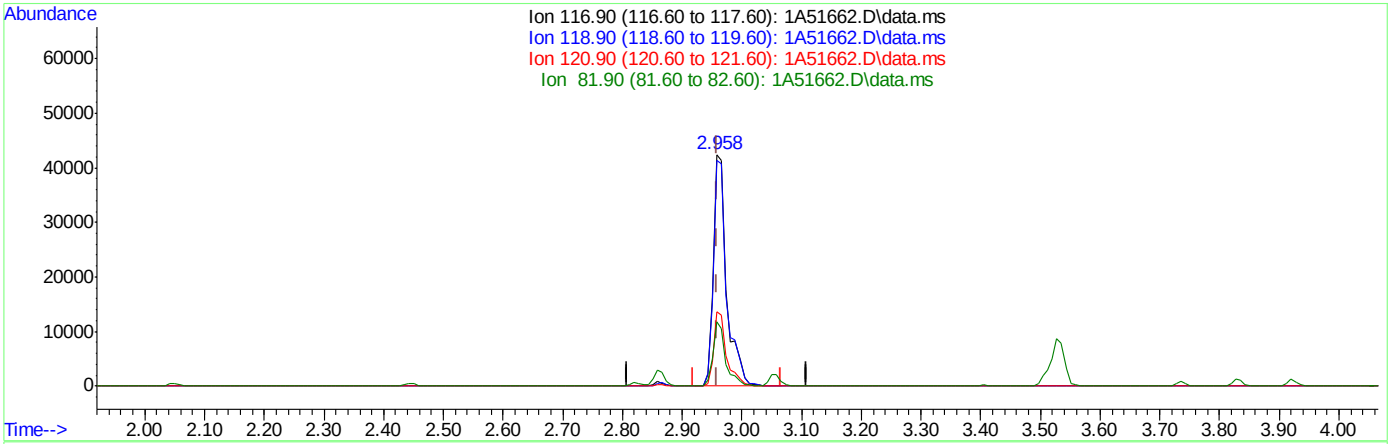
Sample Number: V1A2028-BS
Lab FileID: 1A51662.D
Injection Time: 12/26/23 08:28
Method: SW846 8260D
Analyst approved: 12/26/23 08:44 Liana Tortrodriguez
Supervisor approved: 12/27/23 10:23 Neil Christiana

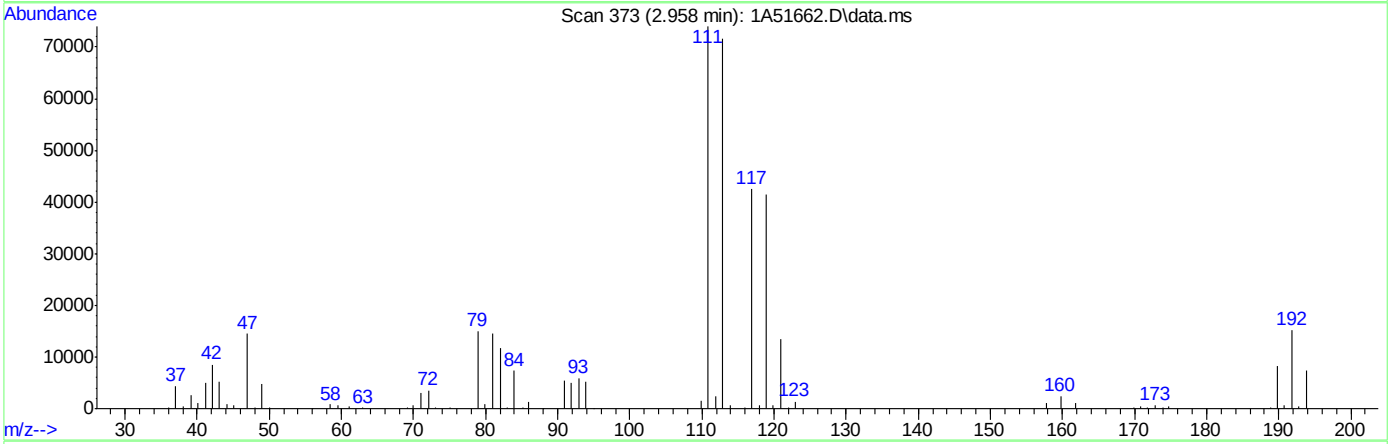
Parameter	CAS	Sig#	R.T. (min.)	Reason
Carbon Tetrachloride	56-23-5		2.96	Overlapping peak
1-Chlorohexane	544-10-5		5.37	Overlapping peak
Ethylbenzene	100-41-4		5.40	Overlapping peak

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\12-26-2023\
Data File : 1A51662.D
Acq On : 26 Dec 2023 8:28 am
Operator : lianatr
Sample : BS
Misc : MS55601,V1A2028,,,,,
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Dec 26 08:39:50 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration





TIC: 1A51662.D\data.ms

(40) Carbon Tetrachloride ( )

2.958min (-0.000) 26.81ug/L

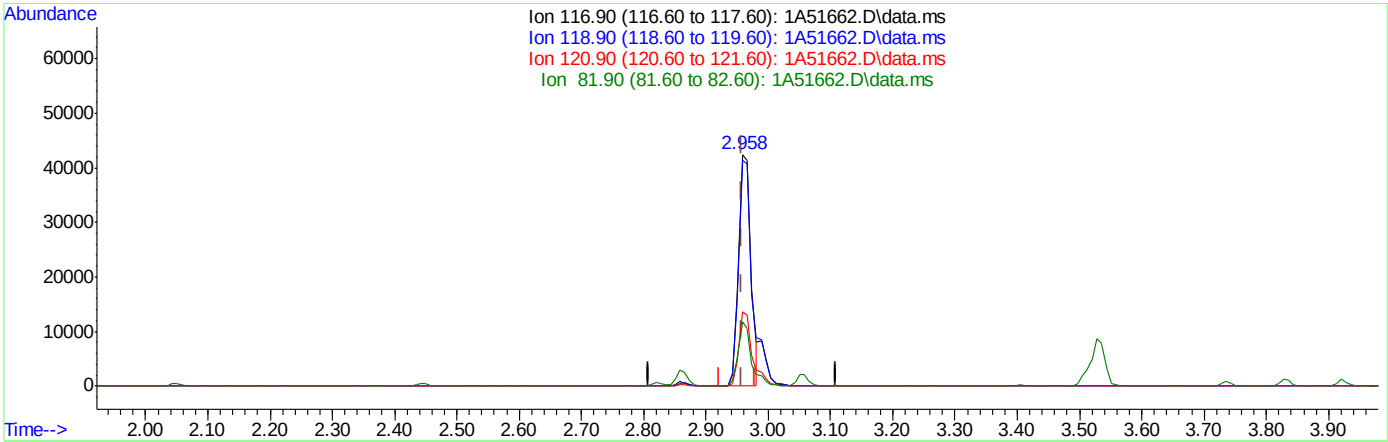
response 66547

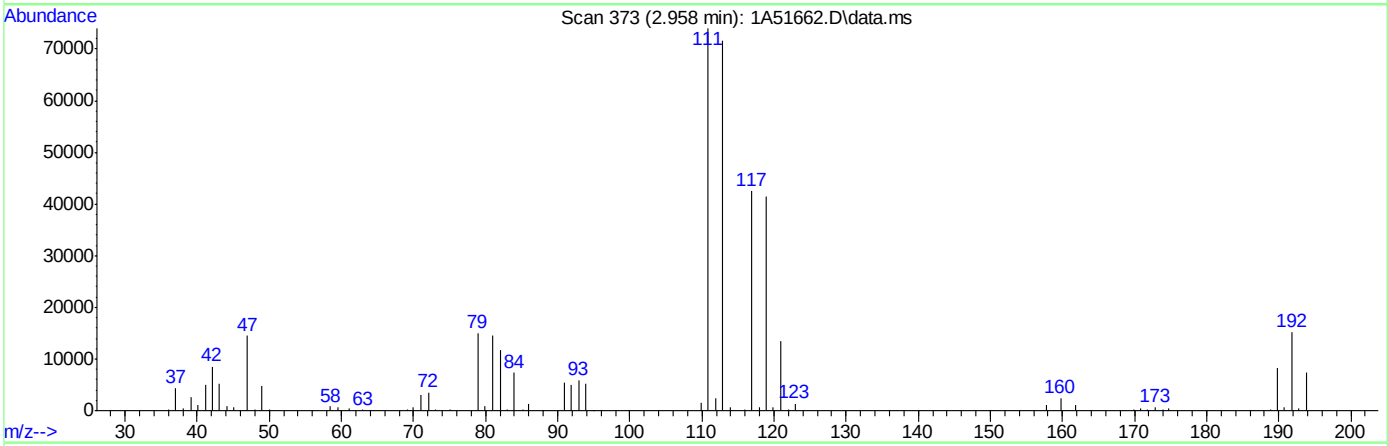
Ion	Exp%	Act%
116.90	100	100
118.90	94.50	97.49
120.90	31.10	31.91
81.90	25.40	27.56

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\12-26-2023\
Data File : 1A51662.D
Acq On : 26 Dec 2023 8:28 am
Operator : lianatr
Sample : BS
Misc : MS55601,V1A2028,,,,,
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Dec 26 08:39:50 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration





TIC: 1A51662.D\data.ms

(40) Carbon Tetrachloride ( )

2.958min (-0.000) 23.84ug/L m

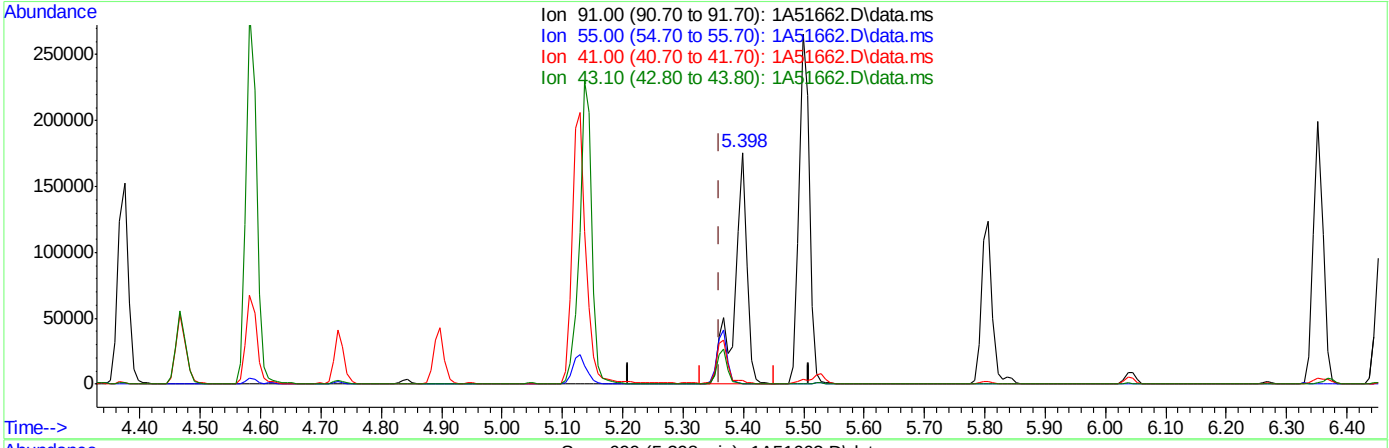
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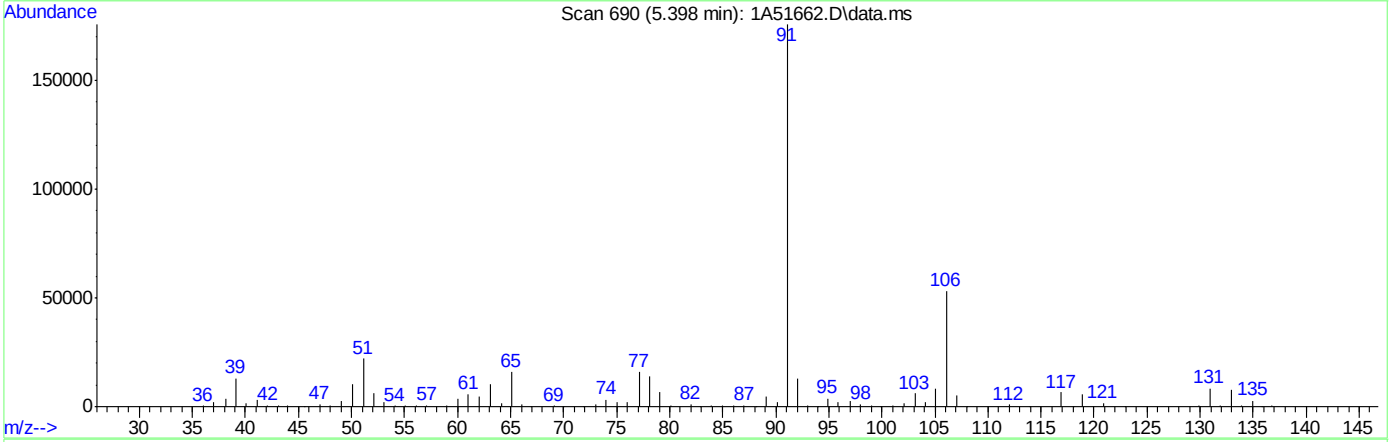
Ion	Exp%	Act%
116.90	100	100
118.90	94.50	97.49
120.90	31.10	31.91
81.90	25.40	27.56

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\12-26-2023\
Data File : 1A51662.D
Acq On : 26 Dec 2023 8:28 am
Operator : lianatr
Sample : BS
Misc : MS55601,V1A2028,,,,,
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Dec 26 08:39:50 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration





TIC: 1A51662.D\data.ms

(76) 1-Chlorohexane

5.398min (+0.038) 100.68ug/L

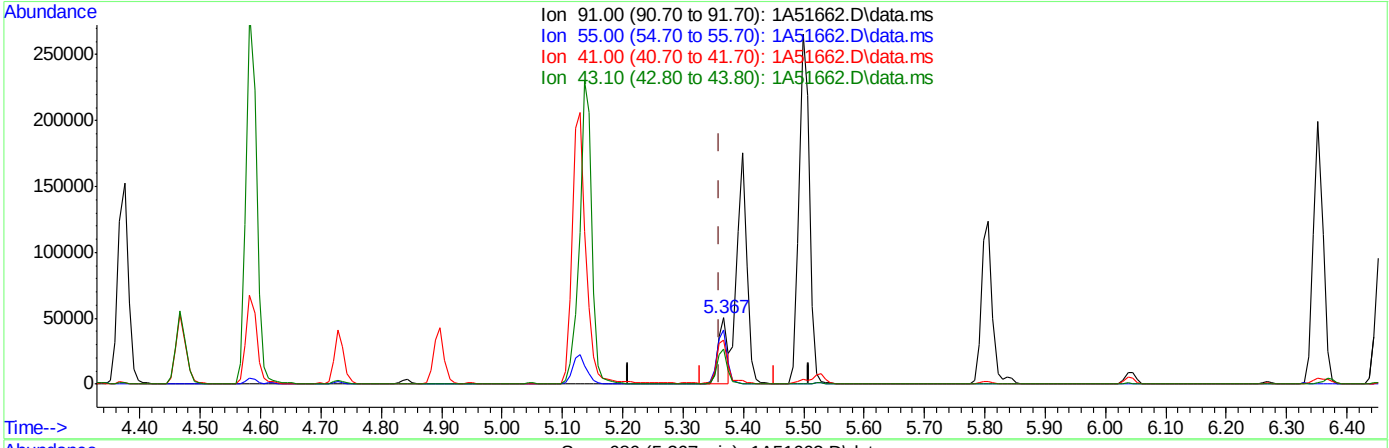
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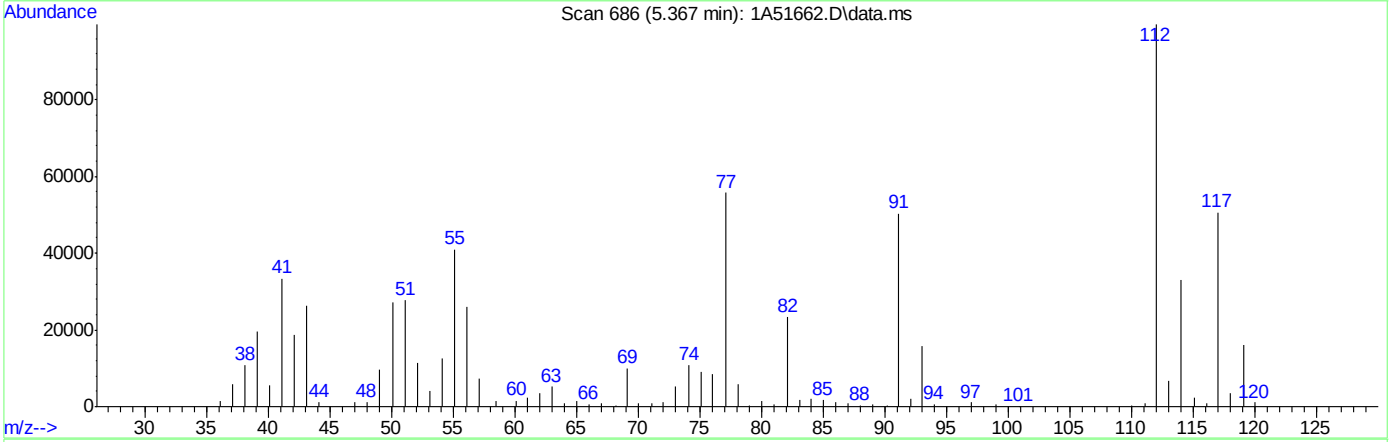
Ion	Exp%	Act%
91.00	100	100
55.00	74.60	0.24#
41.00	53.90	1.33#
43.10	42.90	0.19#

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\12-26-2023\
Data File : 1A51662.D
Acq On : 26 Dec 2023 8:28 am
Operator : lianatr
Sample : BS
Misc : MS55601,V1A2028,,,,,
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Dec 26 08:39:50 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration





TIC: 1A51662.D\data.ms

(76) 1-Chlorohexane

5.367min (+0.007) 21.47ug/L m

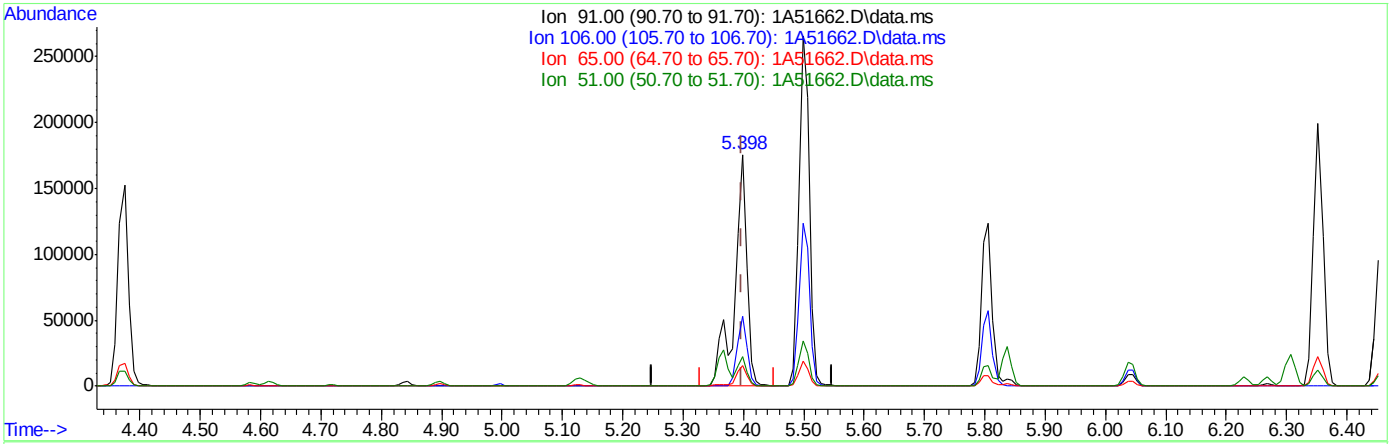
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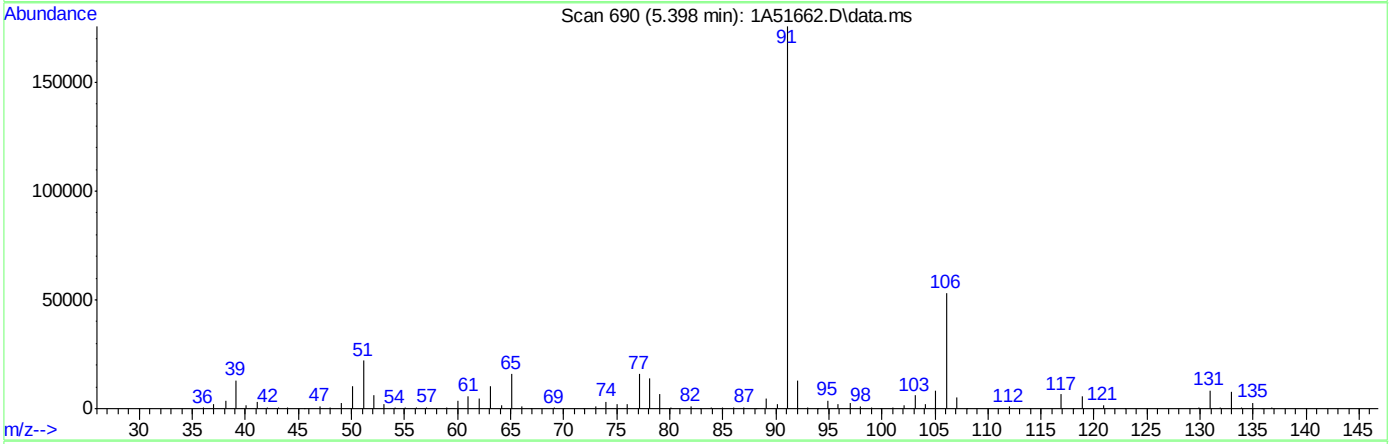
Ion	Exp%	Act%
91.00	100	100
55.00	74.60	81.33
41.00	53.90	66.46
43.10	42.90	52.24

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\12-26-2023\
Data File : 1A51662.D
Acq On : 26 Dec 2023 8:28 am
Operator : lianatr
Sample : BS
Misc : MS55601,V1A2028,,,,,
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Dec 26 08:39:50 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration





TIC: 1A51662.D\data.ms

(77) Ethylbenzene

5.398min (-0.000) 32.31ug/L

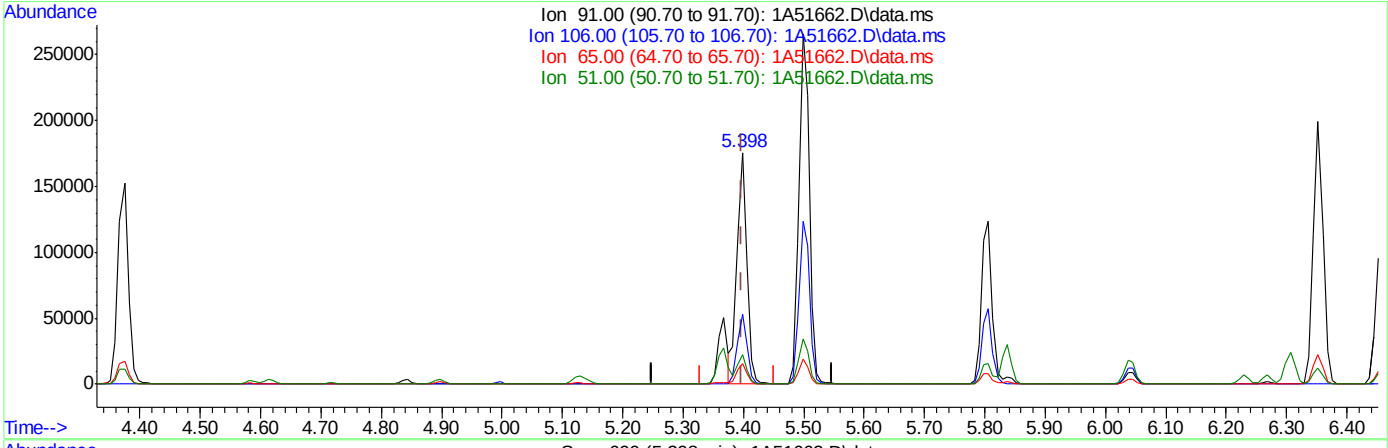
response 255207

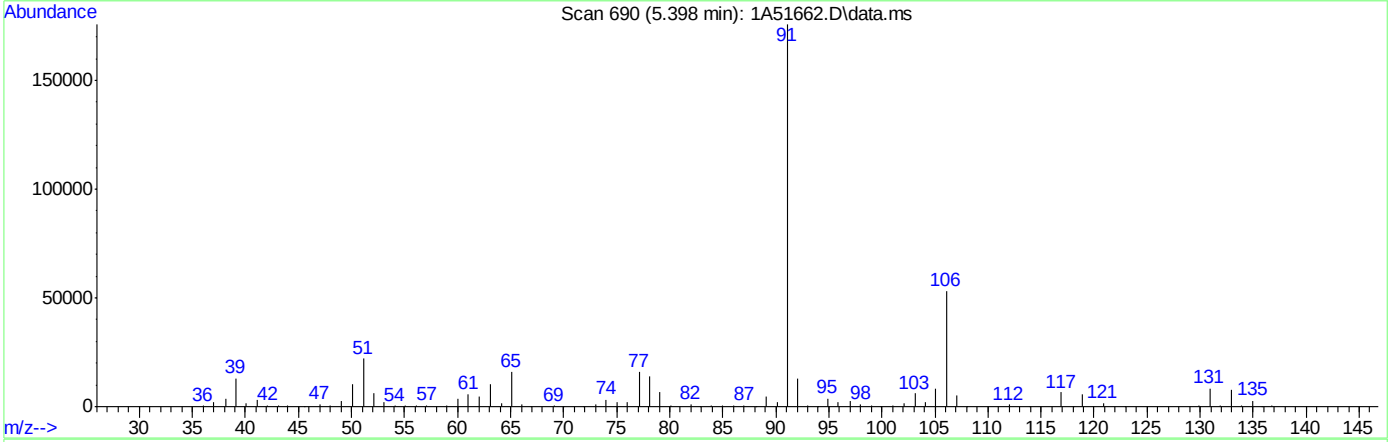
Ion	Exp%	Act%
91.00	100	100
106.00	32.00	30.26
65.00	8.30	9.07
51.00	10.10	12.52

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\12-26-2023\
Data File : 1A51662.D
Acq On : 26 Dec 2023 8:28 am
Operator : lianatr
Sample : BS
Misc : MS55601,V1A2028,,,,,
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Dec 26 08:39:50 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration





TIC: 1A51662.D\data.ms

(77) Ethylbenzene

5.398min (-0.000) 25.39ug/L m

response 200558

Ion	Exp%	Act%
91.00	100	100
106.00	32.00	30.26
65.00	8.30	9.07
51.00	10.10	12.52

Manual Integrations APPROVED (compounds with "m" flag)
Neil Christiana 12/21/23 03:47

Quantitation Report (QT Reviewed)

Data Path : D:\V1A2022\
Data File : 1A51536.d
Acq On : 19 Dec 2023 5:37 pm
Operator : jeniferw
Sample : FC11791-1MS
Misc : MS55575,V1A2022,,,,,5
ALS Vial : 27 Sample Multiplier: 1

Quant Time: Dec 19 21:54:30 2023
Quant Method : X:\Orlando VOA\celinec\December 2023\12-20-2023\V1A2022\method\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Fluorobenzene	3.405	96	300932	50.00	ug/L		0.00
62) Chlorobenzene-d5	5.352	117	215191	50.00	ug/L		0.00
85) 1,4-Dichlorobenzene-d4	7.091	152	109665	50.00	ug/L		0.00
System Monitoring Compounds							
39) Dibromofluoromethane	2.951	113	85257	48.06	ug/L		0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 96.12%				
49) 1,2-Dichloroethane-d4	3.235	65	104247	53.10	ug/L		0.00
Spiked Amount 50.000	Range 79 - 125		Recovery = 106.20%				
63) Toluene-d8	4.336	98	289547	50.39	ug/L		0.00
Spiked Amount 50.000	Range 85 - 112		Recovery = 100.78%				
86) 4-Bromofluorobenzene	6.229	174	91041	49.75	ug/L		0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 99.50%				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	1.011	85	33862	29.46	ug/L		97
3) Chloromethane	1.127	50	38361	22.28	ug/L		97
4) 1,3-butadiene	1.181	39	38671	17.91	ug/L		99
5) Vinyl Chloride	1.165	62	40973	23.82	ug/L		94
6) Bromomethane	1.342	94	15652	25.16	ug/L		99
7) Chloroethane	1.411	64	26013	23.71	ug/L		99
8) Trichlorofluoromethane	1.488	101	65562	26.78	ug/L		99
9) Ethyl Ether	1.650	59	33587	22.39	ug/L		94
10) Ethanol	1.704	45	8350	243.72	ug/L		98
11) 1,2-Dichlorotrifluoroe...	1.742	67	45987	23.53	ug/L		95
12) 1,1-Dichloroethene	1.758	61	55155	21.23	ug/L		99
13) Freon 113	1.781	101	38259	25.82	ug/L		94
14) Carbon Disulfide	1.781	76	97480	20.25	ug/L		90
15) Iodomethane	1.827	142	21862	19.31	ug/L		94
16) Acrolein	1.904	56	46921	101.37	ug/L		97
17) Allyl chloride	1.989	41	54625	21.97	ug/L		88
18) Methylene Chloride	2.043	49	59307	23.36	ug/L		95
19) Acetone	2.050	43	78241	104.69	ug/L		97
20) Methyl acetate	2.119	43	204438	101.22	ug/L		95
21) trans-1,2-Dichloroethene	2.135	61	54245	20.78	ug/L		97
22) Hexane	2.189	56	40960	22.92	ug/L	#	88
23) Methyl Tert Butyl Ether	2.189	73	110379	22.71	ug/L		94
24) Acetonitrile	2.266	41	56072m	214.42	ug/L		
25) Tert Butyl Alcohol	2.204	59	54451	152.21	ug/L	#	31
26) Di-isopropyl ether	2.389	45	135281	22.16	ug/L		92
27) Chloroprene	2.435	53	154806	20.72	ug/L		95
28) 1,1-Dichloroethane	2.443	63	72711	21.46	ug/L		98
29) Acrylonitrile	2.435	52	97995	108.25	ug/L		99
30) ETBE	2.581	59	128089	22.76	ug/L		97
31) Vinyl acetate	2.558	43	517096	113.88	ug/L		95
32) cis-1,2-Dichloroethene	2.720	96	41206	21.99	ug/L		96
33) 2,2-Dichloropropane	2.781	77	51053	21.59	ug/L		99
34) Bromochloromethane	2.820	128	20848	21.97	ug/L		92
35) Cyclohexane	2.858	56	70192	21.43	ug/L		91

Quantitation Report (QT Reviewed)

Data Path : D:\V1A2022\
Data File : 1A51536.d
Acq On : 19 Dec 2023 5:37 pm
Operator : jeniferw
Sample : FC11791-1MS
Misc : MS55575,V1A2022,,,,,5
ALS Vial : 27 Sample Multiplier: 1

Quant Time: Dec 19 21:54:30 2023
Quant Method : X:\Orlando VOA\celinec\December 2023\12-20-2023\V1A2022\method\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
36) Chloroform	2.858	83	71010	22.83	ug/L		97
37) Ethyl acetate	2.912	43	302635	119.45	ug/L		97
38) Tetrahydrofuran	2.943	42	18247	19.04	ug/L		93
40) Carbon Tetrachloride	2.958	117	50779m	21.04	ug/L		
41) 1,1,1-Trichloroethane	2.981	97	61082	23.42	ug/L		94
42) 2-Butanone	2.997	43	129570	102.29	ug/L		90
43) 1,1-Dichloropropene	3.051	75	51585	22.67	ug/L		92
44) tert-Butyl formate	3.089	59	139750	89.94	ug/L		85
45) Propionitrile	3.143	54	74725	191.68	ug/L		98
46) Methacrylonitrile	3.166	41	341138	232.06	ug/L		96
47) Benzene	3.182	78	150236	22.49	ug/L		94
48) TAME	3.251	73	105879	22.45	ug/L		84
50) 1,2-Dichloroethane	3.274	62	59937	23.99	ug/L		93
51) Isobutyl Alcohol	3.251	43	83232	387.48	ug/L		90
52) Tert Amyl Alcohol	3.320	59	42814	145.57	ug/L		91
53) Trichloroethene	3.505	95	40927	21.91	ug/L		91
54) Methylcyclohexane	3.528	83	64191	21.54	ug/L		95
55) Dibromomethane	3.736	93	27198	22.77	ug/L		88
56) 1,2-Dichloropropane	3.790	63	42381	22.41	ug/L		96
57) Bromodichloromethane	3.828	83	49424	21.07	ug/L		97
58) Methyl methacrylate	3.920	41	45825	21.04	ug/L		91
59) 1,4-Dioxane	3.936	88	5074	198.63	ug/L		86
60) 2-Chloroethyl vinyl ether	4.167	63	1981	1.81	ug/L	#	58
61) cis-1,3-Dichloropropene	4.205	75	55464	20.33	ug/L		80
64) Toluene	4.367	91	162083	23.17	ug/L		98
65) 2-Nitropropane	4.467	41	52391	72.02	ug/L		85
66) 4-Methyl-2-pentanone	4.582	43	308145	121.30	ug/L		96
67) trans-1,3-Dichloropropene	4.613	75	50181	20.26	ug/L		88
68) Tetrachloroethene	4.628	166	49899	25.21	ug/L		97
69) Ethyl methacrylate	4.729	69	51152	25.05	ug/L		84
70) 1,1,2-Trichloroethane	4.713	83	30281	21.47	ug/L		97
71) Dibromochloromethane	4.836	129	38585	21.52	ug/L		98
72) 1,3-Dichloropropane	4.898	76	59849	23.06	ug/L		86
73) 1,2-Dibromoethane	4.998	107	39228	21.68	ug/L		93
74) 3,3-Dimethyl-1-Butanol	5.121	57	274699	811.31	ug/L		95
75) 2-hexanone	5.136	43	270455	109.92	ug/L	#	75
76) 1-Chlorohexane	5.367	91	51127m	21.04	ug/L		
77) Ethylbenzene	5.398	91	179076m	23.66	ug/L		
78) Chlorobenzene	5.367	112	106495	22.99	ug/L		97
79) 1,1,1,2-Tetrachloroethane	5.406	131	37217	22.09	ug/L		95
80) m,p-Xylene	5.498	91	283349	47.21	ug/L		99
81) o-Xylene	5.798	91	140762	22.04	ug/L		97
82) Styrene	5.837	104	105479	21.79	ug/L		95
83) Bromoform	5.837	173	22797	18.83	ug/L		99
84) Isopropylbenzene	6.037	105	166854	22.44	ug/L		96
87) cis-1,4-Dichloro-2-butene	6.268	53	13915	21.26	ug/L	#	75
88) n-Propylbenzene	6.352	91	203188	23.71	ug/L		98
89) Bromobenzene	6.306	156	43961	23.11	ug/L		91
90) 1,1,2,2-Tetrachloroethane	6.376	83	51996	23.41	ug/L		96
91) 1,3,5-Trimethylbenzene	6.506	105	138405	23.53	ug/L		100

Quantitation Report (QT Reviewed)

Data Path : D:\V1A2022\
Data File : 1A51536.d
Acq On : 19 Dec 2023 5:37 pm
Operator : jeniferw
Sample : FC11791-1MS
Misc : MS55575,V1A2022,,,,,5
ALS Vial : 27 Sample Multiplier: 1

Quant Time: Dec 19 21:54:30 2023
Quant Method : X:\Orlando VOA\celinec\December 2023\12-20-2023\V1A2022\method\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration

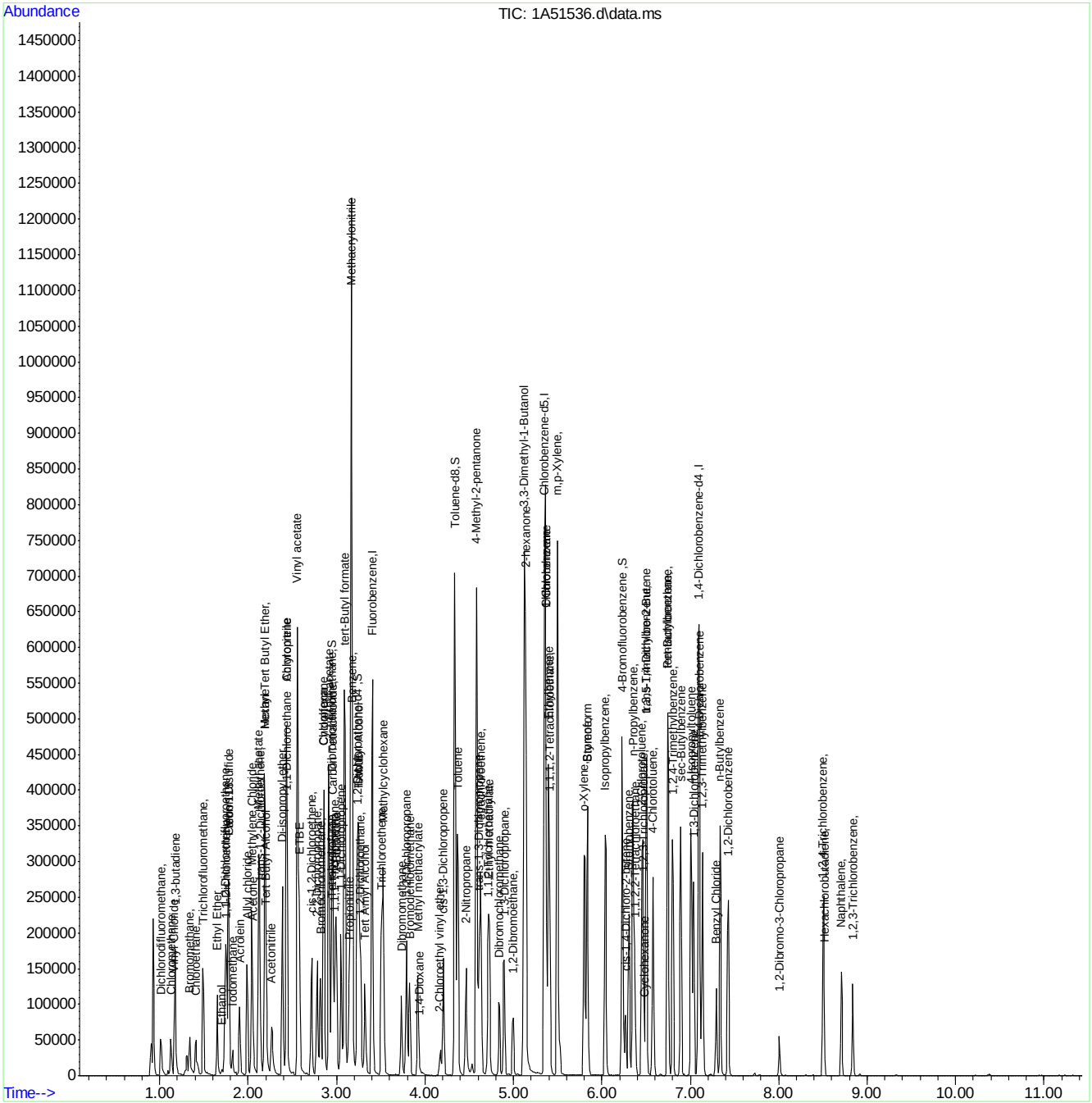
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
92) 2-Chlorotoluene	6.453	91	115405	23.46	ug/L		98
93) trans-1,4-Dichloro-2-B...	6.506	53	16066	18.75	ug/L		85
94) 1,2,3-Trichloropropane	6.468	110	15798	25.80	ug/L		84
95) Cyclohexanone	6.483	55	6729	58.30	ug/L		96
96) 4-Chlorotoluene	6.576	91	120233	23.69	ug/L		96
97) tert-Butylbenzene	6.745	91	79470	23.89	ug/L		94
98) 1,2,4-Trimethylbenzene	6.799	105	131740	23.38	ug/L		99
99) Pentachloroethane	6.745	167	23113	24.73	ug/L	#	81
100) sec-Butylbenzene	6.891	105	165276	22.24	ug/L		97
101) 4-Isopropyltoluene	7.007	119	142048	22.29	ug/L		98
102) 1,3-Dichlorobenzene	7.037	146	77387	22.55	ug/L		97
103) 1,2,3-Trimethylbenzene	7.138	105	129813	23.19	ug/L		98
104) 1,4-Dichlorobenzene	7.107	146	78285	22.54	ug/L		96
105) n-Butylbenzene	7.338	92	70551	24.66	ug/L		93
106) Benzyl Chloride	7.291	126	12173	15.29	ug/L	#	83
107) 1,2-Dichlorobenzene	7.430	146	71099	23.27	ug/L		95
108) 1,2-Dibromo-3-Chloropr...	8.007	75	7531	21.29	ug/L	#	90
109) Hexachlorobutadiene	8.515	225	16220	22.88	ug/L		92
110) 1,2,4-Trichlorobenzene	8.500	180	32211	19.00	ug/L		95
111) Naphthalene	8.708	128	69989	16.11	ug/L		99
112) 1,2,3-Trichlorobenzene	8.838	180	24374	18.09	ug/L		97

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : D:\V1A2022\
Data File : 1A51536.d
Acq On : 19 Dec 2023 5:37 pm
Operator : jeniferw
Sample : FC11791-1MS
Misc : MS55575,V1A2022,,,,,5
ALS Vial : 27 Sample Multiplier: 1

Quant Time: Dec 19 21:54:30 2023
Quant Method : X:\Orlando VOA\celinec\December 2023\12-20-2023\V1A2022\method\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration



Manual Integration Approval Summary

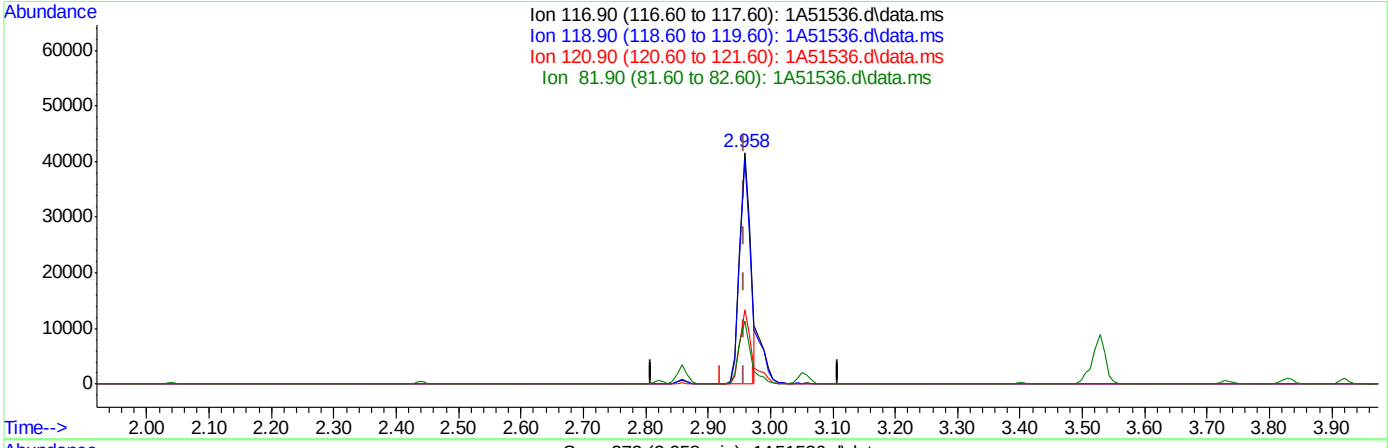
Sample Number: FC11791-1MS
Lab FileID: 1A51536.D
Injection Time: 12/19/23 17:37
Method: SW846 8260D
Analyst approved: 12/19/23 22:04 Celine Celis
Supervisor approved: 12/21/23 03:47 Neil Christiana

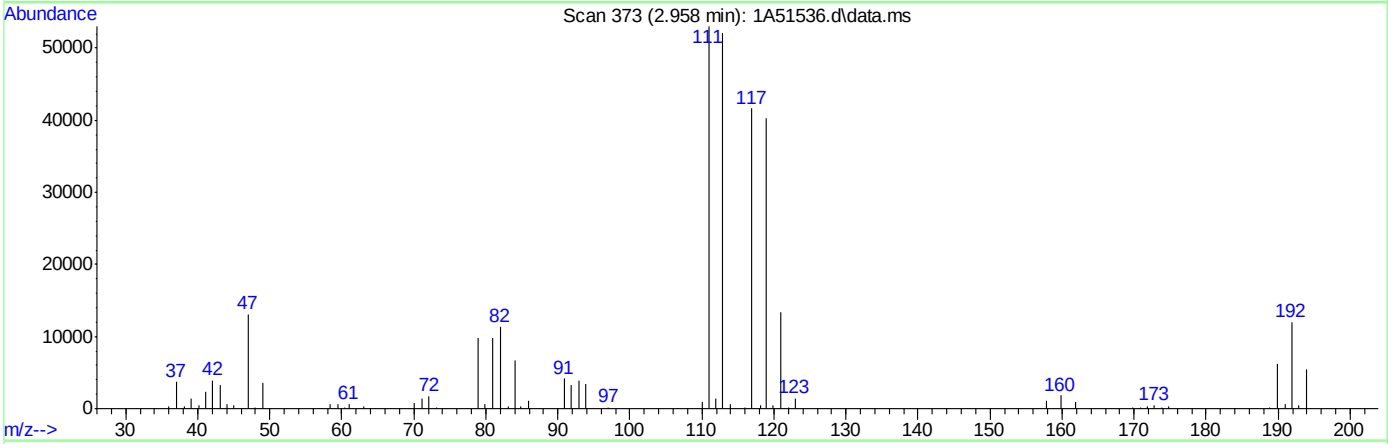
Parameter	CAS	Sig#	R.T. (min.)	Reason
Acetonitrile	75-05-8		2.27	Poor instrument integration
Carbon Tetrachloride	56-23-5		2.96	Overlapping peak
1-Chlorohexane	544-10-5		5.37	Overlapping peak
Ethylbenzene	100-41-4		5.40	Overlapping peak

Quantitation Report (Qedit)

Data Path : D:\V1A2022\
Data File : 1A51536.d
Acq On : 19 Dec 2023 5:37 pm
Operator : jeniferw
Sample : FC11791-1MS
Misc : MS55575,V1A2022,,,,,5
ALS Vial : 27 Sample Multiplier: 1

Quant Time: Dec 19 21:54:30 2023
Quant Method : X:\Orlando VOA\celinec\December 2023\12-20-2023\V1A2022\method\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration





TIC: 1A51536.d\data.ms

(40) Carbon Tetrachloride ( )

2.958min (-0.000) 21.04ug/L m

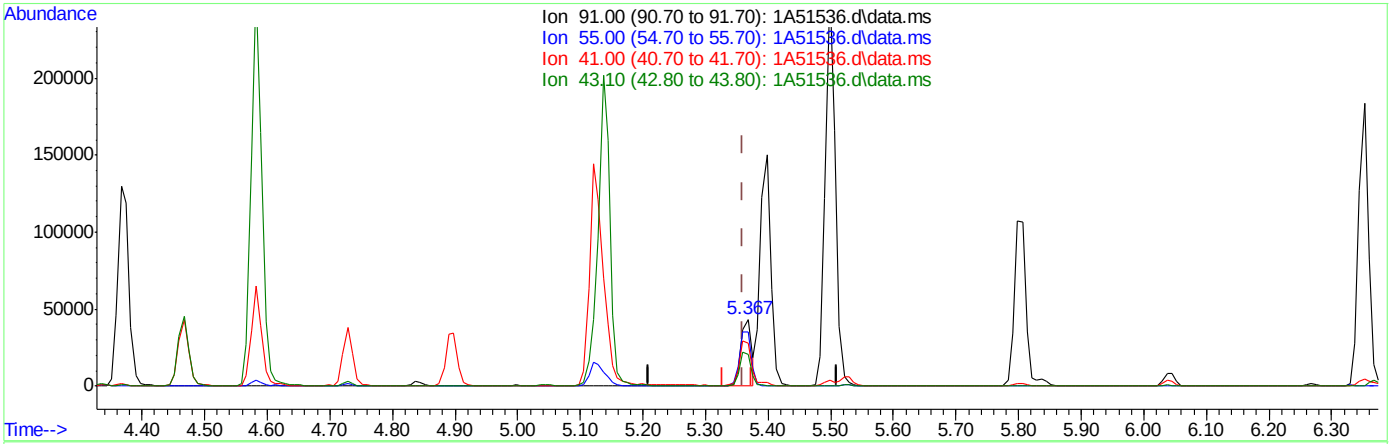
response 50779

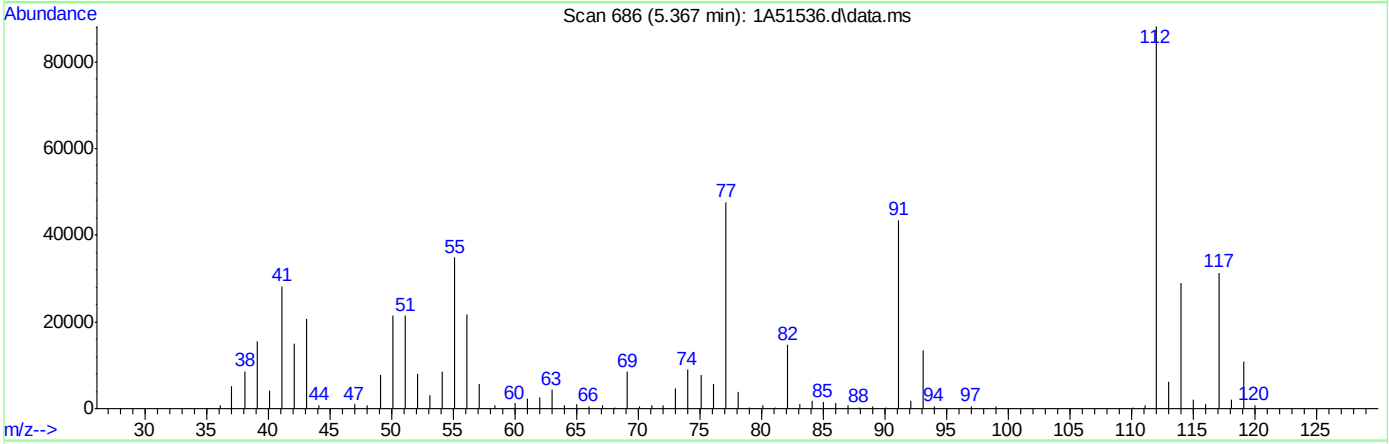
Ion	Exp%	Act%
116.90	100	100
118.90	94.50	96.77
120.90	31.10	32.06
81.90	25.40	27.15

Quantitation Report (Qedit)

Data Path : D:\V1A2022\
Data File : 1A51536.d
Acq On : 19 Dec 2023 5:37 pm
Operator : jeniferw
Sample : FC11791-1MS
Misc : MS55575,V1A2022,,,,,5
ALS Vial : 27 Sample Multiplier: 1

Quant Time: Dec 19 21:54:30 2023
Quant Method : X:\Orlando VOA\celinec\December 2023\12-20-2023\V1A2022\method\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration





TIC: 1A51536.d\data.ms

(76) 1-Chlorohexane

5.367min (+0.008) 21.04ug/L m

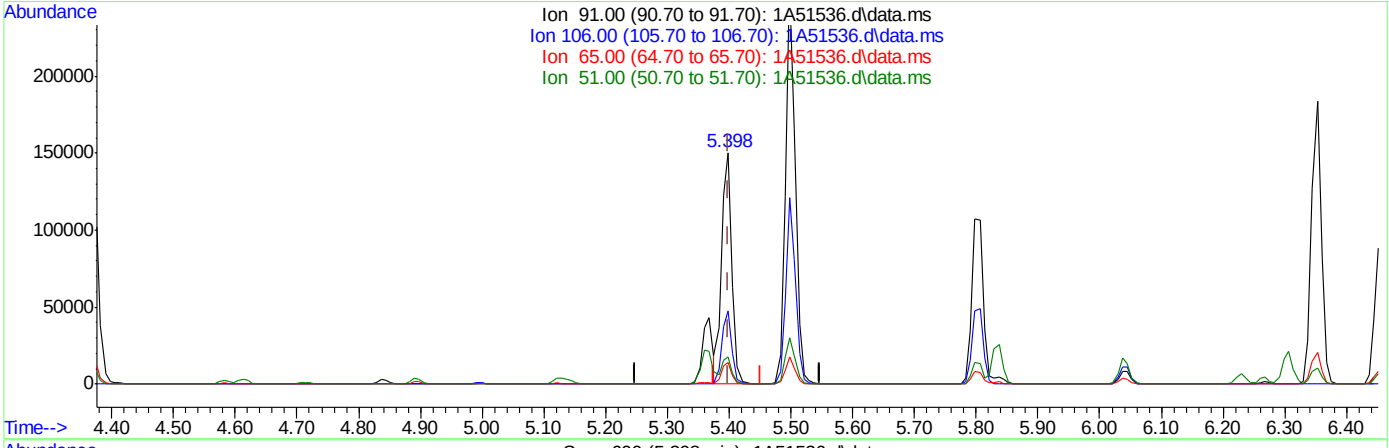
response 51127

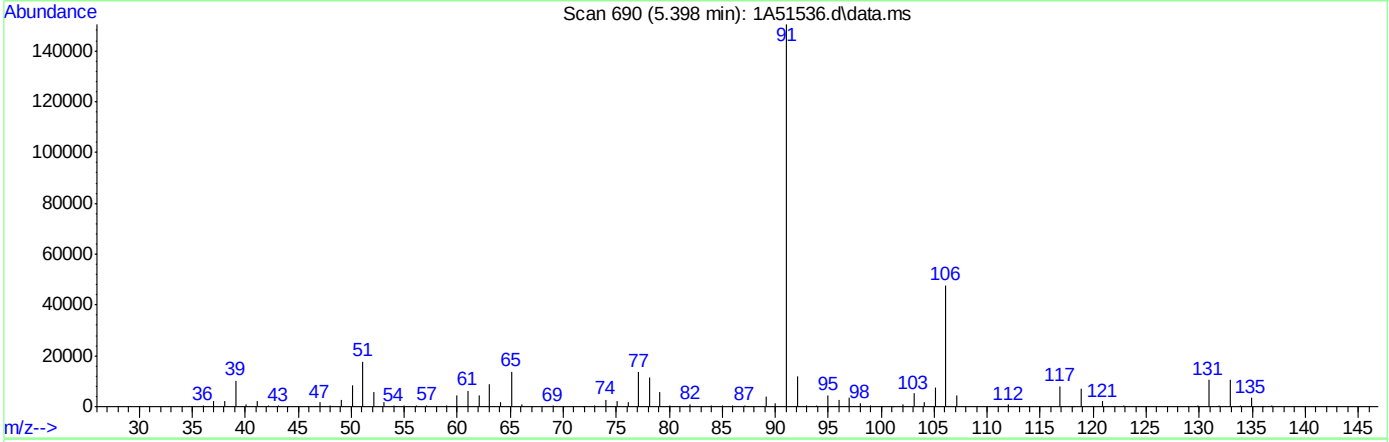
Ion	Exp%	Act%
91.00	100	100
55.00	74.60	80.01
41.00	53.90	64.93
43.10	42.90	47.67

Quantitation Report (Qedit)

Data Path : D:\V1A2022\
Data File : 1A51536.d
Acq On : 19 Dec 2023 5:37 pm
Operator : jeniferw
Sample : FC11791-1MS
Misc : MS55575,V1A2022,,,,,5
ALS Vial : 27 Sample Multiplier: 1

Quant Time: Dec 19 21:54:30 2023
Quant Method : X:\Orlando VOA\celinec\December 2023\12-20-2023\V1A2022\method\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration





TIC: 1A51536.d\data.ms

(77) Ethylbenzene

5.398min (-0.000) 23.66ug/L m

response 179076

Ion	Exp%	Act%
91.00	100	100
106.00	32.00	31.74
65.00	8.30	9.20
51.00	10.10	11.80

Manual Integrations APPROVED (compounds with "m" flag)
Neil Christiana 12/21/23 03:47

Quantitation Report (QT Reviewed)

Data Path : D:\V1A2022\
Data File : 1A51537.d
Acq On : 19 Dec 2023 6:02 pm
Operator : jeniferw
Sample : FC11791-1MSD
Misc : MS55575,V1A2022,,,,,5
ALS Vial : 28 Sample Multiplier: 1

Quant Time: Dec 19 21:54:58 2023
Quant Method : X:\Orlando VOA\celinec\December 2023\12-20-2023\V1A2022\method\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	3.405	96	306130	50.00	ug/L	0.00
62) Chlorobenzene-d5	5.352	117	216143	50.00	ug/L	0.00
85) 1,4-Dichlorobenzene-d4	7.091	152	108895	50.00	ug/L	0.00
System Monitoring Compounds						
39) Dibromofluoromethane	2.951	113	86936	48.18	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 96.36%			
49) 1,2-Dichloroethane-d4	3.235	65	104422	52.28	ug/L	0.00
Spiked Amount 50.000	Range 79 - 125		Recovery = 104.56%			
63) Toluene-d8	4.336	98	296638	51.39	ug/L	0.00
Spiked Amount 50.000	Range 85 - 112		Recovery = 102.78%			
86) 4-Bromofluorobenzene	6.229	174	91894	50.57	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 101.14%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.019	85	33075	28.29	ug/L	97
3) Chloromethane	1.127	50	37713	21.53	ug/L	97
4) 1,3-butadiene	1.180	39	35707	16.26	ug/L	96
5) Vinyl Chloride	1.165	62	41499	23.72	ug/L	98
6) Bromomethane	1.342	94	17222	27.21	ug/L	95
7) Chloroethane	1.411	64	25360	22.72	ug/L	93
8) Trichlorofluoromethane	1.496	101	65167	26.16	ug/L	99
9) Ethyl Ether	1.650	59	33035	21.65	ug/L	93
10) Ethanol	1.704	45	8929	256.19	ug/L	99
11) 1,2-Dichlorotrifluoroe...	1.742	67	45047	22.65	ug/L	93
12) 1,1-Dichloroethene	1.758	61	53825	20.37	ug/L	97
13) Freon 113	1.781	101	38708	25.68	ug/L	91
14) Carbon Disulfide	1.781	76	96473	19.70	ug/L	87
15) Iodomethane	1.827	142	26787	23.26	ug/L	97
16) Acrolein	1.904	56	48602	103.22	ug/L	100
17) Allyl chloride	1.989	41	54525	21.56	ug/L	89
18) Methylene Chloride	2.042	49	58688	22.72	ug/L	94
19) Acetone	2.050	43	78728	103.56	ug/L	99
20) Methyl acetate	2.119	43	203067	98.83	ug/L	95
21) trans-1,2-Dichloroethene	2.135	61	54395	20.48	ug/L	97
22) Hexane	2.196	56	40515	22.29	ug/L	97
23) Methyl Tert Butyl Ether	2.189	73	108324	21.91	ug/L	94
24) Acetonitrile	2.266	41	59165m	222.40	ug/L	
25) Tert Butyl Alcohol	2.204	59	56024	153.95	ug/L #	18
26) Di-isopropyl ether	2.389	45	132590	21.35	ug/L	92
27) Chloroprene	2.435	53	154423	20.31	ug/L	94
28) 1,1-Dichloroethane	2.443	63	71337	20.69	ug/L	99
29) Acrylonitrile	2.435	52	100505	109.14	ug/L	96
30) ETBE	2.581	59	127406	22.25	ug/L	96
31) Vinyl acetate	2.558	43	514753	111.43	ug/L	95
32) cis-1,2-Dichloroethene	2.720	96	40034	21.00	ug/L	98
33) 2,2-Dichloropropane	2.781	77	50475	20.99	ug/L	97
34) Bromochloromethane	2.820	128	20358	21.09	ug/L	89
35) Cyclohexane	2.858	56	69005	20.71	ug/L	91

Quantitation Report (QT Reviewed)

Data Path : D:\V1A2022\
Data File : 1A51537.d
Acq On : 19 Dec 2023 6:02 pm
Operator : jeniferw
Sample : FC11791-1MSD
Misc : MS55575,V1A2022,,,,,5
ALS Vial : 28 Sample Multiplier: 1

Quant Time: Dec 19 21:54:58 2023
Quant Method : X:\Orlando VOA\celinec\December 2023\12-20-2023\V1A2022\method\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
36) Chloroform	2.858	83	71295	22.53	ug/L		96
37) Ethyl acetate	2.912	43	299837	116.34	ug/L		97
38) Tetrahydrofuran	2.943	42	18490	18.96	ug/L		96
40) Carbon Tetrachloride	2.958	117	53215m	21.68	ug/L		
41) 1,1,1-Trichloroethane	2.981	97	60327	22.74	ug/L		94
42) 2-Butanone	2.997	43	129691	100.65	ug/L		91
43) 1,1-Dichloropropene	3.051	75	51302	22.16	ug/L		92
44) tert-Butyl formate	3.089	59	141183	89.32	ug/L		89
45) Propionitrile	3.143	54	76664	193.31	ug/L		99
46) Methacrylonitrile	3.166	41	342936	229.32	ug/L		98
47) Benzene	3.182	78	149142	21.95	ug/L		96
48) TAME	3.251	73	104158	21.71	ug/L		84
50) 1,2-Dichloroethane	3.274	62	58915	23.18	ug/L		94
51) Isobutyl Alcohol	3.251	43	83958	384.22	ug/L		89
52) Tert Amyl Alcohol	3.320	59	45040	150.54	ug/L		92
53) Trichloroethene	3.512	95	40271	21.20	ug/L		97
54) Methylcyclohexane	3.528	83	62226	20.52	ug/L		97
55) Dibromomethane	3.736	93	26805	22.06	ug/L		90
56) 1,2-Dichloropropane	3.790	63	42552	22.12	ug/L		95
57) Bromodichloromethane	3.828	83	49300	20.66	ug/L		97
58) Methyl methacrylate	3.920	41	44664	20.16	ug/L		89
59) 1,4-Dioxane	3.936	88	6004	231.04	ug/L		89
60) 2-Chloroethyl vinyl ether	4.167	63	1540	1.38	ug/L	#	55
61) cis-1,3-Dichloropropene	4.205	75	55265	19.91	ug/L		78
64) Toluene	4.374	91	157888	22.47	ug/L		98
65) 2-Nitropropane	4.467	41	53388	73.07	ug/L		85
66) 4-Methyl-2-pentanone	4.582	43	301686	118.23	ug/L		96
67) trans-1,3-Dichloropropene	4.613	75	50085	20.14	ug/L		87
68) Tetrachloroethene	4.628	166	48726	24.51	ug/L		95
69) Ethyl methacrylate	4.728	69	50746	24.74	ug/L		83
70) 1,1,2-Trichloroethane	4.713	83	29724	20.99	ug/L		99
71) Dibromochloromethane	4.844	129	39178	21.76	ug/L		99
72) 1,3-Dichloropropane	4.898	76	60276	23.12	ug/L		89
73) 1,2-Dibromoethane	4.998	107	37979	20.90	ug/L		93
74) 3,3-Dimethyl-1-Butanol	5.121	57	288918	849.55	ug/L		95
75) 2-hexanone	5.136	43	273057	110.49	ug/L		77
76) 1-Chlorohexane	5.367	91	48469m	19.86	ug/L		
77) Ethylbenzene	5.398	91	180418m	23.73	ug/L		
78) Chlorobenzene	5.367	112	104179	22.39	ug/L		97
79) 1,1,1,2-Tetrachloroethane	5.413	131	36977	21.85	ug/L		95
80) m,p-Xylene	5.498	91	275794	45.74	ug/L		100
81) o-Xylene	5.798	91	139796	21.79	ug/L		98
82) Styrene	5.837	104	103684	21.33	ug/L		96
83) Bromoform	5.837	173	23529	19.35	ug/L		98
84) Isopropylbenzene	6.045	105	163766	21.93	ug/L		99
87) cis-1,4-Dichloro-2-butene	6.268	53	13782	21.21	ug/L	#	79
88) n-Propylbenzene	6.352	91	199321	23.43	ug/L		98
89) Bromobenzene	6.306	156	43163	22.85	ug/L		91
90) 1,1,2,2-Tetrachloroethane	6.376	83	50288	22.80	ug/L		96
91) 1,3,5-Trimethylbenzene	6.506	105	137511	23.55	ug/L		98

Quantitation Report (QT Reviewed)

Data Path : D:\V1A2022\
Data File : 1A51537.d
Acq On : 19 Dec 2023 6:02 pm
Operator : jeniferw
Sample : FC11791-1MSD
Misc : MS55575,V1A2022,,,,,5
ALS Vial : 28 Sample Multiplier: 1

Quant Time: Dec 19 21:54:58 2023
Quant Method : X:\Orlando VOA\celinec\December 2023\12-20-2023\V1A2022\method\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration

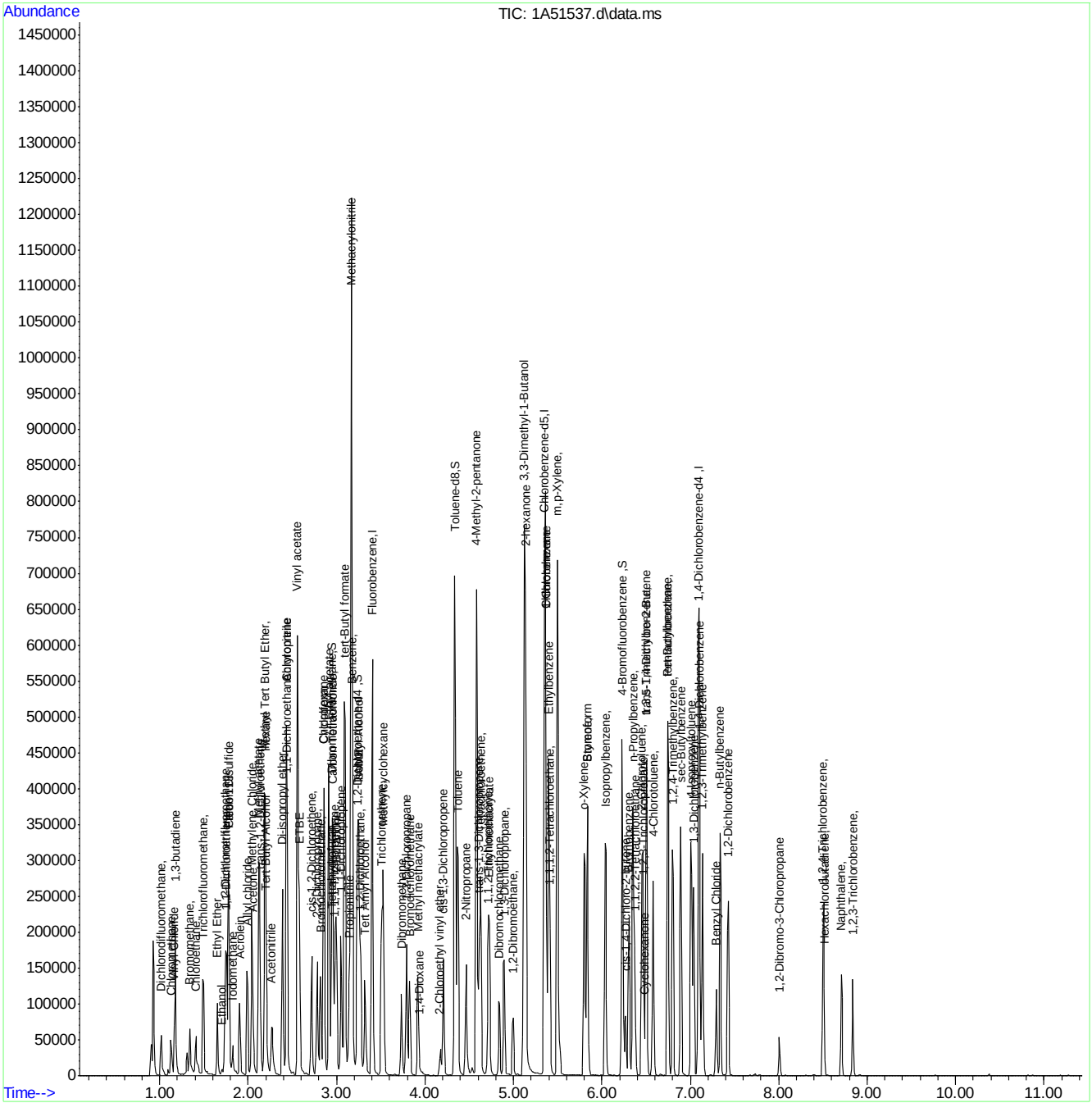
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
92) 2-Chlorotoluene	6.452	91	113078	23.15	ug/L		100
93) trans-1,4-Dichloro-2-B...	6.506	53	15989	18.79	ug/L		88
94) 1,2,3-Trichloropropane	6.468	110	15755	25.91	ug/L		85
95) Cyclohexanone	6.483	55	7605	66.36	ug/L		98
96) 4-Chlorotoluene	6.583	91	118762	23.56	ug/L		96
97) tert-Butylbenzene	6.745	91	77386	23.43	ug/L		94
98) 1,2,4-Trimethylbenzene	6.799	105	129960	23.22	ug/L		98
99) Pentachloroethane	6.745	167	23485	25.30	ug/L	#	86
100) sec-Butylbenzene	6.891	105	163114	22.11	ug/L		97
101) 4-Isopropyltoluene	7.007	119	139535	22.05	ug/L		98
102) 1,3-Dichlorobenzene	7.037	146	77709	22.80	ug/L		97
103) 1,2,3-Trimethylbenzene	7.137	105	127188	22.88	ug/L		97
104) 1,4-Dichlorobenzene	7.107	146	79002	22.90	ug/L		95
105) n-Butylbenzene	7.338	92	68834	24.23	ug/L		94
106) Benzyl Chloride	7.291	126	11875	15.02	ug/L	#	67
107) 1,2-Dichlorobenzene	7.430	146	69142	22.79	ug/L		96
108) 1,2-Dibromo-3-Chloropr...	8.007	75	7638	21.75	ug/L	#	87
109) Hexachlorobutadiene	8.515	225	15522	22.05	ug/L		90
110) 1,2,4-Trichlorobenzene	8.500	180	31200	18.54	ug/L		96
111) Naphthalene	8.708	128	69427	16.09	ug/L		98
112) 1,2,3-Trichlorobenzene	8.838	180	24552	18.35	ug/L		92

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : D:\V1A2022\
Data File : 1A51537.d
Acq On : 19 Dec 2023 6:02 pm
Operator : jeniferw
Sample : FC11791-1MSD
Misc : MS55575,V1A2022,,,,,5
ALS Vial : 28 Sample Multiplier: 1

Quant Time: Dec 19 21:54:58 2023
Quant Method : X:\Orlando VOA\celinec\December 2023\12-20-2023\V1A2022\method\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration



Manual Integration Approval Summary

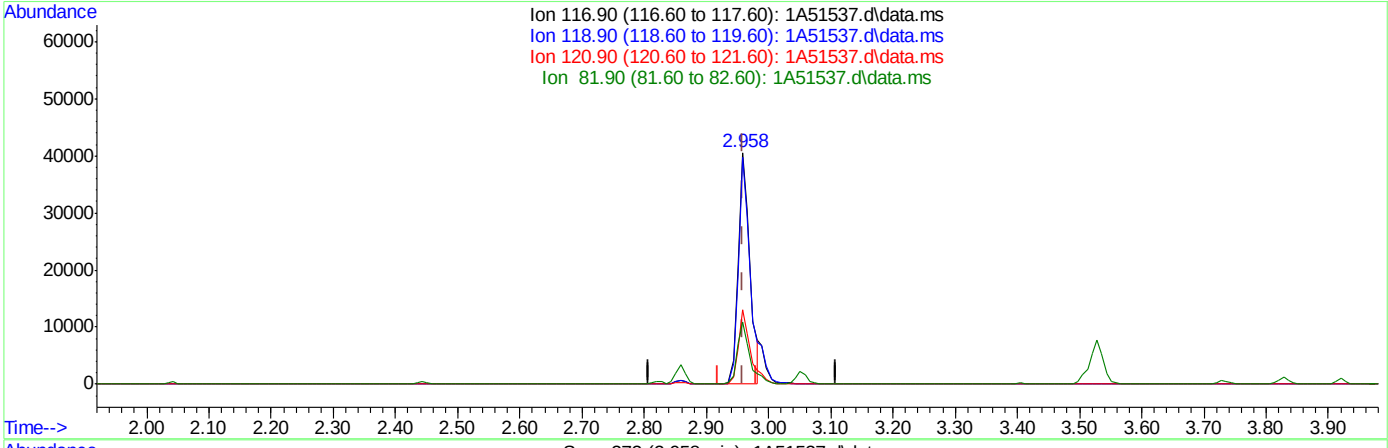
Sample Number: FC11791-1MSD
Lab FileID: 1A51537.D
Injection Time: 12/19/23 18:02
Method: SW846 8260D
Analyst approved: 12/19/23 22:04 Celine Celis
Supervisor approved: 12/21/23 03:47 Neil Christiana

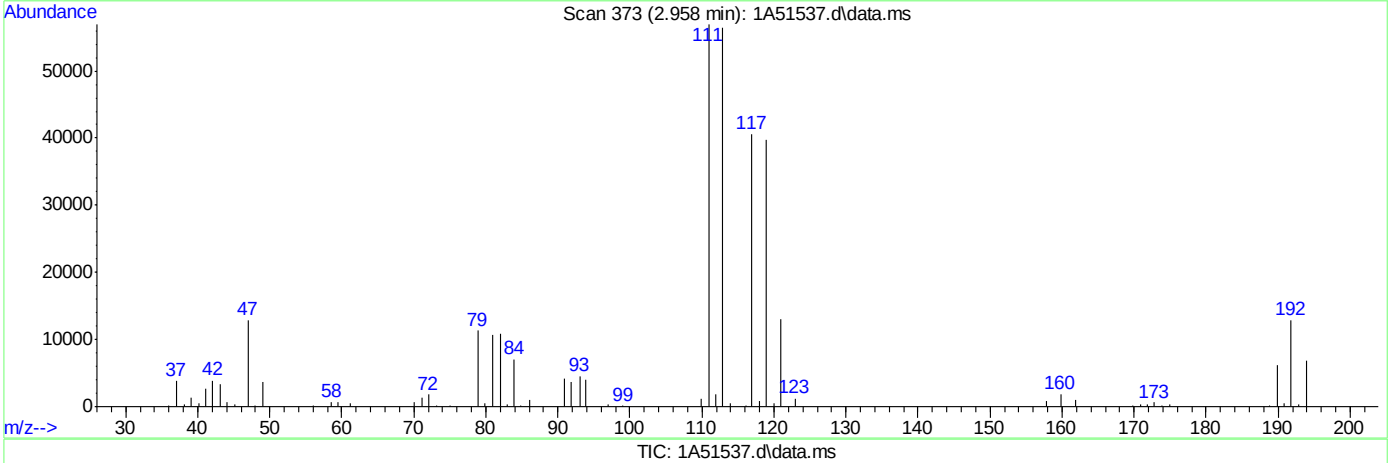
Parameter	CAS	Sig#	R.T. (min.)	Reason
Acetonitrile	75-05-8		2.27	Poor instrument integration
Carbon Tetrachloride	56-23-5		2.96	Overlapping peak
1-Chlorohexane	544-10-5		5.37	Overlapping peak
Ethylbenzene	100-41-4		5.40	Overlapping peak

Quantitation Report (Qedit)

Data Path : D:\V1A2022\
Data File : 1A51537.d
Acq On : 19 Dec 2023 6:02 pm
Operator : jeniferw
Sample : FC11791-1MSD
Misc : MS55575,V1A2022,,,,,5
ALS Vial : 28 Sample Multiplier: 1

Quant Time: Dec 19 21:54:58 2023
Quant Method : X:\Orlando VOA\celinec\December 2023\12-20-2023\V1A2022\method\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration





TIC: 1A51537.d\data.ms

(40) Carbon Tetrachloride ( )

2.958min (-0.000) 21.68ug/L m

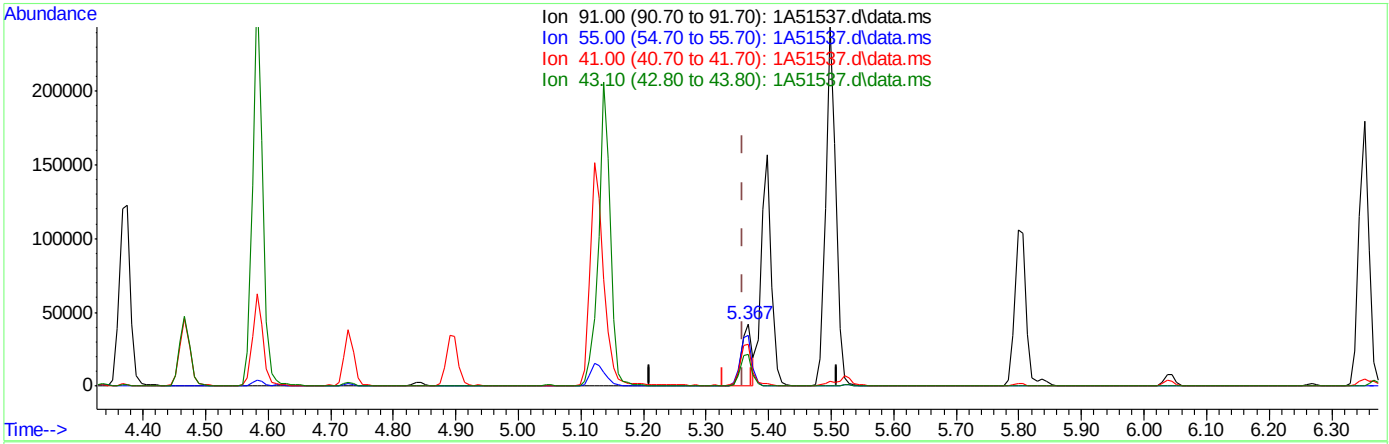
response 53215

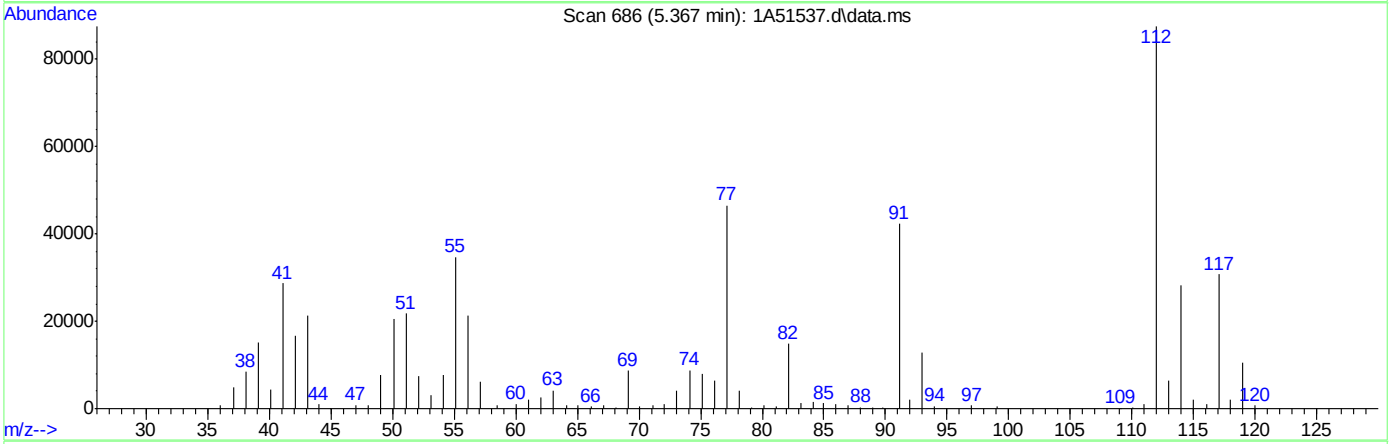
Ion	Exp%	Act%
116.90	100	100
118.90	94.50	97.87
120.90	31.10	31.90
81.90	25.40	26.92

Quantitation Report (Qedit)

Data Path : D:\V1A2022\
Data File : 1A51537.d
Acq On : 19 Dec 2023 6:02 pm
Operator : jeniferw
Sample : FC11791-1MSD
Misc : MS55575,V1A2022,,,,,5
ALS Vial : 28 Sample Multiplier: 1

Quant Time: Dec 19 21:54:58 2023
Quant Method : X:\Orlando VOA\celinec\December 2023\12-20-2023\V1A2022\method\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration





TIC: 1A51537.d\data.ms

(76) 1-Chlorohexane

5.367min (+0.007) 19.86ug/L m

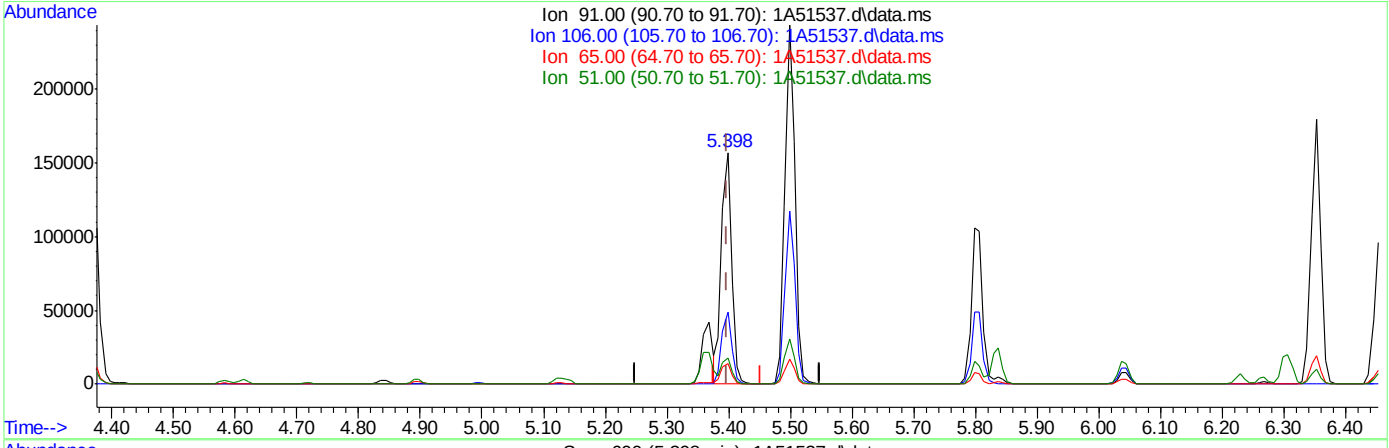
response 48469

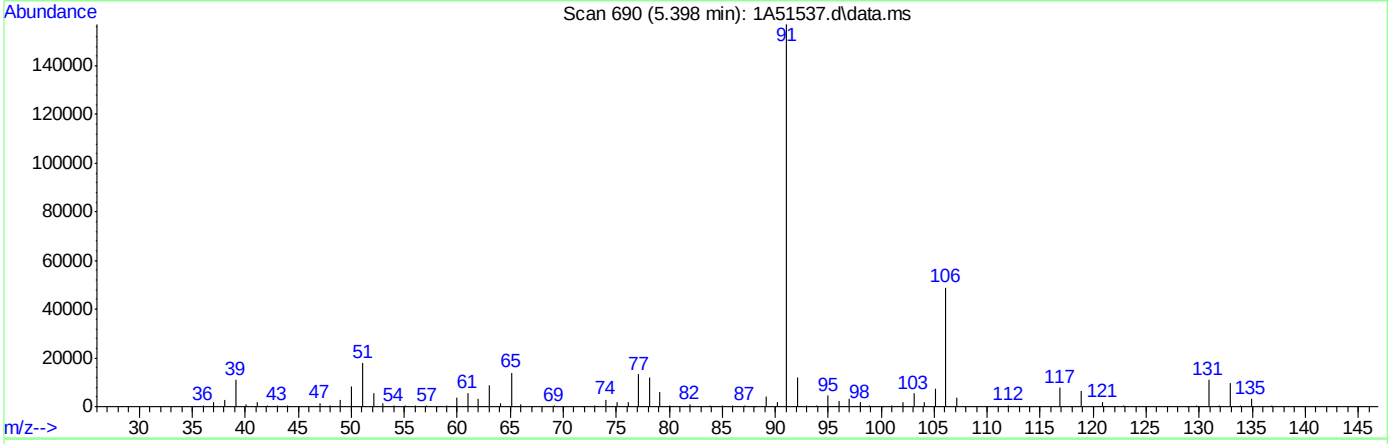
Ion	Exp%	Act%
91.00	100	100
55.00	74.60	82.19
41.00	53.90	67.88
43.10	42.90	50.60

Quantitation Report (Qedit)

Data Path : D:\V1A2022\
Data File : 1A51537.d
Acq On : 19 Dec 2023 6:02 pm
Operator : jeniferw
Sample : FC11791-1MSD
Misc : MS55575,V1A2022,,,,,5
ALS Vial : 28 Sample Multiplier: 1

Quant Time: Dec 19 21:54:58 2023
Quant Method : X:\Orlando VOA\celinec\December 2023\12-20-2023\V1A2022\method\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration





TIC: 1A51537.d\data.ms

(77) Ethylbenzene

5.398min (-0.000) 23.73ug/L m

response 180418

Ion	Exp%	Act%
91.00	100	100
106.00	32.00	31.13
65.00	8.30	8.81
51.00	10.10	11.32

Manual Integrations APPROVED (compounds with "m" flag)
Neil Christiana 12/27/23 10:23

Quantitation Report (QT Reviewed)

Data Path : X:\Orlando VOA\celinec\December 2023\12-27-2023\V1A2028\V1A2028\
Data File : 1A51686.d
Acq On : 26 Dec 2023 6:13 pm
Operator : lianatr
Sample : FC12194-13MS Inst : MSVOA17
Misc : MS55614,V1A2028,,,,,
ALS Vial : 27 Sample Multiplier: 1

Quant Time: Dec 27 00:22:33 2023
Quant Method : X:\Orlando VOA\celinec\December 2023\12-27-2023\V1A2028\METHOD\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	3.405	96	279524	50.00	ug/L	0.00
62) Chlorobenzene-d5	5.352	117	203776	50.00	ug/L	0.00
85) 1,4-Dichlorobenzene-d4	7.099	152	103074	50.00	ug/L	0.00
System Monitoring Compounds						
39) Dibromofluoromethane	2.958	113	81225	49.29	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 98.58%			
49) 1,2-Dichloroethane-d4	3.235	65	100046	54.86	ug/L	0.00
Spiked Amount 50.000	Range 79 - 125		Recovery = 109.72%			
63) Toluene-d8	4.336	98	273894	50.33	ug/L	0.00
Spiked Amount 50.000	Range 85 - 112		Recovery = 100.66%			
86) 4-Bromofluorobenzene	6.229	174	85952	49.97	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 99.94%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.019	85	33639	31.5103	ug/L	96
3) Chloromethane	1.134	50	40675	25.4341	ug/L	100
4) 1,3-butadiene	1.180	39	51093	25.4824	ug/L	94
5) Vinyl Chloride	1.173	62	45081	28.2175	ug/L	96
6) Bromomethane	1.342	94	15625	27.0396	ug/L	98
7) Chloroethane	1.411	64	37010	36.3134	ug/L	93
8) Trichlorofluoromethane	1.496	101	75588	33.2338	ug/L	99
9) Ethyl Ether	1.658	59	41246	29.6026	ug/L	94
10) Ethanol	1.711	45	17142	538.6560	ug/L	97
11) 1,2-Dichlorotrifluoroe...	1.742	67	56860	31.3175	ug/L	90
12) 1,1-Dichloroethene	1.758	61	72079	29.8698	ug/L	95
13) Freon 113	1.781	101	49711	36.1145	ug/L	91
14) Carbon Disulfide	1.781	76	121723	27.2172	ug/L	84
15) Iodomethane	1.827	142	23342	22.1992	ug/L	99
16) Acrolein	1.912	56	47907	111.4285	ug/L	98
17) Allyl chloride	1.996	41	64017	27.7194	ug/L	89
18) Methylene Chloride	2.042	49	70654	29.9588	ug/L	88
19) Acetone	2.050	43	89508	128.9430	ug/L	97
20) Methyl acetate	2.127	43	239197	127.4941	ug/L	96
21) trans-1,2-Dichloroethene	2.135	61	66804	27.5461	ug/L	98
22) Hexane	2.196	56	53161	32.0308	ug/L	93
23) Methyl Tert Butyl Ether	2.196	73	125516	27.8028	ug/L	76
24) Acetonitrile	2.273	41	83688m	344.5302	ug/L	
25) Tert Butyl Alcohol	2.212	59	90418	272.1118	ug/L	84
26) Di-isopropyl ether	2.396	45	162408	28.6456	ug/L	93
27) Chloroprene	2.443	53	171888	24.7624	ug/L	98
28) 1,1-Dichloroethane	2.443	63	87847	27.9094	ug/L	99
29) Acrylonitrile	2.435	52	104862	124.7125	ug/L	97
30) ETBE	2.581	59	150917	28.8673	ug/L	95
31) Vinyl acetate	2.558	43	514941	122.0863	ug/L	96
32) cis-1,2-Dichloroethene	2.720	96	48656	27.9537	ug/L	98
33) 2,2-Dichloropropane	2.781	77	61099	27.8237	ug/L	96
34) Bromochloromethane	2.820	128	23820	27.0199	ug/L #	77
35) Cyclohexane	2.858	56	90751	29.8235	ug/L	88
36) Chloroform	2.858	83	86652	29.9945	ug/L	93
37) Ethyl acetate	2.912	43	300910	127.8673	ug/L	96
38) Tetrahydrofuran	2.943	42	23405	26.2901	ug/L	90
40) Carbon Tetrachloride	2.958	117	65311m	29.1367	ug/L	
41) 1,1,1-Trichloroethane	2.989	97	76142	31.4284	ug/L	95
42) 2-Butanone	3.004	43	141439	120.2149	ug/L	89
43) 1,1-Dichloropropene	3.051	75	64137	30.3458	ug/L	87
44) tert-Butyl formate	3.097	59	63253	43.8261	ug/L #	85

Quantitation Report (QT Reviewed)

Data Path : X:\Orlando VOA\celinec\December 2023\12-27-2023\V1A2028\V1A2028\
Data File : 1A51686.d
Acq On : 26 Dec 2023 6:13 pm
Operator : lianatr
Sample : FC12194-13MS Inst : MSVOA17
Misc : MS55614,V1A2028,,,,,
ALS Vial : 27 Sample Multiplier: 1

Quant Time: Dec 27 00:22:33 2023
Quant Method : X:\Orlando VOA\celinec\December 2023\12-27-2023\V1A2028\METHOD\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
45) Propionitrile	3.143	54	96453	266.3593	ug/L		99
46) Methacrylonitrile	3.166	41	399635	292.6687	ug/L		97
47) Benzene	3.181	78	184126	29.6736	ug/L		95
48) TAME	3.251	73	118159	26.9721	ug/L		82
50) 1,2-Dichloroethane	3.274	62	73103	31.5050	ug/L		93
51) Isobutyl Alcohol	3.258	43	110719	554.9190	ug/L		95
52) Tert Amyl Alcohol	3.328	59	62611	229.1799	ug/L		87
53) Trichloroethene	3.512	95	49475	28.5206	ug/L		96
54) Methylcyclohexane	3.528	83	80889	29.2192	ug/L		94
55) Dibromomethane	3.736	93	31426	28.3245	ug/L	#	79
56) 1,2-Dichloropropane	3.789	63	50658	28.8383	ug/L		94
57) Bromodichloromethane	3.828	83	58793	26.9821	ug/L	#	95
58) Methyl methacrylate	3.920	41	50459	24.9456	ug/L		87
59) 1,4-Dioxane	3.943	88	11548	486.6809	ug/L		93
60) 2-Chloroethyl vinyl ether	4.205	63	451	0.4433	ug/L	#	56
61) cis-1,3-Dichloropropene	4.213	75	66280	26.1523	ug/L		86
64) Toluene	4.374	91	192430	29.0517	ug/L		98
65) 2-Nitropropane	4.467	41	56940	82.6579	ug/L		84
66) 4-Methyl-2-pentanone	4.582	43	306106	127.2438	ug/L		95
67) trans-1,3-Dichloropropene	4.613	75	60118	25.6371	ug/L		85
68) Tetrachloroethene	4.628	166	54863	29.2760	ug/L		94
69) Ethyl methacrylate	4.728	69	55575	28.7369	ug/L		83
70) 1,1,2-Trichloroethane	4.713	83	35458	26.5539	ug/L		96
71) Dibromochloromethane	4.844	129	45152	26.5952	ug/L		98
72) 1,3-Dichloropropane	4.898	76	71729	29.1802	ug/L		87
73) 1,2-Dibromoethane	4.998	107	43790	25.5594	ug/L		96
74) 3,3-Dimethyl-1-Butanol	5.129	57	304388	949.3591	ug/L		94
75) 2-hexanone	5.136	43	280253	120.2848	ug/L		86
76) 1-Chlorohexane	5.367	91	57766m	25.1083	ug/L		
77) Ethylbenzene	5.398	91	218690m	30.5083	ug/L		
78) Chlorobenzene	5.367	112	124994	28.4950	ug/L		93
79) 1,1,1,2-Tetrachloroethane	5.413	131	43426	27.2132	ug/L		91
80) m,p-Xylene	5.498	91	332762	58.5431	ug/L		99
81) o-Xylene	5.806	91	165112	27.2958	ug/L		99
82) Styrene	5.837	104	125043	27.2789	ug/L		96
83) Bromoform	5.837	173	27344	23.8552	ug/L		94
84) Isopropylbenzene	6.045	105	196491	27.9084	ug/L		98
87) cis-1,4-Dichloro-2-butene	6.268	53	16078	26.1347	ug/L	#	74
88) n-Propylbenzene	6.352	91	238149	29.5697	ug/L		96
89) Bromobenzene	6.306	156	50520	28.2537	ug/L		88
90) 1,1,2,2-Tetrachloroethane	6.375	83	56237	26.9340	ug/L		98
91) 1,3,5-Trimethylbenzene	6.506	105	159307	28.8180	ug/L		98
92) 2-Chlorotoluene	6.452	91	133650	28.9060	ug/L		98
93) trans-1,4-Dichloro-2-B...	6.506	53	20118	24.9839	ug/L		79
94) 1,2,3-Trichloropropane	6.468	110	17511	30.4216	ug/L		82
95) Cyclohexanone	6.483	55	10618	97.8783	ug/L		96
96) 4-Chlorotoluene	6.583	91	138191	28.9639	ug/L		97
97) tert-Butylbenzene	6.753	91	93708	29.9765	ug/L		94
98) 1,2,4-Trimethylbenzene	6.799	105	153285	28.9374	ug/L		98
99) Pentachloroethane	6.745	167	25482	29.0037	ug/L	#	69
100) sec-Butylbenzene	6.891	105	192640	27.5824	ug/L		97
101) 4-Isopropyltoluene	7.007	119	160931	26.8636	ug/L		98
102) 1,3-Dichlorobenzene	7.037	146	90068	27.9176	ug/L		96
103) 1,2,3-Trimethylbenzene	7.137	105	148527	28.2262	ug/L		98
104) 1,4-Dichlorobenzene	7.107	146	90053	27.5833	ug/L		96
105) n-Butylbenzene	7.338	92	79434	29.5357	ug/L		94
106) Benzyl Chloride	7.291	126	13158	17.5863	ug/L	#	85
107) 1,2-Dichlorobenzene	7.430	146	79989	27.8493	ug/L		98

Quantitation Report (QT Reviewed)

Data Path : X:\Orlando VOA\celinec\December 2023\12-27-2023\V1A2028\V1A2028\
Data File : 1A51686.d
Acq On : 26 Dec 2023 6:13 pm
Operator : lianatr
Sample : FC12194-13MS Inst : MSVOA17
Misc : MS55614,V1A2028,,,,,
ALS Vial : 27 Sample Multiplier: 1

Quant Time: Dec 27 00:22:33 2023
Quant Method : X:\Orlando VOA\celinec\December 2023\12-27-2023\V1A2028\METHOD\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration

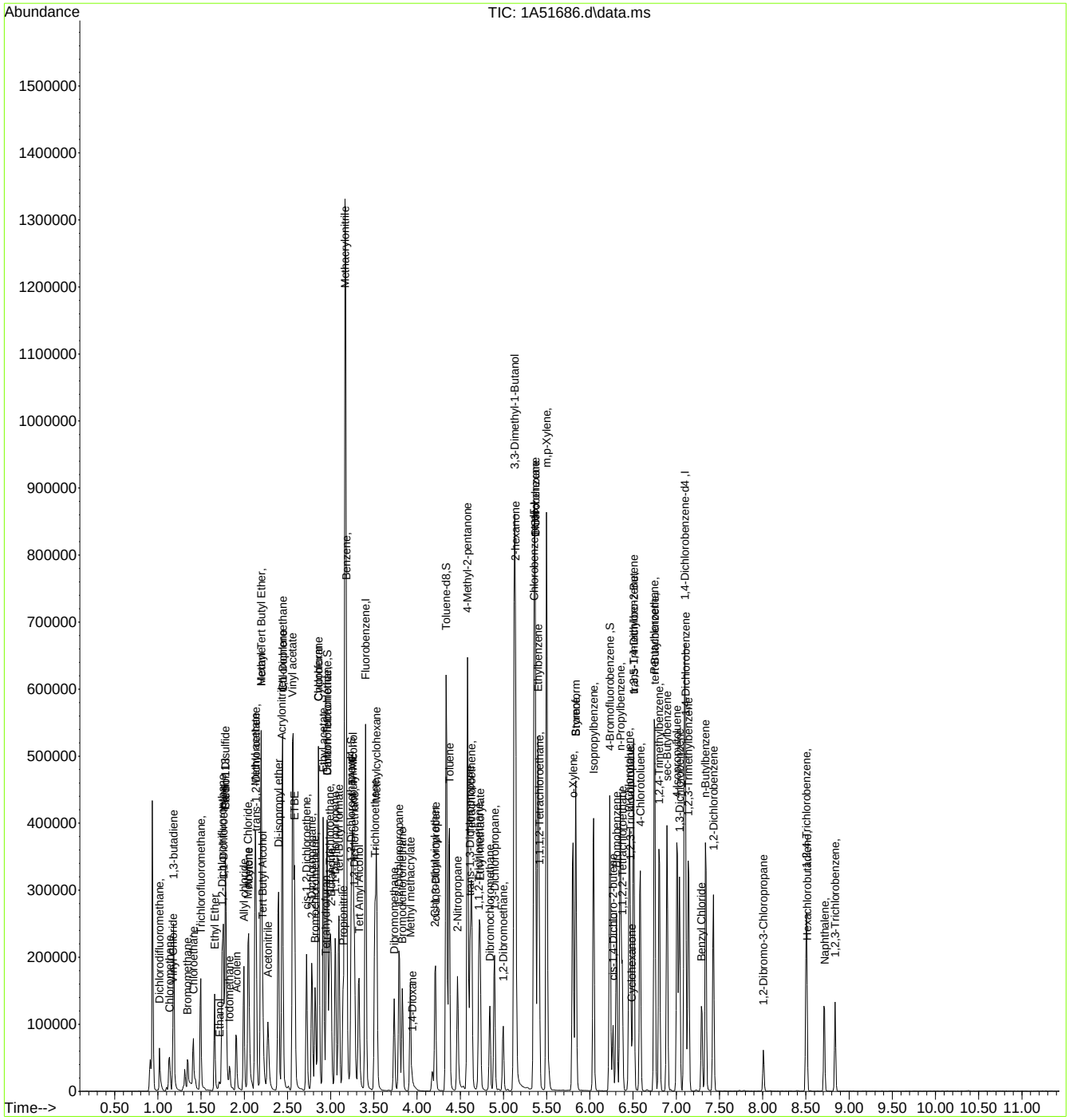
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
108) 1,2-Dibromo-3-Chloropr...	8.007	75	8679	26.1085	ug/L #	82
109) Hexachlorobutadiene	8.515	225	17340	26.0288	ug/L	94
110) 1,2,4-Trichlorobenzene	8.507	180	32693	20.5206	ug/L	97
111) Naphthalene	8.715	128	70226	17.1948	ug/L	97
112) 1,2,3-Trichlorobenzene	8.838	180	23947	18.9112	ug/L	92

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : X:\Orlando VOA\celinec\December 2023\12-27-2023\V1A2028\V1A2028\
Data File : 1A51686.d
Acq On : 26 Dec 2023 6:13 pm
Operator : lianatr
Sample : FC12194-13MS Inst : MSVOA17
Misc : MS55614,V1A2028,,,,,
ALS Vial : 27 Sample Multiplier: 1

Quant Time: Dec 27 00:22:33 2023
Quant Method : X:\Orlando VOA\celinec\December 2023\12-27-2023\V1A2028\METHOD\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration



Manual Integration Approval Summary

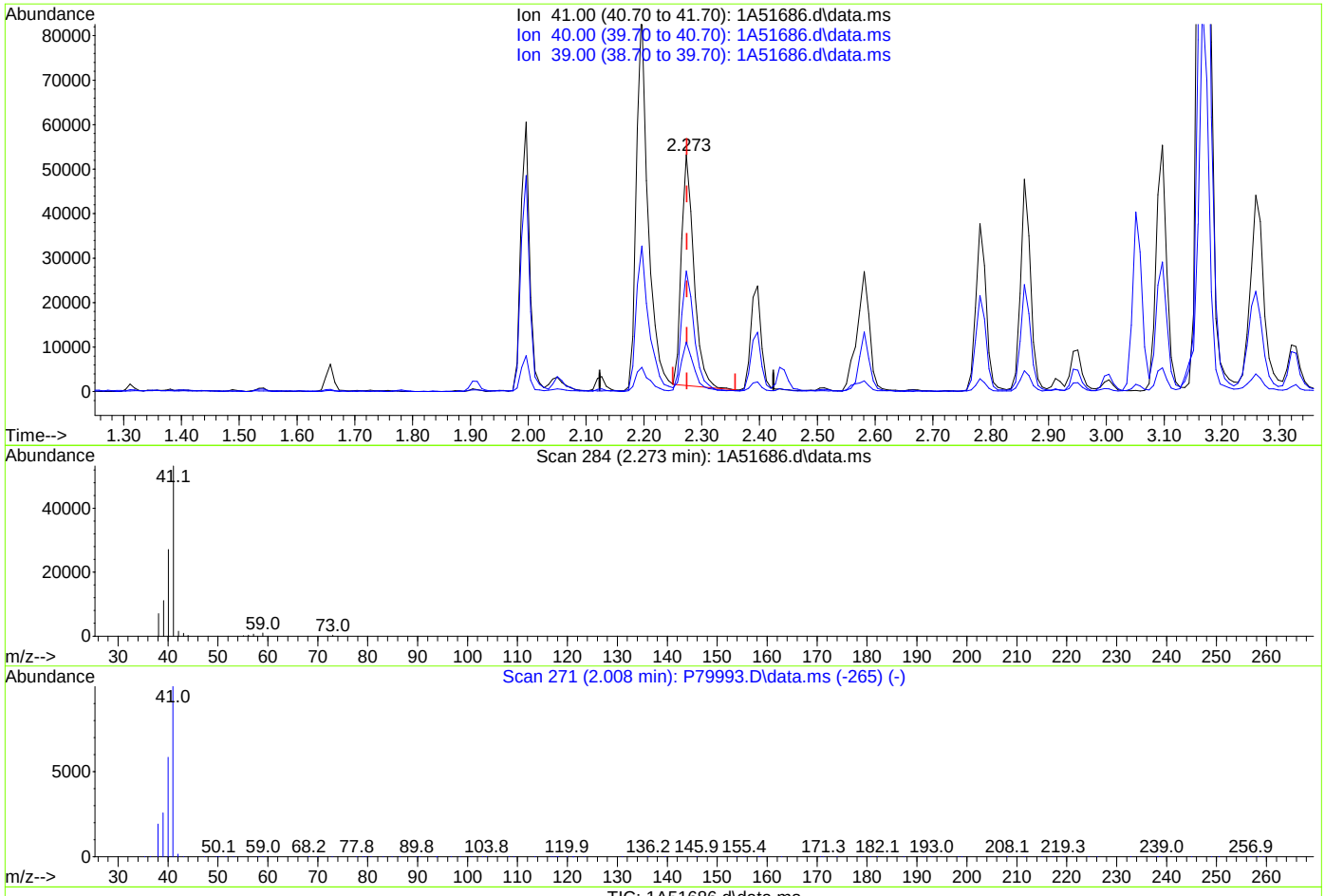
Sample Number: FC12194-13MS
Lab FileID: 1A51686.D
Injection Time: 12/26/23 18:13
Method: SW846 8260D
Analyst approved: 12/26/23 19:31 Celine Celis
Supervisor approved: 12/27/23 10:23 Neil Christiana

Parameter	CAS	Sig#	R.T. (min.)	Reason
Acetonitrile	75-05-8		2.27	Poor instrument integration
Carbon Tetrachloride	56-23-5		2.96	Overlapping peak
1-Chlorohexane	544-10-5		5.37	Overlapping peak
Ethylbenzene	100-41-4		5.40	Overlapping peak

Quantitation Report (Qedit)

Data Path : X:\Orlando VOA\celinec\December 2023\12-27-2023\V1A2028\V1A2028\
Data File : 1A51686.d
Acq On : 26 Dec 2023 6:13 pm
Operator : lianatr
Sample : FC12194-13MS Inst : MSVOA17
Misc : MS55614,V1A2028,,,,,
ALS Vial : 27 Sample Multiplier: 1

Quant Time: Dec 27 00:08:47 2023
Quant Method : X:\Orlando VOA\celinec\December 2023\12-27-2023\V1A2028\METHOD\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration



TIC: 1A51686.d\data.ms

(24) Acetonitrile

2.273min (-0.001) 317.22ug/L

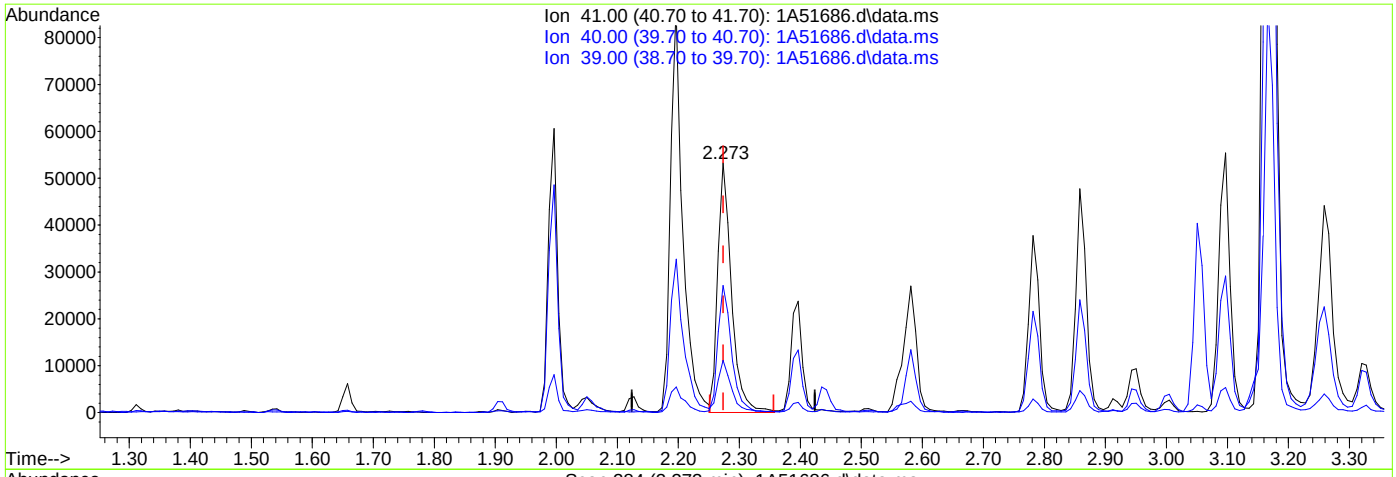
response 77055

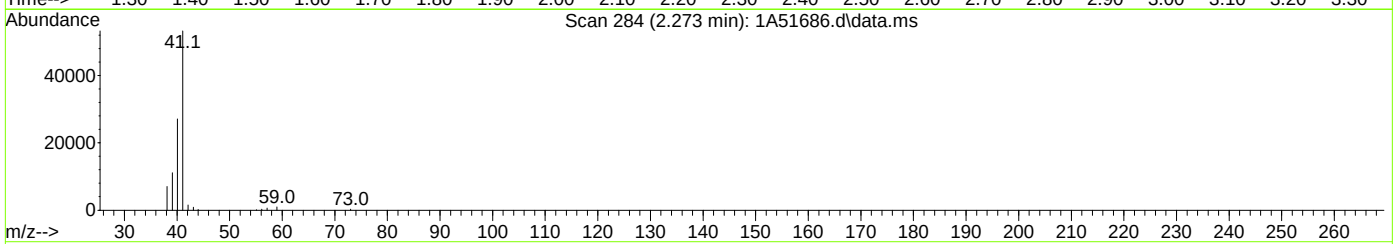
Ion	Exp%	Act%
41.00	100	100
40.00	54.10	50.89
39.00	21.10	20.66
0.00	0.00	0.00

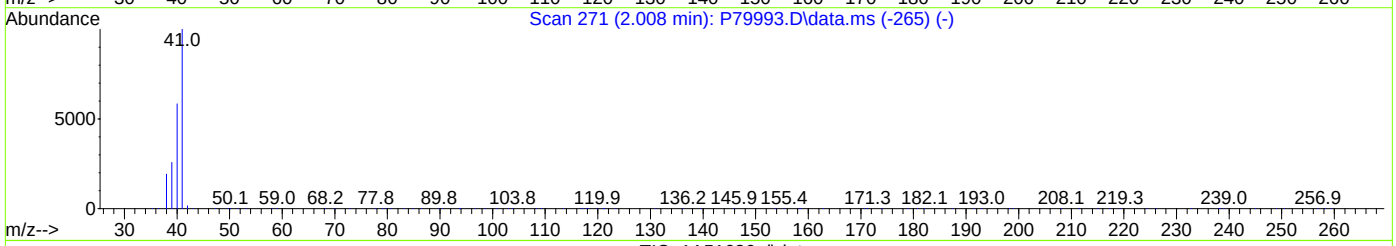
Quantitation Report (Qedit)

Data Path : X:\Orlando VOA\celinec\December 2023\12-27-2023\V1A2028\V1A2028\
Data File : 1A51686.d
Acq On : 26 Dec 2023 6:13 pm
Operator : lianatr
Sample : FC12194-13MS Inst : MSVOA17
Misc : MS55614,V1A2028,,,,,
ALS Vial : 27 Sample Multiplier: 1

Quant Time: Dec 27 00:08:47 2023
Quant Method : X:\Orlando VOA\celinec\December 2023\12-27-2023\V1A2028\METHOD\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration







TIC: 1A51686.d\data.ms

(24) Acetonitrile

2.273min (-0.001) 344.53ug/L m

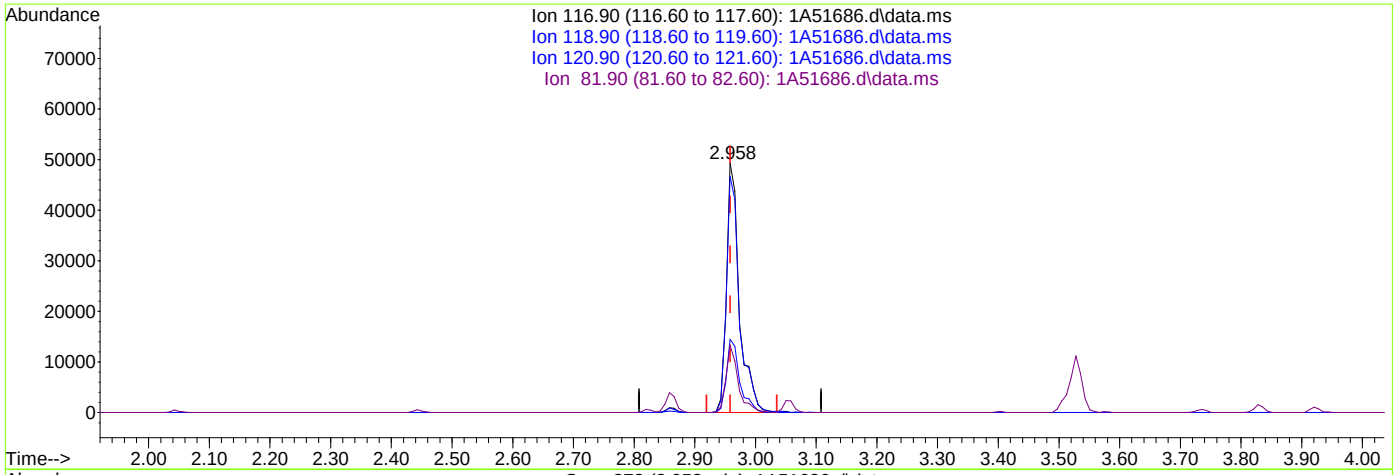
response 83688

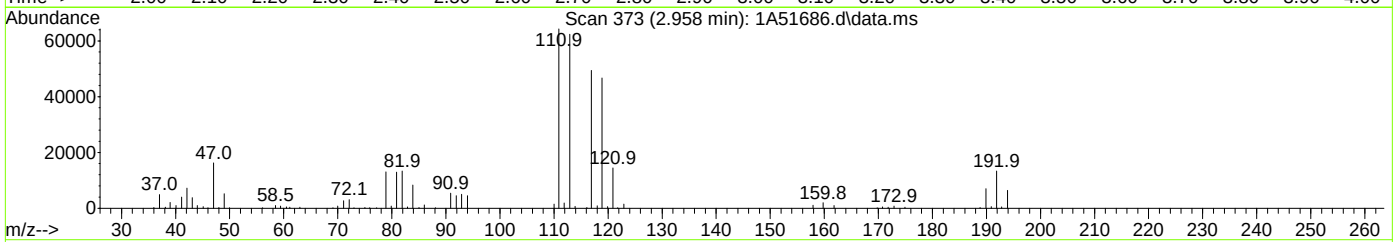
Ion	Exp%	Act%
41.00	100	100
40.00	54.10	50.93
39.00	21.10	20.93
0.00	0.00	0.00

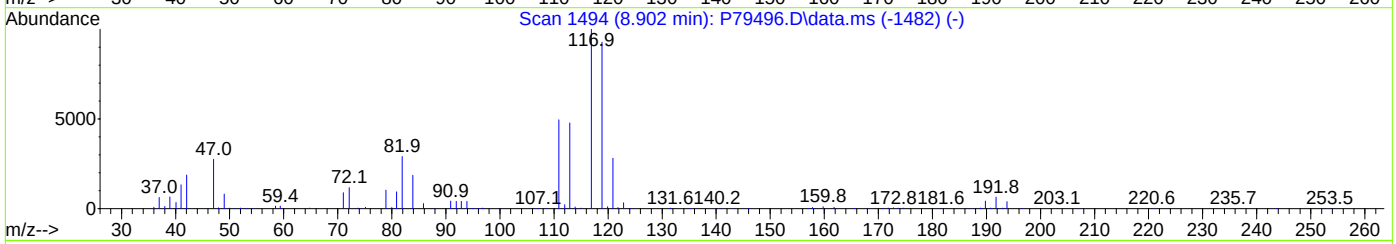
Quantitation Report (Qedit)

Data Path : X:\Orlando VOA\celinec\December 2023\12-27-2023\V1A2028\V1A2028\
Data File : 1A51686.d
Acq On : 26 Dec 2023 6:13 pm
Operator : lianatr
Sample : FC12194-13MS Inst : MSVOA17
Misc : MS55614,V1A2028,,,,,
ALS Vial : 27 Sample Multiplier: 1

Quant Time: Dec 27 00:08:47 2023
Quant Method : X:\Orlando VOA\celinec\December 2023\12-27-2023\V1A2028\METHOD\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration







TIC: 1A51686.d\data.ms

(40) Carbon Tetrachloride ( )

2.958min (-0.000) 32.54ug/L

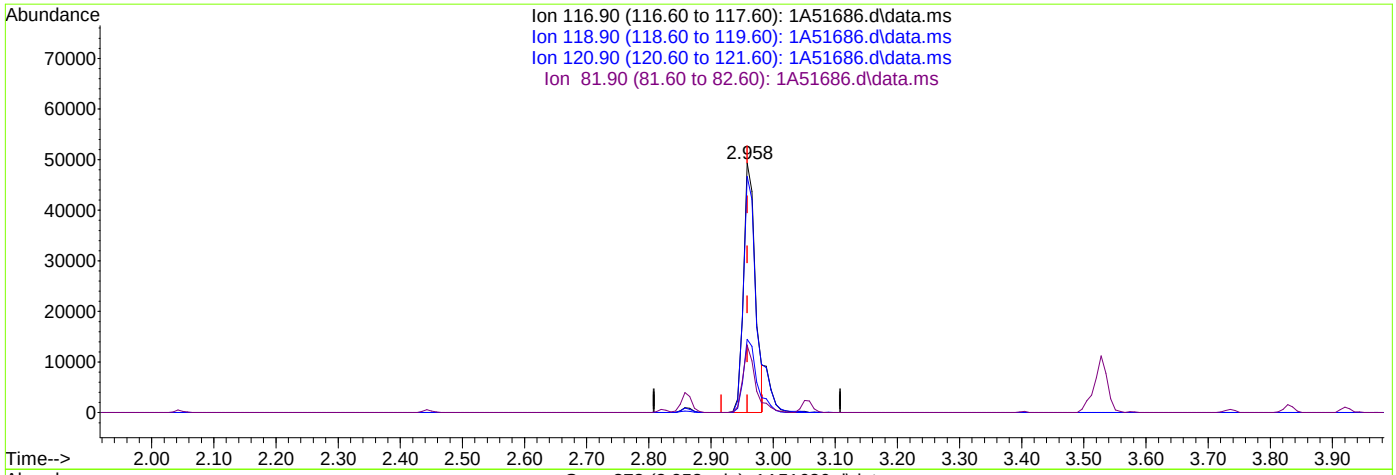
response 72950

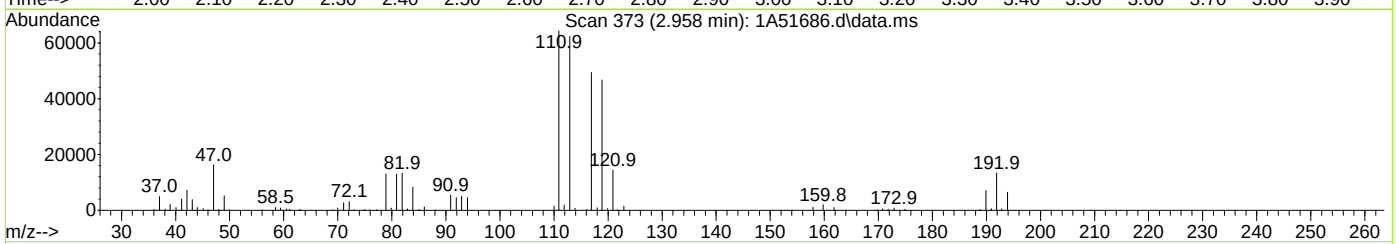
Ion	Exp%	Act%
116.90	100	100
118.90	94.50	94.60
120.90	31.10	29.31
81.90	25.40	26.89

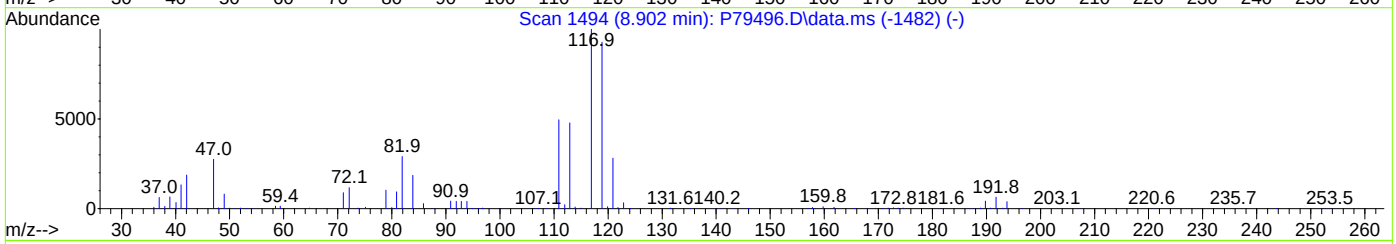
Quantitation Report (Qedit)

Data Path : X:\Orlando VOA\celinec\December 2023\12-27-2023\V1A2028\V1A2028\
Data File : 1A51686.d
Acq On : 26 Dec 2023 6:13 pm
Operator : lianatr
Sample : FC12194-13MS Inst : MSVOA17
Misc : MS55614,V1A2028,,,,,
ALS Vial : 27 Sample Multiplier: 1

Quant Time: Dec 27 00:08:47 2023
Quant Method : X:\Orlando VOA\celinec\December 2023\12-27-2023\V1A2028\METHOD\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration







TIC: 1A51686.d\data.ms

(40) Carbon Tetrachloride ( )

2.958min (-0.000) 29.14ug/L m

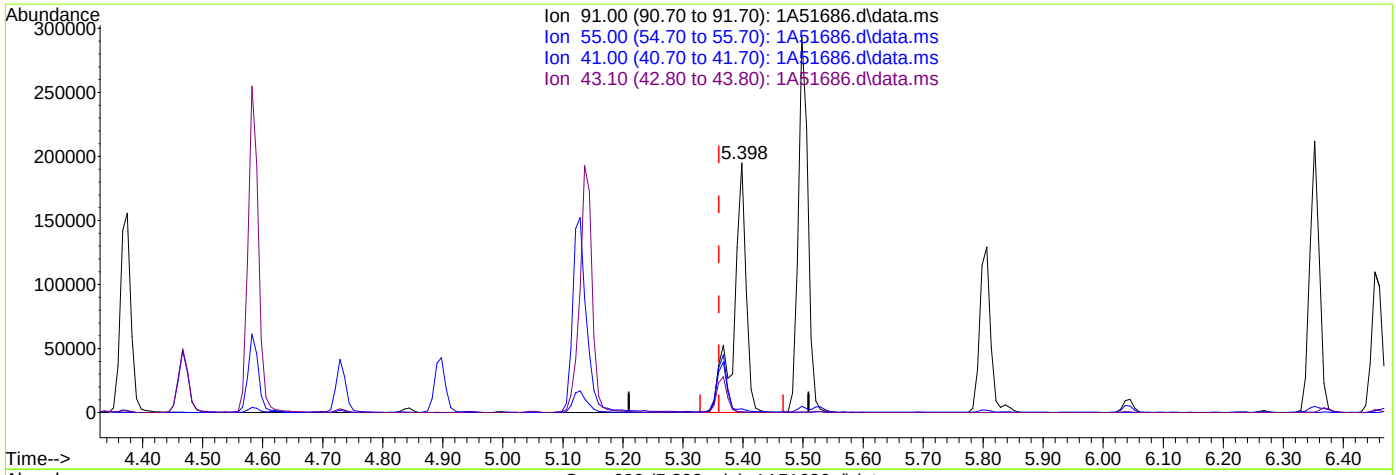
response 65311

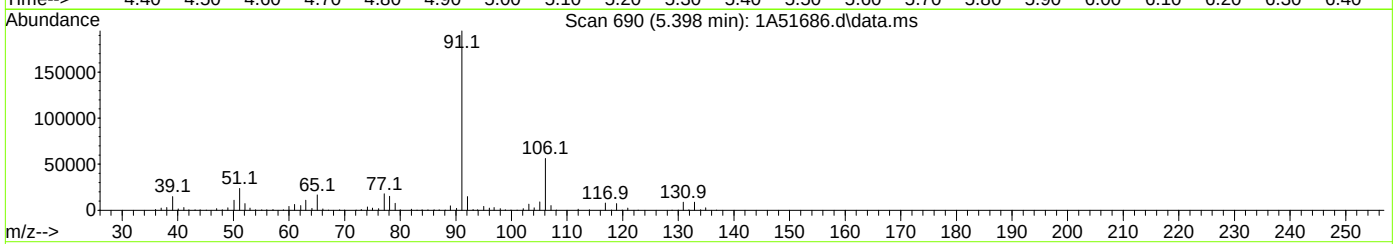
Ion	Exp%	Act%
116.90	100	100
118.90	94.50	94.60
120.90	31.10	29.31
81.90	25.40	26.89

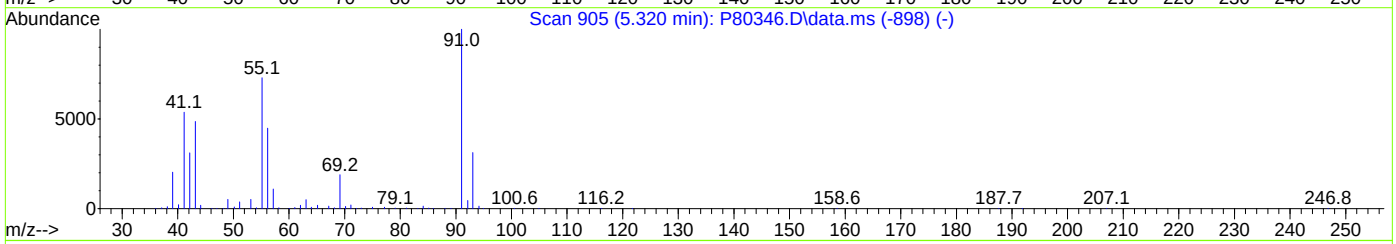
Quantitation Report (Qedit)

Data Path : X:\Orlando VOA\celinec\December 2023\12-27-2023\V1A2028\V1A2028\
Data File : 1A51686.d
Acq On : 26 Dec 2023 6:13 pm
Operator : lianatr
Sample : FC12194-13MS Inst : MSVOA17
Misc : MS55614,V1A2028,,,,,
ALS Vial : 27 Sample Multiplier: 1

Quant Time: Dec 27 00:08:47 2023
Quant Method : X:\Orlando VOA\celinec\December 2023\12-27-2023\V1A2028\METHOD\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration







TIC: 1A51686.d\data.ms

(76) 1-Chlorohexane

5.398min (+0.038) 120.22ug/L

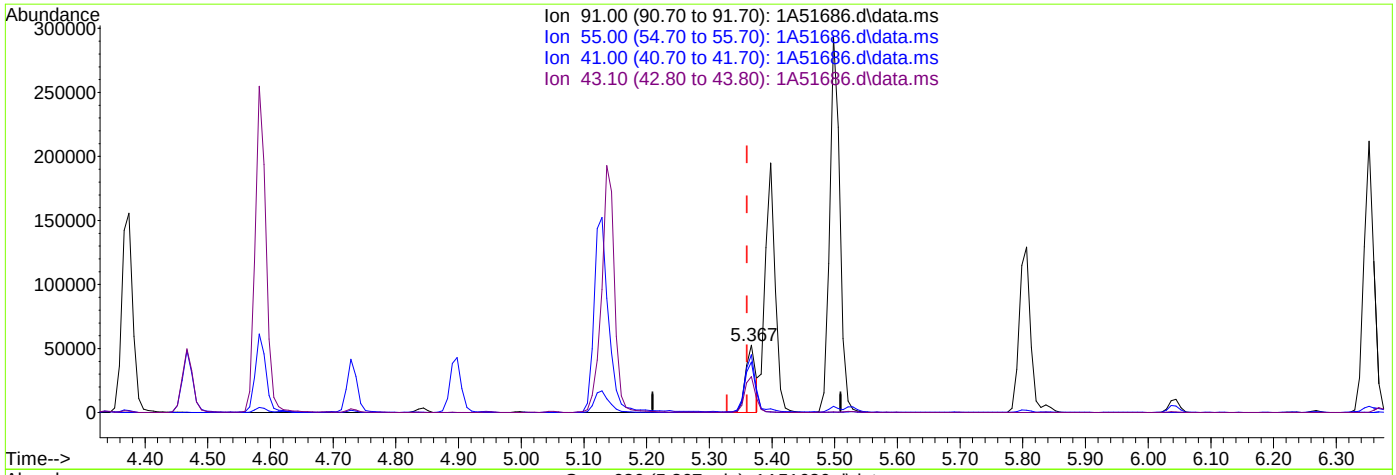
response 276581

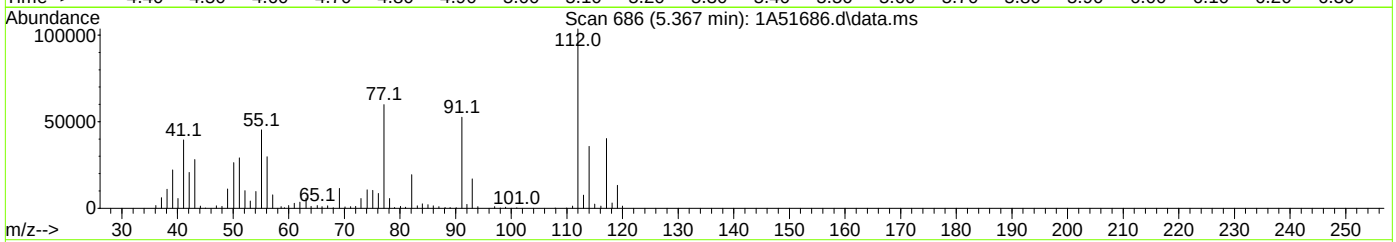
Ion	Exp%	Act%
91.00	100	100
55.00	74.60	0.25#
41.00	53.90	1.16#
43.10	42.90	0.22#

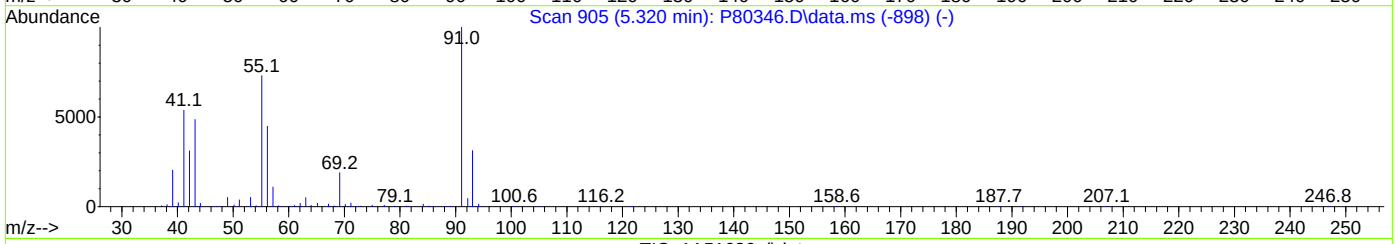
Quantitation Report (Qedit)

Data Path : X:\Orlando VOA\celinec\December 2023\12-27-2023\V1A2028\V1A2028\
Data File : 1A51686.d
Acq On : 26 Dec 2023 6:13 pm
Operator : lianatr
Sample : FC12194-13MS Inst : MSVOA17
Misc : MS55614,V1A2028,,,,,
ALS Vial : 27 Sample Multiplier: 1

Quant Time: Dec 27 00:08:47 2023
Quant Method : X:\Orlando VOA\celinec\December 2023\12-27-2023\V1A2028\METHOD\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration







TIC: 1A51686.d\data.ms

(76) 1-Chlorohexane

5.367min (+0.007) 25.11ug/L m

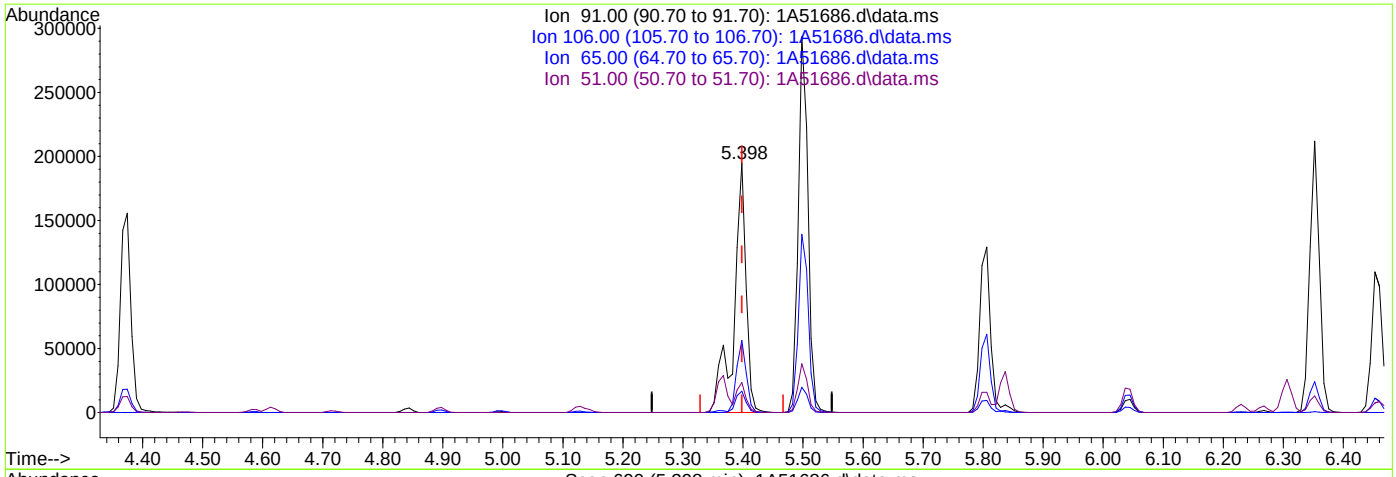
response 57766

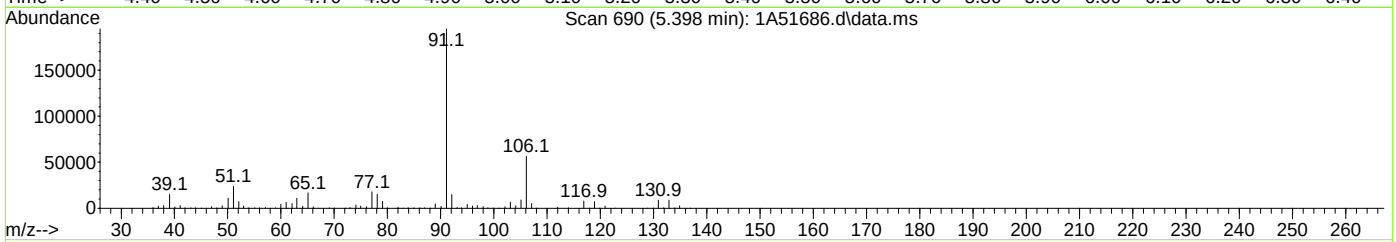
Ion	Exp%	Act%
91.00	100	100
55.00	74.60	86.10
41.00	53.90	75.12#
43.10	42.90	53.49

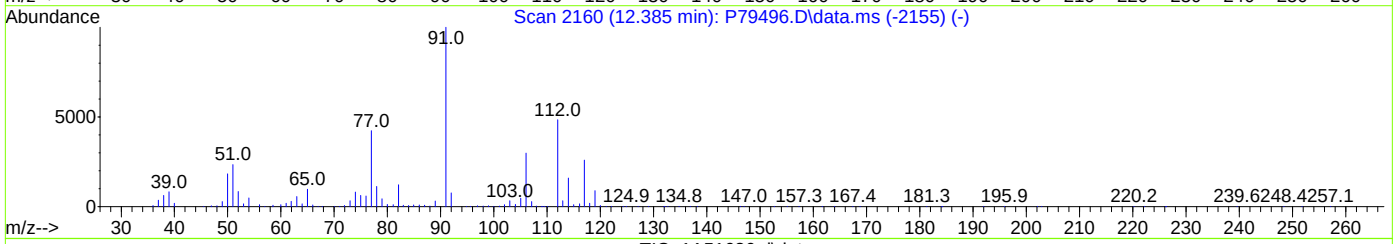
Quantitation Report (Qedit)

Data Path : X:\Orlando VOA\celinec\December 2023\12-27-2023\V1A2028\V1A2028\
Data File : 1A51686.d
Acq On : 26 Dec 2023 6:13 pm
Operator : lianatr
Sample : FC12194-13MS Inst : MSVOA17
Misc : MS55614,V1A2028,,,,,
ALS Vial : 27 Sample Multiplier: 1

Quant Time: Dec 27 00:08:47 2023
Quant Method : X:\Orlando VOA\celinec\December 2023\12-27-2023\V1A2028\METHOD\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration







TIC: 1A51686.d\data.ms

(77) Ethylbenzene

5.398min (-0.000) 38.58ug/L

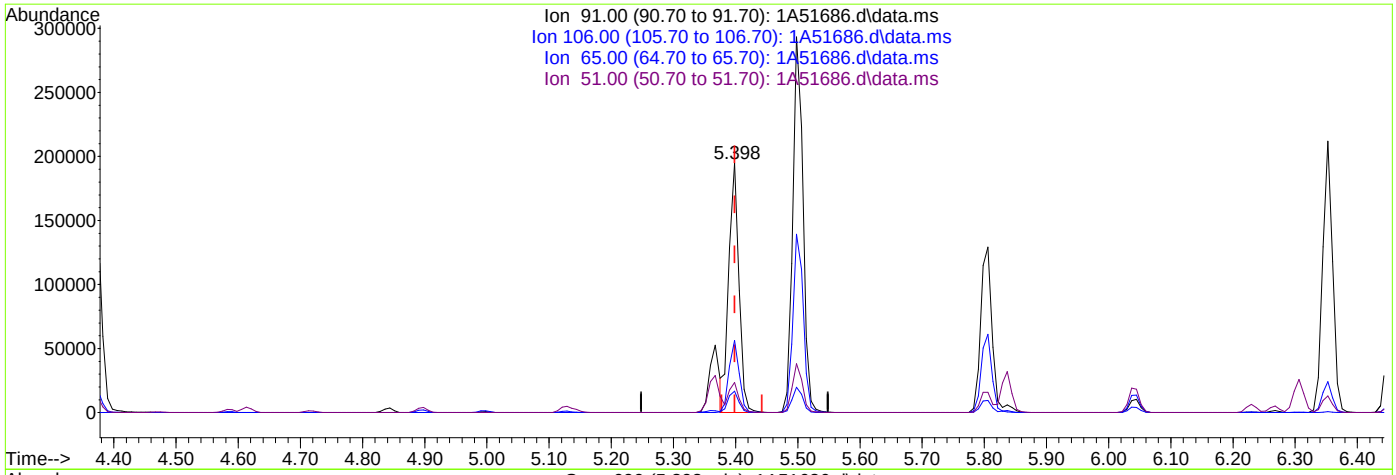
response 276581

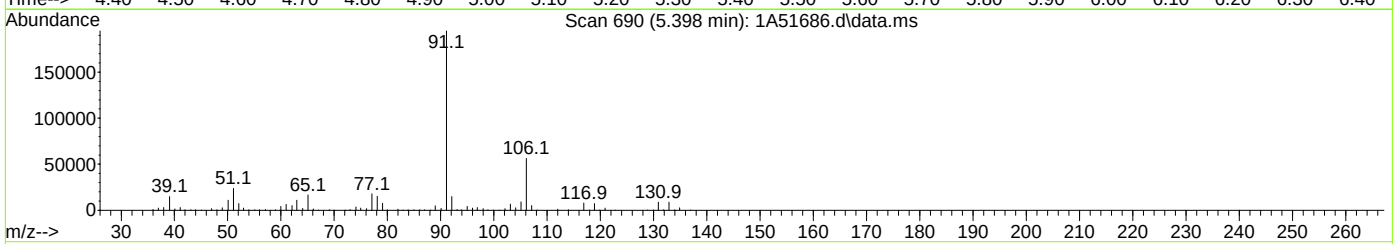
Ion	Exp%	Act%
91.00	100	100
106.00	32.00	28.91
65.00	8.30	8.55
51.00	10.10	12.10

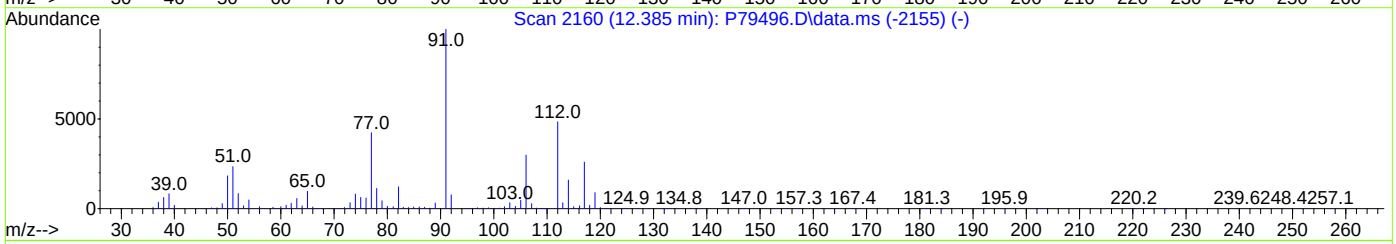
Quantitation Report (Qedit)

Data Path : X:\Orlando VOA\celinec\December 2023\12-27-2023\V1A2028\V1A2028\
Data File : 1A51686.d
Acq On : 26 Dec 2023 6:13 pm
Operator : lianatr
Sample : FC12194-13MS Inst : MSVOA17
Misc : MS55614,V1A2028,,,,,
ALS Vial : 27 Sample Multiplier: 1

Quant Time: Dec 27 00:08:47 2023
Quant Method : X:\Orlando VOA\celinec\December 2023\12-27-2023\V1A2028\METHOD\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration







TIC: 1A51686.d\data.ms

(77) Ethylbenzene

5.398min (-0.000) 30.51ug/L m

response 218690

Ion	Exp%	Act%
91.00	100	100
106.00	32.00	28.91
65.00	8.30	8.55
51.00	10.10	12.10

Manual Integrations APPROVED (compounds with "m" flag)
Neil Christiana 12/27/23 10:23

Quantitation Report (QT Reviewed)

Data Path : X:\Orlando VOA\celinec\December 2023\12-27-2023\V1A2028\V1A2028\
Data File : 1A51687.d
Acq On : 26 Dec 2023 6:37 pm
Operator : lianatr
Sample : FC12194-13MSD Inst : MSVOA17
Misc : MS55614,V1A2028,,,,,
ALS Vial : 28 Sample Multiplier: 1

Quant Time: Dec 27 00:23:09 2023
Quant Method : X:\Orlando VOA\celinec\December 2023\12-27-2023\V1A2028\METHOD\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	3.405	96	293136	50.00	ug/L	0.00
62) Chlorobenzene-d5	5.352	117	212641	50.00	ug/L	0.00
85) 1,4-Dichlorobenzene-d4	7.099	152	107889	50.00	ug/L	0.00
System Monitoring Compounds						
39) Dibromofluoromethane	2.958	113	85221	49.32	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 98.64%			
49) 1,2-Dichloroethane-d4	3.236	65	105971	55.41	ug/L	0.00
Spiked Amount 50.000	Range 79 - 125		Recovery = 110.82%			
63) Toluene-d8	4.336	98	286357	50.43	ug/L	0.00
Spiked Amount 50.000	Range 85 - 112		Recovery = 100.86%			
86) 4-Bromofluorobenzene	6.229	174	89387	49.65	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 99.30%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.019	85	36640	32.7276	ug/L	99
3) Chloromethane	1.134	50	42047	25.0712	ug/L	96
4) 1,3-butadiene	1.181	39	50641	24.0842	ug/L	92
5) Vinyl Chloride	1.173	62	47542	28.3761	ug/L	98
6) Bromomethane	1.342	94	18637	30.7543	ug/L	99
7) Chloroethane	1.404	64	40829	38.2003	ug/L	92
8) Trichlorofluoromethane	1.488	101	81535	34.1838	ug/L	96
9) Ethyl Ether	1.658	59	43910	30.0511	ug/L	96
10) Ethanol	1.712	45	17568	526.4078	ug/L	96
11) 1,2-Dichlorotrifluoroe...	1.742	67	63089	33.1348	ug/L	91
12) 1,1-Dichloroethene	1.758	61	77055	30.4491	ug/L	96
13) Freon 113	1.781	101	54298	37.6152	ug/L	90
14) Carbon Disulfide	1.781	76	132593	28.2710	ug/L	86
15) Iodomethane	1.827	142	31604	28.6609	ug/L	100
16) Acrolein	1.912	56	52837	117.1887	ug/L	100
17) Allyl chloride	1.996	41	62543	25.8237	ug/L	88
18) Methylene Chloride	2.043	49	75664	30.5933	ug/L	89
19) Acetone	2.050	43	95097	130.6329	ug/L	98
20) Methyl acetate	2.127	43	254049	129.1225	ug/L	96
21) trans-1,2-Dichloroethene	2.135	61	73650	28.9588	ug/L	97
22) Hexane	2.196	56	56301	32.3475	ug/L	94
23) Methyl Tert Butyl Ether	2.196	73	139823	29.5337	ug/L	82
24) Acetonitrile	2.273	41	81716m	320.7903	ug/L	
25) Tert Butyl Alcohol	2.212	59	114758	329.3255	ug/L	86
26) Di-isopropyl ether	2.397	45	176019	29.6046	ug/L	92
27) Chloroprene	2.443	53	175093	24.0528	ug/L	96
28) 1,1-Dichloroethane	2.443	63	95393	28.8995	ug/L	99
29) Acrylonitrile	2.443	52	109695	124.4024	ug/L	98
30) ETBE	2.581	59	161659	29.4861	ug/L	95
31) Vinyl acetate	2.558	43	535874	121.1496	ug/L	96
32) cis-1,2-Dichloroethene	2.720	96	51330	28.1205	ug/L	93
33) 2,2-Dichloropropane	2.781	77	66435	28.8487	ug/L	98
34) Bromochloromethane	2.820	128	25293	27.3585	ug/L #	78
35) Cyclohexane	2.858	56	99917	31.3109	ug/L	89
36) Chloroform	2.858	83	94795	31.2894	ug/L	94
37) Ethyl acetate	2.912	43	313155	126.8914	ug/L	96
38) Tetrahydrofuran	2.943	42	24859	26.6267	ug/L	93
40) Carbon Tetrachloride	2.958	117	72781m	30.9615	ug/L	
41) 1,1,1-Trichloroethane	2.989	97	82476	32.4621	ug/L	94
42) 2-Butanone	3.005	43	149381	121.0694	ug/L	91
43) 1,1-Dichloropropene	3.051	75	70032	31.5963	ug/L	87
44) tert-Butyl formate	3.097	59	18230	12.0445	ug/L #	79

Quantitation Report (QT Reviewed)

Data Path : X:\Orlando VOA\celinec\December 2023\12-27-2023\V1A2028\V1A2028\
Data File : 1A51687.d
Acq On : 26 Dec 2023 6:37 pm
Operator : lianatr
Sample : FC12194-13MSD Inst : MSVOA17
Misc : MS55614,V1A2028,,,,,
ALS Vial : 28 Sample Multiplier: 1

Quant Time: Dec 27 00:23:09 2023
Quant Method : X:\Orlando VOA\celinec\December 2023\12-27-2023\V1A2028\METHOD\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration

	Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
45)	Propionitrile	3.143	54	92150	242.6596	ug/L		100
46)	Methacrylonitrile	3.166	41	386661	270.0182	ug/L		98
47)	Benzene	3.182	78	195944	30.1118	ug/L		97
48)	TAME	3.251	73	132721	28.8893	ug/L		89
50)	1,2-Dichloroethane	3.274	62	78385	32.2128	ug/L		93
51)	Isobutyl Alcohol	3.259	43	114512	547.2785	ug/L		97
52)	Tert Amyl Alcohol	3.328	59	72301	252.3598	ug/L		89
53)	Trichloroethene	3.513	95	55332	30.4157	ug/L		95
54)	Methylcyclohexane	3.528	83	86565	29.8175	ug/L		93
55)	Dibromomethane	3.736	93	34930	30.0207	ug/L	#	80
56)	1,2-Dichloropropane	3.790	63	53733	29.1684	ug/L		96
57)	Bromodichloromethane	3.828	83	64985	28.4389	ug/L	#	95
58)	Methyl methacrylate	3.920	41	49900	23.5237	ug/L		88
59)	1,4-Dioxane	3.944	88	13295	534.2885	ug/L		82
60)	2-Chloroethyl vinyl ether	4.205	63	457	0.4284	ug/L	#	49
61)	cis-1,3-Dichloropropene	4.213	75	71797	27.0137	ug/L		84
64)	Toluene	4.375	91	210709	30.4851	ug/L		96
65)	2-Nitropropane	4.467	41	65605	91.2661	ug/L		87
66)	4-Methyl-2-pentanone	4.582	43	323553	128.8892	ug/L		96
67)	trans-1,3-Dichloropropene	4.613	75	65676	26.8397	ug/L		86
68)	Tetrachloroethene	4.629	166	58810	30.0739	ug/L		93
69)	Ethyl methacrylate	4.729	69	53777	26.6479	ug/L		82
70)	1,1,2-Trichloroethane	4.713	83	38713	27.7828	ug/L		96
71)	Dibromochloromethane	4.844	129	50856	28.7061	ug/L		96
72)	1,3-Dichloropropane	4.898	76	78554	30.6244	ug/L		88
73)	1,2-Dibromoethane	4.998	107	48708	27.2447	ug/L		96
74)	3,3-Dimethyl-1-Butanol	5.129	57	367239	1097.6347	ug/L		95
75)	2-hexanone	5.137	43	304197	125.1185	ug/L		89
76)	1-Chlorohexane	5.367	91	64780m	26.9831	ug/L		
77)	Ethylbenzene	5.398	91	233706m	31.2439	ug/L		
78)	Chlorobenzene	5.367	112	134682	29.4236	ug/L		96
79)	1,1,1,2-Tetrachloroethane	5.414	131	48310	29.0117	ug/L		98
80)	m,p-Xylene	5.498	91	360072	60.7068	ug/L		97
81)	o-Xylene	5.806	91	180111	28.5340	ug/L		98
82)	Styrene	5.837	104	134317	28.0804	ug/L		94
83)	Bromoform	5.837	173	30455	25.4616	ug/L		97
84)	Isopropylbenzene	6.045	105	212927	28.9820	ug/L		99
87)	cis-1,4-Dichloro-2-butene	6.268	53	16580	25.7479	ug/L	#	81
88)	n-Propylbenzene	6.353	91	256751	30.4566	ug/L		95
89)	Bromobenzene	6.306	156	55740	29.7818	ug/L		90
90)	1,1,2,2-Tetrachloroethane	6.376	83	64726	29.6162	ug/L		95
91)	1,3,5-Trimethylbenzene	6.506	105	174854	30.2188	ug/L		99
92)	2-Chlorotoluene	6.453	91	144790	29.9178	ug/L		99
93)	trans-1,4-Dichloro-2-B...	6.506	53	22127	26.2525	ug/L		80
94)	1,2,3-Trichloropropane	6.468	110	19529	32.4133	ug/L	#	79
95)	Cyclohexanone	6.483	55	12181	107.2751	ug/L		92
96)	4-Chlorotoluene	6.583	91	151548	30.3459	ug/L		96
97)	tert-Butylbenzene	6.753	91	103225	31.5472	ug/L		96
98)	1,2,4-Trimethylbenzene	6.799	105	166737	30.0721	ug/L		99
99)	Pentachloroethane	6.745	167	25130	27.3265	ug/L	#	54
100)	sec-Butylbenzene	6.891	105	209518	28.6602	ug/L		97
101)	4-Isopropyltoluene	7.007	119	177969	28.3818	ug/L		99
102)	1,3-Dichlorobenzene	7.038	146	94881	28.0970	ug/L		96
103)	1,2,3-Trimethylbenzene	7.138	105	161575	29.3355	ug/L		98
104)	1,4-Dichlorobenzene	7.107	146	98418	28.8002	ug/L		96
105)	n-Butylbenzene	7.338	92	86053	30.5688	ug/L		94
106)	Benzyl Chloride	7.299	126	14866	18.9824	ug/L		98
107)	1,2-Dichlorobenzene	7.430	146	86050	28.6224	ug/L		96

Quantitation Report (QT Reviewed)

Data Path : X:\Orlando VOA\celinec\December 2023\12-27-2023\V1A2028\V1A2028\
Data File : 1A51687.d
Acq On : 26 Dec 2023 6:37 pm
Operator : lianatr
Sample : FC12194-13MSD Inst : MSVOA17
Misc : MS55614,V1A2028,,,,,
ALS Vial : 28 Sample Multiplier: 1

Quant Time: Dec 27 00:23:09 2023
Quant Method : X:\Orlando VOA\celinec\December 2023\12-27-2023\V1A2028\METHOD\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration

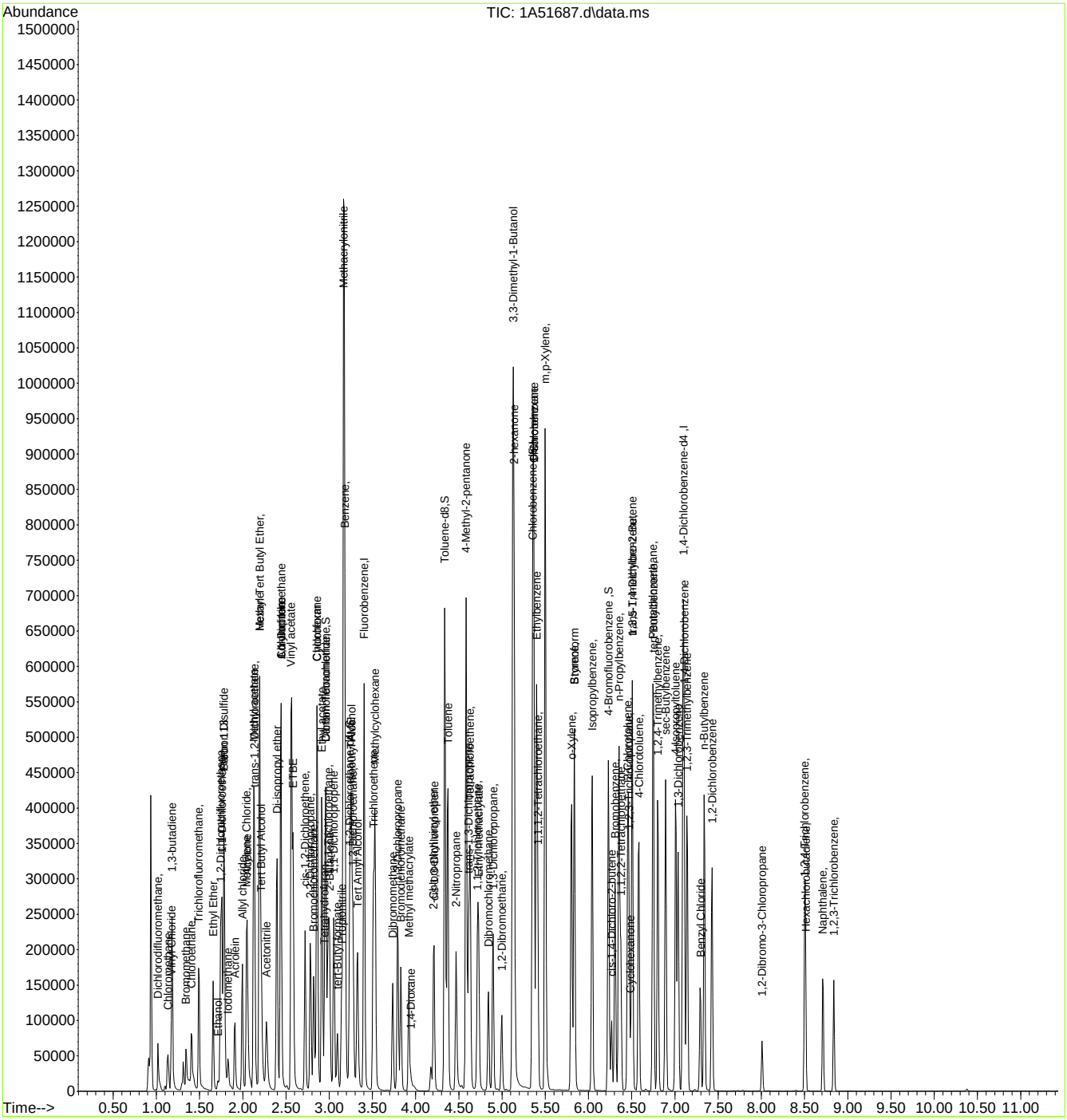
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
108) 1,2-Dibromo-3-Chloropr...	8.007	75	9867	28.3576 ug/L #	83
109) Hexachlorobutadiene	8.515	225	19480	27.9361 ug/L	95
110) 1,2,4-Trichlorobenzene	8.500	180	37064	22.2260 ug/L	95
111) Naphthalene	8.708	128	83594	19.5545 ug/L	95
112) 1,2,3-Trichlorobenzene	8.838	180	28052	21.1643 ug/L	93

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

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Quant Method : X:\Orlando VOA\celinec\December 2023\12-27-2023\V1A2028\METHOD\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
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Manual Integration Approval Summary

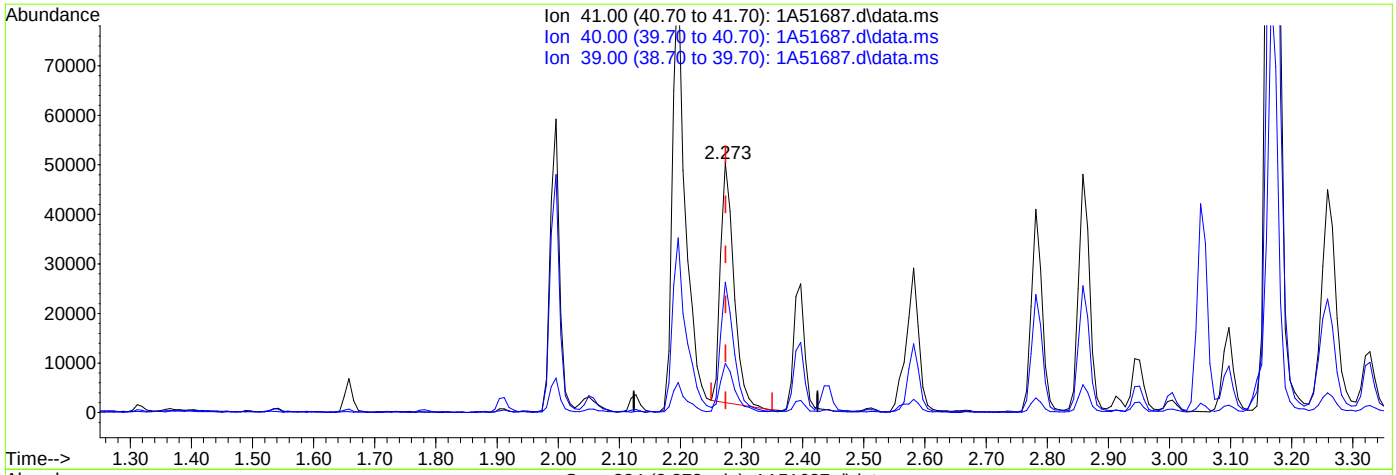
Sample Number: FC12194-13MSD
Lab FileID: 1A51687.D
Injection Time: 12/26/23 18:37
Method: SW846 8260D
Analyst approved: 12/26/23 19:31 Celine Celis
Supervisor approved: 12/27/23 10:23 Neil Christiana

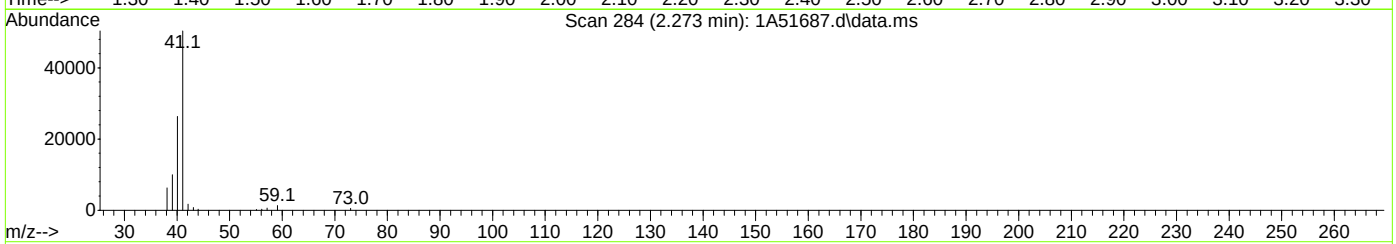
Parameter	CAS	Sig#	R.T. (min.)	Reason
Acetonitrile	75-05-8		2.27	Poor instrument integration
Carbon Tetrachloride	56-23-5		2.96	Overlapping peak
1-Chlorohexane	544-10-5		5.37	Overlapping peak
Ethylbenzene	100-41-4		5.40	Overlapping peak

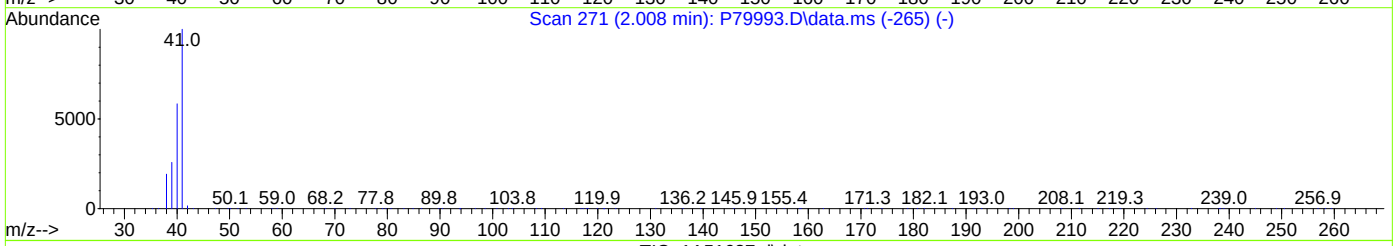
Quantitation Report (Qedit)

Data Path : X:\Orlando VOA\celinec\December 2023\12-27-2023\V1A2028\V1A2028\
Data File : 1A51687.d
Acq On : 26 Dec 2023 6:37 pm
Operator : lianatr
Sample : FC12194-13MSD Inst : MSVOA17
Misc : MS55614,V1A2028,,,,,
ALS Vial : 28 Sample Multiplier: 1

Quant Time: Dec 27 00:08:52 2023
Quant Method : X:\Orlando VOA\celinec\December 2023\12-27-2023\V1A2028\METHOD\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration







TIC: 1A51687.d\data.ms

(24) Acetonitrile

2.273min (-0.001) 285.91ug/L

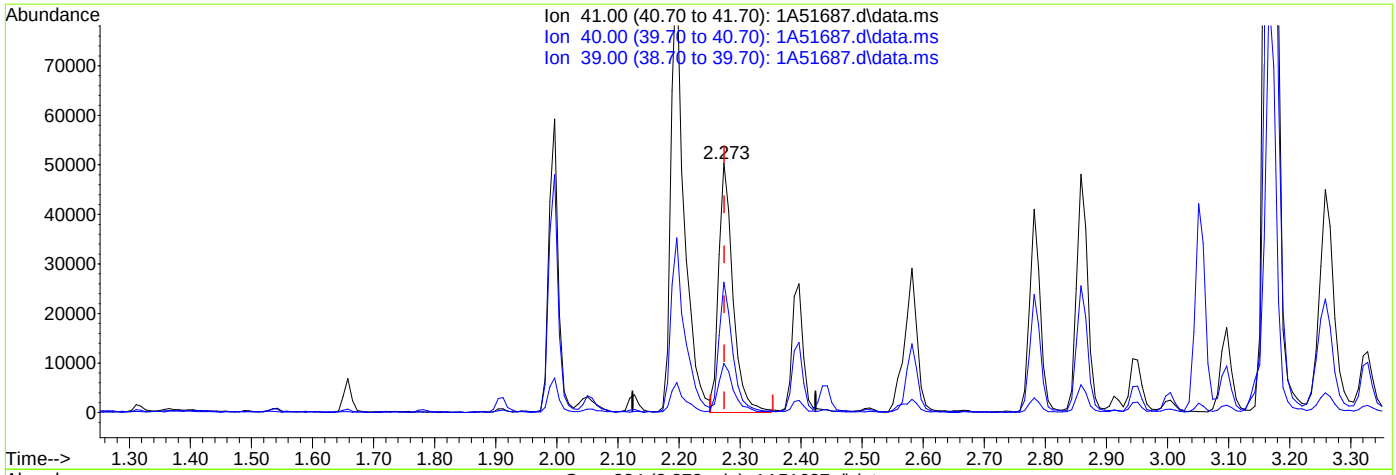
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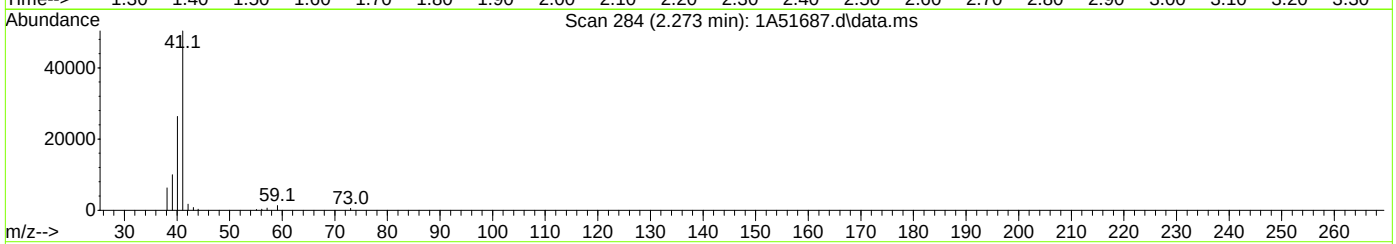
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39.00	21.10	19.27
0.00	0.00	0.00

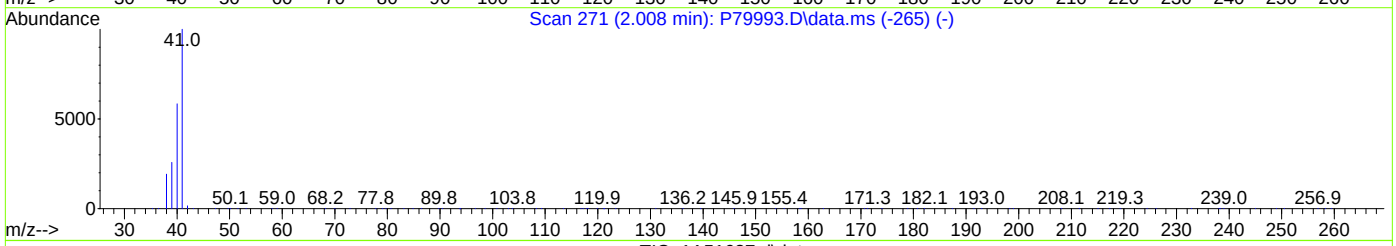
Quantitation Report (Qedit)

Data Path : X:\Orlando VOA\celinec\December 2023\12-27-2023\V1A2028\V1A2028\
Data File : 1A51687.d
Acq On : 26 Dec 2023 6:37 pm
Operator : lianatr
Sample : FC12194-13MSD Inst : MSVOA17
Misc : MS55614,V1A2028,,,,,
ALS Vial : 28 Sample Multiplier: 1

Quant Time: Dec 27 00:08:52 2023
Quant Method : X:\Orlando VOA\celinec\December 2023\12-27-2023\V1A2028\METHOD\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration







TIC: 1A51687.d\data.ms

(24) Acetonitrile

2.273min (-0.001) 320.79ug/L m

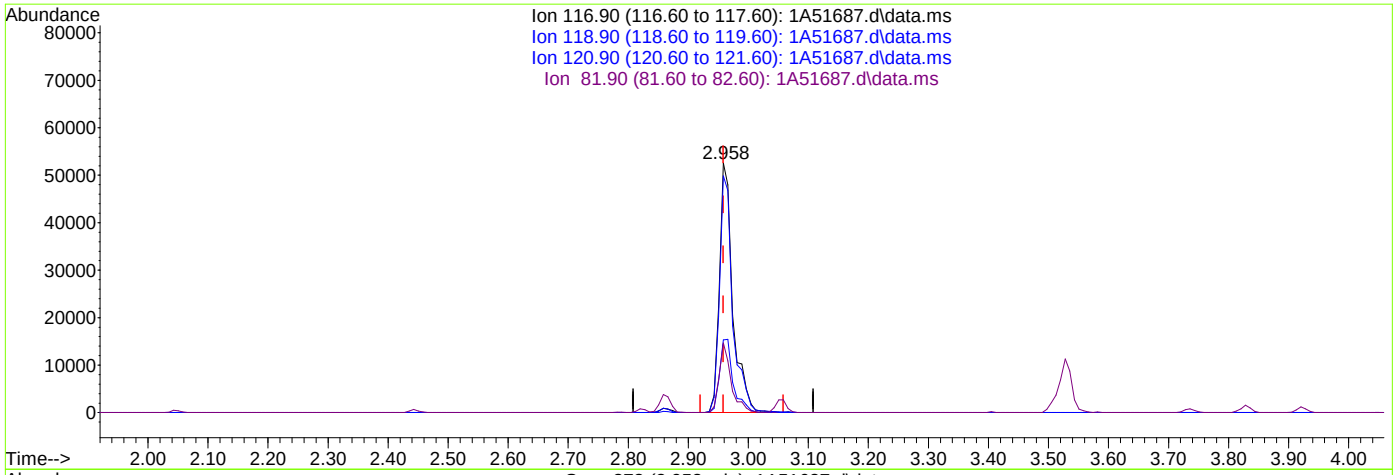
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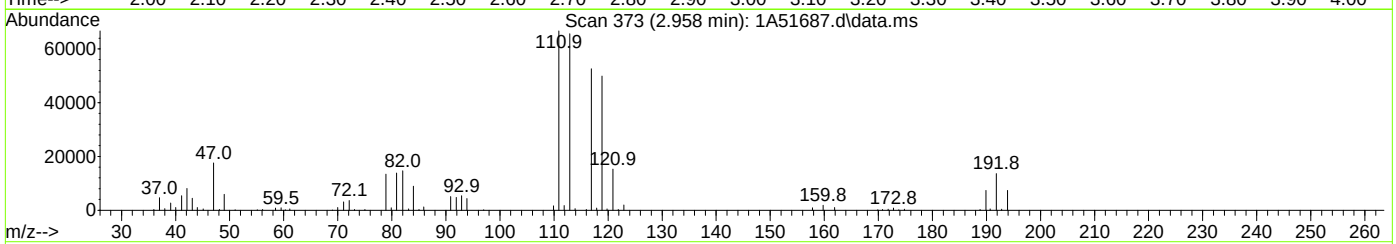
Ion	Exp%	Act%
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39.00	21.10	19.69
0.00	0.00	0.00

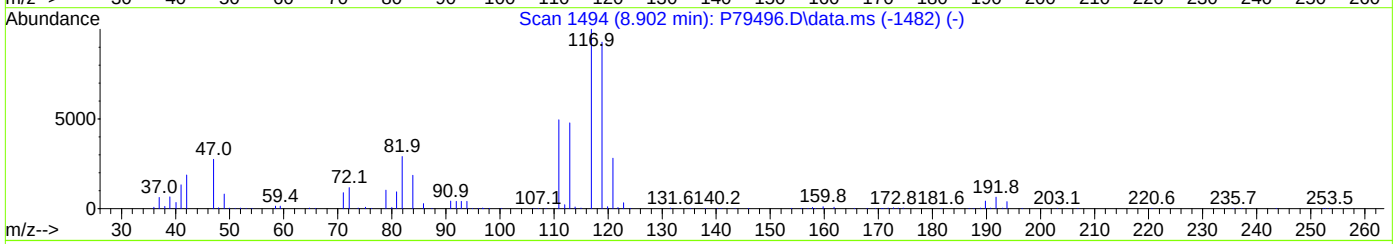
Quantitation Report (Qedit)

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Data File : 1A51687.d
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Quant Title : SW-846 Method 5035A/8260B
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Response via : Initial Calibration







TIC: 1A51687.d\data.ms

(40) Carbon Tetrachloride ( )

2.958min (-0.000) 34.64ug/L

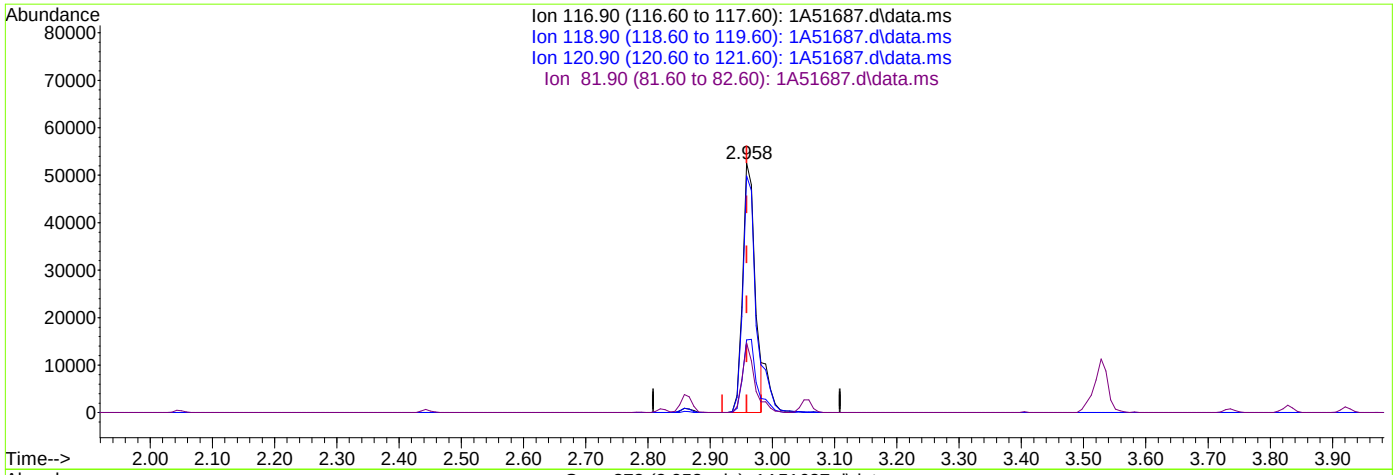
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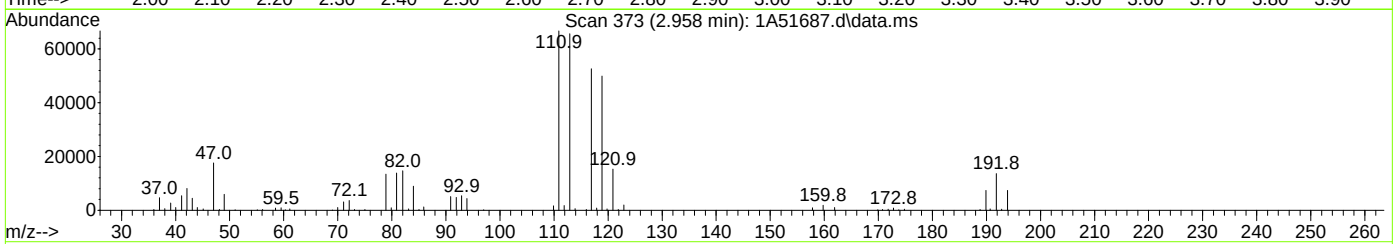
Ion	Exp%	Act%
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120.90	31.10	29.12
81.90	25.40	27.92

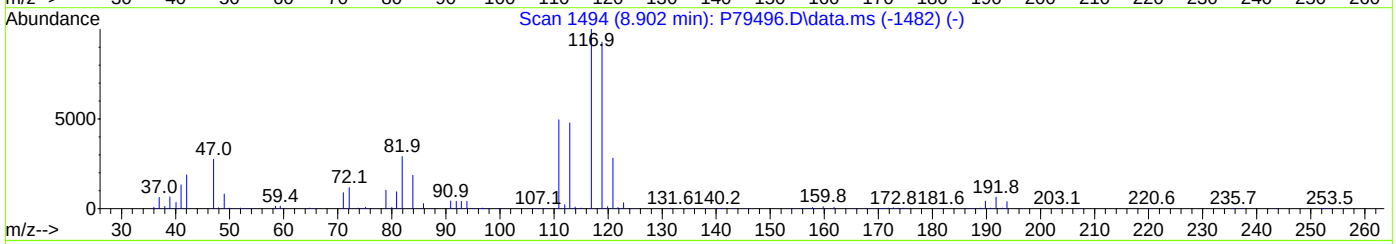
Quantitation Report (Qedit)

Data Path : X:\Orlando VOA\celinec\December 2023\12-27-2023\V1A2028\V1A2028\
Data File : 1A51687.d
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Sample : FC12194-13MSD Inst : MSVOA17
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ALS Vial : 28 Sample Multiplier: 1

Quant Time: Dec 27 00:08:52 2023
Quant Method : X:\Orlando VOA\celinec\December 2023\12-27-2023\V1A2028\METHOD\V1A_11-15-2023.M
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QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration







TIC: 1A51687.d\data.ms

(40) Carbon Tetrachloride ( )

2.958min (-0.000) 30.96ug/L m

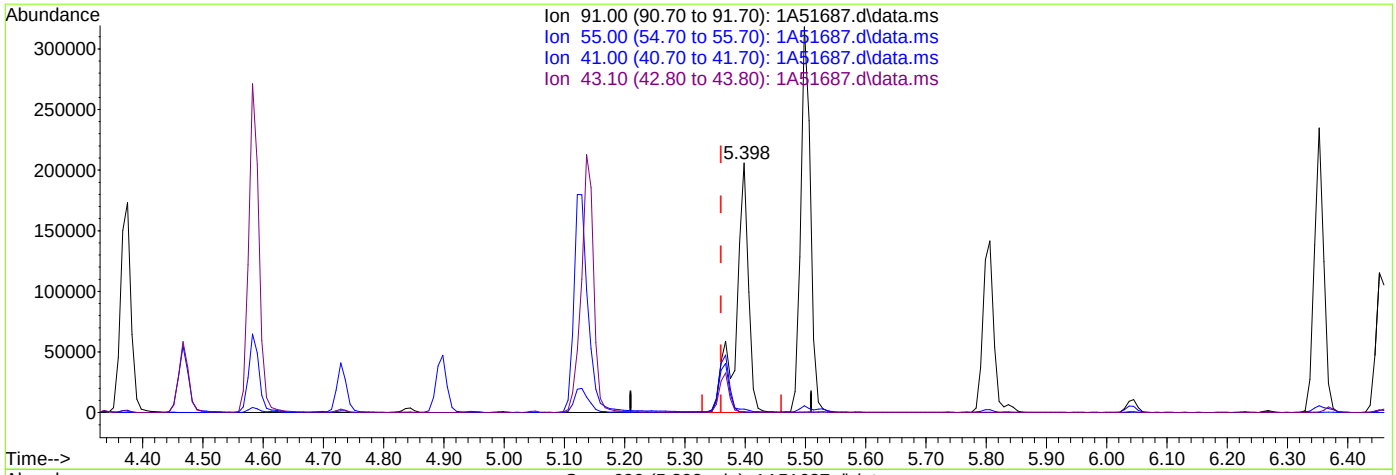
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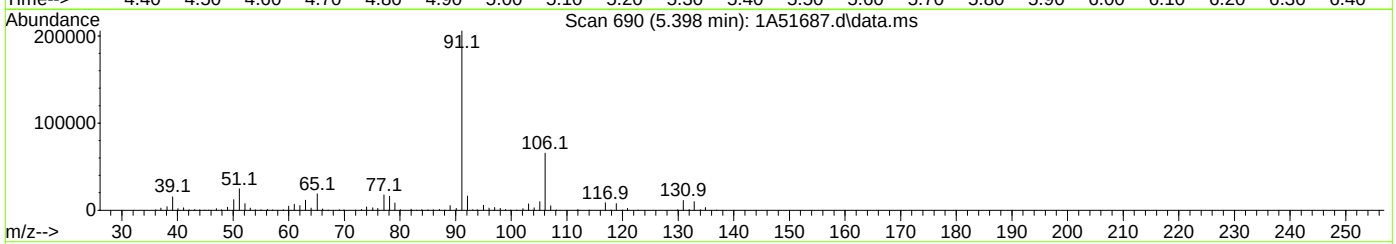
Ion	Exp%	Act%
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118.90	94.50	94.83
120.90	31.10	29.12
81.90	25.40	27.92

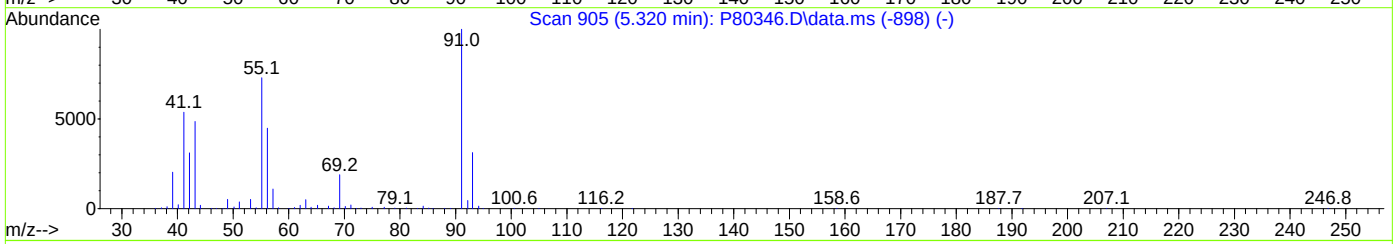
Quantitation Report (Qedit)

Data Path : X:\Orlando VOA\celinec\December 2023\12-27-2023\V1A2028\V1A2028\
Data File : 1A51687.d
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Sample : FC12194-13MSD Inst : MSVOA17
Misc : MS55614,V1A2028,,,,,
ALS Vial : 28 Sample Multiplier: 1

Quant Time: Dec 27 00:08:52 2023
Quant Method : X:\Orlando VOA\celinec\December 2023\12-27-2023\V1A2028\METHOD\V1A_11-15-2023.M
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QLast Update : Wed Nov 15 13:56:01 2023
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TIC: 1A51687.d\data.ms

(76) 1-Chlorohexane

5.398min (+0.038) 124.33ug/L

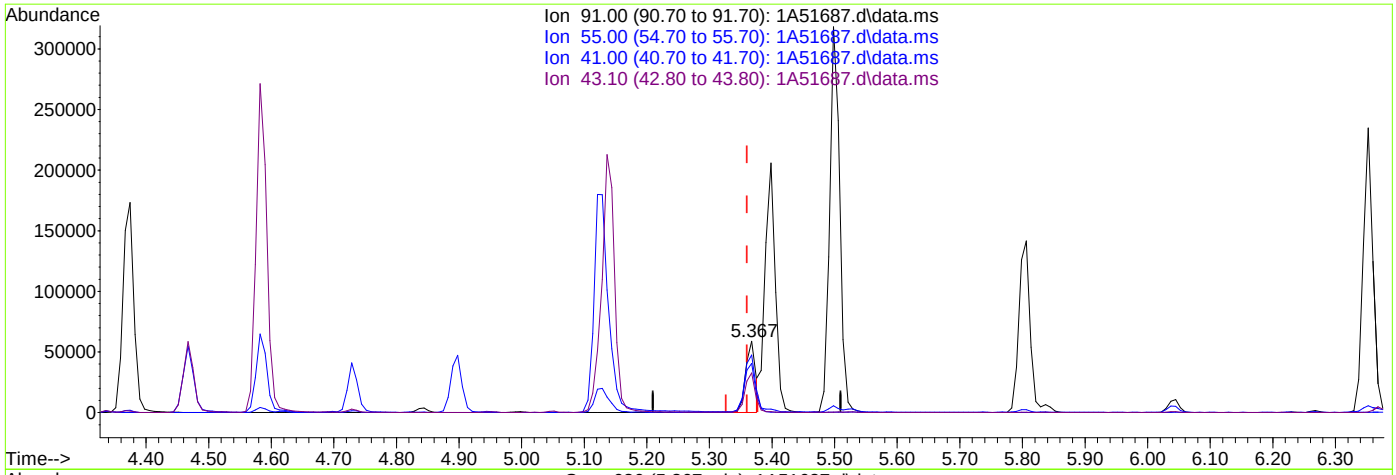
response 298496

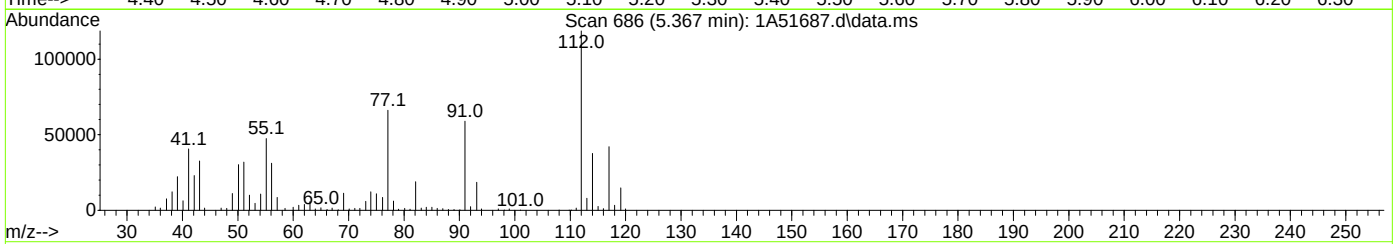
Ion	Exp%	Act%
91.00	100	100
55.00	74.60	0.16#
41.00	53.90	1.14#
43.10	42.90	0.25#

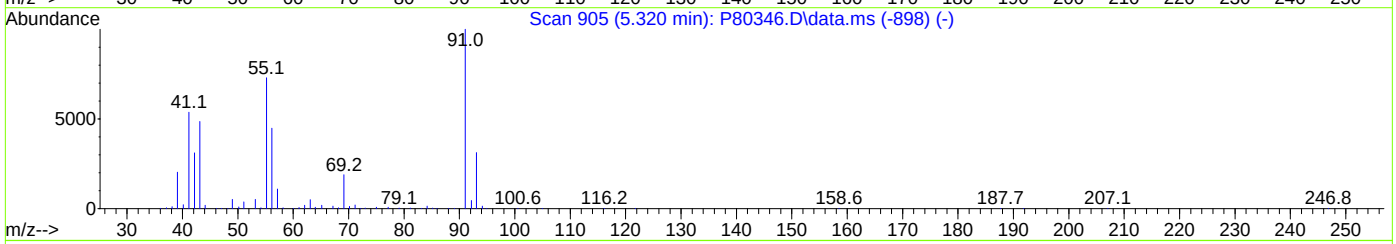
Quantitation Report (Qedit)

Data Path : X:\Orlando VOA\celinec\December 2023\12-27-2023\V1A2028\V1A2028\
Data File : 1A51687.d
Acq On : 26 Dec 2023 6:37 pm
Operator : lianatr
Sample : FC12194-13MSD Inst : MSVOA17
Misc : MS55614,V1A2028,,,,,
ALS Vial : 28 Sample Multiplier: 1

Quant Time: Dec 27 00:08:52 2023
Quant Method : X:\Orlando VOA\celinec\December 2023\12-27-2023\V1A2028\METHOD\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration







TIC: 1A51687.d\data.ms

(76) 1-Chlorohexane

5.367min (+0.008) 26.98ug/L m

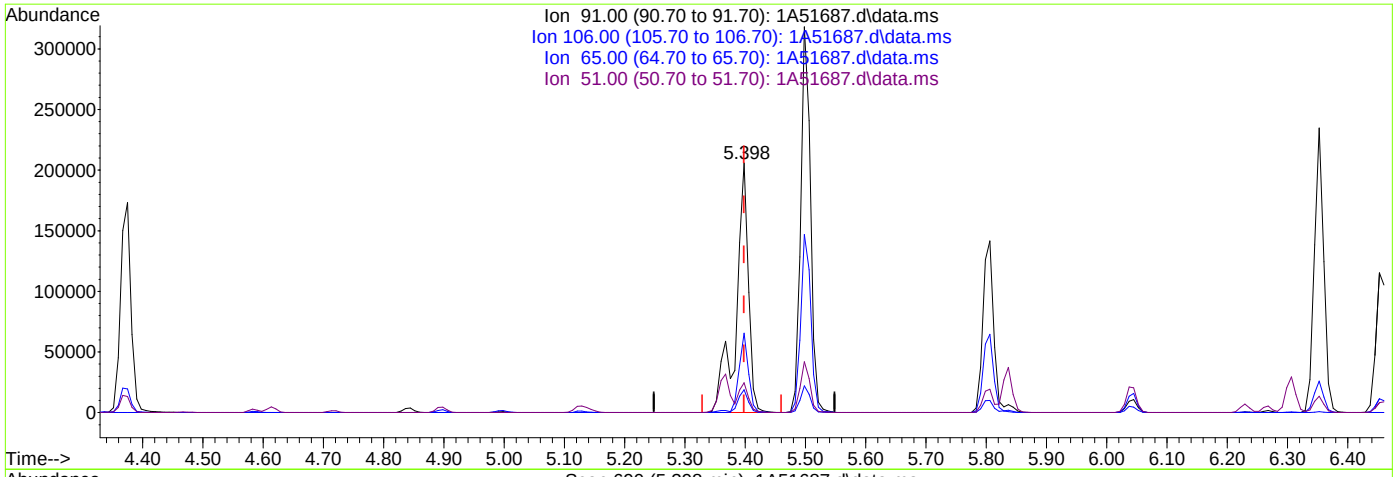
response 64780

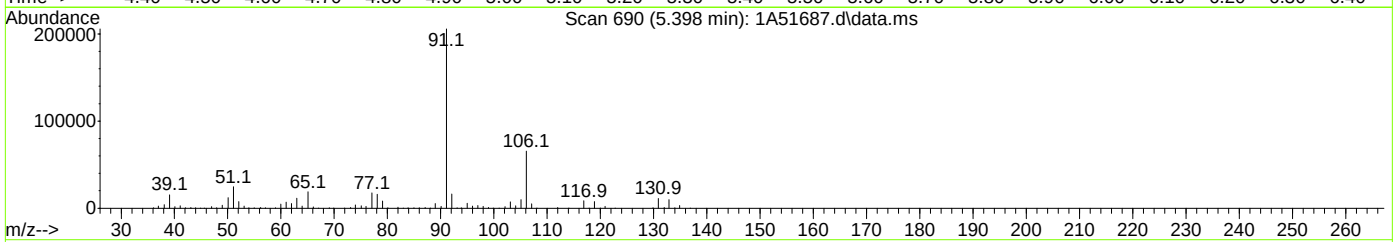
Ion	Exp%	Act%
91.00	100	100
55.00	74.60	80.54
41.00	53.90	68.99
43.10	42.90	55.46

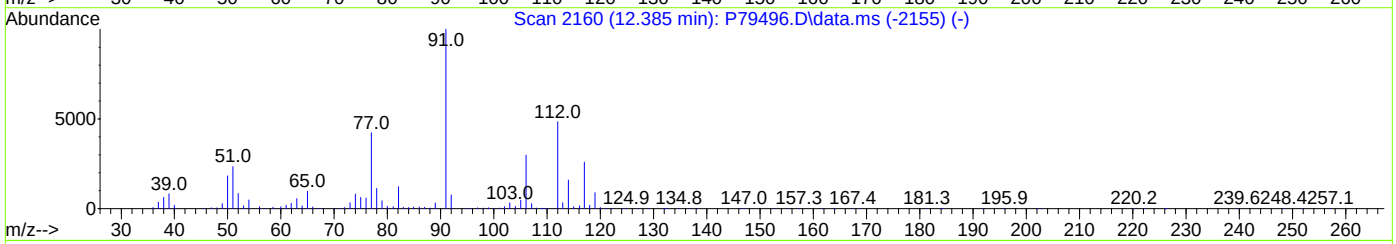
Quantitation Report (Qedit)

Data Path : X:\Orlando VOA\celinec\December 2023\12-27-2023\V1A2028\V1A2028\
Data File : 1A51687.d
Acq On : 26 Dec 2023 6:37 pm
Operator : lianatr
Sample : FC12194-13MSD Inst : MSVOA17
Misc : MS55614,V1A2028,,,,,
ALS Vial : 28 Sample Multiplier: 1

Quant Time: Dec 27 00:08:52 2023
Quant Method : X:\Orlando VOA\celinec\December 2023\12-27-2023\V1A2028\METHOD\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration







TIC: 1A51687.d\data.ms

(77) Ethylbenzene

5.398min (-0.000) 39.91ug/L

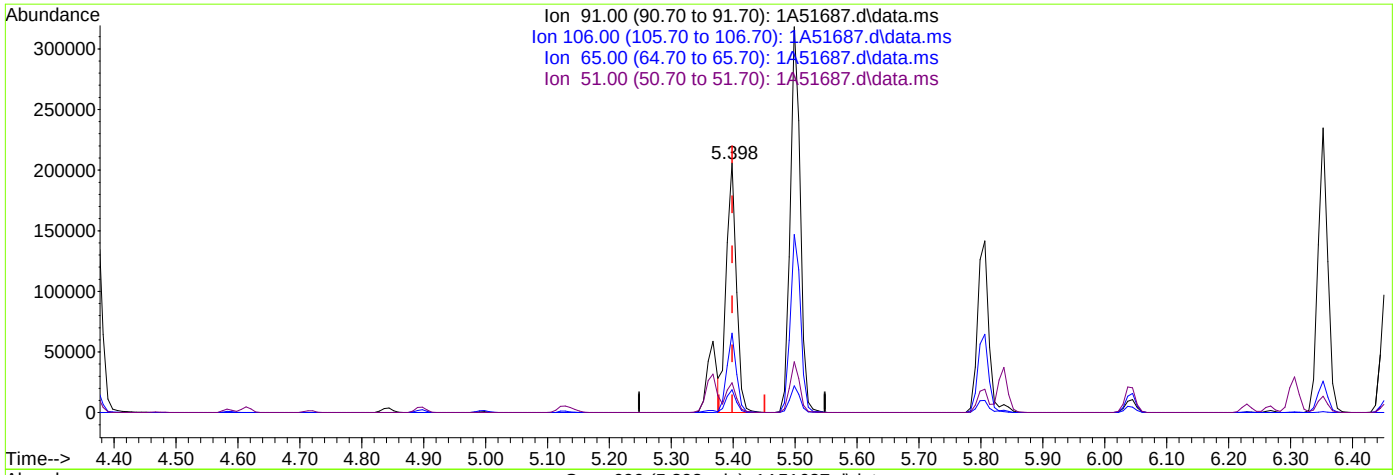
response 298496

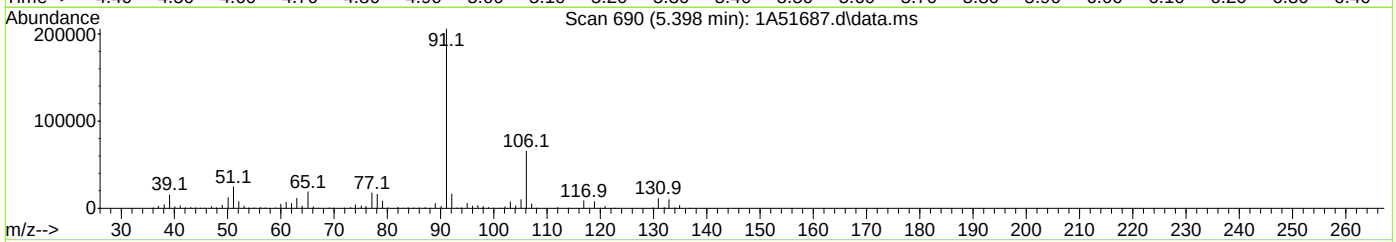
Ion	Exp%	Act%
91.00	100	100
106.00	32.00	31.78
65.00	8.30	9.14
51.00	10.10	11.91

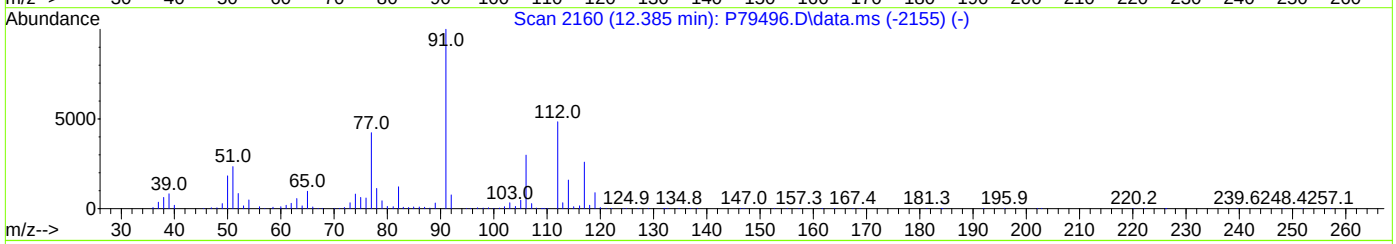
Quantitation Report (Qedit)

Data Path : X:\Orlando VOA\celinec\December 2023\12-27-2023\V1A2028\V1A2028\
Data File : 1A51687.d
Acq On : 26 Dec 2023 6:37 pm
Operator : lianatr
Sample : FC12194-13MSD Inst : MSVOA17
Misc : MS55614,V1A2028,,,,,
ALS Vial : 28 Sample Multiplier: 1

Quant Time: Dec 27 00:08:52 2023
Quant Method : X:\Orlando VOA\celinec\December 2023\12-27-2023\V1A2028\METHOD\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration







TIC: 1A51687.d\data.ms

(77) Ethylbenzene

5.398min (-0.000) 31.24ug/L m

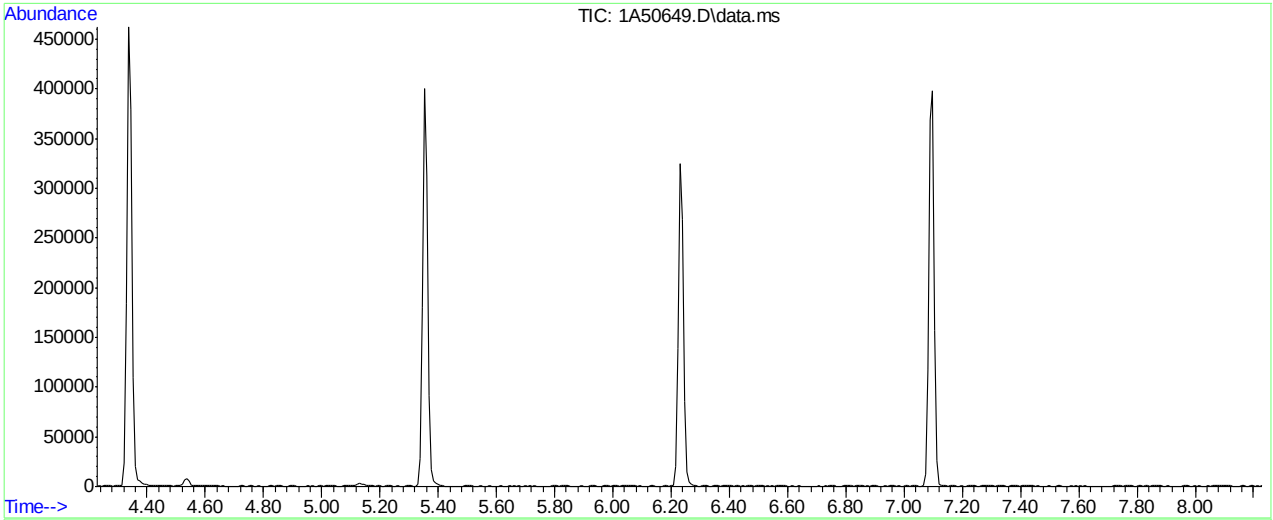
response 233706

Ion	Exp%	Act%
91.00	100	100
106.00	32.00	31.78
65.00	8.30	9.14
51.00	10.10	11.91

Methods: SW-846 8260B

Data File : C:\msdchem\1\DATA\11-15-2023\1A50649.D Vial: 1
Acq On : 15 Nov 2023 5:14 am Operator: jeniferw
Sample : BFB Inst : MSVOA17
Misc : MS55275,V1A1985,,,,, Multiplr: 1.00
MS Integration Params: big.p

Method : C:\msdchem\1\MET...V1A_11-15-2023.M (RTE Integrator)
Title : SW-846 Method 5035A/8260B



AutoFind: Scans 797, 798, 799; Background Corrected with Scan 792

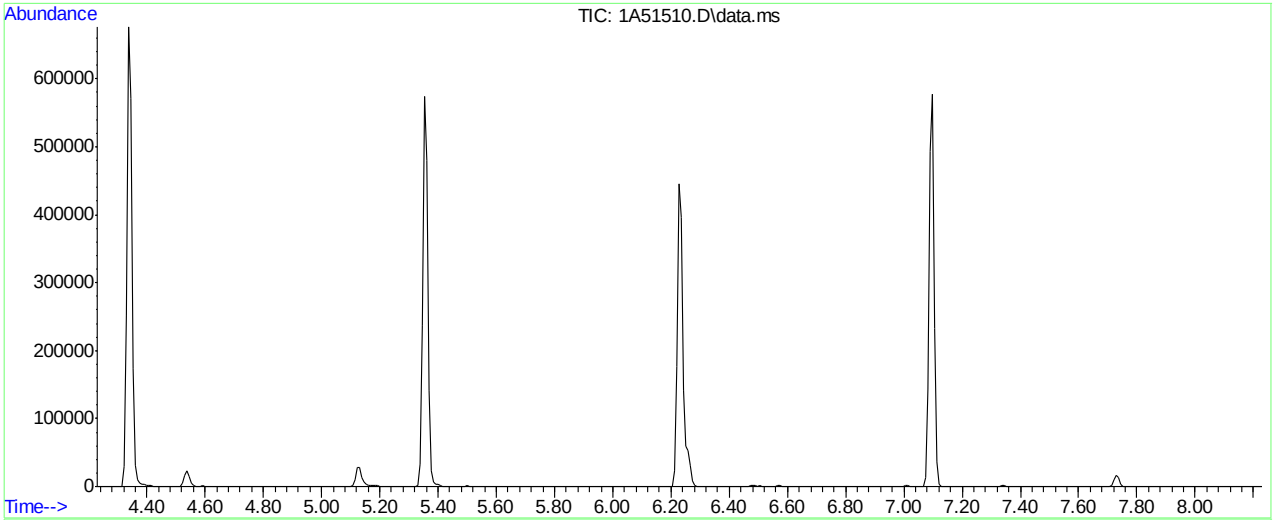
Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	21.9	10728	PASS
75	95	30	60	47.3	23191	PASS
95	95	100	100	100.0	49019	PASS
96	95	5	9	6.5	3164	PASS
173	174	0.00	2	0.8	350	PASS
174	95	50	100	84.7	41496	PASS
175	174	5	9	7.7	3204	PASS
176	174	95	101	100.3	41616	PASS
177	176	5	9	6.9	2859	PASS

1A50649.D V1A_11-15-2023.M Wed Nov 15 14:33:18 2023

Methods: SW-846 8260B

Data File : C:\msdchem\1\DATA\12-19-2023\1A51510.D Vial: 1
Acq On : 19 Dec 2023 7:04 am Operator: jeniferw
Sample : BFB Inst : MSVOA17
Misc : MS55563,V1A2022,,,,, Multiplr: 1.00
MS Integration Params: big.p

Method : C:\msdchem\1\MET...V1A_11-15-2023.M (RTE Integrator)
Title : SW-846 Method 5035A/8260B



AutoFind: Scans 797, 798, 799; Background Corrected with Scan 792

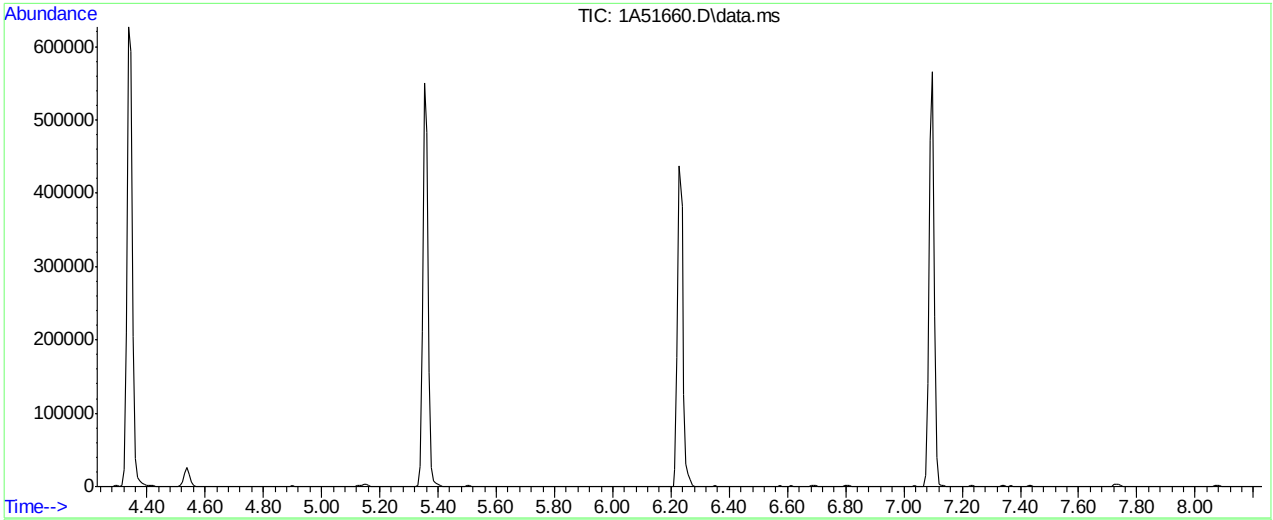
Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	23.9	15416	PASS
75	95	30	60	52.6	33891	PASS
95	95	100	100	100.0	64475	PASS
96	95	5	9	6.8	4403	PASS
173	174	0.00	2	1.1	593	PASS
174	95	50	100	86.7	55904	PASS
175	174	5	9	7.0	3923	PASS
176	174	95	101	97.7	54624	PASS
177	176	5	9	6.5	3556	PASS

1A51510.D V1A_11-15-2023.M Tue Dec 19 10:21:19 2023

Methods: SW-846 8260B

Data File : C:\msdchem\1\DATA\12-26-2023\1A51660.D Vial: 1
Acq On : 26 Dec 2023 7:39 am Operator: lianatr
Sample : BFB Inst : MSVOA17
Misc : MS55601,V1A2028,,,,, Multiplr: 1.00
MS Integration Params: big.p

Method : C:\msdchem\1\MET...V1A_11-15-2023.M (RTE Integrator)
Title : SW-846 Method 5035A/8260B



AutoFind: Scans 797, 798, 799; Background Corrected with Scan 792

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	26.0	16178	PASS
75	95	30	60	52.9	32979	PASS
95	95	100	100	100.0	62291	PASS
96	95	5	9	6.9	4307	PASS
173	174	0.00	2	0.8	441	PASS
174	95	50	100	85.3	53139	PASS
175	174	5	9	7.6	4036	PASS
176	174	95	101	95.8	50893	PASS
177	176	5	9	6.6	3343	PASS

1A51660.D V1A_11-15-2023.M Tue Dec 26 10:28:35 2023

Manual Integrations APPROVED (compounds with "m" flag)
Karen Watson
11/15/23 15:49

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50651.D
Acq On : 15 Nov 2023 6:16 am
Operator : jeniferw
Sample : IC1985-1
Misc : MS55275,V1A1985,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Nov 15 12:52:06 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Fluorobenzene	3.405	96	210984	50.00	ug/L		0.00
62) Chlorobenzene-d5	5.352	117	151397	50.00	ug/L		0.00
85) 1,4-Dichlorobenzene-d4	7.099	152	79393	50.00	ug/L		0.00
System Monitoring Compounds							
39) Dibromofluoromethane	2.959	113	62041	49.17	ug/L		0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 98.34%				
49) 1,2-Dichloroethane-d4	3.236	65	66210	48.21	ug/L		0.00
Spiked Amount 50.000	Range 79 - 125		Recovery = 96.42%				
63) Toluene-d8	4.336	98	202159	50.00	ug/L		0.00
Spiked Amount 50.000	Range 85 - 112		Recovery = 100.00%				
86) 4-Bromofluorobenzene	6.230	174	66196	49.77	ug/L		0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 99.54%				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	1.019	85	886	1.05	ug/L		98
3) Chloromethane	1.127	50	1551	1.21	ug/L		98
4) 1,3-butadiene	1.181	39	2636	1.83	ug/L		88
5) Vinyl Chloride	1.173	62	1334	1.05	ug/L		90
6) Bromomethane	1.350	94	682m	1.45	ug/L		
7) Chloroethane	1.419	64	914m	1.11	ug/L		
8) Trichlorofluoromethane	1.496	101	1979	1.15	ug/L		100
9) Ethyl Ether	1.658	59	1154	1.13	ug/L		95
10) Ethanol	1.704	45	873m	39.90	ug/L		
11) 1,2-Dichlorotrifluoroe...	1.743	67	1441	1.01	ug/L	#	78
12) 1,1-Dichloroethene	1.758	61	1761	0.92	ug/L		91
13) Freon 113	1.789	101	979m	0.91	ug/L		
14) Carbon Disulfide	1.781	76	3674	1.15	ug/L		90
15) Iodomethane	1.835	142	524m	0.80	ug/L		
16) Acrolein	1.904	56	1801	5.36	ug/L		91
17) Allyl chloride	1.997	41	2147	1.19	ug/L		91
18) Methylene Chloride	2.043	49	4422	2.53	ug/L		95
19) Acetone	2.051	43	3175	6.63	ug/L		95
20) Methyl acetate	2.127	43	7761	5.16	ug/L		98
21) trans-1,2-Dichloroethene	2.135	61	1796	0.94	ug/L		92
22) Hexane	2.197	56	1366	1.03	ug/L		97
23) Methyl Tert Butyl Ether	2.197	73	3485	0.99	ug/L		92
24) Acetonitrile	2.274	41	5233	28.29	ug/L		98
25) Tert Butyl Alcohol	2.212	59	2742	10.45	ug/L		84
26) Di-isopropyl ether	2.397	45	4182	0.93	ug/L		95
27) Chloroprene	2.443	53	5937	1.11	ug/L		97
28) 1,1-Dichloroethane	2.443	63	2373	0.96	ug/L		98
29) Acrylonitrile	2.443	52	3367	5.26	ug/L		90
30) ETBE	2.582	59	3854	0.93	ug/L		93
31) Vinyl acetate	2.559	43	16431	5.22	ug/L		99
32) cis-1,2-Dichloroethene	2.720	96	1395	1.01	ug/L		89
33) 2,2-Dichloropropane	2.782	77	1711	1.00	ug/L		94
34) Bromochloromethane	2.820	128	686m	0.98	ug/L		
35) Cyclohexane	2.859	56	2197	0.89	ug/L		94

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50651.D
Acq On : 15 Nov 2023 6:16 am
Operator : jeniferw
Sample : IC1985-1
Misc : MS55275,V1A1985,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Nov 15 12:52:06 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
36) Chloroform	2.859	83	2193	0.94	ug/L		89
37) Ethyl acetate	2.920	43	9435	5.37	ug/L		98
38) Tetrahydrofuran	2.951	42	794m	1.12	ug/L		
40) Carbon Tetrachloride	2.966	117	1743m	1.01	ug/L		
41) 1,1,1-Trichloroethane	2.989	97	1870	0.99	ug/L		94
42) 2-Butanone	3.005	43	4941	5.24	ug/L		98
43) 1,1-Dichloropropene	3.059	75	1553	0.95	ug/L		92
44) tert-Butyl formate	3.097	59	5669	5.14	ug/L		95
45) Propionitrile	3.143	54	3390	13.52	ug/L		90
46) Methacrylonitrile	3.167	41	11935	10.98	ug/L		97
47) Benzene	3.182	78	4815	0.98	ug/L		94
48) TAME	3.251	73	3197	0.92	ug/L		80
50) 1,2-Dichloroethane	3.274	62	1801	0.96	ug/L		82
51) Isobutyl Alcohol	3.259	43	3603	22.98	ug/L		90
52) Tert Amyl Alcohol	3.328	59	2115	9.88	ug/L		82
53) Trichloroethene	3.513	95	1372	0.99	ug/L		92
54) Methylcyclohexane	3.528	83	2017	0.94	ug/L		96
55) Dibromomethane	3.736	93	964m	1.08	ug/L		
56) 1,2-Dichloropropane	3.798	63	1318	0.94	ug/L		91
57) Bromodichloromethane	3.828	83	1729	1.02	ug/L	#	89
58) Methyl methacrylate	3.921	41	2065	1.32	ug/L	#	82
59) 1,4-Dioxane	3.952	88	292m	15.38	ug/L		
60) 2-Chloroethyl vinyl ether	4.167	63	3082	3.93	ug/L		99
61) cis-1,3-Dichloropropene	4.213	75	1944	0.96	ug/L		87
64) Toluene	4.375	91	5094	0.99	ug/L		97
65) 2-Nitropropane	4.467	41	3190	6.32	ug/L		90
66) 4-Methyl-2-pentanone	4.583	43	9530	5.07	ug/L		98
67) trans-1,3-Dichloropropene	4.613	75	1775	0.96	ug/L		89
68) Tetrachloroethene	4.629	166	1396	0.98	ug/L		96
69) Ethyl methacrylate	4.729	69	1506	0.98	ug/L		82
70) 1,1,2-Trichloroethane	4.713	83	981m	0.94	ug/L		
71) Dibromochloromethane	4.844	129	1158	0.87	ug/L		80
72) 1,3-Dichloropropane	4.898	76	1858	0.97	ug/L		78
73) 1,2-Dibromoethane	4.998	107	1358	1.03	ug/L		97
74) 3,3-Dimethyl-1-Butanol	5.121	57	12790	49.79	ug/L		96
75) 2-hexanone	5.144	43	9350	5.04	ug/L	#	75
76) 1-Chlorohexane	5.368	91	2138m	1.19	ug/L		
77) Ethylbenzene	5.398	91	5132m	0.93	ug/L		
78) Chlorobenzene	5.368	112	3244	0.97	ug/L		92
79) 1,1,1,2-Tetrachloroethane	5.414	131	1066	0.86	ug/L		89
80) m,p-Xylene	5.498	91	8622	1.96	ug/L		97
81) o-Xylene	5.806	91	4573	0.98	ug/L		97
82) Styrene	5.837	104	3437	0.98	ug/L		95
83) Bromoform	5.837	173	822m	0.93	ug/L		
84) Isopropylbenzene	6.045	105	5118	0.94	ug/L		97
87) cis-1,4-Dichloro-2-butene	6.268	53	629m	1.38	ug/L		
88) n-Propylbenzene	6.353	91	6429	1.00	ug/L		89
89) Bromobenzene	6.307	156	1537	1.08	ug/L		87
90) 1,1,2,2-Tetrachloroethane	6.376	83	1624	0.96	ug/L		96
91) 1,3,5-Trimethylbenzene	6.507	105	4272	0.97	ug/L		92

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50651.D
Acq On : 15 Nov 2023 6:16 am
Operator : jeniferw
Sample : IC1985-1
Misc : MS55275,V1A1985,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Nov 15 12:52:06 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration

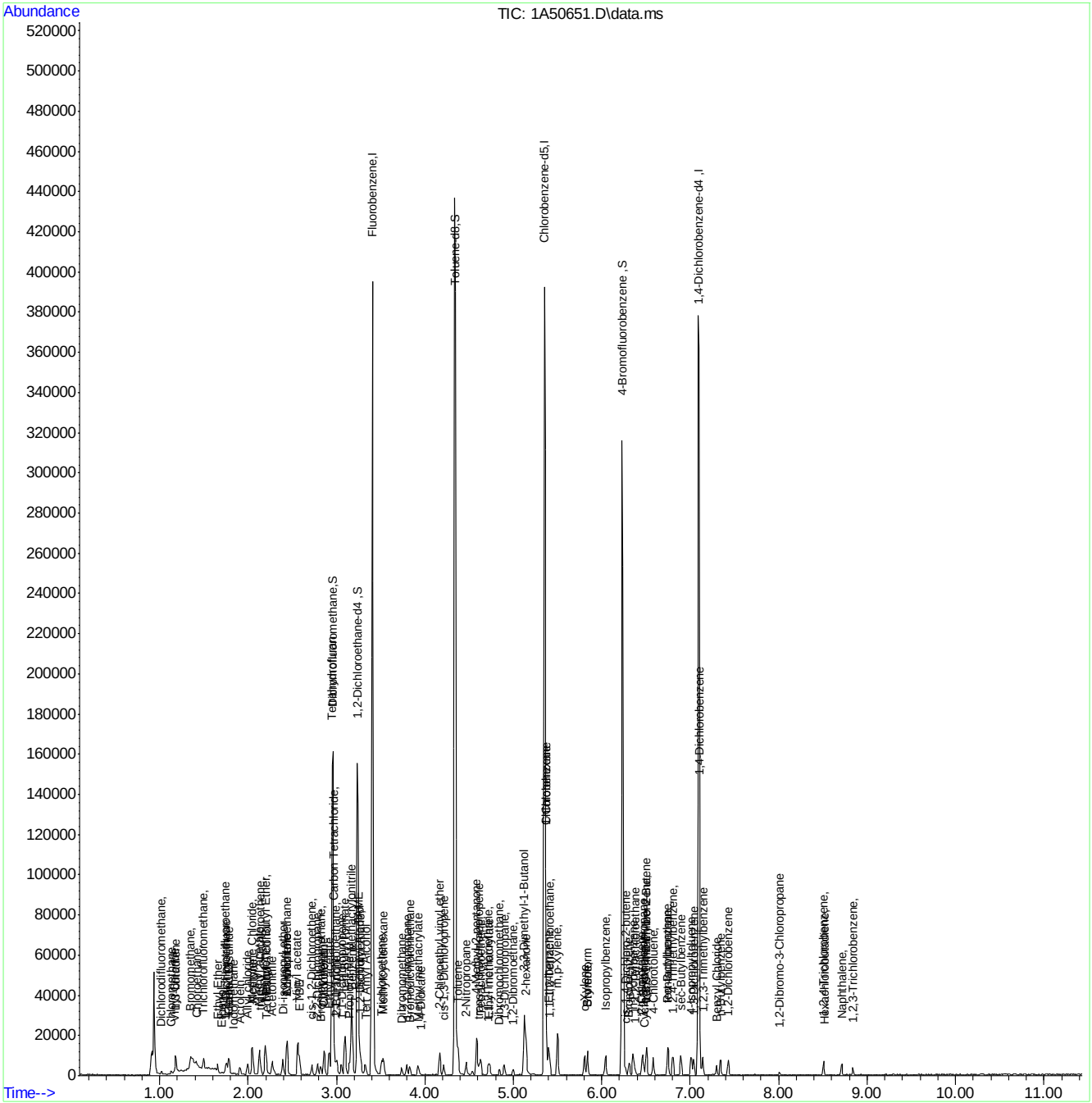
	Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
92)	2-Chlorotoluene	6.453	91	3929	1.05	ug/L	96
93)	trans-1,4-Dichloro-2-B...	6.507	53	681m	1.06	ug/L	
94)	1,2,3-Trichloropropane	6.468	110	438m	0.94	ug/L	
95)	Cyclohexanone	6.484	55	537m	5.57	ug/L	
96)	4-Chlorotoluene	6.584	91	3739	0.96	ug/L	97
97)	tert-Butylbenzene	6.745	91	2457	0.99	ug/L	81
98)	1,2,4-Trimethylbenzene	6.799	105	4083	0.96	ug/L	95
99)	Pentachloroethane	6.745	167	691m	1.05	ug/L	
100)	sec-Butylbenzene	6.892	105	5041	0.90	ug/L	97
101)	4-Isopropyltoluene	7.015	119	4391	0.91	ug/L	98
102)	1,3-Dichlorobenzene	7.038	146	2503	0.96	ug/L	98
103)	1,2,3-Trimethylbenzene	7.146	105	4030	0.95	ug/L	93
104)	1,4-Dichlorobenzene	7.107	146	2780m	1.07	ug/L	
105)	n-Butylbenzene	7.346	92	1964	0.91	ug/L	91
106)	Benzyl Chloride	7.299	126	596m	0.98	ug/L	
107)	1,2-Dichlorobenzene	7.430	146	2163	0.93	ug/L	85
108)	1,2-Dibromo-3-Chloropr...	8.008	75	246m	0.91	ug/L	
109)	Hexachlorobutadiene	8.515	225	412m	0.74	ug/L	
110)	1,2,4-Trichlorobenzene	8.508	180	1216	0.95	ug/L	98
111)	Naphthalene	8.716	128	3440	1.05	ug/L	98
112)	1,2,3-Trichlorobenzene	8.839	180	934m	0.93	ug/L	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50651.D
Acq On : 15 Nov 2023 6:16 am
Operator : jeniferw
Sample : IC1985-1
Misc : MS55275,V1A1985,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Nov 15 12:52:06 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration



Manual Integration Approval Summary

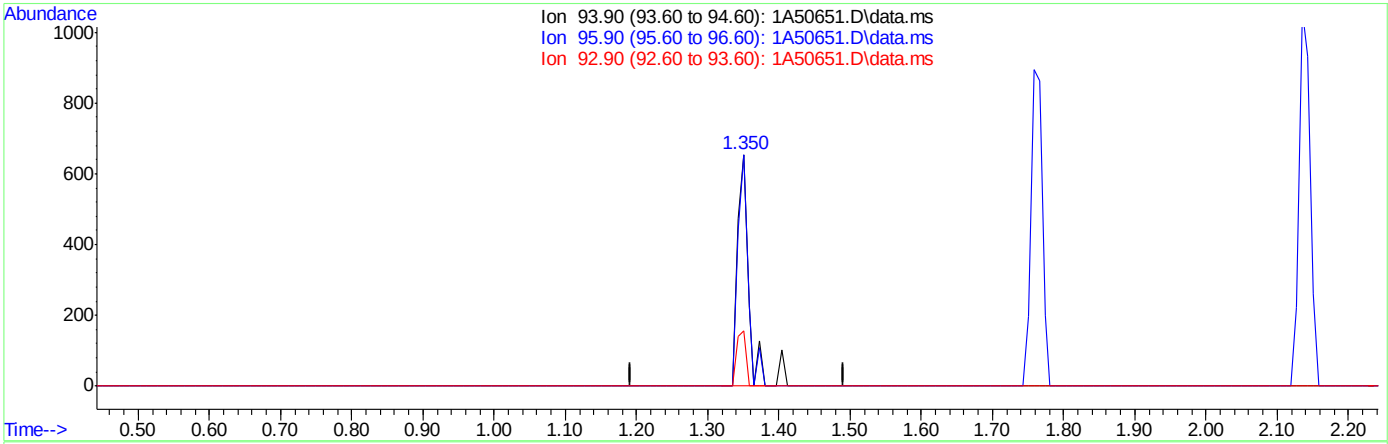
Sample Number: V1A1985-IC1985
Lab FileID: 1A50651.D
Injection Time: 11/15/23 06:16
Method: SW846 8260D
Analyst approved: 11/15/23 14:32 Jenifer Willis
Supervisor approved: 11/15/23 15:49 Karen Watson

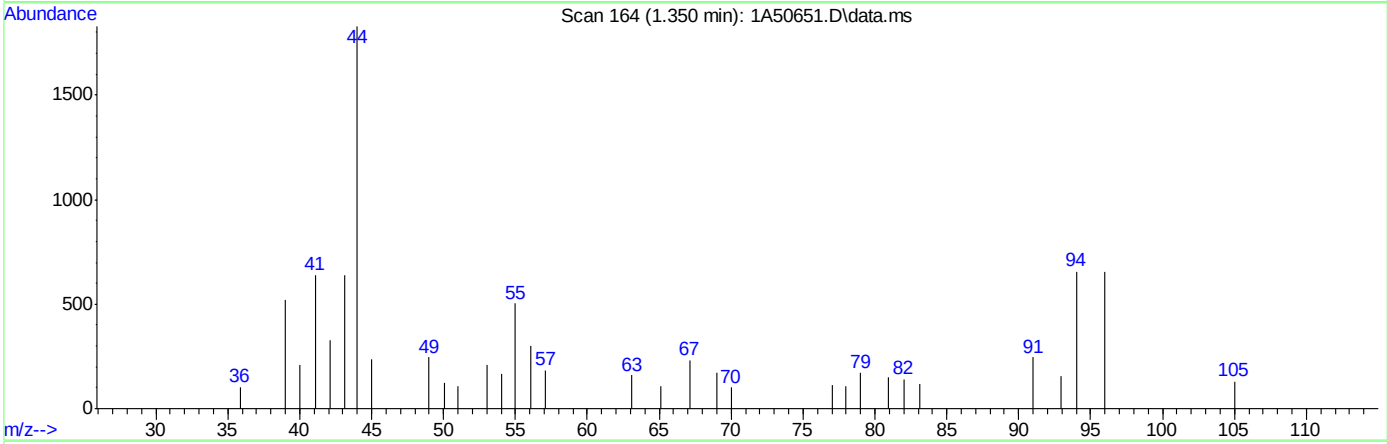
Parameter	CAS	Sig#	R.T. (min.)	Reason
Methyl Bromide	74-83-9		1.35	Missed peak
Chloroethane	75-00-3		1.42	Missed peak
Ethyl Alcohol	64-17-5		1.70	Missed peak
Freon 113	76-13-1		1.79	Missed peak
Methyl Iodide	74-88-4		1.84	Missed peak
Bromochloromethane	74-97-5		2.82	Missed peak
Tetrahydrofuran	109-99-9		2.95	Missed peak
Carbon Tetrachloride	56-23-5		2.97	Overlapping peak
Methylene Bromide	74-95-3		3.74	Missed peak
1,4-Dioxane	123-91-1		3.95	Missed peak
1,1,2-Trichloroethane	79-00-5		4.71	Missed peak
1-Chlorohexane	544-10-5		5.37	Overlapping peak
Ethylbenzene	100-41-4		5.40	Overlapping peak
Bromoform	75-25-2		5.84	Missed peak
cis-1,4-Dichloro-2-Butene	1476-11-5		6.27	Missed peak
1,2,3-Trichloropropane	96-18-4		6.47	Missed peak
Cyclohexanone	108-94-1		6.48	Missed peak
trans-1,4-Dichloro-2-Butene	110-57-6		6.51	Missed peak
Pentachloroethane	76-01-7		6.75	Missed peak
1,4-Dichlorobenzene	106-46-7		7.11	Missed peak
Benzyl Chloride	100-44-7		7.30	Missed peak
1,2-Dibromo-3-chloropropane	96-12-8		8.01	Missed peak
Hexachlorobutadiene	87-68-3		8.52	Missed peak
1,2,3-Trichlorobenzene	87-61-6		8.84	Missed peak

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50651.D
Acq On : 15 Nov 2023 6:16 am
Operator : jeniferw
Sample : IC1945-1
Misc : MS55275,V1A1945,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Nov 15 09:38:22 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50651.D\data.ms

(6) Bromomethane ( )

1.350min (+0.008) 1.45ug/L m

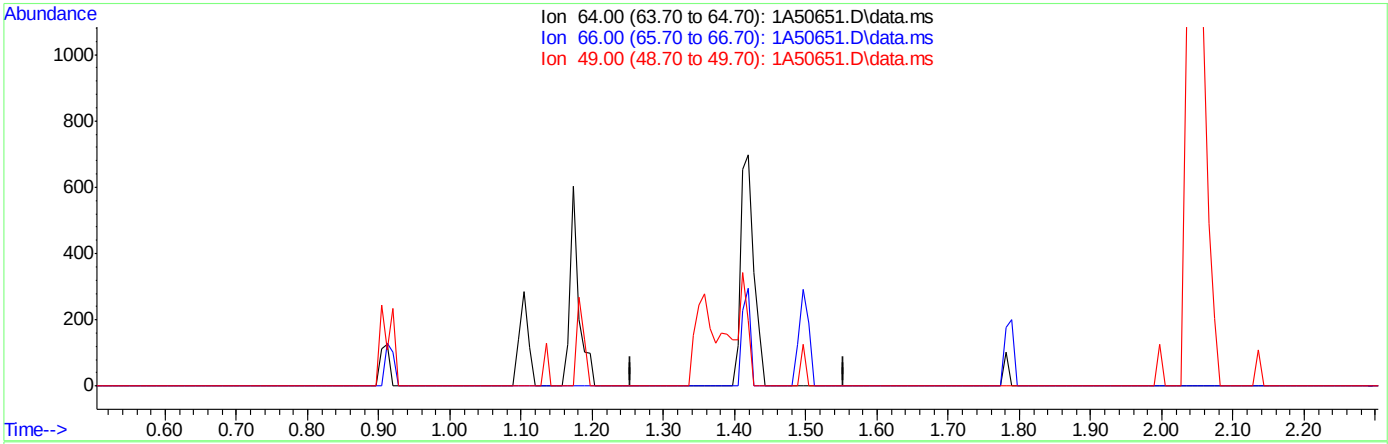
response 682

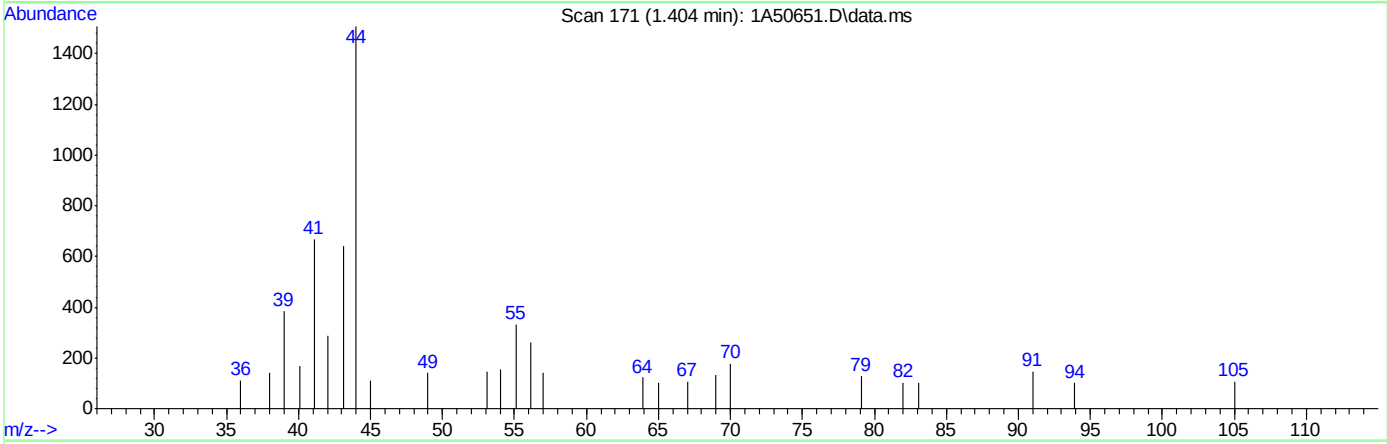
Ion	Exp%	Act%
93.90	100	100
95.90	88.70	99.69
92.90	19.40	23.66
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50651.D
Acq On : 15 Nov 2023 6:16 am
Operator : jeniferw
Sample : IC1945-1
Misc : MS55275,V1A1945,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Nov 15 09:38:22 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50651.D\data.ms

(7) Chloroethane ( )

1.404min (-1.404) 0.00ug/L

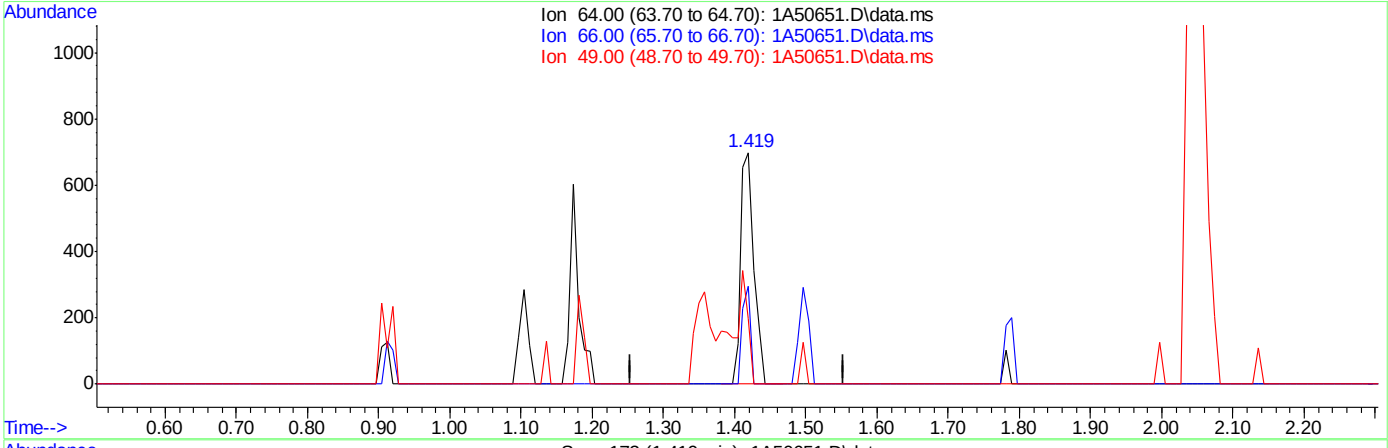
response 0

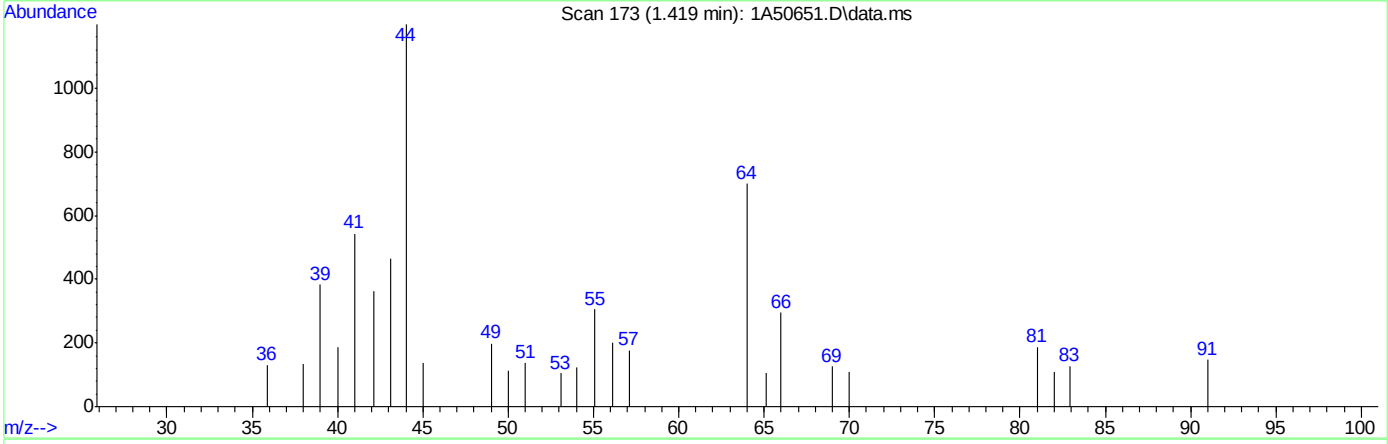
Ion	Exp%	Act%
64.00	100	0.00
66.00	31.50	0.00#
49.00	29.30	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50651.D
Acq On : 15 Nov 2023 6:16 am
Operator : jeniferw
Sample : IC1945-1
Misc : MS55275,V1A1945,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Nov 15 09:38:22 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50651.D\data.ms

(7) Chloroethane ( )

1.419min (+0.015) 1.11ug/L m

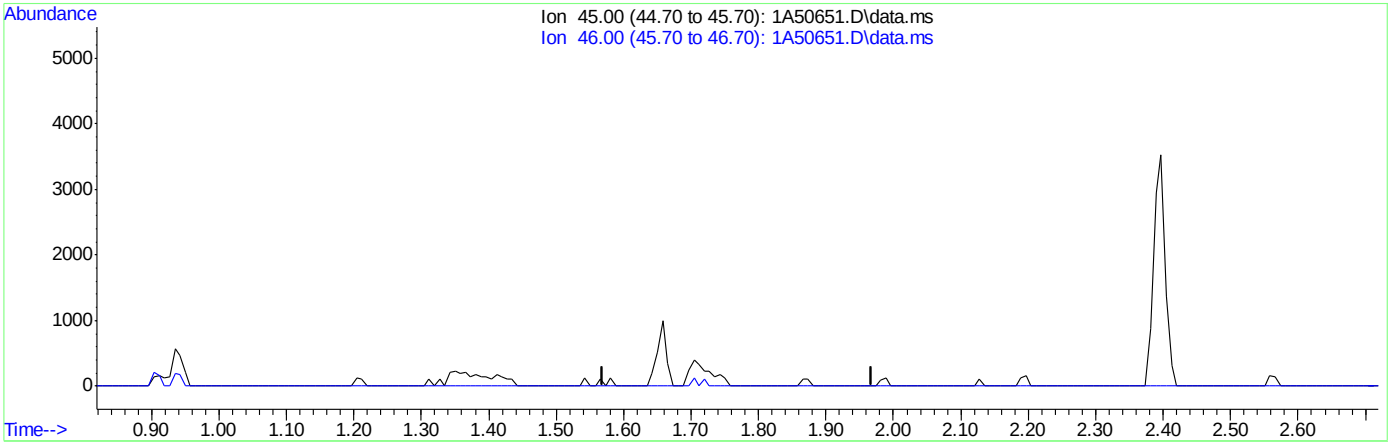
response 914

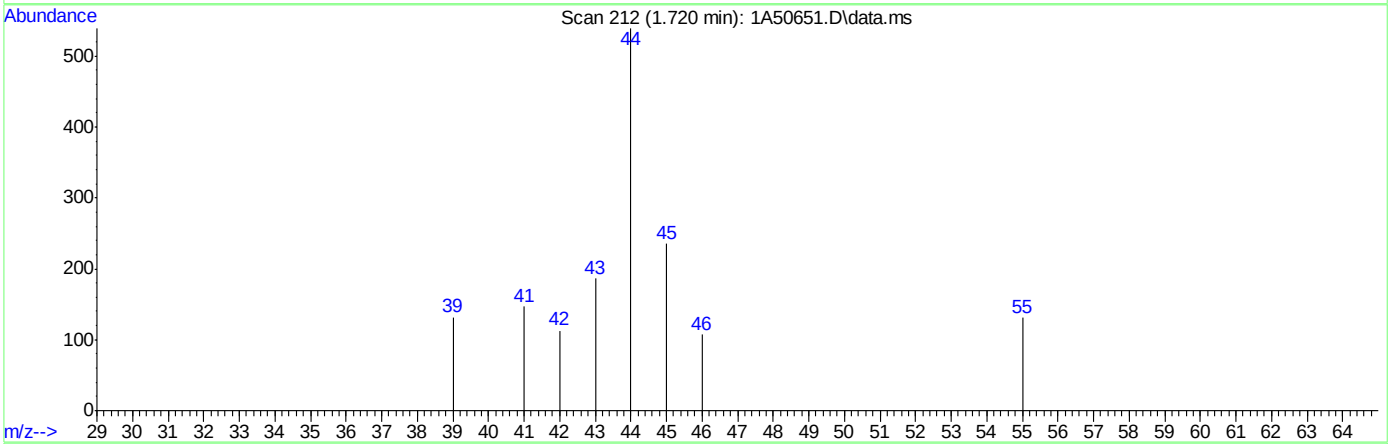
Ion	Exp%	Act%
64.00	100	100
66.00	31.50	42.20
49.00	29.30	28.33
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50651.D
Acq On : 15 Nov 2023 6:16 am
Operator : jeniferw
Sample : IC1945-1
Misc : MS55275,V1A1945,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Nov 15 09:38:22 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50651.D\data.ms

(10) Ethanol

1.719min (-1.719) 0.00ug/L

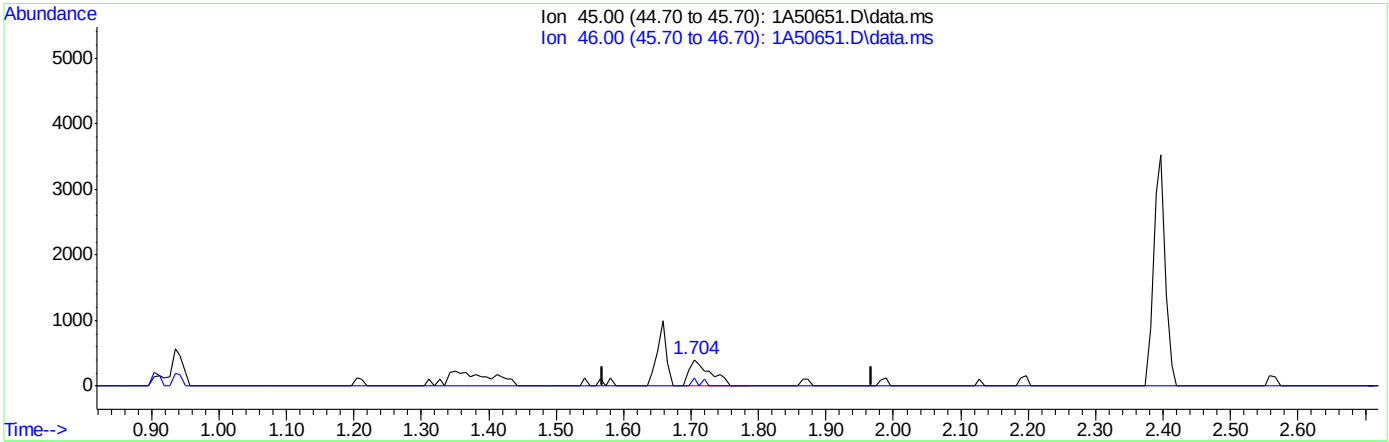
response 0

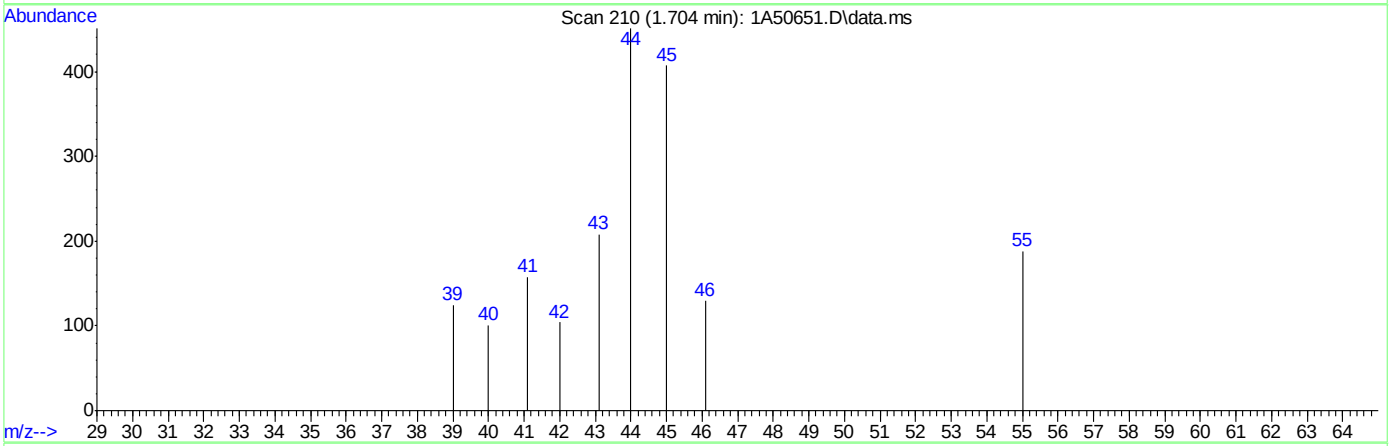
Ion	Exp%	Act%
45.00	100	0.00
46.00	40.30	0.00#
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50651.D
Acq On : 15 Nov 2023 6:16 am
Operator : jeniferw
Sample : IC1945-1
Misc : MS55275,V1A1945,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Nov 15 09:38:22 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50651.D\data.ms

(10) Ethanol

1.704min (-0.015) 39.90ug/L m

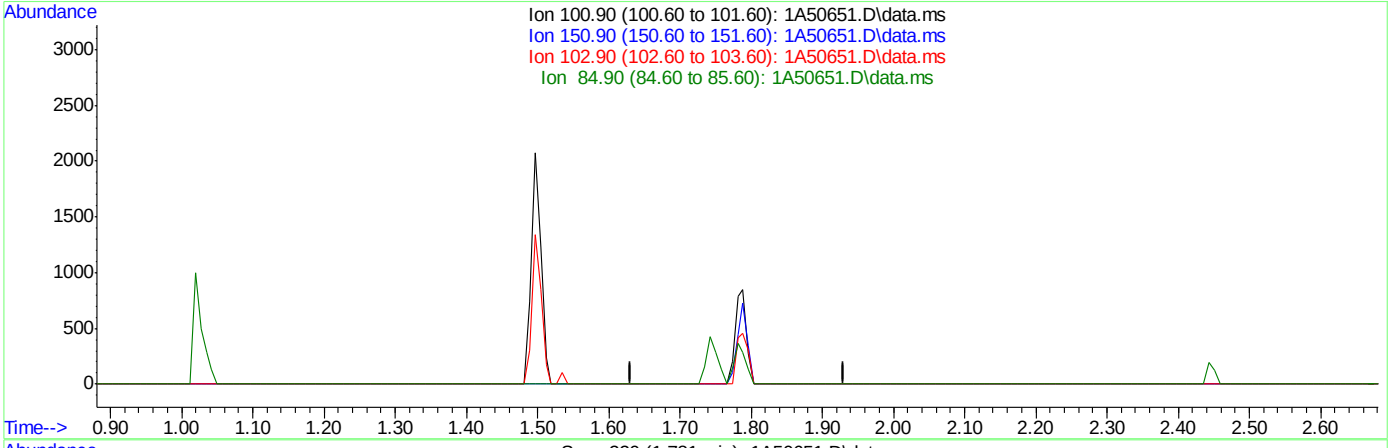
response 873

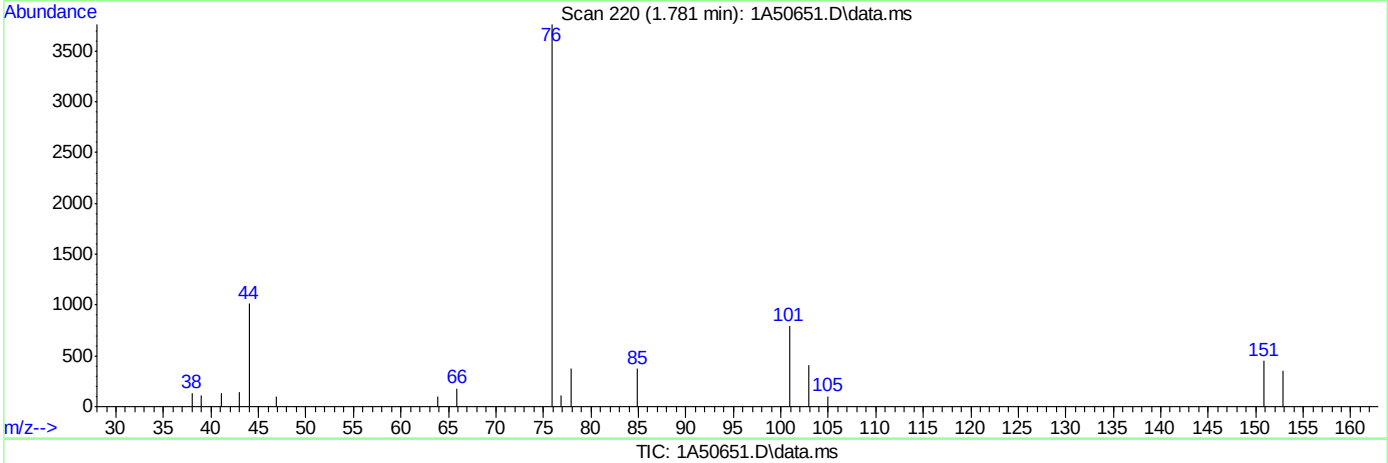
Ion	Exp%	Act%
45.00	100	100
46.00	40.30	31.70
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50651.D
Acq On : 15 Nov 2023 6:16 am
Operator : jeniferw
Sample : IC1945-1
Misc : MS55275,V1A1945,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Nov 15 09:38:22 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50651.D\data.ms

(13) Freon 113

1.781min (-1.781) 0.00ug/L

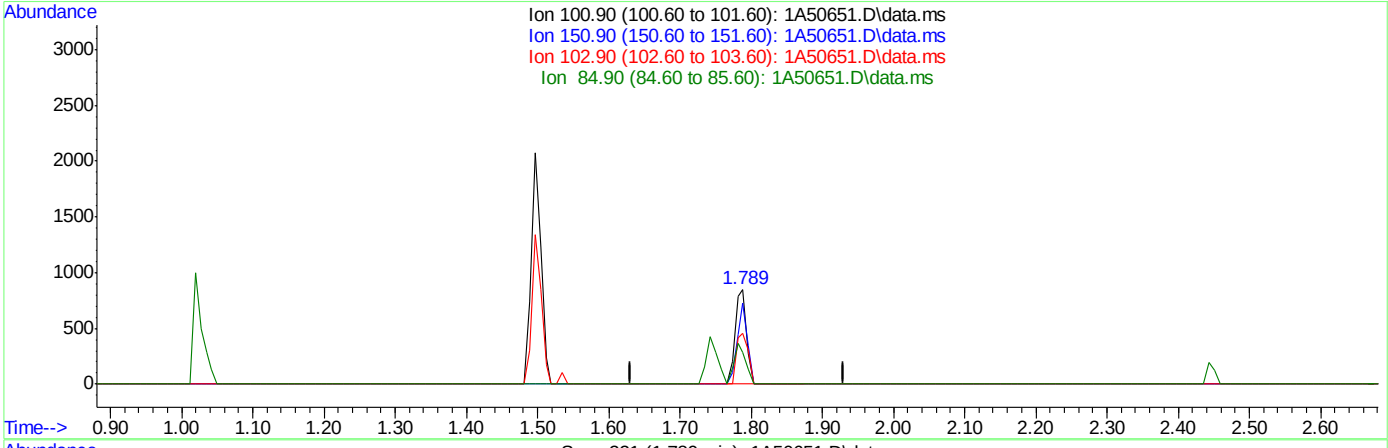
response 0

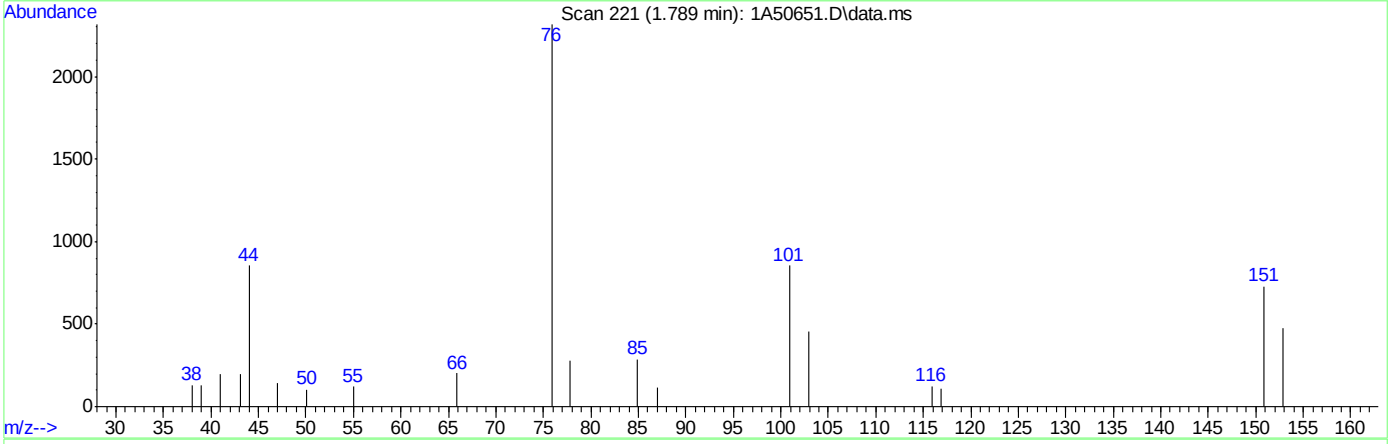
Ion	Exp%	Act%
100.90	100	0.00
150.90	91.50	0.00#
102.90	64.80	0.00#
84.90	45.90	0.00#

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50651.D
Acq On : 15 Nov 2023 6:16 am
Operator : jeniferw
Sample : IC1945-1
Misc : MS55275,V1A1945,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Nov 15 09:38:22 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50651.D\data.ms

(13) Freon 113

1.789min (+0.008) 0.91ug/L m

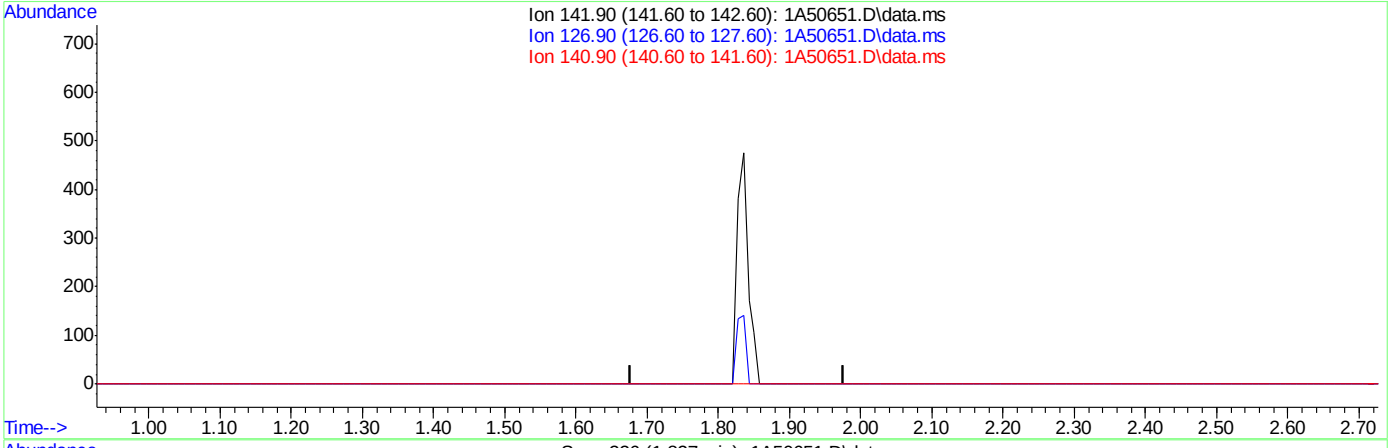
response 979

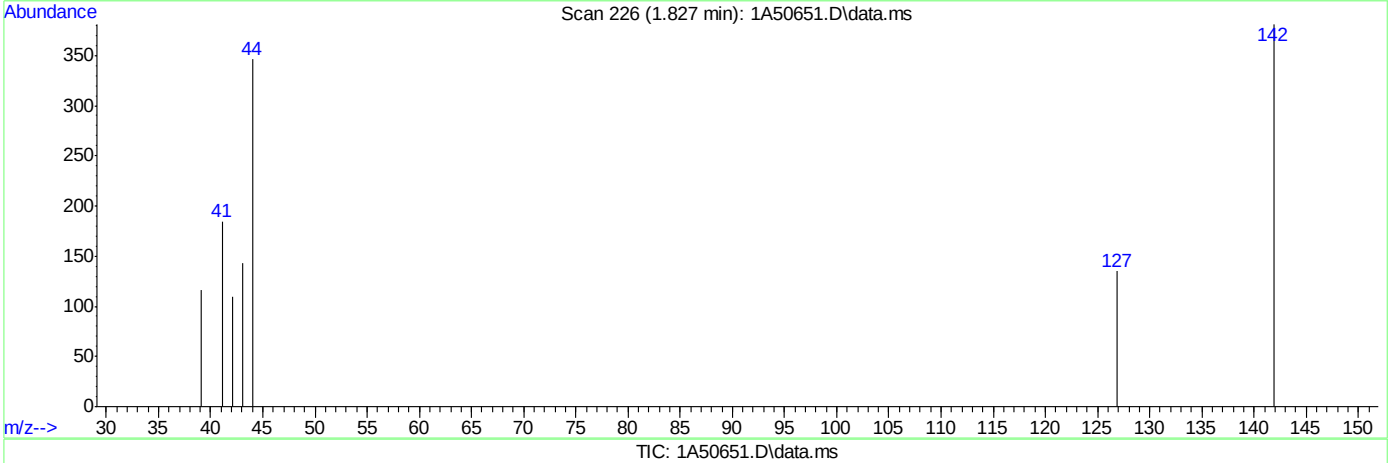
Ion	Exp%	Act%
100.90	100	100
150.90	91.50	85.35
102.90	64.80	53.58
84.90	45.90	33.65

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50651.D
Acq On : 15 Nov 2023 6:16 am
Operator : jeniferw
Sample : IC1945-1
Misc : MS55275,V1A1945,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Nov 15 09:38:22 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50651.D\data.ms

(15) Iodomethane

1.827min (-1.827) 0.00ug/L

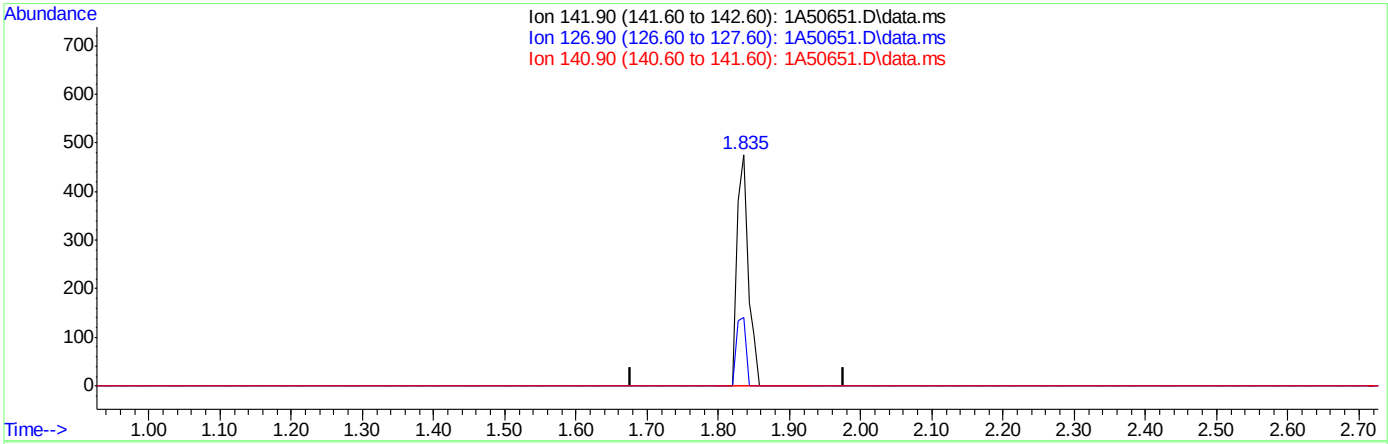
response 0

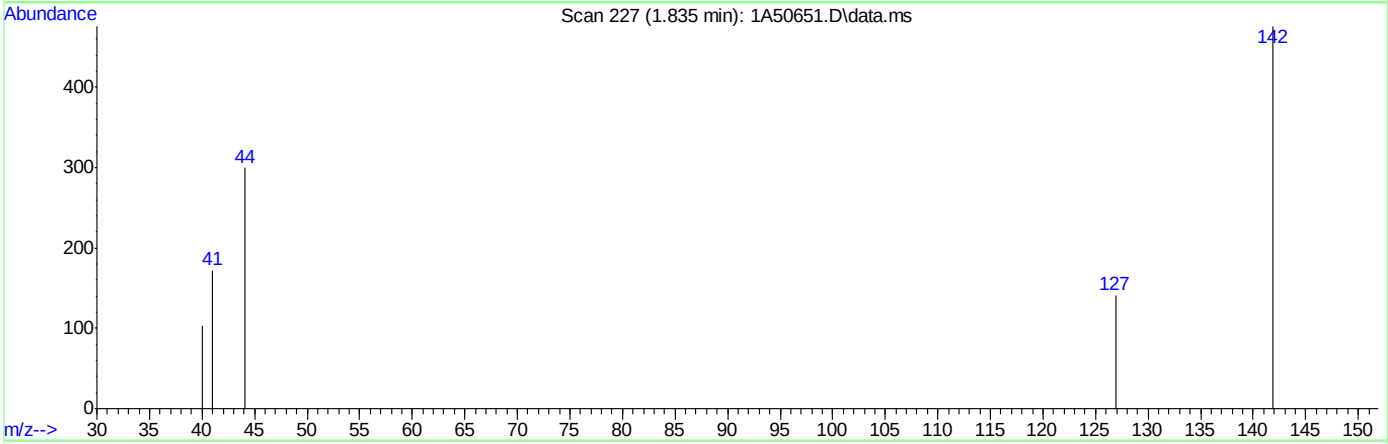
Ion	Exp%	Act%
141.90	100	0.00
126.90	46.70	0.00#
140.90	14.30	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50651.D
Acq On : 15 Nov 2023 6:16 am
Operator : jeniferw
Sample : IC1945-1
Misc : MS55275,V1A1945,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Nov 15 09:38:22 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50651.D\data.ms

(15) Iodomethane

1.835min (+0.008) 0.80ug/L m

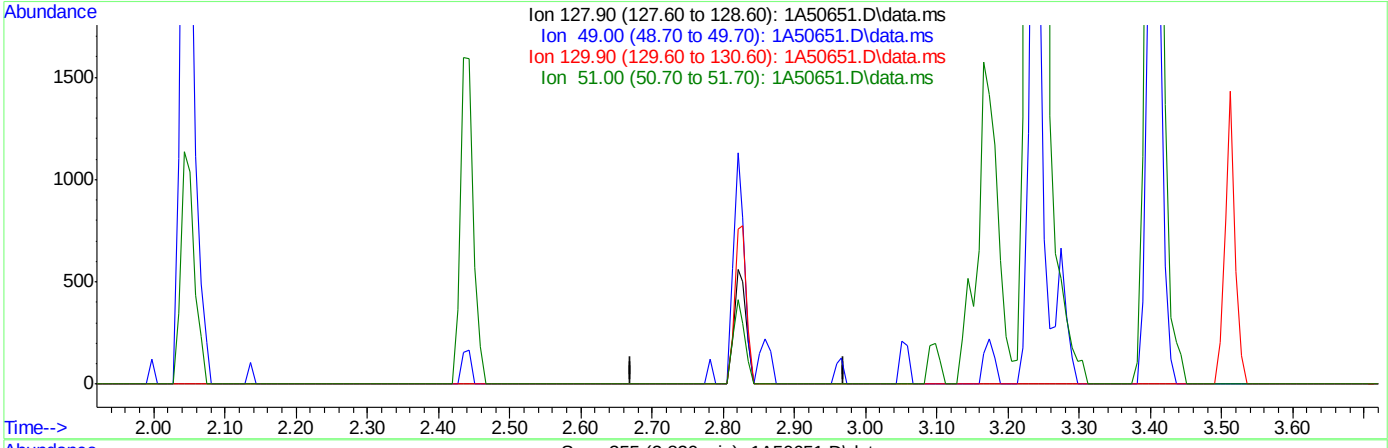
response 524

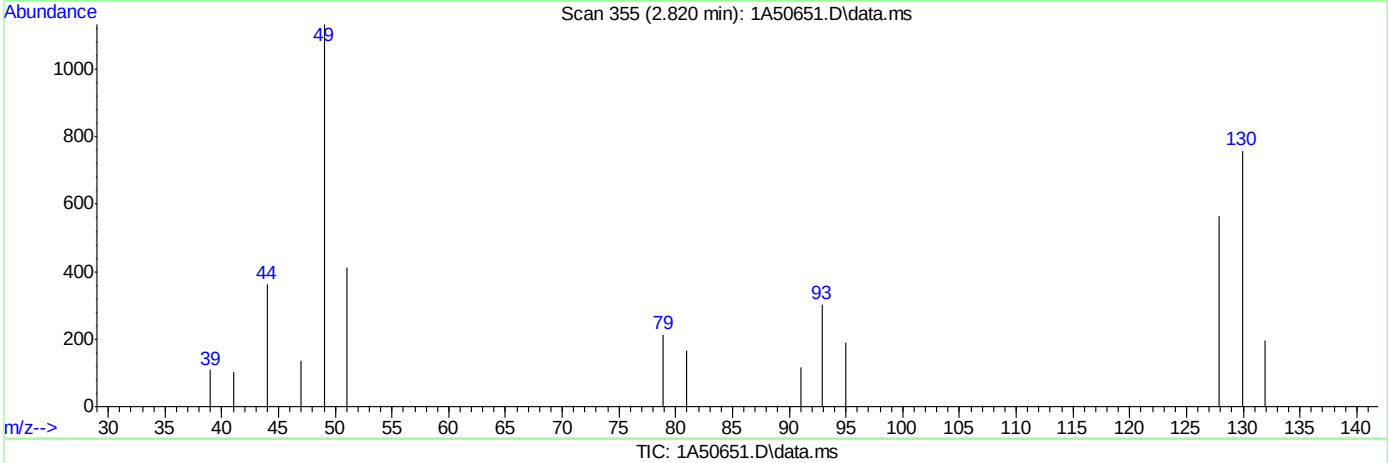
Ion	Exp%	Act%
141.90	100	100
126.90	46.70	29.62
140.90	14.30	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50651.D
Acq On : 15 Nov 2023 6:16 am
Operator : jeniferw
Sample : IC1945-1
Misc : MS55275,V1A1945,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Nov 15 09:38:22 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50651.D\data.ms

(34) Bromochloromethane ( )

2.820min (-2.820) 0.00ug/L

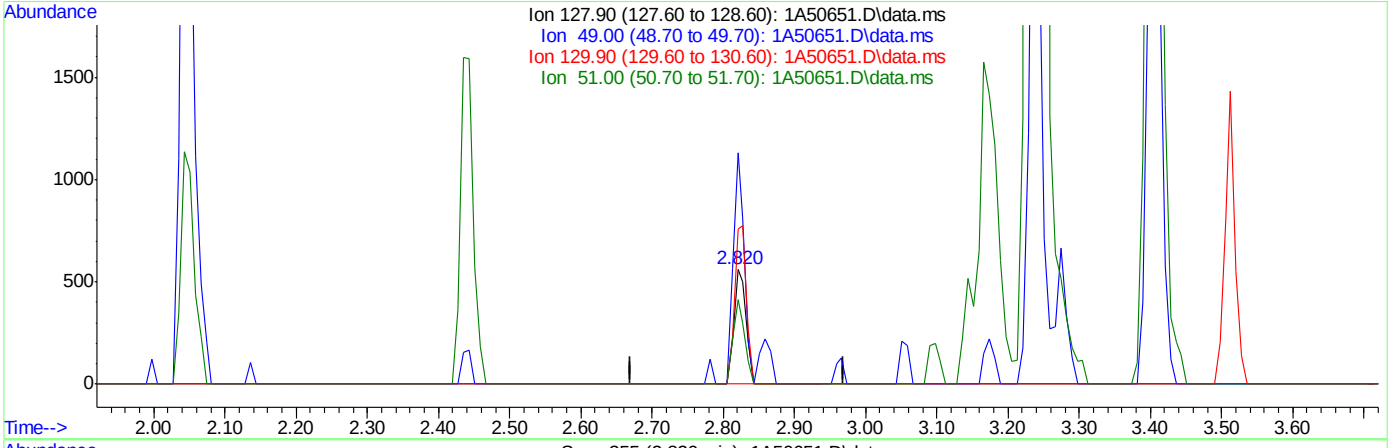
response 0

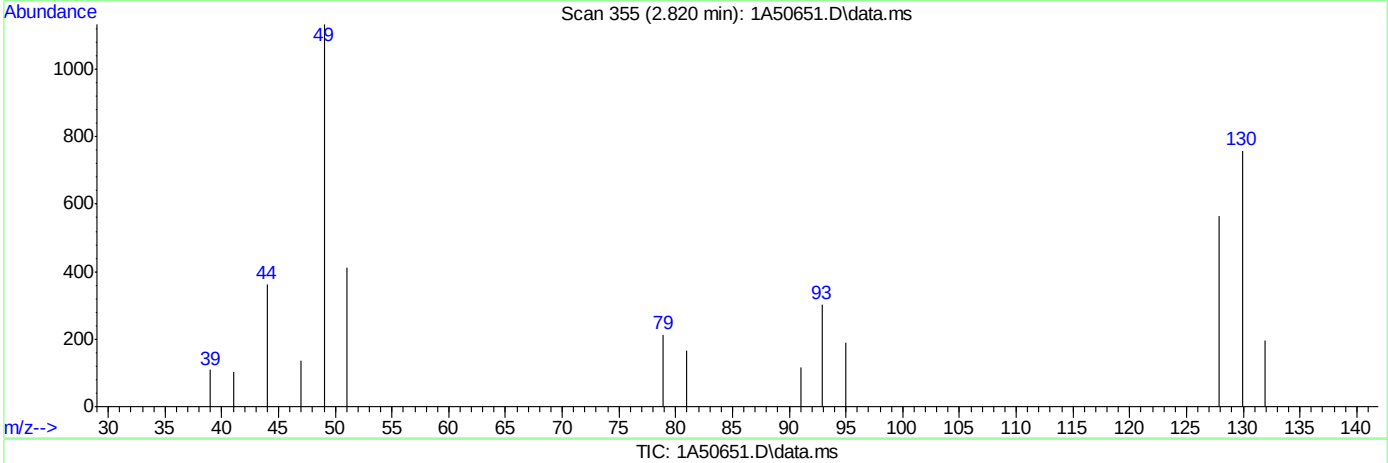
Ion	Exp%	Act%
127.90	100	0.00
49.00	163.50	0.00#
129.90	121.40	0.00#
51.00	52.10	0.00#

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50651.D
Acq On : 15 Nov 2023 6:16 am
Operator : jeniferw
Sample : IC1945-1
Misc : MS55275,V1A1945,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Nov 15 09:38:22 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50651.D\data.ms

(34) Bromochloromethane ( )

2.820min (+0.000) 0.98ug/L m

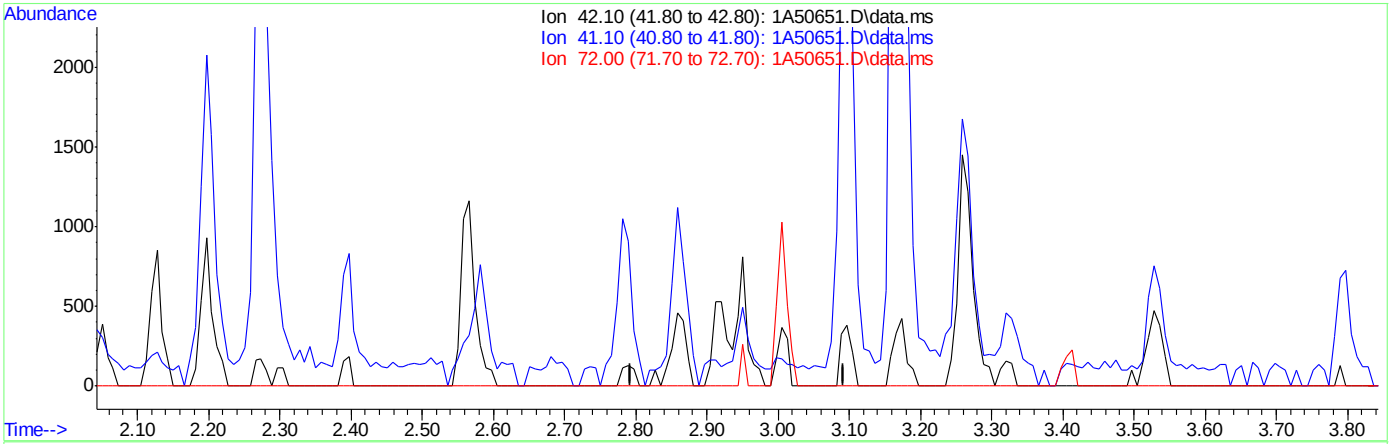
response 686

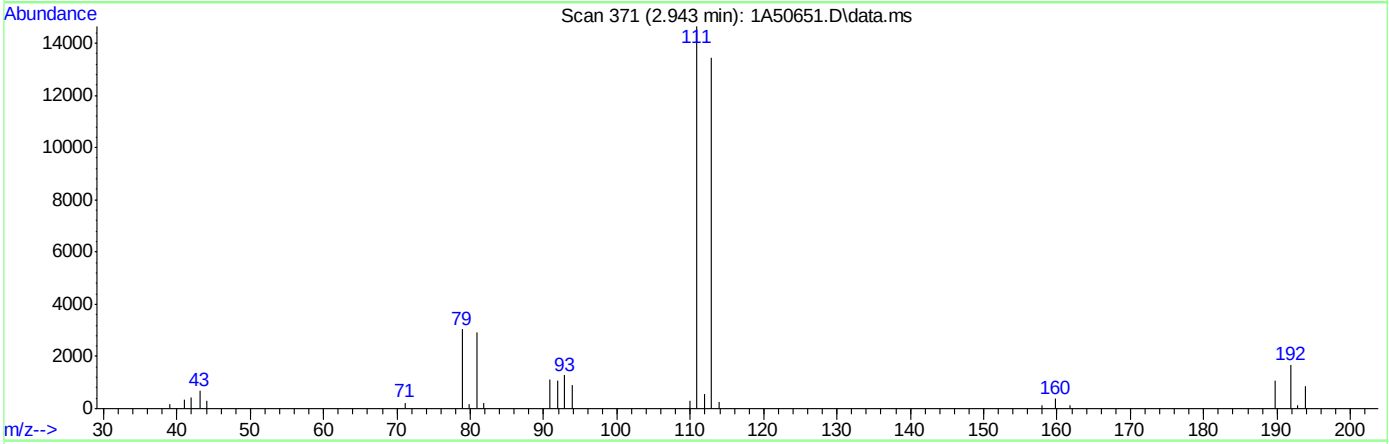
Ion	Exp%	Act%
127.90	100	100
49.00	163.50	200.89#
129.90	121.40	134.57
51.00	52.10	73.23

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50651.D
Acq On : 15 Nov 2023 6:16 am
Operator : jeniferw
Sample : IC1945-1
Misc : MS55275,V1A1945,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Nov 15 09:38:22 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50651.D\data.ms

(38) Tetrahydrofuran

2.943min (-2.943) 0.00ug/L

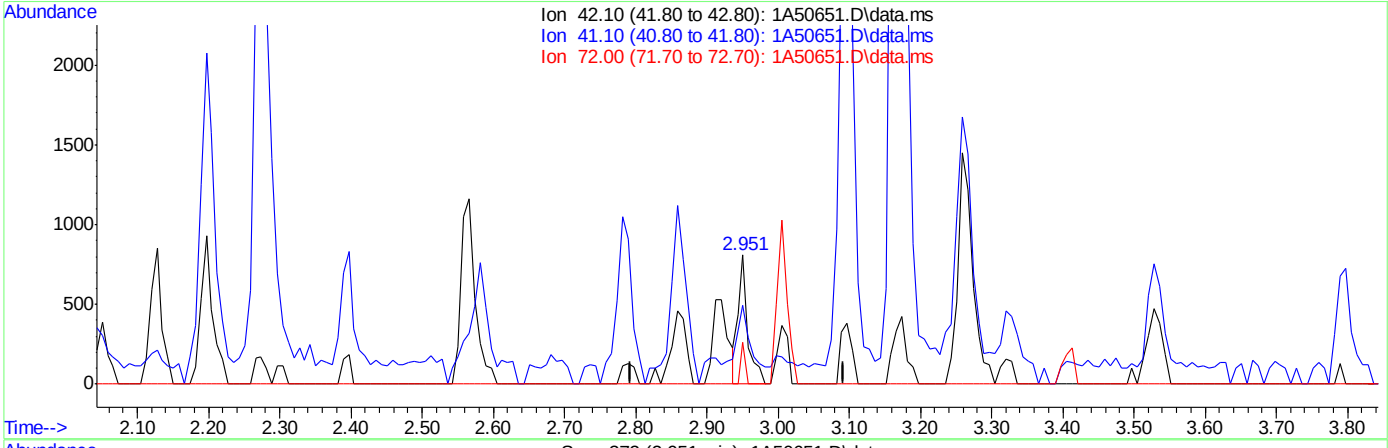
response 0

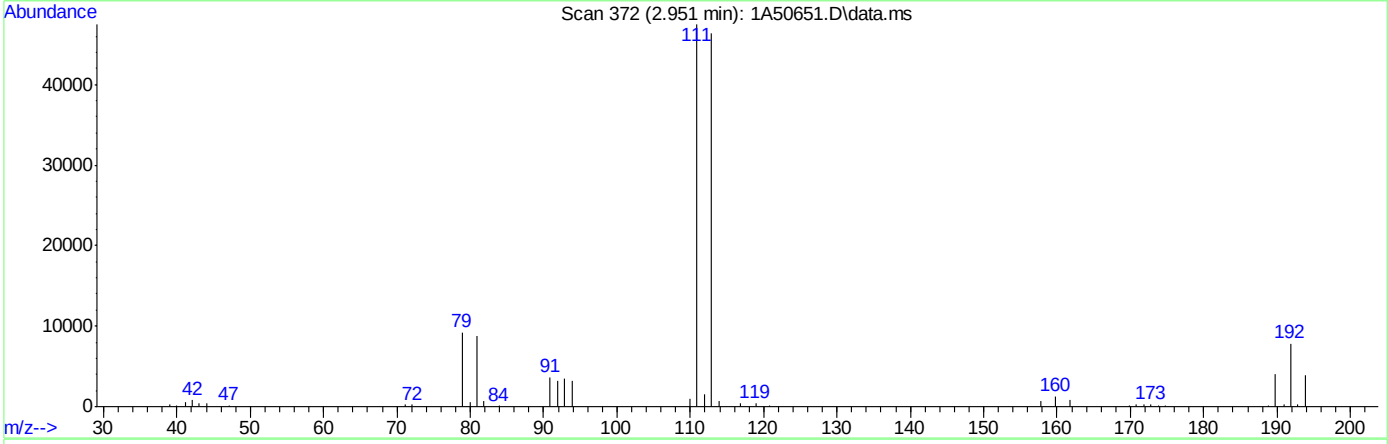
Ion	Exp%	Act%
42.10	100	0.00
41.10	58.70	0.00#
72.00	41.10	0.00#
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50651.D
Acq On : 15 Nov 2023 6:16 am
Operator : jeniferw
Sample : IC1945-1
Misc : MS55275,V1A1945,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Nov 15 09:38:22 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50651.D\data.ms

(38) Tetrahydrofuran

2.951min (+0.008) 1.12ug/L m

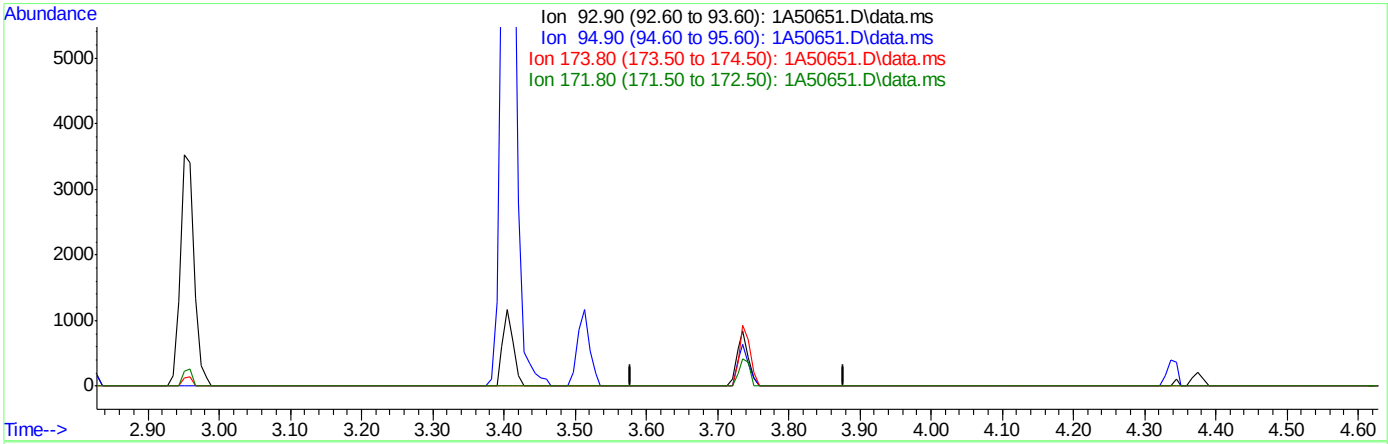
response 794

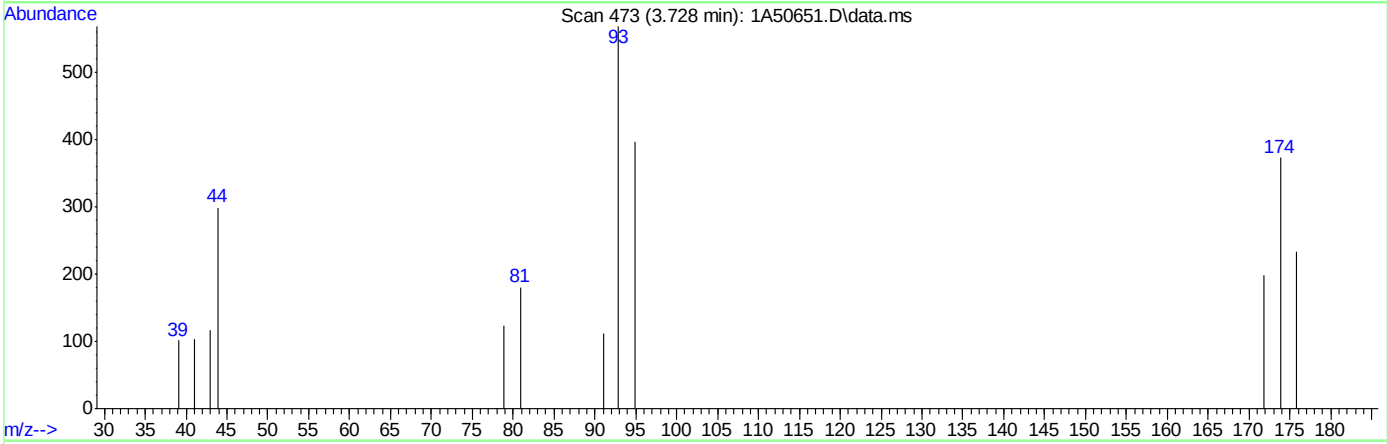
Ion	Exp%	Act%
42.10	100	100
41.10	58.70	60.94
72.00	41.10	32.51
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50651.D
Acq On : 15 Nov 2023 6:16 am
Operator : jeniferw
Sample : IC1945-1
Misc : MS55275,V1A1945,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Nov 15 09:38:22 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50651.D\data.ms

(55) Dibromomethane

3.728min (-3.728) 0.00ug/L

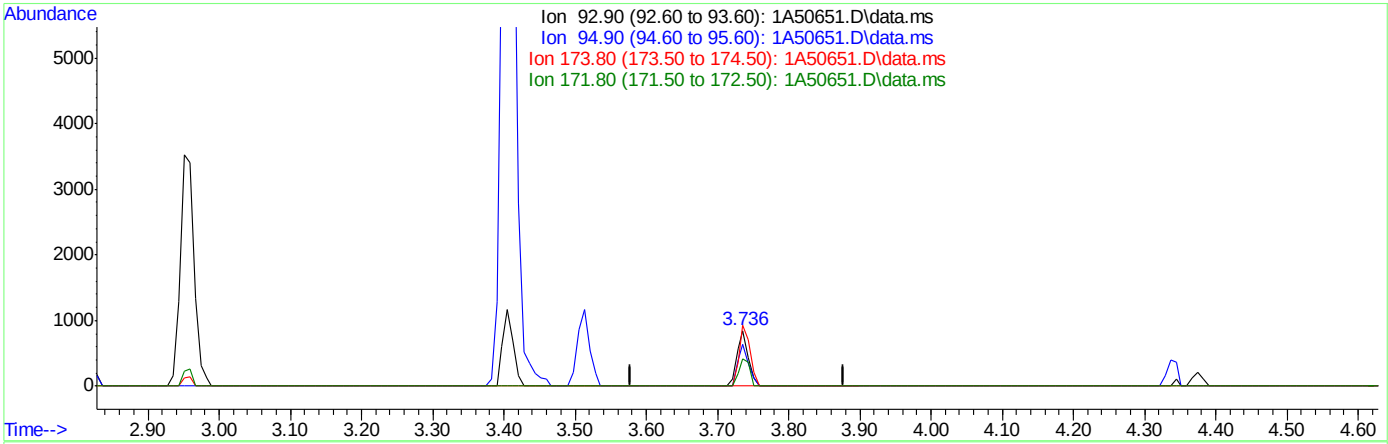
response 0

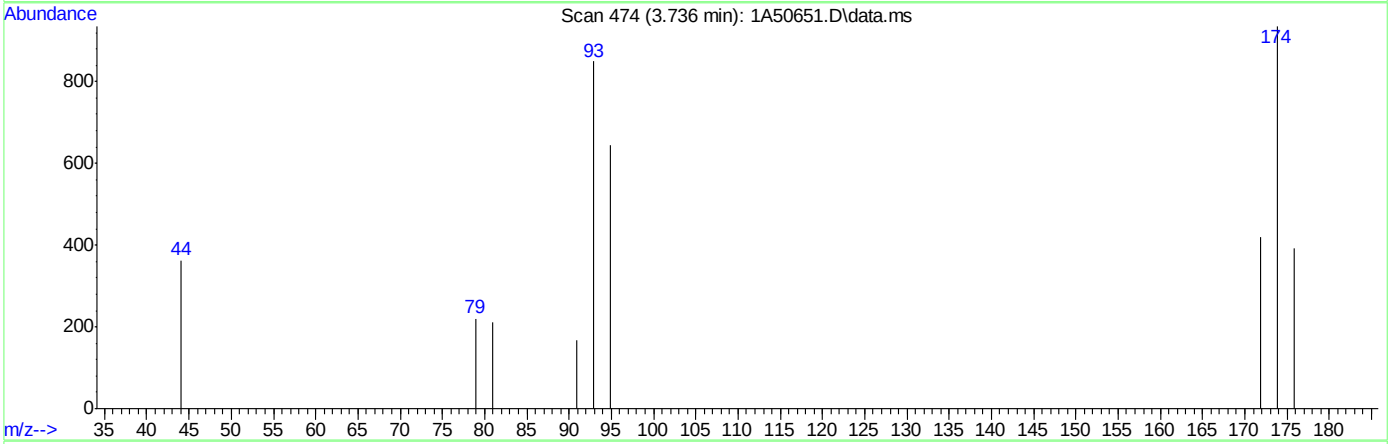
Ion	Exp%	Act%
92.90	100	0.00
94.90	86.10	0.00#
173.80	133.80	0.00#
171.80	68.90	0.00#

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50651.D
Acq On : 15 Nov 2023 6:16 am
Operator : jeniferw
Sample : IC1945-1
Misc : MS55275,V1A1945,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Nov 15 09:38:22 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50651.D\data.ms

(55) Dibromomethane

3.736min (+0.008) 1.08ug/L m

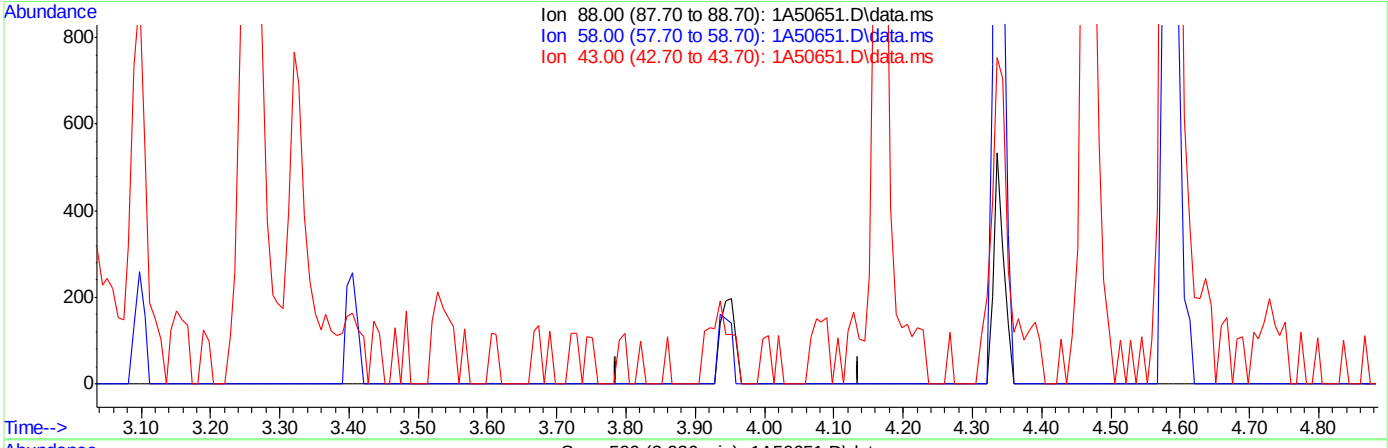
response 964

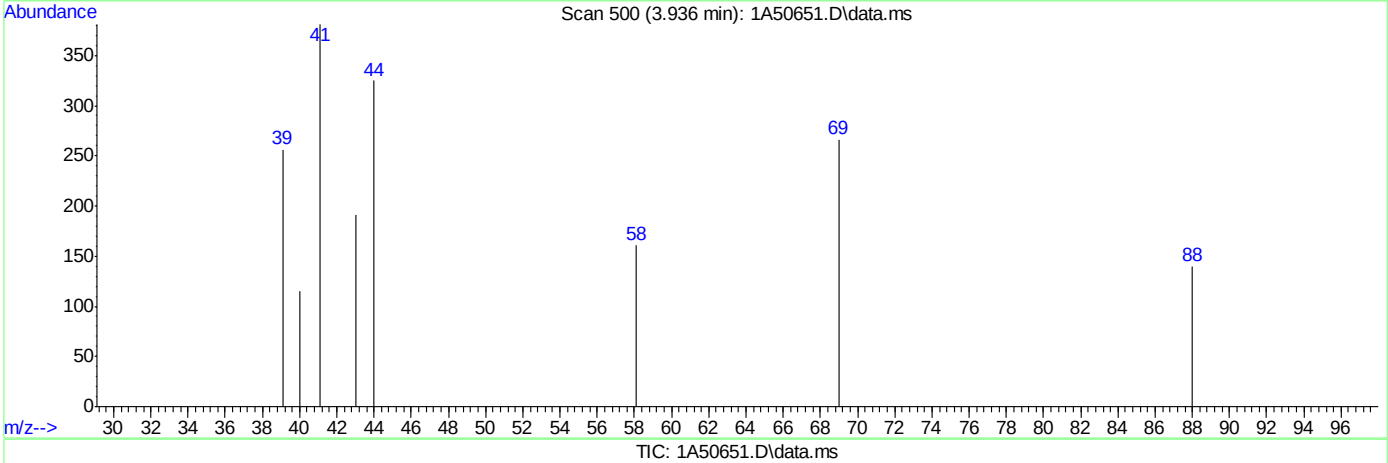
Ion	Exp%	Act%
92.90	100	100
94.90	86.10	75.88
173.80	133.80	110.00
171.80	68.90	49.29

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50651.D
Acq On : 15 Nov 2023 6:16 am
Operator : jeniferw
Sample : IC1945-1
Misc : MS55275,V1A1945,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Nov 15 09:38:22 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50651.D\data.ms

(59) 1,4-Dioxane

3.936min (-3.936) 0.00ug/L

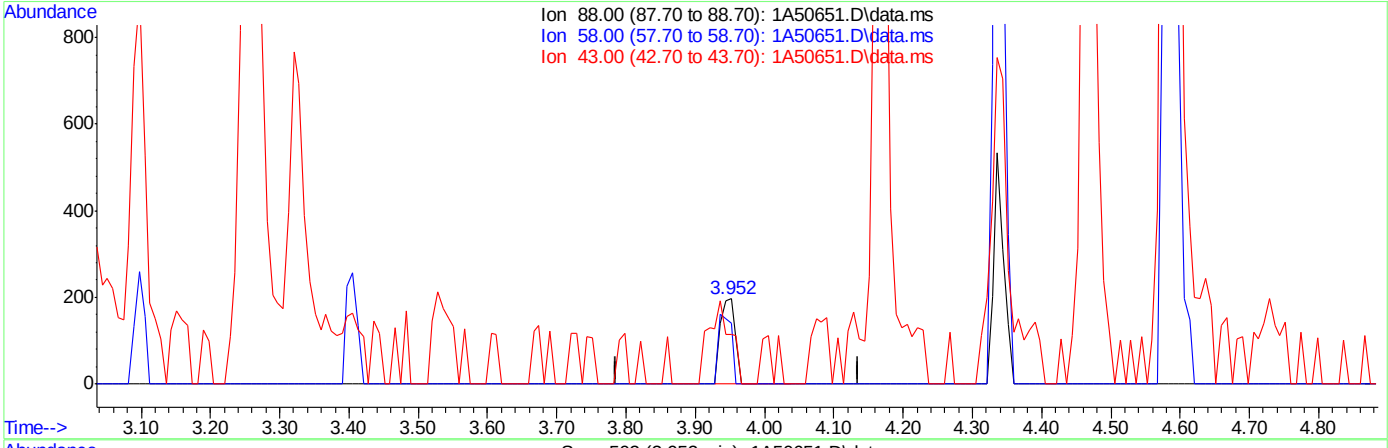
response 0

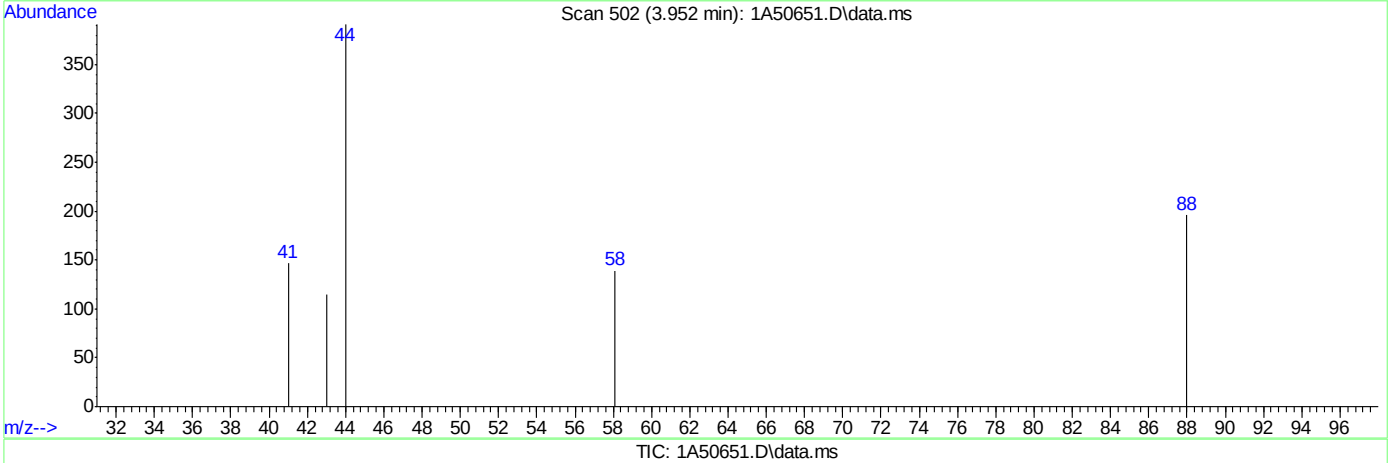
Ion	Exp%	Act%
88.00	100	0.00
58.00	69.70	0.00#
43.00	26.80	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50651.D
Acq On : 15 Nov 2023 6:16 am
Operator : jeniferw
Sample : IC1945-1
Misc : MS55275,V1A1945,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Nov 15 09:38:22 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50651.D\data.ms

(59) 1,4-Dioxane

3.952min (+0.015) 15.38ug/L m

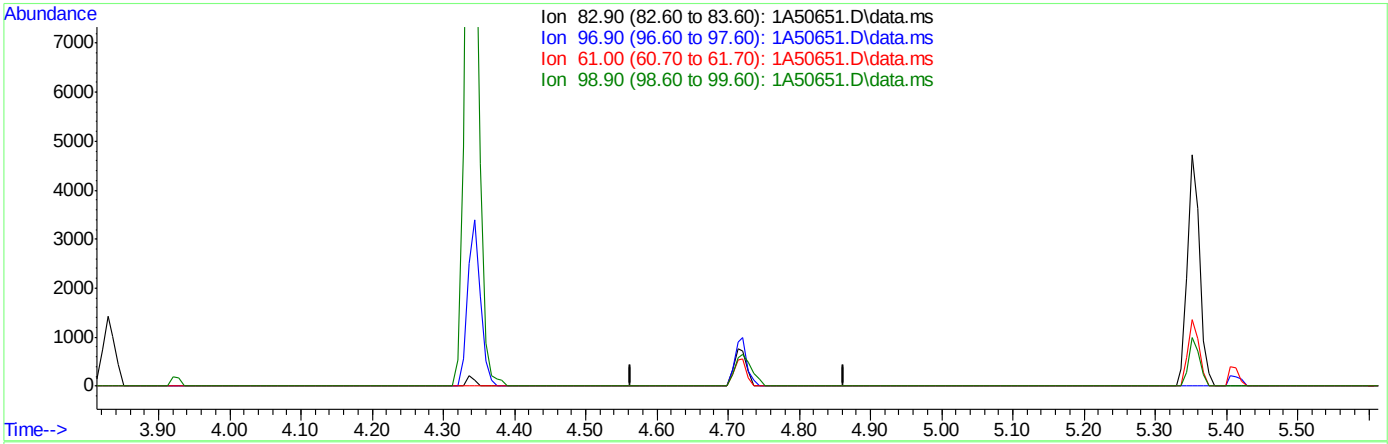
response 292

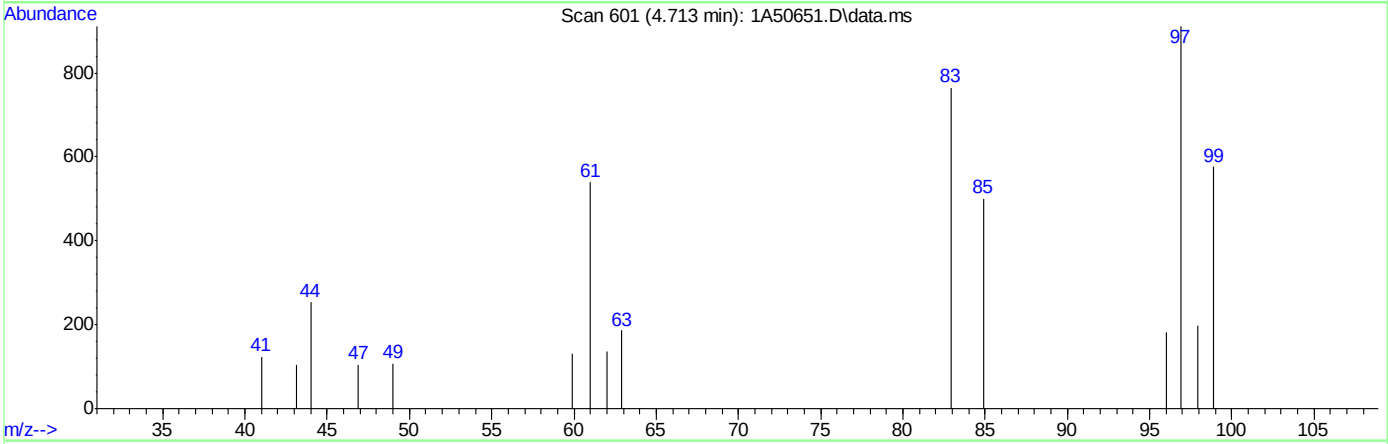
Ion	Exp%	Act%
88.00	100	100
58.00	69.70	70.92
43.00	26.80	58.67#
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50651.D
Acq On : 15 Nov 2023 6:16 am
Operator : jeniferw
Sample : IC1945-1
Misc : MS55275,V1A1945,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Nov 15 09:38:22 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50651.D\data.ms

(70) 1,1,2-Trichloroethane ( )

4.713min (-4.713) 0.00ug/L

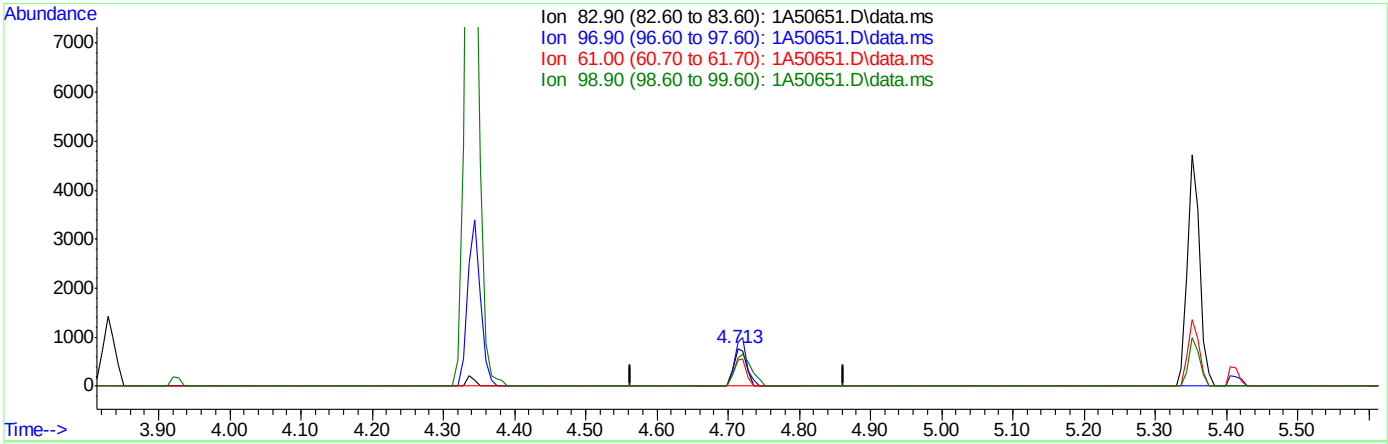
response 0

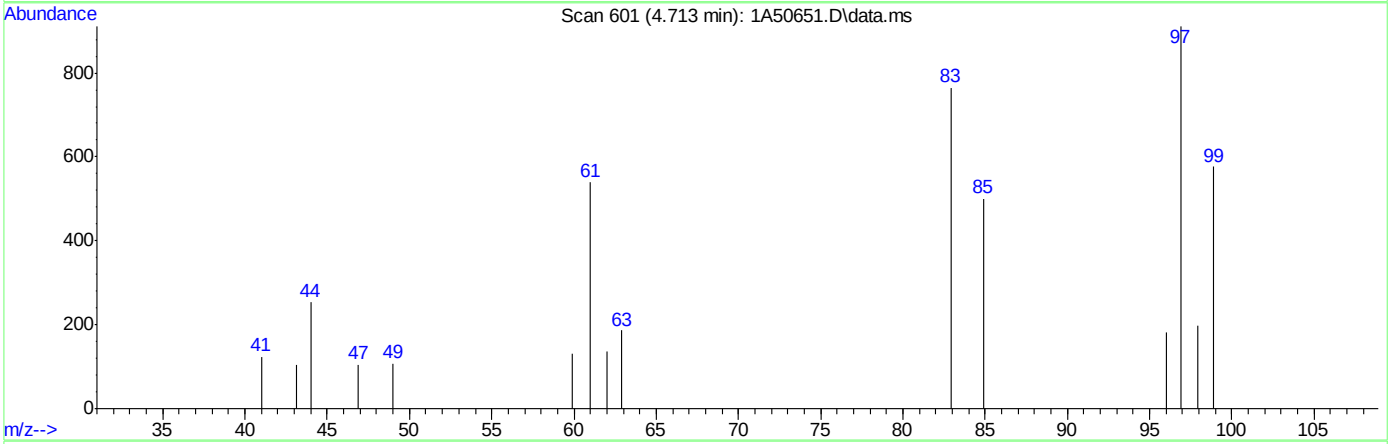
Ion	Exp%	Act%
82.90	100	0.00
96.90	117.30	0.00#
61.00	77.00	0.00#
98.90	74.80	0.00#

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50651.D
Acq On : 15 Nov 2023 6:16 am
Operator : jeniferw
Sample : IC1945-1
Misc : MS55275,V1A1945,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Nov 15 09:38:22 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50651.D\data.ms

(70) 1,1,2-Trichloroethane ( )

4.713min (+0.000) 0.94ug/L m

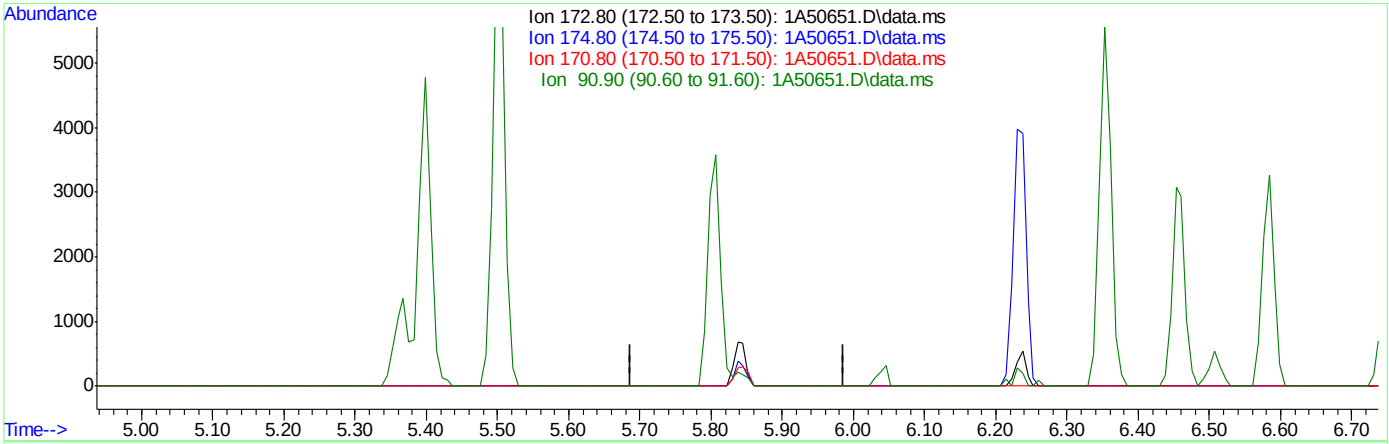
response 981

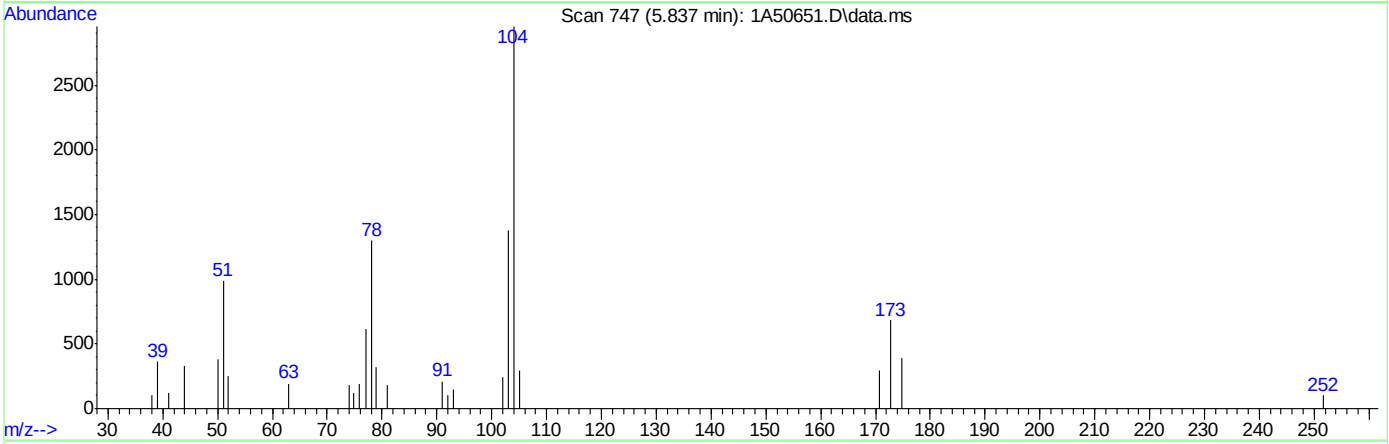
Ion	Exp%	Act%
82.90	100	100
96.90	117.30	119.08
61.00	77.00	70.59
98.90	74.80	75.29

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50651.D
Acq On : 15 Nov 2023 6:16 am
Operator : jeniferw
Sample : IC1945-1
Misc : MS55275,V1A1945,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Nov 15 09:38:22 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50651.D\data.ms

(83) Bromoform

5.837min (-5.837) 0.00ug/L

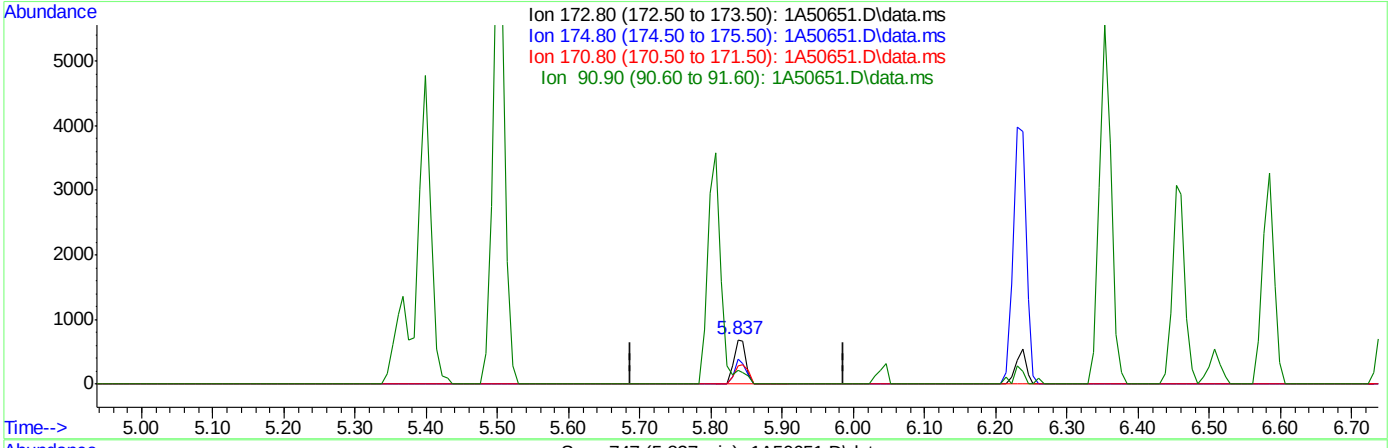
response 0

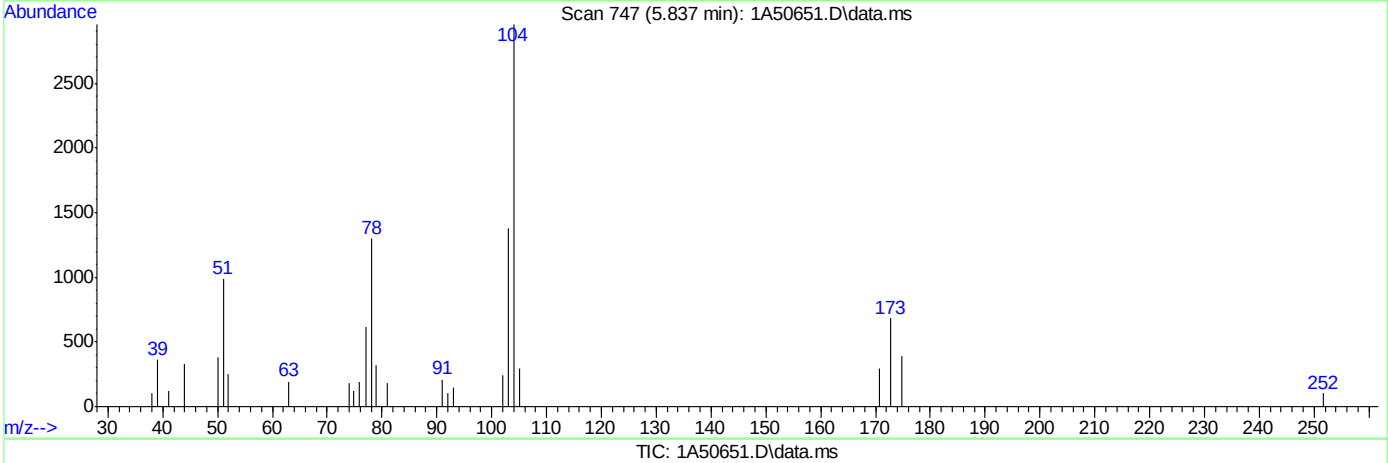
Ion	Exp%	Act%
172.80	100	0.00
174.80	48.00	0.00#
170.80	50.90	0.00#
90.90	22.30	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50651.D
Acq On : 15 Nov 2023 6:16 am
Operator : jeniferw
Sample : IC1945-1
Misc : MS55275,V1A1945,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Nov 15 09:38:22 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50651.D\data.ms

(83) Bromoform

5.837min (+0.000) 0.93ug/L m

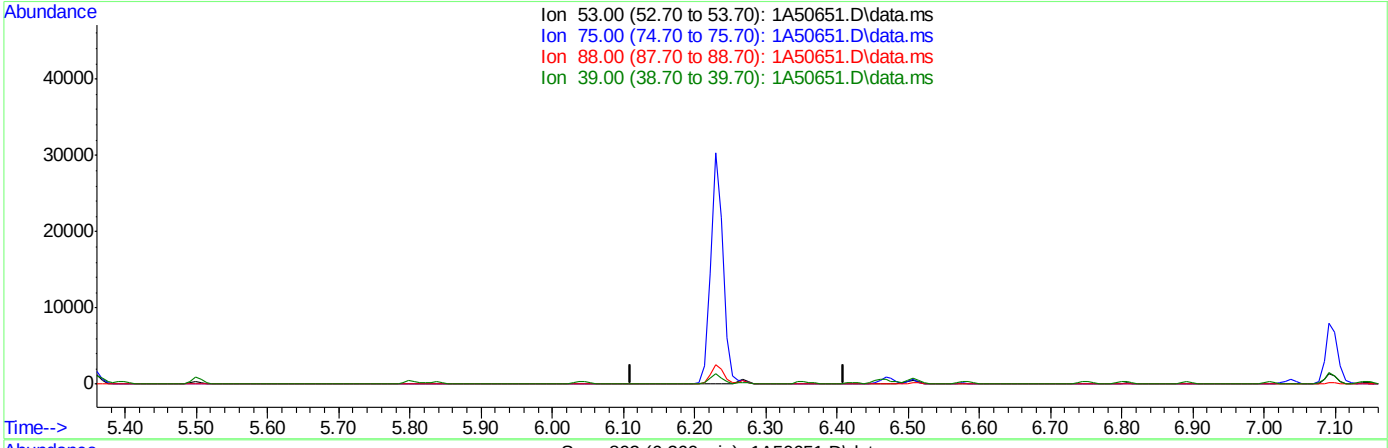
response 822

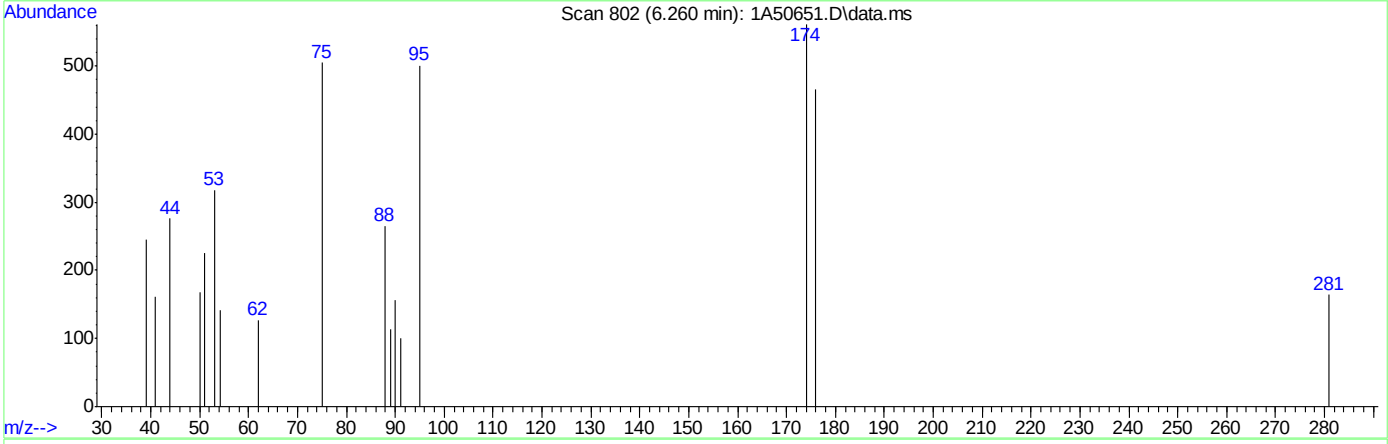
Ion	Exp%	Act%
172.80	100	100
174.80	48.00	57.60
170.80	50.90	42.69
90.90	22.30	30.85

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50651.D
Acq On : 15 Nov 2023 6:16 am
Operator : jeniferw
Sample : IC1945-1
Misc : MS55275,V1A1945,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Nov 15 09:38:22 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50651.D\data.ms

(87) cis-1,4-Dichloro-2-butene

6.260min (-6.260) 0.00ug/L

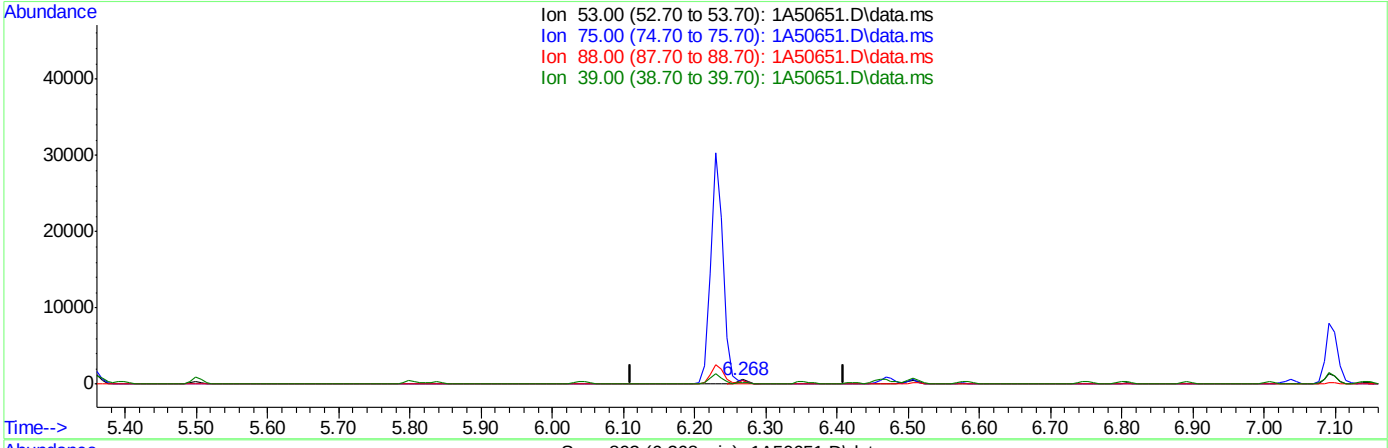
response 0

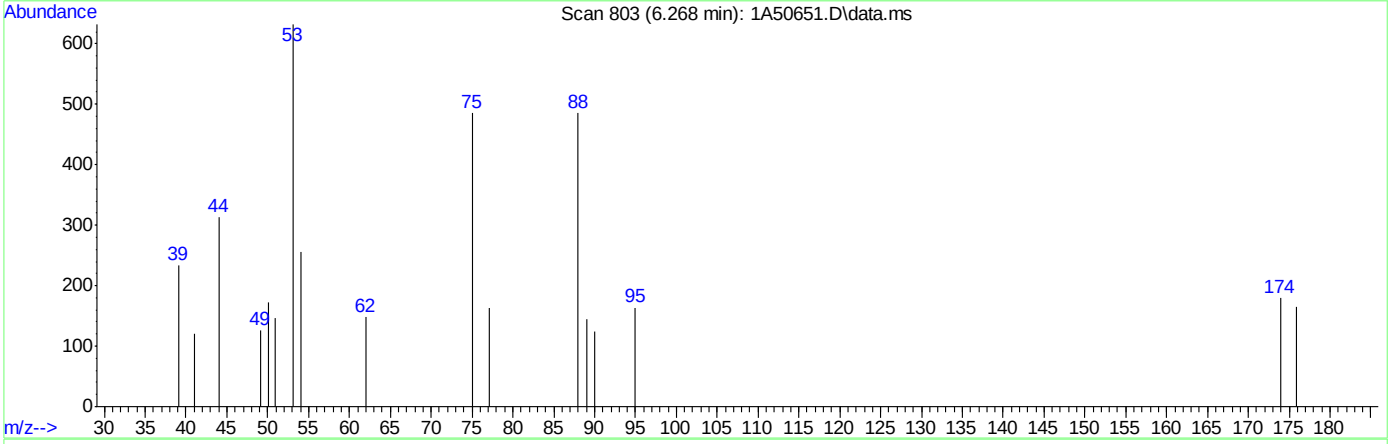
Ion	Exp%	Act%
53.00	100	0.00
75.00	55.00	0.00#
88.00	121.00	0.00#
39.00	30.00	0.00#

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50651.D
Acq On : 15 Nov 2023 6:16 am
Operator : jeniferw
Sample : IC1945-1
Misc : MS55275,V1A1945,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Nov 15 09:38:22 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50651.D\data.ms

(87) cis-1,4-Dichloro-2-butene

6.268min (+0.008) 1.38ug/L m

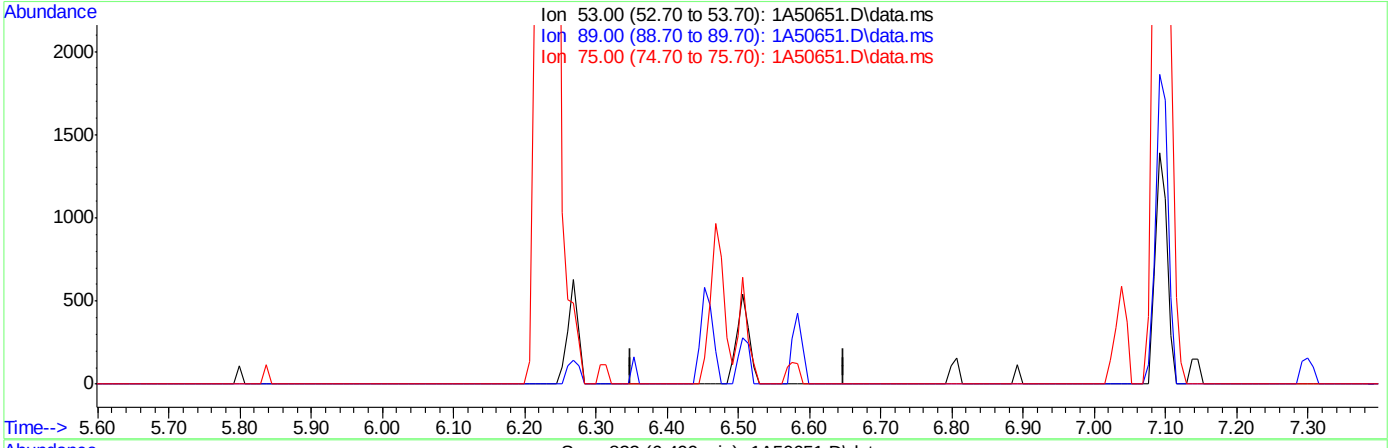
response 629

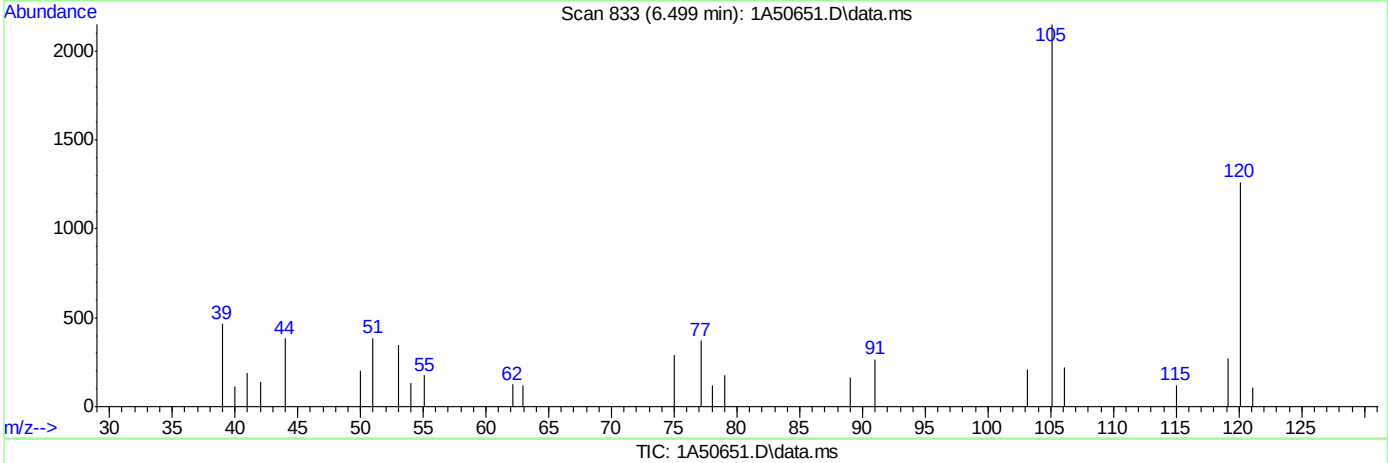
Ion	Exp%	Act%
53.00	100	100
75.00	55.00	76.74#
88.00	121.00	76.74#
39.00	30.00	37.03

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50651.D
Acq On : 15 Nov 2023 6:16 am
Operator : jeniferw
Sample : IC1945-1
Misc : MS55275,V1A1945,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Nov 15 09:38:22 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50651.D\data.ms

(93) trans-1,4-Dichloro-2-Butene

6.499min (-6.499) 0.00ug/L

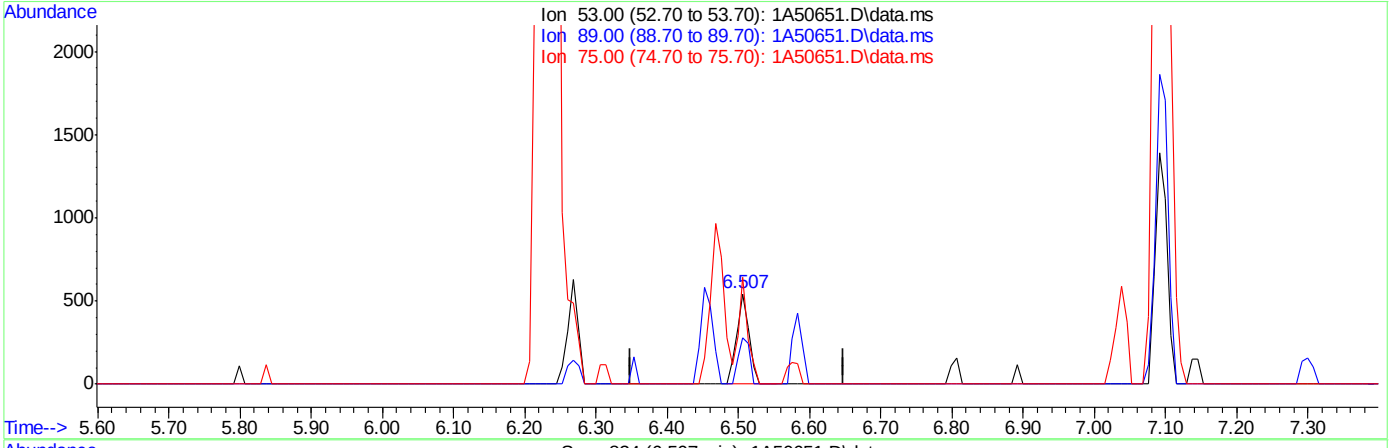
response 0

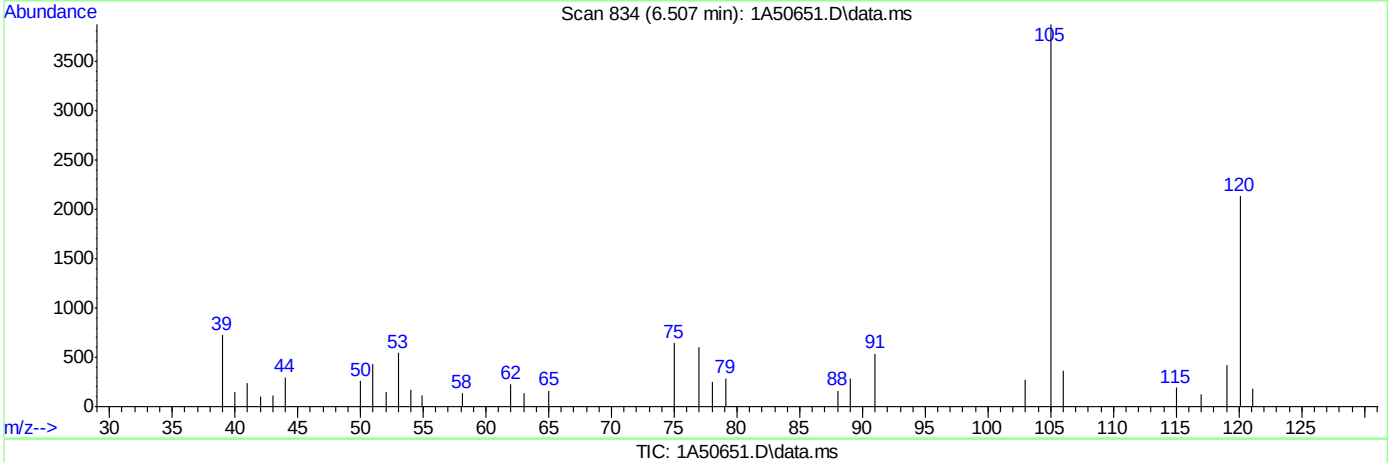
Ion	Exp%	Act%
53.00	100	0.00
89.00	65.00	0.00#
75.00	91.60	0.00#
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50651.D
Acq On : 15 Nov 2023 6:16 am
Operator : jeniferw
Sample : IC1945-1
Misc : MS55275,V1A1945,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Nov 15 09:38:22 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50651.D\data.ms

(93) trans-1,4-Dichloro-2-Butene

6.507min (+0.008) 1.06ug/L m

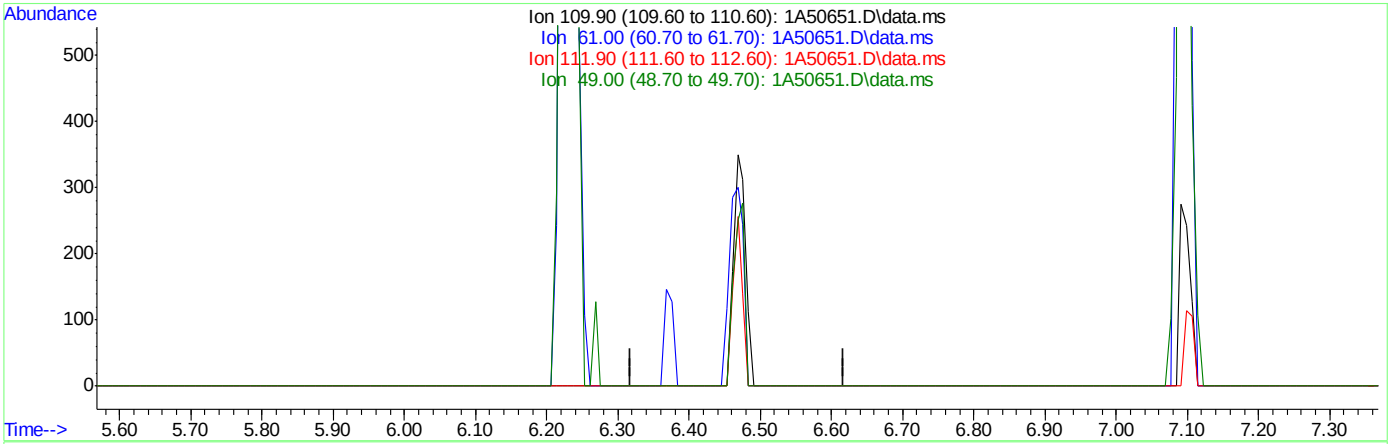
response 681

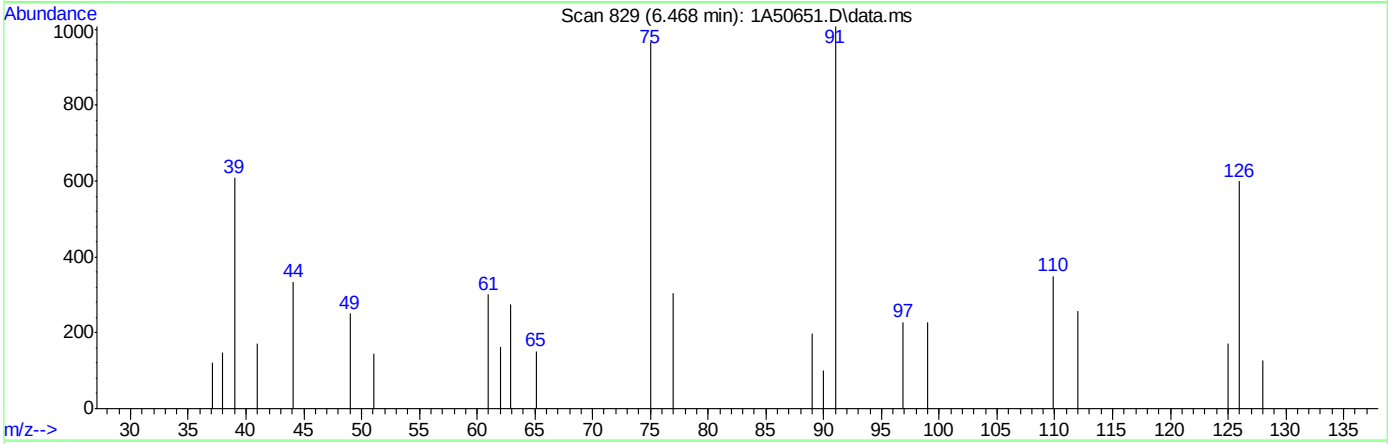
Ion	Exp%	Act%
53.00	100	100
89.00	65.00	51.38
75.00	91.60	118.42#
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50651.D
Acq On : 15 Nov 2023 6:16 am
Operator : jeniferw
Sample : IC1945-1
Misc : MS55275,V1A1945,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Nov 15 09:38:22 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50651.D\data.ms

(94) 1,2,3-Trichloropropane ( )

6.468min (-6.468) 0.00ug/L

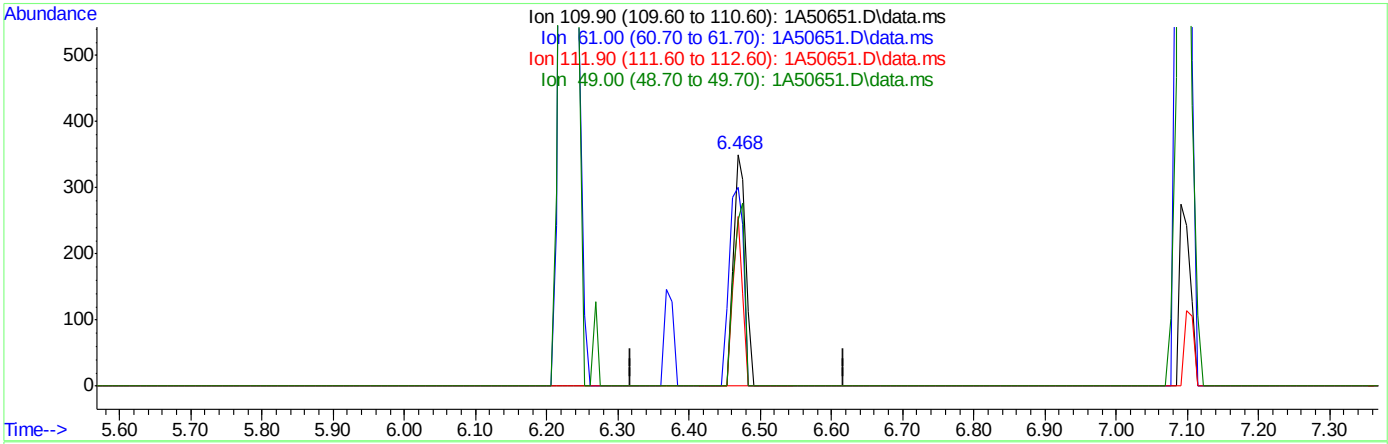
response 0

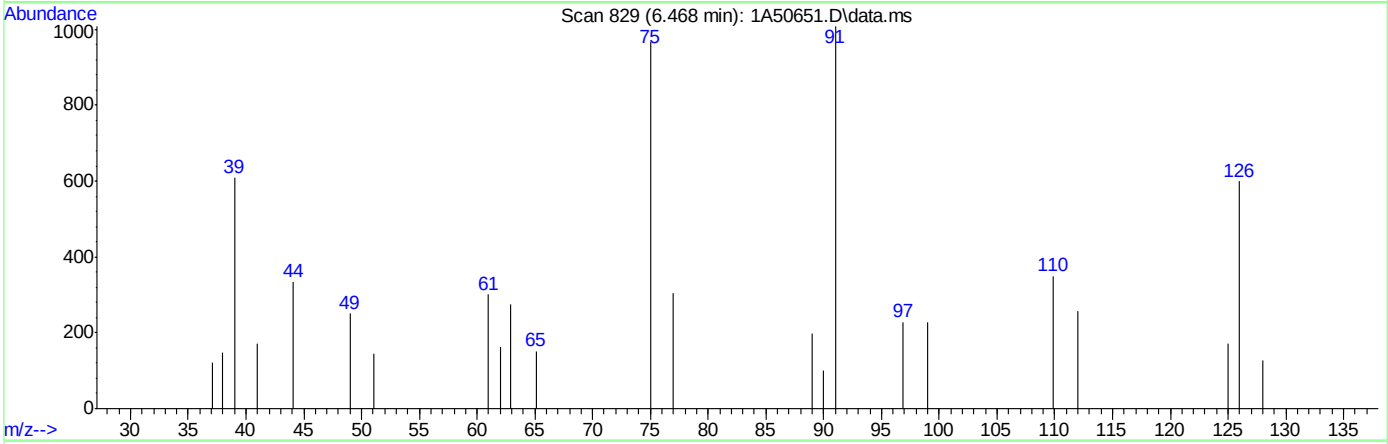
Ion	Exp%	Act%
109.90	100	0.00
61.00	66.40	0.00#
111.90	64.30	0.00#
49.00	57.90	0.00#

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50651.D
Acq On : 15 Nov 2023 6:16 am
Operator : jeniferw
Sample : IC1945-1
Misc : MS55275,V1A1945,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Nov 15 09:38:22 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50651.D\data.ms

(94) 1,2,3-Trichloropropane ( )

6.468min (+0.000) 0.94ug/L m

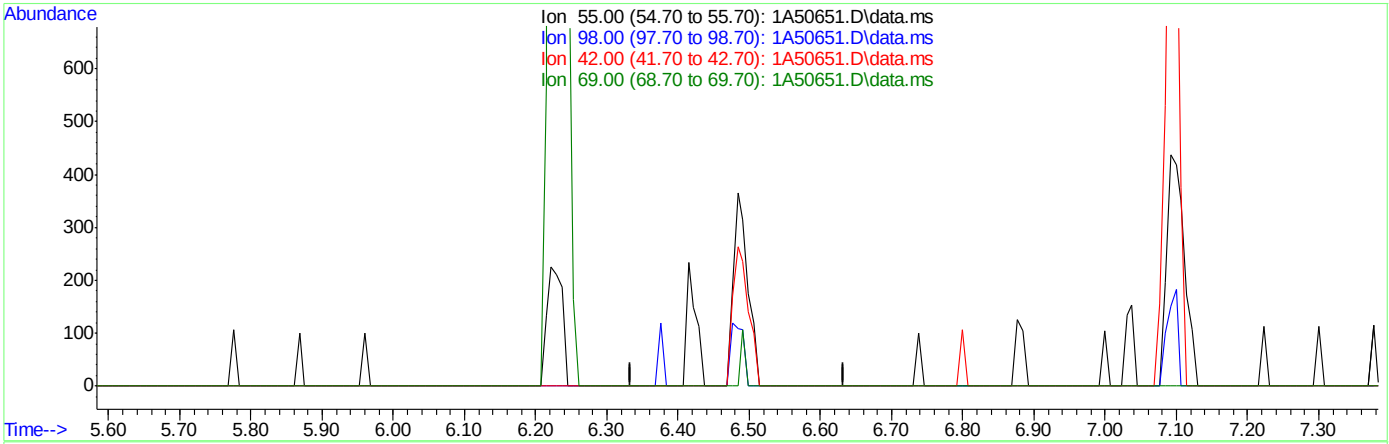
response 438

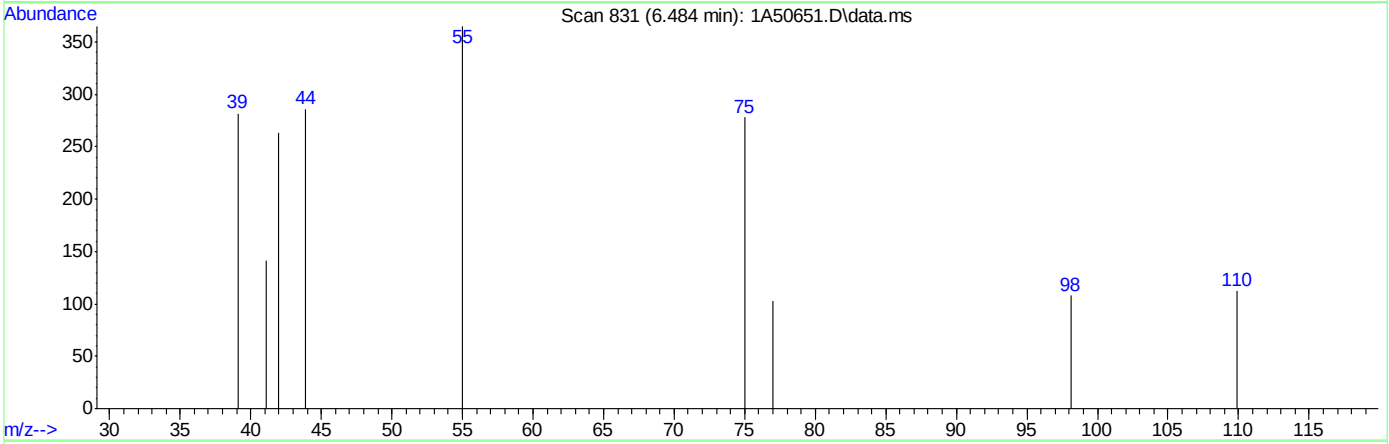
Ion	Exp%	Act%
109.90	100	100
61.00	66.40	86.00
111.90	64.30	73.14
49.00	57.90	71.71

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50651.D
Acq On : 15 Nov 2023 6:16 am
Operator : jeniferw
Sample : IC1945-1
Misc : MS55275,V1A1945,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Nov 15 09:38:22 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50651.D\data.ms

(95) Cyclohexanone

6.484min (-6.484) 0.00ug/L

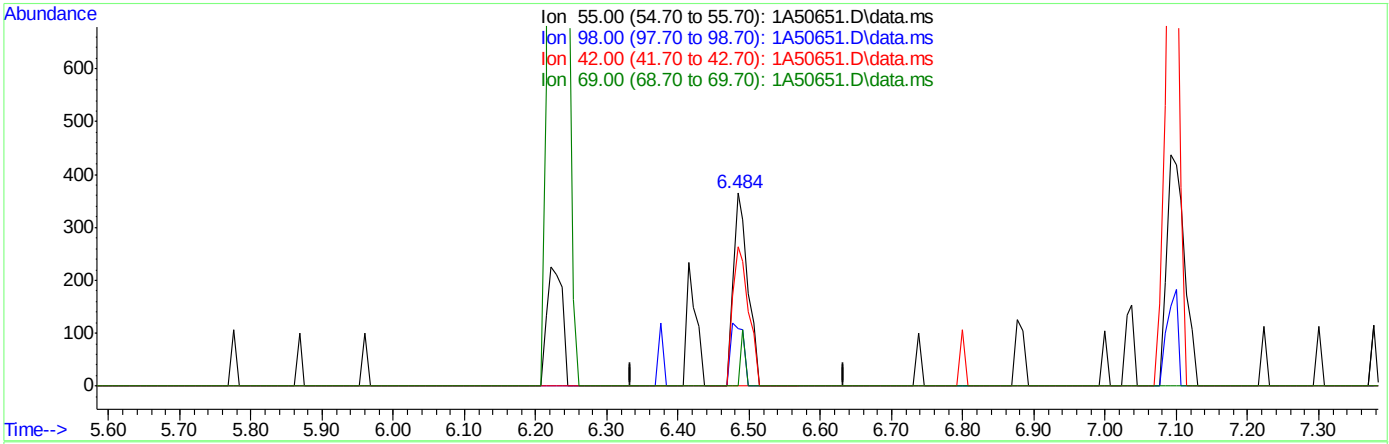
response 0

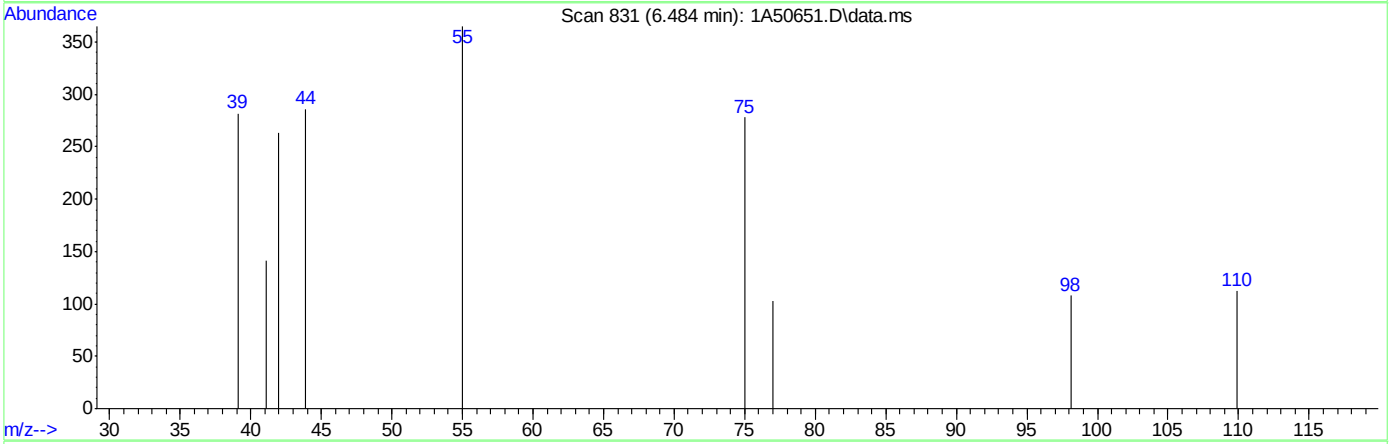
Ion	Exp%	Act%
55.00	100	0.00
98.00	41.70	0.00#
42.00	67.70	0.00#
69.00	27.00	0.00#

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50651.D
Acq On : 15 Nov 2023 6:16 am
Operator : jeniferw
Sample : IC1945-1
Misc : MS55275,V1A1945,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Nov 15 09:38:22 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50651.D\data.ms

(95) Cyclohexanone

6.484min (+0.000) 5.57ug/L m

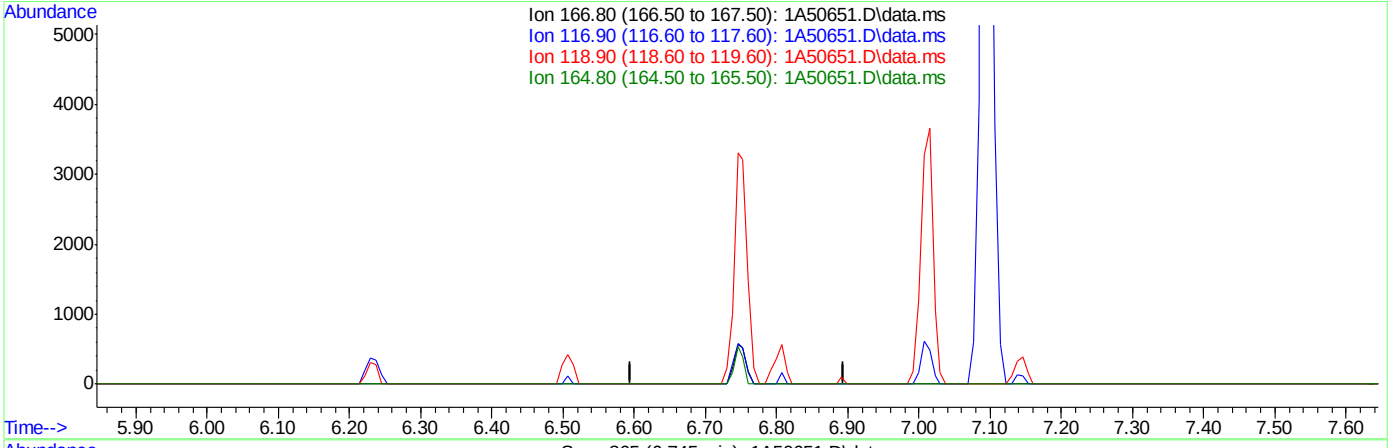
response 537

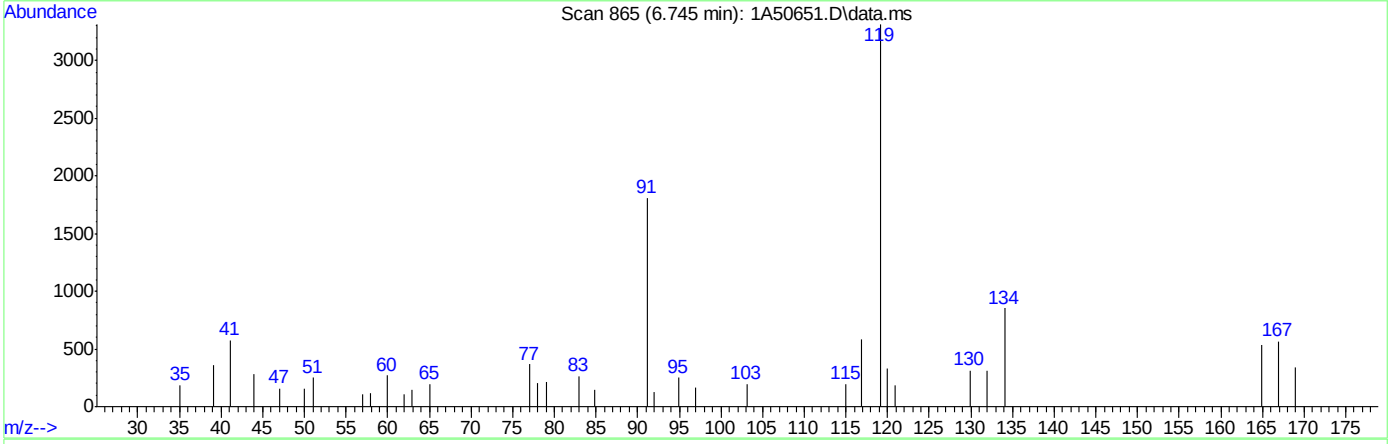
Ion	Exp%	Act%
55.00	100	100
98.00	41.70	29.59
42.00	67.70	72.05
69.00	27.00	0.00#

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50651.D
Acq On : 15 Nov 2023 6:16 am
Operator : jeniferw
Sample : IC1945-1
Misc : MS55275,V1A1945,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Nov 15 09:38:22 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50651.D\data.ms

(99) Pentachloroethane ( )

6.745min (-6.745) 0.00ug/L

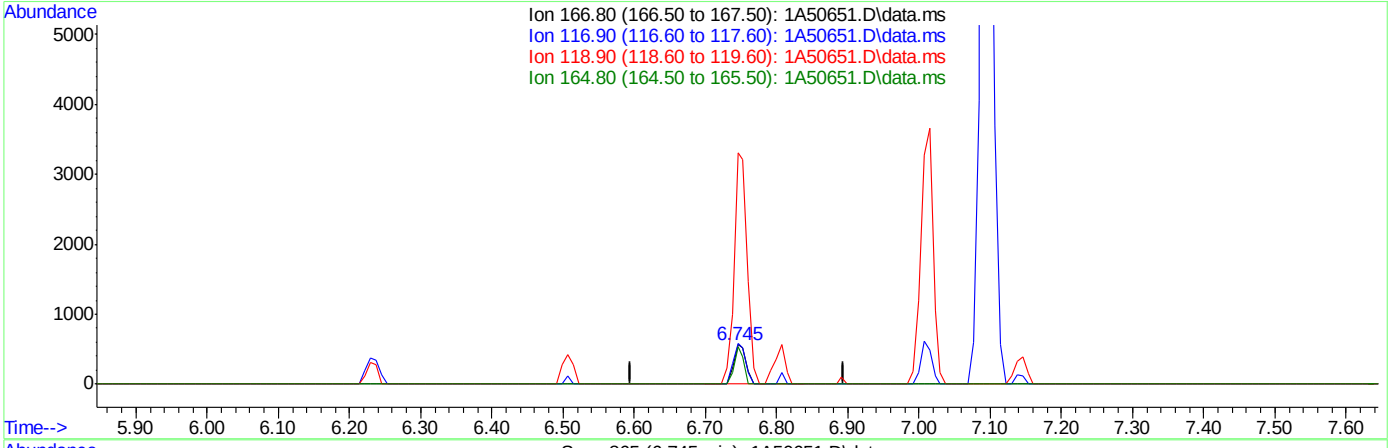
response 0

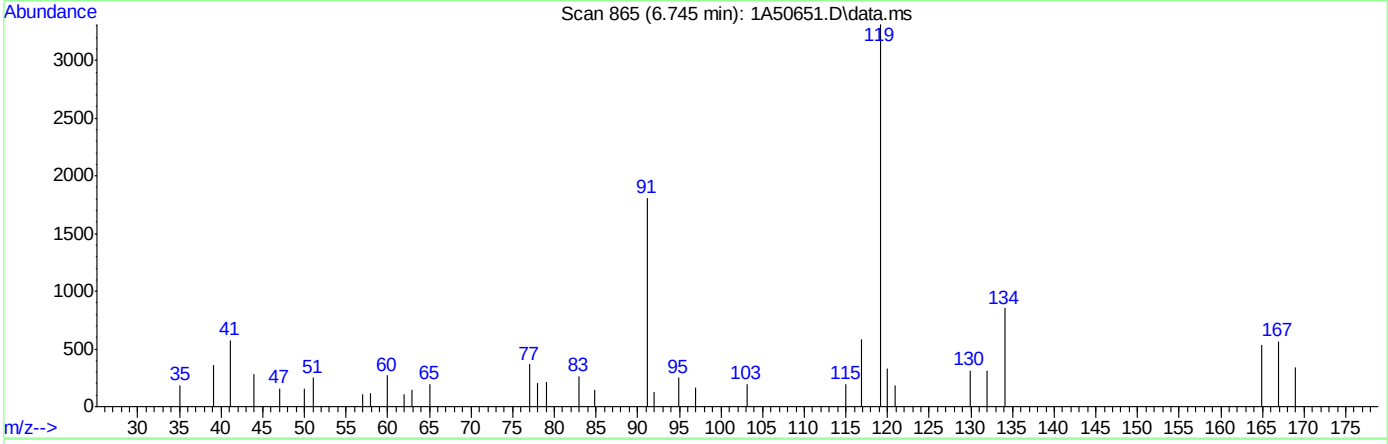
Ion	Exp%	Act%
166.80	100	0.00
116.90	96.30	0.00#
118.90	482.90	0.00#
164.80	79.60	0.00#

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50651.D
Acq On : 15 Nov 2023 6:16 am
Operator : jeniferw
Sample : IC1945-1
Misc : MS55275,V1A1945,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Nov 15 09:38:22 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50651.D\data.ms

(99) Pentachloroethane ( )

6.745min (+0.000) 1.05ug/L m

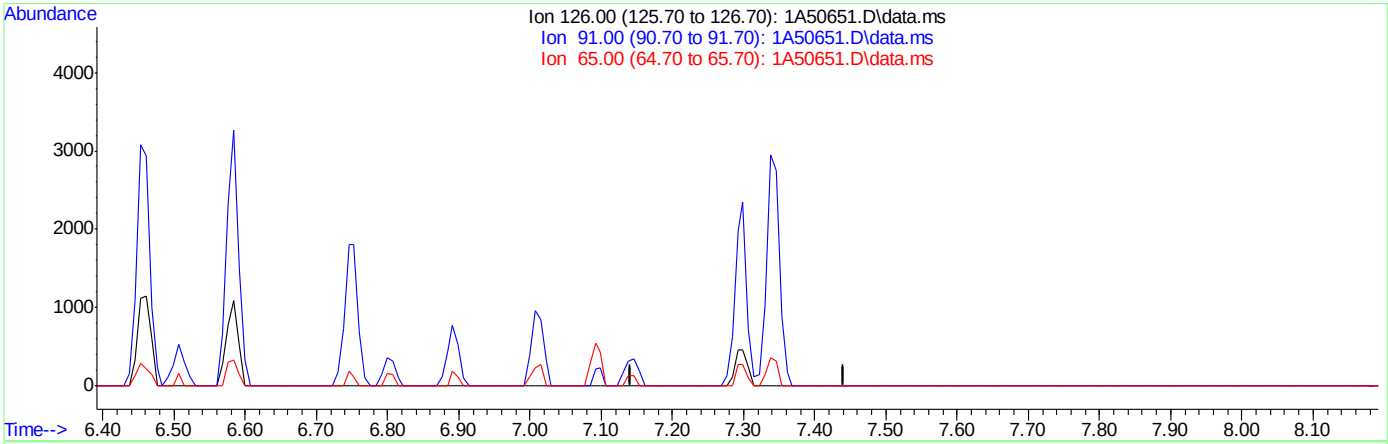
response 691

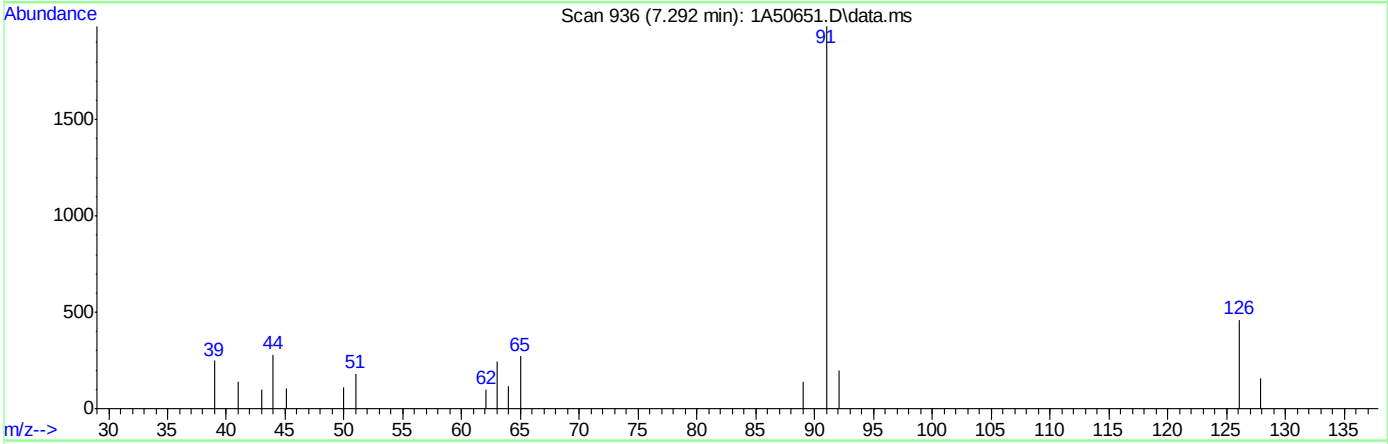
Ion	Exp%	Act%
166.80	100	100
116.90	96.30	104.26
118.90	482.90	587.41#
164.80	79.60	95.04

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50651.D
Acq On : 15 Nov 2023 6:16 am
Operator : jeniferw
Sample : IC1945-1
Misc : MS55275,V1A1945,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Nov 15 09:38:22 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50651.D\data.ms

(106) Benzyl Chloride

7.292min (-7.292) 0.00ug/L

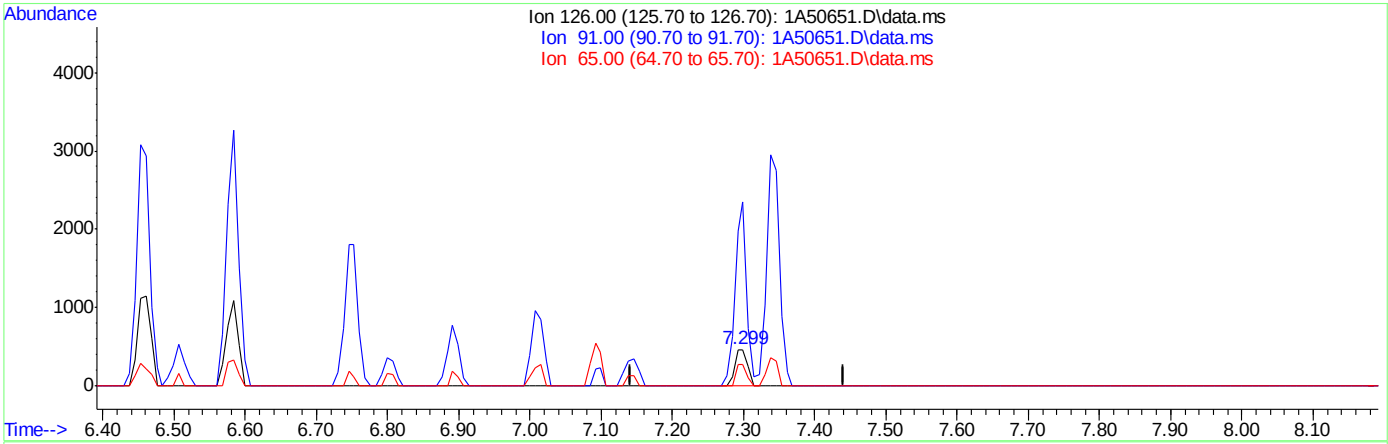
response 0

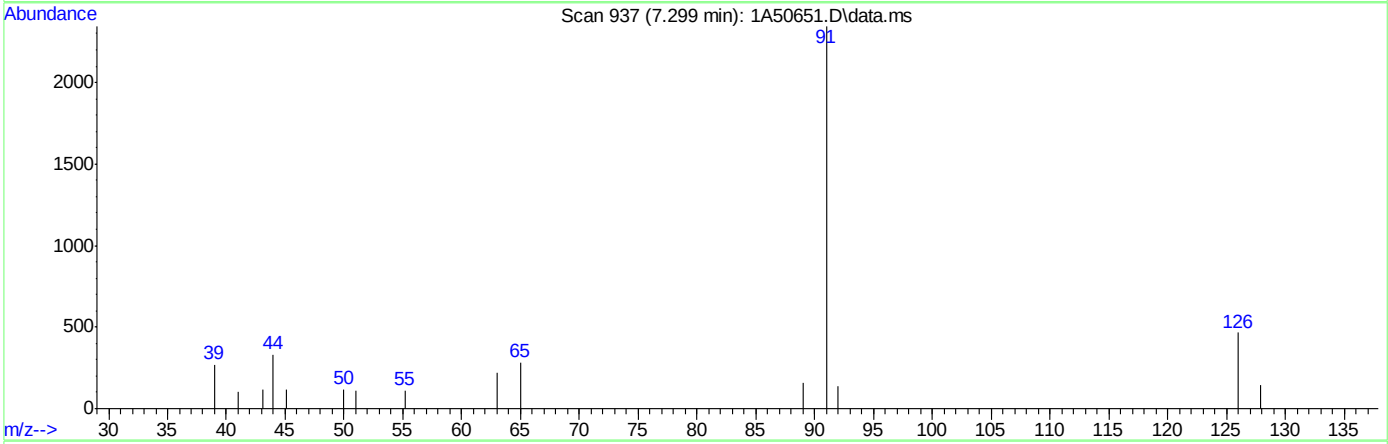
Ion	Exp%	Act%
126.00	100	0.00
91.00	460.20	0.00#
65.00	60.50	0.00#
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50651.D
Acq On : 15 Nov 2023 6:16 am
Operator : jeniferw
Sample : IC1945-1
Misc : MS55275,V1A1945,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Nov 15 09:38:22 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50651.D\data.ms

(106) Benzyl Chloride

7.299min (+0.008) 0.98ug/L m

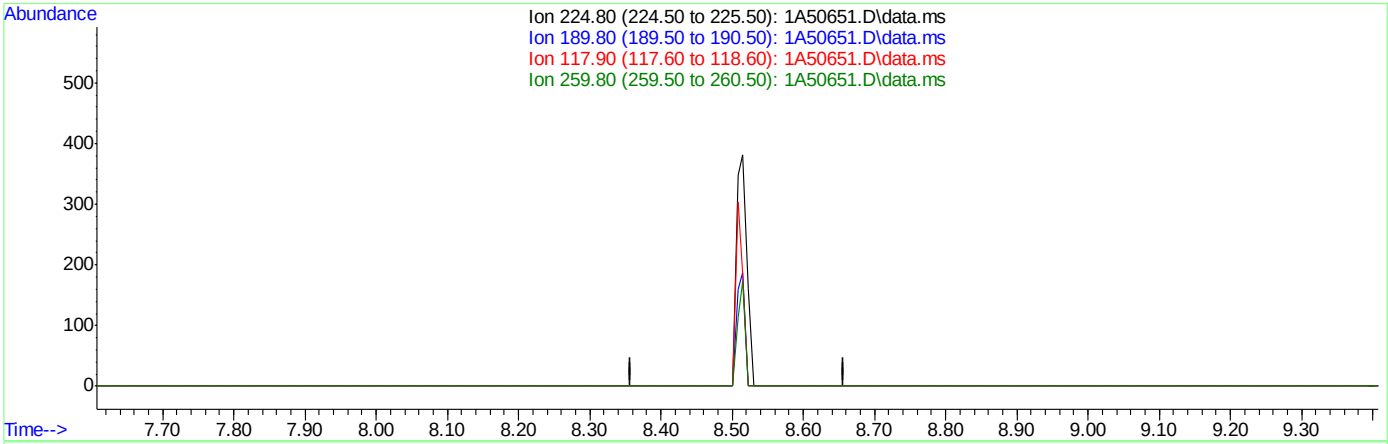
response 596

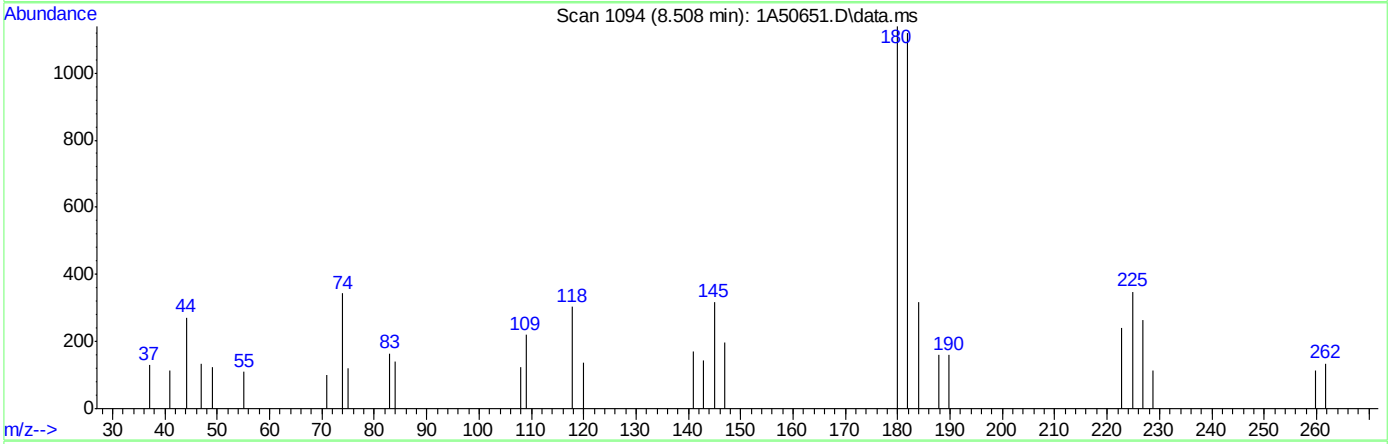
Ion	Exp%	Act%
126.00	100	100
91.00	460.20	503.00#
65.00	60.50	60.94
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50651.D
Acq On : 15 Nov 2023 6:16 am
Operator : jeniferw
Sample : IC1945-1
Misc : MS55275,V1A1945,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Nov 15 09:38:22 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50651.D\data.ms

(109) Hexachlorobutadiene ( )

8.508min (-8.508) 0.00ug/L

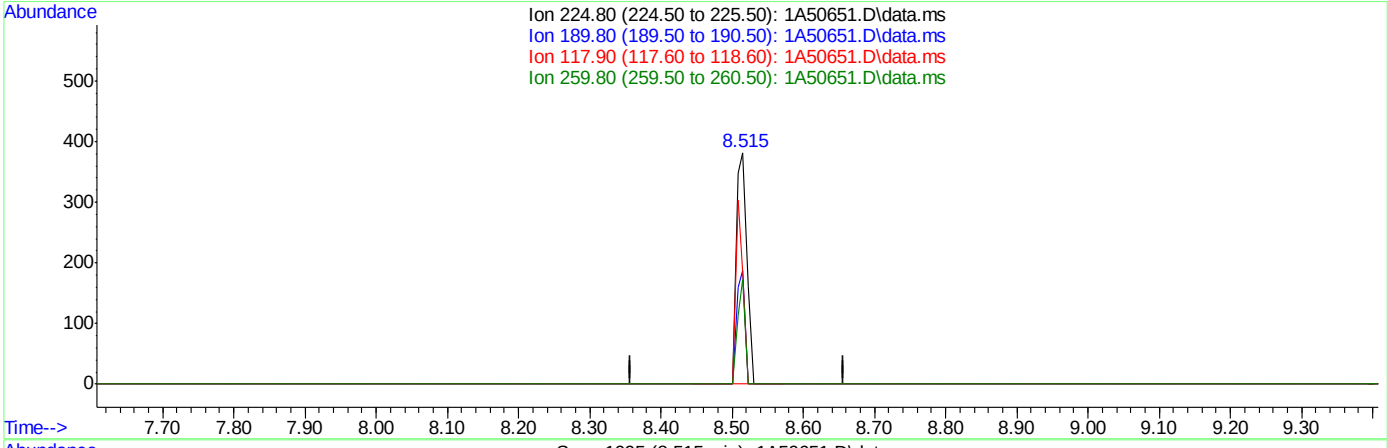
response 0

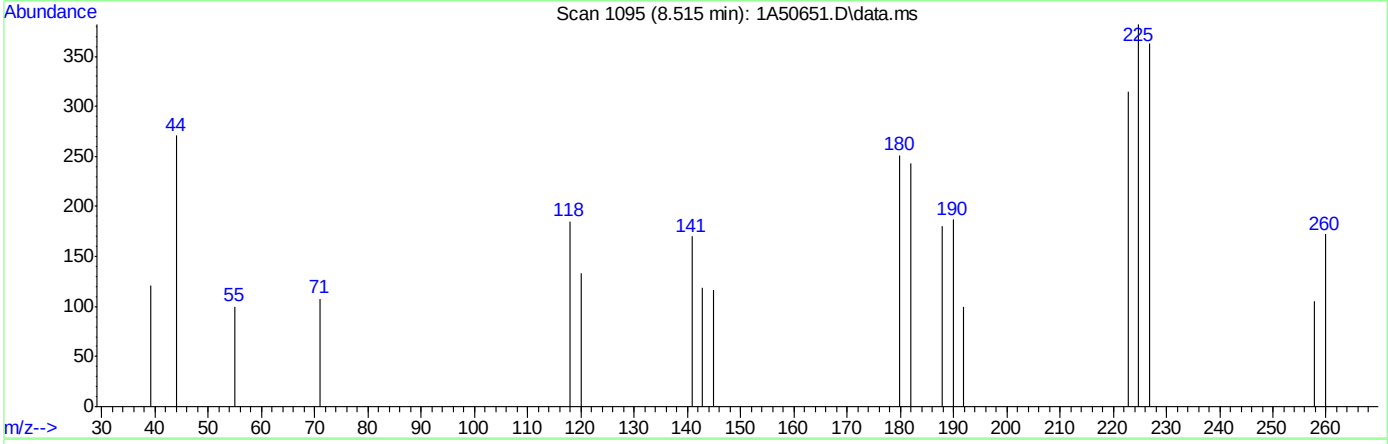
Ion	Exp%	Act%
224.80	100	0.00
189.80	44.60	0.00#
117.90	34.60	0.00#
259.80	28.20	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50651.D
Acq On : 15 Nov 2023 6:16 am
Operator : jeniferw
Sample : IC1945-1
Misc : MS55275,V1A1945,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Nov 15 09:38:22 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50651.D\data.ms

(109) Hexachlorobutadiene ( )

8.515min (+0.008) 0.74ug/L m

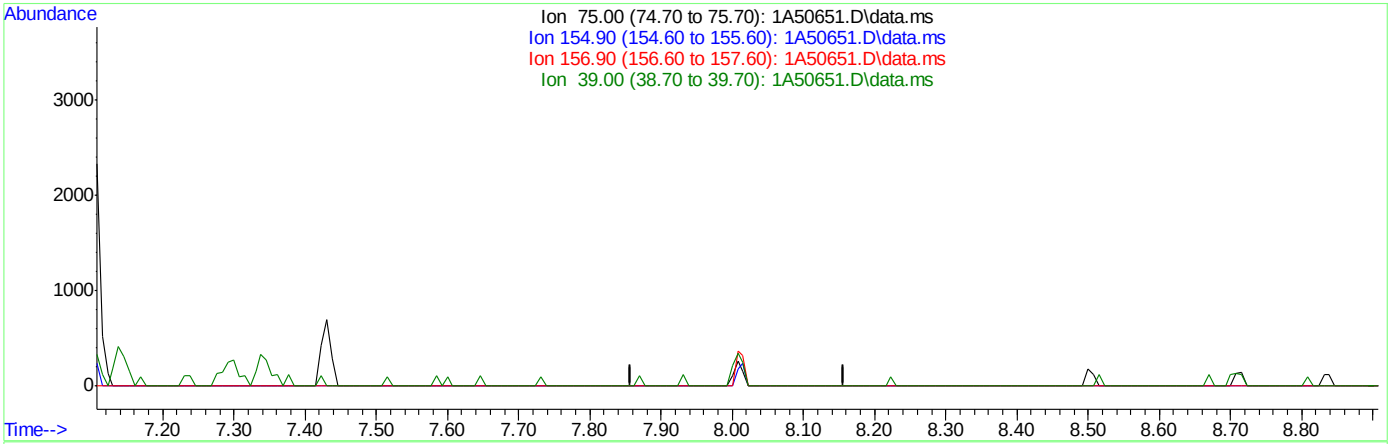
response 412

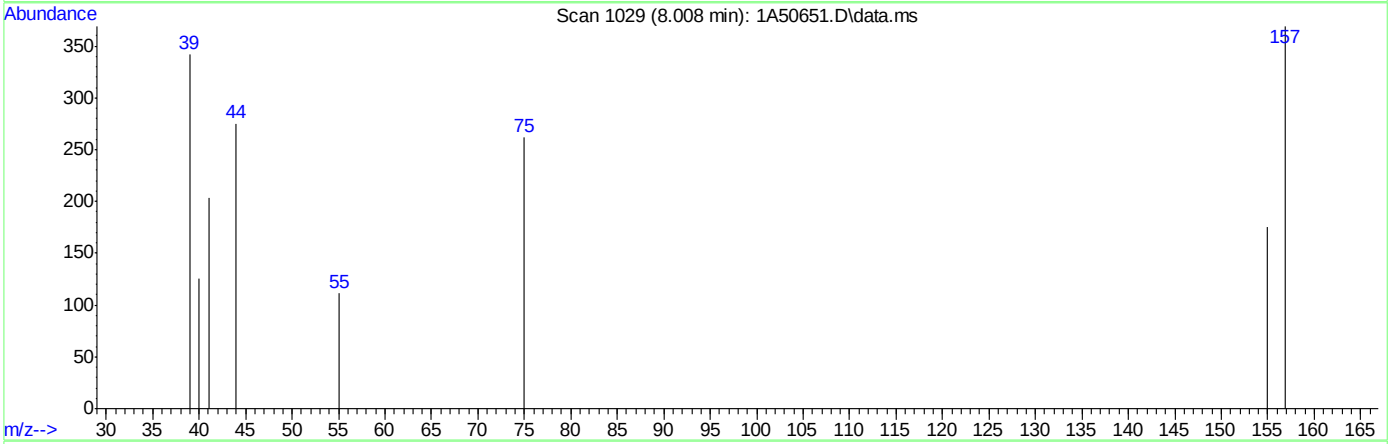
Ion	Exp%	Act%
224.80	100	100
189.80	44.60	48.95
117.90	34.60	48.43
259.80	28.20	45.03

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50651.D
Acq On : 15 Nov 2023 6:16 am
Operator : jeniferw
Sample : IC1945-1
Misc : MS55275,V1A1945,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Nov 15 09:38:22 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50651.D\data.ms

(108) 1,2-Dibromo-3-Chloropropane

8.007min (-8.007) 0.00ug/L

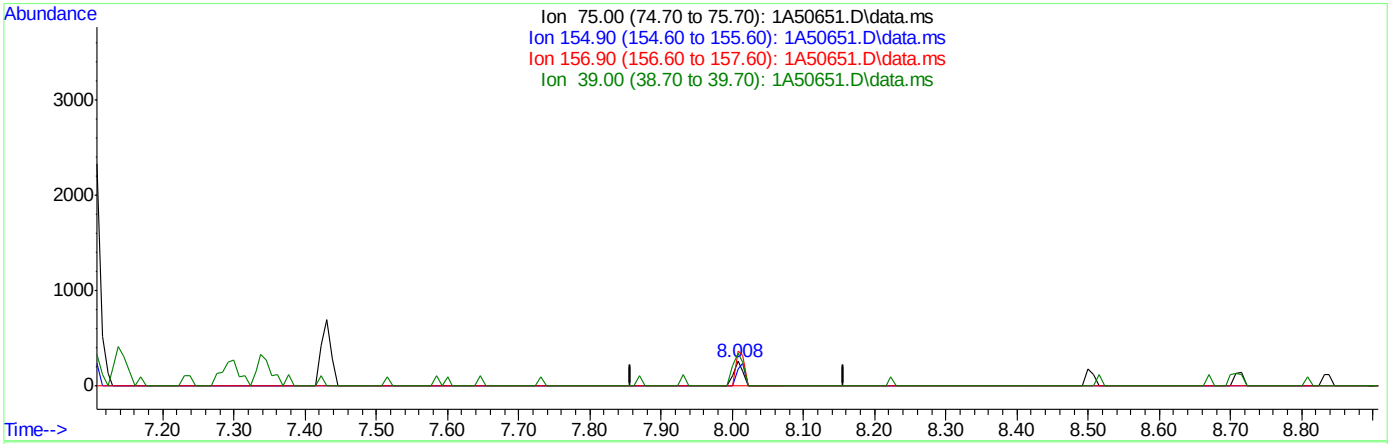
response 0

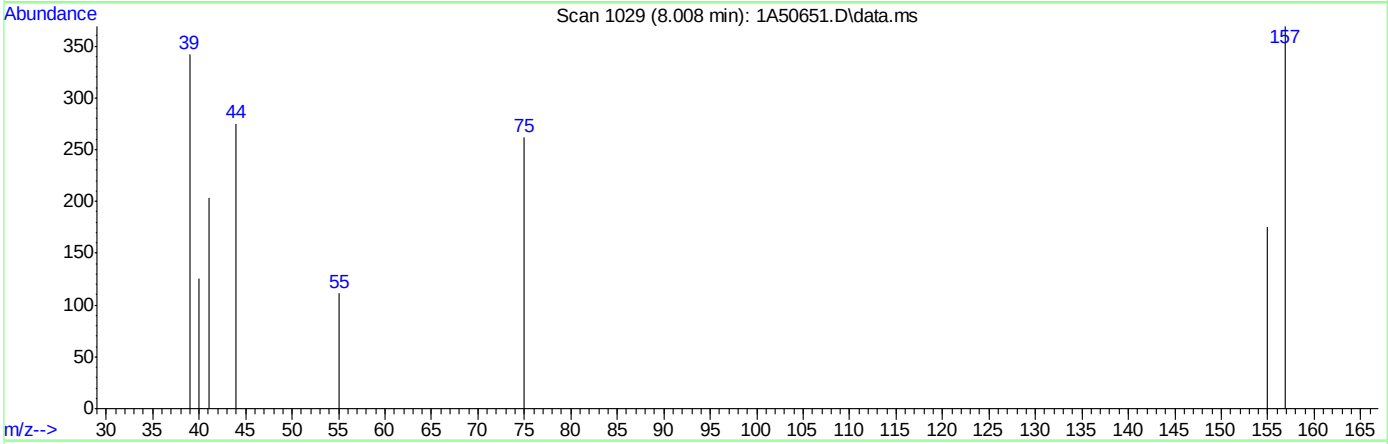
Ion	Exp%	Act%
75.00	100	0.00
154.90	86.70	0.00#
156.90	114.50	0.00#
39.00	63.50	0.00#

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50651.D
Acq On : 15 Nov 2023 6:16 am
Operator : jeniferw
Sample : IC1945-1
Misc : MS55275,V1A1945,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Nov 15 09:38:22 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50651.D\data.ms

(108) 1,2-Dibromo-3-Chloropropane

8.008min (+0.000) 0.91ug/L m

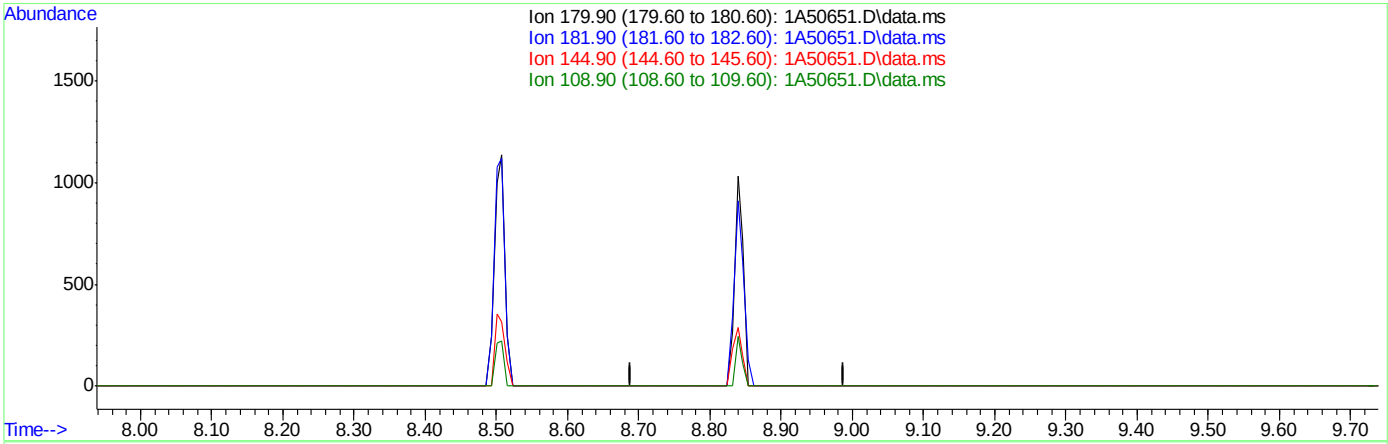
response 246

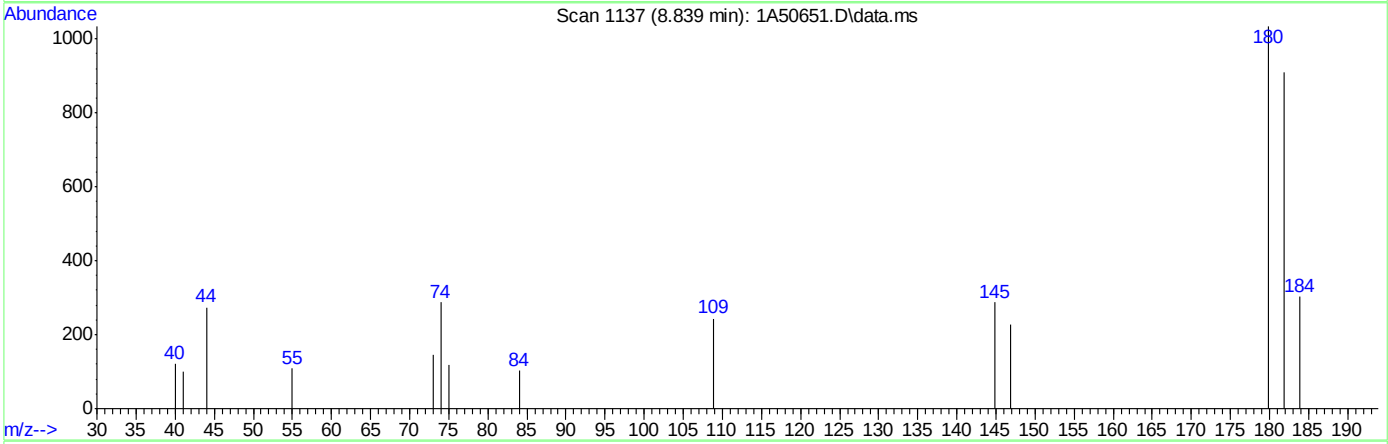
Ion	Exp%	Act%
75.00	100	100
154.90	86.70	66.79
156.90	114.50	140.84
39.00	63.50	130.53#

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50651.D
Acq On : 15 Nov 2023 6:16 am
Operator : jeniferw
Sample : IC1945-1
Misc : MS55275,V1A1945,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Nov 15 09:38:22 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50651.D\data.ms

(112) 1,2,3-Trichlorobenzene ( )

8.839min (-8.839) 0.00ug/L

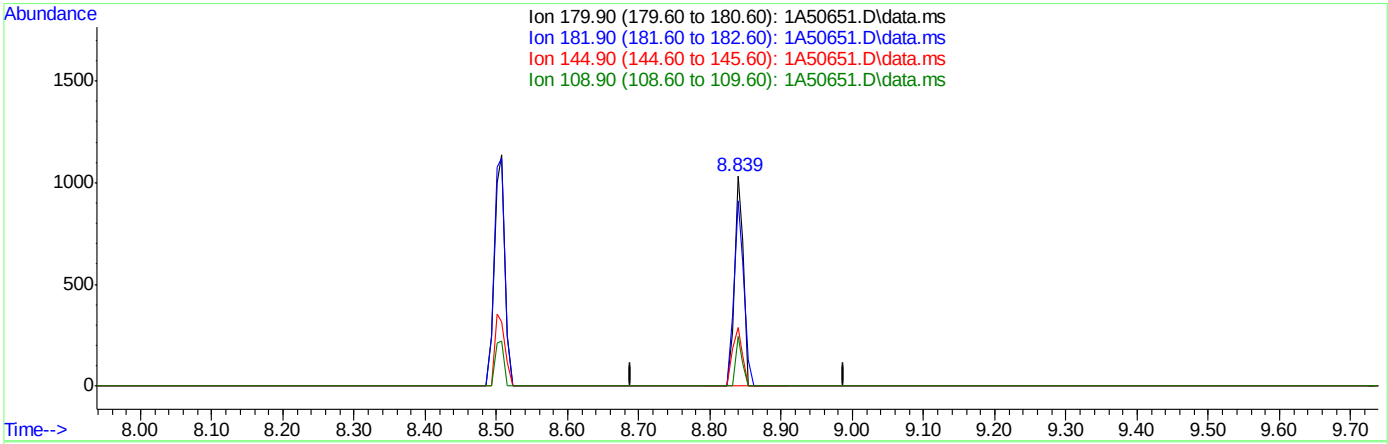
response 0

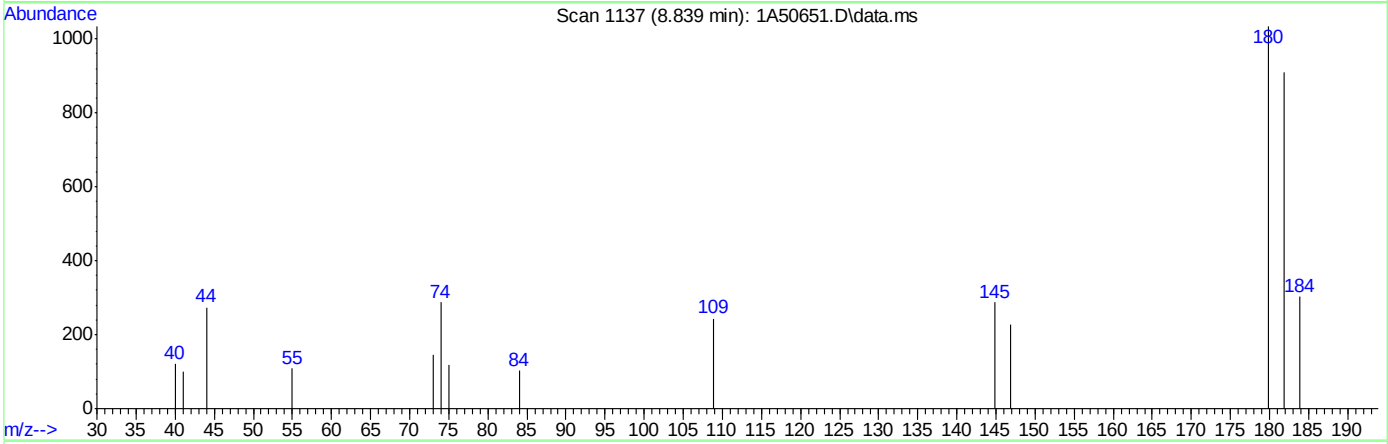
Ion	Exp%	Act%
179.90	100	0.00
181.90	97.70	0.00#
144.90	27.30	0.00
108.90	20.90	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50651.D
Acq On : 15 Nov 2023 6:16 am
Operator : jeniferw
Sample : IC1945-1
Misc : MS55275,V1A1945,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Nov 15 09:38:22 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50651.D\data.ms

(112) 1,2,3-Trichlorobenzene ( )

8.839min (+0.000) 0.93ug/L m

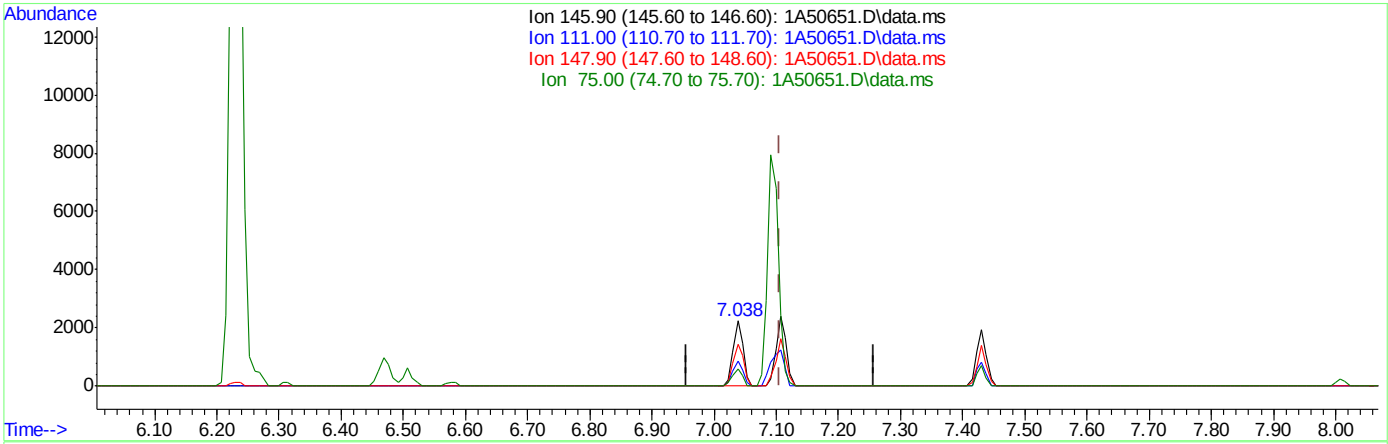
response 934

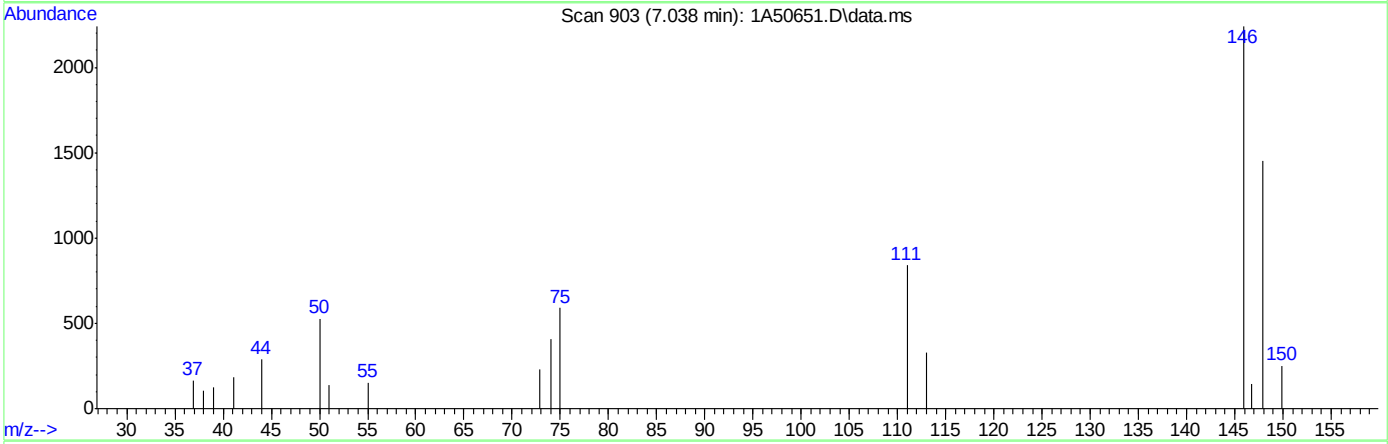
Ion	Exp%	Act%
179.90	100	100
181.90	97.70	88.10
144.90	27.30	27.85
108.90	20.90	23.50

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50651.D
Acq On : 15 Nov 2023 6:16 am
Operator : jeniferw
Sample : IC1945-1
Misc : MS55275,V1A1945,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Nov 15 09:38:22 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50651.D\data.ms

(104) 1,4-Dichlorobenzene

7.038min (-0.069) 0.96ug/L

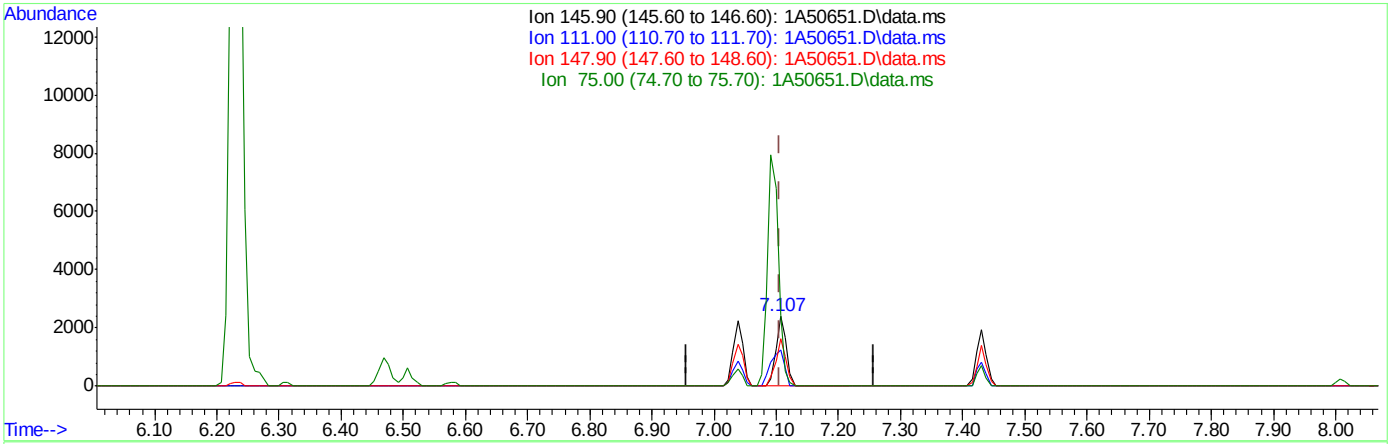
response 2503

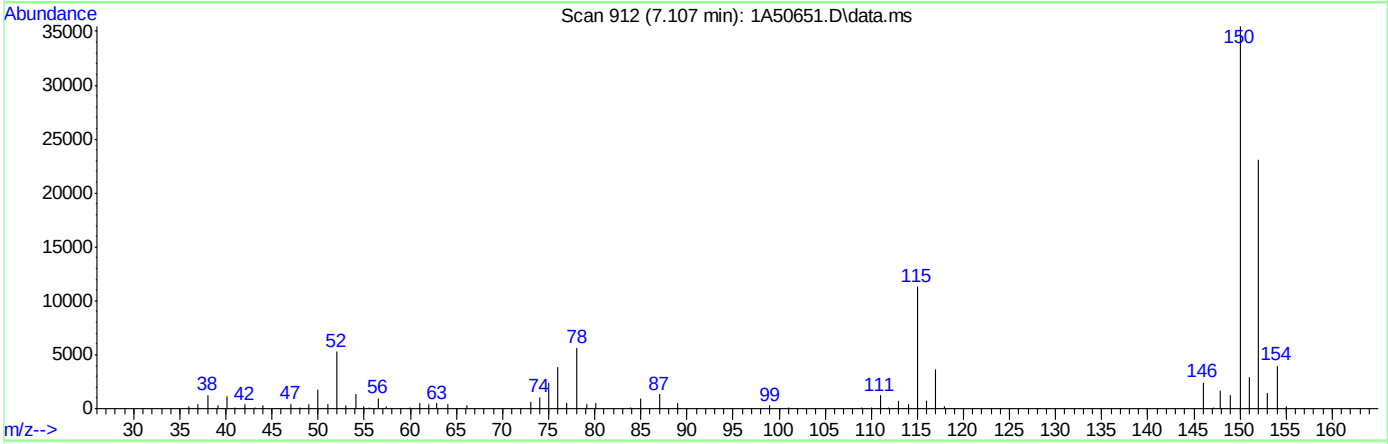
Ion	Exp%	Act%
145.90	100	100
111.00	38.00	37.59
147.90	65.40	64.87
75.00	26.40	26.29

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50651.D
Acq On : 15 Nov 2023 6:16 am
Operator : jeniferw
Sample : IC1945-1
Misc : MS55275,V1A1945,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Nov 15 09:38:22 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50651.D\data.ms

(104) 1,4-Dichlorobenzene

7.107min (+0.000) 1.07ug/L m

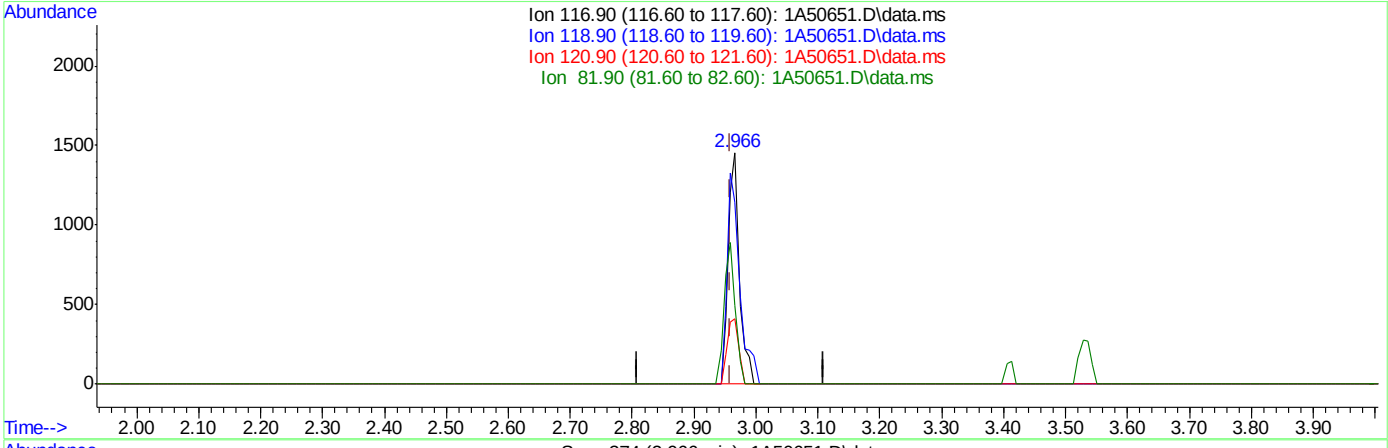
response 2780

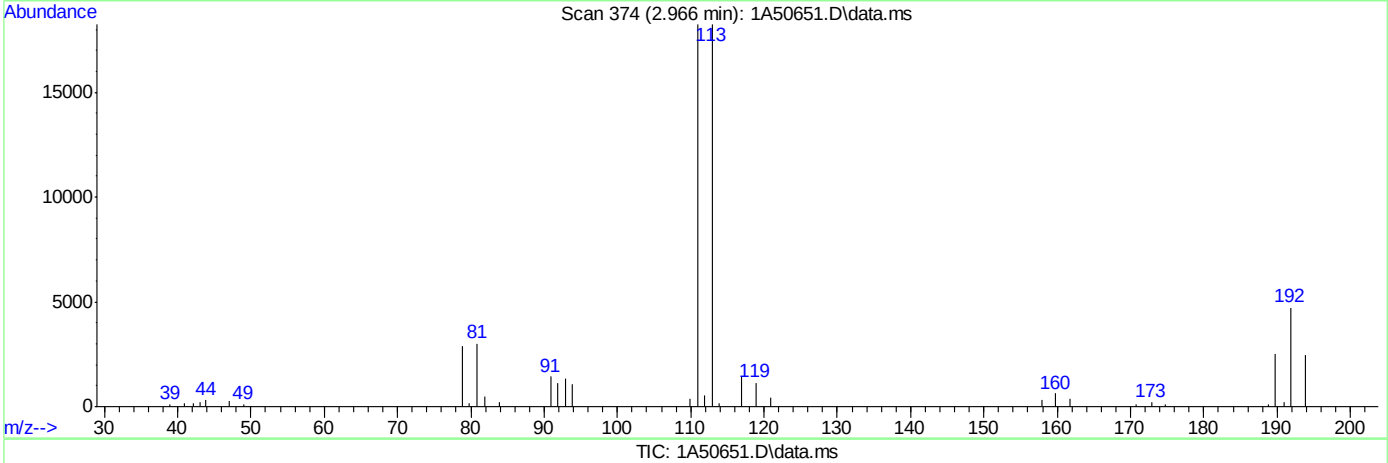
Ion	Exp%	Act%
145.90	100	100
111.00	38.00	52.00
147.90	65.40	67.36
75.00	26.40	101.08#

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50651.D
Acq On : 15 Nov 2023 6:16 am
Operator : jeniferw
Sample : IC1945-1
Misc : MS55275,V1A1945,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Nov 15 09:38:22 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50651.D\data.ms

(40) Carbon Tetrachloride ( )

2.966min (+0.007) 1.05ug/L

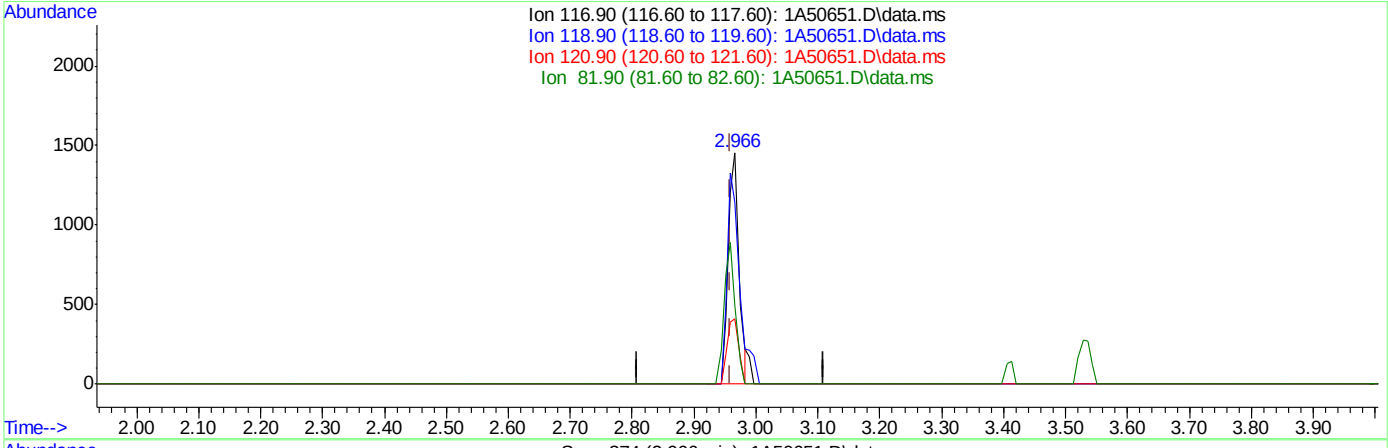
response 1823

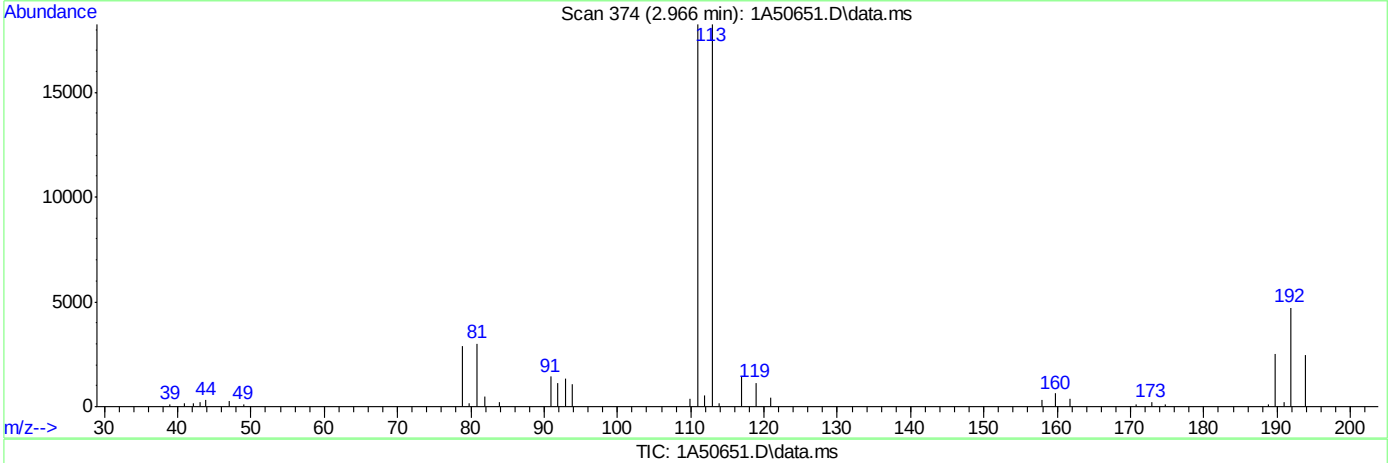
Ion	Exp%	Act%
116.90	100	100
118.90	94.50	78.37
120.90	31.10	28.43
81.90	25.40	33.93

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50651.D
Acq On : 15 Nov 2023 6:16 am
Operator : jeniferw
Sample : IC1945-1
Misc : MS55275,V1A1945,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Nov 15 09:38:22 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50651.D\data.ms

(40) Carbon Tetrachloride ( )

2.966min (+0.007) 1.01ug/L m

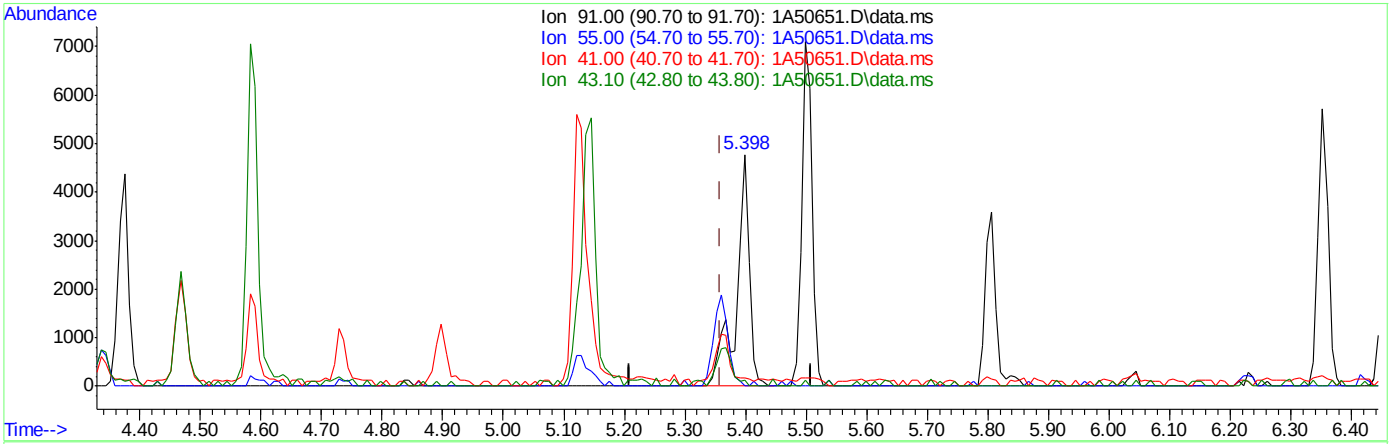
response 1743

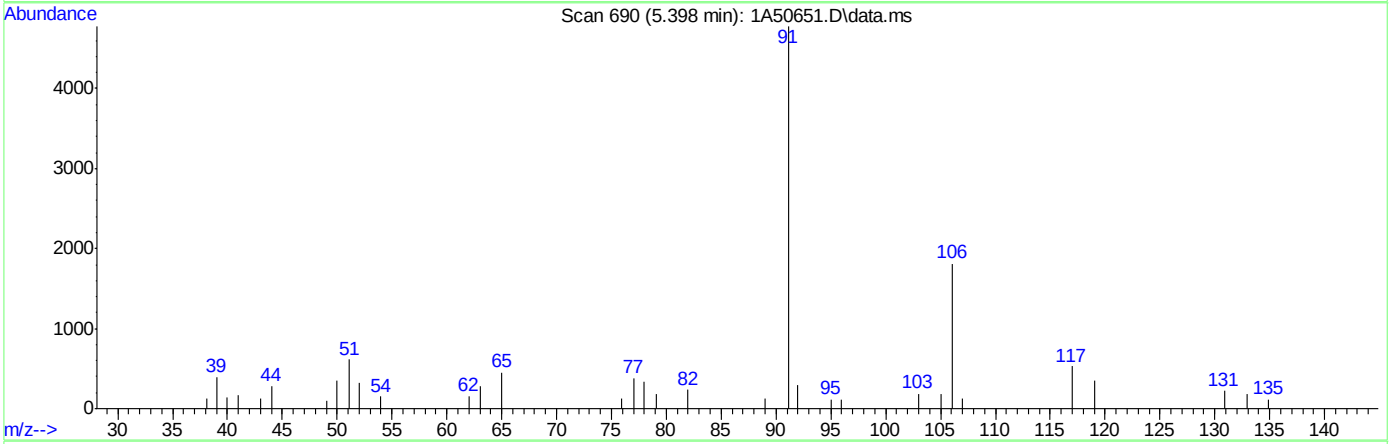
Ion	Exp%	Act%
116.90	100	100
118.90	94.50	78.37
120.90	31.10	28.43
81.90	25.40	33.93

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50651.D
Acq On : 15 Nov 2023 6:16 am
Operator : jeniferw
Sample : IC1945-1
Misc : MS55275,V1A1945,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Nov 15 09:38:22 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50651.D\data.ms

(76) 1-Chlorohexane

5.398min (+0.039) 4.06ug/L

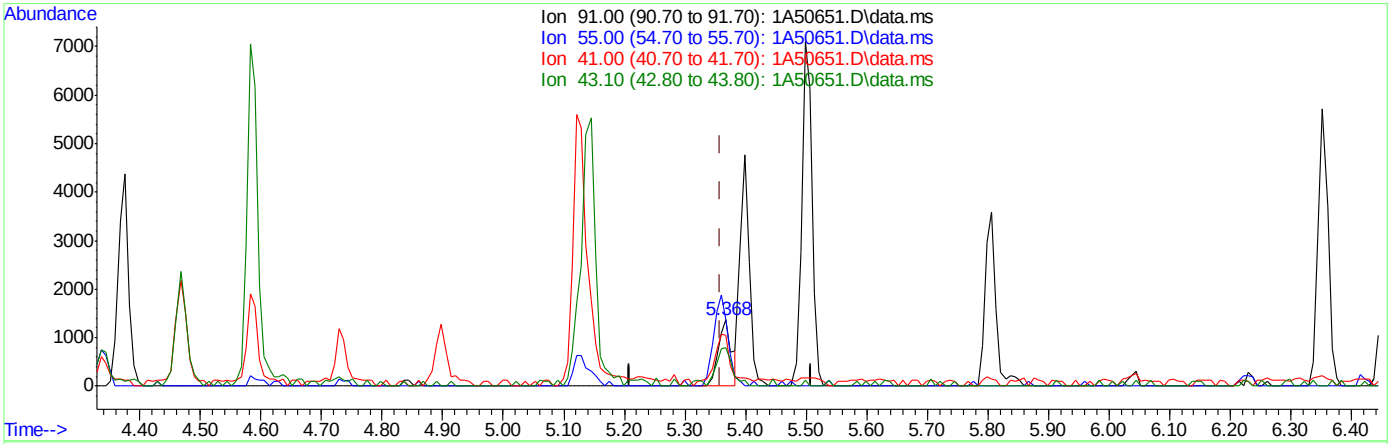
response 7271

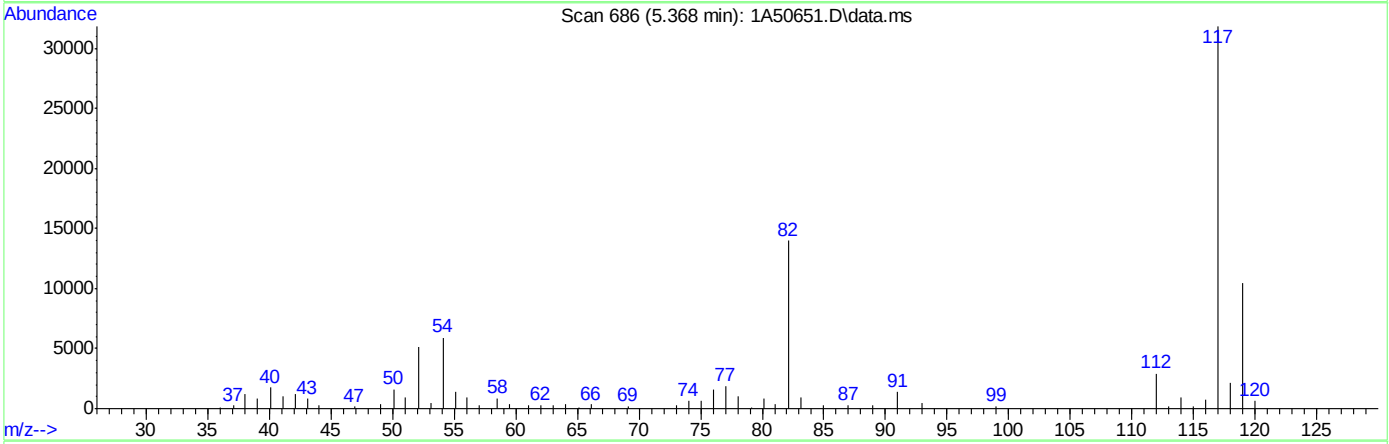
Ion	Exp%	Act%
91.00	100	100
55.00	74.60	0.00#
41.00	53.90	0.67#
43.10	42.90	0.42#

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50651.D
Acq On : 15 Nov 2023 6:16 am
Operator : jeniferw
Sample : IC1945-1
Misc : MS55275,V1A1945,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Nov 15 09:38:22 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50651.D\data.ms

(76) 1-Chlorohexane

5.368min (+0.008) 1.19ug/L m

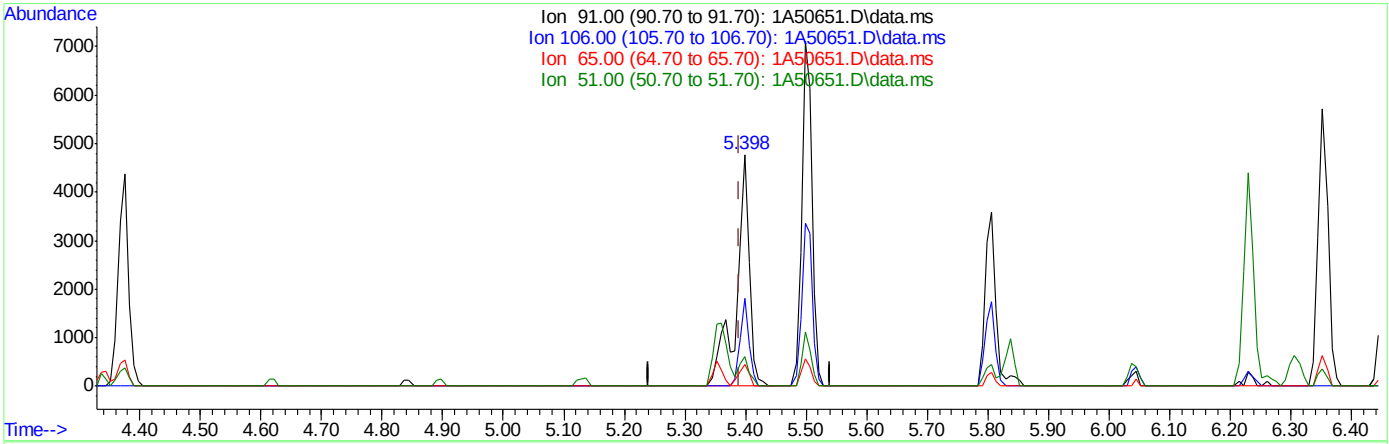
response 2138

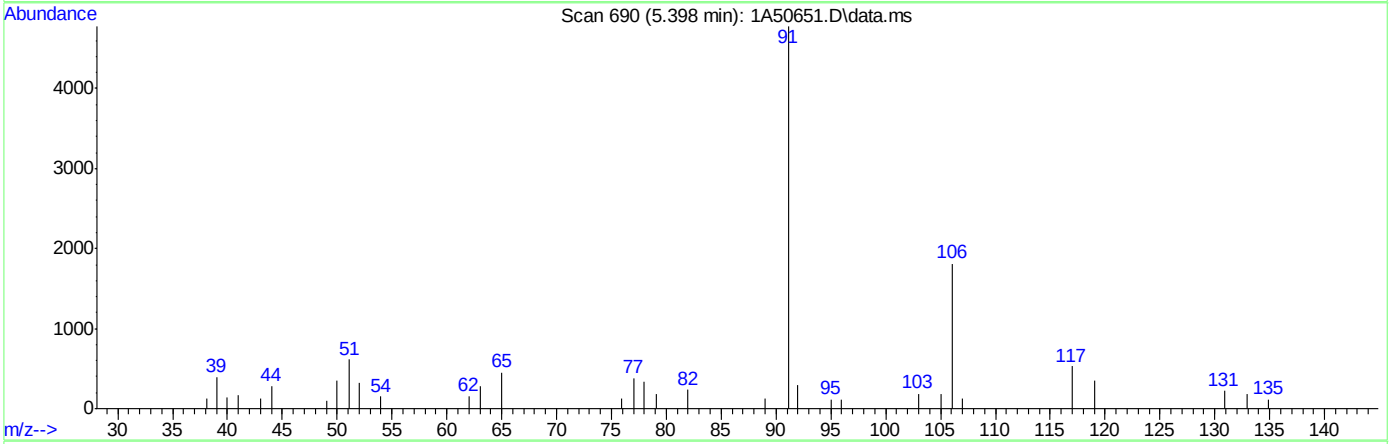
Ion	Exp%	Act%
91.00	100	100
55.00	74.60	100.59#
41.00	53.90	76.21#
43.10	42.90	58.93

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50651.D
Acq On : 15 Nov 2023 6:16 am
Operator : jeniferw
Sample : IC1945-1
Misc : MS55275,V1A1945,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Nov 15 09:38:22 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50651.D\data.ms

(77) Ethylbenzene

5.398min (+0.008) 1.31ug/L

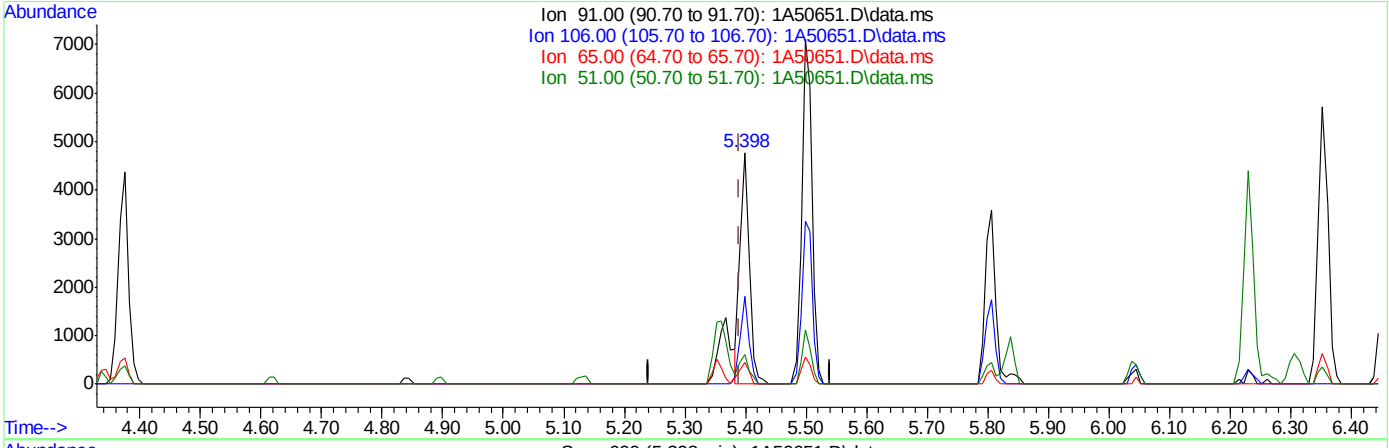
response 7271

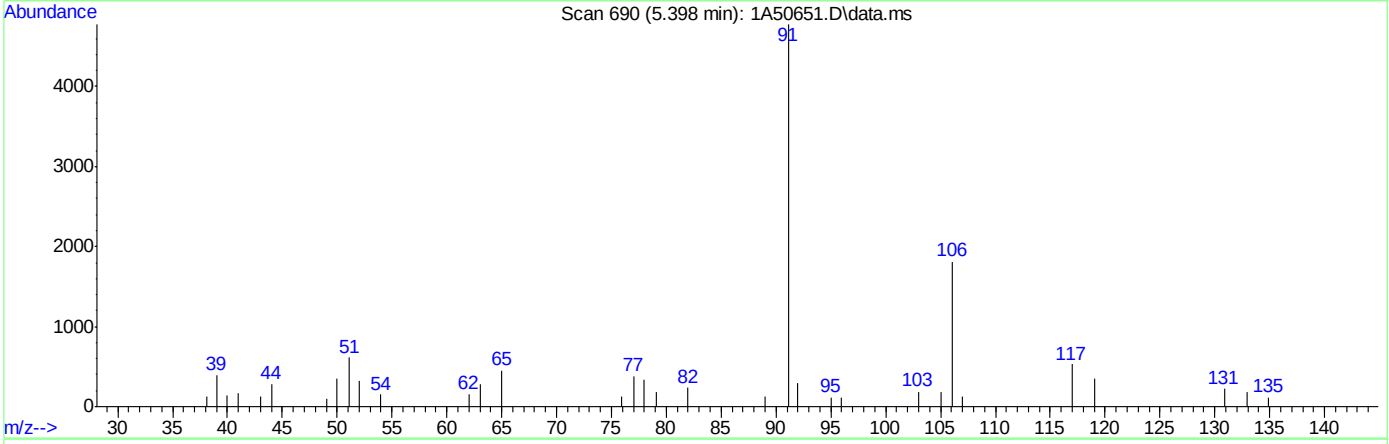
Ion	Exp%	Act%
91.00	100	100
106.00	32.00	37.88
65.00	8.30	9.40
51.00	10.10	12.77

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50651.D
Acq On : 15 Nov 2023 6:16 am
Operator : jeniferw
Sample : IC1945-1
Misc : MS55275,V1A1945,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Nov 15 09:38:22 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50651.D\data.ms

(77) Ethylbenzene

5.398min (+0.008) 0.93ug/L m

response 5132

Ion	Exp%	Act%
91.00	100	100
106.00	32.00	37.88
65.00	8.30	9.40
51.00	10.10	12.77

Manual Integrations APPROVED (compounds with "m" flag)
Karen Watson
11/15/23 15:49

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50653.D
Acq On : 15 Nov 2023 6:48 am
Operator : jeniferw
Sample : IC1985-8
Misc : MS55275,V1A1985,,,,,
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Nov 15 12:54:29 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Fluorobenzene	3.405	96	206731	50.00	ug/L		0.00
62) Chlorobenzene-d5	5.352	117	150894	50.00	ug/L		0.00
85) 1,4-Dichlorobenzene-d4	7.091	152	80043	50.00	ug/L		0.00
System Monitoring Compounds							
39) Dibromofluoromethane	2.951	113	61881	50.06	ug/L		0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 100.12%				
49) 1,2-Dichloroethane-d4	3.235	65	66110	49.13	ug/L		0.00
Spiked Amount 50.000	Range 79 - 125		Recovery = 98.26%				
63) Toluene-d8	4.336	98	199888	49.60	ug/L		0.00
Spiked Amount 50.000	Range 85 - 112		Recovery = 99.20%				
86) 4-Bromofluorobenzene	6.229	174	66083	49.28	ug/L		0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 98.56%				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	1.019	85	1670	2.02	ug/L		97
3) Chloromethane	1.127	50	2570	2.04	ug/L		97
4) 1,3-butadiene	1.181	39	2496	1.77	ug/L		92
5) Vinyl Chloride	1.173	62	2579	2.06	ug/L		96
6) Bromomethane	1.342	94	978m	2.12	ug/L		
7) Chloroethane	1.411	64	1766	2.20	ug/L		84
8) Trichlorofluoromethane	1.496	101	3350	1.99	ug/L		98
9) Ethyl Ether	1.650	59	2038	2.03	ug/L	#	82
10) Ethanol	1.704	45	1192	55.59	ug/L		94
11) 1,2-Dichlorotrifluoroe...	1.742	67	2829	2.03	ug/L		88
12) 1,1-Dichloroethene	1.758	61	3526	1.87	ug/L		98
13) Freon 113	1.781	101	1955	1.85	ug/L		92
14) Carbon Disulfide	1.781	76	6717	2.15	ug/L		84
15) Iodomethane	1.827	142	743m	1.16	ug/L		
16) Acrolein	1.904	56	3383	10.27	ug/L		97
17) Allyl chloride	1.989	41	3685	2.08	ug/L		92
18) Methylene Chloride	2.043	49	5831	3.40	ug/L		94
19) Acetone	2.050	43	5990	12.77	ug/L		97
20) Methyl acetate	2.120	43	14791	10.04	ug/L		95
21) trans-1,2-Dichloroethene	2.135	61	3739	2.00	ug/L		91
22) Hexane	2.196	56	2439	1.88	ug/L	#	90
23) Methyl Tert Butyl Ether	2.189	73	6948	2.01	ug/L		88
24) Acetonitrile	2.273	41	5486	30.27	ug/L		98
25) Tert Butyl Alcohol	2.204	59	5352	20.82	ug/L	#	51
26) Di-isopropyl ether	2.389	45	8535	1.94	ug/L		94
27) Chloroprene	2.435	53	9805	1.88	ug/L		95
28) 1,1-Dichloroethane	2.443	63	4812	1.98	ug/L		96
29) Acrylonitrile	2.435	52	6217	9.91	ug/L		98
30) ETBE	2.581	59	7567	1.87	ug/L		95
31) Vinyl acetate	2.558	43	30432	9.87	ug/L		97
32) cis-1,2-Dichloroethene	2.720	96	2698	2.00	ug/L		98
33) 2,2-Dichloropropane	2.781	77	3398	2.03	ug/L		96
34) Bromochloromethane	2.820	128	1396	2.03	ug/L		95
35) Cyclohexane	2.858	56	4474	1.84	ug/L	#	87

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50653.D
Acq On : 15 Nov 2023 6:48 am
Operator : jeniferw
Sample : IC1985-8
Misc : MS55275,V1A1985,,,,,
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Nov 15 12:54:29 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units		Dev(Min)
36) Chloroform	2.858	83	4356	1.91 ug/L		88
37) Ethyl acetate	2.912	43	17168	9.97 ug/L		98
38) Tetrahydrofuran	2.943	42	1471m	2.12 ug/L		
40) Carbon Tetrachloride	2.958	117	3094m	1.82 ug/L		
41) 1,1,1-Trichloroethane	2.982	97	3615	1.95 ug/L		88
42) 2-Butanone	3.005	43	8971	9.71 ug/L		95
43) 1,1-Dichloropropene	3.051	75	3192	1.99 ug/L		90
44) tert-Butyl formate	3.097	59	9842	9.11 ug/L		89
45) Propionitrile	3.143	54	5616	22.86 ug/L		97
46) Methacrylonitrile	3.166	41	20475	19.23 ug/L		98
47) Benzene	3.182	78	9336	1.94 ug/L		87
48) TAME	3.251	73	6359	1.88 ug/L	#	73
50) 1,2-Dichloroethane	3.274	62	3507	1.91 ug/L		90
51) Isobutyl Alcohol	3.259	43	6459	42.04 ug/L		94
52) Tert Amyl Alcohol	3.320	59	4319	20.59 ug/L		90
53) Trichloroethene	3.505	95	2617	1.93 ug/L		91
54) Methylcyclohexane	3.528	83	3904	1.87 ug/L		93
55) Dibromomethane	3.736	93	1627	1.86 ug/L		86
56) 1,2-Dichloropropane	3.790	63	2644	1.93 ug/L		93
57) Bromodichloromethane	3.828	83	3308	1.99 ug/L		93
58) Methyl methacrylate	3.920	41	2791	1.82 ug/L		92
59) 1,4-Dioxane	3.936	88	655m	35.21 ug/L		
60) 2-Chloroethyl vinyl ether	4.167	63	4362	5.68 ug/L		95
61) cis-1,3-Dichloropropene	4.205	75	3698	1.86 ug/L		83
64) Toluene	4.367	91	10167	1.98 ug/L		95
65) 2-Nitropropane	4.467	41	5418	10.77 ug/L		96
66) 4-Methyl-2-pentanone	4.582	43	18566	9.91 ug/L		94
67) trans-1,3-Dichloropropene	4.613	75	3241	1.76 ug/L		94
68) Tetrachloroethene	4.629	166	2590	1.83 ug/L		91
69) Ethyl methacrylate	4.729	69	2828	1.84 ug/L		85
70) 1,1,2-Trichloroethane	4.713	83	2044	1.97 ug/L		98
71) Dibromochloromethane	4.836	129	2439	1.83 ug/L		96
72) 1,3-Dichloropropane	4.890	76	3575	1.87 ug/L		85
73) 1,2-Dibromoethane	4.998	107	2511	1.91 ug/L		91
74) 3,3-Dimethyl-1-Butanol	5.121	57	22556	88.11 ug/L		96
75) 2-hexanone	5.136	43	17617	9.52 ug/L		79
76) 1-Chlorohexane	5.360	91	3497m	1.96 ug/L		
77) Ethylbenzene	5.398	91	10668	1.93 ug/L		97
78) Chlorobenzene	5.367	112	6627	1.98 ug/L		94
79) 1,1,1,2-Tetrachloroethane	5.406	131	2285	1.85 ug/L		84
80) m,p-Xylene	5.498	91	17408	3.97 ug/L		96
81) o-Xylene	5.798	91	9591	2.06 ug/L		98
82) Styrene	5.837	104	6919	1.97 ug/L		94
83) Bromoform	5.837	173	1664	1.89 ug/L		96
84) Isopropylbenzene	6.037	105	10632	1.96 ug/L		99
87) cis-1,4-Dichloro-2-butene	6.260	53	961m	2.09 ug/L		
88) n-Propylbenzene	6.353	91	12518	1.94 ug/L		98
89) Bromobenzene	6.306	156	2733	1.90 ug/L		85
90) 1,1,2,2-Tetrachloroethane	6.376	83	3351	1.97 ug/L		92
91) 1,3,5-Trimethylbenzene	6.506	105	8559	1.93 ug/L		95

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50653.D
Acq On : 15 Nov 2023 6:48 am
Operator : jeniferw
Sample : IC1985-8
Misc : MS55275,V1A1985,,,,,
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Nov 15 12:54:29 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration

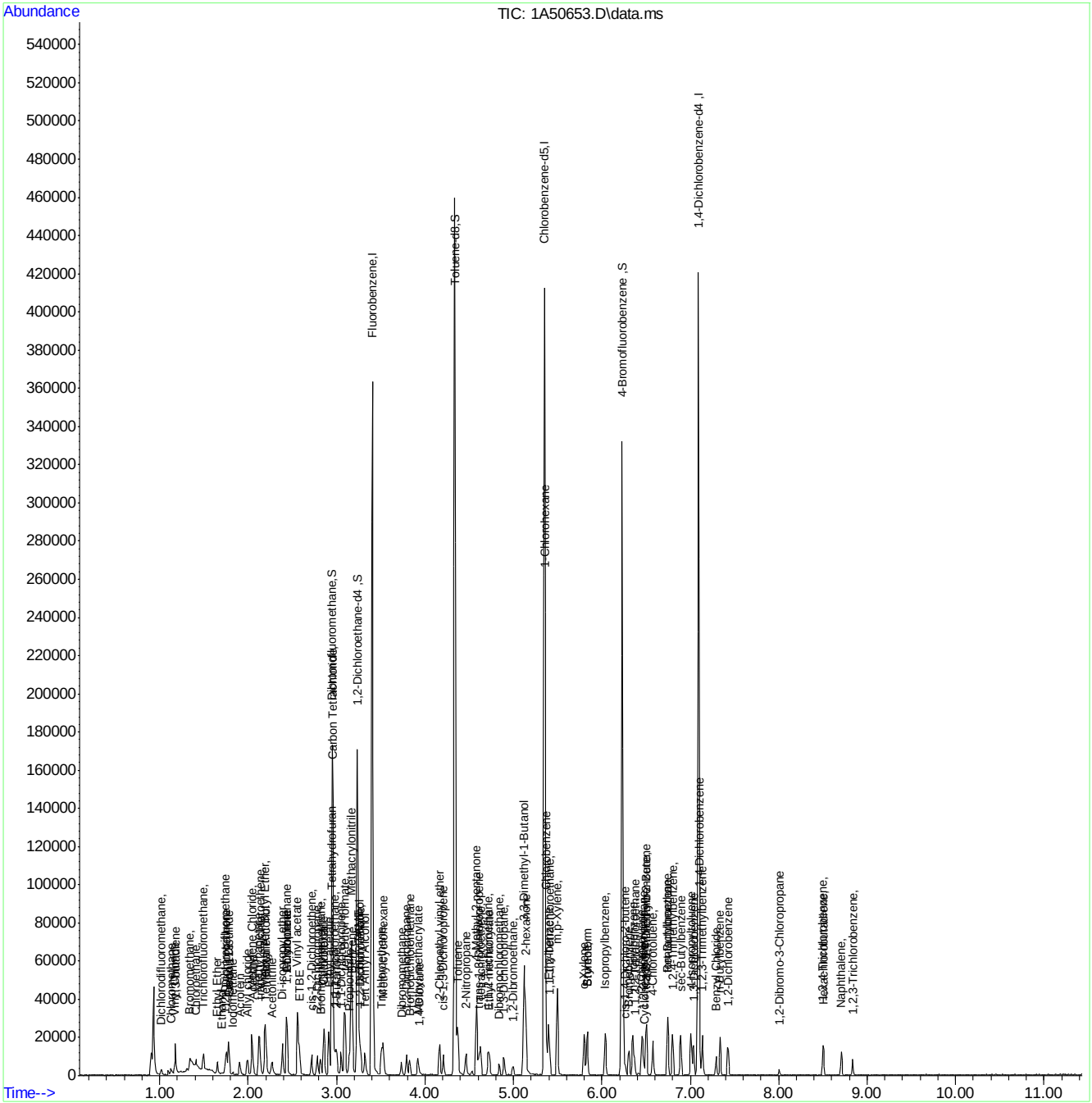
	Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
92)	2-Chlorotoluene	6.453	91	7248	1.92	ug/L		96
93)	trans-1,4-Dichloro-2-B...	6.499	53	1236	1.91	ug/L	#	65
94)	1,2,3-Trichloropropane	6.468	110	855m	1.81	ug/L		
95)	Cyclohexanone	6.483	55	880m	9.05	ug/L		
96)	4-Chlorotoluene	6.576	91	7788	1.99	ug/L		92
97)	tert-Butylbenzene	6.745	91	5096	2.04	ug/L		90
98)	1,2,4-Trimethylbenzene	6.799	105	8319	1.94	ug/L		96
99)	Pentachloroethane	6.745	167	1297	1.95	ug/L	#	62
100)	sec-Butylbenzene	6.891	105	10995	1.95	ug/L		97
101)	4-Isopropyltoluene	7.007	119	9228	1.89	ug/L		95
102)	1,3-Dichlorobenzene	7.037	146	5188	1.97	ug/L		95
103)	1,2,3-Trimethylbenzene	7.138	105	8560	1.99	ug/L		99
104)	1,4-Dichlorobenzene	7.107	146	5214	1.99	ug/L		88
105)	n-Butylbenzene	7.338	92	4278	1.96	ug/L		88
106)	Benzyl Chloride	7.291	126	1099m	1.79	ug/L		
107)	1,2-Dichlorobenzene	7.430	146	4591	1.96	ug/L		99
108)	1,2-Dibromo-3-Chloropr...	8.007	75	482m	1.77	ug/L		
109)	Hexachlorobutadiene	8.508	225	995m	1.78	ug/L		
110)	1,2,4-Trichlorobenzene	8.500	180	2551	1.98	ug/L		94
111)	Naphthalene	8.708	128	6218	1.88	ug/L		99
112)	1,2,3-Trichlorobenzene	8.838	180	1937	1.90	ug/L		93

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50653.D
Acq On : 15 Nov 2023 6:48 am
Operator : jeniferw
Sample : IC1985-8
Misc : MS55275,V1A1985,,,,,
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Nov 15 12:54:29 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration



Manual Integration Approval Summary

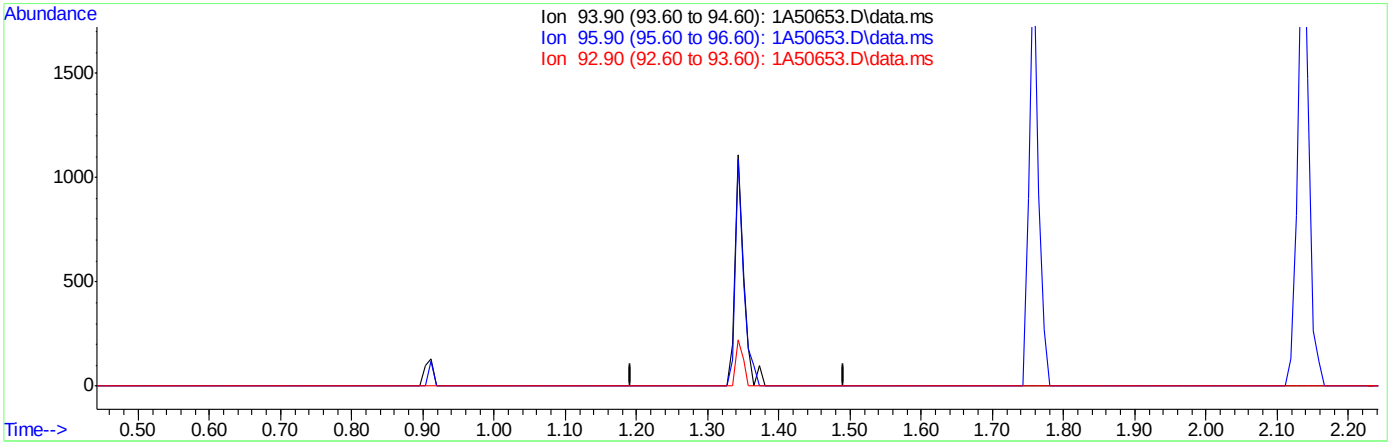
Sample Number: V1A1985-IC1985
Lab FileID: 1A50653.D
Injection Time: 11/15/23 06:48
Method: SW846 8260D
Analyst approved: 11/15/23 14:32 Jenifer Willis
Supervisor approved: 11/15/23 15:49 Karen Watson

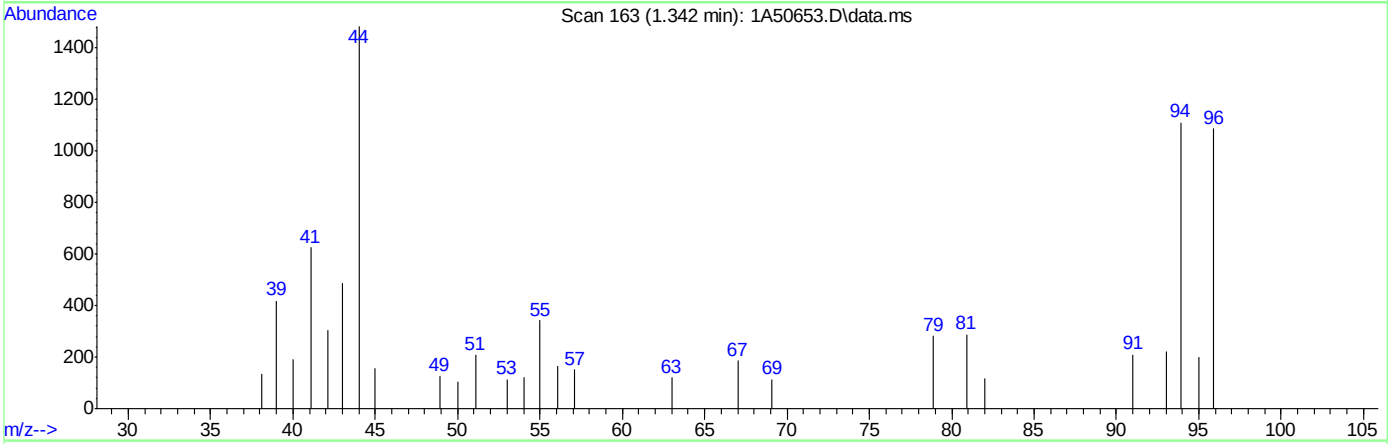
Parameter	CAS	Sig#	R.T. (min.)	Reason
Methyl Bromide	74-83-9		1.34	Missed peak
Methyl Iodide	74-88-4		1.83	Missed peak
Tetrahydrofuran	109-99-9		2.94	Missed peak
Carbon Tetrachloride	56-23-5		2.96	Overlapping peak
1,4-Dioxane	123-91-1		3.94	Missed peak
1-Chlorohexane	544-10-5		5.36	Poorly defined baseline
cis-1,4-Dichloro-2-Butene	1476-11-5		6.26	Missed peak
1,2,3-Trichloropropane	96-18-4		6.47	Missed peak
Cyclohexanone	108-94-1		6.48	Missed peak
Benzyl Chloride	100-44-7		7.29	Missed peak
1,2-Dibromo-3-chloropropane	96-12-8		8.01	Missed peak
Hexachlorobutadiene	87-68-3		8.51	Missed peak

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50653.D
Acq On : 15 Nov 2023 6:48 am
Operator : jeniferw
Sample : IC1945-8
Misc : MS55276,V2A1790,,,,,
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Nov 15 09:38:24 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50653.D\data.ms

(6) Bromomethane ( )

1.342min (-1.342) 0.00ug/L

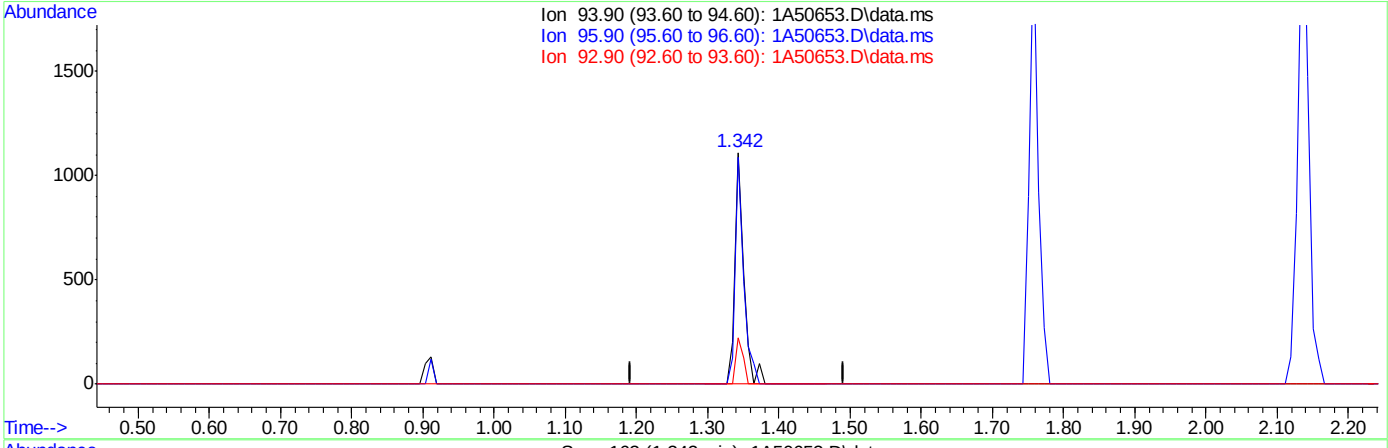
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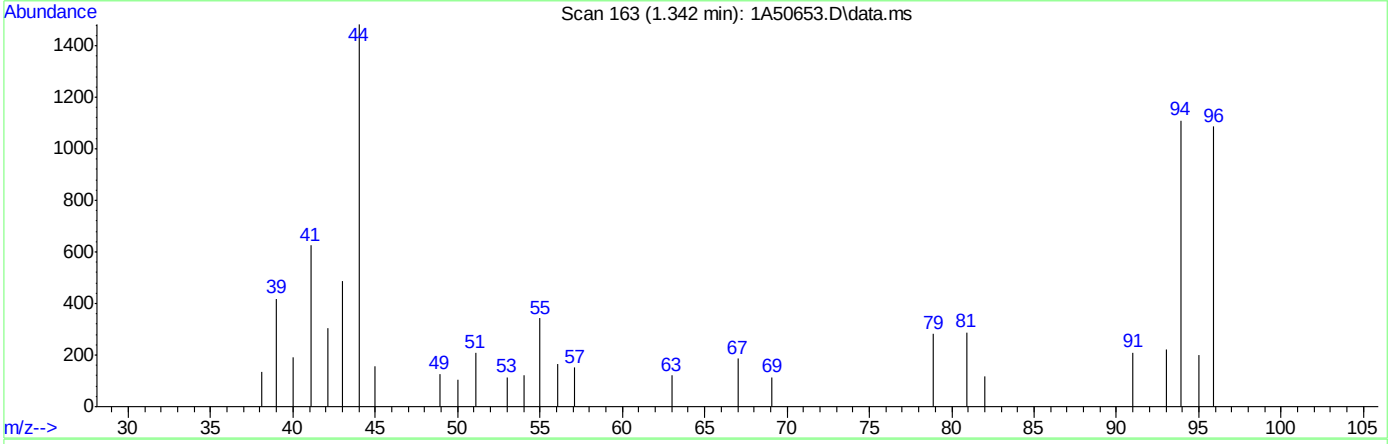
Ion	Exp%	Act%
93.90	100	0.00
95.90	88.70	0.00#
92.90	19.40	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50653.D
Acq On : 15 Nov 2023 6:48 am
Operator : jeniferw
Sample : IC1945-8
Misc : MS55276,V2A1790,,,,,
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Nov 15 09:38:24 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50653.D\data.ms

(6) Bromomethane ( )

1.342min (+0.000) 2.12ug/L m

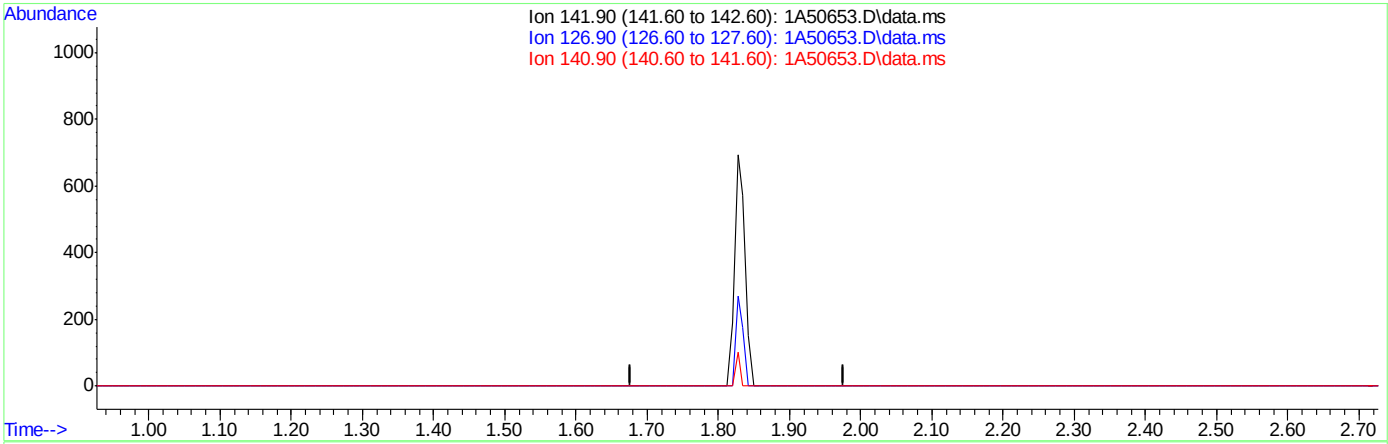
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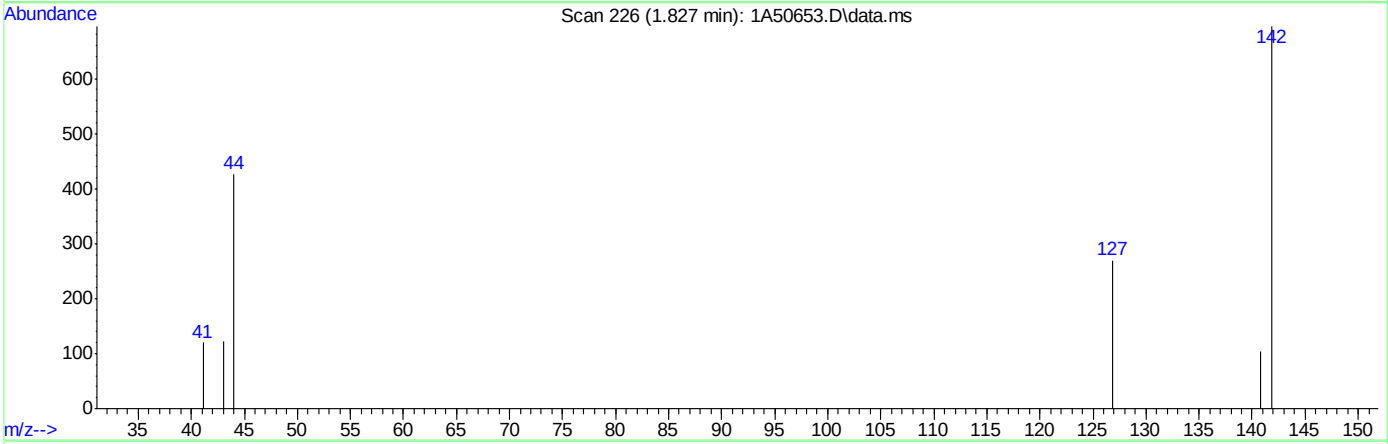
Ion	Exp%	Act%
93.90	100	100
95.90	88.70	97.84
92.90	19.40	20.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50653.D
Acq On : 15 Nov 2023 6:48 am
Operator : jeniferw
Sample : IC1945-8
Misc : MS55276,V2A1790,,,,,
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Nov 15 09:38:24 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50653.D\data.ms

(15) Iodomethane

1.827min (-1.827) 0.00ug/L

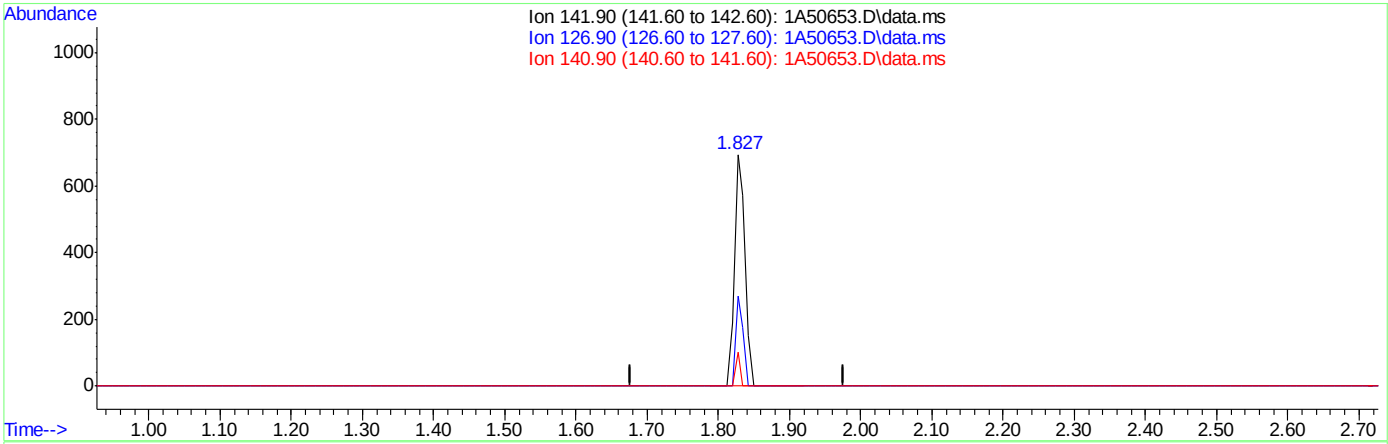
response 0

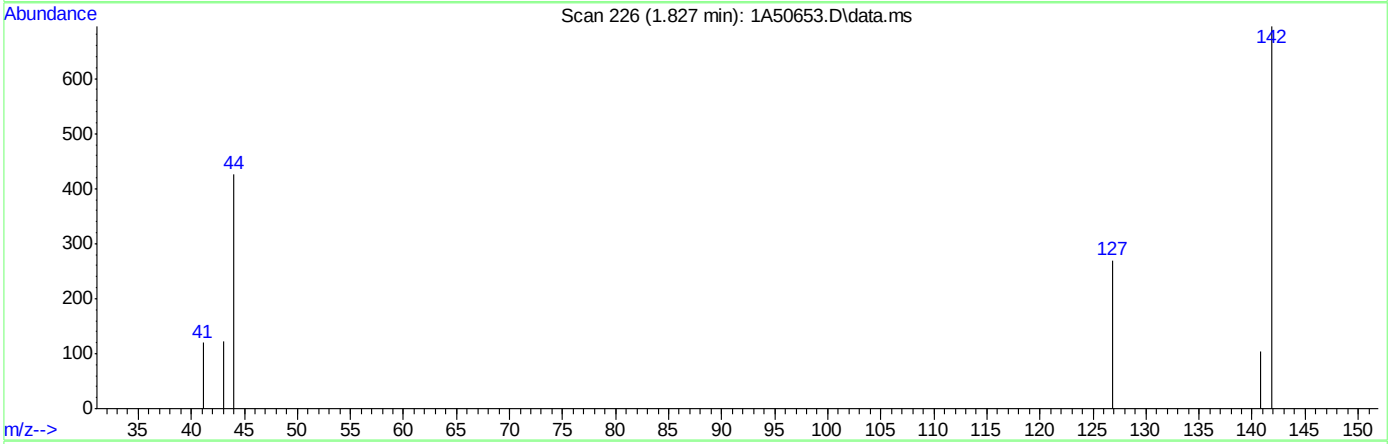
Ion	Exp%	Act%
141.90	100	0.00
126.90	46.70	0.00#
140.90	14.30	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50653.D
Acq On : 15 Nov 2023 6:48 am
Operator : jeniferw
Sample : IC1945-8
Misc : MS55276,V2A1790,,,,,
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Nov 15 09:38:24 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50653.D\data.ms

(15) Iodomethane

1.827min (+0.000) 1.16ug/L m

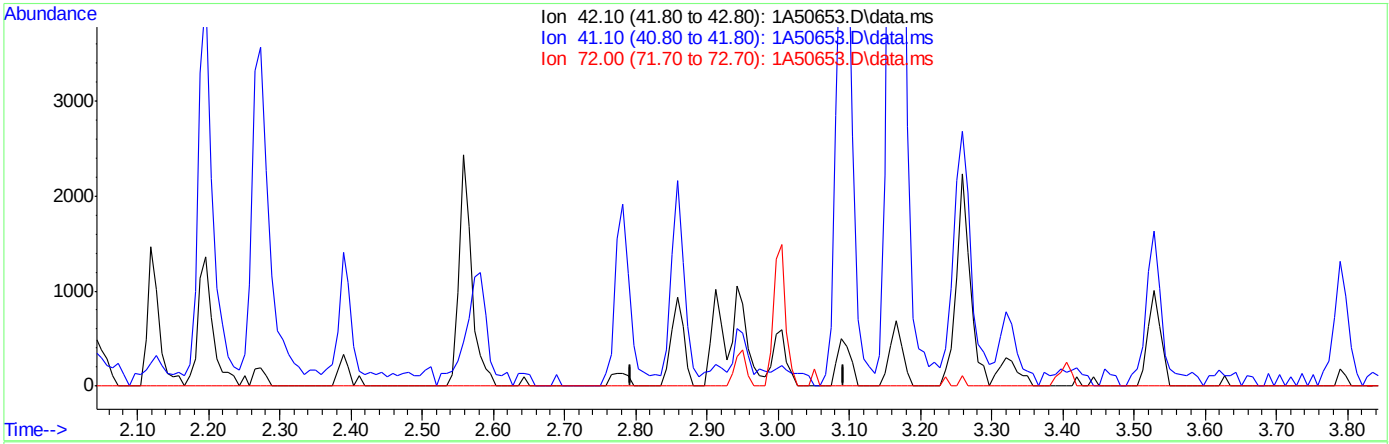
response 743

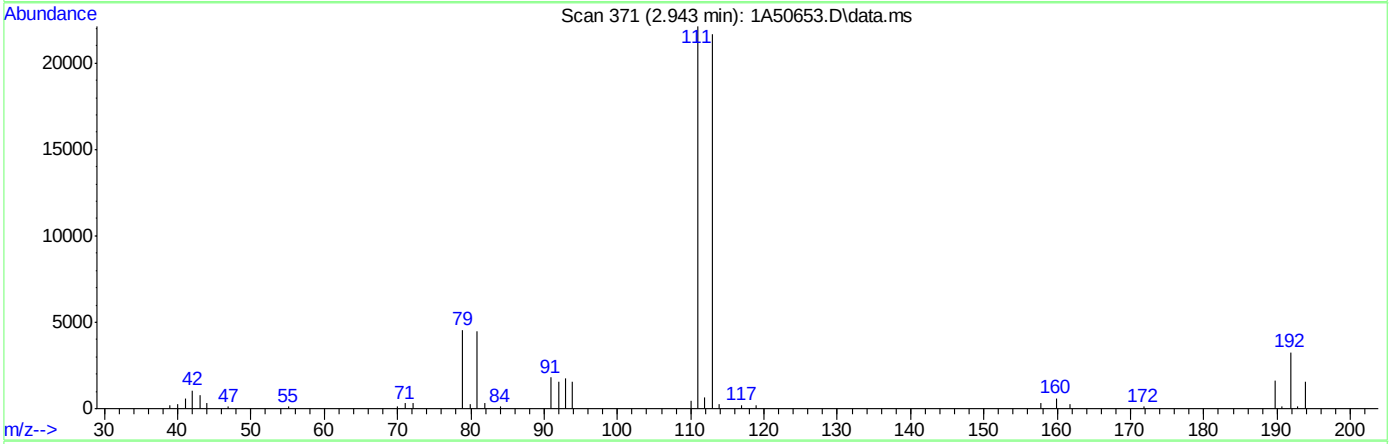
Ion	Exp%	Act%
141.90	100	100
126.90	46.70	38.85
140.90	14.30	14.82
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50653.D
Acq On : 15 Nov 2023 6:48 am
Operator : jeniferw
Sample : IC1945-8
Misc : MS55276,V2A1790,,,,,
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Nov 15 09:38:24 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50653.D\data.ms

(38) Tetrahydrofuran

2.943min (-2.943) 0.00ug/L

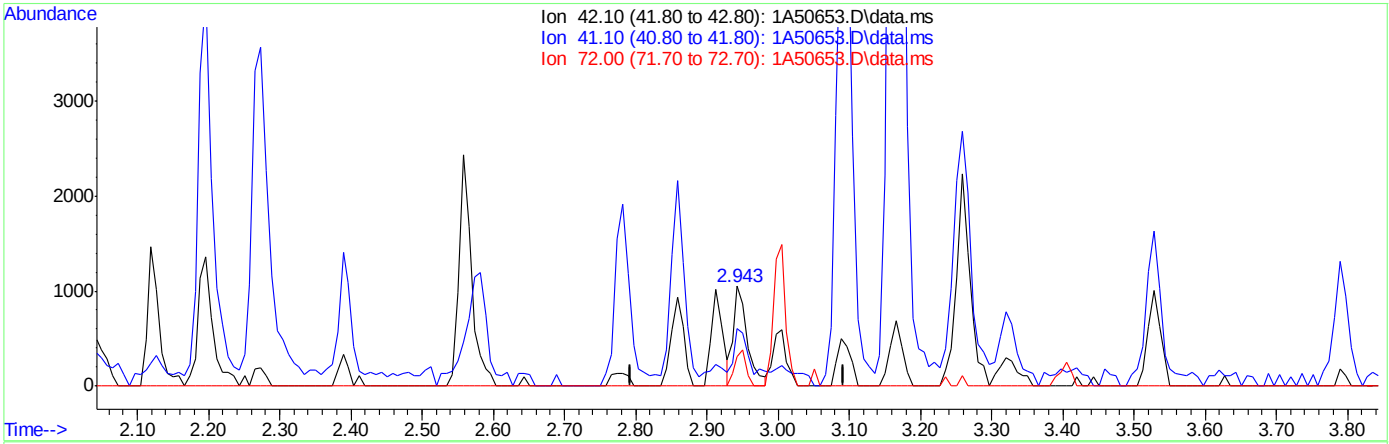
response 0

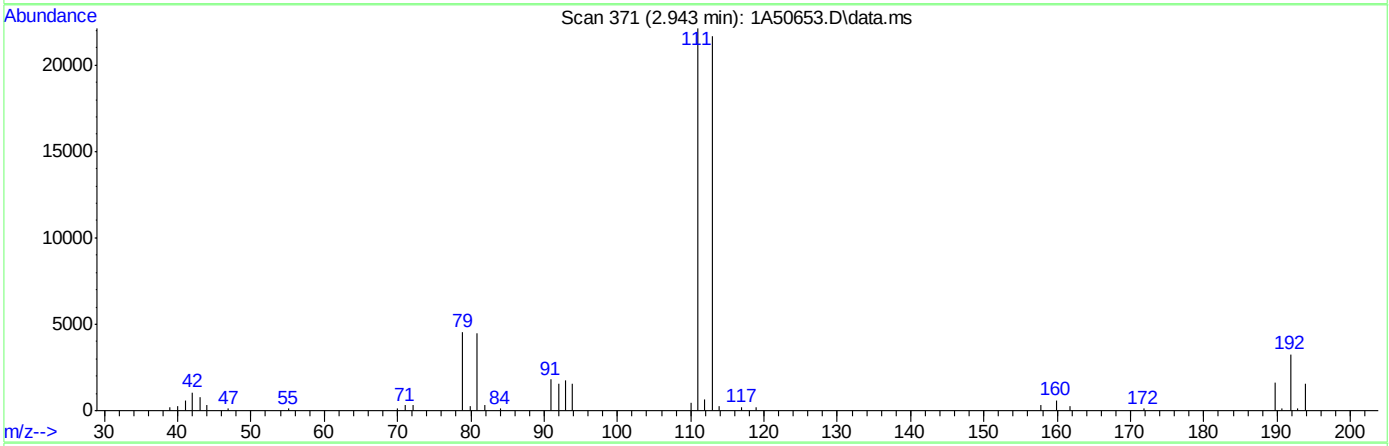
Ion	Exp%	Act%
42.10	100	0.00
41.10	58.70	0.00#
72.00	41.10	0.00#
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50653.D
Acq On : 15 Nov 2023 6:48 am
Operator : jeniferw
Sample : IC1945-8
Misc : MS55276,V2A1790,,,,,
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Nov 15 09:38:24 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50653.D\data.ms

(38) Tetrahydrofuran

2.943min (-0.000) 2.12ug/L m

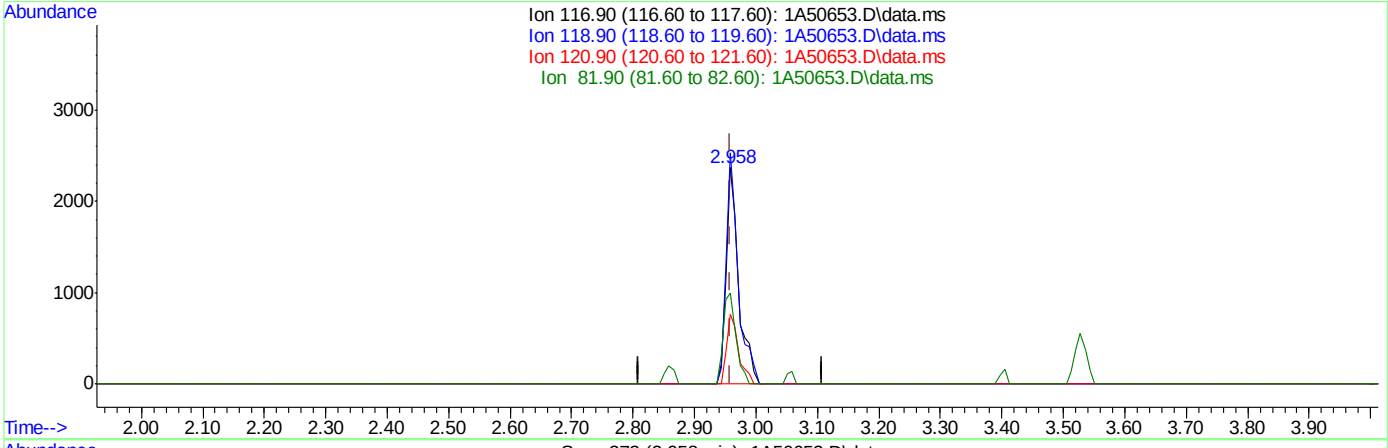
response 1471

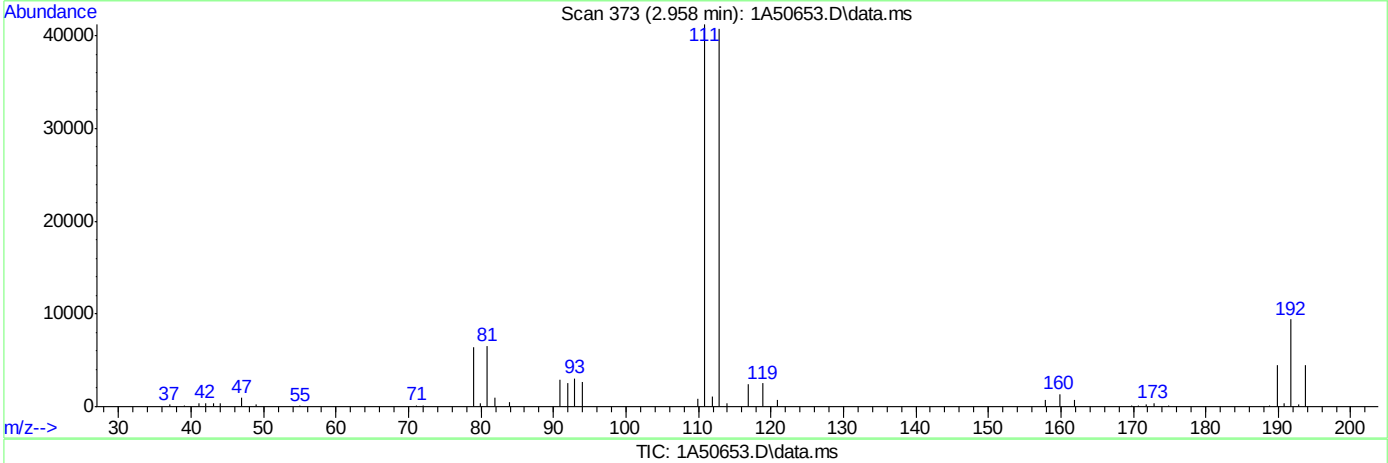
Ion	Exp%	Act%
42.10	100	100
41.10	58.70	58.08
72.00	41.10	28.99
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50653.D
Acq On : 15 Nov 2023 6:48 am
Operator : jeniferw
Sample : IC1945-8
Misc : MS55276,V2A1790,,,,,
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Nov 15 09:38:24 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50653.D\data.ms

(40) Carbon Tetrachloride ( )

2.958min (-0.001) 1.98ug/L

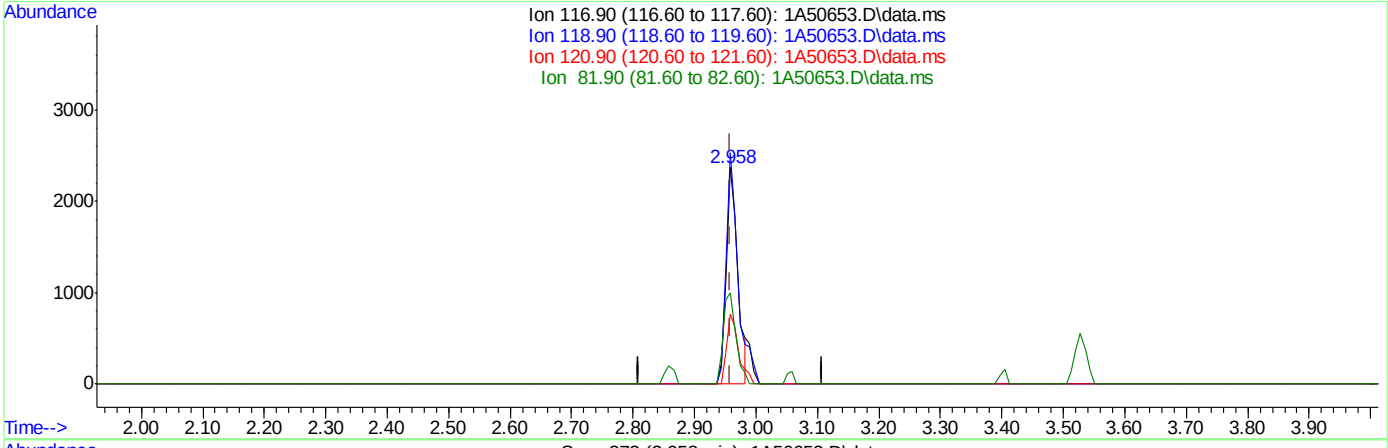
response 3363

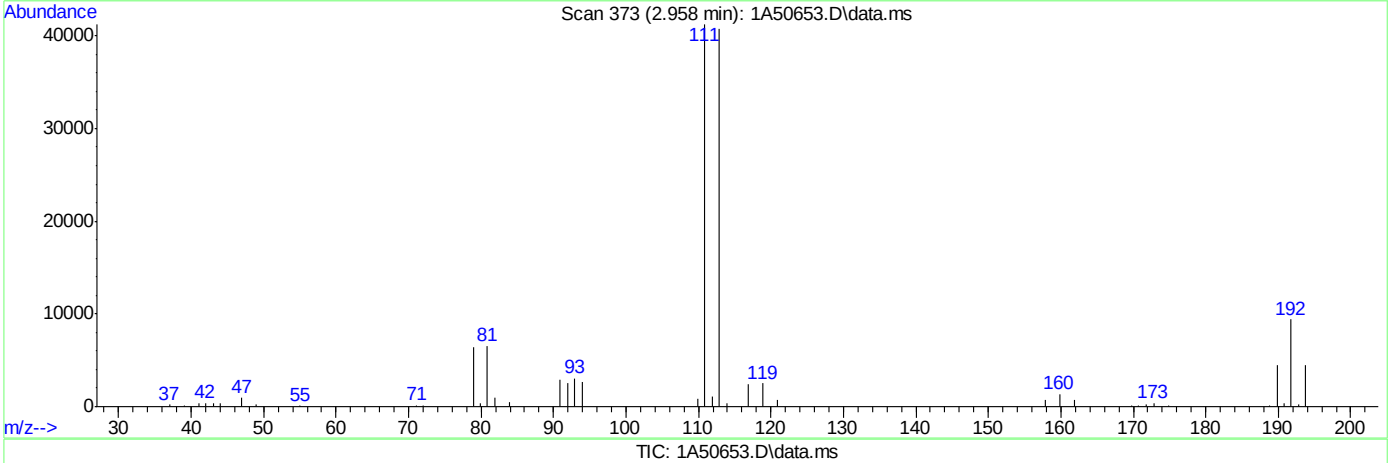
Ion	Exp%	Act%
116.90	100	100
118.90	94.50	107.10
120.90	31.10	32.52
81.90	25.40	42.28

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50653.D
Acq On : 15 Nov 2023 6:48 am
Operator : jeniferw
Sample : IC1945-8
Misc : MS55276,V2A1790,,,,,
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Nov 15 09:38:24 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50653.D\data.ms

(40) Carbon Tetrachloride ( )

2.958min (-0.001) 1.82ug/L m

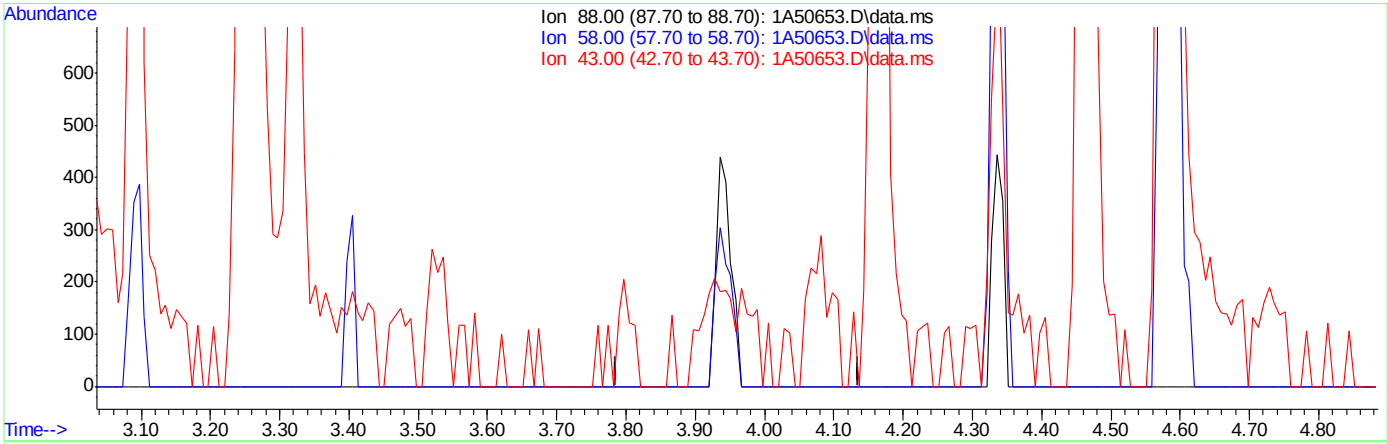
response 3094

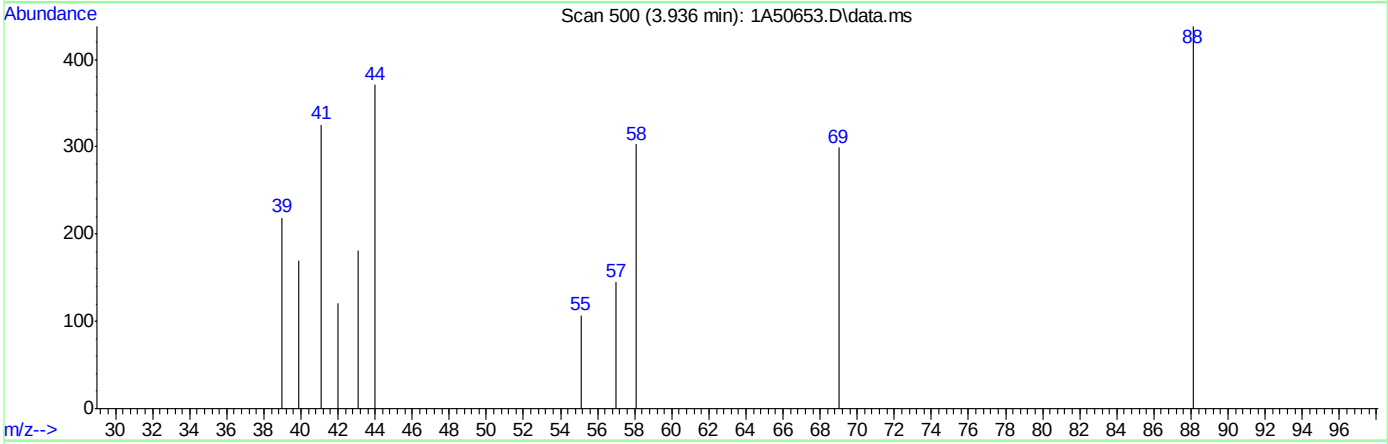
Ion	Exp%	Act%
116.90	100	100
118.90	94.50	107.10
120.90	31.10	32.52
81.90	25.40	42.28

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50653.D
Acq On : 15 Nov 2023 6:48 am
Operator : jeniferw
Sample : IC1945-8
Misc : MS55276,V2A1790,,,,,
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Nov 15 09:38:24 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50653.D\data.ms

(59) 1,4-Dioxane

3.936min (-3.936) 0.00ug/L

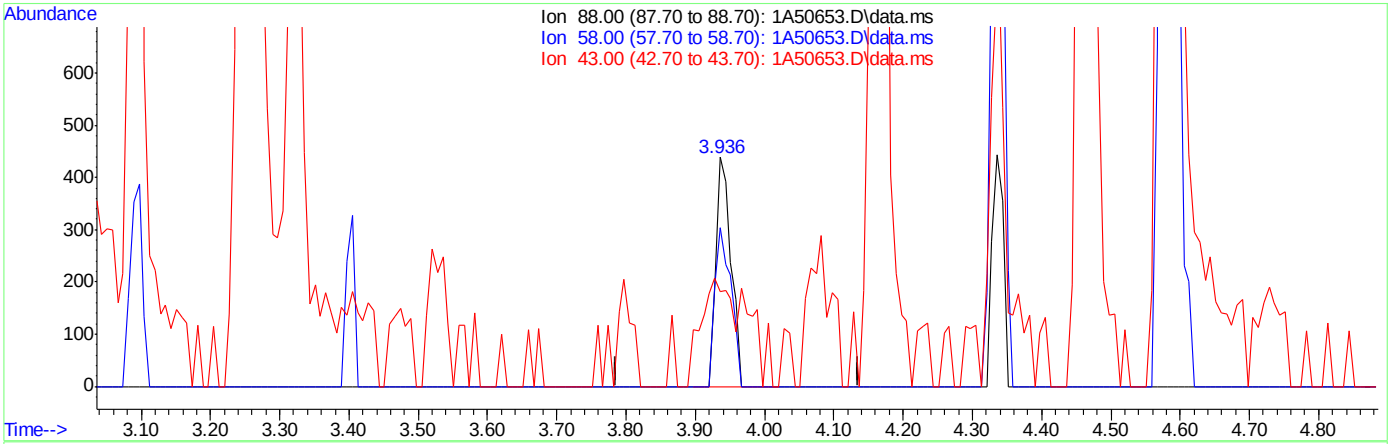
response 0

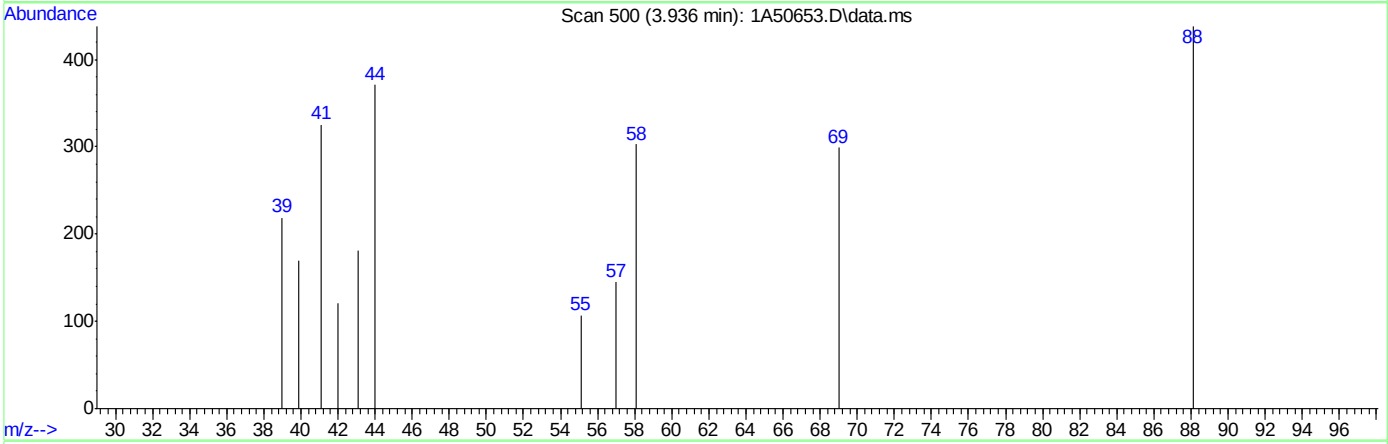
Ion	Exp%	Act%
88.00	100	0.00
58.00	69.70	0.00#
43.00	26.80	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50653.D
Acq On : 15 Nov 2023 6:48 am
Operator : jeniferw
Sample : IC1945-8
Misc : MS55276,V2A1790,,,,,
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Nov 15 09:38:24 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50653.D\data.ms

(59) 1,4-Dioxane

3.936min (-0.000) 35.21ug/L m

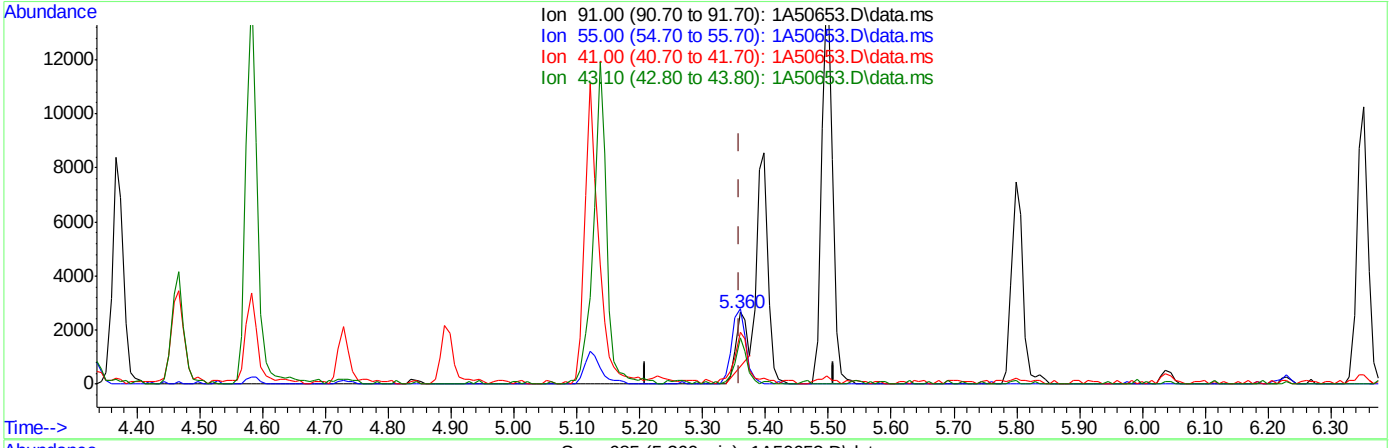
response 655

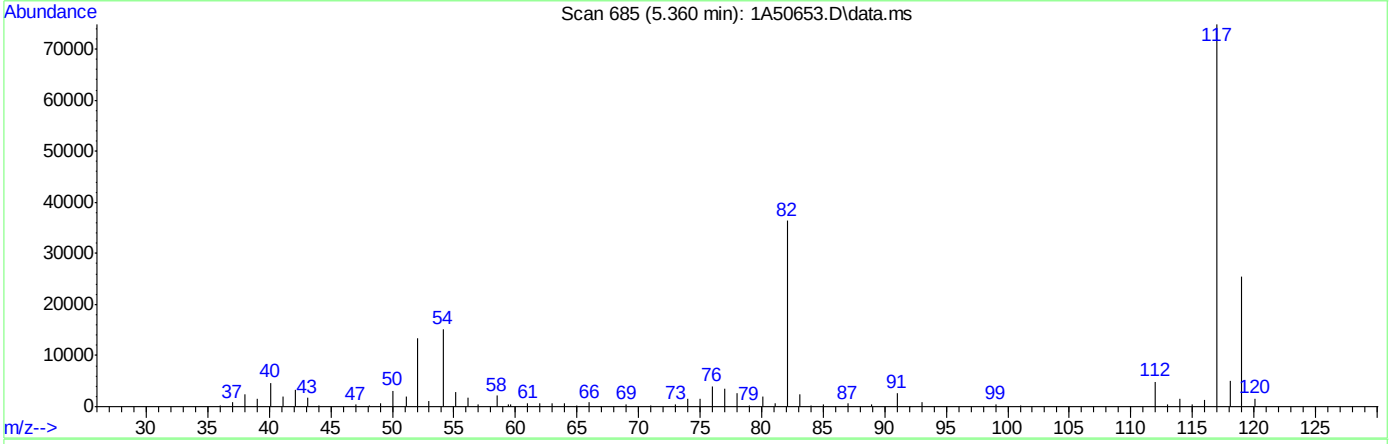
Ion	Exp%	Act%
88.00	100	100
58.00	69.70	69.18
43.00	26.80	41.32
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50653.D
Acq On : 15 Nov 2023 6:48 am
Operator : jeniferw
Sample : IC1945-8
Misc : MS55276,V2A1790,,,,,
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Nov 15 09:38:24 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50653.D\data.ms

(76) 1-Chlorohexane

5.360min (-0.000) 1.27ug/L

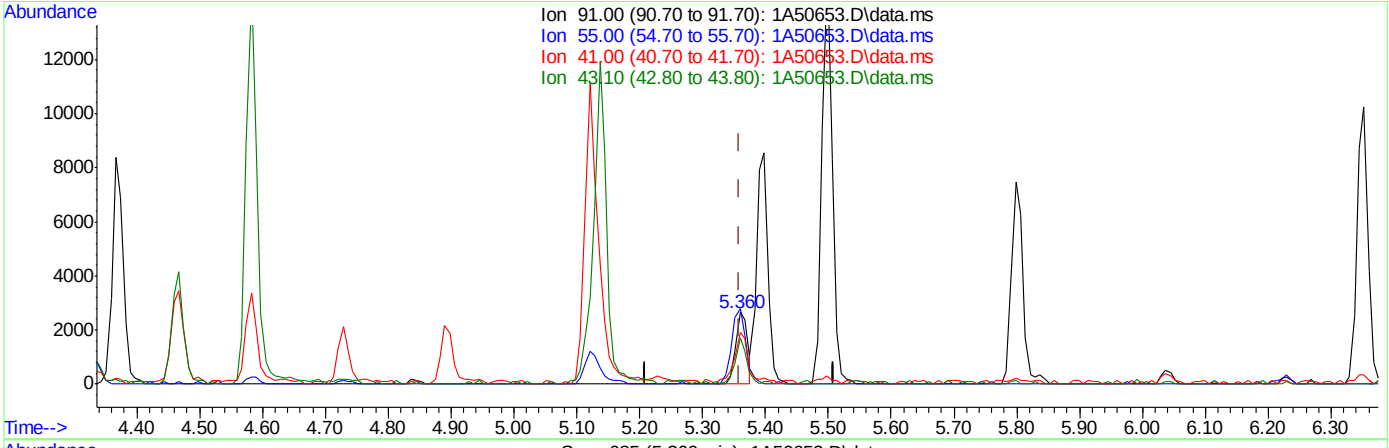
response 2268

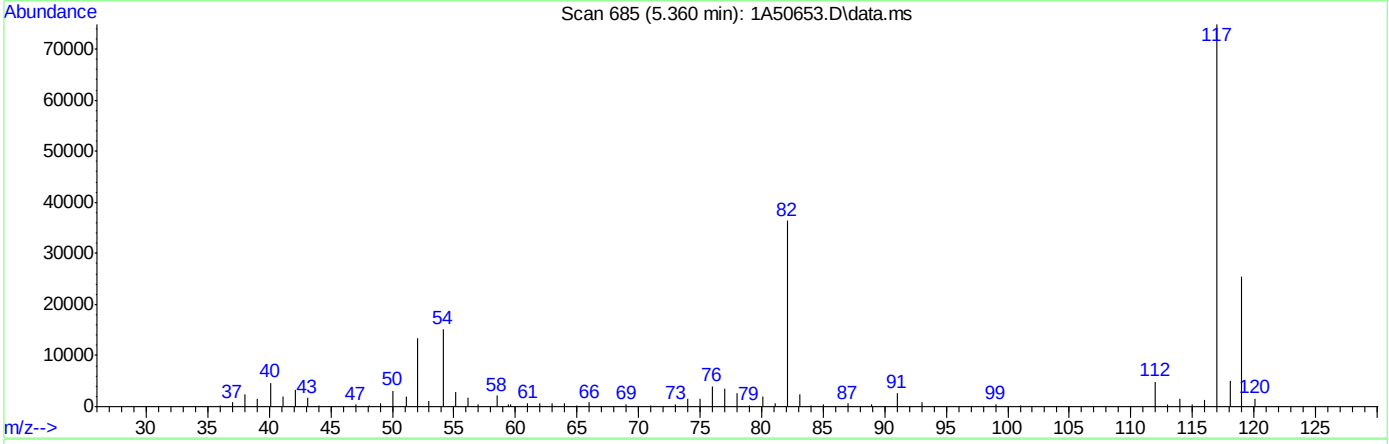
Ion	Exp%	Act%
91.00	100	100
55.00	74.60	93.09
41.00	53.90	63.20
43.10	42.90	60.05

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50653.D
Acq On : 15 Nov 2023 6:48 am
Operator : jeniferw
Sample : IC1945-8
Misc : MS55276,V2A1790,,,,,
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Nov 15 09:38:24 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50653.D\data.ms

(76) 1-Chlorohexane

5.360min (-0.000) 1.96ug/L m

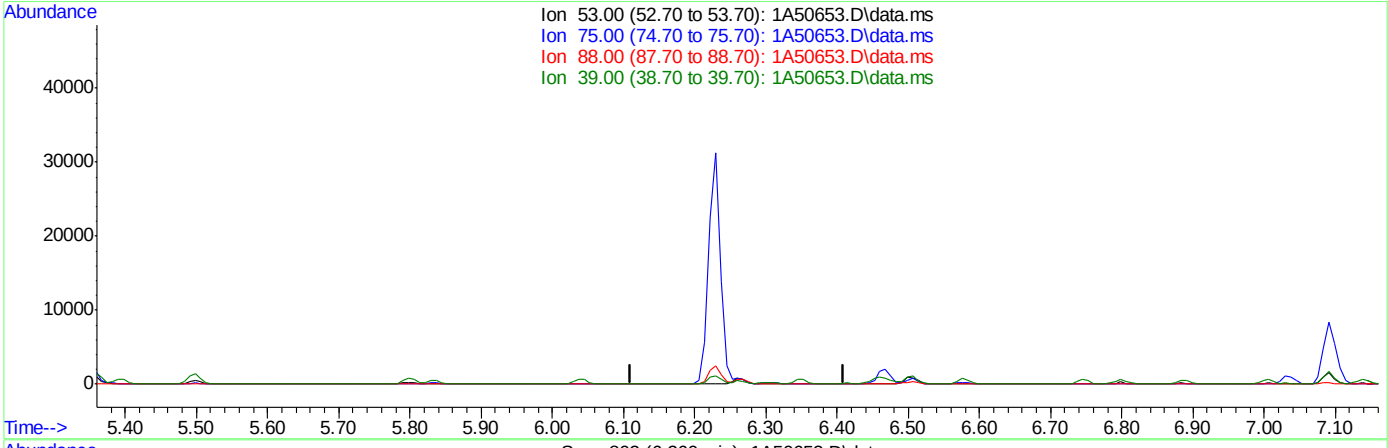
response 3497

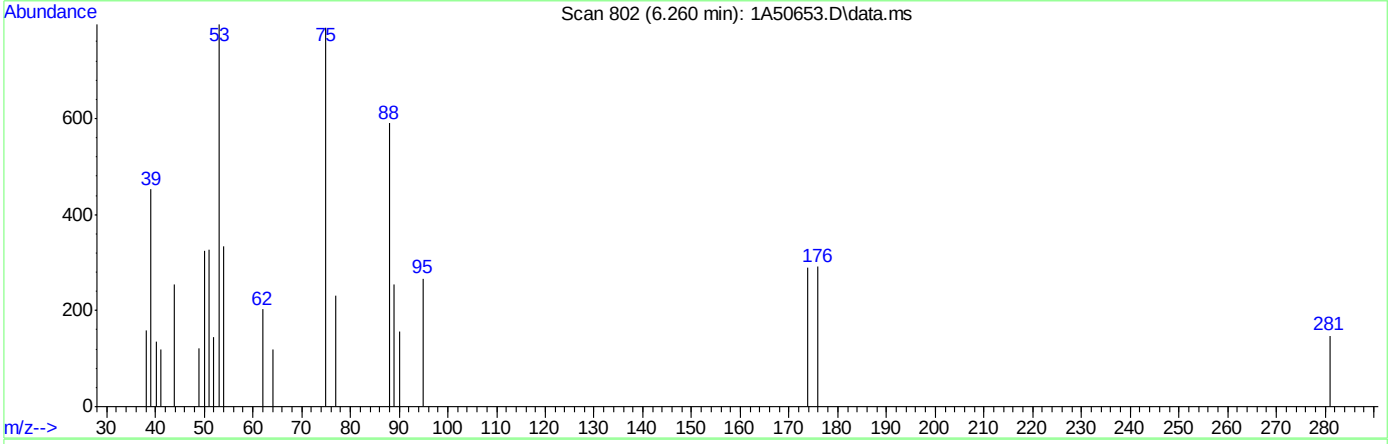
Ion	Exp%	Act%
91.00	100	100
55.00	74.60	105.52#
41.00	53.90	71.69
43.10	42.90	64.18#

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50653.D
Acq On : 15 Nov 2023 6:48 am
Operator : jeniferw
Sample : IC1945-8
Misc : MS55276,V2A1790,,,,,
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Nov 15 09:38:24 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50653.D\data.ms

(87) cis-1,4-Dichloro-2-butene

6.260min (-6.260) 0.00ug/L

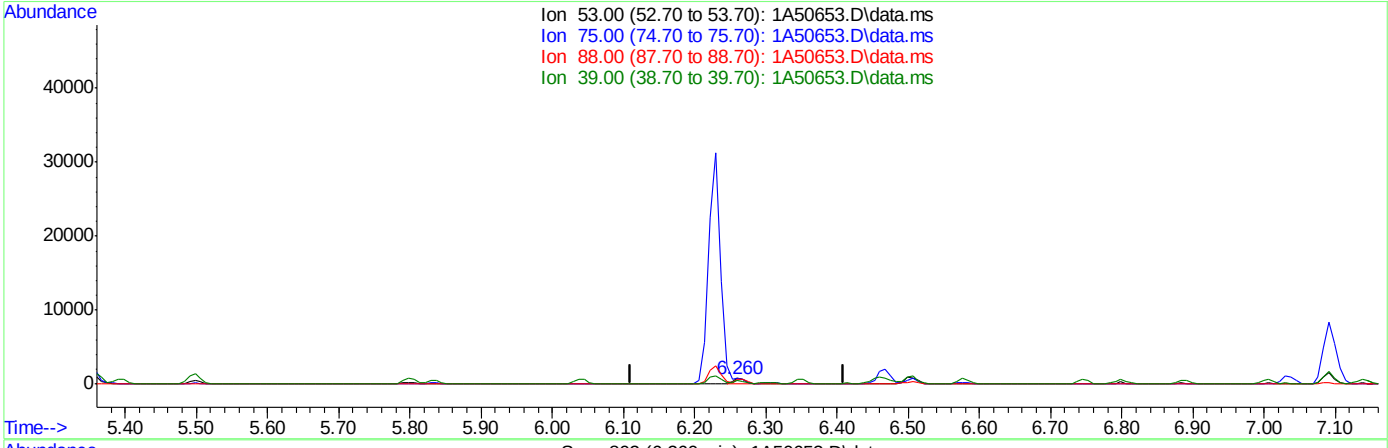
response 0

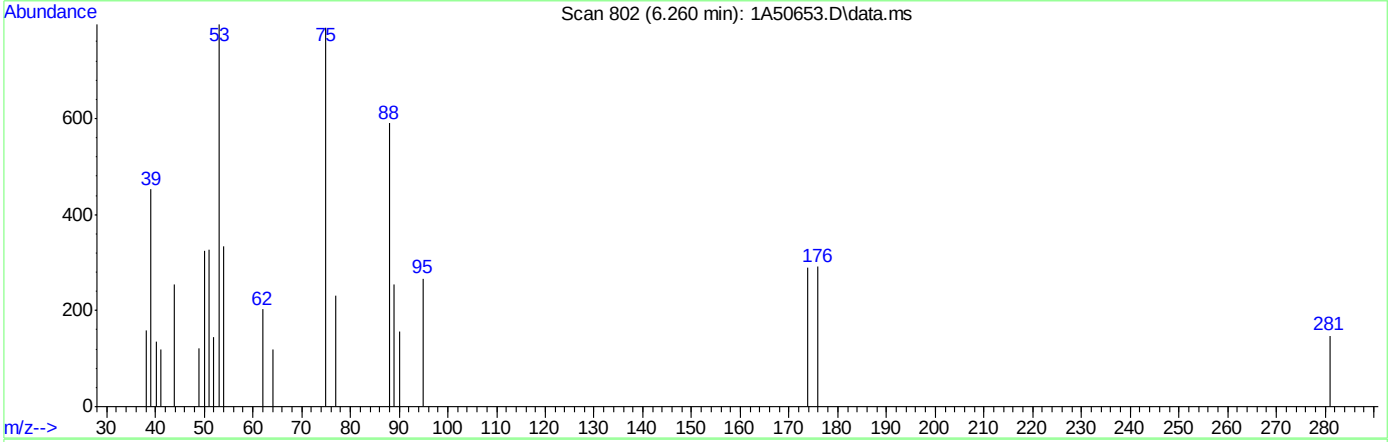
Ion	Exp%	Act%
53.00	100	0.00
75.00	55.00	0.00#
88.00	121.00	0.00#
39.00	30.00	0.00#

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50653.D
Acq On : 15 Nov 2023 6:48 am
Operator : jeniferw
Sample : IC1945-8
Misc : MS55276,V2A1790,,,,,
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Nov 15 09:38:24 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50653.D\data.ms

(87) cis-1,4-Dichloro-2-butene

6.260min (-0.000) 2.09ug/L m

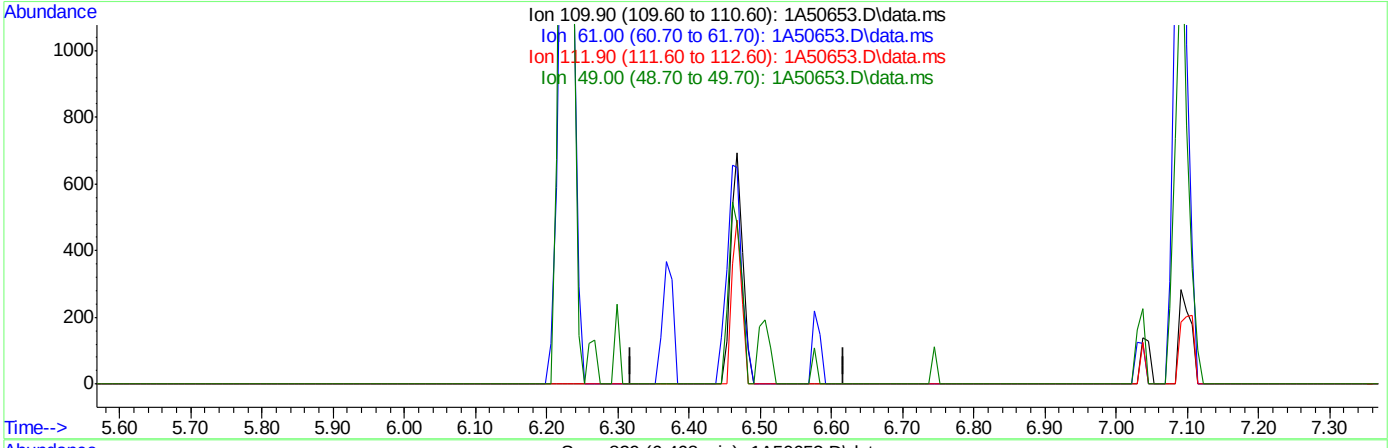
response 961

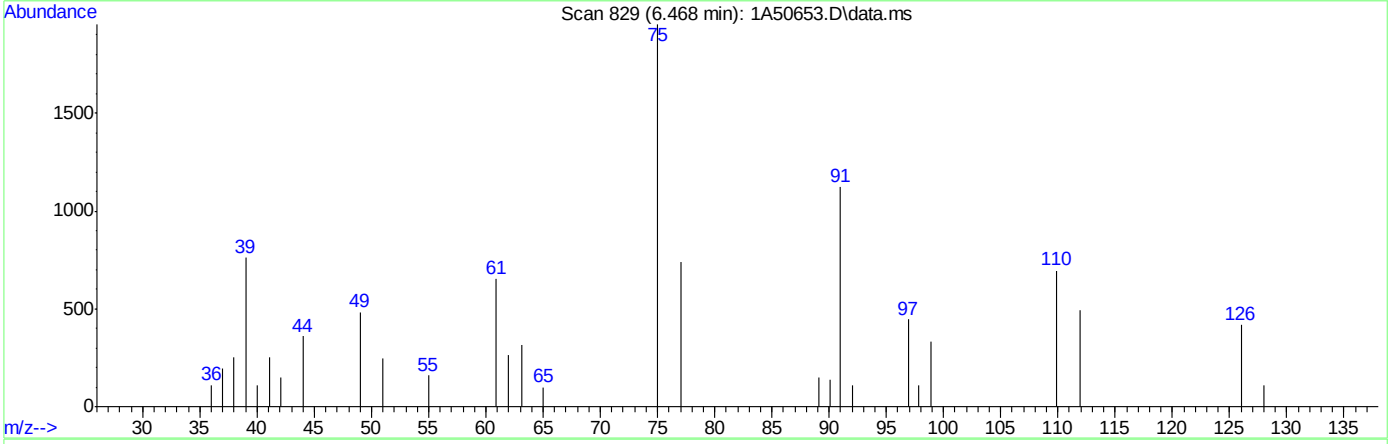
Ion	Exp%	Act%
53.00	100	100
75.00	55.00	98.99#
88.00	121.00	74.12#
39.00	30.00	56.78#

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50653.D
Acq On : 15 Nov 2023 6:48 am
Operator : jeniferw
Sample : IC1945-8
Misc : MS55276,V2A1790,,,,,
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Nov 15 09:38:24 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50653.D\data.ms

(94) 1,2,3-Trichloropropane ( )

6.468min (-6.468) 0.00ug/L

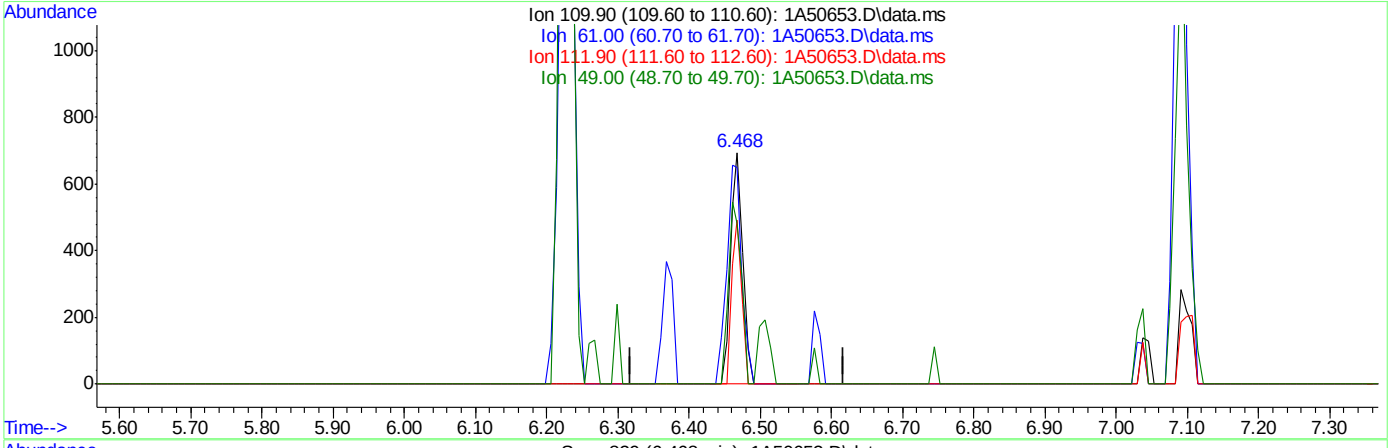
response 0

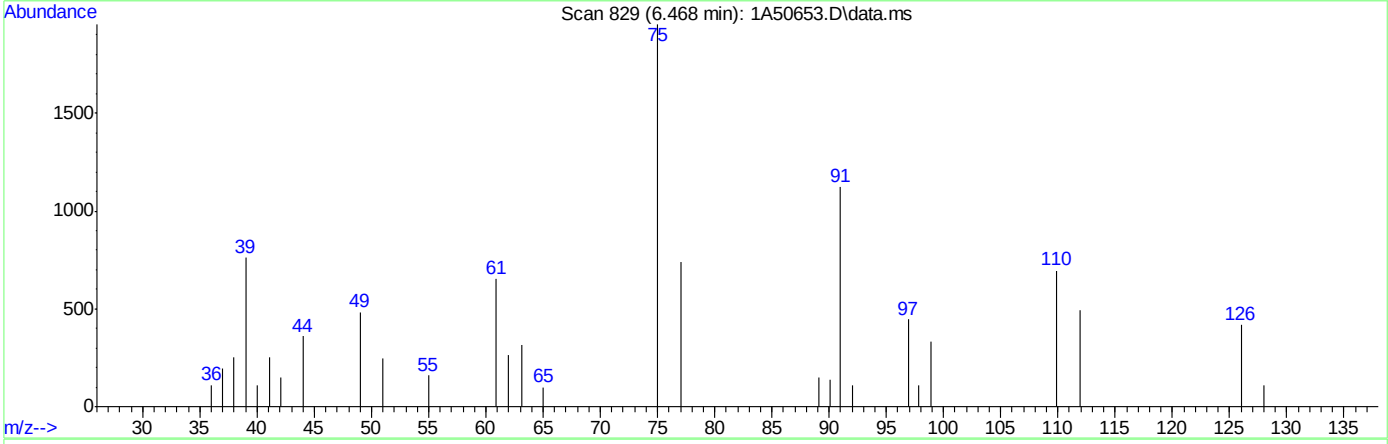
Ion	Exp%	Act%
109.90	100	0.00
61.00	66.40	0.00#
111.90	64.30	0.00#
49.00	57.90	0.00#

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50653.D
Acq On : 15 Nov 2023 6:48 am
Operator : jeniferw
Sample : IC1945-8
Misc : MS55276,V2A1790,,,,,
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Nov 15 09:38:24 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50653.D\data.ms

(94) 1,2,3-Trichloropropane ( )

6.468min (-0.000) 1.81ug/L m

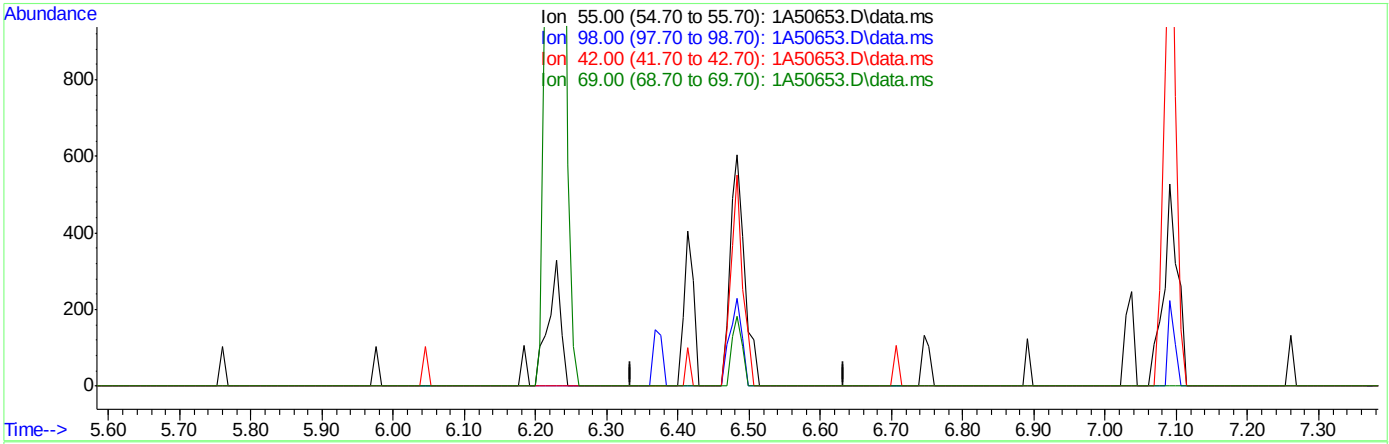
response 855

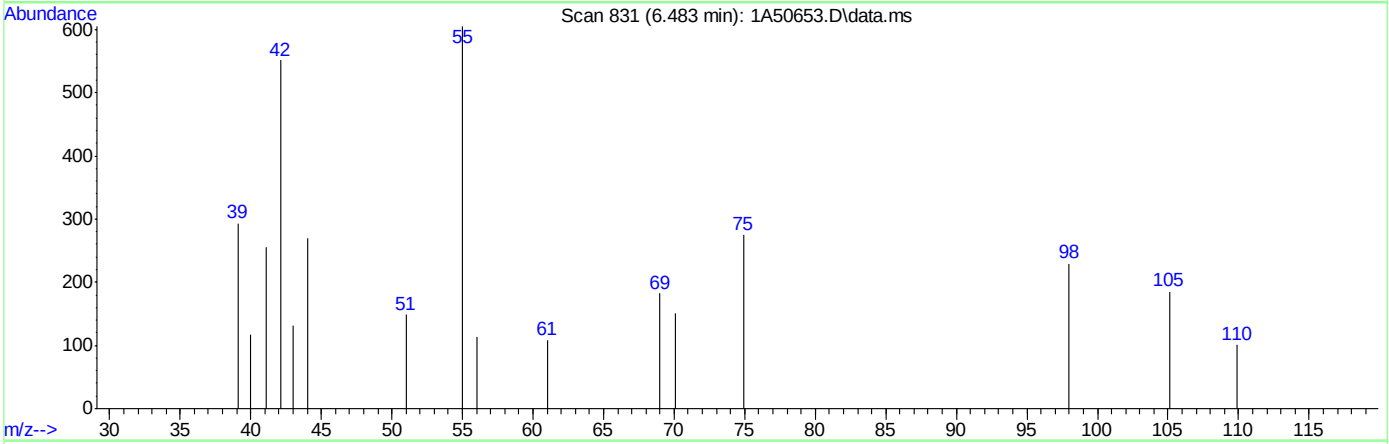
Ion	Exp%	Act%
109.90	100	100
61.00	66.40	93.67
111.90	64.30	70.79
49.00	57.90	69.50

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50653.D
Acq On : 15 Nov 2023 6:48 am
Operator : jeniferw
Sample : IC1945-8
Misc : MS55276,V2A1790,,,,,
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Nov 15 09:38:24 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50653.D\data.ms

(95) Cyclohexanone

6.484min (-6.484) 0.00ug/L

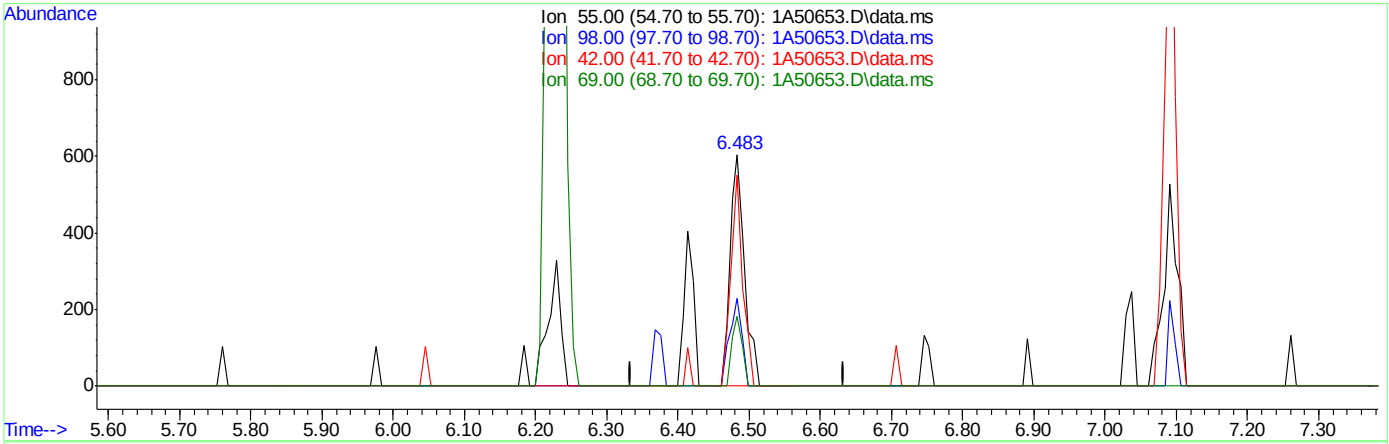
response 0

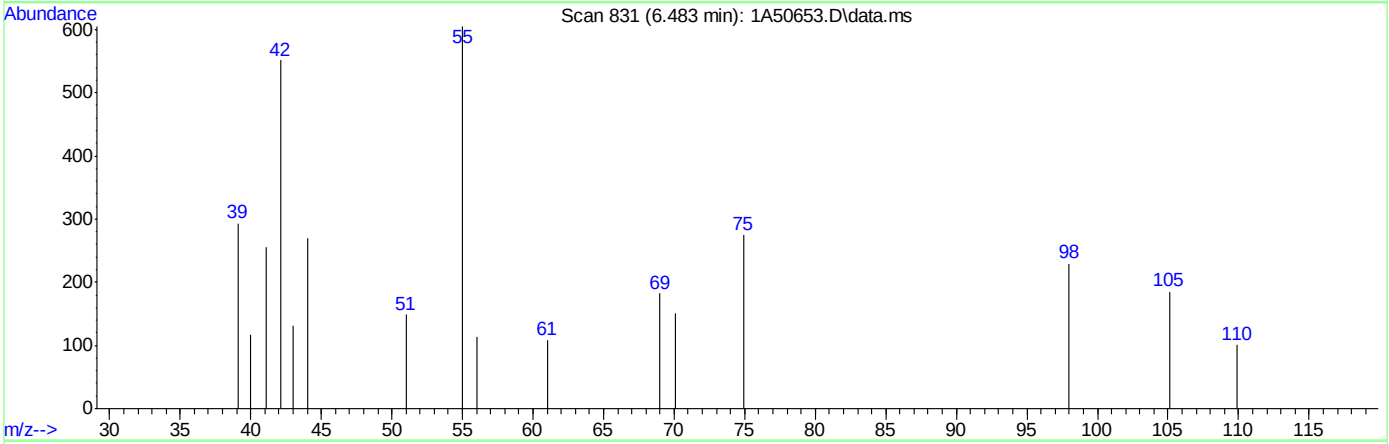
Ion	Exp%	Act%
55.00	100	0.00
98.00	41.70	0.00#
42.00	67.70	0.00#
69.00	27.00	0.00#

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50653.D
Acq On : 15 Nov 2023 6:48 am
Operator : jeniferw
Sample : IC1945-8
Misc : MS55276,V2A1790,,,,,
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Nov 15 09:38:24 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50653.D\data.ms

(95) Cyclohexanone

6.483min (-0.000) 9.05ug/L m

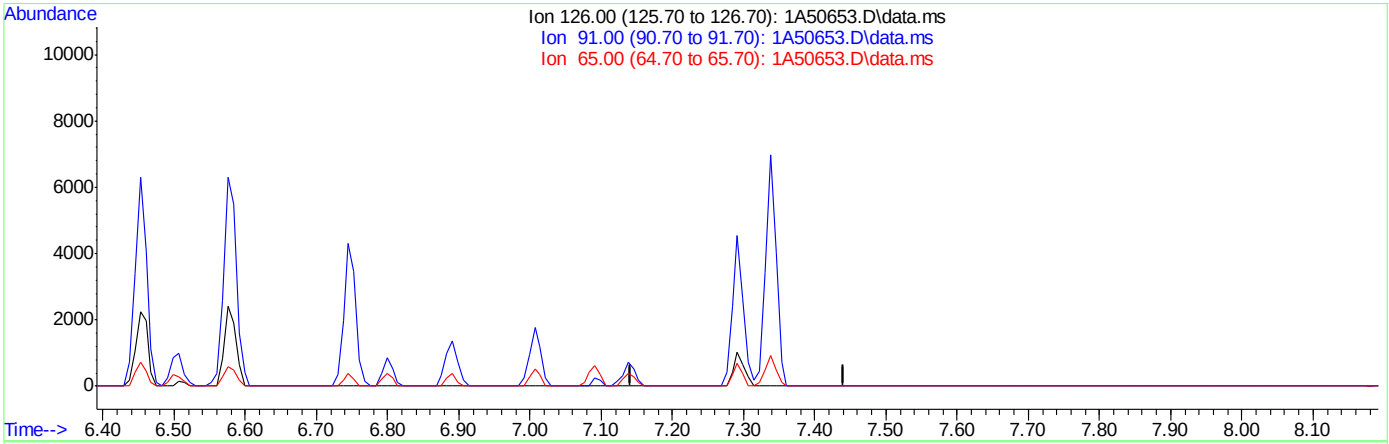
response 880

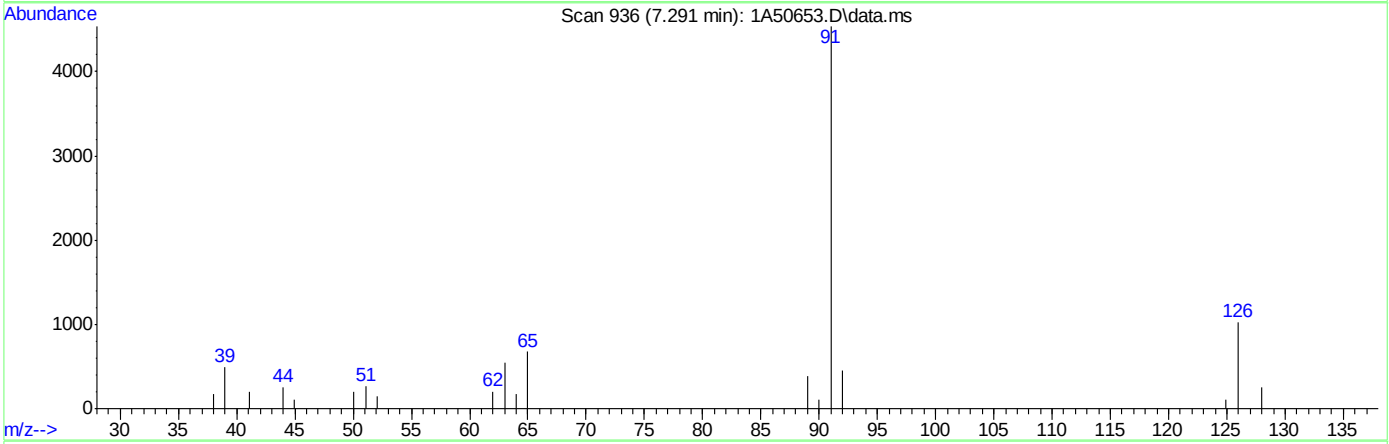
Ion	Exp%	Act%
55.00	100	100
98.00	41.70	37.85
42.00	67.70	91.07#
69.00	27.00	30.08

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50653.D
Acq On : 15 Nov 2023 6:48 am
Operator : jeniferw
Sample : IC1945-8
Misc : MS55276,V2A1790,,,,,
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Nov 15 09:38:24 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50653.D\data.ms

(106) Benzyl Chloride

7.292min (-7.292) 0.00ug/L

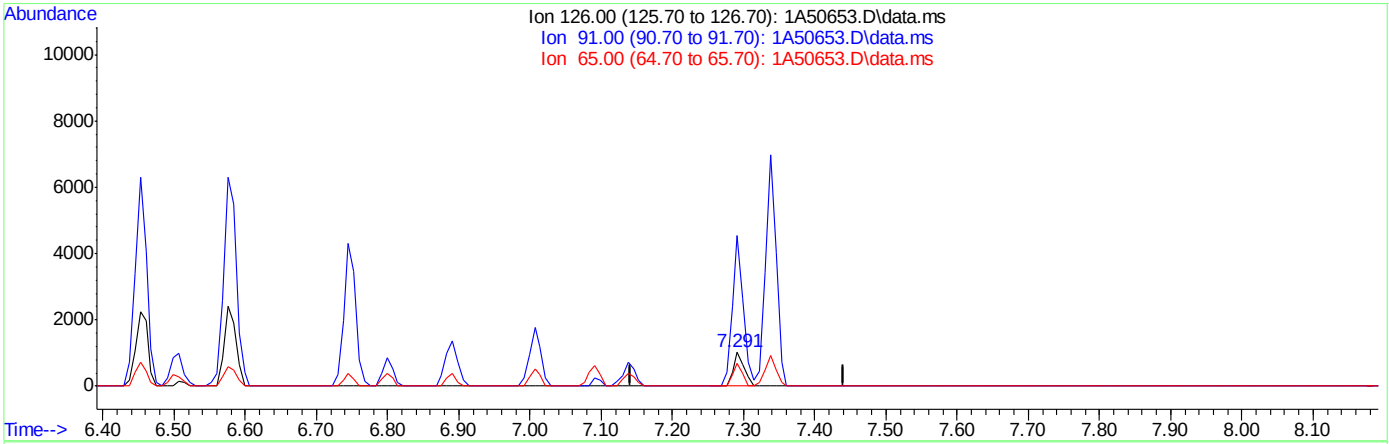
response 0

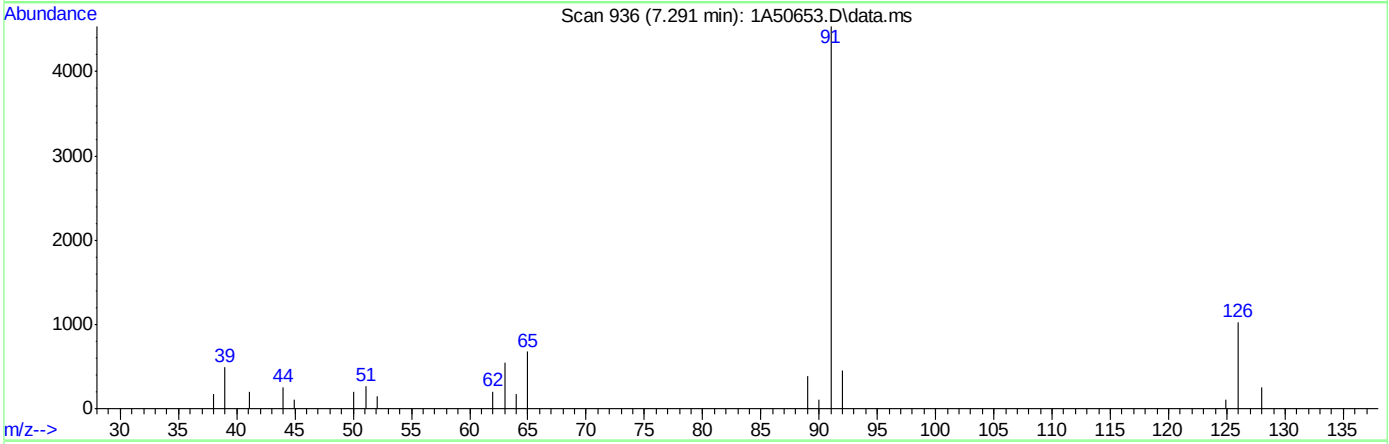
Ion	Exp%	Act%
126.00	100	0.00
91.00	460.20	0.00#
65.00	60.50	0.00#
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50653.D
Acq On : 15 Nov 2023 6:48 am
Operator : jeniferw
Sample : IC1945-8
Misc : MS55276,V2A1790,,,,,
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Nov 15 09:38:24 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50653.D\data.ms

(106) Benzyl Chloride

7.291min (-0.000) 1.79ug/L m

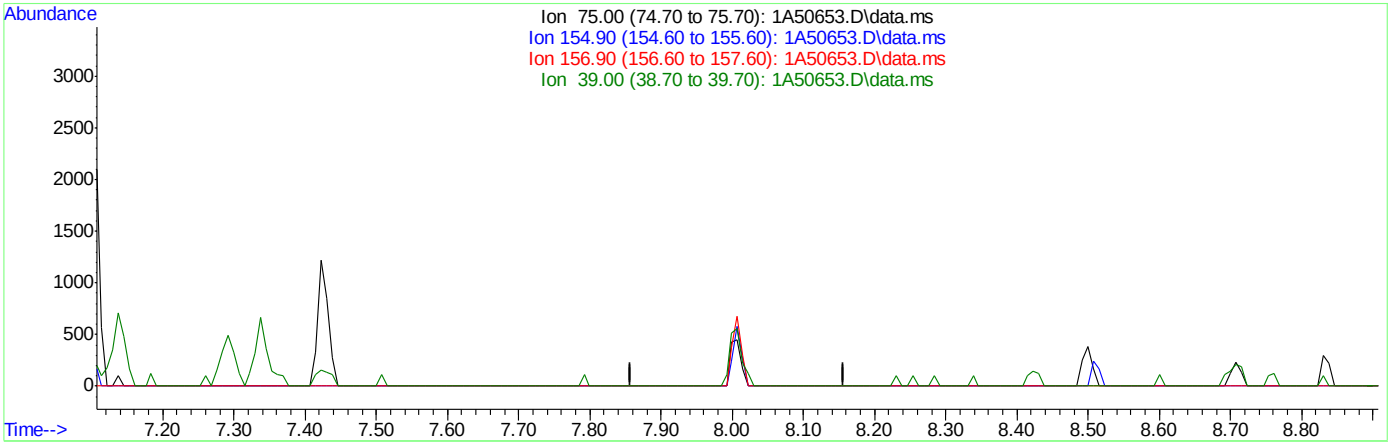
response 1099

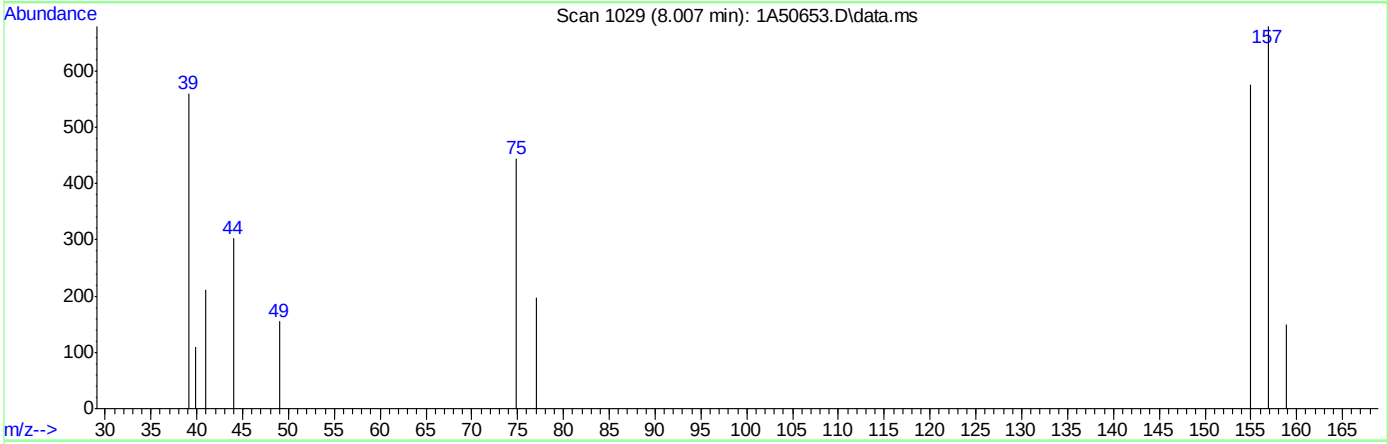
Ion	Exp%	Act%
126.00	100	100
91.00	460.20	441.87
65.00	60.50	65.82
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50653.D
Acq On : 15 Nov 2023 6:48 am
Operator : jeniferw
Sample : IC1945-8
Misc : MS55276,V2A1790,,,,,
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Nov 15 09:38:24 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50653.D\data.ms

(108) 1,2-Dibromo-3-Chloropropane

8.007min (-8.007) 0.00ug/L

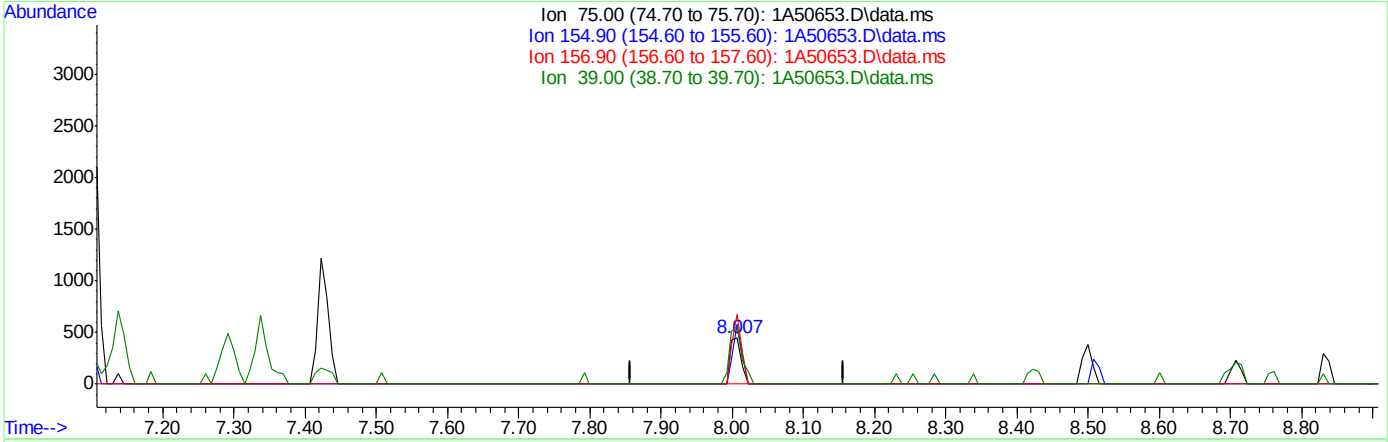
response 0

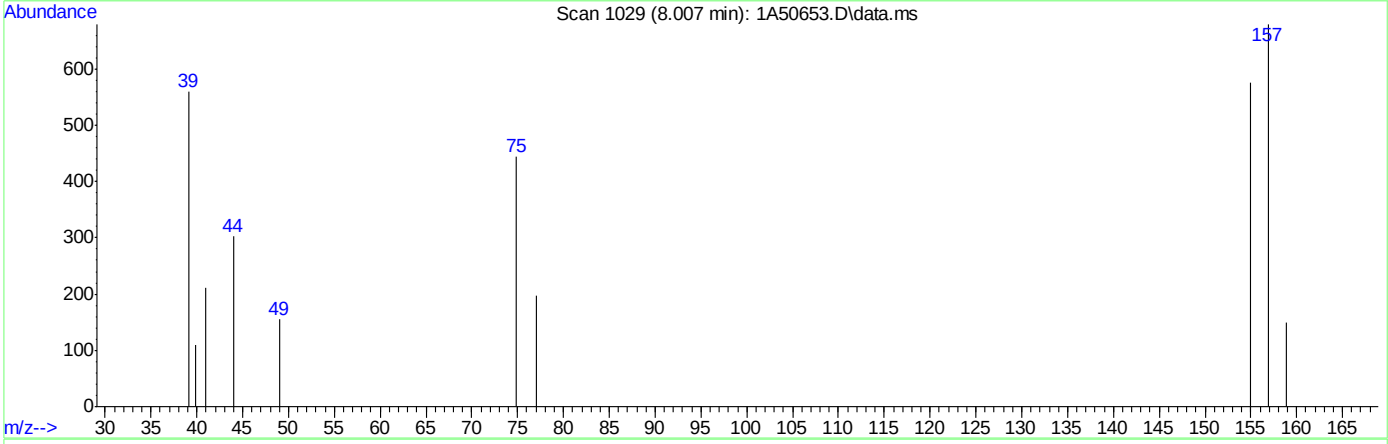
Ion	Exp%	Act%
75.00	100	0.00
154.90	86.70	0.00#
156.90	114.50	0.00#
39.00	63.50	0.00#

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50653.D
Acq On : 15 Nov 2023 6:48 am
Operator : jeniferw
Sample : IC1945-8
Misc : MS55276,V2A1790,,,,,
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Nov 15 09:38:24 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50653.D\data.ms

(108) 1,2-Dibromo-3-Chloropropane

8.007min (-0.000) 1.77ug/L m

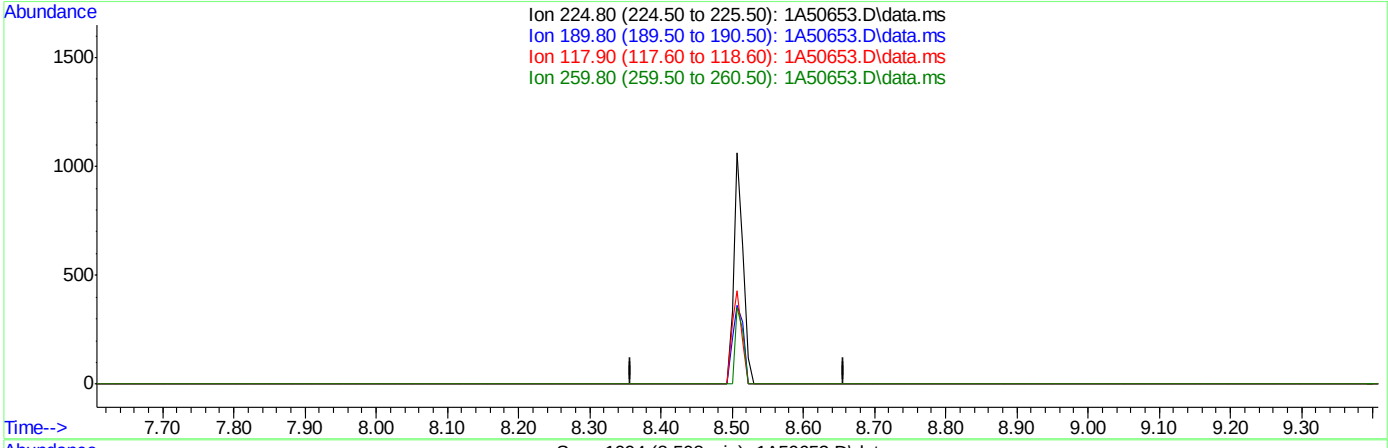
response 482

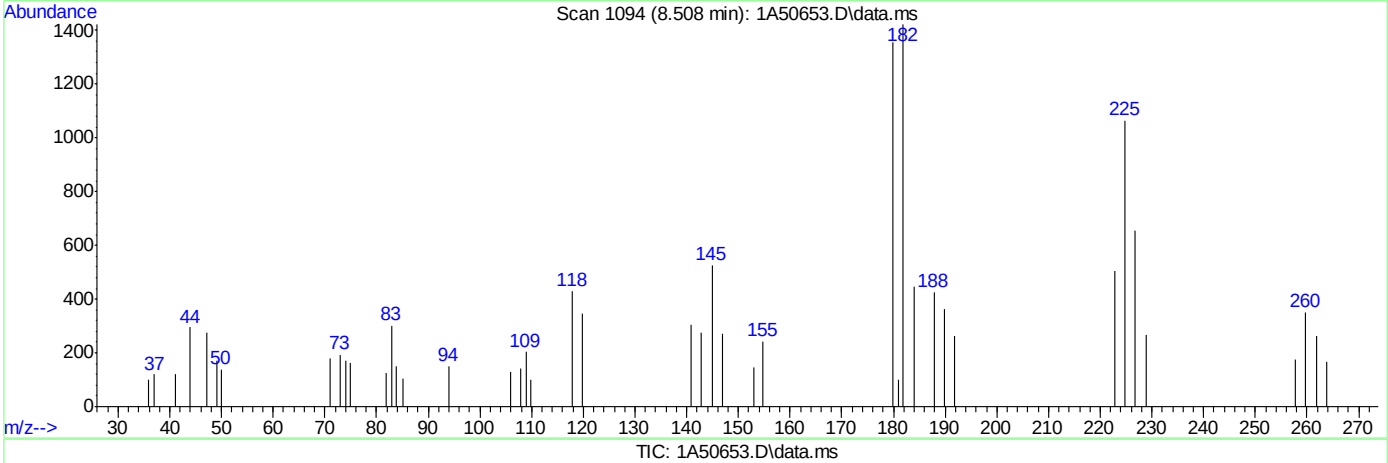
Ion	Exp%	Act%
75.00	100	100
154.90	86.70	129.73#
156.90	114.50	152.93#
39.00	63.50	125.90#

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50653.D
Acq On : 15 Nov 2023 6:48 am
Operator : jeniferw
Sample : IC1945-8
Misc : MS55276,V2A1790,,,,,
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Nov 15 09:38:24 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50653.D\data.ms

(109) Hexachlorobutadiene ( )

8.508min (-8.508) 0.00ug/L

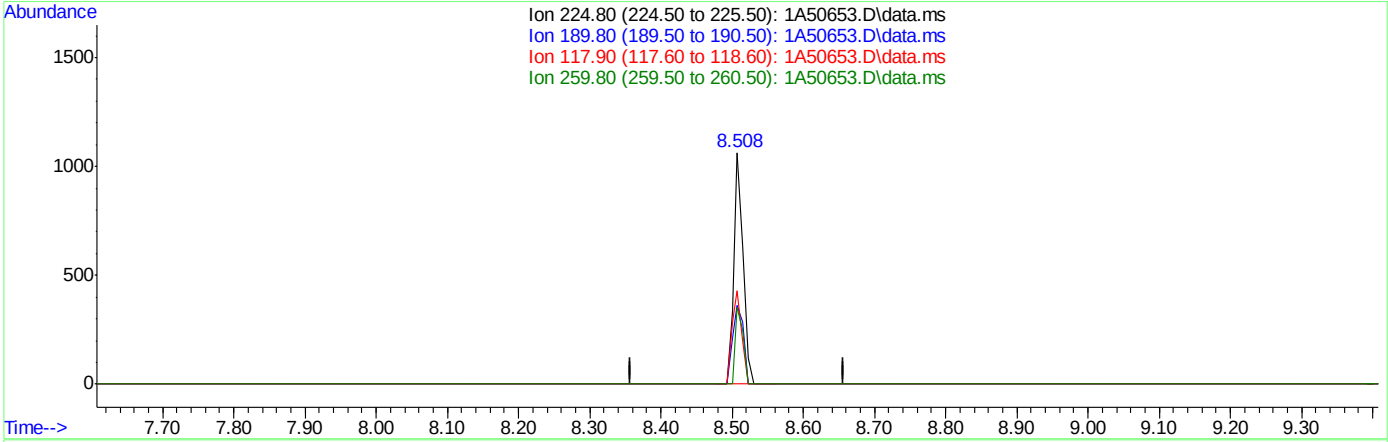
response 0

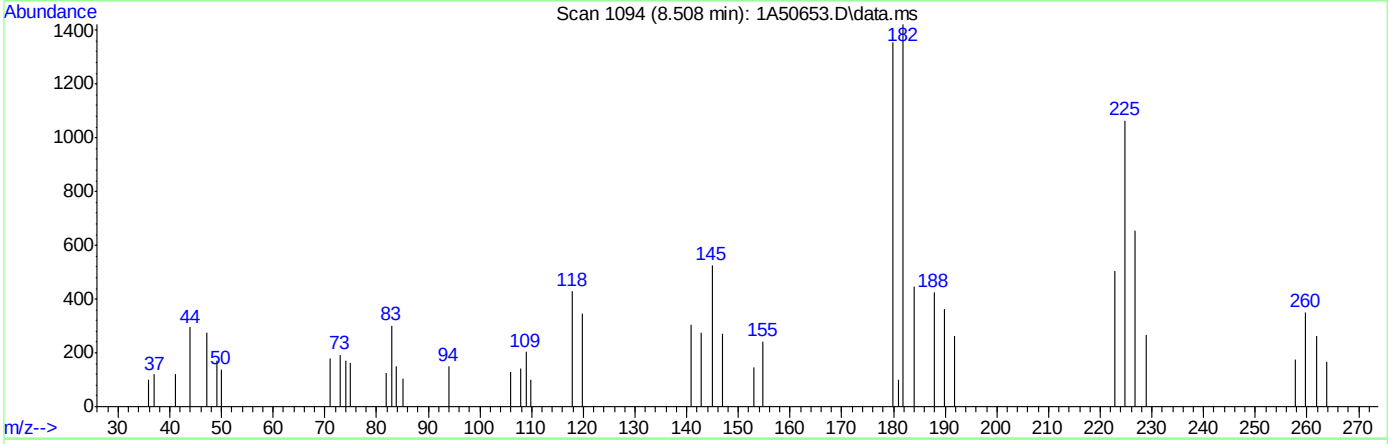
Ion	Exp%	Act%
224.80	100	0.00
189.80	44.60	0.00#
117.90	34.60	0.00#
259.80	28.20	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50653.D
Acq On : 15 Nov 2023 6:48 am
Operator : jeniferw
Sample : IC1945-8
Misc : MS55276,V2A1790,,,,,
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Nov 15 09:38:24 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50653.D\data.ms

(109) Hexachlorobutadiene ( )

8.508min (-0.000) 1.78ug/L m

response 995

Ion	Exp%	Act%
224.80	100	100
189.80	44.60	34.12
117.90	34.60	40.51
259.80	28.20	33.08

Manual Integrations APPROVED (compounds with "m" flag)
Karen Watson
11/15/23 15:49

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50655.D
Acq On : 15 Nov 2023 7:25 am
Operator : jeniferw
Sample : IC1985-2
Misc : MS55275,V1A1985,,,,,
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Nov 15 12:55:35 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	3.405	96	209438	50.00	ug/L	0.00
62) Chlorobenzene-d5	5.352	117	151377	50.00	ug/L	0.00
85) 1,4-Dichlorobenzene-d4	7.091	152	79398	50.00	ug/L	0.00
System Monitoring Compounds						
39) Dibromofluoromethane	2.958	113	61540	49.14	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 98.28%			
49) 1,2-Dichloroethane-d4	3.235	65	65758	48.24	ug/L	0.00
Spiked Amount 50.000	Range 79 - 125		Recovery = 96.48%			
63) Toluene-d8	4.336	98	200005	49.47	ug/L	0.00
Spiked Amount 50.000	Range 85 - 112		Recovery = 98.94%			
86) 4-Bromofluorobenzene	6.229	174	65733	49.42	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 98.84%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.019	85	4056	4.85	ug/L	99
3) Chloromethane	1.134	50	5627	4.41	ug/L	96
4) 1,3-butadiene	1.188	39	9121	6.38	ug/L	96
5) Vinyl Chloride	1.173	62	6023	4.76	ug/L	96
6) Bromomethane	1.350	94	2235	4.79	ug/L	97
7) Chloroethane	1.419	64	3743	4.64	ug/L	90
8) Trichlorofluoromethane	1.496	101	8288	4.87	ug/L	97
9) Ethyl Ether	1.658	59	5534	5.43	ug/L	98
10) Ethanol	1.711	45	2816m	129.64	ug/L	
11) 1,2-Dichlorotrifluoroe...	1.750	67	7203	5.09	ug/L	92
12) 1,1-Dichloroethene	1.758	61	9680	5.07	ug/L	95
13) Freon 113	1.788	101	5608	5.23	ug/L	91
14) Carbon Disulfide	1.781	76	18534	5.86	ug/L	88
15) Iodomethane	1.835	142	2342	3.57	ug/L	95
16) Acrolein	1.912	56	8099	24.27	ug/L	98
17) Allyl chloride	1.996	41	8382	4.67	ug/L	93
18) Methylene Chloride	2.042	49	14443	8.32	ug/L	90
19) Acetone	2.050	43	13338	28.07	ug/L	95
20) Methyl acetate	2.127	43	37703	25.26	ug/L	98
21) trans-1,2-Dichloroethene	2.135	61	9511	5.01	ug/L	92
22) Hexane	2.196	56	6466	4.93	ug/L	93
23) Methyl Tert Butyl Ether	2.196	73	17667	5.05	ug/L	86
24) Acetonitrile	2.273	41	11572	63.03	ug/L	96
25) Tert Butyl Alcohol	2.212	59	12540	48.14	ug/L	94
26) Di-isopropyl ether	2.396	45	22757	5.12	ug/L	95
27) Chloroprene	2.443	53	25956	4.90	ug/L	99
28) 1,1-Dichloroethane	2.443	63	12398	5.03	ug/L	98
29) Acrylonitrile	2.443	52	16104	25.35	ug/L	96
30) ETBE	2.581	59	20802	5.07	ug/L	93
31) Vinyl acetate	2.566	43	75815	24.26	ug/L	95
32) cis-1,2-Dichloroethene	2.720	96	6874	5.02	ug/L	91
33) 2,2-Dichloropropane	2.781	77	8612	5.08	ug/L	96
34) Bromochloromethane	2.827	128	3491	5.02	ug/L	97
35) Cyclohexane	2.858	56	12275	4.99	ug/L	90

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50655.D
Acq On : 15 Nov 2023 7:25 am
Operator : jeniferw
Sample : IC1985-2
Misc : MS55275,V1A1985,,,,,
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Nov 15 12:55:35 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
36) Chloroform	2.858	83	11416	4.95	ug/L		94
37) Ethyl acetate	2.920	43	42520	24.36	ug/L		98
38) Tetrahydrofuran	2.951	42	3399	4.84	ug/L		98
40) Carbon Tetrachloride	2.966	117	8710m	5.06	ug/L		
41) 1,1,1-Trichloroethane	2.989	97	9315	4.95	ug/L		92
42) 2-Butanone	3.004	43	22160	23.68	ug/L		95
43) 1,1-Dichloropropene	3.058	75	8659	5.33	ug/L		96
44) tert-Butyl formate	3.097	59	26820	24.50	ug/L		93
45) Propionitrile	3.143	54	14115	56.71	ug/L		98
46) Methacrylonitrile	3.166	41	50134	46.47	ug/L		98
47) Benzene	3.181	78	24671	5.05	ug/L		97
48) TAME	3.251	73	17692	5.15	ug/L		89
50) 1,2-Dichloroethane	3.274	62	9091	4.90	ug/L		89
51) Isobutyl Alcohol	3.258	43	15556	99.93	ug/L		94
52) Tert Amyl Alcohol	3.328	59	10373	48.81	ug/L		93
53) Trichloroethene	3.512	95	6986	5.10	ug/L		97
54) Methylcyclohexane	3.528	83	11195	5.28	ug/L		94
55) Dibromomethane	3.736	93	4365	4.93	ug/L		86
56) 1,2-Dichloropropane	3.797	63	7066	5.10	ug/L		93
57) Bromodichloromethane	3.828	83	8499	5.04	ug/L		95
58) Methyl methacrylate	3.920	41	7545	4.87	ug/L		95
59) 1,4-Dioxane	3.943	88	2067	109.68	ug/L		92
60) 2-Chloroethyl vinyl ether	4.167	63	18527	23.82	ug/L		99
61) cis-1,3-Dichloropropene	4.213	75	10099	5.03	ug/L		86
64) Toluene	4.374	91	26189	5.09	ug/L		97
65) 2-Nitropropane	4.467	41	12155	24.09	ug/L		93
66) 4-Methyl-2-pentanone	4.582	43	43960	23.40	ug/L		97
67) trans-1,3-Dichloropropene	4.613	75	8952	4.85	ug/L		91
68) Tetrachloroethene	4.628	166	7417	5.23	ug/L		92
69) Ethyl methacrylate	4.728	69	7156	4.64	ug/L		90
70) 1,1,2-Trichloroethane	4.713	83	5253	5.04	ug/L		96
71) Dibromochloromethane	4.844	129	6370	4.77	ug/L		99
72) 1,3-Dichloropropane	4.898	76	9664	5.03	ug/L		91
73) 1,2-Dibromoethane	4.998	107	6680	5.06	ug/L		95
74) 3,3-Dimethyl-1-Butanol	5.121	57	57919	225.52	ug/L		96
75) 2-hexanone	5.136	43	42675	22.99	ug/L		89
76) 1-Chlorohexane	5.367	91	8606m	4.80	ug/L		
77) Ethylbenzene	5.398	91	28487m	5.14	ug/L		
78) Chlorobenzene	5.367	112	17408	5.20	ug/L		95
79) 1,1,1,2-Tetrachloroethane	5.413	131	6251	5.03	ug/L		94
80) m,p-Xylene	5.498	91	44260	10.07	ug/L		97
81) o-Xylene	5.806	91	23386	5.01	ug/L		99
82) Styrene	5.837	104	17661	5.02	ug/L		96
83) Bromoform	5.837	173	4271	4.83	ug/L		95
84) Isopropylbenzene	6.045	105	27340	5.01	ug/L		99
87) cis-1,4-Dichloro-2-butene	6.268	53	2261	4.95	ug/L	#	69
88) n-Propylbenzene	6.352	91	32269	5.03	ug/L		99
89) Bromobenzene	6.306	156	7277	5.11	ug/L		92
90) 1,1,2,2-Tetrachloroethane	6.375	83	8684	5.15	ug/L		95
91) 1,3,5-Trimethylbenzene	6.506	105	22650	5.14	ug/L		96

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50655.D
Acq On : 15 Nov 2023 7:25 am
Operator : jeniferw
Sample : IC1985-2
Misc : MS55275,V1A1985,,,,,
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Nov 15 12:55:35 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration

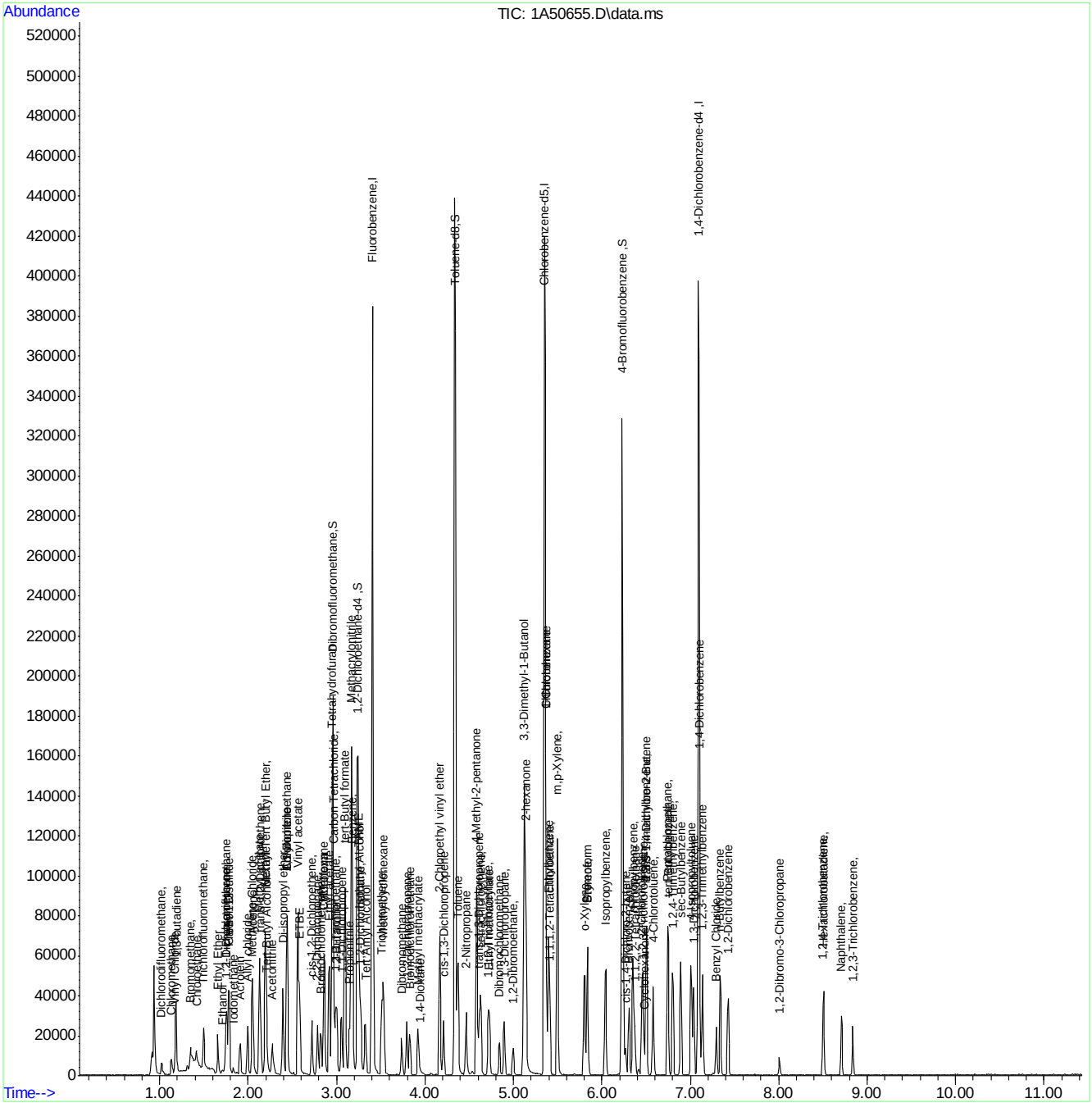
	Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
92)	2-Chlorotoluene	6.452	91	18619	4.98	ug/L		99
93)	trans-1,4-Dichloro-2-B...	6.506	53	3166	4.92	ug/L		93
94)	1,2,3-Trichloropropane	6.468	110	2398	5.12	ug/L		83
95)	Cyclohexanone	6.483	55	2124	22.02	ug/L		90
96)	4-Chlorotoluene	6.583	91	19050	4.90	ug/L		90
97)	tert-Butylbenzene	6.753	91	12579	5.07	ug/L		91
98)	1,2,4-Trimethylbenzene	6.799	105	21500	5.05	ug/L		96
99)	Pentachloroethane	6.745	167	3352	5.08	ug/L	#	62
100)	sec-Butylbenzene	6.891	105	28228	5.06	ug/L		97
101)	4-Isopropyltoluene	7.007	119	23997	4.97	ug/L		99
102)	1,3-Dichlorobenzene	7.037	146	13088	5.01	ug/L		97
103)	1,2,3-Trimethylbenzene	7.137	105	21256	4.99	ug/L		99
104)	1,4-Dichlorobenzene	7.107	146	13210	5.07	ug/L		90
105)	n-Butylbenzene	7.338	92	10540	4.87	ug/L		96
106)	Benzyl Chloride	7.291	126	2815	4.61	ug/L		94
107)	1,2-Dichlorobenzene	7.430	146	11755	5.06	ug/L		96
108)	1,2-Dibromo-3-Chloropr...	8.007	75	1301	4.82	ug/L	#	79
109)	Hexachlorobutadiene	8.507	225	2660	4.80	ug/L		84
110)	1,2,4-Trichlorobenzene	8.500	180	6129	4.79	ug/L		97
111)	Naphthalene	8.707	128	15424	4.69	ug/L		100
112)	1,2,3-Trichlorobenzene	8.838	180	5130	5.08	ug/L		94

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50655.D
Acq On : 15 Nov 2023 7:25 am
Operator : jeniferw
Sample : IC1985-2
Misc : MS55275,V1A1985,,,,,
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Nov 15 12:55:35 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration



Manual Integration Approval Summary

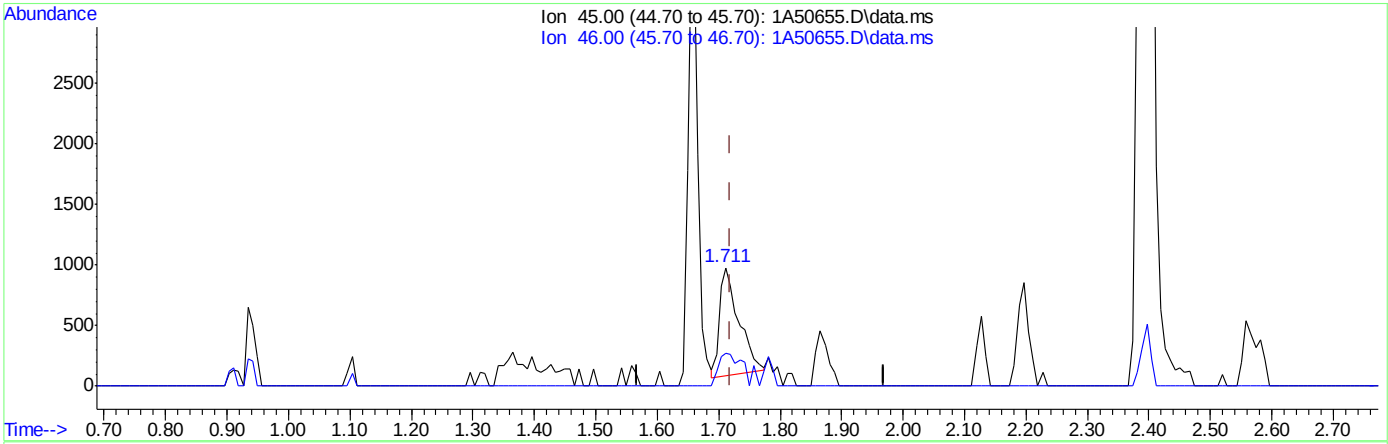
Sample Number: V1A1985-IC1985
Lab FileID: 1A50655.D
Injection Time: 11/15/23 07:25
Method: SW846 8260D
Analyst approved: 11/15/23 14:32 Jenifer Willis
Supervisor approved: 11/15/23 15:49 Karen Watson

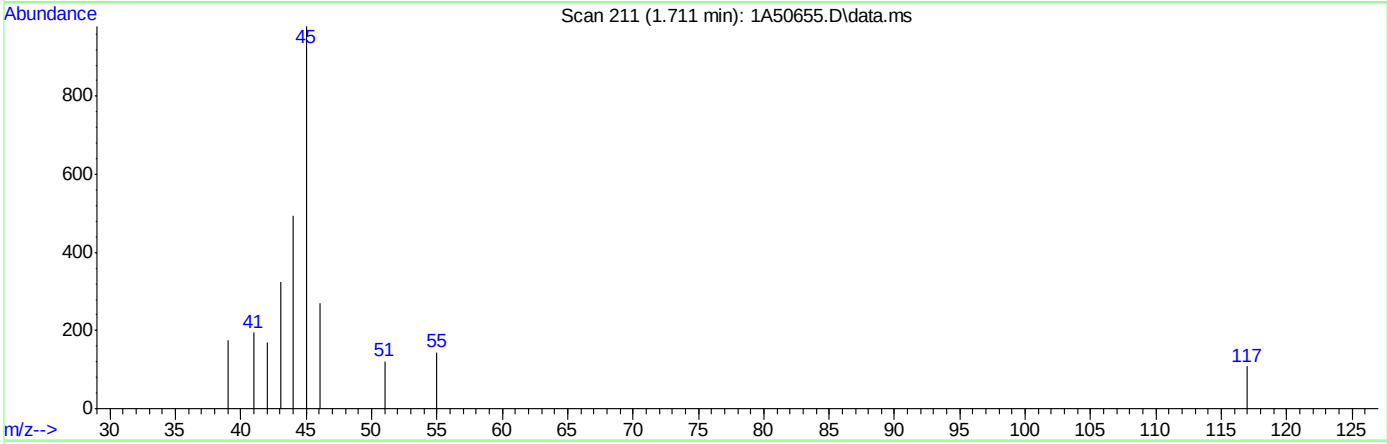
Parameter	CAS	Sig#	R.T. (min.)	Reason
Ethyl Alcohol	64-17-5		1.71	Poorly defined baseline
Carbon Tetrachloride	56-23-5		2.97	Overlapping peak
1-Chlorohexane	544-10-5		5.37	Overlapping peak
Ethylbenzene	100-41-4		5.40	Overlapping peak

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50655.D
Acq On : 15 Nov 2023 7:25 am
Operator : jeniferw
Sample : IC1945-2
Misc : MS55275,V1A1945,,,,,
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Nov 15 09:38:26 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50655.D\data.ms

(10) Ethanol

1.711min (-0.008) 91.11ug/L

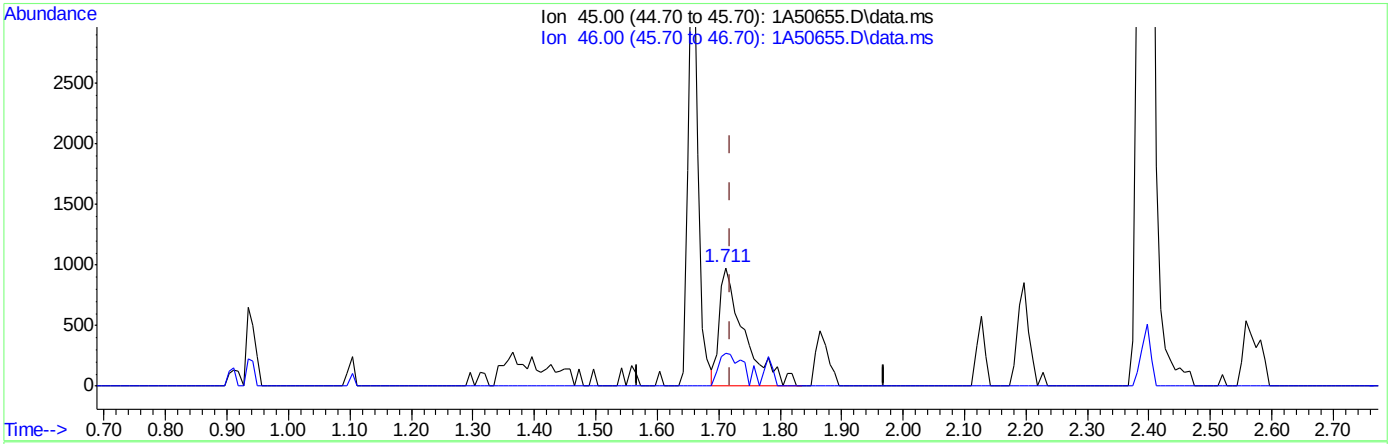
response 1979

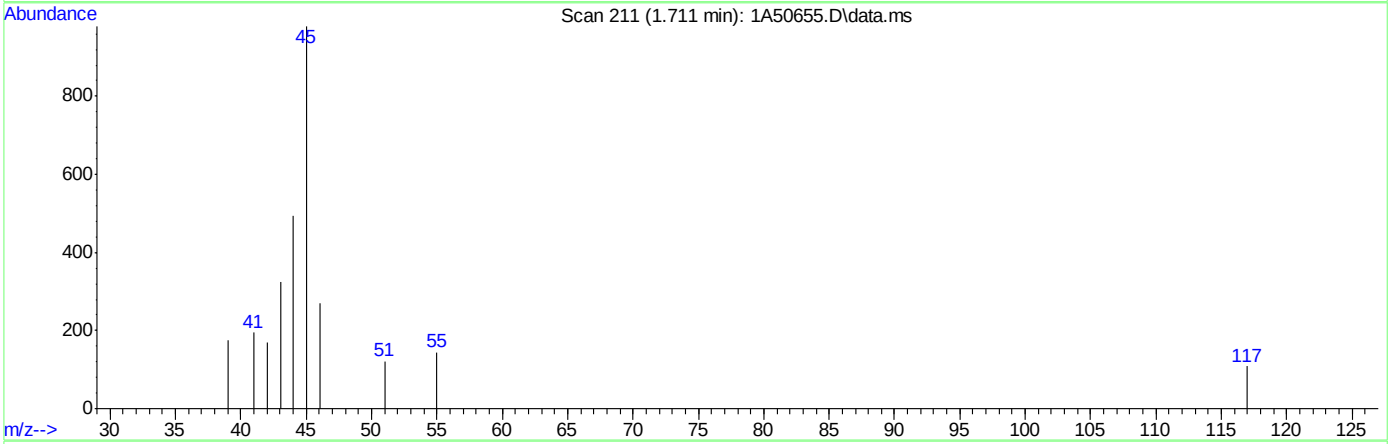
Ion	Exp%	Act%
45.00	100	100
46.00	40.30	31.76
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50655.D
Acq On : 15 Nov 2023 7:25 am
Operator : jeniferw
Sample : IC1945-2
Misc : MS55275,V1A1945,,,,,
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Nov 15 09:38:26 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50655.D\data.ms

(10) Ethanol

1.711min (-0.008) 129.64ug/L m

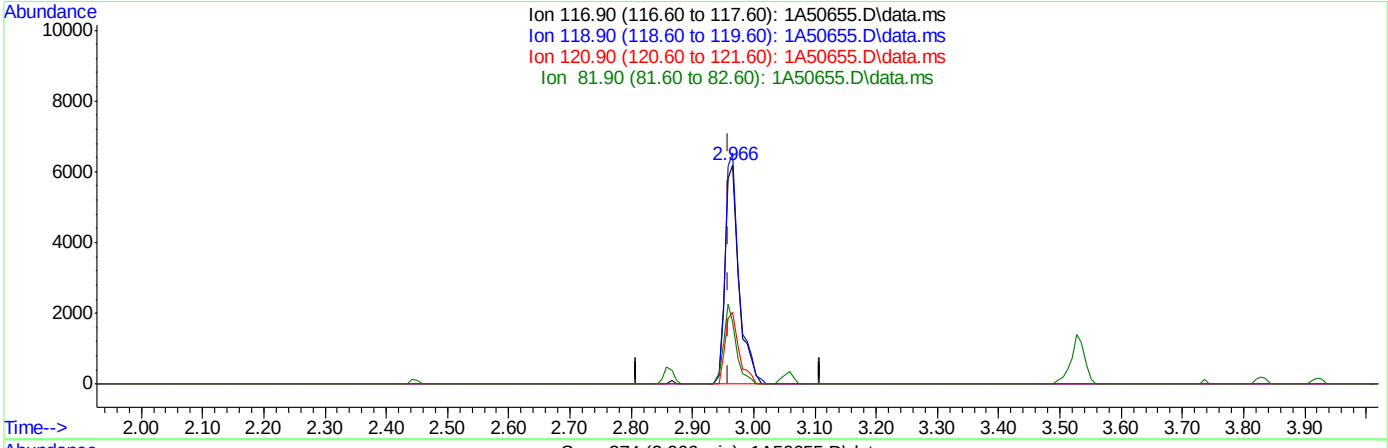
response 2816

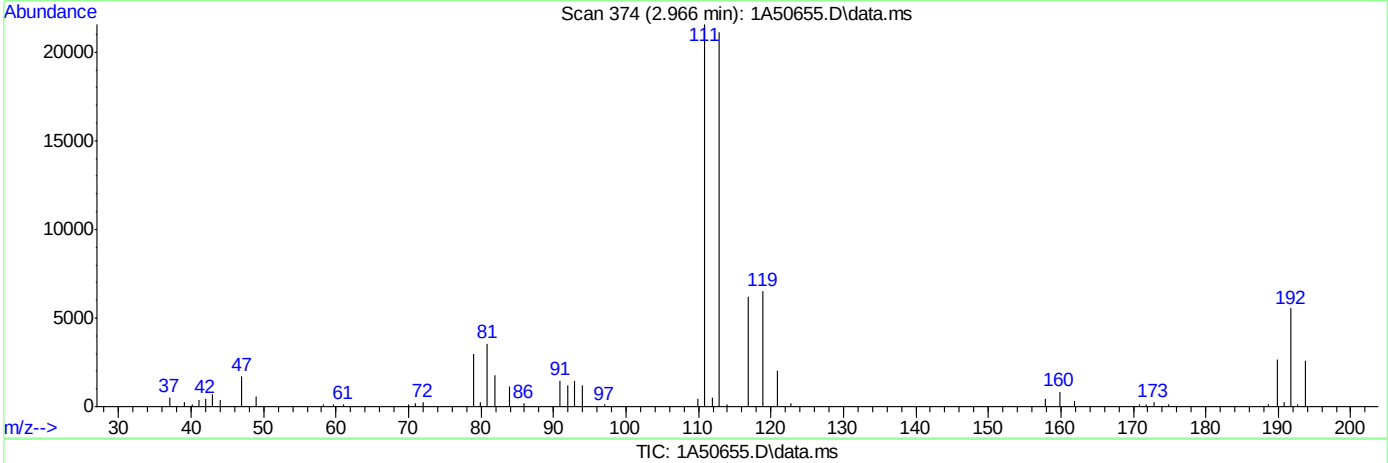
Ion	Exp%	Act%
45.00	100	100
46.00	40.30	27.48
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50655.D
Acq On : 15 Nov 2023 7:25 am
Operator : jeniferw
Sample : IC1945-2
Misc : MS55275,V1A1945,,,,,
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Nov 15 09:38:26 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50655.D\data.ms

(40) Carbon Tetrachloride ( )

2.966min (+0.007) 5.63ug/L

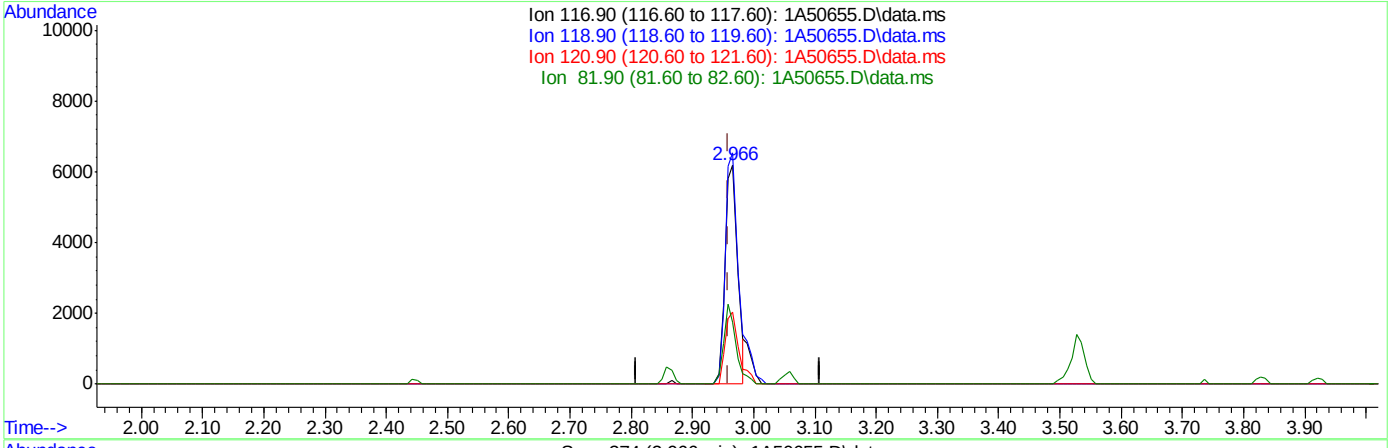
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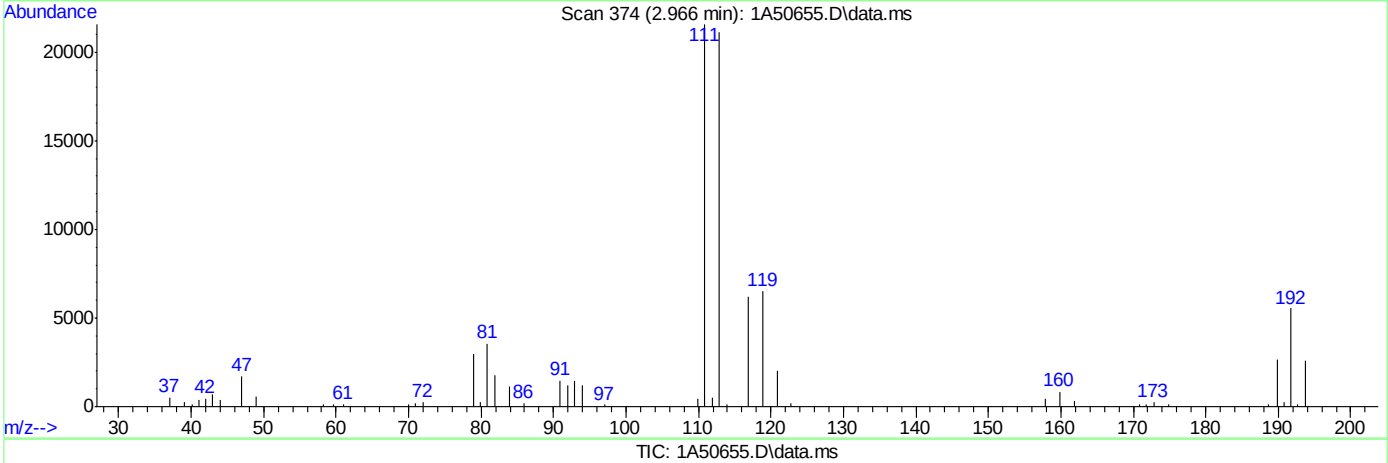
Ion	Exp%	Act%
116.90	100	100
118.90	94.50	105.67
120.90	31.10	32.91
81.90	25.40	28.13

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50655.D
Acq On : 15 Nov 2023 7:25 am
Operator : jeniferw
Sample : IC1945-2
Misc : MS55275,V1A1945,,,,,
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Nov 15 09:38:26 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50655.D\data.ms

(40) Carbon Tetrachloride ( )

2.966min (+0.007) 5.06ug/L m

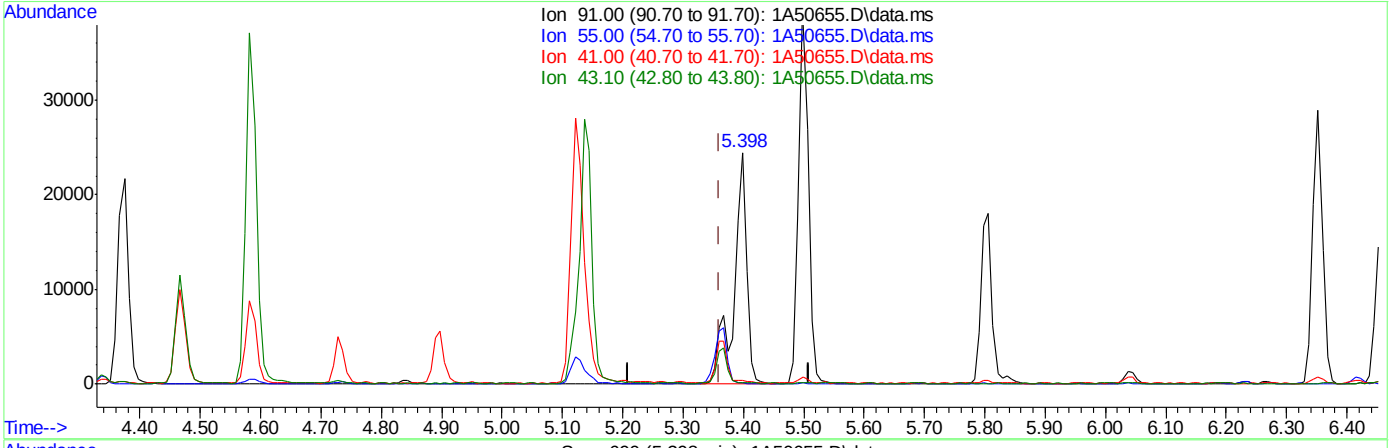
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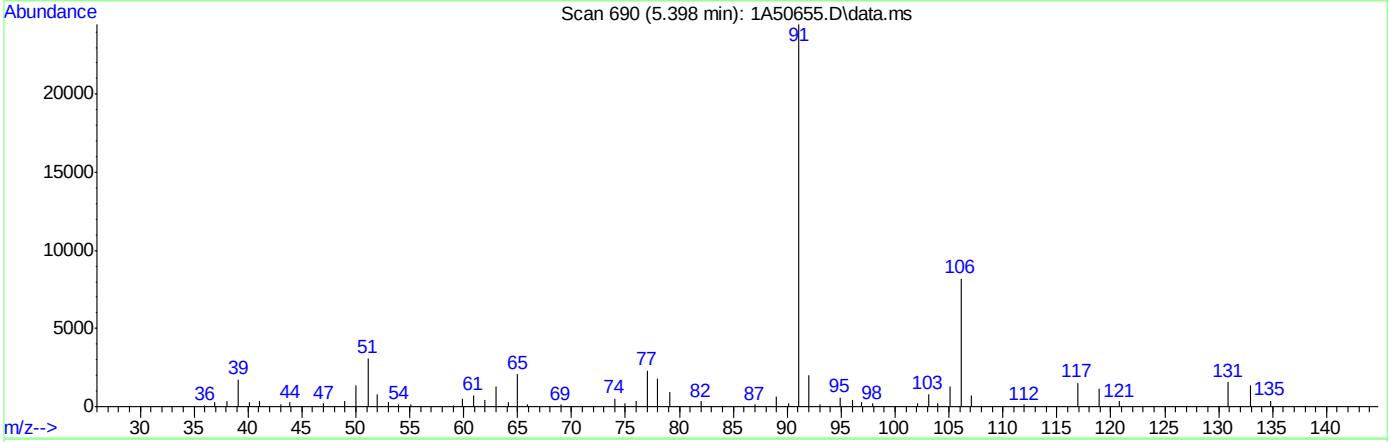
Ion	Exp%	Act%
116.90	100	100
118.90	94.50	105.67
120.90	31.10	32.91
81.90	25.40	28.13

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50655.D
Acq On : 15 Nov 2023 7:25 am
Operator : jeniferw
Sample : IC1945-2
Misc : MS55275,V1A1945,,,,,
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Nov 15 09:38:26 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50655.D\data.ms

(76) 1-Chlorohexane

5.398min (+0.038) 20.70ug/L

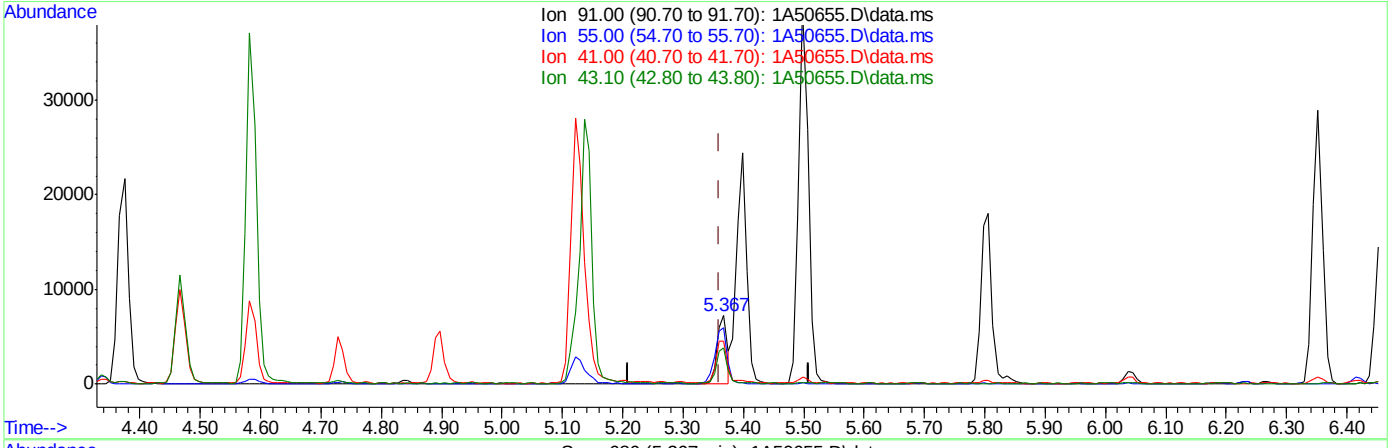
response 37094

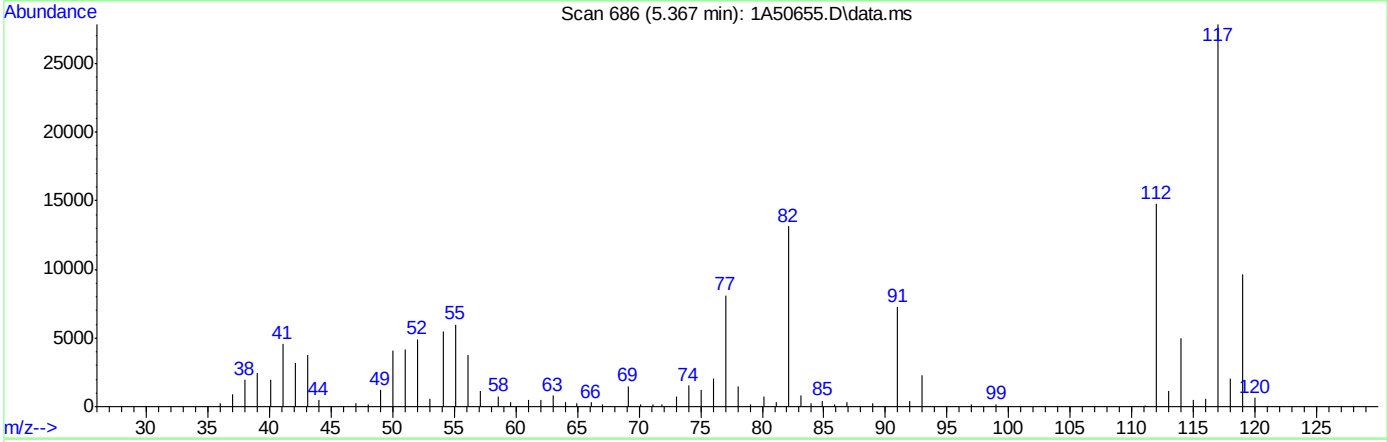
Ion	Exp%	Act%
91.00	100	100
55.00	74.60	0.46#
41.00	53.90	1.03#
43.10	42.90	0.10#

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50655.D
Acq On : 15 Nov 2023 7:25 am
Operator : jeniferw
Sample : IC1945-2
Misc : MS55275,V1A1945,,,,,
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Nov 15 09:38:26 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50655.D\data.ms

(76) 1-Chlorohexane

5.367min (+0.007) 4.80ug/L m

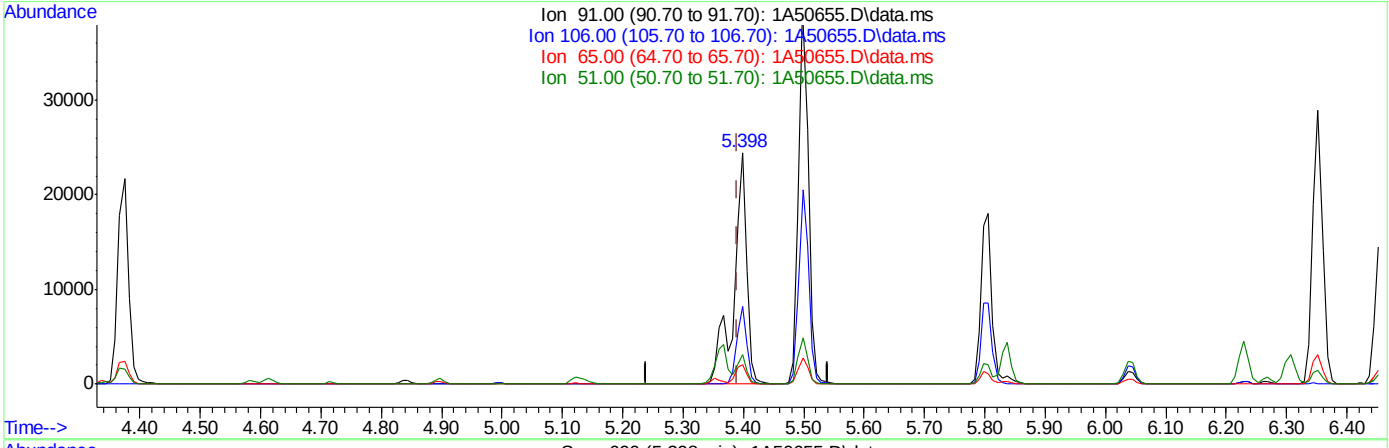
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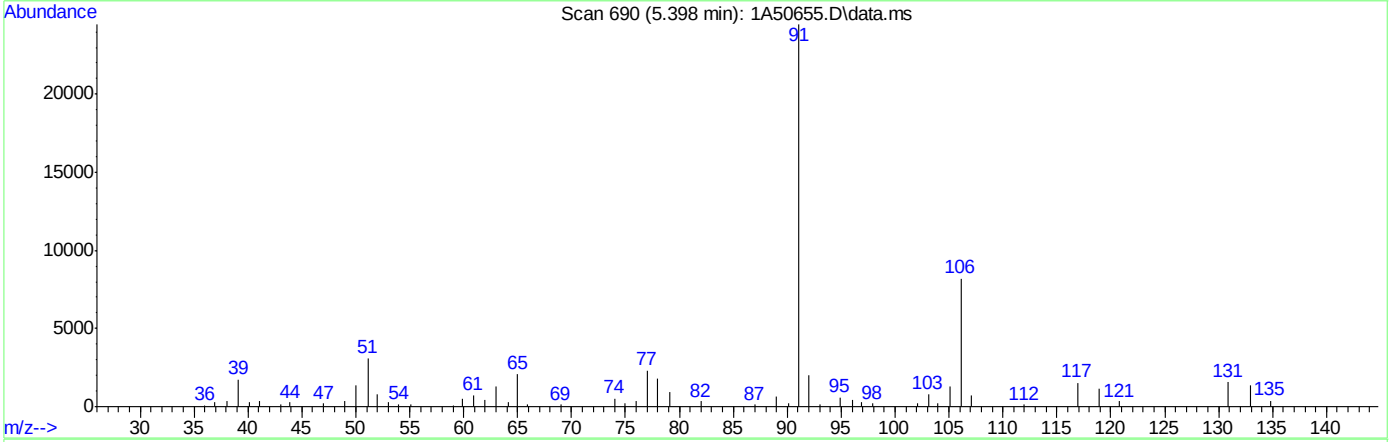
Ion	Exp%	Act%
91.00	100	100
55.00	74.60	82.54
41.00	53.90	62.72
43.10	42.90	52.25

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50655.D
Acq On : 15 Nov 2023 7:25 am
Operator : jeniferw
Sample : IC1945-2
Misc : MS55275,V1A1945,,,,,
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Nov 15 09:38:26 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50655.D\data.ms

(77) Ethylbenzene

5.398min (+0.007) 6.69ug/L

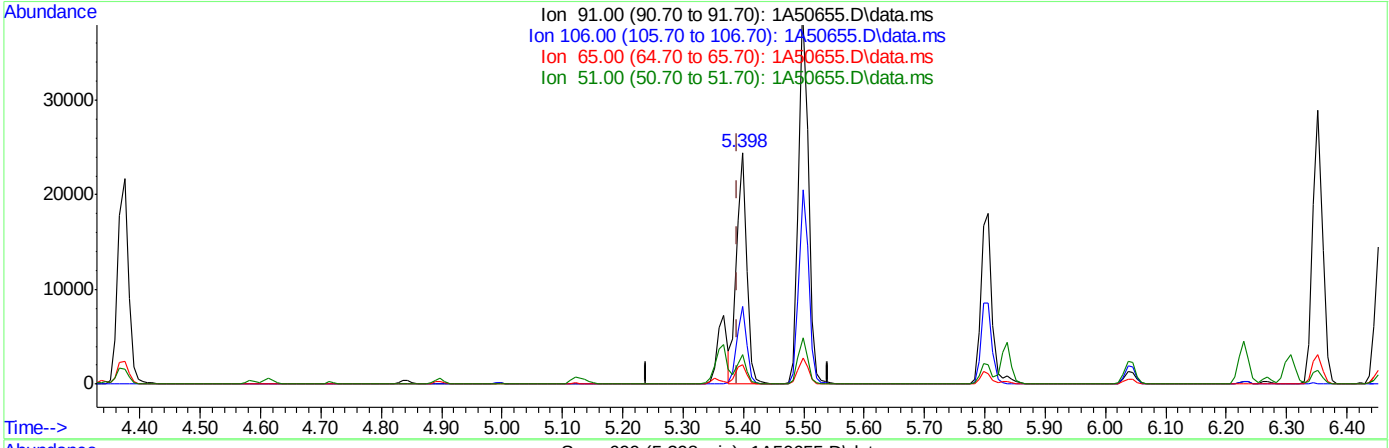
response 37094

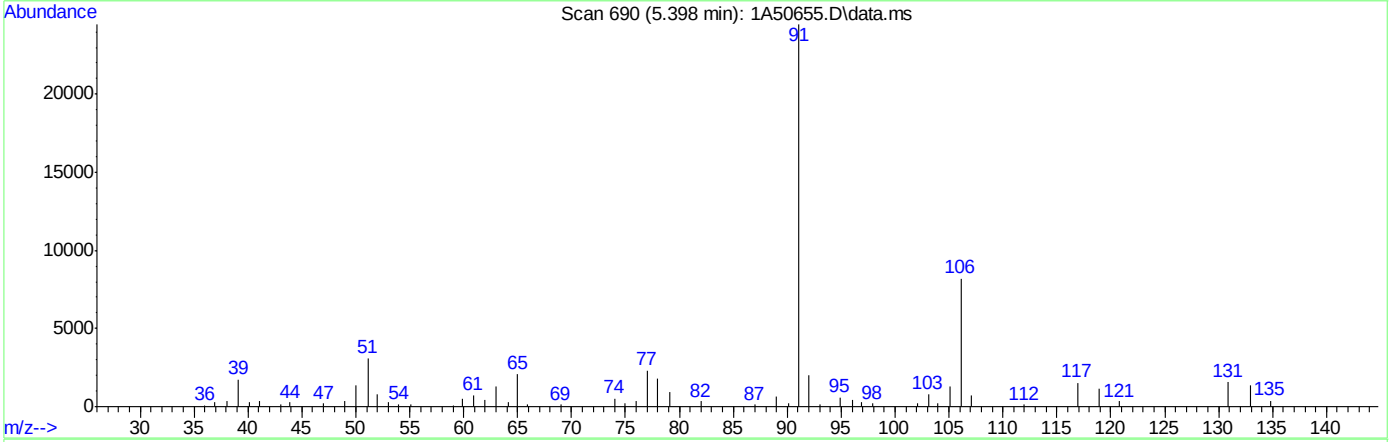
Ion	Exp%	Act%
91.00	100	100
106.00	32.00	33.57
65.00	8.30	8.61
51.00	10.10	12.66

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50655.D
Acq On : 15 Nov 2023 7:25 am
Operator : jeniferw
Sample : IC1945-2
Misc : MS55275,V1A1945,,,,,
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Nov 15 09:38:26 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50655.D\data.ms

(77) Ethylbenzene

5.398min (+0.007) 5.14ug/L m

response 28487

Ion	Exp%	Act%
91.00	100	100
106.00	32.00	33.57
65.00	8.30	8.61
51.00	10.10	12.66

Manual Integrations APPROVED (compounds with "m" flag)
Karen Watson 11/15/23 15:49

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50657.D
Acq On : 15 Nov 2023 7:57 am
Operator : jeniferw
Sample : IC1985-3
Misc : MS55275,V1A1985,,,,,
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Nov 15 12:56:20 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Fluorobenzene	3.405	96	207984	50.00	ug/L		0.00
62) Chlorobenzene-d5	5.352	117	149391	50.00	ug/L		0.00
85) 1,4-Dichlorobenzene-d4	7.091	152	80771	50.00	ug/L		0.00
System Monitoring Compounds							
39) Dibromofluoromethane	2.951	113	62291	50.08	ug/L		0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 100.16%				
49) 1,2-Dichloroethane-d4	3.236	65	66764	49.32	ug/L		0.00
Spiked Amount 50.000	Range 79 - 125		Recovery = 98.64%				
63) Toluene-d8	4.336	98	200780	50.32	ug/L		0.00
Spiked Amount 50.000	Range 85 - 112		Recovery = 100.64%				
86) 4-Bromofluorobenzene	6.229	174	66173	48.91	ug/L		0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 97.82%				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	1.019	85	7633	9.19	ug/L		96
3) Chloromethane	1.127	50	11058	8.73	ug/L		95
4) 1,3-butadiene	1.181	39	16640	11.72	ug/L		96
5) Vinyl Chloride	1.165	62	11022	8.76	ug/L		93
6) Bromomethane	1.342	94	3909	8.44	ug/L		98
7) Chloroethane	1.411	64	7219	9.13	ug/L		91
8) Trichlorofluoromethane	1.496	101	15592	9.23	ug/L		99
9) Ethyl Ether	1.650	59	9748	9.64	ug/L		89
10) Ethanol	1.704	45	5107	236.75	ug/L		99
11) 1,2-Dichlorotrifluoroe...	1.742	67	12681	9.03	ug/L		94
12) 1,1-Dichloroethene	1.758	61	17834	9.41	ug/L		98
13) Freon 113	1.781	101	10387	9.75	ug/L		93
14) Carbon Disulfide	1.781	76	32308	10.28	ug/L		89
15) Iodomethane	1.827	142	4688	7.13	ug/L		94
16) Acrolein	1.904	56	15136	45.68	ug/L		97
17) Allyl chloride	1.989	41	16554	9.28	ug/L		91
18) Methylene Chloride	2.043	49	21198	12.30	ug/L		96
19) Acetone	2.050	43	23826	50.50	ug/L		97
20) Methyl acetate	2.120	43	64137	43.28	ug/L		97
21) trans-1,2-Dichloroethene	2.135	61	17443	9.26	ug/L		97
22) Hexane	2.197	56	11968	9.19	ug/L		97
23) Methyl Tert Butyl Ether	2.189	73	32230	9.28	ug/L		97
24) Acetonitrile	2.273	41	20425	112.03	ug/L		99
25) Tert Butyl Alcohol	2.204	59	23778	91.92	ug/L	#	53
26) Di-isopropyl ether	2.389	45	40399	9.15	ug/L		95
27) Chloroprene	2.435	53	50950	9.69	ug/L		96
28) 1,1-Dichloroethane	2.443	63	22621	9.24	ug/L		98
29) Acrylonitrile	2.435	52	30920	49.01	ug/L		98
30) ETBE	2.581	59	36738	9.01	ug/L		96
31) Vinyl acetate	2.558	43	156482	50.43	ug/L		97
32) cis-1,2-Dichloroethene	2.720	96	12405	9.12	ug/L		98
33) 2,2-Dichloropropane	2.781	77	15784	9.38	ug/L		95
34) Bromochloromethane	2.820	128	6411	9.29	ug/L		95
35) Cyclohexane	2.858	56	22374	9.17	ug/L		90

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50657.D
Acq On : 15 Nov 2023 7:57 am
Operator : jeniferw
Sample : IC1985-3
Misc : MS55275,V1A1985,,,,,
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Nov 15 12:56:20 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
36) Chloroform	2.858	83	20823	9.10	ug/L		95
37) Ethyl acetate	2.912	43	85088	49.09	ug/L		99
38) Tetrahydrofuran	2.943	42	6138	8.80	ug/L		93
40) Carbon Tetrachloride	2.958	117	16526m	9.67	ug/L		
41) 1,1,1-Trichloroethane	2.989	97	17335	9.28	ug/L		94
42) 2-Butanone	2.997	43	40477	43.56	ug/L		93
43) 1,1-Dichloropropene	3.051	75	15409	9.55	ug/L		93
44) tert-Butyl formate	3.089	59	50232	46.21	ug/L		91
45) Propionitrile	3.143	54	26060	105.43	ug/L		97
46) Methacrylonitrile	3.166	41	95779	89.39	ug/L		99
47) Benzene	3.182	78	44277	9.13	ug/L		91
48) TAME	3.251	73	30670	9.00	ug/L	#	70
50) 1,2-Dichloroethane	3.274	62	16398	8.89	ug/L		92
51) Isobutyl Alcohol	3.259	43	30557	197.68	ug/L		94
52) Tert Amyl Alcohol	3.320	59	20043	94.96	ug/L		86
53) Trichloroethene	3.505	95	12422	9.13	ug/L		93
54) Methylcyclohexane	3.528	83	19821	9.42	ug/L		97
55) Dibromomethane	3.736	93	7870	8.96	ug/L		84
56) 1,2-Dichloropropane	3.790	63	12778	9.28	ug/L		90
57) Bromodichloromethane	3.828	83	15381	9.19	ug/L		96
58) Methyl methacrylate	3.921	41	14108	9.17	ug/L		95
59) 1,4-Dioxane	3.936	88	3640	194.49	ug/L		98
60) 2-Chloroethyl vinyl ether	4.167	63	34695	44.91	ug/L		98
61) cis-1,3-Dichloropropene	4.205	75	18044	9.04	ug/L		85
64) Toluene	4.367	91	46731	9.20	ug/L		98
65) 2-Nitropropane	4.467	41	21981	44.14	ug/L		91
66) 4-Methyl-2-pentanone	4.582	43	81980	44.21	ug/L		97
67) trans-1,3-Dichloropropene	4.613	75	16137	8.86	ug/L		89
68) Tetrachloroethene	4.629	166	13186	9.42	ug/L		93
69) Ethyl methacrylate	4.729	69	13721	9.01	ug/L		89
70) 1,1,2-Trichloroethane	4.713	83	9313	9.06	ug/L		96
71) Dibromochloromethane	4.836	129	11581	8.79	ug/L		95
72) 1,3-Dichloropropane	4.890	76	17264	9.10	ug/L		87
73) 1,2-Dibromoethane	4.990	107	11808	9.07	ug/L		98
74) 3,3-Dimethyl-1-Butanol	5.121	57	112080	442.20	ug/L		97
75) 2-hexanone	5.137	43	80993	44.22	ug/L		81
76) 1-Chlorohexane	5.360	91	16317m	9.23	ug/L		
77) Ethylbenzene	5.391	91	51497m	9.41	ug/L		
78) Chlorobenzene	5.360	112	31326	9.48	ug/L		94
79) 1,1,1,2-Tetrachloroethane	5.406	131	11321	9.24	ug/L		95
80) m,p-Xylene	5.498	91	80472	18.55	ug/L		94
81) o-Xylene	5.798	91	42747	9.29	ug/L		99
82) Styrene	5.837	104	32416	9.33	ug/L		95
83) Bromoform	5.837	173	7767	8.89	ug/L		97
84) Isopropylbenzene	6.037	105	51067	9.49	ug/L		98
87) cis-1,4-Dichloro-2-butene	6.260	53	4090	8.80	ug/L	#	77
88) n-Propylbenzene	6.353	91	58975	9.04	ug/L		98
89) Bromobenzene	6.306	156	13452	9.29	ug/L		98
90) 1,1,2,2-Tetrachloroethane	6.368	83	15115	8.80	ug/L		99
91) 1,3,5-Trimethylbenzene	6.506	105	41084	9.16	ug/L		93

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50657.D
Acq On : 15 Nov 2023 7:57 am
Operator : jeniferw
Sample : IC1985-3
Misc : MS55275,V1A1985,,,,,
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Nov 15 12:56:20 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration

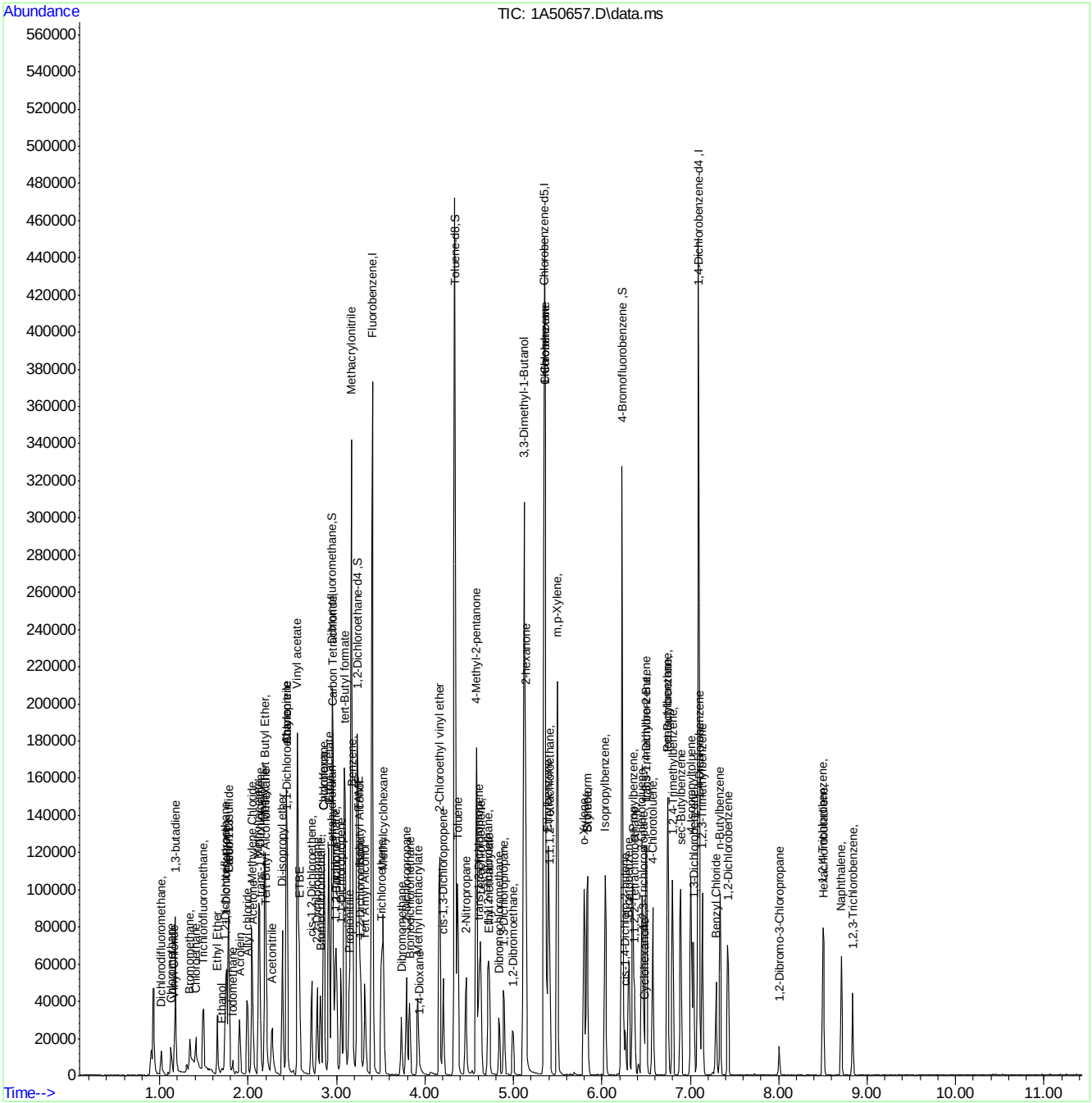
	Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
92)	2-Chlorotoluene	6.453	91	34133	8.98	ug/L		95
93)	trans-1,4-Dichloro-2-B...	6.506	53	5823	8.89	ug/L		93
94)	1,2,3-Trichloropropane	6.468	110	4217	8.85	ug/L		92
95)	Cyclohexanone	6.483	55	3920	39.94	ug/L		97
96)	4-Chlorotoluene	6.576	91	35334	8.93	ug/L		96
97)	tert-Butylbenzene	6.745	91	23148	9.17	ug/L		96
98)	1,2,4-Trimethylbenzene	6.799	105	39385	9.09	ug/L		94
99)	Pentachloroethane	6.745	167	6395	9.53	ug/L	#	47
100)	sec-Butylbenzene	6.891	105	53177	9.36	ug/L		97
101)	4-Isopropyltoluene	7.007	119	44903	9.13	ug/L		98
102)	1,3-Dichlorobenzene	7.038	146	23941	9.01	ug/L		98
103)	1,2,3-Trimethylbenzene	7.138	105	38977	8.99	ug/L		94
104)	1,4-Dichlorobenzene	7.107	146	23925	9.03	ug/L		99
105)	n-Butylbenzene	7.338	92	19943	9.06	ug/L		97
106)	Benzyl Chloride	7.292	126	5365	8.64	ug/L		92
107)	1,2-Dichlorobenzene	7.422	146	21268	9.00	ug/L		96
108)	1,2-Dibromo-3-Chloropr...	8.007	75	2441	8.89	ug/L	#	70
109)	Hexachlorobutadiene	8.508	225	5137	9.12	ug/L		94
110)	1,2,4-Trichlorobenzene	8.500	180	11581	8.90	ug/L		95
111)	Naphthalene	8.708	128	29068	8.69	ug/L		99
112)	1,2,3-Trichlorobenzene	8.838	180	9539	9.29	ug/L		93

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50657.D
Acq On : 15 Nov 2023 7:57 am
Operator : jeniferw
Sample : IC1985-3
Misc : MS55275,V1A1985,,,,,
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Nov 15 12:56:20 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration



Manual Integration Approval Summary

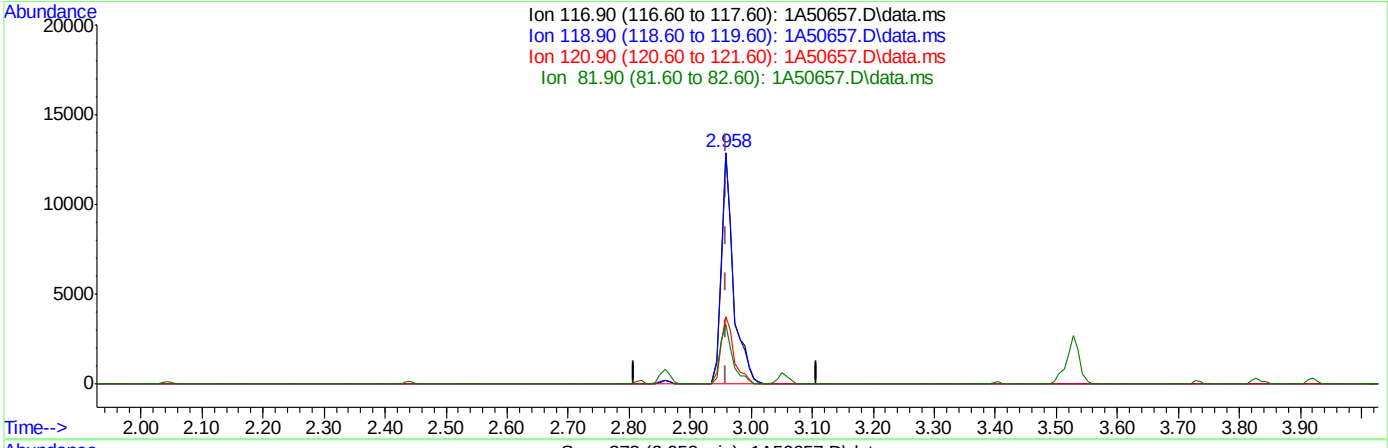
Sample Number: V1A1985-IC1985
Lab FileID: 1A50657.D
Injection Time: 11/15/23 07:57
Method: SW846 8260D
Analyst approved: 11/15/23 14:32 Jenifer Willis
Supervisor approved: 11/15/23 15:49 Karen Watson

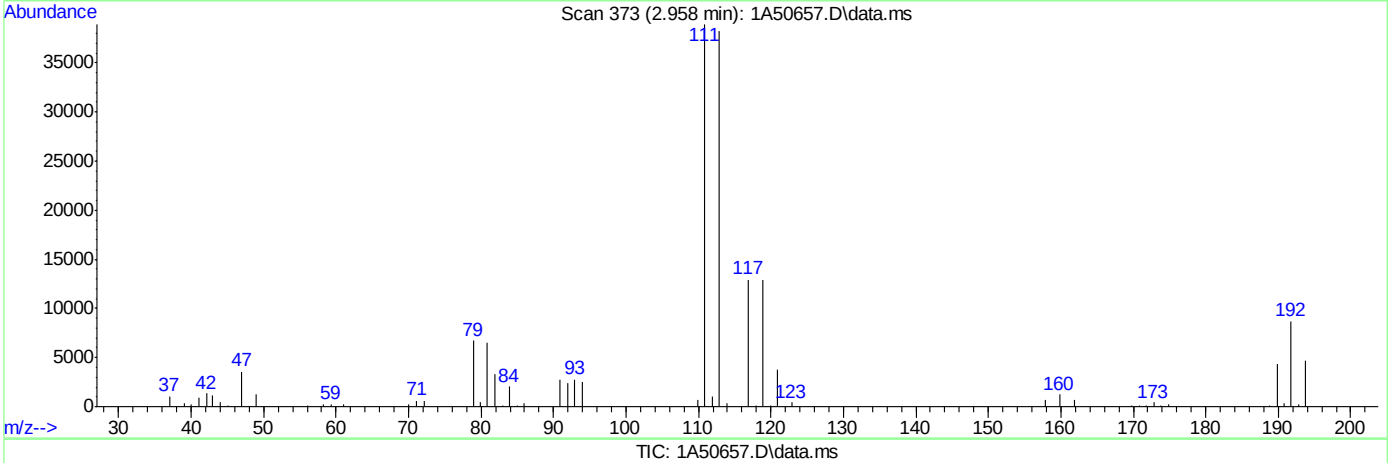
Parameter	CAS	Sig#	R.T. (min.)	Reason
Carbon Tetrachloride	56-23-5		2.96	Overlapping peak
1-Chlorohexane	544-10-5		5.36	Overlapping peak
Ethylbenzene	100-41-4		5.39	Overlapping peak

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50657.D
Acq On : 15 Nov 2023 7:57 am
Operator : jeniferw
Sample : IC1945-3
Misc : MS55275,V1A1945,,,,,
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Nov 15 09:38:28 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50657.D\data.ms

(40) Carbon Tetrachloride ( )

2.958min (-0.001) 10.61ug/L

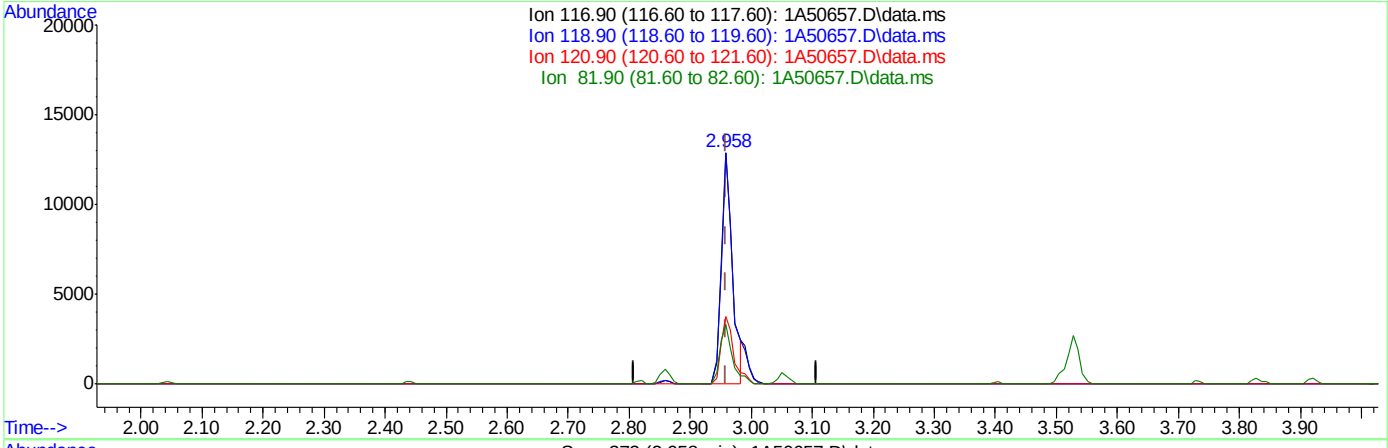
response 18134

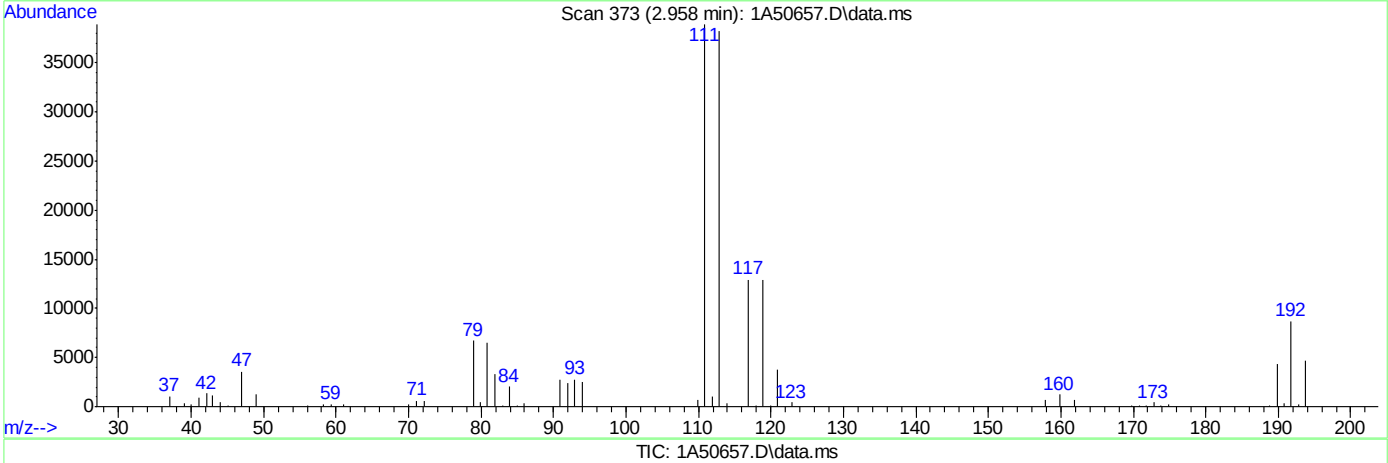
Ion	Exp%	Act%
116.90	100	100
118.90	94.50	99.77
120.90	31.10	29.38
81.90	25.40	25.66

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50657.D
Acq On : 15 Nov 2023 7:57 am
Operator : jeniferw
Sample : IC1945-3
Misc : MS55275,V1A1945,,,,,
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Nov 15 09:38:28 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50657.D\data.ms

(40) Carbon Tetrachloride ( )

2.958min (-0.001) 9.67ug/L m

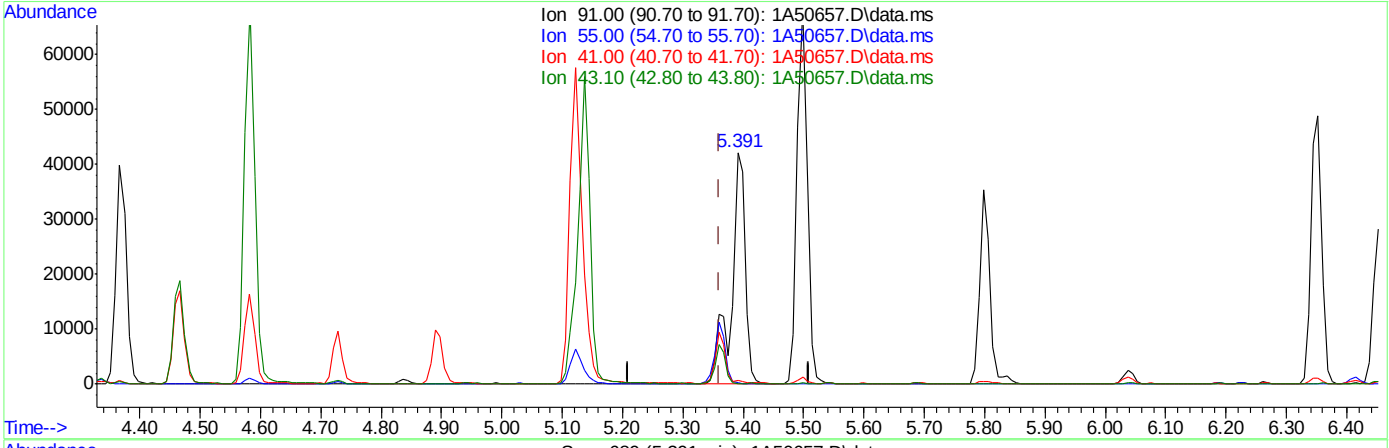
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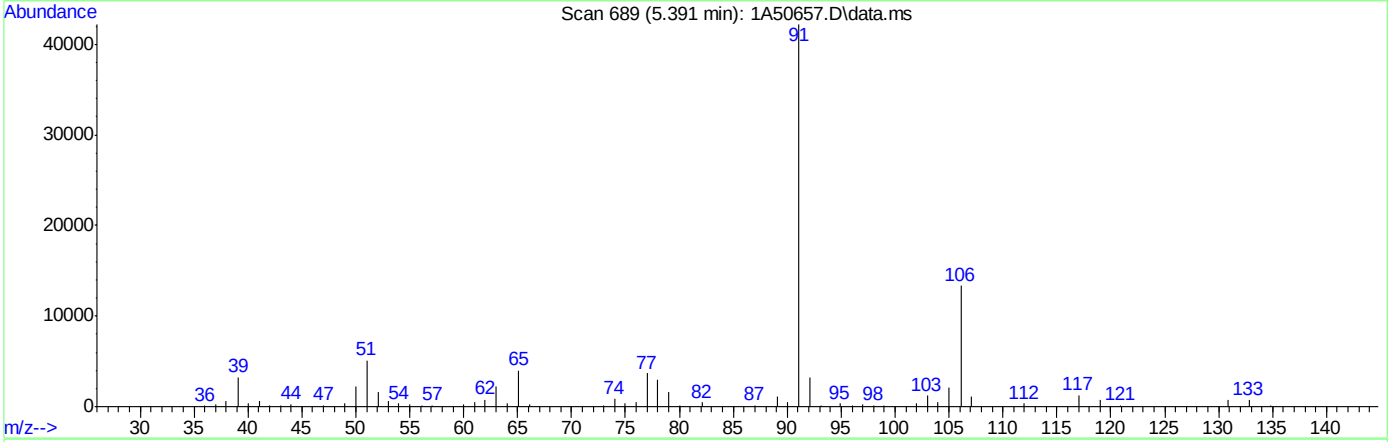
Ion	Exp%	Act%
116.90	100	100
118.90	94.50	99.77
120.90	31.10	29.38
81.90	25.40	25.66

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50657.D
Acq On : 15 Nov 2023 7:57 am
Operator : jeniferw
Sample : IC1945-3
Misc : MS55275,V1A1945,,,,,
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Nov 15 09:38:28 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50657.D\data.ms

(76) 1-Chlorohexane

5.391min (+0.031) 38.35ug/L

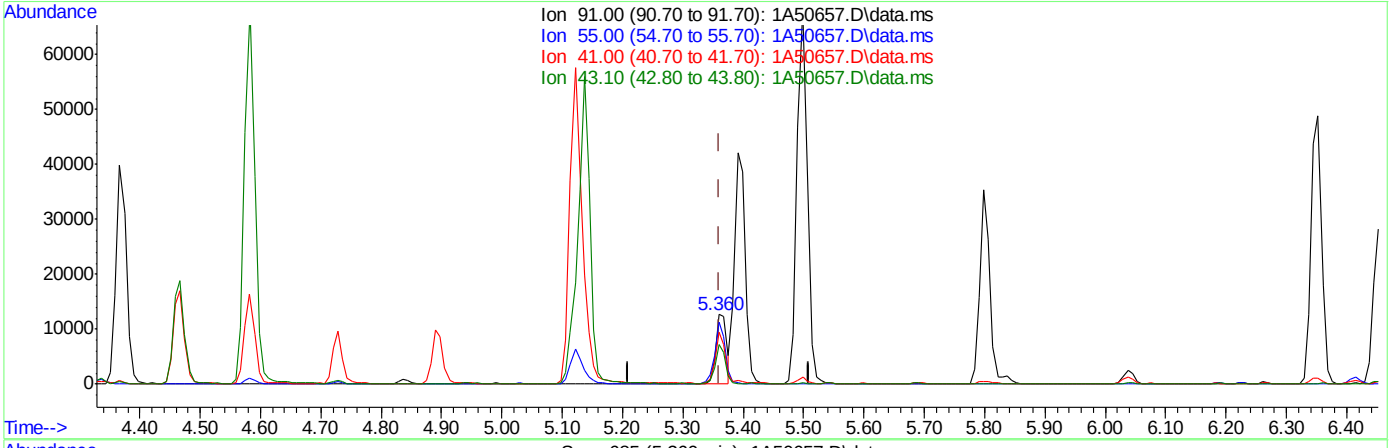
response 67817

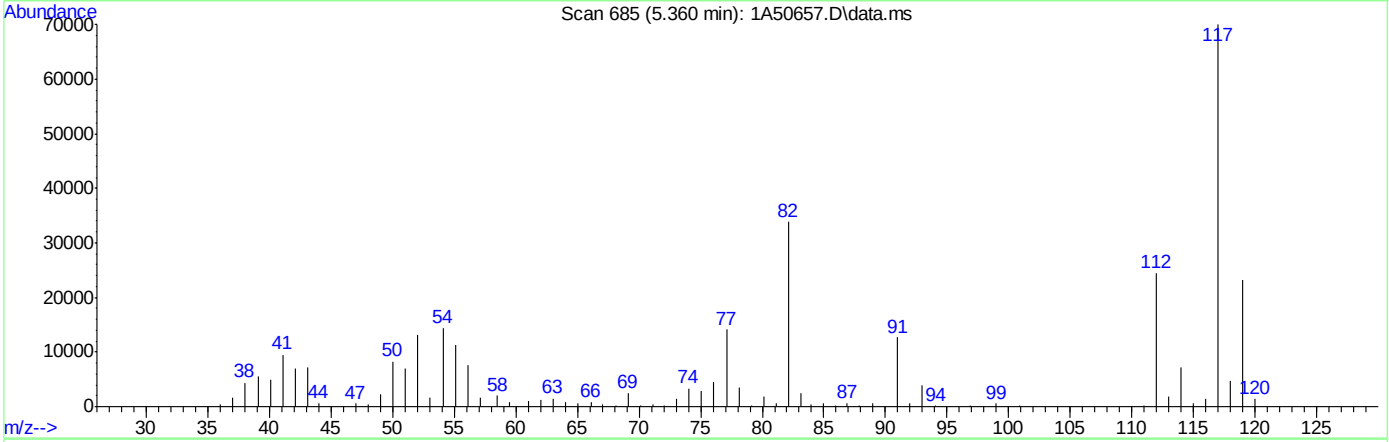
Ion	Exp%	Act%
91.00	100	100
55.00	74.60	0.61#
41.00	53.90	1.26#
43.10	42.90	0.41#

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50657.D
Acq On : 15 Nov 2023 7:57 am
Operator : jeniferw
Sample : IC1945-3
Misc : MS55275,V1A1945,,,,,
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Nov 15 09:38:28 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50657.D\data.ms

(76) 1-Chlorohexane

5.360min (-0.000) 9.23ug/L m

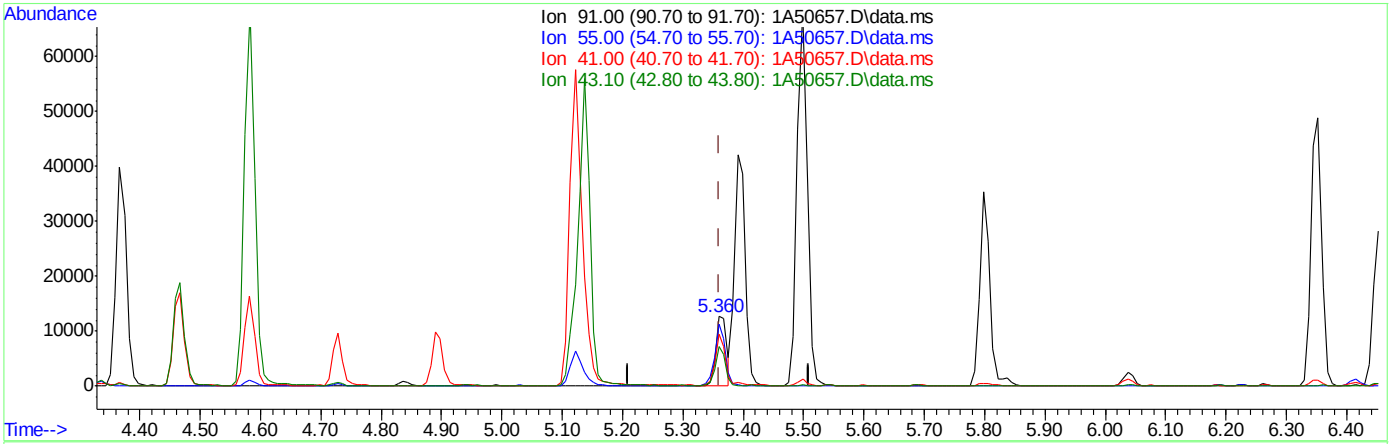
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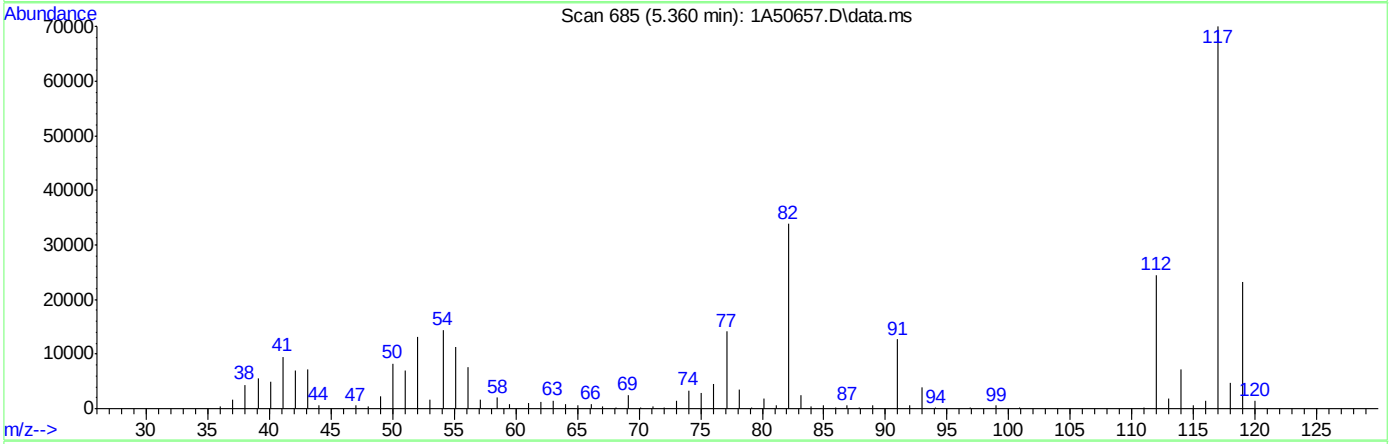
Ion	Exp%	Act%
91.00	100	100
55.00	74.60	89.57
41.00	53.90	75.40#
43.10	42.90	57.34

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50657.D
Acq On : 15 Nov 2023 7:57 am
Operator : jeniferw
Sample : IC1945-3
Misc : MS55275,V1A1945,,,,,
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Nov 15 09:38:28 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50657.D\data.ms

(76) 1-Chlorohexane

5.360min (-0.000) 9.23ug/L m

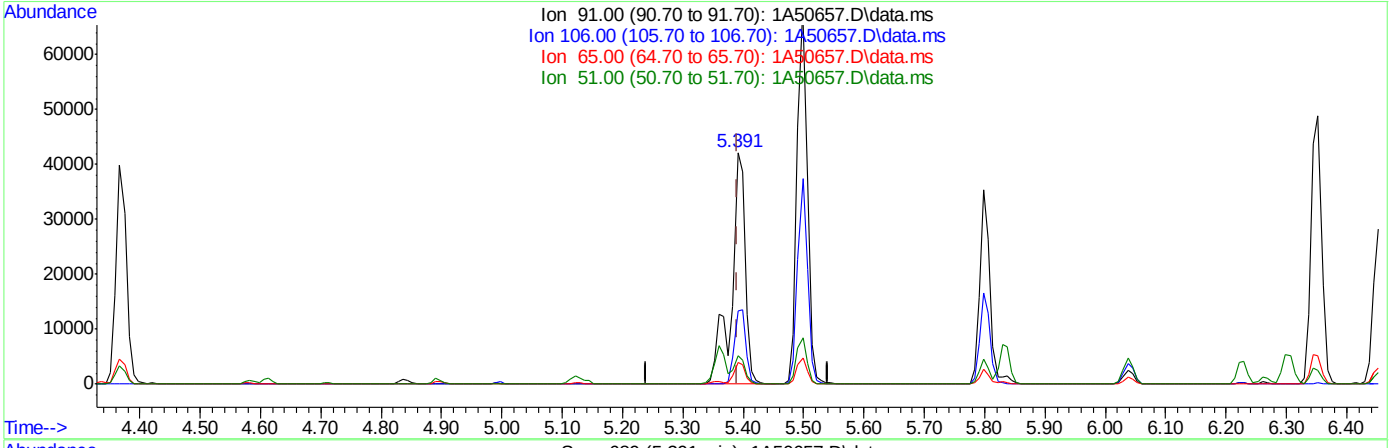
response 16317

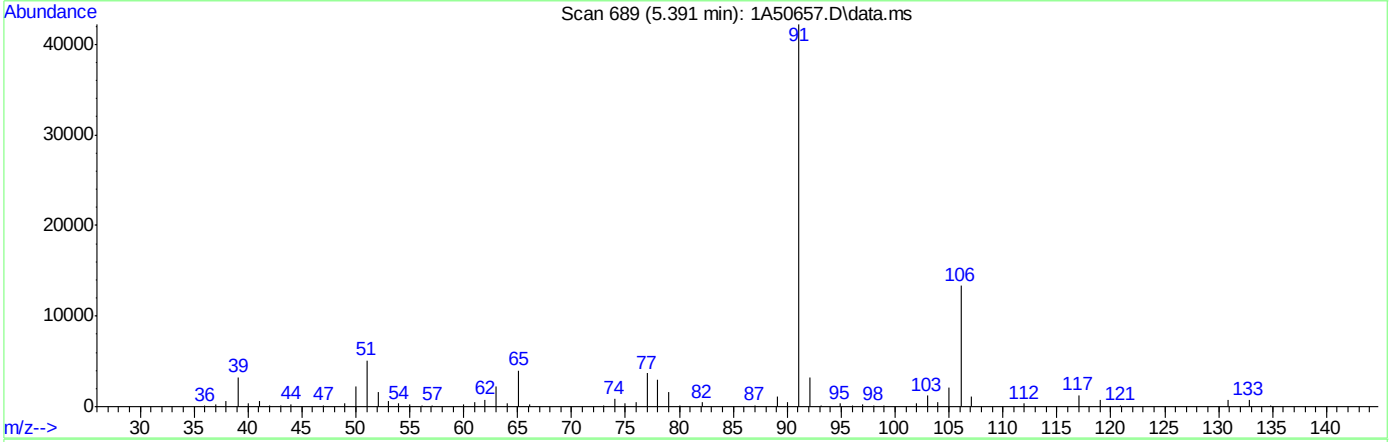
Ion	Exp%	Act%
91.00	100	100
55.00	74.60	89.57
41.00	53.90	75.40#
43.10	42.90	57.34

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50657.D
Acq On : 15 Nov 2023 7:57 am
Operator : jeniferw
Sample : IC1945-3
Misc : MS55275,V1A1945,,,,,
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Nov 15 09:38:28 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50657.D\data.ms

(77) Ethylbenzene

5.391min (-0.000) 12.39ug/L

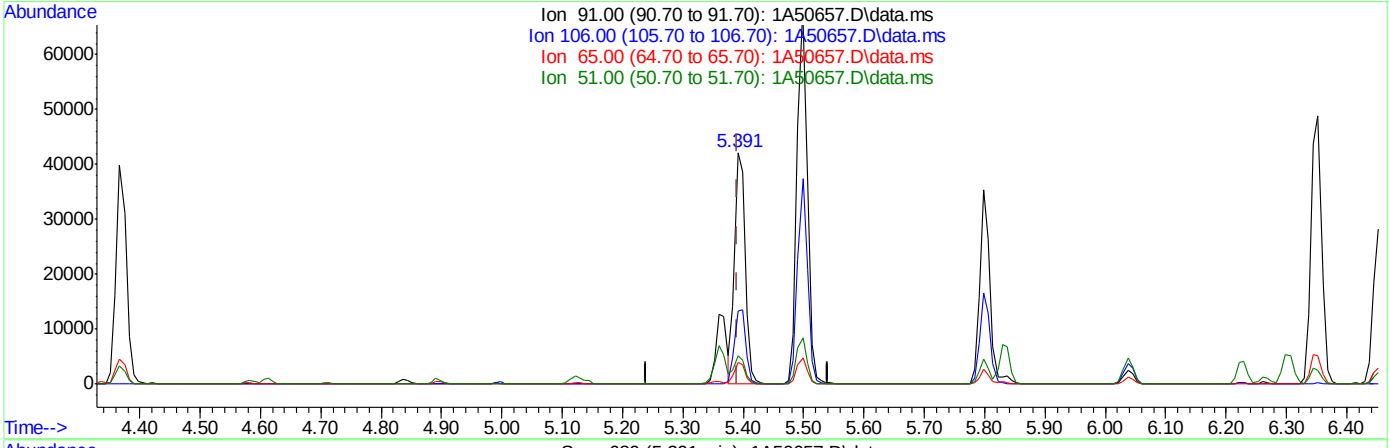
response 67817

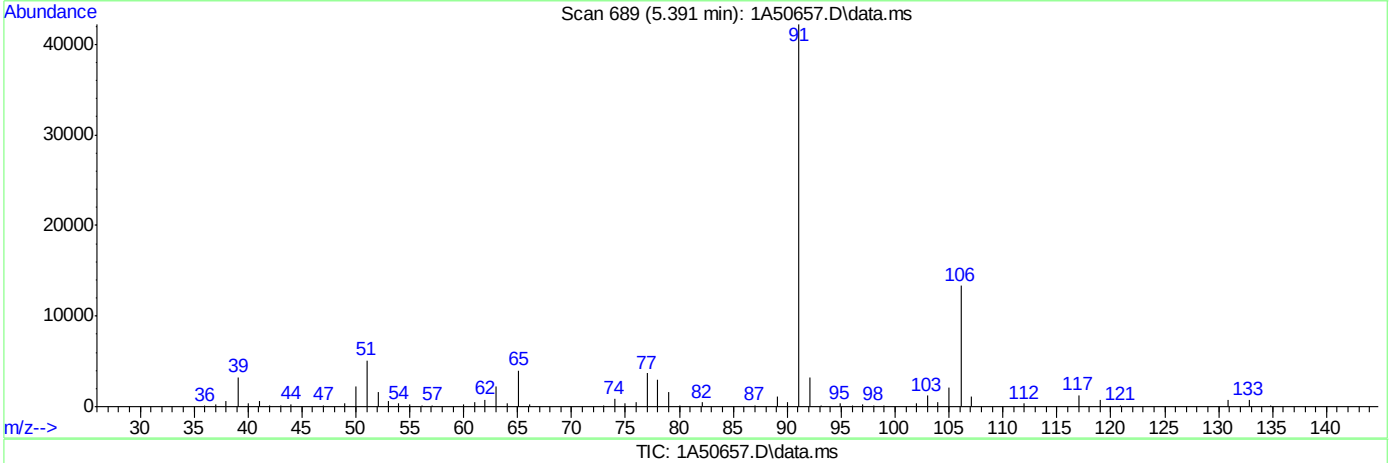
Ion	Exp%	Act%
91.00	100	100
106.00	32.00	31.64
65.00	8.30	9.52
51.00	10.10	12.07

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50657.D
Acq On : 15 Nov 2023 7:57 am
Operator : jeniferw
Sample : IC1945-3
Misc : MS55275,V1A1945,,,,,
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Nov 15 09:38:28 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50657.D\data.ms

(77) Ethylbenzene

5.391min (-0.000) 9.41ug/L m

response 51497

Ion	Exp%	Act%
91.00	100	100
106.00	32.00	31.64
65.00	8.30	9.52
51.00	10.10	12.07

Manual Integrations APPROVED (compounds with "m" flag)
Karen Watson 11/15/23 15:49

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50659.D
Acq On : 15 Nov 2023 8:29 am
Operator : jeniferw
Sample : IC1985-4
Misc : MS55275,V1A1985,,,,,
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Nov 15 12:56:58 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	3.405	96	203651	50.00	ug/L	0.00
62) Chlorobenzene-d5	5.352	117	146312	50.00	ug/L	0.00
85) 1,4-Dichlorobenzene-d4	7.091	152	77121	50.00	ug/L	0.00
System Monitoring Compounds						
39) Dibromofluoromethane	2.958	113	60285	49.50	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 99.00%			
49) 1,2-Dichloroethane-d4	3.236	65	66802	50.40	ug/L	0.00
Spiked Amount 50.000	Range 79 - 125		Recovery = 100.80%			
63) Toluene-d8	4.336	98	193777	49.59	ug/L	0.00
Spiked Amount 50.000	Range 85 - 112		Recovery = 99.18%			
86) 4-Bromofluorobenzene	6.229	174	64838	50.19	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 100.38%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.019	85	19399	23.86	ug/L	94
3) Chloromethane	1.127	50	29701	23.95	ug/L	100
4) 1,3-butadiene	1.181	39	37132	26.71	ug/L	92
5) Vinyl Chloride	1.173	62	29625	24.06	ug/L	98
6) Bromomethane	1.350	94	10931	24.11	ug/L	94
7) Chloroethane	1.412	64	19451	26.51	ug/L	91
8) Trichlorofluoromethane	1.496	101	41396	25.02	ug/L	99
9) Ethyl Ether	1.658	59	25320	25.57	ug/L	95
10) Ethanol	1.712	45	12404	587.27	ug/L	97
11) 1,2-Dichlorotrifluoroe...	1.742	67	32152	23.37	ug/L	89
12) 1,1-Dichloroethene	1.758	61	44563	24.03	ug/L	93
13) Freon 113	1.789	101	24551	23.53	ug/L	98
14) Carbon Disulfide	1.781	76	81081	26.36	ug/L	90
15) Iodomethane	1.835	142	18560	27.36	ug/L	91
16) Acrolein	1.912	56	39496	121.73	ug/L	99
17) Allyl chloride	1.996	41	41043	23.50	ug/L	95
18) Methylene Chloride	2.043	49	46681	27.67	ug/L	92
19) Acetone	2.050	43	61956	134.11	ug/L	97
20) Methyl acetate	2.127	43	169006	116.47	ug/L	98
21) trans-1,2-Dichloroethene	2.135	61	45442	24.64	ug/L	92
22) Hexane	2.197	56	29882	23.44	ug/L	95
23) Methyl Tert Butyl Ether	2.197	73	83464	24.55	ug/L	89
24) Acetonitrile	2.273	41	48880	273.81	ug/L	99
25) Tert Butyl Alcohol	2.212	59	61658	243.44	ug/L	94
26) Di-isopropyl ether	2.397	45	104255	24.11	ug/L	96
27) Chloroprene	2.443	53	128255	24.91	ug/L	98
28) 1,1-Dichloroethane	2.443	63	58537	24.43	ug/L	99
29) Acrylonitrile	2.443	52	77474	125.42	ug/L	93
30) ETBE	2.581	59	98218	24.60	ug/L	95
31) Vinyl acetate	2.558	43	393502	129.50	ug/L	97
32) cis-1,2-Dichloroethene	2.720	96	31960	23.99	ug/L	93
33) 2,2-Dichloropropane	2.781	77	40584	24.63	ug/L	96
34) Bromochloromethane	2.820	128	16874	24.97	ug/L #	85
35) Cyclohexane	2.858	56	54763	22.91	ug/L	90

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50659.D
Acq On : 15 Nov 2023 8:29 am
Operator : jeniferw
Sample : IC1985-4
Misc : MS55275,V1A1985,,,,,
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Nov 15 12:56:58 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
36) Chloroform	2.858	83	53813	24.01	ug/L		94
37) Ethyl acetate	2.912	43	218102	128.52	ug/L		98
38) Tetrahydrofuran	2.943	42	16062	23.51	ug/L		92
40) Carbon Tetrachloride	2.958	117	40875m	24.43	ug/L		
41) 1,1,1-Trichloroethane	2.989	97	44850	24.53	ug/L		95
42) 2-Butanone	3.005	43	110349	121.29	ug/L		93
43) 1,1-Dichloropropene	3.051	75	39219	24.83	ug/L		93
44) tert-Butyl formate	3.097	59	135778	127.57	ug/L		95
45) Propionitrile	3.143	54	65589	271.00	ug/L		97
46) Methacrylonitrile	3.166	41	250132	238.42	ug/L		98
47) Benzene	3.182	78	115560	24.34	ug/L		97
48) TAME	3.251	73	81869	24.52	ug/L		83
50) 1,2-Dichloroethane	3.274	62	43894	24.31	ug/L		92
51) Isobutyl Alcohol	3.259	43	75938	501.70	ug/L		94
52) Tert Amyl Alcohol	3.320	59	51489	249.15	ug/L		89
53) Trichloroethene	3.513	95	31623	23.73	ug/L		96
54) Methylcyclohexane	3.528	83	49835	24.19	ug/L		96
55) Dibromomethane	3.736	93	20145	23.41	ug/L		86
56) 1,2-Dichloropropane	3.790	63	32568	24.15	ug/L		90
57) Bromodichloromethane	3.828	83	40028	24.42	ug/L		96
58) Methyl methacrylate	3.921	41	36200	24.03	ug/L		93
59) 1,4-Dioxane	3.936	88	9123	497.83	ug/L		86
60) 2-Chloroethyl vinyl ether	4.167	63	95519	126.28	ug/L		98
61) cis-1,3-Dichloropropene	4.205	75	47219	24.17	ug/L		85
64) Toluene	4.367	91	119096	23.94	ug/L		99
65) 2-Nitropropane	4.467	41	60119	123.27	ug/L		92
66) 4-Methyl-2-pentanone	4.582	43	220643	121.50	ug/L		97
67) trans-1,3-Dichloropropene	4.613	75	43606	24.45	ug/L		93
68) Tetrachloroethene	4.629	166	34270	24.99	ug/L		96
69) Ethyl methacrylate	4.729	69	35707	23.95	ug/L		89
70) 1,1,2-Trichloroethane	4.713	83	24562	24.40	ug/L		96
71) Dibromochloromethane	4.836	129	31567	24.47	ug/L		99
72) 1,3-Dichloropropane	4.898	76	45377	24.42	ug/L		95
73) 1,2-Dibromoethane	4.998	107	31247	24.50	ug/L		100
74) 3,3-Dimethyl-1-Butanol	5.121	57	287088	1156.52	ug/L		96
75) 2-hexanone	5.137	43	212818	118.63	ug/L		83
76) 1-Chlorohexane	5.367	91	39451m	22.78	ug/L		
77) Ethylbenzene	5.398	91	132697m	24.75	ug/L		
78) Chlorobenzene	5.367	112	81487	25.17	ug/L		96
79) 1,1,1,2-Tetrachloroethane	5.406	131	29655	24.71	ug/L		93
80) m,p-Xylene	5.498	91	207255	48.79	ug/L		96
81) o-Xylene	5.798	91	109196	24.22	ug/L		97
82) Styrene	5.837	104	85149	25.03	ug/L		94
83) Bromoform	5.837	173	21074	24.63	ug/L		98
84) Isopropylbenzene	6.037	105	130223	24.70	ug/L		98
87) cis-1,4-Dichloro-2-butene	6.260	53	11235	25.32	ug/L	#	77
88) n-Propylbenzene	6.353	91	154263	24.76	ug/L		99
89) Bromobenzene	6.306	156	33292	24.07	ug/L		98
90) 1,1,2,2-Tetrachloroethane	6.368	83	39762	24.26	ug/L		95
91) 1,3,5-Trimethylbenzene	6.507	105	107377	25.07	ug/L		96

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50659.D
Acq On : 15 Nov 2023 8:29 am
Operator : jeniferw
Sample : IC1985-4
Misc : MS55275,V1A1985,,,,,
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Nov 15 12:56:58 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration

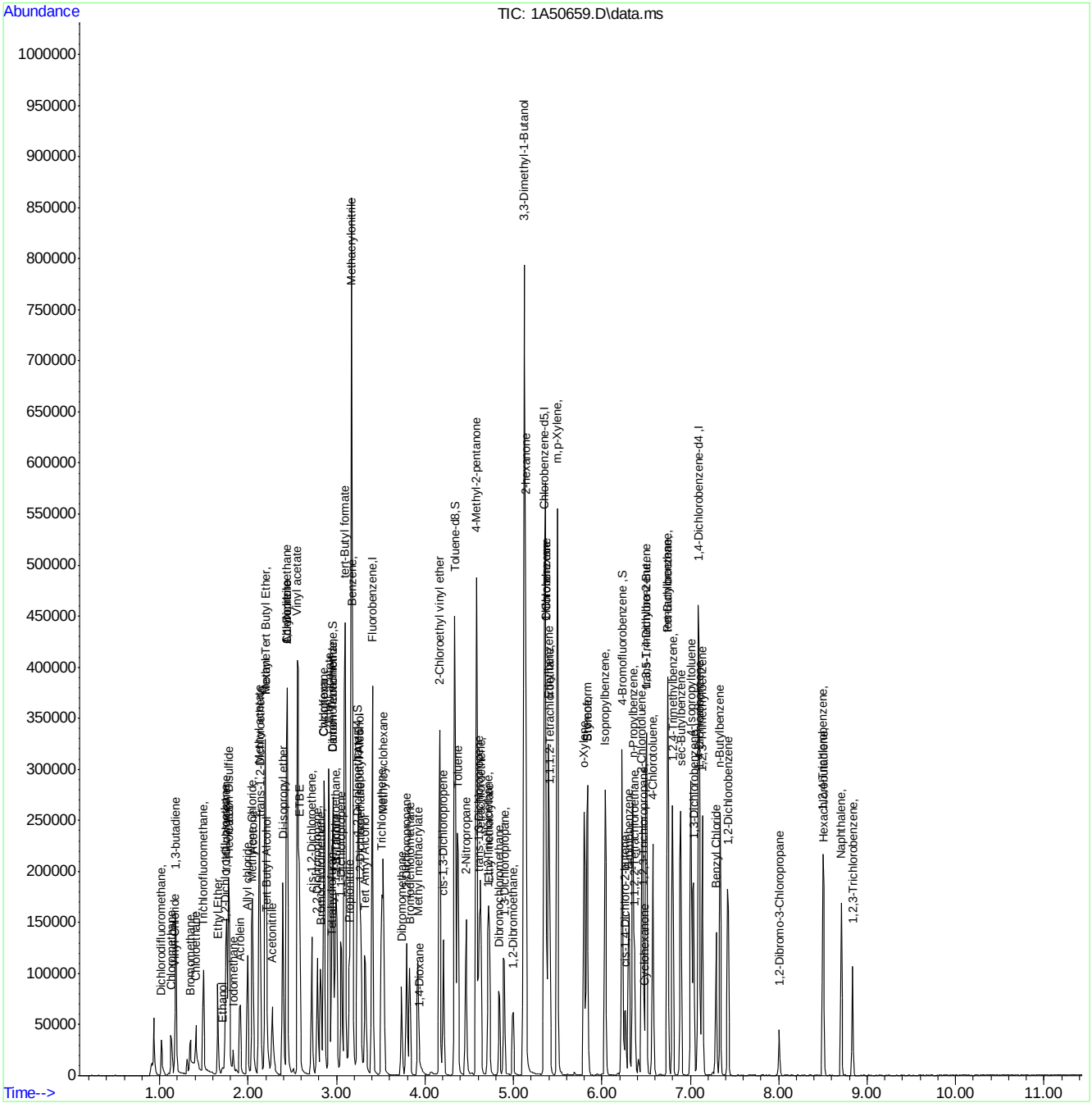
	Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
92)	2-Chlorotoluene	6.453	91	87216	24.04	ug/L		96
93)	trans-1,4-Dichloro-2-B...	6.507	53	15416	24.66	ug/L		92
94)	1,2,3-Trichloropropane	6.468	110	11221	24.67	ug/L		84
95)	Cyclohexanone	6.483	55	9855	105.17	ug/L		96
96)	4-Chlorotoluene	6.576	91	91406	24.20	ug/L		94
97)	tert-Butylbenzene	6.745	91	60237	24.99	ug/L		93
98)	1,2,4-Trimethylbenzene	6.799	105	101920	24.63	ug/L		97
99)	Pentachloroethane	6.745	167	17421	27.19	ug/L	#	63
100)	sec-Butylbenzene	6.891	105	136022	25.09	ug/L		97
101)	4-Isopropyltoluene	7.007	119	118264	25.20	ug/L		98
102)	1,3-Dichlorobenzene	7.038	146	61755	24.35	ug/L		98
103)	1,2,3-Trimethylbenzene	7.138	105	100698	24.33	ug/L		95
104)	1,4-Dichlorobenzene	7.107	146	61763	24.42	ug/L		98
105)	n-Butylbenzene	7.338	92	53118	25.27	ug/L		98
106)	Benzyl Chloride	7.292	126	15114	25.50	ug/L	#	88
107)	1,2-Dichlorobenzene	7.422	146	55633	24.66	ug/L		94
108)	1,2-Dibromo-3-Chloropr...	8.007	75	6539	24.95	ug/L		76
109)	Hexachlorobutadiene	8.508	225	13329	24.77	ug/L		91
110)	1,2,4-Trichlorobenzene	8.500	180	30306	24.38	ug/L		98
111)	Naphthalene	8.708	128	76986	24.10	ug/L		99
112)	1,2,3-Trichlorobenzene	8.839	180	23469	23.94	ug/L		97

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50659.D
Acq On : 15 Nov 2023 8:29 am
Operator : jeniferw
Sample : IC1985-4
Misc : MS55275,V1A1985,,,,,
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Nov 15 12:56:58 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration



Manual Integration Approval Summary

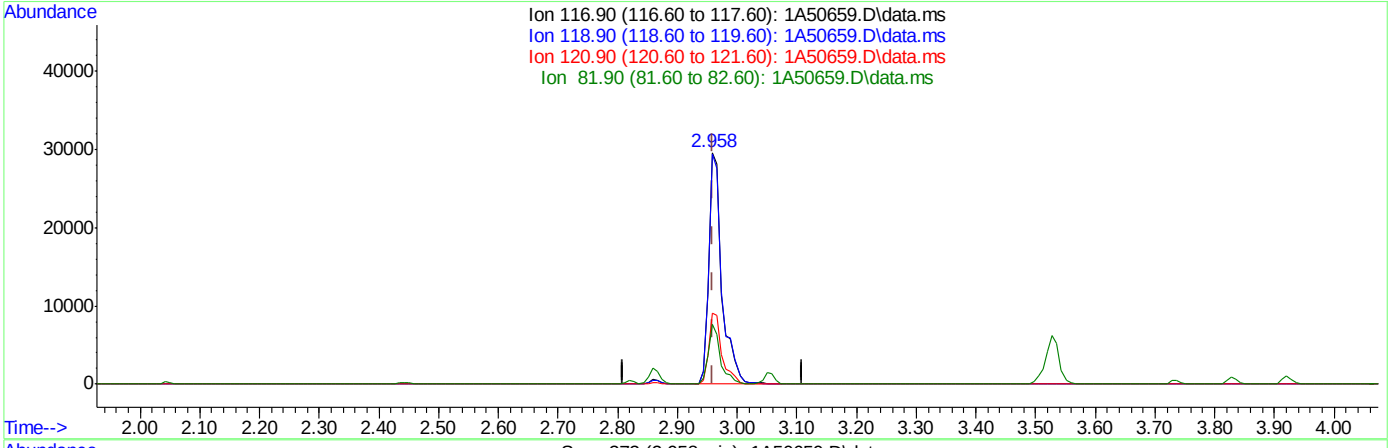
Sample Number: V1A1985-IC1985
Lab FileID: 1A50659.D
Injection Time: 11/15/23 08:29
Method: SW846 8260D
Analyst approved: 11/15/23 14:32 Jenifer Willis
Supervisor approved: 11/15/23 15:49 Karen Watson

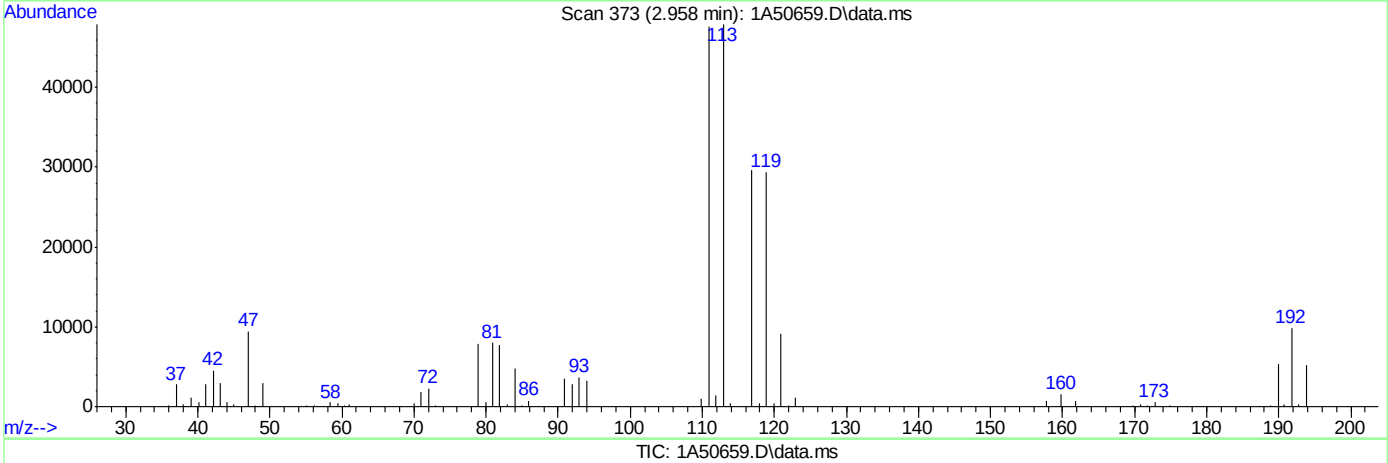
Parameter	CAS	Sig#	R.T. (min.)	Reason
Carbon Tetrachloride	56-23-5		2.96	Overlapping peak
1-Chlorohexane	544-10-5		5.37	Overlapping peak
Ethylbenzene	100-41-4		5.40	Overlapping peak

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50659.D
Acq On : 15 Nov 2023 8:29 am
Operator : jeniferw
Sample : IC1945-4
Misc : MS55275,V1A1945,,,,,
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Nov 15 09:38:30 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50659.D\data.ms

(40) Carbon Tetrachloride ( )

2.958min (-0.001) 27.51ug/L

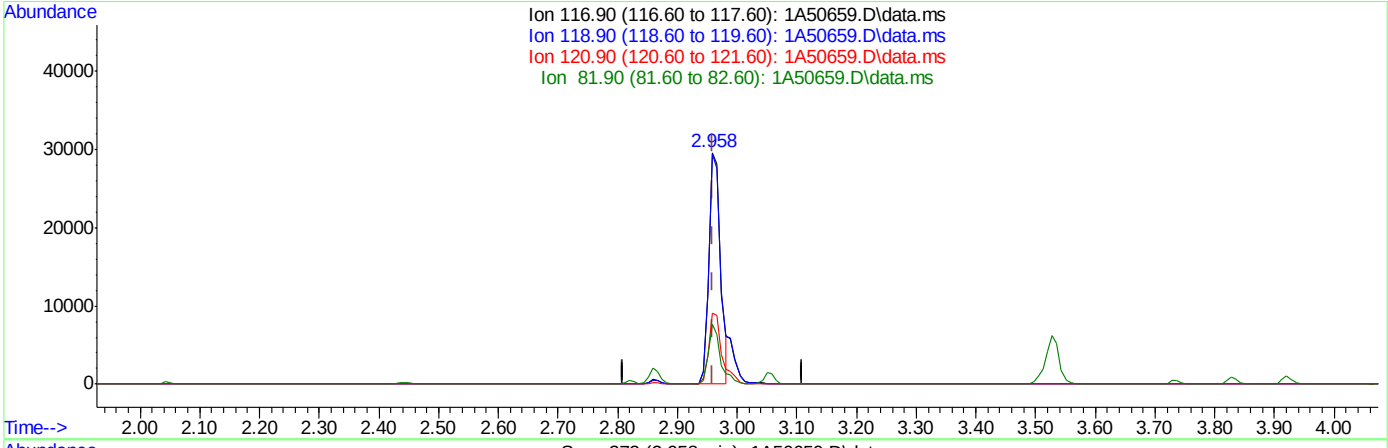
response 46041

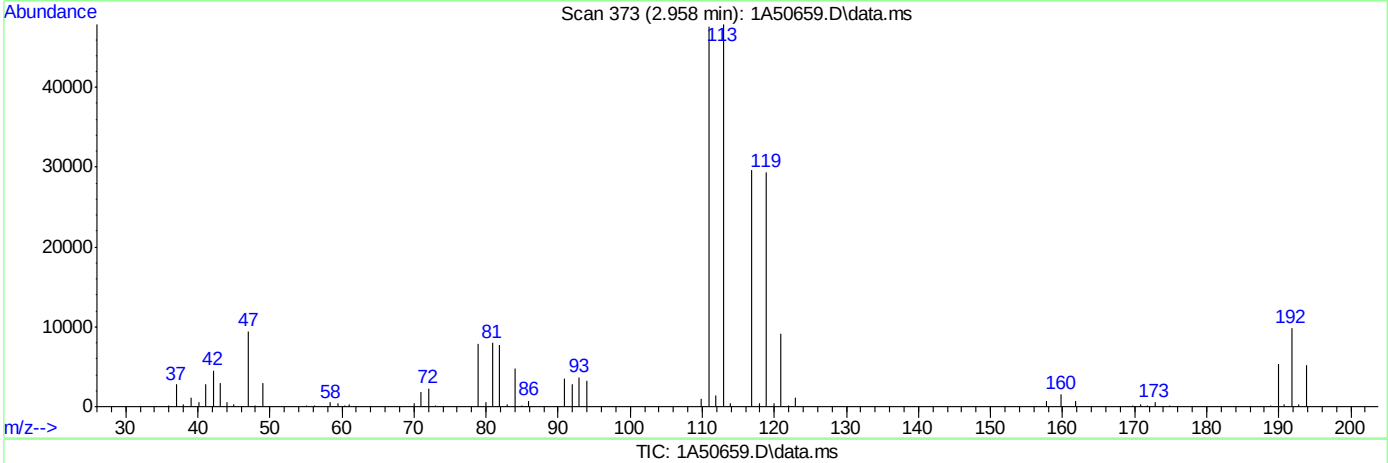
Ion	Exp%	Act%
116.90	100	100
118.90	94.50	99.16
120.90	31.10	30.86
81.90	25.40	25.89

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50659.D
Acq On : 15 Nov 2023 8:29 am
Operator : jeniferw
Sample : IC1945-4
Misc : MS55275,V1A1945,,,,,
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Nov 15 09:38:30 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50659.D\data.ms

(40) Carbon Tetrachloride ( )

2.958min (-0.001) 24.43ug/L m

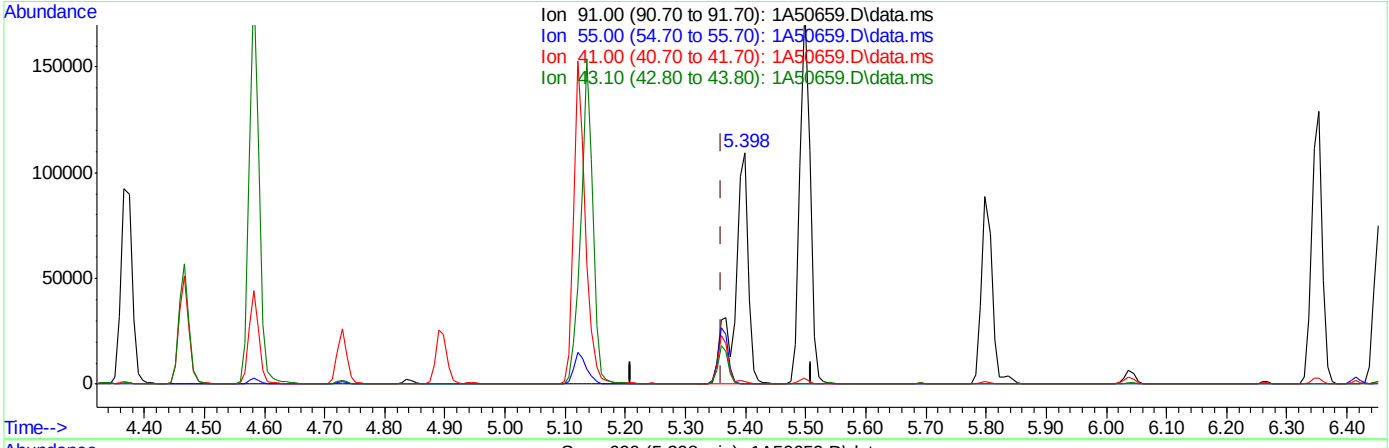
response 40875

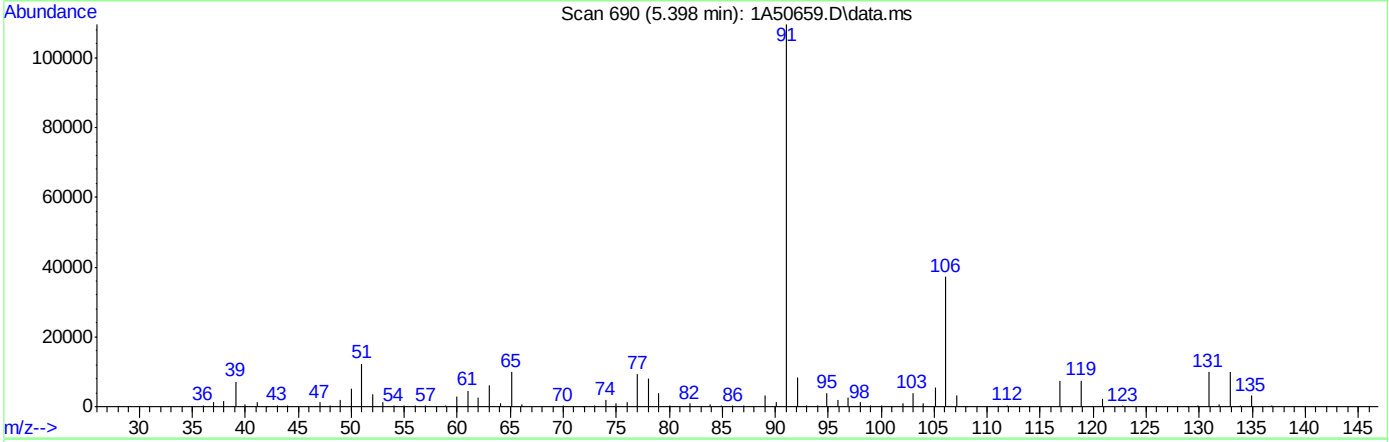
Ion	Exp%	Act%
116.90	100	100
118.90	94.50	99.16
120.90	31.10	30.86
81.90	25.40	25.89

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50659.D
Acq On : 15 Nov 2023 8:29 am
Operator : jeniferw
Sample : IC1945-4
Misc : MS55275,V1A1945,,,,,
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Nov 15 09:38:30 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50659.D\data.ms

(76) 1-Chlorohexane

5.398min (+0.038) 99.40ug/L

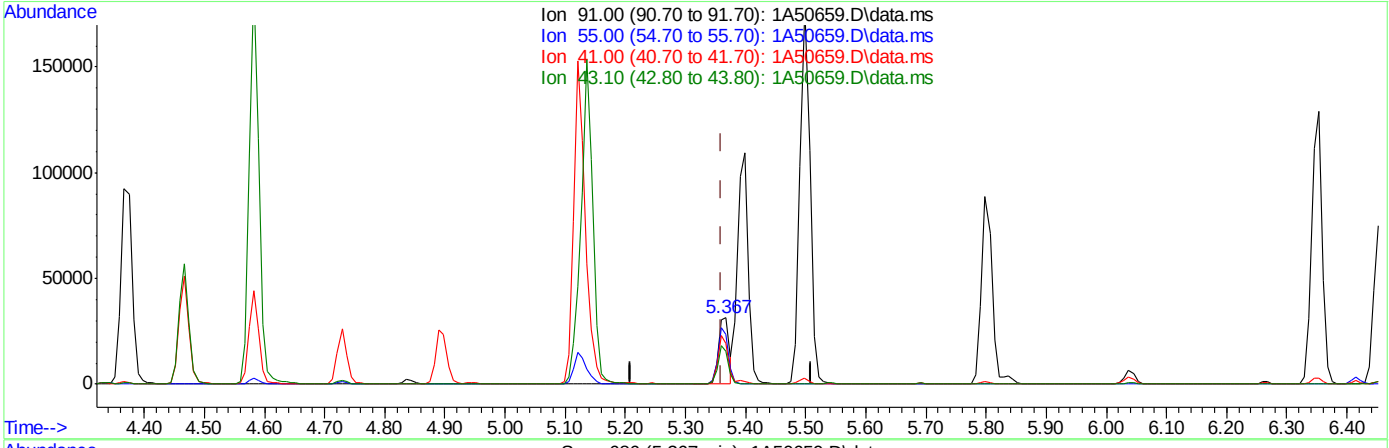
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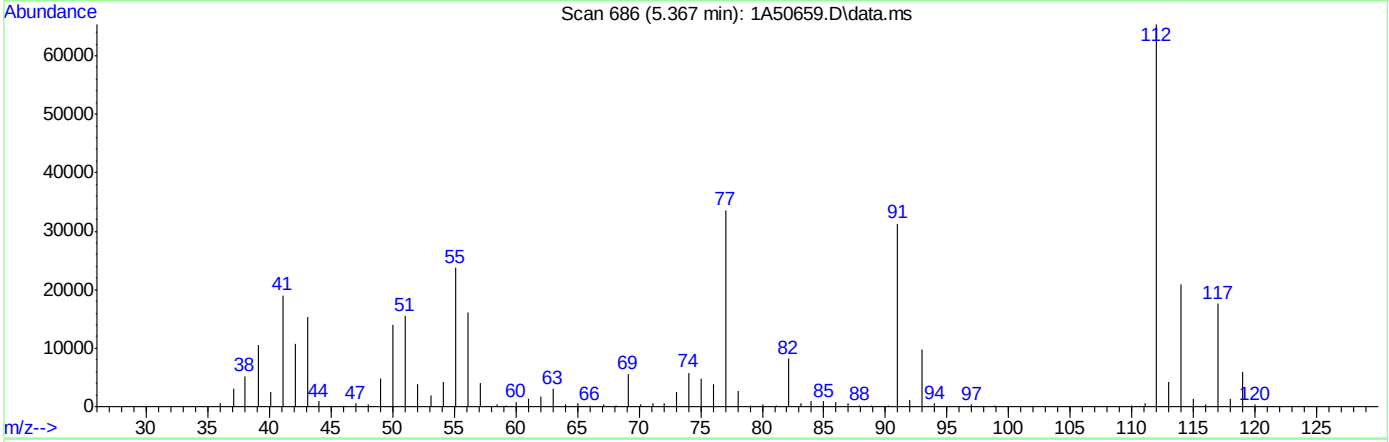
Ion	Exp%	Act%
91.00	100	100
55.00	74.60	0.21#
41.00	53.90	0.85#
43.10	42.90	0.20#

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50659.D
Acq On : 15 Nov 2023 8:29 am
Operator : jeniferw
Sample : IC1945-4
Misc : MS55275,V1A1945,,,,,
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Nov 15 09:38:30 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50659.D\data.ms

(76) 1-Chlorohexane

5.367min (+0.008) 22.78ug/L m

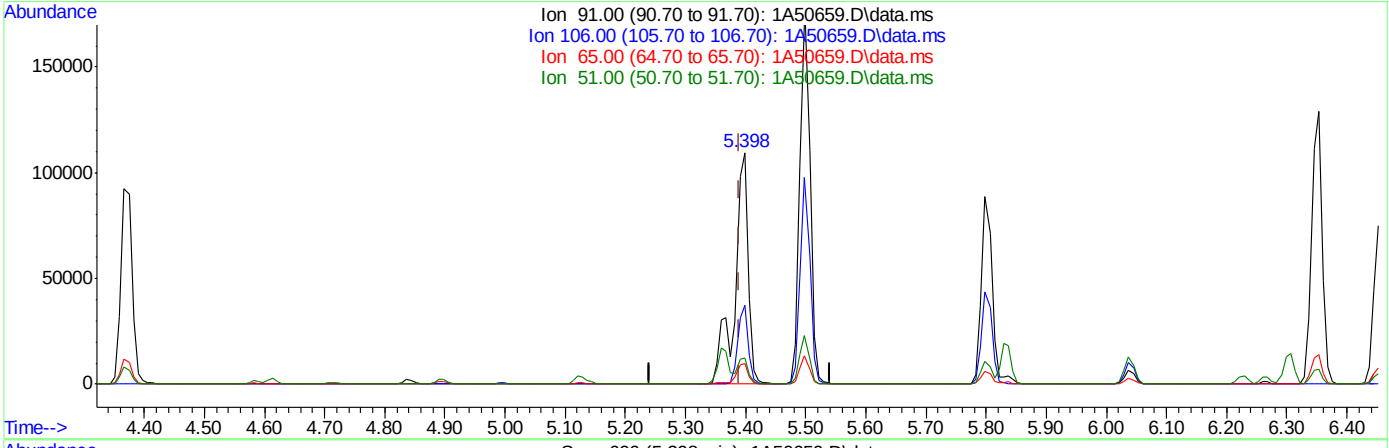
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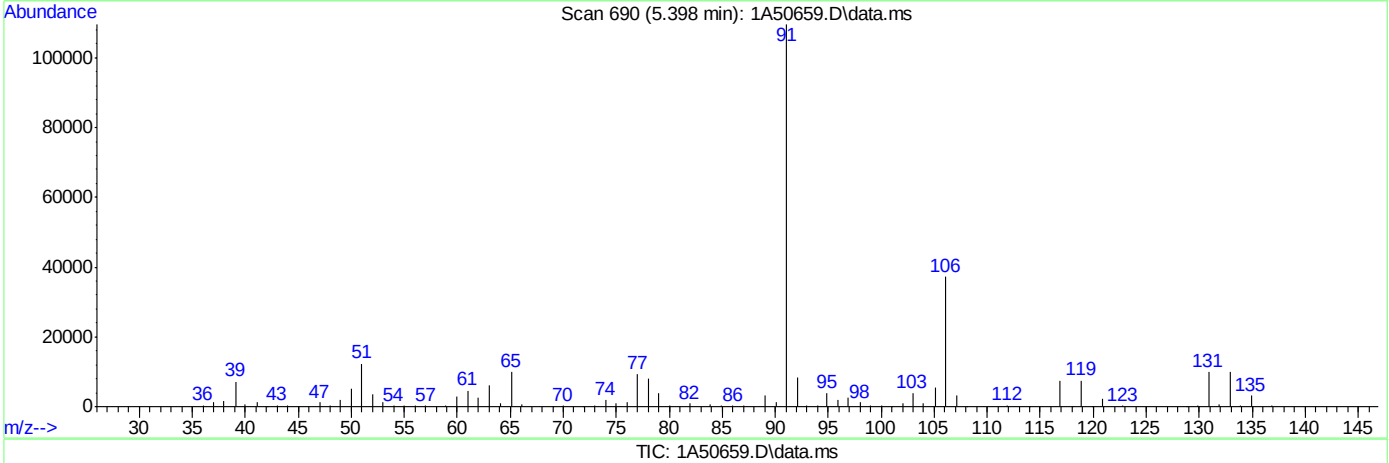
Ion	Exp%	Act%
91.00	100	100
55.00	74.60	75.86
41.00	53.90	60.97
43.10	42.90	48.98

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50659.D
Acq On : 15 Nov 2023 8:29 am
Operator : jeniferw
Sample : IC1945-4
Misc : MS55275,V1A1945,,,,,
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Nov 15 09:38:30 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50659.D\data.ms

(77) Ethylbenzene

5.398min (+0.008) 32.11ug/L

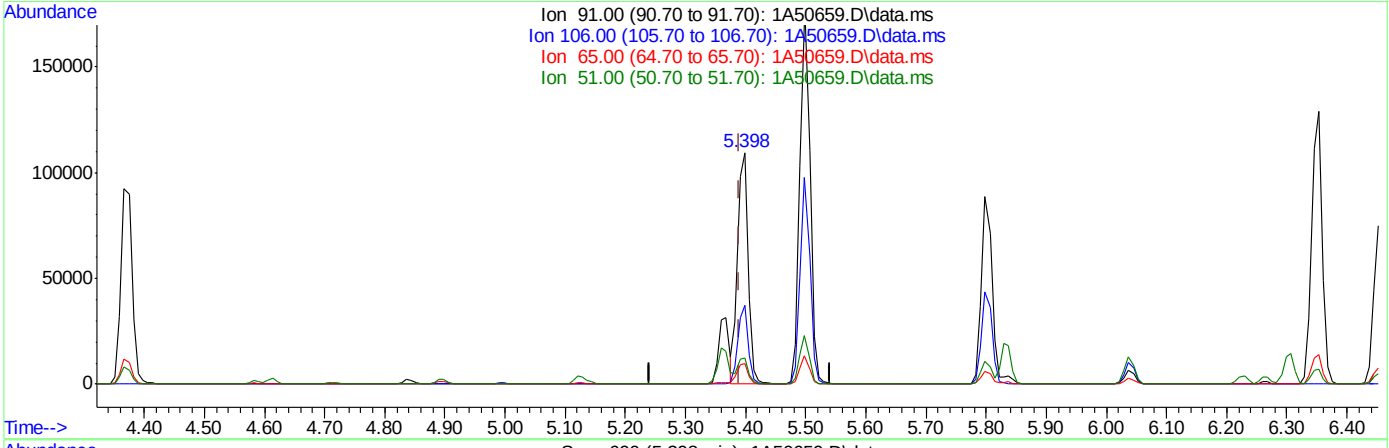
response 172143

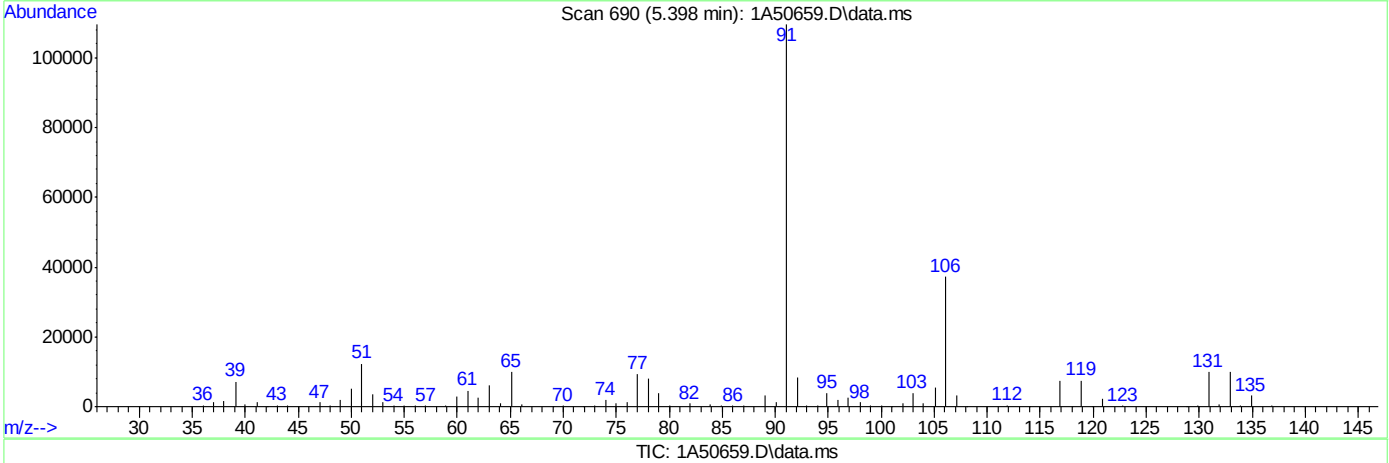
Ion	Exp%	Act%
91.00	100	100
106.00	32.00	33.92
65.00	8.30	8.99
51.00	10.10	11.16

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50659.D
Acq On : 15 Nov 2023 8:29 am
Operator : jeniferw
Sample : IC1945-4
Misc : MS55275,V1A1945,,,,,
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Nov 15 09:38:30 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50659.D\data.ms

(77) Ethylbenzene

5.398min (+0.008) 24.75ug/L m

response 132697

Ion	Exp%	Act%
91.00	100	100
106.00	32.00	33.92
65.00	8.30	8.99
51.00	10.10	11.16

Manual Integrations APPROVED (compounds with "m" flag)
Karen Watson 11/15/23 15:49

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50661.D
Acq On : 15 Nov 2023 9:01 am
Operator : jeniferw
Sample : ICC1985-5
Misc : MS55275,V1A1985,,,,,
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Nov 15 12:57:41 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	3.405	96	213155	50.00	ug/L	0.00
62) Chlorobenzene-d5	5.352	117	152111	50.00	ug/L	0.00
85) 1,4-Dichlorobenzene-d4	7.091	152	80195	50.00	ug/L	0.00
System Monitoring Compounds						
39) Dibromofluoromethane	2.951	113	63212	49.59	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 99.18%			
49) 1,2-Dichloroethane-d4	3.236	65	70343	50.70	ug/L	0.00
Spiked Amount 50.000	Range 79 - 125		Recovery = 101.40%			
63) Toluene-d8	4.336	98	202471	49.84	ug/L	0.00
Spiked Amount 50.000	Range 85 - 112		Recovery = 99.68%			
86) 4-Bromofluorobenzene	6.229	174	66996	49.87	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 99.74%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.019	85	31245	36.72	ug/L	98
3) Chloromethane	1.127	50	47161	36.33	ug/L	100
4) 1,3-butadiene	1.181	39	59148	40.65	ug/L	97
5) Vinyl Chloride	1.165	62	48015	37.26	ug/L	99
6) Bromomethane	1.342	94	17070	35.97	ug/L	97
7) Chloroethane	1.404	64	30685	42.06	ug/L	91
8) Trichlorofluoromethane	1.488	101	68781	39.72	ug/L	99
9) Ethyl Ether	1.650	59	42119	40.64	ug/L	93
10) Ethanol	1.719	45	19106	864.24	ug/L	97
11) 1,2-Dichlorotrifluoroe...	1.742	67	54177	37.63	ug/L	93
12) 1,1-Dichloroethene	1.758	61	72997	37.60	ug/L	98
13) Freon 113	1.781	101	42239	38.69	ug/L	95
14) Carbon Disulfide	1.781	76	129901	40.35	ug/L	91
15) Iodomethane	1.827	142	34757	46.68	ug/L	94
16) Acrolein	1.904	56	63307	186.42	ug/L	98
17) Allyl chloride	1.989	41	66518	36.39	ug/L	92
18) Methylene Chloride	2.043	49	72784	41.22	ug/L	96
19) Acetone	2.050	43	97740	202.14	ug/L	97
20) Methyl acetate	2.120	43	276694	182.18	ug/L	96
21) trans-1,2-Dichloroethene	2.135	61	73424	38.04	ug/L	97
22) Hexane	2.197	56	48578	36.41	ug/L	98
23) Methyl Tert Butyl Ether	2.189	73	134690	37.85	ug/L	96
24) Acetonitrile	2.274	41	75101	401.93	ug/L	99
25) Tert Butyl Alcohol	2.212	59	98317	370.87	ug/L	97
26) Di-isopropyl ether	2.389	45	171511	37.89	ug/L	95
27) Chloroprene	2.435	53	207135	38.44	ug/L	98
28) 1,1-Dichloroethane	2.443	63	95102	37.92	ug/L	97
29) Acrylonitrile	2.435	52	126603	195.81	ug/L	97
30) ETBE	2.581	59	160149	38.32	ug/L	96
31) Vinyl acetate	2.558	43	633827	199.30	ug/L	97
32) cis-1,2-Dichloroethene	2.720	96	51436	36.89	ug/L	97
33) 2,2-Dichloropropane	2.781	77	65723	38.11	ug/L	97
34) Bromochloromethane	2.820	128	26815	37.91	ug/L	92
35) Cyclohexane	2.858	56	93009	37.17	ug/L	92

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50661.D
Acq On : 15 Nov 2023 9:01 am
Operator : jeniferw
Sample : ICC1985-5
Misc : MS55275,V1A1985,,,,,
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Nov 15 12:57:41 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
36) Chloroform	2.858	83	86959	37.07	ug/L		95
37) Ethyl acetate	2.912	43	356602	200.76	ug/L		98
38) Tetrahydrofuran	2.943	42	25221	35.27	ug/L		95
40) Carbon Tetrachloride	2.959	117	68789m	39.28	ug/L		
41) 1,1,1-Trichloroethane	2.982	97	72949	38.12	ug/L		93
42) 2-Butanone	2.997	43	176540	185.39	ug/L		91
43) 1,1-Dichloropropene	3.051	75	63223	38.25	ug/L		94
44) tert-Butyl formate	3.089	59	222319	199.57	ug/L		94
45) Propionitrile	3.143	54	102314	403.89	ug/L		99
46) Methacrylonitrile	3.166	41	402137	366.21	ug/L		98
47) Benzene	3.182	78	186648	37.56	ug/L		94
48) TAME	3.251	73	134127	38.38	ug/L		82
50) 1,2-Dichloroethane	3.274	62	69848	36.97	ug/L		94
51) Isobutyl Alcohol	3.259	43	120391	759.93	ug/L		97
52) Tert Amyl Alcohol	3.320	59	81414	376.38	ug/L		90
53) Trichloroethene	3.505	95	51356	36.82	ug/L		92
54) Methylcyclohexane	3.528	83	84757	39.30	ug/L		96
55) Dibromomethane	3.736	93	32533	36.12	ug/L		91
56) 1,2-Dichloropropane	3.790	63	52981	37.54	ug/L		91
57) Bromodichloromethane	3.828	83	66089	38.52	ug/L		95
58) Methyl methacrylate	3.921	41	58327	36.99	ug/L		94
59) 1,4-Dioxane	3.944	88	14793	771.24	ug/L		96
60) 2-Chloroethyl vinyl ether	4.167	63	153744	194.20	ug/L		98
61) cis-1,3-Dichloropropene	4.205	75	76839	37.58	ug/L		87
64) Toluene	4.367	91	191699	37.07	ug/L		98
65) 2-Nitropropane	4.467	41	97817	192.92	ug/L		94
66) 4-Methyl-2-pentanone	4.582	43	352044	186.46	ug/L		97
67) trans-1,3-Dichloropropene	4.613	75	70912	38.24	ug/L		92
68) Tetrachloroethene	4.629	166	55973	39.26	ug/L		94
69) Ethyl methacrylate	4.729	69	57113	36.85	ug/L		89
70) 1,1,2-Trichloroethane	4.713	83	39628	37.86	ug/L		99
71) Dibromochloromethane	4.836	129	52679	39.28	ug/L		98
72) 1,3-Dichloropropane	4.890	76	73235	37.91	ug/L		90
73) 1,2-Dibromoethane	4.990	107	50182	37.85	ug/L		97
74) 3,3-Dimethyl-1-Butanol	5.121	57	458955	1778.39	ug/L		97
75) 2-hexanone	5.137	43	334513	179.35	ug/L		88
76) 1-Chlorohexane	5.360	91	63589m	35.32	ug/L		
77) Ethylbenzene	5.398	91	211532m	37.95	ug/L		
78) Chlorobenzene	5.367	112	128346	38.13	ug/L		96
79) 1,1,1,2-Tetrachloroethane	5.406	131	49039	39.31	ug/L		93
80) m,p-Xylene	5.498	91	333600	75.53	ug/L		96
81) o-Xylene	5.798	91	176137	37.58	ug/L		98
82) Styrene	5.837	104	135849	38.41	ug/L		96
83) Bromoform	5.837	173	35037	39.39	ug/L		99
84) Isopropylbenzene	6.037	105	208732	38.09	ug/L		99
87) cis-1,4-Dichloro-2-butene	6.260	53	18237	39.52	ug/L	#	79
88) n-Propylbenzene	6.353	91	247669	38.23	ug/L		98
89) Bromobenzene	6.306	156	53866	37.45	ug/L		98
90) 1,1,2,2-Tetrachloroethane	6.368	83	63537	37.27	ug/L		95
91) 1,3,5-Trimethylbenzene	6.507	105	170594	38.31	ug/L		96

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50661.D
Acq On : 15 Nov 2023 9:01 am
Operator : jeniferw
Sample : ICC1985-5
Misc : MS55275,V1A1985,,,,,
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Nov 15 12:57:41 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration

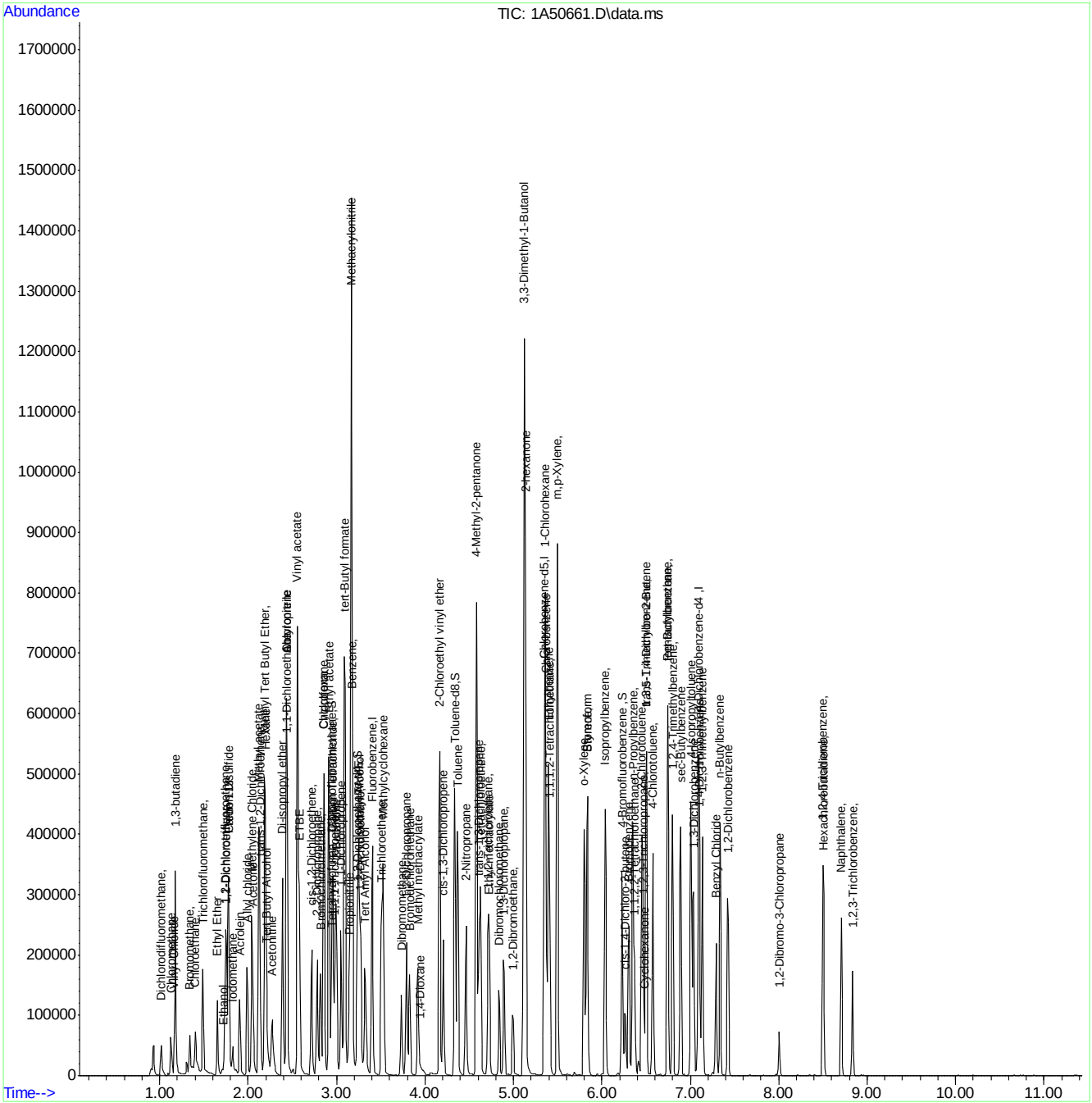
	Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
92)	2-Chlorotoluene	6.453	91	139772	37.05	ug/L		96
93)	trans-1,4-Dichloro-2-B...	6.507	53	24554	37.77	ug/L		94
94)	1,2,3-Trichloropropane	6.468	110	18006	38.07	ug/L		90
95)	Cyclohexanone	6.483	55	15141	155.39	ug/L		95
96)	4-Chlorotoluene	6.576	91	146079	37.19	ug/L		95
97)	tert-Butylbenzene	6.745	91	96036	38.31	ug/L		93
98)	1,2,4-Trimethylbenzene	6.799	105	164126	38.14	ug/L		96
99)	Pentachloroethane	6.745	167	27999	42.03	ug/L	#	57
100)	sec-Butylbenzene	6.891	105	216982	38.48	ug/L		98
101)	4-Isopropyltoluene	7.007	119	188146	38.55	ug/L		97
102)	1,3-Dichlorobenzene	7.038	146	100188	37.99	ug/L		99
103)	1,2,3-Trimethylbenzene	7.138	105	162125	37.66	ug/L		96
104)	1,4-Dichlorobenzene	7.107	146	98623	37.50	ug/L		98
105)	n-Butylbenzene	7.338	92	84713	38.76	ug/L		98
106)	Benzyl Chloride	7.292	126	23321	37.84	ug/L		93
107)	1,2-Dichlorobenzene	7.422	146	88356	37.66	ug/L		93
108)	1,2-Dibromo-3-Chloropr...	8.007	75	10249	37.61	ug/L		74
109)	Hexachlorobutadiene	8.508	225	21478	38.39	ug/L		92
110)	1,2,4-Trichlorobenzene	8.500	180	49506	38.30	ug/L		97
111)	Naphthalene	8.708	128	123343	37.13	ug/L		99
112)	1,2,3-Trichlorobenzene	8.839	180	39610	38.85	ug/L		98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50661.D
Acq On : 15 Nov 2023 9:01 am
Operator : jeniferw
Sample : ICC1985-5
Misc : MS55275,V1A1985,,,,,
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Nov 15 12:57:41 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration



Manual Integration Approval Summary

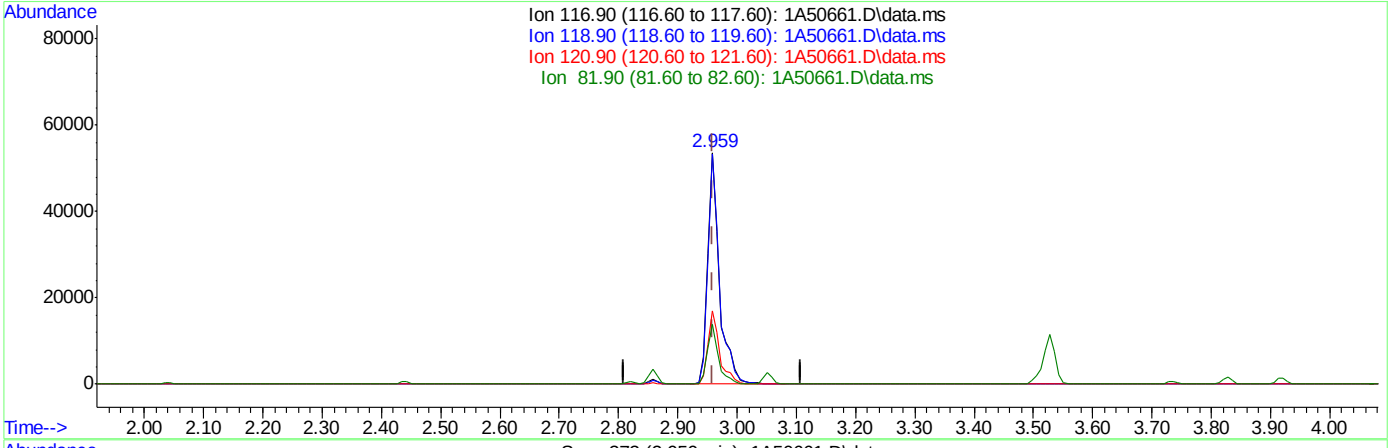
Sample Number: V1A1985-ICC1985 **Method:** SW846 8260D
Lab FileID: 1A50661.D **Analyst approved:** 11/15/23 14:32 Jenifer Willis
Injection Time: 11/15/23 09:01 **Supervisor approved:** 11/15/23 15:49 Karen Watson

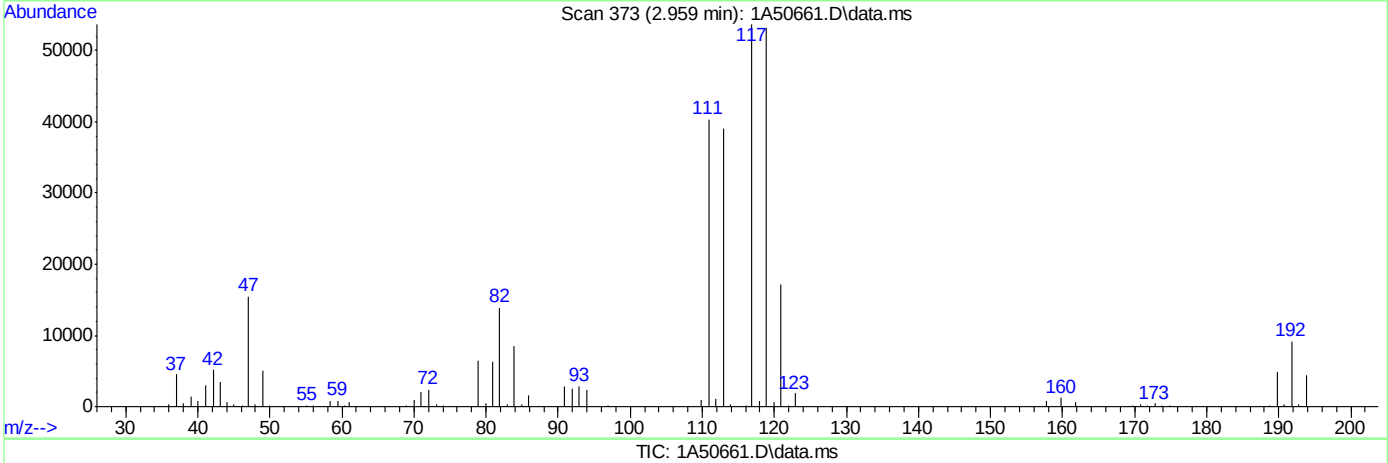
Parameter	CAS	Sig#	R.T. (min.)	Reason
Carbon Tetrachloride	56-23-5		2.96	Overlapping peak
1-Chlorohexane	544-10-5		5.36	Overlapping peak
Ethylbenzene	100-41-4		5.40	Overlapping peak

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50661.D
Acq On : 15 Nov 2023 9:01 am
Operator : jeniferw
Sample : ICC1945-5
Misc : MS55275,V1A1945,,,,,
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Nov 15 09:38:32 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50661.D\data.ms

(40) Carbon Tetrachloride ( )

2.959min (-0.000) 43.08ug/L

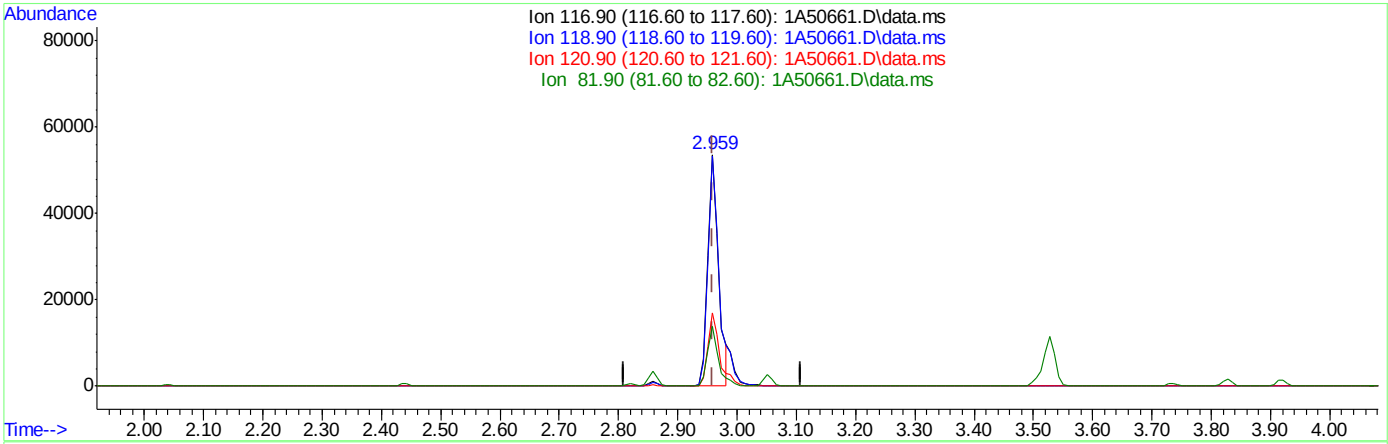
response 75453

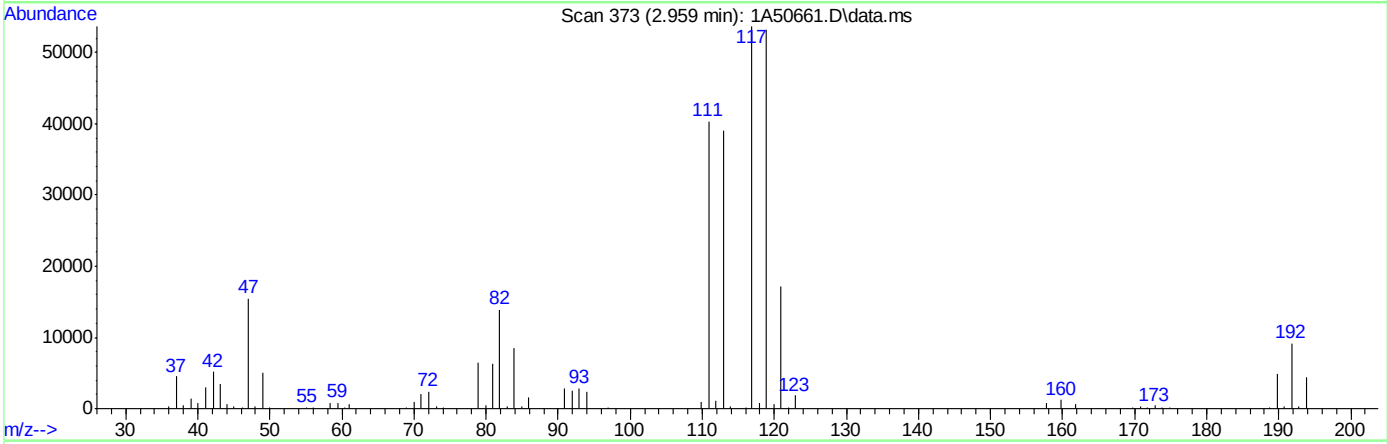
Ion	Exp%	Act%
116.90	100	100
118.90	94.50	99.20
120.90	31.10	31.86
81.90	25.40	25.86

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50661.D
Acq On : 15 Nov 2023 9:01 am
Operator : jeniferw
Sample : ICC1945-5
Misc : MS55275,V1A1945,,,,,
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Nov 15 09:38:32 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50661.D\data.ms

(40) Carbon Tetrachloride ( )

2.959min (-0.000) 39.28ug/L m

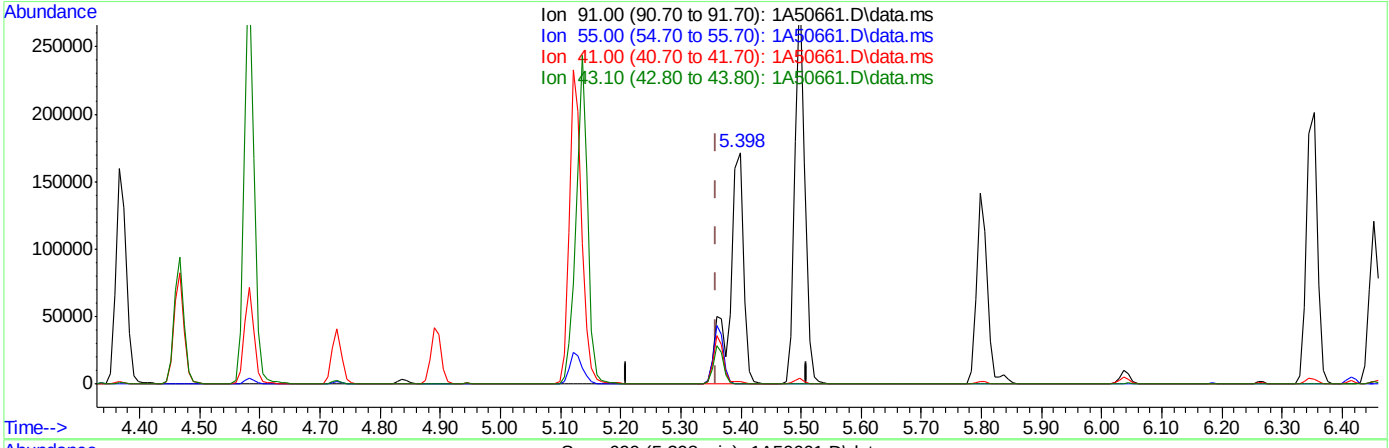
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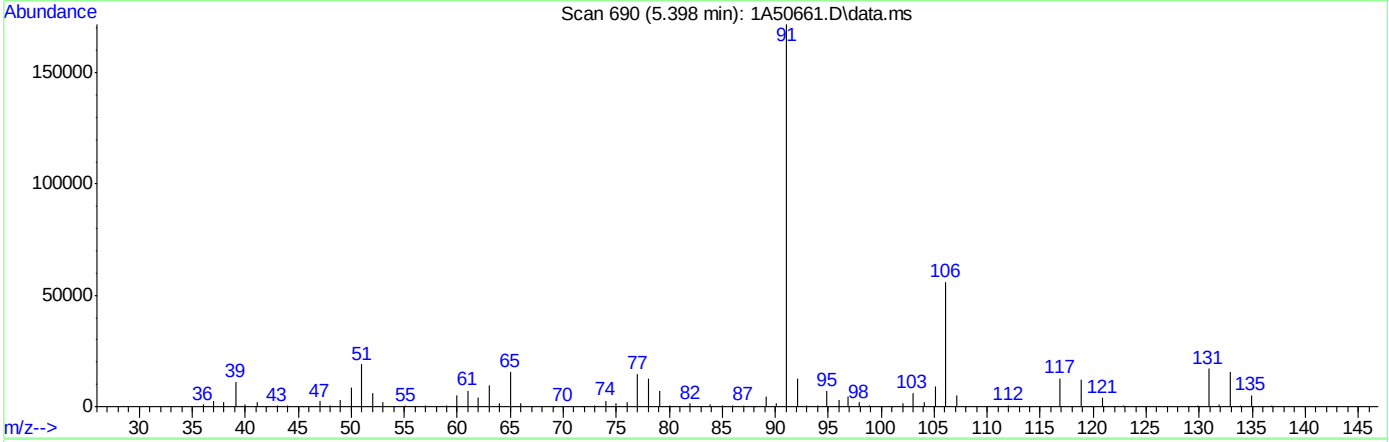
Ion	Exp%	Act%
116.90	100	100
118.90	94.50	99.20
120.90	31.10	31.86
81.90	25.40	25.86

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50661.D
Acq On : 15 Nov 2023 9:01 am
Operator : jeniferw
Sample : ICC1945-5
Misc : MS55275,V1A1945,,,,,
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Nov 15 09:38:32 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50661.D\data.ms

(76) 1-Chlorohexane

5.398min (+0.038) 152.58ug/L

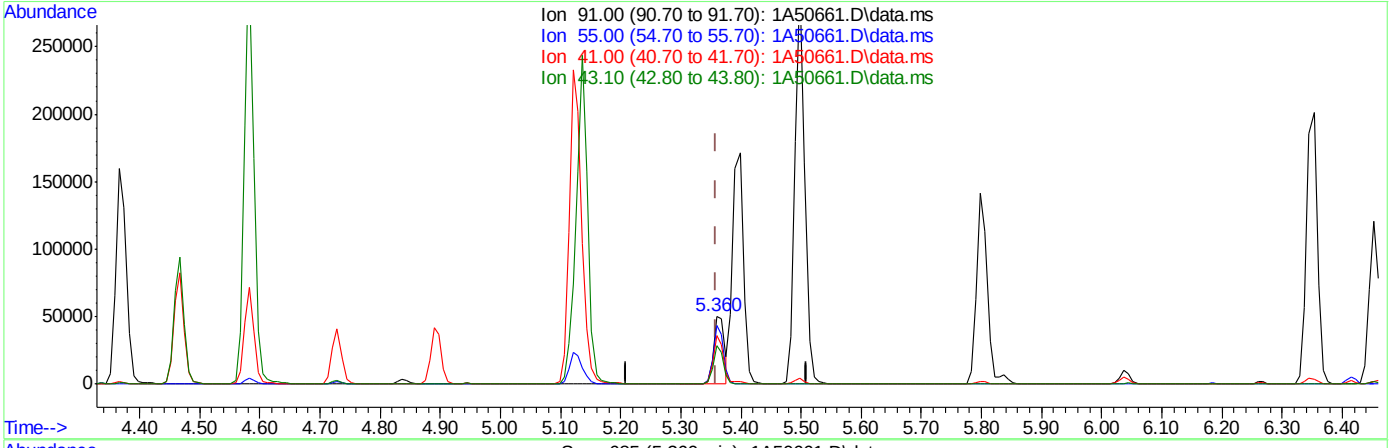
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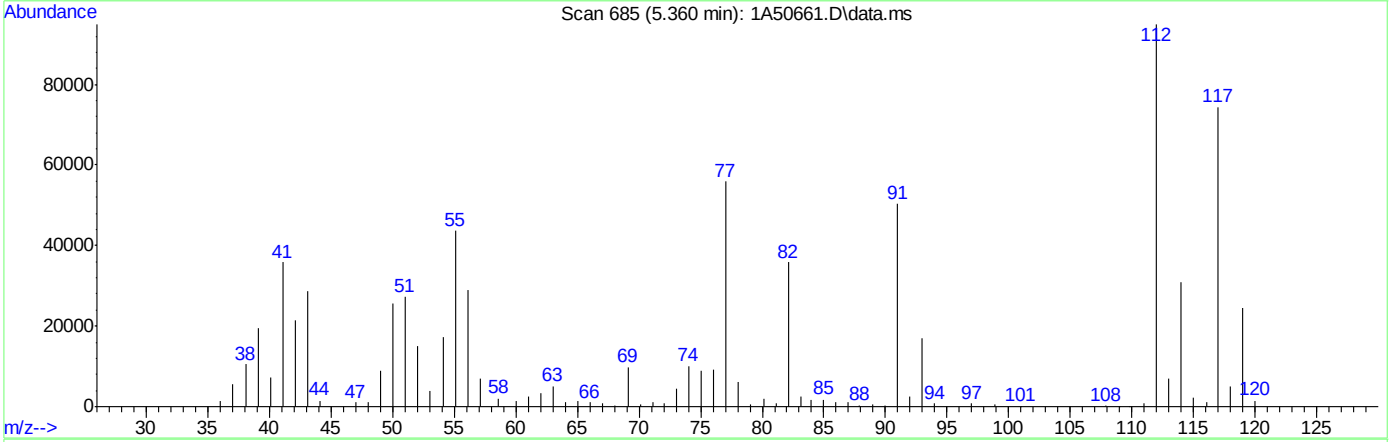
Ion	Exp%	Act%
91.00	100	100
55.00	74.60	0.21#
41.00	53.90	1.03#
43.10	42.90	0.16#

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50661.D
Acq On : 15 Nov 2023 9:01 am
Operator : jeniferw
Sample : ICC1945-5
Misc : MS55275,V1A1945,,,,,
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Nov 15 09:38:32 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50661.D\data.ms

(76) 1-Chlorohexane

5.360min (-0.000) 35.32ug/L m

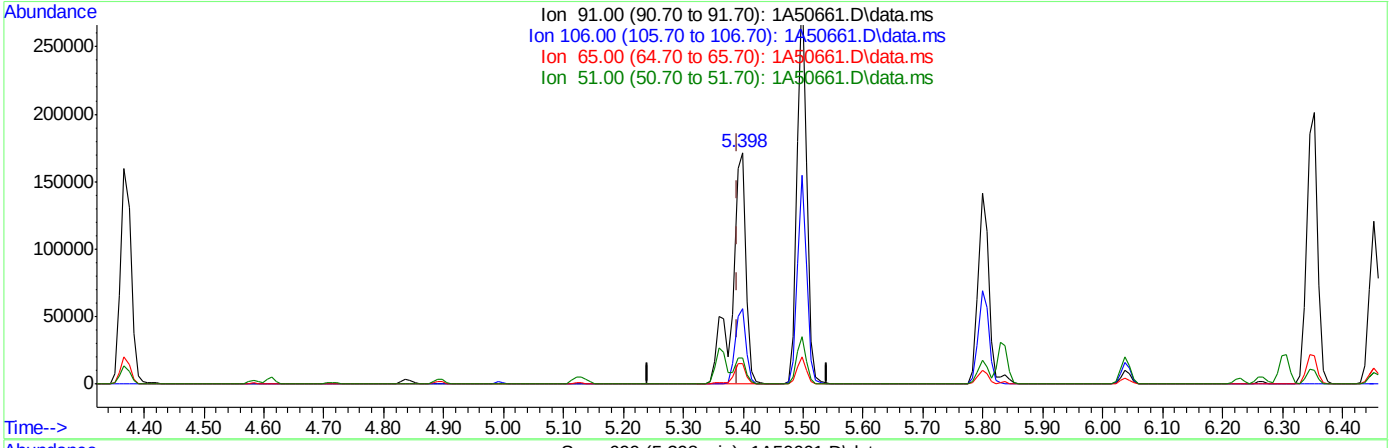
response 63589

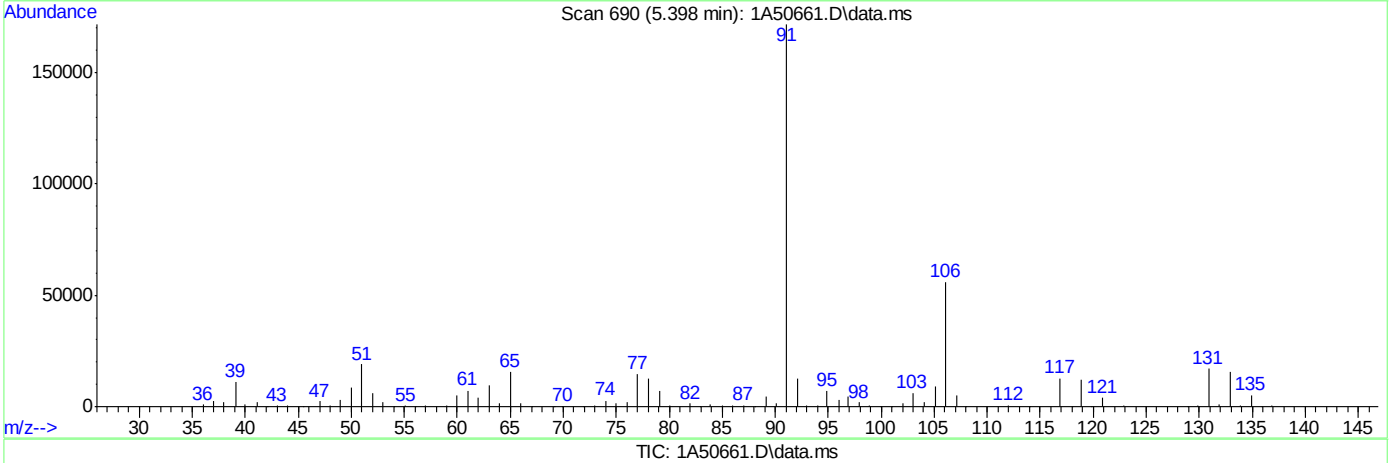
Ion	Exp%	Act%
91.00	100	100
55.00	74.60	86.59
41.00	53.90	71.11
43.10	42.90	56.93

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50661.D
Acq On : 15 Nov 2023 9:01 am
Operator : jeniferw
Sample : ICC1945-5
Misc : MS55275,V1A1945,,,,,
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Nov 15 09:38:32 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50661.D\data.ms

(77) Ethylbenzene

5.398min (+0.008) 49.37ug/L

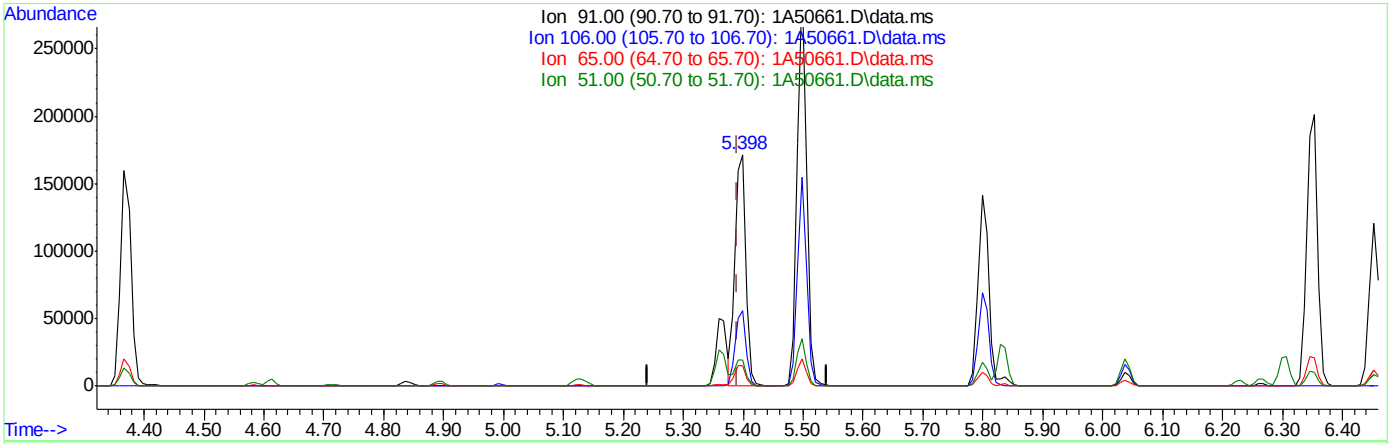
response 275175

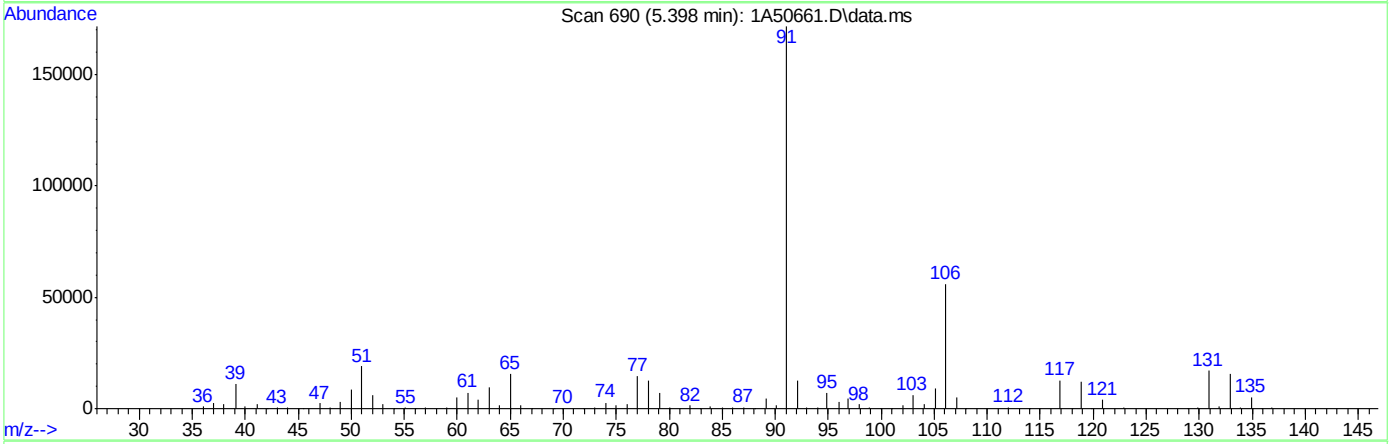
Ion	Exp%	Act%
91.00	100	100
106.00	32.00	32.59
65.00	8.30	9.06
51.00	10.10	11.14

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50661.D
Acq On : 15 Nov 2023 9:01 am
Operator : jeniferw
Sample : ICC1945-5
Misc : MS55275,V1A1945,,,,,
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Nov 15 09:38:32 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50661.D\data.ms

(77) Ethylbenzene

5.398min (+0.008) 37.95ug/L m

response 211532

Ion	Exp%	Act%
91.00	100	100
106.00	32.00	32.59
65.00	8.30	9.06
51.00	10.10	11.14

1A50663.D

Manual Integrations APPROVED (compounds with "m" flag)

Karen Watson 11/15/23 15:49

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50663.D
Acq On : 15 Nov 2023 9:33 am
Operator : jeniferw
Sample : IC1985-6
Misc : MS55275,V1A1985,,,,,
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Nov 15 12:59:19 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	3.405	96	214822	50.00	ug/L	0.00
62) Chlorobenzene-d5	5.352	117	151349	50.00	ug/L	0.00
85) 1,4-Dichlorobenzene-d4	7.091	152	78794	50.00	ug/L	0.00
System Monitoring Compounds						
39) Dibromofluoromethane	2.958	113	61645	47.99	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 95.98%			
49) 1,2-Dichloroethane-d4	3.235	65	72825	52.08	ug/L	0.00
Spiked Amount 50.000	Range 79 - 125		Recovery = 104.16%			
63) Toluene-d8	4.336	98	203026	50.23	ug/L	0.00
Spiked Amount 50.000	Range 85 - 112		Recovery = 100.46%			
86) 4-Bromofluorobenzene	6.229	174	66261	50.20	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 100.40%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.019	85	56764	66.19	ug/L	97
3) Chloromethane	1.127	50	77779	59.45	ug/L	98
4) 1,3-butadiene	1.181	39	100701	68.68	ug/L	92
5) Vinyl Chloride	1.173	62	82267	63.34	ug/L	99
6) Bromomethane	1.342	94	30307	63.37	ug/L	98
7) Chloroethane	1.404	64	48202	73.28	ug/L	95
8) Trichlorofluoromethane	1.488	101	126104	72.25	ug/L	97
9) Ethyl Ether	1.658	59	72262	69.19	ug/L	95
10) Ethanol	1.719	45	29699m	1332.98	ug/L	
11) 1,2-Dichlorotrifluoroe...	1.742	67	95502	65.81	ug/L	89
12) 1,1-Dichloroethene	1.758	61	128506	65.68	ug/L	98
13) Freon 113	1.781	101	75157	68.30	ug/L	95
14) Carbon Disulfide	1.781	76	228353	70.38	ug/L	91
15) Iodomethane	1.827	142	58056	72.79	ug/L	95
16) Acrolein	1.912	56	110530	322.95	ug/L	98
17) Allyl chloride	1.996	41	115737	62.82	ug/L	94
18) Methylene Chloride	2.043	49	122652	68.92	ug/L	94
19) Acetone	2.050	43	166181	341.02	ug/L	98
20) Methyl acetate	2.127	43	476407	311.23	ug/L	98
21) trans-1,2-Dichloroethene	2.135	61	127646	65.62	ug/L	93
22) Hexane	2.196	56	88484	65.80	ug/L	98
23) Methyl Tert Butyl Ether	2.196	73	236007	65.81	ug/L	84
24) Acetonitrile	2.273	41	125540	666.65	ug/L	96
25) Tert Butyl Alcohol	2.212	59	164284	614.90	ug/L	86
26) Di-isopropyl ether	2.397	45	303399	66.51	ug/L	96
27) Chloroprene	2.443	53	361018	66.48	ug/L	99
28) 1,1-Dichloroethane	2.443	63	164289	64.99	ug/L	99
29) Acrylonitrile	2.443	52	218651	335.55	ug/L	98
30) ETBE	2.581	59	281454	66.83	ug/L	96
31) Vinyl acetate	2.558	43	1149176	358.54	ug/L	98
32) cis-1,2-Dichloroethene	2.720	96	89364	63.60	ug/L	94
33) 2,2-Dichloropropane	2.781	77	113603	65.36	ug/L	97
34) Bromochloromethane	2.820	128	44530	62.46	ug/L	87
35) Cyclohexane	2.858	56	163374	64.79	ug/L	91

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50663.D
Acq On : 15 Nov 2023 9:33 am
Operator : jeniferw
Sample : IC1985-6
Misc : MS55275,V1A1985,,,,,
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Nov 15 12:59:19 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
36) Chloroform	2.858	83	151336	64.01	ug/L		95
37) Ethyl acetate	2.912	43	632727	353.45	ug/L		98
38) Tetrahydrofuran	2.943	42	44165	61.28	ug/L		95
40) Carbon Tetrachloride	2.958	117	119339m	67.61	ug/L		
41) 1,1,1-Trichloroethane	2.989	97	129604	67.20	ug/L		96
42) 2-Butanone	3.005	43	304062	316.82	ug/L		94
43) 1,1-Dichloropropene	3.051	75	109964	66.01	ug/L		93
44) tert-Butyl formate	3.097	59	396238	352.93	ug/L		95
45) Propionitrile	3.143	54	175207	686.27	ug/L		98
46) Methacrylonitrile	3.166	41	709628	641.22	ug/L		97
47) Benzene	3.182	78	322517	64.40	ug/L		96
48) TAME	3.251	73	236911	67.27	ug/L		97
50) 1,2-Dichloroethane	3.274	62	120949	63.51	ug/L		92
51) Isobutyl Alcohol	3.259	43	183947	1152.09	ug/L		95
52) Tert Amyl Alcohol	3.328	59	137624	631.31	ug/L		90
53) Trichloroethene	3.513	95	89770	63.86	ug/L		97
54) Methylcyclohexane	3.528	83	152009	69.94	ug/L		98
55) Dibromomethane	3.736	93	56657	62.42	ug/L		88
56) 1,2-Dichloropropane	3.790	63	91339	64.22	ug/L		92
57) Bromodichloromethane	3.828	83	112718	65.18	ug/L		97
58) Methyl methacrylate	3.920	41	100847	63.45	ug/L		95
59) 1,4-Dioxane	3.944	88	25007	1293.63	ug/L		98
60) 2-Chloroethyl vinyl ether	4.167	63	277818	348.19	ug/L		98
61) cis-1,3-Dichloropropene	4.205	75	134640	65.34	ug/L		84
64) Toluene	4.367	91	331142	64.35	ug/L		99
65) 2-Nitropropane	4.467	41	173992	344.89	ug/L		93
66) 4-Methyl-2-pentanone	4.582	43	608938	324.15	ug/L		98
67) trans-1,3-Dichloropropene	4.613	75	124246	67.34	ug/L		92
68) Tetrachloroethene	4.628	166	97236	68.55	ug/L		94
69) Ethyl methacrylate	4.729	69	98802	64.07	ug/L		90
70) 1,1,2-Trichloroethane	4.713	83	67915	65.21	ug/L		98
71) Dibromochloromethane	4.836	129	92739	69.50	ug/L		99
72) 1,3-Dichloropropane	4.898	76	125375	65.23	ug/L		94
73) 1,2-Dibromoethane	4.990	107	87373	66.24	ug/L		98
74) 3,3-Dimethyl-1-Butanol	5.129	57	825500	3214.80	ug/L		97
75) 2-hexanone	5.136	43	582835	314.07	ug/L		90
76) 1-Chlorohexane	5.367	91	110346m	61.60	ug/L		
77) Ethylbenzene	5.398	91	365512m	65.91	ug/L		
78) Chlorobenzene	5.367	112	220923	65.97	ug/L		96
79) 1,1,1,2-Tetrachloroethane	5.406	131	85444	68.83	ug/L		93
80) m,p-Xylene	5.498	91	571516	130.06	ug/L		97
81) o-Xylene	5.798	91	304460	65.29	ug/L		99
82) Styrene	5.837	104	231762	65.85	ug/L		95
83) Bromoform	5.837	173	61976	70.03	ug/L		99
84) Isopropylbenzene	6.037	105	357234	65.51	ug/L		98
87) cis-1,4-Dichloro-2-butene	6.260	53	31916	70.39	ug/L	#	73
88) n-Propylbenzene	6.352	91	426837	67.06	ug/L		99
89) Bromobenzene	6.306	156	91959	65.08	ug/L		97
90) 1,1,2,2-Tetrachloroethane	6.376	83	108702	64.90	ug/L		97
91) 1,3,5-Trimethylbenzene	6.506	105	289121	66.08	ug/L		97

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50663.D
Acq On : 15 Nov 2023 9:33 am
Operator : jeniferw
Sample : IC1985-6
Misc : MS55275,V1A1985,,,,,
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Nov 15 12:59:19 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration

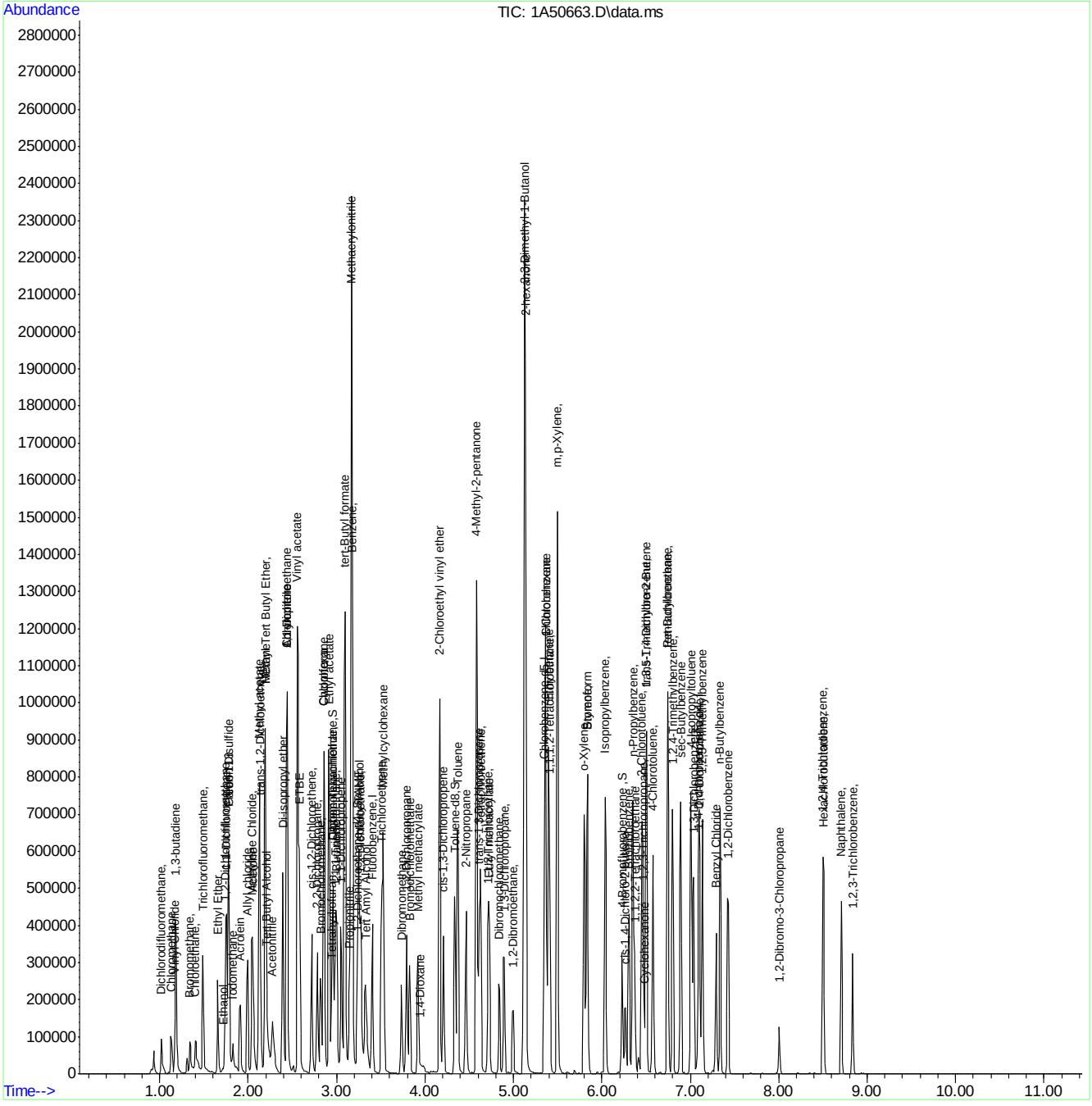
	Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
92)	2-Chlorotoluene	6.453	91	237594	64.10	ug/L		96
93)	trans-1,4-Dichloro-2-B...	6.506	53	42009	65.78	ug/L		91
94)	1,2,3-Trichloropropane	6.468	110	30577	65.80	ug/L		87
95)	Cyclohexanone	6.483	55	26437	276.14	ug/L		99
96)	4-Chlorotoluene	6.576	91	247829	64.22	ug/L		96
97)	tert-Butylbenzene	6.745	91	161610	65.61	ug/L		94
98)	1,2,4-Trimethylbenzene	6.799	105	277182	65.56	ug/L		98
99)	Pentachloroethane	6.745	167	48203	73.65	ug/L	#	68
100)	sec-Butylbenzene	6.891	105	374293	67.56	ug/L		97
101)	4-Isopropyltoluene	7.007	119	320067	66.74	ug/L		98
102)	1,3-Dichlorobenzene	7.037	146	167332	64.57	ug/L		98
103)	1,2,3-Trimethylbenzene	7.138	105	274662	64.94	ug/L		95
104)	1,4-Dichlorobenzene	7.107	146	165596	64.09	ug/L		98
105)	n-Butylbenzene	7.338	92	143542	66.84	ug/L		96
106)	Benzyl Chloride	7.291	126	40571	67.01	ug/L		94
107)	1,2-Dichlorobenzene	7.430	146	150681	65.37	ug/L		97
108)	1,2-Dibromo-3-Chloropr...	8.007	75	18255	68.19	ug/L		77
109)	Hexachlorobutadiene	8.507	225	37500	68.22	ug/L		92
110)	1,2,4-Trichlorobenzene	8.500	180	85696	67.48	ug/L		97
111)	Naphthalene	8.708	128	218409	66.91	ug/L		98
112)	1,2,3-Trichlorobenzene	8.838	180	67723	67.61	ug/L		98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50663.D
Acq On : 15 Nov 2023 9:33 am
Operator : jeniferw
Sample : IC1985-6
Misc : MS55275,V1A1985,,,,,
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Nov 15 12:59:19 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration



Manual Integration Approval Summary

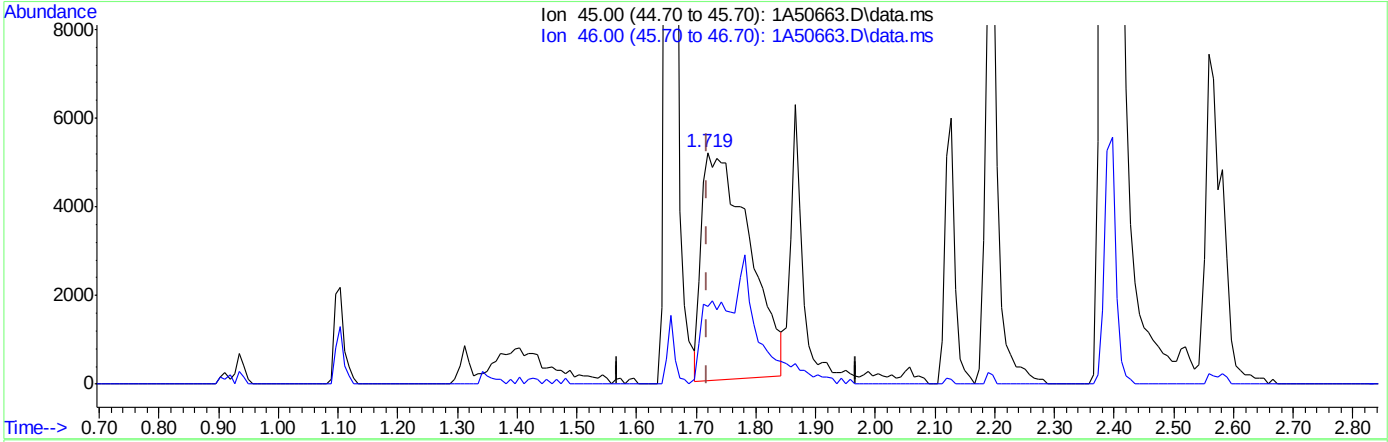
Sample Number: V1A1985-IC1985
Lab FileID: 1A50663.D
Injection Time: 11/15/23 09:33
Method: SW846 8260D
Analyst approved: 11/15/23 14:32 Jenifer Willis
Supervisor approved: 11/15/23 15:49 Karen Watson

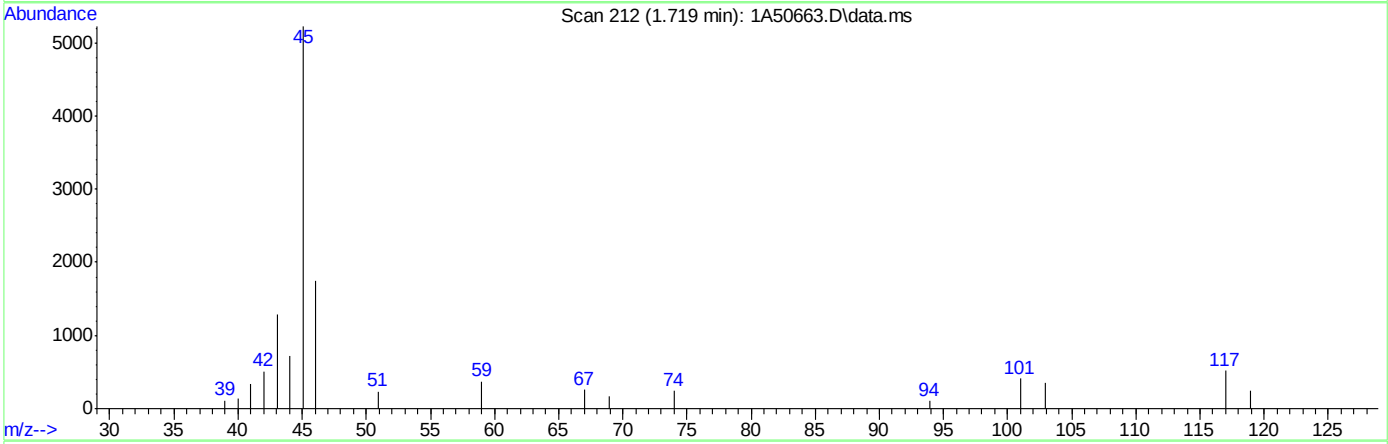
Parameter	CAS	Sig#	R.T. (min.)	Reason
Ethyl Alcohol	64-17-5		1.72	Poorly defined baseline
Carbon Tetrachloride	56-23-5		2.96	Overlapping peak
1-Chlorohexane	544-10-5		5.37	Overlapping peak
Ethylbenzene	100-41-4		5.40	Overlapping peak

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50663.D
Acq On : 15 Nov 2023 9:33 am
Operator : jeniferw
Sample : IC1945-6
Misc : MS55275,V1A1945,,,,,
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Nov 15 12:47:38 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50663.D\data.ms

(10) Ethanol

1.719min (+0.000) 1283.93ug/L

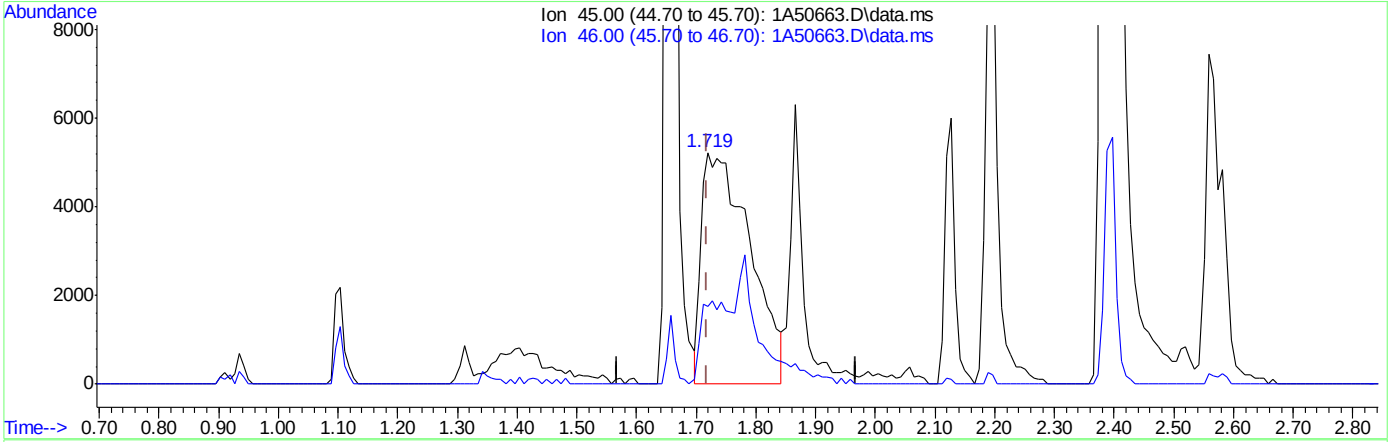
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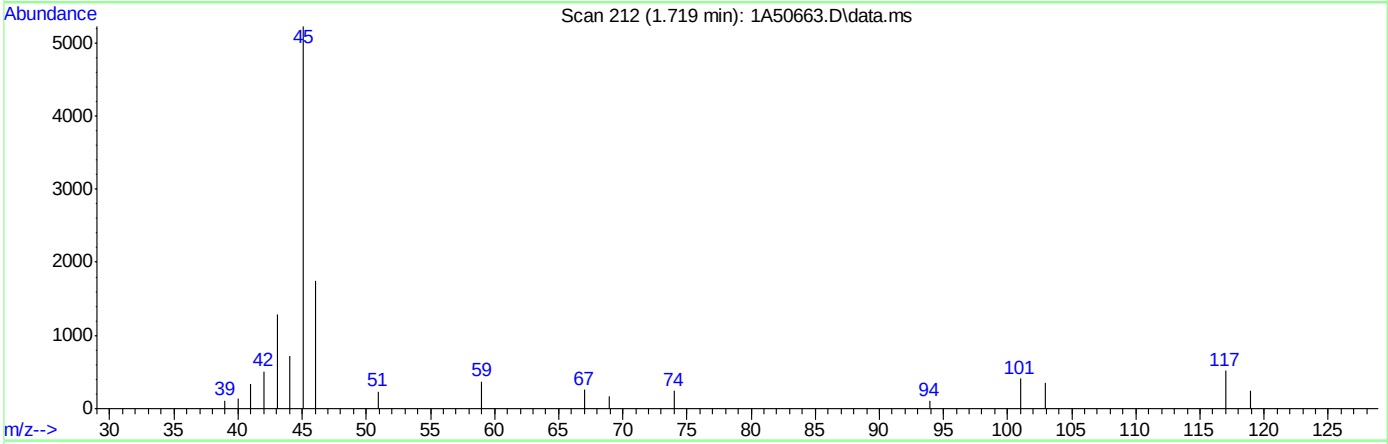
Ion	Exp%	Act%
45.00	100	100
46.00	40.30	36.60
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50663.D
Acq On : 15 Nov 2023 9:33 am
Operator : jeniferw
Sample : IC1945-6
Misc : MS55275,V1A1945,,,,,
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Nov 15 12:47:38 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50663.D\data.ms

(10) Ethanol

1.719min (+0.000) 1332.98ug/L m

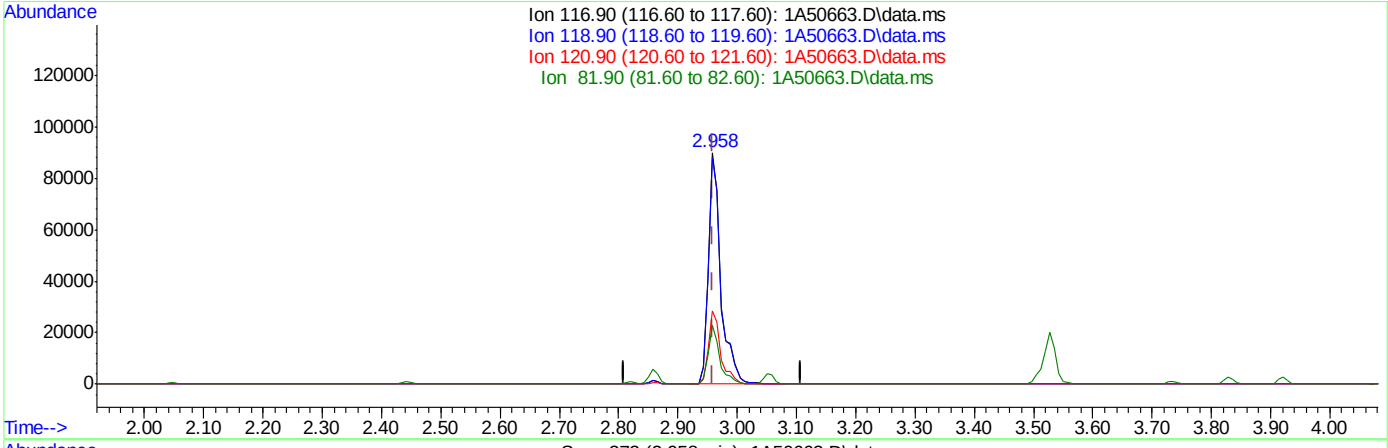
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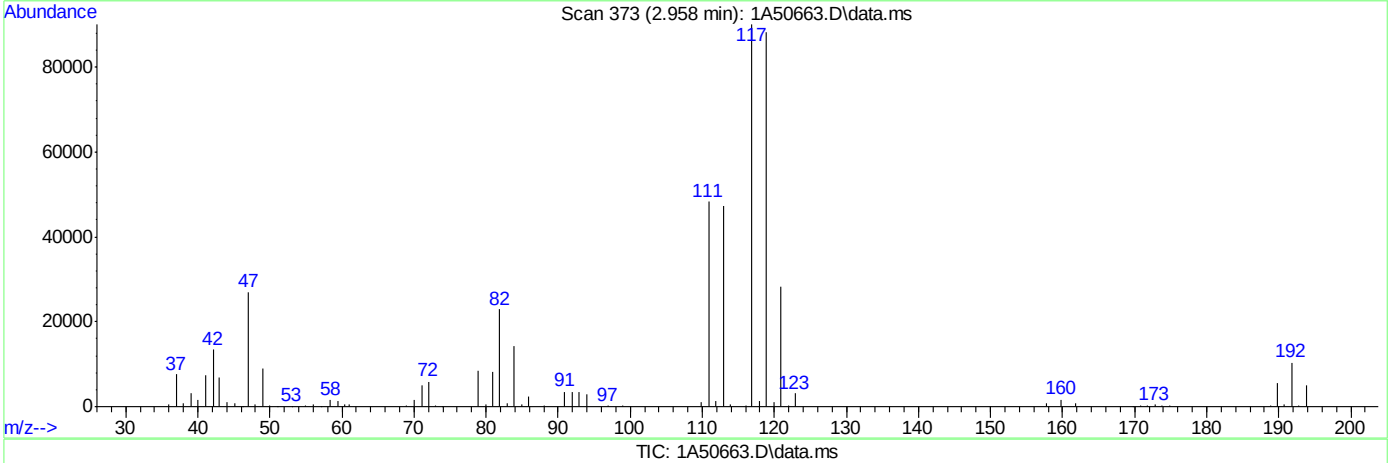
Ion	Exp%	Act%
45.00	100	100
46.00	40.30	33.40
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50663.D
Acq On : 15 Nov 2023 9:33 am
Operator : jeniferw
Sample : IC1945-6
Misc : MS55275,V1A1945,,,,,
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Nov 15 12:47:38 2023
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Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50663.D\data.ms

(40) Carbon Tetrachloride ( )

2.958min (-0.001) 75.51ug/L

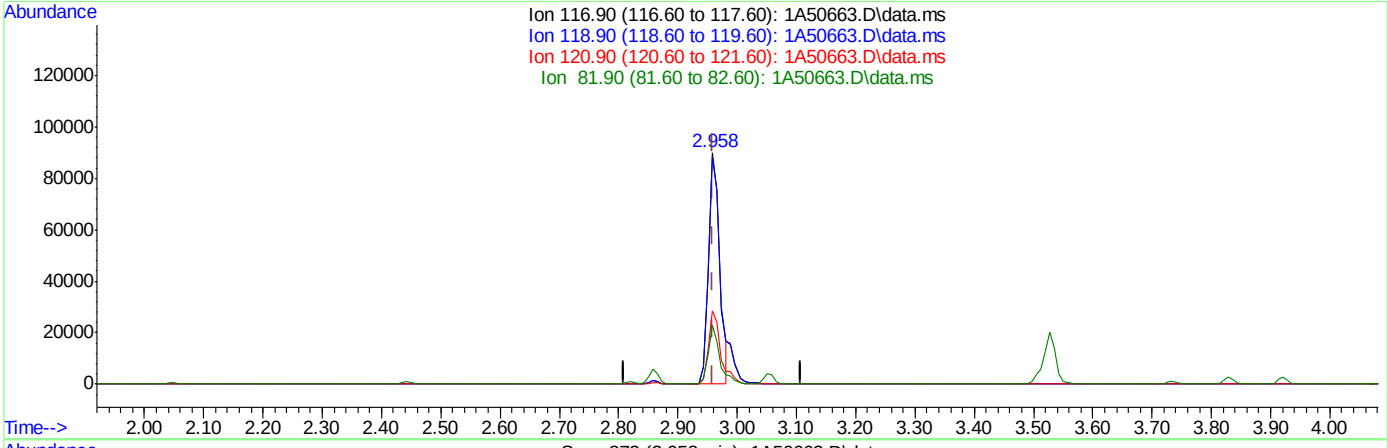
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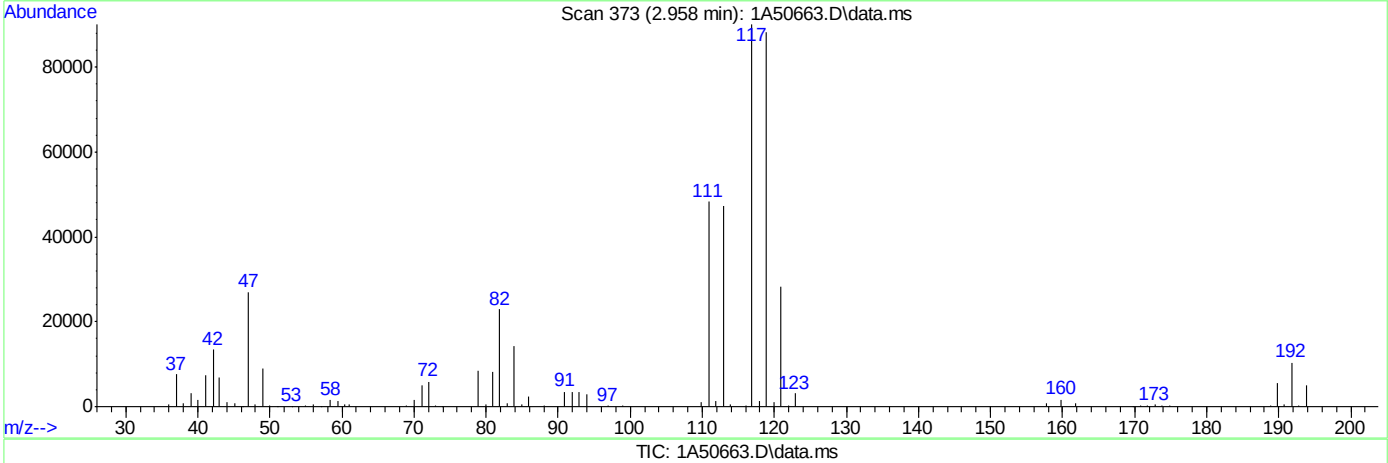
Ion	Exp%	Act%
116.90	100	100
118.90	94.50	98.02
120.90	31.10	31.41
81.90	25.40	25.50

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50663.D
Acq On : 15 Nov 2023 9:33 am
Operator : jeniferw
Sample : IC1945-6
Misc : MS55275,V1A1945,,,,,
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Nov 15 12:47:38 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50663.D\data.ms

(40) Carbon Tetrachloride ( )

2.958min (-0.001) 67.61ug/L m

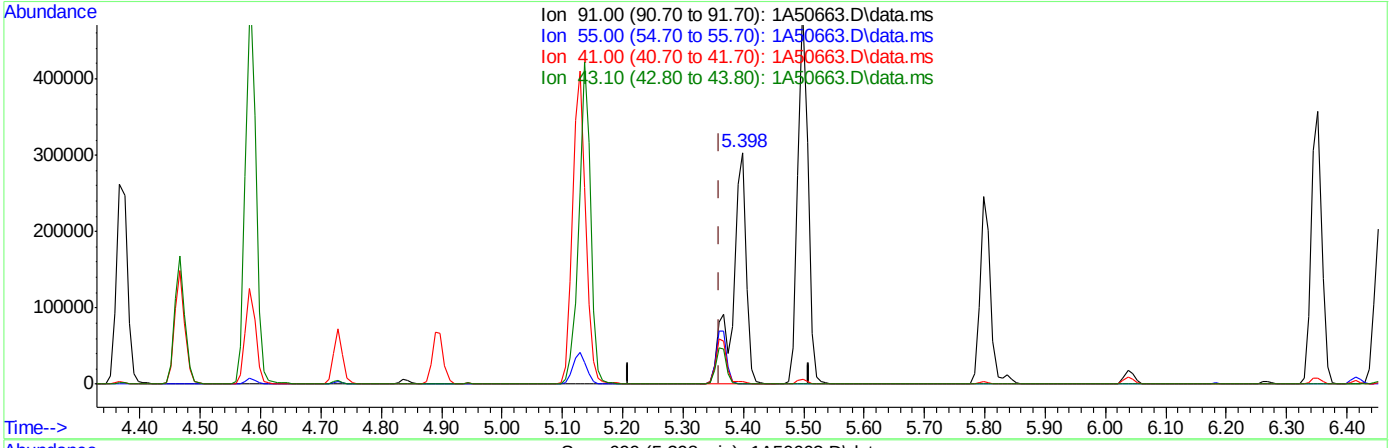
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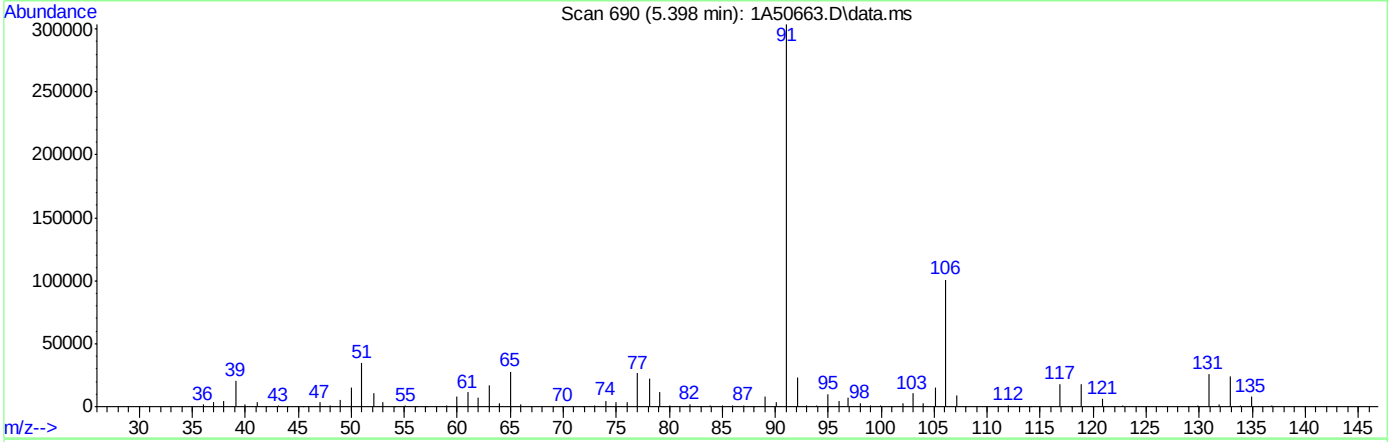
Ion	Exp%	Act%
116.90	100	100
118.90	94.50	98.02
120.90	31.10	31.41
81.90	25.40	25.50

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50663.D
Acq On : 15 Nov 2023 9:33 am
Operator : jeniferw
Sample : IC1945-6
Misc : MS55275,V1A1945,,,,,
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Nov 15 12:47:38 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50663.D\data.ms

(76) 1-Chlorohexane

5.398min (+0.038) 265.38ug/L

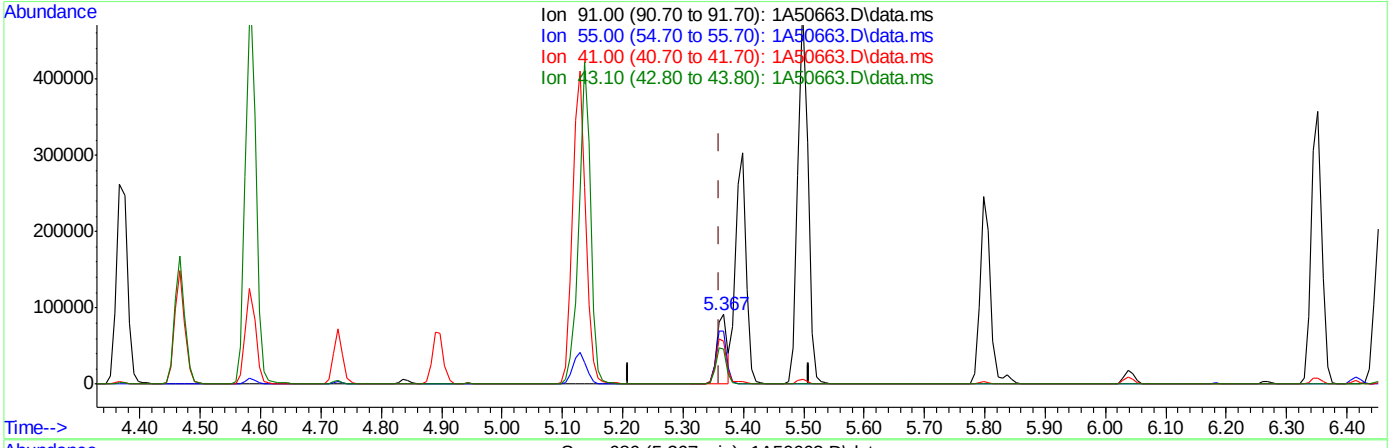
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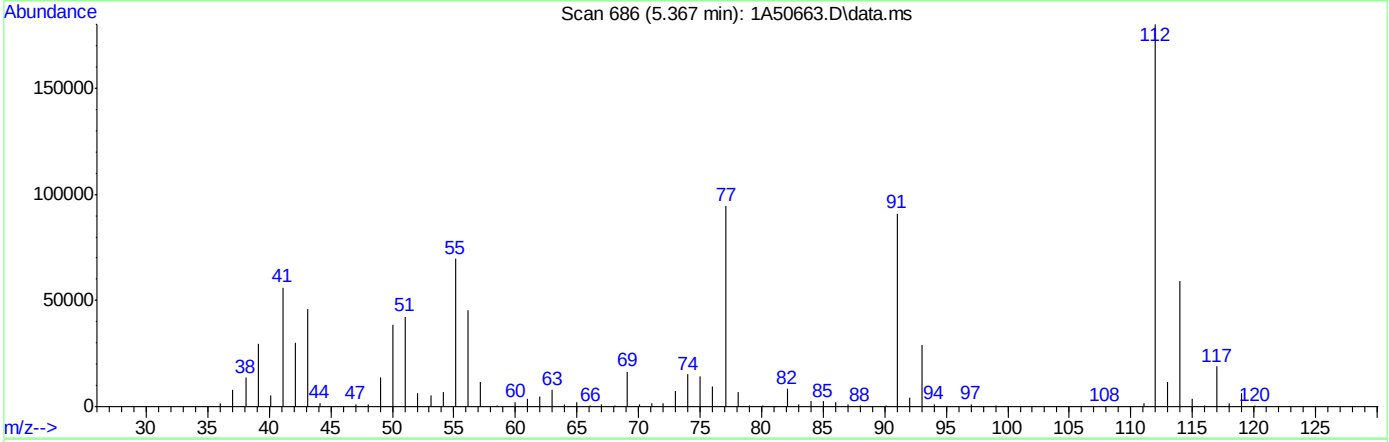
Ion	Exp%	Act%
91.00	100	100
55.00	74.60	0.22#
41.00	53.90	0.99#
43.10	42.90	0.17#

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50663.D
Acq On : 15 Nov 2023 9:33 am
Operator : jeniferw
Sample : IC1945-6
Misc : MS55275,V1A1945,,,,,
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Nov 15 12:47:38 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50663.D\data.ms

(76) 1-Chlorohexane

5.367min (+0.007) 61.60ug/L m

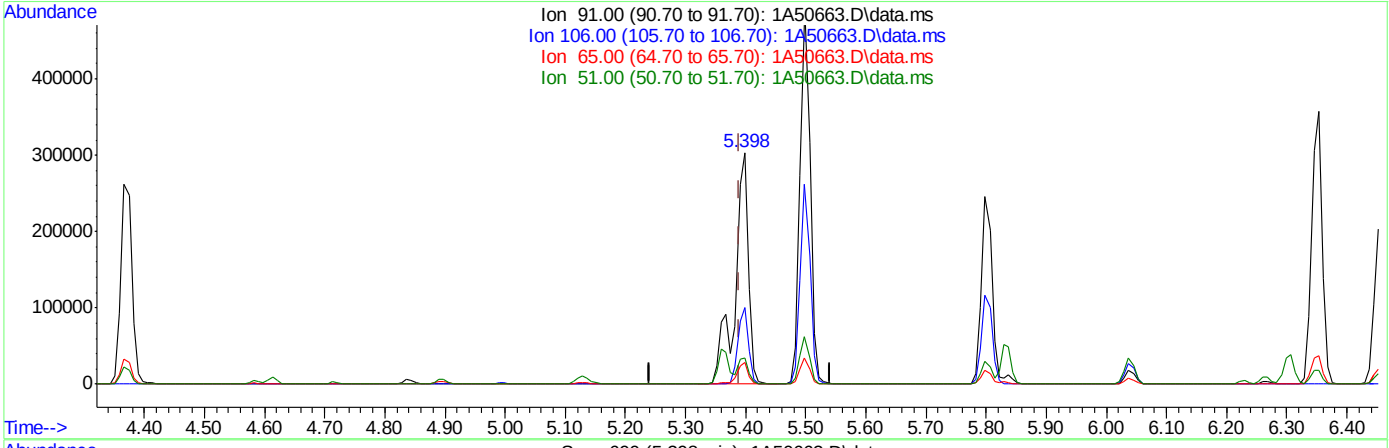
response 110346

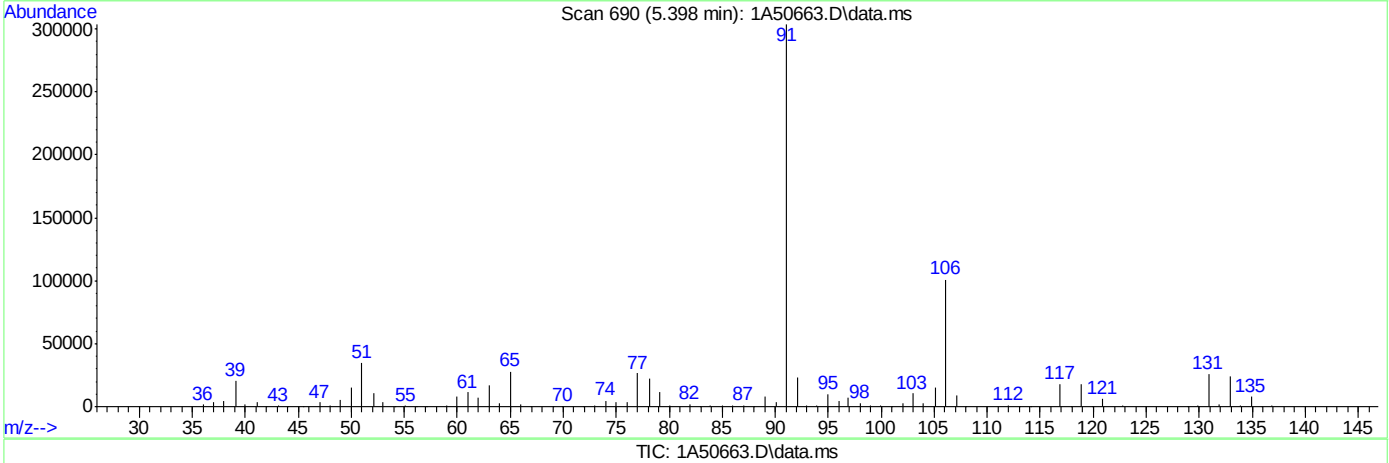
Ion	Exp%	Act%
91.00	100	100
55.00	74.60	76.55
41.00	53.90	61.72
43.10	42.90	50.39

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50663.D
Acq On : 15 Nov 2023 9:33 am
Operator : jeniferw
Sample : IC1945-6
Misc : MS55275,V1A1945,,,,,
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Nov 15 12:47:38 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50663.D\data.ms

(77) Ethylbenzene

5.398min (+0.007) 85.81ug/L

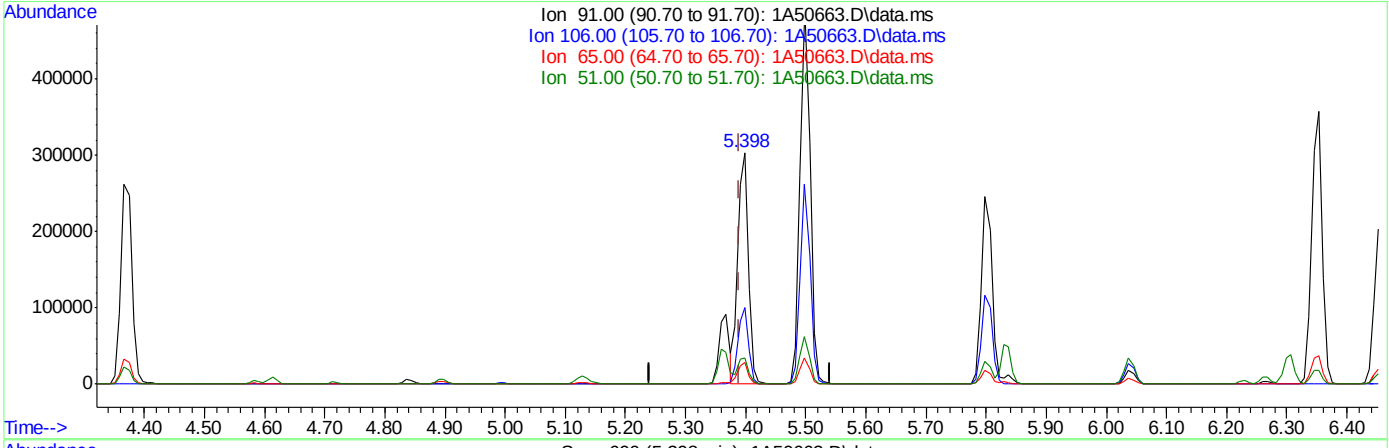
response 475888

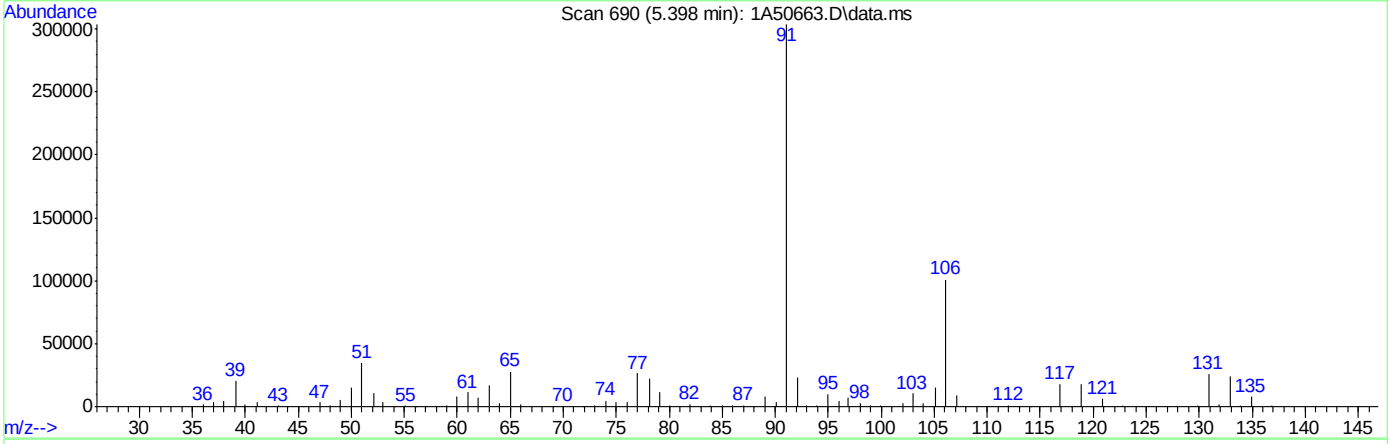
Ion	Exp%	Act%
91.00	100	100
106.00	32.00	33.26
65.00	8.30	9.21
51.00	10.10	11.37

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50663.D
Acq On : 15 Nov 2023 9:33 am
Operator : jeniferw
Sample : IC1945-6
Misc : MS55275,V1A1945,,,,,
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Nov 15 12:47:38 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50663.D\data.ms

(77) Ethylbenzene

5.398min (+0.007) 65.91ug/L m

response 365512

Ion	Exp%	Act%
91.00	100	100
106.00	32.00	33.26
65.00	8.30	9.21
51.00	10.10	11.37

Manual Integrations APPROVED (compounds with "m" flag)
Karen Watson 11/15/23 15:49

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50665.D
Acq On : 15 Nov 2023 10:05 am
Operator : jeniferw
Sample : IC1985-7
Misc : MS55275,V1A1985,,,,,
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Nov 15 13:00:05 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	3.405	96	218617	50.00	ug/L	0.00
62) Chlorobenzene-d5	5.352	117	152138	50.00	ug/L	0.00
85) 1,4-Dichlorobenzene-d4	7.091	152	78213	50.00	ug/L	0.00
System Monitoring Compounds						
39) Dibromofluoromethane	2.950	113	63766	48.78	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 97.56%			
49) 1,2-Dichloroethane-d4	3.235	65	75225	52.87	ug/L	0.00
Spiked Amount 50.000	Range 79 - 125		Recovery = 105.74%			
63) Toluene-d8	4.336	98	206796	50.89	ug/L	0.00
Spiked Amount 50.000	Range 85 - 112		Recovery = 101.78%			
86) 4-Bromofluorobenzene	6.229	174	66556	50.80	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 101.60%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.019	85	77002	88.23	ug/L	97
3) Chloromethane	1.134	50	108772	81.69	ug/L	98
4) 1,3-butadiene	1.180	39	142900	95.77	ug/L	97
5) Vinyl Chloride	1.165	62	113500	85.87	ug/L	98
6) Bromomethane	1.342	94	42136	86.57	ug/L	96
7) Chloroethane	1.404	64	63305	109.59	ug/L	97
8) Trichlorofluoromethane	1.480	101	166527	93.75	ug/L	99
9) Ethyl Ether	1.650	59	104679	98.49	ug/L	90
10) Ethanol	1.773	45	40776m	1798.39	ug/L	
11) 1,2-Dichlorotrifluoroe...	1.742	67	137613	93.19	ug/L	93
12) 1,1-Dichloroethene	1.750	61	186049	93.44	ug/L	93
13) Freon 113	1.781	101	107187	95.72	ug/L	97
14) Carbon Disulfide	1.773	76	322645	97.71	ug/L	88
15) Iodomethane	1.827	142	84705	98.59	ug/L	92
16) Acrolein	1.904	56	158741	455.76	ug/L	99
17) Allyl chloride	1.988	41	163639	87.28	ug/L	93
18) Methylene Chloride	2.042	49	168972	93.30	ug/L	98
19) Acetone	2.050	43	238804	481.54	ug/L	99
20) Methyl acetate	2.119	43	694071	445.56	ug/L	96
21) trans-1,2-Dichloroethene	2.135	61	182728	92.30	ug/L	98
22) Hexane	2.189	56	125641	91.81	ug/L	94
23) Methyl Tert Butyl Ether	2.189	73	341721	93.63	ug/L	83
24) Acetonitrile	2.273	41	178614	932.03	ug/L	94
25) Tert Butyl Alcohol	2.219	59	244519	899.32	ug/L	92
26) Di-isopropyl ether	2.389	45	434496	93.60	ug/L	94
27) Chloroprene	2.435	53	525458	95.09	ug/L	98
28) 1,1-Dichloroethane	2.435	63	238419	92.68	ug/L	98
29) Acrylonitrile	2.435	52	316496	477.27	ug/L	85
30) ETBE	2.581	59	409615	95.57	ug/L	96
31) Vinyl acetate	2.558	43	1670450	512.12	ug/L	97
32) cis-1,2-Dichloroethene	2.720	96	128923	90.16	ug/L	98
33) 2,2-Dichloropropane	2.781	77	163365	92.35	ug/L	97
34) Bromochloromethane	2.820	128	60474	83.35	ug/L	90
35) Cyclohexane	2.858	56	237124	92.41	ug/L	93

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50665.D
Acq On : 15 Nov 2023 10:05 am
Operator : jeniferw
Sample : IC1985-7
Misc : MS55275,V1A1985,,,,,
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Nov 15 13:00:05 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
36) Chloroform	2.858	83	218748	90.91	ug/L		96
37) Ethyl acetate	2.912	43	923931	507.16	ug/L		98
38) Tetrahydrofuran	2.943	42	63646	86.77	ug/L		94
40) Carbon Tetrachloride	2.958	117	177361m	98.73	ug/L		
41) 1,1,1-Trichloroethane	2.981	97	186216	94.88	ug/L		93
42) 2-Butanone	3.004	43	437802	448.26	ug/L		93
43) 1,1-Dichloropropene	3.051	75	159597	94.14	ug/L		96
44) tert-Butyl formate	3.097	59	590326	516.68	ug/L		97
45) Propionitrile	3.151	54	250204	963.02	ug/L		90
46) Methacrylonitrile	3.166	41	1034130	918.22	ug/L		97
47) Benzene	3.181	78	465721	91.38	ug/L		95
48) TAME	3.251	73	341891	95.40	ug/L		98
50) 1,2-Dichloroethane	3.274	62	174201	89.89	ug/L		93
51) Isobutyl Alcohol	3.251	43	233775	1438.76	ug/L		76
52) Tert Amyl Alcohol	3.328	59	204674	922.59	ug/L		88
53) Trichloroethene	3.505	95	130455	91.19	ug/L		91
54) Methylcyclohexane	3.528	83	222330	100.52	ug/L		97
55) Dibromomethane	3.736	93	82145	88.93	ug/L		89
56) 1,2-Dichloropropane	3.789	63	132413	91.48	ug/L		90
57) Bromodichloromethane	3.828	83	164968	93.74	ug/L		95
58) Methyl methacrylate	3.920	41	146652	90.67	ug/L		93
59) 1,4-Dioxane	3.943	88	37164	1889.15	ug/L		91
60) 2-Chloroethyl vinyl ether	4.167	63	399944	492.55	ug/L		98
61) cis-1,3-Dichloropropene	4.205	75	192743	91.92	ug/L		85
64) Toluene	4.367	91	479217	92.65	ug/L		98
65) 2-Nitropropane	4.467	41	250845	494.64	ug/L		94
66) 4-Methyl-2-pentanone	4.582	43	899682	476.44	ug/L		97
67) trans-1,3-Dichloropropene	4.613	75	177454	95.67	ug/L		94
68) Tetrachloroethene	4.628	166	142939	100.25	ug/L		95
69) Ethyl methacrylate	4.728	69	144406	93.16	ug/L		90
70) 1,1,2-Trichloroethane	4.713	83	96728	92.40	ug/L		97
71) Dibromochloromethane	4.836	129	132531	98.80	ug/L		100
72) 1,3-Dichloropropane	4.898	76	179291	92.80	ug/L		94
73) 1,2-Dibromoethane	4.990	107	124805	94.12	ug/L		96
74) 3,3-Dimethyl-1-Butanol	5.129	57	1319990	5113.87	ug/L		96
75) 2-hexanone	5.136	43	889130	476.64	ug/L	#	69
76) 1-Chlorohexane	5.367	91	162297m	90.12	ug/L		
77) Ethylbenzene	5.398	91	525110m	94.20	ug/L		
78) Chlorobenzene	5.367	112	313861	93.24	ug/L		97
79) 1,1,1,2-Tetrachloroethane	5.406	131	121198	97.13	ug/L		94
80) m,p-Xylene	5.498	91	819835	185.60	ug/L		96
81) o-Xylene	5.798	91	432665	92.30	ug/L		99
82) Styrene	5.837	104	331883	93.81	ug/L		95
83) Bromoform	5.837	173	88931	99.97	ug/L		99
84) Isopropylbenzene	6.037	105	508714	92.80	ug/L		99
87) cis-1,4-Dichloro-2-butene	6.268	53	45085	100.18	ug/L	#	74
88) n-Propylbenzene	6.352	91	602337	95.34	ug/L		100
89) Bromobenzene	6.306	156	130083	92.74	ug/L		99
90) 1,1,2,2-Tetrachloroethane	6.375	83	155965	93.82	ug/L		95
91) 1,3,5-Trimethylbenzene	6.506	105	411155	94.67	ug/L		97

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50665.D
Acq On : 15 Nov 2023 10:05 am
Operator : jeniferw
Sample : IC1985-7
Misc : MS55275,V1A1985,,,,,
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Nov 15 13:00:05 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration

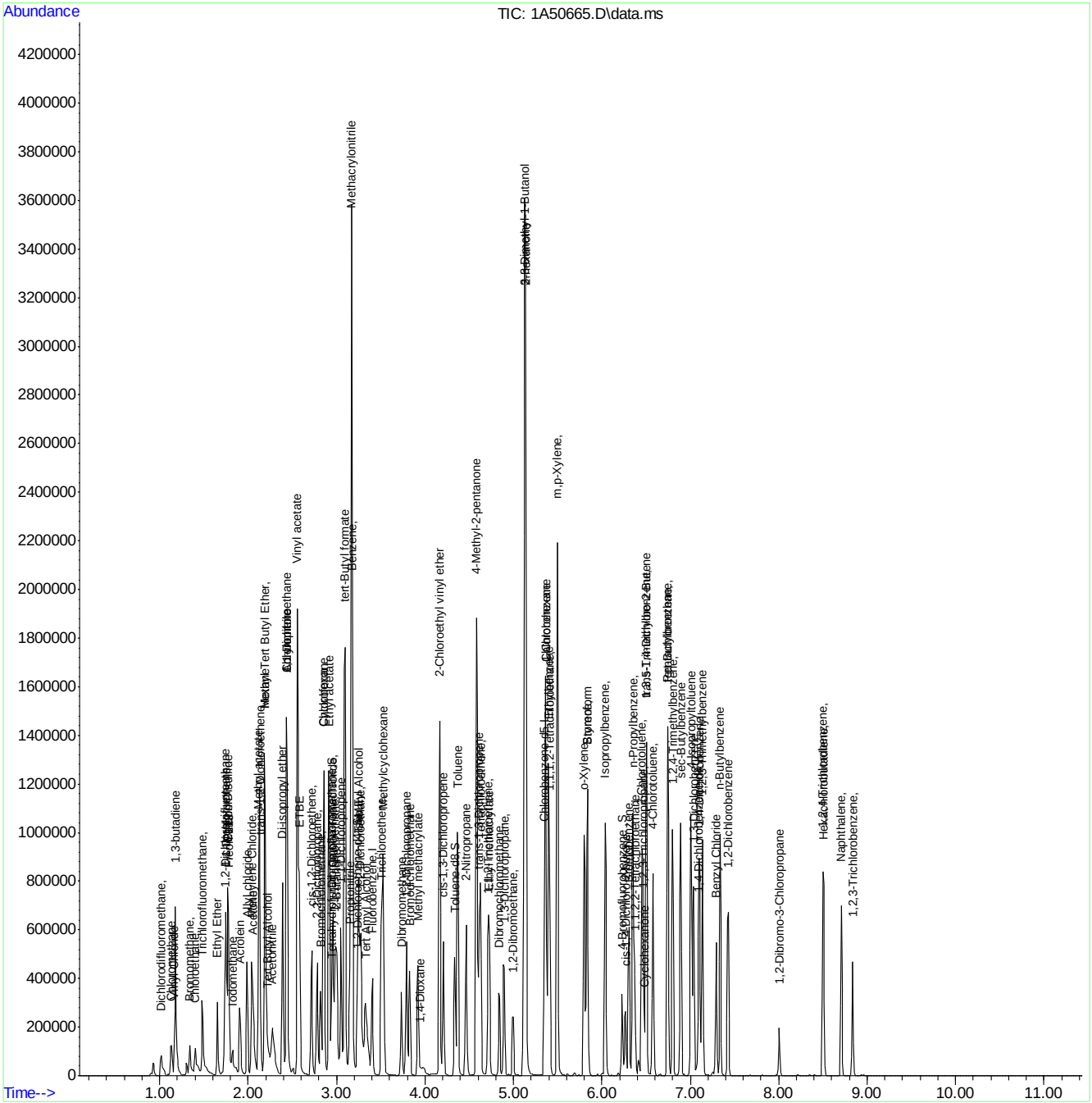
	Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
92)	2-Chlorotoluene	6.452	91	336697	91.51	ug/L		97
93)	trans-1,4-Dichloro-2-B...	6.506	53	60603	95.60	ug/L		90
94)	1,2,3-Trichloropropane	6.468	110	43639	94.61	ug/L		88
95)	Cyclohexanone	6.483	55	39181	412.30	ug/L		97
96)	4-Chlorotoluene	6.575	91	351583	91.79	ug/L		97
97)	tert-Butylbenzene	6.745	91	226964	92.83	ug/L		93
98)	1,2,4-Trimethylbenzene	6.799	105	395277	94.18	ug/L		98
99)	Pentachloroethane	6.745	167	66639	102.57	ug/L	#	65
100)	sec-Butylbenzene	6.891	105	523239	95.15	ug/L		98
101)	4-Isopropyltoluene	7.006	119	453228	95.21	ug/L		98
102)	1,3-Dichlorobenzene	7.037	146	236635	92.00	ug/L		98
103)	1,2,3-Trimethylbenzene	7.137	105	389581	92.80	ug/L		96
104)	1,4-Dichlorobenzene	7.107	146	235478	91.81	ug/L		98
105)	n-Butylbenzene	7.337	92	203763	95.59	ug/L		96
106)	Benzyl Chloride	7.291	126	58663	97.61	ug/L		95
107)	1,2-Dichlorobenzene	7.430	146	213849	93.46	ug/L		98
108)	1,2-Dibromo-3-Chloropr...	8.007	75	27340	102.88	ug/L		79
109)	Hexachlorobutadiene	8.507	225	53439	97.93	ug/L		92
110)	1,2,4-Trichlorobenzene	8.500	180	124641	98.88	ug/L		96
111)	Naphthalene	8.707	128	328466	101.38	ug/L		98
112)	1,2,3-Trichlorobenzene	8.838	180	100789	101.36	ug/L		97

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50665.D
Acq On : 15 Nov 2023 10:05 am
Operator : jeniferw
Sample : IC1985-7
Misc : MS55275,V1A1985,,,,,
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Nov 15 13:00:05 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration



Manual Integration Approval Summary

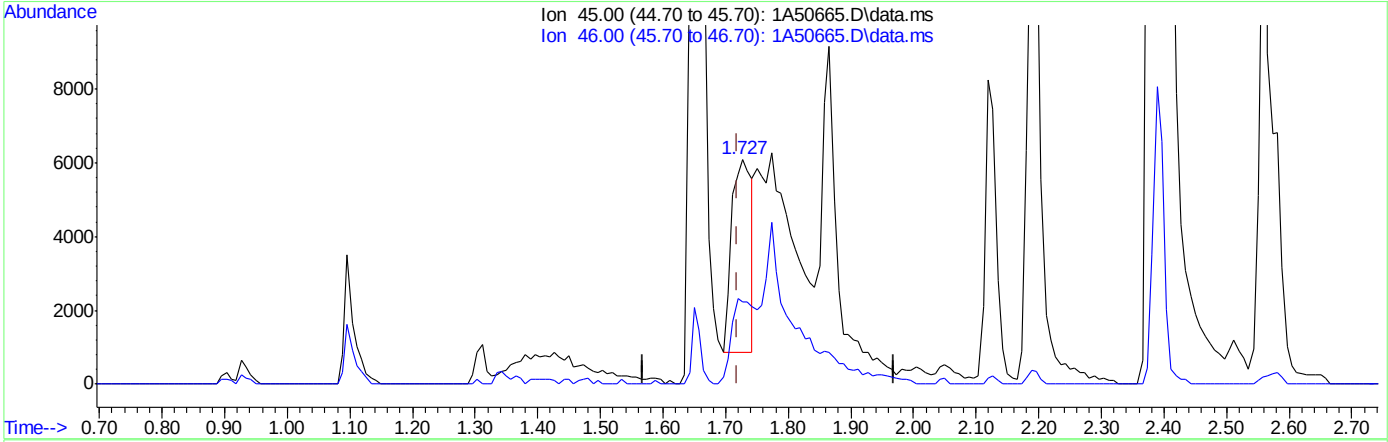
Sample Number: V1A1985-IC1985
Lab FileID: 1A50665.D
Injection Time: 11/15/23 10:05
Method: SW846 8260D
Analyst approved: 11/15/23 14:32 Jenifer Willis
Supervisor approved: 11/15/23 15:49 Karen Watson

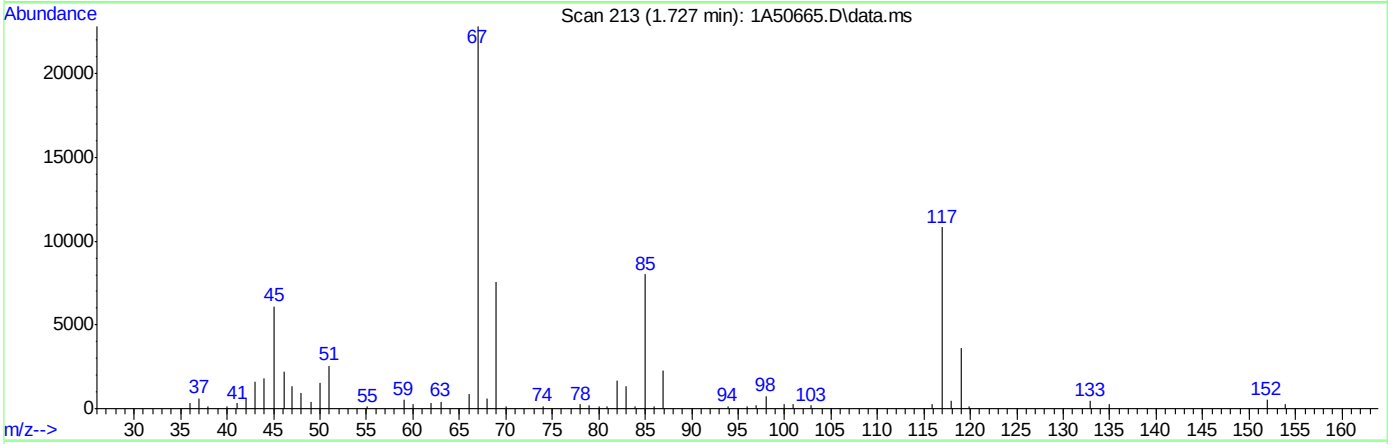
Parameter	CAS	Sig#	R.T. (min.)	Reason
Ethyl Alcohol	64-17-5		1.77	Poorly defined baseline
Carbon Tetrachloride	56-23-5		2.96	Overlapping peak
1-Chlorohexane	544-10-5		5.37	Overlapping peak
Ethylbenzene	100-41-4		5.40	Overlapping peak

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50665.D
Acq On : 15 Nov 2023 10:05 am
Operator : jeniferw
Sample : IC1945-7
Misc : MS55275,V1A1945,,,,,
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Nov 15 12:47:41 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50665.D\data.ms

(10) Ethanol

1.727min (+0.008) 520.82ug/L

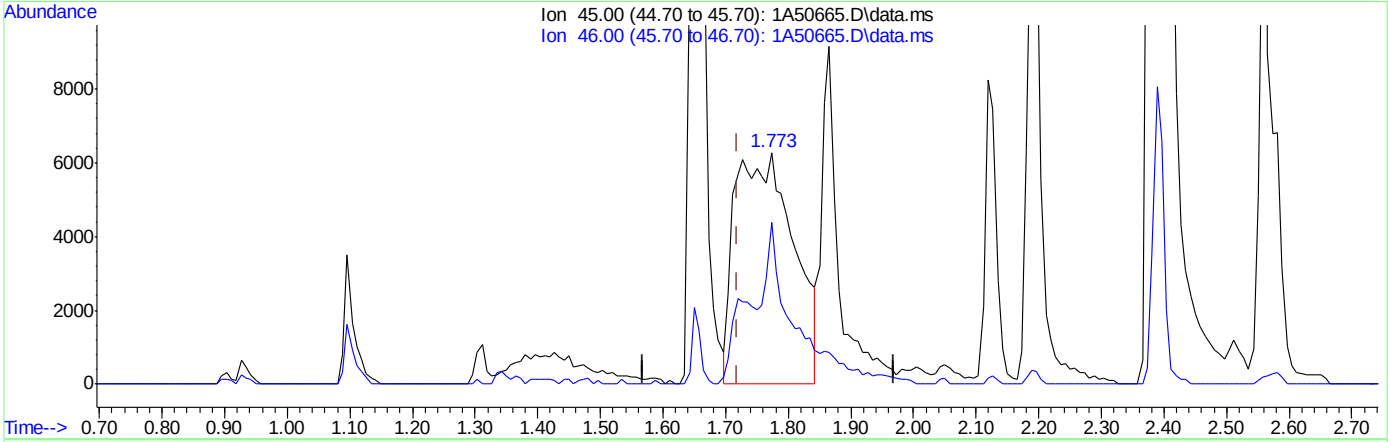
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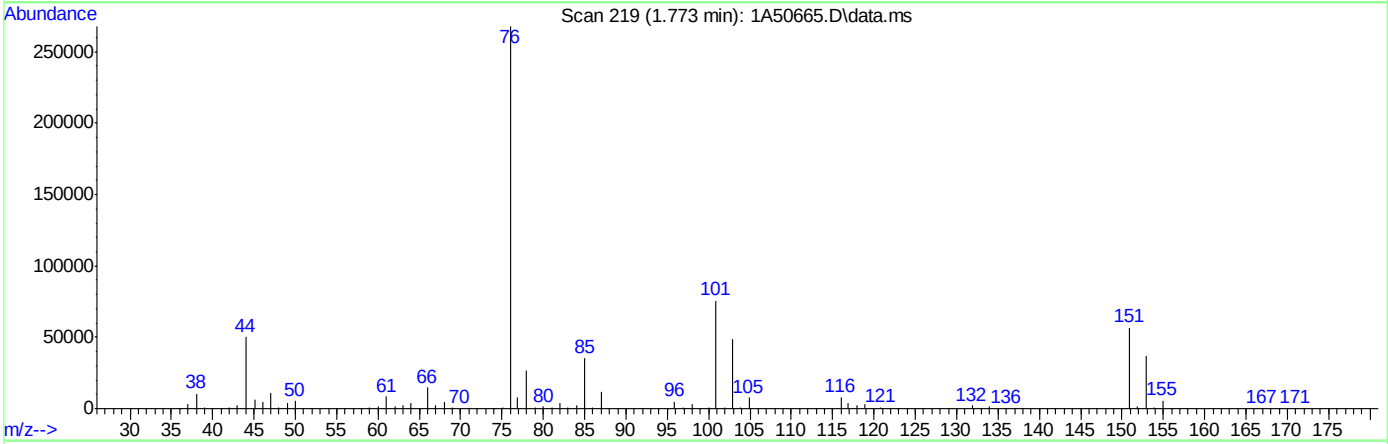
Ion	Exp%	Act%
45.00	100	100
46.00	40.30	39.17
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50665.D
Acq On : 15 Nov 2023 10:05 am
Operator : jeniferw
Sample : IC1945-7
Misc : MS55275,V1A1945,,,,,
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Nov 15 12:47:41 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50665.D\data.ms

(10) Ethanol

1.773min (+0.054) 1798.39ug/L m

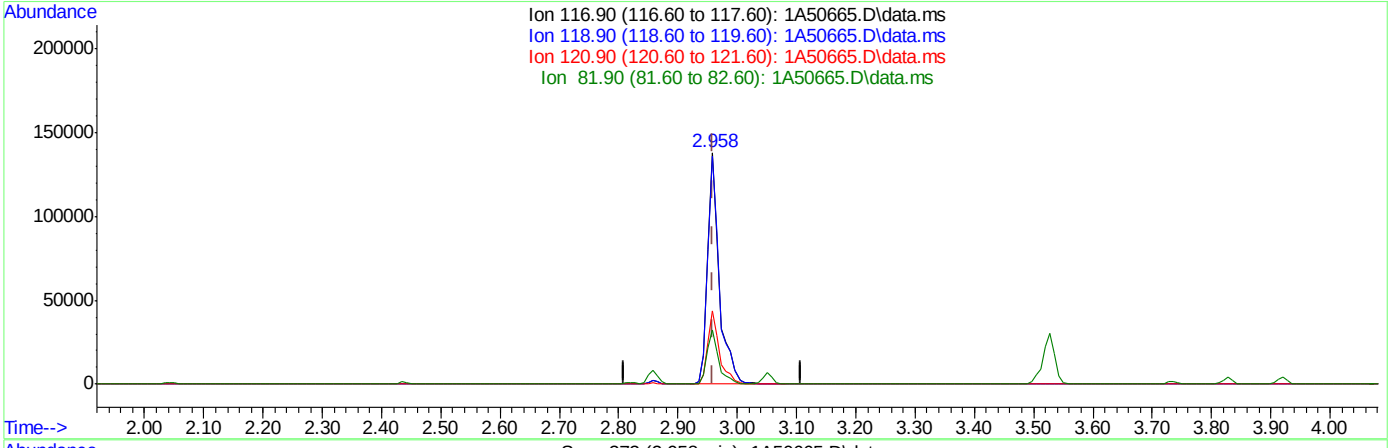
response 40776

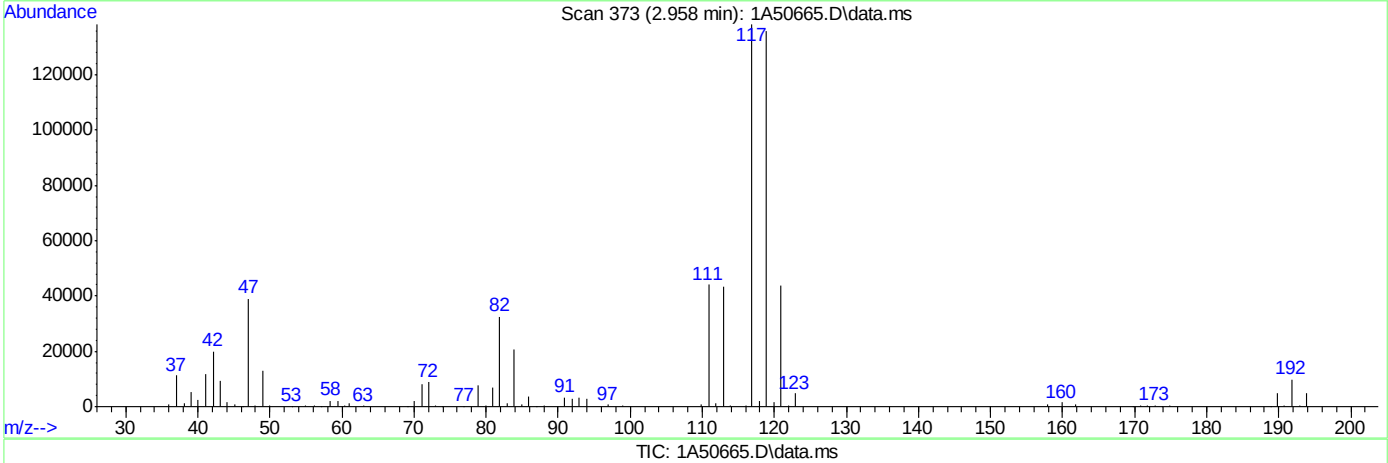
Ion	Exp%	Act%
45.00	100	100
46.00	40.30	69.80#
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50665.D
Acq On : 15 Nov 2023 10:05 am
Operator : jeniferw
Sample : IC1945-7
Misc : MS55275,V1A1945,,,,,
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Nov 15 12:47:41 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50665.D\data.ms

(40) Carbon Tetrachloride ( )

2.958min (-0.001) 107.75ug/L

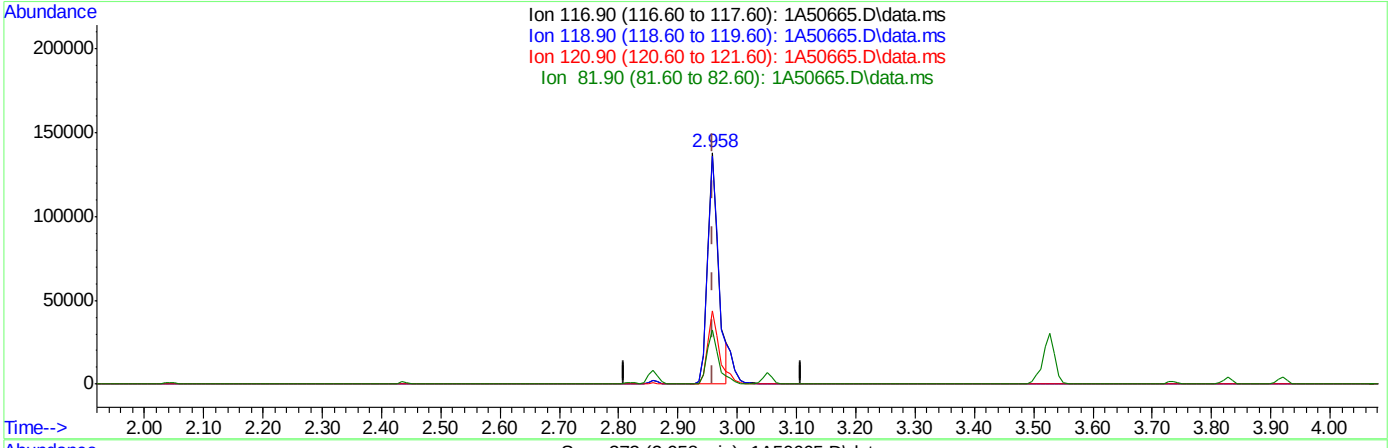
response 193558

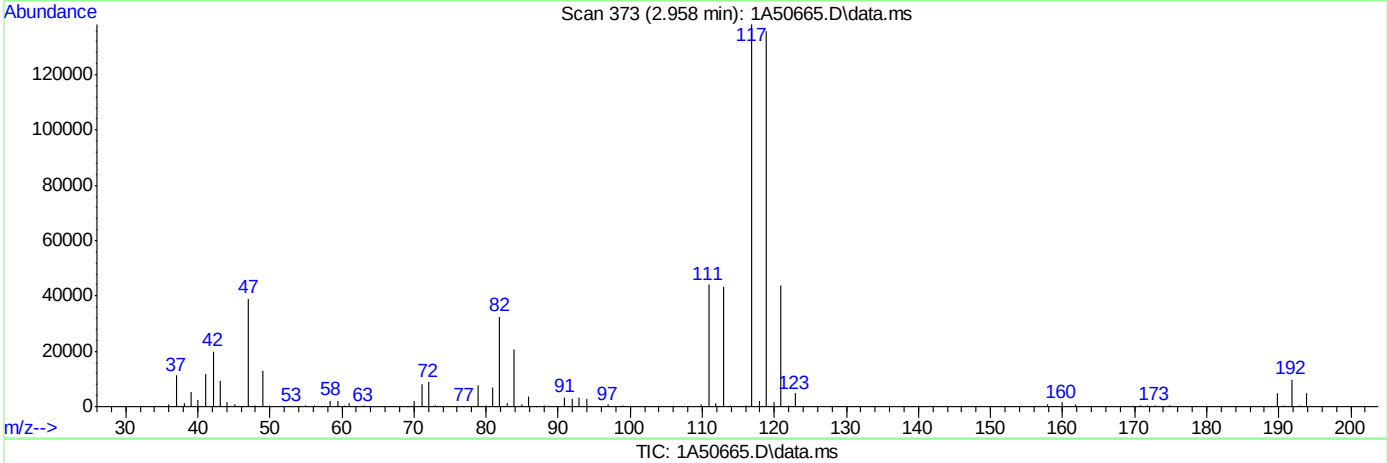
Ion	Exp%	Act%
116.90	100	100
118.90	94.50	98.19
120.90	31.10	31.60
81.90	25.40	23.61

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50665.D
Acq On : 15 Nov 2023 10:05 am
Operator : jeniferw
Sample : IC1945-7
Misc : MS55275,V1A1945,,,,,
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Nov 15 12:47:41 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50665.D\data.ms

(40) Carbon Tetrachloride ( )

2.958min (-0.001) 98.73ug/L m

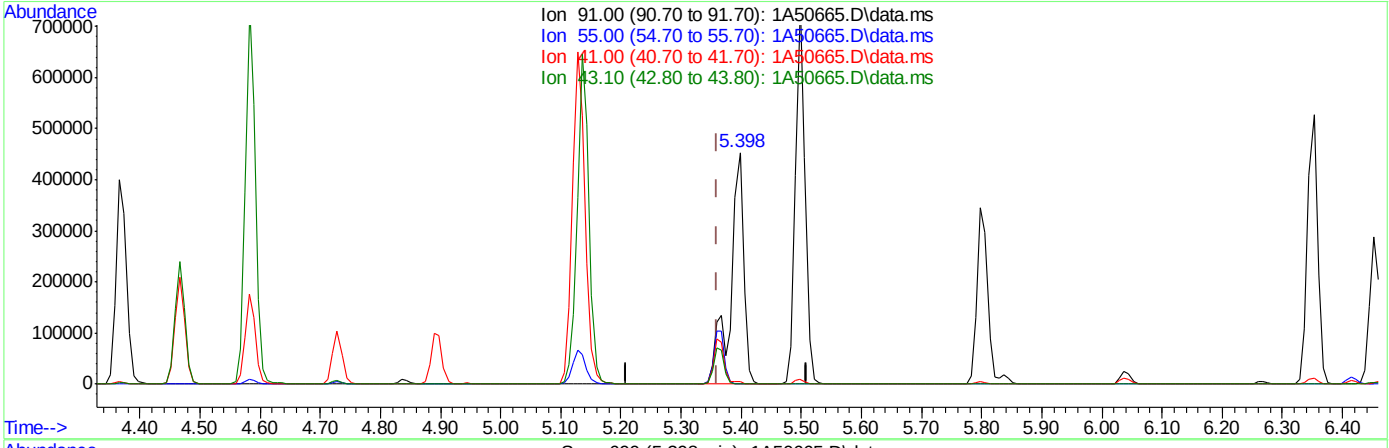
response 177361

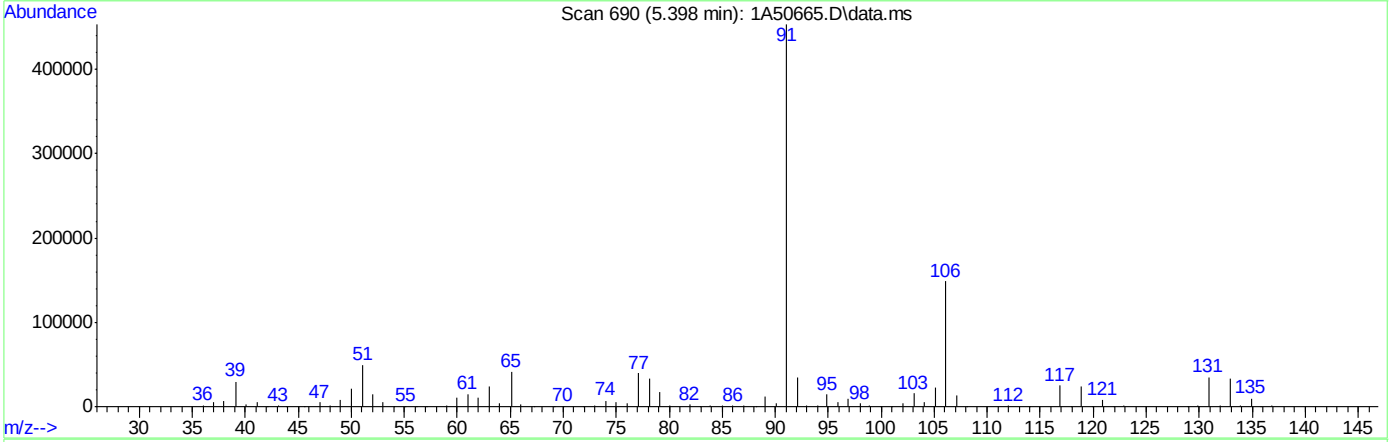
Ion	Exp%	Act%
116.90	100	100
118.90	94.50	98.19
120.90	31.10	31.60
81.90	25.40	23.61

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50665.D
Acq On : 15 Nov 2023 10:05 am
Operator : jeniferw
Sample : IC1945-7
Misc : MS55275,V1A1945,,,,,
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Nov 15 12:47:41 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50665.D\data.ms

(76) 1-Chlorohexane

5.398min (+0.038) 381.40ug/L

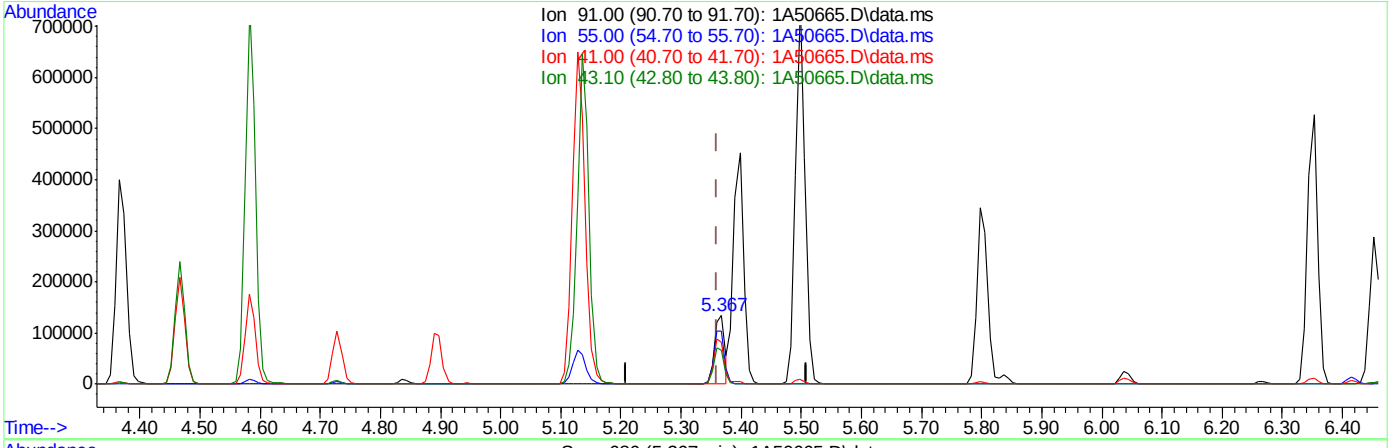
response 686830

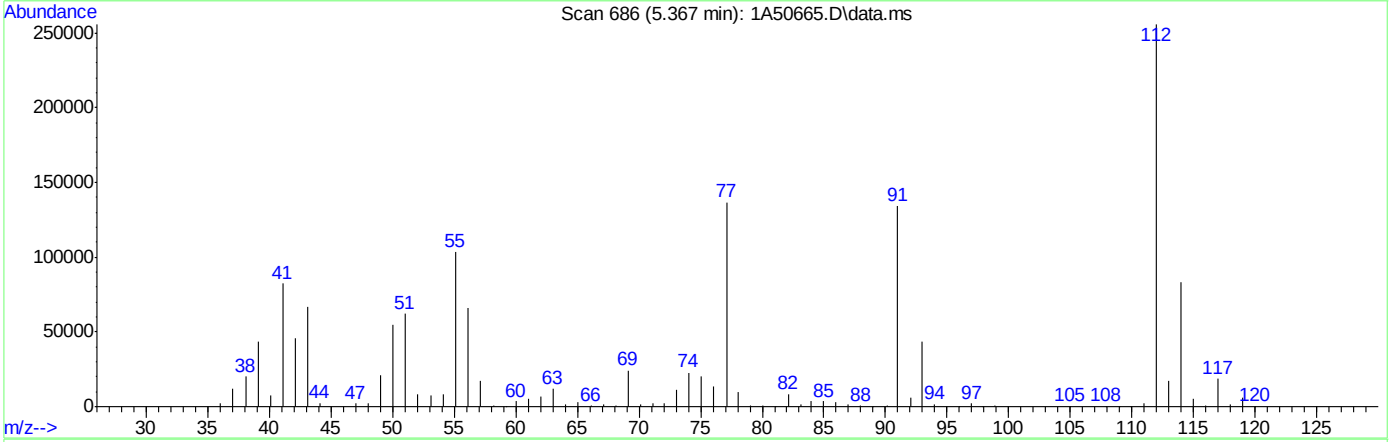
Ion	Exp%	Act%
91.00	100	100
55.00	74.60	0.12#
41.00	53.90	1.00#
43.10	42.90	0.18#

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50665.D
Acq On : 15 Nov 2023 10:05 am
Operator : jeniferw
Sample : IC1945-7
Misc : MS55275,V1A1945,,,,,
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Nov 15 12:47:41 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50665.D\data.ms

(76) 1-Chlorohexane

5.367min (+0.007) 90.12ug/L m

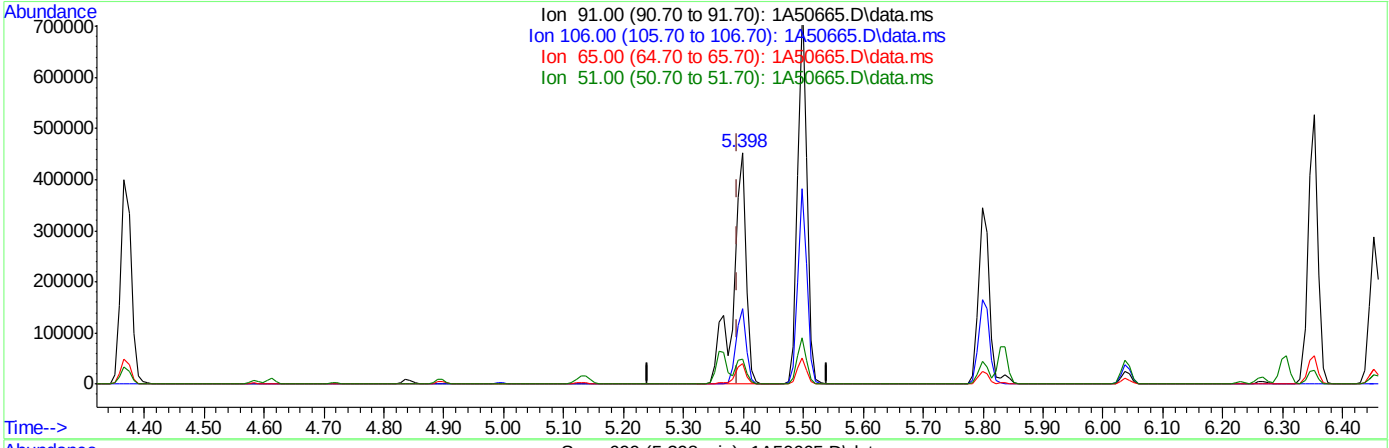
response 162297

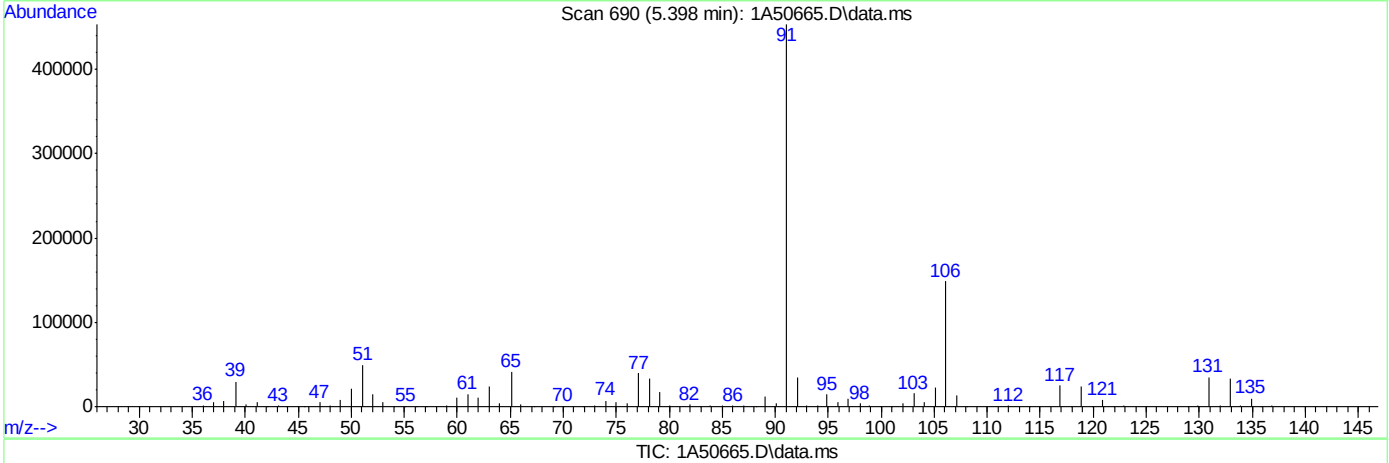
Ion	Exp%	Act%
91.00	100	100
55.00	74.60	77.01
41.00	53.90	61.38
43.10	42.90	49.64

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50665.D
Acq On : 15 Nov 2023 10:05 am
Operator : jeniferw
Sample : IC1945-7
Misc : MS55275,V1A1945,,,,,
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Nov 15 12:47:41 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50665.D\data.ms

(77) Ethylbenzene

5.398min (+0.007) 123.31ug/L

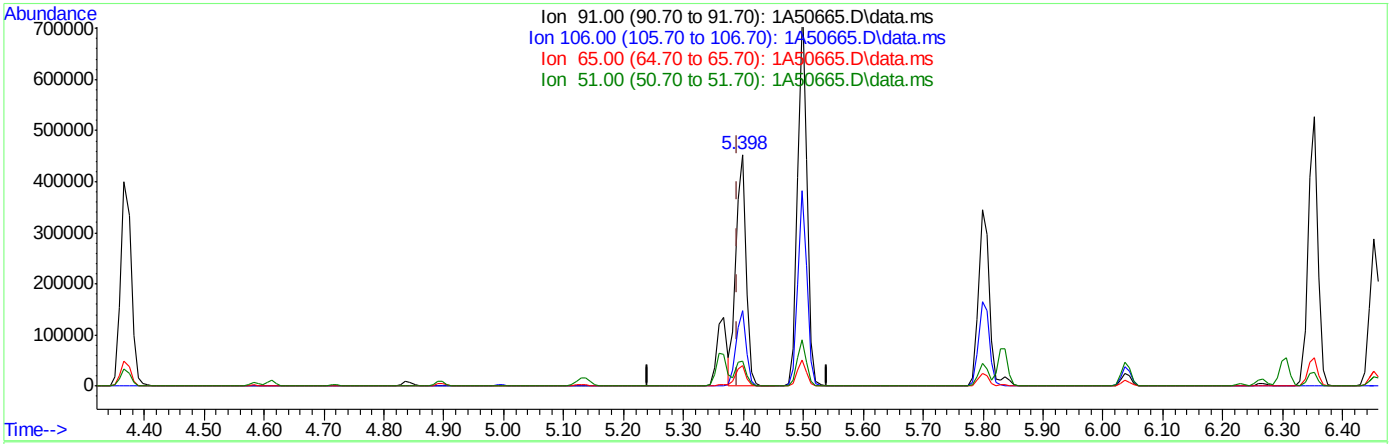
response 687414

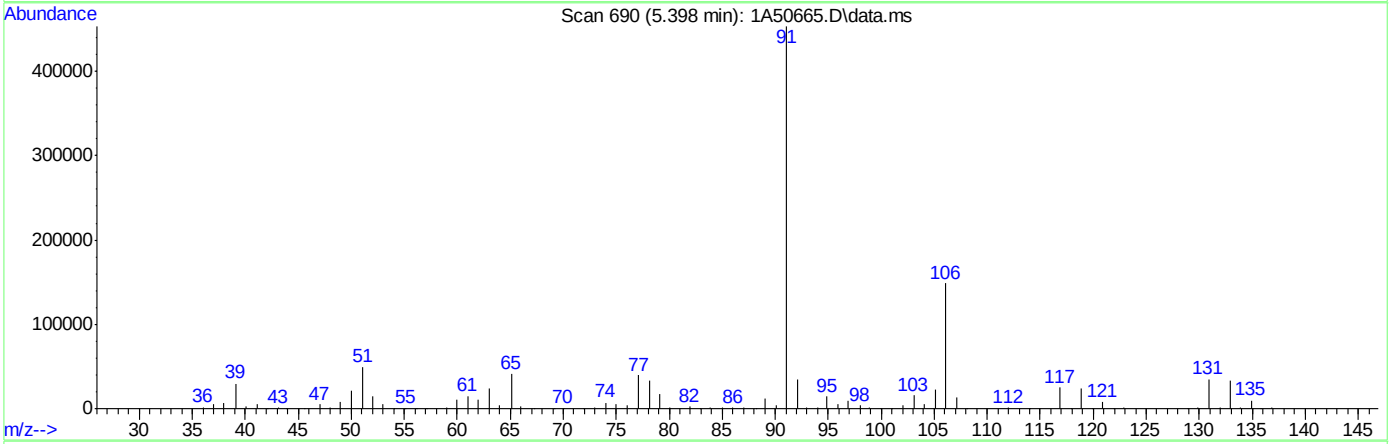
Ion	Exp%	Act%
91.00	100	100
106.00	32.00	32.77
65.00	8.30	9.01
51.00	10.10	10.94

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50665.D
Acq On : 15 Nov 2023 10:05 am
Operator : jeniferw
Sample : IC1945-7
Misc : MS55275,V1A1945,,,,,
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Nov 15 12:47:41 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50665.D\data.ms

(77) Ethylbenzene

5.398min (+0.007) 94.20ug/L m

response 525110

Ion	Exp%	Act%
91.00	100	100
106.00	32.00	32.77
65.00	8.30	9.01
51.00	10.10	10.94

7.6.8.9

7

Manual Integrations APPROVED (compounds with "m" flag)
Karen Watson
11/15/23 15:49

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50669.D
Acq On : 15 Nov 2023 1:32 pm
Operator : jeniferw
Sample : ICV1985-5
Misc : MS55275,V1A1985,,,,,
ALS Vial : 61 Sample Multiplier: 1

Quant Time: Nov 15 14:28:08 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	3.405	96	217169	50.00	ug/L	0.00
62) Chlorobenzene-d5	5.352	117	154189	50.00	ug/L	0.00
85) 1,4-Dichlorobenzene-d4	7.099	152	78807	50.00	ug/L	0.00
System Monitoring Compounds						
39) Dibromofluoromethane	2.958	113	62775	49.04	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 98.08%			
49) 1,2-Dichloroethane-d4	3.235	65	70799	49.97	ug/L	0.00
Spiked Amount 50.000	Range 79 - 125		Recovery = 99.94%			
63) Toluene-d8	4.336	98	205822	49.99	ug/L	0.00
Spiked Amount 50.000	Range 85 - 112		Recovery = 99.98%			
86) 4-Bromofluorobenzene	6.237	174	66715	50.73	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 101.46%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.019	85	46386	55.93	ug/L	96
3) Chloromethane	1.126	50	55314	44.52	ug/L	99
4) 1,3-butadiene	1.180	39	51777	33.24	ug/L	97
5) Vinyl Chloride	1.173	62	55567	44.77	ug/L	98
6) Bromomethane	1.342	94	19730	43.95	ug/L	95
7) Chloroethane	1.404	64	33087	41.79	ug/L	93
8) Trichlorofluoromethane	1.488	101	76910	43.52	ug/L	99
9) Ethyl Ether	1.658	59	44165	40.80	ug/L	95
10) Ethanol	1.711	45	18538m	749.78	ug/L	
11) 1,2-Dichlorotrifluoroe...	1.742	67	59446	42.14	ug/L	91
12) 1,1-Dichloroethene	1.758	61	75580	40.31	ug/L	97
13) Freon 113	1.781	101	51029	47.72	ug/L	93
14) Carbon Disulfide	1.781	76	135456	38.98	ug/L	92
15) Iodomethane	1.827	142	33579	41.10	ug/L	98
16) Acrolein	1.904	56	69540	208.19	ug/L	99
17) Allyl chloride	1.988	41	79285	44.19	ug/L	92
18) Methylene Chloride	2.042	49	76815	41.92	ug/L	97
19) Acetone	2.050	43	104161	193.14	ug/L	96
20) Methyl acetate	2.119	43	263479	180.76	ug/L	96
21) trans-1,2-Dichloroethene	2.135	61	75519	40.08	ug/L	94
22) Hexane	2.196	56	54490	42.26	ug/L	98
23) Methyl Tert Butyl Ether	2.189	73	140375	40.02	ug/L	96
24) Acetonitrile	2.273	41	87012	461.07	ug/L	99
25) Tert Butyl Alcohol	2.212	59	100478	389.21	ug/L	97
26) Di-isopropyl ether	2.389	45	171164	38.86	ug/L	94
27) Chloroprene	2.435	53	204637	37.94	ug/L	97
28) 1,1-Dichloroethane	2.443	63	92777	37.94	ug/L	98
29) Acrylonitrile	2.435	52	127797	195.63	ug/L	98
30) ETBE	2.581	59	166506	40.99	ug/L	96
31) Vinyl acetate	2.558	43	650451	198.49	ug/L	97
32) cis-1,2-Dichloroethene	2.720	96	51531	38.11	ug/L	96
33) 2,2-Dichloropropane	2.781	77	71327	41.81	ug/L	97
34) Bromochloromethane	2.820	128	27648	40.37	ug/L	90
35) Cyclohexane	2.858	56	95794	40.52	ug/L	90

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50669.D
Acq On : 15 Nov 2023 1:32 pm
Operator : jeniferw
Sample : ICV1985-5
Misc : MS55275,V1A1985,,,,,
ALS Vial : 61 Sample Multiplier: 1

Quant Time: Nov 15 14:28:08 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
36) Chloroform	2.858	83	88145	39.27	ug/L		95
37) Ethyl acetate	2.912	43	378775	207.17	ug/L		98
38) Tetrahydrofuran	2.943	42	25182	36.41	ug/L		95
40) Carbon Tetrachloride	2.958	117	70233m	40.33	ug/L		
41) 1,1,1-Trichloroethane	2.989	97	75521	40.12	ug/L		97
42) 2-Butanone	3.004	43	188309	206.01	ug/L		95
43) 1,1-Dichloropropene	3.051	75	67623	41.18	ug/L		92
44) tert-Butyl formate	3.097	59	252894	225.53	ug/L		96
45) Propionitrile	3.143	54	108648	386.18	ug/L		98
46) Methacrylonitrile	3.166	41	437746	412.63	ug/L		97
47) Benzene	3.181	78	189526	39.31	ug/L		97
48) TAME	3.251	73	137161	40.30	ug/L		89
50) 1,2-Dichloroethane	3.274	62	69842	38.74	ug/L		92
51) Isobutyl Alcohol	3.258	43	129202	833.49	ug/L		98
52) Tert Amyl Alcohol	3.328	59	82909	390.61	ug/L		89
53) Trichloroethene	3.512	95	52491	38.95	ug/L		98
54) Methylcyclohexane	3.528	83	89011	41.39	ug/L		98
55) Dibromomethane	3.736	93	33156	38.46	ug/L		86
56) 1,2-Dichloropropane	3.789	63	55486	40.66	ug/L		90
57) Bromodichloromethane	3.828	83	63094	37.27	ug/L	#	96
58) Methyl methacrylate	3.920	41	60023	38.19	ug/L		92
59) 1,4-Dioxane	3.943	88	13535	734.20	ug/L		92
60) 2-Chloroethyl vinyl ether	4.167	63	169140	214.00	ug/L		98
61) cis-1,3-Dichloropropene	4.213	75	77078	39.15	ug/L		89
64) Toluene	4.374	91	197025	39.31	ug/L		99
65) 2-Nitropropane	4.467	41	98525	189.02	ug/L		94
66) 4-Methyl-2-pentanone	4.582	43	373869	205.39	ug/L		96
67) trans-1,3-Dichloropropene	4.613	75	66615	37.54	ug/L		92
68) Tetrachloroethene	4.636	166	58857	41.51	ug/L		98
69) Ethyl methacrylate	4.728	69	67316	46.00	ug/L		89
70) 1,1,2-Trichloroethane	4.721	83	38790	38.39	ug/L		96
71) Dibromochloromethane	4.844	129	53740	41.83	ug/L		99
72) 1,3-Dichloropropane	4.898	76	75862	40.79	ug/L		94
73) 1,2-Dibromoethane	4.998	107	50480	38.94	ug/L		100
74) 3,3-Dimethyl-1-Butanol	5.129	57	485678	2001.94	ug/L		97
75) 2-hexanone	5.144	43	375244	212.85	ug/L	#	74
76) 1-Chlorohexane	5.367	91	72908m	41.88	ug/L		
77) Ethylbenzene	5.398	91	207198	38.20	ug/L		99
78) Chlorobenzene	5.367	112	128443	38.70	ug/L		97
79) 1,1,1,2-Tetrachloroethane	5.413	131	48933	40.53	ug/L		95
80) m,p-Xylene	5.498	91	329578	76.63	ug/L		97
81) o-Xylene	5.806	91	170854	37.33	ug/L		97
82) Styrene	5.837	104	132441	38.18	ug/L		96
83) Bromoform	5.844	173	34532	39.81	ug/L		98
84) Isopropylbenzene	6.044	105	204618	38.41	ug/L		99
87) cis-1,4-Dichloro-2-butene	6.268	53	23118	49.15	ug/L	#	78
88) n-Propylbenzene	6.352	91	242060	39.31	ug/L		100
89) Bromobenzene	6.306	156	55195	40.37	ug/L		93
90) 1,1,2,2-Tetrachloroethane	6.375	83	62988	39.46	ug/L		98
91) 1,3,5-Trimethylbenzene	6.506	105	168226	39.80	ug/L		99

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50669.D
Acq On : 15 Nov 2023 1:32 pm
Operator : jeniferw
Sample : ICV1985-5
Misc : MS55275,V1A1985,,,,,
ALS Vial : 61 Sample Multiplier: 1

Quant Time: Nov 15 14:28:08 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration

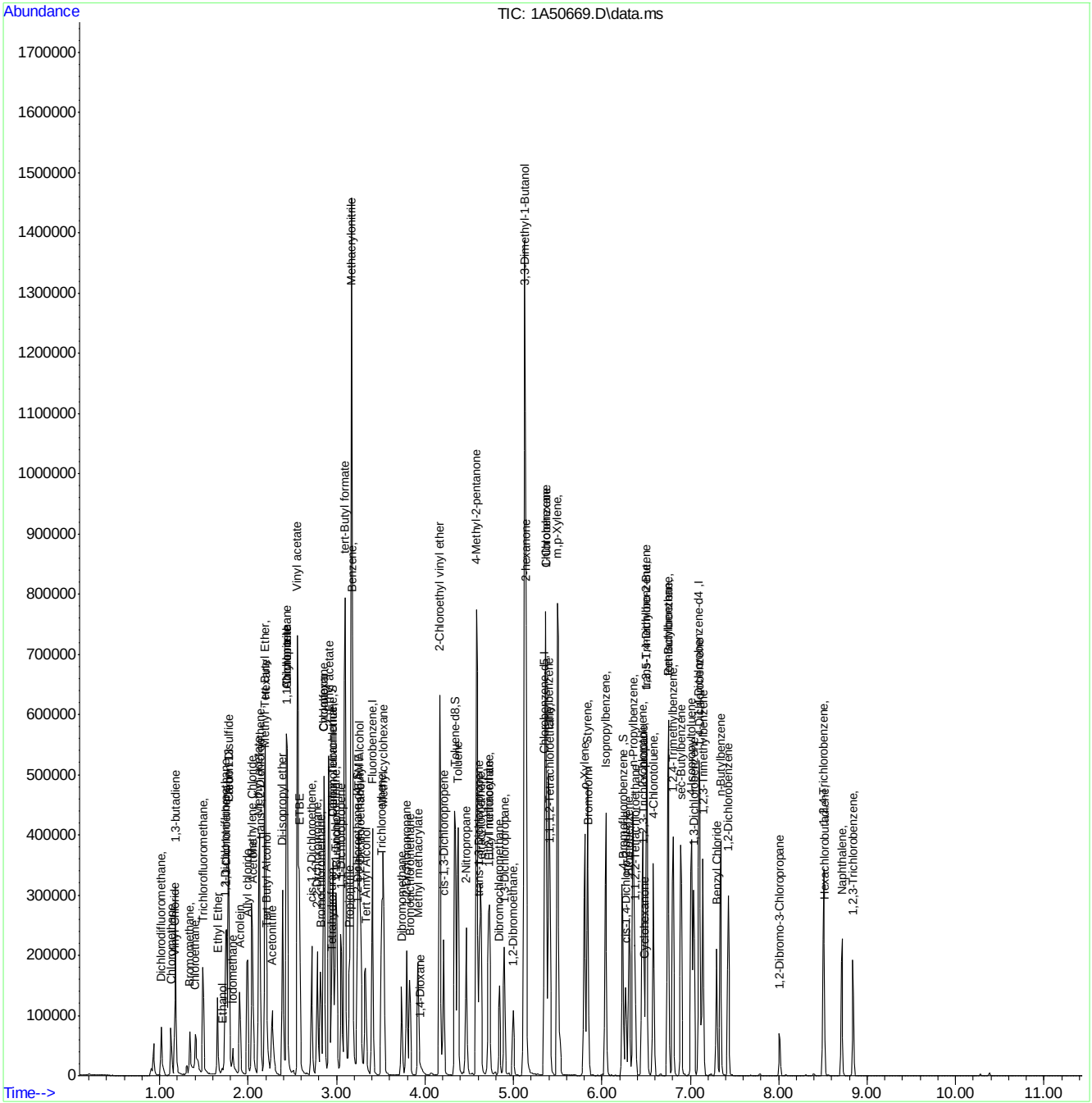
	Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
92)	2-Chlorotoluene	6.460	91	134020	37.91	ug/L		93
93)	trans-1,4-Dichloro-2-B...	6.506	53	25208	40.94	ug/L		92
94)	1,2,3-Trichloropropane	6.468	110	18938	43.03	ug/L		77
95)	Cyclohexanone	6.483	55	24418	294.40	ug/L		98
96)	4-Chlorotoluene	6.583	91	141106	38.68	ug/L		93
97)	tert-Butylbenzene	6.753	91	92780	38.82	ug/L		93
98)	1,2,4-Trimethylbenzene	6.806	105	160538	39.64	ug/L		96
99)	Pentachloroethane	6.753	167	29852	44.44	ug/L	#	66
100)	sec-Butylbenzene	6.891	105	200869	37.62	ug/L		97
101)	4-Isopropyltoluene	7.014	119	178899	39.06	ug/L		97
102)	1,3-Dichlorobenzene	7.037	146	93704	37.99	ug/L		95
103)	1,2,3-Trimethylbenzene	7.145	105	153618	38.18	ug/L		94
104)	1,4-Dichlorobenzene	7.107	146	95486	38.25	ug/L		95
105)	n-Butylbenzene	7.345	92	85065	41.37	ug/L		97
106)	Benzyl Chloride	7.299	126	24999	43.70	ug/L	#	86
107)	1,2-Dichlorobenzene	7.430	146	84272	38.38	ug/L		96
108)	1,2-Dibromo-3-Chloropr...	8.007	75	10254	40.34	ug/L	#	88
109)	Hexachlorobutadiene	8.515	225	20859	40.95	ug/L		96
110)	1,2,4-Trichlorobenzene	8.507	180	47750	39.20	ug/L		98
111)	Naphthalene	8.715	128	119395	38.24	ug/L		97
112)	1,2,3-Trichlorobenzene	8.838	180	38161	39.42	ug/L		94

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50669.D
Acq On : 15 Nov 2023 1:32 pm
Operator : jeniferw
Sample : ICV1985-5
Misc : MS55275,V1A1985,,,,,
ALS Vial : 61 Sample Multiplier: 1

Quant Time: Nov 15 14:28:08 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration



Manual Integration Approval Summary

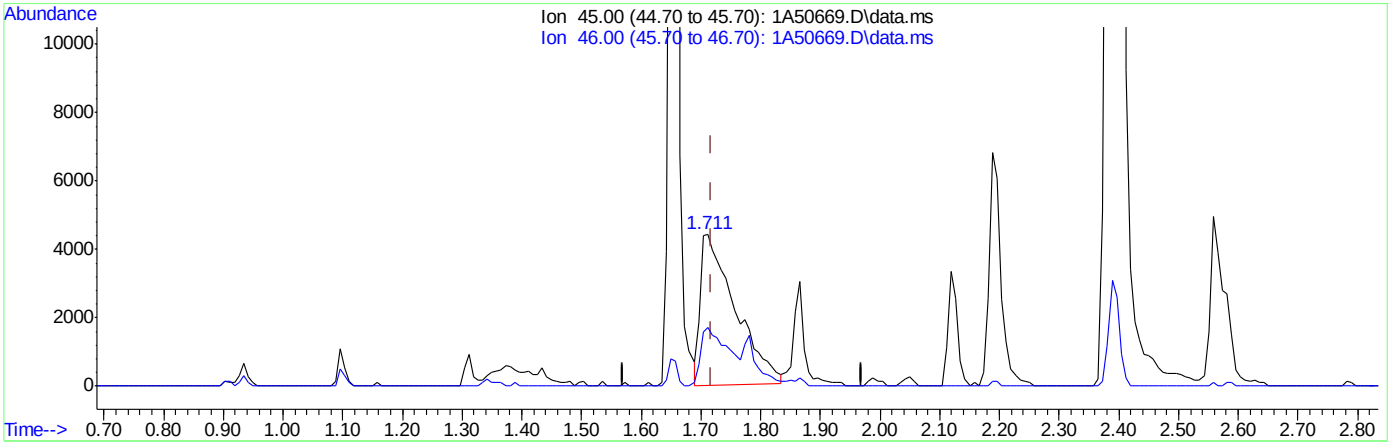
Sample Number: V1A1985-ICV1985 **Method:** SW846 8260D
Lab FileID: 1A50669.D **Analyst approved:** 11/15/23 14:32 Jenifer Willis
Injection Time: 11/15/23 13:32 **Supervisor approved:** 11/15/23 15:49 Karen Watson

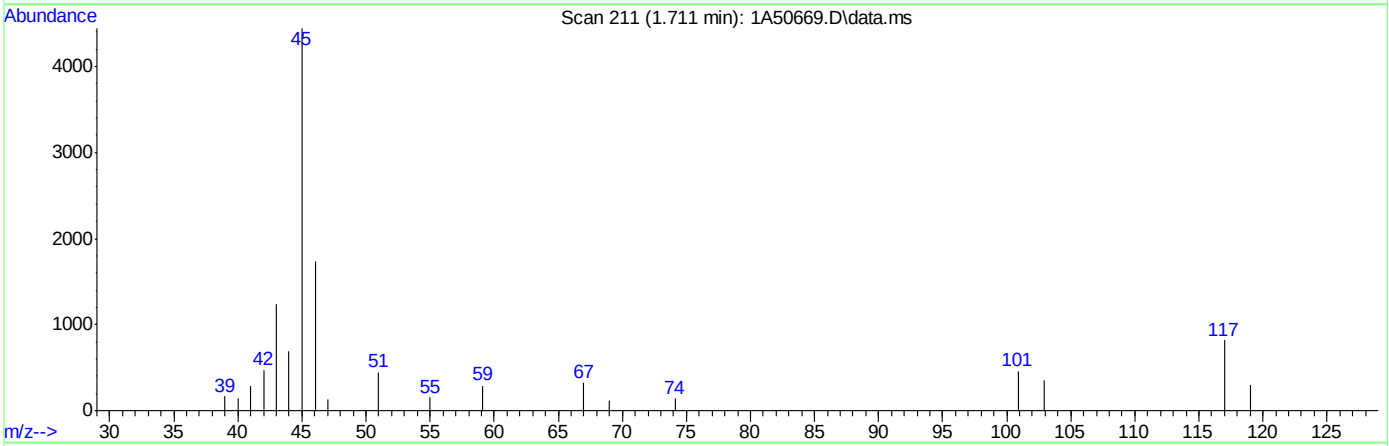
Parameter	CAS	Sig#	R.T. (min.)	Reason
Ethyl Alcohol	64-17-5		1.71	Poorly defined baseline
Carbon Tetrachloride	56-23-5		2.96	Overlapping peak
1-Chlorohexane	544-10-5		5.37	Poorly defined baseline

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50669.D
Acq On : 15 Nov 2023 1:32 pm
Operator : jeniferw
Sample : ICV1985-5
Misc : MS55275,V1A1985,,,,,
ALS Vial : 61 Sample Multiplier: 1

Quant Time: Nov 15 14:27:45 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration





TIC: 1A50669.D\data.ms

(10) Ethanol

1.711min (-0.008) 732.59ug/L

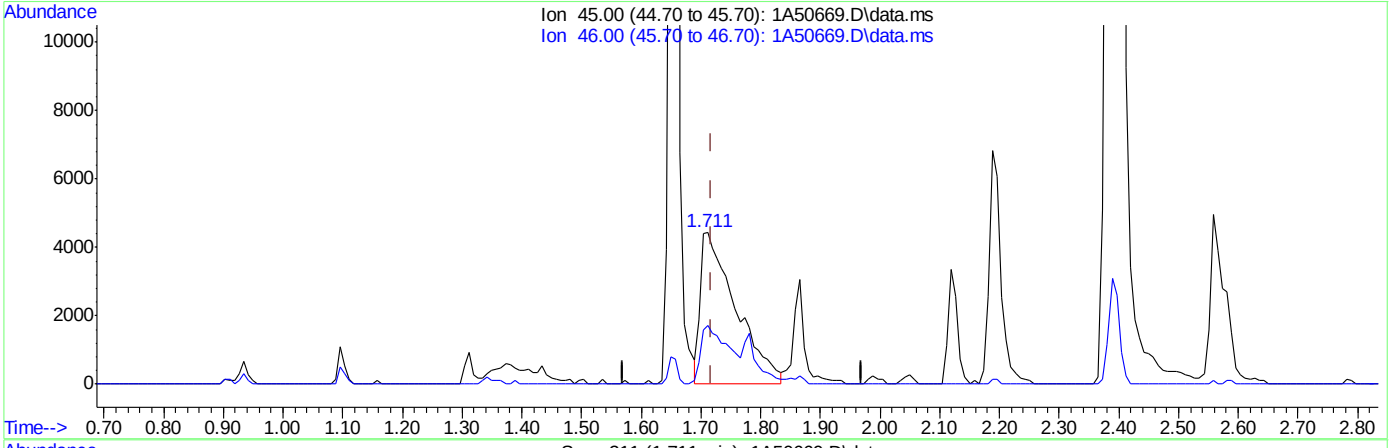
response 18113

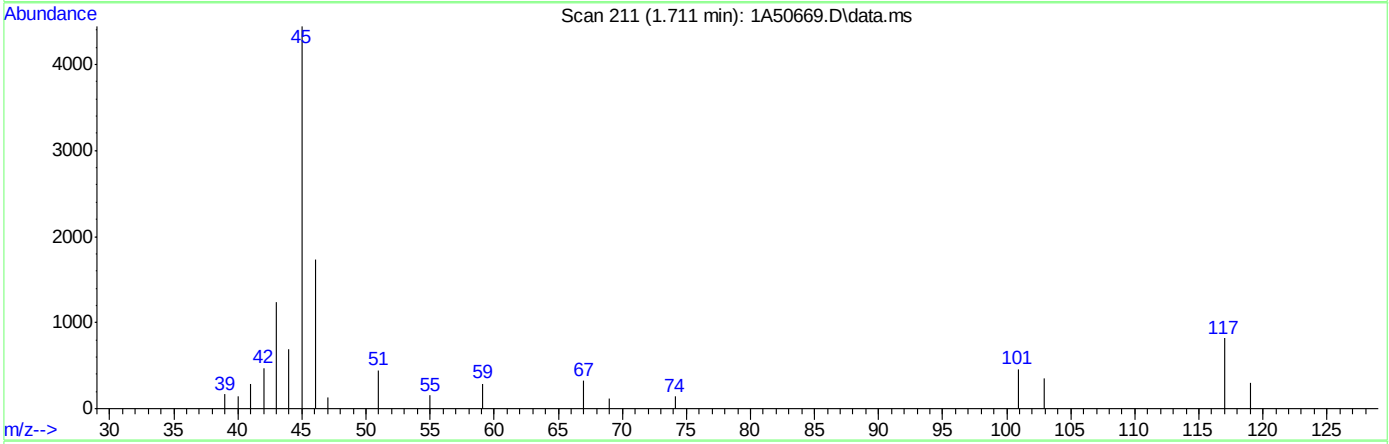
Ion	Exp%	Act%
45.00	100	100
46.00	40.30	39.44
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50669.D
Acq On : 15 Nov 2023 1:32 pm
Operator : jeniferw
Sample : ICV1985-5
Misc : MS55275,V1A1985,,,,,
ALS Vial : 61 Sample Multiplier: 1

Quant Time: Nov 15 14:27:45 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration





TIC: 1A50669.D\data.ms

(10) Ethanol

1.711min (-0.008) 749.78ug/L m

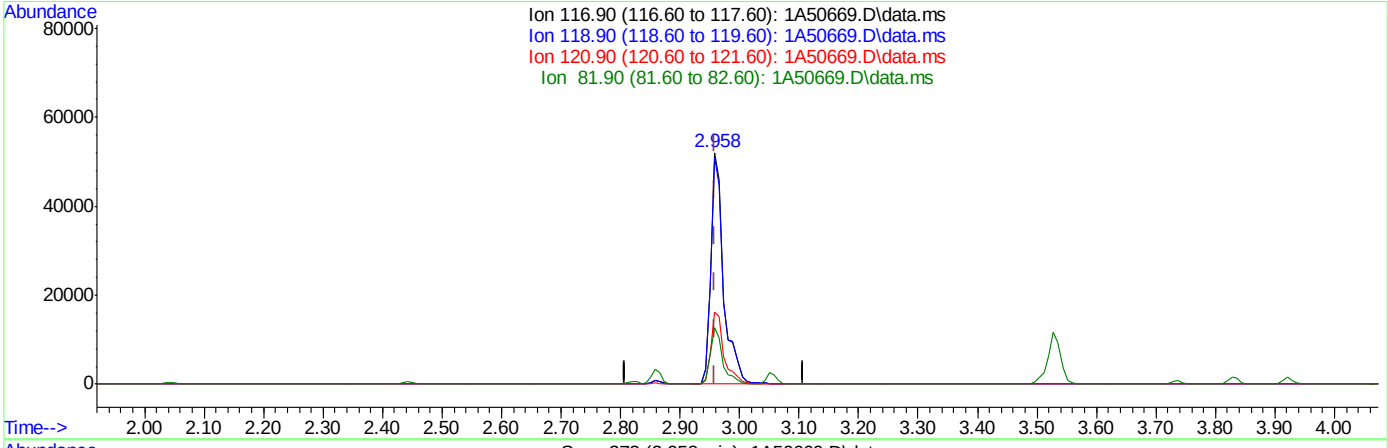
response 18538

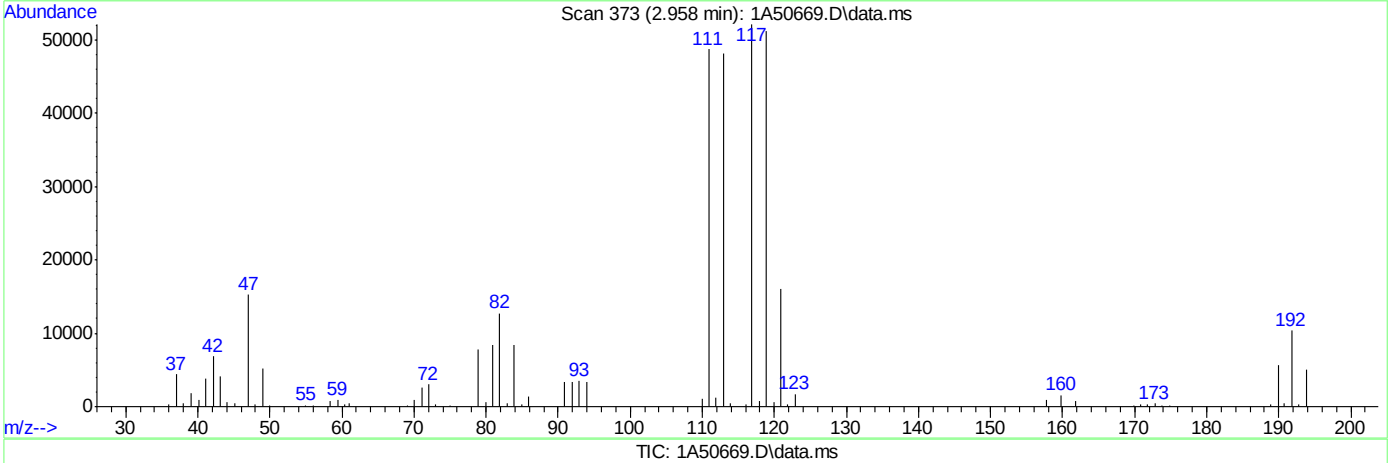
Ion	Exp%	Act%
45.00	100	100
46.00	40.30	38.98
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50669.D
Acq On : 15 Nov 2023 1:32 pm
Operator : jeniferw
Sample : ICV1985-5
Misc : MS55275,V1A1985,,,,,
ALS Vial : 61 Sample Multiplier: 1

Quant Time: Nov 15 14:27:45 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration





TIC: 1A50669.D\data.ms

(40) Carbon Tetrachloride ( )

2.958min (-0.000) 45.15ug/L

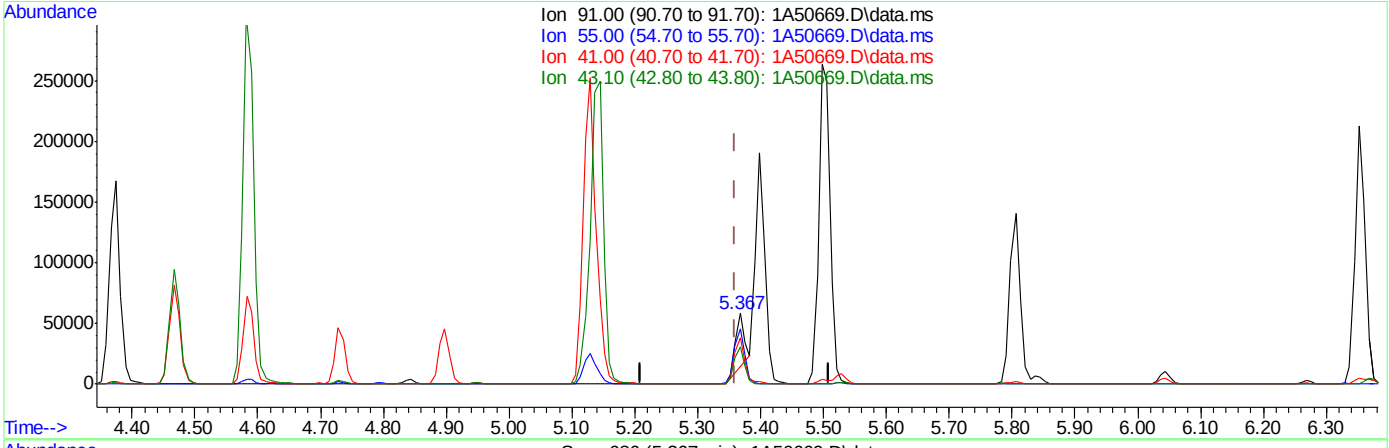
response 78626

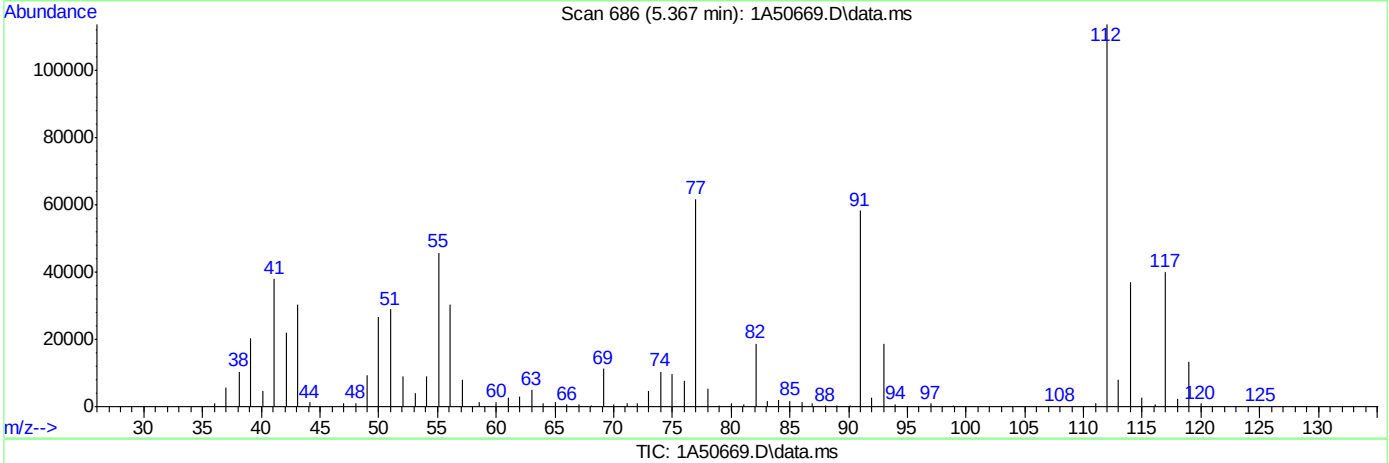
Ion	Exp%	Act%
116.90	100	100
118.90	94.50	98.13
120.90	31.10	30.92
81.90	25.40	24.37

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50669.D
Acq On : 15 Nov 2023 1:32 pm
Operator : jeniferw
Sample : ICV1985-5
Misc : MS55275,V1A1985,,,,,
ALS Vial : 61 Sample Multiplier: 1

Quant Time: Nov 15 14:27:45 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration





TIC: 1A50669.D\data.ms

(76) 1-Chlorohexane

5.367min (+0.007) 25.85ug/L

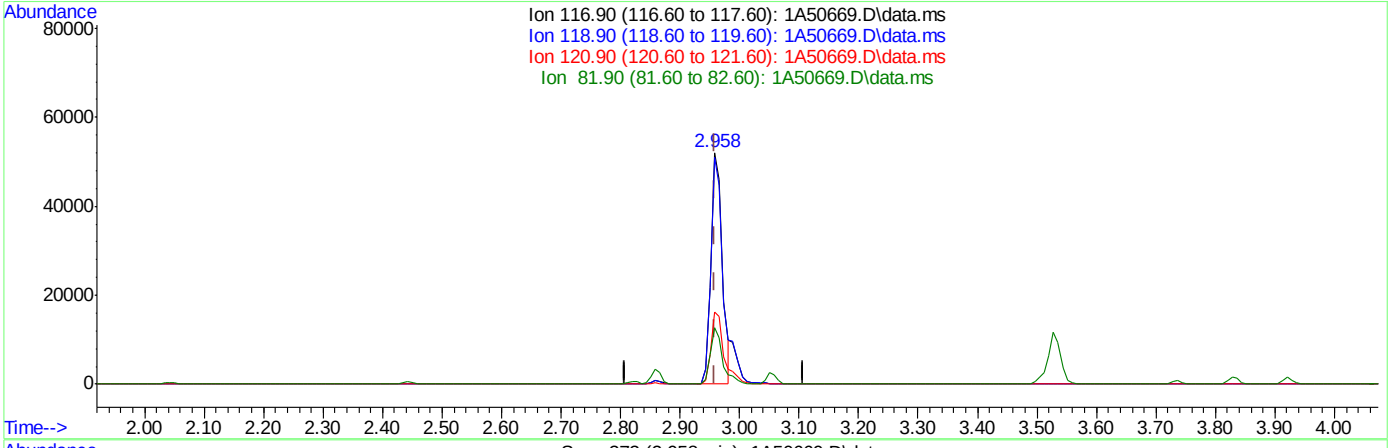
response 44999

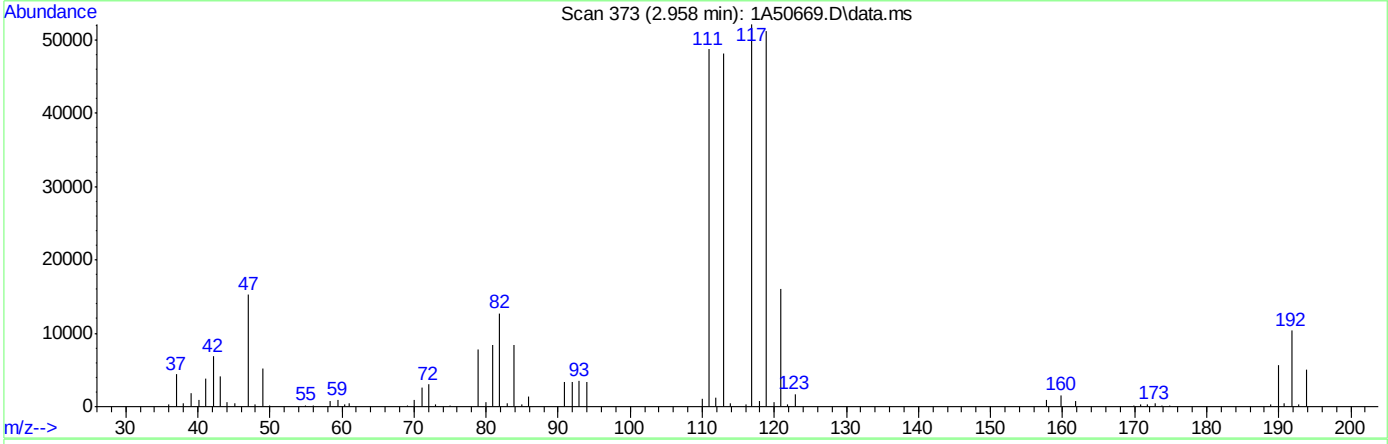
Ion	Exp%	Act%
91.00	100	100
55.00	74.60	77.21
41.00	53.90	64.34
43.10	42.90	51.82

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50669.D
Acq On : 15 Nov 2023 1:32 pm
Operator : jeniferw
Sample : ICV1985-5
Misc : MS55275,V1A1985,,,,,
ALS Vial : 61 Sample Multiplier: 1

Quant Time: Nov 15 14:27:45 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration





TIC: 1A50669.D\data.ms

(40) Carbon Tetrachloride ( )

2.958min (-0.000) 40.33ug/L m

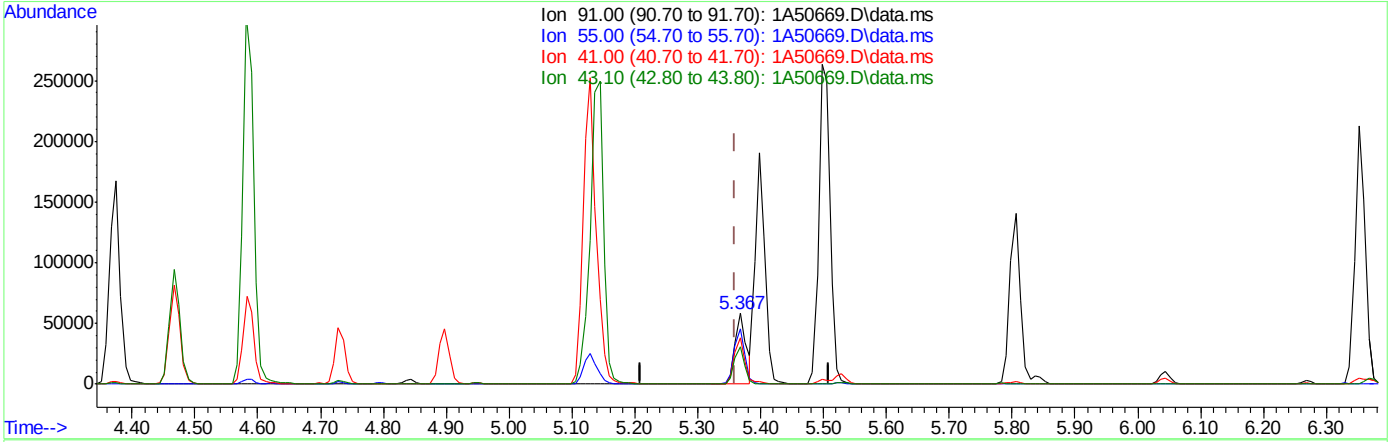
response 70233

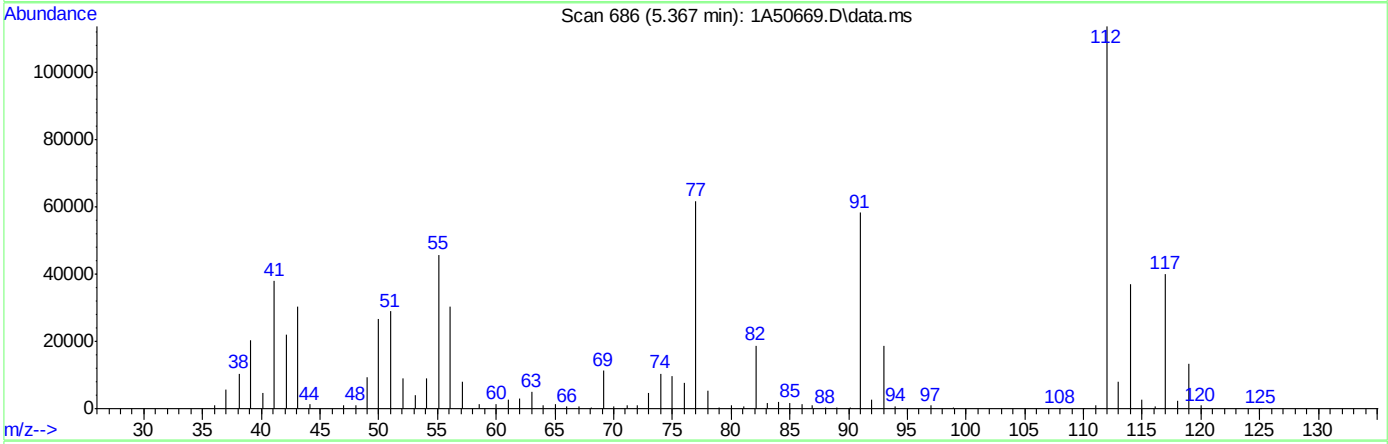
Ion	Exp%	Act%
116.90	100	100
118.90	94.50	98.13
120.90	31.10	30.92
81.90	25.40	24.37

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50669.D
Acq On : 15 Nov 2023 1:32 pm
Operator : jeniferw
Sample : ICV1985-5
Misc : MS55275,V1A1985,,,,,
ALS Vial : 61 Sample Multiplier: 1

Quant Time: Nov 15 14:27:45 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration





TIC: 1A50669.D\data.ms

(76) 1-Chlorohexane

5.367min (+0.007) 41.88ug/L m

response 72908

Ion	Exp%	Act%
91.00	100	100
55.00	74.60	78.38
41.00	53.90	65.20
43.10	42.90	52.32

Manual Integrations APPROVED (compounds with "m" flag)
Neil Christiana 12/21/23 03:47

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\12-19-2023\
Data File : 1A51511.D
Acq On : 19 Dec 2023 7:28 am
Operator : jeniferw
Sample : CC1985-5
Misc : MS55563,V1A2022,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Dec 19 08:08:43 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	3.405	96	318422	50.00	ug/L	0.00
62) Chlorobenzene-d5	5.352	117	225155	50.00	ug/L	0.00
85) 1,4-Dichlorobenzene-d4	7.099	152	113440	50.00	ug/L	0.00
System Monitoring Compounds						
39) Dibromofluoromethane	2.958	113	90479	48.20	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 96.40%			
49) 1,2-Dichloroethane-d4	3.235	65	111160	53.51	ug/L	0.00
Spiked Amount 50.000	Range 79 - 125		Recovery = 107.02%			
63) Toluene-d8	4.336	98	311823	51.86	ug/L	0.00
Spiked Amount 50.000	Range 85 - 112		Recovery = 103.72%			
86) 4-Bromofluorobenzene	6.229	174	95930	50.68	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 101.36%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.019	85	62717	51.57	ug/L	99
3) Chloromethane	1.127	50	68452	37.57	ug/L	99
4) 1,3-butadiene	1.181	39	80281	35.15	ug/L	92
5) Vinyl Chloride	1.173	62	71073	39.05	ug/L	98
6) Bromomethane	1.350	94	36304	55.15	ug/L	93
7) Chloroethane	1.411	64	47326	40.76	ug/L	94
8) Trichlorofluoromethane	1.496	101	110156	42.52	ug/L	99
9) Ethyl Ether	1.658	59	51747	32.60	ug/L	95
10) Ethanol	1.712	45	14848	409.58	ug/L	98
11) 1,2-Dichlorotrifluoroe...	1.742	67	73150	35.37	ug/L	92
12) 1,1-Dichloroethene	1.758	61	101771	37.02	ug/L	92
13) Freon 113	1.789	101	59924	38.22	ug/L	95
14) Carbon Disulfide	1.781	76	176975	34.74	ug/L	88
15) Iodomethane	1.835	142	57272	47.81	ug/L	96
16) Acrolein	1.912	56	82465	168.38	ug/L	96
17) Allyl chloride	1.996	41	102228	38.86	ug/L	90
18) Methylene Chloride	2.042	49	97890	36.44	ug/L	92
19) Acetone	2.050	43	136942	173.18	ug/L	98
20) Methyl acetate	2.127	43	367614	172.01	ug/L	98
21) trans-1,2-Dichloroethene	2.135	61	96298	34.86	ug/L	95
22) Hexane	2.196	56	69204	36.60	ug/L	94
23) Methyl Tert Butyl Ether	2.196	73	178489	34.71	ug/L	79
24) Acetonitrile	2.273	41	88519	319.90	ug/L	97
25) Tert Butyl Alcohol	2.212	59	94863	250.61	ug/L	76
26) Di-isopropyl ether	2.397	45	222615	34.47	ug/L	94
27) Chloroprene	2.443	53	282243	35.69	ug/L	98
28) 1,1-Dichloroethane	2.443	63	128345	35.79	ug/L	98
29) Acrylonitrile	2.435	52	174057	181.72	ug/L	99
30) ETBE	2.581	59	204655	34.36	ug/L	96
31) Vinyl acetate	2.558	43	837407	174.29	ug/L	96
32) cis-1,2-Dichloroethene	2.720	96	70531	35.57	ug/L	96
33) 2,2-Dichloropropane	2.781	77	89537	35.79	ug/L	97
34) Bromochloromethane	2.820	128	34553	34.41	ug/L #	84
35) Cyclohexane	2.858	56	122931	35.46	ug/L	90

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\12-19-2023\
Data File : 1A51511.D
Acq On : 19 Dec 2023 7:28 am
Operator : jeniferw
Sample : CC1985-5
Misc : MS55563,V1A2022,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Dec 19 08:08:43 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
36) Chloroform	2.858	83	119264	36.24	ug/L		94
37) Ethyl acetate	2.912	43	474606	177.04	ug/L		97
38) Tetrahydrofuran	2.943	42	34065	33.59	ug/L		92
40) Carbon Tetrachloride	2.958	117	91896m	35.99	ug/L		
41) 1,1,1-Trichloroethane	2.989	97	105488	38.22	ug/L		95
42) 2-Butanone	3.005	43	238774	178.15	ug/L		93
43) 1,1-Dichloropropene	3.051	75	88649	36.82	ug/L		91
44) tert-Butyl formate	3.097	59	242232	147.33	ug/L		91
45) Propionitrile	3.143	54	122920	297.98	ug/L		97
46) Methacrylonitrile	3.166	41	563332	362.15	ug/L		98
47) Benzene	3.182	78	258633	36.59	ug/L		96
48) TAME	3.251	73	175999	35.27	ug/L		93
50) 1,2-Dichloroethane	3.274	62	99174	37.52	ug/L		94
51) Isobutyl Alcohol	3.259	43	140356	617.52	ug/L		97
52) Tert Amyl Alcohol	3.320	59	79529	255.55	ug/L		94
53) Trichloroethene	3.513	95	72991	36.94	ug/L		95
54) Methylcyclohexane	3.528	83	113413	35.96	ug/L		96
55) Dibromomethane	3.736	93	44046	34.85	ug/L		85
56) 1,2-Dichloropropane	3.790	63	68075	34.02	ug/L		95
57) Bromodichloromethane	3.828	83	87046	35.07	ug/L		94
58) Methyl methacrylate	3.920	41	72189	31.33	ug/L		87
59) 1,4-Dioxane	3.943	88	10726	396.82	ug/L		93
60) 2-Chloroethyl vinyl ether	4.167	63	177635	153.28	ug/L		97
61) cis-1,3-Dichloropropene	4.213	75	98113	33.98	ug/L		88
64) Toluene	4.374	91	278258	38.02	ug/L		96
65) 2-Nitropropane	4.467	41	99533	130.77	ug/L		89
66) 4-Methyl-2-pentanone	4.582	43	504650	189.86	ug/L		96
67) trans-1,3-Dichloropropene	4.613	75	92239	35.60	ug/L		88
68) Tetrachloroethene	4.636	166	79103	38.20	ug/L		97
69) Ethyl methacrylate	4.729	69	82260	38.50	ug/L		85
70) 1,1,2-Trichloroethane	4.713	83	51469	34.88	ug/L		95
71) Dibromochloromethane	4.844	129	65508	34.92	ug/L		99
72) 1,3-Dichloropropane	4.898	76	97002	35.71	ug/L		89
73) 1,2-Dibromoethane	4.998	107	63395	33.49	ug/L		97
74) 3,3-Dimethyl-1-Butanol	5.129	57	509756	1438.92	ug/L		95
75) 2-hexanone	5.136	43	450988	175.19	ug/L		87
76) 1-Chlorohexane	5.367	91	107581m	42.32	ug/L		
77) Ethylbenzene	5.398	91	289546m	36.56	ug/L		
78) Chlorobenzene	5.367	112	179735	37.08	ug/L		97
79) 1,1,1,2-Tetrachloroethane	5.414	131	62884	35.66	ug/L		94
80) m,p-Xylene	5.498	91	479839	76.40	ug/L		98
81) o-Xylene	5.806	91	247691	37.06	ug/L		97
82) Styrene	5.837	104	180746	35.69	ug/L		95
83) Bromoform	5.837	173	44069	34.80	ug/L		96
84) Isopropylbenzene	6.045	105	286362	36.81	ug/L		99
87) cis-1,4-Dichloro-2-butene	6.268	53	25264	37.31	ug/L	#	78
88) n-Propylbenzene	6.352	91	348299	39.29	ug/L		96
89) Bromobenzene	6.306	156	69758	35.45	ug/L		90
90) 1,1,2,2-Tetrachloroethane	6.376	83	85061	37.02	ug/L		98
91) 1,3,5-Trimethylbenzene	6.506	105	231115	37.99	ug/L		100

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\12-19-2023\
Data File : 1A51511.D
Acq On : 19 Dec 2023 7:28 am
Operator : jeniferw
Sample : CC1985-5
Misc : MS55563,V1A2022,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Dec 19 08:08:43 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration

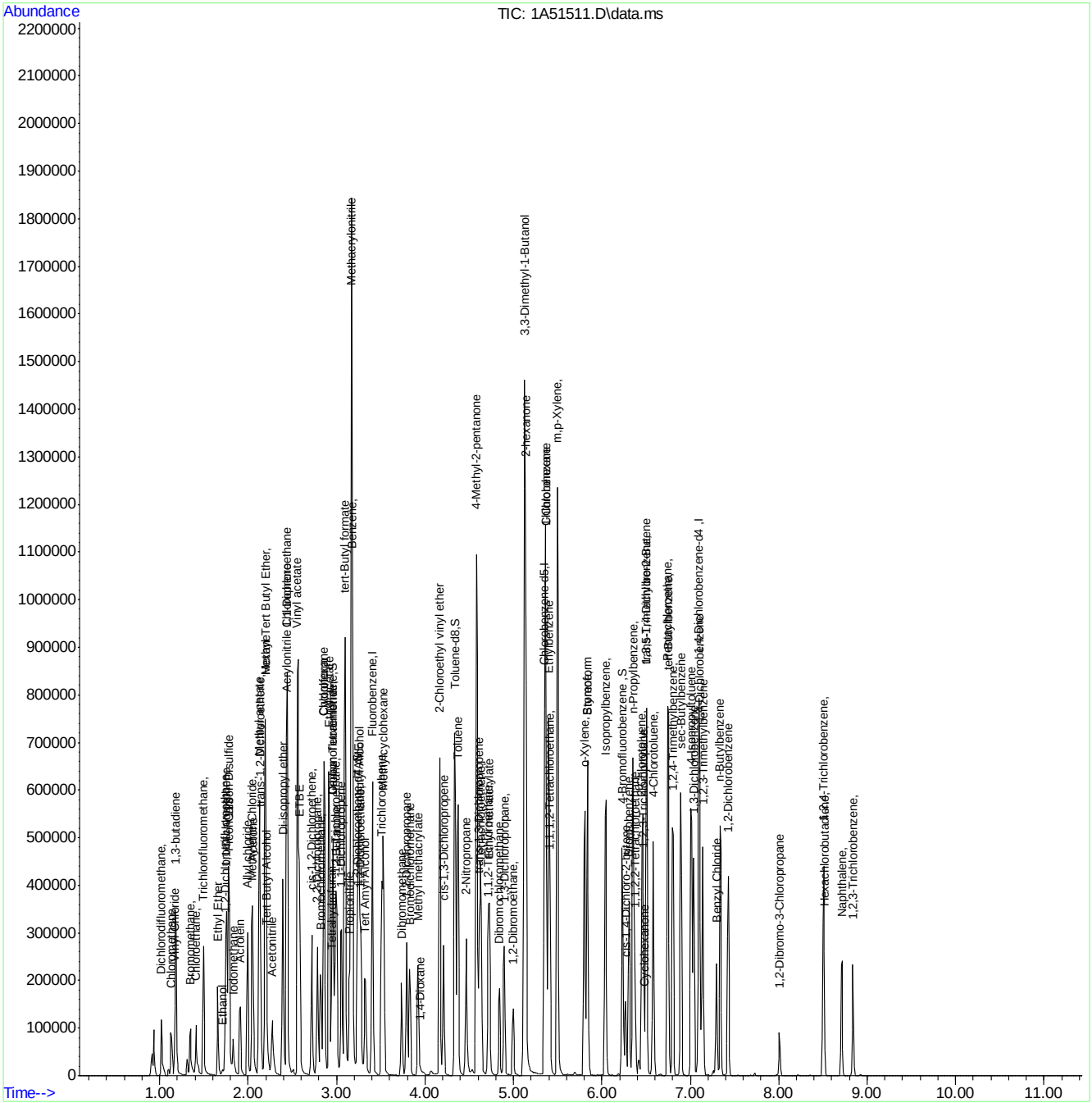
	Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
92)	2-Chlorotoluene	6.453	91	195840	38.49	ug/L		99
93)	trans-1,4-Dichloro-2-B...	6.506	53	30191	34.07	ug/L		86
94)	1,2,3-Trichloropropane	6.468	110	24940	39.37	ug/L		82
95)	Cyclohexanone	6.483	55	13175	110.35	ug/L		98
96)	4-Chlorotoluene	6.583	91	205824	39.20	ug/L		97
97)	tert-Butylbenzene	6.753	91	137355	39.92	ug/L		95
98)	1,2,4-Trimethylbenzene	6.807	105	224571	38.52	ug/L		99
99)	Pentachloroethane	6.745	167	36383	37.63	ug/L	#	70
100)	sec-Butylbenzene	6.891	105	291980	37.99	ug/L		97
101)	4-Isopropyltoluene	7.007	119	248140	37.64	ug/L		98
102)	1,3-Dichlorobenzene	7.037	146	129472	36.46	ug/L		97
103)	1,2,3-Trimethylbenzene	7.145	105	215677	37.24	ug/L		98
104)	1,4-Dichlorobenzene	7.107	146	130350	36.28	ug/L		97
105)	n-Butylbenzene	7.338	92	114252	38.60	ug/L		94
106)	Benzyl Chloride	7.299	126	25975	31.54	ug/L		97
107)	1,2-Dichlorobenzene	7.430	146	116937	36.99	ug/L		97
108)	1,2-Dibromo-3-Chloropr...	8.007	75	13246	36.21	ug/L	#	80
109)	Hexachlorobutadiene	8.515	225	27298	37.23	ug/L		96
110)	1,2,4-Trichlorobenzene	8.507	180	56732	32.36	ug/L		97
111)	Naphthalene	8.715	128	129561	28.82	ug/L		99
112)	1,2,3-Trichlorobenzene	8.838	180	42168	30.26	ug/L		96

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\12-19-2023\
Data File : 1A51511.D
Acq On : 19 Dec 2023 7:28 am
Operator : jeniferw
Sample : CC1985-5
Misc : MS55563,V1A2022,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Dec 19 08:08:43 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration



Manual Integration Approval Summary

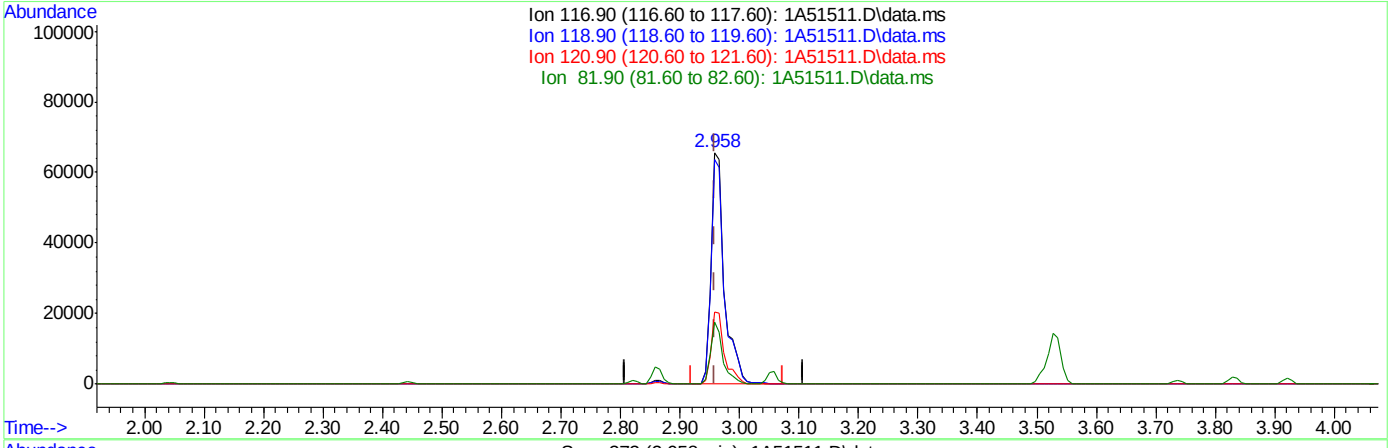
Sample Number: V1A2022-CC1985 **Method:** SW846 8260D
Lab FileID: 1A51511.D **Analyst approved:** 12/19/23 08:12 Jenifer Willis
Injection Time: 12/19/23 07:28 **Supervisor approved:** 12/21/23 03:47 Neil Christiana

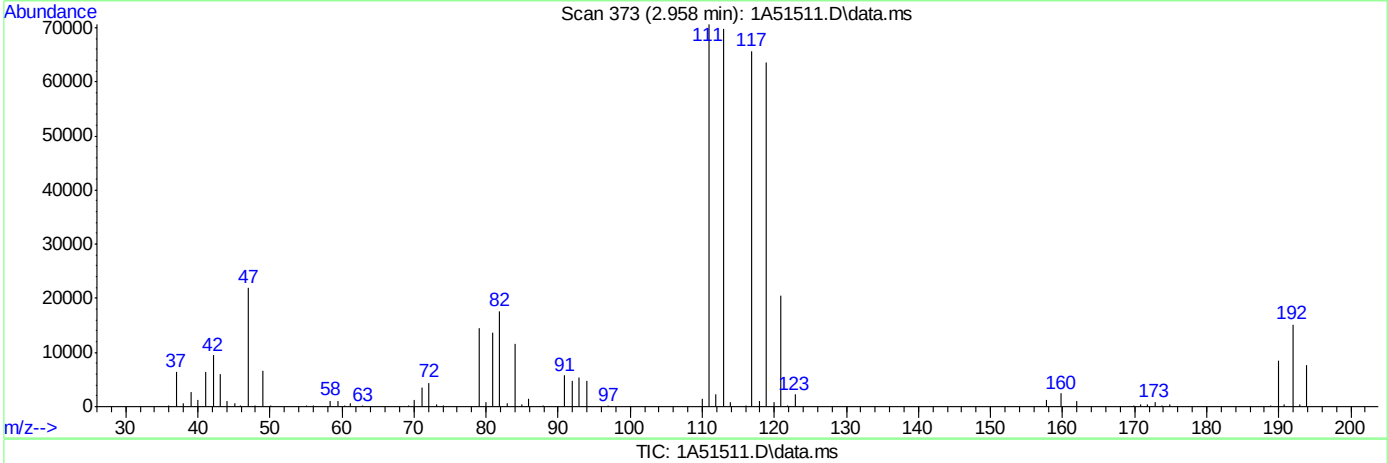
Parameter	CAS	Sig#	R.T. (min.)	Reason
Carbon Tetrachloride	56-23-5		2.96	Overlapping peak
1-Chlorohexane	544-10-5		5.37	Overlapping peak
Ethylbenzene	100-41-4		5.40	Overlapping peak

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\12-19-2023\
Data File : 1A51511.D
Acq On : 19 Dec 2023 7:28 am
Operator : jeniferw
Sample : CC1985-5
Misc : MS55563,V1A2022,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Dec 19 08:08:19 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration





TIC: 1A51511.D\data.ms

(40) Carbon Tetrachloride ( )

2.958min (-0.000) 40.57ug/L

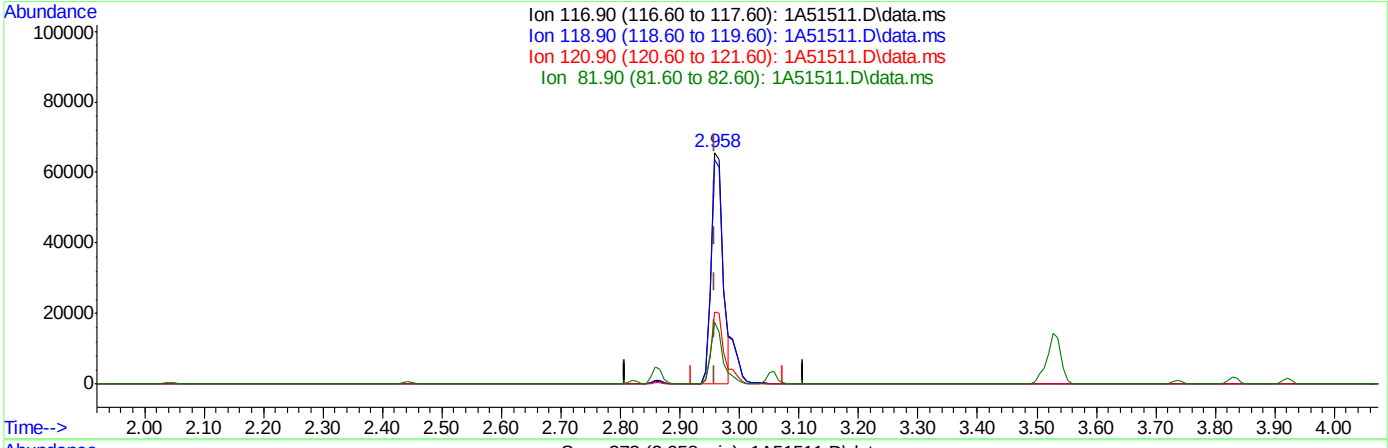
response 103592

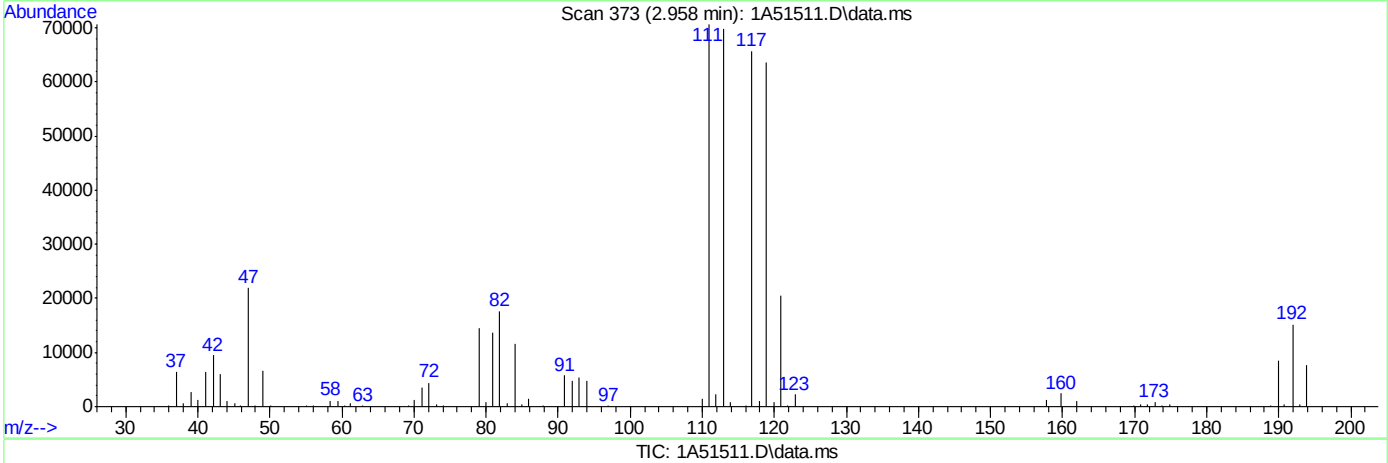
Ion	Exp%	Act%
116.90	100	100
118.90	94.50	96.76
120.90	31.10	31.37
81.90	25.40	26.94

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\12-19-2023\
Data File : 1A51511.D
Acq On : 19 Dec 2023 7:28 am
Operator : jeniferw
Sample : CC1985-5
Misc : MS55563,V1A2022,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Dec 19 08:08:19 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration





TIC: 1A51511.D\data.ms

(40) Carbon Tetrachloride ( )

2.958min (-0.000) 35.99ug/L m

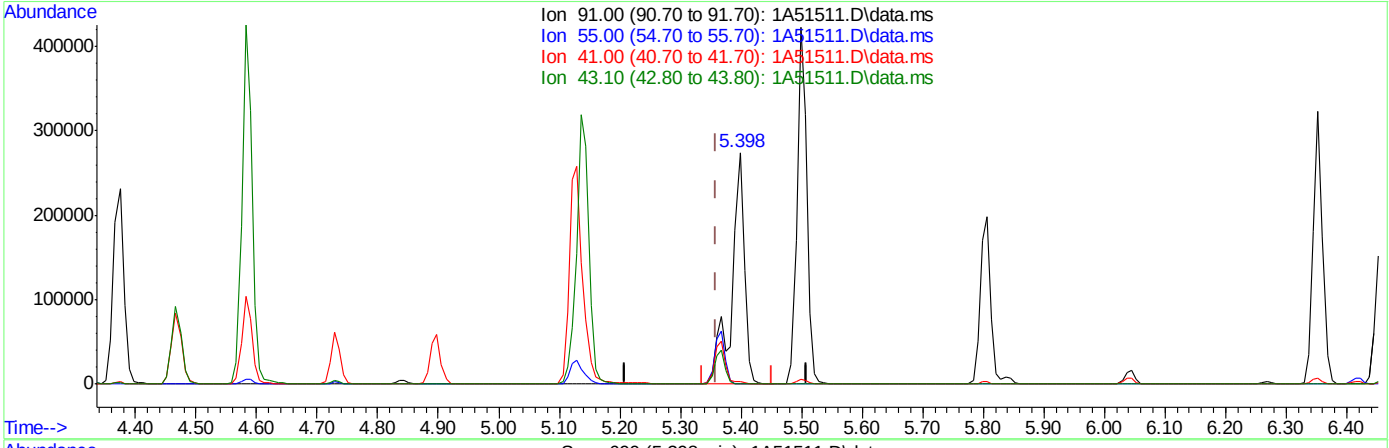
response 91896

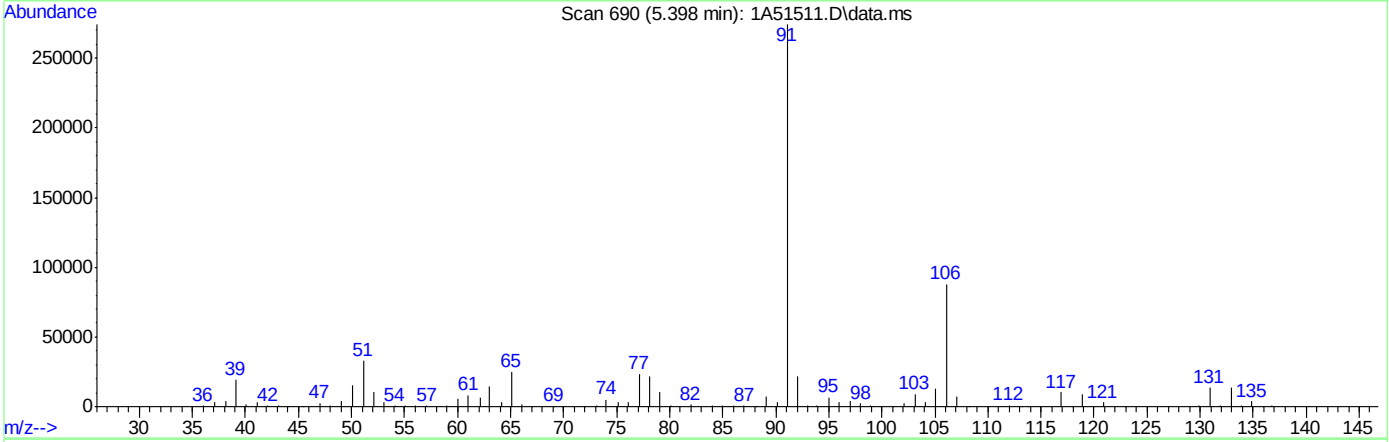
Ion	Exp%	Act%
116.90	100	100
118.90	94.50	96.76
120.90	31.10	31.37
81.90	25.40	26.94

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\12-19-2023\
Data File : 1A51511.D
Acq On : 19 Dec 2023 7:28 am
Operator : jeniferw
Sample : CC1985-5
Misc : MS55563,V1A2022,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Dec 19 08:08:19 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration





TIC: 1A51511.D\data.ms

(76) 1-Chlorohexane

5.398min (+0.038) 156.06ug/L

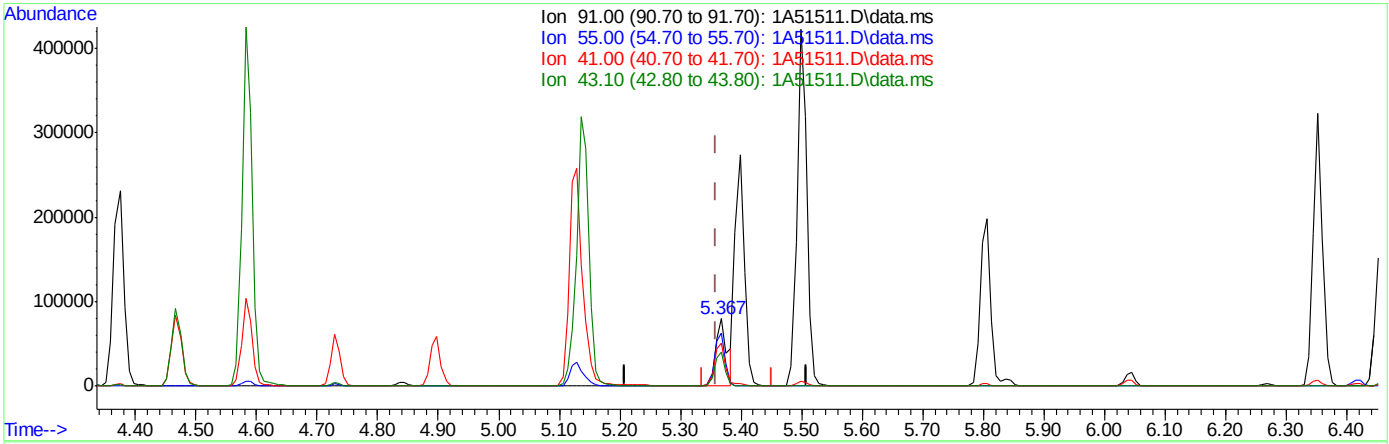
response 396716

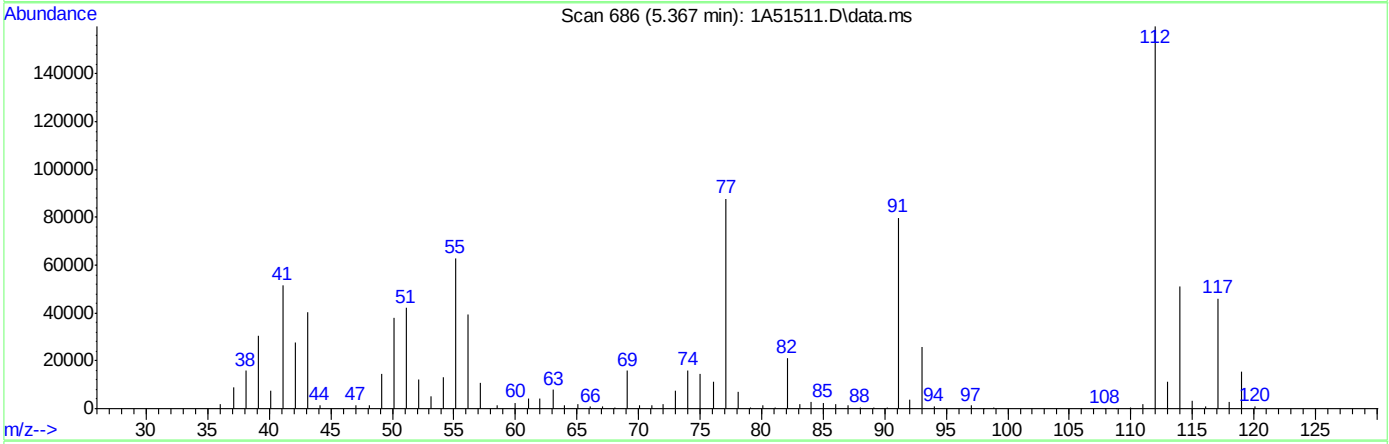
Ion	Exp%	Act%
91.00	100	100
55.00	74.60	0.13#
41.00	53.90	1.06#
43.10	42.90	0.14#

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\12-19-2023\
Data File : 1A51511.D
Acq On : 19 Dec 2023 7:28 am
Operator : jeniferw
Sample : CC1985-5
Misc : MS55563,V1A2022,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Dec 19 08:08:19 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration





TIC: 1A51511.D\data.ms

(76) 1-Chlorohexane

5.367min (+0.008) 42.32ug/L m

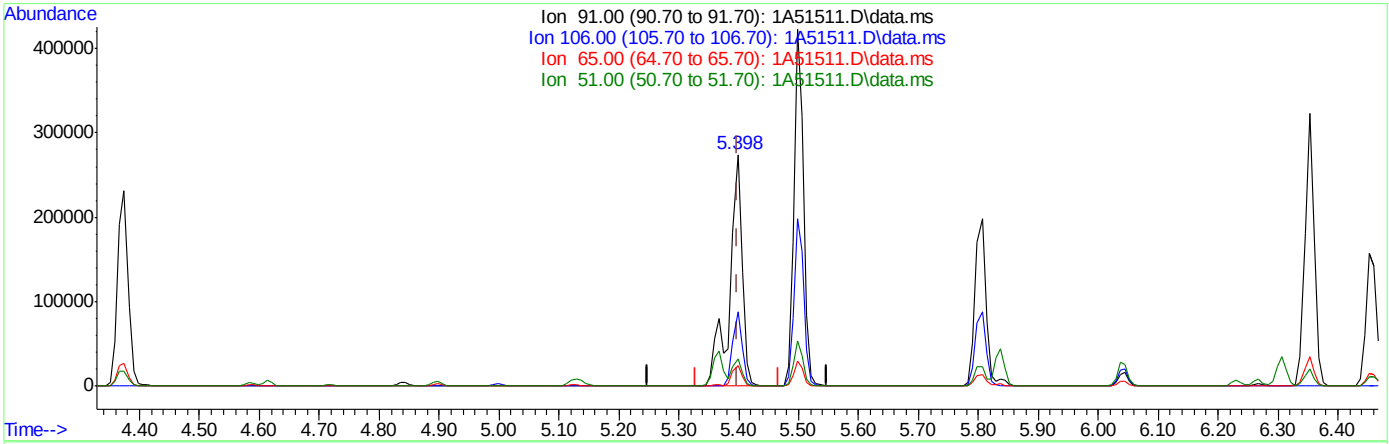
response 107581

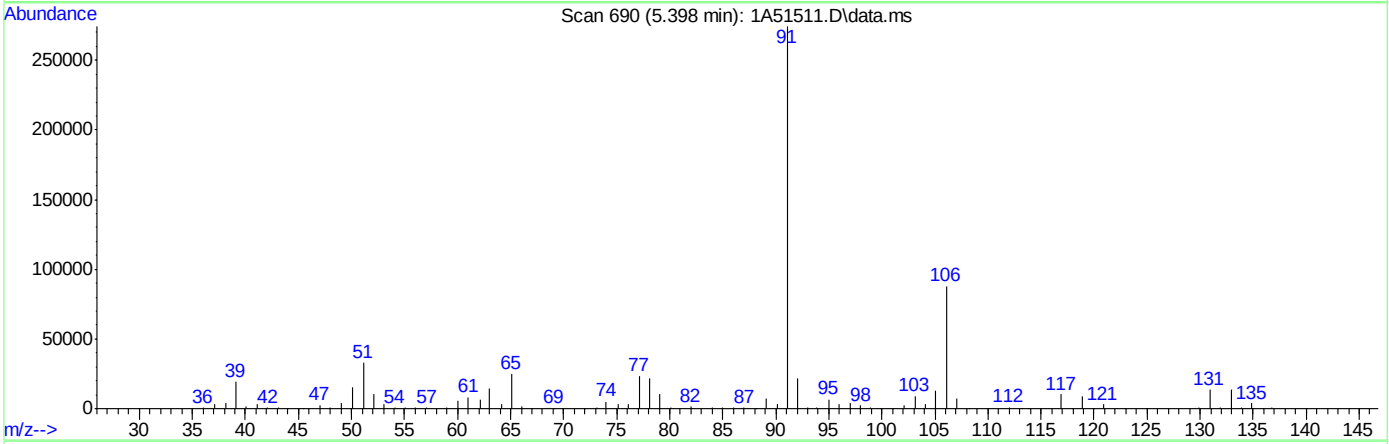
Ion	Exp%	Act%
91.00	100	100
55.00	74.60	79.11
41.00	53.90	64.72
43.10	42.90	50.42

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\12-19-2023\
Data File : 1A51511.D
Acq On : 19 Dec 2023 7:28 am
Operator : jeniferw
Sample : CC1985-5
Misc : MS55563,V1A2022,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Dec 19 08:08:19 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration





TIC: 1A51511.D\data.ms

(77) Ethylbenzene

5.398min (-0.000) 50.14ug/L

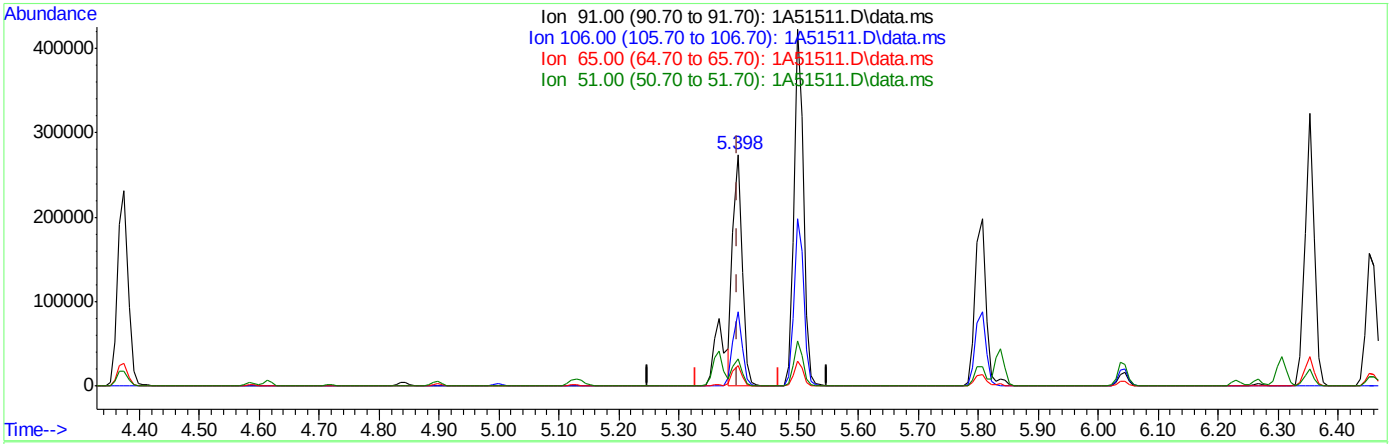
response 397142

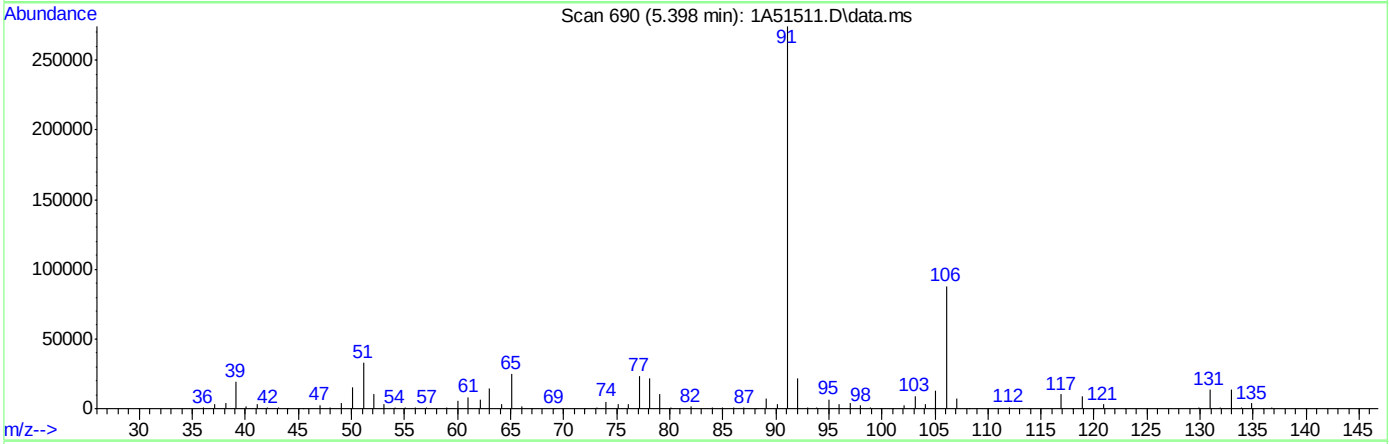
Ion	Exp%	Act%
91.00	100	100
106.00	32.00	32.02
65.00	8.30	9.09
51.00	10.10	11.93

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\12-19-2023\
Data File : 1A51511.D
Acq On : 19 Dec 2023 7:28 am
Operator : jeniferw
Sample : CC1985-5
Misc : MS55563,V1A2022,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Dec 19 08:08:19 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration





TIC: 1A51511.D\data.ms

(77) Ethylbenzene

5.398min (-0.000) 36.56ug/L m

response 289546

Ion	Exp%	Act%
91.00	100	100
106.00	32.00	32.02
65.00	8.30	9.09
51.00	10.10	11.93

Manual Integrations APPROVED
(compounds with "m" flag)
Neil Christiana
12/21/23 03:47

Quantitation Report (QT Reviewed)

Data Path : D:\V1A2022\
Data File : 1A51538.d
Acq On : 19 Dec 2023 6:26 pm
Operator : jeniferw
Sample : ECC1985-5
Misc : MS55575,V1A2022,,,,,
ALS Vial : 29 Sample Multiplier: 1

Quant Time: Dec 19 21:55:24 2023
Quant Method : X:\Orlando VOA\celinec\December 2023\12-20-2023\V1A2022\method\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Fluorobenzene	3.405	96	318384	50.00	ug/L		0.00
62) Chlorobenzene-d5	5.352	117	226369	50.00	ug/L		0.00
85) 1,4-Dichlorobenzene-d4	7.099	152	112528	50.00	ug/L		0.00
System Monitoring Compounds							
39) Dibromofluoromethane	2.958	113	89132	47.49	ug/L		0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 94.98%				
49) 1,2-Dichloroethane-d4	3.243	65	111967	53.90	ug/L		0.00
Spiked Amount 50.000	Range 79 - 125		Recovery = 107.80%				
63) Toluene-d8	4.336	98	309630	51.22	ug/L		0.00
Spiked Amount 50.000	Range 85 - 112		Recovery = 102.44%				
86) 4-Bromofluorobenzene	6.229	174	96461	51.37	ug/L		0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 102.74%				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	1.027	85	56046	46.09	ug/L		100
3) Chloromethane	1.134	50	62858	34.51	ug/L		98
4) 1,3-butadiene	1.188	39	76768	33.61	ug/L		99
5) Vinyl Chloride	1.173	62	67465	37.07	ug/L		100
6) Bromomethane	1.350	94	30779	46.76	ug/L		96
7) Chloroethane	1.419	64	44667	38.48	ug/L		94
8) Trichlorofluoromethane	1.496	101	104172	40.21	ug/L		98
9) Ethyl Ether	1.658	59	54335	34.24	ug/L		92
10) Ethanol	1.712	45	15030	414.65	ug/L		93
11) 1,2-Dichlorotrifluoroe...	1.750	67	71128	34.39	ug/L		95
12) 1,1-Dichloroethene	1.765	61	96273	35.03	ug/L		99
13) Freon 113	1.788	101	54914	35.03	ug/L		96
14) Carbon Disulfide	1.788	76	166092	32.61	ug/L		91
15) Iodomethane	1.835	142	49148	41.04	ug/L		97
16) Acrolein	1.912	56	74407	151.94	ug/L		99
17) Allyl chloride	1.996	41	95111	36.16	ug/L		87
18) Methylene Chloride	2.050	49	101663	37.85	ug/L		97
19) Acetone	2.058	43	134720	170.39	ug/L		98
20) Methyl acetate	2.127	43	376939	176.39	ug/L		96
21) trans-1,2-Dichloroethene	2.143	61	94464	34.20	ug/L		98
22) Hexane	2.196	56	63974	33.84	ug/L	#	89
23) Methyl Tert Butyl Ether	2.196	73	179539	34.92	ug/L		93
24) Acetonitrile	2.273	41	91828m	331.90	ug/L		
25) Tert Butyl Alcohol	2.212	59	98137	259.29	ug/L	#	55
26) Di-isopropyl ether	2.396	45	229951	35.61	ug/L		94
27) Chloroprene	2.443	53	270337	34.19	ug/L		96
28) 1,1-Dichloroethane	2.443	63	126468	35.28	ug/L		98
29) Acrylonitrile	2.443	52	167992	175.41	ug/L		97
30) ETBE	2.581	59	210002	35.27	ug/L		95
31) Vinyl acetate	2.566	43	800870	166.70	ug/L		96
32) cis-1,2-Dichloroethene	2.720	96	69373	34.99	ug/L		92
33) 2,2-Dichloropropane	2.789	77	80916	32.35	ug/L		98
34) Bromochloromethane	2.827	128	33815	33.68	ug/L		94
35) Cyclohexane	2.866	56	118646	34.23	ug/L		94

Quantitation Report (QT Reviewed)

Data Path : D:\V1A2022\
Data File : 1A51538.d
Acq On : 19 Dec 2023 6:26 pm
Operator : jeniferw
Sample : ECC1985-5
Misc : MS55575,V1A2022,,,,,
ALS Vial : 29 Sample Multiplier: 1

Quant Time: Dec 19 21:55:24 2023
Quant Method : X:\Orlando VOA\celinec\December 2023\12-20-2023\V1A2022\method\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
36) Chloroform	2.866	83	119693	36.37	ug/L		97
37) Ethyl acetate	2.920	43	464387	173.25	ug/L		98
38) Tetrahydrofuran	2.951	42	30376	29.96	ug/L		95
40) Carbon Tetrachloride	2.966	117	88612m	34.71	ug/L		
41) 1,1,1-Trichloroethane	2.989	97	102577	37.17	ug/L		94
42) 2-Butanone	3.005	43	236648	176.59	ug/L		92
43) 1,1-Dichloropropene	3.058	75	84951	35.29	ug/L		94
44) tert-Butyl formate	3.097	59	240275	146.16	ug/L		93
45) Propionitrile	3.143	54	118869	288.20	ug/L		99
46) Methacrylonitrile	3.174	41	556356	357.71	ug/L		95
47) Benzene	3.182	78	252559	35.73	ug/L		88
48) TAME	3.251	73	178842	35.84	ug/L		94
50) 1,2-Dichloroethane	3.274	62	99718	37.73	ug/L		93
51) Isobutyl Alcohol	3.258	43	145740	641.29	ug/L		96
52) Tert Amyl Alcohol	3.328	59	85604	275.10	ug/L		92
53) Trichloroethene	3.512	95	69029	34.94	ug/L		94
54) Methylcyclohexane	3.528	83	106065	33.64	ug/L		94
55) Dibromomethane	3.736	93	45229	35.79	ug/L	#	83
56) 1,2-Dichloropropane	3.797	63	67714	33.84	ug/L		94
57) Bromodichloromethane	3.828	83	88073	35.49	ug/L	#	95
58) Methyl methacrylate	3.920	41	70516	30.61	ug/L		86
59) 1,4-Dioxane	3.943	88	11210	414.77	ug/L		89
60) 2-Chloroethyl vinyl ether	4.167	63	175954	151.85	ug/L		96
61) cis-1,3-Dichloropropene	4.213	75	98645	34.17	ug/L		86
64) Toluene	4.374	91	271080	36.84	ug/L		98
65) 2-Nitropropane	4.467	41	102102	133.42	ug/L		89
66) 4-Methyl-2-pentanone	4.582	43	514794	192.63	ug/L		95
67) trans-1,3-Dichloropropene	4.613	75	93490	35.89	ug/L		87
68) Tetrachloroethene	4.636	166	80206	38.53	ug/L		98
69) Ethyl methacrylate	4.728	69	82443	38.38	ug/L		85
70) 1,1,2-Trichloroethane	4.721	83	50965	34.36	ug/L		93
71) Dibromochloromethane	4.844	129	66948	35.50	ug/L		97
72) 1,3-Dichloropropane	4.898	76	96149	35.21	ug/L		88
73) 1,2-Dibromoethane	4.998	107	64266	33.77	ug/L		98
74) 3,3-Dimethyl-1-Butanol	5.129	57	525493	1475.39	ug/L		96
75) 2-hexanone	5.136	43	464665	179.53	ug/L		87
76) 1-Chlorohexane	5.367	91	84552m	33.08	ug/L		
77) Ethylbenzene	5.398	91	305387m	38.35	ug/L		
78) Chlorobenzene	5.367	112	179970	36.93	ug/L		97
79) 1,1,1,2-Tetrachloroethane	5.413	131	63665	35.91	ug/L		97
80) m,p-Xylene	5.498	91	473486	74.99	ug/L		99
81) o-Xylene	5.806	91	246167	36.63	ug/L		97
82) Styrene	5.837	104	180992	35.54	ug/L		94
83) Bromoform	5.837	173	43613	34.25	ug/L		98
84) Isopropylbenzene	6.045	105	282176	36.08	ug/L		98
87) cis-1,4-Dichloro-2-butene	6.268	53	23936	35.64	ug/L	#	74
88) n-Propylbenzene	6.352	91	348718	39.66	ug/L		96
89) Bromobenzene	6.306	156	69258	35.48	ug/L		86
90) 1,1,2,2-Tetrachloroethane	6.376	83	85370	37.45	ug/L		99
91) 1,3,5-Trimethylbenzene	6.506	105	226978	37.61	ug/L		100

Quantitation Report (QT Reviewed)

Data Path : D:\V1A2022\
Data File : 1A51538.d
Acq On : 19 Dec 2023 6:26 pm
Operator : jeniferw
Sample : ECC1985-5
Misc : MS55575,V1A2022,,,,,
ALS Vial : 29 Sample Multiplier: 1

Quant Time: Dec 19 21:55:24 2023
Quant Method : X:\Orlando VOA\celinec\December 2023\12-20-2023\V1A2022\method\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration

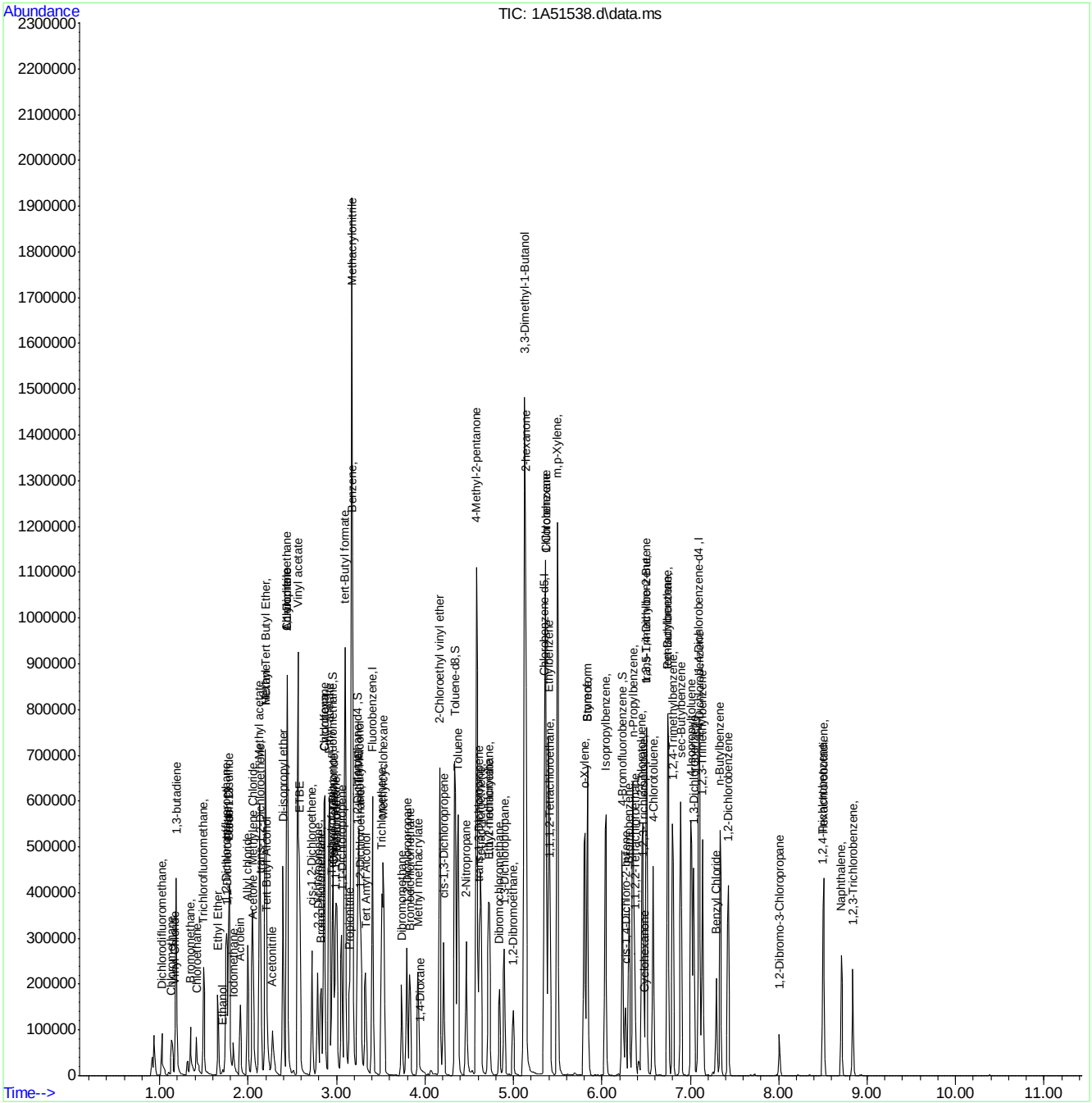
	Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
92)	2-Chlorotoluene	6.452	91	195188	38.67	ug/L		99
93)	trans-1,4-Dichloro-2-B...	6.506	53	29370	33.41	ug/L		83
94)	1,2,3-Trichloropropane	6.468	110	25046	39.86	ug/L		84
95)	Cyclohexanone	6.483	55	13201	111.47	ug/L		93
96)	4-Chlorotoluene	6.583	91	203697	39.11	ug/L		98
97)	tert-Butylbenzene	6.745	91	135705	39.76	ug/L		93
98)	1,2,4-Trimethylbenzene	6.799	105	221452	38.29	ug/L		99
99)	Pentachloroethane	6.745	167	34467	35.93	ug/L	#	60
100)	sec-Butylbenzene	6.891	105	287375	37.69	ug/L		98
101)	4-Isopropyltoluene	7.007	119	243785	37.28	ug/L		97
102)	1,3-Dichlorobenzene	7.037	146	130403	37.02	ug/L		97
103)	1,2,3-Trimethylbenzene	7.137	105	216809	37.74	ug/L		99
104)	1,4-Dichlorobenzene	7.107	146	131583	36.92	ug/L		96
105)	n-Butylbenzene	7.338	92	113760	38.75	ug/L		94
106)	Benzyl Chloride	7.291	126	21269	26.04	ug/L	#	80
107)	1,2-Dichlorobenzene	7.430	146	117481	37.47	ug/L		95
108)	1,2-Dibromo-3-Chloropr...	8.007	75	12531	34.53	ug/L	#	86
109)	Hexachlorobutadiene	8.507	225	27432	37.72	ug/L		89
110)	1,2,4-Trichlorobenzene	8.500	180	55566	31.95	ug/L		95
111)	Naphthalene	8.708	128	130611	29.29	ug/L		99
112)	1,2,3-Trichlorobenzene	8.838	180	42800	30.96	ug/L		94

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : D:\V1A2022\
Data File : 1A51538.d
Acq On : 19 Dec 2023 6:26 pm
Operator : jeniferw
Sample : ECC1985-5
Misc : MS55575,V1A2022,,,,,
ALS Vial : 29 Sample Multiplier: 1

Quant Time: Dec 19 21:55:24 2023
Quant Method : X:\Orlando VOA\celinec\December 2023\12-20-2023\V1A2022\method\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration



Manual Integration Approval Summary

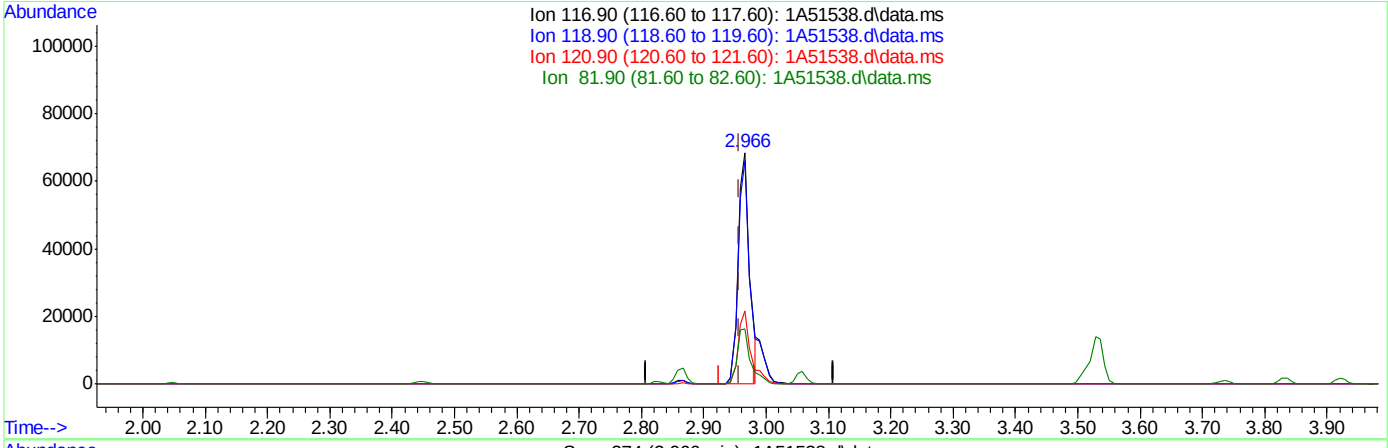
Sample Number: V1A2022-ECC1985 **Method:** SW846 8260D
Lab FileID: 1A51538.D **Analyst approved:** 12/19/23 22:04 Celine Celis
Injection Time: 12/19/23 18:26 **Supervisor approved:** 12/21/23 03:47 Neil Christiana

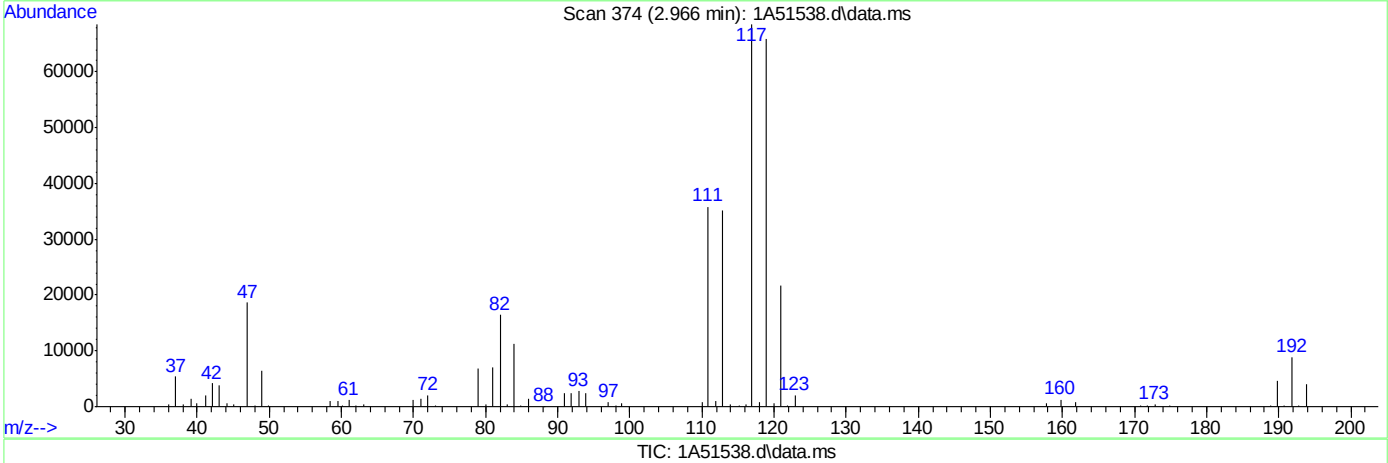
Parameter	CAS	Sig#	R.T. (min.)	Reason
Acetonitrile	75-05-8		2.27	Poor instrument integration
Carbon Tetrachloride	56-23-5		2.97	Overlapping peak
1-Chlorohexane	544-10-5		5.37	Overlapping peak
Ethylbenzene	100-41-4		5.40	Overlapping peak

Quantitation Report (Qedit)

Data Path : D:\V1A2022\
Data File : 1A51538.d
Acq On : 19 Dec 2023 6:26 pm
Operator : jeniferw
Sample : ECC1985-5
Misc : MS55575,V1A2022,,,,,
ALS Vial : 29 Sample Multiplier: 1

Quant Time: Dec 19 21:55:24 2023
Quant Method : X:\Orlando VOA\celinec\December 2023\12-20-2023\V1A2022\method\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration





TIC: 1A51538.d\data.ms

(40) Carbon Tetrachloride ( )

2.966min (+0.007) 34.71ug/L m

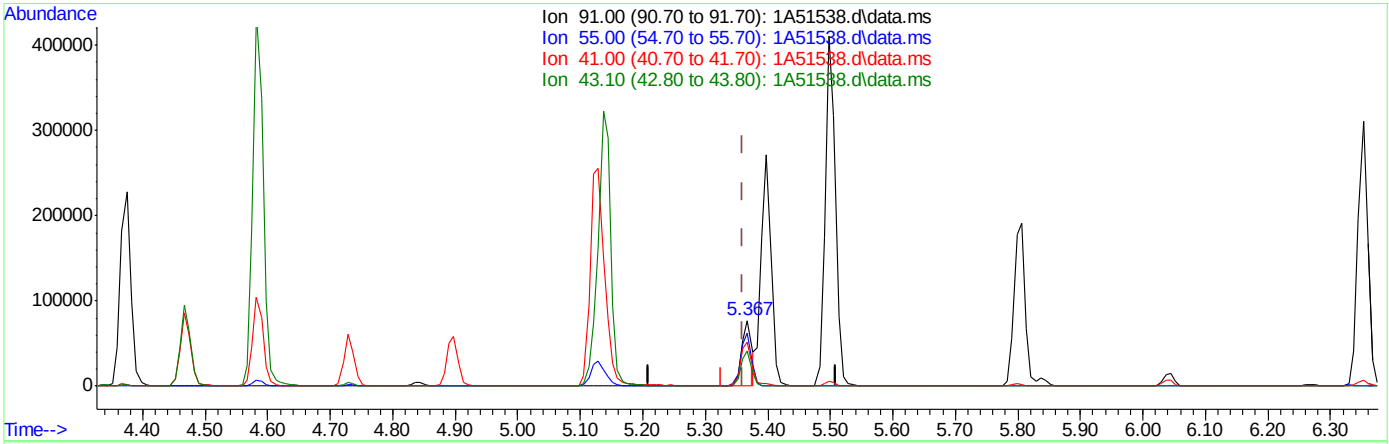
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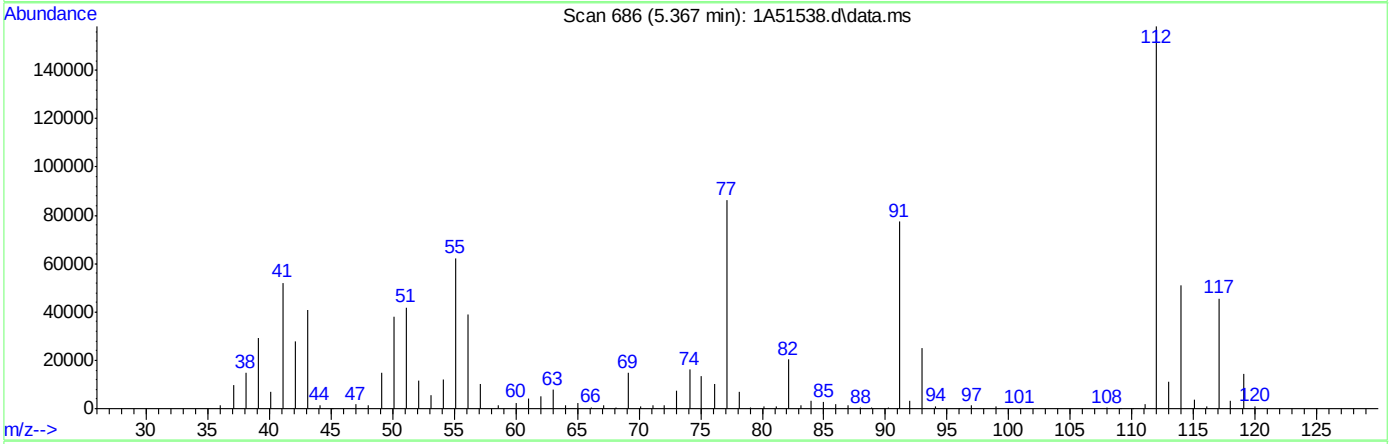
Ion	Exp%	Act%
116.90	100	100
118.90	94.50	96.28
120.90	31.10	31.64
81.90	25.40	23.97

Quantitation Report (Qedit)

Data Path : D:\V1A2022\
Data File : 1A51538.d
Acq On : 19 Dec 2023 6:26 pm
Operator : jeniferw
Sample : ECC1985-5
Misc : MS55575,V1A2022,,,,,
ALS Vial : 29 Sample Multiplier: 1

Quant Time: Dec 19 21:55:24 2023
Quant Method : X:\Orlando VOA\celinec\December 2023\12-20-2023\V1A2022\method\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration





TIC: 1A51538.d\data.ms

(76) 1-Chlorohexane

5.367min (+0.007) 33.08ug/L m

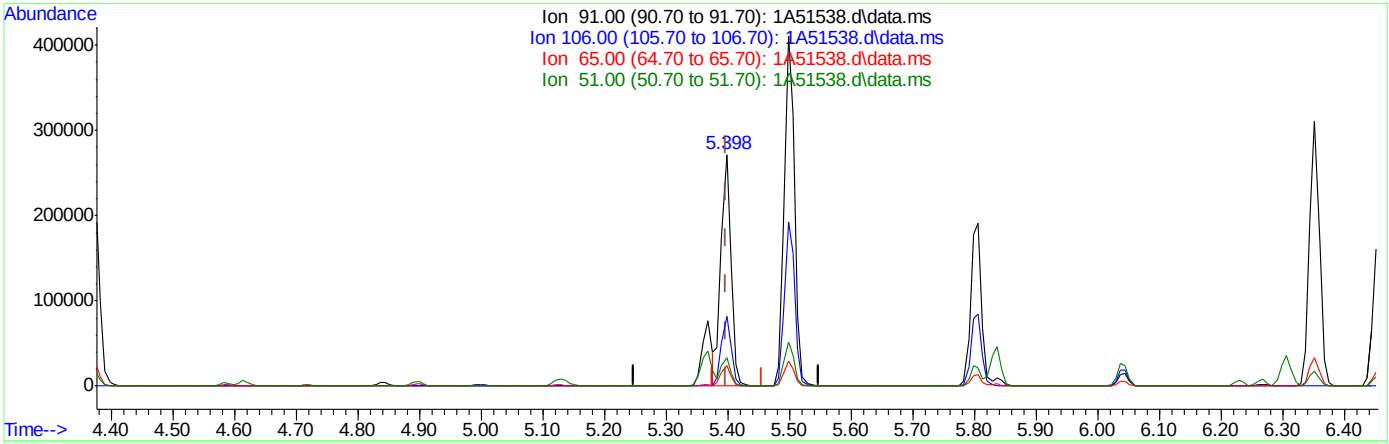
response 84552

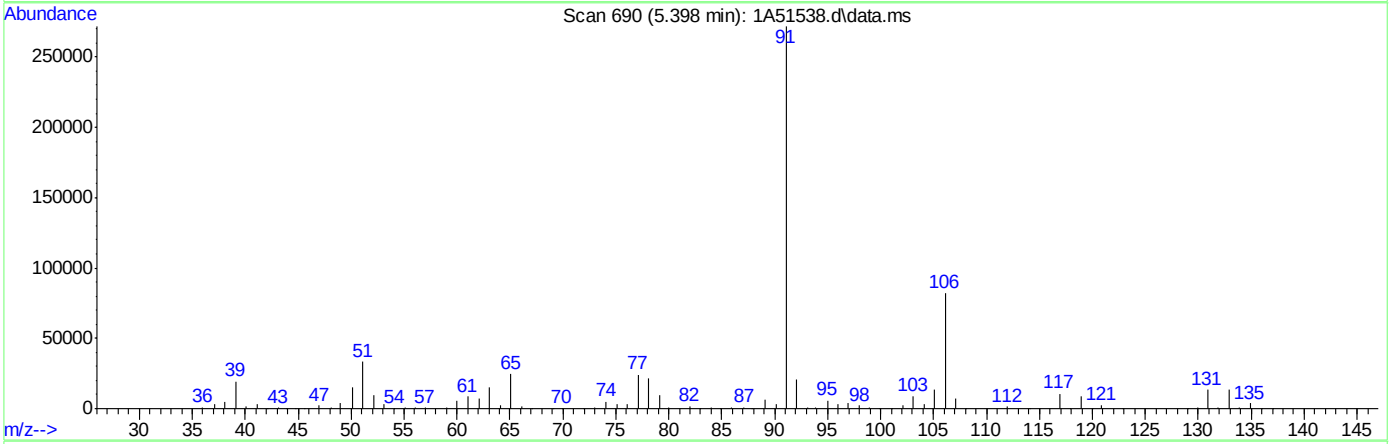
Ion	Exp%	Act%
91.00	100	100
55.00	74.60	80.64
41.00	53.90	67.54
43.10	42.90	53.16

Quantitation Report (Qedit)

Data Path : D:\V1A2022\
Data File : 1A51538.d
Acq On : 19 Dec 2023 6:26 pm
Operator : jeniferw
Sample : ECC1985-5
Misc : MS55575,V1A2022,,,,,
ALS Vial : 29 Sample Multiplier: 1

Quant Time: Dec 19 21:55:24 2023
Quant Method : X:\Orlando VOA\celinec\December 2023\12-20-2023\V1A2022\method\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration





TIC: 1A51538.d\data.ms

(77) Ethylbenzene

5.398min (-0.000) 38.35ug/L m

response 305387

Ion	Exp%	Act%
91.00	100	100
106.00	32.00	30.27
65.00	8.30	9.04
51.00	10.10	12.25

Manual Integrations APPROVED (compounds with "m" flag)
Neil Christiana 12/27/23 10:23

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\12-26-2023\
Data File : 1A51661.D
Acq On : 26 Dec 2023 8:03 am
Operator : lianatr
Sample : CC1985-5
Misc : MS55601,V1A2028,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Dec 26 08:18:45 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	3.405	96	309968	50.00	ug/L	0.00
62) Chlorobenzene-d5	5.352	117	224806	50.00	ug/L	0.00
85) 1,4-Dichlorobenzene-d4	7.099	152	110640	50.00	ug/L	0.00
System Monitoring Compounds						
39) Dibromofluoromethane	2.958	113	90154	49.34	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 98.68%			
49) 1,2-Dichloroethane-d4	3.235	65	111504	55.14	ug/L	0.00
Spiked Amount 50.000	Range 79 - 125		Recovery = 110.28%			
63) Toluene-d8	4.336	98	306592	51.07	ug/L	0.00
Spiked Amount 50.000	Range 85 - 112		Recovery = 102.14%			
86) 4-Bromofluorobenzene	6.229	174	94981	51.45	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 102.90%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.019	85	53663	45.33	ug/L	99
3) Chloromethane	1.134	50	63624	35.88	ug/L	96
4) 1,3-butadiene	1.188	39	69776	31.38	ug/L	99
5) Vinyl Chloride	1.173	62	67277	37.97	ug/L	100
6) Bromomethane	1.350	94	30996	48.37	ug/L	94
7) Chloroethane	1.411	64	57921	51.25	ug/L	94
8) Trichlorofluoromethane	1.496	101	110875	43.96	ug/L	100
9) Ethyl Ether	1.658	59	56423	36.52	ug/L	91
10) Ethanol	1.719	45	26180	741.86	ug/L	99
11) 1,2-Dichlorotrifluoroe...	1.742	67	76447	37.97	ug/L	90
12) 1,1-Dichloroethene	1.758	61	103760	38.78	ug/L	95
13) Freon 113	1.788	101	60828	39.85	ug/L	96
14) Carbon Disulfide	1.781	76	179773	36.25	ug/L	86
15) Iodomethane	1.835	142	36976	31.71	ug/L	98
16) Acrolein	1.912	56	82923	173.93	ug/L	99
17) Allyl chloride	1.996	41	104820	40.93	ug/L	88
18) Methylene Chloride	2.042	49	112340	42.96	ug/L	88
19) Acetone	2.050	43	155289	201.73	ug/L	96
20) Methyl acetate	2.127	43	402672	193.55	ug/L	96
21) trans-1,2-Dichloroethene	2.135	61	101146	37.61	ug/L	93
22) Hexane	2.196	56	74652	40.56	ug/L	93
23) Methyl Tert Butyl Ether	2.196	73	183689	36.69	ug/L	80
24) Acetonitrile	2.273	41	108219	401.76	ug/L	99
25) Tert Butyl Alcohol	2.212	59	131952	358.11	ug/L	70
26) Di-isopropyl ether	2.396	45	239819	38.14	ug/L	93
27) Chloroprene	2.443	53	284664	36.98	ug/L	97
28) 1,1-Dichloroethane	2.443	63	131631	37.71	ug/L	98
29) Acrylonitrile	2.443	52	179278	192.27	ug/L	98
30) ETBE	2.581	59	215833	37.23	ug/L	94
31) Vinyl acetate	2.566	43	824252	176.23	ug/L	96
32) cis-1,2-Dichloroethene	2.720	96	71960	37.28	ug/L	93
33) 2,2-Dichloropropane	2.781	77	95600	39.26	ug/L	99
34) Bromochloromethane	2.827	128	32985	33.74	ug/L	88
35) Cyclohexane	2.858	56	131802	39.06	ug/L	88

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\12-26-2023\
Data File : 1A51661.D
Acq On : 26 Dec 2023 8:03 am
Operator : lianatr
Sample : CC1985-5
Misc : MS55601,V1A2028,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Dec 26 08:18:45 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
36) Chloroform	2.858	83	125811	39.27	ug/L		94
37) Ethyl acetate	2.920	43	489245	187.48	ug/L		98
38) Tetrahydrofuran	2.951	42	33216	33.65	ug/L		96
40) Carbon Tetrachloride	2.966	117	96246m	38.72	ug/L		
41) 1,1,1-Trichloroethane	2.989	97	112713	41.95	ug/L		94
42) 2-Butanone	3.004	43	266812	204.50	ug/L		91
43) 1,1-Dichloropropene	3.058	75	92529	39.48	ug/L		93
44) tert-Butyl formate	3.097	59	267640	167.23	ug/L		96
45) Propionitrile	3.143	54	137585	342.63	ug/L		99
46) Methacrylonitrile	3.166	41	598233	395.08	ug/L		97
47) Benzene	3.181	78	267109	38.82	ug/L		90
48) TAME	3.251	73	181283	37.32	ug/L		91
50) 1,2-Dichloroethane	3.274	62	105376	40.95	ug/L		94
51) Isobutyl Alcohol	3.258	43	169302	765.19	ug/L		97
52) Tert Amyl Alcohol	3.328	59	110064	363.31	ug/L		94
53) Trichloroethene	3.512	95	73109	38.01	ug/L		95
54) Methylcyclohexane	3.528	83	119208	38.83	ug/L		95
55) Dibromomethane	3.736	93	45842	37.26	ug/L	#	82
56) 1,2-Dichloropropane	3.797	63	71532	36.72	ug/L		95
57) Bromodichloromethane	3.828	83	90454	37.44	ug/L	#	97
58) Methyl methacrylate	3.920	41	76498	34.10	ug/L		87
59) 1,4-Dioxane	3.943	88	20237	769.11	ug/L		95
60) 2-Chloroethyl vinyl ether	4.167	63	188428	167.03	ug/L		95
61) cis-1,3-Dichloropropene	4.213	75	104629	37.23	ug/L		84
64) Toluene	4.374	91	285126	39.02	ug/L		97
65) 2-Nitropropane	4.467	41	108418	142.66	ug/L		86
66) 4-Methyl-2-pentanone	4.582	43	534762	201.50	ug/L		95
67) trans-1,3-Dichloropropene	4.613	75	98886	38.22	ug/L		87
68) Tetrachloroethene	4.636	166	81647	39.49	ug/L		99
69) Ethyl methacrylate	4.728	69	81814	38.35	ug/L		81
70) 1,1,2-Trichloroethane	4.721	83	52675	35.76	ug/L		94
71) Dibromochloromethane	4.844	129	69558	37.14	ug/L		99
72) 1,3-Dichloropropane	4.898	76	99936	36.85	ug/L		88
73) 1,2-Dibromoethane	4.998	107	66698	35.29	ug/L		95
74) 3,3-Dimethyl-1-Butanol	5.129	57	624844	1766.52	ug/L		96
75) 2-hexanone	5.136	43	508482	197.83	ug/L		89
76) 1-Chlorohexane	5.367	91	112220m	44.21	ug/L		
77) Ethylbenzene	5.398	91	303405m	38.37	ug/L		
78) Chlorobenzene	5.367	112	187019	38.65	ug/L		96
79) 1,1,1,2-Tetrachloroethane	5.413	131	66288	37.65	ug/L		96
80) m,p-Xylene	5.498	91	490791	78.27	ug/L		99
81) o-Xylene	5.806	91	256108	38.38	ug/L		98
82) Styrene	5.837	104	186653	36.91	ug/L		95
83) Bromoform	5.844	173	46859	37.06	ug/L		99
84) Isopropylbenzene	6.044	105	298530	38.43	ug/L		98
87) cis-1,4-Dichloro-2-butene	6.268	53	33083	50.10	ug/L	#	72
88) n-Propylbenzene	6.352	91	365334	42.26	ug/L		95
89) Bromobenzene	6.306	156	71941	37.48	ug/L		88
90) 1,1,2,2-Tetrachloroethane	6.375	83	89596	39.98	ug/L		95
91) 1,3,5-Trimethylbenzene	6.506	105	241784	40.75	ug/L		99

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\12-26-2023\
Data File : 1A51661.D
Acq On : 26 Dec 2023 8:03 am
Operator : lianatr
Sample : CC1985-5
Misc : MS55601,V1A2028,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Dec 26 08:18:45 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration

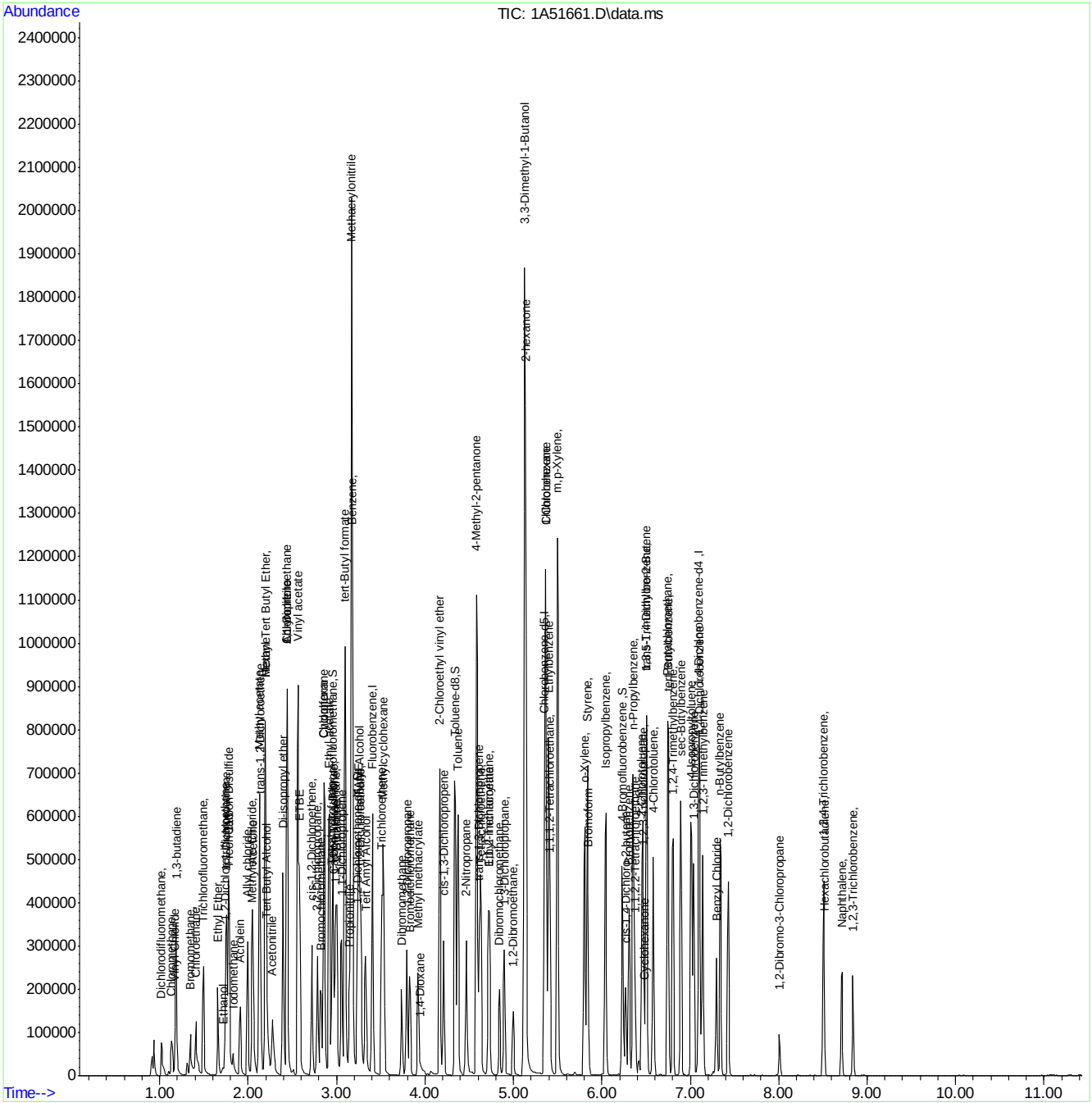
	Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
92)	2-Chlorotoluene	6.452	91	203266	40.96	ug/L		98
93)	trans-1,4-Dichloro-2-B...	6.506	53	39171	45.32	ug/L		91
94)	1,2,3-Trichloropropane	6.468	110	25148	40.70	ug/L	#	75
95)	Cyclohexanone	6.483	55	20095	172.57	ug/L		94
96)	4-Chlorotoluene	6.583	91	210336	41.07	ug/L		97
97)	tert-Butylbenzene	6.753	91	142468	42.46	ug/L		96
98)	1,2,4-Trimethylbenzene	6.806	105	233165	41.01	ug/L		97
99)	Pentachloroethane	6.745	167	38386	40.70	ug/L	#	75
100)	sec-Butylbenzene	6.891	105	302597	40.36	ug/L		96
101)	4-Isopropyltoluene	7.007	119	257620	40.06	ug/L		98
102)	1,3-Dichlorobenzene	7.037	146	137247	39.63	ug/L		95
103)	1,2,3-Trimethylbenzene	7.145	105	225491	39.92	ug/L		98
104)	1,4-Dichlorobenzene	7.107	146	137036	39.10	ug/L		96
105)	n-Butylbenzene	7.337	92	120560	41.76	ug/L		93
106)	Benzyl Chloride	7.299	126	27615	34.38	ug/L	#	87
107)	1,2-Dichlorobenzene	7.430	146	120571	39.11	ug/L		95
108)	1,2-Dibromo-3-Chloropr...	8.007	75	14099	39.51	ug/L	#	81
109)	Hexachlorobutadiene	8.515	225	26892	37.61	ug/L		92
110)	1,2,4-Trichlorobenzene	8.507	180	55842	32.65	ug/L		97
111)	Naphthalene	8.715	128	127425	29.07	ug/L		100
112)	1,2,3-Trichlorobenzene	8.838	180	41296	30.38	ug/L		94

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\12-26-2023\
Data File : 1A51661.D
Acq On : 26 Dec 2023 8:03 am
Operator : lianatr
Sample : CC1985-5
Misc : MS55601,V1A2028,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Dec 26 08:18:45 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration



Manual Integration Approval Summary

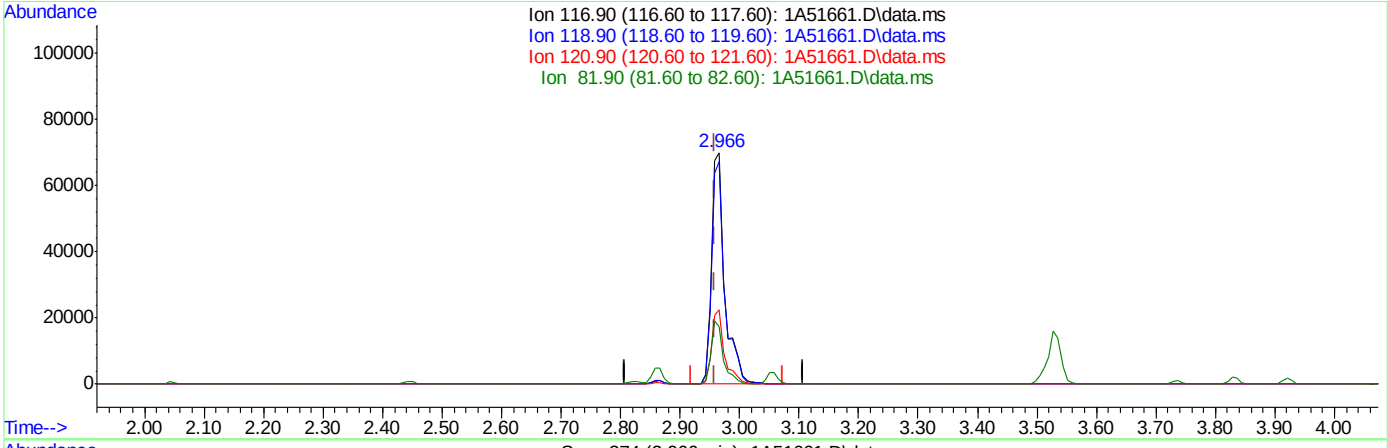
Sample Number: V1A2028-CC1985
Lab FileID: 1A51661.D
Injection Time: 12/26/23 08:03
Method: SW846 8260D
Analyst approved: 12/26/23 08:44 Liana Tortrodriguez
Supervisor approved: 12/27/23 10:23 Neil Christiana

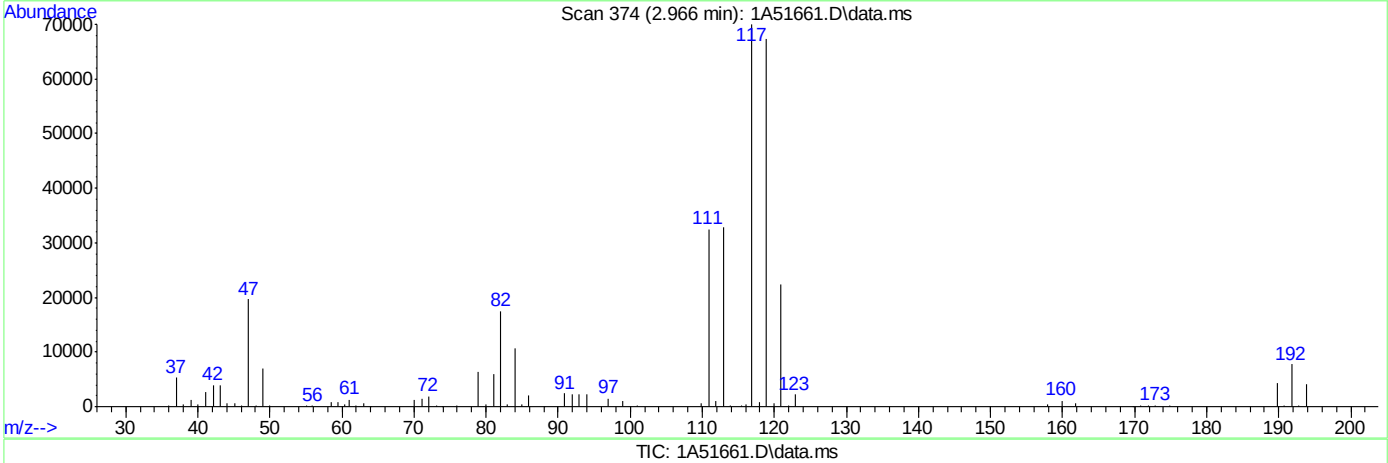
Parameter	CAS	Sig#	R.T. (min.)	Reason
Carbon Tetrachloride	56-23-5		2.97	Overlapping peak
1-Chlorohexane	544-10-5		5.37	Overlapping peak
Ethylbenzene	100-41-4		5.40	Overlapping peak

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\12-26-2023\
Data File : 1A51661.D
Acq On : 26 Dec 2023 8:03 am
Operator : lianatr
Sample : CC1985-5
Misc : MS55601,V1A2028,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Dec 26 08:18:19 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration





TIC: 1A51661.D\data.ms

(40) Carbon Tetrachloride ( )

2.966min (+0.007) 43.92ug/L

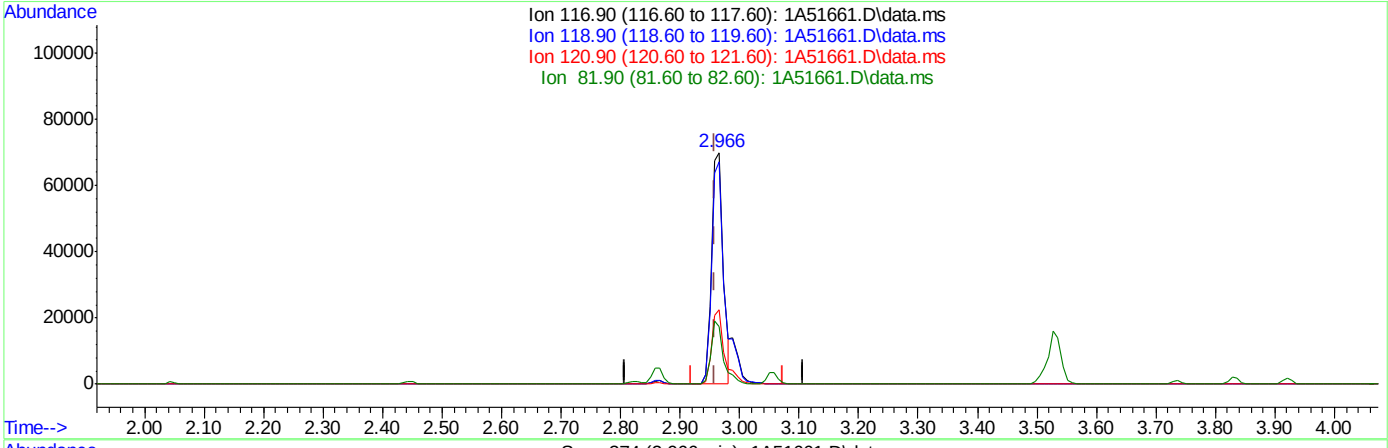
response 109181

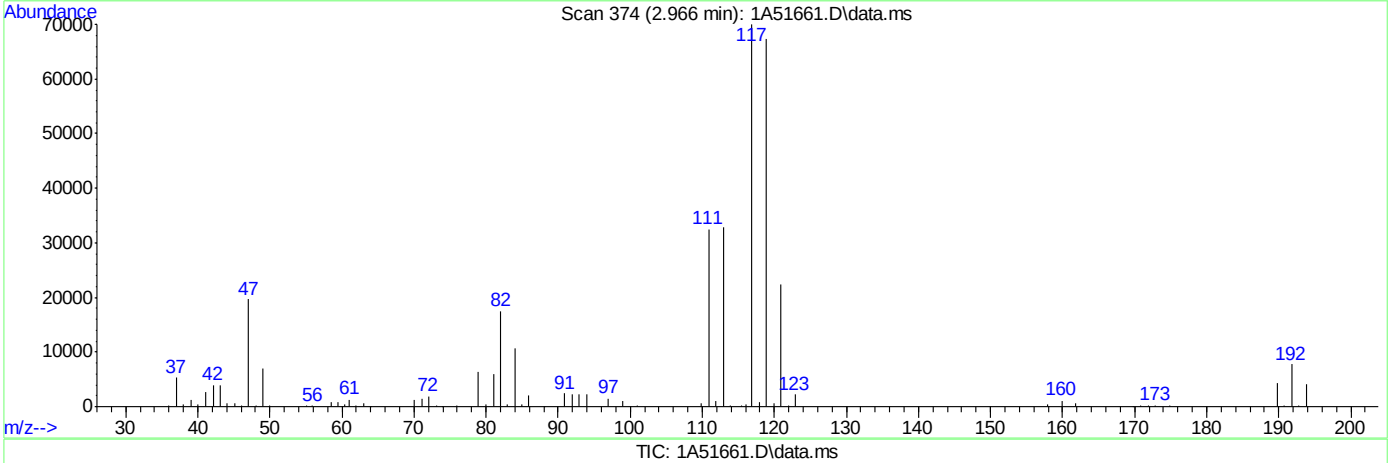
Ion	Exp%	Act%
116.90	100	100
118.90	94.50	96.15
120.90	31.10	31.96
81.90	25.40	25.01

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\12-26-2023\
Data File : 1A51661.D
Acq On : 26 Dec 2023 8:03 am
Operator : lianatr
Sample : CC1985-5
Misc : MS55601,V1A2028,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Dec 26 08:18:19 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration





TIC: 1A51661.D\data.ms

(40) Carbon Tetrachloride ( )

2.966min (+0.007) 38.72ug/L m

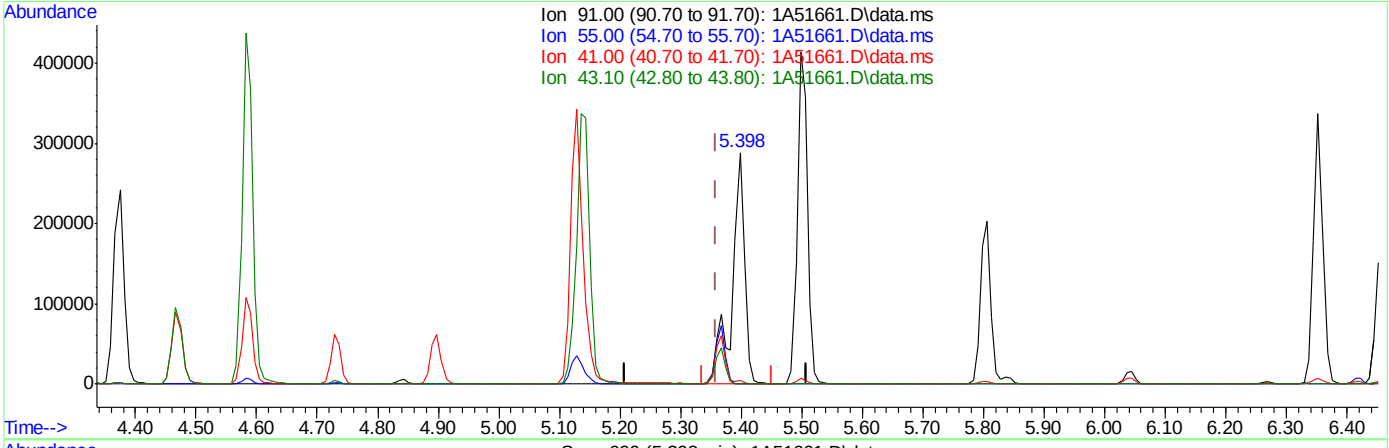
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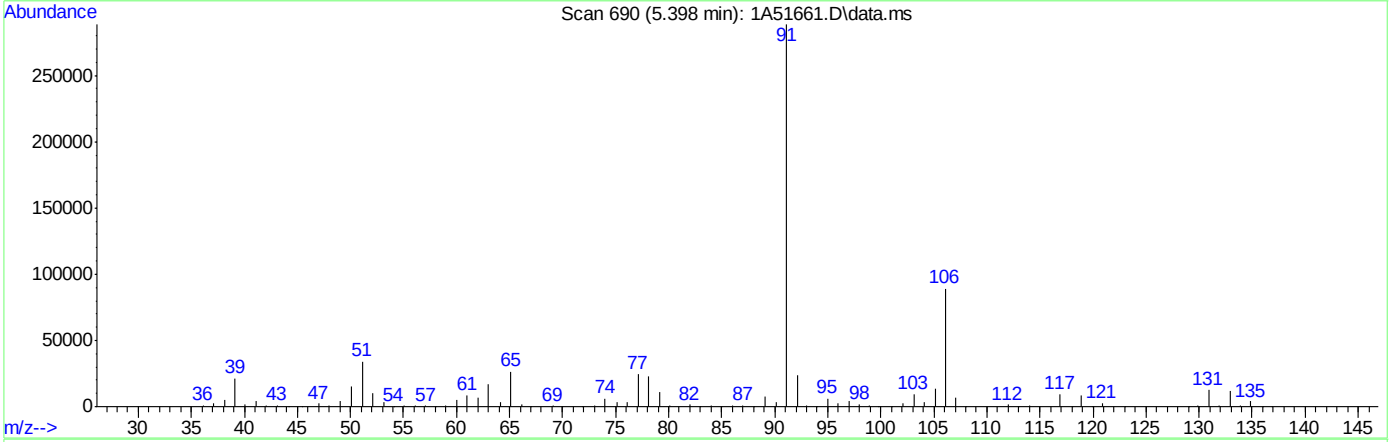
Ion	Exp%	Act%
116.90	100	100
118.90	94.50	96.15
120.90	31.10	31.96
81.90	25.40	25.01

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\12-26-2023\
Data File : 1A51661.D
Acq On : 26 Dec 2023 8:03 am
Operator : lianatr
Sample : CC1985-5
Misc : MS55601,V1A2028,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Dec 26 08:18:19 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration





TIC: 1A51661.D\data.ms

(76) 1-Chlorohexane

5.398min (+0.038) 163.56ug/L

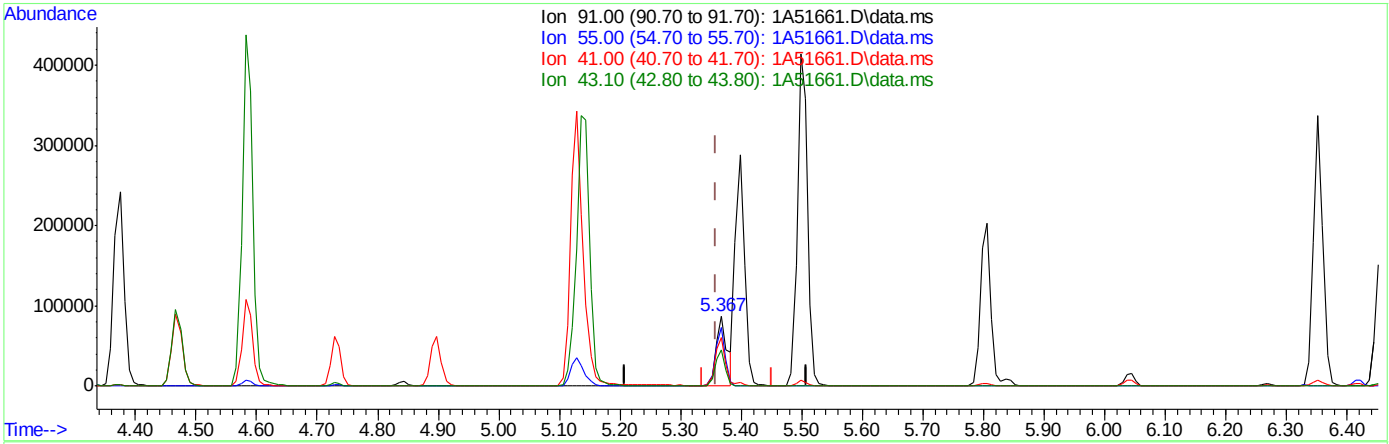
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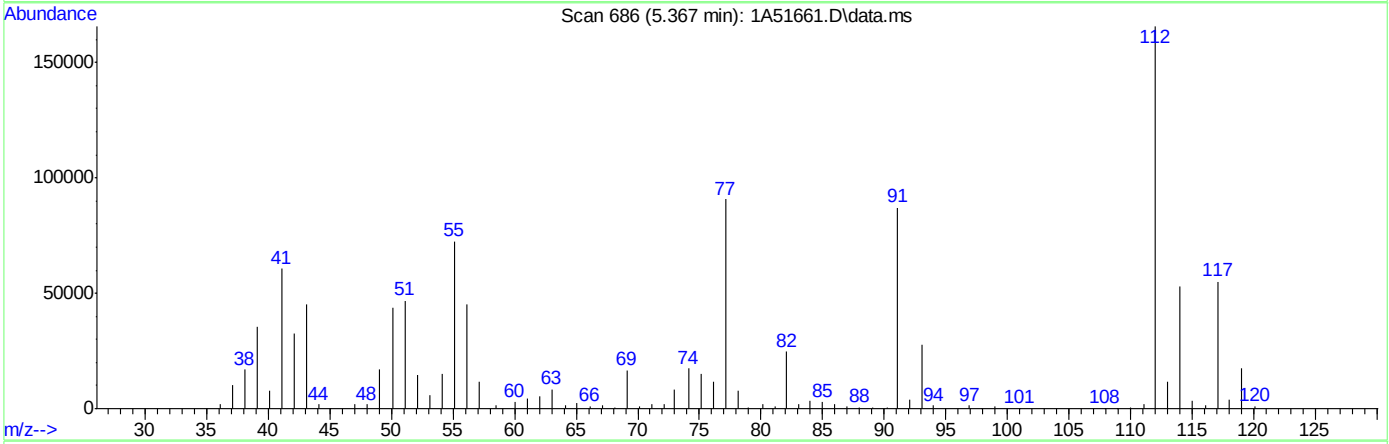
Ion	Exp%	Act%
91.00	100	100
55.00	74.60	0.21#
41.00	53.90	1.16#
43.10	42.90	0.22#

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\12-26-2023\
Data File : 1A51661.D
Acq On : 26 Dec 2023 8:03 am
Operator : lianatr
Sample : CC1985-5
Misc : MS55601,V1A2028,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Dec 26 08:18:19 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration





TIC: 1A51661.D\data.ms

(76) 1-Chlorohexane

5.367min (+0.007) 44.21ug/L m

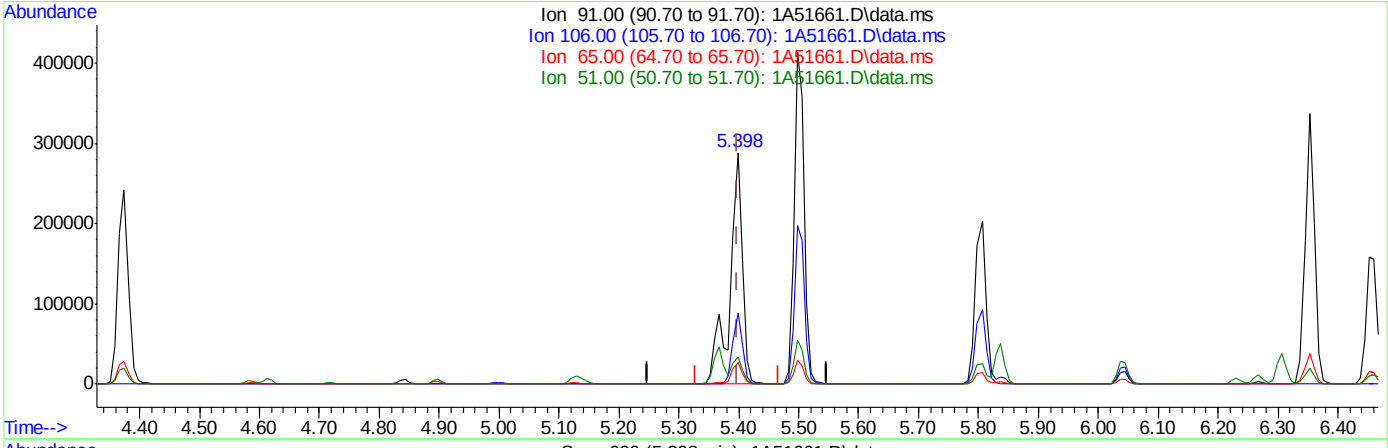
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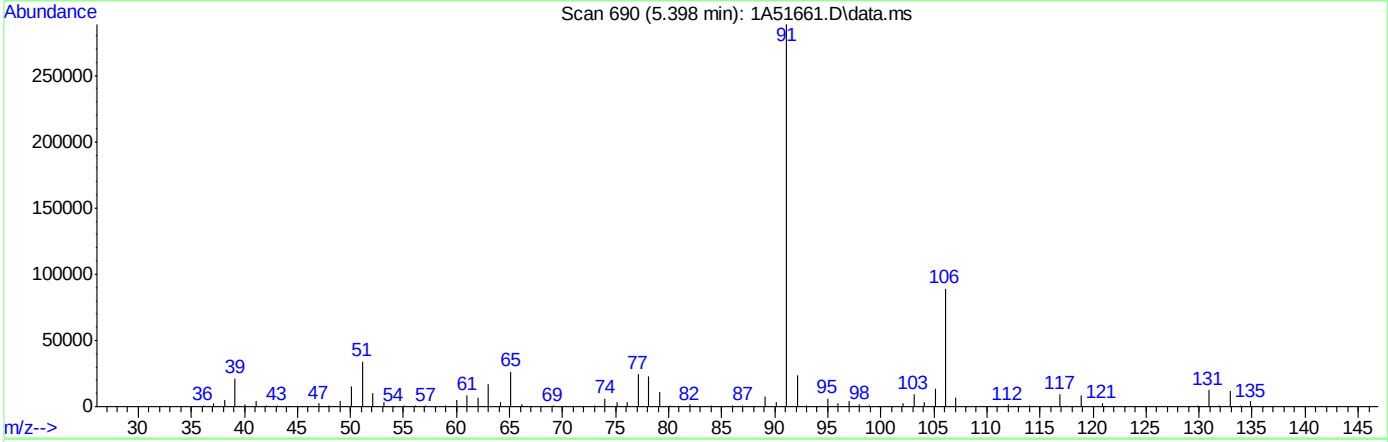
Ion	Exp%	Act%
91.00	100	100
55.00	74.60	83.34
41.00	53.90	69.53
43.10	42.90	51.82

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\12-26-2023\
Data File : 1A51661.D
Acq On : 26 Dec 2023 8:03 am
Operator : lianatr
Sample : CC1985-5
Misc : MS55601,V1A2028,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Dec 26 08:18:19 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration





TIC: 1A51661.D\data.ms

(77) Ethylbenzene

5.398min (-0.000) 52.58ug/L

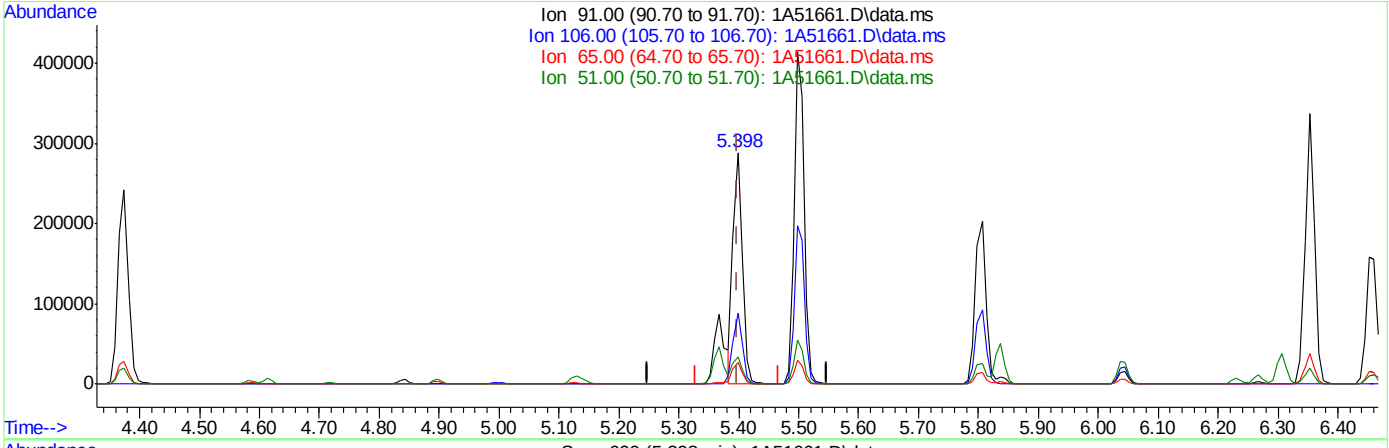
response 415772

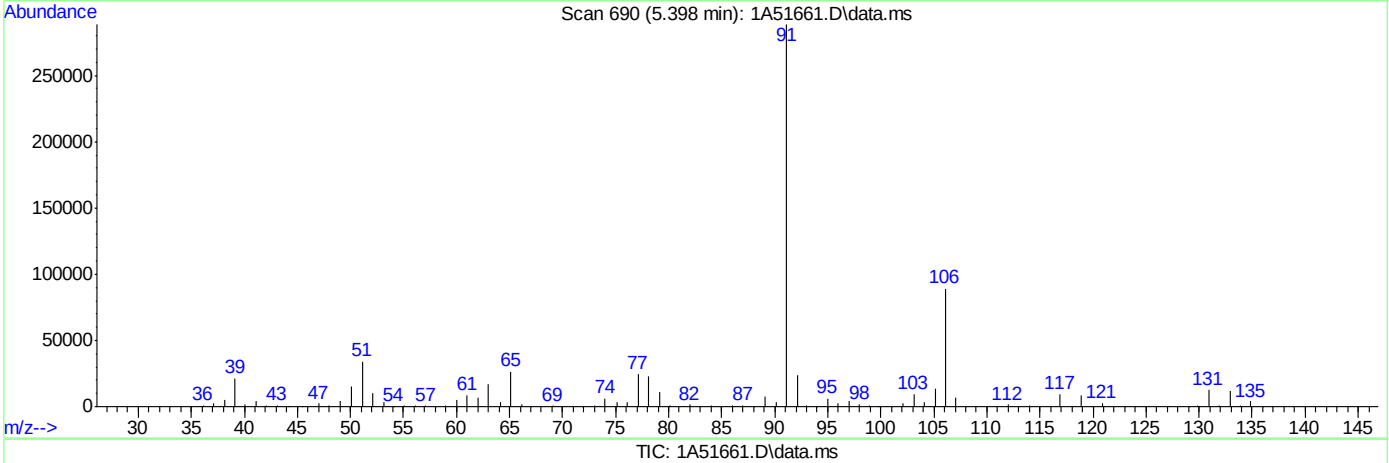
Ion	Exp%	Act%
91.00	100	100
106.00	32.00	30.85
65.00	8.30	9.17
51.00	10.10	11.82

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\12-26-2023\
Data File : 1A51661.D
Acq On : 26 Dec 2023 8:03 am
Operator : lianatr
Sample : CC1985-5
Misc : MS55601,V1A2028,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Dec 26 08:18:19 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration





TIC: 1A51661.D\data.ms

(77) Ethylbenzene

5.398min (-0.000) 38.37ug/L m

response 303405

Ion	Exp%	Act%
91.00	100	100
106.00	32.00	30.85
65.00	8.30	9.17
51.00	10.10	11.82

Manual Integrations APPROVED (compounds with "m" flag)
Neil Christiana 12/27/23 10:23

Quantitation Report (QT Reviewed)

Data Path : X:\Orlando VOA\celinec\December 2023\12-27-2023\V1A2028\V1A2028\
Data File : 1A51688.d
Acq On : 26 Dec 2023 7:02 pm
Operator : lianatr
Sample : ECC1985-5 Inst : MSVOA17
Misc : MS55614,V1A2028,,,,,
ALS Vial : 29 Sample Multiplier: 1

Quant Time: Dec 27 00:23:47 2023
Quant Method : X:\Orlando VOA\celinec\December 2023\12-27-2023\V1A2028\METHOD\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	3.405	96	293272	50.00	ug/L	0.00
62) Chlorobenzene-d5	5.352	117	212363	50.00	ug/L	0.00
85) 1,4-Dichlorobenzene-d4	7.099	152	107604	50.00	ug/L	0.00
System Monitoring Compounds						
39) Dibromofluoromethane	2.958	113	84136	48.67	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 97.34%			
49) 1,2-Dichloroethane-d4	3.235	65	104329	54.53	ug/L	0.00
Spiked Amount 50.000	Range 79 - 125		Recovery = 109.06%			
63) Toluene-d8	4.336	98	289464	51.04	ug/L	0.00
Spiked Amount 50.000	Range 85 - 112		Recovery = 102.08%			
86) 4-Bromofluorobenzene	6.229	174	89437	49.81	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 99.62%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.019	85	49830	44.4886	ug/L	96
3) Chloromethane	1.134	50	58860	35.0799	ug/L	97
4) 1,3-butadiene	1.188	39	71381	33.9321	ug/L	97
5) Vinyl Chloride	1.173	62	62588	37.3392	ug/L	98
6) Bromomethane	1.350	94	27752	45.7744	ug/L	94
7) Chloroethane	1.411	64	53757	50.2726	ug/L	95
8) Trichlorofluoromethane	1.496	101	103595	43.4124	ug/L	98
9) Ethyl Ether	1.658	59	52792	36.1130	ug/L	92
10) Ethanol	1.712	45	24967	747.7646	ug/L	97
11) 1,2-Dichlorotrifluoroe...	1.742	67	66621	34.9736	ug/L	90
12) 1,1-Dichloroethene	1.758	61	88910	35.1174	ug/L	92
13) Freon 113	1.781	101	50124	34.7075	ug/L	90
14) Carbon Disulfide	1.781	76	146655	31.2548	ug/L	86
15) Iodomethane	1.835	142	41667	37.7693	ug/L	97
16) Acrolein	1.912	56	75862	168.1784	ug/L	97
17) Allyl chloride	1.996	41	96633	39.8807	ug/L	86
18) Methylene Chloride	2.043	49	92194	37.2596	ug/L	90
19) Acetone	2.050	43	142264	195.3347	ug/L	96
20) Methyl acetate	2.127	43	405952	206.2327	ug/L	96
21) trans-1,2-Dichloroethene	2.135	61	88191	34.6601	ug/L	95
22) Hexane	2.196	56	63028	36.1956	ug/L	90
23) Methyl Tert Butyl Ether	2.196	73	171868	36.2854	ug/L	91
24) Acetonitrile	2.273	41	116883m	458.6316	ug/L	
25) Tert Butyl Alcohol	2.220	59	121501	348.5145	ug/L	99
26) Di-isopropyl ether	2.397	45	223241	37.5295	ug/L	92
27) Chloroprene	2.443	53	266232	36.5558	ug/L	97
28) 1,1-Dichloroethane	2.443	63	120460	36.4767	ug/L	98
29) Acrylonitrile	2.443	52	166370	188.5886	ug/L	99
30) ETBE	2.581	59	203212	37.0480	ug/L	94
31) Vinyl acetate	2.566	43	702900	158.8369	ug/L	96
32) cis-1,2-Dichloroethene	2.720	96	64976	35.5798	ug/L	93
33) 2,2-Dichloropropane	2.781	77	76172	33.0616	ug/L	98
34) Bromochloromethane	2.828	128	31255	33.7917	ug/L	99
35) Cyclohexane	2.858	56	108979	34.1349	ug/L	90
36) Chloroform	2.858	83	117118	38.6398	ug/L	93
37) Ethyl acetate	2.912	43	446820	180.9689	ug/L	96
38) Tetrahydrofuran	2.951	42	30648	32.8122	ug/L	93
40) Carbon Tetrachloride	2.958	117	82487m	35.0742	ug/L	
41) 1,1,1-Trichloroethane	2.989	97	97262	38.2640	ug/L	94
42) 2-Butanone	3.005	43	251598	203.8190	ug/L	92
43) 1,1-Dichloropropene	3.051	75	79484	35.8441	ug/L	89
44) tert-Butyl formate	3.097	59	224267	148.1037	ug/L	90

Quantitation Report (QT Reviewed)

Data Path : X:\Orlando VOA\celinec\December 2023\12-27-2023\V1A2028\V1A2028\
Data File : 1A51688.d
Acq On : 26 Dec 2023 7:02 pm
Operator : lianatr
Sample : ECC1985-5 Inst : MSVOA17
Misc : MS55614,V1A2028,,,,,
ALS Vial : 29 Sample Multiplier: 1

Quant Time: Dec 27 00:23:47 2023
Quant Method : X:\Orlando VOA\celinec\December 2023\12-27-2023\V1A2028\METHOD\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration

	Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
45)	Propionitrile	3.143	54	138277	363.9575	ug/L		99
46)	Methacrylonitrile	3.166	41	595614	415.7442	ug/L		97
47)	Benzene	3.182	78	242131	37.1924	ug/L		89
48)	TAME	3.251	73	170863	37.1744	ug/L		91
50)	1,2-Dichloroethane	3.274	62	100873	41.4351	ug/L		93
51)	Isobutyl Alcohol	3.259	43	165387	790.0550	ug/L		97
52)	Tert Amyl Alcohol	3.328	59	98464	343.5199	ug/L		91
53)	Trichloroethene	3.513	95	66238	36.3938	ug/L		97
54)	Methylcyclohexane	3.528	83	99308	34.1910	ug/L		95
55)	Dibromomethane	3.736	93	43341	37.2323	ug/L		85
56)	1,2-Dichloropropane	3.797	63	65916	35.7652	ug/L		96
57)	Bromodichloromethane	3.828	83	84072	36.7748	ug/L	#	94
58)	Methyl methacrylate	3.920	41	73534	34.6491	ug/L		88
59)	1,4-Dioxane	3.944	88	18979	762.3587	ug/L		91
60)	2-Chloroethyl vinyl ether	4.167	63	166262	155.7688	ug/L		95
61)	cis-1,3-Dichloropropene	4.213	75	93751	35.2576	ug/L		84
64)	Toluene	4.375	91	258143	37.3967	ug/L		97
65)	2-Nitropropane	4.467	41	95607	133.1774	ug/L		88
66)	4-Methyl-2-pentanone	4.582	43	525889	209.7651	ug/L		95
67)	trans-1,3-Dichloropropene	4.613	75	90710	37.1188	ug/L		88
68)	Tetrachloroethene	4.628	166	71673	36.6997	ug/L		93
69)	Ethyl methacrylate	4.729	69	84426	41.8900	ug/L		83
70)	1,1,2-Trichloroethane	4.721	83	50787	36.4956	ug/L		95
71)	Dibromochloromethane	4.844	129	62425	35.2825	ug/L		99
72)	1,3-Dichloropropane	4.898	76	94737	36.9817	ug/L		87
73)	1,2-Dibromoethane	4.998	107	61905	34.6718	ug/L		96
74)	3,3-Dimethyl-1-Butanol	5.129	57	567504	1698.4240	ug/L		96
75)	2-hexanone	5.136	43	489128	201.4454	ug/L		92
76)	1-Chlorohexane	5.367	91	77764m	32.4337	ug/L		
77)	Ethylbenzene	5.398	91	293075m	39.2322	ug/L		
78)	Chlorobenzene	5.367	112	170657	37.3318	ug/L		97
79)	1,1,1,2-Tetrachloroethane	5.414	131	62055	37.3148	ug/L		95
80)	m,p-Xylene	5.498	91	448021	75.6336	ug/L		99
81)	o-Xylene	5.806	91	234911	37.2644	ug/L		97
82)	Styrene	5.837	104	174702	36.5712	ug/L		94
83)	Bromoform	5.837	173	41821	35.0098	ug/L		96
84)	Isopropylbenzene	6.045	105	266749	36.3554	ug/L		98
87)	cis-1,4-Dichloro-2-butene	6.268	53	26219	40.8246	ug/L	#	77
88)	n-Propylbenzene	6.353	91	328992	39.1295	ug/L		95
89)	Bromobenzene	6.306	156	67903	36.3766	ug/L		88
90)	1,1,2,2-Tetrachloroethane	6.376	83	83376	38.2507	ug/L		97
91)	1,3,5-Trimethylbenzene	6.506	105	222279	38.5166	ug/L		96
92)	2-Chlorotoluene	6.453	91	186952	38.7320	ug/L		99
93)	trans-1,4-Dichloro-2-B...	6.506	53	30858	36.7083	ug/L		84
94)	1,2,3-Trichloropropane	6.468	110	24326	40.4821	ug/L		78
95)	Cyclohexanone	6.483	55	19833	175.1270	ug/L		97
96)	4-Chlorotoluene	6.583	91	195916	39.3340	ug/L		96
97)	tert-Butylbenzene	6.745	91	130352	39.9432	ug/L		93
98)	1,2,4-Trimethylbenzene	6.799	105	213510	38.6099	ug/L		99
99)	Pentachloroethane	6.745	167	35568	38.7793	ug/L	#	75
100)	sec-Butylbenzene	6.891	105	275327	37.7620	ug/L		97
101)	4-Isopropyltoluene	7.007	119	233410	37.3220	ug/L		99
102)	1,3-Dichlorobenzene	7.037	146	126921	37.6845	ug/L		96
103)	1,2,3-Trimethylbenzene	7.145	105	209830	38.1975	ug/L		97
104)	1,4-Dichlorobenzene	7.107	146	128244	37.6276	ug/L		96
105)	n-Butylbenzene	7.338	92	108744	38.7317	ug/L		94
106)	Benzyl Chloride	7.299	126	21171	27.1049	ug/L		96
107)	1,2-Dichlorobenzene	7.430	146	116225	38.7618	ug/L		96

Quantitation Report (QT Reviewed)

Data Path : X:\Orlando VOA\celinec\December 2023\12-27-2023\V1A2028\V1A2028\
Data File : 1A51688.d
Acq On : 26 Dec 2023 7:02 pm
Operator : lianatr
Sample : ECC1985-5 Inst : MSVOA17
Misc : MS55614,V1A2028,,,,,
ALS Vial : 29 Sample Multiplier: 1

Quant Time: Dec 27 00:23:47 2023
Quant Method : X:\Orlando VOA\celinec\December 2023\12-27-2023\V1A2028\METHOD\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration

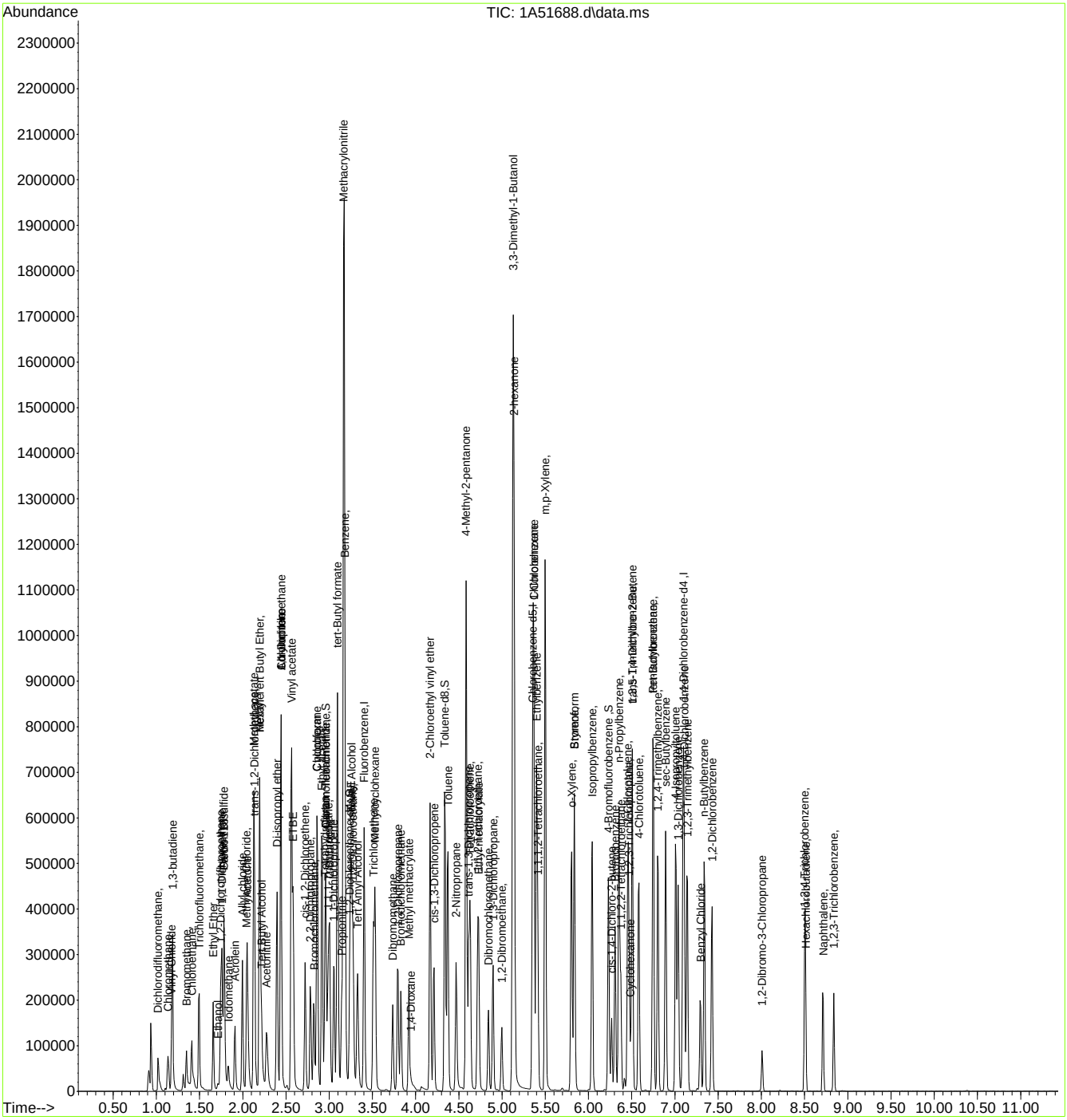
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
108) 1,2-Dibromo-3-Chloropr...	8.007	75	12522	36.0833	ug/L #	80
109) Hexachlorobutadiene	8.515	225	23430	33.6897	ug/L	95
110) 1,2,4-Trichlorobenzene	8.500	180	51501	30.9651	ug/L	95
111) Naphthalene	8.715	128	113910	26.7167	ug/L	98
112) 1,2,3-Trichlorobenzene	8.838	180	37265	28.1897	ug/L	95

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : X:\Orlando VOA\celinec\December 2023\12-27-2023\V1A2028\V1A2028\
Data File : 1A51688.d
Acq On : 26 Dec 2023 7:02 pm
Operator : lianatr
Sample : ECC1985-5 Inst : MSVOA17
Misc : MS55614,V1A2028,,,,,
ALS Vial : 29 Sample Multiplier: 1

Quant Time: Dec 27 00:23:47 2023
Quant Method : X:\Orlando VOA\celinec\December 2023\12-27-2023\V1A2028\METHOD\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration



Manual Integration Approval Summary

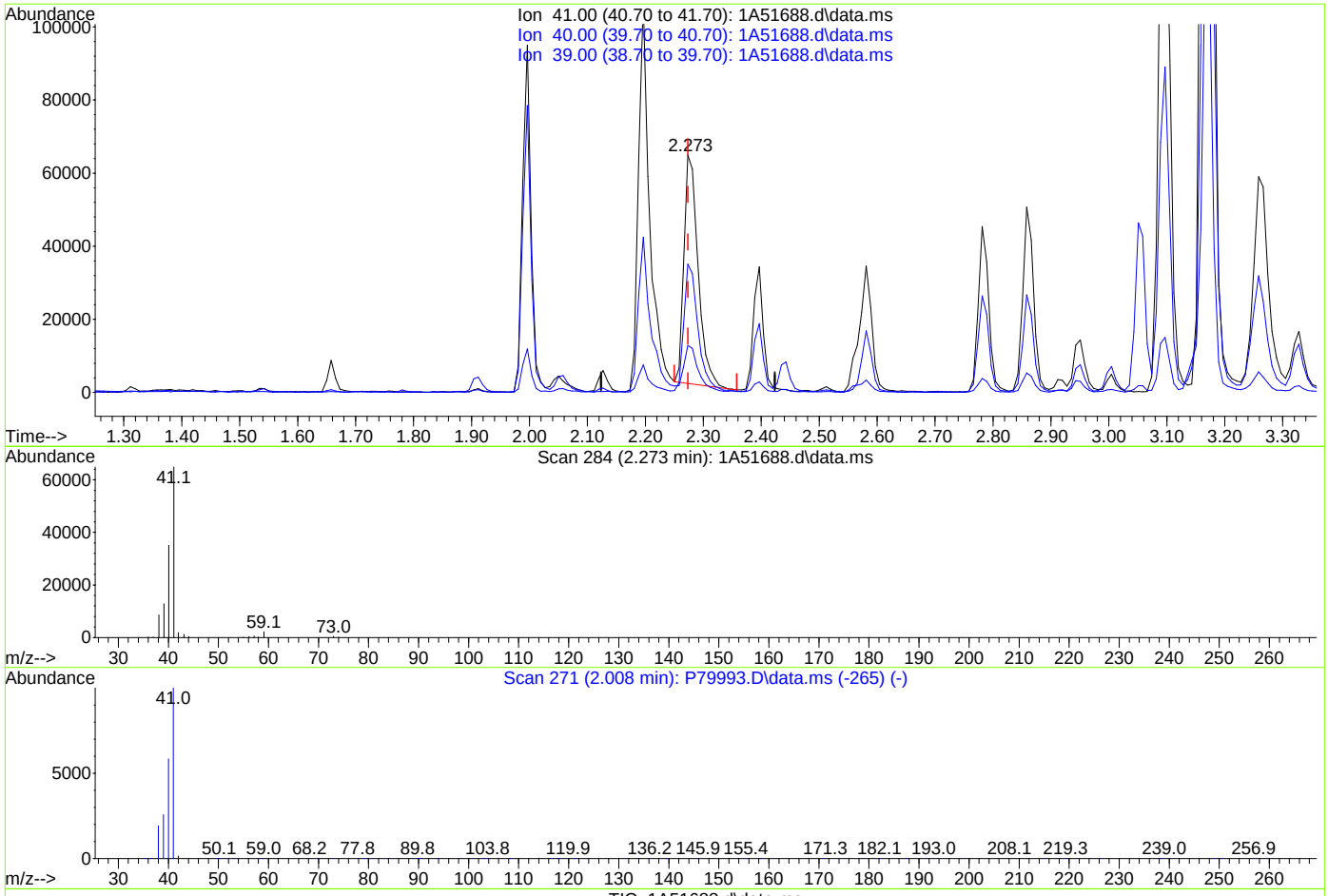
Sample Number: V1A2028-ECC1985 **Method:** SW846 8260D
Lab FileID: 1A51688.D **Analyst approved:** 12/26/23 19:31 Celine Celis
Injection Time: 12/26/23 19:02 **Supervisor approved:** 12/27/23 10:23 Neil Christiana

Parameter	CAS	Sig#	R.T. (min.)	Reason
Acetonitrile	75-05-8		2.27	Poor instrument integration
Carbon Tetrachloride	56-23-5		2.96	Overlapping peak
1-Chlorohexane	544-10-5		5.37	Overlapping peak
Ethylbenzene	100-41-4		5.40	Overlapping peak

Quantitation Report (Qedit)

Data Path : X:\Orlando VOA\celinec\December 2023\12-27-2023\V1A2028\V1A2028\
Data File : 1A51688.d
Acq On : 26 Dec 2023 7:02 pm
Operator : lianatr
Sample : ECC1985-5 Inst : MSVOA17
Misc : MS55614,V1A2028,,,,,
ALS Vial : 29 Sample Multiplier: 1

Quant Time: Dec 27 00:18:29 2023
Quant Method : X:\Orlando VOA\celinec\December 2023\12-27-2023\V1A2028\METHOD\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration



TIC: 1A51688.d\data.ms

(24) Acetonitrile

2.273min (-0.001) 412.68ug/L

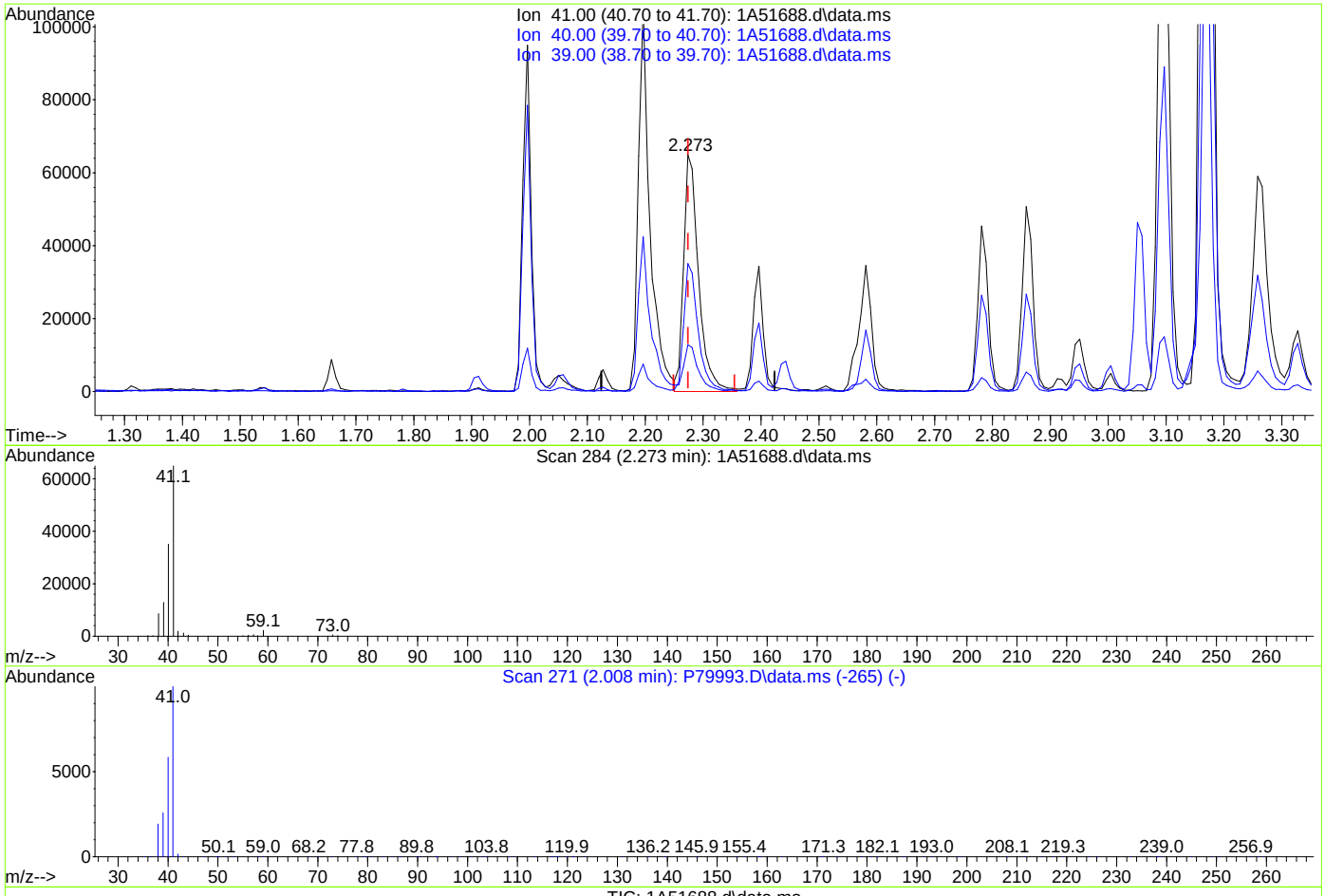
response 105172

Ion	Exp%	Act%
41.00	100	100
40.00	54.10	54.09
39.00	21.10	19.67
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : X:\Orlando VOA\celinec\December 2023\12-27-2023\V1A2028\V1A2028\
Data File : 1A51688.d
Acq On : 26 Dec 2023 7:02 pm
Operator : lianatr
Sample : ECC1985-5 Inst : MSVOA17
Misc : MS55614,V1A2028,,,,,
ALS Vial : 29 Sample Multiplier: 1

Quant Time: Dec 27 00:18:29 2023
Quant Method : X:\Orlando VOA\celinec\December 2023\12-27-2023\V1A2028\METHOD\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration



TIC: 1A51688.d\data.ms

(24) Acetonitrile

2.273min (-0.001) 458.63ug/L m

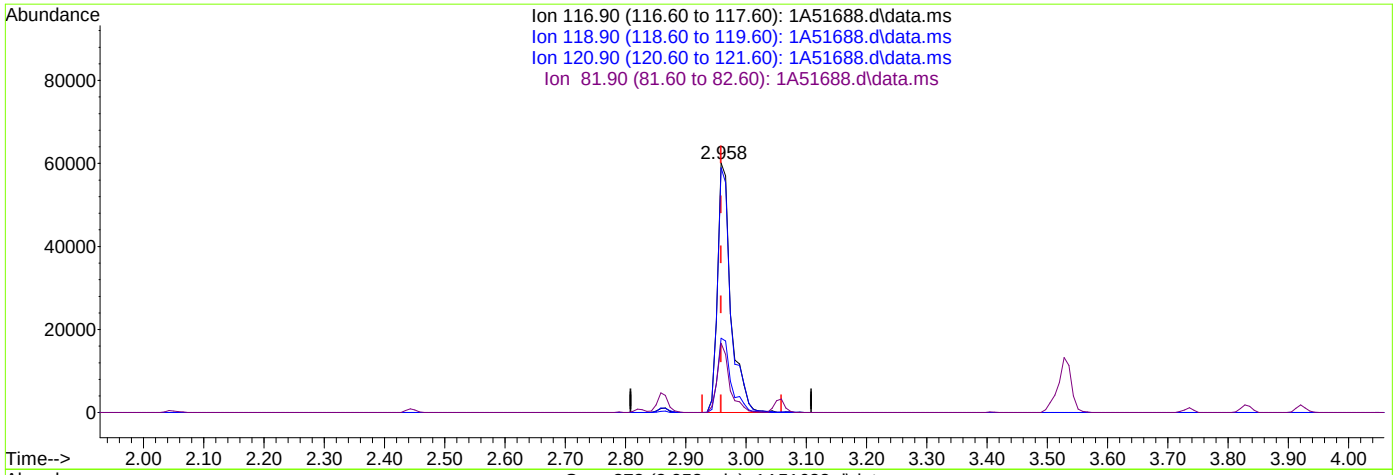
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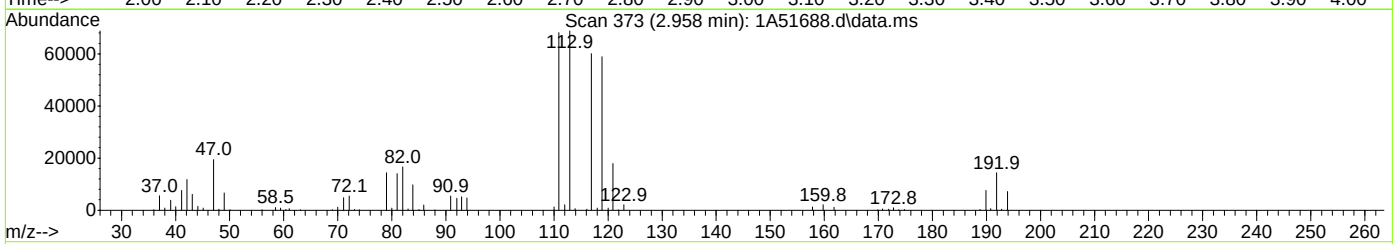
Ion	Exp%	Act%
41.00	100	100
40.00	54.10	54.03
39.00	21.10	19.82
0.00	0.00	0.00

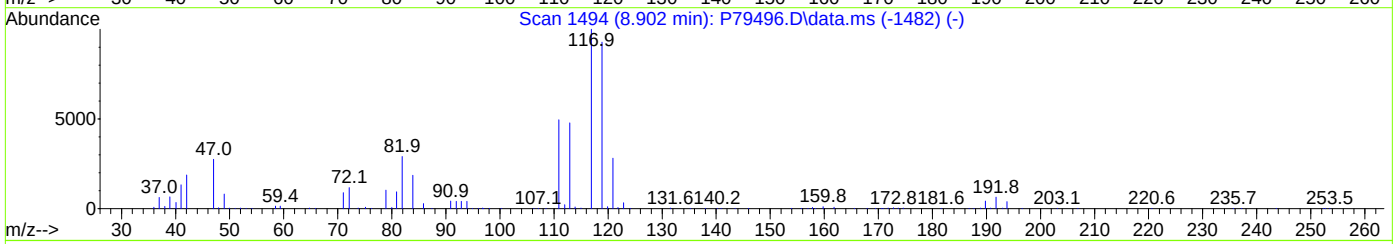
Quantitation Report (Qedit)

Data Path : X:\Orlando VOA\celinec\December 2023\12-27-2023\V1A2028\V1A2028\
Data File : 1A51688.d
Acq On : 26 Dec 2023 7:02 pm
Operator : lianatr
Sample : ECC1985-5 Inst : MSVOA17
Misc : MS55614,V1A2028,,,,,
ALS Vial : 29 Sample Multiplier: 1

Quant Time: Dec 27 00:18:29 2023
Quant Method : X:\Orlando VOA\celinec\December 2023\12-27-2023\V1A2028\METHOD\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration







TIC: 1A51688.d\data.ms

(40) Carbon Tetrachloride ( )

2.958min (-0.000) 39.57ug/L

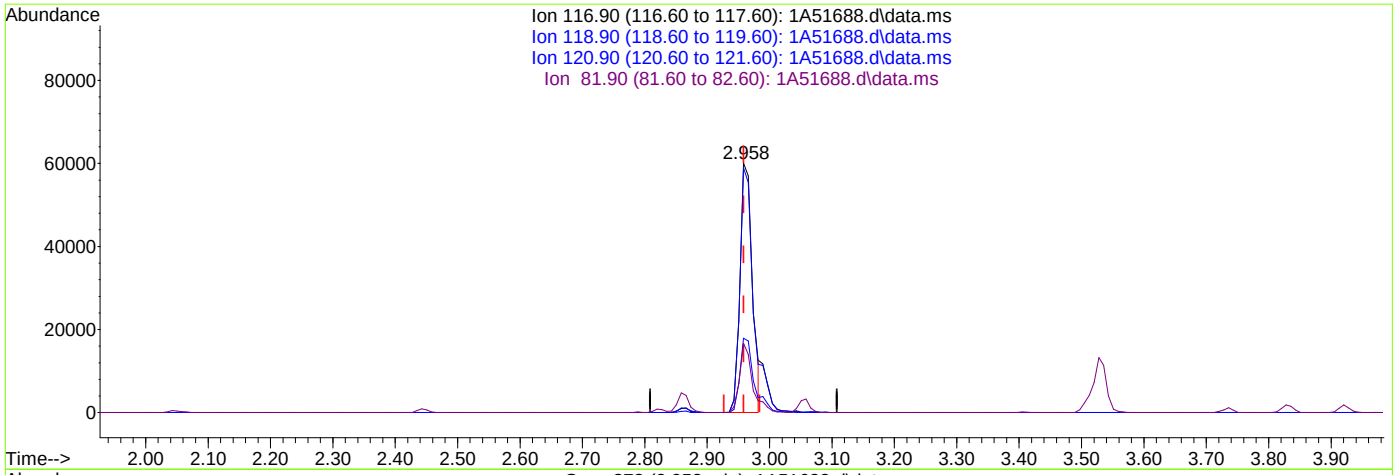
response 93055

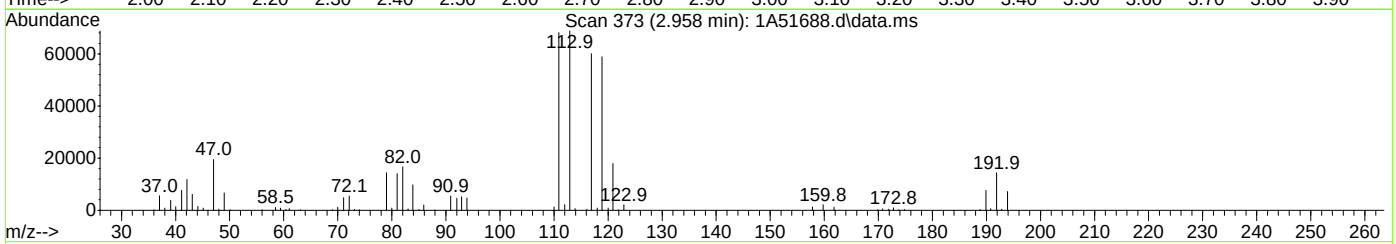
Ion	Exp%	Act%
116.90	100	100
118.90	94.50	97.99
120.90	31.10	29.78
81.90	25.40	27.73

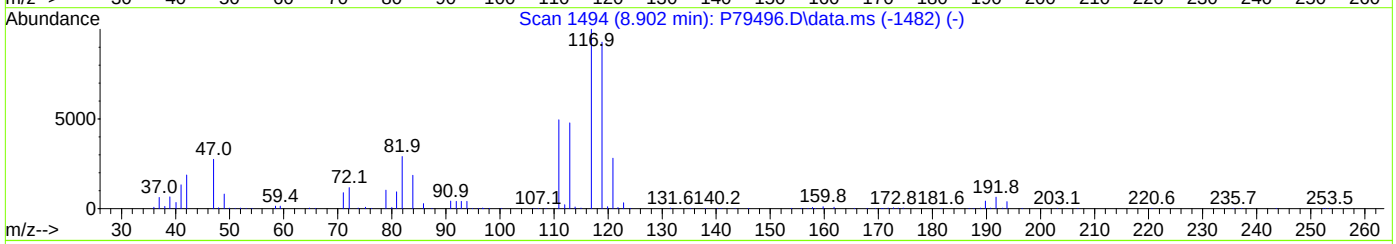
Quantitation Report (Qedit)

Data Path : X:\Orlando VOA\celinec\December 2023\12-27-2023\V1A2028\V1A2028\
Data File : 1A51688.d
Acq On : 26 Dec 2023 7:02 pm
Operator : lianatr
Sample : ECC1985-5 Inst : MSVOA17
Misc : MS55614,V1A2028,,,,,
ALS Vial : 29 Sample Multiplier: 1

Quant Time: Dec 27 00:18:29 2023
Quant Method : X:\Orlando VOA\celinec\December 2023\12-27-2023\V1A2028\METHOD\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration







TIC: 1A51688.d\data.ms

(40) Carbon Tetrachloride ( )

2.958min (-0.000) 35.07ug/L m

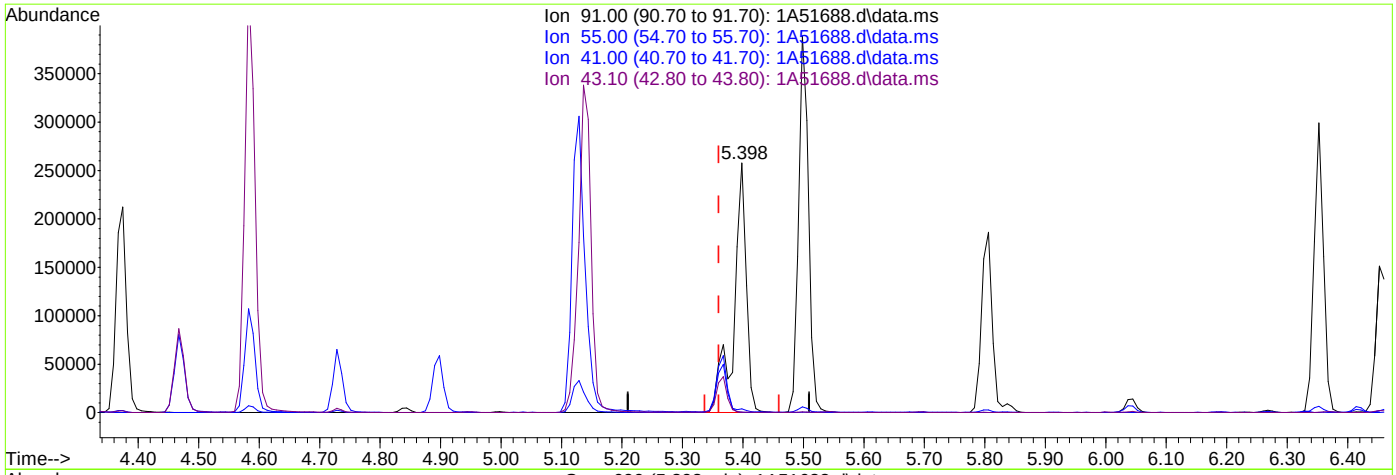
response 82487

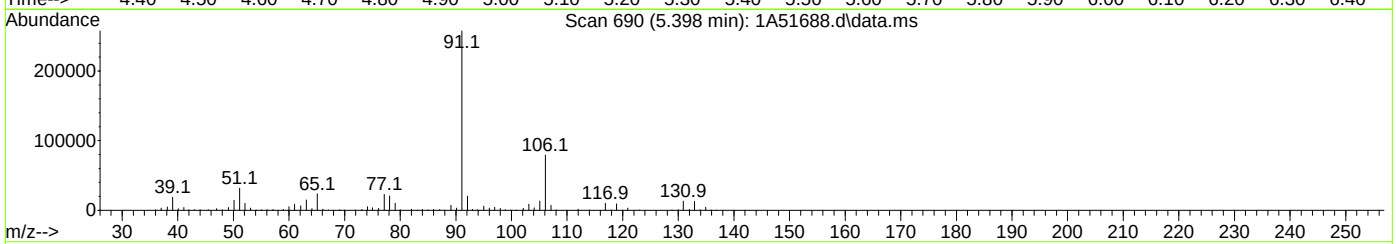
Ion	Exp%	Act%
116.90	100	100
118.90	94.50	97.99
120.90	31.10	29.78
81.90	25.40	27.73

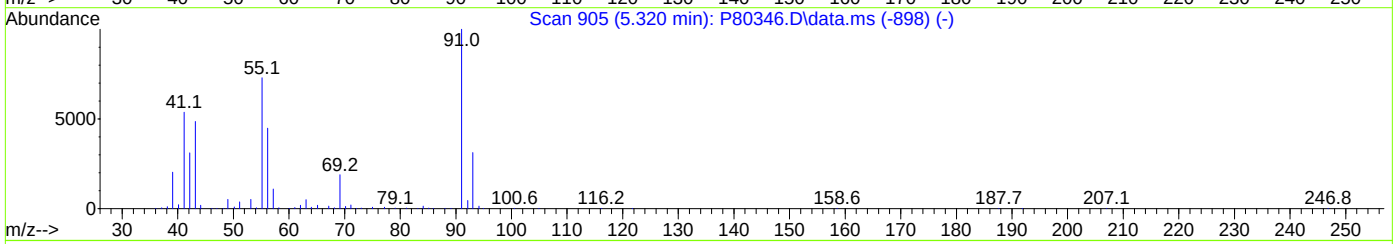
Quantitation Report (Qedit)

Data Path : X:\Orlando VOA\celinec\December 2023\12-27-2023\V1A2028\V1A2028\
Data File : 1A51688.d
Acq On : 26 Dec 2023 7:02 pm
Operator : lianatr
Sample : ECC1985-5 Inst : MSVOA17
Misc : MS55614,V1A2028,,,,,
ALS Vial : 29 Sample Multiplier: 1

Quant Time: Dec 27 00:18:29 2023
Quant Method : X:\Orlando VOA\celinec\December 2023\12-27-2023\V1A2028\METHOD\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration







TIC: 1A51688.d\data.ms

(76) 1-Chlorohexane

5.398min (+0.038) 154.53ug/L

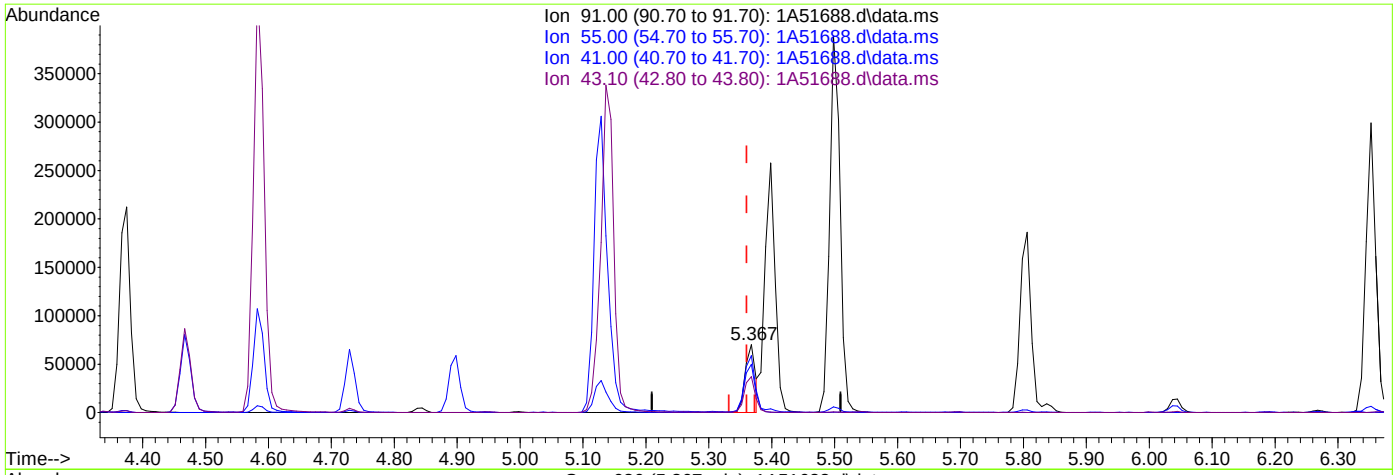
response 370517

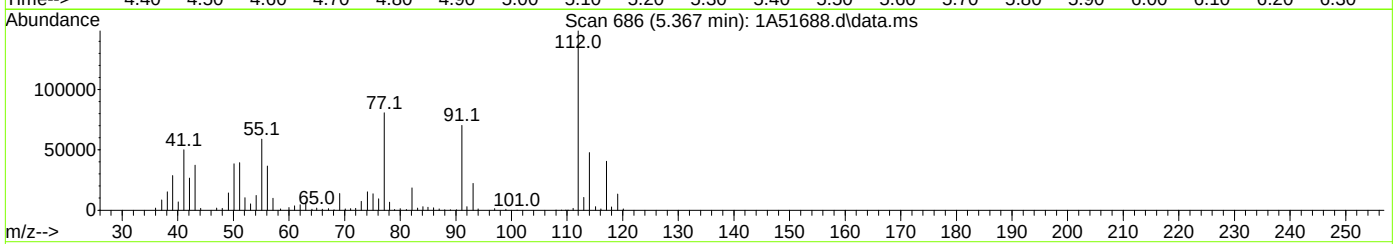
Ion	Exp%	Act%
91.00	100	100
55.00	74.60	0.19#
41.00	53.90	1.30#
43.10	42.90	0.06#

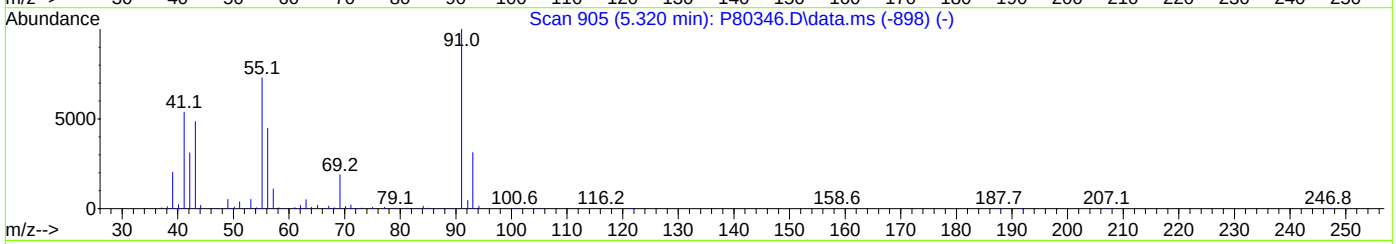
Quantitation Report (Qedit)

Data Path : X:\Orlando VOA\celinec\December 2023\12-27-2023\V1A2028\V1A2028\
Data File : 1A51688.d
Acq On : 26 Dec 2023 7:02 pm
Operator : lianatr
Sample : ECC1985-5 Inst : MSVOA17
Misc : MS55614,V1A2028,,,,,
ALS Vial : 29 Sample Multiplier: 1

Quant Time: Dec 27 00:18:29 2023
Quant Method : X:\Orlando VOA\celinec\December 2023\12-27-2023\V1A2028\METHOD\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration







TIC: 1A51688.d\data.ms

(76) 1-Chlorohexane

5.367min (+0.008) 32.43ug/L m

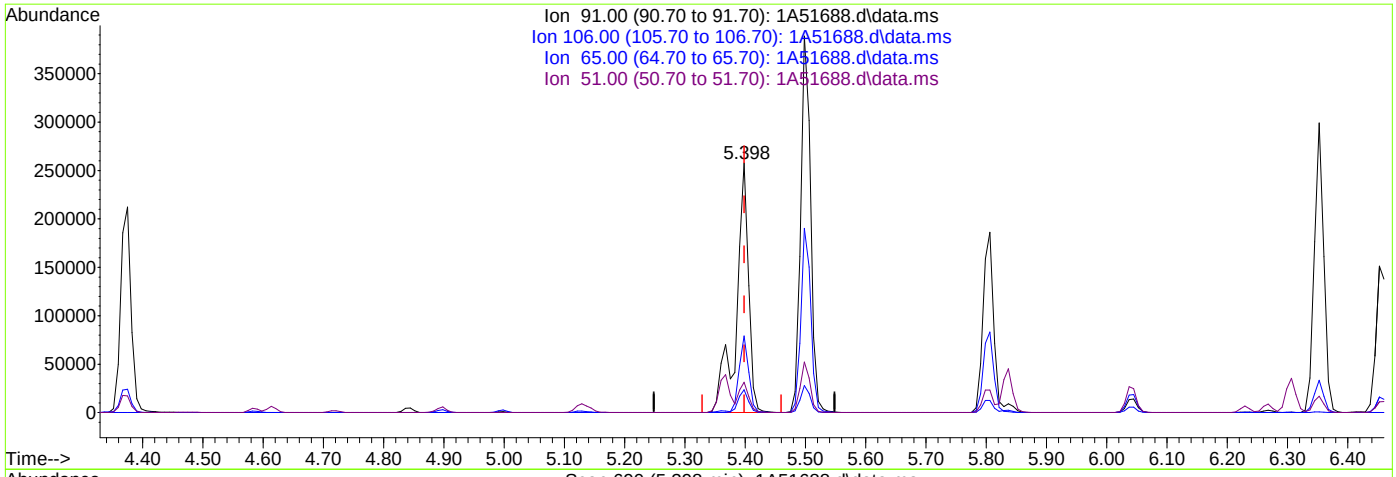
response 77764

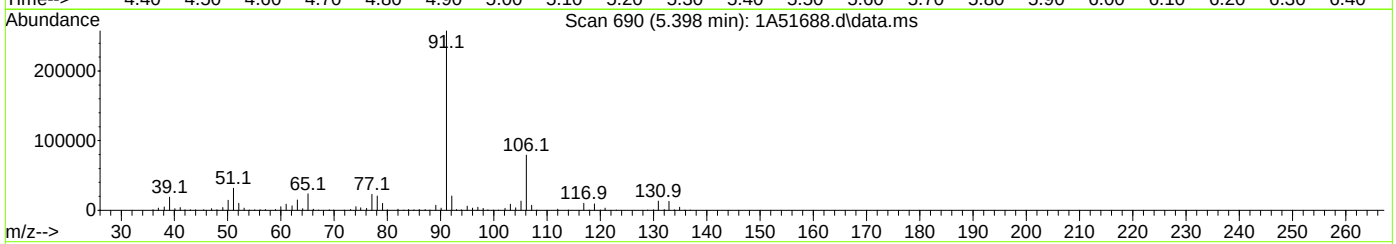
Ion	Exp%	Act%
91.00	100	100
55.00	74.60	84.01
41.00	53.90	71.25
43.10	42.90	53.12

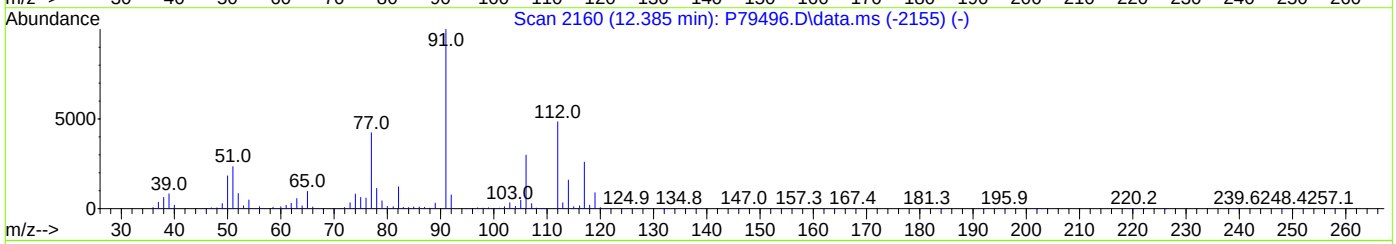
Quantitation Report (Qedit)

Data Path : X:\Orlando VOA\celinec\December 2023\12-27-2023\V1A2028\V1A2028\
Data File : 1A51688.d
Acq On : 26 Dec 2023 7:02 pm
Operator : lianatr
Sample : ECC1985-5 Inst : MSVOA17
Misc : MS55614,V1A2028,,,,,
ALS Vial : 29 Sample Multiplier: 1

Quant Time: Dec 27 00:18:29 2023
Quant Method : X:\Orlando VOA\celinec\December 2023\12-27-2023\V1A2028\METHOD\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration







TIC: 1A51688.d\data.ms

(77) Ethylbenzene

5.398min (-0.000) 49.65ug/L

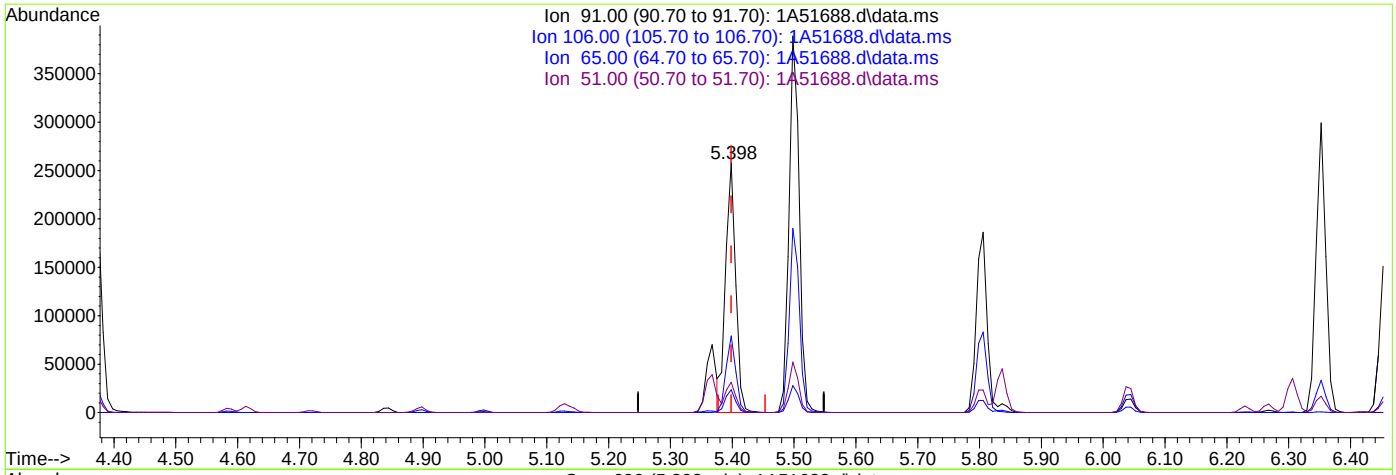
response 370899

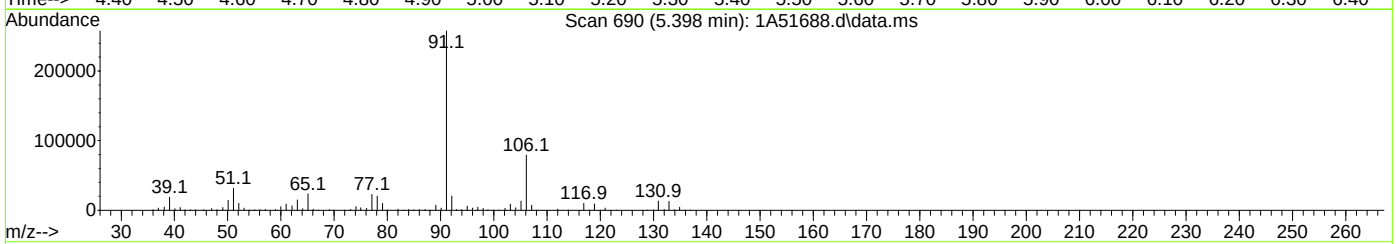
Ion	Exp%	Act%
91.00	100	100
106.00	32.00	30.66
65.00	8.30	9.12
51.00	10.10	12.22

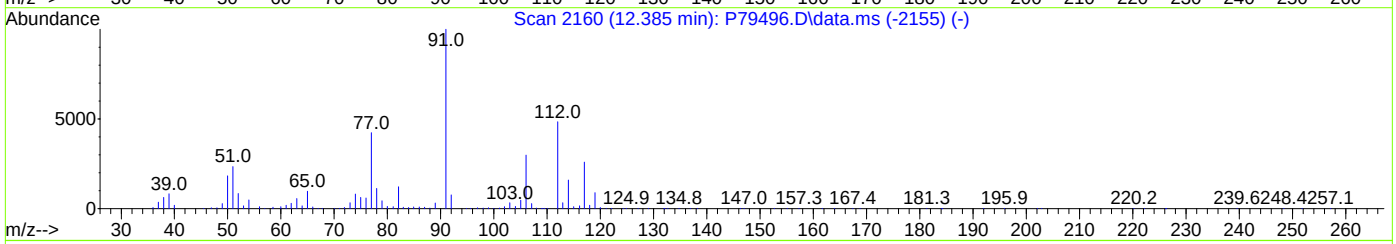
Quantitation Report (Qedit)

Data Path : X:\Orlando VOA\celinec\December 2023\12-27-2023\V1A2028\V1A2028\
Data File : 1A51688.d
Acq On : 26 Dec 2023 7:02 pm
Operator : lianatr
Sample : ECC1985-5 Inst : MSVOA17
Misc : MS55614,V1A2028,,,,,
ALS Vial : 29 Sample Multiplier: 1

Quant Time: Dec 27 00:18:29 2023
Quant Method : X:\Orlando VOA\celinec\December 2023\12-27-2023\V1A2028\METHOD\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration







TIC: 1A51688.d\data.ms

(77) Ethylbenzene

5.398min (-0.000) 39.23ug/L m

response 293075

Ion	Exp%	Act%
91.00	100	100
106.00	32.00	30.66
65.00	8.30	9.12
51.00	10.10	12.22

SGS -ORLANDO **VOA-GCMS ANALYSIS LOG**

Instrument:	MSVOA17-1A
Date:	11/15/2023
Analyst:	Jenifer W
Column Type	RTXVMS
Detector	5975C-MSD
Purge Pressure	1.4 psi
Purge Volume	5mL

Method(s):	VMS8260
Method File:	V1A_11-15-2023.M
Calibration Date:	11/15/2023
Acq. Method:	8260_NITROGEN40.M
EM Voltage:	1624V
Run ID:	**V1A1985**

revised 12/08/23 KKW

BFB:	VS3507
ICAL/CC:	VS3523, VS3537, VS3524
VS3538, VS3525, VS3518,VS3526,,	
ICV/BS:	VS3547, VS3534, VS3527
VS3528, VS3536, VS3535,	
ISTD/Surr.:	VS3507

pH Paper Lot#:	230320A/206722
KI Paper Lot#:	14-860 05/09/2022
AFA Lot#:	VS3511
Data processed by:	Jenfier W
Sample ID Ver. by:	Jenifer W.
Date Verified:	11/15/2023

Data File	Sample ID	Dilution Factor	Vial #	Matrix	A.S. Pos.	Work Group	pH	CI? (Y/N)	RR	Comments and Manually Integrated Peaks (Peak # and Rational)
1A50649	BFB	-	-	Water	1	-	-	-	-	Autofind Tune Passed
1A50651	IC1985-1	-	-	Water	2	-	-	-	-	1uL→100mL (OP)#40,76,77 (MP)#6,7,10,13,15,34,38,55,59,70,83,87,93-95,99,104,106,108,109,11
1A50653	IC1985-8	-	-	Water	2	-	-	-	-	uL→100mL (OP)#40 (PBL)#76 (MP)#6,15,38,59,87,94,95,106,108,109
1A50655	IC1985-2	-	-	Water	3	-	-	-	-	5uL→100mL (PBL)#10, (OP)#40,76,77
1A50657	IC1985-3	-	-	Water	4	-	-	-	-	10uL→100mL (OP)#40,76,77
1A50659	IC1985-4	-	-	Water	5	-	-	-	-	25uL→100mL (OP)#40,76,77
1A50661	ICC1985-5	-	-	Water	6	-	-	-	-	40uL→100mL (OP)#40,76,77
1A50663	IC1985-6	-	-	Water	7	-	-	-	-	70uL→100mL (PBL)#10, (OP)#40,76,77
1A50665	IC1985-7	-	-	Water	8	-	-	-	-	100uL→100mL (PBL)#10, (OP)#40,76,77
1A50667	rinse	-	-	Water	9	-	-	-	-	
1A50669	ICV1985-5	-	-	Water	10	-	-	-	-	40uL→100mL (OP)#40 (PBL)#10,76

Matrix: Designate "W" for Water "S" for soil, "O" for Oil, "Liq" for Non-aquous Liquid, and "TCLP" or "SPLP" for Leachate
Manual Integration Rational SOP QA029: MP Missed Peak, OP Overlapping Peak, SP Split Peak, PDB Poorly Defined Baseline, BR Baseline Ripple, PII Poor Instrument

SGS -ORLANDO

VOA-GCMS ANALYSIS LOG

Instrument:	MSVOA17-1A
Date:	12/19/2023
Analyst:	Jenifer W
Column Type	RTXVMS
Detector	5975C-MSD
Purge Pressure	1.4 psi
Purge Volume	5mL

Method(s):	VMS8260
Method File:	V1A_11-15-2023.M
Calibration Date:	11/15/2023
Acq. Method:	8260_NITROGEN40.M
EM Voltage:	1718V
Run ID:	**V1A2022**

BFB:	VS3617
ICAL/CC:	VS3590, VS3591, VS3626
VS3628, VS3627, VS3618,VS3635,	
ICV/BS:	VS3612, VS3607, VS3637
VS3606, VS3605, VS3636,	
ISTD/Surr.:	VS3617

pH Paper Lot#:	230320A/2367
KI Paper Lot#:	14-860 05/09/2
AFA Lot#:	VS3511
Data processed by:	Jenifer W / C
Sample ID Ver. by:	Jenifer
Date Verified:	12/19/2023

Run Sequence: V1A2022

Data File	Sample ID	Dilution Factor	Vial #	Matrix	A.S. Pos.	Work Group	pH	CI? (Y/N)	RR	Comments and Manually Integrated Peaks (Peak # and Rational)
1A51510	BFB	-	-	Water	1	-	-	-	-	Autofind Tune Passed✓
1A51511	CC1985-5	-	-	Water	2	-	-	-	-	20uL→50mL (OP)#40,76,77 ✓
1A51512	BS	-	-	Water	3	-	-	-	-	12.5uL→50mL (OP)#40,76,77 ✓
1A51513	rinse	-	-	Water	4	-	-	-	-	
1A51514	MB	-	-	Water	5	-	-	-	-	AFA, ND ✓
1A51515	CC1985-1	-	-	Water	6	-	-	-	-	1uL→100mL ✓
1A51516	FC11791-1	1x	1	Water	7	MS55574	1	N	-	✓
1A51517	FC12009-21	1x	1	Water	8	MS55574	1	N	-	bubble >6mm ✓
1A51518	FC12031-9	1x	1	Water	9	MS55574	1	N	-	bubble >6mm ✓
1A51519	FC11990-5	1x	1	Water	10	MS55574	1	N	-	✓
1A51520	FC11942-3	1x	5	Water	11	MS55574	7	N	-	CE and MTBE only ✓
1A51521	FC12008-17	1x	2	Water	12	MS55574	1	N	-	CE only ✓
1A51522	FC11791-2	1x	1	Water	13	MS55574	1	N	-	✓
1A51523	FC11791-3	1x	1	Water	14	MS55574	1	N	-	✓
1A51524	FC11791-4	1x	1	Water	15	MS55574	1	N	-	#100(MP) ✓
1A51525	**FC11791-6**	1x	1	Water	16	MS55574	1	N	**10x**	#100(MP); **EB OR**
1A51526	FC11791-7	1x	1	Water	17	MS55574	1	N	-	✓
1A51527	FC11990-1	1x	1	Water	18	MS55574	1	N	-	✓
1A51528	FC11990-2	1x	1	Water	19	MS55574	1	N	-	✓
1A51529	FC11990-3	1x	1	Water	20	MS55574	1	N	-	✓
1A51530	FC11990-4	1x	1	Water	21	MS55574	1	N	-	✓
1A51531	**FC12031-2**	1x	1	Water	22	MS55574	1	N	5x	AFA; **VC OR**
1A51532	FC12031-3	1x	1	Water	23	MS55574	1	N	-	AFA ✓
1A51533	FC12031-5 2.5X	2.5x	1	Water	24	MS55574	1	N	-	20mL→50mL ✓
1A51534	FC12031-6	1x	1	Water	25	MS55574	1	N	-	✓
1A51535	FC12031-7	1x	1	Water	26	MS55574	1	N	-	✓
1A51536	FC11791-1MS	5x	2	Water	27	MS55574	1	N	-	20mL→100mL spike 25mL→100mL (OP)#40,76,77 ✓
1A51537	FC11791-1MSD	5x	2	Water	28	MS55574	1	-	-	20mL→100mL spike 25mL→100mL (OP)#40,76,77 ✓
1A51538	ECC1985-5	-	-	Water	29	-	-	-	-	20uL→50mL (OP)#40,76,77 ✓

Matrix: Designate "W" for Water "S" for soil, "O" for Oil, "Liq" for Non-aquous Liquid, and "TCLP" or "SPLP" for Leachate
Manual Integration Rational SOP QA029: MP Missed Peak, OP Overlapping Peak, SP Split Peak, PDB Poorly Defined Baseline, BR Baseline Ripple, PII Poor Instrument

SGS -ORLANDO **VOA-GCMS ANALYSIS LOG**

Instrument:	MSVOA17-1A
Date:	12/26/2023
Analyst:	Liana T
Column Type	RTXVMS
Detector	5975C-MSD
Purge Pressure	1.4 psi
Purge Volume	5mL

Method(s):	VMS8260
Method File:	V1A_11-15-2023.M
Calibration Date:	11/15/2023
Acq. Method:	8260_NITROGEN40.M
EM Voltage:	1718V
Run ID:	**V1A2028**

BFB:	VS3617
ICAL/CC:	VS3590, VS3591, VS3652
VS3628, VS3627, VS3653,VS3650,,	
ICV/BS:	VS3612, VS3607, VS3637
VS3642, VS3643, VS3651,	
ISTD/Surr.:	VS3617

pH Paper Lot#:	230320A/206722
KI Paper Lot#:	14-860 05/09/2022
AFA Lot#:	VS3511
Data processed by:	Liana T / Celine C.
Sample ID Ver. by:	Liana T
Date Verified:	12/26/2023

Data File	Sample ID	Dilution Factor	Vial #	Matrix	A.S. Pos.	Work Group	pH	CI? (Y/N)	RR	Comments and Manually Integrated Peaks (Peak # and Rational)
1A51660	BFB	-	-	Water	1	-	-	-	-	Autofind Tune Passed✓
1A51661	CC1985-5	-	-	Water	2	-	-	-	-	40uL→100mL (OP)#40,76,77 ✓
1A51662	BS	-	-	Water	3	-	-	-	-	25uL→100mL (OP)#40,76,77 ✓
1A51663	rinse	-	-	Water	4	-	-	-	-	-
1A51664	MB	-	-	Water	5	-	-	-	-	AFA, ND ✓
1A51665	CC1985-1	-	-	Water	6	-	-	-	-	1uL→100mL ✓
1A51666	FC12194-1	-	1	Water	7	MS55614	1	N	-	ND ✓
1A51667	FC12194-2	-	1	Water	8	MS55614	1	N	-	ND ✓
1A51668	FC12194-3	-	1	Water	9	MS55614	1	N	-	ND ✓
1A51669	FC12194-4	-	1	Water	10	MS55614	1	N	-	ND ✓
1A51670	FC12194-5	-	1	Water	11	MS55614	1	N	-	ND ✓
1A51671	FC12194-6	-	1	Water	12	MS55614	1	N	-	✓
1A51672	FC12194-7	-	1	Water	13	MS55614	1	N	-	✓
1A51673	FC12194-8	-	1	Water	14	MS55614	1	N	-	ND ✓
1A51674	FC12194-9	-	1	Water	15	MS55614	1	N	-	✓
1A51675	FC12194-10	-	1	Water	16	MS55614	1	N	-	✓
1A51676	FC12194-11	-	1	Water	17	MS55614	1	N	-	✓
1A51677	FC12194-12	-	1	Water	18	MS55614	1	N	-	✓
1A51678	FC12194-13	-	1	Water	19	MS55614	1	N	-	ND ✓
1A51679	FC12194-14	-	1	Water	20	MS55614	1	N	-	ND ✓
1A51680	FC12194-15	-	1	Water	21	MS55614	1	N	-	ND ✓
1A51681	FC12031-2	5X	2	Water	22	MS55614	1	N	-	10mL(-)50mL Ecombine ✓
1A51682	FC12071-9	-	3	Water	23	MS55614	1	N	-	2-Butanone only ✓
1A51683	FC12099-12	5X	3	Water	24	MS55614	1	N	-	10mL(-)50mL Ecombine ✓
1A51684	FC12099-13	5X	3	Water	25	MS55614	1	N	-	10mL(-)50mL Ecombine ✓
1A51685	FC12142-3	-	3	Water	26	MS55614	1	N	-	✓
1A51686	FC12194-13MS	-	2	Water	27	MS55614	1	N	-	10uL→40mL (OP)#40,76,77 ✓
1A51687	FC12194-13MSD	-	3	Water	28	MS55614	1	N	-	10uL→40mL (OP)#40,76,77 ✓
1A51688	ECC1985-5	-	-	Water	29	-	-	-	-	40uL→100mL (OP)#40,76,77 ✓

Matrix: Designate "W" for Water "S" for soil, "O" for Oil, "Liq" for Non-aquous Liquid, and "TCLP" or "SPLP" for Leachate
Manual Integration Rational SOP QA029: MP Missed Peak, OP Overlapping Peak, SP Split Peak, PDB Poorly Defined Baseline, BR Baseline Ripple, PII Poor Instrument

GC/LC Semi-volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Surrogate Recovery Summaries
- GC Surrogate Retention Time Summaries
- Initial and Continuing Calibration Summaries
- Run Sequence Reports

Method Blank Summary

Job Number: FC12031
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP715-MB	JR00946575.D	1	12/19/23	EG	12/19/23	OP715	GJR792

The QC reported here applies to the following samples: **Method:** FLORIDA-PRO 2018

FC12031-4, FC12031-6, FC12031-8

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (C8-C40)	ND	0.27	0.14	mg/l	

CAS No.	Surrogate Recoveries		Limits
84-15-1	o-Terphenyl	98%	66-139%
7194-86-7	Nonatriacontane	97%	40-129%

Blank Spike Summary

Job Number: FC12031
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP715-BS	JR00946576.D	1	12/19/23	EG	12/19/23	OP715	GJR792

The QC reported here applies to the following samples: **Method:** FLORIDA-PRO 2018

FC12031-4, FC12031-6, FC12031-8

CAS No.	Compound	Spike mg/l	BSP mg/l	BSP %	Limits
	TPH (C8-C40)	2.72	2.00	74	66-119

CAS No.	Surrogate Recoveries	BSP	Limits
84-15-1	o-Terphenyl	75%	66-139%
7194-86-7	Nonatriacontane	76%	40-129%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: FC12031
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP715-MS	JR00946590.D	1	12/20/23	EG	12/19/23	OP715	GJR792
OP715-MSD	JR00946591.D	1	12/20/23	EG	12/19/23	OP715	GJR792
FC11891-1	JR00946577.D	1	12/19/23	EG	12/19/23	OP715	GJR792

The QC reported here applies to the following samples: **Method:** FLORIDA-PRO 2018

FC12031-4, FC12031-6, FC12031-8

CAS No.	Compound	FC11891-1 mg/l	Q	Spike mg/l	MS mg/l	MS %	Spike mg/l	MSD mg/l	MSD %	RPD	Limits Rec/RPD
	TPH (C8-C40)	3.86		5.67	10.8	122*	5.67	11.0	126*	2	66-119/20

CAS No.	Surrogate Recoveries	MS	MSD	FC11891-1	Limits
84-15-1	o-Terphenyl	96%	97%	81%	66-139%
7194-86-7	Nonatriacontane	98%	101%	76%	40-129%

* = Outside of Control Limits.

Surrogate Recovery Summary

Job Number: FC12031
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Method: FLORIDA-PRO 2018 **Matrix:** AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1 [a]	S2 [a]
FC12031-4	JR00946587.D	102	93
FC12031-6	JR00946588.D	92	83
FC12031-8	JR00946589.D	97	91
OP715-BS	JR00946576.D	75	76
OP715-MB	JR00946575.D	98	97
OP715-MS	JR00946590.D	96	98
OP715-MSD	JR00946591.D	97	101

Surrogate Compounds	Recovery Limits
S1 = o-Terphenyl	66-139%
S2 = Nonatriacontane	40-129%

(a) Recovery from GC signal #1

GC Surrogate Retention Time Summary

Job Number: FC12031
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Check Std:	GJR792-CC790	**Injection Date:**	12/19/23
Lab File ID:	JR00946572.D	**Injection Time:**	17:59
Instrument ID:	GCJR	**Method:**	FLORIDA-PRO 2018

	S1 [a] RT	S2 [a] RT
Check Std	6.68	11.73

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	S1 [a] RT	S2 [a] RT
OP715-MB	JR00946575.D	12/19/23	19:17	6.67	11.74
OP715-BS	JR00946576.D	12/19/23	19:37	6.67	11.73
FC11891-1	JR00946577.D	12/19/23	19:57	6.67	11.74
ZZZZZZ	JR00946578.D	12/19/23	20:16	6.67	11.72
ZZZZZZ	JR00946579.D	12/19/23	20:36	6.66	11.71
ZZZZZZ	JR00946580.D	12/19/23	20:56	6.67	11.73
ZZZZZZ	JR00946581.D	12/19/23	21:15	6.67	11.72
ZZZZZZ	JR00946582.D	12/19/23	21:35	6.66	11.71
ZZZZZZ	JR00946583.D	12/19/23	21:55	6.67	11.73
ZZZZZZ	JR00946584.D	12/19/23	22:15	6.66	11.72

Surrogate Compounds

S1 = o-Terphenyl
S2 = Nonatriacontane

(a) Retention time from GC signal #1

GC Surrogate Retention Time Summary

Job Number: FC12031
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Check Std:	GJR792-CC790	**Injection Date:**	12/19/23
Lab File ID:	JR00946585.D	**Injection Time:**	22:34
Instrument ID:	GCJR	**Method:**	FLORIDA-PRO 2018

	S1 [a] RT	S2 [a] RT
Check Std	6.67	11.72

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	S1 [a] RT	S2 [a] RT
FC12031-4	JR00946587.D	12/19/23	23:14	6.67	11.73
FC12031-6	JR00946588.D	12/19/23	23:33	6.66	11.72
FC12031-8	JR00946589.D	12/19/23	23:53	6.66	11.73
OP715-MS	JR00946590.D	12/20/23	00:13	6.67	11.74
OP715-MSD	JR00946591.D	12/20/23	00:32	6.66	11.73
GJR792-ECC790	JR00946592.D	12/20/23	00:52	6.67	11.73

Surrogate Compounds

S1 = o-Terphenyl
S2 = Nonatriacontane

(a) Retention time from GC signal #1

Initial Calibration Summary

Job Number: FC12031
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample: GJR790-ICC790
Lab FileID: JR00946531.D

Response Factor Report FID 6

Method : C:\msdchem\1\met...\FLPRO_R121923.M (ChemStation Integrator)
Title : TPH by FL_PRO
Last Update : Tue Dec 19 10:18:14 2023
Response via : Initial Calibration

Calibration Files
L! =JR00946529.d L2 =JR00946530.d L3 =JR00946531.d L4 =JR00946532.d
L5 =JR00946533.d L6 =JR00946534.d

	Compound	L!	L2	L3	L4	L5	L6	Avg	%RSD
1) S	O-TERPHENYL	3.022	3.276	3.499	3.387	3.365	3.296	3.308 E6	4.85
2)	TPH (C10-C28)							0.000	-1.00
3) s	Nonatriacontane	2.743	2.712	2.919	2.760	2.827	2.957	2.820 E6	3.53
4) H	TPH (C8-C40)	3.873	3.494	3.400	3.139	3.100	3.151	3.359 E6	8.85

(#) = Out of Range

FLPRO_R121923.M Tue Dec 19 10:23:09 2023

8.6.1

8

Initial Calibration Verification

Job Number: FC12031
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample: GJR790-ICV790
Lab FileID: JR00946535.D

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\data\GJ...121823.S\JR00946535.d Vial: 8
Acq On : 18 Dec 2023 9:15 pm Operator: ering2
Sample : icv790-3 Inst : FID 6
Misc : op684,GJR790,250,,,1,25,water Multiplr: 1.00
IntFile : autoint1.e

Method : C:\msdchem\1\met...\FLPRO_R121923.M (ChemStation Integrator)
Title : TPH by FL_PRO
Last Update : Tue Dec 19 10:18:14 2023
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

	Compound	Amount	Calc.	%Drift	Area%	Dev(min)	RT Window
1 S	O-TERPHENYL		----------NA----------				
2	TPH (C10-C28)		----------NA----------				
3 s	Nonatriacontane		----------NA----------				
4 H	TPH (C8-C40)	340.000	330.772	2.7	96	0.00	2.67-12.36

(#) = Out of Range SPCC's out = 0 CCC's out = 0
JR00946531.d FLPRO_R121923.M Tue Dec 19 10:22:52 2023

8.6.2

8

Continuing Calibration Summary

Job Number: FC12031
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample: GJR792-CC790
Lab FileID: JR00946572.D

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\data\GJ...121923.S\JR00946572.d Vial: 3
Acq On : 19 Dec 2023 5:59 pm Operator: ering2
Sample : cc790-2 Inst : FID 6
Misc : op715,GJR792,250,,,1,10,water Multiplr: 1.00
IntFile : autoint1.e

Method : C:\msdchem\1\met...\FLPRO_R121923.M (ChemStation Integrator)
Title : TPH by FL_PRO
Last Update : Tue Dec 19 10:18:14 2023
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

	Compound	Amount	Calc.	%Drift	Area%	Dev(min)	RT Window
1 S	O-TERPHENYL	10.000	10.292	-2.9	104	0.00	6.17- 7.13
2	TPH (C10-C28)		----------NA----------				
3 s	Nonatriacontane	12.000	13.259	-10.5	115	-0.02	11.14-12.64
4 H	TPH (C8-C40)	170.000	196.996	-15.9	111	0.00	2.67-12.36

(#) = Out of Range SPCC's out = 0 CCC's out = 0
JR00946530.d FLPRO_R121923.M Wed Dec 20 10:56:28 2023

Continuing Calibration Summary

Job Number: FC12031
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample: GJR792-CC790
Lab FileID: JR00946573.D

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\data\GJ...121923.S\JR00946573.d Vial: 4
Acq On : 19 Dec 2023 6:18 pm Operator: ering2
Sample : cc790-3 Inst : FID 6
Misc : op715,GJR792,250,,,1,5,water Multiplr: 1.00
IntFile : autoint1.e

Method : C:\msdchem\1\met...\FLPRO_R121923.M (ChemStation Integrator)
Title : TPH by FL_PRO
Last Update : Tue Dec 19 10:18:14 2023
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

	Compound	Amount	Calc.	%Drift	Area%	Dev(min)	RT Window
1 S	O-TERPHENYL	20.000	21.210	-6.1	100	0.00	6.17- 7.13
2	TPH (C10-C28)			----------NA----------			
3 s	Nonatriacontane	24.000	27.284	-13.7	110	0.02	11.14-12.64
4 H	TPH (C8-C40)	340.000	361.824	-6.4	105	0.00	2.67-12.36

(#) = Out of Range SPCC's out = 0 CCC's out = 0
JR00946531.d FLPRO_R121923.M Wed Dec 20 10:57:15 2023

Continuing Calibration Summary

Job Number: FC12031
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample: GJR792-CC790
Lab FileID: JR00946585.D

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\data\GJ...121923.S\JR00946585.d Vial: 4
Acq On : 19 Dec 2023 10:34 pm Operator: ering2
Sample : cc790-3 Inst : FID 6
Misc : op715,GJR792,250,,,1,5,water Multiplr: 1.00
IntFile : autoint1.e

Method : C:\msdchem\1\met...\FLPRO_R121923.M (ChemStation Integrator)
Title : TPH by FL_PRO
Last Update : Tue Dec 19 10:18:14 2023
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

	Compound	Amount	Calc.	%Drift	Area%	Dev(min)	RT Window
1 S	O-TERPHENYL	20.000	21.531	-7.7	102	-0.02	6.17- 7.13
2	TPH (C10-C28)			----------NA----------			
3 s	Nonatriacontane	24.000	26.881	-12.0	108	-0.03	11.14-12.64
4 H	TPH (C8-C40)	340.000	363.187	-6.8	106	0.00	2.67-12.36

(#) = Out of Range SPCC's out = 0 CCC's out = 0
JR00946531.d FLPRO_R121923.M Wed Dec 20 10:57:18 2023

Continuing Calibration Summary

Job Number: FC12031
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample: GJR792-ECC790
Lab FileID: JR00946592.D

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\data\GJ...121923.S\JR00946592.d Vial: 4
Acq On : 20 Dec 2023 12:52 am Operator: ering2
Sample : ecc790-3 Inst : FID 6
Misc : op715,GJR792,250,,,1,5,water Multiplr: 1.00
IntFile : autoint1.e

Method : C:\msdchem\1\met...\FLPRO_R121923.M (ChemStation Integrator)
Title : TPH by FL_PRO
Last Update : Tue Dec 19 10:18:14 2023
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

	Compound	Amount	Calc.	%Drift	Area%	Dev(min)	RT Window
1 S	O-TERPHENYL	20.000	21.913	-9.6	104	-0.01	6.17- 7.13
2	TPH (C10-C28)			----------NA----------			
3 s	Nonatriacontane	24.000	27.401	-14.2	110	-0.02	11.14-12.64
4 H	TPH (C8-C40)	340.000	368.848	-8.5	107	0.00	2.67-12.36

(#) = Out of Range SPCC's out = 0 CCC's out = 0
JR00946531.d FLPRO_R121923.M Wed Dec 20 10:57:21 2023

8.9.6

Run Sequence Report

Job Number: FC12031
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Run ID: GJR790 **Method:** FLORIDA-PRO 2018 **Instrument ID:** GCJR

Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
GJR790-IC790	JR00946529.D	12/18/23 19:16	n/a	Initial cal 1
GJR790-IC790	JR00946530.D	12/18/23 19:36	n/a	Initial cal 2
GJR790-ICC790	JR00946531.D	12/18/23 19:56	n/a	Initial cal 3
GJR790-IC790	JR00946532.D	12/18/23 20:16	n/a	Initial cal 4
GJR790-IC790	JR00946533.D	12/18/23 20:36	n/a	Initial cal 5
GJR790-IC790	JR00946534.D	12/18/23 20:55	n/a	Initial cal 6
GJR790-ICV790	JR00946535.D	12/18/23 21:15	n/a	Initial cal verification 3

Run Sequence Report

Job Number: FC12031
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Run ID: GJR792 **Method:** FLORIDA-PRO 2018 **Instrument ID:** GCJR

Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
GJR792-CC790	JR00946572.D	12/19/23 17:59	n/a	Continuing cal 2
GJR792-CC790	JR00946573.D	12/19/23 18:18	n/a	Continuing cal 3
OP715-MB	JR00946575.D	12/19/23 19:17	OP715	Method Blank
OP715-BS	JR00946576.D	12/19/23 19:37	OP715	Blank Spike
FC11891-1	JR00946577.D	12/19/23 19:57	OP715	(used for QC only; not part of job FC12031)
ZZZZZZ	JR00946578.D	12/19/23 20:16	OP715	(unrelated sample)
ZZZZZZ	JR00946579.D	12/19/23 20:36	OP715	(unrelated sample)
ZZZZZZ	JR00946580.D	12/19/23 20:56	OP715	(unrelated sample)
ZZZZZZ	JR00946581.D	12/19/23 21:15	OP715	(unrelated sample)
ZZZZZZ	JR00946582.D	12/19/23 21:35	OP715	(unrelated sample)
ZZZZZZ	JR00946583.D	12/19/23 21:55	OP715	(unrelated sample)
ZZZZZZ	JR00946584.D	12/19/23 22:15	OP715	(unrelated sample)
GJR792-CC790	JR00946585.D	12/19/23 22:34	n/a	Continuing cal 3
FC12031-4	JR00946587.D	12/19/23 23:14	OP715	CRHE-MW0056-037.5-20231215
FC12031-6	JR00946588.D	12/19/23 23:33	OP715	CRHE-MW0047-023.0-20231215
FC12031-8	JR00946589.D	12/19/23 23:53	OP715	CRHE-MW0044-042.5-20231215
OP715-MS	JR00946590.D	12/20/23 00:13	OP715	Matrix Spike
OP715-MSD	JR00946591.D	12/20/23 00:32	OP715	Matrix Spike Duplicate
GJR792-ECC790	JR00946592.D	12/20/23 00:52	n/a	Ending cal 3
ZZZZZZ	JR00946606.D	12/20/23 20:41	OP732	(unrelated sample)
ZZZZZZ	JR00946620.D	12/21/23 01:17	OP732	(unrelated sample)

GC/LC Semi-volatiles

Raw Data

Manual Integrations APPROVED (compounds with "m" flag)
William Hustedde 12/20/23 11:21

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\GJR792-121923.S\
Data File : JR00946587.d
Signal(s) : FID1B.ch
Acq On : 19 Dec 2023 11:14 pm
Operator : ering2
Sample : fc12031-4 Inst : FID 6
Misc : op715,GJR792,250,,,1,1,water
ALS Vial : 41 Sample Multiplier: 1

Quant Time: Dec 20 10:39:19 2023
Quant Method : C:\msdchem\1\methods\FLPRO_R121923.M
Quant Title : TPH by FL_PRO
QLast Update : Tue Dec 19 10:18:14 2023
Response via : Initial Calibration

Volume Inj. : 1uL
Signal Phase : DB-5
Signal Info : 0.32mm ID

Compound	R.T.	Response	Conc	Units	
System Monitoring Compounds					
1) S O-TERPHENYL	6.667	84608990	25.580	PPM	m
Spiked Amount 50.000	Range 38 - 122	Recovery = 51.16%			
3) s Nonatriacontane	11.732	65251462	23.142	ppm	m
Target Compounds					
2) TPH (C10-C28)	0.000	0	N.D.	PPM	d
4) H TPH (C8-C40)	3.659	3943974506	1173.978	PPM	

(f)=RT Delta > 1/2 Window (m)=manual int.

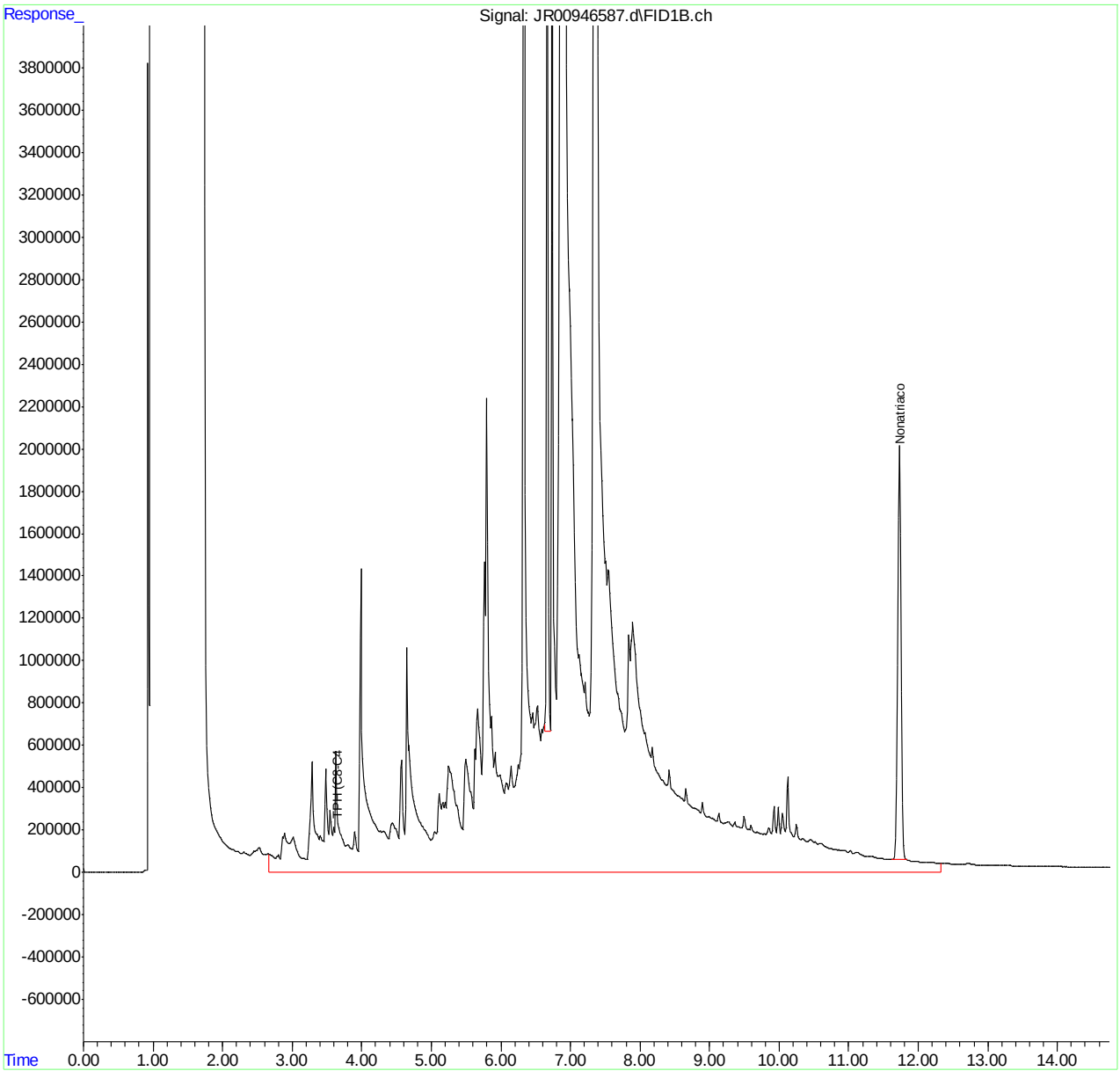
9.1.1
9

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\GJR792-121923.S\
Data File : JR00946587.d
Signal(s) : FID1B.ch
Acq On : 19 Dec 2023 11:14 pm
Operator : ering2
Sample : fc12031-4 Inst : FID 6
Misc : op715,GJR792,250,,,1,1,water
ALS Vial : 41 Sample Multiplier: 1

Quant Time: Dec 20 10:39:19 2023
Quant Method : C:\msdchem\1\methods\FLPRO_R121923.M
Quant Title : TPH by FL_PRO
QLast Update : Tue Dec 19 10:18:14 2023
Response via : Initial Calibration

Volume Inj. : 1uL
Signal Phase : DB-5
Signal Info : 0.32mm ID



Manual Integration Approval Summary

Sample Number: FC12031-4
Lab FileID: JR00946587.D
Injection Time: 12/19/23 23:14
Method: FLORIDA-PRO 2018
Analyst approved: 12/20/23 11:02 Erin Goode
Supervisor approved: 12/20/23 11:21 William Hustedde

Parameter	CAS	Sig#	R.T. (min.)	Reason
o-Terphenyl	84-15-1	1	6.67	Poor instrument integration
Nonatriacontane	7194-86-7	1	11.73	Poor instrument integration

Manual Integrations APPROVED (compounds with "m" flag)
William Hustedde 12/20/23 11:21

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\GJR792-121923.S\
Data File : JR00946588.d
Signal(s) : FID1B.ch
Acq On : 19 Dec 2023 11:33 pm
Operator : ering2
Sample : fc12031-6 Inst : FID 6
Misc : op715,GJR792,240,,,1,1,water
ALS Vial : 42 Sample Multiplier: 1

Quant Time: Dec 20 10:39:36 2023
Quant Method : C:\msdchem\1\methods\FLPRO_R121923.M
Quant Title : TPH by FL_PRO
QLast Update : Tue Dec 19 10:18:14 2023
Response via : Initial Calibration

Volume Inj. : 1uL
Signal Phase : DB-5
Signal Info : 0.32mm ID

Compound	R.T.	Response	Conc	Units	
System Monitoring Compounds					
1) S O-TERPHENYL	6.663	76199096	23.037	PPM	m
Spiked Amount 50.000	Range 38 - 122	Recovery = 46.07%			
3) s Nonatriacontane	11.716	58587875	20.779	ppm	m
Target Compounds					
2) TPH (C10-C28)	0.000	0	N.D.	PPM	d
4) H TPH (C8-C40)	3.659	4508348540	1341.972	PPM	

(f)=RT Delta > 1/2 Window (m)=manual int.

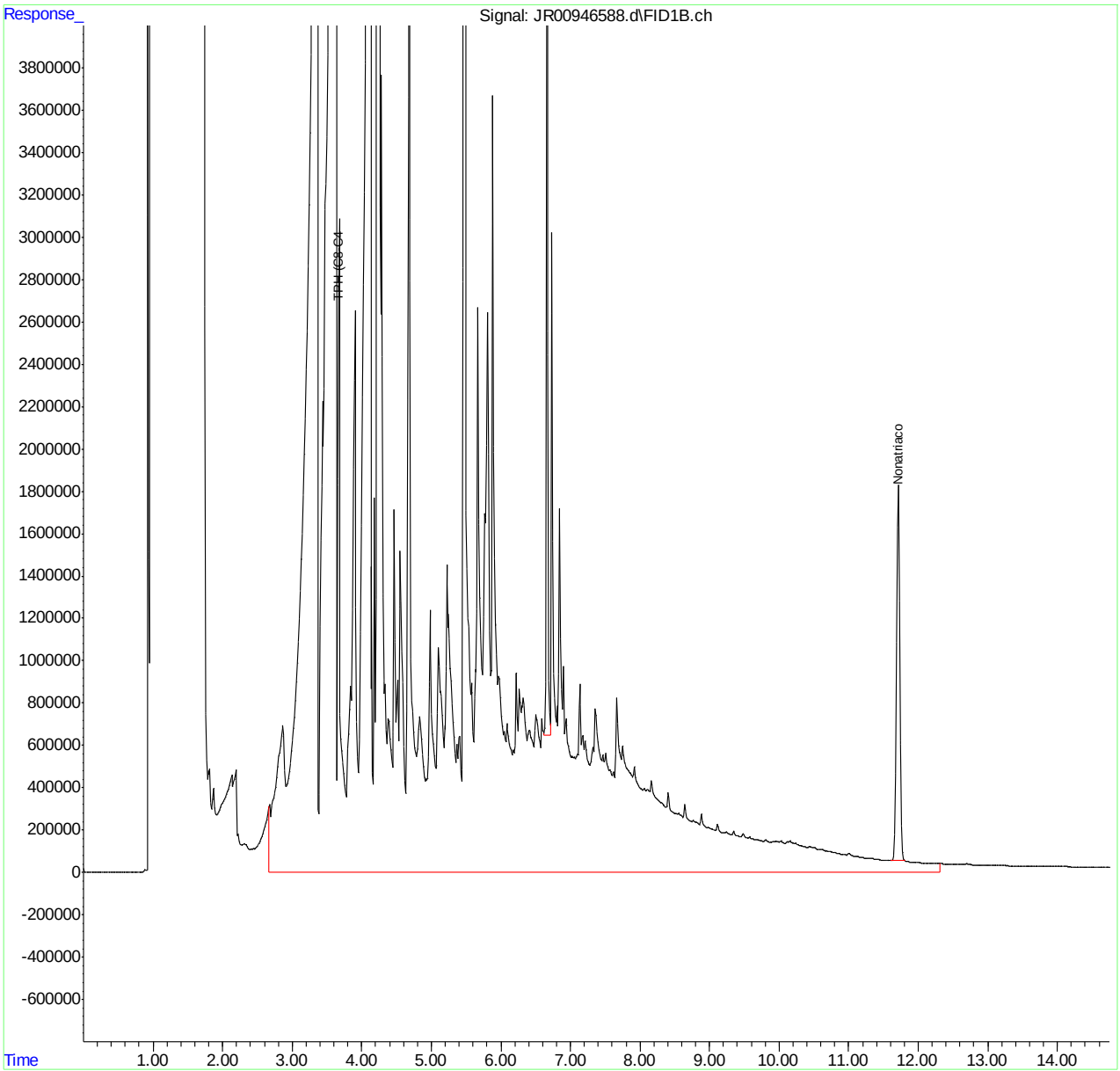
9.1.2
9

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\GJR792-121923.S\
Data File : JR00946588.d
Signal(s) : FID1B.ch
Acq On : 19 Dec 2023 11:33 pm
Operator : ering2
Sample : fc12031-6 Inst : FID 6
Misc : op715,GJR792,240,,,1,1,water
ALS Vial : 42 Sample Multiplier: 1

Quant Time: Dec 20 10:39:36 2023
Quant Method : C:\msdchem\1\methods\FLPRO_R121923.M
Quant Title : TPH by FL_PRO
QLast Update : Tue Dec 19 10:18:14 2023
Response via : Initial Calibration

Volume Inj. : 1uL
Signal Phase : DB-5
Signal Info : 0.32mm ID



Manual Integration Approval Summary

Sample Number: FC12031-6
Lab FileID: JR00946588.D
Injection Time: 12/19/23 23:33
Method: FLORIDA-PRO 2018
Analyst approved: 12/20/23 11:02 Erin Goode
Supervisor approved: 12/20/23 11:21 William Hustedde

Parameter	CAS	Sig#	R.T. (min.)	Reason
o-Terphenyl	84-15-1	1	6.66	Poor instrument integration
Nonatriacontane	7194-86-7	1	11.72	Poor instrument integration

Manual Integrations APPROVED (compounds with "m" flag)
William Hustedde 12/20/23 11:21

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\GJR792-121923.S\
Data File : JR00946589.d
Signal(s) : FID1B.ch
Acq On : 19 Dec 2023 11:53 pm
Operator : ering2
Sample : fc12031-8 Inst : FID 6
Misc : op715,GJR792,240,,,1,1,water
ALS Vial : 43 Sample Multiplier: 1

Quant Time: Dec 20 10:52:40 2023
Quant Method : C:\msdchem\1\methods\FLPRO_R121923.M
Quant Title : TPH by FL_PRO
QLast Update : Tue Dec 19 10:18:14 2023
Response via : Initial Calibration

Volume Inj. : 1uL
Signal Phase : DB-5
Signal Info : 0.32mm ID

Compound	R.T.	Response	Conc	Units	
System Monitoring Compounds					
1) S O-TERPHENYL	6.664	80166896	24.237	PPM	m
Spiked Amount 50.000	Range 38 - 122	Recovery = 48.47%			
3) s Nonatriacontane	11.733	63902063	22.663	ppm	m
Target Compounds					
2) TPH (C10-C28)	0.000	0	N.D.	PPM	d
4) H TPH (C8-C40)	3.659	890212121	264.984	PPM	

(f)=RT Delta > 1/2 Window (m)=manual int.

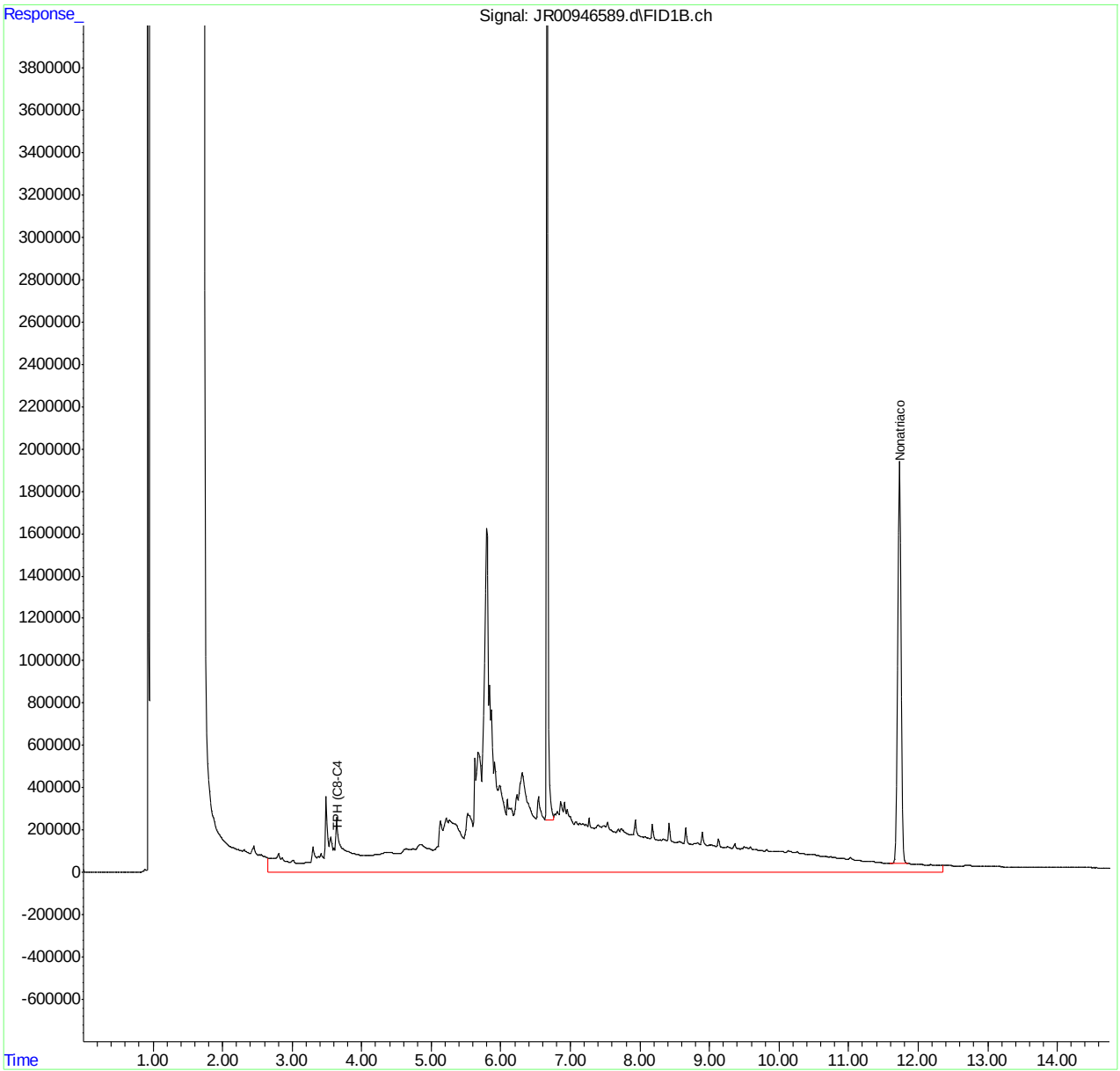
9.1.3
9

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\GJR792-121923.S\
Data File : JR00946589.d
Signal(s) : FID1B.ch
Acq On : 19 Dec 2023 11:53 pm
Operator : ering2
Sample : fc12031-8 Inst : FID 6
Misc : op715,GJR792,240,,,1,1,water
ALS Vial : 43 Sample Multiplier: 1

Quant Time: Dec 20 10:52:40 2023
Quant Method : C:\msdchem\1\methods\FLPRO_R121923.M
Quant Title : TPH by FL_PRO
QLast Update : Tue Dec 19 10:18:14 2023
Response via : Initial Calibration

Volume Inj. : 1uL
Signal Phase : DB-5
Signal Info : 0.32mm ID



Manual Integration Approval Summary

Sample Number: FC12031-8
Lab FileID: JR00946589.D
Injection Time: 12/19/23 23:53
Method: FLORIDA-PRO 2018
Analyst approved: 12/20/23 11:02 Erin Goode
Supervisor approved: 12/20/23 11:21 William Hustedde

Parameter	CAS	Sig#	R.T. (min.)	Reason
o-Terphenyl	84-15-1	1	6.66	Poor instrument integration
Nonatriacontane	7194-86-7	1	11.73	Poor instrument integration

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\GJR792-121923.S\
Data File : JR00946575.d
Signal(s) : FID1B.ch
Acq On : 19 Dec 2023 7:17 pm
Operator : ering2
Sample : op715-mb Inst : FID 6
Misc : op715,GJR792,250,,,1,1,water
ALS Vial : 31 Sample Multiplier: 1

Quant Time: Dec 20 10:30:58 2023
Quant Method : C:\msdchem\1\methods\FLPRO_R121923.M
Quant Title : TPH by FL_PRO
QLast Update : Tue Dec 19 10:18:14 2023
Response via : Initial Calibration

Volume Inj. : 1uL
Signal Phase : DB-5
Signal Info : 0.32mm ID

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
1) S O-TERPHENYL	6.670	80963961	24.478 PPM
Spiked Amount 50.000	Range 38 - 122	Recovery =	48.96%
3) s Nonatriacontane	11.740	68695704	24.363 ppm
Target Compounds			
2) TPH (C10-C28)	0.000	0	N.D. PPM d
4) H TPH (C8-C40)	3.659	90848563	27.042 PPM

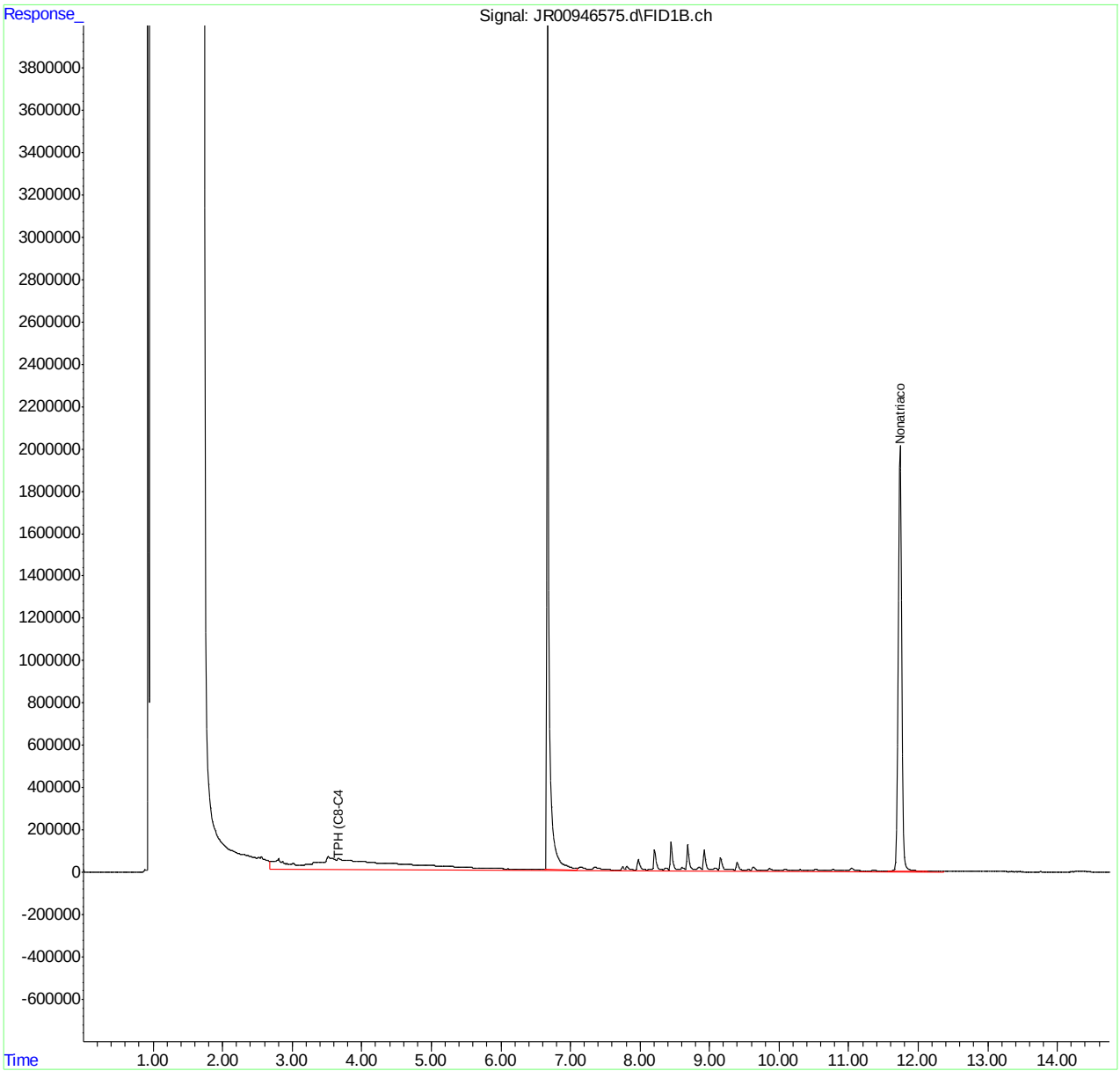
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\GJR792-121923.S\
Data File : JR00946575.d
Signal(s) : FID1B.ch
Acq On : 19 Dec 2023 7:17 pm
Operator : ering2
Sample : op715-mb Inst : FID 6
Misc : op715,GJR792,250,,,1,1,water
ALS Vial : 31 Sample Multiplier: 1

Quant Time: Dec 20 10:30:58 2023
Quant Method : C:\msdchem\1\methods\FLPRO_R121923.M
Quant Title : TPH by FL_PRO
QLast Update : Tue Dec 19 10:18:14 2023
Response via : Initial Calibration

Volume Inj. : 1uL
Signal Phase : DB-5
Signal Info : 0.32mm ID



Manual Integrations APPROVED (compounds with "m" flag)
William Hustedde 12/20/23 11:21

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\GJR792-121923.S\
Data File : JR00946576.d
Signal(s) : FID1B.ch
Acq On : 19 Dec 2023 7:37 pm
Operator : ering2
Sample : op715-bs Inst : FID 6
Misc : op715,GJR792,250,,,1,1,water
ALS Vial : 32 Sample Multiplier: 1

Quant Time: Dec 20 10:31:18 2023
Quant Method : C:\msdchem\1\methods\FLPRO_R121923.M
Quant Title : TPH by FL_PRO
QLast Update : Tue Dec 19 10:18:14 2023
Response via : Initial Calibration

Volume Inj. : 1uL
Signal Phase : DB-5
Signal Info : 0.32mm ID

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
1) S O-TERPHENYL	6.669	61783831	18.679 PPM
Spiked Amount 50.000	Range 38 - 122	Recovery =	37.36%#
3) s Nonatriacontane	11.729	53738683	19.059 ppm m
Target Compounds			
2) TPH (C10-C28)	0.000	0	N.D. PPM d
4) H TPH (C8-C40)	3.659	1679154402	499.823 PPM

(f)=RT Delta > 1/2 Window (m)=manual int.

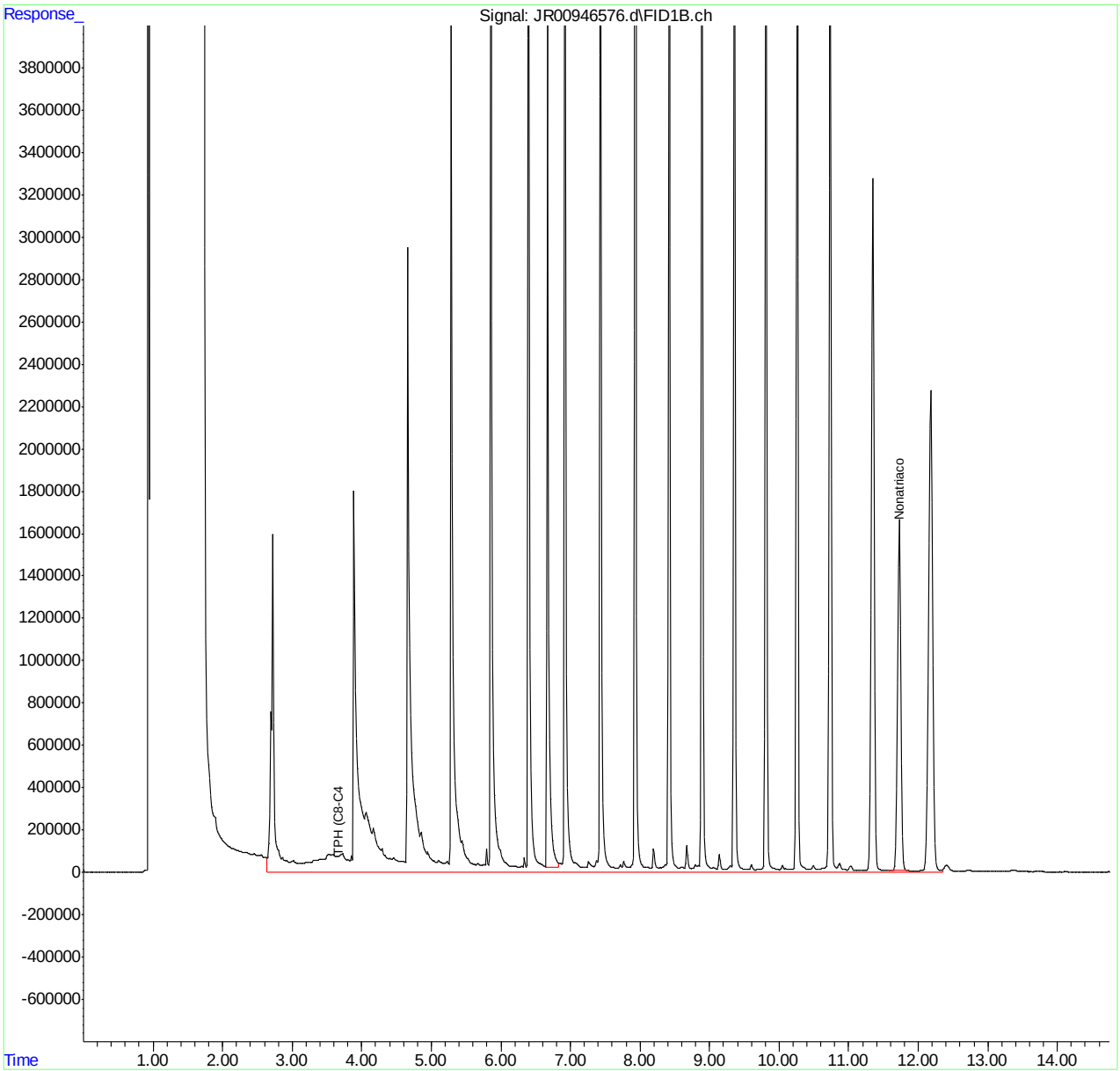
9.3.1
9

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\GJR792-121923.S\
Data File : JR00946576.d
Signal(s) : FID1B.ch
Acq On : 19 Dec 2023 7:37 pm
Operator : ering2
Sample : op715-bs Inst : FID 6
Misc : op715,GJR792,250,,,1,1,water
ALS Vial : 32 Sample Multiplier: 1

Quant Time: Dec 20 10:31:18 2023
Quant Method : C:\msdchem\1\methods\FLPRO_R121923.M
Quant Title : TPH by FL_PRO
QLast Update : Tue Dec 19 10:18:14 2023
Response via : Initial Calibration

Volume Inj. : 1uL
Signal Phase : DB-5
Signal Info : 0.32mm ID



Manual Integration Approval Summary

Sample Number:	OP715-BS	**Method:**	FLORIDA-PRO 2018
Lab FileID:	JR00946576.D	**Analyst approved:**	12/20/23 11:02 Erin Goode
Injection Time:	12/19/23 19:37	**Supervisor approved:**	12/20/23 11:21 William Hustedde

Parameter	CAS	Sig#	R.T. (min.)	Reason
Nonatriacontane	7194-86-7	1	11.73	Poor instrument integration

Manual Integrations APPROVED (compounds with "m" flag)
William Hustedde 12/20/23 11:21

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\GJR792-121923.S\
Data File : JR00946590.d
Signal(s) : FID1B.ch
Acq On : 20 Dec 2023 12:13 am
Operator : ering2
Sample : op715-ms Inst : FID 6
Misc : op715,GJR792,120,,,1,1,water
ALS Vial : 44 Sample Multiplier: 1

Quant Time: Dec 20 10:53:00 2023
Quant Method : C:\msdchem\1\methods\FLPRO_R121923.M
Quant Title : TPH by FL_PRO
QLast Update : Tue Dec 19 10:18:14 2023
Response via : Initial Calibration

Volume Inj. : 1uL
Signal Phase : DB-5
Signal Info : 0.32mm ID

Compound	R.T.	Response	Conc	Units	
System Monitoring Compounds					
1) S O-TERPHENYL	6.665	79061985	23.903	PPM	m
Spiked Amount 50.000	Range 38 - 122	Recovery = 47.81%			
3) s Nonatriacontane	11.740	69158994	24.528	ppm	m
Target Compounds					
2) TPH (C10-C28)	0.000	0	N.D.	PPM	d
4) H TPH (C8-C40)	3.659	4346625573	1293.833	PPM	

(f)=RT Delta > 1/2 Window (m)=manual int.

9.4.1

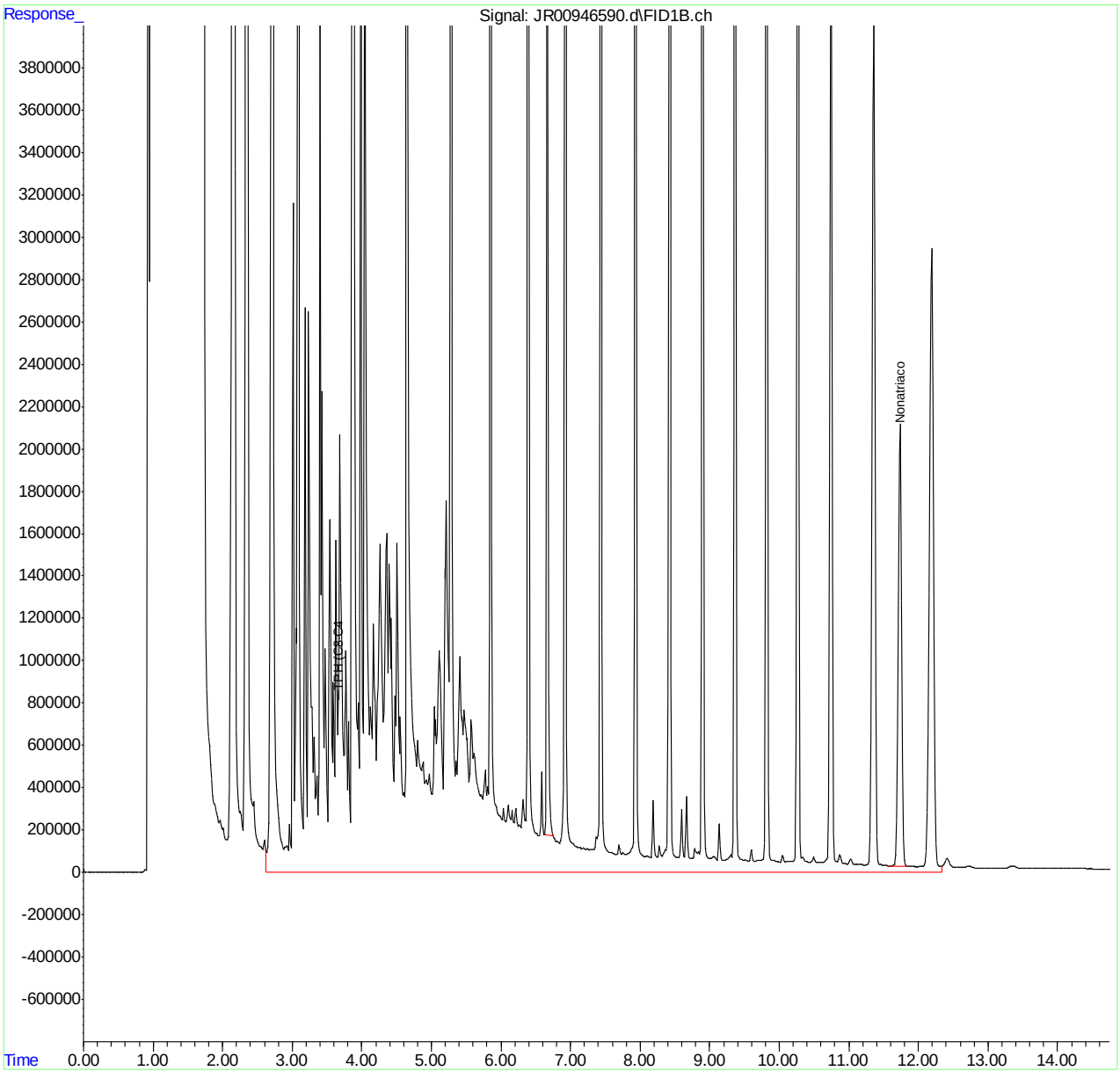
9

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\GJR792-121923.S\
Data File : JR00946590.d
Signal(s) : FID1B.ch
Acq On : 20 Dec 2023 12:13 am
Operator : ering2
Sample : op715-ms Inst : FID 6
Misc : op715,GJR792,120,,,1,1,water
ALS Vial : 44 Sample Multiplier: 1

Quant Time: Dec 20 10:53:00 2023
Quant Method : C:\msdchem\1\methods\FLPRO_R121923.M
Quant Title : TPH by FL_PRO
QLast Update : Tue Dec 19 10:18:14 2023
Response via : Initial Calibration

Volume Inj. : 1uL
Signal Phase : DB-5
Signal Info : 0.32mm ID



Manual Integration Approval Summary

Sample Number:	OP715-MS	**Method:**	FLORIDA-PRO 2018
Lab FileID:	JR00946590.D	**Analyst approved:**	12/20/23 11:02 Erin Goode
Injection Time:	12/20/23 00:13	**Supervisor approved:**	12/20/23 11:21 William Hustedde

Parameter	CAS	Sig#	R.T. (min.)	Reason
o-Terphenyl	84-15-1	1	6.67	Poor instrument integration
Nonatriacontane	7194-86-7	1	11.74	Poor instrument integration

Manual Integrations APPROVED (compounds with "m" flag)
William Hustedde 12/20/23 11:21

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\GJR792-121923.S\
Data File : JR00946591.d
Signal(s) : FID1B.ch
Acq On : 20 Dec 2023 12:32 am
Operator : ering2
Sample : op715-msd Inst : FID 6
Misc : op715,GJR792,120,,,1,1,water
ALS Vial : 45 Sample Multiplier: 1

Quant Time: Dec 20 10:53:15 2023
Quant Method : C:\msdchem\1\methods\FLPRO_R121923.M
Quant Title : TPH by FL_PRO
QLast Update : Tue Dec 19 10:18:14 2023
Response via : Initial Calibration

Volume Inj. : 1uL
Signal Phase : DB-5
Signal Info : 0.32mm ID

Compound	R.T.	Response	Conc	Units	
System Monitoring Compounds					
1) S O-TERPHENYL	6.664	80455627	24.324	PPM	m
Spiked Amount 50.000	Range 38 - 122	Recovery = 48.65%			
3) s Nonatriacontane	11.727	71475278	25.349	ppm	m
Target Compounds					
2) TPH (C10-C28)	0.000	0	N.D.	PPM	d
4) H TPH (C8-C40)	3.659	4445348862	1323.219	PPM	

(f)=RT Delta > 1/2 Window (m)=manual int.

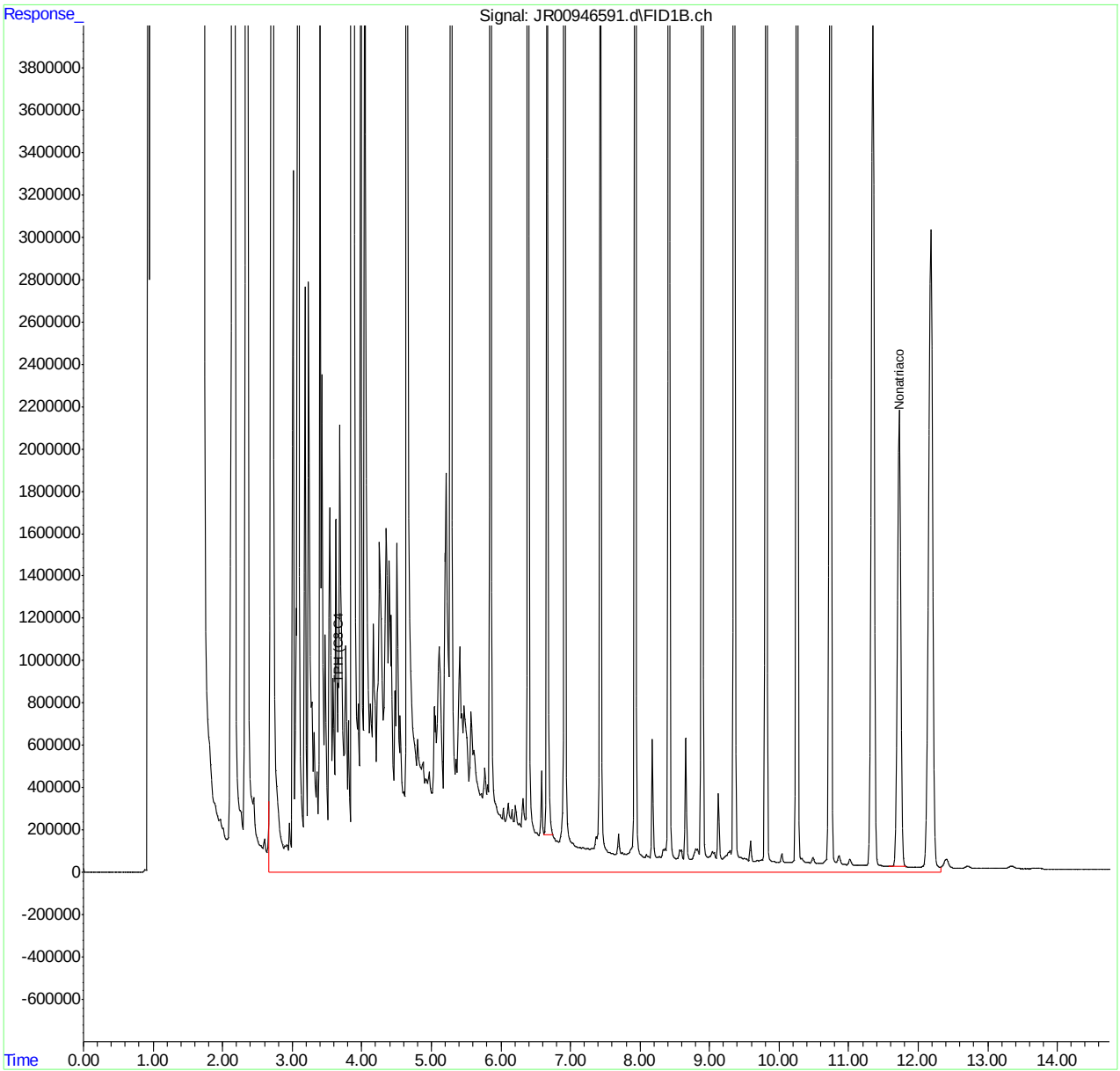
9.4.2
9

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\GJR792-121923.S\
Data File : JR00946591.d
Signal(s) : FID1B.ch
Acq On : 20 Dec 2023 12:32 am
Operator : ering2
Sample : op715-msd Inst : FID 6
Misc : op715,GJR792,120,,,1,1,water
ALS Vial : 45 Sample Multiplier: 1

Quant Time: Dec 20 10:53:15 2023
Quant Method : C:\msdchem\1\methods\FLPRO_R121923.M
Quant Title : TPH by FL_PRO
QLast Update : Tue Dec 19 10:18:14 2023
Response via : Initial Calibration

Volume Inj. : 1uL
Signal Phase : DB-5
Signal Info : 0.32mm ID



Manual Integration Approval Summary

Sample Number: OP715-MSD
Lab FileID: JR00946591.D
Injection Time: 12/20/23 00:32
Method: FLORIDA-PRO 2018
Analyst approved: 12/20/23 11:02 Erin Goode
Supervisor approved: 12/20/23 11:21 William Hustedde

Parameter	CAS	Sig#	R.T. (min.)	Reason
o-Terphenyl	84-15-1	1	6.66	Poor instrument integration
Nonatriacontane	7194-86-7	1	11.73	Poor instrument integration

Manual Integrations APPROVED (compounds with "m" flag)
Naresh Jiawan 12/19/23 12:07

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\GJR790-121823.S\
Data File : JR00946529.d
Signal(s) : FID1B.ch
Acq On : 18 Dec 2023 7:16 pm
Operator : ering2
Sample : ic790-1 Inst : FID 6
Misc : op684,GJR790,250,,,1,20,water
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Dec 19 10:07:56 2023
Quant Method : C:\msdchem\1\methods\FLPRO_R121923.M
Quant Title : TPH by FL_PRO
QLast Update : Tue Dec 19 10:07:05 2023
Response via : Initial Calibration

Volume Inj. : 1uL
Signal Phase : DB-5
Signal Info : 0.32mm ID

Compound	R.T.	Response	Conc	Units	
System Monitoring Compounds					
1) S O-TERPHENYL	6.691	15111081	4.567	PPM	m
Spiked Amount 50.000	Range 38 - 122	Recovery =	9.13%#		
3) s Nonatriacontane	11.748	16460238	5.839	ppm	m
Target Compounds					
2) TPH (C10-C28)	0.000	0	N.D.	PPM	d
4) H TPH (C8-C40)	3.659	329189919	97.624	PPM	

(f)=RT Delta > 1/2 Window (m)=manual int.

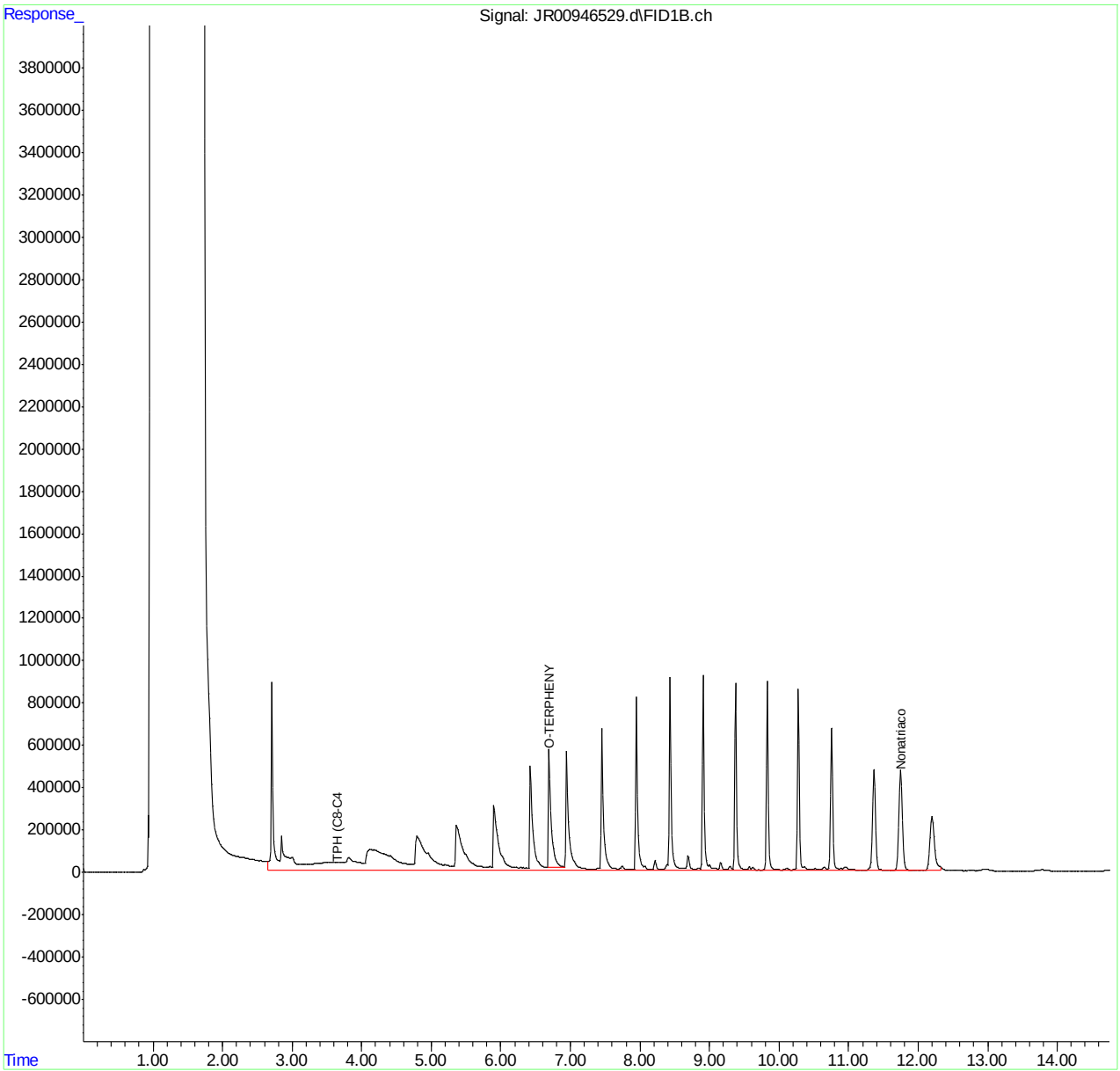
9.5.1
9

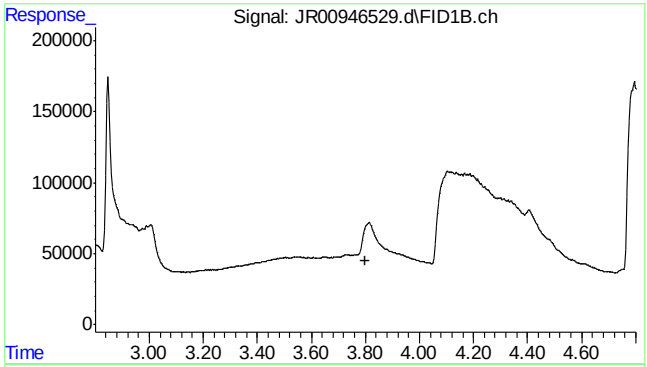
Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\GJR790-121823.S\
Data File : JR00946529.d
Signal(s) : FID1B.ch
Acq On : 18 Dec 2023 7:16 pm
Operator : ering2
Sample : ic790-1 Inst : FID 6
Misc : op684,GJR790,250,,,1,20,water
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Dec 19 10:07:56 2023
Quant Method : C:\msdchem\1\methods\FLPRO_R121923.M
Quant Title : TPH by FL_PRO
QLast Update : Tue Dec 19 10:07:05 2023
Response via : Initial Calibration

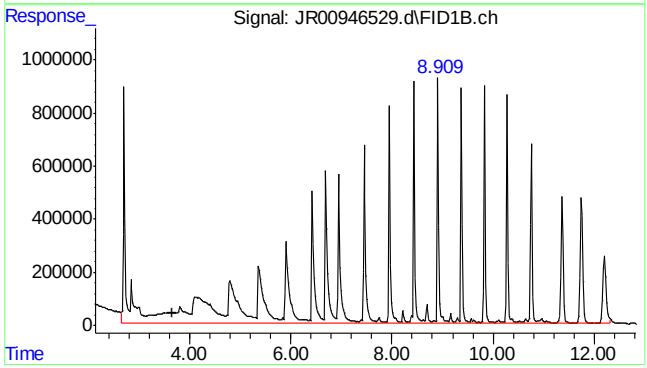
Volume Inj. : 1uL
Signal Phase : DB-5
Signal Info : 0.32mm ID





#2 TPH (C10-C28)

R.T.: 0.000 min
Exp R.T. : 3.801 min
Response: 0
Conc: N.D.



#4 TPH (C8-C40)

R.T.: 3.659 min
Delta R.T.: 0.000 min
Response: 329189919
Conc: 97.62 PPM

Manual Integration Approval Summary

Sample Number:	GJR790-IC790	**Method:**	FLORIDA-PRO 2018
Lab FileID:	JR00946529.D	**Analyst approved:**	12/19/23 10:32 Erin Goode
Injection Time:	12/18/23 19:16	**Supervisor approved:**	12/19/23 12:07 Naresh Jiawan

Parameter	CAS	Sig#	R.T. (min.)	Reason
o-Terphenyl	84-15-1	1	6.69	Poor instrument integration
Nonatriacontane	7194-86-7	1	11.75	Poor instrument integration

Manual Integrations APPROVED (compounds with "m" flag)
Naresh Jiawan 12/19/23 12:07

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\GJR790-121823.S\
Data File : JR00946530.d
Signal(s) : FID1B.ch
Acq On : 18 Dec 2023 7:36 pm
Operator : ering2
Sample : ic790-2 Inst : FID 6
Misc : op684,GJR790,250,,,1,10,water
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Dec 19 10:08:21 2023
Quant Method : C:\msdchem\1\methods\FLPRO_R121923.M
Quant Title : TPH by FL_PRO
QLast Update : Tue Dec 19 10:04:41 2023
Response via : Initial Calibration

Volume Inj. : 1uL
Signal Phase : DB-5
Signal Info : 0.32mm ID

Compound	R.T.	Response	Conc	Units	
System Monitoring Compounds					
1) S O-TERPHENYL	6.675	32763518	9.902	PPM	m
Spiked Amount 50.000	Range 38 - 122	Recovery = 19.80%#			
3) s Nonatriacontane	11.730	32539033	11.542	ppm	m
Target Compounds					
2) TPH (C10-C28)	0.000	0	N.D.	PPM	d
4) H TPH (C8-C40)	3.659	593902651	176.127	PPM	

(f)=RT Delta > 1/2 Window (m)=manual int.

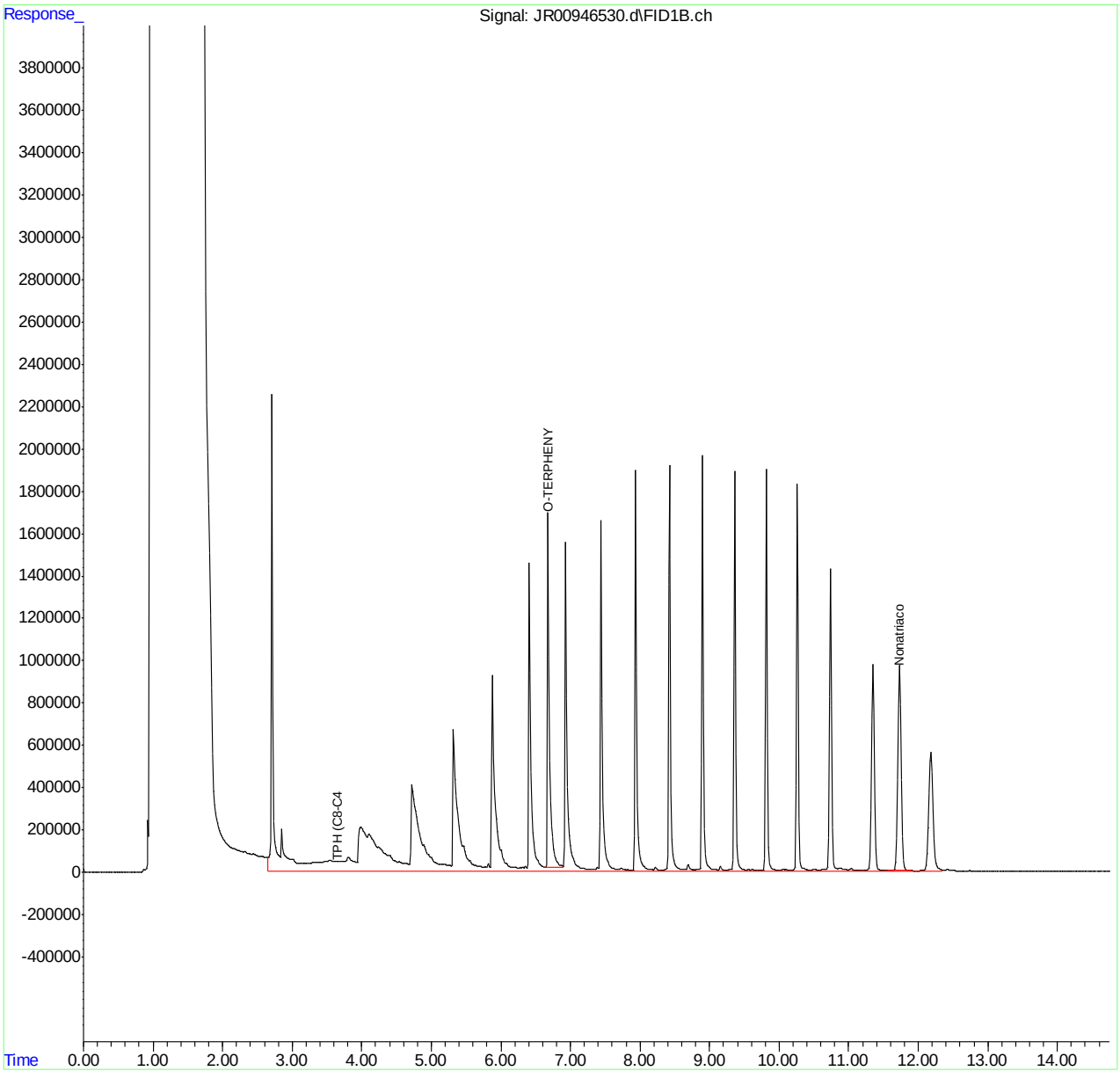
9.5.2
9

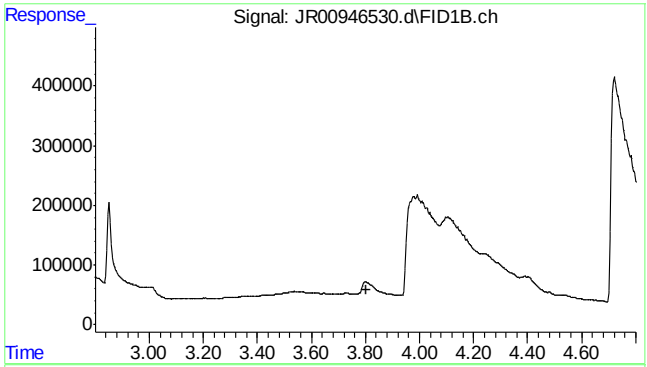
Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\GJR790-121823.S\
Data File : JR00946530.d
Signal(s) : FID1B.ch
Acq On : 18 Dec 2023 7:36 pm
Operator : ering2
Sample : ic790-2 Inst : FID 6
Misc : op684,GJR790,250,,,1,10,water
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Dec 19 10:08:21 2023
Quant Method : C:\msdchem\1\methods\FLPRO_R121923.M
Quant Title : TPH by FL_PRO
QLast Update : Tue Dec 19 10:04:41 2023
Response via : Initial Calibration

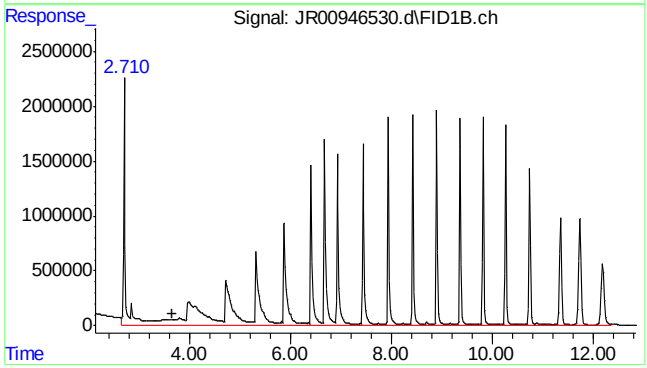
Volume Inj. : 1uL
Signal Phase : DB-5
Signal Info : 0.32mm ID





#2 TPH (C10-C28)

R.T.: 0.000 min
Exp R.T. : 3.801 min
Response: 0
Conc: N.D.



#4 TPH (C8-C40)

R.T.: 3.659 min
Delta R.T.: 0.000 min
Response: 593902651
Conc: 176.13 PPM

Manual Integration Approval Summary

Sample Number:	GJR790-IC790	**Method:**	FLORIDA-PRO 2018
Lab FileID:	JR00946530.D	**Analyst approved:**	12/19/23 10:32 Erin Goode
Injection Time:	12/18/23 19:36	**Supervisor approved:**	12/19/23 12:07 Naresh Jiawan

Parameter	CAS	Sig#	R.T. (min.)	Reason
o-Terphenyl	84-15-1	1	6.68	Poor instrument integration
Nonatriacontane	7194-86-7	1	11.73	Poor instrument integration

Manual Integrations APPROVED (compounds with "m" flag)
Naresh Jiawan 12/19/23 12:07

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\GJR790-121823.S\
Data File : JR00946531.d
Signal(s) : FID1B.ch
Acq On : 18 Dec 2023 7:56 pm
Operator : ering2
Sample : icc790-3 Inst : FID 6
Misc : op684,GJR790,250,,,1,5,water
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Dec 19 10:08:50 2023
Quant Method : C:\msdchem\1\methods\FLPRO_R121923.M
Quant Title : TPH by FL_PRO
QLast Update : Tue Dec 19 10:04:41 2023
Response via : Initial Calibration

Volume Inj. : 1uL
Signal Phase : DB-5
Signal Info : 0.32mm ID

Compound	R.T.	Response	Conc	Units	
System Monitoring Compounds					
1) S O-TERPHENYL	6.671	69980760	21.149	PPM	m
Spiked Amount 50.000	Range 38 - 122	Recovery = 42.30%			
3) s Nonatriacontane	11.749	70050571	24.848	ppm	m
Target Compounds					
2) TPH (C10-C28)	0.000	0	N.D.	PPM	d
4) H TPH (C8-C40)	3.659	1156069161	342.842	PPM	

(f)=RT Delta > 1/2 Window (m)=manual int.

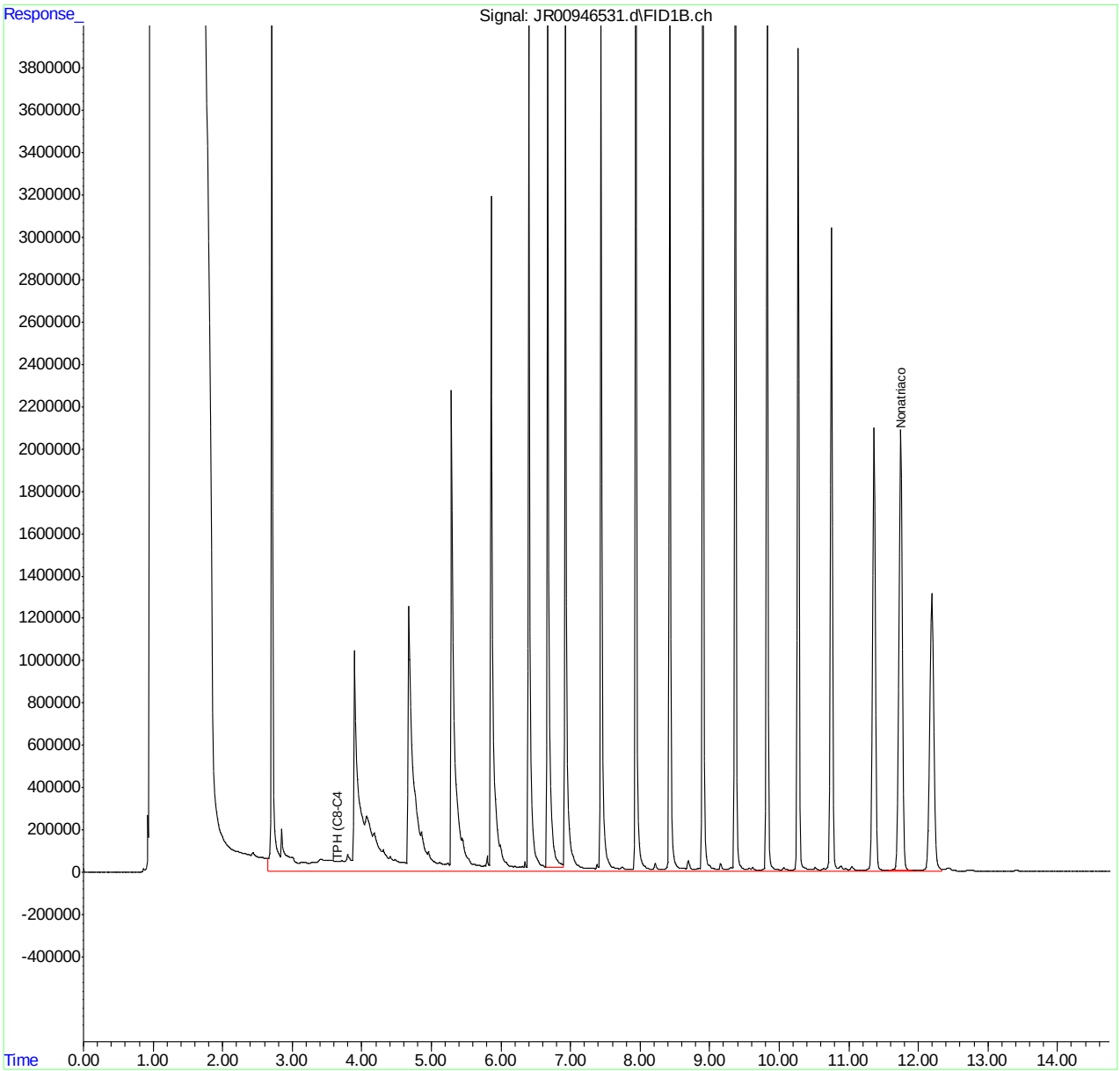
9.5.3

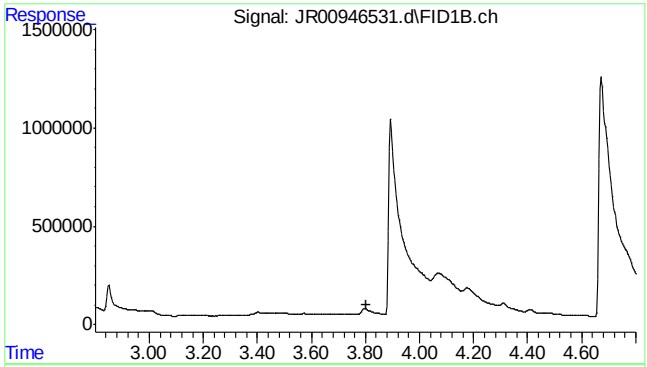
Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\GJR790-121823.S\
Data File : JR00946531.d
Signal(s) : FID1B.ch
Acq On : 18 Dec 2023 7:56 pm
Operator : ering2
Sample : icc790-3 Inst : FID 6
Misc : op684,GJR790,250,,,1,5,water
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Dec 19 10:08:50 2023
Quant Method : C:\msdchem\1\methods\FLPRO_R121923.M
Quant Title : TPH by FL_PRO
QLast Update : Tue Dec 19 10:04:41 2023
Response via : Initial Calibration

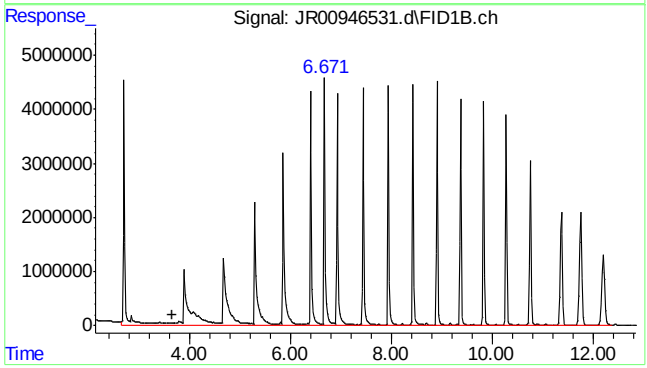
Volume Inj. : 1uL
Signal Phase : DB-5
Signal Info : 0.32mm ID





#2 TPH (C10-C28)

R.T.: 0.000 min
Exp R.T. : 3.801 min
Response: 0
Conc: N.D.



#4 TPH (C8-C40)

R.T.: 3.659 min
Delta R.T.: 0.000 min
Response: 1156069161
Conc: 342.84 PPM

Manual Integration Approval Summary

Sample Number:	GJR790-ICC790	**Method:**	FLORIDA-PRO 2018
Lab FileID:	JR00946531.D	**Analyst approved:**	12/19/23 10:32 Erin Goode
Injection Time:	12/18/23 19:56	**Supervisor approved:**	12/19/23 12:07 Naresh Jiawan

Parameter	CAS	Sig#	R.T. (min.)	Reason
o-Terphenyl	84-15-1	1	6.67	Poor instrument integration
Nonatriacontane	7194-86-7	1	11.75	Poor instrument integration

Manual Integrations APPROVED (compounds with "m" flag)
Naresh Jiawan 12/19/23 12:07

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\GJR790-121823.S\
Data File : JR00946532.d
Signal(s) : FID1B.ch
Acq On : 18 Dec 2023 8:16 pm
Operator : ering2
Sample : ic790-4 Inst : FID 6
Misc : op684,GJR790,250,,,1,2,water
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Dec 19 10:09:21 2023
Quant Method : C:\msdchem\1\methods\FLPRO_R121923.M
Quant Title : TPH by FL_PRO
QLast Update : Tue Dec 19 10:04:41 2023
Response via : Initial Calibration

Volume Inj. : 1uL
Signal Phase : DB-5
Signal Info : 0.32mm ID

Compound	R.T.	Response	Conc	Units	
System Monitoring Compounds					
1) S O-TERPHENYL	6.670	135480357	40.944	PPM	m
Spiked Amount 50.000	Range 38 - 122	Recovery = 81.89%			
3) s Nonatriacontane	11.759	132490048	46.996	ppm	m
Target Compounds					
2) TPH (C10-C28)	0.000	0	N.D.	PPM	d
4) H TPH (C8-C40)	3.659	2134385968	632.970	PPM	

(f)=RT Delta > 1/2 Window (m)=manual int.

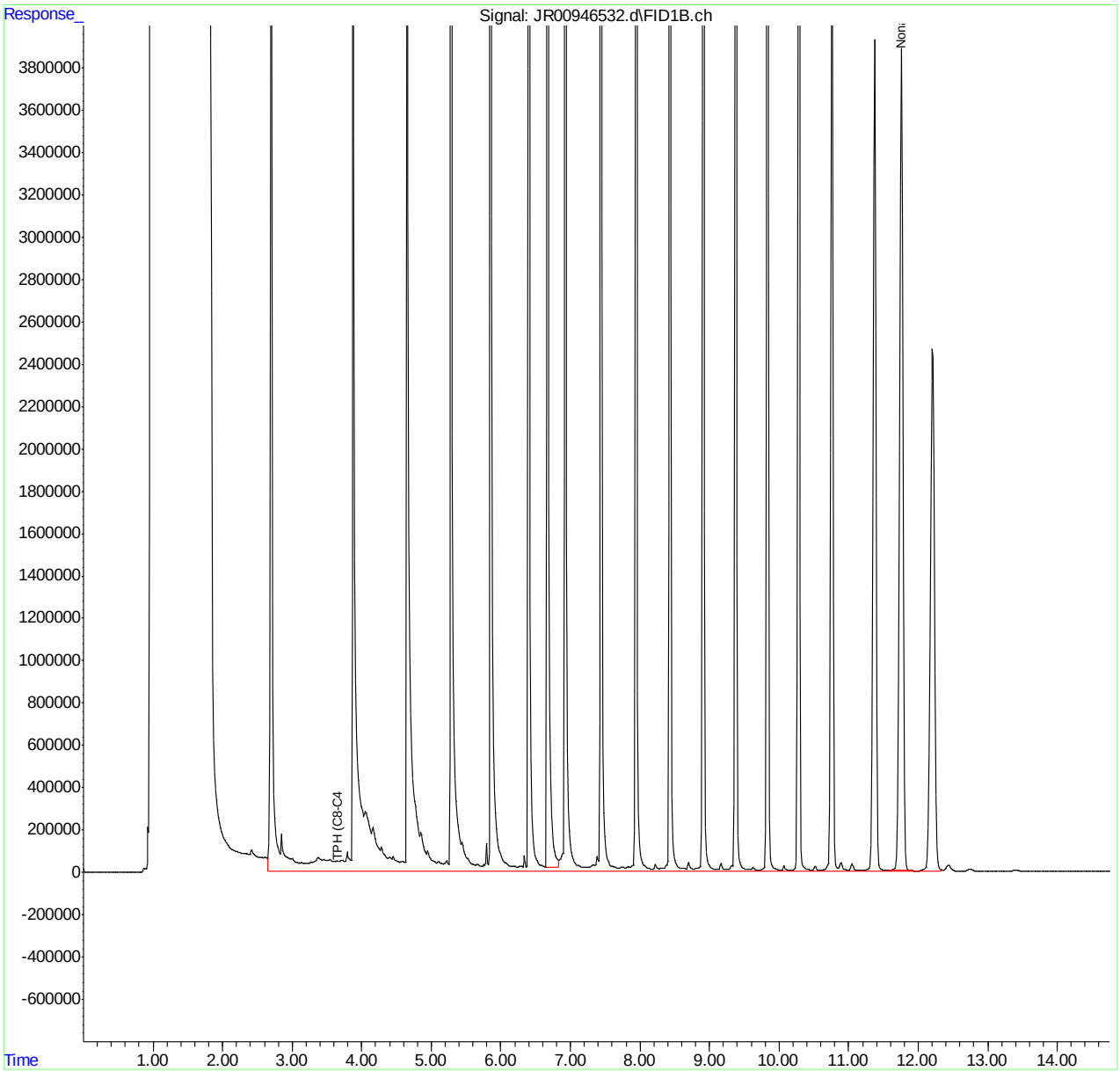
9.5.4
9

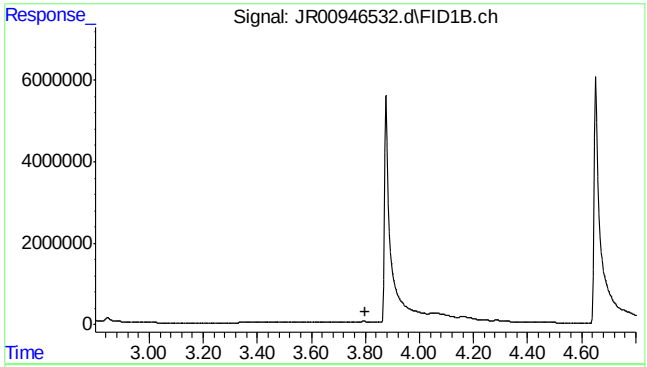
Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\GJR790-121823.S\
Data File : JR00946532.d
Signal(s) : FID1B.ch
Acq On : 18 Dec 2023 8:16 pm
Operator : ering2
Sample : ic790-4 Inst : FID 6
Misc : op684,GJR790,250,,,1,2,water
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Dec 19 10:09:21 2023
Quant Method : C:\msdchem\1\methods\FLPRO_R121923.M
Quant Title : TPH by FL_PRO
QLast Update : Tue Dec 19 10:04:41 2023
Response via : Initial Calibration

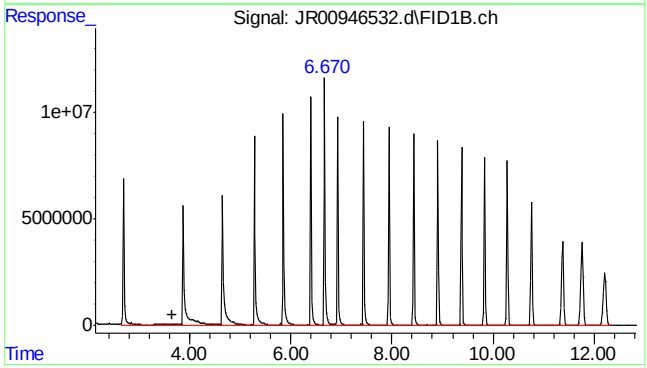
Volume Inj. : 1uL
Signal Phase : DB-5
Signal Info : 0.32mm ID





#2 TPH (C10-C28)

R.T.: 0.000 min
Exp R.T. : 3.801 min
Response: 0
Conc: N.D.



#4 TPH (C8-C40)

R.T.: 3.659 min
Delta R.T.: 0.000 min
Response: 2134385968
Conc: 632.97 PPM

Manual Integration Approval Summary

Sample Number: GJR790-IC790
Lab FileID: JR00946532.D
Injection Time: 12/18/23 20:16
Method: FLORIDA-PRO 2018
Analyst approved: 12/19/23 10:32 Erin Goode
Supervisor approved: 12/19/23 12:07 Naresh Jiawan

Parameter	CAS	Sig#	R.T. (min.)	Reason
o-Terphenyl	84-15-1	1	6.67	Poor instrument integration
Nonatriacontane	7194-86-7	1	11.76	Poor instrument integration

Manual Integrations APPROVED (compounds with "m" flag)
Naresh Jiawan 12/19/23 12:07

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\GJR790-121823.S\
Data File : JR00946533.d
Signal(s) : FID1B.ch
Acq On : 18 Dec 2023 8:36 pm
Operator : ering2
Sample : ic790-5 Inst : FID 6
Misc : op684,GJR790,250,,,1,2,water
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Dec 19 10:09:53 2023
Quant Method : C:\msdchem\1\methods\FLPRO_R121923.M
Quant Title : TPH by FL_PRO
QLast Update : Tue Dec 19 10:04:41 2023
Response via : Initial Calibration

Volume Inj. : 1uL
Signal Phase : DB-5
Signal Info : 0.32mm ID

Compound	R.T.	Response	Conc	Units	
System Monitoring Compounds					
1) S O-TERPHENYL	6.666	168262122	50.851	PPM	m
Spiked Amount 50.000	Range 38 - 122	Recovery = 101.70%			
3) s Nonatriacontane	11.730	169632175	60.171	ppm	m
Target Compounds					
2) TPH (C10-C28)	0.000	0	N.D.	PPM	d
4) H TPH (C8-C40)	3.659	2635222252	781.498	PPM	

(f)=RT Delta > 1/2 Window (m)=manual int.

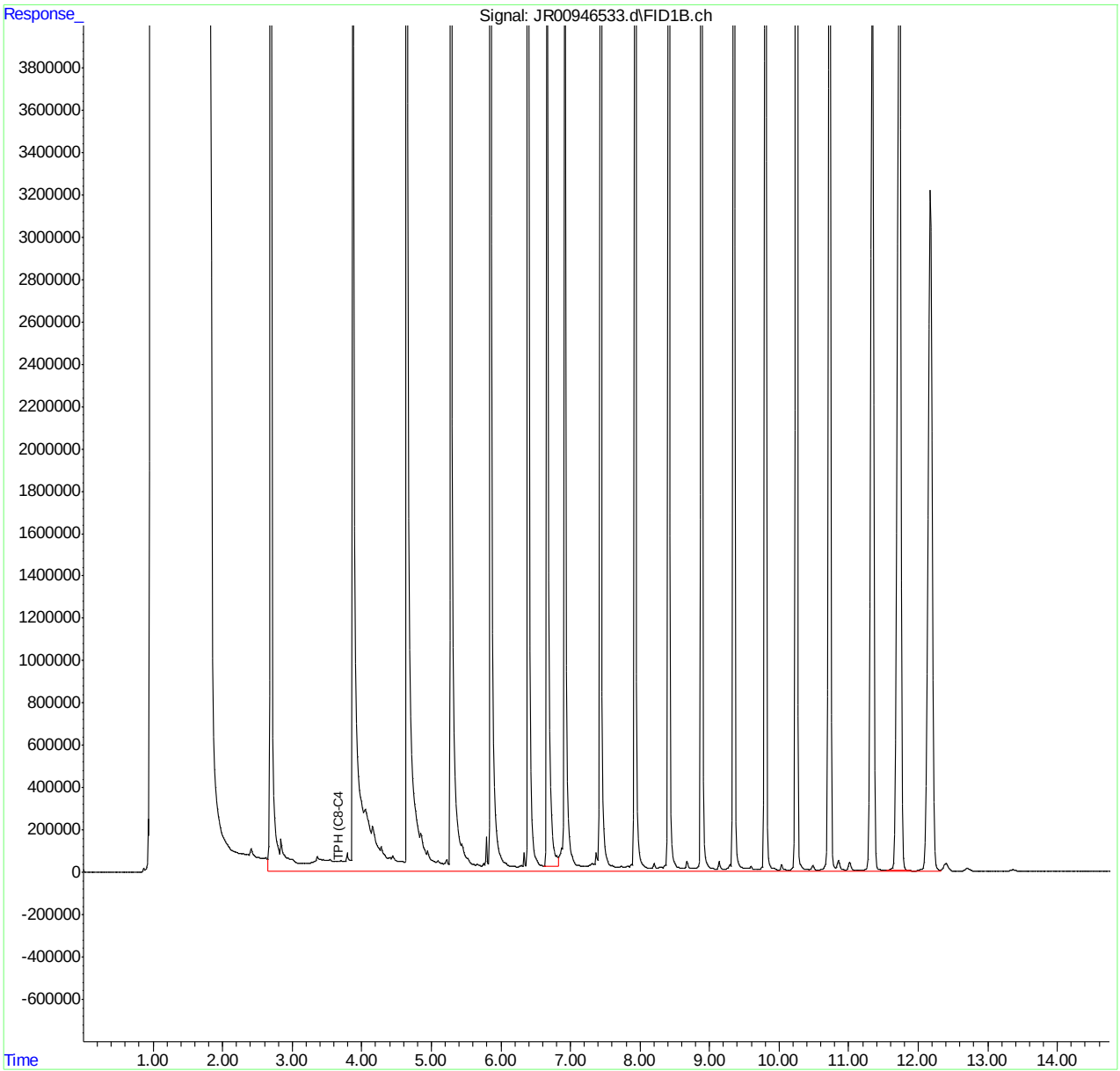
9.5.5
9

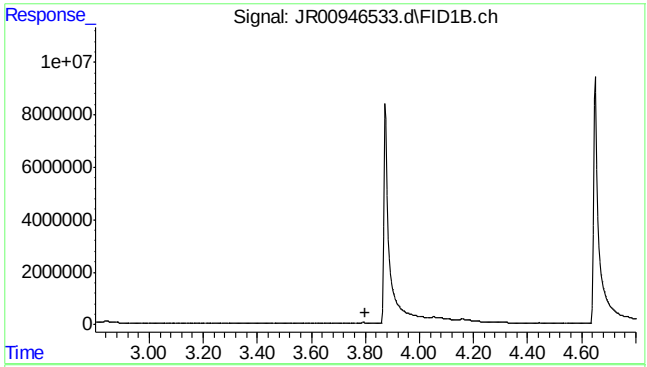
Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\GJR790-121823.S\
Data File : JR00946533.d
Signal(s) : FID1B.ch
Acq On : 18 Dec 2023 8:36 pm
Operator : ering2
Sample : ic790-5 Inst : FID 6
Misc : op684,GJR790,250,,,1,2,water
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Dec 19 10:09:53 2023
Quant Method : C:\msdchem\1\methods\FLPRO_R121923.M
Quant Title : TPH by FL_PRO
QLast Update : Tue Dec 19 10:04:41 2023
Response via : Initial Calibration

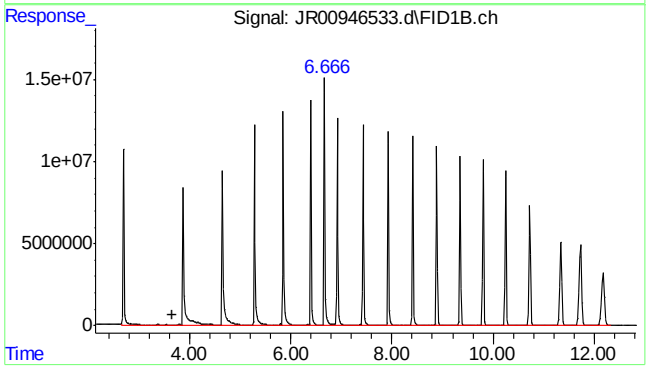
Volume Inj. : 1uL
Signal Phase : DB-5
Signal Info : 0.32mm ID





#2 TPH (C10-C28)

R.T.: 0.000 min
Exp R.T. : 3.801 min
Response: 0
Conc: N.D.



#4 TPH (C8-C40)

R.T.: 3.659 min
Delta R.T.: 0.000 min
Response: 2635222252
Conc: 781.50 PPM

9.5.5

6

Manual Integration Approval Summary

Sample Number:	GJR790-IC790	**Method:**	FLORIDA-PRO 2018
Lab FileID:	JR00946533.D	**Analyst approved:**	12/19/23 10:32 Erin Goode
Injection Time:	12/18/23 20:36	**Supervisor approved:**	12/19/23 12:07 Naresh Jiawan

Parameter	CAS	Sig#	R.T. (min.)	Reason
o-Terphenyl	84-15-1	1	6.67	Poor instrument integration
Nonatriacontane	7194-86-7	1	11.73	Poor instrument integration

Manual Integrations APPROVED (compounds with "m" flag)
Naresh Jiawan 12/19/23 12:07

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\GJR790-121823.S\
Data File : JR00946534.d
Signal(s) : FID1B.ch
Acq On : 18 Dec 2023 8:55 pm
Operator : ering2
Sample : ic790-6 Inst : FID 6
Misc : op684,GJR790,250,,,1,1,water
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Dec 19 10:17:53 2023
Quant Method : C:\msdchem\1\methods\FLPRO_R121923.M
Quant Title : TPH by FL_PRO
QLast Update : Tue Dec 19 10:04:41 2023
Response via : Initial Calibration

Volume Inj. : 1uL
Signal Phase : DB-5
Signal Info : 0.32mm ID

Compound	R.T.	Response	Conc	Units	
System Monitoring Compounds					
1) S O-TERPHENYL	6.673	329624794	99.618	PPM	m
Spiked Amount 50.000	Range 38 - 122	Recovery = 199.24%#			
3) s Nonatriacontane	11.778	354790368	125.850	ppm	m
Target Compounds					
2) TPH (C10-C28)	0.000	0	N.D.	PPM	d
4) H TPH (C8-C40)	3.659	5357277401	1588.746	PPM	

(f)=RT Delta > 1/2 Window (m)=manual int.

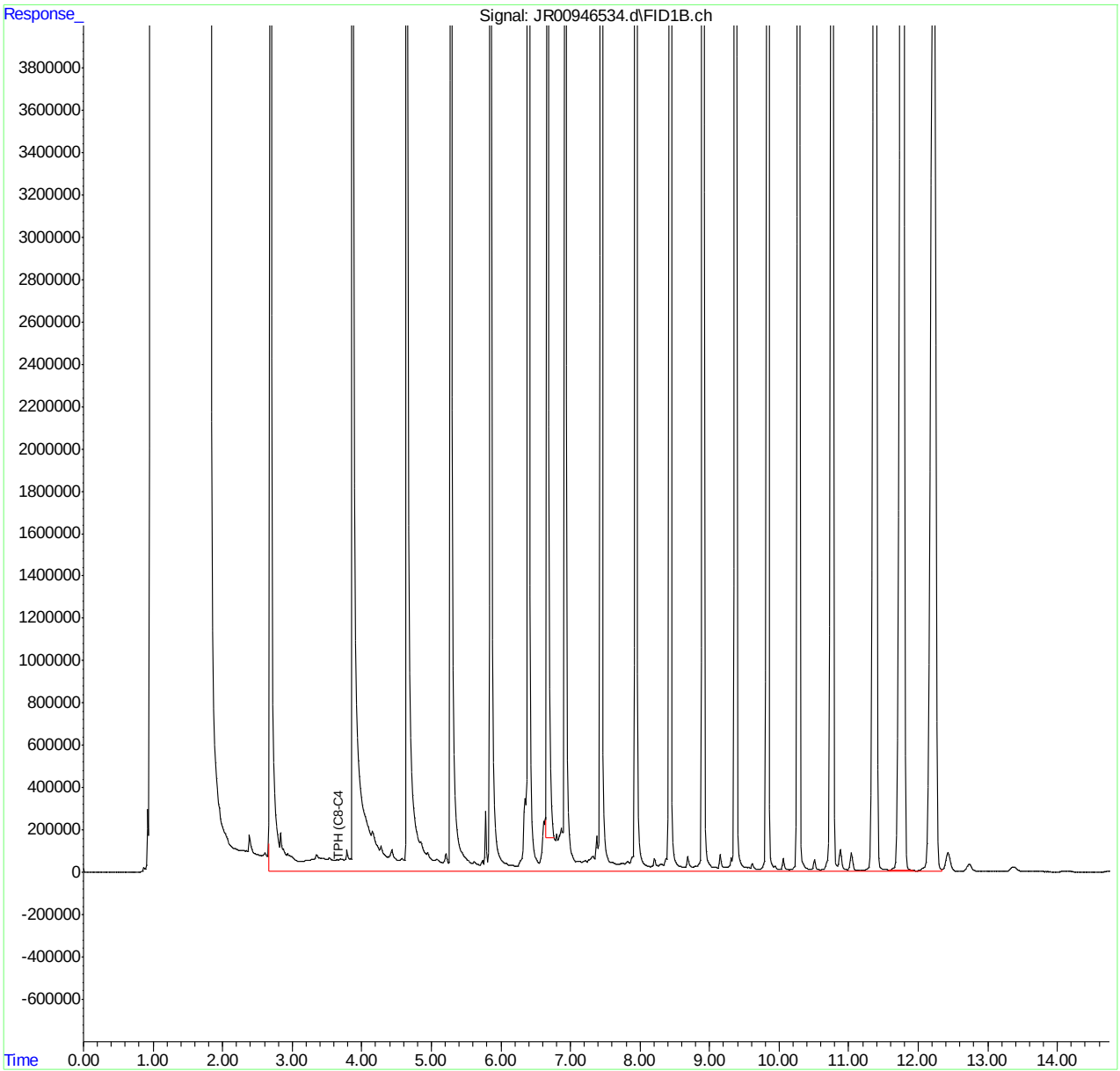
9.5.6
6

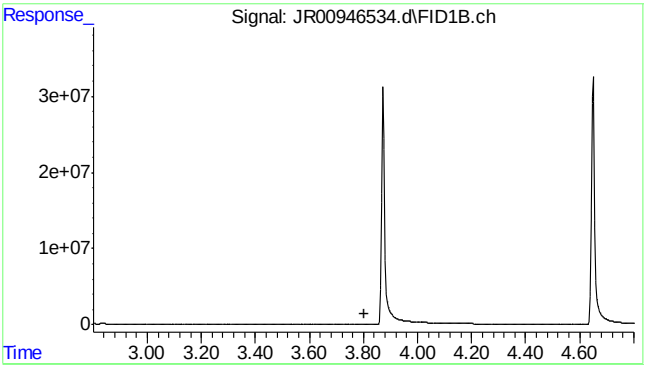
Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\GJR790-121823.S\
Data File : JR00946534.d
Signal(s) : FID1B.ch
Acq On : 18 Dec 2023 8:55 pm
Operator : ering2
Sample : ic790-6 Inst : FID 6
Misc : op684,GJR790,250,,,1,1,water
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Dec 19 10:17:53 2023
Quant Method : C:\msdchem\1\methods\FLPRO_R121923.M
Quant Title : TPH by FL_PRO
QLast Update : Tue Dec 19 10:04:41 2023
Response via : Initial Calibration

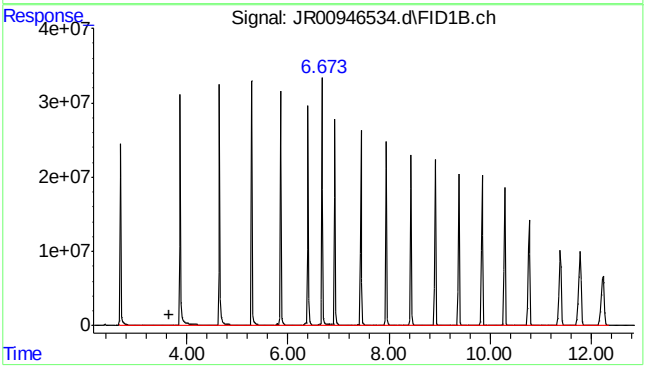
Volume Inj. : 1uL
Signal Phase : DB-5
Signal Info : 0.32mm ID





#2 TPH (C10-C28)

R.T.: 0.000 min
Exp R.T. : 3.801 min
Response: 0
Conc: N.D.



#4 TPH (C8-C40)

R.T.: 3.659 min
Delta R.T.: 0.000 min
Response: 5357277401
Conc: 1588.75 PPM

9.5.6

6

Manual Integration Approval Summary

Sample Number:	GJR790-IC790	**Method:**	FLORIDA-PRO 2018
Lab FileID:	JR00946534.D	**Analyst approved:**	12/19/23 10:32 Erin Goode
Injection Time:	12/18/23 20:55	**Supervisor approved:**	12/19/23 12:07 Naresh Jiawan

Parameter	CAS	Sig#	R.T. (min.)	Reason
o-Terphenyl	84-15-1	1	6.67	Poor instrument integration
Nonatriacontane	7194-86-7	1	11.78	Poor instrument integration

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\GJR790-121823.S\
Data File : JR00946535.d
Signal(s) : FID1B.ch
Acq On : 18 Dec 2023 9:15 pm
Operator : ering2
Sample : icv790-3 Inst : FID 6
Misc : op684,GJR790,250,,,1,25,water
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Dec 19 10:20:11 2023
Quant Method : C:\msdchem\1\methods\FLPRO_R121923.M
Quant Title : TPH by FL_PRO
QLast Update : Tue Dec 19 10:18:14 2023
Response via : Initial Calibration

Volume Inj. : 1uL
Signal Phase : DB-5
Signal Info : 0.32mm ID

Compound	R.T.	Response	Conc	Units	
System Monitoring Compounds					
1) S O-TERPHENYL	0.000	0	N.D.	PPM	d
Spiked Amount 50.000	Range 38 - 122	Recovery =	0.00%#		
3) s Nonatriacontane	0.000	0	N.D.	ppm	d
Target Compounds					
2) TPH (C10-C28)	0.000	0	N.D.	PPM	d
4) H TPH (C8-C40)	3.659	1111226690	330.772	PPM	

(f)=RT Delta > 1/2 Window (m)=manual int.

9.5.7

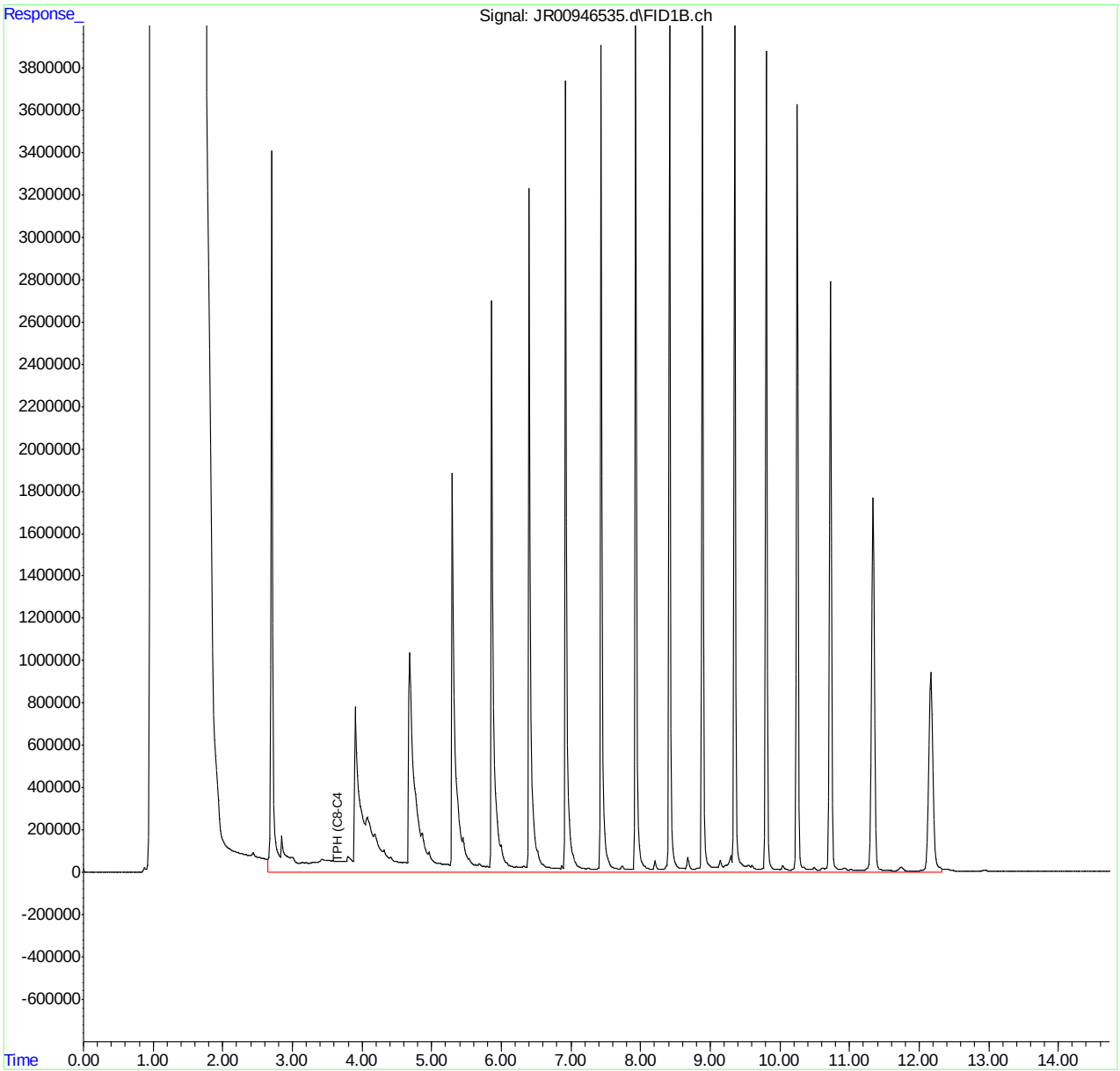
9

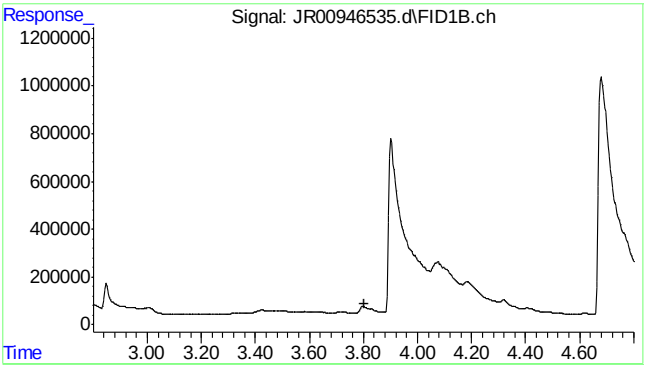
Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\GJR790-121823.S\
Data File : JR00946535.d
Signal(s) : FID1B.ch
Acq On : 18 Dec 2023 9:15 pm
Operator : ering2
Sample : icv790-3 Inst : FID 6
Misc : op684,GJR790,250,,,1,25,water
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Dec 19 10:20:11 2023
Quant Method : C:\msdchem\1\methods\FLPRO_R121923.M
Quant Title : TPH by FL_PRO
QLast Update : Tue Dec 19 10:18:14 2023
Response via : Initial Calibration

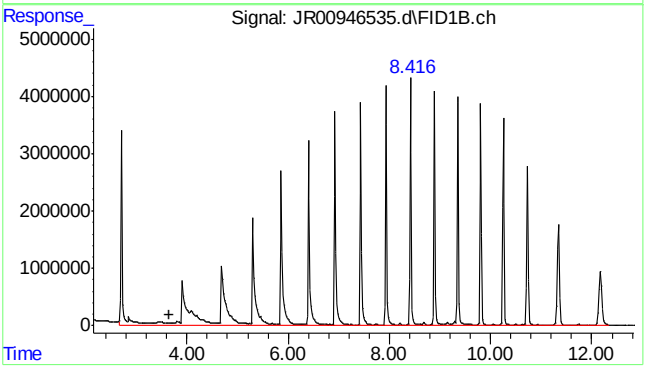
Volume Inj. : 1uL
Signal Phase : DB-5
Signal Info : 0.32mm ID





#2 TPH (C10-C28)

R.T.: 0.000 min
Exp R.T. : 3.801 min
Response: 0
Conc: N.D.



#4 TPH (C8-C40)

R.T.: 3.659 min
Delta R.T.: 0.000 min
Response: 1111226690
Conc: 330.77 PPM

Manual Integrations APPROVED (compounds with "m" flag)
William Hustedde 12/20/23 11:21

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\GJR792-121923.S\
Data File : JR00946572.d
Signal(s) : FID1B.ch
Acq On : 19 Dec 2023 5:59 pm
Operator : ering2
Sample : cc790-2 Inst : FID 6
Misc : op715,GJR792,250,,,1,10,water
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Dec 20 10:30:34 2023
Quant Method : C:\msdchem\1\methods\FLPRO_R121923.M
Quant Title : TPH by FL_PRO
QLast Update : Tue Dec 19 10:18:14 2023
Response via : Initial Calibration

Volume Inj. : 1uL
Signal Phase : DB-5
Signal Info : 0.32mm ID

Compound	R.T.	Response	Conc	Units	
System Monitoring Compounds					
1) S O-TERPHENYL	6.676	34043933	10.292	PPM	m
Spiked Amount 50.000	Range 38 - 122	Recovery = 20.58%#			
3) s Nonatriacontane	11.727	37384913	13.259	ppm	m
Target Compounds					
2) TPH (C10-C28)	0.000	0	N.D.	PPM	d
4) H TPH (C8-C40)	3.659	661808008	196.996	PPM	

(f)=RT Delta > 1/2 Window (m)=manual int.

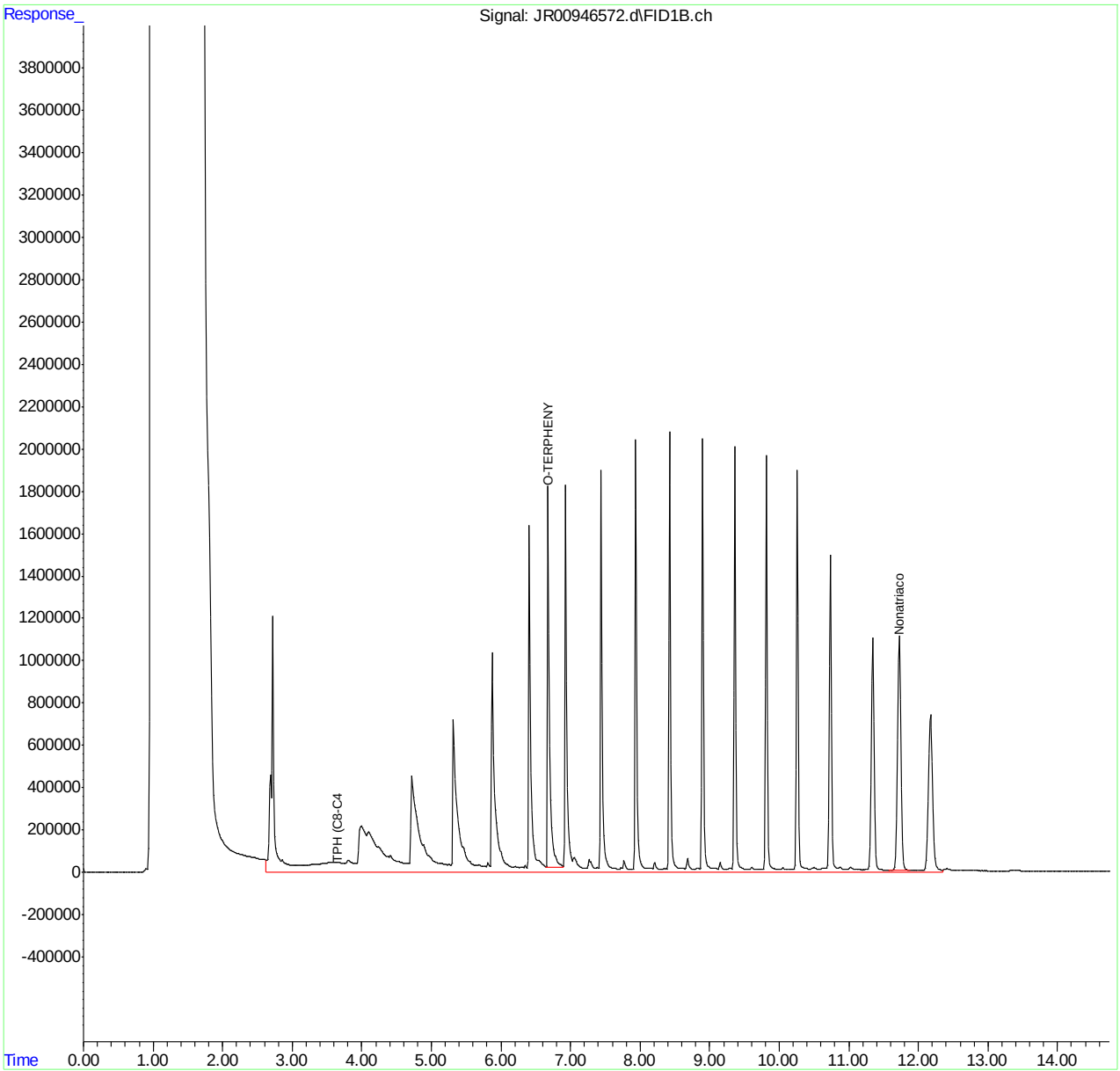
9.5.8
9

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\GJR792-121923.S\
Data File : JR00946572.d
Signal(s) : FID1B.ch
Acq On : 19 Dec 2023 5:59 pm
Operator : ering2
Sample : cc790-2 Inst : FID 6
Misc : op715,GJR792,250,,,1,10,water
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Dec 20 10:30:34 2023
Quant Method : C:\msdchem\1\methods\FLPRO_R121923.M
Quant Title : TPH by FL_PRO
QLast Update : Tue Dec 19 10:18:14 2023
Response via : Initial Calibration

Volume Inj. : 1uL
Signal Phase : DB-5
Signal Info : 0.32mm ID



Manual Integration Approval Summary

Sample Number: GJR792-CC790
Lab FileID: JR00946572.D
Injection Time: 12/19/23 17:59
Method: FLORIDA-PRO 2018
Analyst approved: 12/20/23 11:02 Erin Goode
Supervisor approved: 12/20/23 11:21 William Hustedde

Parameter	CAS	Sig#	R.T. (min.)	Reason
o-Terphenyl	84-15-1	1	6.68	Poor instrument integration
Nonatriacontane	7194-86-7	1	11.73	Poor instrument integration

Manual Integrations APPROVED
(compounds with "m" flag)
William Hustedde
12/20/23 11:21

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\GJR792-121923.S\
Data File : JR00946573.d
Signal(s) : FID1B.ch
Acq On : 19 Dec 2023 6:18 pm
Operator : ering2
Sample : cc790-3 Inst : FID 6
Misc : op715,GJR792,250,,,1,5,water
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Dec 20 10:30:49 2023
Quant Method : C:\msdchem\1\methods\FLPRO_R121923.M
Quant Title : TPH by FL_PRO
QLast Update : Tue Dec 19 10:18:14 2023
Response via : Initial Calibration

Volume Inj. : 1uL
Signal Phase : DB-5
Signal Info : 0.32mm ID

Compound	R.T.	Response	Conc	Units	
System Monitoring Compounds					
1) S O-TERPHENYL	6.671	70155073	21.210	PPM	m
Spiked Amount 50.000	Range 38 - 122	Recovery = 42.42%			
3) s Nonatriacontane	11.759	76930173	27.284	ppm	m
Target Compounds					
2) TPH (C10-C28)	0.000	0	N.D.	PPM	d
4) H TPH (C8-C40)	3.659	1215544590	361.824	PPM	

(f)=RT Delta > 1/2 Window (m)=manual int.

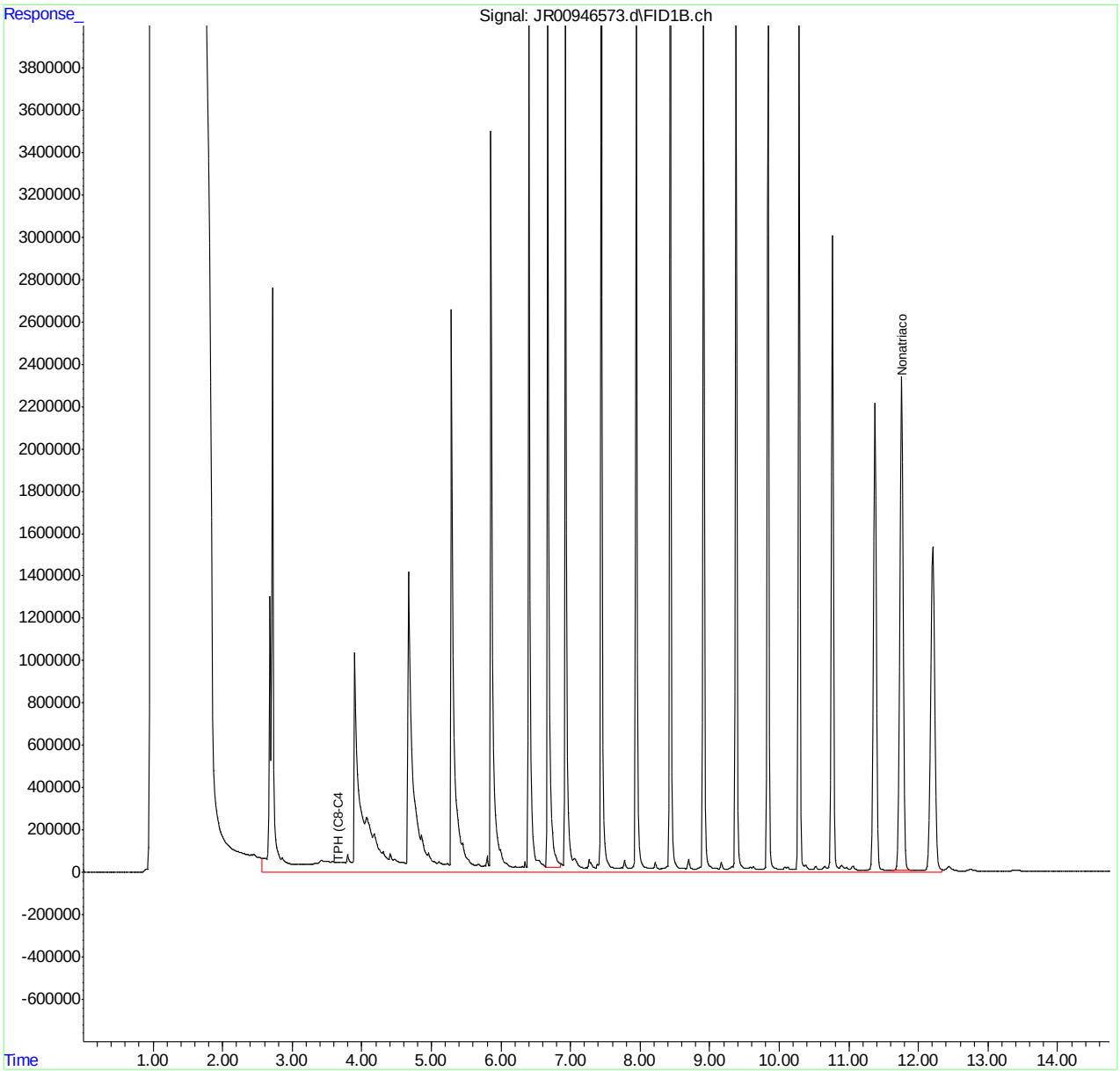
9.5.9
6

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\GJR792-121923.S\
Data File : JR00946573.d
Signal(s) : FID1B.ch
Acq On : 19 Dec 2023 6:18 pm
Operator : ering2
Sample : cc790-3 Inst : FID 6
Misc : op715,GJR792,250,,,1,5,water
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Dec 20 10:30:49 2023
Quant Method : C:\msdchem\1\methods\FLPRO_R121923.M
Quant Title : TPH by FL_PRO
QLast Update : Tue Dec 19 10:18:14 2023
Response via : Initial Calibration

Volume Inj. : 1uL
Signal Phase : DB-5
Signal Info : 0.32mm ID



Manual Integration Approval Summary

Sample Number: GJR792-CC790
Lab FileID: JR00946573.D
Injection Time: 12/19/23 18:18
Method: FLORIDA-PRO 2018
Analyst approved: 12/20/23 11:02 Erin Goode
Supervisor approved: 12/20/23 11:21 William Hustedde

Parameter	CAS	Sig#	R.T. (min.)	Reason
o-Terphenyl	84-15-1	1	6.67	Poor instrument integration
Nonatriacontane	7194-86-7	1	11.76	Poor instrument integration

Manual Integrations APPROVED (compounds with "m" flag)
William Hustedde 12/20/23 11:21

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\GJR792-121923.S\
Data File : JR00946585.d
Signal(s) : FID1B.ch
Acq On : 19 Dec 2023 10:34 pm
Operator : ering2
Sample : cc790-3 Inst : FID 6
Misc : op715,GJR792,250,,,1,5,water
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Dec 20 10:39:02 2023
Quant Method : C:\msdchem\1\methods\FLPRO_R121923.M
Quant Title : TPH by FL_PRO
QLast Update : Tue Dec 19 10:18:14 2023
Response via : Initial Calibration

Volume Inj. : 1uL
Signal Phase : DB-5
Signal Info : 0.32mm ID

Compound	R.T.	Response	Conc	Units	
System Monitoring Compounds					
1) S O-TERPHENYL	6.666	71218709	21.531	PPM	m
Spiked Amount 50.000	Range 38 - 122	Recovery = 43.06%			
3) s Nonatriacontane	11.716	75794284	26.881	ppm	m
Target Compounds					
2) TPH (C10-C28)	0.000	0	N.D.	PPM	d
4) H TPH (C8-C40)	3.659	1220124373	363.187	PPM	

(f)=RT Delta > 1/2 Window (m)=manual int.

9.5.10

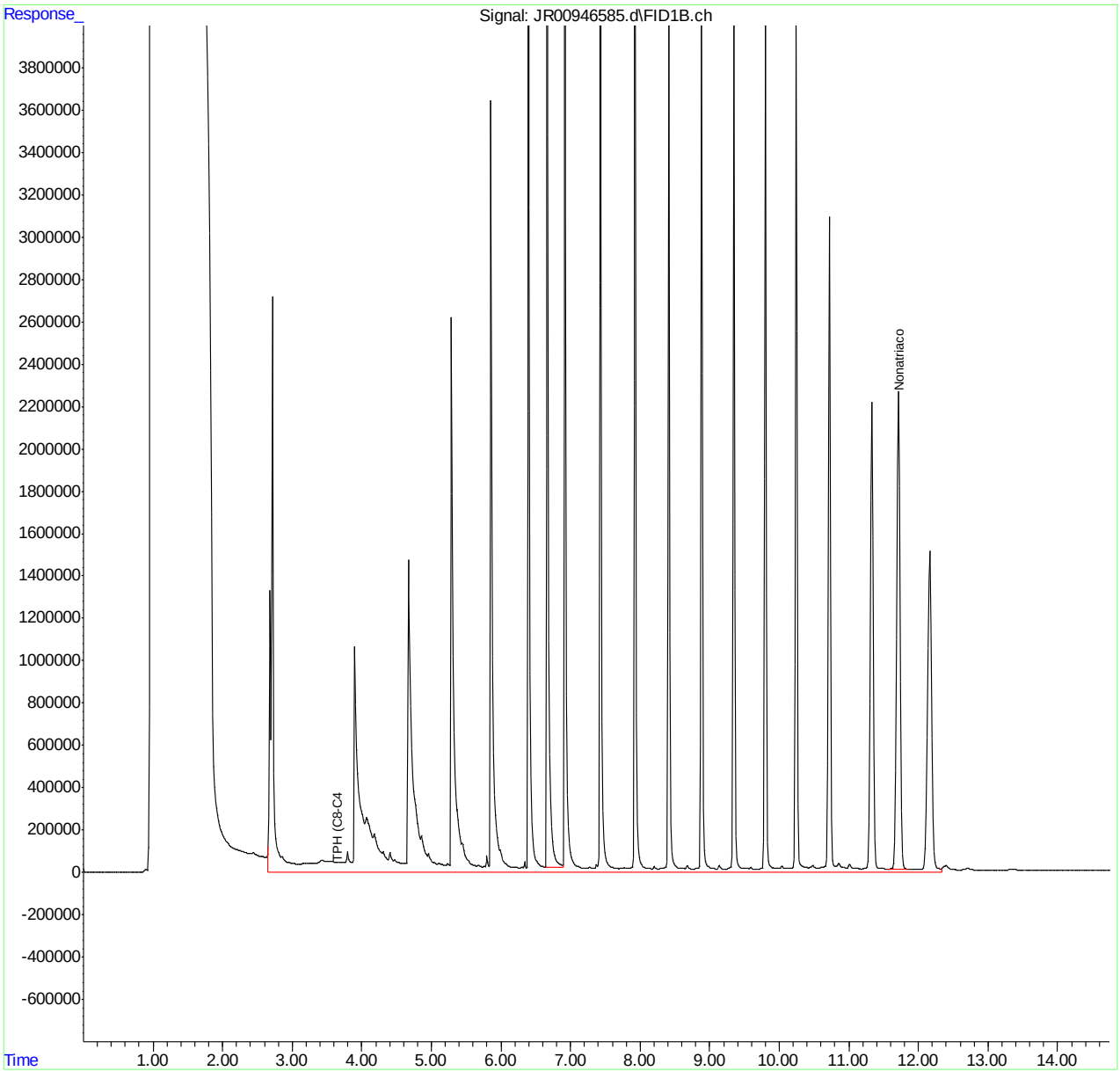
9

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\GJR792-121923.S\
Data File : JR00946585.d
Signal(s) : FID1B.ch
Acq On : 19 Dec 2023 10:34 pm
Operator : ering2
Sample : cc790-3 Inst : FID 6
Misc : op715,GJR792,250,,,1,5,water
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Dec 20 10:39:02 2023
Quant Method : C:\msdchem\1\methods\FLPRO_R121923.M
Quant Title : TPH by FL_PRO
QLast Update : Tue Dec 19 10:18:14 2023
Response via : Initial Calibration

Volume Inj. : 1uL
Signal Phase : DB-5
Signal Info : 0.32mm ID



Manual Integration Approval Summary

Sample Number: GJR792-CC790
Lab FileID: JR00946585.D
Injection Time: 12/19/23 22:34
Method: FLORIDA-PRO 2018
Analyst approved: 12/20/23 11:02 Erin Goode
Supervisor approved: 12/20/23 11:21 William Hustedde

Parameter	CAS	Sig#	R.T. (min.)	Reason
o-Terphenyl	84-15-1	1	6.67	Poor instrument integration
Nonatriacontane	7194-86-7	1	11.72	Poor instrument integration

Manual Integrations APPROVED (compounds with "m" flag)
William Hustedde 12/20/23 11:21

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\GJR792-121923.S\
Data File : JR00946592.d
Signal(s) : FID1B.ch
Acq On : 20 Dec 2023 12:52 am
Operator : ering2
Sample : ecc790-3 Inst : FID 6
Misc : op715,GJR792,250,,,1,5,water
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Dec 20 10:53:37 2023
Quant Method : C:\msdchem\1\methods\FLPRO_R121923.M
Quant Title : TPH by FL_PRO
QLast Update : Tue Dec 19 10:18:14 2023
Response via : Initial Calibration

Volume Inj. : 1uL
Signal Phase : DB-5
Signal Info : 0.32mm ID

Compound	R.T.	Response	Conc	Units	
System Monitoring Compounds					
1) S O-TERPHENYL	6.667	72480259	21.913	PPM	m
Spiked Amount 50.000	Range 38 - 122	Recovery = 43.83%			
3) s Nonatriacontane	11.726	77259677	27.401	ppm	m
Target Compounds					
2) TPH (C10-C28)	0.000	0	N.D.	PPM	d
4) H TPH (C8-C40)	3.659	1239144719	368.848	PPM	

(f)=RT Delta > 1/2 Window (m)=manual int.

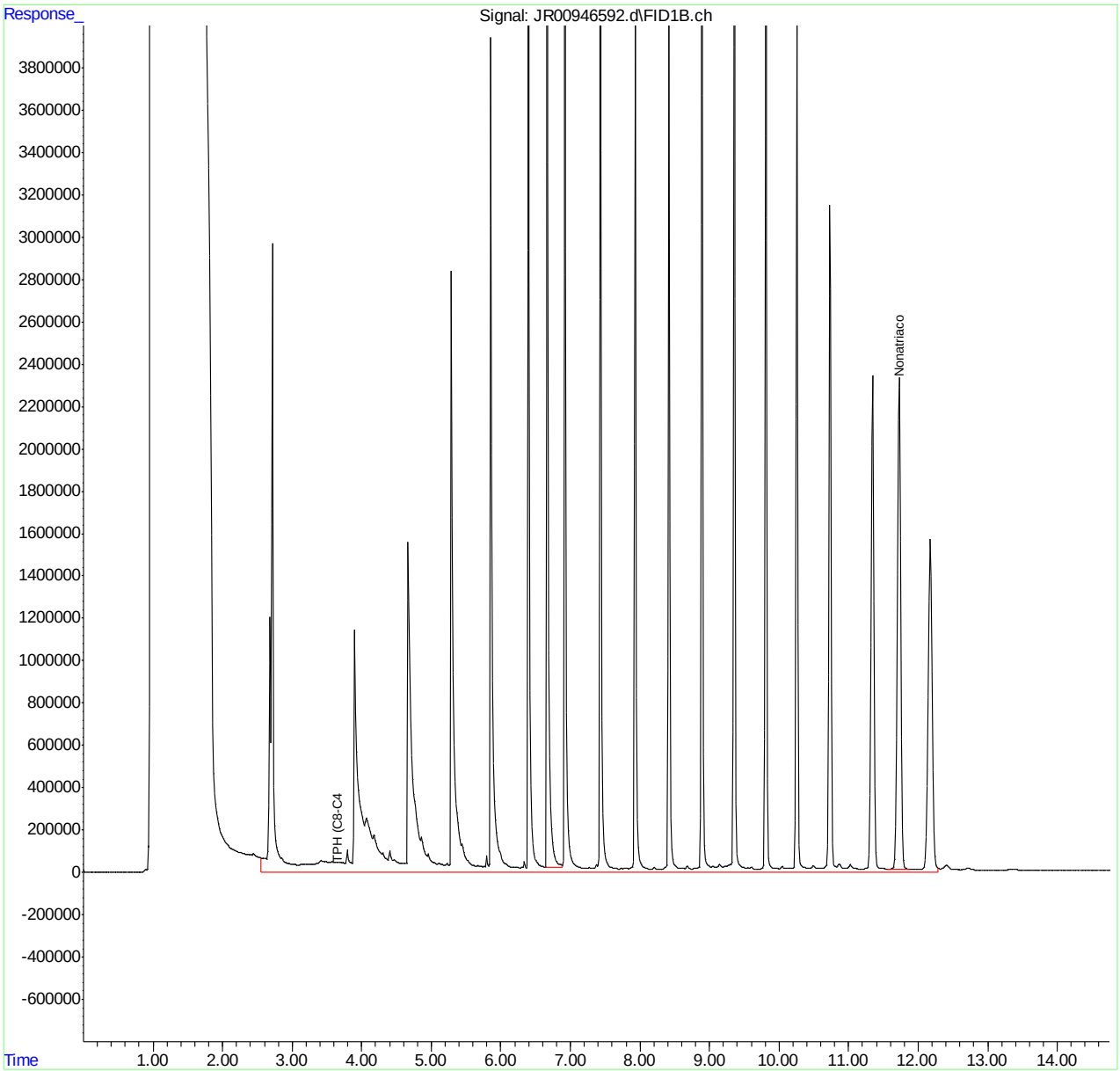
9.5.11
9

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\GJR792-121923.S\
Data File : JR00946592.d
Signal(s) : FID1B.ch
Acq On : 20 Dec 2023 12:52 am
Operator : ering2
Sample : ecc790-3 Inst : FID 6
Misc : op715,GJR792,250,,,1,5,water
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Dec 20 10:53:37 2023
Quant Method : C:\msdchem\1\methods\FLPRO_R121923.M
Quant Title : TPH by FL_PRO
QLast Update : Tue Dec 19 10:18:14 2023
Response via : Initial Calibration

Volume Inj. : 1uL
Signal Phase : DB-5
Signal Info : 0.32mm ID



Manual Integration Approval Summary

Sample Number: GJR792-ECC790
Lab FileID: JR00946592.D
Injection Time: 12/20/23 00:52
Method: FLORIDA-PRO 2018
Analyst approved: 12/20/23 11:02 Erin Goode
Supervisor approved: 12/20/23 11:21 William Hustedde

Parameter	CAS	Sig#	R.T. (min.)	Reason
o-Terphenyl	84-15-1	1	6.67	Poor instrument integration
Nonatriacontane	7194-86-7	1	11.73	Poor instrument integration

SGS-ORLANDO | GC FID06-JR | ANALYSIS LOG

DATE	12/18/2023	**METHODS**	FLPRO	**IC/ICC STD LOT**	S6989
COLUMN TYPE	db5ms	**ACQ. METHOD**	ACQ_FLPRO_R	**ICV STD LOT**	10927B
AMOUNT INJ	1ul	**PROC. METHOD**	flpro_r121923	**SOLVENT**	233065
INSTRUMENT	GCFID06 - JR	**CALIB. DATE**	12/19/2023		
ANALYST	EG	**RUN BATCH**	**GJR790**		

DATA FILE	ALS	SAMPLE NAME	METHOD	DF	MISC. INFO	COMMENTS
JR00946525	1	ccb	FLPRO	1	op684,GJR790,250,,,1,1,water	-
JR00946526	1	ccb	FLPRO	1	op684,GJR790,250,,,1,1,water	-
JR00946527	1	ccb	FLPRO	1	op684,GJR790,250,,,1,1,water	-
JR00946528	1	ccb	FLPRO	1	op684,GJR790,250,,,1,1,water	-
JR00946529	2	ic790-1	FLPRO	25/500	op684,GJR790,250,,,1,20,water	ok
JR00946530	3	ic790-2	FLPRO	50/500	op684,GJR790,250,,,1,10,water	ok
JR00946531	4	icc790-3	FLPRO	100/500	op684,GJR790,250,,,1,5,water	ok
JR00946532	5	ic790-4	FLPRO	200/500	op684,GJR790,250,,,1,2,water	ok
JR00946533	6	ic790-5	FLPRO	250/500	op684,GJR790,250,,,1,2,water	ok
JR00946534	7	ic790-6	FLPRO	1	op684,GJR790,250,,,1,1,water	ok
JR00946535	8	icv790-3	FLPRO	20/500	op684,GJR790,250,,,1,25,water	pass
JR00946536	1	ccb	FLPRO	1	op684,GJR790,250,,,1,1,water	-

SGS-ORLANDO | GC FID06-JR | ANALYSIS LOG

DATE	12/19/2023	**METHODS**	FLPRO	**IC/ICC STD LOT**	S6989
COLUMN TYPE	db5ms	**ACQ. METHOD**	ACQ_FLPRO_R	**ICV STD LOT**	10927B
AMOUNT INJ	1ul	**PROC. METHOD**	flpro_r121923	**SOLVENT**	233065
INSTRUMENT	GCFID06 - JR	**CALIB. DATE**	12/19/2023		
ANALYST	EG	**RUN BATCH**	**GJR792**		

DATA FILE	ALS	SAMPLE NAME	METHOD	DF	MISC. INFO	COMMENTS
JR00946567	1	ccb	FLPRO	1	op715,GJR792,250,,,1,1,water	-
JR00946568	4	conditioning	FLPRO	100/500	op715,GJR792,250,,,1,5,water	-
JR00946569	4	conditioning	FLPRO	100/500	op715,GJR792,250,,,1,5,water	-
JR00946570	4	conditioning	FLPRO	100/500	op715,GJR792,250,,,1,5,water	-
JR00946571	1	ccb	FLPRO	1	op715,GJR792,250,,,1,1,water	-
JR00946572	3	cc790-2	FLPRO	50/500	op715,GJR792,250,,,1,10,water	pass
JR00946573	4	cc790-3	FLPRO	100/500	op715,GJR792,250,,,1,5,water	pass
JR00946574	1	ccb	FLPRO	1	op715,GJR792,250,,,1,1,water	-
JR00946575	31	op715-mb	FLPRO	1	op715,GJR792,250,,,1,1,water	nd
JR00946576	32	op715-bs	FLPRO	1	op715,GJR792,250,,,1,1,water	ok
JR00946577	33	fc11891-1	FLPRO	1	op715,GJR792,250,,,1,1,water	ok
JR00946578	34	fc11891-2	FLPRO	1	op715,GJR792,240,,,1,1,water	ok
JR00946579	35	fc11891-7	FLPRO	1	op715,GJR792,250,,,1,1,water	ok
JR00946580	36	fc11891-10	FLPRO	1	op715,GJR792,240,,,1,1,water	ok
JR00946581	37	fc12022-8	FLPRO	1	op715,GJR792,240,,,1,1,water	ok
JR00946582	38	fc12022-9	FLPRO	1	op715,GJR792,240,,,1,1,water	ok
JR00946583	39	fc12022-10	FLPRO	1	op715,GJR792,240,,,1,1,water	ok
JR00946584	40	fc12022-11	FLPRO	1	op715,GJR792,240,,,1,1,water	ok
JR00946585	4	cc790-3	FLPRO	100/500	op715,GJR792,250,,,1,5,water	pass
JR00946586	1	ccb	FLPRO	1	op715,GJR792,250,,,1,1,water	-
JR00946587	41	fc12031-4	FLPRO	1	op715,GJR792,250,,,1,1,water	ok
JR00946588	42	fc12031-6	FLPRO	1	op715,GJR792,240,,,1,1,water	ok
JR00946589	43	fc12031-8	FLPRO	1	op715,GJR792,240,,,1,1,water	ok
JR00946590	44	op715-ms	FLPRO	1	op715,GJR792,120,,,1,1,water	ok
JR00946591	45	op715-msd	FLPRO	1	op715,GJR792,120,,,1,1,water	ok
JR00946592	4	ecc790-3	FLPRO	100/500	op715,GJR792,250,,,1,5,water	pass
JR00946593	1	ccb	FLPRO	1	op715,GJR792,250,,,1,1,water	-

SGS - ORLANDO

LIQUID SAMPLE PREP REPORT

Date/Time: 12/19/2023 7:30
Started: {mm/dd/yy 24:00}

Date/Time: 12-19-23 9:50
Finished: {mm/dd/yy 24:00}

Prep Method: 3510C

Analytical Method: FLPRO

Batch#: OP715 Ext. By: GT MJM Conc. By: EA Vialed By: AN

Sample ID	Bottle Number	Amount Extracted (ml)	Initial pH	Adjusted pH	Surrogate Amount	Spike Amount	Final Volume (ml)	Comments
OP715-MB	-	250	6	<2	250 ul		1ml	
OP715-BS	-	250	6	<2	250 ul	400 ul		
FC11891-1	7	250	<2	NA				
FC11891-2	6	240						
FC11891-7	6	250						
FC11891-10	6	240						
FC12022-8	7	240						
FC12022-9	7	240						
FC12022-10	7	240						
FC12022-11	8	240						
FC12031-4	2	250						
FC12031-6	5	240						
FC12031-8	3	240	↓	↓	↓		↓	
			QM 12-19-23					
FC11891-1 MS	6	120	<2	NA	250 ul	400 ul	1ml	
FC11891-1 MSD	6	120	↓	↓	250 ul	400 ul	↓	
DUP								

Comments:

Surr ID: ~~E74598~~ E74598 Conc: 100 ppm Exp. Date: 6/13/24 Inj. By: GT Ver. By: GT

Spk ID: E7417B Conc: 100 ppm Exp. Date: 3/28/24 Inj. By: GT Ver. By: GT

Initial Bath Temp (Therm ID): TH#14,15 Exchange Bath/N-Evap Temp (Therm ID): /

Observed Temp °C: 45c Observed Temp °C: / Corr. Temp °C: /

CH2CL2 Lot#	234763	Hexane Lot #	X	H2SO4 Lot#	2303M19
CH3CN Lot #	X	Methanol Lot #	X	Acetone Lot#	X
Syr Filter Lot#	X	pH Paper #	218623	NaOH Lot #	X

Copper Lot # X If Sulfur Cleaning is performed in Extractions (3660B)

Relinquished By: QM Date: 12-19-23

Accepted By: [signature] Date: 12-19-23

FLPROaq_rev 02232021_SH

Page 1 of 1

Metals Analysis

QC Data Summaries

Includes the following where applicable:

- Instrument Runlogs
- Initial and Continuing Calibration Blanks
- Initial and Continuing Calibration Checks
- High and Low Check Standards
- Interfering Element Check Standards
- Method Blank Summaries
- Matrix Spike and Duplicate Summaries
- Blank Spike and Lab Control Sample Summaries
- Serial Dilution Summaries
- IDL and Linear Range Summaries

SGS Instrument Runlog
Inorganics Analyses

Login Number: FC12031
Account: HGLFLMI - Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

File ID: SA123023M2.ICP Date Analyzed: 12/30/23 Methods: SW846 6010D
Analyst: LM Run ID: MA19940
Parameters: Na

Time	Sample Description	Dilution Factor	PS Recov	Comments
11:36	MA19940-STD1	1		STDA
11:47	MA19940-STD2	1		STDB
11:50	MA19940-STD3	1		STDC
11:57	MA19940-STD4	1		STDD
12:01	MA19940-STD5	1		STDE
12:06	MA19940-STD6	1		STDF
12:11	MA19940-STD7	1		STDG
12:27	MA19940-CRIA1	1		
12:33	MA19940-HSTD1	1		
12:40	MA19940-ICV1	1		
12:58	MA19940-ICB1	1		
13:03	MA19940-ICSA1	1		
13:13	MA19940-ICSAB1	1		
13:20	MA19940-CCV1	1		
13:26	MA19940-CCB1	1		
14:22	MA19940-CCV2	1		
14:27	MA19940-CCB2	1		
15:24	MA19940-CCV3	1		
15:29	MA19940-CCB3	1		
15:45	ZZZZZZ	5		
15:52	MA19940-CCV4	1		
16:00	MA19940-CCB4	1		
16:12	ZZZZZZ	5		
16:17	ZZZZZZ	5		
16:22	MP43343-MB1	1		
16:27	MP43343-B1	1		
16:48	MA19940-CCV5	1		
16:53	MA19940-CCB5	1		
17:15	ZZZZZZ	1		
17:20	ZZZZZZ	1		
17:25	ZZZZZZ	1		
17:30	ZZZZZZ	1		
17:35	ZZZZZZ	1		

SGS Instrument Runlog
Inorganics Analyses

Login Number: FC12031
Account: HGLFLMI - Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

File ID: SA123023M2.ICP Date Analyzed: 12/30/23 Methods: SW846 6010D
Analyst: LM Run ID: MA19940
Parameters: Na

Time	Sample Description	Dilution Factor	PS Recov	Comments
17:40	ZZZZZZ	5		
17:45	ZZZZZZ	5		
17:51	MA19940-CCV6	1		
17:56	MA19940-CCB6	1		
18:01	ZZZZZZ	5		
18:17	ZZZZZZ	1		
18:23	ZZZZZZ	1		
18:28	ZZZZZZ	1		
18:33	ZZZZZZ	1		
18:38	ZZZZZZ	1		
18:49	ZZZZZZ	1		
18:54	MA19940-CCV7	1		
18:59	MA19940-CCB7	1		
19:04	ZZZZZZ	1		
19:10	ZZZZZZ	1		
19:15	MP43346-MB1	1		
19:20	MP43346-B1	1		
19:25	FC11943-6	1		(sample used for QC only; not part of login FC12031)
19:31	MP43346-D1	1		
19:36	MP43346-SD1	5		
19:41	MP43346-PS1	1		
19:47	MP43346-S1	1		
19:52	MP43346-S2	1		
---------->	Last reportable sample/prep for job FC12031			
19:57	MA19940-CCV8	1		
20:03	MA19940-CCB8	1		
---------->	Last reportable CCB for job FC12031			
20:08	ZZZZZZ	1		
20:13	ZZZZZZ	1		
20:18	ZZZZZZ	1		
20:23	ZZZZZZ	1		
20:29	ZZZZZZ	1		
20:34	ZZZZZZ	1		
20:39	ZZZZZZ	1		
20:49	ZZZZZZ	1		

SGS Instrument Runlog
Inorganics Analyses

Login Number: FC12031
Account: HGLFLMI - Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

File ID: SA123023M2.ICP Date Analyzed: 12/30/23 Methods: SW846 6010D
Analyst: LM Run ID: MA19940
Parameters: Na

Time	Sample Description	Dilution Factor	PS Recov	Comments
20:55	ZZZZZZ	1		
21:00	MA19940-CCV9	1		
21:05	MA19940-CCB9	1		
21:10	ZZZZZZ	1		
21:16	ZZZZZZ	1		
21:21	ZZZZZZ	1		
21:26	ZZZZZZ	1		
21:31	ZZZZZZ	1		
21:37	ZZZZZZ	1		
21:42	ZZZZZZ	1		
21:47	ZZZZZZ	1		
21:53	ZZZZZZ	1		
21:58	MA19940-CCV10	1		
22:03	MA19940-CCB10	1		

Refer to raw data for calibration curve and standards.

REPORTED ELEMENTS SUMMARY

Login Number: FC12031
Account: HGLFLMI - Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

File ID: SA123023M2.ICP Date Analyzed: 12/30/23 Methods: SW846 6010D
Analyst: LM Run ID: MA19940
Parameters: Na

Time	Sample Description	Element: Dilution	Na
12:27	MA19940-CRIA1	1	X
12:33	MA19940-HSTD1	1	X
12:40	MA19940-ICV1	1	X
12:58	MA19940-ICB1	1	X
13:03	MA19940-ICSA1	1	X
13:13	MA19940-ICSAB1	1	X
13:20	MA19940-CCV1	1	X
13:26	MA19940-CCB1	1	X
14:22	MA19940-CCV2	1	X
14:27	MA19940-CCB2	1	X
15:24	MA19940-CCV3	1	X
15:29	MA19940-CCB3	1	X
15:45	ZZZZZZ	5	
15:52	MA19940-CCV4	1	X
16:00	MA19940-CCB4	1	X
16:12	ZZZZZZ	5	
16:17	ZZZZZZ	5	
16:22	MP43343-MB1	1	
16:27	MP43343-B1	1	
16:48	MA19940-CCV5	1	X
16:53	MA19940-CCB5	1	X
17:15	ZZZZZZ	1	
17:20	ZZZZZZ	1	
17:25	ZZZZZZ	1	
17:30	ZZZZZZ	1	
17:35	ZZZZZZ	1	
17:40	ZZZZZZ	5	
17:45	ZZZZZZ	5	
17:51	MA19940-CCV6	1	X
17:56	MA19940-CCB6	1	X
18:01	ZZZZZZ	5	
18:17	ZZZZZZ	1	
18:23	ZZZZZZ	1	
		Element:	Na

REPORTED ELEMENTS SUMMARY

Login Number: FC12031
Account: HGLFLMI - Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

File ID: SA123023M2.ICP Date Analyzed: 12/30/23 Methods: SW846 6010D
Analyst: LM Run ID: MA19940
Parameters: Na

Time	Sample Description	Element: Dilution	Na	
18:28	ZZZZZZ	1		
18:33	ZZZZZZ	1		
18:38	ZZZZZZ	1		
18:49	ZZZZZZ	1		
18:54	MA19940-CCV7	1	X	
18:59	MA19940-CCB7	1	X	
19:04	ZZZZZZ	1		
19:10	ZZZZZZ	1		
19:15	MP43346-MB1	1	X	
19:20	MP43346-B1	1	X	
19:25	FC11943-6	1	X	(a)
19:31	MP43346-D1	1	X	
19:36	MP43346-SD1	5	X	
19:41	MP43346-PS1	1	X	
19:47	MP43346-S1	1	X	
19:52	MP43346-S2	1	X	
19:57	MA19940-CCV8	1	X	
20:03	MA19940-CCB8	1	X	
20:08	ZZZZZZ	1		
20:13	ZZZZZZ	1		
20:18	ZZZZZZ	1		
20:23	ZZZZZZ	1		
20:29	ZZZZZZ	1		
20:34	ZZZZZZ	1		
20:39	ZZZZZZ	1		
20:49	ZZZZZZ	1		
20:55	ZZZZZZ	1		
21:00	MA19940-CCV9	1	X	
21:05	MA19940-CCB9	1	X	
21:10	ZZZZZZ	1		
21:16	ZZZZZZ	1		
21:21	ZZZZZZ	1		
21:26	ZZZZZZ	1		
		Element:	Na	

REPORTED ELEMENTS SUMMARY

Login Number: FC12031
Account: HGLFLMI - Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

File ID: SA123023M2.ICP Date Analyzed: 12/30/23 Methods: SW846 6010D
Analyst: LM Run ID: MA19940
Parameters: Na

Time	Sample Description	Element: Dilution	N a
21:31	ZZZZZZ	1	
21:37	ZZZZZZ	1	
21:42	ZZZZZZ	1	
21:47	ZZZZZZ	1	
21:53	ZZZZZZ	1	
21:58	MA19940-CCV10	1	X
22:03	MA19940-CCB10	1	X

(a) Sample used for QC only; not part of login FC12031.

Element: N
a

INTERNAL STANDARD SUMMARY

Login Number: FC12031
Account: HGLFLMI - Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

File ID: SA123023M2.ICP Date Analyzed: 12/30/23 Methods: SW846 6010D
Analyst: LM Run ID: MA19940
Parameters: Na

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
11:36	MA19940-STD1	8026	54462	16825	3470
11:47	MA19940-STD2	7896	52992	16767	3308
11:50	MA19940-STD3	7985	54102	16971	3313
11:57	MA19940-STD4	7889	53247	16764	3211
12:01	MA19940-STD5	7812	52794	16929	3081
12:06	MA19940-STD6	7627	51510	16915	2902
12:11	MA19940-STD7	7361	50178	16820	2674
12:27	MA19940-CRIA1	7902	53292	17152	3322
12:33	MA19940-HSTD1	7374	49911	16908	2668
12:40	MA19940-ICV1	7658	51693	17029	2918
12:58	MA19940-ICB1	7981 R	54267 R	17273 R	3453 R
13:03	MA19940-ICSA1	6832	45436	16315	2287
13:13	MA19940-ICSAB1	6959	45447	16558	2412
13:20	MA19940-CCV1	7604	51102	17092	2905
13:26	MA19940-CCB1	8011	53761	17151	3476
14:22	MA19940-CCV2	7621	51542	17367	2923
14:27	MA19940-CCB2	8002	54358	17581	3479
15:24	MA19940-CCV3	7624	51549	17411	2922
15:29	MA19940-CCB3	7972	54458	17495	3468
15:45	ZZZZZZ	7843	53662	17652	3273
15:52	MA19940-CCV4	7617	51434	16907	2907
16:00	MA19940-CCB4	8004	54882	17388	3471
16:12	ZZZZZZ	7894	53688	17632	3196
16:17	ZZZZZZ	7980	54113	17353	3321
16:22	MP43343-MB1	8013	55034	17237	3462
16:27	MP43343-B1	7711	52182	17160	2980
16:48	MA19940-CCV5	7670	52222	17150	2923
16:53	MA19940-CCB5	8044	55176	16925	3471
17:15	ZZZZZZ	9357	62057	19903	3083
17:20	ZZZZZZ	9149	61161	20227	3047
17:25	ZZZZZZ	8567	57873	19003	3052
17:30	ZZZZZZ	9178	61845	19872	3114
17:35	ZZZZZZ	9331	63249	20354	3158

INTERNAL STANDARD SUMMARY

Login Number: FC12031
Account: HGLFLMI - Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

File ID: SA123023M2.ICP Date Analyzed: 12/30/23 Methods: SW846 6010D
Analyst: LM Run ID: MA19940
Parameters: Na

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
17:40	ZZZZZZ	9095	61747	20057	3187
17:45	ZZZZZZ	8923	60138	20097	2914
17:51	MA19940-CCV6	7747	52945	17146	2948
17:56	MA19940-CCB6	8136	56194	17544	3509
18:01	ZZZZZZ	9476	64184	21257	3032
18:17	ZZZZZZ	9009	60389	19909	2980
18:23	ZZZZZZ	9015	60872	19954	3056
18:28	ZZZZZZ	8903	60149	19978	2986
18:33	ZZZZZZ	9054	60974	19842	3173
18:38	ZZZZZZ	8884	59779	19434	3250
18:49	ZZZZZZ	9237	61700	20066	3207
18:54	MA19940-CCV7	7762	53070	17391	2954
18:59	MA19940-CCB7	8162	56237	17651	3521
19:04	ZZZZZZ	9080	61174	20543	2914
19:10	ZZZZZZ	8416	57224	18885	3003
19:15	MP43346-MB1	8160	56573	17784	3515
19:20	MP43346-B1	7808	53097	17538	3036
19:25	FC11943-6	7746	52979	17608	2963
19:31	MP43346-D1	7746	52904	17710	2960
19:36	MP43346-SD1	8092	55292	17648	3347
19:41	MP43346-PS1	7699	52613	17632	2933
19:47	MP43346-S1	7552	51248	17513	2766
19:52	MP43346-S2	7555	51186	17420	2760
19:57	MA19940-CCV8	7771	52718	17447	2975
20:03	MA19940-CCB8	8166	55789	17660	3539
20:08	ZZZZZZ	8040	54826	17825	3381
20:13	ZZZZZZ	8159	56038	17814	3533
20:18	ZZZZZZ	7931	53903	17603	3298
20:23	ZZZZZZ	7850	53193	17671	3269
20:29	ZZZZZZ	7972	54400	17688	3342
20:34	ZZZZZZ	8118	55255	17693	3453
20:39	ZZZZZZ	8145	55618	17716	3515
20:49	ZZZZZZ	7929	53966	17636	3244

INTERNAL STANDARD SUMMARY

Login Number: FC12031
Account: HGLFLMI - Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

File ID: SA123023M2.ICP Date Analyzed: 12/30/23 Methods: SW846 6010D
Analyst: LM Run ID: MA19940
Parameters: Na

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
20:55	ZZZZZZ	7928	53995	17638	3251
21:00	MA19940-CCV9	7773	52528	17401	2971
21:05	MA19940-CCB9	8159	55423	17575	3546
21:10	ZZZZZZ	7349	49492	17139	2881
21:16	ZZZZZZ	7695	52072	17356	3152
21:21	ZZZZZZ	7789	52807	17417	3223
21:26	ZZZZZZ	7811	53215	17509	3223
21:31	ZZZZZZ	7383	49582	17074	2854
21:37	ZZZZZZ	7795	52554	17333	3164
21:42	ZZZZZZ	7829	53189	17624	3198
21:47	ZZZZZZ	7880	53565	17675	3219
21:53	ZZZZZZ	7868	53449	17554	3265
21:58	MA19940-CCV10	7791	52400	17442	2973
22:03	MA19940-CCB10	8190	55673	17625	3555

R = Reference for ISTD limits. ! = Outside limits.

LEGEND:

Istd#	Parameter	Limits
Istd#1	Yttrium (2243)	60-125 %
Istd#2	Yttrium (3600)	60-125 %
Istd#3	Yttrium (3710)	60-125 %
Istd#4	Indium	60-125 %

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: FC12031
Account: HGLFLMI - Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

File ID: SA123023M2.ICP Date Analyzed: 12/30/23 Methods: SW846 6010D
QC Limits: result < RL Run ID: MA19940 Units: ug/l

Time:			12:58		13:26		14:27		15:29	
Sample ID:			ICB1		CCB1		CCB2		CCB3	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Aluminum	200	14	anr							
Antimony	6.0	1								
Arsenic	10	1.3	anr							
Barium	200	.5	anr							
Beryllium	4.0	.1	anr							
Boron	100	5								
Cadmium	5.0	.1	anr							
Calcium	1000	50	anr							
Chromium	10	.5	anr							
Cobalt	50	.2	anr							
Copper	25	1	anr							
Iron	300	15	anr							
Lead	5.0	1	anr							
Lithium	10	.5								
Magnesium	5000	35	anr							
Manganese	15	.25	anr							
Molybdenum	50	.3								
Nickel	40	.4	anr							
Potassium	10000	100	anr							
Selenium	10	2	anr							
Silver	10	.5	anr							
Sodium	10000	250	-25.0	<10000	-18.1	<10000	-16.3	<10000	-15.0	<10000
Strontium	10	.25								
Thallium	10	1								
Tin	50	.5								
Titanium	10	.5								
Vanadium	50	.5	anr							
Zinc	20	3	anr							

(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: FC12031
Account: HGLFLMI - Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

File ID: SA123023M2.ICP Date Analyzed: 12/30/23 Methods: SW846 6010D
QC Limits: result < RL Run ID: MA19940 Units: ug/l

Time: / Sample ID:			16:00 CCB4		16:53 CCB5		17:56 CCB6		18:59 CCB7	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Aluminum	200	14	anr							
Antimony	6.0	1								
Arsenic	10	1.3	anr							
Barium	200	.5	anr							
Beryllium	4.0	.1	anr							
Boron	100	5								
Cadmium	5.0	.1	anr							
Calcium	1000	50	anr							
Chromium	10	.5	anr							
Cobalt	50	.2	anr							
Copper	25	1	anr							
Iron	300	15	anr							
Lead	5.0	1	anr							
Lithium	10	.5								
Magnesium	5000	35	anr							
Manganese	15	.25	anr							
Molybdenum	50	.3								
Nickel	40	.4	anr							
Potassium	10000	100	anr							
Selenium	10	2	anr							
Silver	10	.5	anr							
Sodium	10000	250	-17.1	<10000	-15.6	<10000	-14.1	<10000	-22.1	<10000
Strontium	10	.25								
Thallium	10	1								
Tin	50	.5								
Titanium	10	.5								
Vanadium	50	.5	anr							
Zinc	20	3	anr							

(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: FC12031
Account: HGLFLMI - Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

File ID: SA123023M2.ICP Date Analyzed: 12/30/23 Methods: SW846 6010D
QC Limits: result < RL Run ID: MA19940 Units: ug/l

Time:			20:03	
Sample ID:			CCB8	
Metal	RL	IDL	raw	final
Aluminum	200	14	anr	
Antimony	6.0	1		
Arsenic	10	1.3	anr	
Barium	200	.5	anr	
Beryllium	4.0	.1	anr	
Boron	100	5		
Cadmium	5.0	.1	anr	
Calcium	1000	50	anr	
Chromium	10	.5	anr	
Cobalt	50	.2	anr	
Copper	25	1	anr	
Iron	300	15	anr	
Lead	5.0	1	anr	
Lithium	10	.5		
Magnesium	5000	35	anr	
Manganese	15	.25	anr	
Molybdenum	50	.3		
Nickel	40	.4	anr	
Potassium	10000	100	anr	
Selenium	10	2	anr	
Silver	10	.5	anr	
Sodium	10000	250	-9.70	<10000
Strontium	10	.25		
Thallium	10	1		
Tin	50	.5		
Titanium	10	.5		
Vanadium	50	.5	anr	
Zinc	20	3	anr	

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: FC12031
Account: HGLFLMI - Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

File ID: SA123023M2.ICP Date Analyzed: 12/30/23 Methods: SW846 6010D
QC Limits: 90 to 110 % Recovery Run ID: MA19940 Units: ug/l

Time:		12:40			13:20			14:22	
Sample ID:	ICV	ICV1		CCV	CCV1		CCV	CCV2	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum	anr								
Antimony									
Arsenic	anr								
Barium	anr								
Beryllium	anr								
Boron									
Cadmium	anr								
Calcium	anr								
Chromium	anr								
Cobalt	anr								
Copper	anr								
Iron	anr								
Lead	anr								
Lithium									
Magnesium	anr								
Manganese	anr								
Molybdenum									
Nickel	anr								
Potassium	anr								
Selenium	anr								
Silver	anr								
Sodium	40000	40200	100.5	40000	40900	102.3	40000	40900	102.3
Strontium									
Thallium									
Tin									
Titanium									
Vanadium	anr								
Zinc	anr								

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: FC12031
Account: HGLFLMI - Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

File ID: SA123023M2.ICP Date Analyzed: 12/30/23 Methods: SW846 6010D
QC Limits: 90 to 110 % Recovery Run ID: MA19940 Units: ug/l

Time:		15:24			15:52			16:48	
Sample ID:	CCV	CCV3		CCV	CCV4		CCV	CCV5	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum	anr								
Antimony									
Arsenic	anr								
Barium	anr								
Beryllium	anr								
Boron									
Cadmium	anr								
Calcium	anr								
Chromium	anr								
Cobalt	anr								
Copper	anr								
Iron	anr								
Lead	anr								
Lithium									
Magnesium	anr								
Manganese	anr								
Molybdenum									
Nickel	anr								
Potassium	anr								
Selenium	anr								
Silver	anr								
Sodium	40000	40900	102.3	40000	40400	101.0	40000	40400	101.0
Strontium									
Thallium									
Tin									
Titanium									
Vanadium	anr								
Zinc	anr								

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: FC12031
Account: HGLFLMI - Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

File ID: SA123023M2.ICP Date Analyzed: 12/30/23 Methods: SW846 6010D
QC Limits: 90 to 110 % Recovery Run ID: MA19940 Units: ug/l

Time:		17:51			18:54			19:57	
Sample ID:	CCV	CCV6		CCV	CCV7		CCV	CCV8	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum	anr								
Antimony									
Arsenic	anr								
Barium	anr								
Beryllium	anr								
Boron									
Cadmium	anr								
Calcium	anr								
Chromium	anr								
Cobalt	anr								
Copper	anr								
Iron	anr								
Lead	anr								
Lithium									
Magnesium	anr								
Manganese	anr								
Molybdenum									
Nickel	anr								
Potassium	anr								
Selenium	anr								
Silver	anr								
Sodium	40000	40100	100.3	40000	40000	100.0	40000	40200	100.5
Strontium									
Thallium									
Tin									
Titanium									
Vanadium	anr								
Zinc	anr								

(*) Outside of QC limits
(anr) Analyte not requested

HIGH STANDARD CHECK SUMMARY

Login Number: FC12031
Account: HGLFLMI - Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

File ID: SA123023M2.ICP Date Analyzed: 12/30/23 Methods: SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA19940 Units: ug/l

Time:		12:33	
Sample ID:	HSTD	HSTD1	
Metal	True	Results	% Rec
Aluminum	anr		
Antimony			
Arsenic	anr		
Barium	anr		
Beryllium	anr		
Boron			
Cadmium	anr		
Calcium	anr		
Chromium	anr		
Cobalt	anr		
Copper	anr		
Iron	anr		
Lead	anr		
Lithium			
Magnesium	anr		
Manganese	anr		
Molybdenum			
Nickel	anr		
Potassium	anr		
Selenium	anr		
Silver	anr		
Sodium	80000	80000	100.0
Strontium			
Thallium			
Tin			
Titanium			
Vanadium	anr		
Zinc	anr		

(*) Outside of QC limits
(anr) Analyte not requested

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: FC12031
Account: HGLFLMI - Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

File ID: SA123023M2.ICP Date Analyzed: 12/30/23 Methods: SW846 6010D
QC Limits: CRI 70-130% CRIA 70-130% Run ID: MA19940 Units: ug/l

Time:			12:27	
Sample ID:	CRI	CRIA	CRIA1	
Metal	True	True	Results	% Rec
Aluminum	400	200	anr	
Antimony	10	5.0		
Arsenic	20	10	anr	
Barium	400	200	anr	
Beryllium	10	5.0	anr	
Boron	100	50		
Cadmium	10	5.0	anr	
Calcium	2000	1000	anr	
Chromium	20	10	anr	
Cobalt	100	50	anr	
Copper	50	25	anr	
Iron	600	300	anr	
Lead	10	5.0	anr	
Lithium	18	9.0		
Magnesium	10000	5000	anr	
Manganese	30	15	anr	
Molybdenum	100	50		
Nickel	80	40	anr	
Potassium	20000	10000	anr	
Selenium	20	10	anr	
Silver	20	10	anr	
Sodium	20000	10000	9140	91.4
Strontium	20	10		
Thallium	20	10		
Tin	100	50		
Titanium	20	10		
Vanadium	100	50	anr	
Zinc	40	20	anr	

(*) Outside of QC limits
(anr) Analyte not requested

INTERFERING ELEMENT CHECK STANDARDS SUMMARY
Part 1 - ICSA and ICSAB Standards

Login Number: FC12031
Account: HGLFLMI - Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

File ID: SA123023M2.ICP Date Analyzed: 12/30/23 Methods: SW846 6010D
QC Limits: 80 to 120 % Recovery Run ID: MA19940 Units: ug/l

Time:			13:03		13:13	
Sample ID:	ICSA	ICSAB	ICSA1		ICSAB1	
Metal	True	True	Results	% Rec	Results	% Rec
Aluminum	500000	500000	505000	101.0	501000	100.2
Antimony		1000	-0.400		1020	102.0
Arsenic		1000	1.10		1010	101.0
Barium		500	-0.100		479	95.8
Beryllium		500	0.00		485	97.0
Boron		1000	-4.90		958	95.8
Cadmium		1000	0.00		941	94.1
Calcium	500000	500000	481000	96.2	478000	95.6
Chromium		500	0.200		483	96.6
Cobalt		500	-0.100		452	90.4
Copper		500	-0.100		535	107.0
Iron	500000	200000	461000	92.2	181000	90.5
Lead		1000	0.00		1000	100.0
Lithium		1000	0.500		532	53.2
Magnesium	500000	500000	539000	107.8	534000	106.8
Manganese		500	0.900		506	101.2
Molybdenum		1000	0.00		901	90.1
Nickel		1000	0.400		866	86.6
Potassium			-35.0		-3.60	
Selenium		1000	0.00		941	94.1
Silver		1000	0.00		1050	105.0
Sodium			268		263	
Strontium		1000	0.100		998	99.8
Thallium		1000	0.00		952	95.2
Tin		1000	0.500		878	87.8
Titanium		1000	-0.900		1020	102.0
Vanadium		500	-0.400		514	102.8
Zinc		1000	2.90		899	89.9

(*) Outside of QC limits
(anr) Analyte not requested

SGS Instrument Runlog
Inorganics Analyses

Login Number: FC12031
Account: HGLFLMI - Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

File ID: SB010324M1.ICP Date Analyzed: 01/03/24 Methods: SW846 6010D
Analyst: LM Run ID: MA19942
Parameters: Na

Time	Sample Description	Dilution Factor	PS Recov	Comments
11:49	MA19942-STD1	1		STDA
11:54	MA19942-STD2	1		STDB
11:58	MA19942-STD3	1		STDC
12:02	MA19942-STD4	1		STDD
12:08	MA19942-STD5	1		STDE
12:12	MA19942-STD6	1		STDF
12:27	MA19942-STD7	1		STDG
12:38	MA19942-CRIA1	1		
12:49	MA19942-HSTD1	1		
13:15	MA19942-ICV1	1		
13:24	MA19942-ICB1	1		
13:28	MA19942-ICSA1	1		
13:36	MA19942-ICSAB1	1		
13:44	MA19942-CCV1	1		
13:54	MA19942-CCB1	1		
14:03	FC12205-3	5		(sample used for QC only; not part of login FC12031)
14:08	MP43343-D1	5		
14:13	MP43343-S1	5		
14:18	MP43343-S2	5		
14:22	MP43343-PS1	5		
14:27	MP43343-SD1	25		
14:32	ZZZZZZ	5		
14:37	ZZZZZZ	5		
14:42	ZZZZZZ	5		
14:48	FC11943-6	2		(sample used for QC only; not part of login FC12031)
14:52	MA19942-CCV2	1		
14:57	MA19942-CCB2	1		
15:02	MP43346-D1	2		
15:07	MP43346-S1	2		
15:12	MP43346-S2	2		
15:17	MP43346-PS1	2		
15:22	MP43346-SD1	10		
15:27	FC12031-6	5		
---------->	Last reportable sample/prep for job FC12031			

SGS Instrument Runlog
Inorganics Analyses

Login Number: FC12031
Account: HGLFLMI - Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

File ID: SB010324M1.ICP Date Analyzed: 01/03/24 Methods: SW846 6010D
Analyst: LM Run ID: MA19942
Parameters: Na

	Time	Sample Description	Dilution Factor	PS Recov	Comments
	15:32	ZZZZZZ	5		
	15:37	ZZZZZZ	5		
	15:42	ZZZZZZ	5		
	15:47	ZZZZZZ	5		
	15:52	MA19942-CCV3	1		
	16:00	MA19942-CCB3	1		
---------->	Last reportable CCB for job FC12031				
	16:06	MA19942-CCV4	1		
	16:11	MA19942-CCB4	1		
	16:16	ZZZZZZ	10		
	16:26	ZZZZZZ	5		
	16:31	ZZZZZZ	5		
	16:36	MP43344-SD1	25		
	16:41	MP43349-MB1	1		
	16:46	MP43349-B1	1		
	16:51	FC11943-6F	1		(sample used for QC only; not part of login FC12031)
	16:56	MA19942-CCV5	1		
	17:00	MA19942-CCB5	1		
	17:06	MP43349-D1	1		
	17:11	MP43349-SD1	5		
	17:16	MP43349-PS1	1		
	17:21	MP43349-S1	1		
	17:25	MP43349-S2	1		
	17:30	ZZZZZZ	1		
	17:35	ZZZZZZ	1		
	17:40	ZZZZZZ	1		
	17:45	ZZZZZZ	1		
	17:50	ZZZZZZ	1		
	17:55	MA19942-CCV6	1		
	18:00	MA19942-CCB6	1		
	18:05	ZZZZZZ	1		
	18:10	ZZZZZZ	1		
	18:15	ZZZZZZ	1		
	18:20	ZZZZZZ	1		

SGS Instrument Runlog
Inorganics Analyses

Login Number: FC12031
Account: HGLFLMI - Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

File ID: SB010324M1.ICP Date Analyzed: 01/03/24 Methods: SW846 6010D
Analyst: LM Run ID: MA19942
Parameters: Na

Time	Sample Description	Dilution Factor	PS Recov	Comments
18:26	ZZZZZZ	1		
18:31	ZZZZZZ	1		
18:36	ZZZZZZ	1		
18:41	ZZZZZZ	1		
18:46	ZZZZZZ	1		
18:51	ZZZZZZ	1		
18:56	MA19942-CCV7	1		
19:01	MA19942-CCB7	1		
19:06	ZZZZZZ	1		
19:11	ZZZZZZ	1		
19:26	ZZZZZZ	5		
19:31	ZZZZZZ	10		
19:36	MA19942-CCV8	1		
19:41	MA19942-CCB8	1		

Refer to raw data for calibration curve and standards.

REPORTED ELEMENTS SUMMARY

Login Number: FC12031
Account: HGLFLMI - Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

File ID: SB010324M1.ICP Date Analyzed: 01/03/24 Methods: SW846 6010D
Analyst: LM Run ID: MA19942
Parameters: Na

Time	Sample Description	Element: Dilution	Na	
12:38	MA19942-CRIA1	1	X	
12:49	MA19942-HSTD1	1	X	
13:15	MA19942-ICV1	1	X	
13:24	MA19942-ICB1	1	X	
13:28	MA19942-ICSA1	1	X	
13:36	MA19942-ICSAB1	1	X	
13:44	MA19942-CCV1	1	X	
13:54	MA19942-CCB1	1	X	
14:03	FC12205-3	5		(a)
14:08	MP43343-D1	5		
14:13	MP43343-S1	5		
14:18	MP43343-S2	5		
14:22	MP43343-PS1	5		
14:27	MP43343-SD1	25		
14:32	ZZZZZZ	5		
14:37	ZZZZZZ	5		
14:42	ZZZZZZ	5		
14:48	FC11943-6	2		(a)
14:52	MA19942-CCV2	1	X	
14:57	MA19942-CCB2	1	X	
15:02	MP43346-D1	2		
15:07	MP43346-S1	2		
15:12	MP43346-S2	2		
15:17	MP43346-PS1	2		
15:22	MP43346-SD1	10		
15:27	FC12031-6	5	X	
15:32	ZZZZZZ	5		
15:37	ZZZZZZ	5		
15:42	ZZZZZZ	5		
15:47	ZZZZZZ	5		
15:52	MA19942-CCV3	1	X	
16:00	MA19942-CCB3	1	X	
16:06	MA19942-CCV4	1	X	
		Element:	Na	

REPORTED ELEMENTS SUMMARY

Login Number: FC12031
Account: HGLFLMI - Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

File ID: SB010324M1.ICP Date Analyzed: 01/03/24 Methods: SW846 6010D
Analyst: LM Run ID: MA19942
Parameters: Na

Time	Sample Description	Element: Dilution	Na	
16:11	MA19942-CCB4	1	X	
16:16	ZZZZZZ	10		
16:26	ZZZZZZ	5		
16:31	ZZZZZZ	5		
16:36	MP43344-SD1	25		
16:41	MP43349-MB1	1	X	
16:46	MP43349-B1	1	X	
16:51	FC11943-6F	1	X	(a)
16:56	MA19942-CCV5	1	X	
17:00	MA19942-CCB5	1	X	
17:06	MP43349-D1	1	X	
17:11	MP43349-SD1	5	X	
17:16	MP43349-PS1	1	X	
17:21	MP43349-S1	1	X	
17:25	MP43349-S2	1	X	
17:30	ZZZZZZ	1		
17:35	ZZZZZZ	1		
17:40	ZZZZZZ	1		
17:45	ZZZZZZ	1		
17:50	ZZZZZZ	1		
17:55	MA19942-CCV6	1	X	
18:00	MA19942-CCB6	1	X	
18:05	ZZZZZZ	1		
18:10	ZZZZZZ	1		
18:15	ZZZZZZ	1		
18:20	ZZZZZZ	1		
18:26	ZZZZZZ	1		
18:31	ZZZZZZ	1		
18:36	ZZZZZZ	1		
18:41	ZZZZZZ	1		
18:46	ZZZZZZ	1		
18:51	ZZZZZZ	1		
18:56	MA19942-CCV7	1	X	
		Element:	Na	

REPORTED ELEMENTS SUMMARY

Login Number: FC12031
Account: HGLFLMI - Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

File ID: SB010324M1.ICP Date Analyzed: 01/03/24 Methods: SW846 6010D
Analyst: LM Run ID: MA19942
Parameters: Na

Time	Sample Description	Dilution	Element: N a
19:01	MA19942-CCB7	1	X
19:06	ZZZZZZ	1	
19:11	ZZZZZZ	1	
19:26	ZZZZZZ	5	
19:31	ZZZZZZ	10	
19:36	MA19942-CCV8	1	X
19:41	MA19942-CCB8	1	X

(a) Sample used for QC only; not part of login FC12031.

Element: N
a

INTERNAL STANDARD SUMMARY

Login Number: FC12031
Account: HGLFLMI - Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

File ID: SB010324M1.ICP Date Analyzed: 01/03/24 Methods: SW846 6010D
Analyst: LM Run ID: MA19942
Parameters: Na

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
11:49	MA19942-STD1	1904	21417	4851	792
11:54	MA19942-STD2	1832	20927	4801	731
11:58	MA19942-STD3	1842	20755	4632	731
12:02	MA19942-STD4	1820	20231	4549	708
12:08	MA19942-STD5	1803	19762	4382	678
12:12	MA19942-STD6	1745	19443	4367	638
12:27	MA19942-STD7	1684	18962	4317	602
12:38	MA19942-CRIA1	1857	20195	4384	724
12:49	MA19942-HSTD1	1698	18855	4159	604
13:15	MA19942-ICV1	1774	19390	4382	652
13:24	MA19942-ICB1	1896 R	20718 R	4398 R	780 R
13:28	MA19942-ICSA1	1508	16859	4081	560
13:36	MA19942-ICSAB1	1564	17481	4111	545
13:44	MA19942-CCV1	1743	19375	4333	640
13:54	MA19942-CCB1	1889	20964	4401	770
14:03	FC12205-3	2259	25114	5536 !a	656
14:08	MP43343-D1	2307	25807	5672 !a	643
14:13	MP43343-S1	2163	24265	5362	638
14:18	MP43343-S2	2259	25270	5558 !a	633
14:22	MP43343-PS1	2256	25233	5474	650
14:27	MP43343-SD1	1948	21499	4655	719
14:32	ZZZZZZ	1954	21690	4909	633
14:37	ZZZZZZ	2109	23663	5180	637
14:42	ZZZZZZ	2047	22838	5152	604
14:48	FC11943-6	1790	20187	4448	695
14:52	MA19942-CCV2	1765	19841	4338	638
14:57	MA19942-CCB2	1883	20993	4404	763
15:02	MP43346-D1	1792	20297	4450	696
15:07	MP43346-S1	1758	19941	4360	661
15:12	MP43346-S2	1755	19720	4395	660
15:17	MP43346-PS1	1788	20115	4449	689
15:22	MP43346-SD1	1886	20708	4424	746
15:27	FC12031-6	1751	19843	4359	664

INTERNAL STANDARD SUMMARY

Login Number: FC12031
Account: HGLFLMI - Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

File ID: SB010324M1.ICP Date Analyzed: 01/03/24 Methods: SW846 6010D
Analyst: LM Run ID: MA19942
Parameters: Na

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
15:32	ZZZZZZ	2007	22066	4753	707
15:37	ZZZZZZ	1983	21583	4733	710
15:42	ZZZZZZ	2021	22069	4746	725
15:47	ZZZZZZ	1994	21835	4721	726
15:52	MA19942-CCV3	1755	19332	4364	638
16:00	MA19942-CCB3	1900	20839	4394	771
16:06	MA19942-CCV4	1750	19528	4359	636
16:11	MA19942-CCB4	1895	20463	4396	771
16:16	ZZZZZZ	2074	22738	4882	709
16:26	ZZZZZZ	2151	23182	5089	711
16:31	ZZZZZZ	2023	22159	4733	717
16:36	MP43344-SD1	1894	20564	4476	741
16:41	MP43349-MB1	1895	20567	4399	764
16:46	MP43349-B1	1768	19439	4330	648
16:51	FC11943-6F	1783	19852	4379	673
16:56	MA19942-CCV5	1763	19355	4344	640
17:00	MA19942-CCB5	1905	20566	4407	774
17:06	MP43349-D1	1789	19699	4372	675
17:11	MP43349-SD1	1877	20316	4425	738
17:16	MP43349-PS1	1782	19301	4380	663
17:21	MP43349-S1	1725	19032	4298	622
17:25	MP43349-S2	1717	18891	4297	620
17:30	ZZZZZZ	1802	19604	4358	687
17:35	ZZZZZZ	1862	20040	4371	720
17:40	ZZZZZZ	1881	20149	4414	734
17:45	ZZZZZZ	1861	20077	4395	725
17:50	ZZZZZZ	1746	18964	4329	650
17:55	MA19942-CCV6	1761	19195	4313	643
18:00	MA19942-CCB6	1890	20390	4349	769
18:05	ZZZZZZ	1845	20011	4353	723
18:10	ZZZZZZ	1851	19909	4341	727
18:15	ZZZZZZ	1813	19748	4338	699
18:20	ZZZZZZ	1803	19618	4326	696

INTERNAL STANDARD SUMMARY

Login Number: FC12031
Account: HGLFLMI - Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

File ID: SB010324M1.ICP Date Analyzed: 01/03/24 Methods: SW846 6010D
Analyst: LM Run ID: MA19942
Parameters: Na

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
18:26	ZZZZZZ	1798	19496	4325	696
18:31	ZZZZZZ	1661	18157	4218	602
18:36	ZZZZZZ	1790	19505	4307	696
18:41	ZZZZZZ	1771	19275	4290	680
18:46	ZZZZZZ	1780	19287	4310	686
18:51	ZZZZZZ	1863	20068	4362	747
18:56	MA19942-CCV7	1741	18847	4247	641
19:01	MA19942-CCB7	1870	20021	4323	772
19:06	ZZZZZZ	1977	21316	4664	717
19:11	ZZZZZZ	1875	20044	4312	756
19:26	ZZZZZZ	1814	19834	4469	665
19:31	ZZZZZZ	1570	16964	4241	558
19:36	MA19942-CCV8	1730	18876	4236	637
19:41	MA19942-CCB8	1866	19927	4315	766

R = Reference for ISTD limits. ! = Outside limits.

LEGEND:

Istd#	Parameter	Limits
Istd#1	Yttrium (2243)	60-125 %
Istd#2	Yttrium (3600)	60-125 %
Istd#3	Yttrium (3710)	60-125 %
Istd#4	Indium	60-125 %

(a) No sample results reported from this internal standard.

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: FC12031
Account: HGLFLMI - Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

File ID: SB010324M1.ICP Date Analyzed: 01/03/24 Methods: SW846 6010D
QC Limits: result < RL Run ID: MA19942 Units: ug/l

Time:			13:24		13:54		14:57		16:00	
Sample ID:			ICB1		CCB1		CCB2		CCB3	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Aluminum	200	14	anr							
Antimony	6.0	1	anr							
Arsenic	10	1.3	anr							
Barium	200	.5	anr							
Beryllium	4.0	.1	anr							
Boron	100	5								
Cadmium	5.0	.1	anr							
Calcium	1000	50	anr							
Chromium	10	.5	anr							
Cobalt	50	.2	anr							
Copper	25	1	anr							
Iron	300	15	anr							
Lead	5.0	1	anr							
Lithium	10	.5								
Magnesium	5000	35	anr							
Manganese	15	.25	anr							
Molybdenum	50	.3								
Nickel	40	.4	anr							
Potassium	10000	100	anr							
Selenium	10	2	anr							
Silver	10	.5	anr							
Sodium	10000	250	-3.70	<10000	-3.60	<10000	-5.80	<10000	-14.0	<10000
Strontium	10	.25								
Thallium	10	1	anr							
Tin	50	.5								
Titanium	10	.5								
Vanadium	50	.5	anr							
Zinc	20	3	anr							

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: FC12031
Account: HGLFLMI - Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

File ID: SB010324M1.ICP Date Analyzed: 01/03/24 Methods: SW846 6010D
QC Limits: 90 to 110 % Recovery Run ID: MA19942 Units: ug/l

Time:		13:15			13:44			14:52	
Sample ID:	ICV	ICV1		CCV	CCV1		CCV	CCV2	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum	anr								
Antimony	anr								
Arsenic	anr								
Barium	anr								
Beryllium	anr								
Boron									
Cadmium	anr								
Calcium	anr								
Chromium	anr								
Cobalt	anr								
Copper	anr								
Iron	anr								
Lead	anr								
Lithium									
Magnesium	anr								
Manganese	anr								
Molybdenum									
Nickel	anr								
Potassium	anr								
Selenium	anr								
Silver	anr								
Sodium	40000	41900	104.8	40000	40900	102.3	40000	40500	101.3
Strontium									
Thallium	anr								
Tin									
Titanium									
Vanadium	anr								
Zinc	anr								

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: FC12031
Account: HGLFLMI - Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

File ID: SB010324M1.ICP Date Analyzed: 01/03/24 Methods: SW846 6010D
QC Limits: 90 to 110 % Recovery Run ID: MA19942 Units: ug/l

Time:		15:52	
Sample ID:	CCV	CCV3	
Metal	True	Results	% Rec
Aluminum	anr		
Antimony	anr		
Arsenic	anr		
Barium	anr		
Beryllium	anr		
Boron			
Cadmium	anr		
Calcium	anr		
Chromium	anr		
Cobalt	anr		
Copper	anr		
Iron	anr		
Lead	anr		
Lithium			
Magnesium	anr		
Manganese	anr		
Molybdenum			
Nickel	anr		
Potassium	anr		
Selenium	anr		
Silver	anr		
Sodium	40000	40400	101.0
Strontium			
Thallium	anr		
Tin			
Titanium			
Vanadium	anr		
Zinc	anr		

(*) Outside of QC limits
(anr) Analyte not requested

HIGH STANDARD CHECK SUMMARY

Login Number: FC12031
Account: HGLFLMI - Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

File ID: SB010324M1.ICP Date Analyzed: 01/03/24 Methods: SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA19942 Units: ug/l

Time:		12:49	
Sample ID:	HSTD	HSTD1	
Metal	True	Results	% Rec
Aluminum	anr		
Antimony	anr		
Arsenic	anr		
Barium	anr		
Beryllium	anr		
Boron			
Cadmium	anr		
Calcium	anr		
Chromium	anr		
Cobalt	anr		
Copper	anr		
Iron	anr		
Lead	anr		
Lithium			
Magnesium	anr		
Manganese	anr		
Molybdenum			
Nickel	anr		
Potassium	anr		
Selenium	anr		
Silver	anr		
Sodium	80000	81800	102.3
Strontium			
Thallium	anr		
Tin			
Titanium			
Vanadium	anr		
Zinc	anr		

(*) Outside of QC limits
(anr) Analyte not requested

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: FC12031
Account: HGLFLMI - Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

File ID: SB010324M1.ICP Date Analyzed: 01/03/24 Methods: SW846 6010D
QC Limits: CRI 70-130% CRIA 70-130% Run ID: MA19942 Units: ug/l

Time:			12:38	
Sample ID:	CRI	CRIA	CRIA1	
Metal	True	True	Results	% Rec
Aluminum	400	200	anr	
Antimony	10	5.0	anr	
Arsenic	20	10	anr	
Barium	400	200	anr	
Beryllium	10	5.0	anr	
Boron	100	50		
Cadmium	10	5.0	anr	
Calcium	2000	1000	anr	
Chromium	20	10	anr	
Cobalt	100	50	anr	
Copper	50	25	anr	
Iron	600	300	anr	
Lead	10	5.0	anr	
Lithium	18	9.0		
Magnesium	10000	5000	anr	
Manganese	30	15	anr	
Molybdenum	100	50		
Nickel	80	40	anr	
Potassium	20000	10000	anr	
Selenium	20	10	anr	
Silver	20	10	anr	
Sodium	20000	10000	9150	91.5
Strontium	20	10		
Thallium	20	10	anr	
Tin	100	50		
Titanium	20	10		
Vanadium	100	50	anr	
Zinc	40	20	anr	

(*) Outside of QC limits
(anr) Analyte not requested

INTERFERING ELEMENT CHECK STANDARDS SUMMARY
Part 1 - ICSA and ICSAB Standards

Login Number: FC12031
Account: HGLFLMI - Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

File ID: SB010324M1.ICP Date Analyzed: 01/03/24 Methods: SW846 6010D
QC Limits: 80 to 120 % Recovery Run ID: MA19942 Units: ug/l

Time:			13:28		13:36	
Sample ID:	ICSA	ICSAB	ICSA1		ICSAB1	
Metal	True	True	Results	% Rec	Results	% Rec
Aluminum	500000	500000	519000	103.8	520000	104.0
Antimony		1000	0.00		1060	106.0
Arsenic		1000	0.00		1040	104.0
Barium		500	0.100		497	99.4
Beryllium		500	0.00		496	99.2
Boron		1000	75.5		1070	107.0
Cadmium		1000	-0.700		939	93.9
Calcium	500000	500000	488000	97.6	495000	99.0
Chromium		500	-0.200		480	96.0
Cobalt		500	0.00		458	91.6
Copper		500	0.00		549	109.8
Iron	500000	200000	470000	94.0	191000	95.5
Lead		1000	0.100		928	92.8
Lithium		1000	-0.400		577	57.7
Magnesium	500000	500000	546000	109.2	551000	110.2
Manganese		500	-0.600		497	99.4
Molybdenum		1000	-0.600		919	91.9
Nickel		1000	-0.100		879	87.9
Potassium			-0.100		26.8	
Selenium		1000	1.50		966	96.6
Silver		1000	0.900		1010	101.0
Sodium			339		353	
Strontium		1000	-0.300		1030	103.0
Thallium		1000	-0.500		935	93.5
Tin		1000	0.00		893	89.3
Titanium		1000	0.700		1010	101.0
Vanadium		500	0.100		506	101.2
Zinc		1000	-0.700		910	91.0

(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: FC12031
Account: HGLFLMI - Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

QC Batch ID: MP43346
Matrix Type: AQUEOUS

Methods: SW846 6010D
Units: ug/l

Prep Date: 12/30/23

Metal	RL	IDL	MDL	MB raw	final
Aluminum	200	14	14		
Antimony	6.0	1	1		
Arsenic	10	1.3	1.3		
Barium	200	.5	1		
Beryllium	4.0	.1	.2		
Boron	100	5	10		
Cadmium	5.0	.1	.2		
Calcium	1000	50	50		
Chromium	10	.5	1		
Cobalt	50	.2	.2		
Copper	25	1	1		
Iron	300	15	17		
Lead	5.0	1	1.1		
Lithium	10	.5	1.3		
Magnesium	5000	35	35		
Manganese	15	.25	1		
Molybdenum	50	.3	.3		
Nickel	40	.4	.4		
Potassium	10000	100	200		
Selenium	10	2	2.9		
Silver	10	.5	.7		
Sodium	10000	250	500	-20	<10000
Strontium	10	.25	.5		
Thallium	10	1	1.4		
Tin	50	.5	1		
Titanium	10	.5	1		
Vanadium	50	.5	.6		
Zinc	20	3	4.4		

Associated samples MP43346: FC12031-6

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: FC12031
Account: HGLFLMI - Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

QC Batch ID: MP43346
Matrix Type: AQUEOUS

Methods: SW846 6010D
Units: ug/l

Prep Date:			12/30/23					12/30/23	
Metal	FC11943-6 Original DUP		RPD	QC Limits	FC11943-6 Original MS		Spikelot MPFLICP5 % Rec		QC Limits
Aluminum	anr								
Antimony									
Arsenic	anr								
Barium	anr								
Beryllium	anr								
Boron									
Cadmium	anr								
Calcium	anr								
Chromium	anr								
Cobalt	anr								
Copper	anr								
Iron	anr								
Lead	anr								
Lithium									
Magnesium	anr								
Manganese	anr								
Molybdenum									
Nickel	anr								
Potassium	anr								
Selenium	anr								
Silver	anr								
Sodium	31900	30100	0.7	0-20	31900	68800	45000	85.6	80-120
Strontium									
Thallium									
Tin									
Titanium									
Vanadium	anr								
Zinc	anr								

Associated samples MP43346: FC12031-6

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: FC12031
Account: HGLFLMI - Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

QC Batch ID: MP43346
Matrix Type: AQUEOUS

Methods: SW846 6010D
Units: ug/l

Prep Date: 12/30/23

Metal	FC11943-6 Original	MSD	Spikelot MPFLICP5	% Rec	MSD RPD	QC Limit
Aluminum	anr					
Antimony						
Arsenic	anr					
Barium	anr					
Beryllium	anr					
Boron						
Cadmium	anr					
Calcium	anr					
Chromium	anr					
Cobalt	anr					
Copper	anr					
Iron	anr					
Lead	anr					
Lithium						
Magnesium	anr					
Manganese	anr					
Molybdenum						
Nickel	anr					
Potassium	anr					
Selenium	anr					
Silver	anr					
Sodium	31900	69400	45000	86.9	0.9	20
Strontium						
Thallium						
Tin						
Titanium						
Vanadium	anr					
Zinc	anr					

Associated samples MP43346: FC12031-6

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: FC12031
Account: HGLFLMI - Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

QC Batch ID: MP43346
Matrix Type: AQUEOUS

Methods: SW846 6010D
Units: ug/l

Prep Date: 12/30/23

Metal	BSP Result	Spikelot MPFLICP5	% Rec	QC Limits
Aluminum	anr			
Antimony				
Arsenic	anr			
Barium	anr			
Beryllium	anr			
Boron				
Cadmium	anr			
Calcium	anr			
Chromium	anr			
Cobalt	anr			
Copper	anr			
Iron	anr			
Lead	anr			
Lithium				
Magnesium	anr			
Manganese	anr			
Molybdenum				
Nickel	anr			
Potassium	anr			
Selenium	anr			
Silver	anr			
Sodium	39700	45000	88.2	80-120
Strontium				
Thallium				
Tin				
Titanium				
Vanadium	anr			
Zinc	anr			

Associated samples MP43346: FC12031-6

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

SERIAL DILUTION RESULTS SUMMARY

Login Number: FC12031
Account: HGLFLMI - Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

QC Batch ID: MP43346
Matrix Type: AQUEOUS

Methods: SW846 6010D
Units: ug/l

Prep Date: 12/30/23

Metal	FC11943-6 Original	SDL 1:5	%DIF	QC Limits
Aluminum	anr			
Antimony				
Arsenic	anr			
Barium	anr			
Beryllium	anr			
Boron				
Cadmium	anr			
Calcium	anr			
Chromium	anr			
Cobalt	anr			
Copper	anr			
Iron	anr			
Lead	anr			
Lithium				
Magnesium	anr			
Manganese	anr			
Molybdenum				
Nickel	anr			
Potassium	anr			
Selenium	anr			
Silver	anr			
Sodium	31900	27900	7.9	0-10
Strontium				
Thallium				
Tin				
Titanium				
Vanadium	anr			
Zinc	anr			

Associated samples MP43346: FC12031-6

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

POST DIGESTATE SPIKE SUMMARY

Login Number: FC12031
Account: HGLFLMI - Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

QC Batch ID: MP43346
Matrix Type: AQUEOUS

Methods: SW846 6010D
Units: ug/l

Prep Date: 12/30/23

Metal	Sample ml	Final ml	FC11943-6 Raw	Corr.**	PS ug/l	Spike ml	Spike ug/ml	Spike ug/l	% Rec	QC Limits
Aluminum										
Antimony										
Arsenic										
Barium										
Beryllium										
Boron										
Cadmium										
Calcium										
Chromium										
Cobalt										
Copper										
Iron										
Lead										
Lithium										
Magnesium										
Manganese										
Molybdenum										
Nickel										
Potassium										
Selenium										
Silver										
Sodium	9.8	10	31860	29674.4	38930	0.2	500	10000	92.6	80-120
Strontium										
Thallium										
Tin										
Titanium										
Vanadium										
Zinc										

Associated samples MP43346: FC12031-6

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(**) Corr. sample result = Raw * (sample volume / final volume)
(anr) Analyte not requested

Instrument Detection Limits

Job Number: FC12031
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Instrument ID: SSTRACE1 **Effective Date:** 09/01/22

Analyte	IDL ug/l
Aluminum	14
Antimony	1
Arsenic	1.3
Barium	.5
Beryllium	.1
Boron	5
Cadmium	.1
Calcium	50
Chromium	.5
Cobalt	.2
Copper	1
Iron	15
Lead	1
Lithium	.5
Magnesium	35
Manganese	.25
Molybdenum	.3
Nickel	.4
Potassium	100
Selenium	2
Silicon	5
Silver	.5
Sodium	250
Strontium	.25
Sulfur	5
Thallium	1
Tin	.5
Titanium	.5
Vanadium	.5
Zinc	3

The above applies to the following instrument runs:
MA19940

Instrument Detection Limits

Job Number: FC12031
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Instrument ID: SSTRACE2 **Effective Date:** 09/01/22

Analyte	IDL ug/l
Aluminum	14
Antimony	1
Arsenic	1.3
Barium	.5
Beryllium	.1
Boron	5
Cadmium	.1
Calcium	50
Chromium	.5
Cobalt	.2
Copper	1
Iron	15
Lead	1
Lithium	.5
Magnesium	35
Manganese	.25
Molybdenum	.3
Nickel	.4
Potassium	100
Selenium	2
Silicon	5
Silver	.5
Sodium	250
Strontium	.25
Sulfur	5
Thallium	1
Tin	.5
Titanium	.5
Vanadium	.5
Zinc	3

The above applies to the following instrument runs:
MA19942

Instrument Linear Ranges

Job Number: FC12031
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Instrument ID: SSTRACE1 **Effective Date:** 09/01/22

Analyte	Linear Range ug/l
Aluminum	500000
Antimony	10000
Arsenic	10000
Barium	10000
Beryllium	10000
Boron	10000
Cadmium	10000
Calcium	500000
Chromium	10000
Cobalt	10000
Copper	10000
Iron	500000
Lead	10000
Lithium	10000
Magnesium	500000
Manganese	10000
Molybdenum	10000
Nickel	10000
Potassium	80000
Selenium	10000
Silver	1000
Sodium	80000
Strontium	10000
Sulfur	10000
Thallium	10000
Tin	10000
Titanium	10000
Vanadium	10000
Zinc	10000

The above applies to the following instrument runs:
MA19940

Instrument Linear Ranges

Job Number: FC12031
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Instrument ID: SSTRACE2 **Effective Date:** 09/01/22

Analyte	Linear Range ug/l
Aluminum	500000
Antimony	10000
Arsenic	10000
Barium	10000
Beryllium	10000
Boron	10000
Cadmium	10000
Calcium	500000
Chromium	10000
Cobalt	10000
Copper	10000
Iron	500000
Lead	10000
Lithium	10000
Magnesium	500000
Manganese	10000
Molybdenum	10000
Nickel	10000
Potassium	80000
Selenium	10000
Silver	1000
Sodium	80000
Strontium	10000
Sulfur	10000
Thallium	10000
Tin	10000
Titanium	10000
Vanadium	10000
Zinc	10000

The above applies to the following instrument runs:
MA19942

Metals Analysis

Raw Data

Zoom In ▶ Zoom Out

Sample Name: STDA Acquired: 12/30/2023 11:36:46 Type: Cal
Method: 60102007_COMBO_102422(v756) Mode: IR Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	B_2497	Ba4554	Be3130	Ca3179	Cd2265	Co2286
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.0002**	**.0005**	**-.0004**	**.0016**	**.0007**	**-.0003**	**.0035**	**-.0007**	**-.0008**
Stddev	.0001	.0003	.0000	.0002	.0000	.0000	.0003	.0001	.0000
%RSD	55.70	54.25	12.27	15.30	6.642	16.76	8.901	15.06	6.322
#1	-.0002	.0002	-.0004	.0014	.0006	-.0002	.0038	-.0006	-.0008
#2	-.0004	.0007	-.0003	.0018	.0007	-.0003	.0032	-.0008	-.0008
#3	-.0001	.0006	-.0004	.0015	.0007	-.0003	.0034	-.0008	-.0007

Elem	Cr2677	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.0000**	**.0058**	**.0003**	**.0036**	**.0020**	**-.0003**	**.0003**	**.0002**	**-.0008**
Stddev	.000	.0001	.0002	.0005	.0008	.0001	.0001	.0001	.0013
%RSD	248.1	1.570	75.12	14.93	39.55	21.08	22.67	49.65	159.0
#1	.0000	.0059	.0005	.0043	.0014	-.0002	.0004	.0002	.0003
#2	.0000	.0057	.0003	.0033	.0017	-.0003	.0003	.0003	-.0022
#3	-.0001	.0058	.0001	.0033	.0029	-.0003	.0002	.0001	-.0005

Elem	Ni2316	Pb2203	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.0003**	**-.0013**	**.0002**	**.0000**	**.0040**	**.0000**	**-.0003**	**.0008**	**-.0007**
Stddev	.0001	.0002	.0001	.000	.0001	.0000	.0007	.0001	.0003
%RSD	36.66	14.68	64.17	303.7	2.270	258.8	246.0	9.556	39.88
#1	-.0002	-.0016	.0003	-.0002	.0041	.0000	.0003	.0008	-.0006
#2	-.0004	-.0013	.0002	-.0001	.0039	.0000	-.0001	.0009	-.0009
#3	-.0003	-.0012	.0001	.0001	.0041	.0001	-.0010	.0009	-.0004

Elem	V_2924	Zn2062
Units	Cts/S	Cts/S
Avg	**-.0002**	**.0005**
Stddev	.0001	.0000
%RSD	22.36	8.768
#1	-.0002	.0006
#2	-.0002	.0005
#3	-.0003	.0005

◀ Zoom In ▶ Zoom Out

Sample Name: STDA Acquired: 12/30/2023 11:36:46 Type: Cal
Method: 60102007_COMBO_102422(v756) Mode: IR Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**3470.3**	**8026.0**	**54462.**	**16825.**
Stddev	6.3	11.5	73.	114.
%RSD	.18222	.14288	.13472	.67693
#1	3467.1	8020.2	54509.	16955.
#2	3477.6	8039.3	54500.	16742.
#3	3466.2	8018.6	54378.	16779.

◀ Zoom In ▶ Zoom Out

Sample Name: STDB Acquired: 12/30/2023 11:47:05 Type: Cal
Method: 60102007_COMBO_102422(v756) Mode: IR Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	B_2497	Ba4554	Be3130	Ca3179	Cd2265	Co2286
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.0051**	**.0249**	**.0005**	**.0154**	**1.513**	**.0563**	**.3070**	**.0172**	**.1065**
Stddev	.0001	.0006	.0001	.0002	.006	.0003	.0009	.0001	.0002
%RSD	1.823	2.407	13.39	1.148	.3775	.5052	.2972	.5220	.1697
#1	.0051	.0248	.0006	.0152	1.519	.0565	.3080	.0171	.1067
#2	.0050	.0244	.0005	.0155	1.512	.0565	.3063	.0172	.1065
#3	.0052	.0255	.0005	.0154	1.507	.0560	.3066	.0172	.1063

Elem	Cr2677	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.0052**	**.0261**	**.0561**	**.5036**	**.0024**	**.1518**	**.0411**	**.0326**	**1.811**
Stddev	.0001	.0001	.0002	.0016	.0000	.0007	.0001	.0000	.004
%RSD	1.595	.4495	.3680	.3107	1.530	.4297	.3310	.1247	.2296
#1	.0053	.0262	.0562	.5045	.0024	.1525	.0411	.0326	1.815
#2	.0051	.0260	.0559	.5018	.0025	.1513	.0409	.0326	1.812
#3	.0052	.0261	.0563	.5044	.0024	.1517	.0412	.0327	1.807

Elem	Ni2316	Pb2203	Sb2068	Se1960	Sn1899	Sr4077	Ti3349	Tl1908	V_2924
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.0482**	**.0026**	**.0007**	**.0004**	**.0121**	**.1163**	**.0191**	**.0012**	**.0401**
Stddev	.0002	.0004	.0001	.0001	.0001	.0004	.0002	.0001	.0001
%RSD	.3626	14.93	11.89	13.17	.6184	.3494	1.008	11.04	.2136
#1	.0480	.0025	.0007	.0004	.0122	.1159	.0190	.0013	.0402
#2	.0483	.0029	.0007	.0005	.0120	.1167	.0190	.0013	.0402
#3	.0483	.0022	.0006	.0005	.0121	.1164	.0193	.0011	.0400

Elem	Zn2062
Units	Cts/S
Avg	**.0374**
Stddev	.0001
%RSD	.1451
#1	.0373
#2	.0374
#3	.0374

◀ Zoom In ▶ Zoom Out

Sample Name: STDB Acquired: 12/30/2023 11:47:05 Type: Cal
Method: 60102007_COMBO_102422(v756) Mode: IR Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**3307.5**	**7895.7**	**52992.**	**16767.**
Stddev	2.9	3.2	276.	24.
%RSD	.08690	.04021	.52127	.14118
#1	3304.4	7898.8	52689.	16740.
#2	3308.1	7896.0	53056.	16784.
#3	3310.0	7892.4	53230.	16778.

Zoom In Zoom Out

Sample Name: STDC Acquired: 12/30/2023 11:50:57 Type: Cal
Method: 60102007_COMBO_102422(v756) Mode: IR Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	B_2497	Ba4554	Be3130	Ca3179	Cd2265	Co2286
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.0155**	**.5543**	**.0193**	**.1207**	**1.868**	**2.771**	**1.456**	**.8828**	**.5340**
Stddev	.0002	.0008	.0000	.0002	.005	.003	.003	.0003	.0006
%RSD	1.536	.1424	.1229	.1354	.2576	.1201	.1897	.0310	.1057
#1	.0154	.5547	.0193	.1205	1.874	2.773	1.459	.8830	.5334
#2	.0158	.5548	.0193	.1208	1.867	2.773	1.456	.8825	.5344
#3	.0154	.5534	.0193	.1208	1.864	2.768	1.454	.8830	.5343

Elem	Cr2677	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.1291**	**.2059**	**.9124**	**.2466**	**.3232**	**.1481**	**.6854**	**.1695**	**.9575**
Stddev	.0002	.0009	.0019	.0011	.0004	.0010	.0027	.0004	.0050
%RSD	.1310	.4152	.2036	.4497	.1124	.6724	.3891	.2247	.5234
#1	.1293	.2063	.9110	.2475	.3231	.1490	.6839	.1691	.9621
#2	.1290	.2065	.9145	.2470	.3236	.1482	.6885	.1696	.9584
#3	.1291	.2050	.9117	.2454	.3229	.1470	.6838	.1698	.9521

Elem	Ni2316	Pb2203	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.3023**	**.1845**	**.0346**	**.0157**	**.1148**	**.0606**	**2.904**	**.4334**	**.0427**
Stddev	.0002	.0016	.0002	.0002	.0000	.0000	.004	.0011	.0002
%RSD	.0692	.8482	.5506	1.166	.0393	.0587	.1213	.2623	.4693
#1	.3021	.1828	.0344	.0158	.1149	.0606	2.907	.4327	.0425
#2	.3023	.1859	.0348	.0154	.1148	.0606	2.905	.4347	.0429
#3	.3025	.1847	.0345	.0158	.1148	.0607	2.900	.4328	.0426

Elem	V_2924	Zn2062
Units	Cts/S	Cts/S
Avg	**.1987**	**.4561**
Stddev	.0012	.0007
%RSD	.5971	.1609
#1	.1983	.4557
#2	.2001	.4556
#3	.1978	.4569

Zoom In Zoom Out

Sample Name: STDC Acquired: 12/30/2023 11:50:57 Type: Cal
Method: 60102007_COMBO_102422(v756) Mode: IR Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**3313.4**	**7984.5**	**54102.**	**16971.**
Stddev	1.9	8.1	59.	94.
%RSD	.05804	.10146	.10871	.55606
#1	3315.3	7983.3	54057.	16868.
#2	3313.5	7993.1	54169.	16992.
#3	3311.4	7977.0	54081.	17053.

Zoom In Zoom Out

Sample Name: STDD Acquired: 12/30/2023 11:57:20 Type: Cal
Method: 60102007_COMBO_102422(v756) Mode: IR Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	B_2497	Ba4554	Be3130	Ca3179	Cd2265	Co2286
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.0312**	**1.117**	**.0393**	**.2446**	**3.784**	**5.633**	**2.933**	**1.768**	**1.064**
Stddev	.0001	.003	.0003	.0030	.013	.015	.006	.001	.001
%RSD	.3565	.2361	.6807	1.207	.3335	.2672	.2123	.0478	.0695
#1	.0311	1.119	.0396	.2435	3.788	5.644	2.940	1.768	1.064
#2	.0312	1.114	.0393	.2480	3.794	5.616	2.929	1.769	1.065
#3	.0313	1.116	.0390	.2424	3.769	5.640	2.929	1.768	1.065

Elem	Cr2677	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.2608**	**.4070**	**1.833**	**.4973**	**.6520**	**.2978**	**1.382**	**.3418**	**1.935**
Stddev	.0007	.0026	.005	.0015	.0019	.0021	.003	.0001	.007
%RSD	.2661	.6443	.2637	.3079	.2922	.6996	.2372	.0360	.3731
#1	.2611	.4099	1.838	.4977	.6527	.2995	1.385	.3419	1.941
#2	.2600	.4047	1.830	.4985	.6499	.2955	1.379	.3420	1.936
#3	.2614	.4064	1.830	.4956	.6536	.2984	1.383	.3417	1.927

Elem	Ni2316	Pb2203	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.5989**	**.3756**	**.0693**	**.0318**	**.2276**	**.1209**	**5.885**	**.8731**	**.0865**
Stddev	.0005	.0009	.0003	.0001	.0003	.0001	.017	.0029	.0004
%RSD	.0857	.2404	.4692	.3596	.1422	.0696	.2909	.3323	.4884
#1	.5994	.3766	.0691	.0319	.2273	.1208	5.889	.8764	.0861
#2	.5984	.3751	.0696	.0318	.2279	.1210	5.867	.8711	.0869
#3	.5988	.3750	.0690	.0316	.2277	.1209	5.900	.8717	.0866

Elem	V_2924	Zn2062
Units	Cts/S	Cts/S
Avg	**.4008**	**.9055**
Stddev	.0019	.0016
%RSD	.4631	.1813
#1	.4023	.9073
#2	.3987	.9042
#3	.4013	.9049

Zoom In Zoom Out

Sample Name: STDD Acquired: 12/30/2023 11:57:20 Type: Cal
Method: 60102007_COMBO_102422(v756) Mode: IR Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**3210.6**	**7888.5**	**53247.**	**16764.**
Stddev	2.3	4.8	204.	160.
%RSD	.07152	.06145	.38385	.95388
#1	3209.1	7886.3	53050.	16609.
#2	3209.4	7885.1	53458.	16928.
#3	3213.2	7894.0	53233.	16755.

Zoom In Zoom Out

Sample Name: STDE Acquired: 12/30/2023 12:01:08 Type: Cal
Method: 60102007_COMBO_102422(v756) Mode: IR Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	B_2497	Ba4554	Be3130	Ca3179	Cd2265	Co2286
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.0632**	**2.261**	**.0789**	**.4841**	**7.474**	**11.14**	**5.915**	**3.492**	**2.087**
Stddev	.0004	.004	.0002	.0016	.012	.02	.016	.001	.001
%RSD	.7013	.1673	.2660	.3265	.1555	.2186	.2735	.0412	.0587
#1	.0632	2.262	.0789	.4827	7.487	11.15	5.925	3.491	2.086
#2	.0636	2.256	.0787	.4858	7.469	11.11	5.897	3.494	2.086
#3	.0627	2.264	.0791	.4837	7.465	11.16	5.925	3.492	2.088

Elem	Cr2677	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.5143**	**.8002**	**3.672**	**1.003**	**1.289**	**.5991**	**2.715**	**.6749**	**3.929**
Stddev	.0011	.0006	.012	.002	.003	.0035	.007	.0010	.014
%RSD	.2142	.0701	.3189	.2021	.2415	.5842	.2529	.1501	.3523
#1	.5153	.8002	3.672	1.006	1.293	.5993	2.717	.6759	3.945
#2	.5144	.8007	3.660	1.003	1.287	.5955	2.720	.6739	3.921
#3	.5131	.7996	3.683	1.002	1.288	.6025	2.707	.6749	3.920

Elem	Ni2316	Pb2203	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1.171**	**.7602**	**.1376**	**.0627**	**.3727**	**.2395**	**11.65**	**1.747**	**.1729**
Stddev	.002	.0007	.0003	.0002	.0008	.0004	.01	.002	.0001
%RSD	.1460	.0928	.2498	.2497	.2053	.1502	.1086	.1363	.0832
#1	1.172	.7610	.1378	.0628	.3719	.2396	11.65	1.748	.1729
#2	1.169	.7597	.1372	.0625	.3731	.2391	11.64	1.748	.1728
#3	1.171	.7598	.1378	.0627	.3733	.2398	11.66	1.744	.1731

Elem	V_2924	Zn2062
Units	Cts/S	Cts/S
Avg	**.7881**	**1.783**
Stddev	.0022	.001
%RSD	.2798	.0307
#1	.7882	1.783
#2	.7902	1.783
#3	.7858	1.782

Zoom In Zoom Out

Sample Name: STDE Acquired: 12/30/2023 12:01:08 Type: Cal
Method: 60102007_COMBO_102422(v756) Mode: IR Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**3081.1**	**7812.2**	**52794.**	**16929.**
Stddev	7.9	9.2	172.	119.
%RSD	.25507	.11799	.32662	.70072
#1	3087.9	7822.8	52596.	16891.
#2	3072.5	7807.4	52906.	17063.
#3	3083.0	7806.3	52881.	16835.

Zoom In Zoom Out

Sample Name: STDF Acquired: 12/30/2023 12:06:40 Type: Cal
Method: 60102007_COMBO_102422(v756) Mode: IR Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	B_2497	Ba4554	Be3130	Ca3179	Cd2265	Co2286
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.1291**	**4.558**	**.1615**	**1.011**	**15.11**	**22.28**	**11.95**	**7.011**	**4.186**
Stddev	.0001	.015	.0006	.004	.12	.16	.03	.013	.006
%RSD	.1072	.3183	.3937	.4251	.8146	.7298	.2370	.1815	.1391
#1	.1290	4.557	.1615	1.013	14.97	22.18	11.91	7.026	4.193
#2	.1293	4.573	.1621	1.007	15.13	22.47	11.97	7.002	4.183
#3	.1291	4.544	.1608	1.015	15.22	22.20	11.96	7.005	4.183

Elem	Cr2677	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1.031**	**1.619**	**7.349**	**2.043**	**2.617**	**1.206**	**5.475**	**1.366**	**8.038**
Stddev	.001	.002	.018	.004	.005	.002	.010	.002	.016
%RSD	.1351	.1320	.2421	.1708	.1904	.1220	.1785	.1370	.1973
#1	1.030	1.618	7.348	2.039	2.616	1.204	5.467	1.369	8.022
#2	1.033	1.618	7.368	2.045	2.623	1.207	5.486	1.365	8.037
#3	1.031	1.622	7.333	2.045	2.613	1.205	5.473	1.365	8.054

Elem	Ni2316	Pb2203	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**2.340**	**1.560**	**.2801**	**.1276**	**.7513**	**.4796**	**23.56**	**3.555**	**.3518**
Stddev	.002	.005	.0006	.0002	.0014	.0007	.30	.002	.0009
%RSD	.0974	.2973	.2103	.1602	.1834	.1401	1.272	.0615	.2521
#1	2.341	1.562	.2800	.1277	.7529	.4801	23.37	3.552	.3525
#2	2.342	1.563	.2807	.1274	.7508	.4798	23.90	3.556	.3520
#3	2.337	1.555	.2796	.1278	.7503	.4788	23.40	3.555	.3508

Elem	V_2924	Zn2062
Units	Cts/S	Cts/S
Avg	**1.607**	**3.574**
Stddev	.001	.009
%RSD	.0849	.2463
#1	1.606	3.583
#2	1.608	3.573
#3	1.606	3.566

Zoom In Zoom Out

Sample Name: STDF Acquired: 12/30/2023 12:06:40 Type: Cal
Method: 60102007_COMBO_102422(v756) Mode: IR Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**2902.3**	**7626.6**	**51510.**	**16915.**
Stddev	6.3	15.0	49.	49.
%RSD	.21631	.19623	.09453	.28912
#1	2897.3	7614.4	51528.	16956.
#2	2900.2	7622.1	51548.	16861.
#3	2909.4	7643.3	51455.	16929.

Zoom In Zoom Out

Sample Name: STDG Acquired: 12/30/2023 12:11:14 Type: Cal
Method: 60102007_COMBO_102422(v756) Mode: IR Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	B_2497	Ba4554	Be3130	Ca3179	Cd2265	Co2286
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.2552**	**8.950**	**.3205**	**2.040**	**29.79**	**43.27**	**22.79**	**13.65**	**8.152**
Stddev	.0006	.019	.0007	.002	.21	.38	.14	.00	.004
%RSD	.2366	.2126	.2293	.0835	.7126	.8861	.5948	.0248	.0526
#1	.2557	8.936	.3202	2.039	29.65	43.65	22.64	13.65	8.148
#2	.2546	8.972	.3200	2.041	30.04	42.88	22.80	13.65	8.151
#3	.2554	8.943	.3214	2.042	29.69	43.29	22.91	13.65	8.156

Elem	Cr2677	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**2.005**	**3.190**	**14.13**	**4.007**	**5.254**	**2.349**	**10.47**	**2.683**	**15.73**
Stddev	.003	.005	.04	.008	.017	.007	.06	.002	.01
%RSD	.1590	.1562	.2748	.2013	.3279	.2998	.5919	.0643	.0553
#1	2.008	3.195	14.10	4.001	5.240	2.341	10.41	2.684	15.74
#2	2.005	3.185	14.17	4.016	5.273	2.355	10.47	2.681	15.72
#3	2.002	3.191	14.11	4.004	5.249	2.350	10.54	2.683	15.73

Elem	Ni2316	Pb2203	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**4.535**	**3.137**	**.5524**	**.2528**	**1.650**	**.9273**	**45.80**	**6.899**	**.6940**
Stddev	.004	.003	.0014	.0002	.002	.0012	.60	.005	.0011
%RSD	.0793	.1091	.2444	.0792	.1001	.1317	1.319	.0705	.1586
#1	4.534	3.134	.5532	.2527	1.651	.9266	45.51	6.905	.6949
#2	4.533	3.138	.5508	.2530	1.648	.9265	45.40	6.897	.6928
#3	4.540	3.140	.5532	.2526	1.652	.9287	46.50	6.896	.6943

Elem	V_2924	Zn2062
Units	Cts/S	Cts/S
Avg	**3.149**	**6.951**
Stddev	.007	.001
%RSD	.2119	.0083
#1	3.155	6.951
#2	3.142	6.951
#3	3.150	6.950

Zoom In Zoom Out

Sample Name: STDG Acquired: 12/30/2023 12:11:14 Type: Cal
Method: 60102007_COMBO_102422(v756) Mode: IR Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**2674.4**	**7361.1**	**50178.**	**16820.**
Stddev	6.3	13.1	20.	46.
%RSD	.23723	.17730	.04038	.27293
#1	2681.7	7375.1	50189.	16871.
#2	2670.7	7358.7	50189.	16808.
#3	2670.7	7349.4	50154.	16782.

Zoom In Zoom Out

Sample Name: CRIA Acquired: 12/30/2023 12:27:13 Type: QC
Method: 60102007_COMBO_102422(v756) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	B_2497	Ba4554	Be3130	Ca3179	Cd2265	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0098**	**.2201**	**.0112**	F **.0294**	**.2015**	**.0052**	**1.030**	**.0052**	**.0517**
Stddev	.0002	.0019	.0005	.0012	.0003	.0000	.004	.0000	.0001
%RSD	1.740	.8615	4.529	3.998	.1594	.4317	.3841	.2607	.2094
#1	.0100	.2184	.0110	.0292	.2018	.0052	1.033	.0052	.0518
#2	.0099	.2198	.0108	.0284	.2012	.0051	1.031	.0052	.0518
#3	.0097	.2222	.0118	.0307	.2016	.0052	1.026	.0052	.0516
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value				.0100					
Range				20.00%					

Elem	Cr2677	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0103**	**.0257**	**.3076**	**9.936**	F **.0006**	**5.051**	**.0152**	**.0482**	**9.140**
Stddev	.0002	.0002	.0008	.063	.0006	.013	.0000	.0002	.025
%RSD	2.085	.8501	.2575	.6340	92.16	.2635	.1055	.3710	.2692
#1	.0101	.0259	.3083	10.01	.0012	5.063	.0152	.0484	9.168
#2	.0105	.0255	.3077	9.907	.0005	5.037	.0152	.0481	9.122
#3	.0104	.0256	.3067	9.893	.0001	5.051	.0152	.0481	9.130
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value					.0090				
Range					-20.00%				

Elem	Ni2316	Pb2203	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0414**	**.0044**	**.0047**	**.0091**	**.1929**	**.0507**	**.0101**	**.0105**	**.0096**
Stddev	.0001	.0006	.0006	.0010	.0005	.0004	.0000	.0001	.0010
%RSD	.1702	12.48	11.89	10.71	.2357	.6994	.3333	.9470	10.48
#1	.0414	.0050	.0047	.0102	.1933	.0503	.0102	.0103	.0092
#2	.0415	.0040	.0041	.0088	.1924	.0507	.0101	.0105	.0108
#3	.0415	.0043	.0052	.0084	.1930	.0510	.0101	.0105	.0089
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Zoom In Zoom Out

Sample Name: CRIA Acquired: 12/30/2023 12:27:13 Type: QC
Method: 60102007_COMBO_102422(v756) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	V_2924	Zn2062
Units	ppm	ppm
Avg	**.0509**	**.0207**
Stddev	.0002	.0000
%RSD	.4571	.1818
#1	.0512	.0207
#2	.0507	.0208
#3	.0508	.0207
Check ?	Chk Pass	Chk Pass
Value		
Range		

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**3321.9**	**7902.4**	**53292.**	**17152.**
Stddev	5.2	11.6	248.	125.
%RSD	.15700	.14720	.46592	.72872
#1	3328.0	7913.4	53284.	17010.
#2	3319.3	7890.3	53545.	17197.
#3	3318.6	7903.7	53049.	17248.

Zoom In Zoom Out

Sample Name: HSTD Acquired: 12/30/2023 12:33:49 Type: QC
Method: 60102007_COMBO_102422(v756) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	B_2497	Ba4554	Be3130	Ca3179	Cd2265	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.4986**	**79.74**	**4.002**	**4.067**	**3.922**	**3.924**	**78.98**	**3.940**	**3.930**
Stddev	.0017	.11	.006	.017	.054	.035	.39	.005	.003
%RSD	.3426	.1406	.1471	.4069	1.366	.8788	.4885	.1330	.0689
#1	.5000	79.62	3.997	4.048	3.959	3.963	79.30	3.945	3.930
#2	.4993	79.74	4.008	4.080	3.861	3.910	78.55	3.939	3.933
#3	.4967	79.85	4.001	4.073	3.946	3.899	79.10	3.935	3.928
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Cr2677	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**3.961**	**4.013**	**78.85**	**79.87**	**4.053**	**79.35**	**3.938**	**3.954**	**80.00**
Stddev	.010	.022	.21	.14	.013	.39	.012	.006	.11
%RSD	.2431	.5616	.2710	.1805	.3173	.4867	.2968	.1488	.1396
#1	3.967	4.036	78.77	79.86	4.040	79.56	3.946	3.955	79.89
#2	3.950	4.012	78.68	79.73	4.054	78.90	3.925	3.959	79.99
#3	3.967	3.991	79.09	80.02	4.066	79.58	3.943	3.947	80.11
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Ni2316	Pb2203	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**3.909**	**4.030**	**3.968**	**3.984**	**4.119**	**3.911**	**3.961**	**3.938**	**3.988**
Stddev	.003	.007	.008	.008	.008	.005	.055	.026	.003
%RSD	.0783	.1766	.2054	.2012	.1847	.1209	1.385	.6601	.0852
#1	3.906	4.025	3.961	3.990	4.118	3.911	4.005	3.917	3.990
#2	3.912	4.027	3.977	3.988	4.127	3.916	3.900	3.930	3.984
#3	3.908	4.038	3.967	3.975	4.111	3.906	3.979	3.968	3.990
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Zoom In Zoom Out

Sample Name: HSTD Acquired: 12/30/2023 12:33:49 Type: QC
Method: 60102007_COMBO_102422(v756) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	V_2924	Zn2062
Units	ppm	ppm
Avg	**3.973**	**3.933**
Stddev	.004	.004
%RSD	.0980	.0923
#1	3.977	3.937
#2	3.969	3.930
#3	3.974	3.933
Check ?	Chk Pass	Chk Pass
Value		
Range		

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**2668.2**	**7373.9**	**49911.**	**16908.**
Stddev	2.8	3.1	106.	67.
%RSD	.10557	.04155	.21286	.39920
#1	2670.2	7377.4	49851.	16857.
#2	2669.5	7372.1	50034.	16985.
#3	2665.0	7372.2	49849.	16883.

Zoom In Zoom Out

Sample Name: ICV Acquired: 12/30/2023 12:40:46 Type: QC
Method: 60102007_COMBO_102422(v756) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	B_2497	Ba4554	Be3130	Ca3179	Cd2265	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2489**	**40.11**	**2.023**	**1.858**	**2.013**	**2.054**	**40.45**	**2.036**	**2.030**
Stddev	.0005	.12	.006	.003	.029	.011	.11	.003	.002
%RSD	.1943	.2880	.3009	.1769	1.417	.5228	.2683	.1233	.0752
#1	.2486	40.12	2.027	1.856	2.035	2.057	40.56	2.037	2.031
#2	.2495	40.00	2.026	1.857	1.980	2.062	40.35	2.038	2.030
#3	.2487	40.23	2.016	1.862	2.023	2.042	40.45	2.033	2.028
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Cr2677	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**2.036**	**2.040**	**40.68**	**40.18**	**2.027**	**40.36**	**2.043**	**2.025**	**40.16**
Stddev	.003	.003	.06	.10	.011	.10	.004	.003	.16
%RSD	.1508	.1592	.1504	.2402	.5349	.2548	.2119	.1357	.3932
#1	2.037	2.044	40.67	40.16	2.026	40.39	2.042	2.027	40.29
#2	2.033	2.041	40.61	40.10	2.017	40.24	2.039	2.025	39.99
#3	2.039	2.037	40.74	40.29	2.039	40.44	2.048	2.022	40.22
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Ni2316	Pb2203	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**2.025**	**1.996**	**2.021**	**2.034**	**1.297**	**2.025**	**2.062**	**2.026**	**2.010**
Stddev	.003	.004	.005	.002	.003	.003	.019	.001	.008
%RSD	.1239	.1959	.2292	.0961	.2045	.1615	.9033	.0675	.4107
#1	2.027	1.996	2.017	2.034	1.297	2.027	2.082	2.025	2.006
#2	2.025	2.000	2.026	2.035	1.300	2.026	2.045	2.026	2.020
#3	2.022	1.992	2.020	2.032	1.294	2.021	2.058	2.028	2.005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Zoom In Zoom Out

Sample Name: ICV Acquired: 12/30/2023 12:40:46 Type: QC
Method: 60102007_COMBO_102422(v756) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	V_2924	Zn2062
Units	ppm	ppm
Avg	**2.041**	**2.025**
Stddev	.004	.005
%RSD	.1825	.2293
#1	2.040	2.029
#2	2.037	2.026
#3	2.045	2.019
Check ?	Chk Pass	Chk Pass
Value		
Range		

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**2918.3**	**7657.9**	**51693.**	**17029.**
Stddev	6.9	8.3	145.	37.
%RSD	.23644	.10887	.28051	.21685
#1	2922.6	7656.7	51767.	16996.
#2	2910.3	7650.2	51787.	17069.
#3	2921.9	7666.8	51526.	17021.

SGS FC12031

Zoom In Zoom Out

Sample Name: ICB Acquired: 12/30/2023 12:58:45 Type: QC
Method: 60102007_COMBO_102422(v756) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	B_2497	Ba4554	Be3130	Ca3179	Cd2265	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0003**	**.0035**	**.0011**	**.0002**	**.0000**	**.0000**	**.0002**	**.0000**	**-.0001**
Stddev	.0002	.0049	.0005	.0009	.000	.0000	.0013	.000	.0001
%RSD	83.12	138.1	43.50	383.6	75.23	1253.	584.5	64.22	154.3
#1	.0002	.0073	.0013	.0002	.0000	.0000	-.0012	-.0001	-.0002
#2	.0001	-.0020	.0005	-.0006	-.0001	.0000	.0014	.0000	.0000
#3	.0006	.0052	.0014	.0011	.0000	.0000	.0005	-.0001	-.0001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Cr2677	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0000**	**.0000**	**-.0020**	**-.0391**	**-.0006**	**.0086**	**.0000**	**.0000**	**-.0250**
Stddev	.0001	.000	.0003	.0191	.0003	.0031	.000	.000	.0020
%RSD	346.1	657.8	14.72	48.82	47.83	35.97	19.58	134.7	7.954
#1	-.0001	-.0001	-.0022	-.0220	-.0008	.0053	.0000	.0000	-.0247
#2	.0001	-.0001	-.0022	-.0597	-.0003	.0090	.0000	.0000	-.0232
#3	.0001	.0001	-.0017	-.0355	-.0006	.0114	.0000	.0000	-.0271
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Ni2316	Pb2203	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0000**	**-.0003**	**-.0005**	**.0014**	**.0003**	**.0001**	**-.0001**	**.0000**	**.0006**
Stddev	.000	.0007	.0016	.0019	.0004	.0004	.0001	.000	.0007
%RSD	465.1	227.7	331.9	133.2	107.1	256.8	95.29	186.1	123.1
#1	-.0001	-.0002	.0011	.0026	.0008	.0005	-.0001	-.0001	.0002
#2	.0000	.0003	-.0005	.0023	.0002	-.0002	-.0001	.0000	.0014
#3	.0001	-.0011	-.0020	-.0007	.0001	.0002	.0000	-.0001	.0001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Zoom In Zoom Out

Sample Name: ICB Acquired: 12/30/2023 12:58:45 Type: QC
Method: 60102007_COMBO_102422(v756) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	V_2924	Zn2062
Units	ppm	ppm
Avg	**-.0001**	**.0000**
Stddev	.0000	.000
%RSD	54.51	445.2
#1	-.0001	-.0001
#2	.0000	.0000
#3	-.0001	.0000
Check ?	Chk Pass	Chk Pass
High Limit		
Low Limit		

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**3452.7**	**7981.4**	**54267.**	**17273.**
Stddev	5.5	18.7	40.	115.
%RSD	.15794	.23390	.07360	.66605
#1	3456.7	8000.3	54230.	17307.
#2	3446.5	7963.0	54309.	17368.
#3	3454.9	7980.8	54261.	17145.

Zoom In Zoom Out

Sample Name: ICSA Acquired: 12/30/2023 13:03:01 Type: QC
Method: 60102007_COMBO_102422(v757) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	B_2497	Ba4554	Be3130	Ca3179	Cd2265
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0000**	**504.9**	**.0011**	F **-.0049**	**-.0001**	**.0000**	**480.8**	**.0000**
Stddev	.0002	6.4	.0016	.0054	.0000	.000	2.6	.000
%RSD	585.1	1.275	149.8	109.4	32.47	101.9	.5491	944.0
#1	-.0001	498.1	.0029	-.0027	-.0001	.0000	479.7	.0001
#2	.0003	505.5	.0003	-.0010	-.0001	.0000	478.9	.0002
#3	.0000	511.0	.0000	-.0110	-.0002	.0000	483.8	-.0004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit				.0010				
Low Limit				-.0010				

Elem	Co2286	Cr2677	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.0001**	**.0002**	**-.0001**	F **461.2**	**-.0350**	**.0005**	**539.4**	**.0009**
Stddev	.0001	.0000	.0002	1.8	.0136	.0003	1.9	.0000
%RSD	71.69	20.18	343.6	.3932	39.01	62.45	.3585	4.083
#1	-.0001	.0002	.0000	460.5	-.0417	.0007	537.6	.0009
#2	-.0001	.0002	-.0003	459.8	-.0193	.0007	539.1	.0009
#3	-.0002	.0003	.0001	463.2	-.0439	.0001	541.5	.0009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	None	Chk Pass	Chk Pass	Chk Pass
High Limit				240.0				
Low Limit				160.0				

Elem	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960	Si2124	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0000**	**.2684**	**.0004**	**.0000**	**-.0004**	**.0000**	**.1137**	**.0005**
Stddev	.0002	.0043	.0002	.0013	.0014	.0033	.0007	.0008
%RSD	633.2	1.617	39.75	5215.	364.4	6951.	.6564	150.9
#1	-.0002	.2643	.0004	.0013	-.0002	-.0007	.1145	.0013
#2	.0003	.2730	.0002	-.0013	.0009	-.0029	.1131	-.0003
#3	.0000	.2680	.0005	.0001	-.0019	.0037	.1134	.0005
Check ?	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit								
Low Limit								

Zoom In Zoom Out

Sample Name: ICSA Acquired: 12/30/2023 13:03:01 Type: QC
Method: 60102007_COMBO_102422(v757) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.0001**	**-.0009**	**.0000**	**-.0004**	**.0029**
Stddev	.0001	.0000	.000	.0003	.0002
%RSD	134.3	4.239	798.7	74.69	7.133
#1	.0001	-.0009	.0001	-.0002	.0031
#2	.0001	-.0010	.0001	-.0003	.0030
#3	.0000	-.0009	-.0003	-.0007	.0027
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**2286.6**	**6831.6**	**45436.**	**16315.**
Stddev	8.8	10.8	57.	69.
%RSD	.38511	.15845	.12477	.42570
#1	2276.9	6820.6	45456.	16373.
#2	2288.8	6831.9	45371.	16335.
#3	2294.1	6842.3	45479.	16238.

Zoom In Zoom Out

Sample Name: ICSAB Acquired: 12/30/2023 13:13:56 Type: QC
Method: 60102007_COMBO_102422(v757) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	B_2497	Ba4554	Be3130	Ca3179	Cd2265	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.046**	**500.9**	**1.011**	**.9580**	**.4793**	**.4853**	**477.9**	**.9408**	**.4516**
Stddev	.003	4.1	.003	.0044	.0007	.0008	5.1	.0009	.0002
%RSD	.3221	.8144	.2845	.4644	.1490	.1577	1.072	.0955	.0534
#1	1.050	498.5	1.012	.9631	.4787	.4847	472.1	.9409	.4514
#2	1.045	505.6	1.013	.9556	.4801	.4862	482.0	.9416	.4519
#3	1.043	498.6	1.008	.9553	.4793	.4850	479.5	.9398	.4514
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Cr2677	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.4831**	**.5347**	**181.2**	**-.0036**	F **.5322**	**533.7**	**.5055**	**.9011**	**.2626**
Stddev	.0017	.0038	1.6	.0091	.0016	2.8	.0013	.0004	.0034
%RSD	.3512	.7097	.8786	253.0	.2927	.5204	.2538	.0427	1.299
#1	.4834	.5375	179.3	.0026	.5319	530.8	.5068	.9008	.2589
#2	.4847	.5362	182.2	-.0140	.5338	536.3	.5053	.9015	.2630
#3	.4813	.5304	182.0	.0006	.5307	534.0	.5043	.9009	.2657
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Fail	Chk Pass	Chk Pass	Chk Pass	None
Value					1.000				
Range					-20.00%				

Elem	Ni2316	Pb2203	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.8660**	**.9995**	**1.016**	**.9410**	**.2246**	**.8777**	**.9978**	**1.022**	**.9522**
Stddev	.0002	.0033	.002	.0040	.0007	.0021	.0022	.001	.0009
%RSD	.0176	.3295	.1886	.4257	.2916	.2366	.2196	.1164	.0961
#1	.8658	1.002	1.015	.9382	.2253	.8766	.9955	1.023	.9527
#2	.8661	.9958	1.018	.9456	.2240	.8801	.9999	1.022	.9512
#3	.8659	1.000	1.014	.9392	.2245	.8764	.9979	1.021	.9528
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	None	None	Chk Pass
Value									
Range									

Zoom In Zoom Out

Sample Name: ICSAB Acquired: 12/30/2023 13:13:56 Type: QC
Method: 60102007_COMBO_102422(v757) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	V_2924	Zn2062
Units	ppm	ppm
Avg	**.5140**	**.8987**
Stddev	.0007	.0010
%RSD	.1298	.1142
#1	.5136	.8996
#2	.5147	.8989
#3	.5136	.8976
Check ?	Chk Pass	Chk Pass
Value		
Range		

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**2411.9**	**6959.2**	**45447.**	**16558.**
Stddev	3.7	7.0	122.	106.
%RSD	.15382	.10026	.26757	.64291
#1	2413.0	6965.2	45396.	16668.
#2	2415.0	6951.5	45358.	16455.
#3	2407.8	6961.0	45585.	16551.

Zoom In Zoom Out

Sample Name: CCV Acquired: 12/30/2023 13:20:01 Type: QC
Method: 60102007_COMBO_102422(v757) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	B_2497	Ba4554	Be3130	Ca3179	Cd2265	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2578**	**40.17**	**2.016**	**2.051**	**2.044**	**2.027**	**41.22**	**2.048**	**2.035**
Stddev	.0012	.04	.003	.012	.016	.019	.13	.003	.002
%RSD	.4741	.1008	.1559	.5689	.7792	.9465	.3204	.1308	.1022
#1	.2570	40.15	2.017	2.064	2.029	2.012	41.08	2.049	2.036
#2	.2572	40.22	2.019	2.041	2.043	2.049	41.34	2.051	2.036
#3	.2592	40.15	2.013	2.049	2.061	2.021	41.24	2.046	2.033
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Cr2677	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**2.043**	**2.055**	**40.75**	**40.70**	**2.009**	**40.84**	**2.070**	**2.026**	**40.89**
Stddev	.006	.015	.08	.10	.005	.18	.007	.004	.08
%RSD	.2782	.7061	.1859	.2558	.2367	.4332	.3383	.1739	.2049
#1	2.041	2.040	40.66	40.68	2.013	40.65	2.069	2.030	40.85
#2	2.050	2.068	40.81	40.81	2.009	41.00	2.064	2.027	40.98
#3	2.039	2.058	40.78	40.61	2.004	40.87	2.078	2.023	40.83
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Ni2316	Pb2203	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**2.017**	**1.978**	**2.001**	**2.038**	**1.892**	**2.029**	**2.039**	**2.059**	**1.986**
Stddev	.001	.002	.003	.003	.001	.004	.018	.007	.005
%RSD	.0650	.0991	.1623	.1448	.0503	.1930	.8914	.3284	.2407
#1	2.018	1.976	2.003	2.042	1.893	2.030	2.030	2.058	1.992
#2	2.018	1.979	2.003	2.036	1.892	2.033	2.060	2.053	1.983
#3	2.016	1.979	1.998	2.038	1.891	2.025	2.028	2.066	1.983
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Zoom In Zoom Out

Sample Name: CCV Acquired: 12/30/2023 13:20:01 Type: QC
Method: 60102007_COMBO_102422(v757) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	V_2924	Zn2062
Units	ppm	ppm
Avg	**2.058**	**2.023**
Stddev	.008	.003
%RSD	.4066	.1342
#1	2.053	2.022
#2	2.052	2.026
#3	2.067	2.021
Check ?	Chk Pass	Chk Pass
Value		
Range		

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**2905.3**	**7604.4**	**51102.**	**17092.**
Stddev	2.2	16.5	145.	119.
%RSD	.07518	.21678	.28401	.69501
#1	2906.6	7609.3	51265.	17216.
#2	2902.8	7586.0	51053.	16980.
#3	2906.5	7617.8	50987.	17080.

Zoom In Zoom Out

Sample Name: CCB Acquired: 12/30/2023 13:26:48 Type: QC
Method: 60102007_COMBO_102422(v757) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	B_2497	Ba4554	Be3130	Ca3179	Cd2265	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0001**	**.0079**	**.0009**	F **.0013**	**.0001**	**.0001**	**.0072**	**.0000**	**.0000**
Stddev	.0003	.0050	.0004	.0002	.0001	.0000	.0011	.0000	.0000
%RSD	287.8	62.70	49.47	18.11	69.88	15.97	14.72	52.30	59.36
#1	.0005	.0073	.0014	.0014	.0001	.0001	.0063	.0000	.0001
#2	-.0001	.0131	.0008	.0010	.0002	.0001	.0071	.0001	.0000
#3	.0000	.0033	.0005	.0014	.0001	.0001	.0084	.0000	.0000
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit				.0010					
Low Limit				-.0010					

Elem	Cr2677	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0001**	**.0001**	**.0050**	**-.0376**	**.0004**	**.0142**	**.0001**	**.0004**	**-.0181**
Stddev	.0000	.0001	.0008	.0320	.0005	.0059	.0000	.0001	.0076
%RSD	56.97	93.65	15.29	85.06	112.1	41.57	21.16	17.78	42.06
#1	.0000	.0001	.0042	-.0198	.0002	.0209	.0001	.0004	-.0179
#2	.0000	.0002	.0051	-.0745	.0009	.0114	.0001	.0004	-.0257
#3	.0001	.0000	.0057	-.0185	.0001	.0101	.0001	.0003	-.0105
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Ni2316	Pb2203	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0000**	**-.0004**	**-.0017**	**-.0003**	**.0008**	**.0004**	**.0000**	**.0001**	**.0000**
Stddev	.0001	.0001	.0009	.0005	.0002	.0002	.0000	.0001	.001
%RSD	858.6	30.49	52.98	153.3	29.39	65.52	85.73	90.45	60150.
#1	.0000	-.0005	-.0009	-.0008	.0008	.0003	.0000	.0001	-.0010
#2	.0001	-.0002	-.0015	-.0003	.0005	.0006	.0000	.0000	.0001
#3	-.0001	-.0004	-.0026	.0002	.0010	.0002	.0000	.0000	.0008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Zoom In Zoom Out

Sample Name: CCB Acquired: 12/30/2023 13:26:48 Type: QC
Method: 60102007_COMBO_102422(v757) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	V_2924	Zn2062
Units	ppm	ppm
Avg	**-.0001**	**.0002**
Stddev	.0001	.0000
%RSD	73.84	14.05
#1	-.0002	.0002
#2	-.0001	.0002
#3	.0000	.0002
Check ?	Chk Pass	Chk Pass
High Limit		
Low Limit		

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**3476.0**	**8011.1**	**53761.**	**17151.**
Stddev	20.5	12.7	422.	137.
%RSD	.59098	.15792	.78534	.79934
#1	3452.3	7996.5	53435.	17139.
#2	3488.9	8017.6	54238.	17294.
#3	3486.8	8019.1	53611.	17020.

Zoom In Zoom Out

Sample Name: MP43340-MB1 Acquired: 12/30/2023 13:31:30 Type: QC
Method: 60102007_COMBO_102422(v757) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	B_2497	Ba4554	Be3130	Ca3179	Cd2265	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0000**	**.0041**	**-.0001**	**-.0003**	**-.0001**	**.0000**	**.0074**	**-.0001**	**.0000**
Stddev	.0002	.0047	.0009	.0004	.0001	.000	.0015	.0000	.000
%RSD	436.5	113.9	823.5	160.0	82.56	473.1	20.79	84.35	45.02
#1	-.0001	.0070	-.0012	-.0001	-.0001	.0000	.0057	.0000	.0000
#2	.0003	-.0013	.0004	.0000	.0000	.0000	.0078	.0000	.0000
#3	.0000	.0066	.0005	-.0008	-.0001	.0000	.0087	-.0001	.0000
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Cr2677	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0001**	**.0002**	**.0015**	**-.0600**	**-.0005**	**.0078**	**.0001**	**.0000**	**-.0143**
Stddev	.0001	.0002	.0008	.0088	.0008	.0031	.0000	.000	.0041
%RSD	146.4	68.89	48.45	14.62	149.1	39.61	48.80	98.42	28.89
#1	.0000	.0003	.0011	-.0504	-.0010	.0075	.0000	.0000	-.0141
#2	.0003	.0000	.0012	-.0623	.0004	.0048	.0001	-.0001	-.0185
#3	.0000	.0003	.0024	-.0675	-.0009	.0110	.0001	.0000	-.0102
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Ni2316	Pb2203	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.0001**	**-.0004**	**-.0002**	**-.0009**	**.0016**	**-.0001**	**-.0001**	**-.0001**	**-.0011**
Stddev	.0000	.0005	.0008	.0010	.0001	.0001	.0000	.0001	.0003
%RSD	32.71	108.2	414.8	104.4	8.658	85.79	72.97	125.0	30.16
#1	-.0001	.0001	.0006	-.0020	.0014	-.0001	.0000	-.0002	-.0011
#2	-.0002	-.0006	-.0003	-.0002	.0017	-.0002	.0000	.0000	-.0014
#3	-.0001	-.0009	-.0009	-.0006	.0015	-.0001	-.0001	.0000	-.0007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Zoom In Zoom Out

Sample Name: MP43340-MB1 Acquired: 12/30/2023 13:31:30 Type: QC
Method: 60102007_COMBO_102422(v757) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	V_2924	Zn2062
Units	ppm	ppm
Avg	**-.0002**	**.0004**
Stddev	.0001	.0001
%RSD	36.91	12.58
#1	-.0003	.0004
#2	-.0002	.0005
#3	-.0002	.0004
Check ?	Chk Pass	Chk Pass
High Limit		
Low Limit		

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**3456.1**	**7970.8**	**54567.**	**17506.**
Stddev	10.5	5.4	127.	126.
%RSD	.30480	.06728	.23289	.72156
#1	3446.7	7966.4	54579.	17572.
#2	3454.2	7969.3	54434.	17360.
#3	3467.5	7976.8	54688.	17585.

Zoom In Zoom Out

Sample Name: MP43340-B1 Acquired: 12/30/2023 13:36:40 Type: QC
Method: 60102007_COMBO_102422(v757) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	B_2497	Ba4554	Be3130	Ca3179	Cd2265	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1887**	**23.38**	**.1926**	**.4777**	**.1948**	**.1939**	**43.36**	**.1929**	**.1918**
Stddev	.0010	.03	.0007	.0021	.0002	.0001	.07	.0000	.0001
%RSD	.5271	.1459	.3415	.4363	.0794	.0744	.1607	.0181	.0660
#1	.1879	23.35	.1921	.4754	.1948	.1939	43.44	.1930	.1919
#2	.1885	23.36	.1923	.4795	.1949	.1938	43.34	.1929	.1917
#3	.1898	23.41	.1934	.4782	.1946	.1940	43.30	.1929	.1919
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Cr2677	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1963**	**.1979**	**42.70**	**42.49**	**.5233**	**42.28**	**.1935**	**.6734**	**39.62**
Stddev	.0014	.0015	.03	.03	.0003	.13	.0008	.0002	.04
%RSD	.7120	.7697	.0793	.0802	.0574	.3155	.4029	.0365	.1086
#1	.1966	.1965	42.72	42.50	.5236	42.34	.1934	.6735	39.64
#2	.1948	.1976	42.72	42.45	.5233	42.38	.1928	.6731	39.64
#3	.1976	.1995	42.66	42.51	.5230	42.13	.1943	.6736	39.57
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Ni2316	Pb2203	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1906**	**.1783**	**.1919**	**.1886**	**.3467**	**.5088**	**.5196**	**.5101**	**.1845**
Stddev	.0003	.0012	.0008	.0023	.0008	.0006	.0009	.0012	.0003
%RSD	.1330	.6507	.4411	1.230	.2286	.1261	.1778	.2389	.1452
#1	.1907	.1779	.1929	.1913	.3468	.5090	.5188	.5103	.1846
#2	.1907	.1795	.1912	.1872	.3459	.5093	.5193	.5088	.1841
#3	.1903	.1773	.1917	.1873	.3474	.5081	.5206	.5112	.1846
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Zoom In Zoom Out

Sample Name: MP43340-B1 Acquired: 12/30/2023 13:36:40 Type: QC
Method: 60102007_COMBO_102422(v757) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	V_2924	Zn2062
Units	ppm	ppm
Avg	**.1999**	**.1905**
Stddev	.0011	.0003
%RSD	.5376	.1603
#1	.1996	.1909
#2	.1990	.1904
#3	.2011	.1903
Check ?	Chk Pass	Chk Pass
Value		
Range		

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**2990.7**	**7640.3**	**51503.**	**17322.**
Stddev	1.1	15.6	228.	26.
%RSD	.03817	.20446	.44327	.15174
#1	2991.5	7656.3	51507.	17297.
#2	2989.4	7625.1	51729.	17319.
#3	2991.3	7639.5	51273.	17349.

Zoom In Zoom Out

Sample Name: FC11972-6F Acquired: 12/30/2023 13:41:36 Type: Unk
Method: 60102007_COMBO_102422(v757) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	B_2497	Ba4554	Be3130	Ca3179	Cd2265	Co2286
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.0001**	**.0706**	**.0191**	**.0020**	**.0372**	**.0000**	**13.72**	**.0000**	**-.0001**
Stddev	.0001	.0018	.0016	.0008	.0003	.000	.03	.000	.0000
%RSD	140.0	2.506	8.158	40.74	.6795	131.6	.2442	15.94	21.97
#1	-.0002	.0724	.0208	.0013	.0375	.0000	13.71	.0000	-.0001
#2	.0001	.0708	.0187	.0017	.0370	.0000	13.69	.0000	-.0001
#3	-.0001	.0688	.0177	.0028	.0371	.0000	13.75	.0000	-.0002

Elem	Cr2677	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895
IS Ref	(Y_3600)	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.0002**	**.0002**	**.0038**	**2.041**	**.0076**	**.6905**	**.0447**	**.0035**	**5.470**
Stddev	.0002	.0004	.0006	.009	.0007	.0116	.0001	.0001	.007
%RSD	111.2	156.6	14.78	.4309	9.182	1.685	.2145	4.106	.1258
#1	-.0001	.0002	.0043	2.051	.0084	.6930	.0448	.0036	5.478
#2	-.0003	.0006	.0040	2.033	.0075	.6779	.0447	.0036	5.465
#3	.0000	-.0001	.0032	2.040	.0070	.7007	.0447	.0033	5.468

Elem	Ni2316	Pb2203	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908
IS Ref	(Y_2243)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.0001**	**.0000**	**.0001**	**-.0012**	**3.194**	**.0004**	**.1829**	**.0009**	**-.0014**
Stddev	.0001	.001	.0004	.0014	.005	.0002	.0007	.0001	.0006
%RSD	85.88	1326.	685.5	117.8	.1667	63.76	.3786	13.16	38.53
#1	-.0001	.0005	-.0004	-.0027	3.198	.0001	.1834	.0009	-.0015
#2	-.0003	-.0003	.0004	-.0009	3.188	.0004	.1832	.0010	-.0009
#3	.0000	-.0003	.0001	.0000	3.195	.0006	.1821	.0008	-.0020

Elem	V_2924	Zn2062
IS Ref	(Y_3600)	(Y_2243)
Units	ppm	ppm
Avg	**.0002**	**.0007**
Stddev	.0001	.0001
%RSD	22.23	8.945
#1	.0002	.0008
#2	.0003	.0006
#3	.0003	.0007

Zoom In Zoom Out

Sample Name: FC11972-6F Acquired: 12/30/2023 13:41:36 Type: Unk
Method: 60102007_COMBO_102422(v757) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**3373.9**	**7912.0**	**53840.**	**17340.**
Stddev	4.0	8.3	296.	74.
%RSD	.11860	.10507	.54907	.42514
#1	3377.0	7921.6	53519.	17406.
#2	3375.4	7908.1	53899.	17354.
#3	3369.4	7906.4	54101.	17261.

Zoom In Zoom Out

Sample Name: MP43340-D1 Acquired: 12/30/2023 13:46:42 Type: Unk
Method: 60102007_COMBO_102422(v757) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	B_2497	Ba4554	Be3130	Ca3179	Cd2265	Co2286
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0001**	**.0707**	**.0171**	**.0018**	**.0365**	**.0000**	**13.38**	**-.0001**	**-.0001**
Stddev	.0003	.0049	.0004	.0011	.0004	.000	.13	.0000	.0000
%RSD	574.8	6.933	2.397	59.53	1.218	71.75	.9581	40.00	31.87
#1	-.0002	.0663	.0172	.0007	.0359	.0000	13.23	.0000	-.0001
#2	.0000	.0760	.0175	.0018	.0367	.0000	13.45	-.0001	-.0001
#3	.0004	.0699	.0167	.0028	.0368	.0000	13.45	-.0001	-.0001

Elem	Cr2677	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895
IS Ref	(Y_3600)	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0004**	**-.0002**	**.0018**	**1.959**	**.0074**	**.6528**	**.0439**	**.0034**	**5.360**
Stddev	.0001	.0002	.0003	.042	.0004	.0103	.0000	.0002	.044
%RSD	25.37	73.77	15.83	2.149	6.022	1.571	.0579	5.852	.8165
#1	.0003	-.0002	.0015	1.910	.0079	.6413	.0439	.0036	5.309
#2	.0004	-.0004	.0018	1.987	.0074	.6562	.0439	.0032	5.388
#3	.0005	-.0001	.0021	1.978	.0070	.6610	.0440	.0035	5.382

Elem	Ni2316	Pb2203	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908
IS Ref	(Y_2243)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.0002**	**-.0004**	**-.0007**	**.0012**	**3.149**	**.0000**	**.1768**	**.0008**	**-.0016**
Stddev	.0001	.0009	.0010	.0018	.008	.000	.0020	.0000	.0014
%RSD	46.89	205.8	150.0	155.3	.2481	683.4	1.158	5.283	90.66
#1	-.0001	-.0009	-.0006	-.0002	3.143	-.0003	.1745	.0008	-.0001
#2	-.0002	-.0009	.0003	.0033	3.146	-.0001	.1775	.0008	-.0018
#3	-.0001	.0006	-.0017	.0005	3.158	.0003	.1784	.0009	-.0029

Elem	V_2924	Zn2062
IS Ref	(Y_3600)	(Y_2243)
Units	ppm	ppm
Avg	**.0000**	**.0009**
Stddev	.000	.0001
%RSD	163.5	9.115
#1	-.0001	.0008
#2	-.0001	.0008
#3	.0000	.0010

Zoom In Zoom Out

Sample Name: MP43340-D1 Acquired: 12/30/2023 13:46:42 Type: Unk
Method: 60102007_COMBO_102422(v757) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**3389.3**	**7947.0**	**54344.**	**17588.**
Stddev	6.6	11.2	104.	144.
%RSD	.19575	.14033	.19077	.82005
#1	3396.9	7956.2	54233.	17747.
#2	3385.6	7934.6	54363.	17550.
#3	3385.3	7950.2	54437.	17466.

Zoom In Zoom Out

Sample Name: MP43340-SD1 Acquired: 12/30/2023 13:51:49 Type: Unk
Method: 60102007_COMBO_102422(v757) Mode: CONC Corr. Factor: 5.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	B_2497	Ba4554	Be3130	Ca3179	Cd2265	Co2286
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.0006**	**.0463**	**.0203**	**-.0018**	**.0346**	**-.0001**	**13.07**	**-.0002**	**-.0003**
Stddev	.0001	.0085	.0044	.0040	.0008	.0001	.05	.0001	.0002
%RSD	19.05	18.34	21.60	225.6	2.252	81.45	.3488	23.95	69.65
#1	-.0007	.0375	.0155	.0024	.0355	-.0002	13.10	-.0003	-.0005
#2	-.0006	.0544	.0212	-.0022	.0340	.0000	13.01	-.0002	-.0001
#3	-.0005	.0470	.0241	-.0054	.0343	-.0001	13.08	-.0003	-.0004

Elem	Cr2677	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895
IS Ref	(Y_3600)	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.0009**	**-.0004**	**-.0036**	**1.640**	**.0046**	**.6498**	**.0419**	**.0031**	**5.035**
Stddev	.0004	.0008	.0036	.068	.0038	.0595	.0003	.0004	.029
%RSD	42.88	192.3	98.47	4.129	83.71	9.161	.7309	14.38	.5767
#1	-.0005	.0001	-.0041	1.617	.0056	.6426	.0422	.0035	5.046
#2	-.0010	-.0013	.0001	1.716	.0077	.5942	.0416	.0032	5.001
#3	-.0012	.0000	-.0070	1.586	.0003	.7126	.0419	.0026	5.056

Elem	Ni2316	Pb2203	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908
IS Ref	(Y_2243)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.0007**	**-.0009**	**-.0085**	**-.0030**	**3.005**	**-.0013**	**.1681**	**.0015**	**-.0008**
Stddev	.0004	.0036	.0031	.0105	.009	.0009	.0003	.0001	.0020
%RSD	52.09	382.7	36.24	346.2	.2854	74.32	.1967	7.023	247.8
#1	-.0011	-.0014	-.0071	-.0066	3.006	-.0016	.1678	.0015	.0013
#2	-.0005	-.0043	-.0063	.0088	2.996	-.0020	.1684	.0014	-.0012
#3	-.0005	.0029	-.0120	-.0112	3.013	-.0002	.1681	.0016	-.0025

Elem	V_2924	Zn2062
IS Ref	(Y_3600)	(Y_2243)
Units	ppm	ppm
Avg	**.0001**	**.0022**
Stddev	.0005	.0003
%RSD	836.5	13.96
#1	-.0004	.0021
#2	.0005	.0025
#3	.0000	.0020

Zoom In Zoom Out

Sample Name: MP43340-SD1 Acquired: 12/30/2023 13:51:49 Type: Unk
Method: 60102007_COMBO_102422(v757) Mode: CONC Corr. Factor: 5.000000
User: admin SSTRACE01: : :
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**3484.7**	**8036.2**	**54865.**	**17570.**
Stddev	2.7	7.9	473.	79.
%RSD	.07819	.09839	.86283	.45164
#1	3486.2	8035.7	54539.	17562.
#2	3481.5	8044.4	55408.	17653.
#3	3486.3	8028.6	54648.	17495.

Zoom In Zoom Out

Sample Name: MP43340-PS1 Acquired: 12/30/2023 13:56:56 Type: Unk
Method: 60102007_COMBO_102422(v757) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	B_2497	Ba4554	Be3130	Ca3179	Cd2265	Co2286
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0499**	**2.590**	**.1202**	**.0021**	**.2931**	**.0518**	**18.48**	**.0524**	**.0520**
Stddev	.0001	.019	.0010	.0012	.0003	.0002	.02	.0001	.0001
%RSD	.1709	.7185	.7930	54.51	.0976	.4706	.0831	.1760	.1970
#1	.0498	2.608	.1207	.0031	.2933	.0520	18.48	.0523	.0519
#2	.0498	2.571	.1207	.0025	.2928	.0515	18.46	.0523	.0520
#3	.0500	2.592	.1191	.0008	.2933	.0519	18.49	.0525	.0522

Elem	Cr2677	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895
IS Ref	(Y_3600)	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0528**	**.1047**	**3.075**	**11.72**	**.0077**	**5.779**	**.0962**	**.1002**	**14.53**
Stddev	.0007	.0004	.009	.03	.0006	.032	.0007	.0001	.01
%RSD	1.277	.4176	.2897	.2765	8.069	.5578	.7215	.1168	.0353
#1	.0531	.1043	3.082	11.76	.0084	5.789	.0963	.1001	14.54
#2	.0520	.1051	3.065	11.70	.0072	5.744	.0955	.1002	14.53
#3	.0533	.1048	3.078	11.71	.0075	5.806	.0969	.1004	14.53

Elem	Ni2316	Pb2203	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908
IS Ref	(Y_2243)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1044**	**.0470**	**.1021**	**.0982**	**3.199**	**.0526**	**.2290**	**.1053**	**.0953**
Stddev	.0002	.0005	.0010	.0024	.007	.0004	.0013	.0006	.0006
%RSD	.1666	1.154	1.019	2.413	.2239	.7057	.5586	.5646	.5872
#1	.1043	.0464	.1014	.1006	3.198	.0529	.2299	.1056	.0951
#2	.1042	.0471	.1033	.0958	3.193	.0526	.2276	.1046	.0960
#3	.1046	.0474	.1017	.0983	3.207	.0522	.2297	.1057	.0949

Elem	V_2924	Zn2062
IS Ref	(Y_3600)	(Y_2243)
Units	ppm	ppm
Avg	**.0525**	**.2540**
Stddev	.0005	.0001
%RSD	.9275	.0473
#1	.0523	.2539
#2	.0520	.2541
#3	.0530	.2541

Zoom In Zoom Out

Sample Name: MP43340-PS1 Acquired: 12/30/2023 13:56:56 Type: Unk
Method: 60102007_COMBO_102422(v757) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**3267.3**	**7881.8**	**53330.**	**17659.**
Stddev	2.2	13.9	351.	55.
%RSD	.06806	.17620	.65869	.31157
#1	3265.8	7880.3	53197.	17693.
#2	3269.9	7896.4	53728.	17690.
#3	3266.3	7868.8	53064.	17596.

Zoom In Zoom Out

Sample Name: MP43340-S1 Acquired: 12/30/2023 14:01:55 Type: Unk
Method: 60102007_COMBO_102422(v757) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	B_2497	Ba4554	Be3130	Ca3179	Cd2265	Co2286
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1878**	**23.32**	**.2122**	**.4749**	**.2282**	**.1924**	**55.90**	**.1903**	**.1893**
Stddev	.0009	.04	.0018	.0057	.0010	.0001	.10	.0003	.0002
%RSD	.5041	.1816	.8293	1.208	.4570	.0683	.1781	.1463	.0999
#1	.1870	23.28	.2104	.4692	.2270	.1923	55.95	.1904	.1895
#2	.1889	23.36	.2121	.4748	.2285	.1924	55.97	.1900	.1891
#3	.1877	23.34	.2139	.4807	.2290	.1925	55.79	.1906	.1894

Elem	Cr2677	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895
IS Ref	(Y_3600)	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1944**	**.1972**	**42.33**	**44.16**	F **.5244**	**42.39**	**.2331**	**.6682**	**44.63**
Stddev	.0002	.0011	.05	.07	.0029	.25	.0006	.0005	.13
%RSD	.0913	.5618	.1094	.1519	.5484	.5838	.2443	.0717	.2872
#1	.1944	.1963	42.32	44.09	.5213	42.59	.2328	.6682	44.48
#2	.1946	.1984	42.38	44.22	.5249	42.46	.2337	.6687	44.68
#3	.1942	.1968	42.29	44.17	.5270	42.11	.2327	.6678	44.73

Elem	Ni2316	Pb2203	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908
IS Ref	(Y_2243)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1885**	**.1784**	**.1921**	**.1880**	**3.424**	**.5020**	**.6851**	**.5062**	**.1828**
Stddev	.0001	.0007	.0018	.0015	.005	.0006	.0018	.0013	.0009
%RSD	.0500	.3665	.9450	.8040	.1388	.1135	.2694	.2627	.4861
#1	.1885	.1784	.1932	.1880	3.419	.5026	.6830	.5057	.1832
#2	.1886	.1778	.1900	.1865	3.428	.5019	.6859	.5077	.1835
#3	.1885	.1791	.1931	.1895	3.424	.5015	.6864	.5051	.1818

Elem	V_2924	Zn2062
IS Ref	(Y_3600)	(Y_2243)
Units	ppm	ppm
Avg	**.1989**	**.1881**
Stddev	.0008	.0004
%RSD	.4066	.2276
#1	.1987	.1882
#2	.1999	.1876
#3	.1983	.1885

Zoom In Zoom Out

Sample Name: MP43340-S1 Acquired: 12/30/2023 14:01:55 Type: Unk
Method: 60102007_COMBO_102422(v757) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**2972.3**	**7652.5**	**51567.**	**17341.**
Stddev	5.5	13.3	218.	72.
%RSD	.18592	.17357	.42368	.41280
#1	2973.3	7658.1	51639.	17266.
#2	2977.2	7662.2	51322.	17347.
#3	2966.3	7637.4	51741.	17409.

Zoom In Zoom Out

Sample Name: MP43340-S2 Acquired: 12/30/2023 14:06:51 Type: Unk
Method: 60102007_COMBO_102422(v757) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	B_2497	Ba4554	Be3130	Ca3179	Cd2265	Co2286
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1897**	**24.10**	**.2173**	**.4795**	**.2318**	**.1990**	**56.98**	**.1945**	**.1935**
Stddev	.0009	.05	.0003	.0020	.0009	.0006	.24	.0002	.0002
%RSD	.4975	.2265	.1338	.4185	.3936	.3037	.4159	.1185	.1271
#1	.1907	24.12	.2172	.4775	.2319	.1990	57.10	.1943	.1936
#2	.1889	24.13	.2177	.4815	.2327	.1995	57.13	.1947	.1936
#3	.1893	24.03	.2172	.4794	.2309	.1983	56.71	.1943	.1932

Elem	Cr2677	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895
IS Ref	(Y_3600)	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2004**	**.2027**	**43.87**	**45.25**	F **.5451**	**43.72**	**.2363**	**.6843**	**45.42**
Stddev	.0002	.0006	.16	.07	.0014	.18	.0012	.0002	.14
%RSD	.0972	.2738	.3565	.1636	.2496	.4044	.4938	.0334	.3112
#1	.2006	.2032	43.96	45.31	.5459	43.88	.2376	.6841	45.45
#2	.2002	.2028	43.96	45.28	.5459	43.76	.2357	.6843	45.55
#3	.2003	.2021	43.69	45.17	.5436	43.53	.2355	.6845	45.27

Elem	Ni2316	Pb2203	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908
IS Ref	(Y_2243)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1928**	**.1830**	**.1961**	**.1926**	**3.498**	**.5147**	**.7131**	**.5160**	**.1876**
Stddev	.0003	.0008	.0020	.0012	.000	.0003	.0021	.0020	.0013
%RSD	.1633	.4225	1.021	.6082	.0106	.0656	.2957	.3968	.6862
#1	.1932	.1824	.1943	.1922	3.499	.5148	.7140	.5184	.1870
#2	.1926	.1828	.1958	.1939	3.498	.5150	.7147	.5146	.1891
#3	.1926	.1839	.1983	.1917	3.498	.5144	.7107	.5152	.1868

Elem	V_2924	Zn2062
IS Ref	(Y_3600)	(Y_2243)
Units	ppm	ppm
Avg	**.2020**	**.1934**
Stddev	.0010	.0002
%RSD	.4970	.0995
#1	.2031	.1935
#2	.2012	.1935
#3	.2016	.1932

Zoom In Zoom Out

Sample Name: MP43340-S2 Acquired: 12/30/2023 14:06:51 Type: Unk
Method: 60102007_COMBO_102422(v757) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**2953.0**	**7641.5**	**51416.**	**17254.**
Stddev	4.4	9.3	203.	112.
%RSD	.14840	.12217	.39517	.64740
#1	2957.1	7635.3	51192.	17152.
#2	2953.5	7637.1	51468.	17236.
#3	2948.4	7652.3	51588.	17373.

Zoom In Zoom Out

Sample Name: FC11972-4F Acquired: 12/30/2023 14:11:45 Type: Unk
Method: 60102007_COMBO_102422(v757) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	B_2497	Ba4554	Be3130	Ca3179	Cd2265	Co2286
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0002**	**.0048**	**.0045**	**.0017**	**.0008**	**.0000**	**7.152**	**-.0001**	**-.0001**
Stddev	.0000	.0064	.0004	.0003	.0001	.000	.023	.0000	.0000
%RSD	16.52	132.6	8.947	20.73	13.94	66.96	.3226	47.12	33.84
#1	.0002	.0105	.0046	.0021	.0008	.0000	7.126	-.0001	-.0001
#2	.0002	-.0021	.0041	.0015	.0007	.0000	7.169	-.0001	-.0002
#3	.0002	.0061	.0048	.0015	.0009	.0000	7.161	.0000	-.0001

Elem	Cr2677	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895
IS Ref	(Y_3600)	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0010**	**-.0004**	**.0058**	**.9202**	**.0026**	**2.866**	**.0003**	**.0005**	**2.705**
Stddev	.0001	.0001	.0013	.0103	.0008	.022	.0000	.0001	.007
%RSD	13.85	22.81	22.70	1.116	28.95	.7607	3.801	24.71	.2657
#1	.0009	-.0003	.0068	.9320	.0035	2.858	.0003	.0004	2.696
#2	.0009	-.0004	.0063	.9151	.0020	2.890	.0003	.0007	2.709
#3	.0011	-.0003	.0043	.9134	.0023	2.849	.0003	.0005	2.709

Elem	Ni2316	Pb2203	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908
IS Ref	(Y_2243)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0010**	**-.0005**	**-.0001**	**-.0007**	**2.887**	**.0003**	**.0336**	**.0005**	**-.0012**
Stddev	.0002	.0003	.0010	.0014	.003	.0006	.0001	.0001	.0009
%RSD	17.00	60.22	837.3	209.6	.1055	180.8	.3842	18.62	76.59
#1	.0008	-.0005	-.0010	.0008	2.884	-.0002	.0335	.0006	-.0002
#2	.0011	-.0009	.0009	-.0020	2.890	.0003	.0337	.0004	-.0016
#3	.0011	-.0002	-.0002	-.0007	2.887	.0009	.0335	.0006	-.0019

Elem	V_2924	Zn2062
IS Ref	(Y_3600)	(Y_2243)
Units	ppm	ppm
Avg	**.0001**	**.0009**
Stddev	.0001	.0000
%RSD	114.4	3.085
#1	.0000	.0008
#2	.0003	.0009
#3	.0001	.0009

Zoom In Zoom Out

Sample Name: FC11972-4F Acquired: 12/30/2023 14:11:45 Type: Unk
Method: 60102007_COMBO_102422(v757) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**3415.3**	**7972.9**	**54874.**	**17536.**
Stddev	3.0	3.6	54.	66.
%RSD	.08890	.04528	.09837	.37618
#1	3412.9	7974.9	54832.	17611.
#2	3418.7	7975.1	54855.	17507.
#3	3414.3	7968.8	54935.	17489.

Zoom In Zoom Out

Sample Name: FC11972-5F Acquired: 12/30/2023 14:16:52 Type: Unk
Method: 60102007_COMBO_102422(v757) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	B_2497	Ba4554	Be3130	Ca3179	Cd2265	Co2286
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.0002**	**.0023**	**-.0006**	**.0003**	**-.0001**	**.0000**	**.0291**	**-.0001**	**.0000**
Stddev	.0002	.0058	.0012	.0003	.0000	.000	.0011	.0000	.0001
%RSD	94.08	252.1	198.0	105.6	16.98	16.72	3.678	50.13	616.4
#1	-.0003	-.0029	-.0011	.0001	-.0001	.0000	.0302	-.0001	.0000
#2	-.0004	.0086	.0008	.0001	-.0001	.0000	.0291	-.0001	.0001
#3	.0000	.0012	-.0015	.0006	-.0001	.0000	.0280	.0000	-.0001

Elem	Cr2677	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895
IS Ref	(Y_3600)	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0001**	**.0000**	**.0009**	**-.0233**	**-.0005**	**.0123**	**.0002**	**.0001**	**.1937**
Stddev	.0000	.0001	.0002	.0200	.0001	.0008	.0000	.0002	.0031
%RSD	61.66	311.8	25.69	85.75	14.90	6.141	14.26	228.3	1.577
#1	.0001	.0002	.0011	-.0373	-.0006	.0118	.0002	.0000	.1968
#2	.0000	.0000	.0006	-.0322	-.0006	.0132	.0002	.0004	.1906
#3	.0001	.0000	.0009	-.0004	-.0004	.0119	.0002	-.0001	.1937

Elem	Ni2316	Pb2203	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908
IS Ref	(Y_2243)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0002**	**-.0002**	**-.0013**	**-.0010**	**.0034**	**.0000**	**.0000**	**.0000**	**-.0024**
Stddev	.0001	.0007	.0005	.0006	.0001	.000	.0000	.000	.0002
%RSD	51.51	291.5	38.81	55.86	3.362	1370.	41.54	1522.	8.545
#1	.0003	-.0010	-.0007	-.0014	.0032	-.0004	.0001	.0000	-.0025
#2	.0002	.0003	-.0017	-.0013	.0035	.0001	.0000	.0001	-.0022
#3	.0001	.0000	-.0014	-.0004	.0034	.0002	.0001	.0000	-.0026

Elem	V_2924	Zn2062
IS Ref	(Y_3600)	(Y_2243)
Units	ppm	ppm
Avg	**-.0001**	**.0003**
Stddev	.0001	.0001
%RSD	189.2	20.60
#1	-.0002	.0003
#2	.0000	.0003
#3	.0000	.0004

Zoom In Zoom Out

Sample Name: FC11972-5F Acquired: 12/30/2023 14:16:52 Type: Unk
Method: 60102007_COMBO_102422(v757) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**3455.2**	**7996.5**	**55252.**	**17697.**
Stddev	4.0	16.4	126.	85.
%RSD	.11713	.20496	.22794	.48124
#1	3455.7	7997.5	55203.	17753.
#2	3458.9	8012.4	55158.	17599.
#3	3450.9	7979.6	55395.	17738.

Zoom In Zoom Out

Sample Name: CCV Acquired: 12/30/2023 14:22:02 Type: QC
Method: 60102007_COMBO_102422(v757) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	B_2497	Ba4554	Be3130	Ca3179	Cd2265	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2607**	**40.41**	**2.036**	**2.071**	**2.053**	**2.043**	**40.99**	**2.059**	**2.045**
Stddev	.0010	.04	.003	.002	.018	.013	.07	.002	.001
%RSD	.3887	.1033	.1603	.0939	.8659	.6271	.1776	.1101	.0661
#1	.2614	40.37	2.036	2.070	2.033	2.038	40.90	2.060	2.047
#2	.2595	40.46	2.033	2.073	2.066	2.034	41.01	2.056	2.044
#3	.2611	40.40	2.039	2.069	2.060	2.058	41.04	2.060	2.046
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Cr2677	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**2.047**	**2.123**	**41.09**	**40.96**	**2.046**	**40.96**	**2.056**	**2.034**	**40.89**
Stddev	.003	.007	.04	.12	.008	.09	.006	.002	.05
%RSD	.1625	.3365	.0974	.2989	.3713	.2194	.2872	.1114	.1323
#1	2.051	2.125	41.07	40.86	2.045	40.85	2.063	2.035	40.83
#2	2.046	2.115	41.14	41.10	2.055	41.01	2.054	2.031	40.93
#3	2.044	2.129	41.08	40.93	2.040	41.01	2.053	2.035	40.92
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Ni2316	Pb2203	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**2.017**	**1.973**	**2.024**	**2.085**	**1.927**	**2.038**	**2.082**	**2.053**	**1.998**
Stddev	.003	.005	.001	.007	.002	.002	.008	.005	.002
%RSD	.1709	.2440	.0525	.3194	.1027	.1175	.4011	.2583	.0988
#1	2.018	1.975	2.024	2.093	1.926	2.041	2.091	2.059	1.998
#2	2.013	1.967	2.023	2.079	1.925	2.036	2.075	2.051	1.997
#3	2.019	1.975	2.025	2.084	1.929	2.037	2.079	2.049	2.000
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Zoom In Zoom Out

Sample Name: CCV Acquired: 12/30/2023 14:22:02 Type: QC
Method: 60102007_COMBO_102422(v757) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	V_2924	Zn2062
Units	ppm	ppm
Avg	**2.055**	**2.013**
Stddev	.002	.005
%RSD	.0753	.2289
#1	2.057	2.018
#2	2.054	2.009
#3	2.055	2.011
Check ?	Chk Pass	Chk Pass
Value		
Range		

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**2922.5**	**7620.6**	**51542.**	**17367.**
Stddev	5.0	3.7	87.	50.
%RSD	.17260	.04823	.16883	.28906
#1	2917.5	7618.3	51471.	17407.
#2	2927.6	7624.9	51639.	17384.
#3	2922.4	7618.7	51516.	17311.

Zoom In Zoom Out

Sample Name: CCB Acquired: 12/30/2023 14:27:21 Type: QC
Method: 60102007_COMBO_102422(v757) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	B_2497	Ba4554	Be3130	Ca3179	Cd2265	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.0001**	**.0026**	**.0004**	F **.0013**	**.0001**	**.0001**	**.0063**	**.0001**	**.0002**
Stddev	.0002	.0008	.0007	.0008	.0001	.0000	.0011	.0000	.0001
%RSD	180.0	29.39	163.6	61.54	108.9	19.35	18.25	19.51	41.51
#1	-.0004	.0031	-.0003	.0013	.0000	.0002	.0075	.0001	.0002
#2	-.0001	.0017	.0005	.0004	.0002	.0001	.0053	.0001	.0001
#3	.0001	.0029	.0011	.0020	.0001	.0001	.0060	.0001	.0002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit				.0010					
Low Limit				-.0010					

Elem	Cr2677	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0002**	**.0003**	**.0023**	**-.0334**	**-.0003**	**.0105**	**.0001**	**.0003**	**-.0163**
Stddev	.0002	.0001	.0004	.0174	.0004	.0070	.0000	.0002	.0044
%RSD	131.3	22.81	15.76	52.15	135.3	66.31	20.11	46.82	26.64
#1	.0001	.0004	.0027	-.0494	.0001	.0036	.0001	.0003	-.0121
#2	.0004	.0002	.0020	-.0359	-.0007	.0175	.0001	.0005	-.0208
#3	.0000	.0003	.0023	-.0148	-.0004	.0103	.0001	.0002	-.0161
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Ni2316	Pb2203	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0000**	**-.0002**	**.0002**	**-.0011**	**.0009**	**.0003**	**.0001**	**.0001**	**-.0003**
Stddev	.000	.0004	.0006	.0009	.0001	.0003	.0000	.0001	.0004
%RSD	423.8	198.6	328.2	79.38	12.05	92.23	30.31	95.41	125.8
#1	-.0001	.0001	.0008	-.0008	.0008	.0005	.0001	.0002	.0001
#2	.0001	-.0006	.0000	-.0004	.0008	.0000	.0001	.0000	-.0005
#3	-.0001	-.0001	-.0003	-.0021	.0010	.0004	.0001	.0000	-.0007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Zoom In Zoom Out

Sample Name: CCB Acquired: 12/30/2023 14:27:21 Type: QC
Method: 60102007_COMBO_102422(v757) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	V_2924	Zn2062
Units	ppm	ppm
Avg	**.0000**	**.0002**
Stddev	.0001	.0000
%RSD	1361.	17.86
#1	.0001	.0002
#2	.0000	.0003
#3	-.0001	.0002
Check ?	Chk Pass	Chk Pass
High Limit		
Low Limit		

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**3479.4**	**8002.1**	**54358.**	**17581.**
Stddev	9.1	26.6	48.	41.
%RSD	.26097	.33230	.08873	.23521
#1	3489.7	8032.5	54366.	17553.
#2	3475.9	7990.3	54402.	17629.
#3	3472.6	7983.5	54306.	17561.

Zoom In Zoom Out

Sample Name: FC11972-7F Acquired: 12/30/2023 14:32:30 Type: Unk
Method: 60102007_COMBO_102422(v757) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	B_2497	Ba4554	Be3130	Ca3179	Cd2265	Co2286
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.0002**	**.0625**	**.0182**	**.0013**	**.0375**	**.0000**	**13.40**	**.0000**	**-.0001**
Stddev	.0001	.0015	.0004	.0013	.0000	.0000	.04	.000	.0001
%RSD	52.94	2.466	2.236	102.1	.1334	1324.	.3174	167.5	147.4
#1	-.0001	.0640	.0187	.0026	.0375	.0000	13.38	-.0001	-.0001
#2	-.0003	.0610	.0180	.0000	.0374	.0000	13.45	.0000	.0000
#3	-.0003	.0625	.0180	.0012	.0374	.0000	13.38	.0000	.0000

Elem	Cr2677	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895
IS Ref	(Y_3600)	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.0001**	**-.0001**	**.0007**	**1.881**	**.0076**	**.7155**	**.0540**	**.0034**	**5.146**
Stddev	.0001	.0001	.0003	.012	.0001	.0046	.0002	.0001	.011
%RSD	124.0	68.67	49.16	.6406	1.961	.6391	.2989	1.987	.2193
#1	-.0001	-.0001	.0008	1.887	.0077	.7184	.0538	.0034	5.146
#2	-.0002	-.0001	.0010	1.867	.0076	.7178	.0541	.0034	5.156
#3	.0000	.0000	.0003	1.889	.0074	.7102	.0541	.0035	5.134

Elem	Ni2316	Pb2203	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908
IS Ref	(Y_2243)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0006**	**.0005**	**.0005**	**-.0003**	**3.146**	**.0004**	**.1783**	**.0008**	**-.0017**
Stddev	.0001	.0001	.0002	.0003	.004	.0002	.0004	.0001	.0012
%RSD	11.09	25.32	46.35	120.0	.1420	49.92	.2448	7.617	71.35
#1	.0006	.0006	.0004	-.0003	3.151	.0002	.1778	.0008	-.0018
#2	.0006	.0006	.0004	-.0006	3.144	.0003	.1787	.0009	-.0004
#3	.0005	.0004	.0008	.0001	3.142	.0005	.1783	.0009	-.0029

Elem	V_2924	Zn2062
IS Ref	(Y_3600)	(Y_2243)
Units	ppm	ppm
Avg	**.0002**	**.0000**
Stddev	.0001	.000
%RSD	70.62	254.0
#1	.0003	.0000
#2	.0002	.0000
#3	.0000	-.0001

Zoom In Zoom Out

Sample Name: FC11972-7F Acquired: 12/30/2023 14:32:30 Type: Unk
Method: 60102007_COMBO_102422(v757) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**3370.8**	**7889.6**	**53449.**	**17509.**
Stddev	1.1	3.3	152.	93.
%RSD	.03188	.04235	.28458	.53371
#1	3369.6	7887.8	53604.	17543.
#2	3371.7	7893.4	53441.	17403.
#3	3371.0	7887.4	53300.	17580.

Zoom In Zoom Out

Sample Name: FC12056-1 Acquired: 12/30/2023 14:37:38 Type: Unk
Method: 60102007_COMBO_102422(v757) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	B_2497	Ba4554	Be3130	Ca3179	Cd2265	Co2286
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.0002**	**.0345**	**.0004**	**.2646**	**.3007**	**.0000**	**114.9**	**-.0001**	**.0001**
Stddev	.0003	.0084	.0009	.0011	.0002	.000	1.6	.0000	.0001
%RSD	116.9	24.31	202.0	.4006	.0622	214.8	1.350	23.21	108.8
#1	-.0004	.0428	.0011	.2634	.3005	.0000	116.7	-.0001	.0000
#2	.0001	.0260	.0006	.2655	.3009	.0000	113.8	-.0001	.0000
#3	-.0003	.0348	-.0005	.2650	.3007	.0000	114.1	-.0001	.0001

Elem	Cr2677	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895
IS Ref	(Y_3600)	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0005**	**.0010**	**.0762**	**6.355**	**.0176**	**4.140**	**.0988**	**.0054**	**26.55**
Stddev	.0002	.0002	.0002	.033	.0002	.022	.0003	.0001	.05
%RSD	50.52	19.34	.2551	.5159	1.056	.5427	.2883	1.116	.1885
#1	.0005	.0012	.0764	6.382	.0175	4.164	.0990	.0053	26.57
#2	.0002	.0009	.0763	6.363	.0176	4.119	.0990	.0054	26.60
#3	.0007	.0008	.0760	6.318	.0178	4.137	.0985	.0053	26.50

Elem	Ni2316	Pb2203	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908
IS Ref	(Y_2243)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0006**	**-.0001**	**.0005**	**.0013**	**4.759**	**.0004**	**.6147**	**.0020**	**-.0011**
Stddev	.0001	.0012	.0008	.0013	.005	.0004	.0008	.0001	.0009
%RSD	13.79	1367.	152.5	96.90	.1073	115.9	.1333	3.302	80.11
#1	.0005	.0013	.0003	.0014	4.758	.0007	.6144	.0021	-.0021
#2	.0007	-.0009	-.0002	.0000	4.764	.0005	.6156	.0019	-.0004
#3	.0007	-.0006	.0013	.0025	4.754	-.0001	.6140	.0021	-.0008

Elem	V_2924	Zn2062
IS Ref	(Y_3600)	(Y_2243)
Units	ppm	ppm
Avg	**.0001**	**.0057**
Stddev	.0001	.0000
%RSD	104.6	.7168
#1	.0002	.0056
#2	.0000	.0057
#3	.0002	.0057

Zoom In Zoom Out

Sample Name: FC12056-1 Acquired: 12/30/2023 14:37:38 Type: Unk
Method: 60102007_COMBO_102422(v757) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**3090.7**	**7548.3**	**51200.**	**17064.**
Stddev	7.1	5.7	78.	96.
%RSD	.22926	.07520	.15162	.56199
#1	3090.9	7549.2	51111.	16957.
#2	3097.7	7553.5	51250.	17095.
#3	3083.5	7542.3	51240.	17141.

Zoom In Zoom Out

Sample Name: FC12209-1 Acquired: 12/30/2023 14:42:54 Type: Unk
Method: 60102007_COMBO_102422(v757) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	B_2497	Ba4554	Be3130	Ca3179	Cd2265	Co2286
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0000**	**.5927**	**.0022**	**.0297**	**.0060**	**.0000**	**3.929**	**-.0001**	**.0016**
Stddev	.0002	.0042	.0004	.0007	.0001	.000	.010	.0000	.0001
%RSD	568.1	.7007	17.52	2.202	1.268	74.27	.2579	32.55	3.469
#1	.0001	.5960	.0017	.0301	.0061	.0000	3.918	-.0001	.0016
#2	.0001	.5941	.0024	.0290	.0060	.0000	3.933	-.0001	.0016
#3	-.0002	.5880	.0023	.0301	.0060	.0000	3.938	-.0002	.0015

Elem	Cr2677	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895
IS Ref	(Y_3600)	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0026**	**.0024**	**1.919**	**1.307**	**.0046**	**.3264**	**.0676**	**.0024**	**77.54**
Stddev	.0000	.0003	.007	.020	.0011	.0028	.0002	.0001	.09
%RSD	1.574	12.81	.3854	1.564	24.63	.8512	.3471	6.177	.1138
#1	.0027	.0021	1.910	1.330	.0050	.3253	.0677	.0026	77.53
#2	.0026	.0027	1.925	1.292	.0033	.3296	.0677	.0024	77.63
#3	.0026	.0025	1.921	1.298	.0055	.3243	.0673	.0023	77.45

Elem	Ni2316	Pb2203	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908
IS Ref	(Y_2243)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0218**	**-.0002**	**.0009**	**.0102**	**.8946**	**.0040**	**.0086**	**.0557**	**-.0046**
Stddev	.0001	.0006	.0004	.0017	.0006	.0002	.0000	.0001	.0018
%RSD	.3430	314.0	37.94	16.21	.0698	3.907	.2762	.1939	39.90
#1	.0217	-.0004	.0006	.0101	.8953	.0039	.0086	.0557	-.0026
#2	.0217	.0005	.0013	.0087	.8941	.0039	.0086	.0558	-.0051
#3	.0218	-.0006	.0009	.0120	.8944	.0041	.0086	.0556	-.0062

Elem	V_2924	Zn2062
IS Ref	(Y_3600)	(Y_2243)
Units	ppm	ppm
Avg	**.0006**	**.0355**
Stddev	.0001	.0000
%RSD	11.87	.1141
#1	.0006	.0355
#2	.0007	.0356
#3	.0005	.0356

Zoom In Zoom Out

Sample Name: FC12209-1 Acquired: 12/30/2023 14:42:54 Type: Unk
Method: 60102007_COMBO_102422(v757) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**3173.0**	**7645.0**	**52217.**	**17435.**
Stddev	2.4	6.1	175.	84.
%RSD	.07605	.07934	.33443	.48187
#1	3175.7	7649.5	52416.	17532.
#2	3171.2	7638.1	52090.	17386.
#3	3172.0	7647.5	52144.	17388.

Zoom In Zoom Out

Sample Name: FC12056-2 Acquired: 12/30/2023 14:47:57 Type: Unk
Method: 60102007_COMBO_102422(v757) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	B_2497	Ba4554	Be3130	Ca3179	Cd2265	Co2286
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0000**	**.0135**	**.0011**	F **4.787**	**1.222**	**.0000**	**90.41**	**.0000**	**-.0002**
Stddev	.000	.0074	.0006	.021	.002	.000	.93	.000	.0001
%RSD	607.0	55.09	55.88	.4356	.1711	80.87	1.033	539.1	65.31
#1	-.0003	.0189	.0005	4.764	1.224	.0000	91.41	-.0001	-.0001
#2	.0000	.0165	.0011	4.804	1.220	.0000	89.55	.0001	-.0002
#3	.0002	.0050	.0018	4.792	1.223	.0000	90.29	.0000	-.0003

Elem	Cr2677	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895
IS Ref	(Y_3600)	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0010**	**.0003**	**.1222**	**25.27**	**.1924**	**23.01**	**.0379**	**.0069**	F **138.4**
Stddev	.0003	.0002	.0006	.05	.0010	.08	.0002	.0002	2.2
%RSD	26.57	52.75	.4687	.2110	.5232	.3480	.4113	3.086	1.559
#1	.0008	.0002	.1226	25.28	.1916	23.06	.0378	.0067	140.6
#2	.0013	.0005	.1225	25.21	.1935	22.92	.0379	.0072	136.3
#3	.0010	.0002	.1215	25.32	.1922	23.05	.0381	.0069	138.3

Elem	Ni2316	Pb2203	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908
IS Ref	(Y_2243)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0023**	**-.0007**	**.0000**	**-.0007**	**8.880**	**.0015**	**.9953**	**.0024**	**-.0012**
Stddev	.0002	.0003	.0019	.0005	.028	.0005	.0025	.0001	.0003
%RSD	8.383	42.55	5367.	68.46	.3138	31.81	.2523	4.668	24.49
#1	.0021	-.0005	-.0021	-.0002	8.853	.0017	.9926	.0023	-.0014
#2	.0024	-.0006	.0006	-.0012	8.877	.0010	.9976	.0024	-.0013
#3	.0024	-.0010	.0016	-.0008	8.909	.0019	.9957	.0025	-.0008

Elem	V_2924	Zn2062
IS Ref	(Y_3600)	(Y_2243)
Units	ppm	ppm
Avg	**.0001**	**.0024**
Stddev	.0000	.0001
%RSD	75.33	3.543
#1	.0000	.0024
#2	.0001	.0024
#3	.0001	.0025

Zoom In Zoom Out

Sample Name: FC12056-2 Acquired: 12/30/2023 14:47:57 Type: Unk
Method: 60102007_COMBO_102422(v757) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**2928.2**	**7431.9**	**50393.**	**17310.**
Stddev	7.1	10.9	168.	116.
%RSD	.24220	.14619	.33324	.67292
#1	2934.6	7444.2	50284.	17208.
#2	2920.5	7427.7	50586.	17437.
#3	2929.4	7423.7	50307.	17286.

Zoom In Zoom Out

Sample Name: FC12056-3 Acquired: 12/30/2023 14:53:20 Type: Unk
Method: 60102007_COMBO_102422(v757) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	B_2497	Ba4554	Be3130	Ca3179	Cd2265	Co2286
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0001**	**.0381**	**.0085**	F **.9243**	**.1072**	**.0000**	**143.7**	**.0035**	**.0056**
Stddev	.0001	.0064	.0016	.0013	.0003	.000	1.9	.0000	.0000
%RSD	197.0	16.77	18.62	.1396	.2518	42.68	1.321	.3527	.5527
#1	.0001	.0454	.0074	.9233	.1075	.0000	144.6	.0035	.0056
#2	.0001	.0342	.0077	.9239	.1071	.0000	144.9	.0035	.0057
#3	-.0001	.0345	.0103	.9257	.1069	.0000	141.5	.0034	.0056

Elem	Cr2677	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895
IS Ref	(Y_3600)	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0010**	**.0644**	**4.148**	**32.51**	**.1370**	**3.337**	**.2672**	**.0932**	**32.50**
Stddev	.0002	.0002	.006	.03	.0006	.011	.0002	.0003	.03
%RSD	22.96	.2619	.1494	.0814	.4511	.3149	.0766	.2940	.0827
#1	.0009	.0644	4.149	32.52	.1375	3.339	.2673	.0931	32.50
#2	.0009	.0642	4.154	32.49	.1363	3.346	.2669	.0931	32.47
#3	.0013	.0645	4.142	32.54	.1372	3.326	.2672	.0936	32.53

Elem	Ni2316	Pb2203	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908
IS Ref	(Y_2243)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0161**	**.0206**	**.0028**	**-.0011**	**1.685**	**.0019**	**.5963**	**.0028**	**-.0028**
Stddev	.0000	.0008	.0005	.0031	.000	.0003	.0010	.0001	.0015
%RSD	.0760	3.653	18.41	275.7	.0215	17.10	.1678	1.860	53.51
#1	.0161	.0214	.0025	-.0046	1.685	.0018	.5964	.0027	-.0045
#2	.0161	.0199	.0034	.0000	1.685	.0016	.5973	.0028	-.0026
#3	.0162	.0205	.0025	.0013	1.686	.0022	.5953	.0027	-.0015

Elem	V_2924	Zn2062
IS Ref	(Y_3600)	(Y_2243)
Units	ppm	ppm
Avg	**.0030**	**1.131**
Stddev	.0002	.001
%RSD	5.330	.0507
#1	.0029	1.130
#2	.0030	1.132
#3	.0032	1.131

Zoom In Zoom Out

Sample Name: FC12056-3 Acquired: 12/30/2023 14:53:20 Type: Unk
Method: 60102007_COMBO_102422(v757) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**3030.1**	**7455.3**	**50747.**	**17073.**
Stddev	1.6	7.2	62.	67.
%RSD	.05445	.09633	.12147	.39055
#1	3028.6	7461.2	50736.	17073.
#2	3031.9	7457.3	50814.	17006.
#3	3029.8	7447.3	50692.	17139.

Zoom In Zoom Out

Sample Name: FC12056-4 Acquired: 12/30/2023 14:58:30 Type: Unk
Method: 60102007_COMBO_102422(v757) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	B_2497	Ba4554	Be3130	Ca3179	Cd2265	Co2286
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0000**	**.0222**	**.0021**	F **.7959**	**.2518**	**.0000**	**136.6**	**.0000**	**.0032**
Stddev	.000	.0066	.0005	.0038	.0001	.000	.9	.000	.0001
%RSD	8998.	29.56	26.03	.4794	.0573	46.50	.6592	91.84	1.945
#1	.0003	.0255	.0025	.7915	.2520	.0000	135.9	.0000	.0032
#2	.0000	.0146	.0023	.7974	.2517	.0000	137.6	.0000	.0032
#3	-.0003	.0264	.0015	.7987	.2518	.0000	136.3	-.0001	.0031

Elem	Cr2677	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895
IS Ref	(Y_3600)	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0002**	**.0021**	**1.356**	**3.785**	**.0574**	**12.04**	**.1271**	**.0623**	**28.79**
Stddev	.0003	.0001	.007	.008	.0008	.04	.0005	.0003	.02
%RSD	147.5	4.115	.5034	.2007	1.401	.3186	.3821	.4124	.0642
#1	.0005	.0021	1.352	3.776	.0572	12.02	.1266	.0621	28.77
#2	.0000	.0020	1.364	3.788	.0582	12.08	.1270	.0622	28.80
#3	.0001	.0022	1.353	3.790	.0567	12.01	.1276	.0626	28.79

Elem	Ni2316	Pb2203	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908
IS Ref	(Y_2243)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0315**	**.0013**	**.0047**	**-.0013**	**3.944**	**.0014**	**.8679**	**.0015**	**-.0023**
Stddev	.0001	.0007	.0001	.0023	.008	.0002	.0044	.0001	.0017
%RSD	.3219	56.39	3.131	182.2	.1919	14.91	.5043	5.199	77.45
#1	.0315	.0008	.0047	-.0007	3.941	.0012	.8642	.0015	-.0005
#2	.0316	.0021	.0049	.0007	3.938	.0016	.8727	.0015	-.0023
#3	.0314	.0009	.0046	-.0038	3.952	.0013	.8667	.0016	-.0040

Elem	V_2924	Zn2062
IS Ref	(Y_3600)	(Y_2243)
Units	ppm	ppm
Avg	**.0013**	**.1879**
Stddev	.0000	.0002
%RSD	3.478	.1194
#1	.0013	.1877
#2	.0014	.1882
#3	.0013	.1879

Zoom In Zoom Out

Sample Name: FC12056-4 Acquired: 12/30/2023 14:58:30 Type: Unk
Method: 60102007_COMBO_102422(v757) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**3055.9**	**7528.6**	**51322.**	**17109.**
Stddev	1.4	8.7	288.	35.
%RSD	.04722	.11586	.56080	.20212
#1	3057.5	7538.7	51326.	17104.
#2	3055.4	7523.5	51609.	17077.
#3	3054.8	7523.6	51033.	17146.

Zoom In Zoom Out

Sample Name: FC11995-1F Acquired: 12/30/2023 15:03:41 Type: Unk
Method: 60102007_COMBO_102422(v757) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	B_2497	Ba4554	Be3130	Ca3179	Cd2265	Co2286
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.0001**	**.0067**	**.0001**	**.0085**	**.0444**	**.0000**	**4.837**	**-.0001**	**.0013**
Stddev	.0001	.0023	.0015	.0003	.0000	.0000	.017	.0000	.0001
%RSD	128.4	34.51	1220.	2.978	.0295	48450.	.3418	49.38	4.072
#1	-.0001	.0063	.0005	.0085	.0444	.0000	4.846	-.0001	.0013
#2	-.0002	.0092	.0013	.0087	.0444	.0000	4.847	-.0001	.0014
#3	.0000	.0046	-.0015	.0082	.0443	.0000	4.818	-.0001	.0014

Elem	Cr2677	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895
IS Ref	(Y_3600)	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.0001**	**.0004**	**.0002**	**1.864**	**-.0007**	**2.345**	**.0606**	**.0000**	**3.666**
Stddev	.0001	.0001	.0001	.018	.0005	.015	.0001	.0001	.014
%RSD	84.85	24.71	50.97	.9890	75.90	.6523	.2094	207.0	.3791
#1	-.0001	.0005	.0001	1.845	-.0002	2.336	.0606	.0000	3.682
#2	.0000	.0003	.0001	1.864	-.0007	2.363	.0607	.0000	3.658
#3	-.0002	.0003	.0003	1.882	-.0012	2.337	.0605	.0002	3.658

Elem	Ni2316	Pb2203	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908
IS Ref	(Y_2243)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0006**	**.0001**	**-.0003**	**-.0012**	**3.432**	**.0001**	**.0567**	**.0004**	**-.0006**
Stddev	.0001	.0004	.0005	.0021	.002	.0002	.0002	.0000	.0004
%RSD	9.693	716.0	155.6	172.3	.0638	314.1	.3122	4.783	76.04
#1	.0006	-.0003	-.0002	-.0001	3.430	-.0001	.0566	.0004	-.0009
#2	.0007	.0001	.0001	.0001	3.434	.0000	.0569	.0004	-.0007
#3	.0006	.0004	-.0008	-.0037	3.432	.0003	.0567	.0004	-.0001

Elem	V_2924	Zn2062
IS Ref	(Y_3600)	(Y_2243)
Units	ppm	ppm
Avg	**.0000**	**.0146**
Stddev	.0001	.0000
%RSD	511.3	.2286
#1	-.0001	.0146
#2	.0000	.0146
#3	.0001	.0146

Zoom In Zoom Out

Sample Name: FC11995-1F Acquired: 12/30/2023 15:03:41 Type: Unk
Method: 60102007_COMBO_102422(v757) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**3407.2**	**7981.8**	**54479.**	**17602.**
Stddev	1.9	10.4	151.	45.
%RSD	.05492	.13041	.27797	.25367
#1	3407.7	7977.4	54560.	17560.
#2	3408.9	7993.7	54305.	17595.
#3	3405.2	7974.4	54574.	17649.

Zoom In Zoom Out

Sample Name: FC11995-2F Acquired: 12/30/2023 15:08:49 Type: Unk
Method: 60102007_COMBO_102422(v757) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	B_2497	Ba4554	Be3130	Ca3179	Cd2265	Co2286
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0000**	**.0136**	**-.0003**	**.0037**	**.0421**	**.0000**	**9.562**	**-.0001**	**-.0002**
Stddev	.0002	.0069	.0001	.0011	.0002	.0000	.022	.0000	.0000
%RSD	326.4	50.94	28.35	30.29	.5101	167.7	.2297	78.26	27.19
#1	-.0001	.0203	-.0004	.0043	.0420	.0000	9.536	.0000	-.0002
#2	.0002	.0140	-.0002	.0024	.0419	.0000	9.576	-.0001	-.0001
#3	.0001	.0065	-.0004	.0045	.0423	.0000	9.572	-.0001	-.0001

Elem	Cr2677	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895
IS Ref	(Y_3600)	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0006**	**.0003**	**-.0007**	**1.941**	**.0003**	**2.924**	**.0112**	**.0010**	**6.900**
Stddev	.0002	.0002	.0015	.017	.0005	.014	.0000	.0001	.011
%RSD	28.42	77.10	215.6	.8727	183.1	.4914	.3708	5.279	.1519
#1	.0006	.0002	-.0004	1.932	-.0003	2.909	.0112	.0010	6.888
#2	.0007	.0001	-.0023	1.931	.0005	2.937	.0113	.0011	6.906
#3	.0004	.0006	.0007	1.961	.0006	2.927	.0112	.0010	6.906

Elem	Ni2316	Pb2203	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908
IS Ref	(Y_2243)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.0002**	**-.0003**	**-.0011**	**-.0011**	**4.134**	**.0000**	**.0841**	**.0008**	**-.0010**
Stddev	.0001	.0011	.0010	.0011	.005	.000	.0003	.0000	.0015
%RSD	56.75	326.0	93.09	104.3	.1297	615.0	.3211	6.021	148.5
#1	-.0002	-.0011	.0000	-.0010	4.139	.0002	.0844	.0008	-.0014
#2	-.0001	-.0008	-.0014	-.0022	4.134	-.0001	.0841	.0007	.0006
#3	-.0003	.0009	-.0019	.0000	4.128	-.0002	.0838	.0008	-.0023

Elem	V_2924	Zn2062
IS Ref	(Y_3600)	(Y_2243)
Units	ppm	ppm
Avg	**.0010**	**.0009**
Stddev	.0001	.0000
%RSD	12.92	1.255
#1	.0009	.0009
#2	.0010	.0009
#3	.0012	.0009

Zoom In Zoom Out

Sample Name: FC11995-2F Acquired: 12/30/2023 15:08:49 Type: Unk
Method: 60102007_COMBO_102422(v757) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**3365.9**	**7914.7**	**53805.**	**17588.**
Stddev	4.5	7.2	116.	52.
%RSD	.13411	.09143	.21644	.29314
#1	3370.0	7923.0	53705.	17643.
#2	3366.6	7909.7	53779.	17540.
#3	3361.0	7911.5	53933.	17581.

Zoom In Zoom Out

Sample Name: FC11995-3F Acquired: 12/30/2023 15:13:55 Type: Unk
Method: 60102007_COMBO_102422(v757) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	B_2497	Ba4554	Be3130	Ca3179	Cd2265	Co2286
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0002**	**.0417**	**.0016**	**.0077**	**.0088**	**.0000**	**26.39**	**-.0002**	**-.0001**
Stddev	.0001	.0073	.0006	.0006	.0001	.000	.03	.0000	.0001
%RSD	27.70	17.49	37.79	7.750	1.035	23.86	.1157	14.01	66.98
#1	.0001	.0493	.0022	.0079	.0089	.0000	26.42	-.0002	-.0001
#2	.0002	.0411	.0010	.0081	.0087	.0000	26.36	-.0002	.0000
#3	.0002	.0347	.0016	.0070	.0089	.0000	26.40	-.0002	-.0002

Elem	Cr2677	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895
IS Ref	(Y_3600)	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0003**	**.0025**	**.0081**	**4.293**	**.0014**	**.4706**	**.0005**	**.0047**	**23.75**
Stddev	.0000	.0001	.0008	.021	.0006	.0066	.0001	.0000	.09
%RSD	17.78	4.190	9.767	.5020	43.48	1.406	10.21	.3531	.3732
#1	.0003	.0024	.0076	4.306	.0009	.4656	.0006	.0047	23.85
#2	.0002	.0026	.0090	4.268	.0013	.4781	.0005	.0047	23.71
#3	.0002	.0026	.0077	4.304	.0021	.4680	.0005	.0047	23.70

Elem	Ni2316	Pb2203	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908
IS Ref	(Y_2243)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0002**	**-.0003**	**-.0028**	**.0036**	**3.871**	**.0013**	**.0803**	**.0013**	**-.0038**
Stddev	.0001	.0004	.0008	.0013	.002	.0001	.0001	.0000	.0007
%RSD	53.11	120.8	27.64	37.93	.0466	11.32	.1212	2.014	18.46
#1	.0004	-.0007	-.0021	.0021	3.869	.0011	.0804	.0013	-.0046
#2	.0003	.0001	-.0026	.0048	3.872	.0013	.0802	.0013	-.0035
#3	.0001	-.0005	-.0036	.0037	3.870	.0014	.0802	.0013	-.0033

Elem	V_2924	Zn2062
IS Ref	(Y_3600)	(Y_2243)
Units	ppm	ppm
Avg	**.0020**	**.0162**
Stddev	.0001	.0001
%RSD	7.491	.7250
#1	.0021	.0163
#2	.0020	.0161
#3	.0018	.0163

Zoom In Zoom Out

Sample Name: FC11995-3F Acquired: 12/30/2023 15:13:55 Type: Unk
Method: 60102007_COMBO_102422(v757) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**3241.8**	**7774.5**	**52597.**	**17222.**
Stddev	5.5	8.6	237.	18.
%RSD	.16855	.11099	.44980	.10479
#1	3235.5	7771.4	52485.	17239.
#2	3245.1	7767.8	52869.	17203.
#3	3244.8	7784.2	52437.	17224.

Zoom In Zoom Out

Sample Name: FC11995-4F Acquired: 12/30/2023 15:19:03 Type: Unk
Method: 60102007_COMBO_102422(v757) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	B_2497	Ba4554	Be3130	Ca3179	Cd2265	Co2286
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0003**	**.0101**	**-.0004**	**.0025**	**.0428**	**.0000**	**10.92**	**.0000**	**.0034**
Stddev	.0000	.0051	.0005	.0005	.0001	.000	.00	.000	.0001
%RSD	16.86	50.48	114.6	21.74	.3120	59.02	.0451	172.1	1.921
#1	.0002	.0046	-.0003	.0031	.0427	.0000	10.91	-.0001	.0034
#2	.0003	.0146	.0000	.0020	.0428	.0000	10.92	-.0001	.0033
#3	.0002	.0110	-.0010	.0025	.0429	.0000	10.92	.0000	.0034

Elem	Cr2677	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895
IS Ref	(Y_3600)	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0002**	**.0040**	**.2017**	**2.740**	**-.0002**	**2.248**	**.2321**	**.0000**	**3.899**
Stddev	.0002	.0002	.0006	.004	.0007	.018	.0004	.0002	.010
%RSD	103.6	5.181	.3213	.1360	414.3	.7945	.1743	778.2	.2659
#1	.0003	.0038	.2010	2.741	-.0003	2.266	.2316	.0000	3.909
#2	.0000	.0042	.2021	2.743	.0006	2.231	.2321	-.0001	3.888
#3	.0002	.0039	.2020	2.736	-.0008	2.247	.2324	.0002	3.901

Elem	Ni2316	Pb2203	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908
IS Ref	(Y_2243)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0140**	**-.0003**	**-.0009**	**.0009**	**3.417**	**.0001**	**.0490**	**.0008**	**-.0019**
Stddev	.0001	.0002	.0015	.0007	.003	.0003	.0002	.0000	.0009
%RSD	.4093	57.22	167.6	78.51	.0921	621.6	.3386	5.997	49.17
#1	.0140	-.0001	-.0018	.0001	3.418	-.0001	.0489	.0008	-.0024
#2	.0140	-.0004	-.0018	.0011	3.413	.0004	.0492	.0008	-.0025
#3	.0139	-.0003	.0009	.0016	3.419	-.0002	.0489	.0008	-.0008

Elem	V_2924	Zn2062
IS Ref	(Y_3600)	(Y_2243)
Units	ppm	ppm
Avg	**.0001**	**.0187**
Stddev	.0002	.0001
%RSD	174.3	.2994
#1	.0000	.0187
#2	.0000	.0186
#3	.0003	.0187

Zoom In Zoom Out

Sample Name: FC11995-4F Acquired: 12/30/2023 15:19:03 Type: Unk
Method: 60102007_COMBO_102422(v757) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**3384.3**	**7939.0**	**54388.**	**17478.**
Stddev	6.1	13.7	203.	55.
%RSD	.18071	.17214	.37243	.31660
#1	3390.9	7947.5	54610.	17414.
#2	3378.8	7946.2	54341.	17513.
#3	3383.1	7923.2	54213.	17507.

Zoom In Zoom Out

Sample Name: CCV Acquired: 12/30/2023 15:24:09 Type: QC
Method: 60102007_COMBO_102422(v757) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	B_2497	Ba4554	Be3130	Ca3179	Cd2265	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2588**	**40.29**	**2.035**	**2.075**	**2.045**	**2.021**	**40.86**	**2.047**	**2.042**
Stddev	.0009	.11	.004	.009	.009	.021	.08	.001	.002
%RSD	.3392	.2703	.1742	.4246	.4217	1.012	.1950	.0600	.1116
#1	.2590	40.37	2.036	2.065	2.044	2.022	40.95	2.046	2.041
#2	.2578	40.16	2.031	2.082	2.054	2.001	40.84	2.046	2.041
#3	.2595	40.32	2.038	2.079	2.037	2.042	40.80	2.048	2.045
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Cr2677	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**2.030**	**2.084**	**40.64**	**40.70**	**2.018**	**40.30**	**2.054**	**2.037**	**40.88**
Stddev	.004	.004	.10	.11	.007	.17	.003	.000	.04
%RSD	.1835	.2107	.2485	.2821	.3436	.4242	.1338	.0203	.0975
#1	2.026	2.084	40.74	40.82	2.019	40.48	2.052	2.037	40.90
#2	2.031	2.079	40.54	40.59	2.011	40.14	2.052	2.037	40.91
#3	2.034	2.088	40.65	40.70	2.025	40.29	2.057	2.038	40.83
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Ni2316	Pb2203	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**2.025**	**1.986**	**2.040**	**2.065**	**1.918**	**2.039**	**2.048**	**2.054**	**2.007**
Stddev	.002	.002	.009	.010	.003	.004	.014	.004	.005
%RSD	.0955	.0894	.4178	.4840	.1583	.2007	.6606	.1957	.2491
#1	2.024	1.987	2.041	2.054	1.916	2.040	2.054	2.053	2.011
#2	2.023	1.987	2.030	2.070	1.916	2.034	2.032	2.051	2.007
#3	2.027	1.984	2.047	2.072	1.921	2.042	2.057	2.059	2.001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Zoom In Zoom Out

Sample Name: CCV Acquired: 12/30/2023 15:24:09 Type: QC
Method: 60102007_COMBO_102422(v757) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	V_2924	Zn2062
Units	ppm	ppm
Avg	**2.046**	**2.012**
Stddev	.003	.001
%RSD	.1686	.0514
#1	2.046	2.013
#2	2.044	2.011
#3	2.050	2.011
Check ?	Chk Pass	Chk Pass
Value		
Range		

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**2921.9**	**7624.4**	**51549.**	**17411.**
Stddev	5.1	8.8	90.	50.
%RSD	.17548	.11578	.17475	.28842
#1	2918.9	7620.7	51518.	17355.
#2	2919.0	7634.5	51650.	17453.
#3	2927.8	7618.0	51478.	17426.

Zoom In Zoom Out

Sample Name: CCB Acquired: 12/30/2023 15:29:26 Type: QC
Method: 60102007_COMBO_102422(v757) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	B_2497	Ba4554	Be3130	Ca3179	Cd2265
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.0001**	**.0043**	**.0000**	F **.0015**	**.0002**	**.0001**	**.0047**	**.0001**
Stddev	.0001	.0020	.0006	.0006	.0001	.0000	.0006	.0000
%RSD	181.2	46.03	7395.	43.20	42.55	19.12	11.83	4.678
#1	-.0002	.0051	.0001	.0018	.0002	.0001	.0041	.0001
#2	.0001	.0059	-.0006	.0019	.0001	.0001	.0052	.0001
#3	-.0001	.0021	.0005	.0008	.0003	.0001	.0049	.0001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit				.0010				
Low Limit				-.0010				

Elem	Co2286	Cr2677	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0002**	**.0001**	**.0002**	**.0018**	**-.0302**	F **-.0012**	**.0106**	**.0001**
Stddev	.0000	.0002	.0002	.0012	.0248	.0007	.0087	.0000
%RSD	27.29	289.1	63.72	67.35	81.96	59.00	82.29	8.960
#1	.0002	.0002	.0003	.0015	-.0554	-.0004	.0204	.0001
#2	.0002	.0002	.0003	.0008	-.0059	-.0014	.0035	.0001
#3	.0001	-.0002	.0001	.0032	-.0294	-.0017	.0080	.0001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit						.0010		
Low Limit						-.0010		

Elem	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960	Si2124	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0004**	**-.0150**	**-.0001**	**-.0005**	**-.0004**	**.0000**	**.0010**	**.0001**
Stddev	.0001	.0029	.0001	.0003	.0004	.001	.0002	.0002
%RSD	35.06	18.99	137.3	69.78	117.7	1776.	24.10	258.4
#1	.0005	-.0130	.0000	-.0007	-.0008	.0007	.0011	.0003
#2	.0002	-.0183	-.0001	-.0006	.0001	-.0005	.0007	.0001
#3	.0004	-.0139	-.0001	-.0001	-.0004	-.0003	.0011	-.0001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit								
Low Limit								

Zoom In Zoom Out

Sample Name: CCB Acquired: 12/30/2023 15:29:26 Type: QC
Method: 60102007_COMBO_102422(v757) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.0001**	**.0001**	**.0001**	**-.0001**	**.0002**
Stddev	.0000	.0001	.0006	.0003	.0001
%RSD	4.279	177.6	431.9	294.5	39.79
#1	.0001	.0001	-.0003	-.0004	.0001
#2	.0001	-.0001	-.0002	.0000	.0001
#3	.0001	.0002	.0009	.0001	.0003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**3468.2**	**7971.7**	**54458.**	**17495.**
Stddev	3.3	13.4	28.	33.
%RSD	.09501	.16771	.05126	.18669
#1	3468.8	7986.8	54479.	17461.
#2	3471.2	7967.2	54426.	17527.
#3	3464.7	7961.2	54468.	17496.

Zoom In Zoom Out

Sample Name: FC11995-5F Acquired: 12/30/2023 15:34:37 Type: Unk
Method: 60102007_COMBO_102422(v757) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	B_2497	Ba4554	Be3130	Ca3179	Cd2265	Co2286
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0001**	**.0205**	**.0002**	**.0049**	**.0485**	**.0000**	**64.42**	**-.0001**	**.0016**
Stddev	.0000	.0071	.0013	.0014	.0002	.0000	.15	.0000	.0000
%RSD	62.41	34.51	525.3	28.80	.3993	532.3	.2396	16.02	1.067
#1	.0000	.0282	.0009	.0033	.0486	.0000	64.49	-.0001	.0016
#2	.0001	.0193	-.0012	.0061	.0486	.0001	64.53	-.0001	.0016
#3	.0001	.0141	.0011	.0054	.0483	.0000	64.24	-.0001	.0016

Elem	Cr2677	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895
IS Ref	(Y_3600)	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0002**	**.0002**	**1.096**	**9.110**	**.0001**	**4.743**	**.7298**	**.0091**	**6.639**
Stddev	.0002	.0002	.000	.032	.0006	.030	.0009	.0001	.010
%RSD	99.51	105.0	.0138	.3513	495.7	.6232	.1298	.9266	.1466
#1	.0005	.0000	1.096	9.122	.0009	4.721	.7303	.0092	6.648
#2	.0001	.0004	1.096	9.134	-.0003	4.776	.7304	.0090	6.628
#3	.0001	.0002	1.096	9.074	-.0002	4.730	.7287	.0091	6.641

Elem	Ni2316	Pb2203	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908
IS Ref	(Y_2243)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0003**	**-.0006**	**.0002**	**.0005**	**3.915**	**.0012**	**.1480**	**.0015**	**-.0012**
Stddev	.0001	.0003	.0003	.0026	.004	.0003	.0002	.0001	.0007
%RSD	29.79	41.77	166.6	556.8	.0935	26.51	.1381	7.062	59.66
#1	.0003	-.0004	-.0002	.0031	3.911	.0015	.1483	.0015	-.0005
#2	.0002	-.0009	.0003	.0004	3.916	.0010	.1480	.0016	-.0012
#3	.0003	-.0006	.0004	-.0021	3.918	.0009	.1479	.0014	-.0019

Elem	V_2924	Zn2062
IS Ref	(Y_3600)	(Y_2243)
Units	ppm	ppm
Avg	**.0001**	**.0161**
Stddev	.0001	.0001
%RSD	82.65	.5694
#1	.0002	.0162
#2	.0001	.0162
#3	.0000	.0160

Zoom In Zoom Out

Sample Name: FC11995-5F Acquired: 12/30/2023 15:34:37 Type: Unk
Method: 60102007_COMBO_102422(v757) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**3199.9**	**7714.2**	**52521.**	**17057.**
Stddev	1.6	4.2	187.	63.
%RSD	.05108	.05395	.35570	.36901
#1	3198.3	7711.0	52547.	17060.
#2	3201.5	7712.7	52322.	16993.
#3	3199.8	7718.9	52693.	17119.

Zoom In Zoom Out

Sample Name: FC12002-1F Acquired: 12/30/2023 15:39:51 Type: Unk
Method: 60102007_COMBO_102422(v757) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	B_2497	Ba4554	Be3130	Ca3179	Cd2265	Co2286
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.0001**	**.0194**	**.0053**	**.0014**	**.0005**	**.0000**	**3.219**	**-.0001**	**-.0001**
Stddev	.0001	.0029	.0008	.0007	.0001	.000	.002	.0000	.0001
%RSD	118.4	15.15	15.20	48.83	14.15	21.55	.0540	50.92	70.03
#1	.0000	.0223	.0053	.0006	.0005	.0000	3.221	-.0001	-.0001
#2	-.0001	.0165	.0045	.0018	.0004	.0000	3.218	-.0001	-.0002
#3	-.0002	.0193	.0061	.0017	.0006	.0000	3.218	.0000	.0000

Elem	Cr2677	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895
IS Ref	(Y_3600)	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0022**	**.0004**	**.0322**	**.5597**	**-.0016**	**.8838**	**.0010**	**.0001**	**2.606**
Stddev	.0003	.0002	.0022	.0164	.0006	.0053	.0000	.0001	.005
%RSD	14.71	39.75	6.868	2.922	40.23	.6009	.6600	48.75	.1759
#1	.0021	.0006	.0304	.5652	-.0013	.8847	.0010	.0001	2.608
#2	.0020	.0003	.0347	.5726	-.0023	.8886	.0010	.0001	2.601
#3	.0026	.0004	.0316	.5413	-.0011	.8781	.0010	.0002	2.609

Elem	Ni2316	Pb2203	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908
IS Ref	(Y_2243)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0013**	**-.0008**	**-.0006**	**-.0011**	**3.327**	**.0001**	**.0135**	**.0010**	**-.0011**
Stddev	.0002	.0008	.0007	.0012	.003	.0003	.0001	.0001	.0018
%RSD	18.19	104.1	127.3	104.3	.0945	365.1	.5085	6.003	163.2
#1	.0013	-.0011	-.0014	-.0023	3.324	.0005	.0135	.0010	-.0030
#2	.0011	-.0014	-.0002	.0001	3.330	.0000	.0136	.0010	.0005
#3	.0016	.0001	-.0001	-.0012	3.326	-.0002	.0135	.0011	-.0007

Elem	V_2924	Zn2062
IS Ref	(Y_3600)	(Y_2243)
Units	ppm	ppm
Avg	**.0005**	**.0013**
Stddev	.0001	.0001
%RSD	23.33	6.294
#1	.0006	.0012
#2	.0004	.0014
#3	.0005	.0013

Zoom In Zoom Out

Sample Name: FC12002-1F Acquired: 12/30/2023 15:39:51 Type: Unk
Method: 60102007_COMBO_102422(v757) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**3435.9**	**7995.7**	**55074.**	**17616.**
Stddev	5.6	11.3	119.	67.
%RSD	.16251	.14158	.21533	.37949
#1	3439.0	8005.0	54969.	17624.
#2	3439.3	7998.8	55050.	17545.
#3	3429.5	7983.1	55203.	17678.

Zoom In Zoom Out

Sample Name: FC11943-1 Acquired: 12/30/2023 15:45:01 Type: Unk
Method: 60102007_COMBO_102422(v757) Mode: CONC Corr. Factor: 5.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	B_2497	Ba4554	Be3130	Ca3179	Cd2265	Co2286
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.0007**	**.5784**	**.0089**	**.2488**	**.1510**	**.0000**	**68.17**	**.0002**	**.0069**
Stddev	.0012	.0297	.0032	.0044	.0009	.000	.19	.0001	.0002
%RSD	164.9	5.140	36.22	1.768	.6113	1682.	.2741	46.82	2.693
#1	.0005	.5857	.0118	.2533	.1520	.0001	68.36	.0002	.0071
#2	-.0019	.6038	.0095	.2445	.1506	-.0001	68.15	.0002	.0070
#3	-.0008	.5457	.0054	.2484	.1503	.0001	67.99	.0004	.0067

Elem	Cr2677	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895
IS Ref	(Y_3600)	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0052**	**.0085**	**30.93**	**4.176**	**.0493**	**30.07**	**9.018**	**.0283**	**118.6**
Stddev	.0011	.0006	.17	.048	.0053	.26	.025	.0005	.7
%RSD	20.38	7.627	.5355	1.147	10.66	.8540	.2780	1.888	.5484
#1	.0064	.0082	31.09	4.228	.0523	30.35	9.046	.0283	119.3
#2	.0050	.0081	30.95	4.168	.0524	30.02	8.998	.0278	118.4
#3	.0043	.0092	30.76	4.133	.0432	29.85	9.010	.0288	118.1

Elem	Ni2316	Pb2203	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908
IS Ref	(Y_2243)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0141**	**-.0045**	**-.0035**	**-.0003**	**4.102**	**.0041**	**1.247**	**.0149**	**-.0019**
Stddev	.0003	.0019	.0029	.0083	.002	.0011	.009	.0002	.0058
%RSD	2.140	43.00	83.27	2638.	.0406	27.08	.7424	1.393	304.3
#1	.0138	-.0041	-.0002	.0031	4.103	.0050	1.258	.0149	-.0009
#2	.0143	-.0028	-.0057	.0057	4.103	.0029	1.241	.0151	.0033
#3	.0143	-.0066	-.0046	-.0098	4.100	.0044	1.242	.0147	-.0081

Elem	V_2924	Zn2062
IS Ref	(Y_3600)	(Y_2243)
Units	ppm	ppm
Avg	**.0068**	**.0115**
Stddev	.0010	.0002
%RSD	15.05	1.639
#1	.0067	.0117
#2	.0058	.0113
#3	.0078	.0116

Zoom In Zoom Out

Sample Name: FC11943-1 Acquired: 12/30/2023 15:45:01 Type: Unk
Method: 60102007_COMBO_102422(v757) Mode: CONC Corr. Factor: 5.000000
User: admin SSTRACE01: : :
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**3272.8**	**7843.3**	**53662.**	**17652.**
Stddev	9.8	17.3	133.	68.
%RSD	.30014	.22042	.24735	.38721
#1	3273.6	7847.6	53511.	17647.
#2	3282.1	7858.0	53710.	17587.
#3	3262.5	7824.2	53763.	17723.

Zoom In Zoom Out

Sample Name: CCV Acquired: 12/30/2023 15:52:29 Type: QC
Method: 60102007_COMBO_102422(v757) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	B_2497	Ba4554	Be3130	Ca3179	Cd2265	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2533**	**40.49**	**2.009**	**1.990**	**1.997**	**2.040**	**40.54**	**2.016**	**2.015**
Stddev	.0018	.07	.004	.007	.019	.018	.05	.001	.001
%RSD	.6936	.1619	.2179	.3441	.9528	.8578	.1183	.0699	.0485
#1	.2551	40.52	2.014	1.983	2.011	2.035	40.54	2.015	2.016
#2	.2531	40.53	2.008	1.996	1.975	2.026	40.49	2.015	2.014
#3	.2516	40.41	2.006	1.989	2.004	2.060	40.58	2.017	2.015
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Cr2677	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**2.023**	**2.060**	**40.94**	**40.38**	**2.018**	**40.36**	**2.017**	**2.013**	**40.38**
Stddev	.008	.009	.04	.03	.004	.01	.008	.002	.09
%RSD	.4088	.4197	.0862	.0664	.2168	.0295	.3918	.1026	.2116
#1	2.031	2.069	40.96	40.40	2.022	40.37	2.023	2.015	40.40
#2	2.023	2.057	40.96	40.35	2.014	40.35	2.019	2.011	40.28
#3	2.014	2.052	40.90	40.40	2.018	40.35	2.008	2.013	40.45
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Ni2316	Pb2203	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**2.008**	**1.984**	**2.019**	**2.023**	**1.898**	**2.019**	**2.051**	**2.020**	**2.006**
Stddev	.003	.006	.003	.004	.002	.003	.025	.007	.004
%RSD	.1412	.3088	.1382	.1734	.0932	.1564	1.198	.3598	.1871
#1	2.010	1.991	2.021	2.019	1.900	2.022	2.079	2.025	2.011
#2	2.008	1.979	2.020	2.026	1.897	2.020	2.037	2.023	2.005
#3	2.005	1.982	2.016	2.024	1.898	2.016	2.036	2.012	2.004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Zoom In Zoom Out

Sample Name: CCV Acquired: 12/30/2023 15:52:29 Type: QC
Method: 60102007_COMBO_102422(v757) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	V_2924	Zn2062
Units	ppm	ppm
Avg	**2.007**	**1.997**
Stddev	.008	.003
%RSD	.3799	.1339
#1	2.014	1.999
#2	2.009	1.997
#3	1.999	1.994
Check ?	Chk Pass	Chk Pass
Value		
Range		

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**2906.6**	**7617.4**	**51434.**	**16907.**
Stddev	7.8	18.2	301.	81.
%RSD	.26825	.23842	.58535	.47716
#1	2897.6	7599.9	51186.	16821.
#2	2910.5	7616.2	51346.	16982.
#3	2911.6	7636.1	51769.	16918.

Zoom In Zoom Out

Sample Name: CCB Acquired: 12/30/2023 16:00:42 Type: QC
Method: 60102007_COMBO_102422(v757) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	B_2497	Ba4554	Be3130	Ca3179	Cd2265	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0000**	**.0097**	**.0007**	**.0003**	**.0001**	**.0001**	**.0050**	**.0000**	**.0001**
Stddev	.000	.0023	.0004	.0007	.0001	.0000	.0006	.0000	.0001
%RSD	1640.	23.80	51.23	216.1	97.17	53.43	12.48	28.68	44.78
#1	.0001	.0123	.0011	.0007	.0000	.0001	.0043	.0000	.0002
#2	.0002	.0078	.0003	-.0005	.0002	.0000	.0052	.0000	.0001
#3	-.0004	.0091	.0008	.0008	.0002	.0001	.0055	.0000	.0001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Cr2677	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.0002**	**.0001**	**.0011**	**-.0404**	**-.0005**	**.0011**	**.0001**	**.0003**	**-.0171**
Stddev	.0001	.0001	.0010	.0165	.0004	.0054	.0000	.0001	.0040
%RSD	66.09	89.40	86.59	40.79	84.42	509.4	48.06	22.47	23.61
#1	-.0001	.0000	.0003	-.0587	-.0008	-.0052	.0001	.0002	-.0214
#2	-.0001	.0002	.0022	-.0357	.0000	.0046	.0001	.0004	-.0164
#3	-.0003	.0001	.0010	-.0268	-.0006	.0038	.0000	.0003	-.0134
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Ni2316	Pb2203	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0000**	**.0001**	**.0000**	**-.0006**	**.0010**	**.0004**	**.0000**	**.0001**	**-.0006**
Stddev	.0000	.0005	.001	.0022	.0002	.0005	.0000	.0001	.0008
%RSD	432.8	482.6	5656.	342.2	16.55	129.5	175.7	99.24	116.8
#1	.0000	-.0001	.0016	.0000	.0012	.0000	.0001	.0001	-.0013
#2	.0001	-.0003	-.0010	.0012	.0010	.0002	.0000	.0000	.0002
#3	.0000	.0007	-.0007	-.0030	.0008	.0010	.0000	.0001	-.0008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Zoom In Zoom Out

Sample Name: CCB Acquired: 12/30/2023 16:00:42 Type: QC
Method: 60102007_COMBO_102422(v757) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	V_2924	Zn2062
Units	ppm	ppm
Avg	**.0001**	**.0003**
Stddev	.0001	.0000
%RSD	119.4	11.10
#1	.0000	.0004
#2	.0001	.0003
#3	.0001	.0003
Check ?	Chk Pass	Chk Pass
High Limit		
Low Limit		

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**3470.6**	**8003.9**	**54882.**	**17388.**
Stddev	7.3	12.0	107.	69.
%RSD	.20940	.15037	.19541	.39538
#1	3475.1	8016.9	54857.	17371.
#2	3474.5	8001.6	54790.	17330.
#3	3462.2	7993.2	55000.	17464.

Zoom In Zoom Out

Sample Name: FC11943-2 Acquired: 12/30/2023 16:12:01 Type: Unk
Method: 60102007_COMBO_102422(v757) Mode: CONC Corr. Factor: 5.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	B_2497	Ba4554	Be3130	Ca3179	Cd2265	Co2286
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0013**	**8.753**	**.0057**	**.5493**	**.3987**	**.0004**	**96.74**	**.0001**	**.0195**
Stddev	.0017	.018	.0076	.0049	.0016	.0000	.20	.0003	.0002
%RSD	131.1	.2018	133.6	.8883	.4080	6.663	.2037	300.7	.9133
#1	-.0007	8.768	.0142	.5532	.3969	.0004	96.84	-.0002	.0195
#2	.0024	8.734	.0034	.5438	.3992	.0004	96.86	.0003	.0194
#3	.0022	8.756	-.0005	.5508	.4001	.0005	96.51	.0001	.0197

Elem	Cr2677	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895
IS Ref	(Y_3600)	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0455**	**.0213**	**68.99**	**7.967**	**.0813**	**32.69**	**4.685**	**.0073**	**247.6**
Stddev	.0005	.0012	.13	.055	.0064	.18	.013	.0006	.4
%RSD	1.166	5.643	.1894	.6948	7.892	.5548	.2829	7.582	.1751
#1	.0459	.0217	68.89	7.946	.0828	32.48	4.685	.0079	247.2
#2	.0458	.0199	68.95	8.030	.0868	32.74	4.673	.0069	248.0
#3	.0449	.0222	69.14	7.925	.0743	32.83	4.699	.0071	247.5

Elem	Ni2316	Pb2203	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908
IS Ref	(Y_2243)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0372**	**.0029**	**-.0011**	**.0043**	**11.08**	**.0052**	**1.446**	**.1075**	**-.0035**
Stddev	.0004	.0005	.0033	.0081	.02	.0011	.007	.0007	.0114
%RSD	1.022	17.36	309.9	187.9	.1570	21.89	.4668	.6296	330.5
#1	.0372	.0035	-.0009	.0136	11.06	.0043	1.440	.1074	-.0156
#2	.0367	.0024	.0021	.0010	11.09	.0048	1.444	.1068	.0070
#3	.0375	.0029	-.0044	-.0016	11.10	.0065	1.453	.1082	-.0017

Elem	V_2924	Zn2062
IS Ref	(Y_3600)	(Y_2243)
Units	ppm	ppm
Avg	**.0615**	**.1045**
Stddev	.0003	.0006
%RSD	.4358	.5682
#1	.0612	.1039
#2	.0616	.1048
#3	.0617	.1049

Zoom In Zoom Out

Sample Name: FC11943-2 Acquired: 12/30/2023 16:12:01 Type: Unk
Method: 60102007_COMBO_102422(v757) Mode: CONC Corr. Factor: 5.000000
User: admin SSTRACE01: : :
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**3196.2**	**7894.1**	**53688.**	**17632.**
Stddev	5.7	29.2	255.	30.
%RSD	.17733	.37002	.47434	.17105
#1	3200.9	7916.1	53797.	17597.
#2	3197.9	7905.2	53871.	17643.
#3	3189.9	7861.0	53398.	17654.

Zoom In Zoom Out

Sample Name: FC11943-4 Acquired: 12/30/2023 16:17:03 Type: Unk
Method: 60102007_COMBO_102422(v757) Mode: CONC Corr. Factor: 5.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	B_2497	Ba4554	Be3130	Ca3179	Cd2265	Co2286
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.0002**	**5.236**	**.0077**	**.2293**	**.1882**	**.0001**	**45.67**	**.0040**	**.0025**
Stddev	.0015	.027	.0036	.0021	.0005	.0000	.15	.0001	.0003
%RSD	884.9	.5134	46.69	.9117	.2518	17.42	.3261	3.176	12.80
#1	.0010	5.260	.0110	.2269	.1882	.0001	45.83	.0041	.0022
#2	-.0018	5.207	.0081	.2304	.1887	.0001	45.54	.0039	.0028
#3	.0003	5.241	.0039	.2306	.1878	.0002	45.62	.0041	.0024

Elem	Cr2677	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895
IS Ref	(Y_3600)	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0376**	**.0123**	**5.497**	**3.618**	**.0416**	**11.57**	**.3325**	**.0367**	**112.7**
Stddev	.0008	.0008	.031	.013	.0015	.06	.0012	.0007	.2
%RSD	2.136	6.504	.5709	.3625	3.613	.4827	.3531	1.801	.1569
#1	.0374	.0123	5.525	3.629	.0419	11.63	.3337	.0364	112.9
#2	.0369	.0132	5.463	3.603	.0430	11.55	.3313	.0362	112.6
#3	.0384	.0116	5.503	3.621	.0400	11.52	.3326	.0375	112.7

Elem	Ni2316	Pb2203	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908
IS Ref	(Y_2243)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0105**	**.0386**	**-.0019**	**-.0036**	**8.538**	**.0053**	**.5490**	**.1101**	**-.0033**
Stddev	.0004	.0013	.0053	.0133	.015	.0012	.0018	.0016	.0045
%RSD	3.768	3.449	278.5	369.8	.1698	22.88	.3345	1.479	136.4
#1	.0104	.0373	-.0080	-.0159	8.521	.0044	.5502	.1118	-.0024
#2	.0102	.0386	.0012	-.0055	8.545	.0067	.5469	.1101	-.0081
#3	.0110	.0399	.0011	.0105	8.547	.0049	.5499	.1085	.0007

Elem	V_2924	Zn2062
IS Ref	(Y_3600)	(Y_2243)
Units	ppm	ppm
Avg	**.0187**	**.0876**
Stddev	.0004	.0003
%RSD	2.110	.3689
#1	.0182	.0875
#2	.0189	.0874
#3	.0190	.0880

Zoom In Zoom Out

Sample Name: FC11943-4 Acquired: 12/30/2023 16:17:03 Type: Unk
Method: 60102007_COMBO_102422(v757) Mode: CONC Corr. Factor: 5.000000
User: admin SSTRACE01: : :
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**3320.9**	**7980.3**	**54113.**	**17353.**
Stddev	7.3	18.4	353.	107.
%RSD	.21864	.23083	.65173	.61810
#1	3328.0	7998.4	53772.	17233.
#2	3321.3	7980.9	54089.	17438.
#3	3313.5	7961.6	54477.	17389.

Zoom In Zoom Out

Sample Name: MP43343-MB1 Acquired: 12/30/2023 16:22:08 Type: QC
Method: 60102007_COMBO_102422(v757) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	B_2497	Ba4554	Be3130	Ca3179	Cd2265	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.0001**	**.0066**	**.0013**	**-.0014**	**.0000**	**.0000**	**.0272**	**.0000**	**.0000**
Stddev	.0002	.0028	.0008	.0008	.0000	.000	.0016	.000	.0000
%RSD	240.4	42.42	66.91	60.77	68.56	191.3	5.863	45.39	102.9
#1	.0000	.0035	.0019	-.0004	.0000	.0000	.0291	.0000	.0000
#2	.0001	.0090	.0003	-.0020	.0001	-.0001	.0263	.0000	.0000
#3	-.0004	.0075	.0016	-.0016	.0000	.0000	.0264	.0000	.0000
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Cr2677	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0002**	**.0001**	**.0050**	**-.0099**	**-.0002**	**.0127**	**.0003**	**.0000**	**-.0067**
Stddev	.0001	.0001	.0001	.0030	.0007	.0065	.0000	.000	.0081
%RSD	70.21	122.3	1.091	30.00	298.8	51.27	5.444	328.6	122.0
#1	.0003	.0001	.0050	-.0106	.0003	.0124	.0004	-.0001	-.0154
#2	.0000	.0000	.0049	-.0067	.0001	.0193	.0003	.0000	-.0051
#3	.0003	.0001	.0050	-.0125	-.0011	.0063	.0003	.0000	.0005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Ni2316	Pb2203	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0000**	**.0001**	**-.0005**	**-.0002**	**.0033**	**.0217**	**.0001**	**.0002**	**-.0022**
Stddev	.0002	.0009	.0007	.0015	.0002	.0002	.0001	.0001	.0016
%RSD	2731.	877.6	135.3	666.7	6.049	1.082	77.04	40.74	71.30
#1	.0000	-.0009	-.0009	-.0015	.0034	.0218	.0000	.0002	-.0010
#2	.0002	.0005	-.0009	-.0007	.0034	.0215	.0001	.0003	-.0017
#3	-.0002	.0007	.0003	.0015	.0031	.0219	.0001	.0001	-.0039
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Zoom In Zoom Out

Sample Name: MP43343-MB1 Acquired: 12/30/2023 16:22:08 Type: QC
Method: 60102007_COMBO_102422(v757) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	V_2924	Zn2062
Units	ppm	ppm
Avg	**.0000**	**.0011**
Stddev	.000	.0000
%RSD	687.6	4.023
#1	.0000	.0011
#2	-.0001	.0012
#3	.0001	.0012
Check ?	Chk Pass	Chk Pass
High Limit		
Low Limit		

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**3461.7**	**8013.1**	**55034.**	**17237.**
Stddev	1.5	9.3	53.	81.
%RSD	.04404	.11589	.09719	.47023
#1	3462.0	8021.9	54988.	17148.
#2	3463.1	8014.1	55093.	17253.
#3	3460.1	8003.4	55022.	17308.

Zoom In Zoom Out

Sample Name: MP43343-B1 Acquired: 12/30/2023 16:27:18 Type: QC
Method: 60102007_COMBO_102422(v757) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	B_2497	Ba4554	Be3130	Ca3179	Cd2265	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1906**	**23.83**	**.2002**	**.4745**	**.1966**	**.1971**	**44.27**	**.1956**	**.1948**
Stddev	.0008	.02	.0020	.0024	.0001	.0004	.10	.0002	.0002
%RSD	.3961	.1009	.9993	.5121	.0526	.1883	.2344	.1239	.0785
#1	.1910	23.81	.1982	.4745	.1967	.1966	44.24	.1953	.1946
#2	.1910	23.86	.2001	.4721	.1967	.1972	44.39	.1958	.1948
#3	.1897	23.84	.2022	.4769	.1965	.1973	44.19	.1956	.1949
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Cr2677	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1980**	**.1937**	**43.17**	**42.78**	**.5206**	**42.48**	**.1980**	**.6819**	**40.29**
Stddev	.0008	.0009	.07	.05	.0014	.12	.0002	.0007	.08
%RSD	.3867	.4654	.1670	.1105	.2614	.2906	.1158	.1028	.2012
#1	.1986	.1947	43.09	42.73	.5192	42.36	.1983	.6818	40.20
#2	.1972	.1929	43.21	42.82	.5209	42.61	.1978	.6826	40.36
#3	.1983	.1934	43.22	42.79	.5219	42.47	.1980	.6812	40.32
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Ni2316	Pb2203	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1963**	**.1883**	**.1978**	**.1961**	**.3516**	**.5395**	**.5146**	**.5185**	**.1952**
Stddev	.0001	.0007	.0007	.0013	.0002	.0009	.0011	.0003	.0016
%RSD	.0465	.3806	.3503	.6440	.0582	.1628	.2092	.0550	.8120
#1	.1963	.1880	.1979	.1954	.3514	.5404	.5138	.5188	.1945
#2	.1964	.1878	.1971	.1954	.3518	.5386	.5143	.5184	.1941
#3	.1962	.1891	.1985	.1976	.3517	.5394	.5159	.5182	.1970
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Zoom In Zoom Out

Sample Name: MP43343-B1 Acquired: 12/30/2023 16:27:18 Type: QC
Method: 60102007_COMBO_102422(v757) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	V_2924	Zn2062
Units	ppm	ppm
Avg	**.2020**	**.1967**
Stddev	.0004	.0003
%RSD	.1953	.1317
#1	.2023	.1964
#2	.2016	.1968
#3	.2022	.1968
Check ?	Chk Pass	Chk Pass
Value		
Range		

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**2980.0**	**7711.1**	**52182.**	**17160.**
Stddev	6.8	4.4	81.	62.
%RSD	.22972	.05725	.15473	.35972
#1	2979.9	7712.0	52137.	17154.
#2	2986.9	7715.0	52275.	17102.
#3	2973.3	7706.3	52134.	17225.

SGS FC12031

Zoom In Zoom Out

Sample Name: FC12205-3 Acquired: 12/30/2023 16:32:13 Type: Unk
Method: 60102007_COMBO_102422(v757) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	B_2497	Ba4554	Be3130	Ca3179	Cd2265
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.0002**	**114.6**	**.0510**	**.0636**	**.3519**	**.0057**	**312.7**	**.0018**
Stddev	.0001	.2	.0012	.0019	.0010	.0000	1.0	.0000
%RSD	58.46	.1832	2.264	2.994	.2719	.1236	.3186	2.452
#1	-.0002	114.7	.0514	.0655	.3530	.0057	312.3	.0018
#2	-.0003	114.3	.0520	.0617	.3515	.0057	313.9	.0017
#3	-.0001	114.7	.0497	.0636	.3512	.0057	312.0	.0018

Elem	Co2286	Cr2677	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576
IS Ref	(Y_2243)	(Y_3600)	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0124**	**.2936**	**.0845**	**58.65**	**9.825**	**.0570**	**31.25**	**.4425**
Stddev	.0000	.0005	.0004	.26	.023	.0007	.14	.0008
%RSD	.2174	.1756	.4702	.4493	.2319	1.182	.4394	.1899
#1	.0124	.2940	.0840	58.45	9.821	.0563	31.09	.4415
#2	.0124	.2938	.0848	58.95	9.850	.0570	31.33	.4431
#3	.0125	.2930	.0846	58.56	9.805	.0577	31.32	.4428

Elem	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960	Si2124	Sn1899
IS Ref	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0125**	**4.308**	**.0497**	**.1686**	**.0028**	**.0015**	**4.968**	**.0125**
Stddev	.0001	.014	.0001	.0011	.0006	.0003	.028	.0004
%RSD	.9053	.3152	.2508	.6632	22.76	21.17	.5526	3.145
#1	.0125	4.319	.0496	.1677	.0031	.0012	4.980	.0121
#2	.0126	4.312	.0497	.1683	.0032	.0014	4.988	.0128
#3	.0123	4.293	.0499	.1699	.0021	.0018	4.937	.0127

Elem	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**1.671**	**.7316**	F **-.0102**	**.2984**	**.1928**
Stddev	.011	.0053	.0013	.0006	.0006
%RSD	.6534	.7188	12.24	.2063	.3185
#1	1.682	.7335	-.0088	.2981	.1922
#2	1.660	.7257	-.0107	.2991	.1927
#3	1.671	.7357	-.0112	.2980	.1935

Zoom In Zoom Out

Sample Name: FC12205-3 Acquired: 12/30/2023 16:32:13 Type: Unk
Method: 60102007_COMBO_102422(v757) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**2555.8**	**15571.**	**104270.**	**36446.**
Stddev	8.8	22.	151.	151.
%RSD	.34284	.13884	.14505	.41473
#1	2565.6	15589.	104340.	36620.
#2	2553.4	15578.	104090.	36353.
#3	2548.6	15547.	104370.	36365.

Zoom In Zoom Out

Sample Name: MP43343-D1 Acquired: 12/30/2023 16:37:44 Type: Unk
Method: 60102007_COMBO_102422(v757) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	B_2497	Ba4554	Be3130	Ca3179	Cd2265	Co2286
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0000**	**130.5**	**.0573**	**.0726**	**.3676**	**.0065**	**339.7**	**.0017**	**.0140**
Stddev	.0001	2.1	.0003	.0011	.0013	.0000	2.3	.0001	.0000
%RSD	197.2	1.601	.5518	1.453	.3606	.1528	.6682	4.974	.1499
#1	.0000	132.8	.0574	.0717	.3665	.0065	341.0	.0016	.0140
#2	.0000	129.9	.0576	.0725	.3691	.0065	341.0	.0017	.0140
#3	.0001	128.7	.0570	.0738	.3673	.0065	337.0	.0018	.0140

Elem	Cr2677	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895
IS Ref	(Y_3600)	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.3308**	**.0745**	**67.24**	**11.72**	**.0658**	**34.60**	**.4952**	**.0131**	**5.028**
Stddev	.0012	.0002	.68	.03	.0004	.30	.0015	.0001	.018
%RSD	.3634	.2262	1.004	.2740	.6774	.8568	.3057	1.057	.3659
#1	.3295	.0746	67.87	11.71	.0661	34.87	.4966	.0132	5.011
#2	.3319	.0745	67.33	11.75	.0659	34.65	.4954	.0131	5.047
#3	.3310	.0743	66.53	11.69	.0653	34.29	.4935	.0129	5.026

Elem	Ni2316	Pb2203	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908
IS Ref	(Y_2243)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0545**	**.2084**	**.0029**	**.0025**	**4.539**	**.0115**	**1.799**	**.8012**	**-.0089**
Stddev	.0002	.0010	.0003	.0011	.019	.0003	.007	.0032	.0033
%RSD	.4334	.4629	8.845	44.21	.4187	2.735	.4083	.4013	37.28
#1	.0548	.2074	.0027	.0024	4.548	.0111	1.807	.8043	-.0088
#2	.0543	.2092	.0032	.0015	4.551	.0117	1.794	.8014	-.0057
#3	.0544	.2087	.0029	.0037	4.517	.0116	1.794	.7979	-.0123

Elem	V_2924	Zn2062
IS Ref	(Y_3600)	(Y_2243)
Units	ppm	ppm
Avg	**.3406**	**.1913**
Stddev	.0013	.0002
%RSD	.3728	.1206
#1	.3411	.1913
#2	.3416	.1911
#3	.3392	.1915

Zoom In Zoom Out

Sample Name: MP43343-D1 Acquired: 12/30/2023 16:37:44 Type: Unk
Method: 60102007_COMBO_102422(v757) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**2464.4**	**17104.**	**114450.**	**39628.**
Stddev	3.1	8.	396.	220.
%RSD	.12617	.04832	.34625	.55488
#1	2466.6	17109.	114160.	39426.
#2	2465.8	17110.	114280.	39595.
#3	2460.8	17095.	114900.	39862.

Zoom In Zoom Out

Sample Name: MP43343-SD1 Acquired: 12/30/2023 16:43:15 Type: Unk
Method: 60102007_COMBO_102422(v757) Mode: CONC Corr. Factor: 5.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	B_2497	Ba4554	Be3130	Ca3179	Cd2265	Co2286
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.0005**	**193.5**	**.0921**	**.0944**	**.6035**	**.0098**	**583.2**	**.0024**	**.0232**
Stddev	.0000	.3	.0059	.0020	.0010	.0001	3.1	.0003	.0002
%RSD	6.589	.1710	6.411	2.129	.1693	.6224	.5368	11.79	.8877
#1	-.0006	193.9	.0974	.0955	.6024	.0098	579.6	.0021	.0230
#2	-.0005	193.2	.0858	.0921	.6038	.0098	584.6	.0026	.0234
#3	-.0006	193.4	.0931	.0956	.6044	.0097	585.3	.0025	.0233

Elem	Cr2677	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895
IS Ref	(Y_3600)	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.5161**	**.1406**	**105.6**	**16.28**	**.0861**	**54.80**	**.7837**	**.0221**	**7.177**
Stddev	.0020	.0012	.2	.05	.0012	.11	.0030	.0001	.019
%RSD	.3825	.8762	.2366	.3077	1.443	.1926	.3864	.5744	.2632
#1	.5152	.1393	105.9	16.34	.0846	54.79	.7847	.0221	7.170
#2	.5183	.1418	105.4	16.24	.0865	54.70	.7861	.0221	7.198
#3	.5147	.1406	105.7	16.27	.0870	54.91	.7803	.0219	7.162

Elem	Ni2316	Pb2203	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908
IS Ref	(Y_2243)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0901**	**.1279**	**.0007**	**.0012**	**8.405**	**.0228**	**2.855**	**1.276**	**-.0064**
Stddev	.0005	.0030	.0051	.0065	.024	.0011	.012	.015	.0109
%RSD	.5799	2.362	714.1	531.9	.2854	4.640	.4023	1.189	171.2
#1	.0907	.1314	.0059	.0020	8.433	.0234	2.867	1.293	-.0113
#2	.0897	.1263	-.0043	-.0057	8.392	.0216	2.844	1.272	-.0139
#3	.0901	.1261	.0005	.0073	8.391	.0235	2.856	1.263	.0061

Elem	V_2924	Zn2062
IS Ref	(Y_3600)	(Y_2243)
Units	ppm	ppm
Avg	**.5220**	**.3522**
Stddev	.0030	.0001
%RSD	.5679	.0263
#1	.5237	.3522
#2	.5237	.3523
#3	.5186	.3521

Zoom In Zoom Out

Sample Name: MP43343-SD1 Acquired: 12/30/2023 16:43:15 Type: Unk
Method: 60102007_COMBO_102422(v757) Mode: CONC Corr. Factor: 5.000000
User: admin SSTRACE01: : :
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**3064.3**	**9570.9**	**64498.**	**21256.**
Stddev	8.2	22.7	252.	52.
%RSD	.26602	.23710	.39022	.24690
#1	3072.1	9589.6	64496.	21298.
#2	3055.9	9577.5	64248.	21273.
#3	3064.9	9545.7	64751.	21197.

Zoom In Zoom Out

Sample Name: CCV Acquired: 12/30/2023 16:48:24 Type: QC
Method: 60102007_COMBO_102422(v757) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	B_2497	Ba4554	Be3130	Ca3179	Cd2265	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2511**	**40.29**	**2.015**	**2.012**	**2.009**	**2.018**	**40.82**	**2.013**	**2.018**
Stddev	.0001	.14	.003	.018	.004	.018	.03	.004	.004
%RSD	.0362	.3405	.1418	.8859	.1914	.8787	.0626	.1864	.1800
#1	.2510	40.32	2.012	1.992	2.011	2.001	40.79	2.012	2.016
#2	.2512	40.15	2.014	2.026	2.005	2.036	40.83	2.010	2.016
#3	.2510	40.42	2.018	2.019	2.012	2.017	40.83	2.018	2.022
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Cr2677	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**2.010**	**1.998**	**40.58**	**40.17**	**1.973**	**40.23**	**2.028**	**2.011**	**40.41**
Stddev	.004	.003	.16	.09	.007	.07	.003	.004	.05
%RSD	.1762	.1543	.4006	.2338	.3555	.1706	.1351	.1885	.1339
#1	2.006	1.995	40.54	40.12	1.975	40.15	2.030	2.008	40.35
#2	2.013	1.999	40.45	40.12	1.965	40.25	2.025	2.011	40.43
#3	2.011	2.001	40.76	40.28	1.979	40.29	2.029	2.016	40.46
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Ni2316	Pb2203	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**2.023**	**2.005**	**2.027**	**2.008**	**1.885**	**2.028**	**2.013**	**2.024**	**2.016**
Stddev	.003	.002	.005	.014	.004	.002	.005	.001	.004
%RSD	.1304	.1078	.2272	.6788	.2058	.1059	.2595	.0539	.2011
#1	2.021	2.003	2.026	2.003	1.885	2.026	2.009	2.025	2.012
#2	2.022	2.006	2.023	1.997	1.882	2.028	2.012	2.023	2.020
#3	2.026	2.007	2.032	2.023	1.890	2.030	2.019	2.025	2.015
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Zoom In Zoom Out

Sample Name: CCV Acquired: 12/30/2023 16:48:24 Type: QC
Method: 60102007_COMBO_102422(v757) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	V_2924	Zn2062
Units	ppm	ppm
Avg	**2.009**	**2.018**
Stddev	.001	.003
%RSD	.0542	.1315
#1	2.009	2.017
#2	2.008	2.016
#3	2.010	2.021
Check ?	Chk Pass	Chk Pass
Value		
Range		

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**2922.7**	**7670.2**	**52222.**	**17150.**
Stddev	5.0	23.1	55.	44.
%RSD	.17168	.30128	.10582	.25890
#1	2928.3	7693.1	52258.	17127.
#2	2921.2	7670.6	52158.	17201.
#3	2918.6	7646.9	52250.	17121.

Zoom In Zoom Out

Sample Name: CCB Acquired: 12/30/2023 16:53:36 Type: QC
Method: 60102007_COMBO_102422(v757) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	B_2497	Ba4554	Be3130	Ca3179	Cd2265	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.0002**	**.0060**	**.0014**	**.0001**	**.0003**	**.0002**	**.0071**	**.0001**	**.0001**
Stddev	.0002	.0049	.0005	.0003	.0001	.0000	.0010	.0000	.0000
%RSD	100.6	81.18	32.82	327.7	40.39	10.58	14.23	34.15	52.10
#1	-.0003	.0083	.0009	.0000	.0001	.0002	.0077	.0001	.0000
#2	.0000	.0094	.0018	-.0001	.0003	.0001	.0059	.0001	.0001
#3	-.0002	.0004	.0014	.0004	.0003	.0001	.0076	.0000	.0001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Cr2677	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0000**	**.0000**	**.0035**	**-.0309**	**.0000**	**.0075**	**.0002**	**.0004**	**-.0156**
Stddev	.0000	.000	.0009	.0090	.0002	.0062	.0000	.0000	.0049
%RSD	61.86	140.2	24.80	29.09	1747.	83.84	20.43	11.15	31.28
#1	.0001	.0000	.0026	-.0398	.0000	.0147	.0002	.0004	-.0115
#2	.0000	-.0001	.0043	-.0310	-.0002	.0039	.0001	.0004	-.0143
#3	.0000	-.0001	.0034	-.0218	.0003	.0038	.0001	.0004	-.0209
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Ni2316	Pb2203	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0000**	**-.0003**	**-.0003**	**-.0008**	**.0016**	**.0003**	**.0002**	**.0001**	**-.0001**
Stddev	.0001	.0007	.0014	.0006	.0003	.0002	.0000	.0000	.0007
%RSD	355.2	246.2	408.0	80.10	17.74	75.59	22.54	19.46	1312.
#1	.0000	-.0006	-.0014	-.0012	.0013	.0001	.0001	.0001	-.0006
#2	.0002	-.0008	-.0009	-.0011	.0019	.0006	.0002	.0002	.0008
#3	-.0001	.0005	.0012	-.0001	.0016	.0002	.0001	.0001	-.0004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Zoom In Zoom Out

Sample Name: CCB Acquired: 12/30/2023 16:53:36 Type: QC
Method: 60102007_COMBO_102422(v757) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	V_2924	Zn2062
Units	ppm	ppm
Avg	**-.0001**	**.0003**
Stddev	.0002	.0001
%RSD	155.9	19.34
#1	-.0001	.0003
#2	-.0003	.0003
#3	.0000	.0002
Check ?	Chk Pass	Chk Pass
High Limit		
Low Limit		

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**3470.7**	**8044.3**	**55176.**	**16925.**
Stddev	.7	4.2	258.	54.
%RSD	.01961	.05272	.46770	.32081
#1	3471.4	8048.0	55215.	16911.
#2	3470.3	8045.2	55412.	16985.
#3	3470.2	8039.7	54900.	16879.

Zoom In Zoom Out

Sample Name: MP43343-PS1 Acquired: 12/30/2023 16:58:47 Type: Unk
Method: 60102007_COMBO_102422(v757) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	B_2497	Ba4554	Be3130	Ca3179	Cd2265	Co2286
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0232**	**114.5**	**.0989**	**.0644**	**.4640**	**.0285**	**310.2**	**.0236**	**.0336**
Stddev	.0001	.9	.0005	.0011	.0008	.0001	3.0	.0000	.0001
%RSD	.4501	.7439	.5031	1.689	.1801	.3669	.9772	.1960	.4300
#1	.0233	115.1	.0984	.0642	.4633	.0285	312.4	.0236	.0335
#2	.0231	115.0	.0993	.0656	.4649	.0285	306.7	.0236	.0336
#3	.0232	113.6	.0992	.0635	.4639	.0286	311.5	.0236	.0338

Elem	Cr2677	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895
IS Ref	(Y_3600)	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.3096**	**.1273**	**58.97**	**14.28**	**.0556**	**32.77**	**.4587**	**.0539**	**8.626**
Stddev	.0005	.0005	.54	.02	.0006	.21	.0009	.0001	.022
%RSD	.1709	.4062	.9171	.1656	1.160	.6506	.1922	.0975	.2594
#1	.3096	.1277	58.85	14.26	.0550	32.79	.4596	.0539	8.603
#2	.3091	.1275	58.51	14.27	.0556	32.55	.4579	.0540	8.648
#3	.3102	.1267	59.57	14.30	.0563	32.97	.4584	.0539	8.626

Elem	Ni2316	Pb2203	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908
IS Ref	(Y_2243)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0928**	**.2155**	**.0502**	**.0463**	**4.828**	**.0343**	**1.637**	**.7685**	**.0850**
Stddev	.0001	.0009	.0014	.0019	.017	.0004	.024	.0037	.0015
%RSD	.1193	.4059	2.708	4.188	.3437	1.298	1.481	.4788	1.797
#1	.0928	.2146	.0516	.0482	4.845	.0339	1.644	.7701	.0834
#2	.0928	.2163	.0500	.0443	4.826	.0348	1.610	.7711	.0864
#3	.0930	.2156	.0489	.0465	4.812	.0343	1.657	.7643	.0852

Elem	V_2924	Zn2062
IS Ref	(Y_3600)	(Y_2243)
Units	ppm	ppm
Avg	**.3159**	**.2986**
Stddev	.0007	.0006
%RSD	.2220	.2012
#1	.3167	.2979
#2	.3156	.2989
#3	.3154	.2989

Zoom In Zoom Out

Sample Name: MP43343-PS1 Acquired: 12/30/2023 16:58:47 Type: Unk
Method: 60102007_COMBO_102422(v757) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**2547.0**	**15405.**	**103810.**	**36000.**
Stddev	5.0	21.	217.	257.
%RSD	.19435	.13434	.20923	.71458
#1	2550.7	15428.	104030.	36095.
#2	2549.0	15393.	103600.	36196.
#3	2541.4	15392.	103810.	35708.

Zoom In Zoom Out

Sample Name: MP43343-S1 Acquired: 12/30/2023 17:04:20 Type: Unk
Method: 60102007_COMBO_102422(v757) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	B_2497	Ba4554	Be3130	Ca3179	Cd2265	Co2286
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0995**	**119.6**	**.1536**	**.3046**	**.4589**	**.1040**	**324.3**	**.0944**	**.1038**
Stddev	.0002	.6	.0004	.0021	.0007	.0001	1.2	.0001	.0002
%RSD	.2403	.5331	.2661	.6855	.1436	.0724	.3603	.1112	.1492
#1	.0996	120.3	.1538	.3030	.4589	.1040	325.7	.0945	.1038
#2	.0993	119.1	.1531	.3069	.4582	.1039	323.5	.0943	.1036
#3	.0997	119.3	.1538	.3038	.4595	.1040	323.8	.0945	.1039

Elem	Cr2677	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895
IS Ref	(Y_3600)	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.5048**	**.2008**	**77.71**	**31.50**	**.3342**	**51.04**	**.5191**	**.3374**	**25.05**
Stddev	.0004	.0004	.61	.03	.0015	.31	.0007	.0004	.01
%RSD	.0846	.1937	.7869	.1058	.4423	.6132	.1427	.1258	.0492
#1	.5044	.2005	78.29	31.47	.3325	51.37	.5183	.3378	25.06
#2	.5052	.2007	77.07	31.50	.3348	50.75	.5198	.3370	25.06
#3	.5048	.2012	77.77	31.54	.3353	51.00	.5191	.3375	25.04

Elem	Ni2316	Pb2203	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908
IS Ref	(Y_2243)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1404**	**.3658**	**.0643**	**.0990**	**6.031**	**.2499**	**1.891**	**.8522**	**.1872**
Stddev	.0001	.0007	.0008	.0022	.009	.0003	.022	.0016	.0012
%RSD	.0688	.1829	1.194	2.199	.1583	.1218	1.189	.1864	.6226
#1	.1404	.3665	.0647	.0966	6.039	.2497	1.897	.8506	.1864
#2	.1405	.3654	.0648	.0996	6.021	.2497	1.867	.8538	.1885
#3	.1403	.3653	.0634	.1008	6.035	.2502	1.911	.8522	.1866

Elem	V_2924	Zn2062
IS Ref	(Y_3600)	(Y_2243)
Units	ppm	ppm
Avg	**.3809**	**.2903**
Stddev	.0007	.0001
%RSD	.1747	.0444
#1	.3801	.2902
#2	.3812	.2905
#3	.3813	.2903

Zoom In Zoom Out

Sample Name: MP43343-S1 Acquired: 12/30/2023 17:04:20 Type: Unk
Method: 60102007_COMBO_102422(v757) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**2468.6**	**14353.**	**96545.**	**33564.**
Stddev	1.3	12.	215.	198.
%RSD	.05082	.08281	.22258	.59055
#1	2469.6	14365.	96706.	33340.
#2	2469.1	14341.	96301.	33717.
#3	2467.2	14352.	96630.	33636.

Zoom In Zoom Out

Sample Name: MP43343-S2 Acquired: 12/30/2023 17:09:49 Type: Unk
Method: 60102007_COMBO_102422(v757) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	B_2497	Ba4554	Be3130	Ca3179	Cd2265	Co2286
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0852**	**135.4**	**.1393**	**.2712**	**.4409**	**.0899**	**351.2**	**.0795**	**.0896**
Stddev	.0000	.5	.0012	.0022	.0006	.0001	2.2	.0001	.0002
%RSD	.0233	.3911	.8378	.7968	.1332	.1230	.6193	.1719	.1805
#1	.0852	136.0	.1399	.2697	.4407	.0900	353.7	.0794	.0894
#2	.0852	135.0	.1401	.2737	.4416	.0898	349.9	.0796	.0898
#3	.0852	135.1	.1380	.2703	.4405	.0900	349.9	.0797	.0896

Elem	Cr2677	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895
IS Ref	(Y_3600)	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.3999**	**.1515**	**79.72**	**29.66**	**.2996**	**51.31**	**.5434**	**.2862**	**22.53**
Stddev	.0012	.0007	.51	.00	.0002	.20	.0008	.0002	.02
%RSD	.2998	.4542	.6438	.0058	.0510	.3815	.1468	.0646	.0926
#1	.4011	.1521	80.28	29.66	.2997	51.42	.5439	.2860	22.55
#2	.3987	.1508	79.60	29.66	.2995	51.09	.5439	.2862	22.52
#3	.3999	.1516	79.27	29.66	.2994	51.43	.5425	.2864	22.51

Elem	Ni2316	Pb2203	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908
IS Ref	(Y_2243)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1284**	**.3918**	**.0513**	**.0819**	**5.197**	**.2107**	**1.960**	**.8774**	**.1789**
Stddev	.0001	.0024	.0011	.0021	.016	.0003	.015	.0018	.0038
%RSD	.0988	.6148	2.179	2.563	.3150	.1455	.7771	.2067	2.113
#1	.1283	.3895	.0526	.0823	5.214	.2110	1.957	.8776	.1801
#2	.1284	.3916	.0509	.0839	5.196	.2104	1.947	.8791	.1747
#3	.1285	.3943	.0504	.0797	5.181	.2108	1.977	.8755	.1819

Elem	V_2924	Zn2062
IS Ref	(Y_3600)	(Y_2243)
Units	ppm	ppm
Avg	**.4028**	**.2614**
Stddev	.0012	.0001
%RSD	.2964	.0330
#1	.4036	.2615
#2	.4034	.2614
#3	.4014	.2615

Zoom In Zoom Out

Sample Name: MP43343-S2 Acquired: 12/30/2023 17:09:49 Type: Unk
Method: 60102007_COMBO_102422(v757) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**2396.0**	**16180.**	**108000.**	**37451.**
Stddev	8.2	21.	245.	235.
%RSD	.34306	.13039	.22639	.62794
#1	2396.8	16195.	107840.	37316.
#2	2403.8	16189.	108290.	37722.
#3	2387.4	16155.	107890.	37314.

Zoom In Zoom Out

Sample Name: FC12205-4 Acquired: 12/30/2023 17:15:19 Type: Unk
Method: 60102007_COMBO_102422(v757) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	B_2497	Ba4554	Be3130	Ca3179	Cd2265	Co2286
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.0005**	**105.4**	**.0468**	**-.0016**	**.4159**	**.0034**	**35.70**	**-.0008**	**.0086**
Stddev	.0001	.1	.0003	.0006	.0003	.0000	.12	.0000	.0000
%RSD	19.84	.0736	.6200	35.04	.0690	.6951	.3359	1.350	.5326
#1	-.0006	105.5	.0467	-.0016	.4160	.0034	35.83	-.0008	.0086
#2	-.0004	105.4	.0472	-.0010	.4155	.0034	35.59	-.0008	.0085
#3	-.0005	105.4	.0466	-.0021	.4161	.0034	35.69	-.0008	.0086

Elem	Cr2677	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895
IS Ref	(Y_3600)	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1376**	**.0183**	**59.99**	**.9974**	**.0411**	**8.983**	**.0836**	**.0010**	**.3216**
Stddev	.0004	.0001	.01	.0196	.0003	.024	.0003	.0001	.0003
%RSD	.2886	.4385	.0133	1.967	.6199	.2721	.3256	9.365	.1058
#1	.1381	.0183	60.00	.9960	.0413	8.989	.0838	.0009	.3218
#2	.1373	.0184	59.99	1.018	.0408	9.003	.0835	.0011	.3212
#3	.1376	.0183	59.99	.9784	.0412	8.956	.0833	.0009	.3218

Elem	Ni2316	Pb2203	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908
IS Ref	(Y_2243)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0249**	**.0745**	**.0023**	**-.0004**	**6.000**	**.0205**	**1.136**	**.3424**	**-.0015**
Stddev	.0001	.0012	.0013	.0016	.036	.0005	.002	.0024	.0004
%RSD	.3131	1.630	55.82	409.2	.6031	2.359	.2143	.6944	28.07
#1	.0248	.0754	.0037	.0006	5.960	.0209	1.133	.3447	-.0011
#2	.0249	.0749	.0022	-.0022	6.011	.0200	1.137	.3425	-.0020
#3	.0250	.0731	.0011	.0005	6.030	.0206	1.137	.3400	-.0014

Elem	V_2924	Zn2062
IS Ref	(Y_3600)	(Y_2243)
Units	ppm	ppm
Avg	**.0856**	**.1028**
Stddev	.0001	.0002
%RSD	.0696	.1862
#1	.0857	.1029
#2	.0855	.1029
#3	.0856	.1026

Zoom In Zoom Out

Sample Name: FC12205-4 Acquired: 12/30/2023 17:15:19 Type: Unk
Method: 60102007_COMBO_102422(v757) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**3083.1**	**9357.1**	**62057.**	**19903.**
Stddev	3.0	4.4	45.	43.
%RSD	.09674	.04692	.07284	.21739
#1	3086.5	9359.7	62040.	19854.
#2	3081.5	9352.0	62108.	19920.
#3	3081.2	9359.5	62022.	19935.

Zoom In Zoom Out

Sample Name: FC12205-5 Acquired: 12/30/2023 17:20:20 Type: Unk
Method: 60102007_COMBO_102422(v757) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	B_2497	Ba4554	Be3130	Ca3179	Cd2265	Co2286
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.0005**	**96.94**	**.0397**	**.0003**	**.3772**	**.0030**	**79.20**	**-.0003**	**.0081**
Stddev	.0001	.21	.0012	.0004	.0011	.0000	.27	.0000	.0001
%RSD	27.31	.2168	2.982	137.3	.2854	.6124	.3356	12.65	.9604
#1	-.0003	96.81	.0408	.0004	.3783	.0030	78.92	-.0004	.0081
#2	-.0006	96.82	.0385	.0007	.3762	.0030	79.22	-.0003	.0081
#3	-.0006	97.18	.0397	-.0002	.3771	.0030	79.45	-.0003	.0080

Elem	Cr2677	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895
IS Ref	(Y_3600)	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1277**	**.0395**	**53.69**	**.9532**	**.0393**	**8.310**	**.1010**	**.0009**	**.3721**
Stddev	.0004	.0001	.12	.0081	.0004	.029	.0005	.0001	.0021
%RSD	.3235	.3013	.2297	.8538	.9469	.3468	.5067	9.047	.5739
#1	.1280	.0394	53.72	.9625	.0394	8.322	.1013	.0010	.3716
#2	.1278	.0397	53.55	.9498	.0390	8.277	.1013	.0009	.3703
#3	.1272	.0395	53.79	.9474	.0397	8.331	.1004	.0008	.3745

Elem	Ni2316	Pb2203	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908
IS Ref	(Y_2243)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0233**	**.0909**	**.0022**	**-.0005**	**6.159**	**.0225**	**1.067**	**.3571**	**-.0008**
Stddev	.0002	.0010	.0003	.0018	.018	.0005	.002	.0053	.0018
%RSD	.9932	1.103	11.55	388.5	.2959	2.400	.1816	1.487	216.6
#1	.0230	.0898	.0020	.0008	6.176	.0232	1.069	.3630	.0007
#2	.0234	.0918	.0025	.0003	6.140	.0222	1.065	.3555	-.0028
#3	.0235	.0911	.0022	-.0025	6.160	.0223	1.068	.3527	-.0004

Elem	V_2924	Zn2062
IS Ref	(Y_3600)	(Y_2243)
Units	ppm	ppm
Avg	**.0806**	**.3733**
Stddev	.0004	.0004
%RSD	.5166	.1023
#1	.0810	.3731
#2	.0806	.3731
#3	.0802	.3737

Zoom In Zoom Out

Sample Name: FC12205-5 Acquired: 12/30/2023 17:20:20 Type: Unk
Method: 60102007_COMBO_102422(v757) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**3047.4**	**9148.9**	**61161.**	**20227.**
Stddev	4.2	17.0	282.	93.
%RSD	.13875	.18559	.46054	.45908
#1	3051.8	9165.5	61003.	20208.
#2	3047.0	9149.6	60994.	20328.
#3	3043.3	9131.6	61486.	20145.

Zoom In Zoom Out

Sample Name: FC12205-6 Acquired: 12/30/2023 17:25:30 Type: Unk
Method: 60102007_COMBO_102422(v757) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	B_2497	Ba4554	Be3130	Ca3179	Cd2265	Co2286
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0001**	**47.96**	**.0479**	**-.0007**	**.2107**	**.0016**	**137.5**	**.0002**	**.0045**
Stddev	.0002	.02	.0009	.0011	.0005	.0000	1.7	.0001	.0002
%RSD	308.1	.0375	1.834	165.1	.2591	.2859	1.202	25.32	3.400
#1	.0002	47.97	.0475	.0006	.2100	.0016	138.8	.0003	.0044
#2	-.0001	47.94	.0473	-.0015	.2109	.0016	135.6	.0002	.0044
#3	.0001	47.96	.0489	-.0011	.2111	.0016	138.1	.0003	.0046

Elem	Cr2677	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895
IS Ref	(Y_3600)	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0712**	**.1037**	**35.79**	**.6588**	**.0227**	**4.216**	**.1312**	**.0008**	**.1968**
Stddev	.0005	.0001	.02	.0028	.0003	.008	.0004	.0002	.0079
%RSD	.6523	.0608	.0644	.4237	1.348	.1832	.3296	25.94	4.028
#1	.0714	.1038	35.79	.6584	.0224	4.216	.1314	.0008	.1880
#2	.0707	.1037	35.81	.6563	.0228	4.224	.1315	.0010	.1990
#3	.0715	.1037	35.77	.6618	.0230	4.208	.1307	.0006	.2033

Elem	Ni2316	Pb2203	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908
IS Ref	(Y_2243)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0177**	**.1888**	**.0003**	**.0005**	**5.736**	**.0297**	**.5513**	**.3290**	**-.0007**
Stddev	.0003	.0009	.0005	.0026	.015	.0004	.0017	.0057	.0002
%RSD	1.718	.4942	159.8	477.5	.2586	1.325	.3110	1.727	32.86
#1	.0174	.1878	.0007	.0034	5.732	.0301	.5493	.3329	-.0004
#2	.0178	.1896	.0003	-.0001	5.753	.0293	.5522	.3318	-.0008
#3	.0180	.1891	-.0002	-.0017	5.724	.0296	.5524	.3225	-.0008

Elem	V_2924	Zn2062
IS Ref	(Y_3600)	(Y_2243)
Units	ppm	ppm
Avg	**.0559**	**.8378**
Stddev	.0001	.0011
%RSD	.1386	.1253
#1	.0559	.8390
#2	.0558	.8376
#3	.0558	.8369

Zoom In Zoom Out

Sample Name: FC12205-6 Acquired: 12/30/2023 17:25:30 Type: Unk
Method: 60102007_COMBO_102422(v757) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**3052.1**	**8567.2**	**57873.**	**19003.**
Stddev	2.5	12.9	60.	15.
%RSD	.08224	.15061	.10436	.07964
#1	3049.5	8552.9	57806.	18986.
#2	3052.3	8578.0	57892.	19009.
#3	3054.6	8570.6	57922.	19015.

Zoom In Zoom Out

Sample Name: FC12205-7 Acquired: 12/30/2023 17:30:41 Type: Unk
Method: 60102007_COMBO_102422(v757) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	B_2497	Ba4554	Be3130	Ca3179	Cd2265	Co2286
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.0003**	**95.72**	**.0300**	**-.0004**	**.4127**	**.0029**	**31.12**	**.0011**	**.0085**
Stddev	.0005	.27	.0010	.0006	.0004	.0000	.12	.0001	.0000
%RSD	189.8	.2834	3.475	139.1	.0941	1.068	.3711	6.782	.1573
#1	-.0005	95.78	.0292	-.0011	.4128	.0030	31.26	.0010	.0085
#2	-.0006	95.43	.0312	.0001	.4131	.0029	31.06	.0012	.0085
#3	.0003	95.96	.0297	-.0003	.4123	.0030	31.06	.0011	.0085

Elem	Cr2677	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895
IS Ref	(Y_3600)	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1304**	**.0703**	**55.73**	**1.567**	**.0429**	**8.444**	**.1597**	**.0008**	**.2442**
Stddev	.0007	.0007	.15	.007	.0003	.042	.0006	.0002	.0047
%RSD	.5529	.9912	.2754	.4467	.7220	.4934	.3651	21.17	1.938
#1	.1307	.0701	55.79	1.563	.0426	8.484	.1602	.0008	.2466
#2	.1309	.0711	55.56	1.563	.0432	8.401	.1599	.0010	.2472
#3	.1296	.0698	55.85	1.576	.0430	8.448	.1591	.0006	.2387

Elem	Ni2316	Pb2203	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908
IS Ref	(Y_2243)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0309**	**.2497**	**.0008**	**.0002**	**6.851**	**.0290**	**1.228**	**.4457**	**-.0008**
Stddev	.0001	.0004	.0010	.0003	.032	.0000	.004	.0009	.0019
%RSD	.1896	.1785	118.0	147.4	.4678	.1388	.3346	.1980	250.0
#1	.0308	.2492	.0013	.0004	6.871	.0290	1.229	.4464	.0014
#2	.0309	.2501	-.0003	.0002	6.867	.0289	1.223	.4447	-.0020
#3	.0309	.2497	.0015	-.0001	6.814	.0290	1.232	.4460	-.0016

Elem	V_2924	Zn2062
IS Ref	(Y_3600)	(Y_2243)
Units	ppm	ppm
Avg	**.0872**	F **4.082**
Stddev	.0002	.009
%RSD	.2019	.2169
#1	.0873	4.090
#2	.0872	4.072
#3	.0870	4.085

Zoom In Zoom Out

Sample Name: FC12205-7 Acquired: 12/30/2023 17:30:41 Type: Unk
Method: 60102007_COMBO_102422(v757) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**3113.8**	**9178.3**	**61845.**	**19872.**
Stddev	3.4	11.3	236.	147.
%RSD	.10978	.12296	.38098	.74173
#1	3116.9	9187.3	61756.	19708.
#2	3114.5	9181.9	61666.	19994.
#3	3110.1	9165.6	62112.	19913.

Zoom In Zoom Out

Sample Name: FC12205-8 Acquired: 12/30/2023 17:35:43 Type: Unk
Method: 60102007_COMBO_102422(v757) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	B_2497	Ba4554	Be3130	Ca3179	Cd2265	Co2286
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0000**	**73.47**	**.0599**	**-.0069**	**.3542**	**.0025**	**23.63**	**.0078**	**.0077**
Stddev	.0001	.11	.0009	.0004	.0009	.0000	.05	.0001	.0001
%RSD	321.0	.1481	1.427	5.843	.2570	1.017	.1933	1.052	1.249
#1	.0001	73.59	.0602	-.0069	.3546	.0026	23.67	.0078	.0076
#2	-.0001	73.44	.0589	-.0073	.3548	.0025	23.64	.0078	.0078
#3	.0001	73.37	.0605	-.0065	.3532	.0025	23.58	.0079	.0077

Elem	Cr2677	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895
IS Ref	(Y_3600)	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1043**	**1.106**	**65.32**	**.9648**	**.0349**	**5.840**	**.4627**	**.0012**	**.1471**
Stddev	.0014	.005	.14	.0084	.0004	.044	.0023	.0001	.0034
%RSD	1.298	.4287	.2158	.8693	1.107	.7496	.4978	5.606	2.303
#1	.1039	1.108	65.40	.9734	.0350	5.820	.4627	.0011	.1453
#2	.1032	1.100	65.40	.9643	.0345	5.890	.4604	.0013	.1510
#3	.1058	1.108	65.16	.9567	.0352	5.810	.4650	.0011	.1450

Elem	Ni2316	Pb2203	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908
IS Ref	(Y_2243)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0213**	**.2031**	**.0007**	**.0016**	**8.440**	**.0352**	**1.093**	**.5045**	**.0004**
Stddev	.0002	.0008	.0005	.0006	.095	.0003	.002	.0019	.0013
%RSD	.7826	.4171	71.38	37.70	1.124	.8106	.2004	.3793	339.8
#1	.0213	.2021	.0013	.0010	8.536	.0349	1.093	.5050	.0019
#2	.0211	.2034	.0006	.0022	8.437	.0355	1.095	.5024	-.0004
#3	.0215	.2037	.0003	.0016	8.346	.0352	1.091	.5061	-.0004

Elem	V_2924	Zn2062
IS Ref	(Y_3600)	(Y_2243)
Units	ppm	ppm
Avg	**.0747**	**3.724**
Stddev	.0002	.004
%RSD	.2859	.1006
#1	.0747	3.725
#2	.0746	3.720
#3	.0750	3.727

Zoom In Zoom Out

Sample Name: FC12205-8 Acquired: 12/30/2023 17:35:43 Type: Unk
Method: 60102007_COMBO_102422(v757) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**3157.5**	**9330.8**	**63249.**	**20354.**
Stddev	6.7	5.7	276.	89.
%RSD	.21321	.06140	.43579	.43640
#1	3163.9	9327.2	63337.	20306.
#2	3158.0	9337.4	63471.	20300.
#3	3150.5	9327.8	62941.	20457.

Zoom In Zoom Out

Sample Name: FC12205-9 Acquired: 12/30/2023 17:40:43 Type: Unk
Method: 60102007_COMBO_102422(v757) Mode: CONC Corr. Factor: 5.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	B_2497	Ba4554	Be3130	Ca3179	Cd2265	Co2286
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0013**	**187.5**	**.1074**	**.0221**	**.9651**	**.0118**	**295.0**	**.0030**	**.0270**
Stddev	.0009	.1	.0043	.0041	.0019	.0001	1.6	.0002	.0002
%RSD	71.40	.0795	4.041	18.49	.1941	.8082	.5345	7.705	.6541
#1	.0009	187.6	.1084	.0250	.9656	.0118	296.7	.0032	.0272
#2	.0006	187.4	.1112	.0239	.9630	.0117	293.7	.0028	.0268
#3	.0024	187.7	.1027	.0174	.9666	.0118	294.7	.0030	.0270

Elem	Cr2677	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895
IS Ref	(Y_3600)	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.3873**	**1.164**	**86.59**	**9.104**	**.0607**	**43.14**	**1.389**	**.0409**	**2.537**
Stddev	.0013	.008	.17	.063	.0016	.10	.004	.0008	.020
%RSD	.3366	.6961	.1934	.6950	2.700	.2214	.2811	1.946	.7877
#1	.3860	1.155	86.76	9.041	.0593	43.04	1.385	.0400	2.514
#2	.3871	1.171	86.58	9.167	.0625	43.23	1.391	.0412	2.552
#3	.3886	1.164	86.43	9.105	.0604	43.14	1.392	.0416	2.545

Elem	Ni2316	Pb2203	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908
IS Ref	(Y_2243)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1401**	**.4099**	**-.0001**	**.0128**	**3.625**	**.0292**	**6.048**	**.5327**	**-.0046**
Stddev	.0005	.0042	.0042	.0109	.007	.0009	.011	.0019	.0056
%RSD	.3374	1.032	3073.	85.31	.1831	2.966	.1888	.3595	123.0
#1	.1397	.4071	-.0041	.0228	3.623	.0286	6.042	.5334	.0017
#2	.1401	.4078	-.0006	.0143	3.620	.0287	6.061	.5305	-.0091
#3	.1406	.4147	.0043	.0012	3.633	.0302	6.040	.5341	-.0064

Elem	V_2924	Zn2062
IS Ref	(Y_3600)	(Y_2243)
Units	ppm	ppm
Avg	**.2912**	**.6226**
Stddev	.0010	.0013
%RSD	.3369	.2016
#1	.2905	.6212
#2	.2908	.6229
#3	.2923	.6237

Zoom In Zoom Out

Sample Name: FC12205-9 Acquired: 12/30/2023 17:40:43 Type: Unk
Method: 60102007_COMBO_102422(v757) Mode: CONC Corr. Factor: 5.000000
User: admin SSTRACE01: : :
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**3186.8**	**9095.4**	**61747.**	**20057.**
Stddev	7.5	13.3	191.	28.
%RSD	.23557	.14611	.30995	.13836
#1	3194.6	9107.4	61966.	20042.
#2	3186.2	9097.6	61612.	20040.
#3	3179.6	9081.1	61662.	20089.

Zoom In Zoom Out

Sample Name: FC12205-10 Acquired: 12/30/2023 17:45:53 Type: Unk
Method: 60102007_COMBO_102422(v757) Mode: CONC Corr. Factor: 5.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	B_2497	Ba4554	Be3130	Ca3179	Cd2265	Co2286
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0014**	**230.4**	**.1106**	**.0698**	**1.491**	**.0098**	**1264.**	**.0011**	**.0232**
Stddev	.0005	.3	.0040	.0037	.003	.0001	20.	.0003	.0001
%RSD	33.00	.1230	3.643	5.264	.2261	.6148	1.579	23.70	.4399
#1	.0017	230.1	.1122	.0732	1.488	.0097	1267.	.0014	.0232
#2	.0009	230.3	.1135	.0659	1.494	.0098	1283.	.0009	.0233
#3	.0017	230.6	.1060	.0703	1.491	.0098	1243.	.0010	.0231

Elem	Cr2677	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895
IS Ref	(Y_3600)	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.4323**	**.2153**	**126.5**	**10.76**	**.0788**	**90.25**	**2.564**	**.0405**	**6.505**
Stddev	.0005	.0020	.3	.08	.0009	.73	.012	.0008	.022
%RSD	.1246	.9265	.2056	.7374	1.114	.8090	.4554	1.896	.3394
#1	.4318	.2138	126.3	10.68	.0796	90.01	2.574	.0410	6.481
#2	.4323	.2145	126.8	10.84	.0779	91.06	2.551	.0396	6.525
#3	.4328	.2176	126.6	10.76	.0790	89.66	2.566	.0408	6.509

Elem	Ni2316	Pb2203	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908
IS Ref	(Y_2243)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0977**	**.1810**	**.0138**	**-.0085**	**6.496**	**.0240**	**5.143**	**1.114**	**-.0094**
Stddev	.0009	.0041	.0044	.0026	.108	.0018	.010	.007	.0029
%RSD	.9050	2.268	31.74	30.41	1.654	7.518	.2001	.5972	30.61
#1	.0982	.1764	.0166	-.0078	6.610	.0229	5.131	1.112	-.0083
#2	.0967	.1823	.0161	-.0114	6.396	.0230	5.149	1.121	-.0126
#3	.0982	.1842	.0088	-.0064	6.482	.0261	5.150	1.108	-.0072

Elem	V_2924	Zn2062
IS Ref	(Y_3600)	(Y_2243)
Units	ppm	ppm
Avg	**.5138**	**.2461**
Stddev	.0026	.0008
%RSD	.5116	.3311
#1	.5155	.2453
#2	.5108	.2460
#3	.5151	.2469

Zoom In Zoom Out

Sample Name: FC12205-10 Acquired: 12/30/2023 17:45:53 Type: Unk
Method: 60102007_COMBO_102422(v757) Mode: CONC Corr. Factor: 5.000000
User: admin SSTRACE01: : :
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**2914.0**	**8922.5**	**60138.**	**20097.**
Stddev	6.7	16.4	208.	217.
%RSD	.22893	.18375	.34530	1.0800
#1	2916.2	8926.9	60253.	20153.
#2	2919.4	8936.2	60264.	19857.
#3	2906.5	8904.3	59899.	20280.

Zoom In Zoom Out

Sample Name: CCV Acquired: 12/30/2023 17:51:03 Type: QC
Method: 60102007_COMBO_102422(v757) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	B_2497	Ba4554	Be3130	Ca3179	Cd2265	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2462**	**40.44**	**2.009**	**1.980**	**1.976**	**2.011**	**40.56**	**1.994**	**2.006**
Stddev	.0004	.05	.002	.013	.017	.006	.13	.002	.002
%RSD	.1790	.1174	.0821	.6462	.8461	.3057	.3171	.1103	.1004
#1	.2460	40.48	2.011	1.966	1.965	2.017	40.68	1.992	2.005
#2	.2467	40.46	2.009	1.992	1.995	2.005	40.42	1.994	2.005
#3	.2458	40.39	2.008	1.982	1.967	2.010	40.59	1.997	2.009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Cr2677	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.994**	**1.968**	**40.75**	**39.95**	**1.972**	**40.07**	**2.001**	**2.007**	**40.08**
Stddev	.003	.005	.09	.07	.006	.23	.007	.003	.05
%RSD	.1559	.2651	.2242	.1820	.2843	.5678	.3759	.1687	.1303
#1	1.997	1.962	40.85	40.03	1.978	40.30	2.008	2.005	40.13
#2	1.993	1.971	40.72	39.95	1.971	39.85	2.001	2.004	40.07
#3	1.990	1.971	40.67	39.88	1.967	40.06	1.993	2.011	40.03
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Ni2316	Pb2203	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**2.019**	**2.002**	**2.031**	**1.993**	**1.885**	**2.018**	**1.998**	**2.005**	**2.018**
Stddev	.001	.004	.005	.007	.004	.001	.014	.004	.007
%RSD	.0459	.1952	.2706	.3619	.2022	.0432	.6821	.2168	.3414
#1	2.019	2.006	2.025	1.988	1.882	2.017	1.982	2.009	2.026
#2	2.018	1.999	2.032	1.991	1.885	2.019	2.007	2.006	2.016
#3	2.020	2.000	2.036	2.001	1.889	2.018	2.004	2.000	2.013
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Zoom In Zoom Out

Sample Name: CCV Acquired: 12/30/2023 17:51:03 Type: QC
Method: 60102007_COMBO_102422(v757) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	V_2924	Zn2062
Units	ppm	ppm
Avg	**1.976**	**1.998**
Stddev	.004	.001
%RSD	.2282	.0356
#1	1.981	1.998
#2	1.976	1.999
#3	1.972	1.997
Check ?	Chk Pass	Chk Pass
Value		
Range		

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**2947.7**	**7746.9**	**52945.**	**17146.**
Stddev	1.8	6.0	91.	102.
%RSD	.06058	.07802	.17175	.59300
#1	2946.1	7753.5	52898.	17041.
#2	2947.4	7741.7	53050.	17244.
#3	2949.6	7745.5	52887.	17152.

Zoom In Zoom Out

Sample Name: CCB Acquired: 12/30/2023 17:56:21 Type: QC
Method: 60102007_COMBO_102422(v757) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	B_2497	Ba4554	Be3130	Ca3179	Cd2265
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0000**	**.0031**	**.0008**	**.0005**	**.0001**	**.0001**	**.0044**	**.0001**
Stddev	.000	.0059	.0007	.0000	.0001	.0000	.0015	.0000
%RSD	855.6	190.1	92.06	6.644	69.50	14.39	34.36	40.28
#1	.0000	.0097	.0003	.0005	.0000	.0001	.0029	.0001
#2	.0001	.0007	.0016	.0006	.0001	.0001	.0059	.0000
#3	-.0002	-.0012	.0004	.0005	.0002	.0001	.0045	.0001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0001**	**.0002**	**-.0002**	**.0022**	**-.0353**	F **-.0011**	**.0067**	**.0001**
Stddev	.0000	.0002	.0002	.0017	.0201	.0006	.0044	.0000
%RSD	38.62	69.24	84.84	75.19	57.01	52.63	65.71	26.58
#1	.0001	.0001	.0000	.0020	-.0420	-.0008	.0090	.0001
#2	.0001	.0003	-.0004	.0040	-.0127	-.0018	.0094	.0001
#3	.0000	.0004	-.0002	.0007	-.0512	-.0008	.0016	.0001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit						.0010		
Low Limit						-.0010		

Elem	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960	Si2124	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0003**	**-.0141**	**.0000**	**-.0004**	**-.0001**	**-.0012**	**.0030**	**.0001**
Stddev	.0001	.0038	.000	.0006	.0009	.0020	.0004	.0000
%RSD	40.08	26.84	121.3	132.4	917.1	174.2	12.64	36.78
#1	.0002	-.0184	-.0001	-.0011	.0009	.0009	.0035	.0002
#2	.0003	-.0128	.0000	-.0001	-.0010	-.0032	.0029	.0001
#3	.0004	-.0112	.0000	-.0001	-.0001	-.0012	.0028	.0001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit								
Low Limit								

Zoom In Zoom Out

Sample Name: CCB Acquired: 12/30/2023 17:56:21 Type: QC
Method: 60102007_COMBO_102422(v757) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.0001**	**.0001**	**-.0001**	**.0000**	**.0002**
Stddev	.0000	.0001	.0013	.0001	.0000
%RSD	28.35	77.83	1356.	508.1	20.15
#1	.0001	.0001	.0011	.0001	.0002
#2	.0001	.0000	-.0014	.0000	.0002
#3	.0001	.0001	.0000	-.0001	.0002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**3508.8**	**8136.0**	**56194.**	**17544.**
Stddev	1.9	11.3	45.	199.
%RSD	.05398	.13873	.08054	1.1370
#1	3509.7	8138.6	56198.	17489.
#2	3506.6	8145.7	56147.	17378.
#3	3510.0	8123.6	56237.	17765.

Zoom In Zoom Out

Sample Name: FC12205-11 Acquired: 12/30/2023 18:01:31 Type: Unk
Method: 60102007_COMBO_102422(v757) Mode: CONC Corr. Factor: 5.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	B_2497	Ba4554	Be3130	Ca3179	Cd2265	Co2286
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0006**	**217.5**	**.1643**	**.0814**	**1.017**	**.0116**	**723.0**	**.0017**	**.0304**
Stddev	.0011	.4	.0063	.0023	.004	.0000	1.4	.0002	.0004
%RSD	175.6	.1717	3.864	2.785	.4152	.3136	.1915	13.74	1.253
#1	.0019	217.3	.1639	.0829	1.012	.0116	721.7	.0015	.0303
#2	-.0003	218.0	.1709	.0788	1.020	.0115	723.0	.0017	.0300
#3	.0003	217.4	.1582	.0827	1.017	.0116	724.4	.0020	.0308

Elem	Cr2677	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895
IS Ref	(Y_3600)	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.4383**	**.8568**	**106.1**	**11.16**	**.0747**	**49.71**	**1.382**	**.0398**	**10.37**
Stddev	.0001	.0027	.2	.14	.0049	.12	.007	.0004	.01
%RSD	.0184	.3166	.1473	1.295	6.498	.2409	.5017	1.094	.1055
#1	.4382	.8536	106.0	10.99	.0694	49.60	1.374	.0394	10.36
#2	.4384	.8584	106.3	11.22	.0789	49.84	1.385	.0398	10.38
#3	.4383	.8582	106.0	11.26	.0758	49.69	1.387	.0402	10.36

Elem	Ni2316	Pb2203	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908
IS Ref	(Y_2243)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1378**	**.4264**	**.0094**	**.0063**	**2.412**	**.0243**	**4.305**	**1.034**	**-.0091**
Stddev	.0009	.0055	.0033	.0091	.006	.0002	.025	.003	.0082
%RSD	.6760	1.286	35.15	143.6	.2330	.6527	.5757	.3332	90.36
#1	.1371	.4235	.0062	-.0034	2.408	.0244	4.285	1.030	-.0155
#2	.1374	.4231	.0093	.0146	2.418	.0241	4.333	1.036	-.0120
#3	.1389	.4328	.0128	.0079	2.409	.0244	4.297	1.036	.0002

Elem	V_2924	Zn2062
IS Ref	(Y_3600)	(Y_2243)
Units	ppm	ppm
Avg	**.5304**	**.2748**
Stddev	.0012	.0004
%RSD	.2220	.1534
#1	.5290	.2751
#2	.5309	.2743
#3	.5312	.2750

Zoom In Zoom Out

Sample Name: FC12205-11 Acquired: 12/30/2023 18:01:31 Type: Unk
Method: 60102007_COMBO_102422(v757) Mode: CONC Corr. Factor: 5.000000
User: admin SSTRACE01: : :
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**3031.6**	**9476.0**	**64184.**	**21257.**
Stddev	4.0	12.7	160.	26.
%RSD	.13199	.13443	.24866	.12074
#1	3033.5	9486.3	64358.	21255.
#2	3034.2	9479.9	64045.	21232.
#3	3027.0	9461.7	64149.	21283.

Zoom In Zoom Out

Sample Name: FC12205-12 Acquired: 12/30/2023 18:06:42 Type: Unk
Method: 60102007_COMBO_102422(v757) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	B_2497	Ba4554	Be3130	Ca3179	Cd2265	Co2286
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0002**	**122.2**	**.1666**	**.1079**	**.7424**	**.0059**	F **584.1**	**.0029**	**.0140**
Stddev	.0002	1.2	.0006	.0014	.0026	.0000	1.8	.0000	.0000
%RSD	111.0	.9575	.3448	1.277	.3455	.5437	.3075	1.248	.2183
#1	-.0001	123.4	.1666	.1067	.7427	.0059	584.2	.0029	.0140
#2	.0004	122.1	.1672	.1075	.7397	.0059	585.8	.0030	.0141
#3	.0003	121.0	.1661	.1094	.7448	.0058	582.2	.0029	.0140

Elem	Cr2677	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895
IS Ref	(Y_3600)	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2790**	**.5564**	**80.13**	**9.602**	**.0565**	**50.11**	**1.267**	**.0213**	**8.755**
Stddev	.0006	.0031	.61	.050	.0009	.39	.003	.0002	.021
%RSD	.2270	.5630	.7617	.5177	1.611	.7797	.2321	.7405	.2367
#1	.2797	.5580	80.82	9.651	.0575	50.52	1.269	.0212	8.757
#2	.2785	.5528	79.65	9.552	.0559	50.05	1.268	.0215	8.733
#3	.2789	.5585	79.93	9.605	.0560	49.74	1.264	.0213	8.775

Elem	Ni2316	Pb2203	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908
IS Ref	(Y_2243)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0639**	**.2919**	**.0065**	**.0016**	**2.809**	**.0207**	F **6.615**	**.6289**	**-.0028**
Stddev	.0001	.0004	.0017	.0001	.003	.0001	.023	.0010	.0008
%RSD	.2081	.1261	26.54	9.119	.1151	.5919	.3544	.1629	29.76
#1	.0638	.2915	.0079	.0014	2.806	.0206	6.595	.6299	-.0019
#2	.0639	.2920	.0046	.0017	2.808	.0208	6.641	.6288	-.0035
#3	.0641	.2922	.0069	.0016	2.812	.0207	6.608	.6279	-.0031

Elem	V_2924	Zn2062
IS Ref	(Y_3600)	(Y_2243)
Units	ppm	ppm
Avg	**.3178**	**.4387**
Stddev	.0006	.0005
%RSD	.1816	.1178
#1	.3182	.4393
#2	.3172	.4383
#3	.3181	.4386

Zoom In Zoom Out

Sample Name: FC12205-12 Acquired: 12/30/2023 18:06:42 Type: Unk
Method: 60102007_COMBO_102422(v757) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**2507.4**	**10916.**	**73401.**	**25351.**
Stddev	4.9	7.	24.	166.
%RSD	.19502	.06266	.03264	.65518
#1	2502.9	10909.	73395.	25195.
#2	2512.6	10918.	73381.	25332.
#3	2506.6	10922.	73427.	25525.

Zoom In Zoom Out

Sample Name: FC12205-13 Acquired: 12/30/2023 18:12:16 Type: Unk
Method: 60102007_COMBO_102422(v757) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	B_2497	Ba4554	Be3130	Ca3179	Cd2265	Co2286
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0000**	**197.2**	**.0706**	**.0782**	**.7749**	**.0083**	**434.3**	**.0022**	**.0194**
Stddev	.0000	1.6	.0006	.0012	.0024	.0000	3.6	.0000	.0000
%RSD	770.7	.8170	.8797	1.475	.3052	.2818	.8281	1.857	.0524
#1	.0000	198.6	.0702	.0771	.7733	.0083	438.3	.0021	.0194
#2	.0000	195.4	.0702	.0781	.7776	.0083	431.4	.0022	.0194
#3	.0000	197.4	.0713	.0794	.7739	.0083	433.1	.0022	.0194

Elem	Cr2677	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895
IS Ref	(Y_3600)	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.3425**	**.1740**	**94.96**	**11.55**	**.0697**	**42.31**	**.9428**	**.0222**	**7.878**
Stddev	.0003	.0010	.04	.03	.0004	.19	.0016	.0001	.012
%RSD	.0961	.5823	.0371	.2178	.5819	.4477	.1689	.5122	.1536
#1	.3426	.1737	94.98	11.52	.0694	42.46	.9440	.0222	7.868
#2	.3422	.1732	94.92	11.56	.0696	42.37	.9435	.0221	7.892
#3	.3428	.1751	94.97	11.57	.0702	42.09	.9410	.0223	7.876

Elem	Ni2316	Pb2203	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908
IS Ref	(Y_2243)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0718**	**.2704**	**.0075**	**-.0002**	**5.053**	**.0157**	F **4.193**	**.8073**	**-.0084**
Stddev	.0002	.0019	.0001	.0019	.003	.0006	.043	.0018	.0021
%RSD	.2687	.7020	1.963	948.3	.0569	3.649	1.020	.2176	24.91
#1	.0715	.2686	.0075	.0020	5.056	.0156	4.189	.8070	-.0098
#2	.0718	.2724	.0076	-.0016	5.050	.0152	4.238	.8091	-.0060
#3	.0719	.2703	.0073	-.0009	5.052	.0163	4.153	.8057	-.0095

Elem	V_2924	Zn2062
IS Ref	(Y_3600)	(Y_2243)
Units	ppm	ppm
Avg	**.3957**	**.2543**
Stddev	.0009	.0004
%RSD	.2149	.1533
#1	.3961	.2548
#2	.3963	.2541
#3	.3947	.2541

Zoom In Zoom Out

Sample Name: FC12205-13 Acquired: 12/30/2023 18:12:16 Type: Unk
Method: 60102007_COMBO_102422(v757) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**2492.5**	**13027.**	**87595.**	**30813.**
Stddev	2.3	23.	64.	178.
%RSD	.09407	.18037	.07268	.57655
#1	2493.3	13047.	87541.	30628.
#2	2494.3	13033.	87580.	30830.
#3	2489.8	13001.	87665.	30982.

Zoom In Zoom Out

Sample Name: FC12205-14 Acquired: 12/30/2023 18:17:49 Type: Unk
Method: 60102007_COMBO_102422(v757) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	B_2497	Ba4554	Be3130	Ca3179	Cd2265	Co2286
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.0004**	**118.0**	**.0200**	**.0093**	**.3413**	**.0026**	**162.8**	**.0002**	**.0073**
Stddev	.0004	.0	.0005	.0005	.0007	.0000	1.7	.0000	.0000
%RSD	113.3	.0187	2.343	5.826	.1979	1.055	1.015	18.67	.3936
#1	-.0002	118.0	.0205	.0088	.3411	.0026	161.0	.0002	.0074
#2	-.0001	118.0	.0196	.0092	.3407	.0026	164.2	.0003	.0073
#3	-.0009	118.0	.0201	.0099	.3420	.0027	163.1	.0002	.0073

Elem	Cr2677	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895
IS Ref	(Y_3600)	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1381**	**.0468**	**22.80**	**1.943**	**.0564**	**5.498**	**.0926**	**.0051**	**1.538**
Stddev	.0008	.0004	.03	.021	.0002	.008	.0002	.0001	.002
%RSD	.5580	.8875	.1509	1.058	.2846	.1392	.2240	2.499	.1156
#1	.1388	.0463	22.78	1.966	.0562	5.497	.0926	.0051	1.537
#2	.1373	.0468	22.84	1.933	.0564	5.506	.0923	.0053	1.538
#3	.1384	.0471	22.77	1.929	.0565	5.491	.0927	.0051	1.540

Elem	Ni2316	Pb2203	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908
IS Ref	(Y_2243)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0466**	**.0983**	**.0018**	**-.0028**	**5.648**	**.0206**	**1.631**	**.7288**	**-.0024**
Stddev	.0002	.0010	.0012	.0011	.010	.0004	.007	.0021	.0030
%RSD	.3700	.9790	66.03	37.97	.1718	2.186	.4272	.2918	128.7
#1	.0465	.0975	.0026	-.0032	5.637	.0201	1.632	.7280	-.0031
#2	.0465	.0993	.0025	-.0016	5.649	.0208	1.638	.7272	-.0050
#3	.0468	.0979	.0004	-.0035	5.657	.0209	1.624	.7312	.0010

Elem	V_2924	Zn2062
IS Ref	(Y_3600)	(Y_2243)
Units	ppm	ppm
Avg	**.1012**	**.1203**
Stddev	.0004	.0000
%RSD	.3727	.0187
#1	.1012	.1203
#2	.1008	.1203
#3	.1015	.1202

Zoom In Zoom Out

Sample Name: FC12205-14 Acquired: 12/30/2023 18:17:49 Type: Unk
Method: 60102007_COMBO_102422(v757) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**2980.1**	**9008.5**	**60389.**	**19909.**
Stddev	.5	3.4	176.	122.
%RSD	.01755	.03782	.29124	.61391
#1	2980.2	9009.7	60371.	20016.
#2	2980.5	9004.7	60573.	19776.
#3	2979.5	9011.2	60222.	19936.

Zoom In Zoom Out

Sample Name: FC12205-15 Acquired: 12/30/2023 18:23:08 Type: Unk
Method: 60102007_COMBO_102422(v757) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	B_2497	Ba4554	Be3130	Ca3179	Cd2265	Co2286
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0001**	**85.16**	**.0467**	**.0072**	**.3680**	**.0027**	**87.77**	**.0007**	**.0082**
Stddev	.0002	.10	.0008	.0009	.0001	.0000	.38	.0000	.0000
%RSD	286.0	.1203	1.709	11.97	.0347	.4827	.4381	5.621	.3715
#1	-.0001	85.15	.0473	.0080	.3679	.0027	87.83	.0007	.0082
#2	.0001	85.27	.0470	.0063	.3679	.0027	88.12	.0007	.0082
#3	.0002	85.06	.0458	.0072	.3681	.0027	87.36	.0006	.0082

Elem	Cr2677	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895
IS Ref	(Y_3600)	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1269**	**.1904**	**48.83**	**1.596**	**.0419**	**12.08**	**.3006**	**.0022**	**.3909**
Stddev	.0005	.0006	.06	.003	.0005	.02	.0010	.0001	.0020
%RSD	.4198	.2911	.1157	.1764	1.112	.1683	.3201	4.627	.5150
#1	.1267	.1908	48.81	1.597	.0421	12.07	.3007	.0023	.3916
#2	.1274	.1897	48.89	1.598	.0414	12.06	.3016	.0022	.3887
#3	.1264	.1907	48.78	1.593	.0423	12.10	.2996	.0021	.3925

Elem	Ni2316	Pb2203	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908
IS Ref	(Y_2243)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0369**	**.1712**	**.0018**	**-.0011**	**6.349**	**.0280**	**1.862**	**.3862**	**-.0027**
Stddev	.0002	.0016	.0009	.0033	.018	.0004	.013	.0007	.0010
%RSD	.4909	.9262	49.66	297.9	.2804	1.351	.7091	.1756	38.99
#1	.0369	.1708	.0008	-.0049	6.367	.0277	1.859	.3862	-.0030
#2	.0368	.1698	.0023	.0009	6.331	.0279	1.851	.3869	-.0015
#3	.0371	.1729	.0022	.0007	6.350	.0284	1.877	.3855	-.0035

Elem	V_2924	Zn2062
IS Ref	(Y_3600)	(Y_2243)
Units	ppm	ppm
Avg	**.0921**	**.9154**
Stddev	.0005	.0014
%RSD	.5367	.1486
#1	.0916	.9154
#2	.0926	.9140
#3	.0920	.9167

Zoom In Zoom Out

Sample Name: FC12205-15 Acquired: 12/30/2023 18:23:08 Type: Unk
Method: 60102007_COMBO_102422(v757) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**3056.2**	**9014.9**	**60872.**	**19954.**
Stddev	4.9	11.1	200.	48.
%RSD	.15949	.12341	.32778	.23832
#1	3054.7	9024.0	60843.	20008.
#2	3061.7	9018.2	60689.	19934.
#3	3052.3	9002.5	61085.	19920.

Zoom In Zoom Out

Sample Name: FC12205-16 Acquired: 12/30/2023 18:28:27 Type: Unk
Method: 60102007_COMBO_102422(v757) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	B_2497	Ba4554	Be3130	Ca3179	Cd2265	Co2286
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0003**	**105.0**	**.0450**	**.0088**	**.4045**	**.0028**	**141.6**	**.0009**	**.0108**
Stddev	.0002	.2	.0012	.0008	.0013	.0000	1.6	.0000	.0001
%RSD	48.96	.1729	2.615	8.895	.3288	.5973	1.156	4.705	.7224
#1	.0005	105.0	.0448	.0080	.4030	.0029	143.3	.0009	.0107
#2	.0002	104.8	.0439	.0088	.4055	.0028	141.5	.0008	.0107
#3	.0003	105.1	.0463	.0096	.4049	.0029	140.0	.0009	.0109

Elem	Cr2677	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895
IS Ref	(Y_3600)	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1399**	**.1070**	**52.98**	**1.576**	**.0575**	**12.58**	**.3214**	**.0026**	**.6839**
Stddev	.0006	.0007	.08	.009	.0005	.01	.0016	.0001	.0029
%RSD	.4316	.6430	.1425	.5507	.8322	.0448	.5077	4.814	.4192
#1	.1393	.1076	53.02	1.567	.0574	12.59	.3196	.0026	.6827
#2	.1405	.1070	52.89	1.577	.0571	12.59	.3220	.0026	.6872
#3	.1397	.1063	53.03	1.585	.0580	12.58	.3227	.0028	.6818

Elem	Ni2316	Pb2203	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908
IS Ref	(Y_2243)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0445**	**.0899**	**.0036**	**-.0004**	**3.725**	**.0228**	**3.148**	**.4525**	**.0003**
Stddev	.0002	.0009	.0006	.0011	.009	.0005	.018	.0036	.0004
%RSD	.3888	1.005	17.32	248.0	.2542	2.141	.5860	.7923	167.0
#1	.0445	.0898	.0029	-.0016	3.731	.0223	3.140	.4564	-.0002
#2	.0443	.0909	.0039	-.0001	3.714	.0228	3.168	.4493	.0004
#3	.0446	.0891	.0041	.0004	3.729	.0233	3.134	.4518	.0006

Elem	V_2924	Zn2062
IS Ref	(Y_3600)	(Y_2243)
Units	ppm	ppm
Avg	**.1226**	**1.659**
Stddev	.0007	.000
%RSD	.5736	.0176
#1	.1218	1.659
#2	.1232	1.658
#3	.1228	1.659

Zoom In Zoom Out

Sample Name: FC12205-16 Acquired: 12/30/2023 18:28:27 Type: Unk
Method: 60102007_COMBO_102422(v757) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**2986.4**	**8903.3**	**60149.**	**19978.**
Stddev	3.2	20.8	302.	49.
%RSD	.10829	.23374	.50196	.24559
#1	2990.1	8923.5	60491.	19939.
#2	2984.8	8904.4	59921.	19961.
#3	2984.3	8882.0	60035.	20033.

Zoom In Zoom Out

Sample Name: FC12205-17 Acquired: 12/30/2023 18:33:47 Type: Unk
Method: 60102007_COMBO_102422(v757) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	B_2497	Ba4554	Be3130	Ca3179	Cd2265	Co2286
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0004**	**80.62**	**.0713**	**-.0008**	**.3679**	**.0027**	**26.70**	**.0005**	**.0072**
Stddev	.0001	.13	.0002	.0012	.0012	.0001	.10	.0000	.0001
%RSD	19.28	.1654	.2229	152.3	.3220	2.084	.3605	9.472	.8103
#1	.0005	80.52	.0712	-.0021	.3673	.0026	26.64	.0006	.0072
#2	.0004	80.77	.0715	.0001	.3693	.0027	26.81	.0005	.0072
#3	.0003	80.56	.0714	-.0004	.3673	.0027	26.65	.0005	.0071

Elem	Cr2677	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895
IS Ref	(Y_3600)	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1169**	**.2829**	**48.63**	**1.917**	**.0382**	**8.116**	**.1698**	**.0005**	**.1665**
Stddev	.0001	.0007	.14	.017	.0013	.064	.0005	.0001	.0041
%RSD	.0526	.2530	.2819	.8829	3.275	.7820	.3084	21.08	2.445
#1	.1169	.2821	48.51	1.900	.0370	8.092	.1695	.0005	.1659
#2	.1169	.2835	48.78	1.918	.0395	8.187	.1704	.0004	.1627
#3	.1170	.2831	48.61	1.934	.0381	8.067	.1695	.0006	.1708

Elem	Ni2316	Pb2203	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908
IS Ref	(Y_2243)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0212**	**.2788**	**.0021**	**-.0009**	**4.881**	**.0312**	**1.196**	**.2839**	**-.0005**
Stddev	.0003	.0010	.0007	.0011	.014	.0002	.004	.0057	.0004
%RSD	1.358	.3511	35.04	120.6	.2956	.6751	.3532	2.020	85.15
#1	.0209	.2785	.0027	-.0011	4.892	.0311	1.193	.2786	-.0006
#2	.0212	.2799	.0013	-.0019	4.865	.0314	1.201	.2831	-.0010
#3	.0215	.2781	.0022	.0003	4.886	.0310	1.195	.2900	-.0001

Elem	V_2924	Zn2062
IS Ref	(Y_3600)	(Y_2243)
Units	ppm	ppm
Avg	**.0616**	**.9642**
Stddev	.0003	.0022
%RSD	.4514	.2328
#1	.0614	.9620
#2	.0619	.9640
#3	.0614	.9665

Zoom In Zoom Out

Sample Name: FC12205-17 Acquired: 12/30/2023 18:33:47 Type: Unk
Method: 60102007_COMBO_102422(v757) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**3172.9**	**9054.0**	**60974.**	**19842.**
Stddev	5.1	15.2	266.	135.
%RSD	.15960	.16819	.43578	.67788
#1	3178.7	9067.7	61278.	19947.
#2	3169.9	9056.7	60853.	19691.
#3	3170.1	9037.6	60790.	19889.

Zoom In Zoom Out

Sample Name: FC12205-18 Acquired: 12/30/2023 18:38:48 Type: Unk
Method: 60102007_COMBO_102422(v757) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	B_2497	Ba4554	Be3130	Ca3179	Cd2265	Co2286
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0000**	**56.41**	**.0327**	**.0024**	**.2092**	**.0017**	**17.56**	**.0010**	**.0059**
Stddev	.000	.11	.0012	.0013	.0005	.0000	.02	.0000	.0001
%RSD	159.6	.1875	3.577	53.46	.2573	1.613	.1086	3.127	1.049
#1	-.0001	56.30	.0336	.0014	.2093	.0017	17.56	.0010	.0060
#2	.0000	56.52	.0332	.0039	.2086	.0017	17.54	.0010	.0060
#3	.0000	56.41	.0314	.0020	.2097	.0017	17.57	.0010	.0059

Elem	Cr2677	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895
IS Ref	(Y_3600)	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0825**	**.0707**	**35.80**	**2.486**	**.0297**	**5.217**	**.3804**	**.0006**	**.2193**
Stddev	.0003	.0003	.07	.005	.0001	.028	.0006	.0001	.0037
%RSD	.4024	.4519	.2041	.2088	.3722	.5343	.1553	19.41	1.665
#1	.0824	.0710	35.84	2.491	.0297	5.246	.3810	.0004	.2216
#2	.0829	.0704	35.84	2.480	.0295	5.213	.3799	.0006	.2151
#3	.0823	.0709	35.71	2.486	.0297	5.191	.3802	.0006	.2211

Elem	Ni2316	Pb2203	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908
IS Ref	(Y_2243)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0180**	**.0748**	**.0011**	**-.0010**	**5.433**	**.0247**	**.8089**	**.3806**	**-.0005**
Stddev	.0001	.0001	.0006	.0033	.005	.0001	.0011	.0072	.0008
%RSD	.5869	.0836	54.06	318.1	.0871	.3887	.1364	1.892	149.6
#1	.0179	.0748	.0016	-.0020	5.438	.0247	.8097	.3885	-.0011
#2	.0181	.0748	.0004	-.0038	5.430	.0248	.8094	.3791	-.0008
#3	.0179	.0747	.0013	.0027	5.430	.0246	.8077	.3743	.0004

Elem	V_2924	Zn2062
IS Ref	(Y_3600)	(Y_2243)
Units	ppm	ppm
Avg	**.0567**	**.9711**
Stddev	.0002	.0014
%RSD	.2688	.1424
#1	.0567	.9721
#2	.0568	.9716
#3	.0565	.9695

Zoom In Zoom Out

Sample Name: FC12205-18 Acquired: 12/30/2023 18:38:48 Type: Unk
Method: 60102007_COMBO_102422(v757) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**3250.3**	**8883.7**	**59779.**	**19434.**
Stddev	2.3	15.4	58.	42.
%RSD	.06987	.17300	.09657	.21577
#1	3252.6	8901.2	59741.	19424.
#2	3250.3	8877.7	59846.	19397.
#3	3248.0	8872.3	59752.	19479.

Zoom In Zoom Out

Sample Name: FC12205-19 Acquired: 12/30/2023 18:43:50 Type: Unk
Method: 60102007_COMBO_102422(v757) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	B_2497	Ba4554	Be3130	Ca3179	Cd2265	Co2286
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.0019**	**101.0**	**.0574**	**.0690**	**.2855**	**.0047**	*****	**.0031**	**.0136**
Stddev	.0001	.7	.0004	.0011	.0003	.0000	-----	.0000	.0000
%RSD	3.690	.7007	.6695	1.602	.1214	.5452	-----	.3553	.1975
#1	-.0018	100.2	.0572	.0689	.2859	.0047	-----	.0031	.0136
#2	-.0020	101.6	.0579	.0680	.2852	.0048	-----	.0031	.0136
#3	-.0020	101.1	.0572	.0702	.2856	.0047	-----	.0031	.0136

Elem	Cr2677	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895
IS Ref	(Y_3600)	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2607**	**.0932**	**45.74**	**8.175**	**.0820**	**95.33**	**.3246**	**.0162**	**8.682**
Stddev	.0008	.0002	.14	.005	.0007	.04	.0004	.0001	.008
%RSD	.3072	.1703	.3096	.0602	.8482	.0410	.1146	.3423	.0916
#1	.2602	.0933	45.74	8.181	.0815	95.37	.3250	.0162	8.679
#2	.2603	.0930	45.87	8.173	.0828	95.33	.3246	.0161	8.692
#3	.2616	.0932	45.59	8.172	.0818	95.29	.3243	.0162	8.677

Elem	Ni2316	Pb2203	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908
IS Ref	(Y_2243)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0459**	**.1412**	**.0089**	**.0001**	**3.975**	**.0134**	**3.395**	**.6121**	**-.0047**
Stddev	.0001	.0012	.0012	.0021	.028	.0003	.047	.0004	.0031
%RSD	.2374	.8163	13.09	4067.	.6938	2.255	1.388	.0641	65.40
#1	.0459	.1416	.0095	-.0010	4.007	.0138	3.430	.6116	-.0060
#2	.0458	.1399	.0076	.0024	3.963	.0132	3.342	.6124	-.0012
#3	.0460	.1421	.0096	-.0012	3.956	.0133	3.413	.6121	-.0069

Elem	V_2924	Zn2062
IS Ref	(Y_3600)	(Y_2243)
Units	ppm	ppm
Avg	**.3264**	**.2386**
Stddev	.0010	.0002
%RSD	.3127	.0968
#1	.3276	.2386
#2	.3257	.2388
#3	.3259	.2384

Zoom In Zoom Out

Sample Name: FC12205-19 Acquired: 12/30/2023 18:43:50 Type: Unk
Method: 60102007_COMBO_102422(v757) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**2351.2**	**12750.**	**84661.**	**30828.**
Stddev	5.6	9.	195.	105.
%RSD	.23876	.07170	.23086	.34056
#1	2352.5	12747.	84683.	30944.
#2	2356.0	12760.	84845.	30801.
#3	2345.0	12742.	84456.	30739.

Zoom In Zoom Out

Sample Name: FC12205-20 Acquired: 12/30/2023 18:49:10 Type: Unk
Method: 60102007_COMBO_102422(v757) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	B_2497	Ba4554	Be3130	Ca3179	Cd2265	Co2286
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.0001**	**81.84**	**.0261**	**.0033**	**.2993**	**.0027**	**18.53**	**.0000**	**.0070**
Stddev	.0001	.21	.0008	.0004	.0006	.0000	.06	.0000	.0001
%RSD	87.64	.2508	3.083	12.76	.2106	.7707	.3339	87.19	1.692
#1	.0000	81.62	.0259	.0029	.2990	.0027	18.50	.0000	.0071
#2	-.0001	82.03	.0270	.0033	.2989	.0028	18.60	.0000	.0071
#3	-.0001	81.85	.0255	.0037	.3001	.0027	18.49	.0000	.0069

Elem	Cr2677	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895
IS Ref	(Y_3600)	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1085**	**.0256**	**42.37**	**2.237**	**.0387**	**8.078**	**.1760**	**.0005**	**.2933**
Stddev	.0005	.0003	.15	.034	.0011	.047	.0006	.0001	.0004
%RSD	.4780	1.276	.3529	1.498	2.913	.5762	.3608	11.04	.1311
#1	.1089	.0259	42.23	2.211	.0389	8.034	.1767	.0004	.2936
#2	.1086	.0256	42.52	2.225	.0375	8.127	.1754	.0005	.2932
#3	.1079	.0253	42.37	2.275	.0398	8.075	.1760	.0005	.2929

Elem	Ni2316	Pb2203	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908
IS Ref	(Y_2243)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0204**	**.0518**	**.0008**	**-.0008**	**4.677**	**.0211**	**1.353**	**.3493**	**-.0013**
Stddev	.0001	.0003	.0003	.0012	.006	.0003	.005	.0030	.0008
%RSD	.4419	.6384	42.11	165.0	.1259	1.560	.3844	.8461	59.01
#1	.0203	.0517	.0006	-.0017	4.671	.0209	1.350	.3480	-.0016
#2	.0203	.0515	.0012	-.0012	4.679	.0215	1.350	.3471	-.0004
#3	.0205	.0521	.0006	.0007	4.682	.0210	1.359	.3526	-.0019

Elem	V_2924	Zn2062
IS Ref	(Y_3600)	(Y_2243)
Units	ppm	ppm
Avg	**.0638**	**.6688**
Stddev	.0003	.0016
%RSD	.5062	.2415
#1	.0640	.6692
#2	.0634	.6670
#3	.0638	.6701

Zoom In Zoom Out

Sample Name: FC12205-20 Acquired: 12/30/2023 18:49:10 Type: Unk
Method: 60102007_COMBO_102422(v757) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**3207.2**	**9236.9**	**61700.**	**20066.**
Stddev	4.1	10.8	215.	135.
%RSD	.12827	.11729	.34878	.67042
#1	3207.5	9240.7	61533.	20100.
#2	3211.2	9245.3	61624.	19918.
#3	3203.0	9224.7	61943.	20181.

Zoom In Zoom Out

Sample Name: CCV Acquired: 12/30/2023 18:54:20 Type: QC
Method: 60102007_COMBO_102422(v757) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	B_2497	Ba4554	Be3130	Ca3179	Cd2265	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2493**	**40.34**	**2.015**	**2.002**	**2.016**	**2.024**	**40.57**	**2.008**	**2.011**
Stddev	.0010	.05	.003	.012	.024	.010	.12	.002	.002
%RSD	.4124	.1203	.1495	.6101	1.200	.5034	.3025	.1020	.1095
#1	.2499	40.32	2.014	2.000	2.018	2.033	40.69	2.006	2.009
#2	.2481	40.39	2.012	1.990	2.038	2.026	40.56	2.009	2.011
#3	.2499	40.30	2.018	2.015	1.990	2.013	40.45	2.010	2.013
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Cr2677	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**2.008**	**2.016**	**40.81**	**40.04**	**1.982**	**40.23**	**2.005**	**2.005**	**40.02**
Stddev	.002	.002	.10	.05	.005	.11	.005	.003	.08
%RSD	.1196	.0956	.2338	.1159	.2533	.2703	.2673	.1511	.2071
#1	2.011	2.017	40.83	39.99	1.977	40.22	2.007	2.002	40.06
#2	2.007	2.016	40.89	40.05	1.980	40.35	1.999	2.008	39.93
#3	2.007	2.013	40.70	40.08	1.987	40.13	2.009	2.005	40.08
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Ni2316	Pb2203	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**2.013**	**1.996**	**2.025**	**2.015**	**1.910**	**2.019**	**2.014**	**2.009**	**2.011**
Stddev	.003	.003	.003	.009	.003	.003	.010	.005	.005
%RSD	.1625	.1688	.1440	.4207	.1800	.1314	.5032	.2319	.2307
#1	2.010	1.995	2.022	2.007	1.907	2.019	2.011	2.009	2.013
#2	2.016	1.993	2.028	2.014	1.914	2.016	2.025	2.004	2.006
#3	2.015	1.999	2.026	2.023	1.908	2.021	2.005	2.013	2.015
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Zoom In Zoom Out

Sample Name: CCV Acquired: 12/30/2023 18:54:20 Type: QC
Method: 60102007_COMBO_102422(v757) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	V_2924	Zn2062
Units	ppm	ppm
Avg	**1.990**	**2.001**
Stddev	.006	.002
%RSD	.2886	.1021
#1	1.992	1.999
#2	1.983	2.001
#3	1.994	2.004
Check ?	Chk Pass	Chk Pass
Value		
Range		

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**2954.3**	**7762.4**	**53070.**	**17391.**
Stddev	5.5	8.6	116.	61.
%RSD	.18772	.11090	.21918	.34928
#1	2952.6	7767.8	53004.	17356.
#2	2960.5	7767.0	53205.	17357.
#3	2949.8	7752.5	53003.	17462.

Zoom In Zoom Out

Sample Name: CCB Acquired: 12/30/2023 18:59:38 Type: QC
Method: 60102007_COMBO_102422(v757) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	B_2497	Ba4554	Be3130	Ca3179	Cd2265	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.0001**	**.0064**	**.0009**	**.0002**	**.0000**	**.0001**	**.0063**	**.0001**	**.0000**
Stddev	.0002	.0058	.0004	.0008	.0001	.0000	.0010	.0000	.0001
%RSD	206.7	91.08	45.68	331.2	200.0	9.632	16.13	33.45	146.2
#1	-.0004	.0094	.0007	.0005	.0000	.0001	.0068	.0000	.0000
#2	.0000	.0101	.0006	-.0007	.0001	.0001	.0070	.0001	.0000
#3	.0000	-.0003	.0014	.0008	.0000	.0001	.0051	.0001	.0001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Cr2677	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0001**	**-.0002**	**.0017**	**-.0391**	**-.0004**	**.0065**	**.0001**	**.0004**	**-.0221**
Stddev	.0002	.0000	.0007	.0299	.0002	.0054	.0000	.0001	.0078
%RSD	375.3	20.98	41.14	76.60	47.34	83.98	4.747	19.81	35.25
#1	-.0002	-.0002	.0025	-.0140	-.0003	.0033	.0001	.0005	-.0213
#2	.0001	-.0002	.0011	-.0311	-.0003	.0127	.0001	.0003	-.0302
#3	.0003	-.0002	.0016	-.0722	-.0007	.0033	.0001	.0004	-.0147
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Ni2316	Pb2203	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.0001**	**-.0004**	**-.0001**	**-.0013**	**.0065**	**.0002**	**.0001**	**.0001**	**.0008**
Stddev	.0001	.0007	.0009	.0019	.0005	.0003	.0000	.0001	.0002
%RSD	120.5	161.2	1175.	141.1	8.368	124.1	40.41	78.45	30.48
#1	.0000	.0004	.0010	-.0033	.0070	.0001	.0001	.0001	.0006
#2	-.0003	-.0007	-.0004	-.0012	.0064	.0006	.0000	.0002	.0007
#3	-.0001	-.0010	-.0008	.0005	.0059	.0000	.0001	.0000	.0011
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Zoom In Zoom Out

Sample Name: CCB Acquired: 12/30/2023 18:59:38 Type: QC
Method: 60102007_COMBO_102422(v757) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	V_2924	Zn2062
Units	ppm	ppm
Avg	**.0000**	**.0002**
Stddev	.000	.0000
%RSD	262.6	14.61
#1	.0000	.0002
#2	-.0001	.0002
#3	.0000	.0002
Check ?	Chk Pass	Chk Pass
High Limit		
Low Limit		

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**3521.2**	**8161.9**	**56237.**	**17651.**
Stddev	6.3	9.6	201.	8.
%RSD	.17751	.11719	.35791	.04760
#1	3528.4	8166.0	56469.	17654.
#2	3517.2	8168.7	56112.	17642.
#3	3518.1	8150.9	56130.	17657.

Zoom In Zoom Out

Sample Name: FC12205-21 Acquired: 12/30/2023 19:04:49 Type: Unk
Method: 60102007_COMBO_102422(v757) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	B_2497	Ba4554	Be3130	Ca3179	Cd2265	Co2286
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0000**	**83.04**	**.1020**	**.0094**	**.5905**	**.0036**	**217.4**	**.0011**	**.0107**
Stddev	.0003	.08	.0009	.0015	.0016	.0000	1.1	.0000	.0001
%RSD	558.5	.0985	.8830	16.20	.2791	.8663	.5231	3.317	1.024
#1	.0004	83.11	.1025	.0076	.5888	.0036	218.7	.0011	.0108
#2	-.0001	82.95	.1025	.0102	.5921	.0035	217.1	.0011	.0107
#3	-.0001	83.05	.1009	.0103	.5907	.0036	216.5	.0011	.0106

Elem	Cr2677	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895
IS Ref	(Y_3600)	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1393**	**.2770**	**53.88**	**2.961**	**.0481**	**10.08**	**.6488**	**.0028**	**.4283**
Stddev	.0006	.0018	.11	.004	.0004	.03	.0006	.0001	.0079
%RSD	.4052	.6388	.2031	.1203	.8864	.2507	.0901	4.350	1.853
#1	.1390	.2759	53.99	2.957	.0483	10.11	.6490	.0027	.4233
#2	.1389	.2760	53.77	2.964	.0483	10.07	.6492	.0029	.4374
#3	.1399	.2790	53.88	2.961	.0476	10.07	.6481	.0029	.4241

Elem	Ni2316	Pb2203	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908
IS Ref	(Y_2243)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0349**	**.4899**	**.0032**	**.0000**	**5.900**	**.0496**	**1.822**	**.3037**	**-.0016**
Stddev	.0000	.0009	.0003	.0009	.025	.0001	.041	.0012	.0013
%RSD	.0957	.1853	8.562	8229.	.4173	.2757	2.256	.4011	82.97
#1	.0348	.4906	.0031	.0003	5.871	.0498	1.866	.3051	-.0026
#2	.0348	.4889	.0029	-.0010	5.915	.0495	1.814	.3031	-.0001
#3	.0349	.4902	.0034	.0007	5.912	.0496	1.785	.3029	-.0020

Elem	V_2924	Zn2062
IS Ref	(Y_3600)	(Y_2243)
Units	ppm	ppm
Avg	**.1053**	**.3368**
Stddev	.0004	.0002
%RSD	.3838	.0737
#1	.1052	.3370
#2	.1057	.3365
#3	.1050	.3369

Zoom In Zoom Out

Sample Name: FC12205-21 Acquired: 12/30/2023 19:04:49 Type: Unk
Method: 60102007_COMBO_102422(v757) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**2913.7**	**9080.4**	**61174.**	**20543.**
Stddev	6.3	14.1	44.	93.
%RSD	.21620	.15565	.07159	.45051
#1	2918.9	9094.9	61212.	20463.
#2	2915.5	9079.6	61185.	20521.
#3	2906.7	9066.7	61126.	20645.

Zoom In Zoom Out

Sample Name: FC12205-22 Acquired: 12/30/2023 19:10:09 Type: Unk
Method: 60102007_COMBO_102422(v757) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	B_2497	Ba4554	Be3130	Ca3179	Cd2265	Co2286
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0001**	**39.30**	**.0963**	**-.0083**	**.2972**	**.0015**	**147.2**	**.0003**	**.0140**
Stddev	.0002	.09	.0009	.0005	.0005	.0000	.1	.0001	.0001
%RSD	353.1	.2251	.9037	6.280	.1752	1.064	.0924	55.10	.9238
#1	.0003	39.40	.0958	-.0077	.2977	.0015	147.4	.0001	.0139
#2	-.0002	39.25	.0973	-.0086	.2968	.0015	147.3	.0003	.0141
#3	.0001	39.24	.0957	-.0086	.2970	.0015	147.1	.0004	.0140

Elem	Cr2677	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895
IS Ref	(Y_3600)	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0943**	**.2683**	**112.8**	**1.891**	**.0187**	**4.351**	**.6631**	**.0026**	**.2003**
Stddev	.0002	.0008	.6	.005	.0005	.008	.0009	.0002	.0010
%RSD	.2295	.2800	.5318	.2816	2.763	.1780	.1345	5.988	.5094
#1	.0944	.2692	113.5	1.885	.0182	4.352	.6630	.0027	.2001
#2	.0944	.2677	112.5	1.896	.0186	4.343	.6623	.0028	.2014
#3	.0940	.2682	112.4	1.892	.0193	4.358	.6641	.0025	.1994

Elem	Ni2316	Pb2203	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908
IS Ref	(Y_2243)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0333**	**.1849**	**.0000**	**.0003**	**6.224**	**.9251**	**.7633**	**.2798**	**.0004**
Stddev	.0001	.0007	.001	.0026	.005	.0013	.0013	.0067	.0009
%RSD	.1930	.3947	4933.	790.1	.0777	.1357	.1741	2.377	191.0
#1	.0333	.1848	.0010	.0009	6.230	.9243	.7641	.2875	.0005
#2	.0332	.1856	-.0003	-.0025	6.221	.9244	.7618	.2759	.0013
#3	.0333	.1842	-.0008	.0026	6.222	.9265	.7640	.2760	-.0004

Elem	V_2924	Zn2062
IS Ref	(Y_3600)	(Y_2243)
Units	ppm	ppm
Avg	**.0991**	**.4523**
Stddev	.0001	.0005
%RSD	.1045	.1038
#1	.0991	.4520
#2	.0993	.4522
#3	.0991	.4529

Zoom In Zoom Out

Sample Name: FC12205-22 Acquired: 12/30/2023 19:10:09 Type: Unk
Method: 60102007_COMBO_102422(v757) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**3003.3**	**8416.3**	**57224.**	**18885.**
Stddev	2.7	7.7	163.	49.
%RSD	.08925	.09127	.28521	.25907
#1	3002.7	8410.3	57343.	18854.
#2	3006.3	8425.0	57291.	18859.
#3	3001.1	8413.8	57038.	18941.

Zoom In Zoom Out

Sample Name: MP43346-MB1 Acquired: 12/30/2023 19:15:28 Type: QC
Method: 60102007_COMBO_102422(v757) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	B_2497	Ba4554	Be3130	Ca3179	Cd2265	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0000**	**.0089**	**-.0005**	**-.0008**	**.0001**	**.0000**	**.0194**	**.0000**	**-.0001**
Stddev	.000	.0009	.0005	.0006	.0001	.000	.0018	.000	.0000
%RSD	496.6	10.25	101.4	72.22	235.1	971.4	9.210	135.5	39.94
#1	.0001	.0085	-.0009	-.0010	.0001	.0000	.0212	.0000	.0000
#2	-.0002	.0099	.0000	-.0013	-.0001	.0000	.0195	.0000	-.0001
#3	.0000	.0082	-.0005	-.0002	.0001	.0000	.0176	-.0001	-.0001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Cr2677	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.0002**	**-.0002**	**.0082**	**-.0378**	**-.0013**	**.0056**	**.0001**	**.0000**	**-.0202**
Stddev	.0003	.0001	.0010	.0220	.0012	.0086	.0000	.0000	.0022
%RSD	141.6	63.34	11.71	58.09	95.10	153.9	23.83	60.95	10.67
#1	.0000	-.0001	.0092	-.0632	.0000	.0094	.0001	.0000	-.0177
#2	-.0001	-.0002	.0078	-.0242	-.0024	.0117	.0001	.0000	-.0217
#3	-.0005	-.0004	.0074	-.0261	-.0014	-.0043	.0001	.0001	-.0211
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Ni2316	Pb2203	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.0001**	**-.0001**	**-.0006**	**-.0002**	**.0187**	**.0001**	**.0000**	**.0001**	**-.0022**
Stddev	.0002	.0001	.0004	.0017	.0019	.0003	.0000	.0000	.0008
%RSD	102.5	257.5	62.31	1055.	10.17	334.3	113.0	45.24	38.04
#1	-.0002	-.0002	-.0005	-.0012	.0206	.0004	.0001	.0001	-.0023
#2	.0000	-.0001	-.0003	-.0010	.0188	-.0002	.0000	.0001	-.0013
#3	-.0003	.0001	-.0010	.0018	.0168	.0000	.0000	.0001	-.0030
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Zoom In Zoom Out

Sample Name: MP43346-MB1 Acquired: 12/30/2023 19:15:28 Type: QC
Method: 60102007_COMBO_102422(v757) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	V_2924	Zn2062
Units	ppm	ppm
Avg	**.0000**	**.0007**
Stddev	.000	.0000
%RSD	412.6	5.639
#1	.0001	.0007
#2	-.0002	.0007
#3	.0000	.0007
Check ?	Chk Pass	Chk Pass
High Limit		
Low Limit		

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**3515.2**	**8160.1**	**56573.**	**17784.**
Stddev	7.5	9.5	52.	84.
%RSD	.21211	.11689	.09207	.47007
#1	3517.2	8162.1	56531.	17713.
#2	3521.5	8168.4	56631.	17876.
#3	3507.0	8149.6	56556.	17763.

Zoom In Zoom Out

Sample Name: MP43346-B1 Acquired: 12/30/2023 19:20:40 Type: QC
Method: 60102007_COMBO_102422(v757) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	B_2497	Ba4554	Be3130	Ca3179	Cd2265	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1892**	**23.63**	**.1981**	**.4241**	**.1974**	**.1982**	**44.01**	**.1954**	**.1955**
Stddev	.0011	.04	.0014	.0031	.0010	.0003	.17	.0004	.0002
%RSD	.5895	.1503	.6955	.7227	.4906	.1676	.3821	.2025	.1201
#1	.1885	23.61	.1967	.4208	.1969	.1978	43.96	.1950	.1953
#2	.1885	23.67	.1994	.4269	.1986	.1985	44.19	.1955	.1957
#3	.1905	23.60	.1981	.4247	.1969	.1981	43.87	.1958	.1955
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Cr2677	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1997**	**.1972**	**43.37**	**42.75**	**.4691**	**42.69**	**.1968**	**.6443**	**39.68**
Stddev	.0003	.0007	.04	.16	.0025	.10	.0010	.0005	.17
%RSD	.1616	.3606	.0934	.3727	.5236	.2389	.5037	.0705	.4198
#1	.1998	.1967	43.32	42.68	.4664	42.62	.1974	.6444	39.56
#2	.1993	.1969	43.39	42.93	.4712	42.80	.1957	.6438	39.87
#3	.1999	.1981	43.39	42.63	.4696	42.64	.1973	.6447	39.62
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Ni2316	Pb2203	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1965**	**.1841**	**.1984**	**.1921**	**.0650**	**.4719**	**.4763**	**.4743**	**.1885**
Stddev	.0004	.0005	.0021	.0010	.0009	.0005	.0020	.0022	.0013
%RSD	.1846	.2734	1.079	.5026	1.372	.1085	.4119	.4625	.6862
#1	.1961	.1847	.1987	.1916	.0646	.4714	.4746	.4749	.1895
#2	.1964	.1837	.2003	.1932	.0660	.4725	.4784	.4718	.1871
#3	.1968	.1840	.1961	.1914	.0644	.4719	.4758	.4760	.1889
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass		None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Zoom In Zoom Out

Sample Name: MP43346-B1 Acquired: 12/30/2023 19:20:40 Type: QC
Method: 60102007_COMBO_102422(v757) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	V_2924	Zn2062
Units	ppm	ppm
Avg	**.2024**	**.1944**
Stddev	.0004	.0001
%RSD	.1998	.0283
#1	.2022	.1944
#2	.2021	.1945
#3	.2029	.1944
Check ?	Chk Pass	Chk Pass
Value		
Range		

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**3036.1**	**7807.5**	**53097.**	**17538.**
Stddev	3.0	9.3	118.	33.
%RSD	.09869	.11974	.22159	.18895
#1	3034.7	7811.5	53031.	17539.
#2	3039.6	7796.8	53233.	17504.
#3	3034.1	7814.1	53027.	17570.

Zoom In Zoom Out

Sample Name: FC11943-6 Acquired: 12/30/2023 19:25:37 Type: Unk
Method: 60102007_COMBO_102422(v757) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	B_2497	Ba4554	Be3130	Ca3179	Cd2265
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0005**	**1.915**	**.0010**	**.0475**	**.3954**	**.0001**	**63.70**	**-.0018**
Stddev	.0002	.007	.0002	.0041	.0013	.0000	.31	.0003
%RSD	44.83	.3604	21.25	8.535	.3177	10.18	.4906	14.69
#1	.0006	1.914	.0013	.0452	.3944	.0001	63.56	-.0019
#2	.0002	1.909	.0009	.0450	.3968	.0001	64.06	-.0021
#3	.0006	1.923	.0009	.0521	.3950	.0001	63.48	-.0015

Elem	Co2286	Cr2677	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576
IS Ref	(Y_2243)	(Y_3600)	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0991**	**.0951**	**.0323**	**295.8**	**2.292**	**.0209**	**12.25**	F **5.555**
Stddev	.0002	.0016	.0004	1.9	.011	.0009	.03	.028
%RSD	.1931	1.685	1.146	.6476	.4737	4.136	.2700	.5074
#1	.0990	.0969	.0327	295.7	2.279	.0200	12.22	5.586
#2	.0994	.0937	.0322	297.8	2.298	.0211	12.25	5.532
#3	.0991	.0948	.0320	294.0	2.298	.0218	12.29	5.546

Elem	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960	Si2124	Sn1899
IS Ref	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0262**	**30.28**	**.1463**	F **-.0429**	**-.0013**	**.0131**	**4.974**	**.0024**
Stddev	.0002	.04	.0001	.0006	.0005	.0022	.008	.0001
%RSD	.9282	.1243	.0679	1.423	38.05	16.98	.1528	2.107
#1	.0260	30.25	.1461	-.0428	-.0019	.0107	4.979	.0024
#2	.0261	30.33	.1463	-.0424	-.0009	.0152	4.966	.0025
#3	.0265	30.27	.1463	-.0436	-.0011	.0135	4.978	.0024

Elem	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.8900**	**.0769**	**.0071**	**.1348**	**.0183**
Stddev	.0005	.0011	.0019	.0007	.0000
%RSD	.0524	1.442	27.11	.5281	.1579
#1	.8901	.0779	.0049	.1353	.0183
#2	.8895	.0771	.0086	.1340	.0182
#3	.8904	.0757	.0077	.1351	.0182

Zoom In Zoom Out

Sample Name: FC11943-6 Acquired: 12/30/2023 19:25:37 Type: Unk
Method: 60102007_COMBO_102422(v757) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**2963.0**	**7746.3**	**52979.**	**17608.**
Stddev	6.1	9.2	14.	20.
%RSD	.20712	.11910	.02724	.11177
#1	2966.2	7756.3	52981.	17624.
#2	2966.9	7744.6	52993.	17586.
#3	2955.9	7738.1	52964.	17613.

Zoom In Zoom Out

Sample Name: MP43346-D1 Acquired: 12/30/2023 19:31:06 Type: Unk
Method: 60102007_COMBO_102422(v757) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	B_2497	Ba4554	Be3130	Ca3179	Cd2265
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0002**	**1.916**	**.0013**	**.0451**	**.3715**	**.0001**	**63.19**	**-.0018**
Stddev	.0002	.006	.0011	.0045	.0012	.0000	.54	.0004
%RSD	99.66	.3329	80.40	10.09	.3156	16.81	.8533	21.83
#1	.0003	1.918	.0026	.0408	.3714	.0002	63.64	-.0022
#2	.0004	1.922	.0008	.0444	.3727	.0001	63.33	-.0018
#3	.0000	1.909	.0007	.0499	.3703	.0001	62.59	-.0014

Elem	Co2286	Cr2677	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576
IS Ref	(Y_2243)	(Y_3600)	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0996**	**.0904**	**.0330**	**297.8**	**2.283**	**.0206**	**12.24**	F **5.511**
Stddev	.0002	.0007	.0003	3.3	.004	.0003	.07	.042
%RSD	.2110	.7834	.9730	1.099	.1965	1.651	.6095	.7608
#1	.0994	.0900	.0328	300.8	2.286	.0204	12.26	5.551
#2	.0995	.0912	.0329	298.3	2.277	.0203	12.29	5.514
#3	.0998	.0900	.0334	294.3	2.285	.0209	12.15	5.467

Elem	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960	Si2124	Sn1899
IS Ref	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0266**	**30.11**	**.1483**	F **-.0429**	**-.0005**	**.0143**	**4.977**	**.0023**
Stddev	.0002	.06	.0003	.0004	.0004	.0005	.008	.0004
%RSD	.8751	.1913	.1703	.9074	64.60	3.282	.1556	17.67
#1	.0265	30.07	.1485	-.0434	-.0005	.0146	4.971	.0023
#2	.0265	30.18	.1482	-.0427	-.0009	.0146	4.986	.0019
#3	.0269	30.09	.1481	-.0427	-.0002	.0138	4.973	.0027

Elem	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.8926**	**.0741**	**.0087**	**.1291**	**.0207**
Stddev	.0028	.0005	.0010	.0007	.0000
%RSD	.3131	.6904	11.61	.5145	.1975
#1	.8916	.0738	.0075	.1287	.0207
#2	.8958	.0739	.0091	.1298	.0208
#3	.8905	.0747	.0094	.1287	.0207

Zoom In Zoom Out

Sample Name: MP43346-D1 Acquired: 12/30/2023 19:31:06 Type: Unk
Method: 60102007_COMBO_102422(v757) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**2960.2**	**7746.3**	**52904.**	**17710.**
Stddev	7.1	20.5	38.	126.
%RSD	.23930	.26525	.07094	.71271
#1	2967.1	7764.3	52929.	17617.
#2	2960.5	7750.7	52860.	17658.
#3	2952.9	7723.9	52921.	17853.

Zoom In Zoom Out

Sample Name: MP43346-SD1 Acquired: 12/30/2023 19:36:34 Type: Unk
Method: 60102007_COMBO_102422(v757) Mode: CONC Corr. Factor: 5.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	B_2497	Ba4554	Be3130	Ca3179	Cd2265
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0015**	**1.824**	**.0062**	**.0063**	**.3700**	**.0001**	**60.86**	**-.0034**
Stddev	.0008	.030	.0042	.0021	.0005	.0001	.34	.0001
%RSD	49.22	1.631	67.33	32.63	.1414	119.0	.5597	3.772
#1	.0024	1.819	.0056	.0087	.3699	.0000	60.65	-.0035
#2	.0014	1.796	.0106	.0049	.3706	.0002	60.68	-.0033
#3	.0008	1.855	.0024	.0054	.3696	.0001	61.25	-.0033

Elem	Co2286	Cr2677	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576
IS Ref	(Y_2243)	(Y_3600)	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0958**	**.0933**	**.0292**	**301.1**	**1.940**	**.0166**	**11.98**	**5.422**
Stddev	.0005	.0011	.0009	1.2	.127	.0049	.13	.018
%RSD	.5138	1.209	3.235	.3828	6.543	29.38	1.093	.3230
#1	.0954	.0921	.0298	300.5	1.817	.0170	11.85	5.425
#2	.0956	.0936	.0296	300.4	2.070	.0116	12.00	5.404
#3	.0963	.0943	.0281	302.5	1.933	.0213	12.11	5.439

Elem	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960	Si2124	Sn1899
IS Ref	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0246**	**27.90**	**.1377**	F **-.0435**	**-.0074**	**.0164**	**4.752**	**.0045**
Stddev	.0008	.09	.0007	.0017	.0028	.0043	.020	.0007
%RSD	3.409	.3181	.5320	3.820	37.52	26.06	.4294	14.50
#1	.0247	27.87	.1383	-.0454	-.0046	.0166	4.732	.0038
#2	.0254	27.84	.1380	-.0426	-.0073	.0205	4.773	.0047
#3	.0237	28.01	.1369	-.0425	-.0102	.0120	4.752	.0051

Elem	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.8397**	**.0732**	**.0098**	**.1279**	**.0185**
Stddev	.0010	.0011	.0082	.0017	.0001
%RSD	.1212	1.454	83.72	1.301	.4251
#1	.8409	.0720	.0176	.1264	.0184
#2	.8389	.0741	.0106	.1297	.0186
#3	.8395	.0735	.0012	.1277	.0185

Zoom In Zoom Out

Sample Name: MP43346-SD1 Acquired: 12/30/2023 19:36:34 Type: Unk
Method: 60102007_COMBO_102422(v757) Mode: CONC Corr. Factor: 5.000000
User: admin SSTRACE01: : :
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**3346.8**	**8091.8**	**55292.**	**17648.**
Stddev	7.3	18.6	17.	215.
%RSD	.21932	.22998	.03158	1.2189
#1	3342.8	8099.9	55305.	17807.
#2	3355.3	8105.0	55299.	17734.
#3	3342.3	8070.5	55272.	17404.

Zoom In Zoom Out

Sample Name: MP43346-PS1 Acquired: 12/30/2023 19:41:41 Type: Unk
Method: 60102007_COMBO_102422(v757) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	B_2497	Ba4554	Be3130	Ca3179	Cd2265	Co2286
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0500**	**4.387**	**.1021**	**.0496**	**.6419**	**.0511**	**67.19**	**.0491**	**.1471**
Stddev	.0001	.004	.0005	.0042	.0012	.0001	.36	.0003	.0001
%RSD	.2142	.0974	.4952	8.527	.1913	.0980	.5361	.6539	.0906
#1	.0500	4.385	.1017	.0461	.6405	.0510	67.54	.0490	.1470
#2	.0498	4.392	.1019	.0485	.6423	.0511	67.21	.0488	.1472
#3	.0500	4.384	.1027	.0543	.6428	.0511	66.82	.0494	.1472

Elem	Cr2677	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895
IS Ref	(Y_3600)	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1449**	**.1364**	**291.4**	**12.02**	**.0209**	**16.91**	F **5.496**	**.1207**	**38.93**
Stddev	.0006	.0004	2.1	.04	.0004	.06	.012	.0005	.01
%RSD	.4091	.2837	.7192	.3377	1.750	.3831	.2159	.3849	.0213
#1	.1454	.1360	292.0	12.01	.0205	16.87	5.490	.1207	38.93
#2	.1442	.1366	293.2	11.99	.0212	16.98	5.488	.1202	38.93
#3	.1450	.1366	289.1	12.07	.0211	16.88	5.510	.1211	38.92

Elem	Ni2316	Pb2203	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908
IS Ref	(Y_2243)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2434**	**.0069**	**.0999**	**.1097**	**4.911**	**.0524**	**.9202**	**.1774**	**.1051**
Stddev	.0004	.0003	.0018	.0025	.005	.0004	.0009	.0016	.0035
%RSD	.1670	4.172	1.846	2.264	.1022	.8175	.0929	.8777	3.325
#1	.2437	.0072	.0989	.1124	4.910	.0519	.9198	.1765	.1063
#2	.2435	.0070	.1021	.1092	4.906	.0527	.9196	.1765	.1012
#3	.2429	.0066	.0989	.1075	4.916	.0525	.9212	.1792	.1079

Elem	V_2924	Zn2062
IS Ref	(Y_3600)	(Y_2243)
Units	ppm	ppm
Avg	**.1844**	**.2636**
Stddev	.0008	.0004
%RSD	.4424	.1390
#1	.1842	.2634
#2	.1837	.2640
#3	.1853	.2634

Zoom In Zoom Out

Sample Name: MP43346-PS1 Acquired: 12/30/2023 19:41:41 Type: Unk
Method: 60102007_COMBO_102422(v757) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**2933.3**	**7698.6**	**52613.**	**17632.**
Stddev	3.5	1.0	251.	46.
%RSD	.11781	.01247	.47796	.26184
#1	2932.5	7698.7	52800.	17654.
#2	2937.2	7697.6	52711.	17579.
#3	2930.4	7699.5	52327.	17663.

Zoom In Zoom Out

Sample Name: MP43346-S1 Acquired: 12/30/2023 19:47:06 Type: Unk
Method: 60102007_COMBO_102422(v757) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	B_2497	Ba4554	Be3130	Ca3179	Cd2265	Co2286
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1925**	**25.40**	**.1980**	**.4995**	**.5560**	**.1929**	**103.0**	**.1873**	**.2812**
Stddev	.0005	.03	.0004	.0026	.0012	.0003	.0	.0002	.0005
%RSD	.2744	.0998	.2121	.5263	.2244	.1415	.0357	.1089	.1641
#1	.1931	25.41	.1981	.5014	.5572	.1930	103.0	.1871	.2808
#2	.1921	25.37	.1983	.5007	.5563	.1926	103.0	.1873	.2813
#3	.1922	25.42	.1975	.4965	.5547	.1932	103.1	.1875	.2817

Elem	Cr2677	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895
IS Ref	(Y_3600)	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2772**	**.2327**	**316.6**	**45.02**	F **.5003**	**52.97**	F **5.471**	**.6593**	**68.83**
Stddev	.0012	.0000	.6	.03	.0001	.09	.015	.0003	.09
%RSD	.4242	.0189	.1741	.0634	.0150	.1696	.2767	.0530	.1344
#1	.2783	.2327	315.9	45.04	.5003	53.06	5.486	.6597	68.90
#2	.2760	.2327	317.0	45.02	.5002	52.97	5.471	.6590	68.87
#3	.2773	.2328	316.8	44.99	.5003	52.88	5.456	.6591	68.73

Elem	Ni2316	Pb2203	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908
IS Ref	(Y_2243)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.3273**	**.1490**	**.1850**	**.2011**	**4.780**	**.4550**	**1.316**	**.5325**	**.1970**
Stddev	.0004	.0016	.0007	.0006	.010	.0018	.002	.0021	.0012
%RSD	.1160	1.059	.3524	.2833	.2054	.3887	.1835	.3854	.6170
#1	.3275	.1478	.1844	.2015	4.769	.4548	1.317	.5346	.1977
#2	.3269	.1483	.1851	.2013	4.786	.4533	1.313	.5305	.1978
#3	.3276	.1508	.1857	.2004	4.785	.4568	1.317	.5324	.1956

Elem	V_2924	Zn2062
IS Ref	(Y_3600)	(Y_2243)
Units	ppm	ppm
Avg	**.3187**	**.2038**
Stddev	.0020	.0002
%RSD	.6370	.0847
#1	.3208	.2037
#2	.3167	.2037
#3	.3186	.2040

Zoom In Zoom Out

Sample Name: MP43346-S1 Acquired: 12/30/2023 19:47:06 Type: Unk
Method: 60102007_COMBO_102422(v757) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**2765.7**	**7551.9**	**51248.**	**17513.**
Stddev	12.3	7.6	14.	63.
%RSD	.44315	.10112	.02696	.36094
#1	2779.8	7560.6	51232.	17582.
#2	2760.1	7546.0	51255.	17497.
#3	2757.3	7549.3	51257.	17459.

Zoom In Zoom Out

Sample Name: MP43346-S2 Acquired: 12/30/2023 19:52:29 Type: Unk
Method: 60102007_COMBO_102422(v757) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	B_2497	Ba4554	Be3130	Ca3179	Cd2265	Co2286
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1939**	**25.56**	**.1975**	**.4902**	**.5551**	**.1954**	**103.7**	**.1885**	**.2833**
Stddev	.0002	.05	.0014	.0057	.0012	.0002	.3	.0004	.0005
%RSD	.1072	.1828	.6908	1.160	.2072	.1143	.2593	.2384	.1795
#1	.1939	25.58	.1990	.4836	.5551	.1956	103.7	.1880	.2830
#2	.1936	25.51	.1971	.4929	.5540	.1951	103.4	.1888	.2830
#3	.1941	25.59	.1964	.4939	.5563	.1954	103.9	.1887	.2839

Elem	Cr2677	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895
IS Ref	(Y_3600)	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2785**	**.2344**	**323.1**	**45.36**	F **.5050**	**53.93**	F **5.580**	**.6608**	**69.35**
Stddev	.0012	.0004	3.0	.06	.0007	.13	.050	.0021	.17
%RSD	.4340	.1872	.9134	.1355	.1376	.2338	.9027	.3114	.2437
#1	.2784	.2348	325.9	45.35	.5057	53.99	5.598	.6596	69.48
#2	.2773	.2343	320.0	45.31	.5043	53.78	5.619	.6597	69.16
#3	.2797	.2340	323.3	45.43	.5049	54.00	5.523	.6632	69.42

Elem	Ni2316	Pb2203	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908
IS Ref	(Y_2243)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.3280**	**.1496**	**.1874**	**.2022**	**4.834**	**.4543**	**1.344**	**.5332**	**.1995**
Stddev	.0005	.0023	.0007	.0029	.003	.0009	.003	.0030	.0029
%RSD	.1452	1.523	.3757	1.438	.0693	.1950	.2137	.5631	1.437
#1	.3274	.1483	.1882	.2047	4.836	.4535	1.347	.5314	.1989
#2	.3281	.1482	.1874	.1990	4.836	.4552	1.341	.5316	.1969
#3	.3284	.1522	.1868	.2030	4.830	.4543	1.343	.5367	.2025

Elem	V_2924	Zn2062
IS Ref	(Y_3600)	(Y_2243)
Units	ppm	ppm
Avg	**.3172**	**.2041**
Stddev	.0015	.0005
%RSD	.4613	.2415
#1	.3168	.2037
#2	.3160	.2040
#3	.3188	.2047

Zoom In Zoom Out

Sample Name: MP43346-S2 Acquired: 12/30/2023 19:52:29 Type: Unk
Method: 60102007_COMBO_102422(v757) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**2760.1**	**7554.5**	**51186.**	**17420.**
Stddev	4.7	8.0	28.	68.
%RSD	.17163	.10557	.05444	.38824
#1	2760.0	7562.1	51192.	17369.
#2	2764.9	7546.2	51156.	17497.
#3	2755.4	7555.2	51211.	17394.

Zoom In Zoom Out

Sample Name: CCV Acquired: 12/30/2023 19:57:52 Type: QC
Method: 60102007_COMBO_102422(v757) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	B_2497	Ba4554	Be3130	Ca3179	Cd2265	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2558**	**40.13**	**2.014**	**2.031**	**2.012**	**2.014**	**40.93**	**2.028**	**2.023**
Stddev	.0007	.15	.006	.011	.013	.007	.11	.003	.001
%RSD	.2846	.3644	.2890	.5495	.6458	.3664	.2735	.1608	.0543
#1	.2560	40.30	2.014	2.025	2.024	2.010	41.04	2.031	2.025
#2	.2564	40.07	2.009	2.024	1.998	2.023	40.95	2.029	2.023
#3	.2550	40.03	2.020	2.044	2.013	2.010	40.81	2.025	2.023
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Cr2677	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**2.019**	**2.045**	**40.56**	**40.26**	**1.978**	**40.46**	**2.041**	**2.018**	**40.24**
Stddev	.008	.010	.24	.15	.016	.39	.001	.002	.06
%RSD	.3919	.4914	.5955	.3757	.7869	.9654	.0469	.0997	.1601
#1	2.028	2.053	40.81	40.43	1.995	40.73	2.042	2.020	40.32
#2	2.013	2.048	40.54	40.20	1.972	40.63	2.041	2.016	40.19
#3	2.016	2.034	40.33	40.14	1.966	40.01	2.040	2.017	40.23
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Ni2316	Pb2203	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**2.012**	**1.978**	**2.022**	**2.033**	**1.927**	**2.024**	**2.015**	**2.038**	**1.997**
Stddev	.002	.002	.009	.005	.002	.003	.018	.001	.005
%RSD	.1120	.1038	.4380	.2576	.0823	.1262	.8875	.0616	.2767
#1	2.013	1.978	2.022	2.035	1.928	2.022	2.005	2.038	2.003
#2	2.009	1.976	2.013	2.027	1.925	2.027	2.036	2.040	1.992
#3	2.013	1.980	2.030	2.036	1.928	2.022	2.006	2.037	1.995
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Zoom In Zoom Out

Sample Name: CCV Acquired: 12/30/2023 19:57:52 Type: QC
Method: 60102007_COMBO_102422(v757) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	V_2924	Zn2062
Units	ppm	ppm
Avg	**2.030**	**2.003**
Stddev	.003	.003
%RSD	.1452	.1534
#1	2.033	2.006
#2	2.030	2.003
#3	2.027	2.000
Check ?	Chk Pass	Chk Pass
Value		
Range		

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**2974.6**	**7771.0**	**52718.**	**17447.**
Stddev	4.1	7.5	76.	83.
%RSD	.13797	.09611	.14354	.47475
#1	2979.3	7777.8	52630.	17418.
#2	2971.7	7772.3	52760.	17383.
#3	2972.9	7763.0	52762.	17541.

Zoom In Zoom Out

Sample Name: CCB Acquired: 12/30/2023 20:03:12 Type: QC
Method: 60102007_COMBO_102422(v757) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	B_2497	Ba4554	Be3130	Ca3179	Cd2265	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0001**	**.0009**	**.0009**	**.0002**	**.0001**	**.0001**	**.0026**	**.0000**	**.0001**
Stddev	.0001	.0047	.0012	.0004	.0001	.0000	.0017	.0000	.0000
%RSD	94.13	552.8	143.4	235.9	186.2	39.38	65.70	137.6	36.75
#1	.0000	.0056	.0020	-.0003	.0000	.0001	.0045	.0001	.0002
#2	.0001	-.0038	.0011	.0004	.0002	.0001	.0011	.0000	.0001
#3	.0002	.0008	-.0005	.0004	.0000	.0001	.0022	.0000	.0001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Cr2677	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0000**	**.0001**	**.0022**	**-.0381**	**-.0005**	**.0055**	**.0001**	**.0002**	**-.0097**
Stddev	.000	.0001	.0016	.0134	.0012	.0046	.0000	.0000	.0042
%RSD	521.8	160.2	73.00	35.18	249.5	83.68	40.00	13.88	43.03
#1	.0001	.0001	.0040	-.0371	-.0016	.0012	.0001	.0003	-.0081
#2	-.0002	-.0001	.0016	-.0519	.0007	.0049	.0001	.0002	-.0144
#3	.0000	.0002	.0009	-.0252	-.0005	.0103	.0001	.0002	-.0066
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Ni2316	Pb2203	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.0001**	**-.0004**	**-.0008**	**-.0015**	**.0019**	**.0001**	**.0001**	**.0000**	**.0000**
Stddev	.0001	.0001	.0017	.0009	.0003	.0000	.0000	.0000	.002
%RSD	67.74	26.78	223.0	62.12	13.96	7.249	45.53	226.0	30870.
#1	-.0001	-.0003	-.0014	-.0006	.0017	.0001	.0001	.0000	-.0021
#2	-.0002	-.0005	-.0021	-.0024	.0022	.0001	.0001	.0000	.0016
#3	.0000	-.0003	.0012	-.0014	.0017	.0001	.0000	.0000	.0005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Zoom In Zoom Out

Sample Name: CCB Acquired: 12/30/2023 20:03:12 Type: QC
Method: 60102007_COMBO_102422(v757) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	V_2924	Zn2062
Units	ppm	ppm
Avg	**.0001**	**.0000**
Stddev	.0001	.000
%RSD	156.9	522.9
#1	-.0001	.0000
#2	.0001	-.0001
#3	.0002	.0000
Check ?	Chk Pass	Chk Pass
High Limit		
Low Limit		

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**3538.9**	**8165.6**	**55789.**	**17660.**
Stddev	.4	12.3	227.	90.
%RSD	.01211	.15031	.40743	.51124
#1	3538.7	8177.3	55981.	17717.
#2	3539.3	8166.8	55538.	17556.
#3	3538.6	8152.8	55847.	17707.

NOTE: The remaining raw data for this batch is not relevant to this job. As such it has been omitted.

Element, Wavelength and Order	Use?	# IECs	IEC	k1	k2	Calc-in-fit?
Ag 328.068 {103}	☒	2	V	-0.005817	0.000000	No
			Fe	-0.000037	0.000000	No
Al 396.152 { 85}	☒	1	Mo	0.040336	0.000000	No
As 189.042 {478}	☒	4	Fe	-0.000069	0.000000	No
			Cr	-0.000653	0.000000	No
			Mo	0.000444	0.000000	No
			Al	0.000001	0.000000	No
B 249.773 {135}	☒	1	Fe	0.000964	0.000000	No
Ba 455.403 { 74}	☒	4	Fe	-0.000051	0.000000	No
			Al	0.000025	0.000000	No
			Ca	0.000016	0.000000	No
			Mg	0.000016	0.000000	No
Be 313.042 {108}	☒	2	V	0.000089	0.000000	No
			Ti	-0.000289	0.000000	No
Ca 317.933 {106}	☒	None				
Cd 226.502 {449}	☒	4	Fe	0.000095	0.000000	No
			Ca	-0.000000	0.000000	No
			Al	-0.000002	0.000000	No
			Ti	0.000103	0.000000	No
Co 228.616 {447}	☒	3	Mo	-0.001220	0.000000	No
			Ti	0.002210	0.000000	No
			Fe	0.000005	0.000000	No
Cr 267.716 {126}	☒	4	Al	0.000003	0.000000	No
			Fe	-0.000015	0.000000	No
			Ca	0.000002	0.000000	No
			Cd	-0.000120	0.000000	No
Cu 324.754 {104}	☒	10	Mo	0.000189	0.000000	No
			Sn	-0.000012	0.000000	No
			V	-0.000158	0.000000	No
			Al	0.000003	0.000000	No
			Mg	0.000003	0.000000	No
			Co	-0.000547	0.000000	No
			Cd	0.000190	0.000000	No
			Fe	0.000007	0.000000	No
			Ca	0.000001	0.000000	No
			Ti	-0.000268	0.000000	No
Fe 259.940 {130}	☒	None				
In 230.606 {446}*	☒	None				
K 766.490 { 44}	☒	None				
Li 670.784 { 50}	☒	4	Ca	0.000004	0.000000	No
			Fe	0.000025	0.000000	No
			Al	-0.000009	0.000000	No
			Mg	-0.000006	0.000000	No
Mg 279.079 {121}	☒	None				
Mn 257.610 {131}	☒	2	Fe	0.000004	0.000000	No
			Mg	0.000000	0.000000	No
Mo 202.030 {467}	☒	3	Fe	0.000001	0.000000	No
			Al	-0.000002	0.000000	No
			Ca	-0.000003	0.000000	No
Na 589.592 { 57}	☒	None				
Ni 231.604 {445}	☒	7	Fe	-0.000041	0.000000	No
			Co	0.000112	0.000000	No
			Mo	0.000980	0.000000	No
			Sb	-0.000120	0.000000	No
			Al	0.000003	0.000000	No
			Be	-0.000304	0.000000	No
			Tl	0.000172	0.000000	No

	Element, Wavelength and Order	Use?	# IECs	IEC	k1	k2	Calc-in-fit?
	Pb 220.353 {453}	☒	9	Al	0.000153	0.000000	No
				Fe	0.000182	0.000000	No
				Mo	-0.002189	0.000000	No
				Cu	0.000467	0.000000	No
				Ti	0.000036	0.000000	No
				Si	0.000182	0.000000	No
				Ca	0.000012	0.000000	No
				Cr	-0.000260	0.000000	No
				Mg	0.000002	0.000000	No
	Sb 206.833 {463}	☒	11	Fe	0.000017	0.000000	No
				Cr	0.011486	0.000000	No
				Mo	-0.002538	0.000000	No
				V	-0.002735	0.000000	No
				Sn	-0.008695	0.000000	No
				Ti	0.000278	0.000000	No
				Ca	0.000001	0.000000	No
				Ni	-0.000818	0.000000	No
				Al	0.000005	0.000000	No
				Mn	-0.000133	0.000000	No
				Mg	-0.000002	0.000000	No
	Se 196.090 {472}	☒	12	Fe	-0.000062	0.000000	No
				Ca	0.000006	0.000000	No
				Mn	0.000331	0.000000	No
				Mo	0.000111	0.000000	No
				Al	0.000001	0.000000	No
				V	0.000000	0.000000	No
				Zn	0.000000	0.000000	No
				Sr	-0.000111	0.000000	No
				As	0.000125	0.000000	No
				Cd	-0.000250	0.000000	No
				Mg	0.000002	0.000000	No
				Cr	-0.000326	0.000000	No
	Si 212.412 {459}	☒	1	Mo	0.000000	0.000000	No
	Sn 189.989 {477}	☒	1	Fe	0.000010	0.000000	No
	Sr 407.771 { 83}	☒	2	Ca	-0.000009	0.000000	No
				Al	0.000012	0.000000	No
	Ti 334.941 {101}	☒	1	Ca	-0.000010	0.000000	No
	Tl 190.856 {477}	☒	10	Co	0.004099	0.000000	No
				Fe	-0.000062	0.000000	No
				Al	0.000000	0.000000	No
				Ba	-0.000051	0.000000	No
				Ti	-0.000648	0.000000	No
				Sb	0.000167	0.000000	No
				Ca	0.000001	0.000000	No
				Cr	0.000340	0.000000	No
				Mg	-0.000002	0.000000	No
				V	0.000015	0.000000	No
	V 292.402 {115}	☒	5	Fe	0.000010	0.000000	No
				Cr	-0.003634	0.000000	No
				Mo	-0.009536	0.000000	No
				Ti	0.000303	0.000000	No
				Mn	-0.000333	0.000000	No
	Y 224.306 {450}*	☒	None				
	Y 360.073 { 94}*	☒	None				
	Y 371.030 { 91}*	☒	None				
	Zn 206.200 {463}	☒	5	Cr	-0.001305	0.000000	No
				Al	0.000014	0.000000	No

	Element, Wavelength and Order	Use?	# IECs	IEC	k1	k2	Calc-in-fit?
				Ca	0.000003	0.000000	No
				Fe	-0.000006	0.000000	No
				As	0.001105	0.000000	No

Element, Wavelength and Order	Date of Fit	Date of Cal.	Type of Fit	Weighting	A0	A1	A2	n (Exponent)
Ag 328.068 {103}	12/30/2023 13:13:33	12/30/2023 12:15:32	Linear	1/Conc	-0.000245	0.539850	0.000000	1.000000
Al 396.152 { 85}	12/30/2023 13:13:33	12/30/2023 12:15:32	Linear	1/Conc	0.000480	0.112285	0.000000	1.000000
As 189.042 {478}	12/30/2023 13:13:33	12/30/2023 12:15:32	Linear	1/Conc	-0.000378	0.080314	0.000000	1.000000
B 249.773 {135}	12/30/2023 13:13:33	12/30/2023 12:15:32	Linear	1/Conc	0.001561	0.491503	0.000000	1.000000
Ba 455.403 { 74}	12/30/2023 13:13:33	12/30/2023 12:15:32	Linear	1/Conc	0.000685	7.487401	0.000000	1.000000
Be 313.042 {108}	12/30/2023 13:13:33	12/30/2023 12:15:32	Linear	1/Conc	-0.000254	10.983212	0.000000	1.000000
Ca 317.933 {106}	12/30/2023 13:13:33	12/30/2023 12:15:32	Linear	1/Conc	0.003500	0.290532	0.000000	1.000000
Cd 226.502 {449}	12/30/2023 13:13:33	12/30/2023 12:15:32	Linear	1/Conc	-0.000745	3.452578	0.000000	1.000000
Co 228.616 {447}	12/30/2023 13:13:33	12/30/2023 12:15:32	Linear	1/Conc	-0.000747	2.066258	0.000000	1.000000
Cr 267.716 {126}	12/30/2023 13:13:33	12/30/2023 12:15:32	Linear	1/Conc	-0.000017	0.508630	0.000000	1.000000
Cu 324.754 {104}	12/30/2023 13:13:33	12/30/2023 12:15:32	Linear	1/Conc	0.005825	0.799498	0.000000	1.000000
Fe 259.940 {130}	12/30/2023 13:13:33	12/30/2023 12:15:32	Linear	1/Conc	0.000289	0.179980	0.000000	1.000000
In 230.606 {446}*	12/30/2023 13:13:33	5/5/2010 12:30:54	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
K 766.490 { 44}	12/30/2023 13:13:33	12/30/2023 12:15:32	Linear	1/Conc	0.003624	0.050175	0.000000	1.000000
Li 670.784 { 50}	12/30/2023 13:13:33	12/30/2023 12:15:32	Linear	1/Conc	0.002020	1.304748	0.000000	1.000000
Mg 279.079 {121}	12/30/2023 13:13:33	12/30/2023 12:15:32	Linear	1/Conc	-0.000258	0.029706	0.000000	1.000000
Mn 257.610 {131}	12/30/2023 13:13:33	12/30/2023 12:15:32	Linear	1/Conc	0.000310	2.674546	0.000000	1.000000
Mo 202.030 {467}	12/30/2023 13:13:33	12/30/2023 12:15:32	Linear	1/Conc	0.000220	0.675284	0.000000	1.000000
Na 589.592 { 57}	12/30/2023 13:13:33	12/30/2023 12:15:32	Linear	1/Conc	-0.000895	0.196407	0.000000	1.000000
Ni 231.604 {445}	12/30/2023 13:13:33	12/30/2023 12:15:32	Linear	1/Conc	-0.000271	1.154807	0.000000	1.000000
Pb 220.353 {453}	12/30/2023 13:13:33	12/30/2023 12:15:32	Linear	1/Conc	-0.001337	0.773291	0.000000	1.000000
Sb 206.833 {463}	12/30/2023 13:13:33	12/30/2023 12:15:32	Linear	1/Conc	0.000177	0.138827	0.000000	1.000000
Se 196.090 {472}	12/30/2023 13:13:33	12/30/2023 12:15:32	Linear	1/Conc	-0.000044	0.063377	0.000000	1.000000
Si 212.412 {459}	12/30/2023 13:13:33	12/30/2023 12:15:32	Linear	1/Conc	0.004047	0.399558	0.000000	1.000000
Sn 189.989 {477}	12/30/2023 13:13:33	12/30/2023 12:15:32	Linear	1/Conc	0.000016	0.235835	0.000000	1.000000
Sr 407.771 { 83}	12/30/2023 13:13:33	12/30/2023 12:15:32	Linear	1/Conc	-0.000278	11.586668	0.000000	1.000000
Ti 334.941 {101}	12/30/2023 13:13:33	12/30/2023 12:15:32	Linear	1/Conc	0.000842	1.742794	0.000000	1.000000
Tl 190.856 {477}	12/30/2023 13:13:33	12/30/2023 12:15:33	Linear	1/Conc	-0.000653	0.173896	0.000000	1.000000
V 292.402 {115}	12/30/2023 13:13:33	12/30/2023 12:15:33	Linear	1/Conc	-0.000234	0.803384	0.000000	1.000000
Y 224.306 {450}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Y 360.073 { 94}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Y 371.030 { 91}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Zn 206.200 {463}	12/30/2023 13:13:33	12/30/2023 12:15:33	Linear	1/Conc	0.000553	1.763523	0.000000	1.000000

	Element, Wavelength and Order	Correlation	Std Error of Est	Predicted MDL	Predicted MQL	Status	Reslope		QC Norm	
							Slope	Y-int	Slope factor	Offset
	Ag 328.068 {103}	0.999965	0.000016	0.000331	0.001102	OK.	1.000000	0.000000	1	0
	Al 396.152 { 85}	0.999960	0.000210	0.006553	0.021842	OK.	1.000000	0.000000	1	0
	As 189.042 {478}	0.999962	0.000007	0.001194	0.003980	OK.	1.000000	0.000000	1	0
	B 249.773 {135}	0.999153	0.000482	0.000983	0.003275	OK.	1.000000	0.000000	1	0
	Ba 455.403 { 74}	0.999979	0.002313	0.000132	0.000439	OK.	1.000000	0.000000	1	0
	Be 313.042 {108}	0.999879	0.001259	0.000032	0.000106	OK.	1.000000	0.000000	1	0
	Ca 317.933 {106}	0.999773	0.002889	0.001462	0.004874	OK.	1.000000	0.000000	1	0
	Cd 226.502 {449}	0.999900	0.000361	0.000051	0.000171	OK.	1.000000	0.000000	1	0
	Co 228.616 {447}	0.999868	0.000784	0.000097	0.000324	OK.	1.000000	0.000000	1	0
	Cr 267.716 {126}	0.999889	0.000079	0.000242	0.000807	OK.	1.000000	0.000000	1	0
	Cu 324.754 {104}	0.999981	0.000081	0.000244	0.000813	OK.	1.000000	0.000000	1	0
	Fe 259.940 {130}	0.999814	0.000887	0.001156	0.003854	OK.	1.000000	0.000000	1	0
	In 230.606 {446}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
	K 766.490 { 44}	0.999942	0.000578	0.024129	0.080430	OK.	1.000000	0.000000	1	0
	Li 670.784 { 50}	0.999436	0.000433	0.001018	0.003393	OK.	1.000000	0.000000	1	0
	Mg 279.079 {121}	0.999925	0.000384	0.009807	0.032689	OK.	1.000000	0.000000	1	0
	Mn 257.610 {131}	0.999753	0.000759	0.000039	0.000131	OK.	1.000000	0.000000	1	0
	Mo 202.030 {467}	0.999961	0.000139	0.000156	0.000520	OK.	1.000000	0.000000	1	0
	Na 589.592 { 57}	0.999738	0.004826	0.006264	0.020879	OK.	1.000000	0.000000	1	0
	Ni 231.604 {445}	0.999793	0.000490	0.000177	0.000591	OK.	1.000000	0.000000	1	0
	Pb 220.353 {453}	0.999887	0.000086	0.000622	0.002073	OK.	1.000000	0.000000	1	0
	Sb 206.833 {463}	0.999969	0.000008	0.001216	0.004052	OK.	1.000000	0.000000	1	0
	Se 196.090 {472}	0.999950	0.000007	0.002284	0.007615	OK.	1.000000	0.000000	1	0
	Si 212.412 {459}	0.998192	0.001295	0.000312	0.001040	OK.	1.000000	0.000000	1	0
	Sn 189.989 {477}	0.999839	0.000099	0.000419	0.001396	OK.	1.000000	0.000000	1	0
	Sr 407.771 { 83}	0.999919	0.001537	0.000051	0.000171	OK.	1.000000	0.000000	1	0
	Ti 334.941 {101}	0.999920	0.000230	0.000101	0.000338	OK.	1.000000	0.000000	1	0
	Tl 190.856 {477}	0.999977	0.000012	0.001310	0.004366	OK.	1.000000	0.000000	1	0
	V 292.402 {115}	0.999957	0.000172	0.000212	0.000707	OK.	1.000000	0.000000	1	0
	Y 224.306 {450}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
	Y 360.073 { 94}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
	Y 371.030 { 91}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
	Zn 206.200 {463}	0.999872	0.000416	0.000072	0.000239	OK.	1.000000	0.000000	1	0

Zoom In ▶ Zoom Out

Sample Name: STDA Acquired: 1/3/2024 11:49:00 Type: Cal
Method: 60102007_COMBO_10242022(v435) Mode: IR Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2497	Ba4554	Be3130	Ca3179	Cd2265	Co2286
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.0001**	**.0000**	**-.0004**	**.0012**	**.0054**	**.0001**	**.0069**	**-.0006**	**-.0006**
Stddev	.0002	.0007	.0001	.0002	.0023	.0006	.0006	.0004	.0000
%RSD	243.0	12950.	14.17	19.08	42.00	734.2	9.045	65.52	7.318
#1	.0000	.0005	-.0005	.0011	.0079	-.0005	.0065	-.0004	-.0006
#2	-.0004	.0003	-.0004	.0010	.0049	.0000	.0066	-.0010	-.0006
#3	.0001	-.0008	-.0005	.0014	.0034	.0007	.0076	-.0003	-.0007

Elem	Cr2677	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.0001**	**.0034**	**.0005**	**-.0033**	**.0015**	**-.0010**	**.0001**	**.0005**	**.0203**
Stddev	.0001	.0001	.0001	.0011	.0013	.0002	.0001	.0001	.0007
%RSD	104.5	2.076	12.63	34.56	82.86	19.26	97.45	17.69	3.392
#1	.0001	.0034	.0004	-.0045	.0006	-.0011	.0000	.0005	.0195
#2	.0000	.0034	.0005	-.0023	.0010	-.0011	.0002	.0006	.0207
#3	.0002	.0033	.0004	-.0031	.0030	-.0008	.0002	.0004	.0207

Elem	Ni2316	Pb2203	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.0011**	**-.0023**	**.0006**	**.0001**	**.0052**	**.0002**	**-.0021**	**.0007**	**.0000**
Stddev	.0001	.0010	.0002	.0001	.0000	.0001	.0004	.0001	.000
%RSD	11.71	43.83	37.32	136.1	.3810	59.50	17.47	19.21	1073.
#1	-.0011	-.0026	.0009	.0002	.0052	.0003	-.0021	.0008	-.0004
#2	-.0009	-.0012	.0005	.0001	.0052	.0003	-.0024	.0007	.0004
#3	-.0012	-.0032	.0004	-.0001	.0052	.0001	-.0017	.0005	-.0001

Elem	V_2924	Zn2062
Units	Cts/S	Cts/S
Avg	**-.0005**	**.0009**
Stddev	.0002	.0002
%RSD	43.44	26.43
#1	-.0007	.0012
#2	-.0005	.0009
#3	-.0003	.0007

◀ Zoom In ▶ Zoom Out

Sample Name: STDA Acquired: 1/3/2024 11:49:00 Type: Cal
Method: 60102007_COMBO_10242022(v435) Mode: IR Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**792.27**	**1904.4**	**21417.**	**4850.5**
Stddev	1.44	9.2	104.	15.5
%RSD	.18206	.48071	.48519	.31919
#1	792.87	1913.8	21462.	4858.8
#2	793.32	1903.9	21298.	4832.6
#3	790.63	1895.5	21491.	4860.0

◀ Zoom In ▶ Zoom Out

Sample Name: STDB Acquired: 1/3/2024 11:54:03 Type: Cal
Method: 60102007_COMBO_10242022(v435) Mode: IR Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2497	Ba4554	Be3130	Ca3179	Cd2265	Co2286
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.0049**	**.0389**	**.0009**	**.0063**	**2.812**	**.0615**	**.2713**	**.0210**	**.1183**
Stddev	.0002	.0016	.0001	.0010	.016	.0013	.0021	.0005	.0008
%RSD	4.264	4.019	7.328	16.26	.5683	2.054	.7904	2.196	.6839
#1	.0047	.0384	.0009	.0063	2.794	.0602	.2688	.0204	.1176
#2	.0051	.0407	.0009	.0053	2.824	.0616	.2720	.0211	.1192
#3	.0049	.0376	.0008	.0074	2.819	.0627	.2729	.0213	.1183

Elem	Cr2677	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.0034**	**.0273**	**.0494**	**1.397**	**.0326**	**.1242**	**.0381**	**.0486**	**5.325**
Stddev	.0000	.0002	.0007	.004	.0014	.0019	.0001	.0003	.032
%RSD	.6092	.5537	1.498	.3018	4.375	1.526	.2718	.5689	.6000
#1	.0034	.0275	.0490	1.392	.0342	.1221	.0382	.0489	5.292
#2	.0034	.0272	.0490	1.399	.0316	.1253	.0380	.0484	5.355
#3	.0034	.0273	.0502	1.399	.0319	.1254	.0380	.0484	5.329

Elem	Ni2316	Pb2203	Sb2068	Se1960	Sn1899	Sr4077	Ti3349	Tl1908	V_2924
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.0511**	**.0032**	**.0016**	**.0013**	**.0171**	**.1949**	**.0197**	**.0032**	**.0343**
Stddev	.0001	.0004	.0004	.0003	.0003	.0002	.0005	.0010	.0001
%RSD	.2543	11.88	23.12	20.42	2.021	.1270	2.753	30.36	.2099
#1	.0512	.0036	.0014	.0012	.0169	.1951	.0202	.0025	.0344
#2	.0510	.0029	.0013	.0011	.0175	.1950	.0198	.0044	.0344
#3	.0510	.0030	.0020	.0016	.0169	.1946	.0191	.0028	.0342

Elem	Zn2062
Units	Cts/S
Avg	**.0352**
Stddev	.0003
%RSD	.7934
#1	.0350
#2	.0355
#3	.0351

◀ Zoom In ▶ Zoom Out

Sample Name: STDB Acquired: 1/3/2024 11:54:03 Type: Cal
Method: 60102007_COMBO_10242022(v435) Mode: IR Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**731.18**	**1832.4**	**20927.**	**4801.3**
Stddev	.92	6.7	42.	33.6
%RSD	.12607	.36472	.20041	.69930
#1	732.03	1834.8	20974.	4840.1
#2	730.20	1824.8	20911.	4780.4
#3	731.31	1837.5	20895.	4783.5

Zoom In Zoom Out

Sample Name: STDC Acquired: 1/3/2024 11:58:11 Type: Cal
Method: 60102007_COMBO_10242022(v435) Mode: IR Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2497	Ba4554	Be3130	Ca3179	Cd2265	Co2286
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.0153**	**.9339**	**.0345**	**.1935**	**3.514**	**3.034**	**1.300**	**1.049**	**.5878**
Stddev	.0002	.0034	.0001	.0027	.020	.017	.001	.001	.0016
%RSD	1.155	.3595	.3994	1.401	.5781	.5453	.1088	.0590	.2718
#1	.0151	.9308	.0347	.1966	3.493	3.023	1.299	1.048	.5890
#2	.0155	.9375	.0344	.1921	3.533	3.053	1.300	1.049	.5885
#3	.0153	.9334	.0345	.1917	3.516	3.026	1.301	1.048	.5860

Elem	Cr2677	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.0837**	**.2438**	**.8177**	**.6898**	**.8448**	**.1236**	**.6505**	**.2469**	**2.856**
Stddev	.0009	.0009	.0042	.0013	.0023	.0006	.0057	.0006	.014
%RSD	1.045	.3855	.5197	.1881	.2743	.4636	.8795	.2258	.4778
#1	.0846	.2434	.8149	.6887	.8443	.1230	.6553	.2471	2.848
#2	.0828	.2431	.8226	.6912	.8473	.1241	.6442	.2474	2.872
#3	.0837	.2449	.8156	.6896	.8428	.1236	.6519	.2463	2.848

Elem	Ni2316	Pb2203	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.3213**	**.2661**	**.0657**	**.0295**	**.1754**	**.0850**	**4.856**	**.4638**	**.0773**
Stddev	.0003	.0007	.0004	.0004	.0003	.0001	.028	.0016	.0010
%RSD	.0900	.2693	.5394	1.205	.1727	.1759	.5789	.3401	1.318
#1	.3212	.2657	.0661	.0292	.1756	.0852	4.833	.4655	.0784
#2	.3211	.2669	.0655	.0294	.1755	.0849	4.888	.4624	.0768
#3	.3216	.2658	.0655	.0299	.1750	.0849	4.848	.4636	.0765

Elem	V_2924	Zn2062
Units	Cts/S	Cts/S
Avg	**.1704**	**.4324**
Stddev	.0010	.0003
%RSD	.5739	.0747
#1	.1709	.4326
#2	.1692	.4320
#3	.1710	.4326

Zoom In Zoom Out

Sample Name: STDC Acquired: 1/3/2024 11:58:11 Type: Cal
Method: 60102007_COMBO_10242022(v435) Mode: IR Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**731.36**	**1841.9**	**20755.**	**4632.3**
Stddev	1.56	1.7	100.	23.4
%RSD	.21350	.09164	.48203	.50576
#1	732.99	1843.5	20702.	4648.3
#2	729.87	1840.2	20870.	4605.4
#3	731.23	1842.0	20691.	4643.0

Zoom In Zoom Out

Sample Name: STDD Acquired: 1/3/2024 12:02:16 Type: Cal
Method: 60102007_COMBO_10242022(v435) Mode: IR Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2497	Ba4554	Be3130	Ca3179	Cd2265	Co2286
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.0320**	**1.916**	**.0713**	**.3957**	**7.188**	**6.240**	**2.637**	**2.122**	**1.187**
Stddev	.0005	.003	.0002	.0006	.025	.020	.009	.003	.002
%RSD	1.483	.1616	.3382	.1616	.3455	.3277	.3519	.1390	.1807
#1	.0320	1.920	.0714	.3951	7.215	6.264	2.644	2.125	1.189
#2	.0325	1.914	.0710	.3964	7.183	6.230	2.626	2.119	1.185
#3	.0316	1.916	.0715	.3956	7.167	6.227	2.640	2.121	1.188

Elem	Cr2677	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.1748**	**.4995**	**1.677**	**1.436**	**1.755**	**.2582**	**1.325**	**.5009**	**5.920**
Stddev	.0006	.0029	.006	.008	.007	.0013	.004	.0008	.037
%RSD	.3207	.5785	.3722	.5492	.4293	.5063	.2885	.1583	.6330
#1	.1745	.4968	1.684	1.445	1.763	.2577	1.322	.5007	5.961
#2	.1754	.5025	1.673	1.432	1.753	.2597	1.329	.5018	5.910
#3	.1743	.4992	1.674	1.431	1.748	.2573	1.323	.5003	5.888

Elem	Ni2316	Pb2203	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.6542**	**.5458**	**.1338**	**.0589**	**.3517**	**.1718**	**10.03**	**.9536**	**.1617**
Stddev	.0015	.0011	.0002	.0006	.0008	.0008	.04	.0036	.0016
%RSD	.2259	.2094	.1754	1.098	.2149	.4525	.3644	.3817	.9865
#1	.6559	.5471	.1337	.0593	.3525	.1727	10.07	.9504	.1607
#2	.6531	.5453	.1341	.0592	.3512	.1714	10.02	.9576	.1636
#3	.6536	.5450	.1336	.0581	.3512	.1713	10.00	.9529	.1610

Elem	V_2924	Zn2062
Units	Cts/S	Cts/S
Avg	**.3582**	**.8770**
Stddev	.0017	.0013
%RSD	.4838	.1436
#1	.3576	.8784
#2	.3602	.8760
#3	.3569	.8765

Zoom In Zoom Out

Sample Name: STDD Acquired: 1/3/2024 12:02:16 Type: Cal
Method: 60102007_COMBO_10242022(v435) Mode: IR Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**708.45**	**1820.0**	**20231.**	**4549.0**
Stddev	1.99	3.1	82.	16.9
%RSD	.28128	.16863	.40588	.37111
#1	707.41	1820.1	20285.	4529.5
#2	707.20	1816.9	20137.	4559.3
#3	710.75	1823.0	20271.	4558.1

Zoom In Zoom Out

Sample Name: STDE Acquired: 1/3/2024 12:08:14 Type: Cal
Method: 60102007_COMBO_10242022(v435) Mode: IR Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2497	Ba4554	Be3130	Ca3179	Cd2265	Co2286
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.0653**	**3.915**	**.1424**	**.7041**	**14.29**	**12.42**	**5.499**	**4.228**	**2.346**
Stddev	.0004	.021	.0005	.0017	.09	.07	.024	.014	.008
%RSD	.6251	.5331	.3652	.2464	.6111	.5682	.4338	.3312	.3565
#1	.0657	3.902	.1427	.7039	14.21	12.37	5.491	4.242	2.354
#2	.0653	3.939	.1428	.7060	14.38	12.50	5.526	4.229	2.347
#3	.0649	3.905	.1418	.7025	14.28	12.39	5.480	4.214	2.337

Elem	Cr2677	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.3525**	**.9718**	**3.409**	**2.997**	**3.554**	**.5381**	**2.662**	**.9927**	**12.00**
Stddev	.0023	.0056	.035	.022	.018	.0036	.012	.0033	.07
%RSD	.6613	.5727	1.016	.7236	.5111	.6772	.4665	.3368	.6121
#1	.3539	.9781	3.383	2.976	3.539	.5370	2.672	.9963	11.94
#2	.3538	.9699	3.448	3.019	3.574	.5422	2.664	.9921	12.09
#3	.3498	.9676	3.395	2.997	3.548	.5351	2.648	.9896	11.99

Elem	Ni2316	Pb2203	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1.280**	**1.113**	**.2621**	**.1171**	**.3948**	**.3400**	**19.92**	**1.906**	**.3176**
Stddev	.004	.007	.0011	.0003	.0013	.0014	.07	.009	.0039
%RSD	.3240	.6449	.4204	.2671	.3253	.4187	.3451	.4872	1.242
#1	1.283	1.121	.2625	.1173	.3955	.3415	19.87	1.917	.3221
#2	1.281	1.111	.2630	.1168	.3957	.3399	20.00	1.903	.3147
#3	1.275	1.107	.2609	.1173	.3934	.3386	19.89	1.899	.3160

Elem	V_2924	Zn2062
Units	Cts/S	Cts/S
Avg	**.7119**	**1.842**
Stddev	.0046	.009
%RSD	.6435	.4643
#1	.7164	1.851
#2	.7121	1.840
#3	.7072	1.835

Zoom In Zoom Out

Sample Name: STDE Acquired: 1/3/2024 12:08:14 Type: Cal
Method: 60102007_COMBO_10242022(v435) Mode: IR Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**678.19**	**1802.9**	**19762.**	**4382.3**
Stddev	1.85	3.0	56.	29.8
%RSD	.27213	.16567	.28088	.67902
#1	676.64	1801.9	19706.	4401.1
#2	677.71	1800.5	19764.	4348.0
#3	680.23	1806.2	19817.	4397.7

Zoom In Zoom Out

Sample Name: STDF Acquired: 1/3/2024 12:12:21 Type: Cal
Method: 60102007_COMBO_10242022(v435) Mode: IR Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2497	Ba4554	Be3130	Ca3179	Cd2265	Co2286
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.1293**	**7.771**	**.2899**	**1.429**	**28.53**	**24.52**	**10.84**	**8.373**	**4.641**
Stddev	.0006	.018	.0007	.007	.06	.06	.06	.007	.005
%RSD	.4591	.2385	.2322	.4954	.2196	.2282	.5765	.0840	.1024
#1	.1299	7.762	.2906	1.427	28.49	24.47	10.81	8.379	4.646
#2	.1289	7.758	.2893	1.436	28.50	24.50	10.79	8.365	4.637
#3	.1289	7.792	.2897	1.422	28.61	24.58	10.91	8.376	4.640

Elem	Cr2677	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.6827**	**1.920**	**6.713**	**6.097**	**7.203**	**1.058**	**5.188**	**1.983**	**23.98**
Stddev	.0020	.009	.021	.025	.017	.005	.020	.004	.03
%RSD	.2939	.4757	.3139	.4067	.2393	.4598	.3930	.1797	.1320
#1	.6848	1.918	6.696	6.077	7.183	1.056	5.206	1.984	24.00
#2	.6825	1.931	6.707	6.089	7.212	1.055	5.192	1.980	23.94
#3	.6808	1.913	6.737	6.124	7.213	1.064	5.166	1.987	24.00

Elem	Ni2316	Pb2203	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**2.510**	**2.246**	**.5282**	**.2354**	**.7911**	**.6705**	**39.49**	**3.765**	**.6202**
Stddev	.002	.004	.0009	.0006	.0011	.0012	.01	.014	.0026
%RSD	.0715	.1933	.1647	.2587	.1416	.1805	.0148	.3653	.4174
#1	2.512	2.249	.5289	.2361	.7923	.6718	39.50	3.764	.6216
#2	2.508	2.241	.5272	.2349	.7907	.6700	39.49	3.779	.6172
#3	2.510	2.249	.5283	.2353	.7902	.6696	39.49	3.752	.6219

Elem	V_2924	Zn2062
Units	Cts/S	Cts/S
Avg	**1.393**	**3.540**
Stddev	.006	.006
%RSD	.4655	.1830
#1	1.397	3.543
#2	1.397	3.533
#3	1.386	3.545

Zoom In Zoom Out

Sample Name: STDF Acquired: 1/3/2024 12:12:21 Type: Cal
Method: 60102007_COMBO_10242022(v435) Mode: IR Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**638.32**	**1744.5**	**19443.**	**4366.6**
Stddev	1.36	1.4	62.	21.7
%RSD	.21381	.08048	.32052	.49679
#1	637.84	1742.9	19415.	4366.5
#2	639.86	1745.5	19399.	4388.4
#3	637.26	1745.2	19514.	4345.0

Zoom In Zoom Out

Sample Name: STDG Acquired: 1/3/2024 12:27:49 Type: Cal
Method: 60102007_COMBO_10242022(v435) Mode: IR Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2497	Ba4554	Be3130	Ca3179	Cd2265	Co2286
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.2576**	**15.56**	**.5858**	**2.845**	**56.93**	**48.34**	**21.54**	**16.50**	**9.137**
Stddev	.0020	.02	.0013	.007	.06	.06	.07	.01	.013
%RSD	.7765	.1266	.2163	.2535	.1089	.1313	.3414	.0664	.1397
#1	.2574	15.56	.5863	2.848	56.92	48.38	21.61	16.49	9.129
#2	.2597	15.58	.5844	2.837	56.99	48.38	21.54	16.51	9.130
#3	.2557	15.55	.5867	2.851	56.87	48.27	21.47	16.51	9.152

Elem	Cr2677	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1.356**	**3.858**	**13.23**	**12.43**	**14.70**	**2.130**	**10.22**	**3.942**	**48.01**
Stddev	.014	.007	.04	.02	.04	.008	.05	.006	.07
%RSD	.9979	.1812	.2977	.1941	.2759	.3909	.4447	.1474	.1506
#1	1.346	3.859	13.27	12.41	14.67	2.137	10.21	3.942	47.98
#2	1.371	3.864	13.22	12.46	14.75	2.132	10.27	3.936	48.09
#3	1.351	3.850	13.19	12.43	14.69	2.121	10.19	3.947	47.96

Elem	Ni2316	Pb2203	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**4.937**	**4.502**	**1.062**	**.4720**	**1.298**	**1.327**	**77.36**	**7.462**	**1.214**
Stddev	.002	.025	.002	.0018	.003	.001	1.31	.007	.009
%RSD	.0393	.5435	.2241	.3715	.2021	.0660	1.692	.0934	.7230
#1	4.938	4.486	1.061	.4731	1.299	1.327	75.85	7.455	1.217
#2	4.934	4.530	1.060	.4700	1.295	1.328	78.03	7.469	1.205
#3	4.938	4.491	1.064	.4729	1.300	1.328	78.20	7.463	1.222

Elem	V_2924	Zn2062
Units	Cts/S	Cts/S
Avg	**2.773**	**7.017**
Stddev	.019	.019
%RSD	.6958	.2752
#1	2.764	7.001
#2	2.795	7.038
#3	2.760	7.011

Zoom In Zoom Out

Sample Name: STDG Acquired: 1/3/2024 12:27:49 Type: Cal
Method: 60102007_COMBO_10242022(v435) Mode: IR Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**601.75**	**1684.0**	**18962.**	**4316.6**
Stddev	2.12	6.0	78.	5.5
%RSD	.35268	.35589	.41179	.12782
#1	604.10	1686.0	18999.	4321.2
#2	599.97	1688.8	18872.	4310.5
#3	601.20	1677.3	19014.	4318.1

Zoom In Zoom Out

Sample Name: CRIA Acquired: 1/3/2024 12:38:58 Type: QC
Method: 60102007_COMBO_10242022(v435) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2497	Ba4554	Be3130	Ca3179	Cd2265	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0101**	**.2045**	**.0106**	**.0106**	**.1989**	**.0051**	**1.042**	**.0053**	**.0522**
Stddev	.0001	.0028	.0005	.0002	.0005	.0001	.006	.0000	.0003
%RSD	.6560	1.367	4.999	2.333	.2608	2.007	.5436	.2026	.4856
#1	.0102	.2073	.0100	.0105	.1991	.0052	1.036	.0053	.0522
#2	.0101	.2017	.0111	.0104	.1992	.0050	1.043	.0053	.0519
#3	.0102	.2046	.0105	.0109	.1983	.0052	1.047	.0053	.0524
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Cr2677	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0101**	**.0249**	**.3067**	**9.538**	**.0095**	**5.106**	**.0155**	**.0488**	**9.152**
Stddev	.0002	.0001	.0008	.044	.0004	.046	.0002	.0001	.016
%RSD	2.044	.3299	.2724	.4647	4.048	.8988	.9759	.1766	.1718
#1	.0100	.0249	.3062	9.575	.0091	5.143	.0156	.0489	9.171
#2	.0100	.0248	.3063	9.551	.0098	5.055	.0153	.0487	9.142
#3	.0104	.0249	.3076	9.489	.0096	5.120	.0155	.0488	9.144
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Ni2316	Pb2203	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0425**	**.0052**	**.0051**	**.0090**	**.0825**	**.0515**	**.0102**	**.0104**	**.0116**
Stddev	.0004	.0003	.0008	.0015	.0011	.0004	.0000	.0001	.0014
%RSD	1.006	5.987	14.81	16.94	1.287	.7331	.2881	.7785	12.14
#1	.0420	.0048	.0056	.0073	.0821	.0520	.0102	.0104	.0132
#2	.0429	.0053	.0055	.0101	.0837	.0514	.0102	.0105	.0109
#3	.0425	.0054	.0042	.0096	.0816	.0513	.0102	.0104	.0107
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Zoom In Zoom Out

Sample Name: CRIA Acquired: 1/3/2024 12:38:58 Type: QC
Method: 60102007_COMBO_10242022(v435) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062
Units	ppm	ppm
Avg	**.0517**	**.0205**
Stddev	.0002	.0000
%RSD	.4818	.0698
#1	.0520	.0205
#2	.0515	.0206
#3	.0516	.0205
Check ?	Chk Pass	Chk Pass
Value		
Range		

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**724.21**	**1856.6**	**20195.**	**4383.9**
Stddev	1.99	4.6	91.	11.3
%RSD	.27424	.24904	.44898	.25697
#1	725.94	1859.3	20115.	4387.9
#2	724.67	1859.1	20294.	4392.6
#3	722.04	1851.2	20176.	4371.2

Zoom In Zoom Out

Sample Name: HSTD Acquired: 1/3/2024 12:49:26 Type: QC
Method: 60102007_COMBO_10242022(v435) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2497	Ba4554	Be3130	Ca3179	Cd2265	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.5017**	**80.94**	**3.978**	**3.835**	**4.004**	**4.006**	**81.33**	**3.971**	**3.948**
Stddev	.0049	.30	.008	.018	.015	.011	.49	.009	.007
%RSD	.9781	.3730	.1926	.4678	.3727	.2773	.6047	.2237	.1738
#1	.4986	80.98	3.987	3.856	4.018	4.007	81.14	3.980	3.955
#2	.5074	80.62	3.975	3.824	3.988	3.994	80.96	3.970	3.947
#3	.4993	81.22	3.973	3.826	4.007	4.017	81.89	3.962	3.941
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Cr2677	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**4.030**	**3.955**	**80.70**	**82.46**	**4.050**	**83.02**	**3.987**	**3.968**	**81.78**
Stddev	.060	.021	.14	.34	.016	.38	.039	.006	.19
%RSD	1.501	.5332	.1708	.4149	.3952	.4609	.9864	.1550	.2265
#1	3.980	3.941	80.81	82.60	4.063	82.97	3.961	3.974	81.92
#2	4.097	3.979	80.54	82.07	4.032	82.67	4.032	3.968	81.57
#3	4.013	3.946	80.73	82.70	4.056	83.43	3.968	3.962	81.86
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Ni2316	Pb2203	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**3.966**	**4.037**	**3.949**	**3.944**	**3.322**	**3.974**	**4.012**	**3.993**	**3.995**
Stddev	.004	.013	.001	.019	.007	.008	.062	.020	.021
%RSD	.1048	.3174	.0355	.4913	.1979	.2060	1.544	.4957	.5306
#1	3.970	4.047	3.950	3.967	3.330	3.983	4.038	3.980	4.015
#2	3.962	4.023	3.948	3.934	3.320	3.970	3.942	4.015	3.973
#3	3.965	4.042	3.950	3.933	3.317	3.968	4.057	3.983	3.996
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Zoom In Zoom Out

Sample Name: HSTD Acquired: 1/3/2024 12:49:26 Type: QC
Method: 60102007_COMBO_10242022(v435) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062
Units	ppm	ppm
Avg	**4.009**	**3.999**
Stddev	.041	.013
%RSD	1.014	.3241
#1	3.978	4.011
#2	4.055	4.000
#3	3.995	3.986
Check ?	Chk Pass	Chk Pass
Value		
Range		

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**603.61**	**1697.5**	**18855.**	**4159.3**
Stddev	2.85	3.2	159.	22.9
%RSD	.47275	.18626	.84107	.55164
#1	604.19	1700.1	18968.	4176.3
#2	606.13	1698.3	18674.	4168.4
#3	600.51	1693.9	18924.	4133.2

Zoom In Zoom Out

Sample Name: ICV Acquired: 1/3/2024 13:15:29 Type: QC
Method: 60102007_COMBO_10242022(v435) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2497	Ba4554	Be3130	Ca3179	Cd2265	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2647**	**41.50**	**2.058**	**2.086**	**2.037**	**2.073**	**41.50**	**2.062**	**2.064**
Stddev	.0001	.31	.006	.012	.020	.011	.28	.001	.001
%RSD	.0341	.7391	.2886	.5575	.9790	.5377	.6774	.0381	.0518
#1	.2648	41.62	2.052	2.082	2.040	2.074	41.74	2.062	2.063
#2	.2646	41.15	2.058	2.078	2.016	2.061	41.19	2.061	2.065
#3	.2647	41.74	2.064	2.100	2.055	2.083	41.57	2.063	2.063
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Cr2677	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**2.140**	**2.100**	**40.78**	**41.16**	**2.057**	**41.52**	**2.105**	**2.070**	**41.94**
Stddev	.010	.003	.31	.35	.016	.34	.004	.002	.31
%RSD	.4624	.1377	.7647	.8559	.7546	.8147	.2043	.1044	.7367
#1	2.131	2.104	40.96	41.27	2.059	41.77	2.100	2.068	41.96
#2	2.151	2.099	40.42	40.76	2.040	41.14	2.107	2.070	41.62
#3	2.139	2.098	40.97	41.44	2.071	41.66	2.108	2.072	42.23
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Ni2316	Pb2203	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**2.073**	**2.063**	**2.063**	**2.067**	**2.283**	**2.101**	**2.076**	**2.104**	**2.188**
Stddev	.002	.005	.003	.006	.007	.002	.014	.002	.020
%RSD	.0722	.2434	.1659	.3098	.3072	.0730	.6509	.0917	.9053
#1	2.074	2.057	2.066	2.074	2.284	2.102	2.073	2.101	2.173
#2	2.072	2.067	2.063	2.066	2.289	2.099	2.064	2.105	2.180
#3	2.075	2.065	2.059	2.061	2.275	2.101	2.091	2.104	2.210
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Zoom In Zoom Out

Sample Name: ICV Acquired: 1/3/2024 13:15:29 Type: QC
Method: 60102007_COMBO_10242022(v435) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062
Units	ppm	ppm
Avg	**2.122**	**2.055**
Stddev	.002	.001
%RSD	.0772	.0220
#1	2.124	2.055
#2	2.122	2.055
#3	2.120	2.056
Check ?	Chk Pass	Chk Pass
Value		
Range		

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**651.52**	**1774.0**	**19390.**	**4382.0**
Stddev	3.09	2.9	57.	18.2
%RSD	.47397	.16330	.29237	.41623
#1	654.97	1776.1	19455.	4368.1
#2	650.60	1775.2	19350.	4402.6
#3	649.00	1770.7	19364.	4375.2

Zoom In Zoom Out

Sample Name: ICB Acquired: 1/3/2024 13:24:41 Type: QC
Method: 60102007_COMBO_10242022(v435) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2497	Ba4554	Be3130	Ca3179	Cd2265	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.0002**	**-.0021**	**-.0005**	F **.0018**	**.0001**	**.0000**	**-.0020**	**.0000**	**.0000**
Stddev	.0003	.0006	.0007	.0005	.0000	.0000	.0010	.0000	.0001
%RSD	111.7	30.76	132.7	28.80	88.28	94.56	50.71	77.86	308.9
#1	-.0004	-.0028	-.0001	.0022	.0001	.0000	-.0016	.0000	.0000
#2	.0001	-.0018	-.0001	.0012	.0000	.0000	-.0032	.0001	.0001
#3	-.0003	-.0017	-.0014	.0019	.0000	.0001	-.0013	.0000	.0000
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit				.0010					
Low Limit				-.0010					

Elem	Cr2677	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0000**	**-.0002**	**-.0005**	**.0123**	**.0004**	**.0242**	**.0000**	**.0003**	**-.0037**
Stddev	.001	.0002	.0006	.0256	.0001	.0042	.000	.0001	.0033
%RSD	26250.	111.4	111.6	207.8	20.09	17.34	146.8	33.28	88.77
#1	.0004	-.0004	-.0011	.0290	.0004	.0256	.0000	.0004	-.0040
#2	-.0007	-.0002	.0001	.0252	.0004	.0195	.0000	.0004	-.0068
#3	.0003	.0000	-.0005	-.0172	.0005	.0275	.0000	.0002	-.0003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Ni2316	Pb2203	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0002**	**.0010**	**.0000**	**-.0011**	**-.0008**	**.0001**	**.0000**	**-.0001**	**-.0001**
Stddev	.0001	.0002	.000	.0017	.0004	.0001	.0000	.0000	.0007
%RSD	80.44	16.16	76970.	147.4	57.42	81.86	3831.	63.83	681.7
#1	.0000	.0012	-.0002	.0002	-.0008	.0000	.0000	.0000	.0007
#2	.0003	.0009	-.0003	-.0006	-.0012	.0002	.0000	-.0001	-.0003
#3	.0002	.0009	.0005	-.0030	-.0003	.0001	.0000	-.0001	-.0006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Zoom In Zoom Out

Sample Name: ICB Acquired: 1/3/2024 13:24:41 Type: QC
Method: 60102007_COMBO_10242022(v435) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062
Units	ppm	ppm
Avg	**.0000**	**-.0001**
Stddev	.0002	.0001
%RSD	877.9	70.80
#1	.0003	-.0001
#2	-.0001	-.0002
#3	-.0001	.0000
Check ?	Chk Pass	Chk Pass
High Limit		
Low Limit		

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**780.02**	**1895.9**	**20718.**	**4398.0**
Stddev	.54	7.8	112.	34.9
%RSD	.06966	.41319	.54159	.79420
#1	779.40	1902.8	20700.	4438.2
#2	780.42	1897.5	20837.	4381.2
#3	780.23	1887.3	20615.	4374.7

Zoom In Zoom Out

Sample Name: ICSA Acquired: 1/3/2024 13:28:58 Type: QC
Method: 60102007_COMBO_10242022(v436) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2497	Ba4554	Be3130	Ca3179	Cd2265	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0009**	**519.1**	**.0000**	F **.0755**	**.0001**	**.0000**	**487.7**	**-.0007**	**.0000**
Stddev	.0021	6.8	.0016	.0047	.0002	.0000	4.4	.0007	.000
%RSD	243.4	1.303	7342.	6.237	248.3	59.63	.9113	112.0	523.0
#1	.0006	517.4	.0018	.0702	.0002	.0000	486.4	-.0010	-.0002
#2	.0031	526.6	-.0007	.0770	-.0001	.0000	492.6	-.0012	.0000
#3	-.0011	513.4	-.0011	.0793	.0001	.0000	484.0	.0002	.0001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit				.0010					
Low Limit				-.0010					

Elem	Cr2677	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.0002**	**.0000**	F **470.4**	**-.0001**	**-.0004**	**545.5**	**-.0006**	**-.0006**	**.3394**
Stddev	.0004	.001	3.2	.0105	.0005	7.5	.0001	.0004	.0070
%RSD	282.1	2166.	.6738	14090.	139.3	1.368	11.68	64.03	2.073
#1	.0003	.0003	472.3	-.0122	-.0008	546.3	-.0006	-.0004	.3373
#2	-.0001	.0002	472.2	.0060	.0002	552.6	-.0006	-.0003	.3472
#3	-.0006	-.0005	466.8	.0060	-.0005	537.7	-.0005	-.0010	.3336
Check ?	Chk Pass	Chk Pass	Chk Fail	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None
High Limit			240.0						
Low Limit			160.0						

Elem	Ni2316	Pb2203	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.0001**	**.0001**	**.0000**	**.0015**	**.1838**	**.0000**	**-.0003**	**.0007**	**-.0005**
Stddev	.0001	.0015	.0014	.0023	.0013	.002	.0001	.0001	.0044
%RSD	126.4	2310.	23410.	156.1	.7198	14260.	16.52	20.89	896.4
#1	.0000	.0018	-.0014	-.0007	.1825	.0014	-.0003	.0006	-.0054
#2	.0000	-.0011	.0013	.0013	.1837	.0001	-.0004	.0009	.0009
#3	-.0002	-.0005	.0001	.0039	.1851	-.0015	-.0003	.0006	.0030
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Zoom In Zoom Out

Sample Name: ICSA Acquired: 1/3/2024 13:28:58 Type: QC
Method: 60102007_COMBO_10242022(v436) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062
Units	ppm	ppm
Avg	**.0001**	**-.0007**
Stddev	.0002	.0002
%RSD	139.9	30.23
#1	.0002	-.0006
#2	-.0001	-.0009
#3	.0002	-.0005
Check ?	Chk Pass	Chk Pass
High Limit		
Low Limit		

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**560.02**	**1507.9**	**16859.**	**4081.2**
Stddev	1.44	2.3	81.	43.8
%RSD	.25630	.15010	.47990	1.0721
#1	558.79	1509.0	16853.	4079.5
#2	559.68	1509.4	16943.	4038.4
#3	561.60	1505.3	16782.	4125.9

Zoom In Zoom Out

Sample Name: ICSAB Acquired: 1/3/2024 13:36:37 Type: QC
Method: 60102007_COMBO_10242022(v436) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2497	Ba4554	Be3130	Ca3179	Cd2265	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.013**	**519.6**	**1.043**	**1.067**	**.4969**	**.4964**	**495.0**	**.9390**	**.4584**
Stddev	.005	.8	.004	.007	.0003	.0020	4.4	.0017	.0006
%RSD	.4791	.1542	.3510	.6571	.0599	.4069	.8872	.1859	.1341
#1	1.012	518.6	1.045	1.059	.4965	.4954	499.4	.9408	.4591
#2	1.008	520.1	1.039	1.072	.4971	.4988	495.1	.9391	.4579
#3	1.018	520.0	1.045	1.071	.4970	.4951	490.6	.9373	.4584
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Cr2677	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.4796**	**.5486**	**190.5**	**.0268**	F **.5774**	**551.1**	**.4974**	**.9185**	**.3525**
Stddev	.0042	.0022	1.0	.0017	.0023	3.8	.0029	.0030	.0082
%RSD	.8767	.3981	.5078	6.278	.3983	.6887	.5794	.3280	2.315
#1	.4776	.5497	191.5	.0259	.5749	554.1	.4968	.9212	.3503
#2	.4768	.5461	190.4	.0257	.5779	552.4	.4949	.9153	.3616
#3	.4845	.5500	189.5	.0287	.5794	546.9	.5005	.9192	.3457
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Fail	Chk Pass	Chk Pass	Chk Pass	None
Value					1.000				
Range					-20.00%				

Elem	Ni2316	Pb2203	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.8794**	**.9278**	**1.059**	**.9658**	**.3558**	**.8928**	**1.028**	**1.009**	**.9351**
Stddev	.0015	.0022	.007	.0057	.0005	.0021	.005	.004	.0110
%RSD	.1723	.2337	.6312	.5945	.1438	.2353	.4487	.4329	1.177
#1	.8809	.9285	1.052	.9663	.3554	.8938	1.025	1.011	.9444
#2	.8795	.9253	1.066	.9714	.3564	.8942	1.034	1.004	.9379
#3	.8778	.9295	1.059	.9599	.3557	.8904	1.027	1.011	.9229
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	None	None	Chk Pass
Value									
Range									

Zoom In Zoom Out

Sample Name: ICSAB Acquired: 1/3/2024 13:36:37 Type: QC
Method: 60102007_COMBO_10242022(v436) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062
Units	ppm	ppm
Avg	**.5056**	**.9103**
Stddev	.0028	.0021
%RSD	.5558	.2291
#1	.5045	.9127
#2	.5034	.9088
#3	.5087	.9095
Check ?	Chk Pass	Chk Pass
Value		
Range		

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**545.07**	**1563.7**	**17481.**	**4110.7**
Stddev	2.52	2.9	111.	16.5
%RSD	.46307	.18522	.63720	.40042
#1	545.00	1565.8	17492.	4100.5
#2	547.63	1564.9	17586.	4102.0
#3	542.59	1560.4	17364.	4129.7

Zoom In Zoom Out

Sample Name: CCV Acquired: 1/3/2024 13:44:31 Type: QC
Method: 60102007_COMBO_10242022(v436) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2497	Ba4554	Be3130	Ca3179	Cd2265	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2577**	**40.52**	**2.036**	**2.008**	**2.016**	**2.037**	**40.56**	**2.033**	**2.037**
Stddev	.0017	.19	.007	.002	.006	.009	.13	.002	.003
%RSD	.6497	.4692	.3495	.1174	.2789	.4198	.3252	.0947	.1507
#1	.2560	40.30	2.029	2.010	2.010	2.028	40.44	2.035	2.040
#2	.2594	40.62	2.038	2.010	2.019	2.037	40.55	2.033	2.035
#3	.2578	40.63	2.043	2.006	2.019	2.045	40.71	2.031	2.035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Cr2677	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**2.039**	**2.042**	**40.35**	**40.47**	**2.019**	**40.31**	**2.044**	**2.037**	**40.85**
Stddev	.014	.008	.26	.13	.008	.22	.008	.003	.18
%RSD	.7038	.3901	.6366	.3233	.4080	.5554	.3759	.1266	.4429
#1	2.041	2.032	40.07	40.35	2.011	40.11	2.045	2.039	40.64
#2	2.052	2.047	40.40	40.46	2.027	40.27	2.051	2.037	40.97
#3	2.024	2.046	40.58	40.61	2.018	40.55	2.036	2.034	40.94
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Ni2316	Pb2203	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**2.030**	**2.035**	**2.039**	**2.044**	**2.077**	**2.043**	**2.042**	**2.033**	**2.071**
Stddev	.001	.001	.008	.006	.002	.002	.008	.003	.016
%RSD	.0571	.0427	.4141	.2793	.1011	.1152	.3897	.1596	.7477
#1	2.031	2.035	2.047	2.041	2.079	2.046	2.033	2.030	2.054
#2	2.031	2.034	2.039	2.051	2.075	2.042	2.044	2.036	2.074
#3	2.029	2.036	2.030	2.042	2.077	2.041	2.048	2.033	2.084
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Zoom In Zoom Out

Sample Name: CCV Acquired: 1/3/2024 13:44:31 Type: QC
Method: 60102007_COMBO_10242022(v436) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062
Units	ppm	ppm
Avg	**2.036**	**2.029**
Stddev	.009	.004
%RSD	.4662	.1909
#1	2.033	2.033
#2	2.047	2.026
#3	2.029	2.026
Check ?	Chk Pass	Chk Pass
Value		
Range		

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**640.11**	**1743.3**	**19375.**	**4332.9**
Stddev	1.29	1.7	77.	28.0
%RSD	.20076	.09753	.39861	.64510
#1	641.51	1744.7	19413.	4362.8
#2	639.85	1743.6	19286.	4328.5
#3	638.98	1741.4	19426.	4307.4

Zoom In Zoom Out

Sample Name: CCB Acquired: 1/3/2024 13:54:02 Type: QC
Method: 60102007_COMBO_10242022(v436) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2497	Ba4554	Be3130	Ca3179	Cd2265	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.0003**	**.0028**	**.0001**	F **.0020**	**.0001**	**.0000**	**-.0034**	**.0000**	**.0001**
Stddev	.0001	.0059	.0015	.0017	.0001	.0000	.0017	.0000	.0002
%RSD	46.76	211.2	1353.	81.23	127.8	120.7	49.69	419.4	174.3
#1	-.0001	.0046	-.0011	.0039	.0000	.0000	-.0052	.0000	.0000
#2	-.0003	-.0038	.0018	.0007	.0001	.0000	-.0020	.0000	.0003
#3	-.0004	.0076	-.0003	.0015	.0002	.0000	-.0030	.0000	.0000
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit				.0010					
Low Limit				-.0010					

Elem	Cr2677	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0000**	**-.0004**	**.0023**	**.0030**	**.0003**	**.0044**	**.0001**	**.0004**	**-.0036**
Stddev	.0005	.0003	.0012	.0201	.0008	.0041	.0000	.0001	.0051
%RSD	4965.	95.31	49.75	680.6	242.4	92.96	85.98	35.31	140.5
#1	-.0005	-.0006	.0035	-.0017	-.0003	.0081	.0000	.0005	-.0041
#2	.0004	-.0005	.0012	.0250	.0000	.0000	.0000	.0004	-.0085
#3	.0000	.0000	.0023	-.0144	.0013	.0053	.0001	.0003	.0017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Ni2316	Pb2203	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0001**	**.0006**	**-.0005**	**.0019**	**.0010**	**.0001**	**.0001**	**.0000**	**.0011**
Stddev	.0001	.0003	.0003	.0027	.0004	.0004	.0000	.0000	.0021
%RSD	234.8	58.43	71.30	141.6	42.81	572.1	45.50	29.95	186.6
#1	.0001	.0008	-.0003	.0049	.0008	.0005	.0001	.0000	.0025
#2	.0001	.0007	-.0009	.0006	.0014	-.0003	.0001	.0000	.0022
#3	-.0001	.0002	-.0003	.0001	.0006	.0000	.0001	.0000	-.0013
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Zoom In Zoom Out

Sample Name: CCB Acquired: 1/3/2024 13:54:02 Type: QC
Method: 60102007_COMBO_10242022(v436) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062
Units	ppm	ppm
Avg	**-.0001**	**.0005**
Stddev	.0002	.0001
%RSD	216.0	15.37
#1	-.0001	.0004
#2	.0001	.0006
#3	-.0003	.0004
Check ?	Chk Pass	Chk Pass
High Limit		
Low Limit		

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**770.14**	**1889.4**	**20964.**	**4400.8**
Stddev	2.78	4.6	10.	17.4
%RSD	.36121	.24186	.04929	.39613
#1	772.86	1894.6	20974.	4406.0
#2	770.27	1887.5	20965.	4381.4
#3	767.30	1886.1	20953.	4415.1

Zoom In Zoom Out

Sample Name: FC12205-3 Acquired: 1/3/2024 14:03:14 Type: Unk
Method: 60102007_COMBO_10242022(v436) Mode: CONC Corr. Factor: 5.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2497	Ba4554	Be3130	Ca3179	Cd2265	Co2286
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0017**	**204.4**	**.0862**	**.1365**	**.6331**	**.0102**	**612.6**	**.0011**	**.0234**
Stddev	.0010	.6	.0013	.0009	.0022	.0001	.9	.0002	.0006
%RSD	55.82	.2813	1.470	.6577	.3402	.8646	.1425	17.15	2.568
#1	.0023	203.9	.0877	.1359	.6322	.0102	611.6	.0009	.0228
#2	.0006	204.3	.0856	.1362	.6315	.0102	613.1	.0011	.0239
#3	.0023	205.0	.0854	.1375	.6355	.0103	613.1	.0013	.0237

Elem	Cr2677	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895
IS Ref	(Y_3600)	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.5297**	**.1474**	**110.6**	**17.48**	**.0984**	**58.06**	**.8134**	**.0224**	**7.629**
Stddev	.0080	.0004	.2	.07	.0006	.10	.0056	.0006	.044
%RSD	1.503	.2546	.2167	.3979	.6023	.1722	.6832	2.583	.5729
#1	.5236	.1474	110.3	17.41	.0981	57.95	.8090	.0230	7.613
#2	.5387	.1478	110.8	17.48	.0991	58.13	.8197	.0222	7.596
#3	.5269	.1471	110.7	17.55	.0980	58.11	.8116	.0219	7.679

Elem	Ni2316	Pb2203	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908
IS Ref	(Y_2243)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0931**	**.1329**	**-.0020**	**.0039**	**26.87**	**.0210**	**2.953**	**1.390**	**-.0053**
Stddev	.0021	.0052	.0059	.0187	.37	.0038	.013	.013	.0127
%RSD	2.292	3.880	286.7	483.9	1.375	17.91	.4404	.9027	240.3
#1	.0922	.1362	-.0048	-.0177	27.17	.0240	2.945	1.396	-.0071
#2	.0916	.1270	-.0060	.0141	26.99	.0168	2.946	1.375	-.0170
#3	.0956	.1356	.0047	.0152	26.46	.0221	2.968	1.398	.0083

Elem	V_2924	Zn2062
IS Ref	(Y_3600)	(Y_2243)
Units	ppm	ppm
Avg	**.5325**	**.3756**
Stddev	.0020	.0005
%RSD	.3697	.1200
#1	.5304	.3761
#2	.5343	.3755
#3	.5326	.3752

Zoom In Zoom Out

Sample Name: FC12205-3 Acquired: 1/3/2024 14:03:14 Type: Unk
Method: 60102007_COMBO_10242022(v436) Mode: CONC Corr. Factor: 5.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**655.92**	**2259.3**	**25114.**	**5535.9**
Stddev	.84	7.3	121.	28.4
%RSD	.12858	.32182	.48141	.51332
#1	656.88	2267.0	25249.	5566.6
#2	655.30	2258.4	25016.	5510.4
#3	655.59	2252.6	25076.	5530.8

Zoom In Zoom Out

Sample Name: MP43343-D1 Acquired: 1/3/2024 14:08:12 Type: Unk
Method: 60102007_COMBO_10242022(v436) Mode: CONC Corr. Factor: 5.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2497	Ba4554	Be3130	Ca3179	Cd2265	Co2286
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0046**	**236.0**	**.0949**	**.1529**	**.6852**	**.0121**	**694.9**	**.0008**	**.0281**
Stddev	.0003	.8	.0080	.0025	.0044	.0001	1.8	.0003	.0004
%RSD	5.669	.3376	8.466	1.641	.6494	.6442	.2589	33.54	1.296
#1	.0044	235.8	.0955	.1500	.6826	.0120	696.1	.0008	.0277
#2	.0045	235.3	.0865	.1548	.6826	.0120	692.9	.0010	.0285
#3	.0049	236.9	.1026	.1537	.6903	.0121	695.8	.0005	.0281

Elem	Cr2677	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895
IS Ref	(Y_3600)	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.6165**	**.1348**	**130.8**	**21.53**	**.1171**	**65.83**	**.9446**	**.0250**	**9.262**
Stddev	.0054	.0002	.7	.12	.0029	.16	.0035	.0008	.070
%RSD	.8811	.1679	.5393	.5526	2.440	.2423	.3746	3.078	.7541
#1	.6226	.1350	130.7	21.48	.1203	66.00	.9485	.0256	9.228
#2	.6147	.1347	130.2	21.45	.1159	65.69	.9417	.0253	9.215
#3	.6122	.1346	131.6	21.67	.1150	65.80	.9435	.0241	9.342

Elem	Ni2316	Pb2203	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908
IS Ref	(Y_2243)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1052**	**.1502**	**-.0098**	**.0137**	**16.68**	**.0207**	**3.320**	**1.411**	**.0118**
Stddev	.0016	.0019	.0024	.0077	.05	.0030	.017	.008	.0083
%RSD	1.537	1.272	25.02	56.54	.2786	14.66	.5241	.5738	69.88
#1	.1033	.1507	-.0086	.0073	16.71	.0242	3.316	1.420	.0207
#2	.1062	.1517	-.0126	.0223	16.70	.0196	3.305	1.408	.0043
#3	.1059	.1480	-.0082	.0115	16.63	.0184	3.339	1.405	.0104

Elem	V_2924	Zn2062
IS Ref	(Y_3600)	(Y_2243)
Units	ppm	ppm
Avg	**.6283**	**.3811**
Stddev	.0055	.0007
%RSD	.8677	.1729
#1	.6338	.3812
#2	.6229	.3817
#3	.6281	.3804

Zoom In Zoom Out

Sample Name: MP43343-D1 Acquired: 1/3/2024 14:08:12 Type: Unk
Method: 60102007_COMBO_10242022(v436) Mode: CONC Corr. Factor: 5.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**643.34**	**2307.2**	**25807.**	**5671.7**
Stddev	2.24	11.2	103.	7.6
%RSD	.34884	.48681	.40021	.13487
#1	645.89	2319.9	25688.	5665.1
#2	642.45	2303.2	25863.	5680.1
#3	641.67	2298.5	25869.	5670.1

Zoom In Zoom Out

Sample Name: MP43343-S1 Acquired: 1/3/2024 14:13:08 Type: Unk
Method: 60102007_COMBO_10242022(v436) Mode: CONC Corr. Factor: 5.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2497	Ba4554	Be3130	Ca3179	Cd2265	Co2286
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1639**	**206.5**	**.2567**	**.5652**	**.8006**	**.1837**	**620.2**	**.1728**	**.1931**
Stddev	.0011	.5	.0033	.0021	.0035	.0015	2.2	.0008	.0008
%RSD	.6855	.2227	1.302	.3754	.4371	.8011	.3551	.4786	.4031
#1	.1649	206.0	.2598	.5627	.7972	.1823	617.6	.1723	.1934
#2	.1642	206.7	.2532	.5661	.8005	.1835	621.6	.1737	.1937
#3	.1627	206.8	.2572	.5666	.8042	.1852	621.3	.1724	.1922

Elem	Cr2677	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895
IS Ref	(Y_3600)	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.8804**	**.3444**	**141.8**	**54.27**	**.5627**	**90.77**	**.9274**	**.5990**	**43.17**
Stddev	.0049	.0017	.9	.29	.0017	.48	.0037	.0002	.07
%RSD	.5518	.4980	.6553	.5376	.2976	.5278	.3970	.0306	.1654
#1	.8781	.3424	140.8	53.98	.5630	90.22	.9252	.5988	43.09
#2	.8860	.3456	141.7	54.28	.5609	91.03	.9317	.5990	43.22
#3	.8771	.3452	142.7	54.56	.5642	91.06	.9254	.5992	43.21

Elem	Ni2316	Pb2203	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908
IS Ref	(Y_2243)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2546**	**.3442**	**.0865**	**.1839**	**21.27**	**.4620**	**3.259**	**1.434**	**.2153**
Stddev	.0008	.0028	.0039	.0067	.04	.0019	.006	.000	.0051
%RSD	.3185	.8246	4.526	3.639	.1853	.4158	.1900	.0071	2.389
#1	.2537	.3438	.0856	.1888	21.23	.4620	3.252	1.434	.2165
#2	.2549	.3416	.0831	.1763	21.31	.4638	3.261	1.434	.2096
#3	.2552	.3472	.0908	.1865	21.27	.4600	3.263	1.434	.2197

Elem	V_2924	Zn2062
IS Ref	(Y_3600)	(Y_2243)
Units	ppm	ppm
Avg	**.6620**	**.5368**
Stddev	.0035	.0016
%RSD	.5319	.3062
#1	.6595	.5350
#2	.6660	.5383
#3	.6605	.5369

Zoom In Zoom Out

Sample Name: MP43343-S1 Acquired: 1/3/2024 14:13:08 Type: Unk
Method: 60102007_COMBO_10242022(v436) Mode: CONC Corr. Factor: 5.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**638.31**	**2163.4**	**24265.**	**5361.8**
Stddev	.93	4.4	55.	37.1
%RSD	.14512	.20378	.22565	.69260
#1	639.20	2167.5	24315.	5398.6
#2	637.35	2158.7	24206.	5324.3
#3	638.37	2164.0	24272.	5362.5

Zoom In Zoom Out

Sample Name: MP43343-S2 Acquired: 1/3/2024 14:18:03 Type: Unk
Method: 60102007_COMBO_10242022(v436) Mode: CONC Corr. Factor: 5.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2497	Ba4554	Be3130	Ca3179	Cd2265	Co2286
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1488**	**240.8**	**.2422**	**.5371**	**.8164**	**.1670**	**708.6**	**.1532**	**.1762**
Stddev	.0007	.8	.0026	.0032	.0015	.0005	3.6	.0003	.0007
%RSD	.4847	.3129	1.058	.5970	.1819	.3193	.5060	.1901	.4180
#1	.1496	240.9	.2449	.5340	.8169	.1666	711.1	.1529	.1758
#2	.1488	240.0	.2417	.5404	.8147	.1669	704.5	.1533	.1770
#3	.1481	241.5	.2399	.5367	.8176	.1676	710.2	.1534	.1757

Elem	Cr2677	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895
IS Ref	(Y_3600)	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.7250**	**.2707**	**152.2**	**54.02**	**.5338**	**95.51**	**1.019**	**.5366**	**41.05**
Stddev	.0066	.0028	.6	.09	.0015	.29	.004	.0023	.07
%RSD	.9090	1.016	.3729	.1582	.2846	.3002	.3544	.4226	.1820
#1	.7212	.2710	152.7	54.04	.5351	95.83	1.019	.5340	41.13
#2	.7212	.2678	151.6	53.92	.5321	95.30	1.015	.5381	40.98
#3	.7326	.2733	152.2	54.09	.5341	95.39	1.022	.5378	41.05

Elem	Ni2316	Pb2203	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908
IS Ref	(Y_2243)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2462**	**.3431**	**.0823**	**.1582**	**18.80**	**.4174**	**3.552**	**1.574**	**.2121**
Stddev	.0025	.0100	.0034	.0116	.04	.0008	.005	.007	.0260
%RSD	1.001	2.903	4.144	7.328	.2273	.1862	.1526	.4690	12.27
#1	.2441	.3327	.0840	.1455	18.75	.4179	3.552	1.578	.2390
#2	.2489	.3525	.0845	.1683	18.81	.4177	3.547	1.566	.2102
#3	.2456	.3442	.0784	.1607	18.83	.4165	3.558	1.579	.1870

Elem	V_2924	Zn2062
IS Ref	(Y_3600)	(Y_2243)
Units	ppm	ppm
Avg	**.7327**	**.5095**
Stddev	.0051	.0022
%RSD	.6997	.4399
#1	.7337	.5080
#2	.7271	.5120
#3	.7372	.5083

Zoom In Zoom Out

Sample Name: MP43343-S2 Acquired: 1/3/2024 14:18:03 Type: Unk
Method: 60102007_COMBO_10242022(v436) Mode: CONC Corr. Factor: 5.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**633.47**	**2258.6**	**25270.**	**5557.9**
Stddev	2.22	11.5	104.	42.7
%RSD	.35047	.50765	.41169	.76833
#1	635.49	2270.4	25323.	5524.2
#2	633.83	2257.8	25338.	5605.9
#3	631.09	2247.5	25151.	5543.7

Zoom In Zoom Out

Sample Name: MP43343-PS1 Acquired: 1/3/2024 14:22:57 Type: Unk
Method: 60102007_COMBO_10242022(v436) Mode: CONC Corr. Factor: 5.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2497	Ba4554	Be3130	Ca3179	Cd2265	Co2286
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0423**	**211.7**	**.1693**	**.1348**	**.8558**	**.0521**	**630.0**	**.0426**	**.0643**
Stddev	.0007	.4	.0045	.0101	.0014	.0003	2.8	.0002	.0009
%RSD	1.593	.1884	2.645	7.470	.1677	.4829	.4499	.3734	1.410
#1	.0431	212.1	.1741	.1352	.8575	.0523	633.3	.0427	.0639
#2	.0421	211.3	.1652	.1446	.8551	.0520	628.5	.0426	.0637
#3	.0418	211.7	.1687	.1245	.8549	.0518	628.4	.0424	.0654

Elem	Cr2677	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895
IS Ref	(Y_3600)	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.5735**	**.2313**	**116.4**	**26.16**	**.1005**	**64.18**	**.8630**	**.0992**	**15.64**
Stddev	.0028	.0026	.2	.08	.0021	.28	.0006	.0006	.02
%RSD	.4940	1.128	.1748	.2886	2.078	.4310	.0678	.5612	.1076
#1	.5744	.2339	116.5	26.10	.1012	64.47	.8631	.0990	15.64
#2	.5758	.2287	116.4	26.13	.1021	64.15	.8635	.0988	15.65
#3	.5703	.2314	116.1	26.24	.0981	63.92	.8624	.0998	15.62

Elem	Ni2316	Pb2203	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908
IS Ref	(Y_2243)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1755**	**.1823**	**.0786**	**.0859**	**27.43**	**.0635**	**3.063**	**1.494**	**.1109**
Stddev	.0016	.0046	.0033	.0152	.37	.0035	.005	.008	.0119
%RSD	.9020	2.525	4.193	17.66	1.365	5.494	.1516	.5463	10.69
#1	.1736	.1770	.0757	.0891	27.84	.0651	3.069	1.493	.1206
#2	.1764	.1849	.0780	.0992	27.31	.0595	3.059	1.502	.0977
#3	.1763	.1850	.0822	.0694	27.12	.0660	3.062	1.486	.1144

Elem	V_2924	Zn2062
IS Ref	(Y_3600)	(Y_2243)
Units	ppm	ppm
Avg	**.5788**	**.5818**
Stddev	.0019	.0018
%RSD	.3353	.3096
#1	.5768	.5838
#2	.5807	.5811
#3	.5789	.5804

Zoom In Zoom Out

Sample Name: MP43343-PS1 Acquired: 1/3/2024 14:22:57 Type: Unk
Method: 60102007_COMBO_10242022(v436) Mode: CONC Corr. Factor: 5.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**650.02**	**2255.8**	**25233.**	**5473.9**
Stddev	2.33	7.9	52.	25.1
%RSD	.35767	.35078	.20455	.45928
#1	652.62	2261.4	25282.	5445.6
#2	649.33	2259.4	25179.	5493.8
#3	648.13	2246.8	25238.	5482.3

Zoom In Zoom Out

Sample Name: MP43343-SD1 Acquired: 1/3/2024 14:27:53 Type: Unk
Method: 60102007_COMBO_10242022(v436) Mode: CONC Corr. Factor: 25.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2497	Ba4554	Be3130	Ca3179	Cd2265	Co2286
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0036**	**245.8**	**.0786**	**.1471**	**.7549**	**.0121**	**738.0**	**-.0002**	**.0311**
Stddev	.0070	.7	.0228	.0183	.0043	.0009	1.4	.0007	.0014
%RSD	192.5	.3000	29.01	12.42	.5737	7.632	.1854	342.1	4.552
#1	.0003	246.6	.0807	.1649	.7573	.0117	739.6	.0002	.0305
#2	-.0011	245.4	.0548	.1480	.7576	.0131	737.0	.0002	.0327
#3	.0116	245.4	.1003	.1284	.7499	.0113	737.5	-.0010	.0300

Elem	Cr2677	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895
IS Ref	(Y_3600)	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.6475**	**.1677**	**135.4**	**19.72**	**.1244**	**71.05**	**1.005**	**.0270**	**8.829**
Stddev	.0037	.0040	.4	.50	.0072	.20	.007	.0026	.112
%RSD	.5738	2.402	.2590	2.542	5.787	.2867	.6864	9.703	1.269
#1	.6436	.1676	135.8	19.40	.1236	71.06	1.008	.0280	8.957
#2	.6509	.1637	135.1	20.30	.1176	71.24	1.010	.0290	8.779
#3	.6481	.1718	135.2	19.46	.1319	70.84	.9974	.0241	8.750

Elem	Ni2316	Pb2203	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908
IS Ref	(Y_2243)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1215**	**.1219**	**-.0026**	**.1212**	**32.62**	**.0222**	**3.552**	**1.728**	**.0719**
Stddev	.0100	.0134	.0285	.0209	.59	.0035	.014	.085	.0288
%RSD	8.215	11.01	1092.	17.26	1.794	15.66	.3968	4.924	40.12
#1	.1227	.1104	.0293	.1066	33.27	.0257	3.567	1.696	.0508
#2	.1109	.1187	-.0253	.1119	32.44	.0222	3.551	1.825	.0601
#3	.1308	.1366	-.0119	.1452	32.14	.0187	3.539	1.664	.1048

Elem	V_2924	Zn2062
IS Ref	(Y_3600)	(Y_2243)
Units	ppm	ppm
Avg	**.6476**	**.4549**
Stddev	.0045	.0020
%RSD	.7002	.4424
#1	.6475	.4568
#2	.6522	.4550
#3	.6432	.4528

Zoom In Zoom Out

Sample Name: MP43343-SD1 Acquired: 1/3/2024 14:27:53 Type: Unk
Method: 60102007_COMBO_10242022(v436) Mode: CONC Corr. Factor: 25.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**718.63**	**1948.2**	**21499.**	**4654.8**
Stddev	2.34	3.8	111.	17.7
%RSD	.32498	.19610	.51858	.37951
#1	720.31	1949.8	21370.	4641.4
#2	719.61	1951.0	21568.	4674.8
#3	715.96	1943.9	21559.	4648.3

Zoom In Zoom Out

Sample Name: FC12205-12 Acquired: 1/3/2024 14:32:53 Type: Unk
Method: 60102007_COMBO_10242022(v436) Mode: CONC Corr. Factor: 5.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2497	Ba4554	Be3130	Ca3179	Cd2265	Co2286
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0040**	**177.9**	**.2479**	**.2048**	**1.133**	**.0088**	**984.7**	**.0024**	**.0230**
Stddev	.0007	.4	.0136	.0043	.003	.0001	5.7	.0001	.0007
%RSD	18.31	.2524	5.480	2.097	.2957	.8971	.5754	2.300	3.055
#1	.0036	177.4	.2504	.2004	1.131	.0088	978.2	.0023	.0233
#2	.0035	177.9	.2332	.2050	1.131	.0087	987.0	.0023	.0222
#3	.0048	178.3	.2601	.2090	1.137	.0089	988.8	.0024	.0236

Elem	Cr2677	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895
IS Ref	(Y_3600)	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.4262**	**.8350**	**125.7**	**14.36**	**.0816**	**77.43**	**2.015**	**.0331**	**12.99**
Stddev	.0042	.0019	.6	.06	.0034	.42	.007	.0016	.04
%RSD	.9779	.2223	.4934	.4276	4.124	.5457	.3323	4.910	.2966
#1	.4283	.8329	125.4	14.39	.0845	77.12	2.012	.0316	12.96
#2	.4289	.8356	125.2	14.29	.0779	77.27	2.022	.0330	12.98
#3	.4214	.8365	126.4	14.40	.0825	77.91	2.010	.0348	13.03

Elem	Ni2316	Pb2203	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908
IS Ref	(Y_2243)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1001**	**.2982**	**-.0020**	**.0110**	**13.07**	**.0291**	**10.27**	**.9624**	**.0113**
Stddev	.0009	.0021	.0048	.0075	.01	.0014	.02	.0015	.0117
%RSD	.9365	.7159	247.7	68.33	.1012	4.876	.2255	.1575	104.1
#1	.1012	.2996	.0028	.0091	13.08	.0275	10.25	.9641	.0062
#2	.0997	.2993	-.0069	.0046	13.06	.0301	10.29	.9621	.0029
#3	.0995	.2957	-.0018	.0193	13.08	.0299	10.29	.9611	.0247

Elem	V_2924	Zn2062
IS Ref	(Y_3600)	(Y_2243)
Units	ppm	ppm
Avg	**.4816**	**.7216**
Stddev	.0007	.0033
%RSD	.1391	.4597
#1	.4809	.7226
#2	.4822	.7178
#3	.4816	.7242

Zoom In Zoom Out

Sample Name: FC12205-12 Acquired: 1/3/2024 14:32:53 Type: Unk
Method: 60102007_COMBO_10242022(v436) Mode: CONC Corr. Factor: 5.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**632.77**	**1954.3**	**21690.**	**4908.8**
Stddev	.60	2.7	71.	29.0
%RSD	.09539	.13803	.32913	.59116
#1	633.26	1957.4	21744.	4917.2
#2	632.10	1953.1	21609.	4932.7
#3	632.97	1952.4	21717.	4876.5

Zoom In Zoom Out

Sample Name: FC12205-13 Acquired: 1/3/2024 14:37:57 Type: Unk
Method: 60102007_COMBO_10242022(v436) Mode: CONC Corr. Factor: 5.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2497	Ba4554	Be3130	Ca3179	Cd2265	Co2286
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0067**	**343.4**	**.1077**	**.1515**	**1.326**	**.0143**	**826.4**	**.0001**	**.0364**
Stddev	.0002	.6	.0031	.0048	.001	.0002	.8	.0003	.0004
%RSD	2.917	.1868	2.908	3.184	.0659	1.636	.0945	296.3	1.150
#1	.0070	342.7	.1048	.1466	1.326	.0144	825.9	.0001	.0359
#2	.0067	343.9	.1110	.1563	1.325	.0145	825.9	.0005	.0365
#3	.0066	343.6	.1072	.1515	1.327	.0141	827.3	-.0002	.0368

Elem	Cr2677	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895
IS Ref	(Y_3600)	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.5974**	**.2910**	**175.7**	**19.93**	**.1181**	**76.95**	**1.658**	**.0379**	**13.45**
Stddev	.0038	.0023	.5	.06	.0017	.40	.007	.0002	.04
%RSD	.6422	.7989	.2646	.3212	1.456	.5167	.4182	.4065	.2964
#1	.6018	.2884	175.3	19.90	.1169	76.55	1.664	.0380	13.41
#2	.5957	.2929	175.6	20.00	.1201	76.94	1.661	.0380	13.48
#3	.5947	.2916	176.2	19.88	.1174	77.35	1.651	.0377	13.48

Elem	Ni2316	Pb2203	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908
IS Ref	(Y_2243)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1278**	**.2385**	**-.0031**	**.0018**	**17.19**	**.0256**	**7.367**	**1.332**	**.0110**
Stddev	.0015	.0081	.0039	.0148	.05	.0001	.016	.003	.0041
%RSD	1.180	3.390	124.7	805.1	.3115	.3617	.2191	.2349	37.13
#1	.1274	.2369	-.0073	-.0103	17.13	.0256	7.348	1.329	.0083
#2	.1265	.2472	-.0023	-.0026	17.21	.0255	7.372	1.335	.0157
#3	.1295	.2313	.0003	.0183	17.23	.0257	7.379	1.330	.0090

Elem	V_2924	Zn2062
IS Ref	(Y_3600)	(Y_2243)
Units	ppm	ppm
Avg	**.6852**	**.4757**
Stddev	.0007	.0018
%RSD	.1000	.3730
#1	.6848	.4776
#2	.6860	.4754
#3	.6849	.4741

Zoom In Zoom Out

Sample Name: FC12205-13 Acquired: 1/3/2024 14:37:57 Type: Unk
Method: 60102007_COMBO_10242022(v436) Mode: CONC Corr. Factor: 5.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**637.38**	**2109.1**	**23663.**	**5180.3**
Stddev	1.10	12.0	49.	31.3
%RSD	.17200	.57114	.20821	.60387
#1	638.65	2122.7	23691.	5208.1
#2	636.73	2104.8	23607.	5186.4
#3	636.76	2099.8	23693.	5146.4

Zoom In Zoom Out

Sample Name: FC12205-19 Acquired: 1/3/2024 14:42:53 Type: Unk
Method: 60102007_COMBO_10242022(v436) Mode: CONC Corr. Factor: 5.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2497	Ba4554	Be3130	Ca3179	Cd2265	Co2286
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0031**	**167.5**	**.0948**	**.1318**	**.4667**	**.0083**	**1546.**	**.0040**	**.0225**
Stddev	.0008	.8	.0075	.0057	.0035	.0002	9.	.0004	.0005
%RSD	26.48	.4942	7.894	4.293	.7427	2.997	.5511	10.71	2.100
#1	.0028	167.8	.0921	.1287	.4679	.0086	1553.	.0040	.0219
#2	.0024	168.2	.1032	.1285	.4694	.0081	1547.	.0036	.0228
#3	.0040	166.6	.0890	.1384	.4628	.0083	1536.	.0044	.0226

Elem	Cr2677	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895
IS Ref	(Y_3600)	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.4337**	**.1513**	**80.97**	**13.94**	**.1254**	**163.9**	**.5639**	**.0333**	**14.88**
Stddev	.0062	.0005	.69	.11	.0027	1.5	.0044	.0009	.10
%RSD	1.434	.3270	.8513	.7821	2.156	.9207	.7734	2.684	.7021
#1	.4330	.1518	81.32	13.90	.1284	164.7	.5603	.0343	14.97
#2	.4279	.1508	81.40	14.06	.1249	164.8	.5626	.0330	14.91
#3	.4403	.1512	80.17	13.85	.1231	162.1	.5688	.0325	14.77

Elem	Ni2316	Pb2203	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908
IS Ref	(Y_2243)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0812**	**.1003**	**.0006**	**-.0095**	**12.74**	**.0221**	**5.741**	**.9297**	**.0138**
Stddev	.0001	.0056	.0028	.0060	.02	.0013	.030	.0025	.0108
%RSD	.0682	5.601	446.9	63.37	.1365	5.835	.5192	.2720	78.80
#1	.0813	.0991	.0002	-.0068	12.73	.0228	5.753	.9297	.0250
#2	.0812	.0953	-.0020	-.0164	12.76	.0206	5.763	.9271	.0130
#3	.0812	.1064	.0036	-.0053	12.72	.0229	5.707	.9322	.0033

Elem	V_2924	Zn2062
IS Ref	(Y_3600)	(Y_2243)
Units	ppm	ppm
Avg	**.5433**	**.4339**
Stddev	.0037	.0002
%RSD	.6828	.0568
#1	.5393	.4340
#2	.5437	.4340
#3	.5467	.4336

Zoom In Zoom Out

Sample Name: FC12205-19 Acquired: 1/3/2024 14:42:53 Type: Unk
Method: 60102007_COMBO_10242022(v436) Mode: CONC Corr. Factor: 5.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**604.32**	**2047.2**	**22838.**	**5152.1**
Stddev	1.98	6.2	143.	27.7
%RSD	.32747	.30118	.62545	.53852
#1	606.22	2054.0	22925.	5140.0
#2	604.47	2045.4	22916.	5132.5
#3	602.27	2042.0	22673.	5183.8

Zoom In Zoom Out

Sample Name: FC11943-6 Acquired: 1/3/2024 14:48:00 Type: Unk
Method: 60102007_COMBO_10242022(v436) Mode: CONC Corr. Factor: 2.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2497	Ba4554	Be3130	Ca3179	Cd2265	Co2286
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0073**	**2.204**	**-.0003**	**.0834**	**.4204**	**.0001**	**68.42**	**-.0077**	**.1082**
Stddev	.0015	.030	.0027	.0017	.0011	.0001	.46	.0002	.0001
%RSD	20.45	1.367	1018.	2.092	.2603	113.9	.6749	3.013	.0727
#1	.0090	2.238	.0016	.0843	.4209	.0000	68.88	-.0080	.1082
#2	.0067	2.193	.0010	.0844	.4192	.0001	68.43	-.0076	.1082
#3	.0061	2.181	-.0034	.0813	.4212	.0001	67.96	-.0075	.1083

Elem	Cr2677	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895
IS Ref	(Y_3600)	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1061**	**.0344**	**324.5**	**2.521**	**.0245**	**12.99**	**6.027**	**.0277**	**31.86**
Stddev	.0004	.0006	1.7	.030	.0009	.08	.029	.0005	.17
%RSD	.3896	1.856	.5375	1.190	3.811	.5783	.4860	1.835	.5443
#1	.1058	.0349	326.5	2.489	.0253	13.07	6.052	.0283	32.02
#2	.1066	.0337	323.6	2.549	.0235	12.93	5.995	.0273	31.68
#3	.1061	.0346	323.5	2.525	.0247	12.98	6.034	.0276	31.87

Elem	Ni2316	Pb2203	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908
IS Ref	(Y_2243)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1547**	**.0158**	**-.0022**	**.0021**	**8.733**	**.0015**	**.9119**	**.0851**	**-.0017**
Stddev	.0002	.0022	.0013	.0041	.009	.0011	.0036	.0002	.0037
%RSD	.1476	13.76	62.16	195.4	.0990	75.62	.3976	.1909	212.8
#1	.1547	.0140	-.0008	.0045	8.729	.0028	.9148	.0853	.0010
#2	.1544	.0183	-.0035	.0043	8.728	.0009	.9078	.0849	-.0003
#3	.1549	.0153	-.0021	-.0026	8.743	.0008	.9132	.0851	-.0060

Elem	V_2924	Zn2062
IS Ref	(Y_3600)	(Y_2243)
Units	ppm	ppm
Avg	**.1520**	**.0190**
Stddev	.0004	.0002
%RSD	.2576	1.110
#1	.1516	.0188
#2	.1520	.0192
#3	.1524	.0192

Zoom In Zoom Out

Sample Name: FC11943-6 Acquired: 1/3/2024 14:48:00 Type: Unk
Method: 60102007_COMBO_10242022(v436) Mode: CONC Corr. Factor: 2.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**694.84**	**1789.8**	**20187.**	**4448.2**
Stddev	.44	4.0	108.	24.1
%RSD	.06389	.22377	.53559	.54121
#1	694.36	1793.5	20106.	4420.7
#2	695.24	1790.3	20309.	4458.7
#3	694.93	1785.5	20145.	4465.3

Zoom In Zoom Out

Sample Name: CCV Acquired: 1/3/2024 14:52:59 Type: QC
Method: 60102007_COMBO_10242022(v436) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2497	Ba4554	Be3130	Ca3179	Cd2265	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2463**	**40.38**	**2.044**	**1.964**	**2.026**	**2.011**	**41.09**	**2.039**	**2.044**
Stddev	.0008	.10	.003	.005	.009	.005	.23	.002	.002
%RSD	.3130	.2586	.1665	.2470	.4437	.2694	.5486	.0722	.0890
#1	.2468	40.31	2.043	1.965	2.028	2.011	41.02	2.040	2.044
#2	.2454	40.50	2.048	1.958	2.033	2.017	41.35	2.040	2.045
#3	.2468	40.32	2.041	1.967	2.016	2.006	40.91	2.038	2.042
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Cr2677	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.945**	**1.972**	**40.72**	**41.09**	**2.022**	**39.98**	**2.026**	**2.055**	**40.54**
Stddev	.010	.005	.41	.17	.003	.47	.006	.003	.16
%RSD	.5032	.2596	1.009	.4027	.1590	1.173	.3225	.1489	.4050
#1	1.952	1.974	40.86	41.17	2.020	39.92	2.033	2.054	40.60
#2	1.949	1.966	41.05	41.21	2.026	40.48	2.025	2.059	40.67
#3	1.934	1.975	40.26	40.90	2.022	39.55	2.020	2.053	40.36
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Ni2316	Pb2203	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.980**	**2.073**	**2.023**	**2.044**	**2.055**	**2.046**	**1.984**	**1.989**	**2.057**
Stddev	.004	.005	.002	.006	.004	.003	.004	.002	.011
%RSD	.1992	.2339	.0863	.2867	.1791	.1449	.1944	.0907	.5194
#1	1.984	2.077	2.022	2.047	2.056	2.047	1.985	1.990	2.056
#2	1.980	2.074	2.025	2.049	2.057	2.049	1.988	1.987	2.069
#3	1.977	2.068	2.023	2.038	2.051	2.043	1.980	1.990	2.048
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Zoom In Zoom Out

Sample Name: CCV Acquired: 1/3/2024 14:52:59 Type: QC
Method: 60102007_COMBO_10242022(v436) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062
Units	ppm	ppm
Avg	**1.953**	**2.072**
Stddev	.005	.001
%RSD	.2785	.0635
#1	1.959	2.070
#2	1.950	2.072
#3	1.949	2.073
Check ?	Chk Pass	Chk Pass
Value		
Range		

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**638.27**	**1764.7**	**19841.**	**4338.2**
Stddev	1.02	1.8	35.	21.8
%RSD	.15992	.10460	.17725	.50365
#1	638.93	1766.9	19802.	4336.0
#2	637.09	1763.5	19850.	4317.6
#3	638.78	1763.8	19871.	4361.1

Zoom In Zoom Out

Sample Name: CCB Acquired: 1/3/2024 14:57:42 Type: QC
Method: 60102007_COMBO_10242022(v436) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2497	Ba4554	Be3130	Ca3179	Cd2265	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0001**	**.0079**	**.0002**	F **.0027**	**.0003**	**.0001**	**-.0027**	**.0000**	**-.0001**
Stddev	.0003	.0044	.0010	.0004	.0000	.0000	.0011	.0000	.0001
%RSD	533.5	55.95	404.4	13.26	4.285	20.55	39.74	61.24	49.73
#1	.0001	.0043	.0013	.0027	.0002	.0001	-.0020	.0000	-.0001
#2	-.0003	.0129	-.0001	.0024	.0003	.0002	-.0040	.0000	-.0002
#3	.0003	.0065	-.0006	.0031	.0002	.0001	-.0022	.0000	-.0001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit				.0010					
Low Limit				-.0010					

Elem	Cr2677	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0001**	**-.0006**	**.0017**	**-.0200**	**.0009**	**.0091**	**.0001**	**.0004**	**-.0058**
Stddev	.0003	.0001	.0028	.0151	.0006	.0159	.0000	.0001	.0039
%RSD	199.5	19.57	167.1	75.27	74.67	174.9	5.534	26.93	67.12
#1	.0000	-.0007	.0049	-.0372	.0003	.0240	.0001	.0005	-.0072
#2	.0000	-.0005	.0005	-.0092	.0007	-.0076	.0001	.0004	-.0014
#3	.0004	-.0005	-.0003	-.0136	.0015	.0108	.0001	.0003	-.0089
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Ni2316	Pb2203	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.0001**	**.0002**	**.0000**	**.0008**	**.0029**	**.0003**	**.0001**	**.0000**	**-.0006**
Stddev	.0001	.0003	.001	.0006	.0005	.0005	.0000	.000	.0012
%RSD	150.7	141.2	3345.	75.46	16.23	188.1	29.27	4145.	182.1
#1	.0000	-.0001	.0006	.0015	.0034	-.0003	.0001	.0001	-.0019
#2	-.0002	.0003	.0001	.0004	.0028	.0003	.0002	.0000	.0004
#3	.0000	.0004	-.0007	.0006	.0025	.0008	.0001	-.0001	-.0004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Zoom In Zoom Out

Sample Name: CCB Acquired: 1/3/2024 14:57:42 Type: QC
Method: 60102007_COMBO_10242022(v436) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062
Units	ppm	ppm
Avg	**.0001**	**.0005**
Stddev	.0002	.0001
%RSD	238.2	16.84
#1	-.0001	.0004
#2	.0002	.0005
#3	.0002	.0006
Check ?	Chk Pass	Chk Pass
High Limit		
Low Limit		

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**763.18**	**1882.6**	**20993.**	**4403.9**
Stddev	2.13	4.2	87.	1.2
%RSD	.27916	.22147	.41566	.02760
#1	765.64	1887.2	21086.	4405.2
#2	761.99	1881.4	20981.	4402.7
#3	761.91	1879.2	20912.	4403.8

Zoom In Zoom Out

Sample Name: MP43346-D1 Acquired: 1/3/2024 15:02:48 Type: Unk
Method: 60102007_COMBO_10242022(v436) Mode: CONC Corr. Factor: 2.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2497	Ba4554	Be3130	Ca3179	Cd2265	Co2286
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0067**	**2.122**	**-.0021**	**.0835**	**.3909**	**.0001**	**67.23**	**-.0077**	**.1069**
Stddev	.0012	.017	.0047	.0028	.0016	.0001	.25	.0002	.0004
%RSD	17.31	.7886	226.1	3.340	.4030	124.9	.3716	2.621	.3765
#1	.0054	2.140	-.0047	.0854	.3927	.0001	67.49	-.0076	.1069
#2	.0077	2.119	.0034	.0847	.3903	.0000	67.00	-.0076	.1065
#3	.0069	2.107	-.0050	.0803	.3897	.0000	67.21	-.0080	.1073

Elem	Cr2677	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895
IS Ref	(Y_3600)	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0952**	**.0345**	**319.7**	**2.456**	**.0244**	**12.78**	**5.894**	**.0273**	**31.24**
Stddev	.0003	.0004	.2	.004	.0020	.03	.034	.0002	.03
%RSD	.3004	1.060	.0492	.1758	8.314	.2181	.5687	.6285	.0899
#1	.0953	.0349	319.8	2.453	.0225	12.76	5.933	.0274	31.26
#2	.0948	.0342	319.8	2.461	.0266	12.81	5.871	.0274	31.25
#3	.0953	.0343	319.5	2.455	.0241	12.77	5.880	.0271	31.21

Elem	Ni2316	Pb2203	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908
IS Ref	(Y_2243)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1529**	**.0200**	**-.0020**	**.0025**	**8.500**	**.0010**	**.8944**	**.0808**	**-.0050**
Stddev	.0005	.0019	.0020	.0050	.019	.0010	.0016	.0003	.0020
%RSD	.3550	9.451	99.00	196.7	.2275	99.12	.1752	.3771	39.36
#1	.1524	.0205	-.0033	.0048	8.518	.0000	.8960	.0811	-.0030
#2	.1535	.0180	-.0030	-.0032	8.480	.0009	.8929	.0808	-.0069
#3	.1528	.0217	.0003	.0059	8.504	.0020	.8944	.0805	-.0053

Elem	V_2924	Zn2062
IS Ref	(Y_3600)	(Y_2243)
Units	ppm	ppm
Avg	**.1403**	**.0192**
Stddev	.0011	.0000
%RSD	.7692	.2364
#1	.1414	.0191
#2	.1403	.0191
#3	.1393	.0192

Zoom In Zoom Out

Sample Name: MP43346-D1 Acquired: 1/3/2024 15:02:48 Type: Unk
Method: 60102007_COMBO_10242022(v436) Mode: CONC Corr. Factor: 2.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**695.57**	**1792.4**	**20297.**	**4450.2**
Stddev	.78	5.0	133.	7.5
%RSD	.11198	.28076	.65550	.16741
#1	696.45	1794.7	20147.	4444.1
#2	695.28	1795.9	20402.	4458.5
#3	694.98	1786.7	20341.	4448.1

Zoom In Zoom Out

Sample Name: MP43346-S1 Acquired: 1/3/2024 15:07:48 Type: Unk
Method: 60102007_COMBO_10242022(v436) Mode: CONC Corr. Factor: 2.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2497	Ba4554	Be3130	Ca3179	Cd2265	Co2286
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1962**	**27.56**	**.2107**	**.5704**	**.5915**	**.2063**	**111.5**	**.1975**	**.3079**
Stddev	.0011	.10	.0035	.0015	.0035	.0007	.1	.0002	.0005
%RSD	.5504	.3623	1.638	.2694	.5992	.3389	.0567	.1259	.1551
#1	.1974	27.46	.2100	.5686	.5878	.2055	111.6	.1976	.3074
#2	.1955	27.66	.2076	.5710	.5919	.2067	111.5	.1977	.3082
#3	.1956	27.56	.2145	.5715	.5949	.2067	111.5	.1972	.3082

Elem	Cr2677	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895
IS Ref	(Y_3600)	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2890**	**.2384**	**355.9**	**48.55**	**.5369**	**56.77**	**5.860**	**.7165**	**72.82**
Stddev	.0023	.0003	1.3	.12	.0037	.18	.049	.0007	.34
%RSD	.7972	.1087	.3593	.2470	.6889	.3133	.8411	.1011	.4687
#1	.2873	.2382	354.6	48.41	.5327	56.63	5.857	.7172	72.44
#2	.2881	.2384	356.0	48.61	.5394	56.97	5.813	.7164	72.92
#3	.2916	.2387	357.1	48.63	.5386	56.69	5.911	.7158	73.11

Elem	Ni2316	Pb2203	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908
IS Ref	(Y_2243)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.3459**	**.2182**	**.1978**	**.2016**	**8.376**	**.5027**	**1.362**	**.5615**	**.1917**
Stddev	.0009	.0027	.0044	.0040	.017	.0030	.007	.0006	.0049
%RSD	.2522	1.240	2.233	2.009	.2050	.5900	.5241	.1024	2.532
#1	.3460	.2167	.1931	.2062	8.357	.5012	1.354	.5615	.1865
#2	.3468	.2165	.1984	.1986	8.381	.5061	1.363	.5609	.1961
#3	.3450	.2213	.2019	.1999	8.390	.5008	1.368	.5620	.1924

Elem	V_2924	Zn2062
IS Ref	(Y_3600)	(Y_2243)
Units	ppm	ppm
Avg	**.3356**	**.2260**
Stddev	.0023	.0008
%RSD	.6773	.3598
#1	.3336	.2259
#2	.3351	.2269
#3	.3381	.2252

Zoom In Zoom Out

Sample Name: MP43346-S1 Acquired: 1/3/2024 15:07:48 Type: Unk
Method: 60102007_COMBO_10242022(v436) Mode: CONC Corr. Factor: 2.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**661.19**	**1758.0**	**19941.**	**4359.8**
Stddev	2.30	6.0	108.	15.3
%RSD	.34846	.34399	.54174	.35084
#1	663.81	1764.0	19973.	4376.2
#2	659.49	1757.9	20030.	4357.2
#3	660.28	1751.9	19821.	4346.0

Zoom In Zoom Out

Sample Name: MP43346-S2 Acquired: 1/3/2024 15:12:38 Type: Unk
Method: 60102007_COMBO_10242022(v436) Mode: CONC Corr. Factor: 2.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2497	Ba4554	Be3130	Ca3179	Cd2265	Co2286
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1967**	**27.41**	**.2094**	**.5728**	**.5902**	**.2065**	**112.4**	**.1975**	**.3086**
Stddev	.0021	.11	.0016	.0021	.0007	.0005	.1	.0005	.0014
%RSD	1.044	.4087	.7630	.3686	.1203	.2406	.1194	.2544	.4562
#1	.1991	27.33	.2110	.5744	.5908	.2061	112.3	.1981	.3101
#2	.1955	27.38	.2078	.5704	.5894	.2065	112.5	.1972	.3083
#3	.1956	27.54	.2093	.5736	.5903	.2071	112.5	.1973	.3074

Elem	Cr2677	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895
IS Ref	(Y_3600)	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2913**	**.2400**	**356.4**	**48.50**	**.5357**	**56.59**	**6.008**	**.7154**	**73.17**
Stddev	.0042	.0003	1.1	.04	.0014	.20	.037	.0016	.03
%RSD	1.455	.1289	.3176	.0787	.2614	.3562	.6103	.2215	.0419
#1	.2961	.2403	357.1	48.53	.5371	56.74	6.050	.7172	73.20
#2	.2895	.2397	355.1	48.46	.5357	56.36	5.990	.7151	73.18
#3	.2882	.2401	357.0	48.51	.5343	56.67	5.983	.7141	73.14

Elem	Ni2316	Pb2203	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908
IS Ref	(Y_2243)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.3474**	**.2180**	**.1998**	**.1950**	**8.357**	**.4993**	**1.372**	**.5601**	**.1934**
Stddev	.0017	.0012	.0055	.0049	.027	.0009	.003	.0028	.0035
%RSD	.5017	.5430	2.752	2.507	.3217	.1724	.2182	.5026	1.833
#1	.3492	.2171	.1948	.2002	8.388	.4990	1.370	.5622	.1975
#2	.3473	.2193	.1988	.1943	8.337	.4986	1.375	.5569	.1914
#3	.3457	.2174	.2057	.1905	8.346	.5002	1.370	.5612	.1913

Elem	V_2924	Zn2062
IS Ref	(Y_3600)	(Y_2243)
Units	ppm	ppm
Avg	**.3338**	**.2223**
Stddev	.0027	.0006
%RSD	.8223	.2908
#1	.3367	.2228
#2	.3312	.2226
#3	.3335	.2216

Zoom In Zoom Out

Sample Name: MP43346-S2 Acquired: 1/3/2024 15:12:38 Type: Unk
Method: 60102007_COMBO_10242022(v436) Mode: CONC Corr. Factor: 2.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**660.04**	**1754.6**	**19720.**	**4395.1**
Stddev	2.63	.4	57.	6.6
%RSD	.39912	.02225	.28672	.14985
#1	660.68	1754.2	19659.	4402.4
#2	657.14	1754.9	19771.	4393.5
#3	662.29	1754.8	19729.	4389.5

Zoom In Zoom Out

Sample Name: MP43346-PS1 Acquired: 1/3/2024 15:17:29 Type: Unk
Method: 60102007_COMBO_10242022(v436) Mode: CONC Corr. Factor: 2.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2497	Ba4554	Be3130	Ca3179	Cd2265	Co2286
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0543**	**5.117**	**.1067**	**.0836**	**.6588**	**.0527**	**70.51**	**.0465**	**.1560**
Stddev	.0009	.057	.0018	.0029	.0060	.0005	.26	.0004	.0001
%RSD	1.570	1.122	1.677	3.440	.9168	1.032	.3644	.8342	.0588
#1	.0539	5.064	.1060	.0858	.6543	.0520	70.26	.0468	.1559
#2	.0553	5.178	.1055	.0803	.6656	.0531	70.77	.0461	.1561
#3	.0537	5.109	.1088	.0846	.6564	.0529	70.50	.0467	.1560

Elem	Cr2677	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895
IS Ref	(Y_3600)	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1837**	**.1373**	**309.3**	**12.47**	**.0251**	**17.42**	**5.829**	**.1271**	**39.69**
Stddev	.0046	.0009	2.8	.13	.0014	.11	.018	.0005	.30
%RSD	2.494	.6514	.9082	1.028	5.684	.6106	.3105	.4261	.7545
#1	.1882	.1363	307.1	12.38	.0254	17.31	5.812	.1275	39.37
#2	.1838	.1378	312.5	12.62	.0264	17.52	5.826	.1274	39.97
#3	.1791	.1379	308.3	12.42	.0236	17.42	5.848	.1265	39.74

Elem	Ni2316	Pb2203	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908
IS Ref	(Y_2243)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2510**	**.0671**	**.1038**	**.1013**	**9.080**	**.0565**	**.9224**	**.2084**	**.0971**
Stddev	.0003	.0014	.0022	.0025	.058	.0011	.0085	.0013	.0052
%RSD	.1353	2.066	2.076	2.481	.6370	1.875	.9183	.6413	5.329
#1	.2507	.0676	.1021	.0984	9.135	.0577	.9127	.2072	.1025
#2	.2514	.0655	.1062	.1029	9.087	.0560	.9284	.2098	.0968
#3	.2511	.0681	.1030	.1027	9.019	.0559	.9260	.2081	.0922

Elem	V_2924	Zn2062
IS Ref	(Y_3600)	(Y_2243)
Units	ppm	ppm
Avg	**.2179**	**.2828**
Stddev	.0023	.0009
%RSD	1.046	.3109
#1	.2155	.2818
#2	.2200	.2831
#3	.2183	.2835

Zoom In Zoom Out

Sample Name: MP43346-PS1 Acquired: 1/3/2024 15:17:29 Type: Unk
Method: 60102007_COMBO_10242022(v436) Mode: CONC Corr. Factor: 2.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**688.64**	**1788.4**	**20115.**	**4449.1**
Stddev	1.07	2.8	73.	22.6
%RSD	.15597	.15831	.36380	.50813
#1	687.60	1787.5	20198.	4469.1
#2	689.75	1791.5	20082.	4424.6
#3	688.57	1786.0	20063.	4453.8

Zoom In Zoom Out

Sample Name: MP43346-SD1 Acquired: 1/3/2024 15:22:22 Type: Unk
Method: 60102007_COMBO_10242022(v436) Mode: CONC Corr. Factor: 10.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2497	Ba4554	Be3130	Ca3179	Cd2265	Co2286
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0059**	**2.343**	**-.0173**	**.0772**	**.3881**	**-.0002**	**65.46**	**-.0081**	**.1018**
Stddev	.0029	.045	.0194	.0050	.0020	.0011	.38	.0003	.0018
%RSD	48.92	1.942	112.0	6.437	.5198	685.0	.5836	3.576	1.802
#1	.0092	2.298	-.0335	.0748	.3862	.0011	65.03	-.0078	.1012
#2	.0037	2.342	-.0227	.0738	.3902	-.0004	65.60	-.0081	.1039
#3	.0049	2.389	.0042	.0829	.3877	-.0012	65.75	-.0084	.1004

Elem	Cr2677	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895
IS Ref	(Y_3600)	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1286**	**.0291**	**307.4**	**2.288**	**.0196**	**12.61**	**5.859**	**.0239**	**29.17**
Stddev	.0067	.0008	.2	.088	.0090	.16	.036	.0005	.12
%RSD	5.199	2.631	.0668	3.836	45.90	1.275	.6073	2.135	.3975
#1	.1245	.0282	307.2	2.187	.0121	12.49	5.885	.0245	29.04
#2	.1363	.0295	307.6	2.337	.0296	12.79	5.818	.0235	29.27
#3	.1249	.0296	307.3	2.340	.0172	12.54	5.873	.0237	29.19

Elem	Ni2316	Pb2203	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908
IS Ref	(Y_2243)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1474**	**.0171**	**.0003**	**.0113**	**8.724**	**.0027**	**.8545**	**.1024**	**-.0038**
Stddev	.0022	.0044	.0044	.0146	.037	.0030	.0035	.0067	.0051
%RSD	1.465	25.93	1563.	129.3	.4303	110.3	.4103	6.551	132.8
#1	.1492	.0150	.0010	.0263	8.758	.0009	.8504	.0960	.0019
#2	.1480	.0141	.0043	.0104	8.731	.0011	.8568	.1094	-.0077
#3	.1450	.0222	-.0045	-.0028	8.684	.0062	.8562	.1020	-.0057

Elem	V_2924	Zn2062
IS Ref	(Y_3600)	(Y_2243)
Units	ppm	ppm
Avg	**.1665**	**.0183**
Stddev	.0060	.0013
%RSD	3.603	7.195
#1	.1600	.0188
#2	.1717	.0192
#3	.1678	.0167

Zoom In Zoom Out

Sample Name: MP43346-SD1 Acquired: 1/3/2024 15:22:22 Type: Unk
Method: 60102007_COMBO_10242022(v436) Mode: CONC Corr. Factor: 10.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**745.79**	**1886.0**	**20708.**	**4423.5**
Stddev	2.11	8.4	89.	6.4
%RSD	.28310	.44450	.43107	.14383
#1	748.23	1895.4	20677.	4425.1
#2	744.59	1883.4	20809.	4428.9
#3	744.56	1879.2	20638.	4416.5

Zoom In Zoom Out

Sample Name: FC12031-6 Acquired: 1/3/2024 15:27:23 Type: Unk
Method: 60102007_COMBO_10242022(v436) Mode: CONC Corr. Factor: 5.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2497	Ba4554	Be3130	Ca3179	Cd2265	Co2286
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.0003**	**-.0032**	**.0003**	**.1122**	**.0275**	**-.0004**	**549.2**	**-.0003**	**-.0009**
Stddev	.0013	.0331	.0059	.0059	.0014	.0000	4.4	.0002	.0008
%RSD	393.4	1043.	2111.	5.216	5.277	5.927	.7996	72.10	84.74
#1	-.0001	-.0188	-.0028	.1114	.0267	-.0004	544.6	-.0002	-.0010
#2	.0009	.0348	.0071	.1184	.0265	-.0004	549.6	-.0002	-.0001
#3	-.0017	-.0255	-.0035	.1068	.0291	-.0004	553.3	-.0005	-.0017

Elem	Cr2677	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895
IS Ref	(Y_3600)	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0016**	**-.0023**	**1.792**	**6.093**	**.0185**	**55.72**	**.1233**	**.0026**	**113.3**
Stddev	.0017	.0003	.019	.013	.0030	.85	.0006	.0005	.9
%RSD	109.2	13.27	1.048	.2145	16.05	1.530	.4735	17.94	.8238
#1	.0000	-.0024	1.779	6.086	.0170	54.74	.1228	.0023	112.2
#2	.0013	-.0025	1.782	6.086	.0167	56.09	.1232	.0032	113.7
#3	.0035	-.0019	1.813	6.109	.0220	56.33	.1240	.0025	114.0

Elem	Ni2316	Pb2203	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908
IS Ref	(Y_2243)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.0018**	**-.0090**	**-.0005**	**.0018**	**17.07**	**-.0011**	**3.386**	**.0072**	**.0055**
Stddev	.0004	.0047	.0094	.0048	.06	.0030	.020	.0007	.0118
%RSD	24.92	52.45	1933.	268.0	.3505	267.0	.5904	9.457	212.8
#1	-.0013	-.0065	.0007	-.0026	17.01	-.0041	3.364	.0064	-.0073
#2	-.0018	-.0144	.0082	.0011	17.09	.0019	3.391	.0078	.0158
#3	-.0022	-.0060	-.0104	.0069	17.13	-.0012	3.403	.0073	.0081

Elem	V_2924	Zn2062
IS Ref	(Y_3600)	(Y_2243)
Units	ppm	ppm
Avg	**.0008**	**.0098**
Stddev	.0012	.0005
%RSD	165.5	4.779
#1	.0021	.0093
#2	-.0004	.0099
#3	.0005	.0102

Zoom In Zoom Out

Sample Name: FC12031-6 Acquired: 1/3/2024 15:27:23 Type: Unk
Method: 60102007_COMBO_10242022(v436) Mode: CONC Corr. Factor: 5.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**664.46**	**1750.9**	**19843.**	**4358.7**
Stddev	3.62	8.9	86.	51.5
%RSD	.54469	.50914	.43439	1.1818
#1	668.47	1761.0	19922.	4416.2
#2	663.48	1747.7	19856.	4343.0
#3	661.44	1744.1	19751.	4316.8

Zoom In Zoom Out

Sample Name: FC12204-1 Acquired: 1/3/2024 15:32:26 Type: Unk
Method: 60102007_COMBO_10242022(v436) Mode: CONC Corr. Factor: 5.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2497	Ba4554	Be3130	Ca3179	Cd2265	Co2286
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0018**	**232.4**	**.0225**	**.0324**	**1.677**	**.0076**	**82.54**	**.0022**	**.0141**
Stddev	.0026	.5	.0020	.0072	.004	.0001	.09	.0002	.0002
%RSD	139.5	.2289	8.657	22.11	.2339	1.301	.1037	10.56	1.755
#1	-.0007	232.1	.0242	.0366	1.674	.0075	82.49	.0024	.0139
#2	.0019	233.0	.0204	.0241	1.676	.0076	82.64	.0020	.0141
#3	.0044	232.2	.0230	.0365	1.682	.0077	82.50	.0022	.0144

Elem	Cr2677	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895
IS Ref	(Y_3600)	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2981**	**.0415**	**71.33**	**3.611**	**.1094**	**8.244**	**.2614**	**.0043**	**1.641**
Stddev	.0034	.0004	.10	.068	.0021	.031	.0006	.0010	.014
%RSD	1.146	.9471	.1398	1.871	1.944	.3713	.2250	23.20	.8353
#1	.2986	.0418	71.44	3.546	.1070	8.249	.2616	.0032	1.640
#2	.2945	.0415	71.26	3.681	.1101	8.211	.2608	.0052	1.628
#3	.3012	.0410	71.28	3.606	.1111	8.272	.2619	.0043	1.656

Elem	Ni2316	Pb2203	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908
IS Ref	(Y_2243)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1517**	**.0957**	**-.0058**	**.0056**	**15.53**	**.0271**	**3.450**	**2.098**	**.0094**
Stddev	.0002	.0007	.0059	.0033	.03	.0017	.011	.006	.0119
%RSD	.1202	.7323	101.3	59.35	.1636	6.420	.3045	.3099	127.0
#1	.1519	.0959	-.0126	.0041	15.51	.0251	3.444	2.101	-.0023
#2	.1516	.0962	-.0017	.0094	15.52	.0284	3.462	2.091	.0216
#3	.1516	.0949	-.0032	.0033	15.56	.0279	3.444	2.103	.0088

Elem	V_2924	Zn2062
IS Ref	(Y_3600)	(Y_2243)
Units	ppm	ppm
Avg	**.1185**	**.5670**
Stddev	.0004	.0008
%RSD	.3237	.1450
#1	.1190	.5662
#2	.1184	.5672
#3	.1182	.5678

Zoom In Zoom Out

Sample Name: FC12204-1 Acquired: 1/3/2024 15:32:26 Type: Unk
Method: 60102007_COMBO_10242022(v436) Mode: CONC Corr. Factor: 5.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**706.82**	**2007.2**	**22066.**	**4753.1**
Stddev	2.21	9.1	22.	14.0
%RSD	.31260	.45418	.10054	.29393
#1	709.06	2012.6	22085.	4739.0
#2	706.76	2012.2	22072.	4753.3
#3	704.64	1996.6	22042.	4766.9

Zoom In Zoom Out

Sample Name: FC12204-2 Acquired: 1/3/2024 15:37:25 Type: Unk
Method: 60102007_COMBO_10242022(v436) Mode: CONC Corr. Factor: 5.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2497	Ba4554	Be3130	Ca3179	Cd2265	Co2286
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0032**	**178.0**	**.0145**	**.0196**	**1.185**	**.0056**	**116.3**	**.0019**	**.0083**
Stddev	.0028	1.5	.0040	.0055	.006	.0002	1.0	.0002	.0008
%RSD	88.80	.8492	27.82	27.89	.5167	3.747	.8749	9.085	9.484
#1	.0015	179.3	.0130	.0180	1.188	.0055	117.1	.0018	.0090
#2	.0016	178.4	.0115	.0257	1.189	.0055	116.5	.0017	.0075
#3	.0064	176.4	.0191	.0151	1.178	.0059	115.1	.0020	.0085

Elem	Cr2677	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895
IS Ref	(Y_3600)	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2497**	**.0135**	**61.54**	**2.203**	**.0867**	**6.203**	**.5027**	**.0018**	**1.524**
Stddev	.0033	.0000	.27	.034	.0023	.111	.0028	.0008	.029
%RSD	1.311	.0284	.4439	1.534	2.657	1.782	.5655	44.45	1.935
#1	.2459	.0135	61.69	2.184	.0892	6.299	.4994	.0021	1.558
#2	.2519	.0135	61.71	2.242	.0847	6.229	.5046	.0009	1.509
#3	.2511	.0135	61.23	2.183	.0860	6.082	.5040	.0025	1.504

Elem	Ni2316	Pb2203	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908
IS Ref	(Y_2243)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1120**	**.0734**	**-.0035**	**.0005**	**12.73**	**.0248**	**2.588**	**1.704**	**.0083**
Stddev	.0006	.0026	.0058	.0006	.02	.0006	.026	.012	.0034
%RSD	.5568	3.517	167.6	124.2	.1765	2.568	1.018	.6804	41.17
#1	.1113	.0745	-.0097	.0011	12.72	.0253	2.604	1.691	.0092
#2	.1126	.0705	-.0025	-.0001	12.76	.0241	2.602	1.709	.0111
#3	.1122	.0752	.0018	.0004	12.72	.0250	2.558	1.712	.0045

Elem	V_2924	Zn2062
IS Ref	(Y_3600)	(Y_2243)
Units	ppm	ppm
Avg	**.0843**	**.1377**
Stddev	.0008	.0012
%RSD	.8913	.8835
#1	.0843	.1385
#2	.0851	.1384
#3	.0836	.1363

Zoom In Zoom Out

Sample Name: FC12204-2 Acquired: 1/3/2024 15:37:25 Type: Unk
Method: 60102007_COMBO_10242022(v436) Mode: CONC Corr. Factor: 5.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**710.32**	**1982.8**	**21583.**	**4733.2**
Stddev	.76	3.2	138.	25.1
%RSD	.10697	.16159	.63791	.52947
#1	710.97	1986.4	21741.	4707.3
#2	710.49	1980.3	21507.	4734.7
#3	709.48	1981.8	21499.	4757.4

Zoom In Zoom Out

Sample Name: FC12204-3 Acquired: 1/3/2024 15:42:24 Type: Unk
Method: 60102007_COMBO_10242022(v436) Mode: CONC Corr. Factor: 5.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2497	Ba4554	Be3130	Ca3179	Cd2265	Co2286
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0008**	**169.7**	**.0167**	**.0227**	**1.255**	**.0059**	**46.87**	**.0013**	**.0087**
Stddev	.0013	1.2	.0031	.0069	.008	.0001	.45	.0003	.0003
%RSD	154.6	.7131	18.44	30.27	.6602	1.525	.9662	19.76	2.921
#1	.0004	170.2	.0191	.0304	1.260	.0059	47.08	.0016	.0087
#2	-.0002	170.5	.0177	.0173	1.259	.0060	47.18	.0011	.0084
#3	.0023	168.3	.0132	.0203	1.245	.0058	46.35	.0013	.0089

Elem	Cr2677	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895
IS Ref	(Y_3600)	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2764**	**.0163**	**66.52**	**2.379**	**.0719**	**5.760**	**.7182**	**.0018**	**2.227**
Stddev	.0026	.0008	.47	.072	.0041	.094	.0007	.0001	.010
%RSD	.9400	5.077	.7137	3.015	5.647	1.634	.0908	5.929	.4405
#1	.2794	.0156	66.64	2.310	.0703	5.773	.7182	.0020	2.227
#2	.2748	.0161	66.92	2.453	.0765	5.848	.7176	.0018	2.236
#3	.2750	.0173	65.99	2.374	.0689	5.661	.7189	.0018	2.217

Elem	Ni2316	Pb2203	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908
IS Ref	(Y_2243)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0977**	**.0664**	**-.0041**	**-.0032**	**14.15**	**.0259**	**2.814**	**1.688**	**-.0039**
Stddev	.0009	.0044	.0056	.0069	.06	.0012	.020	.007	.0019
%RSD	.9487	6.560	139.3	213.8	.4480	4.498	.7014	.4180	50.10
#1	.0984	.0621	-.0078	-.0073	14.20	.0258	2.828	1.680	-.0019
#2	.0966	.0662	-.0068	-.0072	14.17	.0248	2.822	1.693	-.0040
#3	.0980	.0708	.0024	.0048	14.08	.0271	2.791	1.691	-.0057

Elem	V_2924	Zn2062
IS Ref	(Y_3600)	(Y_2243)
Units	ppm	ppm
Avg	**.0986**	**.1269**
Stddev	.0015	.0012
%RSD	1.473	.9729
#1	.0971	.1283
#2	.0999	.1267
#3	.0989	.1258

Zoom In Zoom Out

Sample Name: FC12204-3 Acquired: 1/3/2024 15:42:24 Type: Unk
Method: 60102007_COMBO_10242022(v436) Mode: CONC Corr. Factor: 5.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**724.88**	**2020.7**	**22069.**	**4746.2**
Stddev	4.13	14.1	47.	36.5
%RSD	.56929	.69629	.21449	.76930
#1	729.43	2036.1	22122.	4737.2
#2	723.84	2017.6	22030.	4715.0
#3	721.37	2008.4	22054.	4786.3

Zoom In Zoom Out

Sample Name: FC12204-4 Acquired: 1/3/2024 15:47:23 Type: Unk
Method: 60102007_COMBO_10242022(v436) Mode: CONC Corr. Factor: 5.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2497	Ba4554	Be3130	Ca3179	Cd2265	Co2286
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0019**	**136.3**	**.0155**	**.0129**	**.8641**	**.0048**	**31.49**	**.0020**	**.0076**
Stddev	.0007	.4	.0044	.0077	.0028	.0004	.05	.0000	.0006
%RSD	33.48	.2915	28.21	59.36	.3280	8.894	.1665	2.261	8.371
#1	.0012	136.0	.0111	.0218	.8623	.0049	31.55	.0020	.0080
#2	.0022	136.2	.0199	.0092	.8673	.0043	31.45	.0019	.0079
#3	.0024	136.8	.0155	.0079	.8626	.0051	31.47	.0020	.0068

Elem	Cr2677	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895
IS Ref	(Y_3600)	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2435**	**.0090**	**51.27**	**1.376**	**.0582**	**3.856**	**.1427**	**.0019**	**2.404**
Stddev	.0022	.0012	.21	.091	.0022	.027	.0005	.0007	.013
%RSD	.9014	13.61	.4147	6.625	3.722	.7023	.3719	34.45	.5580
#1	.2460	.0095	51.29	1.373	.0573	3.827	.1432	.0017	2.419
#2	.2424	.0098	51.47	1.286	.0567	3.881	.1428	.0026	2.396
#3	.2420	.0076	51.05	1.469	.0607	3.861	.1421	.0013	2.397

Elem	Ni2316	Pb2203	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908
IS Ref	(Y_2243)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0750**	**.0570**	**-.0051**	**-.0040**	**11.42**	**.0227**	**2.184**	**1.317**	**.0129**
Stddev	.0009	.0031	.0014	.0091	.03	.0028	.007	.003	.0036
%RSD	1.180	5.437	28.00	225.5	.2706	12.27	.3225	.2552	27.95
#1	.0760	.0534	-.0066	-.0064	11.39	.0259	2.181	1.319	.0170
#2	.0746	.0588	-.0050	-.0117	11.42	.0207	2.179	1.319	.0101
#3	.0743	.0587	-.0038	.0060	11.45	.0216	2.192	1.313	.0117

Elem	V_2924	Zn2062
IS Ref	(Y_3600)	(Y_2243)
Units	ppm	ppm
Avg	**.0764**	**.0787**
Stddev	.0008	.0005
%RSD	1.063	.6614
#1	.0773	.0786
#2	.0760	.0783
#3	.0757	.0793

Zoom In Zoom Out

Sample Name: FC12204-4 Acquired: 1/3/2024 15:47:23 Type: Unk
Method: 60102007_COMBO_10242022(v436) Mode: CONC Corr. Factor: 5.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**726.34**	**1993.6**	**21835.**	**4721.3**
Stddev	2.42	7.3	92.	11.1
%RSD	.33342	.36831	.41998	.23430
#1	728.70	2000.4	21736.	4733.9
#2	726.46	1994.4	21850.	4713.3
#3	723.86	1985.8	21918.	4716.7

Zoom In Zoom Out

Sample Name: CCV Acquired: 1/3/2024 15:52:22 Type: QC
Method: 60102007_COMBO_10242022(v436) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2497	Ba4554	Be3130	Ca3179	Cd2265	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2555**	**40.54**	**2.064**	**1.975**	**2.011**	**2.007**	**41.05**	**2.043**	**2.048**
Stddev	.0013	.17	.003	.004	.009	.005	.17	.001	.002
%RSD	.5092	.4313	.1655	.2179	.4568	.2558	.4112	.0545	.1077
#1	.2546	40.73	2.064	1.976	2.021	2.013	41.23	2.043	2.049
#2	.2570	40.51	2.061	1.979	2.009	2.005	41.02	2.042	2.045
#3	.2550	40.38	2.068	1.970	2.003	2.004	40.90	2.045	2.049
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Cr2677	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**2.040**	**2.027**	**39.73**	**40.55**	**2.025**	**39.35**	**2.078**	**2.055**	**40.37**
Stddev	.009	.007	.21	.16	.010	.25	.006	.001	.18
%RSD	.4642	.3341	.5255	.4025	.5151	.6291	.2726	.0685	.4420
#1	2.034	2.020	39.97	40.72	2.036	39.63	2.073	2.056	40.58
#2	2.051	2.034	39.62	40.53	2.024	39.18	2.084	2.053	40.27
#3	2.035	2.027	39.59	40.40	2.015	39.23	2.076	2.055	40.27
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Ni2316	Pb2203	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**2.007**	**2.066**	**2.039**	**2.057**	**2.067**	**2.048**	**2.001**	**2.027**	**2.037**
Stddev	.001	.003	.009	.002	.002	.003	.006	.005	.031
%RSD	.0395	.1626	.4178	.0736	.0834	.1360	.2930	.2633	1.516
#1	2.008	2.070	2.036	2.056	2.065	2.050	2.008	2.021	2.001
#2	2.007	2.065	2.033	2.057	2.066	2.050	1.998	2.032	2.055
#3	2.006	2.064	2.049	2.059	2.068	2.045	1.998	2.027	2.055
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Zoom In Zoom Out

Sample Name: CCV Acquired: 1/3/2024 15:52:22 Type: QC
Method: 60102007_COMBO_10242022(v436) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062
Units	ppm	ppm
Avg	**2.032**	**2.064**
Stddev	.009	.004
%RSD	.4204	.2023
#1	2.028	2.063
#2	2.042	2.061
#3	2.026	2.069
Check ?	Chk Pass	Chk Pass
Value		
Range		

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**637.84**	**1755.2**	**19332.**	**4364.1**
Stddev	.61	2.5	60.	7.1
%RSD	.09563	.14001	.30829	.16234
#1	638.49	1755.9	19400.	4361.0
#2	637.75	1757.2	19292.	4372.2
#3	637.29	1752.4	19302.	4359.1

Zoom In Zoom Out

Sample Name: CCB Acquired: 1/3/2024 16:00:40 Type: QC
Method: 60102007_COMBO_10242022(v436) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	B_2497	Ba4554	Be3130	Ca3179	Cd2265	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0001**	**.0068**	**-.0005**	F **.0015**	**.0003**	**.0000**	**-.0020**	**.0000**	**.0001**
Stddev	.0000	.0017	.0006	.0011	.0000	.0000	.0024	.000	.0000
%RSD	21.30	24.57	112.7	72.27	16.67	1366.	119.3	60.31	24.06
#1	.0001	.0078	-.0006	.0012	.0003	.0000	.0003	.0000	.0001
#2	.0001	.0077	.0001	.0027	.0002	.0000	-.0046	-.0001	.0001
#3	.0001	.0049	-.0011	.0006	.0003	.0000	-.0018	.0000	.0001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit				.0010					
Low Limit				-.0010					

Elem	Cr2677	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0000**	**-.0005**	**-.0010**	**-.0122**	**.0003**	**.0050**	**.0000**	**.0001**	**-.0140**
Stddev	.000	.0001	.0009	.0021	.0002	.0147	.0000	.0001	.0017
%RSD	614.5	19.71	89.18	16.90	68.09	295.0	215.3	144.4	12.28
#1	-.0001	-.0004	-.0014	-.0103	.0001	-.0120	.0000	.0000	-.0158
#2	-.0003	-.0006	-.0016	-.0143	.0002	.0144	.0000	.0003	-.0139
#3	.0002	-.0006	.0000	-.0118	.0005	.0125	.0000	.0001	-.0124
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Ni2316	Pb2203	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0002**	**.0004**	**.0006**	**-.0003**	**.0014**	**.0001**	**.0000**	**.0001**	**.0007**
Stddev	.0002	.0007	.0008	.0021	.0004	.0002	.0000	.0001	.0006
%RSD	100.0	166.0	125.9	680.8	30.51	192.0	84.26	182.6	95.67
#1	.0000	.0013	-.0002	-.0023	.0010	.0001	.0000	.0001	.0008
#2	.0004	.0000	.0007	-.0007	.0019	.0003	.0000	.0001	.0012
#3	.0003	.0001	.0014	.0020	.0014	-.0001	.0001	-.0001	.0000
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Zoom In Zoom Out

Sample Name: CCB Acquired: 1/3/2024 16:00:40 Type: QC
Method: 60102007_COMBO_10242022(v436) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062
Units	ppm	ppm
Avg	**.0000**	**.0004**
Stddev	.000	.0000
%RSD	290.5	8.343
#1	.0000	.0004
#2	.0001	.0004
#3	-.0002	.0004
Check ?	Chk Pass	Chk Pass
High Limit		
Low Limit		

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**771.10**	**1899.7**	**20839.**	**4393.7**
Stddev	1.84	6.5	149.	21.3
%RSD	.23828	.34021	.71648	.48515
#1	772.13	1906.9	21001.	4393.1
#2	772.18	1894.5	20810.	4415.4
#3	768.97	1897.6	20707.	4372.7

NOTE: The remaining raw data for this batch is not relevant to this job. As such it has been omitted.

Element, Wavelength and Order	Use?	# IECs	IEC	k1	k2	Calc-in-fit?
Ag 328.068 {103}	☒	2	V	-0.005817	0.000000	No
			Fe	-0.000216	0.000000	No
Al 396.152 { 85}	☒	1	Mo	0.040336	0.000000	No
As 189.042 {478}	☒	4	Fe	-0.000032	0.000000	No
			Cr	-0.000653	0.000000	No
			Mo	0.000444	0.000000	No
			Al	0.000001	0.000000	No
B 249.773 {135}	☒	1	Fe	0.000584	0.000000	No
Ba 455.403 { 74}	☒	4	Fe	-0.000052	0.000000	No
			Al	0.000025	0.000000	No
			Ca	0.000016	0.000000	No
			Mg	0.000016	0.000000	No
Be 313.042 {108}	☒	2	V	0.000625	0.000000	No
			Ti	-0.000289	0.000000	No
Ca 317.933 {106}	☒	None				
Cd 226.502 {449}	☒	4	Fe	0.000145	0.000000	No
			Ca	-0.000000	0.000000	No
			Al	-0.000002	0.000000	No
			Ti	0.000103	0.000000	No
Co 228.616 {447}	☒	3	Mo	-0.001220	0.000000	No
			Ti	0.002210	0.000000	No
			Fe	0.000003	0.000000	No
Cr 267.716 {126}	☒	4	Al	0.000003	0.000000	No
			Fe	-0.000012	0.000000	No
			Ca	0.000002	0.000000	No
			Cd	-0.000120	0.000000	No
Cu 324.754 {104}	☒	10	Mo	0.000189	0.000000	No
			Sn	-0.000012	0.000000	No
			V	-0.000158	0.000000	No
			Al	0.000003	0.000000	No
			Mg	0.000003	0.000000	No
			Co	-0.000547	0.000000	No
			Cd	0.000190	0.000000	No
			Fe	-0.000097	0.000000	No
			Ca	0.000001	0.000000	No
			Ti	-0.000268	0.000000	No
Fe 259.940 {130}	☒	None				
In 230.606 {446}*	☒	None				
K 766.490 { 44}	☒	None				
Li 670.784 { 50}	☒	4	Ca	0.000004	0.000000	No
			Fe	0.000020	0.000000	No
			Al	-0.000009	0.000000	No
			Mg	-0.000006	0.000000	No
Mg 279.079 {121}	☒	None				
Mn 257.610 {131}	☒	2	Fe	-0.000001	0.000000	No
			Mg	0.000000	0.000000	No
Mo 202.030 {467}	☒	3	Fe	0.000003	0.000000	No
			Al	-0.000002	0.000000	No
			Ca	-0.000003	0.000000	No
Na 589.592 { 57}	☒	None				
Ni 231.604 {445}	☒	7	Fe	-0.000024	0.000000	No
			Co	0.000112	0.000000	No
			Mo	0.000980	0.000000	No
			Sb	-0.000120	0.000000	No
			Al	0.000003	0.000000	No
			Be	-0.000304	0.000000	No
			Tl	0.000172	0.000000	No

	Element, Wavelength and Order	Use?	# IECs	IEC	k1	k2	Calc-in-fit?
	Pb 220.353 {453}	☒	9	Al	0.000153	0.000000	No
				Fe	-0.000025	0.000000	No
				Mo	-0.002189	0.000000	No
				Cu	0.000467	0.000000	No
				Ti	0.000036	0.000000	No
				Si	0.000043	0.000000	No
				Ca	0.000012	0.000000	No
				Cr	-0.000260	0.000000	No
				Mg	0.000002	0.000000	No
	Sb 206.833 {463}	☒	11	Fe	0.000018	0.000000	No
				Cr	0.011486	0.000000	No
				Mo	-0.002538	0.000000	No
				V	-0.000441	0.000000	No
				Sn	-0.008695	0.000000	No
				Ti	0.000278	0.000000	No
				Ca	0.000001	0.000000	No
				Ni	-0.000818	0.000000	No
				Al	0.000005	0.000000	No
				Mn	-0.000133	0.000000	No
				Mg	-0.000002	0.000000	No
	Se 196.090 {472}	☒	12	Fe	-0.000021	0.000000	No
				Ca	0.000006	0.000000	No
				Mn	0.000331	0.000000	No
				Mo	0.000111	0.000000	No
				Al	0.000001	0.000000	No
				V	0.000000	0.000000	No
				Zn	0.000000	0.000000	No
				Sr	-0.000111	0.000000	No
				As	0.000125	0.000000	No
				Cd	-0.000250	0.000000	No
				Mg	0.000002	0.000000	No
				Cr	-0.000326	0.000000	No
	Si 212.412 {459}	☒	1	Mo	0.000000	0.000000	No
	Sn 189.989 {477}	☒	1	Fe	0.000010	0.000000	No
	Sr 407.771 { 83}	☒	2	Ca	-0.000006	0.000000	No
				Al	0.000012	0.000000	No
	Ti 334.941 {101}	☒	1	Ca	-0.000010	0.000000	No
	Tl 190.856 {477}	☒	10	Co	0.004099	0.000000	No
				Fe	0.000001	0.000000	No
				Al	0.000000	0.000000	No
				Ba	-0.000051	0.000000	No
				Ti	-0.000648	0.000000	No
				Sb	0.000167	0.000000	No
				Ca	0.000001	0.000000	No
				Cr	0.000340	0.000000	No
				Mg	-0.000002	0.000000	No
				V	0.000015	0.000000	No
	V 292.402 {115}	☒	5	Fe	0.000015	0.000000	No
				Cr	-0.003634	0.000000	No
				Mo	-0.009536	0.000000	No
				Ti	0.000303	0.000000	No
				Mn	-0.000333	0.000000	No
	Y 224.306 {450}*	☒	None				
	Y 360.073 { 94}*	☒	None				
	Y 371.030 { 91}*	☒	None				
	Zn 206.200 {463}	☒	5	Cr	-0.001305	0.000000	No
				Al	0.000014	0.000000	No

	Element, Wavelength and Order	Use?	# IECs	IEC	k1	k2	Calc-in-fit?
				Ca	0.000003	0.000000	No
				Fe	-0.000007	0.000000	No
				As	0.001105	0.000000	No

Element, Wavelength and Order	Date of Fit	Date of Cal.	Type of Fit	Weighting	A0	A1	A2	n (Exponent)
Ag 328.068 {103}	1/3/2024 12:31:14	1/3/2024 12:31:14	Curvilin	1/Conc	-0.000103	0.559671	0.004204	1.000000
Al 396.152 { 85}	1/3/2024 12:31:14	1/3/2024 12:31:14	Linear	1/Conc	0.000004	0.193799	0.000000	1.000000
As 189.042 {478}	1/3/2024 12:31:14	1/3/2024 12:31:14	Linear	1/Conc	-0.000429	0.145401	0.000000	1.000000
B 249.773 {135}	1/3/2024 12:31:14	1/3/2024 12:31:14	Linear	1/Conc	0.001150	0.705491	0.000000	1.000000
Ba 455.403 { 74}	1/3/2024 12:31:14	1/3/2024 12:31:14	Linear	1/Conc	0.005367	14.241533	0.000000	1.000000
Be 313.042 {108}	1/3/2024 12:31:14	1/3/2024 12:31:14	Linear	1/Conc	0.000084	12.196606	0.000000	1.000000
Ca 317.933 {106}	1/3/2024 12:31:14	1/3/2024 12:31:14	Linear	1/Conc	0.006890	0.269506	0.000000	1.000000
Cd 226.502 {449}	1/3/2024 12:31:14	1/3/2024 12:31:14	Linear	1/Conc	-0.000566	4.152487	0.000000	1.000000
Co 228.616 {447}	1/3/2024 12:31:14	1/3/2024 12:31:14	Linear	1/Conc	-0.000616	2.307975	0.000000	1.000000
Cr 267.716 {126}	1/3/2024 12:31:14	1/3/2024 12:31:14	Linear	1/Conc	0.000083	0.341907	0.000000	1.000000
Cu 324.754 {104}	1/3/2024 12:31:14	1/3/2024 12:31:14	Linear	1/Conc	0.003367	0.967019	0.000000	1.000000
Fe 259.940 {130}	1/3/2024 12:31:14	1/3/2024 12:31:14	Linear	1/Conc	0.000452	0.166709	0.000000	1.000000
In 230.606 {446}*	1/3/2024 11:48:41	5/5/2010 12:30:54	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
K 766.490 { 44}	1/3/2024 12:31:14	1/3/2024 12:31:14	Linear	1/Conc	-0.003467	0.151937	0.000000	1.000000
Li 670.784 { 50}	1/3/2024 12:31:14	1/3/2024 12:31:14	Linear	1/Conc	0.001541	3.618738	0.000000	1.000000
Mg 279.079 {121}	1/3/2024 12:31:14	1/3/2024 12:31:14	Linear	1/Conc	-0.001012	0.026492	0.000000	1.000000
Mn 257.610 {131}	1/3/2024 12:31:14	1/3/2024 12:31:14	Linear	1/Conc	0.000106	2.586575	0.000000	1.000000
Mo 202.030 {467}	1/3/2024 12:31:14	1/3/2024 12:31:14	Linear	1/Conc	0.000502	0.988676	0.000000	1.000000
Na 589.592 { 57}	1/3/2024 12:31:14	1/3/2024 12:31:14	Linear	1/Conc	0.019934	0.593806	0.000000	1.000000
Ni 231.604 {445}	1/3/2024 12:31:14	1/3/2024 12:31:14	Linear	1/Conc	-0.001073	1.252310	0.000000	1.000000
Pb 220.353 {453}	1/3/2024 12:31:14	1/3/2024 12:31:14	Linear	1/Conc	-0.002312	1.119611	0.000000	1.000000
Sb 206.833 {463}	1/3/2024 12:31:14	1/3/2024 12:31:14	Linear	1/Conc	0.000608	0.264418	0.000000	1.000000
Se 196.090 {472}	1/3/2024 12:31:14	1/3/2024 12:31:14	Linear	1/Conc	0.000096	0.117779	0.000000	1.000000
Si 212.412 {459}	1/3/2024 12:31:14	1/3/2024 12:31:14	Linear	1/Conc	0.005311	0.385051	0.000000	1.000000
Sn 189.989 {477}	1/3/2024 12:31:14	1/3/2024 12:31:14	Linear	1/Conc	0.000223	0.334610	0.000000	1.000000
Sr 407.771 { 83}	1/3/2024 12:31:14	1/3/2024 12:31:14	Linear	1/Conc	-0.002046	19.568098	0.000000	1.000000
Ti 334.941 {101}	1/3/2024 12:31:14	1/3/2024 12:31:14	Linear	1/Conc	0.000670	1.877543	0.000000	1.000000
Tl 190.856 {477}	1/3/2024 12:31:14	1/3/2024 12:31:14	Linear	1/Conc	-0.000035	0.307374	0.000000	1.000000
V 292.402 {115}	1/3/2024 12:31:14	1/3/2024 12:31:14	Linear	1/Conc	-0.000500	0.707075	0.000000	1.000000
Y 224.306 {450}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Y 360.073 { 94}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Y 371.030 { 91}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Zn 206.200 {463}	1/3/2024 12:31:14	1/3/2024 12:31:14	Linear	1/Conc	0.000915	1.768058	0.000000	1.000000

	Element, Wavelength and Order	Correlation	Std Error of Est	Predicted MDL	Predicted MQL	Status	Reslope		QC Norm	
							Slope	Y-int	Slope factor	Offset
	Ag 328.068 {103}	0.999921	0.000027	0.000441	0.001471	Warnin	1.000000	0.000000	1	0
	Al 396.152 { 85}	0.999966	0.000334	0.006581	0.021937	OK.	1.000000	0.000000	1	0
	As 189.042 {478}	0.999927	0.000018	0.001490	0.004965	OK.	1.000000	0.000000	1	0
	B 249.773 {135}	0.997237	0.001241	0.001449	0.004830	OK.	1.000000	0.000000	1	0
	Ba 455.403 { 74}	0.999990	0.002930	0.000132	0.000441	OK.	1.000000	0.000000	1	0
	Be 313.042 {108}	0.999936	0.001020	0.000049	0.000164	OK.	1.000000	0.000000	1	0
	Ca 317.933 {106}	0.999928	0.001509	0.002573	0.008577	OK.	1.000000	0.000000	1	0
	Cd 226.502 {449}	0.999945	0.000321	0.000073	0.000244	OK.	1.000000	0.000000	1	0
	Co 228.616 {447}	0.999915	0.000705	0.000142	0.000472	OK.	1.000000	0.000000	1	0
	Cr 267.716 {126}	0.999897	0.000051	0.000409	0.001364	OK.	1.000000	0.000000	1	0
	Cu 324.754 {104}	0.999967	0.000130	0.000230	0.000767	OK.	1.000000	0.000000	1	0
	Fe 259.940 {130}	0.999937	0.000478	0.002087	0.006957	OK.	1.000000	0.000000	1	0
	In 230.606 {446}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
	K 766.490 { 44}	0.999473	0.005293	0.018806	0.062686	OK.	1.000000	0.000000	1	0
	Li 670.784 { 50}	0.999805	0.000707	0.000752	0.002506	OK.	1.000000	0.000000	1	0
	Mg 279.079 {121}	0.999857	0.000474	0.017186	0.057286	OK.	1.000000	0.000000	1	0
	Mn 257.610 {131}	0.999888	0.000494	0.000051	0.000172	OK.	1.000000	0.000000	1	0
	Mo 202.030 {467}	0.999988	0.000114	0.000211	0.000705	OK.	1.000000	0.000000	1	0
	Na 589.592 { 57}	0.999584	0.018383	0.004400	0.014668	OK.	1.000000	0.000000	1	0
	Ni 231.604 {445}	0.999825	0.000489	0.000263	0.000876	OK.	1.000000	0.000000	1	0
	Pb 220.353 {453}	0.999947	0.000085	0.000818	0.002725	OK.	1.000000	0.000000	1	0
	Sb 206.833 {463}	0.999974	0.000014	0.001227	0.004092	OK.	1.000000	0.000000	1	0
	Se 196.090 {472}	0.999996	0.000004	0.002620	0.008733	OK.	1.000000	0.000000	1	0
	Si 212.412 {459}	0.965044	0.005630	0.000600	0.002001	OK.	1.000000	0.000000	1	0
	Sn 189.989 {477}	0.999942	0.000084	0.000543	0.001810	OK.	1.000000	0.000000	1	0
	Sr 407.771 { 83}	0.999912	0.002711	0.000058	0.000194	OK.	1.000000	0.000000	1	0
	Ti 334.941 {101}	0.999964	0.000166	0.000120	0.000400	OK.	1.000000	0.000000	1	0
	Tl 190.856 {477}	0.999797	0.000065	0.001876	0.006253	OK.	1.000000	0.000000	1	0
	V 292.402 {115}	0.999929	0.000194	0.000287	0.000956	OK.	1.000000	0.000000	1	0
	Y 224.306 {450}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
	Y 360.073 { 94}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
	Y 371.030 { 91}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
	Zn 206.200 {463}	0.999860	0.000436	0.000130	0.000432	OK.	1.000000	0.000000	1	0

SGS Orlando

Date:	12/30/23
Time [24hr]	12:26

Analysts Name:	Adam K
MP Batch ID:	43346
Method	SW846-3010A

Reagent / Lot Number		Spk.Soln(A)	Vol. Used (ml)	Pipette Number
Conc. HNO3 (B)	24002372	ACC1422	1	KU15244
Conc. HCl (B)	23I1962006	ACC1396	0.25	KU15244
NA	NA	MET7509	0.25	KU15244
NA	NA	NA	NA	NA

HotBlock I.D.	12	**Therm ID**	6130	**Temp. C**	95	**Corr. Factor**	0.5	**Corrected Observed Temp. C**	95.5
pH Paper Lot Number	230320			**Filter Lot Number**		306067223		**Digestion Tube Lot Number**	L223081404

	Bot#	Sample #	Initial Vol.(ml)	Final Vol.(ml)	pH<2	Comments
	NA	Method Blank(MB)	50	50	NA	
	NA	Spike Blank(SB)	50	50	NA	
	36	Matrix Spike(MS)	50	50	Y	
	36	Matrix Spike Dup(MSD)	50	50	Y	
	36	Duplicate(DUP)	50	50	Y	
1(QC) C	36	FC11943-6	50	50	Y	
2	2	FC12103-1F	50	50	Y	MB2-12/20-MP43309
3	2	FC12103-2F	50	50	Y	MB2-12/20-MP43309
4	11	FC12162-1	50	50	Y	
5	11	FC12162-2	50	50	Y	
6	11	FC12162-3	50	50	Y	
7	2	FC12002-2F	50	50	Y	
8	2	FC12002-3F	50	50	Y	
9	4	FC12031-6	50	50	Y	
10	8	FC12096-3	50	50	Y	
11	9	FC12096-3F	50	50	Y	
12	2	FC12119-1	50	50	Y	
13	2	FC12119-2	50	50	Y	
14	2	FC12119-3	50	50	Y	
15	2	FC12119-4	50	50	Y	
16	2	FC12119-5	50	50	Y	
17	4	FC12168-4	50	50	Y	
18	4	FC12168-5	50	50	Y	
19	4	FC12168-6	50	50	Y	
20	4	FC12168-8	50	50	Y	
21 [D]						
22 [D]						
23 [D]						
24 [D]						

Protected Worksheet

A Used for SB, MS, MSD
B For reagent volumes used refer to SOP MET 103, current verion
C Parent sample used to prepare MS, MSD, DUP
D Additional matrix QC

General Chemistry

QC Data Summaries

Includes the following where applicable:

- Method Blank and Blank Spike Summaries
- Duplicate Summaries
- Matrix Spike Summaries

METHOD BLANK AND SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: FC12031
Account: HGLFLMI - Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Solids, Total Dissolved	GN96171	50	0.0	mg/l	2000	1980	98.8	85-115%

Associated Samples:
Batch GN96171: FC12031-1, FC12031-2, FC12031-4, FC12031-8
(*) Outside of QC limits

DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: FC12031
Account: HGLFLMI - Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Solids, Total Dissolved	GN96171	FC12044-2	mg/l	88.0	92.0	4.4	0-10%

Associated Samples:
Batch GN96171: FC12031-1, FC12031-2, FC12031-4, FC12031-8
(*) Outside of QC limits

General Chemistry

Raw Data

TDS Worksheet

Method: SM2540-15, Editorial Rev. 2020

GN Batch ID:	96171	Filter Lot#	116519		
Analyst:	CC	Date (mm/dd/yy):	12/20/2023	12/20/2023	
Filter Date:	12/19/2023	Time (24hr)(Start/Finish):	9:45	12:05	
Balance ID:	C309773746	Temp Deg C (Start/Finish):	180	180	

All recorded temperatures are in corrected temperature.

104 Oven ID	oven#3
180 Oven ID	oven#4
Therm ID (Oven 3)	925350
Therm ID (Oven 4)	925330

Corr. Factor, C: 0

Corr. Factor, C: 0

	Bottle #	Sample ID	Dish #	Volume Filtered (ml)	Filter tare weight (g)	Initial weight after drying at 180 deg C (g)	Redry 1 Constant Weight in g (a)	Redry ?	Redry 2 Constant Weight in g (a)	Redry ?	Redry 3 Constant Weight in g (a)	Redry ?	TDS (mg/l)	RL (mg/l)	MDL (mg/l)	Scon(Umhos/cm)
MB	-	Method Blank	807	50.0	48.9368	48.9349	48.9348	NO		FALSE		FALSE	-40.0	50.0	40.0	-
QC1	19	FC12044-2	1	50.0	62.1588	62.1630	62.1632	NO		FALSE		FALSE	88.0	50.0	40.0	206
D1	19	FC12044-2D1	82	50.0	48.2538	48.2587	48.2584	NO		FALSE		FALSE	92.0	50.0	40.0	206
	-	Blank Spike	7	50.0	50.9825	51.0815	51.0813	NO		FALSE		FALSE	1976.0	50.0	40.0	-
	18	FC12044-3	9001	50.0	50.1695	50.1727	50.1726	NO		FALSE		FALSE	62.0	50.0	40.0	102
	19	FC12044-4	9002	50.0	49.8827	49.8878	49.8879	NO		FALSE		FALSE	104.0	50.0	40.0	208
	19	FC12044-5	9003	50.0	49.9254	49.9284	49.9285	NO		FALSE		FALSE	62.0	50.0	40.0	105
	19	FC12044-6	9004	50.0	49.6592	49.6616	49.6618	NO		FALSE		FALSE	52.0	50.0	40.0	104
	1	FC12031-1	9005	50.0	50.4234	50.4342	50.4345	NO		FALSE		FALSE	222.0	50.0	40.0	375
	4	FC12031-2	9006	50.0	49.8632	49.8953	49.8955	NO		FALSE		FALSE	646.0	50.0	40.0	1078
	1	FC12031-4	9007	50.0	50.2509	50.3056	50.3056	NO		FALSE		FALSE	1094.0	50.0	40.0	1610
	1	FC12031-8	9008	50.0	49.9265	49.9905	49.9906	NO		FALSE		FALSE	1282.0	50.0	40.0	1902
								FALSE		FALSE		FALSE		#DIV/0!	#DIV/0!	
								FALSE		FALSE		FALSE		#DIV/0!	#DIV/0!	
								FALSE		FALSE		FALSE		#DIV/0!	#DIV/0!	
								FALSE		FALSE		FALSE		#DIV/0!	#DIV/0!	
								FALSE		FALSE		FALSE		#DIV/0!	#DIV/0!	
								FALSE		FALSE		FALSE		#DIV/0!	#DIV/0!	
								FALSE		FALSE		FALSE		#DIV/0!	#DIV/0!	
								FALSE		FALSE		FALSE		#DIV/0!	#DIV/0!	
								FALSE		FALSE		FALSE		#DIV/0!	#DIV/0!	
								FALSE		FALSE		FALSE		#DIV/0!	#DIV/0!	
								FALSE		FALSE		FALSE		#DIV/0!	#DIV/0!	

Duplicate 1 RPD: 4.444

Analyst's Signature: _____ Date: 12.21.23

Reviewer's Signature: _____ Date: 12-21-23

The results set forth herein are provided by SGS North America Inc.

e-Hardcopy 2.0
Automated Report



Technical Report for

Hydrogeologic, Inc.

CRHEA-GWIM; Contractors Rd, KSC, FL

NS1004.05.10

SGS Job Number: FC12099

Sampling Dates: 12/18/23 - 12/19/23

Report to:

HGL, Inc
2405 N Courtenay Pkwy Suite 203
Merritt Island, FL 32953
jtracy@hgl.com; lnyland@hgl.com

ATTN: John Tracy

Total number of pages in report: **1976**

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable unless noted in the narrative, comments or footnotes.

Norm Farmer
Technical Director

Client Service contact: Jean Dent-Smith 407-425-6700

Certifications: FL(E83510), LA(03051), KS(E-10327), NC(573), NJ(FL002), NY(12022), SC(96038001) DoD ELAP(ANAB L2229), AZ(AZ0806), CA(2937), TX(T104704404), PA(68-03573), VA(460177), AL, AK, AR, CT, IA, KY, MA, MI. MS, ND, NH, NV, OK, OR, IL, UT, VT, WA, WI, WV

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January 11, 2024

Ms. Linda Nyland
HydroGeoLogic, Inc.
2405 N. Courtenay Parkway, Suite 203
Merritt Island, Florida 32953

RE: SGS North America Inc. - Orlando job FC12099 Reissue

Dear Ms. Nyland,

The final report for job number FC12099 has been revised to reflect your requested changes. These following edits have been incorporated into the revised report.

8260 VOC reporting list has been edited to report our Standard TAL as per your request.

Please feel free to contact us if we can be of further assistance.

Sincerely,

SGS North America Inc. - Orlando

Florida ♦ 4405 Vineland Road ♦ Suite C-15 ♦ Orlando, FL 32811 ♦ tel: 407 425-6700 ♦ fax: 407 425-0707

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SGS North America Inc.

Sample Summary

Hydrogeologic, Inc.

Job No: FC12099

CRHEA-GWIM; Contractors Rd, KSC, FL
Project No: NS1004.05.10

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
FC12099-1	12/18/23	08:49	MWBS	12/19/23	AQ	Ground Water	CRHE-MW0030-016.0-20231218
FC12099-2	12/18/23	09:39	MWBS	12/19/23	AQ	Ground Water	CRHE-IW0009S-007.0-20231218
FC12099-3	12/18/23	10:33	MWBS	12/19/23	AQ	Ground Water	CRHE-MW0025-030.0-20231218
FC12099-4	12/18/23	11:45	MWBS	12/19/23	AQ	Ground Water	CRHE-MW0024-010.0-20231218
FC12099-5	12/18/23	12:29	MWBS	12/19/23	AQ	Ground Water	CRHE-IW0002S-008.0-20231218
FC12099-6	12/18/23	13:20	MWBS	12/19/23	AQ	Ground Water	CRHE-IW0004I-035.0-20231218
FC12099-7	12/18/23	13:30	MWBS	12/19/23	AQ	Field Blank Water	CRHE-FB-20231218-01
FC12099-8	12/18/23	13:40	MWBS	12/19/23	AQ	Equipment Blank	CRHE-EB-20231218-01
FC12099-9	12/18/23	14:37	MWBS	12/19/23	AQ	Ground Water	CRHE-MW0032-045.0-20231218
FC12099-10	12/19/23	08:57	MWBS	12/19/23	AQ	Ground Water	CRHE-MW0027-045.0-20231219
FC12099-11	12/19/23	10:27	MWBS	12/19/23	AQ	Ground Water	CRHE-MW0041-035.0-20231219
FC12099-12	12/19/23	12:49	MWBS	12/19/23	AQ	Ground Water	CRHE-MW0034-035.0-20231219
FC12099-13	12/19/23	13:48	MWBS	12/19/23	AQ	Ground Water	CRHE-MW0042-040.0-20231219

Sample Summary
(continued)

Hydrogeologic, Inc.

Job No: FC12099

CRHEA-GWIM; Contractors Rd, KSC, FL
Project No: NS1004.05.10

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
FC12099-14	12/18/23	09:30	MWBS	12/19/23	AQ	Ground Water	CRHE-IW0001S-008.0-20231218
FC12099-15	12/18/23	10:24	MWBS	12/19/23	AQ	Ground Water	CRHE-IW0019I-040.0-20231218
FC12099-16	12/18/23	11:34	MWBS	12/19/23	AQ	Ground Water	CRHE-IW0013S-007.5-20231218
FC12099-17	12/18/23	13:22	MWBS	12/19/23	AQ	Ground Water	CRHE-IW0017I-030.0-20231218
FC12099-18	12/18/23	14:52	MWBS	12/19/23	AQ	Ground Water	CRHE-MW0035-045.0-20231218
FC12099-19	12/19/23	08:20	MWBS	12/19/23	AQ	Ground Water	CRHE-MW0043-043.0-20231219
FC12099-20	12/19/23	10:31	MWBS	12/19/23	AQ	Ground Water	CRHE-MW0039-030.0-20231219
FC12099-21	12/18/23	10:20	MWBS	12/19/23	AQ	Trip Blank Water	CRHE-TB-20231218-01
FC12099-22	12/18/23	10:21	MWBS	12/19/23	AQ	Trip Blank Water	CRHE-TB-20231218-02

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: Hydrogeologic, Inc. **Job No:** FC12099

Site: CRHEA-GWIM; Contractors Rd, KSC, FL **Report Date:** 1/9/2024 10:39:26 AM

On 12/19/2023, 18 Sample(s), 2 Trip Blank(s), 1 Equip. Blank(s) and 1 Field Blank(s) were received at SGS North America Inc - Orlando. at a maximum corrected temperature of 2.8 C. Samples were intact and chemically preserved, unless noted below. A SGS North America Inc. - Orlando Job Number of FC12099 was assigned to the project.

Laboratory sample ID, client sample ID and dates of sample collection are detailed in the report's Results Summary Section. Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

MS Volatiles By Method SW846 8260D

Matrix: AQ **Batch ID:** V1A2028

Sample(s) FC12194-13MS, FC12194-13MSD were used as the QC samples indicated.

V1A2028-MB: Sample was treated with an anti-foaming agent.

Matrix: AQ **Batch ID:** V5E1996

Sample(s) FC12099-3MS, FC12099-3MSD were used as the QC samples indicated.

RPD(s) for MSD for Vinyl Chloride are outside control limits for sample FC12099-3MSD. Probable cause is due to sample non-homogeneity.

FC12099-12: Confirmation run.

FC12099-13: Confirmation run.

V5E1996-MB: Sample was treated with an anti-foaming agent.

MS Volatiles By Method SW846 8260D BY SIM

Matrix: AQ **Batch ID:** VA3455

VA3455-BS: No MS/MSD available for this run.

MS Semi-volatiles By Method EPA 537M QSM5.3 B-15

Matrix: AQ **Batch ID:** OP835

Sample(s) FC12189-4MS, FC12189-4MSD were used as the QC samples indicated.

Sample(s) FC12099-14, FC12099-3, FC12099-4, FC12099-6 have surrogates outside control limits.

OP835-BS for 13C8-PFOS: Outside control limits.
OP835-BS for 13C2-PFTeDA: Outside control limits.
OP835-MB for 13C2-PFTeDA: Outside control limits.
OP835-MB for 13C8-PFOS: Outside control limits.

FC12099-3: Confirmation run.
FC12099-4 for 13C8-FOSA: Outside control limits.

FC12099-4 for PFOSA: Associated ID Standard outside control limits.

FC12099-4: Dilution required (ID recovery standard failure).

FC12099-6 for 13C8-FOSA: Outside control limits.

FC12099-6: Dilution required (ID recovery standard failure).

FC12099-14: Confirmation run.

Matrix: AQ **Batch ID:** OP937

Sample(s) FC12185-2MS, FC12185-2MSD were used as the QC samples indicated.

Sample(s) FC12099-14, FC12099-3 have surrogates outside control limits.

OP937-MB for 13C2-PFTeDA: Outside control limits.
FC12099-3 for 13C2-PFTeDA: Outside control limits.

FC12099-3 for 13C8-FOSA: Outside control limits.

FC12099-3 for Perfluorotetradecanoic acid: Associated ID Standard outside control limits.

FC12099-3 for PFOSA: Associated ID Standard outside control limits.

FC12099-3: Dilution required (ID recovery standard failure).

FC12099-14 for 13C2-PFTeDA: Outside control limits.
FC12099-14 for 13C8-FOSA: Outside control limits.

FC12099-14 for Perfluorotetradecanoic acid: Associated ID Standard outside control limits.

FC12099-14: Dilution required (ID recovery standard failure).

General Chemistry By Method SM2540 C-15

Matrix: AQ **Batch ID:** GN96183

Sample(s) FC12045-3DUP were used as the QC samples for Solids, Total Dissolved.

SGS North America Inc. - Orlando certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting the Quality System precision, accuracy and completeness objectives except as noted. Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria. SGS North America Inc.- Orlando is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety.

Narrative prepared by:

_____

Kim Benham, Client Services *(Signature on File)*

Summary of Hits

Job Number: FC12099
Account: Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL
Collected: 12/18/23 thru 12/19/23

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	LOQ	LOD	Units	Method
FC12099-1	**CRHE-MW0030-016.0-20231218**					
Perfluorobutanoic acid		0.0694	0.017	0.0083	ug/l	EPA 537M QSM5.3 B-15
Perfluoropentanoic acid		0.010	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanoic acid		0.0062 J	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluoroheptanoic acid		0.0077 J	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluorooctanoic acid		0.0076 J	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluorooctanesulfonic acid		0.0085	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
FC12099-2	**CRHE-IW0009S-007.0-20231218**					
Perfluorobutanoic acid		0.0324	0.017	0.0083	ug/l	EPA 537M QSM5.3 B-15
Perfluoropentanoic acid		0.0205	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanoic acid		0.0135	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluoroheptanoic acid		0.0122	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluorooctanoic acid		0.0155	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluorononanoic acid		0.0094	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluorodecanoic acid		0.0031 J	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluorobutanesulfonic acid		0.0024 J	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanesulfonic acid		0.0168	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluorooctanesulfonic acid		0.0991	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
FC12099-3	**CRHE-MW0025-030.0-20231218**					
1,4-Dioxane		4.6	1.0	0.75	ug/l	SW846 8260D BY SIM
Perfluoropentanoic acid		0.0043 J	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanoic acid		0.0032 J	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorooctanoic acid		0.0033 J	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluoropentanesulfonic acid		0.0021 J	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanesulfonic acid		0.0069 J	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Solids, Total Dissolved		940	50	50	mg/l	SM2540 C-15
FC12099-4	**CRHE-MW0024-010.0-20231218**					
Perfluorobutanoic acid		0.0243	0.017	0.0083	ug/l	EPA 537M QSM5.3 B-15
Perfluoropentanoic acid		0.0349	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanoic acid		0.0273	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluoroheptanoic acid		0.0247	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluorooctanoic acid		0.0249	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluorobutanesulfonic acid		0.0078 J	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluoropentanesulfonic acid		0.0023 J	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanesulfonic acid		0.0209	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluorooctanesulfonic acid		0.0242	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15

Summary of Hits

Job Number: FC12099
Account: Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL
Collected: 12/18/23 thru 12/19/23

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	LOQ	LOD	Units	Method
FC12099-5	**CRHE-IW0002S-008.0-20231218**					
Perfluorobutanoic acid		0.0553	0.017	0.0083	ug/l	EPA 537M QSM5.3 B-15
Perfluoropentanoic acid		0.0104	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanoic acid		0.0077 J	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluoroheptanoic acid		0.0062 J	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluorooctanoic acid		0.0221	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluorononanoic acid		0.0651	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluorodecanoic acid		0.0074 J	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluorooctanesulfonic acid		0.143	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
FC12099-6	**CRHE-IW0004I-035.0-20231218**					
Perfluorobutanoic acid		0.0422	0.017	0.0083	ug/l	EPA 537M QSM5.3 B-15
Perfluoropentanoic acid		0.0035 J	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanoic acid		0.0047 J	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluoroheptanoic acid		0.0049 J	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluorooctanoic acid		0.0176	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluorobutanesulfonic acid		0.0164	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanesulfonic acid		0.0086	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluorooctanesulfonic acid		0.108	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
FC12099-7	**CRHE-FB-20231218-01**					
No hits reported in this sample.						
FC12099-8	**CRHE-EB-20231218-01**					
No hits reported in this sample.						
FC12099-9	**CRHE-MW0032-045.0-20231218**					
cis-1,2-Dichloroethylene		0.81 J	1.0	0.50	ug/l	SW846 8260D
Vinyl Chloride		0.85 J	1.0	0.50	ug/l	SW846 8260D
FC12099-10	**CRHE-MW0027-045.0-20231219**					
Toluene		0.90 J	1.0	0.50	ug/l	SW846 8260D
FC12099-11	**CRHE-MW0041-035.0-20231219**					
cis-1,2-Dichloroethylene		4.2	1.0	0.50	ug/l	SW846 8260D
trans-1,2-Dichloroethylene		0.71 J	1.0	0.50	ug/l	SW846 8260D
Vinyl Chloride		98.4	1.0	0.50	ug/l	SW846 8260D
1,4-Dioxane		2.6	1.0	0.75	ug/l	SW846 8260D BY SIM

Summary of Hits

Job Number: FC12099
Account: Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL
Collected: 12/18/23 thru 12/19/23

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	LOQ	LOD	Units	Method
FC12099-12	**CRHE-MW0034-035.0-20231219**					
Chlorobenzene		1.4	1.0	0.50	ug/l	SW846 8260D
cis-1,2-Dichloroethylene		2.0	1.0	0.50	ug/l	SW846 8260D
Vinyl Chloride		76.1	5.0	2.5	ug/l	SW846 8260D
FC12099-13	**CRHE-MW0042-040.0-20231219**					
cis-1,2-Dichloroethylene		2.9	1.0	0.50	ug/l	SW846 8260D
trans-1,2-Dichloroethylene		2.9	1.0	0.50	ug/l	SW846 8260D
Vinyl Chloride		101	5.0	2.5	ug/l	SW846 8260D
FC12099-14	**CRHE-IW0001S-008.0-20231218**					
Perfluorobutanoic acid		0.157	0.016	0.0080	ug/l	EPA 537M QSM5.3 B-15
Perfluoropentanoic acid		0.0021 J	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanoic acid		0.0024 J	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluoroheptanoic acid		0.0026 J	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorooctanoic acid		0.0175	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanesulfonic acid		0.0090	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorooctanesulfonic acid		0.0545	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
FC12099-15	**CRHE-IW0019I-040.0-20231218**					
trans-1,2-Dichloroethylene		3.3	2.5	1.3	ug/l	SW846 8260D
Methylene Chloride		6.3 J	13	10	ug/l	SW846 8260D
Vinyl Chloride		172	2.5	1.3	ug/l	SW846 8260D
Perfluoropentanoic acid		0.0067 J	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanoic acid		0.0068 J	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluoroheptanoic acid		0.0052 J	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorooctanoic acid		0.0150	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanesulfonic acid		0.0051 J	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorooctanesulfonic acid		0.0111	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
FC12099-16	**CRHE-IW0013S-007.5-20231218**					
Perfluorobutanoic acid		0.0170	0.017	0.0083	ug/l	EPA 537M QSM5.3 B-15
Perfluorooctanesulfonic acid		0.0032 J	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
FC12099-17	**CRHE-IW0017I-030.0-20231218**					
Perfluorobutanoic acid		0.0071 J	0.017	0.0083	ug/l	EPA 537M QSM5.3 B-15

Summary of Hits

Job Number: FC12099
Account: Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL
Collected: 12/18/23 thru 12/19/23

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	LOQ	LOD	Units	Method
FC12099-18	**CRHE-MW0035-045.0-20231218**					
cis-1,2-Dichloroethylene		0.57 J	1.0	0.50	ug/l	SW846 8260D
Vinyl Chloride		4.5	1.0	0.50	ug/l	SW846 8260D
1,4-Dioxane		6.7	1.0	0.75	ug/l	SW846 8260D BY SIM
FC12099-19	**CRHE-MW0043-043.0-20231219**					
Solids, Total Dissolved		574	50	50	mg/l	SM2540 C-15
FC12099-20	**CRHE-MW0039-030.0-20231219**					
Vinyl Chloride		3.8	1.0	0.50	ug/l	SW846 8260D
1,4-Dioxane		5.7	1.0	0.75	ug/l	SW846 8260D BY SIM
FC12099-21	**CRHE-TB-20231218-01**					
No hits reported in this sample.						
FC12099-22	**CRHE-TB-20231218-02**					
No hits reported in this sample.						

Sample Results

Report of Analysis

SGS North America Inc.

Report of Analysis

Client Sample ID:	CRHE-MW0030-016.0-20231218		
Lab Sample ID:	FC12099-1	**Date Sampled:**	12/18/23
Matrix:	AQ - Ground Water	**Date Received:**	12/19/23
Method:	EPA 537M QSM5.3 B-15 EPA 537 MOD	**Percent Solids:**	n/a
Project:	CRHEA-GWIM; Contractors Rd, KSC, FL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5Q23946.D	1	12/29/23 01:02	NG	12/26/23 07:30	OP835	S5Q375
Run #2							

	Initial Volume	Final Volume
Run #1	120 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0694	0.017	0.0083	0.0042	ug/l	
2706-90-3	Perfluoropentanoic acid	0.010	0.0083	0.0042	0.0021	ug/l	
307-24-4	Perfluorohexanoic acid	0.0062	0.0083	0.0042	0.0021	ug/l	J
375-85-9	Perfluoroheptanoic acid	0.0077	0.0083	0.0042	0.0021	ug/l	J
335-67-1	Perfluorooctanoic acid	0.0076	0.0083	0.0042	0.0021	ug/l	J
375-95-1	Perfluorononanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
335-76-2	Perfluorodecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
307-55-1	Perfluorododecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.0085	0.0083	0.0042	0.0021	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0042 U	0.0083	0.0042	0.0021	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0083 U	0.017	0.0083	0.0042	ug/l	
2991-50-6	EtFOSAA	0.0083 U	0.017	0.0083	0.0042	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0083 U	0.017	0.0083	0.0042	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0083 U	0.017	0.0083	0.0042	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CRHE-MW0030-016.0-20231218		
Lab Sample ID:	FC12099-1	**Date Sampled:**	12/18/23
Matrix:	AQ - Ground Water	**Date Received:**	12/19/23
Method:	EPA 537M QSM5.3 B-15 EPA 537 MOD	**Percent Solids:**	n/a
Project:	CRHEA-GWIM; Contractors Rd, KSC, FL		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0083 U	0.017	0.0083	0.0042	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0083 U	0.017	0.0083	0.0042	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	106%		50-150%
	13C5-PFPeA	95%		50-150%
	13C5-PFHxA	104%		50-150%
	13C4-PFHpA	106%		50-150%
	13C8-PFOA	109%		50-150%
	13C9-PFNA	107%		50-150%
	13C6-PFDA	102%		50-150%
	13C7-PFUnDA	89%		50-150%
	13C2-PFDoDA	81%		50-150%
	13C2-PFTeDA	61%		50-150%
	13C3-PFBS	97%		50-150%
	13C3-PFHxS	101%		50-150%
	13C8-PFOS	91%		50-150%
	13C8-FOSA	75%		50-150%
	d3-MeFOSAA	109%		50-150%
	d5-EtFOSAA	100%		50-150%
	13C2-4:2FTS	100%		50-150%
	13C2-6:2FTS	108%		50-150%
	13C2-8:2FTS	93%		50-150%
	13C3-HFPO-DA	100%		50-150%

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LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	CRHE-IW0009S-007.0-20231218		
Lab Sample ID:	FC12099-2	**Date Sampled:**	12/18/23
Matrix:	AQ - Ground Water	**Date Received:**	12/19/23
Method:	EPA 537M QSM5.3 B-15 EPA 537 MOD	**Percent Solids:**	n/a
Project:	CRHEA-GWIM; Contractors Rd, KSC, FL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5Q23947.D	1	12/29/23 01:19	NG	12/26/23 07:30	OP835	S5Q375
Run #2							

	Initial Volume	Final Volume
Run #1	120 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0324	0.017	0.0083	0.0042	ug/l	
2706-90-3	Perfluoropentanoic acid	0.0205	0.0083	0.0042	0.0021	ug/l	
307-24-4	Perfluorohexanoic acid	0.0135	0.0083	0.0042	0.0021	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0122	0.0083	0.0042	0.0021	ug/l	
335-67-1	Perfluorooctanoic acid	0.0155	0.0083	0.0042	0.0021	ug/l	
375-95-1	Perfluorononanoic acid	0.0094	0.0083	0.0042	0.0021	ug/l	
335-76-2	Perfluorodecanoic acid	0.0031	0.0083	0.0042	0.0021	ug/l	J
2058-94-8	Perfluoroundecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
307-55-1	Perfluorododecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0024	0.0083	0.0042	0.0021	ug/l	J
2706-91-4	Perfluoropentanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.0168	0.0083	0.0042	0.0021	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.0991	0.0083	0.0042	0.0021	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0042 U	0.0083	0.0042	0.0021	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0083 U	0.017	0.0083	0.0042	ug/l	
2991-50-6	EtFOSAA	0.0083 U	0.017	0.0083	0.0042	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0083 U	0.017	0.0083	0.0042	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0083 U	0.017	0.0083	0.0042	ug/l	

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LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CRHE-IW0009S-007.0-20231218		
Lab Sample ID:	FC12099-2	**Date Sampled:**	12/18/23
Matrix:	AQ - Ground Water	**Date Received:**	12/19/23
Method:	EPA 537M QSM5.3 B-15 EPA 537 MOD	**Percent Solids:**	n/a
Project:	CRHEA-GWIM; Contractors Rd, KSC, FL		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0083 U	0.017	0.0083	0.0042	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0083 U	0.017	0.0083	0.0042	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	100%		50-150%
	13C5-PFPeA	82%		50-150%
	13C5-PFHxA	91%		50-150%
	13C4-PFHpA	90%		50-150%
	13C8-PFOA	91%		50-150%
	13C9-PFNA	86%		50-150%
	13C6-PFDA	81%		50-150%
	13C7-PFUnDA	75%		50-150%
	13C2-PFDoDA	75%		50-150%
	13C2-PFTeDA	69%		50-150%
	13C3-PFBS	85%		50-150%
	13C3-PFHxS	84%		50-150%
	13C8-PFOS	69%		50-150%
	13C8-FOSA	63%		50-150%
	d3-MeFOSAA	93%		50-150%
	d5-EtFOSAA	87%		50-150%
	13C2-4:2FTS	93%		50-150%
	13C2-6:2FTS	96%		50-150%
	13C2-8:2FTS	78%		50-150%
	13C3-HFPO-DA	87%		50-150%

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LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	CRHE-MW0025-030.0-20231218		
Lab Sample ID:	FC12099-3	**Date Sampled:**	12/18/23
Matrix:	AQ - Ground Water	**Date Received:**	12/19/23
Method:	SW846 8260D BY SIM	**Percent Solids:**	n/a
Project:	CRHEA-GWIM; Contractors Rd, KSC, FL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	A0239271.D	1	12/26/23 12:48	TD	n/a	n/a	VA3455
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
123-91-1	1,4-Dioxane	4.6	1.0	0.75	0.30	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4	100%		74-125%
2037-26-5	Toluene-D8	101%		88-111%

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LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	CRHE-MW0025-030.0-20231218		
Lab Sample ID:	FC12099-3	**Date Sampled:**	12/18/23
Matrix:	AQ - Ground Water	**Date Received:**	12/19/23
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	CRHEA-GWIM; Contractors Rd, KSC, FL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5E44807.D	1	12/22/23 10:52	JW	n/a	n/a	V5E1996
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA 8260 List

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
67-64-1	Acetone	20 U	25	20	10	ug/l	
71-43-2	Benzene	0.50 U	1.0	0.50	0.31	ug/l	
108-86-1	Bromobenzene	0.50 U	1.0	0.50	0.37	ug/l	
74-97-5	Bromochloromethane	0.50 U	1.0	0.50	0.45	ug/l	
75-27-4	Bromodichloromethane	0.50 U	1.0	0.50	0.24	ug/l	
75-25-2	Bromoform	0.50 U	1.0	0.50	0.41	ug/l	
78-93-3	2-Butanone (MEK)	3.5 U	5.0	3.5	2.0	ug/l	
104-51-8	n-Butylbenzene	0.50 U	1.0	0.50	0.23	ug/l	
135-98-8	sec-Butylbenzene	0.50 U	1.0	0.50	0.24	ug/l	
98-06-6	tert-Butylbenzene	0.50 U	1.0	0.50	0.31	ug/l	
75-15-0	Carbon Disulfide	1.0 U	2.0	1.0	0.53	ug/l	
56-23-5	Carbon Tetrachloride	0.50 U	1.0	0.50	0.36	ug/l	
108-90-7	Chlorobenzene	0.50 U	1.0	0.50	0.20	ug/l	
75-00-3	Chloroethane	1.0 U	2.0	1.0	0.67	ug/l	
67-66-3	Chloroform	0.50 U	1.0	0.50	0.30	ug/l	
95-49-8	o-Chlorotoluene	0.50 U	1.0	0.50	0.22	ug/l	
106-43-4	p-Chlorotoluene	0.50 U	1.0	0.50	0.31	ug/l	
124-48-1	Dibromochloromethane	0.50 U	1.0	0.50	0.28	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	2.0 U	5.0	2.0	1.0	ug/l	
106-93-4	1,2-Dibromoethane	1.0 U	2.0	1.0	0.28	ug/l	
75-71-8	Dichlorodifluoromethane	1.0 U	2.0	1.0	0.50	ug/l	
95-50-1	1,2-Dichlorobenzene	0.50 U	1.0	0.50	0.32	ug/l	
541-73-1	1,3-Dichlorobenzene	0.50 U	1.0	0.50	0.22	ug/l	
106-46-7	1,4-Dichlorobenzene	0.50 U	1.0	0.50	0.26	ug/l	
75-34-3	1,1-Dichloroethane	0.50 U	1.0	0.50	0.34	ug/l	
107-06-2	1,2-Dichloroethane	0.50 U	1.0	0.50	0.31	ug/l	
75-35-4	1,1-Dichloroethylene	0.50 U	1.0	0.50	0.32	ug/l	
156-59-2	cis-1,2-Dichloroethylene	0.50 U	1.0	0.50	0.28	ug/l	
156-60-5	trans-1,2-Dichloroethylene	0.50 U	1.0	0.50	0.22	ug/l	
78-87-5	1,2-Dichloropropane	0.50 U	1.0	0.50	0.43	ug/l	
142-28-9	1,3-Dichloropropane	0.50 U	1.0	0.50	0.31	ug/l	
594-20-7	2,2-Dichloropropane	0.50 U	1.0	0.50	0.24	ug/l	

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E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CRHE-MW0025-030.0-20231218		
Lab Sample ID:	FC12099-3	**Date Sampled:**	12/18/23
Matrix:	AQ - Ground Water	**Date Received:**	12/19/23
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	CRHEA-GWIM; Contractors Rd, KSC, FL		

VOA 8260 List

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
563-58-6	1,1-Dichloropropene	0.50 U	1.0	0.50	0.34	ug/l	
10061-01-5	cis-1,3-Dichloropropene	0.50 U	1.0	0.50	0.29	ug/l	
10061-02-6	trans-1,3-Dichloropropene	0.50 U	1.0	0.50	0.21	ug/l	
100-41-4	Ethylbenzene	0.50 U	1.0	0.50	0.36	ug/l	
87-68-3	Hexachlorobutadiene	1.0 U	2.0	1.0	0.30	ug/l	
591-78-6	2-Hexanone	5.0 U	10	5.0	2.0	ug/l	
98-82-8	Isopropylbenzene	0.50 U	1.0	0.50	0.22	ug/l	
99-87-6	p-Isopropyltoluene	0.50 U	1.0	0.50	0.21	ug/l	
74-83-9	Methyl Bromide	4.0 U	5.0	4.0	2.0	ug/l	
74-87-3	Methyl Chloride	1.0 U	2.0	1.0	0.50	ug/l	
74-95-3	Methylene Bromide	0.50 U	2.0	0.50	0.37	ug/l	
75-09-2	Methylene Chloride	4.0 U	5.0	4.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	2.0 U	5.0	2.0	1.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	0.50 U	1.0	0.50	0.23	ug/l	
91-20-3	Naphthalene	2.0 U	5.0	2.0	1.0	ug/l	
103-65-1	n-Propylbenzene	0.50 U	1.0	0.50	0.29	ug/l	
100-42-5	Styrene	0.50 U	1.0	0.50	0.22	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	0.50 U	1.0	0.50	0.28	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	0.50 U	1.0	0.50	0.30	ug/l	
127-18-4	Tetrachloroethylene	0.50 U	1.0	0.50	0.22	ug/l	
108-88-3	Toluene	0.50 U	1.0	0.50	0.30	ug/l	
87-61-6	1,2,3-Trichlorobenzene	1.0 U	2.0	1.0	0.61	ug/l	
120-82-1	1,2,4-Trichlorobenzene	1.0 U	2.0	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	0.50 U	1.0	0.50	0.25	ug/l	
79-00-5	1,1,2-Trichloroethane	0.50 U	1.0	0.50	0.47	ug/l	
79-01-6	Trichloroethylene	0.50 U	1.0	0.50	0.35	ug/l	
75-69-4	Trichlorofluoromethane	1.0 U	2.0	1.0	0.50	ug/l	
96-18-4	1,2,3-Trichloropropane	1.0 U	2.0	1.0	0.63	ug/l	
95-63-6	1,2,4-Trimethylbenzene	0.50 U	1.0	0.50	0.32	ug/l	
108-67-8	1,3,5-Trimethylbenzene	0.50 U	1.0	0.50	0.27	ug/l	
108-05-4	Vinyl Acetate	5.0 U	10	5.0	2.0	ug/l	
75-01-4	Vinyl Chloride	0.50 U	1.0	0.50	0.41	ug/l	
	m,p-Xylene	1.0 U	2.0	1.0	0.47	ug/l	
95-47-6	o-Xylene	0.50 U	1.0	0.50	0.26	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	102%		83-118%
17060-07-0	1,2-Dichloroethane-D4	96%		79-125%
2037-26-5	Toluene-D8	103%		85-112%

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Report of Analysis

Client Sample ID:	CRHE-MW0025-030.0-20231218		
Lab Sample ID:	FC12099-3	**Date Sampled:**	12/18/23
Matrix:	AQ - Ground Water	**Date Received:**	12/19/23
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	CRHEA-GWIM; Contractors Rd, KSC, FL		

VOA 8260 List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	103%		83-118%

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LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	CRHE-MW0025-030.0-20231218		
Lab Sample ID:	FC12099-3	**Date Sampled:**	12/18/23
Matrix:	AQ - Ground Water	**Date Received:**	12/19/23
Method:	EPA 537M QSM5.3 B-15 EPA 537 MOD	**Percent Solids:**	n/a
Project:	CRHEA-GWIM; Contractors Rd, KSC, FL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2Q118606.D	1	01/04/24 16:52	LR	01/03/24 10:35	OP937	S2Q1693
Run #2 [a]	5Q23948.D	1	12/29/23 01:35	NG	12/26/23 07:30	OP835	S5Q375
Run #3 [b]	5Q24255.D	5	01/05/24 20:36	LR	01/03/24 10:35	OP937	S5Q380

	Initial Volume	Final Volume
Run #1	125 ml	1.0 ml
Run #2	120 ml	1.0 ml
Run #3	125 ml	1.0 ml

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0080 U	0.016	0.0080	0.0040	ug/l	
2706-90-3	Perfluoropentanoic acid	0.0043	0.0080	0.0040	0.0020	ug/l	J
307-24-4	Perfluorohexanoic acid	0.0032	0.0080	0.0040	0.0020	ug/l	J
375-85-9	Perfluoroheptanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-67-1	Perfluorooctanoic acid	0.0033	0.0080	0.0040	0.0020	ug/l	J
375-95-1	Perfluorononanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-76-2	Perfluorodecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-55-1	Perfluorododecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
376-06-7	Perfluorotetradecanoic acid [c]	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	0.0021	0.0080	0.0040	0.0020	ug/l	J
355-46-4	Perfluorohexanesulfonic acid	0.0069	0.0080	0.0040	0.0020	ug/l	J
375-92-8	Perfluoroheptanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA [c]	0.020 U [d]	0.040	0.020	0.010	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
2991-50-6	EtFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
FLUOROTELOMER SULFONATES							

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CRHE-MW0025-030.0-20231218		
Lab Sample ID:	FC12099-3	**Date Sampled:**	12/18/23
Matrix:	AQ - Ground Water	**Date Received:**	12/19/23
Method:	EPA 537M QSM5.3 B-15 EPA 537 MOD	**Percent Solids:**	n/a
Project:	CRHEA-GWIM; Contractors Rd, KSC, FL		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
757124-72-4	4:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
39108-34-4	8:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0080 U	0.016	0.0080	0.0040	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Run# 3	Limits
	13C4-PFBA	58%	82%	58%	50-150%
	13C5-PFPeA	58%	67%	56%	50-150%
	13C5-PFHxA	60%	91%	66%	50-150%
	13C4-PFHpA	66%	94%	68%	50-150%
	13C8-PFOA	70%	97%	72%	50-150%
	13C9-PFNA	68%	96%	71%	50-150%
	13C6-PFDA	75%	95%	65%	50-150%
	13C7-PFUnDA	68%	90%	54%	50-150%
	13C2-PFDoDA	61%	76%	47% e	50-150%
	13C2-PFTeDA	44% e	23% e	27% e	50-150%
	13C3-PFBS	58%	81%	61%	50-150%
	13C3-PFHxS	63%	85%	67%	50-150%
	13C8-PFOS	64%	85%	71%	50-150%
	13C8-FOSA	39% e	37% e	49% e	50-150%
	d3-MeFOSAA	79%	96%	73%	50-150%
	d5-EtFOSAA	72%	94%	68%	50-150%
	13C2-4:2FTS	61%	94%	66%	50-150%
	13C2-6:2FTS	72%	103%	67%	50-150%
	13C2-8:2FTS	72%	85%	63%	50-150%
	13C3-HFPO-DA	62%	93%	66%	50-150%

(a) Confirmation run.
(b) Dilution required (ID recovery standard failure).
(c) Associated ID Standard outside control limits.
(d) Result is from Run# 3
(e) Outside control limits.

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CRHE-MW0025-030.0-20231218		
Lab Sample ID:	FC12099-3	**Date Sampled:**	12/18/23
Matrix:	AQ - Ground Water	**Date Received:**	12/19/23
		Percent Solids:	n/a
Project:	CRHEA-GWIM; Contractors Rd, KSC, FL		

General Chemistry

Analyte	Result	LOQ	LOD	DL	Units	DF	Analyzed	By	Method
Solids, Total Dissolved	940	50	50	40	mg/l	1	12/20/23 11:00	SS	SM2540 C-15

LOQ = Limit of Quantitation DL = Detection Limit U = Indicates a result < LOD
LOD = Limit of Detection B = Analyte found in associated blank J = Indicates a result > = DL (MDL) but < LOQ

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Report of Analysis

Client Sample ID: CRHE-MW0024-010.0-20231218
Lab Sample ID: FC12099-4
Matrix: AQ - Ground Water
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Date Sampled: 12/18/23
Date Received: 12/19/23
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5Q23949.D	1	12/29/23 01:52	NG	12/26/23 07:30	OP835	S5Q375
Run #2 [a]	5Q24076.D	5	01/03/24 06:52	LR	12/26/23 07:30	OP835	S5Q377

	Initial Volume	Final Volume
Run #1	120 ml	1.0 ml
Run #2	120 ml	1.0 ml

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0243	0.017	0.0083	0.0042	ug/l	
2706-90-3	Perfluoropentanoic acid	0.0349	0.0083	0.0042	0.0021	ug/l	
307-24-4	Perfluorohexanoic acid	0.0273	0.0083	0.0042	0.0021	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0247	0.0083	0.0042	0.0021	ug/l	
335-67-1	Perfluorooctanoic acid	0.0249	0.0083	0.0042	0.0021	ug/l	
375-95-1	Perfluorononanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
335-76-2	Perfluorodecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
307-55-1	Perfluorododecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0078	0.0083	0.0042	0.0021	ug/l	J
2706-91-4	Perfluoropentanesulfonic acid	0.0023	0.0083	0.0042	0.0021	ug/l	J
355-46-4	Perfluorohexanesulfonic acid	0.0209	0.0083	0.0042	0.0021	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.0242	0.0083	0.0042	0.0021	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA [b]	0.021 U [c]	0.042	0.021	0.010	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0083 U	0.017	0.0083	0.0042	ug/l	
2991-50-6	EtFOSAA	0.0083 U	0.017	0.0083	0.0042	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0083 U	0.017	0.0083	0.0042	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0083 U	0.017	0.0083	0.0042	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CRHE-MW0024-010.0-20231218		
Lab Sample ID:	FC12099-4	**Date Sampled:**	12/18/23
Matrix:	AQ - Ground Water	**Date Received:**	12/19/23
Method:	EPA 537M QSM5.3 B-15 EPA 537 MOD	**Percent Solids:**	n/a
Project:	CRHEA-GWIM; Contractors Rd, KSC, FL		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0083 U	0.017	0.0083	0.0042	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0083 U	0.017	0.0083	0.0042	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	75%	65%	50-150%
	13C5-PFPeA	63%	59%	50-150%
	13C5-PFHxA	80%	69%	50-150%
	13C4-PFHpA	81%	77%	50-150%
	13C8-PFOA	81%	83%	50-150%
	13C9-PFNA	75%	88%	50-150%
	13C6-PFDA	78%	82%	50-150%
	13C7-PFUnDA	82%	74%	50-150%
	13C2-PFDoDA	85%	69%	50-150%
	13C2-PFTeDA	80%	51%	50-150%
	13C3-PFBS	76%	68%	50-150%
	13C3-PFHxS	69%	78%	50-150%
	13C8-PFOS	68%	78%	50-150%
	13C8-FOSA	27% d	46% d	50-150%
	d3-MeFOSAA	80%	91%	50-150%
	d5-EtFOSAA	85%	81%	50-150%
	13C2-4:2FTS	85%	70%	50-150%
	13C2-6:2FTS	90%	83%	50-150%
	13C2-8:2FTS	69%	85%	50-150%
	13C3-HFPO-DA	85%	63%	50-150%

(a) Dilution required (ID recovery standard failure).
(b) Associated ID Standard outside control limits.
(c) Result is from Run# 2
(d) Outside control limits.

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	CRHE-IW0002S-008.0-20231218		
Lab Sample ID:	FC12099-5	**Date Sampled:**	12/18/23
Matrix:	AQ - Ground Water	**Date Received:**	12/19/23
Method:	EPA 537M QSM5.3 B-15 EPA 537 MOD	**Percent Solids:**	n/a
Project:	CRHEA-GWIM; Contractors Rd, KSC, FL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5Q23950.D	1	12/29/23 02:08	NG	12/26/23 07:30	OP835	S5Q375
Run #2							

	Initial Volume	Final Volume
Run #1	120 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0553	0.017	0.0083	0.0042	ug/l	
2706-90-3	Perfluoropentanoic acid	0.0104	0.0083	0.0042	0.0021	ug/l	
307-24-4	Perfluorohexanoic acid	0.0077	0.0083	0.0042	0.0021	ug/l	J
375-85-9	Perfluoroheptanoic acid	0.0062	0.0083	0.0042	0.0021	ug/l	J
335-67-1	Perfluorooctanoic acid	0.0221	0.0083	0.0042	0.0021	ug/l	
375-95-1	Perfluorononanoic acid	0.0651	0.0083	0.0042	0.0021	ug/l	
335-76-2	Perfluorodecanoic acid	0.0074	0.0083	0.0042	0.0021	ug/l	J
2058-94-8	Perfluoroundecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
307-55-1	Perfluorododecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.143	0.0083	0.0042	0.0021	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0042 U	0.0083	0.0042	0.0021	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0083 U	0.017	0.0083	0.0042	ug/l	
2991-50-6	EtFOSAA	0.0083 U	0.017	0.0083	0.0042	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0083 U	0.017	0.0083	0.0042	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0083 U	0.017	0.0083	0.0042	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CRHE-IW0002S-008.0-20231218		
Lab Sample ID:	FC12099-5	**Date Sampled:**	12/18/23
Matrix:	AQ - Ground Water	**Date Received:**	12/19/23
Method:	EPA 537M QSM5.3 B-15 EPA 537 MOD	**Percent Solids:**	n/a
Project:	CRHEA-GWIM; Contractors Rd, KSC, FL		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0083 U	0.017	0.0083	0.0042	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0083 U	0.017	0.0083	0.0042	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	111%		50-150%
	13C5-PFPeA	105%		50-150%
	13C5-PFHxA	103%		50-150%
	13C4-PFHpA	104%		50-150%
	13C8-PFOA	98%		50-150%
	13C9-PFNA	85%		50-150%
	13C6-PFDA	75%		50-150%
	13C7-PFUnDA	65%		50-150%
	13C2-PFDoDA	61%		50-150%
	13C2-PFTeDA	66%		50-150%
	13C3-PFBS	99%		50-150%
	13C3-PFHxS	91%		50-150%
	13C8-PFOS	64%		50-150%
	13C8-FOSA	81%		50-150%
	d3-MeFOSAA	74%		50-150%
	d5-EtFOSAA	72%		50-150%
	13C2-4:2FTS	102%		50-150%
	13C2-6:2FTS	100%		50-150%
	13C2-8:2FTS	71%		50-150%
	13C3-HFPO-DA	101%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	CRHE-IW0004I-035.0-20231218		
Lab Sample ID:	FC12099-6	**Date Sampled:**	12/18/23
Matrix:	AQ - Ground Water	**Date Received:**	12/19/23
Method:	EPA 537M QSM5.3 B-15 EPA 537 MOD	**Percent Solids:**	n/a
Project:	CRHEA-GWIM; Contractors Rd, KSC, FL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5Q23951.D	1	12/29/23 02:25	NG	12/26/23 07:30	OP835	S5Q375
Run #2 [a]	5Q24077.D	5	01/03/24 07:09	LR	12/26/23 07:30	OP835	S5Q377

	Initial Volume	Final Volume
Run #1	120 ml	1.0 ml
Run #2	120 ml	1.0 ml

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0422	0.017	0.0083	0.0042	ug/l	
2706-90-3	Perfluoropentanoic acid	0.0035	0.0083	0.0042	0.0021	ug/l	J
307-24-4	Perfluorohexanoic acid	0.0047	0.0083	0.0042	0.0021	ug/l	J
375-85-9	Perfluoroheptanoic acid	0.0049	0.0083	0.0042	0.0021	ug/l	J
335-67-1	Perfluorooctanoic acid	0.0176	0.0083	0.0042	0.0021	ug/l	
375-95-1	Perfluorononanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
335-76-2	Perfluorodecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
307-55-1	Perfluorododecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0164	0.0083	0.0042	0.0021	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.0086	0.0083	0.0042	0.0021	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.108	0.0083	0.0042	0.0021	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.021 U [b]	0.042	0.021	0.010	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0083 U	0.017	0.0083	0.0042	ug/l	
2991-50-6	EtFOSAA	0.0083 U	0.017	0.0083	0.0042	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0083 U	0.017	0.0083	0.0042	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0083 U	0.017	0.0083	0.0042	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CRHE-IW0004I-035.0-20231218		
Lab Sample ID:	FC12099-6	**Date Sampled:**	12/18/23
Matrix:	AQ - Ground Water	**Date Received:**	12/19/23
Method:	EPA 537M QSM5.3 B-15 EPA 537 MOD	**Percent Solids:**	n/a
Project:	CRHEA-GWIM; Contractors Rd, KSC, FL		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0083 U	0.017	0.0083	0.0042	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0083 U	0.017	0.0083	0.0042	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	103%	78%	50-150%
	13C5-PFPeA	88%	80%	50-150%
	13C5-PFHxA	86%	87%	50-150%
	13C4-PFHpA	81%	98%	50-150%
	13C8-PFOA	77%	102%	50-150%
	13C9-PFNA	75%	103%	50-150%
	13C6-PFDA	81%	96%	50-150%
	13C7-PFUnDA	87%	83%	50-150%
	13C2-PFDoDA	89%	79%	50-150%
	13C2-PFTeDA	84%	69%	50-150%
	13C3-PFBS	79%	87%	50-150%
	13C3-PFHxS	69%	103%	50-150%
	13C8-PFOS	77%	90%	50-150%
	13C8-FOSA	44% [c]	52%	50-150%
	d3-MeFOSAA	93%	99%	50-150%
	d5-EtFOSAA	91%	96%	50-150%
	13C2-4:2FTS	94%	85%	50-150%
	13C2-6:2FTS	85%	96%	50-150%
	13C2-8:2FTS	73%	94%	50-150%
	13C3-HFPO-DA	84%	80%	50-150%

(a) Dilution required (ID recovery standard failure).
(b) Result is from Run# 2
(c) Outside control limits.

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	CRHE-FB-20231218-01		
Lab Sample ID:	FC12099-7	**Date Sampled:**	12/18/23
Matrix:	AQ - Field Blank Water	**Date Received:**	12/19/23
Method:	EPA 537M QSM5.3 B-15 EPA 537 MOD	**Percent Solids:**	n/a
Project:	CRHEA-GWIM; Contractors Rd, KSC, FL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5Q23952.D	1	12/29/23 02:41	NG	12/26/23 07:30	OP835	S5Q375
Run #2							

	Initial Volume	Final Volume
Run #1	120 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0083 U	0.017	0.0083	0.0042	ug/l	
2706-90-3	Perfluoropentanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
307-24-4	Perfluorohexanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
335-67-1	Perfluorooctanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
375-95-1	Perfluorononanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
335-76-2	Perfluorodecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
307-55-1	Perfluorododecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0042 U	0.0083	0.0042	0.0021	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0083 U	0.017	0.0083	0.0042	ug/l	
2991-50-6	EtFOSAA	0.0083 U	0.017	0.0083	0.0042	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0083 U	0.017	0.0083	0.0042	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0083 U	0.017	0.0083	0.0042	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CRHE-FB-20231218-01		
Lab Sample ID:	FC12099-7	**Date Sampled:**	12/18/23
Matrix:	AQ - Field Blank Water	**Date Received:**	12/19/23
Method:	EPA 537M QSM5.3 B-15 EPA 537 MOD	**Percent Solids:**	n/a
Project:	CRHEA-GWIM; Contractors Rd, KSC, FL		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0083 U	0.017	0.0083	0.0042	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0083 U	0.017	0.0083	0.0042	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	105%		50-150%
	13C5-PFPeA	100%		50-150%
	13C5-PFHxA	95%		50-150%
	13C4-PFHpA	90%		50-150%
	13C8-PFOA	87%		50-150%
	13C9-PFNA	82%		50-150%
	13C6-PFDA	80%		50-150%
	13C7-PFUnDA	76%		50-150%
	13C2-PFDoDA	76%		50-150%
	13C2-PFTeDA	81%		50-150%
	13C3-PFBS	91%		50-150%
	13C3-PFHxS	83%		50-150%
	13C8-PFOS	70%		50-150%
	13C8-FOSA	79%		50-150%
	d3-MeFOSAA	81%		50-150%
	d5-EtFOSAA	77%		50-150%
	13C2-4:2FTS	93%		50-150%
	13C2-6:2FTS	86%		50-150%
	13C2-8:2FTS	73%		50-150%
	13C3-HFPO-DA	91%		50-150%

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SGS North America Inc.

Report of Analysis

Client Sample ID:	CRHE-EB-20231218-01		
Lab Sample ID:	FC12099-8	**Date Sampled:**	12/18/23
Matrix:	AQ - Equipment Blank	**Date Received:**	12/19/23
Method:	EPA 537M QSM5.3 B-15 EPA 537 MOD	**Percent Solids:**	n/a
Project:	CRHEA-GWIM; Contractors Rd, KSC, FL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5Q23953.D	1	12/29/23 02:58	NG	12/26/23 07:30	OP835	S5Q375
Run #2							

	Initial Volume	Final Volume
Run #1	120 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0083 U	0.017	0.0083	0.0042	ug/l	
2706-90-3	Perfluoropentanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
307-24-4	Perfluorohexanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
335-67-1	Perfluorooctanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
375-95-1	Perfluorononanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
335-76-2	Perfluorodecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
307-55-1	Perfluorododecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0042 U	0.0083	0.0042	0.0021	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0083 U	0.017	0.0083	0.0042	ug/l	
2991-50-6	EtFOSAA	0.0083 U	0.017	0.0083	0.0042	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0083 U	0.017	0.0083	0.0042	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0083 U	0.017	0.0083	0.0042	ug/l	

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LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CRHE-EB-20231218-01		
Lab Sample ID:	FC12099-8	**Date Sampled:**	12/18/23
Matrix:	AQ - Equipment Blank	**Date Received:**	12/19/23
Method:	EPA 537M QSM5.3 B-15 EPA 537 MOD	**Percent Solids:**	n/a
Project:	CRHEA-GWIM; Contractors Rd, KSC, FL		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0083 U	0.017	0.0083	0.0042	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0083 U	0.017	0.0083	0.0042	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	126%		50-150%
	13C5-PFPeA	122%		50-150%
	13C5-PFHxA	119%		50-150%
	13C4-PFHpA	116%		50-150%
	13C8-PFOA	109%		50-150%
	13C9-PFNA	102%		50-150%
	13C6-PFDA	100%		50-150%
	13C7-PFUnDA	91%		50-150%
	13C2-PFDoDA	90%		50-150%
	13C2-PFTeDA	97%		50-150%
	13C3-PFBS	112%		50-150%
	13C3-PFHxS	105%		50-150%
	13C8-PFOS	87%		50-150%
	13C8-FOSA	87%		50-150%
	d3-MeFOSAA	101%		50-150%
	d5-EtFOSAA	97%		50-150%
	13C2-4:2FTS	115%		50-150%
	13C2-6:2FTS	109%		50-150%
	13C2-8:2FTS	93%		50-150%
	13C3-HFPO-DA	110%		50-150%

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LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	CRHE-MW0032-045.0-20231218		
Lab Sample ID:	FC12099-9	**Date Sampled:**	12/18/23
Matrix:	AQ - Ground Water	**Date Received:**	12/19/23
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	CRHEA-GWIM; Contractors Rd, KSC, FL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5E44808.D	1	12/22/23 11:15	JW	n/a	n/a	V5E1996
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA 8260 List

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
67-64-1	Acetone	20 U	25	20	10	ug/l	
71-43-2	Benzene	0.50 U	1.0	0.50	0.31	ug/l	
108-86-1	Bromobenzene	0.50 U	1.0	0.50	0.37	ug/l	
74-97-5	Bromochloromethane	0.50 U	1.0	0.50	0.45	ug/l	
75-27-4	Bromodichloromethane	0.50 U	1.0	0.50	0.24	ug/l	
75-25-2	Bromoform	0.50 U	1.0	0.50	0.41	ug/l	
78-93-3	2-Butanone (MEK)	3.5 U	5.0	3.5	2.0	ug/l	
104-51-8	n-Butylbenzene	0.50 U	1.0	0.50	0.23	ug/l	
135-98-8	sec-Butylbenzene	0.50 U	1.0	0.50	0.24	ug/l	
98-06-6	tert-Butylbenzene	0.50 U	1.0	0.50	0.31	ug/l	
75-15-0	Carbon Disulfide	1.0 U	2.0	1.0	0.53	ug/l	
56-23-5	Carbon Tetrachloride	0.50 U	1.0	0.50	0.36	ug/l	
108-90-7	Chlorobenzene	0.50 U	1.0	0.50	0.20	ug/l	
75-00-3	Chloroethane	1.0 U	2.0	1.0	0.67	ug/l	
67-66-3	Chloroform	0.50 U	1.0	0.50	0.30	ug/l	
95-49-8	o-Chlorotoluene	0.50 U	1.0	0.50	0.22	ug/l	
106-43-4	p-Chlorotoluene	0.50 U	1.0	0.50	0.31	ug/l	
124-48-1	Dibromochloromethane	0.50 U	1.0	0.50	0.28	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	2.0 U	5.0	2.0	1.0	ug/l	
106-93-4	1,2-Dibromoethane	1.0 U	2.0	1.0	0.28	ug/l	
75-71-8	Dichlorodifluoromethane	1.0 U	2.0	1.0	0.50	ug/l	
95-50-1	1,2-Dichlorobenzene	0.50 U	1.0	0.50	0.32	ug/l	
541-73-1	1,3-Dichlorobenzene	0.50 U	1.0	0.50	0.22	ug/l	
106-46-7	1,4-Dichlorobenzene	0.50 U	1.0	0.50	0.26	ug/l	
75-34-3	1,1-Dichloroethane	0.50 U	1.0	0.50	0.34	ug/l	
107-06-2	1,2-Dichloroethane	0.50 U	1.0	0.50	0.31	ug/l	
75-35-4	1,1-Dichloroethylene	0.50 U	1.0	0.50	0.32	ug/l	
156-59-2	cis-1,2-Dichloroethylene	0.81	1.0	0.50	0.28	ug/l	J
156-60-5	trans-1,2-Dichloroethylene	0.50 U	1.0	0.50	0.22	ug/l	
78-87-5	1,2-Dichloropropane	0.50 U	1.0	0.50	0.43	ug/l	
142-28-9	1,3-Dichloropropane	0.50 U	1.0	0.50	0.31	ug/l	
594-20-7	2,2-Dichloropropane	0.50 U	1.0	0.50	0.24	ug/l	

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E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CRHE-MW0032-045.0-20231218		
Lab Sample ID:	FC12099-9	**Date Sampled:**	12/18/23
Matrix:	AQ - Ground Water	**Date Received:**	12/19/23
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	CRHEA-GWIM; Contractors Rd, KSC, FL		

VOA 8260 List

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
563-58-6	1,1-Dichloropropene	0.50 U	1.0	0.50	0.34	ug/l	
10061-01-5	cis-1,3-Dichloropropene	0.50 U	1.0	0.50	0.29	ug/l	
10061-02-6	trans-1,3-Dichloropropene	0.50 U	1.0	0.50	0.21	ug/l	
100-41-4	Ethylbenzene	0.50 U	1.0	0.50	0.36	ug/l	
87-68-3	Hexachlorobutadiene	1.0 U	2.0	1.0	0.30	ug/l	
591-78-6	2-Hexanone	5.0 U	10	5.0	2.0	ug/l	
98-82-8	Isopropylbenzene	0.50 U	1.0	0.50	0.22	ug/l	
99-87-6	p-Isopropyltoluene	0.50 U	1.0	0.50	0.21	ug/l	
74-83-9	Methyl Bromide	4.0 U	5.0	4.0	2.0	ug/l	
74-87-3	Methyl Chloride	1.0 U	2.0	1.0	0.50	ug/l	
74-95-3	Methylene Bromide	0.50 U	2.0	0.50	0.37	ug/l	
75-09-2	Methylene Chloride	4.0 U	5.0	4.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	2.0 U	5.0	2.0	1.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	0.50 U	1.0	0.50	0.23	ug/l	
91-20-3	Naphthalene	2.0 U	5.0	2.0	1.0	ug/l	
103-65-1	n-Propylbenzene	0.50 U	1.0	0.50	0.29	ug/l	
100-42-5	Styrene	0.50 U	1.0	0.50	0.22	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	0.50 U	1.0	0.50	0.28	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	0.50 U	1.0	0.50	0.30	ug/l	
127-18-4	Tetrachloroethylene	0.50 U	1.0	0.50	0.22	ug/l	
108-88-3	Toluene	0.50 U	1.0	0.50	0.30	ug/l	
87-61-6	1,2,3-Trichlorobenzene	1.0 U	2.0	1.0	0.61	ug/l	
120-82-1	1,2,4-Trichlorobenzene	1.0 U	2.0	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	0.50 U	1.0	0.50	0.25	ug/l	
79-00-5	1,1,2-Trichloroethane	0.50 U	1.0	0.50	0.47	ug/l	
79-01-6	Trichloroethylene	0.50 U	1.0	0.50	0.35	ug/l	
75-69-4	Trichlorofluoromethane	1.0 U	2.0	1.0	0.50	ug/l	
96-18-4	1,2,3-Trichloropropane	1.0 U	2.0	1.0	0.63	ug/l	
95-63-6	1,2,4-Trimethylbenzene	0.50 U	1.0	0.50	0.32	ug/l	
108-67-8	1,3,5-Trimethylbenzene	0.50 U	1.0	0.50	0.27	ug/l	
108-05-4	Vinyl Acetate	5.0 U	10	5.0	2.0	ug/l	
75-01-4	Vinyl Chloride	0.85	1.0	0.50	0.41	ug/l	J
	m,p-Xylene	1.0 U	2.0	1.0	0.47	ug/l	
95-47-6	o-Xylene	0.50 U	1.0	0.50	0.26	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	101%		83-118%
17060-07-0	1,2-Dichloroethane-D4	98%		79-125%
2037-26-5	Toluene-D8	103%		85-112%

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Report of Analysis

Client Sample ID:	CRHE-MW0032-045.0-20231218		
Lab Sample ID:	FC12099-9	**Date Sampled:**	12/18/23
Matrix:	AQ - Ground Water	**Date Received:**	12/19/23
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	CRHEA-GWIM; Contractors Rd, KSC, FL		

VOA 8260 List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	104%		83-118%

U = Not detected LOD = Limit of Detection
LOQ = Limit of Quantitation DL = Detection Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	CRHE-MW0027-045.0-20231219		
Lab Sample ID:	FC12099-10	**Date Sampled:**	12/19/23
Matrix:	AQ - Ground Water	**Date Received:**	12/19/23
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	CRHEA-GWIM; Contractors Rd, KSC, FL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5E44809.D	1	12/22/23 11:38	JW	n/a	n/a	V5E1996
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA 8260 List

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
67-64-1	Acetone	20 U	25	20	10	ug/l	
71-43-2	Benzene	0.50 U	1.0	0.50	0.31	ug/l	
108-86-1	Bromobenzene	0.50 U	1.0	0.50	0.37	ug/l	
74-97-5	Bromochloromethane	0.50 U	1.0	0.50	0.45	ug/l	
75-27-4	Bromodichloromethane	0.50 U	1.0	0.50	0.24	ug/l	
75-25-2	Bromoform	0.50 U	1.0	0.50	0.41	ug/l	
78-93-3	2-Butanone (MEK)	3.5 U	5.0	3.5	2.0	ug/l	
104-51-8	n-Butylbenzene	0.50 U	1.0	0.50	0.23	ug/l	
135-98-8	sec-Butylbenzene	0.50 U	1.0	0.50	0.24	ug/l	
98-06-6	tert-Butylbenzene	0.50 U	1.0	0.50	0.31	ug/l	
75-15-0	Carbon Disulfide	1.0 U	2.0	1.0	0.53	ug/l	
56-23-5	Carbon Tetrachloride	0.50 U	1.0	0.50	0.36	ug/l	
108-90-7	Chlorobenzene	0.50 U	1.0	0.50	0.20	ug/l	
75-00-3	Chloroethane	1.0 U	2.0	1.0	0.67	ug/l	
67-66-3	Chloroform	0.50 U	1.0	0.50	0.30	ug/l	
95-49-8	o-Chlorotoluene	0.50 U	1.0	0.50	0.22	ug/l	
106-43-4	p-Chlorotoluene	0.50 U	1.0	0.50	0.31	ug/l	
124-48-1	Dibromochloromethane	0.50 U	1.0	0.50	0.28	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	2.0 U	5.0	2.0	1.0	ug/l	
106-93-4	1,2-Dibromoethane	1.0 U	2.0	1.0	0.28	ug/l	
75-71-8	Dichlorodifluoromethane	1.0 U	2.0	1.0	0.50	ug/l	
95-50-1	1,2-Dichlorobenzene	0.50 U	1.0	0.50	0.32	ug/l	
541-73-1	1,3-Dichlorobenzene	0.50 U	1.0	0.50	0.22	ug/l	
106-46-7	1,4-Dichlorobenzene	0.50 U	1.0	0.50	0.26	ug/l	
75-34-3	1,1-Dichloroethane	0.50 U	1.0	0.50	0.34	ug/l	
107-06-2	1,2-Dichloroethane	0.50 U	1.0	0.50	0.31	ug/l	
75-35-4	1,1-Dichloroethylene	0.50 U	1.0	0.50	0.32	ug/l	
156-59-2	cis-1,2-Dichloroethylene	0.50 U	1.0	0.50	0.28	ug/l	
156-60-5	trans-1,2-Dichloroethylene	0.50 U	1.0	0.50	0.22	ug/l	
78-87-5	1,2-Dichloropropane	0.50 U	1.0	0.50	0.43	ug/l	
142-28-9	1,3-Dichloropropane	0.50 U	1.0	0.50	0.31	ug/l	
594-20-7	2,2-Dichloropropane	0.50 U	1.0	0.50	0.24	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CRHE-MW0027-045.0-20231219		
Lab Sample ID:	FC12099-10	**Date Sampled:**	12/19/23
Matrix:	AQ - Ground Water	**Date Received:**	12/19/23
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	CRHEA-GWIM; Contractors Rd, KSC, FL		

VOA 8260 List

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
563-58-6	1,1-Dichloropropene	0.50 U	1.0	0.50	0.34	ug/l	
10061-01-5	cis-1,3-Dichloropropene	0.50 U	1.0	0.50	0.29	ug/l	
10061-02-6	trans-1,3-Dichloropropene	0.50 U	1.0	0.50	0.21	ug/l	
100-41-4	Ethylbenzene	0.50 U	1.0	0.50	0.36	ug/l	
87-68-3	Hexachlorobutadiene	1.0 U	2.0	1.0	0.30	ug/l	
591-78-6	2-Hexanone	5.0 U	10	5.0	2.0	ug/l	
98-82-8	Isopropylbenzene	0.50 U	1.0	0.50	0.22	ug/l	
99-87-6	p-Isopropyltoluene	0.50 U	1.0	0.50	0.21	ug/l	
74-83-9	Methyl Bromide	4.0 U	5.0	4.0	2.0	ug/l	
74-87-3	Methyl Chloride	1.0 U	2.0	1.0	0.50	ug/l	
74-95-3	Methylene Bromide	0.50 U	2.0	0.50	0.37	ug/l	
75-09-2	Methylene Chloride	4.0 U	5.0	4.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	2.0 U	5.0	2.0	1.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	0.50 U	1.0	0.50	0.23	ug/l	
91-20-3	Naphthalene	2.0 U	5.0	2.0	1.0	ug/l	
103-65-1	n-Propylbenzene	0.50 U	1.0	0.50	0.29	ug/l	
100-42-5	Styrene	0.50 U	1.0	0.50	0.22	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	0.50 U	1.0	0.50	0.28	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	0.50 U	1.0	0.50	0.30	ug/l	
127-18-4	Tetrachloroethylene	0.50 U	1.0	0.50	0.22	ug/l	
108-88-3	Toluene	0.90	1.0	0.50	0.30	ug/l	J
87-61-6	1,2,3-Trichlorobenzene	1.0 U	2.0	1.0	0.61	ug/l	
120-82-1	1,2,4-Trichlorobenzene	1.0 U	2.0	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	0.50 U	1.0	0.50	0.25	ug/l	
79-00-5	1,1,2-Trichloroethane	0.50 U	1.0	0.50	0.47	ug/l	
79-01-6	Trichloroethylene	0.50 U	1.0	0.50	0.35	ug/l	
75-69-4	Trichlorofluoromethane	1.0 U	2.0	1.0	0.50	ug/l	
96-18-4	1,2,3-Trichloropropane	1.0 U	2.0	1.0	0.63	ug/l	
95-63-6	1,2,4-Trimethylbenzene	0.50 U	1.0	0.50	0.32	ug/l	
108-67-8	1,3,5-Trimethylbenzene	0.50 U	1.0	0.50	0.27	ug/l	
108-05-4	Vinyl Acetate	5.0 U	10	5.0	2.0	ug/l	
75-01-4	Vinyl Chloride	0.50 U	1.0	0.50	0.41	ug/l	
	m,p-Xylene	1.0 U	2.0	1.0	0.47	ug/l	
95-47-6	o-Xylene	0.50 U	1.0	0.50	0.26	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	102%		83-118%
17060-07-0	1,2-Dichloroethane-D4	97%		79-125%
2037-26-5	Toluene-D8	104%		85-112%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CRHE-MW0027-045.0-20231219		
Lab Sample ID:	FC12099-10	**Date Sampled:**	12/19/23
Matrix:	AQ - Ground Water	**Date Received:**	12/19/23
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	CRHEA-GWIM; Contractors Rd, KSC, FL		

VOA 8260 List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	100%		83-118%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	CRHE-MW0041-035.0-20231219		
Lab Sample ID:	FC12099-11	**Date Sampled:**	12/19/23
Matrix:	AQ - Ground Water	**Date Received:**	12/19/23
Method:	SW846 8260D BY SIM	**Percent Solids:**	n/a
Project:	CRHEA-GWIM; Contractors Rd, KSC, FL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	A0239272.D	1	12/26/23 13:15	TD	n/a	n/a	VA3455
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
123-91-1	1,4-Dioxane	2.6	1.0	0.75	0.30	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4	100%		74-125%
2037-26-5	Toluene-D8	98%		88-111%

U = Not detected LOD = Limit of Detection
LOQ = Limit of Quantitation DL = Detection Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	CRHE-MW0041-035.0-20231219		
Lab Sample ID:	FC12099-11	**Date Sampled:**	12/19/23
Matrix:	AQ - Ground Water	**Date Received:**	12/19/23
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	CRHEA-GWIM; Contractors Rd, KSC, FL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5E44810.D	1	12/22/23 12:01	JW	n/a	n/a	V5E1996
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA 8260 List

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
67-64-1	Acetone	20 U	25	20	10	ug/l	
71-43-2	Benzene	0.50 U	1.0	0.50	0.31	ug/l	
108-86-1	Bromobenzene	0.50 U	1.0	0.50	0.37	ug/l	
74-97-5	Bromochloromethane	0.50 U	1.0	0.50	0.45	ug/l	
75-27-4	Bromodichloromethane	0.50 U	1.0	0.50	0.24	ug/l	
75-25-2	Bromoform	0.50 U	1.0	0.50	0.41	ug/l	
78-93-3	2-Butanone (MEK)	3.5 U	5.0	3.5	2.0	ug/l	
104-51-8	n-Butylbenzene	0.50 U	1.0	0.50	0.23	ug/l	
135-98-8	sec-Butylbenzene	0.50 U	1.0	0.50	0.24	ug/l	
98-06-6	tert-Butylbenzene	0.50 U	1.0	0.50	0.31	ug/l	
75-15-0	Carbon Disulfide	1.0 U	2.0	1.0	0.53	ug/l	
56-23-5	Carbon Tetrachloride	0.50 U	1.0	0.50	0.36	ug/l	
108-90-7	Chlorobenzene	0.50 U	1.0	0.50	0.20	ug/l	
75-00-3	Chloroethane	1.0 U	2.0	1.0	0.67	ug/l	
67-66-3	Chloroform	0.50 U	1.0	0.50	0.30	ug/l	
95-49-8	o-Chlorotoluene	0.50 U	1.0	0.50	0.22	ug/l	
106-43-4	p-Chlorotoluene	0.50 U	1.0	0.50	0.31	ug/l	
124-48-1	Dibromochloromethane	0.50 U	1.0	0.50	0.28	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	2.0 U	5.0	2.0	1.0	ug/l	
106-93-4	1,2-Dibromoethane	1.0 U	2.0	1.0	0.28	ug/l	
75-71-8	Dichlorodifluoromethane	1.0 U	2.0	1.0	0.50	ug/l	
95-50-1	1,2-Dichlorobenzene	0.50 U	1.0	0.50	0.32	ug/l	
541-73-1	1,3-Dichlorobenzene	0.50 U	1.0	0.50	0.22	ug/l	
106-46-7	1,4-Dichlorobenzene	0.50 U	1.0	0.50	0.26	ug/l	
75-34-3	1,1-Dichloroethane	0.50 U	1.0	0.50	0.34	ug/l	
107-06-2	1,2-Dichloroethane	0.50 U	1.0	0.50	0.31	ug/l	
75-35-4	1,1-Dichloroethylene	0.50 U	1.0	0.50	0.32	ug/l	
156-59-2	cis-1,2-Dichloroethylene	4.2	1.0	0.50	0.28	ug/l	
156-60-5	trans-1,2-Dichloroethylene	0.71	1.0	0.50	0.22	ug/l	J
78-87-5	1,2-Dichloropropane	0.50 U	1.0	0.50	0.43	ug/l	
142-28-9	1,3-Dichloropropane	0.50 U	1.0	0.50	0.31	ug/l	
594-20-7	2,2-Dichloropropane	0.50 U	1.0	0.50	0.24	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CRHE-MW0041-035.0-20231219		
Lab Sample ID:	FC12099-11	**Date Sampled:**	12/19/23
Matrix:	AQ - Ground Water	**Date Received:**	12/19/23
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	CRHEA-GWIM; Contractors Rd, KSC, FL		

VOA 8260 List

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
563-58-6	1,1-Dichloropropene	0.50 U	1.0	0.50	0.34	ug/l	
10061-01-5	cis-1,3-Dichloropropene	0.50 U	1.0	0.50	0.29	ug/l	
10061-02-6	trans-1,3-Dichloropropene	0.50 U	1.0	0.50	0.21	ug/l	
100-41-4	Ethylbenzene	0.50 U	1.0	0.50	0.36	ug/l	
87-68-3	Hexachlorobutadiene	1.0 U	2.0	1.0	0.30	ug/l	
591-78-6	2-Hexanone	5.0 U	10	5.0	2.0	ug/l	
98-82-8	Isopropylbenzene	0.50 U	1.0	0.50	0.22	ug/l	
99-87-6	p-Isopropyltoluene	0.50 U	1.0	0.50	0.21	ug/l	
74-83-9	Methyl Bromide	4.0 U	5.0	4.0	2.0	ug/l	
74-87-3	Methyl Chloride	1.0 U	2.0	1.0	0.50	ug/l	
74-95-3	Methylene Bromide	0.50 U	2.0	0.50	0.37	ug/l	
75-09-2	Methylene Chloride	4.0 U	5.0	4.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	2.0 U	5.0	2.0	1.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	0.50 U	1.0	0.50	0.23	ug/l	
91-20-3	Naphthalene	2.0 U	5.0	2.0	1.0	ug/l	
103-65-1	n-Propylbenzene	0.50 U	1.0	0.50	0.29	ug/l	
100-42-5	Styrene	0.50 U	1.0	0.50	0.22	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	0.50 U	1.0	0.50	0.28	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	0.50 U	1.0	0.50	0.30	ug/l	
127-18-4	Tetrachloroethylene	0.50 U	1.0	0.50	0.22	ug/l	
108-88-3	Toluene	0.50 U	1.0	0.50	0.30	ug/l	
87-61-6	1,2,3-Trichlorobenzene	1.0 U	2.0	1.0	0.61	ug/l	
120-82-1	1,2,4-Trichlorobenzene	1.0 U	2.0	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	0.50 U	1.0	0.50	0.25	ug/l	
79-00-5	1,1,2-Trichloroethane	0.50 U	1.0	0.50	0.47	ug/l	
79-01-6	Trichloroethylene	0.50 U	1.0	0.50	0.35	ug/l	
75-69-4	Trichlorofluoromethane	1.0 U	2.0	1.0	0.50	ug/l	
96-18-4	1,2,3-Trichloropropane	1.0 U	2.0	1.0	0.63	ug/l	
95-63-6	1,2,4-Trimethylbenzene	0.50 U	1.0	0.50	0.32	ug/l	
108-67-8	1,3,5-Trimethylbenzene	0.50 U	1.0	0.50	0.27	ug/l	
108-05-4	Vinyl Acetate	5.0 U	10	5.0	2.0	ug/l	
75-01-4	Vinyl Chloride	98.4	1.0	0.50	0.41	ug/l	
	m,p-Xylene	1.0 U	2.0	1.0	0.47	ug/l	
95-47-6	o-Xylene	0.50 U	1.0	0.50	0.26	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	101%		83-118%
17060-07-0	1,2-Dichloroethane-D4	96%		79-125%
2037-26-5	Toluene-D8	102%		85-112%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CRHE-MW0041-035.0-20231219		
Lab Sample ID:	FC12099-11	**Date Sampled:**	12/19/23
Matrix:	AQ - Ground Water	**Date Received:**	12/19/23
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	CRHEA-GWIM; Contractors Rd, KSC, FL		

VOA 8260 List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	102%		83-118%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	CRHE-MW0034-035.0-20231219		
Lab Sample ID:	FC12099-12	**Date Sampled:**	12/19/23
Matrix:	AQ - Ground Water	**Date Received:**	12/19/23
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	CRHEA-GWIM; Contractors Rd, KSC, FL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5E44811.D	1	12/22/23 12:25	JW	n/a	n/a	V5E1996
Run #2	1A51683.D	5	12/26/23 17:00	LT	n/a	n/a	V1A2028

	Purge Volume
Run #1	5.0 ml
Run #2	5.0 ml

VOA 8260 List

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
67-64-1	Acetone	20 U	25	20	10	ug/l	
71-43-2	Benzene	0.50 U	1.0	0.50	0.31	ug/l	
108-86-1	Bromobenzene	0.50 U	1.0	0.50	0.37	ug/l	
74-97-5	Bromochloromethane	0.50 U	1.0	0.50	0.45	ug/l	
75-27-4	Bromodichloromethane	0.50 U	1.0	0.50	0.24	ug/l	
75-25-2	Bromoform	0.50 U	1.0	0.50	0.41	ug/l	
78-93-3	2-Butanone (MEK)	3.5 U	5.0	3.5	2.0	ug/l	
104-51-8	n-Butylbenzene	0.50 U	1.0	0.50	0.23	ug/l	
135-98-8	sec-Butylbenzene	0.50 U	1.0	0.50	0.24	ug/l	
98-06-6	tert-Butylbenzene	0.50 U	1.0	0.50	0.31	ug/l	
75-15-0	Carbon Disulfide	1.0 U	2.0	1.0	0.53	ug/l	
56-23-5	Carbon Tetrachloride	0.50 U	1.0	0.50	0.36	ug/l	
108-90-7	Chlorobenzene	1.4	1.0	0.50	0.20	ug/l	
75-00-3	Chloroethane	1.0 U	2.0	1.0	0.67	ug/l	
67-66-3	Chloroform	0.50 U	1.0	0.50	0.30	ug/l	
95-49-8	o-Chlorotoluene	0.50 U	1.0	0.50	0.22	ug/l	
106-43-4	p-Chlorotoluene	0.50 U	1.0	0.50	0.31	ug/l	
124-48-1	Dibromochloromethane	0.50 U	1.0	0.50	0.28	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	2.0 U	5.0	2.0	1.0	ug/l	
106-93-4	1,2-Dibromoethane	1.0 U	2.0	1.0	0.28	ug/l	
75-71-8	Dichlorodifluoromethane	1.0 U	2.0	1.0	0.50	ug/l	
95-50-1	1,2-Dichlorobenzene	0.50 U	1.0	0.50	0.32	ug/l	
541-73-1	1,3-Dichlorobenzene	0.50 U	1.0	0.50	0.22	ug/l	
106-46-7	1,4-Dichlorobenzene	0.50 U	1.0	0.50	0.26	ug/l	
75-34-3	1,1-Dichloroethane	0.50 U	1.0	0.50	0.34	ug/l	
107-06-2	1,2-Dichloroethane	0.50 U	1.0	0.50	0.31	ug/l	
75-35-4	1,1-Dichloroethylene	0.50 U	1.0	0.50	0.32	ug/l	
156-59-2	cis-1,2-Dichloroethylene	2.0	1.0	0.50	0.28	ug/l	
156-60-5	trans-1,2-Dichloroethylene	0.50 U	1.0	0.50	0.22	ug/l	
78-87-5	1,2-Dichloropropane	0.50 U	1.0	0.50	0.43	ug/l	
142-28-9	1,3-Dichloropropane	0.50 U	1.0	0.50	0.31	ug/l	
594-20-7	2,2-Dichloropropane	0.50 U	1.0	0.50	0.24	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CRHE-MW0034-035.0-20231219		
Lab Sample ID:	FC12099-12	**Date Sampled:**	12/19/23
Matrix:	AQ - Ground Water	**Date Received:**	12/19/23
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	CRHEA-GWIM; Contractors Rd, KSC, FL		

VOA 8260 List

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
563-58-6	1,1-Dichloropropene	0.50 U	1.0	0.50	0.34	ug/l	
10061-01-5	cis-1,3-Dichloropropene	0.50 U	1.0	0.50	0.29	ug/l	
10061-02-6	trans-1,3-Dichloropropene	0.50 U	1.0	0.50	0.21	ug/l	
100-41-4	Ethylbenzene	0.50 U	1.0	0.50	0.36	ug/l	
87-68-3	Hexachlorobutadiene	1.0 U	2.0	1.0	0.30	ug/l	
591-78-6	2-Hexanone	5.0 U	10	5.0	2.0	ug/l	
98-82-8	Isopropylbenzene	0.50 U	1.0	0.50	0.22	ug/l	
99-87-6	p-Isopropyltoluene	0.50 U	1.0	0.50	0.21	ug/l	
74-83-9	Methyl Bromide	4.0 U	5.0	4.0	2.0	ug/l	
74-87-3	Methyl Chloride	1.0 U	2.0	1.0	0.50	ug/l	
74-95-3	Methylene Bromide	0.50 U	2.0	0.50	0.37	ug/l	
75-09-2	Methylene Chloride	4.0 U	5.0	4.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	2.0 U	5.0	2.0	1.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	0.50 U	1.0	0.50	0.23	ug/l	
91-20-3	Naphthalene	2.0 U	5.0	2.0	1.0	ug/l	
103-65-1	n-Propylbenzene	0.50 U	1.0	0.50	0.29	ug/l	
100-42-5	Styrene	0.50 U	1.0	0.50	0.22	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	0.50 U	1.0	0.50	0.28	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	0.50 U	1.0	0.50	0.30	ug/l	
127-18-4	Tetrachloroethylene	0.50 U	1.0	0.50	0.22	ug/l	
108-88-3	Toluene	0.50 U	1.0	0.50	0.30	ug/l	
87-61-6	1,2,3-Trichlorobenzene	1.0 U	2.0	1.0	0.61	ug/l	
120-82-1	1,2,4-Trichlorobenzene	1.0 U	2.0	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	0.50 U	1.0	0.50	0.25	ug/l	
79-00-5	1,1,2-Trichloroethane	0.50 U	1.0	0.50	0.47	ug/l	
79-01-6	Trichloroethylene	0.50 U	1.0	0.50	0.35	ug/l	
75-69-4	Trichlorofluoromethane	1.0 U	2.0	1.0	0.50	ug/l	
96-18-4	1,2,3-Trichloropropane	1.0 U	2.0	1.0	0.63	ug/l	
95-63-6	1,2,4-Trimethylbenzene	0.50 U	1.0	0.50	0.32	ug/l	
108-67-8	1,3,5-Trimethylbenzene	0.50 U	1.0	0.50	0.27	ug/l	
108-05-4	Vinyl Acetate	5.0 U	10	5.0	2.0	ug/l	
75-01-4	Vinyl Chloride	76.1 [a]	5.0	2.5	2.0	ug/l	
	m,p-Xylene	1.0 U	2.0	1.0	0.47	ug/l	
95-47-6	o-Xylene	0.50 U	1.0	0.50	0.26	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	101%	98%	83-118%
17060-07-0	1,2-Dichloroethane-D4	94%	107%	79-125%
2037-26-5	Toluene-D8	102%	102%	85-112%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CRHE-MW0034-035.0-20231219		
Lab Sample ID:	FC12099-12	**Date Sampled:**	12/19/23
Matrix:	AQ - Ground Water	**Date Received:**	12/19/23
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	CRHEA-GWIM; Contractors Rd, KSC, FL		

VOA 8260 List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	102%	100%	83-118%

(a) Result is from Run# 2

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	CRHE-MW0042-040.0-20231219		
Lab Sample ID:	FC12099-13	**Date Sampled:**	12/19/23
Matrix:	AQ - Ground Water	**Date Received:**	12/19/23
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	CRHEA-GWIM; Contractors Rd, KSC, FL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5E44812.D	1	12/22/23 12:47	JW	n/a	n/a	V5E1996
Run #2	1A51684.D	5	12/26/23 17:24	LT	n/a	n/a	V1A2028

	Purge Volume
Run #1	5.0 ml
Run #2	5.0 ml

VOA 8260 List

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
67-64-1	Acetone	20 U	25	20	10	ug/l	
71-43-2	Benzene	0.50 U	1.0	0.50	0.31	ug/l	
108-86-1	Bromobenzene	0.50 U	1.0	0.50	0.37	ug/l	
74-97-5	Bromochloromethane	0.50 U	1.0	0.50	0.45	ug/l	
75-27-4	Bromodichloromethane	0.50 U	1.0	0.50	0.24	ug/l	
75-25-2	Bromoform	0.50 U	1.0	0.50	0.41	ug/l	
78-93-3	2-Butanone (MEK)	3.5 U	5.0	3.5	2.0	ug/l	
104-51-8	n-Butylbenzene	0.50 U	1.0	0.50	0.23	ug/l	
135-98-8	sec-Butylbenzene	0.50 U	1.0	0.50	0.24	ug/l	
98-06-6	tert-Butylbenzene	0.50 U	1.0	0.50	0.31	ug/l	
75-15-0	Carbon Disulfide	1.0 U	2.0	1.0	0.53	ug/l	
56-23-5	Carbon Tetrachloride	0.50 U	1.0	0.50	0.36	ug/l	
108-90-7	Chlorobenzene	0.50 U	1.0	0.50	0.20	ug/l	
75-00-3	Chloroethane	1.0 U	2.0	1.0	0.67	ug/l	
67-66-3	Chloroform	0.50 U	1.0	0.50	0.30	ug/l	
95-49-8	o-Chlorotoluene	0.50 U	1.0	0.50	0.22	ug/l	
106-43-4	p-Chlorotoluene	0.50 U	1.0	0.50	0.31	ug/l	
124-48-1	Dibromochloromethane	0.50 U	1.0	0.50	0.28	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	2.0 U	5.0	2.0	1.0	ug/l	
106-93-4	1,2-Dibromoethane	1.0 U	2.0	1.0	0.28	ug/l	
75-71-8	Dichlorodifluoromethane	1.0 U	2.0	1.0	0.50	ug/l	
95-50-1	1,2-Dichlorobenzene	0.50 U	1.0	0.50	0.32	ug/l	
541-73-1	1,3-Dichlorobenzene	0.50 U	1.0	0.50	0.22	ug/l	
106-46-7	1,4-Dichlorobenzene	0.50 U	1.0	0.50	0.26	ug/l	
75-34-3	1,1-Dichloroethane	0.50 U	1.0	0.50	0.34	ug/l	
107-06-2	1,2-Dichloroethane	0.50 U	1.0	0.50	0.31	ug/l	
75-35-4	1,1-Dichloroethylene	0.50 U	1.0	0.50	0.32	ug/l	
156-59-2	cis-1,2-Dichloroethylene	2.9	1.0	0.50	0.28	ug/l	
156-60-5	trans-1,2-Dichloroethylene	2.9	1.0	0.50	0.22	ug/l	
78-87-5	1,2-Dichloropropane	0.50 U	1.0	0.50	0.43	ug/l	
142-28-9	1,3-Dichloropropane	0.50 U	1.0	0.50	0.31	ug/l	
594-20-7	2,2-Dichloropropane	0.50 U	1.0	0.50	0.24	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CRHE-MW0042-040.0-20231219		
Lab Sample ID:	FC12099-13	**Date Sampled:**	12/19/23
Matrix:	AQ - Ground Water	**Date Received:**	12/19/23
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	CRHEA-GWIM; Contractors Rd, KSC, FL		

VOA 8260 List

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
563-58-6	1,1-Dichloropropene	0.50 U	1.0	0.50	0.34	ug/l	
10061-01-5	cis-1,3-Dichloropropene	0.50 U	1.0	0.50	0.29	ug/l	
10061-02-6	trans-1,3-Dichloropropene	0.50 U	1.0	0.50	0.21	ug/l	
100-41-4	Ethylbenzene	0.50 U	1.0	0.50	0.36	ug/l	
87-68-3	Hexachlorobutadiene	1.0 U	2.0	1.0	0.30	ug/l	
591-78-6	2-Hexanone	5.0 U	10	5.0	2.0	ug/l	
98-82-8	Isopropylbenzene	0.50 U	1.0	0.50	0.22	ug/l	
99-87-6	p-Isopropyltoluene	0.50 U	1.0	0.50	0.21	ug/l	
74-83-9	Methyl Bromide	4.0 U	5.0	4.0	2.0	ug/l	
74-87-3	Methyl Chloride	1.0 U	2.0	1.0	0.50	ug/l	
74-95-3	Methylene Bromide	0.50 U	2.0	0.50	0.37	ug/l	
75-09-2	Methylene Chloride	4.0 U	5.0	4.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	2.0 U	5.0	2.0	1.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	0.50 U	1.0	0.50	0.23	ug/l	
91-20-3	Naphthalene	2.0 U	5.0	2.0	1.0	ug/l	
103-65-1	n-Propylbenzene	0.50 U	1.0	0.50	0.29	ug/l	
100-42-5	Styrene	0.50 U	1.0	0.50	0.22	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	0.50 U	1.0	0.50	0.28	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	0.50 U	1.0	0.50	0.30	ug/l	
127-18-4	Tetrachloroethylene	0.50 U	1.0	0.50	0.22	ug/l	
108-88-3	Toluene	0.50 U	1.0	0.50	0.30	ug/l	
87-61-6	1,2,3-Trichlorobenzene	1.0 U	2.0	1.0	0.61	ug/l	
120-82-1	1,2,4-Trichlorobenzene	1.0 U	2.0	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	0.50 U	1.0	0.50	0.25	ug/l	
79-00-5	1,1,2-Trichloroethane	0.50 U	1.0	0.50	0.47	ug/l	
79-01-6	Trichloroethylene	0.50 U	1.0	0.50	0.35	ug/l	
75-69-4	Trichlorofluoromethane	1.0 U	2.0	1.0	0.50	ug/l	
96-18-4	1,2,3-Trichloropropane	1.0 U	2.0	1.0	0.63	ug/l	
95-63-6	1,2,4-Trimethylbenzene	0.50 U	1.0	0.50	0.32	ug/l	
108-67-8	1,3,5-Trimethylbenzene	0.50 U	1.0	0.50	0.27	ug/l	
108-05-4	Vinyl Acetate	5.0 U	10	5.0	2.0	ug/l	
75-01-4	Vinyl Chloride	101 [a]	5.0	2.5	2.0	ug/l	
	m,p-Xylene	1.0 U	2.0	1.0	0.47	ug/l	
95-47-6	o-Xylene	0.50 U	1.0	0.50	0.26	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	102%	96%	83-118%
17060-07-0	1,2-Dichloroethane-D4	97%	107%	79-125%
2037-26-5	Toluene-D8	101%	102%	85-112%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CRHE-MW0042-040.0-20231219		
Lab Sample ID:	FC12099-13	**Date Sampled:**	12/19/23
Matrix:	AQ - Ground Water	**Date Received:**	12/19/23
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	CRHEA-GWIM; Contractors Rd, KSC, FL		

VOA 8260 List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	103%	101%	83-118%

(a) Result is from Run# 2

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	CRHE-IW0001S-008.0-20231218		
Lab Sample ID:	FC12099-14	**Date Sampled:**	12/18/23
Matrix:	AQ - Ground Water	**Date Received:**	12/19/23
Method:	EPA 537M QSM5.3 B-15 EPA 537 MOD	**Percent Solids:**	n/a
Project:	CRHEA-GWIM; Contractors Rd, KSC, FL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2Q118607.D	1	01/04/24 17:08	LR	01/03/24 10:35	OP937	S2Q1693
Run #2 [a]	5Q23956.D	1	12/29/23 03:47	NG	12/26/23 07:30	OP835	S5Q375
Run #3 [b]	5Q24256.D	5	01/05/24 20:52	LR	01/03/24 10:35	OP937	S5Q380

	Initial Volume	Final Volume
Run #1	125 ml	1.0 ml
Run #2	120 ml	1.0 ml
Run #3	125 ml	1.0 ml

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.157	0.016	0.0080	0.0040	ug/l	
2706-90-3	Perfluoropentanoic acid	0.0021	0.0080	0.0040	0.0020	ug/l	J
307-24-4	Perfluorohexanoic acid	0.0024	0.0080	0.0040	0.0020	ug/l	J
375-85-9	Perfluoroheptanoic acid	0.0026	0.0080	0.0040	0.0020	ug/l	J
335-67-1	Perfluorooctanoic acid	0.0175	0.0080	0.0040	0.0020	ug/l	
375-95-1	Perfluorononanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-76-2	Perfluorodecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-55-1	Perfluorododecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
376-06-7	Perfluorotetradecanoic acid [c]	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.0090	0.0080	0.0040	0.0020	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.0545	0.0080	0.0040	0.0020	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.020 U [d]	0.040	0.020	0.010	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
2991-50-6	EtFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
FLUOROTELOMER SULFONATES							

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CRHE-IW0001S-008.0-20231218		
Lab Sample ID:	FC12099-14	**Date Sampled:**	12/18/23
Matrix:	AQ - Ground Water	**Date Received:**	12/19/23
Method:	EPA 537M QSM5.3 B-15 EPA 537 MOD	**Percent Solids:**	n/a
Project:	CRHEA-GWIM; Contractors Rd, KSC, FL		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
757124-72-4	4:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
39108-34-4	8:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0080 U	0.016	0.0080	0.0040	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Run# 3	Limits
	13C4-PFBA	71%	101%	65%	50-150%
	13C5-PFPeA	70%	86%	64%	50-150%
	13C5-PFHxA	69%	92%	67%	50-150%
	13C4-PFHpA	70%	89%	69%	50-150%
	13C8-PFOA	72%	86%	68%	50-150%
	13C9-PFNA	68%	75%	63%	50-150%
	13C6-PFDA	70%	63%	54%	50-150%
	13C7-PFUnDA	60%	57%	48% e	50-150%
	13C2-PFDoDA	51%	56%	44% e	50-150%
	13C2-PFTeDA	42% e	49% e	38% e	50-150%
	13C3-PFBS	69%	83%	63%	50-150%
	13C3-PFHxS	65%	74%	69%	50-150%
	13C8-PFOS	61%	54%	51%	50-150%
	13C8-FOSA	43% e	58%	51%	50-150%
	d3-MeFOSAA	70%	71%	55%	50-150%
	d5-EtFOSAA	67%	65%	57%	50-150%
	13C2-4:2FTS	69%	94%	64%	50-150%
	13C2-6:2FTS	70%	92%	65%	50-150%
	13C2-8:2FTS	67%	63%	54%	50-150%
	13C3-HFPO-DA	68%	87%	68%	50-150%

(a) Confirmation run.
(b) Dilution required (ID recovery standard failure).
(c) Associated ID Standard outside control limits.
(d) Result is from Run# 3
(e) Outside control limits.

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	CRHE-IW0019I-040.0-20231218		
Lab Sample ID:	FC12099-15	**Date Sampled:**	12/18/23
Matrix:	AQ - Ground Water	**Date Received:**	12/19/23
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	CRHEA-GWIM; Contractors Rd, KSC, FL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5E44825.D	2.5	12/22/23 17:46	JW	n/a	n/a	V5E1996
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA 8260 List

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
67-64-1	Acetone	50 U	63	50	25	ug/l	
71-43-2	Benzene	1.3 U	2.5	1.3	0.78	ug/l	
108-86-1	Bromobenzene	1.3 U	2.5	1.3	0.92	ug/l	
74-97-5	Bromochloromethane	1.3 U	2.5	1.3	1.1	ug/l	
75-27-4	Bromodichloromethane	1.3 U	2.5	1.3	0.61	ug/l	
75-25-2	Bromoform	1.3 U	2.5	1.3	1.0	ug/l	
78-93-3	2-Butanone (MEK)	8.8 U	13	8.8	5.0	ug/l	
104-51-8	n-Butylbenzene	1.3 U	2.5	1.3	0.58	ug/l	
135-98-8	sec-Butylbenzene	1.3 U	2.5	1.3	0.61	ug/l	
98-06-6	tert-Butylbenzene	1.3 U	2.5	1.3	0.79	ug/l	
75-15-0	Carbon Disulfide	2.5 U	5.0	2.5	1.3	ug/l	
56-23-5	Carbon Tetrachloride	1.3 U	2.5	1.3	0.89	ug/l	
108-90-7	Chlorobenzene	1.3 U	2.5	1.3	0.50	ug/l	
75-00-3	Chloroethane	2.5 U	5.0	2.5	1.7	ug/l	
67-66-3	Chloroform	1.3 U	2.5	1.3	0.75	ug/l	
95-49-8	o-Chlorotoluene	1.3 U	2.5	1.3	0.56	ug/l	
106-43-4	p-Chlorotoluene	1.3 U	2.5	1.3	0.77	ug/l	
124-48-1	Dibromochloromethane	1.3 U	2.5	1.3	0.69	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	5.0 U	13	5.0	2.6	ug/l	
106-93-4	1,2-Dibromoethane	2.5 U	5.0	2.5	0.69	ug/l	
75-71-8	Dichlorodifluoromethane	2.5 U	5.0	2.5	1.3	ug/l	
95-50-1	1,2-Dichlorobenzene	1.3 U	2.5	1.3	0.81	ug/l	
541-73-1	1,3-Dichlorobenzene	1.3 U	2.5	1.3	0.54	ug/l	
106-46-7	1,4-Dichlorobenzene	1.3 U	2.5	1.3	0.64	ug/l	
75-34-3	1,1-Dichloroethane	1.3 U	2.5	1.3	0.85	ug/l	
107-06-2	1,2-Dichloroethane	1.3 U	2.5	1.3	0.78	ug/l	
75-35-4	1,1-Dichloroethylene	1.3 U	2.5	1.3	0.81	ug/l	
156-59-2	cis-1,2-Dichloroethylene	1.3 U	2.5	1.3	0.69	ug/l	
156-60-5	trans-1,2-Dichloroethylene	3.3	2.5	1.3	0.55	ug/l	
78-87-5	1,2-Dichloropropane	1.3 U	2.5	1.3	1.1	ug/l	
142-28-9	1,3-Dichloropropane	1.3 U	2.5	1.3	0.77	ug/l	
594-20-7	2,2-Dichloropropane	1.3 U	2.5	1.3	0.60	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CRHE-IW0019I-040.0-20231218		
Lab Sample ID:	FC12099-15	**Date Sampled:**	12/18/23
Matrix:	AQ - Ground Water	**Date Received:**	12/19/23
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	CRHEA-GWIM; Contractors Rd, KSC, FL		

VOA 8260 List

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
563-58-6	1,1-Dichloropropene	1.3 U	2.5	1.3	0.84	ug/l	
10061-01-5	cis-1,3-Dichloropropene	1.3 U	2.5	1.3	0.73	ug/l	
10061-02-6	trans-1,3-Dichloropropene	1.3 U	2.5	1.3	0.54	ug/l	
100-41-4	Ethylbenzene	1.3 U	2.5	1.3	0.89	ug/l	
87-68-3	Hexachlorobutadiene	2.5 U	5.0	2.5	0.74	ug/l	
591-78-6	2-Hexanone	13 U	25	13	5.0	ug/l	
98-82-8	Isopropylbenzene	1.3 U	2.5	1.3	0.55	ug/l	
99-87-6	p-Isopropyltoluene	1.3 U	2.5	1.3	0.53	ug/l	
74-83-9	Methyl Bromide	10 U	13	10	5.0	ug/l	
74-87-3	Methyl Chloride	2.5 U	5.0	2.5	1.3	ug/l	
74-95-3	Methylene Bromide	1.3 U	5.0	1.3	0.92	ug/l	
75-09-2	Methylene Chloride	6.3	13	10	5.0	ug/l	J
108-10-1	4-Methyl-2-pentanone (MIBK)	5.0 U	13	5.0	2.5	ug/l	
1634-04-4	Methyl Tert Butyl Ether	1.3 U	2.5	1.3	0.57	ug/l	
91-20-3	Naphthalene	5.0 U	13	5.0	2.5	ug/l	
103-65-1	n-Propylbenzene	1.3 U	2.5	1.3	0.72	ug/l	
100-42-5	Styrene	1.3 U	2.5	1.3	0.56	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	1.3 U	2.5	1.3	0.69	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	1.3 U	2.5	1.3	0.75	ug/l	
127-18-4	Tetrachloroethylene	1.3 U	2.5	1.3	0.54	ug/l	
108-88-3	Toluene	1.3 U	2.5	1.3	0.75	ug/l	
87-61-6	1,2,3-Trichlorobenzene	2.5 U	5.0	2.5	1.5	ug/l	
120-82-1	1,2,4-Trichlorobenzene	2.5 U	5.0	2.5	1.3	ug/l	
71-55-6	1,1,1-Trichloroethane	1.3 U	2.5	1.3	0.62	ug/l	
79-00-5	1,1,2-Trichloroethane	1.3 U	2.5	1.3	1.2	ug/l	
79-01-6	Trichloroethylene	1.3 U	2.5	1.3	0.86	ug/l	
75-69-4	Trichlorofluoromethane	2.5 U	5.0	2.5	1.3	ug/l	
96-18-4	1,2,3-Trichloropropane	2.5 U	5.0	2.5	1.6	ug/l	
95-63-6	1,2,4-Trimethylbenzene	1.3 U	2.5	1.3	0.81	ug/l	
108-67-8	1,3,5-Trimethylbenzene	1.3 U	2.5	1.3	0.69	ug/l	
108-05-4	Vinyl Acetate	13 U	25	13	5.0	ug/l	
75-01-4	Vinyl Chloride	172	2.5	1.3	1.0	ug/l	
	m,p-Xylene	2.5 U	5.0	2.5	1.2	ug/l	
95-47-6	o-Xylene	1.3 U	2.5	1.3	0.64	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	101%		83-118%
17060-07-0	1,2-Dichloroethane-D4	96%		79-125%
2037-26-5	Toluene-D8	102%		85-112%

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E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CRHE-IW0019I-040.0-20231218		
Lab Sample ID:	FC12099-15	**Date Sampled:**	12/18/23
Matrix:	AQ - Ground Water	**Date Received:**	12/19/23
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	CRHEA-GWIM; Contractors Rd, KSC, FL		

VOA 8260 List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	103%		83-118%

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SGS North America Inc.

Report of Analysis

Client Sample ID:	CRHE-IW0019I-040.0-20231218		
Lab Sample ID:	FC12099-15	**Date Sampled:**	12/18/23
Matrix:	AQ - Ground Water	**Date Received:**	12/19/23
Method:	EPA 537M QSM5.3 B-15 EPA 537 MOD	**Percent Solids:**	n/a
Project:	CRHEA-GWIM; Contractors Rd, KSC, FL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2Q118608.D	1	01/04/24 17:25	LR	01/03/24 10:35	OP937	S2Q1693
Run #2							

	Initial Volume	Final Volume
Run #1	125 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0080 U	0.016	0.0080	0.0040	ug/l	
2706-90-3	Perfluoropentanoic acid	0.0067	0.0080	0.0040	0.0020	ug/l	J
307-24-4	Perfluorohexanoic acid	0.0068	0.0080	0.0040	0.0020	ug/l	J
375-85-9	Perfluoroheptanoic acid	0.0052	0.0080	0.0040	0.0020	ug/l	J
335-67-1	Perfluorooctanoic acid	0.0150	0.0080	0.0040	0.0020	ug/l	
375-95-1	Perfluorononanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-76-2	Perfluorodecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-55-1	Perfluorododecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.0051	0.0080	0.0040	0.0020	ug/l	J
375-92-8	Perfluoroheptanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.0111	0.0080	0.0040	0.0020	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
2991-50-6	EtFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	

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Report of Analysis

Client Sample ID:	CRHE-IW0019I-040.0-20231218		
Lab Sample ID:	FC12099-15	**Date Sampled:**	12/18/23
Matrix:	AQ - Ground Water	**Date Received:**	12/19/23
Method:	EPA 537M QSM5.3 B-15 EPA 537 MOD	**Percent Solids:**	n/a
Project:	CRHEA-GWIM; Contractors Rd, KSC, FL		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0080 U	0.016	0.0080	0.0040	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	63%		50-150%
	13C5-PFPeA	63%		50-150%
	13C5-PFHxA	64%		50-150%
	13C4-PFHpA	67%		50-150%
	13C8-PFOA	71%		50-150%
	13C9-PFNA	70%		50-150%
	13C6-PFDA	75%		50-150%
	13C7-PFUnDA	68%		50-150%
	13C2-PFDoDA	59%		50-150%
	13C2-PFTeDA	50%		50-150%
	13C3-PFBS	62%		50-150%
	13C3-PFHxS	61%		50-150%
	13C8-PFOS	65%		50-150%
	13C8-FOSA	59%		50-150%
	d3-MeFOSAA	74%		50-150%
	d5-EtFOSAA	71%		50-150%
	13C2-4:2FTS	65%		50-150%
	13C2-6:2FTS	69%		50-150%
	13C2-8:2FTS	71%		50-150%
	13C3-HFPO-DA	63%		50-150%

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LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	CRHE-IW0013S-007.5-20231218		
Lab Sample ID:	FC12099-16	**Date Sampled:**	12/18/23
Matrix:	AQ - Ground Water	**Date Received:**	12/19/23
Method:	EPA 537M QSM5.3 B-15 EPA 537 MOD	**Percent Solids:**	n/a
Project:	CRHEA-GWIM; Contractors Rd, KSC, FL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5Q23958.D	1	12/29/23 04:21	NG	12/26/23 07:30	OP835	S5Q375
Run #2							

	Initial Volume	Final Volume
Run #1	120 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0170	0.017	0.0083	0.0042	ug/l	
2706-90-3	Perfluoropentanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
307-24-4	Perfluorohexanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
335-67-1	Perfluorooctanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
375-95-1	Perfluorononanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
335-76-2	Perfluorodecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
307-55-1	Perfluorododecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.0032	0.0083	0.0042	0.0021	ug/l	J
68259-12-1	Perfluorononanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0042 U	0.0083	0.0042	0.0021	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0083 U	0.017	0.0083	0.0042	ug/l	
2991-50-6	EtFOSAA	0.0083 U	0.017	0.0083	0.0042	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0083 U	0.017	0.0083	0.0042	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0083 U	0.017	0.0083	0.0042	ug/l	

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LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CRHE-IW0013S-007.5-20231218		
Lab Sample ID:	FC12099-16	**Date Sampled:**	12/18/23
Matrix:	AQ - Ground Water	**Date Received:**	12/19/23
Method:	EPA 537M QSM5.3 B-15 EPA 537 MOD	**Percent Solids:**	n/a
Project:	CRHEA-GWIM; Contractors Rd, KSC, FL		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0083 U	0.017	0.0083	0.0042	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0083 U	0.017	0.0083	0.0042	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	99%		50-150%
	13C5-PFPeA	78%		50-150%
	13C5-PFHxA	83%		50-150%
	13C4-PFHpA	82%		50-150%
	13C8-PFOA	80%		50-150%
	13C9-PFNA	69%		50-150%
	13C6-PFDA	60%		50-150%
	13C7-PFUnDA	55%		50-150%
	13C2-PFDoDA	55%		50-150%
	13C2-PFTeDA	63%		50-150%
	13C3-PFBS	78%		50-150%
	13C3-PFHxS	69%		50-150%
	13C8-PFOS	54%		50-150%
	13C8-FOSA	51%		50-150%
	d3-MeFOSAA	67%		50-150%
	d5-EtFOSAA	61%		50-150%
	13C2-4:2FTS	86%		50-150%
	13C2-6:2FTS	87%		50-150%
	13C2-8:2FTS	59%		50-150%
	13C3-HFPO-DA	78%		50-150%

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LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	CRHE-IW0017I-030.0-20231218		
Lab Sample ID:	FC12099-17	**Date Sampled:**	12/18/23
Matrix:	AQ - Ground Water	**Date Received:**	12/19/23
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	CRHEA-GWIM; Contractors Rd, KSC, FL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5E44813.D	1	12/22/23 13:10	JW	n/a	n/a	V5E1996
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA 8260 List

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
67-64-1	Acetone	20 U	25	20	10	ug/l	
71-43-2	Benzene	0.50 U	1.0	0.50	0.31	ug/l	
108-86-1	Bromobenzene	0.50 U	1.0	0.50	0.37	ug/l	
74-97-5	Bromochloromethane	0.50 U	1.0	0.50	0.45	ug/l	
75-27-4	Bromodichloromethane	0.50 U	1.0	0.50	0.24	ug/l	
75-25-2	Bromoform	0.50 U	1.0	0.50	0.41	ug/l	
78-93-3	2-Butanone (MEK)	3.5 U	5.0	3.5	2.0	ug/l	
104-51-8	n-Butylbenzene	0.50 U	1.0	0.50	0.23	ug/l	
135-98-8	sec-Butylbenzene	0.50 U	1.0	0.50	0.24	ug/l	
98-06-6	tert-Butylbenzene	0.50 U	1.0	0.50	0.31	ug/l	
75-15-0	Carbon Disulfide	1.0 U	2.0	1.0	0.53	ug/l	
56-23-5	Carbon Tetrachloride	0.50 U	1.0	0.50	0.36	ug/l	
108-90-7	Chlorobenzene	0.50 U	1.0	0.50	0.20	ug/l	
75-00-3	Chloroethane	1.0 U	2.0	1.0	0.67	ug/l	
67-66-3	Chloroform	0.50 U	1.0	0.50	0.30	ug/l	
95-49-8	o-Chlorotoluene	0.50 U	1.0	0.50	0.22	ug/l	
106-43-4	p-Chlorotoluene	0.50 U	1.0	0.50	0.31	ug/l	
124-48-1	Dibromochloromethane	0.50 U	1.0	0.50	0.28	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	2.0 U	5.0	2.0	1.0	ug/l	
106-93-4	1,2-Dibromoethane	1.0 U	2.0	1.0	0.28	ug/l	
75-71-8	Dichlorodifluoromethane	1.0 U	2.0	1.0	0.50	ug/l	
95-50-1	1,2-Dichlorobenzene	0.50 U	1.0	0.50	0.32	ug/l	
541-73-1	1,3-Dichlorobenzene	0.50 U	1.0	0.50	0.22	ug/l	
106-46-7	1,4-Dichlorobenzene	0.50 U	1.0	0.50	0.26	ug/l	
75-34-3	1,1-Dichloroethane	0.50 U	1.0	0.50	0.34	ug/l	
107-06-2	1,2-Dichloroethane	0.50 U	1.0	0.50	0.31	ug/l	
75-35-4	1,1-Dichloroethylene	0.50 U	1.0	0.50	0.32	ug/l	
156-59-2	cis-1,2-Dichloroethylene	0.50 U	1.0	0.50	0.28	ug/l	
156-60-5	trans-1,2-Dichloroethylene	0.50 U	1.0	0.50	0.22	ug/l	
78-87-5	1,2-Dichloropropane	0.50 U	1.0	0.50	0.43	ug/l	
142-28-9	1,3-Dichloropropane	0.50 U	1.0	0.50	0.31	ug/l	
594-20-7	2,2-Dichloropropane	0.50 U	1.0	0.50	0.24	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CRHE-IW0017I-030.0-20231218		
Lab Sample ID:	FC12099-17	**Date Sampled:**	12/18/23
Matrix:	AQ - Ground Water	**Date Received:**	12/19/23
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	CRHEA-GWIM; Contractors Rd, KSC, FL		

VOA 8260 List

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
563-58-6	1,1-Dichloropropene	0.50 U	1.0	0.50	0.34	ug/l	
10061-01-5	cis-1,3-Dichloropropene	0.50 U	1.0	0.50	0.29	ug/l	
10061-02-6	trans-1,3-Dichloropropene	0.50 U	1.0	0.50	0.21	ug/l	
100-41-4	Ethylbenzene	0.50 U	1.0	0.50	0.36	ug/l	
87-68-3	Hexachlorobutadiene	1.0 U	2.0	1.0	0.30	ug/l	
591-78-6	2-Hexanone	5.0 U	10	5.0	2.0	ug/l	
98-82-8	Isopropylbenzene	0.50 U	1.0	0.50	0.22	ug/l	
99-87-6	p-Isopropyltoluene	0.50 U	1.0	0.50	0.21	ug/l	
74-83-9	Methyl Bromide	4.0 U	5.0	4.0	2.0	ug/l	
74-87-3	Methyl Chloride	1.0 U	2.0	1.0	0.50	ug/l	
74-95-3	Methylene Bromide	0.50 U	2.0	0.50	0.37	ug/l	
75-09-2	Methylene Chloride	4.0 U	5.0	4.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	2.0 U	5.0	2.0	1.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	0.50 U	1.0	0.50	0.23	ug/l	
91-20-3	Naphthalene	2.0 U	5.0	2.0	1.0	ug/l	
103-65-1	n-Propylbenzene	0.50 U	1.0	0.50	0.29	ug/l	
100-42-5	Styrene	0.50 U	1.0	0.50	0.22	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	0.50 U	1.0	0.50	0.28	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	0.50 U	1.0	0.50	0.30	ug/l	
127-18-4	Tetrachloroethylene	0.50 U	1.0	0.50	0.22	ug/l	
108-88-3	Toluene	0.50 U	1.0	0.50	0.30	ug/l	
87-61-6	1,2,3-Trichlorobenzene	1.0 U	2.0	1.0	0.61	ug/l	
120-82-1	1,2,4-Trichlorobenzene	1.0 U	2.0	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	0.50 U	1.0	0.50	0.25	ug/l	
79-00-5	1,1,2-Trichloroethane	0.50 U	1.0	0.50	0.47	ug/l	
79-01-6	Trichloroethylene	0.50 U	1.0	0.50	0.35	ug/l	
75-69-4	Trichlorofluoromethane	1.0 U	2.0	1.0	0.50	ug/l	
96-18-4	1,2,3-Trichloropropane	1.0 U	2.0	1.0	0.63	ug/l	
95-63-6	1,2,4-Trimethylbenzene	0.50 U	1.0	0.50	0.32	ug/l	
108-67-8	1,3,5-Trimethylbenzene	0.50 U	1.0	0.50	0.27	ug/l	
108-05-4	Vinyl Acetate	5.0 U	10	5.0	2.0	ug/l	
75-01-4	Vinyl Chloride	0.50 U	1.0	0.50	0.41	ug/l	
	m,p-Xylene	1.0 U	2.0	1.0	0.47	ug/l	
95-47-6	o-Xylene	0.50 U	1.0	0.50	0.26	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	99%		83-118%
17060-07-0	1,2-Dichloroethane-D4	97%		79-125%
2037-26-5	Toluene-D8	102%		85-112%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CRHE-IW0017I-030.0-20231218		
Lab Sample ID:	FC12099-17	**Date Sampled:**	12/18/23
Matrix:	AQ - Ground Water	**Date Received:**	12/19/23
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	CRHEA-GWIM; Contractors Rd, KSC, FL		

VOA 8260 List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	101%		83-118%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	CRHE-IW0017I-030.0-20231218		
Lab Sample ID:	FC12099-17	**Date Sampled:**	12/18/23
Matrix:	AQ - Ground Water	**Date Received:**	12/19/23
Method:	EPA 537M QSM5.3 B-15 EPA 537 MOD	**Percent Solids:**	n/a
Project:	CRHEA-GWIM; Contractors Rd, KSC, FL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5Q23959.D	1	12/29/23 04:37	NG	12/26/23 07:30	OP835	S5Q375
Run #2							

	Initial Volume	Final Volume
Run #1	120 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0071	0.017	0.0083	0.0042	ug/l	J
2706-90-3	Perfluoropentanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
307-24-4	Perfluorohexanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
335-67-1	Perfluorooctanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
375-95-1	Perfluorononanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
335-76-2	Perfluorodecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
307-55-1	Perfluorododecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0042 U	0.0083	0.0042	0.0021	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0083 U	0.017	0.0083	0.0042	ug/l	
2991-50-6	EtFOSAA	0.0083 U	0.017	0.0083	0.0042	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0083 U	0.017	0.0083	0.0042	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0083 U	0.017	0.0083	0.0042	ug/l	

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E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CRHE-IW0017I-030.0-20231218		
Lab Sample ID:	FC12099-17	**Date Sampled:**	12/18/23
Matrix:	AQ - Ground Water	**Date Received:**	12/19/23
Method:	EPA 537M QSM5.3 B-15 EPA 537 MOD	**Percent Solids:**	n/a
Project:	CRHEA-GWIM; Contractors Rd, KSC, FL		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0083 U	0.017	0.0083	0.0042	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0083 U	0.017	0.0083	0.0042	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	101%		50-150%
	13C5-PFPeA	97%		50-150%
	13C5-PFHxA	97%		50-150%
	13C4-PFHpA	97%		50-150%
	13C8-PFOA	95%		50-150%
	13C9-PFNA	90%		50-150%
	13C6-PFDA	81%		50-150%
	13C7-PFUnDA	69%		50-150%
	13C2-PFDoDA	65%		50-150%
	13C2-PFTeDA	58%		50-150%
	13C3-PFBS	94%		50-150%
	13C3-PFHxS	92%		50-150%
	13C8-PFOS	71%		50-150%
	13C8-FOSA	74%		50-150%
	d3-MeFOSAA	84%		50-150%
	d5-EtFOSAA	77%		50-150%
	13C2-4:2FTS	94%		50-150%
	13C2-6:2FTS	95%		50-150%
	13C2-8:2FTS	76%		50-150%
	13C3-HFPO-DA	89%		50-150%

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LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	CRHE-MW0035-045.0-20231218		
Lab Sample ID:	FC12099-18	**Date Sampled:**	12/18/23
Matrix:	AQ - Ground Water	**Date Received:**	12/19/23
Method:	SW846 8260D BY SIM	**Percent Solids:**	n/a
Project:	CRHEA-GWIM; Contractors Rd, KSC, FL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	A0239273.D	1	12/26/23 13:42	TD	n/a	n/a	VA3455
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
123-91-1	1,4-Dioxane	6.7	1.0	0.75	0.30	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4	100%		74-125%
2037-26-5	Toluene-D8	100%		88-111%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	CRHE-MW0035-045.0-20231218		
Lab Sample ID:	FC12099-18	**Date Sampled:**	12/18/23
Matrix:	AQ - Ground Water	**Date Received:**	12/19/23
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	CRHEA-GWIM; Contractors Rd, KSC, FL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5E44814.D	1	12/22/23 13:33	JW	n/a	n/a	V5E1996
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA 8260 List

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
67-64-1	Acetone	20 U	25	20	10	ug/l	
71-43-2	Benzene	0.50 U	1.0	0.50	0.31	ug/l	
108-86-1	Bromobenzene	0.50 U	1.0	0.50	0.37	ug/l	
74-97-5	Bromochloromethane	0.50 U	1.0	0.50	0.45	ug/l	
75-27-4	Bromodichloromethane	0.50 U	1.0	0.50	0.24	ug/l	
75-25-2	Bromoform	0.50 U	1.0	0.50	0.41	ug/l	
78-93-3	2-Butanone (MEK)	3.5 U	5.0	3.5	2.0	ug/l	
104-51-8	n-Butylbenzene	0.50 U	1.0	0.50	0.23	ug/l	
135-98-8	sec-Butylbenzene	0.50 U	1.0	0.50	0.24	ug/l	
98-06-6	tert-Butylbenzene	0.50 U	1.0	0.50	0.31	ug/l	
75-15-0	Carbon Disulfide	1.0 U	2.0	1.0	0.53	ug/l	
56-23-5	Carbon Tetrachloride	0.50 U	1.0	0.50	0.36	ug/l	
108-90-7	Chlorobenzene	0.50 U	1.0	0.50	0.20	ug/l	
75-00-3	Chloroethane	1.0 U	2.0	1.0	0.67	ug/l	
67-66-3	Chloroform	0.50 U	1.0	0.50	0.30	ug/l	
95-49-8	o-Chlorotoluene	0.50 U	1.0	0.50	0.22	ug/l	
106-43-4	p-Chlorotoluene	0.50 U	1.0	0.50	0.31	ug/l	
124-48-1	Dibromochloromethane	0.50 U	1.0	0.50	0.28	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	2.0 U	5.0	2.0	1.0	ug/l	
106-93-4	1,2-Dibromoethane	1.0 U	2.0	1.0	0.28	ug/l	
75-71-8	Dichlorodifluoromethane	1.0 U	2.0	1.0	0.50	ug/l	
95-50-1	1,2-Dichlorobenzene	0.50 U	1.0	0.50	0.32	ug/l	
541-73-1	1,3-Dichlorobenzene	0.50 U	1.0	0.50	0.22	ug/l	
106-46-7	1,4-Dichlorobenzene	0.50 U	1.0	0.50	0.26	ug/l	
75-34-3	1,1-Dichloroethane	0.50 U	1.0	0.50	0.34	ug/l	
107-06-2	1,2-Dichloroethane	0.50 U	1.0	0.50	0.31	ug/l	
75-35-4	1,1-Dichloroethylene	0.50 U	1.0	0.50	0.32	ug/l	
156-59-2	cis-1,2-Dichloroethylene	0.57	1.0	0.50	0.28	ug/l	J
156-60-5	trans-1,2-Dichloroethylene	0.50 U	1.0	0.50	0.22	ug/l	
78-87-5	1,2-Dichloropropane	0.50 U	1.0	0.50	0.43	ug/l	
142-28-9	1,3-Dichloropropane	0.50 U	1.0	0.50	0.31	ug/l	
594-20-7	2,2-Dichloropropane	0.50 U	1.0	0.50	0.24	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CRHE-MW0035-045.0-20231218		
Lab Sample ID:	FC12099-18	**Date Sampled:**	12/18/23
Matrix:	AQ - Ground Water	**Date Received:**	12/19/23
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	CRHEA-GWIM; Contractors Rd, KSC, FL		

VOA 8260 List

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
563-58-6	1,1-Dichloropropene	0.50 U	1.0	0.50	0.34	ug/l	
10061-01-5	cis-1,3-Dichloropropene	0.50 U	1.0	0.50	0.29	ug/l	
10061-02-6	trans-1,3-Dichloropropene	0.50 U	1.0	0.50	0.21	ug/l	
100-41-4	Ethylbenzene	0.50 U	1.0	0.50	0.36	ug/l	
87-68-3	Hexachlorobutadiene	1.0 U	2.0	1.0	0.30	ug/l	
591-78-6	2-Hexanone	5.0 U	10	5.0	2.0	ug/l	
98-82-8	Isopropylbenzene	0.50 U	1.0	0.50	0.22	ug/l	
99-87-6	p-Isopropyltoluene	0.50 U	1.0	0.50	0.21	ug/l	
74-83-9	Methyl Bromide	4.0 U	5.0	4.0	2.0	ug/l	
74-87-3	Methyl Chloride	1.0 U	2.0	1.0	0.50	ug/l	
74-95-3	Methylene Bromide	0.50 U	2.0	0.50	0.37	ug/l	
75-09-2	Methylene Chloride	4.0 U	5.0	4.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	2.0 U	5.0	2.0	1.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	0.50 U	1.0	0.50	0.23	ug/l	
91-20-3	Naphthalene	2.0 U	5.0	2.0	1.0	ug/l	
103-65-1	n-Propylbenzene	0.50 U	1.0	0.50	0.29	ug/l	
100-42-5	Styrene	0.50 U	1.0	0.50	0.22	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	0.50 U	1.0	0.50	0.28	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	0.50 U	1.0	0.50	0.30	ug/l	
127-18-4	Tetrachloroethylene	0.50 U	1.0	0.50	0.22	ug/l	
108-88-3	Toluene	0.50 U	1.0	0.50	0.30	ug/l	
87-61-6	1,2,3-Trichlorobenzene	1.0 U	2.0	1.0	0.61	ug/l	
120-82-1	1,2,4-Trichlorobenzene	1.0 U	2.0	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	0.50 U	1.0	0.50	0.25	ug/l	
79-00-5	1,1,2-Trichloroethane	0.50 U	1.0	0.50	0.47	ug/l	
79-01-6	Trichloroethylene	0.50 U	1.0	0.50	0.35	ug/l	
75-69-4	Trichlorofluoromethane	1.0 U	2.0	1.0	0.50	ug/l	
96-18-4	1,2,3-Trichloropropane	1.0 U	2.0	1.0	0.63	ug/l	
95-63-6	1,2,4-Trimethylbenzene	0.50 U	1.0	0.50	0.32	ug/l	
108-67-8	1,3,5-Trimethylbenzene	0.50 U	1.0	0.50	0.27	ug/l	
108-05-4	Vinyl Acetate	5.0 U	10	5.0	2.0	ug/l	
75-01-4	Vinyl Chloride	4.5	1.0	0.50	0.41	ug/l	
	m,p-Xylene	1.0 U	2.0	1.0	0.47	ug/l	
95-47-6	o-Xylene	0.50 U	1.0	0.50	0.26	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	101%		83-118%
17060-07-0	1,2-Dichloroethane-D4	97%		79-125%
2037-26-5	Toluene-D8	102%		85-112%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CRHE-MW0035-045.0-20231218		
Lab Sample ID:	FC12099-18	**Date Sampled:**	12/18/23
Matrix:	AQ - Ground Water	**Date Received:**	12/19/23
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	CRHEA-GWIM; Contractors Rd, KSC, FL		

VOA 8260 List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	104%		83-118%

U = Not detected LOD = Limit of Detection
LOQ = Limit of Quantitation DL = Detection Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CRHE-MW0043-043.0-20231219		
Lab Sample ID:	FC12099-19	**Date Sampled:**	12/19/23
Matrix:	AQ - Ground Water	**Date Received:**	12/19/23
		Percent Solids:	n/a
Project:	CRHEA-GWIM; Contractors Rd, KSC, FL		

General Chemistry

Analyte	Result	LOQ	LOD	DL	Units	DF	Analyzed	By	Method
Solids, Total Dissolved	574	50	50	40	mg/l	1	12/20/23 11:00	SS	SM2540 C-15

LOQ = Limit of Quantitation DL = Detection Limit U = Indicates a result < LOD
LOD = Limit of Detection B = Analyte found in associated blank J = Indicates a result > = DL (MDL) but < LOQ

SGS North America Inc.

Report of Analysis

Client Sample ID:	CRHE-MW0039-030.0-20231219		
Lab Sample ID:	FC12099-20	**Date Sampled:**	12/19/23
Matrix:	AQ - Ground Water	**Date Received:**	12/19/23
Method:	SW846 8260D BY SIM	**Percent Solids:**	n/a
Project:	CRHEA-GWIM; Contractors Rd, KSC, FL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	A0239274.D	1	12/26/23 14:08	TD	n/a	n/a	VA3455
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
123-91-1	1,4-Dioxane	5.7	1.0	0.75	0.30	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4	100%		74-125%
2037-26-5	Toluene-D8	99%		88-111%

U = Not detected LOD = Limit of Detection
LOQ = Limit of Quantitation DL = Detection Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	CRHE-MW0039-030.0-20231219		
Lab Sample ID:	FC12099-20	**Date Sampled:**	12/19/23
Matrix:	AQ - Ground Water	**Date Received:**	12/19/23
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	CRHEA-GWIM; Contractors Rd, KSC, FL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5E44815.D	1	12/22/23 13:56	JW	n/a	n/a	V5E1996
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA 8260 List

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
67-64-1	Acetone	20 U	25	20	10	ug/l	
71-43-2	Benzene	0.50 U	1.0	0.50	0.31	ug/l	
108-86-1	Bromobenzene	0.50 U	1.0	0.50	0.37	ug/l	
74-97-5	Bromochloromethane	0.50 U	1.0	0.50	0.45	ug/l	
75-27-4	Bromodichloromethane	0.50 U	1.0	0.50	0.24	ug/l	
75-25-2	Bromoform	0.50 U	1.0	0.50	0.41	ug/l	
78-93-3	2-Butanone (MEK)	3.5 U	5.0	3.5	2.0	ug/l	
104-51-8	n-Butylbenzene	0.50 U	1.0	0.50	0.23	ug/l	
135-98-8	sec-Butylbenzene	0.50 U	1.0	0.50	0.24	ug/l	
98-06-6	tert-Butylbenzene	0.50 U	1.0	0.50	0.31	ug/l	
75-15-0	Carbon Disulfide	1.0 U	2.0	1.0	0.53	ug/l	
56-23-5	Carbon Tetrachloride	0.50 U	1.0	0.50	0.36	ug/l	
108-90-7	Chlorobenzene	0.50 U	1.0	0.50	0.20	ug/l	
75-00-3	Chloroethane	1.0 U	2.0	1.0	0.67	ug/l	
67-66-3	Chloroform	0.50 U	1.0	0.50	0.30	ug/l	
95-49-8	o-Chlorotoluene	0.50 U	1.0	0.50	0.22	ug/l	
106-43-4	p-Chlorotoluene	0.50 U	1.0	0.50	0.31	ug/l	
124-48-1	Dibromochloromethane	0.50 U	1.0	0.50	0.28	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	2.0 U	5.0	2.0	1.0	ug/l	
106-93-4	1,2-Dibromoethane	1.0 U	2.0	1.0	0.28	ug/l	
75-71-8	Dichlorodifluoromethane	1.0 U	2.0	1.0	0.50	ug/l	
95-50-1	1,2-Dichlorobenzene	0.50 U	1.0	0.50	0.32	ug/l	
541-73-1	1,3-Dichlorobenzene	0.50 U	1.0	0.50	0.22	ug/l	
106-46-7	1,4-Dichlorobenzene	0.50 U	1.0	0.50	0.26	ug/l	
75-34-3	1,1-Dichloroethane	0.50 U	1.0	0.50	0.34	ug/l	
107-06-2	1,2-Dichloroethane	0.50 U	1.0	0.50	0.31	ug/l	
75-35-4	1,1-Dichloroethylene	0.50 U	1.0	0.50	0.32	ug/l	
156-59-2	cis-1,2-Dichloroethylene	0.50 U	1.0	0.50	0.28	ug/l	
156-60-5	trans-1,2-Dichloroethylene	0.50 U	1.0	0.50	0.22	ug/l	
78-87-5	1,2-Dichloropropane	0.50 U	1.0	0.50	0.43	ug/l	
142-28-9	1,3-Dichloropropane	0.50 U	1.0	0.50	0.31	ug/l	
594-20-7	2,2-Dichloropropane	0.50 U	1.0	0.50	0.24	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CRHE-MW0039-030.0-20231219		
Lab Sample ID:	FC12099-20	**Date Sampled:**	12/19/23
Matrix:	AQ - Ground Water	**Date Received:**	12/19/23
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	CRHEA-GWIM; Contractors Rd, KSC, FL		

VOA 8260 List

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
563-58-6	1,1-Dichloropropene	0.50 U	1.0	0.50	0.34	ug/l	
10061-01-5	cis-1,3-Dichloropropene	0.50 U	1.0	0.50	0.29	ug/l	
10061-02-6	trans-1,3-Dichloropropene	0.50 U	1.0	0.50	0.21	ug/l	
100-41-4	Ethylbenzene	0.50 U	1.0	0.50	0.36	ug/l	
87-68-3	Hexachlorobutadiene	1.0 U	2.0	1.0	0.30	ug/l	
591-78-6	2-Hexanone	5.0 U	10	5.0	2.0	ug/l	
98-82-8	Isopropylbenzene	0.50 U	1.0	0.50	0.22	ug/l	
99-87-6	p-Isopropyltoluene	0.50 U	1.0	0.50	0.21	ug/l	
74-83-9	Methyl Bromide	4.0 U	5.0	4.0	2.0	ug/l	
74-87-3	Methyl Chloride	1.0 U	2.0	1.0	0.50	ug/l	
74-95-3	Methylene Bromide	0.50 U	2.0	0.50	0.37	ug/l	
75-09-2	Methylene Chloride	4.0 U	5.0	4.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	2.0 U	5.0	2.0	1.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	0.50 U	1.0	0.50	0.23	ug/l	
91-20-3	Naphthalene	2.0 U	5.0	2.0	1.0	ug/l	
103-65-1	n-Propylbenzene	0.50 U	1.0	0.50	0.29	ug/l	
100-42-5	Styrene	0.50 U	1.0	0.50	0.22	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	0.50 U	1.0	0.50	0.28	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	0.50 U	1.0	0.50	0.30	ug/l	
127-18-4	Tetrachloroethylene	0.50 U	1.0	0.50	0.22	ug/l	
108-88-3	Toluene	0.50 U	1.0	0.50	0.30	ug/l	
87-61-6	1,2,3-Trichlorobenzene	1.0 U	2.0	1.0	0.61	ug/l	
120-82-1	1,2,4-Trichlorobenzene	1.0 U	2.0	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	0.50 U	1.0	0.50	0.25	ug/l	
79-00-5	1,1,2-Trichloroethane	0.50 U	1.0	0.50	0.47	ug/l	
79-01-6	Trichloroethylene	0.50 U	1.0	0.50	0.35	ug/l	
75-69-4	Trichlorofluoromethane	1.0 U	2.0	1.0	0.50	ug/l	
96-18-4	1,2,3-Trichloropropane	1.0 U	2.0	1.0	0.63	ug/l	
95-63-6	1,2,4-Trimethylbenzene	0.50 U	1.0	0.50	0.32	ug/l	
108-67-8	1,3,5-Trimethylbenzene	0.50 U	1.0	0.50	0.27	ug/l	
108-05-4	Vinyl Acetate	5.0 U	10	5.0	2.0	ug/l	
75-01-4	Vinyl Chloride	3.8	1.0	0.50	0.41	ug/l	
	m,p-Xylene	1.0 U	2.0	1.0	0.47	ug/l	
95-47-6	o-Xylene	0.50 U	1.0	0.50	0.26	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	101%		83-118%
17060-07-0	1,2-Dichloroethane-D4	97%		79-125%
2037-26-5	Toluene-D8	103%		85-112%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CRHE-MW0039-030.0-20231219		
Lab Sample ID:	FC12099-20	**Date Sampled:**	12/19/23
Matrix:	AQ - Ground Water	**Date Received:**	12/19/23
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	CRHEA-GWIM; Contractors Rd, KSC, FL		

VOA 8260 List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	103%		83-118%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	CRHE-TB-20231218-01		
Lab Sample ID:	FC12099-21	**Date Sampled:**	12/18/23
Matrix:	AQ - Trip Blank Water	**Date Received:**	12/19/23
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	CRHEA-GWIM; Contractors Rd, KSC, FL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5E44816.D	1	12/22/23 14:19	JW	n/a	n/a	V5E1996
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA 8260 List

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
67-64-1	Acetone	20 U	25	20	10	ug/l	
71-43-2	Benzene	0.50 U	1.0	0.50	0.31	ug/l	
108-86-1	Bromobenzene	0.50 U	1.0	0.50	0.37	ug/l	
74-97-5	Bromochloromethane	0.50 U	1.0	0.50	0.45	ug/l	
75-27-4	Bromodichloromethane	0.50 U	1.0	0.50	0.24	ug/l	
75-25-2	Bromoform	0.50 U	1.0	0.50	0.41	ug/l	
78-93-3	2-Butanone (MEK)	3.5 U	5.0	3.5	2.0	ug/l	
104-51-8	n-Butylbenzene	0.50 U	1.0	0.50	0.23	ug/l	
135-98-8	sec-Butylbenzene	0.50 U	1.0	0.50	0.24	ug/l	
98-06-6	tert-Butylbenzene	0.50 U	1.0	0.50	0.31	ug/l	
75-15-0	Carbon Disulfide	1.0 U	2.0	1.0	0.53	ug/l	
56-23-5	Carbon Tetrachloride	0.50 U	1.0	0.50	0.36	ug/l	
108-90-7	Chlorobenzene	0.50 U	1.0	0.50	0.20	ug/l	
75-00-3	Chloroethane	1.0 U	2.0	1.0	0.67	ug/l	
67-66-3	Chloroform	0.50 U	1.0	0.50	0.30	ug/l	
95-49-8	o-Chlorotoluene	0.50 U	1.0	0.50	0.22	ug/l	
106-43-4	p-Chlorotoluene	0.50 U	1.0	0.50	0.31	ug/l	
124-48-1	Dibromochloromethane	0.50 U	1.0	0.50	0.28	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	2.0 U	5.0	2.0	1.0	ug/l	
106-93-4	1,2-Dibromoethane	1.0 U	2.0	1.0	0.28	ug/l	
75-71-8	Dichlorodifluoromethane	1.0 U	2.0	1.0	0.50	ug/l	
95-50-1	1,2-Dichlorobenzene	0.50 U	1.0	0.50	0.32	ug/l	
541-73-1	1,3-Dichlorobenzene	0.50 U	1.0	0.50	0.22	ug/l	
106-46-7	1,4-Dichlorobenzene	0.50 U	1.0	0.50	0.26	ug/l	
75-34-3	1,1-Dichloroethane	0.50 U	1.0	0.50	0.34	ug/l	
107-06-2	1,2-Dichloroethane	0.50 U	1.0	0.50	0.31	ug/l	
75-35-4	1,1-Dichloroethylene	0.50 U	1.0	0.50	0.32	ug/l	
156-59-2	cis-1,2-Dichloroethylene	0.50 U	1.0	0.50	0.28	ug/l	
156-60-5	trans-1,2-Dichloroethylene	0.50 U	1.0	0.50	0.22	ug/l	
78-87-5	1,2-Dichloropropane	0.50 U	1.0	0.50	0.43	ug/l	
142-28-9	1,3-Dichloropropane	0.50 U	1.0	0.50	0.31	ug/l	
594-20-7	2,2-Dichloropropane	0.50 U	1.0	0.50	0.24	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CRHE-TB-20231218-01		
Lab Sample ID:	FC12099-21	**Date Sampled:**	12/18/23
Matrix:	AQ - Trip Blank Water	**Date Received:**	12/19/23
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	CRHEA-GWIM; Contractors Rd, KSC, FL		

VOA 8260 List

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
563-58-6	1,1-Dichloropropene	0.50 U	1.0	0.50	0.34	ug/l	
10061-01-5	cis-1,3-Dichloropropene	0.50 U	1.0	0.50	0.29	ug/l	
10061-02-6	trans-1,3-Dichloropropene	0.50 U	1.0	0.50	0.21	ug/l	
100-41-4	Ethylbenzene	0.50 U	1.0	0.50	0.36	ug/l	
87-68-3	Hexachlorobutadiene	1.0 U	2.0	1.0	0.30	ug/l	
591-78-6	2-Hexanone	5.0 U	10	5.0	2.0	ug/l	
98-82-8	Isopropylbenzene	0.50 U	1.0	0.50	0.22	ug/l	
99-87-6	p-Isopropyltoluene	0.50 U	1.0	0.50	0.21	ug/l	
74-83-9	Methyl Bromide	4.0 U	5.0	4.0	2.0	ug/l	
74-87-3	Methyl Chloride	1.0 U	2.0	1.0	0.50	ug/l	
74-95-3	Methylene Bromide	0.50 U	2.0	0.50	0.37	ug/l	
75-09-2	Methylene Chloride	4.0 U	5.0	4.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	2.0 U	5.0	2.0	1.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	0.50 U	1.0	0.50	0.23	ug/l	
91-20-3	Naphthalene	2.0 U	5.0	2.0	1.0	ug/l	
103-65-1	n-Propylbenzene	0.50 U	1.0	0.50	0.29	ug/l	
100-42-5	Styrene	0.50 U	1.0	0.50	0.22	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	0.50 U	1.0	0.50	0.28	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	0.50 U	1.0	0.50	0.30	ug/l	
127-18-4	Tetrachloroethylene	0.50 U	1.0	0.50	0.22	ug/l	
108-88-3	Toluene	0.50 U	1.0	0.50	0.30	ug/l	
87-61-6	1,2,3-Trichlorobenzene	1.0 U	2.0	1.0	0.61	ug/l	
120-82-1	1,2,4-Trichlorobenzene	1.0 U	2.0	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	0.50 U	1.0	0.50	0.25	ug/l	
79-00-5	1,1,2-Trichloroethane	0.50 U	1.0	0.50	0.47	ug/l	
79-01-6	Trichloroethylene	0.50 U	1.0	0.50	0.35	ug/l	
75-69-4	Trichlorofluoromethane	1.0 U	2.0	1.0	0.50	ug/l	
96-18-4	1,2,3-Trichloropropane	1.0 U	2.0	1.0	0.63	ug/l	
95-63-6	1,2,4-Trimethylbenzene	0.50 U	1.0	0.50	0.32	ug/l	
108-67-8	1,3,5-Trimethylbenzene	0.50 U	1.0	0.50	0.27	ug/l	
108-05-4	Vinyl Acetate	5.0 U	10	5.0	2.0	ug/l	
75-01-4	Vinyl Chloride	0.50 U	1.0	0.50	0.41	ug/l	
	m,p-Xylene	1.0 U	2.0	1.0	0.47	ug/l	
95-47-6	o-Xylene	0.50 U	1.0	0.50	0.26	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	101%		83-118%
17060-07-0	1,2-Dichloroethane-D4	96%		79-125%
2037-26-5	Toluene-D8	101%		85-112%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CRHE-TB-20231218-01		
Lab Sample ID:	FC12099-21	**Date Sampled:**	12/18/23
Matrix:	AQ - Trip Blank Water	**Date Received:**	12/19/23
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	CRHEA-GWIM; Contractors Rd, KSC, FL		

VOA 8260 List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	104%		83-118%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	CRHE-TB-20231218-02		
Lab Sample ID:	FC12099-22	**Date Sampled:**	12/18/23
Matrix:	AQ - Trip Blank Water	**Date Received:**	12/19/23
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	CRHEA-GWIM; Contractors Rd, KSC, FL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5E44817.D	1	12/22/23 14:42	JW	n/a	n/a	V5E1996
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA 8260 List

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
67-64-1	Acetone	20 U	25	20	10	ug/l	
71-43-2	Benzene	0.50 U	1.0	0.50	0.31	ug/l	
108-86-1	Bromobenzene	0.50 U	1.0	0.50	0.37	ug/l	
74-97-5	Bromochloromethane	0.50 U	1.0	0.50	0.45	ug/l	
75-27-4	Bromodichloromethane	0.50 U	1.0	0.50	0.24	ug/l	
75-25-2	Bromoform	0.50 U	1.0	0.50	0.41	ug/l	
78-93-3	2-Butanone (MEK)	3.5 U	5.0	3.5	2.0	ug/l	
104-51-8	n-Butylbenzene	0.50 U	1.0	0.50	0.23	ug/l	
135-98-8	sec-Butylbenzene	0.50 U	1.0	0.50	0.24	ug/l	
98-06-6	tert-Butylbenzene	0.50 U	1.0	0.50	0.31	ug/l	
75-15-0	Carbon Disulfide	1.0 U	2.0	1.0	0.53	ug/l	
56-23-5	Carbon Tetrachloride	0.50 U	1.0	0.50	0.36	ug/l	
108-90-7	Chlorobenzene	0.50 U	1.0	0.50	0.20	ug/l	
75-00-3	Chloroethane	1.0 U	2.0	1.0	0.67	ug/l	
67-66-3	Chloroform	0.50 U	1.0	0.50	0.30	ug/l	
95-49-8	o-Chlorotoluene	0.50 U	1.0	0.50	0.22	ug/l	
106-43-4	p-Chlorotoluene	0.50 U	1.0	0.50	0.31	ug/l	
124-48-1	Dibromochloromethane	0.50 U	1.0	0.50	0.28	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	2.0 U	5.0	2.0	1.0	ug/l	
106-93-4	1,2-Dibromoethane	1.0 U	2.0	1.0	0.28	ug/l	
75-71-8	Dichlorodifluoromethane	1.0 U	2.0	1.0	0.50	ug/l	
95-50-1	1,2-Dichlorobenzene	0.50 U	1.0	0.50	0.32	ug/l	
541-73-1	1,3-Dichlorobenzene	0.50 U	1.0	0.50	0.22	ug/l	
106-46-7	1,4-Dichlorobenzene	0.50 U	1.0	0.50	0.26	ug/l	
75-34-3	1,1-Dichloroethane	0.50 U	1.0	0.50	0.34	ug/l	
107-06-2	1,2-Dichloroethane	0.50 U	1.0	0.50	0.31	ug/l	
75-35-4	1,1-Dichloroethylene	0.50 U	1.0	0.50	0.32	ug/l	
156-59-2	cis-1,2-Dichloroethylene	0.50 U	1.0	0.50	0.28	ug/l	
156-60-5	trans-1,2-Dichloroethylene	0.50 U	1.0	0.50	0.22	ug/l	
78-87-5	1,2-Dichloropropane	0.50 U	1.0	0.50	0.43	ug/l	
142-28-9	1,3-Dichloropropane	0.50 U	1.0	0.50	0.31	ug/l	
594-20-7	2,2-Dichloropropane	0.50 U	1.0	0.50	0.24	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CRHE-TB-20231218-02		
Lab Sample ID:	FC12099-22	**Date Sampled:**	12/18/23
Matrix:	AQ - Trip Blank Water	**Date Received:**	12/19/23
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	CRHEA-GWIM; Contractors Rd, KSC, FL		

VOA 8260 List

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
563-58-6	1,1-Dichloropropene	0.50 U	1.0	0.50	0.34	ug/l	
10061-01-5	cis-1,3-Dichloropropene	0.50 U	1.0	0.50	0.29	ug/l	
10061-02-6	trans-1,3-Dichloropropene	0.50 U	1.0	0.50	0.21	ug/l	
100-41-4	Ethylbenzene	0.50 U	1.0	0.50	0.36	ug/l	
87-68-3	Hexachlorobutadiene	1.0 U	2.0	1.0	0.30	ug/l	
591-78-6	2-Hexanone	5.0 U	10	5.0	2.0	ug/l	
98-82-8	Isopropylbenzene	0.50 U	1.0	0.50	0.22	ug/l	
99-87-6	p-Isopropyltoluene	0.50 U	1.0	0.50	0.21	ug/l	
74-83-9	Methyl Bromide	4.0 U	5.0	4.0	2.0	ug/l	
74-87-3	Methyl Chloride	1.0 U	2.0	1.0	0.50	ug/l	
74-95-3	Methylene Bromide	0.50 U	2.0	0.50	0.37	ug/l	
75-09-2	Methylene Chloride	4.0 U	5.0	4.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	2.0 U	5.0	2.0	1.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	0.50 U	1.0	0.50	0.23	ug/l	
91-20-3	Naphthalene	2.0 U	5.0	2.0	1.0	ug/l	
103-65-1	n-Propylbenzene	0.50 U	1.0	0.50	0.29	ug/l	
100-42-5	Styrene	0.50 U	1.0	0.50	0.22	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	0.50 U	1.0	0.50	0.28	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	0.50 U	1.0	0.50	0.30	ug/l	
127-18-4	Tetrachloroethylene	0.50 U	1.0	0.50	0.22	ug/l	
108-88-3	Toluene	0.50 U	1.0	0.50	0.30	ug/l	
87-61-6	1,2,3-Trichlorobenzene	1.0 U	2.0	1.0	0.61	ug/l	
120-82-1	1,2,4-Trichlorobenzene	1.0 U	2.0	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	0.50 U	1.0	0.50	0.25	ug/l	
79-00-5	1,1,2-Trichloroethane	0.50 U	1.0	0.50	0.47	ug/l	
79-01-6	Trichloroethylene	0.50 U	1.0	0.50	0.35	ug/l	
75-69-4	Trichlorofluoromethane	1.0 U	2.0	1.0	0.50	ug/l	
96-18-4	1,2,3-Trichloropropane	1.0 U	2.0	1.0	0.63	ug/l	
95-63-6	1,2,4-Trimethylbenzene	0.50 U	1.0	0.50	0.32	ug/l	
108-67-8	1,3,5-Trimethylbenzene	0.50 U	1.0	0.50	0.27	ug/l	
108-05-4	Vinyl Acetate	5.0 U	10	5.0	2.0	ug/l	
75-01-4	Vinyl Chloride	0.50 U	1.0	0.50	0.41	ug/l	
	m,p-Xylene	1.0 U	2.0	1.0	0.47	ug/l	
95-47-6	o-Xylene	0.50 U	1.0	0.50	0.26	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	101%		83-118%
17060-07-0	1,2-Dichloroethane-D4	95%		79-125%
2037-26-5	Toluene-D8	102%		85-112%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CRHE-TB-20231218-02		
Lab Sample ID:	FC12099-22	**Date Sampled:**	12/18/23
Matrix:	AQ - Trip Blank Water	**Date Received:**	12/19/23
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	CRHEA-GWIM; Contractors Rd, KSC, FL		

VOA 8260 List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	103%		83-118%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody
- QC Evaluation: DOD QSM5.x Limits

SGS North America Inc - Orlando

Chain of Custody

4405 Vineland Road, Suite C-15 Orlando, Fl 32811
TEL 407-425-6700 FAX: 407-425-0707
www.sgs.com

SGS _ ORLANDO JOB #: FC12099 PAGE 1 OF 2

SGS - ORLANDO Quote: STAFF

Client / Reporting Information

Company Name: HydroGeoLogic, Inc.
Address: 2405 N. Courtney Parkway STE. 203
City: Merritt Island State: FL Zip: 32953
Project Contact: Denise Rivers Email: drivers@hgl.com
Phone #: 910-233-8460
Sampler(s) Name(s) (Printed): Sampler 1: Meghan West Sampler 2: Brandon Schmidt

Project Information

Project Name: CRHE Area
Street: Kennedy Pkwy.
City: Kennedy Space Center State: FL
Project # ~~NS1004.05.01~~ MW NS1004.05.10
Fax #
Client Purchase Order #

Analytical Information

SGS Orlando Sample #	Field ID / Point of Collection	DATE	TIME	SAMPLED BY	MATRIX	TOTAL # OF BOTTLES	CONTAINER INFORMATION: NONE	HCl	NaOH	HNO3	H2SO4	NaOH+ZnAc	DI WATER	MeOH	LCGSM537DODFL, LCMS+GENX	V8260CVC	FL.PROLV	NA	TDS	V8260SIMDIOX	LAB USE ONLY
1	CRHE-MW0030-010.0-20231218	12/18/23	0849	MW	GW	2	X								X						
2	CRHE-EW0009S-007.0-20231218	12/18/23	0939	MW	GW	2	X								X						
3	CRHE-MW0025-030.0-20231218	12/18/23	1033	MW	GW	9	X	X							X	X			X	X	
4	CRHE-MW0024-010.0-20231218	12/18/23	1145	MW	GW	2	X								X						
5	CRHE-IW0025-008.0-20231218	12/18/23	1229	MW	GW	2	X								X						
6	CRHE-IW0004I-035.0-20231218	12/18/23	1320	MW	GW	2	X								X						
7	CRHE-FB-20231218-01	12/18/23	1330	MW	WW	2	X								X						
8	CRHE-EB-20231218-01	12/18/23	1340	MW	WW	2	X								X						
9	CRHE-MW0032-045.0-20231219	12/19/23	1437	MW	GW	3			X							X					
10	CRHE-MW0027-045.0-20231219	12/19/23	0857	MW	GW	3			X							X					
11	CRHE-MW0041-035.0-20231219	12/19/23	1027	MW	GW	6			X							X				X	
12	CRHE-MW0034-035.0-20231219	12/19/23	1249	BS	GW	3			X							X					
13	CRHE-MW0042-040.0-20231219	12/19/23	1348	MW	GW	3			X							X					

Matrix Codes: DW - Drinking Water; GW - Ground Water; WW - Water; SW - Surface Water; SO - Soil; SL- Sludge; OI - Oil; LIQ - Other Liquid; AIR - Air; SOL - Other Solid; WP - Wipe

Turnaround Time (Business days)

Std. 10 Business Days
7 Day *RUSH*
5 Day *RUSH*
3 Day *EMERGENCY*
2 Day *EMERGENCY*
1 Day *EMERGENCY*
Other
Approved By: / Date/Rush Code:
Emergency or Rush T/A Data Available VIA Email or Lablink

Data Deliverable Information

- [ ] COMMERCIAL "A" (RESULTS ONLY)
- [ ] COMMERCIAL "B" (RESULTS PLUS QC)
- [ ] REDT1 (EPA LEVEL 3)
- [ ] FULLT1 (EPA LEVEL 4)
- [ ] EDD'S

Comments/ Remarks

INITIAL ASSESSMENT ED
LABEL VERIFICATION SP

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler/Affiliation	Date Time:	Received By/Affiliation	Relinquished By/Affiliation	Date Time:	Received By/Affiliation
1 Meghan West	12/19/23 1630	2 [illegible] 12/19/23 1630	3 [illegible] 12/19/23	17:50	4 [illegible] 12/20/23 1730
Relinquished by/Affiliation	Date Time:	Received By/Affiliation	Relinquished By/Affiliation	Date Time:	Received By/Affiliation
5		6	7		8

Lab Use Only: Custody Seal in Place: Y N Temp Blank Provided: Y N Preserved Where Applicable: Y N Total # of Coolers: 3 Cooler Temperature (s) Celsius: 2.4, 2.0, 1.6 IR #1

FC12099: Chain of Custody
Page 1 of 4

SGS North America Inc - Orlando

Chain of Custody

4405 Vineland Road, Suite C-15 Orlando, Fl 32811
TEL. 407-425-6700 FAX: 407-425-0707
www.sgs.com

SGS _ ORLANDO JOB #: FC12099 PAGE 2 OF 2

SGS - ORLANDO Quote: SKY #

Client / Reporting Information

Company Name: HydroGeoLogic, Inc.
Address: 2405 N. Courtney Parkway STE. 203
City: Merritt Island State: FL Zip: 32953
Project Contact: Denise Rivers Email: drivers@hgl.com
Phone #: 910-233-8460
Sampler(s) Name(s) (Printed)
Sampler 1: Meghan West Sampler 2: Brandon Schmidt

Project Information

Project Name:: CRHE Area
Street: Kennedy Pkwy.
City: Kennedy Space Center State: FL
Project #: NS1004.05.01
Fax #
Client Purchase Order #

Analytical Information

SGS Orlando Sample #	Field ID / Point of Collection	DATE	TIME	SAMPLED BY:	MATRIX	TOTAL # OF BOTTLES	CONTAINER INFORMATION: NONE	HCl	NaOH	HNO3	H2SO4	NAOH+ZnAC	DI WATER	MEOH	LCQSM537DODFL, LCMS+GENX	V8260CVC	FLPROLV	NA	TDS	V8260SIMDIOX										LAB USE ONLY
14	CRHE-IW0001S-008.0-20231218	12-18-23	9:30	BS	GW	2	X								X															
15	CRHE-IW0019I-040.0-20231218		10:24	BS	GW	5	X	X							X	X														
16	CRHE-IW0013S-007.5-20231218		11:34	BS	GW	2	X								X															
17	CRHE-IW0017I-030.0-20231218		13:22	BS	GW	5	X	X							X	X														
18	CRHE-MW0035-045.0-20231218	↓	14:52	BS	GW	6		X							[redacted]	X				X										
19	CRHE-MW0043-043.0-20231219	12-19-23	8:20	BS	GW	1	X												X											
20	CRHE-MW0039-030.0-20231219	12-19-23	10:31	BS	GW	6		X								X				X										
21	CRHE-TB-20231218-01	12/18/23	10:20	MW	WW	2		X								X														
22	CRHE-TB-20231218-02	12/18/23	10:21	MW	WW	2		X								X														

Matrix Codes: DW - Drinking Water; GW - Ground Water; WW - Water; SW - Surface Water; SO - Soil; SL- Sludge; OI - Oil; LIQ - Other Liquid; AIR - Air; SOL - Other Solid; WP - Wipe

Turnaround Time (Business days)

Std. 10 Business Days
7 Day *RUSH*
5 Day *RUSH*
3 Day *EMERGENCY*
2 Day *EMERGENCY*
1 Day *EMERGENCY*
Other
Approved By: / Date/Rush Code:
Emergency or Rush T/A Data Available VIA Email or Lablink

Data Deliverable Information

- [ ] COMMERCIAL "A" (RESULTS ONLY)
- [ ] COMMERCIAL "B" (RESULTS PLUS QC)
- [ ] REDT1 (EPA LEVEL 3)
- [ ] FULLT1 (EPA LEVEL 4)
- [ ] EDD'S

Comments / Remarks

CRHE-MW0043-043.0-20231219: Well MW0043 has a depth of 043.0

Sample Custody must be documented below each time samples change possession, including courier delivery.

	Relinquished by Sampler/Affiliation	Date Time:	Received By/Affiliation	Relinquished By/Affiliation	Date Time:	Received By/Affiliation
1	Meghan West	12/19/23 1630	2	3		4
5	Relinquished by/Affiliation	Date Time:	Received By/Affiliation 6	Relinquished By/Affiliation 7	Date Time:	Received By/Affiliation 8

Lab Use Only: Custody Seal in Place: Y N Temp Blank Provided: Y N Preserved Where Applicable: Y N Total # of Coolers: Cooler Temperature (s) Celsius:

SGS - Orlando Sample Receipt Summary

Job Number: fc12099 **Client:** HGL **Project:** CRHE AREA

Date / Time Received: 12/19/2023 5:30:00 PM **Delivery Method:** SGS COURIER **Airbill #'s:** N/A

Cooler Temps (Raw Measured) °C: Cooler 1: (2.4); Cooler 2: (2.0); Cooler 3: (1.6);

Cooler Temps (Corrected) °C: Cooler 1: (2.8); Cooler 2: (2.4); Cooler 3: (2.0);

Cooler Information	Y	or	N
1. Custody Seals Present:	☑		☐
2. Custody Seals Intact:	☑		☐
3. Temp criteria achieved:	☑		☐
4. Cooler temp verification:	IR Gun		
5. Cooler media:	Ice (Bag)		

Trip Blank Information	Y	or	N	N/A
1. Trip Blank present / cooler:	☑		☐	☐
2. Trip Blank listed on COC:	☑		☐	☐

	W	or	S	N/A
3. Type of TB Received	☑		☐	☐

Sample Information	Y	or	N	N/A
1. Sample labels present on bottles:	☑		☐	
2. Samples presented properly	☑		☐	
3. Suffiient volume/containers recv'd for analysis	☑		☐	
4. Condition of sample:	Intact			
5. Sample recv'd within HT	☑		☐	
6. Dates/Times/IDs on COC match sample label	☐		☐	
7. VOCs have headspace	☐		☑	☐
8. Bottles received for unspecified tests	☐		☑	
9. Compositing instructions clear	☐		☐	☑
10. Voa Soil Kits/Jars received past 48hrs?	☐		☐	☐
11. % Solids Jar Received?	☐		☐	☐
12. Residual Chlorine Present?	☐		☐	☐

Misc Information

Number of Encores: 25 Gram 5 Gram

Number of Lab Filtered Metals:

Test Strip Lot #s: pH 0-3: 226422 pH 10-12: Other: (Specify) pH 1.0 - 12.0 222221

Residual Chlorine Test Strip Lot #

Comments

Sample Receipt Summary 112723 EK Technician: SHAYLAP Date: 12/20/2023 8:16:54 AM Reviewer: Date:

Job Change Order: FC12099

Requested Date:	1/11/2024	**Received Date:**	12/19/2023
Account Name:	Hydrogeologic, Inc.	**Due Date:**	1/11/2024
Project Description:	CRHEA-GWIM; Contractors Rd, KSC, FL	**Deliverable:**	FULT1
C/O Initiated By:	JEAN_DENT **PM:** JDS	**TAT (Days):**	2

==========

Sample #: FC12099-3,9,-13,15,17,18,20-22 **Dept:** RP

Client ID: **TAT:** 2

Change: Please re-issue report, VOC reporting list revised as per client request. Thank you.

FC12099: Chain of Custody
Page 4 of 4

Above Changes Per: Client, Linda Nyland, via e-mail re **Date/Time:** 1/11/2024

To Client: This Change Order is confirmation of the revisions, previously discussed with the Client Service Representative.

Page 1 of 1

QC Evaluation: DOD QSM5.x Limits

Job Number: FC12099
Account: Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL
Collected: 12/18/23 thru 12/19/23

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
V1A2028	SW846 8260D						
V1A2028-BS	75-01-4	Vinyl Chloride	BSP	REC	95	%	58-137
V1A2028-BS	1868-53-7	Dibromofluoromethane	BSP	SURR	98	%	80-119
V1A2028-BS	17060-07-0	1,2-Dichloroethane-D4	BSP	SURR	108	%	81-118
V1A2028-BS	2037-26-5	Toluene-D8	BSP	SURR	102	%	89-112
V1A2028-BS	460-00-4	4-Bromofluorobenzene	BSP	SURR	102	%	85-114
FC12194-13MS*	75-01-4	Vinyl Chloride	MS	REC	113	%	58-137
FC12194-13MS*	1868-53-7	Dibromofluoromethane	MS	SURR	99	%	80-119
FC12194-13MS*	17060-07-0	1,2-Dichloroethane-D4	MS	SURR	110	%	81-118
FC12194-13MS*	2037-26-5	Toluene-D8	MS	SURR	101	%	89-112
FC12194-13MS*	460-00-4	4-Bromofluorobenzene	MS	SURR	100	%	85-114
FC12194-13MSD*	75-01-4	Vinyl Chloride	MSD	REC	114	%	58-137
FC12194-13MSD*	75-01-4	Vinyl Chloride	MSD	RPD	1	%	20
FC12194-13MSD*	1868-53-7	Dibromofluoromethane	MSD	SURR	99	%	80-119
FC12194-13MSD*	17060-07-0	1,2-Dichloroethane-D4	MSD	SURR	111	%	81-118
FC12194-13MSD*	2037-26-5	Toluene-D8	MSD	SURR	101	%	89-112
FC12194-13MSD*	460-00-4	4-Bromofluorobenzene	MSD	SURR	99	%	85-114
V1A2028-MB	1868-53-7	Dibromofluoromethane	MB	SURR	97	%	80-119
V1A2028-MB	17060-07-0	1,2-Dichloroethane-D4	MB	SURR	105	%	81-118
V1A2028-MB	2037-26-5	Toluene-D8	MB	SURR	103	%	89-112
V1A2028-MB	460-00-4	4-Bromofluorobenzene	MB	SURR	100	%	85-114
FC12099-12	1868-53-7	Dibromofluoromethane	SAMP	SURR	98	%	80-119
FC12099-12	17060-07-0	1,2-Dichloroethane-D4	SAMP	SURR	107	%	81-118
FC12099-12	2037-26-5	Toluene-D8	SAMP	SURR	102	%	89-112
FC12099-12	460-00-4	4-Bromofluorobenzene	SAMP	SURR	100	%	85-114
FC12099-13	1868-53-7	Dibromofluoromethane	SAMP	SURR	96	%	80-119
FC12099-13	17060-07-0	1,2-Dichloroethane-D4	SAMP	SURR	107	%	81-118
FC12099-13	2037-26-5	Toluene-D8	SAMP	SURR	102	%	89-112
FC12099-13	460-00-4	4-Bromofluorobenzene	SAMP	SURR	101	%	85-114
V5E1996	SW846 8260D						
V5E1996-BS	67-64-1	Acetone	BSP	REC	100	%	39-160
V5E1996-BS	71-43-2	Benzene	BSP	REC	99	%	79-120
V5E1996-BS	108-86-1	Bromobenzene	BSP	REC	100	%	80-120
V5E1996-BS	74-97-5	Bromochloromethane	BSP	REC	105	%	78-123
V5E1996-BS	75-27-4	Bromodichloromethane	BSP	REC	100	%	79-125
V5E1996-BS	75-25-2	Bromoform	BSP	REC	99	%	66-130
V5E1996-BS	78-93-3	2-Butanone (MEK)	BSP	REC	94	%	56-143
V5E1996-BS	104-51-8	n-Butylbenzene	BSP	REC	106	%	75-128
V5E1996-BS	135-98-8	sec-Butylbenzene	BSP	REC	96	%	77-126
V5E1996-BS	98-06-6	tert-Butylbenzene	BSP	REC	103	%	78-124
V5E1996-BS	75-15-0	Carbon Disulfide	BSP	REC	114	%	64-133

* Sample used for QC is not from job FC12099

QC Evaluation: DOD QSM5.x Limits

Job Number: FC12099
Account: Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL
Collected: 12/18/23 thru 12/19/23

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
V5E1996-BS	56-23-5	Carbon Tetrachloride	BSP	REC	104	%	72-136
V5E1996-BS	108-90-7	Chlorobenzene	BSP	REC	97	%	82-118
V5E1996-BS	75-00-3	Chloroethane	BSP	REC	74	%	60-138
V5E1996-BS	67-66-3	Chloroform	BSP	REC	101	%	79-124
V5E1996-BS	95-49-8	o-Chlorotoluene	BSP	REC	103	%	79-122
V5E1996-BS	106-43-4	p-Chlorotoluene	BSP	REC	94	%	78-122
V5E1996-BS	124-48-1	Dibromochloromethane	BSP	REC	106	%	74-126
V5E1996-BS	96-12-8	1,2-Dibromo-3-chloropropane	BSP	REC	110	%	62-128
V5E1996-BS	106-93-4	1,2-Dibromoethane	BSP	REC	108	%	77-121
V5E1996-BS	75-71-8	Dichlorodifluoromethane	BSP	REC	108	%	32-152
V5E1996-BS	95-50-1	1,2-Dichlorobenzene	BSP	REC	95	%	80-119
V5E1996-BS	541-73-1	1,3-Dichlorobenzene	BSP	REC	95	%	80-119
V5E1996-BS	106-46-7	1,4-Dichlorobenzene	BSP	REC	102	%	79-118
V5E1996-BS	75-34-3	1,1-Dichloroethane	BSP	REC	94	%	77-125
V5E1996-BS	107-06-2	1,2-Dichloroethane	BSP	REC	100	%	73-128
V5E1996-BS	75-35-4	1,1-Dichloroethylene	BSP	REC	104	%	71-131
V5E1996-BS	156-59-2	cis-1,2-Dichloroethylene	BSP	REC	96	%	78-123
V5E1996-BS	156-60-5	trans-1,2-Dichloroethylene	BSP	REC	102	%	75-124
V5E1996-BS	78-87-5	1,2-Dichloropropane	BSP	REC	103	%	78-122
V5E1996-BS	142-28-9	1,3-Dichloropropane	BSP	REC	110	%	80-119
V5E1996-BS	594-20-7	2,2-Dichloropropane	BSP	REC	112	%	60-139
V5E1996-BS	563-58-6	1,1-Dichloropropene	BSP	REC	108	%	79-125
V5E1996-BS	10061-01-5	cis-1,3-Dichloropropene	BSP	REC	104	%	75-124
V5E1996-BS	10061-02-6	trans-1,3-Dichloropropene	BSP	REC	100	%	73-127
V5E1996-BS	100-41-4	Ethylbenzene	BSP	REC	100	%	79-121
V5E1996-BS	87-68-3	Hexachlorobutadiene	BSP	REC	108	%	66-134
V5E1996-BS	591-78-6	2-Hexanone	BSP	REC	106	%	57-139
V5E1996-BS	98-82-8	Isopropylbenzene	BSP	REC	98	%	72-131
V5E1996-BS	99-87-6	p-Isopropyltoluene	BSP	REC	98	%	77-127
V5E1996-BS	74-83-9	Methyl Bromide	BSP	REC	114	%	53-141
V5E1996-BS	74-87-3	Methyl Chloride	BSP	REC	107	%	50-139
V5E1996-BS	74-95-3	Methylene Bromide	BSP	REC	106	%	79-123
V5E1996-BS	75-09-2	Methylene Chloride	BSP	REC	114	%	74-124
V5E1996-BS	108-10-1	4-Methyl-2-pentanone (MIBK)	BSP	REC	98	%	67-130
V5E1996-BS	1634-04-4	Methyl Tert Butyl Ether	BSP	REC	108	%	71-124
V5E1996-BS	91-20-3	Naphthalene	BSP	REC	100	%	61-128
V5E1996-BS	103-65-1	n-Propylbenzene	BSP	REC	105	%	76-126
V5E1996-BS	100-42-5	Styrene	BSP	REC	105	%	78-123
V5E1996-BS	630-20-6	1,1,1,2-Tetrachloroethane	BSP	REC	100	%	78-124
V5E1996-BS	79-34-5	1,1,2,2-Tetrachloroethane	BSP	REC	96	%	71-121
V5E1996-BS	127-18-4	Tetrachloroethylene	BSP	REC	103	%	74-129
V5E1996-BS	108-88-3	Toluene	BSP	REC	108	%	80-121
V5E1996-BS	87-61-6	1,2,3-Trichlorobenzene	BSP	REC	98	%	69-129
V5E1996-BS	120-82-1	1,2,4-Trichlorobenzene	BSP	REC	102	%	69-130
V5E1996-BS	71-55-6	1,1,1-Trichloroethane	BSP	REC	103	%	74-131

* Sample used for QC is not from job FC12099

QC Evaluation: DOD QSM5.x Limits

Job Number: FC12099
Account: Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL
Collected: 12/18/23 thru 12/19/23

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
V5E1996-BS	79-00-5	1,1,2-Trichloroethane	BSP	REC	100	%	80-119
V5E1996-BS	79-01-6	Trichloroethylene	BSP	REC	103	%	79-123
V5E1996-BS	75-69-4	Trichlorofluoromethane	BSP	REC	138	%	65-141
V5E1996-BS	96-18-4	1,2,3-Trichloropropane	BSP	REC	105	%	73-122
V5E1996-BS	95-63-6	1,2,4-Trimethylbenzene	BSP	REC	102	%	76-124
V5E1996-BS	108-67-8	1,3,5-Trimethylbenzene	BSP	REC	104	%	75-124
V5E1996-BS	108-05-4	Vinyl Acetate	BSP	REC	104	%	54-146
V5E1996-BS	75-01-4	Vinyl Chloride	BSP	REC	108	%	58-137
V5E1996-BS		m,p-Xylene	BSP	REC	101	%	80-121
V5E1996-BS	95-47-6	o-Xylene	BSP	REC	100	%	78-122
V5E1996-BS	1868-53-7	Dibromofluoromethane	BSP	SURR	101	%	80-119
V5E1996-BS	17060-07-0	1,2-Dichloroethane-D4	BSP	SURR	102	%	81-118
V5E1996-BS	2037-26-5	Toluene-D8	BSP	SURR	101	%	89-112
V5E1996-BS	460-00-4	4-Bromofluorobenzene	BSP	SURR	100	%	85-114
FC12099-3MS	67-64-1	Acetone	MS	REC	104	%	39-160
FC12099-3MS	71-43-2	Benzene	MS	REC	108	%	79-120
FC12099-3MS	108-86-1	Bromobenzene	MS	REC	115	%	80-120
FC12099-3MS	74-97-5	Bromochloromethane	MS	REC	122	%	78-123
FC12099-3MS	75-27-4	Bromodichloromethane	MS	REC	110	%	79-125
FC12099-3MS	75-25-2	Bromoform	MS	REC	94	%	66-130
FC12099-3MS	78-93-3	2-Butanone (MEK)	MS	REC	102	%	56-143
FC12099-3MS	104-51-8	n-Butylbenzene	MS	REC	110	%	75-128
FC12099-3MS	135-98-8	sec-Butylbenzene	MS	REC	101	%	77-126
FC12099-3MS	98-06-6	tert-Butylbenzene	MS	REC	112	%	78-124
FC12099-3MS	75-15-0	Carbon Disulfide	MS	REC	114	%	64-133
FC12099-3MS	56-23-5	Carbon Tetrachloride	MS	REC	110	%	72-136
FC12099-3MS	108-90-7	Chlorobenzene	MS	REC	110	%	82-118
FC12099-3MS	75-00-3	Chloroethane	MS	REC	98	%	60-138
FC12099-3MS	67-66-3	Chloroform	MS	REC	114	%	79-124
FC12099-3MS	95-49-8	o-Chlorotoluene	MS	REC	114	%	79-122
FC12099-3MS	106-43-4	p-Chlorotoluene	MS	REC	105	%	78-122
FC12099-3MS	124-48-1	Dibromochloromethane	MS	REC	113	%	74-126
FC12099-3MS	96-12-8	1,2-Dibromo-3-chloropropane	MS	REC	110	%	62-128
FC12099-3MS	106-93-4	1,2-Dibromoethane	MS	REC	124	%	77-121
FC12099-3MS	75-71-8	Dichlorodifluoromethane	MS	REC	113	%	32-152
FC12099-3MS	95-50-1	1,2-Dichlorobenzene	MS	REC	111	%	80-119
FC12099-3MS	541-73-1	1,3-Dichlorobenzene	MS	REC	108	%	80-119
FC12099-3MS	106-46-7	1,4-Dichlorobenzene	MS	REC	117	%	79-118
FC12099-3MS	75-34-3	1,1-Dichloroethane	MS	REC	102	%	77-125
FC12099-3MS	107-06-2	1,2-Dichloroethane	MS	REC	114	%	73-128
FC12099-3MS	75-35-4	1,1-Dichloroethylene	MS	REC	112	%	71-131
FC12099-3MS	156-59-2	cis-1,2-Dichloroethylene	MS	REC	110	%	78-123
FC12099-3MS	156-60-5	trans-1,2-Dichloroethylene	MS	REC	110	%	75-124
FC12099-3MS	78-87-5	1,2-Dichloropropane	MS	REC	122	%	78-122
FC12099-3MS	142-28-9	1,3-Dichloropropane	MS	REC	126	%	80-119

* Sample used for QC is not from job FC12099

QC Evaluation: DOD QSM5.x Limits

Job Number: FC12099
Account: Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL
Collected: 12/18/23 thru 12/19/23

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
FC12099-3MS	594-20-7	2,2-Dichloropropane	MS	REC	107	%	60-139
FC12099-3MS	563-58-6	1,1-Dichloropropene	MS	REC	116	%	79-125
FC12099-3MS	10061-01-5	cis-1,3-Dichloropropene	MS	REC	113	%	75-124
FC12099-3MS	10061-02-6	trans-1,3-Dichloropropene	MS	REC	109	%	73-127
FC12099-3MS	100-41-4	Ethylbenzene	MS	REC	113	%	79-121
FC12099-3MS	87-68-3	Hexachlorobutadiene	MS	REC	105	%	66-134
FC12099-3MS	591-78-6	2-Hexanone	MS	REC	116	%	57-139
FC12099-3MS	98-82-8	Isopropylbenzene	MS	REC	106	%	72-131
FC12099-3MS	99-87-6	p-Isopropyltoluene	MS	REC	105	%	77-127
FC12099-3MS	74-83-9	Methyl Bromide	MS	REC	74	%	53-141
FC12099-3MS	74-87-3	Methyl Chloride	MS	REC	111	%	50-139
FC12099-3MS	74-95-3	Methylene Bromide	MS	REC	126	%	79-123
FC12099-3MS	75-09-2	Methylene Chloride	MS	REC	114	%	74-124
FC12099-3MS	108-10-1	4-Methyl-2-pentanone (MIBK)	MS	REC	108	%	67-130
FC12099-3MS	1634-04-4	Methyl Tert Butyl Ether	MS	REC	121	%	71-124
FC12099-3MS	91-20-3	Naphthalene	MS	REC	114	%	61-128
FC12099-3MS	103-65-1	n-Propylbenzene	MS	REC	113	%	76-126
FC12099-3MS	100-42-5	Styrene	MS	REC	119	%	78-123
FC12099-3MS	630-20-6	1,1,1,2-Tetrachloroethane	MS	REC	112	%	78-124
FC12099-3MS	79-34-5	1,1,2,2-Tetrachloroethane	MS	REC	117	%	71-121
FC12099-3MS	127-18-4	Tetrachloroethylene	MS	REC	104	%	74-129
FC12099-3MS	108-88-3	Toluene	MS	REC	117	%	80-121
FC12099-3MS	87-61-6	1,2,3-Trichlorobenzene	MS	REC	112	%	69-129
FC12099-3MS	120-82-1	1,2,4-Trichlorobenzene	MS	REC	111	%	69-130
FC12099-3MS	71-55-6	1,1,1-Trichloroethane	MS	REC	114	%	74-131
FC12099-3MS	79-00-5	1,1,2-Trichloroethane	MS	REC	115	%	80-119
FC12099-3MS	79-01-6	Trichloroethylene	MS	REC	116	%	79-123
FC12099-3MS	75-69-4	Trichlorofluoromethane	MS	REC	142	%	65-141
FC12099-3MS	96-18-4	1,2,3-Trichloropropane	MS	REC	126	%	73-122
FC12099-3MS	95-63-6	1,2,4-Trimethylbenzene	MS	REC	115	%	76-124
FC12099-3MS	108-67-8	1,3,5-Trimethylbenzene	MS	REC	115	%	75-124
FC12099-3MS	108-05-4	Vinyl Acetate	MS	REC	119	%	54-146
FC12099-3MS	75-01-4	Vinyl Chloride	MS	REC	110	%	58-137
FC12099-3MS		m,p-Xylene	MS	REC	111	%	80-121
FC12099-3MS	95-47-6	o-Xylene	MS	REC	112	%	78-122
FC12099-3MS	1868-53-7	Dibromofluoromethane	MS	SURR	99	%	80-119
FC12099-3MS	17060-07-0	1,2-Dichloroethane-D4	MS	SURR	97	%	81-118
FC12099-3MS	2037-26-5	Toluene-D8	MS	SURR	99	%	89-112
FC12099-3MS	460-00-4	4-Bromofluorobenzene	MS	SURR	98	%	85-114
FC12099-3MSD	67-64-1	Acetone	MSD	REC	73	%	39-160
FC12099-3MSD	67-64-1	Acetone	MSD	RPD	34	%	20
FC12099-3MSD	71-43-2	Benzene	MSD	REC	74	%	79-120
FC12099-3MSD	71-43-2	Benzene	MSD	RPD	37	%	20
FC12099-3MSD	108-86-1	Bromobenzene	MSD	REC	79	%	80-120
FC12099-3MSD	108-86-1	Bromobenzene	MSD	RPD	37	%	20

* Sample used for QC is not from job FC12099

QC Evaluation: DOD QSM5.x Limits

Job Number: FC12099
Account: Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL
Collected: 12/18/23 thru 12/19/23

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
FC12099-3MSD	74-97-5	Bromochloromethane	MSD	REC	80	%	78-123
FC12099-3MSD	74-97-5	Bromochloromethane	MSD	RPD	42	%	20
FC12099-3MSD	75-27-4	Bromodichloromethane	MSD	REC	75	%	79-125
FC12099-3MSD	75-27-4	Bromodichloromethane	MSD	RPD	37	%	20
FC12099-3MSD	75-25-2	Bromoform	MSD	REC	63	%	66-130
FC12099-3MSD	75-25-2	Bromoform	MSD	RPD	40	%	20
FC12099-3MSD	78-93-3	2-Butanone (MEK)	MSD	REC	70	%	56-143
FC12099-3MSD	78-93-3	2-Butanone (MEK)	MSD	RPD	38	%	20
FC12099-3MSD	104-51-8	n-Butylbenzene	MSD	REC	72	%	75-128
FC12099-3MSD	104-51-8	n-Butylbenzene	MSD	RPD	42	%	20
FC12099-3MSD	135-98-8	sec-Butylbenzene	MSD	REC	68	%	77-126
FC12099-3MSD	135-98-8	sec-Butylbenzene	MSD	RPD	39	%	20
FC12099-3MSD	98-06-6	tert-Butylbenzene	MSD	REC	78	%	78-124
FC12099-3MSD	98-06-6	tert-Butylbenzene	MSD	RPD	36	%	20
FC12099-3MSD	75-15-0	Carbon Disulfide	MSD	REC	80	%	64-133
FC12099-3MSD	75-15-0	Carbon Disulfide	MSD	RPD	35	%	20
FC12099-3MSD	56-23-5	Carbon Tetrachloride	MSD	REC	77	%	72-136
FC12099-3MSD	56-23-5	Carbon Tetrachloride	MSD	RPD	35	%	20
FC12099-3MSD	108-90-7	Chlorobenzene	MSD	REC	74	%	82-118
FC12099-3MSD	108-90-7	Chlorobenzene	MSD	RPD	38	%	20
FC12099-3MSD	75-00-3	Chloroethane	MSD	REC	53	%	60-138
FC12099-3MSD	75-00-3	Chloroethane	MSD	RPD	59	%	20
FC12099-3MSD	67-66-3	Chloroform	MSD	REC	78	%	79-124
FC12099-3MSD	67-66-3	Chloroform	MSD	RPD	38	%	20
FC12099-3MSD	95-49-8	o-Chlorotoluene	MSD	REC	79	%	79-122
FC12099-3MSD	95-49-8	o-Chlorotoluene	MSD	RPD	36	%	20
FC12099-3MSD	106-43-4	p-Chlorotoluene	MSD	REC	71	%	78-122
FC12099-3MSD	106-43-4	p-Chlorotoluene	MSD	RPD	38	%	20
FC12099-3MSD	124-48-1	Dibromochloromethane	MSD	REC	75	%	74-126
FC12099-3MSD	124-48-1	Dibromochloromethane	MSD	RPD	41	%	20
FC12099-3MSD	96-12-8	1,2-Dibromo-3-chloropropane	MSD	REC	75	%	62-128
FC12099-3MSD	96-12-8	1,2-Dibromo-3-chloropropane	MSD	RPD	38	%	20
FC12099-3MSD	106-93-4	1,2-Dibromoethane	MSD	REC	81	%	77-121
FC12099-3MSD	106-93-4	1,2-Dibromoethane	MSD	RPD	42	%	20
FC12099-3MSD	75-71-8	Dichlorodifluoromethane	MSD	REC	76	%	32-152
FC12099-3MSD	75-71-8	Dichlorodifluoromethane	MSD	RPD	39	%	20
FC12099-3MSD	95-50-1	1,2-Dichlorobenzene	MSD	REC	73	%	80-119
FC12099-3MSD	95-50-1	1,2-Dichlorobenzene	MSD	RPD	42	%	20
FC12099-3MSD	541-73-1	1,3-Dichlorobenzene	MSD	REC	73	%	80-119
FC12099-3MSD	541-73-1	1,3-Dichlorobenzene	MSD	RPD	39	%	20
FC12099-3MSD	106-46-7	1,4-Dichlorobenzene	MSD	REC	77	%	79-118
FC12099-3MSD	106-46-7	1,4-Dichlorobenzene	MSD	RPD	41	%	20
FC12099-3MSD	75-34-3	1,1-Dichloroethane	MSD	REC	72	%	77-125
FC12099-3MSD	75-34-3	1,1-Dichloroethane	MSD	RPD	35	%	20
FC12099-3MSD	107-06-2	1,2-Dichloroethane	MSD	REC	76	%	73-128

* Sample used for QC is not from job FC12099

QC Evaluation: DOD QSM5.x Limits

Job Number: FC12099
Account: Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL
Collected: 12/18/23 thru 12/19/23

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
FC12099-3MSD	107-06-2	1,2-Dichloroethane	MSD	RPD	40	%	20
FC12099-3MSD	75-35-4	1,1-Dichloroethylene	MSD	REC	76	%	71-131
FC12099-3MSD	75-35-4	1,1-Dichloroethylene	MSD	RPD	38	%	20
FC12099-3MSD	156-59-2	cis-1,2-Dichloroethylene	MSD	REC	78	%	78-123
FC12099-3MSD	156-59-2	cis-1,2-Dichloroethylene	MSD	RPD	34	%	20
FC12099-3MSD	156-60-5	trans-1,2-Dichloroethylene	MSD	REC	76	%	75-124
FC12099-3MSD	156-60-5	trans-1,2-Dichloroethylene	MSD	RPD	36	%	20
FC12099-3MSD	78-87-5	1,2-Dichloropropane	MSD	REC	81	%	78-122
FC12099-3MSD	78-87-5	1,2-Dichloropropane	MSD	RPD	40	%	20
FC12099-3MSD	142-28-9	1,3-Dichloropropane	MSD	REC	86	%	80-119
FC12099-3MSD	142-28-9	1,3-Dichloropropane	MSD	RPD	38	%	20
FC12099-3MSD	594-20-7	2,2-Dichloropropane	MSD	REC	73	%	60-139
FC12099-3MSD	594-20-7	2,2-Dichloropropane	MSD	RPD	38	%	20
FC12099-3MSD	563-58-6	1,1-Dichloropropene	MSD	REC	78	%	79-125
FC12099-3MSD	563-58-6	1,1-Dichloropropene	MSD	RPD	39	%	20
FC12099-3MSD	10061-01-5	cis-1,3-Dichloropropene	MSD	REC	74	%	75-124
FC12099-3MSD	10061-01-5	cis-1,3-Dichloropropene	MSD	RPD	42	%	20
FC12099-3MSD	10061-02-6	trans-1,3-Dichloropropene	MSD	REC	70	%	73-127
FC12099-3MSD	10061-02-6	trans-1,3-Dichloropropene	MSD	RPD	43	%	20
FC12099-3MSD	100-41-4	Ethylbenzene	MSD	REC	76	%	79-121
FC12099-3MSD	100-41-4	Ethylbenzene	MSD	RPD	39	%	20
FC12099-3MSD	87-68-3	Hexachlorobutadiene	MSD	REC	71	%	66-134
FC12099-3MSD	87-68-3	Hexachlorobutadiene	MSD	RPD	39	%	20
FC12099-3MSD	591-78-6	2-Hexanone	MSD	REC	80	%	57-139
FC12099-3MSD	591-78-6	2-Hexanone	MSD	RPD	37	%	20
FC12099-3MSD	98-82-8	Isopropylbenzene	MSD	REC	73	%	72-131
FC12099-3MSD	98-82-8	Isopropylbenzene	MSD	RPD	37	%	20
FC12099-3MSD	99-87-6	p-Isopropyltoluene	MSD	REC	70	%	77-127
FC12099-3MSD	99-87-6	p-Isopropyltoluene	MSD	RPD	39	%	20
FC12099-3MSD	74-83-9	Methyl Bromide	MSD	REC	68	%	53-141
FC12099-3MSD	74-83-9	Methyl Bromide	MSD	RPD	9	%	20
FC12099-3MSD	74-87-3	Methyl Chloride	MSD	REC	77	%	50-139
FC12099-3MSD	74-87-3	Methyl Chloride	MSD	RPD	36	%	20
FC12099-3MSD	74-95-3	Methylene Bromide	MSD	REC	84	%	79-123
FC12099-3MSD	74-95-3	Methylene Bromide	MSD	RPD	40	%	20
FC12099-3MSD	75-09-2	Methylene Chloride	MSD	REC	84	%	74-124
FC12099-3MSD	75-09-2	Methylene Chloride	MSD	RPD	30	%	20
FC12099-3MSD	108-10-1	4-Methyl-2-pentanone (MIBK)	MSD	REC	76	%	67-130
FC12099-3MSD	108-10-1	4-Methyl-2-pentanone (MIBK)	MSD	RPD	35	%	20
FC12099-3MSD	1634-04-4	Methyl Tert Butyl Ether	MSD	REC	82	%	71-124
FC12099-3MSD	1634-04-4	Methyl Tert Butyl Ether	MSD	RPD	39	%	20
FC12099-3MSD	91-20-3	Naphthalene	MSD	REC	77	%	61-128
FC12099-3MSD	91-20-3	Naphthalene	MSD	RPD	39	%	20
FC12099-3MSD	103-65-1	n-Propylbenzene	MSD	REC	78	%	76-126
FC12099-3MSD	103-65-1	n-Propylbenzene	MSD	RPD	37	%	20

* Sample used for QC is not from job FC12099

QC Evaluation: DOD QSM5.x Limits

Job Number: FC12099
Account: Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL
Collected: 12/18/23 thru 12/19/23

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
FC12099-3MSD	100-42-5	Styrene	MSD	REC	82	%	78-123
FC12099-3MSD	100-42-5	Styrene	MSD	RPD	37	%	20
FC12099-3MSD	630-20-6	1,1,1,2-Tetrachloroethane	MSD	REC	76	%	78-124
FC12099-3MSD	630-20-6	1,1,1,2-Tetrachloroethane	MSD	RPD	38	%	20
FC12099-3MSD	79-34-5	1,1,2,2-Tetrachloroethane	MSD	REC	74	%	71-121
FC12099-3MSD	79-34-5	1,1,2,2-Tetrachloroethane	MSD	RPD	45	%	20
FC12099-3MSD	127-18-4	Tetrachloroethylene	MSD	REC	71	%	74-129
FC12099-3MSD	127-18-4	Tetrachloroethylene	MSD	RPD	38	%	20
FC12099-3MSD	108-88-3	Toluene	MSD	REC	82	%	80-121
FC12099-3MSD	108-88-3	Toluene	MSD	RPD	35	%	20
FC12099-3MSD	87-61-6	1,2,3-Trichlorobenzene	MSD	REC	79	%	69-129
FC12099-3MSD	87-61-6	1,2,3-Trichlorobenzene	MSD	RPD	34	%	20
FC12099-3MSD	120-82-1	1,2,4-Trichlorobenzene	MSD	REC	76	%	69-130
FC12099-3MSD	120-82-1	1,2,4-Trichlorobenzene	MSD	RPD	37	%	20
FC12099-3MSD	71-55-6	1,1,1-Trichloroethane	MSD	REC	75	%	74-131
FC12099-3MSD	71-55-6	1,1,1-Trichloroethane	MSD	RPD	40	%	20
FC12099-3MSD	79-00-5	1,1,2-Trichloroethane	MSD	REC	81	%	80-119
FC12099-3MSD	79-00-5	1,1,2-Trichloroethane	MSD	RPD	35	%	20
FC12099-3MSD	79-01-6	Trichloroethylene	MSD	REC	78	%	79-123
FC12099-3MSD	79-01-6	Trichloroethylene	MSD	RPD	39	%	20
FC12099-3MSD	75-69-4	Trichlorofluoromethane	MSD	REC	113	%	65-141
FC12099-3MSD	75-69-4	Trichlorofluoromethane	MSD	RPD	23	%	20
FC12099-3MSD	96-18-4	1,2,3-Trichloropropane	MSD	REC	84	%	73-122
FC12099-3MSD	96-18-4	1,2,3-Trichloropropane	MSD	RPD	40	%	20
FC12099-3MSD	95-63-6	1,2,4-Trimethylbenzene	MSD	REC	77	%	76-124
FC12099-3MSD	95-63-6	1,2,4-Trimethylbenzene	MSD	RPD	40	%	20
FC12099-3MSD	108-67-8	1,3,5-Trimethylbenzene	MSD	REC	79	%	75-124
FC12099-3MSD	108-67-8	1,3,5-Trimethylbenzene	MSD	RPD	37	%	20
FC12099-3MSD	108-05-4	Vinyl Acetate	MSD	REC	84	%	54-146
FC12099-3MSD	108-05-4	Vinyl Acetate	MSD	RPD	34	%	20
FC12099-3MSD	75-01-4	Vinyl Chloride	MSD	REC	78	%	58-137
FC12099-3MSD	75-01-4	Vinyl Chloride	MSD	RPD	33	%	20
FC12099-3MSD		m,p-Xylene	MSD	REC	75	%	80-121
FC12099-3MSD		m,p-Xylene	MSD	RPD	39	%	20
FC12099-3MSD	95-47-6	o-Xylene	MSD	REC	76	%	78-122
FC12099-3MSD	95-47-6	o-Xylene	MSD	RPD	38	%	20
FC12099-3MSD	1868-53-7	Dibromofluoromethane	MSD	SURR	99	%	80-119
FC12099-3MSD	17060-07-0	1,2-Dichloroethane-D4	MSD	SURR	101	%	81-118
FC12099-3MSD	2037-26-5	Toluene-D8	MSD	SURR	101	%	89-112
FC12099-3MSD	460-00-4	4-Bromofluorobenzene	MSD	SURR	99	%	85-114
V5E1996-MB	1868-53-7	Dibromofluoromethane	MB	SURR	103	%	80-119
V5E1996-MB	17060-07-0	1,2-Dichloroethane-D4	MB	SURR	95	%	81-118
V5E1996-MB	2037-26-5	Toluene-D8	MB	SURR	103	%	89-112
V5E1996-MB	460-00-4	4-Bromofluorobenzene	MB	SURR	107	%	85-114
FC12099-3	1868-53-7	Dibromofluoromethane	SAMP	SURR	102	%	80-119

* Sample used for QC is not from job FC12099

QC Evaluation: DOD QSM5.x Limits

Job Number: FC12099
Account: Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL
Collected: 12/18/23 thru 12/19/23

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
FC12099-3	17060-07-0	1,2-Dichloroethane-D4	SAMP	SURR	96	%	81-118
FC12099-3	2037-26-5	Toluene-D8	SAMP	SURR	103	%	89-112
FC12099-3	460-00-4	4-Bromofluorobenzene	SAMP	SURR	103	%	85-114
FC12099-9	1868-53-7	Dibromofluoromethane	SAMP	SURR	101	%	80-119
FC12099-9	17060-07-0	1,2-Dichloroethane-D4	SAMP	SURR	98	%	81-118
FC12099-9	2037-26-5	Toluene-D8	SAMP	SURR	103	%	89-112
FC12099-9	460-00-4	4-Bromofluorobenzene	SAMP	SURR	104	%	85-114
FC12099-10	1868-53-7	Dibromofluoromethane	SAMP	SURR	102	%	80-119
FC12099-10	17060-07-0	1,2-Dichloroethane-D4	SAMP	SURR	97	%	81-118
FC12099-10	2037-26-5	Toluene-D8	SAMP	SURR	104	%	89-112
FC12099-10	460-00-4	4-Bromofluorobenzene	SAMP	SURR	100	%	85-114
FC12099-11	1868-53-7	Dibromofluoromethane	SAMP	SURR	101	%	80-119
FC12099-11	17060-07-0	1,2-Dichloroethane-D4	SAMP	SURR	96	%	81-118
FC12099-11	2037-26-5	Toluene-D8	SAMP	SURR	102	%	89-112
FC12099-11	460-00-4	4-Bromofluorobenzene	SAMP	SURR	102	%	85-114
FC12099-12	1868-53-7	Dibromofluoromethane	SAMP	SURR	101	%	80-119
FC12099-12	17060-07-0	1,2-Dichloroethane-D4	SAMP	SURR	94	%	81-118
FC12099-12	2037-26-5	Toluene-D8	SAMP	SURR	102	%	89-112
FC12099-12	460-00-4	4-Bromofluorobenzene	SAMP	SURR	102	%	85-114
FC12099-13	1868-53-7	Dibromofluoromethane	SAMP	SURR	102	%	80-119
FC12099-13	17060-07-0	1,2-Dichloroethane-D4	SAMP	SURR	97	%	81-118
FC12099-13	2037-26-5	Toluene-D8	SAMP	SURR	101	%	89-112
FC12099-13	460-00-4	4-Bromofluorobenzene	SAMP	SURR	103	%	85-114
FC12099-15	1868-53-7	Dibromofluoromethane	SAMP	SURR	101	%	80-119
FC12099-15	17060-07-0	1,2-Dichloroethane-D4	SAMP	SURR	96	%	81-118
FC12099-15	2037-26-5	Toluene-D8	SAMP	SURR	102	%	89-112
FC12099-15	460-00-4	4-Bromofluorobenzene	SAMP	SURR	103	%	85-114
FC12099-17	1868-53-7	Dibromofluoromethane	SAMP	SURR	99	%	80-119
FC12099-17	17060-07-0	1,2-Dichloroethane-D4	SAMP	SURR	97	%	81-118
FC12099-17	2037-26-5	Toluene-D8	SAMP	SURR	102	%	89-112
FC12099-17	460-00-4	4-Bromofluorobenzene	SAMP	SURR	101	%	85-114
FC12099-18	1868-53-7	Dibromofluoromethane	SAMP	SURR	101	%	80-119
FC12099-18	17060-07-0	1,2-Dichloroethane-D4	SAMP	SURR	97	%	81-118
FC12099-18	2037-26-5	Toluene-D8	SAMP	SURR	102	%	89-112
FC12099-18	460-00-4	4-Bromofluorobenzene	SAMP	SURR	104	%	85-114
FC12099-20	1868-53-7	Dibromofluoromethane	SAMP	SURR	101	%	80-119
FC12099-20	17060-07-0	1,2-Dichloroethane-D4	SAMP	SURR	97	%	81-118
FC12099-20	2037-26-5	Toluene-D8	SAMP	SURR	103	%	89-112
FC12099-20	460-00-4	4-Bromofluorobenzene	SAMP	SURR	103	%	85-114
FC12099-21	1868-53-7	Dibromofluoromethane	SAMP	SURR	101	%	80-119
FC12099-21	17060-07-0	1,2-Dichloroethane-D4	SAMP	SURR	96	%	81-118
FC12099-21	2037-26-5	Toluene-D8	SAMP	SURR	101	%	89-112
FC12099-21	460-00-4	4-Bromofluorobenzene	SAMP	SURR	104	%	85-114
FC12099-22	1868-53-7	Dibromofluoromethane	SAMP	SURR	101	%	80-119
FC12099-22	17060-07-0	1,2-Dichloroethane-D4	SAMP	SURR	95	%	81-118

* Sample used for QC is not from job FC12099

QC Evaluation: DOD QSM5.x Limits

Job Number: FC12099
Account: Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL
Collected: 12/18/23 thru 12/19/23

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
FC12099-22	2037-26-5	Toluene-D8	SAMP	SURR	102	%	89-112
FC12099-22	460-00-4	4-Bromofluorobenzene	SAMP	SURR	103	%	85-114
VA3455	SW846 8260D BY SIM						
VA3455-BS	123-91-1	1,4-Dioxane	BSP	REC	118	%	59-139
VA3455-BS	17060-07-0	1,2-Dichloroethane-D4	BSP	SURR	99	%	81-118
VA3455-BS	2037-26-5	Toluene-D8	BSP	SURR	98	%	89-112
VA3455-MB	17060-07-0	1,2-Dichloroethane-D4	MB	SURR	101	%	81-118
VA3455-MB	2037-26-5	Toluene-D8	MB	SURR	96	%	89-112
FC12099-3	17060-07-0	1,2-Dichloroethane-D4	SAMP	SURR	100	%	81-118
FC12099-3	2037-26-5	Toluene-D8	SAMP	SURR	101	%	89-112
FC12099-11	17060-07-0	1,2-Dichloroethane-D4	SAMP	SURR	100	%	81-118
FC12099-11	2037-26-5	Toluene-D8	SAMP	SURR	98	%	89-112
FC12099-18	17060-07-0	1,2-Dichloroethane-D4	SAMP	SURR	100	%	81-118
FC12099-18	2037-26-5	Toluene-D8	SAMP	SURR	100	%	89-112
FC12099-20	17060-07-0	1,2-Dichloroethane-D4	SAMP	SURR	100	%	81-118
FC12099-20	2037-26-5	Toluene-D8	SAMP	SURR	99	%	89-112
OP835	EPA 537M QSM5.3 B-15						
OP835-BS	375-22-4	Perfluorobutanoic acid	BSP	REC	89	%	73-129
OP835-BS	2706-90-3	Perfluoropentanoic acid	BSP	REC	89	%	72-129
OP835-BS	307-24-4	Perfluorohexanoic acid	BSP	REC	88	%	72-129
OP835-BS	375-85-9	Perfluoroheptanoic acid	BSP	REC	89	%	72-130
OP835-BS	335-67-1	Perfluorooctanoic acid	BSP	REC	89	%	71-133
OP835-BS	375-95-1	Perfluorononanoic acid	BSP	REC	89	%	69-130
OP835-BS	335-76-2	Perfluorodecanoic acid	BSP	REC	88	%	71-129
OP835-BS	2058-94-8	Perfluoroundecanoic acid	BSP	REC	88	%	69-133
OP835-BS	307-55-1	Perfluorododecanoic acid	BSP	REC	89	%	72-134
OP835-BS	72629-94-8	Perfluorotridecanoic acid	BSP	REC	79	%	65-144
OP835-BS	376-06-7	Perfluorotetradecanoic acid	BSP	REC	88	%	71-132
OP835-BS	375-73-5	Perfluorobutanesulfonic acid	BSP	REC	89	%	72-130
OP835-BS	2706-91-4	Perfluoropentanesulfonic acid	BSP	REC	84	%	71-127
OP835-BS	355-46-4	Perfluorohexanesulfonic acid	BSP	REC	87	%	68-131
OP835-BS	375-92-8	Perfluoroheptanesulfonic acid	BSP	REC	86	%	69-134
OP835-BS	1763-23-1	Perfluorooctanesulfonic acid	BSP	REC	83	%	65-140
OP835-BS	68259-12-1	Perfluorononanesulfonic acid	BSP	REC	80	%	69-127
OP835-BS	335-77-3	Perfluorodecanesulfonic acid	BSP	REC	59	%	53-142
OP835-BS	754-91-6	PFOSA	BSP	REC	89	%	67-137
OP835-BS	2355-31-9	MeFOSAA	BSP	REC	87	%	65-136
OP835-BS	2991-50-6	EtFOSAA	BSP	REC	84	%	61-135
OP835-BS	757124-72-4	4:2 Fluorotelomer sulfonate	BSP	REC	91	%	63-143
OP835-BS	27619-97-2	6:2 Fluorotelomer sulfonate	BSP	REC	93	%	64-140
OP835-BS	39108-34-4	8:2 Fluorotelomer sulfonate	BSP	REC	93	%	67-138

* Sample used for QC is not from job FC12099

QC Evaluation: DOD QSM5.x Limits

Job Number: FC12099
Account: Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL
Collected: 12/18/23 thru 12/19/23

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
OP835-MS*	375-22-4	Perfluorobutanoic acid	MS	REC	96	%	73-129
OP835-MS*	2706-90-3	Perfluoropentanoic acid	MS	REC	97	%	72-129
OP835-MS*	307-24-4	Perfluorohexanoic acid	MS	REC	96	%	72-129
OP835-MS*	375-85-9	Perfluoroheptanoic acid	MS	REC	97	%	72-130
OP835-MS*	335-67-1	Perfluorooctanoic acid	MS	REC	98	%	71-133
OP835-MS*	375-95-1	Perfluorononanoic acid	MS	REC	98	%	69-130
OP835-MS*	335-76-2	Perfluorodecanoic acid	MS	REC	98	%	71-129
OP835-MS*	2058-94-8	Perfluoroundecanoic acid	MS	REC	98	%	69-133
OP835-MS*	307-55-1	Perfluorododecanoic acid	MS	REC	97	%	72-134
OP835-MS*	72629-94-8	Perfluorotridecanoic acid	MS	REC	92	%	65-144
OP835-MS*	376-06-7	Perfluorotetradecanoic acid	MS	REC	95	%	71-132
OP835-MS*	375-73-5	Perfluorobutanesulfonic acid	MS	REC	97	%	72-130
OP835-MS*	2706-91-4	Perfluoropentanesulfonic acid	MS	REC	93	%	71-127
OP835-MS*	355-46-4	Perfluorohexanesulfonic acid	MS	REC	92	%	68-131
OP835-MS*	375-92-8	Perfluoroheptanesulfonic acid	MS	REC	103	%	69-134
OP835-MS*	1763-23-1	Perfluorooctanesulfonic acid	MS	REC	98	%	65-140
OP835-MS*	68259-12-1	Perfluorononanesulfonic acid	MS	REC	94	%	69-127
OP835-MS*	335-77-3	Perfluorodecanesulfonic acid	MS	REC	84	%	53-142
OP835-MS*	754-91-6	PFOSA	MS	REC	95	%	67-137
OP835-MS*	2355-31-9	MeFOSAA	MS	REC	98	%	65-136
OP835-MS*	2991-50-6	EtFOSAA	MS	REC	93	%	61-135
OP835-MS*	757124-72-4	4:2 Fluorotelomer sulfonate	MS	REC	101	%	63-143
OP835-MS*	27619-97-2	6:2 Fluorotelomer sulfonate	MS	REC	101	%	64-140
OP835-MS*	39108-34-4	8:2 Fluorotelomer sulfonate	MS	REC	100	%	67-138
OP835-MSD*	375-22-4	Perfluorobutanoic acid	MSD	REC	93	%	73-129
OP835-MSD*	375-22-4	Perfluorobutanoic acid	MSD	RPD	3	%	30
OP835-MSD*	2706-90-3	Perfluoropentanoic acid	MSD	REC	93	%	72-129
OP835-MSD*	2706-90-3	Perfluoropentanoic acid	MSD	RPD	3	%	30
OP835-MSD*	307-24-4	Perfluorohexanoic acid	MSD	REC	92	%	72-129
OP835-MSD*	307-24-4	Perfluorohexanoic acid	MSD	RPD	3	%	30
OP835-MSD*	375-85-9	Perfluoroheptanoic acid	MSD	REC	94	%	72-130
OP835-MSD*	375-85-9	Perfluoroheptanoic acid	MSD	RPD	2	%	30
OP835-MSD*	335-67-1	Perfluorooctanoic acid	MSD	REC	92	%	71-133
OP835-MSD*	335-67-1	Perfluorooctanoic acid	MSD	RPD	4	%	30
OP835-MSD*	375-95-1	Perfluorononanoic acid	MSD	REC	94	%	69-130
OP835-MSD*	375-95-1	Perfluorononanoic acid	MSD	RPD	3	%	30
OP835-MSD*	335-76-2	Perfluorodecanoic acid	MSD	REC	94	%	71-129
OP835-MSD*	335-76-2	Perfluorodecanoic acid	MSD	RPD	4	%	30
OP835-MSD*	2058-94-8	Perfluoroundecanoic acid	MSD	REC	96	%	69-133
OP835-MSD*	2058-94-8	Perfluoroundecanoic acid	MSD	RPD	2	%	30
OP835-MSD*	307-55-1	Perfluorododecanoic acid	MSD	REC	95	%	72-134
OP835-MSD*	307-55-1	Perfluorododecanoic acid	MSD	RPD	2	%	30
OP835-MSD*	72629-94-8	Perfluorotridecanoic acid	MSD	REC	91	%	65-144
OP835-MSD*	72629-94-8	Perfluorotridecanoic acid	MSD	RPD	1	%	30
OP835-MSD*	376-06-7	Perfluorotetradecanoic acid	MSD	REC	96	%	71-132

* Sample used for QC is not from job FC12099

QC Evaluation: DOD QSM5.x Limits

Job Number: FC12099
Account: Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL
Collected: 12/18/23 thru 12/19/23

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
OP835-MSD*	376-06-7	Perfluorotetradecanoic acid	MSD	RPD	1	%	30
OP835-MSD*	375-73-5	Perfluorobutanesulfonic acid	MSD	REC	95	%	72-130
OP835-MSD*	375-73-5	Perfluorobutanesulfonic acid	MSD	RPD	1	%	30
OP835-MSD*	2706-91-4	Perfluoropentanesulfonic acid	MSD	REC	91	%	71-127
OP835-MSD*	2706-91-4	Perfluoropentanesulfonic acid	MSD	RPD	1	%	30
OP835-MSD*	355-46-4	Perfluorohexanesulfonic acid	MSD	REC	93	%	68-131
OP835-MSD*	355-46-4	Perfluorohexanesulfonic acid	MSD	RPD	1	%	30
OP835-MSD*	375-92-8	Perfluoroheptanesulfonic acid	MSD	REC	101	%	69-134
OP835-MSD*	375-92-8	Perfluoroheptanesulfonic acid	MSD	RPD	1	%	30
OP835-MSD*	1763-23-1	Perfluorooctanesulfonic acid	MSD	REC	94	%	65-140
OP835-MSD*	1763-23-1	Perfluorooctanesulfonic acid	MSD	RPD	2	%	30
OP835-MSD*	68259-12-1	Perfluorononanesulfonic acid	MSD	REC	91	%	69-127
OP835-MSD*	68259-12-1	Perfluorononanesulfonic acid	MSD	RPD	4	%	30
OP835-MSD*	335-77-3	Perfluorodecanesulfonic acid	MSD	REC	82	%	53-142
OP835-MSD*	335-77-3	Perfluorodecanesulfonic acid	MSD	RPD	3	%	30
OP835-MSD*	754-91-6	PFOSA	MSD	REC	94	%	67-137
OP835-MSD*	754-91-6	PFOSA	MSD	RPD	1	%	30
OP835-MSD*	2355-31-9	MeFOSAA	MSD	REC	93	%	65-136
OP835-MSD*	2355-31-9	MeFOSAA	MSD	RPD	5	%	30
OP835-MSD*	2991-50-6	EtFOSAA	MSD	REC	92	%	61-135
OP835-MSD*	2991-50-6	EtFOSAA	MSD	RPD	1	%	30
OP835-MSD*	757124-72-4	4:2 Fluorotelomer sulfonate	MSD	REC	99	%	63-143
OP835-MSD*	757124-72-4	4:2 Fluorotelomer sulfonate	MSD	RPD	2	%	30
OP835-MSD*	27619-97-2	6:2 Fluorotelomer sulfonate	MSD	REC	100	%	64-140
OP835-MSD*	27619-97-2	6:2 Fluorotelomer sulfonate	MSD	RPD	1	%	30
OP835-MSD*	39108-34-4	8:2 Fluorotelomer sulfonate	MSD	REC	98	%	67-138
OP835-MSD*	39108-34-4	8:2 Fluorotelomer sulfonate	MSD	RPD	3	%	30
OP937	EPA 537M QSM5.3 B-15						
OP937-BS	375-22-4	Perfluorobutanoic acid	BSP	REC	106	%	73-129
OP937-BS	2706-90-3	Perfluoropentanoic acid	BSP	REC	103	%	72-129
OP937-BS	307-24-4	Perfluorohexanoic acid	BSP	REC	102	%	72-129
OP937-BS	375-85-9	Perfluoroheptanoic acid	BSP	REC	103	%	72-130
OP937-BS	335-67-1	Perfluorooctanoic acid	BSP	REC	101	%	71-133
OP937-BS	375-95-1	Perfluorononanoic acid	BSP	REC	108	%	69-130
OP937-BS	335-76-2	Perfluorodecanoic acid	BSP	REC	104	%	71-129
OP937-BS	2058-94-8	Perfluoroundecanoic acid	BSP	REC	109	%	69-133
OP937-BS	307-55-1	Perfluorododecanoic acid	BSP	REC	110	%	72-134
OP937-BS	72629-94-8	Perfluorotridecanoic acid	BSP	REC	111	%	65-144
OP937-BS	376-06-7	Perfluorotetradecanoic acid	BSP	REC	110	%	71-132
OP937-BS	375-73-5	Perfluorobutanesulfonic acid	BSP	REC	105	%	72-130
OP937-BS	2706-91-4	Perfluoropentanesulfonic acid	BSP	REC	105	%	71-127
OP937-BS	355-46-4	Perfluorohexanesulfonic acid	BSP	REC	106	%	68-131
OP937-BS	375-92-8	Perfluoroheptanesulfonic acid	BSP	REC	105	%	69-134

* Sample used for QC is not from job FC12099

QC Evaluation: DOD QSM5.x Limits

Job Number: FC12099
Account: Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL
Collected: 12/18/23 thru 12/19/23

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
OP937-BS	1763-23-1	Perfluorooctanesulfonic acid	BSP	REC	116	%	65-140
OP937-BS	68259-12-1	Perfluorononanesulfonic acid	BSP	REC	106	%	69-127
OP937-BS	335-77-3	Perfluorodecanesulfonic acid	BSP	REC	104	%	53-142
OP937-BS	754-91-6	PFOSA	BSP	REC	104	%	67-137
OP937-BS	2355-31-9	MeFOSAA	BSP	REC	109	%	65-136
OP937-BS	2991-50-6	EtFOSAA	BSP	REC	107	%	61-135
OP937-BS	757124-72-4	4:2 Fluorotelomer sulfonate	BSP	REC	105	%	63-143
OP937-BS	27619-97-2	6:2 Fluorotelomer sulfonate	BSP	REC	113	%	64-140
OP937-BS	39108-34-4	8:2 Fluorotelomer sulfonate	BSP	REC	108	%	67-138
OP937-MS*	375-22-4	Perfluorobutanoic acid	MS	REC	108	%	73-129
OP937-MS*	2706-90-3	Perfluoropentanoic acid	MS	REC	105	%	72-129
OP937-MS*	307-24-4	Perfluorohexanoic acid	MS	REC	104	%	72-129
OP937-MS*	375-85-9	Perfluoroheptanoic acid	MS	REC	104	%	72-130
OP937-MS*	335-67-1	Perfluorooctanoic acid	MS	REC	103	%	71-133
OP937-MS*	375-95-1	Perfluorononanoic acid	MS	REC	103	%	69-130
OP937-MS*	335-76-2	Perfluorodecanoic acid	MS	REC	104	%	71-129
OP937-MS*	2058-94-8	Perfluoroundecanoic acid	MS	REC	105	%	69-133
OP937-MS*	307-55-1	Perfluorododecanoic acid	MS	REC	104	%	72-134
OP937-MS*	72629-94-8	Perfluorotridecanoic acid	MS	REC	104	%	65-144
OP937-MS*	376-06-7	Perfluorotetradecanoic acid	MS	REC	101	%	71-132
OP937-MS*	375-73-5	Perfluorobutanesulfonic acid	MS	REC	108	%	72-130
OP937-MS*	2706-91-4	Perfluoropentanesulfonic acid	MS	REC	109	%	71-127
OP937-MS*	355-46-4	Perfluorohexanesulfonic acid	MS	REC	104	%	68-131
OP937-MS*	375-92-8	Perfluoroheptanesulfonic acid	MS	REC	100	%	69-134
OP937-MS*	1763-23-1	Perfluorooctanesulfonic acid	MS	REC	103	%	65-140
OP937-MS*	68259-12-1	Perfluorononanesulfonic acid	MS	REC	100	%	69-127
OP937-MS*	335-77-3	Perfluorodecanesulfonic acid	MS	REC	97	%	53-142
OP937-MS*	754-91-6	PFOSA	MS	REC	106	%	67-137
OP937-MS*	2355-31-9	MeFOSAA	MS	REC	106	%	65-136
OP937-MS*	2991-50-6	EtFOSAA	MS	REC	106	%	61-135
OP937-MS*	757124-72-4	4:2 Fluorotelomer sulfonate	MS	REC	104	%	63-143
OP937-MS*	27619-97-2	6:2 Fluorotelomer sulfonate	MS	REC	111	%	64-140
OP937-MS*	39108-34-4	8:2 Fluorotelomer sulfonate	MS	REC	103	%	67-138
OP937-MSD*	375-22-4	Perfluorobutanoic acid	MSD	REC	106	%	73-129
OP937-MSD*	375-22-4	Perfluorobutanoic acid	MSD	RPD	2	%	30
OP937-MSD*	2706-90-3	Perfluoropentanoic acid	MSD	REC	102	%	72-129
OP937-MSD*	2706-90-3	Perfluoropentanoic acid	MSD	RPD	3	%	30
OP937-MSD*	307-24-4	Perfluorohexanoic acid	MSD	REC	102	%	72-129
OP937-MSD*	307-24-4	Perfluorohexanoic acid	MSD	RPD	2	%	30
OP937-MSD*	375-85-9	Perfluoroheptanoic acid	MSD	REC	103	%	72-130
OP937-MSD*	375-85-9	Perfluoroheptanoic acid	MSD	RPD	1	%	30
OP937-MSD*	335-67-1	Perfluorooctanoic acid	MSD	REC	101	%	71-133
OP937-MSD*	335-67-1	Perfluorooctanoic acid	MSD	RPD	2	%	30
OP937-MSD*	375-95-1	Perfluorononanoic acid	MSD	REC	104	%	69-130
OP937-MSD*	375-95-1	Perfluorononanoic acid	MSD	RPD	1	%	30

* Sample used for QC is not from job FC12099

QC Evaluation: DOD QSM5.x Limits

Job Number: FC12099
Account: Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL
Collected: 12/18/23 thru 12/19/23

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
OP937-MSD*	335-76-2	Perfluorodecanoic acid	MSD	REC	103	%	71-129
OP937-MSD*	335-76-2	Perfluorodecanoic acid	MSD	RPD	1	%	30
OP937-MSD*	2058-94-8	Perfluoroundecanoic acid	MSD	REC	102	%	69-133
OP937-MSD*	2058-94-8	Perfluoroundecanoic acid	MSD	RPD	3	%	30
OP937-MSD*	307-55-1	Perfluorododecanoic acid	MSD	REC	102	%	72-134
OP937-MSD*	307-55-1	Perfluorododecanoic acid	MSD	RPD	2	%	30
OP937-MSD*	72629-94-8	Perfluorotridecanoic acid	MSD	REC	103	%	65-144
OP937-MSD*	72629-94-8	Perfluorotridecanoic acid	MSD	RPD	1	%	30
OP937-MSD*	376-06-7	Perfluorotetradecanoic acid	MSD	REC	98	%	71-132
OP937-MSD*	376-06-7	Perfluorotetradecanoic acid	MSD	RPD	3	%	30
OP937-MSD*	375-73-5	Perfluorobutanesulfonic acid	MSD	REC	105	%	72-130
OP937-MSD*	375-73-5	Perfluorobutanesulfonic acid	MSD	RPD	3	%	30
OP937-MSD*	2706-91-4	Perfluoropentanesulfonic acid	MSD	REC	106	%	71-127
OP937-MSD*	2706-91-4	Perfluoropentanesulfonic acid	MSD	RPD	3	%	30
OP937-MSD*	355-46-4	Perfluorohexanesulfonic acid	MSD	REC	101	%	68-131
OP937-MSD*	355-46-4	Perfluorohexanesulfonic acid	MSD	RPD	3	%	30
OP937-MSD*	375-92-8	Perfluoroheptanesulfonic acid	MSD	REC	101	%	69-134
OP937-MSD*	375-92-8	Perfluoroheptanesulfonic acid	MSD	RPD	1	%	30
OP937-MSD*	1763-23-1	Perfluorooctanesulfonic acid	MSD	REC	104	%	65-140
OP937-MSD*	1763-23-1	Perfluorooctanesulfonic acid	MSD	RPD	1	%	30
OP937-MSD*	68259-12-1	Perfluorononanesulfonic acid	MSD	REC	98	%	69-127
OP937-MSD*	68259-12-1	Perfluorononanesulfonic acid	MSD	RPD	2	%	30
OP937-MSD*	335-77-3	Perfluorodecanesulfonic acid	MSD	REC	97	%	53-142
OP937-MSD*	335-77-3	Perfluorodecanesulfonic acid	MSD	RPD	0	%	30
OP937-MSD*	754-91-6	PFOSA	MSD	REC	103	%	67-137
OP937-MSD*	754-91-6	PFOSA	MSD	RPD	3	%	30
OP937-MSD*	2355-31-9	MeFOSAA	MSD	REC	104	%	65-136
OP937-MSD*	2355-31-9	MeFOSAA	MSD	RPD	2	%	30
OP937-MSD*	2991-50-6	EtFOSAA	MSD	REC	106	%	61-135
OP937-MSD*	2991-50-6	EtFOSAA	MSD	RPD	1	%	30
OP937-MSD*	757124-72-4	4:2 Fluorotelomer sulfonate	MSD	REC	100	%	63-143
OP937-MSD*	757124-72-4	4:2 Fluorotelomer sulfonate	MSD	RPD	4	%	30
OP937-MSD*	27619-97-2	6:2 Fluorotelomer sulfonate	MSD	REC	108	%	64-140
OP937-MSD*	27619-97-2	6:2 Fluorotelomer sulfonate	MSD	RPD	3	%	30
OP937-MSD*	39108-34-4	8:2 Fluorotelomer sulfonate	MSD	REC	106	%	67-138
OP937-MSD*	39108-34-4	8:2 Fluorotelomer sulfonate	MSD	RPD	3	%	30

* Sample used for QC is not from job FC12099

MS Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Instrument Performance Checks (BFB)
- Internal Standard Area Summaries
- Surrogate Recovery Summaries
- Initial and Continuing Calibration Summaries
- Run Sequence Reports

Method Blank Summary

Job Number: FC12099
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VA3455-MB	A0239270.D	1	12/26/23	TD	n/a	n/a	VA3455

The QC reported here applies to the following samples: **Method:** SW846 8260D BY SIM

FC12099-3, FC12099-11, FC12099-18, FC12099-20

CAS No.	Compound	Result	RL	MDL	Units	Q
123-91-1	1,4-Dioxane	ND	1.0	0.30	ug/l	

CAS No.	Surrogate Recoveries		Limits
17060-07-0	1,2-Dichloroethane-D4	101%	74-125%
2037-26-5	Toluene-D8	96%	88-111%

Method Blank Summary

Job Number: FC12099
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V5E1996-MB [a]	5E44806.D	1	12/22/23	JW	n/a	n/a	V5E1996

The QC reported here applies to the following samples: **Method:** SW846 8260D

FC12099-3, FC12099-9, FC12099-10, FC12099-11, FC12099-15, FC12099-17, FC12099-18, FC12099-20, FC12099-21, FC12099-22

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	25	10	ug/l	
71-43-2	Benzene	ND	1.0	0.31	ug/l	
108-86-1	Bromobenzene	ND	1.0	0.37	ug/l	
74-97-5	Bromochloromethane	ND	1.0	0.45	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.24	ug/l	
75-25-2	Bromoform	ND	1.0	0.41	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.0	ug/l	
104-51-8	n-Butylbenzene	ND	1.0	0.23	ug/l	
135-98-8	sec-Butylbenzene	ND	1.0	0.24	ug/l	
98-06-6	tert-Butylbenzene	ND	1.0	0.31	ug/l	
75-15-0	Carbon Disulfide	ND	2.0	0.53	ug/l	
56-23-5	Carbon Tetrachloride	ND	1.0	0.36	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.20	ug/l	
75-00-3	Chloroethane	ND	2.0	0.67	ug/l	
67-66-3	Chloroform	ND	1.0	0.30	ug/l	
95-49-8	o-Chlorotoluene	ND	1.0	0.22	ug/l	
106-43-4	p-Chlorotoluene	ND	1.0	0.31	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.28	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5.0	1.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	2.0	0.28	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.50	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.32	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.22	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.26	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.34	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.31	ug/l	
75-35-4	1,1-Dichloroethylene	ND	1.0	0.32	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	1.0	0.28	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	1.0	0.22	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.43	ug/l	
142-28-9	1,3-Dichloropropane	ND	1.0	0.31	ug/l	
594-20-7	2,2-Dichloropropane	ND	1.0	0.24	ug/l	
563-58-6	1,1-Dichloropropene	ND	1.0	0.34	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.29	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.21	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.36	ug/l	

Method Blank Summary

Job Number: FC12099
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V5E1996-MB [a]	5E44806.D	1	12/22/23	JW	n/a	n/a	V5E1996

The QC reported here applies to the following samples: **Method:** SW846 8260D

FC12099-3, FC12099-9, FC12099-10, FC12099-11, FC12099-15, FC12099-17, FC12099-18, FC12099-20, FC12099-21, FC12099-22

CAS No.	Compound	Result	RL	MDL	Units	Q
87-68-3	Hexachlorobutadiene	ND	2.0	0.30	ug/l	
591-78-6	2-Hexanone	ND	10	2.0	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	0.22	ug/l	
99-87-6	p-Isopropyltoluene	ND	1.0	0.21	ug/l	
74-83-9	Methyl Bromide	ND	5.0	2.0	ug/l	
74-87-3	Methyl Chloride	ND	2.0	0.50	ug/l	
74-95-3	Methylene Bromide	ND	2.0	0.37	ug/l	
75-09-2	Methylene Chloride	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	1.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.23	ug/l	
91-20-3	Naphthalene	ND	5.0	1.0	ug/l	
103-65-1	n-Propylbenzene	ND	1.0	0.29	ug/l	
100-42-5	Styrene	ND	1.0	0.22	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	0.28	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.30	ug/l	
127-18-4	Tetrachloroethylene	ND	1.0	0.22	ug/l	
108-88-3	Toluene	ND	1.0	0.30	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	2.0	0.61	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	2.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.25	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.47	ug/l	
79-01-6	Trichloroethylene	ND	1.0	0.35	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	0.50	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	2.0	0.63	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	1.0	0.32	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	1.0	0.27	ug/l	
108-05-4	Vinyl Acetate	ND	10	2.0	ug/l	
75-01-4	Vinyl Chloride	ND	1.0	0.41	ug/l	
	m,p-Xylene	ND	2.0	0.47	ug/l	
95-47-6	o-Xylene	ND	1.0	0.26	ug/l	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	103%	83-118%
17060-07-0	1,2-Dichloroethane-D4	95%	79-125%

Method Blank Summary

Job Number: FC12099
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V5E1996-MB [a]	5E44806.D	1	12/22/23	JW	n/a	n/a	V5E1996

The QC reported here applies to the following samples: **Method:** SW846 8260D

FC12099-3, FC12099-9, FC12099-10, FC12099-11, FC12099-15, FC12099-17, FC12099-18, FC12099-20, FC12099-21, FC12099-22

CAS No.	Surrogate Recoveries		Limits
2037-26-5	Toluene-D8	103%	85-112%
460-00-4	4-Bromofluorobenzene	107%	83-118%

(a) Sample was treated with an anti-foaming agent.

Method Blank Summary

Job Number: FC12099
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V1A2028-MB [a]	1A51664.D	1	12/26/23	LT	n/a	n/a	V1A2028

The QC reported here applies to the following samples: **Method:** SW846 8260D

FC12099-12, FC12099-13

CAS No.	Compound	Result	RL	MDL	Units	Q
75-01-4	Vinyl Chloride	ND	1.0	0.41	ug/l	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	97%	83-118%
17060-07-0	1,2-Dichloroethane-D4	105%	79-125%
2037-26-5	Toluene-D8	103%	85-112%
460-00-4	4-Bromofluorobenzene	100%	83-118%

(a) Sample was treated with an anti-foaming agent.

Blank Spike Summary

Job Number: FC12099
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VA3455-BS [a]	A0239268.D	1	12/26/23	TD	n/a	n/a	VA3455

The QC reported here applies to the following samples: **Method:** SW846 8260D BY SIM

FC12099-3, FC12099-11, FC12099-18, FC12099-20

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
123-91-1	1,4-Dioxane	20	23.6	118	65-121

CAS No.	Surrogate Recoveries	BSP	Limits
17060-07-0	1,2-Dichloroethane-D4	99%	74-125%
2037-26-5	Toluene-D8	98%	88-111%

(a) No MS/MSD available for this run.

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FC12099
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V5E1996-BS	5E44804.D	1	12/22/23	JW	n/a	n/a	V5E1996

The QC reported here applies to the following samples: **Method:** SW846 8260D

FC12099-3, FC12099-9, FC12099-10, FC12099-11, FC12099-15, FC12099-17, FC12099-18, FC12099-20, FC12099-21, FC12099-22

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
67-64-1	Acetone	125	125	100	50-147
71-43-2	Benzene	25	24.8	99	81-122
108-86-1	Bromobenzene	25	25.1	100	80-121
74-97-5	Bromochloromethane	25	26.3	105	76-123
75-27-4	Bromodichloromethane	25	25.0	100	79-123
75-25-2	Bromoform	25	24.7	99	66-123
78-93-3	2-Butanone (MEK)	125	117	94	56-143
104-51-8	n-Butylbenzene	25	26.6	106	79-126
135-98-8	sec-Butylbenzene	25	23.9	96	83-133
98-06-6	tert-Butylbenzene	25	25.7	103	80-133
75-15-0	Carbon Disulfide	25	28.4	114	66-148
56-23-5	Carbon Tetrachloride	25	26.1	104	76-136
108-90-7	Chlorobenzene	25	24.2	97	82-124
75-00-3	Chloroethane	25	18.4	74	62-144
67-66-3	Chloroform	25	25.2	101	80-124
95-49-8	o-Chlorotoluene	25	25.8	103	81-127
106-43-4	p-Chlorotoluene	25	23.4	94	83-130
124-48-1	Dibromochloromethane	25	26.6	106	78-122
96-12-8	1,2-Dibromo-3-chloropropane	25	27.6	110	64-123
106-93-4	1,2-Dibromoethane	25	26.9	108	75-120
75-71-8	Dichlorodifluoromethane	25	27.0	108	42-167
95-50-1	1,2-Dichlorobenzene	25	23.8	95	82-124
541-73-1	1,3-Dichlorobenzene	25	23.7	95	84-125
106-46-7	1,4-Dichlorobenzene	25	25.6	102	78-120
75-34-3	1,1-Dichloroethane	25	23.5	94	81-122
107-06-2	1,2-Dichloroethane	25	24.9	100	75-125
75-35-4	1,1-Dichloroethylene	25	25.9	104	78-137
156-59-2	cis-1,2-Dichloroethylene	25	24.1	96	78-120
156-60-5	trans-1,2-Dichloroethylene	25	25.5	102	76-127
78-87-5	1,2-Dichloropropane	25	25.7	103	76-124
142-28-9	1,3-Dichloropropane	25	27.5	110	80-118
594-20-7	2,2-Dichloropropane	25	27.9	112	74-139
563-58-6	1,1-Dichloropropene	25	27.1	108	79-131
10061-01-5	cis-1,3-Dichloropropene	25	26.0	104	75-118
10061-02-6	trans-1,3-Dichloropropene	25	25.0	100	80-120
100-41-4	Ethylbenzene	25	25.1	100	81-121

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FC12099
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V5E1996-BS	5E44804.D	1	12/22/23	JW	n/a	n/a	V5E1996

The QC reported here applies to the following samples: **Method:** SW846 8260D

FC12099-3, FC12099-9, FC12099-10, FC12099-11, FC12099-15, FC12099-17, FC12099-18, FC12099-20, FC12099-21, FC12099-22

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
87-68-3	Hexachlorobutadiene	25	26.9	108	75-142
591-78-6	2-Hexanone	125	133	106	61-129
98-82-8	Isopropylbenzene	25	24.4	98	83-132
99-87-6	p-Isopropyltoluene	25	24.4	98	79-130
74-83-9	Methyl Bromide	25	28.4	114	59-143
74-87-3	Methyl Chloride	25	26.8	107	50-159
74-95-3	Methylene Bromide	25	26.5	106	78-119
75-09-2	Methylene Chloride	25	28.4	114	69-135
108-10-1	4-Methyl-2-pentanone (MIBK)	125	122	98	66-122
1634-04-4	Methyl Tert Butyl Ether	25	26.9	108	72-117
91-20-3	Naphthalene	25	25.0	100	63-132
103-65-1	n-Propylbenzene	25	26.2	105	82-133
100-42-5	Styrene	25	26.3	105	78-119
630-20-6	1,1,1,2-Tetrachloroethane	25	25.1	100	77-122
79-34-5	1,1,2,2-Tetrachloroethane	25	23.9	96	72-120
127-18-4	Tetrachloroethylene	25	25.8	103	76-135
108-88-3	Toluene	25	26.9	108	80-120
87-61-6	1,2,3-Trichlorobenzene	25	24.6	98	68-131
120-82-1	1,2,4-Trichlorobenzene	25	25.4	102	73-129
71-55-6	1,1,1-Trichloroethane	25	25.7	103	75-130
79-00-5	1,1,2-Trichloroethane	25	24.9	100	76-119
79-01-6	Trichloroethylene	25	25.8	103	81-126
75-69-4	Trichlorofluoromethane	25	34.4	138	71-156
96-18-4	1,2,3-Trichloropropane	25	26.2	105	77-120
95-63-6	1,2,4-Trimethylbenzene	25	25.5	102	79-120
108-67-8	1,3,5-Trimethylbenzene	25	26.1	104	79-120
108-05-4	Vinyl Acetate	125	130	104	43-154
75-01-4	Vinyl Chloride	25	27.1	108	69-159
	m,p-Xylene	50	50.6	101	79-126
95-47-6	o-Xylene	25	25.0	100	80-127

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	101%	83-118%
17060-07-0	1,2-Dichloroethane-D4	102%	79-125%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FC12099
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V5E1996-BS	5E44804.D	1	12/22/23	JW	n/a	n/a	V5E1996

The QC reported here applies to the following samples: **Method:** SW846 8260D

FC12099-3, FC12099-9, FC12099-10, FC12099-11, FC12099-15, FC12099-17, FC12099-18, FC12099-20, FC12099-21, FC12099-22

CAS No.	Surrogate Recoveries	BSP	Limits
2037-26-5	Toluene-D8	101%	85-112%
460-00-4	4-Bromofluorobenzene	100%	83-118%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FC12099
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V1A2028-BS	1A51662.D	1	12/26/23	LT	n/a	n/a	V1A2028

The QC reported here applies to the following samples: **Method:** SW846 8260D

FC12099-12, FC12099-13

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
75-01-4	Vinyl Chloride	25	23.7	95	69-159

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	98%	83-118%
17060-07-0	1,2-Dichloroethane-D4	108%	79-125%
2037-26-5	Toluene-D8	102%	85-112%
460-00-4	4-Bromofluorobenzene	102%	83-118%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: FC12099
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
FC12099-3MS	5E44827.D	5	12/22/23	JW	n/a	n/a	V5E1996
FC12099-3MSD	5E44828.D	5	12/22/23	JW	n/a	n/a	V5E1996
FC12099-3	5E44807.D	1	12/22/23	JW	n/a	n/a	V5E1996

The QC reported here applies to the following samples: **Method:** SW846 8260D

FC12099-3, FC12099-9, FC12099-10, FC12099-11, FC12099-15, FC12099-17, FC12099-18, FC12099-20, FC12099-21, FC12099-22

CAS No.	Compound	FC12099-3 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	25	U	625	647	104	625	458	73	34*	50-147/21
71-43-2	Benzene	1.0	U	125	135	108	125	92.7	74*	37*	81-122/14
108-86-1	Bromobenzene	1.0	U	125	144	115	125	99.0	79*	37*	80-121/14
74-97-5	Bromochloromethane	1.0	U	125	153	122	125	100	80	42*	76-123/14
75-27-4	Bromodichloromethane	1.0	U	125	137	110	125	93.9	75*	37*	79-123/19
75-25-2	Bromoform	1.0	U	125	118	94	125	78.4	63*	40*	66-123/21
78-93-3	2-Butanone (MEK)	5.0	U	625	639	102	625	436	70	38*	56-143/18
104-51-8	n-Butylbenzene	1.0	U	125	138	110	125	89.9	72*	42*	79-126/16
135-98-8	sec-Butylbenzene	1.0	U	125	126	101	125	85.1	68*	39*	83-133/16
98-06-6	tert-Butylbenzene	1.0	U	125	140	112	125	97.2	78*	36*	80-133/16
75-15-0	Carbon Disulfide	2.0	U	125	143	114	125	100	80	35*	66-148/23
56-23-5	Carbon Tetrachloride	1.0	U	125	137	110	125	95.7	77	35*	76-136/23
108-90-7	Chlorobenzene	1.0	U	125	137	110	125	93.0	74*	38*	82-124/14
75-00-3	Chloroethane	2.0	U	125	122	98	125	66.1	53*	59*	62-144/20
67-66-3	Chloroform	1.0	U	125	143	114	125	97.7	78*	38*	80-124/15
95-49-8	o-Chlorotoluene	1.0	U	125	142	114	125	98.2	79*	36*	81-127/15
106-43-4	p-Chlorotoluene	1.0	U	125	131	105	125	89.0	71*	38*	83-130/15
124-48-1	Dibromochloromethane	1.0	U	125	141	113	125	93.5	75*	41*	78-122/19
96-12-8	1,2-Dibromo-3-chloropropane	5.0	U	125	138	110	125	93.6	75	38*	64-123/18
106-93-4	1,2-Dibromoethane	2.0	U	125	155	124*	125	101	81	42*	75-120/13
75-71-8	Dichlorodifluoromethane	2.0	U	125	141	113	125	94.9	76	39*	42-167/19
95-50-1	1,2-Dichlorobenzene	1.0	U	125	139	111	125	91.2	73*	42*	82-124/14
541-73-1	1,3-Dichlorobenzene	1.0	U	125	135	108	125	91.3	73*	39*	84-125/14
106-46-7	1,4-Dichlorobenzene	1.0	U	125	146	117	125	96.3	77*	41*	78-120/15
75-34-3	1,1-Dichloroethane	1.0	U	125	128	102	125	90.1	72*	35*	81-122/15
107-06-2	1,2-Dichloroethane	1.0	U	125	143	114	125	95.6	76	40*	75-125/14
75-35-4	1,1-Dichloroethylene	1.0	U	125	140	112	125	94.9	76*	38*	78-137/18
156-59-2	cis-1,2-Dichloroethylene	1.0	U	125	137	110	125	97.3	78	34*	78-120/15
156-60-5	trans-1,2-Dichloroethylene	1.0	U	125	137	110	125	95.2	76	36*	76-127/17
78-87-5	1,2-Dichloropropane	1.0	U	125	152	122	125	101	81	40*	76-124/14
142-28-9	1,3-Dichloropropane	1.0	U	125	158	126*	125	107	86	38*	80-118/13
594-20-7	2,2-Dichloropropane	1.0	U	125	134	107	125	91.6	73*	38*	74-139/17
563-58-6	1,1-Dichloropropene	1.0	U	125	145	116	125	98.0	78*	39*	79-131/16
10061-01-5	cis-1,3-Dichloropropene	1.0	U	125	141	113	125	92.4	74*	42*	75-118/23
10061-02-6	trans-1,3-Dichloropropene	1.0	U	125	136	109	125	87.7	70*	43*	80-120/22
100-41-4	Ethylbenzene	1.0	U	125	141	113	125	94.8	76*	39*	81-121/14

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: FC12099
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
FC12099-3MS	5E44827.D	5	12/22/23	JW	n/a	n/a	V5E1996
FC12099-3MSD	5E44828.D	5	12/22/23	JW	n/a	n/a	V5E1996
FC12099-3	5E44807.D	1	12/22/23	JW	n/a	n/a	V5E1996

The QC reported here applies to the following samples: **Method:** SW846 8260D

FC12099-3, FC12099-9, FC12099-10, FC12099-11, FC12099-15, FC12099-17, FC12099-18, FC12099-20, FC12099-21, FC12099-22

CAS No.	Compound	FC12099-3 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
87-68-3	Hexachlorobutadiene	2.0	U	125	131	105	125	88.6	71*	39*	75-142/19
591-78-6	2-Hexanone	10	U	625	725	116	625	500	80	37*	61-129/18
98-82-8	Isopropylbenzene	1.0	U	125	133	106	125	91.3	73*	37*	83-132/15
99-87-6	p-Isopropyltoluene	1.0	U	125	131	105	125	88.0	70*	39*	79-130/16
74-83-9	Methyl Bromide	5.0	U	125	93.0	74	125	85.1	68	9	59-143/19
74-87-3	Methyl Chloride	2.0	U	125	139	111	125	96.3	77	36*	50-159/19
74-95-3	Methylene Bromide	2.0	U	125	158	126*	125	105	84	40*	78-119/14
75-09-2	Methylene Chloride	5.0	U	125	142	114	125	105	84	30*	69-135/16
108-10-1	4-Methyl-2-pentanone (MIBK)	5.0	U	625	674	108	625	472	76	35*	66-122/16
1634-04-4	Methyl Tert Butyl Ether	1.0	U	125	151	121*	125	102	82	39*	72-117/14
91-20-3	Naphthalene	5.0	U	125	142	114	125	95.8	77	39*	63-132/25
103-65-1	n-Propylbenzene	1.0	U	125	141	113	125	97.1	78*	37*	82-133/15
100-42-5	Styrene	1.0	U	125	149	119	125	102	82	37*	78-119/23
630-20-6	1,1,1,2-Tetrachloroethane	1.0	U	125	140	112	125	95.3	76*	38*	77-122/19
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U	125	146	117	125	92.4	74	45*	72-120/14
127-18-4	Tetrachloroethylene	1.0	U	125	130	104	125	88.7	71*	38*	76-135/16
108-88-3	Toluene	1.0	U	125	146	117	125	102	82	35*	80-120/14
87-61-6	1,2,3-Trichlorobenzene	2.0	U	125	140	112	125	99.2	79	34*	68-131/25
120-82-1	1,2,4-Trichlorobenzene	2.0	U	125	139	111	125	95.3	76	37*	73-129/20
71-55-6	1,1,1-Trichloroethane	1.0	U	125	142	114	125	94.2	75	40*	75-130/16
79-00-5	1,1,2-Trichloroethane	1.0	U	125	144	115	125	101	81	35*	76-119/14
79-01-6	Trichloroethylene	1.0	U	125	145	116	125	97.2	78*	39*	81-126/15
75-69-4	Trichlorofluoromethane	2.0	U	125	177	142	125	141	113	23*	71-156/21
96-18-4	1,2,3-Trichloropropane	2.0	U	125	158	126*	125	105	84	40*	77-120/16
95-63-6	1,2,4-Trimethylbenzene	1.0	U	125	144	115	125	96.4	77*	40*	79-120/18
108-67-8	1,3,5-Trimethylbenzene	1.0	U	125	144	115	125	98.9	79	37*	79-120/19
108-05-4	Vinyl Acetate	10	U	625	742	119	625	525	84	34*	43-154/14
75-01-4	Vinyl Chloride	1.0	U	125	137	110	125	98.0	78	33*	69-159/18
	m,p-Xylene	2.0	U	250	278	111	250	188	75*	39*	79-126/15
95-47-6	o-Xylene	1.0	U	125	140	112	125	95.5	76*	38*	80-127/14

CAS No.	Surrogate Recoveries	MS	MSD	FC12099-3	Limits
1868-53-7	Dibromofluoromethane	99%	99%	102%	83-118%
17060-07-0	1,2-Dichloroethane-D4	97%	101%	96%	79-125%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: FC12099
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
FC12099-3MS	5E44827.D	5	12/22/23	JW	n/a	n/a	V5E1996
FC12099-3MSD	5E44828.D	5	12/22/23	JW	n/a	n/a	V5E1996
FC12099-3	5E44807.D	1	12/22/23	JW	n/a	n/a	V5E1996

The QC reported here applies to the following samples: **Method:** SW846 8260D

FC12099-3, FC12099-9, FC12099-10, FC12099-11, FC12099-15, FC12099-17, FC12099-18, FC12099-20, FC12099-21, FC12099-22

CAS No.	Surrogate Recoveries	MS	MSD	FC12099-3	Limits
2037-26-5	Toluene-D8	99%	101%	103%	85-112%
460-00-4	4-Bromofluorobenzene	98%	99%	103%	83-118%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: FC12099
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
FC12194-13MS	1A51686.D	1	12/26/23	LT	n/a	n/a	V1A2028
FC12194-13MSD	1A51687.D	1	12/26/23	LT	n/a	n/a	V1A2028
FC12194-13	1A51678.D	1	12/26/23	LT	n/a	n/a	V1A2028

The QC reported here applies to the following samples: **Method:** SW846 8260D

FC12099-12, FC12099-13

CAS No.	Compound	FC12194-13 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
75-01-4	Vinyl Chloride	1.0	U	25	28.2	113	25	28.4	114	1	69-159/18

CAS No.	Surrogate Recoveries	MS	MSD	FC12194-13	Limits
1868-53-7	Dibromofluoromethane	99%	99%	101%	83-118%
17060-07-0	1,2-Dichloroethane-D4	110%	111%	108%	79-125%
2037-26-5	Toluene-D8	101%	101%	103%	85-112%
460-00-4	4-Bromofluorobenzene	100%	99%	101%	83-118%

* = Outside of Control Limits.

Instrument Performance Check (BFB)

Job Number: FC12099
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample: V1A1985-BFB
Lab File ID: 1A50649.D
Instrument ID: GCMS1A
Injection Date: 11/15/23
Injection Time: 05:14

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	15.0 - 40.0% of mass 95	10728	21.9		Pass
75	30.0 - 60.0% of mass 95	23191	47.3		Pass
95	Base peak, 100% relative abundance	49019	100.0		Pass
96	5.0 - 9.0% of mass 95	3164	6.45		Pass
173	Less than 2.0% of mass 174	350	0.71	(0.84) [a]	Pass
174	50.0 - 100.0% of mass 95	41496	84.7		Pass
175	5.0 - 9.0% of mass 174	3204	6.54	(7.72) [a]	Pass
176	95.0 - 101.0% of mass 174	41616	84.9	(100.3) [a]	Pass
177	5.0 - 9.0% of mass 176	2859	5.83	(6.87) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
V1A1985-IC1985	1A50651.D	11/15/23	06:16	01:02	Initial cal 1
V1A1985-IC1985	1A50653.D	11/15/23	06:48	01:34	Initial cal 8
V2A1790-IC1945	1A50653.D	11/15/23	06:48	01:34	Initial cal 8
V1A1985-IC1985	1A50655.D	11/15/23	07:25	02:11	Initial cal 2
V1A1985-IC1985	1A50657.D	11/15/23	07:57	02:43	Initial cal 3
V1A1985-IC1985	1A50659.D	11/15/23	08:29	03:15	Initial cal 4
V1A1985-ICC1985	1A50661.D	11/15/23	09:01	03:47	Initial cal 5
V1A1985-IC1985	1A50663.D	11/15/23	09:33	04:19	Initial cal 6
V1A1985-IC1985	1A50665.D	11/15/23	10:05	04:51	Initial cal 7
V1A1985-ICV1985	1A50669.D	11/15/23	13:32	08:18	Initial cal verification 5

Instrument Performance Check (BFB)

Job Number: FC12099
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample: V1A2028-BFB
Lab File ID: 1A51660.D
Instrument ID: GCMS1A
Injection Date: 12/26/23
Injection Time: 07:39

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	15.0 - 40.0% of mass 95	16178	26.0		Pass
75	30.0 - 60.0% of mass 95	32979	52.9		Pass
95	Base peak, 100% relative abundance	62291	100.0		Pass
96	5.0 - 9.0% of mass 95	4307	6.91		Pass
173	Less than 2.0% of mass 174	441	0.71	(0.83) [a]	Pass
174	50.0 - 100.0% of mass 95	53139	85.3		Pass
175	5.0 - 9.0% of mass 174	4036	6.48	(7.60) [a]	Pass
176	95.0 - 101.0% of mass 174	50893	81.7	(95.8) [a]	Pass
177	5.0 - 9.0% of mass 176	3343	5.37	(6.57) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
V1A2028-CC1985	1A51661.D	12/26/23	08:03	00:24	Continuing cal 5
V1A2028-BS	1A51662.D	12/26/23	08:28	00:49	Blank Spike
V1A2028-MB	1A51664.D	12/26/23	09:16	01:37	Method Blank
ZZZZZZ	1A51666.D	12/26/23	10:05	02:26	(unrelated sample)
ZZZZZZ	1A51667.D	12/26/23	10:30	02:51	(unrelated sample)
ZZZZZZ	1A51668.D	12/26/23	10:54	03:15	(unrelated sample)
ZZZZZZ	1A51669.D	12/26/23	11:18	03:39	(unrelated sample)
ZZZZZZ	1A51670.D	12/26/23	11:43	04:04	(unrelated sample)
ZZZZZZ	1A51671.D	12/26/23	12:07	04:28	(unrelated sample)
ZZZZZZ	1A51672.D	12/26/23	12:31	04:52	(unrelated sample)
ZZZZZZ	1A51673.D	12/26/23	12:56	05:17	(unrelated sample)
ZZZZZZ	1A51674.D	12/26/23	13:20	05:41	(unrelated sample)
ZZZZZZ	1A51675.D	12/26/23	13:45	06:06	(unrelated sample)
ZZZZZZ	1A51676.D	12/26/23	14:09	06:30	(unrelated sample)
ZZZZZZ	1A51677.D	12/26/23	14:33	06:54	(unrelated sample)
FC12194-13	1A51678.D	12/26/23	14:58	07:19	(used for QC only; not part of job FC12099)
ZZZZZZ	1A51679.D	12/26/23	15:22	07:43	(unrelated sample)
ZZZZZZ	1A51680.D	12/26/23	15:47	08:08	(unrelated sample)
ZZZZZZ	1A51681.D	12/26/23	16:11	08:32	(unrelated sample)
ZZZZZZ	1A51682.D	12/26/23	16:35	08:56	(unrelated sample)
FC12099-12	1A51683.D	12/26/23	17:00	09:21	CRHE-MW0034-035.0-20231219
FC12099-13	1A51684.D	12/26/23	17:24	09:45	CRHE-MW0042-040.0-20231219
ZZZZZZ	1A51685.D	12/26/23	17:48	10:09	(unrelated sample)
FC12194-13MS	1A51686.D	12/26/23	18:13	10:34	Matrix Spike

Instrument Performance Check (BFB)

Job Number: FC12099
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample:	V1A2028-BFB	**Injection Date:**	12/26/23
Lab File ID:	1A51660.D	**Injection Time:**	07:39
Instrument ID:	GCMS1A		

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
FC12194-13MSD	1A51687.D	12/26/23	18:37	10:58	Matrix Spike Duplicate
V1A2028-ECC1985	1A51688.D	12/26/23	19:02	11:23	Ending cal 5

Instrument Performance Check (BFB)

Job Number: FC12099
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample: V5E1994-BFB
Lab File ID: 5E44753.D
Instrument ID: GCMS5E
Injection Date: 12/20/23
Injection Time: 12:38

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	15.0 - 40.0% of mass 95	9726	21.5		Pass
75	30.0 - 60.0% of mass 95	23501	51.8		Pass
95	Base peak, 100% relative abundance	45333	100.0		Pass
96	5.0 - 9.0% of mass 95	3008	6.64		Pass
173	Less than 2.0% of mass 174	468	1.03	(1.12) [a]	Pass
174	50.0 - 100.0% of mass 95	41899	92.4		Pass
175	5.0 - 9.0% of mass 174	3511	7.74	(8.38) [a]	Pass
176	95.0 - 101.0% of mass 174	42037	92.7	(100.3) [a]	Pass
177	5.0 - 9.0% of mass 176	2583	5.70	(6.14) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
V5E1994-IC1994	5E44758.D	12/20/23	15:52	03:14	Initial cal 1
V5E1994-IC1994	5E44759.D	12/20/23	16:15	03:37	Initial cal 8
V5E1994-IC1994	5E44760.D	12/20/23	16:38	04:00	Initial cal 2
V5E1994-IC1994	5E44761.D	12/20/23	17:01	04:23	Initial cal 3
V5E1994-IC1994	5E44762.D	12/20/23	17:24	04:46	Initial cal 4
V5E1994-ICC1994	5E44763.D	12/20/23	17:47	05:09	Initial cal 5
V5E1994-IC1994	5E44764.D	12/20/23	18:10	05:32	Initial cal 6
V5E1994-IC1994	5E44765.D	12/20/23	18:33	05:55	Initial cal 7
V5E1994-ICV1994	5E44767.D	12/20/23	19:19	06:41	Initial cal verification 5

Instrument Performance Check (BFB)

Job Number: FC12099
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample: V5E1996-BFB
Lab File ID: 5E44802.D
Instrument ID: GCMS5E
Injection Date: 12/22/23
Injection Time: 08:39

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	15.0 - 40.0% of mass 95	9842	21.0		Pass
75	30.0 - 60.0% of mass 95	24909	53.0		Pass
95	Base peak, 100% relative abundance	46955	100.0		Pass
96	5.0 - 9.0% of mass 95	3130	6.67		Pass
173	Less than 2.0% of mass 174	453	0.96	(1.02) [a]	Pass
174	50.0 - 100.0% of mass 95	44584	95.0		Pass
175	5.0 - 9.0% of mass 174	3623	7.72	(8.13) [a]	Pass
176	95.0 - 101.0% of mass 174	44499	94.8	(99.8) [a]	Pass
177	5.0 - 9.0% of mass 176	2858	6.09	(6.42) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
V5E1996-CC1994	5E44803.D	12/22/23	09:08	00:29	Continuing cal 5
V5E1996-BS	5E44804.D	12/22/23	09:44	01:05	Blank Spike
V5E1996-MB	5E44806.D	12/22/23	10:29	01:50	Method Blank
FC12099-3	5E44807.D	12/22/23	10:52	02:13	CRHE-MW0025-030.0-20231218
FC12099-9	5E44808.D	12/22/23	11:15	02:36	CRHE-MW0032-045.0-20231218
FC12099-10	5E44809.D	12/22/23	11:38	02:59	CRHE-MW0027-045.0-20231219
FC12099-11	5E44810.D	12/22/23	12:01	03:22	CRHE-MW0041-035.0-20231219
FC12099-12	5E44811.D	12/22/23	12:25	03:46	CRHE-MW0034-035.0-20231219
FC12099-13	5E44812.D	12/22/23	12:47	04:08	CRHE-MW0042-040.0-20231219
FC12099-17	5E44813.D	12/22/23	13:10	04:31	CRHE-IW0017I-030.0-20231218
FC12099-18	5E44814.D	12/22/23	13:33	04:54	CRHE-MW0035-045.0-20231218
FC12099-20	5E44815.D	12/22/23	13:56	05:17	CRHE-MW0039-030.0-20231219
FC12099-21	5E44816.D	12/22/23	14:19	05:40	CRHE-TB-20231218-01
FC12099-22	5E44817.D	12/22/23	14:42	06:03	CRHE-TB-20231218-02
ZZZZZZ	5E44818.D	12/22/23	15:05	06:26	(unrelated sample)
ZZZZZZ	5E44819.D	12/22/23	15:28	06:49	(unrelated sample)
ZZZZZZ	5E44820.D	12/22/23	15:51	07:12	(unrelated sample)
ZZZZZZ	5E44821.D	12/22/23	16:14	07:35	(unrelated sample)
ZZZZZZ	5E44822.D	12/22/23	16:37	07:58	(unrelated sample)
ZZZZZZ	5E44823.D	12/22/23	17:00	08:21	(unrelated sample)
ZZZZZZ	5E44824.D	12/22/23	17:23	08:44	(unrelated sample)
FC12099-15	5E44825.D	12/22/23	17:46	09:07	CRHE-IW0019I-040.0-20231218
FC12099-3MS	5E44827.D	12/22/23	18:32	09:53	Matrix Spike
FC12099-3MSD	5E44828.D	12/22/23	18:54	10:15	Matrix Spike Duplicate

Instrument Performance Check (BFB)

Job Number: FC12099
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample:	V5E1996-BFB	**Injection Date:**	12/22/23
Lab File ID:	5E44802.D	**Injection Time:**	08:39
Instrument ID:	GCMS5E		

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
V5E1996-ECC1994	5E44829.D	12/22/23	19:17	10:38	Ending cal 5

Instrument Performance Check (BFB)

Job Number: FC12099
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample: VA3444-BFB
Lab File ID: A0239065A.D
Instrument ID: GCMSA
Injection Date: 12/04/23
Injection Time: 11:33

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	15.0 - 40.0% of mass 95	327915	18.9		Pass
75	30.0 - 60.0% of mass 95	760960	43.9		Pass
95	Base peak, 100% relative abundance	1731583	100.0		Pass
96	5.0 - 9.0% of mass 95	114787	6.63		Pass
173	Less than 2.0% of mass 174	9234	0.53	(0.63) [a]	Pass
174	50.0 - 100.0% of mass 95	1468575	84.8		Pass
175	5.0 - 9.0% of mass 174	106530	6.15	(7.25) [a]	Pass
176	95.0 - 101.0% of mass 174	1412943	81.6	(96.2) [a]	Pass
177	5.0 - 9.0% of mass 176	92557	5.35	(6.55) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
VA3444-IC3444	A0239067.D	12/04/23	12:29	00:56	Initial cal 1
VA3444-IC3444	A0239068.D	12/04/23	12:56	01:23	Initial cal 2
VA3444-IC3444	A0239069.D	12/04/23	13:27	01:54	Initial cal 3
VA3444-IC3444	A0239070.D	12/04/23	13:53	02:20	Initial cal 4
VA3444-ICC3444	A0239071.D	12/04/23	14:20	02:47	Initial cal 5
VA3444-IC3444	A0239072.D	12/04/23	14:48	03:15	Initial cal 6
VA3444-IC3444	A0239073.D	12/04/23	15:14	03:41	Initial cal 7
VA3444-ICV3444	A0239075.D	12/04/23	16:07	04:34	Initial cal verification 5
VA3444-BS	A0239076.D	12/04/23	16:35	05:02	Blank Spike
VA3444-MB	A0239078.D	12/04/23	17:29	05:56	Method Blank
ZZZZZZ	A0239079.D	12/04/23	17:56	06:23	(unrelated sample)
DA60292-2	A0239080.D	12/04/23	18:23	06:50	(used for QC only; not part of job FC12099)
ZZZZZZ	A0239081.D	12/04/23	18:50	07:17	(unrelated sample)
ZZZZZZ	A0239082.D	12/04/23	19:17	07:44	(unrelated sample)
DA60292-2MS	A0239083.D	12/04/23	19:44	08:11	Matrix Spike
DA60292-2MSD	A0239084.D	12/04/23	20:11	08:38	Matrix Spike Duplicate

Instrument Performance Check (BFB)

Job Number: FC12099
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample: VA3455-BFB
Lab File ID: A0239264.D
Instrument ID: GCMSA
Injection Date: 12/26/23
Injection Time: 09:23

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	15.0 - 40.0% of mass 95	362475	22.7		Pass
75	30.0 - 60.0% of mass 95	748989	47.0		Pass
95	Base peak, 100% relative abundance	1595210	100.0		Pass
96	5.0 - 9.0% of mass 95	104373	6.54		Pass
173	Less than 2.0% of mass 174	0	0.00	(0.00) [a]	Pass
174	50.0 - 100.0% of mass 95	1489738	93.4		Pass
175	5.0 - 9.0% of mass 174	111679	7.00	(7.50) [a]	Pass
176	95.0 - 101.0% of mass 174	1437525	90.1	(96.5) [a]	Pass
177	5.0 - 9.0% of mass 176	94739	5.94	(6.59) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
VA3455-CC3444	A0239266.D	12/26/23	10:16	00:53	Continuing cal 5
VA3455-BS	A0239268.D	12/26/23	11:25	02:02	Blank Spike
VA3457-BS	A0239268.D	12/26/23	11:25	02:02	Blank Spike
VA3455-MB	A0239270.D	12/26/23	12:20	02:57	Method Blank
VA3457-MB	A0239270.D	12/26/23	12:20	02:57	Method Blank
FC12099-3	A0239271.D	12/26/23	12:48	03:25	CRHE-MW0025-030.0-20231218
FC12099-11	A0239272.D	12/26/23	13:15	03:52	CRHE-MW0041-035.0-20231219
FC12099-18	A0239273.D	12/26/23	13:42	04:19	CRHE-MW0035-045.0-20231218
FC12099-20	A0239274.D	12/26/23	14:08	04:45	CRHE-MW0039-030.0-20231219
FC12127-1	A0239275.D	12/26/23	14:30	05:07	(used for QC only; not part of job FC12099)
ZZZZZZ	A0239277.D	12/26/23	15:13	05:50	(unrelated sample)
ZZZZZZ	A0239278.D	12/26/23	15:37	06:14	(unrelated sample)
ZZZZZZ	A0239279.D	12/26/23	15:58	06:35	(unrelated sample)
ZZZZZZ	A0239280.D	12/26/23	16:20	06:57	(unrelated sample)
ZZZZZZ	A0239281.D	12/26/23	16:41	07:18	(unrelated sample)
ZZZZZZ	A0239283.D	12/26/23	17:24	08:01	(unrelated sample)
ZZZZZZ	A0239284.D	12/26/23	17:46	08:23	(unrelated sample)
ZZZZZZ	A0239285.D	12/26/23	18:08	08:45	(unrelated sample)
ZZZZZZ	A0239286.D	12/26/23	18:29	09:06	(unrelated sample)
ZZZZZZ	A0239287.D	12/26/23	18:51	09:28	(unrelated sample)
ZZZZZZ	A0239288.D	12/26/23	19:13	09:50	(unrelated sample)
FC12127-1MS	A0239291.D	12/26/23	20:18	10:55	Matrix Spike
FC12127-1MSD	A0239292.D	12/26/23	20:39	11:16	Matrix Spike Duplicate
VA3456-CC3444	A0239294.D	12/26/23	21:23	12:00	Continuing cal 5

Instrument Performance Check (BFB)

Job Number: FC12099
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample:	VA3455-BFB	**Injection Date:**	12/26/23
Lab File ID:	A0239264.D	**Injection Time:**	09:23
Instrument ID:	GCMSA		

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
VA3456-BS	A0239295.D	12/26/23	21:44	12:21	Blank Spike
VA3456-MB	A0239297.D	12/26/23	22:28	13:05	Method Blank
ZZZZZZ	A0239298.D	12/26/23	22:50	13:27	(unrelated sample)
FC12196-17	A0239299.D	12/26/23	23:11	13:48	(used for QC only; not part of job FC12099)
ZZZZZZ	A0239302.D	12/27/23	00:16	14:53	(unrelated sample)
ZZZZZZ	A0239304.D	12/27/23	00:59	15:36	(unrelated sample)
ZZZZZZ	A0239305.D	12/27/23	01:21	15:58	(unrelated sample)
ZZZZZZ	A0239307.D	12/27/23	02:04	16:41	(unrelated sample)
ZZZZZZ	A0239308.D	12/27/23	02:26	17:03	(unrelated sample)
ZZZZZZ	A0239310.D	12/27/23	03:09	17:46	(unrelated sample)
ZZZZZZ	A0239311.D	12/27/23	03:30	18:07	(unrelated sample)
FC12196-17MS	A0239313.D	12/27/23	04:14	18:51	Matrix Spike
FC12196-17MSD	A0239314.D	12/27/23	04:35	19:12	Matrix Spike Duplicate

Internal Standard Area Summary

Job Number: FC12099
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Check Std:	V1A2028-CC1985	**Injection Date:**	12/26/23
Lab File ID:	1A51661.D	**Injection Time:**	08:03
Instrument ID:	GCMS1A	**Method:**	SW846 8260D

	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT
Initial Cal [a]	213155	3.40	152111	5.35	80195	7.09
Check Std [b]	309968	3.40	224806	5.35	110640	7.10
Upper Limit [c]	619936	3.57	449612	5.52	221280	7.27
Lower Limit [d]	154984	3.23	112403	5.18	55320	6.93

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT
V1A2028-BS	309508	3.40	224519	5.35	112687	7.10
V1A2028-MB [e]	297564	3.40	211361	5.35	107849	7.10
ZZZZZZ	289997	3.40	206086	5.35	102206	7.09
ZZZZZZ	287679	3.40	204602	5.35	104243	7.09
ZZZZZZ	281239	3.40	203038	5.35	99502	7.09
ZZZZZZ	285366	3.40	202907	5.35	101900	7.09
ZZZZZZ	282233	3.40	203078	5.35	101185	7.09
ZZZZZZ	275293	3.40	199088	5.35	100373	7.09
ZZZZZZ	271102	3.40	195643	5.35	96919	7.10
ZZZZZZ	274696	3.40	197580	5.35	98368	7.10
ZZZZZZ	273260	3.40	194204	5.35	96017	7.10
ZZZZZZ	272175	3.40	196922	5.35	97697	7.09
ZZZZZZ	265422	3.40	192059	5.35	95319	7.09
ZZZZZZ	271475	3.40	194861	5.35	96905	7.10
FC12194-13	267705	3.40	191112	5.35	94928	7.09
ZZZZZZ	275932	3.40	194844	5.35	97651	7.10
ZZZZZZ	268243	3.40	194577	5.35	95240	7.09
ZZZZZZ	267411	3.40	190260	5.35	96038	7.09
ZZZZZZ	275060	3.40	200108	5.35	101003	7.10
FC12099-12	264038	3.40	186389	5.35	94215	7.10
FC12099-13	267428	3.40	189358	5.35	92952	7.09
ZZZZZZ	262985	3.40	189189	5.35	94824	7.10

IS 1 = Fluorobenzene
IS 2 = Chlorobenzene-D5
IS 3 = 1,4-Dichlorobenzene-d4

(a) Initial Cal is: V1A1985-ICC1985 1A50661.D 11/15/23 09:01
(b) Check Std Limit = -50 to + 100% of initial cal area.
(c) Upper Limit = + 100% of check standard area; Retention time + 0.167 minutes.
(d) Lower Limit = -50% of check standard area; Retention time -0.167 minutes.
(e) Sample was treated with an anti-foaming agent.

Internal Standard Area Summary

Job Number: FC12099
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Check Std:	V5E1996-CC1994	**Injection Date:**	12/22/23
Lab File ID:	5E44803.D	**Injection Time:**	09:08
Instrument ID:	GCMS5E	**Method:**	SW846 8260D

	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT
Initial Cal [a]	371111	8.46	292823	11.60	168062	13.96
Check Std [b]	364014	8.46	293025	11.60	168837	13.96
Upper Limit [c]	728028	8.63	586050	11.77	337674	14.13
Lower Limit [d]	182007	8.29	146513	11.43	84419	13.79

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT
V5E1996-BS	360505	8.46	280176	11.60	160776	13.96
V5E1996-MB [e]	315520	8.46	241686	11.60	132406	13.96
FC12099-3	312909	8.46	241168	11.60	130106	13.96
FC12099-9	307217	8.46	235707	11.60	127110	13.96
FC12099-10	313192	8.46	241454	11.60	134092	13.96
FC12099-11	304778	8.46	235363	11.60	128613	13.96
FC12099-12	303832	8.46	235161	11.60	126705	13.96
FC12099-13	302585	8.46	236496	11.60	128287	13.96
FC12099-17	302983	8.46	233309	11.60	126233	13.96
FC12099-18	302034	8.46	233925	11.60	127670	13.96
FC12099-20	302341	8.46	235359	11.60	126960	13.96
FC12099-21	301496	8.46	237281	11.60	126034	13.96
FC12099-22	303022	8.46	234395	11.60	126794	13.96
ZZZZZZ	302651	8.46	233547	11.60	123748	13.96
ZZZZZZ	296641	8.46	230981	11.60	123922	13.96
ZZZZZZ	300673	8.46	233723	11.60	125446	13.96
ZZZZZZ	298017	8.46	234858	11.60	128905	13.96
ZZZZZZ	293834	8.46	228308	11.60	124582	13.96
ZZZZZZ	298041	8.46	230943	11.60	125503	13.96
ZZZZZZ	292394	8.46	228433	11.60	135072	13.96
FC12099-15	315725	8.46	245944	11.60	130875	13.96
FC12099-3MS	338109	8.46	270181	11.60	154641	13.96
FC12099-3MSD	332450	8.46	258653	11.60	147487	13.96
V5E1996-ECC1994	352112	8.46	280290	11.60	163329	13.96

IS 1 = Fluorobenzene
IS 2 = Chlorobenzene-D5
IS 3 = 1,4-Dichlorobenzene-d4

(a) Initial Cal is: V5E1994-ICC1994 5E44763.D 12/20/23 17:47
(b) Check Std Limit = -50 to + 100% of initial cal area.
(c) Upper Limit = + 100% of check standard area; Retention time + 0.167 minutes.
(d) Lower Limit = -50% of check standard area; Retention time -0.167 minutes.

Internal Standard Area Summary

Job Number: FC12099
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Check Std:	V5E1996-CC1994	**Injection Date:**	12/22/23
Lab File ID:	5E44803.D	**Injection Time:**	09:08
Instrument ID:	GCMS5E	**Method:**	SW846 8260D

Lab Sample ID	IS 1 AREA	IS 1 RT	IS 2 AREA	IS 2 RT	IS 3 AREA	IS 3 RT

(e) Sample was treated with an anti-foaming agent.

Internal Standard Area Summary

Job Number: FC12099
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Check Std:	VA3455-CC3444	**Injection Date:**	12/26/23
Lab File ID:	A0239266.D	**Injection Time:**	10:16
Instrument ID:	GCMSA	**Method:**	SW846 8260D BY SIM

	IS 1 AREA	RT	IS 2 AREA	RT
Initial Cal [a]	39466	7.81	5851	8.69
Check Std [b]	27417	7.81	3989	8.70
Upper Limit [c]	54834	7.98	7978	8.87
Lower Limit [d]	13709	7.64	1995	8.53

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT
VA3457-BS	25668	7.81	3133	8.71
VA3455-BS [e]	25668	7.81	3133	8.71
VA3455-MB	24368	7.81	2098	8.71
VA3457-MB	24368	7.81	2098	8.71
FC12099-3	27609	7.81	3706	8.70
FC12099-11	25778	7.81	2915	8.70
FC12099-18	27723	7.81	2911	8.70
FC12099-20	25916	7.81	3256	8.70
FC12127-1	26632	7.81	2587	8.70
ZZZZZZ	24988	7.81	2203	8.70
ZZZZZZ	27165	7.81	3226	8.70
ZZZZZZ	26925	7.81	2802	8.70
ZZZZZZ	24197	7.81	2515	8.70
ZZZZZZ	25748	7.81	3244	8.70
ZZZZZZ	26501	7.81	2787	8.70
ZZZZZZ	31577	7.81	2289	8.70
ZZZZZZ	33542	7.80	2575	8.70
ZZZZZZ	29829	7.81	7141	8.70
ZZZZZZ	31484	7.81	5981	8.70
ZZZZZZ	30013	7.81	4509	8.70
FC12127-1MS	32725	7.81	4059	8.70
FC12127-1MSD	31526	7.81	6145	8.70

IS 1 = Fluorobenzene
IS 2 = 1,4-Dioxane-D8

(a) Initial Cal is: VA3444-ICC3444 A0239071.D 12/04/23 14:20
(b) Check Std Limit = -50 to + 100% of initial cal area.
(c) Upper Limit = + 100% of check standard area; Retention time + 0.167 minutes.
(d) Lower Limit = -50% of check standard area; Retention time -0.167 minutes.
(e) No MS/MSD available for this run.

Surrogate Recovery Summary

Job Number: FC12099
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Method: SW846 8260D BY SIM **Matrix:** AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2
FC12099-3	A0239271.D	100	101
FC12099-11	A0239272.D	100	98
FC12099-18	A0239273.D	100	100
FC12099-20	A0239274.D	100	99
VA3455-BS	A0239268.D	99	98
VA3455-MB	A0239270.D	101	96

Surrogate Compounds	Recovery Limits
S1 = 1,2-Dichloroethane-D4	74-125%
S2 = Toluene-D8	88-111%

Surrogate Recovery Summary

Job Number: FC12099
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Method: SW846 8260D **Matrix:** AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3	S4
FC12099-3	5E44807.D	102	96	103	103
FC12099-9	5E44808.D	101	98	103	104
FC12099-10	5E44809.D	102	97	104	100
FC12099-11	5E44810.D	101	96	102	102
FC12099-12	1A51683.D	98	107	102	100
FC12099-12	5E44811.D	101	94	102	102
FC12099-13	1A51684.D	96	107	102	101
FC12099-13	5E44812.D	102	97	101	103
FC12099-15	5E44825.D	101	96	102	103
FC12099-17	5E44813.D	99	97	102	101
FC12099-18	5E44814.D	101	97	102	104
FC12099-20	5E44815.D	101	97	103	103
FC12099-21	5E44816.D	101	96	101	104
FC12099-22	5E44817.D	101	95	102	103
FC12099-3MS	5E44827.D	99	97	99	98
FC12099-3MSD	5E44828.D	99	101	101	99
FC12194-13MS	1A51686.D	99	110	101	100
FC12194-13MSD	1A51687.D	99	111	101	99
V1A2028-BS	1A51662.D	98	108	102	102
V1A2028-MB	1A51664.D	97	105	103	100
V5E1996-BS	5E44804.D	101	102	101	100
V5E1996-MB	5E44806.D	103	95	103	107

Surrogate Compounds	Recovery Limits
S1 = Dibromofluoromethane	83-118%
S2 = 1,2-Dichloroethane-D4	79-125%
S3 = Toluene-D8	85-112%
S4 = 4-Bromofluorobenzene	83-118%

Initial Calibration Summary

Job Number: FC12099
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample: V1A1985-ICC1985
Lab FileID: 1A50661.D

Response Factor Report MSVOA17

Method : C:\msdchem\1\MET...V1A_11-15-2023.M (RTE Integrator)
Title : SW-846 Method 5035A/8260B
Last Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration

Calibration Files
1 =1A50651.D 2 =1A50655.D 3 =1A50657.D 4 =1A50659.D
5 =1A50661.D 6 =1A50663.D 7 =1A50665.D 8 =1A50653.D

Compound	1	2	3	4	5	6	7	8	Avg	%RSD
1) I Fluorobenzene	----------	----------	----------	ISTD	----------	----------	----------	----------		
2) Dichlorodifl	0.210	0.194	0.183	0.191	0.183	0.189	0.176	0.202	0.191	5.70
3) Chloromethan	0.368	0.269	0.266	0.292	0.277	0.259	0.249	0.311	0.286	13.36
4) 1,3-butadien		0.435	0.400	0.365	0.347	0.335	0.327	0.302	0.359	12.78
5) Vinyl Chlori	0.316	0.288	0.265	0.291	0.282	0.274	0.260	0.312	0.286	7.15
6) Bromomethane		0.107	0.094	0.107	0.100	0.101	0.096	0.118	0.103	7.94
7) Chloroethane	0.217	0.179	0.174	0.191	0.180	0.160	0.145	0.214	0.182	13.46
8) Trichloroflu	0.469	0.396	0.375	0.407	0.403	0.419	0.381	0.405	0.407	7.11
9) Ethyl Ether	0.273	0.264	0.234	0.249	0.247	0.240	0.239	0.246	0.249	5.31
10) Ethanol		0.007	0.006	0.006	0.006	0.005	0.005		0.006	13.74
11) 1,2-Dichloro	0.341	0.344	0.305	0.316	0.318	0.318	0.315	0.342	0.325	4.70
12) 1,1-Dichloro	0.417	0.462	0.429	0.438	0.428	0.427	0.426	0.426	0.432	3.13
13) Freon 113	0.232	0.268	0.250	0.241	0.248	0.250	0.245	0.236	0.246	4.39
14) Carbon Disul	0.871	0.885	0.777	0.796	0.762	0.759	0.738	0.812	0.800	6.66
15) Iodomethane	0.124	0.112	0.113	0.182	0.204	0.193	0.194	0.090	0.151	30.39
---- Linear regr., Force(0,0) ---- Coefficient = 0.9913										
Response Ratio = 0.00000 + 0.18808 *A										
16) Acrolein	0.085	0.077	0.073	0.078	0.074	0.074	0.073	0.082	0.077	6.03
17) Allyl chlori	0.509	0.400	0.398	0.403	0.390	0.385	0.374	0.446	0.413	10.65
18) Methylene Ch	1.048	0.690	0.510	0.458	0.427	0.408	0.386	0.705	0.579	39.00
---- Linear regr., Force(0,0) ---- Coefficient = 0.9944										
Response Ratio = 0.00000 + 0.42186 *A										
19) Acetone	0.150	0.127	0.115	0.122	0.115	0.111	0.109	0.145	0.124	12.66
20) Methyl aceta	0.368	0.360	0.308	0.332	0.325	0.317	0.317	0.358	0.336	6.84
21) trans-1,2-Di	0.426	0.454	0.419	0.446	0.431	0.424	0.418	0.452	0.434	3.41
22) Hexane	0.324	0.309	0.288	0.293	0.285	0.294	0.287	0.295	0.297	4.41
23) Methyl Tert	0.826	0.844	0.775	0.820	0.790	0.785	0.782	0.840	0.808	3.45
24) Acetonitrile	0.124	0.055	0.049	0.048	0.044	0.042	0.041	0.066	0.059	47.18
---- Linear regr., Force(0,0) ---- Coefficient = 0.9976										
Response Ratio = 0.00000 + 0.04345 *A										
25) Tert Butyl A	0.065	0.060	0.057	0.061	0.058	0.055	0.056	0.065	0.059	6.48
26) Di-isopropyl	0.991	1.087	0.971	1.024	1.006	1.009	0.994	1.032	1.014	3.45
27) Chloroprene	1.407	1.239	1.225	1.260	1.215	1.200	1.202	1.186	1.242	5.70
28) 1,1-Dichloro	0.562	0.592	0.544	0.575	0.558	0.546	0.545	0.582	0.563	3.24
29) Acrylonitril	0.160	0.154	0.149	0.152	0.148	0.145	0.145	0.150	0.150	3.20
30) ETBE	0.913	0.993	0.883	0.965	0.939	0.936	0.937	0.915	0.935	3.58
31) Vinyl acetat	0.779	0.724	0.752	0.773	0.743	0.764	0.764	0.736	0.754	2.51
32) cis-1,2-Dich	0.331	0.328	0.298	0.314	0.302	0.297	0.295	0.326	0.311	4.89
33) 2,2-Dichloro	0.405	0.411	0.379	0.399	0.385	0.378	0.374	0.411	0.393	3.95
34) Bromochlorom	0.163	0.167	0.154	0.166	0.157	0.148	0.138	0.169	0.158	6.67
35) Cyclohexane	0.521	0.586	0.538	0.538	0.545	0.543	0.542	0.541	0.544	3.41
36) Chloroform	0.520	0.545	0.501	0.528	0.510	0.503	0.500	0.527	0.517	3.11
37) Ethyl acetat	0.447	0.406	0.409	0.428	0.418	0.421	0.423	0.415	0.421	3.04

Initial Calibration Summary

Job Number: FC12099
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample: V1A1985-ICC1985
Lab FileID: 1A50661.D

38)	Tetrahydrofu	0.188	0.162	0.148	0.158	0.148	0.147	0.146	0.178	0.159	10.07
39)	Dibromofluor	0.294	0.294	0.299	0.296	0.297	0.287	0.292	0.299	0.295	1.40
40)	Carbon Tetra	0.413	0.416	0.397	0.401	0.403	0.397	0.406	0.374	0.401	3.19
41)	1,1,1-Trichl	0.443	0.445	0.417	0.440	0.428	0.431	0.426	0.437	0.433	2.24
42)	2-Butanone	0.234	0.212	0.195	0.217	0.207	0.202	0.200	0.217	0.210	5.91
43)	1,1-Dichloro	0.368	0.413	0.370	0.385	0.371	0.366	0.365	0.386	0.378	4.36
44)	tert-Butyl f	0.269	0.256	0.242	0.267	0.261	0.263	0.270	0.238	0.258	4.73
45)	Propionitril	0.080	0.067	0.063	0.064	0.060	0.058	0.057	0.068	0.065	11.46
46)	Methacryloni	0.283	0.239	0.230	0.246	0.236	0.236	0.237	0.248	0.244	6.78
47)	Benzene	1.141	1.178	1.064	1.135	1.095	1.072	1.065	1.129	1.110	3.78
48)	TAME	0.758	0.845	0.737	0.804	0.787	0.788	0.782	0.769	0.784	4.10
49)	1,2-Dichloro	0.314	0.314	0.321	0.328	0.330	0.339	0.344	0.320	0.326	3.42
50)	1,2-Dichloro	0.427	0.434	0.394	0.431	0.410	0.402	0.398	0.424	0.415	3.80
51)	Isobutyl Alc	0.043	0.037	0.037	0.037	0.035	0.031	0.027	0.039	0.036	13.91
52)	Tert Amyl Al	0.050	0.050	0.048	0.051	0.048	0.046	0.047	0.052	0.049	4.36
53)	Trichloroeth	0.325	0.334	0.299	0.311	0.301	0.298	0.298	0.316	0.310	4.39
54)	Methylcycloh	0.478	0.535	0.477	0.489	0.497	0.505	0.508	0.472	0.495	4.21
55)	Dibromometha	0.228	0.208	0.189	0.198	0.191	0.188	0.188	0.197	0.198	7.02
56)	1,2-Dichloro	0.312	0.337	0.307	0.320	0.311	0.304	0.303	0.320	0.314	3.62
57)	Bromodichlor	0.410	0.406	0.370	0.393	0.388	0.375	0.377	0.400	0.390	3.83
58)	Methyl metha	0.489	0.360	0.339	0.356	0.342	0.335	0.335	0.338	0.362	14.48
59)	1,4-Dioxane	0.003	0.005	0.004	0.004	0.004	0.004	0.004	0.004	0.004	10.00
60)	2-Chloroethy	0.146	0.177	0.167	0.188	0.180	0.185	0.183	0.105	0.166	16.83
		---- Linear regr., Force(0,0) ---- Coefficient = 0.9990									
		Response Ratio = 0.00000 + 0.18198 *A									
61)	cis-1,3-Dich	0.461	0.482	0.434	0.464	0.451	0.448	0.441	0.447	0.453	3.35
62)	I Chlorobenzene-d5	----------ISTD----------									
63)	Toluene-d8	1.335	1.321	1.344	1.324	1.331	1.341	1.359	1.325	1.335	0.95
64)	Toluene	1.682	1.730	1.564	1.628	1.575	1.563	1.575	1.684	1.625	4.06
65)	2-Nitropropa	0.211	0.161	0.147	0.164	0.161	0.164	0.165	0.180	0.169	11.24
66)	4-Methyl-2-p	0.629	0.581	0.549	0.603	0.579	0.575	0.591	0.615	0.590	4.30
67)	trans-1,3-Di	0.586	0.591	0.540	0.596	0.583	0.586	0.583	0.537	0.575	4.03
68)	Tetrachloroe	0.461	0.490	0.441	0.468	0.460	0.459	0.470	0.429	0.460	4.00
69)	Ethyl methac	0.497	0.473	0.459	0.488	0.469	0.466	0.475	0.469	0.475	2.61
70)	1,1,2-Trichl	0.324	0.347	0.312	0.336	0.326	0.321	0.318	0.339	0.328	3.61
71)	Dibromochlor	0.382	0.421	0.388	0.432	0.433	0.438	0.436	0.404	0.417	5.35
72)	1,3-Dichloro	0.614	0.638	0.578	0.620	0.602	0.592	0.589	0.592	0.603	3.28
73)	1,2-Dibromoe	0.448	0.441	0.395	0.427	0.412	0.412	0.410	0.416	0.420	4.18
74)	3,3-Dimethyl	0.084	0.077	0.075	0.078	0.075	0.078	0.087	0.075	0.079	5.76
75)	2-hexanone	0.618	0.564	0.542	0.582	0.550	0.550	0.584	0.584	0.572	4.38
76)	1-Chlorohexa	0.706	0.569	0.546	0.539	0.523	0.521	0.533	0.579	0.565	10.78
77)	Ethylbenzene	1.695	1.882	1.724	1.814	1.738	1.725	1.726	1.767	1.759	3.48
78)	Chlorobenzen	1.071	1.150	1.048	1.114	1.055	1.043	1.032	1.098	1.076	3.80
79)	1,1,1,2-Tetr	0.352	0.413	0.379	0.405	0.403	0.403	0.398	0.379	0.392	5.15
80)	m,p-Xylene	1.424	1.462	1.347	1.417	1.371	1.349	1.347	1.442	1.395	3.36
81)	o-Xylene	1.510	1.545	1.431	1.493	1.447	1.437	1.422	1.589	1.484	4.09
82)	Styrene	1.135	1.167	1.085	1.164	1.116	1.094	1.091	1.146	1.125	2.94
83)	Bromoform	0.271	0.282	0.260	0.288	0.288	0.292	0.292	0.276	0.281	4.08
84)	Isopropylben	1.690	1.806	1.709	1.780	1.715	1.686	1.672	1.762	1.728	2.83
85)	I 1,4-Dichlorobenzene-d	----------ISTD----------									
86)	4-Bromofluor	0.834	0.828	0.819	0.841	0.835	0.841	0.851	0.826	0.834	1.20
87)	cis-1,4-Dich	0.396	0.285	0.253	0.291	0.284	0.289	0.288	0.300	0.298	14.00
88)	n-Propylbenz	4.049	4.064	3.651	4.001	3.860	3.869	3.851	3.910	3.907	3.43
89)	Bromobenzene	0.968	0.917	0.833	0.863	0.840	0.834	0.832	0.854	0.867	5.70
90)	1,1,2,2-Tetr	1.023	1.094	0.936	1.031	0.990	0.985	0.997	1.047	1.013	4.66
91)	1,3,5-Trimet	2.690	2.853	2.543	2.785	2.659	2.621	2.628	2.673	2.682	3.63
92)	2-Chlorotolu	2.474	2.345	2.113	2.262	2.179	2.154	2.152	2.264	2.243	5.38

Initial Calibration Summary

Job Number: FC12099
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample: V1A1985-ICC1985
Lab FileID: 1A50661.D

93) trans-1,4-Di	0.429	0.399	0.360	0.400	0.383	0.381	0.387	0.386	0.391	5.04
94) 1,2,3-Trichl	0.276	0.302	0.261	0.291	0.281	0.277	0.279	0.267	0.279	4.60
95) Cyclohexanon	0.068	0.054	0.049	0.051	0.047	0.048	0.050	0.055	0.053	12.62
96) 4-Chlorotolu	2.355	2.399	2.187	2.370	2.277	2.247	2.248	2.432	2.314	3.74
97) tert-Butylbe	1.547	1.584	1.433	1.562	1.497	1.465	1.451	1.592	1.516	4.14
98) 1,2,4-Trimet	2.571	2.708	2.438	2.643	2.558	2.513	2.527	2.598	2.570	3.22
99) Pentachloroe	0.435	0.422	0.396	0.452	0.436	0.437	0.426	0.405	0.426	4.29
100) sec-Butylben	3.175	3.555	3.292	3.527	3.382	3.393	3.345	3.434	3.388	3.64
101) 4-Isopropylt	2.765	3.022	2.780	3.067	2.933	2.901	2.897	2.882	2.906	3.60
102) 1,3-Dichloro	1.576	1.648	1.482	1.602	1.562	1.517	1.513	1.620	1.565	3.70
103) 1,2,3-Trimet	2.538	2.677	2.413	2.611	2.527	2.490	2.491	2.674	2.553	3.68
104) 1,4-Dichloro	1.751	1.664	1.481	1.602	1.537	1.501	1.505	1.628	1.584	5.96
105) n-Butylbenze	1.237	1.327	1.235	1.378	1.320	1.301	1.303	1.336	1.305	3.73
106) Benzyl Chlor	0.375	0.355	0.332	0.392	0.364	0.368	0.375	0.343	0.363	5.28
107) 1,2-Dichloro	1.362	1.481	1.317	1.443	1.377	1.366	1.367	1.434	1.393	3.86
108) 1,2-Dibromo-	0.155	0.164	0.151	0.170	0.160	0.165	0.175	0.151	0.161	5.43
109) Hexachlorobu	0.259	0.335	0.318	0.346	0.335	0.340	0.342	0.311	0.323	8.78
110) 1,2,4-Trichl	0.766	0.772	0.717	0.786	0.772	0.777	0.797	0.797	0.773	3.29
111) Naphthalene	2.166	1.943	1.799	1.996	1.923	1.980	2.100	1.942	1.981	5.66
112) 1,2,3-Trichl	0.588	0.646	0.590	0.609	0.617	0.614	0.644	0.605	0.614	3.53

(#) = Out of Range ### Number of calibration levels exceeded format ###

V1A_11-15-2023.M Wed Nov 15 14:28:34 2023

Initial Calibration Verification

Job Number: FC12099
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample: V1A1985-ICV1985
Lab FileID: 1A50669.D

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\11-15-2023\1A50669.D Vial: 61
Acq On : 15 Nov 2023 1:32 pm Operator: jeniferw
Sample : ICV1985-5 Inst : MSVOA17
Misc : MS55275,V1A1985,,,,, Multiplr: 1.00
MS Integration Params: big.p

Method : C:\msdchem\1\MET...V1A_11-15-2023.M (RTE Integrator)
Title : SW-846 Method 5035A/8260B
Last Update : Wed Nov 15 13:56:01 2023
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1 I	Fluorobenzene	1.000	1.000	0.0	102	0.00	3.40
2	Dichlorodifluoromethane	0.191	0.267	-39.8#	148	0.00	1.02
3	Chloromethane	0.286	0.318	-11.2	117	0.00	1.13
4	1,3-butadiene	0.359	0.298	17.0	88	0.00	1.18
5	Vinyl Chloride	0.286	0.320	-11.9	116	0.00	1.17
6	Bromomethane	0.103	0.114	-10.7	116	0.00	1.34
7	Chloroethane	0.182	0.190	-4.4	108	0.00	1.40
8	Trichlorofluoromethane	0.407	0.443	-8.8	112	0.00	1.49
9	Ethyl Ether	0.249	0.254	-2.0	105	0.00	1.66
10	Ethanol	0.006	0.005	16.7	97	0.00	1.71
11	1,2-Dichlorotrifluoroetha	0.325	0.342	-5.2	110	0.00	1.74
12	1,1-Dichloroethene	0.432	0.435	-0.7	104	0.00	1.76
13	Freon 113	0.246	0.294	-19.5	121	0.00	1.78
14	Carbon Disulfide	0.800	0.780	2.5	104	0.00	1.78
	----------	Amount	Calc.	%Drift	----------		
15	Iodomethane	40.000	41.104	-2.8	97	0.00	1.83
	----------	AvgRF	CCRF	%Dev	----------		
16	Acrolein	0.077	0.080	-3.9	110	0.00	1.90
17	Allyl chloride	0.413	0.456	-10.4	119	0.00	1.99
	----------	Amount	Calc.	%Drift	----------		
18	Methylene Chloride	40.000	41.923	-4.8	106	0.00	2.04
	----------	AvgRF	CCRF	%Dev	----------		
19	Acetone	0.124	0.120	3.2	107	0.00	2.05
20	Methyl acetate	0.336	0.303	9.8	95	0.00	2.12
21	trans-1,2-Dichloroethene	0.434	0.435	-0.2	103	0.00	2.13
22	Hexane	0.297	0.314	-5.7	112	0.00	2.20
23	Methyl Tert Butyl Ether	0.808	0.808	0.0	104	0.00	2.19
	----------	Amount	Calc.	%Drift	----------		
24	Acetonitrile	400.000	461.068	-15.3	116	0.00	2.27
	----------	AvgRF	CCRF	%Dev	----------		
25	Tert Butyl Alcohol	0.059	0.058	1.7	102	0.00	2.21
26	Di-isopropyl ether	1.014	0.985	2.9	100	0.00	2.39
27	Chloroprene	1.242	1.178	5.2	99	0.00	2.43
28	1,1-Dichloroethane	0.563	0.534	5.2	98	0.00	2.44
29	Acrylonitrile	0.150	0.147	2.0	101	0.00	2.43
30	ETBE	0.935	0.958	-2.5	104	0.00	2.58

Initial Calibration Verification

Job Number: FC12099
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample: V1A1985-ICV1985
Lab FileID: 1A50669.D

31		Vinyl acetate	0.754	0.749	0.7	103	0.00	2.56
32		cis-1,2-Dichloroethene	0.311	0.297	4.5	100	0.00	2.72
33		2,2-Dichloropropane	0.393	0.411	-4.6	109	0.00	2.78
34		Bromochloromethane	0.158	0.159	-0.6	103	0.00	2.82
35		Cyclohexane	0.544	0.551	-1.3	103	0.00	2.86
36		Chloroform	0.517	0.507	1.9	101	0.00	2.86
37		Ethyl acetate	0.421	0.436	-3.6	106	0.00	2.91
38		Tetrahydrofuran	0.159	0.145	8.8	100	0.00	2.94
39	S	Dibromofluoromethane	0.295	0.289	2.0	99	0.00	2.96
40		Carbon Tetrachloride	0.401	0.404	-0.7	102	0.00	2.96
41		1,1,1-Trichloroethane	0.433	0.435	-0.5	104	0.00	2.99
42		2-Butanone	0.210	0.217	-3.3	107	0.00	3.00
43		1,1-Dichloropropene	0.378	0.389	-2.9	107	0.00	3.05
44		tert-Butyl formate	0.258	0.291	-12.8	114	0.00	3.10
45		Propionitrile	0.065	0.063	3.1	106	0.00	3.14
46		Methacrylonitrile	0.244	0.252	-3.3	109	0.00	3.17
47		Benzene	1.110	1.091	1.7	102	0.00	3.18
48		TAME	0.784	0.789	-0.6	102	0.00	3.25
49	S	1,2-Dichloroethane-d4	0.326	0.326	0.0	101	0.00	3.24
50		1,2-Dichloroethane	0.415	0.402	3.1	100	0.00	3.27
51		Isobutyl Alcohol	0.036	0.037	-2.8	107	0.00	3.26
52		Tert Amyl Alcohol	0.049	0.048	2.0	102	0.00	3.33
53		Trichloroethene	0.310	0.302	2.6	102	0.00	3.51
54		Methylcyclohexane	0.495	0.512	-3.4	105	0.00	3.53
55		Dibromomethane	0.198	0.191	3.5	102	0.00	3.74
56		1,2-Dichloropropane	0.314	0.319	-1.6	105	0.00	3.79
57		Bromodichloromethane	0.390	0.363	6.9	95	0.00	3.83
58		Methyl methacrylate	0.362	0.345	4.7	103	0.00	3.92
59		1,4-Dioxane	0.004	0.004	0.0	91	0.00	3.94
		----------	Amount	Calc.	%Drift	----------		
60		2-Chloroethyl vinyl ether	200.000	213.996	-7.0	110	0.00	4.17
		----------	AvgRF	CCRF	%Dev	----------		
61		cis-1,3-Dichloropropene	0.453	0.444	2.0	100	0.00	4.21
62	I	Chlorobenzene-d5	1.000	1.000	0.0	101	0.00	5.35
63	S	Toluene-d8	1.335	1.335	0.0	102	0.00	4.34
64		Toluene	1.625	1.597	1.7	103	0.00	4.37
65		2-Nitropropane	0.169	0.160	5.3	101	0.00	4.47
66		4-Methyl-2-pentanone	0.590	0.606	-2.7	106	0.00	4.58
67		trans-1,3-Dichloropropene	0.575	0.540	6.1	94	0.00	4.61
68		Tetrachloroethene	0.460	0.477	-3.7	105	0.00	4.64
69		Ethyl methacrylate	0.475	0.546	-14.9	118	0.00	4.73
70		1,1,2-Trichloroethane	0.328	0.314	4.3	98	0.00	4.72
71		Dibromochloromethane	0.417	0.436	-4.6	102	0.00	4.84
72		1,3-Dichloropropane	0.603	0.615	-2.0	104	0.00	4.90
73		1,2-Dibromoethane	0.420	0.409	2.6	101	0.00	5.00
74		3,3-Dimethyl-1-Butanol	0.079	0.079	0.0	106	0.00	5.13
75		2-hexanone	0.572	0.608	-6.3	112	0.00	5.14
76		1-Chlorohexane	0.565	0.591	-4.6	115	0.00	5.37
77		Ethylbenzene	1.759	1.680	4.5	98	0.00	5.40
78		Chlorobenzene	1.076	1.041	3.3	100	0.00	5.37
79		1,1,1,2-Tetrachloroethane	0.392	0.397	-1.3	100	0.00	5.41
80		m,p-Xylene	1.395	1.336	4.2	99	0.00	5.50
81		o-Xylene	1.484	1.385	6.7	97	0.00	5.81
82		Styrene	1.125	1.074	4.5	97	0.00	5.84
83		Bromoform	0.281	0.280	0.4	99	0.00	5.84
84		Isopropylbenzene	1.728	1.659	4.0	98	0.00	6.04

Initial Calibration Verification

Job Number: FC12099
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample: V1A1985-ICV1985
Lab FileID: 1A50669.D

85	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	98	0.00	7.10
86	S	4-Bromofluorobenzene	0.834	0.847	-1.6	100	0.00	6.24
87		cis-1,4-Dichloro-2-butene	0.298	0.367	-23.2#	127	0.00	6.27
88		n-Propylbenzene	3.907	3.839	1.7	98	0.00	6.35
89		Bromobenzene	0.867	0.875	-0.9	102	0.00	6.31
90		1,1,2,2-Tetrachloroethane	1.013	0.999	1.4	99	0.00	6.38
91		1,3,5-Trimethylbenzene	2.682	2.668	0.5	99	0.00	6.51
92		2-Chlorotoluene	2.243	2.126	5.2	96	0.00	6.46
93		trans-1,4-Dichloro-2-Bute	0.391	0.400	-2.3	103	0.00	6.51
94		1,2,3-Trichloropropane	0.279	0.300	-7.5	105	0.00	6.47
95		Cyclohexanone	0.053	0.077	-45.3#	161	0.00	6.48
96		4-Chlorotoluene	2.314	2.238	3.3	97	0.00	6.58
97		tert-Butylbenzene	1.516	1.472	2.9	97	0.00	6.75
98		1,2,4-Trimethylbenzene	2.570	2.546	0.9	98	0.00	6.81
99		Pentachloroethane	0.426	0.473	-11.0	107	0.00	6.75
100		sec-Butylbenzene	3.388	3.186	6.0	93	0.00	6.89
101		4-Isopropyltoluene	2.906	2.838	2.3	95	0.00	7.01
102		1,3-Dichlorobenzene	1.565	1.486	5.0	94	0.00	7.04
103		1,2,3-Trimethylbenzene	2.553	2.437	4.5	95	0.00	7.15
104		1,4-Dichlorobenzene	1.584	1.515	4.4	97	0.00	7.11
105		n-Butylbenzene	1.305	1.349	-3.4	100	0.00	7.35
106		Benzyl Chloride	0.363	0.397	-9.4	107	0.00	7.30
107		1,2-Dichlorobenzene	1.393	1.337	4.0	95	0.00	7.43
108		1,2-Dibromo-3-Chloropropa	0.161	0.163	-1.2	100	0.00	8.01
109		Hexachlorobutadiene	0.323	0.331	-2.5	97	0.00	8.52
110		1,2,4-Trichlorobenzene	0.773	0.757	2.1	96	0.00	8.51
111		Naphthalene	1.981	1.894	4.4	97	0.00	8.72
112		1,2,3-Trichlorobenzene	0.614	0.605	1.5	96	0.00	8.84

(#) = Out of Range SPCC's out = 0 CCC's out = 0
1A50661.D V1A_11-15-2023.M Wed Nov 15 14:28:44 2023

Continuing Calibration Summary

Job Number: FC12099
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample: V1A2028-CC1985
Lab FileID: 1A51661.D

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\12-26-2023\1A51661.D Vial: 2
Acq On : 26 Dec 2023 8:03 am Operator: lianatr
Sample : CC1985-5 Inst : MSVOA17
Misc : MS55601,V1A2028,,,,, Multiplr: 1.00
MS Integration Params: big.p

Method : C:\msdchem\1\MET...V1A_11-15-2023.M (RTE Integrator)
Title : SW-846 Method 5035A/8260B
Last Update : Wed Nov 15 13:56:01 2023
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1 I	Fluorobenzene	1.000	1.000	0.0	145	0.00	3.40
2	Dichlorodifluoromethane	0.191	0.216	-13.1	172	0.00	1.02
3	Chloromethane	0.286	0.257	10.1	135	0.00	1.13
4	1,3-butadiene	0.359	0.281	21.7#	118	0.00	1.19
5	Vinyl Chloride	0.286	0.271	5.2	140	0.00	1.17
6	Bromomethane	0.103	0.125	-21.4#	182	0.00	1.35
7	Chloroethane	0.182	0.234	-28.6#	189	0.00	1.41
8	Trichlorofluoromethane	0.407	0.447	-9.8	161	0.00	1.50
9	Ethyl Ether	0.249	0.228	8.4	134	0.00	1.66
10	Ethanol	0.006	0.005	16.7	137	0.00	1.72
11	1,2-Dichlorotrifluoroetha	0.325	0.308	5.2	141	0.00	1.74
12	1,1-Dichloroethene	0.432	0.418	3.2	142	0.00	1.76
13	Freon 113	0.246	0.245	0.4	144	0.00	1.79
14	Carbon Disulfide	0.800	0.725	9.4	138	0.00	1.78
	----------	Amount	Calc.	%Drift	----------		
15	Iodomethane	40.000	31.712	20.7#	106	0.00	1.83
	----------	AvgRF	CCRF	%Dev	----------		
16	Acrolein	0.077	0.067	13.0	131	0.00	1.91
17	Allyl chloride	0.413	0.423	-2.4	158	0.00	2.00
	----------	Amount	Calc.	%Drift	----------		
18	Methylene Chloride	40.000	42.956	-7.4	154	0.00	2.04
	----------	AvgRF	CCRF	%Dev	----------		
19	Acetone	0.124	0.125	-0.8	159	0.00	2.05
20	Methyl acetate	0.336	0.325	3.3	146	0.00	2.13
21	trans-1,2-Dichloroethene	0.434	0.408	6.0	138	0.00	2.13
22	Hexane	0.297	0.301	-1.3	154	0.00	2.20
23	Methyl Tert Butyl Ether	0.808	0.741	8.3	136	0.00	2.20
	----------	Amount	Calc.	%Drift	----------		
24	Acetonitrile	400.000	401.763	-0.4	144	0.00	2.27
	----------	AvgRF	CCRF	%Dev	----------		
25	Tert Butyl Alcohol	0.059	0.053	10.2	134	0.00	2.21
26	Di-isopropyl ether	1.014	0.967	4.6	140	0.00	2.40
27	Chloroprene	1.242	1.148	7.6	137	0.00	2.44
28	1,1-Dichloroethane	0.563	0.531	5.7	138	0.00	2.44
29	Acrylonitrile	0.150	0.145	3.3	142	0.00	2.44
30	ETBE	0.935	0.870	7.0	135	0.00	2.58

Continuing Calibration Summary

Job Number: FC12099 **Sample:** V1A2028-CC1985
Account: HGLFLMI Hydrogeologic, Inc. **Lab FileID:** 1A51661.D
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

31		Vinyl acetate	0.754	0.665	11.8	130	0.00	2.57
32		cis-1,2-Dichloroethene	0.311	0.290	6.8	140	0.00	2.72
33		2,2-Dichloropropane	0.393	0.386	1.8	145	0.00	2.78
34		Bromochloromethane	0.158	0.133	15.8	123	0.00	2.83
35		Cyclohexane	0.544	0.532	2.2	142	0.00	2.86
36		Chloroform	0.517	0.507	1.9	145	0.00	2.86
37		Ethyl acetate	0.421	0.395	6.2	137	0.00	2.92
38		Tetrahydrofuran	0.159	0.134	15.7	132	0.00	2.95
39	S	Dibromofluoromethane	0.295	0.291	1.4	143	0.00	2.96
40		Carbon Tetrachloride	0.401	0.388	3.2	140	0.00	2.97
41		1,1,1-Trichloroethane	0.433	0.455	-5.1	155	0.00	2.99
42		2-Butanone	0.210	0.215	-2.4	151	0.00	3.00
43		1,1-Dichloropropene	0.378	0.373	1.3	146	0.00	3.06
44		tert-Butyl formate	0.258	0.216	16.3	120	0.00	3.10
45		Propionitrile	0.065	0.055	15.4	134	0.00	3.14
46		Methacrylonitrile	0.244	0.241	1.2	149	0.00	3.17
47		Benzene	1.110	1.077	3.0	143	0.00	3.18
48		TAME	0.784	0.731	6.8	135	0.00	3.25
49	S	1,2-Dichloroethane-d4	0.326	0.360	-10.4	159	0.00	3.24
50		1,2-Dichloroethane	0.415	0.425	-2.4	151	0.00	3.27
51		Isobutyl Alcohol	0.036	0.034	5.6	141	0.00	3.26
52		Tert Amyl Alcohol	0.049	0.044	10.2	135	0.00	3.33
53		Trichloroethene	0.310	0.295	4.8	142	0.00	3.51
54		Methylcyclohexane	0.495	0.481	2.8	141	0.00	3.53
55		Dibromomethane	0.198	0.185	6.6	141	0.00	3.74
56		1,2-Dichloropropane	0.314	0.288	8.3	135	0.00	3.80
57		Bromodichloromethane	0.390	0.365	6.4	137	0.00	3.83
58		Methyl methacrylate	0.362	0.308	14.9	131	0.00	3.92
59		1,4-Dioxane	0.004	0.004	0.0	137	0.00	3.94
			Amount	Calc.	%Drift			
60		2-Chloroethyl vinyl ether	200.000	167.027	16.5	123	0.00	4.17
			AvgRF	CCRF	%Dev			
61		cis-1,3-Dichloropropene	0.453	0.422	6.8	136	0.00	4.21
62	I	Chlorobenzene-d5	1.000	1.000	0.0	148	0.00	5.35
63	S	Toluene-d8	1.335	1.364	-2.2	151	0.00	4.34
64		Toluene	1.625	1.585	2.5	149	0.00	4.37
65		2-Nitropropane	0.169	0.121	28.4#	111	0.00	4.47
66		4-Methyl-2-pentanone	0.590	0.595	-0.8	152	0.00	4.58
67		trans-1,3-Dichloropropene	0.575	0.550	4.3	139	0.00	4.61
68		Tetrachloroethene	0.460	0.454	1.3	146	0.00	4.64
69		Ethyl methacrylate	0.475	0.455	4.2	143	0.00	4.73
70		1,1,2-Trichloroethane	0.328	0.293	10.7	133	0.00	4.72
71		Dibromochloromethane	0.417	0.387	7.2	132	0.00	4.84
72		1,3-Dichloropropane	0.603	0.556	7.8	136	0.00	4.90
73		1,2-Dibromoethane	0.420	0.371	11.7	133	0.00	5.00
74		3,3-Dimethyl-1-Butanol	0.079	0.069	12.7	136	0.00	5.13
75		2-hexanone	0.572	0.565	1.2	152	0.00	5.14
76		1-Chlorohexane	0.565	0.624	-10.4	176	0.00	5.37
77		Ethylbenzene	1.759	1.687	4.1	143	0.00	5.40
78		Chlorobenzene	1.076	1.040	3.3	146	0.00	5.37
79		1,1,1,2-Tetrachloroethane	0.392	0.369	5.9	135	0.00	5.41
80		m,p-Xylene	1.395	1.364	2.2	147	0.00	5.50
81		o-Xylene	1.484	1.424	4.0	145	0.00	5.81
82		Styrene	1.125	1.038	7.7	137	0.00	5.84
83		Bromoform	0.281	0.261	7.1	134	0.00	5.84
84		Isopropylbenzene	1.728	1.660	3.9	143	0.00	6.04

Continuing Calibration Summary

Job Number: FC12099 **Sample:** V1A2028-CC1985
Account: HGLFLMI Hydrogeologic, Inc. **Lab FileID:** 1A51661.D
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

85	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	138	0.00	7.10
86	S	4-Bromofluorobenzene	0.834	0.858	-2.9	142	0.00	6.23
87		cis-1,4-Dichloro-2-butene	0.298	0.374	-25.5#	181	0.00	6.27
88		n-Propylbenzene	3.907	4.128	-5.7	148	0.00	6.35
89		Bromobenzene	0.867	0.813	6.2	134	0.00	6.31
90		1,1,2,2-Tetrachloroethane	1.013	1.012	0.1	141	0.00	6.38
91		1,3,5-Trimethylbenzene	2.682	2.732	-1.9	142	0.00	6.51
92		2-Chlorotoluene	2.243	2.296	-2.4	145	0.00	6.45
93		trans-1,4-Dichloro-2-Bute	0.391	0.443	-13.3	160	0.00	6.51
94		1,2,3-Trichloropropane	0.279	0.284	-1.8	140	0.00	6.47
95		Cyclohexanone	0.053	0.045	15.1	133	0.00	6.48
96		4-Chlorotoluene	2.314	2.376	-2.7	144	0.00	6.58
97		tert-Butylbenzene	1.516	1.610	-6.2	148	0.00	6.75
98		1,2,4-Trimethylbenzene	2.570	2.634	-2.5	142	0.00	6.81
99		Pentachloroethane	0.426	0.434	-1.9	137	0.00	6.74
100		sec-Butylbenzene	3.388	3.419	-0.9	139	0.00	6.89
101		4-Isopropyltoluene	2.906	2.911	-0.2	137	0.00	7.01
102		1,3-Dichlorobenzene	1.565	1.551	0.9	137	0.00	7.04
103		1,2,3-Trimethylbenzene	2.553	2.548	0.2	139	0.00	7.15
104		1,4-Dichlorobenzene	1.584	1.548	2.3	139	0.00	7.11
105		n-Butylbenzene	1.305	1.362	-4.4	142	0.00	7.34
106		Benzyl Chloride	0.363	0.312	14.0	118	0.00	7.30
107		1,2-Dichlorobenzene	1.393	1.362	2.2	136	0.00	7.43
108		1,2-Dibromo-3-Chloropropa	0.161	0.159	1.2	138	0.00	8.01
109		Hexachlorobutadiene	0.323	0.304	5.9	125	0.00	8.52
110		1,2,4-Trichlorobenzene	0.773	0.631	18.4	113	0.00	8.51
111		Naphthalene	1.981	1.440	27.3#	103	0.00	8.72
112		1,2,3-Trichlorobenzene	0.614	0.467	23.9#	104	0.00	8.84

(#) = Out of Range SPCC's out = 0 CCC's out = 0
1A50661.D V1A_11-15-2023.M Tue Dec 26 08:19:11 2023

Continuing Calibration Summary

Job Number: FC12099
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample: V1A2028-ECC1985
Lab FileID: 1A51688.D

Evaluate Continuing Calibration Report

Data File : X:\Orlando VOA\celin...028\V1A2028\1A51688.d Vial: 29
Acq On : 26 Dec 2023 7:02 pm Operator: lianatr
Sample : ECC1985-5 Inst : MSVOA17
Misc : MS55614,V1A2028,,,,, Multiplr: 1.00
MS Integration Params: big.p

Method : X:\Orlando VOA\c...V1A_11-15-2023.M (RTE Integrator)
Title : SW-846 Method 5035A/8260B
Last Update : Wed Nov 15 13:56:01 2023
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 50% Max. Rel. Area : 200%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1 I	Fluorobenzene	1.000	1.000	0.0	138	0.00	3.40
2	Dichlorodifluoromethane	0.191	0.212	-11.0	159	0.00	1.02
3	Chloromethane	0.286	0.251	12.2	125	0.00	1.13
4	1,3-butadiene	0.359	0.304	15.3	121	0.00	1.19
5	Vinyl Chloride	0.286	0.267	6.6	130	0.00	1.17
6	Bromomethane	0.103	0.118	-14.6	163	0.00	1.35
7	Chloroethane	0.182	0.229	-25.8	175	0.00	1.41
8	Trichlorofluoromethane	0.407	0.442	-8.6	151	0.00	1.50
9	Ethyl Ether	0.249	0.225	9.6	125	0.00	1.66
10	Ethanol	0.006	0.005	16.7	131	0.00	1.71
11	1,2-Dichlorotrifluoroetha	0.325	0.284	12.6	123	0.00	1.74
12	1,1-Dichloroethene	0.432	0.379	12.3	122	0.00	1.76
13	Freon 113	0.246	0.214	13.0	119	0.00	1.78
14	Carbon Disulfide	0.800	0.625	21.9	113	0.00	1.78
	----------	True	Calc.	% Drift	----------		
15	Iodomethane	40.000	37.769	5.6	120	0.00	1.83
	----------	AvgRF	CCRF	% Dev	----------		
16	Acrolein	0.077	0.065	15.6	120	0.00	1.91
17	Allyl chloride	0.413	0.412	0.2	145	0.00	2.00
	----------	True	Calc.	% Drift	----------		
18	Methylene Chloride	40.000	37.260	6.9	127	0.00	2.04
	----------	AvgRF	CCRF	% Dev	----------		
19	Acetone	0.124	0.121	2.4	146	0.00	2.05
20	Methyl acetate	0.336	0.346	-3.0	147	0.00	2.13
21	trans-1,2-Dichloroethene	0.434	0.376	13.4	120	0.00	2.13
22	Hexane	0.297	0.269	9.4	130	0.00	2.20
23	Methyl Tert Butyl Ether	0.808	0.733	9.3	128	0.00	2.20
	----------	True	Calc.	% Drift	----------		
24	Acetonitrile	400.000	458.632	-14.7	156	0.00	2.27
	----------	AvgRF	CCRF	% Dev	----------		
25	Tert Butyl Alcohol	0.059	0.052	11.9	124	0.00	2.22
26	Di-isopropyl ether	1.014	0.952	6.1	130	0.00	2.40
27	Chloroprene	1.242	1.135	8.6	129	0.00	2.44
28	1,1-Dichloroethane	0.563	0.513	8.9	127	0.00	2.44
29	Acrylonitrile	0.150	0.142	5.3	131	0.00	2.44
30	ETBE	0.935	0.866	7.4	127	0.00	2.58

Continuing Calibration Summary

Job Number: FC12099 **Sample:** V1A2028-ECC1985
Account: HGLFLMI Hydrogeologic, Inc. **Lab FileID:** 1A51688.D
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

31		Vinyl acetate	0.754	0.599	20.6	111	0.00	2.57
32		cis-1,2-Dichloroethene	0.311	0.277	10.9	126	0.00	2.72
33		2,2-Dichloropropane	0.393	0.325	17.3	116	0.00	2.78
34		Bromochloromethane	0.158	0.133	15.8	117	0.00	2.83
35		Cyclohexane	0.544	0.464	14.7	117	0.00	2.86
36		Chloroform	0.517	0.499	3.5	135	0.00	2.86
37		Ethyl acetate	0.421	0.381	9.5	125	0.00	2.91
38		Tetrahydrofuran	0.159	0.131	17.6	122	0.00	2.95
39	S	Dibromofluoromethane	0.295	0.287	2.7	133	0.00	2.96
40		Carbon Tetrachloride	0.401	0.352	12.2	120	0.00	2.96
41		1,1,1-Trichloroethane	0.433	0.415	4.2	133	0.00	2.99
42		2-Butanone	0.210	0.214	-1.9	143	0.00	3.00
43		1,1-Dichloropropene	0.378	0.339	10.3	126	0.00	3.05
44		tert-Butyl formate	0.258	0.191	26.0	101	0.00	3.10
45		Propionitrile	0.065	0.059	9.2	135	0.00	3.14
46		Methacrylonitrile	0.244	0.254	-4.1	148	0.00	3.17
47		Benzene	1.110	1.032	7.0	130	0.00	3.18
48		TAME	0.784	0.728	7.1	127	0.00	3.25
49	S	1,2-Dichloroethane-d4	0.326	0.356	-9.2	148	0.00	3.24
50		1,2-Dichloroethane	0.415	0.430	-3.6	144	0.00	3.27
51		Isobutyl Alcohol	0.036	0.035	2.8	137	0.00	3.26
52		Tert Amyl Alcohol	0.049	0.042	14.3	121	0.00	3.33
53		Trichloroethene	0.310	0.282	9.0	129	0.00	3.51
54		Methylcyclohexane	0.495	0.423	14.5	117	0.00	3.53
55		Dibromomethane	0.198	0.185	6.6	133	0.00	3.74
56		1,2-Dichloropropane	0.314	0.281	10.5	124	0.00	3.80
57		Bromodichloromethane	0.390	0.358	8.2	127	0.00	3.83
58		Methyl methacrylate	0.362	0.313	13.5	126	0.00	3.92
59		1,4-Dioxane	0.004	0.004	0.0	128	0.00	3.94
			True	Calc.	% Drift			
60		2-Chloroethyl vinyl ether	200.000	155.769	22.1	108	0.00	4.17
			AvgRF	CCRF	% Dev			
61		cis-1,3-Dichloropropene	0.453	0.400	11.7	122	0.00	4.21
62	I	Chlorobenzene-d5	1.000	1.000	0.0	140	0.00	5.35
63	S	Toluene-d8	1.335	1.363	-2.1	143	0.00	4.34
64		Toluene	1.625	1.519	6.5	135	0.00	4.37
65		2-Nitropropane	0.169	0.113	33.1	98	0.00	4.47
66		4-Methyl-2-pentanone	0.590	0.619	-4.9	149	0.00	4.58
67		trans-1,3-Dichloropropene	0.575	0.534	7.1	128	0.00	4.61
68		Tetrachloroethene	0.460	0.422	8.3	128	0.00	4.63
69		Ethyl methacrylate	0.475	0.497	-4.6	148	0.00	4.73
70		1,1,2-Trichloroethane	0.328	0.299	8.8	128	0.00	4.72
71		Dibromochloromethane	0.417	0.367	12.0	119	0.00	4.84
72		1,3-Dichloropropane	0.603	0.558	7.5	129	0.00	4.90
73		1,2-Dibromoethane	0.420	0.364	13.3	123	0.00	5.00
74		3,3-Dimethyl-1-Butanol	0.079	0.067	15.2	124	0.00	5.13
75		2-hexanone	0.572	0.576	-0.7	146	0.00	5.14
76		1-Chlorohexane	0.565	0.458	18.9	122	0.00	5.37
77		Ethylbenzene	1.759	1.725	1.9	139	0.00	5.40
78		Chlorobenzene	1.076	1.005	6.6	133	0.00	5.37
79		1,1,1,2-Tetrachloroethane	0.392	0.365	6.9	127	0.00	5.41
80		m,p-Xylene	1.395	1.319	5.4	134	0.00	5.50
81		o-Xylene	1.484	1.383	6.8	133	0.00	5.81
82		Styrene	1.125	1.028	8.6	129	0.00	5.84
83		Bromoform	0.281	0.246	12.5	119	0.00	5.84
84		Isopropylbenzene	1.728	1.570	9.1	128	0.00	6.04

Continuing Calibration Summary

Job Number: FC12099 **Sample:** V1A2028-ECC1985
Account: HGLFLMI Hydrogeologic, Inc. **Lab FileID:** 1A51688.D
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

85	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	134	0.00	7.10
86	S	4-Bromofluorobenzene	0.834	0.831	0.4	133	0.00	6.23
87		cis-1,4-Dichloro-2-butene	0.298	0.305	-2.3	144	0.00	6.27
88		n-Propylbenzene	3.907	3.822	2.2	133	0.00	6.35
89		Bromobenzene	0.867	0.789	9.0	126	0.00	6.31
90		1,1,2,2-Tetrachloroethane	1.013	0.969	4.3	131	0.00	6.38
91		1,3,5-Trimethylbenzene	2.682	2.582	3.7	130	0.00	6.51
92		2-Chlorotoluene	2.243	2.172	3.2	134	0.00	6.45
93		trans-1,4-Dichloro-2-Bute	0.391	0.358	8.4	126	0.00	6.51
94		1,2,3-Trichloropropane	0.279	0.283	-1.4	135	0.00	6.47
95		Cyclohexanone	0.053	0.046	13.2	131	0.00	6.48
96		4-Chlorotoluene	2.314	2.276	1.6	134	0.00	6.58
97		tert-Butylbenzene	1.516	1.514	0.1	136	0.00	6.75
98		1,2,4-Trimethylbenzene	2.570	2.480	3.5	130	0.00	6.80
99		Pentachloroethane	0.426	0.413	3.1	127	0.00	6.75
100		sec-Butylbenzene	3.388	3.198	5.6	127	0.00	6.89
101		4-Isopropyltoluene	2.906	2.711	6.7	124	0.00	7.01
102		1,3-Dichlorobenzene	1.565	1.474	5.8	127	0.00	7.04
103		1,2,3-Trimethylbenzene	2.553	2.438	4.5	129	0.00	7.15
104		1,4-Dichlorobenzene	1.584	1.490	5.9	130	0.00	7.11
105		n-Butylbenzene	1.305	1.263	3.2	128	0.00	7.34
106		Benzyl Chloride	0.363	0.246	32.2	91	0.00	7.30
107		1,2-Dichlorobenzene	1.393	1.350	3.1	132	0.00	7.43
108		1,2-Dibromo-3-Chloropropa	0.161	0.145	9.9	122	0.00	8.01
109		Hexachlorobutadiene	0.323	0.272	15.8	109	0.00	8.52
110		1,2,4-Trichlorobenzene	0.773	0.598	22.6	104	0.00	8.50
111		Naphthalene	1.981	1.323	33.2	92	0.00	8.72
112		1,2,3-Trichlorobenzene	0.614	0.433	29.5	94	0.00	8.84

(#) = Out of Range SPCC's out = 0 CCC's out = 0
1A50661.D V1A_11-15-2023.M Wed Dec 27 00:27:50 2023

Initial Calibration Summary

Job Number: FC12099
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample: V5E1994-ICC1994
Lab FileID: 5E44763.D

Response Factor Report MSVOA20

Method : C:\msdchem\1\met...5E_12-20-2023_.M (RTE Integrator)
Title : SW-846 Method 5030B/8260B & EPA 624
Last Update : Thu Dec 21 08:38:40 2023
Response via : Initial Calibration

Calibration Files
1 =5E44758.D 2 =5E44760.D 3 =5E44761.D 4 =5E44762.D
5 =5E44763.D 6 =5E44764.D 7 =5E44765.D 8 =5E44759.D

Compound	1	2	3	4	5	6	7	8	Avg	%RSD
1) I Fluorobenzene	----------	ISTD	----------							
2) Dichlorodifl	0.219	0.186	0.183	0.185	0.192	0.173	0.184	0.193	0.189	7.17
3) Chloromethan	0.319	0.203	0.228	0.183	0.192	0.184	0.182	0.251	0.218	21.94
---- Linear regr., Force(0,0) ---- Coefficient = 0.9983										
Response Ratio = 0.00000 + 0.18745 *A										
4) Vinyl Chlori	0.282	0.205	0.230	0.204	0.208	0.198	0.202	0.238	0.221	12.84
5) 1,3-Butadien	0.189	0.229	0.237	0.188	0.204	0.176	0.180	0.158	0.195	13.80
6) Bromomethane	0.215	0.148	0.175	0.135	0.150	0.153	0.164	0.201	0.168	16.56
---- Linear regr., Force(0,0) ---- Coefficient = 0.9951										
Response Ratio = 0.00000 + 0.15655 *A										
7) Chloroethane	0.254	0.185	0.224	0.262	0.357	0.326	0.286	0.220	0.264	21.65
---- Quadratic regr., Force(0,0) ---- Coefficient = 0.9918										
Response Ratio = 0.00000 + 0.35324 *A + -0.03080 *A^2										
8) Trichloroflu	0.345	0.321	0.356	0.350	0.395	0.481	0.806	0.378	0.429	37.28
---- Quadratic regr., Force(0,0) ---- Coefficient = 0.9900										
Response Ratio = 0.00000 + 0.05829 *A + 0.36184 *A^2										
9) Ethyl Ether	0.213	0.167	0.172	0.178	0.161	0.161	0.163	0.174	0.174	9.80
10) Ethanol		0.002	0.003	0.003	0.004	0.003	0.003		0.003	15.37
---- Linear regr., Force(0,0) ---- Coefficient = 0.9950										
Response Ratio = 0.00000 + 0.00326 *A										
11) 1,2-Dichloro	0.293	0.251	0.259	0.261	0.250	0.231	0.238	0.240	0.253	7.58
12) 1,1-Dichloro	0.376	0.316	0.310	0.318	0.300	0.287	0.290	0.304	0.313	8.92
13) Freon 113	0.220	0.205	0.207	0.228	0.220	0.194	0.202	0.177	0.207	7.97
14) Carbon Disul	1.062	0.695	0.655	0.677	0.617	0.597	0.604	0.779	0.711	21.63
---- Linear regr., Force(0,0) ---- Coefficient = 0.9988										
Response Ratio = 0.00000 + 0.61830 *A										
15) Iodomethane	0.148	0.156	0.205	0.237	0.232	0.210	0.198	0.131	0.190	21.09
---- Quadratic regr., Force(0,0) ---- Coefficient = 0.9961										
Response Ratio = 0.00000 + 0.22579 *A + -0.01202 *A^2										
16) Acrolein	0.042	0.038	0.043	0.049	0.051	0.050	0.052	0.043	0.046	10.89
17) Allyl chlori	0.309	0.250	0.268	0.216	0.234	0.226	0.226	0.180	0.239	16.00
---- Linear regr., Force(0,0) ---- Coefficient = 0.9972										
Response Ratio = 0.00000 + 0.22823 *A										
18) Methylene Ch	2.076	0.615	0.376	0.312	0.280	0.263	0.265	1.191	0.672	96.55
---- Linear regr., Force(0,0) ---- Coefficient = 0.9975										
Response Ratio = 0.00000 + 0.29704 *A										
19) Acetone	0.122	0.097	0.100	0.094	0.098	0.093	0.099	0.126	0.104	12.39

Initial Calibration Summary

Job Number: FC12099
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample: V5E1994-ICC1994
Lab FileID: 5E44763.D

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20) Methyl aceta 0.256 0.209 0.216 0.231 0.222 0.223 0.232 0.204 0.224   7.18
21) trans-1,2-Di 0.353 0.299 0.278 0.290 0.276 0.277 0.284 0.306 0.295   8.75
22) Hexane       0.177 0.161 0.172 0.169 0.163 0.149 0.154 0.138 0.160   7.94
23) Methyl Tert  0.784 0.653 0.658 0.703 0.661 0.636 0.652 0.670 0.677   7.00
24) Acetonitrile 0.048 0.033 0.037 0.028 0.033 0.031 0.032 0.031 0.034  17.81
            ---- Linear regr., Force(0,0) ----  Coefficient =  0.9967
              Response Ratio = 0.00000 + 0.03203 *A

25) Di-isopropyl 0.766 0.599 0.598 0.638 0.589 0.577 0.598 0.655 0.627   9.81
26) Chloroprene  0.251 0.279 0.285 0.237 0.271 0.258 0.264 0.210 0.257   9.44
27) 1,1-Dichloro 0.554 0.390 0.410 0.407 0.385 0.375 0.388 0.453 0.420  14.06
28) Acrylonitril 0.077 0.122 0.109 0.103 0.105 0.103 0.108 0.103 0.104  12.07
29) ETBE         0.736 0.607 0.639 0.666 0.619 0.617 0.646 0.656 0.648   6.30
30) Tert Butyl A 0.076 0.054 0.060 0.059 0.056 0.054 0.054 0.119 0.066  33.67
            ---- Linear regr., Force(0,0) ----  Coefficient =  0.9974
              Response Ratio = 0.00000 + 0.05536 *A

31) Vinyl acetat 0.017 0.479 0.423 0.417 0.427 0.434 0.466 0.302 0.371  41.09
            ---- Linear regr., Force(0,0) ----  Coefficient =  0.9973
              Response Ratio = 0.00000 + 0.44169 *A

32) cis-1,2-Dich 0.331 0.246 0.264 0.264 0.244 0.242 0.253 0.256 0.263  11.03
33) 2,2-Dichloro 0.413 0.314 0.307 0.317 0.299 0.293 0.295 0.338 0.322  12.25
34) Bromochlorom 0.161 0.128 0.135 0.146 0.132 0.131 0.133 0.138 0.138   7.88
35) Cyclohexane  0.324 0.307 0.319 0.344 0.329 0.305 0.329 0.283 0.317   5.91
36) Chloroform   0.535 0.410 0.426 0.449 0.420 0.415 0.423 0.436 0.439   9.20
37) Ethyl acetat 0.181 0.346 0.297 0.276 0.278 0.279 0.294 0.276 0.278  16.45
            ---- Linear regr., Force(0,0) ----  Coefficient =  0.9976
              Response Ratio = 0.00000 + 0.28621 *A

38) Tetrahydrofu 0.089 0.125 0.134 0.111 0.104 0.102 0.107 0.141 0.114  15.45
            ---- Quadratic regr., Force(0,0) ----  Coefficient =  0.9956
              Response Ratio = 0.00000 + 0.11432 *A + -0.00545 *A^2

39) Dibromofluor 0.301 0.303 0.303 0.303 0.301 0.290 0.295 0.304 0.300   1.65
40) Carbon Tetra 0.366 0.333 0.334 0.350 0.332 0.321 0.328 0.338 0.338   4.16
41) 1,1,1-Trichl 0.467 0.355 0.370 0.381 0.361 0.352 0.359 0.352 0.375  10.29
42) 2-Butanone   0.162 0.140 0.157 0.154 0.158 0.159 0.167 0.164 0.158   5.24
43) 1,1-Dichloro 0.368 0.282 0.289 0.311 0.296 0.291 0.296 0.277 0.301   9.52
44) tert-Butyl f 0.069 0.056 0.075 0.072 0.075 0.077 0.081 0.071 0.072  10.30
45) Propionitril 0.048 0.048 0.056 0.047 0.053 0.054 0.057 0.032 0.049  16.38
            ---- Quadratic regr., Force(0,0) ----  Coefficient =  0.9980
              Response Ratio = 0.00000 + 0.04764 *A + 0.00048 *A^2

46) Methacryloni 0.177 0.160 0.181 0.159 0.178 0.184 0.201 0.122 0.170  13.89
47) Benzene      1.240 0.914 0.906 0.944 0.894 0.890 0.913 0.995 0.962  12.21
48) TAME         0.736 0.646 0.666 0.699 0.664 0.683 0.716 0.629 0.680   5.27
49) 1,2-Dichloro 0.294 0.293 0.296 0.304 0.293 0.300 0.300 0.286 0.296   1.91
50) 1,2-Dichloro 0.421 0.297 0.310 0.328 0.313 0.315 0.324 0.307 0.327  12.02
51) tert Amyl al 0.045 0.043 0.047 0.049 0.049 0.050 0.052 0.044 0.047   6.01
52) Trichloroeth 0.374 0.253 0.258 0.266 0.249 0.249 0.257 0.260 0.271  15.49
            ---- Linear regr., Force(0,0) ----  Coefficient =  0.9991
              Response Ratio = 0.00000 + 0.25500 *A

53) Methylcycloh 0.391 0.359 0.373 0.404 0.395 0.375 0.402 0.351 0.381   5.22
54) Dibromometha 0.136 0.151 0.167 0.184 0.167 0.168 0.172 0.175 0.165   9.09
55) 1,2-Dichloro 0.242 0.207 0.215 0.217 0.211 0.209 0.211 0.213 0.216   5.23
56) Bromodichlor 0.388 0.299 0.318 0.335 0.319 0.319 0.326 0.310 0.327   8.32
57) Methyl metha 0.050 0.177 0.217 0.190 0.207 0.198 0.208 0.088 0.167  37.42
            ---- Quadratic regr., Force(0,0) ----  Coefficient =  0.9974
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Job Number: FC12099 **Sample:** V5E1994-ICC1994
Account: HGLFLMI Hydrogeologic, Inc. **Lab FileID:** 5E44763.D
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

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              Response Ratio = 0.00000 + 0.18755 *A + 0.01019 *A^2

58) 1,4-Dioxane        0.004 0.005 0.005 0.005 0.005 0.005 0.003 0.004  16.73
            ---- Linear regr., Force(0,0) ----  Coefficient =  0.9986
              Response Ratio = 0.00000 + 0.00459 *A

59) 2-Chloroethy 0.037 0.057 0.074 0.082 0.087 0.098 0.102 0.051 0.073  31.54
            ---- Quadratic regr., Force(0,0) ----  Coefficient =  0.9988
              Response Ratio = 0.00000 + 0.07215 *A + 0.00317 *A^2

60) cis-1,3-Dich 0.351 0.313 0.322 0.348 0.338 0.339 0.350 0.320 0.335   4.47

61) I   Chlorobenzene-d5      ----------------ISTD--------------------
62) Toluene-d8   1.278 1.307 1.281 1.259 1.243 1.187 1.166 1.272 1.249   3.89
63) Toluene      1.776 1.305 1.284 1.294 1.189 1.176 1.174 1.410 1.326  15.00
            ---- Linear regr., Force(0,0) ----  Coefficient =  0.9992
              Response Ratio = 0.00000 + 1.19983 *A

64) Isobutyl alc 0.024 0.022 0.024 0.021 0.024 0.024 0.024 0.018 0.022  10.15
65) 2-Nitropropa 0.137 0.118 0.124 0.129 0.123 0.124 0.130 0.108 0.124   7.05
66) 4-Methyl-2-p 0.432 0.412 0.410 0.394 0.405 0.400 0.421 0.470 0.418   5.76
67) trans-1,3-Di 0.395 0.380 0.396 0.434 0.415 0.414 0.429 0.351 0.402   6.84
68) Tetrachloroe 0.433 0.374 0.366 0.374 0.357 0.356 0.361 0.350 0.371   7.07
69) Ethyl methac 0.179 0.354 0.394 0.348 0.389 0.376 0.394 0.203 0.330  26.61
            ---- Quadratic regr., Force(0,0) ----  Coefficient =  0.9980
              Response Ratio = 0.00000 + 0.35118 *A + 0.02168 *A^2

70) 1,1,2-Trichl 0.247 0.253 0.252 0.261 0.238 0.233 0.236 0.263 0.248   4.53
71) Dibromochlor 0.384 0.345 0.337 0.371 0.348 0.345 0.353 0.313 0.349   6.09
72) 1,3-Dichloro 0.501 0.416 0.448 0.475 0.435 0.427 0.429 0.406 0.442   7.16
73) 1,2-Dibromoe 0.280 0.293 0.330 0.347 0.316 0.314 0.323 0.280 0.310   7.73
74) 3,3-Dimethyl 0.042 0.036 0.051 0.049 0.053 0.058 0.061 0.041 0.049  17.54
            ---- Quadratic regr., Force(0,0) ----  Coefficient =  0.9991
              Response Ratio = 0.00000 + 0.04579 *A + 0.00016 *A^2

75) 2-hexanone   0.229 0.258 0.300 0.295 0.308 0.313 0.334 0.290 0.291  11.37
76) 1-Chlorohexa 0.419 0.390 0.409 0.417 0.397 0.399 0.412 0.351 0.399   5.53
77) Ethylbenzene 2.302 1.362 1.426 1.451 1.363 1.396 1.416 1.573 1.536  20.61
            ---- Linear regr., Force(0,0) ----  Coefficient =  0.9991
              Response Ratio = 0.00000 + 1.40940 *A

78) Chlorobenzen 1.167 0.880 0.902 0.907 0.854 0.866 0.890 0.929 0.924  10.91
79) 1,1,1,2-Tetr 0.378 0.311 0.324 0.340 0.322 0.320 0.327 0.343 0.333   6.24
80) m,p-Xylene   2.133 1.024 1.055 1.085 1.046 1.064 1.096 1.154 1.207  31.16
            ---- Linear regr., Force(0,0) ----  Coefficient =  0.9976
              Response Ratio = 0.00000 + 1.07955 *A

81) o-Xylene     2.037 1.086 1.074 1.088 1.040 1.028 1.058 1.156 1.196  28.61
            ---- Linear regr., Force(0,0) ----  Coefficient =  0.9987
              Response Ratio = 0.00000 + 1.05532 *A

82) Styrene      0.809 0.802 0.800 0.861 0.814 0.835 0.860 0.674 0.807   7.32
83) Bromoform    0.206 0.212 0.225 0.256 0.246 0.253 0.265 0.180 0.230  12.80
84) Isopropylben 1.830 1.361 1.412 1.417 1.349 1.359 1.411 1.356 1.437  11.24

85) I   1,4-Dichlorobenzene-d ----------------ISTD--------------------
86) 4-Bromofluor 0.754 0.755 0.743 0.730 0.709 0.689 0.681 0.761 0.728   4.30
87) cis-1,4-Dich       0.166 0.218 0.164 0.192 0.184 0.194 0.048 0.167  33.23
            ---- Linear regr., Force(0,0) ----  Coefficient =  0.9944
              Response Ratio = 0.00000 + 0.18716 *A
```

Initial Calibration Summary

Job Number: FC12099
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample: V5E1994-ICC1994
Lab FileID: 5E44763.D

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 88) n-Propylbenz 4.217 2.950 2.932 2.812 2.714 2.659 2.716 3.136 3.017  16.90
             ---- Linear regr., Force(0,0) ----  Coefficient =  0.9996
               Response Ratio = 0.00000 + 2.73172 *A

 89) Bromobenzene 0.798 0.615 0.640 0.638 0.602 0.563 0.593 0.627 0.635  11.16
 90) 1,1,2,2-Tetr 0.947 0.785 0.812 0.851 0.800 0.770 0.788 0.819 0.822   6.86
 91) 1,3,5-Trimet 3.086 2.020 2.045 2.010 1.899 1.906 1.960 2.161 2.136  18.39
             ---- Linear regr., Force(0,0) ----  Coefficient =  0.9994
               Response Ratio = 0.00000 + 1.95115 *A

 92) 2-Chlorotolu 2.574 1.871 1.888 1.840 1.668 1.664 1.711 2.129 1.918  15.93
             ---- Linear regr., Force(0,0) ----  Coefficient =  0.9990
               Response Ratio = 0.00000 + 1.72090 *A

 93) trans-1,4-Di       0.114 0.173 0.169 0.182 0.179 0.177 0.065 0.151  29.47
             ---- Linear regr., Force(0,0) ----  Coefficient =  0.9990
               Response Ratio = 0.00000 + 0.17498 *A

 94) 1,2,3-Trichl 0.269 0.232 0.241 0.247 0.238 0.231 0.237 0.271 0.246   6.40
 95) Cyclohexanon       0.037 0.032 0.033 0.032 0.030 0.030 0.028 0.032   9.23
 96) 4-Chlorotolu 2.178 1.645 1.609 1.587 1.522 1.468 1.523 1.773 1.663  13.71
 97) a-Methyl sty                                                 0.000  -1.00
 98) tert-Butylbe 1.541 1.127 1.086 1.016 0.984 0.969 0.994 1.144 1.108  16.93
             ---- Linear regr., Force(0,0) ----  Coefficient =  0.9995
               Response Ratio = 0.00000 + 0.99719 *A

 99) 1,2,4-Trimet 3.796 1.902 1.982 1.968 1.857 1.872 1.935 2.163 2.184  30.14
             ---- Linear regr., Force(0,0) ----  Coefficient =  0.9983
               Response Ratio = 0.00000 + 1.91866 *A

100) Pentachloroe 0.441 0.327 0.333 0.289 0.332 0.322 0.332 0.269 0.331  15.24
             ---- Linear regr., Force(0,0) ----  Coefficient =  0.9974
               Response Ratio = 0.00000 + 0.32514 *A

101) sec-Butylben 3.392 2.586 2.696 2.533 2.496 2.438 2.515 2.769 2.678  11.51
102) 4-Isopropylt 2.938 2.158 2.284 2.218 2.159 2.148 2.231 2.310 2.306  11.38
103) 1,3-Dichloro 1.594 1.193 1.212 1.229 1.162 1.127 1.193 1.328 1.255  11.89
104) 1,2,3-Trimet 3.374 2.040 2.108 2.106 1.988 2.014 2.089 2.278 2.250  20.58
             ---- Quadratic regr., Force(0,0) ----  Coefficient =  0.9989
               Response Ratio = 0.00000 + 2.06563 *A + -0.00395 *A^2

105) 1,4-Dichloro 1.914 1.293 1.361 1.363 1.275 1.278 1.301 1.471 1.407  15.28
             ---- Linear regr., Force(0,0) ----  Coefficient =  0.9994
               Response Ratio = 0.00000 + 1.30251 *A

106) n-Butylbenze 1.393 0.953 1.079 1.079 1.062 1.061 1.103 1.033 1.095  11.74
107) Benzyl Chlor 0.204 0.200 0.225 0.269 0.266 0.270 0.286 0.134 0.232  22.18
             ---- Quadratic regr., Force(0,0) ----  Coefficient =  0.9982
               Response Ratio = 0.00000 + 0.23596 *A + 0.02581 *A^2

108) 1,2-Dichloro 1.651 1.121 1.184 1.199 1.125 1.100 1.145 1.181 1.213  14.85
109) 1,2-Dibromo- 0.063 0.116 0.143 0.143 0.146 0.145 0.150 0.048 0.119  34.32
             ---- Quadratic regr., Force(0,0) ----  Coefficient =  0.9979
               Response Ratio = 0.00000 + 0.13275 *A + 0.00898 *A^2

110) Hexachlorobu 0.341 0.186 0.223 0.197 0.206 0.196 0.203 0.219 0.221  22.46
             ---- Linear regr., Force(0,0) ----  Coefficient =  0.9984
               Response Ratio = 0.00000 + 0.20199 *A
```

Initial Calibration Summary

Job Number: FC12099
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample: V5E1994-ICC1994
Lab FileID: 5E44763.D

```
111) 1,2,4-Trichl 0.750 0.576 0.615 0.634 0.624 0.607 0.633 0.657 0.637   8.07
112) Naphthalene  2.293 1.743 1.890 2.041 1.954 1.946 2.040 1.831 1.967   8.42
113) 1,2,3-Trichl 0.612 0.506 0.560 0.561 0.534 0.529 0.555 0.545 0.550   5.65
 ---------------------------------------------------------------------------
 (#) = Out of Range  ###  Number of calibration levels exceeded format  ###

           V5E_12-20-2023_.M        Thu Dec 21 08:57:14 2023
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Initial Calibration Verification

Job Number: FC12099
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample: V5E1994-ICV1994
Lab FileID: 5E44767.D

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\data\12-20-2023\5E44767.D Vial: 11
Acq On : 20 Dec 2023 7:19 pm Operator: joannel
Sample : ICV1994-5 Inst : MSVOA20
Misc : MS55506,V5E1994,,,,, Multiplr: 1.00
MS Integration Params: ult...ll.p

Method : C:\msdchem\1\met...5E_12-20-2023_.M (RTE Integrator)
Title : SW-846 Method 5030B/8260B & EPA 624
Last Update : Thu Dec 21 08:38:40 2023
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1 I	Fluorobenzene	1.000	1.000	0.0	102	0.00	8.46
2	Dichlorodifluoromethane	0.189	0.178	5.8	95	0.00	2.81
		Amount	Calc.	%Drift			
3 P	Chloromethane	40.000	38.404	4.0	96	0.00	3.14
		AvgRF	CCRF	%Dev			
4 C	Vinyl Chloride	0.221	0.205	7.2	101	0.00	3.26
5	1,3-Butadiene	0.195	0.165	15.4	82	0.00	3.29
		Amount	Calc.	%Drift			
6	Bromomethane	40.000	39.422	1.4	105	0.00	3.77
7	Chloroethane	40.000	36.731	8.2	87	0.00	3.95
8	Trichlorofluoromethane	40.000	42.919	-7.3	103	0.01	4.15
		AvgRF	CCRF	%Dev			
9	Ethyl Ether	0.174	0.168	3.4	107	0.00	4.58
		Amount	Calc.	%Drift			
10	Ethanol	800.000	924.898	-15.6	107	-0.04	4.77
		AvgRF	CCRF	%Dev			
11	1,2-Dichlorotrifluoroetha	0.253	0.244	3.6	100	0.00	4.82
12 C	1,1-Dichloroethene	0.313	0.274	12.5	93	0.00	4.86
13	Freon 113	0.207	0.220	-6.3	102	0.00	4.90
		Amount	Calc.	%Drift			
14	Carbon Disulfide	40.000	37.823	5.4	97	0.00	4.92
15	Iodomethane	40.000	32.098	19.8	77	0.00	5.06
		AvgRF	CCRF	%Dev			
16	Acrolein	0.046	0.052	-13.0	105	0.00	5.29
		Amount	Calc.	%Drift			
17	Allyl chloride	40.000	38.717	3.2	96	0.00	5.46
18	Methylene Chloride	40.000	36.286	9.3	98	0.00	5.59
		AvgRF	CCRF	%Dev			
19	Acetone	0.104	0.101	2.9	105	0.00	5.64
20	Methyl acetate	0.224	0.194	13.4	89	0.00	5.78
21	trans-1,2-Dichloroethene	0.295	0.263	10.8	97	0.00	5.79
22	Hexane	0.160	0.151	5.6	95	0.00	5.87

Initial Calibration Verification

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Sample: V5E1994-ICV1994
Lab FileID: 5E44767.D

23		Methyl Tert Butyl Ether	0.677	0.644	4.9	100	0.00	5.90
			Amount	Calc.	%Drift			
24		Acetonitrile	400.000	435.446	-8.9	108	-0.01	6.21
			AvgRF	CCRF	%Dev			
25		Di-isopropyl ether	0.627	0.557	11.2	97	0.00	6.32
26		Chloroprene	0.257	0.229	10.9	86	0.00	6.49
27	P	1,1-Dichloroethane	0.420	0.348	17.1	92	0.00	6.51
28		Acrylonitrile	0.104	0.103	1.0	100	0.00	6.57
29		ETBE	0.648	0.613	5.4	101	0.00	6.74
			Amount	Calc.	%Drift			
30		Tert Butyl Alcohol	400.000	373.798	6.6	94	-0.01	5.98
31		Vinyl acetate	200.000	200.815	-0.4	106	0.00	6.76
			AvgRF	CCRF	%Dev			
32		cis-1,2-Dichloroethene	0.263	0.226	14.1	95	0.00	7.13
33		2,2-Dichloropropane	0.322	0.281	12.7	96	0.00	7.24
34		Bromochloromethane	0.138	0.123	10.9	95	0.00	7.35
35		Cyclohexane	0.317	0.291	8.2	91	0.00	7.37
36	C	Chloroform	0.439	0.397	9.6	97	0.00	7.41
			Amount	Calc.	%Drift			
37		Ethyl acetate	200.000	210.796	-5.4	111	0.00	7.49
38		Tetrahydrofuran	40.000	34.165	14.6	93	0.00	7.60
			AvgRF	CCRF	%Dev			
39	S	Dibromofluoromethane	0.300	0.296	1.3	101	0.00	7.60
40		Carbon Tetrachloride	0.338	0.295	12.7	91	0.00	7.59
41		1,1,1-Trichloroethane	0.375	0.331	11.7	94	0.00	7.65
42		2-Butanone	0.158	0.145	8.2	93	0.00	7.73
43		1,1-Dichloropropene	0.301	0.275	8.6	95	0.00	7.78
44		tert-Butyl formate	0.072	0.090	-25.0#	123	0.00	7.87
			Amount	Calc.	%Drift			
45		Propionitrile	400.000	425.739	-6.4	107	0.00	8.06
			AvgRF	CCRF	%Dev			
46		Methacrylonitrile	0.170	0.182	-7.1	105	0.00	8.07
47		Benzene	0.962	0.841	12.6	96	0.00	8.04
48		TAME	0.680	0.656	3.5	101	0.00	8.12
49	S	1,2-Dichloroethane-d4	0.296	0.292	1.4	102	0.00	8.18
50		1,2-Dichloroethane	0.327	0.300	8.3	98	0.00	8.25
51		tert Amyl alcohol	0.047	0.044	6.4	93	0.00	8.29
			Amount	Calc.	%Drift			
52		Trichloroethene	40.000	37.188	7.0	97	0.00	8.64
			AvgRF	CCRF	%Dev			
53		Methylcyclohexane	0.381	0.348	8.7	90	0.00	8.64
54		Dibromomethane	0.165	0.160	3.0	98	0.00	9.08
55	C	1,2-Dichloropropane	0.216	0.208	3.7	101	0.00	9.17
56		Bromodichloromethane	0.327	0.288	11.9	92	0.00	9.22
			Amount	Calc.	%Drift			
57		Methyl methacrylate	40.000	42.023	-5.1	102	0.00	9.33
58		1,4-Dioxane	800.000	687.205	14.1	87	0.00	9.42
59		2-Chloroethyl vinyl ether	200.000	220.056	-10.0	111	0.00	9.75

Initial Calibration Verification

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Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample: V5E1994-ICV1994
Lab FileID: 5E44767.D

			AvgRF	CCRF	%Dev			
60		cis-1,3-Dichloropropene	0.335	0.323	3.6	98	0.00	9.85
61	I	Chlorobenzene-d5	1.000	1.000	0.0	101	0.00	11.60
62	S	Toluene-d8	1.249	1.236	1.0	100	0.00	10.04
			Amount	Calc.	%Drift			
63	C	Toluene	40.000	38.071	4.8	97	0.00	10.09
			AvgRF	CCRF	%Dev			
64		Isobutyl alcohol	0.022	0.025	-13.6	105	0.00	8.18
65		2-Nitropropane	0.124	0.114	8.1	93	0.00	10.32
66		4-Methyl-2-pentanone	0.418	0.405	3.1	101	0.00	10.43
67		trans-1,3-Dichloropropene	0.402	0.377	6.2	92	0.00	10.49
68		Tetrachloroethene	0.371	0.344	7.3	97	0.00	10.49
			Amount	Calc.	%Drift			
69		Ethyl methacrylate	40.000	43.864	-9.7	105	0.00	10.59
			AvgRF	CCRF	%Dev			
70		1,1,2-Trichloroethane	0.248	0.223	10.1	94	0.00	10.65
71		Dibromochloromethane	0.349	0.337	3.4	98	0.00	10.85
72		1,3-Dichloropropane	0.442	0.439	0.7	102	0.00	10.94
73		1,2-Dibromoethane	0.310	0.301	2.9	96	0.00	11.11
			Amount	Calc.	%Drift			
74		3,3-Dimethyl-1-butanol	2000.000	2004.938	-0.2	99	0.00	11.19
			AvgRF	CCRF	%Dev			
75		2-hexanone	0.291	0.313	-7.6	102	0.00	11.25
76		1-Chlorohexane	0.399	0.360	9.8	91	0.00	11.54
			Amount	Calc.	%Drift			
77	C	Ethylbenzene	40.000	36.794	8.0	96	0.00	11.61
			AvgRF	CCRF	%Dev			
78	P	Chlorobenzene	0.924	0.816	11.7	96	0.00	11.62
79		1,1,1,2-Tetrachloroethane	0.333	0.304	8.7	95	0.00	11.66
			Amount	Calc.	%Drift			
80		m,p-Xylene	80.000	72.830	9.0	95	0.00	11.74
81		o-Xylene	40.000	35.974	10.1	92	0.00	12.19
			AvgRF	CCRF	%Dev			
82		Styrene	0.807	0.799	1.0	99	0.00	12.24
83	P	Bromoform	0.230	0.225	2.2	92	0.00	12.30
84		Isopropylbenzene	1.437	1.242	13.6	93	0.00	12.49
85	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	100	0.00	13.96
86	S	4-Bromofluorobenzene	0.728	0.708	2.7	100	0.00	12.81
			Amount	Calc.	%Drift			
87		cis-1,4-Dichloro-2-butene	40.000	41.101	-2.8	101	0.00	12.85
88		n-Propylbenzene	40.000	36.482	8.8	92	0.00	12.91
			AvgRF	CCRF	%Dev			
89		Bromobenzene	0.635	0.594	6.5	99	0.00	12.94
90	P	1,1,2,2-Tetrachloroethane	0.822	0.751	8.6	94	0.00	12.98
			Amount	Calc.	%Drift			

Initial Calibration Verification

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Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample: V5E1994-ICV1994
Lab FileID: 5E44767.D

91	1,3,5-Trimethylbenzene	40.000	37.332	6.7	96	0.00	13.09
92	2-Chlorotoluene	40.000	36.642	8.4	95	0.00	13.10
93	trans-1,4-Dichloro-2-Bute	40.000	35.613	11.0	86	0.00	13.16
		AvgRF	CCRF	%Dev			
94	1,2,3-Trichloropropane	0.246	0.241	2.0	102	0.00	13.15
95	Cyclohexanone	0.032	0.059	-84.4#	187	0.00	13.22
96	4-Chlorotoluene	1.663	1.403	15.6	93	0.00	13.27
97	a-Methyl styrene		----------NA----------				
		Amount	Calc.	%Drift			
98	tert-Butylbenzene	40.000	36.604	8.5	93	0.00	13.43
99	1,2,4-Trimethylbenzene	40.000	37.216	7.0	97	0.00	13.51
100	Pentachloroethane	40.000	40.928	-2.3	101	0.00	13.49
		AvgRF	CCRF	%Dev			
101	sec-Butylbenzene	2.678	2.179	18.6	88	0.00	13.61
102	4-Isopropyltoluene	2.306	1.956	15.2	91	0.00	13.74
103	1,3-Dichlorobenzene	1.255	1.078	14.1	93	0.00	13.89
		Amount	Calc.	%Drift			
104	1,2,3-Trimethylbenzene	40.000	36.325	9.2	95	0.00	13.96
105	1,4-Dichlorobenzene	40.000	37.241	6.9	96	0.00	13.97
		AvgRF	CCRF	%Dev			
106	n-Butylbenzene	1.095	1.012	7.6	96	0.00	14.17
		Amount	Calc.	%Drift			
107	Benzyl Chloride	40.000	38.506	3.7	93	0.00	14.19
		AvgRF	CCRF	%Dev			
108	1,2-Dichlorobenzene	1.213	1.054	13.1	94	0.00	14.39
		Amount	Calc.	%Drift			
109	1,2-Dibromo-3-Chloropropa	40.000	39.357	1.6	95	0.00	15.12
110	Hexachlorobutadiene	40.000	37.299	6.8	92	0.00	15.65
		AvgRF	CCRF	%Dev			
111	1,2,4-Trichlorobenzene	0.637	0.580	8.9	93	0.00	15.71
112	Naphthalene	1.967	1.817	7.6	93	0.00	16.00
113	1,2,3-Trichlorobenzene	0.550	0.503	8.5	95	0.00	16.18

(#) = Out of Range SPCC's out = 0 CCC's out = 0
5E44763.D V5E_12-20-2023_.M Thu Dec 21 08:54:58 2023

Continuing Calibration Summary

Job Number: FC12099
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample: V5E1996-CC1994
Lab FileID: 5E44803.D

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\data\12-22-2023\5E44803.D Vial: 2
Acq On : 22 Dec 2023 9:08 am Operator: jeniferw
Sample : CC1994-5 Inst : MSVOA20
Misc : MS55597,V5E1996,,,,, Multiplr: 1.00
MS Integration Params: ult...ll.p

Method : C:\msdchem\1\met...5E_12-20-2023_.M (RTE Integrator)
Title : SW-846 Method 5030B/8260B & EPA 624
Last Update : Thu Dec 21 09:37:06 2023
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1 I	Fluorobenzene	1.000	1.000	0.0	98	0.00	8.46
2	Dichlorodifluoromethane	0.189	0.197	-4.2	101	0.00	2.81
	----------	Amount	Calc.	%Drift	----------		
3 P	Chloromethane	40.000	37.744	5.6	91	0.00	3.14
	----------	AvgRF	CCRF	%Dev	----------		
4 C	Vinyl Chloride	0.221	0.216	2.3	102	0.00	3.26
5	1,3-Butadiene	0.195	0.204	-4.6	98	0.00	3.29
	----------	Amount	Calc.	%Drift	----------		
6	Bromomethane	40.000	41.219	-3.0	105	0.00	3.77
7	Chloroethane	40.000	40.326	-0.8	91	0.00	3.95
8	Trichlorofluoromethane	40.000	43.674	-9.2	102	0.01	4.15
	----------	AvgRF	CCRF	%Dev	----------		
9	Ethyl Ether	0.174	0.157	9.8	96	0.00	4.58
	----------	Amount	Calc.	%Drift	----------		
10	Ethanol	800.000	850.761	-6.3	95	-0.02	4.78
	----------	AvgRF	CCRF	%Dev	----------		
11	1,2-Dichlorotrifluoroetha	0.253	0.234	7.5	92	0.00	4.82
12 C	1,1-Dichloroethene	0.313	0.282	9.9	92	0.00	4.86
13	Freon 113	0.207	0.207	0.0	92	0.00	4.90
	----------	Amount	Calc.	%Drift	----------		
14	Carbon Disulfide	40.000	39.258	1.9	96	0.00	4.92
	----------	AvgRF	CCRF	%Dev	----------		
15	Iodomethane	0.206	0.172	16.5	72	0.00	5.06
16	Acrolein	0.046	0.048	-4.3	94	0.00	5.29
	----------	Amount	Calc.	%Drift	----------		
17	Allyl chloride	40.000	38.219	4.5	91	0.00	5.46
18	Methylene Chloride	40.000	37.661	5.8	98	0.00	5.59
	----------	AvgRF	CCRF	%Dev	----------		
19	Acetone	0.104	0.092	11.5	92	0.00	5.64
20	Methyl acetate	0.224	0.210	6.3	92	0.00	5.77
21	trans-1,2-Dichloroethene	0.295	0.264	10.5	94	0.00	5.79
22	Hexane	0.160	0.155	3.1	93	0.00	5.87

Continuing Calibration Summary

Job Number: FC12099 **Sample:** V5E1996-CC1994
Account: HGLFLMI Hydrogeologic, Inc. **Lab FileID:** 5E44803.D
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

23		Methyl Tert Butyl Ether	0.677	0.619	8.6	92	0.00	5.90
			Amount	Calc.	%Drift			
24		Acetonitrile	400.000	374.117	6.5	89	0.00	6.21
			AvgRF	CCRF	%Dev			
25		Di-isopropyl ether	0.627	0.561	10.5	94	0.00	6.32
26		Chloroprene	0.257	0.251	2.3	91	0.00	6.49
27	P	1,1-Dichloroethane	0.420	0.366	12.9	93	0.00	6.52
28		Acrylonitrile	0.104	0.099	4.8	93	0.00	6.57
29		ETBE	0.648	0.593	8.5	94	0.00	6.74
			Amount	Calc.	%Drift			
30		Tert Butyl Alcohol	400.000	377.720	5.6	91	-0.01	5.98
31		Vinyl acetate	200.000	183.551	8.2	93	0.00	6.76
			AvgRF	CCRF	%Dev			
32		cis-1,2-Dichloroethene	0.263	0.240	8.7	97	0.00	7.13
33		2,2-Dichloropropane	0.322	0.305	5.3	100	0.00	7.24
34		Bromochloromethane	0.138	0.132	4.3	98	0.00	7.35
35		Cyclohexane	0.317	0.310	2.2	92	0.00	7.37
36	C	Chloroform	0.439	0.399	9.1	93	0.00	7.41
			Amount	Calc.	%Drift			
37		Ethyl acetate	200.000	186.252	6.9	94	0.00	7.50
38		Tetrahydrofuran	40.000	37.050	7.4	97	0.00	7.60
			AvgRF	CCRF	%Dev			
39	S	Dibromofluoromethane	0.300	0.301	-0.3	98	0.00	7.60
40		Carbon Tetrachloride	0.338	0.317	6.2	94	0.00	7.59
41		1,1,1-Trichloroethane	0.375	0.338	9.9	92	0.00	7.65
42		2-Butanone	0.158	0.152	3.8	95	0.00	7.73
43		1,1-Dichloropropene	0.301	0.277	8.0	92	0.00	7.78
44		tert-Butyl formate	0.072	0.073	-1.4	96	0.00	7.87
			Amount	Calc.	%Drift			
45		Propionitrile	400.000	390.564	2.4	93	0.00	8.05
			AvgRF	CCRF	%Dev			
46		Methacrylonitrile	0.170	0.168	1.2	92	0.00	8.07
47		Benzene	0.962	0.845	12.2	93	0.00	8.04
48		TAME	0.680	0.637	6.3	94	0.00	8.12
49	S	1,2-Dichloroethane-d4	0.296	0.307	-3.7	103	0.00	8.18
50		1,2-Dichloroethane	0.327	0.311	4.9	97	0.00	8.25
51		tert Amyl alcohol	0.047	0.045	4.3	91	0.00	8.29
			Amount	Calc.	%Drift			
52		Trichloroethene	40.000	37.956	5.1	95	0.00	8.64
			AvgRF	CCRF	%Dev			
53		Methylcyclohexane	0.381	0.375	1.6	93	0.00	8.64
54		Dibromomethane	0.165	0.160	3.0	94	0.00	9.09
55	C	1,2-Dichloropropane	0.216	0.202	6.5	94	0.00	9.17
56		Bromodichloromethane	0.327	0.311	4.9	96	0.00	9.22
			Amount	Calc.	%Drift			
57		Methyl methacrylate	40.000	39.587	1.0	92	0.00	9.33
58		1,4-Dioxane	800.000	759.234	5.1	92	0.00	9.42
59		2-Chloroethyl vinyl ether	200.000	221.593	-10.8	107	0.00	9.75

Continuing Calibration Summary

Job Number: FC12099 **Sample:** V5E1996-CC1994
Account: HGLFLMI Hydrogeologic, Inc. **Lab FileID:** 5E44803.D
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

			AvgRF	CCRF	%Dev			
60		cis-1,3-Dichloropropene	0.335	0.327	2.4	95	0.00	9.85
61	I	Chlorobenzene-d5	1.000	1.000	0.0	100	0.00	11.60
62	S	Toluene-d8	1.249	1.217	2.6	98	0.00	10.04
			Amount	Calc.	%Drift			
63	C	Toluene	40.000	38.270	4.3	97	0.00	10.09
			AvgRF	CCRF	%Dev			
64		Isobutyl alcohol	0.022	0.022	0.0	91	0.00	8.17
65		2-Nitropropane	0.124	0.116	6.5	94	0.00	10.32
66		4-Methyl-2-pentanone	0.418	0.378	9.6	93	0.00	10.43
67		trans-1,3-Dichloropropene	0.402	0.394	2.0	95	0.00	10.49
68		Tetrachloroethene	0.371	0.331	10.8	93	0.00	10.49
			Amount	Calc.	%Drift			
69		Ethyl methacrylate	40.000	38.827	2.9	92	0.00	10.58
			AvgRF	CCRF	%Dev			
70		1,1,2-Trichloroethane	0.248	0.228	8.1	96	0.00	10.65
71		Dibromochloromethane	0.349	0.330	5.4	95	0.00	10.85
72		1,3-Dichloropropane	0.442	0.412	6.8	95	0.00	10.94
73		1,2-Dibromoethane	0.310	0.301	2.9	95	0.00	11.12
			Amount	Calc.	%Drift			
74		3,3-Dimethyl-1-butanol	2000.000	1895.913	5.2	92	0.00	11.19
			AvgRF	CCRF	%Dev			
75		2-hexanone	0.291	0.286	1.7	93	0.00	11.25
76		1-Chlorohexane	0.399	0.377	5.5	95	0.00	11.54
			Amount	Calc.	%Drift			
77	C	Ethylbenzene	40.000	36.720	8.2	95	0.00	11.61
			AvgRF	CCRF	%Dev			
78	P	Chlorobenzene	0.924	0.814	11.9	95	0.00	11.62
79		1,1,1,2-Tetrachloroethane	0.333	0.311	6.6	97	0.00	11.66
			Amount	Calc.	%Drift			
80		m,p-Xylene	80.000	72.843	8.9	94	0.00	11.74
81		o-Xylene	40.000	37.493	6.3	95	0.00	12.19
			AvgRF	CCRF	%Dev			
82		Styrene	0.807	0.786	2.6	97	0.00	12.24
83	P	Bromoform	0.230	0.219	4.8	89	0.00	12.30
84		Isopropylbenzene	1.437	1.301	9.5	97	0.00	12.49
85	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	100	0.00	13.96
86	S	4-Bromofluorobenzene	0.728	0.716	1.6	101	0.00	12.81
			Amount	Calc.	%Drift			
87		cis-1,4-Dichloro-2-butene	40.000	32.119	19.7	79	0.00	12.85
88		n-Propylbenzene	40.000	38.145	4.6	96	0.00	12.91
			AvgRF	CCRF	%Dev			
89		Bromobenzene	0.635	0.573	9.8	96	0.00	12.94
90	P	1,1,2,2-Tetrachloroethane	0.822	0.753	8.4	95	0.00	12.98
			Amount	Calc.	%Drift			

Continuing Calibration Summary

Job Number: FC12099 **Sample:** V5E1996-CC1994
Account: HGLFLMI Hydrogeologic, Inc. **Lab FileID:** 5E44803.D
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

91	1,3,5-Trimethylbenzene	40.000	37.317	6.7	96	0.00	13.09
92	2-Chlorotoluene	40.000	36.799	8.0	95	0.00	13.11
93	trans-1,4-Dichloro-2-Bute	40.000	32.792	18.0	79	0.00	13.16
		AvgRF	CCRF	%Dev			
94	1,2,3-Trichloropropane	0.246	0.222	9.8	94	0.00	13.15
95	Cyclohexanone	0.032	0.027	15.6	86	0.00	13.22
96	4-Chlorotoluene	1.663	1.428	14.1	94	0.00	13.27
97	a-Methyl styrene		----------NA----------				
		Amount	Calc.	%Drift			
98	tert-Butylbenzene	40.000	36.355	9.1	93	0.00	13.44
99	1,2,4-Trimethylbenzene	40.000	37.378	6.6	97	0.00	13.51
100	Pentachloroethane	40.000	39.630	0.9	97	0.00	13.49
		AvgRF	CCRF	%Dev			
101	sec-Butylbenzene	2.678	2.357	12.0	95	0.00	13.62
102	4-Isopropyltoluene	2.306	2.091	9.3	97	0.00	13.75
103	1,3-Dichlorobenzene	1.255	1.115	11.2	96	0.00	13.89
		Amount	Calc.	%Drift			
104	1,2,3-Trimethylbenzene	40.000	37.052	7.4	97	0.00	13.96
105	1,4-Dichlorobenzene	40.000	38.055	4.9	98	0.00	13.97
		AvgRF	CCRF	%Dev			
106	n-Butylbenzene	1.095	1.009	7.9	95	0.00	14.17
		Amount	Calc.	%Drift			
107	Benzyl Chloride	40.000	42.522	-6.3	103	0.00	14.19
		AvgRF	CCRF	%Dev			
108	1,2-Dichlorobenzene	1.213	1.071	11.7	96	0.00	14.39
		Amount	Calc.	%Drift			
109	1,2-Dibromo-3-Chloropropa	40.000	38.278	4.3	92	0.00	15.12
110	Hexachlorobutadiene	40.000	36.905	7.7	91	0.00	15.66
		AvgRF	CCRF	%Dev			
111	1,2,4-Trichlorobenzene	0.637	0.568	10.8	91	0.00	15.71
112	Naphthalene	1.967	1.805	8.2	93	0.00	16.00
113	1,2,3-Trichlorobenzene	0.550	0.486	11.6	91	0.00	16.18

(#) = Out of Range SPCC's out = 0 CCC's out = 0
5E44763.D V5E_12-20-2023_.M Fri Dec 22 10:04:40 2023

Continuing Calibration Summary

Job Number: FC12099
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample: V5E1996-ECC1994
Lab FileID: 5E44829.D

Evaluate Continuing Calibration Report

Data File : X:\Orlando VOA\celin...996\V5E1996\5E44829.d Vial: 28
Acq On : 22 Dec 2023 7:17 pm Operator: joannel
Sample : ECC1994-5 Inst : MSVOA20
Misc : MS55608,V5E1996,,,,, Multiplr: 1.00
MS Integration Params: ult...ll.p

Method : X:\Orlando VOA\c...5E_12-20-2023_.M (RTE Integrator)
Title : SW-846 Method 5030B/8260B & EPA 624
Last Update : Thu Dec 21 09:37:06 2023
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 50% Max. Rel. Area : 200%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1 I	Fluorobenzene	1.000	1.000	0.0	95	0.00	8.46
2	Dichlorodifluoromethane	0.189	0.178	5.8	88	0.00	2.81
	----------	True	Calc.	% Drift	----------		
3 P	Chloromethane	40.000	36.999	7.5	86	0.00	3.13
	----------	AvgRF	CCRF	% Dev	----------		
4 C	Vinyl Chloride	0.221	0.195	11.8	89	0.00	3.26
5	1,3-Butadiene	0.195	0.239	-22.6	111	0.00	3.29
	----------	True	Calc.	% Drift	----------		
6	Bromomethane	40.000	35.782	10.5	89	0.00	3.77
7	Chloroethane	40.000	41.269	-3.2	90	0.00	3.95
8	Trichlorofluoromethane	40.000	41.868	-4.7	91	0.01	4.15
	----------	AvgRF	CCRF	% Dev	----------		
9	Ethyl Ether	0.174	0.163	6.3	96	0.00	4.58
	----------	True	Calc.	% Drift	----------		
10	Ethanol	800.000	925.226	-15.7	99	-0.02	4.79
	----------	AvgRF	CCRF	% Dev	----------		
11	1,2-Dichlorotrifluoroetha	0.253	0.230	9.1	87	0.00	4.82
12 C	1,1-Dichloroethene	0.313	0.278	11.2	88	0.00	4.86
13	Freon 113	0.207	0.200	3.4	87	0.00	4.90
	----------	True	Calc.	% Drift	----------		
14	Carbon Disulfide	40.000	36.847	7.9	88	0.00	4.92
	----------	AvgRF	CCRF	% Dev	----------		
15	Iodomethane	0.206	0.250	-21.4	102	0.00	5.06
16	Acrolein	0.046	0.044	4.3	83	0.00	5.29
	----------	True	Calc.	% Drift	----------		
17	Allyl chloride	40.000	35.522	11.2	82	0.00	5.46
18	Methylene Chloride	40.000	35.225	11.9	89	0.00	5.59
	----------	AvgRF	CCRF	% Dev	----------		
19	Acetone	0.104	0.099	4.8	96	0.00	5.64
20	Methyl acetate	0.224	0.226	-0.9	96	0.00	5.78
21	trans-1,2-Dichloroethene	0.295	0.260	11.9	89	0.00	5.79
22	Hexane	0.160	0.139	13.1	81	0.00	5.87

Continuing Calibration Summary

Job Number: FC12099 **Sample:** V5E1996-ECC1994
Account: HGLFLMI Hydrogeologic, Inc. **Lab FileID:** 5E44829.D
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

23		Methyl Tert Butyl Ether	0.677	0.632	6.6	91	0.00	5.89
			True	Calc.	% Drift			
24		Acetonitrile	400.000	384.693	3.8	89	-0.01	6.21
			AvgRF	CCRF	% Dev			
25		Di-isopropyl ether	0.627	0.551	12.1	89	0.00	6.32
26		Chloroprene	0.257	0.241	6.2	85	0.00	6.49
27	P	1,1-Dichloroethane	0.420	0.363	13.6	90	0.00	6.52
28		Acrylonitrile	0.104	0.100	3.8	91	0.00	6.57
29		ETBE	0.648	0.593	8.5	91	0.00	6.74
			True	Calc.	% Drift			
30		Tert Butyl Alcohol	400.000	384.618	3.8	90	-0.01	5.98
31		Vinyl acetate	200.000	166.803	16.6	82	0.00	6.77
			AvgRF	CCRF	% Dev			
32		cis-1,2-Dichloroethene	0.263	0.245	6.8	95	0.00	7.13
33		2,2-Dichloropropane	0.322	0.257	20.2	82	0.00	7.25
34		Bromochloromethane	0.138	0.129	6.5	93	0.00	7.35
35		Cyclohexane	0.317	0.294	7.3	85	0.00	7.37
36	C	Chloroform	0.439	0.399	9.1	90	0.00	7.41
			True	Calc.	% Drift			
37		Ethyl acetate	200.000	184.246	7.9	90	0.00	7.50
38		Tetrahydrofuran	40.000	36.523	8.7	92	0.00	7.60
			AvgRF	CCRF	% Dev			
39	S	Dibromofluoromethane	0.300	0.299	0.3	94	0.00	7.60
40		Carbon Tetrachloride	0.338	0.310	8.3	89	0.00	7.59
41		1,1,1-Trichloroethane	0.375	0.341	9.1	90	0.00	7.65
42		2-Butanone	0.158	0.161	-1.9	96	0.00	7.73
43		1,1-Dichloropropene	0.301	0.275	8.6	88	0.00	7.78
44		tert-Butyl formate	0.072	0.068	5.6	86	0.00	7.87
			True	Calc.	% Drift			
45		Propionitrile	400.000	407.521	-1.9	94	0.00	8.05
			AvgRF	CCRF	% Dev			
46		Methacrylonitrile	0.170	0.172	-1.2	91	0.00	8.07
47		Benzene	0.962	0.834	13.3	89	0.00	8.04
48		TAME	0.680	0.648	4.7	92	0.00	8.12
49	S	1,2-Dichloroethane-d4	0.296	0.289	2.4	93	0.00	8.18
50		1,2-Dichloroethane	0.327	0.303	7.3	92	0.00	8.25
51		tert Amyl alcohol	0.047	0.046	2.1	90	0.00	8.29
			True	Calc.	% Drift			
52		Trichloroethene	40.000	38.061	4.8	92	0.00	8.64
			AvgRF	CCRF	% Dev			
53		Methylcyclohexane	0.381	0.364	4.5	87	0.00	8.64
54		Dibromomethane	0.165	0.166	-0.6	94	0.00	9.08
55	C	1,2-Dichloropropane	0.216	0.198	8.3	89	0.00	9.17
56		Bromodichloromethane	0.327	0.303	7.3	90	0.00	9.22
			True	Calc.	% Drift			
57		Methyl methacrylate	40.000	40.022	-0.1	90	0.00	9.33
58		1,4-Dioxane	800.000	814.779	-1.8	96	0.00	9.41
59		2-Chloroethyl vinyl ether	200.000	200.992	-0.5	93	0.00	9.75

Continuing Calibration Summary

Job Number: FC12099 **Sample:** V5E1996-ECC1994
Account: HGLFLMI Hydrogeologic, Inc. **Lab FileID:** 5E44829.D
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

			AvgRF	CCRF	% Dev			
60		cis-1,3-Dichloropropene	0.335	0.313	6.6	88	0.00	9.85
61	I	Chlorobenzene-d5	1.000	1.000	0.0	96	0.00	11.60
62	S	Toluene-d8	1.249	1.225	1.9	94	0.00	10.04
			True	Calc.	% Drift			
63	C	Toluene	40.000	37.873	5.3	91	0.00	10.09
			AvgRF	CCRF	% Dev			
64		Isobutyl alcohol	0.022	0.023	-4.5	91	0.00	8.18
65		2-Nitropropane	0.124	0.118	4.8	92	0.00	10.32
66		4-Methyl-2-pentanone	0.418	0.408	2.4	96	0.00	10.43
67		trans-1,3-Dichloropropene	0.402	0.381	5.2	88	0.00	10.49
68		Tetrachloroethene	0.371	0.358	3.5	96	0.00	10.49
			True	Calc.	% Drift			
69		Ethyl methacrylate	40.000	41.104	-2.8	93	0.00	10.58
			AvgRF	CCRF	% Dev			
70		1,1,2-Trichloroethane	0.248	0.233	6.0	94	0.00	10.65
71		Dibromochloromethane	0.349	0.327	6.3	90	0.00	10.85
72		1,3-Dichloropropane	0.442	0.414	6.3	91	0.00	10.94
73		1,2-Dibromoethane	0.310	0.313	-1.0	95	0.00	11.12
			True	Calc.	% Drift			
74		3,3-Dimethyl-1-butanol	2000.000	1849.243	7.5	86	0.00	11.19
			AvgRF	CCRF	% Dev			
75		2-hexanone	0.291	0.309	-6.2	96	0.00	11.25
76		1-Chlorohexane	0.399	0.372	6.8	90	0.00	11.54
			True	Calc.	% Drift			
77	C	Ethylbenzene	40.000	37.077	7.3	92	0.00	11.61
			AvgRF	CCRF	% Dev			
78	P	Chlorobenzene	0.924	0.834	9.7	93	0.00	11.62
79		1,1,1,2-Tetrachloroethane	0.333	0.311	6.6	93	0.00	11.66
			True	Calc.	% Drift			
80		m,p-Xylene	80.000	73.811	7.7	91	0.00	11.75
81		o-Xylene	40.000	37.579	6.1	91	0.00	12.19
			AvgRF	CCRF	% Dev			
82		Styrene	0.807	0.772	4.3	91	0.00	12.24
83	P	Bromoform	0.230	0.193	16.1	75	0.00	12.30
84		Isopropylbenzene	1.437	1.295	9.9	92	0.00	12.49
85	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	97	0.00	13.96
86	S	4-Bromofluorobenzene	0.728	0.710	2.5	97	0.00	12.81
			True	Calc.	% Drift			
87		cis-1,4-Dichloro-2-butene	40.000	14.019	65.0#	33	0.00	12.85
88		n-Propylbenzene	40.000	37.047	7.4	91	0.00	12.91
			AvgRF	CCRF	% Dev			
89		Bromobenzene	0.635	0.583	8.2	94	0.00	12.94
90	P	1,1,2,2-Tetrachloroethane	0.822	0.747	9.1	91	0.00	12.98
			True	Calc.	% Drift			

Continuing Calibration Summary

Job Number: FC12099 **Sample:** V5E1996-ECC1994
Account: HGLFLMI Hydrogeologic, Inc. **Lab FileID:** 5E44829.D
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

91	1,3,5-Trimethylbenzene	40.000	37.375	6.6	93	0.00	13.09
92	2-Chlorotoluene	40.000	37.629	5.9	94	0.00	13.11
93	trans-1,4-Dichloro-2-Bute	40.000	18.053	54.9#	42	0.00	13.16
		AvgRF	CCRF	% Dev			
94	1,2,3-Trichloropropane	0.246	0.234	4.9	96	0.00	13.15
95	Cyclohexanone	0.032	0.029	9.4	89	0.00	13.22
96	4-Chlorotoluene	1.663	1.415	14.9	90	0.00	13.27
97	a-Methyl styrene		----------NA----------				
		True	Calc.	% Drift			
98	tert-Butylbenzene	40.000	37.623	5.9	93	0.00	13.44
99	1,2,4-Trimethylbenzene	40.000	37.894	5.3	95	0.00	13.51
100	Pentachloroethane	40.000	35.071	12.3	83	0.00	13.49
		AvgRF	CCRF	% Dev			
101	sec-Butylbenzene	2.678	2.346	12.4	91	0.00	13.62
102	4-Isopropyltoluene	2.306	2.041	11.5	92	0.00	13.75
103	1,3-Dichlorobenzene	1.255	1.134	9.6	95	0.00	13.89
		True	Calc.	% Drift			
104	1,2,3-Trimethylbenzene	40.000	37.124	7.2	94	0.00	13.96
105	1,4-Dichlorobenzene	40.000	37.512	6.2	93	0.00	13.97
		AvgRF	CCRF	% Dev			
106	n-Butylbenzene	1.095	0.965	11.9	88	0.00	14.17
		True	Calc.	% Drift			
107	Benzyl Chloride	40.000	33.590	16.0	78	0.00	14.20
		AvgRF	CCRF	% Dev			
108	1,2-Dichlorobenzene	1.213	1.092	10.0	94	0.00	14.39
		True	Calc.	% Drift			
109	1,2-Dibromo-3-Chloropropa	40.000	36.498	8.8	85	0.00	15.12
110	Hexachlorobutadiene	40.000	36.665	8.3	87	0.00	15.66
		AvgRF	CCRF	% Dev			
111	1,2,4-Trichlorobenzene	0.637	0.588	7.7	92	0.00	15.71
112	Naphthalene	1.967	1.905	3.2	95	0.00	16.00
113	1,2,3-Trichlorobenzene	0.550	0.515	6.4	94	0.00	16.18

(#) = Out of Range SPCC's out = 0 CCC's out = 0
5E44763.D V5E_12-20-2023_.M Tue Dec 26 00:22:43 2023

Initial Calibration Summary

Job Number: FC12099
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample: VA3444-ICC3444
Lab FileID: A0239071.D

Response Factor Report MSVOA10

Method : C:\msdchem\1\MET...3-12-3_SIMDIOX.M (RTE Integrator)
Title : 1,4-Dioxane by SIM
Last Update : Mon Dec 04 15:33:06 2023
Response via : Initial Calibration

Calibration Files
1 =A0239067.D 2 =A0239068.D 3 =A0239069.D 4 =A0239070.D
5 =A0239071.D 6 =A0239072.D 7 =A0239073.D

Compound	1	2	3	4	5	6	7	Avg	%RSD
1) I Fluorobenzene	ISTD								
2)S 1,2-Dichloroethan	0.412	0.416	0.415	0.413	0.405	0.411	0.404	0.411	1.11
3)S Toluene-d8	0.667	0.671	0.669	0.675	0.682	0.680	0.677	0.674	0.86
4) I 1,4-Dioxane-d8	ISTD								
5) 1,4-Dioxane	4.149	2.893	2.763	3.222	3.278	2.918	3.354	3.225	14.38

(#) = Out of Range

2023-12-3_SIMDIOX.M Tue Dec 05 10:12:45 2023

Initial Calibration Verification

Job Number: FC12099
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample: VA3444-ICV3444
Lab FileID: A0239075.D

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\120323\A0239075.D Vial: 17
Acq On : 4 Dec 2023 4:07 pm Operator: TRANGD
Sample : icv3444-5 Inst : MSVOA10
Misc : MS55453,VA3444,,,,, Multiplr: 1.00
MS Integration Params: tiny.p

Method : C:\msdchem\1\MET...3-12-3_SIMDIOX.M (RTE Integrator)
Title : 1,4-Dioxane by SIM
Last Update : Mon Dec 04 15:33:06 2023
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1	I	Fluorobenzene	1.000	1.000	0.0	94	0.00	7.80
2	S	1,2-Dichloroethane-d4	0.411	0.411	0.0	95	0.00	7.54
3	S	Toluene-d8	0.674	0.668	0.9	92	0.00	9.34
4	I	1,4-Dioxane-d8	1.000	1.000	0.0	149	0.00	8.70
5		1,4-Dioxane	3.225	3.086	4.3	140	0.00	8.73

(#) = Out of Range SPCC's out = 0 CCC's out = 0
A0239071.D 2023-12-3_SIMDIOX.M Tue Dec 05 10:13:20 2023

Continuing Calibration Summary

Job Number: FC12099
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample: VA3455-CC3444
Lab FileID: A0239266.D

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\122623\A0239266.D Vial: 5
Acq On : 26 Dec 2023 10:16 am Operator: TRANGD
Sample : cc3444-5 Inst : MSVOA10
Misc : MS55613,VA3455,,,,, Multiplr: 1.00
MS Integration Params: tiny.p

Method : C:\msdchem\1\MET...-12-14_SIMDIOX.M (RTE Integrator)
Title : 1,4-Dioxane by SIM
Last Update : Fri Dec 15 10:44:46 2023
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1 I	Fluorobenzene	1.000	1.000	0.0	73	0.00	7.81
2 S	1,2-Dichloroethane-d4	0.426	0.410	3.8	71	0.00	7.54
3 S	Toluene-d8	0.768	0.777	-1.2	74	0.00	9.35
4 I	1,4-Dioxane-d8	1.000	1.000	0.0	79	0.00	8.70
5	1,4-Dioxane	2.887	3.394	-17.6	90	0.00	8.74

(#) = Out of Range SPCC's out = 0 CCC's out = 0
A0239174.D 2023-12-14_SIMDIOX.M Wed Dec 27 07:31:05 2023

Continuing Calibration Summary

Job Number: FC12099
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample: VA3456-CC3444
Lab FileID: A0239294.D

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\122623\A0239294.D Vial: 33
Acq On : 26 Dec 2023 9:23 pm Operator: TRANGD
Sample : cc3444-5 Inst : MSVOA10
Misc : MS55619,VA3456,,,,, Multiplr: 1.00
MS Integration Params: tiny.p

Method : C:\msdchem\1\MET...-12-14_SIMDIOX.M (RTE Integrator)
Title : 1,4-Dioxane by SIM
Last Update : Fri Dec 15 10:44:46 2023
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1 I	Fluorobenzene	1.000	1.000	0.0	80	0.00	7.81
2 S	1,2-Dichloroethane-d4	0.426	0.422	0.9	79	0.00	7.54
3 S	Toluene-d8	0.768	0.813	-5.9	84	0.00	9.35
4 I	1,4-Dioxane-d8	1.000	1.000	0.0	88	0.00	8.70
5	1,4-Dioxane	2.887	3.291	-14.0	97	0.00	8.73

(#) = Out of Range SPCC's out = 0 CCC's out = 0
A0239174.D 2023-12-14_SIMDIOX.M Wed Dec 27 07:51:25 2023

Run Sequence Report

Job Number: FC12099
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Run ID: V1A1985 **Method:** SW846 8260D **Instrument ID:** GCMS1A

Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
V1A1985-BFB	1A50649.D	11/15/23 05:14	n/a	BFB Tune
V1A1985-IC1985	1A50651.D	11/15/23 06:16	n/a	Initial cal 1
V1A1985-IC1985	1A50653.D	11/15/23 06:48	n/a	Initial cal 8
V1A1985-IC1985	1A50655.D	11/15/23 07:25	n/a	Initial cal 2
V1A1985-IC1985	1A50657.D	11/15/23 07:57	n/a	Initial cal 3
V1A1985-IC1985	1A50659.D	11/15/23 08:29	n/a	Initial cal 4
V1A1985-ICC1985	1A50661.D	11/15/23 09:01	n/a	Initial cal 5
V1A1985-IC1985	1A50663.D	11/15/23 09:33	n/a	Initial cal 6
V1A1985-IC1985	1A50665.D	11/15/23 10:05	n/a	Initial cal 7
V1A1985-ICV1985	1A50669.D	11/15/23 13:32	n/a	Initial cal verification 5

Run Sequence Report

Job Number: FC12099
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Run ID: V1A2028 **Method:** SW846 8260D **Instrument ID:** GCMS1A

Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
V1A2028-BFB	1A51660.D	12/26/23 07:39	n/a	BFB Tune
V1A2028-CC1985	1A51661.D	12/26/23 08:03	n/a	Continuing cal 5
V1A2028-BS	1A51662.D	12/26/23 08:28	n/a	Blank Spike
V1A2028-MB	1A51664.D	12/26/23 09:16	n/a	Method Blank
ZZZZZZ	1A51666.D	12/26/23 10:05	n/a	(unrelated sample)
ZZZZZZ	1A51667.D	12/26/23 10:30	n/a	(unrelated sample)
ZZZZZZ	1A51668.D	12/26/23 10:54	n/a	(unrelated sample)
ZZZZZZ	1A51669.D	12/26/23 11:18	n/a	(unrelated sample)
ZZZZZZ	1A51670.D	12/26/23 11:43	n/a	(unrelated sample)
ZZZZZZ	1A51671.D	12/26/23 12:07	n/a	(unrelated sample)
ZZZZZZ	1A51672.D	12/26/23 12:31	n/a	(unrelated sample)
ZZZZZZ	1A51673.D	12/26/23 12:56	n/a	(unrelated sample)
ZZZZZZ	1A51674.D	12/26/23 13:20	n/a	(unrelated sample)
ZZZZZZ	1A51675.D	12/26/23 13:45	n/a	(unrelated sample)
ZZZZZZ	1A51676.D	12/26/23 14:09	n/a	(unrelated sample)
ZZZZZZ	1A51677.D	12/26/23 14:33	n/a	(unrelated sample)
FC12194-13	1A51678.D	12/26/23 14:58	n/a	(used for QC only; not part of job FC12099)
ZZZZZZ	1A51679.D	12/26/23 15:22	n/a	(unrelated sample)
ZZZZZZ	1A51680.D	12/26/23 15:47	n/a	(unrelated sample)
ZZZZZZ	1A51681.D	12/26/23 16:11	n/a	(unrelated sample)
ZZZZZZ	1A51682.D	12/26/23 16:35	n/a	(unrelated sample)
FC12099-12	1A51683.D	12/26/23 17:00	n/a	CRHE-MW0034-035.0-20231219
FC12099-13	1A51684.D	12/26/23 17:24	n/a	CRHE-MW0042-040.0-20231219
ZZZZZZ	1A51685.D	12/26/23 17:48	n/a	(unrelated sample)
FC12194-13MS	1A51686.D	12/26/23 18:13	n/a	Matrix Spike
FC12194-13MSD	1A51687.D	12/26/23 18:37	n/a	Matrix Spike Duplicate
V1A2028-ECC1985	1A51688.D	12/26/23 19:02	n/a	Ending cal 5

Run Sequence Report

Job Number: FC12099
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Run ID: V5E1994 **Method:** SW846 8260D **Instrument ID:** GCMS5E

Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
V5E1994-BFB	5E44753.D	12/20/23 12:38	n/a	BFB Tune
V5E1994-IC1994	5E44758.D	12/20/23 15:52	n/a	Initial cal 1
V5E1994-IC1994	5E44759.D	12/20/23 16:15	n/a	Initial cal 8
V5E1994-IC1994	5E44760.D	12/20/23 16:38	n/a	Initial cal 2
V5E1994-IC1994	5E44761.D	12/20/23 17:01	n/a	Initial cal 3
V5E1994-IC1994	5E44762.D	12/20/23 17:24	n/a	Initial cal 4
V5E1994-ICC1994	5E44763.D	12/20/23 17:47	n/a	Initial cal 5
V5E1994-IC1994	5E44764.D	12/20/23 18:10	n/a	Initial cal 6
V5E1994-IC1994	5E44765.D	12/20/23 18:33	n/a	Initial cal 7
V5E1994-ICV1994	5E44767.D	12/20/23 19:19	n/a	Initial cal verification 5

Run Sequence Report

Job Number: FC12099
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Run ID: V5E1996 **Method:** SW846 8260D **Instrument ID:** GCMS5E

Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
V5E1996-BFB	5E44802.D	12/22/23 08:39	n/a	BFB Tune
V5E1996-CC1994	5E44803.D	12/22/23 09:08	n/a	Continuing cal 5
V5E1996-BS	5E44804.D	12/22/23 09:44	n/a	Blank Spike
V5E1996-MB	5E44806.D	12/22/23 10:29	n/a	Method Blank
FC12099-3	5E44807.D	12/22/23 10:52	n/a	CRHE-MW0025-030.0-20231218
FC12099-9	5E44808.D	12/22/23 11:15	n/a	CRHE-MW0032-045.0-20231218
FC12099-10	5E44809.D	12/22/23 11:38	n/a	CRHE-MW0027-045.0-20231219
FC12099-11	5E44810.D	12/22/23 12:01	n/a	CRHE-MW0041-035.0-20231219
FC12099-12	5E44811.D	12/22/23 12:25	n/a	CRHE-MW0034-035.0-20231219
FC12099-13	5E44812.D	12/22/23 12:47	n/a	CRHE-MW0042-040.0-20231219
FC12099-17	5E44813.D	12/22/23 13:10	n/a	CRHE-IW0017I-030.0-20231218
FC12099-18	5E44814.D	12/22/23 13:33	n/a	CRHE-MW0035-045.0-20231218
FC12099-20	5E44815.D	12/22/23 13:56	n/a	CRHE-MW0039-030.0-20231219
FC12099-21	5E44816.D	12/22/23 14:19	n/a	CRHE-TB-20231218-01
FC12099-22	5E44817.D	12/22/23 14:42	n/a	CRHE-TB-20231218-02
ZZZZZZ	5E44818.D	12/22/23 15:05	n/a	(unrelated sample)
ZZZZZZ	5E44819.D	12/22/23 15:28	n/a	(unrelated sample)
ZZZZZZ	5E44820.D	12/22/23 15:51	n/a	(unrelated sample)
ZZZZZZ	5E44821.D	12/22/23 16:14	n/a	(unrelated sample)
ZZZZZZ	5E44822.D	12/22/23 16:37	n/a	(unrelated sample)
ZZZZZZ	5E44823.D	12/22/23 17:00	n/a	(unrelated sample)
ZZZZZZ	5E44824.D	12/22/23 17:23	n/a	(unrelated sample)
FC12099-15	5E44825.D	12/22/23 17:46	n/a	CRHE-IW0019I-040.0-20231218
FC12099-3MS	5E44827.D	12/22/23 18:32	n/a	Matrix Spike
FC12099-3MSD	5E44828.D	12/22/23 18:54	n/a	Matrix Spike Duplicate
V5E1996-ECC1994	5E44829.D	12/22/23 19:17	n/a	Ending cal 5

Run Sequence Report

Job Number: FC12099
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Run ID: VA3444 **Method:** EPA 624.1 BY SIM **Instrument ID:** GCMSA

Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
VA3444-BFB	A0239065A.D	12/04/23 11:33	n/a	BFB Tune
VA3444-IC3444	A0239067.D	12/04/23 12:29	n/a	Initial cal 1
VA3444-IC3444	A0239068.D	12/04/23 12:56	n/a	Initial cal 2
VA3444-IC3444	A0239069.D	12/04/23 13:27	n/a	Initial cal 3
VA3444-IC3444	A0239070.D	12/04/23 13:53	n/a	Initial cal 4
VA3444-ICC3444	A0239071.D	12/04/23 14:20	n/a	Initial cal 5
VA3444-IC3444	A0239072.D	12/04/23 14:48	n/a	Initial cal 6
VA3444-IC3444	A0239073.D	12/04/23 15:14	n/a	Initial cal 7
VA3444-ICV3444	A0239075.D	12/04/23 16:07	n/a	Initial cal verification 5
VA3444-BS	A0239076.D	12/04/23 16:35	n/a	Blank Spike
VA3444-MB	A0239078.D	12/04/23 17:29	n/a	Method Blank
ZZZZZZ	A0239079.D	12/04/23 17:56	n/a	(unrelated sample)
DA60292-2	A0239080.D	12/04/23 18:23	n/a	(used for QC only; not part of job FC12099)
ZZZZZZ	A0239081.D	12/04/23 18:50	n/a	(unrelated sample)
ZZZZZZ	A0239082.D	12/04/23 19:17	n/a	(unrelated sample)
DA60292-2MS	A0239083.D	12/04/23 19:44	n/a	Matrix Spike
DA60292-2MSD	A0239084.D	12/04/23 20:11	n/a	Matrix Spike Duplicate

Run Sequence Report

Job Number: FC12099
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Run ID: VA3455 **Method:** SW846 8260D BY SIM **Instrument ID:** GCMSA

Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
VA3455-BFB	A0239264.D	12/26/23 09:23	n/a	BFB Tune
VA3455-CC3444	A0239266.D	12/26/23 10:16	n/a	Continuing cal 5
VA3455-BS	A0239268.D	12/26/23 11:25	n/a	Blank Spike
VA3455-MB	A0239270.D	12/26/23 12:20	n/a	Method Blank
FC12099-3	A0239271.D	12/26/23 12:48	n/a	CRHE-MW0025-030.0-20231218
FC12099-11	A0239272.D	12/26/23 13:15	n/a	CRHE-MW0041-035.0-20231219
FC12099-18	A0239273.D	12/26/23 13:42	n/a	CRHE-MW0035-045.0-20231218
FC12099-20	A0239274.D	12/26/23 14:08	n/a	CRHE-MW0039-030.0-20231219
ZZZZZZ	A0239277.D	12/26/23 15:13	n/a	(unrelated sample)
ZZZZZZ	A0239278.D	12/26/23 15:37	n/a	(unrelated sample)
ZZZZZZ	A0239279.D	12/26/23 15:58	n/a	(unrelated sample)
ZZZZZZ	A0239280.D	12/26/23 16:20	n/a	(unrelated sample)
ZZZZZZ	A0239281.D	12/26/23 16:41	n/a	(unrelated sample)
ZZZZZZ	A0239283.D	12/26/23 17:24	n/a	(unrelated sample)
ZZZZZZ	A0239284.D	12/26/23 17:46	n/a	(unrelated sample)
ZZZZZZ	A0239285.D	12/26/23 18:08	n/a	(unrelated sample)
ZZZZZZ	A0239286.D	12/26/23 18:29	n/a	(unrelated sample)
ZZZZZZ	A0239287.D	12/26/23 18:51	n/a	(unrelated sample)
ZZZZZZ	A0239288.D	12/26/23 19:13	n/a	(unrelated sample)

Run Sequence Report

Job Number: FC12099
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Run ID: VA3456 **Method:** SW846 8260D BY SIM **Instrument ID:** GCMSA

Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
VA3456-CC3444	A0239294.D	12/26/23 21:23	n/a	Continuing cal 5
VA3456-BS	A0239295.D	12/26/23 21:44	n/a	Blank Spike
VA3456-MB	A0239297.D	12/26/23 22:28	n/a	Method Blank
ZZZZZZ	A0239298.D	12/26/23 22:50	n/a	(unrelated sample)
FC12196-17	A0239299.D	12/26/23 23:11	n/a	(used for QC only; not part of job FC12099)
ZZZZZZ	A0239302.D	12/27/23 00:16	n/a	(unrelated sample)
ZZZZZZ	A0239304.D	12/27/23 00:59	n/a	(unrelated sample)
ZZZZZZ	A0239305.D	12/27/23 01:21	n/a	(unrelated sample)
ZZZZZZ	A0239307.D	12/27/23 02:04	n/a	(unrelated sample)
ZZZZZZ	A0239308.D	12/27/23 02:26	n/a	(unrelated sample)
ZZZZZZ	A0239310.D	12/27/23 03:09	n/a	(unrelated sample)
ZZZZZZ	A0239311.D	12/27/23 03:30	n/a	(unrelated sample)
FC12196-17MS	A0239313.D	12/27/23 04:14	n/a	Matrix Spike
FC12196-17MSD	A0239314.D	12/27/23 04:35	n/a	Matrix Spike Duplicate

MS Volatiles

Raw Data

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\122623\
Data File : A0239271.D
Acq On : 26 Dec 2023 12:48 pm
Operator : TRANGD
Sample : FC12099-3
Misc : MS55618,VA3455,,,,,
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Dec 26 13:43:35 2023
Quant Method : C:\msdchem\1\METHODS\2023-12-14_SIMDIOX.M
Quant Title : 1,4-Dioxane by SIM
QLast Update : Fri Dec 15 10:44:46 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	7.810	96	27609	5.00	ug/L	0.00
4) 1,4-Dioxane-d8	8.703	96	3706	50.00	ug/L	0.00
System Monitoring Compounds						
2) 1,2-Dichloroethane-d4	7.541	65	11779	5.01	ug/L	0.00
Spiked Amount 5.000	Range 74 - 125		Recovery = 100.20%			
3) Toluene-d8	9.347	98	21376	5.04	ug/L	0.00
Spiked Amount 5.000	Range 88 - 111		Recovery = 100.80%			
Target Compounds						Qvalue
5) 1,4-Dioxane	8.745	88	976	4.56	ug/L	95

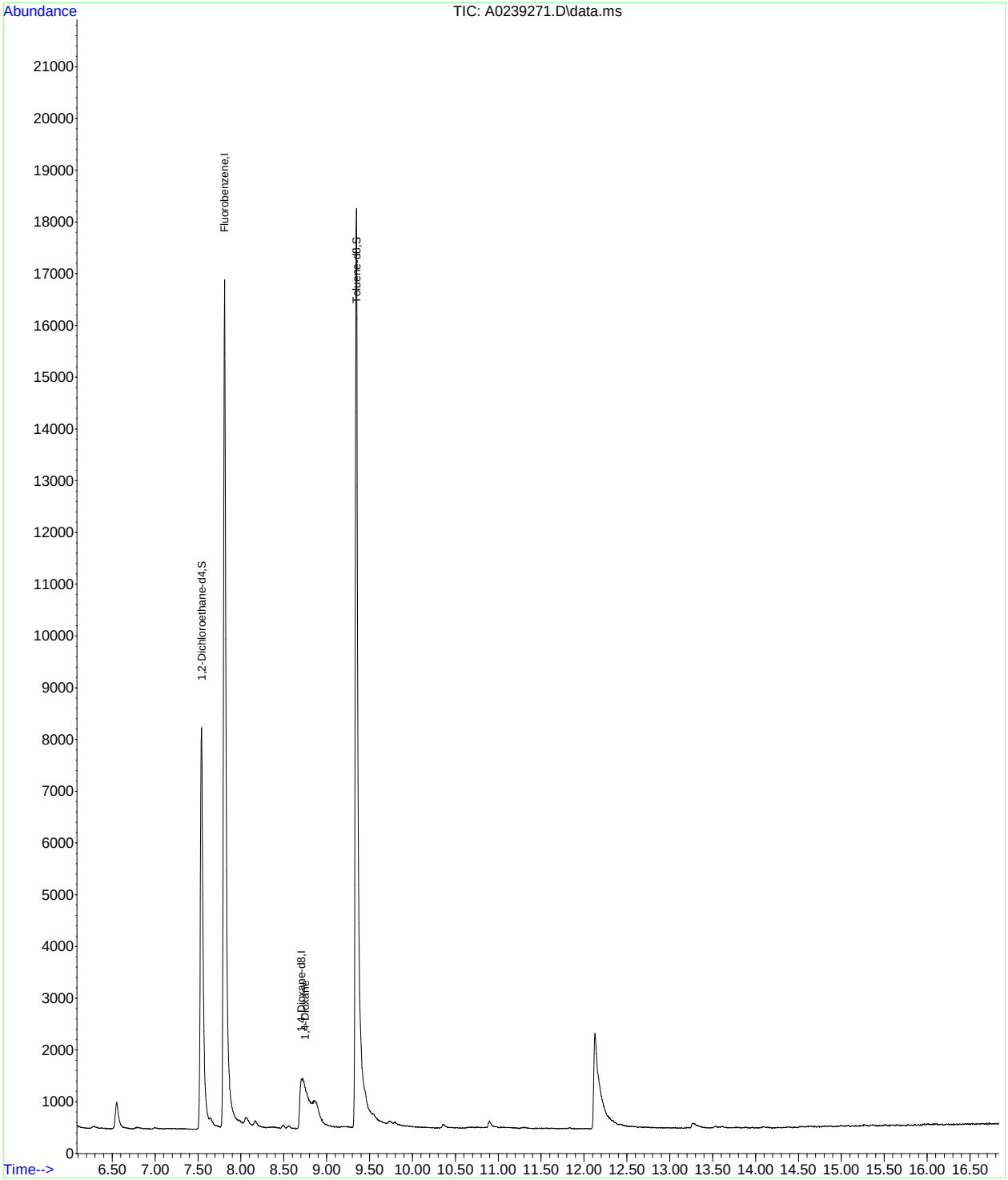
(#) = qualifier out of range (m) = manual integration (+) = signals summed

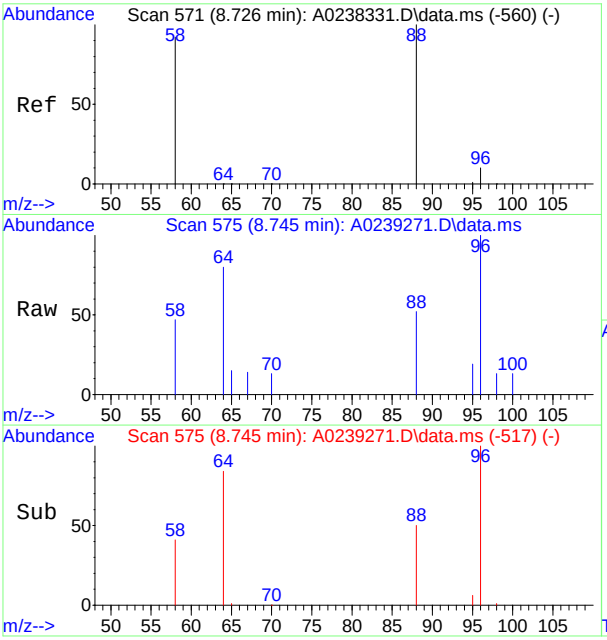
7.1.1
7

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\122623\
Data File : A0239271.D
Acq On : 26 Dec 2023 12:48 pm
Operator : TRANGD
Sample : FC12099-3
Misc : MS55618,VA3455,,,,,
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Dec 26 13:43:35 2023
Quant Method : C:\msdchem\1\METHODS\2023-12-14_SIMDIOX.M
Quant Title : 1,4-Dioxane by SIM
QLast Update : Fri Dec 15 10:44:46 2023
Response via : Initial Calibration

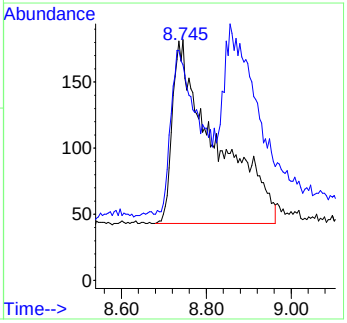




#5
1,4-Dioxane
Concen: 4.56 ug/L
RT: 8.745 min Scan# 575
Delta R.T. 0.019 min
Lab File: A0239271.D
Acq: 26 Dec 2023 12:48 pm

Tgt Ion: 88 Resp: 976

Ion	Ratio	Lower	Upper
88	100		
58	81.3	56.6	96.6



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\122623\
Data File : A0239272.D
Acq On : 26 Dec 2023 1:15 pm
Operator : TRANGD
Sample : FC12099-11
Misc : MS55618,VA3455,,,,,
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Dec 27 06:08:30 2023
Quant Method : C:\msdchem\1\METHODS\2023-12-14_SIMDIOX.M
Quant Title : 1,4-Dioxane by SIM
QLast Update : Fri Dec 15 10:44:46 2023
Response via : Initial Calibration

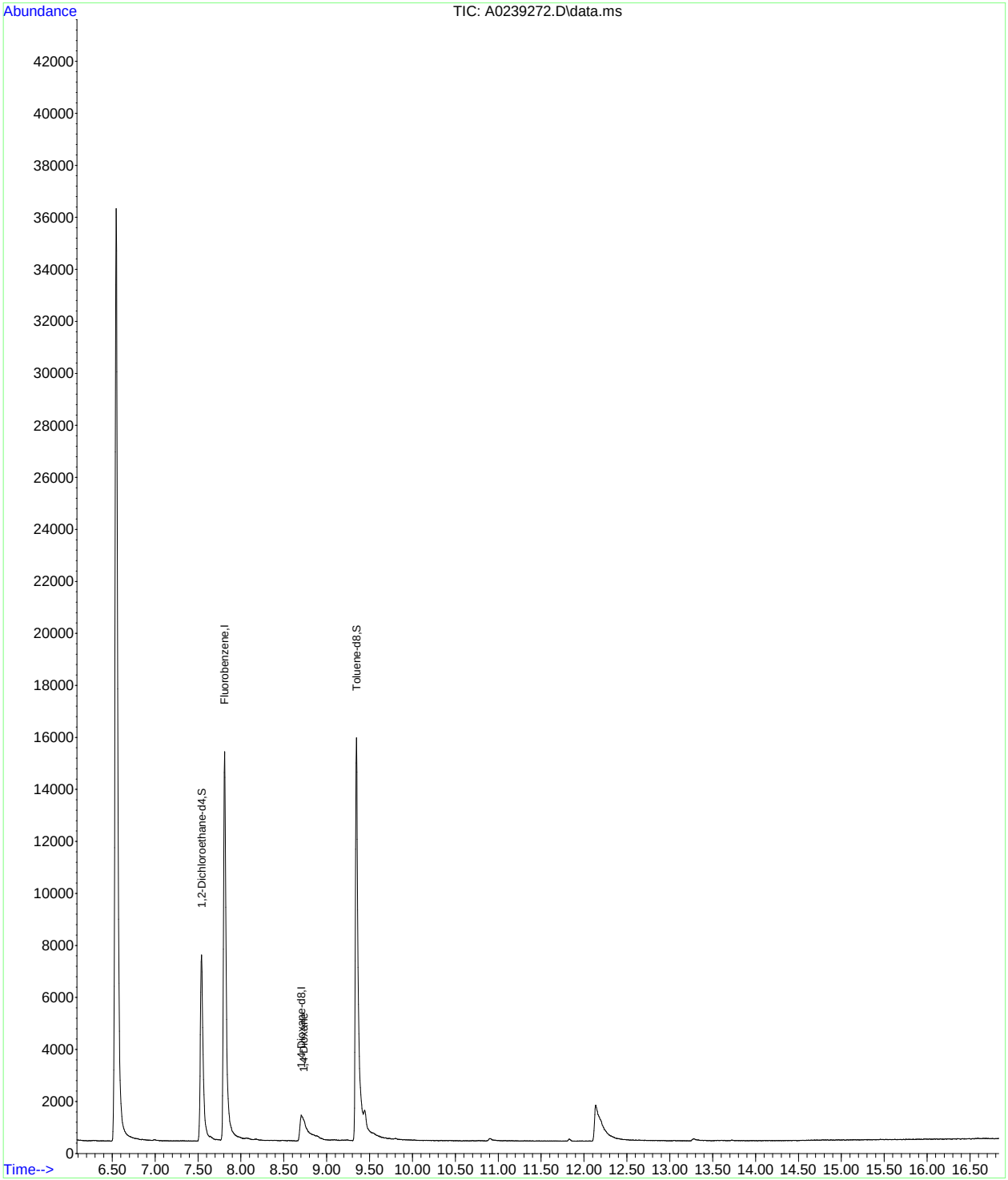
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	7.810	96	25778	5.00	ug/L	0.00
4) 1,4-Dioxane-d8	8.703	96	2915	50.00	ug/L	0.00
System Monitoring Compounds						
2) 1,2-Dichloroethane-d4	7.541	65	10955	4.99	ug/L	0.00
Spiked Amount 5.000	Range 74 - 125		Recovery = 99.80%			
3) Toluene-d8	9.347	98	19435	4.91	ug/L	0.00
Spiked Amount 5.000	Range 88 - 111		Recovery = 98.20%			
Target Compounds						Qvalue
5) 1,4-Dioxane	8.731	88	436	2.59	ug/L	98

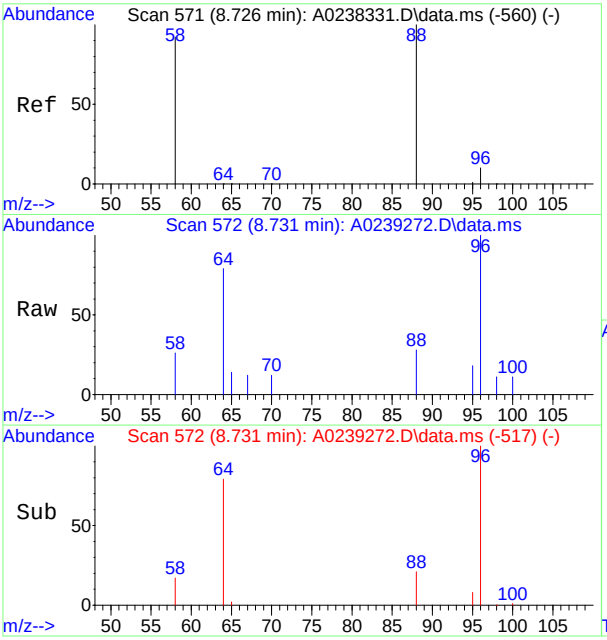
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\122623\
Data File : A0239272.D
Acq On : 26 Dec 2023 1:15 pm
Operator : TRANGD
Sample : FC12099-11
Misc : MS55618,VA3455,,,,,
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Dec 27 06:08:30 2023
Quant Method : C:\msdchem\1\METHODS\2023-12-14_SIMDIOX.M
Quant Title : 1,4-Dioxane by SIM
QLast Update : Fri Dec 15 10:44:46 2023
Response via : Initial Calibration

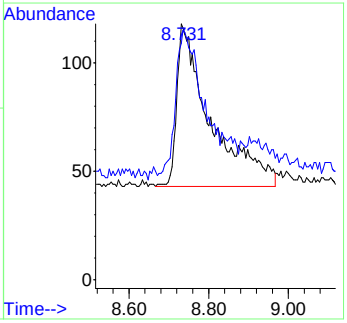




#5
1,4-Dioxane
Concen: 2.59 ug/L
RT: 8.731 min Scan# 572
Delta R.T. 0.005 min
Lab File: A0239272.D
Acq: 26 Dec 2023 1:15 pm

Tgt Ion: 88 Resp: 436

Ion	Ratio	Lower	Upper
88	100		
58	78.7	56.6	96.6



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\122623\
Data File : A0239273.D
Acq On : 26 Dec 2023 1:42 pm
Operator : TRANGD
Sample : FC12099-18
Misc : MS55618,VA3455,,,,,
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Dec 27 06:08:32 2023
Quant Method : C:\msdchem\1\METHODS\2023-12-14_SIMDIOX.M
Quant Title : 1,4-Dioxane by SIM
QLast Update : Fri Dec 15 10:44:46 2023
Response via : Initial Calibration

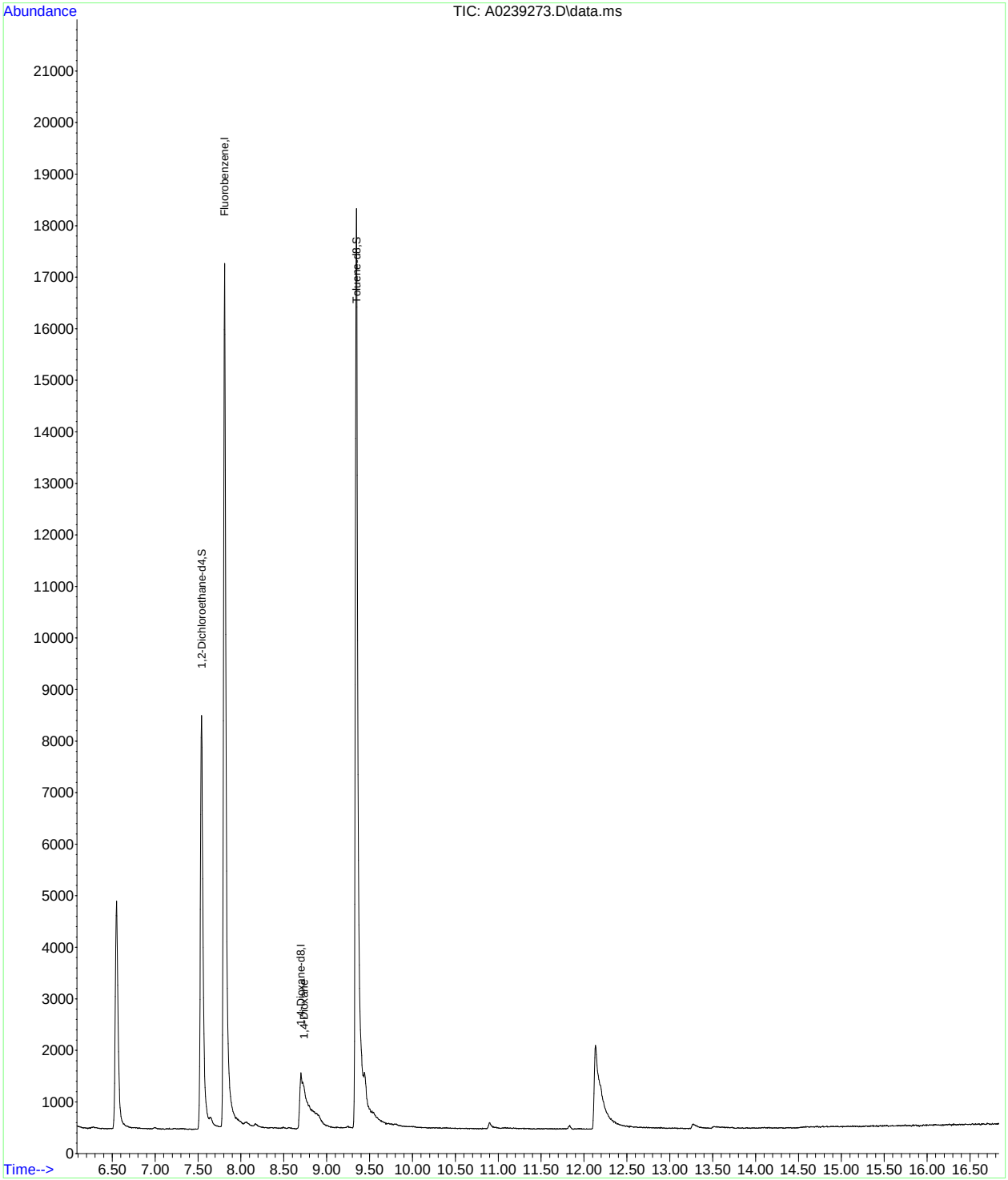
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	7.810	96	27723	5.00	ug/L	0.00
4) 1,4-Dioxane-d8	8.699	96	2911	50.00	ug/L	0.00
System Monitoring Compounds						
2) 1,2-Dichloroethane-d4	7.541	65	11794	4.99	ug/L	0.00
Spiked Amount 5.000	Range 74 - 125		Recovery =	99.80%		
3) Toluene-d8	9.347	98	21246	4.99	ug/L	0.00
Spiked Amount 5.000	Range 88 - 111		Recovery =	99.80%		
Target Compounds						Qvalue
5) 1,4-Dioxane	8.736	88	1126	6.70	ug/L	92

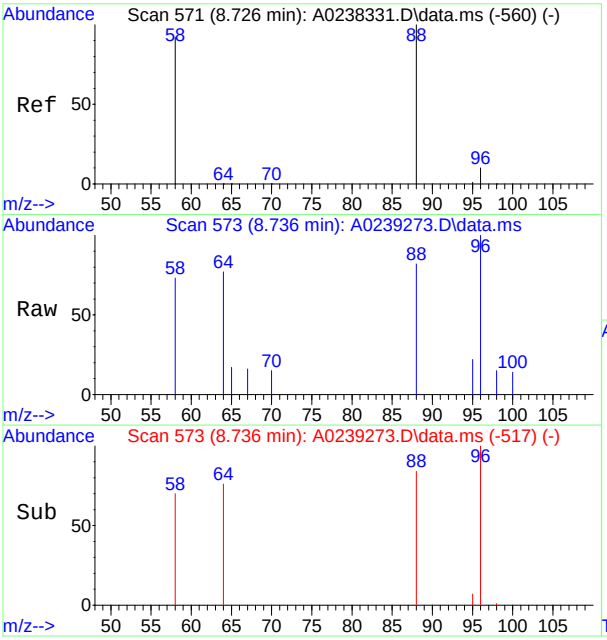
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\122623\
Data File : A0239273.D
Acq On : 26 Dec 2023 1:42 pm
Operator : TRANGD
Sample : FC12099-18
Misc : MS55618,VA3455,,,,,
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Dec 27 06:08:32 2023
Quant Method : C:\msdchem\1\METHODS\2023-12-14_SIMDIOX.M
Quant Title : 1,4-Dioxane by SIM
QLast Update : Fri Dec 15 10:44:46 2023
Response via : Initial Calibration

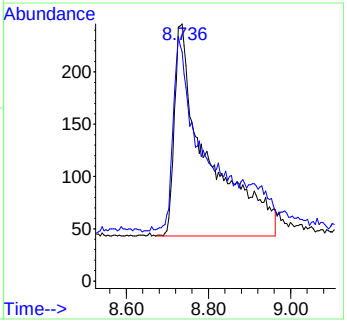




#5
1,4-Dioxane
Concen: 6.70 ug/L
RT: 8.736 min Scan# 573
Delta R.T. 0.010 min
Lab File: A0239273.D
Acq: 26 Dec 2023 1:42 pm

Tgt Ion: 88 Resp: 1126

Ion	Ratio	Lower	Upper
88	100		
58	83.7	56.6	96.6



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\122623\
Data File : A0239274.D
Acq On : 26 Dec 2023 2:08 pm
Operator : TRANGD
Sample : FC12099-20
Misc : MS55618,VA3455,,,,,
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Dec 27 06:08:34 2023
Quant Method : C:\msdchem\1\METHODS\2023-12-14_SIMDIOX.M
Quant Title : 1,4-Dioxane by SIM
QLast Update : Fri Dec 15 10:44:46 2023
Response via : Initial Calibration

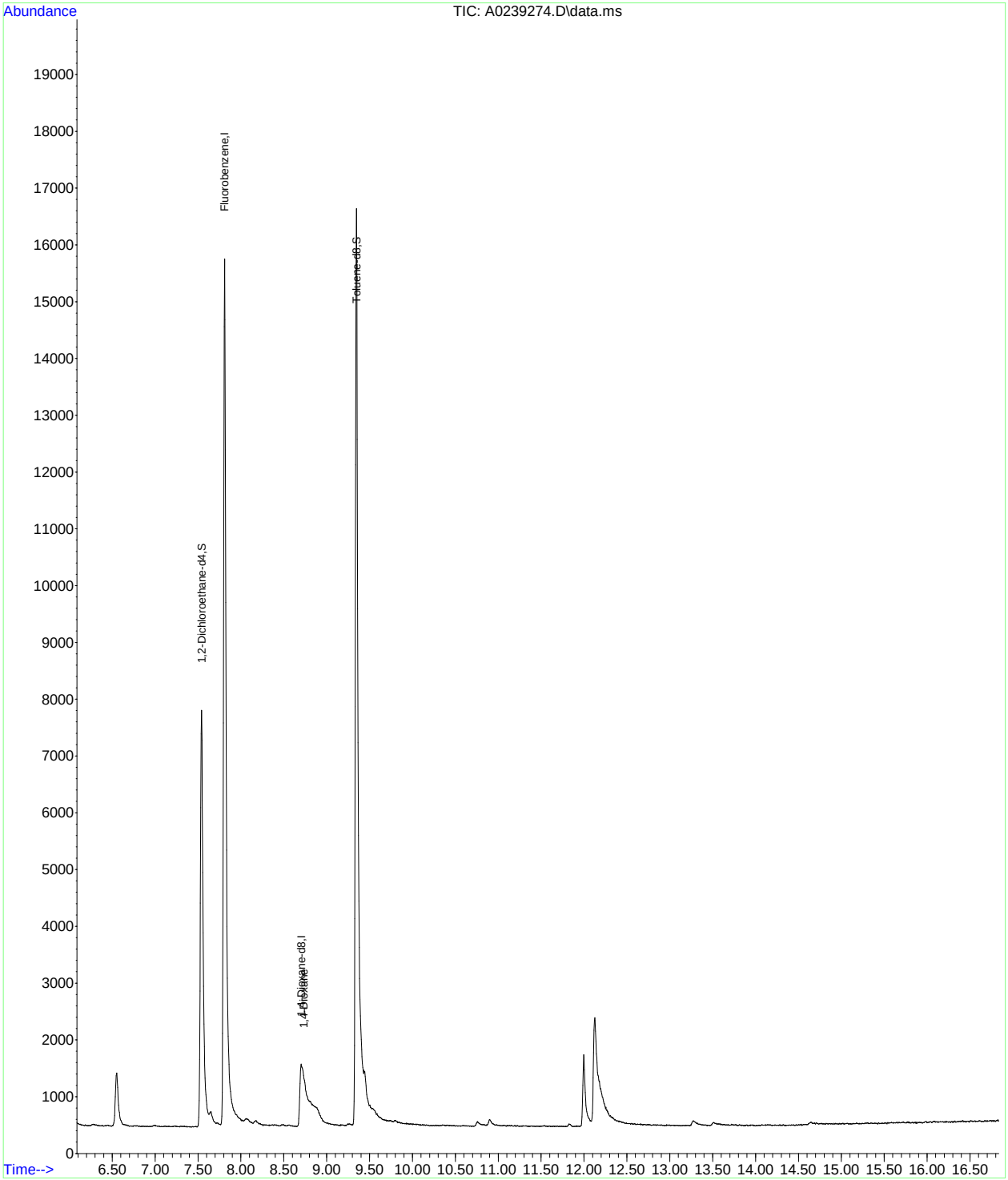
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	7.809	96	25916	5.00	ug/L	0.00
4) 1,4-Dioxane-d8	8.703	96	3256	50.00	ug/L	0.00
System Monitoring Compounds						
2) 1,2-Dichloroethane-d4	7.541	65	11098	5.02	ug/L	0.00
Spiked Amount 5.000	Range 74 - 125		Recovery = 100.40%			
3) Toluene-d8	9.347	98	19765	4.96	ug/L	0.00
Spiked Amount 5.000	Range 88 - 111		Recovery = 99.20%			
Target Compounds						Qvalue
5) 1,4-Dioxane	8.731	88	1070	5.69	ug/L	98

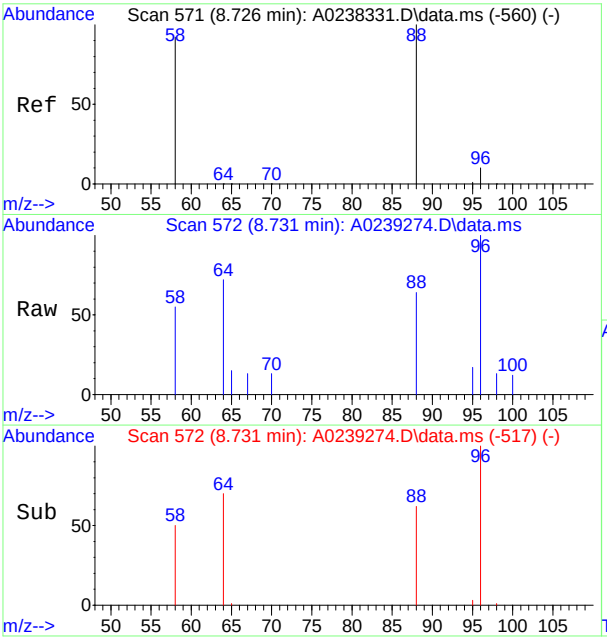
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\122623\
Data File : A0239274.D
Acq On : 26 Dec 2023 2:08 pm
Operator : TRANGD
Sample : FC12099-20
Misc : MS55618,VA3455,,,,,
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Dec 27 06:08:34 2023
Quant Method : C:\msdchem\1\METHODS\2023-12-14_SIMDIOX.M
Quant Title : 1,4-Dioxane by SIM
QLast Update : Fri Dec 15 10:44:46 2023
Response via : Initial Calibration

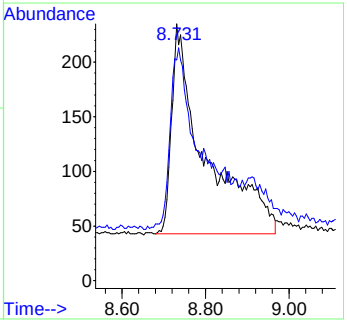




#5
1,4-Dioxane
Concen: 5.69 ug/L
RT: 8.731 min Scan# 572
Delta R.T. 0.005 min
Lab File: A0239274.D
Acq: 26 Dec 2023 2:08 pm

Tgt Ion: 88 Resp: 1070

Ion	Ratio	Lower	Upper
88	100		
58	78.1	56.6	96.6



Quantitation Report (QT Reviewed)

Data Path : X:\Orlando VOA\celinec\December 2023\12-26-2023\V5E1996\V5E1996\
Data File : 5E44807.d
Acq On : 22 Dec 2023 10:52 am
Operator : joannel
Sample : FC12099-3 Inst : MSVOA20
Misc : MS55608,V5E1996,,,,,
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Dec 26 00:12:41 2023
Quant Method : X:\Orlando VOA\celinec\December 2023\12-26-2023\V5E1996\METHOD\V5E_12-20-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Thu Dec 21 09:37:06 2023
Response via : Initial Calibration

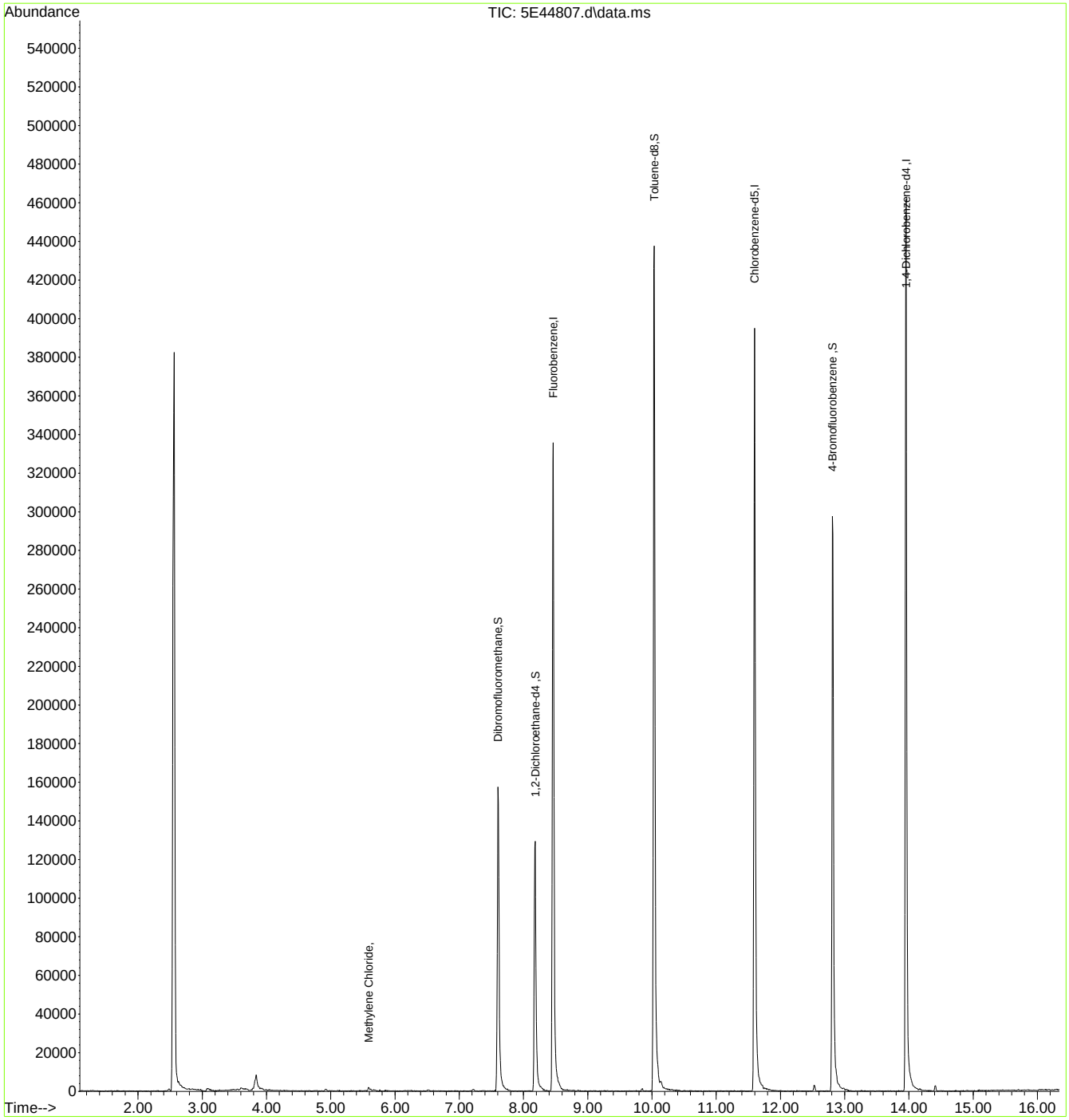
Compound		R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards							
1) Fluorobenzene		8.463	96	312909	50.00	ug/L	0.00
61) Chlorobenzene-d5		11.597	117	241168	50.00	ug/L	0.00
85) 1,4-Dichlorobenzene-d4		13.956	152	130106	50.00	ug/L	0.00
System Monitoring Compounds							
39) Dibromofluoromethane		7.604	113	96192	51.23	ug/L	0.00
Spiked Amount	50.000	Range 83 - 118		Recovery =	102.46%		
49) 1,2-Dichloroethane-d4		8.183	65	89277	48.25	ug/L	0.00
Spiked Amount	50.000	Range 79 - 125		Recovery =	96.50%		
62) Toluene-d8		10.036	98	310605	51.56	ug/L	0.00
Spiked Amount	50.000	Range 85 - 112		Recovery =	103.12%		
86) 4-Bromofluorobenzene		12.810	95	97910	51.69	ug/L	0.00
Spiked Amount	50.000	Range 83 - 118		Recovery =	103.38%		
Target Compounds							Qvalue
18) Methylene Chloride		5.592	49	1114	0.5993	ug/L	80

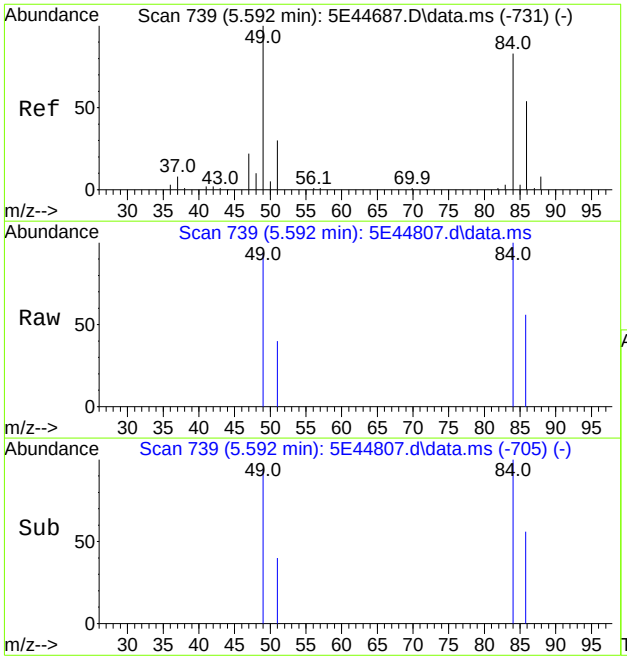
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : X:\Orlando VOA\celinec\December 2023\12-26-2023\V5E1996\V5E1996\
Data File : 5E44807.d
Acq On : 22 Dec 2023 10:52 am
Operator : joannel
Sample : FC12099-3 Inst : MSVOA20
Misc : MS55608,V5E1996,,,,,
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Dec 26 00:12:41 2023
Quant Method : X:\Orlando VOA\celinec\December 2023\12-26-2023\V5E1996\METHOD\V5E_12-20-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Thu Dec 21 09:37:06 2023
Response via : Initial Calibration

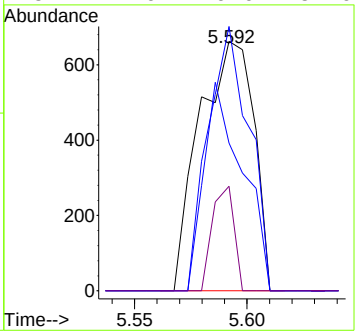




#18
Methylene Chloride
Concen: 0.5993 ug/L
RT: 5.592 min Scan# 739
Delta R.T. 0.006 min
Lab File: 5E44807.d
Acq: 22 Dec 2023 10:52 am

Tgt Ion: 49 Resp: 1114

Ion	Ratio	Lower	Upper
49	100		
84	106.0	51.3	111.3
86	59.2	24.8	84.8
51	42.0	0.0	57.9



Quantitation Report (QT Reviewed)

Data Path : X:\Orlando VOA\celinec\December 2023\12-26-2023\V5E1996\V5E1996\
Data File : 5E44808.d
Acq On : 22 Dec 2023 11:15 am
Operator : joannel
Sample : FC12099-9 Inst : MSVOA20
Misc : MS55608,V5E1996,,,,,
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Dec 26 00:13:11 2023
Quant Method : X:\Orlando VOA\celinec\December 2023\12-26-2023\V5E1996\METHOD\V5E_12-20-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Thu Dec 21 09:37:06 2023
Response via : Initial Calibration

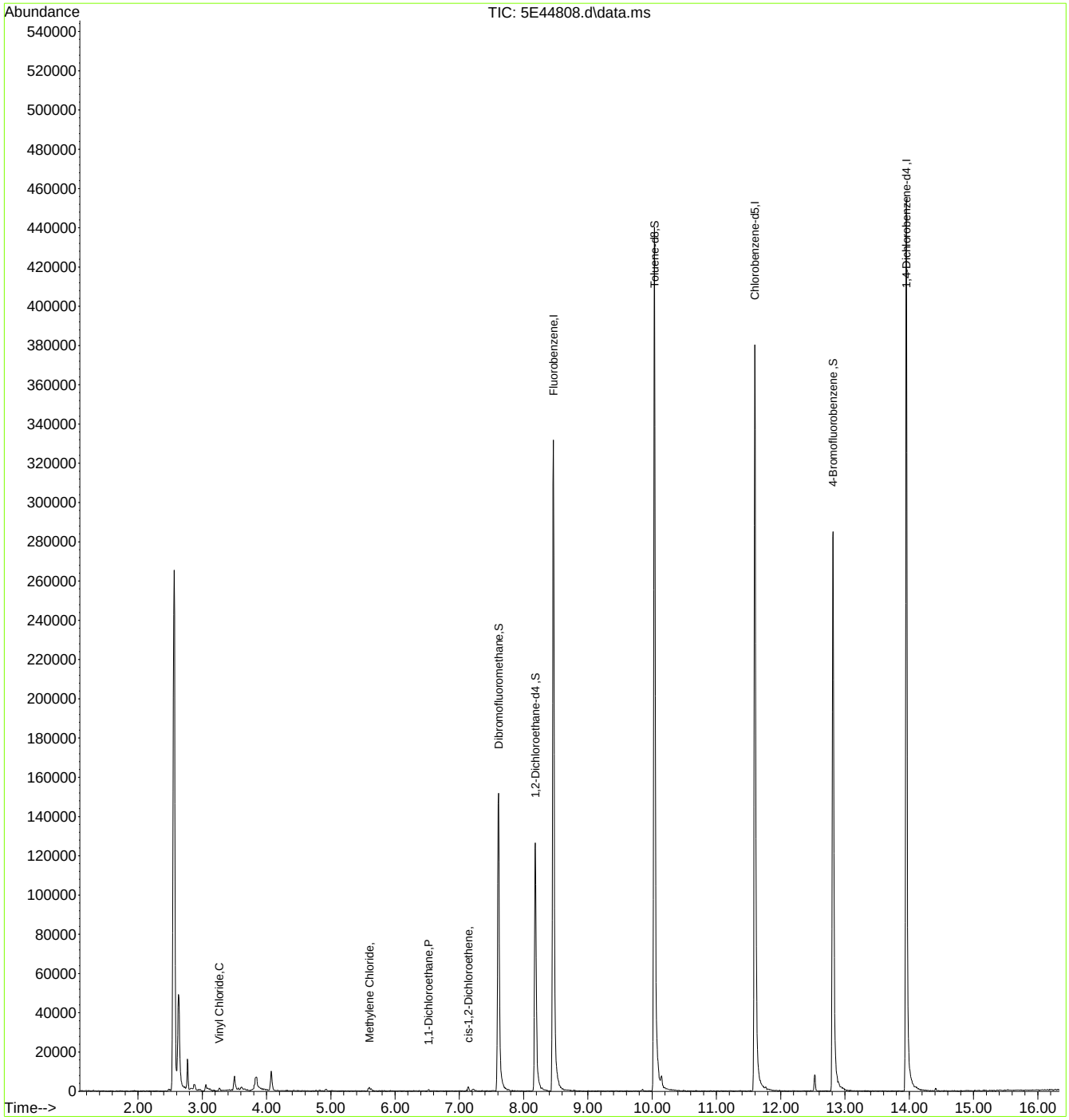
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	8.463	96	307217	50.00	ug/L	0.00
61) Chlorobenzene-d5	11.597	117	235707	50.00	ug/L	0.00
85) 1,4-Dichlorobenzene-d4	13.956	152	127110	50.00	ug/L	0.00
System Monitoring Compounds						
39) Dibromofluoromethane	7.610	113	93099	50.50	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 101.00%			
49) 1,2-Dichloroethane-d4	8.183	65	88571	48.76	ug/L	0.00
Spiked Amount 50.000	Range 79 - 125		Recovery = 97.52%			
62) Toluene-d8	10.036	98	303003	51.46	ug/L	0.00
Spiked Amount 50.000	Range 85 - 112		Recovery = 102.92%			
86) 4-Bromofluorobenzene	12.816	95	96265	52.02	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 104.04%			
Target Compounds						Qvalue
4) Vinyl Chloride	3.263	62	1148	0.8456	ug/L	88
18) Methylene Chloride	5.598	49	1027	0.5627	ug/L	82
27) 1,1-Dichloroethane	6.519	63	773	0.2995	ug/L	81
32) cis-1,2-Dichloroethene	7.140	96	1302	0.8071	ug/L	82

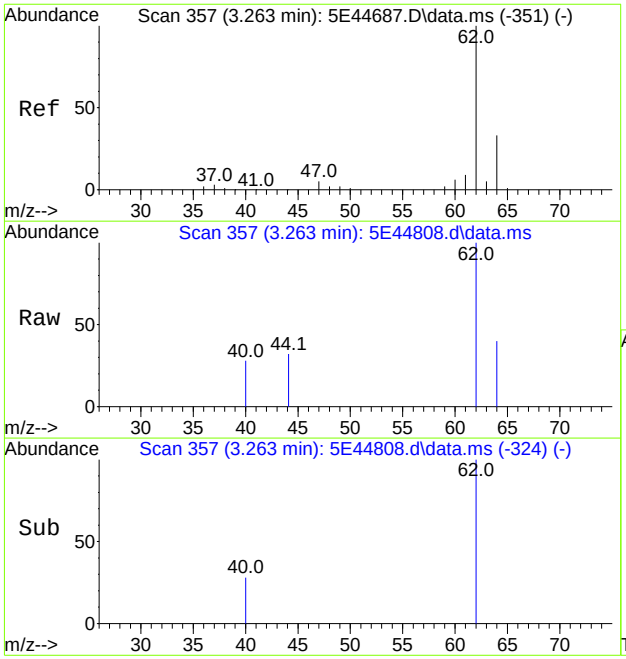
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : X:\Orlando VOA\celinec\December 2023\12-26-2023\V5E1996\V5E1996\
Data File : 5E44808.d
Acq On : 22 Dec 2023 11:15 am
Operator : joannel
Sample : FC12099-9 Inst : MSVOA20
Misc : MS55608,V5E1996,,,,,
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Dec 26 00:13:11 2023
Quant Method : X:\Orlando VOA\celinec\December 2023\12-26-2023\V5E1996\METHOD\V5E_12-20-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Thu Dec 21 09:37:06 2023
Response via : Initial Calibration

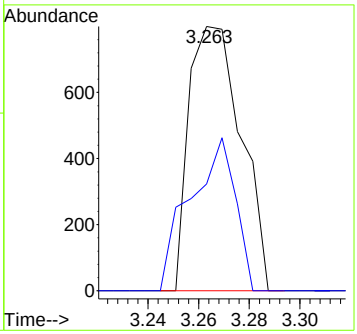


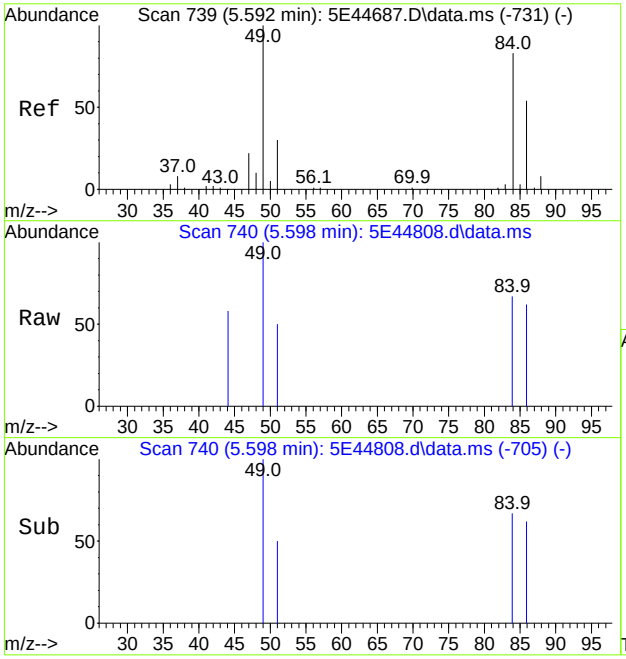


#4
Vinyl Chloride
Concen: 0.8456 ug/L
RT: 3.263 min Scan# 357
Delta R.T. 0.000 min
Lab File: 5E44808.d
Acq: 22 Dec 2023 11:15 am

Tgt Ion: 62 Resp: 1148

Ion	Ratio	Lower	Upper
62	100		
64	40.4	3.4	63.4

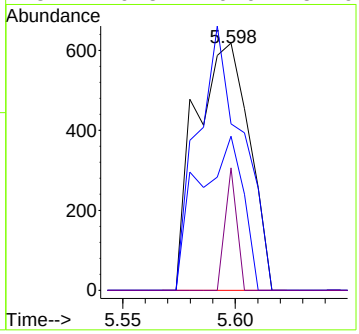


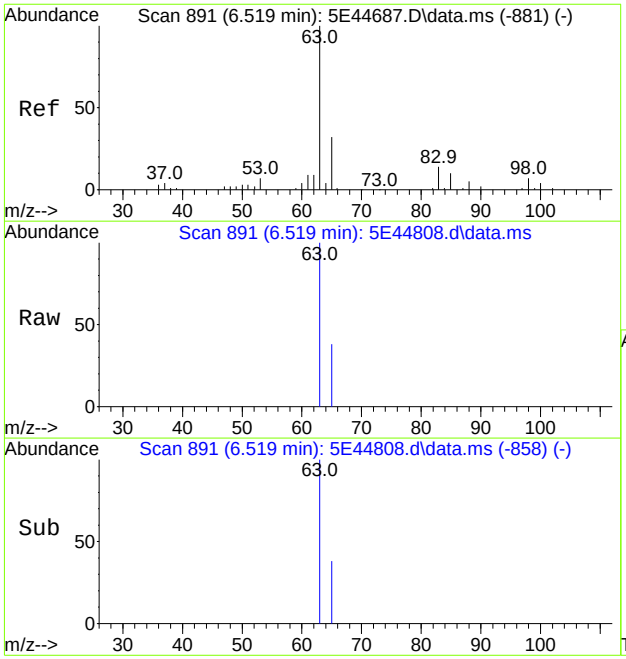


#18
Methylene Chloride
Concen: 0.5627 ug/L
RT: 5.598 min Scan# 740
Delta R.T. 0.012 min
Lab File: 5E44808.d
Acq: 22 Dec 2023 11:15 am

Tgt Ion: 49 Resp: 1027

Ion	Ratio	Lower	Upper
49	100		
84	67.3	51.3	111.3
86	62.3	24.8	84.8
51	49.5	0.0	57.9

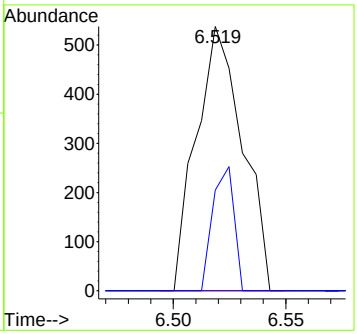


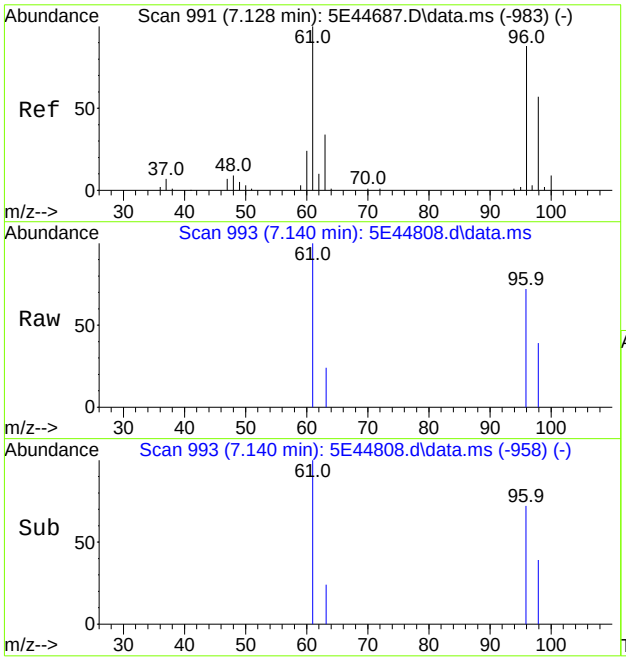


#27
1,1-Dichloroethane
Concen: 0.2995 ug/L
RT: 6.519 min Scan# 891
Delta R.T. -0.000 min
Lab File: 5E44808.d
Acq: 22 Dec 2023 11:15 am

Tgt Ion: 63 Resp: 773

Ion	Ratio	Lower	Upper
63	100		
65	38.1	1.7	61.7
83	0.0	0.0	44.4

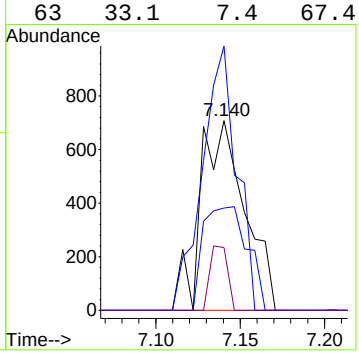




#32
cis-1,2-Dichloroethene
Concen: 0.8071 ug/L
RT: 7.140 min Scan# 993
Delta R.T. 0.012 min
Lab File: 5E44808.d
Acq: 22 Dec 2023 11:15 am

Tgt Ion: 96 Resp: 1302

Ion	Ratio	Lower	Upper
96	100		
61	139.4	85.7	145.7
98	54.0	36.6	96.6
63	33.1	7.4	67.4



Quantitation Report (QT Reviewed)

Data Path : X:\Orlando VOA\celinec\December 2023\12-26-2023\V5E1996\V5E1996\
Data File : 5E44809.d
Acq On : 22 Dec 2023 11:38 am
Operator : joannel
Sample : FC12099-10 Inst : MSVOA20
Misc : MS55608,V5E1996,,,,,
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Dec 26 00:13:37 2023
Quant Method : X:\Orlando VOA\celinec\December 2023\12-26-2023\V5E1996\METHOD\V5E_12-20-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Thu Dec 21 09:37:06 2023
Response via : Initial Calibration

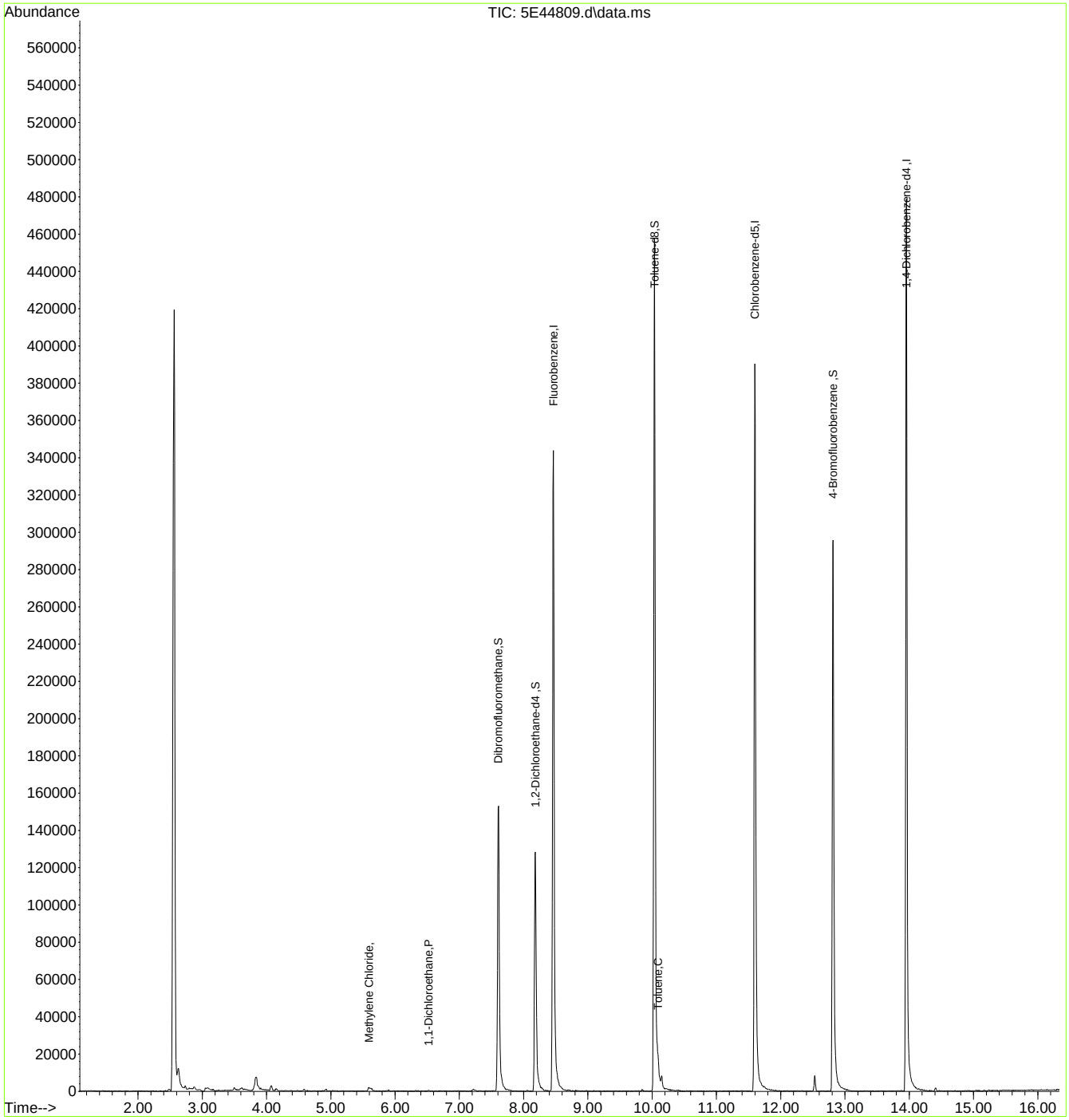
Compound		R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards							
1) Fluorobenzene		8.463	96	313192	50.00	ug/L	0.00
61) Chlorobenzene-d5		11.597	117	241454	50.00	ug/L	0.00
85) 1,4-Dichlorobenzene-d4		13.956	152	134092	50.00	ug/L	0.00
System Monitoring Compounds							
39) Dibromofluoromethane		7.604	113	96047	51.11	ug/L	0.00
Spiked Amount	50.000	Range 83 - 118		Recovery =	102.22%		
49) 1,2-Dichloroethane-d4		8.183	65	89399	48.27	ug/L	0.00
Spiked Amount	50.000	Range 79 - 125		Recovery =	96.54%		
62) Toluene-d8		10.036	98	312771	51.85	ug/L	0.00
Spiked Amount	50.000	Range 85 - 112		Recovery =	103.70%		
86) 4-Bromofluorobenzene		12.810	95	97971	50.18	ug/L	0.00
Spiked Amount	50.000	Range 83 - 118		Recovery =	100.36%		
Target Compounds							Qvalue
18) Methylene Chloride		5.592	49	1164	0.6256	ug/L	83
27) 1,1-Dichloroethane		6.519	63	394	0.1498	ug/L #	50
63) Toluene		10.091	91	5187	0.8952	ug/L	98

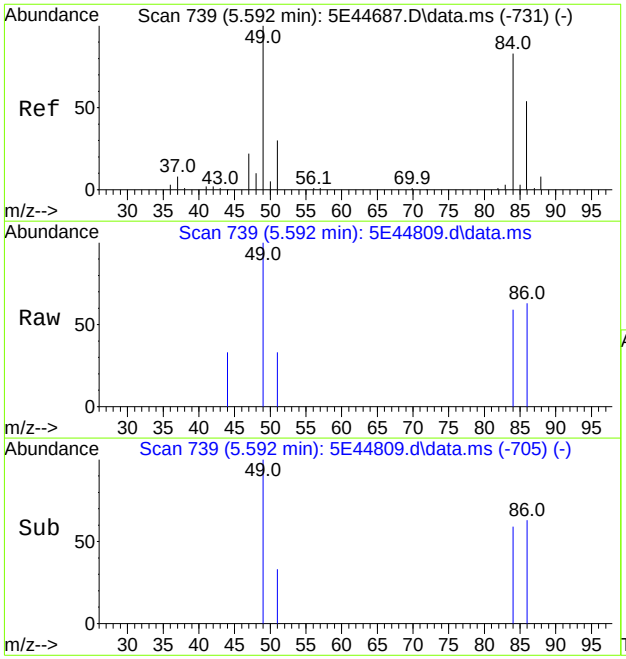
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : X:\Orlando VOA\celinec\December 2023\12-26-2023\V5E1996\V5E1996\
Data File : 5E44809.d
Acq On : 22 Dec 2023 11:38 am
Operator : joannel
Sample : FC12099-10 Inst : MSVOA20
Misc : MS55608,V5E1996,,,,,
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Dec 26 00:13:37 2023
Quant Method : X:\Orlando VOA\celinec\December 2023\12-26-2023\V5E1996\METHOD\V5E_12-20-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Thu Dec 21 09:37:06 2023
Response via : Initial Calibration

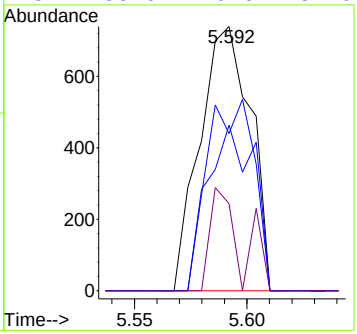


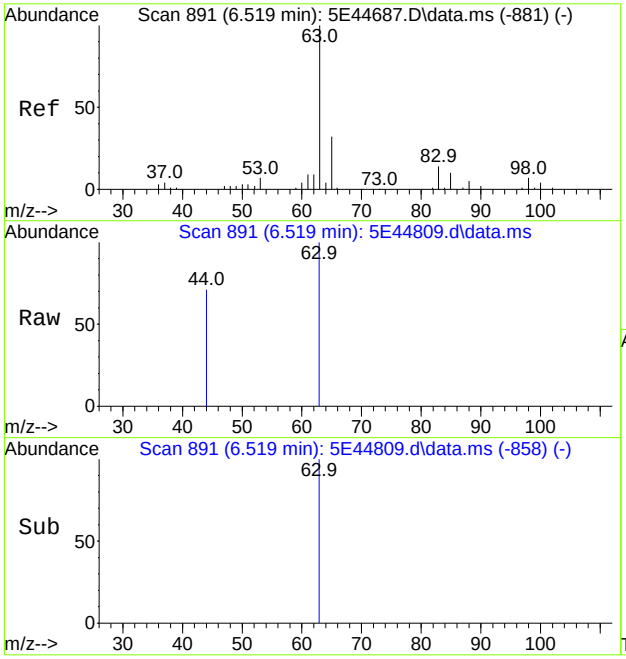


#18
Methylene Chloride
Concen: 0.6256 ug/L
RT: 5.592 min Scan# 739
Delta R.T. 0.006 min
Lab File: 5E44809.d
Acq: 22 Dec 2023 11:38 am

Tgt Ion: 49 Resp: 1164

Ion	Ratio	Lower	Upper
49	100		
84	59.5	51.3	111.3
86	62.7	24.8	84.8
51	33.0	0.0	57.9

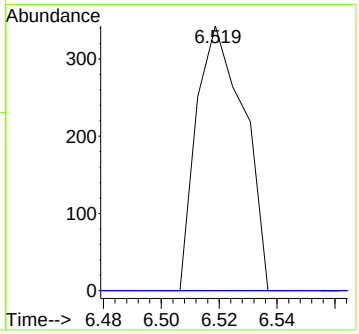


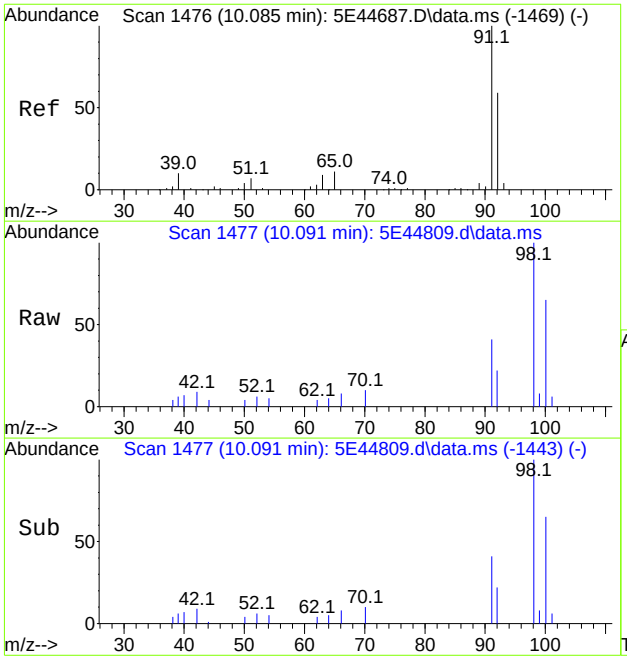


#27
1,1-Dichloroethane
Concen: 0.1498 ug/L
RT: 6.519 min Scan# 891
Delta R.T. -0.000 min
Lab File: 5E44809.d
Acq: 22 Dec 2023 11:38 am

Tgt Ion: 63 Resp: 394

Ion	Ratio	Lower	Upper
63	100		
65	0.0	1.7	61.7#
83	0.0	0.0	44.4

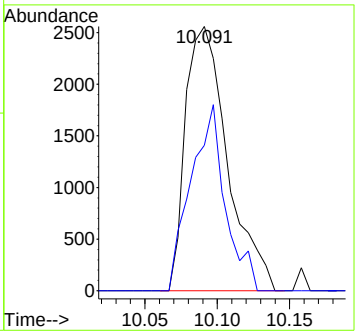




#63
Toluene
Concen: 0.8952 ug/L
RT: 10.091 min Scan# 1477
Delta R.T. 0.006 min
Lab File: 5E44809.d
Acq: 22 Dec 2023 11:38 am

Tgt Ion: 91 Resp: 5187

Ion	Ratio	Lower	Upper
91	100		
92	55.0	26.7	86.7



Quantitation Report (QT Reviewed)

Data Path : X:\Orlando VOA\celinec\December 2023\12-26-2023\V5E1996\V5E1996\
Data File : 5E44810.d
Acq On : 22 Dec 2023 12:01 pm
Operator : joannel
Sample : FC12099-11 Inst : MSVOA20
Misc : MS55608,V5E1996,,,,,
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Dec 26 00:13:54 2023
Quant Method : X:\Orlando VOA\celinec\December 2023\12-26-2023\V5E1996\METHOD\V5E_12-20-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Thu Dec 21 09:37:06 2023
Response via : Initial Calibration

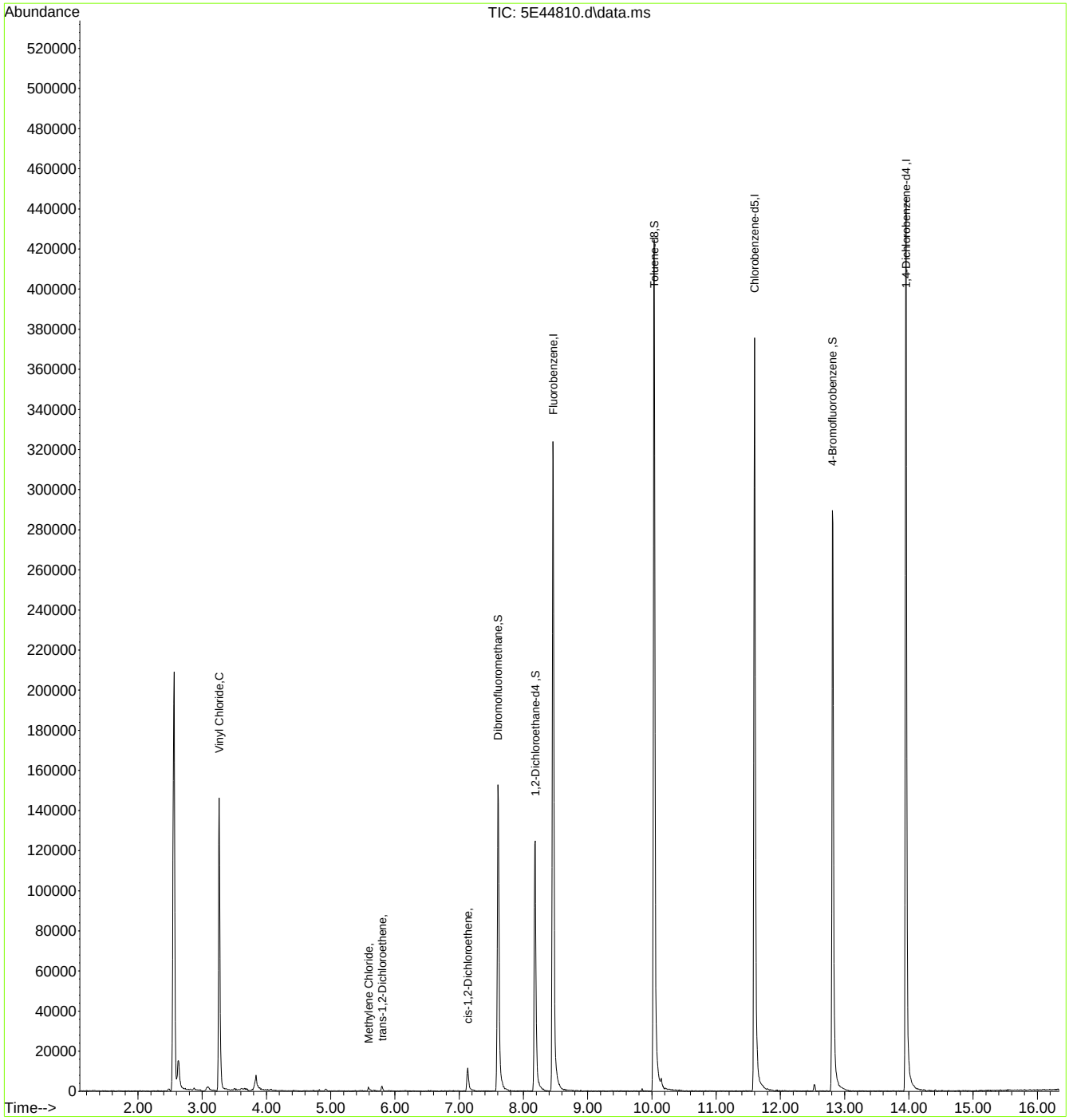
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	8.463	96	304778	50.00	ug/L	0.00
61) Chlorobenzene-d5	11.597	117	235363	50.00	ug/L	0.00
85) 1,4-Dichlorobenzene-d4	13.956	152	128613	50.00	ug/L	0.00
System Monitoring Compounds						
39) Dibromofluoromethane	7.604	113	92141	50.38	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 100.76%			
49) 1,2-Dichloroethane-d4	8.183	65	86786	48.15	ug/L	0.00
Spiked Amount 50.000	Range 79 - 125		Recovery = 96.30%			
62) Toluene-d8	10.036	98	300663	51.14	ug/L	0.00
Spiked Amount 50.000	Range 85 - 112		Recovery = 102.28%			
86) 4-Bromofluorobenzene	12.810	95	95530	51.02	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 102.04%			
Target Compounds						Qvalue
4) Vinyl Chloride	3.263	62	132497	98.3775	ug/L	99
18) Methylene Chloride	5.592	49	932	0.5147	ug/L	78
21) trans-1,2-Dichloroethene	5.799	61	1276	0.7089	ug/L	83
32) cis-1,2-Dichloroethene	7.134	96	6742	4.2129	ug/L	88

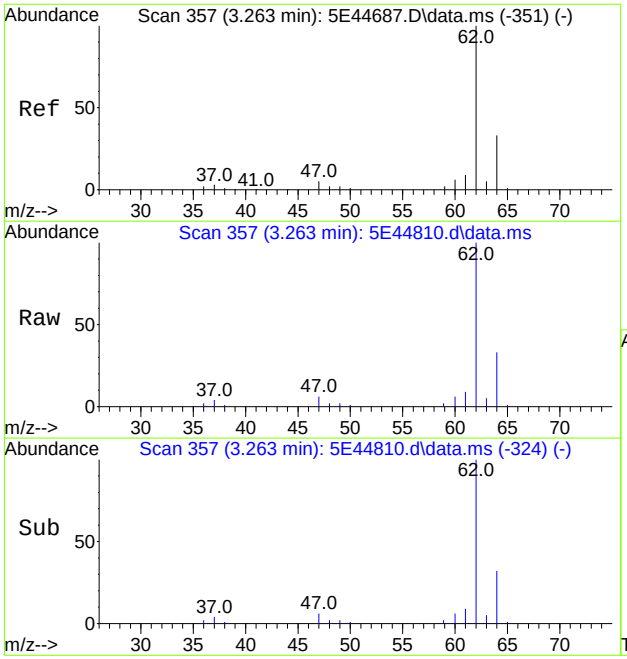
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : X:\Orlando VOA\celinec\December 2023\12-26-2023\V5E1996\V5E1996\
Data File : 5E44810.d
Acq On : 22 Dec 2023 12:01 pm
Operator : joannel
Sample : FC12099-11 Inst : MSVOA20
Misc : MS55608,V5E1996,,,,,
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Dec 26 00:13:54 2023
Quant Method : X:\Orlando VOA\celinec\December 2023\12-26-2023\V5E1996\METHOD\V5E_12-20-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Thu Dec 21 09:37:06 2023
Response via : Initial Calibration

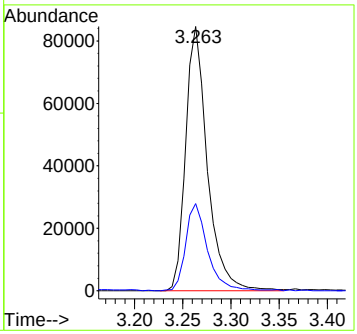


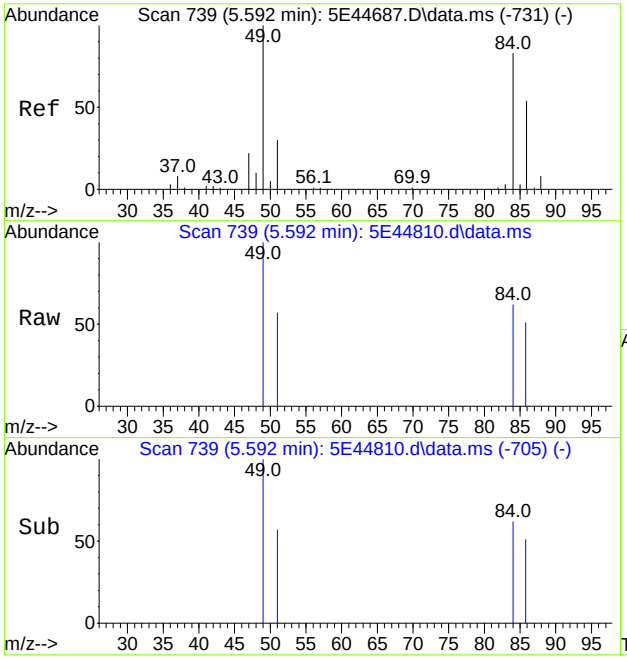


#4
Vinyl Chloride
Concen: 98.3775 ug/L
RT: 3.263 min Scan# 357
Delta R.T. 0.000 min
Lab File: 5E44810.d
Acq: 22 Dec 2023 12:01 pm

Tgt Ion: 62 Resp: 132497

Ion	Ratio	Lower	Upper
62	100		
64	33.0	3.4	63.4

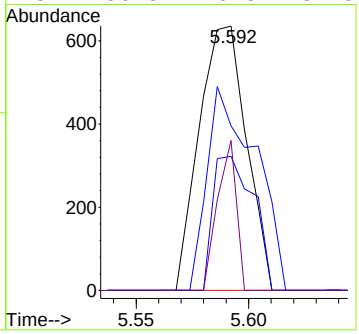


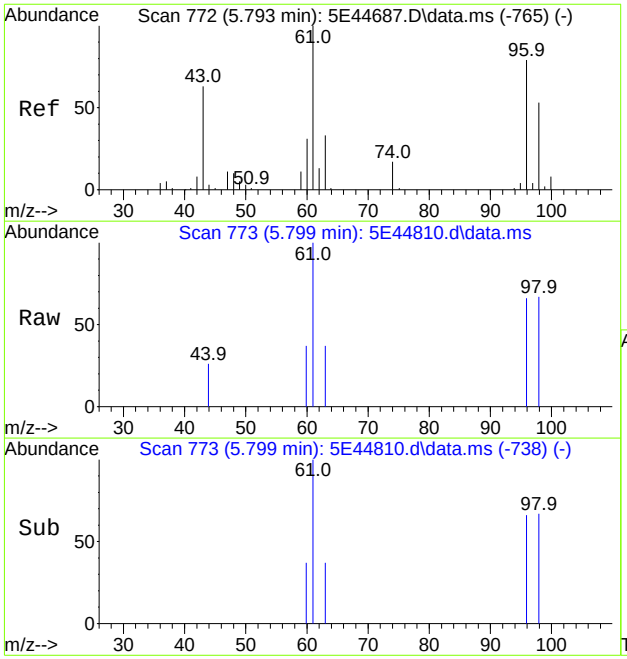


#18
Methylene Chloride
Concen: 0.5147 ug/L
RT: 5.592 min Scan# 739
Delta R.T. 0.006 min
Lab File: 5E44810.d
Acq: 22 Dec 2023 12:01 pm

Tgt Ion: 49 Resp: 932

Ion	Ratio	Lower	Upper
49	100		
84	62.3	51.3	111.3
86	50.6	24.8	84.8
51	56.8	0.0	57.9

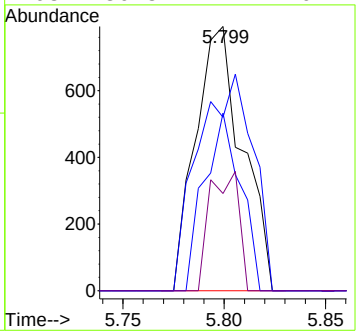


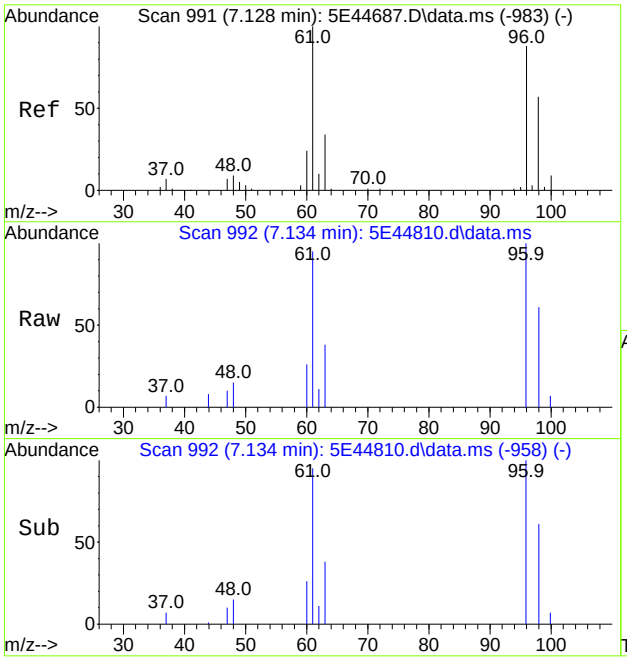


#21
trans-1,2-Dichloroethene
Concen: 0.7089 ug/L
RT: 5.799 min Scan# 773
Delta R.T. 0.012 min
Lab File: 5E44810.d
Acq: 22 Dec 2023 12:01 pm

Tgt Ion: 61 Resp: 1276

Ion	Ratio	Lower	Upper
61	100		
96	65.6	49.6	109.6
98	67.2	20.6	80.6
63	36.8	2.2	62.2

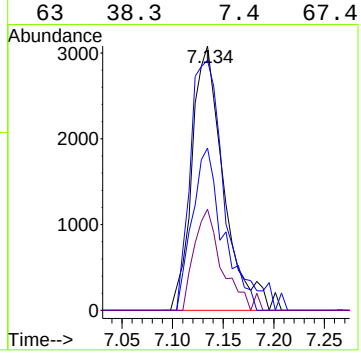




#32
cis-1,2-Dichloroethene
Concen: 4.2129 ug/L
RT: 7.134 min Scan# 992
Delta R.T. 0.006 min
Lab File: 5E44810.d
Acq: 22 Dec 2023 12:01 pm

Tgt Ion: 96 Resp: 6742

Ion	Ratio	Lower	Upper
96	100		
61	94.5	85.7	145.7
98	61.4	36.6	96.6
63	38.3	7.4	67.4



Quantitation Report (QT Reviewed)

Data Path : X:\Orlando VOA\celinec\December 2023\12-27-2023\V1A2028\V1A2028\
Data File : 1A51683.d
Acq On : 26 Dec 2023 5:00 pm
Operator : lianatr
Sample : FC12099-12 5X Inst : MSVOA17
Misc : MS55614,V1A2028,,,,,5
ALS Vial : 24 Sample Multiplier: 1

Quant Time: Dec 27 00:37:32 2023
Quant Method : X:\Orlando VOA\celinec\December 2023\12-27-2023\V1A2028\METHOD\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration

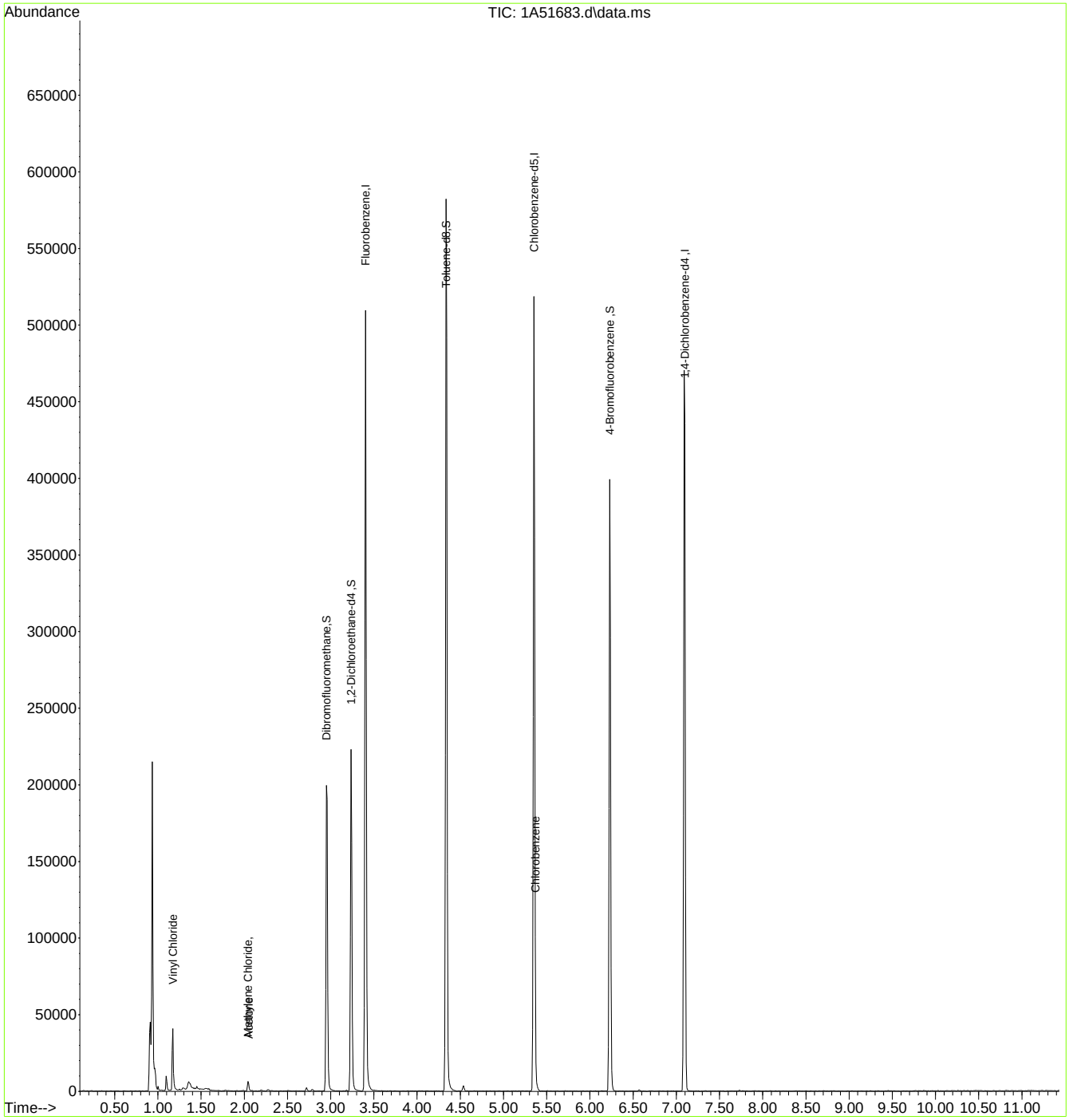
Compound		R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards							
1) Fluorobenzene		3.405	96	264038	50.00	ug/L	0.00
62) Chlorobenzene-d5		5.352	117	186389	50.00	ug/L	0.00
85) 1,4-Dichlorobenzene-d4		7.099	152	94215	50.00	ug/L	0.00
System Monitoring Compounds							
39) Dibromofluoromethane		2.950	113	76272	49.00	ug/L	0.00
Spiked Amount	50.000	Range 83 - 118		Recovery =	98.00%		
49) 1,2-Dichloroethane-d4		3.235	65	92250	53.55	ug/L	0.00
Spiked Amount	50.000	Range 79 - 125		Recovery =	107.10%		
63) Toluene-d8		4.336	98	252744	50.78	ug/L	0.00
Spiked Amount	50.000	Range 85 - 112		Recovery =	101.56%		
86) 4-Bromofluorobenzene		6.229	174	78246	49.77	ug/L	0.00
Spiked Amount	50.000	Range 83 - 118		Recovery =	99.54%		
Target Compounds							Qvalue
5) Vinyl Chloride		1.173	62	22969	15.2202	ug/L	98
18) Methylene Chloride		2.042	49	2585	1.1604	ug/L	83
19) Acetone		2.050	43	667	1.0172	ug/L	97
78) Chlorobenzene		5.367	112	1203	0.2998	ug/L	78

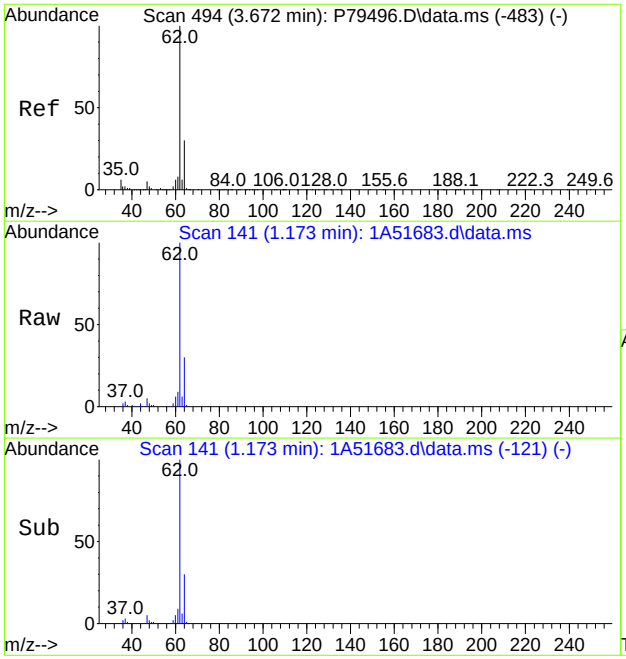
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : X:\Orlando VOA\celinec\December 2023\12-27-2023\V1A2028\V1A2028\
Data File : 1A51683.d
Acq On : 26 Dec 2023 5:00 pm
Operator : lianatr
Sample : FC12099-12 5X Inst : MSVOA17
Misc : MS55614,V1A2028,,,,,5
ALS Vial : 24 Sample Multiplier: 1

Quant Time: Dec 27 00:37:32 2023
Quant Method : X:\Orlando VOA\celinec\December 2023\12-27-2023\V1A2028\METHOD\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration

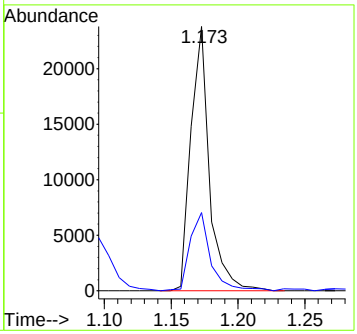


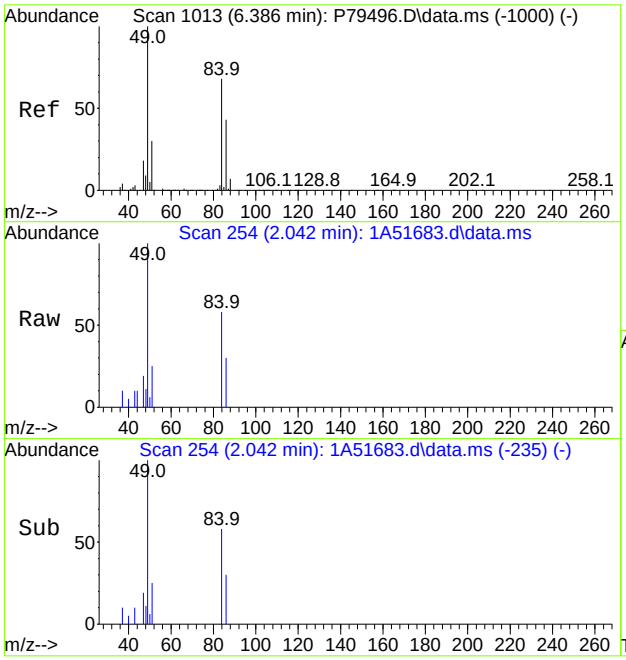


#5
Vinyl Chloride
Concen: 15.2202 ug/L
RT: 1.173 min Scan# 141
Delta R.T. 0.008 min
Lab File: 1A51683.d
Acq: 26 Dec 2023 5:00 pm

Tgt Ion: 62 Resp: 22969

Ion	Ratio	Lower	Upper
62	100		
64	29.6	0.7	60.7

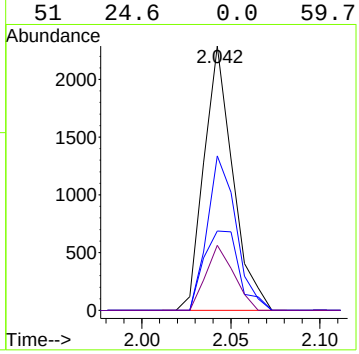


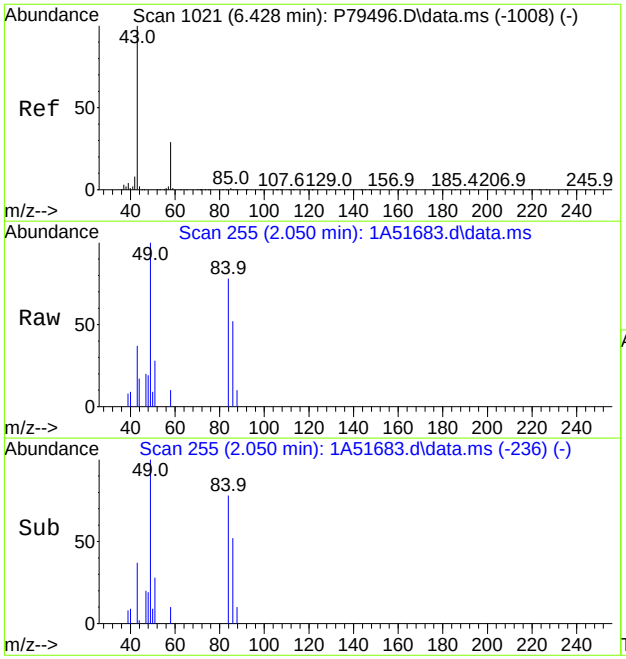


#18
Methylene Chloride
Concen: 1.1604 ug/L
RT: 2.042 min Scan# 254
Delta R.T. -0.001 min
Lab File: 1A51683.d
Acq: 26 Dec 2023 5:00 pm

Tgt Ion: 49 Resp: 2585

Ion	Ratio	Lower	Upper
49	100		
84	58.4	41.8	101.8
86	30.0	15.6	75.6
51	24.6	0.0	59.7

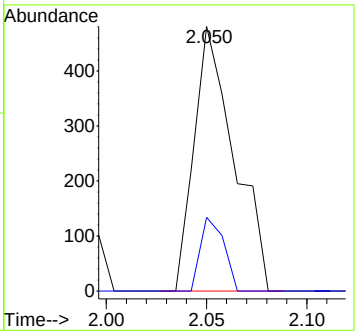


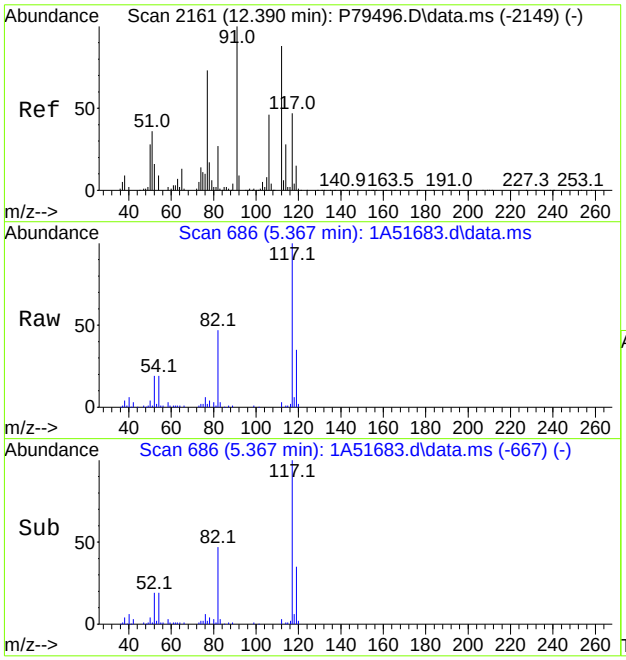


#19
Acetone
Concen: 1.0172 ug/L
RT: 2.050 min Scan# 255
Delta R.T. -0.000 min
Lab File: 1A51683.d
Acq: 26 Dec 2023 5:00 pm

Tgt Ion: 43 Resp: 667

Ion	Ratio	Lower	Upper
43	100		
58	27.9	0.0	59.6

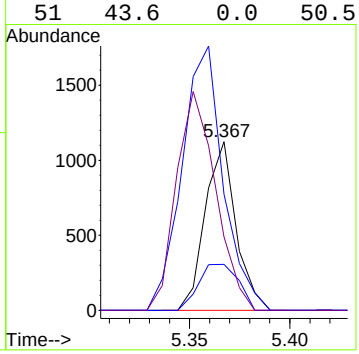




#78
Chlorobenzene
Concen: 0.2998 ug/L
RT: 5.367 min Scan# 686
Delta R.T. -0.000 min
Lab File: 1A51683.d
Acq: 26 Dec 2023 5:00 pm

Tgt Ion:112 Resp: 1203

Ion	Ratio	Lower	Upper
112	100		
77	68.9	24.5	84.5
114	27.2	1.1	61.1
51	43.6	0.0	50.5



Quantitation Report (QT Reviewed)

Data Path : X:\Orlando VOA\celinec\December 2023\12-26-2023\V5E1996\V5E1996\
Data File : 5E44811.d
Acq On : 22 Dec 2023 12:25 pm
Operator : joannel
Sample : FC12099-12 Inst : MSVOA20
Misc : MS55608,V5E1996,,,,,
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Dec 26 00:14:26 2023
Quant Method : X:\Orlando VOA\celinec\December 2023\12-26-2023\V5E1996\METHOD\V5E_12-20-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Thu Dec 21 09:37:06 2023
Response via : Initial Calibration

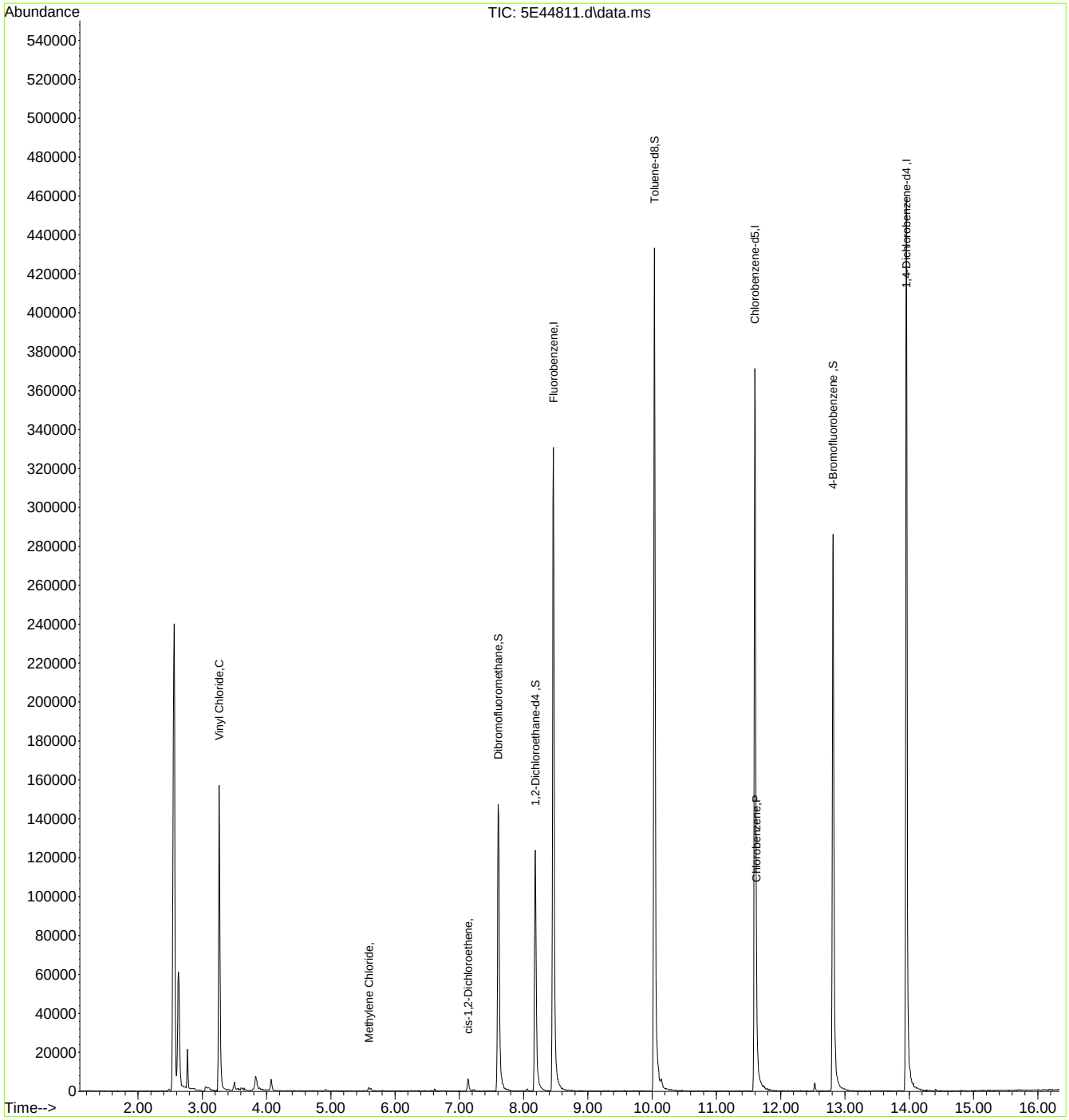
Compound		R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards							
1) Fluorobenzene		8.464	96	303832	50.00	ug/L	0.00
61) Chlorobenzene-d5		11.597	117	235161	50.00	ug/L	0.00
85) 1,4-Dichlorobenzene-d4		13.956	152	126705	50.00	ug/L	0.00
System Monitoring Compounds							
39) Dibromofluoromethane		7.604	113	91815	50.36	ug/L	0.00
Spiked Amount	50.000	Range 83 - 118		Recovery =	100.72%		
49) 1,2-Dichloroethane-d4		8.183	65	84876	47.24	ug/L	0.00
Spiked Amount	50.000	Range 79 - 125		Recovery =	94.48%		
62) Toluene-d8		10.036	98	300421	51.14	ug/L	0.00
Spiked Amount	50.000	Range 85 - 112		Recovery =	102.28%		
86) 4-Bromofluorobenzene		12.816	95	93732	50.81	ug/L	0.00
Spiked Amount	50.000	Range 83 - 118		Recovery =	101.62%		
Target Compounds							Qvalue
4) Vinyl Chloride		3.263	62	141341	105.2708	ug/L	99
18) Methylene Chloride		5.592	49	1110	0.6150	ug/L	96
32) cis-1,2-Dichloroethene		7.135	96	3116	1.9532	ug/L	83
78) Chlorobenzene		11.621	112	6242	1.4356	ug/L	94

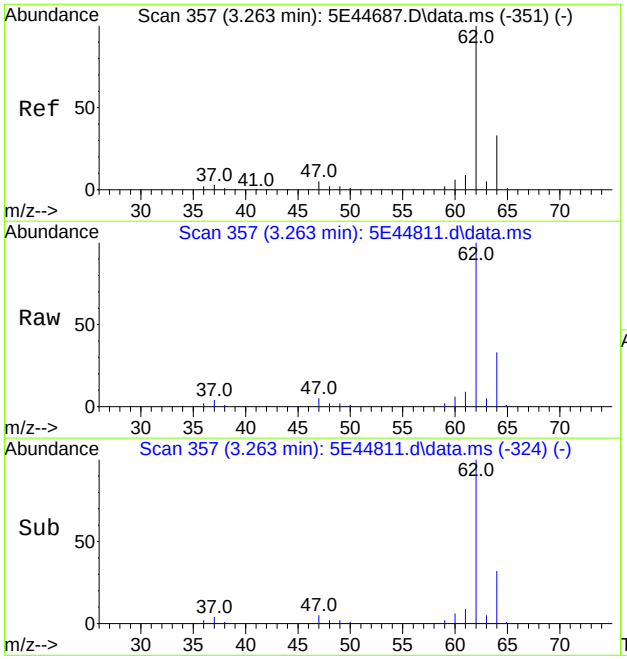
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : X:\Orlando VOA\celinec\December 2023\12-26-2023\V5E1996\V5E1996\
Data File : 5E44811.d
Acq On : 22 Dec 2023 12:25 pm
Operator : joannel
Sample : FC12099-12 Inst : MSVOA20
Misc : MS55608,V5E1996,,,,,
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Dec 26 00:14:26 2023
Quant Method : X:\Orlando VOA\celinec\December 2023\12-26-2023\V5E1996\METHOD\V5E_12-20-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Thu Dec 21 09:37:06 2023
Response via : Initial Calibration

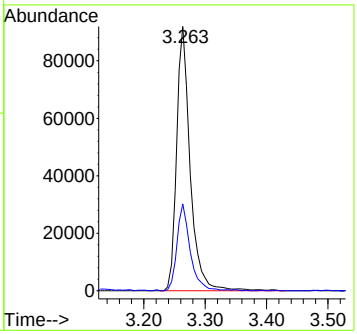


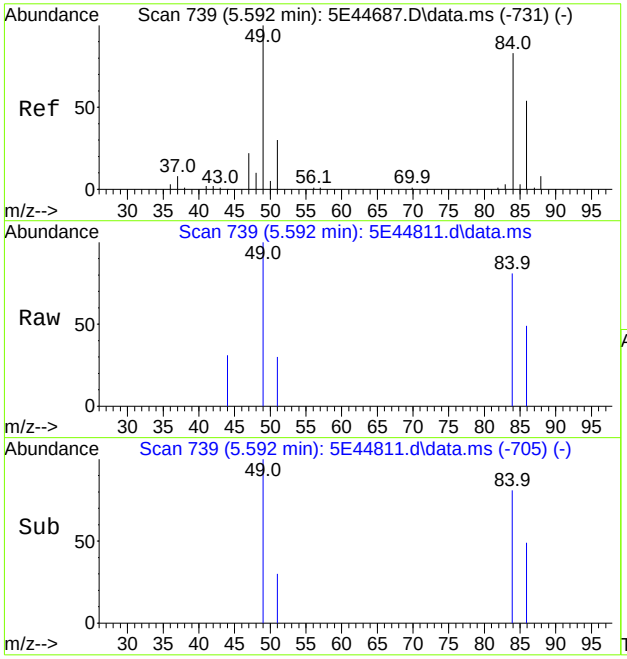


#4
Vinyl Chloride
Concen: 105.2708 ug/L
RT: 3.263 min Scan# 357
Delta R.T. 0.000 min
Lab File: 5E44811.d
Acq: 22 Dec 2023 12:25 pm

Tgt Ion: 62 Resp: 141341

Ion	Ratio	Lower	Upper
62	100		
64	32.9	3.4	63.4

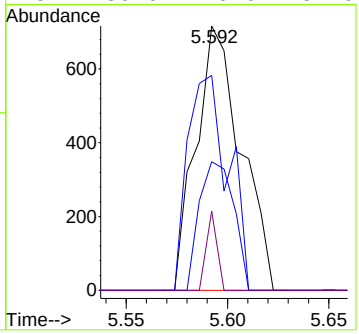


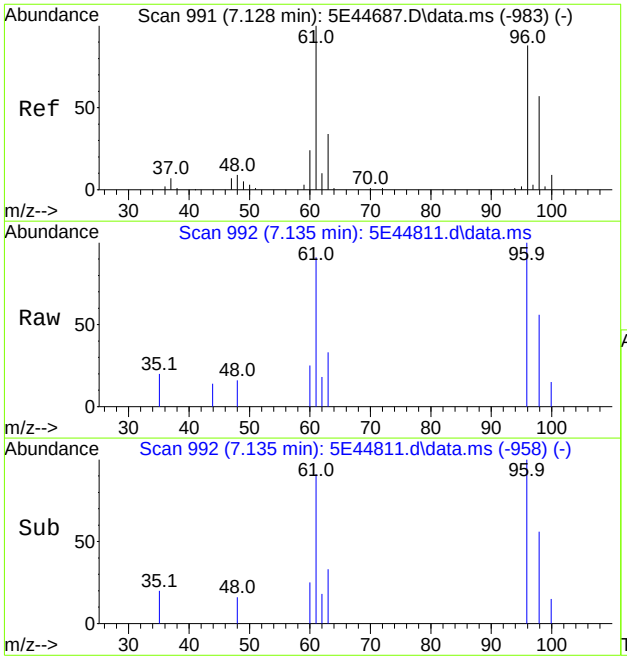


#18
Methylene Chloride
Concen: 0.6150 ug/L
RT: 5.592 min Scan# 739
Delta R.T. 0.006 min
Lab File: 5E44811.d
Acq: 22 Dec 2023 12:25 pm

Tgt Ion: 49 Resp: 1110

Ion	Ratio	Lower	Upper
49	100		
84	81.3	51.3	111.3
86	48.7	24.8	84.8
51	30.0	0.0	57.9

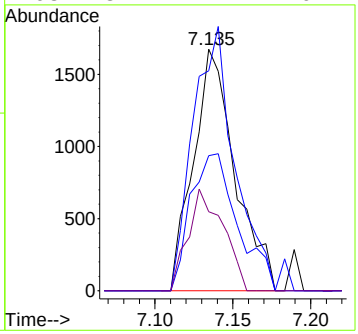


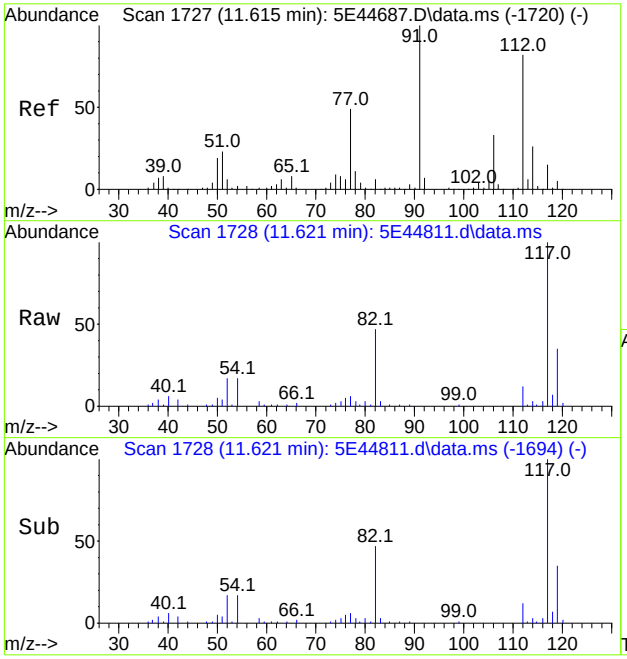


#32
cis-1,2-Dichloroethene
Concen: 1.9532 ug/L
RT: 7.135 min Scan# 992
Delta R.T. 0.007 min
Lab File: 5E44811.d
Acq: 22 Dec 2023 12:25 pm

Tgt Ion: 96 Resp: 3116

Ion	Ratio	Lower	Upper
96	100		
61	91.1	85.7	145.7
98	56.0	36.6	96.6
63	32.7	7.4	67.4

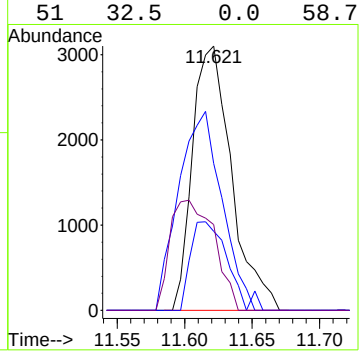




#78
Chlorobenzene
Concen: 1.4356 ug/L
RT: 11.621 min Scan# 1728
Delta R.T. 0.006 min
Lab File: 5E44811.d
Acq: 22 Dec 2023 12:25 pm

Tgt Ion:112 Resp: 6242

Ion	Ratio	Lower	Upper
112	100		
77	55.6	30.6	90.6
114	29.9	2.5	62.5
51	32.5	0.0	58.7



Quantitation Report (QT Reviewed)

Data Path : X:\Orlando VOA\celinec\December 2023\12-27-2023\V1A2028\V1A2028\
Data File : 1A51684.d
Acq On : 26 Dec 2023 5:24 pm
Operator : lianatr
Sample : FC12099-13 5X Inst : MSVOA17
Misc : MS55614,V1A2028,,,,,5
ALS Vial : 25 Sample Multiplier: 1

Quant Time: Dec 27 00:37:48 2023
Quant Method : X:\Orlando VOA\celinec\December 2023\12-27-2023\V1A2028\METHOD\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration

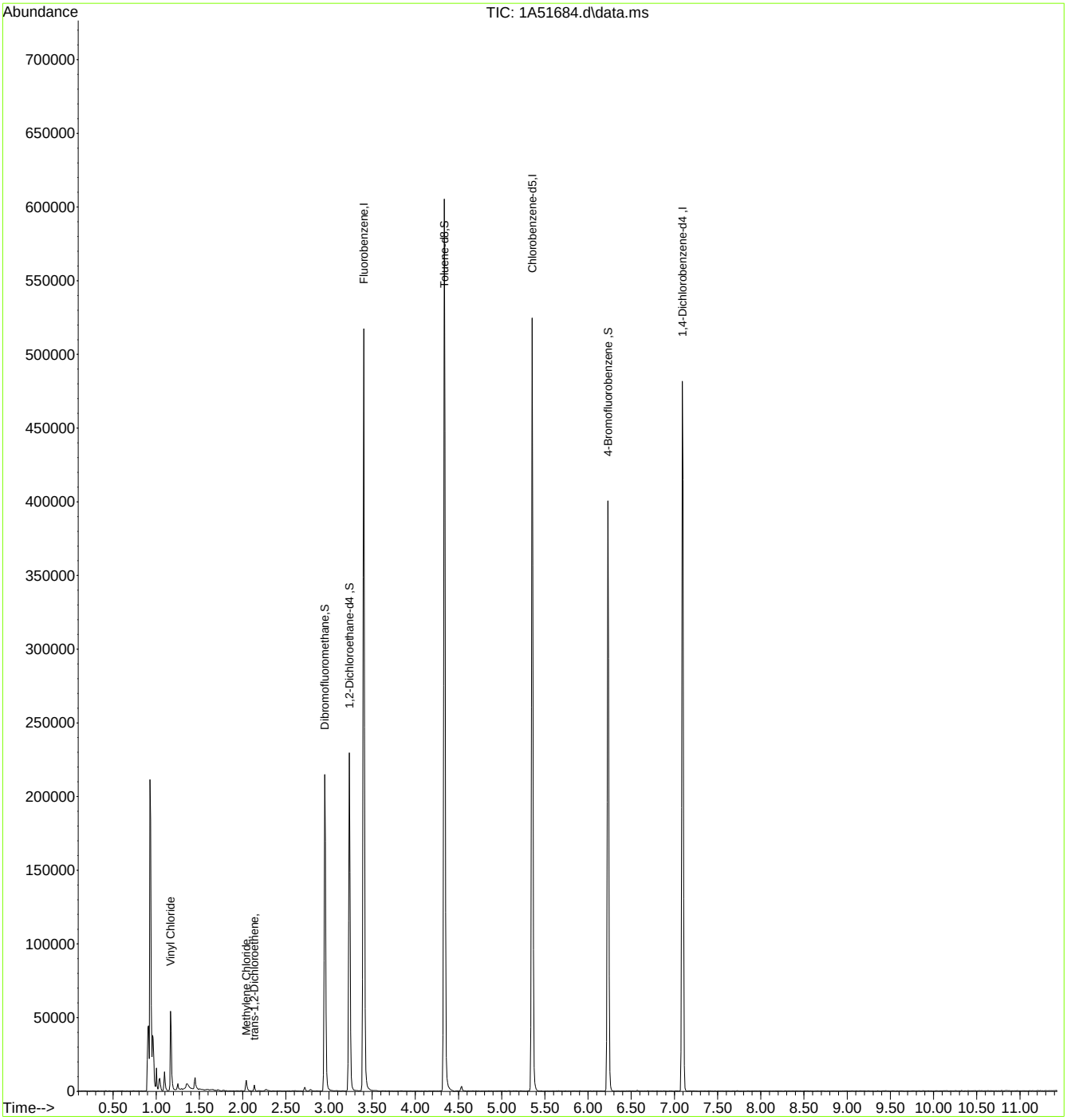
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	3.405	96	267428	50.00	ug/L	0.00
62) Chlorobenzene-d5	5.352	117	189358	50.00	ug/L	0.00
85) 1,4-Dichlorobenzene-d4	7.091	152	92952	50.00	ug/L	0.00
System Monitoring Compounds						
39) Dibromofluoromethane	2.951	113	75902	48.15	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 96.30%			
49) 1,2-Dichloroethane-d4	3.235	65	93269	53.46	ug/L	0.00
Spiked Amount 50.000	Range 79 - 125		Recovery = 106.92%			
63) Toluene-d8	4.336	98	258411	51.10	ug/L	0.00
Spiked Amount 50.000	Range 85 - 112		Recovery = 102.20%			
86) 4-Bromofluorobenzene	6.229	174	78448	50.58	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 101.16%			
Target Compounds						Qvalue
5) Vinyl Chloride	1.165	62	30963	20.2573	ug/L	99
18) Methylene Chloride	2.043	49	2575	1.1412	ug/L	88
21) trans-1,2-Dichloroethene	2.135	61	1033	0.4452	ug/L	91

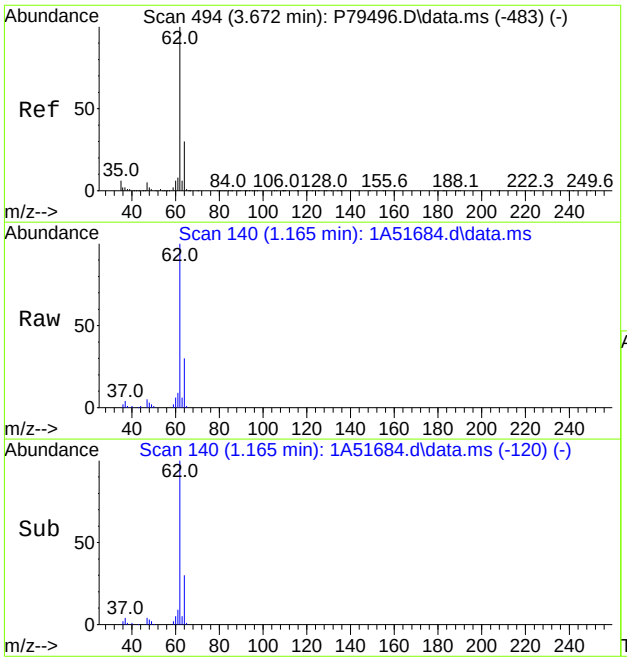
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : X:\Orlando VOA\celinec\December 2023\12-27-2023\V1A2028\V1A2028\
Data File : 1A51684.d
Acq On : 26 Dec 2023 5:24 pm
Operator : lianatr
Sample : FC12099-13 5X Inst : MSVOA17
Misc : MS55614,V1A2028,,,,,5
ALS Vial : 25 Sample Multiplier: 1

Quant Time: Dec 27 00:37:48 2023
Quant Method : X:\Orlando VOA\celinec\December 2023\12-27-2023\V1A2028\METHOD\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration

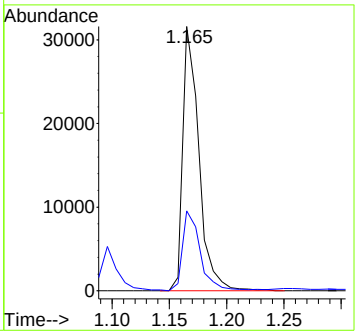


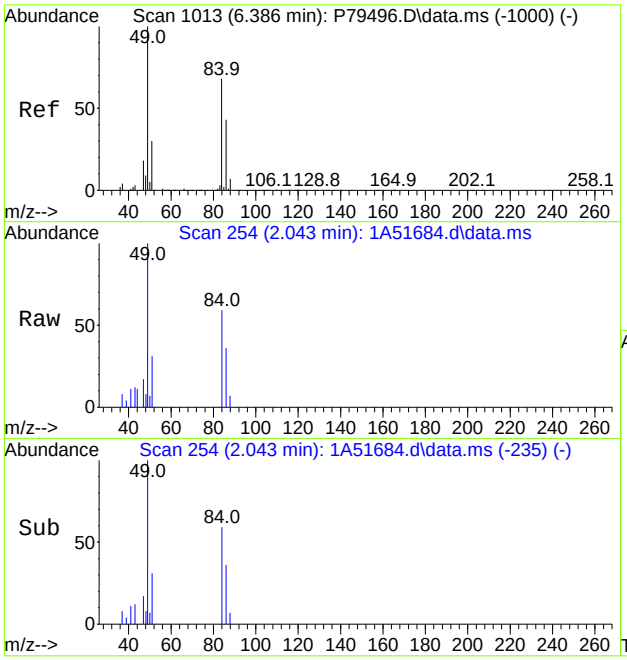


#5
Vinyl Chloride
Concen: 20.2573 ug/L
RT: 1.165 min Scan# 140
Delta R.T. 0.000 min
Lab File: 1A51684.d
Acq: 26 Dec 2023 5:24 pm

Tgt Ion: 62 Resp: 30963

Ion	Ratio	Lower	Upper
62	100		
64	29.9	0.7	60.7

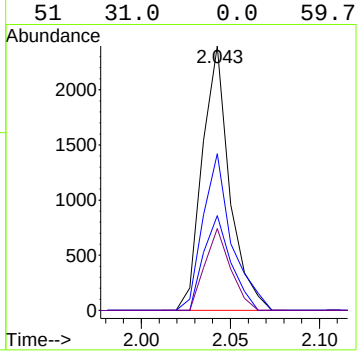


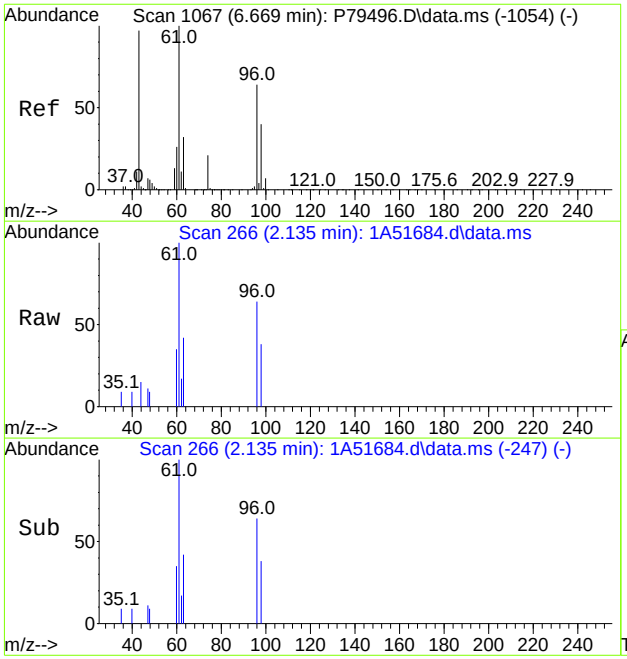


#18
Methylene Chloride
Concen: 1.1412 ug/L
RT: 2.043 min Scan# 254
Delta R.T. -0.000 min
Lab File: 1A51684.d
Acq: 26 Dec 2023 5:24 pm

Tgt Ion: 49 Resp: 2575

Ion	Ratio	Lower	Upper
49	100		
84	59.3	41.8	101.8
86	35.8	15.6	75.6
51	31.0	0.0	59.7

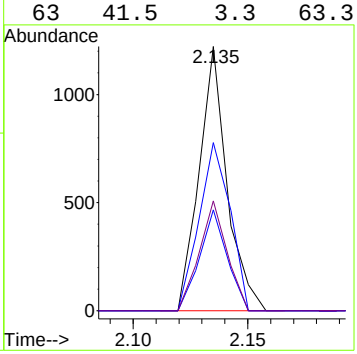




#21
trans-1,2-Dichloroethene
Concen: 0.4452 ug/L
RT: 2.135 min Scan# 266
Delta R.T. -0.000 min
Lab File: 1A51684.d
Acq: 26 Dec 2023 5:24 pm

Tgt Ion: 61 Resp: 1033

Ion	Ratio	Lower	Upper
61	100		
96	63.6	37.3	97.3
98	38.2	16.1	76.1
63	41.5	3.3	63.3



Quantitation Report (QT Reviewed)

Data Path : X:\Orlando VOA\celinec\December 2023\12-26-2023\V5E1996\V5E1996\
Data File : 5E44812.d
Acq On : 22 Dec 2023 12:47 pm
Operator : joannel
Sample : FC12099-13 Inst : MSVOA20
Misc : MS55608,V5E1996,,,,,
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Dec 26 00:15:03 2023
Quant Method : X:\Orlando VOA\celinec\December 2023\12-26-2023\V5E1996\METHOD\V5E_12-20-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Thu Dec 21 09:37:06 2023
Response via : Initial Calibration

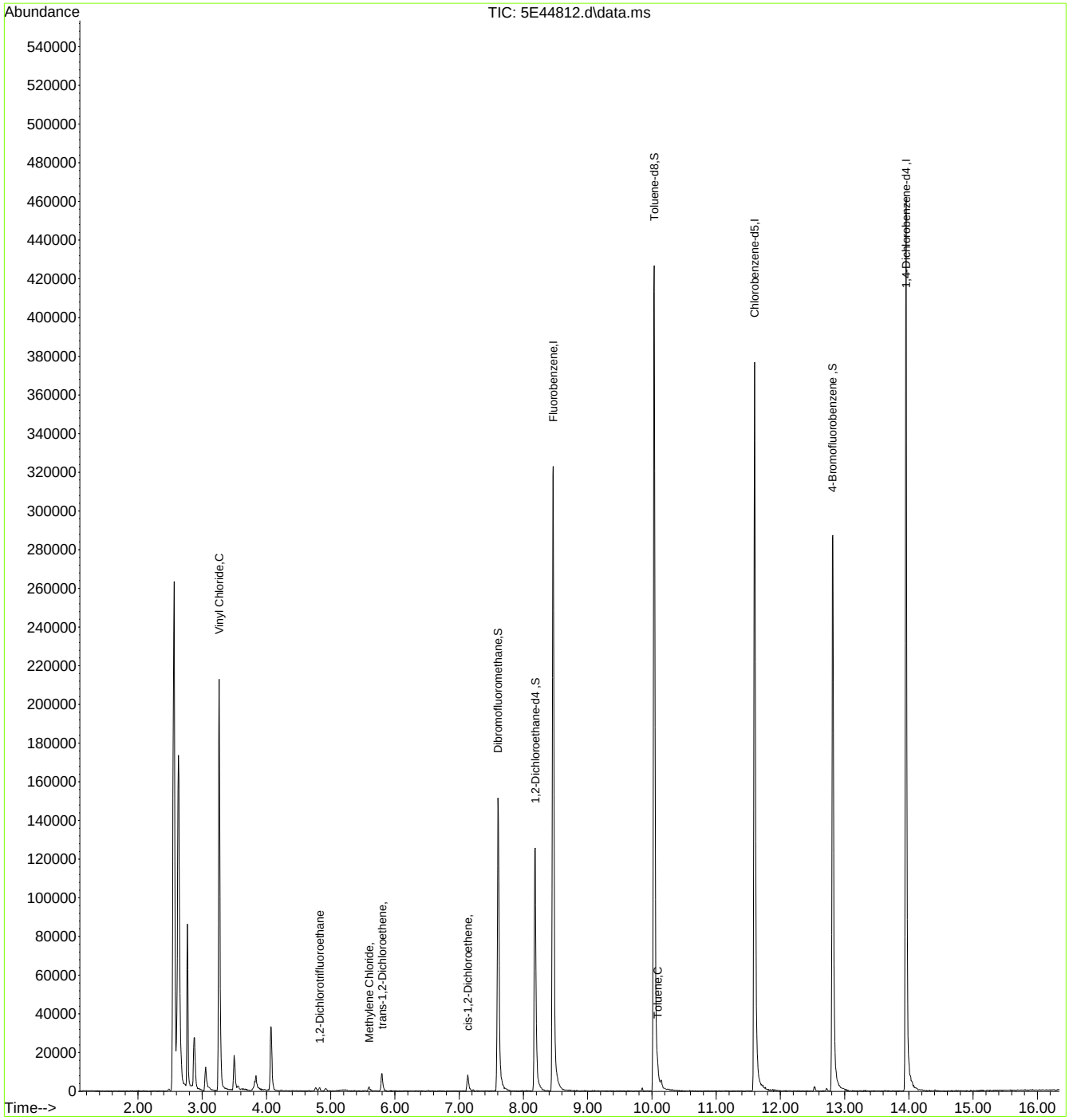
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	8.464	96	302585	50.00	ug/L	0.00
61) Chlorobenzene-d5	11.597	117	236496	50.00	ug/L	0.00
85) 1,4-Dichlorobenzene-d4	13.956	152	128287	50.00	ug/L	0.00
System Monitoring Compounds						
39) Dibromofluoromethane	7.604	113	92158	50.76	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 101.52%			
49) 1,2-Dichloroethane-d4	8.183	65	86501	48.34	ug/L	0.00
Spiked Amount 50.000	Range 79 - 125		Recovery = 96.68%			
62) Toluene-d8	10.036	98	299818	50.75	ug/L	0.00
Spiked Amount 50.000	Range 85 - 112		Recovery = 101.50%			
86) 4-Bromofluorobenzene	12.810	95	95955	51.37	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 102.74%			
Target Compounds						Qvalue
4) Vinyl Chloride	3.263	62	194949	145.7965	ug/L	98
11) 1,2-Dichlorotrifluoroe...	4.830	67	918	0.6000	ug/L #	85
18) Methylene Chloride	5.598	49	1209	0.6726	ug/L	82
21) trans-1,2-Dichloroethene	5.799	61	5252	2.9389	ug/L	90
32) cis-1,2-Dichloroethene	7.135	96	4604	2.8978	ug/L	91
63) Toluene	10.091	91	1278	0.2252	ug/L	93

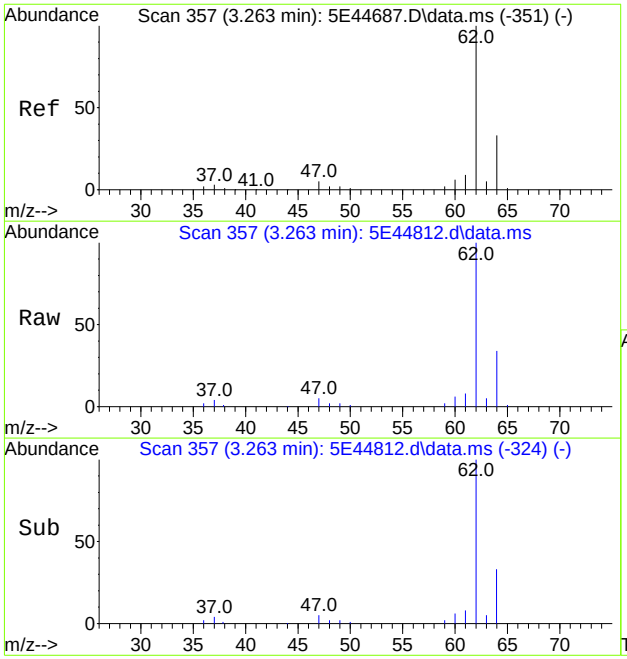
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : X:\Orlando VOA\celinec\December 2023\12-26-2023\V5E1996\V5E1996\
Data File : 5E44812.d
Acq On : 22 Dec 2023 12:47 pm
Operator : joannel
Sample : FC12099-13 Inst : MSVOA20
Misc : MS55608,V5E1996,,,,,
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Dec 26 00:15:03 2023
Quant Method : X:\Orlando VOA\celinec\December 2023\12-26-2023\V5E1996\METHOD\V5E_12-20-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Thu Dec 21 09:37:06 2023
Response via : Initial Calibration

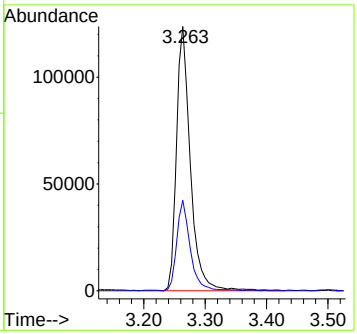


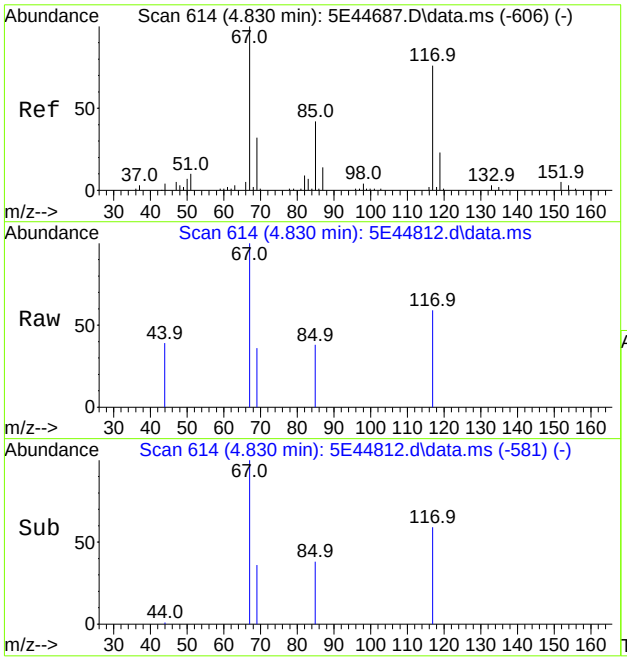


#4
Vinyl Chloride
Concen: 145.7965 ug/L
RT: 3.263 min Scan# 357
Delta R.T. 0.000 min
Lab File: 5E44812.d
Acq: 22 Dec 2023 12:47 pm

Tgt Ion: 62 Resp: 194949

Ion	Ratio	Lower	Upper
62	100		
64	34.3	3.4	63.4

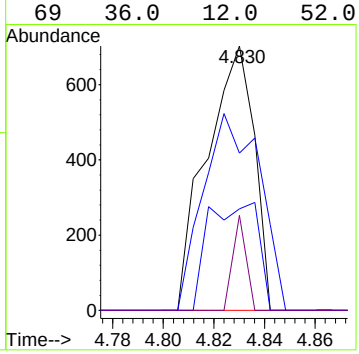


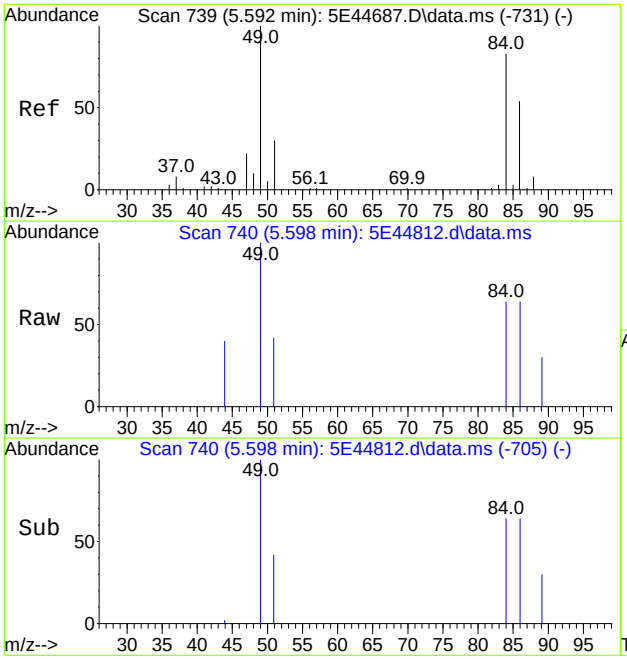


#11
1,2-Dichlorotrifluoroethane
Concen: 0.6000 ug/L
RT: 4.830 min Scan# 614
Delta R.T. 0.000 min
Lab File: 5E44812.d
Acq: 22 Dec 2023 12:47 pm

Tgt Ion: 67 Resp: 918

Ion	Ratio	Lower	Upper
67	100		
117	59.5	60.5	100.5#
85	38.4	22.1	62.1
69	36.0	12.0	52.0

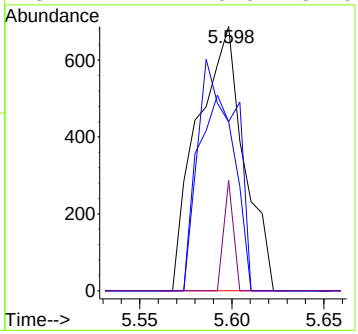


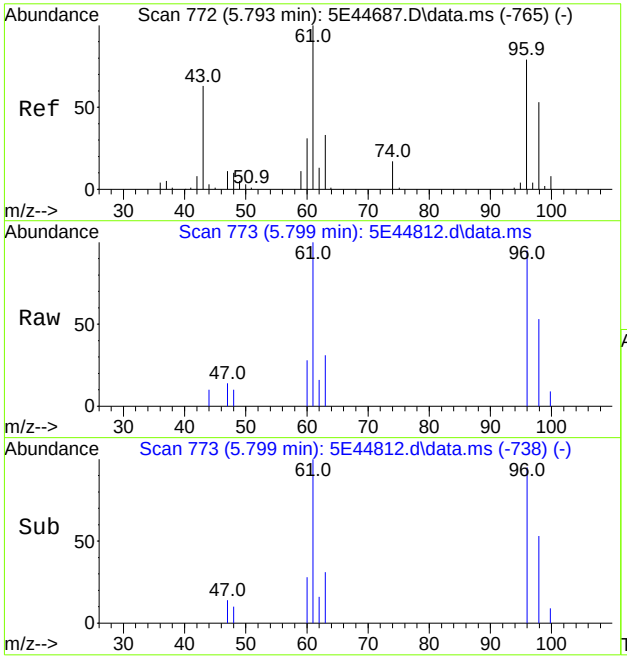


#18
Methylene Chloride
Concen: 0.6726 ug/L
RT: 5.598 min Scan# 740
Delta R.T. 0.012 min
Lab File: 5E44812.d
Acq: 22 Dec 2023 12:47 pm

Tgt Ion: 49 Resp: 1209

Ion	Ratio	Lower	Upper
49	100		
84	64.0	51.3	111.3
86	64.0	24.8	84.8
51	41.7	0.0	57.9

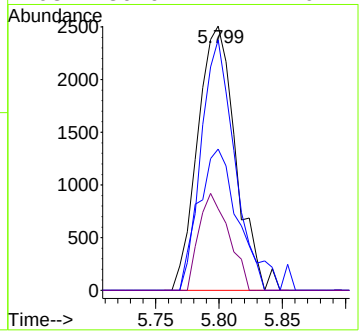


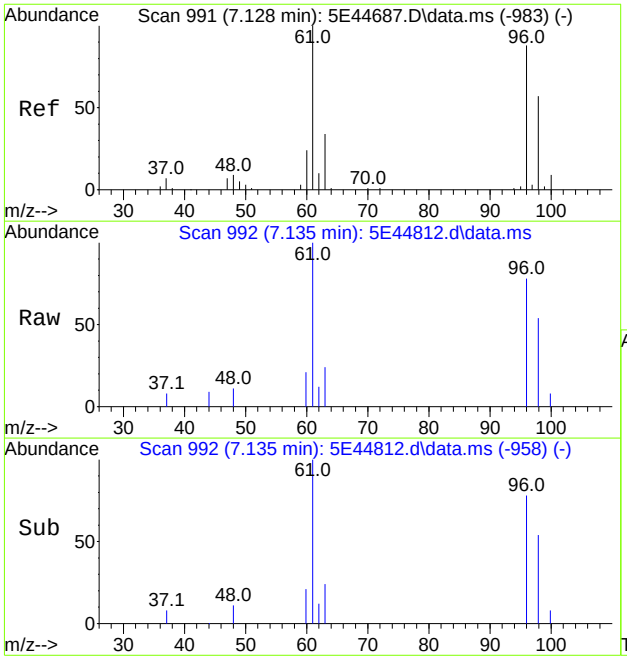


#21
trans-1,2-Dichloroethene
Concen: 2.9389 ug/L
RT: 5.799 min Scan# 773
Delta R.T. 0.012 min
Lab File: 5E44812.d
Acq: 22 Dec 2023 12:47 pm

Tgt Ion: 61 Resp: 5252

Ion	Ratio	Lower	Upper
61	100		
96	94.7	49.6	109.6
98	53.4	20.6	80.6
63	30.9	2.2	62.2

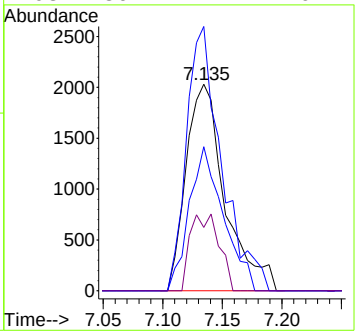


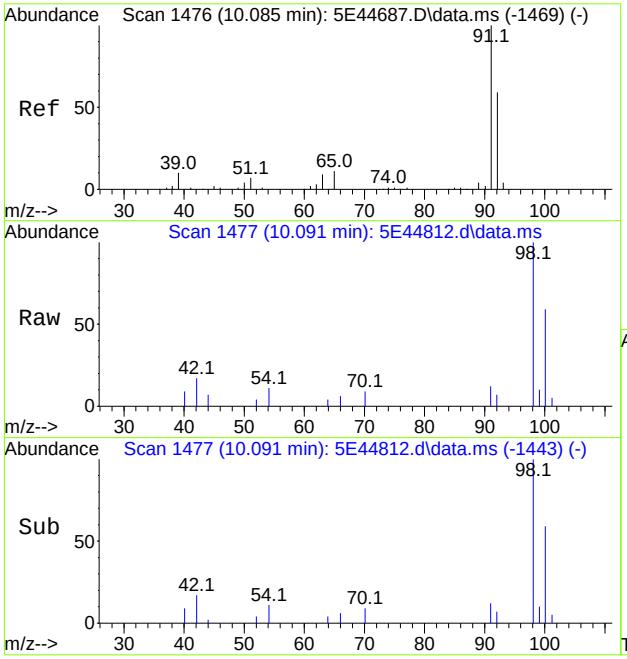


#32
cis-1,2-Dichloroethene
Concen: 2.8978 ug/L
RT: 7.135 min Scan# 992
Delta R.T. 0.007 min
Lab File: 5E44812.d
Acq: 22 Dec 2023 12:47 pm

Tgt Ion: 96 Resp: 4604

Ion	Ratio	Lower	Upper
96	100		
61	128.0	85.7	145.7
98	69.7	36.6	96.6
63	30.7	7.4	67.4

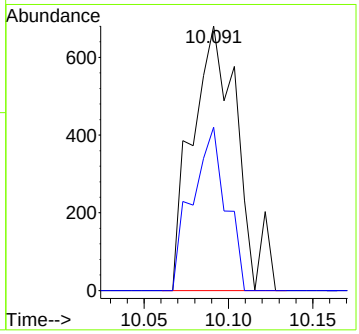




#63
Toluene
Concen: 0.2252 ug/L
RT: 10.091 min Scan# 1477
Delta R.T. 0.006 min
Lab File: 5E44812.d
Acq: 22 Dec 2023 12:47 pm

Tgt Ion: 91 Resp: 1278

Ion	Ratio	Lower	Upper
91	100		
92	61.7	26.7	86.7



Quantitation Report (QT Reviewed)

Data Path : X:\Orlando VOA\celinec\December 2023\12-26-2023\V5E1996\V5E1996\
Data File : 5E44825.d
Acq On : 22 Dec 2023 5:46 pm
Operator : joannel
Sample : FC12099-15 2.5X Inst : MSVOA20
Misc : MS55608,V5E1996,,,,,2.5
ALS Vial : 24 Sample Multiplier: 1

Quant Time: Dec 26 00:21:42 2023
Quant Method : X:\Orlando VOA\celinec\December 2023\12-26-2023\V5E1996\METHOD\V5E_12-20-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Thu Dec 21 09:37:06 2023
Response via : Initial Calibration

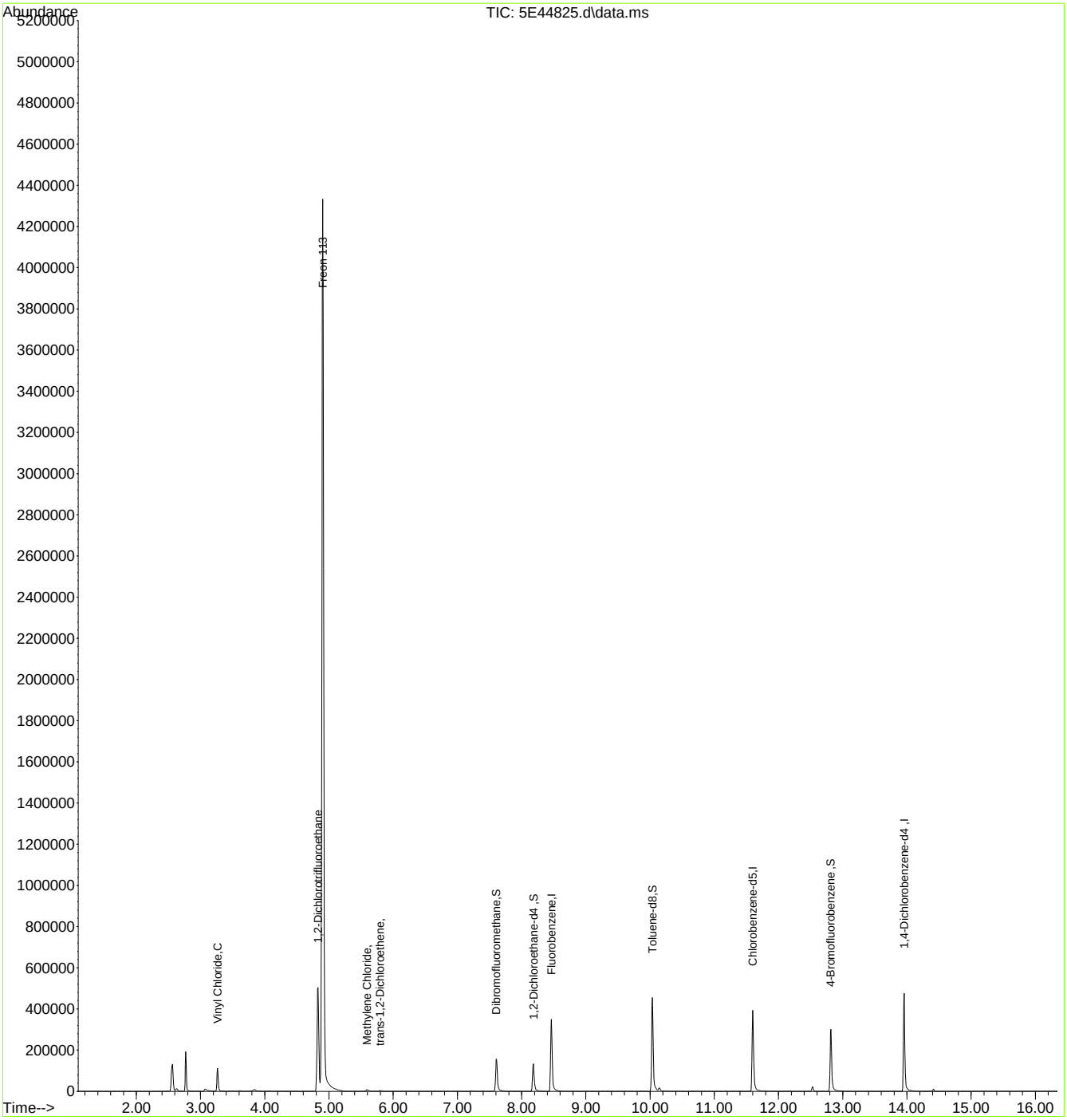
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	8.463	96	315725	50.00	ug/L	0.00
61) Chlorobenzene-d5	11.597	117	245944	50.00	ug/L	0.00
85) 1,4-Dichlorobenzene-d4	13.956	152	130875	50.00	ug/L	0.00
System Monitoring Compounds						
39) Dibromofluoromethane	7.604	113	95907	50.62	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 101.24%			
49) 1,2-Dichloroethane-d4	8.183	65	90035	48.23	ug/L	0.00
Spiked Amount 50.000	Range 79 - 125		Recovery = 96.46%			
62) Toluene-d8	10.036	98	311941	50.77	ug/L	0.00
Spiked Amount 50.000	Range 85 - 112		Recovery = 101.54%			
86) 4-Bromofluorobenzene	12.810	95	98359	51.62	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 103.24%			
Target Compounds						Qvalue
4) Vinyl Chloride	3.263	62	95878	68.7200	ug/L	99
11) 1,2-Dichlorotrifluoroe...	4.830	67	241954	151.5686	ug/L	98
13) Freon 113	4.903	101	1708703	1309.3620	ug/L	98
18) Methylene Chloride	5.592	49	4709	2.5106	ug/L	92
21) trans-1,2-Dichloroethene	5.793	61	2453	1.3155	ug/L	93

(#) = qualifier out of range (m) = manual integration (+) = signals summed

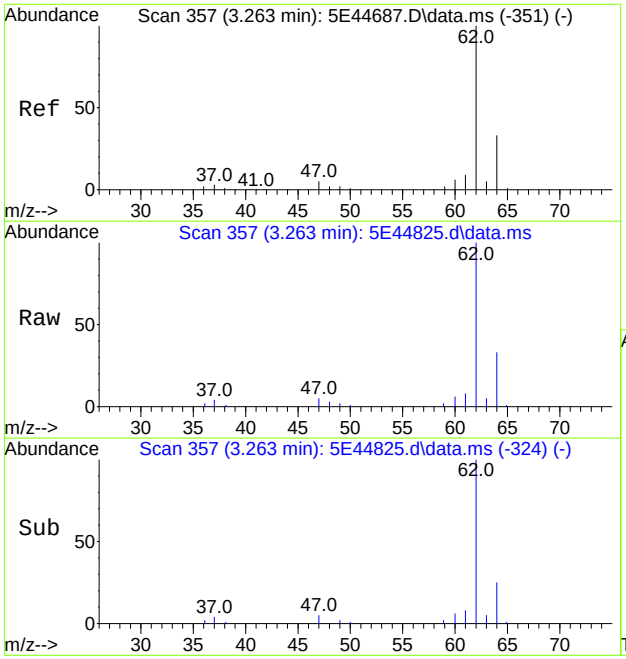
Quantitation Report (QT Reviewed)

Data Path : X:\Orlando VOA\celinec\December 2023\12-26-2023\V5E1996\V5E1996\
Data File : 5E44825.d
Acq On : 22 Dec 2023 5:46 pm
Operator : joannel
Sample : FC12099-15 2.5X Inst : MSVOA20
Misc : MS55608,V5E1996,,,,,2.5
ALS Vial : 24 Sample Multiplier: 1

Quant Time: Dec 26 00:21:42 2023
Quant Method : X:\Orlando VOA\celinec\December 2023\12-26-2023\V5E1996\METHOD\V5E_12-20-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Thu Dec 21 09:37:06 2023
Response via : Initial Calibration



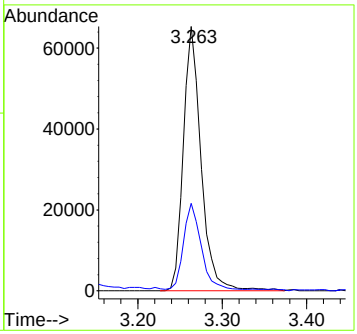
V5E_12-20-2023_.M Tue Dec 26 00:24:52 2023 Page: 2

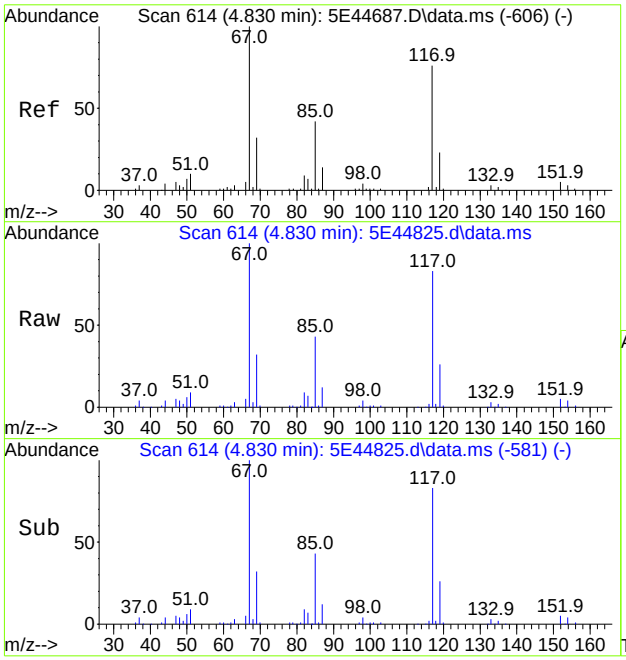


#4
Vinyl Chloride
Concen: 68.7200 ug/L
RT: 3.263 min Scan# 357
Delta R.T. 0.000 min
Lab File: 5E44825.d
Acq: 22 Dec 2023 5:46 pm

Tgt Ion: 62 Resp: 95878

Ion	Ratio	Lower	Upper
62	100		
64	32.6	3.4	63.4

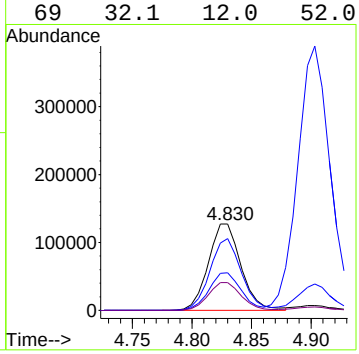


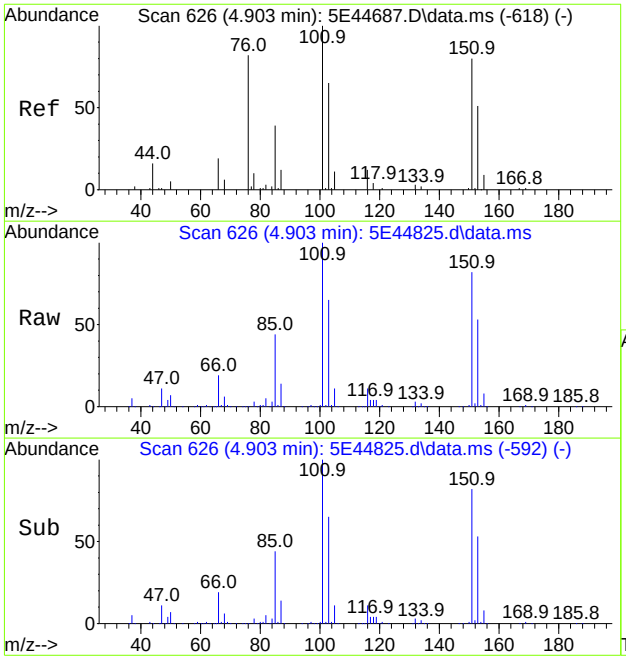


#11
1,2-Dichlorotrifluoroethane
Concen: 151.5686 ug/L
RT: 4.830 min Scan# 614
Delta R.T. -0.000 min
Lab File: 5E44825.d
Acq: 22 Dec 2023 5:46 pm

Tgt Ion: 67 Resp: 241954

Ion	Ratio	Lower	Upper
67	100		
117	83.3	60.5	100.5
85	43.5	22.1	62.1
69	32.1	12.0	52.0

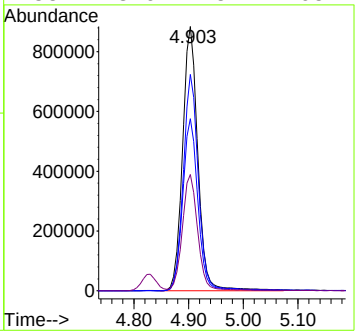


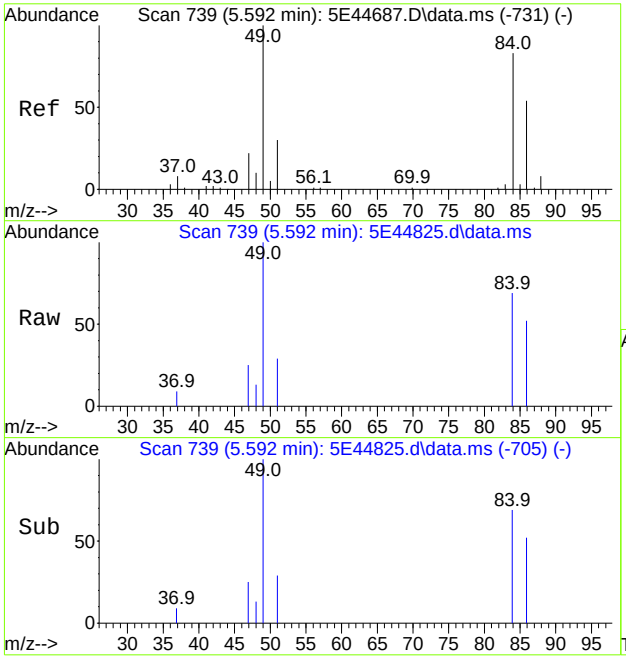


#13
Freon 113
Concen: 1309.3620 ug/L
RT: 4.903 min Scan# 626
Delta R.T. 0.006 min
Lab File: 5E44825.d
Acq: 22 Dec 2023 5:46 pm

Tgt Ion:101 Resp: 1708703

Ion	Ratio	Lower	Upper
101	100		
151	81.9	59.3	99.3
103	65.1	44.2	84.2
85	43.9	25.4	65.4

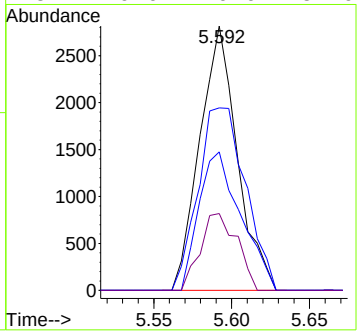


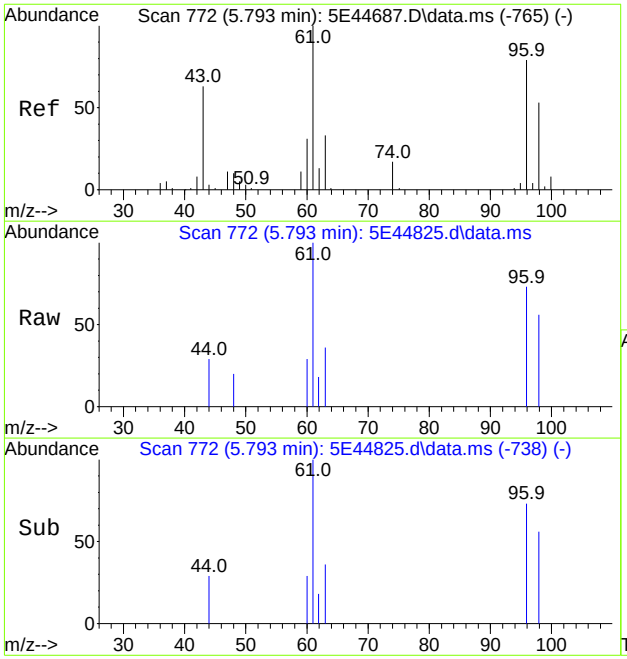


#18
Methylene Chloride
Concen: 2.5106 ug/L
RT: 5.592 min Scan# 739
Delta R.T. 0.006 min
Lab File: 5E44825.d
Acq: 22 Dec 2023 5:46 pm

Tgt Ion: 49 Resp: 4709

Ion	Ratio	Lower	Upper
49	100		
84	69.0	51.3	111.3
86	52.4	24.8	84.8
51	29.0	0.0	57.9

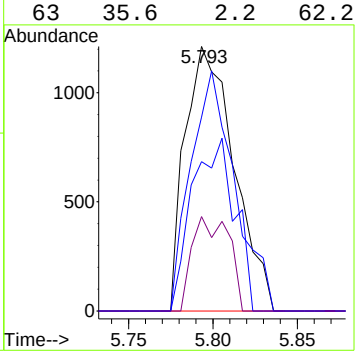




#21
trans-1,2-Dichloroethene
Concen: 1.3155 ug/L
RT: 5.793 min Scan# 772
Delta R.T. 0.006 min
Lab File: 5E44825.d
Acq: 22 Dec 2023 5:46 pm

Tgt Ion: 61 Resp: 2453

Ion	Ratio	Lower	Upper
61	100		
96	73.2	49.6	109.6
98	56.4	20.6	80.6
63	35.6	2.2	62.2



Quantitation Report (QT Reviewed)

Data Path : X:\Orlando VOA\celinec\December 2023\12-26-2023\V5E1996\V5E1996\
Data File : 5E44813.d
Acq On : 22 Dec 2023 1:10 pm
Operator : joannel
Sample : FC12099-17 Inst : MSVOA20
Misc : MS55608,V5E1996,,,,,
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Dec 26 00:15:20 2023
Quant Method : X:\Orlando VOA\celinec\December 2023\12-26-2023\V5E1996\METHOD\V5E_12-20-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Thu Dec 21 09:37:06 2023
Response via : Initial Calibration

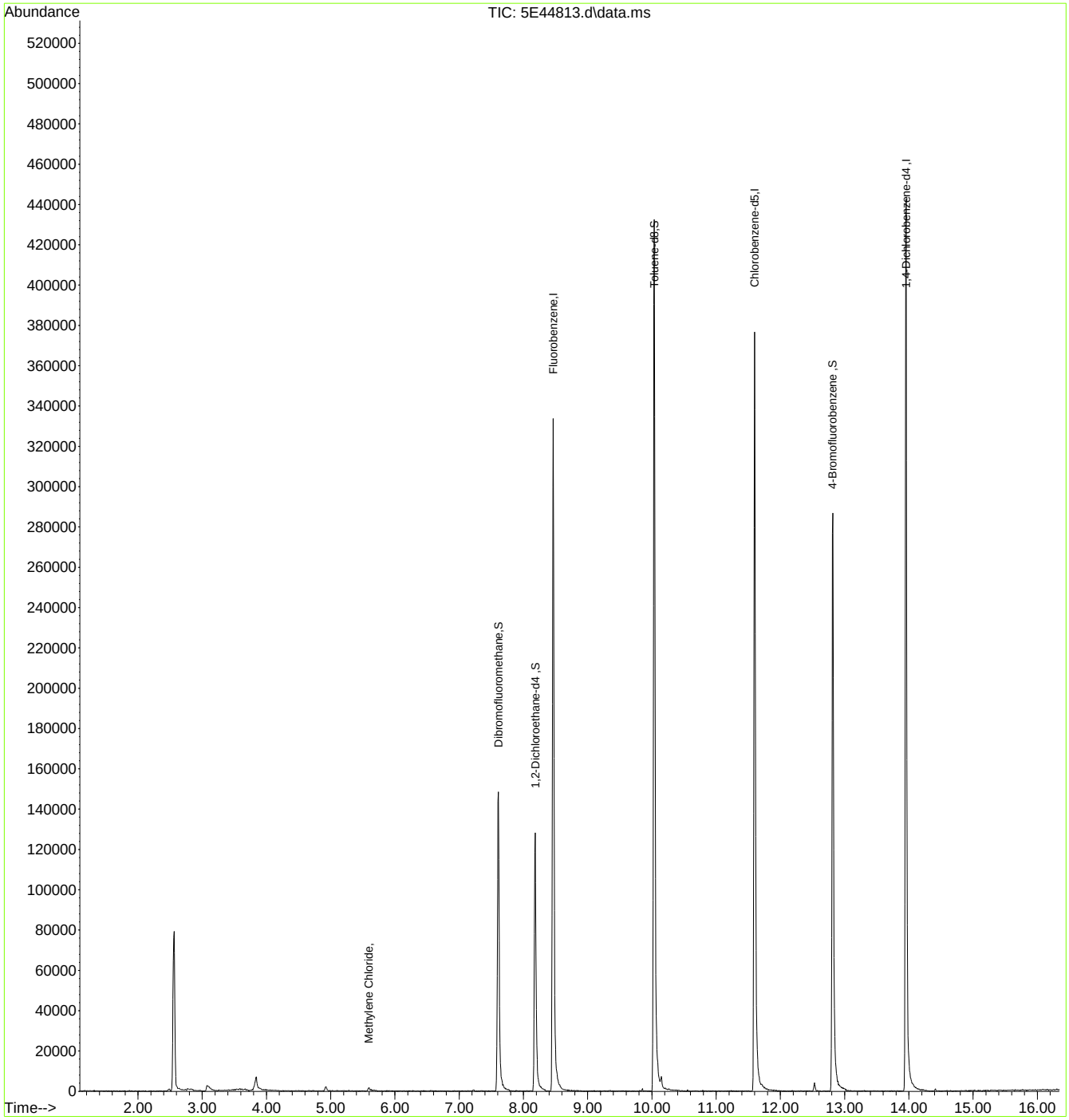
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	8.463	96	302983	50.00	ug/L	0.00
61) Chlorobenzene-d5	11.597	117	233309	50.00	ug/L	0.00
85) 1,4-Dichlorobenzene-d4	13.956	152	126233	50.00	ug/L	0.00
System Monitoring Compounds						
39) Dibromofluoromethane	7.610	113	90103	49.56	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 99.12%			
49) 1,2-Dichloroethane-d4	8.183	65	86830	48.46	ug/L	0.00
Spiked Amount 50.000	Range 79 - 125		Recovery = 96.92%			
62) Toluene-d8	10.036	98	296803	50.92	ug/L	0.00
Spiked Amount 50.000	Range 85 - 112		Recovery = 101.84%			
86) 4-Bromofluorobenzene	12.810	95	92843	50.52	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 101.04%			
Target Compounds						Qvalue
18) Methylene Chloride	5.592	49	1061	0.5895	ug/L	82

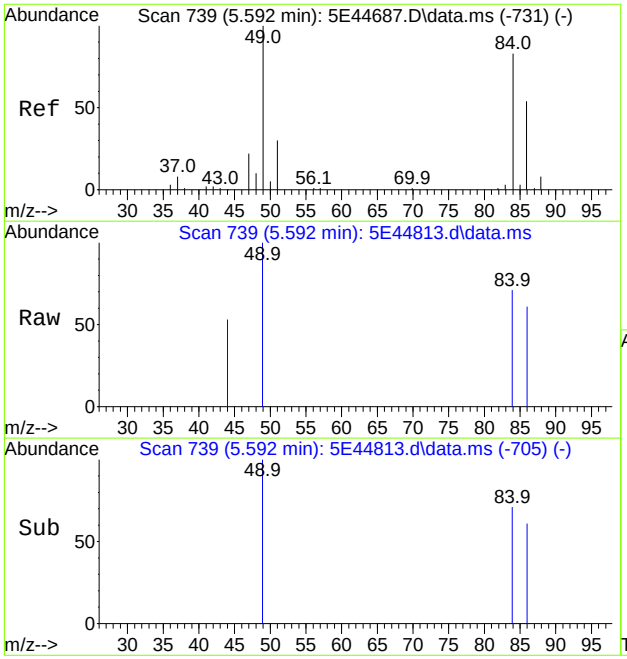
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : X:\Orlando VOA\celinec\December 2023\12-26-2023\V5E1996\V5E1996\
Data File : 5E44813.d
Acq On : 22 Dec 2023 1:10 pm
Operator : joannel
Sample : FC12099-17 Inst : MSVOA20
Misc : MS55608,V5E1996,,,,,
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Dec 26 00:15:20 2023
Quant Method : X:\Orlando VOA\celinec\December 2023\12-26-2023\V5E1996\METHOD\V5E_12-20-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Thu Dec 21 09:37:06 2023
Response via : Initial Calibration

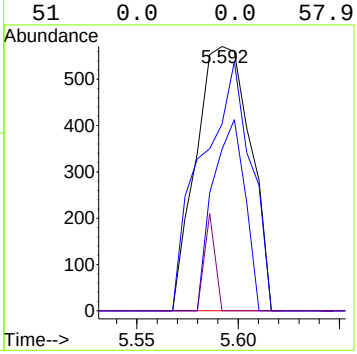




#18
Methylene Chloride
Concen: 0.5895 ug/L
RT: 5.592 min Scan# 739
Delta R.T. 0.006 min
Lab File: 5E44813.d
Acq: 22 Dec 2023 1:10 pm

Tgt Ion: 49 Resp: 1061

Ion	Ratio	Lower	Upper
49	100		
84	70.6	51.3	111.3
86	61.1	24.8	84.8
51	0.0	0.0	57.9



Quantitation Report (QT Reviewed)

Data Path : X:\Orlando VOA\celinec\December 2023\12-26-2023\V5E1996\V5E1996\
Data File : 5E44814.d
Acq On : 22 Dec 2023 1:33 pm
Operator : joannel
Sample : FC12099-18 Inst : MSVOA20
Misc : MS55608,V5E1996,,,,,
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Dec 26 00:16:15 2023
Quant Method : X:\Orlando VOA\celinec\December 2023\12-26-2023\V5E1996\METHOD\V5E_12-20-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Thu Dec 21 09:37:06 2023
Response via : Initial Calibration

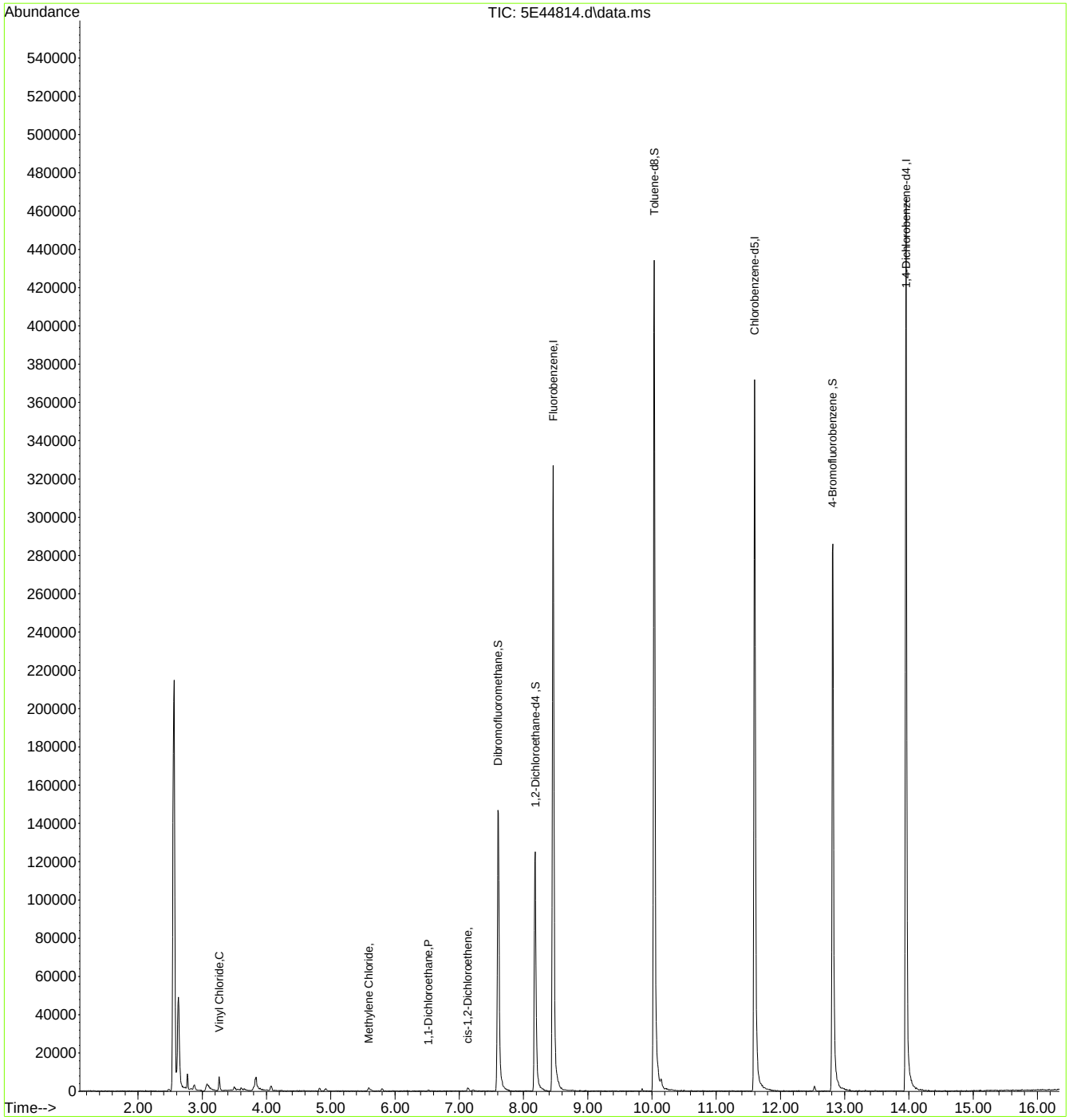
Compound		R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards							
1) Fluorobenzene		8.463	96	302034	50.00	ug/L	0.00
61) Chlorobenzene-d5		11.597	117	233925	50.00	ug/L	0.00
85) 1,4-Dichlorobenzene-d4		13.956	152	127670	50.00	ug/L	0.00
System Monitoring Compounds							
39) Dibromofluoromethane		7.604	113	91376	50.42	ug/L	0.00
Spiked Amount	50.000	Range 83 - 118		Recovery =	100.84%		
49) 1,2-Dichloroethane-d4		8.183	65	86311	48.33	ug/L	0.00
Spiked Amount	50.000	Range 79 - 125		Recovery =	96.66%		
62) Toluene-d8		10.036	98	299331	51.22	ug/L	0.00
Spiked Amount	50.000	Range 85 - 112		Recovery =	102.44%		
86) 4-Bromofluorobenzene		12.810	95	96212	51.76	ug/L	0.00
Spiked Amount	50.000	Range 83 - 118		Recovery =	103.52%		
Target Compounds							Qvalue
4) Vinyl Chloride		3.263	62	6047	4.5306	ug/L	95
18) Methylene Chloride		5.592	49	1079	0.6013	ug/L	79
27) 1,1-Dichloroethane		6.519	63	762	0.3003	ug/L	61
32) cis-1,2-Dichloroethene		7.128	96	899	0.5669	ug/L #	74

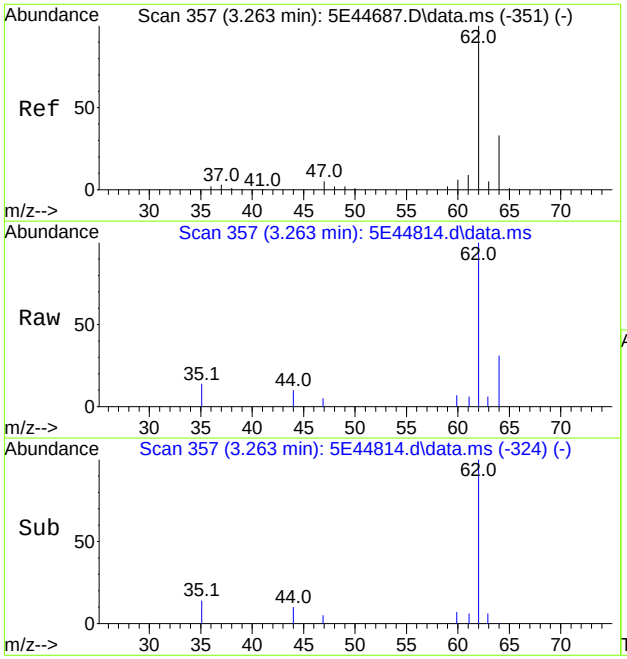
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : X:\Orlando VOA\celinec\December 2023\12-26-2023\V5E1996\V5E1996\
Data File : 5E44814.d
Acq On : 22 Dec 2023 1:33 pm
Operator : joannel
Sample : FC12099-18 Inst : MSVOA20
Misc : MS55608,V5E1996,,,,,
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Dec 26 00:16:15 2023
Quant Method : X:\Orlando VOA\celinec\December 2023\12-26-2023\V5E1996\METHOD\V5E_12-20-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Thu Dec 21 09:37:06 2023
Response via : Initial Calibration

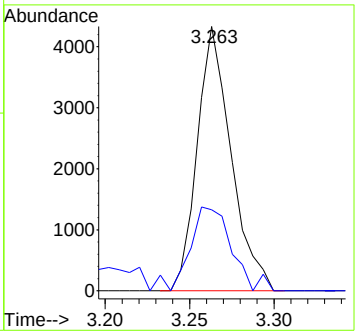


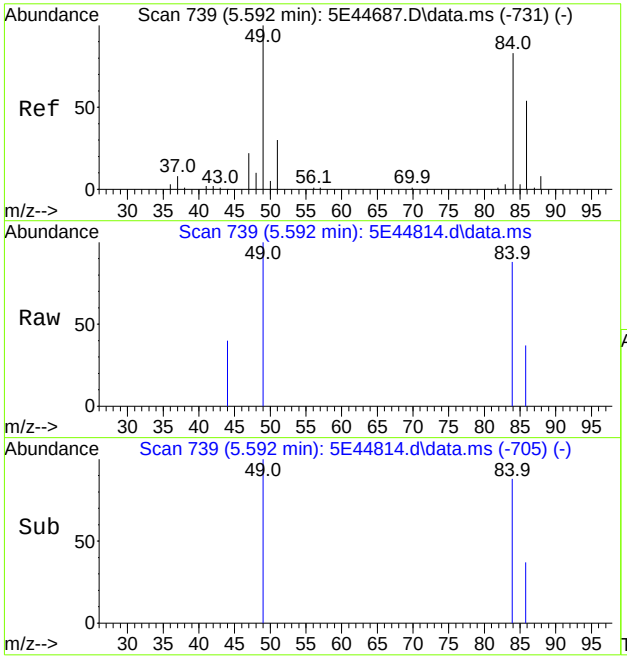


#4
Vinyl Chloride
Concen: 4.5306 ug/L
RT: 3.263 min Scan# 357
Delta R.T. 0.000 min
Lab File: 5E44814.d
Acq: 22 Dec 2023 1:33 pm

Tgt Ion: 62 Resp: 6047

Ion	Ratio	Lower	Upper
62	100		
64	30.7	3.4	63.4

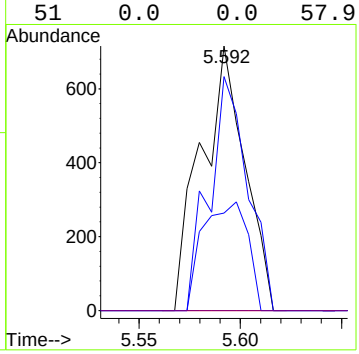


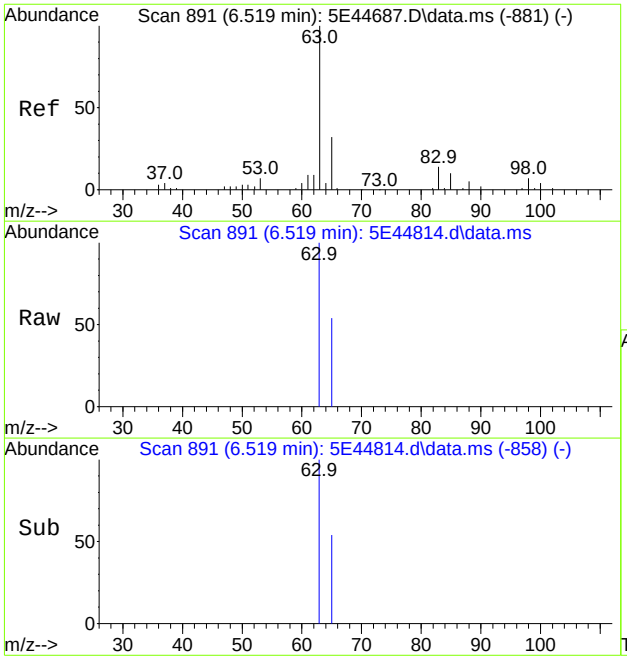


#18
Methylene Chloride
Concen: 0.6013 ug/L
RT: 5.592 min Scan# 739
Delta R.T. 0.006 min
Lab File: 5E44814.d
Acq: 22 Dec 2023 1:33 pm

Tgt Ion: 49 Resp: 1079

Ion	Ratio	Lower	Upper
49	100		
84	88.4	51.3	111.3
86	36.9	24.8	84.8
51	0.0	0.0	57.9

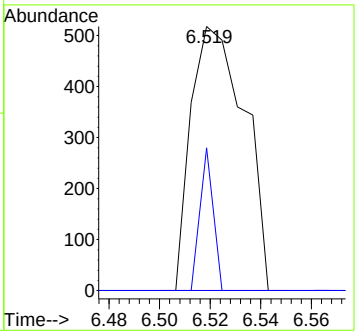


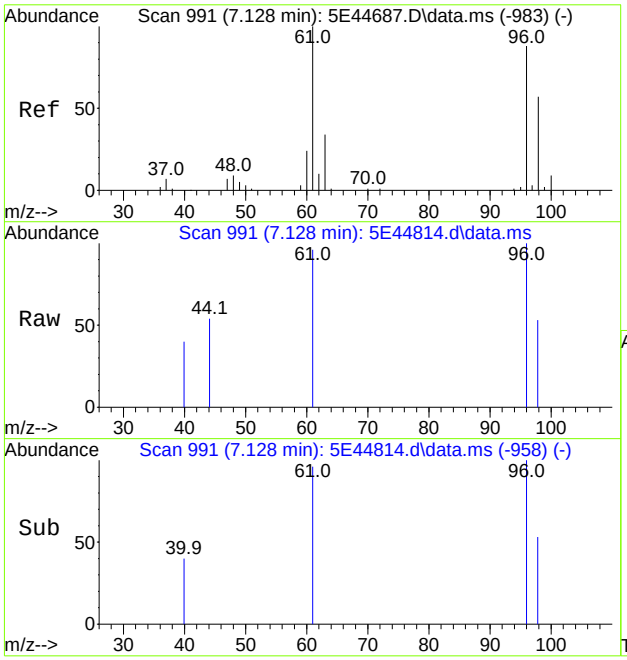


#27
1,1-Dichloroethane
Concen: 0.3003 ug/L
RT: 6.519 min Scan# 891
Delta R.T. -0.000 min
Lab File: 5E44814.d
Acq: 22 Dec 2023 1:33 pm

Tgt Ion: 63 Resp: 762

Ion	Ratio	Lower	Upper
63	100		
65	54.1	1.7	61.7
83	0.0	0.0	44.4

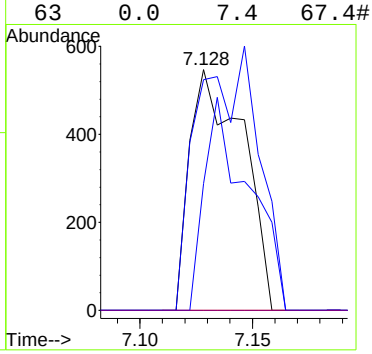




#32
cis-1,2-Dichloroethene
Concen: 0.5669 ug/L
RT: 7.128 min Scan# 991
Delta R.T. 0.000 min
Lab File: 5E44814.d
Acq: 22 Dec 2023 1:33 pm

Tgt Ion: 96 Resp: 899

Ion	Ratio	Lower	Upper
96	100		
61	95.8	85.7	145.7
98	52.7	36.6	96.6
63	0.0	7.4	67.4#



Quantitation Report (QT Reviewed)

Data Path : X:\Orlando VOA\celinec\December 2023\12-26-2023\V5E1996\V5E1996\
Data File : 5E44815.d
Acq On : 22 Dec 2023 1:56 pm
Operator : joannel
Sample : FC12099-20 Inst : MSVOA20
Misc : MS55608,V5E1996,,,,,
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Dec 26 00:16:38 2023
Quant Method : X:\Orlando VOA\celinec\December 2023\12-26-2023\V5E1996\METHOD\V5E_12-20-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Thu Dec 21 09:37:06 2023
Response via : Initial Calibration

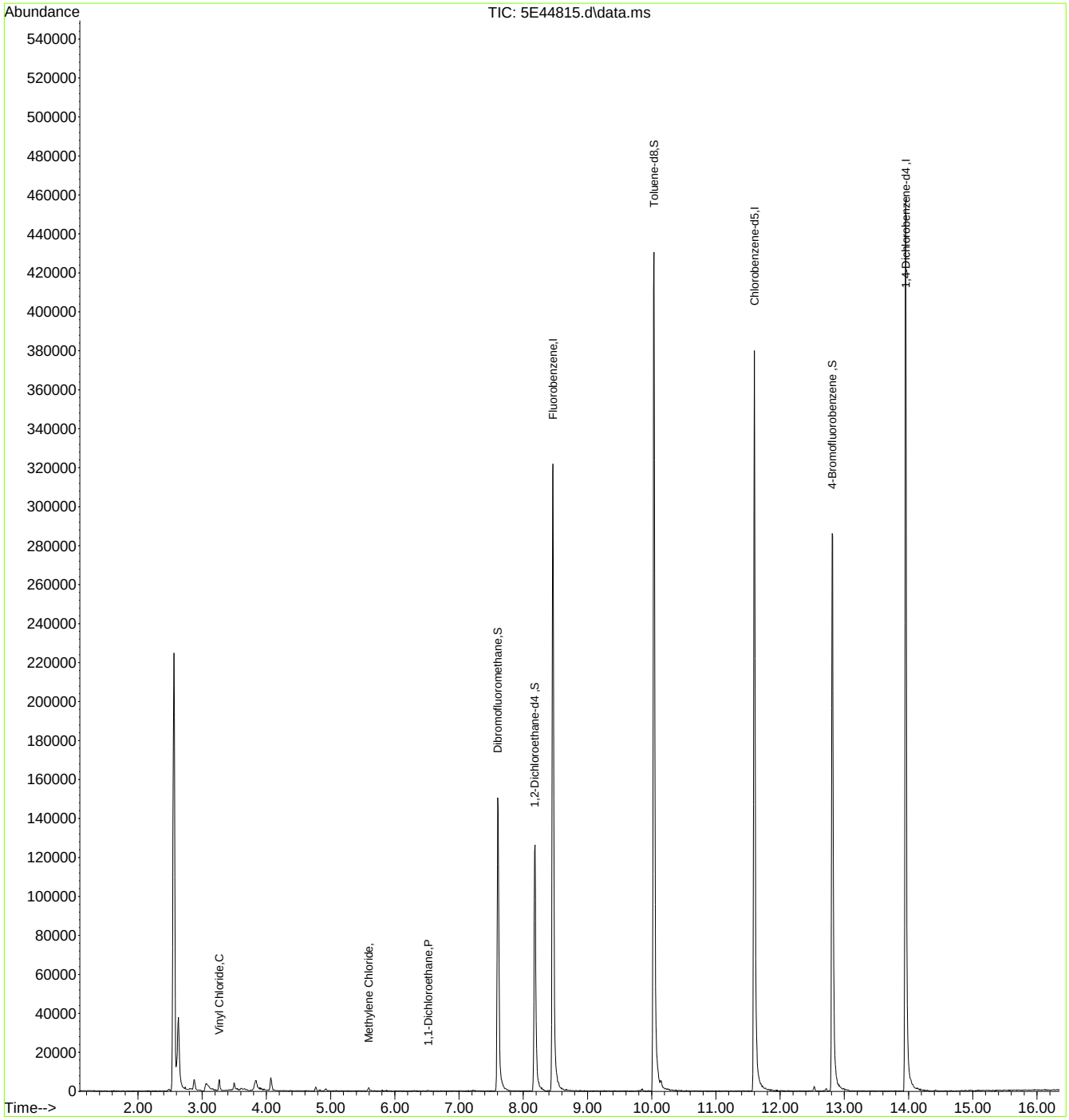
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	8.463	96	302341	50.00	ug/L	0.00
61) Chlorobenzene-d5	11.597	117	235359	50.00	ug/L	0.00
85) 1,4-Dichlorobenzene-d4	13.956	152	126960	50.00	ug/L	0.00
System Monitoring Compounds						
39) Dibromofluoromethane	7.604	113	91422	50.39	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 100.78%			
49) 1,2-Dichloroethane-d4	8.177	65	86275	48.26	ug/L	0.00
Spiked Amount 50.000	Range 79 - 125		Recovery = 96.52%			
62) Toluene-d8	10.036	98	301764	51.32	ug/L	0.00
Spiked Amount 50.000	Range 85 - 112		Recovery = 102.64%			
86) 4-Bromofluorobenzene	12.810	95	95087	51.44	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 102.88%			
Target Compounds						Qvalue
4) Vinyl Chloride	3.263	62	5085	3.8060	ug/L	82
18) Methylene Chloride	5.592	49	891	0.4961	ug/L	77
27) 1,1-Dichloroethane	6.519	63	319	0.1256	ug/L #	50

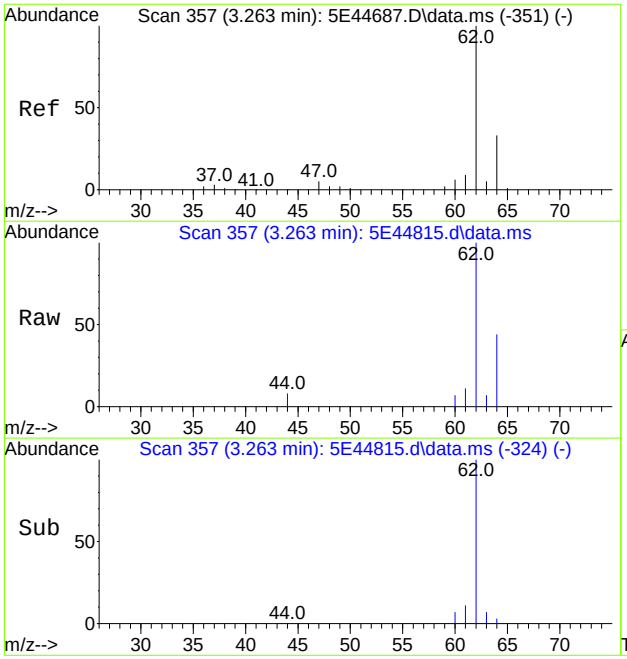
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : X:\Orlando VOA\celinec\December 2023\12-26-2023\V5E1996\V5E1996\
Data File : 5E44815.d
Acq On : 22 Dec 2023 1:56 pm
Operator : joannel
Sample : FC12099-20 Inst : MSVOA20
Misc : MS55608,V5E1996,,,,,
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Dec 26 00:16:38 2023
Quant Method : X:\Orlando VOA\celinec\December 2023\12-26-2023\V5E1996\METHOD\V5E_12-20-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Thu Dec 21 09:37:06 2023
Response via : Initial Calibration

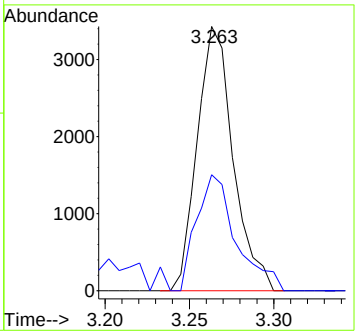


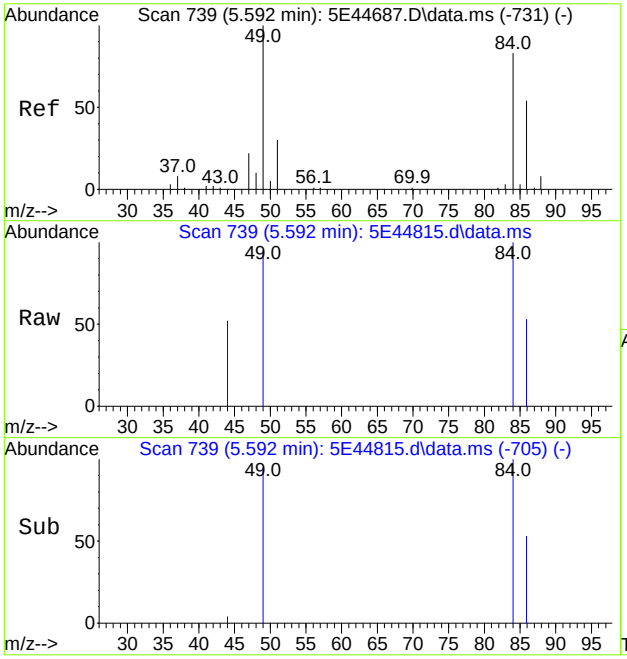


#4
Vinyl Chloride
Concen: 3.8060 ug/L
RT: 3.263 min Scan# 357
Delta R.T. 0.000 min
Lab File: 5E44815.d
Acq: 22 Dec 2023 1:56 pm

Tgt Ion: 62 Resp: 5085

Ion	Ratio	Lower	Upper
62	100		
64	43.9	3.4	63.4

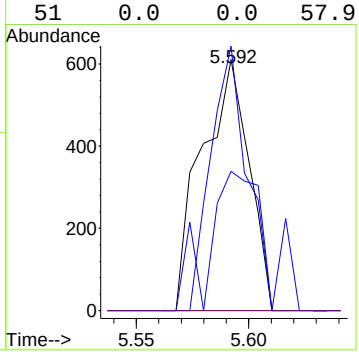


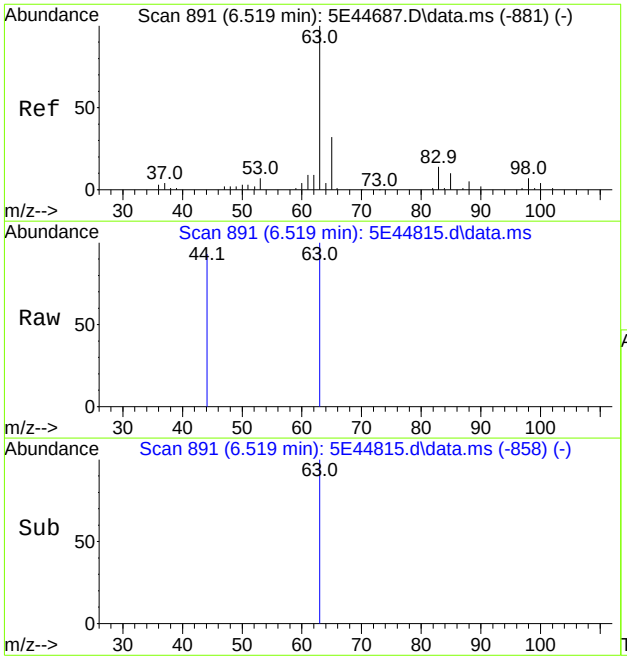


#18
Methylene Chloride
Concen: 0.4961 ug/L
RT: 5.592 min Scan# 739
Delta R.T. 0.006 min
Lab File: 5E44815.d
Acq: 22 Dec 2023 1:56 pm

Tgt Ion: 49 Resp: 891

Ion	Ratio	Lower	Upper
49	100		
84	105.4	51.3	111.3
86	55.5	24.8	84.8
51	0.0	0.0	57.9

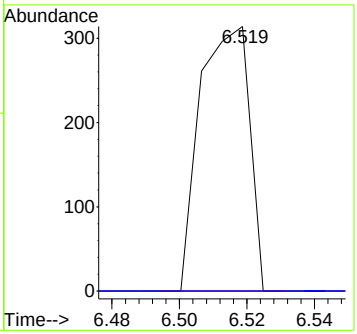




#27
1,1-Dichloroethane
Concen: 0.1256 ug/L
RT: 6.519 min Scan# 891
Delta R.T. -0.000 min
Lab File: 5E44815.d
Acq: 22 Dec 2023 1:56 pm

Tgt Ion: 63 Resp: 319

Ion	Ratio	Lower	Upper
63	100		
65	0.0	1.7	61.7#
83	0.0	0.0	44.4



Quantitation Report (QT Reviewed)

Data Path : X:\Orlando VOA\celinec\December 2023\12-26-2023\V5E1996\V5E1996\
Data File : 5E44816.d
Acq On : 22 Dec 2023 2:19 pm
Operator : joannel
Sample : FC12099-21 Inst : MSVOA20
Misc : MS55608,V5E1996,,,,,
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Dec 26 00:16:54 2023
Quant Method : X:\Orlando VOA\celinec\December 2023\12-26-2023\V5E1996\METHOD\V5E_12-20-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Thu Dec 21 09:37:06 2023
Response via : Initial Calibration

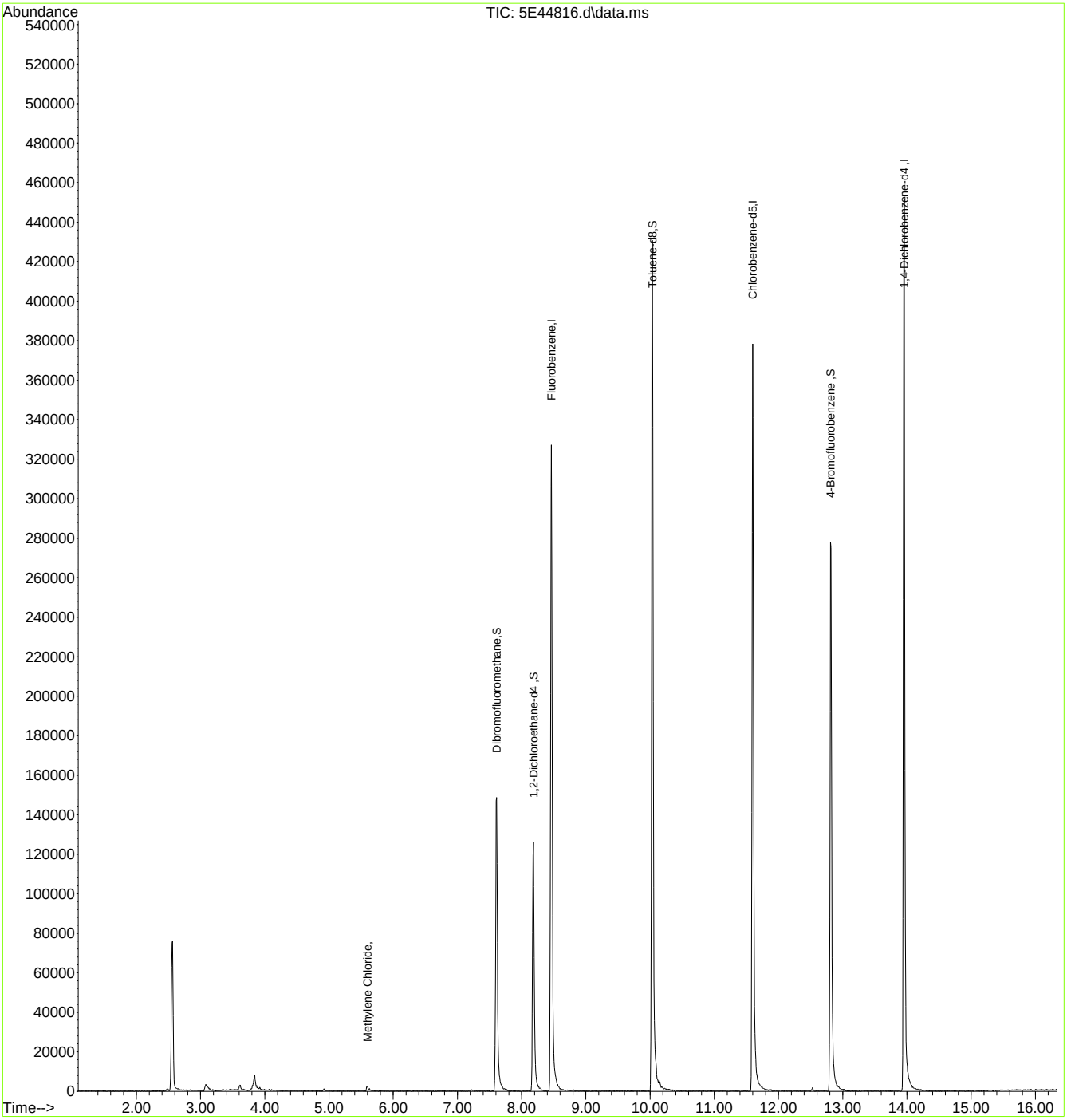
Compound		R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards							
1) Fluorobenzene		8.464	96	301496	50.00	ug/L	0.00
61) Chlorobenzene-d5		11.597	117	237281	50.00	ug/L	0.00
85) 1,4-Dichlorobenzene-d4		13.956	152	126034	50.00	ug/L	0.00
System Monitoring Compounds							
39) Dibromofluoromethane		7.610	113	91740	50.71	ug/L	0.00
Spiked Amount	50.000	Range 83 - 118		Recovery =	101.42%		
49) 1,2-Dichloroethane-d4		8.183	65	85263	47.82	ug/L	0.00
Spiked Amount	50.000	Range 79 - 125		Recovery =	95.64%		
62) Toluene-d8		10.036	98	298269	50.32	ug/L	0.00
Spiked Amount	50.000	Range 85 - 112		Recovery =	100.64%		
86) 4-Bromofluorobenzene		12.810	95	95090	51.82	ug/L	0.00
Spiked Amount	50.000	Range 83 - 118		Recovery =	103.64%		
Target Compounds							Qvalue
18) Methylene Chloride		5.598	49	1317	0.7353	ug/L	82

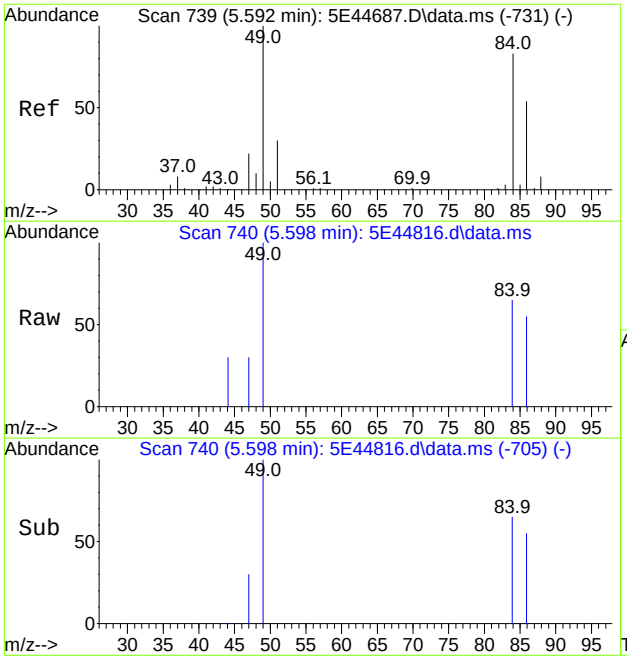
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : X:\Orlando VOA\celinec\December 2023\12-26-2023\V5E1996\V5E1996\
Data File : 5E44816.d
Acq On : 22 Dec 2023 2:19 pm
Operator : joannel
Sample : FC12099-21 Inst : MSVOA20
Misc : MS55608,V5E1996,,,,,
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Dec 26 00:16:54 2023
Quant Method : X:\Orlando VOA\celinec\December 2023\12-26-2023\V5E1996\METHOD\V5E_12-20-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Thu Dec 21 09:37:06 2023
Response via : Initial Calibration

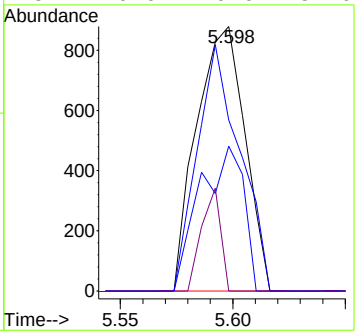




#18
Methylene Chloride
Concen: 0.7353 ug/L
RT: 5.598 min Scan# 740
Delta R.T. 0.012 min
Lab File: 5E44816.d
Acq: 22 Dec 2023 2:19 pm

Tgt Ion: 49 Resp: 1317

Ion	Ratio	Lower	Upper
49	100		
84	64.5	51.3	111.3
86	54.8	24.8	84.8
51	0.0	0.0	57.9



Quantitation Report (QT Reviewed)

Data Path : X:\Orlando VOA\celinec\December 2023\12-26-2023\V5E1996\V5E1996\
Data File : 5E44817.d
Acq On : 22 Dec 2023 2:42 pm
Operator : joannel
Sample : FC12099-22 Inst : MSVOA20
Misc : MS55608,V5E1996,,,,,
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Dec 26 00:17:05 2023
Quant Method : X:\Orlando VOA\celinec\December 2023\12-26-2023\V5E1996\METHOD\V5E_12-20-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Thu Dec 21 09:37:06 2023
Response via : Initial Calibration

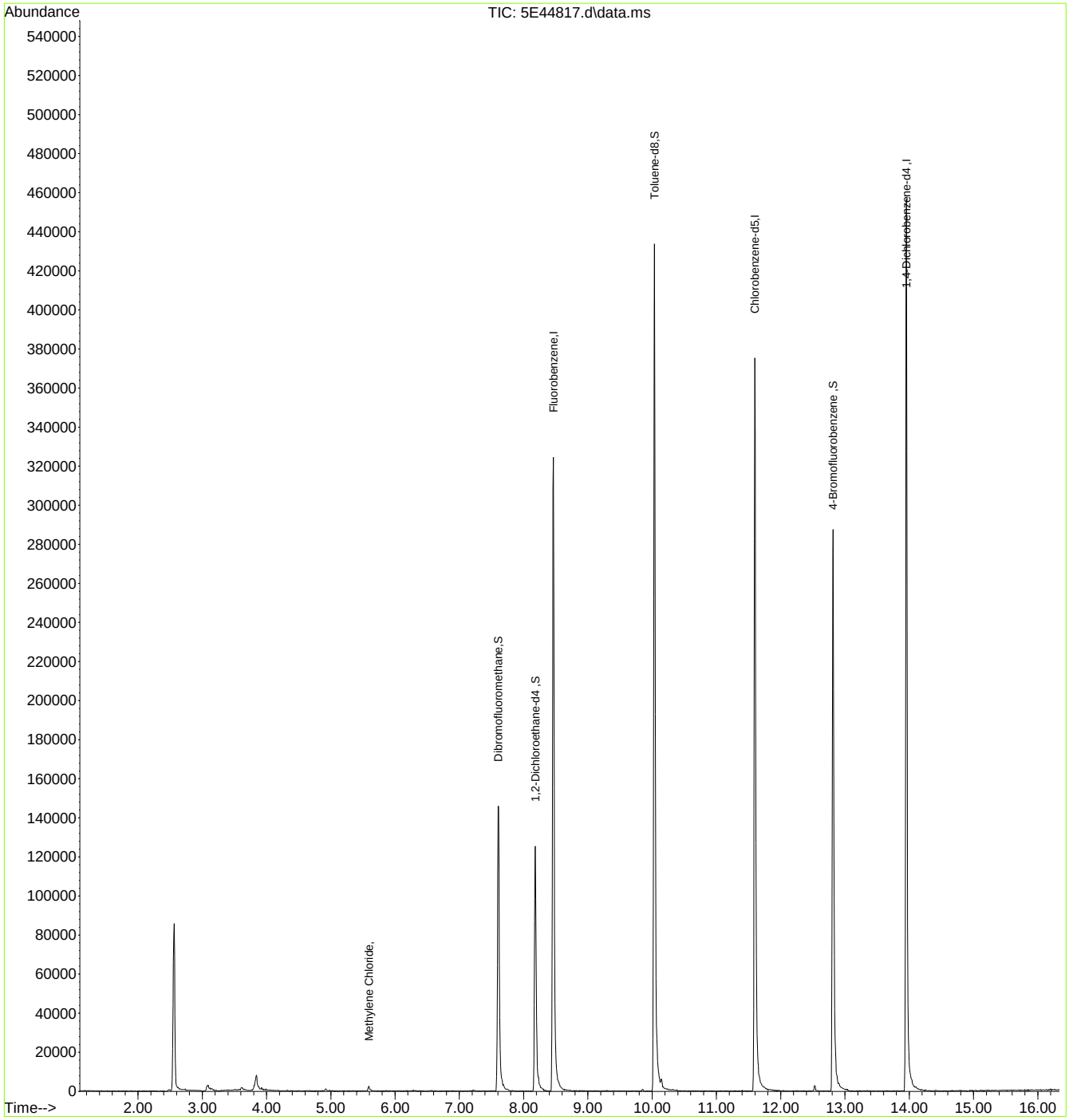
Compound		R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards							
1) Fluorobenzene		8.463	96	303022	50.00	ug/L	0.00
61) Chlorobenzene-d5		11.597	117	234395	50.00	ug/L	0.00
85) 1,4-Dichlorobenzene-d4		13.956	152	126794	50.00	ug/L	0.00
System Monitoring Compounds							
39) Dibromofluoromethane		7.604	113	91507	50.33	ug/L	0.00
Spiked Amount	50.000	Range 83 - 118		Recovery =	100.66%		
49) 1,2-Dichloroethane-d4		8.183	65	85326	47.62	ug/L	0.00
Spiked Amount	50.000	Range 79 - 125		Recovery =	95.24%		
62) Toluene-d8		10.036	98	297265	50.77	ug/L	0.00
Spiked Amount	50.000	Range 85 - 112		Recovery =	101.54%		
86) 4-Bromofluorobenzene		12.810	95	94825	51.37	ug/L	0.00
Spiked Amount	50.000	Range 83 - 118		Recovery =	102.74%		
Target Compounds							Qvalue
18) Methylene Chloride		5.592	49	1319	0.7327	ug/L	78

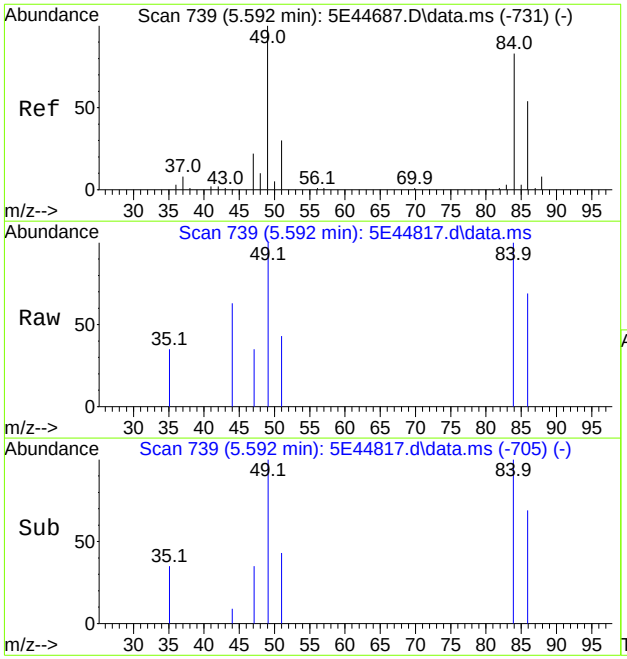
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : X:\Orlando VOA\celinec\December 2023\12-26-2023\V5E1996\V5E1996\
Data File : 5E44817.d
Acq On : 22 Dec 2023 2:42 pm
Operator : joannel
Sample : FC12099-22 Inst : MSVOA20
Misc : MS55608,V5E1996,,,,,
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Dec 26 00:17:05 2023
Quant Method : X:\Orlando VOA\celinec\December 2023\12-26-2023\V5E1996\METHOD\V5E_12-20-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Thu Dec 21 09:37:06 2023
Response via : Initial Calibration

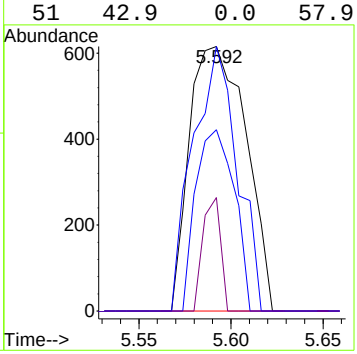




#18
Methylene Chloride
Concen: 0.7327 ug/L
RT: 5.592 min Scan# 739
Delta R.T. 0.006 min
Lab File: 5E44817.d
Acq: 22 Dec 2023 2:42 pm

Tgt Ion: 49 Resp: 1319

Ion	Ratio	Lower	Upper
49	100		
84	100.0	51.3	111.3
86	68.5	24.8	84.8
51	42.9	0.0	57.9



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\122623\
Data File : A0239270.D
Acq On : 26 Dec 2023 12:20 pm
Operator : TRANGD
Sample : mb
Misc : MS55628,VA3457,,,,,
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Dec 26 15:51:22 2023
Quant Method : C:\msdchem\1\METHODS\2023-12-14_SIMDIOX.M
Quant Title : 1,4-Dioxane by SIM
QLast Update : Fri Dec 15 10:44:46 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	7.809	96	24368	5.00	ug/L	0.00
4) 1,4-Dioxane-d8	8.712	96	2098	50.00	ug/L	0.02
System Monitoring Compounds						
2) 1,2-Dichloroethane-d4	7.541	65	10493	5.05	ug/L	0.00
Spiked Amount 5.000	Range 74 - 125		Recovery = 101.00%			
3) Toluene-d8	9.347	98	18066	4.82	ug/L	0.00
Spiked Amount 5.000	Range 88 - 111		Recovery = 96.40%			
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

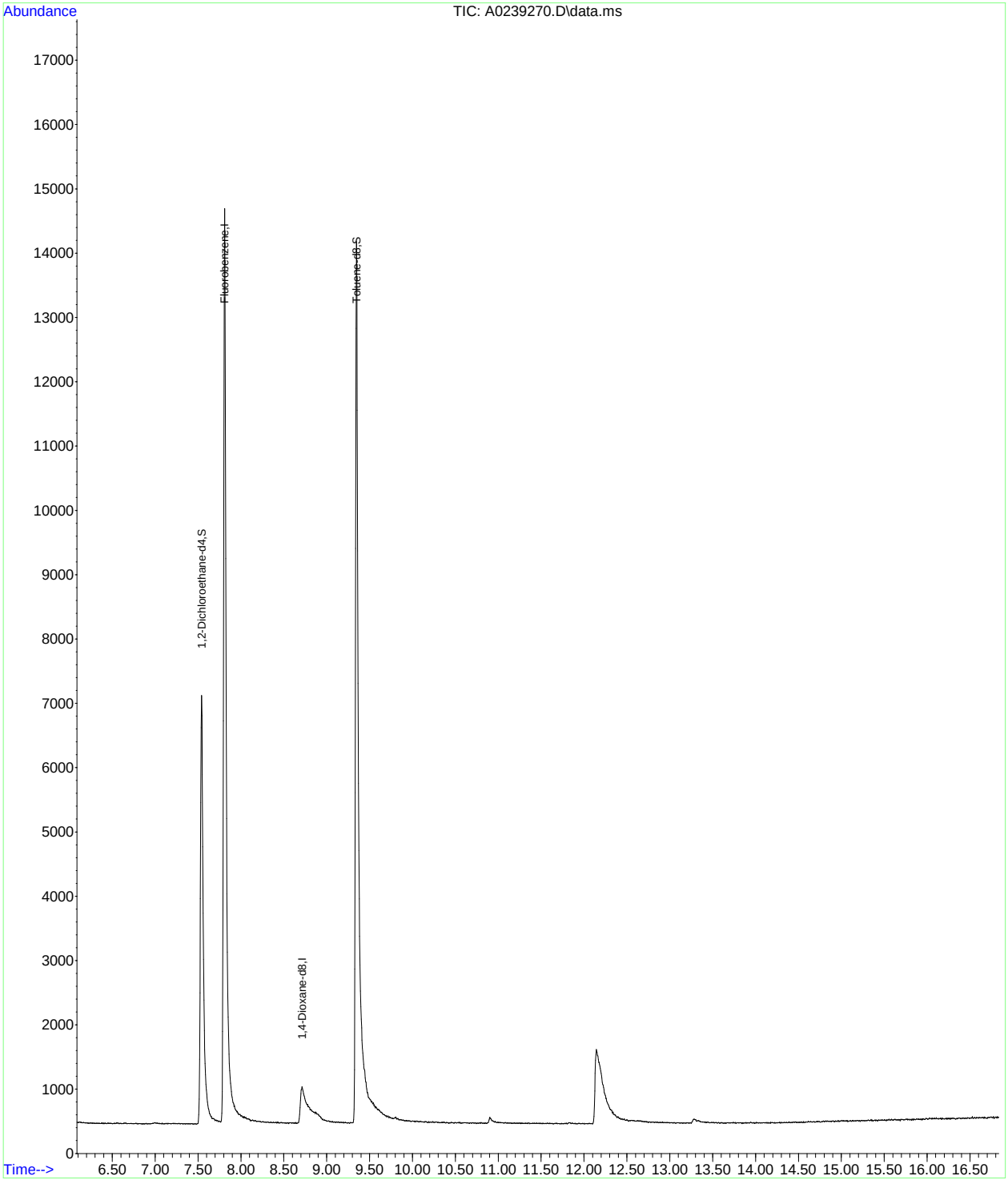
7.2.1

7

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\122623\
Data File : A0239270.D
Acq On : 26 Dec 2023 12:20 pm
Operator : TRANGD
Sample : mb
Misc : MS55628,VA3457,,,,,
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Dec 26 15:51:22 2023
Quant Method : C:\msdchem\1\METHODS\2023-12-14_SIMDIOX.M
Quant Title : 1,4-Dioxane by SIM
QLast Update : Fri Dec 15 10:44:46 2023
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : X:\Orlando VOA\celinec\December 2023\12-26-2023\V5E1996\V5E1996\
Data File : 5E44806.d
Acq On : 22 Dec 2023 10:29 am
Operator : joannel
Sample : MB Inst : MSVOA20
Misc : MS55597,V5E1996,,,,,
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Dec 26 00:12:25 2023
Quant Method : X:\Orlando VOA\celinec\December 2023\12-26-2023\V5E1996\METHOD\V5E_12-20-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Thu Dec 21 09:37:06 2023
Response via : Initial Calibration

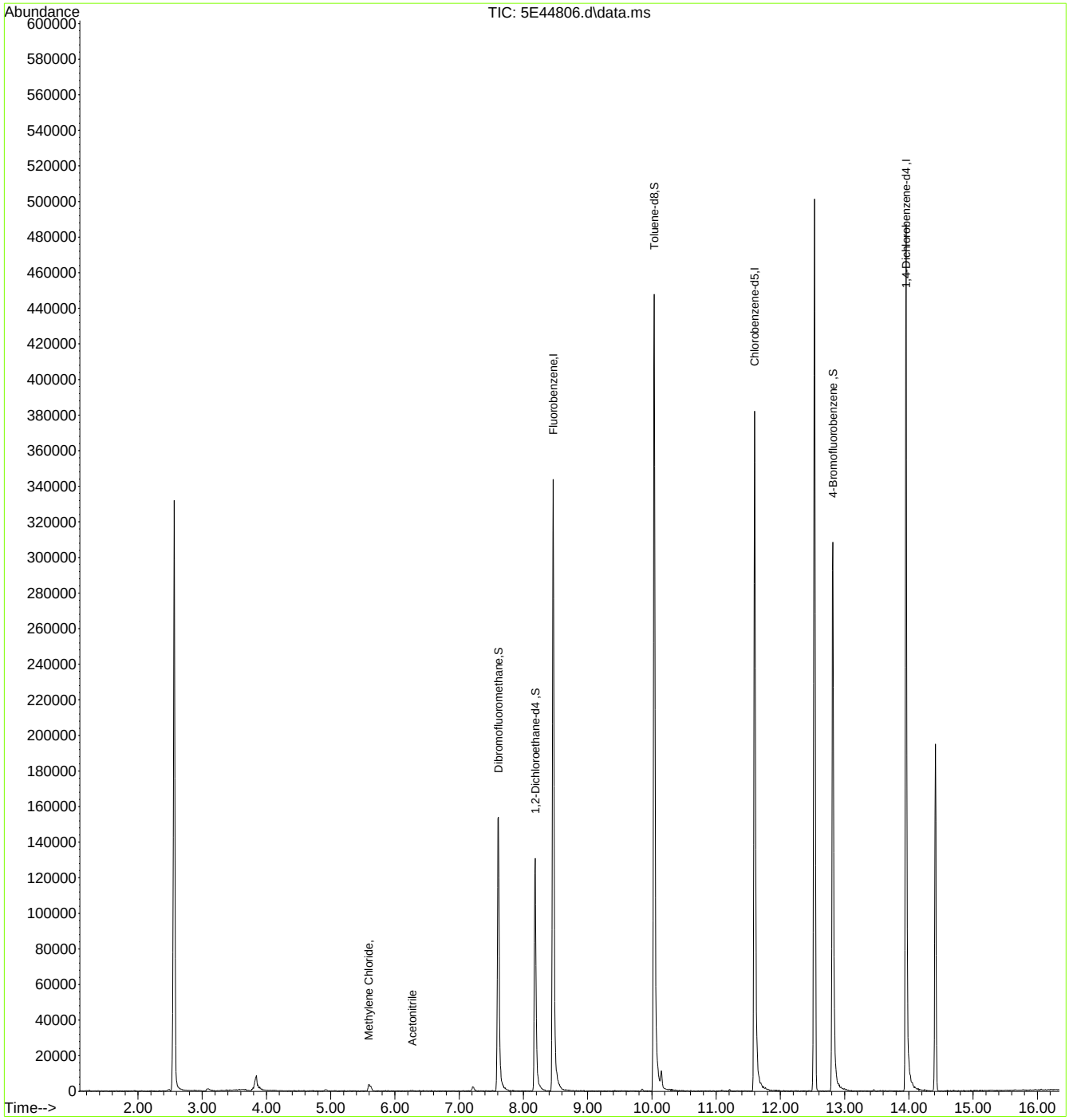
Compound		R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards							
1) Fluorobenzene		8.464	96	315520	50.00	ug/L	0.00
61) Chlorobenzene-d5		11.597	117	241686	50.00	ug/L	0.00
85) 1,4-Dichlorobenzene-d4		13.956	152	132406	50.00	ug/L	0.00
System Monitoring Compounds							
39) Dibromofluoromethane		7.610	113	97354	51.42	ug/L	0.00
Spiked Amount	50.000	Range 83 - 118		Recovery =	102.84%		
49) 1,2-Dichloroethane-d4		8.183	65	88447	47.41	ug/L	0.00
Spiked Amount	50.000	Range 79 - 125		Recovery =	94.82%		
62) Toluene-d8		10.036	98	311116	51.53	ug/L	0.00
Spiked Amount	50.000	Range 85 - 112		Recovery =	103.06%		
86) 4-Bromofluorobenzene		12.816	95	102854	53.35	ug/L	0.00
Spiked Amount	50.000	Range 83 - 118		Recovery =	106.70%		
Target Compounds							Qvalue
18) Methylene Chloride		5.592	49	2332	1.2441	ug/L	88
24) Acetonitrile		6.269	41	493	2.4393	ug/L #	61

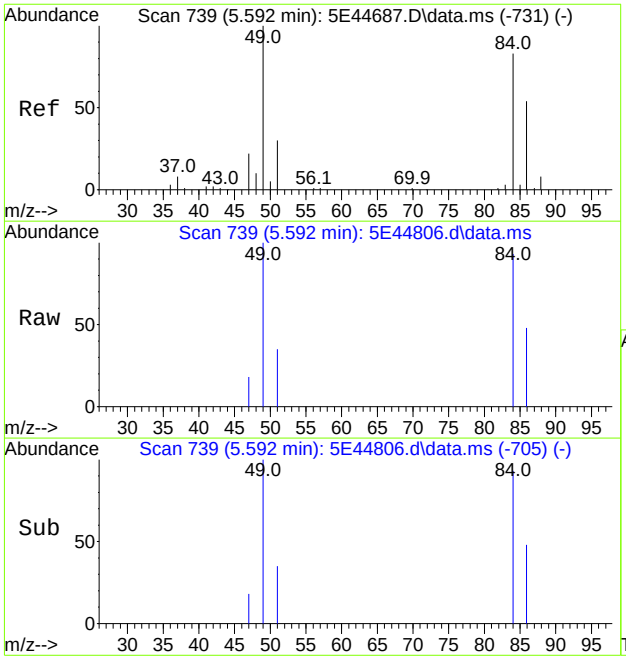
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : X:\Orlando VOA\celinec\December 2023\12-26-2023\V5E1996\V5E1996\
Data File : 5E44806.d
Acq On : 22 Dec 2023 10:29 am
Operator : joannel
Sample : MB Inst : MSVOA20
Misc : MS55597,V5E1996,,,,,
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Dec 26 00:12:25 2023
Quant Method : X:\Orlando VOA\celinec\December 2023\12-26-2023\V5E1996\METHOD\V5E_12-20-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Thu Dec 21 09:37:06 2023
Response via : Initial Calibration

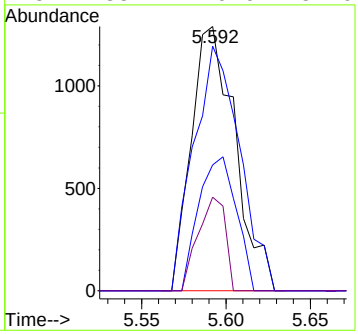


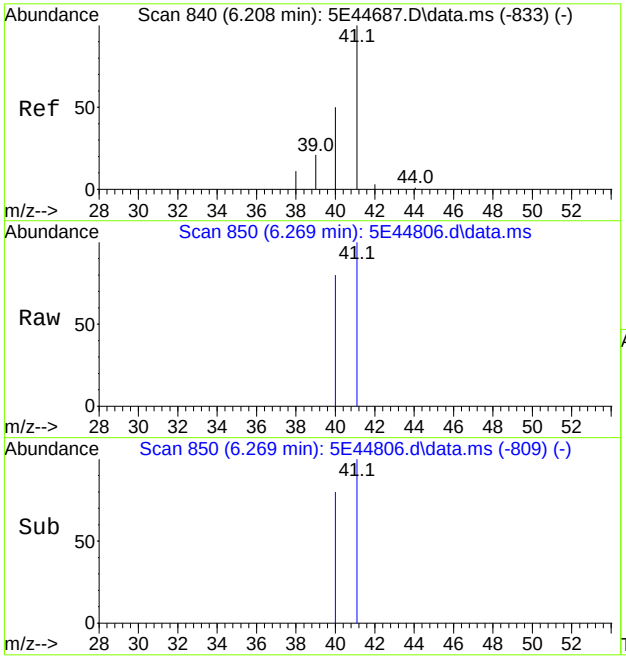


#18
Methylene Chloride
Concen: 1.2441 ug/L
RT: 5.592 min Scan# 739
Delta R.T. 0.006 min
Lab File: 5E44806.d
Acq: 22 Dec 2023 10:29 am

Tgt Ion: 49 Resp: 2332

Ion	Ratio	Lower	Upper
49	100		
84	92.6	51.3	111.3
86	47.6	24.8	84.8
51	35.4	0.0	57.9

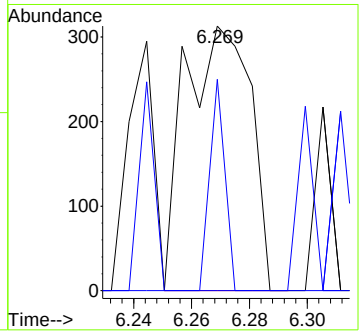




#24
Acetonitrile
Concen: 2.4393 ug/L
RT: 6.269 min Scan# 850
Delta R.T. 0.049 min
Lab File: 5E44806.d
Acq: 22 Dec 2023 10:29 am

Tgt Ion: 41 Resp: 493

Ion	Ratio	Lower	Upper
41	100		
40	79.9	33.3	73.3#
39	0.0	0.0	38.9



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\12-26-2023\
Data File : 1A51664.D
Acq On : 26 Dec 2023 9:16 am
Operator : lianatr
Sample : MB
Misc : MS55601,V1A2028,,,,,
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Dec 26 10:29:45 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration

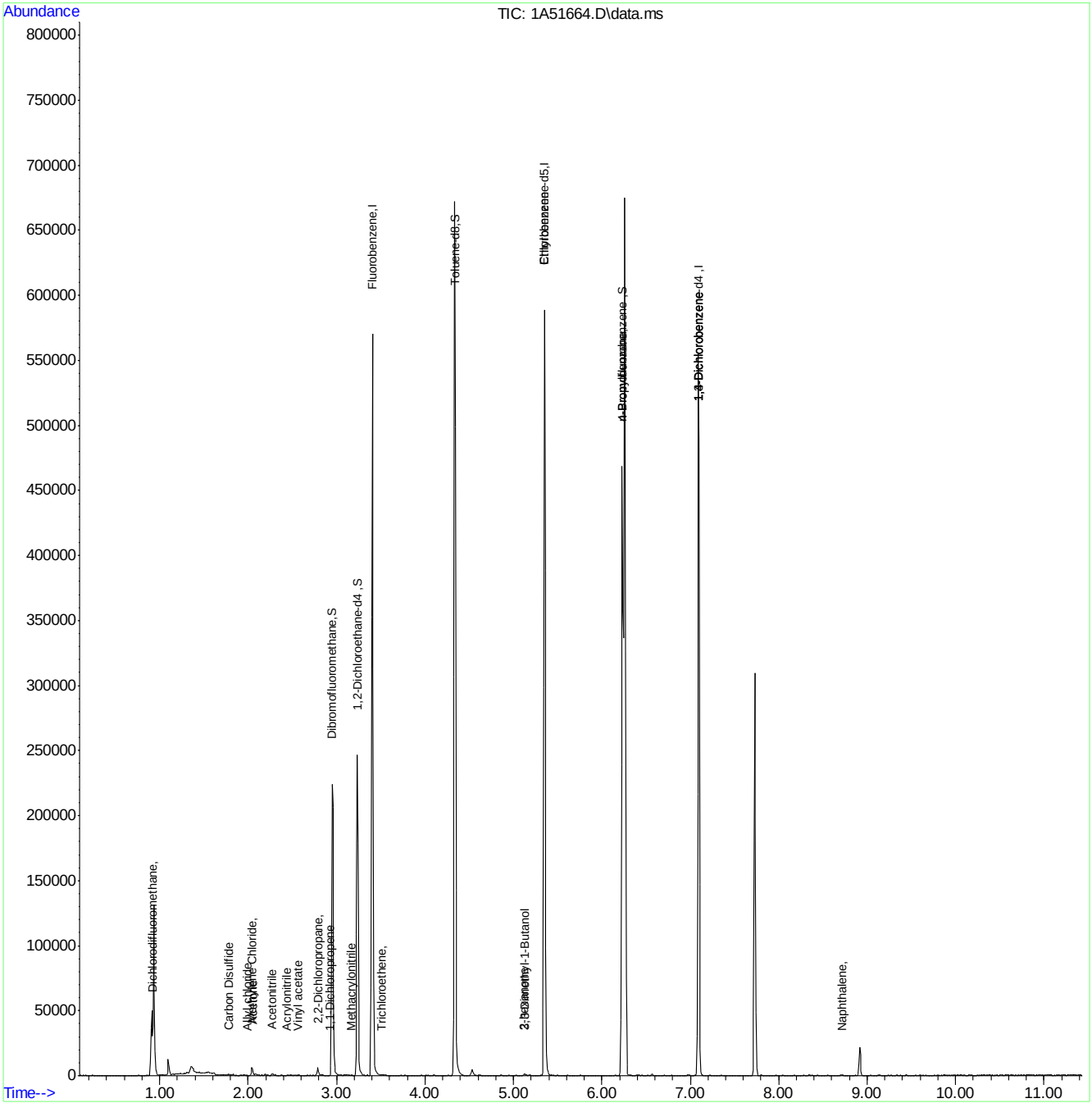
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Fluorobenzene	3.405	96	297564	50.00	ug/L		0.00
62) Chlorobenzene-d5	5.352	117	211361	50.00	ug/L		0.00
85) 1,4-Dichlorobenzene-d4	7.099	152	107849	50.00	ug/L		0.00
System Monitoring Compounds							
39) Dibromofluoromethane	2.951	113	85082	48.50	ug/L		0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 97.00%				
49) 1,2-Dichloroethane-d4	3.235	65	102184	52.63	ug/L		0.00
Spiked Amount 50.000	Range 79 - 125		Recovery = 105.26%				
63) Toluene-d8	4.336	98	289631	51.32	ug/L		0.00
Spiked Amount 50.000	Range 85 - 112		Recovery = 102.64%				
86) 4-Bromofluorobenzene	6.229	174	89939	49.98	ug/L		0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 99.96%				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	0.919	85	199	0.18	ug/L	#	40
14) Carbon Disulfide	1.781	76	566	0.12	ug/L		63
17) Allyl chloride	1.989	41	66	0.03	ug/L	#	28
18) Methylene Chloride	2.043	49	2198	0.88	ug/L		90
19) Acetone	2.050	43	1130	1.53	ug/L		80
24) Acetonitrile	2.273	41	1213	4.69	ug/L		92
29) Acrylonitrile	2.443	52	50	0.06	ug/L	#	55
31) Vinyl acetate	2.566	43	243	0.05	ug/L		77
33) 2,2-Dichloropropane	2.789	77	176	0.08	ug/L	#	51
43) 1,1-Dichloropropene	2.928	75	50	0.02	ug/L	#	32
46) Methacrylonitrile	3.166	41	124	0.09	ug/L	#	44
53) Trichloroethene	3.505	95	47	0.03	ug/L	#	1
74) 3,3-Dimethyl-1-Butanol	5.129	57	422	1.27	ug/L		98
75) 2-hexanone	5.121	43	98	0.04	ug/L	#	1
77) Ethylbenzene	5.352	91	397	0.05	ug/L	#	1
88) n-Propylbenzene	6.229	91	527	0.06	ug/L		50
102) 1,3-Dichlorobenzene	7.099	146	214	0.06	ug/L	#	1
104) 1,4-Dichlorobenzene	7.099	146	214	0.06	ug/L	#	1
111) Naphthalene	8.715	128	374	0.09	ug/L		66

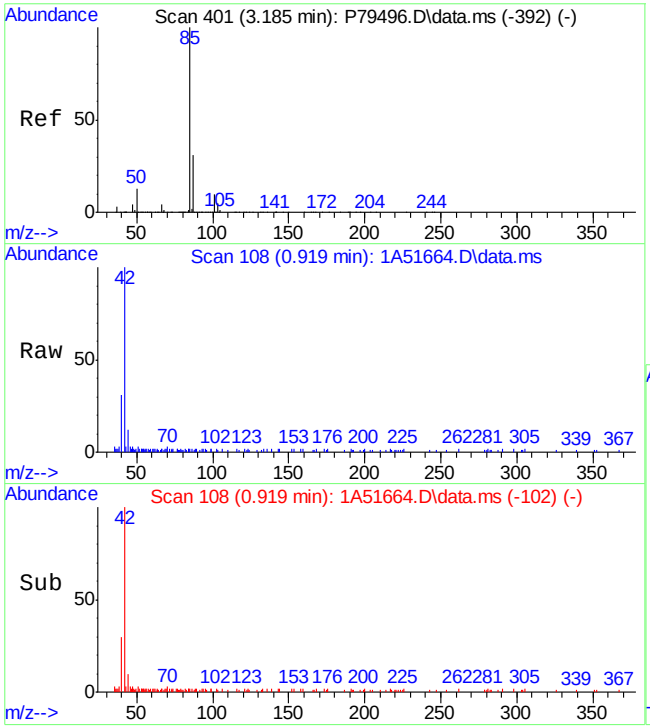
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\12-26-2023\
Data File : 1A51664.D
Acq On : 26 Dec 2023 9:16 am
Operator : lianatr
Sample : MB
Misc : MS55601,V1A2028,,,,,
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Dec 26 10:29:45 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration

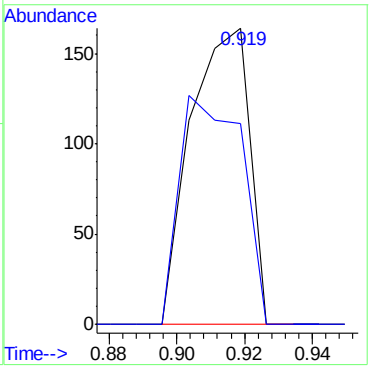


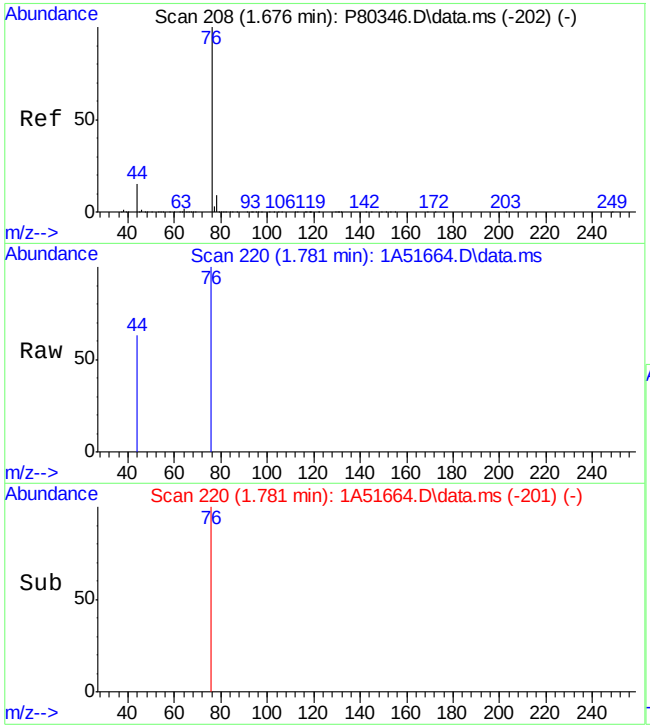


#2
Dichlorodifluoromethane
Concen: 0.18 ug/L
RT: 0.919 min Scan# 108
Delta R.T. -0.100 min
Lab File: 1A51664.D
Acq: 26 Dec 2023 9:16 am

Tgt Ion: 85 Resp: 199

Ion	Ratio	Lower	Upper
85	100		
87	67.7	3.4	63.4#

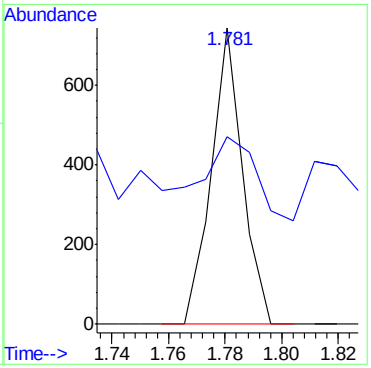


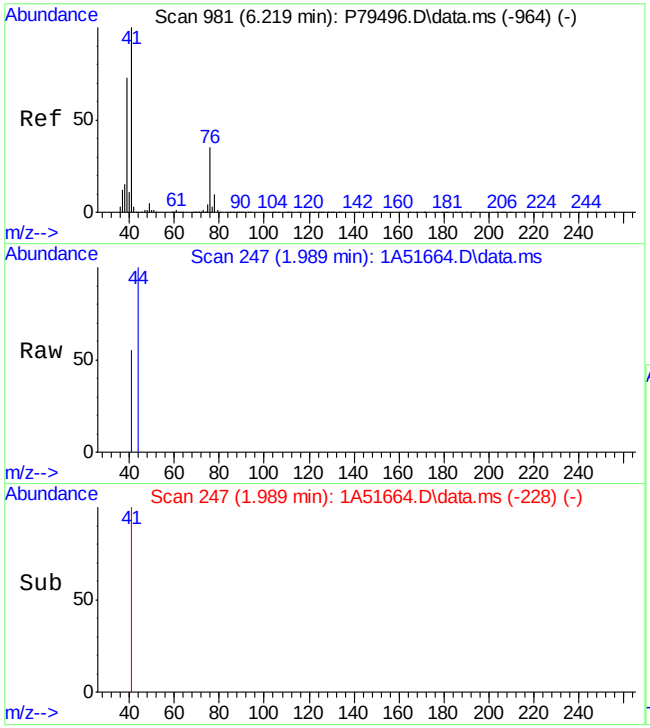


#14
Carbon Disulfide
Concen: 0.12 ug/L
RT: 1.781 min Scan# 220
Delta R.T. -0.000 min
Lab File: 1A51664.D
Acq: 26 Dec 2023 9:16 am

Tgt Ion: 76 Resp: 566

Ion	Ratio	Lower	Upper
76	100		
44	28.5	0.0	43.6

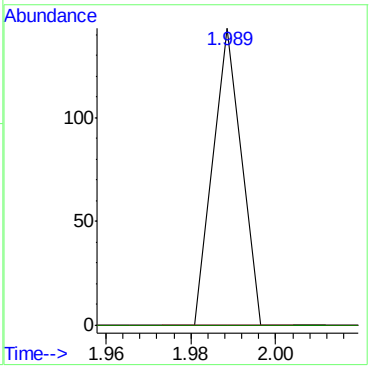


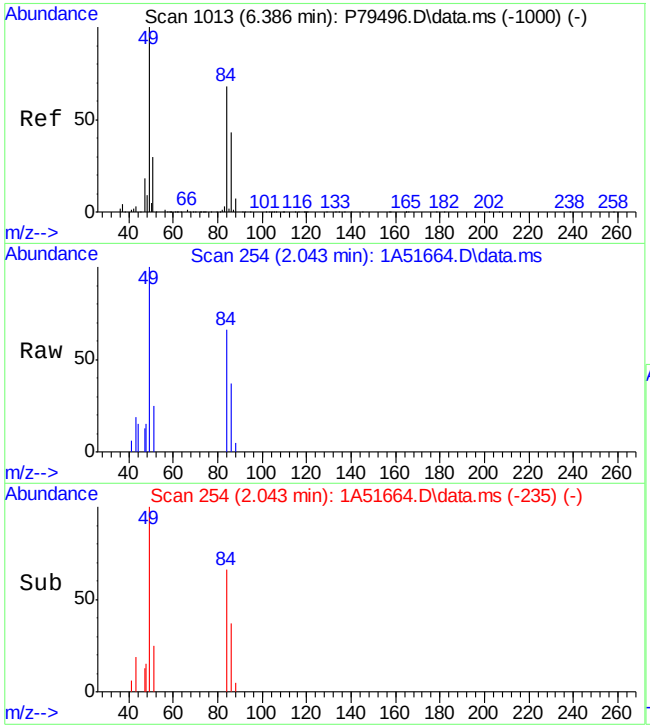


#17
Allyl chloride
Concen: 0.03 ug/L
RT: 1.989 min Scan# 247
Delta R.T. -0.000 min
Lab File: 1A51664.D
Acq: 26 Dec 2023 9:16 am

Tgt Ion: 41 Resp: 66

Ion	Ratio	Lower	Upper
41	100		
39	0.0	49.0	89.0#
38	0.0	0.0	34.1
76	0.0	19.5	59.5#

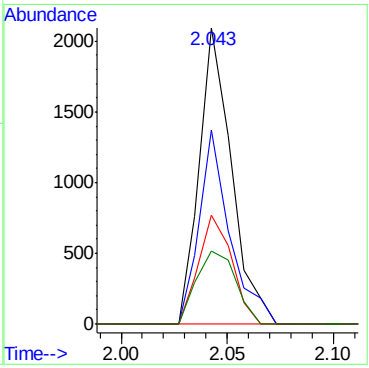


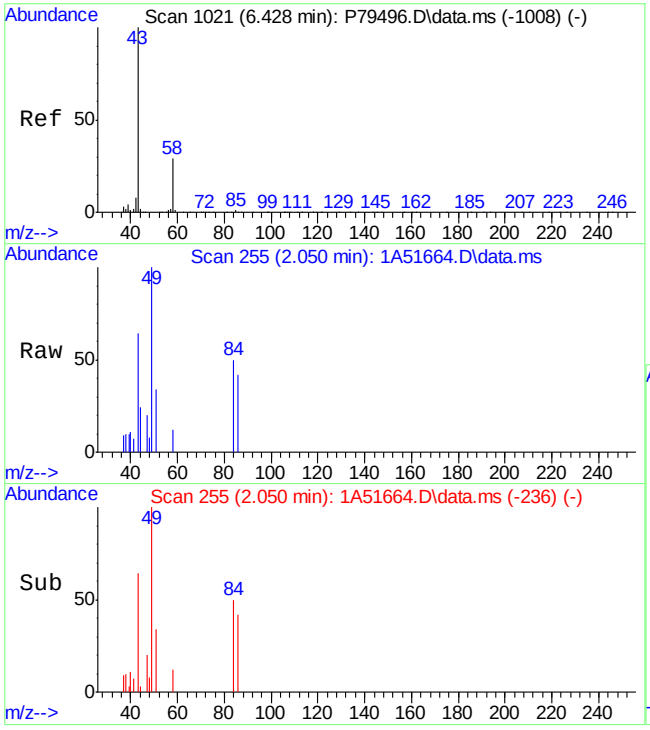


#18
Methylene Chloride
Concen: 0.88 ug/L
RT: 2.043 min Scan# 254
Delta R.T. -0.000 min
Lab File: 1A51664.D
Acq: 26 Dec 2023 9:16 am

Tgt Ion: 49 Resp: 2198

Ion	Ratio	Lower	Upper
49	100		
84	65.7	41.8	101.8
86	36.8	15.6	75.6
51	24.6	0.0	59.7

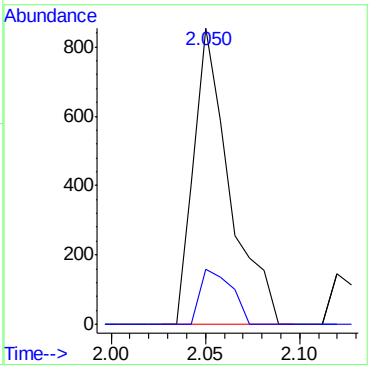


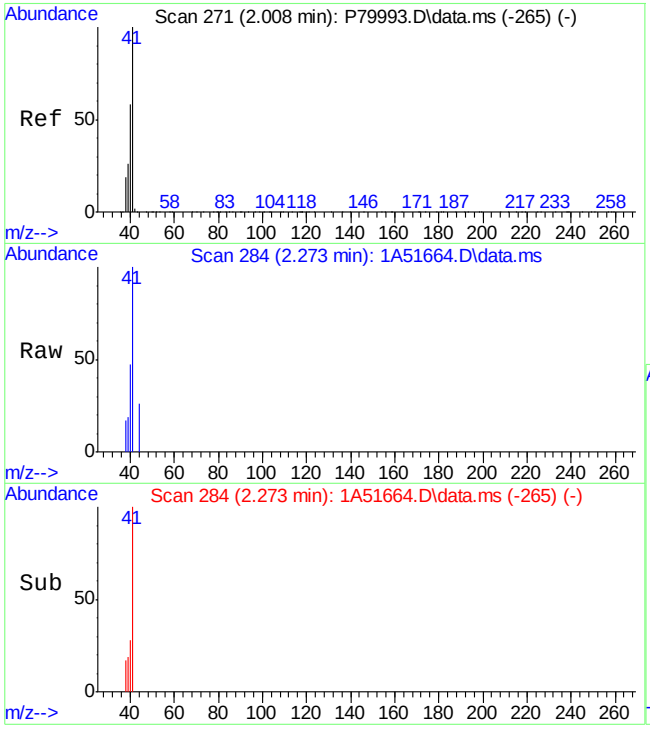


#19
Acetone
Concen: 1.53 ug/L
RT: 2.050 min Scan# 255
Delta R.T. -0.000 min
Lab File: 1A51664.D
Acq: 26 Dec 2023 9:16 am

Tgt Ion: 43 Resp: 1130

Ion	Ratio	Lower	Upper
43	100		
58	18.7	0.0	59.6

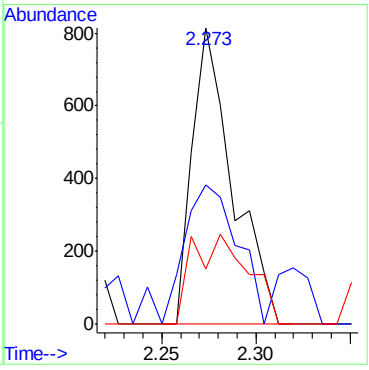


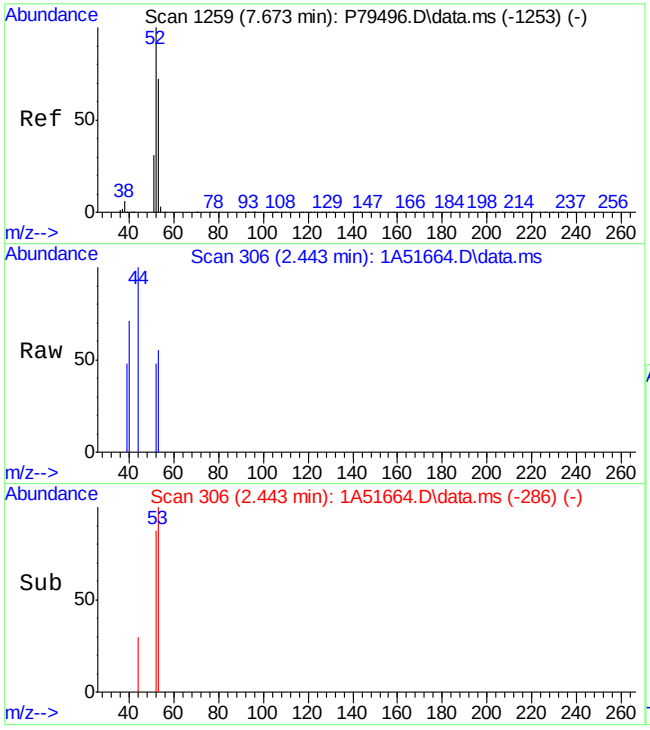


#24
Acetonitrile
Concen: 4.69 ug/L
RT: 2.273 min Scan# 284
Delta R.T. -0.001 min
Lab File: 1A51664.D
Acq: 26 Dec 2023 9:16 am

Tgt Ion: 41 Resp: 1213

Ion	Ratio	Lower	Upper
41	100		
40	47.2	34.1	74.1
39	18.8	1.1	41.1

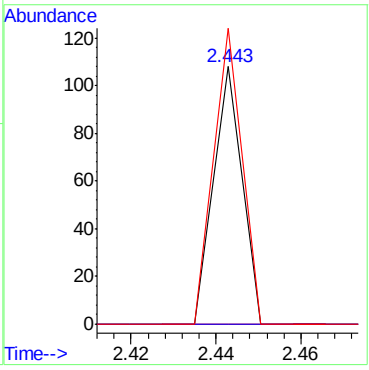


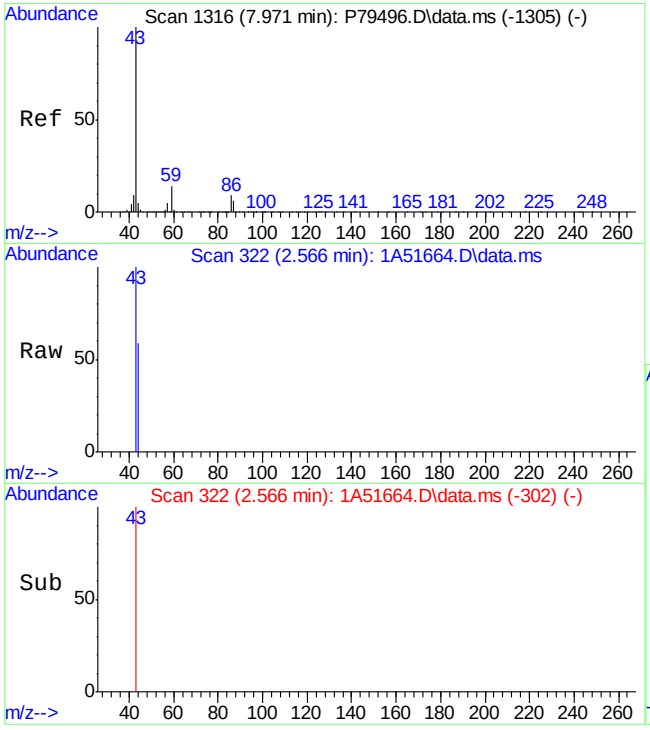


#29
Acrylonitrile
Concen: 0.06 ug/L
RT: 2.443 min Scan# 306
Delta R.T. 0.008 min
Lab File: 1A51664.D
Acq: 26 Dec 2023 9:16 am

Tgt Ion: 52 Resp: 50

Ion	Ratio	Lower	Upper
52	100		
51	0.0	22.8	82.8#
53	114.8	131.2	191.2#

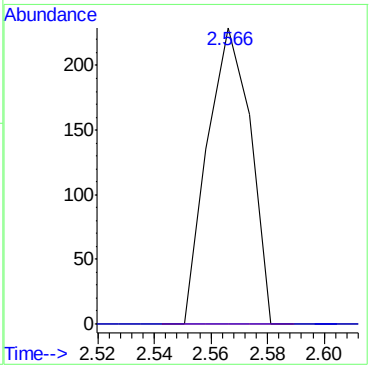


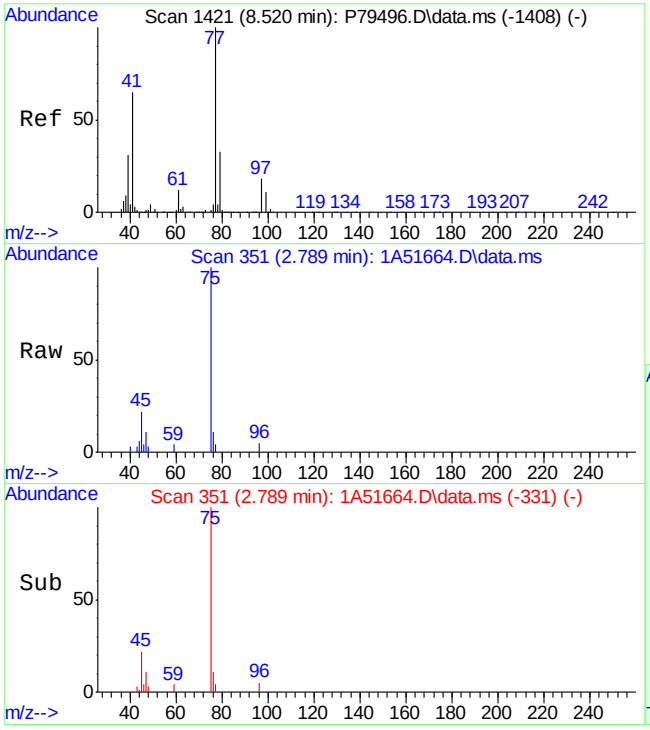


#31
Vinyl acetate
Concen: 0.05 ug/L
RT: 2.566 min Scan# 322
Delta R.T. 0.008 min
Lab File: 1A51664.D
Acq: 26 Dec 2023 9:16 am

Tgt Ion: 43 Resp: 243

Ion	Ratio	Lower	Upper
43	100		
42	0.0	0.0	38.3

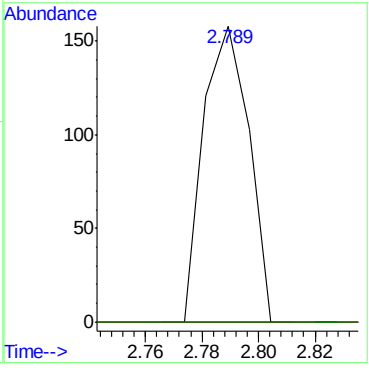


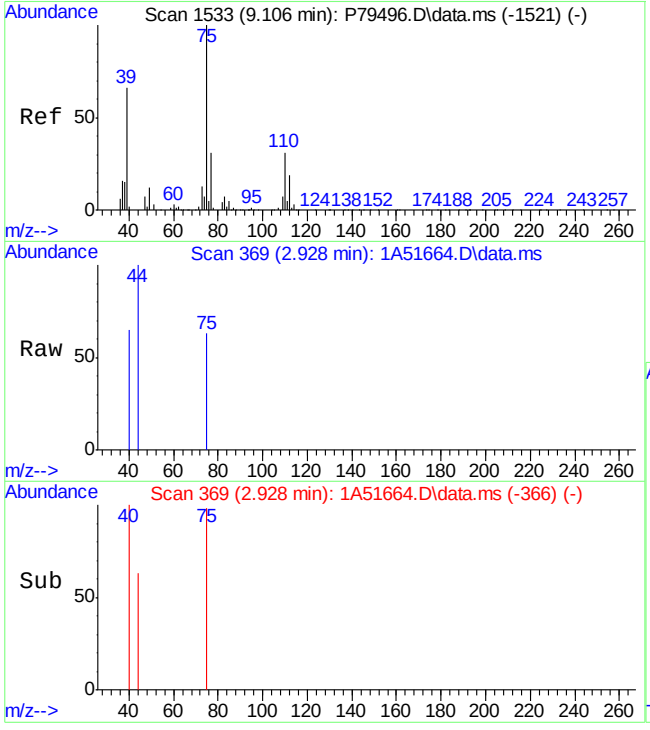


#33
2,2-Dichloropropane
Concen: 0.08 ug/L
RT: 2.789 min Scan# 351
Delta R.T. 0.008 min
Lab File: 1A51664.D
Acq: 26 Dec 2023 9:16 am

Tgt Ion: 77 Resp: 176

Ion	Ratio	Lower	Upper
77	100		
97	0.0	0.0	48.7
99	0.0	0.0	42.5
79	0.0	3.5	63.5#

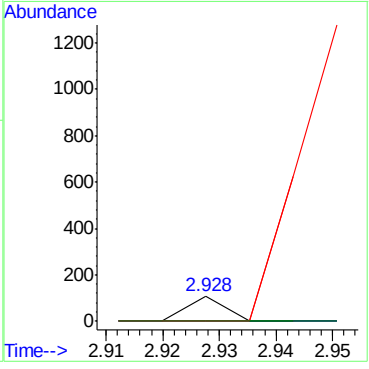


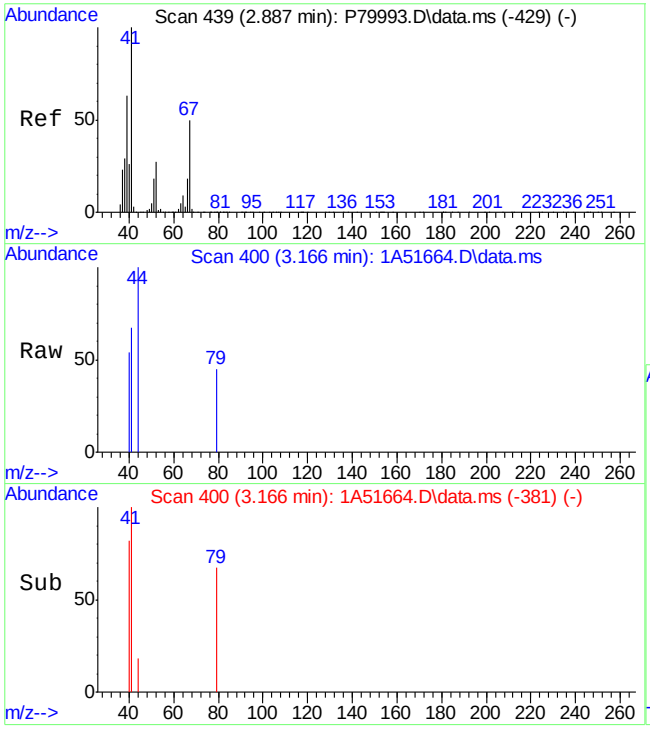


#43
1,1-Dichloropropene
Concen: 0.02 ug/L
RT: 2.928 min Scan# 369
Delta R.T. -0.123 min
Lab File: 1A51664.D
Acq: 26 Dec 2023 9:16 am

Tgt Ion: 75 Resp: 50

Ion	Ratio	Lower	Upper
75	100		
39	0.0	27.7	87.7#
110	0.0	4.9	64.9#
77	0.0	1.5	61.5#

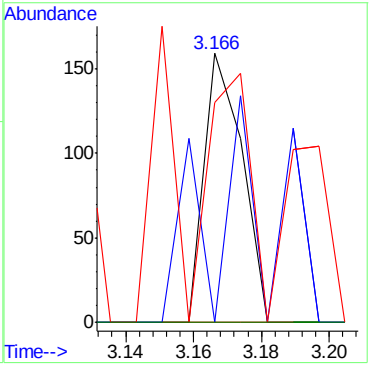


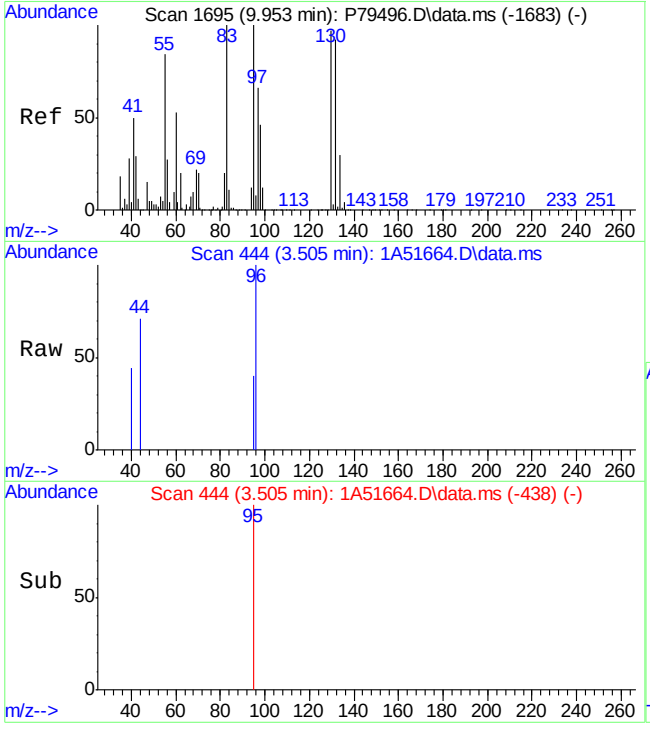


#46
Methacrylonitrile
Concen: 0.09 ug/L
RT: 3.166 min Scan# 400
Delta R.T. -0.000 min
Lab File: 1A51664.D
Acq: 26 Dec 2023 9:16 am

Tgt Ion: 41 Resp: 124

Ion	Ratio	Lower	Upper
41	100		
39	0.0	33.8	73.8#
40	17.6	5.7	45.7
52	0.0	10.8	50.8#

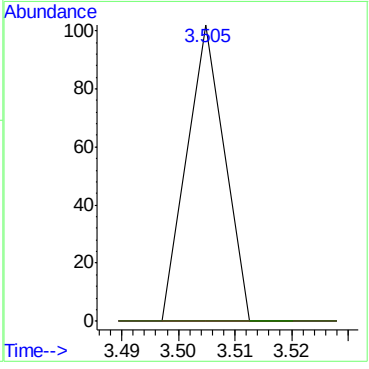


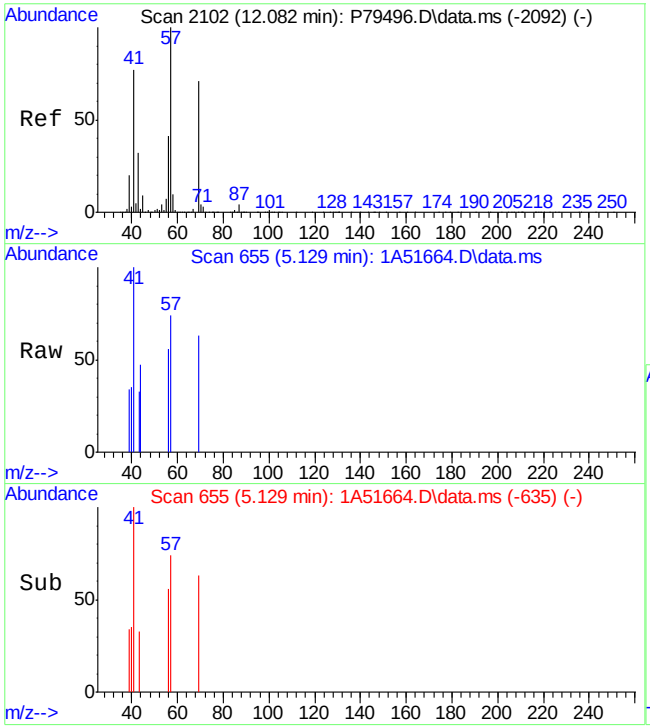


#53
Trichloroethene
Concen: 0.03 ug/L
RT: 3.505 min Scan# 444
Delta R.T. -0.000 min
Lab File: 1A51664.D
Acq: 26 Dec 2023 9:16 am

Tgt Ion: 95 Resp: 47

Ion	Ratio	Lower	Upper
95	100		
130	0.0	76.8	136.8#
97	0.0	34.1	94.1#
132	0.0	81.1	141.1#

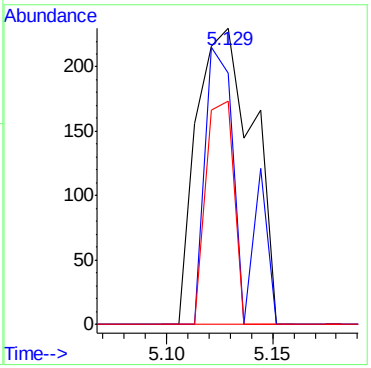


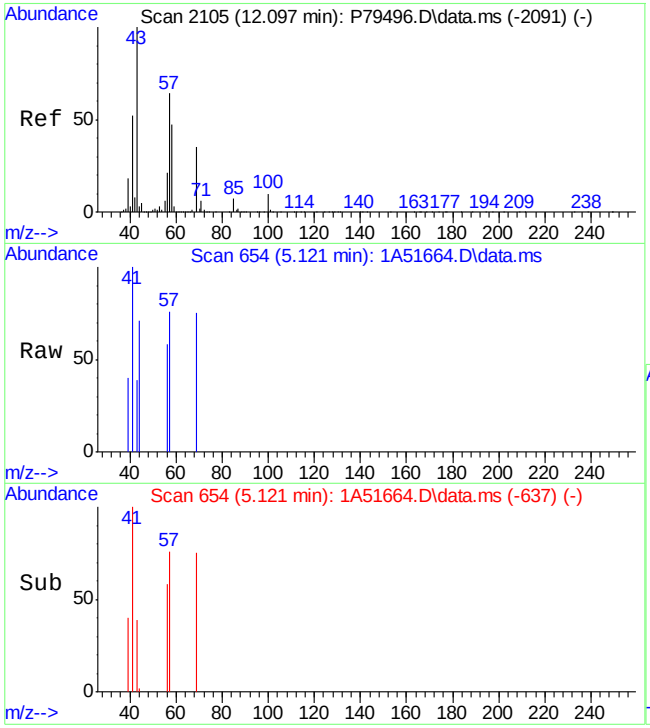


#74
3,3-Dimethyl-1-Butanol
Concen: 1.27 ug/L
RT: 5.129 min Scan# 655
Delta R.T. 0.008 min
Lab File: 1A51664.D
Acq: 26 Dec 2023 9:16 am

Tgt Ion: 57 Resp: 422

Ion	Ratio	Lower	Upper
57	100		
69	58.1	40.6	80.6
56	37.2	17.0	57.0

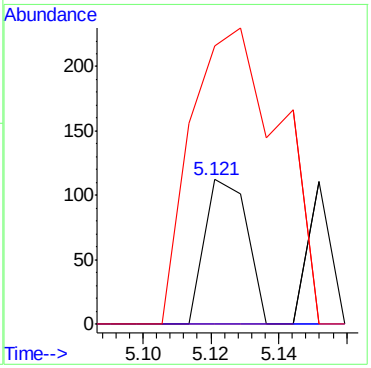


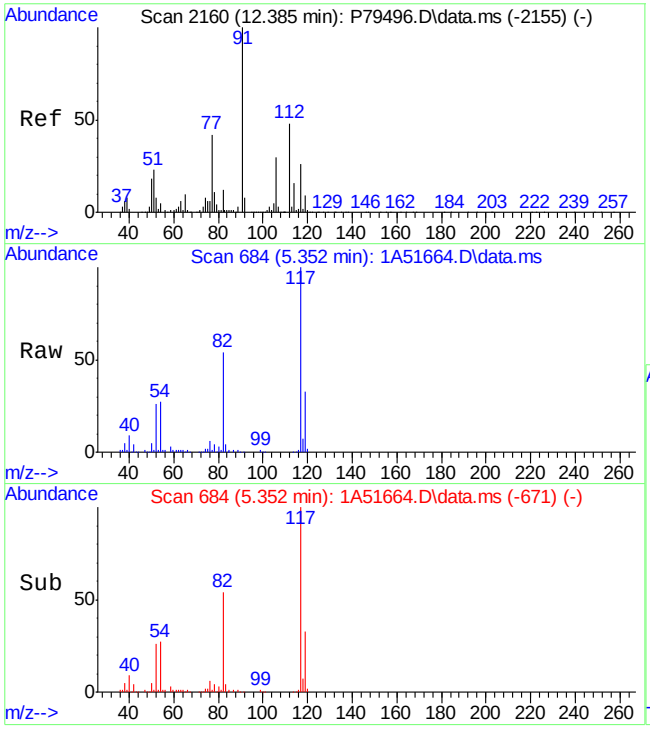


#75
2-hexanone
Concen: 0.04 ug/L
RT: 5.121 min Scan# 654
Delta R.T. -0.016 min
Lab File: 1A51664.D
Acq: 26 Dec 2023 9:16 am

Tgt Ion: 43 Resp: 98

Ion	Ratio	Lower	Upper
43	100		
58	0.0	22.5	82.5#
57	192.9	40.1	100.1#

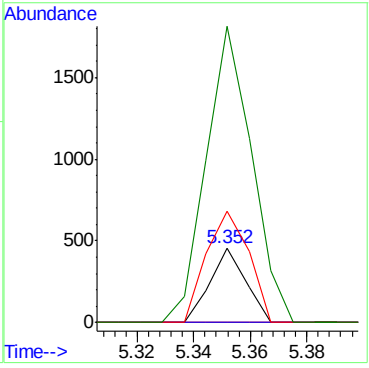


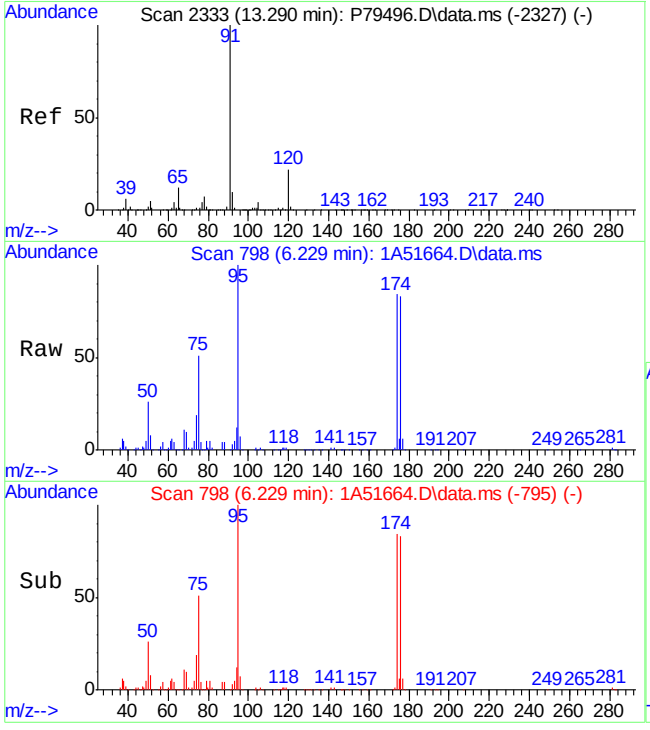


#77
Ethylbenzene
Concen: 0.05 ug/L
RT: 5.352 min Scan# 684
Delta R.T. -0.046 min
Lab File: 1A51664.D
Acq: 26 Dec 2023 9:16 am

Tgt Ion: 91 Resp: 397

Ion	Ratio	Lower	Upper
91	100		
106	0.0	2.0	62.0#
65	150.0	0.0	38.3#
51	398.0	0.0	40.1#

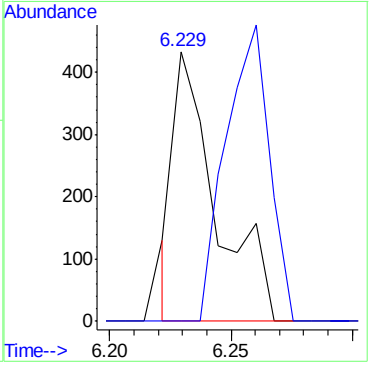


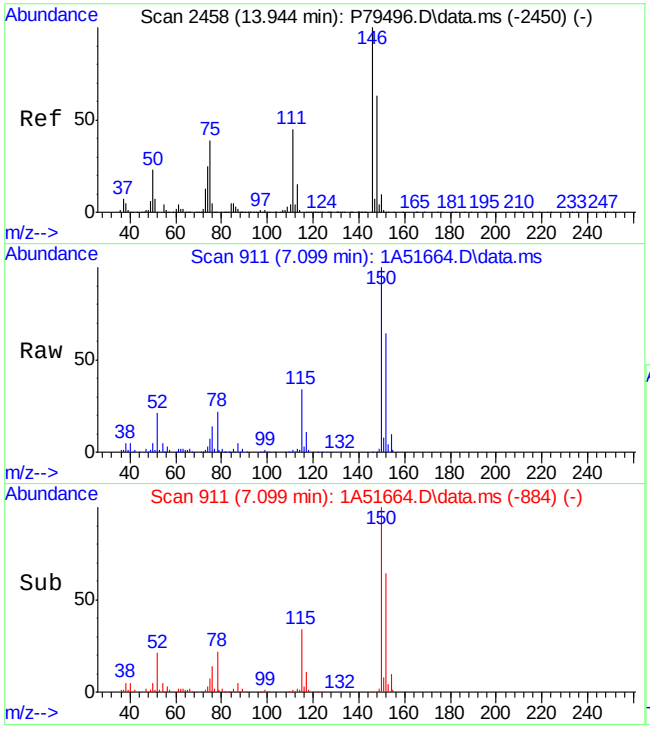


#88
n-Propylbenzene
Concen: 0.06 ug/L
RT: 6.229 min Scan# 798
Delta R.T. -0.123 min
Lab File: 1A51664.D
Acq: 26 Dec 2023 9:16 am

Tgt Ion: 91 Resp: 527

Ion	Ratio	Lower	Upper
91	100		
120	0.0	0.0	54.8

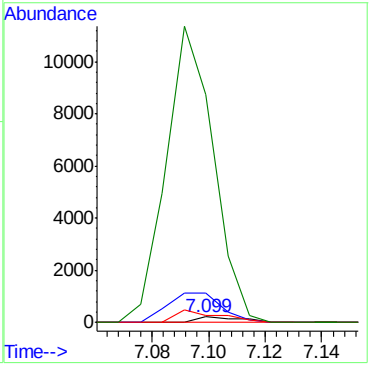


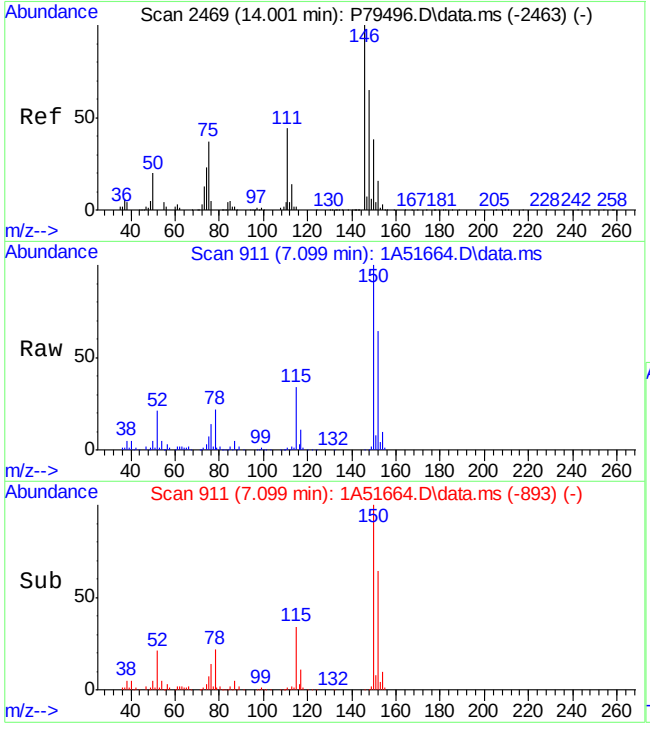


#102
1,3-Dichlorobenzene
Concen: 0.06 ug/L
RT: 7.099 min Scan# 911
Delta R.T. 0.061 min
Lab File: 1A51664.D
Acq: 26 Dec 2023 9:16 am

Tgt Ion:146 Resp: 214

Ion	Ratio	Lower	Upper
146	100		
111	554.0	5.5	65.5#
148	130.0	34.7	94.7#
75	4375.0	0.0	54.2#

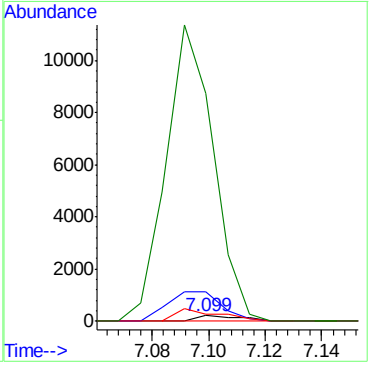


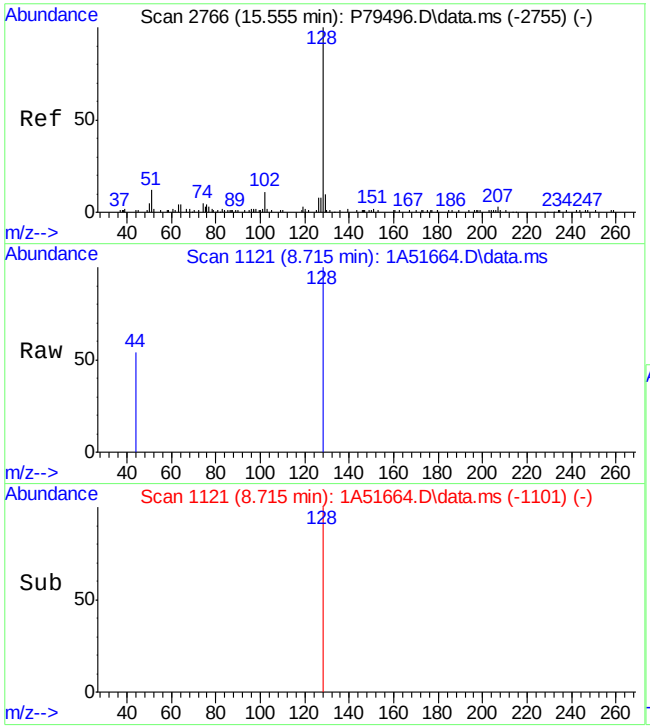


#104
1,4-Dichlorobenzene
Concen: 0.06 ug/L
RT: 7.099 min Scan# 911
Delta R.T. -0.008 min
Lab File: 1A51664.D
Acq: 26 Dec 2023 9:16 am

Tgt Ion:146 Resp: 214

Ion	Ratio	Lower	Upper
146	100		
111	554.0	8.0	68.0#
148	130.0	35.4	95.4#
75	4375.0	0.0	56.4#

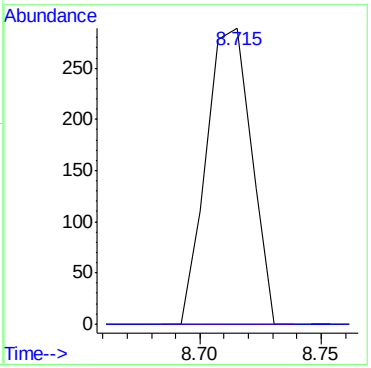




#111
Naphthalene
Concen: 0.09 ug/L
RT: 8.715 min Scan# 1121
Delta R.T. 0.008 min
Lab File: 1A51664.D
Acq: 26 Dec 2023 9:16 am

Tgt Ion:128 Resp: 374

Ion	Ratio	Lower	Upper
128	100		
127	0.0	0.0	43.5



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\122623\
Data File : A0239268.D
Acq On : 26 Dec 2023 11:25 am
Operator : TRANGD
Sample : bs
Misc : MS55628,VA3457,,,,,
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Dec 26 15:50:50 2023
Quant Method : C:\msdchem\1\METHODS\2023-12-14_SIMDIOX.M
Quant Title : 1,4-Dioxane by SIM
QLast Update : Fri Dec 15 10:44:46 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	7.810	96	25668	5.00	ug/L	0.00
4) 1,4-Dioxane-d8	8.713	96	3133	50.00	ug/L	0.02
System Monitoring Compounds						
2) 1,2-Dichloroethane-d4	7.536	65	10866	4.97	ug/L	0.00
Spiked Amount 5.000	Range 74 - 125		Recovery = 99.40%			
3) Toluene-d8	9.347	98	19424	4.92	ug/L	0.00
Spiked Amount 5.000	Range 88 - 111		Recovery = 98.40%			
Target Compounds						Qvalue
5) 1,4-Dioxane	8.731	88	4266	23.58	ug/L	88

(#) = qualifier out of range (m) = manual integration (+) = signals summed

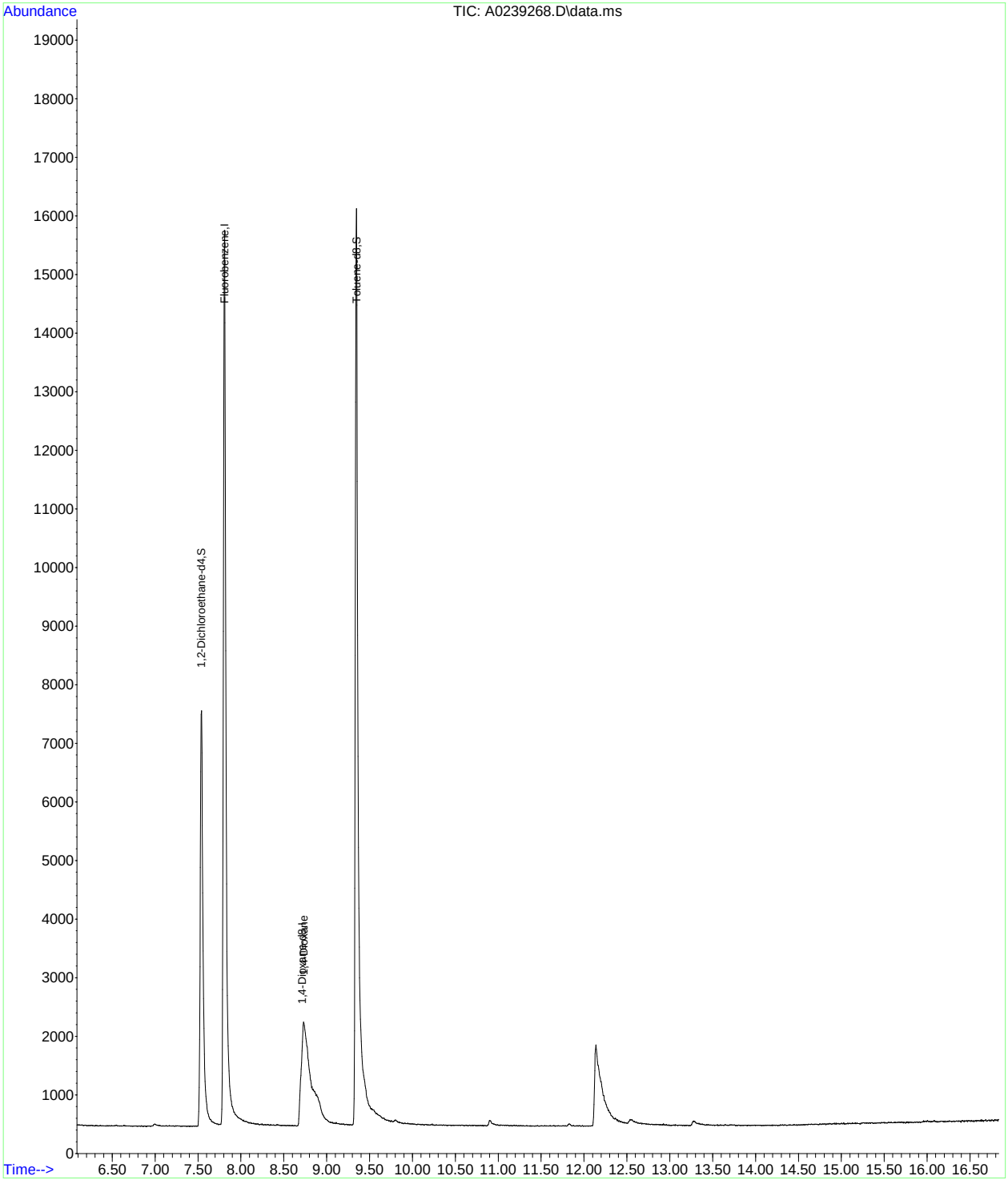
7.3.1

7

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\122623\
Data File : A0239268.D
Acq On : 26 Dec 2023 11:25 am
Operator : TRANGD
Sample : bs
Misc : MS55628,VA3457,,,,,
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Dec 26 15:50:50 2023
Quant Method : C:\msdchem\1\METHODS\2023-12-14_SIMDIOX.M
Quant Title : 1,4-Dioxane by SIM
QLast Update : Fri Dec 15 10:44:46 2023
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\12-22-2023\
Data File : 5E44804.D
Acq On : 22 Dec 2023 9:44 am
Operator : joannel
Sample : BS
Misc : MS55597,V5E1996,,,,,
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Dec 22 10:03:46 2023
Quant Method : C:\msdchem\1\methods\V5E_12-20-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Thu Dec 21 09:37:06 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	8.463	96	360505	50.00	ug/L	0.00
61) Chlorobenzene-d5	11.597	117	280176	50.00	ug/L	0.00
85) 1,4-Dichlorobenzene-d4	13.956	152	160776	50.00	ug/L	0.00
System Monitoring Compounds						
39) Dibromofluoromethane	7.604	113	109005	50.39	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 100.78%			
49) 1,2-Dichloroethane-d4	8.177	65	109138	51.20	ug/L	0.00
Spiked Amount 50.000	Range 79 - 125		Recovery = 102.40%			
62) Toluene-d8	10.036	98	353355	50.49	ug/L	0.00
Spiked Amount 50.000	Range 85 - 112		Recovery = 100.98%			
86) 4-Bromofluorobenzene	12.810	95	117487	50.19	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 100.38%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	2.806	85	36925	27.05	ug/L	99
3) Chloromethane	3.129	50	36258	26.83	ug/L	99
4) Vinyl Chloride	3.263	62	43202	27.12	ug/L	96
5) 1,3-Butadiene	3.294	39	37932	26.96	ug/L	96
6) Bromomethane	3.769	94	32074	28.42	ug/L	96
7) Chloroethane	3.952	64	45368	18.40	ug/L	93
8) Trichlorofluoromethane	4.153	101	76097	34.37	ug/L	100
9) Ethyl Ether	4.580	59	33439	26.73	ug/L	99
10) Ethanol	4.775	45	8060	343.02	ug/L	99
11) 1,2-Dichlorotrifluoroe...	4.824	67	51222	28.10	ug/L	99
12) 1,1-Dichloroethene	4.861	61	58497	25.95	ug/L	94
13) Freon 113	4.903	101	49376	33.14	ug/L	97
14) Carbon Disulfide	4.915	76	126725	28.43	ug/L	100
15) Iodomethane	5.056	142	42374	28.46	ug/L	95
16) Acrolein	5.287	56	52189	157.05	ug/L	95
17) Allyl chloride	5.458	41	43169	26.23	ug/L	98
18) Methylene Chloride	5.586	49	60780	28.38	ug/L	95
19) Acetone	5.641	43	93925	125.41	ug/L	100
20) Methyl acetate	5.781	43	190527	117.85	ug/L	97
21) trans-1,2-Dichloroethene	5.793	61	54327	25.52	ug/L	98
22) Hexane	5.866	56	32755	28.32	ug/L	95
23) Methyl Tert Butyl Ether	5.891	73	131324	26.90	ug/L	90
24) Acetonitrile	6.208	41	66961	289.97	ug/L	95
25) Di-isopropyl ether	6.318	45	111234	24.59	ug/L	97
26) Chloroprene	6.488	53	43958	23.72	ug/L	98
27) 1,1-Dichloroethane	6.519	63	71218	23.52	ug/L	99
28) Acrylonitrile	6.568	53	95670	128.02	ug/L	95
29) ETBE	6.738	59	123201	26.36	ug/L	97
30) Tert Butyl Alcohol	5.970	59	104341	261.42	ug/L	94
31) Vinyl acetate	6.769	43	412572	129.55	ug/L	100
32) cis-1,2-Dichloroethene	7.128	96	45618	24.10	ug/L	97
33) 2,2-Dichloropropane	7.244	77	64851	27.94	ug/L	98
34) Bromochloromethane	7.348	128	26175	26.33	ug/L	98
35) Cyclohexane	7.366	56	64011	27.97	ug/L	98

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\12-22-2023\
Data File : 5E44804.D
Acq On : 22 Dec 2023 9:44 am
Operator : joannel
Sample : BS
Misc : MS55597,V5E1996,,,,,
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Dec 22 10:03:46 2023
Quant Method : C:\msdchem\1\methods\V5E_12-20-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Thu Dec 21 09:37:06 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
36) Chloroform	7.409	83	79672	25.16	ug/L	98
37) Ethyl acetate	7.500	43	277494	134.47	ug/L	98
38) Tetrahydrofuran	7.598	42	17843	22.11	ug/L	87
40) Carbon Tetrachloride	7.586	117	63609	26.13	ug/L	100
41) 1,1,1-Trichloroethane	7.653	97	69332	25.67	ug/L	98
42) 2-Butanone	7.726	43	132903	116.98	ug/L	100
43) 1,1-Dichloropropene	7.781	75	58755	27.05	ug/L	92
44) tert-Butyl formate	7.872	59	168834	325.24	ug/L	99
45) Propionitrile	8.049	54	101163	278.91	ug/L	98
46) Methacrylonitrile	8.073	41	326723	266.23	ug/L	97
47) Benzene	8.043	78	172165	24.82	ug/L	96
48) TAME	8.116	73	127028	25.92	ug/L	96
50) 1,2-Dichloroethane	8.250	62	58816	24.95	ug/L	97
51) tert Amyl alcohol	8.287	59	86292	252.09	ug/L	98
52) Trichloroethene	8.640	95	47469	25.82	ug/L	97
53) Methylcyclohexane	8.640	83	76501	27.83	ug/L	99
54) Dibromomethane	9.079	93	31551	26.51	ug/L	95
55) 1,2-Dichloropropane	9.171	63	39932	25.68	ug/L	98
56) Bromodichloromethane	9.219	83	58887	25.00	ug/L	92
57) Methyl methacrylate	9.323	41	39636	28.43	ug/L	97
58) 1,4-Dioxane	9.415	88	16288	492.61	ug/L	96
59) 2-Chloroethyl vinyl ether	9.750	63	88832	150.77	ug/L	97
60) cis-1,3-Dichloropropene	9.847	75	62735	25.97	ug/L	97
63) Toluene	10.085	91	180805	26.89	ug/L	99
64) Isobutyl alcohol	8.171	43	68770	546.87	ug/L	94
65) 2-Nitropropane	10.317	41	85161	122.51	ug/L	96
66) 4-Methyl-2-pentanone	10.427	43	285184	121.74	ug/L	100
67) trans-1,3-Dichloropropene	10.487	75	56195	24.97	ug/L	94
68) Tetrachloroethene	10.487	166	53739	25.82	ug/L	94
69) Ethyl methacrylate	10.591	69	57863	28.41	ug/L	94
70) 1,1,2-Trichloroethane	10.652	83	34607	24.92	ug/L	99
71) Dibromochloromethane	10.847	129	52137	26.62	ug/L	97
72) 1,3-Dichloropropane	10.939	76	68073	27.47	ug/L	95
73) 1,2-Dibromoethane	11.115	107	46813	26.92	ug/L	98
74) 3,3-Dimethyl-1-butanol	11.189	57	355567	1275.06	ug/L	98
75) 2-hexanone	11.250	43	216253	132.68	ug/L	99
76) 1-Chlorohexane	11.542	91	58243	26.03	ug/L	98
77) Ethylbenzene	11.609	91	198366	25.12	ug/L	99
78) Chlorobenzene	11.615	112	125607	24.25	ug/L	99
79) 1,1,1,2-Tetrachloroethane	11.664	131	46891	25.13	ug/L	98
80) m,p-Xylene	11.749	91	306096	50.60	ug/L	98
81) o-Xylene	12.188	91	147667	24.97	ug/L	100
82) Styrene	12.243	104	118888	26.29	ug/L	96
83) Bromoform	12.304	173	31919	24.73	ug/L	94
84) Isopropylbenzene	12.493	105	196386	24.39	ug/L	97
87) cis-1,4-Dichloro-2-butene	12.853	53	12958	21.53	ug/L	91
88) n-Propylbenzene	12.914	91	230078	26.19	ug/L	99
89) Bromobenzene	12.944	156	51146	25.07	ug/L	92
90) 1,1,2,2-Tetrachloroethane	12.981	83	63259	23.95	ug/L	100
91) 1,3,5-Trimethylbenzene	13.091	105	163522	26.06	ug/L	99

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\12-22-2023\
Data File : 5E44804.D
Acq On : 22 Dec 2023 9:44 am
Operator : joannel
Sample : BS
Misc : MS55597,V5E1996,,,,,
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Dec 22 10:03:46 2023
Quant Method : C:\msdchem\1\methods\V5E_12-20-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Thu Dec 21 09:37:06 2023
Response via : Initial Calibration

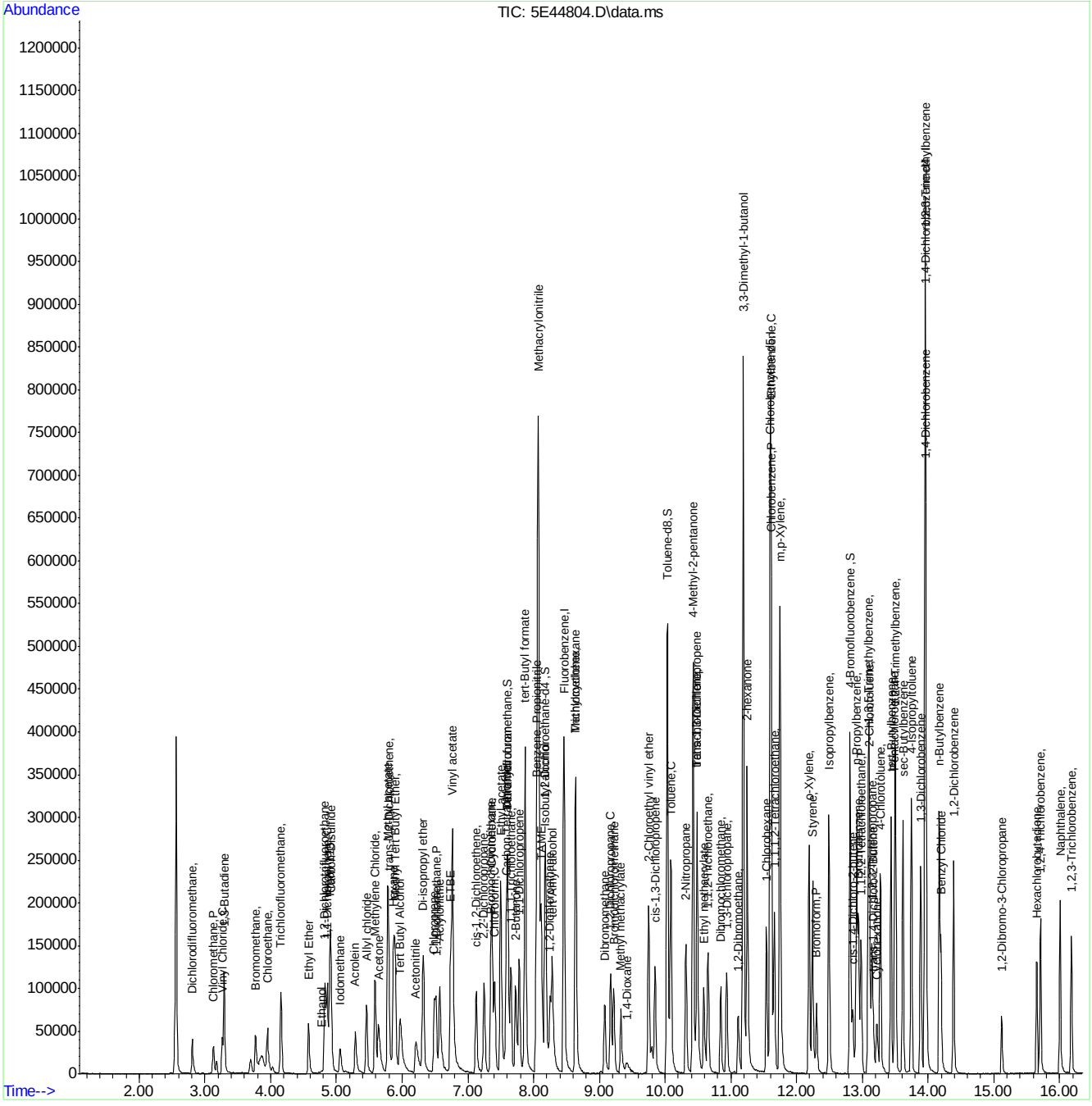
	Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
92)	2-Chlorotoluene	13.109	91	143033	25.85	ug/L		97
93)	trans-1,4-Dichloro-2-B...	13.170	53	10968	19.49	ug/L	#	88
94)	1,2,3-Trichloropropane	13.146	110	20731	26.23	ug/L		95
95)	Cyclohexanone	13.225	55	24296	239.07	ug/L		97
96)	4-Chlorotoluene	13.274	91	125195	23.41	ug/L		97
98)	tert-Butylbenzene	13.438	91	82276	25.66	ug/L		96
99)	1,2,4-Trimethylbenzene	13.505	105	157463	25.52	ug/L		99
100)	Pentachloroethane	13.493	167	29298	28.02	ug/L		93
101)	sec-Butylbenzene	13.621	105	205872	23.91	ug/L		98
102)	4-Isopropyltoluene	13.749	119	181064	24.42	ug/L		99
103)	1,3-Dichlorobenzene	13.889	146	95797	23.74	ug/L		98
104)	1,2,3-Trimethylbenzene	13.962	105	165175	24.89	ug/L		100
105)	1,4-Dichlorobenzene	13.969	146	107215	25.60	ug/L		97
106)	n-Butylbenzene	14.170	92	93564	26.57	ug/L		98
107)	Benzyl Chloride	14.200	126	21671	26.97	ug/L	#	86
108)	1,2-Dichlorobenzene	14.389	146	92960	23.83	ug/L		97
109)	1,2-Dibromo-3-Chloropr...	15.121	75	12212	27.58	ug/L		95
110)	Hexachlorobutadiene	15.657	225	17481	26.91	ug/L		96
111)	1,2,4-Trichlorobenzene	15.712	180	51952	25.37	ug/L		98
112)	Naphthalene	16.011	128	158144	25.00	ug/L		100
113)	1,2,3-Trichlorobenzene	16.181	180	43534	24.60	ug/L		97

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\12-22-2023\
Data File : 5E44804.D
Acq On : 22 Dec 2023 9:44 am
Operator : joannel
Sample : BS
Misc : MS55597,V5E1996,,,,,
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Dec 22 10:03:46 2023
Quant Method : C:\msdchem\1\methods\V5E_12-20-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Thu Dec 21 09:37:06 2023
Response via : Initial Calibration



Manual Integrations APPROVED (compounds with "m" flag)
Neil Christiana 12/27/23 10:23

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\12-26-2023\
Data File : 1A51662.D
Acq On : 26 Dec 2023 8:28 am
Operator : lianatr
Sample : BS
Misc : MS55601,V1A2028,,,,,
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Dec 26 08:41:32 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Fluorobenzene	3.405	96	309508	50.00	ug/L		0.00
62) Chlorobenzene-d5	5.352	117	224519	50.00	ug/L		0.00
85) 1,4-Dichlorobenzene-d4	7.099	152	112687	50.00	ug/L		0.00
System Monitoring Compounds							
39) Dibromofluoromethane	2.958	113	89195	48.89	ug/L		0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 97.78%				
49) 1,2-Dichloroethane-d4	3.235	65	109328	54.14	ug/L		0.00
Spiked Amount 50.000	Range 79 - 125		Recovery = 108.28%				
63) Toluene-d8	4.336	98	305564	50.97	ug/L		0.00
Spiked Amount 50.000	Range 85 - 112		Recovery = 101.94%				
86) 4-Bromofluorobenzene	6.229	174	95732	50.91	ug/L		0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 101.82%				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	1.019	85	30631	25.91	ug/L		97
3) Chloromethane	1.134	50	37355	21.10	ug/L		99
4) 1,3-butadiene	1.180	39	41548	18.71	ug/L		95
5) Vinyl Chloride	1.173	62	41927	23.70	ug/L		98
6) Bromomethane	1.342	94	18714	29.25	ug/L		92
7) Chloroethane	1.411	64	33974	30.11	ug/L		98
8) Trichlorofluoromethane	1.496	101	66423	26.38	ug/L		95
9) Ethyl Ether	1.658	59	38153	24.73	ug/L		93
10) Ethanol	1.711	45	17573	498.70	ug/L		98
11) 1,2-Dichlorotrifluoroe...	1.742	67	51979	25.86	ug/L		88
12) 1,1-Dichloroethene	1.758	61	64294	24.06	ug/L		95
13) Freon 113	1.781	101	44887	29.45	ug/L		91
14) Carbon Disulfide	1.781	76	116205	23.47	ug/L		86
15) Iodomethane	1.827	142	24667	21.19	ug/L		98
16) Acrolein	1.912	56	54995	115.52	ug/L		99
17) Allyl chloride	1.996	41	64292	25.14	ug/L		88
18) Methylene Chloride	2.042	49	76401	29.26	ug/L		89
19) Acetone	2.050	43	105680	137.49	ug/L		95
20) Methyl acetate	2.127	43	238772	114.94	ug/L		96
21) trans-1,2-Dichloroethene	2.135	61	63739	23.74	ug/L		92
22) Hexane	2.196	56	49862	27.13	ug/L		94
23) Methyl Tert Butyl Ether	2.196	73	121381	24.28	ug/L		81
24) Acetonitrile	2.273	41	76249	283.50	ug/L		98
25) Tert Butyl Alcohol	2.212	59	85064	231.20	ug/L		84
26) Di-isopropyl ether	2.396	45	149711	23.85	ug/L		92
27) Chloroprene	2.443	53	176507	22.96	ug/L		96
28) 1,1-Dichloroethane	2.443	63	83401	23.93	ug/L		97
29) Acrylonitrile	2.443	52	113661	122.08	ug/L		98
30) ETBE	2.581	59	140992	24.36	ug/L		95
31) Vinyl acetate	2.566	43	559579	119.82	ug/L		96
32) cis-1,2-Dichloroethene	2.720	96	44484	23.08	ug/L		94
33) 2,2-Dichloropropane	2.781	77	63255	26.01	ug/L		98
34) Bromochloromethane	2.820	128	21351	21.87	ug/L	#	78
35) Cyclohexane	2.858	56	80416	23.87	ug/L		89

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\12-26-2023\
Data File : 1A51662.D
Acq On : 26 Dec 2023 8:28 am
Operator : lianatr
Sample : BS
Misc : MS55601,V1A2028,,,,,
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Dec 26 08:41:32 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
36) Chloroform	2.858	83	79431	24.83	ug/L		92
37) Ethyl acetate	2.912	43	341951	131.23	ug/L		96
38) Tetrahydrofuran	2.951	42	20820	21.12	ug/L		92
40) Carbon Tetrachloride	2.958	117	59167m	23.84	ug/L		
41) 1,1,1-Trichloroethane	2.989	97	67973	25.34	ug/L		94
42) 2-Butanone	3.004	43	159288	122.27	ug/L		91
43) 1,1-Dichloropropene	3.058	75	59595	25.47	ug/L		94
44) tert-Butyl formate	3.097	59	200299	125.34	ug/L		93
45) Propionitrile	3.143	54	97265	242.58	ug/L		99
46) Methacrylonitrile	3.166	41	387704	256.42	ug/L		97
47) Benzene	3.181	78	168859	24.58	ug/L		93
48) TAME	3.251	73	116663	24.05	ug/L		90
50) 1,2-Dichloroethane	3.274	62	67659	26.33	ug/L		93
51) Isobutyl Alcohol	3.258	43	114259	517.18	ug/L		97
52) Tert Amyl Alcohol	3.328	59	69165	228.64	ug/L		93
53) Trichloroethene	3.512	95	47211	24.58	ug/L		91
54) Methylcyclohexane	3.528	83	70473	22.99	ug/L		93
55) Dibromomethane	3.736	93	29806	24.26	ug/L		86
56) 1,2-Dichloropropane	3.789	63	46649	23.98	ug/L		94
57) Bromodichloromethane	3.828	83	54637	22.65	ug/L	#	96
58) Methyl methacrylate	3.920	41	50633	22.61	ug/L		87
59) 1,4-Dioxane	3.943	88	12480	475.01	ug/L		93
60) 2-Chloroethyl vinyl ether	4.167	63	117678	104.47	ug/L		94
61) cis-1,3-Dichloropropene	4.213	75	65359	23.29	ug/L		85
64) Toluene	4.374	91	180915	24.79	ug/L		99
65) 2-Nitropropane	4.467	41	62502	82.35	ug/L		85
66) 4-Methyl-2-pentanone	4.582	43	340688	128.54	ug/L		95
67) trans-1,3-Dichloropropene	4.613	75	59703	23.11	ug/L		87
68) Tetrachloroethene	4.628	166	51423	24.91	ug/L		94
69) Ethyl methacrylate	4.728	69	55239	25.92	ug/L		83
70) 1,1,2-Trichloroethane	4.721	83	33033	22.45	ug/L		95
71) Dibromochloromethane	4.844	129	44388	23.73	ug/L		97
72) 1,3-Dichloropropane	4.898	76	66798	24.66	ug/L		86
73) 1,2-Dibromoethane	4.998	107	42312	22.42	ug/L		97
74) 3,3-Dimethyl-1-Butanol	5.129	57	396887	1123.49	ug/L		97
75) 2-hexanone	5.136	43	331243	129.03	ug/L		89
76) 1-Chlorohexane	5.367	91	54433m	21.47	ug/L		
77) Ethylbenzene	5.398	91	200558m	25.39	ug/L		
78) Chlorobenzene	5.367	112	114645	23.72	ug/L		95
79) 1,1,1,2-Tetrachloroethane	5.413	131	40704	23.15	ug/L		95
80) m,p-Xylene	5.498	91	312410	49.88	ug/L		98
81) o-Xylene	5.806	91	156478	23.48	ug/L		99
82) Styrene	5.837	104	117444	23.25	ug/L		95
83) Bromoform	5.837	173	28072	22.23	ug/L		97
84) Isopropylbenzene	6.044	105	182981	23.59	ug/L		98
87) cis-1,4-Dichloro-2-butene	6.268	53	20050	29.81	ug/L	#	81
88) n-Propylbenzene	6.352	91	220405	25.03	ug/L		98
89) Bromobenzene	6.306	156	46331	23.70	ug/L		88
90) 1,1,2,2-Tetrachloroethane	6.375	83	55564	24.34	ug/L		95
91) 1,3,5-Trimethylbenzene	6.506	105	150663	24.93	ug/L		99

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\12-26-2023\
Data File : 1A51662.D
Acq On : 26 Dec 2023 8:28 am
Operator : lianatr
Sample : BS
Misc : MS55601,V1A2028,,,,,
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Dec 26 08:41:32 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration

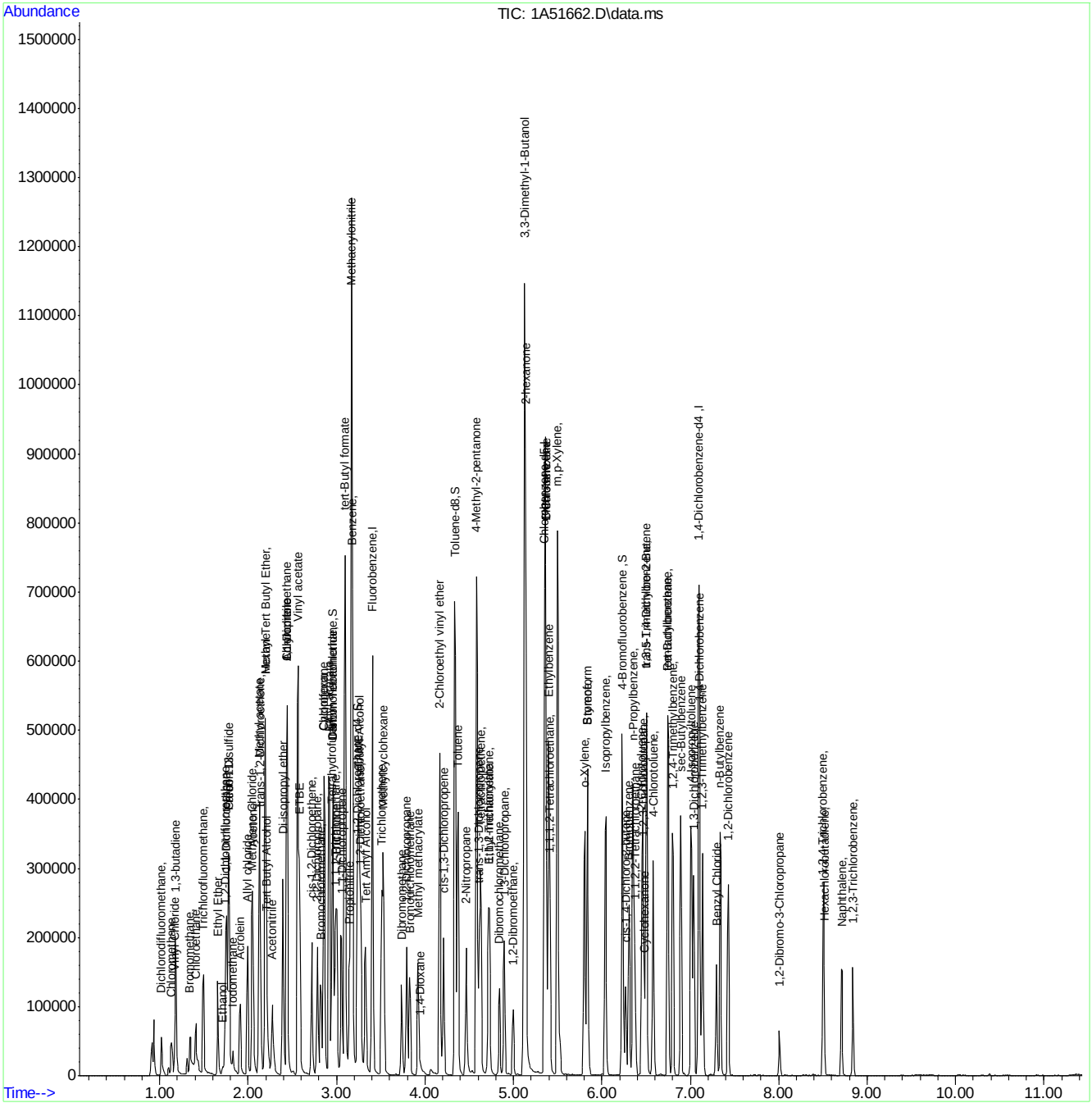
	Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
92)	2-Chlorotoluene	6.452	91	127163	25.16	ug/L		97
93)	trans-1,4-Dichloro-2-B...	6.506	53	23938	27.19	ug/L		86
94)	1,2,3-Trichloropropane	6.468	110	17507	27.82	ug/L		77
95)	Cyclohexanone	6.483	55	25020	210.96	ug/L		95
96)	4-Chlorotoluene	6.583	91	131670	25.24	ug/L		98
97)	tert-Butylbenzene	6.745	91	87602	25.63	ug/L		94
98)	1,2,4-Trimethylbenzene	6.799	105	142876	24.67	ug/L		99
99)	Pentachloroethane	6.745	167	25292	26.33	ug/L	#	86
100)	sec-Butylbenzene	6.891	105	179206	23.47	ug/L		97
101)	4-Isopropyltoluene	7.007	119	155769	23.78	ug/L		96
102)	1,3-Dichlorobenzene	7.037	146	83563	23.69	ug/L		95
103)	1,2,3-Trimethylbenzene	7.137	105	138488	24.07	ug/L		99
104)	1,4-Dichlorobenzene	7.107	146	85408	23.93	ug/L		95
105)	n-Butylbenzene	7.337	92	76873	26.15	ug/L		95
106)	Benzyl Chloride	7.299	126	17239	21.08	ug/L		97
107)	1,2-Dichlorobenzene	7.430	146	74668	23.78	ug/L		97
108)	1,2-Dibromo-3-Chloropr...	8.007	75	9073	24.97	ug/L	#	79
109)	Hexachlorobutadiene	8.515	225	17172	23.58	ug/L		95
110)	1,2,4-Trichlorobenzene	8.500	180	35682	20.49	ug/L		94
111)	Naphthalene	8.715	128	83860	18.78	ug/L		100
112)	1,2,3-Trichlorobenzene	8.838	180	26479	19.13	ug/L		95

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\12-26-2023\
Data File : 1A51662.D
Acq On : 26 Dec 2023 8:28 am
Operator : lianatr
Sample : BS
Misc : MS55601,V1A2028,,,,,
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Dec 26 08:41:32 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration



Manual Integration Approval Summary

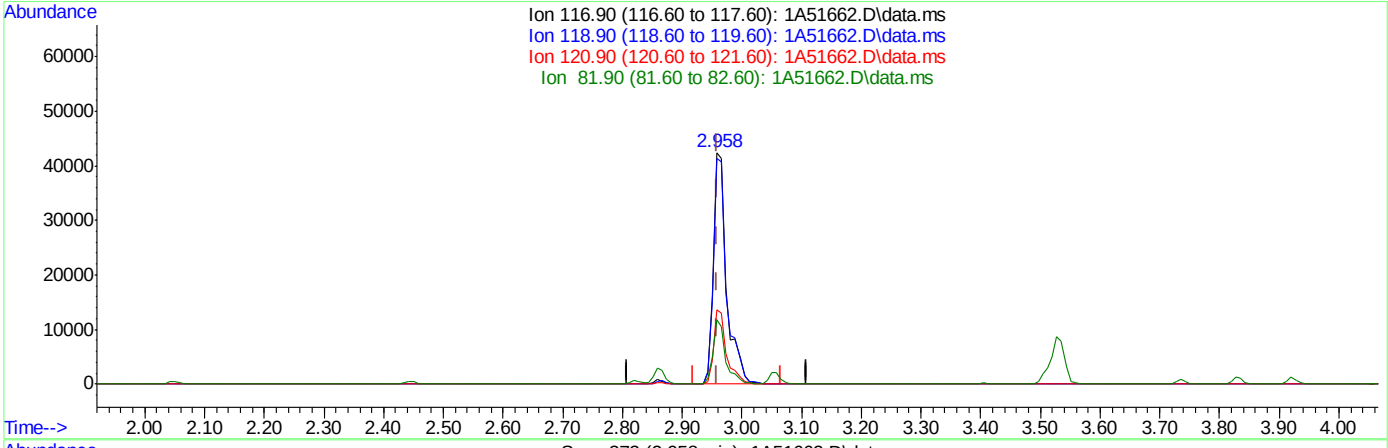
Sample Number:	V1A2028-BS	**Method:**	SW846 8260D
Lab FileID:	1A51662.D	**Analyst approved:**	12/26/23 08:44 Liana Tortrodriguez
Injection Time:	12/26/23 08:28	**Supervisor approved:**	12/27/23 10:23 Neil Christiana

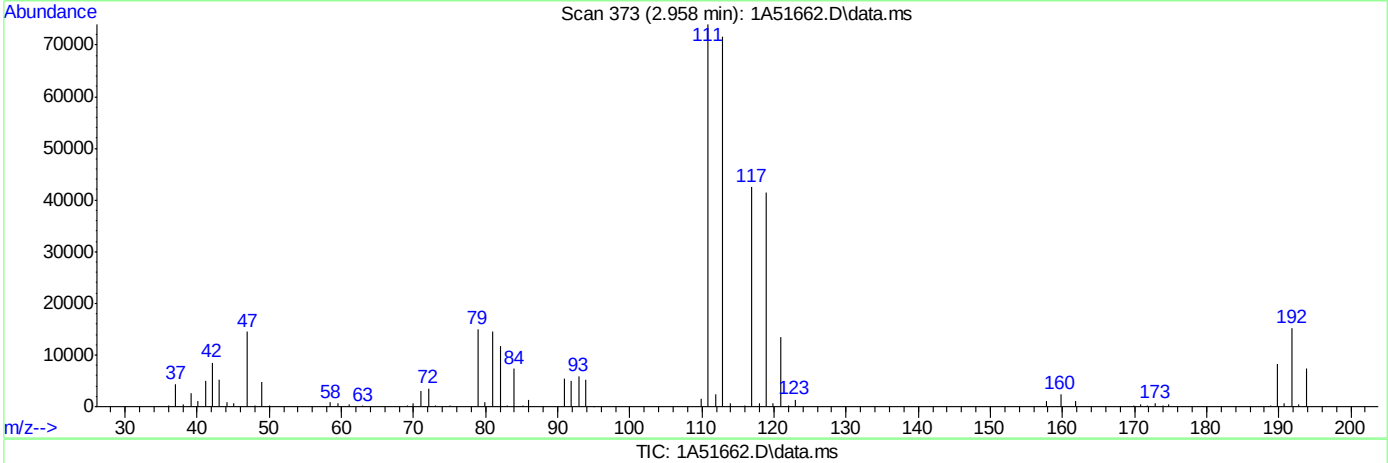
Parameter	CAS	Sig#	R.T. (min.)	Reason
Carbon Tetrachloride	56-23-5		2.96	Overlapping peak
1-Chlorohexane	544-10-5		5.37	Overlapping peak
Ethylbenzene	100-41-4		5.40	Overlapping peak

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\12-26-2023\
Data File : 1A51662.D
Acq On : 26 Dec 2023 8:28 am
Operator : lianatr
Sample : BS
Misc : MS55601,V1A2028,,,,,
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Dec 26 08:39:50 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration





TIC: 1A51662.D\data.ms

(40) Carbon Tetrachloride ( )

2.958min (-0.000) 26.81ug/L

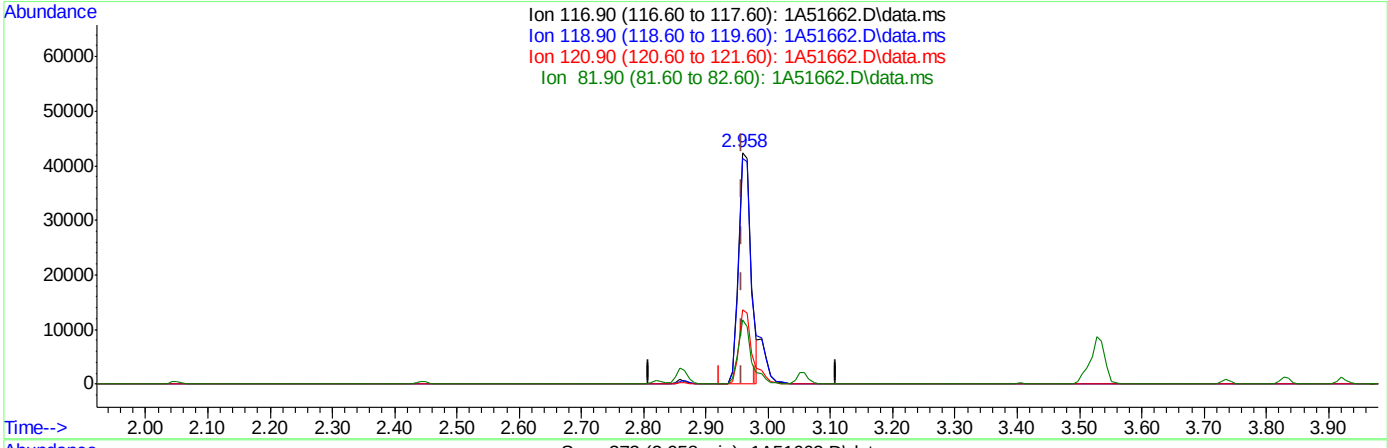
response 66547

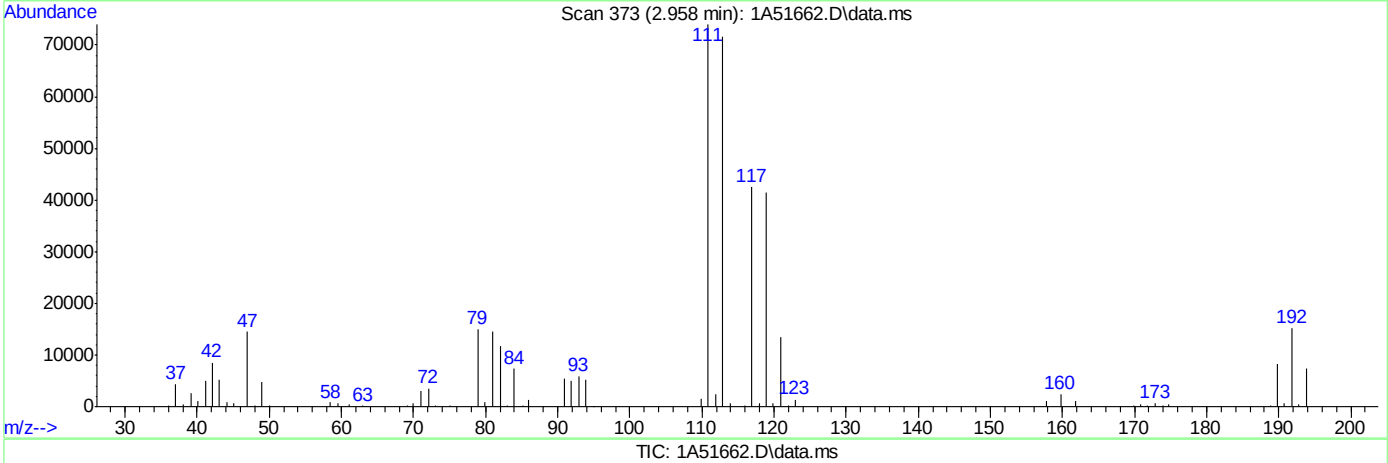
Ion	Exp%	Act%
116.90	100	100
118.90	94.50	97.49
120.90	31.10	31.91
81.90	25.40	27.56

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\12-26-2023\
Data File : 1A51662.D
Acq On : 26 Dec 2023 8:28 am
Operator : lianatr
Sample : BS
Misc : MS55601,V1A2028,,,,,
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Dec 26 08:39:50 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration





TIC: 1A51662.D\data.ms

(40) Carbon Tetrachloride ( )

2.958min (-0.000) 23.84ug/L m

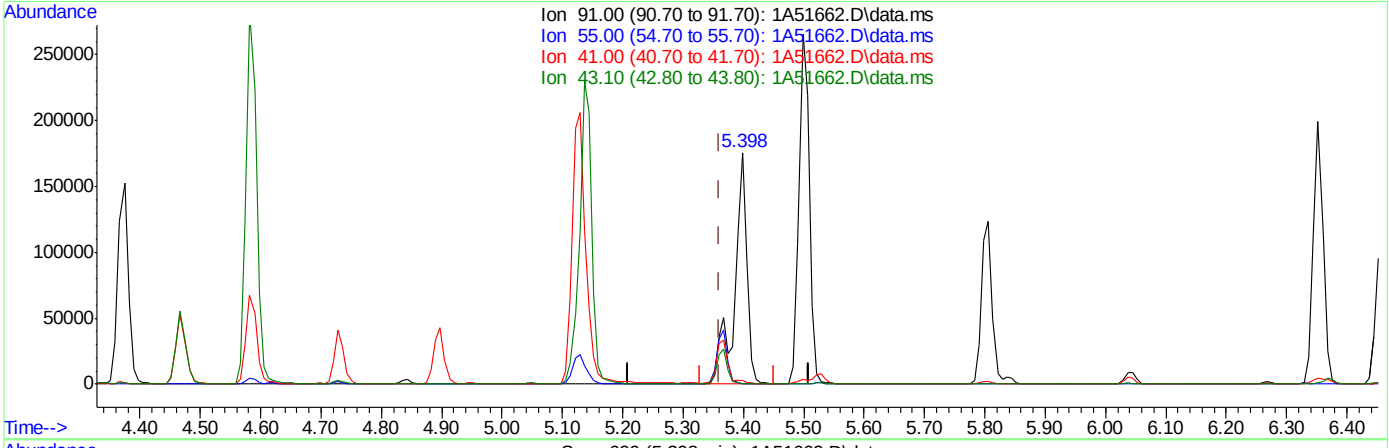
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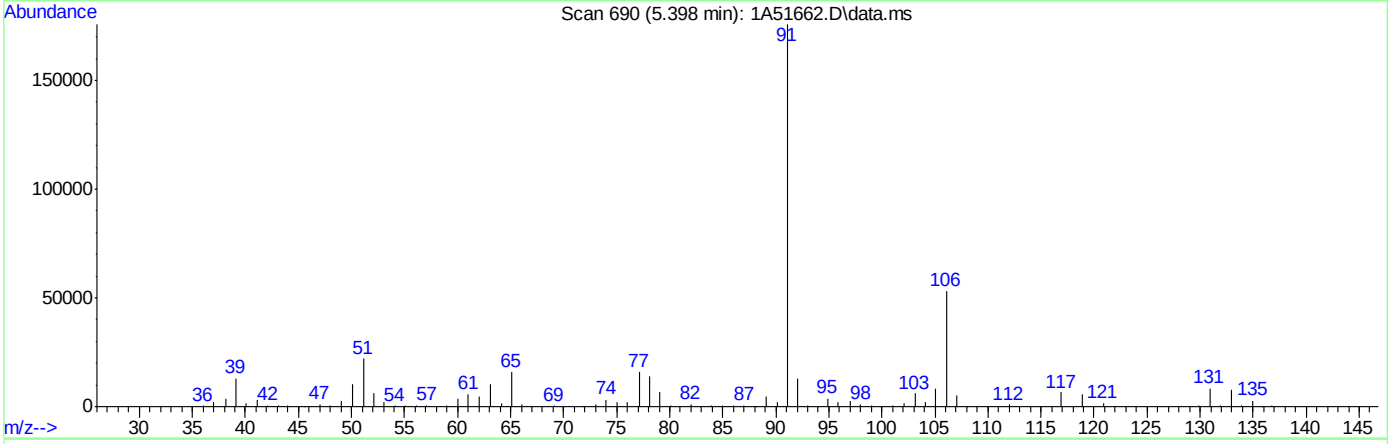
Ion	Exp%	Act%
116.90	100	100
118.90	94.50	97.49
120.90	31.10	31.91
81.90	25.40	27.56

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\12-26-2023\
Data File : 1A51662.D
Acq On : 26 Dec 2023 8:28 am
Operator : lianatr
Sample : BS
Misc : MS55601,V1A2028,,,,,
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Dec 26 08:39:50 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration





TIC: 1A51662.D\data.ms

(76) 1-Chlorohexane

5.398min (+0.038) 100.68ug/L

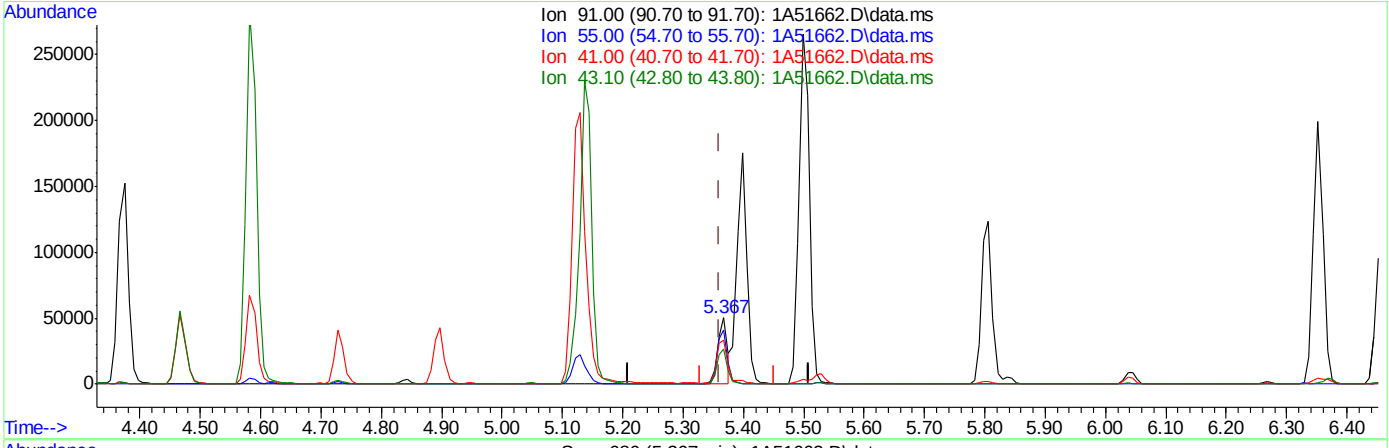
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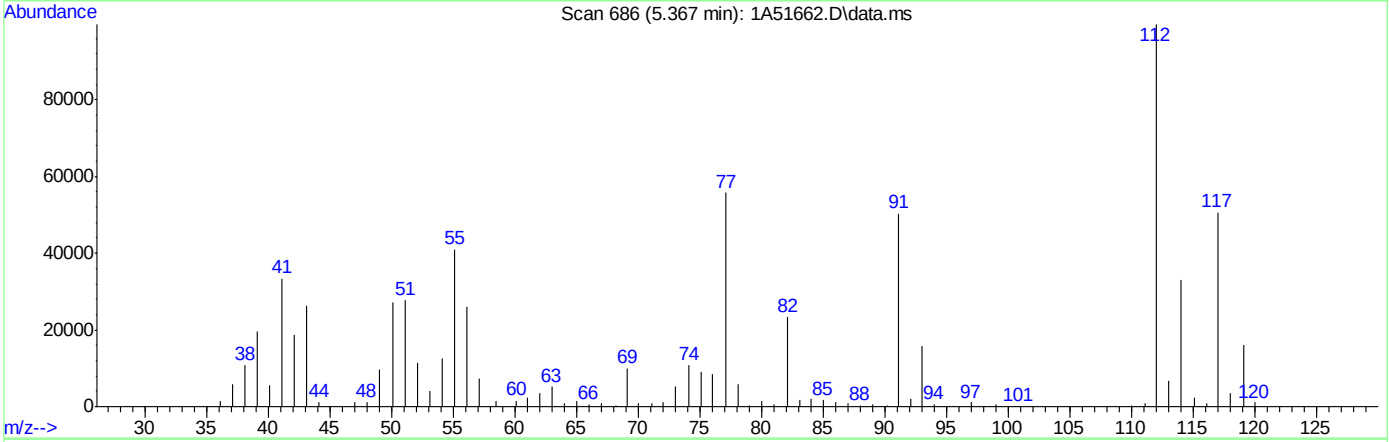
Ion	Exp%	Act%
91.00	100	100
55.00	74.60	0.24#
41.00	53.90	1.33#
43.10	42.90	0.19#

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\12-26-2023\
Data File : 1A51662.D
Acq On : 26 Dec 2023 8:28 am
Operator : lianatr
Sample : BS
Misc : MS55601,V1A2028,,,,,
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Dec 26 08:39:50 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration





TIC: 1A51662.D\data.ms

(76) 1-Chlorohexane

5.367min (+0.007) 21.47ug/L m

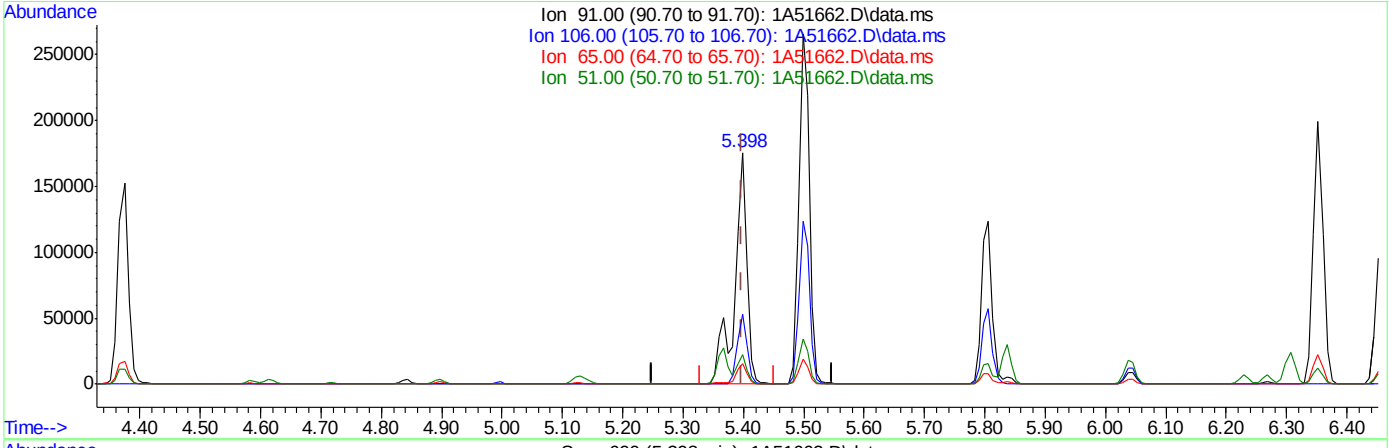
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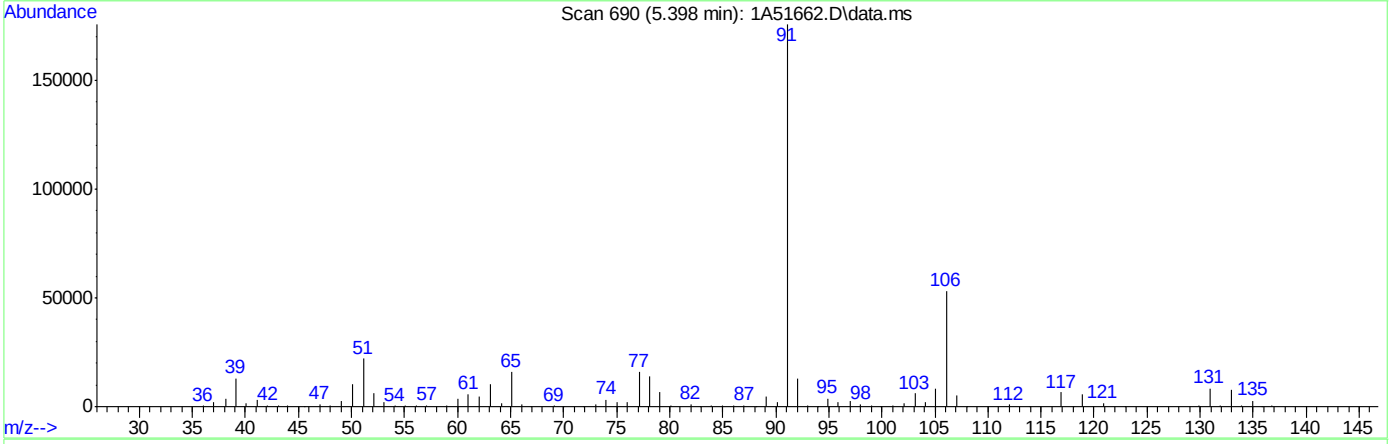
Ion	Exp%	Act%
91.00	100	100
55.00	74.60	81.33
41.00	53.90	66.46
43.10	42.90	52.24

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\12-26-2023\
Data File : 1A51662.D
Acq On : 26 Dec 2023 8:28 am
Operator : lianatr
Sample : BS
Misc : MS55601,V1A2028,,,,,
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Dec 26 08:39:50 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration





TIC: 1A51662.D\data.ms

(77) Ethylbenzene

5.398min (-0.000) 32.31ug/L

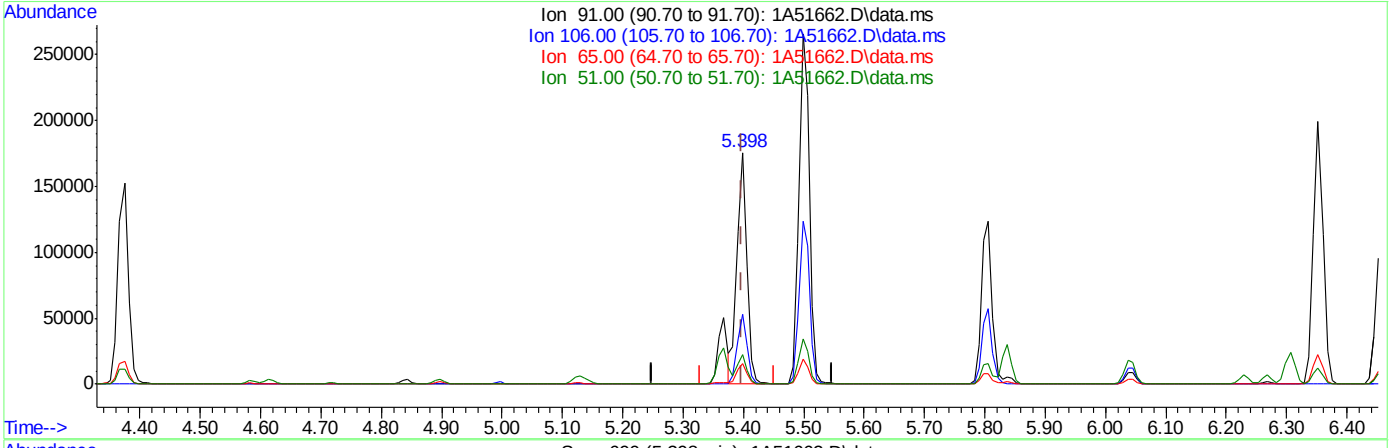
response 255207

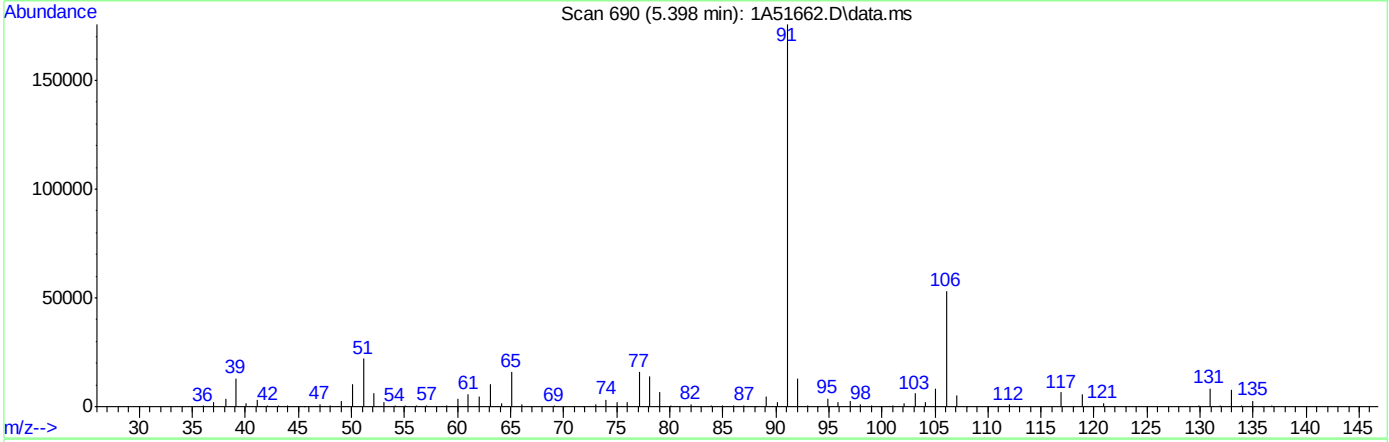
Ion	Exp%	Act%
91.00	100	100
106.00	32.00	30.26
65.00	8.30	9.07
51.00	10.10	12.52

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\12-26-2023\
Data File : 1A51662.D
Acq On : 26 Dec 2023 8:28 am
Operator : lianatr
Sample : BS
Misc : MS55601,V1A2028,,,,,
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Dec 26 08:39:50 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration





TIC: 1A51662.D\data.ms

(77) Ethylbenzene

5.398min (-0.000) 25.39ug/L m

response 200558

Ion	Exp%	Act%
91.00	100	100
106.00	32.00	30.26
65.00	8.30	9.07
51.00	10.10	12.52

Quantitation Report (QT Reviewed)

Data Path : X:\Orlando VOA\celinec\December 2023\12-26-2023\V5E1996\V5E1996\
Data File : 5E44827.d
Acq On : 22 Dec 2023 6:32 pm
Operator : joannel
Sample : FC12099-3MS 5X Inst : MSVOA20
Misc : MS55608,V5E1996,,,,,5
ALS Vial : 26 Sample Multiplier: 1

Quant Time: Dec 26 00:09:57 2023
Quant Method : X:\Orlando VOA\celinec\December 2023\12-26-2023\V5E1996\METHOD\V5E_12-20-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Thu Dec 21 09:37:06 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	8.464	96	338109	50.00	ug/L	0.00
61) Chlorobenzene-d5	11.597	117	270181	50.00	ug/L	0.00
85) 1,4-Dichlorobenzene-d4	13.956	152	154641	50.00	ug/L	0.00
System Monitoring Compounds						
39) Dibromofluoromethane	7.604	113	100257	49.42	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 98.84%			
49) 1,2-Dichloroethane-d4	8.183	65	97217	48.63	ug/L	0.00
Spiked Amount 50.000	Range 79 - 125		Recovery = 97.26%			
62) Toluene-d8	10.036	98	333206	49.37	ug/L	0.00
Spiked Amount 50.000	Range 85 - 112		Recovery = 98.74%			
86) 4-Bromofluorobenzene	12.810	95	110591	49.12	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 98.24%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	2.806	85	36047	28.1545	ug/L	98
3) Chloromethane	3.129	50	35357	27.8933	ug/L	98
4) Vinyl Chloride	3.263	62	41038	27.4665	ug/L	100
5) 1,3-Butadiene	3.294	39	48283	36.5898	ug/L	99
6) Bromomethane	3.769	94	19695	18.6050	ug/L	92
7) Chloroethane	3.946	64	55587	24.3012	ug/L	94
8) Trichlorofluoromethane	4.153	101	75398	35.4311	ug/L	95
9) Ethyl Ether	4.580	59	35542	30.2930	ug/L	96
10) Ethanol	4.781	45	15875	720.3672	ug/L	89
11) 1,2-Dichlorotrifluoroe...	4.830	67	52333	30.6129	ug/L	98
12) 1,1-Dichloroethene	4.861	61	59014	27.9131	ug/L	97
13) Freon 113	4.903	101	48825	34.9372	ug/L	97
14) Carbon Disulfide	4.922	76	119435	28.5657	ug/L	97
15) Iodomethane	5.056	142	39843	28.5371	ug/L	99
16) Acrolein	5.287	56	50162	160.9453	ug/L	98
17) Allyl chloride	5.458	41	42097	27.2767	ug/L	98
18) Methylene Chloride	5.586	49	56936	28.3460	ug/L	99
19) Acetone	5.641	43	90862	129.3573	ug/L	100
20) Methyl acetate	5.781	43	207207	136.6611	ug/L	97
21) trans-1,2-Dichloroethene	5.793	61	54810	27.4483	ug/L	98
22) Hexane	5.867	56	32848	30.2846	ug/L	97
23) Methyl Tert Butyl Ether	5.891	73	137850	30.1064	ug/L	85
24) Acetonitrile	6.208	41	70426	325.1746	ug/L	98
25) Di-isopropyl ether	6.324	45	117100	27.6036	ug/L	97
26) Chloroprene	6.488	53	42723	24.5830	ug/L	98
27) 1,1-Dichloroethane	6.519	63	72971	25.6915	ug/L	96
28) Acrylonitrile	6.574	53	99884	142.5105	ug/L	95
29) ETBE	6.744	59	128723	29.3638	ug/L	98
30) Tert Butyl Alcohol	5.976	59	122768	327.9607	ug/L	92
31) Vinyl acetate	6.769	43	443061	148.3394	ug/L	100
32) cis-1,2-Dichloroethene	7.128	96	48725	27.4458	ug/L	96
33) 2,2-Dichloropropane	7.250	77	58509	26.8805	ug/L	99
34) Bromochloromethane	7.354	128	28598	30.6727	ug/L	93
35) Cyclohexane	7.366	56	62659	29.1912	ug/L	98
36) Chloroform	7.409	83	85100	28.6505	ug/L	98
37) Ethyl acetate	7.500	43	292924	151.3492	ug/L	98
38) Tetrahydrofuran	7.598	42	20857	27.7127	ug/L	92
40) Carbon Tetrachloride	7.586	117	62673	27.4470	ug/L	96
41) 1,1,1-Trichloroethane	7.653	97	71900	28.3837	ug/L	97
42) 2-Butanone	7.726	43	136118	127.7442	ug/L	96
43) 1,1-Dichloropropene	7.781	75	59006	28.9656	ug/L	97
44) tert-Butyl formate	7.872	59	111279	228.5685	ug/L	96

Quantitation Report (QT Reviewed)

Data Path : X:\Orlando VOA\celinec\December 2023\12-26-2023\V5E1996\V5E1996\
Data File : 5E44827.d
Acq On : 22 Dec 2023 6:32 pm
Operator : joannel
Sample : FC12099-3MS 5X Inst : MSVOA20
Misc : MS55608,V5E1996,,,,,5
ALS Vial : 26 Sample Multiplier: 1

Quant Time: Dec 26 00:09:57 2023
Quant Method : X:\Orlando VOA\celinec\December 2023\12-26-2023\V5E1996\METHOD\V5E_12-20-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Thu Dec 21 09:37:06 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
45) Propionitrile	8.049	54	112013	326.3332	ug/L		90
46) Methacrylonitrile	8.073	41	355474	308.8469	ug/L		98
47) Benzene	8.043	78	176186	27.0839	ug/L		97
48) TAME	8.116	73	134936	29.3531	ug/L		97
50) 1,2-Dichloroethane	8.250	62	63145	28.5596	ug/L		98
51) tert Amyl alcohol	8.287	59	96363	300.1581	ug/L		94
52) Trichloroethene	8.640	95	50087	29.0470	ug/L		97
53) Methylcyclohexane	8.640	83	74759	28.9985	ug/L		98
54) Dibromomethane	9.079	93	35205	31.5393	ug/L		97
55) 1,2-Dichloropropane	9.171	63	44328	30.3994	ug/L		98
56) Bromodichloromethane	9.220	83	60456	27.3670	ug/L		96
57) Methyl methacrylate	9.329	41	41380	31.5465	ug/L		96
58) 1,4-Dioxane	9.421	88	18601	599.8322	ug/L		98
59) 2-Chloroethyl vinyl ether	9.847	63	205	0.4200	ug/L	#	65
60) cis-1,3-Dichloropropene	9.847	75	64016	28.2600	ug/L		98
63) Toluene	10.085	91	189502	29.2286	ug/L		95
64) Isobutyl alcohol	8.177	43	74842	617.1727	ug/L		99
65) 2-Nitropropane	10.317	41	92969	138.6871	ug/L		98
66) 4-Methyl-2-pentanone	10.427	43	304581	134.8327	ug/L		100
67) trans-1,3-Dichloropropene	10.488	75	58870	27.1309	ug/L		96
68) Tetrachloroethene	10.488	166	52302	26.0608	ug/L		96
69) Ethyl methacrylate	10.585	69	61999	31.4501	ug/L		94
70) 1,1,2-Trichloroethane	10.652	83	38589	28.8161	ug/L		98
71) Dibromochloromethane	10.847	129	53229	28.1879	ug/L		93
72) 1,3-Dichloropropane	10.939	76	75313	31.5135	ug/L		98
73) 1,2-Dibromoethane	11.115	107	52061	31.0457	ug/L		99
74) 3,3-Dimethyl-1-butanol	11.189	57	368292	1362.1228	ug/L		99
75) 2-hexanone	11.250	43	227797	144.9291	ug/L		99
76) 1-Chlorohexane	11.542	91	59270	27.4724	ug/L		96
77) Ethylbenzene	11.609	91	214091	28.1112	ug/L		99
78) Chlorobenzene	11.615	112	136589	27.3429	ug/L		99
79) 1,1,1,2-Tetrachloroethane	11.664	131	50330	27.9717	ug/L		98
80) m,p-Xylene	11.743	91	324858	55.6886	ug/L		99
81) o-Xylene	12.188	91	160050	28.0665	ug/L		97
82) Styrene	12.243	104	129823	29.7736	ug/L		95
83) Bromoform	12.304	173	29393	23.6121	ug/L		98
84) Isopropylbenzene	12.493	105	206927	26.6537	ug/L		98
87) cis-1,4-Dichloro-2-butene	12.853	53	5562	9.6085	ug/L	#	76
88) n-Propylbenzene	12.914	91	238814	28.2663	ug/L		99
89) Bromobenzene	12.944	156	56694	28.8875	ug/L		94
90) 1,1,2,2-Tetrachloroethane	12.981	83	74046	29.1408	ug/L		96
91) 1,3,5-Trimethylbenzene	13.091	105	174001	28.8341	ug/L		96
92) 2-Chlorotoluene	13.109	91	151467	28.4582	ug/L		100
93) trans-1,4-Dichloro-2-B...	13.170	53	5775	10.6710	ug/L	#	77
94) 1,2,3-Trichloropropane	13.146	110	23957	31.5130	ug/L		94
95) Cyclohexanone	13.225	55	12477	127.6450	ug/L		94
96) 4-Chlorotoluene	13.274	91	134920	26.2332	ug/L		99
98) tert-Butylbenzene	13.438	91	86298	27.9812	ug/L		98
99) 1,2,4-Trimethylbenzene	13.505	105	170798	28.7826	ug/L		98
100) Pentachloroethane	13.493	167	30991	30.8188	ug/L		95
101) sec-Butylbenzene	13.621	105	208077	25.1200	ug/L		98
102) 4-Isopropyltoluene	13.749	119	187065	26.2314	ug/L		98
103) 1,3-Dichlorobenzene	13.889	146	104807	27.0050	ug/L		97
104) 1,2,3-Trimethylbenzene	13.962	105	180936	28.3524	ug/L		99
105) 1,4-Dichlorobenzene	13.969	146	117639	29.2023	ug/L		98
106) n-Butylbenzene	14.170	92	93164	27.5019	ug/L		99
107) Benzyl Chloride	14.200	126	20766	26.8749	ug/L		94
108) 1,2-Dichlorobenzene	14.389	146	104571	27.8672	ug/L		97

Quantitation Report (QT Reviewed)

Data Path : X:\Orlando VOA\celinec\December 2023\12-26-2023\V5E1996\V5E1996\
Data File : 5E44827.d
Acq On : 22 Dec 2023 6:32 pm
Operator : joannel
Sample : FC12099-3MS 5X Inst : MSVOA20
Misc : MS55608,V5E1996,,,,,5
ALS Vial : 26 Sample Multiplier: 1

Quant Time: Dec 26 00:09:57 2023
Quant Method : X:\Orlando VOA\celinec\December 2023\12-26-2023\V5E1996\METHOD\V5E_12-20-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Thu Dec 21 09:37:06 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
109) 1,2-Dibromo-3-Chloropr...	15.121	75	11726	27.5336	ug/L	92
110) Hexachlorobutadiene	15.657	225	16350	26.1722	ug/L	87
111) 1,2,4-Trichlorobenzene	15.712	180	54746	27.7935	ug/L	95
112) Naphthalene	16.005	128	172957	28.4288	ug/L	100
113) 1,2,3-Trichlorobenzene	16.182	180	47561	27.9436	ug/L	98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

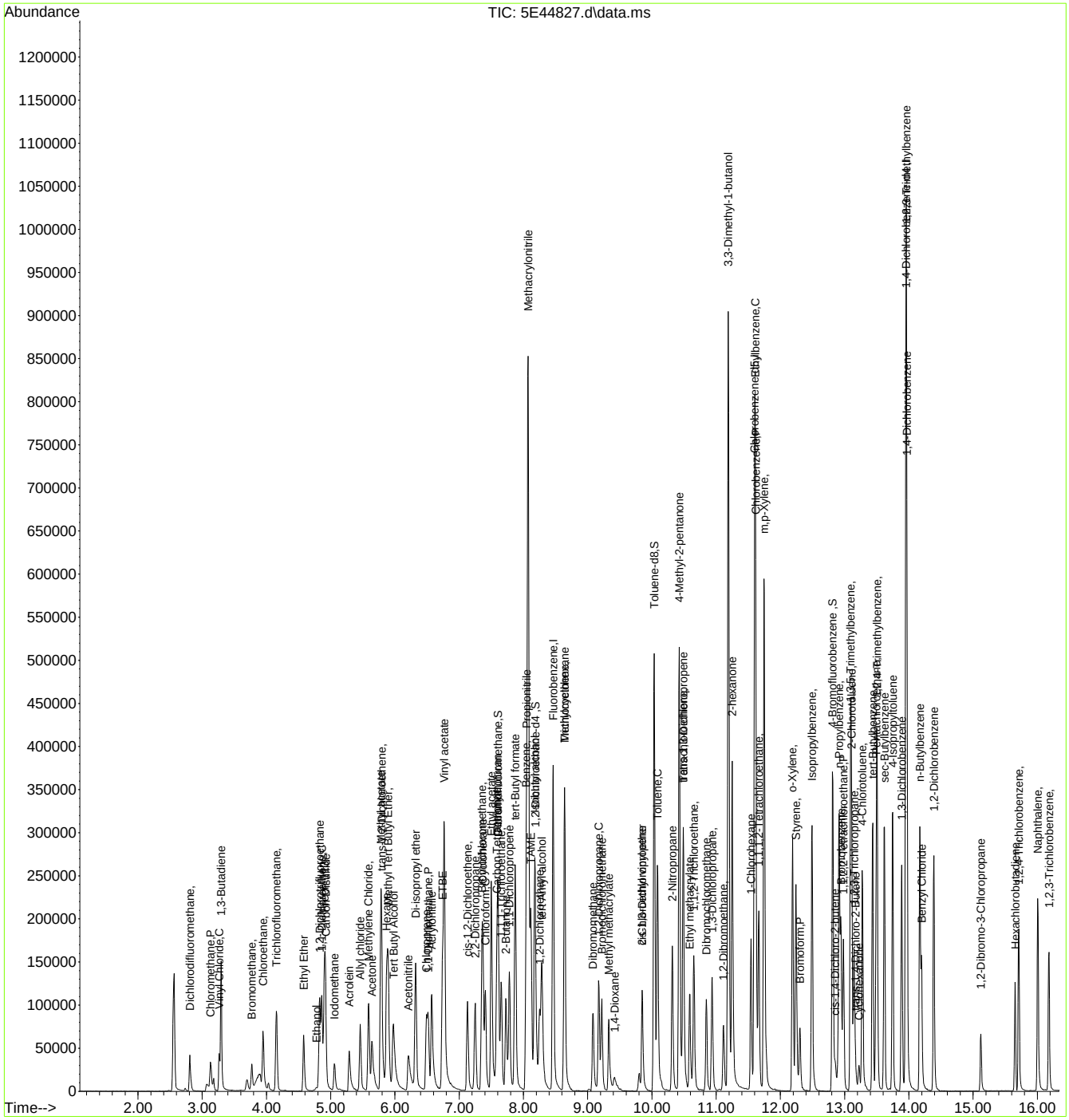
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Quantitation Report (QT Reviewed)

Data Path : X:\Orlando VOA\celinec\December 2023\12-26-2023\V5E1996\V5E1996\
Data File : 5E44827.d
Acq On : 22 Dec 2023 6:32 pm
Operator : joannel
Sample : FC12099-3MS 5X Inst : MSVOA20
Misc : MS55608,V5E1996,,,,,5
ALS Vial : 26 Sample Multiplier: 1

Quant Time: Dec 26 00:09:57 2023
Quant Method : X:\Orlando VOA\celinec\December 2023\12-26-2023\V5E1996\METHOD\V5E_12-20-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Thu Dec 21 09:37:06 2023
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : X:\Orlando VOA\celinec\December 2023\12-26-2023\V5E1996\V5E1996\
Data File : 5E44828.d
Acq On : 22 Dec 2023 6:54 pm
Operator : joannel
Sample : FC12099-3MSD 5X Inst : MSVOA20
Misc : MS55608,V5E1996,,,,,5
ALS Vial : 27 Sample Multiplier: 1

Quant Time: Dec 26 00:10:02 2023
Quant Method : X:\Orlando VOA\celinec\December 2023\12-26-2023\V5E1996\METHOD\V5E_12-20-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Thu Dec 21 09:37:06 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	8.463	96	332450	50.00	ug/L	0.00
61) Chlorobenzene-d5	11.597	117	258653	50.00	ug/L	0.00
85) 1,4-Dichlorobenzene-d4	13.956	152	147487	50.00	ug/L	0.00
System Monitoring Compounds						
39) Dibromofluoromethane	7.604	113	98779	49.52	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 99.04%			
49) 1,2-Dichloroethane-d4	8.177	65	99090	50.41	ug/L	0.00
Spiked Amount 50.000	Range 79 - 125		Recovery = 100.82%			
62) Toluene-d8	10.036	98	327054	50.62	ug/L	0.00
Spiked Amount 50.000	Range 85 - 112		Recovery = 101.24%			
86) 4-Bromofluorobenzene	12.810	95	106121	49.42	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 98.84%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	2.806	85	23903	18.9873	ug/L	97
3) Chloromethane	3.135	50	23999	19.2552	ug/L	95
4) Vinyl Chloride	3.263	62	28798	19.6024	ug/L	99
5) 1,3-Butadiene	3.294	39	35341	27.2380	ug/L	100
6) Bromomethane	3.769	94	17709	17.0137	ug/L	99
7) Chloroethane	3.946	64	30338	13.2220	ug/L	95
8) Trichlorofluoromethane	4.159	101	49439	28.2790	ug/L	90
9) Ethyl Ether	4.580	59	23780	20.6131	ug/L	93
10) Ethanol	4.781	45	8565	395.2737	ug/L	98
11) 1,2-Dichlorotrifluoroe...	4.824	67	34196	20.3439	ug/L	98
12) 1,1-Dichloroethene	4.860	61	39473	18.9882	ug/L	96
13) Freon 113	4.903	101	32150	23.3968	ug/L	95
14) Carbon Disulfide	4.921	76	82520	20.0725	ug/L	98
15) Iodomethane	5.056	142	33388	24.3208	ug/L	95
16) Acrolein	5.287	56	35533	115.9487	ug/L	98
17) Allyl chloride	5.458	41	28842	19.0063	ug/L	97
18) Methylene Chloride	5.592	49	41475	21.0001	ug/L	93
19) Acetone	5.641	43	63329	91.6942	ug/L	99
20) Methyl acetate	5.781	43	131249	88.0374	ug/L	99
21) trans-1,2-Dichloroethene	5.793	61	37379	19.0376	ug/L	93
22) Hexane	5.872	56	21542	20.1990	ug/L	93
23) Methyl Tert Butyl Ether	5.891	73	91594	20.3446	ug/L	85
24) Acetonitrile	6.208	41	47247	221.8647	ug/L	99
25) Di-isopropyl ether	6.324	45	76719	18.3925	ug/L	99
26) Chloroprene	6.488	53	30118	17.6250	ug/L	98
27) 1,1-Dichloroethane	6.519	63	50326	18.0203	ug/L	99
28) Acrylonitrile	6.574	53	70909	102.8923	ug/L	92
29) ETBE	6.738	59	86701	20.1145	ug/L	96
30) Tert Butyl Alcohol	5.976	59	83286	226.2763	ug/L	98
31) Vinyl acetate	6.769	43	308529	105.0557	ug/L	99
32) cis-1,2-Dichloroethene	7.128	96	33982	19.4672	ug/L	97
33) 2,2-Dichloropropane	7.250	77	39202	18.3170	ug/L	97
34) Bromochloromethane	7.354	128	18373	20.0414	ug/L	90
35) Cyclohexane	7.366	56	41878	19.8420	ug/L	94
36) Chloroform	7.409	83	57090	19.5476	ug/L	98
37) Ethyl acetate	7.500	43	203203	106.7790	ug/L	99
38) Tetrahydrofuran	7.604	42	14831	19.8890	ug/L	94
40) Carbon Tetrachloride	7.586	117	42955	19.1319	ug/L	98
41) 1,1,1-Trichloroethane	7.653	97	46907	18.8325	ug/L	98
42) 2-Butanone	7.726	43	91263	87.1066	ug/L	100
43) 1,1-Dichloropropene	7.781	75	39253	19.5970	ug/L	92
44) tert-Butyl formate	7.872	59	76495	159.7963	ug/L	96

Quantitation Report (QT Reviewed)

Data Path : X:\Orlando VOA\celinec\December 2023\12-26-2023\V5E1996\V5E1996\
Data File : 5E44828.d
Acq On : 22 Dec 2023 6:54 pm
Operator : joannel
Sample : FC12099-3MSD 5X Inst : MSVOA20
Misc : MS55608,V5E1996,,,,,5
ALS Vial : 27 Sample Multiplier: 1

Quant Time: Dec 26 00:10:02 2023
Quant Method : X:\Orlando VOA\celinec\December 2023\12-26-2023\V5E1996\METHOD\V5E_12-20-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Thu Dec 21 09:37:06 2023
Response via : Initial Calibration

	Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
45)	Propionitrile	8.049	54	71625	216.6990	ug/L		89
46)	Methacrylonitrile	8.073	41	232267	205.2359	ug/L		99
47)	Benzene	8.043	78	118629	18.5465	ug/L		97
48)	TAME	8.116	73	88615	19.6049	ug/L		98
50)	1,2-Dichloroethane	8.250	62	41550	19.1124	ug/L		98
51)	tert Amyl alcohol	8.287	59	59722	189.1927	ug/L		94
52)	Trichloroethene	8.640	95	32964	19.4423	ug/L		99
53)	Methylcyclohexane	8.640	83	48947	19.3094	ug/L		97
54)	Dibromomethane	9.085	93	23101	21.0479	ug/L		96
55)	1,2-Dichloropropane	9.171	63	28992	20.2206	ug/L		94
56)	Bromodichloromethane	9.219	83	40775	18.7720	ug/L		91
57)	Methyl methacrylate	9.329	41	27974	21.9112	ug/L		96
58)	1,4-Dioxane	9.414	88	11171	366.3667	ug/L		89
60)	cis-1,3-Dichloropropene	9.847	75	41142	18.4714	ug/L		99
63)	Toluene	10.091	91	126986	20.4591	ug/L		99
64)	Isobutyl alcohol	8.171	43	48508	417.8419	ug/L		97
65)	2-Nitropropane	10.317	41	57077	88.9398	ug/L		95
66)	4-Methyl-2-pentanone	10.426	43	204075	94.3669	ug/L		98
67)	trans-1,3-Dichloropropene	10.487	75	36432	17.5384	ug/L		93
68)	Tetrachloroethene	10.487	166	34094	17.7453	ug/L		96
69)	Ethyl methacrylate	10.591	69	39695	21.2905	ug/L		94
70)	1,1,2-Trichloroethane	10.652	83	25919	20.2175	ug/L		95
71)	Dibromochloromethane	10.847	129	33807	18.7008	ug/L		94
72)	1,3-Dichloropropane	10.939	76	49031	21.4306	ug/L		97
73)	1,2-Dibromoethane	11.115	107	32542	20.2708	ug/L		92
74)	3,3-Dimethyl-1-butanol	11.189	57	258576	1020.6654	ug/L		98
75)	2-hexanone	11.249	43	150369	99.9317	ug/L		99
76)	1-Chlorohexane	11.542	91	37627	18.2179	ug/L		97
77)	Ethylbenzene	11.609	91	138195	18.9544	ug/L		97
78)	Chlorobenzene	11.615	112	88915	18.5926	ug/L		99
79)	1,1,1,2-Tetrachloroethane	11.664	131	32823	19.0549	ug/L		98
80)	m,p-Xylene	11.743	91	210099	37.6213	ug/L		99
81)	o-Xylene	12.188	91	104293	19.1040	ug/L		98
82)	Styrene	12.243	104	84934	20.3469	ug/L		96
83)	Bromoform	12.304	173	18684	15.6782	ug/L		96
84)	Isopropylbenzene	12.493	105	135689	18.2567	ug/L		99
87)	cis-1,4-Dichloro-2-butene	12.859	53	3685	6.6747	ug/L	#	65
88)	n-Propylbenzene	12.914	91	156414	19.4114	ug/L		97
89)	Bromobenzene	12.938	156	37079	19.8094	ug/L		96
90)	1,1,2,2-Tetrachloroethane	12.981	83	44761	18.4701	ug/L		98
91)	1,3,5-Trimethylbenzene	13.091	105	113826	19.7773	ug/L		98
92)	2-Chlorotoluene	13.109	91	99701	19.6409	ug/L		98
93)	trans-1,4-Dichloro-2-B...	13.170	53	3649	7.0696	ug/L		96
94)	1,2,3-Trichloropropane	13.145	110	15283	21.0784	ug/L		95
95)	Cyclohexanone	13.219	55	8266	88.6666	ug/L		98
96)	4-Chlorotoluene	13.273	91	87353	17.8084	ug/L		98
98)	tert-Butylbenzene	13.432	91	57186	19.4414	ug/L		98
99)	1,2,4-Trimethylbenzene	13.505	105	109061	19.2703	ug/L		99
100)	Pentachloroethane	13.493	167	20266	21.1310	ug/L		93
101)	sec-Butylbenzene	13.615	105	134479	17.0224	ug/L		99
102)	4-Isopropyltoluene	13.743	119	119715	17.6014	ug/L		97
103)	1,3-Dichlorobenzene	13.889	146	67576	18.2565	ug/L		97
104)	1,2,3-Trimethylbenzene	13.956	105	115586	18.9839	ug/L		97
105)	1,4-Dichlorobenzene	13.968	146	73982	19.2559	ug/L		97
106)	n-Butylbenzene	14.170	92	58059	17.9703	ug/L		99
107)	Benzyl Chloride	14.194	126	12094	16.7612	ug/L	#	85
108)	1,2-Dichlorobenzene	14.389	146	65288	18.2426	ug/L		99
109)	1,2-Dibromo-3-Chloropr...	15.121	75	7515	18.7170	ug/L		92

Quantitation Report (QT Reviewed)

Data Path : X:\Orlando VOA\celinec\December 2023\12-26-2023\V5E1996\V5E1996\
Data File : 5E44828.d
Acq On : 22 Dec 2023 6:54 pm
Operator : joannel
Sample : FC12099-3MSD 5X Inst : MSVOA20
Misc : MS55608,V5E1996,,,,,5
ALS Vial : 27 Sample Multiplier: 1

Quant Time: Dec 26 00:10:02 2023
Quant Method : X:\Orlando VOA\celinec\December 2023\12-26-2023\V5E1996\METHOD\V5E_12-20-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Thu Dec 21 09:37:06 2023
Response via : Initial Calibration

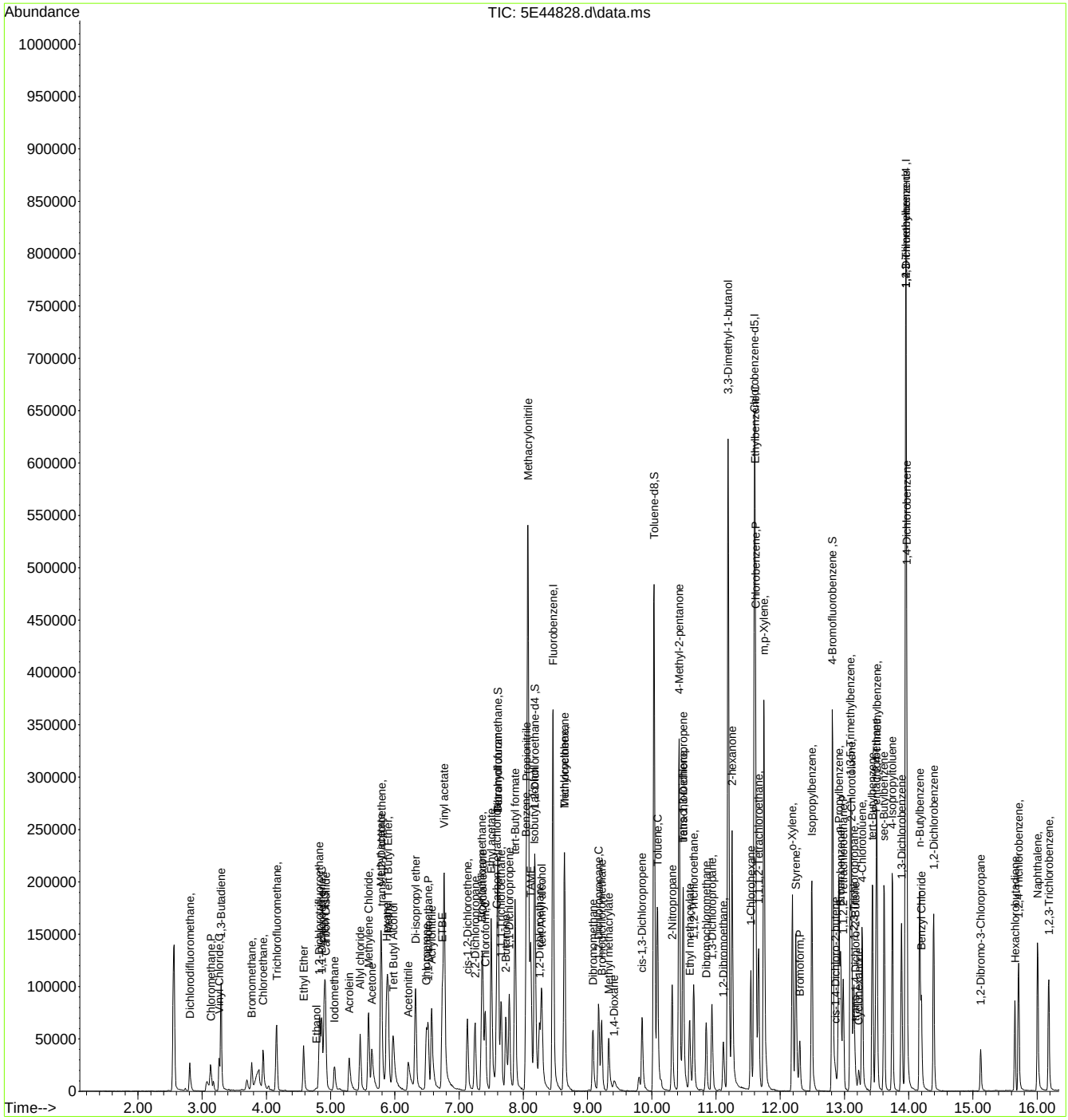
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
110) Hexachlorobutadiene	15.657	225	10556	17.7171	ug/L	95
111) 1,2,4-Trichlorobenzene	15.712	180	35802	19.0576	ug/L	95
112) Naphthalene	16.005	128	111124	19.1513	ug/L	100
113) 1,2,3-Trichlorobenzene	16.181	180	32195	19.8331	ug/L	97

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : X:\Orlando VOA\celinec\December 2023\12-26-2023\V5E1996\V5E1996\
Data File : 5E44828.d
Acq On : 22 Dec 2023 6:54 pm
Operator : joannel
Sample : FC12099-3MSD 5X Inst : MSVOA20
Misc : MS55608,V5E1996,,,,,5
ALS Vial : 27 Sample Multiplier: 1

Quant Time: Dec 26 00:10:02 2023
Quant Method : X:\Orlando VOA\celinec\December 2023\12-26-2023\V5E1996\METHOD\V5E_12-20-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Thu Dec 21 09:37:06 2023
Response via : Initial Calibration



V5E_12-20-2023_.M Tue Dec 26 00:23:15 2023 Page: 4

Manual Integrations APPROVED (compounds with "m" flag)
Neil Christiana 12/27/23 10:23

Quantitation Report (QT Reviewed)

Data Path : X:\Orlando VOA\celinec\December 2023\12-27-2023\V1A2028\V1A2028\
Data File : 1A51686.d
Acq On : 26 Dec 2023 6:13 pm
Operator : lianatr
Sample : FC12194-13MS Inst : MSVOA17
Misc : MS55614,V1A2028,,,,,
ALS Vial : 27 Sample Multiplier: 1

Quant Time: Dec 27 00:22:33 2023
Quant Method : X:\Orlando VOA\celinec\December 2023\12-27-2023\V1A2028\METHOD\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	3.405	96	279524	50.00	ug/L	0.00
62) Chlorobenzene-d5	5.352	117	203776	50.00	ug/L	0.00
85) 1,4-Dichlorobenzene-d4	7.099	152	103074	50.00	ug/L	0.00
System Monitoring Compounds						
39) Dibromofluoromethane	2.958	113	81225	49.29	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 98.58%			
49) 1,2-Dichloroethane-d4	3.235	65	100046	54.86	ug/L	0.00
Spiked Amount 50.000	Range 79 - 125		Recovery = 109.72%			
63) Toluene-d8	4.336	98	273894	50.33	ug/L	0.00
Spiked Amount 50.000	Range 85 - 112		Recovery = 100.66%			
86) 4-Bromofluorobenzene	6.229	174	85952	49.97	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 99.94%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.019	85	33639	31.5103	ug/L	96
3) Chloromethane	1.134	50	40675	25.4341	ug/L	100
4) 1,3-butadiene	1.180	39	51093	25.4824	ug/L	94
5) Vinyl Chloride	1.173	62	45081	28.2175	ug/L	96
6) Bromomethane	1.342	94	15625	27.0396	ug/L	98
7) Chloroethane	1.411	64	37010	36.3134	ug/L	93
8) Trichlorofluoromethane	1.496	101	75588	33.2338	ug/L	99
9) Ethyl Ether	1.658	59	41246	29.6026	ug/L	94
10) Ethanol	1.711	45	17142	538.6560	ug/L	97
11) 1,2-Dichlorotrifluoroe...	1.742	67	56860	31.3175	ug/L	90
12) 1,1-Dichloroethene	1.758	61	72079	29.8698	ug/L	95
13) Freon 113	1.781	101	49711	36.1145	ug/L	91
14) Carbon Disulfide	1.781	76	121723	27.2172	ug/L	84
15) Iodomethane	1.827	142	23342	22.1992	ug/L	99
16) Acrolein	1.912	56	47907	111.4285	ug/L	98
17) Allyl chloride	1.996	41	64017	27.7194	ug/L	89
18) Methylene Chloride	2.042	49	70654	29.9588	ug/L	88
19) Acetone	2.050	43	89508	128.9430	ug/L	97
20) Methyl acetate	2.127	43	239197	127.4941	ug/L	96
21) trans-1,2-Dichloroethene	2.135	61	66804	27.5461	ug/L	98
22) Hexane	2.196	56	53161	32.0308	ug/L	93
23) Methyl Tert Butyl Ether	2.196	73	125516	27.8028	ug/L	76
24) Acetonitrile	2.273	41	83688m	344.5302	ug/L	
25) Tert Butyl Alcohol	2.212	59	90418	272.1118	ug/L	84
26) Di-isopropyl ether	2.396	45	162408	28.6456	ug/L	93
27) Chloroprene	2.443	53	171888	24.7624	ug/L	98
28) 1,1-Dichloroethane	2.443	63	87847	27.9094	ug/L	99
29) Acrylonitrile	2.435	52	104862	124.7125	ug/L	97
30) ETBE	2.581	59	150917	28.8673	ug/L	95
31) Vinyl acetate	2.558	43	514941	122.0863	ug/L	96
32) cis-1,2-Dichloroethene	2.720	96	48656	27.9537	ug/L	98
33) 2,2-Dichloropropane	2.781	77	61099	27.8237	ug/L	96
34) Bromochloromethane	2.820	128	23820	27.0199	ug/L #	77
35) Cyclohexane	2.858	56	90751	29.8235	ug/L	88
36) Chloroform	2.858	83	86652	29.9945	ug/L	93
37) Ethyl acetate	2.912	43	300910	127.8673	ug/L	96
38) Tetrahydrofuran	2.943	42	23405	26.2901	ug/L	90
40) Carbon Tetrachloride	2.958	117	65311m	29.1367	ug/L	
41) 1,1,1-Trichloroethane	2.989	97	76142	31.4284	ug/L	95
42) 2-Butanone	3.004	43	141439	120.2149	ug/L	89
43) 1,1-Dichloropropene	3.051	75	64137	30.3458	ug/L	87
44) tert-Butyl formate	3.097	59	63253	43.8261	ug/L #	85

Quantitation Report (QT Reviewed)

Data Path : X:\Orlando VOA\celinec\December 2023\12-27-2023\V1A2028\V1A2028\
Data File : 1A51686.d
Acq On : 26 Dec 2023 6:13 pm
Operator : lianatr
Sample : FC12194-13MS Inst : MSVOA17
Misc : MS55614,V1A2028,,,,,
ALS Vial : 27 Sample Multiplier: 1

Quant Time: Dec 27 00:22:33 2023
Quant Method : X:\Orlando VOA\celinec\December 2023\12-27-2023\V1A2028\METHOD\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration

	Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
45)	Propionitrile	3.143	54	96453	266.3593	ug/L		99
46)	Methacrylonitrile	3.166	41	399635	292.6687	ug/L		97
47)	Benzene	3.181	78	184126	29.6736	ug/L		95
48)	TAME	3.251	73	118159	26.9721	ug/L		82
50)	1,2-Dichloroethane	3.274	62	73103	31.5050	ug/L		93
51)	Isobutyl Alcohol	3.258	43	110719	554.9190	ug/L		95
52)	Tert Amyl Alcohol	3.328	59	62611	229.1799	ug/L		87
53)	Trichloroethene	3.512	95	49475	28.5206	ug/L		96
54)	Methylcyclohexane	3.528	83	80889	29.2192	ug/L		94
55)	Dibromomethane	3.736	93	31426	28.3245	ug/L	#	79
56)	1,2-Dichloropropane	3.789	63	50658	28.8383	ug/L		94
57)	Bromodichloromethane	3.828	83	58793	26.9821	ug/L	#	95
58)	Methyl methacrylate	3.920	41	50459	24.9456	ug/L		87
59)	1,4-Dioxane	3.943	88	11548	486.6809	ug/L		93
60)	2-Chloroethyl vinyl ether	4.205	63	451	0.4433	ug/L	#	56
61)	cis-1,3-Dichloropropene	4.213	75	66280	26.1523	ug/L		86
64)	Toluene	4.374	91	192430	29.0517	ug/L		98
65)	2-Nitropropane	4.467	41	56940	82.6579	ug/L		84
66)	4-Methyl-2-pentanone	4.582	43	306106	127.2438	ug/L		95
67)	trans-1,3-Dichloropropene	4.613	75	60118	25.6371	ug/L		85
68)	Tetrachloroethene	4.628	166	54863	29.2760	ug/L		94
69)	Ethyl methacrylate	4.728	69	55575	28.7369	ug/L		83
70)	1,1,2-Trichloroethane	4.713	83	35458	26.5539	ug/L		96
71)	Dibromochloromethane	4.844	129	45152	26.5952	ug/L		98
72)	1,3-Dichloropropane	4.898	76	71729	29.1802	ug/L		87
73)	1,2-Dibromoethane	4.998	107	43790	25.5594	ug/L		96
74)	3,3-Dimethyl-1-Butanol	5.129	57	304388	949.3591	ug/L		94
75)	2-hexanone	5.136	43	280253	120.2848	ug/L		86
76)	1-Chlorohexane	5.367	91	57766m	25.1083	ug/L		
77)	Ethylbenzene	5.398	91	218690m	30.5083	ug/L		
78)	Chlorobenzene	5.367	112	124994	28.4950	ug/L		93
79)	1,1,1,2-Tetrachloroethane	5.413	131	43426	27.2132	ug/L		91
80)	m,p-Xylene	5.498	91	332762	58.5431	ug/L		99
81)	o-Xylene	5.806	91	165112	27.2958	ug/L		99
82)	Styrene	5.837	104	125043	27.2789	ug/L		96
83)	Bromoform	5.837	173	27344	23.8552	ug/L		94
84)	Isopropylbenzene	6.045	105	196491	27.9084	ug/L		98
87)	cis-1,4-Dichloro-2-butene	6.268	53	16078	26.1347	ug/L	#	74
88)	n-Propylbenzene	6.352	91	238149	29.5697	ug/L		96
89)	Bromobenzene	6.306	156	50520	28.2537	ug/L		88
90)	1,1,2,2-Tetrachloroethane	6.375	83	56237	26.9340	ug/L		98
91)	1,3,5-Trimethylbenzene	6.506	105	159307	28.8180	ug/L		98
92)	2-Chlorotoluene	6.452	91	133650	28.9060	ug/L		98
93)	trans-1,4-Dichloro-2-B...	6.506	53	20118	24.9839	ug/L		79
94)	1,2,3-Trichloropropane	6.468	110	17511	30.4216	ug/L		82
95)	Cyclohexanone	6.483	55	10618	97.8783	ug/L		96
96)	4-Chlorotoluene	6.583	91	138191	28.9639	ug/L		97
97)	tert-Butylbenzene	6.753	91	93708	29.9765	ug/L		94
98)	1,2,4-Trimethylbenzene	6.799	105	153285	28.9374	ug/L		98
99)	Pentachloroethane	6.745	167	25482	29.0037	ug/L	#	69
100)	sec-Butylbenzene	6.891	105	192640	27.5824	ug/L		97
101)	4-Isopropyltoluene	7.007	119	160931	26.8636	ug/L		98
102)	1,3-Dichlorobenzene	7.037	146	90068	27.9176	ug/L		96
103)	1,2,3-Trimethylbenzene	7.137	105	148527	28.2262	ug/L		98
104)	1,4-Dichlorobenzene	7.107	146	90053	27.5833	ug/L		96
105)	n-Butylbenzene	7.338	92	79434	29.5357	ug/L		94
106)	Benzyl Chloride	7.291	126	13158	17.5863	ug/L	#	85
107)	1,2-Dichlorobenzene	7.430	146	79989	27.8493	ug/L		98

Quantitation Report (QT Reviewed)

Data Path : X:\Orlando VOA\celinec\December 2023\12-27-2023\V1A2028\V1A2028\
Data File : 1A51686.d
Acq On : 26 Dec 2023 6:13 pm
Operator : lianatr
Sample : FC12194-13MS Inst : MSVOA17
Misc : MS55614,V1A2028,,,,,
ALS Vial : 27 Sample Multiplier: 1

Quant Time: Dec 27 00:22:33 2023
Quant Method : X:\Orlando VOA\celinec\December 2023\12-27-2023\V1A2028\METHOD\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration

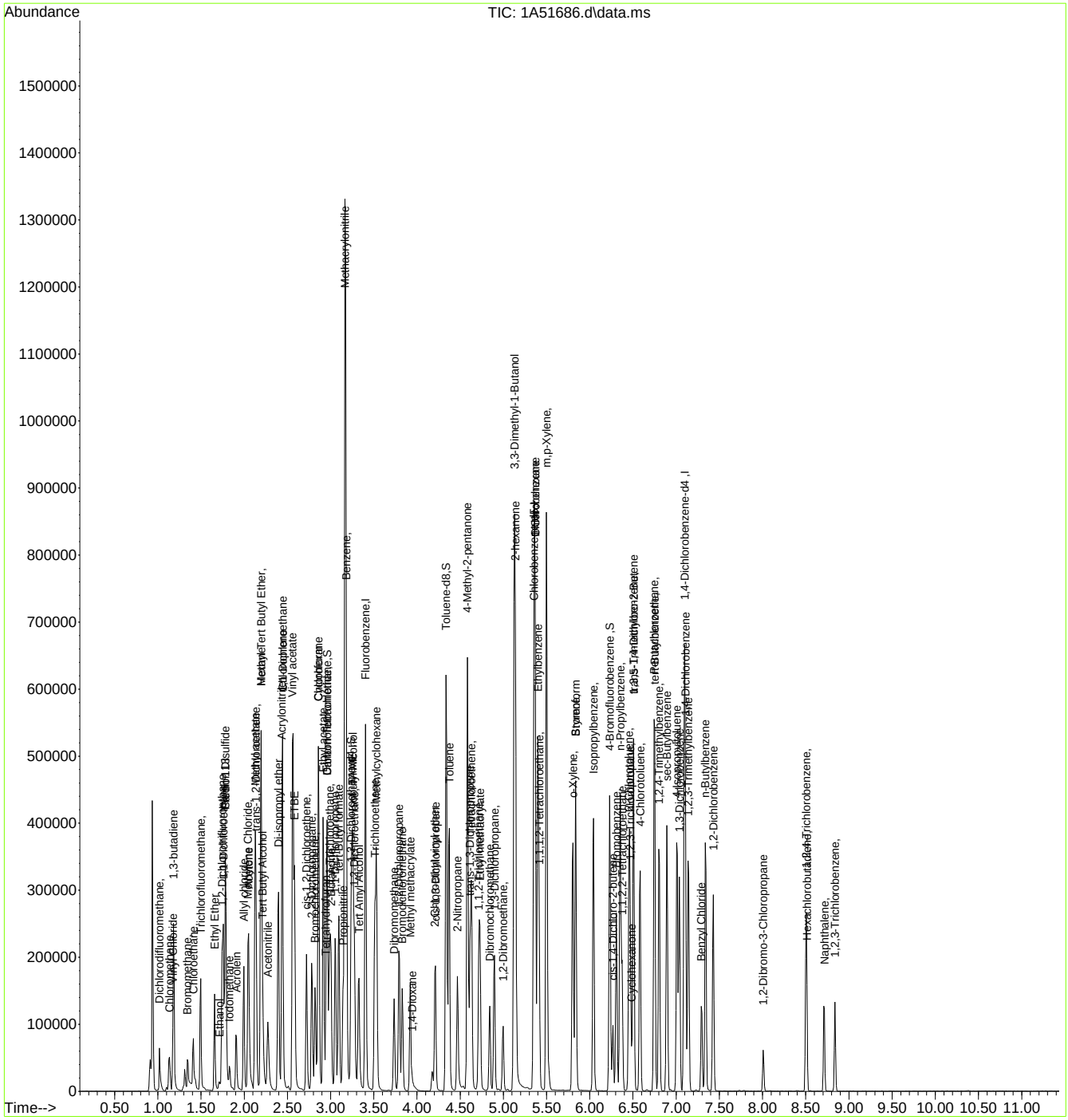
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
108) 1,2-Dibromo-3-Chloropr...	8.007	75	8679	26.1085	ug/L #	82
109) Hexachlorobutadiene	8.515	225	17340	26.0288	ug/L	94
110) 1,2,4-Trichlorobenzene	8.507	180	32693	20.5206	ug/L	97
111) Naphthalene	8.715	128	70226	17.1948	ug/L	97
112) 1,2,3-Trichlorobenzene	8.838	180	23947	18.9112	ug/L	92

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : X:\Orlando VOA\celinec\December 2023\12-27-2023\V1A2028\V1A2028\
Data File : 1A51686.d
Acq On : 26 Dec 2023 6:13 pm
Operator : lianatr
Sample : FC12194-13MS Inst : MSVOA17
Misc : MS55614,V1A2028,,,,,
ALS Vial : 27 Sample Multiplier: 1

Quant Time: Dec 27 00:22:33 2023
Quant Method : X:\Orlando VOA\celinec\December 2023\12-27-2023\V1A2028\METHOD\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration



Manual Integration Approval Summary

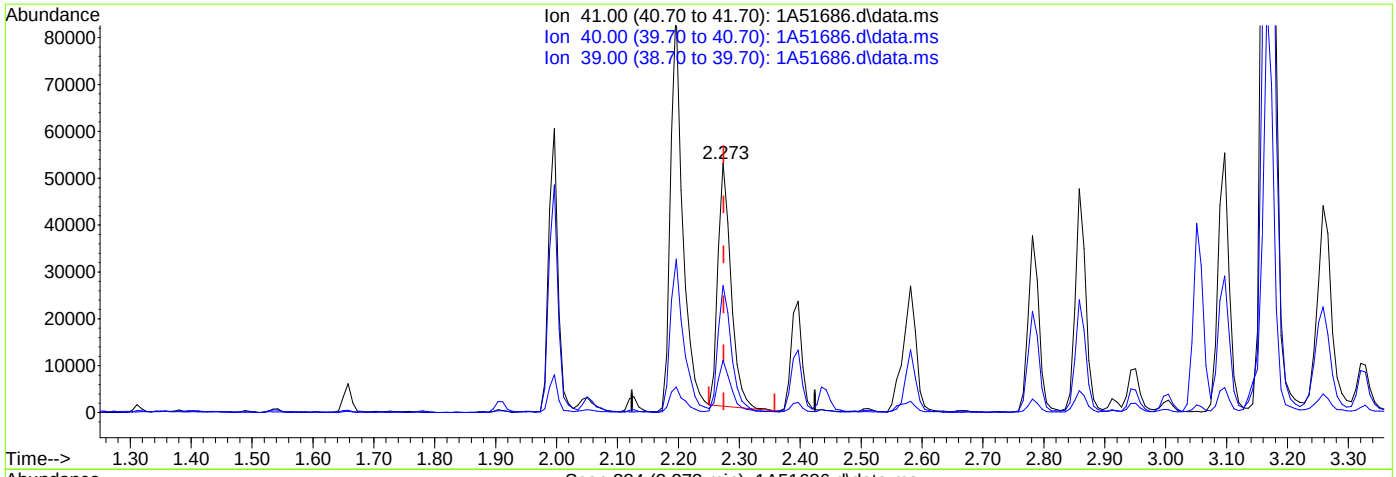
Sample Number: FC12194-13MS
Lab FileID: 1A51686.D
Injection Time: 12/26/23 18:13
Method: SW846 8260D
Analyst approved: 12/26/23 19:31 Celine Celis
Supervisor approved: 12/27/23 10:23 Neil Christiana

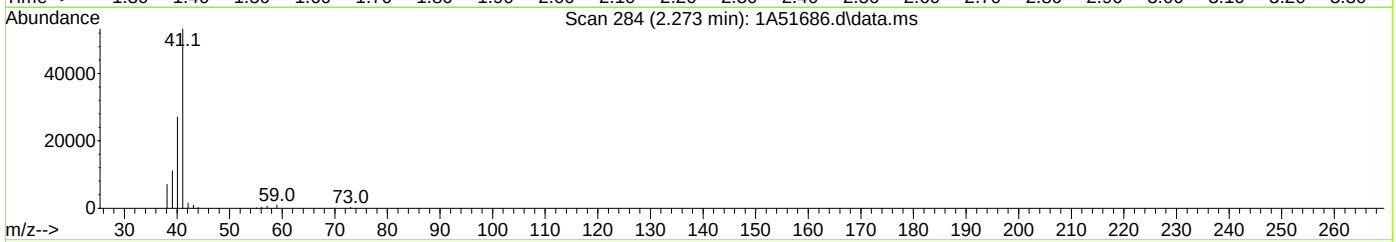
Parameter	CAS	Sig#	R.T. (min.)	Reason
Acetonitrile	75-05-8		2.27	Poor instrument integration
Carbon Tetrachloride	56-23-5		2.96	Overlapping peak
1-Chlorohexane	544-10-5		5.37	Overlapping peak
Ethylbenzene	100-41-4		5.40	Overlapping peak

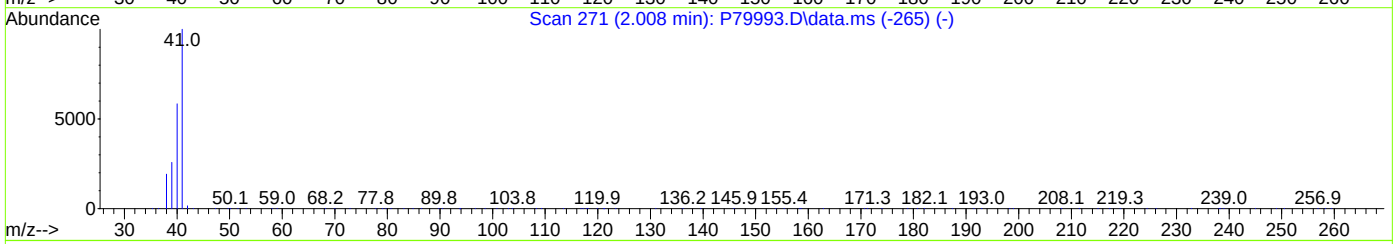
Quantitation Report (Qedit)

Data Path : X:\Orlando VOA\celinec\December 2023\12-27-2023\V1A2028\V1A2028\
Data File : 1A51686.d
Acq On : 26 Dec 2023 6:13 pm
Operator : lianatr
Sample : FC12194-13MS Inst : MSVOA17
Misc : MS55614,V1A2028,,,,,
ALS Vial : 27 Sample Multiplier: 1

Quant Time: Dec 27 00:08:47 2023
Quant Method : X:\Orlando VOA\celinec\December 2023\12-27-2023\V1A2028\METHOD\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration







TIC: 1A51686.d\data.ms

(24) Acetonitrile

2.273min (-0.001) 317.22ug/L

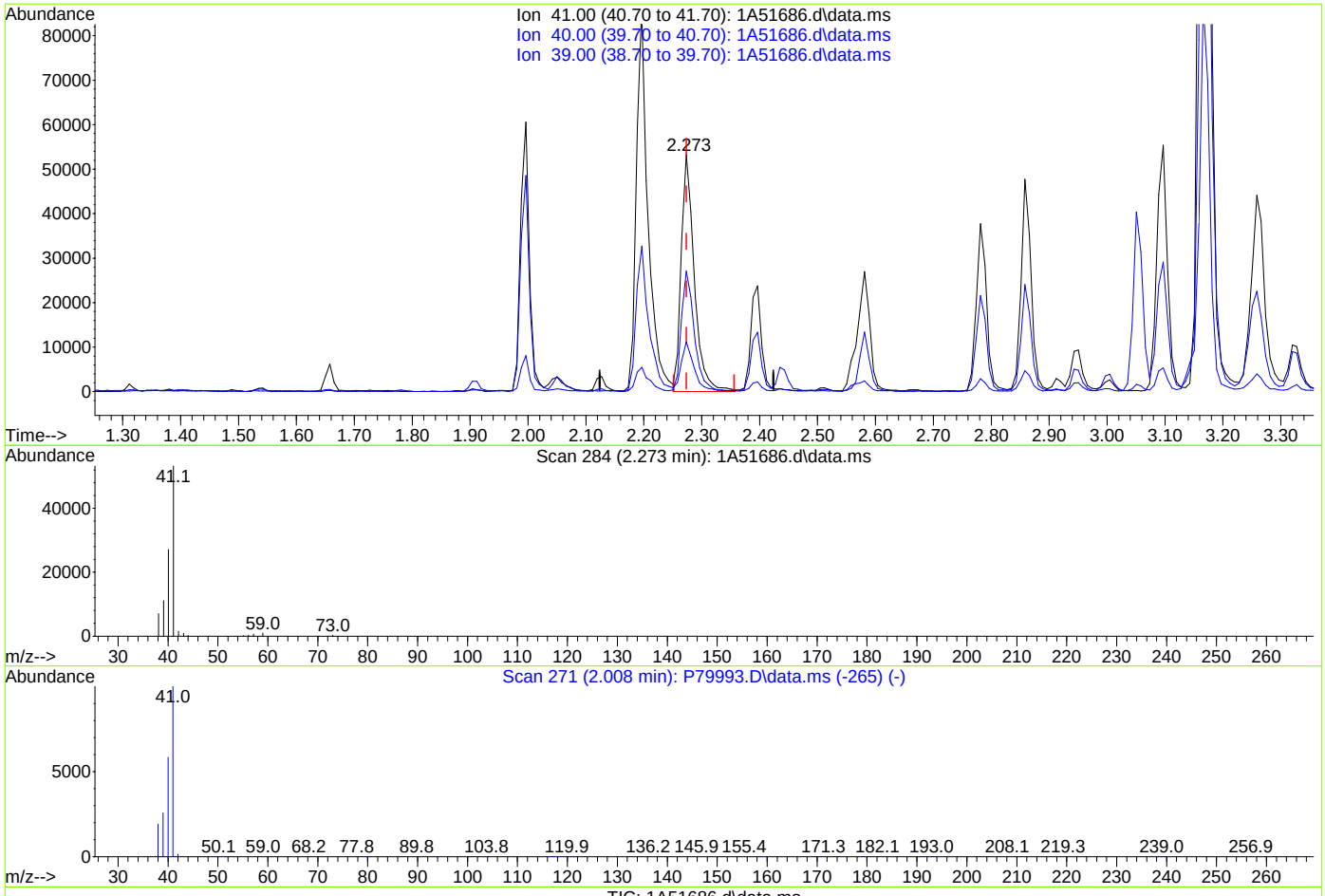
response 77055

Ion	Exp%	Act%
41.00	100	100
40.00	54.10	50.89
39.00	21.10	20.66
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : X:\Orlando VOA\celinec\December 2023\12-27-2023\V1A2028\V1A2028\
Data File : 1A51686.d
Acq On : 26 Dec 2023 6:13 pm
Operator : lianatr
Sample : FC12194-13MS Inst : MSVOA17
Misc : MS55614,V1A2028,,,,,
ALS Vial : 27 Sample Multiplier: 1

Quant Time: Dec 27 00:08:47 2023
Quant Method : X:\Orlando VOA\celinec\December 2023\12-27-2023\V1A2028\METHOD\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration



TIC: 1A51686.d\data.ms

(24) Acetonitrile

2.273min (-0.001) 344.53ug/L m

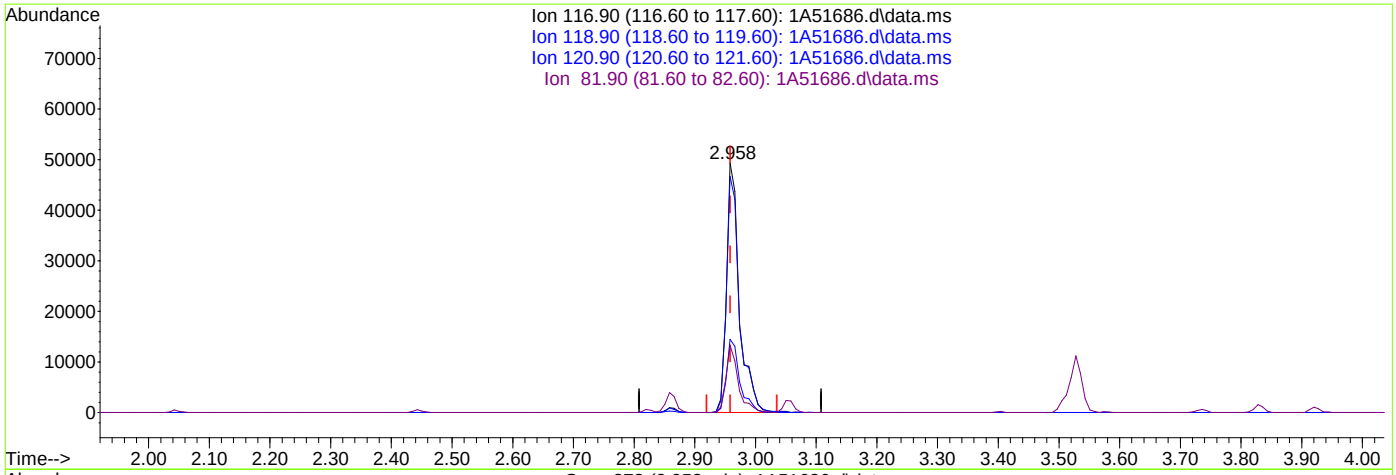
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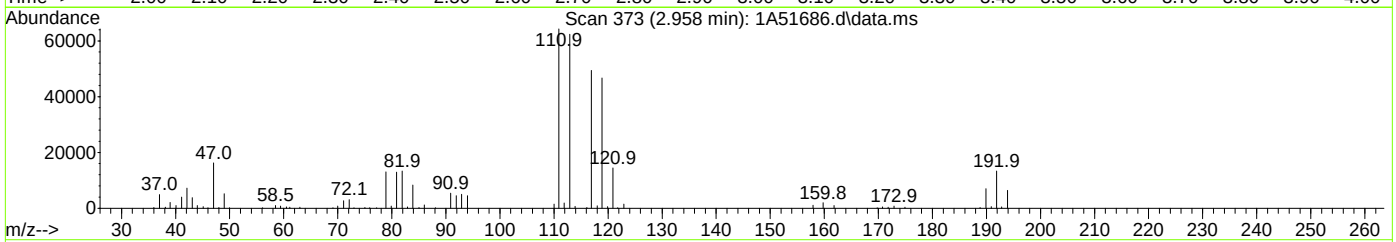
Ion	Exp%	Act%
41.00	100	100
40.00	54.10	50.93
39.00	21.10	20.93
0.00	0.00	0.00

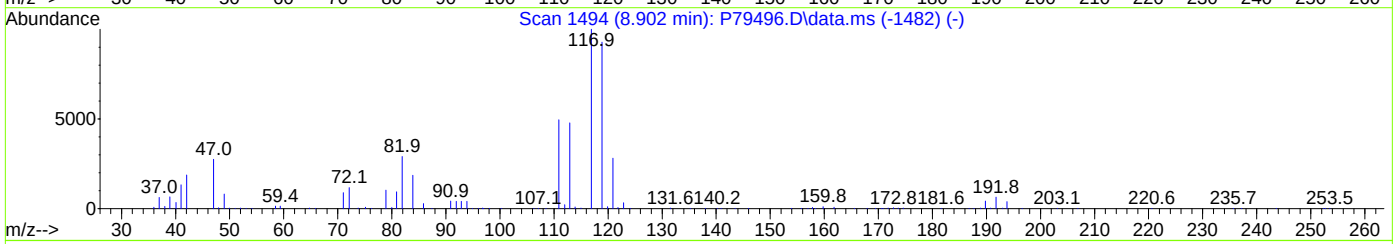
Quantitation Report (Qedit)

Data Path : X:\Orlando VOA\celinec\December 2023\12-27-2023\V1A2028\V1A2028\
Data File : 1A51686.d
Acq On : 26 Dec 2023 6:13 pm
Operator : lianatr
Sample : FC12194-13MS Inst : MSVOA17
Misc : MS55614,V1A2028,,,,,
ALS Vial : 27 Sample Multiplier: 1

Quant Time: Dec 27 00:08:47 2023
Quant Method : X:\Orlando VOA\celinec\December 2023\12-27-2023\V1A2028\METHOD\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration







TIC: 1A51686.d\data.ms

(40) Carbon Tetrachloride ( )

2.958min (-0.000) 32.54ug/L

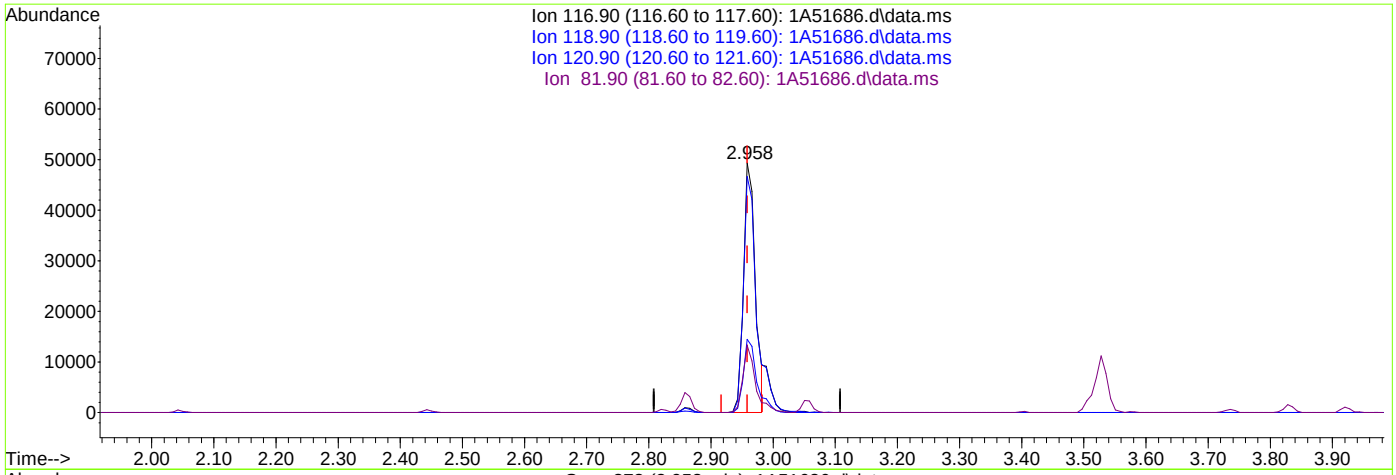
response 72950

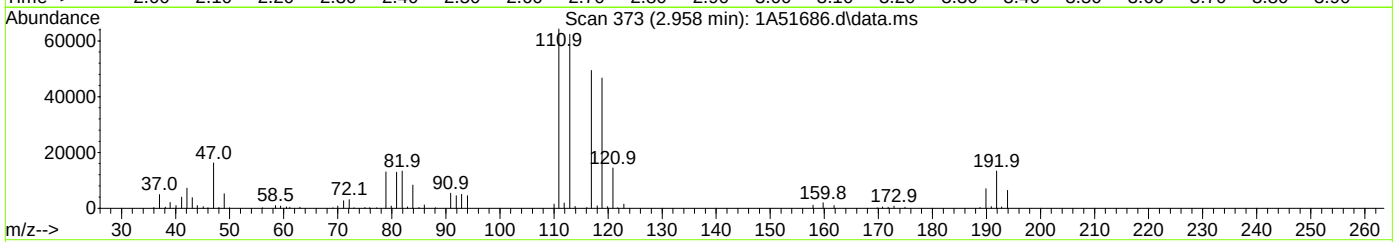
Ion	Exp%	Act%
116.90	100	100
118.90	94.50	94.60
120.90	31.10	29.31
81.90	25.40	26.89

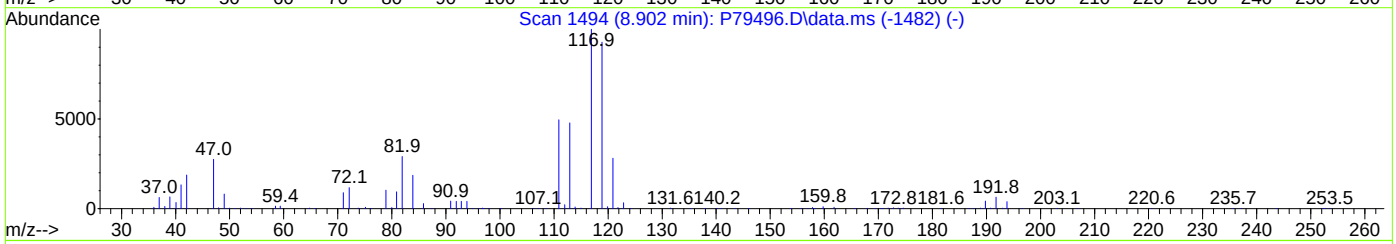
Quantitation Report (Qedit)

Data Path : X:\Orlando VOA\celinec\December 2023\12-27-2023\V1A2028\V1A2028\
Data File : 1A51686.d
Acq On : 26 Dec 2023 6:13 pm
Operator : lianatr
Sample : FC12194-13MS Inst : MSVOA17
Misc : MS55614,V1A2028,,,,,
ALS Vial : 27 Sample Multiplier: 1

Quant Time: Dec 27 00:08:47 2023
Quant Method : X:\Orlando VOA\celinec\December 2023\12-27-2023\V1A2028\METHOD\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration







TIC: 1A51686.d\data.ms

(40) Carbon Tetrachloride ( )

2.958min (-0.000) 29.14ug/L m

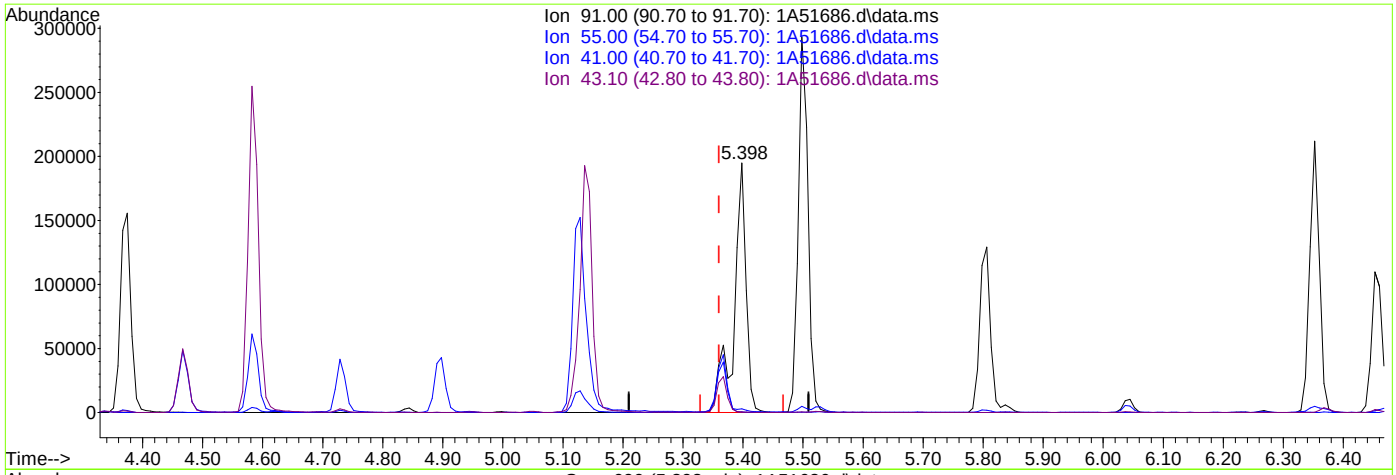
response 65311

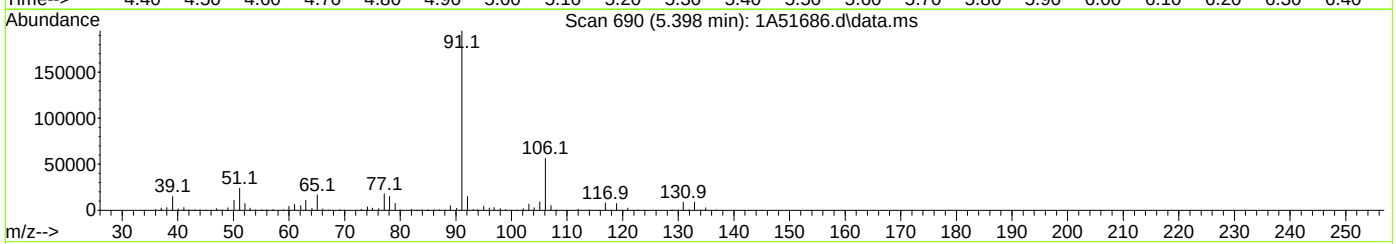
Ion	Exp%	Act%
116.90	100	100
118.90	94.50	94.60
120.90	31.10	29.31
81.90	25.40	26.89

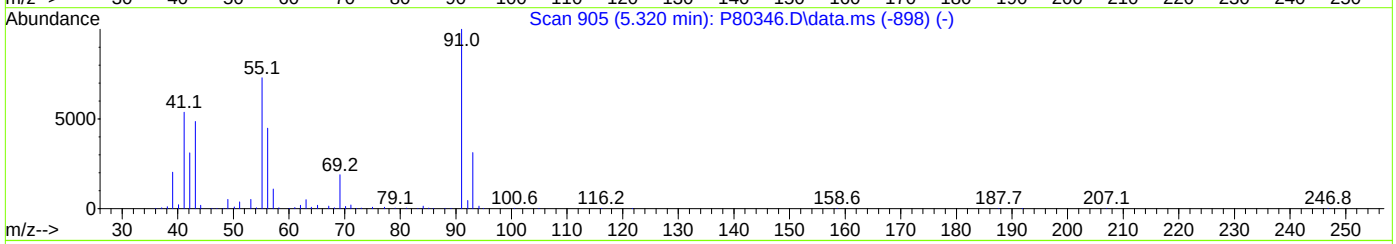
Quantitation Report (Qedit)

Data Path : X:\Orlando VOA\celinec\December 2023\12-27-2023\V1A2028\V1A2028\
Data File : 1A51686.d
Acq On : 26 Dec 2023 6:13 pm
Operator : lianatr
Sample : FC12194-13MS Inst : MSVOA17
Misc : MS55614,V1A2028,,,,,
ALS Vial : 27 Sample Multiplier: 1

Quant Time: Dec 27 00:08:47 2023
Quant Method : X:\Orlando VOA\celinec\December 2023\12-27-2023\V1A2028\METHOD\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration







TIC: 1A51686.d\data.ms

(76) 1-Chlorohexane

5.398min (+0.038) 120.22ug/L

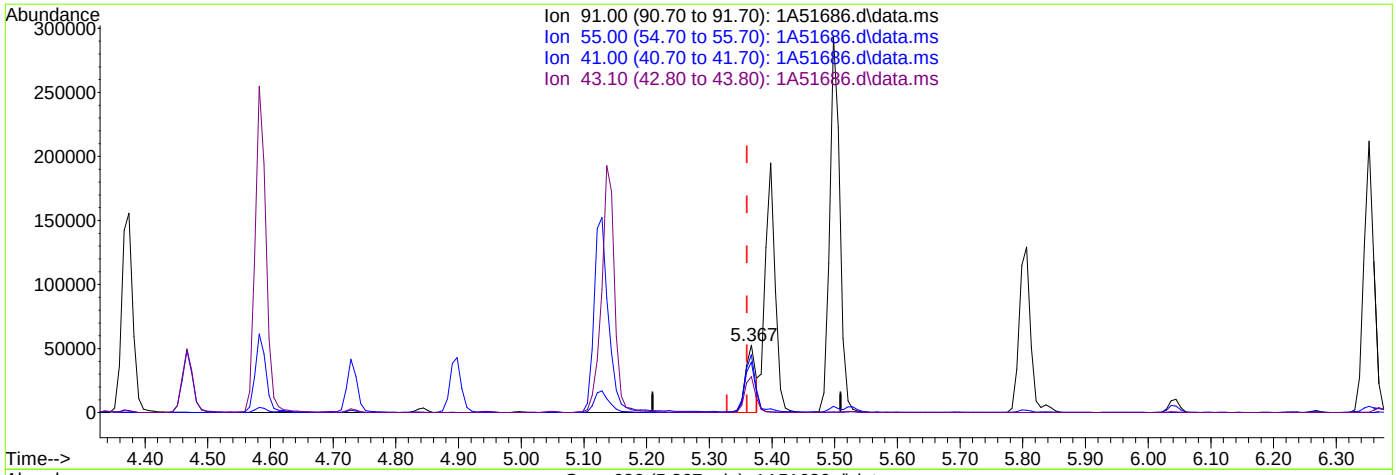
response 276581

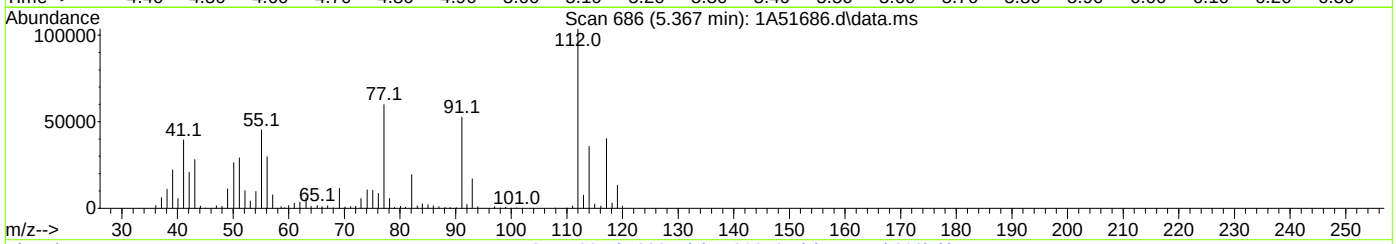
Ion	Exp%	Act%
91.00	100	100
55.00	74.60	0.25#
41.00	53.90	1.16#
43.10	42.90	0.22#

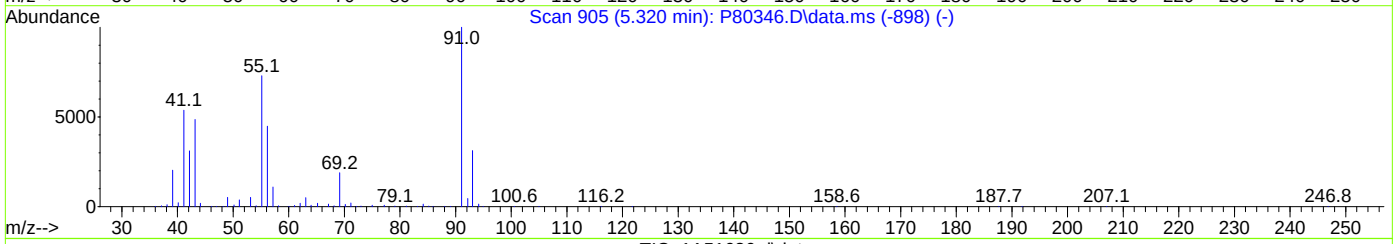
Quantitation Report (Qedit)

Data Path : X:\Orlando VOA\celinec\December 2023\12-27-2023\V1A2028\V1A2028\
Data File : 1A51686.d
Acq On : 26 Dec 2023 6:13 pm
Operator : lianatr
Sample : FC12194-13MS Inst : MSVOA17
Misc : MS55614,V1A2028,,,,,
ALS Vial : 27 Sample Multiplier: 1

Quant Time: Dec 27 00:08:47 2023
Quant Method : X:\Orlando VOA\celinec\December 2023\12-27-2023\V1A2028\METHOD\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration







TIC: 1A51686.d\data.ms

(76) 1-Chlorohexane

5.367min (+0.007) 25.11ug/L m

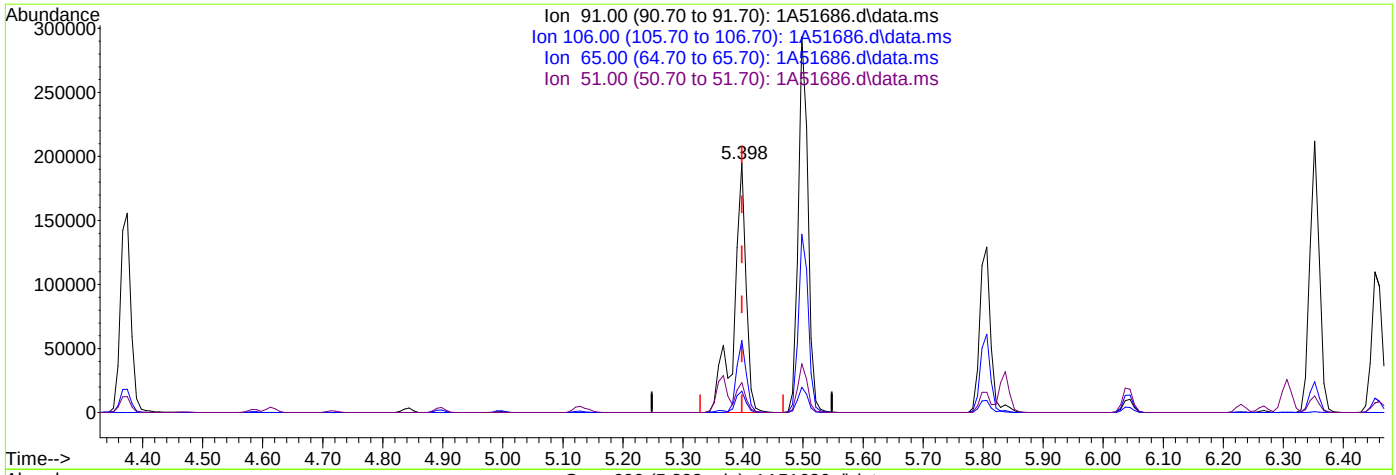
response 57766

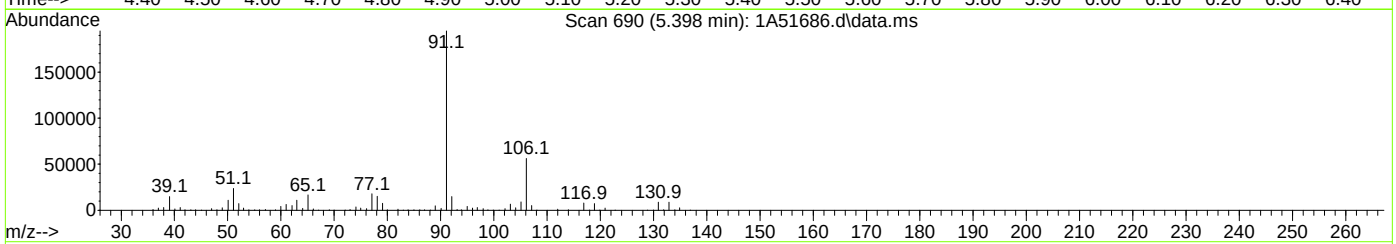
Ion	Exp%	Act%
91.00	100	100
55.00	74.60	86.10
41.00	53.90	75.12#
43.10	42.90	53.49

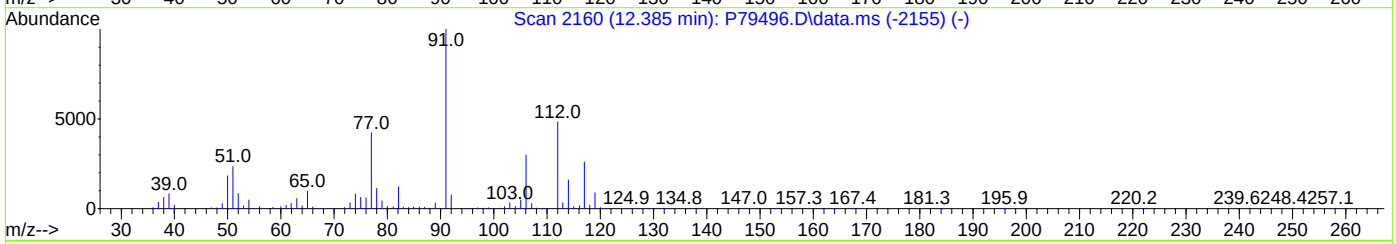
Quantitation Report (Qedit)

Data Path : X:\Orlando VOA\celinec\December 2023\12-27-2023\V1A2028\V1A2028\
Data File : 1A51686.d
Acq On : 26 Dec 2023 6:13 pm
Operator : lianatr
Sample : FC12194-13MS Inst : MSVOA17
Misc : MS55614,V1A2028,,,,,
ALS Vial : 27 Sample Multiplier: 1

Quant Time: Dec 27 00:08:47 2023
Quant Method : X:\Orlando VOA\celinec\December 2023\12-27-2023\V1A2028\METHOD\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration







TIC: 1A51686.d\data.ms

(77) Ethylbenzene

5.398min (-0.000) 38.58ug/L

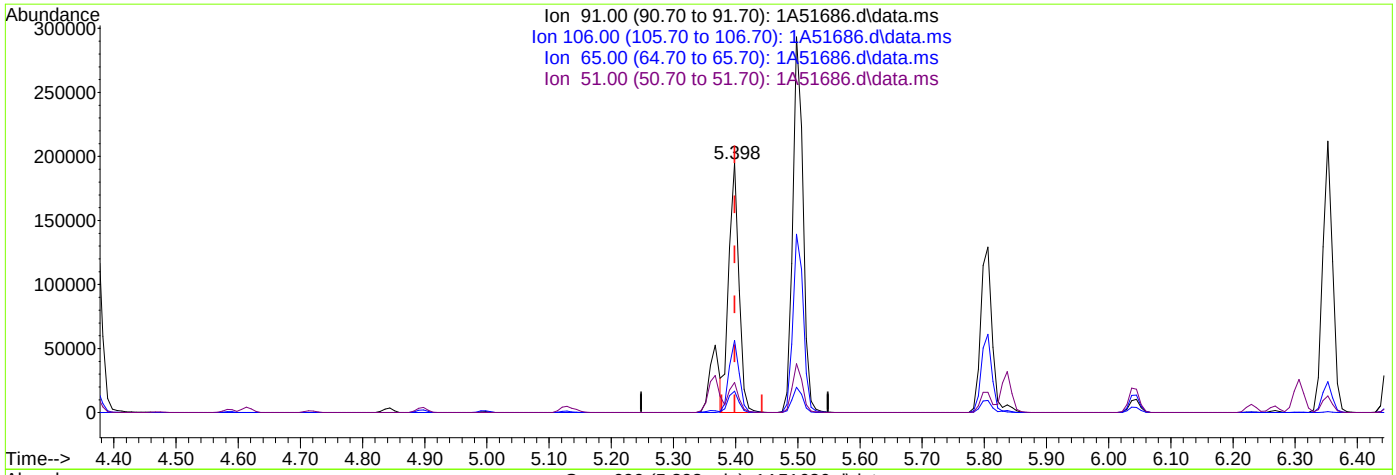
response 276581

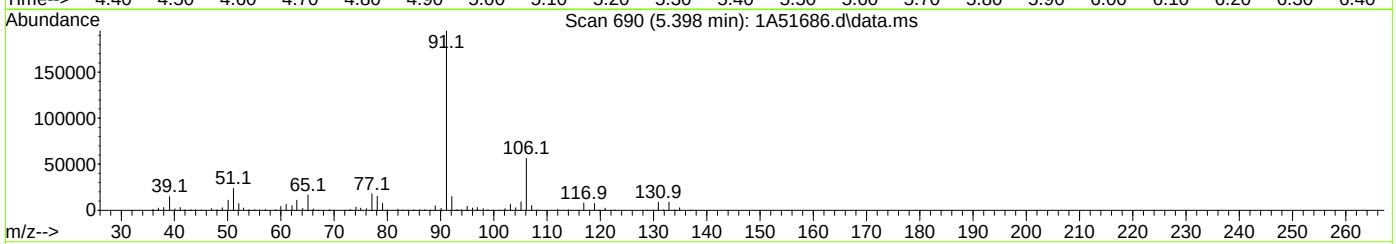
Ion	Exp%	Act%
91.00	100	100
106.00	32.00	28.91
65.00	8.30	8.55
51.00	10.10	12.10

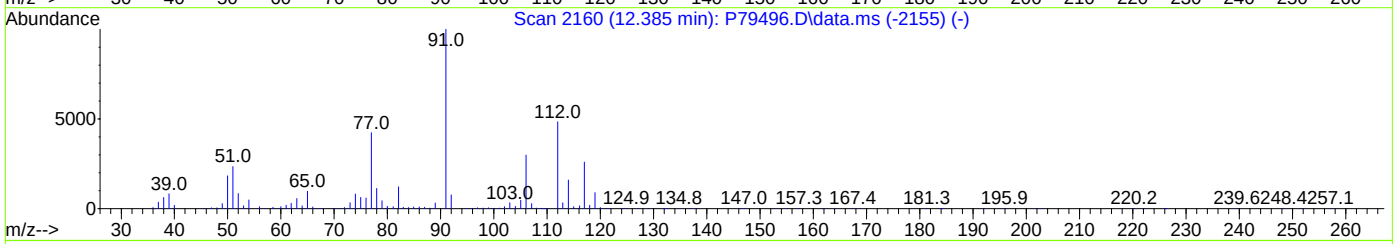
Quantitation Report (Qedit)

Data Path : X:\Orlando VOA\celinec\December 2023\12-27-2023\V1A2028\V1A2028\
Data File : 1A51686.d
Acq On : 26 Dec 2023 6:13 pm
Operator : lianatr
Sample : FC12194-13MS Inst : MSVOA17
Misc : MS55614,V1A2028,,,,,
ALS Vial : 27 Sample Multiplier: 1

Quant Time: Dec 27 00:08:47 2023
Quant Method : X:\Orlando VOA\celinec\December 2023\12-27-2023\V1A2028\METHOD\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration







TIC: 1A51686.d\data.ms

(77) Ethylbenzene

5.398min (-0.000) 30.51ug/L m

response 218690

Ion	Exp%	Act%
91.00	100	100
106.00	32.00	28.91
65.00	8.30	8.55
51.00	10.10	12.10

Manual Integrations APPROVED (compounds with "m" flag)
Neil Christiana 12/27/23 10:23

Quantitation Report (QT Reviewed)

Data Path : X:\Orlando VOA\celinec\December 2023\12-27-2023\V1A2028\V1A2028\
Data File : 1A51687.d
Acq On : 26 Dec 2023 6:37 pm
Operator : lianatr
Sample : FC12194-13MSD Inst : MSVOA17
Misc : MS55614,V1A2028,,,,,
ALS Vial : 28 Sample Multiplier: 1

Quant Time: Dec 27 00:23:09 2023
Quant Method : X:\Orlando VOA\celinec\December 2023\12-27-2023\V1A2028\METHOD\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	3.405	96	293136	50.00	ug/L	0.00
62) Chlorobenzene-d5	5.352	117	212641	50.00	ug/L	0.00
85) 1,4-Dichlorobenzene-d4	7.099	152	107889	50.00	ug/L	0.00
System Monitoring Compounds						
39) Dibromofluoromethane	2.958	113	85221	49.32	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 98.64%			
49) 1,2-Dichloroethane-d4	3.236	65	105971	55.41	ug/L	0.00
Spiked Amount 50.000	Range 79 - 125		Recovery = 110.82%			
63) Toluene-d8	4.336	98	286357	50.43	ug/L	0.00
Spiked Amount 50.000	Range 85 - 112		Recovery = 100.86%			
86) 4-Bromofluorobenzene	6.229	174	89387	49.65	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 99.30%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.019	85	36640	32.7276	ug/L	99
3) Chloromethane	1.134	50	42047	25.0712	ug/L	96
4) 1,3-butadiene	1.181	39	50641	24.0842	ug/L	92
5) Vinyl Chloride	1.173	62	47542	28.3761	ug/L	98
6) Bromomethane	1.342	94	18637	30.7543	ug/L	99
7) Chloroethane	1.404	64	40829	38.2003	ug/L	92
8) Trichlorofluoromethane	1.488	101	81535	34.1838	ug/L	96
9) Ethyl Ether	1.658	59	43910	30.0511	ug/L	96
10) Ethanol	1.712	45	17568	526.4078	ug/L	96
11) 1,2-Dichlorotrifluoroe...	1.742	67	63089	33.1348	ug/L	91
12) 1,1-Dichloroethene	1.758	61	77055	30.4491	ug/L	96
13) Freon 113	1.781	101	54298	37.6152	ug/L	90
14) Carbon Disulfide	1.781	76	132593	28.2710	ug/L	86
15) Iodomethane	1.827	142	31604	28.6609	ug/L	100
16) Acrolein	1.912	56	52837	117.1887	ug/L	100
17) Allyl chloride	1.996	41	62543	25.8237	ug/L	88
18) Methylene Chloride	2.043	49	75664	30.5933	ug/L	89
19) Acetone	2.050	43	95097	130.6329	ug/L	98
20) Methyl acetate	2.127	43	254049	129.1225	ug/L	96
21) trans-1,2-Dichloroethene	2.135	61	73650	28.9588	ug/L	97
22) Hexane	2.196	56	56301	32.3475	ug/L	94
23) Methyl Tert Butyl Ether	2.196	73	139823	29.5337	ug/L	82
24) Acetonitrile	2.273	41	81716m	320.7903	ug/L	
25) Tert Butyl Alcohol	2.212	59	114758	329.3255	ug/L	86
26) Di-isopropyl ether	2.397	45	176019	29.6046	ug/L	92
27) Chloroprene	2.443	53	175093	24.0528	ug/L	96
28) 1,1-Dichloroethane	2.443	63	95393	28.8995	ug/L	99
29) Acrylonitrile	2.443	52	109695	124.4024	ug/L	98
30) ETBE	2.581	59	161659	29.4861	ug/L	95
31) Vinyl acetate	2.558	43	535874	121.1496	ug/L	96
32) cis-1,2-Dichloroethene	2.720	96	51330	28.1205	ug/L	93
33) 2,2-Dichloropropane	2.781	77	66435	28.8487	ug/L	98
34) Bromochloromethane	2.820	128	25293	27.3585	ug/L #	78
35) Cyclohexane	2.858	56	99917	31.3109	ug/L	89
36) Chloroform	2.858	83	94795	31.2894	ug/L	94
37) Ethyl acetate	2.912	43	313155	126.8914	ug/L	96
38) Tetrahydrofuran	2.943	42	24859	26.6267	ug/L	93
40) Carbon Tetrachloride	2.958	117	72781m	30.9615	ug/L	
41) 1,1,1-Trichloroethane	2.989	97	82476	32.4621	ug/L	94
42) 2-Butanone	3.005	43	149381	121.0694	ug/L	91
43) 1,1-Dichloropropene	3.051	75	70032	31.5963	ug/L	87
44) tert-Butyl formate	3.097	59	18230	12.0445	ug/L #	79

Quantitation Report (QT Reviewed)

Data Path : X:\Orlando VOA\celinec\December 2023\12-27-2023\V1A2028\V1A2028\
Data File : 1A51687.d
Acq On : 26 Dec 2023 6:37 pm
Operator : lianatr
Sample : FC12194-13MSD Inst : MSVOA17
Misc : MS55614,V1A2028,,,,,
ALS Vial : 28 Sample Multiplier: 1

Quant Time: Dec 27 00:23:09 2023
Quant Method : X:\Orlando VOA\celinec\December 2023\12-27-2023\V1A2028\METHOD\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration

	Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
45)	Propionitrile	3.143	54	92150	242.6596	ug/L		100
46)	Methacrylonitrile	3.166	41	386661	270.0182	ug/L		98
47)	Benzene	3.182	78	195944	30.1118	ug/L		97
48)	TAME	3.251	73	132721	28.8893	ug/L		89
50)	1,2-Dichloroethane	3.274	62	78385	32.2128	ug/L		93
51)	Isobutyl Alcohol	3.259	43	114512	547.2785	ug/L		97
52)	Tert Amyl Alcohol	3.328	59	72301	252.3598	ug/L		89
53)	Trichloroethene	3.513	95	55332	30.4157	ug/L		95
54)	Methylcyclohexane	3.528	83	86565	29.8175	ug/L		93
55)	Dibromomethane	3.736	93	34930	30.0207	ug/L	#	80
56)	1,2-Dichloropropane	3.790	63	53733	29.1684	ug/L		96
57)	Bromodichloromethane	3.828	83	64985	28.4389	ug/L	#	95
58)	Methyl methacrylate	3.920	41	49900	23.5237	ug/L		88
59)	1,4-Dioxane	3.944	88	13295	534.2885	ug/L		82
60)	2-Chloroethyl vinyl ether	4.205	63	457	0.4284	ug/L	#	49
61)	cis-1,3-Dichloropropene	4.213	75	71797	27.0137	ug/L		84
64)	Toluene	4.375	91	210709	30.4851	ug/L		96
65)	2-Nitropropane	4.467	41	65605	91.2661	ug/L		87
66)	4-Methyl-2-pentanone	4.582	43	323553	128.8892	ug/L		96
67)	trans-1,3-Dichloropropene	4.613	75	65676	26.8397	ug/L		86
68)	Tetrachloroethene	4.629	166	58810	30.0739	ug/L		93
69)	Ethyl methacrylate	4.729	69	53777	26.6479	ug/L		82
70)	1,1,2-Trichloroethane	4.713	83	38713	27.7828	ug/L		96
71)	Dibromochloromethane	4.844	129	50856	28.7061	ug/L		96
72)	1,3-Dichloropropane	4.898	76	78554	30.6244	ug/L		88
73)	1,2-Dibromoethane	4.998	107	48708	27.2447	ug/L		96
74)	3,3-Dimethyl-1-Butanol	5.129	57	367239	1097.6347	ug/L		95
75)	2-hexanone	5.137	43	304197	125.1185	ug/L		89
76)	1-Chlorohexane	5.367	91	64780m	26.9831	ug/L		
77)	Ethylbenzene	5.398	91	233706m	31.2439	ug/L		
78)	Chlorobenzene	5.367	112	134682	29.4236	ug/L		96
79)	1,1,1,2-Tetrachloroethane	5.414	131	48310	29.0117	ug/L		98
80)	m,p-Xylene	5.498	91	360072	60.7068	ug/L		97
81)	o-Xylene	5.806	91	180111	28.5340	ug/L		98
82)	Styrene	5.837	104	134317	28.0804	ug/L		94
83)	Bromoform	5.837	173	30455	25.4616	ug/L		97
84)	Isopropylbenzene	6.045	105	212927	28.9820	ug/L		99
87)	cis-1,4-Dichloro-2-butene	6.268	53	16580	25.7479	ug/L	#	81
88)	n-Propylbenzene	6.353	91	256751	30.4566	ug/L		95
89)	Bromobenzene	6.306	156	55740	29.7818	ug/L		90
90)	1,1,2,2-Tetrachloroethane	6.376	83	64726	29.6162	ug/L		95
91)	1,3,5-Trimethylbenzene	6.506	105	174854	30.2188	ug/L		99
92)	2-Chlorotoluene	6.453	91	144790	29.9178	ug/L		99
93)	trans-1,4-Dichloro-2-B...	6.506	53	22127	26.2525	ug/L		80
94)	1,2,3-Trichloropropane	6.468	110	19529	32.4133	ug/L	#	79
95)	Cyclohexanone	6.483	55	12181	107.2751	ug/L		92
96)	4-Chlorotoluene	6.583	91	151548	30.3459	ug/L		96
97)	tert-Butylbenzene	6.753	91	103225	31.5472	ug/L		96
98)	1,2,4-Trimethylbenzene	6.799	105	166737	30.0721	ug/L		99
99)	Pentachloroethane	6.745	167	25130	27.3265	ug/L	#	54
100)	sec-Butylbenzene	6.891	105	209518	28.6602	ug/L		97
101)	4-Isopropyltoluene	7.007	119	177969	28.3818	ug/L		99
102)	1,3-Dichlorobenzene	7.038	146	94881	28.0970	ug/L		96
103)	1,2,3-Trimethylbenzene	7.138	105	161575	29.3355	ug/L		98
104)	1,4-Dichlorobenzene	7.107	146	98418	28.8002	ug/L		96
105)	n-Butylbenzene	7.338	92	86053	30.5688	ug/L		94
106)	Benzyl Chloride	7.299	126	14866	18.9824	ug/L		98
107)	1,2-Dichlorobenzene	7.430	146	86050	28.6224	ug/L		96

Quantitation Report (QT Reviewed)

Data Path : X:\Orlando VOA\celinec\December 2023\12-27-2023\V1A2028\V1A2028\
Data File : 1A51687.d
Acq On : 26 Dec 2023 6:37 pm
Operator : lianatr
Sample : FC12194-13MSD Inst : MSVOA17
Misc : MS55614,V1A2028,,,,,
ALS Vial : 28 Sample Multiplier: 1

Quant Time: Dec 27 00:23:09 2023
Quant Method : X:\Orlando VOA\celinec\December 2023\12-27-2023\V1A2028\METHOD\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration

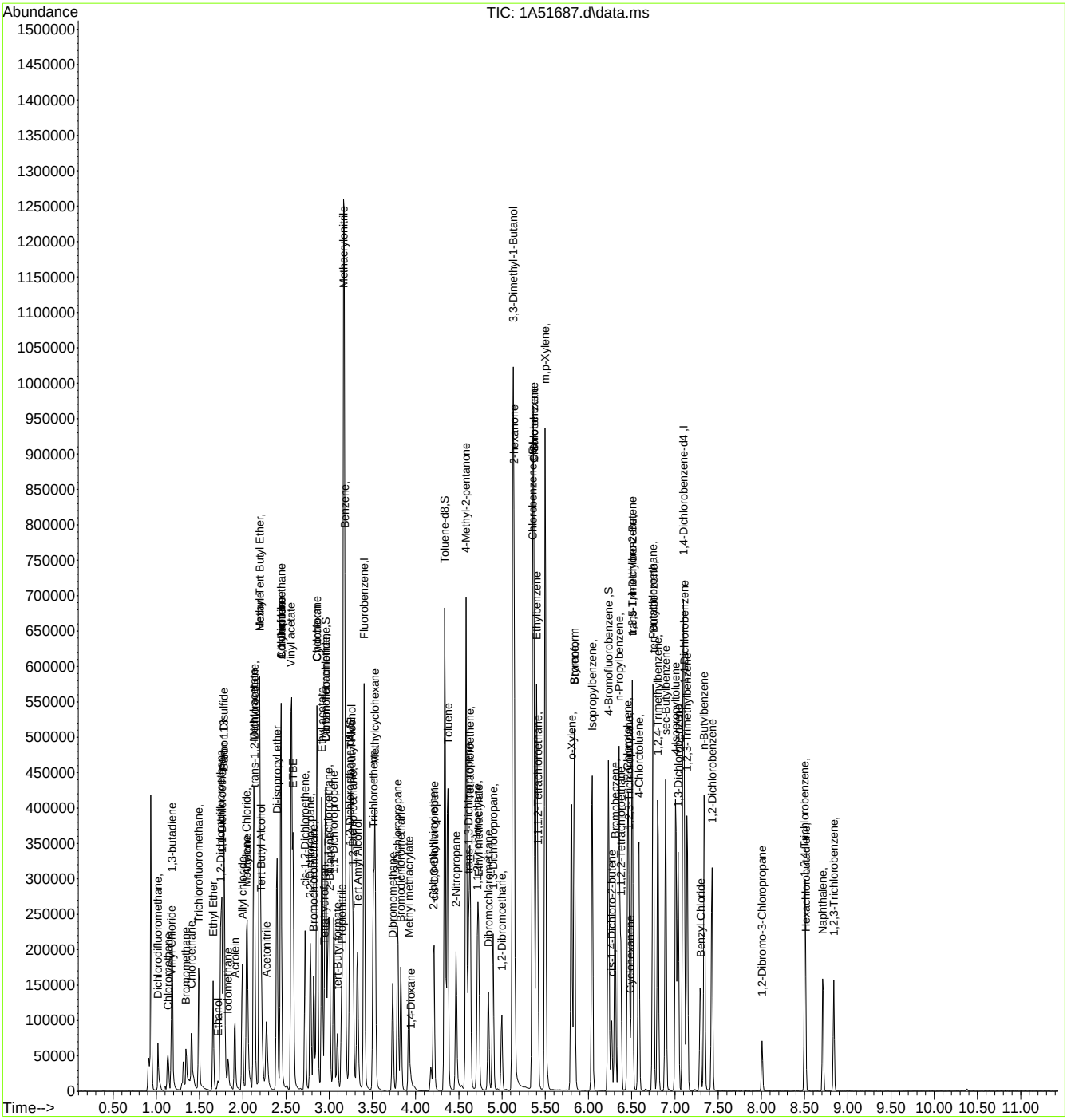
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
108) 1,2-Dibromo-3-Chloropr...	8.007	75	9867	28.3576 ug/L #	83
109) Hexachlorobutadiene	8.515	225	19480	27.9361 ug/L	95
110) 1,2,4-Trichlorobenzene	8.500	180	37064	22.2260 ug/L	95
111) Naphthalene	8.708	128	83594	19.5545 ug/L	95
112) 1,2,3-Trichlorobenzene	8.838	180	28052	21.1643 ug/L	93

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : X:\Orlando VOA\celinec\December 2023\12-27-2023\V1A2028\V1A2028\
Data File : 1A51687.d
Acq On : 26 Dec 2023 6:37 pm
Operator : lianatr
Sample : FC12194-13MSD Inst : MSVOA17
Misc : MS55614,V1A2028,,,,,
ALS Vial : 28 Sample Multiplier: 1

Quant Time: Dec 27 00:23:09 2023
Quant Method : X:\Orlando VOA\celinec\December 2023\12-27-2023\V1A2028\METHOD\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration



Manual Integration Approval Summary

Sample Number: FC12194-13MSD
Lab FileID: 1A51687.D
Injection Time: 12/26/23 18:37

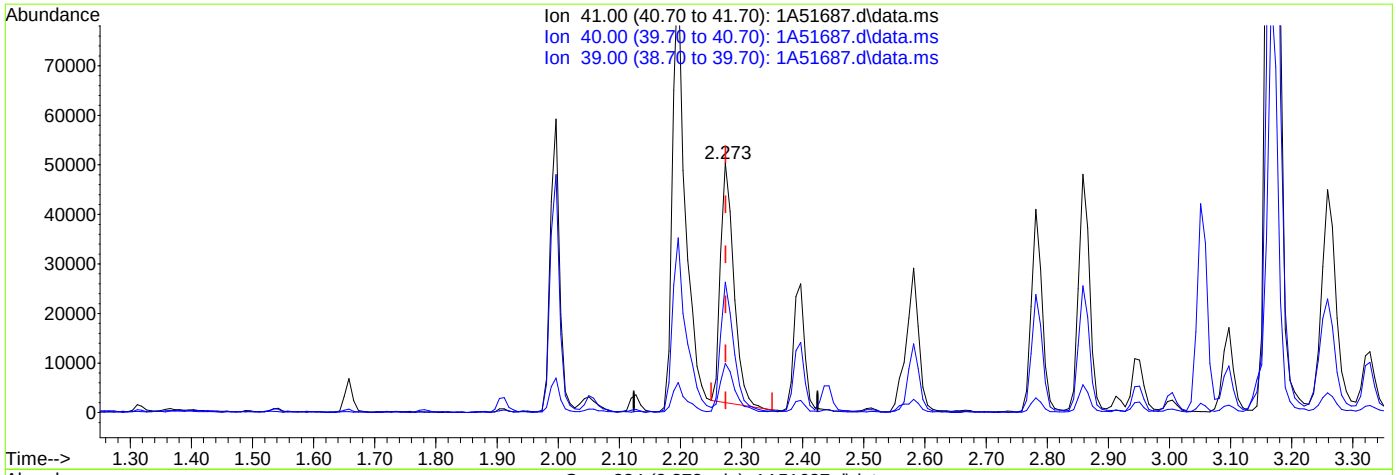
Method: SW846 8260D
Analyst approved: 12/26/23 19:31 Celine Celis
Supervisor approved: 12/27/23 10:23 Neil Christiana

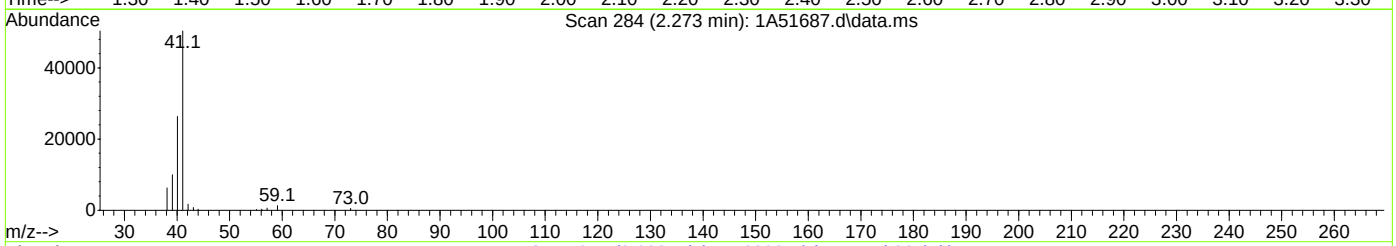
Parameter	CAS	Sig#	R.T. (min.)	Reason
Acetonitrile	75-05-8		2.27	Poor instrument integration
Carbon Tetrachloride	56-23-5		2.96	Overlapping peak
1-Chlorohexane	544-10-5		5.37	Overlapping peak
Ethylbenzene	100-41-4		5.40	Overlapping peak

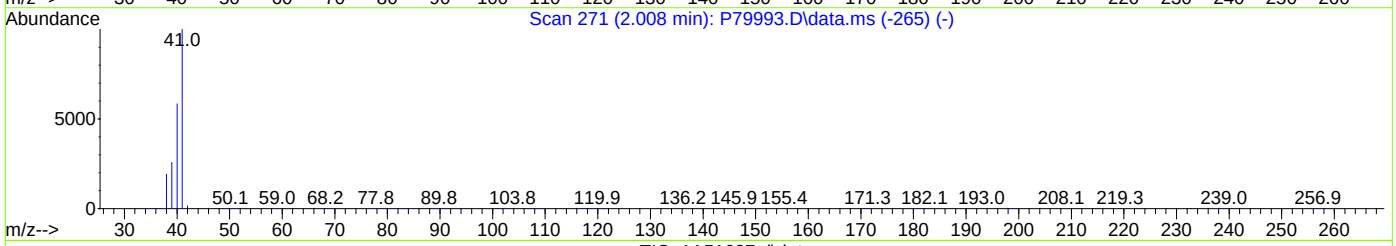
Quantitation Report (Qedit)

Data Path : X:\Orlando VOA\celinec\December 2023\12-27-2023\V1A2028\V1A2028\
Data File : 1A51687.d
Acq On : 26 Dec 2023 6:37 pm
Operator : lianatr
Sample : FC12194-13MSD Inst : MSVOA17
Misc : MS55614,V1A2028,,,,,
ALS Vial : 28 Sample Multiplier: 1

Quant Time: Dec 27 00:08:52 2023
Quant Method : X:\Orlando VOA\celinec\December 2023\12-27-2023\V1A2028\METHOD\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration







TIC: 1A51687.d\data.ms

(24) Acetonitrile

2.273min (-0.001) 285.91ug/L

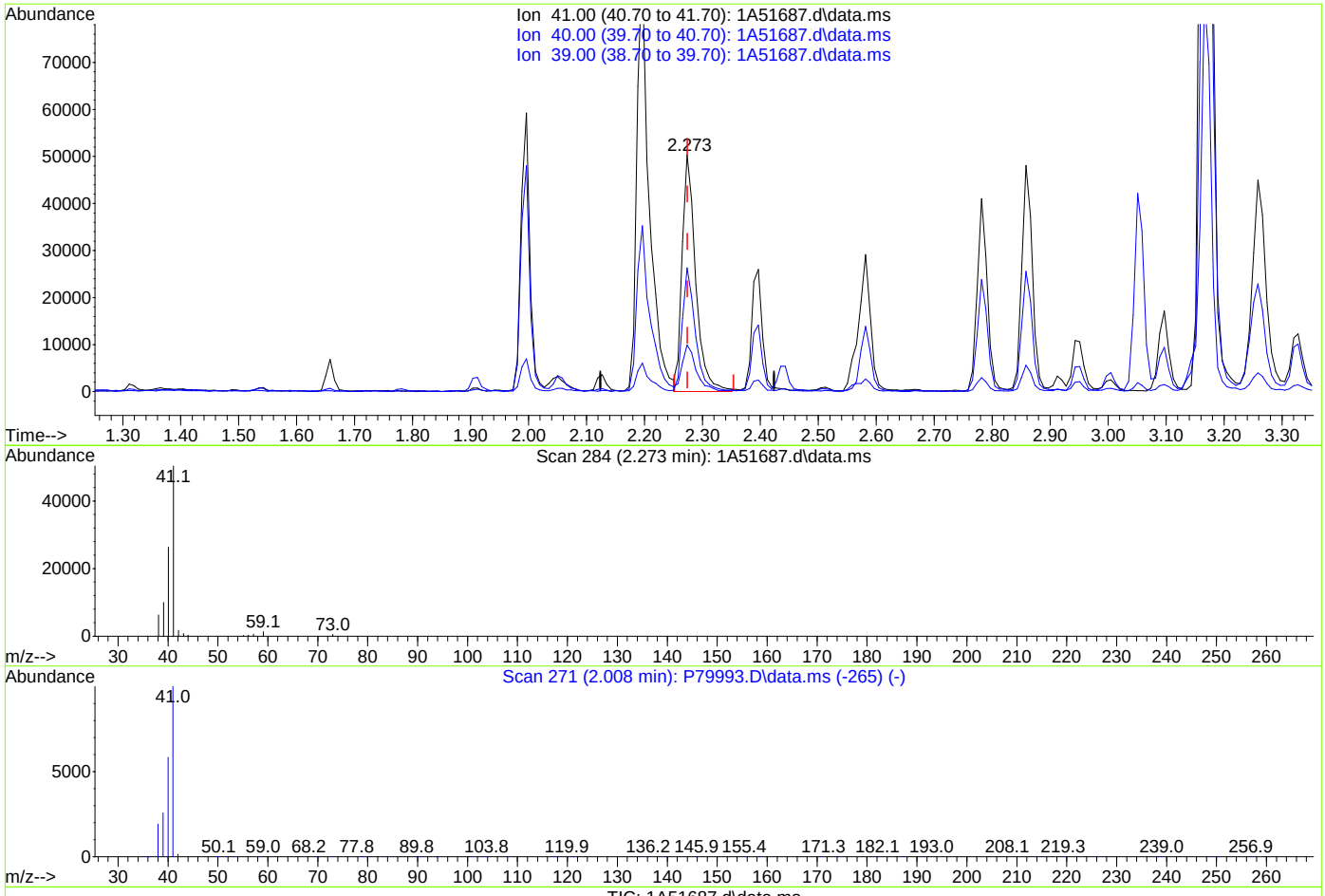
response 72830

Ion	Exp%	Act%
41.00	100	100
40.00	54.10	52.21
39.00	21.10	19.27
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : X:\Orlando VOA\celinec\December 2023\12-27-2023\V1A2028\V1A2028\
Data File : 1A51687.d
Acq On : 26 Dec 2023 6:37 pm
Operator : lianatr
Sample : FC12194-13MSD Inst : MSVOA17
Misc : MS55614,V1A2028,,,,,
ALS Vial : 28 Sample Multiplier: 1

Quant Time: Dec 27 00:08:52 2023
Quant Method : X:\Orlando VOA\celinec\December 2023\12-27-2023\V1A2028\METHOD\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration



TIC: 1A51687.d\data.ms

(24) Acetonitrile

2.273min (-0.001) 320.79ug/L m

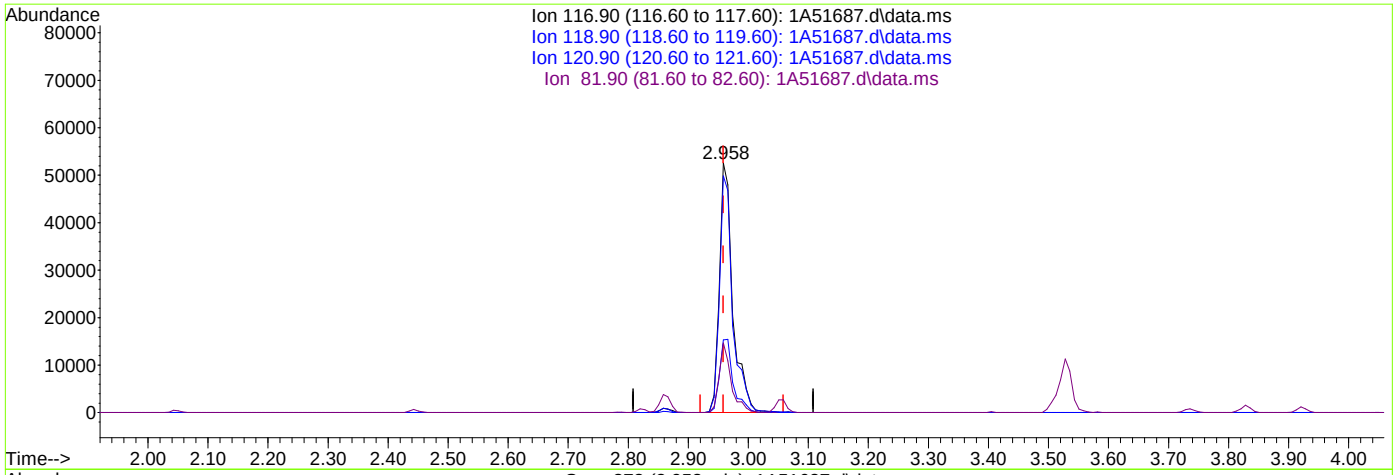
response 81716

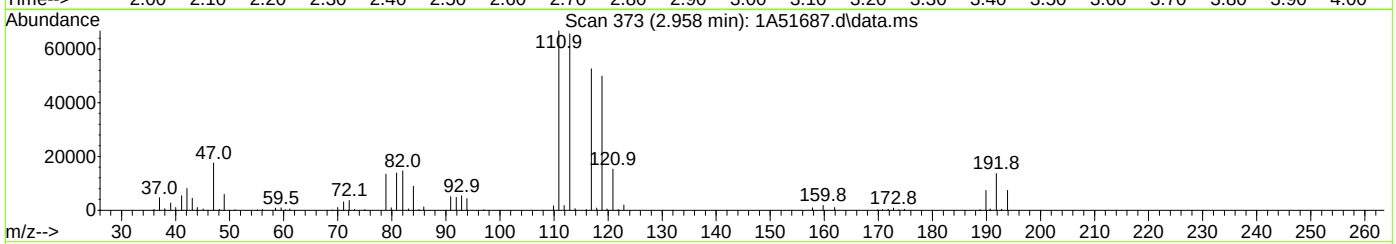
Ion	Exp%	Act%
41.00	100	100
40.00	54.10	52.26
39.00	21.10	19.69
0.00	0.00	0.00

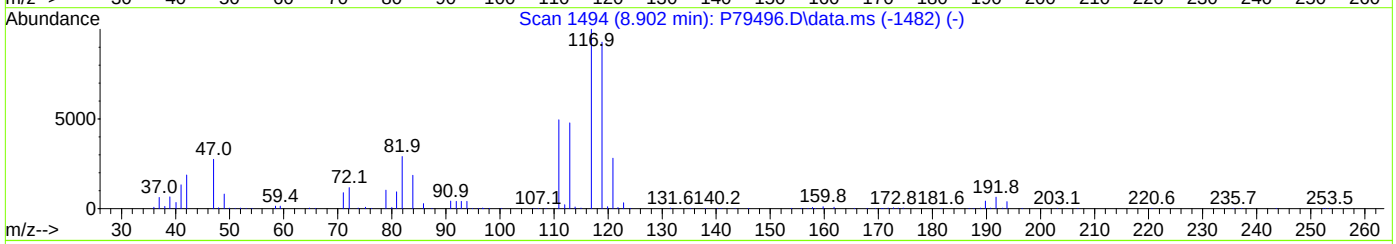
Quantitation Report (Qedit)

Data Path : X:\Orlando VOA\celinec\December 2023\12-27-2023\V1A2028\V1A2028\
Data File : 1A51687.d
Acq On : 26 Dec 2023 6:37 pm
Operator : lianatr
Sample : FC12194-13MSD Inst : MSVOA17
Misc : MS55614,V1A2028,,,,,
ALS Vial : 28 Sample Multiplier: 1

Quant Time: Dec 27 00:08:52 2023
Quant Method : X:\Orlando VOA\celinec\December 2023\12-27-2023\V1A2028\METHOD\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration







TIC: 1A51687.d\data.ms

(40) Carbon Tetrachloride ( )

2.958min (-0.000) 34.64ug/L

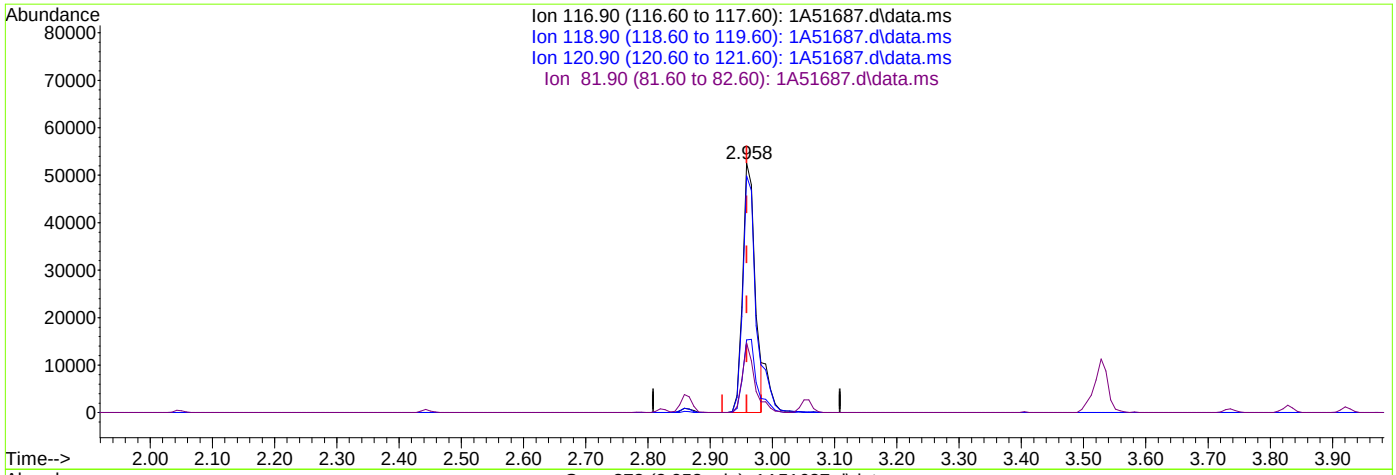
response 81434

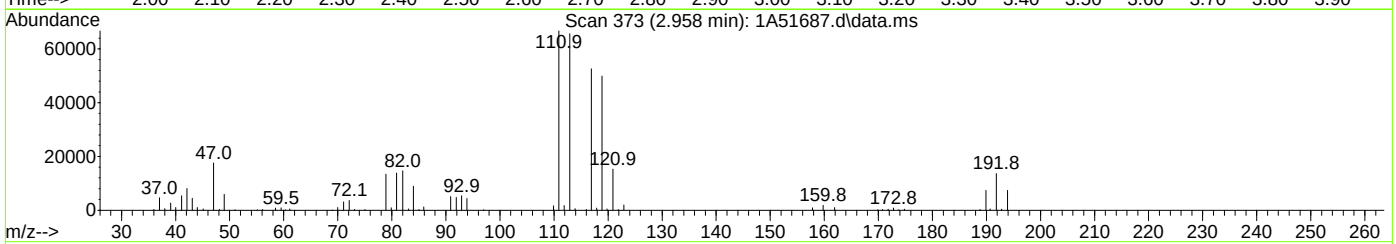
Ion	Exp%	Act%
116.90	100	100
118.90	94.50	94.83
120.90	31.10	29.12
81.90	25.40	27.92

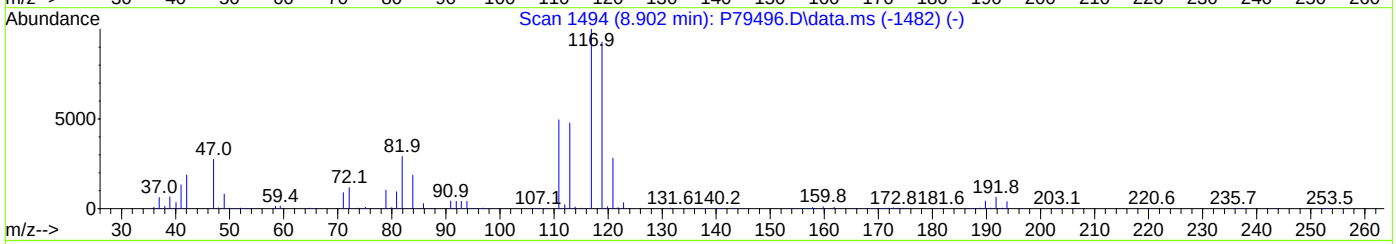
Quantitation Report (Qedit)

Data Path : X:\Orlando VOA\celinec\December 2023\12-27-2023\V1A2028\V1A2028\
Data File : 1A51687.d
Acq On : 26 Dec 2023 6:37 pm
Operator : lianatr
Sample : FC12194-13MSD Inst : MSVOA17
Misc : MS55614,V1A2028,,,,,
ALS Vial : 28 Sample Multiplier: 1

Quant Time: Dec 27 00:08:52 2023
Quant Method : X:\Orlando VOA\celinec\December 2023\12-27-2023\V1A2028\METHOD\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration







TIC: 1A51687.d\data.ms

(40) Carbon Tetrachloride ( )

2.958min (-0.000) 30.96ug/L m

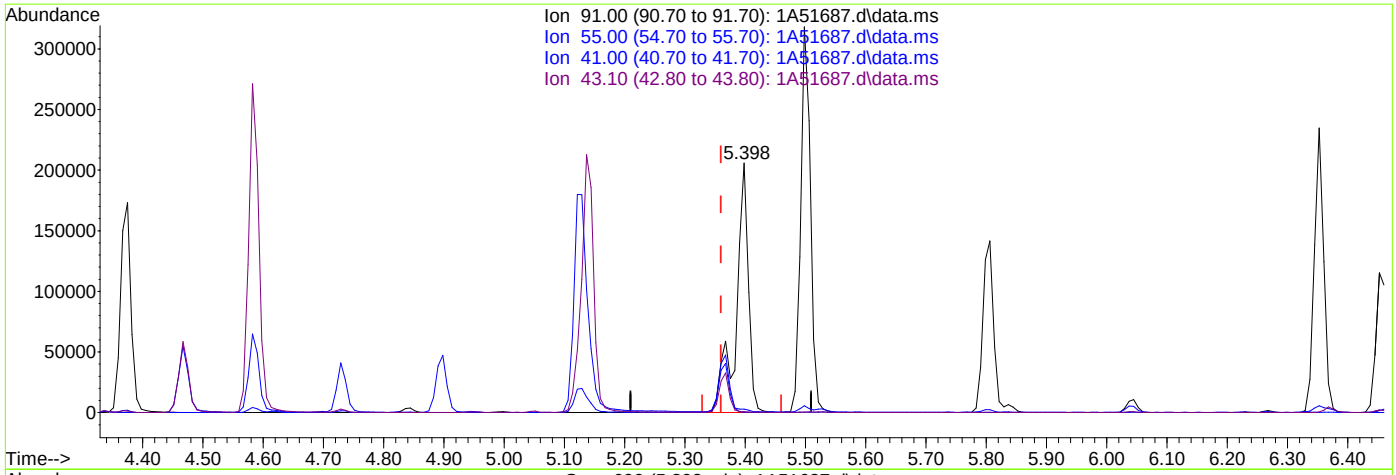
response 72781

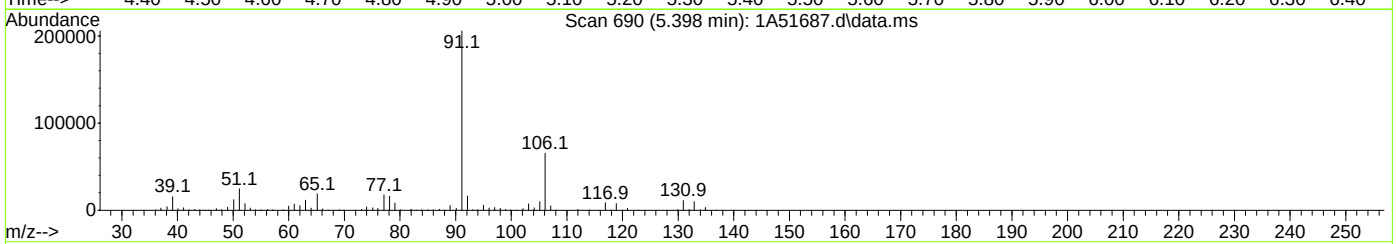
Ion	Exp%	Act%
116.90	100	100
118.90	94.50	94.83
120.90	31.10	29.12
81.90	25.40	27.92

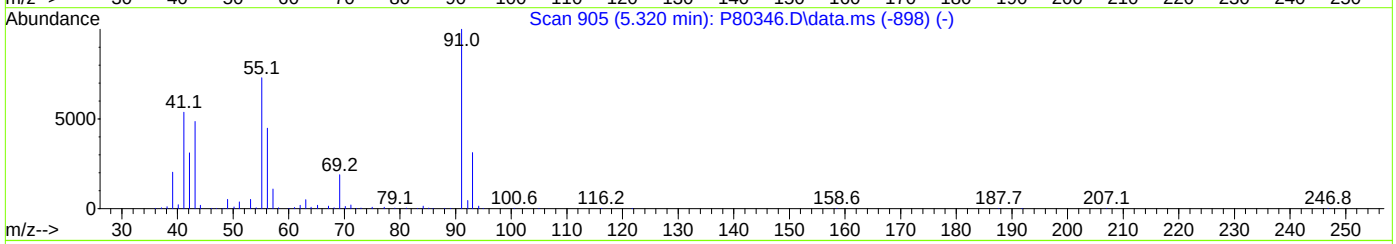
Quantitation Report (Qedit)

Data Path : X:\Orlando VOA\celinec\December 2023\12-27-2023\V1A2028\V1A2028\
Data File : 1A51687.d
Acq On : 26 Dec 2023 6:37 pm
Operator : lianatr
Sample : FC12194-13MSD Inst : MSVOA17
Misc : MS55614,V1A2028,,,,,
ALS Vial : 28 Sample Multiplier: 1

Quant Time: Dec 27 00:08:52 2023
Quant Method : X:\Orlando VOA\celinec\December 2023\12-27-2023\V1A2028\METHOD\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration







TIC: 1A51687.d\data.ms

(76) 1-Chlorohexane

5.398min (+0.038) 124.33ug/L

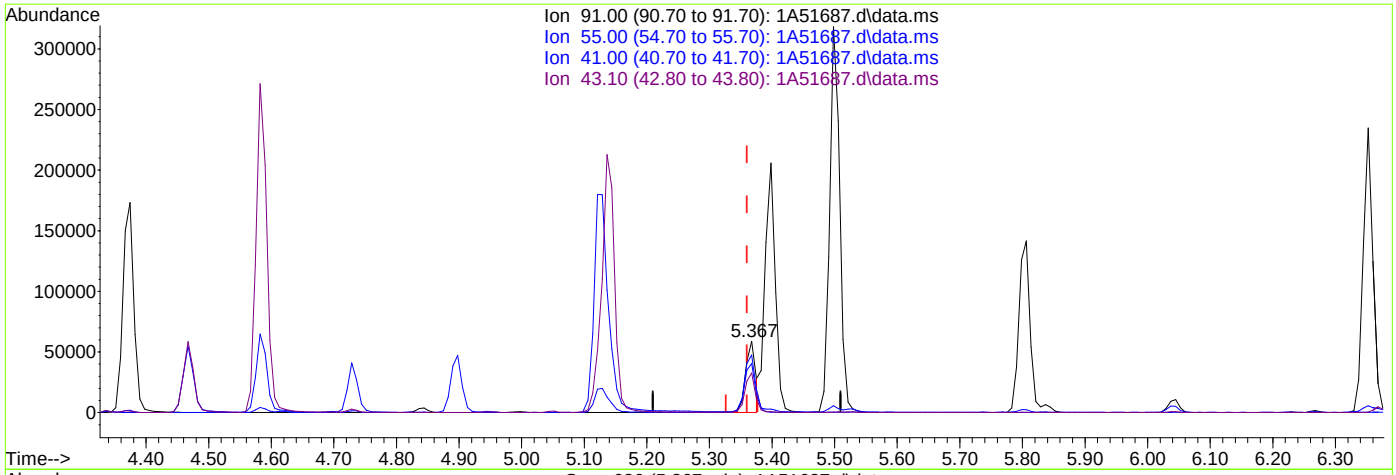
response 298496

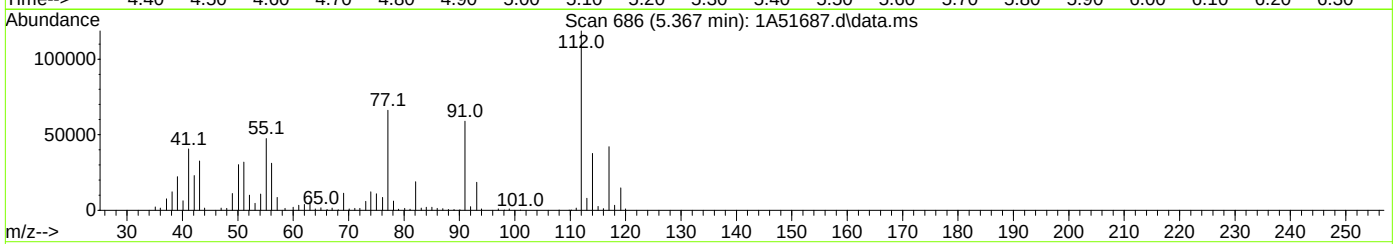
Ion	Exp%	Act%
91.00	100	100
55.00	74.60	0.16#
41.00	53.90	1.14#
43.10	42.90	0.25#

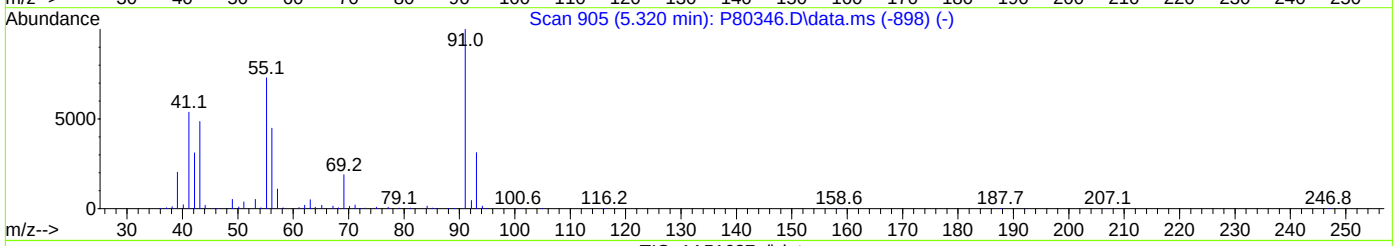
Quantitation Report (Qedit)

Data Path : X:\Orlando VOA\celinec\December 2023\12-27-2023\V1A2028\V1A2028\
Data File : 1A51687.d
Acq On : 26 Dec 2023 6:37 pm
Operator : lianatr
Sample : FC12194-13MSD Inst : MSVOA17
Misc : MS55614,V1A2028,,,,,
ALS Vial : 28 Sample Multiplier: 1

Quant Time: Dec 27 00:08:52 2023
Quant Method : X:\Orlando VOA\celinec\December 2023\12-27-2023\V1A2028\METHOD\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration







TIC: 1A51687.d\data.ms

(76) 1-Chlorohexane

5.367min (+0.008) 26.98ug/L m

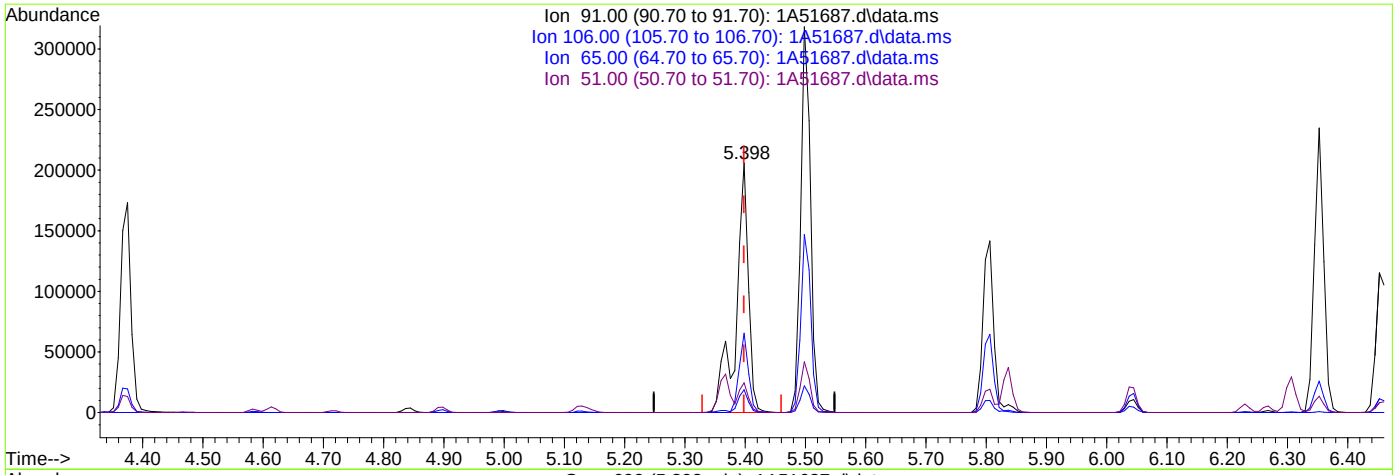
response 64780

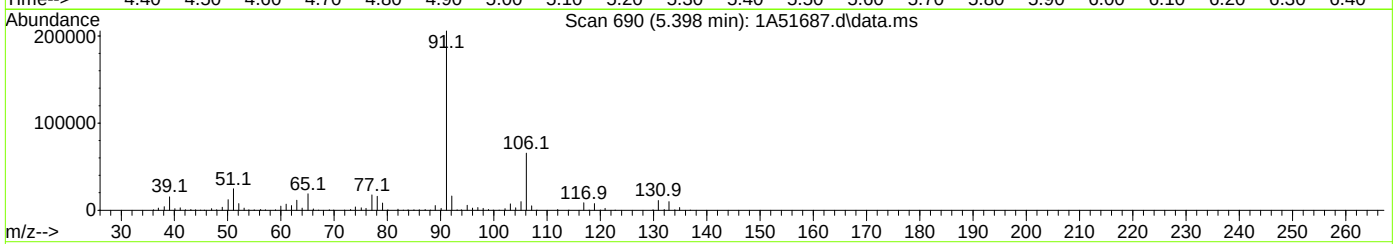
Ion	Exp%	Act%
91.00	100	100
55.00	74.60	80.54
41.00	53.90	68.99
43.10	42.90	55.46

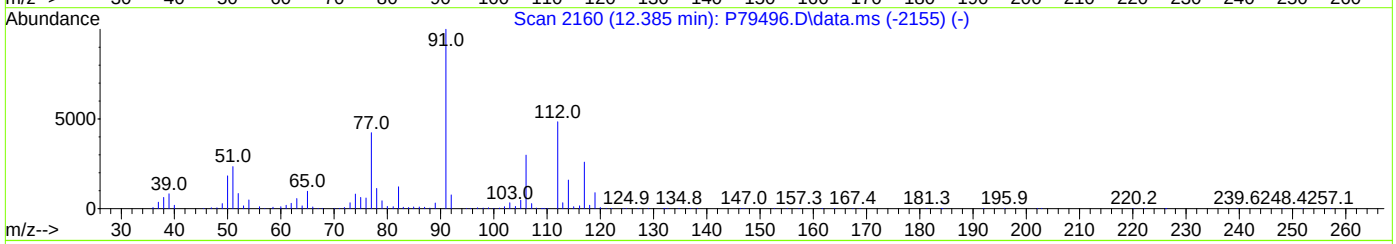
Quantitation Report (Qedit)

Data Path : X:\Orlando VOA\celinec\December 2023\12-27-2023\V1A2028\V1A2028\
Data File : 1A51687.d
Acq On : 26 Dec 2023 6:37 pm
Operator : lianatr
Sample : FC12194-13MSD Inst : MSVOA17
Misc : MS55614,V1A2028,,,,,
ALS Vial : 28 Sample Multiplier: 1

Quant Time: Dec 27 00:08:52 2023
Quant Method : X:\Orlando VOA\celinec\December 2023\12-27-2023\V1A2028\METHOD\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration







TIC: 1A51687.d\data.ms

(77) Ethylbenzene

5.398min (-0.000) 39.91ug/L

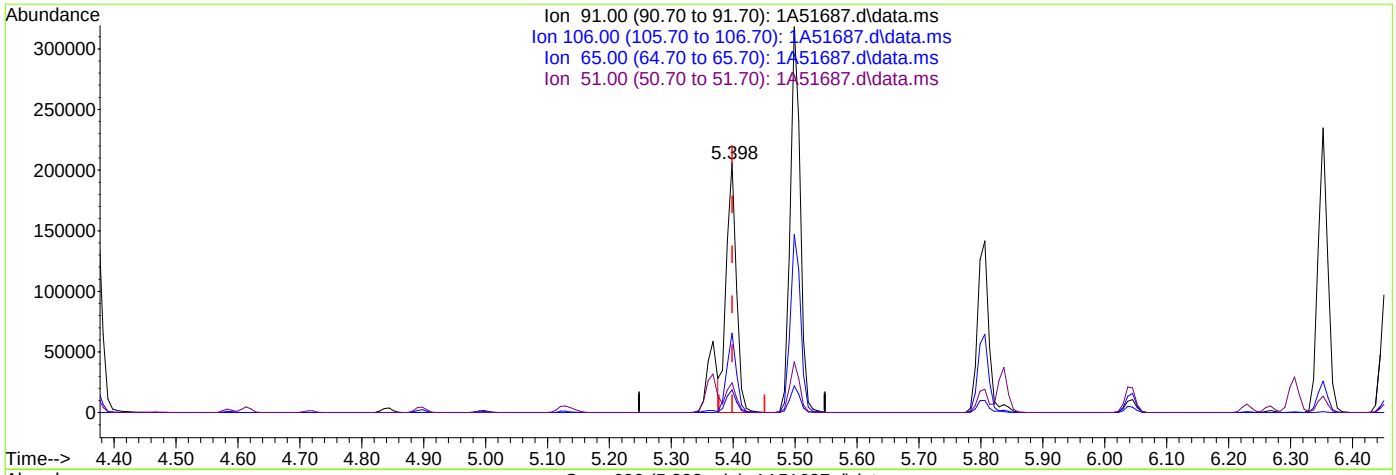
response 298496

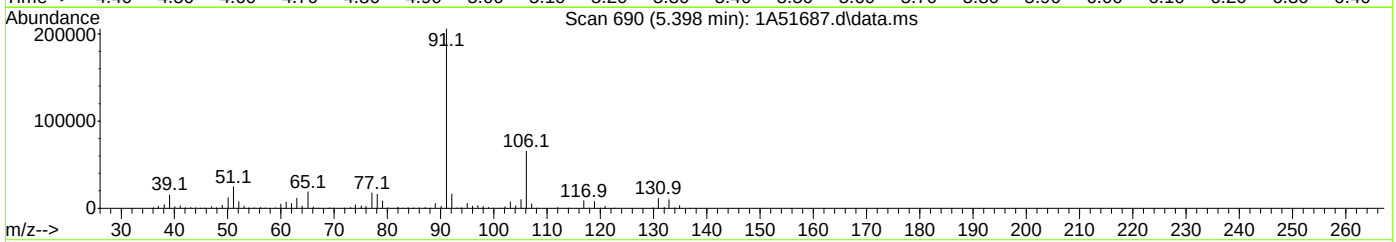
Ion	Exp%	Act%
91.00	100	100
106.00	32.00	31.78
65.00	8.30	9.14
51.00	10.10	11.91

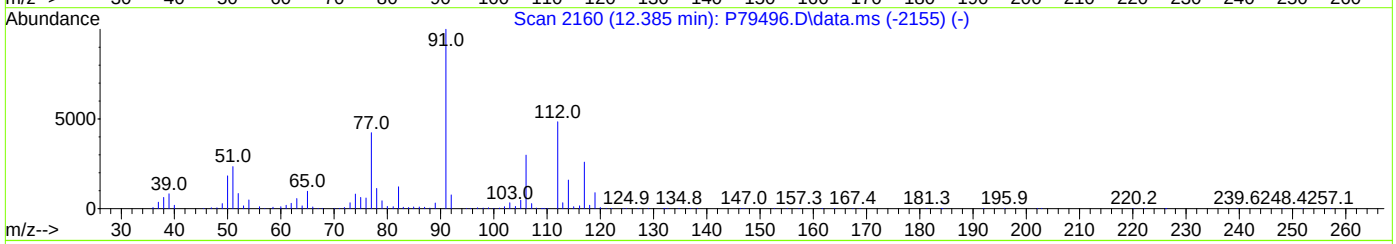
Quantitation Report (Qedit)

Data Path : X:\Orlando VOA\celinec\December 2023\12-27-2023\V1A2028\V1A2028\
Data File : 1A51687.d
Acq On : 26 Dec 2023 6:37 pm
Operator : lianatr
Sample : FC12194-13MSD Inst : MSVOA17
Misc : MS55614,V1A2028,,,,,
ALS Vial : 28 Sample Multiplier: 1

Quant Time: Dec 27 00:08:52 2023
Quant Method : X:\Orlando VOA\celinec\December 2023\12-27-2023\V1A2028\METHOD\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration







TIC: 1A51687.d\data.ms

(77) Ethylbenzene

5.398min (-0.000) 31.24ug/L m

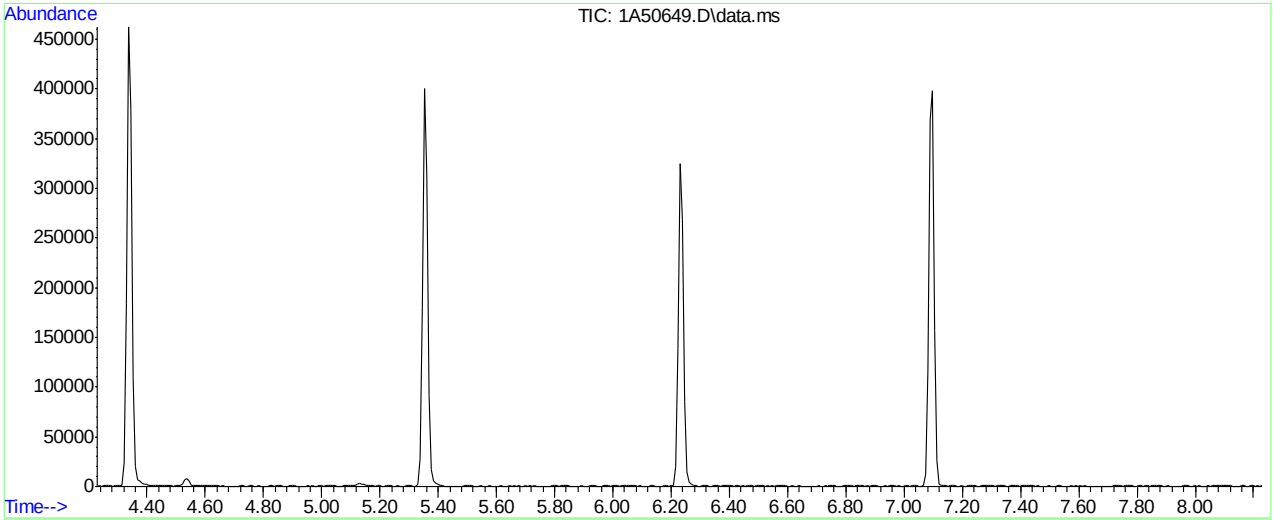
response 233706

Ion	Exp%	Act%
91.00	100	100
106.00	32.00	31.78
65.00	8.30	9.14
51.00	10.10	11.91

Methods: SW-846 8260B

Data File : C:\msdchem\1\DATA\11-15-2023\1A50649.D Vial: 1
Acq On : 15 Nov 2023 5:14 am Operator: jeniferw
Sample : BFB Inst : MSVOA17
Misc : MS55275,V1A1985,,,,, Multiplr: 1.00
MS Integration Params: big.p

Method : C:\msdchem\1\MET...V1A_11-15-2023.M (RTE Integrator)
Title : SW-846 Method 5035A/8260B



AutoFind: Scans 797, 798, 799; Background Corrected with Scan 792

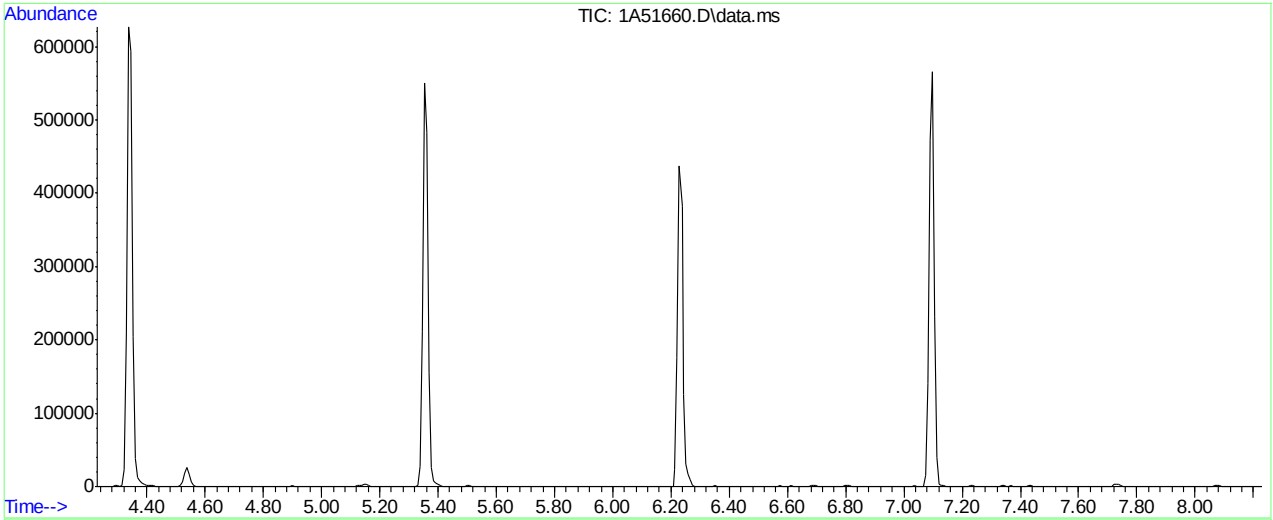
Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	21.9	10728	PASS
75	95	30	60	47.3	23191	PASS
95	95	100	100	100.0	49019	PASS
96	95	5	9	6.5	3164	PASS
173	174	0.00	2	0.8	350	PASS
174	95	50	100	84.7	41496	PASS
175	174	5	9	7.7	3204	PASS
176	174	95	101	100.3	41616	PASS
177	176	5	9	6.9	2859	PASS

1A50649.D V1A_11-15-2023.M Wed Nov 15 14:33:18 2023

Methods: SW-846 8260B

Data File : C:\msdchem\1\DATA\12-26-2023\1A51660.D Vial: 1
Acq On : 26 Dec 2023 7:39 am Operator: lianatr
Sample : BFB Inst : MSVOA17
Misc : MS55601,V1A2028,,,,, Multiplr: 1.00
MS Integration Params: big.p

Method : C:\msdchem\1\MET...V1A_11-15-2023.M (RTE Integrator)
Title : SW-846 Method 5035A/8260B



AutoFind: Scans 797, 798, 799; Background Corrected with Scan 792

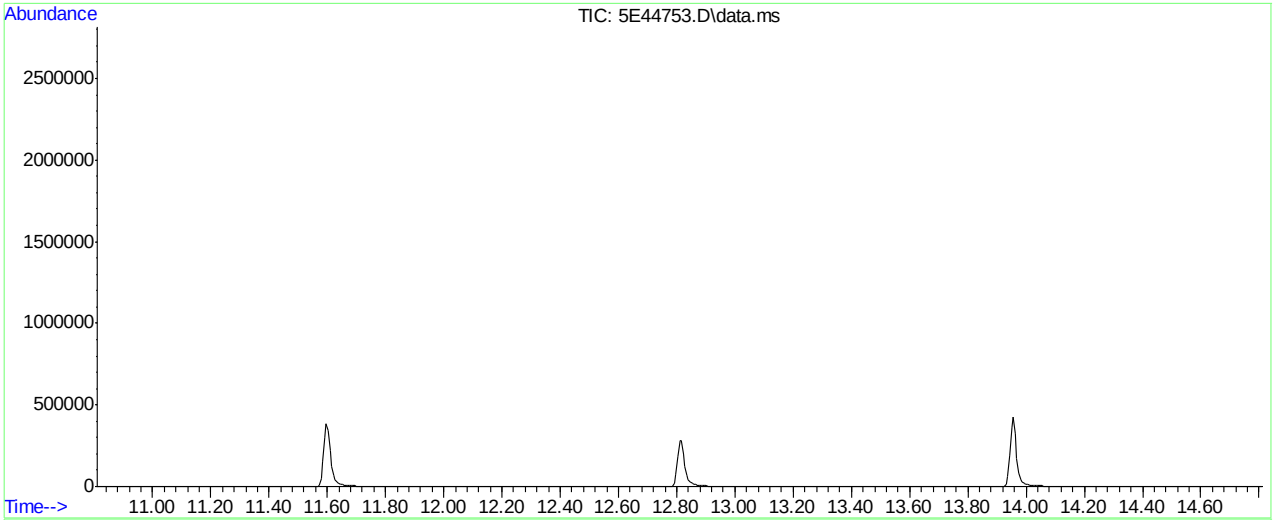
Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	26.0	16178	PASS
75	95	30	60	52.9	32979	PASS
95	95	100	100	100.0	62291	PASS
96	95	5	9	6.9	4307	PASS
173	174	0.00	2	0.8	441	PASS
174	95	50	100	85.3	53139	PASS
175	174	5	9	7.6	4036	PASS
176	174	95	101	95.8	50893	PASS
177	176	5	9	6.6	3343	PASS

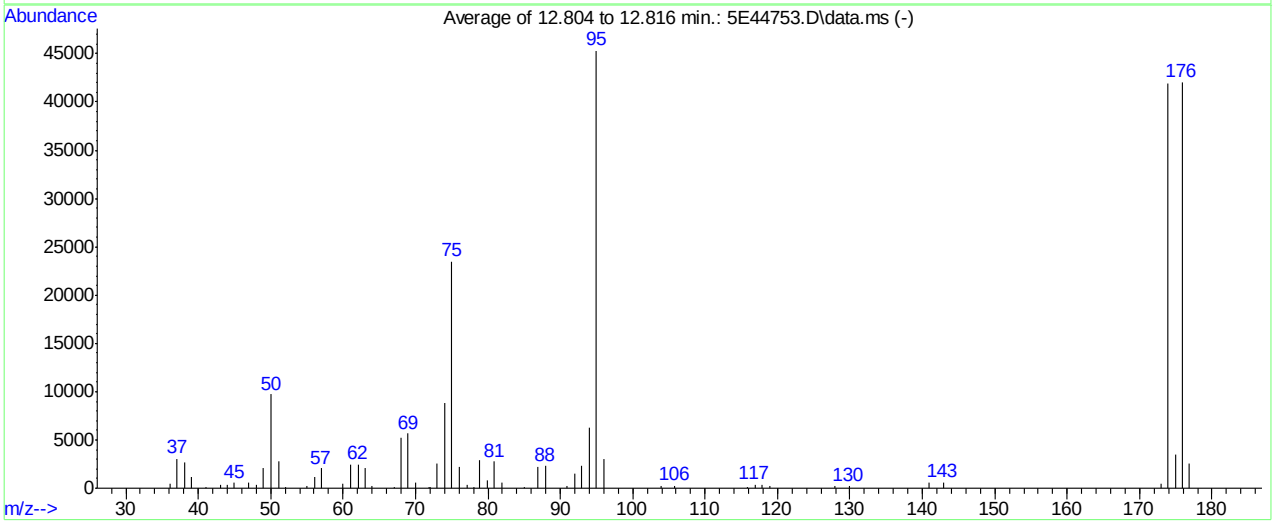
1A51660.D V1A_11-15-2023.M Tue Dec 26 10:28:35 2023

Methods: SW-846 8260B

```
Data File : C:\msdchem\1\data\12-20-2023\5E44753.D       Vial: 1
Acq On    : 20 Dec 2023  12:38 pm                    Operator: joannel
Sample    : BFB                                      Inst    : MSVOA20
Misc      : MS55506,V5E1994,,,,,                     Multiplr: 1.00
MS Integration Params: ult...ll.p

Method   : C:\msdchem\1\met...5E_12-20-2023_.M (RTE Integrator)
Title    : SW-846 Method 5030B/8260B & EPA 624
```





AutoFind: Scans 1922, 1923, 1924; Background Corrected with Scan 1916

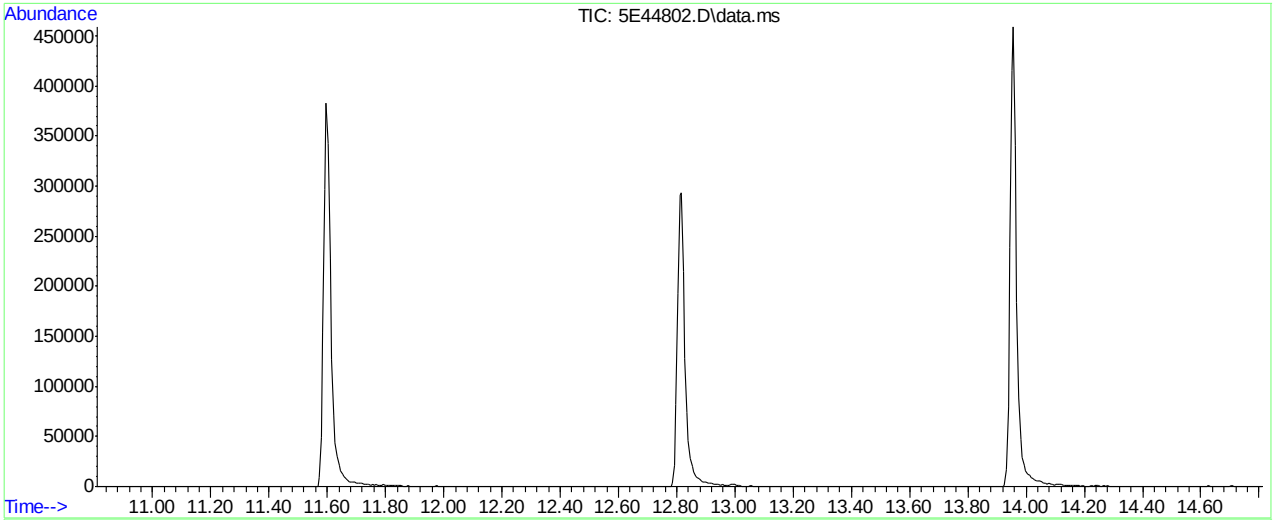
Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	21.5	9726	PASS
75	95	30	60	51.8	23501	PASS
95	95	100	100	100.0	45333	PASS
96	95	5	9	6.6	3008	PASS
173	174	0.00	2	1.1	468	PASS
174	95	50	100	92.4	41899	PASS
175	174	5	9	8.4	3511	PASS
176	174	95	101	100.3	42037	PASS
177	176	5	9	6.1	2583	PASS

5E44753.D V5E_12-20-2023_.M Thu Dec 21 08:53:35 2023

Methods: SW-846 8260B

```
Data File : C:\msdchem\1\data\12-22-2023\5E44802.D       Vial: 1
Acq On    : 22 Dec 2023   8:39 am                    Operator: jeniferw
Sample    : BFB                                      Inst    : MSVOA20
Misc      : MS55597,V5E1996,,,,,                     Multiplr: 1.00
MS Integration Params: ult...ll.p

Method    : C:\msdchem\1\met...5E_12-20-2023_.M (RTE Integrator)
Title     : SW-846 Method 5030B/8260B & EPA 624
```



AutoFind: Scans 1922, 1923, 1924; Background Corrected with Scan 1916

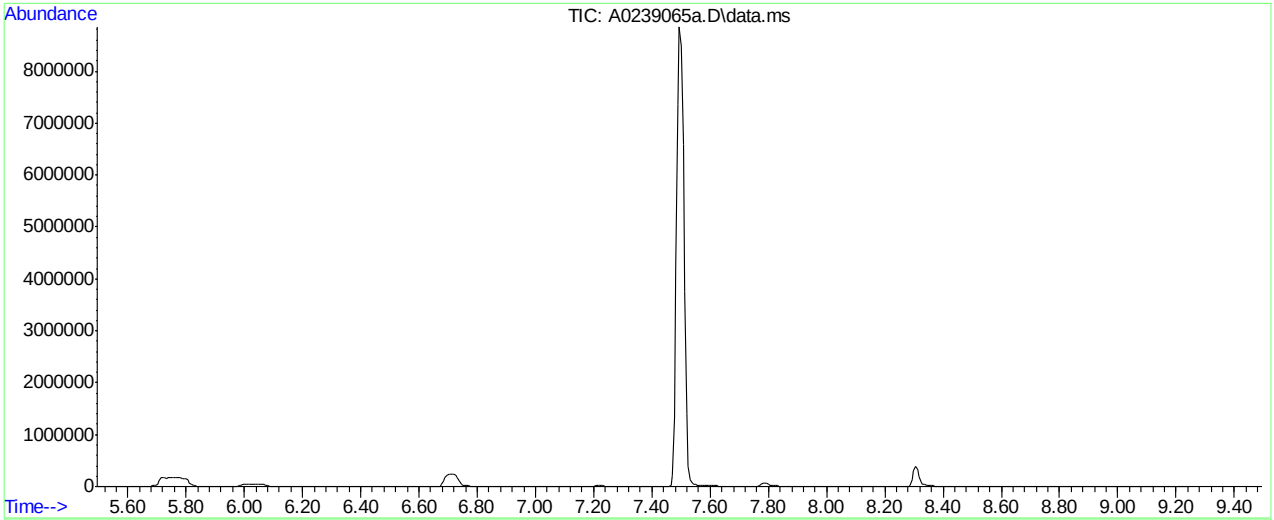
Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	21.0	9842	PASS
75	95	30	60	53.0	24909	PASS
95	95	100	100	100.0	46955	PASS
96	95	5	9	6.7	3130	PASS
173	174	0.00	2	1.0	453	PASS
174	95	50	100	95.0	44584	PASS
175	174	5	9	8.1	3623	PASS
176	174	95	101	99.8	44499	PASS
177	176	5	9	6.4	2858	PASS

5E44802.D V5E_12-20-2023_.M Fri Dec 22 10:06:33 2023

Methods: SW-846 8260B

Data File : C:\msdchem\1\DATA\120323\A0239065a.D Vial: 6
Acq On : 4 Dec 2023 11:33 am Operator: TRANGD
Sample : BFB Inst : MSVOA10
Misc : MS55238,VA3444,,,,, Multiplr: 1.00
MS Integration Params: tiny.p

Method : C:\msdchem\1\MET...3-12-3_SIMDIOX.M (RTE Integrator)
Title : 1,4-Dioxane by SIM



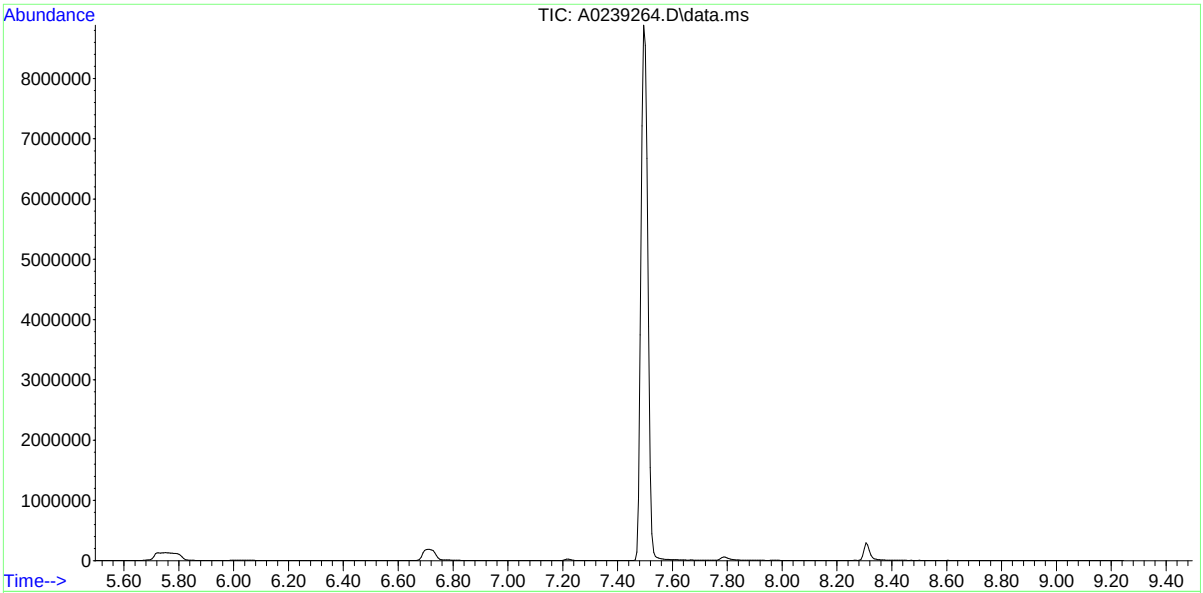
AutoFind: Scans 599, 600, 601; Background Corrected with Scan 588

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	18.9	327915	PASS
75	95	30	60	43.9	760960	PASS
95	95	100	100	100.0	1731583	PASS
96	95	5	9	6.6	114787	PASS
173	174	0.00	2	0.6	9234	PASS
174	95	50	100	84.8	1468575	PASS
175	174	5	9	7.3	106530	PASS
176	174	95	101	96.2	1412943	PASS
177	176	5	9	6.6	92557	PASS

A0239065a.D 2023-12-3_SIMDIOX.M Tue Dec 05 10:12:13 2023

Methods: SW-846 8260B
Data File : C:\msdchem\1\DATA\122623\A0239264.D Vial: 3
Acq On : 26 Dec 2023 9:23 am Operator: TRANGD
Sample : BFB Inst : MSVOA10
Misc : MS55613,VA3455,,,,, Multiplr: 1.00
MS Integration Params: tiny.p

Method : C:\msdchem\1\MET...-12-14_SIMDIOX.M (RTE Integrator)
Title : 1,4-Dioxane by SIM



AutoFind: Scans 599, 600, 601; Background Corrected with Scan 591

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	22.7	362475	PASS
75	95	30	60	47.0	748989	PASS
95	95	100	100	100.0	1595210	PASS
96	95	5	9	6.5	104373	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	93.4	1489738	PASS
175	174	5	9	7.5	111679	PASS
176	174	95	101	96.5	1437525	PASS
177	176	5	9	6.6	94739	PASS

A0239264.D 2023-12-14_SIMDIOX.M Wed Dec 27 08:05:20 2023

Manual Integrations APPROVED (compounds with "m" flag)
Karen Watson
11/15/23 15:49

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50651.D
Acq On : 15 Nov 2023 6:16 am
Operator : jeniferw
Sample : IC1985-1
Misc : MS55275,V1A1985,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Nov 15 12:52:06 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Fluorobenzene	3.405	96	210984	50.00	ug/L		0.00
62) Chlorobenzene-d5	5.352	117	151397	50.00	ug/L		0.00
85) 1,4-Dichlorobenzene-d4	7.099	152	79393	50.00	ug/L		0.00
System Monitoring Compounds							
39) Dibromofluoromethane	2.959	113	62041	49.17	ug/L		0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 98.34%				
49) 1,2-Dichloroethane-d4	3.236	65	66210	48.21	ug/L		0.00
Spiked Amount 50.000	Range 79 - 125		Recovery = 96.42%				
63) Toluene-d8	4.336	98	202159	50.00	ug/L		0.00
Spiked Amount 50.000	Range 85 - 112		Recovery = 100.00%				
86) 4-Bromofluorobenzene	6.230	174	66196	49.77	ug/L		0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 99.54%				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	1.019	85	886	1.05	ug/L		98
3) Chloromethane	1.127	50	1551	1.21	ug/L		98
4) 1,3-butadiene	1.181	39	2636	1.83	ug/L		88
5) Vinyl Chloride	1.173	62	1334	1.05	ug/L		90
6) Bromomethane	1.350	94	682m	1.45	ug/L		
7) Chloroethane	1.419	64	914m	1.11	ug/L		
8) Trichlorofluoromethane	1.496	101	1979	1.15	ug/L		100
9) Ethyl Ether	1.658	59	1154	1.13	ug/L		95
10) Ethanol	1.704	45	873m	39.90	ug/L		
11) 1,2-Dichlorotrifluoroe...	1.743	67	1441	1.01	ug/L	#	78
12) 1,1-Dichloroethene	1.758	61	1761	0.92	ug/L		91
13) Freon 113	1.789	101	979m	0.91	ug/L		
14) Carbon Disulfide	1.781	76	3674	1.15	ug/L		90
15) Iodomethane	1.835	142	524m	0.80	ug/L		
16) Acrolein	1.904	56	1801	5.36	ug/L		91
17) Allyl chloride	1.997	41	2147	1.19	ug/L		91
18) Methylene Chloride	2.043	49	4422	2.53	ug/L		95
19) Acetone	2.051	43	3175	6.63	ug/L		95
20) Methyl acetate	2.127	43	7761	5.16	ug/L		98
21) trans-1,2-Dichloroethene	2.135	61	1796	0.94	ug/L		92
22) Hexane	2.197	56	1366	1.03	ug/L		97
23) Methyl Tert Butyl Ether	2.197	73	3485	0.99	ug/L		92
24) Acetonitrile	2.274	41	5233	28.29	ug/L		98
25) Tert Butyl Alcohol	2.212	59	2742	10.45	ug/L		84
26) Di-isopropyl ether	2.397	45	4182	0.93	ug/L		95
27) Chloroprene	2.443	53	5937	1.11	ug/L		97
28) 1,1-Dichloroethane	2.443	63	2373	0.96	ug/L		98
29) Acrylonitrile	2.443	52	3367	5.26	ug/L		90
30) ETBE	2.582	59	3854	0.93	ug/L		93
31) Vinyl acetate	2.559	43	16431	5.22	ug/L		99
32) cis-1,2-Dichloroethene	2.720	96	1395	1.01	ug/L		89
33) 2,2-Dichloropropane	2.782	77	1711	1.00	ug/L		94
34) Bromochloromethane	2.820	128	686m	0.98	ug/L		
35) Cyclohexane	2.859	56	2197	0.89	ug/L		94

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50651.D
Acq On : 15 Nov 2023 6:16 am
Operator : jeniferw
Sample : IC1985-1
Misc : MS55275,V1A1985,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Nov 15 12:52:06 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
36) Chloroform	2.859	83	2193	0.94	ug/L		89
37) Ethyl acetate	2.920	43	9435	5.37	ug/L		98
38) Tetrahydrofuran	2.951	42	794m	1.12	ug/L		
40) Carbon Tetrachloride	2.966	117	1743m	1.01	ug/L		
41) 1,1,1-Trichloroethane	2.989	97	1870	0.99	ug/L		94
42) 2-Butanone	3.005	43	4941	5.24	ug/L		98
43) 1,1-Dichloropropene	3.059	75	1553	0.95	ug/L		92
44) tert-Butyl formate	3.097	59	5669	5.14	ug/L		95
45) Propionitrile	3.143	54	3390	13.52	ug/L		90
46) Methacrylonitrile	3.167	41	11935	10.98	ug/L		97
47) Benzene	3.182	78	4815	0.98	ug/L		94
48) TAME	3.251	73	3197	0.92	ug/L		80
50) 1,2-Dichloroethane	3.274	62	1801	0.96	ug/L		82
51) Isobutyl Alcohol	3.259	43	3603	22.98	ug/L		90
52) Tert Amyl Alcohol	3.328	59	2115	9.88	ug/L		82
53) Trichloroethene	3.513	95	1372	0.99	ug/L		92
54) Methylcyclohexane	3.528	83	2017	0.94	ug/L		96
55) Dibromomethane	3.736	93	964m	1.08	ug/L		
56) 1,2-Dichloropropane	3.798	63	1318	0.94	ug/L		91
57) Bromodichloromethane	3.828	83	1729	1.02	ug/L	#	89
58) Methyl methacrylate	3.921	41	2065	1.32	ug/L	#	82
59) 1,4-Dioxane	3.952	88	292m	15.38	ug/L		
60) 2-Chloroethyl vinyl ether	4.167	63	3082	3.93	ug/L		99
61) cis-1,3-Dichloropropene	4.213	75	1944	0.96	ug/L		87
64) Toluene	4.375	91	5094	0.99	ug/L		97
65) 2-Nitropropane	4.467	41	3190	6.32	ug/L		90
66) 4-Methyl-2-pentanone	4.583	43	9530	5.07	ug/L		98
67) trans-1,3-Dichloropropene	4.613	75	1775	0.96	ug/L		89
68) Tetrachloroethene	4.629	166	1396	0.98	ug/L		96
69) Ethyl methacrylate	4.729	69	1506	0.98	ug/L		82
70) 1,1,2-Trichloroethane	4.713	83	981m	0.94	ug/L		
71) Dibromochloromethane	4.844	129	1158	0.87	ug/L		80
72) 1,3-Dichloropropane	4.898	76	1858	0.97	ug/L		78
73) 1,2-Dibromoethane	4.998	107	1358	1.03	ug/L		97
74) 3,3-Dimethyl-1-Butanol	5.121	57	12790	49.79	ug/L		96
75) 2-hexanone	5.144	43	9350	5.04	ug/L	#	75
76) 1-Chlorohexane	5.368	91	2138m	1.19	ug/L		
77) Ethylbenzene	5.398	91	5132m	0.93	ug/L		
78) Chlorobenzene	5.368	112	3244	0.97	ug/L		92
79) 1,1,1,2-Tetrachloroethane	5.414	131	1066	0.86	ug/L		89
80) m,p-Xylene	5.498	91	8622	1.96	ug/L		97
81) o-Xylene	5.806	91	4573	0.98	ug/L		97
82) Styrene	5.837	104	3437	0.98	ug/L		95
83) Bromoform	5.837	173	822m	0.93	ug/L		
84) Isopropylbenzene	6.045	105	5118	0.94	ug/L		97
87) cis-1,4-Dichloro-2-butene	6.268	53	629m	1.38	ug/L		
88) n-Propylbenzene	6.353	91	6429	1.00	ug/L		89
89) Bromobenzene	6.307	156	1537	1.08	ug/L		87
90) 1,1,2,2-Tetrachloroethane	6.376	83	1624	0.96	ug/L		96
91) 1,3,5-Trimethylbenzene	6.507	105	4272	0.97	ug/L		92

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50651.D
Acq On : 15 Nov 2023 6:16 am
Operator : jeniferw
Sample : IC1985-1
Misc : MS55275,V1A1985,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Nov 15 12:52:06 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration

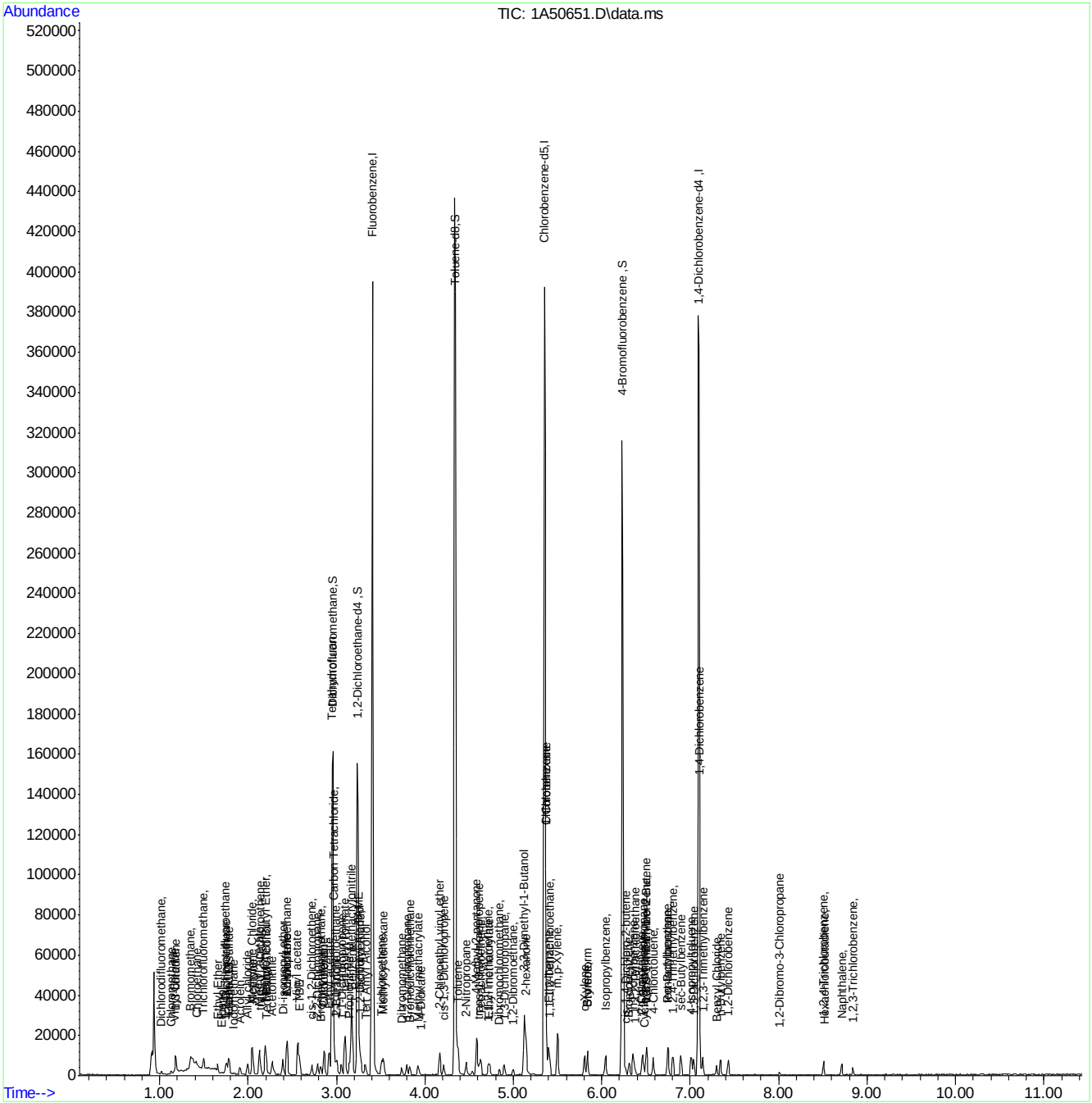
	Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
92)	2-Chlorotoluene	6.453	91	3929	1.05	ug/L	96
93)	trans-1,4-Dichloro-2-B...	6.507	53	681m	1.06	ug/L	
94)	1,2,3-Trichloropropane	6.468	110	438m	0.94	ug/L	
95)	Cyclohexanone	6.484	55	537m	5.57	ug/L	
96)	4-Chlorotoluene	6.584	91	3739	0.96	ug/L	97
97)	tert-Butylbenzene	6.745	91	2457	0.99	ug/L	81
98)	1,2,4-Trimethylbenzene	6.799	105	4083	0.96	ug/L	95
99)	Pentachloroethane	6.745	167	691m	1.05	ug/L	
100)	sec-Butylbenzene	6.892	105	5041	0.90	ug/L	97
101)	4-Isopropyltoluene	7.015	119	4391	0.91	ug/L	98
102)	1,3-Dichlorobenzene	7.038	146	2503	0.96	ug/L	98
103)	1,2,3-Trimethylbenzene	7.146	105	4030	0.95	ug/L	93
104)	1,4-Dichlorobenzene	7.107	146	2780m	1.07	ug/L	
105)	n-Butylbenzene	7.346	92	1964	0.91	ug/L	91
106)	Benzyl Chloride	7.299	126	596m	0.98	ug/L	
107)	1,2-Dichlorobenzene	7.430	146	2163	0.93	ug/L	85
108)	1,2-Dibromo-3-Chloropr...	8.008	75	246m	0.91	ug/L	
109)	Hexachlorobutadiene	8.515	225	412m	0.74	ug/L	
110)	1,2,4-Trichlorobenzene	8.508	180	1216	0.95	ug/L	98
111)	Naphthalene	8.716	128	3440	1.05	ug/L	98
112)	1,2,3-Trichlorobenzene	8.839	180	934m	0.93	ug/L	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50651.D
Acq On : 15 Nov 2023 6:16 am
Operator : jeniferw
Sample : IC1985-1
Misc : MS55275,V1A1985,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Nov 15 12:52:06 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration



Manual Integration Approval Summary

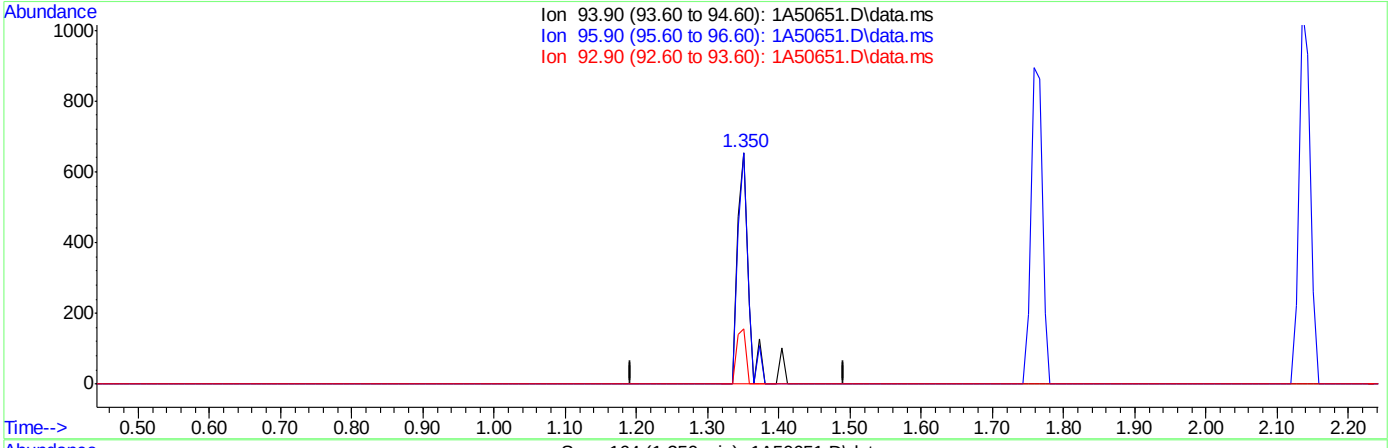
Sample Number: V1A1985-IC1985
Lab FileID: 1A50651.D
Injection Time: 11/15/23 06:16
Method: SW846 8260D
Analyst approved: 11/15/23 14:32 Jenifer Willis
Supervisor approved: 11/15/23 15:49 Karen Watson

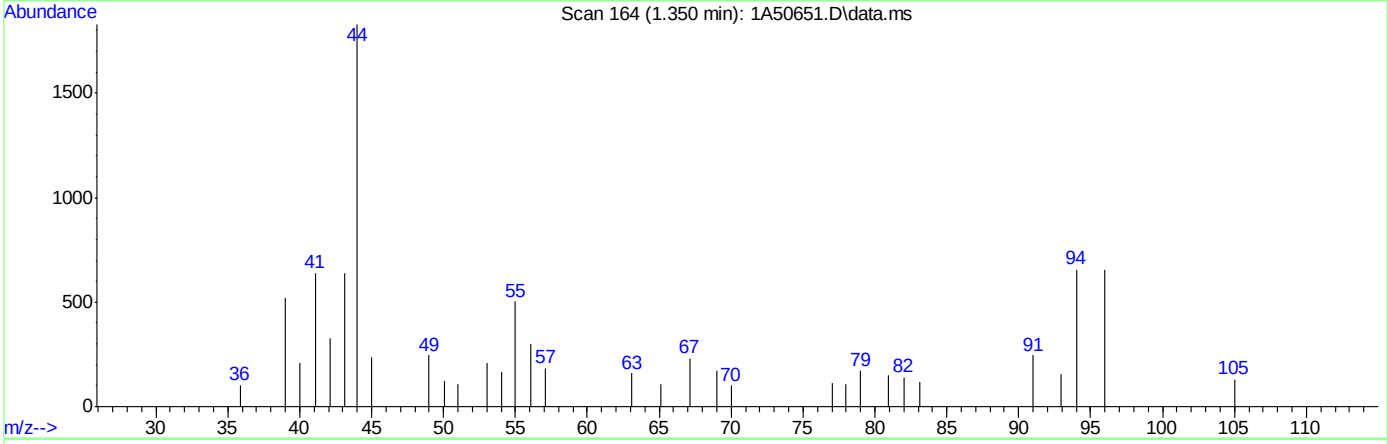
Parameter	CAS	Sig#	R.T. (min.)	Reason
Methyl Bromide	74-83-9		1.35	Missed peak
Chloroethane	75-00-3		1.42	Missed peak
Ethyl Alcohol	64-17-5		1.70	Missed peak
Freon 113	76-13-1		1.79	Missed peak
Methyl Iodide	74-88-4		1.84	Missed peak
Bromochloromethane	74-97-5		2.82	Missed peak
Tetrahydrofuran	109-99-9		2.95	Missed peak
Carbon Tetrachloride	56-23-5		2.97	Overlapping peak
Methylene Bromide	74-95-3		3.74	Missed peak
1,4-Dioxane	123-91-1		3.95	Missed peak
1,1,2-Trichloroethane	79-00-5		4.71	Missed peak
1-Chlorohexane	544-10-5		5.37	Overlapping peak
Ethylbenzene	100-41-4		5.40	Overlapping peak
Bromoform	75-25-2		5.84	Missed peak
cis-1,4-Dichloro-2-Butene	1476-11-5		6.27	Missed peak
1,2,3-Trichloropropane	96-18-4		6.47	Missed peak
Cyclohexanone	108-94-1		6.48	Missed peak
trans-1,4-Dichloro-2-Butene	110-57-6		6.51	Missed peak
Pentachloroethane	76-01-7		6.75	Missed peak
1,4-Dichlorobenzene	106-46-7		7.11	Missed peak
Benzyl Chloride	100-44-7		7.30	Missed peak
1,2-Dibromo-3-chloropropane	96-12-8		8.01	Missed peak
Hexachlorobutadiene	87-68-3		8.52	Missed peak
1,2,3-Trichlorobenzene	87-61-6		8.84	Missed peak

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50651.D
Acq On : 15 Nov 2023 6:16 am
Operator : jeniferw
Sample : IC1945-1
Misc : MS55275,V1A1945,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Nov 15 09:38:22 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50651.D\data.ms

(6) Bromomethane ( )

1.350min (+0.008) 1.45ug/L m

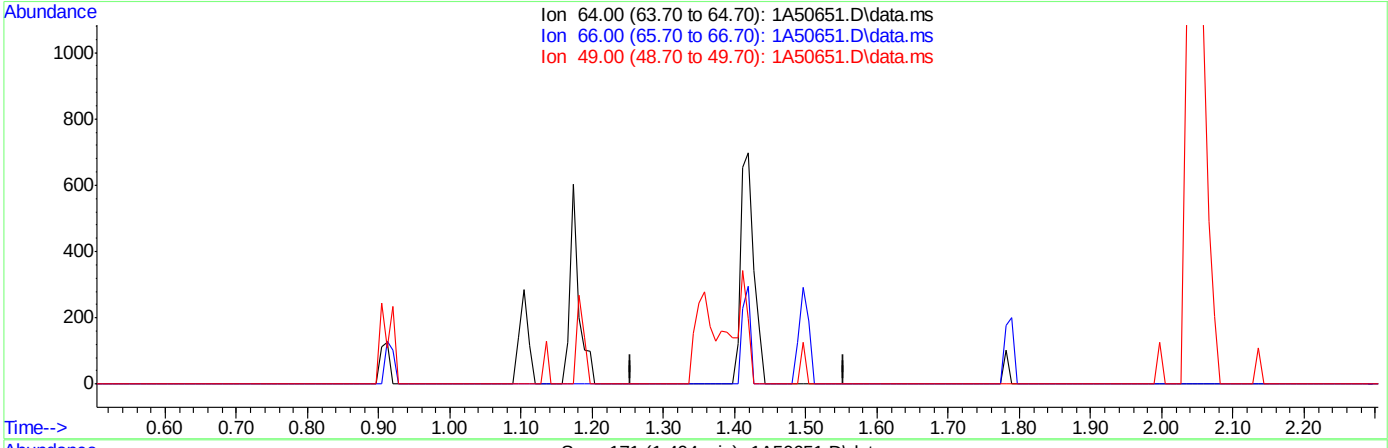
response 682

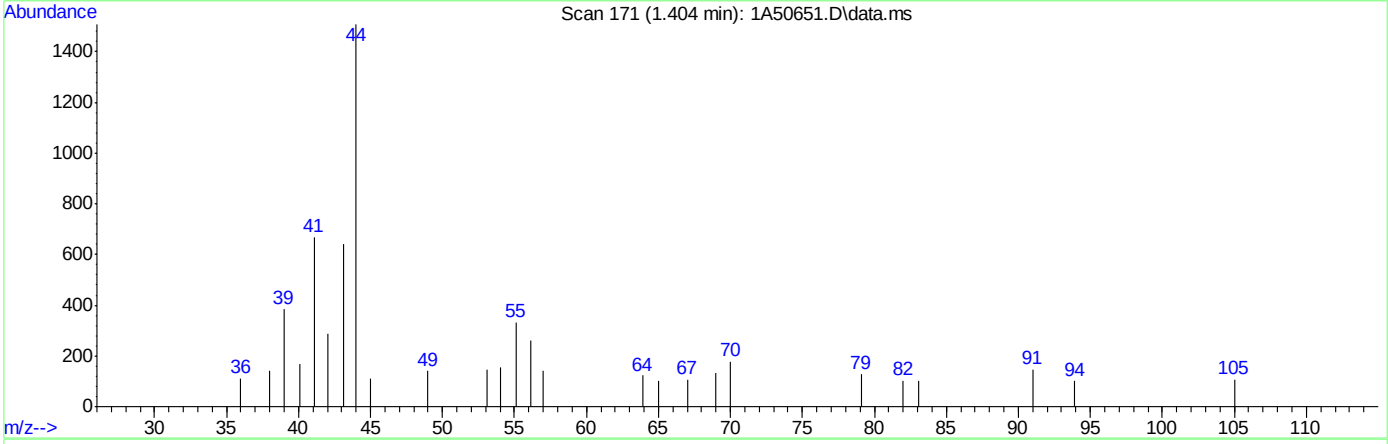
Ion	Exp%	Act%
93.90	100	100
95.90	88.70	99.69
92.90	19.40	23.66
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50651.D
Acq On : 15 Nov 2023 6:16 am
Operator : jeniferw
Sample : IC1945-1
Misc : MS55275,V1A1945,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Nov 15 09:38:22 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50651.D\data.ms

(7) Chloroethane ( )

1.404min (-1.404) 0.00ug/L

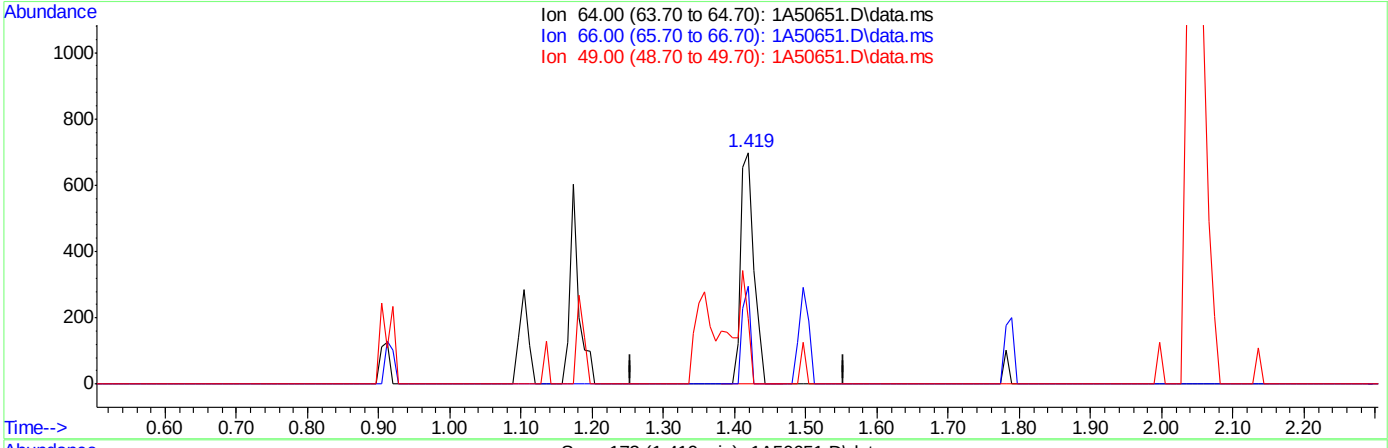
response 0

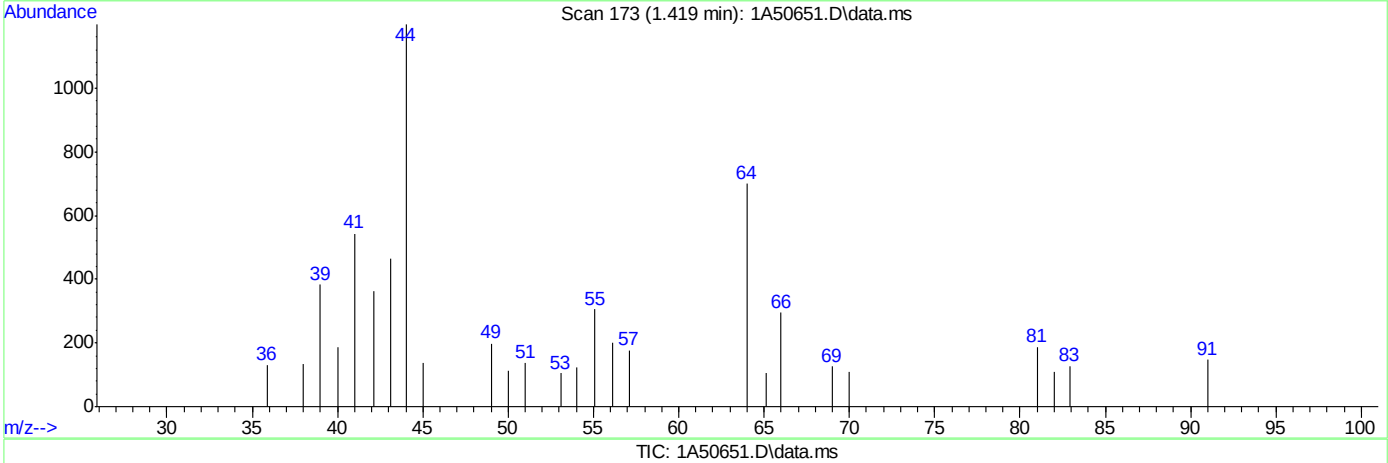
Ion	Exp%	Act%
64.00	100	0.00
66.00	31.50	0.00#
49.00	29.30	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50651.D
Acq On : 15 Nov 2023 6:16 am
Operator : jeniferw
Sample : IC1945-1
Misc : MS55275,V1A1945,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Nov 15 09:38:22 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50651.D\data.ms

(7) Chloroethane ( )

1.419min (+0.015) 1.11ug/L m

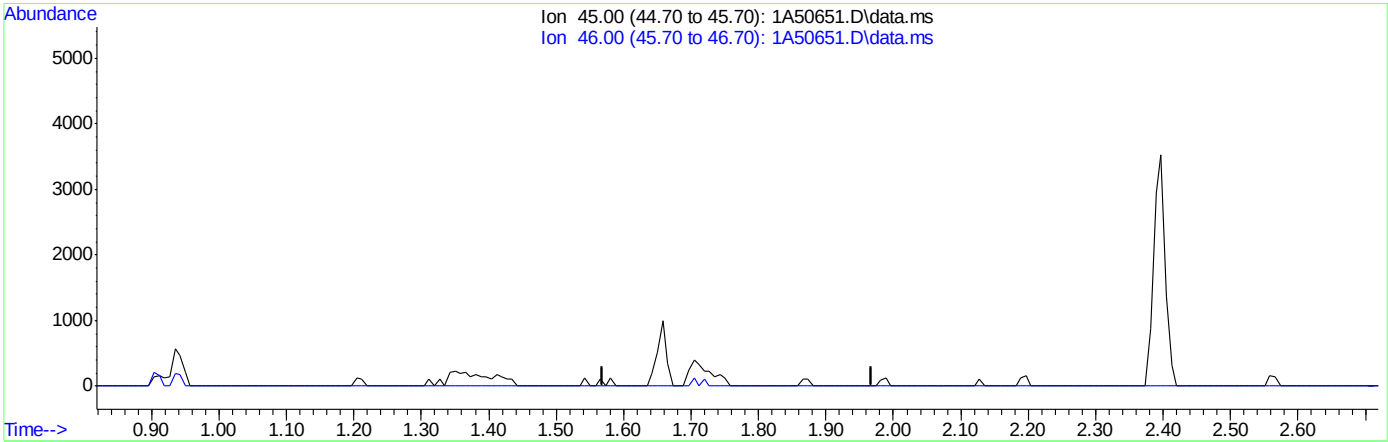
response 914

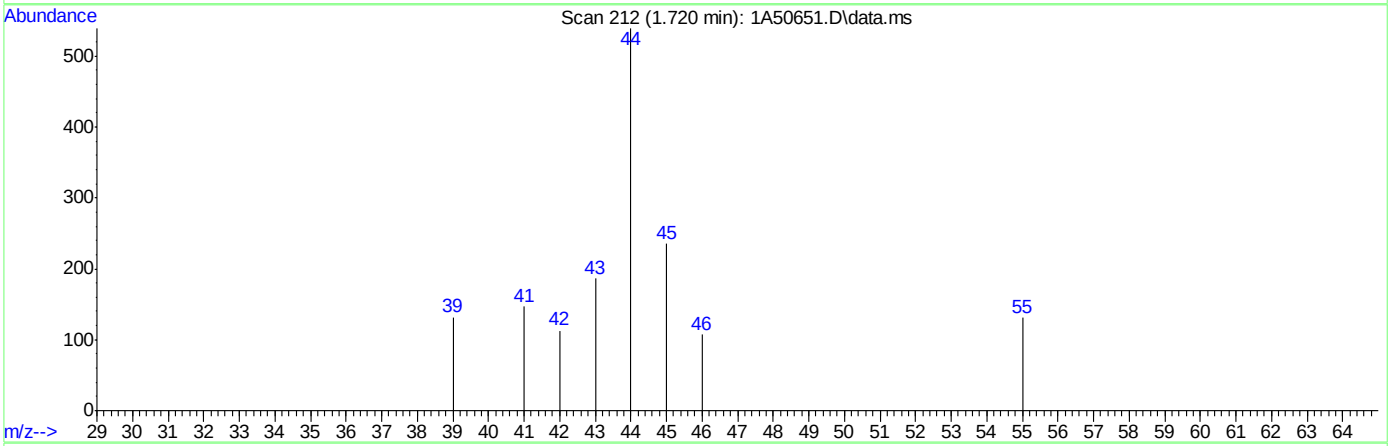
Ion	Exp%	Act%
64.00	100	100
66.00	31.50	42.20
49.00	29.30	28.33
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50651.D
Acq On : 15 Nov 2023 6:16 am
Operator : jeniferw
Sample : IC1945-1
Misc : MS55275,V1A1945,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Nov 15 09:38:22 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50651.D\data.ms

(10) Ethanol

1.719min (-1.719) 0.00ug/L

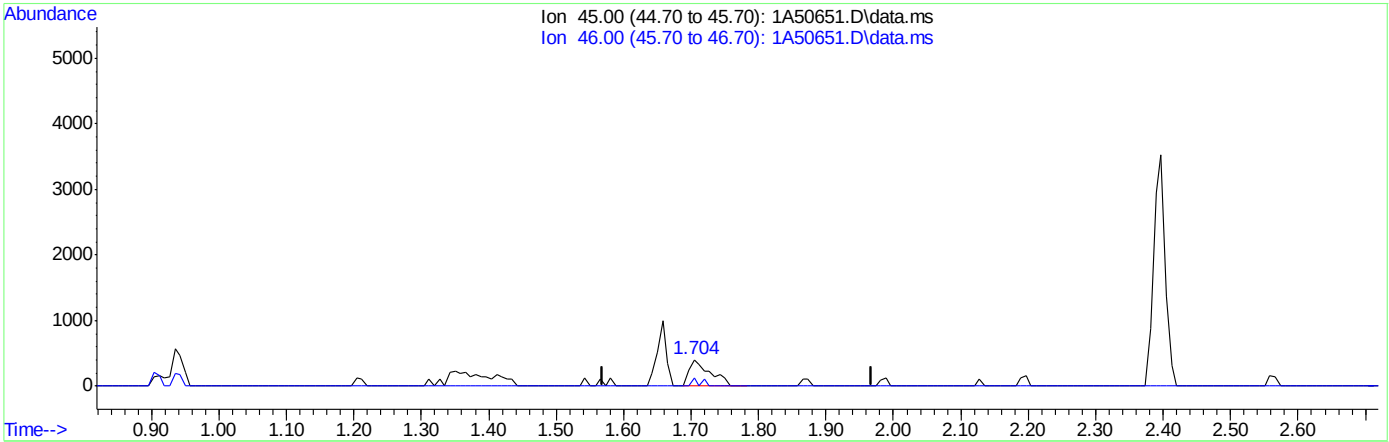
response 0

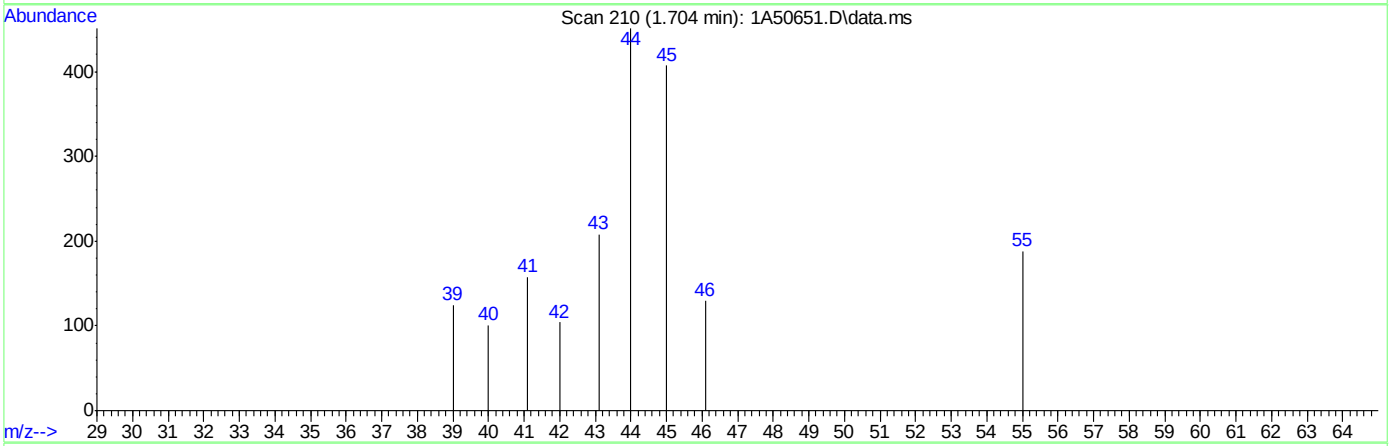
Ion	Exp%	Act%
45.00	100	0.00
46.00	40.30	0.00#
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50651.D
Acq On : 15 Nov 2023 6:16 am
Operator : jeniferw
Sample : IC1945-1
Misc : MS55275,V1A1945,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Nov 15 09:38:22 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50651.D\data.ms

(10) Ethanol

1.704min (-0.015) 39.90ug/L m

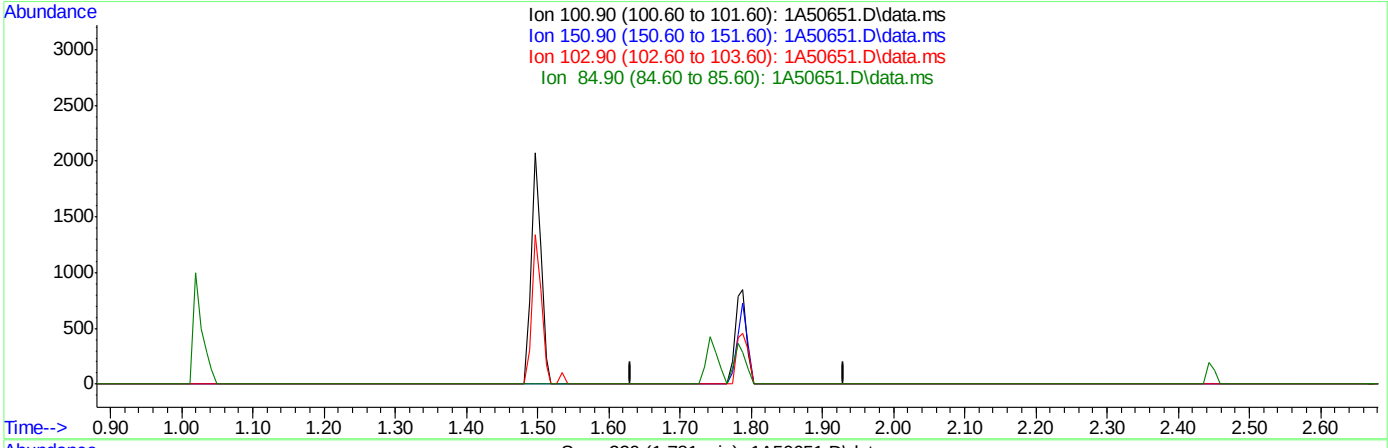
response 873

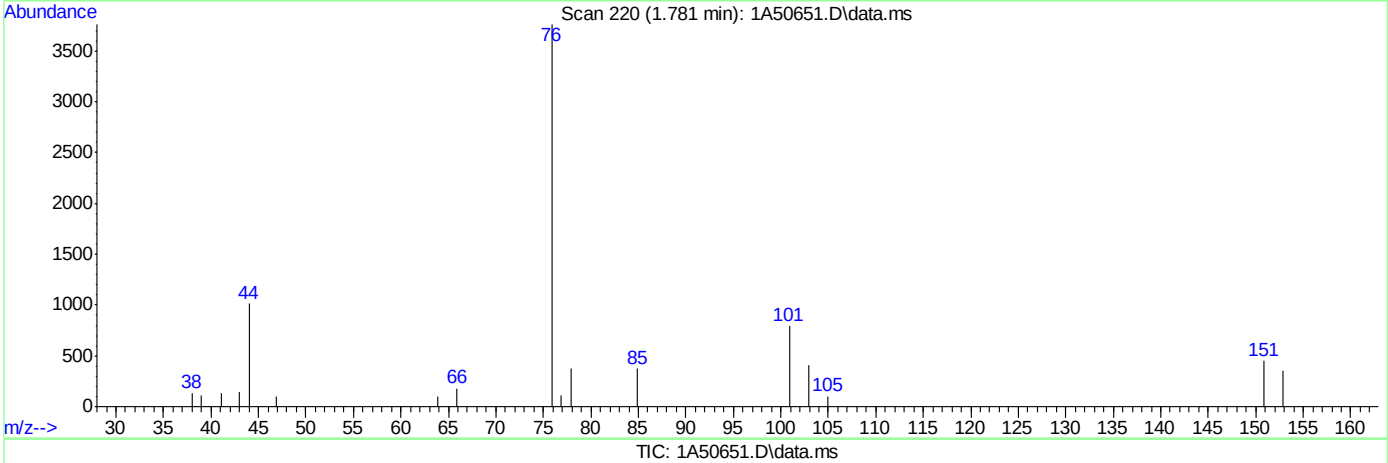
Ion	Exp%	Act%
45.00	100	100
46.00	40.30	31.70
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50651.D
Acq On : 15 Nov 2023 6:16 am
Operator : jeniferw
Sample : IC1945-1
Misc : MS55275,V1A1945,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Nov 15 09:38:22 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50651.D\data.ms

(13) Freon 113

1.781min (-1.781) 0.00ug/L

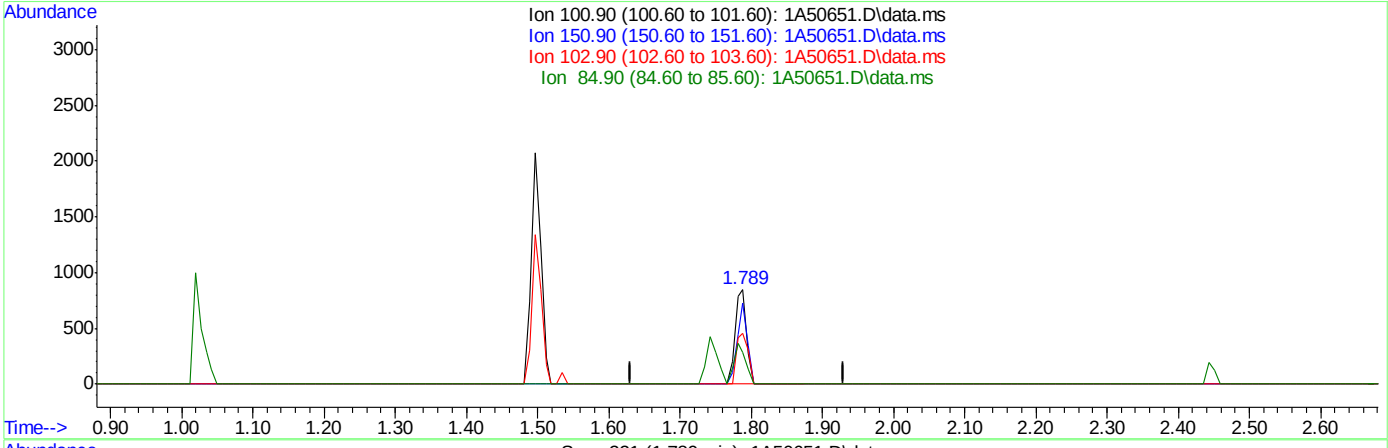
response 0

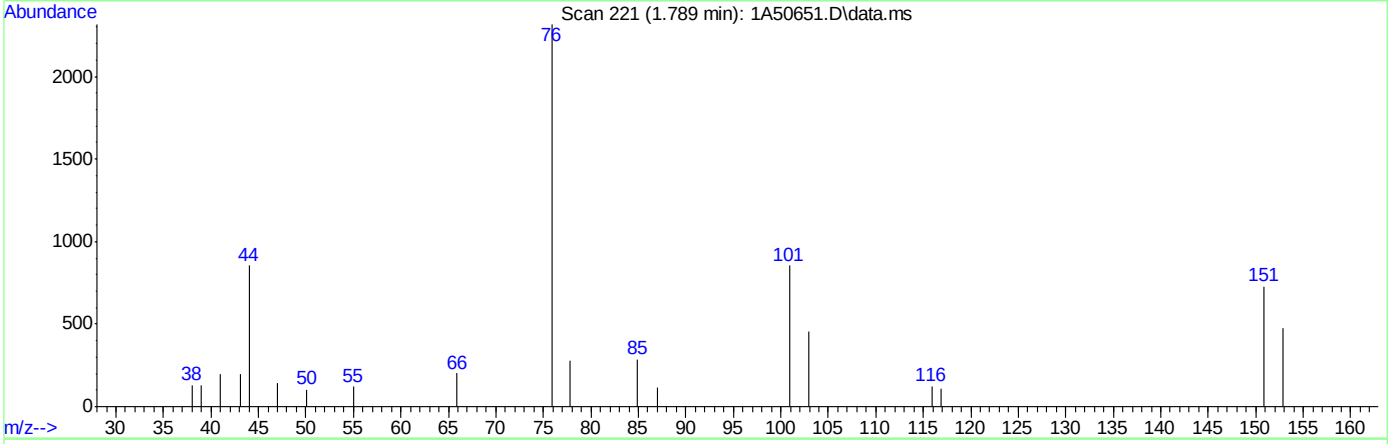
Ion	Exp%	Act%
100.90	100	0.00
150.90	91.50	0.00#
102.90	64.80	0.00#
84.90	45.90	0.00#

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50651.D
Acq On : 15 Nov 2023 6:16 am
Operator : jeniferw
Sample : IC1945-1
Misc : MS55275,V1A1945,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Nov 15 09:38:22 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50651.D\data.ms

(13) Freon 113

1.789min (+0.008) 0.91ug/L m

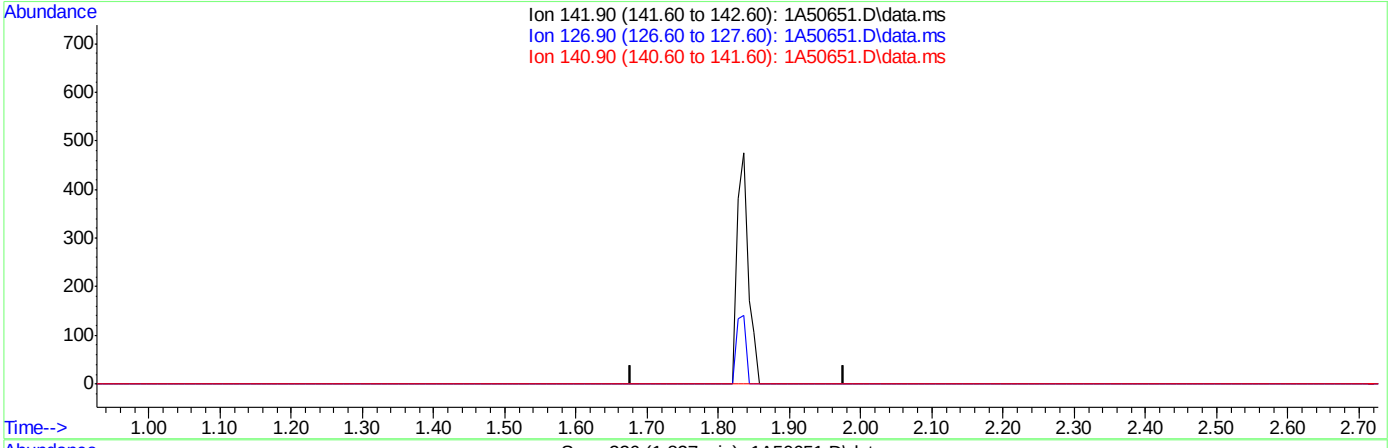
response 979

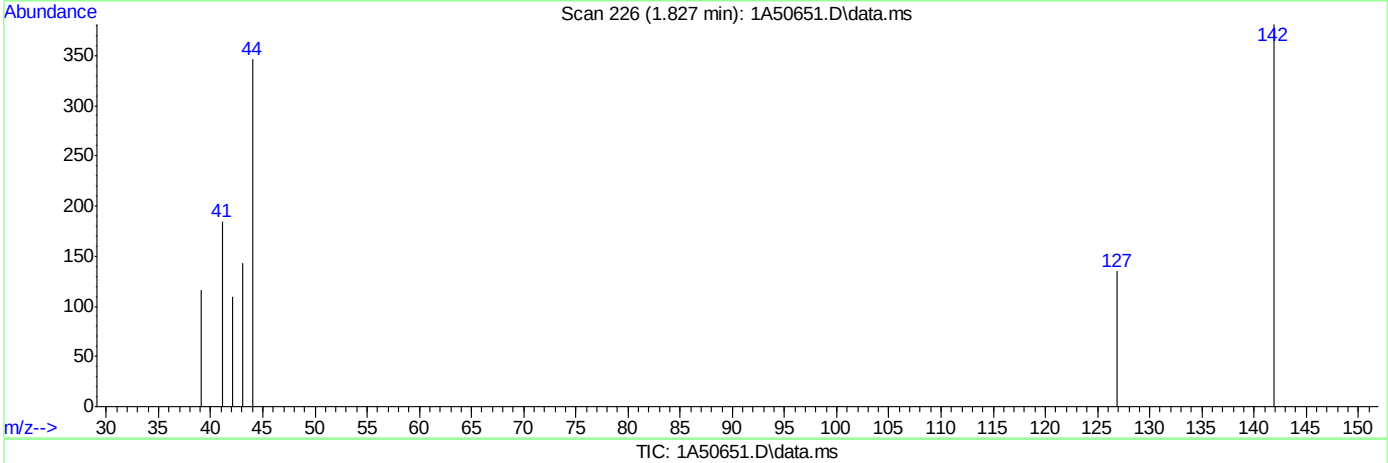
Ion	Exp%	Act%
100.90	100	100
150.90	91.50	85.35
102.90	64.80	53.58
84.90	45.90	33.65

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50651.D
Acq On : 15 Nov 2023 6:16 am
Operator : jeniferw
Sample : IC1945-1
Misc : MS55275,V1A1945,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Nov 15 09:38:22 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50651.D\data.ms

(15) Iodomethane

1.827min (-1.827) 0.00ug/L

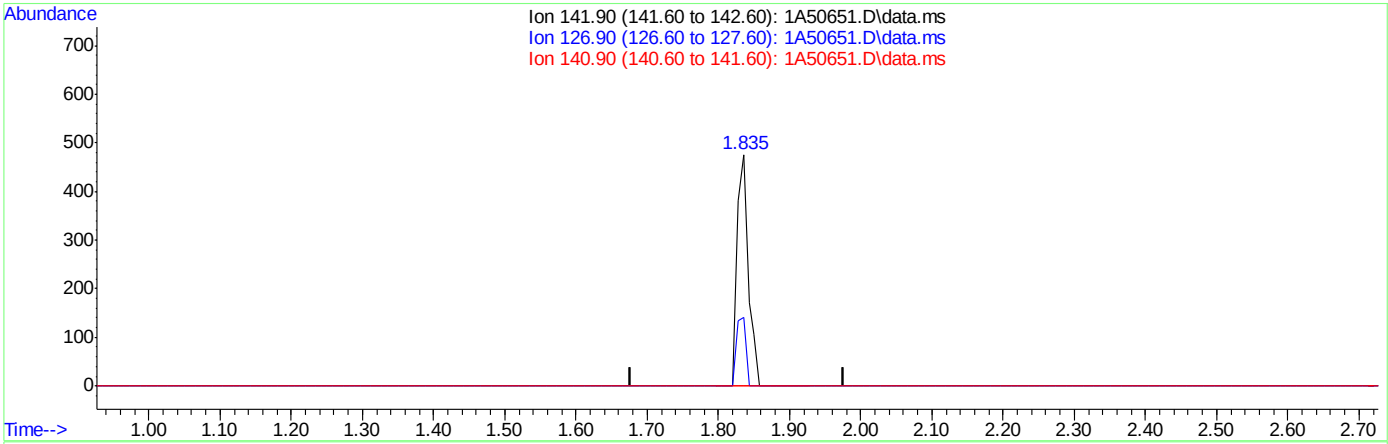
response 0

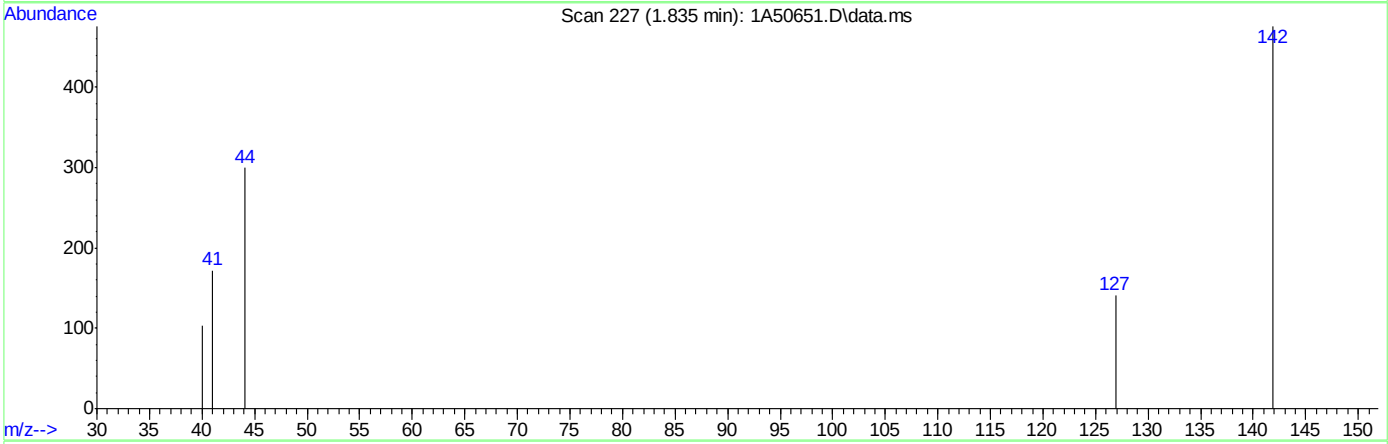
Ion	Exp%	Act%
141.90	100	0.00
126.90	46.70	0.00#
140.90	14.30	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50651.D
Acq On : 15 Nov 2023 6:16 am
Operator : jeniferw
Sample : IC1945-1
Misc : MS55275,V1A1945,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Nov 15 09:38:22 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50651.D\data.ms

(15) Iodomethane

1.835min (+0.008) 0.80ug/L m

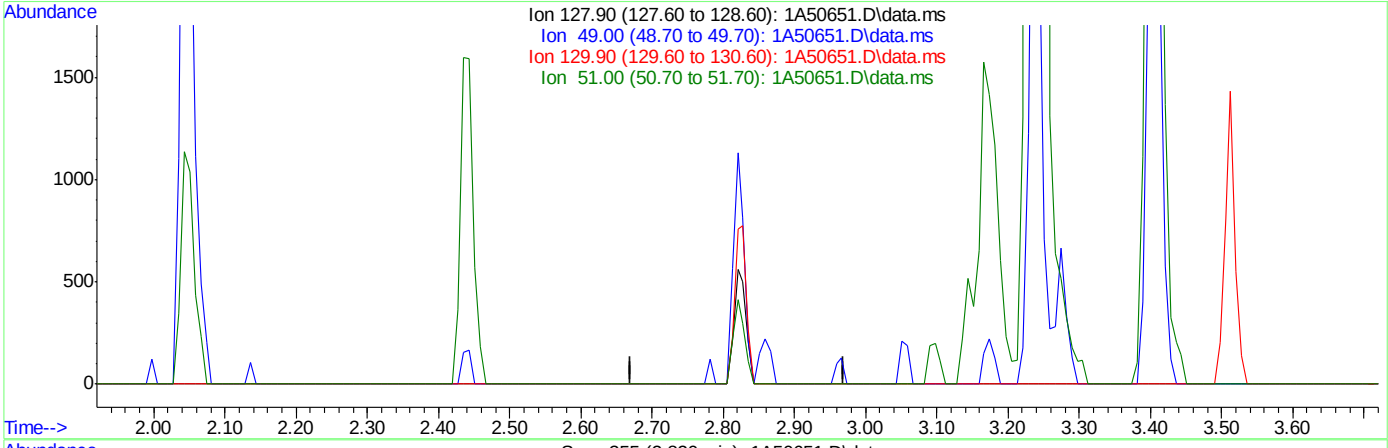
response 524

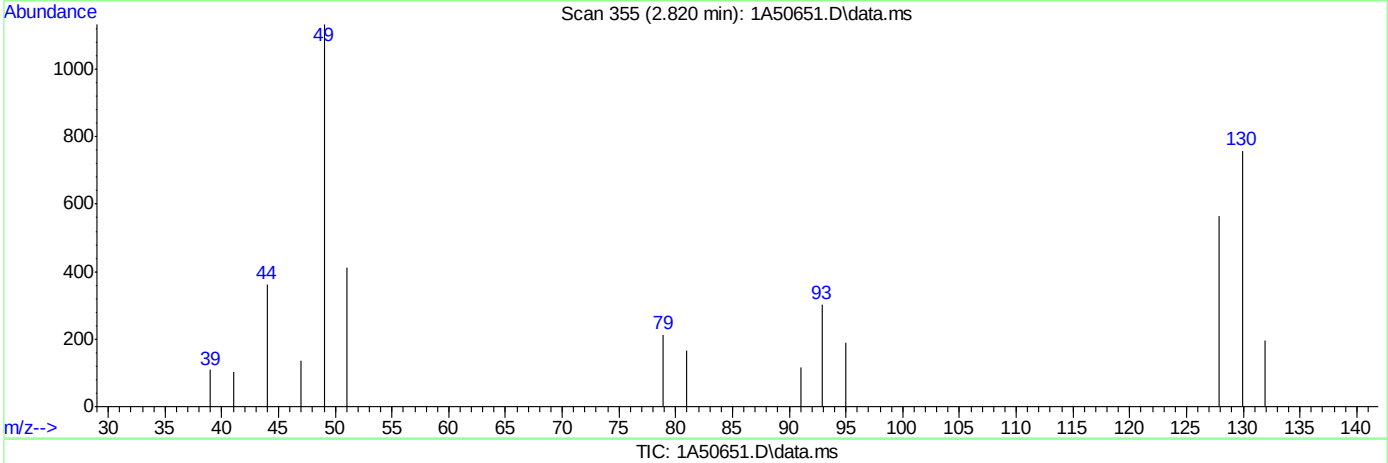
Ion	Exp%	Act%
141.90	100	100
126.90	46.70	29.62
140.90	14.30	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50651.D
Acq On : 15 Nov 2023 6:16 am
Operator : jeniferw
Sample : IC1945-1
Misc : MS55275,V1A1945,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Nov 15 09:38:22 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50651.D\data.ms

(34) Bromochloromethane ( )

2.820min (-2.820) 0.00ug/L

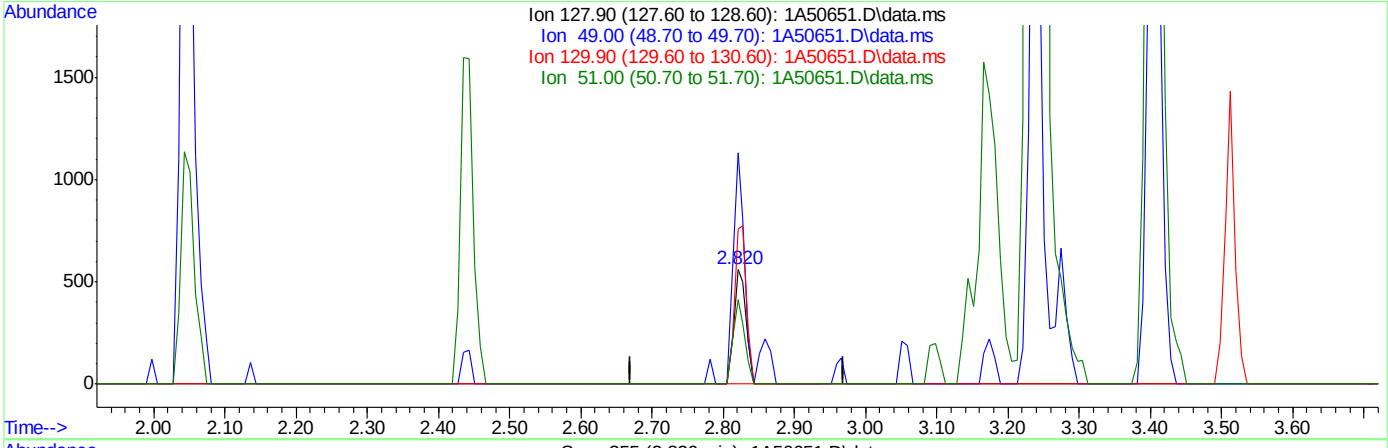
response 0

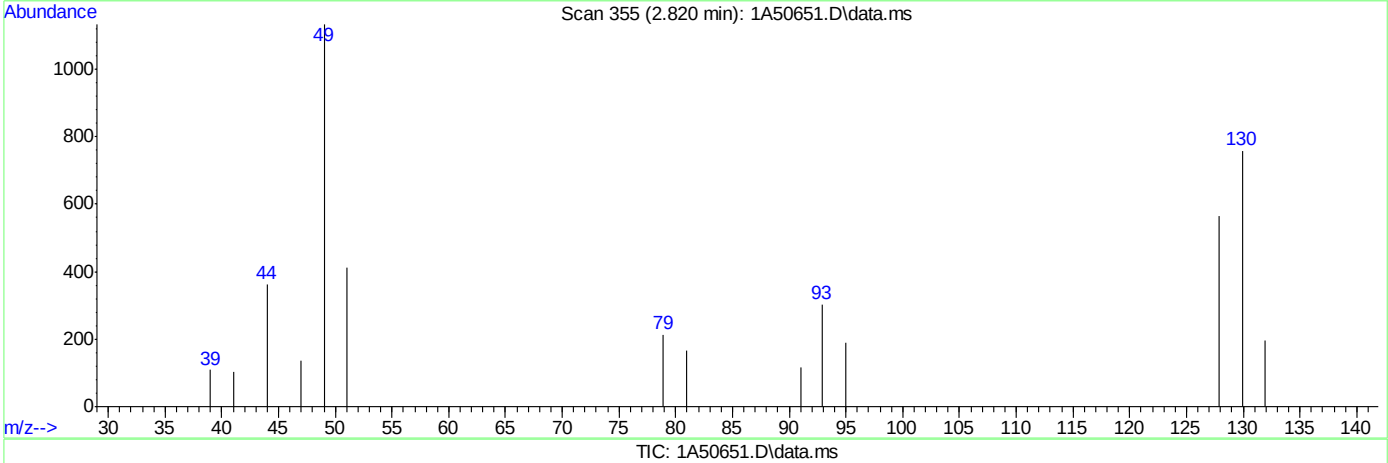
Ion	Exp%	Act%
127.90	100	0.00
49.00	163.50	0.00#
129.90	121.40	0.00#
51.00	52.10	0.00#

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50651.D
Acq On : 15 Nov 2023 6:16 am
Operator : jeniferw
Sample : IC1945-1
Misc : MS55275,V1A1945,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Nov 15 09:38:22 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50651.D\data.ms

(34) Bromochloromethane ( )

2.820min (+0.000) 0.98ug/L m

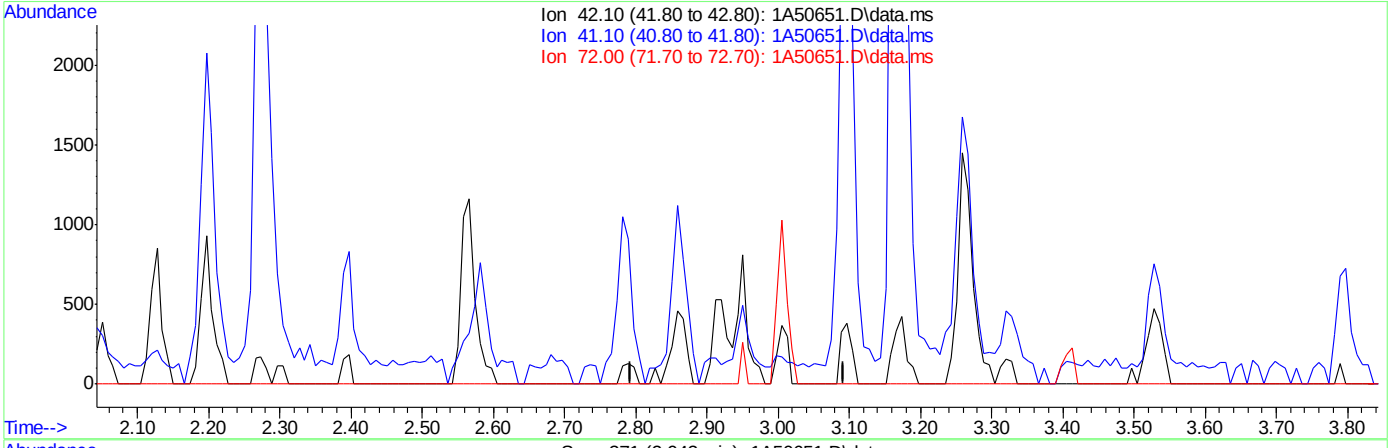
response 686

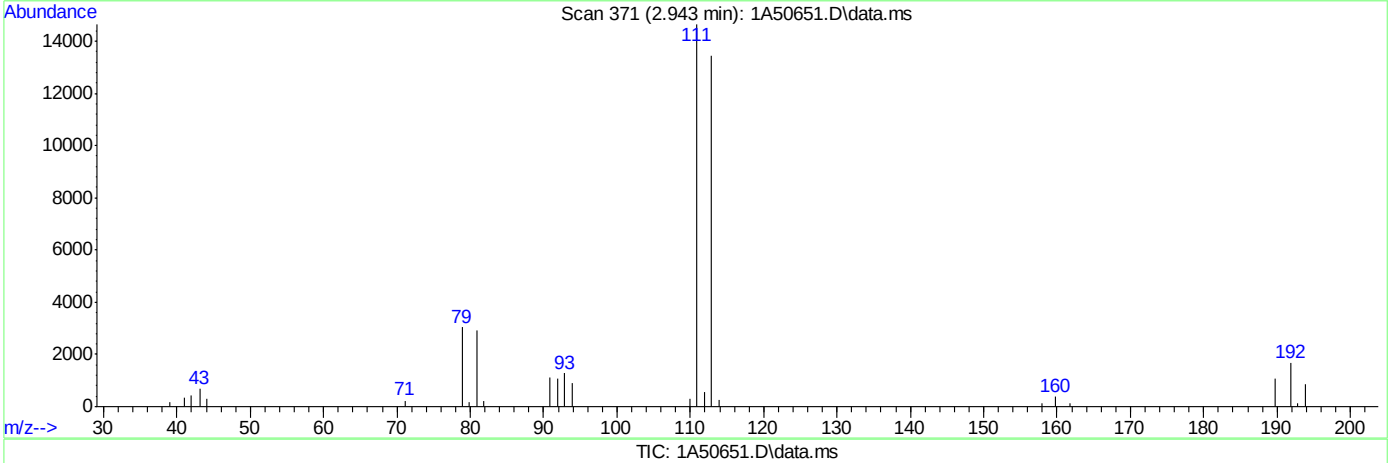
Ion	Exp%	Act%
127.90	100	100
49.00	163.50	200.89#
129.90	121.40	134.57
51.00	52.10	73.23

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50651.D
Acq On : 15 Nov 2023 6:16 am
Operator : jeniferw
Sample : IC1945-1
Misc : MS55275,V1A1945,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Nov 15 09:38:22 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50651.D\data.ms

(38) Tetrahydrofuran

2.943min (-2.943) 0.00ug/L

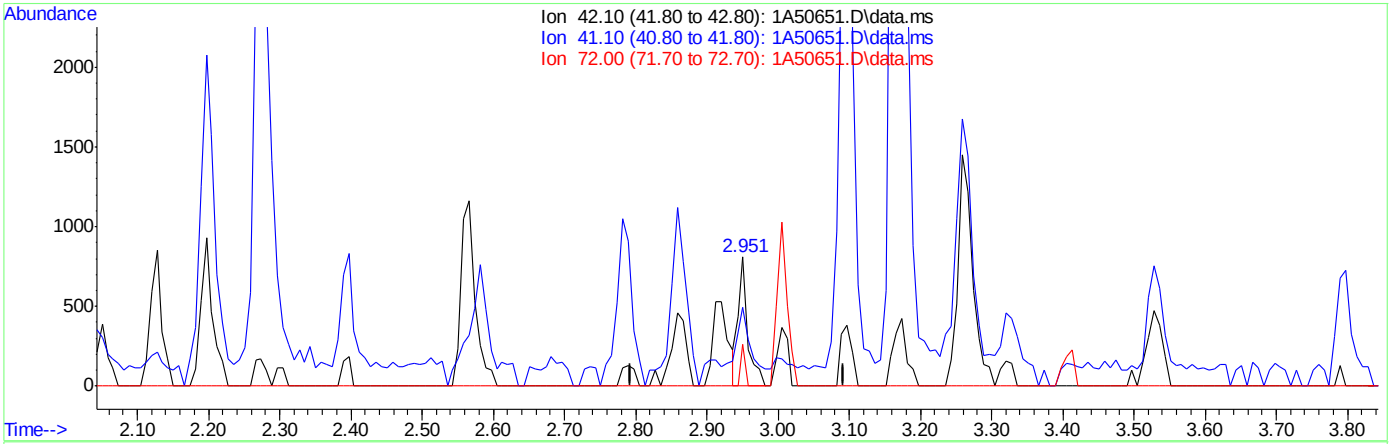
response 0

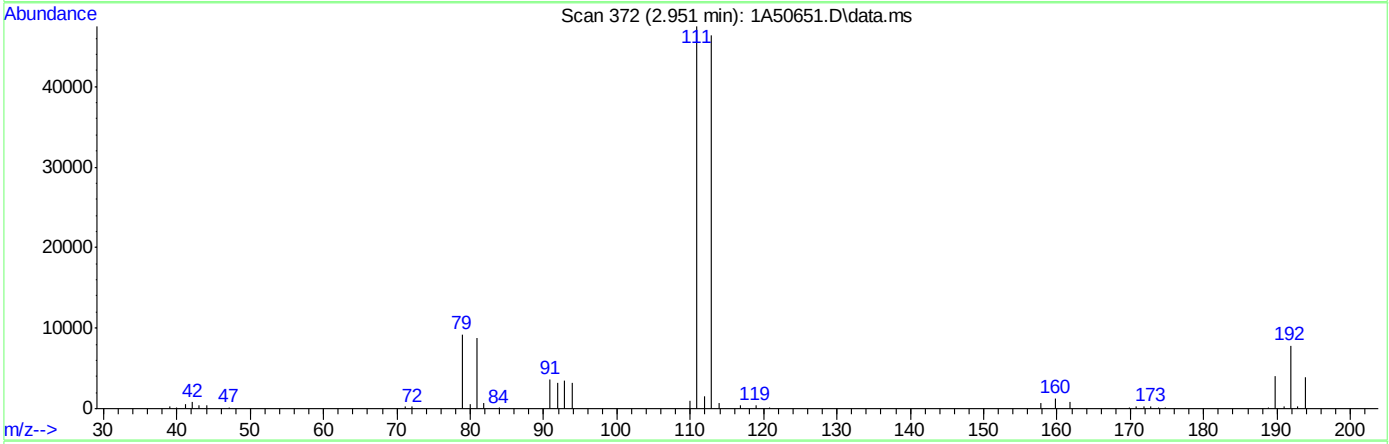
Ion	Exp%	Act%
42.10	100	0.00
41.10	58.70	0.00#
72.00	41.10	0.00#
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50651.D
Acq On : 15 Nov 2023 6:16 am
Operator : jeniferw
Sample : IC1945-1
Misc : MS55275,V1A1945,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Nov 15 09:38:22 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50651.D\data.ms

(38) Tetrahydrofuran

2.951min (+0.008) 1.12ug/L m

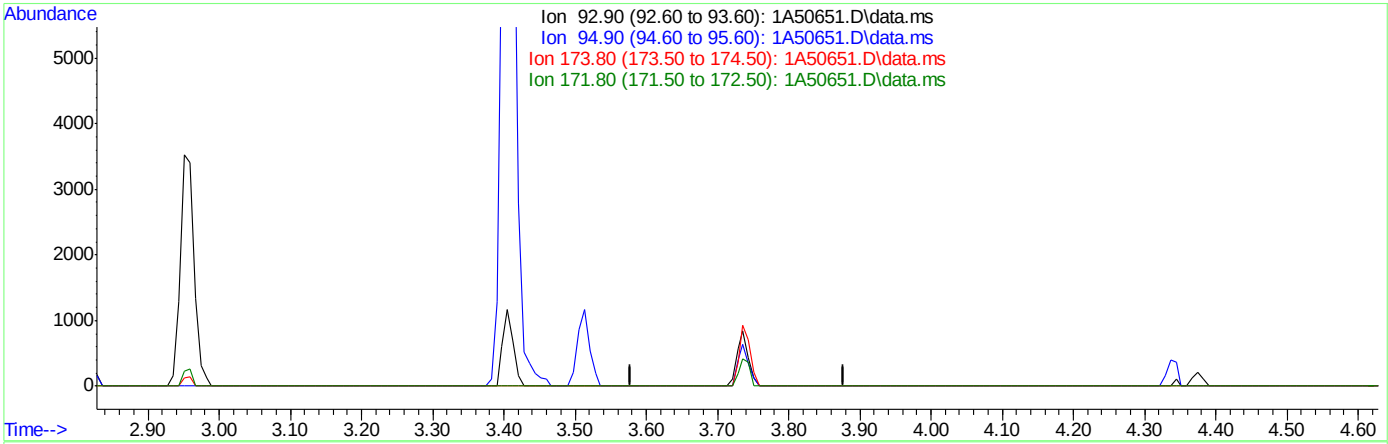
response 794

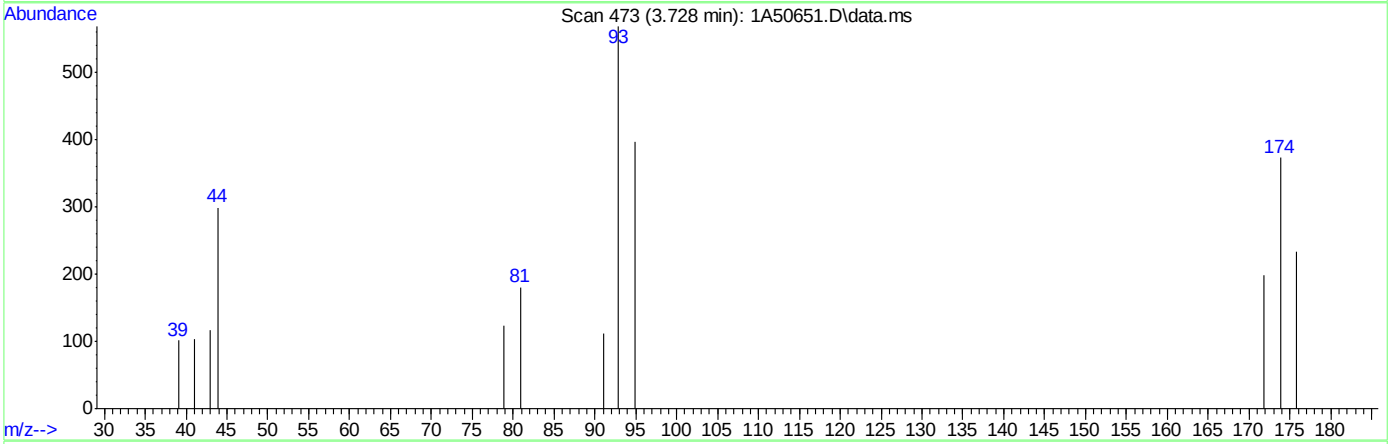
Ion	Exp%	Act%
42.10	100	100
41.10	58.70	60.94
72.00	41.10	32.51
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50651.D
Acq On : 15 Nov 2023 6:16 am
Operator : jeniferw
Sample : IC1945-1
Misc : MS55275,V1A1945,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Nov 15 09:38:22 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50651.D\data.ms

(55) Dibromomethane

3.728min (-3.728) 0.00ug/L

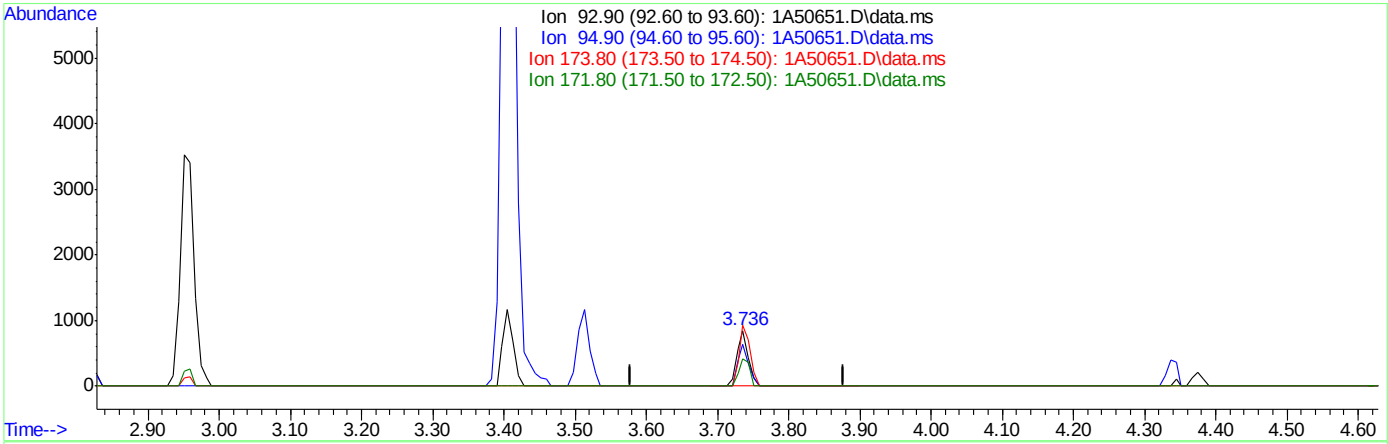
response 0

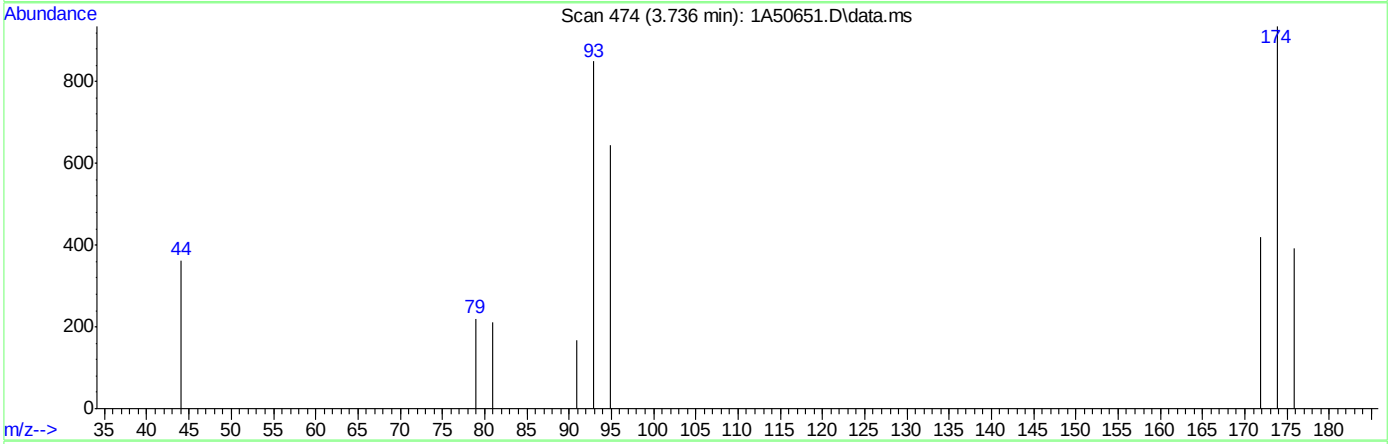
Ion	Exp%	Act%
92.90	100	0.00
94.90	86.10	0.00#
173.80	133.80	0.00#
171.80	68.90	0.00#

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50651.D
Acq On : 15 Nov 2023 6:16 am
Operator : jeniferw
Sample : IC1945-1
Misc : MS55275,V1A1945,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Nov 15 09:38:22 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50651.D\data.ms

(55) Dibromomethane

3.736min (+0.008) 1.08ug/L m

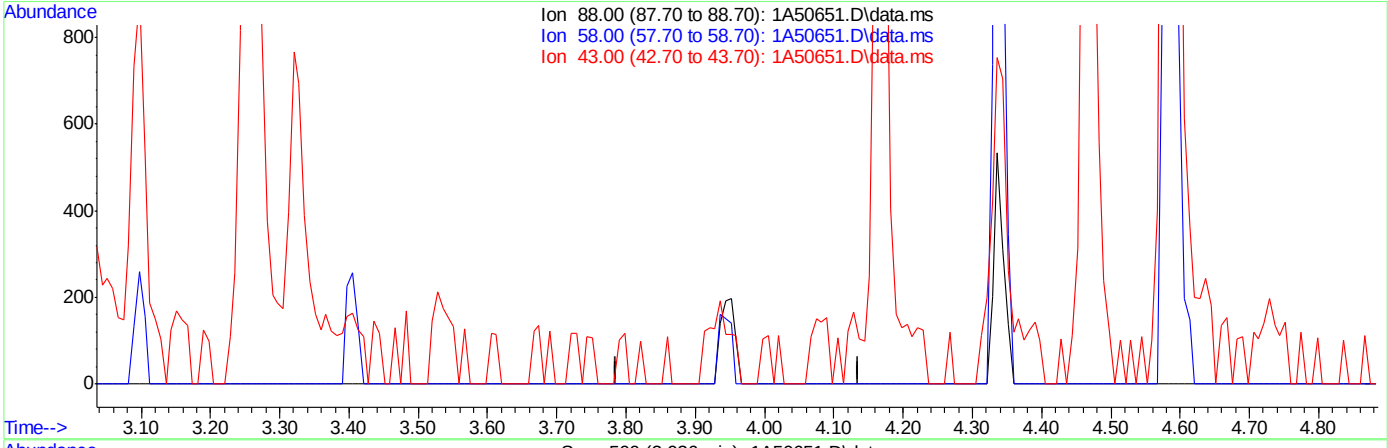
response 964

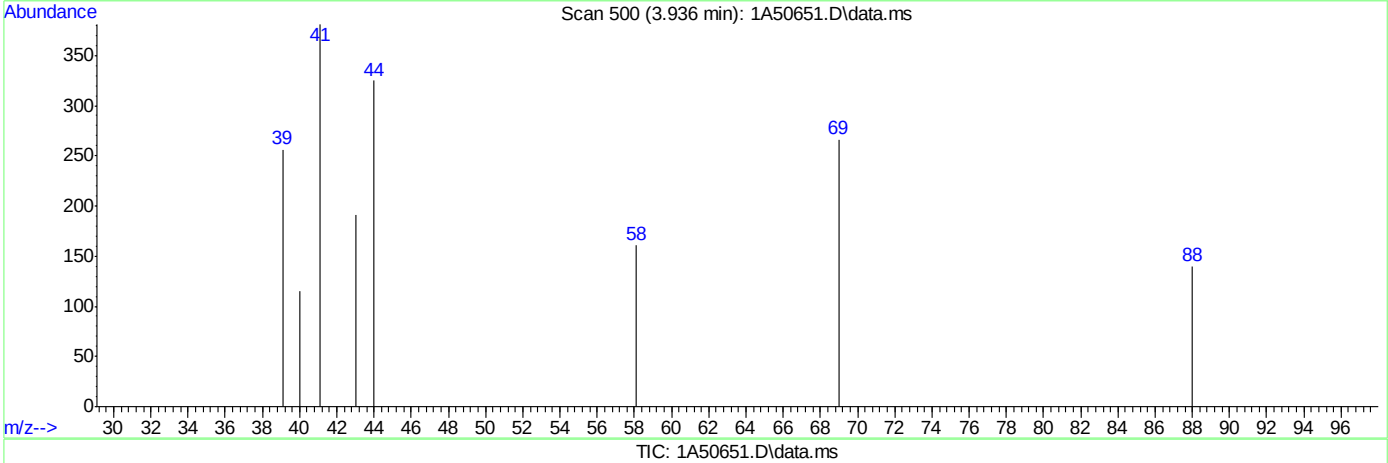
Ion	Exp%	Act%
92.90	100	100
94.90	86.10	75.88
173.80	133.80	110.00
171.80	68.90	49.29

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50651.D
Acq On : 15 Nov 2023 6:16 am
Operator : jeniferw
Sample : IC1945-1
Misc : MS55275,V1A1945,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Nov 15 09:38:22 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50651.D\data.ms

(59) 1,4-Dioxane

3.936min (-3.936) 0.00ug/L

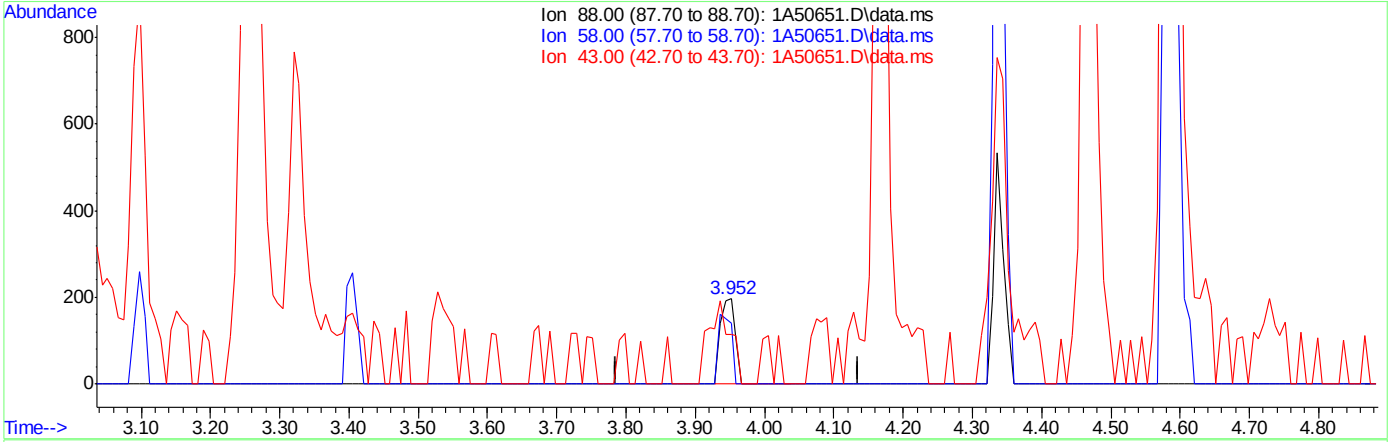
response 0

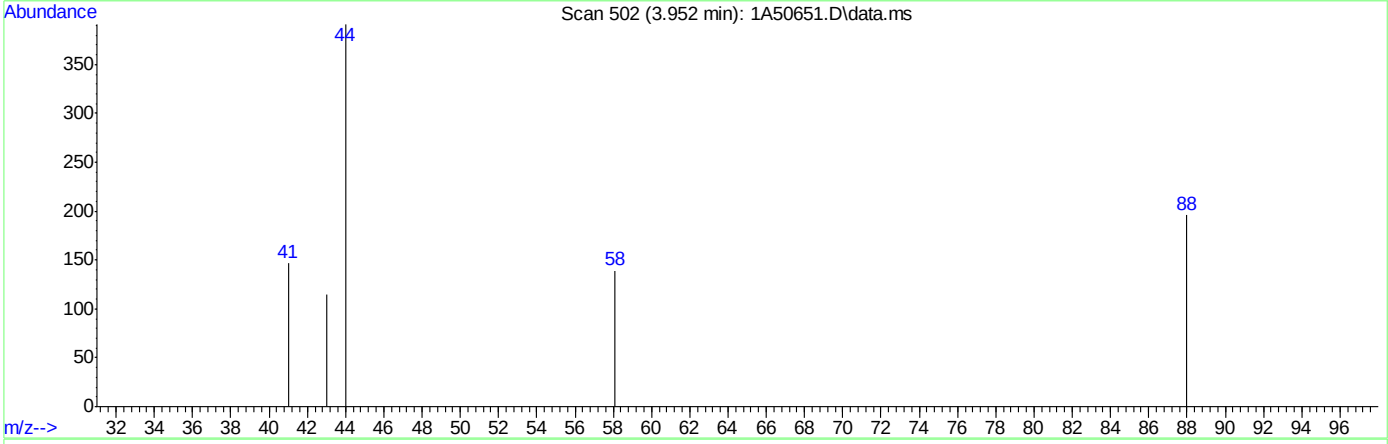
Ion	Exp%	Act%
88.00	100	0.00
58.00	69.70	0.00#
43.00	26.80	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50651.D
Acq On : 15 Nov 2023 6:16 am
Operator : jeniferw
Sample : IC1945-1
Misc : MS55275,V1A1945,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Nov 15 09:38:22 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50651.D\data.ms

(59) 1,4-Dioxane

3.952min (+0.015) 15.38ug/L m

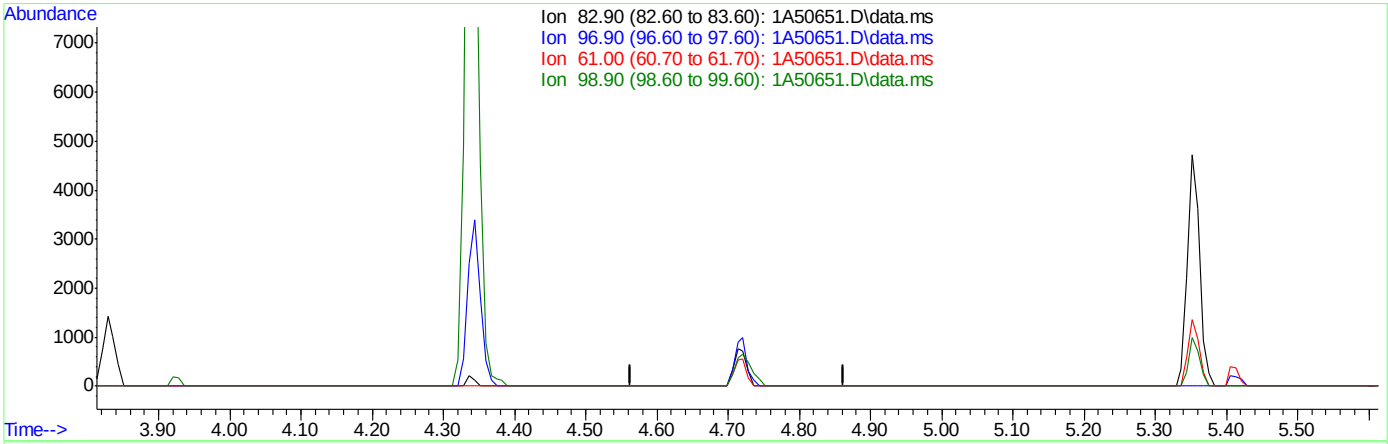
response 292

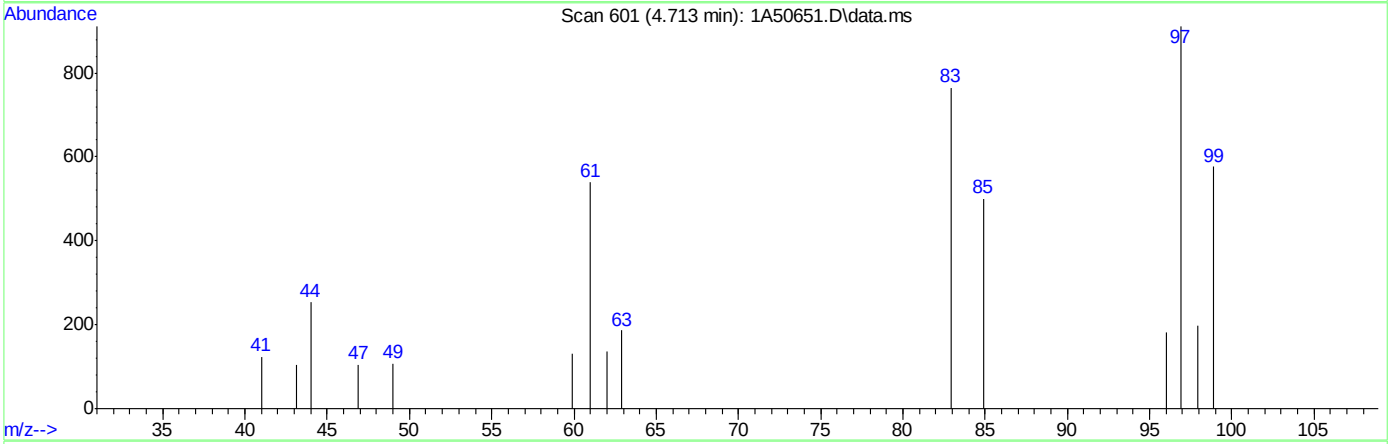
Ion	Exp%	Act%
88.00	100	100
58.00	69.70	70.92
43.00	26.80	58.67#
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50651.D
Acq On : 15 Nov 2023 6:16 am
Operator : jeniferw
Sample : IC1945-1
Misc : MS55275,V1A1945,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Nov 15 09:38:22 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50651.D\data.ms

(70) 1,1,2-Trichloroethane ( )

4.713min (-4.713) 0.00ug/L

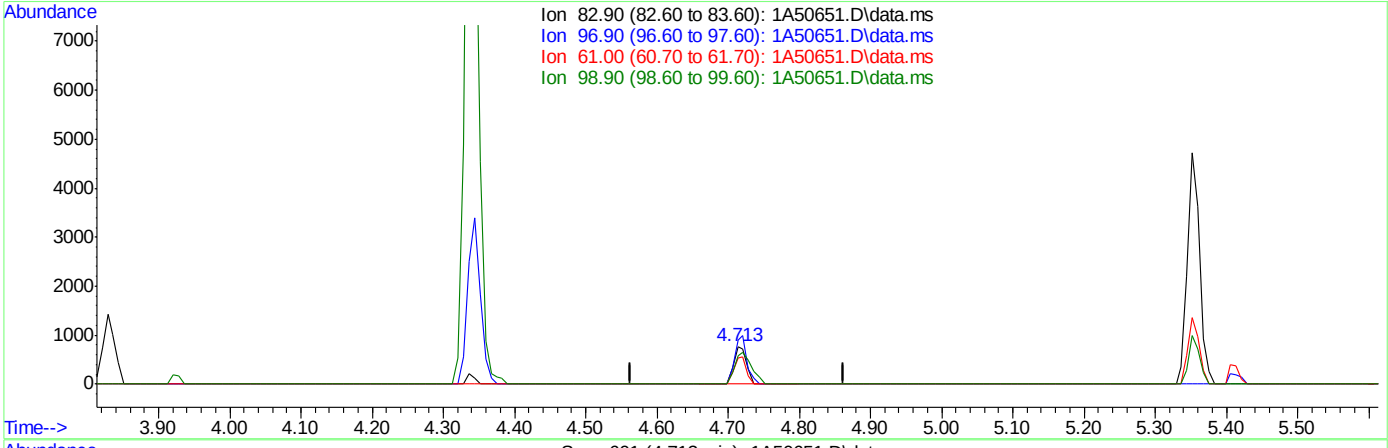
response 0

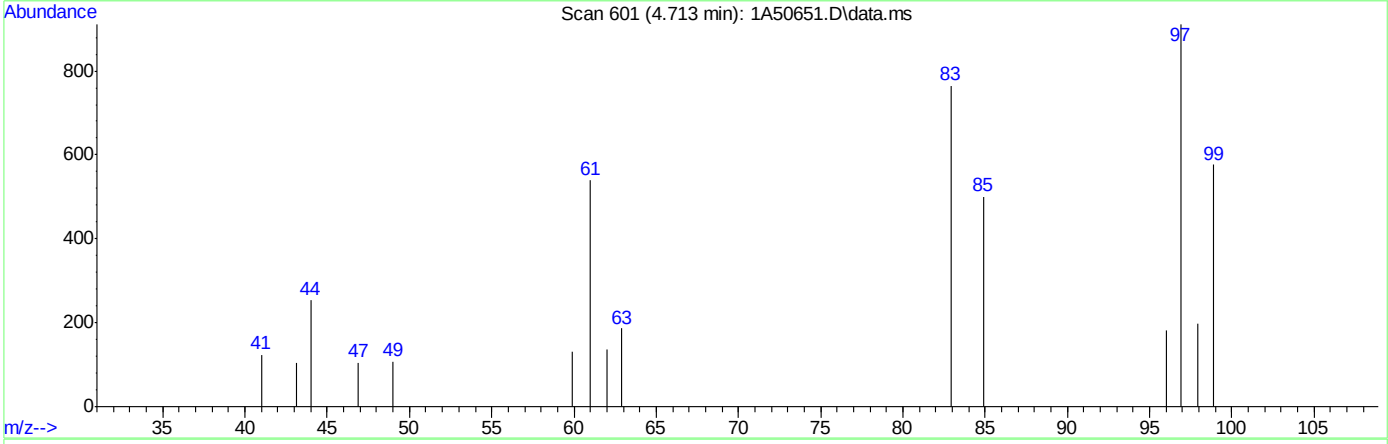
Ion	Exp%	Act%
82.90	100	0.00
96.90	117.30	0.00#
61.00	77.00	0.00#
98.90	74.80	0.00#

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50651.D
Acq On : 15 Nov 2023 6:16 am
Operator : jeniferw
Sample : IC1945-1
Misc : MS55275,V1A1945,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Nov 15 09:38:22 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50651.D\data.ms

(70) 1,1,2-Trichloroethane ( )

4.713min (+0.000) 0.94ug/L m

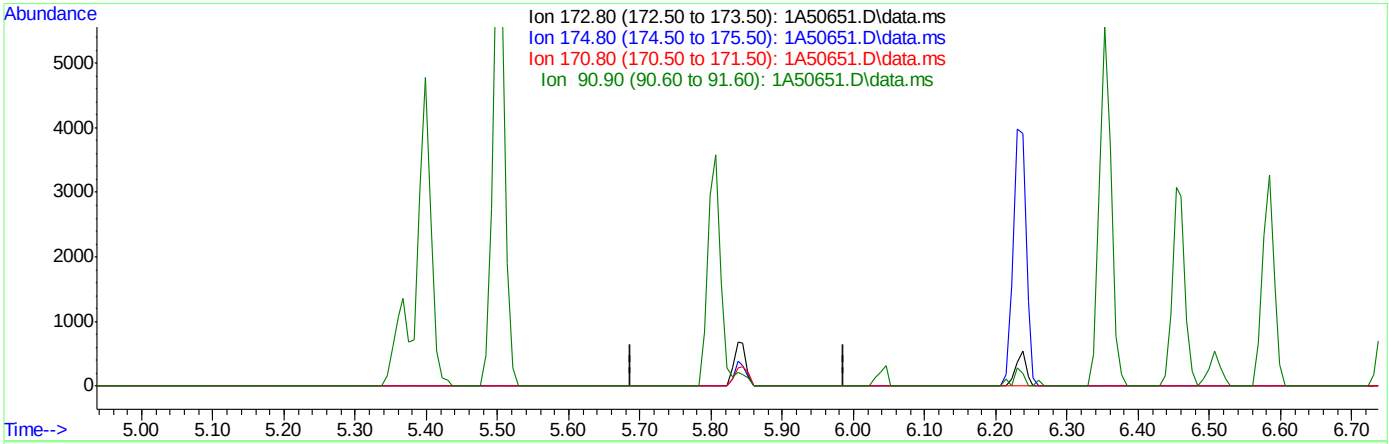
response 981

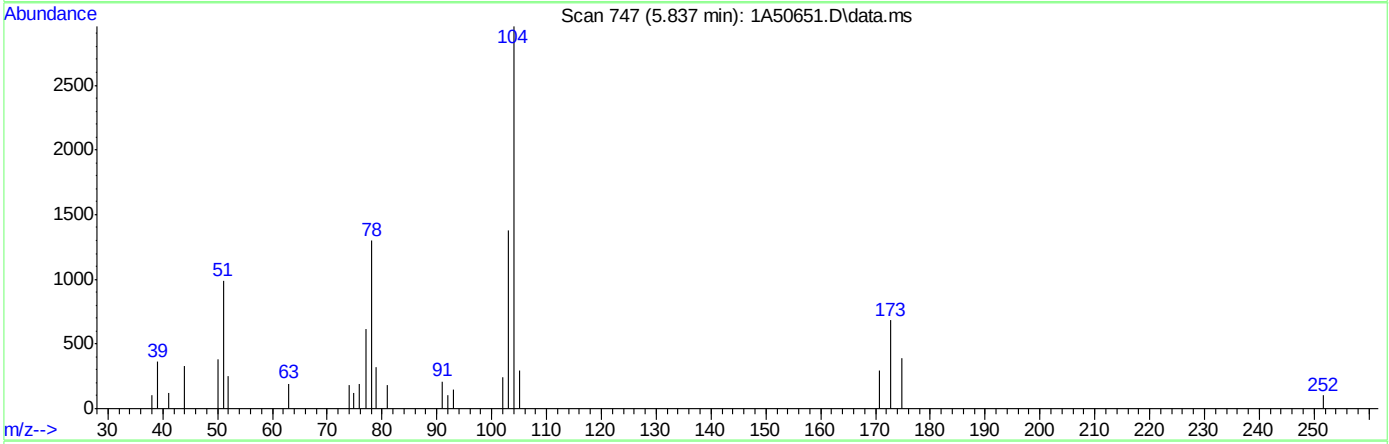
Ion	Exp%	Act%
82.90	100	100
96.90	117.30	119.08
61.00	77.00	70.59
98.90	74.80	75.29

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50651.D
Acq On : 15 Nov 2023 6:16 am
Operator : jeniferw
Sample : IC1945-1
Misc : MS55275,V1A1945,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Nov 15 09:38:22 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50651.D\data.ms

(83) Bromoform

5.837min (-5.837) 0.00ug/L

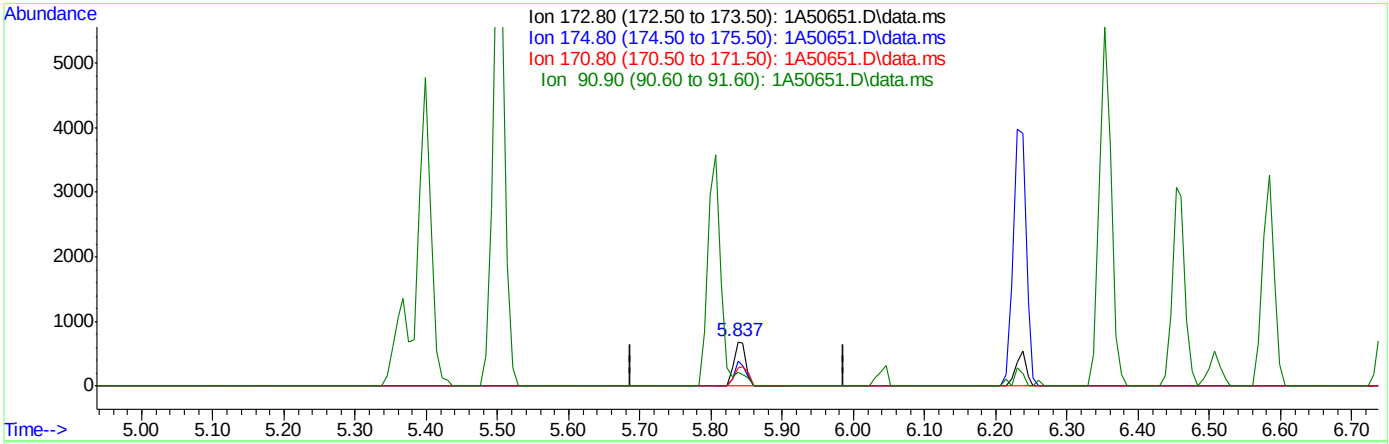
response 0

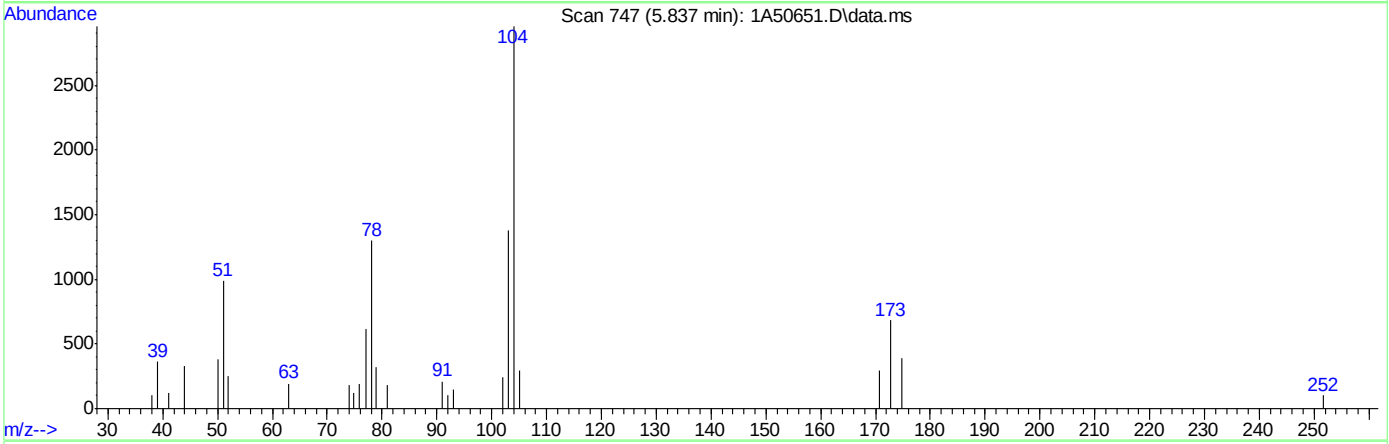
Ion	Exp%	Act%
172.80	100	0.00
174.80	48.00	0.00#
170.80	50.90	0.00#
90.90	22.30	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50651.D
Acq On : 15 Nov 2023 6:16 am
Operator : jeniferw
Sample : IC1945-1
Misc : MS55275,V1A1945,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Nov 15 09:38:22 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50651.D\data.ms

(83) Bromoform

5.837min (+0.000) 0.93ug/L m

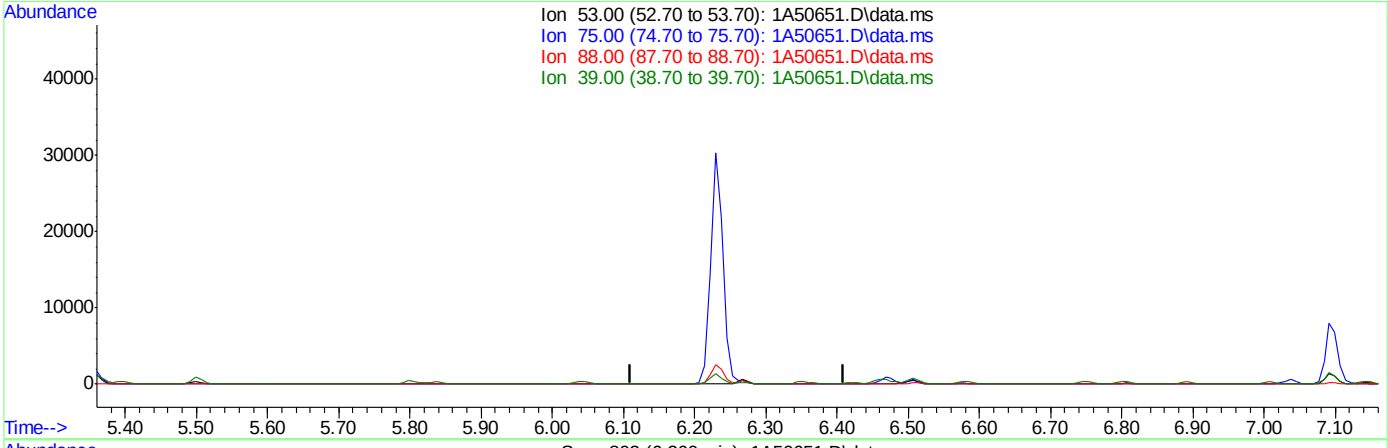
response 822

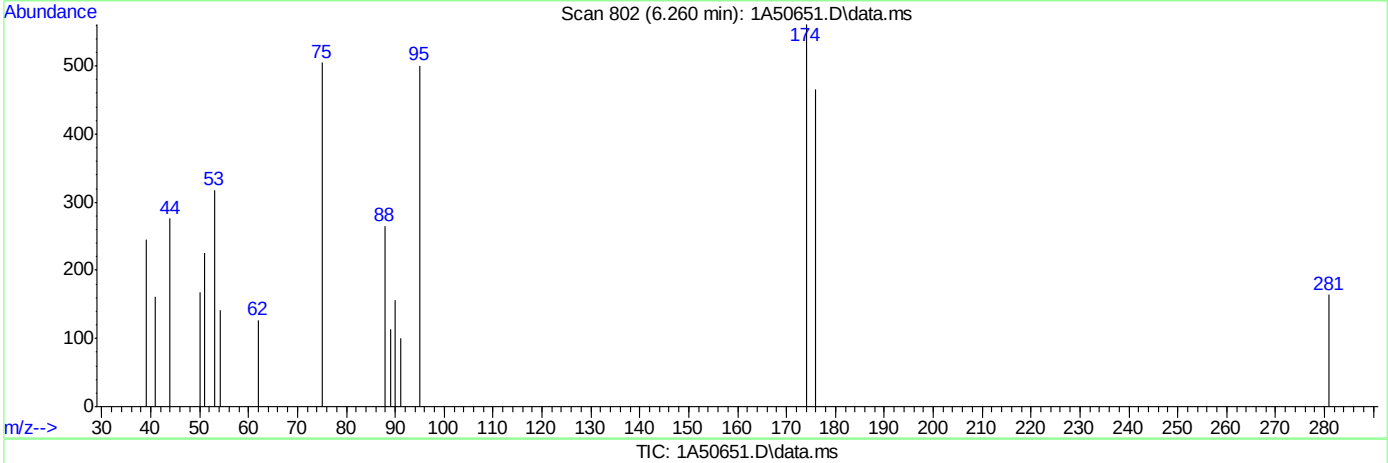
Ion	Exp%	Act%
172.80	100	100
174.80	48.00	57.60
170.80	50.90	42.69
90.90	22.30	30.85

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50651.D
Acq On : 15 Nov 2023 6:16 am
Operator : jeniferw
Sample : IC1945-1
Misc : MS55275,V1A1945,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Nov 15 09:38:22 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50651.D\data.ms

(87) cis-1,4-Dichloro-2-butene

6.260min (-6.260) 0.00ug/L

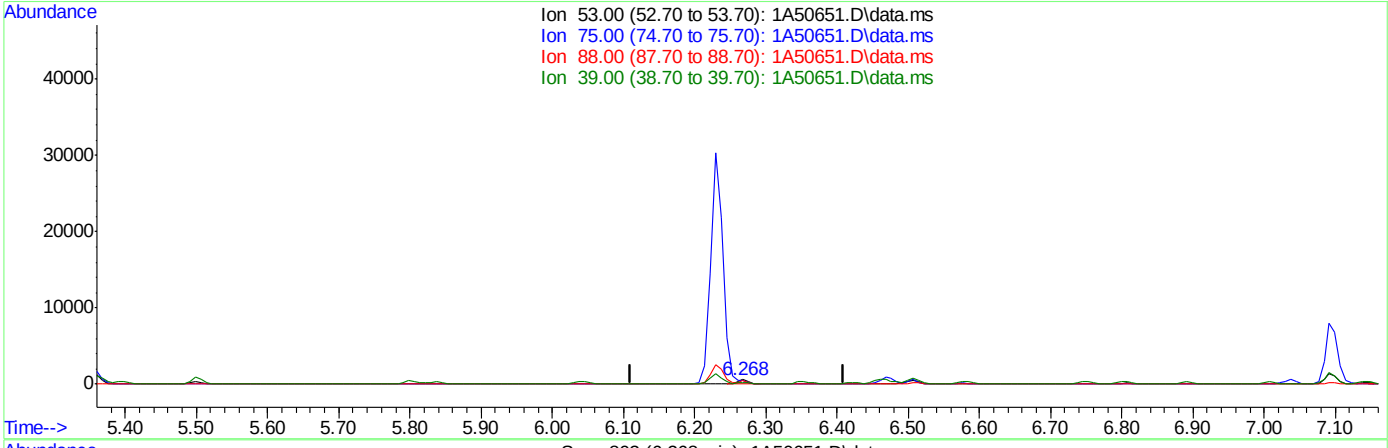
response 0

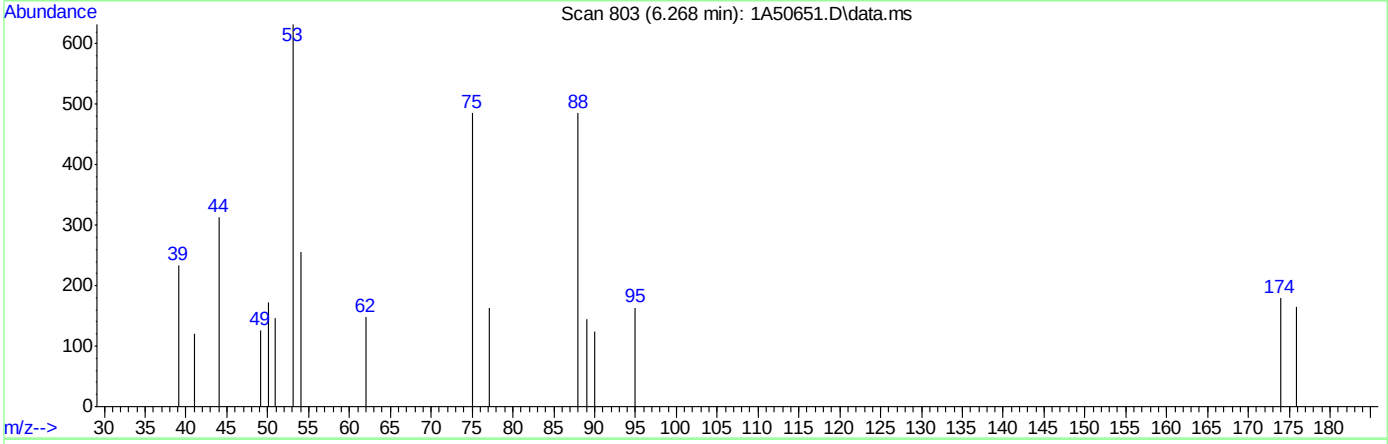
Ion	Exp%	Act%
53.00	100	0.00
75.00	55.00	0.00#
88.00	121.00	0.00#
39.00	30.00	0.00#

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50651.D
Acq On : 15 Nov 2023 6:16 am
Operator : jeniferw
Sample : IC1945-1
Misc : MS55275,V1A1945,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Nov 15 09:38:22 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50651.D\data.ms

(87) cis-1,4-Dichloro-2-butene

6.268min (+0.008) 1.38ug/L m

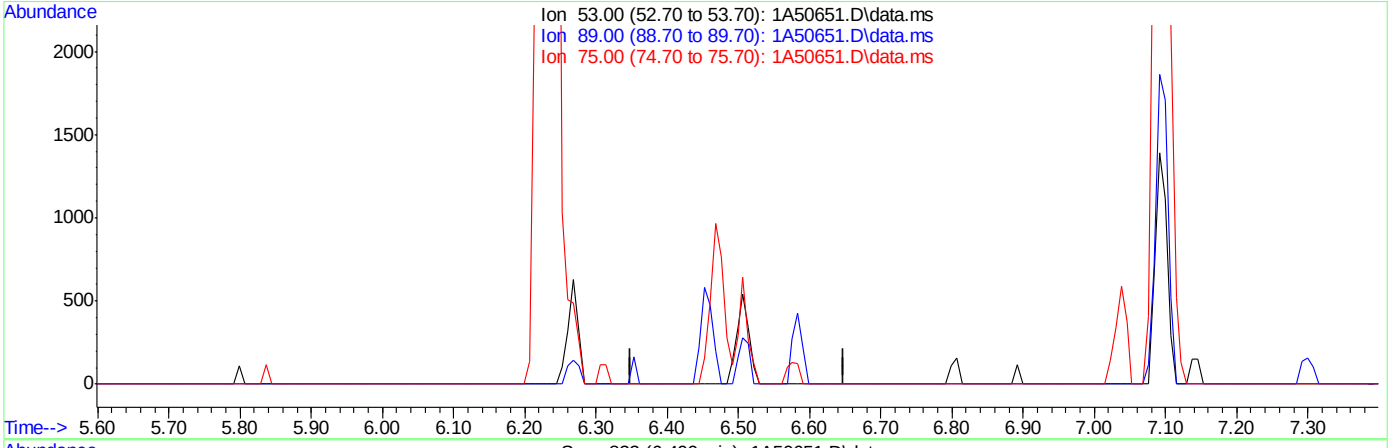
response 629

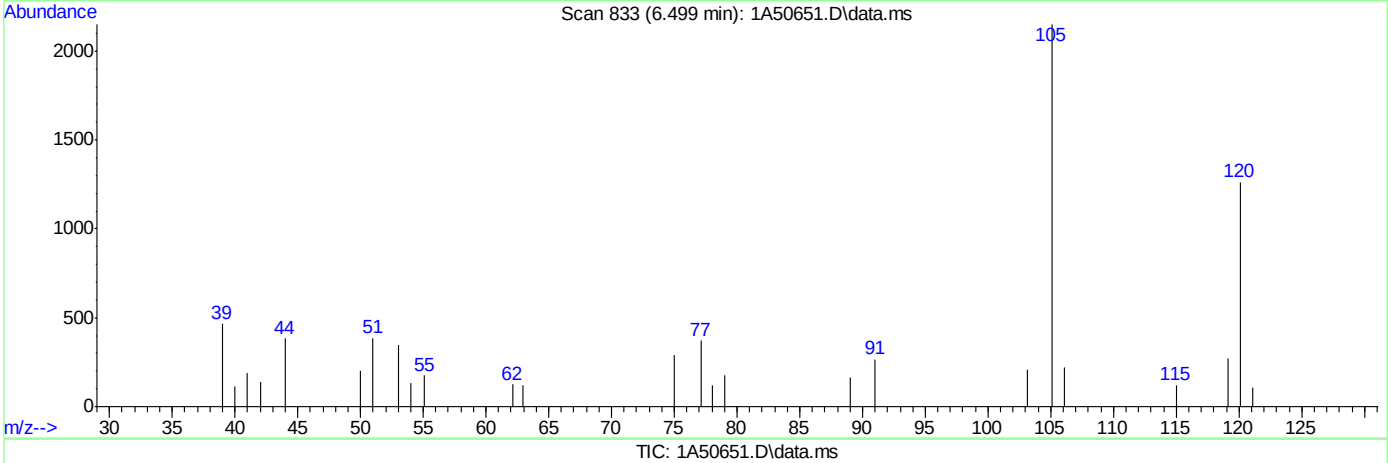
Ion	Exp%	Act%
53.00	100	100
75.00	55.00	76.74#
88.00	121.00	76.74#
39.00	30.00	37.03

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50651.D
Acq On : 15 Nov 2023 6:16 am
Operator : jeniferw
Sample : IC1945-1
Misc : MS55275,V1A1945,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Nov 15 09:38:22 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50651.D\data.ms

(93) trans-1,4-Dichloro-2-Butene

6.499min (-6.499) 0.00ug/L

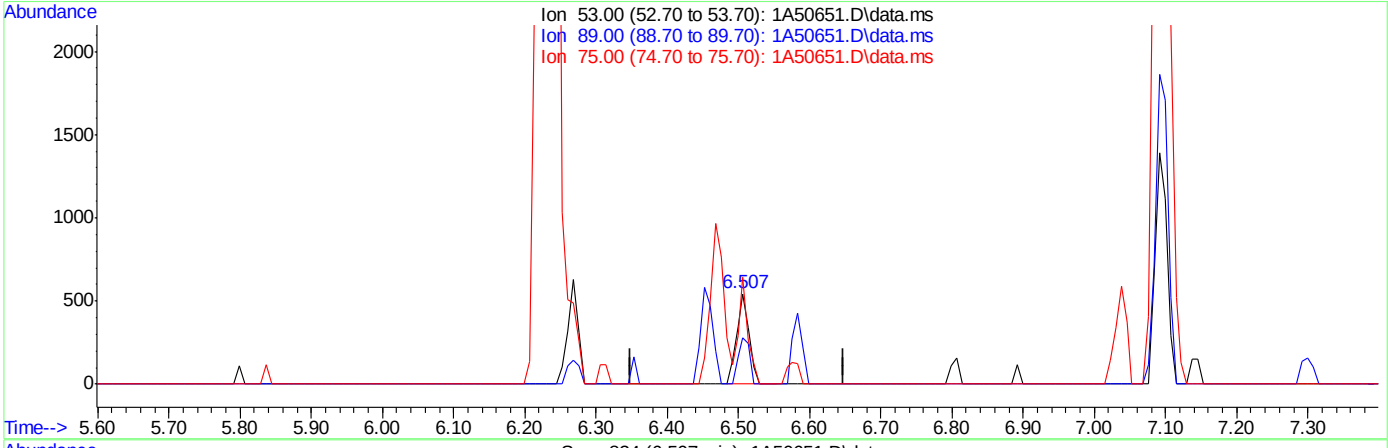
response 0

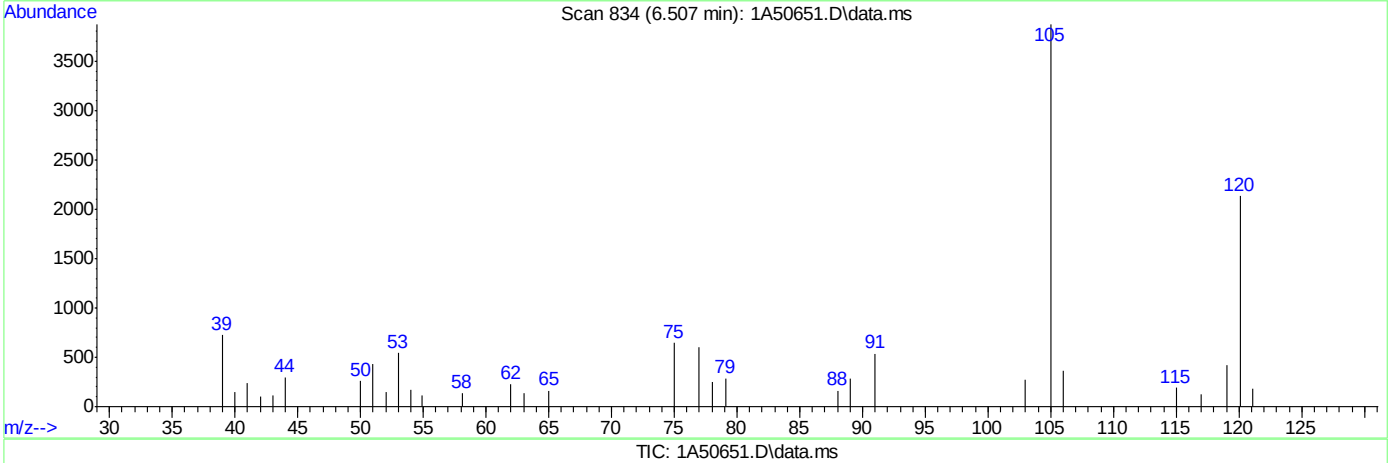
Ion	Exp%	Act%
53.00	100	0.00
89.00	65.00	0.00#
75.00	91.60	0.00#
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50651.D
Acq On : 15 Nov 2023 6:16 am
Operator : jeniferw
Sample : IC1945-1
Misc : MS55275,V1A1945,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Nov 15 09:38:22 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50651.D\data.ms

(93) trans-1,4-Dichloro-2-Butene

6.507min (+0.008) 1.06ug/L m

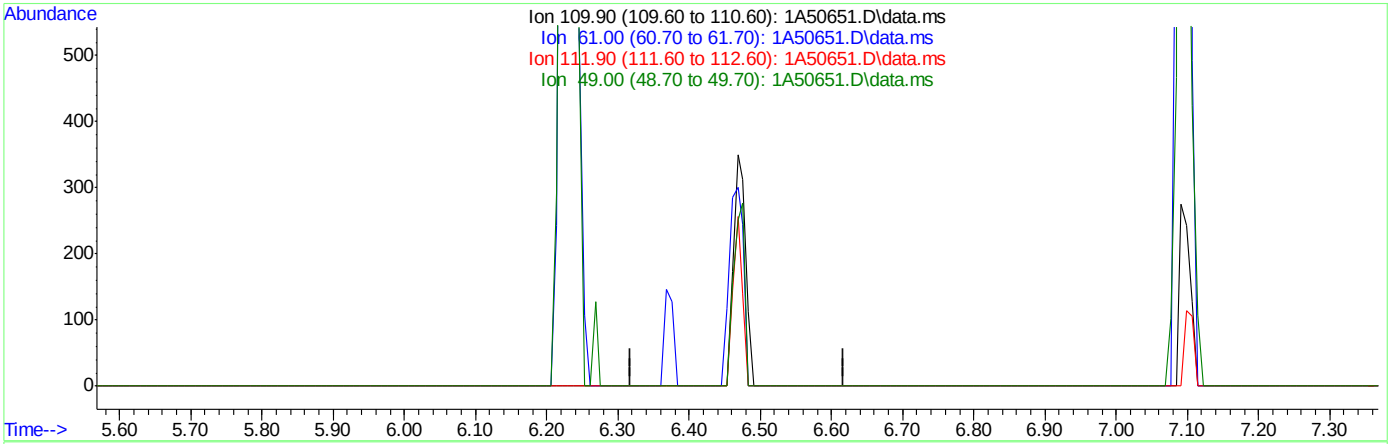
response 681

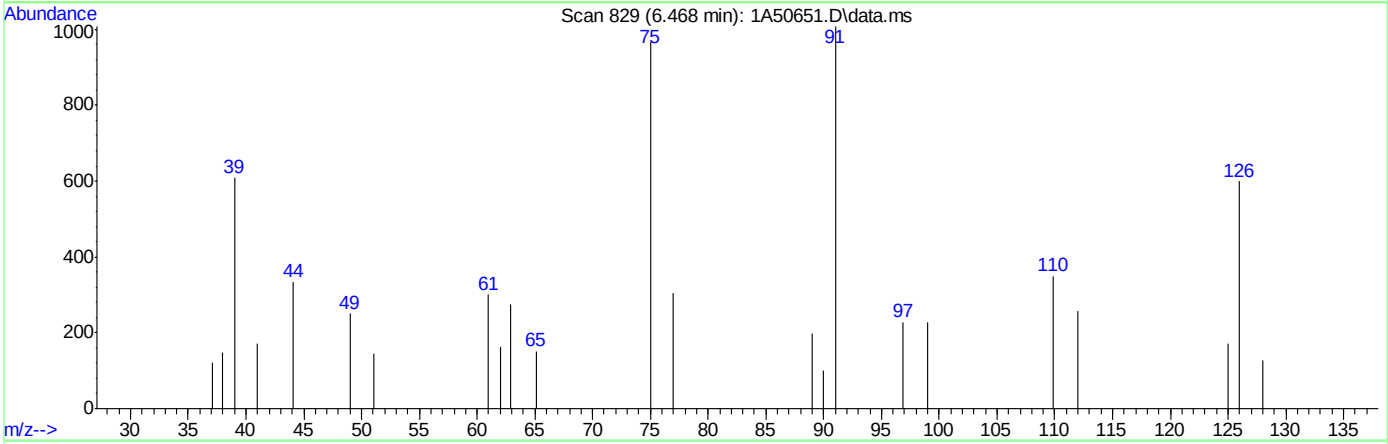
Ion	Exp%	Act%
53.00	100	100
89.00	65.00	51.38
75.00	91.60	118.42#
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50651.D
Acq On : 15 Nov 2023 6:16 am
Operator : jeniferw
Sample : IC1945-1
Misc : MS55275,V1A1945,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Nov 15 09:38:22 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50651.D\data.ms

(94) 1,2,3-Trichloropropane ( )

6.468min (-6.468) 0.00ug/L

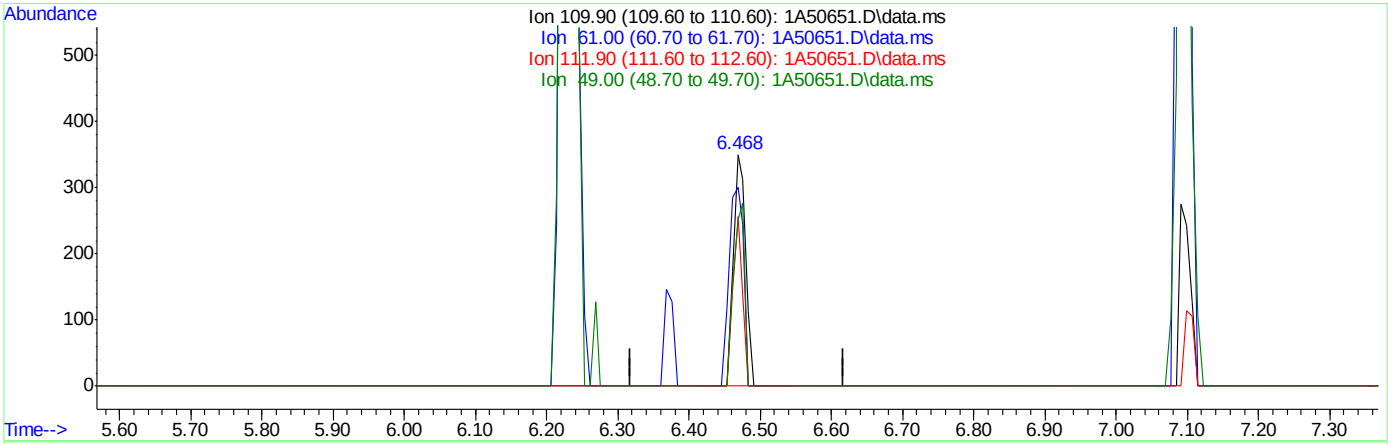
response 0

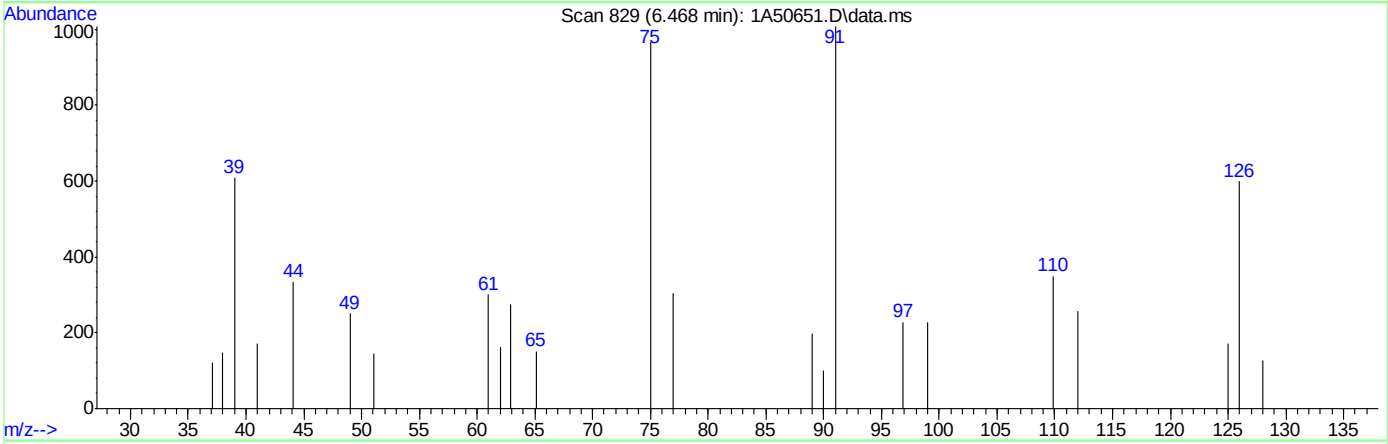
Ion	Exp%	Act%
109.90	100	0.00
61.00	66.40	0.00#
111.90	64.30	0.00#
49.00	57.90	0.00#

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50651.D
Acq On : 15 Nov 2023 6:16 am
Operator : jeniferw
Sample : IC1945-1
Misc : MS55275,V1A1945,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Nov 15 09:38:22 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50651.D\data.ms

(94) 1,2,3-Trichloropropane ( )

6.468min (+0.000) 0.94ug/L m

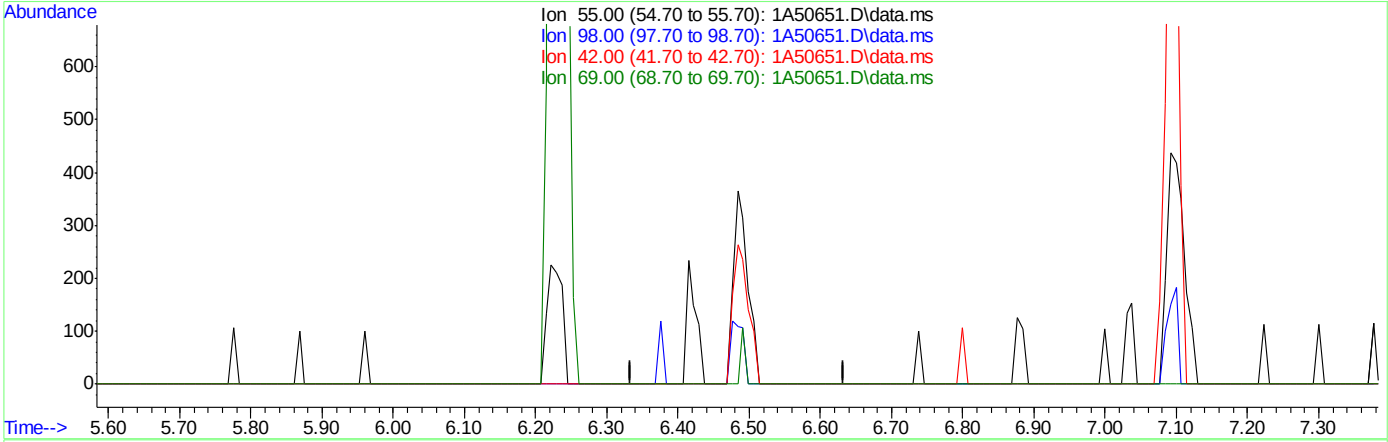
response 438

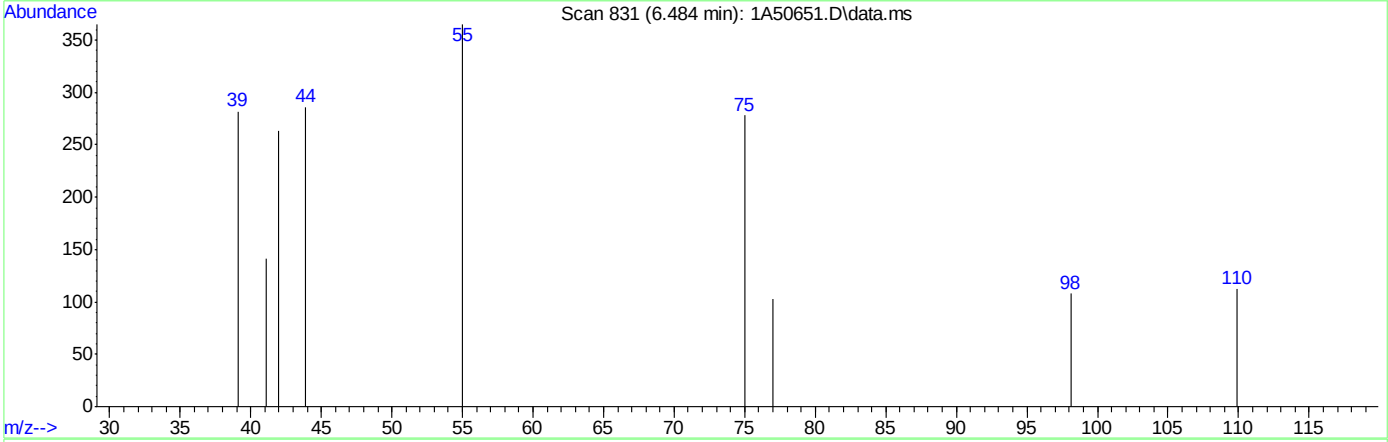
Ion	Exp%	Act%
109.90	100	100
61.00	66.40	86.00
111.90	64.30	73.14
49.00	57.90	71.71

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50651.D
Acq On : 15 Nov 2023 6:16 am
Operator : jeniferw
Sample : IC1945-1
Misc : MS55275,V1A1945,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Nov 15 09:38:22 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50651.D\data.ms

(95) Cyclohexanone

6.484min (-6.484) 0.00ug/L

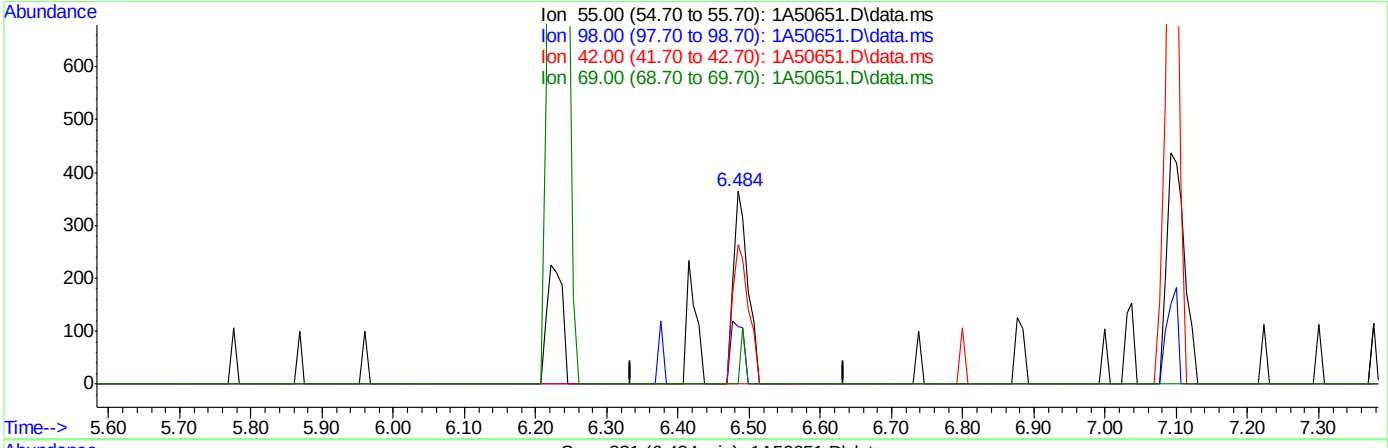
response 0

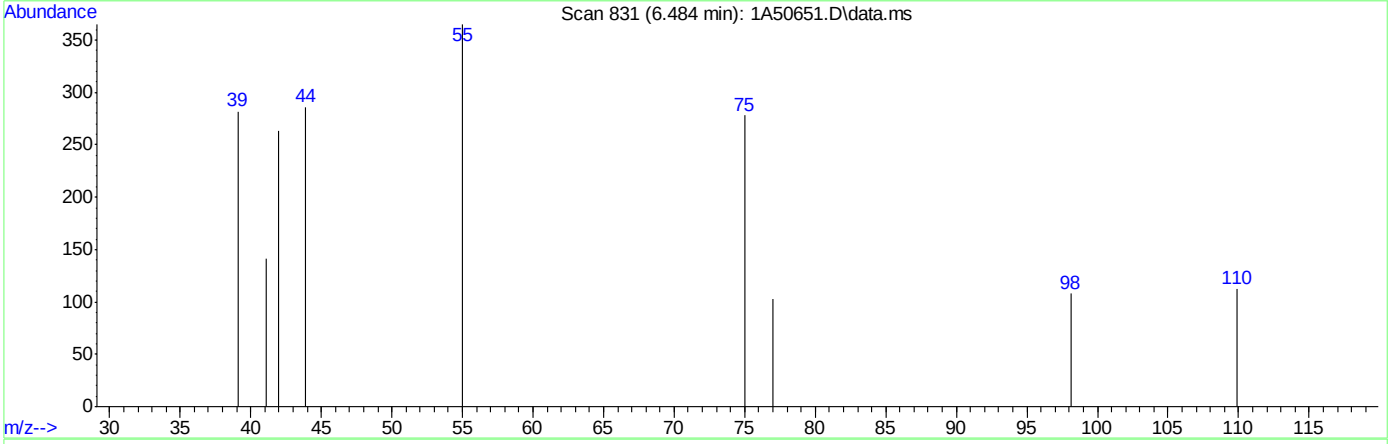
Ion	Exp%	Act%
55.00	100	0.00
98.00	41.70	0.00#
42.00	67.70	0.00#
69.00	27.00	0.00#

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50651.D
Acq On : 15 Nov 2023 6:16 am
Operator : jeniferw
Sample : IC1945-1
Misc : MS55275,V1A1945,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Nov 15 09:38:22 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50651.D\data.ms

(95) Cyclohexanone

6.484min (+0.000) 5.57ug/L m

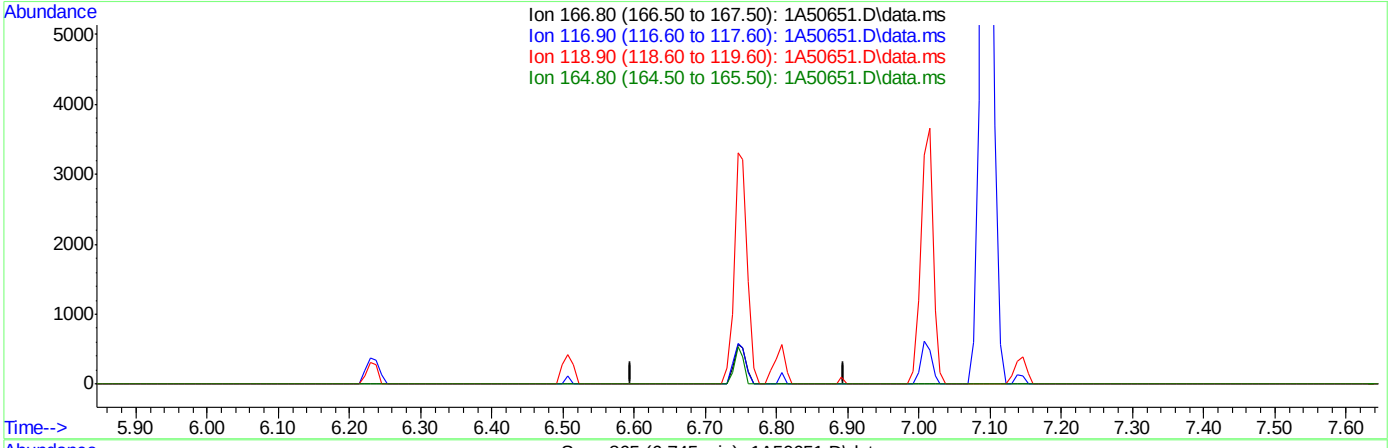
response 537

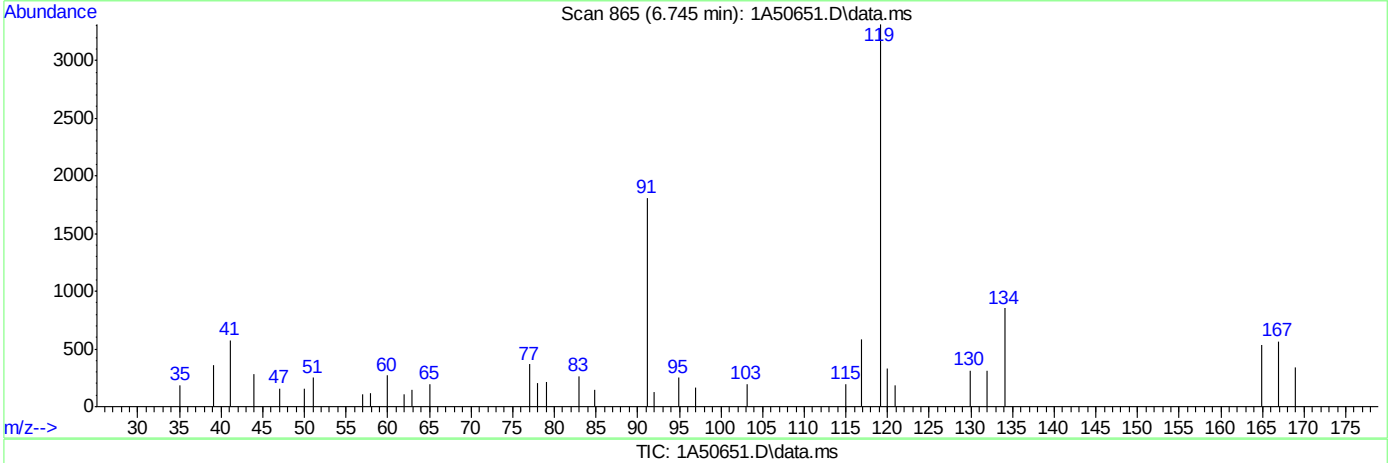
Ion	Exp%	Act%
55.00	100	100
98.00	41.70	29.59
42.00	67.70	72.05
69.00	27.00	0.00#

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50651.D
Acq On : 15 Nov 2023 6:16 am
Operator : jeniferw
Sample : IC1945-1
Misc : MS55275,V1A1945,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Nov 15 09:38:22 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50651.D\data.ms

(99) Pentachloroethane ( )

6.745min (-6.745) 0.00ug/L

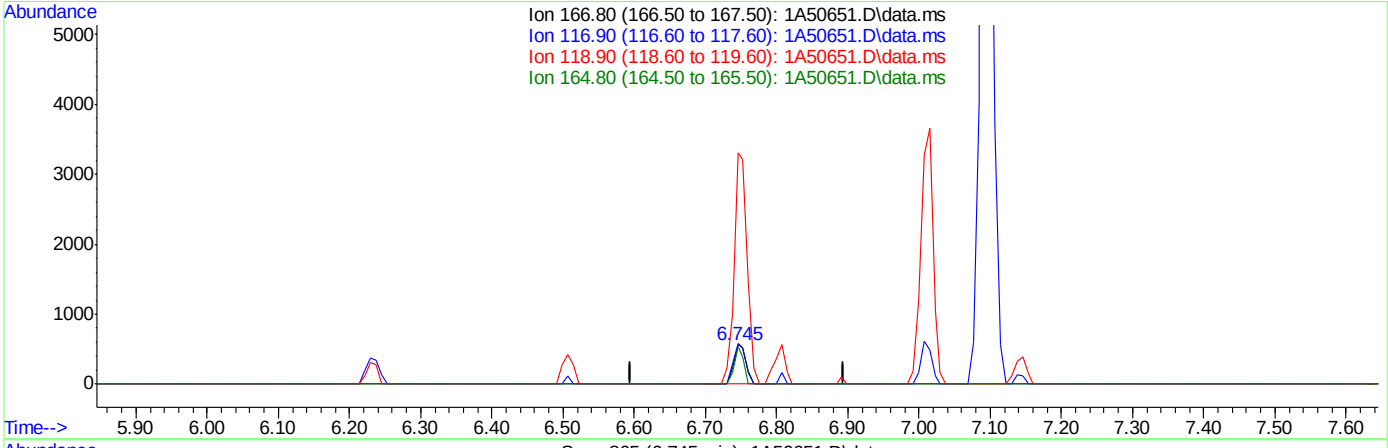
response 0

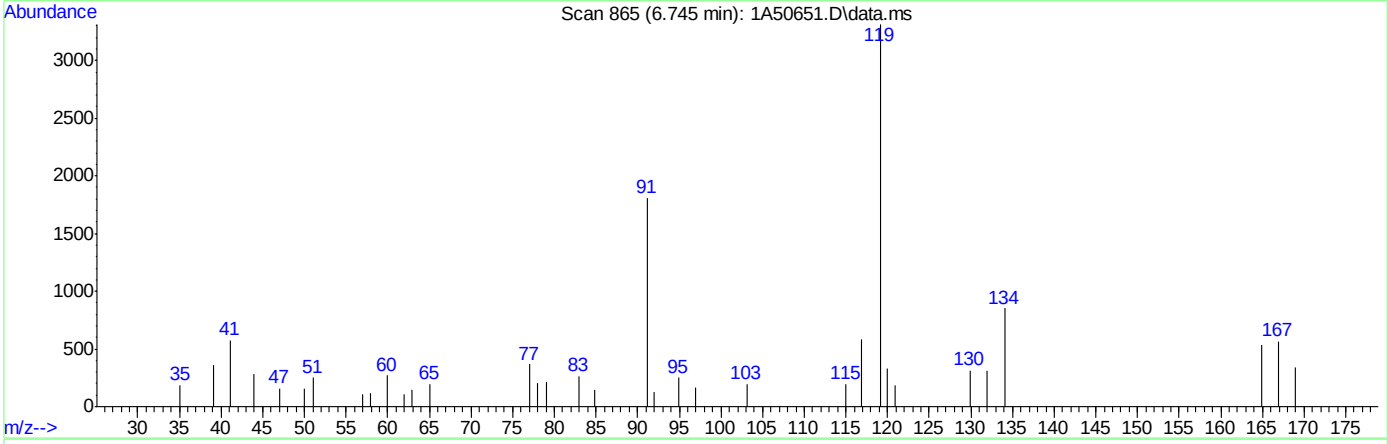
Ion	Exp%	Act%
166.80	100	0.00
116.90	96.30	0.00#
118.90	482.90	0.00#
164.80	79.60	0.00#

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50651.D
Acq On : 15 Nov 2023 6:16 am
Operator : jeniferw
Sample : IC1945-1
Misc : MS55275,V1A1945,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Nov 15 09:38:22 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50651.D\data.ms

(99) Pentachloroethane ( )

6.745min (+0.000) 1.05ug/L m

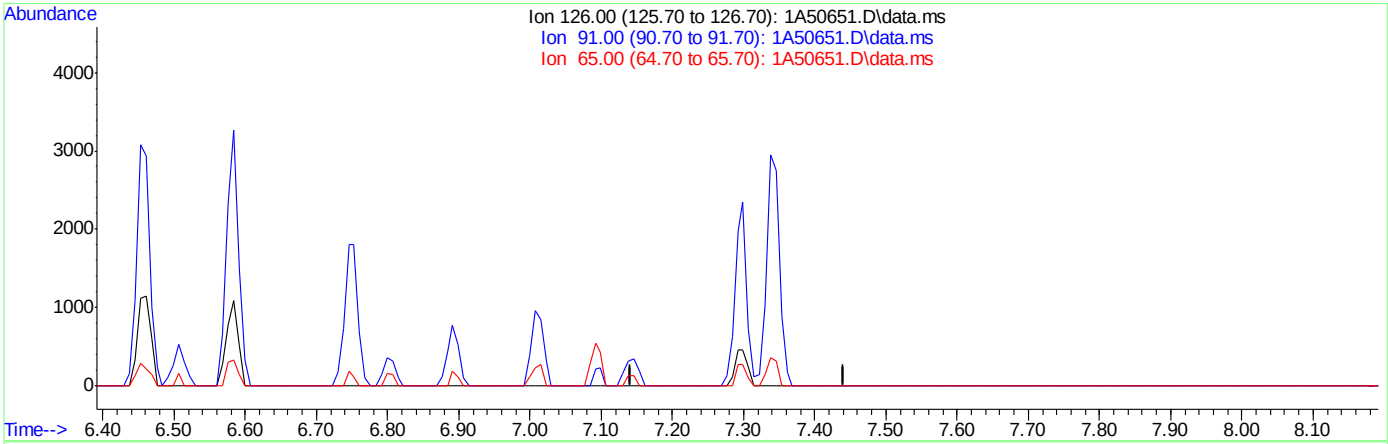
response 691

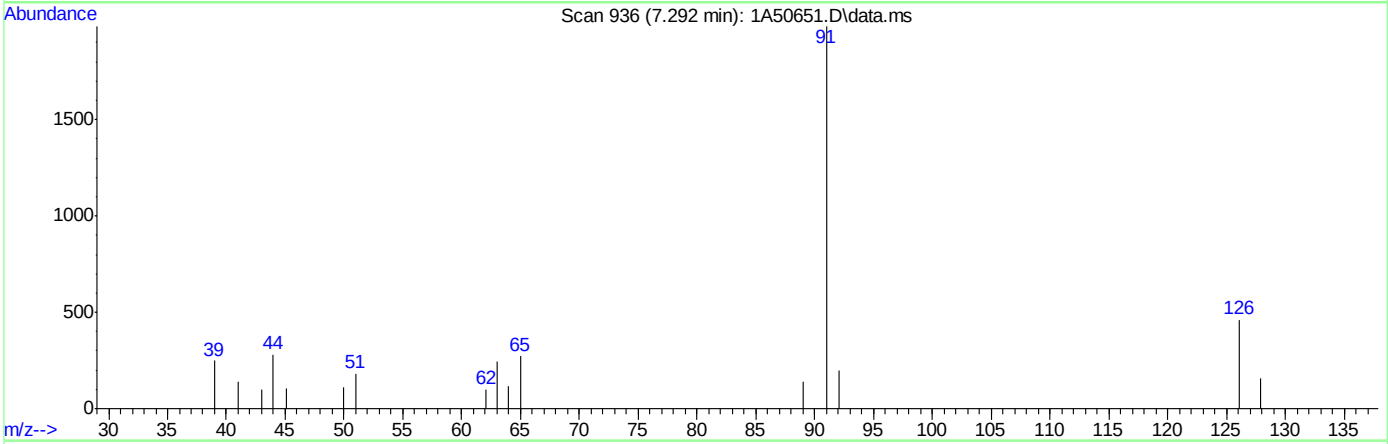
Ion	Exp%	Act%
166.80	100	100
116.90	96.30	104.26
118.90	482.90	587.41#
164.80	79.60	95.04

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50651.D
Acq On : 15 Nov 2023 6:16 am
Operator : jeniferw
Sample : IC1945-1
Misc : MS55275,V1A1945,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Nov 15 09:38:22 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50651.D\data.ms

(106) Benzyl Chloride

7.292min (-7.292) 0.00ug/L

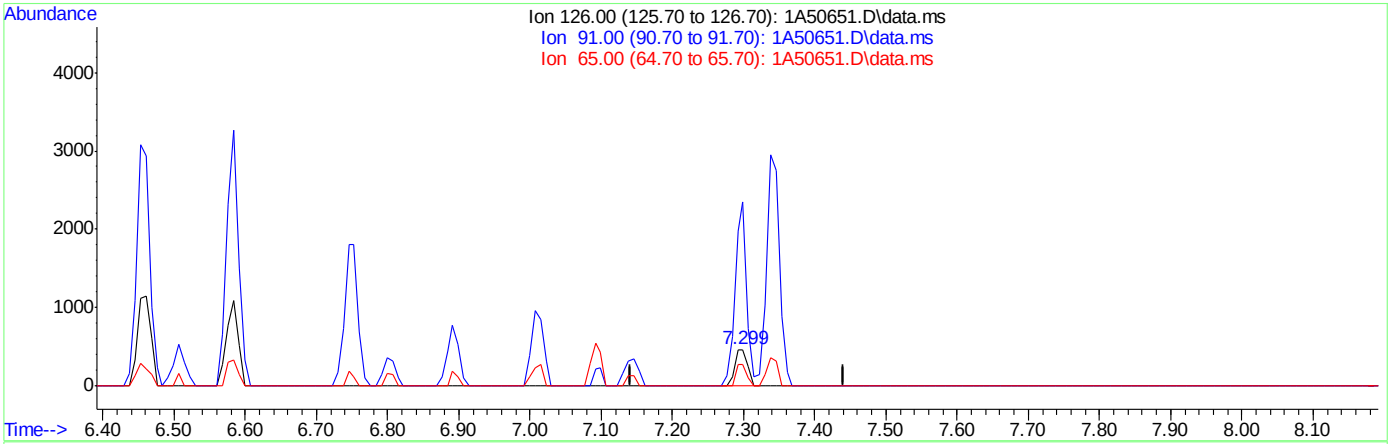
response 0

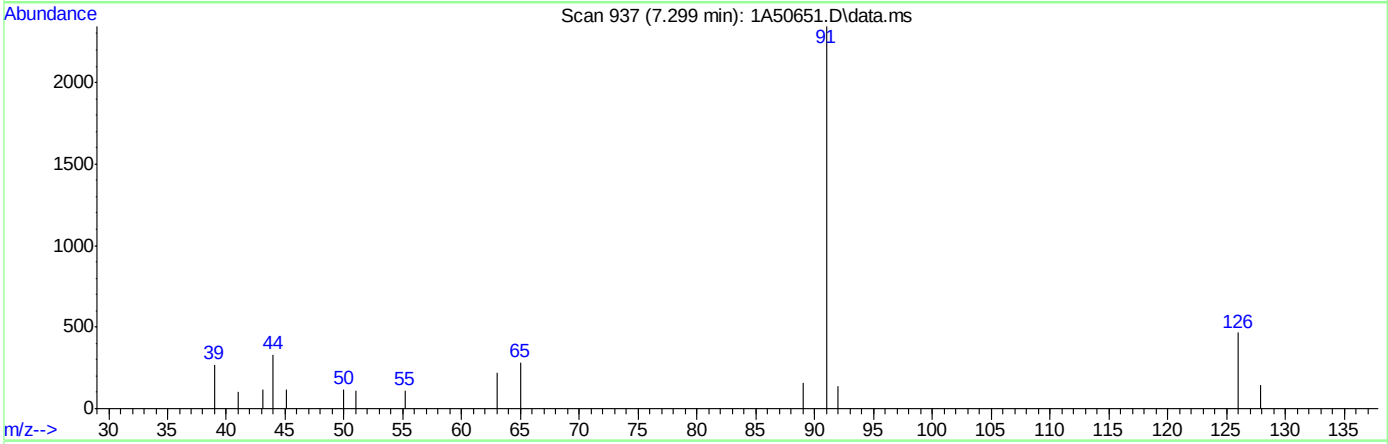
Ion	Exp%	Act%
126.00	100	0.00
91.00	460.20	0.00#
65.00	60.50	0.00#
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50651.D
Acq On : 15 Nov 2023 6:16 am
Operator : jeniferw
Sample : IC1945-1
Misc : MS55275,V1A1945,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Nov 15 09:38:22 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50651.D\data.ms

(106) Benzyl Chloride

7.299min (+0.008) 0.98ug/L m

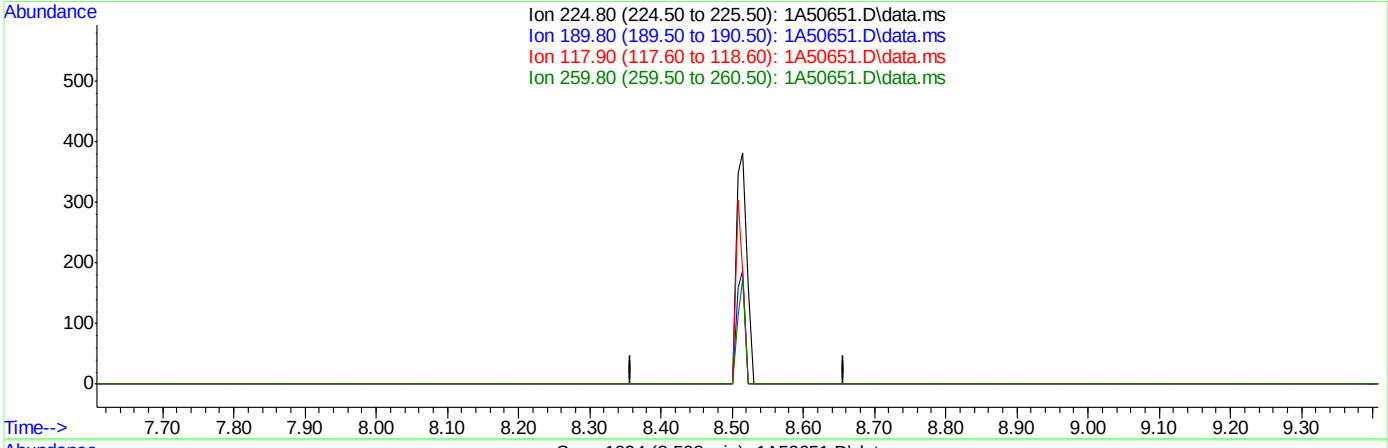
response 596

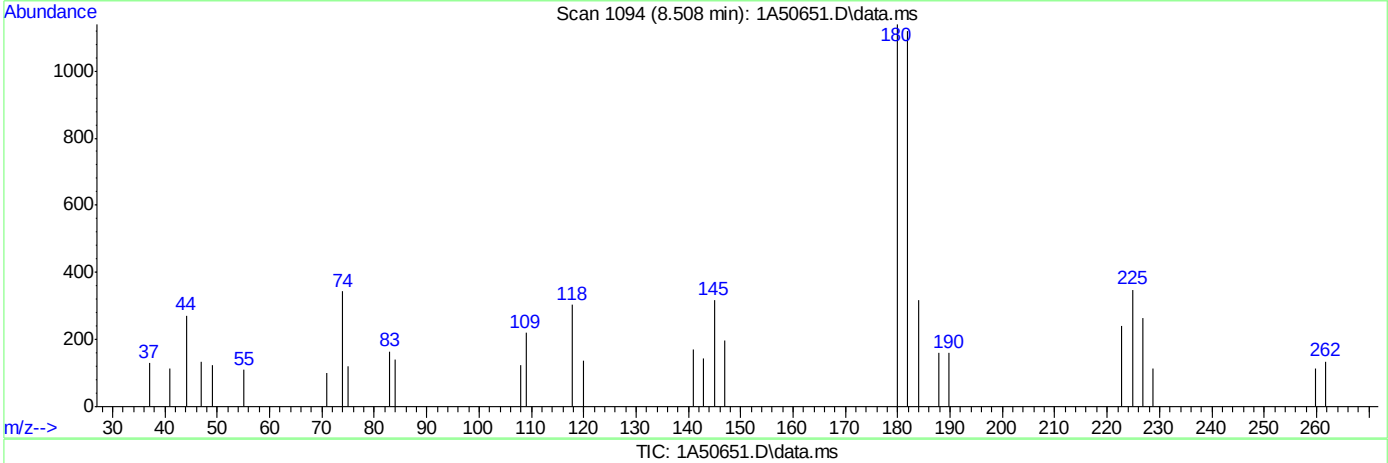
Ion	Exp%	Act%
126.00	100	100
91.00	460.20	503.00#
65.00	60.50	60.94
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50651.D
Acq On : 15 Nov 2023 6:16 am
Operator : jeniferw
Sample : IC1945-1
Misc : MS55275,V1A1945,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Nov 15 09:38:22 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50651.D\data.ms

(109) Hexachlorobutadiene ( )

8.508min (-8.508) 0.00ug/L

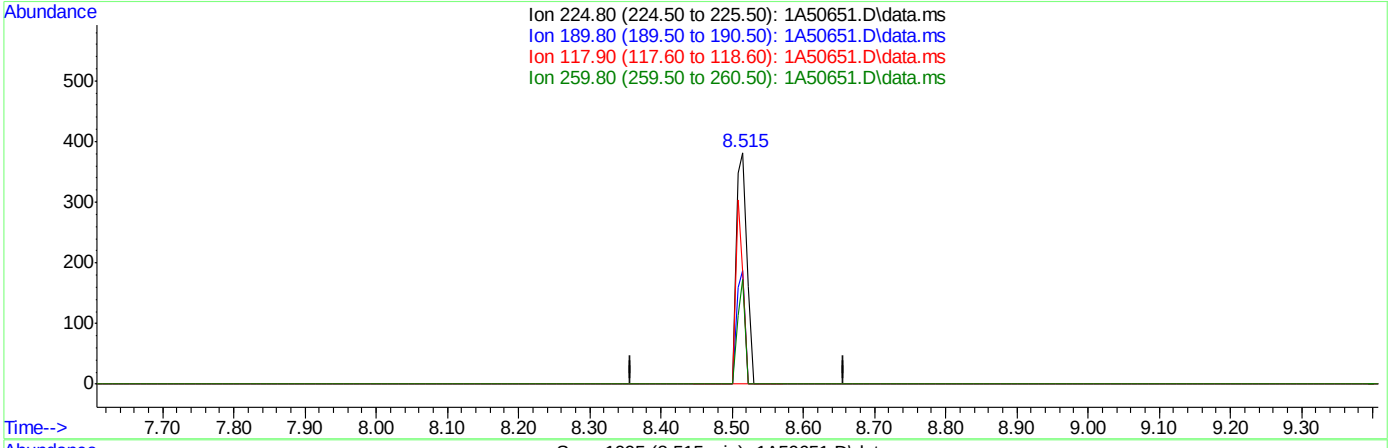
response 0

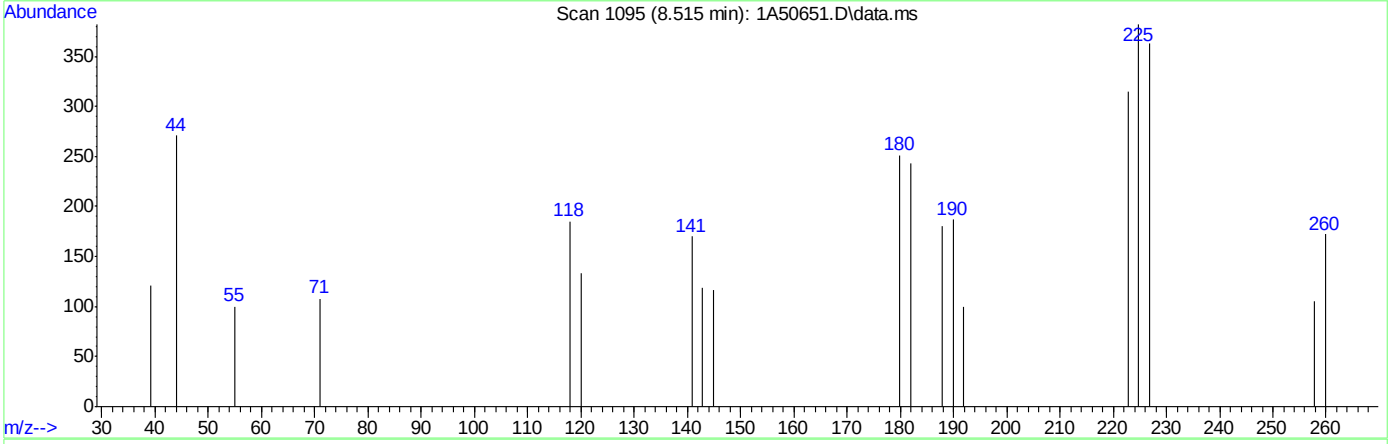
Ion	Exp%	Act%
224.80	100	0.00
189.80	44.60	0.00#
117.90	34.60	0.00#
259.80	28.20	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50651.D
Acq On : 15 Nov 2023 6:16 am
Operator : jeniferw
Sample : IC1945-1
Misc : MS55275,V1A1945,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Nov 15 09:38:22 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50651.D\data.ms

(109) Hexachlorobutadiene ( )

8.515min (+0.008) 0.74ug/L m

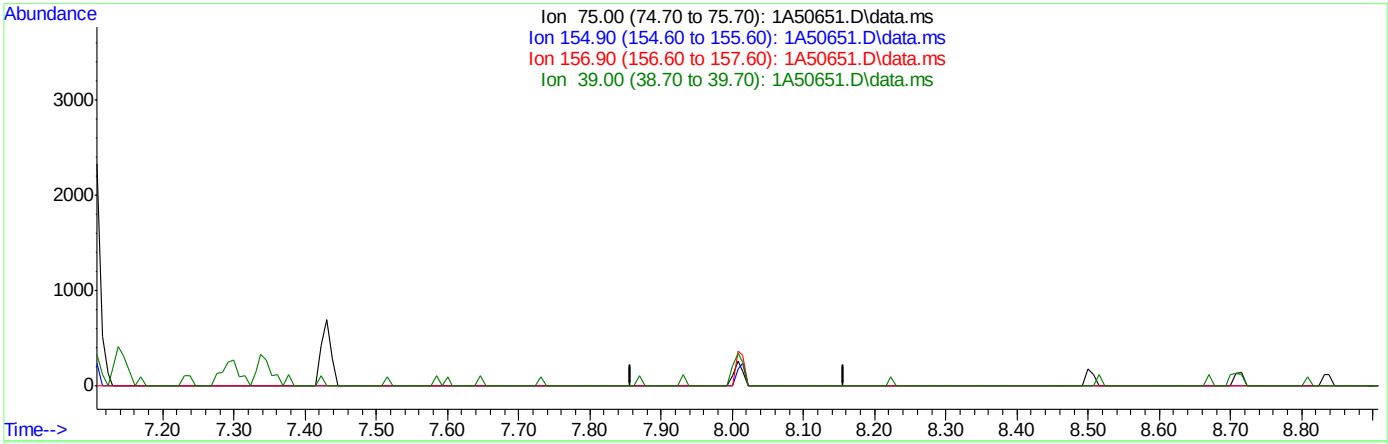
response 412

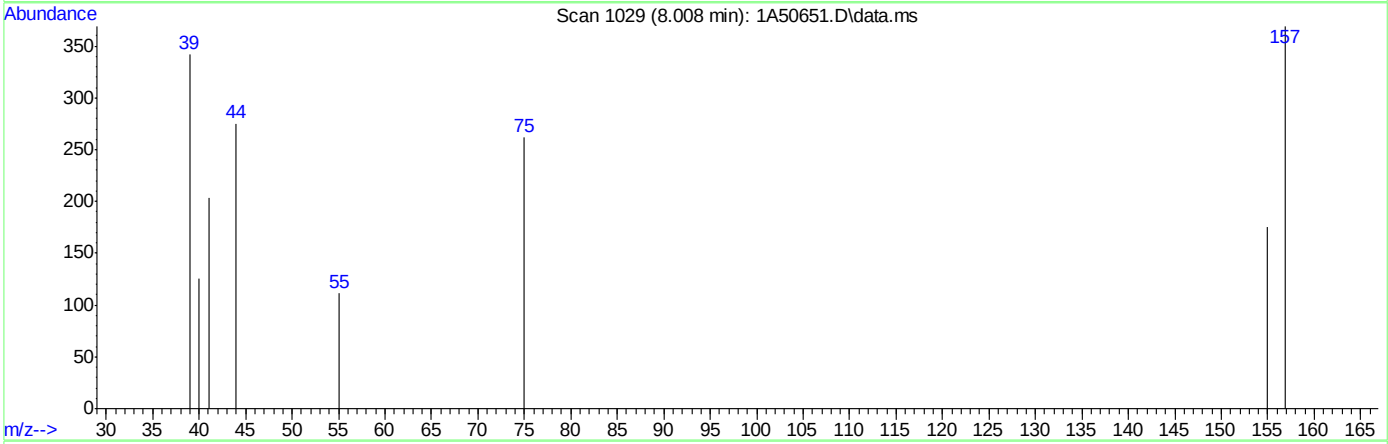
Ion	Exp%	Act%
224.80	100	100
189.80	44.60	48.95
117.90	34.60	48.43
259.80	28.20	45.03

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50651.D
Acq On : 15 Nov 2023 6:16 am
Operator : jeniferw
Sample : IC1945-1
Misc : MS55275,V1A1945,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Nov 15 09:38:22 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50651.D\data.ms

(108) 1,2-Dibromo-3-Chloropropane

8.007min (-8.007) 0.00ug/L

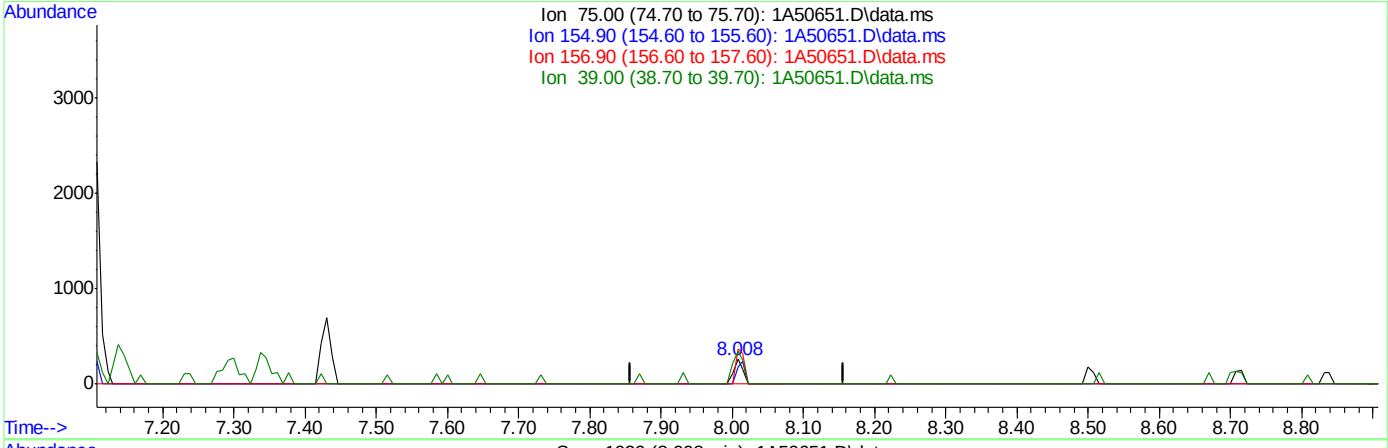
response 0

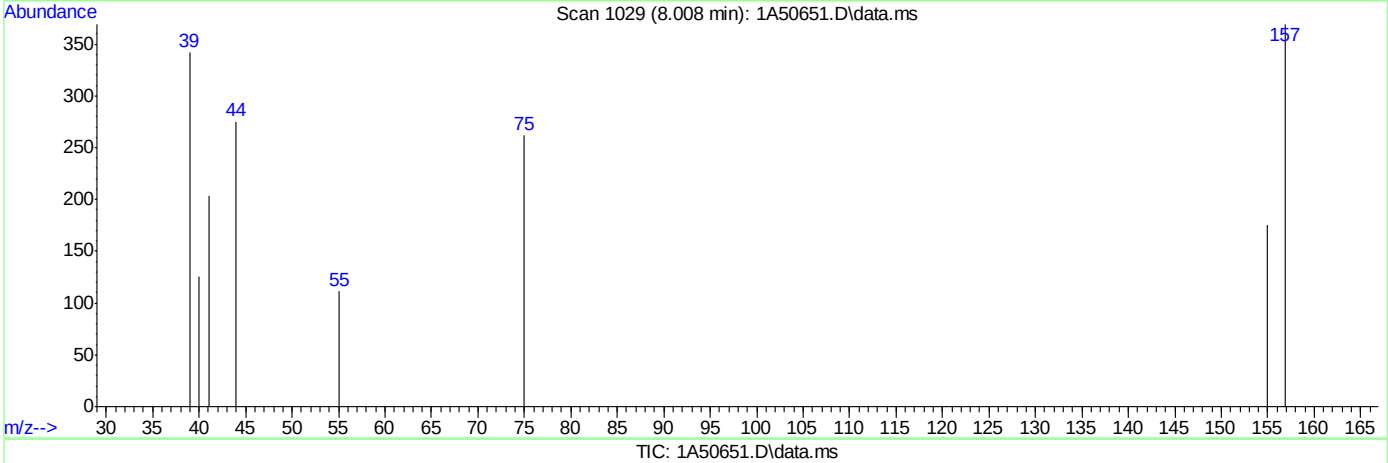
Ion	Exp%	Act%
75.00	100	0.00
154.90	86.70	0.00#
156.90	114.50	0.00#
39.00	63.50	0.00#

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50651.D
Acq On : 15 Nov 2023 6:16 am
Operator : jeniferw
Sample : IC1945-1
Misc : MS55275,V1A1945,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Nov 15 09:38:22 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50651.D\data.ms

(108) 1,2-Dibromo-3-Chloropropane

8.008min (+0.000) 0.91ug/L m

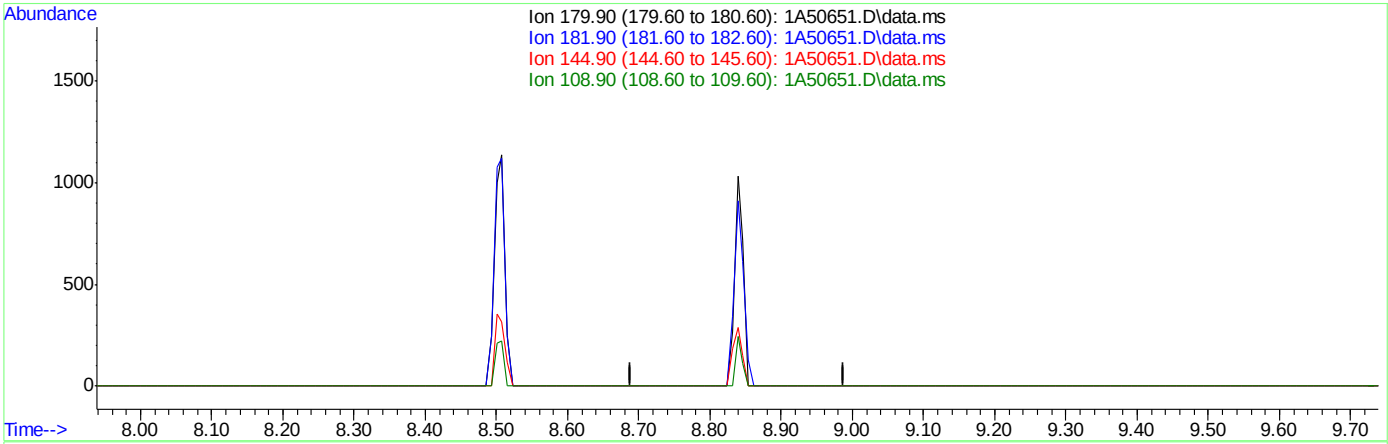
response 246

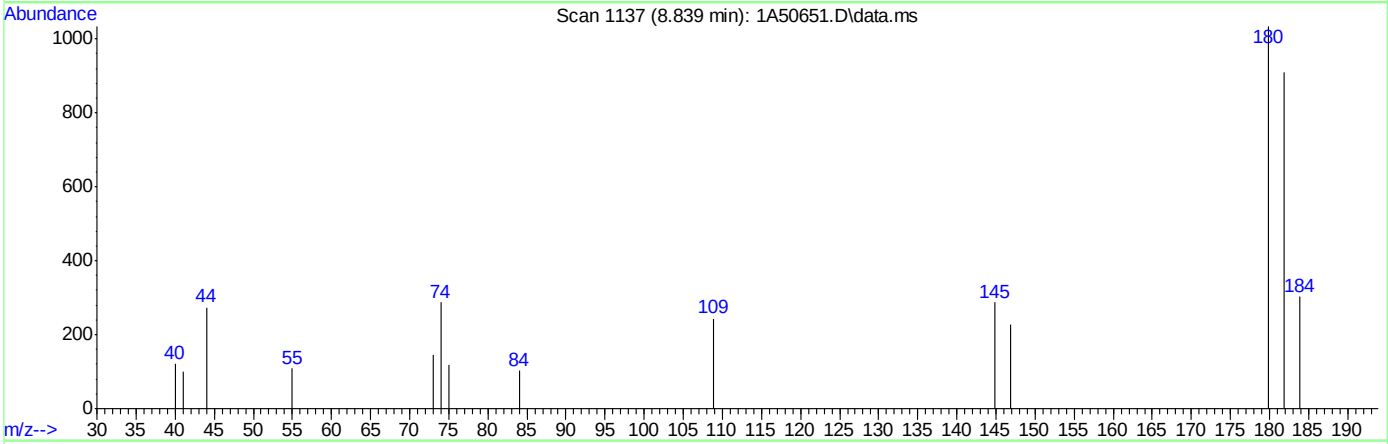
Ion	Exp%	Act%
75.00	100	100
154.90	86.70	66.79
156.90	114.50	140.84
39.00	63.50	130.53#

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50651.D
Acq On : 15 Nov 2023 6:16 am
Operator : jeniferw
Sample : IC1945-1
Misc : MS55275,V1A1945,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Nov 15 09:38:22 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50651.D\data.ms

(112) 1,2,3-Trichlorobenzene ( )

8.839min (-8.839) 0.00ug/L

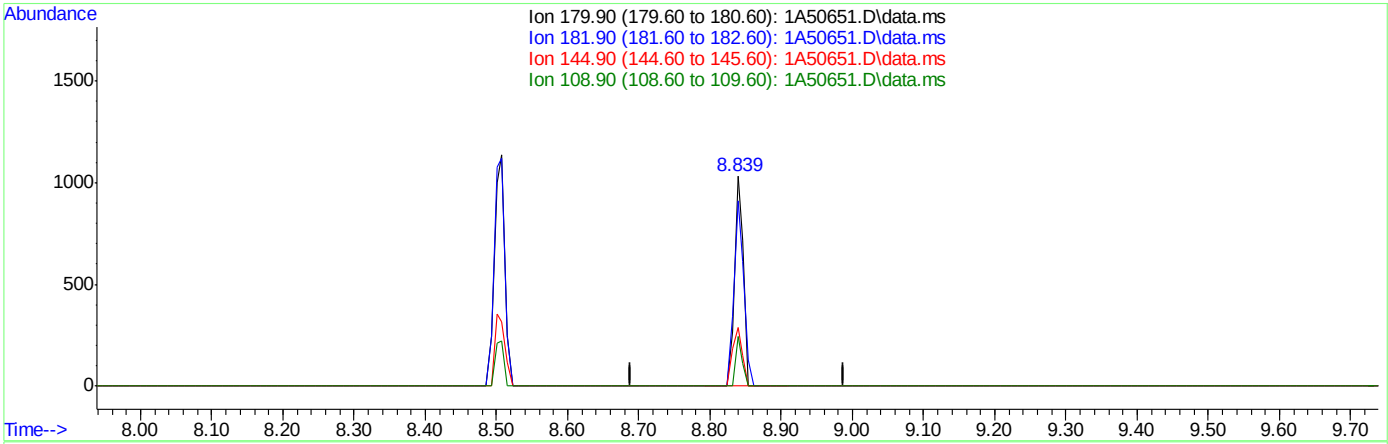
response 0

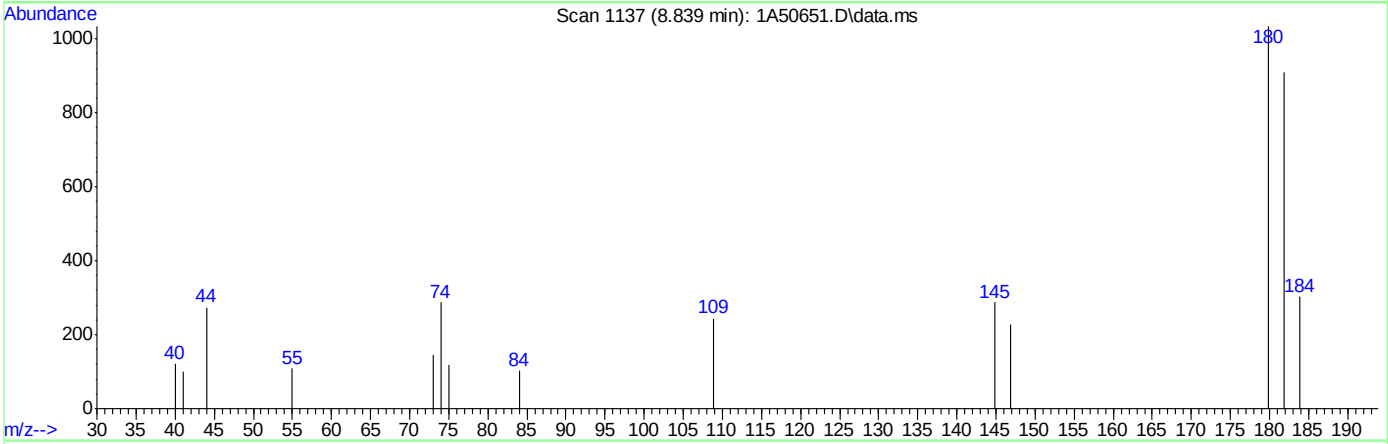
Ion	Exp%	Act%
179.90	100	0.00
181.90	97.70	0.00#
144.90	27.30	0.00
108.90	20.90	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50651.D
Acq On : 15 Nov 2023 6:16 am
Operator : jeniferw
Sample : IC1945-1
Misc : MS55275,V1A1945,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Nov 15 09:38:22 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50651.D\data.ms

(112) 1,2,3-Trichlorobenzene ( )

8.839min (+0.000) 0.93ug/L m

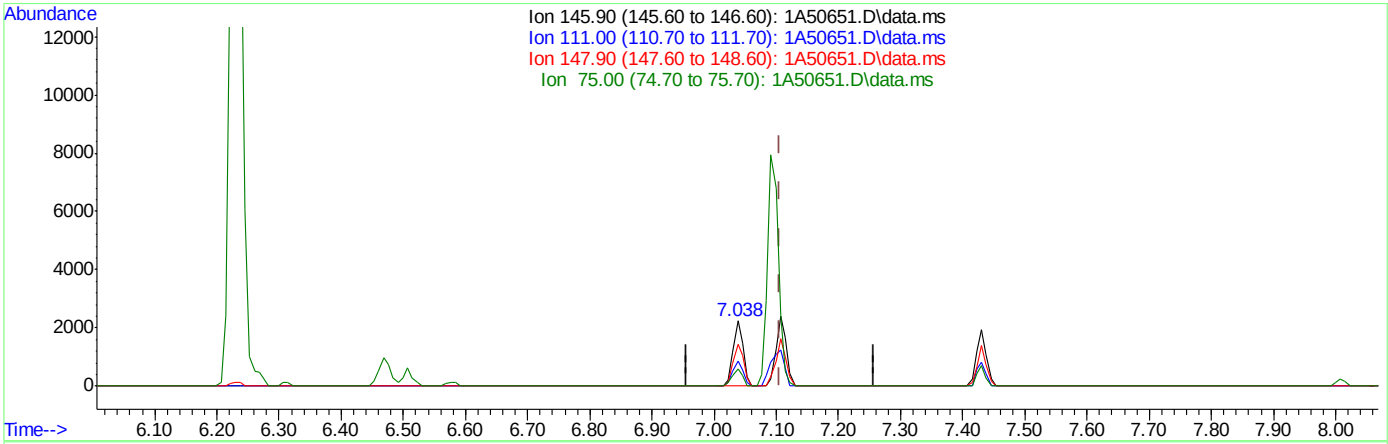
response 934

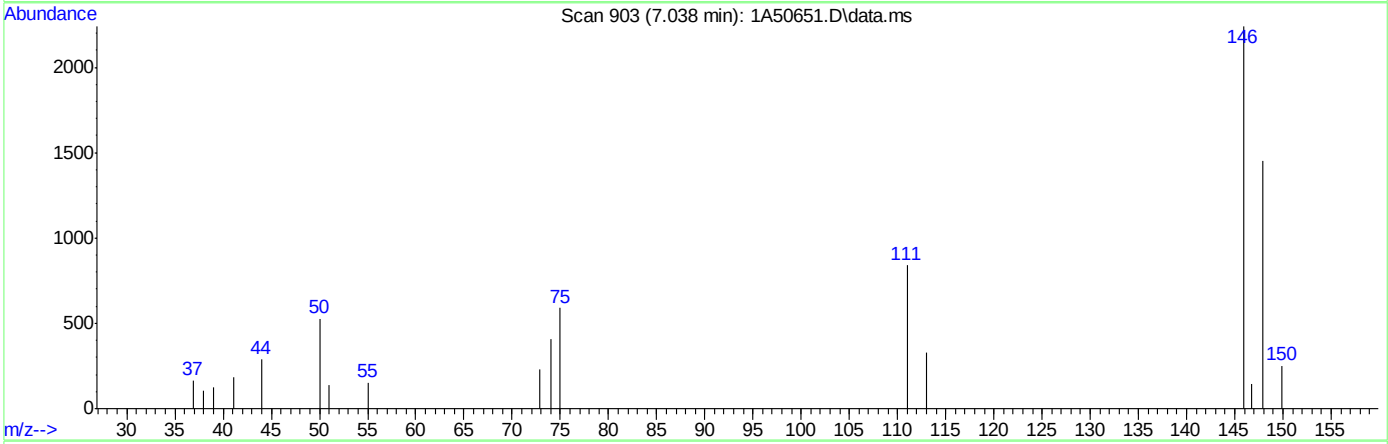
Ion	Exp%	Act%
179.90	100	100
181.90	97.70	88.10
144.90	27.30	27.85
108.90	20.90	23.50

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50651.D
Acq On : 15 Nov 2023 6:16 am
Operator : jeniferw
Sample : IC1945-1
Misc : MS55275,V1A1945,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Nov 15 09:38:22 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50651.D\data.ms

(104) 1,4-Dichlorobenzene

7.038min (-0.069) 0.96ug/L

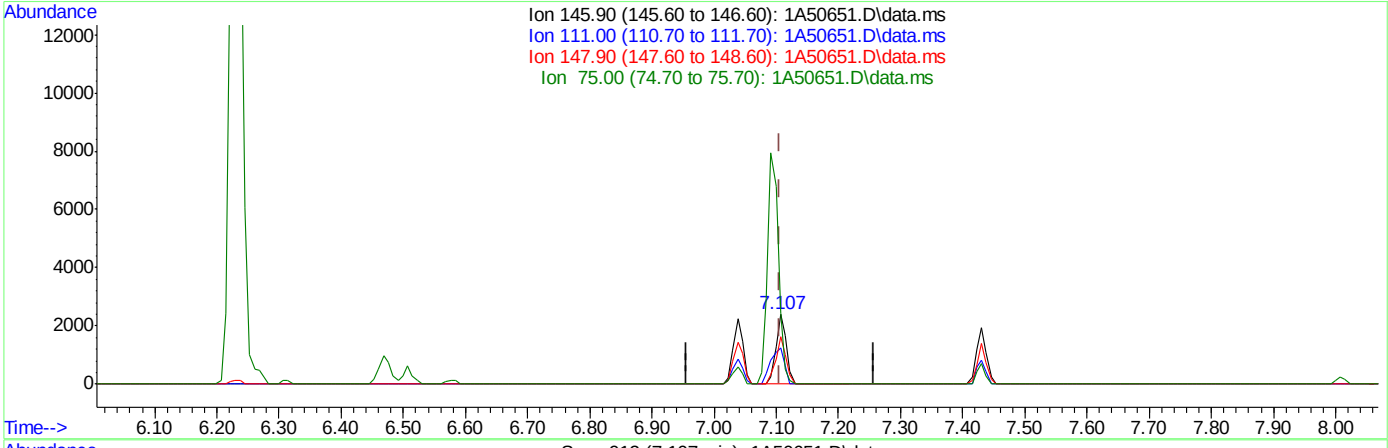
response 2503

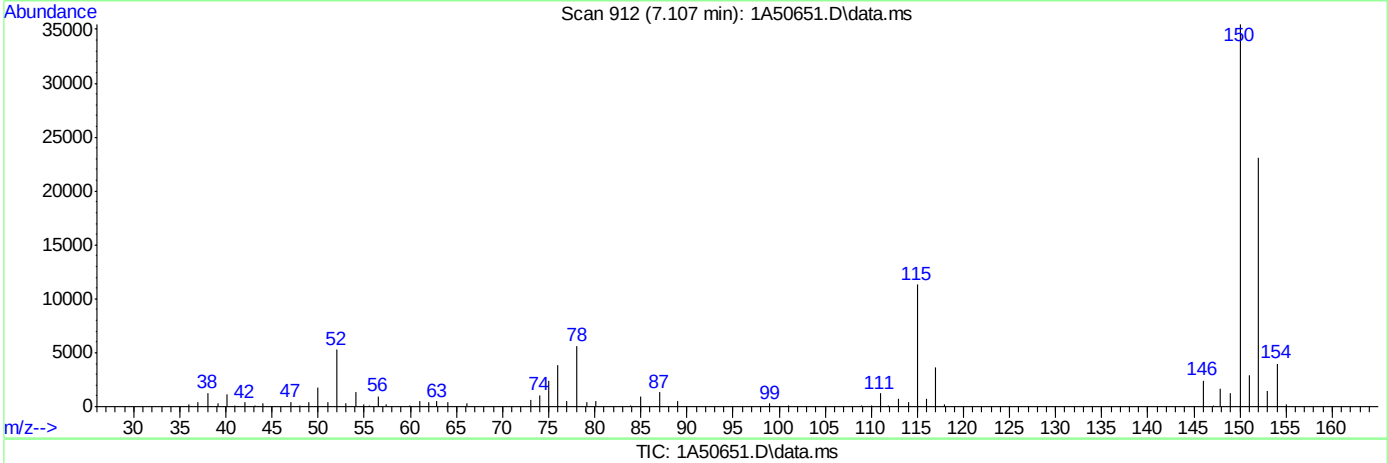
Ion	Exp%	Act%
145.90	100	100
111.00	38.00	37.59
147.90	65.40	64.87
75.00	26.40	26.29

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50651.D
Acq On : 15 Nov 2023 6:16 am
Operator : jeniferw
Sample : IC1945-1
Misc : MS55275,V1A1945,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Nov 15 09:38:22 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50651.D\data.ms

(104) 1,4-Dichlorobenzene

7.107min (+0.000) 1.07ug/L m

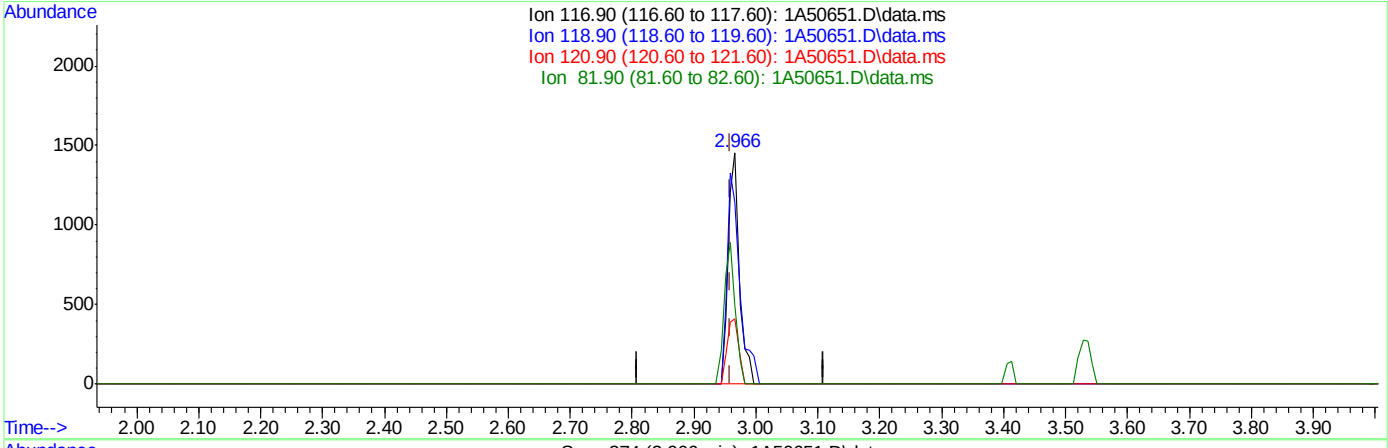
response 2780

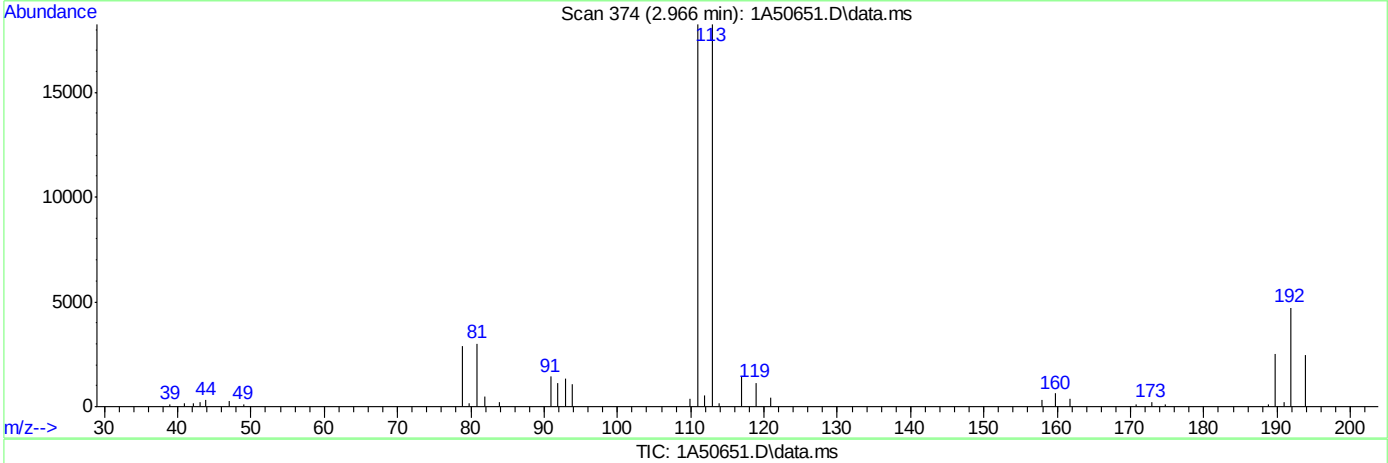
Ion	Exp%	Act%
145.90	100	100
111.00	38.00	52.00
147.90	65.40	67.36
75.00	26.40	101.08#

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50651.D
Acq On : 15 Nov 2023 6:16 am
Operator : jeniferw
Sample : IC1945-1
Misc : MS55275,V1A1945,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Nov 15 09:38:22 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50651.D\data.ms

(40) Carbon Tetrachloride ( )

2.966min (+0.007) 1.05ug/L

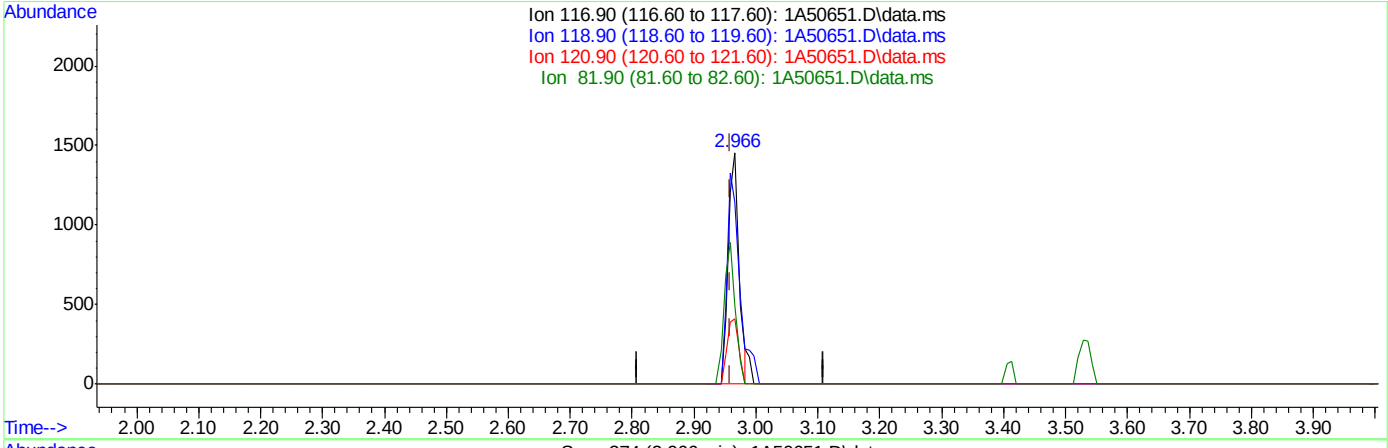
response 1823

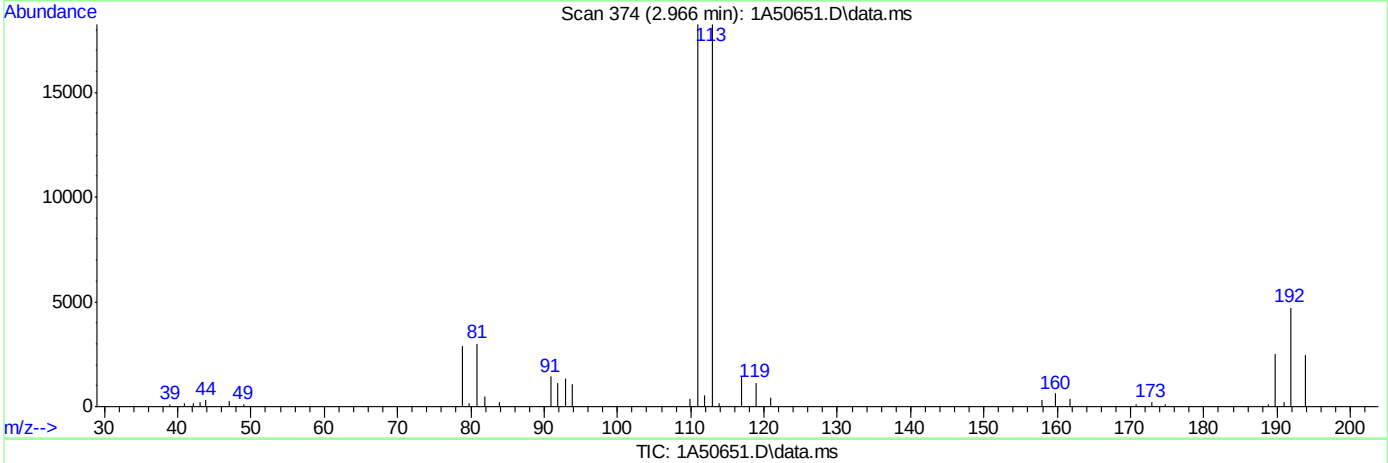
Ion	Exp%	Act%
116.90	100	100
118.90	94.50	78.37
120.90	31.10	28.43
81.90	25.40	33.93

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50651.D
Acq On : 15 Nov 2023 6:16 am
Operator : jeniferw
Sample : IC1945-1
Misc : MS55275,V1A1945,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Nov 15 09:38:22 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50651.D\data.ms

(40) Carbon Tetrachloride ( )

2.966min (+0.007) 1.01ug/L m

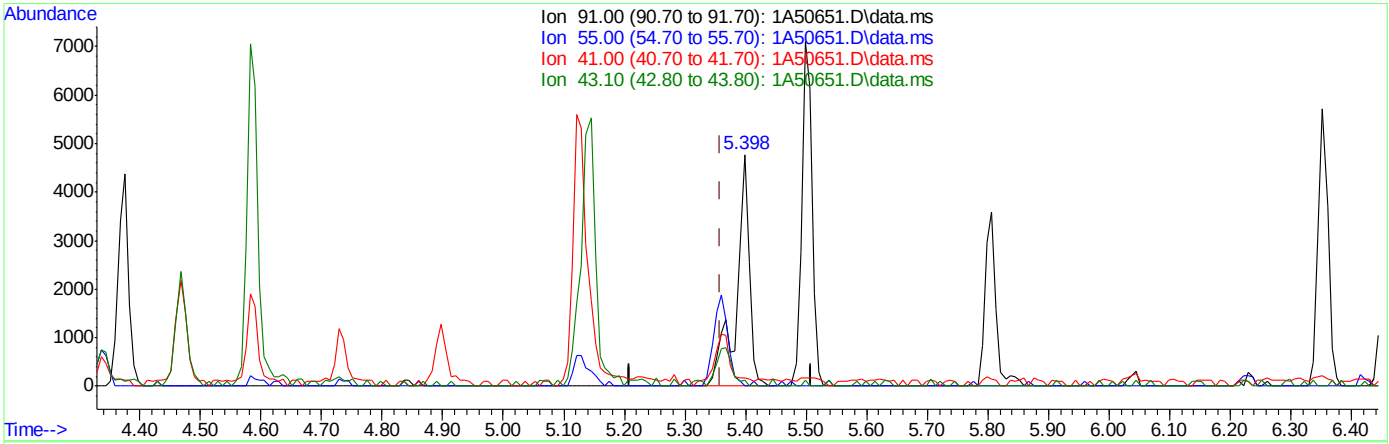
response 1743

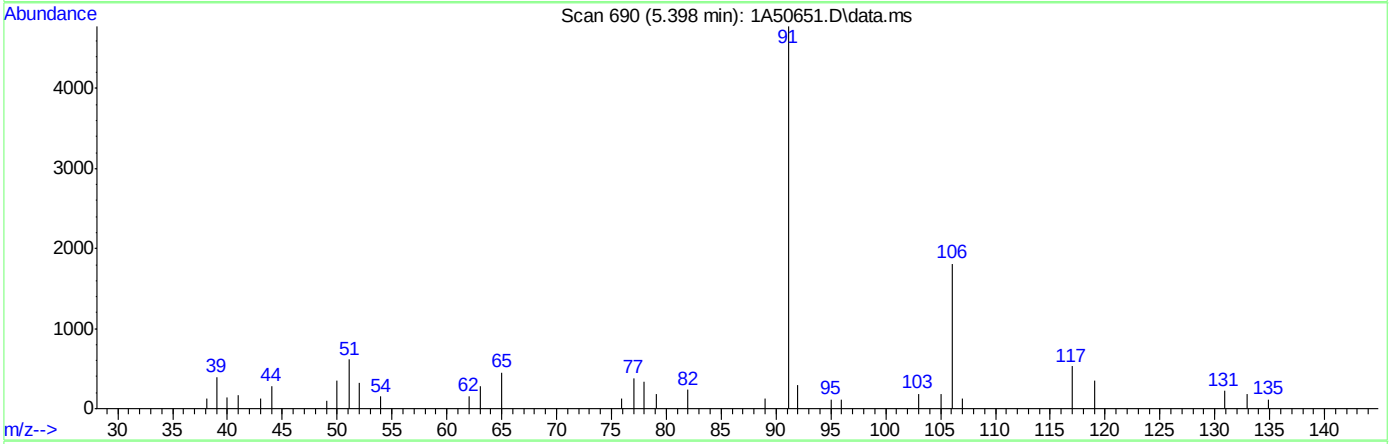
Ion	Exp%	Act%
116.90	100	100
118.90	94.50	78.37
120.90	31.10	28.43
81.90	25.40	33.93

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50651.D
Acq On : 15 Nov 2023 6:16 am
Operator : jeniferw
Sample : IC1945-1
Misc : MS55275,V1A1945,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Nov 15 09:38:22 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50651.D\data.ms

(76) 1-Chlorohexane

5.398min (+0.039) 4.06ug/L

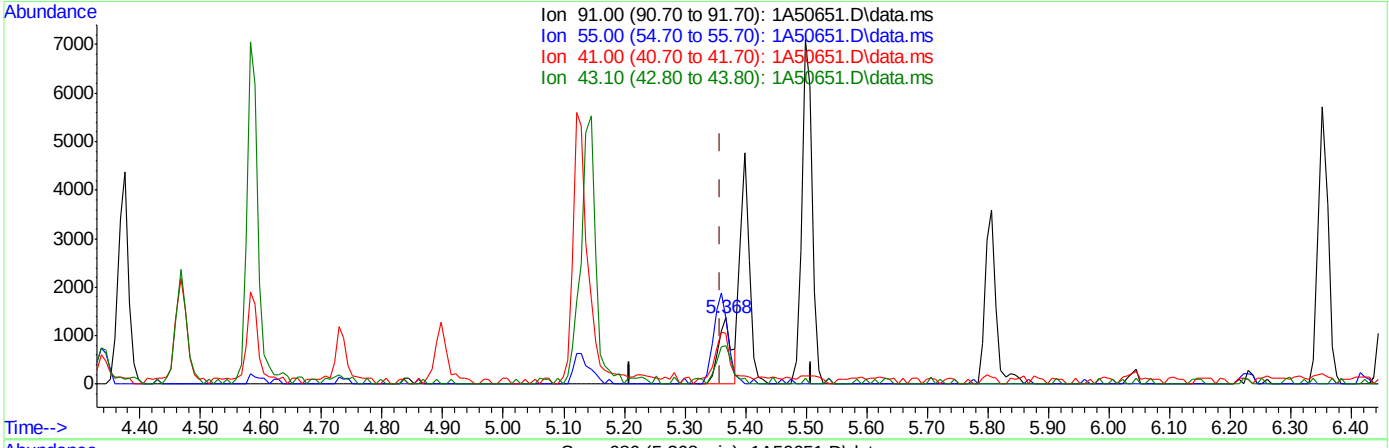
response 7271

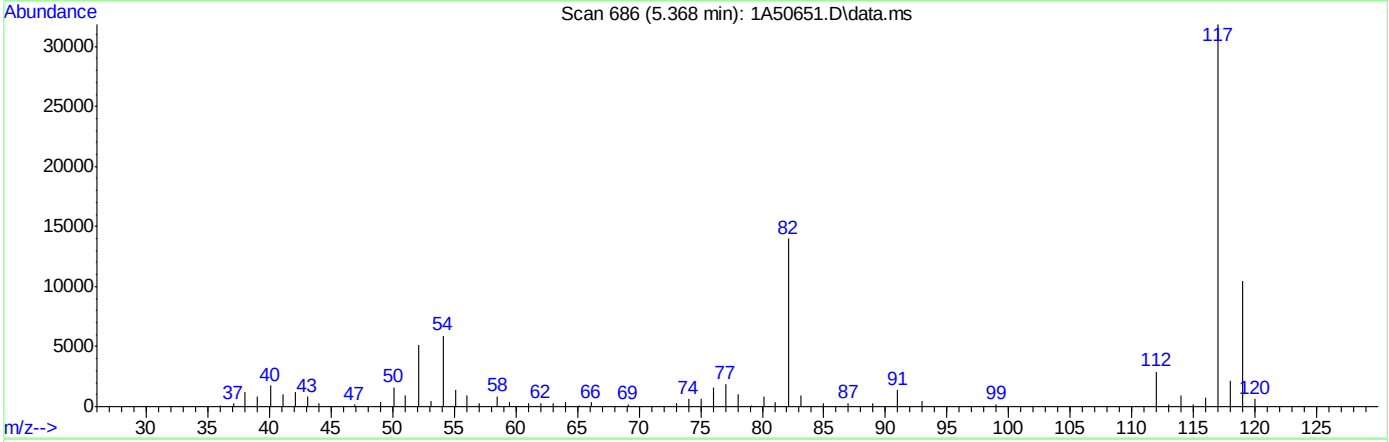
Ion	Exp%	Act%
91.00	100	100
55.00	74.60	0.00#
41.00	53.90	0.67#
43.10	42.90	0.42#

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50651.D
Acq On : 15 Nov 2023 6:16 am
Operator : jeniferw
Sample : IC1945-1
Misc : MS55275,V1A1945,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Nov 15 09:38:22 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50651.D\data.ms

(76) 1-Chlorohexane

5.368min (+0.008) 1.19ug/L m

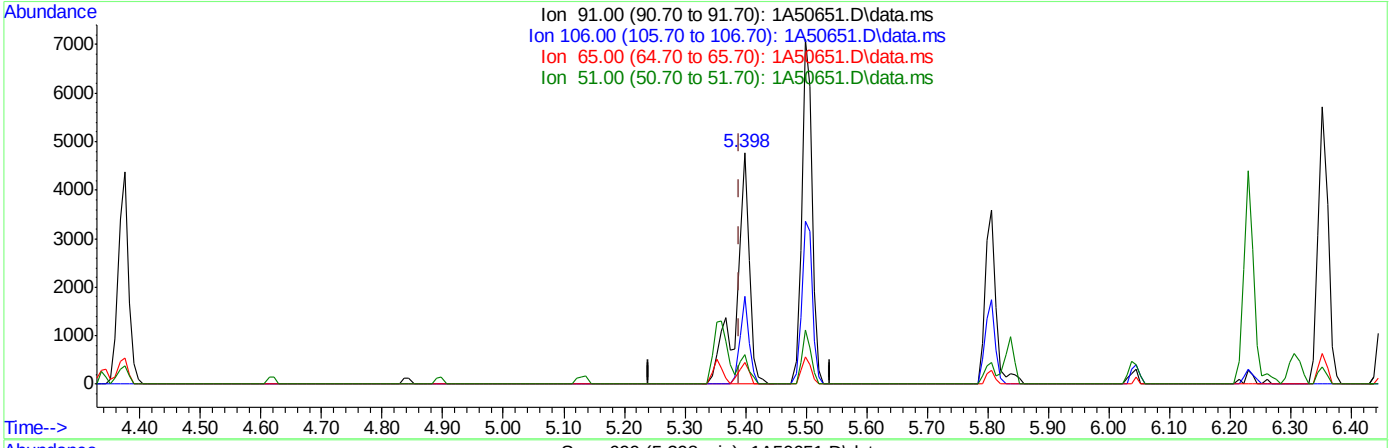
response 2138

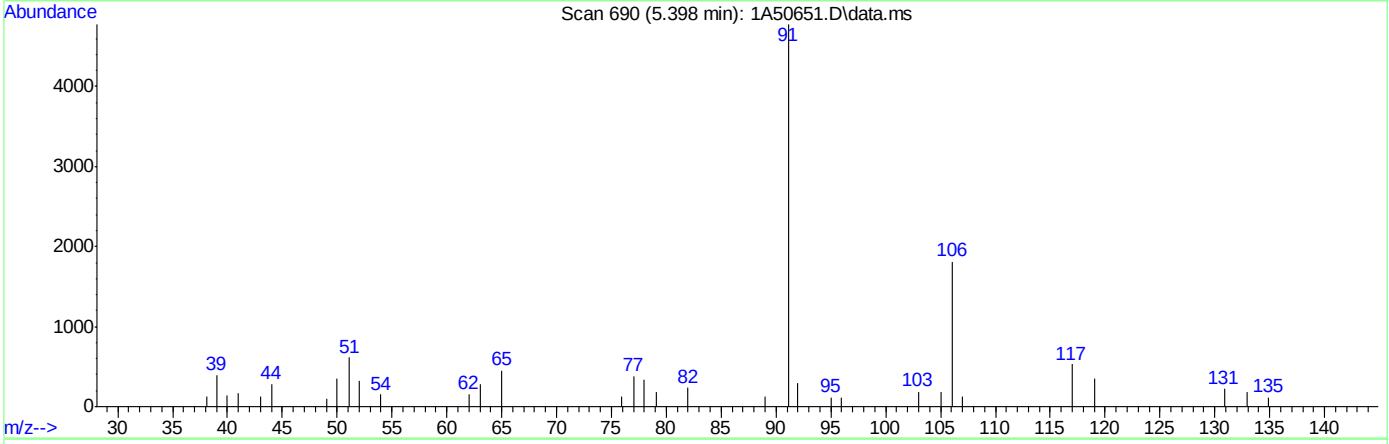
Ion	Exp%	Act%
91.00	100	100
55.00	74.60	100.59#
41.00	53.90	76.21#
43.10	42.90	58.93

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50651.D
Acq On : 15 Nov 2023 6:16 am
Operator : jeniferw
Sample : IC1945-1
Misc : MS55275,V1A1945,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Nov 15 09:38:22 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50651.D\data.ms

(77) Ethylbenzene

5.398min (+0.008) 1.31ug/L

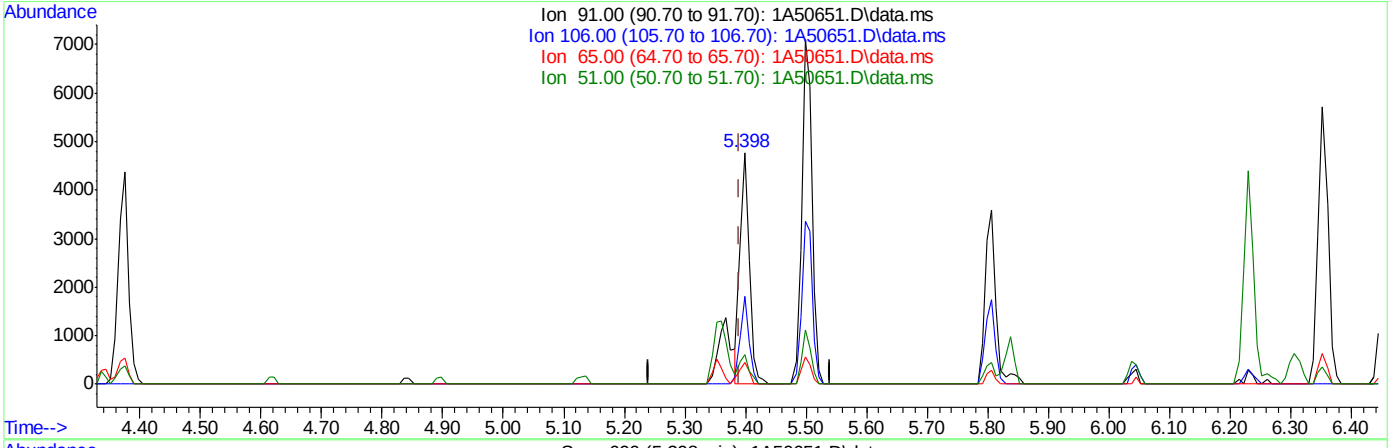
response 7271

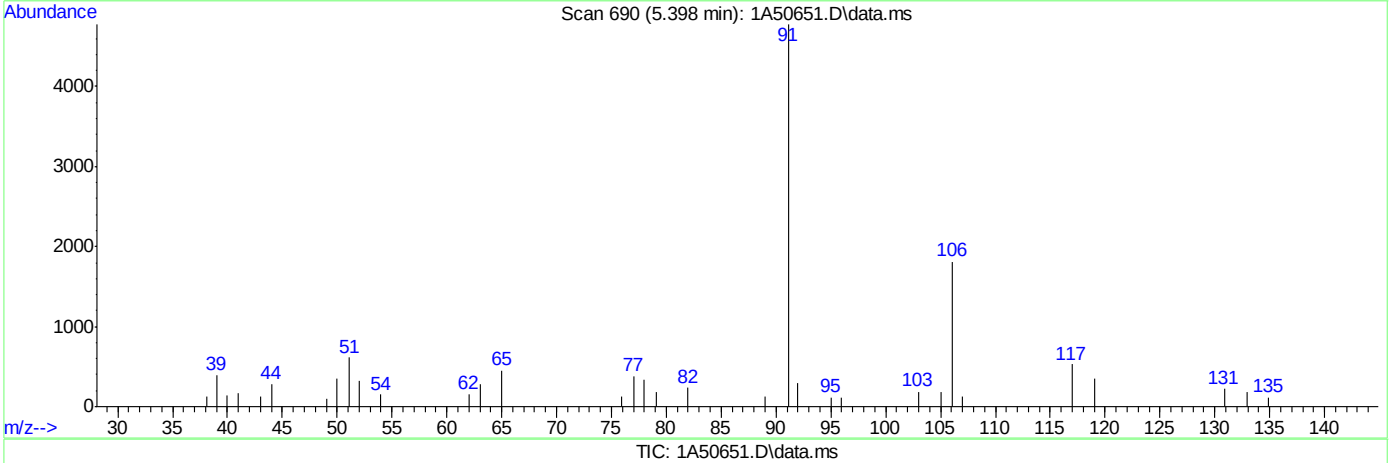
Ion	Exp%	Act%
91.00	100	100
106.00	32.00	37.88
65.00	8.30	9.40
51.00	10.10	12.77

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50651.D
Acq On : 15 Nov 2023 6:16 am
Operator : jeniferw
Sample : IC1945-1
Misc : MS55275,V1A1945,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Nov 15 09:38:22 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50651.D\data.ms

(77) Ethylbenzene

5.398min (+0.008) 0.93ug/L m

response 5132

Ion	Exp%	Act%
91.00	100	100
106.00	32.00	37.88
65.00	8.30	9.40
51.00	10.10	12.77

Manual Integrations APPROVED (compounds with "m" flag)
Karen Watson
11/15/23 15:49

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50653.D
Acq On : 15 Nov 2023 6:48 am
Operator : jeniferw
Sample : IC1985-8
Misc : MS55275,V1A1985,,,,,
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Nov 15 12:54:29 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Fluorobenzene	3.405	96	206731	50.00	ug/L		0.00
62) Chlorobenzene-d5	5.352	117	150894	50.00	ug/L		0.00
85) 1,4-Dichlorobenzene-d4	7.091	152	80043	50.00	ug/L		0.00
System Monitoring Compounds							
39) Dibromofluoromethane	2.951	113	61881	50.06	ug/L		0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 100.12%				
49) 1,2-Dichloroethane-d4	3.235	65	66110	49.13	ug/L		0.00
Spiked Amount 50.000	Range 79 - 125		Recovery = 98.26%				
63) Toluene-d8	4.336	98	199888	49.60	ug/L		0.00
Spiked Amount 50.000	Range 85 - 112		Recovery = 99.20%				
86) 4-Bromofluorobenzene	6.229	174	66083	49.28	ug/L		0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 98.56%				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	1.019	85	1670	2.02	ug/L		97
3) Chloromethane	1.127	50	2570	2.04	ug/L		97
4) 1,3-butadiene	1.181	39	2496	1.77	ug/L		92
5) Vinyl Chloride	1.173	62	2579	2.06	ug/L		96
6) Bromomethane	1.342	94	978m	2.12	ug/L		
7) Chloroethane	1.411	64	1766	2.20	ug/L		84
8) Trichlorofluoromethane	1.496	101	3350	1.99	ug/L		98
9) Ethyl Ether	1.650	59	2038	2.03	ug/L	#	82
10) Ethanol	1.704	45	1192	55.59	ug/L		94
11) 1,2-Dichlorotrifluoroe...	1.742	67	2829	2.03	ug/L		88
12) 1,1-Dichloroethene	1.758	61	3526	1.87	ug/L		98
13) Freon 113	1.781	101	1955	1.85	ug/L		92
14) Carbon Disulfide	1.781	76	6717	2.15	ug/L		84
15) Iodomethane	1.827	142	743m	1.16	ug/L		
16) Acrolein	1.904	56	3383	10.27	ug/L		97
17) Allyl chloride	1.989	41	3685	2.08	ug/L		92
18) Methylene Chloride	2.043	49	5831	3.40	ug/L		94
19) Acetone	2.050	43	5990	12.77	ug/L		97
20) Methyl acetate	2.120	43	14791	10.04	ug/L		95
21) trans-1,2-Dichloroethene	2.135	61	3739	2.00	ug/L		91
22) Hexane	2.196	56	2439	1.88	ug/L	#	90
23) Methyl Tert Butyl Ether	2.189	73	6948	2.01	ug/L		88
24) Acetonitrile	2.273	41	5486	30.27	ug/L		98
25) Tert Butyl Alcohol	2.204	59	5352	20.82	ug/L	#	51
26) Di-isopropyl ether	2.389	45	8535	1.94	ug/L		94
27) Chloroprene	2.435	53	9805	1.88	ug/L		95
28) 1,1-Dichloroethane	2.443	63	4812	1.98	ug/L		96
29) Acrylonitrile	2.435	52	6217	9.91	ug/L		98
30) ETBE	2.581	59	7567	1.87	ug/L		95
31) Vinyl acetate	2.558	43	30432	9.87	ug/L		97
32) cis-1,2-Dichloroethene	2.720	96	2698	2.00	ug/L		98
33) 2,2-Dichloropropane	2.781	77	3398	2.03	ug/L		96
34) Bromochloromethane	2.820	128	1396	2.03	ug/L		95
35) Cyclohexane	2.858	56	4474	1.84	ug/L	#	87

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50653.D
Acq On : 15 Nov 2023 6:48 am
Operator : jeniferw
Sample : IC1985-8
Misc : MS55275,V1A1985,,,,,
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Nov 15 12:54:29 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
36) Chloroform	2.858	83	4356	1.91	ug/L		88
37) Ethyl acetate	2.912	43	17168	9.97	ug/L		98
38) Tetrahydrofuran	2.943	42	1471m	2.12	ug/L		
40) Carbon Tetrachloride	2.958	117	3094m	1.82	ug/L		
41) 1,1,1-Trichloroethane	2.982	97	3615	1.95	ug/L		88
42) 2-Butanone	3.005	43	8971	9.71	ug/L		95
43) 1,1-Dichloropropene	3.051	75	3192	1.99	ug/L		90
44) tert-Butyl formate	3.097	59	9842	9.11	ug/L		89
45) Propionitrile	3.143	54	5616	22.86	ug/L		97
46) Methacrylonitrile	3.166	41	20475	19.23	ug/L		98
47) Benzene	3.182	78	9336	1.94	ug/L		87
48) TAME	3.251	73	6359	1.88	ug/L	#	73
50) 1,2-Dichloroethane	3.274	62	3507	1.91	ug/L		90
51) Isobutyl Alcohol	3.259	43	6459	42.04	ug/L		94
52) Tert Amyl Alcohol	3.320	59	4319	20.59	ug/L		90
53) Trichloroethene	3.505	95	2617	1.93	ug/L		91
54) Methylcyclohexane	3.528	83	3904	1.87	ug/L		93
55) Dibromomethane	3.736	93	1627	1.86	ug/L		86
56) 1,2-Dichloropropane	3.790	63	2644	1.93	ug/L		93
57) Bromodichloromethane	3.828	83	3308	1.99	ug/L		93
58) Methyl methacrylate	3.920	41	2791	1.82	ug/L		92
59) 1,4-Dioxane	3.936	88	655m	35.21	ug/L		
60) 2-Chloroethyl vinyl ether	4.167	63	4362	5.68	ug/L		95
61) cis-1,3-Dichloropropene	4.205	75	3698	1.86	ug/L		83
64) Toluene	4.367	91	10167	1.98	ug/L		95
65) 2-Nitropropane	4.467	41	5418	10.77	ug/L		96
66) 4-Methyl-2-pentanone	4.582	43	18566	9.91	ug/L		94
67) trans-1,3-Dichloropropene	4.613	75	3241	1.76	ug/L		94
68) Tetrachloroethene	4.629	166	2590	1.83	ug/L		91
69) Ethyl methacrylate	4.729	69	2828	1.84	ug/L		85
70) 1,1,2-Trichloroethane	4.713	83	2044	1.97	ug/L		98
71) Dibromochloromethane	4.836	129	2439	1.83	ug/L		96
72) 1,3-Dichloropropane	4.890	76	3575	1.87	ug/L		85
73) 1,2-Dibromoethane	4.998	107	2511	1.91	ug/L		91
74) 3,3-Dimethyl-1-Butanol	5.121	57	22556	88.11	ug/L		96
75) 2-hexanone	5.136	43	17617	9.52	ug/L		79
76) 1-Chlorohexane	5.360	91	3497m	1.96	ug/L		
77) Ethylbenzene	5.398	91	10668	1.93	ug/L		97
78) Chlorobenzene	5.367	112	6627	1.98	ug/L		94
79) 1,1,1,2-Tetrachloroethane	5.406	131	2285	1.85	ug/L		84
80) m,p-Xylene	5.498	91	17408	3.97	ug/L		96
81) o-Xylene	5.798	91	9591	2.06	ug/L		98
82) Styrene	5.837	104	6919	1.97	ug/L		94
83) Bromoform	5.837	173	1664	1.89	ug/L		96
84) Isopropylbenzene	6.037	105	10632	1.96	ug/L		99
87) cis-1,4-Dichloro-2-butene	6.260	53	961m	2.09	ug/L		
88) n-Propylbenzene	6.353	91	12518	1.94	ug/L		98
89) Bromobenzene	6.306	156	2733	1.90	ug/L		85
90) 1,1,2,2-Tetrachloroethane	6.376	83	3351	1.97	ug/L		92
91) 1,3,5-Trimethylbenzene	6.506	105	8559	1.93	ug/L		95

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50653.D
Acq On : 15 Nov 2023 6:48 am
Operator : jeniferw
Sample : IC1985-8
Misc : MS55275,V1A1985,,,,,
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Nov 15 12:54:29 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration

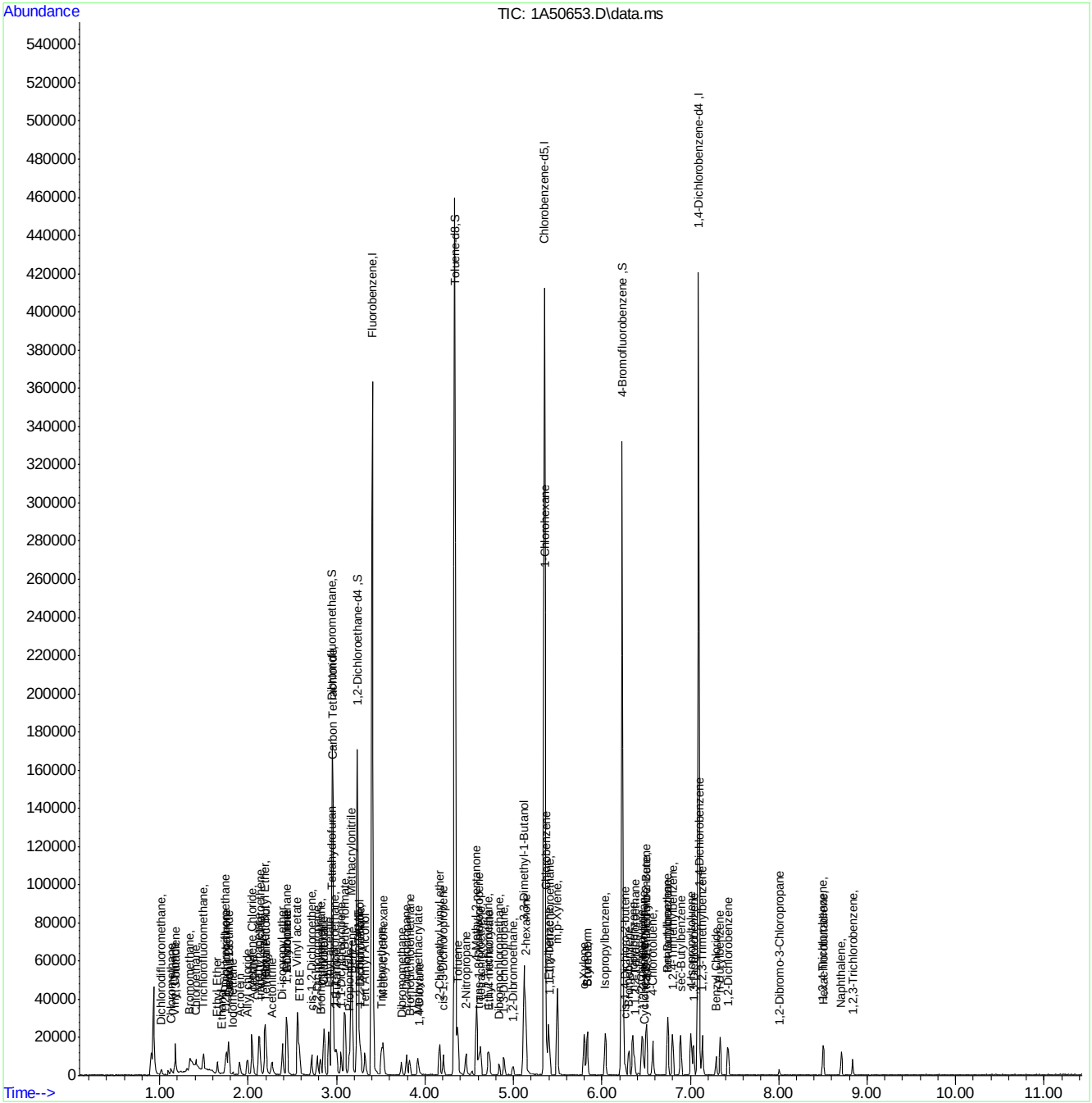
	Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
92)	2-Chlorotoluene	6.453	91	7248	1.92	ug/L		96
93)	trans-1,4-Dichloro-2-B...	6.499	53	1236	1.91	ug/L	#	65
94)	1,2,3-Trichloropropane	6.468	110	855m	1.81	ug/L		
95)	Cyclohexanone	6.483	55	880m	9.05	ug/L		
96)	4-Chlorotoluene	6.576	91	7788	1.99	ug/L		92
97)	tert-Butylbenzene	6.745	91	5096	2.04	ug/L		90
98)	1,2,4-Trimethylbenzene	6.799	105	8319	1.94	ug/L		96
99)	Pentachloroethane	6.745	167	1297	1.95	ug/L	#	62
100)	sec-Butylbenzene	6.891	105	10995	1.95	ug/L		97
101)	4-Isopropyltoluene	7.007	119	9228	1.89	ug/L		95
102)	1,3-Dichlorobenzene	7.037	146	5188	1.97	ug/L		95
103)	1,2,3-Trimethylbenzene	7.138	105	8560	1.99	ug/L		99
104)	1,4-Dichlorobenzene	7.107	146	5214	1.99	ug/L		88
105)	n-Butylbenzene	7.338	92	4278	1.96	ug/L		88
106)	Benzyl Chloride	7.291	126	1099m	1.79	ug/L		
107)	1,2-Dichlorobenzene	7.430	146	4591	1.96	ug/L		99
108)	1,2-Dibromo-3-Chloropr...	8.007	75	482m	1.77	ug/L		
109)	Hexachlorobutadiene	8.508	225	995m	1.78	ug/L		
110)	1,2,4-Trichlorobenzene	8.500	180	2551	1.98	ug/L		94
111)	Naphthalene	8.708	128	6218	1.88	ug/L		99
112)	1,2,3-Trichlorobenzene	8.838	180	1937	1.90	ug/L		93

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50653.D
Acq On : 15 Nov 2023 6:48 am
Operator : jeniferw
Sample : IC1985-8
Misc : MS55275,V1A1985,,,,,
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Nov 15 12:54:29 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration



Manual Integration Approval Summary

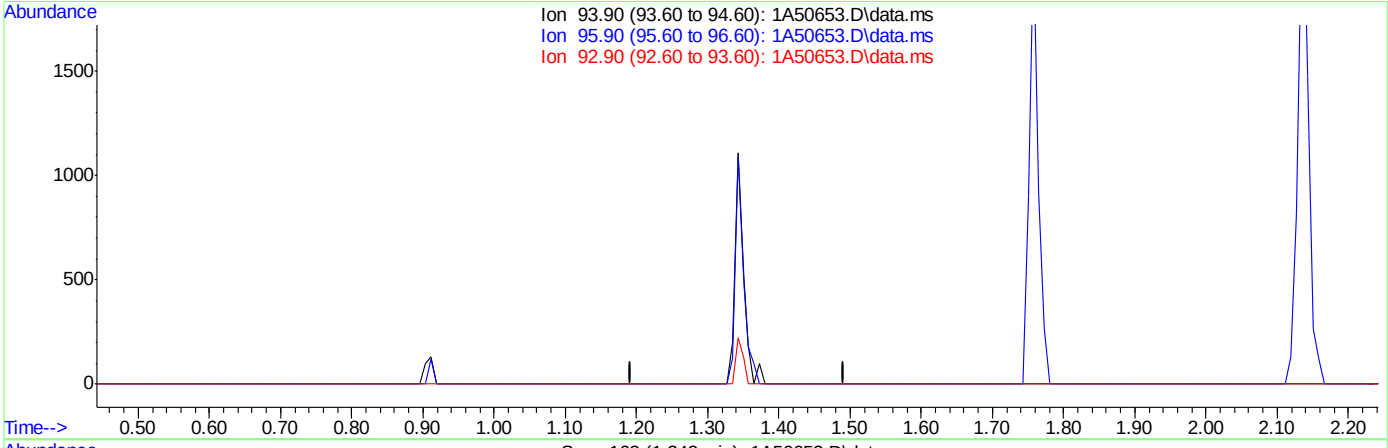
Sample Number: V1A1985-IC1985
Lab FileID: 1A50653.D
Injection Time: 11/15/23 06:48
Method: SW846 8260D
Analyst approved: 11/15/23 14:32 Jenifer Willis
Supervisor approved: 11/15/23 15:49 Karen Watson

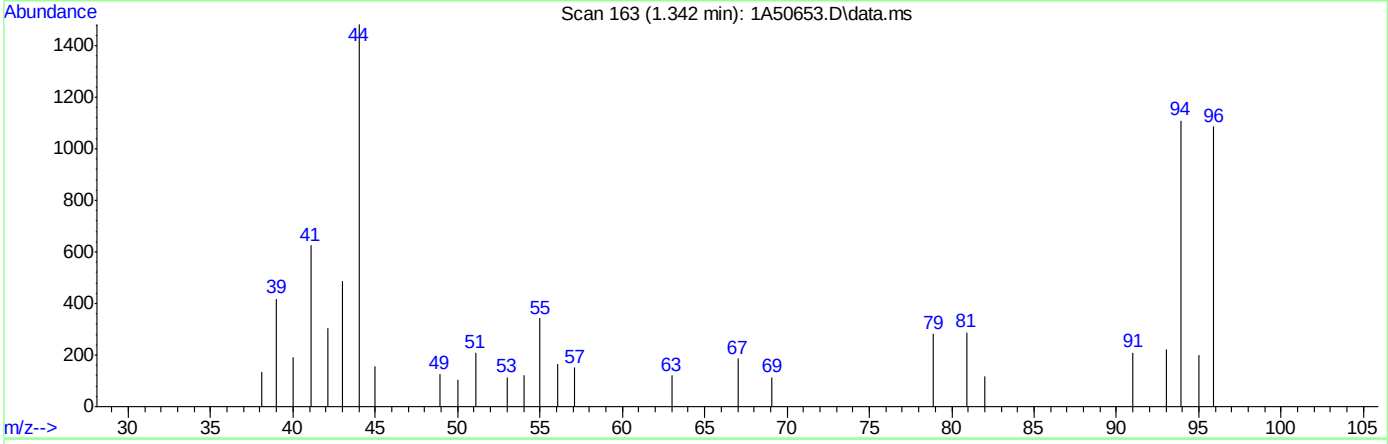
Parameter	CAS	Sig#	R.T. (min.)	Reason
Methyl Bromide	74-83-9		1.34	Missed peak
Methyl Iodide	74-88-4		1.83	Missed peak
Tetrahydrofuran	109-99-9		2.94	Missed peak
Carbon Tetrachloride	56-23-5		2.96	Overlapping peak
1,4-Dioxane	123-91-1		3.94	Missed peak
1-Chlorohexane	544-10-5		5.36	Poorly defined baseline
cis-1,4-Dichloro-2-Butene	1476-11-5		6.26	Missed peak
1,2,3-Trichloropropane	96-18-4		6.47	Missed peak
Cyclohexanone	108-94-1		6.48	Missed peak
Benzyl Chloride	100-44-7		7.29	Missed peak
1,2-Dibromo-3-chloropropane	96-12-8		8.01	Missed peak
Hexachlorobutadiene	87-68-3		8.51	Missed peak

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50653.D
Acq On : 15 Nov 2023 6:48 am
Operator : jeniferw
Sample : IC1945-8
Misc : MS55276,V2A1790,,,,,
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Nov 15 09:38:24 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50653.D\data.ms

(6) Bromomethane ( )

1.342min (-1.342) 0.00ug/L

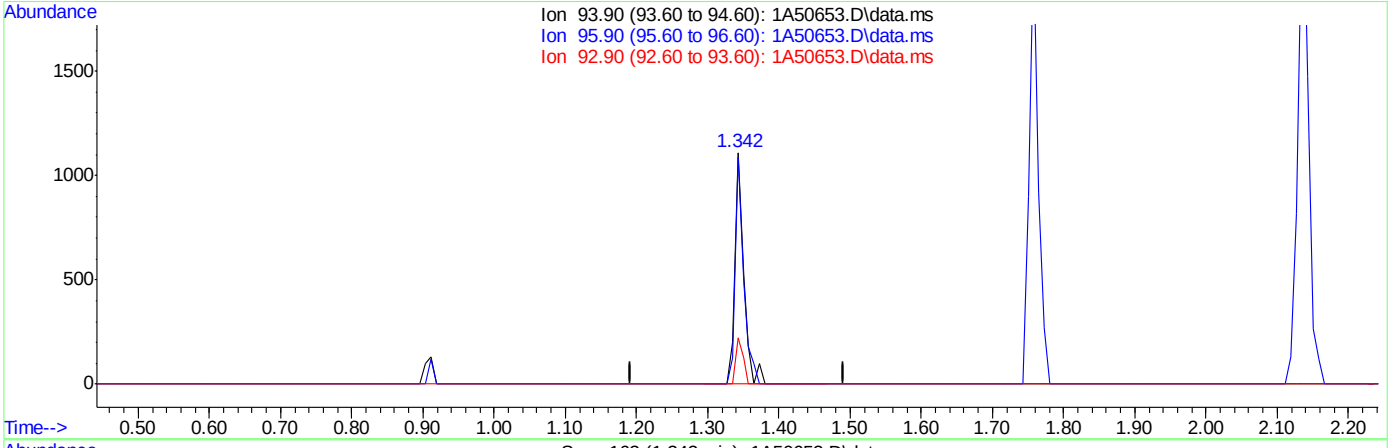
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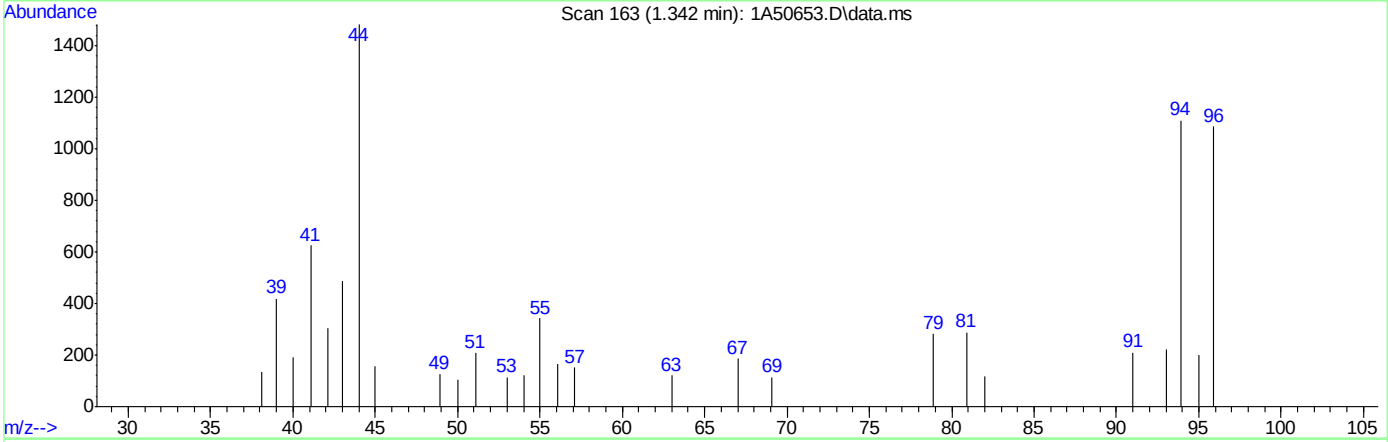
Ion	Exp%	Act%
93.90	100	0.00
95.90	88.70	0.00#
92.90	19.40	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50653.D
Acq On : 15 Nov 2023 6:48 am
Operator : jeniferw
Sample : IC1945-8
Misc : MS55276,V2A1790,,,,,
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Nov 15 09:38:24 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50653.D\data.ms

(6) Bromomethane ( )

1.342min (+0.000) 2.12ug/L m

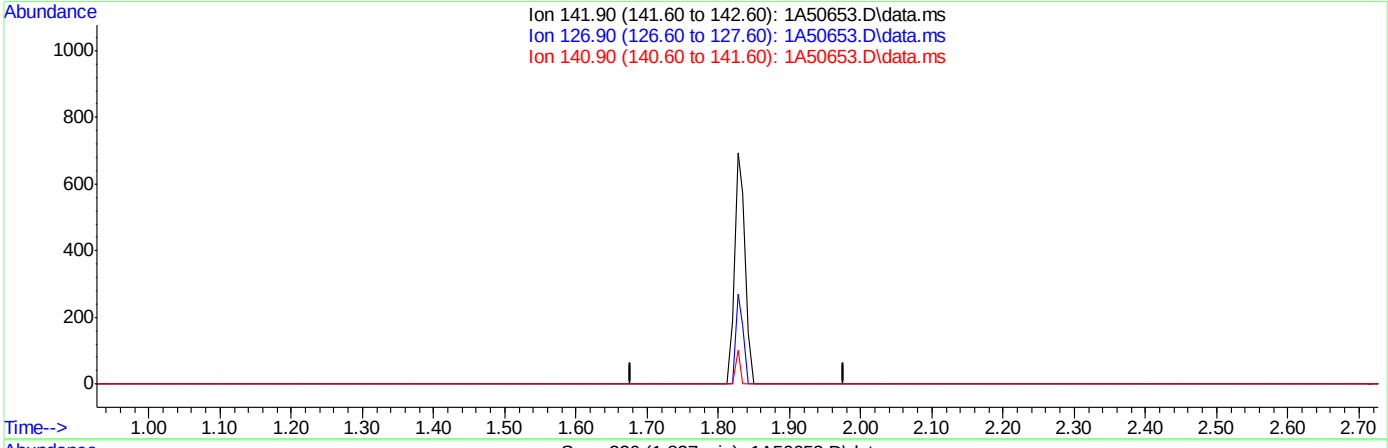
response 978

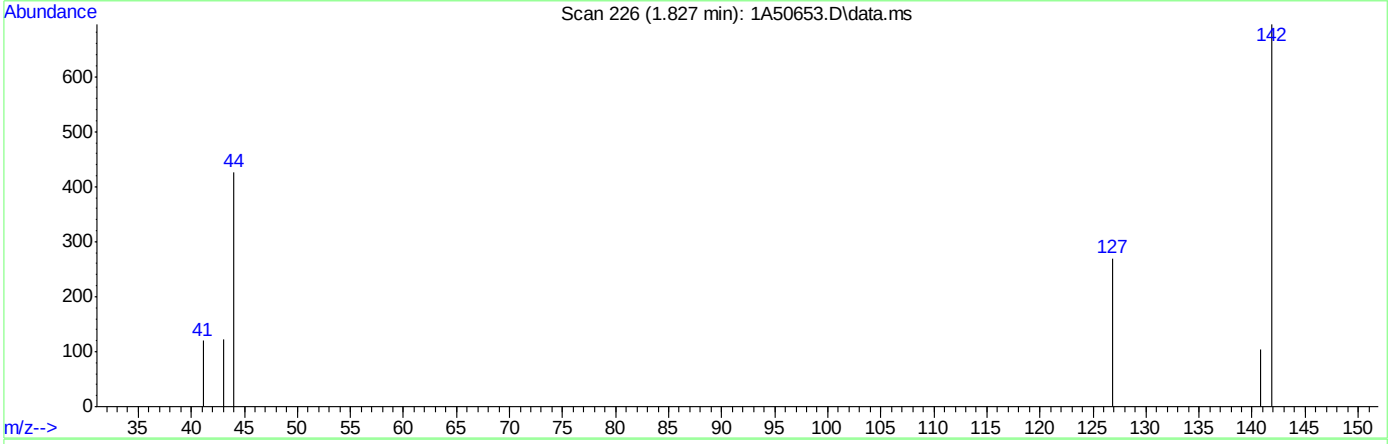
Ion	Exp%	Act%
93.90	100	100
95.90	88.70	97.84
92.90	19.40	20.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50653.D
Acq On : 15 Nov 2023 6:48 am
Operator : jeniferw
Sample : IC1945-8
Misc : MS55276,V2A1790,,,,,
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Nov 15 09:38:24 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50653.D\data.ms

(15) Iodomethane

1.827min (-1.827) 0.00ug/L

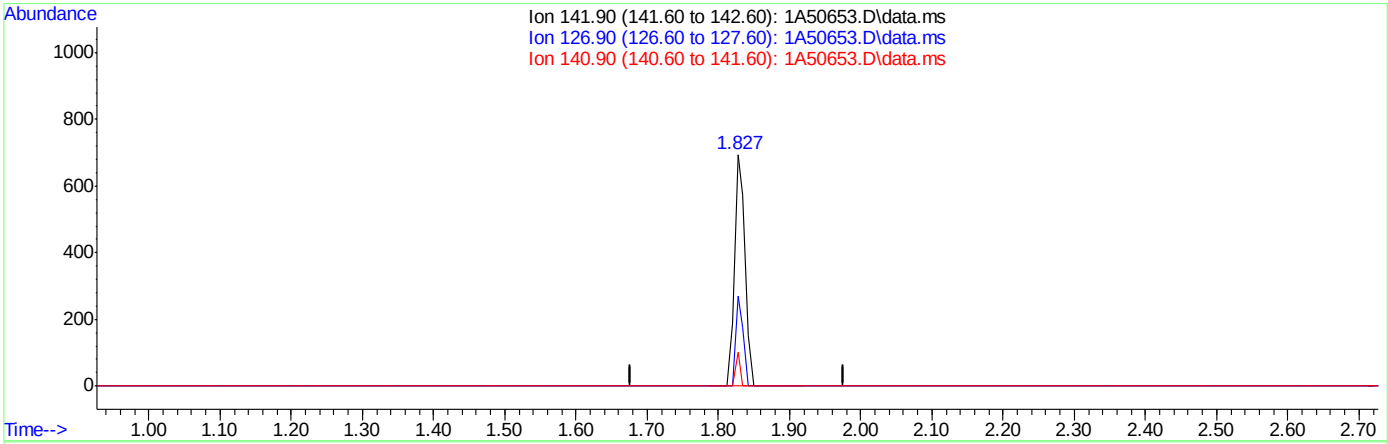
response 0

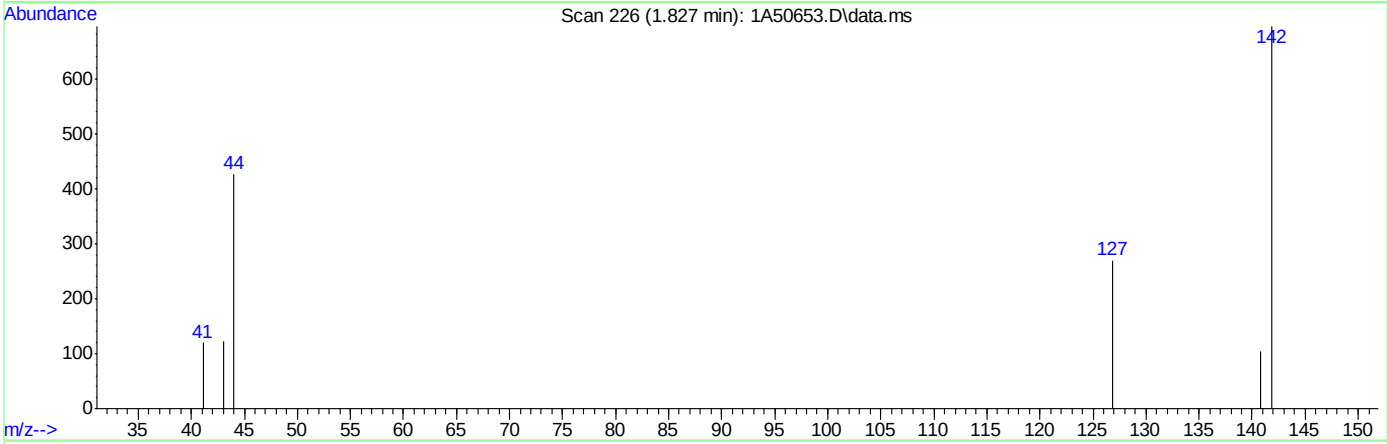
Ion	Exp%	Act%
141.90	100	0.00
126.90	46.70	0.00#
140.90	14.30	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50653.D
Acq On : 15 Nov 2023 6:48 am
Operator : jeniferw
Sample : IC1945-8
Misc : MS55276,V2A1790,,,,,
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Nov 15 09:38:24 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50653.D\data.ms

(15) Iodomethane

1.827min (+0.000) 1.16ug/L m

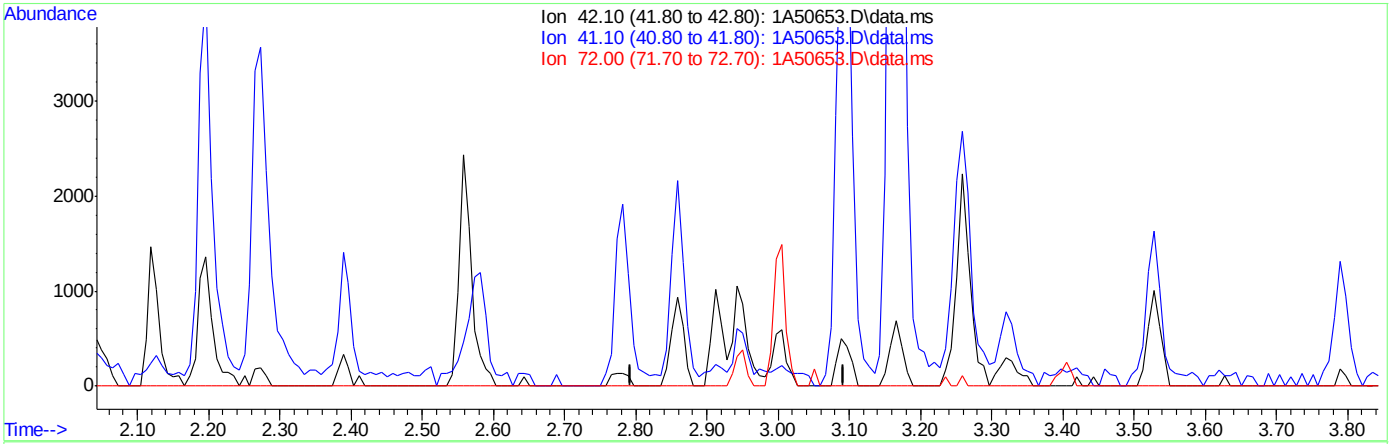
response 743

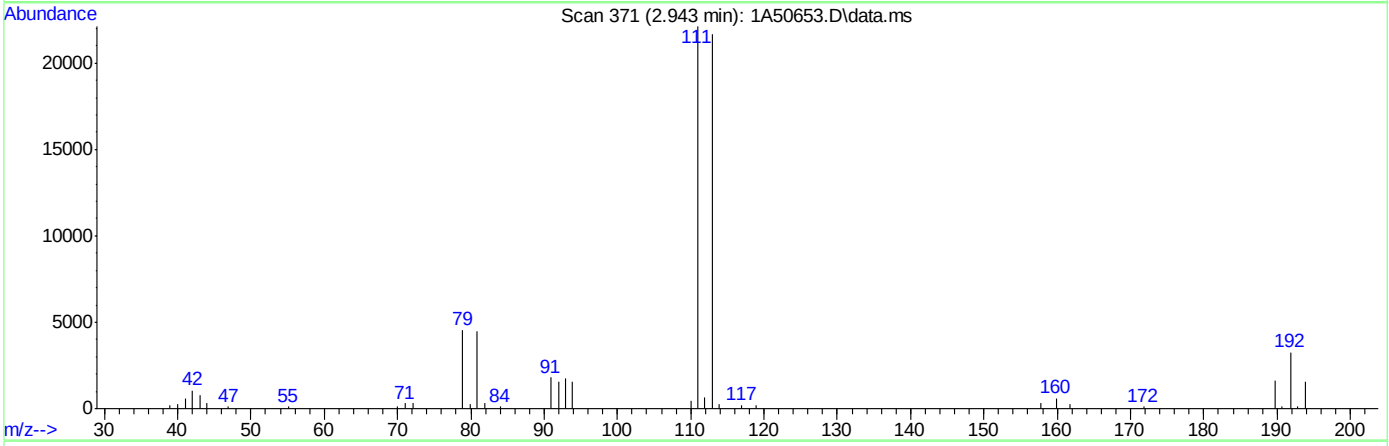
Ion	Exp%	Act%
141.90	100	100
126.90	46.70	38.85
140.90	14.30	14.82
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50653.D
Acq On : 15 Nov 2023 6:48 am
Operator : jeniferw
Sample : IC1945-8
Misc : MS55276,V2A1790,,,,,
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Nov 15 09:38:24 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50653.D\data.ms

(38) Tetrahydrofuran

2.943min (-2.943) 0.00ug/L

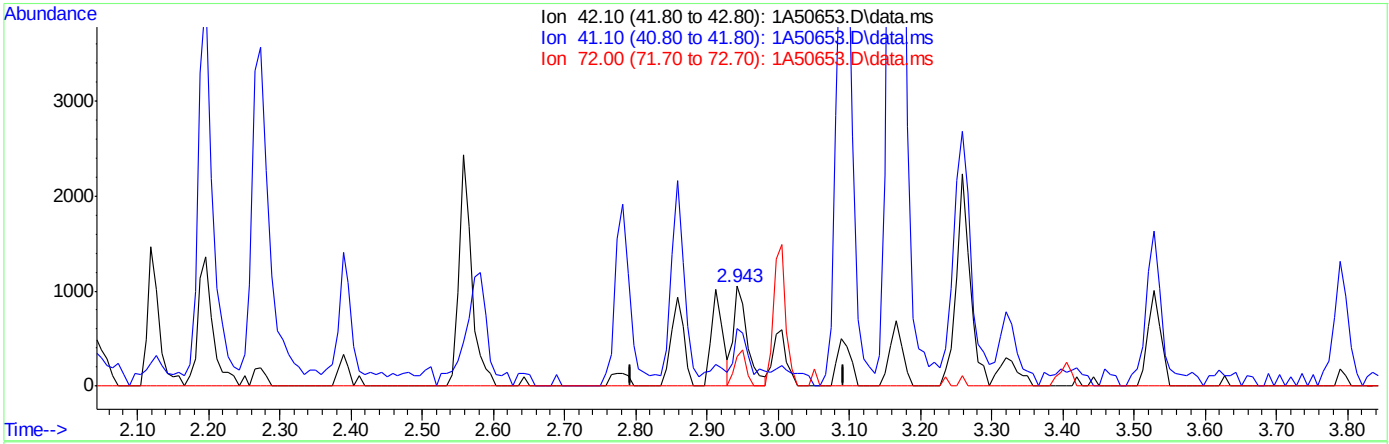
response 0

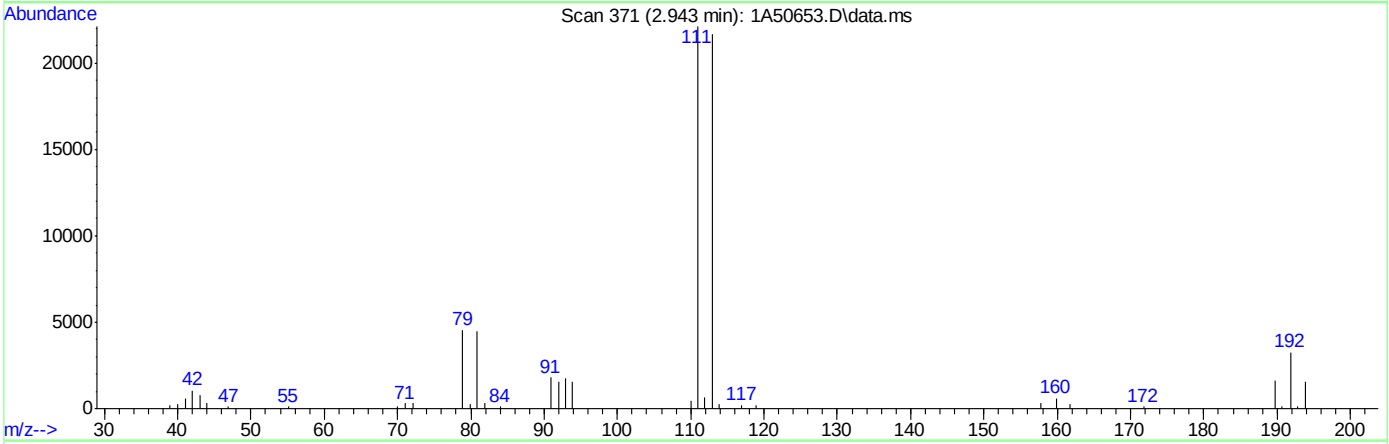
Ion	Exp%	Act%
42.10	100	0.00
41.10	58.70	0.00#
72.00	41.10	0.00#
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50653.D
Acq On : 15 Nov 2023 6:48 am
Operator : jeniferw
Sample : IC1945-8
Misc : MS55276,V2A1790,,,,,
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Nov 15 09:38:24 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50653.D\data.ms

(38) Tetrahydrofuran

2.943min (-0.000) 2.12ug/L m

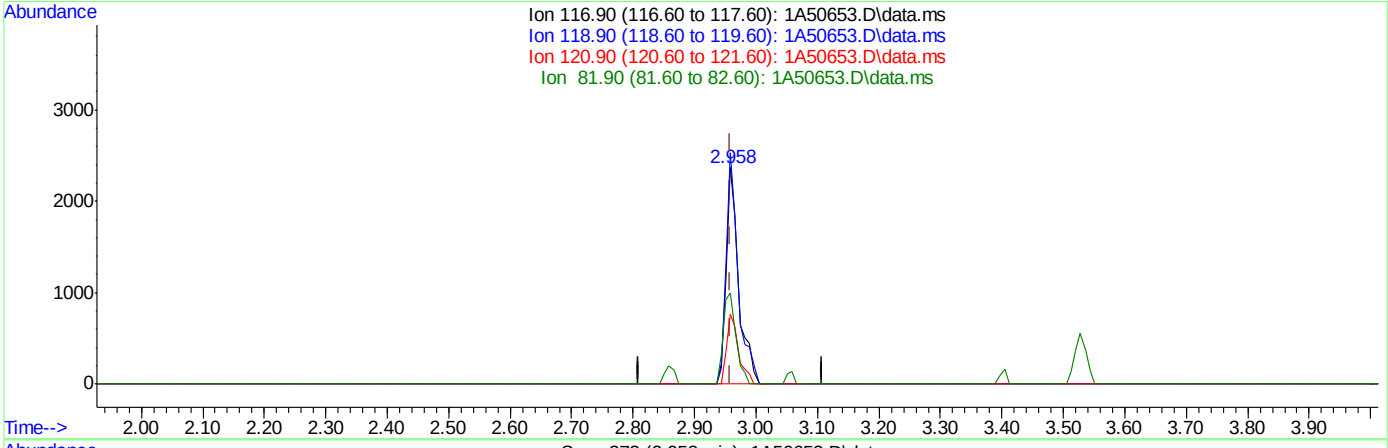
response 1471

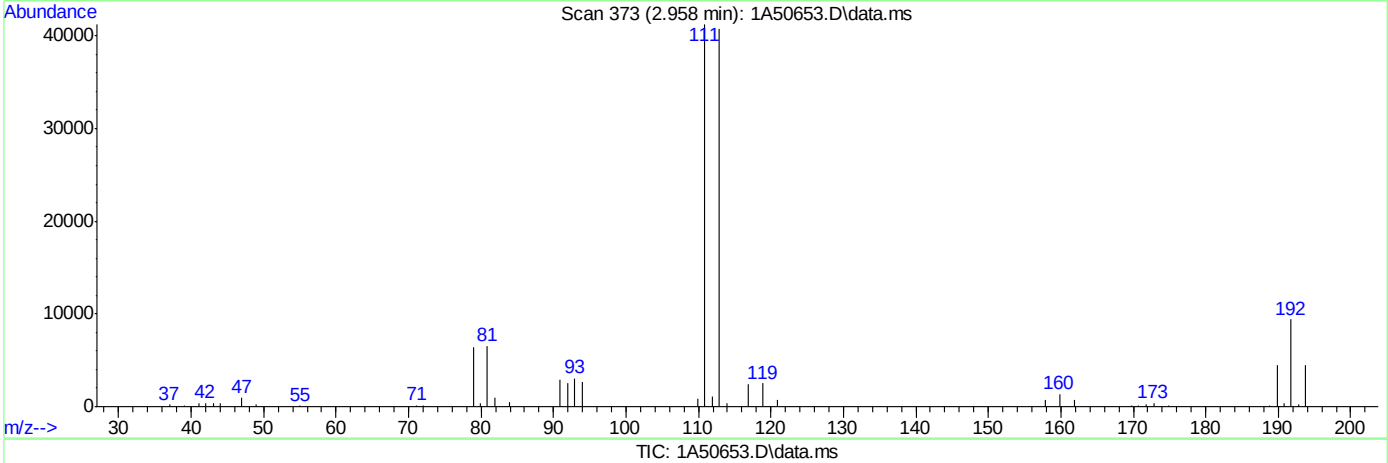
Ion	Exp%	Act%
42.10	100	100
41.10	58.70	58.08
72.00	41.10	28.99
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50653.D
Acq On : 15 Nov 2023 6:48 am
Operator : jeniferw
Sample : IC1945-8
Misc : MS55276,V2A1790,,,,,
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Nov 15 09:38:24 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50653.D\data.ms

(40) Carbon Tetrachloride ( )

2.958min (-0.001) 1.98ug/L

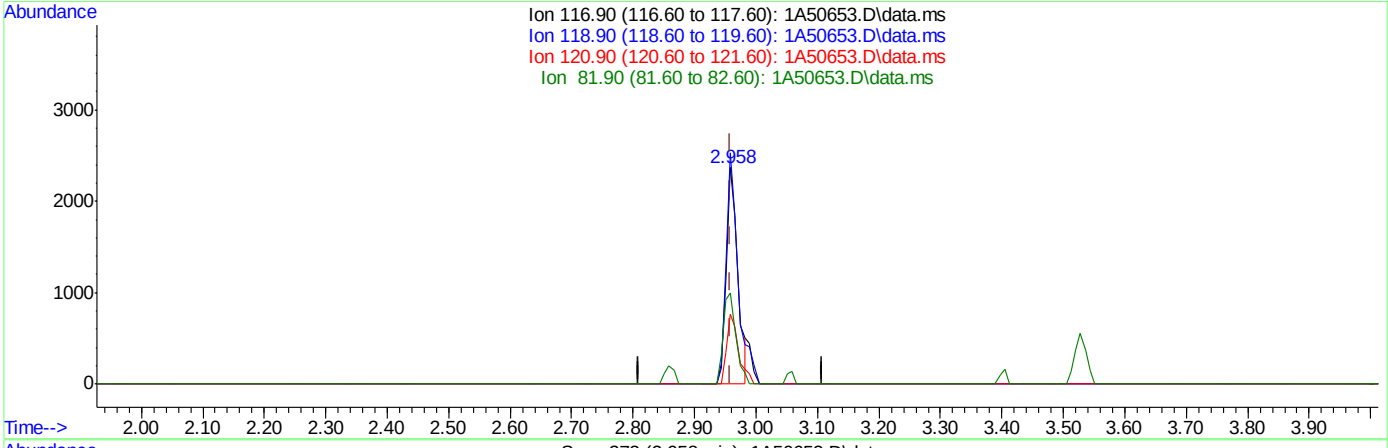
response 3363

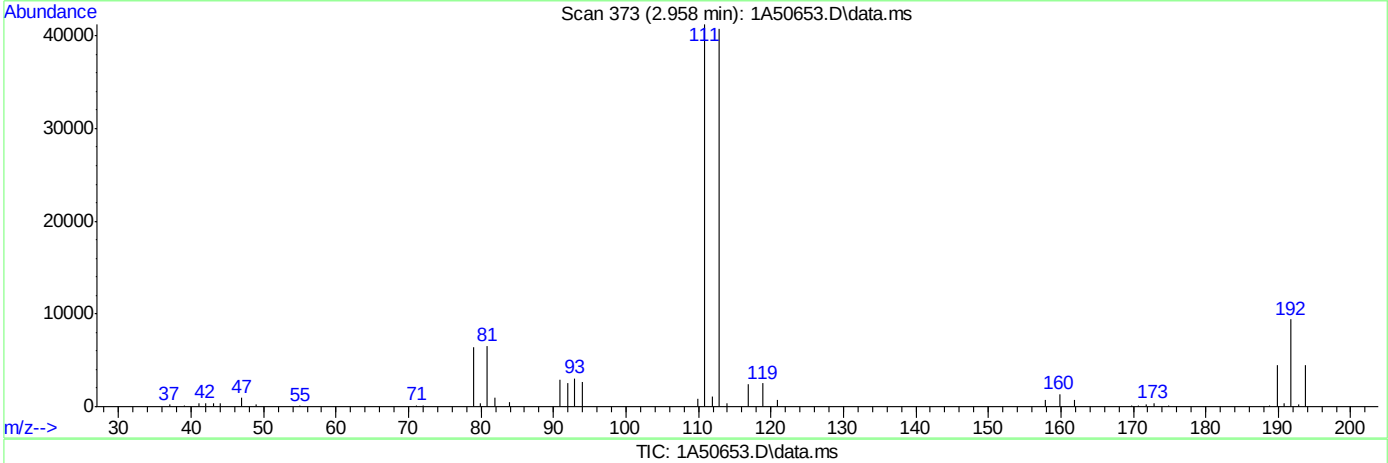
Ion	Exp%	Act%
116.90	100	100
118.90	94.50	107.10
120.90	31.10	32.52
81.90	25.40	42.28

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50653.D
Acq On : 15 Nov 2023 6:48 am
Operator : jeniferw
Sample : IC1945-8
Misc : MS55276,V2A1790,,,,,
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Nov 15 09:38:24 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50653.D\data.ms

(40) Carbon Tetrachloride ( )

2.958min (-0.001) 1.82ug/L m

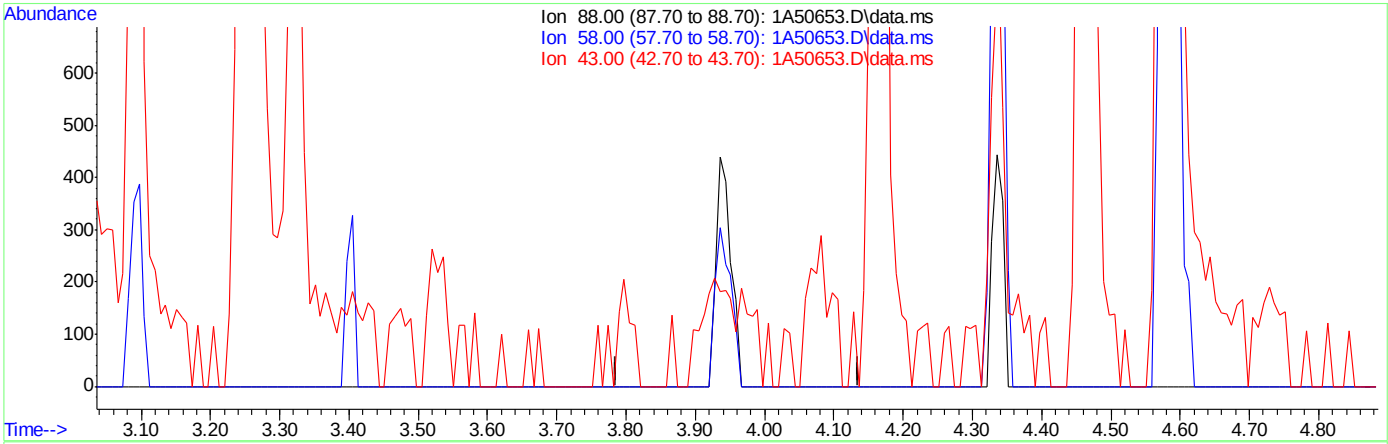
response 3094

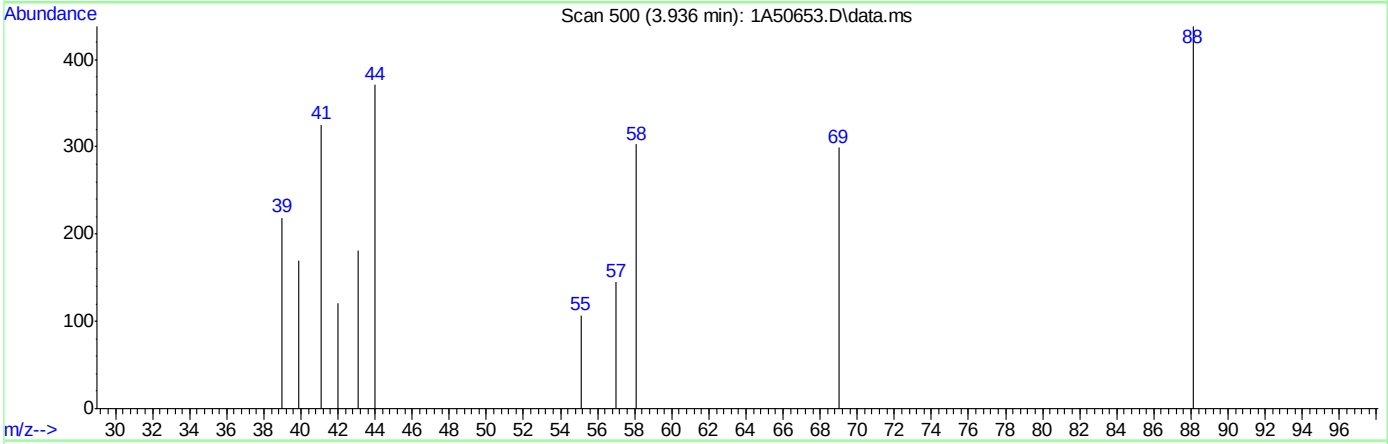
Ion	Exp%	Act%
116.90	100	100
118.90	94.50	107.10
120.90	31.10	32.52
81.90	25.40	42.28

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50653.D
Acq On : 15 Nov 2023 6:48 am
Operator : jeniferw
Sample : IC1945-8
Misc : MS55276,V2A1790,,,,,
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Nov 15 09:38:24 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50653.D\data.ms

(59) 1,4-Dioxane

3.936min (-3.936) 0.00ug/L

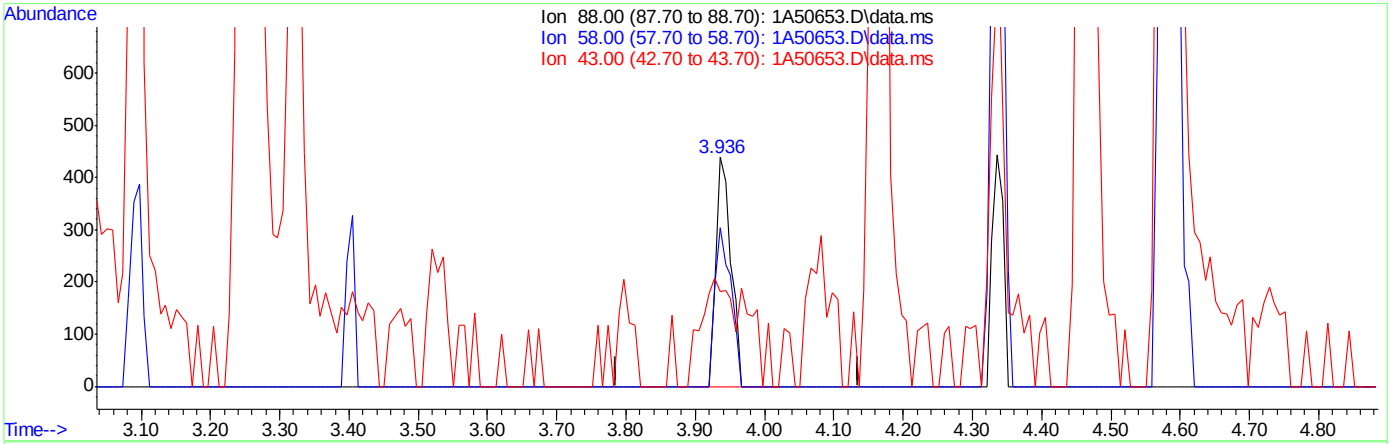
response 0

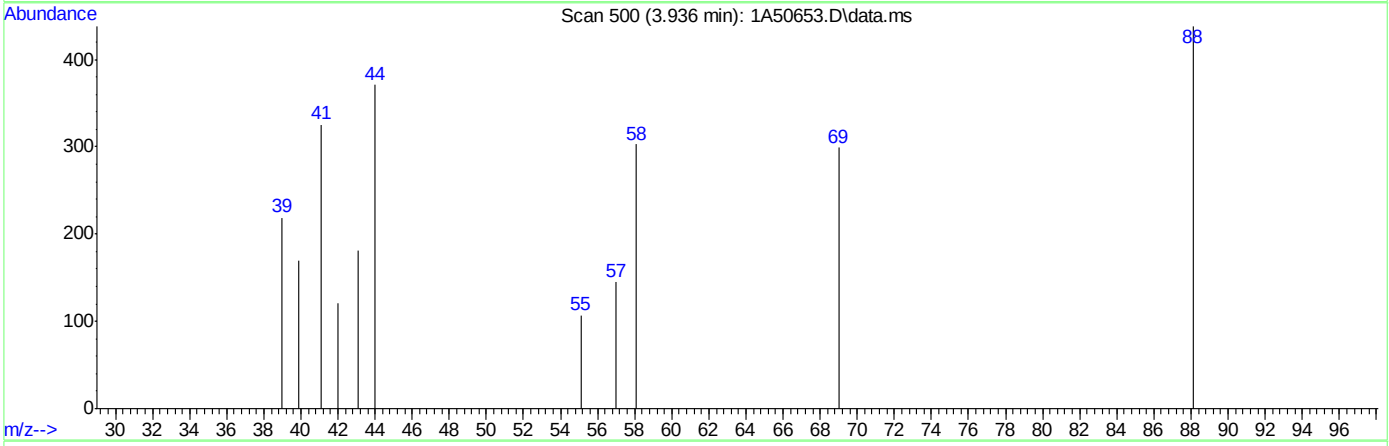
Ion	Exp%	Act%
88.00	100	0.00
58.00	69.70	0.00#
43.00	26.80	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50653.D
Acq On : 15 Nov 2023 6:48 am
Operator : jeniferw
Sample : IC1945-8
Misc : MS55276,V2A1790,,,,,
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Nov 15 09:38:24 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50653.D\data.ms

(59) 1,4-Dioxane

3.936min (-0.000) 35.21ug/L m

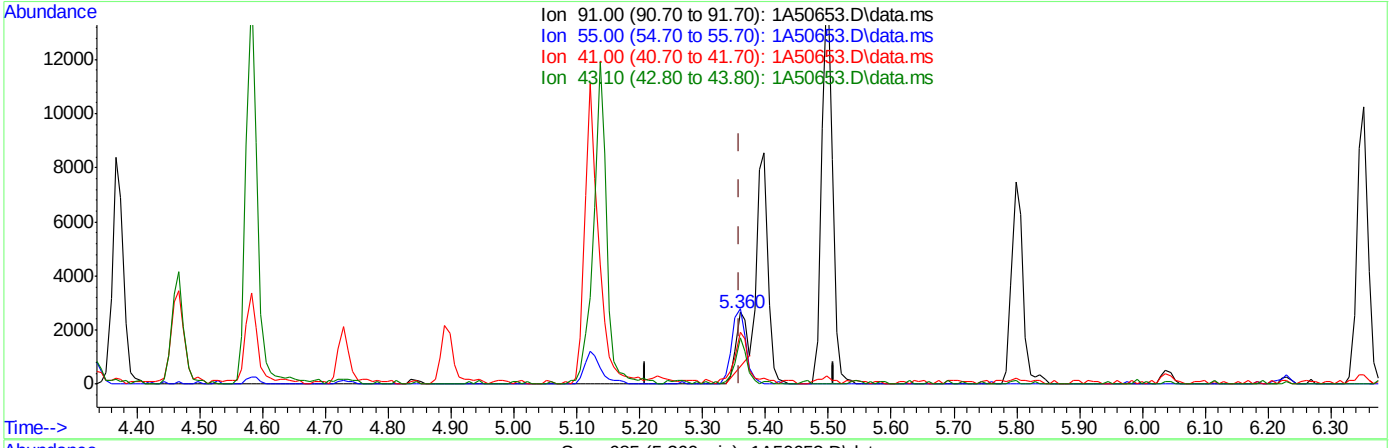
response 655

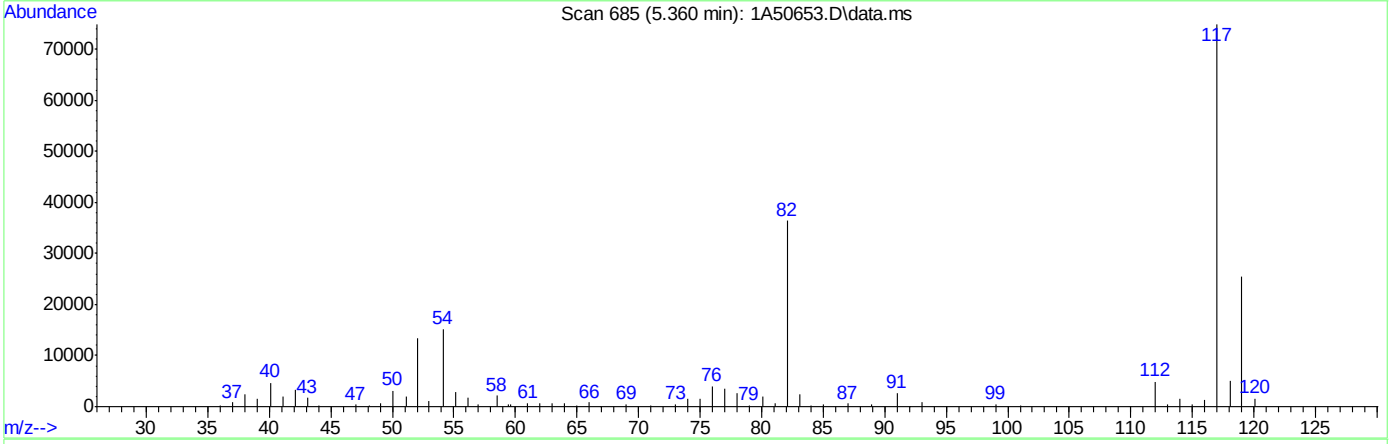
Ion	Exp%	Act%
88.00	100	100
58.00	69.70	69.18
43.00	26.80	41.32
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50653.D
Acq On : 15 Nov 2023 6:48 am
Operator : jeniferw
Sample : IC1945-8
Misc : MS55276,V2A1790,,,,,
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Nov 15 09:38:24 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50653.D\data.ms

(76) 1-Chlorohexane

5.360min (-0.000) 1.27ug/L

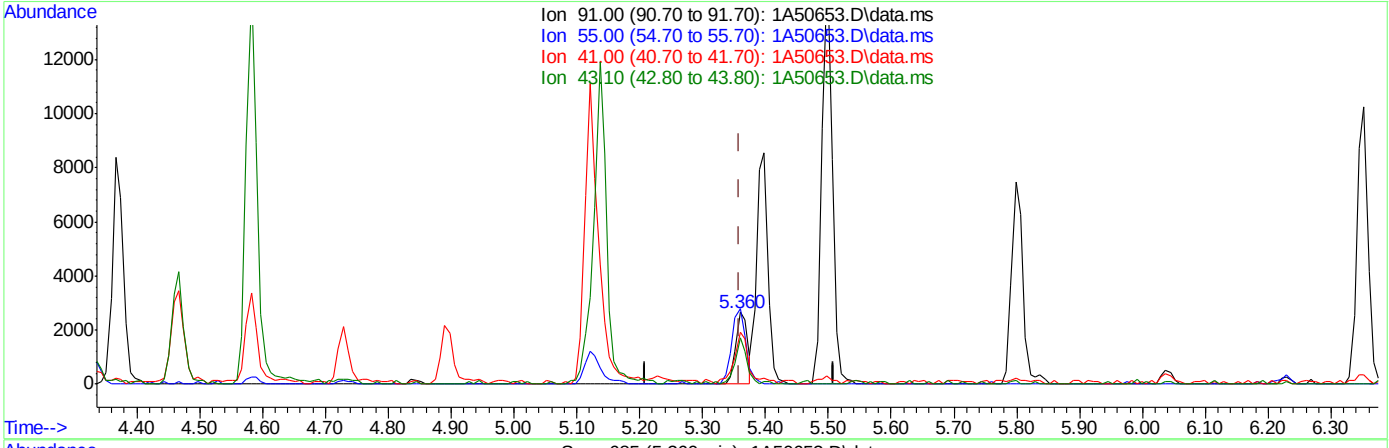
response 2268

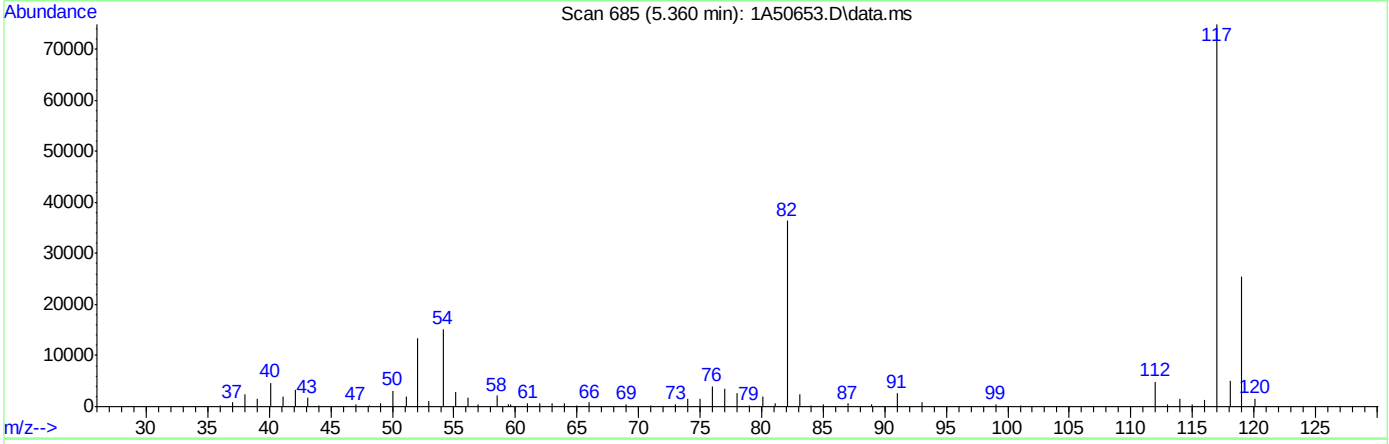
Ion	Exp%	Act%
91.00	100	100
55.00	74.60	93.09
41.00	53.90	63.20
43.10	42.90	60.05

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50653.D
Acq On : 15 Nov 2023 6:48 am
Operator : jeniferw
Sample : IC1945-8
Misc : MS55276,V2A1790,,,,,
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Nov 15 09:38:24 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50653.D\data.ms

(76) 1-Chlorohexane

5.360min (-0.000) 1.96ug/L m

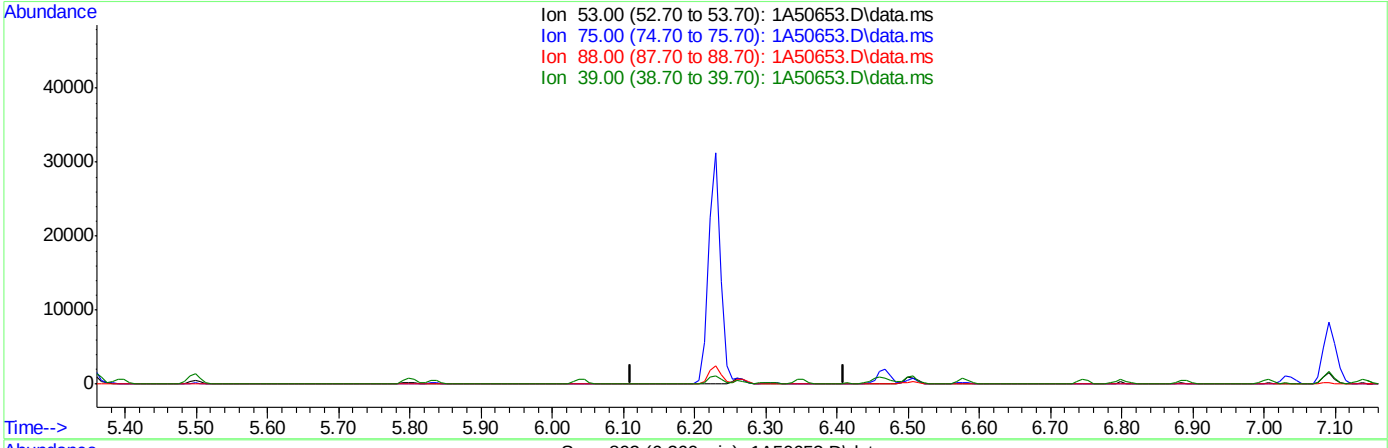
response 3497

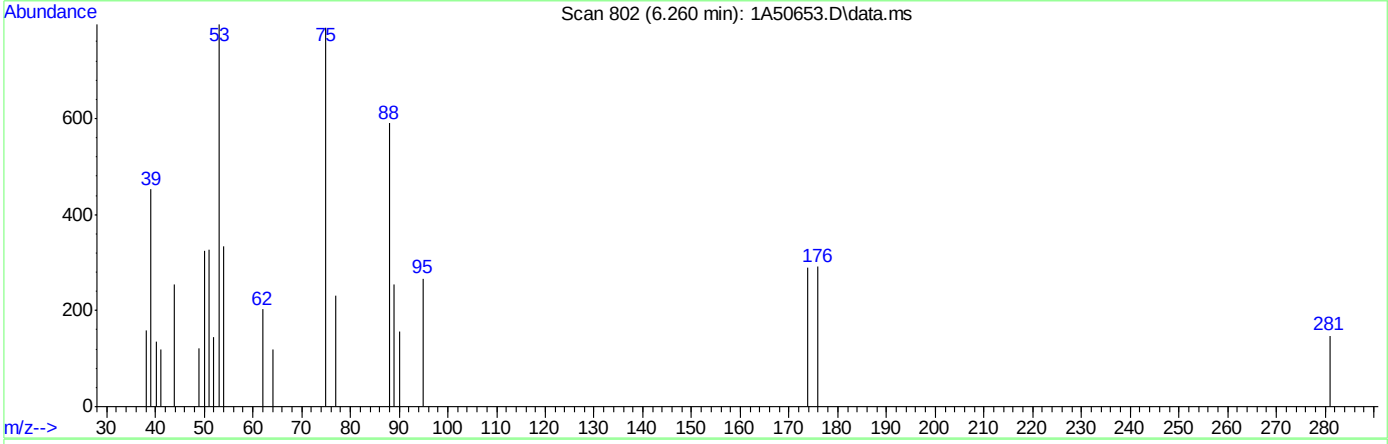
Ion	Exp%	Act%
91.00	100	100
55.00	74.60	105.52#
41.00	53.90	71.69
43.10	42.90	64.18#

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50653.D
Acq On : 15 Nov 2023 6:48 am
Operator : jeniferw
Sample : IC1945-8
Misc : MS55276,V2A1790,,,,,
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Nov 15 09:38:24 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50653.D\data.ms

(87) cis-1,4-Dichloro-2-butene

6.260min (-6.260) 0.00ug/L

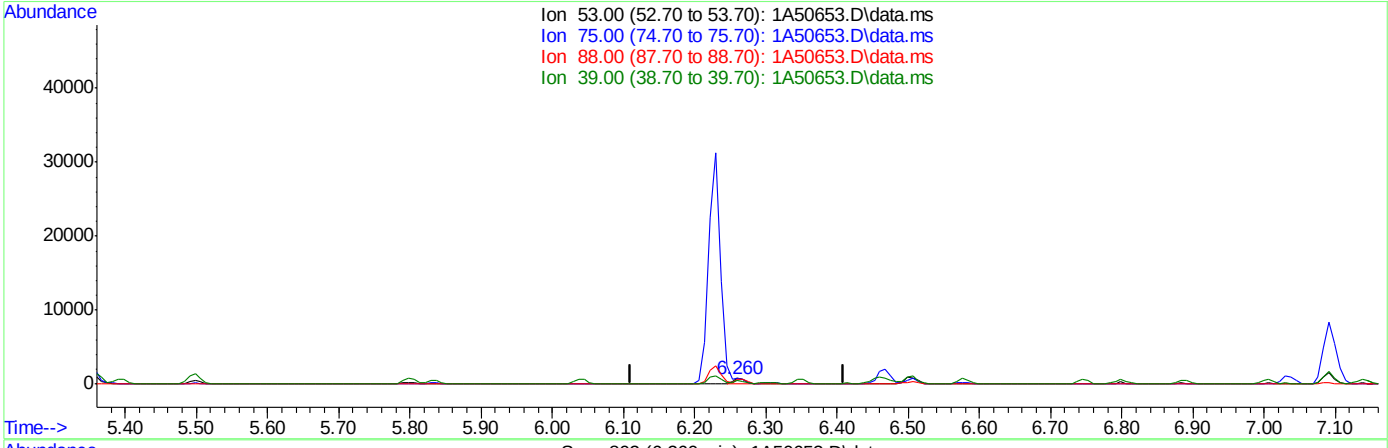
response 0

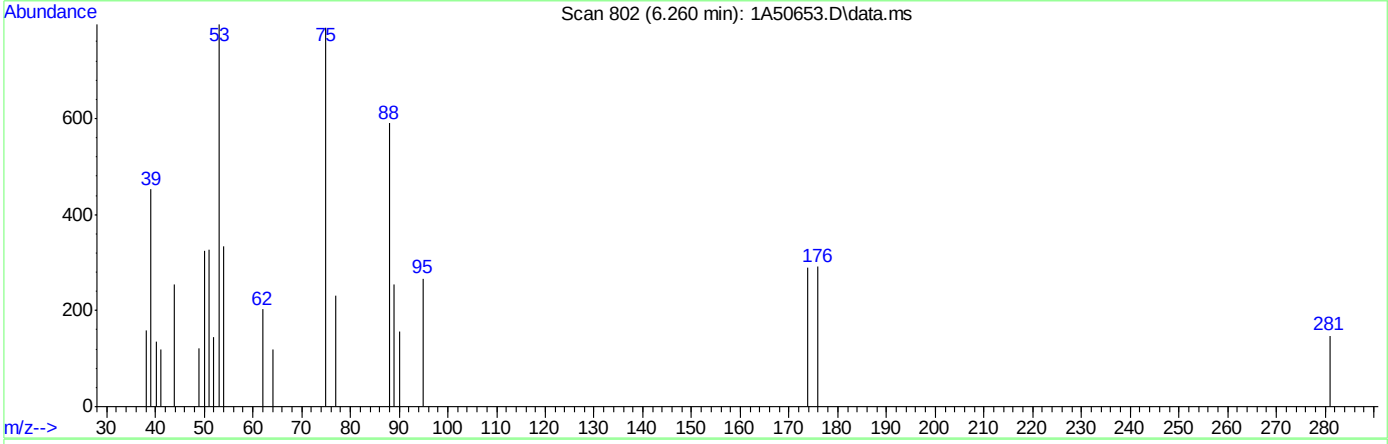
Ion	Exp%	Act%
53.00	100	0.00
75.00	55.00	0.00#
88.00	121.00	0.00#
39.00	30.00	0.00#

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50653.D
Acq On : 15 Nov 2023 6:48 am
Operator : jeniferw
Sample : IC1945-8
Misc : MS55276,V2A1790,,,,,
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Nov 15 09:38:24 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50653.D\data.ms

(87) cis-1,4-Dichloro-2-butene

6.260min (-0.000) 2.09ug/L m

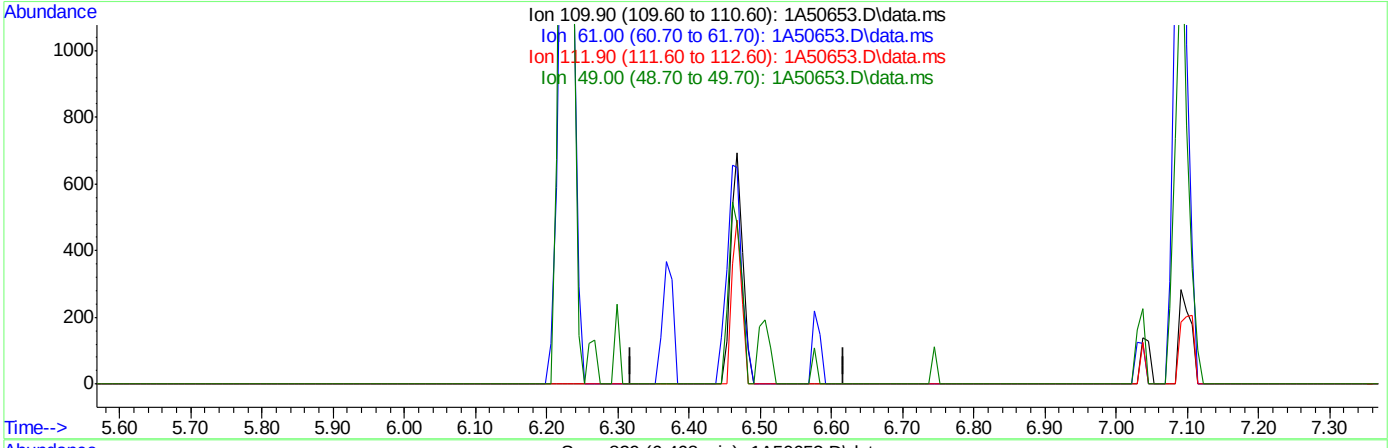
response 961

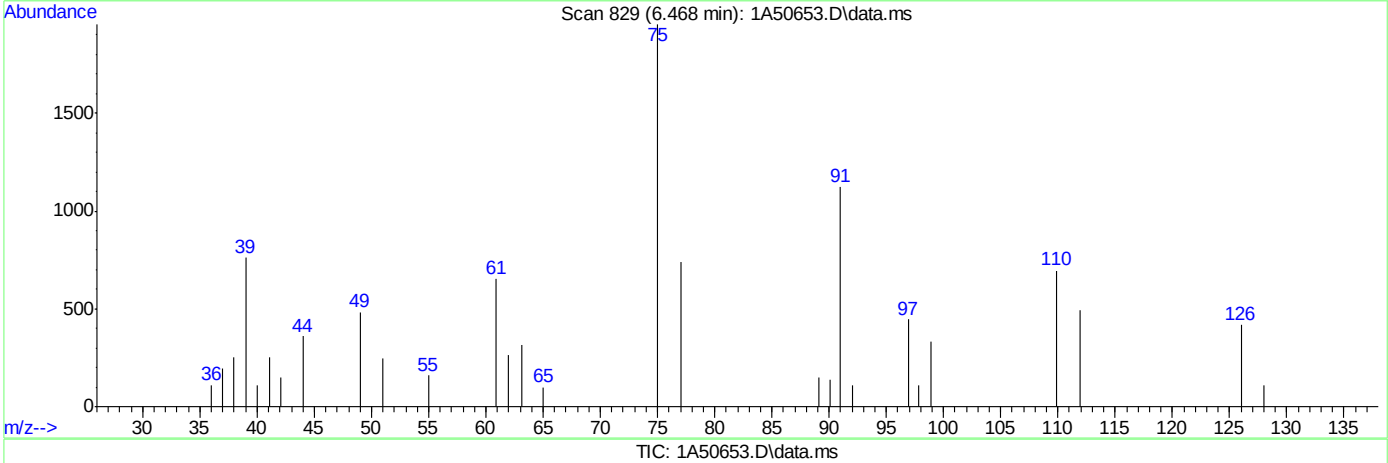
Ion	Exp%	Act%
53.00	100	100
75.00	55.00	98.99#
88.00	121.00	74.12#
39.00	30.00	56.78#

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50653.D
Acq On : 15 Nov 2023 6:48 am
Operator : jeniferw
Sample : IC1945-8
Misc : MS55276,V2A1790,,,,,
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Nov 15 09:38:24 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50653.D\data.ms

(94) 1,2,3-Trichloropropane ( )

6.468min (-6.468) 0.00ug/L

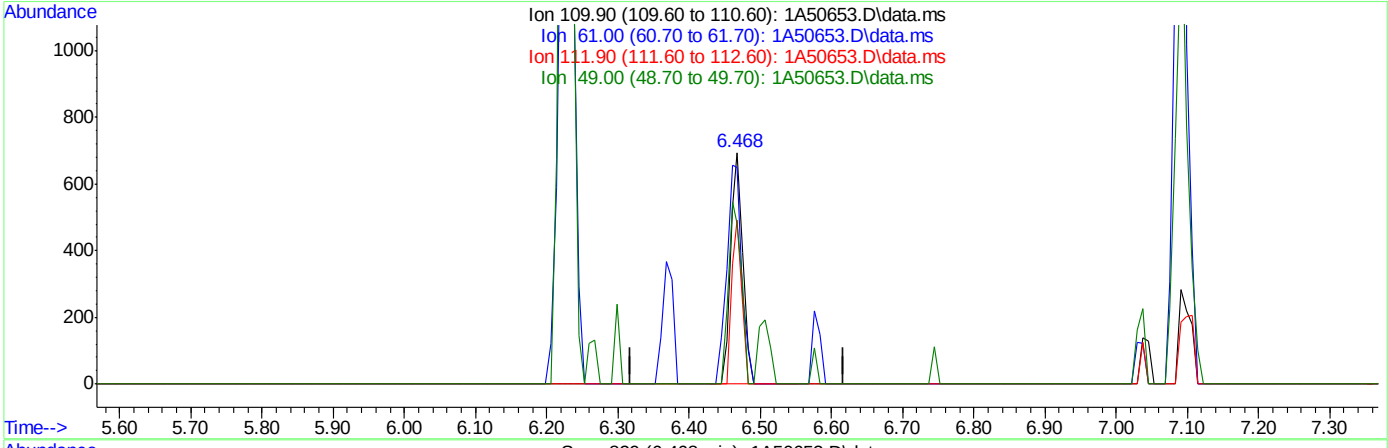
response 0

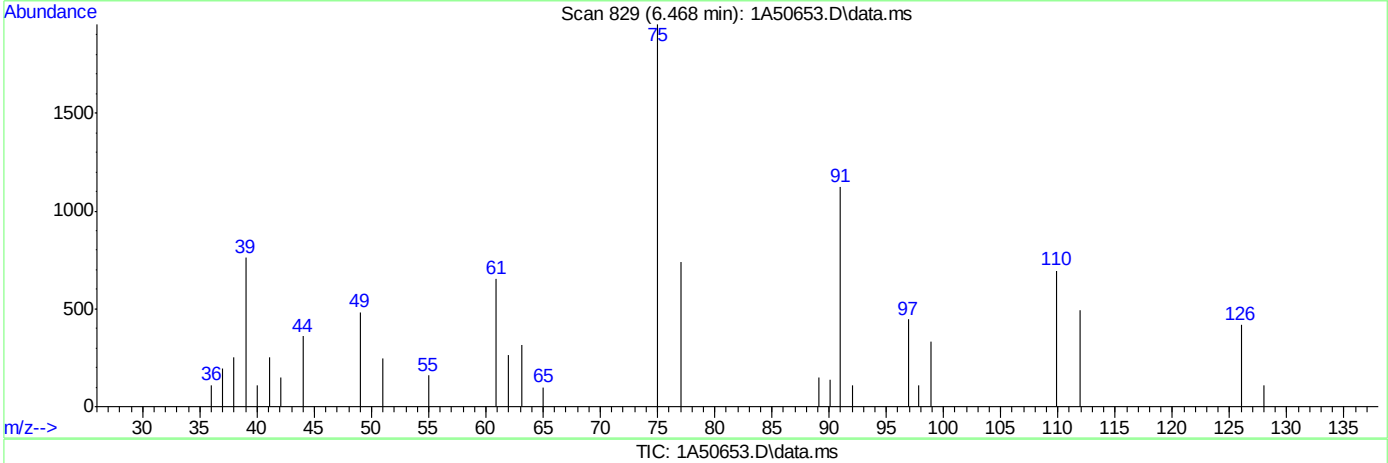
Ion	Exp%	Act%
109.90	100	0.00
61.00	66.40	0.00#
111.90	64.30	0.00#
49.00	57.90	0.00#

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50653.D
Acq On : 15 Nov 2023 6:48 am
Operator : jeniferw
Sample : IC1945-8
Misc : MS55276,V2A1790,,,,,
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Nov 15 09:38:24 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50653.D\data.ms

(94) 1,2,3-Trichloropropane ( )

6.468min (-0.000) 1.81ug/L m

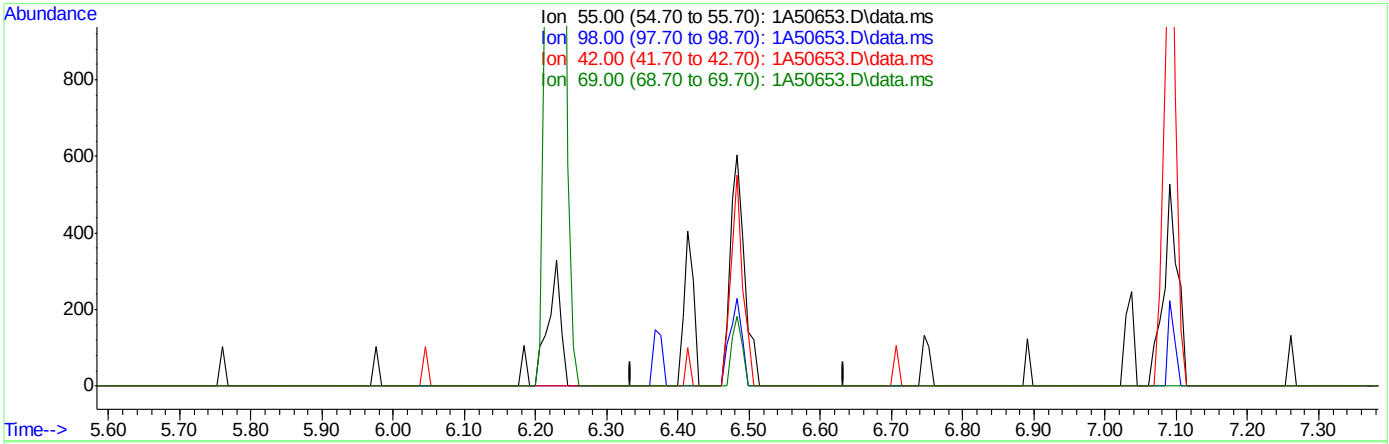
response 855

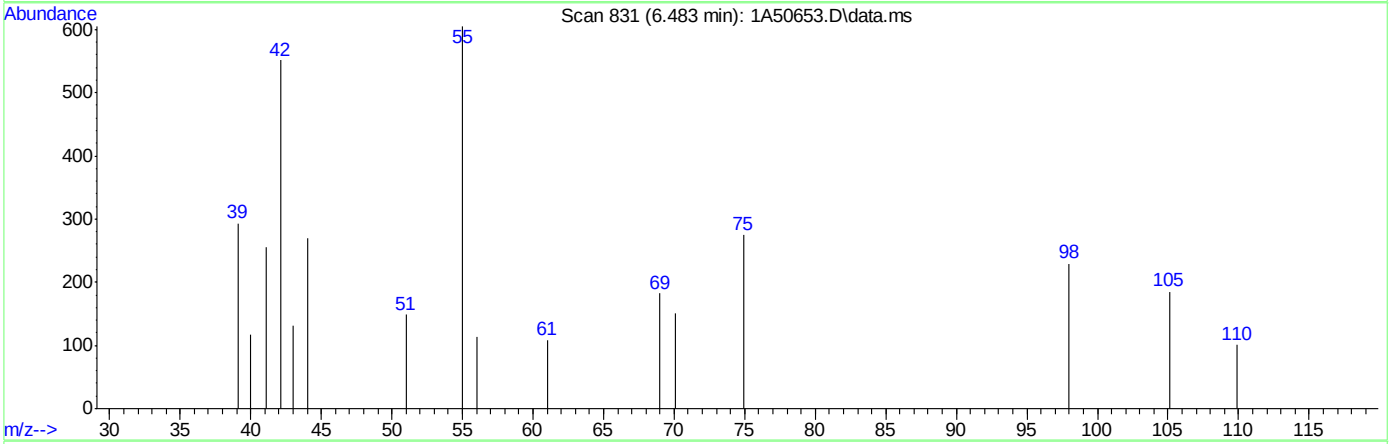
Ion	Exp%	Act%
109.90	100	100
61.00	66.40	93.67
111.90	64.30	70.79
49.00	57.90	69.50

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50653.D
Acq On : 15 Nov 2023 6:48 am
Operator : jeniferw
Sample : IC1945-8
Misc : MS55276,V2A1790,,,,,
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Nov 15 09:38:24 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50653.D\data.ms

(95) Cyclohexanone

6.484min (-6.484) 0.00ug/L

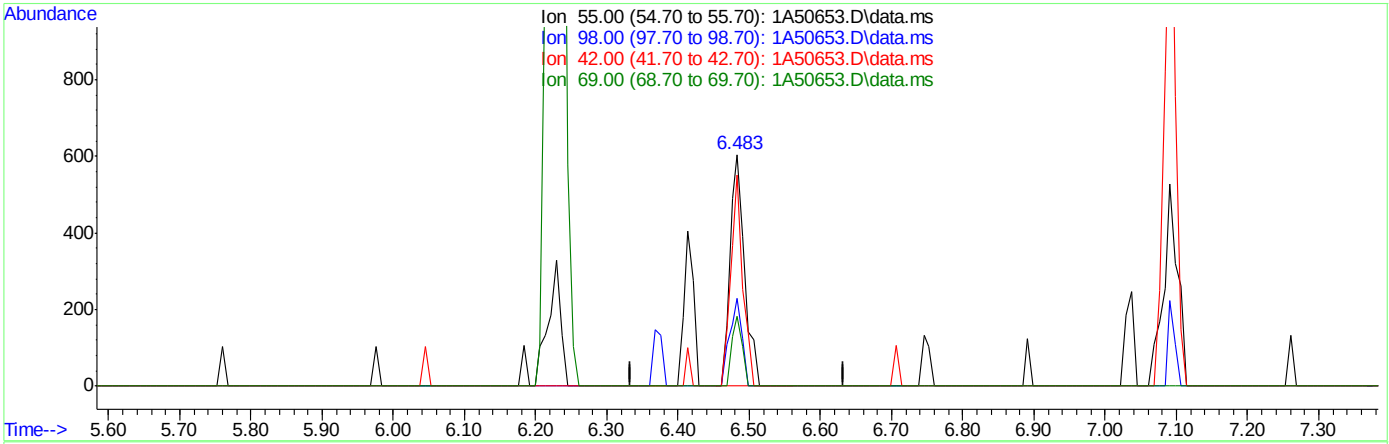
response 0

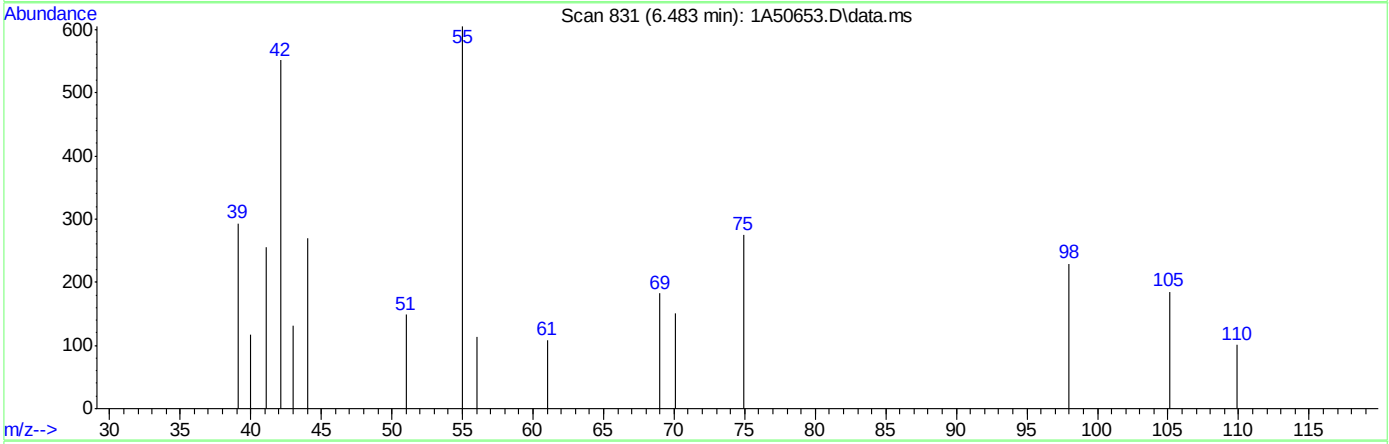
Ion	Exp%	Act%
55.00	100	0.00
98.00	41.70	0.00#
42.00	67.70	0.00#
69.00	27.00	0.00#

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50653.D
Acq On : 15 Nov 2023 6:48 am
Operator : jeniferw
Sample : IC1945-8
Misc : MS55276,V2A1790,,,,,
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Nov 15 09:38:24 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50653.D\data.ms

(95) Cyclohexanone

6.483min (-0.000) 9.05ug/L m

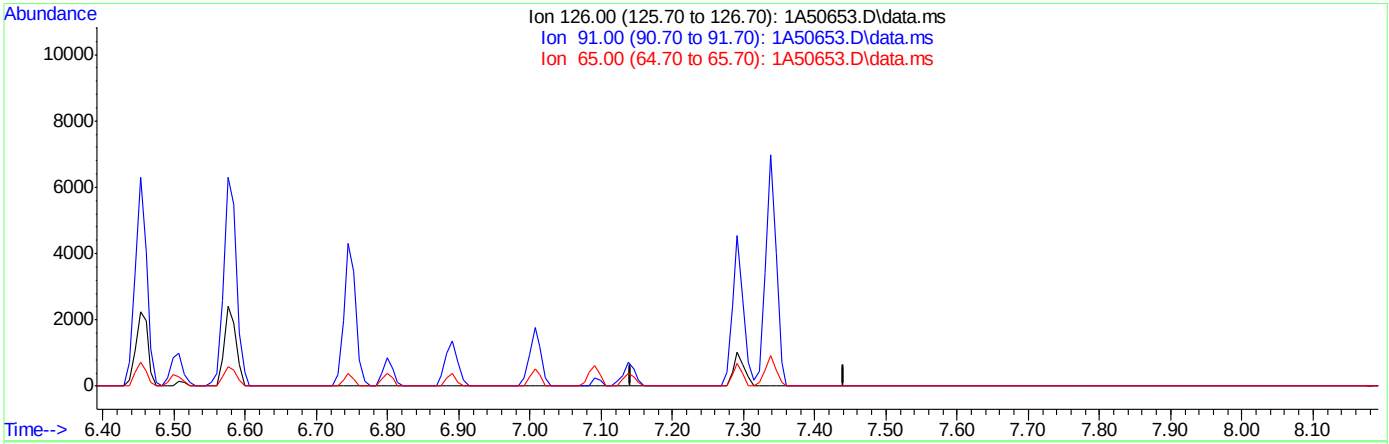
response 880

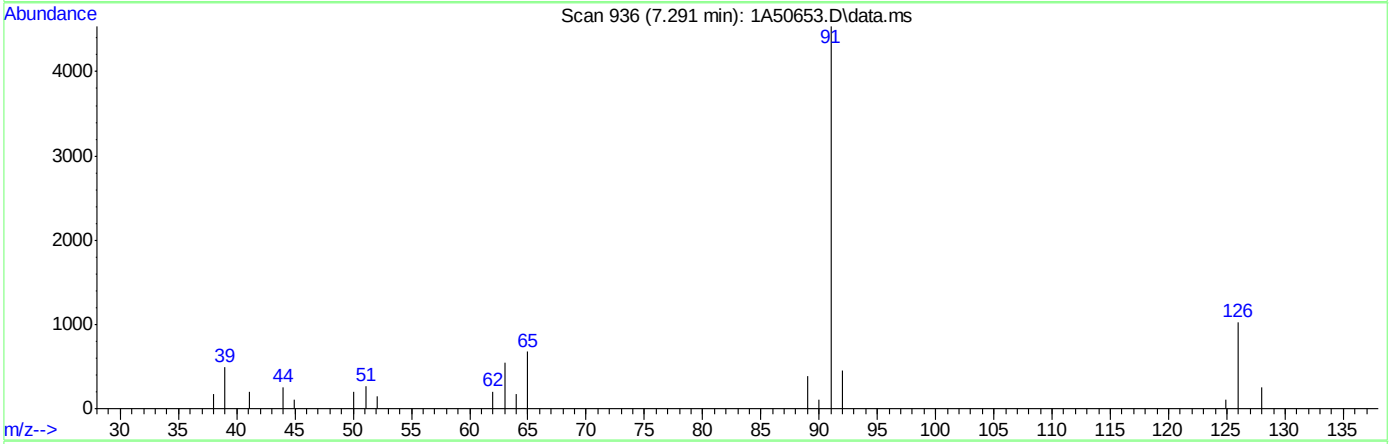
Ion	Exp%	Act%
55.00	100	100
98.00	41.70	37.85
42.00	67.70	91.07#
69.00	27.00	30.08

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50653.D
Acq On : 15 Nov 2023 6:48 am
Operator : jeniferw
Sample : IC1945-8
Misc : MS55276,V2A1790,,,,,
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Nov 15 09:38:24 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50653.D\data.ms

(106) Benzyl Chloride

7.292min (-7.292) 0.00ug/L

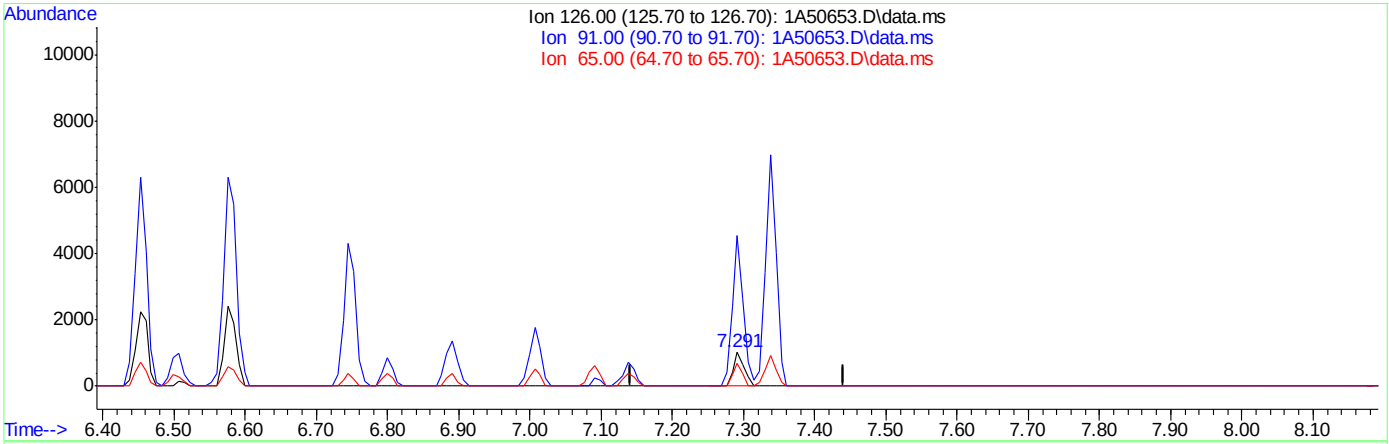
response 0

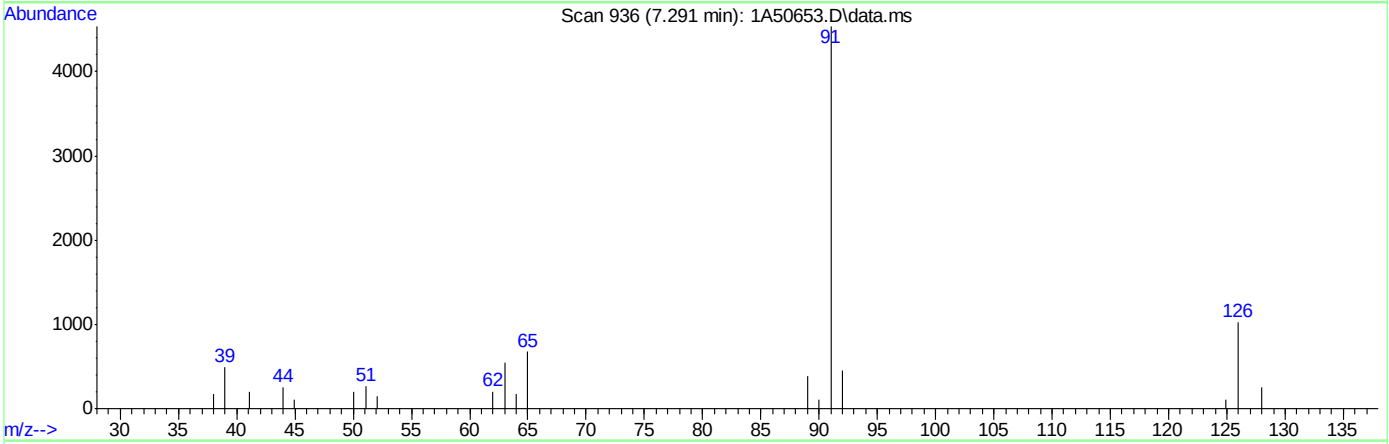
Ion	Exp%	Act%
126.00	100	0.00
91.00	460.20	0.00#
65.00	60.50	0.00#
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50653.D
Acq On : 15 Nov 2023 6:48 am
Operator : jeniferw
Sample : IC1945-8
Misc : MS55276,V2A1790,,,,,
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Nov 15 09:38:24 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50653.D\data.ms

(106) Benzyl Chloride

7.291min (-0.000) 1.79ug/L m

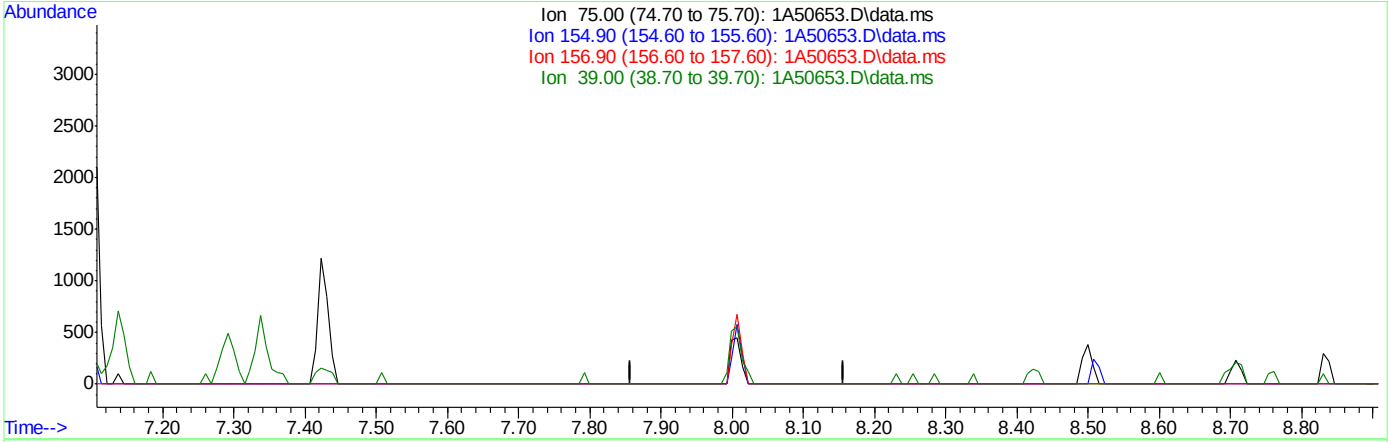
response 1099

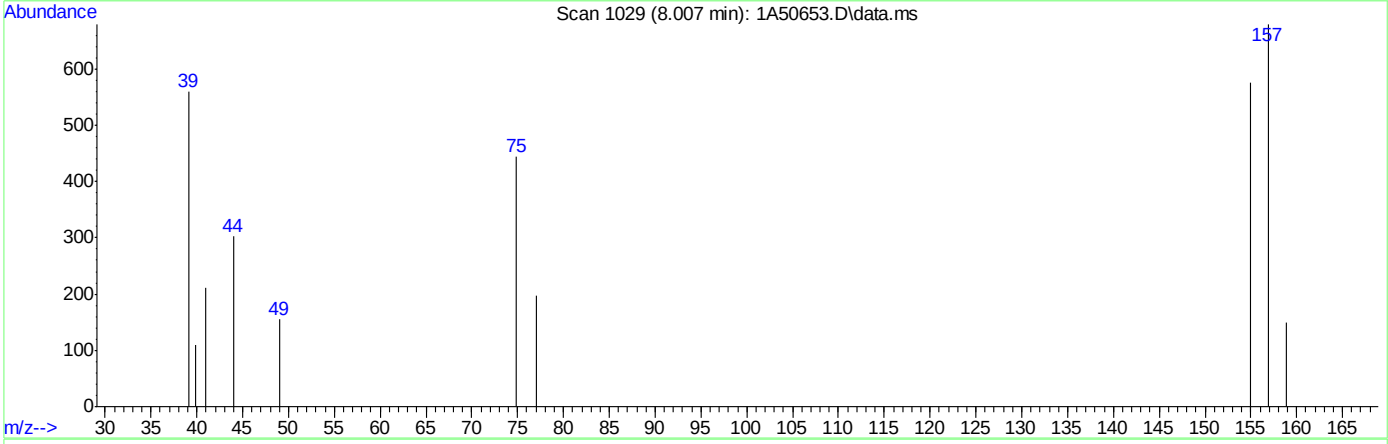
Ion	Exp%	Act%
126.00	100	100
91.00	460.20	441.87
65.00	60.50	65.82
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50653.D
Acq On : 15 Nov 2023 6:48 am
Operator : jeniferw
Sample : IC1945-8
Misc : MS55276,V2A1790,,,,,
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Nov 15 09:38:24 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50653.D\data.ms

(108) 1,2-Dibromo-3-Chloropropane

8.007min (-8.007) 0.00ug/L

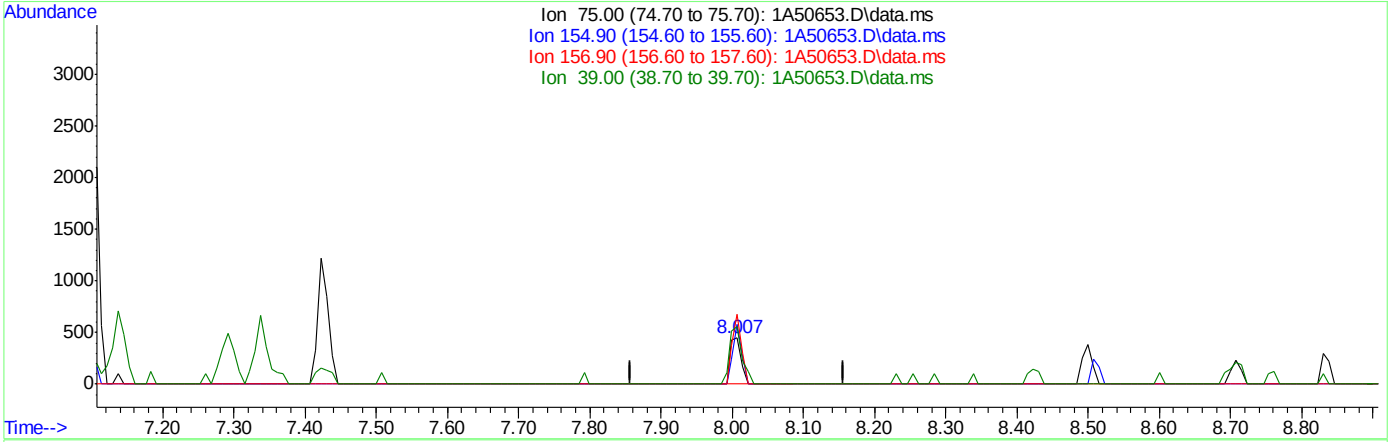
response 0

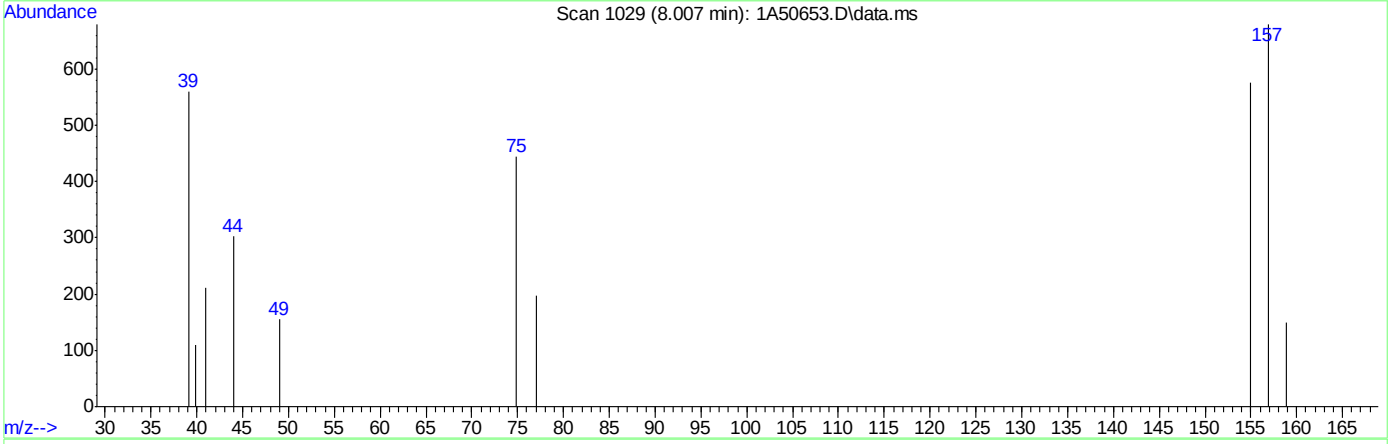
Ion	Exp%	Act%
75.00	100	0.00
154.90	86.70	0.00#
156.90	114.50	0.00#
39.00	63.50	0.00#

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50653.D
Acq On : 15 Nov 2023 6:48 am
Operator : jeniferw
Sample : IC1945-8
Misc : MS55276,V2A1790,,,,,
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Nov 15 09:38:24 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50653.D\data.ms

(108) 1,2-Dibromo-3-Chloropropane

8.007min (-0.000) 1.77ug/L m

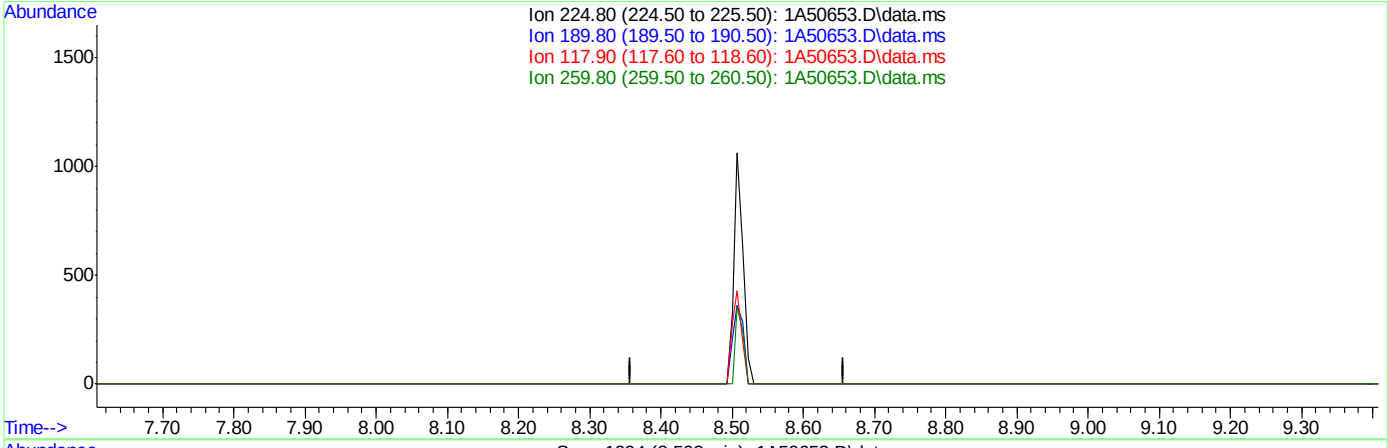
response 482

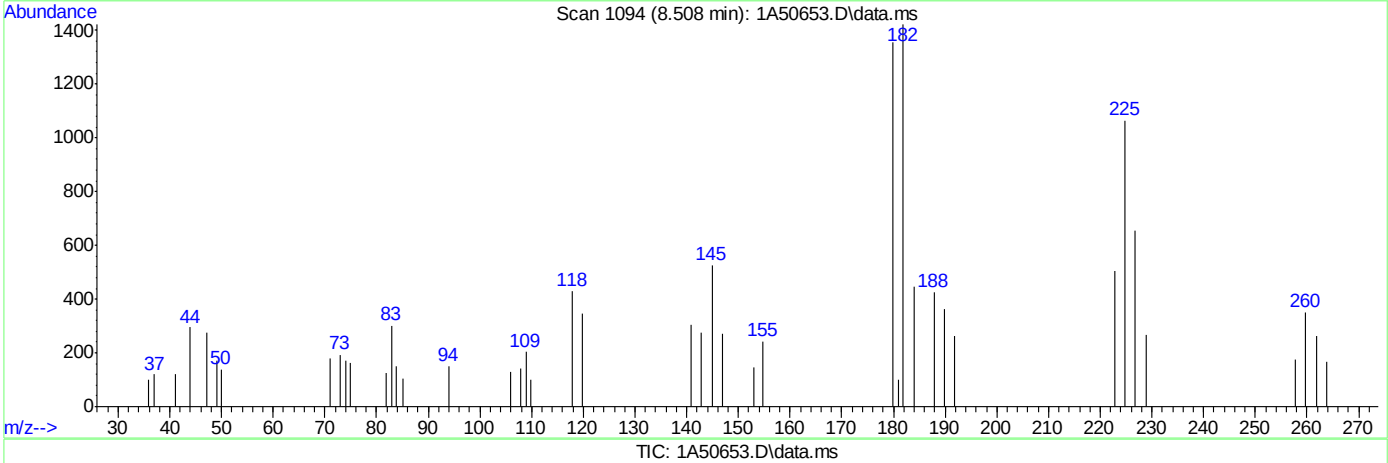
Ion	Exp%	Act%
75.00	100	100
154.90	86.70	129.73#
156.90	114.50	152.93#
39.00	63.50	125.90#

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50653.D
Acq On : 15 Nov 2023 6:48 am
Operator : jeniferw
Sample : IC1945-8
Misc : MS55276,V2A1790,,,,,
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Nov 15 09:38:24 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50653.D\data.ms

(109) Hexachlorobutadiene ( )

8.508min (-8.508) 0.00ug/L

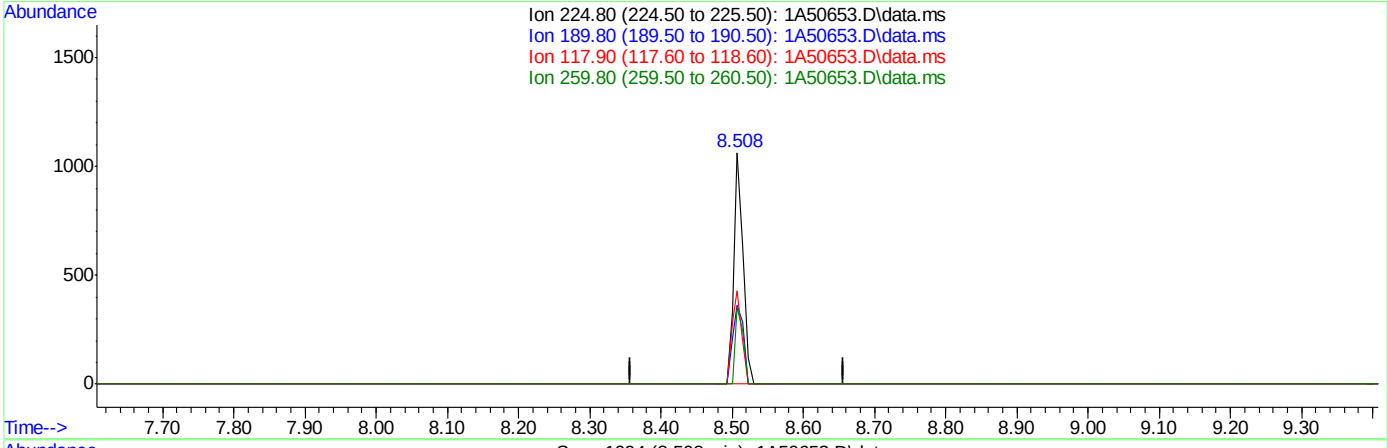
response 0

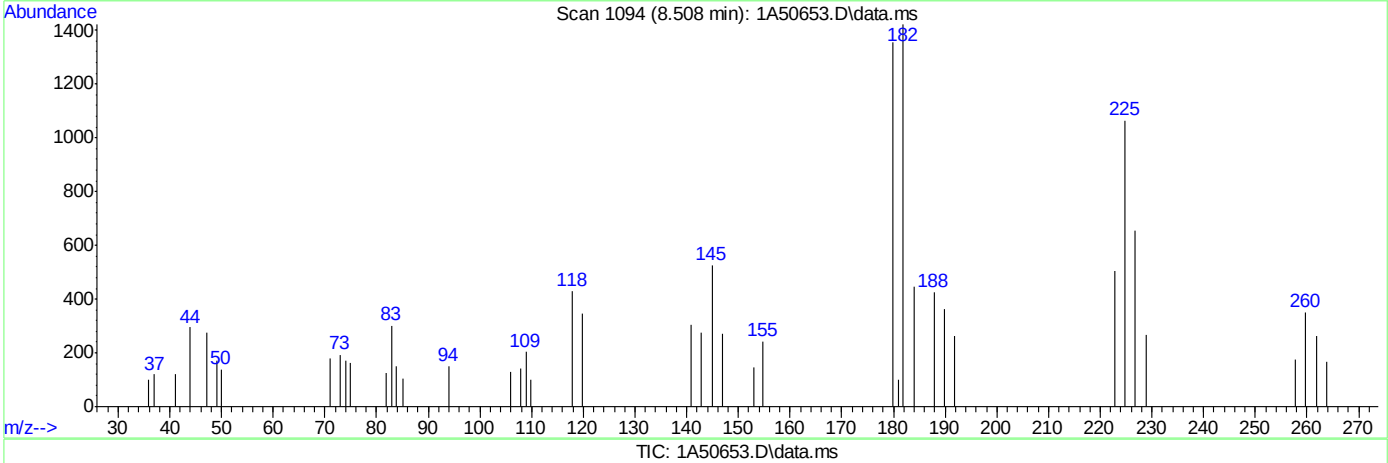
Ion	Exp%	Act%
224.80	100	0.00
189.80	44.60	0.00#
117.90	34.60	0.00#
259.80	28.20	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50653.D
Acq On : 15 Nov 2023 6:48 am
Operator : jeniferw
Sample : IC1945-8
Misc : MS55276,V2A1790,,,,,
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Nov 15 09:38:24 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50653.D\data.ms

(109) Hexachlorobutadiene ( )

8.508min (-0.000) 1.78ug/L m

response 995

Ion	Exp%	Act%
224.80	100	100
189.80	44.60	34.12
117.90	34.60	40.51
259.80	28.20	33.08

Manual Integrations APPROVED (compounds with "m" flag)
Karen Watson
11/15/23 15:49

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50655.D
Acq On : 15 Nov 2023 7:25 am
Operator : jeniferw
Sample : IC1985-2
Misc : MS55275,V1A1985,,,,,
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Nov 15 12:55:35 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	3.405	96	209438	50.00	ug/L	0.00
62) Chlorobenzene-d5	5.352	117	151377	50.00	ug/L	0.00
85) 1,4-Dichlorobenzene-d4	7.091	152	79398	50.00	ug/L	0.00
System Monitoring Compounds						
39) Dibromofluoromethane	2.958	113	61540	49.14	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 98.28%			
49) 1,2-Dichloroethane-d4	3.235	65	65758	48.24	ug/L	0.00
Spiked Amount 50.000	Range 79 - 125		Recovery = 96.48%			
63) Toluene-d8	4.336	98	200005	49.47	ug/L	0.00
Spiked Amount 50.000	Range 85 - 112		Recovery = 98.94%			
86) 4-Bromofluorobenzene	6.229	174	65733	49.42	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 98.84%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.019	85	4056	4.85	ug/L	99
3) Chloromethane	1.134	50	5627	4.41	ug/L	96
4) 1,3-butadiene	1.188	39	9121	6.38	ug/L	96
5) Vinyl Chloride	1.173	62	6023	4.76	ug/L	96
6) Bromomethane	1.350	94	2235	4.79	ug/L	97
7) Chloroethane	1.419	64	3743	4.64	ug/L	90
8) Trichlorofluoromethane	1.496	101	8288	4.87	ug/L	97
9) Ethyl Ether	1.658	59	5534	5.43	ug/L	98
10) Ethanol	1.711	45	2816m	129.64	ug/L	
11) 1,2-Dichlorotrifluoroe...	1.750	67	7203	5.09	ug/L	92
12) 1,1-Dichloroethene	1.758	61	9680	5.07	ug/L	95
13) Freon 113	1.788	101	5608	5.23	ug/L	91
14) Carbon Disulfide	1.781	76	18534	5.86	ug/L	88
15) Iodomethane	1.835	142	2342	3.57	ug/L	95
16) Acrolein	1.912	56	8099	24.27	ug/L	98
17) Allyl chloride	1.996	41	8382	4.67	ug/L	93
18) Methylene Chloride	2.042	49	14443	8.32	ug/L	90
19) Acetone	2.050	43	13338	28.07	ug/L	95
20) Methyl acetate	2.127	43	37703	25.26	ug/L	98
21) trans-1,2-Dichloroethene	2.135	61	9511	5.01	ug/L	92
22) Hexane	2.196	56	6466	4.93	ug/L	93
23) Methyl Tert Butyl Ether	2.196	73	17667	5.05	ug/L	86
24) Acetonitrile	2.273	41	11572	63.03	ug/L	96
25) Tert Butyl Alcohol	2.212	59	12540	48.14	ug/L	94
26) Di-isopropyl ether	2.396	45	22757	5.12	ug/L	95
27) Chloroprene	2.443	53	25956	4.90	ug/L	99
28) 1,1-Dichloroethane	2.443	63	12398	5.03	ug/L	98
29) Acrylonitrile	2.443	52	16104	25.35	ug/L	96
30) ETBE	2.581	59	20802	5.07	ug/L	93
31) Vinyl acetate	2.566	43	75815	24.26	ug/L	95
32) cis-1,2-Dichloroethene	2.720	96	6874	5.02	ug/L	91
33) 2,2-Dichloropropane	2.781	77	8612	5.08	ug/L	96
34) Bromochloromethane	2.827	128	3491	5.02	ug/L	97
35) Cyclohexane	2.858	56	12275	4.99	ug/L	90

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50655.D
Acq On : 15 Nov 2023 7:25 am
Operator : jeniferw
Sample : IC1985-2
Misc : MS55275,V1A1985,,,,,
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Nov 15 12:55:35 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
36) Chloroform	2.858	83	11416	4.95	ug/L		94
37) Ethyl acetate	2.920	43	42520	24.36	ug/L		98
38) Tetrahydrofuran	2.951	42	3399	4.84	ug/L		98
40) Carbon Tetrachloride	2.966	117	8710m	5.06	ug/L		
41) 1,1,1-Trichloroethane	2.989	97	9315	4.95	ug/L		92
42) 2-Butanone	3.004	43	22160	23.68	ug/L		95
43) 1,1-Dichloropropene	3.058	75	8659	5.33	ug/L		96
44) tert-Butyl formate	3.097	59	26820	24.50	ug/L		93
45) Propionitrile	3.143	54	14115	56.71	ug/L		98
46) Methacrylonitrile	3.166	41	50134	46.47	ug/L		98
47) Benzene	3.181	78	24671	5.05	ug/L		97
48) TAME	3.251	73	17692	5.15	ug/L		89
50) 1,2-Dichloroethane	3.274	62	9091	4.90	ug/L		89
51) Isobutyl Alcohol	3.258	43	15556	99.93	ug/L		94
52) Tert Amyl Alcohol	3.328	59	10373	48.81	ug/L		93
53) Trichloroethene	3.512	95	6986	5.10	ug/L		97
54) Methylcyclohexane	3.528	83	11195	5.28	ug/L		94
55) Dibromomethane	3.736	93	4365	4.93	ug/L		86
56) 1,2-Dichloropropane	3.797	63	7066	5.10	ug/L		93
57) Bromodichloromethane	3.828	83	8499	5.04	ug/L		95
58) Methyl methacrylate	3.920	41	7545	4.87	ug/L		95
59) 1,4-Dioxane	3.943	88	2067	109.68	ug/L		92
60) 2-Chloroethyl vinyl ether	4.167	63	18527	23.82	ug/L		99
61) cis-1,3-Dichloropropene	4.213	75	10099	5.03	ug/L		86
64) Toluene	4.374	91	26189	5.09	ug/L		97
65) 2-Nitropropane	4.467	41	12155	24.09	ug/L		93
66) 4-Methyl-2-pentanone	4.582	43	43960	23.40	ug/L		97
67) trans-1,3-Dichloropropene	4.613	75	8952	4.85	ug/L		91
68) Tetrachloroethene	4.628	166	7417	5.23	ug/L		92
69) Ethyl methacrylate	4.728	69	7156	4.64	ug/L		90
70) 1,1,2-Trichloroethane	4.713	83	5253	5.04	ug/L		96
71) Dibromochloromethane	4.844	129	6370	4.77	ug/L		99
72) 1,3-Dichloropropane	4.898	76	9664	5.03	ug/L		91
73) 1,2-Dibromoethane	4.998	107	6680	5.06	ug/L		95
74) 3,3-Dimethyl-1-Butanol	5.121	57	57919	225.52	ug/L		96
75) 2-hexanone	5.136	43	42675	22.99	ug/L		89
76) 1-Chlorohexane	5.367	91	8606m	4.80	ug/L		
77) Ethylbenzene	5.398	91	28487m	5.14	ug/L		
78) Chlorobenzene	5.367	112	17408	5.20	ug/L		95
79) 1,1,1,2-Tetrachloroethane	5.413	131	6251	5.03	ug/L		94
80) m,p-Xylene	5.498	91	44260	10.07	ug/L		97
81) o-Xylene	5.806	91	23386	5.01	ug/L		99
82) Styrene	5.837	104	17661	5.02	ug/L		96
83) Bromoform	5.837	173	4271	4.83	ug/L		95
84) Isopropylbenzene	6.045	105	27340	5.01	ug/L		99
87) cis-1,4-Dichloro-2-butene	6.268	53	2261	4.95	ug/L	#	69
88) n-Propylbenzene	6.352	91	32269	5.03	ug/L		99
89) Bromobenzene	6.306	156	7277	5.11	ug/L		92
90) 1,1,2,2-Tetrachloroethane	6.375	83	8684	5.15	ug/L		95
91) 1,3,5-Trimethylbenzene	6.506	105	22650	5.14	ug/L		96

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50655.D
Acq On : 15 Nov 2023 7:25 am
Operator : jeniferw
Sample : IC1985-2
Misc : MS55275,V1A1985,,,,,
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Nov 15 12:55:35 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration

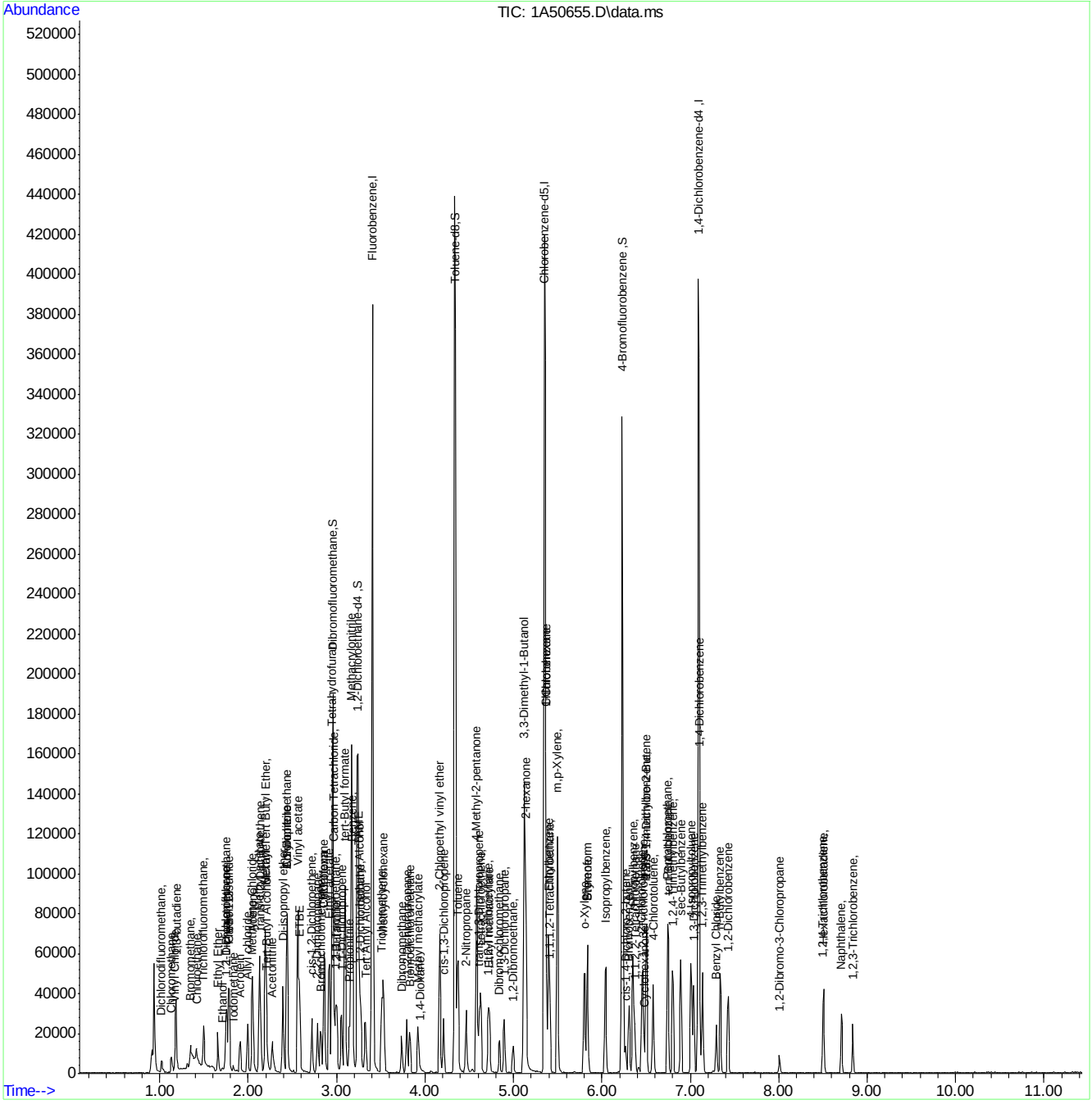
	Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
92)	2-Chlorotoluene	6.452	91	18619	4.98	ug/L		99
93)	trans-1,4-Dichloro-2-B...	6.506	53	3166	4.92	ug/L		93
94)	1,2,3-Trichloropropane	6.468	110	2398	5.12	ug/L		83
95)	Cyclohexanone	6.483	55	2124	22.02	ug/L		90
96)	4-Chlorotoluene	6.583	91	19050	4.90	ug/L		90
97)	tert-Butylbenzene	6.753	91	12579	5.07	ug/L		91
98)	1,2,4-Trimethylbenzene	6.799	105	21500	5.05	ug/L		96
99)	Pentachloroethane	6.745	167	3352	5.08	ug/L	#	62
100)	sec-Butylbenzene	6.891	105	28228	5.06	ug/L		97
101)	4-Isopropyltoluene	7.007	119	23997	4.97	ug/L		99
102)	1,3-Dichlorobenzene	7.037	146	13088	5.01	ug/L		97
103)	1,2,3-Trimethylbenzene	7.137	105	21256	4.99	ug/L		99
104)	1,4-Dichlorobenzene	7.107	146	13210	5.07	ug/L		90
105)	n-Butylbenzene	7.338	92	10540	4.87	ug/L		96
106)	Benzyl Chloride	7.291	126	2815	4.61	ug/L		94
107)	1,2-Dichlorobenzene	7.430	146	11755	5.06	ug/L		96
108)	1,2-Dibromo-3-Chloropr...	8.007	75	1301	4.82	ug/L	#	79
109)	Hexachlorobutadiene	8.507	225	2660	4.80	ug/L		84
110)	1,2,4-Trichlorobenzene	8.500	180	6129	4.79	ug/L		97
111)	Naphthalene	8.707	128	15424	4.69	ug/L		100
112)	1,2,3-Trichlorobenzene	8.838	180	5130	5.08	ug/L		94

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50655.D
Acq On : 15 Nov 2023 7:25 am
Operator : jeniferw
Sample : IC1985-2
Misc : MS55275,V1A1985,,,,,
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Nov 15 12:55:35 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration



Manual Integration Approval Summary

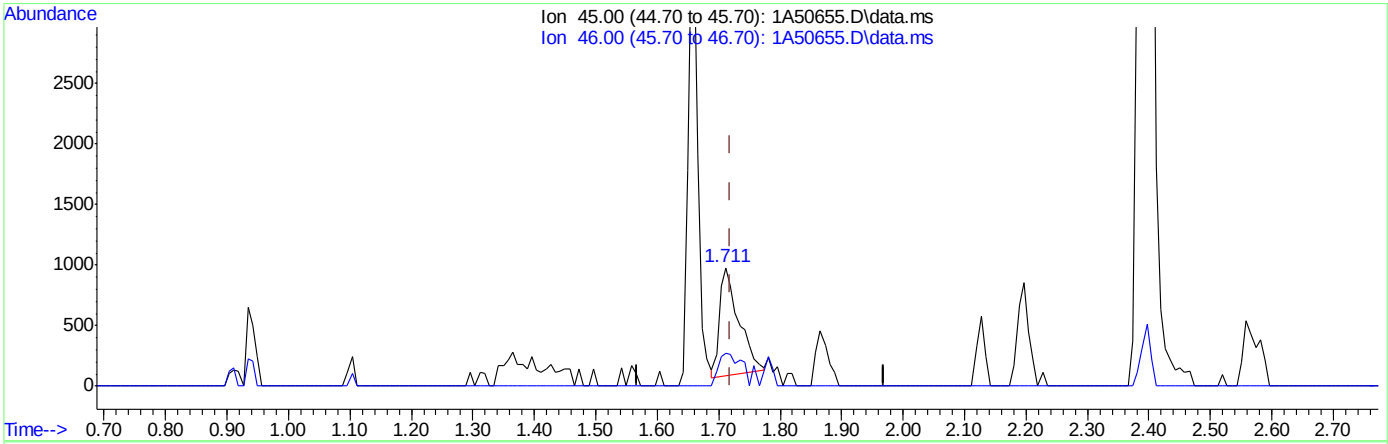
Sample Number: V1A1985-IC1985
Lab FileID: 1A50655.D
Injection Time: 11/15/23 07:25
Method: SW846 8260D
Analyst approved: 11/15/23 14:32 Jenifer Willis
Supervisor approved: 11/15/23 15:49 Karen Watson

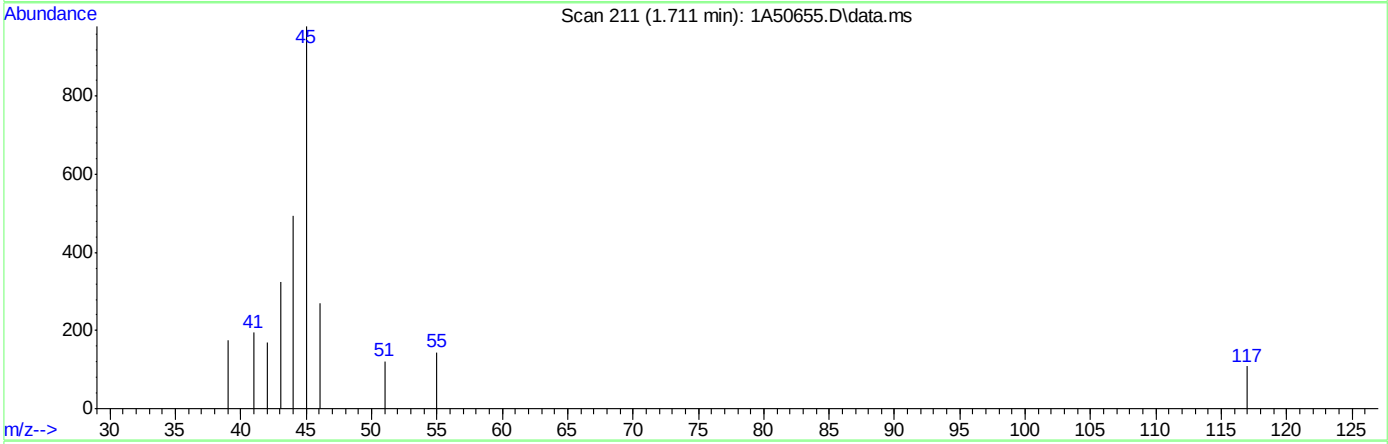
Parameter	CAS	Sig#	R.T. (min.)	Reason
Ethyl Alcohol	64-17-5		1.71	Poorly defined baseline
Carbon Tetrachloride	56-23-5		2.97	Overlapping peak
1-Chlorohexane	544-10-5		5.37	Overlapping peak
Ethylbenzene	100-41-4		5.40	Overlapping peak

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50655.D
Acq On : 15 Nov 2023 7:25 am
Operator : jeniferw
Sample : IC1945-2
Misc : MS55275,V1A1945,,,,,
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Nov 15 09:38:26 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50655.D\data.ms

(10) Ethanol

1.711min (-0.008) 91.11ug/L

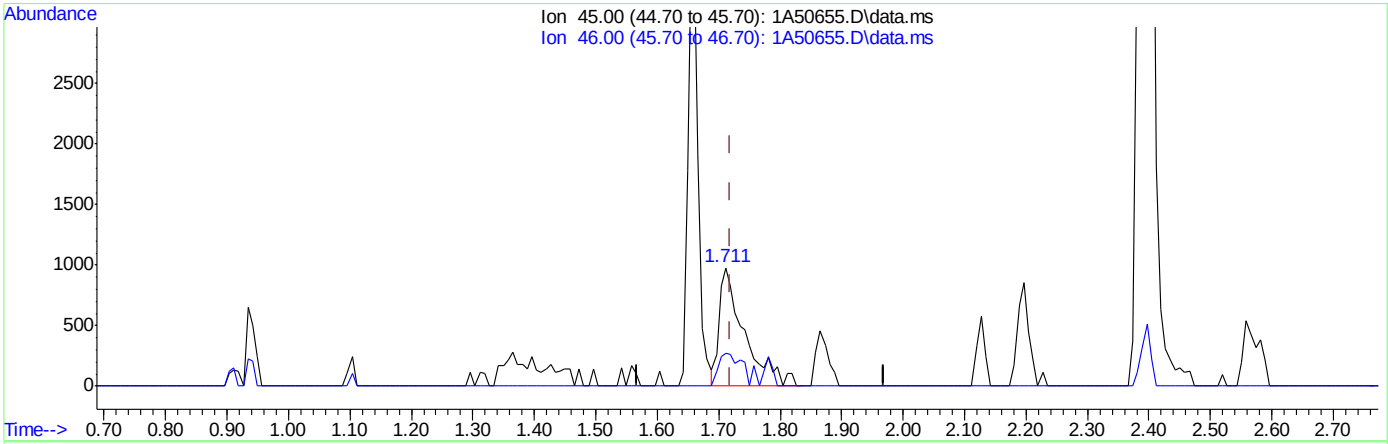
response 1979

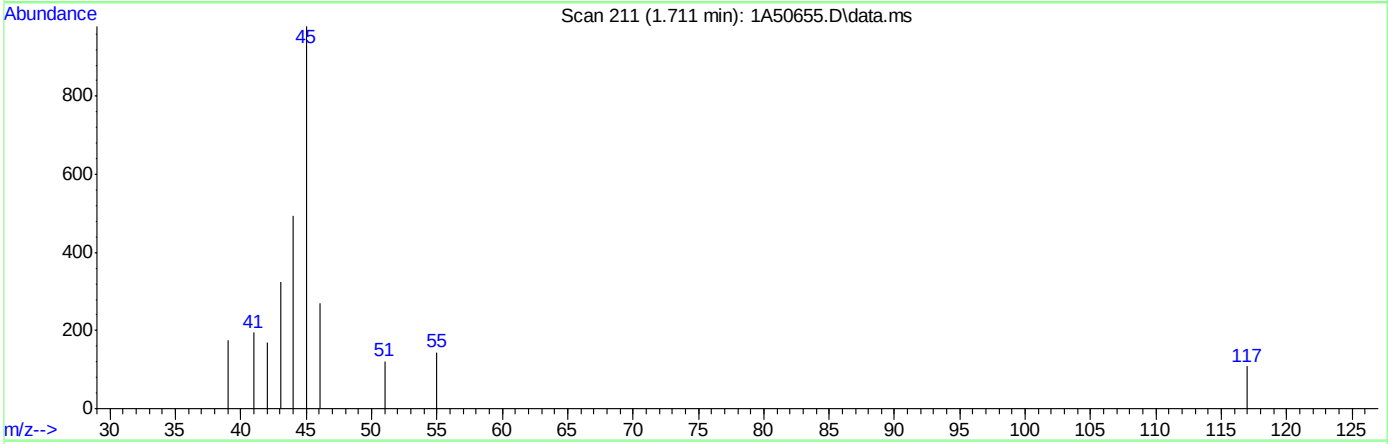
Ion	Exp%	Act%
45.00	100	100
46.00	40.30	31.76
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50655.D
Acq On : 15 Nov 2023 7:25 am
Operator : jeniferw
Sample : IC1945-2
Misc : MS55275,V1A1945,,,,,
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Nov 15 09:38:26 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50655.D\data.ms

(10) Ethanol

1.711min (-0.008) 129.64ug/L m

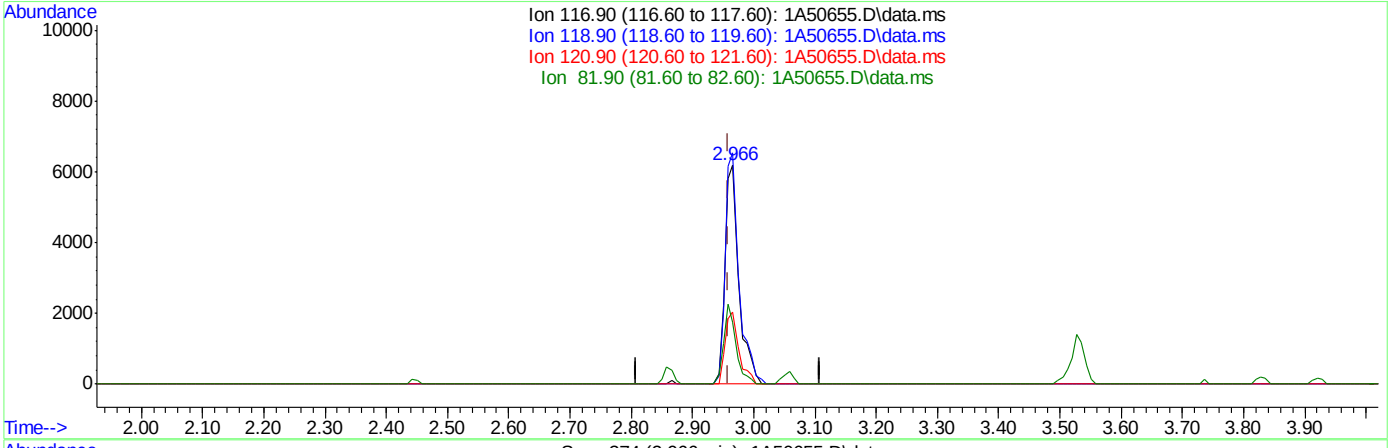
response 2816

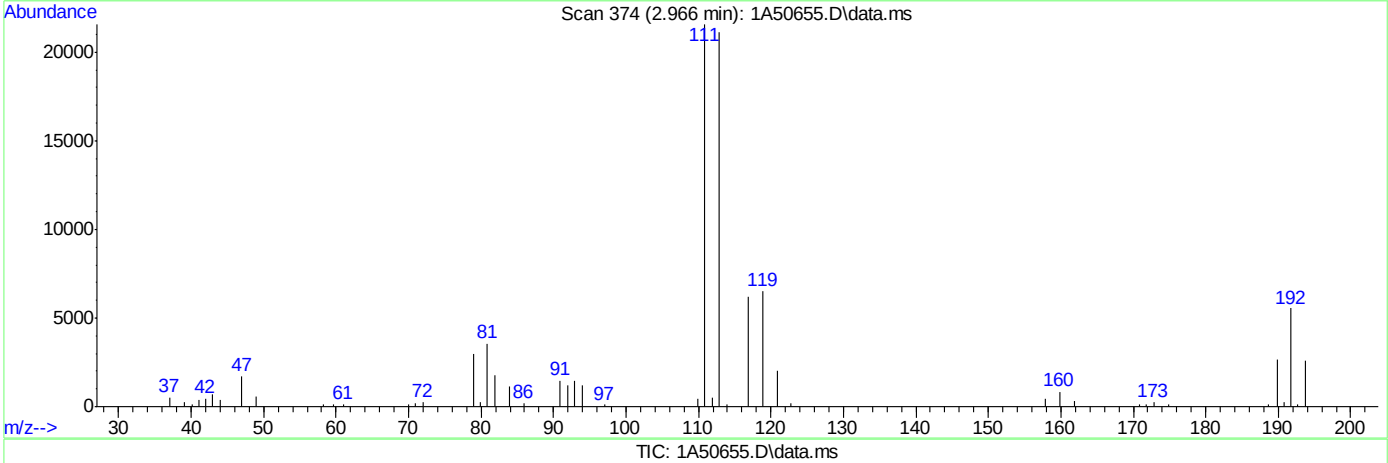
Ion	Exp%	Act%
45.00	100	100
46.00	40.30	27.48
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50655.D
Acq On : 15 Nov 2023 7:25 am
Operator : jeniferw
Sample : IC1945-2
Misc : MS55275,V1A1945,,,,,
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Nov 15 09:38:26 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50655.D\data.ms

(40) Carbon Tetrachloride ( )

2.966min (+0.007) 5.63ug/L

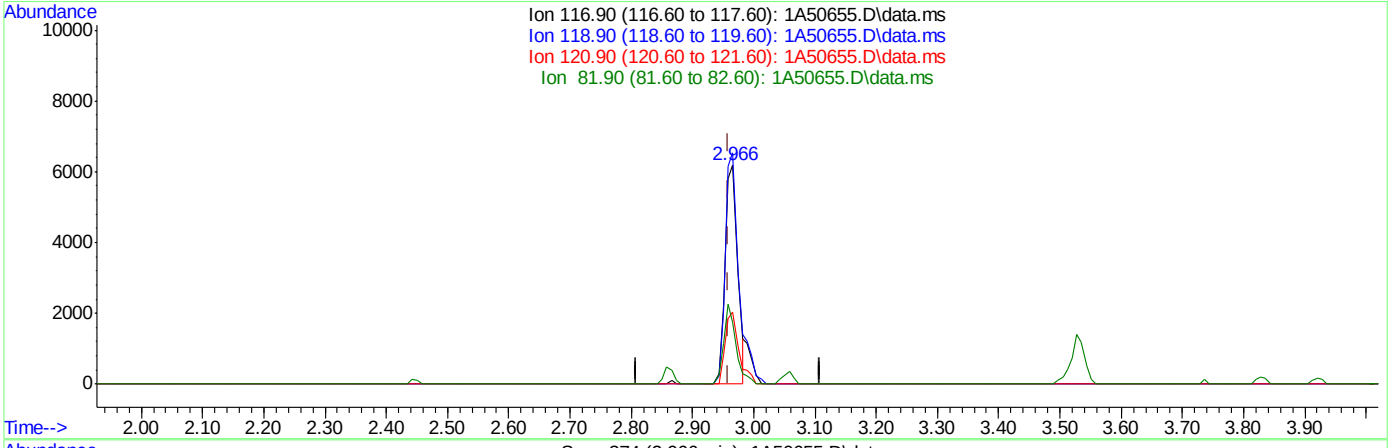
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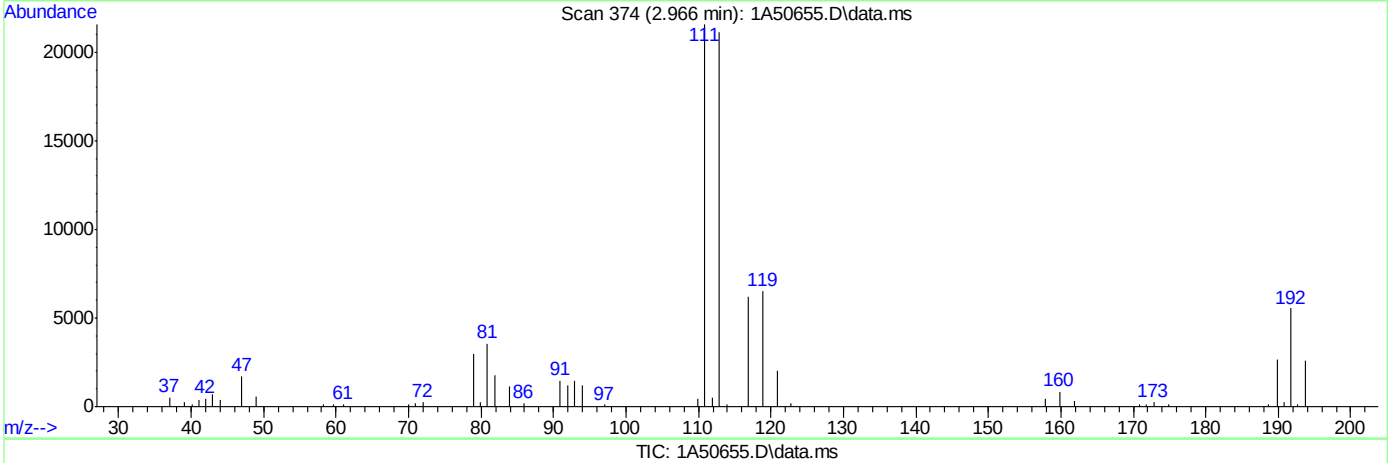
Ion	Exp%	Act%
116.90	100	100
118.90	94.50	105.67
120.90	31.10	32.91
81.90	25.40	28.13

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50655.D
Acq On : 15 Nov 2023 7:25 am
Operator : jeniferw
Sample : IC1945-2
Misc : MS55275,V1A1945,,,,,
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Nov 15 09:38:26 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50655.D\data.ms

(40) Carbon Tetrachloride ( )

2.966min (+0.007) 5.06ug/L m

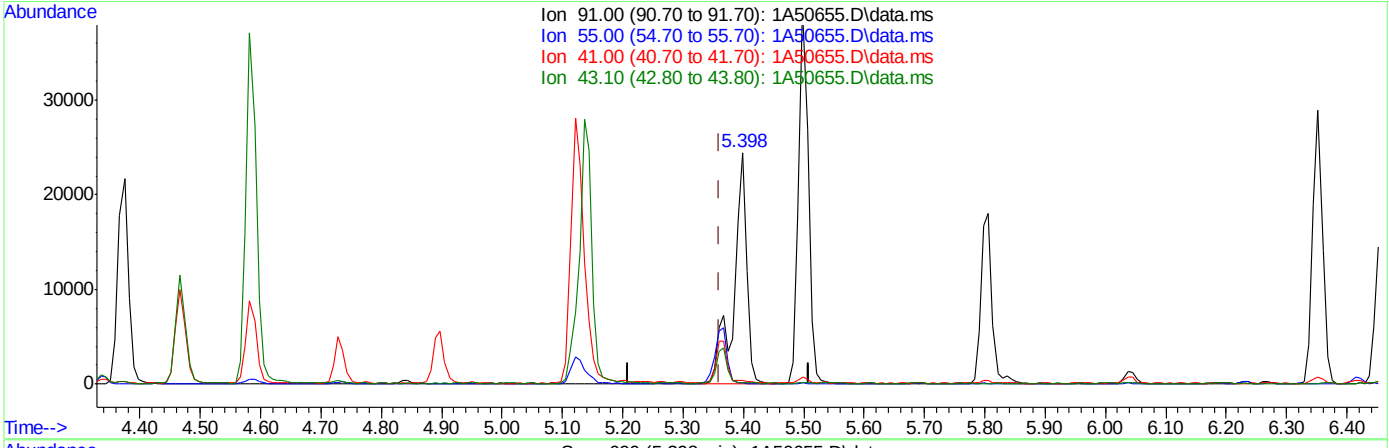
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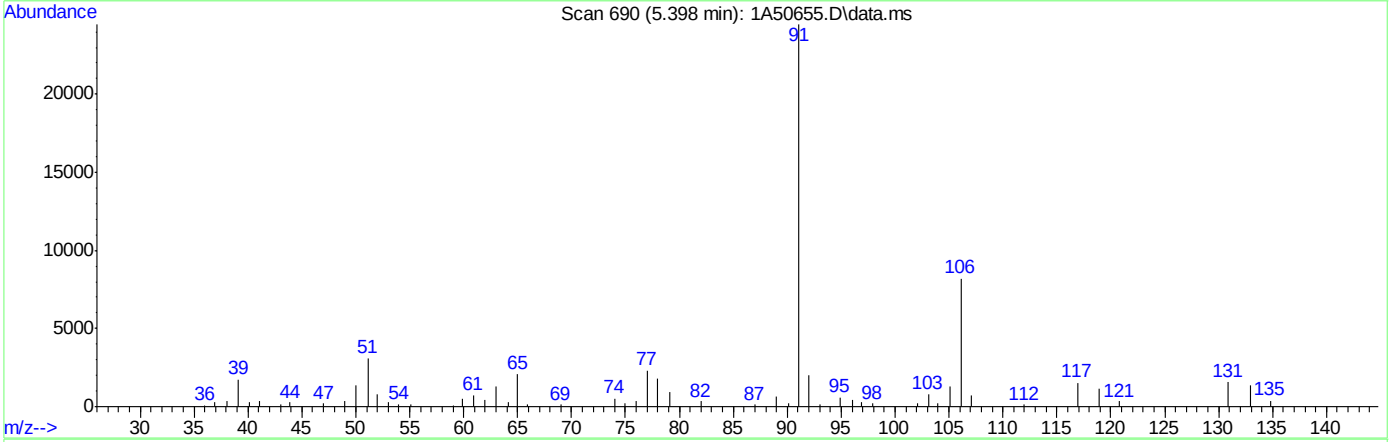
Ion	Exp%	Act%
116.90	100	100
118.90	94.50	105.67
120.90	31.10	32.91
81.90	25.40	28.13

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50655.D
Acq On : 15 Nov 2023 7:25 am
Operator : jeniferw
Sample : IC1945-2
Misc : MS55275,V1A1945,,,,,
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Nov 15 09:38:26 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50655.D\data.ms

(76) 1-Chlorohexane

5.398min (+0.038) 20.70ug/L

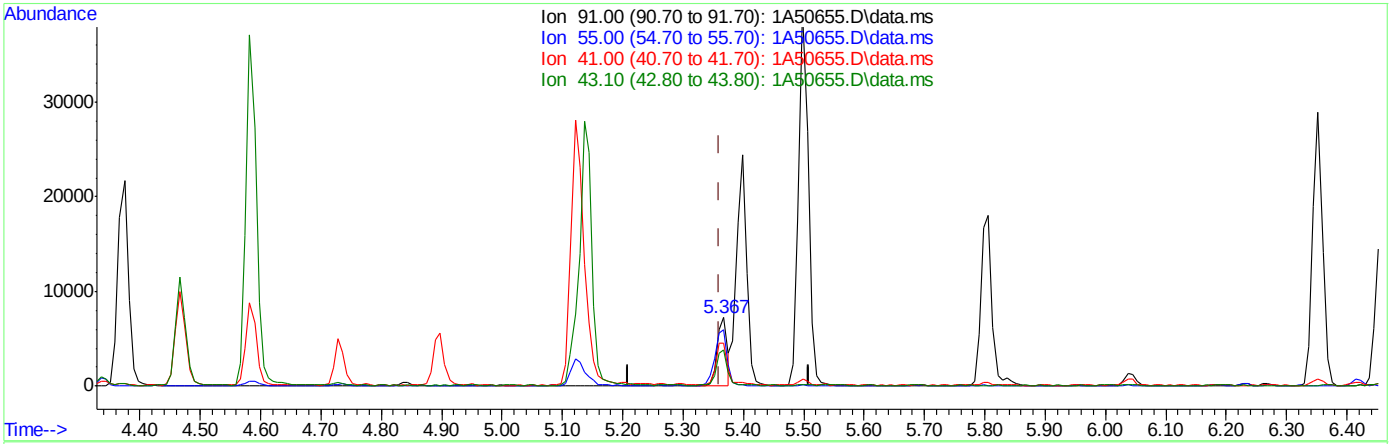
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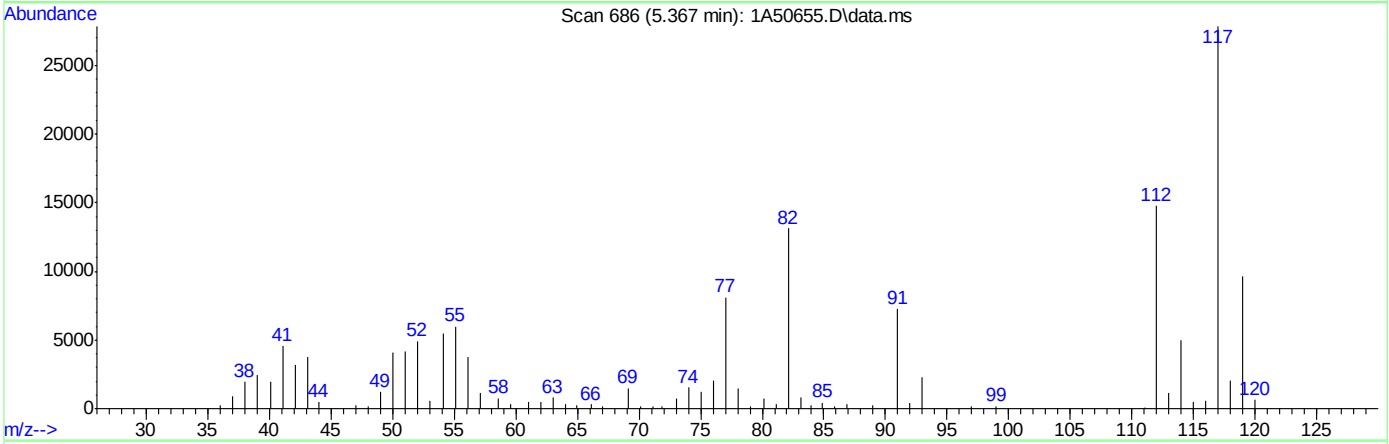
Ion	Exp%	Act%
91.00	100	100
55.00	74.60	0.46#
41.00	53.90	1.03#
43.10	42.90	0.10#

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50655.D
Acq On : 15 Nov 2023 7:25 am
Operator : jeniferw
Sample : IC1945-2
Misc : MS55275,V1A1945,,,,,
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Nov 15 09:38:26 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50655.D\data.ms

(76) 1-Chlorohexane

5.367min (+0.007) 4.80ug/L m

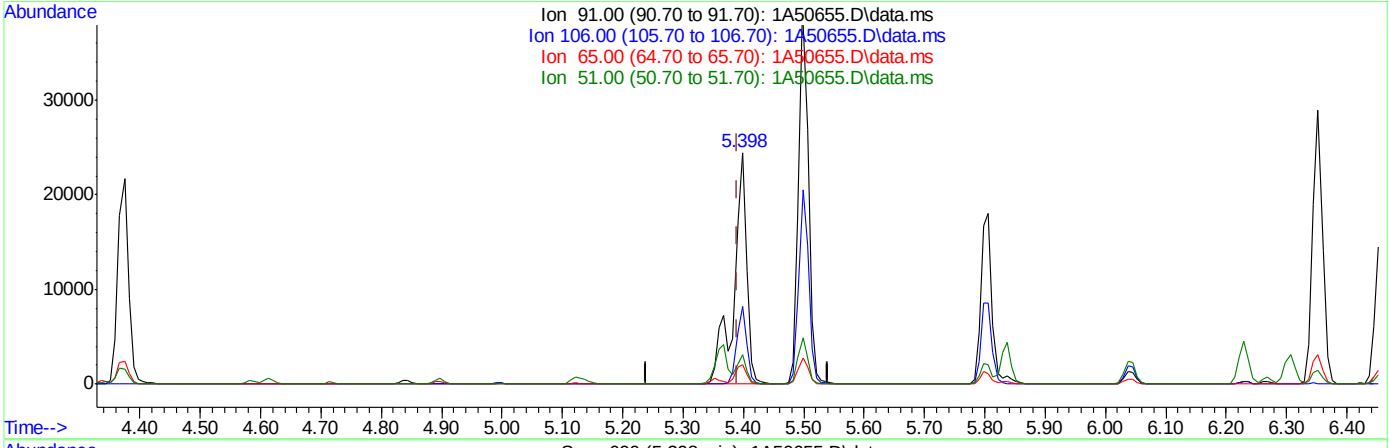
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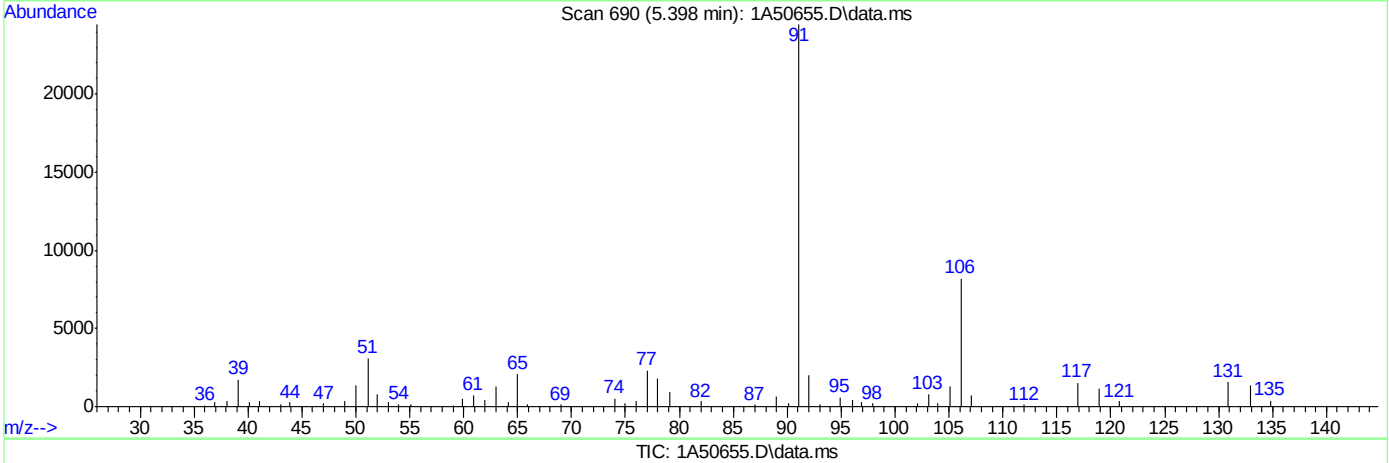
Ion	Exp%	Act%
91.00	100	100
55.00	74.60	82.54
41.00	53.90	62.72
43.10	42.90	52.25

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50655.D
Acq On : 15 Nov 2023 7:25 am
Operator : jeniferw
Sample : IC1945-2
Misc : MS55275,V1A1945,,,,,
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Nov 15 09:38:26 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50655.D\data.ms

(77) Ethylbenzene

5.398min (+0.007) 6.69ug/L

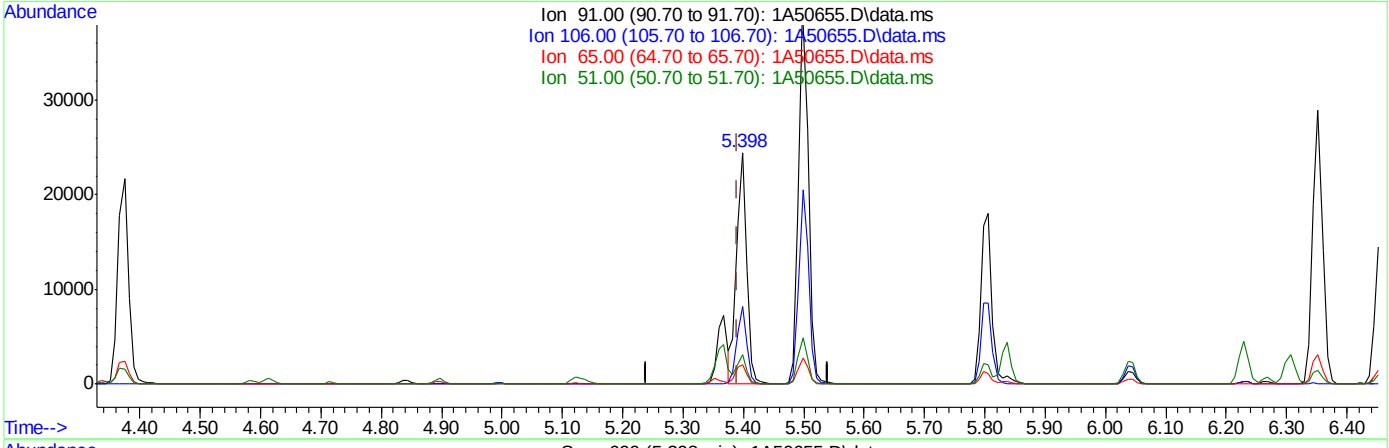
response 37094

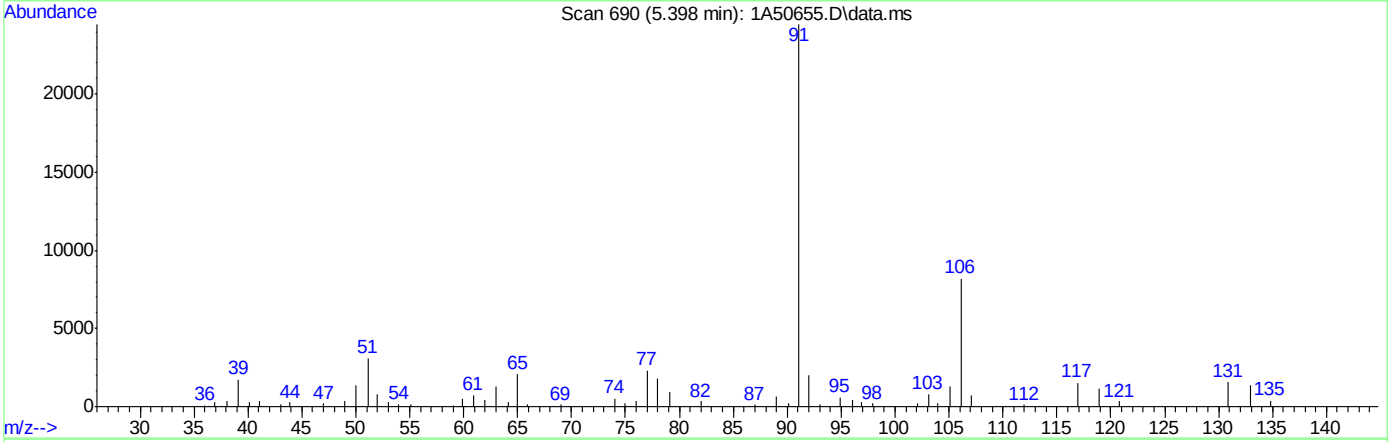
Ion	Exp%	Act%
91.00	100	100
106.00	32.00	33.57
65.00	8.30	8.61
51.00	10.10	12.66

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50655.D
Acq On : 15 Nov 2023 7:25 am
Operator : jeniferw
Sample : IC1945-2
Misc : MS55275,V1A1945,,,,,
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Nov 15 09:38:26 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50655.D\data.ms

(77) Ethylbenzene

5.398min (+0.007) 5.14ug/L m

response 28487

Ion	Exp%	Act%
91.00	100	100
106.00	32.00	33.57
65.00	8.30	8.61
51.00	10.10	12.66

Manual Integrations APPROVED (compounds with "m" flag)
Karen Watson
11/15/23 15:49

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50657.D
Acq On : 15 Nov 2023 7:57 am
Operator : jeniferw
Sample : IC1985-3
Misc : MS55275,V1A1985,,,,,
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Nov 15 12:56:20 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Fluorobenzene	3.405	96	207984	50.00	ug/L		0.00
62) Chlorobenzene-d5	5.352	117	149391	50.00	ug/L		0.00
85) 1,4-Dichlorobenzene-d4	7.091	152	80771	50.00	ug/L		0.00
System Monitoring Compounds							
39) Dibromofluoromethane	2.951	113	62291	50.08	ug/L		0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 100.16%				
49) 1,2-Dichloroethane-d4	3.236	65	66764	49.32	ug/L		0.00
Spiked Amount 50.000	Range 79 - 125		Recovery = 98.64%				
63) Toluene-d8	4.336	98	200780	50.32	ug/L		0.00
Spiked Amount 50.000	Range 85 - 112		Recovery = 100.64%				
86) 4-Bromofluorobenzene	6.229	174	66173	48.91	ug/L		0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 97.82%				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	1.019	85	7633	9.19	ug/L		96
3) Chloromethane	1.127	50	11058	8.73	ug/L		95
4) 1,3-butadiene	1.181	39	16640	11.72	ug/L		96
5) Vinyl Chloride	1.165	62	11022	8.76	ug/L		93
6) Bromomethane	1.342	94	3909	8.44	ug/L		98
7) Chloroethane	1.411	64	7219	9.13	ug/L		91
8) Trichlorofluoromethane	1.496	101	15592	9.23	ug/L		99
9) Ethyl Ether	1.650	59	9748	9.64	ug/L		89
10) Ethanol	1.704	45	5107	236.75	ug/L		99
11) 1,2-Dichlorotrifluoroe...	1.742	67	12681	9.03	ug/L		94
12) 1,1-Dichloroethene	1.758	61	17834	9.41	ug/L		98
13) Freon 113	1.781	101	10387	9.75	ug/L		93
14) Carbon Disulfide	1.781	76	32308	10.28	ug/L		89
15) Iodomethane	1.827	142	4688	7.13	ug/L		94
16) Acrolein	1.904	56	15136	45.68	ug/L		97
17) Allyl chloride	1.989	41	16554	9.28	ug/L		91
18) Methylene Chloride	2.043	49	21198	12.30	ug/L		96
19) Acetone	2.050	43	23826	50.50	ug/L		97
20) Methyl acetate	2.120	43	64137	43.28	ug/L		97
21) trans-1,2-Dichloroethene	2.135	61	17443	9.26	ug/L		97
22) Hexane	2.197	56	11968	9.19	ug/L		97
23) Methyl Tert Butyl Ether	2.189	73	32230	9.28	ug/L		97
24) Acetonitrile	2.273	41	20425	112.03	ug/L		99
25) Tert Butyl Alcohol	2.204	59	23778	91.92	ug/L	#	53
26) Di-isopropyl ether	2.389	45	40399	9.15	ug/L		95
27) Chloroprene	2.435	53	50950	9.69	ug/L		96
28) 1,1-Dichloroethane	2.443	63	22621	9.24	ug/L		98
29) Acrylonitrile	2.435	52	30920	49.01	ug/L		98
30) ETBE	2.581	59	36738	9.01	ug/L		96
31) Vinyl acetate	2.558	43	156482	50.43	ug/L		97
32) cis-1,2-Dichloroethene	2.720	96	12405	9.12	ug/L		98
33) 2,2-Dichloropropane	2.781	77	15784	9.38	ug/L		95
34) Bromochloromethane	2.820	128	6411	9.29	ug/L		95
35) Cyclohexane	2.858	56	22374	9.17	ug/L		90

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50657.D
Acq On : 15 Nov 2023 7:57 am
Operator : jeniferw
Sample : IC1985-3
Misc : MS55275,V1A1985,,,,,
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Nov 15 12:56:20 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
36) Chloroform	2.858	83	20823	9.10	ug/L		95
37) Ethyl acetate	2.912	43	85088	49.09	ug/L		99
38) Tetrahydrofuran	2.943	42	6138	8.80	ug/L		93
40) Carbon Tetrachloride	2.958	117	16526m	9.67	ug/L		
41) 1,1,1-Trichloroethane	2.989	97	17335	9.28	ug/L		94
42) 2-Butanone	2.997	43	40477	43.56	ug/L		93
43) 1,1-Dichloropropene	3.051	75	15409	9.55	ug/L		93
44) tert-Butyl formate	3.089	59	50232	46.21	ug/L		91
45) Propionitrile	3.143	54	26060	105.43	ug/L		97
46) Methacrylonitrile	3.166	41	95779	89.39	ug/L		99
47) Benzene	3.182	78	44277	9.13	ug/L		91
48) TAME	3.251	73	30670	9.00	ug/L	#	70
50) 1,2-Dichloroethane	3.274	62	16398	8.89	ug/L		92
51) Isobutyl Alcohol	3.259	43	30557	197.68	ug/L		94
52) Tert Amyl Alcohol	3.320	59	20043	94.96	ug/L		86
53) Trichloroethene	3.505	95	12422	9.13	ug/L		93
54) Methylcyclohexane	3.528	83	19821	9.42	ug/L		97
55) Dibromomethane	3.736	93	7870	8.96	ug/L		84
56) 1,2-Dichloropropane	3.790	63	12778	9.28	ug/L		90
57) Bromodichloromethane	3.828	83	15381	9.19	ug/L		96
58) Methyl methacrylate	3.921	41	14108	9.17	ug/L		95
59) 1,4-Dioxane	3.936	88	3640	194.49	ug/L		98
60) 2-Chloroethyl vinyl ether	4.167	63	34695	44.91	ug/L		98
61) cis-1,3-Dichloropropene	4.205	75	18044	9.04	ug/L		85
64) Toluene	4.367	91	46731	9.20	ug/L		98
65) 2-Nitropropane	4.467	41	21981	44.14	ug/L		91
66) 4-Methyl-2-pentanone	4.582	43	81980	44.21	ug/L		97
67) trans-1,3-Dichloropropene	4.613	75	16137	8.86	ug/L		89
68) Tetrachloroethene	4.629	166	13186	9.42	ug/L		93
69) Ethyl methacrylate	4.729	69	13721	9.01	ug/L		89
70) 1,1,2-Trichloroethane	4.713	83	9313	9.06	ug/L		96
71) Dibromochloromethane	4.836	129	11581	8.79	ug/L		95
72) 1,3-Dichloropropane	4.890	76	17264	9.10	ug/L		87
73) 1,2-Dibromoethane	4.990	107	11808	9.07	ug/L		98
74) 3,3-Dimethyl-1-Butanol	5.121	57	112080	442.20	ug/L		97
75) 2-hexanone	5.137	43	80993	44.22	ug/L		81
76) 1-Chlorohexane	5.360	91	16317m	9.23	ug/L		
77) Ethylbenzene	5.391	91	51497m	9.41	ug/L		
78) Chlorobenzene	5.360	112	31326	9.48	ug/L		94
79) 1,1,1,2-Tetrachloroethane	5.406	131	11321	9.24	ug/L		95
80) m,p-Xylene	5.498	91	80472	18.55	ug/L		94
81) o-Xylene	5.798	91	42747	9.29	ug/L		99
82) Styrene	5.837	104	32416	9.33	ug/L		95
83) Bromoform	5.837	173	7767	8.89	ug/L		97
84) Isopropylbenzene	6.037	105	51067	9.49	ug/L		98
87) cis-1,4-Dichloro-2-butene	6.260	53	4090	8.80	ug/L	#	77
88) n-Propylbenzene	6.353	91	58975	9.04	ug/L		98
89) Bromobenzene	6.306	156	13452	9.29	ug/L		98
90) 1,1,2,2-Tetrachloroethane	6.368	83	15115	8.80	ug/L		99
91) 1,3,5-Trimethylbenzene	6.506	105	41084	9.16	ug/L		93

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50657.D
Acq On : 15 Nov 2023 7:57 am
Operator : jeniferw
Sample : IC1985-3
Misc : MS55275,V1A1985,,,,,
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Nov 15 12:56:20 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration

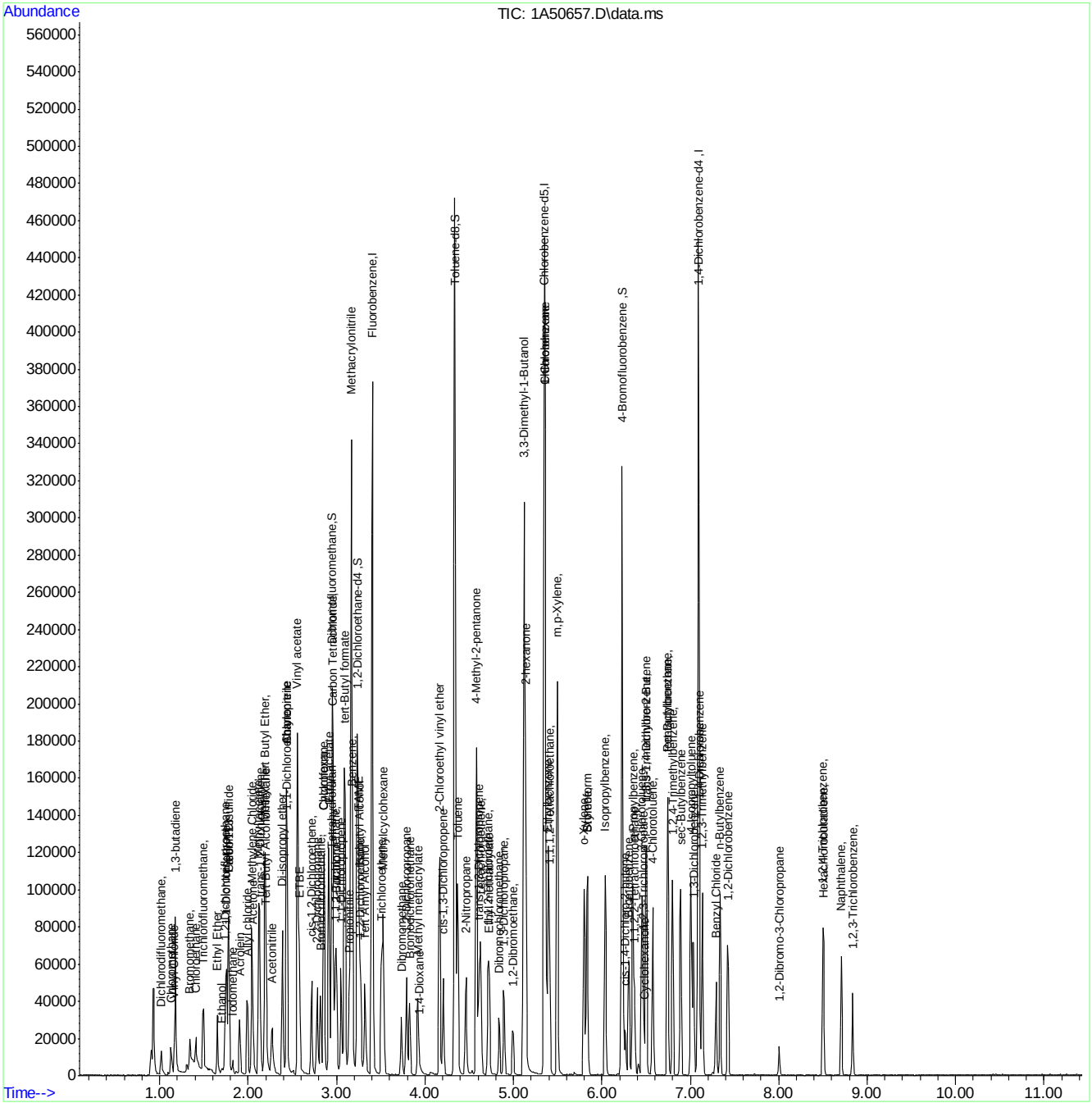
	Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
92)	2-Chlorotoluene	6.453	91	34133	8.98	ug/L		95
93)	trans-1,4-Dichloro-2-B...	6.506	53	5823	8.89	ug/L		93
94)	1,2,3-Trichloropropane	6.468	110	4217	8.85	ug/L		92
95)	Cyclohexanone	6.483	55	3920	39.94	ug/L		97
96)	4-Chlorotoluene	6.576	91	35334	8.93	ug/L		96
97)	tert-Butylbenzene	6.745	91	23148	9.17	ug/L		96
98)	1,2,4-Trimethylbenzene	6.799	105	39385	9.09	ug/L		94
99)	Pentachloroethane	6.745	167	6395	9.53	ug/L	#	47
100)	sec-Butylbenzene	6.891	105	53177	9.36	ug/L		97
101)	4-Isopropyltoluene	7.007	119	44903	9.13	ug/L		98
102)	1,3-Dichlorobenzene	7.038	146	23941	9.01	ug/L		98
103)	1,2,3-Trimethylbenzene	7.138	105	38977	8.99	ug/L		94
104)	1,4-Dichlorobenzene	7.107	146	23925	9.03	ug/L		99
105)	n-Butylbenzene	7.338	92	19943	9.06	ug/L		97
106)	Benzyl Chloride	7.292	126	5365	8.64	ug/L		92
107)	1,2-Dichlorobenzene	7.422	146	21268	9.00	ug/L		96
108)	1,2-Dibromo-3-Chloropr...	8.007	75	2441	8.89	ug/L	#	70
109)	Hexachlorobutadiene	8.508	225	5137	9.12	ug/L		94
110)	1,2,4-Trichlorobenzene	8.500	180	11581	8.90	ug/L		95
111)	Naphthalene	8.708	128	29068	8.69	ug/L		99
112)	1,2,3-Trichlorobenzene	8.838	180	9539	9.29	ug/L		93

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50657.D
Acq On : 15 Nov 2023 7:57 am
Operator : jeniferw
Sample : IC1985-3
Misc : MS55275,V1A1985,,,,,
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Nov 15 12:56:20 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration



Manual Integration Approval Summary

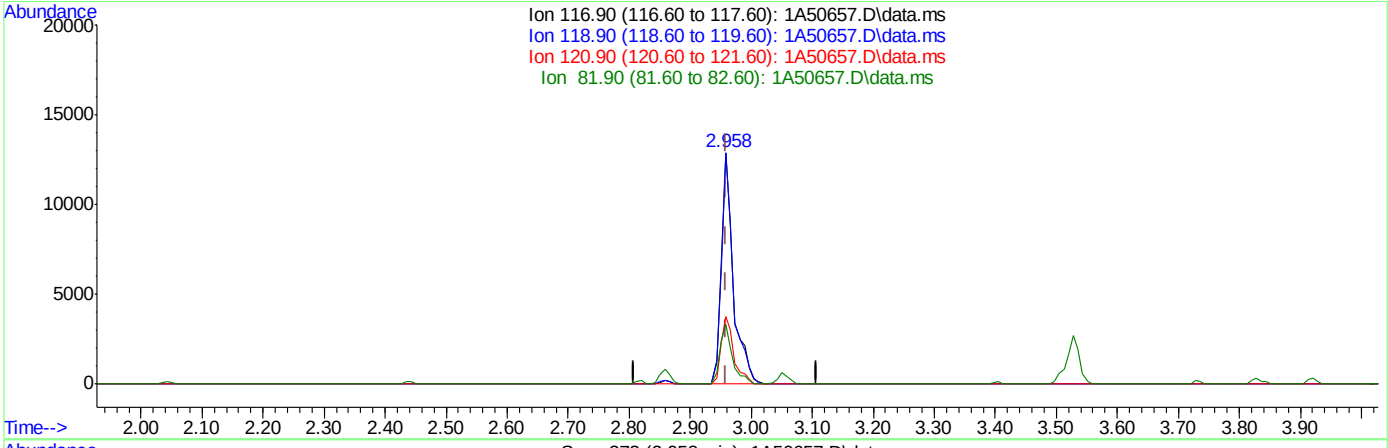
Sample Number: V1A1985-IC1985
Lab FileID: 1A50657.D
Injection Time: 11/15/23 07:57
Method: SW846 8260D
Analyst approved: 11/15/23 14:32 Jenifer Willis
Supervisor approved: 11/15/23 15:49 Karen Watson

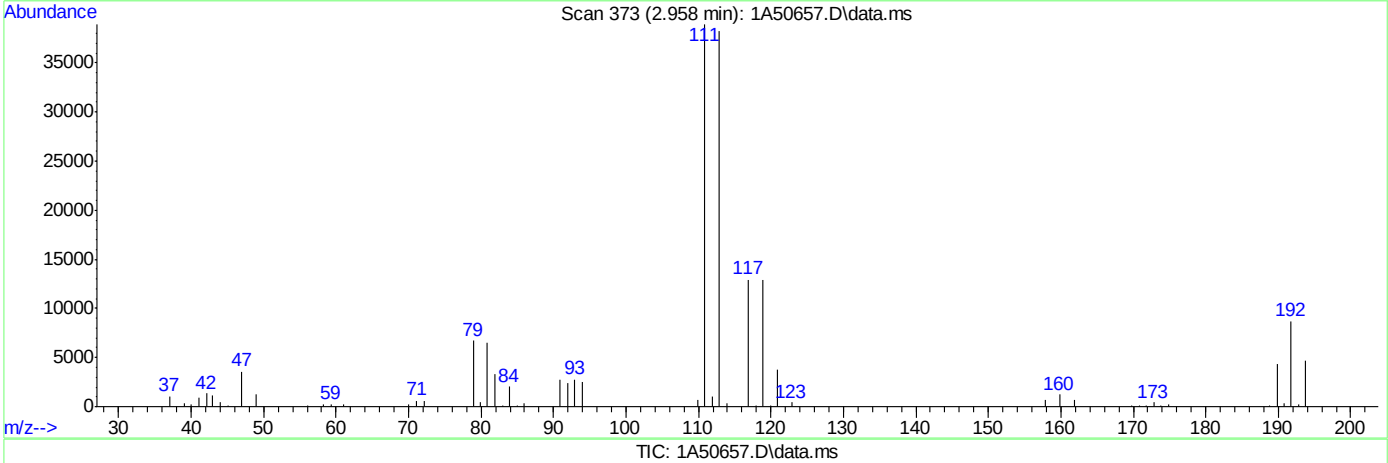
Parameter	CAS	Sig#	R.T. (min.)	Reason
Carbon Tetrachloride	56-23-5		2.96	Overlapping peak
1-Chlorohexane	544-10-5		5.36	Overlapping peak
Ethylbenzene	100-41-4		5.39	Overlapping peak

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50657.D
Acq On : 15 Nov 2023 7:57 am
Operator : jeniferw
Sample : IC1945-3
Misc : MS55275,V1A1945,,,,,
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Nov 15 09:38:28 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50657.D\data.ms

(40) Carbon Tetrachloride ( )

2.958min (-0.001) 10.61ug/L

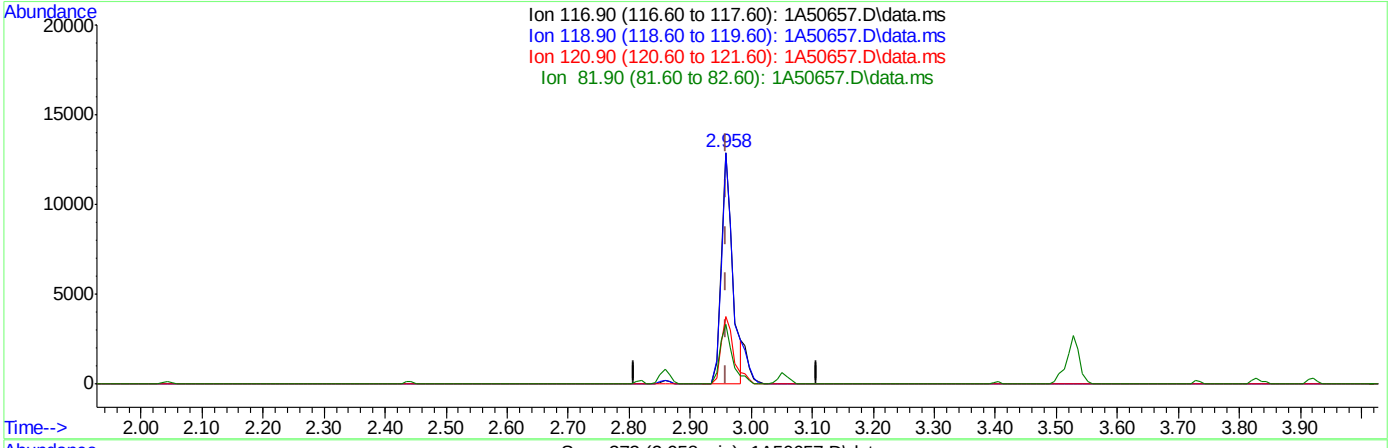
response 18134

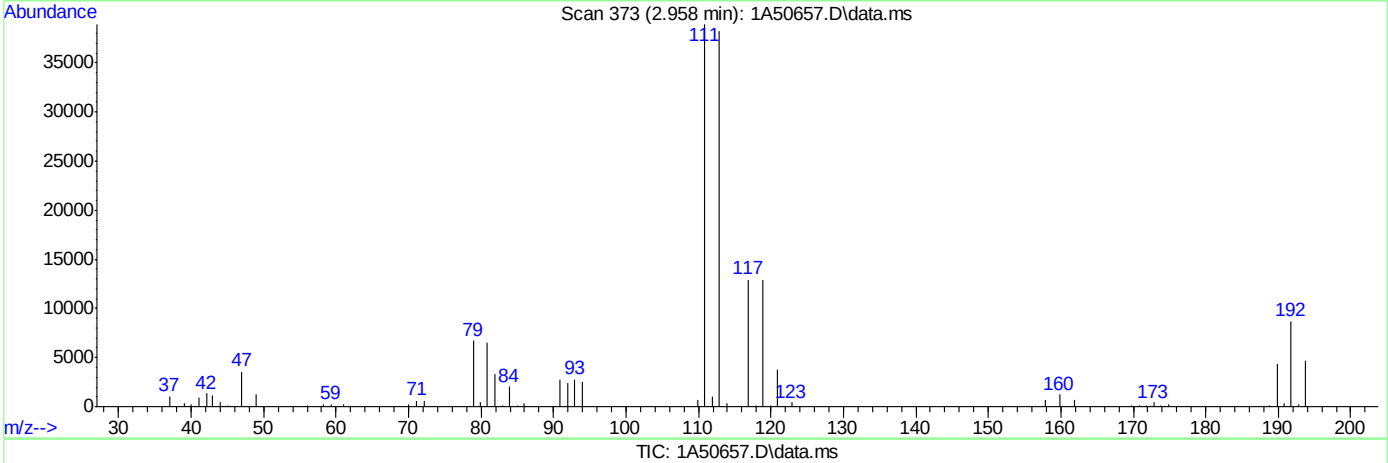
Ion	Exp%	Act%
116.90	100	100
118.90	94.50	99.77
120.90	31.10	29.38
81.90	25.40	25.66

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50657.D
Acq On : 15 Nov 2023 7:57 am
Operator : jeniferw
Sample : IC1945-3
Misc : MS55275,V1A1945,,,,,
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Nov 15 09:38:28 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50657.D\data.ms

(40) Carbon Tetrachloride ( )

2.958min (-0.001) 9.67ug/L m

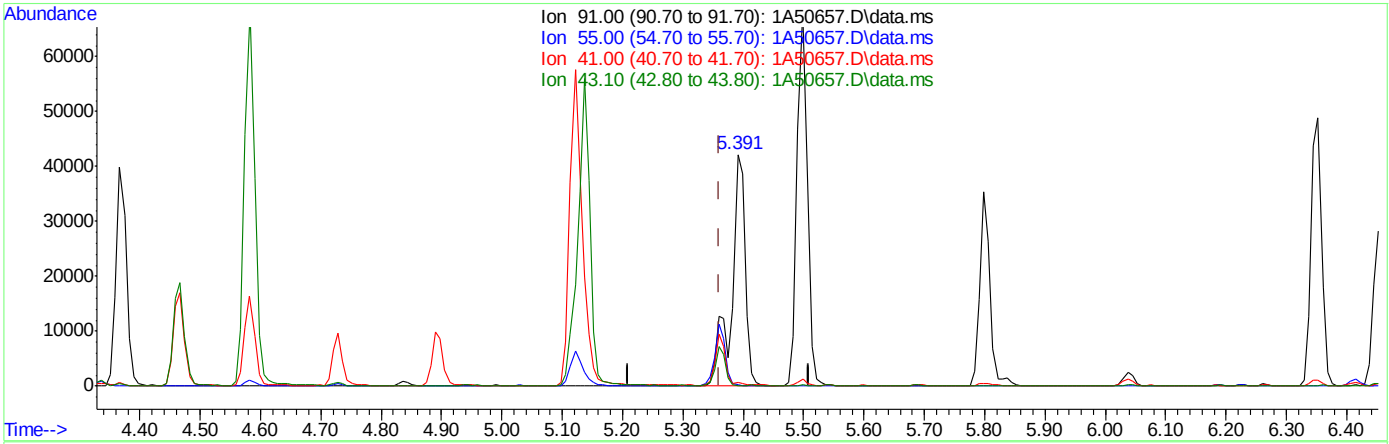
response 16526

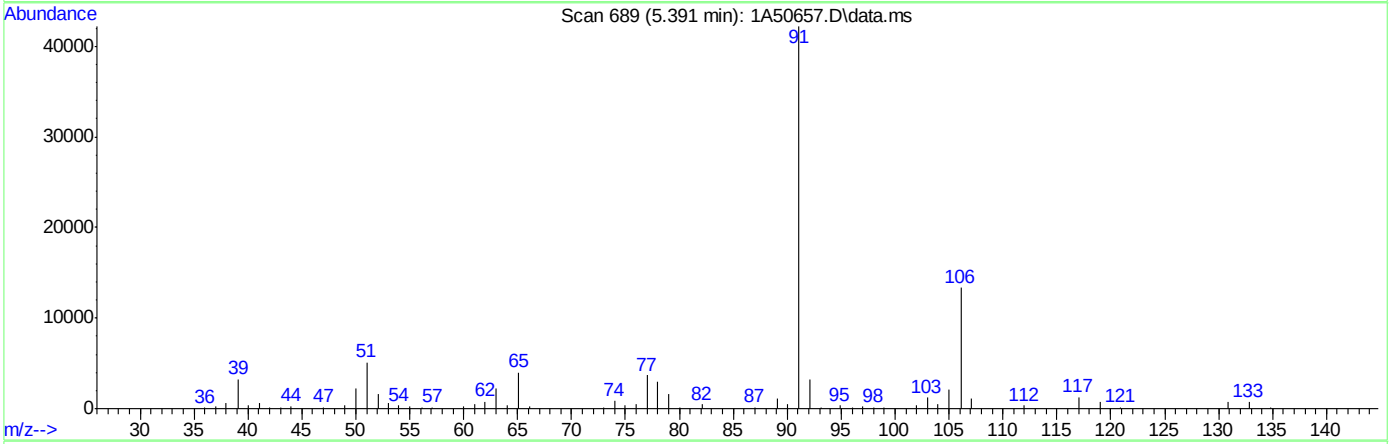
Ion	Exp%	Act%
116.90	100	100
118.90	94.50	99.77
120.90	31.10	29.38
81.90	25.40	25.66

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50657.D
Acq On : 15 Nov 2023 7:57 am
Operator : jeniferw
Sample : IC1945-3
Misc : MS55275,V1A1945,,,,,
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Nov 15 09:38:28 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50657.D\data.ms

(76) 1-Chlorohexane

5.391min (+0.031) 38.35ug/L

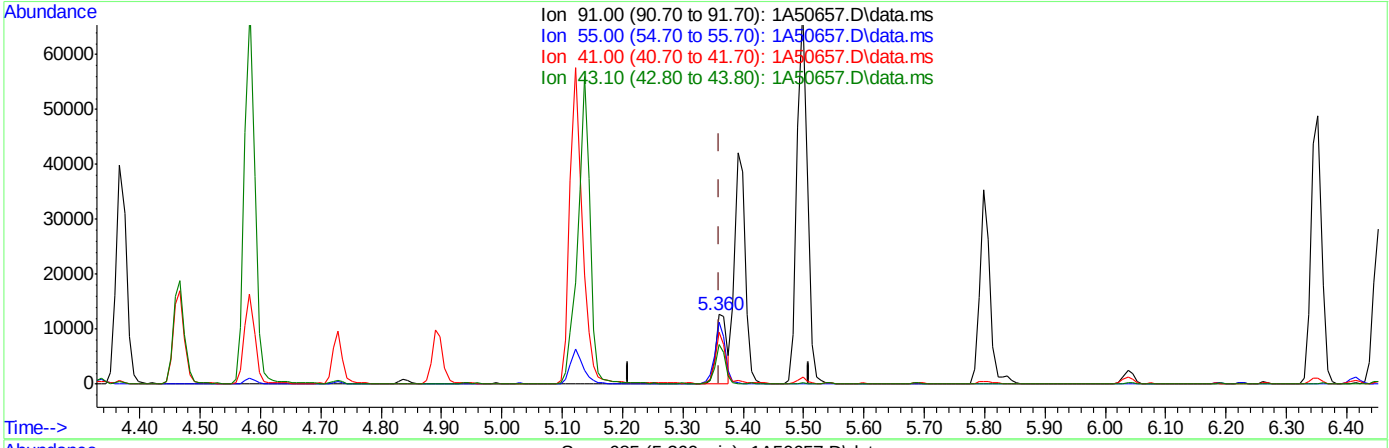
response 67817

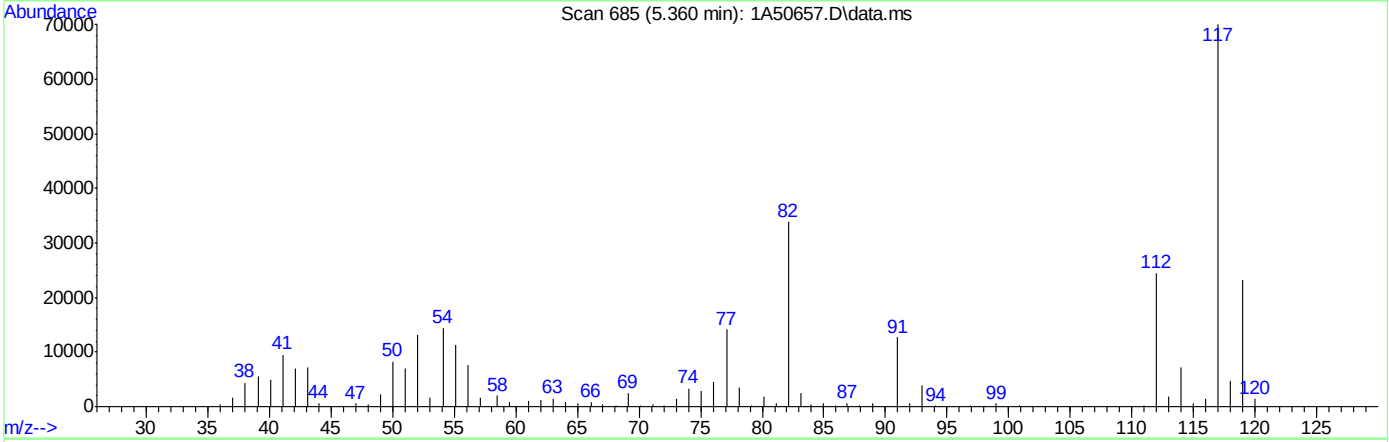
Ion	Exp%	Act%
91.00	100	100
55.00	74.60	0.61#
41.00	53.90	1.26#
43.10	42.90	0.41#

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50657.D
Acq On : 15 Nov 2023 7:57 am
Operator : jeniferw
Sample : IC1945-3
Misc : MS55275,V1A1945,,,,,
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Nov 15 09:38:28 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50657.D\data.ms

(76) 1-Chlorohexane

5.360min (-0.000) 9.23ug/L m

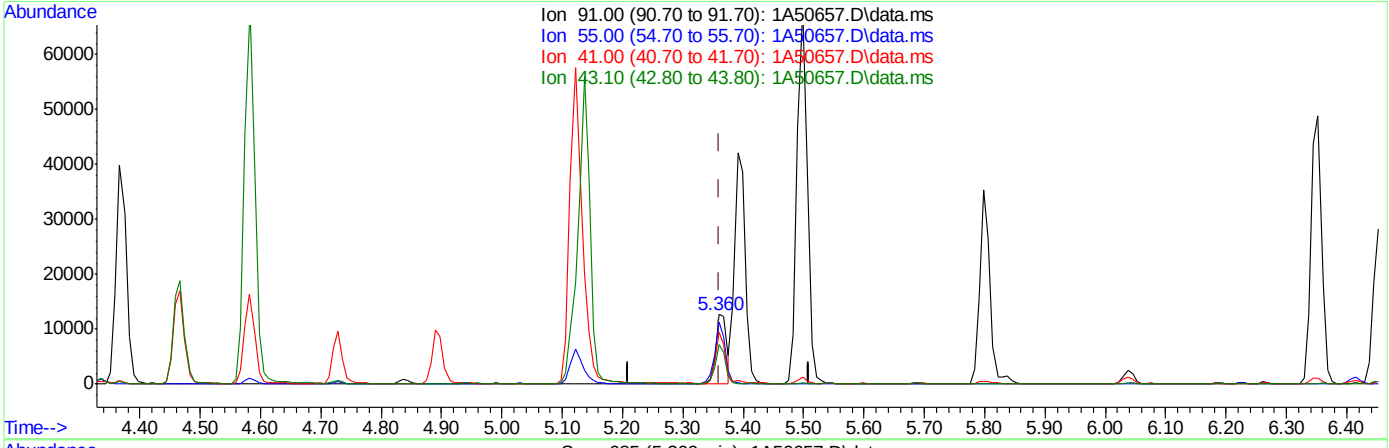
response 16317

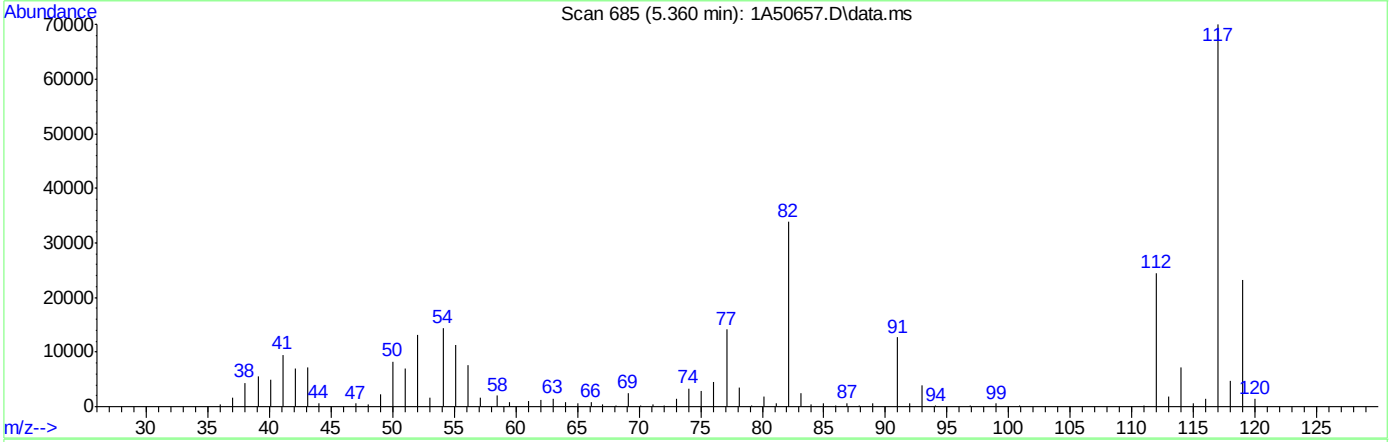
Ion	Exp%	Act%
91.00	100	100
55.00	74.60	89.57
41.00	53.90	75.40#
43.10	42.90	57.34

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50657.D
Acq On : 15 Nov 2023 7:57 am
Operator : jeniferw
Sample : IC1945-3
Misc : MS55275,V1A1945,,,,,
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Nov 15 09:38:28 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50657.D\data.ms

(76) 1-Chlorohexane

5.360min (-0.000) 9.23ug/L m

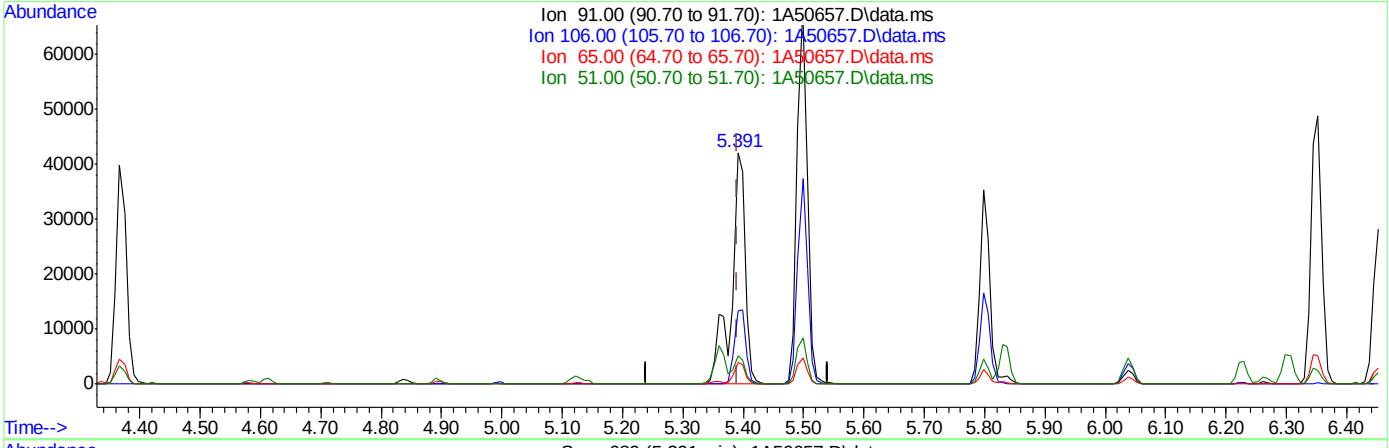
response 16317

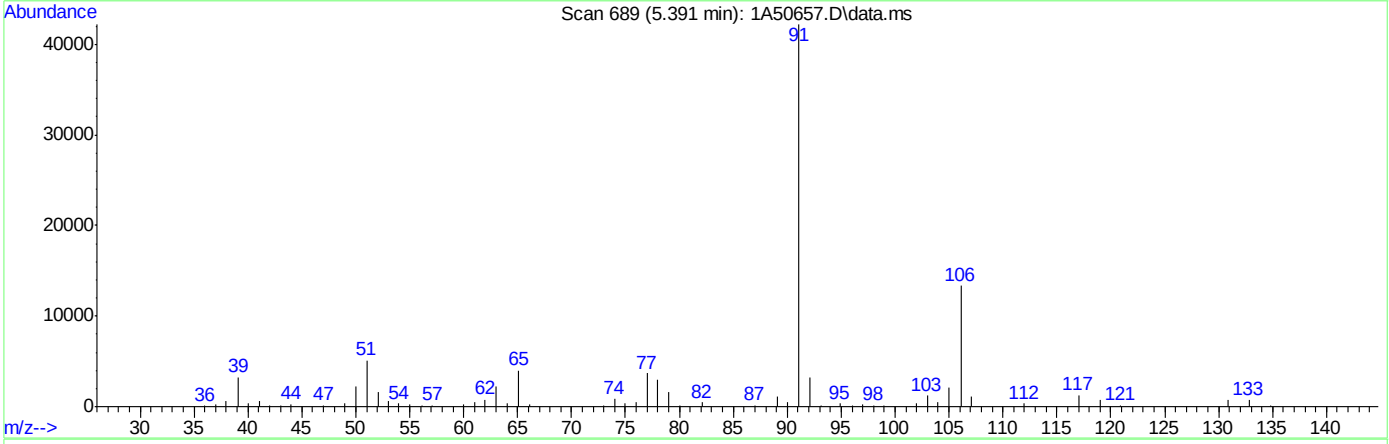
Ion	Exp%	Act%
91.00	100	100
55.00	74.60	89.57
41.00	53.90	75.40#
43.10	42.90	57.34

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50657.D
Acq On : 15 Nov 2023 7:57 am
Operator : jeniferw
Sample : IC1945-3
Misc : MS55275,V1A1945,,,,,
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Nov 15 09:38:28 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50657.D\data.ms

(77) Ethylbenzene

5.391min (-0.000) 12.39ug/L

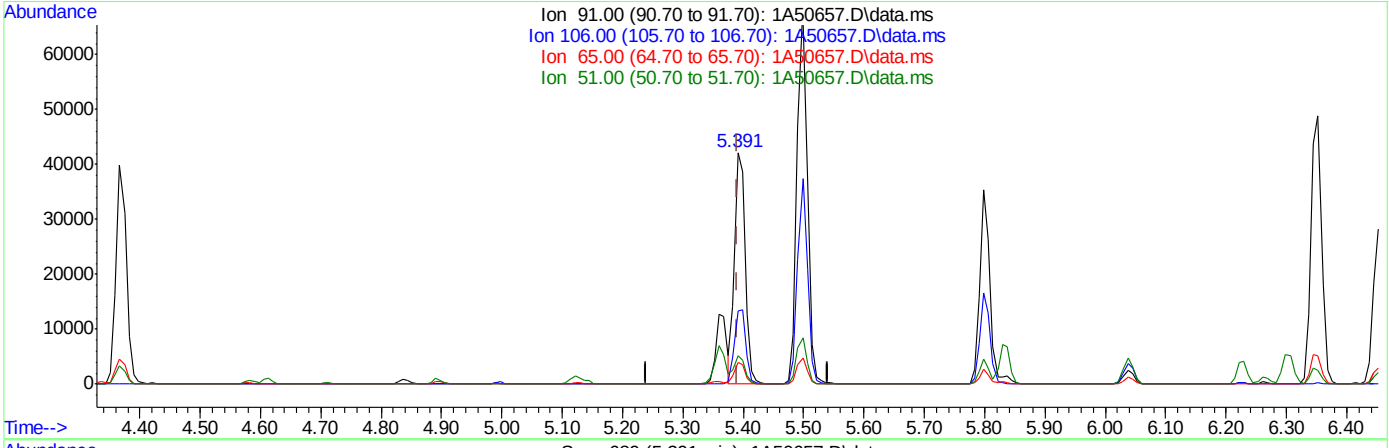
response 67817

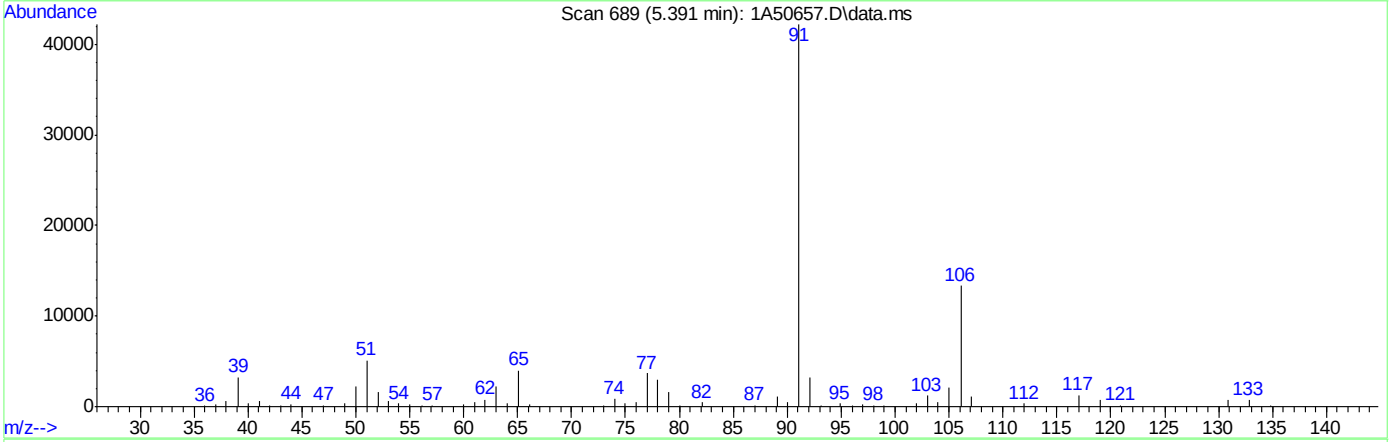
Ion	Exp%	Act%
91.00	100	100
106.00	32.00	31.64
65.00	8.30	9.52
51.00	10.10	12.07

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50657.D
Acq On : 15 Nov 2023 7:57 am
Operator : jeniferw
Sample : IC1945-3
Misc : MS55275,V1A1945,,,,,
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Nov 15 09:38:28 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50657.D\data.ms

(77) Ethylbenzene

5.391min (-0.000) 9.41ug/L m

response 51497

Ion	Exp%	Act%
91.00	100	100
106.00	32.00	31.64
65.00	8.30	9.52
51.00	10.10	12.07

Manual Integrations APPROVED (compounds with "m" flag)
Karen Watson 11/15/23 15:49

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50659.D
Acq On : 15 Nov 2023 8:29 am
Operator : jeniferw
Sample : IC1985-4
Misc : MS55275,V1A1985,,,,,
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Nov 15 12:56:58 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	3.405	96	203651	50.00	ug/L	0.00
62) Chlorobenzene-d5	5.352	117	146312	50.00	ug/L	0.00
85) 1,4-Dichlorobenzene-d4	7.091	152	77121	50.00	ug/L	0.00
System Monitoring Compounds						
39) Dibromofluoromethane	2.958	113	60285	49.50	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 99.00%			
49) 1,2-Dichloroethane-d4	3.236	65	66802	50.40	ug/L	0.00
Spiked Amount 50.000	Range 79 - 125		Recovery = 100.80%			
63) Toluene-d8	4.336	98	193777	49.59	ug/L	0.00
Spiked Amount 50.000	Range 85 - 112		Recovery = 99.18%			
86) 4-Bromofluorobenzene	6.229	174	64838	50.19	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 100.38%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.019	85	19399	23.86	ug/L	94
3) Chloromethane	1.127	50	29701	23.95	ug/L	100
4) 1,3-butadiene	1.181	39	37132	26.71	ug/L	92
5) Vinyl Chloride	1.173	62	29625	24.06	ug/L	98
6) Bromomethane	1.350	94	10931	24.11	ug/L	94
7) Chloroethane	1.412	64	19451	26.51	ug/L	91
8) Trichlorofluoromethane	1.496	101	41396	25.02	ug/L	99
9) Ethyl Ether	1.658	59	25320	25.57	ug/L	95
10) Ethanol	1.712	45	12404	587.27	ug/L	97
11) 1,2-Dichlorotrifluoroe...	1.742	67	32152	23.37	ug/L	89
12) 1,1-Dichloroethene	1.758	61	44563	24.03	ug/L	93
13) Freon 113	1.789	101	24551	23.53	ug/L	98
14) Carbon Disulfide	1.781	76	81081	26.36	ug/L	90
15) Iodomethane	1.835	142	18560	27.36	ug/L	91
16) Acrolein	1.912	56	39496	121.73	ug/L	99
17) Allyl chloride	1.996	41	41043	23.50	ug/L	95
18) Methylene Chloride	2.043	49	46681	27.67	ug/L	92
19) Acetone	2.050	43	61956	134.11	ug/L	97
20) Methyl acetate	2.127	43	169006	116.47	ug/L	98
21) trans-1,2-Dichloroethene	2.135	61	45442	24.64	ug/L	92
22) Hexane	2.197	56	29882	23.44	ug/L	95
23) Methyl Tert Butyl Ether	2.197	73	83464	24.55	ug/L	89
24) Acetonitrile	2.273	41	48880	273.81	ug/L	99
25) Tert Butyl Alcohol	2.212	59	61658	243.44	ug/L	94
26) Di-isopropyl ether	2.397	45	104255	24.11	ug/L	96
27) Chloroprene	2.443	53	128255	24.91	ug/L	98
28) 1,1-Dichloroethane	2.443	63	58537	24.43	ug/L	99
29) Acrylonitrile	2.443	52	77474	125.42	ug/L	93
30) ETBE	2.581	59	98218	24.60	ug/L	95
31) Vinyl acetate	2.558	43	393502	129.50	ug/L	97
32) cis-1,2-Dichloroethene	2.720	96	31960	23.99	ug/L	93
33) 2,2-Dichloropropane	2.781	77	40584	24.63	ug/L	96
34) Bromochloromethane	2.820	128	16874	24.97	ug/L #	85
35) Cyclohexane	2.858	56	54763	22.91	ug/L	90

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50659.D
Acq On : 15 Nov 2023 8:29 am
Operator : jeniferw
Sample : IC1985-4
Misc : MS55275,V1A1985,,,,,
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Nov 15 12:56:58 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
36) Chloroform	2.858	83	53813	24.01	ug/L		94
37) Ethyl acetate	2.912	43	218102	128.52	ug/L		98
38) Tetrahydrofuran	2.943	42	16062	23.51	ug/L		92
40) Carbon Tetrachloride	2.958	117	40875m	24.43	ug/L		
41) 1,1,1-Trichloroethane	2.989	97	44850	24.53	ug/L		95
42) 2-Butanone	3.005	43	110349	121.29	ug/L		93
43) 1,1-Dichloropropene	3.051	75	39219	24.83	ug/L		93
44) tert-Butyl formate	3.097	59	135778	127.57	ug/L		95
45) Propionitrile	3.143	54	65589	271.00	ug/L		97
46) Methacrylonitrile	3.166	41	250132	238.42	ug/L		98
47) Benzene	3.182	78	115560	24.34	ug/L		97
48) TAME	3.251	73	81869	24.52	ug/L		83
50) 1,2-Dichloroethane	3.274	62	43894	24.31	ug/L		92
51) Isobutyl Alcohol	3.259	43	75938	501.70	ug/L		94
52) Tert Amyl Alcohol	3.320	59	51489	249.15	ug/L		89
53) Trichloroethene	3.513	95	31623	23.73	ug/L		96
54) Methylcyclohexane	3.528	83	49835	24.19	ug/L		96
55) Dibromomethane	3.736	93	20145	23.41	ug/L		86
56) 1,2-Dichloropropane	3.790	63	32568	24.15	ug/L		90
57) Bromodichloromethane	3.828	83	40028	24.42	ug/L		96
58) Methyl methacrylate	3.921	41	36200	24.03	ug/L		93
59) 1,4-Dioxane	3.936	88	9123	497.83	ug/L		86
60) 2-Chloroethyl vinyl ether	4.167	63	95519	126.28	ug/L		98
61) cis-1,3-Dichloropropene	4.205	75	47219	24.17	ug/L		85
64) Toluene	4.367	91	119096	23.94	ug/L		99
65) 2-Nitropropane	4.467	41	60119	123.27	ug/L		92
66) 4-Methyl-2-pentanone	4.582	43	220643	121.50	ug/L		97
67) trans-1,3-Dichloropropene	4.613	75	43606	24.45	ug/L		93
68) Tetrachloroethene	4.629	166	34270	24.99	ug/L		96
69) Ethyl methacrylate	4.729	69	35707	23.95	ug/L		89
70) 1,1,2-Trichloroethane	4.713	83	24562	24.40	ug/L		96
71) Dibromochloromethane	4.836	129	31567	24.47	ug/L		99
72) 1,3-Dichloropropane	4.898	76	45377	24.42	ug/L		95
73) 1,2-Dibromoethane	4.998	107	31247	24.50	ug/L		100
74) 3,3-Dimethyl-1-Butanol	5.121	57	287088	1156.52	ug/L		96
75) 2-hexanone	5.137	43	212818	118.63	ug/L		83
76) 1-Chlorohexane	5.367	91	39451m	22.78	ug/L		
77) Ethylbenzene	5.398	91	132697m	24.75	ug/L		
78) Chlorobenzene	5.367	112	81487	25.17	ug/L		96
79) 1,1,1,2-Tetrachloroethane	5.406	131	29655	24.71	ug/L		93
80) m,p-Xylene	5.498	91	207255	48.79	ug/L		96
81) o-Xylene	5.798	91	109196	24.22	ug/L		97
82) Styrene	5.837	104	85149	25.03	ug/L		94
83) Bromoform	5.837	173	21074	24.63	ug/L		98
84) Isopropylbenzene	6.037	105	130223	24.70	ug/L		98
87) cis-1,4-Dichloro-2-butene	6.260	53	11235	25.32	ug/L	#	77
88) n-Propylbenzene	6.353	91	154263	24.76	ug/L		99
89) Bromobenzene	6.306	156	33292	24.07	ug/L		98
90) 1,1,2,2-Tetrachloroethane	6.368	83	39762	24.26	ug/L		95
91) 1,3,5-Trimethylbenzene	6.507	105	107377	25.07	ug/L		96

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50659.D
Acq On : 15 Nov 2023 8:29 am
Operator : jeniferw
Sample : IC1985-4
Misc : MS55275,V1A1985,,,,,
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Nov 15 12:56:58 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration

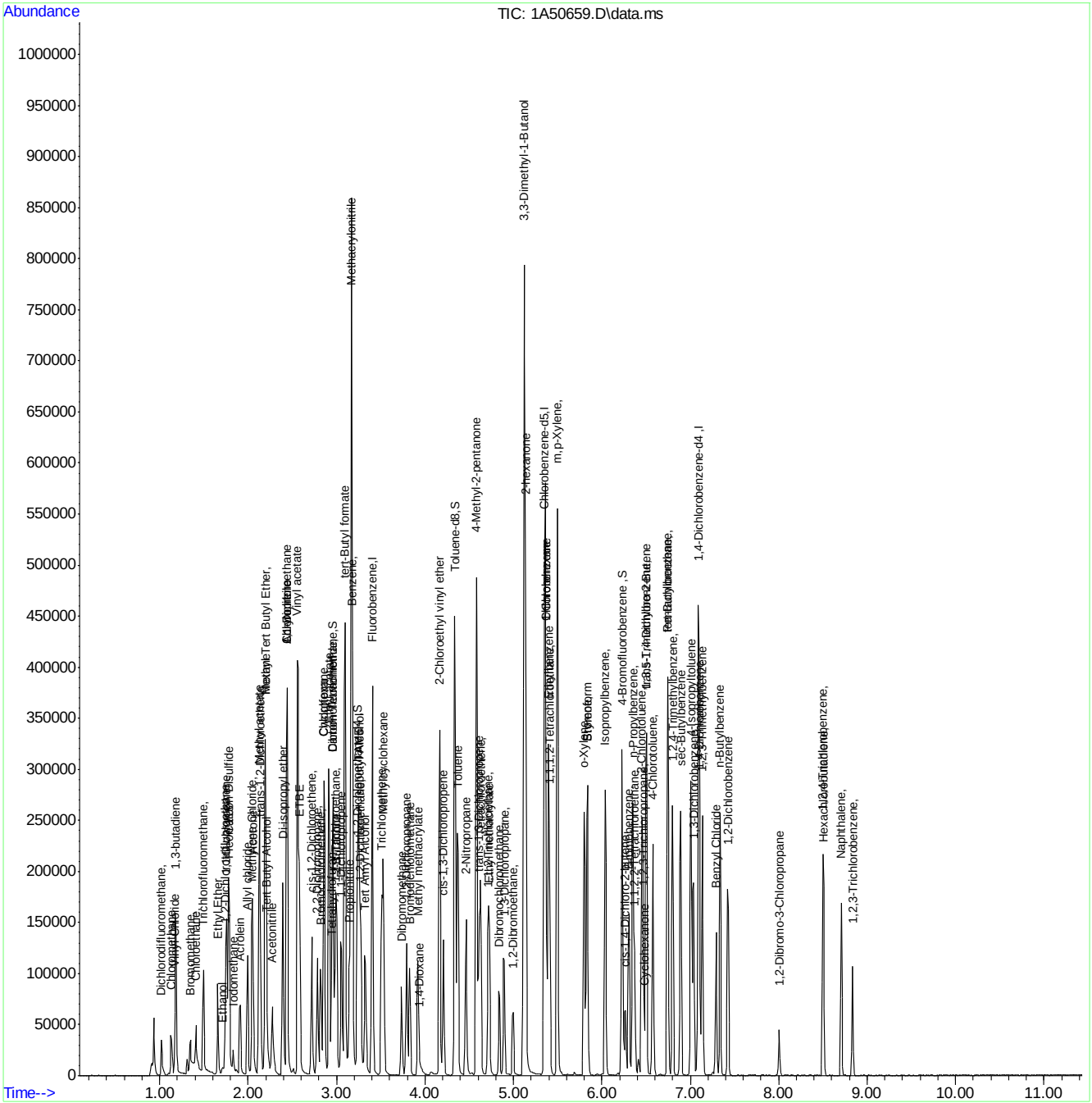
	Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
92)	2-Chlorotoluene	6.453	91	87216	24.04	ug/L		96
93)	trans-1,4-Dichloro-2-B...	6.507	53	15416	24.66	ug/L		92
94)	1,2,3-Trichloropropane	6.468	110	11221	24.67	ug/L		84
95)	Cyclohexanone	6.483	55	9855	105.17	ug/L		96
96)	4-Chlorotoluene	6.576	91	91406	24.20	ug/L		94
97)	tert-Butylbenzene	6.745	91	60237	24.99	ug/L		93
98)	1,2,4-Trimethylbenzene	6.799	105	101920	24.63	ug/L		97
99)	Pentachloroethane	6.745	167	17421	27.19	ug/L	#	63
100)	sec-Butylbenzene	6.891	105	136022	25.09	ug/L		97
101)	4-Isopropyltoluene	7.007	119	118264	25.20	ug/L		98
102)	1,3-Dichlorobenzene	7.038	146	61755	24.35	ug/L		98
103)	1,2,3-Trimethylbenzene	7.138	105	100698	24.33	ug/L		95
104)	1,4-Dichlorobenzene	7.107	146	61763	24.42	ug/L		98
105)	n-Butylbenzene	7.338	92	53118	25.27	ug/L		98
106)	Benzyl Chloride	7.292	126	15114	25.50	ug/L	#	88
107)	1,2-Dichlorobenzene	7.422	146	55633	24.66	ug/L		94
108)	1,2-Dibromo-3-Chloropr...	8.007	75	6539	24.95	ug/L		76
109)	Hexachlorobutadiene	8.508	225	13329	24.77	ug/L		91
110)	1,2,4-Trichlorobenzene	8.500	180	30306	24.38	ug/L		98
111)	Naphthalene	8.708	128	76986	24.10	ug/L		99
112)	1,2,3-Trichlorobenzene	8.839	180	23469	23.94	ug/L		97

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50659.D
Acq On : 15 Nov 2023 8:29 am
Operator : jeniferw
Sample : IC1985-4
Misc : MS55275,V1A1985,,,,,
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Nov 15 12:56:58 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration



Manual Integration Approval Summary

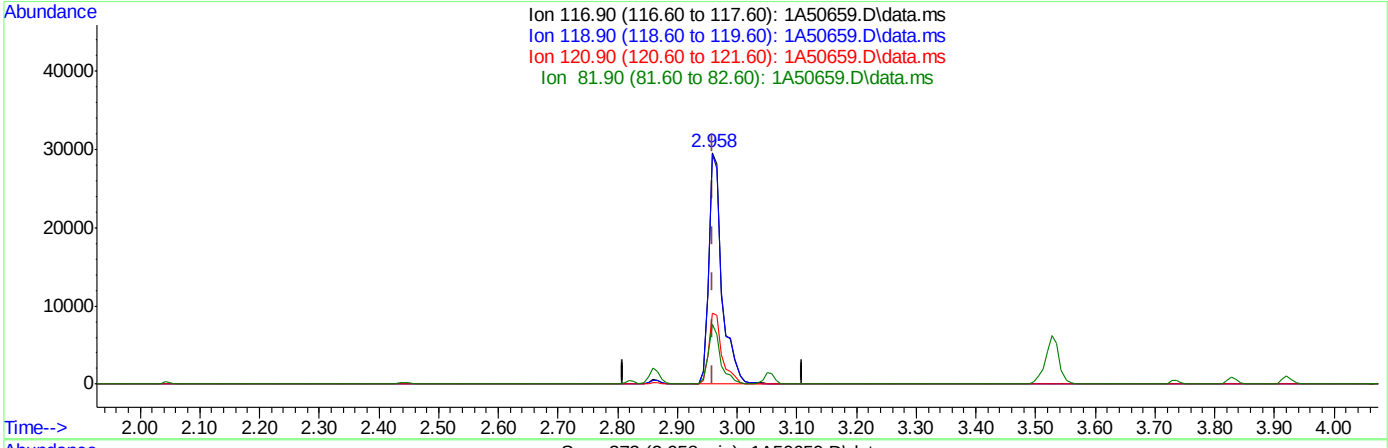
Sample Number: V1A1985-IC1985
Lab FileID: 1A50659.D
Injection Time: 11/15/23 08:29
Method: SW846 8260D
Analyst approved: 11/15/23 14:32 Jenifer Willis
Supervisor approved: 11/15/23 15:49 Karen Watson

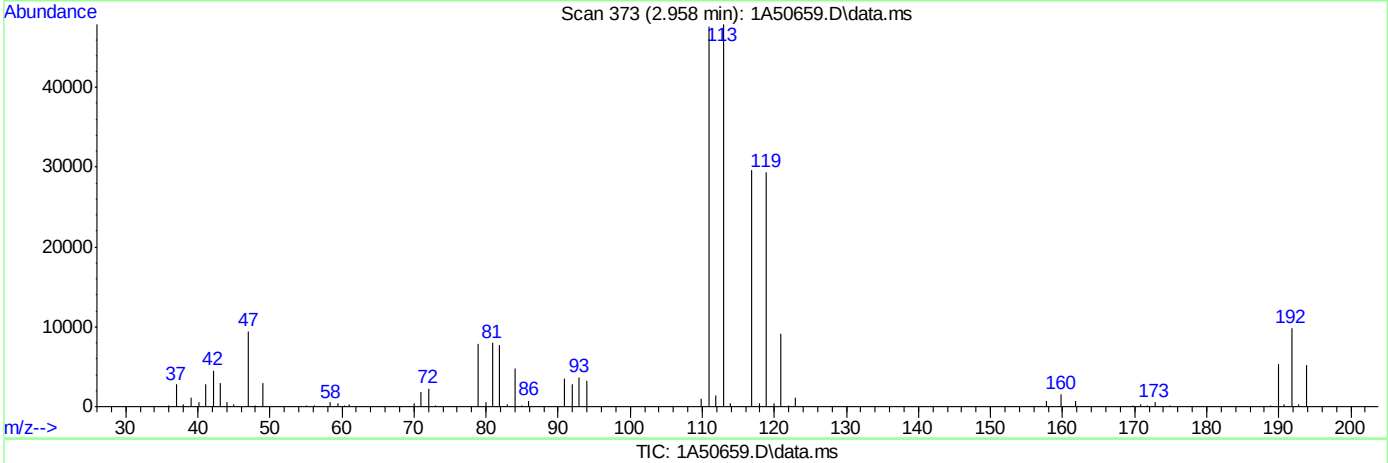
Parameter	CAS	Sig#	R.T. (min.)	Reason
Carbon Tetrachloride	56-23-5		2.96	Overlapping peak
1-Chlorohexane	544-10-5		5.37	Overlapping peak
Ethylbenzene	100-41-4		5.40	Overlapping peak

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50659.D
Acq On : 15 Nov 2023 8:29 am
Operator : jeniferw
Sample : IC1945-4
Misc : MS55275,V1A1945,,,,,
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Nov 15 09:38:30 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50659.D\data.ms

(40) Carbon Tetrachloride ( )

2.958min (-0.001) 27.51ug/L

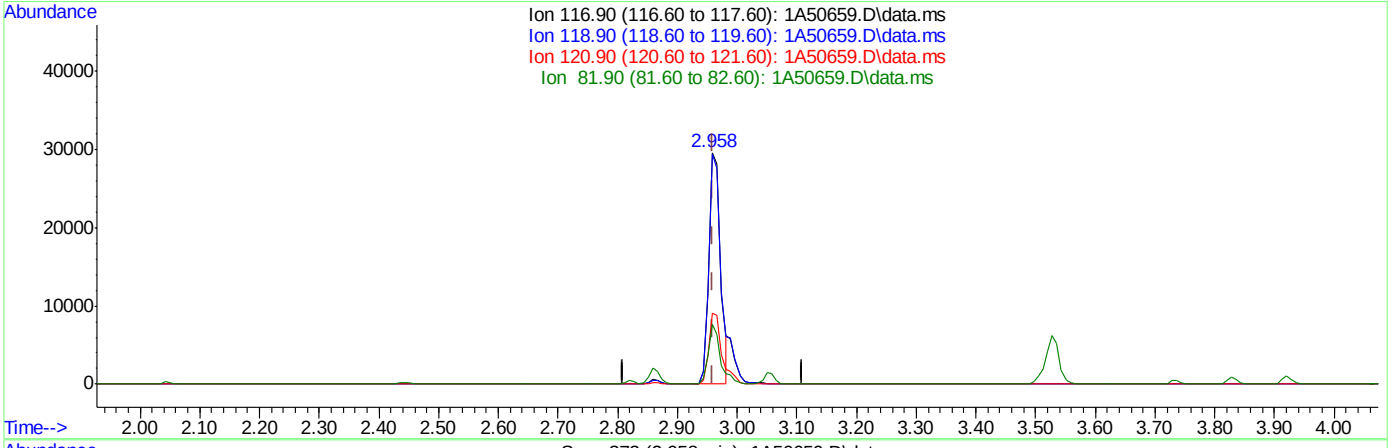
response 46041

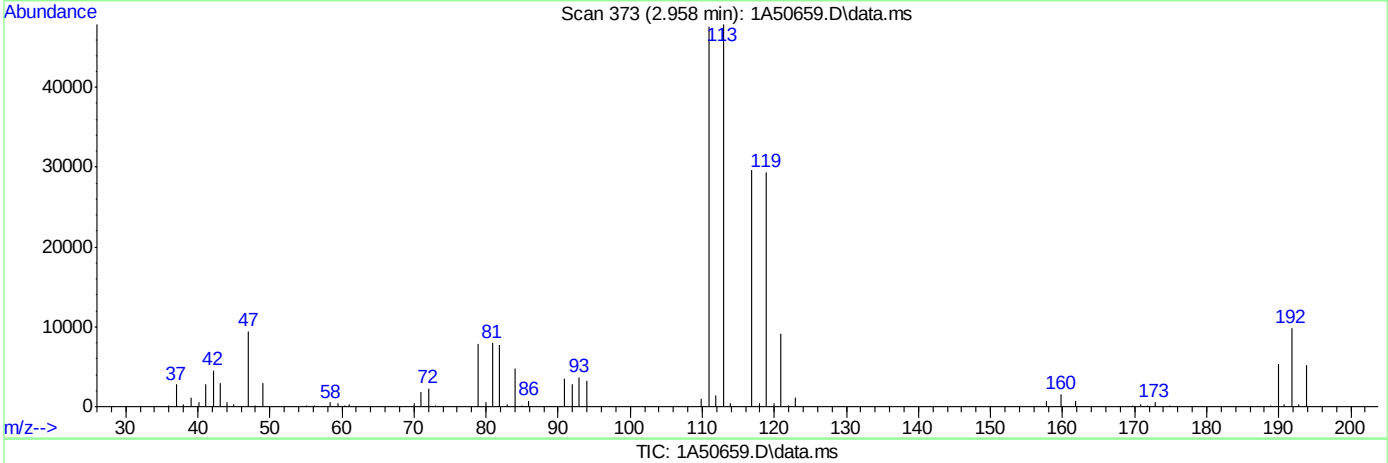
Ion	Exp%	Act%
116.90	100	100
118.90	94.50	99.16
120.90	31.10	30.86
81.90	25.40	25.89

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50659.D
Acq On : 15 Nov 2023 8:29 am
Operator : jeniferw
Sample : IC1945-4
Misc : MS55275,V1A1945,,,,,
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Nov 15 09:38:30 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50659.D\data.ms

(40) Carbon Tetrachloride ( )

2.958min (-0.001) 24.43ug/L m

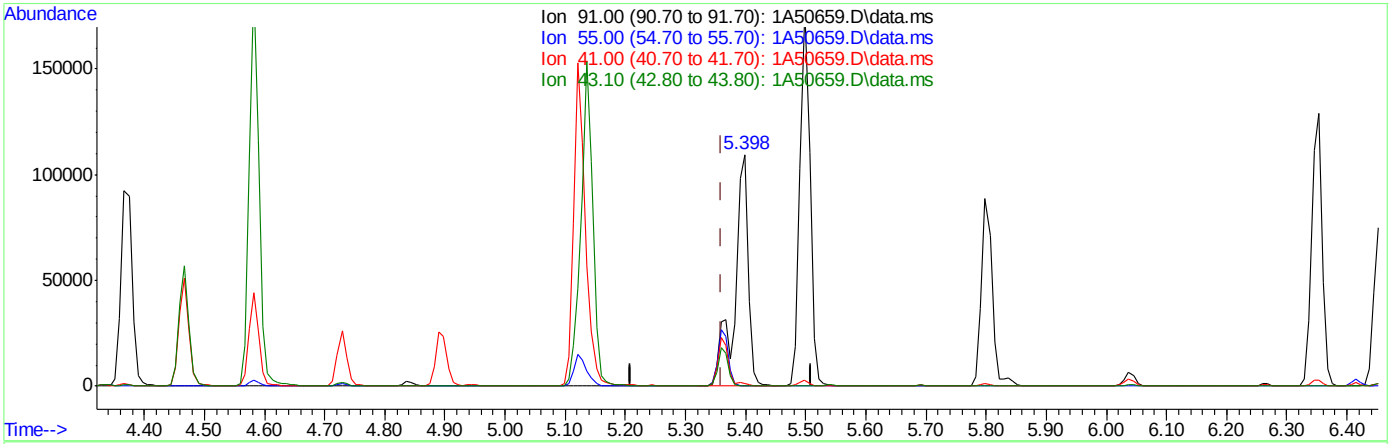
response 40875

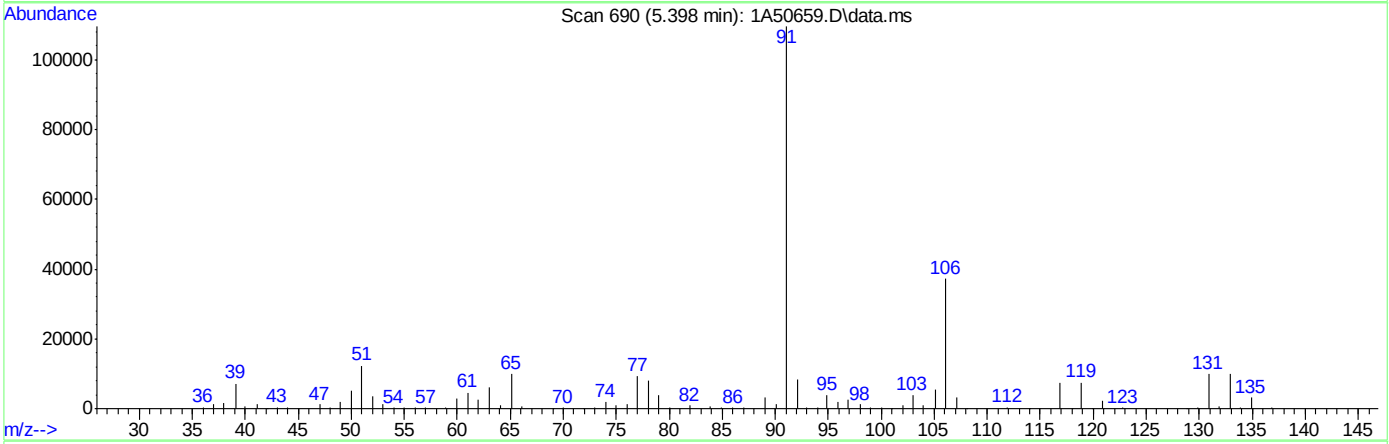
Ion	Exp%	Act%
116.90	100	100
118.90	94.50	99.16
120.90	31.10	30.86
81.90	25.40	25.89

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50659.D
Acq On : 15 Nov 2023 8:29 am
Operator : jeniferw
Sample : IC1945-4
Misc : MS55275,V1A1945,,,,,
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Nov 15 09:38:30 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50659.D\data.ms

(76) 1-Chlorohexane

5.398min (+0.038) 99.40ug/L

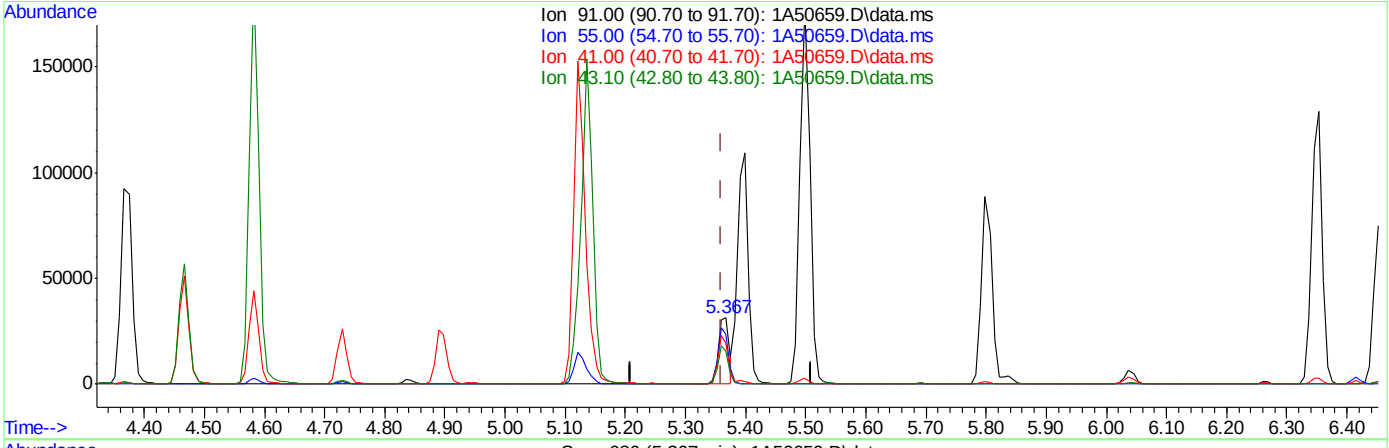
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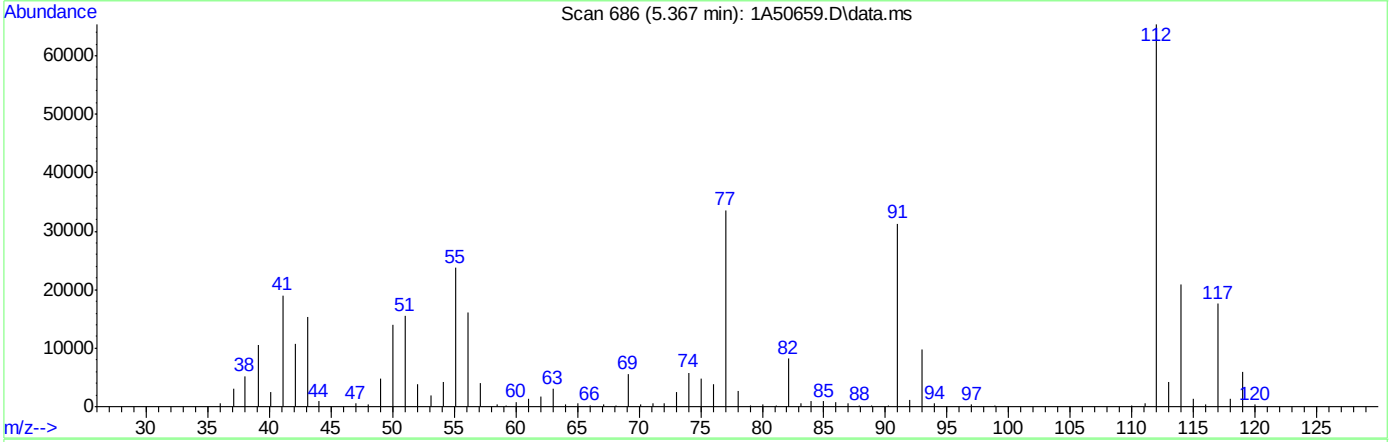
Ion	Exp%	Act%
91.00	100	100
55.00	74.60	0.21#
41.00	53.90	0.85#
43.10	42.90	0.20#

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50659.D
Acq On : 15 Nov 2023 8:29 am
Operator : jeniferw
Sample : IC1945-4
Misc : MS55275,V1A1945,,,,,
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Nov 15 09:38:30 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50659.D\data.ms

(76) 1-Chlorohexane

5.367min (+0.008) 22.78ug/L m

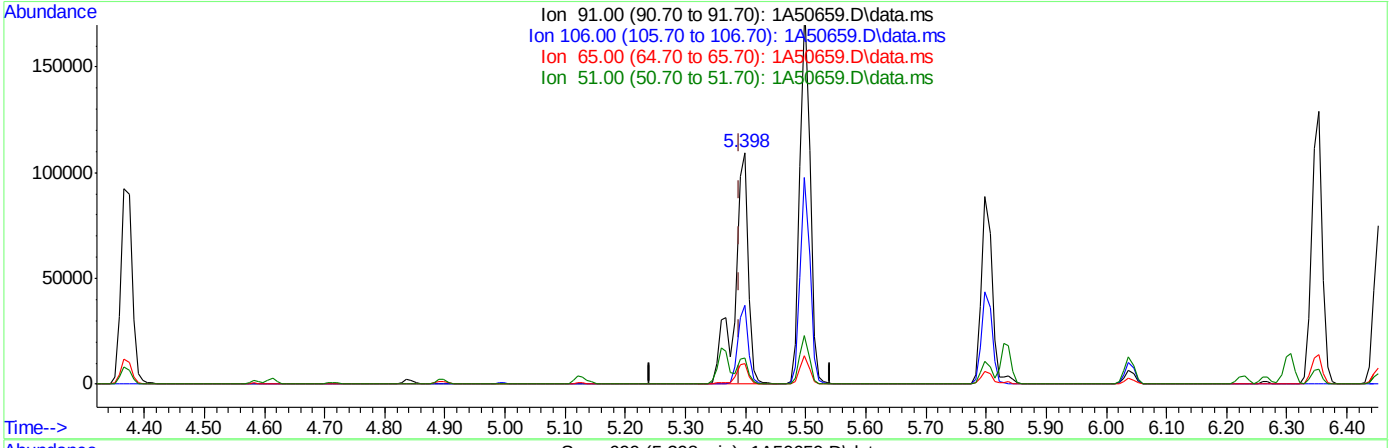
response 39451

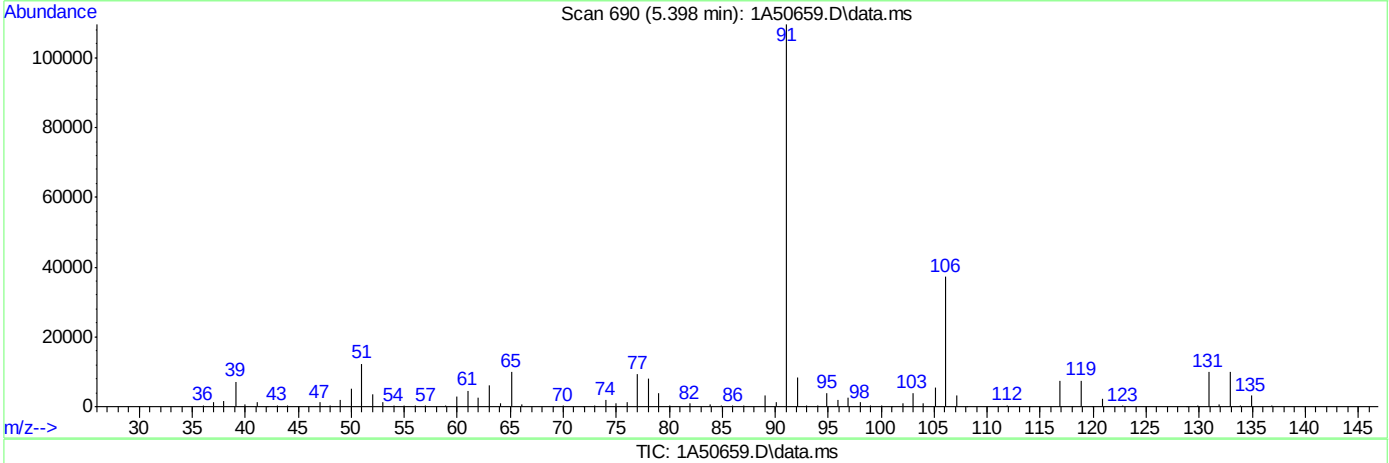
Ion	Exp%	Act%
91.00	100	100
55.00	74.60	75.86
41.00	53.90	60.97
43.10	42.90	48.98

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50659.D
Acq On : 15 Nov 2023 8:29 am
Operator : jeniferw
Sample : IC1945-4
Misc : MS55275,V1A1945,,,,,
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Nov 15 09:38:30 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50659.D\data.ms

(77) Ethylbenzene

5.398min (+0.008) 32.11ug/L

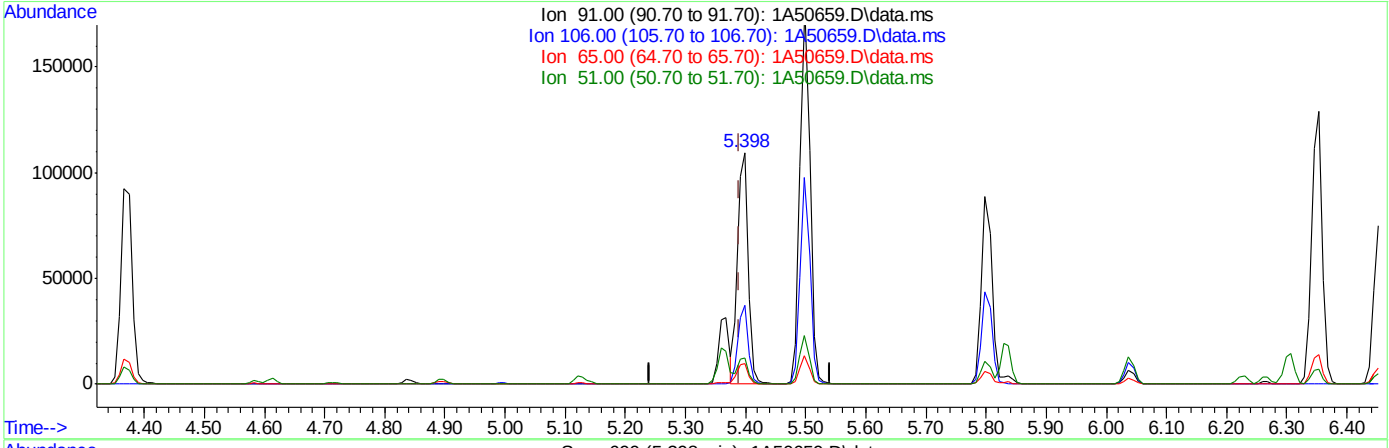
response 172143

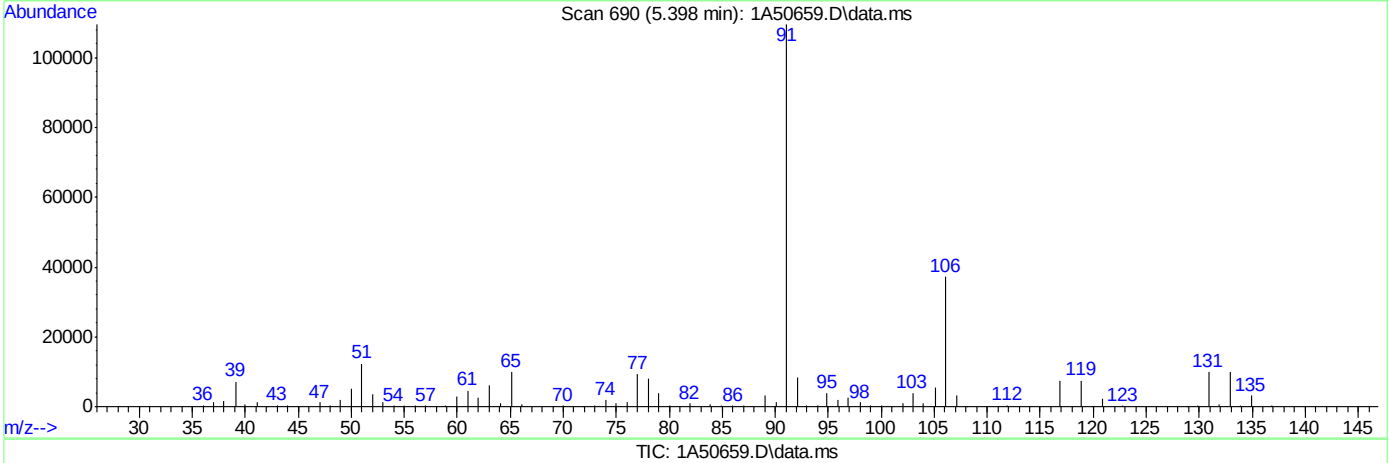
Ion	Exp%	Act%
91.00	100	100
106.00	32.00	33.92
65.00	8.30	8.99
51.00	10.10	11.16

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50659.D
Acq On : 15 Nov 2023 8:29 am
Operator : jeniferw
Sample : IC1945-4
Misc : MS55275,V1A1945,,,,,
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Nov 15 09:38:30 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50659.D\data.ms

(77) Ethylbenzene

5.398min (+0.008) 24.75ug/L m

response 132697

Ion	Exp%	Act%
91.00	100	100
106.00	32.00	33.92
65.00	8.30	8.99
51.00	10.10	11.16

Manual Integrations APPROVED (compounds with "m" flag)
Karen Watson
11/15/23 15:49

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50661.D
Acq On : 15 Nov 2023 9:01 am
Operator : jeniferw
Sample : ICC1985-5
Misc : MS55275,V1A1985,,,,,
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Nov 15 12:57:41 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	3.405	96	213155	50.00	ug/L	0.00
62) Chlorobenzene-d5	5.352	117	152111	50.00	ug/L	0.00
85) 1,4-Dichlorobenzene-d4	7.091	152	80195	50.00	ug/L	0.00
System Monitoring Compounds						
39) Dibromofluoromethane	2.951	113	63212	49.59	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 99.18%			
49) 1,2-Dichloroethane-d4	3.236	65	70343	50.70	ug/L	0.00
Spiked Amount 50.000	Range 79 - 125		Recovery = 101.40%			
63) Toluene-d8	4.336	98	202471	49.84	ug/L	0.00
Spiked Amount 50.000	Range 85 - 112		Recovery = 99.68%			
86) 4-Bromofluorobenzene	6.229	174	66996	49.87	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 99.74%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.019	85	31245	36.72	ug/L	98
3) Chloromethane	1.127	50	47161	36.33	ug/L	100
4) 1,3-butadiene	1.181	39	59148	40.65	ug/L	97
5) Vinyl Chloride	1.165	62	48015	37.26	ug/L	99
6) Bromomethane	1.342	94	17070	35.97	ug/L	97
7) Chloroethane	1.404	64	30685	42.06	ug/L	91
8) Trichlorofluoromethane	1.488	101	68781	39.72	ug/L	99
9) Ethyl Ether	1.650	59	42119	40.64	ug/L	93
10) Ethanol	1.719	45	19106	864.24	ug/L	97
11) 1,2-Dichlorotrifluoroe...	1.742	67	54177	37.63	ug/L	93
12) 1,1-Dichloroethene	1.758	61	72997	37.60	ug/L	98
13) Freon 113	1.781	101	42239	38.69	ug/L	95
14) Carbon Disulfide	1.781	76	129901	40.35	ug/L	91
15) Iodomethane	1.827	142	34757	46.68	ug/L	94
16) Acrolein	1.904	56	63307	186.42	ug/L	98
17) Allyl chloride	1.989	41	66518	36.39	ug/L	92
18) Methylene Chloride	2.043	49	72784	41.22	ug/L	96
19) Acetone	2.050	43	97740	202.14	ug/L	97
20) Methyl acetate	2.120	43	276694	182.18	ug/L	96
21) trans-1,2-Dichloroethene	2.135	61	73424	38.04	ug/L	97
22) Hexane	2.197	56	48578	36.41	ug/L	98
23) Methyl Tert Butyl Ether	2.189	73	134690	37.85	ug/L	96
24) Acetonitrile	2.274	41	75101	401.93	ug/L	99
25) Tert Butyl Alcohol	2.212	59	98317	370.87	ug/L	97
26) Di-isopropyl ether	2.389	45	171511	37.89	ug/L	95
27) Chloroprene	2.435	53	207135	38.44	ug/L	98
28) 1,1-Dichloroethane	2.443	63	95102	37.92	ug/L	97
29) Acrylonitrile	2.435	52	126603	195.81	ug/L	97
30) ETBE	2.581	59	160149	38.32	ug/L	96
31) Vinyl acetate	2.558	43	633827	199.30	ug/L	97
32) cis-1,2-Dichloroethene	2.720	96	51436	36.89	ug/L	97
33) 2,2-Dichloropropane	2.781	77	65723	38.11	ug/L	97
34) Bromochloromethane	2.820	128	26815	37.91	ug/L	92
35) Cyclohexane	2.858	56	93009	37.17	ug/L	92

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50661.D
Acq On : 15 Nov 2023 9:01 am
Operator : jeniferw
Sample : ICC1985-5
Misc : MS55275,V1A1985,,,,,
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Nov 15 12:57:41 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
36) Chloroform	2.858	83	86959	37.07	ug/L		95
37) Ethyl acetate	2.912	43	356602	200.76	ug/L		98
38) Tetrahydrofuran	2.943	42	25221	35.27	ug/L		95
40) Carbon Tetrachloride	2.959	117	68789m	39.28	ug/L		
41) 1,1,1-Trichloroethane	2.982	97	72949	38.12	ug/L		93
42) 2-Butanone	2.997	43	176540	185.39	ug/L		91
43) 1,1-Dichloropropene	3.051	75	63223	38.25	ug/L		94
44) tert-Butyl formate	3.089	59	222319	199.57	ug/L		94
45) Propionitrile	3.143	54	102314	403.89	ug/L		99
46) Methacrylonitrile	3.166	41	402137	366.21	ug/L		98
47) Benzene	3.182	78	186648	37.56	ug/L		94
48) TAME	3.251	73	134127	38.38	ug/L		82
50) 1,2-Dichloroethane	3.274	62	69848	36.97	ug/L		94
51) Isobutyl Alcohol	3.259	43	120391	759.93	ug/L		97
52) Tert Amyl Alcohol	3.320	59	81414	376.38	ug/L		90
53) Trichloroethene	3.505	95	51356	36.82	ug/L		92
54) Methylcyclohexane	3.528	83	84757	39.30	ug/L		96
55) Dibromomethane	3.736	93	32533	36.12	ug/L		91
56) 1,2-Dichloropropane	3.790	63	52981	37.54	ug/L		91
57) Bromodichloromethane	3.828	83	66089	38.52	ug/L		95
58) Methyl methacrylate	3.921	41	58327	36.99	ug/L		94
59) 1,4-Dioxane	3.944	88	14793	771.24	ug/L		96
60) 2-Chloroethyl vinyl ether	4.167	63	153744	194.20	ug/L		98
61) cis-1,3-Dichloropropene	4.205	75	76839	37.58	ug/L		87
64) Toluene	4.367	91	191699	37.07	ug/L		98
65) 2-Nitropropane	4.467	41	97817	192.92	ug/L		94
66) 4-Methyl-2-pentanone	4.582	43	352044	186.46	ug/L		97
67) trans-1,3-Dichloropropene	4.613	75	70912	38.24	ug/L		92
68) Tetrachloroethene	4.629	166	55973	39.26	ug/L		94
69) Ethyl methacrylate	4.729	69	57113	36.85	ug/L		89
70) 1,1,2-Trichloroethane	4.713	83	39628	37.86	ug/L		99
71) Dibromochloromethane	4.836	129	52679	39.28	ug/L		98
72) 1,3-Dichloropropane	4.890	76	73235	37.91	ug/L		90
73) 1,2-Dibromoethane	4.990	107	50182	37.85	ug/L		97
74) 3,3-Dimethyl-1-Butanol	5.121	57	458955	1778.39	ug/L		97
75) 2-hexanone	5.137	43	334513	179.35	ug/L		88
76) 1-Chlorohexane	5.360	91	63589m	35.32	ug/L		
77) Ethylbenzene	5.398	91	211532m	37.95	ug/L		
78) Chlorobenzene	5.367	112	128346	38.13	ug/L		96
79) 1,1,1,2-Tetrachloroethane	5.406	131	49039	39.31	ug/L		93
80) m,p-Xylene	5.498	91	333600	75.53	ug/L		96
81) o-Xylene	5.798	91	176137	37.58	ug/L		98
82) Styrene	5.837	104	135849	38.41	ug/L		96
83) Bromoform	5.837	173	35037	39.39	ug/L		99
84) Isopropylbenzene	6.037	105	208732	38.09	ug/L		99
87) cis-1,4-Dichloro-2-butene	6.260	53	18237	39.52	ug/L	#	79
88) n-Propylbenzene	6.353	91	247669	38.23	ug/L		98
89) Bromobenzene	6.306	156	53866	37.45	ug/L		98
90) 1,1,2,2-Tetrachloroethane	6.368	83	63537	37.27	ug/L		95
91) 1,3,5-Trimethylbenzene	6.507	105	170594	38.31	ug/L		96

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50661.D
Acq On : 15 Nov 2023 9:01 am
Operator : jeniferw
Sample : ICC1985-5
Misc : MS55275,V1A1985,,,,,
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Nov 15 12:57:41 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration

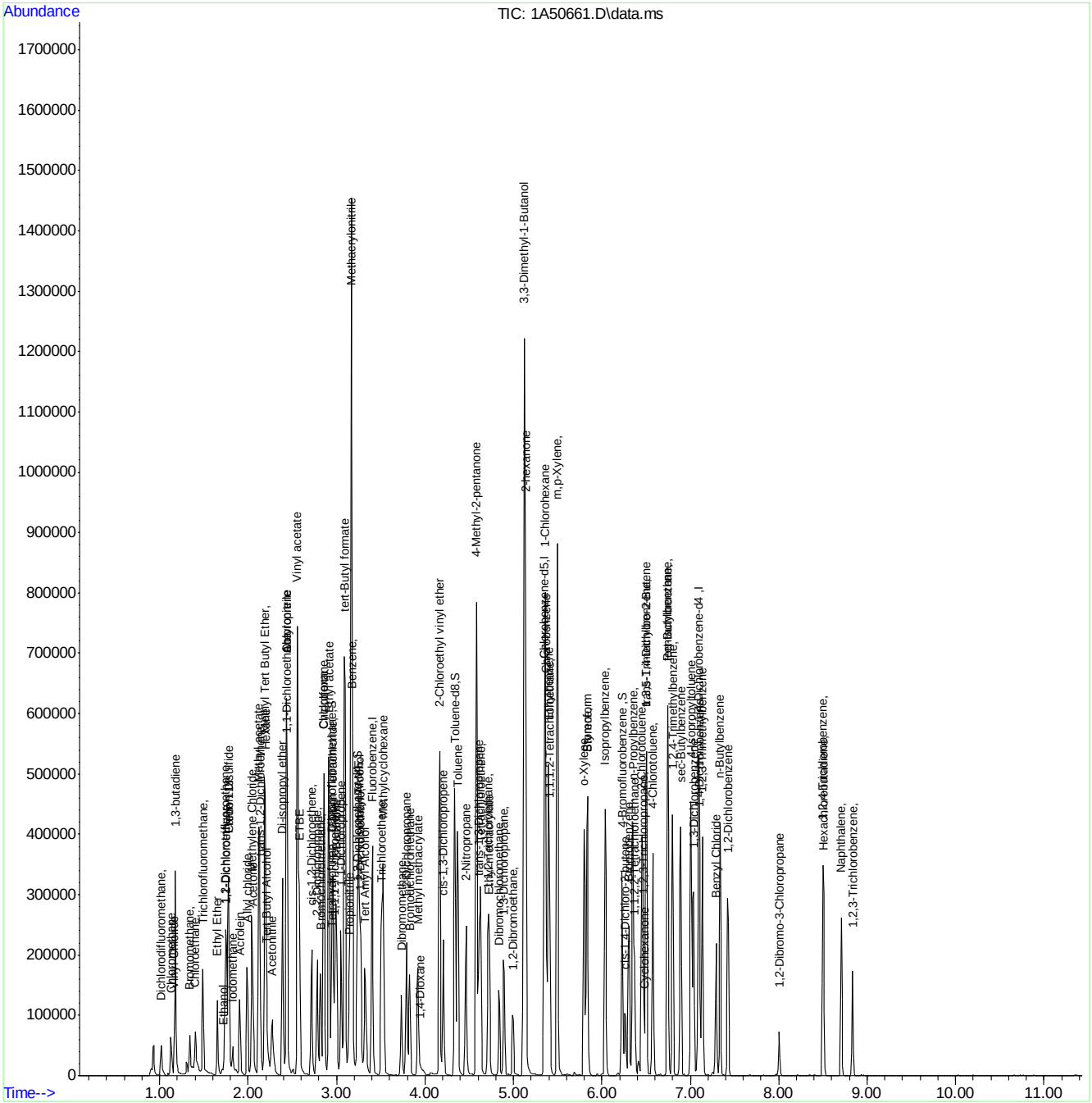
	Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
92)	2-Chlorotoluene	6.453	91	139772	37.05	ug/L		96
93)	trans-1,4-Dichloro-2-B...	6.507	53	24554	37.77	ug/L		94
94)	1,2,3-Trichloropropane	6.468	110	18006	38.07	ug/L		90
95)	Cyclohexanone	6.483	55	15141	155.39	ug/L		95
96)	4-Chlorotoluene	6.576	91	146079	37.19	ug/L		95
97)	tert-Butylbenzene	6.745	91	96036	38.31	ug/L		93
98)	1,2,4-Trimethylbenzene	6.799	105	164126	38.14	ug/L		96
99)	Pentachloroethane	6.745	167	27999	42.03	ug/L	#	57
100)	sec-Butylbenzene	6.891	105	216982	38.48	ug/L		98
101)	4-Isopropyltoluene	7.007	119	188146	38.55	ug/L		97
102)	1,3-Dichlorobenzene	7.038	146	100188	37.99	ug/L		99
103)	1,2,3-Trimethylbenzene	7.138	105	162125	37.66	ug/L		96
104)	1,4-Dichlorobenzene	7.107	146	98623	37.50	ug/L		98
105)	n-Butylbenzene	7.338	92	84713	38.76	ug/L		98
106)	Benzyl Chloride	7.292	126	23321	37.84	ug/L		93
107)	1,2-Dichlorobenzene	7.422	146	88356	37.66	ug/L		93
108)	1,2-Dibromo-3-Chloropr...	8.007	75	10249	37.61	ug/L		74
109)	Hexachlorobutadiene	8.508	225	21478	38.39	ug/L		92
110)	1,2,4-Trichlorobenzene	8.500	180	49506	38.30	ug/L		97
111)	Naphthalene	8.708	128	123343	37.13	ug/L		99
112)	1,2,3-Trichlorobenzene	8.839	180	39610	38.85	ug/L		98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50661.D
Acq On : 15 Nov 2023 9:01 am
Operator : jeniferw
Sample : ICC1985-5
Misc : MS55275,V1A1985,,,,,
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Nov 15 12:57:41 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration



Manual Integration Approval Summary

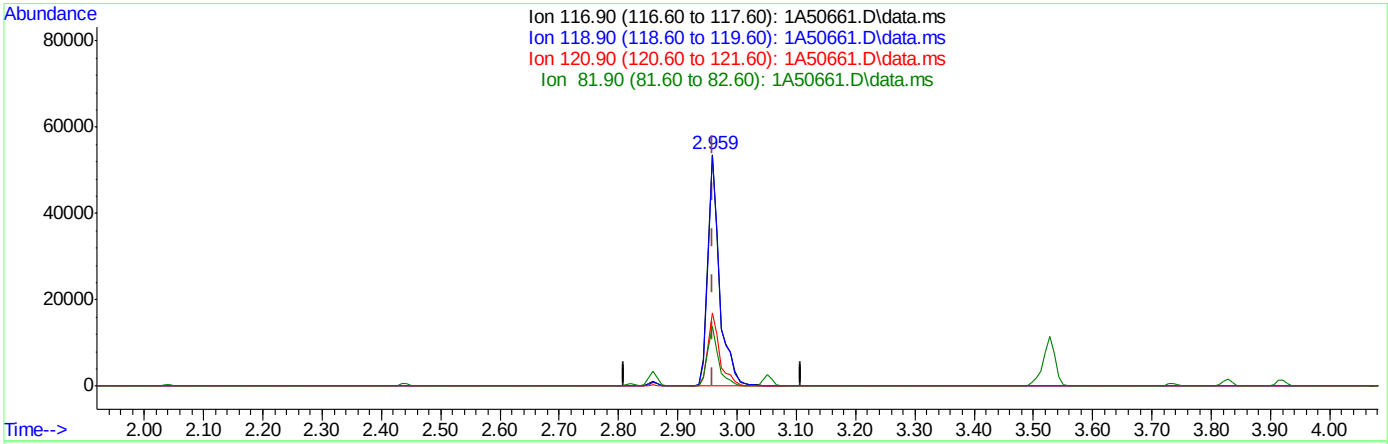
Sample Number: V1A1985-ICC1985 **Method:** SW846 8260D
Lab FileID: 1A50661.D **Analyst approved:** 11/15/23 14:32 Jenifer Willis
Injection Time: 11/15/23 09:01 **Supervisor approved:** 11/15/23 15:49 Karen Watson

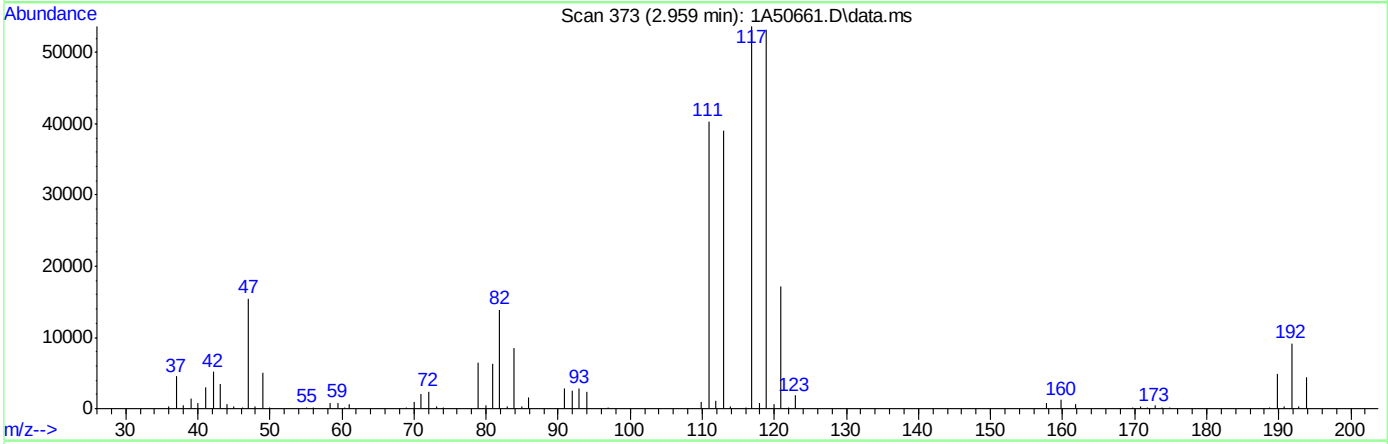
Parameter	CAS	Sig#	R.T. (min.)	Reason
Carbon Tetrachloride	56-23-5		2.96	Overlapping peak
1-Chlorohexane	544-10-5		5.36	Overlapping peak
Ethylbenzene	100-41-4		5.40	Overlapping peak

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50661.D
Acq On : 15 Nov 2023 9:01 am
Operator : jeniferw
Sample : ICC1945-5
Misc : MS55275,V1A1945,,,,,
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Nov 15 09:38:32 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50661.D\data.ms

(40) Carbon Tetrachloride ( )

2.959min (-0.000) 43.08ug/L

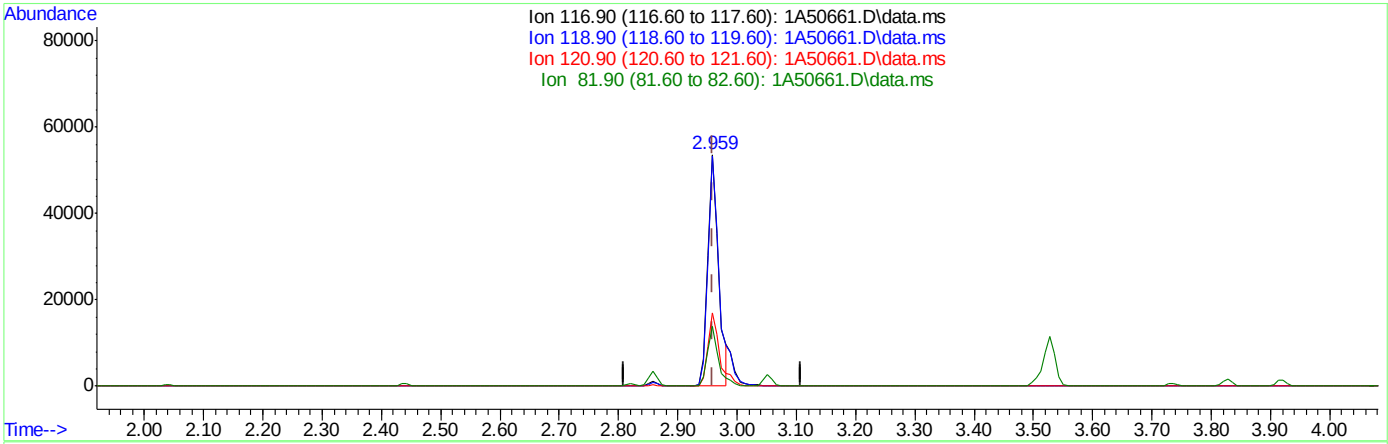
response 75453

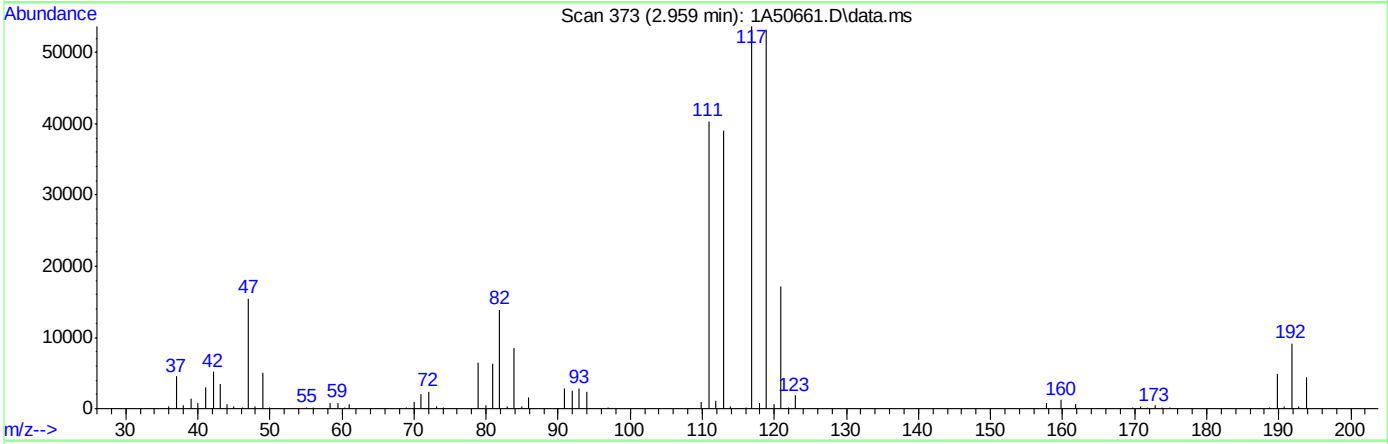
Ion	Exp%	Act%
116.90	100	100
118.90	94.50	99.20
120.90	31.10	31.86
81.90	25.40	25.86

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50661.D
Acq On : 15 Nov 2023 9:01 am
Operator : jeniferw
Sample : ICC1945-5
Misc : MS55275,V1A1945,,,,,
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Nov 15 09:38:32 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50661.D\data.ms

(40) Carbon Tetrachloride ( )

2.959min (-0.000) 39.28ug/L m

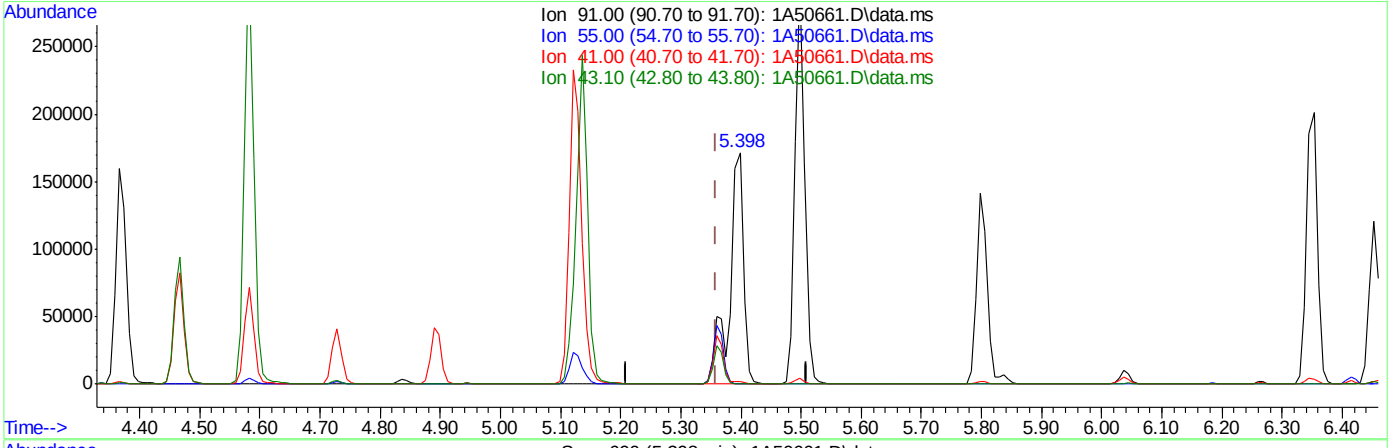
response 68789

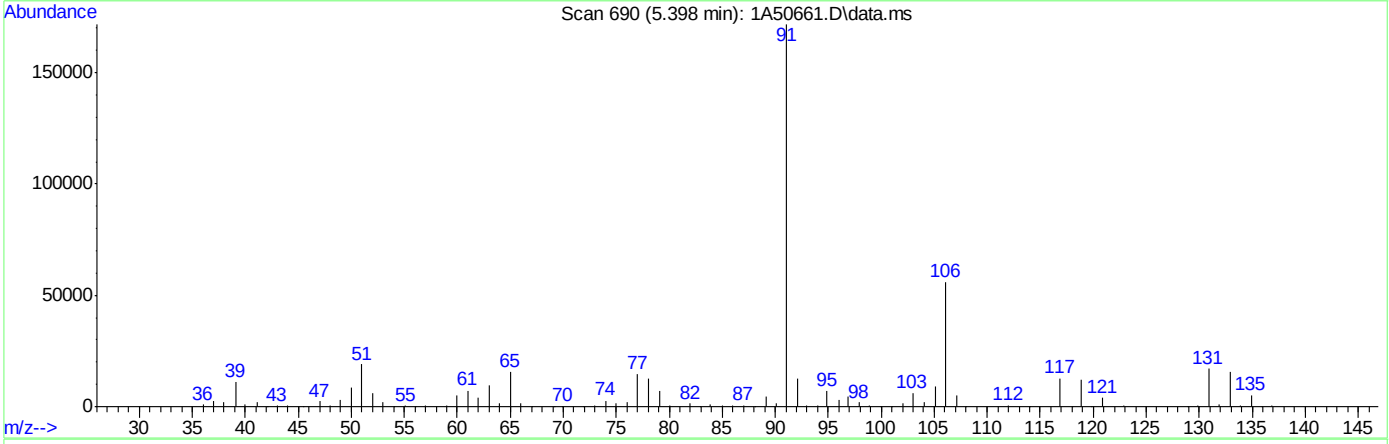
Ion	Exp%	Act%
116.90	100	100
118.90	94.50	99.20
120.90	31.10	31.86
81.90	25.40	25.86

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50661.D
Acq On : 15 Nov 2023 9:01 am
Operator : jeniferw
Sample : ICC1945-5
Misc : MS55275,V1A1945,,,,,
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Nov 15 09:38:32 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50661.D\data.ms

(76) 1-Chlorohexane

5.398min (+0.038) 152.58ug/L

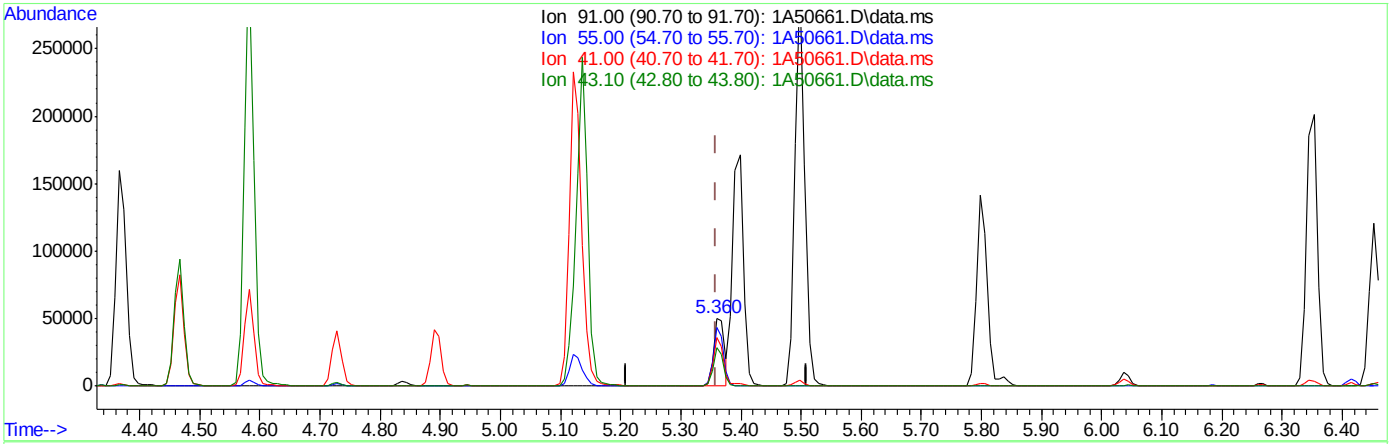
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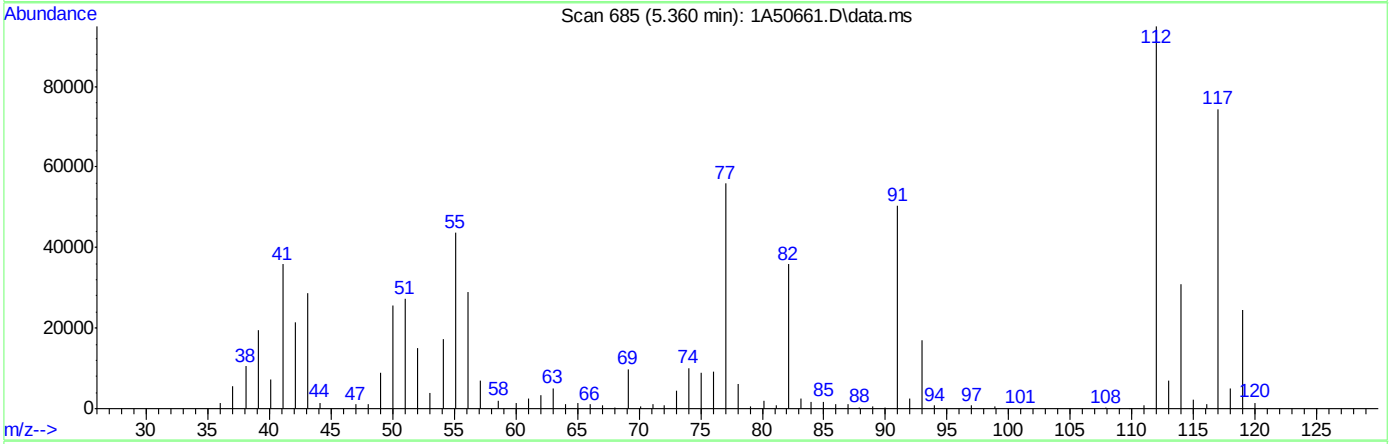
Ion	Exp%	Act%
91.00	100	100
55.00	74.60	0.21#
41.00	53.90	1.03#
43.10	42.90	0.16#

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50661.D
Acq On : 15 Nov 2023 9:01 am
Operator : jeniferw
Sample : ICC1945-5
Misc : MS55275,V1A1945,,,,,
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Nov 15 09:38:32 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50661.D\data.ms

(76) 1-Chlorohexane

5.360min (-0.000) 35.32ug/L m

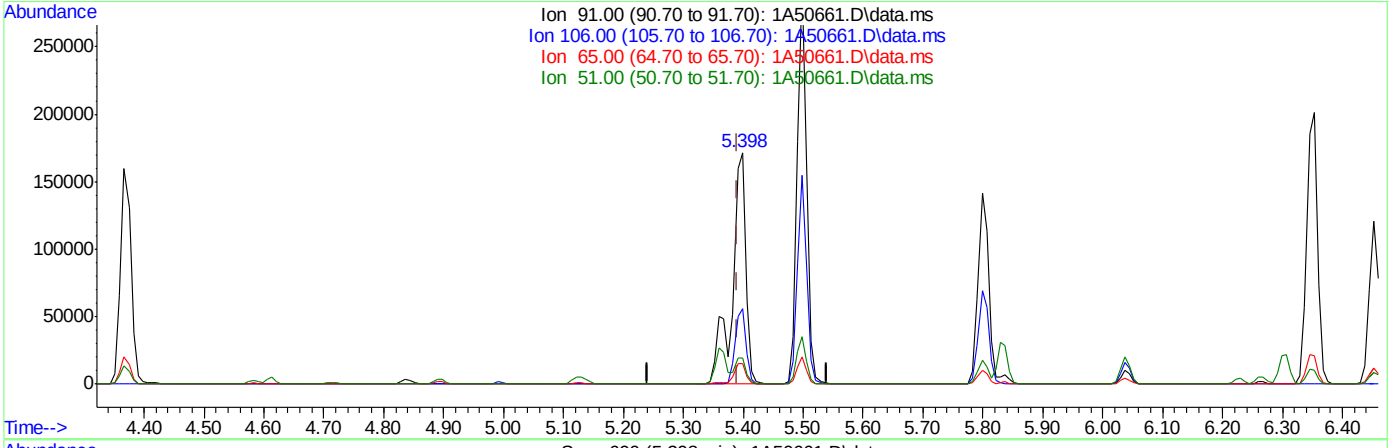
response 63589

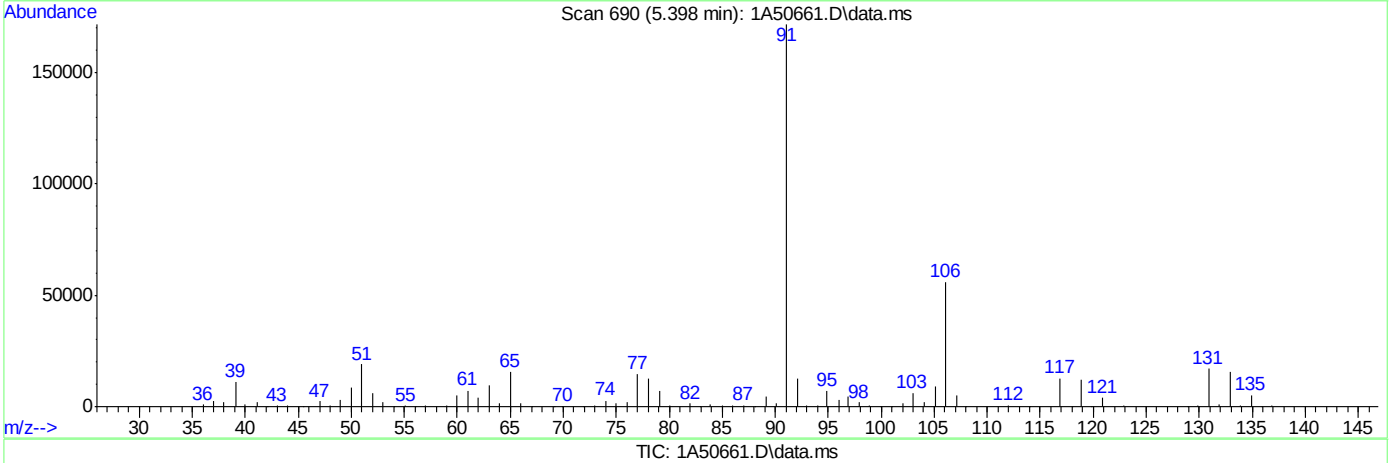
Ion	Exp%	Act%
91.00	100	100
55.00	74.60	86.59
41.00	53.90	71.11
43.10	42.90	56.93

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50661.D
Acq On : 15 Nov 2023 9:01 am
Operator : jeniferw
Sample : ICC1945-5
Misc : MS55275,V1A1945,,,,,
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Nov 15 09:38:32 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50661.D\data.ms

(77) Ethylbenzene

5.398min (+0.008) 49.37ug/L

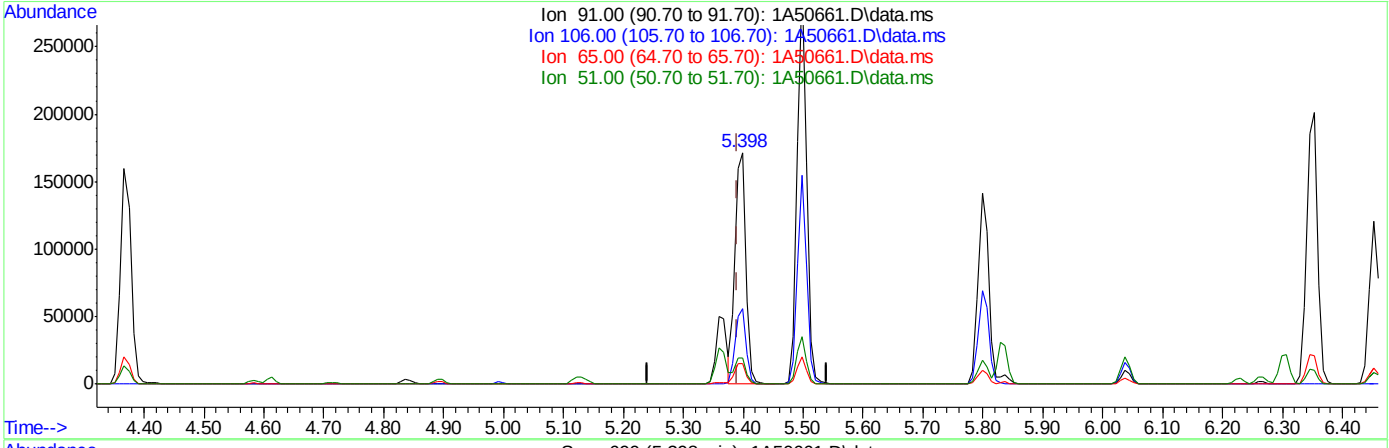
response 275175

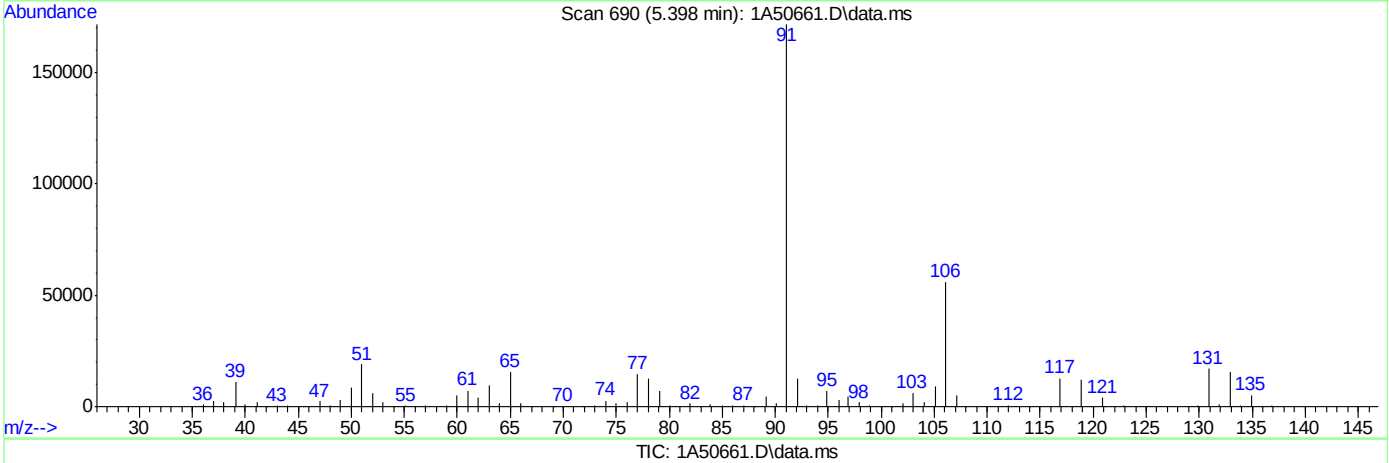
Ion	Exp%	Act%
91.00	100	100
106.00	32.00	32.59
65.00	8.30	9.06
51.00	10.10	11.14

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50661.D
Acq On : 15 Nov 2023 9:01 am
Operator : jeniferw
Sample : ICC1945-5
Misc : MS55275,V1A1945,,,,,
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Nov 15 09:38:32 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50661.D\data.ms

(77) Ethylbenzene

5.398min (+0.008) 37.95ug/L m

response 211532

Ion	Exp%	Act%
91.00	100	100
106.00	32.00	32.59
65.00	8.30	9.06
51.00	10.10	11.14

1A50663.D

Manual Integrations APPROVED (compounds with "m" flag)

Karen Watson
11/15/23 15:49

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50663.D
Acq On : 15 Nov 2023 9:33 am
Operator : jeniferw
Sample : IC1985-6
Misc : MS55275,V1A1985,,,,,
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Nov 15 12:59:19 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	3.405	96	214822	50.00	ug/L	0.00
62) Chlorobenzene-d5	5.352	117	151349	50.00	ug/L	0.00
85) 1,4-Dichlorobenzene-d4	7.091	152	78794	50.00	ug/L	0.00
System Monitoring Compounds						
39) Dibromofluoromethane	2.958	113	61645	47.99	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 95.98%			
49) 1,2-Dichloroethane-d4	3.235	65	72825	52.08	ug/L	0.00
Spiked Amount 50.000	Range 79 - 125		Recovery = 104.16%			
63) Toluene-d8	4.336	98	203026	50.23	ug/L	0.00
Spiked Amount 50.000	Range 85 - 112		Recovery = 100.46%			
86) 4-Bromofluorobenzene	6.229	174	66261	50.20	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 100.40%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.019	85	56764	66.19	ug/L	97
3) Chloromethane	1.127	50	77779	59.45	ug/L	98
4) 1,3-butadiene	1.181	39	100701	68.68	ug/L	92
5) Vinyl Chloride	1.173	62	82267	63.34	ug/L	99
6) Bromomethane	1.342	94	30307	63.37	ug/L	98
7) Chloroethane	1.404	64	48202	73.28	ug/L	95
8) Trichlorofluoromethane	1.488	101	126104	72.25	ug/L	97
9) Ethyl Ether	1.658	59	72262	69.19	ug/L	95
10) Ethanol	1.719	45	29699m	1332.98	ug/L	
11) 1,2-Dichlorotrifluoroe...	1.742	67	95502	65.81	ug/L	89
12) 1,1-Dichloroethene	1.758	61	128506	65.68	ug/L	98
13) Freon 113	1.781	101	75157	68.30	ug/L	95
14) Carbon Disulfide	1.781	76	228353	70.38	ug/L	91
15) Iodomethane	1.827	142	58056	72.79	ug/L	95
16) Acrolein	1.912	56	110530	322.95	ug/L	98
17) Allyl chloride	1.996	41	115737	62.82	ug/L	94
18) Methylene Chloride	2.043	49	122652	68.92	ug/L	94
19) Acetone	2.050	43	166181	341.02	ug/L	98
20) Methyl acetate	2.127	43	476407	311.23	ug/L	98
21) trans-1,2-Dichloroethene	2.135	61	127646	65.62	ug/L	93
22) Hexane	2.196	56	88484	65.80	ug/L	98
23) Methyl Tert Butyl Ether	2.196	73	236007	65.81	ug/L	84
24) Acetonitrile	2.273	41	125540	666.65	ug/L	96
25) Tert Butyl Alcohol	2.212	59	164284	614.90	ug/L	86
26) Di-isopropyl ether	2.397	45	303399	66.51	ug/L	96
27) Chloroprene	2.443	53	361018	66.48	ug/L	99
28) 1,1-Dichloroethane	2.443	63	164289	64.99	ug/L	99
29) Acrylonitrile	2.443	52	218651	335.55	ug/L	98
30) ETBE	2.581	59	281454	66.83	ug/L	96
31) Vinyl acetate	2.558	43	1149176	358.54	ug/L	98
32) cis-1,2-Dichloroethene	2.720	96	89364	63.60	ug/L	94
33) 2,2-Dichloropropane	2.781	77	113603	65.36	ug/L	97
34) Bromochloromethane	2.820	128	44530	62.46	ug/L	87
35) Cyclohexane	2.858	56	163374	64.79	ug/L	91

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50663.D
Acq On : 15 Nov 2023 9:33 am
Operator : jeniferw
Sample : IC1985-6
Misc : MS55275,V1A1985,,,,,
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Nov 15 12:59:19 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
36) Chloroform	2.858	83	151336	64.01	ug/L		95
37) Ethyl acetate	2.912	43	632727	353.45	ug/L		98
38) Tetrahydrofuran	2.943	42	44165	61.28	ug/L		95
40) Carbon Tetrachloride	2.958	117	119339m	67.61	ug/L		
41) 1,1,1-Trichloroethane	2.989	97	129604	67.20	ug/L		96
42) 2-Butanone	3.005	43	304062	316.82	ug/L		94
43) 1,1-Dichloropropene	3.051	75	109964	66.01	ug/L		93
44) tert-Butyl formate	3.097	59	396238	352.93	ug/L		95
45) Propionitrile	3.143	54	175207	686.27	ug/L		98
46) Methacrylonitrile	3.166	41	709628	641.22	ug/L		97
47) Benzene	3.182	78	322517	64.40	ug/L		96
48) TAME	3.251	73	236911	67.27	ug/L		97
50) 1,2-Dichloroethane	3.274	62	120949	63.51	ug/L		92
51) Isobutyl Alcohol	3.259	43	183947	1152.09	ug/L		95
52) Tert Amyl Alcohol	3.328	59	137624	631.31	ug/L		90
53) Trichloroethene	3.513	95	89770	63.86	ug/L		97
54) Methylcyclohexane	3.528	83	152009	69.94	ug/L		98
55) Dibromomethane	3.736	93	56657	62.42	ug/L		88
56) 1,2-Dichloropropane	3.790	63	91339	64.22	ug/L		92
57) Bromodichloromethane	3.828	83	112718	65.18	ug/L		97
58) Methyl methacrylate	3.920	41	100847	63.45	ug/L		95
59) 1,4-Dioxane	3.944	88	25007	1293.63	ug/L		98
60) 2-Chloroethyl vinyl ether	4.167	63	277818	348.19	ug/L		98
61) cis-1,3-Dichloropropene	4.205	75	134640	65.34	ug/L		84
64) Toluene	4.367	91	331142	64.35	ug/L		99
65) 2-Nitropropane	4.467	41	173992	344.89	ug/L		93
66) 4-Methyl-2-pentanone	4.582	43	608938	324.15	ug/L		98
67) trans-1,3-Dichloropropene	4.613	75	124246	67.34	ug/L		92
68) Tetrachloroethene	4.628	166	97236	68.55	ug/L		94
69) Ethyl methacrylate	4.729	69	98802	64.07	ug/L		90
70) 1,1,2-Trichloroethane	4.713	83	67915	65.21	ug/L		98
71) Dibromochloromethane	4.836	129	92739	69.50	ug/L		99
72) 1,3-Dichloropropane	4.898	76	125375	65.23	ug/L		94
73) 1,2-Dibromoethane	4.990	107	87373	66.24	ug/L		98
74) 3,3-Dimethyl-1-Butanol	5.129	57	825500	3214.80	ug/L		97
75) 2-hexanone	5.136	43	582835	314.07	ug/L		90
76) 1-Chlorohexane	5.367	91	110346m	61.60	ug/L		
77) Ethylbenzene	5.398	91	365512m	65.91	ug/L		
78) Chlorobenzene	5.367	112	220923	65.97	ug/L		96
79) 1,1,1,2-Tetrachloroethane	5.406	131	85444	68.83	ug/L		93
80) m,p-Xylene	5.498	91	571516	130.06	ug/L		97
81) o-Xylene	5.798	91	304460	65.29	ug/L		99
82) Styrene	5.837	104	231762	65.85	ug/L		95
83) Bromoform	5.837	173	61976	70.03	ug/L		99
84) Isopropylbenzene	6.037	105	357234	65.51	ug/L		98
87) cis-1,4-Dichloro-2-butene	6.260	53	31916	70.39	ug/L	#	73
88) n-Propylbenzene	6.352	91	426837	67.06	ug/L		99
89) Bromobenzene	6.306	156	91959	65.08	ug/L		97
90) 1,1,2,2-Tetrachloroethane	6.376	83	108702	64.90	ug/L		97
91) 1,3,5-Trimethylbenzene	6.506	105	289121	66.08	ug/L		97

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50663.D
Acq On : 15 Nov 2023 9:33 am
Operator : jeniferw
Sample : IC1985-6
Misc : MS55275,V1A1985,,,,,
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Nov 15 12:59:19 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration

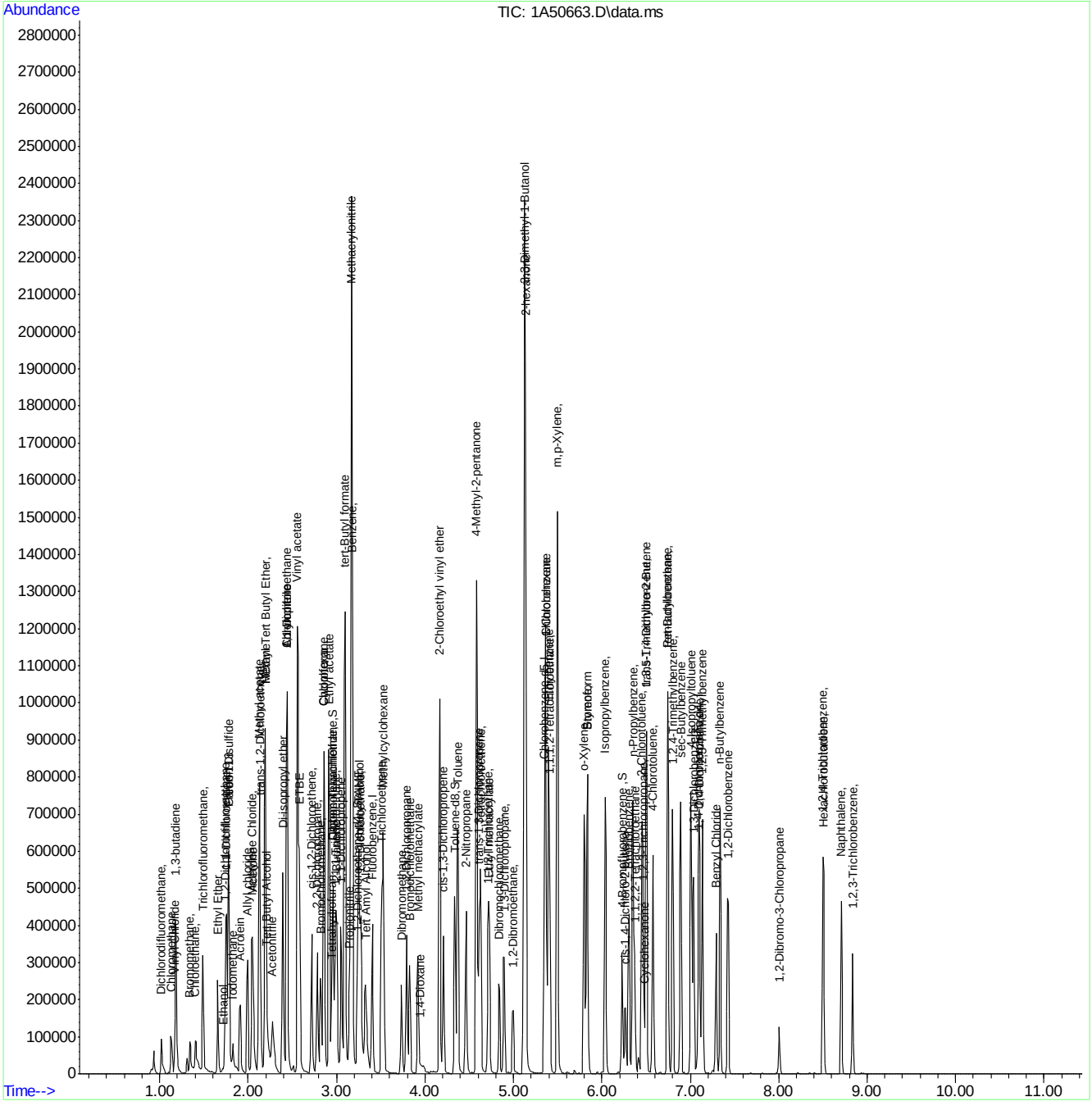
	Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
92)	2-Chlorotoluene	6.453	91	237594	64.10	ug/L		96
93)	trans-1,4-Dichloro-2-B...	6.506	53	42009	65.78	ug/L		91
94)	1,2,3-Trichloropropane	6.468	110	30577	65.80	ug/L		87
95)	Cyclohexanone	6.483	55	26437	276.14	ug/L		99
96)	4-Chlorotoluene	6.576	91	247829	64.22	ug/L		96
97)	tert-Butylbenzene	6.745	91	161610	65.61	ug/L		94
98)	1,2,4-Trimethylbenzene	6.799	105	277182	65.56	ug/L		98
99)	Pentachloroethane	6.745	167	48203	73.65	ug/L	#	68
100)	sec-Butylbenzene	6.891	105	374293	67.56	ug/L		97
101)	4-Isopropyltoluene	7.007	119	320067	66.74	ug/L		98
102)	1,3-Dichlorobenzene	7.037	146	167332	64.57	ug/L		98
103)	1,2,3-Trimethylbenzene	7.138	105	274662	64.94	ug/L		95
104)	1,4-Dichlorobenzene	7.107	146	165596	64.09	ug/L		98
105)	n-Butylbenzene	7.338	92	143542	66.84	ug/L		96
106)	Benzyl Chloride	7.291	126	40571	67.01	ug/L		94
107)	1,2-Dichlorobenzene	7.430	146	150681	65.37	ug/L		97
108)	1,2-Dibromo-3-Chloropr...	8.007	75	18255	68.19	ug/L		77
109)	Hexachlorobutadiene	8.507	225	37500	68.22	ug/L		92
110)	1,2,4-Trichlorobenzene	8.500	180	85696	67.48	ug/L		97
111)	Naphthalene	8.708	128	218409	66.91	ug/L		98
112)	1,2,3-Trichlorobenzene	8.838	180	67723	67.61	ug/L		98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50663.D
Acq On : 15 Nov 2023 9:33 am
Operator : jeniferw
Sample : IC1985-6
Misc : MS55275,V1A1985,,,,,
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Nov 15 12:59:19 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration



Manual Integration Approval Summary

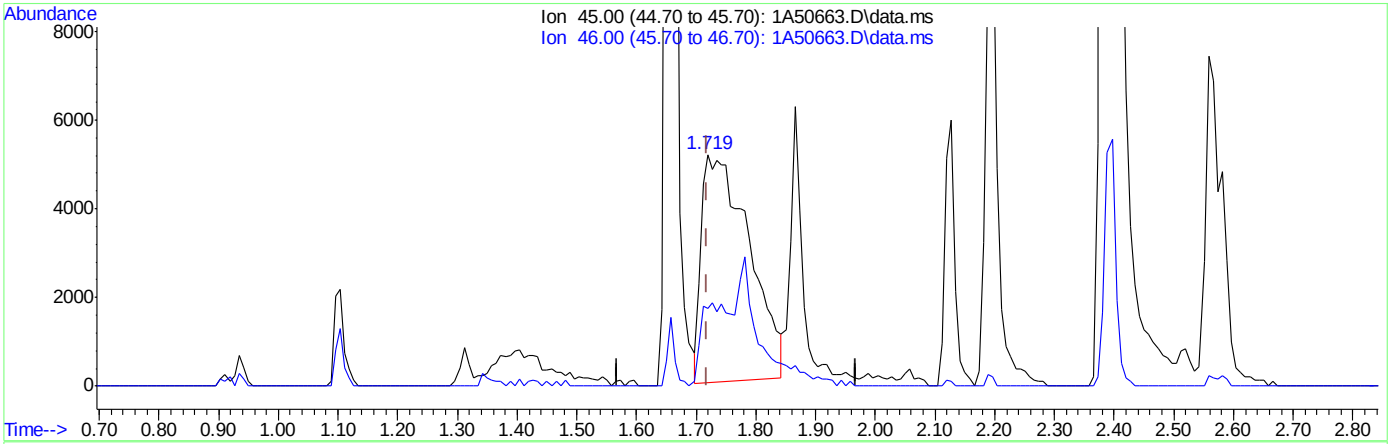
Sample Number: V1A1985-IC1985
Lab FileID: 1A50663.D
Injection Time: 11/15/23 09:33
Method: SW846 8260D
Analyst approved: 11/15/23 14:32 Jenifer Willis
Supervisor approved: 11/15/23 15:49 Karen Watson

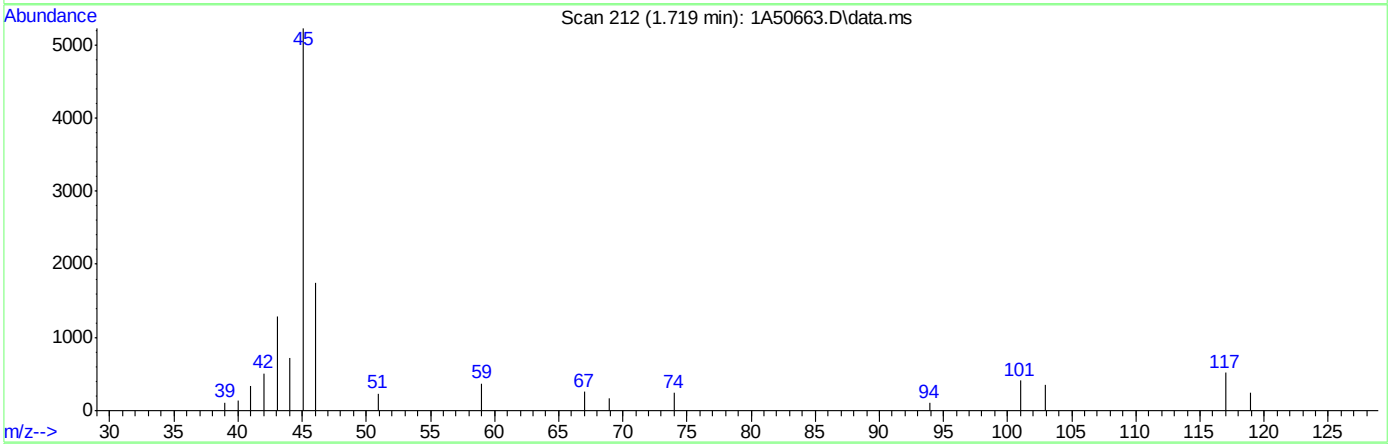
Parameter	CAS	Sig#	R.T. (min.)	Reason
Ethyl Alcohol	64-17-5		1.72	Poorly defined baseline
Carbon Tetrachloride	56-23-5		2.96	Overlapping peak
1-Chlorohexane	544-10-5		5.37	Overlapping peak
Ethylbenzene	100-41-4		5.40	Overlapping peak

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50663.D
Acq On : 15 Nov 2023 9:33 am
Operator : jeniferw
Sample : IC1945-6
Misc : MS55275,V1A1945,,,,,
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Nov 15 12:47:38 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50663.D\data.ms

(10) Ethanol

1.719min (+0.000) 1283.93ug/L

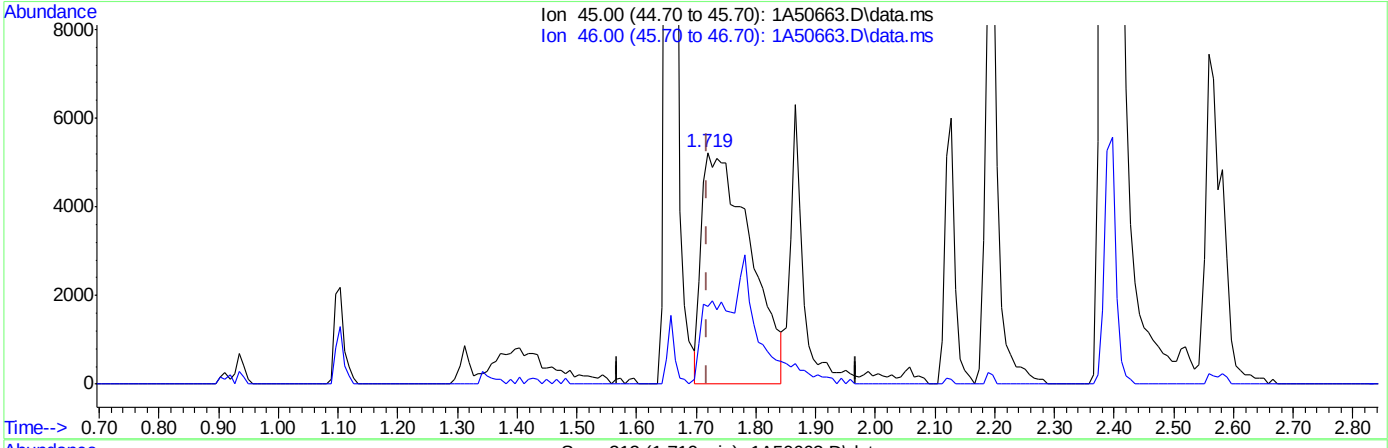
response 28606

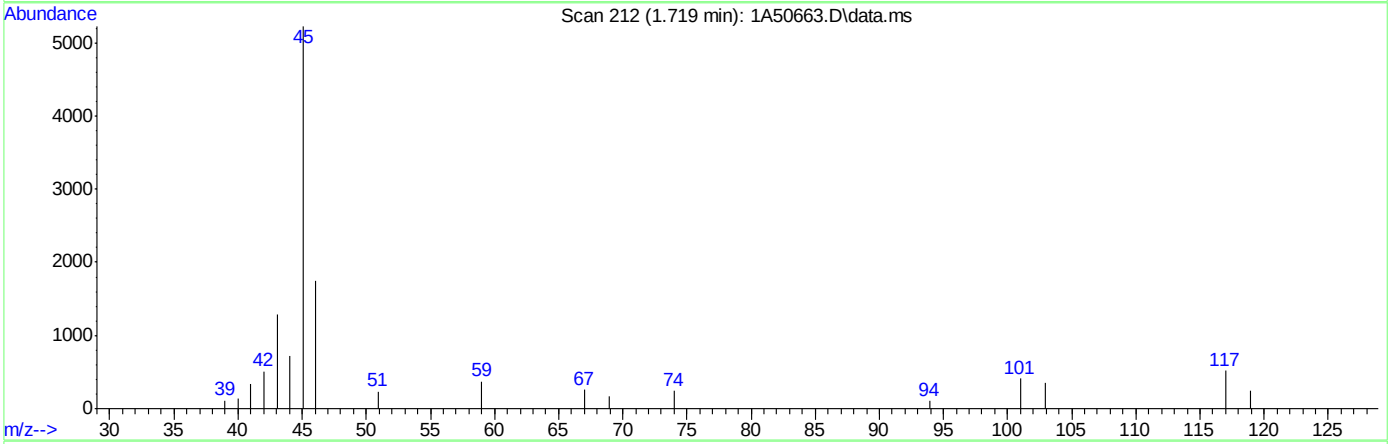
Ion	Exp%	Act%
45.00	100	100
46.00	40.30	36.60
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50663.D
Acq On : 15 Nov 2023 9:33 am
Operator : jeniferw
Sample : IC1945-6
Misc : MS55275,V1A1945,,,,,
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Nov 15 12:47:38 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50663.D\data.ms

(10) Ethanol

1.719min (+0.000) 1332.98ug/L m

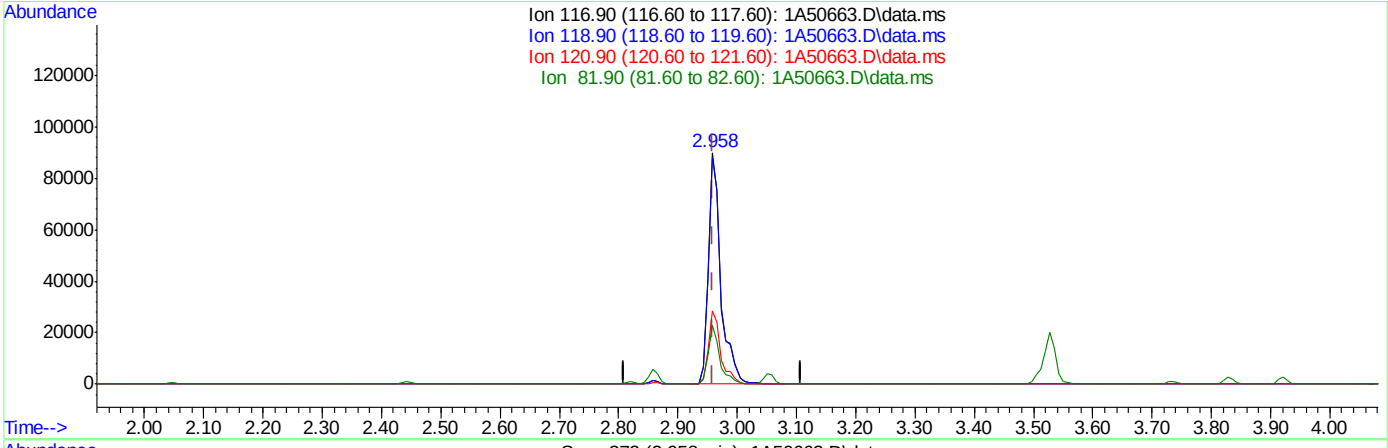
response 29699

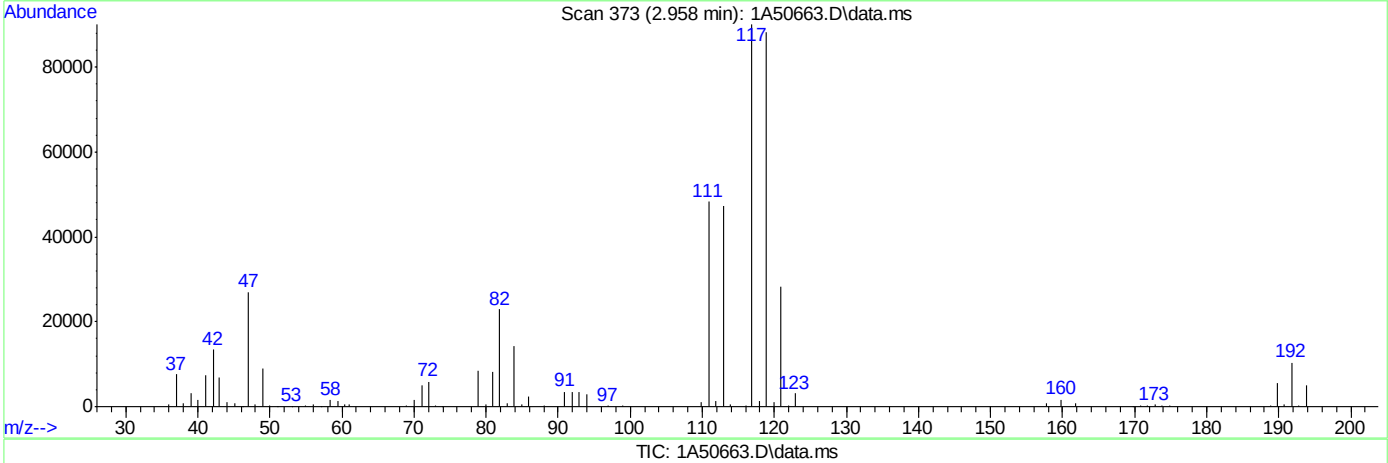
Ion	Exp%	Act%
45.00	100	100
46.00	40.30	33.40
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50663.D
Acq On : 15 Nov 2023 9:33 am
Operator : jeniferw
Sample : IC1945-6
Misc : MS55275,V1A1945,,,,,
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Nov 15 12:47:38 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50663.D\data.ms

(40) Carbon Tetrachloride ( )

2.958min (-0.001) 75.51ug/L

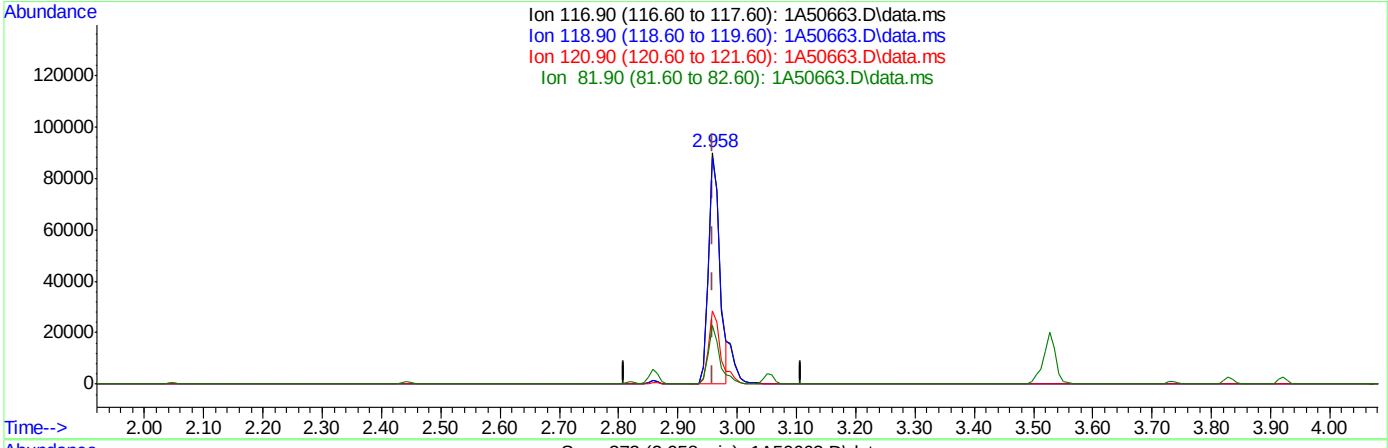
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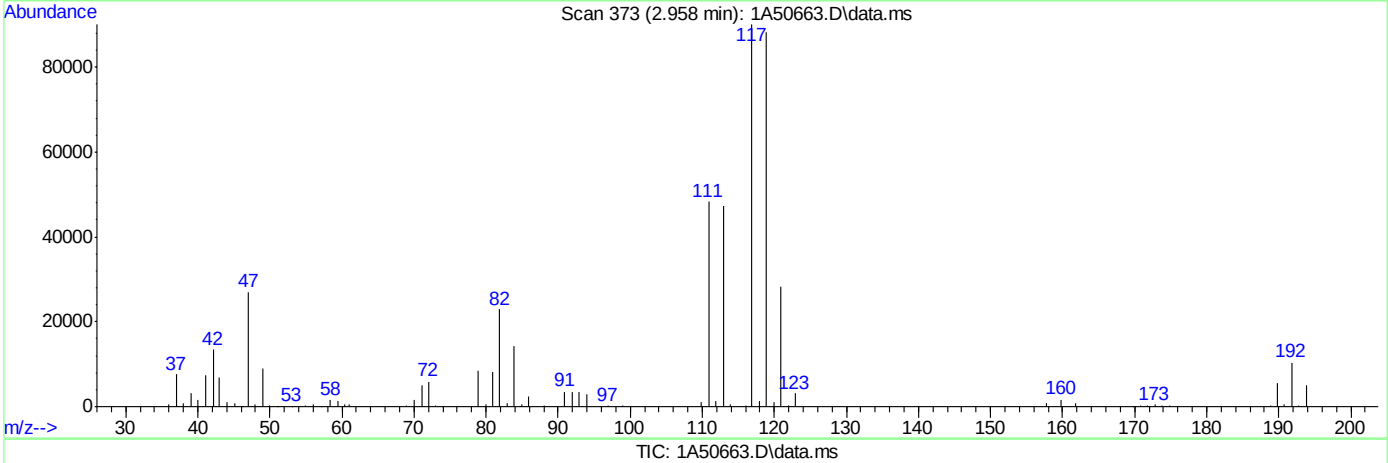
Ion	Exp%	Act%
116.90	100	100
118.90	94.50	98.02
120.90	31.10	31.41
81.90	25.40	25.50

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50663.D
Acq On : 15 Nov 2023 9:33 am
Operator : jeniferw
Sample : IC1945-6
Misc : MS55275,V1A1945,,,,,
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Nov 15 12:47:38 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50663.D\data.ms

(40) Carbon Tetrachloride ( )

2.958min (-0.001) 67.61ug/L m

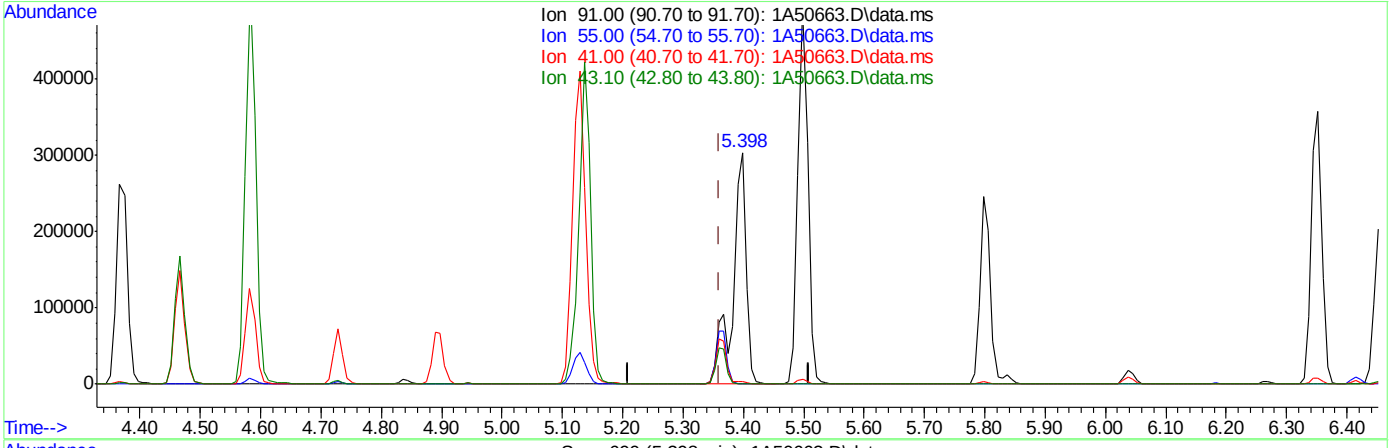
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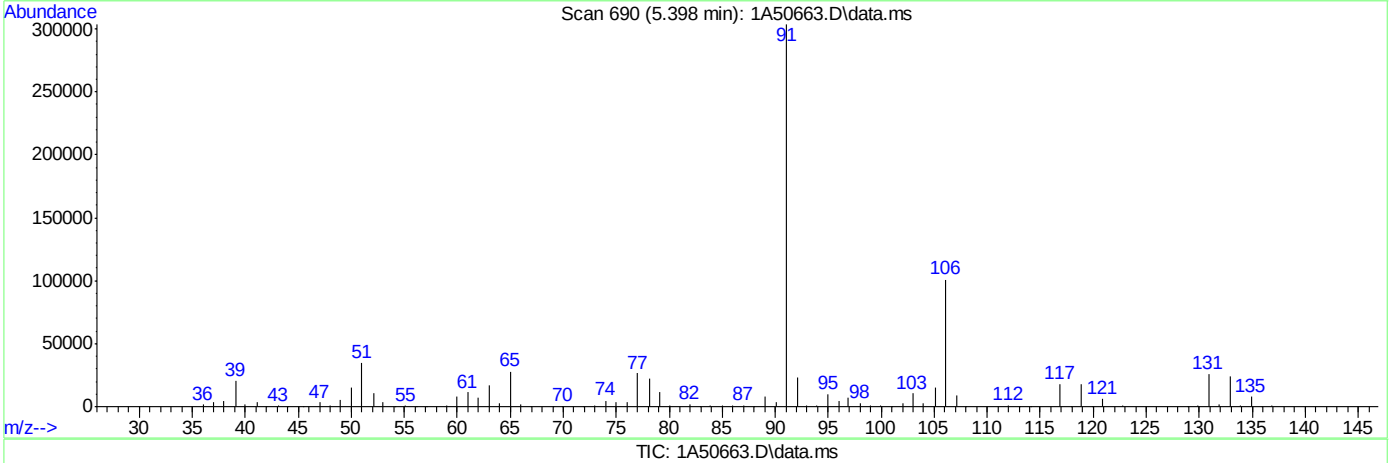
Ion	Exp%	Act%
116.90	100	100
118.90	94.50	98.02
120.90	31.10	31.41
81.90	25.40	25.50

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50663.D
Acq On : 15 Nov 2023 9:33 am
Operator : jeniferw
Sample : IC1945-6
Misc : MS55275,V1A1945,,,,,
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Nov 15 12:47:38 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50663.D\data.ms

(76) 1-Chlorohexane

5.398min (+0.038) 265.38ug/L

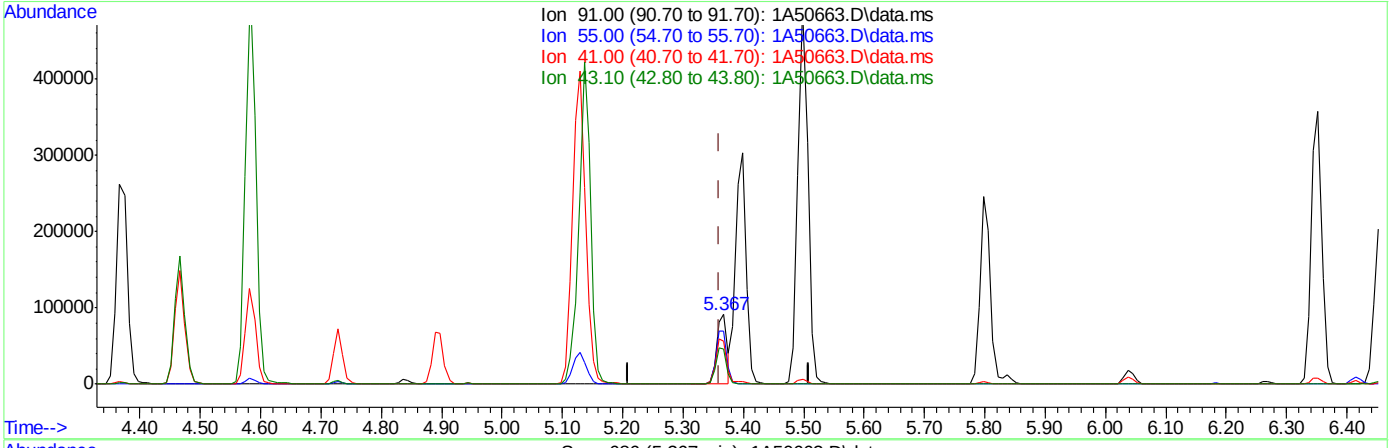
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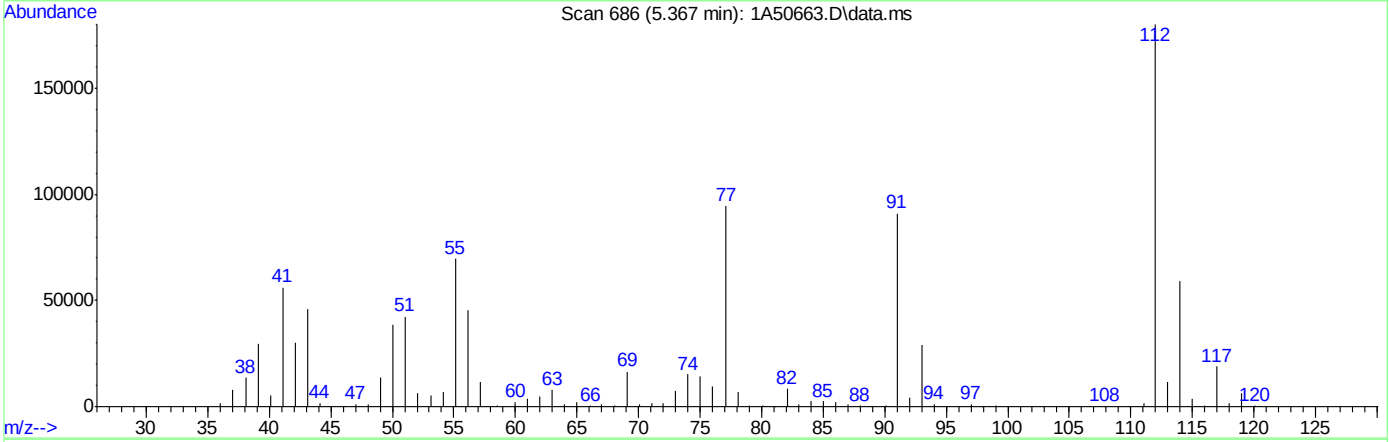
Ion	Exp%	Act%
91.00	100	100
55.00	74.60	0.22#
41.00	53.90	0.99#
43.10	42.90	0.17#

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50663.D
Acq On : 15 Nov 2023 9:33 am
Operator : jeniferw
Sample : IC1945-6
Misc : MS55275,V1A1945,,,,,
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Nov 15 12:47:38 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50663.D\data.ms

(76) 1-Chlorohexane

5.367min (+0.007) 61.60ug/L m

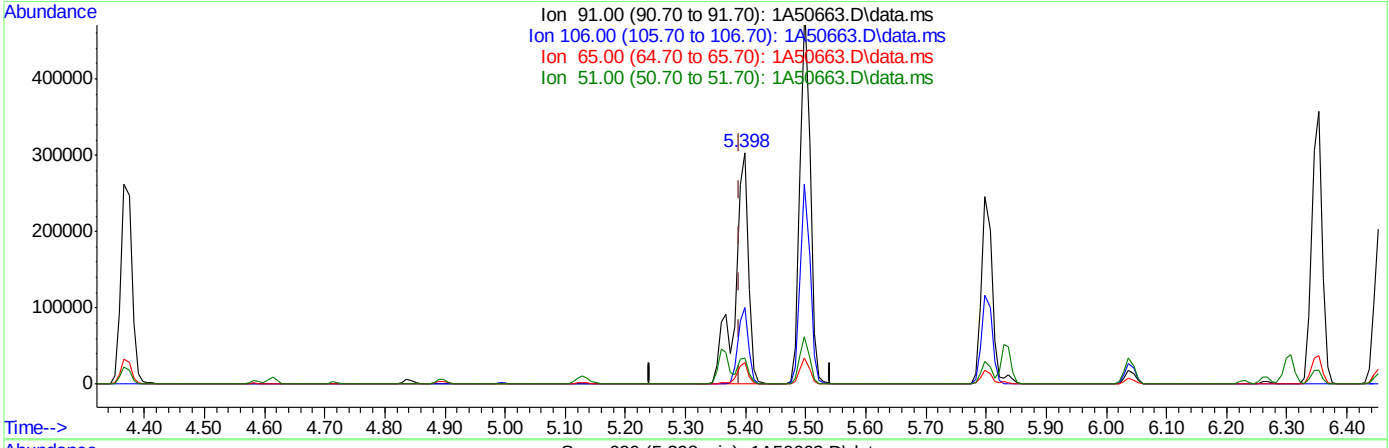
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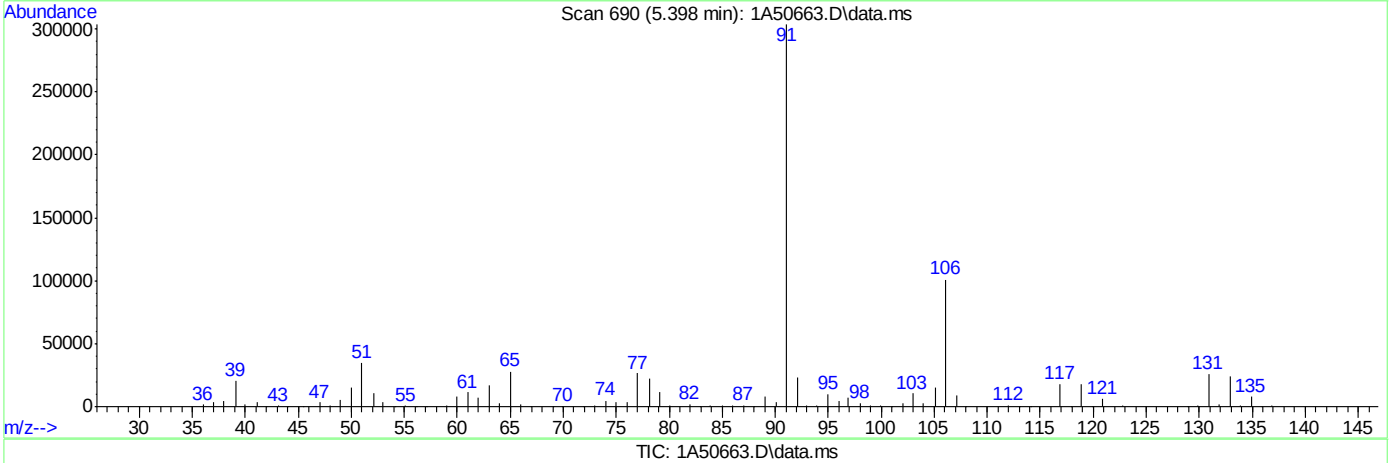
Ion	Exp%	Act%
91.00	100	100
55.00	74.60	76.55
41.00	53.90	61.72
43.10	42.90	50.39

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50663.D
Acq On : 15 Nov 2023 9:33 am
Operator : jeniferw
Sample : IC1945-6
Misc : MS55275,V1A1945,,,,,
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Nov 15 12:47:38 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50663.D\data.ms

(77) Ethylbenzene

5.398min (+0.007) 85.81ug/L

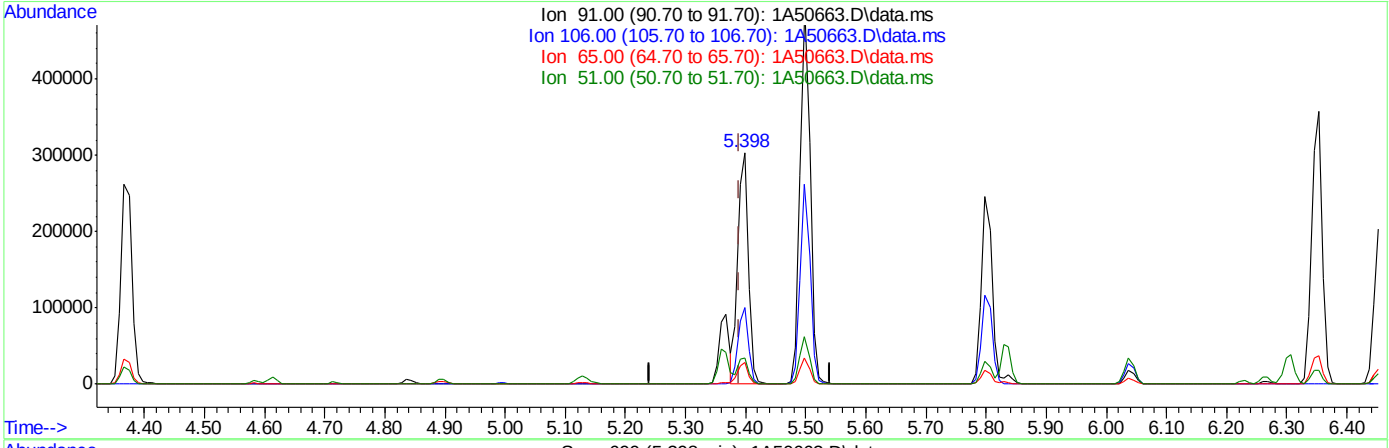
response 475888

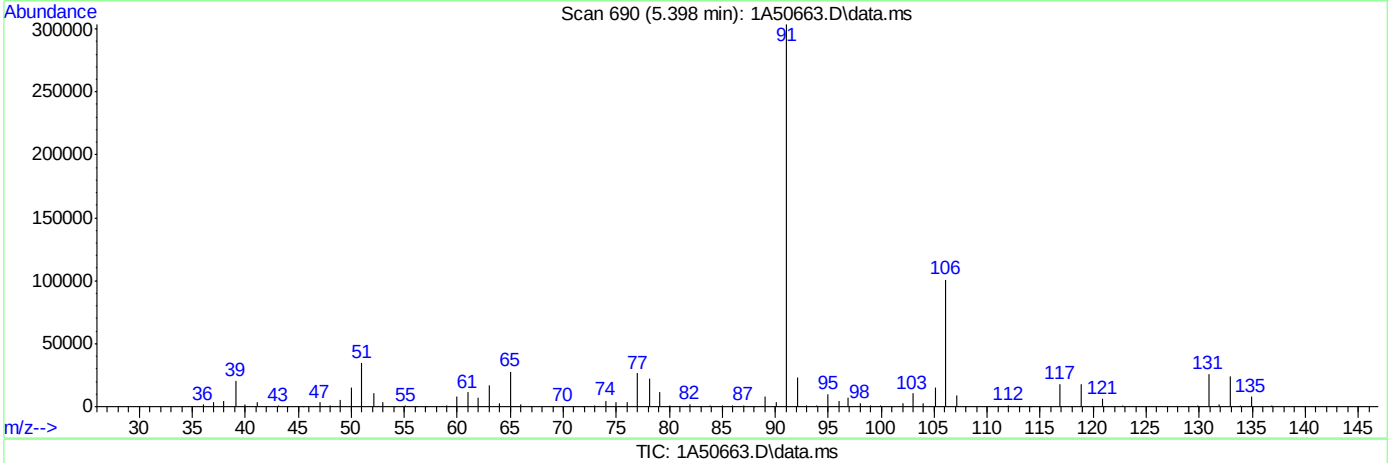
Ion	Exp%	Act%
91.00	100	100
106.00	32.00	33.26
65.00	8.30	9.21
51.00	10.10	11.37

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50663.D
Acq On : 15 Nov 2023 9:33 am
Operator : jeniferw
Sample : IC1945-6
Misc : MS55275,V1A1945,,,,,
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Nov 15 12:47:38 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50663.D\data.ms

(77) Ethylbenzene

5.398min (+0.007) 65.91ug/L m

response 365512

Ion	Exp%	Act%
91.00	100	100
106.00	32.00	33.26
65.00	8.30	9.21
51.00	10.10	11.37

Manual Integrations APPROVED (compounds with "m" flag)
Karen Watson 11/15/23 15:49

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50665.D
Acq On : 15 Nov 2023 10:05 am
Operator : jeniferw
Sample : IC1985-7
Misc : MS55275,V1A1985,,,,,
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Nov 15 13:00:05 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	3.405	96	218617	50.00	ug/L	0.00
62) Chlorobenzene-d5	5.352	117	152138	50.00	ug/L	0.00
85) 1,4-Dichlorobenzene-d4	7.091	152	78213	50.00	ug/L	0.00
System Monitoring Compounds						
39) Dibromofluoromethane	2.950	113	63766	48.78	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 97.56%			
49) 1,2-Dichloroethane-d4	3.235	65	75225	52.87	ug/L	0.00
Spiked Amount 50.000	Range 79 - 125		Recovery = 105.74%			
63) Toluene-d8	4.336	98	206796	50.89	ug/L	0.00
Spiked Amount 50.000	Range 85 - 112		Recovery = 101.78%			
86) 4-Bromofluorobenzene	6.229	174	66556	50.80	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 101.60%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.019	85	77002	88.23	ug/L	97
3) Chloromethane	1.134	50	108772	81.69	ug/L	98
4) 1,3-butadiene	1.180	39	142900	95.77	ug/L	97
5) Vinyl Chloride	1.165	62	113500	85.87	ug/L	98
6) Bromomethane	1.342	94	42136	86.57	ug/L	96
7) Chloroethane	1.404	64	63305	109.59	ug/L	97
8) Trichlorofluoromethane	1.480	101	166527	93.75	ug/L	99
9) Ethyl Ether	1.650	59	104679	98.49	ug/L	90
10) Ethanol	1.773	45	40776m	1798.39	ug/L	
11) 1,2-Dichlorotrifluoroe...	1.742	67	137613	93.19	ug/L	93
12) 1,1-Dichloroethene	1.750	61	186049	93.44	ug/L	93
13) Freon 113	1.781	101	107187	95.72	ug/L	97
14) Carbon Disulfide	1.773	76	322645	97.71	ug/L	88
15) Iodomethane	1.827	142	84705	98.59	ug/L	92
16) Acrolein	1.904	56	158741	455.76	ug/L	99
17) Allyl chloride	1.988	41	163639	87.28	ug/L	93
18) Methylene Chloride	2.042	49	168972	93.30	ug/L	98
19) Acetone	2.050	43	238804	481.54	ug/L	99
20) Methyl acetate	2.119	43	694071	445.56	ug/L	96
21) trans-1,2-Dichloroethene	2.135	61	182728	92.30	ug/L	98
22) Hexane	2.189	56	125641	91.81	ug/L	94
23) Methyl Tert Butyl Ether	2.189	73	341721	93.63	ug/L	83
24) Acetonitrile	2.273	41	178614	932.03	ug/L	94
25) Tert Butyl Alcohol	2.219	59	244519	899.32	ug/L	92
26) Di-isopropyl ether	2.389	45	434496	93.60	ug/L	94
27) Chloroprene	2.435	53	525458	95.09	ug/L	98
28) 1,1-Dichloroethane	2.435	63	238419	92.68	ug/L	98
29) Acrylonitrile	2.435	52	316496	477.27	ug/L	85
30) ETBE	2.581	59	409615	95.57	ug/L	96
31) Vinyl acetate	2.558	43	1670450	512.12	ug/L	97
32) cis-1,2-Dichloroethene	2.720	96	128923	90.16	ug/L	98
33) 2,2-Dichloropropane	2.781	77	163365	92.35	ug/L	97
34) Bromochloromethane	2.820	128	60474	83.35	ug/L	90
35) Cyclohexane	2.858	56	237124	92.41	ug/L	93

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50665.D
Acq On : 15 Nov 2023 10:05 am
Operator : jeniferw
Sample : IC1985-7
Misc : MS55275,V1A1985,,,,,
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Nov 15 13:00:05 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
36) Chloroform	2.858	83	218748	90.91	ug/L		96
37) Ethyl acetate	2.912	43	923931	507.16	ug/L		98
38) Tetrahydrofuran	2.943	42	63646	86.77	ug/L		94
40) Carbon Tetrachloride	2.958	117	177361m	98.73	ug/L		
41) 1,1,1-Trichloroethane	2.981	97	186216	94.88	ug/L		93
42) 2-Butanone	3.004	43	437802	448.26	ug/L		93
43) 1,1-Dichloropropene	3.051	75	159597	94.14	ug/L		96
44) tert-Butyl formate	3.097	59	590326	516.68	ug/L		97
45) Propionitrile	3.151	54	250204	963.02	ug/L		90
46) Methacrylonitrile	3.166	41	1034130	918.22	ug/L		97
47) Benzene	3.181	78	465721	91.38	ug/L		95
48) TAME	3.251	73	341891	95.40	ug/L		98
50) 1,2-Dichloroethane	3.274	62	174201	89.89	ug/L		93
51) Isobutyl Alcohol	3.251	43	233775	1438.76	ug/L		76
52) Tert Amyl Alcohol	3.328	59	204674	922.59	ug/L		88
53) Trichloroethene	3.505	95	130455	91.19	ug/L		91
54) Methylcyclohexane	3.528	83	222330	100.52	ug/L		97
55) Dibromomethane	3.736	93	82145	88.93	ug/L		89
56) 1,2-Dichloropropane	3.789	63	132413	91.48	ug/L		90
57) Bromodichloromethane	3.828	83	164968	93.74	ug/L		95
58) Methyl methacrylate	3.920	41	146652	90.67	ug/L		93
59) 1,4-Dioxane	3.943	88	37164	1889.15	ug/L		91
60) 2-Chloroethyl vinyl ether	4.167	63	399944	492.55	ug/L		98
61) cis-1,3-Dichloropropene	4.205	75	192743	91.92	ug/L		85
64) Toluene	4.367	91	479217	92.65	ug/L		98
65) 2-Nitropropane	4.467	41	250845	494.64	ug/L		94
66) 4-Methyl-2-pentanone	4.582	43	899682	476.44	ug/L		97
67) trans-1,3-Dichloropropene	4.613	75	177454	95.67	ug/L		94
68) Tetrachloroethene	4.628	166	142939	100.25	ug/L		95
69) Ethyl methacrylate	4.728	69	144406	93.16	ug/L		90
70) 1,1,2-Trichloroethane	4.713	83	96728	92.40	ug/L		97
71) Dibromochloromethane	4.836	129	132531	98.80	ug/L		100
72) 1,3-Dichloropropane	4.898	76	179291	92.80	ug/L		94
73) 1,2-Dibromoethane	4.990	107	124805	94.12	ug/L		96
74) 3,3-Dimethyl-1-Butanol	5.129	57	1319990	5113.87	ug/L		96
75) 2-hexanone	5.136	43	889130	476.64	ug/L	#	69
76) 1-Chlorohexane	5.367	91	162297m	90.12	ug/L		
77) Ethylbenzene	5.398	91	525110m	94.20	ug/L		
78) Chlorobenzene	5.367	112	313861	93.24	ug/L		97
79) 1,1,1,2-Tetrachloroethane	5.406	131	121198	97.13	ug/L		94
80) m,p-Xylene	5.498	91	819835	185.60	ug/L		96
81) o-Xylene	5.798	91	432665	92.30	ug/L		99
82) Styrene	5.837	104	331883	93.81	ug/L		95
83) Bromoform	5.837	173	88931	99.97	ug/L		99
84) Isopropylbenzene	6.037	105	508714	92.80	ug/L		99
87) cis-1,4-Dichloro-2-butene	6.268	53	45085	100.18	ug/L	#	74
88) n-Propylbenzene	6.352	91	602337	95.34	ug/L		100
89) Bromobenzene	6.306	156	130083	92.74	ug/L		99
90) 1,1,2,2-Tetrachloroethane	6.375	83	155965	93.82	ug/L		95
91) 1,3,5-Trimethylbenzene	6.506	105	411155	94.67	ug/L		97

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50665.D
Acq On : 15 Nov 2023 10:05 am
Operator : jeniferw
Sample : IC1985-7
Misc : MS55275,V1A1985,,,,,
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Nov 15 13:00:05 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration

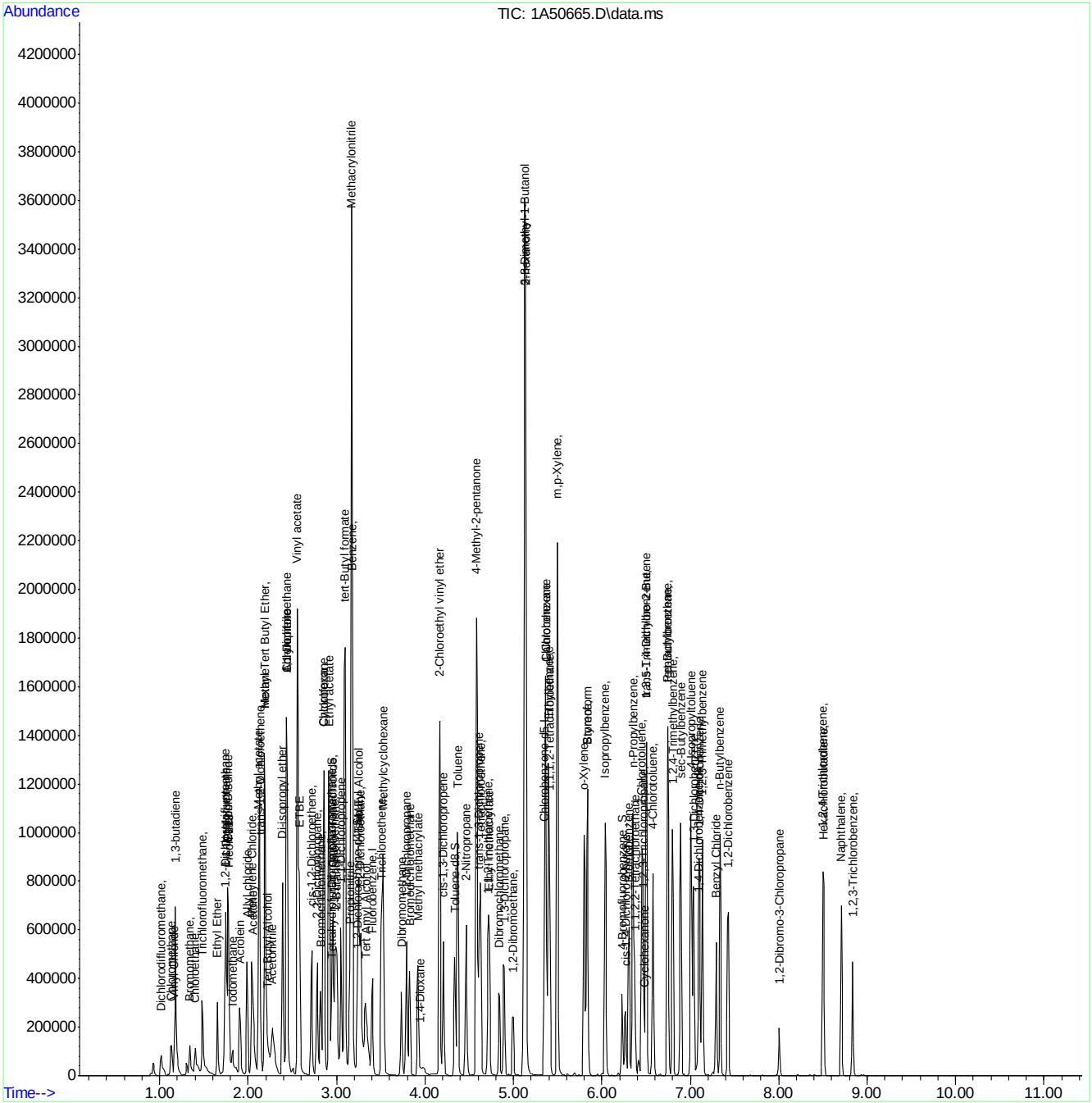
	Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
92)	2-Chlorotoluene	6.452	91	336697	91.51	ug/L		97
93)	trans-1,4-Dichloro-2-B...	6.506	53	60603	95.60	ug/L		90
94)	1,2,3-Trichloropropane	6.468	110	43639	94.61	ug/L		88
95)	Cyclohexanone	6.483	55	39181	412.30	ug/L		97
96)	4-Chlorotoluene	6.575	91	351583	91.79	ug/L		97
97)	tert-Butylbenzene	6.745	91	226964	92.83	ug/L		93
98)	1,2,4-Trimethylbenzene	6.799	105	395277	94.18	ug/L		98
99)	Pentachloroethane	6.745	167	66639	102.57	ug/L	#	65
100)	sec-Butylbenzene	6.891	105	523239	95.15	ug/L		98
101)	4-Isopropyltoluene	7.006	119	453228	95.21	ug/L		98
102)	1,3-Dichlorobenzene	7.037	146	236635	92.00	ug/L		98
103)	1,2,3-Trimethylbenzene	7.137	105	389581	92.80	ug/L		96
104)	1,4-Dichlorobenzene	7.107	146	235478	91.81	ug/L		98
105)	n-Butylbenzene	7.337	92	203763	95.59	ug/L		96
106)	Benzyl Chloride	7.291	126	58663	97.61	ug/L		95
107)	1,2-Dichlorobenzene	7.430	146	213849	93.46	ug/L		98
108)	1,2-Dibromo-3-Chloropr...	8.007	75	27340	102.88	ug/L		79
109)	Hexachlorobutadiene	8.507	225	53439	97.93	ug/L		92
110)	1,2,4-Trichlorobenzene	8.500	180	124641	98.88	ug/L		96
111)	Naphthalene	8.707	128	328466	101.38	ug/L		98
112)	1,2,3-Trichlorobenzene	8.838	180	100789	101.36	ug/L		97

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50665.D
Acq On : 15 Nov 2023 10:05 am
Operator : jeniferw
Sample : IC1985-7
Misc : MS55275,V1A1985,,,,,
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Nov 15 13:00:05 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration



Manual Integration Approval Summary

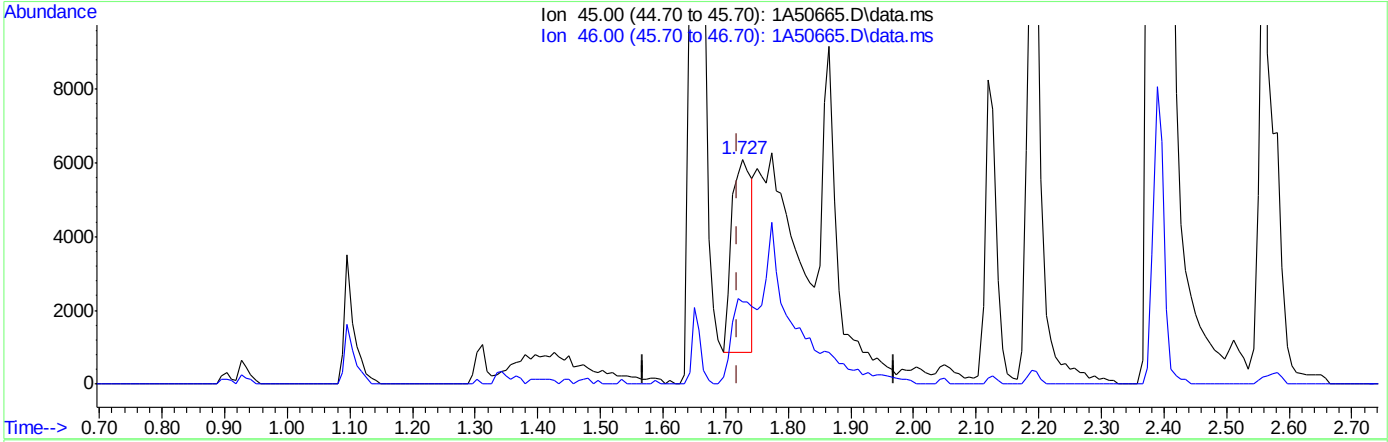
Sample Number: V1A1985-IC1985
Lab FileID: 1A50665.D
Injection Time: 11/15/23 10:05
Method: SW846 8260D
Analyst approved: 11/15/23 14:32 Jenifer Willis
Supervisor approved: 11/15/23 15:49 Karen Watson

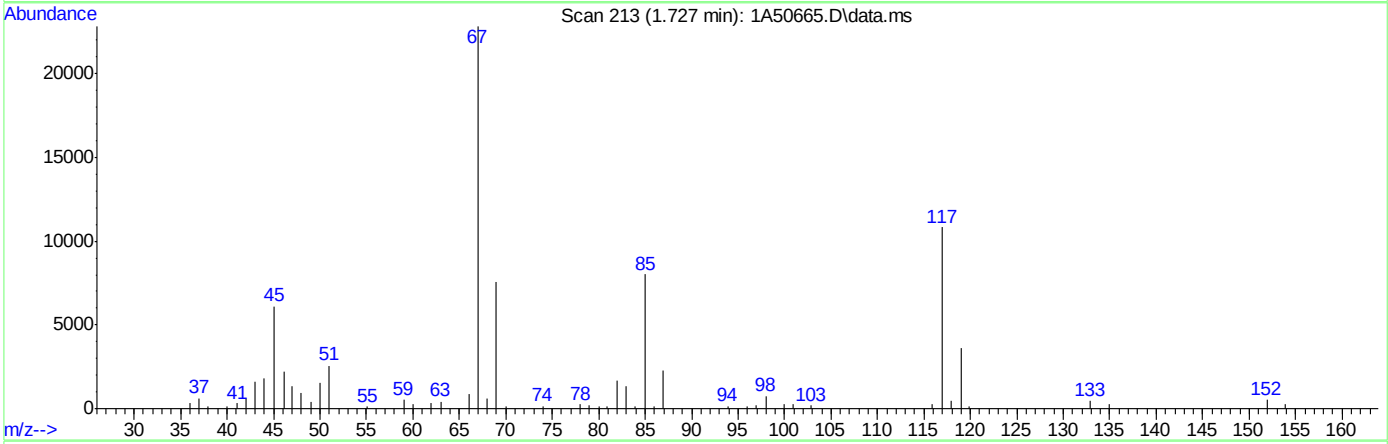
Parameter	CAS	Sig#	R.T. (min.)	Reason
Ethyl Alcohol	64-17-5		1.77	Poorly defined baseline
Carbon Tetrachloride	56-23-5		2.96	Overlapping peak
1-Chlorohexane	544-10-5		5.37	Overlapping peak
Ethylbenzene	100-41-4		5.40	Overlapping peak

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50665.D
Acq On : 15 Nov 2023 10:05 am
Operator : jeniferw
Sample : IC1945-7
Misc : MS55275,V1A1945,,,,,
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Nov 15 12:47:41 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50665.D\data.ms

(10) Ethanol

1.727min (+0.008) 520.82ug/L

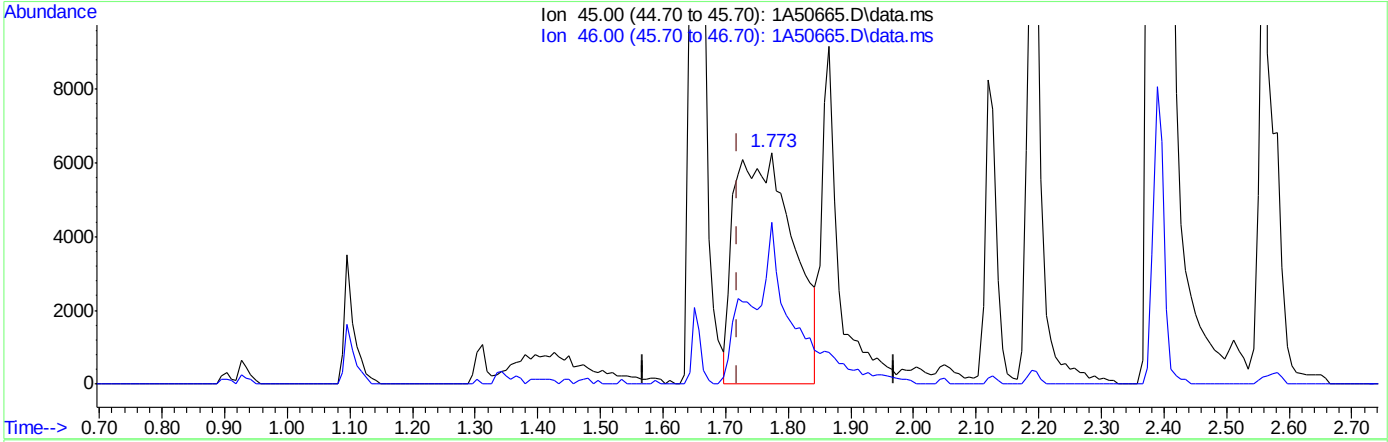
response 11809

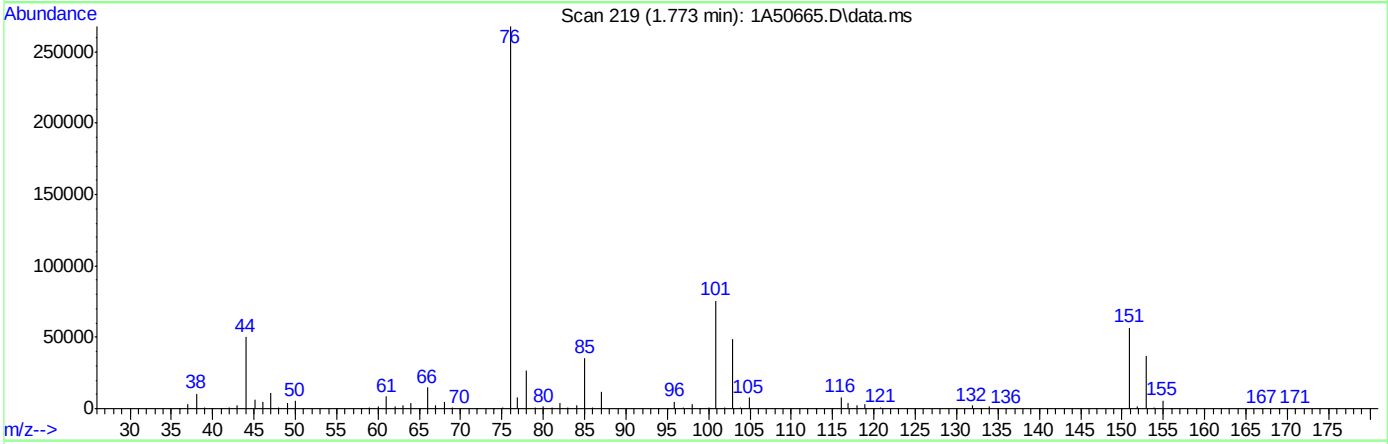
Ion	Exp%	Act%
45.00	100	100
46.00	40.30	39.17
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50665.D
Acq On : 15 Nov 2023 10:05 am
Operator : jeniferw
Sample : IC1945-7
Misc : MS55275,V1A1945,,,,,
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Nov 15 12:47:41 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50665.D\data.ms

(10) Ethanol

1.773min (+0.054) 1798.39ug/L m

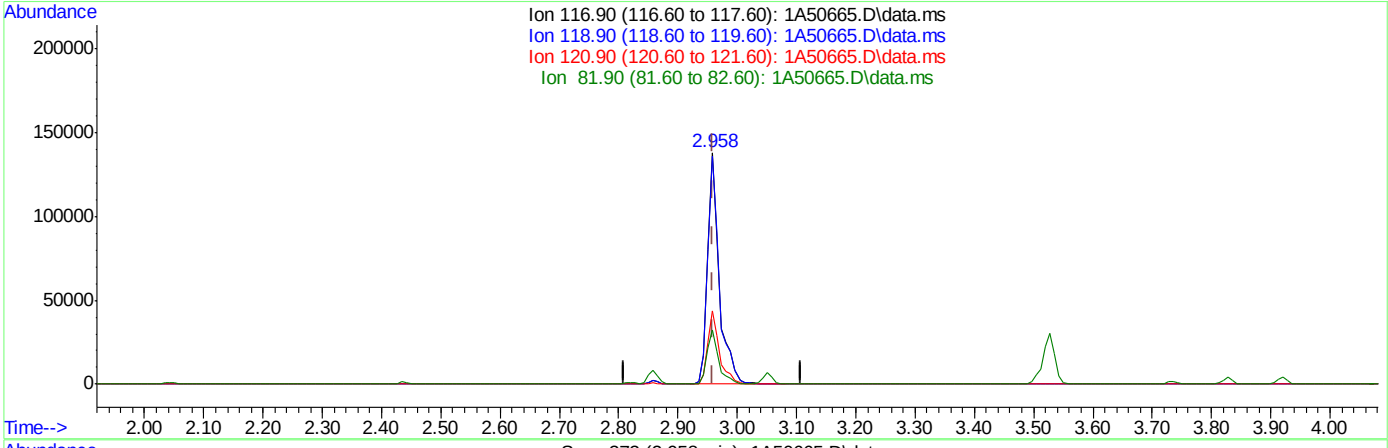
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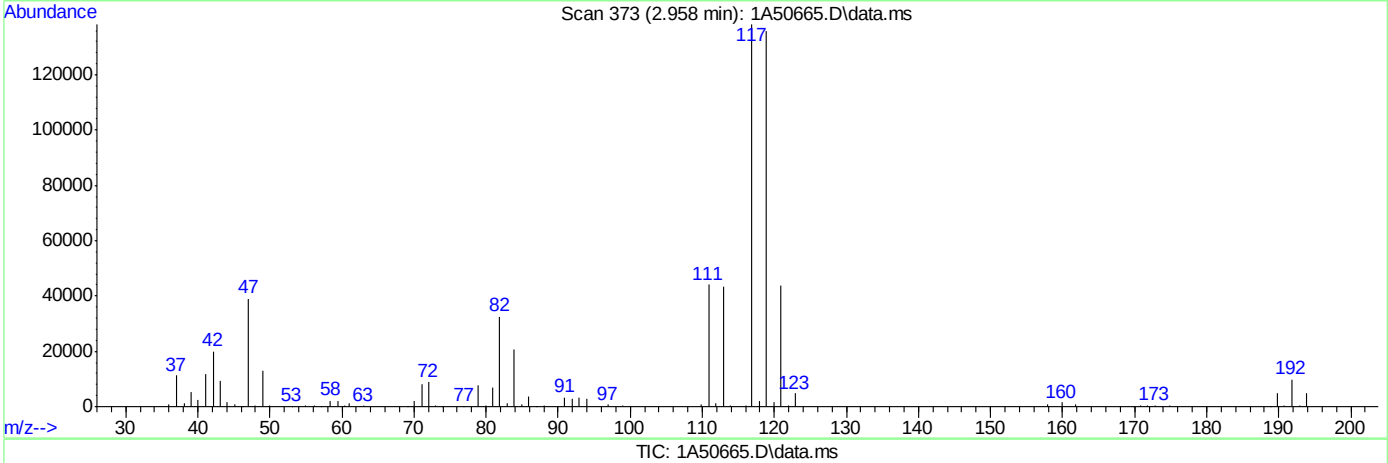
Ion	Exp%	Act%
45.00	100	100
46.00	40.30	69.80#
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50665.D
Acq On : 15 Nov 2023 10:05 am
Operator : jeniferw
Sample : IC1945-7
Misc : MS55275,V1A1945,,,,,
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Quant Time: Nov 15 12:47:41 2023
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Response via : Initial Calibration





TIC: 1A50665.D\data.ms

(40) Carbon Tetrachloride ( )

2.958min (-0.001) 107.75ug/L

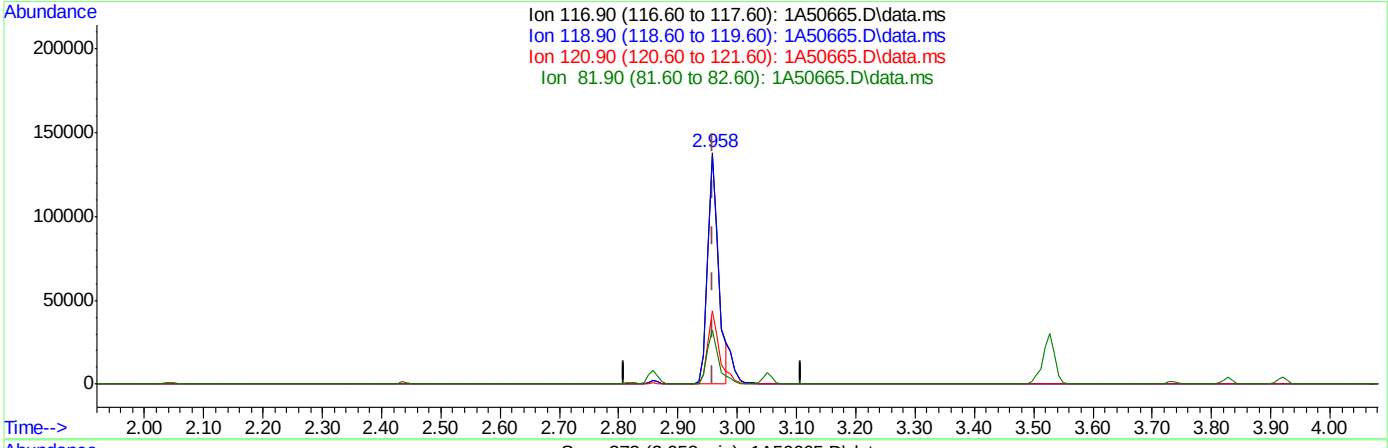
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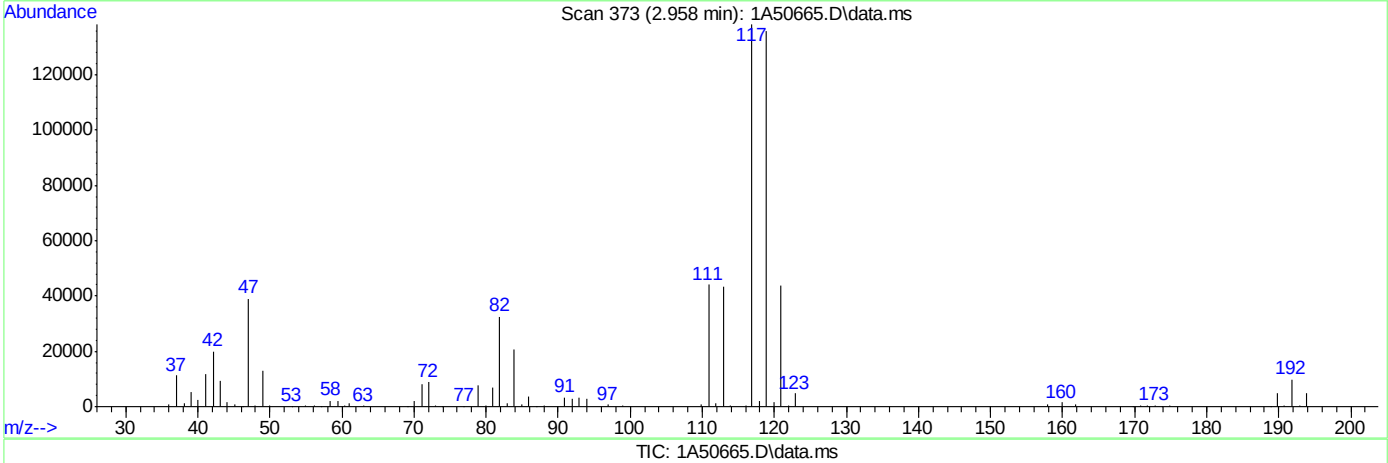
Ion	Exp%	Act%
116.90	100	100
118.90	94.50	98.19
120.90	31.10	31.60
81.90	25.40	23.61

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50665.D
Acq On : 15 Nov 2023 10:05 am
Operator : jeniferw
Sample : IC1945-7
Misc : MS55275,V1A1945,,,,,
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Nov 15 12:47:41 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50665.D\data.ms

(40) Carbon Tetrachloride ( )

2.958min (-0.001) 98.73ug/L m

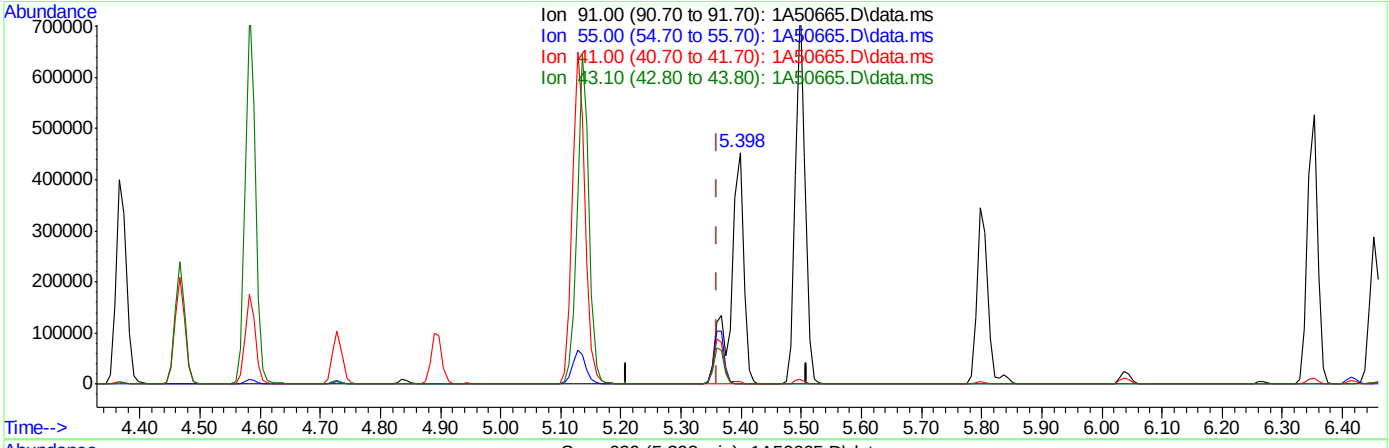
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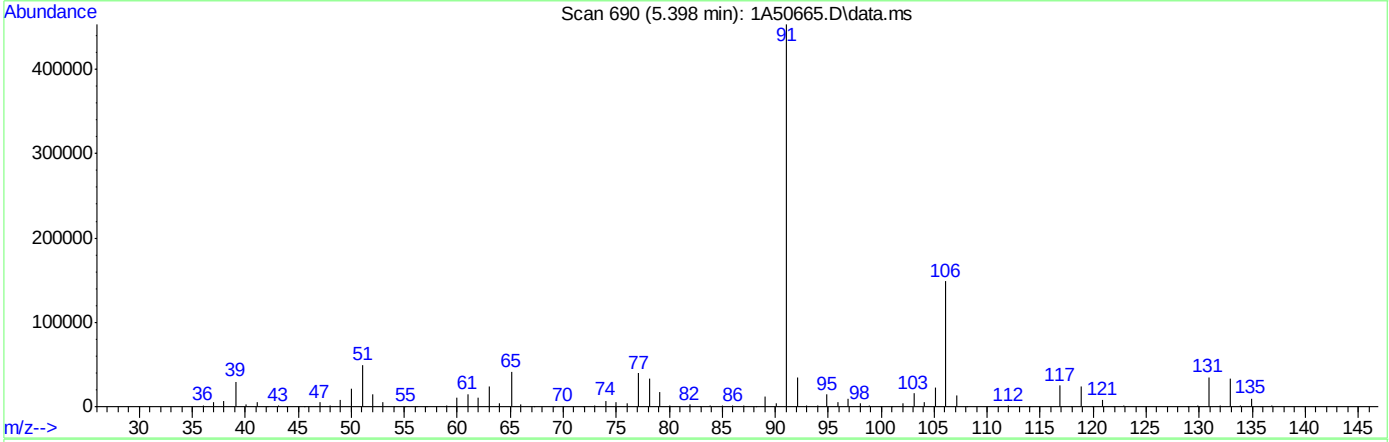
Ion	Exp%	Act%
116.90	100	100
118.90	94.50	98.19
120.90	31.10	31.60
81.90	25.40	23.61

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50665.D
Acq On : 15 Nov 2023 10:05 am
Operator : jeniferw
Sample : IC1945-7
Misc : MS55275,V1A1945,,,,,
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Nov 15 12:47:41 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50665.D\data.ms

(76) 1-Chlorohexane

5.398min (+0.038) 381.40ug/L

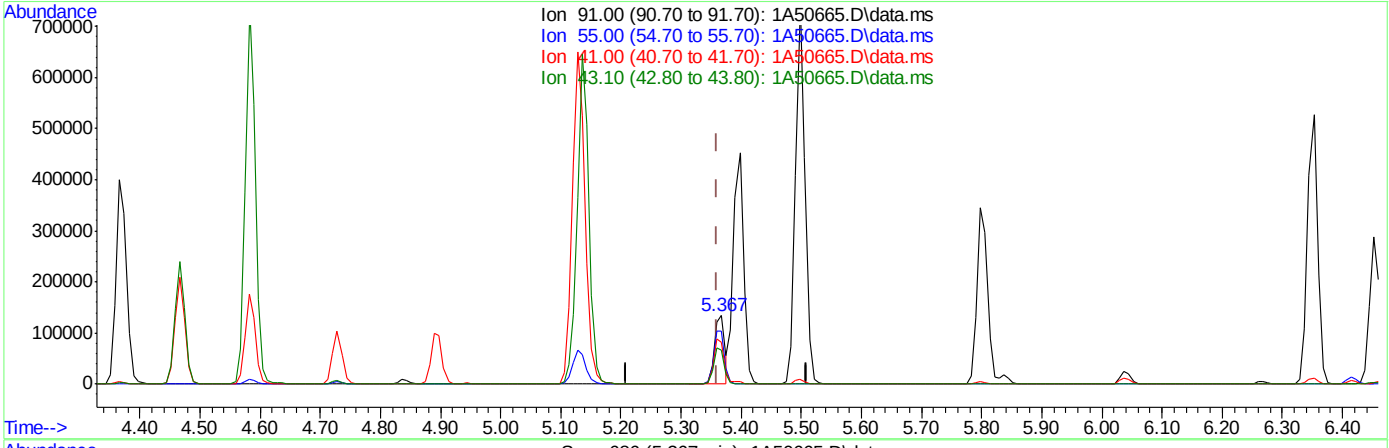
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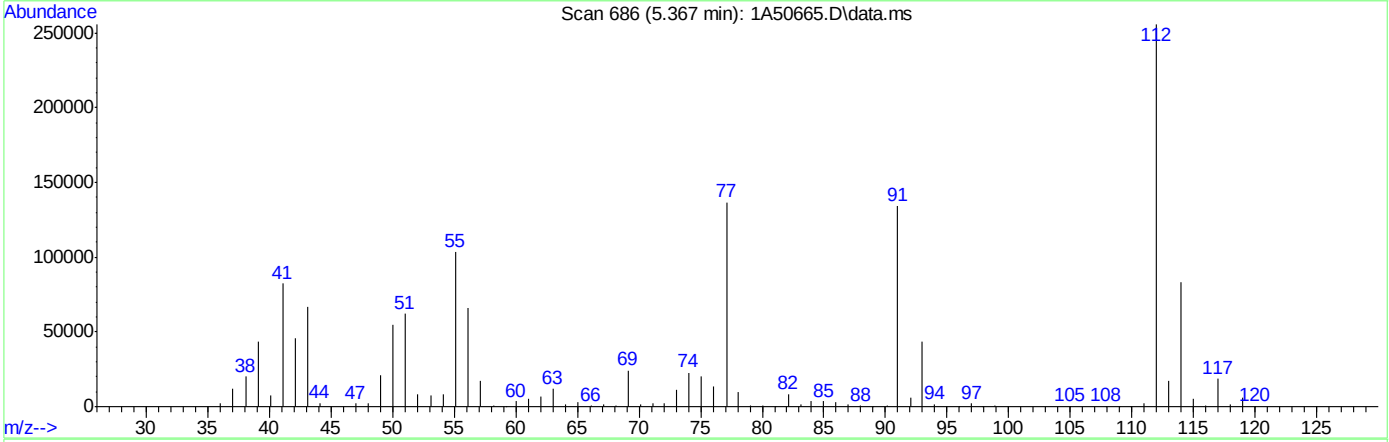
Ion	Exp%	Act%
91.00	100	100
55.00	74.60	0.12#
41.00	53.90	1.00#
43.10	42.90	0.18#

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50665.D
Acq On : 15 Nov 2023 10:05 am
Operator : jeniferw
Sample : IC1945-7
Misc : MS55275,V1A1945,,,,,
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Nov 15 12:47:41 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50665.D\data.ms

(76) 1-Chlorohexane

5.367min (+0.007) 90.12ug/L m

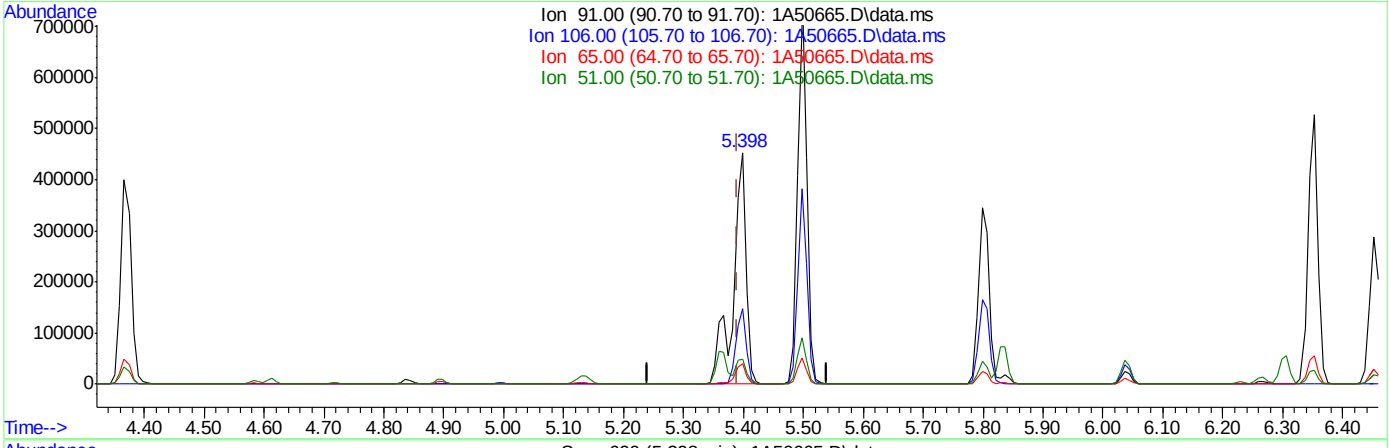
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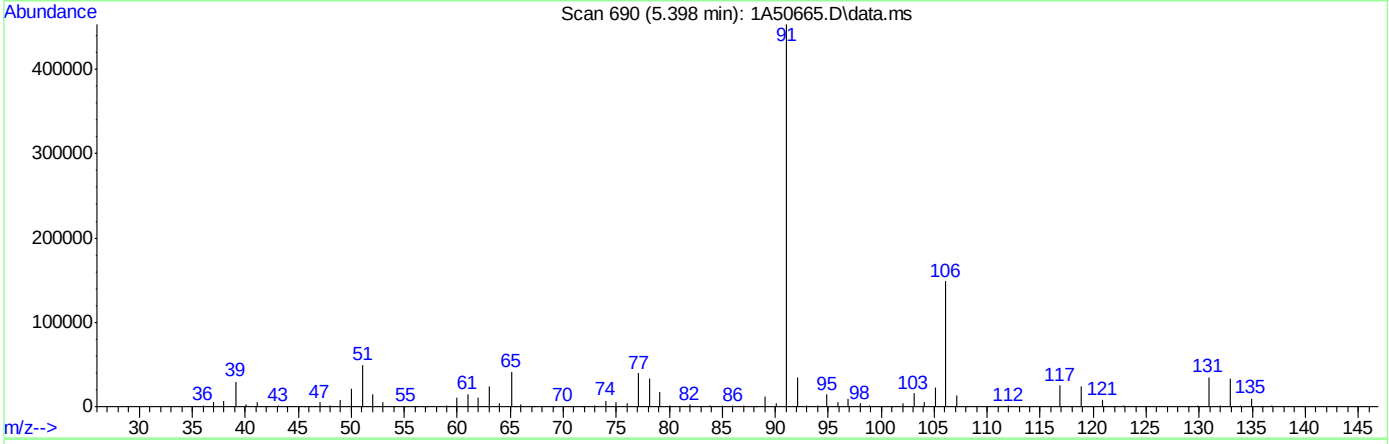
Ion	Exp%	Act%
91.00	100	100
55.00	74.60	77.01
41.00	53.90	61.38
43.10	42.90	49.64

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50665.D
Acq On : 15 Nov 2023 10:05 am
Operator : jeniferw
Sample : IC1945-7
Misc : MS55275,V1A1945,,,,,
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Nov 15 12:47:41 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50665.D\data.ms

(77) Ethylbenzene

5.398min (+0.007) 123.31ug/L

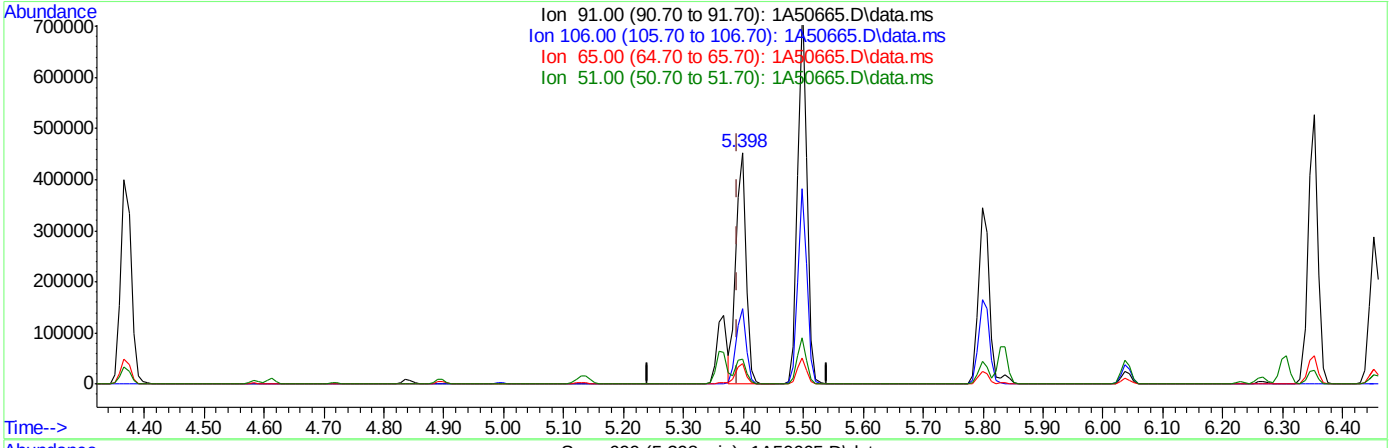
response 687414

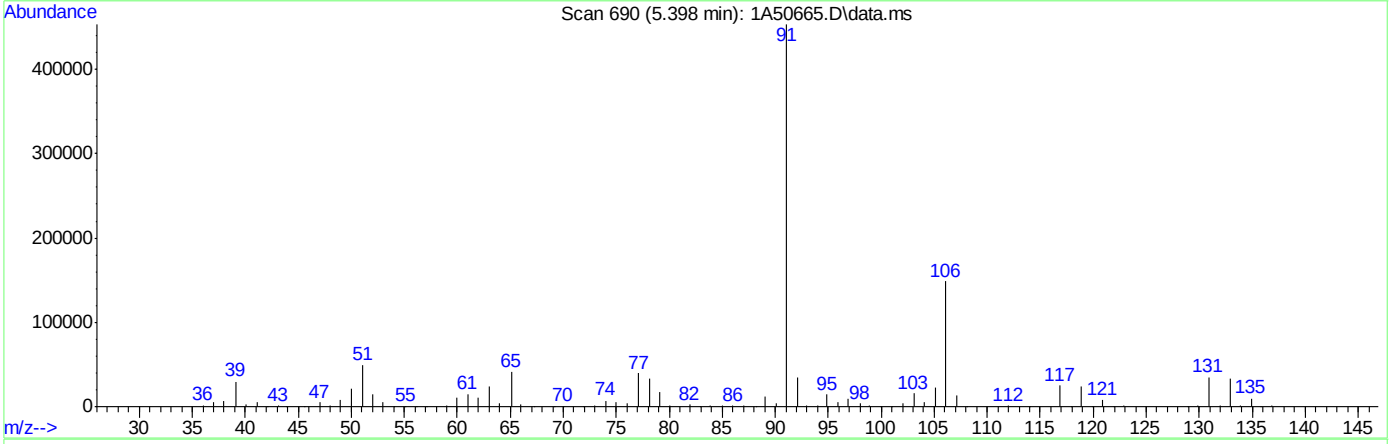
Ion	Exp%	Act%
91.00	100	100
106.00	32.00	32.77
65.00	8.30	9.01
51.00	10.10	10.94

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50665.D
Acq On : 15 Nov 2023 10:05 am
Operator : jeniferw
Sample : IC1945-7
Misc : MS55275,V1A1945,,,,,
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Nov 15 12:47:41 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Tue Nov 14 14:48:25 2023
Response via : Initial Calibration





TIC: 1A50665.D\data.ms

(77) Ethylbenzene

5.398min (+0.007) 94.20ug/L m

response 525110

Ion	Exp%	Act%
91.00	100	100
106.00	32.00	32.77
65.00	8.30	9.01
51.00	10.10	10.94

Manual Integrations APPROVED (compounds with "m" flag)
Karen Watson
11/15/23 15:49

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50669.D
Acq On : 15 Nov 2023 1:32 pm
Operator : jeniferw
Sample : ICV1985-5
Misc : MS55275,V1A1985,,,,,
ALS Vial : 61 Sample Multiplier: 1

Quant Time: Nov 15 14:28:08 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	3.405	96	217169	50.00	ug/L	0.00
62) Chlorobenzene-d5	5.352	117	154189	50.00	ug/L	0.00
85) 1,4-Dichlorobenzene-d4	7.099	152	78807	50.00	ug/L	0.00
System Monitoring Compounds						
39) Dibromofluoromethane	2.958	113	62775	49.04	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 98.08%			
49) 1,2-Dichloroethane-d4	3.235	65	70799	49.97	ug/L	0.00
Spiked Amount 50.000	Range 79 - 125		Recovery = 99.94%			
63) Toluene-d8	4.336	98	205822	49.99	ug/L	0.00
Spiked Amount 50.000	Range 85 - 112		Recovery = 99.98%			
86) 4-Bromofluorobenzene	6.237	174	66715	50.73	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 101.46%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.019	85	46386	55.93	ug/L	96
3) Chloromethane	1.126	50	55314	44.52	ug/L	99
4) 1,3-butadiene	1.180	39	51777	33.24	ug/L	97
5) Vinyl Chloride	1.173	62	55567	44.77	ug/L	98
6) Bromomethane	1.342	94	19730	43.95	ug/L	95
7) Chloroethane	1.404	64	33087	41.79	ug/L	93
8) Trichlorofluoromethane	1.488	101	76910	43.52	ug/L	99
9) Ethyl Ether	1.658	59	44165	40.80	ug/L	95
10) Ethanol	1.711	45	18538m	749.78	ug/L	
11) 1,2-Dichlorotrifluoroe...	1.742	67	59446	42.14	ug/L	91
12) 1,1-Dichloroethene	1.758	61	75580	40.31	ug/L	97
13) Freon 113	1.781	101	51029	47.72	ug/L	93
14) Carbon Disulfide	1.781	76	135456	38.98	ug/L	92
15) Iodomethane	1.827	142	33579	41.10	ug/L	98
16) Acrolein	1.904	56	69540	208.19	ug/L	99
17) Allyl chloride	1.988	41	79285	44.19	ug/L	92
18) Methylene Chloride	2.042	49	76815	41.92	ug/L	97
19) Acetone	2.050	43	104161	193.14	ug/L	96
20) Methyl acetate	2.119	43	263479	180.76	ug/L	96
21) trans-1,2-Dichloroethene	2.135	61	75519	40.08	ug/L	94
22) Hexane	2.196	56	54490	42.26	ug/L	98
23) Methyl Tert Butyl Ether	2.189	73	140375	40.02	ug/L	96
24) Acetonitrile	2.273	41	87012	461.07	ug/L	99
25) Tert Butyl Alcohol	2.212	59	100478	389.21	ug/L	97
26) Di-isopropyl ether	2.389	45	171164	38.86	ug/L	94
27) Chloroprene	2.435	53	204637	37.94	ug/L	97
28) 1,1-Dichloroethane	2.443	63	92777	37.94	ug/L	98
29) Acrylonitrile	2.435	52	127797	195.63	ug/L	98
30) ETBE	2.581	59	166506	40.99	ug/L	96
31) Vinyl acetate	2.558	43	650451	198.49	ug/L	97
32) cis-1,2-Dichloroethene	2.720	96	51531	38.11	ug/L	96
33) 2,2-Dichloropropane	2.781	77	71327	41.81	ug/L	97
34) Bromochloromethane	2.820	128	27648	40.37	ug/L	90
35) Cyclohexane	2.858	56	95794	40.52	ug/L	90

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50669.D
Acq On : 15 Nov 2023 1:32 pm
Operator : jeniferw
Sample : ICV1985-5
Misc : MS55275,V1A1985,,,,,
ALS Vial : 61 Sample Multiplier: 1

Quant Time: Nov 15 14:28:08 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
36) Chloroform	2.858	83	88145	39.27	ug/L		95
37) Ethyl acetate	2.912	43	378775	207.17	ug/L		98
38) Tetrahydrofuran	2.943	42	25182	36.41	ug/L		95
40) Carbon Tetrachloride	2.958	117	70233m	40.33	ug/L		
41) 1,1,1-Trichloroethane	2.989	97	75521	40.12	ug/L		97
42) 2-Butanone	3.004	43	188309	206.01	ug/L		95
43) 1,1-Dichloropropene	3.051	75	67623	41.18	ug/L		92
44) tert-Butyl formate	3.097	59	252894	225.53	ug/L		96
45) Propionitrile	3.143	54	108648	386.18	ug/L		98
46) Methacrylonitrile	3.166	41	437746	412.63	ug/L		97
47) Benzene	3.181	78	189526	39.31	ug/L		97
48) TAME	3.251	73	137161	40.30	ug/L		89
50) 1,2-Dichloroethane	3.274	62	69842	38.74	ug/L		92
51) Isobutyl Alcohol	3.258	43	129202	833.49	ug/L		98
52) Tert Amyl Alcohol	3.328	59	82909	390.61	ug/L		89
53) Trichloroethene	3.512	95	52491	38.95	ug/L		98
54) Methylcyclohexane	3.528	83	89011	41.39	ug/L		98
55) Dibromomethane	3.736	93	33156	38.46	ug/L		86
56) 1,2-Dichloropropane	3.789	63	55486	40.66	ug/L		90
57) Bromodichloromethane	3.828	83	63094	37.27	ug/L	#	96
58) Methyl methacrylate	3.920	41	60023	38.19	ug/L		92
59) 1,4-Dioxane	3.943	88	13535	734.20	ug/L		92
60) 2-Chloroethyl vinyl ether	4.167	63	169140	214.00	ug/L		98
61) cis-1,3-Dichloropropene	4.213	75	77078	39.15	ug/L		89
64) Toluene	4.374	91	197025	39.31	ug/L		99
65) 2-Nitropropane	4.467	41	98525	189.02	ug/L		94
66) 4-Methyl-2-pentanone	4.582	43	373869	205.39	ug/L		96
67) trans-1,3-Dichloropropene	4.613	75	66615	37.54	ug/L		92
68) Tetrachloroethene	4.636	166	58857	41.51	ug/L		98
69) Ethyl methacrylate	4.728	69	67316	46.00	ug/L		89
70) 1,1,2-Trichloroethane	4.721	83	38790	38.39	ug/L		96
71) Dibromochloromethane	4.844	129	53740	41.83	ug/L		99
72) 1,3-Dichloropropane	4.898	76	75862	40.79	ug/L		94
73) 1,2-Dibromoethane	4.998	107	50480	38.94	ug/L		100
74) 3,3-Dimethyl-1-Butanol	5.129	57	485678	2001.94	ug/L		97
75) 2-hexanone	5.144	43	375244	212.85	ug/L	#	74
76) 1-Chlorohexane	5.367	91	72908m	41.88	ug/L		
77) Ethylbenzene	5.398	91	207198	38.20	ug/L		99
78) Chlorobenzene	5.367	112	128443	38.70	ug/L		97
79) 1,1,1,2-Tetrachloroethane	5.413	131	48933	40.53	ug/L		95
80) m,p-Xylene	5.498	91	329578	76.63	ug/L		97
81) o-Xylene	5.806	91	170854	37.33	ug/L		97
82) Styrene	5.837	104	132441	38.18	ug/L		96
83) Bromoform	5.844	173	34532	39.81	ug/L		98
84) Isopropylbenzene	6.044	105	204618	38.41	ug/L		99
87) cis-1,4-Dichloro-2-butene	6.268	53	23118	49.15	ug/L	#	78
88) n-Propylbenzene	6.352	91	242060	39.31	ug/L		100
89) Bromobenzene	6.306	156	55195	40.37	ug/L		93
90) 1,1,2,2-Tetrachloroethane	6.375	83	62988	39.46	ug/L		98
91) 1,3,5-Trimethylbenzene	6.506	105	168226	39.80	ug/L		99

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50669.D
Acq On : 15 Nov 2023 1:32 pm
Operator : jeniferw
Sample : ICV1985-5
Misc : MS55275,V1A1985,,,,,
ALS Vial : 61 Sample Multiplier: 1

Quant Time: Nov 15 14:28:08 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration

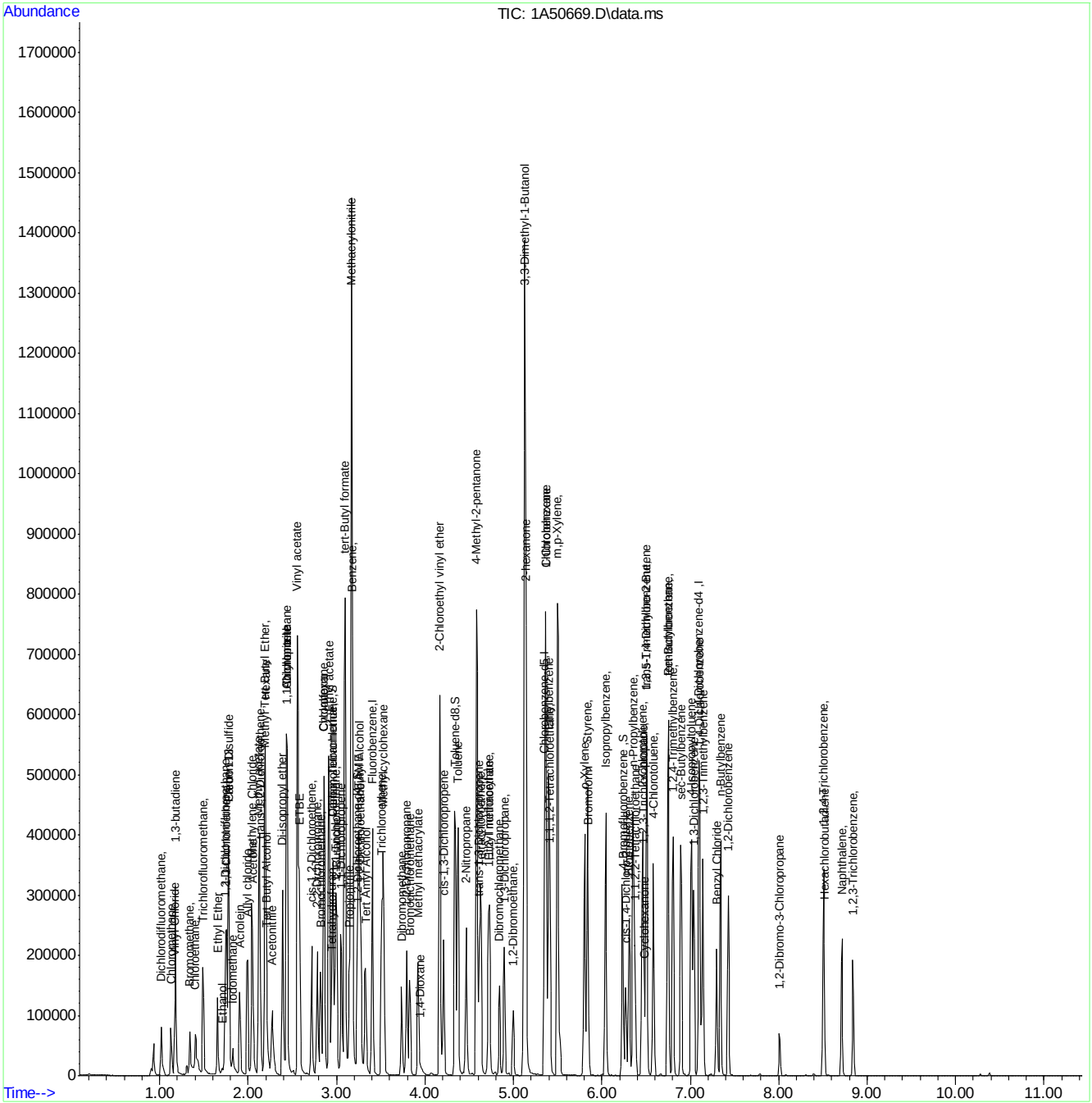
	Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
92)	2-Chlorotoluene	6.460	91	134020	37.91	ug/L		93
93)	trans-1,4-Dichloro-2-B...	6.506	53	25208	40.94	ug/L		92
94)	1,2,3-Trichloropropane	6.468	110	18938	43.03	ug/L		77
95)	Cyclohexanone	6.483	55	24418	294.40	ug/L		98
96)	4-Chlorotoluene	6.583	91	141106	38.68	ug/L		93
97)	tert-Butylbenzene	6.753	91	92780	38.82	ug/L		93
98)	1,2,4-Trimethylbenzene	6.806	105	160538	39.64	ug/L		96
99)	Pentachloroethane	6.753	167	29852	44.44	ug/L	#	66
100)	sec-Butylbenzene	6.891	105	200869	37.62	ug/L		97
101)	4-Isopropyltoluene	7.014	119	178899	39.06	ug/L		97
102)	1,3-Dichlorobenzene	7.037	146	93704	37.99	ug/L		95
103)	1,2,3-Trimethylbenzene	7.145	105	153618	38.18	ug/L		94
104)	1,4-Dichlorobenzene	7.107	146	95486	38.25	ug/L		95
105)	n-Butylbenzene	7.345	92	85065	41.37	ug/L		97
106)	Benzyl Chloride	7.299	126	24999	43.70	ug/L	#	86
107)	1,2-Dichlorobenzene	7.430	146	84272	38.38	ug/L		96
108)	1,2-Dibromo-3-Chloropr...	8.007	75	10254	40.34	ug/L	#	88
109)	Hexachlorobutadiene	8.515	225	20859	40.95	ug/L		96
110)	1,2,4-Trichlorobenzene	8.507	180	47750	39.20	ug/L		98
111)	Naphthalene	8.715	128	119395	38.24	ug/L		97
112)	1,2,3-Trichlorobenzene	8.838	180	38161	39.42	ug/L		94

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50669.D
Acq On : 15 Nov 2023 1:32 pm
Operator : jeniferw
Sample : ICV1985-5
Misc : MS55275,V1A1985,,,,,
ALS Vial : 61 Sample Multiplier: 1

Quant Time: Nov 15 14:28:08 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration



Manual Integration Approval Summary

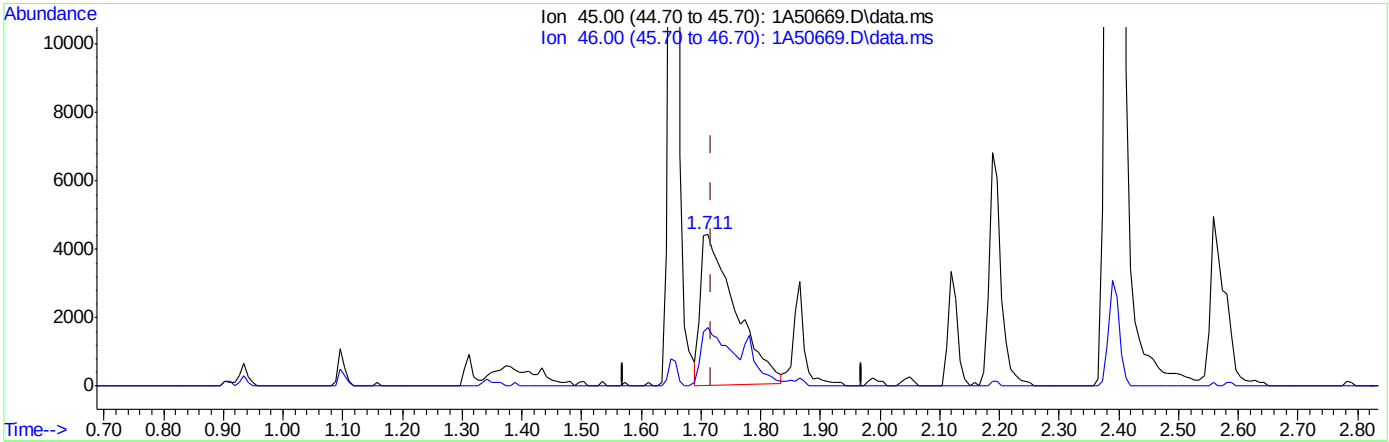
Sample Number: V1A1985-ICV1985 **Method:** SW846 8260D
Lab FileID: 1A50669.D **Analyst approved:** 11/15/23 14:32 Jenifer Willis
Injection Time: 11/15/23 13:32 **Supervisor approved:** 11/15/23 15:49 Karen Watson

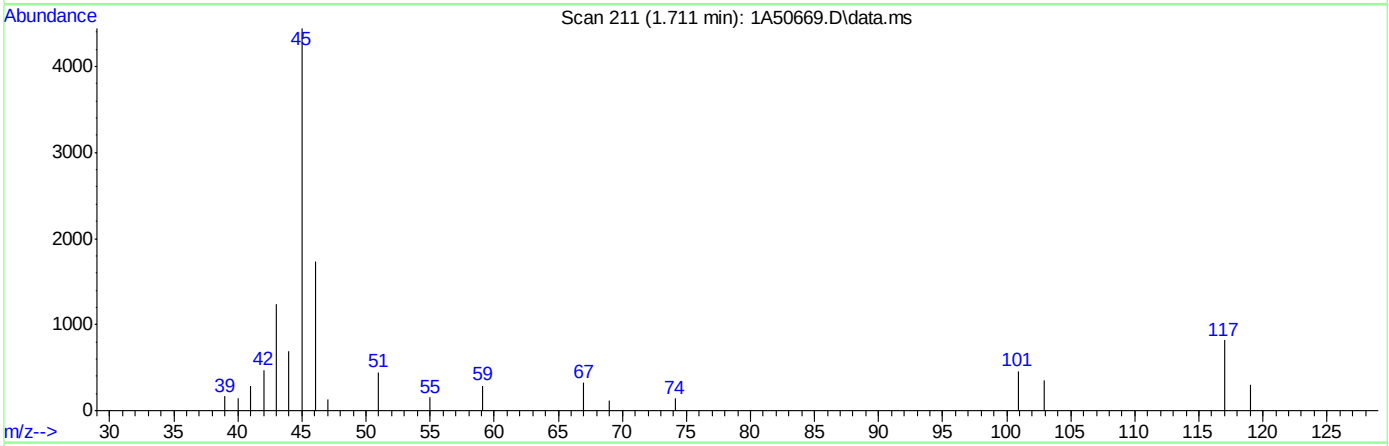
Parameter	CAS	Sig#	R.T. (min.)	Reason
Ethyl Alcohol	64-17-5		1.71	Poorly defined baseline
Carbon Tetrachloride	56-23-5		2.96	Overlapping peak
1-Chlorohexane	544-10-5		5.37	Poorly defined baseline

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50669.D
Acq On : 15 Nov 2023 1:32 pm
Operator : jeniferw
Sample : ICV1985-5
Misc : MS55275,V1A1985,,,,,
ALS Vial : 61 Sample Multiplier: 1

Quant Time: Nov 15 14:27:45 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration





TIC: 1A50669.D\data.ms

(10) Ethanol

1.711min (-0.008) 732.59ug/L

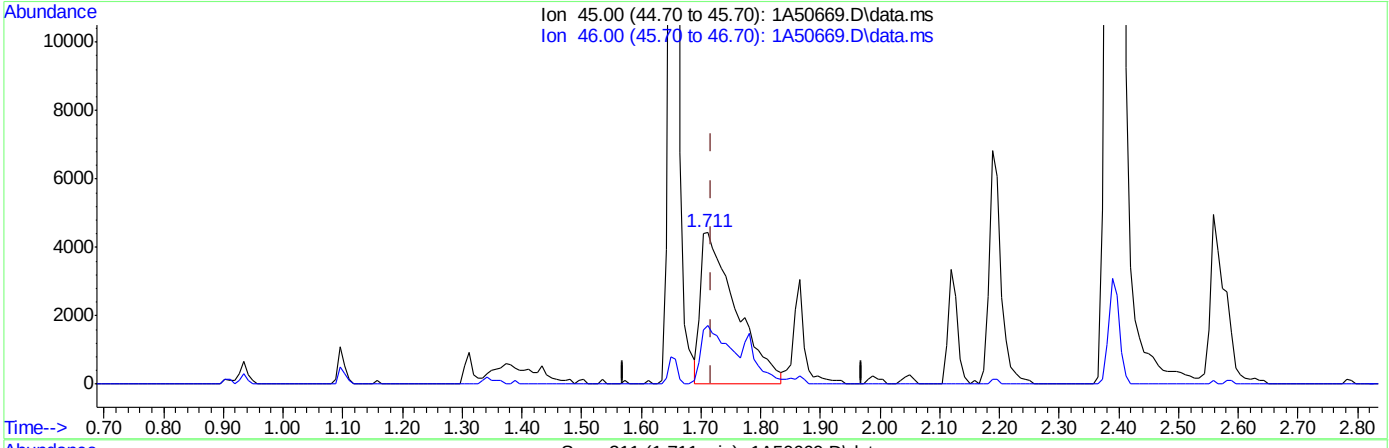
response 18113

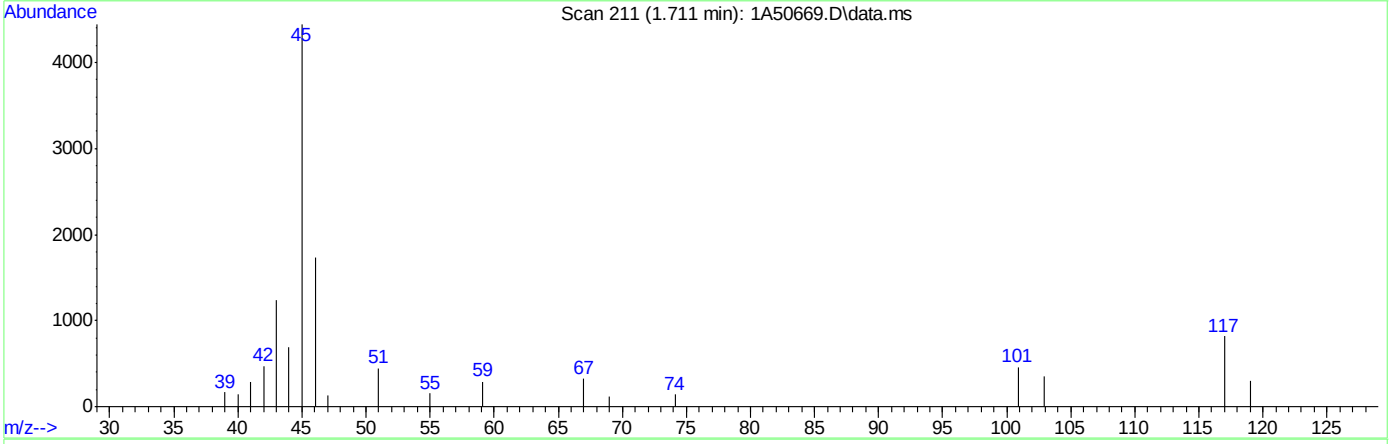
Ion	Exp%	Act%
45.00	100	100
46.00	40.30	39.44
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50669.D
Acq On : 15 Nov 2023 1:32 pm
Operator : jeniferw
Sample : ICV1985-5
Misc : MS55275,V1A1985,,,,,
ALS Vial : 61 Sample Multiplier: 1

Quant Time: Nov 15 14:27:45 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration





TIC: 1A50669.D\data.ms

(10) Ethanol

1.711min (-0.008) 749.78ug/L m

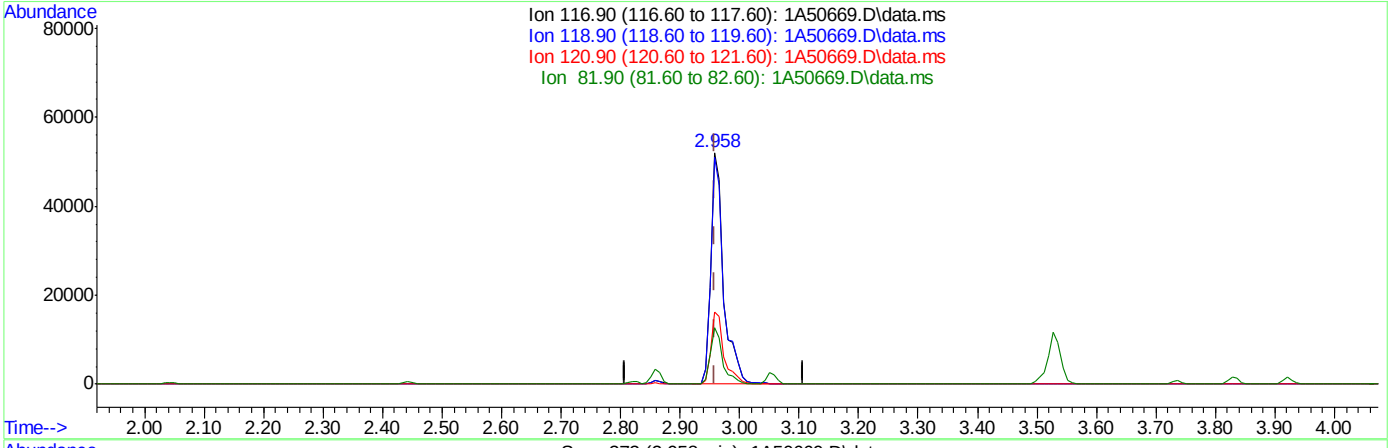
response 18538

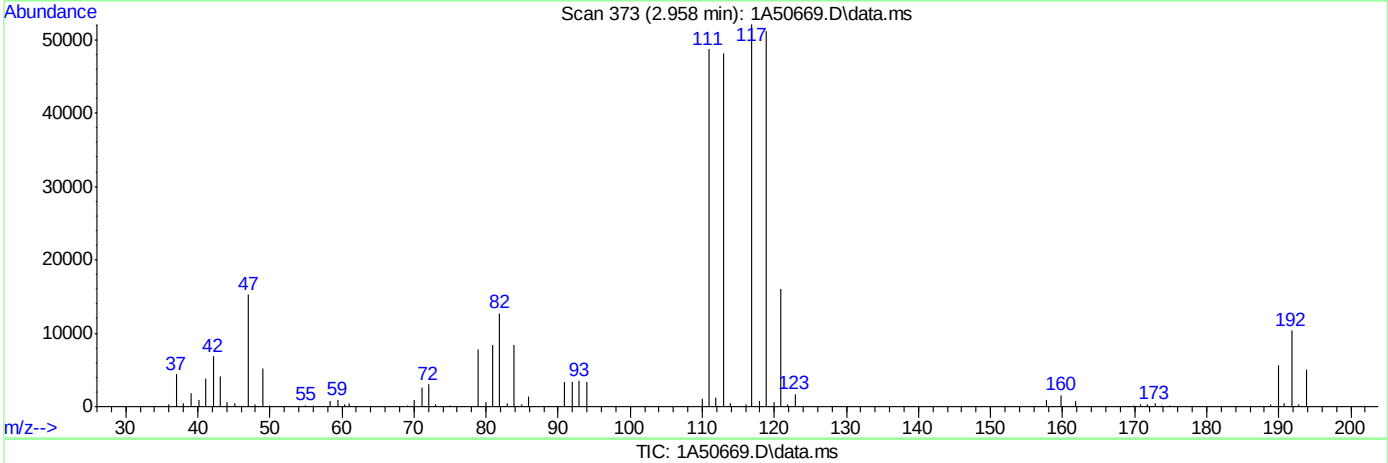
Ion	Exp%	Act%
45.00	100	100
46.00	40.30	38.98
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50669.D
Acq On : 15 Nov 2023 1:32 pm
Operator : jeniferw
Sample : ICV1985-5
Misc : MS55275,V1A1985,,,,,
ALS Vial : 61 Sample Multiplier: 1

Quant Time: Nov 15 14:27:45 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration





TIC: 1A50669.D\data.ms

(40) Carbon Tetrachloride ( )

2.958min (-0.000) 45.15ug/L

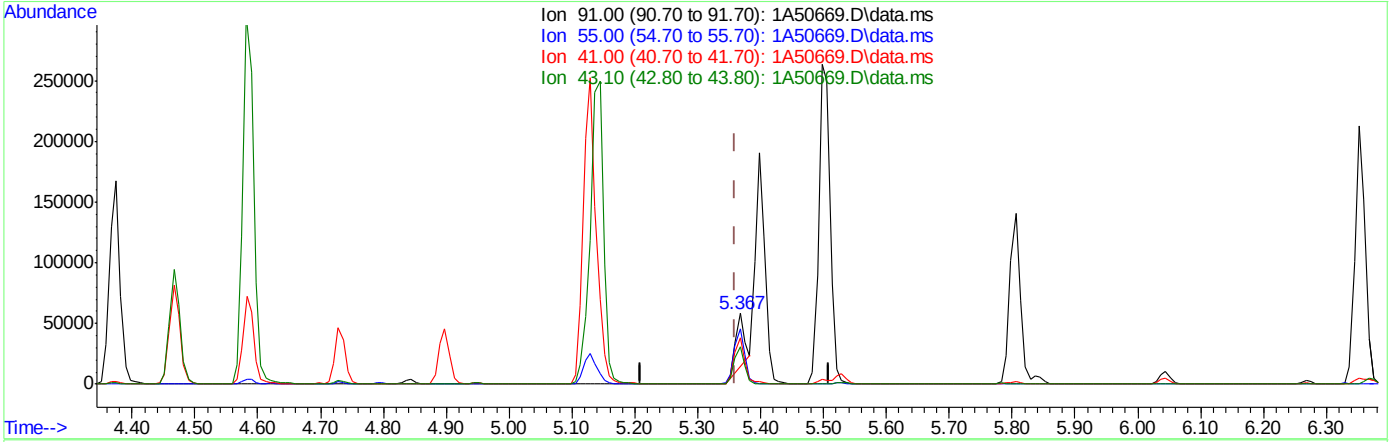
response 78626

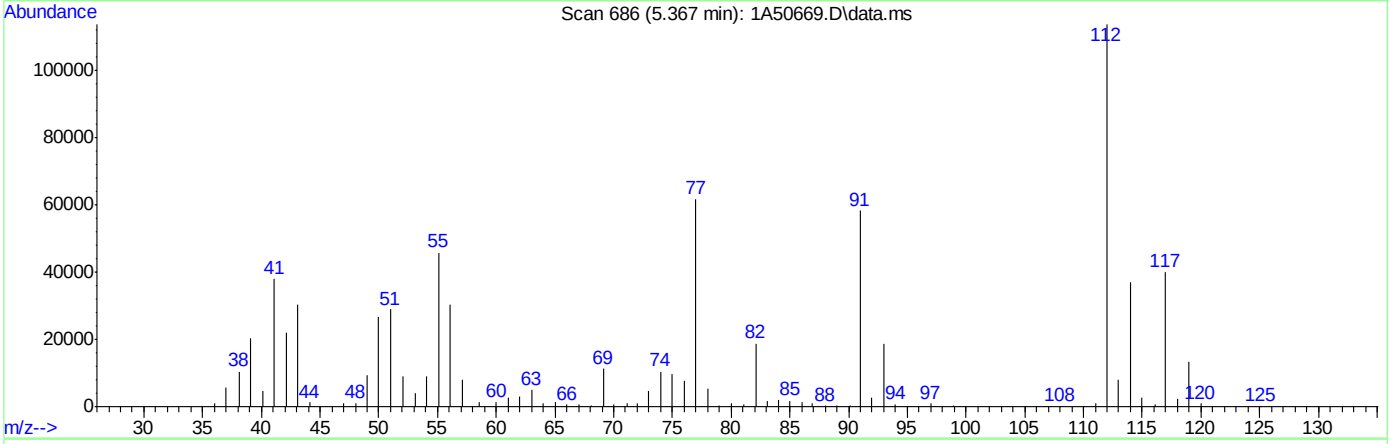
Ion	Exp%	Act%
116.90	100	100
118.90	94.50	98.13
120.90	31.10	30.92
81.90	25.40	24.37

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50669.D
Acq On : 15 Nov 2023 1:32 pm
Operator : jeniferw
Sample : ICV1985-5
Misc : MS55275,V1A1985,,,,,
ALS Vial : 61 Sample Multiplier: 1

Quant Time: Nov 15 14:27:45 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration





TIC: 1A50669.D\data.ms

(76) 1-Chlorohexane

5.367min (+0.007) 25.85ug/L

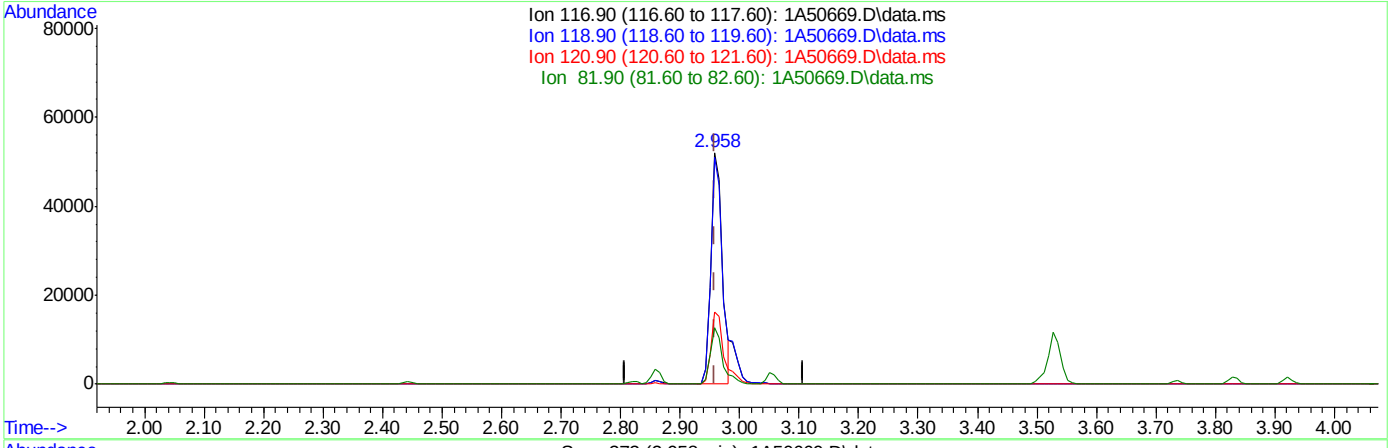
response 44999

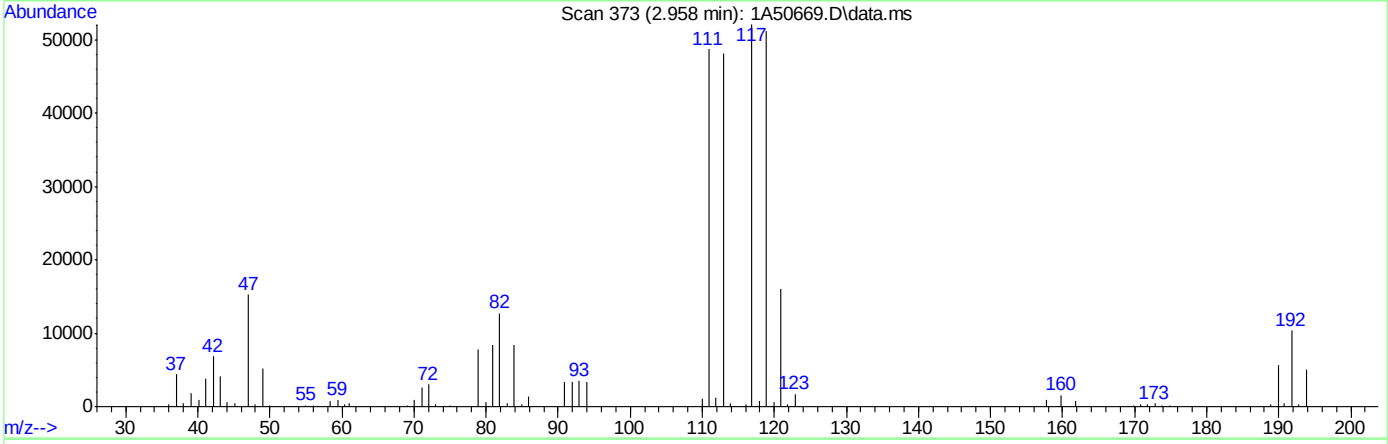
Ion	Exp%	Act%
91.00	100	100
55.00	74.60	77.21
41.00	53.90	64.34
43.10	42.90	51.82

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50669.D
Acq On : 15 Nov 2023 1:32 pm
Operator : jeniferw
Sample : ICV1985-5
Misc : MS55275,V1A1985,,,,,
ALS Vial : 61 Sample Multiplier: 1

Quant Time: Nov 15 14:27:45 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration





TIC: 1A50669.D\data.ms

(40) Carbon Tetrachloride ( )

2.958min (-0.000) 40.33ug/L m

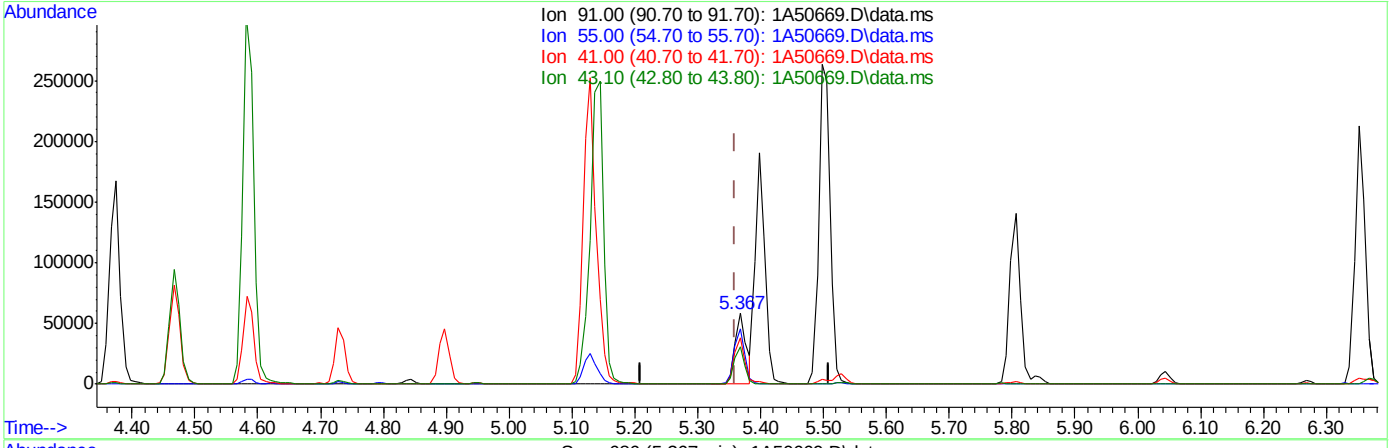
response 70233

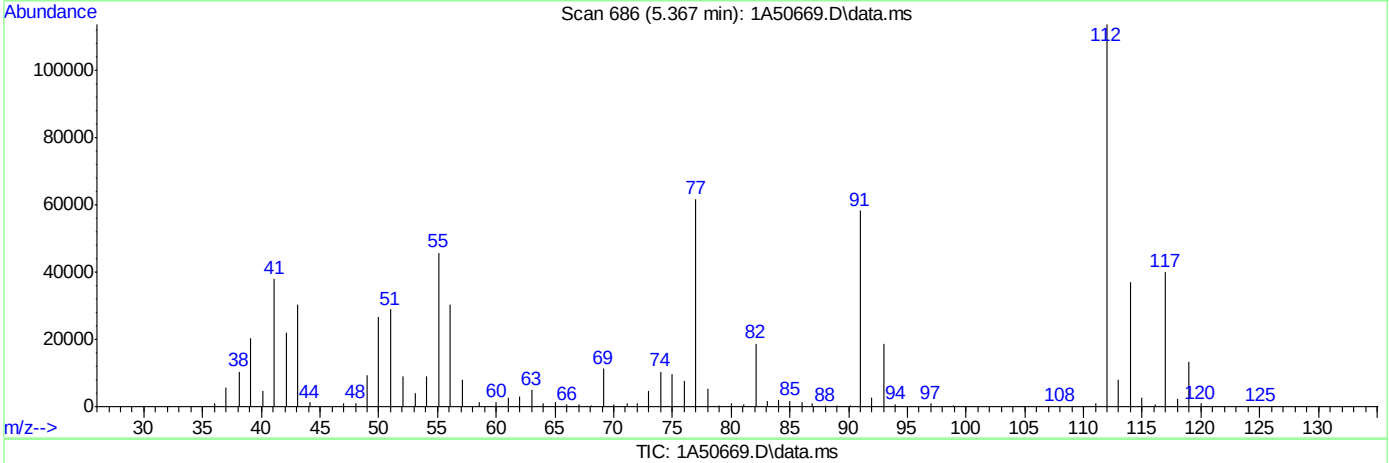
Ion	Exp%	Act%
116.90	100	100
118.90	94.50	98.13
120.90	31.10	30.92
81.90	25.40	24.37

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\11-15-2023\
Data File : 1A50669.D
Acq On : 15 Nov 2023 1:32 pm
Operator : jeniferw
Sample : ICV1985-5
Misc : MS55275,V1A1985,,,,,
ALS Vial : 61 Sample Multiplier: 1

Quant Time: Nov 15 14:27:45 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration





TIC: 1A50669.D\data.ms

(76) 1-Chlorohexane

5.367min (+0.007) 41.88ug/L m

response 72908

Ion	Exp%	Act%
91.00	100	100
55.00	74.60	78.38
41.00	53.90	65.20
43.10	42.90	52.32

Manual Integrations APPROVED (compounds with "m" flag)
Neil Christiana 12/27/23 10:23

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\12-26-2023\
Data File : 1A51661.D
Acq On : 26 Dec 2023 8:03 am
Operator : lianatr
Sample : CC1985-5
Misc : MS55601,V1A2028,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Dec 26 08:18:45 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	3.405	96	309968	50.00	ug/L	0.00
62) Chlorobenzene-d5	5.352	117	224806	50.00	ug/L	0.00
85) 1,4-Dichlorobenzene-d4	7.099	152	110640	50.00	ug/L	0.00
System Monitoring Compounds						
39) Dibromofluoromethane	2.958	113	90154	49.34	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 98.68%			
49) 1,2-Dichloroethane-d4	3.235	65	111504	55.14	ug/L	0.00
Spiked Amount 50.000	Range 79 - 125		Recovery = 110.28%			
63) Toluene-d8	4.336	98	306592	51.07	ug/L	0.00
Spiked Amount 50.000	Range 85 - 112		Recovery = 102.14%			
86) 4-Bromofluorobenzene	6.229	174	94981	51.45	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 102.90%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.019	85	53663	45.33	ug/L	99
3) Chloromethane	1.134	50	63624	35.88	ug/L	96
4) 1,3-butadiene	1.188	39	69776	31.38	ug/L	99
5) Vinyl Chloride	1.173	62	67277	37.97	ug/L	100
6) Bromomethane	1.350	94	30996	48.37	ug/L	94
7) Chloroethane	1.411	64	57921	51.25	ug/L	94
8) Trichlorofluoromethane	1.496	101	110875	43.96	ug/L	100
9) Ethyl Ether	1.658	59	56423	36.52	ug/L	91
10) Ethanol	1.719	45	26180	741.86	ug/L	99
11) 1,2-Dichlorotrifluoroe...	1.742	67	76447	37.97	ug/L	90
12) 1,1-Dichloroethene	1.758	61	103760	38.78	ug/L	95
13) Freon 113	1.788	101	60828	39.85	ug/L	96
14) Carbon Disulfide	1.781	76	179773	36.25	ug/L	86
15) Iodomethane	1.835	142	36976	31.71	ug/L	98
16) Acrolein	1.912	56	82923	173.93	ug/L	99
17) Allyl chloride	1.996	41	104820	40.93	ug/L	88
18) Methylene Chloride	2.042	49	112340	42.96	ug/L	88
19) Acetone	2.050	43	155289	201.73	ug/L	96
20) Methyl acetate	2.127	43	402672	193.55	ug/L	96
21) trans-1,2-Dichloroethene	2.135	61	101146	37.61	ug/L	93
22) Hexane	2.196	56	74652	40.56	ug/L	93
23) Methyl Tert Butyl Ether	2.196	73	183689	36.69	ug/L	80
24) Acetonitrile	2.273	41	108219	401.76	ug/L	99
25) Tert Butyl Alcohol	2.212	59	131952	358.11	ug/L	70
26) Di-isopropyl ether	2.396	45	239819	38.14	ug/L	93
27) Chloroprene	2.443	53	284664	36.98	ug/L	97
28) 1,1-Dichloroethane	2.443	63	131631	37.71	ug/L	98
29) Acrylonitrile	2.443	52	179278	192.27	ug/L	98
30) ETBE	2.581	59	215833	37.23	ug/L	94
31) Vinyl acetate	2.566	43	824252	176.23	ug/L	96
32) cis-1,2-Dichloroethene	2.720	96	71960	37.28	ug/L	93
33) 2,2-Dichloropropane	2.781	77	95600	39.26	ug/L	99
34) Bromochloromethane	2.827	128	32985	33.74	ug/L	88
35) Cyclohexane	2.858	56	131802	39.06	ug/L	88

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\12-26-2023\
Data File : 1A51661.D
Acq On : 26 Dec 2023 8:03 am
Operator : lianatr
Sample : CC1985-5
Misc : MS55601,V1A2028,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Dec 26 08:18:45 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
36) Chloroform	2.858	83	125811	39.27	ug/L		94
37) Ethyl acetate	2.920	43	489245	187.48	ug/L		98
38) Tetrahydrofuran	2.951	42	33216	33.65	ug/L		96
40) Carbon Tetrachloride	2.966	117	96246m	38.72	ug/L		
41) 1,1,1-Trichloroethane	2.989	97	112713	41.95	ug/L		94
42) 2-Butanone	3.004	43	266812	204.50	ug/L		91
43) 1,1-Dichloropropene	3.058	75	92529	39.48	ug/L		93
44) tert-Butyl formate	3.097	59	267640	167.23	ug/L		96
45) Propionitrile	3.143	54	137585	342.63	ug/L		99
46) Methacrylonitrile	3.166	41	598233	395.08	ug/L		97
47) Benzene	3.181	78	267109	38.82	ug/L		90
48) TAME	3.251	73	181283	37.32	ug/L		91
50) 1,2-Dichloroethane	3.274	62	105376	40.95	ug/L		94
51) Isobutyl Alcohol	3.258	43	169302	765.19	ug/L		97
52) Tert Amyl Alcohol	3.328	59	110064	363.31	ug/L		94
53) Trichloroethene	3.512	95	73109	38.01	ug/L		95
54) Methylcyclohexane	3.528	83	119208	38.83	ug/L		95
55) Dibromomethane	3.736	93	45842	37.26	ug/L	#	82
56) 1,2-Dichloropropane	3.797	63	71532	36.72	ug/L		95
57) Bromodichloromethane	3.828	83	90454	37.44	ug/L	#	97
58) Methyl methacrylate	3.920	41	76498	34.10	ug/L		87
59) 1,4-Dioxane	3.943	88	20237	769.11	ug/L		95
60) 2-Chloroethyl vinyl ether	4.167	63	188428	167.03	ug/L		95
61) cis-1,3-Dichloropropene	4.213	75	104629	37.23	ug/L		84
64) Toluene	4.374	91	285126	39.02	ug/L		97
65) 2-Nitropropane	4.467	41	108418	142.66	ug/L		86
66) 4-Methyl-2-pentanone	4.582	43	534762	201.50	ug/L		95
67) trans-1,3-Dichloropropene	4.613	75	98886	38.22	ug/L		87
68) Tetrachloroethene	4.636	166	81647	39.49	ug/L		99
69) Ethyl methacrylate	4.728	69	81814	38.35	ug/L		81
70) 1,1,2-Trichloroethane	4.721	83	52675	35.76	ug/L		94
71) Dibromochloromethane	4.844	129	69558	37.14	ug/L		99
72) 1,3-Dichloropropane	4.898	76	99936	36.85	ug/L		88
73) 1,2-Dibromoethane	4.998	107	66698	35.29	ug/L		95
74) 3,3-Dimethyl-1-Butanol	5.129	57	624844	1766.52	ug/L		96
75) 2-hexanone	5.136	43	508482	197.83	ug/L		89
76) 1-Chlorohexane	5.367	91	112220m	44.21	ug/L		
77) Ethylbenzene	5.398	91	303405m	38.37	ug/L		
78) Chlorobenzene	5.367	112	187019	38.65	ug/L		96
79) 1,1,1,2-Tetrachloroethane	5.413	131	66288	37.65	ug/L		96
80) m,p-Xylene	5.498	91	490791	78.27	ug/L		99
81) o-Xylene	5.806	91	256108	38.38	ug/L		98
82) Styrene	5.837	104	186653	36.91	ug/L		95
83) Bromoform	5.844	173	46859	37.06	ug/L		99
84) Isopropylbenzene	6.044	105	298530	38.43	ug/L		98
87) cis-1,4-Dichloro-2-butene	6.268	53	33083	50.10	ug/L	#	72
88) n-Propylbenzene	6.352	91	365334	42.26	ug/L		95
89) Bromobenzene	6.306	156	71941	37.48	ug/L		88
90) 1,1,2,2-Tetrachloroethane	6.375	83	89596	39.98	ug/L		95
91) 1,3,5-Trimethylbenzene	6.506	105	241784	40.75	ug/L		99

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\12-26-2023\
Data File : 1A51661.D
Acq On : 26 Dec 2023 8:03 am
Operator : lianatr
Sample : CC1985-5
Misc : MS55601,V1A2028,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Dec 26 08:18:45 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration

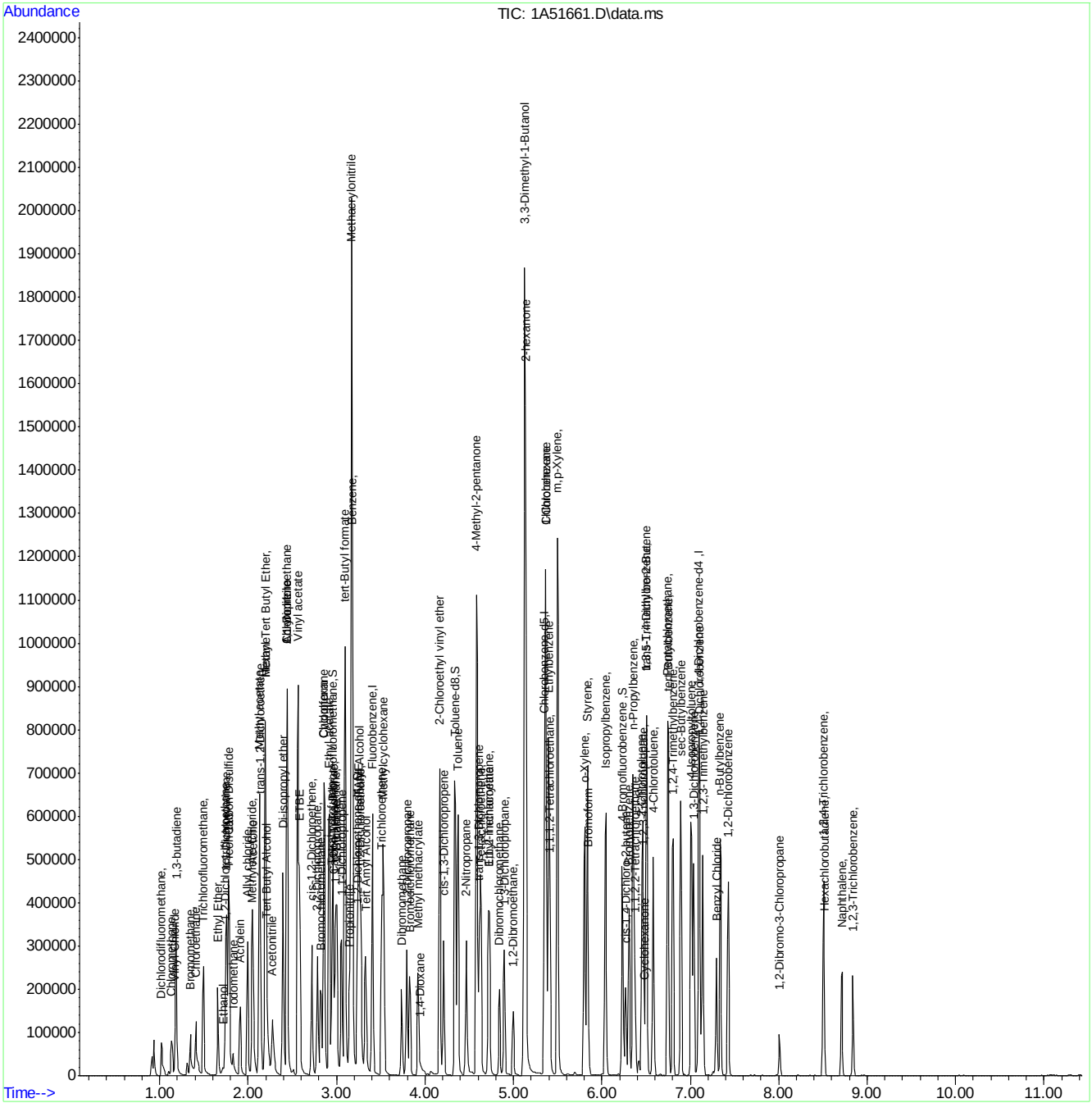
	Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
92)	2-Chlorotoluene	6.452	91	203266	40.96	ug/L		98
93)	trans-1,4-Dichloro-2-B...	6.506	53	39171	45.32	ug/L		91
94)	1,2,3-Trichloropropane	6.468	110	25148	40.70	ug/L	#	75
95)	Cyclohexanone	6.483	55	20095	172.57	ug/L		94
96)	4-Chlorotoluene	6.583	91	210336	41.07	ug/L		97
97)	tert-Butylbenzene	6.753	91	142468	42.46	ug/L		96
98)	1,2,4-Trimethylbenzene	6.806	105	233165	41.01	ug/L		97
99)	Pentachloroethane	6.745	167	38386	40.70	ug/L	#	75
100)	sec-Butylbenzene	6.891	105	302597	40.36	ug/L		96
101)	4-Isopropyltoluene	7.007	119	257620	40.06	ug/L		98
102)	1,3-Dichlorobenzene	7.037	146	137247	39.63	ug/L		95
103)	1,2,3-Trimethylbenzene	7.145	105	225491	39.92	ug/L		98
104)	1,4-Dichlorobenzene	7.107	146	137036	39.10	ug/L		96
105)	n-Butylbenzene	7.337	92	120560	41.76	ug/L		93
106)	Benzyl Chloride	7.299	126	27615	34.38	ug/L	#	87
107)	1,2-Dichlorobenzene	7.430	146	120571	39.11	ug/L		95
108)	1,2-Dibromo-3-Chloropr...	8.007	75	14099	39.51	ug/L	#	81
109)	Hexachlorobutadiene	8.515	225	26892	37.61	ug/L		92
110)	1,2,4-Trichlorobenzene	8.507	180	55842	32.65	ug/L		97
111)	Naphthalene	8.715	128	127425	29.07	ug/L		100
112)	1,2,3-Trichlorobenzene	8.838	180	41296	30.38	ug/L		94

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\12-26-2023\
Data File : 1A51661.D
Acq On : 26 Dec 2023 8:03 am
Operator : lianatr
Sample : CC1985-5
Misc : MS55601,V1A2028,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Dec 26 08:18:45 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration



Manual Integration Approval Summary

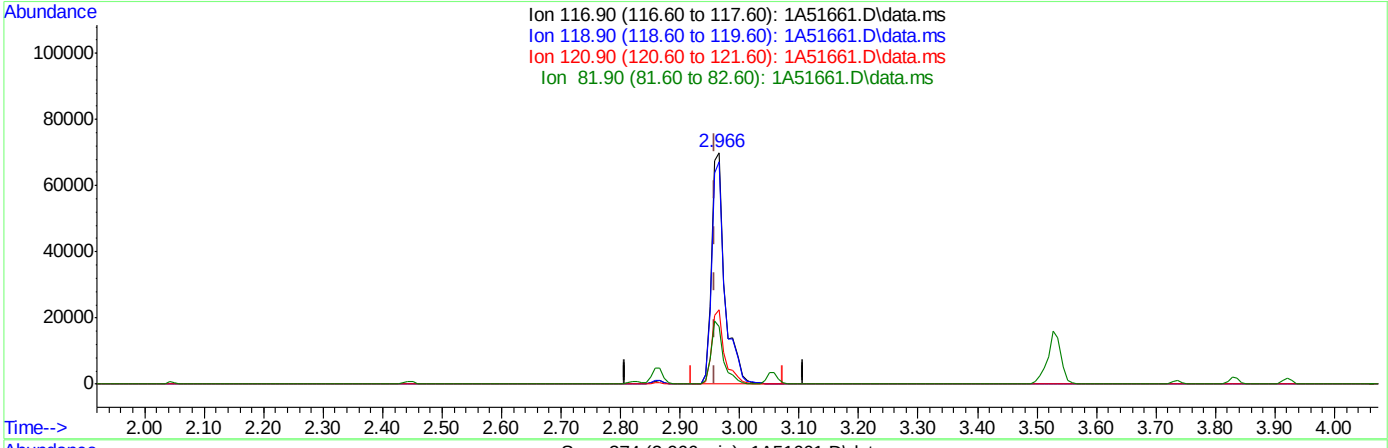
Sample Number: V1A2028-CC1985 **Method:** SW846 8260D
Lab FileID: 1A51661.D **Analyst approved:** 12/26/23 08:44 Liana Tortrodriguez
Injection Time: 12/26/23 08:03 **Supervisor approved:** 12/27/23 10:23 Neil Christiana

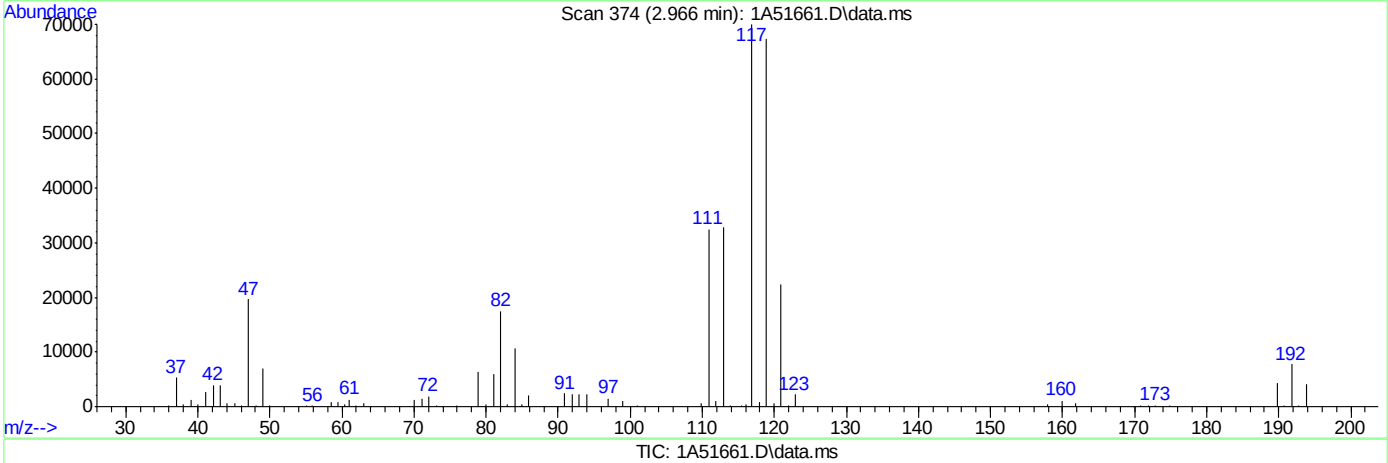
Parameter	CAS	Sig#	R.T. (min.)	Reason
Carbon Tetrachloride	56-23-5		2.97	Overlapping peak
1-Chlorohexane	544-10-5		5.37	Overlapping peak
Ethylbenzene	100-41-4		5.40	Overlapping peak

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\12-26-2023\
Data File : 1A51661.D
Acq On : 26 Dec 2023 8:03 am
Operator : lianatr
Sample : CC1985-5
Misc : MS55601,V1A2028,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Dec 26 08:18:19 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration





TIC: 1A51661.D\data.ms

(40) Carbon Tetrachloride ( )

2.966min (+0.007) 43.92ug/L

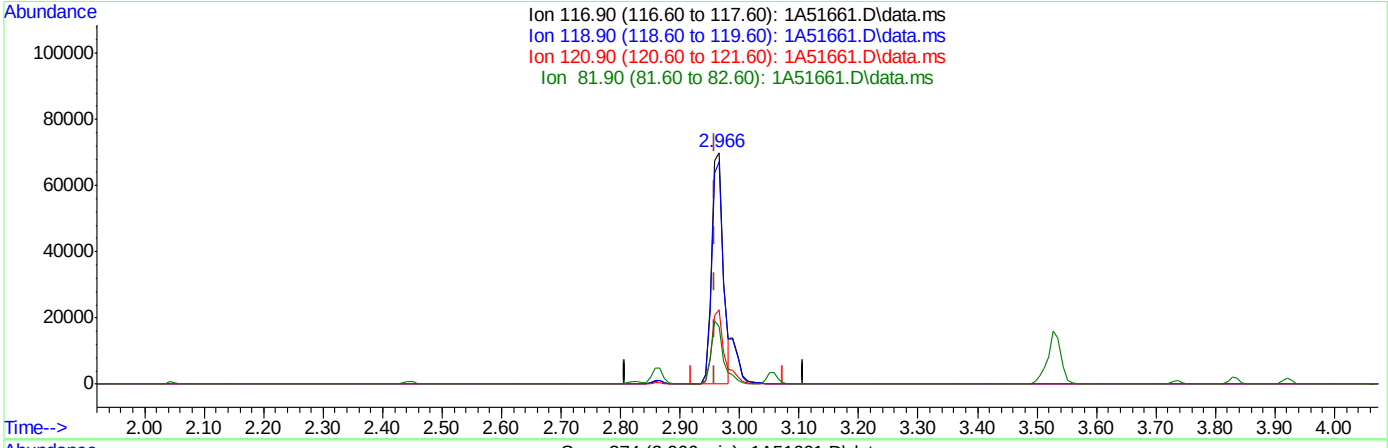
response 109181

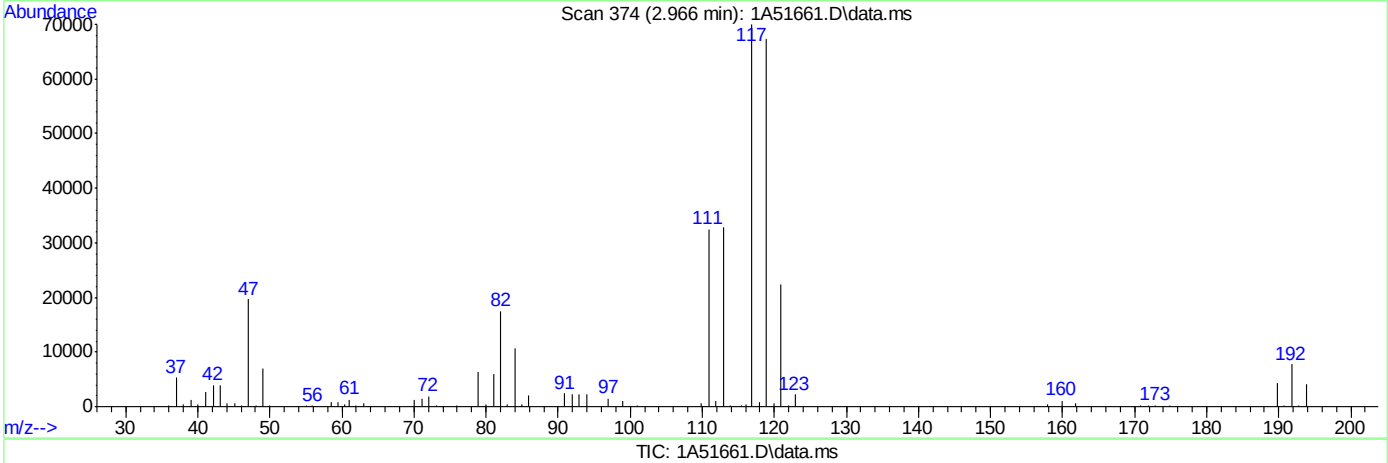
Ion	Exp%	Act%
116.90	100	100
118.90	94.50	96.15
120.90	31.10	31.96
81.90	25.40	25.01

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\12-26-2023\
Data File : 1A51661.D
Acq On : 26 Dec 2023 8:03 am
Operator : lianatr
Sample : CC1985-5
Misc : MS55601,V1A2028,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Dec 26 08:18:19 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration





TIC: 1A51661.D\data.ms

(40) Carbon Tetrachloride ( )

2.966min (+0.007) 38.72ug/L m

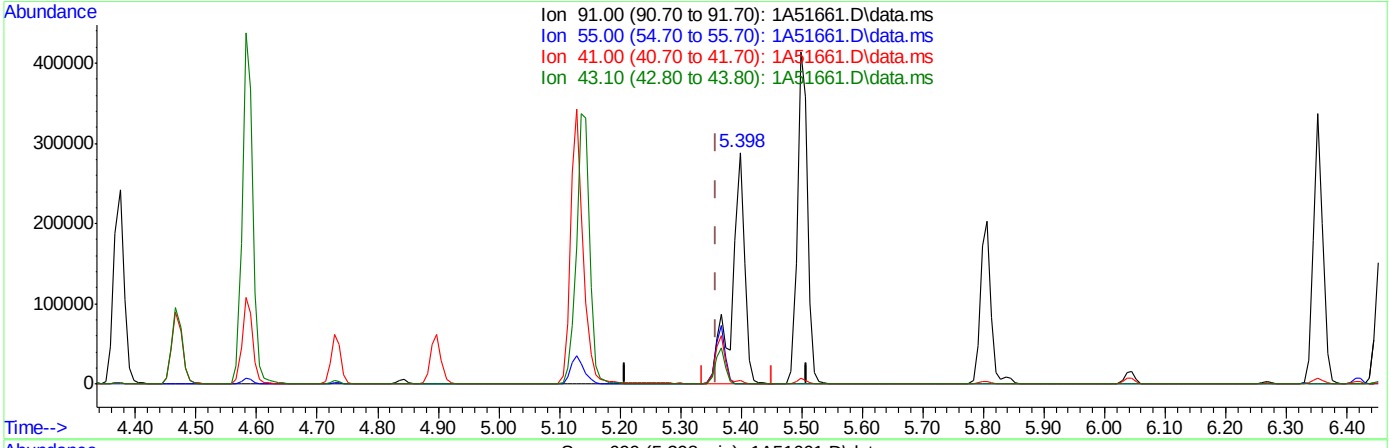
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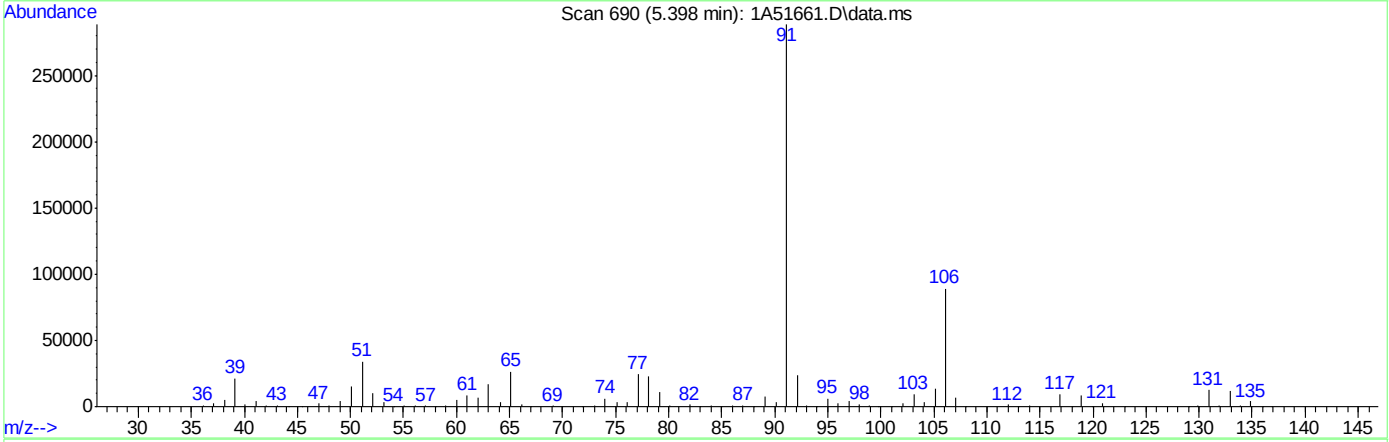
Ion	Exp%	Act%
116.90	100	100
118.90	94.50	96.15
120.90	31.10	31.96
81.90	25.40	25.01

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\12-26-2023\
Data File : 1A51661.D
Acq On : 26 Dec 2023 8:03 am
Operator : lianatr
Sample : CC1985-5
Misc : MS55601,V1A2028,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Dec 26 08:18:19 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration





TIC: 1A51661.D\data.ms

(76) 1-Chlorohexane

5.398min (+0.038) 163.56ug/L

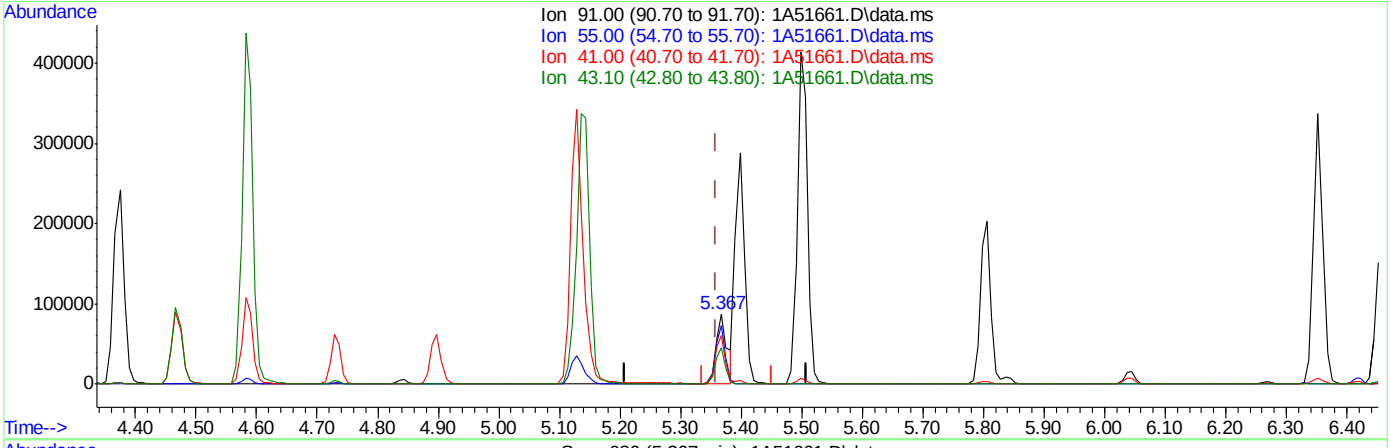
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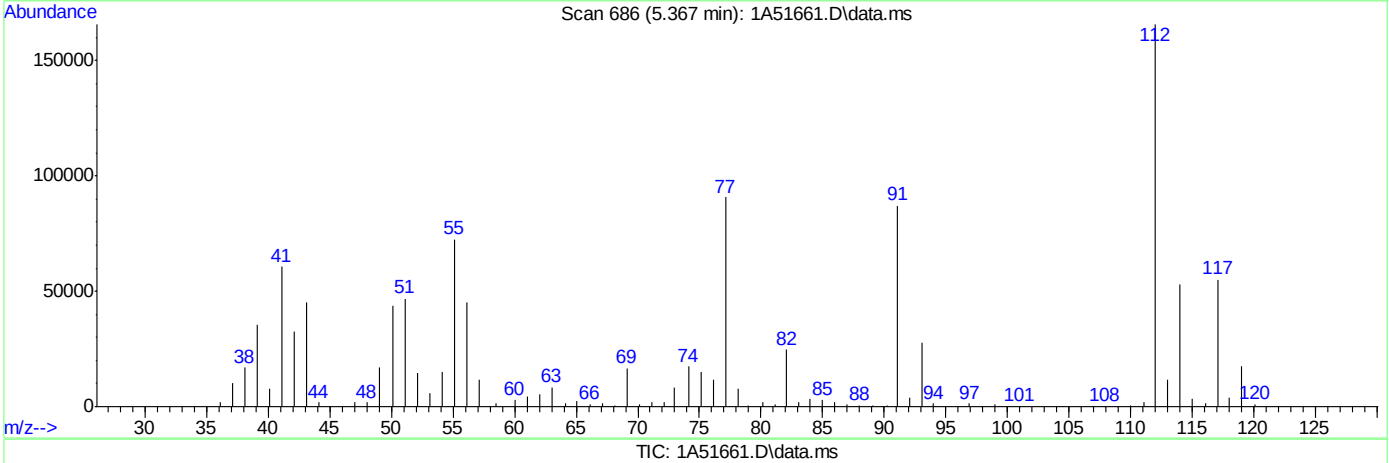
Ion	Exp%	Act%
91.00	100	100
55.00	74.60	0.21#
41.00	53.90	1.16#
43.10	42.90	0.22#

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\12-26-2023\
Data File : 1A51661.D
Acq On : 26 Dec 2023 8:03 am
Operator : lianatr
Sample : CC1985-5
Misc : MS55601,V1A2028,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Dec 26 08:18:19 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration





TIC: 1A51661.D\data.ms

(76) 1-Chlorohexane

5.367min (+0.007) 44.21ug/L m

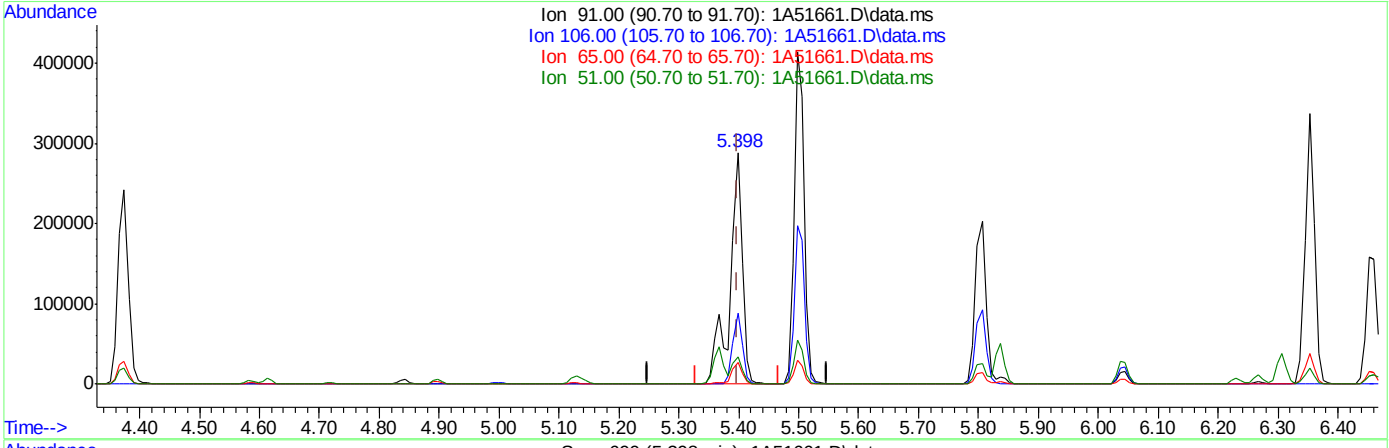
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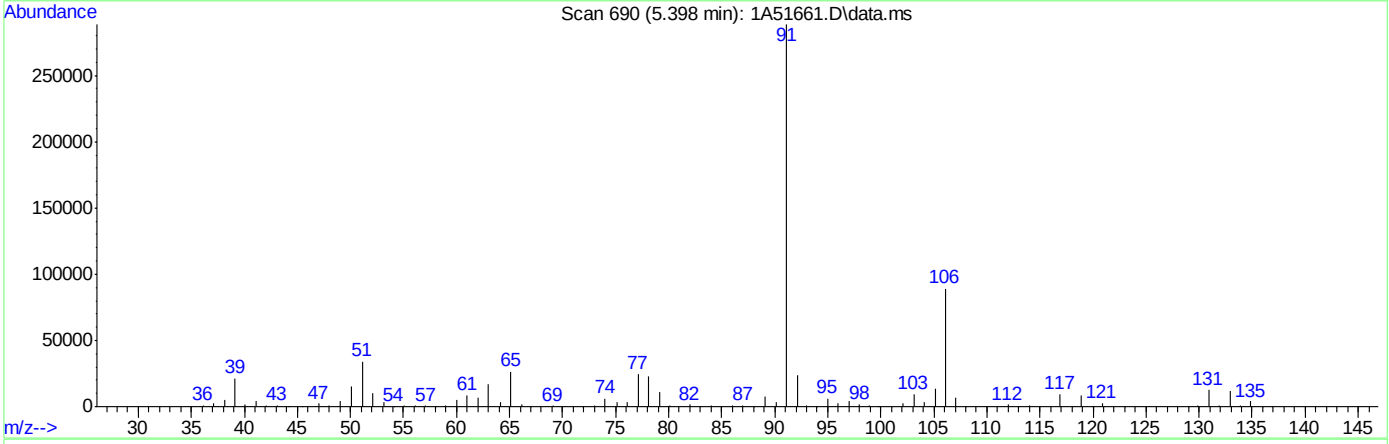
Ion	Exp%	Act%
91.00	100	100
55.00	74.60	83.34
41.00	53.90	69.53
43.10	42.90	51.82

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\12-26-2023\
Data File : 1A51661.D
Acq On : 26 Dec 2023 8:03 am
Operator : lianatr
Sample : CC1985-5
Misc : MS55601,V1A2028,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Dec 26 08:18:19 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration





TIC: 1A51661.D\data.ms

(77) Ethylbenzene

5.398min (-0.000) 52.58ug/L

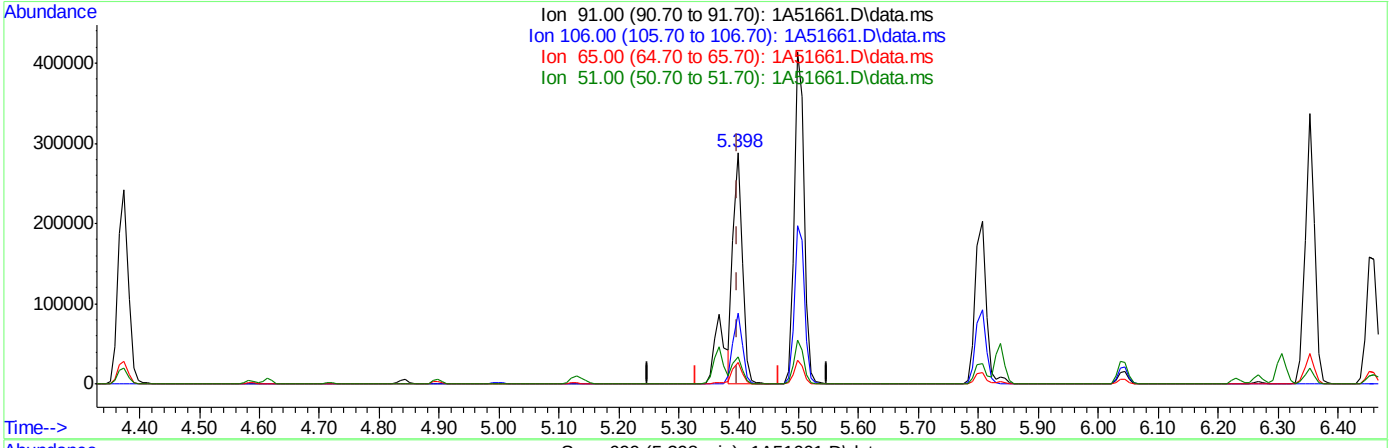
response 415772

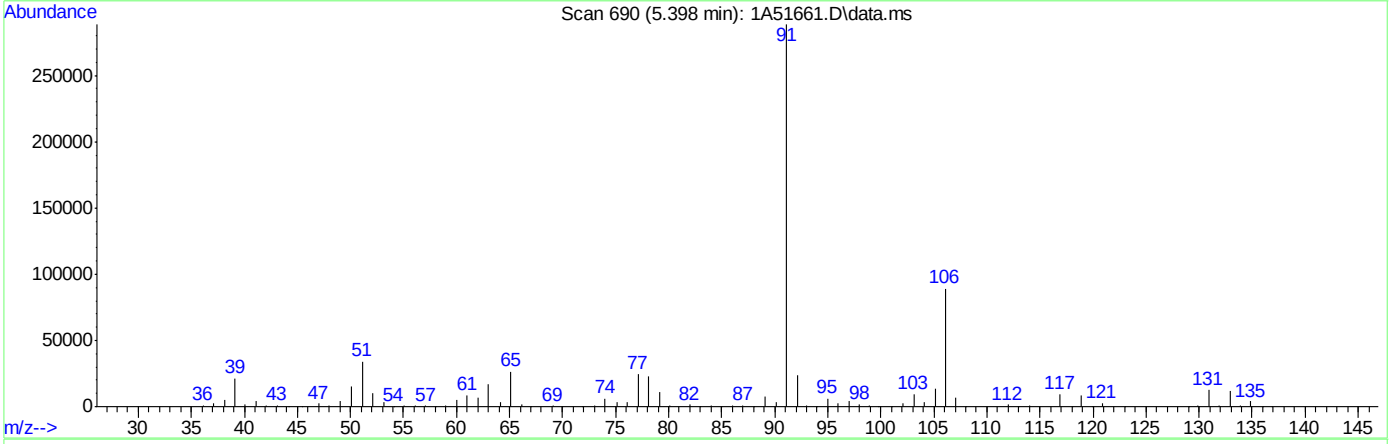
Ion	Exp%	Act%
91.00	100	100
106.00	32.00	30.85
65.00	8.30	9.17
51.00	10.10	11.82

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\12-26-2023\
Data File : 1A51661.D
Acq On : 26 Dec 2023 8:03 am
Operator : lianatr
Sample : CC1985-5
Misc : MS55601,V1A2028,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Dec 26 08:18:19 2023
Quant Method : C:\msdchem\1\METHODS\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration





TIC: 1A51661.D\data.ms

(77) Ethylbenzene

5.398min (-0.000) 38.37ug/L m

response 303405

Ion	Exp%	Act%
91.00	100	100
106.00	32.00	30.85
65.00	8.30	9.17
51.00	10.10	11.82

Manual Integrations APPROVED (compounds with "m" flag)
Neil Christiana 12/27/23 10:23

Quantitation Report (QT Reviewed)

Data Path : X:\Orlando VOA\celinec\December 2023\12-27-2023\V1A2028\V1A2028\
Data File : 1A51688.d
Acq On : 26 Dec 2023 7:02 pm
Operator : lianatr
Sample : ECC1985-5 Inst : MSVOA17
Misc : MS55614,V1A2028,,,,,
ALS Vial : 29 Sample Multiplier: 1

Quant Time: Dec 27 00:23:47 2023
Quant Method : X:\Orlando VOA\celinec\December 2023\12-27-2023\V1A2028\METHOD\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	3.405	96	293272	50.00	ug/L	0.00
62) Chlorobenzene-d5	5.352	117	212363	50.00	ug/L	0.00
85) 1,4-Dichlorobenzene-d4	7.099	152	107604	50.00	ug/L	0.00
System Monitoring Compounds						
39) Dibromofluoromethane	2.958	113	84136	48.67	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 97.34%			
49) 1,2-Dichloroethane-d4	3.235	65	104329	54.53	ug/L	0.00
Spiked Amount 50.000	Range 79 - 125		Recovery = 109.06%			
63) Toluene-d8	4.336	98	289464	51.04	ug/L	0.00
Spiked Amount 50.000	Range 85 - 112		Recovery = 102.08%			
86) 4-Bromofluorobenzene	6.229	174	89437	49.81	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 99.62%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.019	85	49830	44.4886	ug/L	96
3) Chloromethane	1.134	50	58860	35.0799	ug/L	97
4) 1,3-butadiene	1.188	39	71381	33.9321	ug/L	97
5) Vinyl Chloride	1.173	62	62588	37.3392	ug/L	98
6) Bromomethane	1.350	94	27752	45.7744	ug/L	94
7) Chloroethane	1.411	64	53757	50.2726	ug/L	95
8) Trichlorofluoromethane	1.496	101	103595	43.4124	ug/L	98
9) Ethyl Ether	1.658	59	52792	36.1130	ug/L	92
10) Ethanol	1.712	45	24967	747.7646	ug/L	97
11) 1,2-Dichlorotrifluoroe...	1.742	67	66621	34.9736	ug/L	90
12) 1,1-Dichloroethene	1.758	61	88910	35.1174	ug/L	92
13) Freon 113	1.781	101	50124	34.7075	ug/L	90
14) Carbon Disulfide	1.781	76	146655	31.2548	ug/L	86
15) Iodomethane	1.835	142	41667	37.7693	ug/L	97
16) Acrolein	1.912	56	75862	168.1784	ug/L	97
17) Allyl chloride	1.996	41	96633	39.8807	ug/L	86
18) Methylene Chloride	2.043	49	92194	37.2596	ug/L	90
19) Acetone	2.050	43	142264	195.3347	ug/L	96
20) Methyl acetate	2.127	43	405952	206.2327	ug/L	96
21) trans-1,2-Dichloroethene	2.135	61	88191	34.6601	ug/L	95
22) Hexane	2.196	56	63028	36.1956	ug/L	90
23) Methyl Tert Butyl Ether	2.196	73	171868	36.2854	ug/L	91
24) Acetonitrile	2.273	41	116883m	458.6316	ug/L	
25) Tert Butyl Alcohol	2.220	59	121501	348.5145	ug/L	99
26) Di-isopropyl ether	2.397	45	223241	37.5295	ug/L	92
27) Chloroprene	2.443	53	266232	36.5558	ug/L	97
28) 1,1-Dichloroethane	2.443	63	120460	36.4767	ug/L	98
29) Acrylonitrile	2.443	52	166370	188.5886	ug/L	99
30) ETBE	2.581	59	203212	37.0480	ug/L	94
31) Vinyl acetate	2.566	43	702900	158.8369	ug/L	96
32) cis-1,2-Dichloroethene	2.720	96	64976	35.5798	ug/L	93
33) 2,2-Dichloropropane	2.781	77	76172	33.0616	ug/L	98
34) Bromochloromethane	2.828	128	31255	33.7917	ug/L	99
35) Cyclohexane	2.858	56	108979	34.1349	ug/L	90
36) Chloroform	2.858	83	117118	38.6398	ug/L	93
37) Ethyl acetate	2.912	43	446820	180.9689	ug/L	96
38) Tetrahydrofuran	2.951	42	30648	32.8122	ug/L	93
40) Carbon Tetrachloride	2.958	117	82487m	35.0742	ug/L	
41) 1,1,1-Trichloroethane	2.989	97	97262	38.2640	ug/L	94
42) 2-Butanone	3.005	43	251598	203.8190	ug/L	92
43) 1,1-Dichloropropene	3.051	75	79484	35.8441	ug/L	89
44) tert-Butyl formate	3.097	59	224267	148.1037	ug/L	90

Quantitation Report (QT Reviewed)

Data Path : X:\Orlando VOA\celinec\December 2023\12-27-2023\V1A2028\V1A2028\
Data File : 1A51688.d
Acq On : 26 Dec 2023 7:02 pm
Operator : lianatr
Sample : ECC1985-5 Inst : MSVOA17
Misc : MS55614,V1A2028,,,,,
ALS Vial : 29 Sample Multiplier: 1

Quant Time: Dec 27 00:23:47 2023
Quant Method : X:\Orlando VOA\celinec\December 2023\12-27-2023\V1A2028\METHOD\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration

	Compound	R.T.	QIon	Response	Conc Units		Dev(Min)
45)	Propionitrile	3.143	54	138277	363.9575	ug/L	99
46)	Methacrylonitrile	3.166	41	595614	415.7442	ug/L	97
47)	Benzene	3.182	78	242131	37.1924	ug/L	89
48)	TAME	3.251	73	170863	37.1744	ug/L	91
50)	1,2-Dichloroethane	3.274	62	100873	41.4351	ug/L	93
51)	Isobutyl Alcohol	3.259	43	165387	790.0550	ug/L	97
52)	Tert Amyl Alcohol	3.328	59	98464	343.5199	ug/L	91
53)	Trichloroethene	3.513	95	66238	36.3938	ug/L	97
54)	Methylcyclohexane	3.528	83	99308	34.1910	ug/L	95
55)	Dibromomethane	3.736	93	43341	37.2323	ug/L	85
56)	1,2-Dichloropropane	3.797	63	65916	35.7652	ug/L	96
57)	Bromodichloromethane	3.828	83	84072	36.7748	ug/L #	94
58)	Methyl methacrylate	3.920	41	73534	34.6491	ug/L	88
59)	1,4-Dioxane	3.944	88	18979	762.3587	ug/L	91
60)	2-Chloroethyl vinyl ether	4.167	63	166262	155.7688	ug/L	95
61)	cis-1,3-Dichloropropene	4.213	75	93751	35.2576	ug/L	84
64)	Toluene	4.375	91	258143	37.3967	ug/L	97
65)	2-Nitropropane	4.467	41	95607	133.1774	ug/L	88
66)	4-Methyl-2-pentanone	4.582	43	525889	209.7651	ug/L	95
67)	trans-1,3-Dichloropropene	4.613	75	90710	37.1188	ug/L	88
68)	Tetrachloroethene	4.628	166	71673	36.6997	ug/L	93
69)	Ethyl methacrylate	4.729	69	84426	41.8900	ug/L	83
70)	1,1,2-Trichloroethane	4.721	83	50787	36.4956	ug/L	95
71)	Dibromochloromethane	4.844	129	62425	35.2825	ug/L	99
72)	1,3-Dichloropropane	4.898	76	94737	36.9817	ug/L	87
73)	1,2-Dibromoethane	4.998	107	61905	34.6718	ug/L	96
74)	3,3-Dimethyl-1-Butanol	5.129	57	567504	1698.4240	ug/L	96
75)	2-hexanone	5.136	43	489128	201.4454	ug/L	92
76)	1-Chlorohexane	5.367	91	77764m	32.4337	ug/L	
77)	Ethylbenzene	5.398	91	293075m	39.2322	ug/L	
78)	Chlorobenzene	5.367	112	170657	37.3318	ug/L	97
79)	1,1,1,2-Tetrachloroethane	5.414	131	62055	37.3148	ug/L	95
80)	m,p-Xylene	5.498	91	448021	75.6336	ug/L	99
81)	o-Xylene	5.806	91	234911	37.2644	ug/L	97
82)	Styrene	5.837	104	174702	36.5712	ug/L	94
83)	Bromoform	5.837	173	41821	35.0098	ug/L	96
84)	Isopropylbenzene	6.045	105	266749	36.3554	ug/L	98
87)	cis-1,4-Dichloro-2-butene	6.268	53	26219	40.8246	ug/L #	77
88)	n-Propylbenzene	6.353	91	328992	39.1295	ug/L	95
89)	Bromobenzene	6.306	156	67903	36.3766	ug/L	88
90)	1,1,2,2-Tetrachloroethane	6.376	83	83376	38.2507	ug/L	97
91)	1,3,5-Trimethylbenzene	6.506	105	222279	38.5166	ug/L	96
92)	2-Chlorotoluene	6.453	91	186952	38.7320	ug/L	99
93)	trans-1,4-Dichloro-2-B...	6.506	53	30858	36.7083	ug/L	84
94)	1,2,3-Trichloropropane	6.468	110	24326	40.4821	ug/L	78
95)	Cyclohexanone	6.483	55	19833	175.1270	ug/L	97
96)	4-Chlorotoluene	6.583	91	195916	39.3340	ug/L	96
97)	tert-Butylbenzene	6.745	91	130352	39.9432	ug/L	93
98)	1,2,4-Trimethylbenzene	6.799	105	213510	38.6099	ug/L	99
99)	Pentachloroethane	6.745	167	35568	38.7793	ug/L #	75
100)	sec-Butylbenzene	6.891	105	275327	37.7620	ug/L	97
101)	4-Isopropyltoluene	7.007	119	233410	37.3220	ug/L	99
102)	1,3-Dichlorobenzene	7.037	146	126921	37.6845	ug/L	96
103)	1,2,3-Trimethylbenzene	7.145	105	209830	38.1975	ug/L	97
104)	1,4-Dichlorobenzene	7.107	146	128244	37.6276	ug/L	96
105)	n-Butylbenzene	7.338	92	108744	38.7317	ug/L	94
106)	Benzyl Chloride	7.299	126	21171	27.1049	ug/L	96
107)	1,2-Dichlorobenzene	7.430	146	116225	38.7618	ug/L	96

Quantitation Report (QT Reviewed)

Data Path : X:\Orlando VOA\celinec\December 2023\12-27-2023\V1A2028\V1A2028\
Data File : 1A51688.d
Acq On : 26 Dec 2023 7:02 pm
Operator : lianatr
Sample : ECC1985-5 Inst : MSVOA17
Misc : MS55614,V1A2028,,,,,
ALS Vial : 29 Sample Multiplier: 1

Quant Time: Dec 27 00:23:47 2023
Quant Method : X:\Orlando VOA\celinec\December 2023\12-27-2023\V1A2028\METHOD\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration

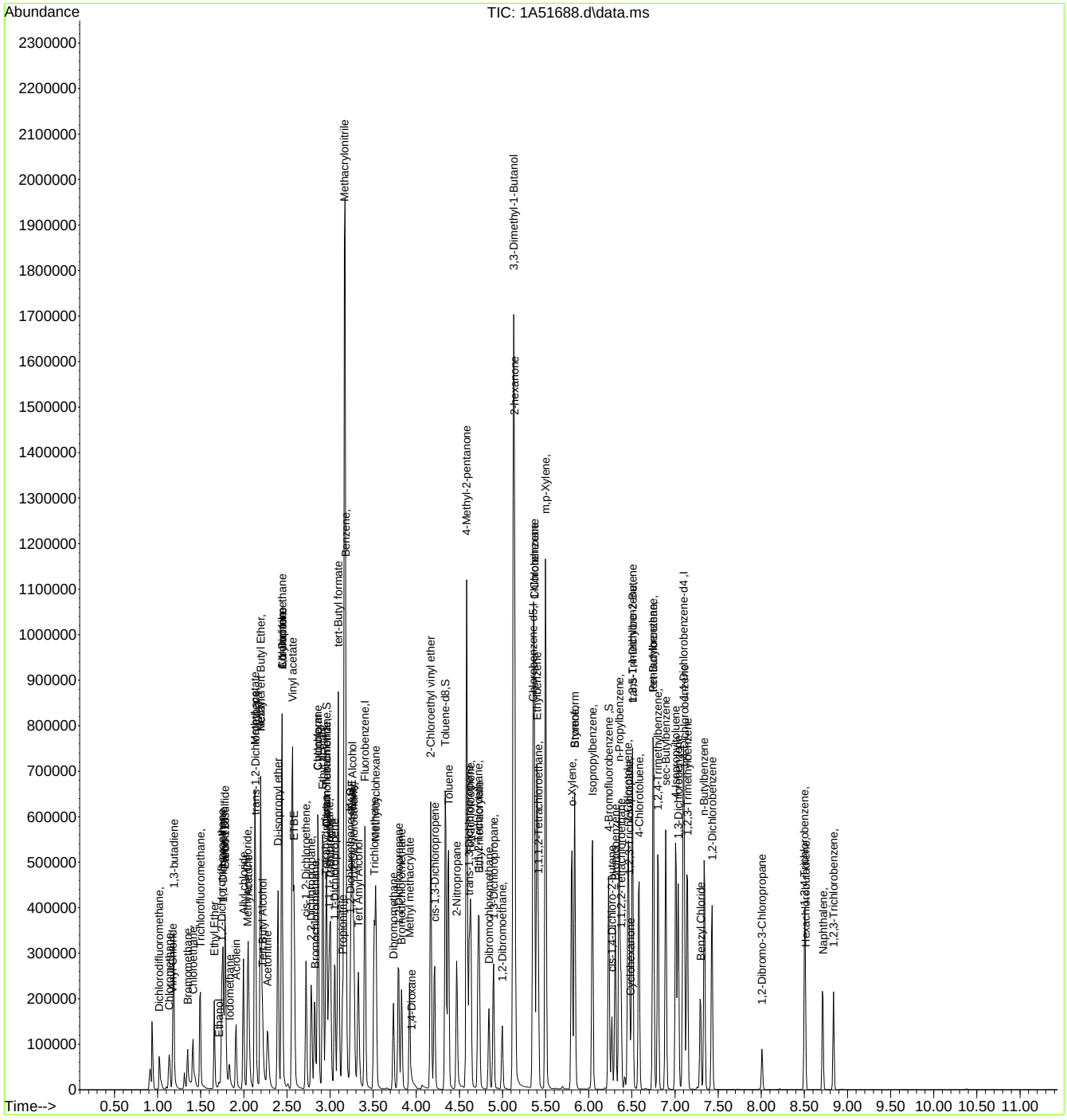
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
108) 1,2-Dibromo-3-Chloropr...	8.007	75	12522	36.0833	ug/L #	80
109) Hexachlorobutadiene	8.515	225	23430	33.6897	ug/L	95
110) 1,2,4-Trichlorobenzene	8.500	180	51501	30.9651	ug/L	95
111) Naphthalene	8.715	128	113910	26.7167	ug/L	98
112) 1,2,3-Trichlorobenzene	8.838	180	37265	28.1897	ug/L	95

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : X:\Orlando VOA\celinec\December 2023\12-27-2023\V1A2028\V1A2028\
Data File : 1A51688.d
Acq On : 26 Dec 2023 7:02 pm
Operator : lianatr
Sample : ECC1985-5 Inst : MSVOA17
Misc : MS55614,V1A2028,,,,,
ALS Vial : 29 Sample Multiplier: 1

Quant Time: Dec 27 00:23:47 2023
Quant Method : X:\Orlando VOA\celinec\December 2023\12-27-2023\V1A2028\METHOD\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration



Manual Integration Approval Summary

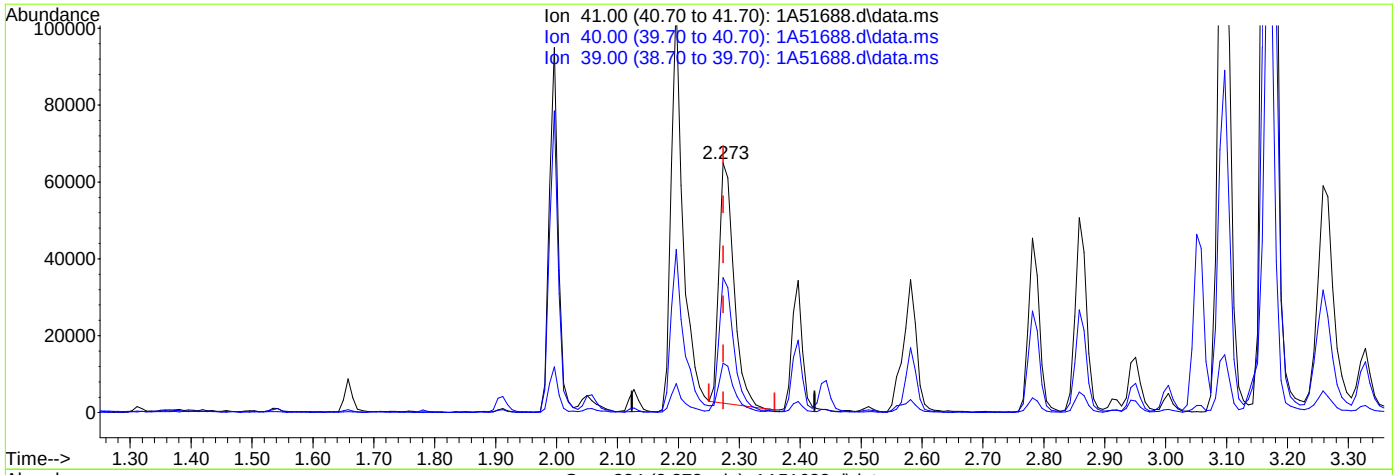
Sample Number: V1A2028-ECC1985 **Method:** SW846 8260D
Lab FileID: 1A51688.D **Analyst approved:** 12/26/23 19:31 Celine Celis
Injection Time: 12/26/23 19:02 **Supervisor approved:** 12/27/23 10:23 Neil Christiana

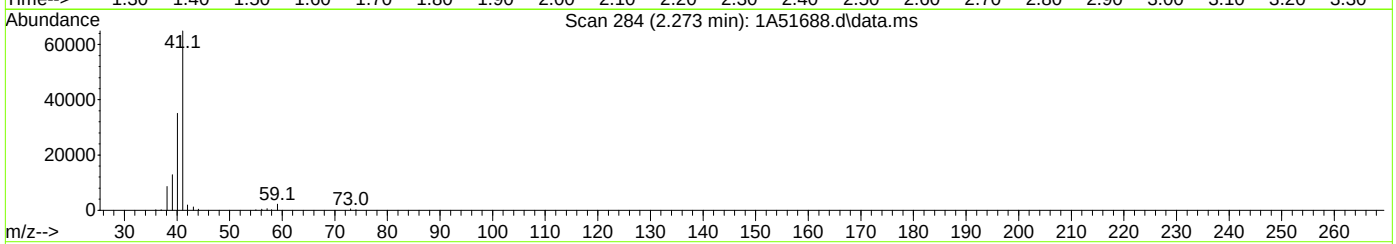
Parameter	CAS	Sig#	R.T. (min.)	Reason
Acetonitrile	75-05-8		2.27	Poor instrument integration
Carbon Tetrachloride	56-23-5		2.96	Overlapping peak
1-Chlorohexane	544-10-5		5.37	Overlapping peak
Ethylbenzene	100-41-4		5.40	Overlapping peak

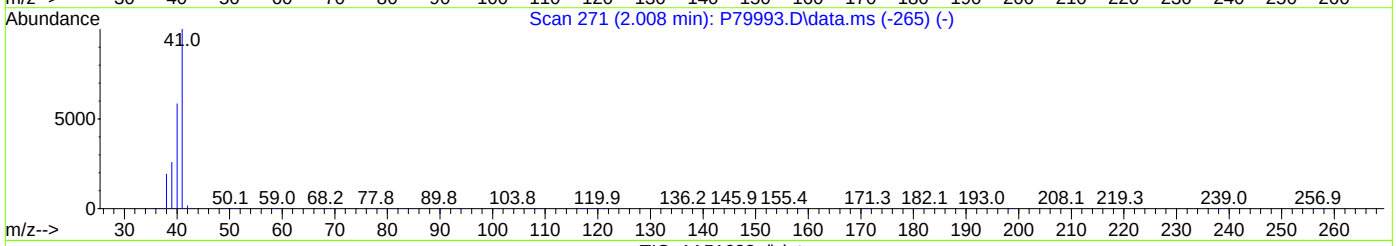
Quantitation Report (Qedit)

Data Path : X:\Orlando VOA\celinec\December 2023\12-27-2023\V1A2028\V1A2028\
Data File : 1A51688.d
Acq On : 26 Dec 2023 7:02 pm
Operator : lianatr
Sample : ECC1985-5 Inst : MSVOA17
Misc : MS55614,V1A2028,,,,,
ALS Vial : 29 Sample Multiplier: 1

Quant Time: Dec 27 00:18:29 2023
Quant Method : X:\Orlando VOA\celinec\December 2023\12-27-2023\V1A2028\METHOD\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration







TIC: 1A51688.d\data.ms

(24) Acetonitrile

2.273min (-0.001) 412.68ug/L

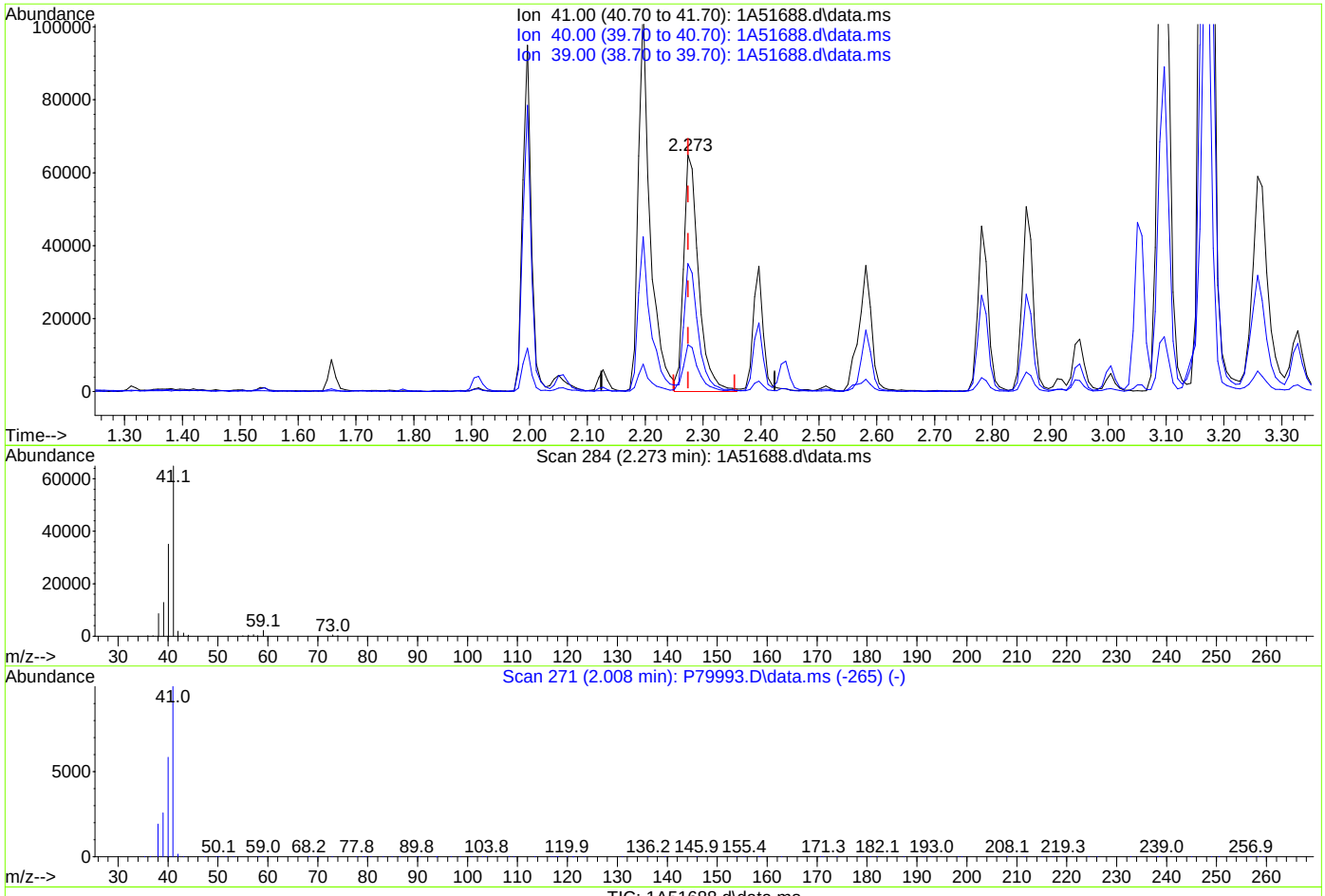
response 105172

Ion	Exp%	Act%
41.00	100	100
40.00	54.10	54.09
39.00	21.10	19.67
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : X:\Orlando VOA\celinec\December 2023\12-27-2023\V1A2028\V1A2028\
Data File : 1A51688.d
Acq On : 26 Dec 2023 7:02 pm
Operator : lianatr
Sample : ECC1985-5 Inst : MSVOA17
Misc : MS55614,V1A2028,,,,,
ALS Vial : 29 Sample Multiplier: 1

Quant Time: Dec 27 00:18:29 2023
Quant Method : X:\Orlando VOA\celinec\December 2023\12-27-2023\V1A2028\METHOD\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration



TIC: 1A51688.d\data.ms

(24) Acetonitrile

2.273min (-0.001) 458.63ug/L m

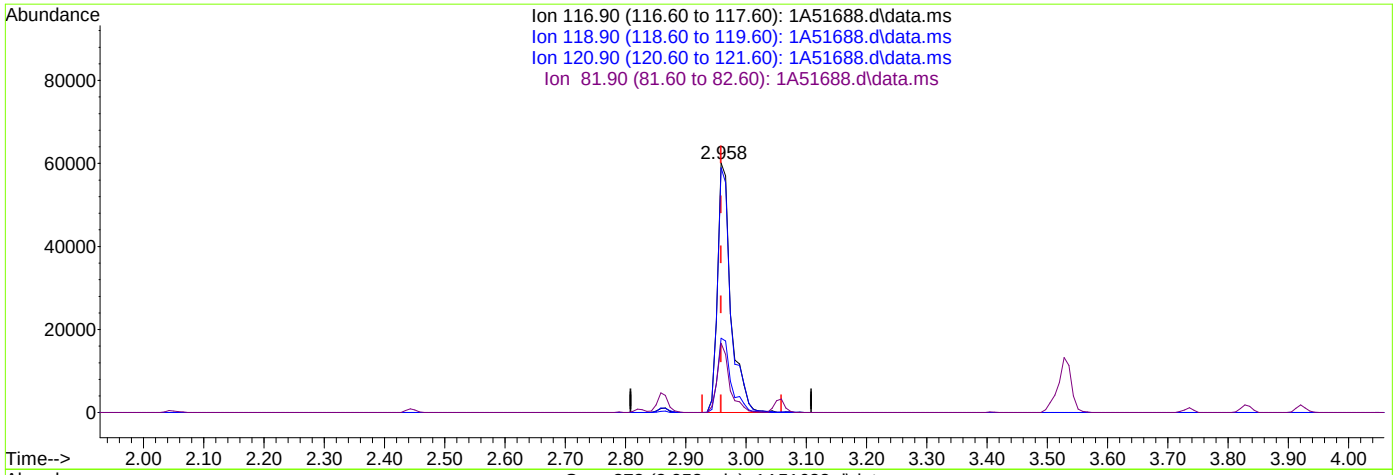
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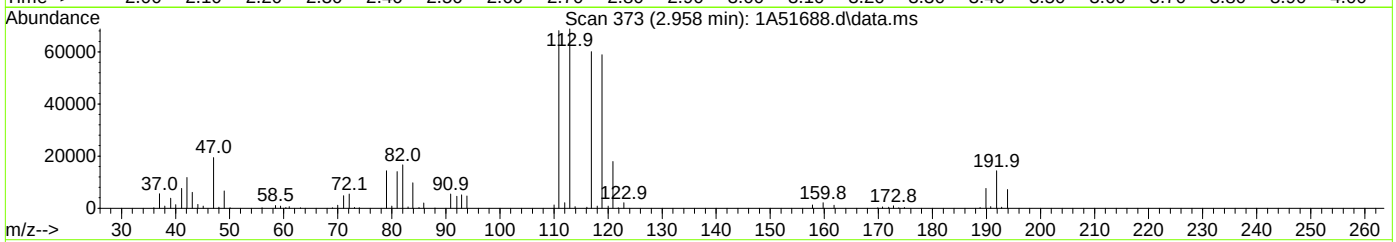
Ion	Exp%	Act%
41.00	100	100
40.00	54.10	54.03
39.00	21.10	19.82
0.00	0.00	0.00

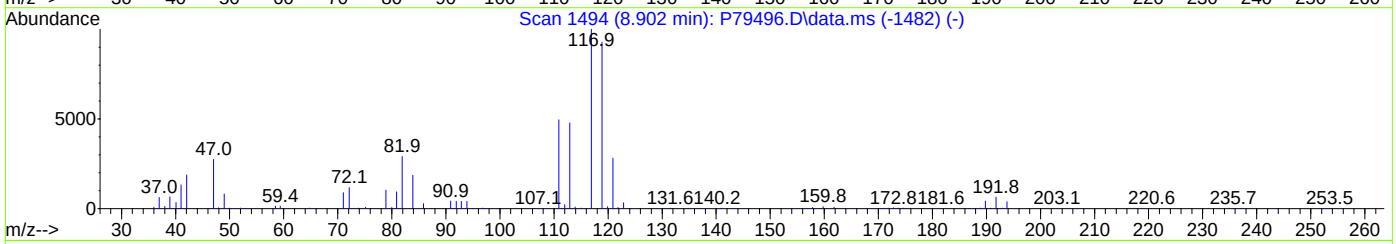
Quantitation Report (Qedit)

Data Path : X:\Orlando VOA\celinec\December 2023\12-27-2023\V1A2028\V1A2028\
Data File : 1A51688.d
Acq On : 26 Dec 2023 7:02 pm
Operator : lianatr
Sample : ECC1985-5 Inst : MSVOA17
Misc : MS55614,V1A2028,,,,,
ALS Vial : 29 Sample Multiplier: 1

Quant Time: Dec 27 00:18:29 2023
Quant Method : X:\Orlando VOA\celinec\December 2023\12-27-2023\V1A2028\METHOD\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration







TIC: 1A51688.d\data.ms

(40) Carbon Tetrachloride ( )

2.958min (-0.000) 39.57ug/L

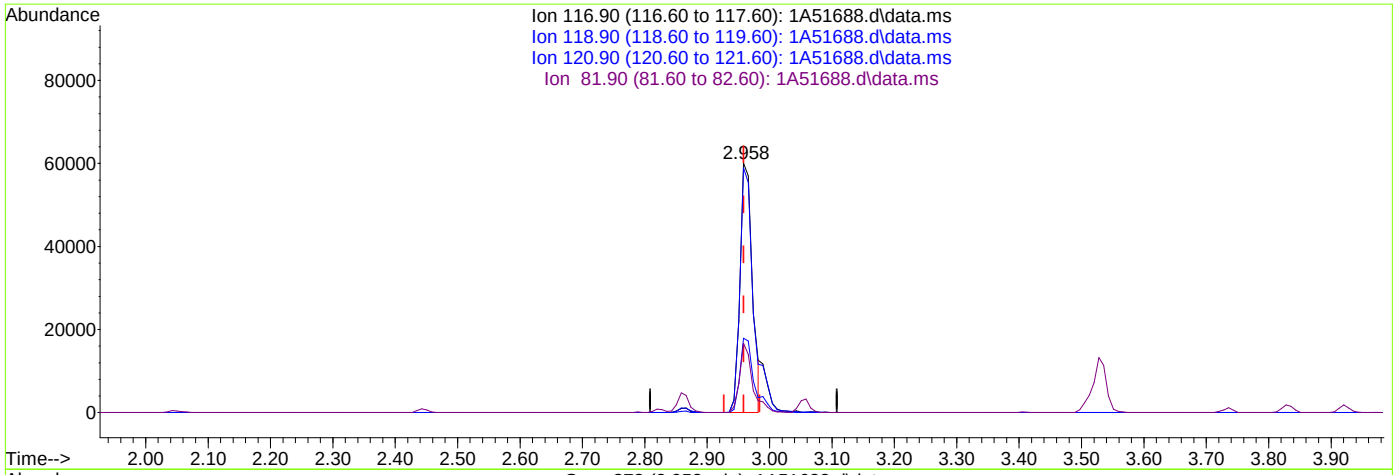
response 93055

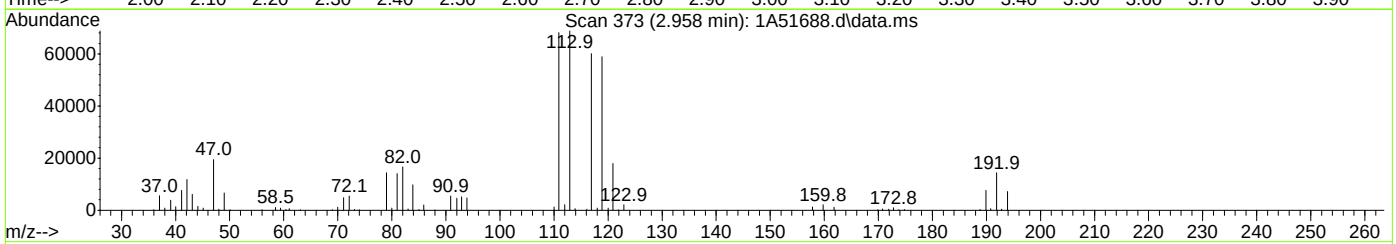
Ion	Exp%	Act%
116.90	100	100
118.90	94.50	97.99
120.90	31.10	29.78
81.90	25.40	27.73

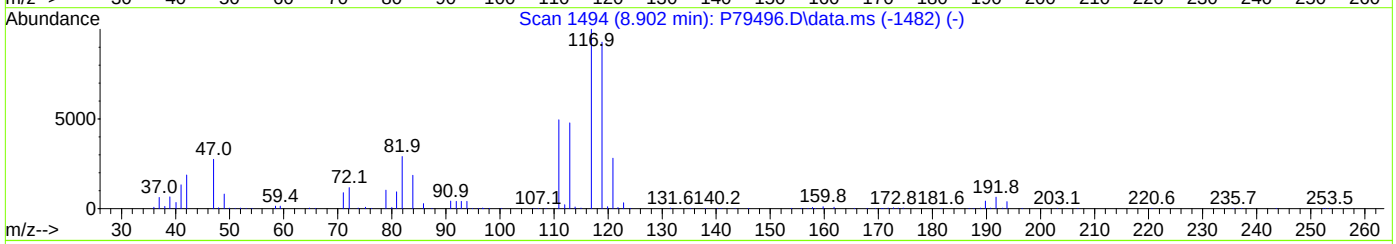
Quantitation Report (Qedit)

Data Path : X:\Orlando VOA\celinec\December 2023\12-27-2023\V1A2028\V1A2028\
Data File : 1A51688.d
Acq On : 26 Dec 2023 7:02 pm
Operator : lianatr
Sample : ECC1985-5 Inst : MSVOA17
Misc : MS55614,V1A2028,,,,,
ALS Vial : 29 Sample Multiplier: 1

Quant Time: Dec 27 00:18:29 2023
Quant Method : X:\Orlando VOA\celinec\December 2023\12-27-2023\V1A2028\METHOD\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration







TIC: 1A51688.d\data.ms

(40) Carbon Tetrachloride ( )

2.958min (-0.000) 35.07ug/L m

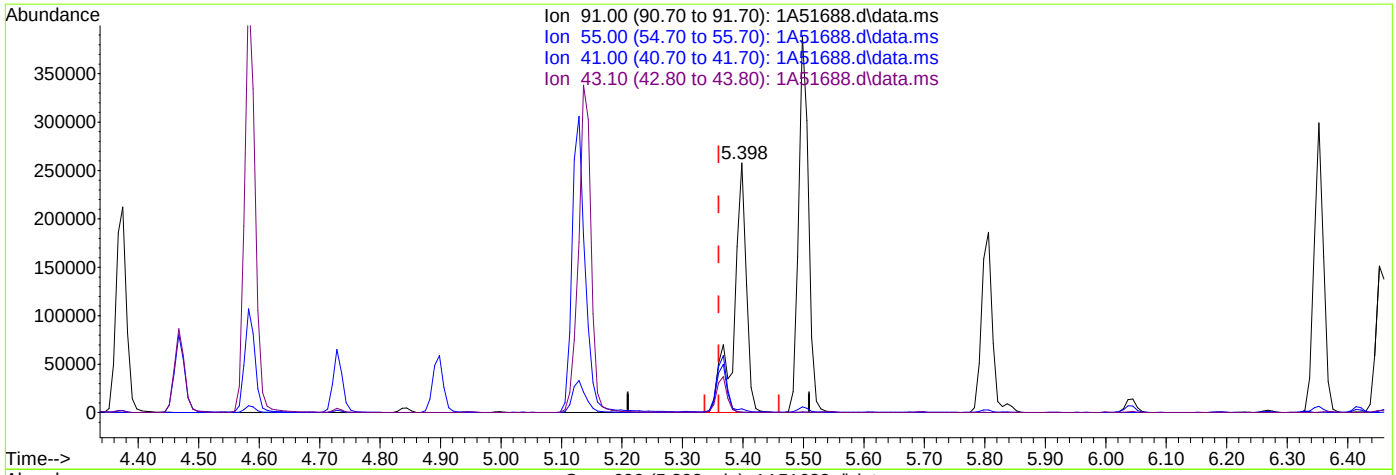
response 82487

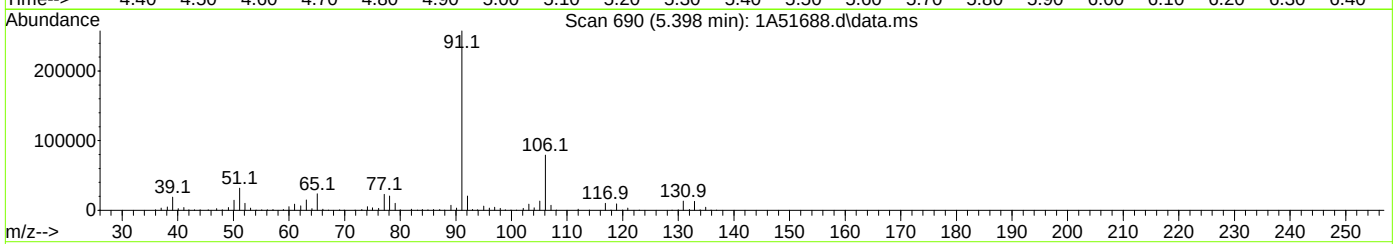
Ion	Exp%	Act%
116.90	100	100
118.90	94.50	97.99
120.90	31.10	29.78
81.90	25.40	27.73

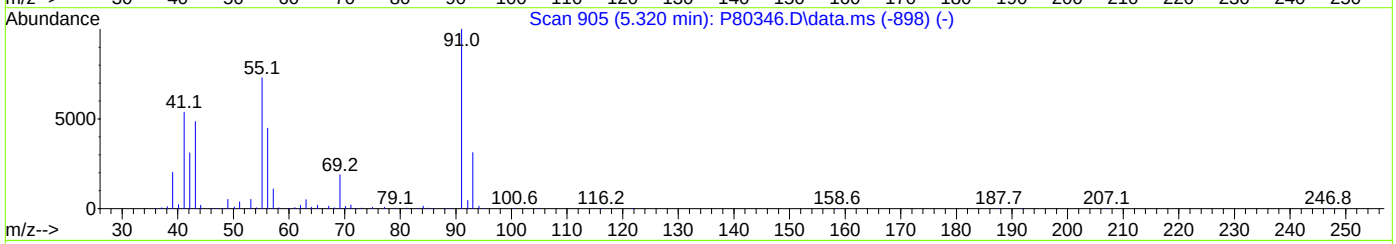
Quantitation Report (Qedit)

Data Path : X:\Orlando VOA\celinec\December 2023\12-27-2023\V1A2028\V1A2028\
Data File : 1A51688.d
Acq On : 26 Dec 2023 7:02 pm
Operator : lianatr
Sample : ECC1985-5 Inst : MSVOA17
Misc : MS55614,V1A2028,,,,,
ALS Vial : 29 Sample Multiplier: 1

Quant Time: Dec 27 00:18:29 2023
Quant Method : X:\Orlando VOA\celinec\December 2023\12-27-2023\V1A2028\METHOD\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration







TIC: 1A51688.d\data.ms

(76) 1-Chlorohexane

5.398min (+0.038) 154.53ug/L

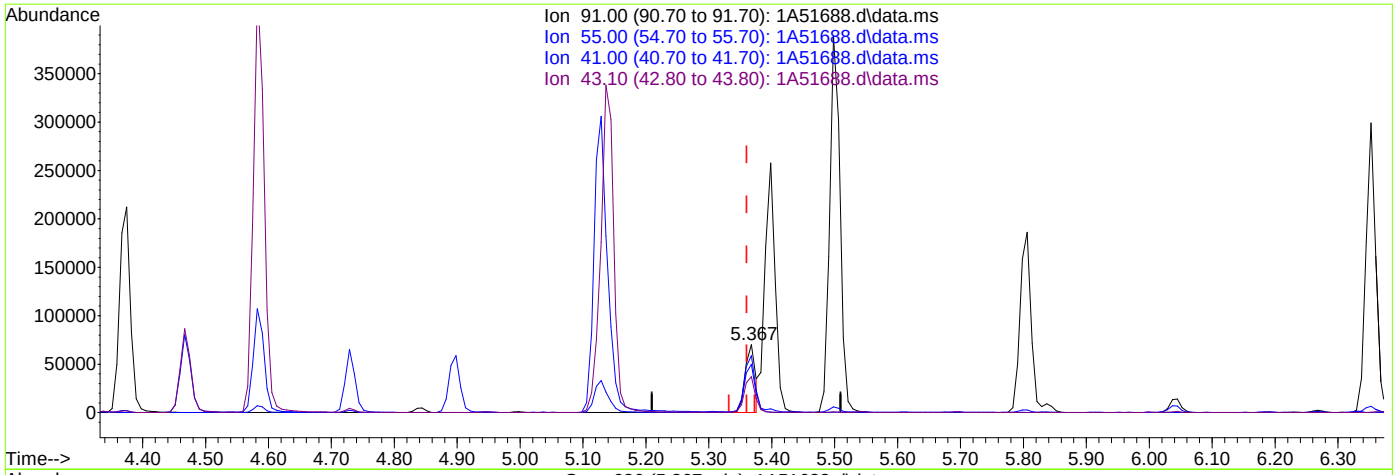
response 370517

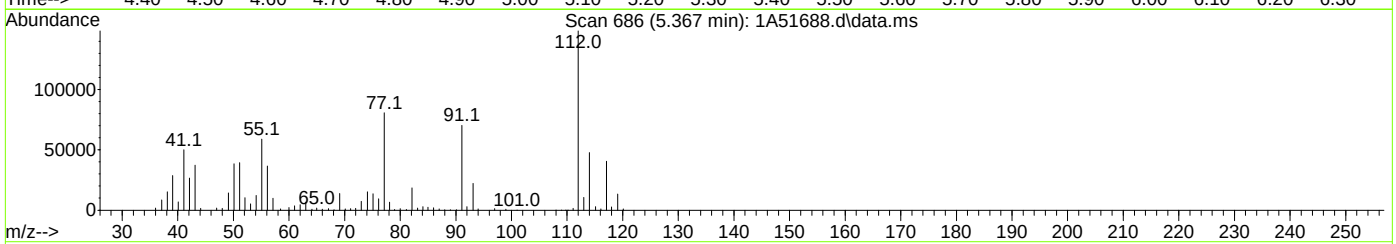
Ion	Exp%	Act%
91.00	100	100
55.00	74.60	0.19#
41.00	53.90	1.30#
43.10	42.90	0.06#

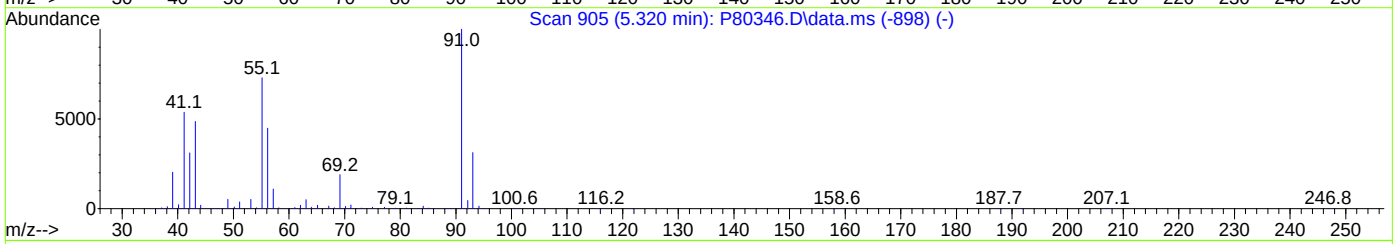
Quantitation Report (Qedit)

Data Path : X:\Orlando VOA\celinec\December 2023\12-27-2023\V1A2028\V1A2028\
Data File : 1A51688.d
Acq On : 26 Dec 2023 7:02 pm
Operator : lianatr
Sample : ECC1985-5 Inst : MSVOA17
Misc : MS55614,V1A2028,,,,,
ALS Vial : 29 Sample Multiplier: 1

Quant Time: Dec 27 00:18:29 2023
Quant Method : X:\Orlando VOA\celinec\December 2023\12-27-2023\V1A2028\METHOD\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration







TIC: 1A51688.d\data.ms

(76) 1-Chlorohexane

5.367min (+0.008) 32.43ug/L m

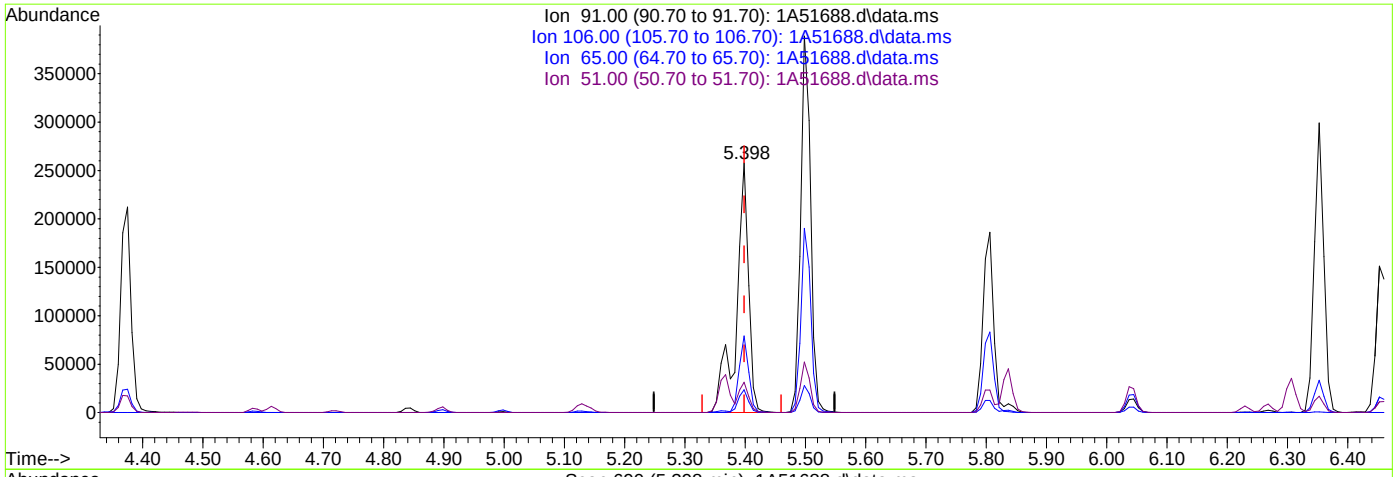
response 77764

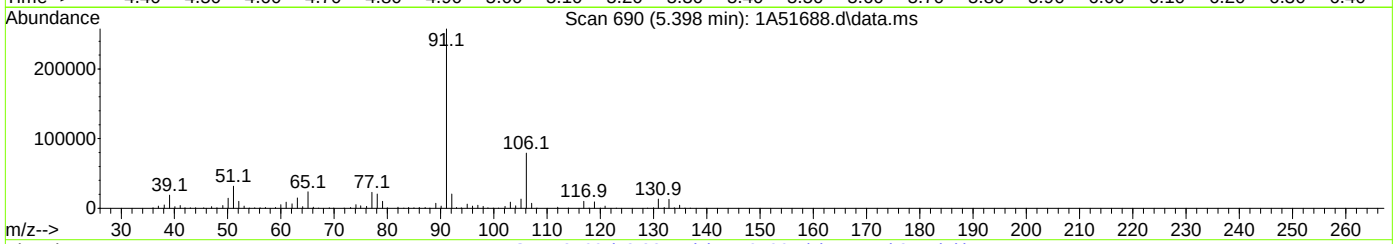
Ion	Exp%	Act%
91.00	100	100
55.00	74.60	84.01
41.00	53.90	71.25
43.10	42.90	53.12

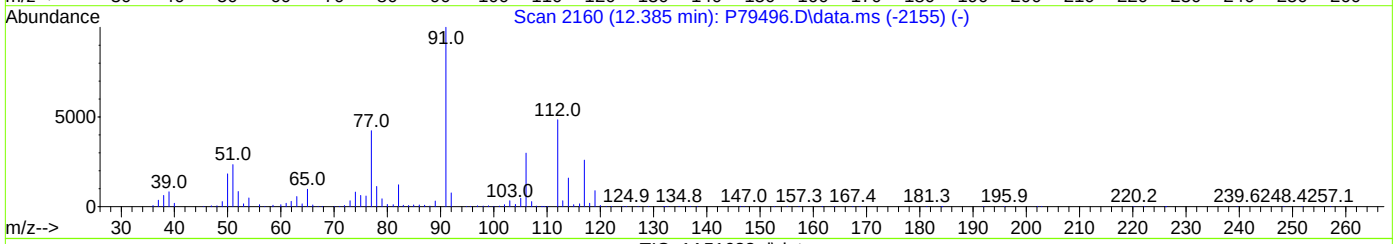
Quantitation Report (Qedit)

Data Path : X:\Orlando VOA\celinec\December 2023\12-27-2023\V1A2028\V1A2028\
Data File : 1A51688.d
Acq On : 26 Dec 2023 7:02 pm
Operator : lianatr
Sample : ECC1985-5 Inst : MSVOA17
Misc : MS55614,V1A2028,,,,,
ALS Vial : 29 Sample Multiplier: 1

Quant Time: Dec 27 00:18:29 2023
Quant Method : X:\Orlando VOA\celinec\December 2023\12-27-2023\V1A2028\METHOD\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration







TIC: 1A51688.d\data.ms

(77) Ethylbenzene

5.398min (-0.000) 49.65ug/L

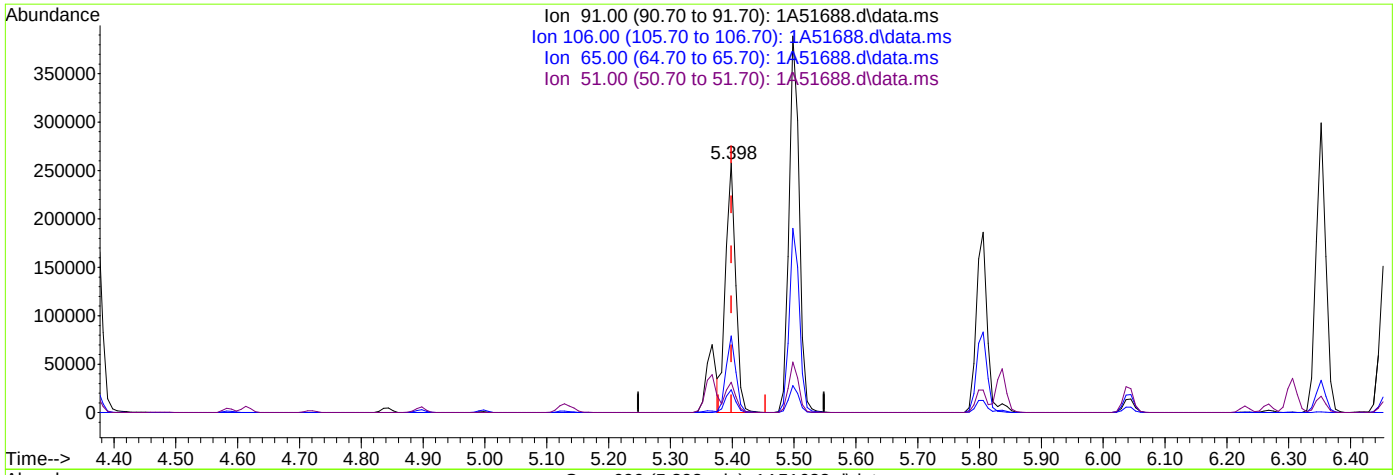
response 370899

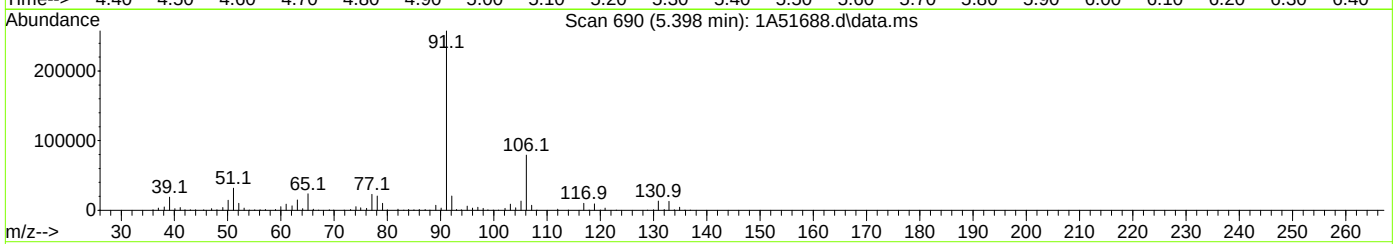
Ion	Exp%	Act%
91.00	100	100
106.00	32.00	30.66
65.00	8.30	9.12
51.00	10.10	12.22

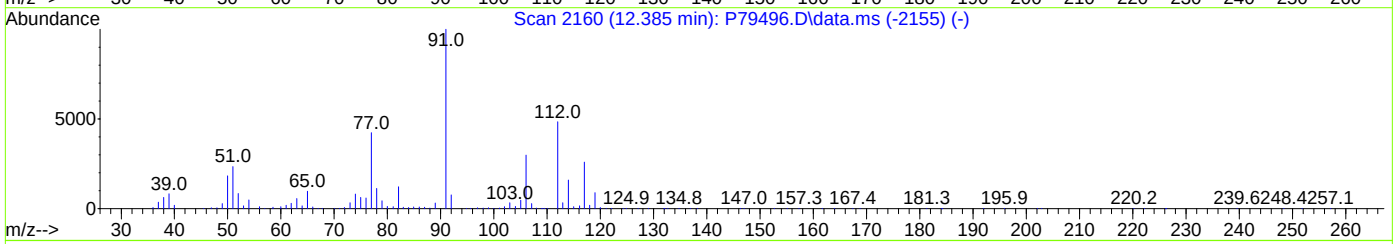
Quantitation Report (Qedit)

Data Path : X:\Orlando VOA\celinec\December 2023\12-27-2023\V1A2028\V1A2028\
Data File : 1A51688.d
Acq On : 26 Dec 2023 7:02 pm
Operator : lianatr
Sample : ECC1985-5 Inst : MSVOA17
Misc : MS55614,V1A2028,,,,,
ALS Vial : 29 Sample Multiplier: 1

Quant Time: Dec 27 00:18:29 2023
Quant Method : X:\Orlando VOA\celinec\December 2023\12-27-2023\V1A2028\METHOD\V1A_11-15-2023.M
Quant Title : SW-846 Method 5035A/8260B
QLast Update : Wed Nov 15 13:56:01 2023
Response via : Initial Calibration







TIC: 1A51688.d\data.ms

(77) Ethylbenzene

5.398min (-0.000) 39.23ug/L m

response 293075

Ion	Exp%	Act%
91.00	100	100
106.00	32.00	30.66
65.00	8.30	9.12
51.00	10.10	12.22

Manual Integrations APPROVED (compounds with "m" flag)
Karen Watson
12/21/23 13:36

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\12-20-2023\
Data File : 5E44758.D
Acq On : 20 Dec 2023 3:52 pm
Operator : joannel
Sample : IC1994-1
Misc : MS55506,V5E1994,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Dec 21 04:45:00 2023
Quant Method : C:\msdchem\1\methods\V5E_12-20-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Mon Dec 18 08:44:27 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Fluorobenzene	8.463	96	318583	50.00	ug/L		0.00
61) Chlorobenzene-d5	11.597	117	245538	50.00	ug/L		0.00
85) 1,4-Dichlorobenzene-d4	13.956	152	130114	50.00	ug/L		0.00
System Monitoring Compounds							
39) Dibromofluoromethane	7.610	113	96028	50.20	ug/L		0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 100.40%				
49) 1,2-Dichloroethane-d4	8.183	65	93617	56.45	ug/L		0.00
Spiked Amount 50.000	Range 79 - 125		Recovery = 112.90%				
62) Toluene-d8	10.036	98	313833	47.77	ug/L		0.00
Spiked Amount 50.000	Range 85 - 112		Recovery = 95.54%				
86) 4-Bromofluorobenzene	12.816	95	98141	47.87	ug/L		0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 95.74%				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	2.800	85	1397	1.02	ug/L		92
3) Chloromethane	3.129	50	2033	1.57	ug/L		92
4) Vinyl Chloride	3.263	62	1796	1.29	ug/L		94
5) 1,3-Butadiene	3.300	39	1203	0.80	ug/L		97
6) Bromomethane	3.769	94	1370	1.19	ug/L		90
7) Chloroethane	3.952	64	1618	2.05	ug/L		89
8) Trichlorofluoromethane	4.165	101	2199	1.06	ug/L		96
9) Ethyl Ether	4.580	59	1354	1.50	ug/L		91
11) 1,2-Dichlorotrifluoroe...	4.836	67	1866	1.22	ug/L		85
12) 1,1-Dichloroethene	4.860	61	2396	1.24	ug/L		89
13) Freon 113	4.909	101	1399	1.07	ug/L	#	70
14) Carbon Disulfide	4.921	76	6764	1.67	ug/L		95
15) Iodomethane	5.055	142	944	0.48	ug/L		85
16) Acrolein	5.305	56	1349	11.59	ug/L		91
17) Allyl chloride	5.464	41	1967	1.20	ug/L		92
18) Methylene Chloride	5.592	49	13230	7.13	ug/L		94
19) Acetone	5.653	43	3892	22.32	ug/L		80
20) Methyl acetate	5.799	43	8145	19.17	ug/L		87
21) trans-1,2-Dichloroethene	5.799	61	2250	1.32	ug/L		91
22) Hexane	5.878	56	1126	1.08	ug/L	#	69
23) Methyl Tert Butyl Ether	5.897	73	4997	1.51	ug/L		91
24) Acetonitrile	6.244	41	3063	60.15	ug/L		83
25) Di-isopropyl ether	6.330	45	4878	1.29	ug/L		95
26) Chloroprene	6.494	53	1602	0.90	ug/L		84
27) 1,1-Dichloroethane	6.519	63	3527	1.44	ug/L		80
28) Acrylonitrile	6.592	53	2455	10.88	ug/L		75
29) ETBE	6.744	59	4688	1.23	ug/L		94
30) Tert Butyl Alcohol	5.976	59	4835	45.69	ug/L		83
31) Vinyl acetate	6.756	43	556	0.29	ug/L		70
32) cis-1,2-Dichloroethene	7.134	96	2109	1.46	ug/L		85
33) 2,2-Dichloropropane	7.244	77	2630	1.35	ug/L		90
34) Bromochloromethane	7.348	128	1026	1.35	ug/L	#	54
35) Cyclohexane	7.360	56	2062	0.98	ug/L		87
36) Chloroform	7.409	83	3406	1.33	ug/L		96

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\12-20-2023\
Data File : 5E44758.D
Acq On : 20 Dec 2023 3:52 pm
Operator : joannel
Sample : IC1994-1
Misc : MS55506,V5E1994,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Dec 21 04:45:00 2023
Quant Method : C:\msdchem\1\methods\V5E_12-20-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Mon Dec 18 08:44:27 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
37) Ethyl acetate	7.518	43	5760	8.49	ug/L		90
38) Tetrahydrofuran	7.616	42	567	2.46	ug/L	#	29
40) Carbon Tetrachloride	7.585	117	2331	1.18	ug/L		77
41) 1,1,1-Trichloroethane	7.652	97	2975	1.36	ug/L		97
42) 2-Butanone	7.756	43	5176	17.97	ug/L		47
43) 1,1-Dichloropropene	7.787	75	2342	1.37	ug/L		94
44) tert-Butyl formate	7.878	59	4384	15.71	ug/L		89
45) Propionitrile	8.073	54	3054	44.10	ug/L		89
46) Methacrylonitrile	8.085	41	11268	23.12	ug/L		97
47) Benzene	8.049	78	7904	1.50	ug/L		94
48) TAME	8.122	73	4687	1.32	ug/L		82
50) 1,2-Dichloroethane	8.256	62	2684	1.72	ug/L		93
51) tert Amyl alcohol	8.286	59	2888	55.85	ug/L		94
52) Trichloroethene	8.646	95	2380	1.58	ug/L	#	84
53) Methylcyclohexane	8.646	83	2493	1.06	ug/L	#	78
54) Dibromomethane	9.085	93	865	1.17	ug/L		89
55) 1,2-Dichloropropane	9.183	63	1544	1.26	ug/L		93
56) Bromodichloromethane	9.225	83	2475	1.32	ug/L		90
57) Methyl methacrylate	9.353	41	318	0.46	ug/L	#	44
59) 2-Chloroethyl vinyl ether	9.780	63	1184	26.91	ug/L	#	75
60) cis-1,3-Dichloropropene	9.859	75	2234	1.10	ug/L		94
63) Toluene	10.091	91	8720	1.41	ug/L		96
64) Isobutyl alcohol	8.189	43	2357	103.50	ug/L	#	44
65) 2-Nitropropane	10.323	41	3371	15.52	ug/L		91
66) 4-Methyl-2-pentanone	10.432	43	10605	14.33	ug/L		95
67) trans-1,3-Dichloropropene	10.506	75	1938	1.16	ug/L		82
68) Tetrachloroethene	10.487	166	2125	1.25	ug/L		94
69) Ethyl methacrylate	10.609	69	877	0.76	ug/L	#	59
70) 1,1,2-Trichloroethane	10.658	83	1211	1.36	ug/L		87
71) Dibromochloromethane	10.859	129	1884	1.35	ug/L		80
72) 1,3-Dichloropropane	10.945	76	2462	1.48	ug/L		92
73) 1,2-Dibromoethane	11.127	107	1376	1.26	ug/L		74
74) 3,3-Dimethyl-1-butanol	11.188	57	10220	974.10	ug/L		93
75) 2-hexanone	11.262	43	5621	14.04	ug/L		86
76) 1-Chlorohexane	11.548	91	2058	1.10	ug/L	#	81
77) Ethylbenzene	11.615	91	11303	1.62	ug/L		91
78) Chlorobenzene	11.615	112	5731	1.39	ug/L		89
79) 1,1,1,2-Tetrachloroethane	11.664	131	1854	1.22	ug/L	#	59
80) m,p-Xylene	11.749	91	20947	4.04	ug/L		96
81) o-Xylene	12.194	91	10002	1.93	ug/L		96
82) Styrene	12.255	104	3975	1.04	ug/L		93
83) Bromoform	12.310	173	1010	1.40	ug/L	#	65
84) Isopropylbenzene	12.499	105	8987	1.35	ug/L		93
88) n-Propylbenzene	12.920	91	10975	1.42	ug/L		95
89) Bromobenzene	12.950	156	2077	1.41	ug/L	#	62
90) 1,1,2,2-Tetrachloroethane	12.987	83	2465	2.17	ug/L		82
91) 1,3,5-Trimethylbenzene	13.097	105	8030	1.50	ug/L		95
92) 2-Chlorotoluene	13.115	91	6697	1.36	ug/L		91
94) 1,2,3-Trichloropropane	13.145	110	699	2.46	ug/L	#	70
96) 4-Chlorotoluene	13.286	91	5667	1.31	ug/L		91

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\12-20-2023\
Data File : 5E44758.D
Acq On : 20 Dec 2023 3:52 pm
Operator : joannel
Sample : IC1994-1
Misc : MS55506,V5E1994,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Dec 21 04:45:00 2023
Quant Method : C:\msdchem\1\methods\V5E_12-20-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Mon Dec 18 08:44:27 2023
Response via : Initial Calibration

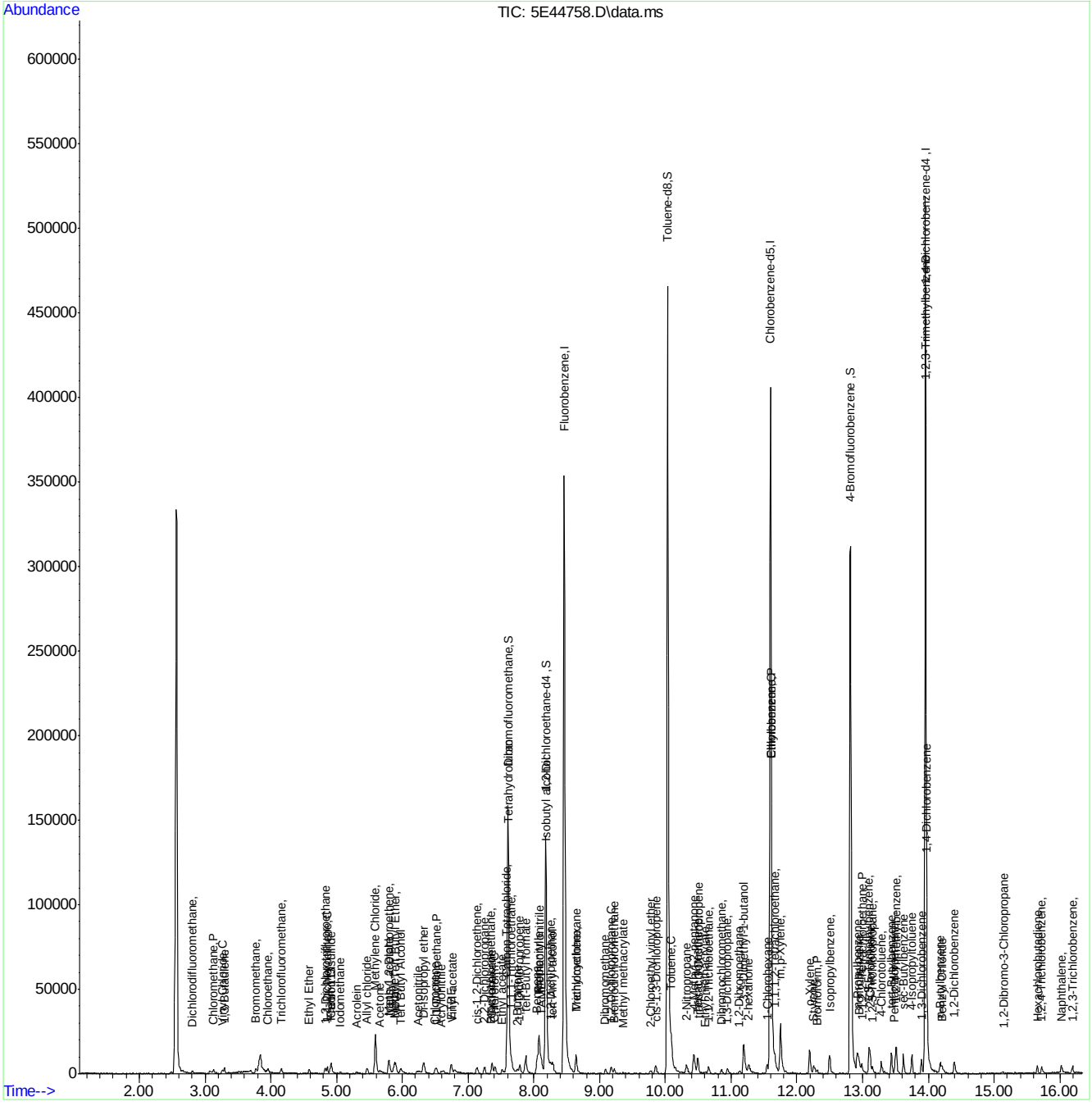
	Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
98)	tert-Butylbenzene	13.438	91	4011	1.39	ug/L		91
99)	1,2,4-Trimethylbenzene	13.511	105	9878	1.91	ug/L		94
100)	Pentachloroethane	13.487	167	1147	1.34	ug/L	#	54
101)	sec-Butylbenzene	13.621	105	8827	1.28	ug/L		93
102)	4-Isopropyltoluene	13.749	119	7646	1.35	ug/L		96
103)	1,3-Dichlorobenzene	13.901	146	4149	1.38	ug/L		84
104)	1,2,3-Trimethylbenzene	13.962	105	8781	1.61	ug/L	#	69
105)	1,4-Dichlorobenzene	13.974	146	4981	1.49	ug/L	#	85
106)	n-Butylbenzene	14.182	92	3625	1.46	ug/L		93
107)	Benzyl Chloride	14.206	126	531	2.13	ug/L	#	57
108)	1,2-Dichlorobenzene	14.395	146	4296	1.62	ug/L		93
109)	1,2-Dibromo-3-Chloropr...	15.139	75	164m	1.95	ug/L		
110)	Hexachlorobutadiene	15.657	225	887	1.77	ug/L		85
111)	1,2,4-Trichlorobenzene	15.724	180	1952	1.86	ug/L		78
112)	Naphthalene	16.023	128	5966	4.78	ug/L		100
113)	1,2,3-Trichlorobenzene	16.193	180	1593	2.38	ug/L		88

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\12-20-2023\
Data File : 5E44758.D
Acq On : 20 Dec 2023 3:52 pm
Operator : joannel
Sample : IC1994-1
Misc : MS55506,V5E1994,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Dec 21 04:45:00 2023
Quant Method : C:\msdchem\1\methods\V5E_12-20-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Mon Dec 18 08:44:27 2023
Response via : Initial Calibration



Manual Integration Approval Summary

Sample Number: V5E1994-IC1994
Lab FileID: 5E44758.D
Injection Time: 12/20/23 15:52

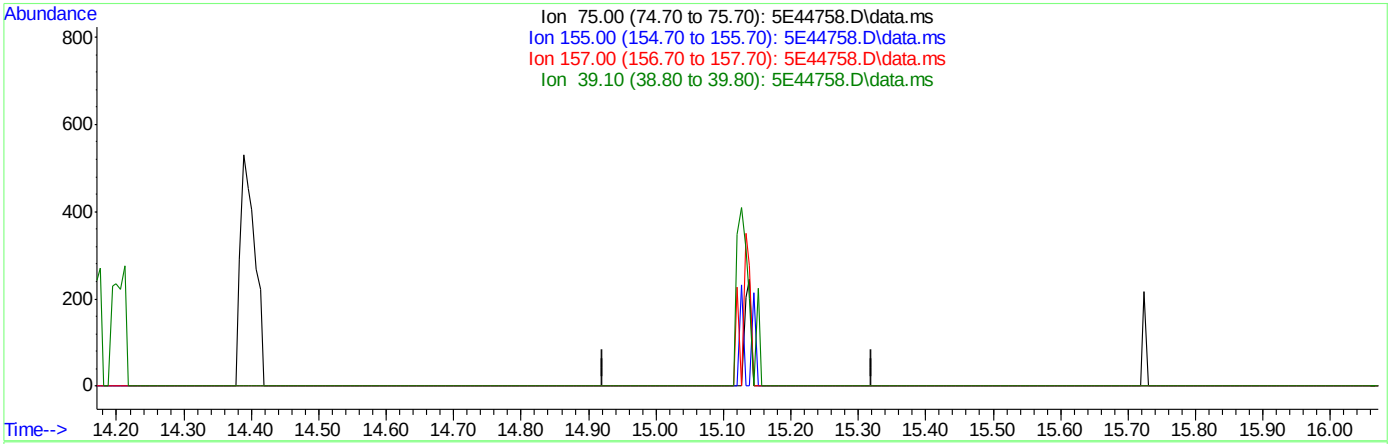
Method: SW846 8260D
Analyst approved: 12/21/23 09:18 Jenifer Willis
Supervisor approved: 12/21/23 13:36 Karen Watson

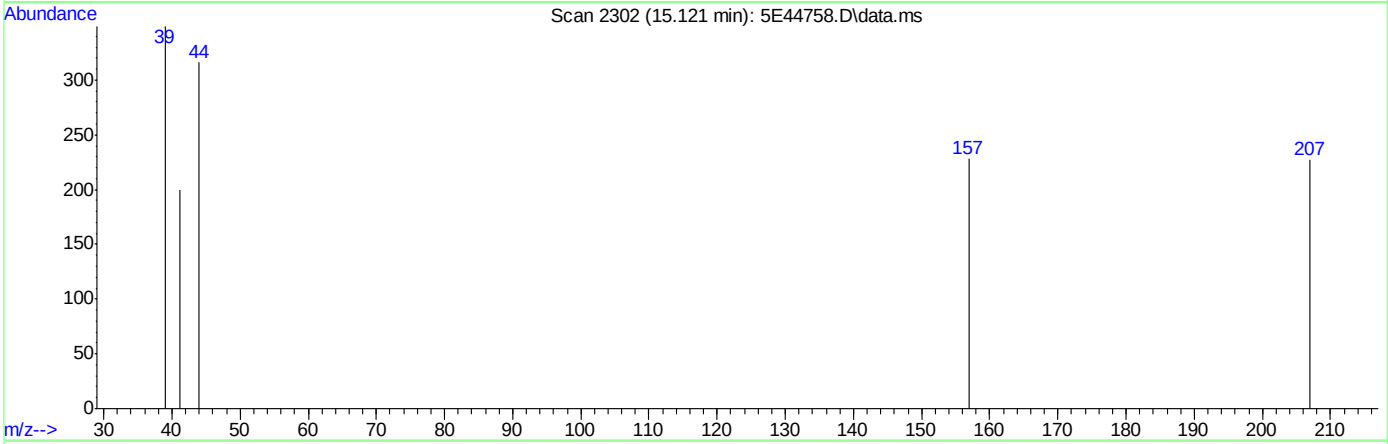
Parameter	CAS	Sig#	R.T. (min.)	Reason
1,2-Dibromo-3-chloropropane	96-12-8		15.14	Missed peak

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\12-20-2023\
Data File : 5E44758.D
Acq On : 20 Dec 2023 3:52 pm
Operator : joannel
Sample : IC1994-1
Misc : MS55506,V5E1994,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Dec 21 04:41:13 2023
Quant Method : C:\msdchem\1\methods\V5E_12-20-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Mon Dec 18 08:44:27 2023
Response via : Initial Calibration





TIC: 5E44758.D\data.ms

(109) 1,2-Dibromo-3-Chloropropane

15.121min (-15.121) 0.00ug/L

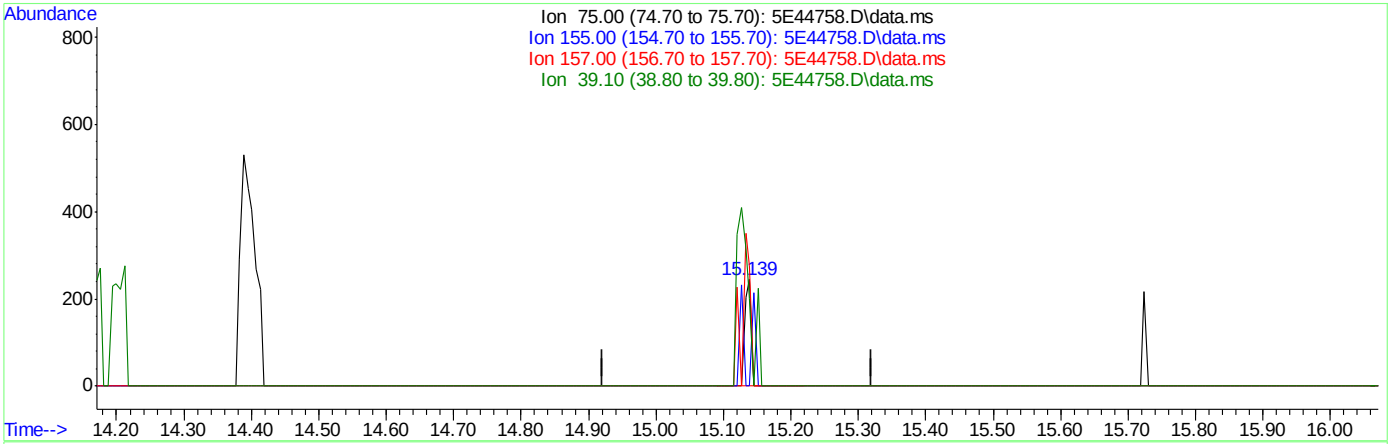
response 0

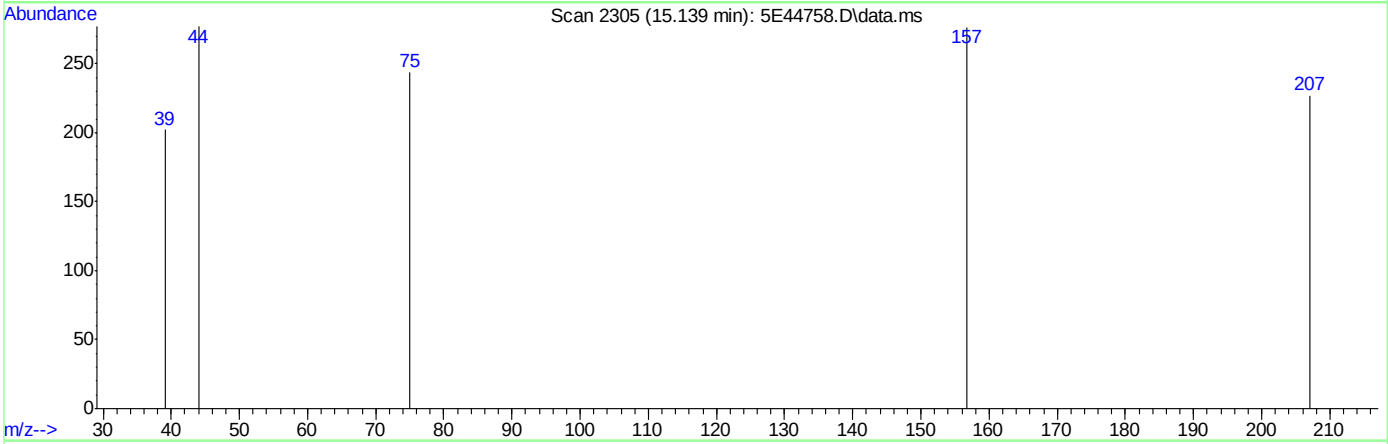
Ion	Exp%	Act%
75.00	100	0.00
155.00	125.60	0.00#
157.00	148.30	0.00#
39.10	90.50	0.00#

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\12-20-2023\
Data File : 5E44758.D
Acq On : 20 Dec 2023 3:52 pm
Operator : joannel
Sample : IC1994-1
Misc : MS55506,V5E1994,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Dec 21 04:41:13 2023
Quant Method : C:\msdchem\1\methods\V5E_12-20-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Mon Dec 18 08:44:27 2023
Response via : Initial Calibration





TIC: 5E44758.D\data.ms

(109) 1,2-Dibromo-3-Chloropropane

15.139min (+0.018) 1.95ug/L m

response 164

Ion	Exp%	Act%
75.00	100	100
155.00	125.60	0.00#
157.00	148.30	113.11#
39.10	90.50	82.79

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\12-20-2023\
Data File : 5E44759.D
Acq On : 20 Dec 2023 4:15 pm
Operator : joannel
Sample : IC1994-8
Misc : MS55506,V5E1994,,,,,
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Dec 21 04:41:15 2023
Quant Method : C:\msdchem\1\methods\V5E_12-20-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Mon Dec 18 08:44:27 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Fluorobenzene	8.463	96	320801	50.00	ug/L		0.00
61) Chlorobenzene-d5	11.597	117	248744	50.00	ug/L		0.00
85) 1,4-Dichlorobenzene-d4	13.956	152	133876	50.00	ug/L		0.00
System Monitoring Compounds							
39) Dibromofluoromethane	7.604	113	97666	50.70	ug/L		0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 101.40%				
49) 1,2-Dichloroethane-d4	8.177	65	91749	54.94	ug/L		0.00
Spiked Amount 50.000	Range 79 - 125		Recovery = 109.88%				
62) Toluene-d8	10.036	98	316468	47.55	ug/L		0.00
Spiked Amount 50.000	Range 85 - 112		Recovery = 95.10%				
86) 4-Bromofluorobenzene	12.810	95	101935	48.32	ug/L		0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 96.64%				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	2.806	85	2474	1.79	ug/L		83
3) Chloromethane	3.129	50	3219	2.47	ug/L		90
4) Vinyl Chloride	3.263	62	3054	2.19	ug/L		99
5) 1,3-Butadiene	3.294	39	2023	1.33	ug/L		97
6) Bromomethane	3.769	94	2580	2.22	ug/L		93
7) Chloroethane	3.958	64	2827	3.54	ug/L		93
8) Trichlorofluoromethane	4.159	101	4849	2.31	ug/L		84
9) Ethyl Ether	4.580	59	2231	2.45	ug/L		93
11) 1,2-Dichlorotrifluoroe...	4.824	67	3080	2.00	ug/L	#	81
12) 1,1-Dichloroethene	4.866	61	3904	2.01	ug/L		96
13) Freon 113	4.903	101	2265	1.73	ug/L		95
14) Carbon Disulfide	4.921	76	9997	2.46	ug/L		94
15) Iodomethane	5.055	142	1678	0.85	ug/L		83
16) Acrolein	5.299	56	2781	23.73	ug/L		90
17) Allyl chloride	5.464	41	2312	1.40	ug/L		86
18) Methylene Chloride	5.592	49	15289	8.18	ug/L		88
19) Acetone	5.659	43	8114	46.20	ug/L		93
20) Methyl acetate	5.787	43	13091	30.60	ug/L		95
21) trans-1,2-Dichloroethene	5.793	61	3932	2.30	ug/L		90
22) Hexane	5.878	56	1777	1.69	ug/L	#	63
23) Methyl Tert Butyl Ether	5.897	73	8599	2.58	ug/L		82
24) Acetonitrile	6.232	41	3968	77.39	ug/L		83
25) Di-isopropyl ether	6.324	45	8399	2.21	ug/L		94
26) Chloroprene	6.494	53	2697	1.50	ug/L		79
27) 1,1-Dichloroethane	6.519	63	5809	2.36	ug/L		95
28) Acrylonitrile	6.586	53	6607	29.09	ug/L		93
29) ETBE	6.744	59	8424	2.19	ug/L		95
30) Tert Butyl Alcohol	5.970	59	7626	71.57	ug/L		92
31) Vinyl acetate	6.781	43	19368	9.99	ug/L		97
32) cis-1,2-Dichloroethene	7.134	96	3283	2.26	ug/L		80
33) 2,2-Dichloropropane	7.250	77	4333	2.20	ug/L		96
34) Bromochloromethane	7.354	128	1767	2.30	ug/L		82
35) Cyclohexane	7.366	56	3626	1.71	ug/L		85
36) Chloroform	7.409	83	5592	2.17	ug/L		95

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\12-20-2023\
Data File : 5E44759.D
Acq On : 20 Dec 2023 4:15 pm
Operator : joannel
Sample : IC1994-8
Misc : MS55506,V5E1994,,,,,
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Dec 21 04:41:15 2023
Quant Method : C:\msdchem\1\methods\V5E_12-20-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Mon Dec 18 08:44:27 2023
Response via : Initial Calibration

	Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
37)	Ethyl acetate	7.518	43	17697	25.89	ug/L		96
38)	Tetrahydrofuran	7.604	42	1804	7.80	ug/L		92
40)	Carbon Tetrachloride	7.585	117	4339	2.18	ug/L		91
41)	1,1,1-Trichloroethane	7.653	97	4515	2.05	ug/L		94
42)	2-Butanone	7.744	43	10498	36.20	ug/L		94
43)	1,1-Dichloropropene	7.787	75	3559	2.07	ug/L		90
44)	tert-Butyl formate	7.878	59	9066	32.26	ug/L		93
45)	Propionitrile	8.061	54	4082	58.22	ug/L	#	65
46)	Methacrylonitrile	8.079	41	15631	31.85	ug/L		91
47)	Benzene	8.049	78	12764	2.40	ug/L		97
48)	TAME	8.116	73	8067	2.26	ug/L		92
50)	1,2-Dichloroethane	8.256	62	3941	2.51	ug/L		97
51)	tert Amyl alcohol	8.287	59	5698	107.60	ug/L		95
52)	Trichloroethene	8.640	95	3332	2.19	ug/L		89
53)	Methylcyclohexane	8.640	83	4506	1.91	ug/L		87
54)	Dibromomethane	9.097	93	2245	3.03	ug/L		80
55)	1,2-Dichloropropane	9.177	63	2736	2.22	ug/L		88
56)	Bromodichloromethane	9.219	83	3975	2.11	ug/L		85
57)	Methyl methacrylate	9.347	41	1130	1.63	ug/L	#	87
58)	1,4-Dioxane	9.451	88	746	116.77	ug/L	#	28
59)	2-Chloroethyl vinyl ether	9.756	63	3249	73.34	ug/L		92
60)	cis-1,3-Dichloropropene	9.853	75	4100	2.01	ug/L		98
63)	Toluene	10.085	91	14026	2.23	ug/L		92
64)	Isobutyl alcohol	8.183	43	3533	152.00	ug/L	#	68
65)	2-Nitropropane	10.323	41	5373	24.42	ug/L		89
66)	4-Methyl-2-pentanone	10.426	43	23372	31.18	ug/L		96
67)	trans-1,3-Dichloropropene	10.500	75	3488	2.05	ug/L		87
68)	Tetrachloroethene	10.493	166	3480	2.02	ug/L		90
69)	Ethyl methacrylate	10.609	69	2018	1.71	ug/L	#	51
70)	1,1,2-Trichloroethane	10.652	83	2615	2.89	ug/L		90
71)	Dibromochloromethane	10.853	129	3116	2.21	ug/L		84
72)	1,3-Dichloropropane	10.938	76	4044	2.40	ug/L		90
73)	1,2-Dibromoethane	11.121	107	2783	2.52	ug/L		93
74)	3,3-Dimethyl-1-butanol	11.195	57	20322	1662.90	ug/L		93
75)	2-hexanone	11.262	43	14422	35.33	ug/L		91
76)	1-Chlorohexane	11.542	91	3491	1.83	ug/L		95
77)	Ethylbenzene	11.609	91	15649	2.21	ug/L		88
78)	Chlorobenzene	11.615	112	9243	2.21	ug/L		84
79)	1,1,1,2-Tetrachloroethane	11.658	131	3408	2.21	ug/L	#	58
80)	m,p-Xylene	11.749	91	22963	4.37	ug/L		95
81)	o-Xylene	12.194	91	11502	2.19	ug/L		98
82)	Styrene	12.255	104	6705	1.73	ug/L		95
83)	Bromoform	12.304	173	1794	2.46	ug/L		75
84)	Isopropylbenzene	12.493	105	13490	2.01	ug/L		98
87)	cis-1,4-Dichloro-2-butene	12.865	53	258	1.56	ug/L	#	6
88)	n-Propylbenzene	12.920	91	16793	2.11	ug/L		98
89)	Bromobenzene	12.938	156	3359	2.21	ug/L		82
90)	1,1,2,2-Tetrachloroethane	12.987	83	4385	3.75	ug/L		89
91)	1,3,5-Trimethylbenzene	13.097	105	11572	2.10	ug/L		97
92)	2-Chlorotoluene	13.109	91	11401	2.25	ug/L		95

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\12-20-2023\
Data File : 5E44759.D
Acq On : 20 Dec 2023 4:15 pm
Operator : joannel
Sample : IC1994-8
Misc : MS55506,V5E1994,,,,,
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Dec 21 04:41:15 2023
Quant Method : C:\msdchem\1\methods\V5E_12-20-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Mon Dec 18 08:44:27 2023
Response via : Initial Calibration

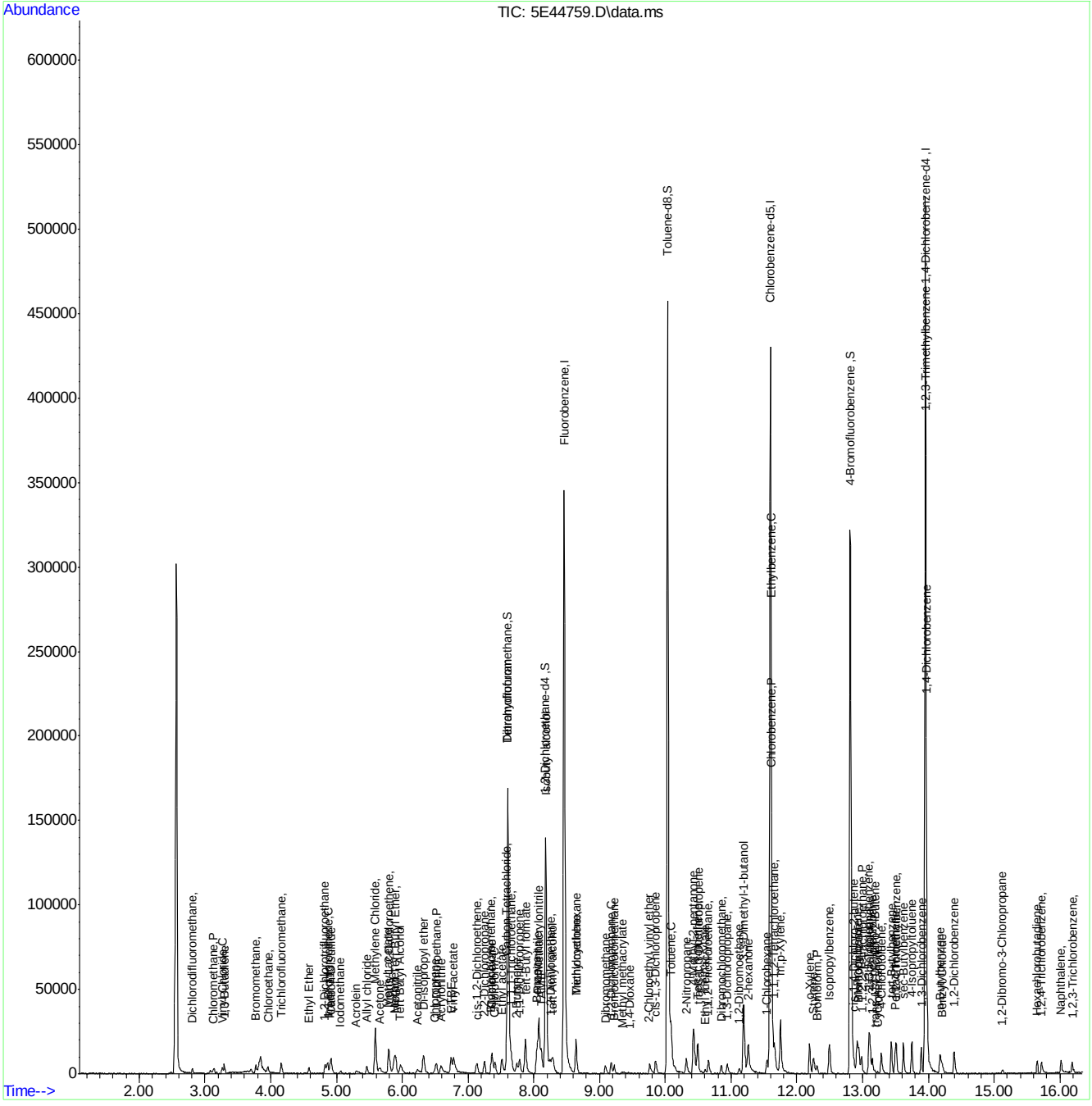
	Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
93)	trans-1,4-Dichloro-2-B...	13.188	53	349	2.36	ug/L	#	1
94)	1,2,3-Trichloropropane	13.151	110	1453	4.98	ug/L		89
95)	Cyclohexanone	13.231	55	741	50.62	ug/L	#	77
96)	4-Chlorotoluene	13.286	91	9493	2.13	ug/L		98
98)	tert-Butylbenzene	13.438	91	6126	2.07	ug/L		98
99)	1,2,4-Trimethylbenzene	13.511	105	11583	2.17	ug/L		98
100)	Pentachloroethane	13.493	167	1440	1.64	ug/L	#	80
101)	sec-Butylbenzene	13.621	105	14829	2.10	ug/L		95
102)	4-Isopropyltoluene	13.749	119	12371	2.12	ug/L		98
103)	1,3-Dichlorobenzene	13.895	146	7113	2.30	ug/L		95
104)	1,2,3-Trimethylbenzene	13.962	105	12200	2.18	ug/L		89
105)	1,4-Dichlorobenzene	13.968	146	7878	2.29	ug/L	#	81
106)	n-Butylbenzene	14.176	92	5533	2.16	ug/L		88
107)	Benzyl Chloride	14.206	126	715	2.78	ug/L	#	70
108)	1,2-Dichlorobenzene	14.395	146	6324	2.32	ug/L		93
109)	1,2-Dibromo-3-Chloropr...	15.121	75	256	2.95	ug/L	#	73
110)	Hexachlorobutadiene	15.651	225	1175	2.28	ug/L		81
111)	1,2,4-Trichlorobenzene	15.718	180	3517	3.25	ug/L		88
112)	Naphthalene	16.017	128	9806	7.57	ug/L		100
113)	1,2,3-Trichlorobenzene	16.194	180	2919	4.22	ug/L	#	71

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\12-20-2023\
Data File : 5E44759.D
Acq On : 20 Dec 2023 4:15 pm
Operator : joannel
Sample : IC1994-8
Misc : MS55506,V5E1994,,,,,
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Dec 21 04:41:15 2023
Quant Method : C:\msdchem\1\methods\V5E_12-20-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Mon Dec 18 08:44:27 2023
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\12-20-2023\
Data File : 5E44760.D
Acq On : 20 Dec 2023 4:38 pm
Operator : joannel
Sample : IC1994-2
Misc : MS55506,V5E1994,,,,,
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Dec 21 04:41:17 2023
Quant Method : C:\msdchem\1\methods\V5E_12-20-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Mon Dec 18 08:44:27 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Fluorobenzene	8.464	96	320283	50.00	ug/L		0.00
61) Chlorobenzene-d5	11.597	117	240308	50.00	ug/L		0.00
85) 1,4-Dichlorobenzene-d4	13.956	152	133222	50.00	ug/L		0.00
System Monitoring Compounds							
39) Dibromofluoromethane	7.604	113	96957	50.41	ug/L		0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 100.82%				
49) 1,2-Dichloroethane-d4	8.177	65	93705	56.20	ug/L		0.00
Spiked Amount 50.000	Range 79 - 125		Recovery = 112.40%				
62) Toluene-d8	10.036	98	313963	48.83	ug/L		0.00
Spiked Amount 50.000	Range 85 - 112		Recovery = 97.66%				
86) 4-Bromofluorobenzene	12.810	95	100631	47.94	ug/L		0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 95.88%				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	2.806	85	5965	4.33	ug/L		94
3) Chloromethane	3.129	50	6505	4.99	ug/L		97
4) Vinyl Chloride	3.263	62	6578	4.72	ug/L		99
5) 1,3-Butadiene	3.294	39	7326	4.82	ug/L		89
6) Bromomethane	3.769	94	4735	4.08	ug/L		85
7) Chloroethane	3.952	64	5923	7.37	ug/L		99
8) Trichlorofluoromethane	4.166	101	10268	4.91	ug/L		92
9) Ethyl Ether	4.580	59	5347	5.89	ug/L		94
10) Ethanol	4.830	45	1446	285.53	ug/L	#	44
11) 1,2-Dichlorotrifluoroe...	4.830	67	8037	5.22	ug/L		89
12) 1,1-Dichloroethene	4.867	61	10119	5.21	ug/L		90
13) Freon 113	4.903	101	6581	5.03	ug/L		94
14) Carbon Disulfide	4.922	76	22272	5.48	ug/L		99
15) Iodomethane	5.062	142	4981	2.51	ug/L		98
16) Acrolein	5.293	56	6123	52.32	ug/L		82
17) Allyl chloride	5.464	41	8006	4.84	ug/L		93
18) Methylene Chloride	5.592	49	19711	10.56	ug/L		90
19) Acetone	5.653	43	15578	88.85	ug/L		98
20) Methyl acetate	5.787	43	33462	78.35	ug/L		97
21) trans-1,2-Dichloroethene	5.799	61	9572	5.60	ug/L		98
22) Hexane	5.873	56	5172	4.92	ug/L	#	77
23) Methyl Tert Butyl Ether	5.897	73	20908	6.29	ug/L		84
24) Acetonitrile	6.226	41	10469	204.50	ug/L		84
25) Di-isopropyl ether	6.324	45	19178	5.05	ug/L		97
26) Chloroprene	6.494	53	8921	4.97	ug/L		88
27) 1,1-Dichloroethane	6.519	63	12483	5.09	ug/L		96
28) Acrylonitrile	6.580	53	19533	86.13	ug/L		95
29) ETBE	6.744	59	19446	5.06	ug/L		98
30) Tert Butyl Alcohol	5.976	59	17383	163.40	ug/L		95
31) Vinyl acetate	6.775	43	76719	39.65	ug/L		100
32) cis-1,2-Dichloroethene	7.135	96	7876	5.42	ug/L		86
33) 2,2-Dichloropropane	7.250	77	10041	5.12	ug/L		97
34) Bromochloromethane	7.354	128	4090	5.33	ug/L		95
35) Cyclohexane	7.372	56	9843	4.64	ug/L		96

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\12-20-2023\
Data File : 5E44760.D
Acq On : 20 Dec 2023 4:38 pm
Operator : joannel
Sample : IC1994-2
Misc : MS55506,V5E1994,,,,,
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Dec 21 04:41:17 2023
Quant Method : C:\msdchem\1\methods\V5E_12-20-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Mon Dec 18 08:44:27 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
36) Chloroform	7.409	83	13138	5.10	ug/L		90
37) Ethyl acetate	7.506	43	55373	81.15	ug/L		98
38) Tetrahydrofuran	7.604	42	4009	17.52	ug/L		84
40) Carbon Tetrachloride	7.586	117	10678	5.37	ug/L		96
41) 1,1,1-Trichloroethane	7.653	97	11367	5.16	ug/L		93
42) 2-Butanone	7.732	43	22414	77.42	ug/L		99
43) 1,1-Dichloropropene	7.787	75	9016	5.24	ug/L		93
44) tert-Butyl formate	7.872	59	18070	64.41	ug/L		89
45) Propionitrile	8.055	54	15402	208.08	ug/L	#	60
46) Methacrylonitrile	8.073	41	51271	104.64	ug/L		98
47) Benzene	8.049	78	29267	5.51	ug/L		97
48) TAME	8.116	73	20689	5.81	ug/L		100
50) 1,2-Dichloroethane	8.250	62	9508	6.08	ug/L		98
51) tert Amyl alcohol	8.281	59	13920	251.60	ug/L		98
52) Trichloroethene	8.646	95	8116	5.35	ug/L		93
53) Methylcyclohexane	8.640	83	11484	4.87	ug/L		94
54) Dibromomethane	9.091	93	4838	6.54	ug/L		98
55) 1,2-Dichloropropane	9.177	63	6622	5.38	ug/L		89
56) Bromodichloromethane	9.226	83	9565	5.09	ug/L		95
57) Methyl methacrylate	9.341	41	5663	8.17	ug/L		91
58) 1,4-Dioxane	9.427	88	2394	375.33	ug/L		78
59) 2-Chloroethyl vinyl ether	9.762	63	9164	207.18	ug/L		94
60) cis-1,3-Dichloropropene	9.854	75	10012	4.92	ug/L		93
63) Toluene	10.091	91	31362	5.17	ug/L		96
64) Isobutyl alcohol	8.183	43	10418	444.08	ug/L		85
65) 2-Nitropropane	10.317	41	14175	66.69	ug/L		97
66) 4-Methyl-2-pentanone	10.427	43	49519	68.39	ug/L		98
67) trans-1,3-Dichloropropene	10.494	75	9121	5.54	ug/L		96
68) Tetrachloroethene	10.494	166	8998	5.41	ug/L		85
69) Ethyl methacrylate	10.591	69	8500	7.43	ug/L		95
70) 1,1,2-Trichloroethane	10.652	83	6087	6.96	ug/L		93
71) Dibromochloromethane	10.847	129	8295	6.09	ug/L		77
72) 1,3-Dichloropropane	10.939	76	9990	6.14	ug/L		94
73) 1,2-Dibromoethane	11.122	107	7047	6.61	ug/L		86
74) 3,3-Dimethyl-1-butanol	11.189	57	43706	2968.69	ug/L		93
75) 2-hexanone	11.256	43	31019	77.73	ug/L		90
76) 1-Chlorohexane	11.548	91	9362	5.09	ug/L		91
77) Ethylbenzene	11.609	91	32729	4.79	ug/L		97
78) Chlorobenzene	11.615	112	21156	5.22	ug/L		94
79) 1,1,1,2-Tetrachloroethane	11.670	131	7478	5.02	ug/L		94
80) m,p-Xylene	11.749	91	49217	9.69	ug/L		94
81) o-Xylene	12.195	91	26090	5.14	ug/L		98
82) Styrene	12.249	104	19269	5.16	ug/L		95
83) Bromoform	12.310	173	5101	7.20	ug/L		94
84) Isopropylbenzene	12.493	105	32709	5.04	ug/L		97
87) cis-1,4-Dichloro-2-butene	12.865	53	2217	13.47	ug/L	#	78
88) n-Propylbenzene	12.914	91	39307	4.95	ug/L		100
89) Bromobenzene	12.944	156	8194	5.43	ug/L	#	77
90) 1,1,2,2-Tetrachloroethane	12.981	83	10463	9.00	ug/L		83
91) 1,3,5-Trimethylbenzene	13.097	105	26911	4.92	ug/L		98

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\12-20-2023\
Data File : 5E44760.D
Acq On : 20 Dec 2023 4:38 pm
Operator : joannel
Sample : IC1994-2
Misc : MS55506,V5E1994,,,,,
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Dec 21 04:41:17 2023
Quant Method : C:\msdchem\1\methods\V5E_12-20-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Mon Dec 18 08:44:27 2023
Response via : Initial Calibration

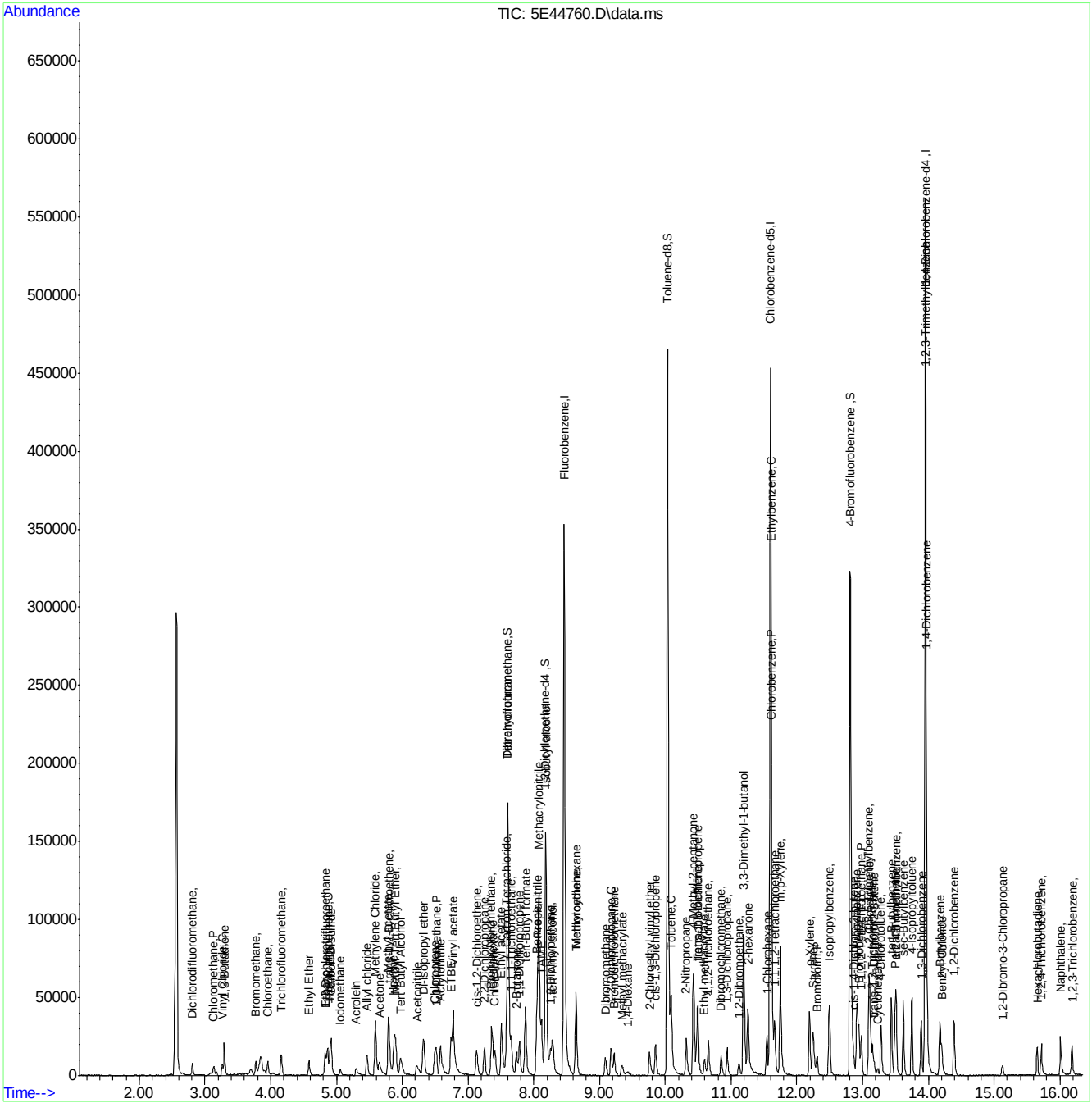
	Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
92)	2-Chlorotoluene	13.109	91	24925	4.94	ug/L		91
93)	trans-1,4-Dichloro-2-B...	13.176	53	1517	10.30	ug/L	#	50
94)	1,2,3-Trichloropropane	13.152	110	3097	10.67	ug/L		96
95)	Cyclohexanone	13.225	55	2459	168.81	ug/L		82
96)	4-Chlorotoluene	13.280	91	21911	4.94	ug/L		99
98)	tert-Butylbenzene	13.438	91	15016	5.09	ug/L		95
99)	1,2,4-Trimethylbenzene	13.511	105	25333	4.78	ug/L		93
100)	Pentachloroethane	13.493	167	4362	4.98	ug/L		92
101)	sec-Butylbenzene	13.621	105	34450	4.89	ug/L		96
102)	4-Isopropyltoluene	13.749	119	28747	4.95	ug/L		93
103)	1,3-Dichlorobenzene	13.895	146	15900	5.16	ug/L		95
104)	1,2,3-Trimethylbenzene	13.962	105	27171	4.88	ug/L		91
105)	1,4-Dichlorobenzene	13.969	146	17227	5.03	ug/L		85
106)	n-Butylbenzene	14.176	92	12691	4.98	ug/L		98
107)	Benzyl Chloride	14.206	126	2660	10.10	ug/L	#	78
108)	1,2-Dichlorobenzene	14.389	146	14937	5.50	ug/L		95
109)	1,2-Dibromo-3-Chloropr...	15.127	75	1546	16.95	ug/L		91
110)	Hexachlorobutadiene	15.657	225	2484	4.85	ug/L		94
111)	1,2,4-Trichlorobenzene	15.718	180	7680	7.08	ug/L		97
112)	Naphthalene	16.011	128	23215	17.50	ug/L		97
113)	1,2,3-Trichlorobenzene	16.188	180	6742	9.71	ug/L		90

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\12-20-2023\
Data File : 5E44760.D
Acq On : 20 Dec 2023 4:38 pm
Operator : joannel
Sample : IC1994-2
Misc : MS55506,V5E1994,,,,,
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Dec 21 04:41:17 2023
Quant Method : C:\msdchem\1\methods\V5E_12-20-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Mon Dec 18 08:44:27 2023
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\12-20-2023\
Data File : 5E44761.D
Acq On : 20 Dec 2023 5:01 pm
Operator : joannel
Sample : IC1994-3
Misc : MS55506,V5E1994,,,,,
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Dec 21 04:41:19 2023
Quant Method : C:\msdchem\1\methods\V5E_12-20-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Mon Dec 18 08:44:27 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	8.463	96	325210	50.00	ug/L	0.00
61) Chlorobenzene-d5	11.597	117	248818	50.00	ug/L	0.00
85) 1,4-Dichlorobenzene-d4	13.956	152	137666	50.00	ug/L	0.00
System Monitoring Compounds						
39) Dibromofluoromethane	7.604	113	98512	50.45	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 100.90%			
49) 1,2-Dichloroethane-d4	8.177	65	96109	56.77	ug/L	0.00
Spiked Amount 50.000	Range 79 - 125		Recovery = 113.54%			
62) Toluene-d8	10.036	98	318635	47.86	ug/L	0.00
Spiked Amount 50.000	Range 85 - 112		Recovery = 95.72%			
86) 4-Bromofluorobenzene	12.810	95	102269	47.14	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 94.28%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	2.806	85	11919	8.52	ug/L	95
3) Chloromethane	3.129	50	14833	11.21	ug/L	95
4) Vinyl Chloride	3.263	62	14940	10.55	ug/L	99
5) 1,3-Butadiene	3.294	39	15433	10.01	ug/L	94
6) Bromomethane	3.769	94	11379	9.66	ug/L	92
7) Chloroethane	3.952	64	14548	17.41	ug/L	92
8) Trichlorofluoromethane	4.159	101	23153	10.90	ug/L	89
9) Ethyl Ether	4.580	59	11184	12.12	ug/L	97
10) Ethanol	4.775	45	4354	846.73	ug/L	93
11) 1,2-Dichlorotrifluoroe...	4.824	67	16837	10.77	ug/L	94
12) 1,1-Dichloroethene	4.860	61	20151	10.22	ug/L	97
13) Freon 113	4.903	101	13492	10.15	ug/L	95
14) Carbon Disulfide	4.921	76	42573	10.31	ug/L	97
15) Iodomethane	5.055	142	13351	6.64	ug/L	91
16) Acrolein	5.293	56	13963	117.51	ug/L	88
17) Allyl chloride	5.458	41	17447	10.40	ug/L	97
18) Methylene Chloride	5.586	49	24447	12.90	ug/L	95
19) Acetone	5.647	43	32564	182.92	ug/L	95
20) Methyl acetate	5.781	43	70345	162.22	ug/L	99
21) trans-1,2-Dichloroethene	5.793	61	18053	10.39	ug/L	92
22) Hexane	5.878	56	11187	10.48	ug/L	90
23) Methyl Tert Butyl Ether	5.897	73	42818	12.68	ug/L	86
24) Acetonitrile	6.220	41	24016	462.03	ug/L	89
25) Di-isopropyl ether	6.317	45	38898	10.08	ug/L	97
26) Chloroprene	6.488	53	18551	10.18	ug/L	95
27) 1,1-Dichloroethane	6.519	63	26668	10.70	ug/L	97
28) Acrylonitrile	6.573	53	35456	153.97	ug/L	98
29) ETBE	6.738	59	41543	10.64	ug/L	96
30) Tert Butyl Alcohol	5.976	59	38726	358.51	ug/L	89
31) Vinyl acetate	6.769	43	137723	70.10	ug/L	100
32) cis-1,2-Dichloroethene	7.128	96	17203	11.66	ug/L	85
33) 2,2-Dichloropropane	7.250	77	19994	10.03	ug/L	97
34) Bromochloromethane	7.354	128	8809	11.31	ug/L	85
35) Cyclohexane	7.366	56	20718	9.62	ug/L	90

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\12-20-2023\
Data File : 5E44761.D
Acq On : 20 Dec 2023 5:01 pm
Operator : joannel
Sample : IC1994-3
Misc : MS55506,V5E1994,,,,,
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Dec 21 04:41:19 2023
Quant Method : C:\msdchem\1\methods\V5E_12-20-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Mon Dec 18 08:44:27 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
36) Chloroform	7.409	83	27686	10.58	ug/L		97
37) Ethyl acetate	7.500	43	96545	139.34	ug/L		98
38) Tetrahydrofuran	7.598	42	8702	38.15	ug/L		97
40) Carbon Tetrachloride	7.585	117	21738	10.77	ug/L		92
41) 1,1,1-Trichloroethane	7.659	97	24053	10.75	ug/L		98
42) 2-Butanone	7.726	43	51122	173.90	ug/L		98
43) 1,1-Dichloropropene	7.781	75	18817	10.77	ug/L		94
44) tert-Butyl formate	7.872	59	48754	171.14	ug/L		94
45) Propionitrile	8.055	54	36193	443.68	ug/L	#	56
46) Methacrylonitrile	8.073	41	117706	236.58	ug/L		97
47) Benzene	8.049	78	58936	10.93	ug/L		85
48) TAME	8.116	73	43299	11.97	ug/L		96
50) 1,2-Dichloroethane	8.250	62	20177	12.70	ug/L		99
51) tert Amyl alcohol	8.287	59	30684	506.44	ug/L		94
52) Trichloroethene	8.640	95	16753	10.87	ug/L		97
53) Methylcyclohexane	8.640	83	24259	10.13	ug/L		95
54) Dibromomethane	9.085	93	10891	14.49	ug/L		95
55) 1,2-Dichloropropane	9.177	63	14011	11.22	ug/L		93
56) Bromodichloromethane	9.219	83	20667	10.82	ug/L		100
57) Methyl methacrylate	9.335	41	14083	20.02	ug/L		88
58) 1,4-Dioxane	9.414	88	6287	970.75	ug/L		81
59) 2-Chloroethyl vinyl ether	9.756	63	24178	538.34	ug/L		96
60) cis-1,3-Dichloropropene	9.847	75	20969	10.14	ug/L		96
63) Toluene	10.085	91	63890	10.17	ug/L		98
64) Isobutyl alcohol	8.177	43	23776	915.53	ug/L		97
65) 2-Nitropropane	10.317	41	30795	139.94	ug/L		90
66) 4-Methyl-2-pentanone	10.426	43	102074	136.16	ug/L		99
67) trans-1,3-Dichloropropene	10.487	75	19716	11.49	ug/L		90
68) Tetrachloroethene	10.487	166	18213	10.58	ug/L		93
69) Ethyl methacrylate	10.591	69	19602	16.42	ug/L		95
70) 1,1,2-Trichloroethane	10.652	83	12535	13.84	ug/L		95
71) Dibromochloromethane	10.847	129	16753	11.88	ug/L		97
72) 1,3-Dichloropropane	10.938	76	22313	13.26	ug/L		98
73) 1,2-Dibromoethane	11.115	107	16403	14.87	ug/L		91
74) 3,3-Dimethyl-1-butanol	11.188	57	125904	5786.40	ug/L		98
75) 2-hexanone	11.249	43	74525	175.54	ug/L		97
76) 1-Chlorohexane	11.542	91	20372	10.70	ug/L		96
77) Ethylbenzene	11.609	91	70959	10.03	ug/L		98
78) Chlorobenzene	11.615	112	44887	10.71	ug/L		96
79) 1,1,1,2-Tetrachloroethane	11.664	131	16128	10.45	ug/L		96
80) m,p-Xylene	11.749	91	104993	19.97	ug/L		97
81) o-Xylene	12.188	91	53450	10.16	ug/L		96
82) Styrene	12.243	104	39819	10.29	ug/L		97
83) Bromoform	12.304	173	11193	15.10	ug/L		93
84) Isopropylbenzene	12.493	105	70272	10.45	ug/L		97
87) cis-1,4-Dichloro-2-butene	12.859	53	6009	35.34	ug/L	#	84
88) n-Propylbenzene	12.914	91	80724	9.84	ug/L		95
89) Bromobenzene	12.944	156	17612	11.29	ug/L		89
90) 1,1,2,2-Tetrachloroethane	12.981	83	22349	18.60	ug/L		98
91) 1,3,5-Trimethylbenzene	13.097	105	56292	9.95	ug/L		98

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\12-20-2023\
Data File : 5E44761.D
Acq On : 20 Dec 2023 5:01 pm
Operator : joannel
Sample : IC1994-3
Misc : MS55506,V5E1994,,,,,
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Dec 21 04:41:19 2023
Quant Method : C:\msdchem\1\methods\V5E_12-20-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Mon Dec 18 08:44:27 2023
Response via : Initial Calibration

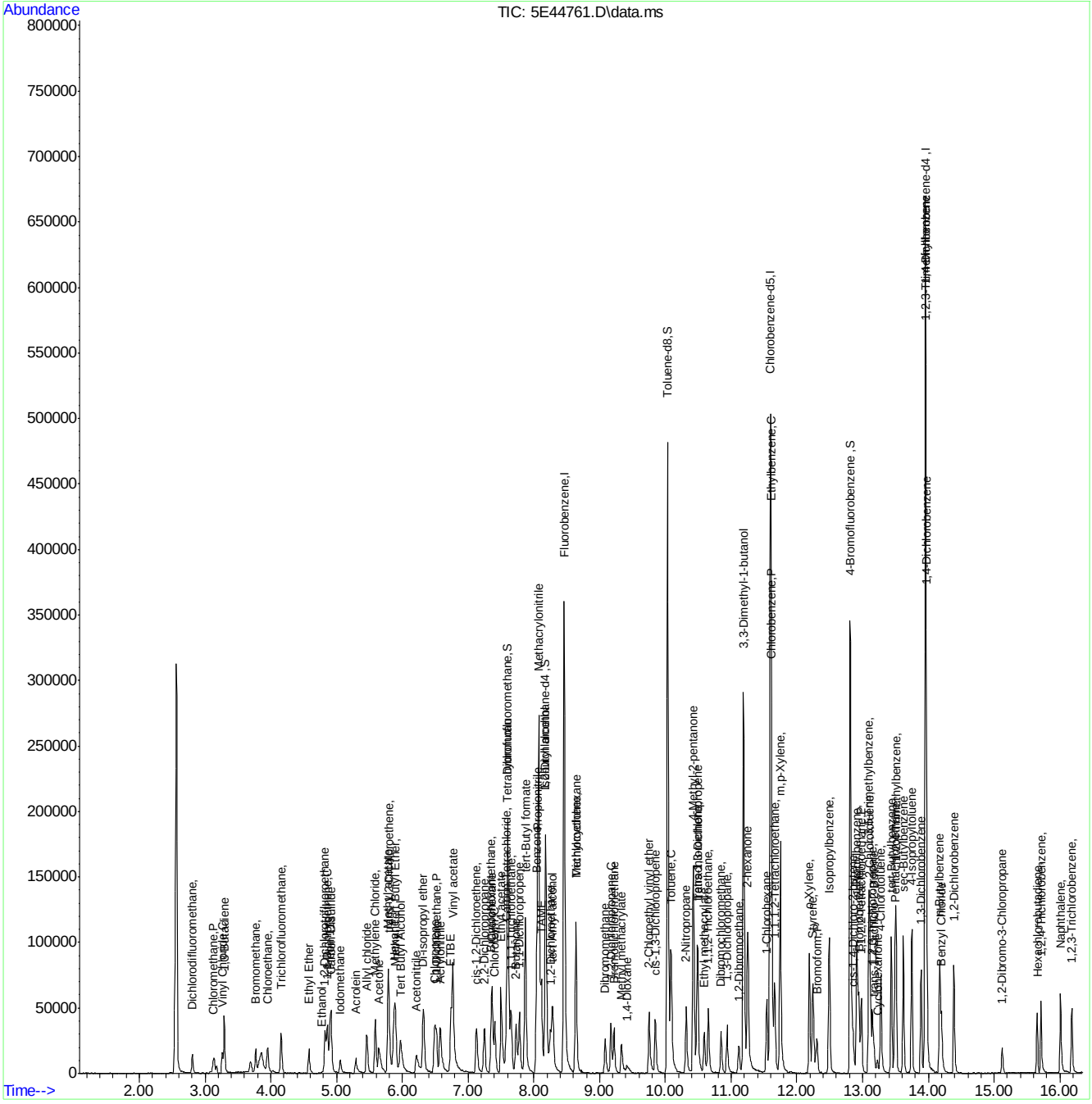
	Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
92)	2-Chlorotoluene	13.109	91	51996	9.97	ug/L		97
93)	trans-1,4-Dichloro-2-B...	13.170	53	4750	31.21	ug/L	#	62
94)	1,2,3-Trichloropropane	13.145	110	6636	22.12	ug/L		93
95)	Cyclohexanone	13.225	55	4401	292.38	ug/L	#	71
96)	4-Chlorotoluene	13.273	91	44294	9.67	ug/L		99
98)	tert-Butylbenzene	13.438	91	29897	9.80	ug/L		92
99)	1,2,4-Trimethylbenzene	13.505	105	54562	9.96	ug/L		96
100)	Pentachloroethane	13.493	167	9179	10.14	ug/L		91
101)	sec-Butylbenzene	13.621	105	74228	10.20	ug/L		97
102)	4-Isopropyltoluene	13.749	119	62891	10.47	ug/L		97
103)	1,3-Dichlorobenzene	13.889	146	33366	10.48	ug/L		96
104)	1,2,3-Trimethylbenzene	13.962	105	58051	10.09	ug/L		95
105)	1,4-Dichlorobenzene	13.968	146	37484	10.59	ug/L		96
106)	n-Butylbenzene	14.169	92	29704	11.28	ug/L		94
107)	Benzyl Chloride	14.200	126	6187	21.78	ug/L	#	77
108)	1,2-Dichlorobenzene	14.389	146	32595	11.61	ug/L		97
109)	1,2-Dibromo-3-Chloropr...	15.121	75	3948	38.66	ug/L	#	80
110)	Hexachlorobutadiene	15.657	225	6129	11.58	ug/L		87
111)	1,2,4-Trichlorobenzene	15.712	180	16924	14.86	ug/L		99
112)	Naphthalene	16.011	128	52037	36.05	ug/L		99
113)	1,2,3-Trichlorobenzene	16.181	180	15410	21.05	ug/L		95

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\12-20-2023\
Data File : 5E44761.D
Acq On : 20 Dec 2023 5:01 pm
Operator : joannel
Sample : IC1994-3
Misc : MS55506,V5E1994,,,,,
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Dec 21 04:41:19 2023
Quant Method : C:\msdchem\1\methods\V5E_12-20-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Mon Dec 18 08:44:27 2023
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\12-20-2023\
Data File : 5E44762.D
Acq On : 20 Dec 2023 5:24 pm
Operator : joannel
Sample : IC1994-4
Misc : MS55506,V5E1994,,,,,
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Dec 21 04:41:21 2023
Quant Method : C:\msdchem\1\methods\V5E_12-20-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Mon Dec 18 08:44:27 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	8.463	96	349106	50.00	ug/L	0.00
61) Chlorobenzene-d5	11.597	117	271795	50.00	ug/L	0.00
85) 1,4-Dichlorobenzene-d4	13.956	152	155007	50.00	ug/L	0.00
System Monitoring Compounds						
39) Dibromofluoromethane	7.604	113	105749	50.45	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 100.90%			
49) 1,2-Dichloroethane-d4	8.177	65	106233	58.46	ug/L	0.00
Spiked Amount 50.000	Range 79 - 125		Recovery = 116.92%			
62) Toluene-d8	10.036	98	342263	47.06	ug/L	0.00
Spiked Amount 50.000	Range 85 - 112		Recovery = 94.12%			
86) 4-Bromofluorobenzene	12.810	95	113216	46.35	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 92.70%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	2.806	85	32309	21.51	ug/L	100
3) Chloromethane	3.135	50	32012	22.53	ug/L	98
4) Vinyl Chloride	3.263	62	35577	23.41	ug/L	95
5) 1,3-Butadiene	3.294	39	32846	19.85	ug/L	98
6) Bromomethane	3.769	94	23586	18.66	ug/L	100
7) Chloroethane	3.946	64	45769	47.68	ug/L	96
8) Trichlorofluoromethane	4.153	101	61055	26.78	ug/L	93
9) Ethyl Ether	4.580	59	31126	31.43	ug/L	93
10) Ethanol	4.781	45	10004	1812.34	ug/L	84
11) 1,2-Dichlorotrifluoroe...	4.830	67	45502	27.13	ug/L	96
12) 1,1-Dichloroethene	4.860	61	55474	26.20	ug/L	95
13) Freon 113	4.903	101	39841	27.93	ug/L	97
14) Carbon Disulfide	4.921	76	118155	26.66	ug/L	97
15) Iodomethane	5.062	142	41442	19.19	ug/L	100
16) Acrolein	5.287	56	42543	333.54	ug/L	92
17) Allyl chloride	5.458	41	37691	20.92	ug/L	93
18) Methylene Chloride	5.592	49	54475	26.78	ug/L	95
19) Acetone	5.647	43	82369	431.01	ug/L	99
20) Methyl acetate	5.781	43	201969	433.87	ug/L	99
21) trans-1,2-Dichloroethene	5.793	61	50589	27.13	ug/L	93
22) Hexane	5.872	56	29457	25.71	ug/L	96
23) Methyl Tert Butyl Ether	5.897	73	122712	33.86	ug/L	87
24) Acetonitrile	6.220	41	49484	886.82	ug/L	93
25) Di-isopropyl ether	6.324	45	111340	26.89	ug/L	98
26) Chloroprene	6.488	53	41406	21.18	ug/L	98
27) 1,1-Dichloroethane	6.519	63	70967	26.53	ug/L	98
28) Acrylonitrile	6.574	53	89504	362.07	ug/L	98
29) ETBE	6.744	59	116227	27.74	ug/L	100
30) Tert Butyl Alcohol	5.976	59	103232	890.26	ug/L	99
31) Vinyl acetate	6.769	43	364221	172.71	ug/L	100
32) cis-1,2-Dichloroethene	7.128	96	46061	29.09	ug/L	95
33) 2,2-Dichloropropane	7.250	77	55257	25.83	ug/L	98
34) Bromochloromethane	7.354	128	25487	30.49	ug/L	91
35) Cyclohexane	7.366	56	60001	25.95	ug/L	94

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\12-20-2023\
Data File : 5E44762.D
Acq On : 20 Dec 2023 5:24 pm
Operator : joannel
Sample : IC1994-4
Misc : MS55506,V5E1994,,,,,
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Dec 21 04:41:21 2023
Quant Method : C:\msdchem\1\methods\V5E_12-20-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Mon Dec 18 08:44:27 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
36) Chloroform	7.409	83	78461	27.92	ug/L		98
37) Ethyl acetate	7.500	43	240721	323.64	ug/L		99
38) Tetrahydrofuran	7.598	42	19375	82.43	ug/L		92
40) Carbon Tetrachloride	7.586	117	61011	28.16	ug/L		99
41) 1,1,1-Trichloroethane	7.653	97	66455	27.67	ug/L		100
42) 2-Butanone	7.726	43	134052	424.79	ug/L		99
43) 1,1-Dichloropropene	7.781	75	54342	28.98	ug/L		97
44) tert-Butyl formate	7.872	59	125852	411.53	ug/L		94
45) Propionitrile	8.055	54	81310	823.91	ug/L	#	64
46) Methacrylonitrile	8.073	41	277528	519.63	ug/L		98
47) Benzene	8.049	78	164815	28.47	ug/L		89
48) TAME	8.116	73	122044	31.42	ug/L		96
50) 1,2-Dichloroethane	8.250	62	57290	33.59	ug/L		98
51) tert Amyl alcohol	8.287	59	86172	1125.76	ug/L		96
52) Trichloroethene	8.640	95	46397	28.05	ug/L		97
53) Methylcyclohexane	8.640	83	70536	27.45	ug/L		96
54) Dibromomethane	9.085	93	32113	39.80	ug/L		98
55) 1,2-Dichloropropane	9.171	63	37836	28.22	ug/L		97
56) Bromodichloromethane	9.219	83	58521	28.55	ug/L		97
57) Methyl methacrylate	9.329	41	33168	43.92	ug/L		98
58) 1,4-Dioxane	9.421	88	16964	2440.05	ug/L		95
59) 2-Chloroethyl vinyl ether	9.750	63	71149	1475.76	ug/L		98
60) cis-1,3-Dichloropropene	9.847	75	60827	27.40	ug/L		94
63) Toluene	10.085	91	175846	25.63	ug/L		97
64) Isobutyl alcohol	8.177	43	56110	1770.40	ug/L		97
65) 2-Nitropropane	10.317	41	87687	364.78	ug/L		90
66) 4-Methyl-2-pentanone	10.426	43	267604	326.78	ug/L		99
67) trans-1,3-Dichloropropene	10.487	75	58977	30.84	ug/L		96
68) Tetrachloroethene	10.493	166	50860	27.06	ug/L		91
69) Ethyl methacrylate	10.591	69	47270	35.64	ug/L		97
70) 1,1,2-Trichloroethane	10.652	83	35419	35.81	ug/L		90
71) Dibromochloromethane	10.847	129	50435	32.74	ug/L		95
72) 1,3-Dichloropropane	10.939	76	64501	35.08	ug/L		95
73) 1,2-Dibromoethane	11.115	107	47093	39.27	ug/L		91
74) 3,3-Dimethyl-1-butanol	11.188	57	334158	9832.19	ug/L		96
75) 2-hexanone	11.249	43	200773	407.15	ug/L		98
76) 1-Chlorohexane	11.542	91	56663	27.26	ug/L		98
77) Ethylbenzene	11.609	91	197192	25.52	ug/L		98
78) Chlorobenzene	11.615	112	123293	26.92	ug/L		98
79) 1,1,1,2-Tetrachloroethane	11.664	131	46236	27.44	ug/L		96
80) m,p-Xylene	11.749	91	294945	51.35	ug/L		98
81) o-Xylene	12.188	91	147833	25.73	ug/L		96
82) Styrene	12.243	104	117052	27.69	ug/L		96
83) Bromoform	12.304	173	34851	41.70	ug/L		94
84) Isopropylbenzene	12.493	105	192515	26.21	ug/L		99
87) cis-1,4-Dichloro-2-butene	12.853	53	12687	66.27	ug/L		88
88) n-Propylbenzene	12.914	91	217933	23.60	ug/L		95
89) Bromobenzene	12.944	156	49479	28.18	ug/L		90
90) 1,1,2,2-Tetrachloroethane	12.981	83	65929	48.73	ug/L		98
91) 1,3,5-Trimethylbenzene	13.091	105	155788	24.46	ug/L		100

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\12-20-2023\
Data File : 5E44762.D
Acq On : 20 Dec 2023 5:24 pm
Operator : joannel
Sample : IC1994-4
Misc : MS55506,V5E1994,,,,,
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Dec 21 04:41:21 2023
Quant Method : C:\msdchem\1\methods\V5E_12-20-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Mon Dec 18 08:44:27 2023
Response via : Initial Calibration

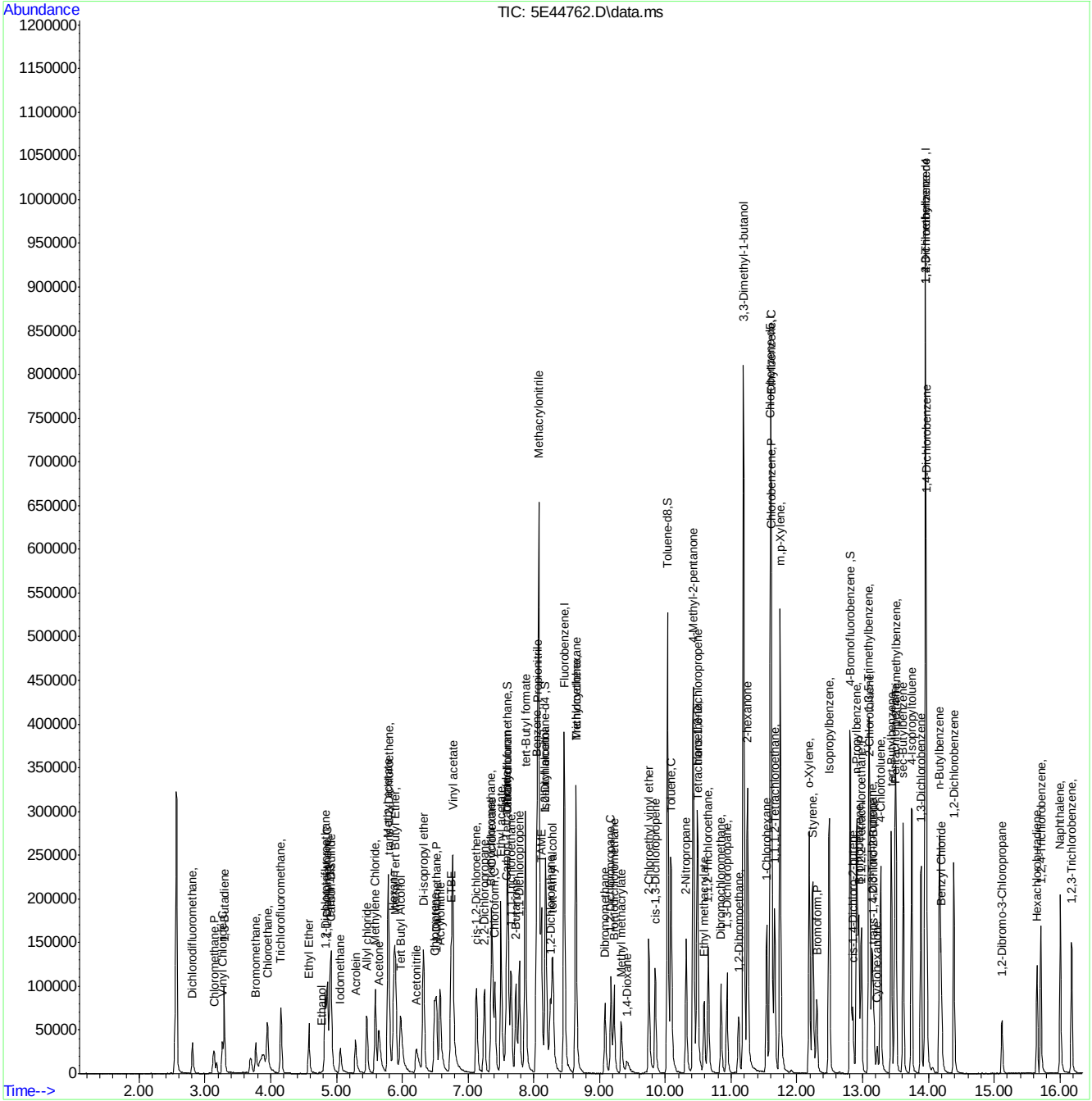
	Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
92)	2-Chlorotoluene	13.109	91	142611	24.27	ug/L		93
93)	trans-1,4-Dichloro-2-B...	13.164	53	13080	76.33	ug/L	#	74
94)	1,2,3-Trichloropropane	13.145	110	19159	56.71	ug/L		95
95)	Cyclohexanone	13.219	55	12794	754.87	ug/L		92
96)	4-Chlorotoluene	13.273	91	123004	23.85	ug/L		97
98)	tert-Butylbenzene	13.438	91	78739	22.93	ug/L		93
99)	1,2,4-Trimethylbenzene	13.505	105	152561	24.74	ug/L		95
100)	Pentachloroethane	13.493	167	22388	21.97	ug/L		92
101)	sec-Butylbenzene	13.615	105	196329	23.96	ug/L		99
102)	4-Isopropyltoluene	13.749	119	171887	25.42	ug/L		97
103)	1,3-Dichlorobenzene	13.889	146	95265	26.59	ug/L		98
104)	1,2,3-Trimethylbenzene	13.956	105	163206	25.19	ug/L		97
105)	1,4-Dichlorobenzene	13.968	146	105672	26.52	ug/L		97
106)	n-Butylbenzene	14.170	92	83652	28.20	ug/L		98
107)	Benzyl Chloride	14.200	126	20836	57.73	ug/L	#	74
108)	1,2-Dichlorobenzene	14.389	146	92944	29.39	ug/L		97
109)	1,2-Dibromo-3-Chloropr...	15.121	75	11114	83.40	ug/L		96
110)	Hexachlorobutadiene	15.651	225	15281	25.63	ug/L		96
111)	1,2,4-Trichlorobenzene	15.712	180	49110	36.66	ug/L		96
112)	Naphthalene	16.005	128	158205	85.73	ug/L		99
113)	1,2,3-Trichlorobenzene	16.181	180	43508	50.25	ug/L		94

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\12-20-2023\
Data File : 5E44762.D
Acq On : 20 Dec 2023 5:24 pm
Operator : joannel
Sample : IC1994-4
Misc : MS55506,V5E1994,,,,,
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Dec 21 04:41:21 2023
Quant Method : C:\msdchem\1\methods\V5E_12-20-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Mon Dec 18 08:44:27 2023
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\12-20-2023\
Data File : 5E44763.D
Acq On : 20 Dec 2023 5:47 pm
Operator : joannel
Sample : ICC1994-5
Misc : MS55506,V5E1994,,,,,
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Dec 21 04:41:23 2023
Quant Method : C:\msdchem\1\methods\V5E_12-20-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Mon Dec 18 08:44:27 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	8.463	96	371111	50.00	ug/L	0.00
61) Chlorobenzene-d5	11.597	117	292823	50.00	ug/L	0.00
85) 1,4-Dichlorobenzene-d4	13.956	152	168062	50.00	ug/L	0.00
System Monitoring Compounds						
39) Dibromofluoromethane	7.604	113	111634	50.10	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 100.20%			
49) 1,2-Dichloroethane-d4	8.177	65	108819	56.33	ug/L	0.00
Spiked Amount 50.000	Range 79 - 125		Recovery = 112.66%			
62) Toluene-d8	10.036	98	363866	46.44	ug/L	0.00
Spiked Amount 50.000	Range 85 - 112		Recovery = 92.88%			
86) 4-Bromofluorobenzene	12.810	95	119224	45.02	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 90.04%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	2.806	85	56909	35.64	ug/L	99
3) Chloromethane	3.135	50	56889	37.67	ug/L	94
4) Vinyl Chloride	3.263	62	61821	38.26	ug/L	97
5) 1,3-Butadiene	3.294	39	60695	34.50	ug/L	100
6) Bromomethane	3.769	94	44568	33.16	ug/L	98
7) Chloroethane	3.946	64	106067	94.41	ug/L	99
8) Trichlorofluoromethane	4.153	101	117176	48.34	ug/L	100
9) Ethyl Ether	4.580	59	47765	45.37	ug/L	96
10) Ethanol	4.787	45	21348	3638.11	ug/L	83
11) 1,2-Dichlorotrifluoroe...	4.830	67	74162	41.59	ug/L	96
12) 1,1-Dichloroethene	4.860	61	89043	39.56	ug/L	96
13) Freon 113	4.897	101	65269	43.05	ug/L	97
14) Carbon Disulfide	4.915	76	183212	38.90	ug/L	99
15) Iodomethane	5.062	142	69013	30.06	ug/L	98
16) Acrolein	5.287	56	75086	553.77	ug/L	87
17) Allyl chloride	5.458	41	69530	36.31	ug/L	96
18) Methylene Chloride	5.586	49	83161	38.46	ug/L	95
19) Acetone	5.641	43	145619	716.79	ug/L	97
20) Methyl acetate	5.775	43	330141	667.16	ug/L	99
21) trans-1,2-Dichloroethene	5.793	61	82076	41.41	ug/L	97
22) Hexane	5.872	56	48405	39.74	ug/L	88
23) Methyl Tert Butyl Ether	5.897	73	196106	50.90	ug/L	85
24) Acetonitrile	6.214	41	97640	1646.09	ug/L	98
25) Di-isopropyl ether	6.324	45	174793	39.70	ug/L	99
26) Chloroprene	6.488	53	80393	38.68	ug/L	98
27) 1,1-Dichloroethane	6.519	63	114217	40.16	ug/L	99
28) Acrylonitrile	6.574	53	155945	593.45	ug/L	98
29) ETBE	6.744	59	183665	41.23	ug/L	97
30) Tert Butyl Alcohol	5.976	59	167231	1356.66	ug/L	96
31) Vinyl acetate	6.769	43	633517	282.59	ug/L	98
32) cis-1,2-Dichloroethene	7.128	96	72365	42.99	ug/L	89
33) 2,2-Dichloropropane	7.250	77	88730	39.01	ug/L	97
34) Bromochloromethane	7.354	128	39149	44.06	ug/L	90
35) Cyclohexane	7.366	56	97632	39.73	ug/L	92

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\12-20-2023\
Data File : 5E44763.D
Acq On : 20 Dec 2023 5:47 pm
Operator : joannel
Sample : ICC1994-5
Misc : MS55506,V5E1994,,,,,
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Dec 21 04:41:23 2023
Quant Method : C:\msdchem\1\methods\V5E_12-20-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Mon Dec 18 08:44:27 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
36) Chloroform	7.409	83	124726	41.76	ug/L		98
37) Ethyl acetate	7.500	43	412871	522.18	ug/L		98
38) Tetrahydrofuran	7.598	42	30779	128.82	ug/L		91
40) Carbon Tetrachloride	7.585	117	98453	42.75	ug/L		98
41) 1,1,1-Trichloroethane	7.653	97	107309	42.02	ug/L		98
42) 2-Butanone	7.726	43	234710	699.66	ug/L		97
43) 1,1-Dichloropropene	7.781	75	87797	44.04	ug/L		95
44) tert-Butyl formate	7.872	59	221422	681.11	ug/L		97
45) Propionitrile	8.055	54	156907	1308.01	ug/L	#	60
46) Methacrylonitrile	8.073	41	529802	933.17	ug/L		97
47) Benzene	8.043	78	265475	43.14	ug/L		95
48) TAME	8.116	73	197270	47.77	ug/L		100
50) 1,2-Dichloroethane	8.250	62	92980	51.28	ug/L		100
51) tert Amyl alcohol	8.287	59	145133	1599.63	ug/L		96
52) Trichloroethene	8.640	95	74068	42.12	ug/L		97
53) Methylcyclohexane	8.640	83	117318	42.94	ug/L		99
54) Dibromomethane	9.079	93	49639	57.87	ug/L		97
55) 1,2-Dichloropropane	9.171	63	62551	43.88	ug/L		97
56) Bromodichloromethane	9.219	83	94584	43.41	ug/L		99
57) Methyl methacrylate	9.329	41	61479	76.58	ug/L		93
58) 1,4-Dioxane	9.414	88	27481	3718.40	ug/L		92
59) 2-Chloroethyl vinyl ether	9.750	63	129760	2531.86	ug/L		96
60) cis-1,3-Dichloropropene	9.847	75	100275	42.50	ug/L		98
63) Toluene	10.085	91	278556	37.68	ug/L		98
64) Isobutyl alcohol	8.171	43	111414	2873.74	ug/L		93
65) 2-Nitropropane	10.317	41	143640	554.63	ug/L		93
66) 4-Methyl-2-pentanone	10.426	43	474688	538.03	ug/L		98
67) trans-1,3-Dichloropropene	10.481	75	97139	46.39	ug/L		96
68) Tetrachloroethene	10.487	166	83597	41.28	ug/L		96
69) Ethyl methacrylate	10.585	69	91154	62.32	ug/L		98
70) 1,1,2-Trichloroethane	10.652	83	55760	52.33	ug/L		97
71) Dibromochloromethane	10.847	129	81511	49.12	ug/L		95
72) 1,3-Dichloropropane	10.938	76	102014	51.49	ug/L		94
73) 1,2-Dibromoethane	11.115	107	74138	57.59	ug/L		96
74) 3,3-Dimethyl-1-butanol	11.188	57	621547	13409.77	ug/L		96
75) 2-hexanone	11.249	43	360230	639.80	ug/L		97
76) 1-Chlorohexane	11.542	91	93069	41.55	ug/L		97
77) Ethylbenzene	11.609	91	319301	38.36	ug/L		98
78) Chlorobenzene	11.615	112	199974	40.53	ug/L		96
79) 1,1,1,2-Tetrachloroethane	11.664	131	75358	41.51	ug/L		94
80) m,p-Xylene	11.743	91	489881	79.16	ug/L		99
81) o-Xylene	12.188	91	243622	39.36	ug/L		99
82) Styrene	12.243	104	190570	41.85	ug/L		96
83) Bromoform	12.304	173	57518	62.35	ug/L		97
84) Isopropylbenzene	12.493	105	315921	39.92	ug/L		99
87) cis-1,4-Dichloro-2-butene	12.853	53	25833	124.45	ug/L	#	92
88) n-Propylbenzene	12.914	91	364872	36.45	ug/L		99
89) Bromobenzene	12.938	156	80906	42.49	ug/L		90
90) 1,1,2,2-Tetrachloroethane	12.981	83	107586	73.34	ug/L		96
91) 1,3,5-Trimethylbenzene	13.091	105	255318	36.97	ug/L		96

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\12-20-2023\
Data File : 5E44763.D
Acq On : 20 Dec 2023 5:47 pm
Operator : joannel
Sample : ICC1994-5
Misc : MS55506,V5E1994,,,,,
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Dec 21 04:41:23 2023
Quant Method : C:\msdchem\1\methods\V5E_12-20-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Mon Dec 18 08:44:27 2023
Response via : Initial Calibration

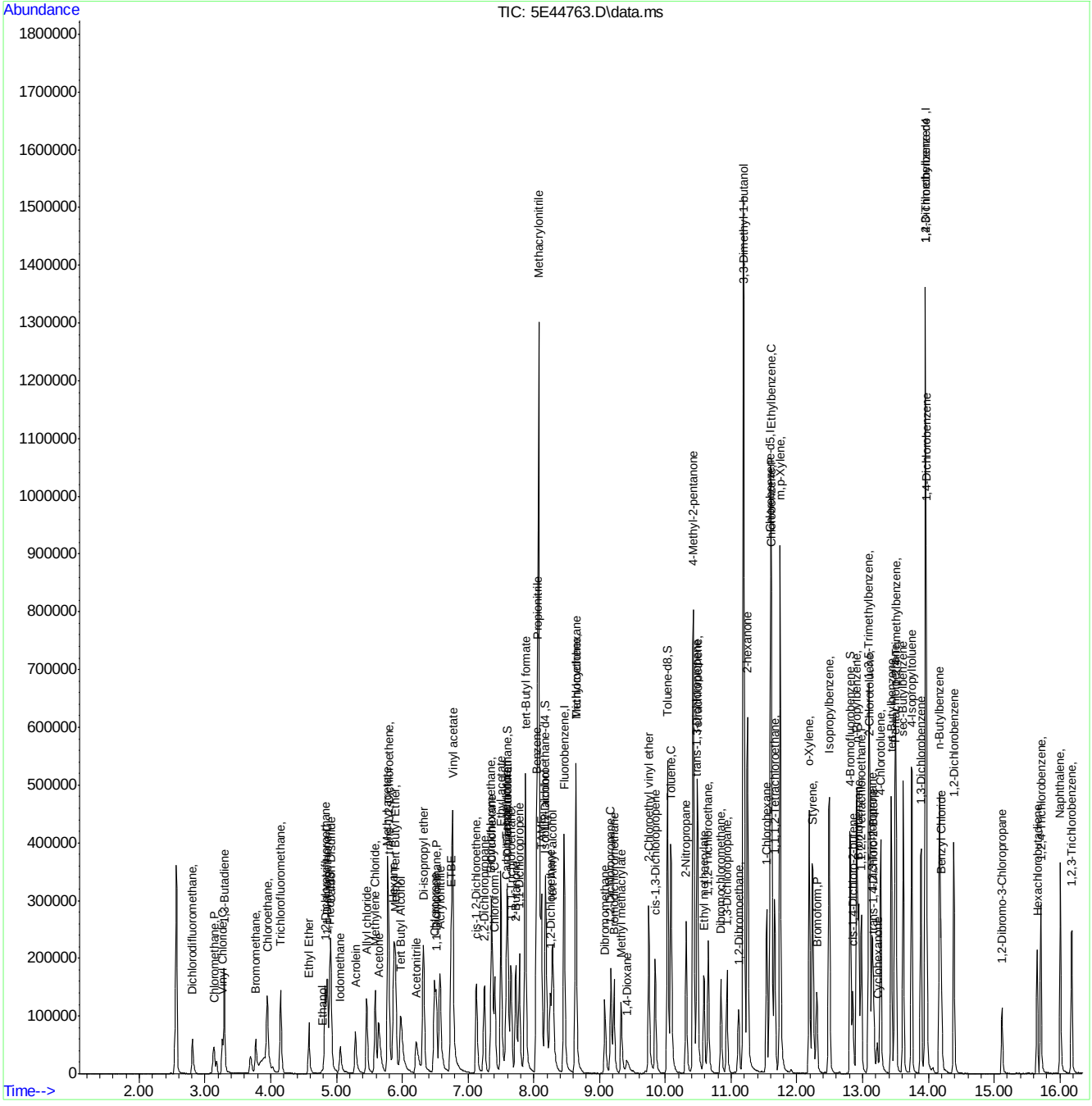
	Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
92)	2-Chlorotoluene	13.109	91	224213	35.20	ug/L		93
93)	trans-1,4-Dichloro-2-B...	13.164	53	24405	131.35	ug/L	#	70
94)	1,2,3-Trichloropropane	13.145	110	32003	87.37	ug/L		90
95)	Cyclohexanone	13.225	55	21265	1157.21	ug/L	#	83
96)	4-Chlorotoluene	13.273	91	204567	36.59	ug/L		99
98)	tert-Butylbenzene	13.438	91	132270	35.53	ug/L		94
99)	1,2,4-Trimethylbenzene	13.505	105	249621	37.33	ug/L		96
100)	Pentachloroethane	13.493	167	44704	40.47	ug/L		98
101)	sec-Butylbenzene	13.615	105	335590	37.78	ug/L		98
102)	4-Isopropyltoluene	13.749	119	290328	39.60	ug/L		97
103)	1,3-Dichlorobenzene	13.889	146	156234	40.21	ug/L		98
104)	1,2,3-Trimethylbenzene	13.956	105	267237	38.04	ug/L		97
105)	1,4-Dichlorobenzene	13.968	146	171365	39.66	ug/L		98
106)	n-Butylbenzene	14.170	92	142723	44.38	ug/L		97
107)	Benzyl Chloride	14.194	126	35813	84.40	ug/L	#	78
108)	1,2-Dichlorobenzene	14.389	146	151278	44.12	ug/L		99
109)	1,2-Dibromo-3-Chloropr...	15.121	75	19605	121.50	ug/L		89
110)	Hexachlorobutadiene	15.657	225	27662	42.79	ug/L		97
111)	1,2,4-Trichlorobenzene	15.712	180	83905	55.70	ug/L		97
112)	Naphthalene	16.005	128	262671	121.03	ug/L		98
113)	1,2,3-Trichlorobenzene	16.181	180	71850	73.71	ug/L		93

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\12-20-2023\
Data File : 5E44763.D
Acq On : 20 Dec 2023 5:47 pm
Operator : joannel
Sample : ICC1994-5
Misc : MS55506,V5E1994,,,,,
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Dec 21 04:41:23 2023
Quant Method : C:\msdchem\1\methods\V5E_12-20-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Mon Dec 18 08:44:27 2023
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\12-20-2023\
Data File : 5E44764.D
Acq On : 20 Dec 2023 6:10 pm
Operator : joannel
Sample : IC1994-6
Misc : MS55506,V5E1994,,,,,
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Dec 21 04:41:25 2023
Quant Method : C:\msdchem\1\methods\V5E_12-20-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Mon Dec 18 08:44:27 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Fluorobenzene	8.464	96	407208	50.00	ug/L		0.00
61) Chlorobenzene-d5	11.597	117	327356	50.00	ug/L		0.00
85) 1,4-Dichlorobenzene-d4	13.956	152	195739	50.00	ug/L		0.00
System Monitoring Compounds							
39) Dibromofluoromethane	7.604	113	118169	48.33	ug/L		0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 96.66%				
49) 1,2-Dichloroethane-d4	8.183	65	122240	57.67	ug/L		0.00
Spiked Amount 50.000	Range 79 - 125		Recovery = 115.34%				
62) Toluene-d8	10.036	98	388700	44.37	ug/L		0.00
Spiked Amount 50.000	Range 85 - 112		Recovery = 88.74%				
86) 4-Bromofluorobenzene	12.810	95	134875	43.73	ug/L		0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 87.46%				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	2.806	85	98368	56.14	ug/L		94
3) Chloromethane	3.135	50	104813	63.25	ug/L		100
4) Vinyl Chloride	3.263	62	113128	63.81	ug/L		98
5) 1,3-Butadiene	3.294	39	100552	52.08	ug/L		98
6) Bromomethane	3.775	94	87226	59.15	ug/L		98
7) Chloroethane	3.946	64	185937	138.74	ug/L		97
8) Trichlorofluoromethane	4.141	101	273933	103.00	ug/L		96
9) Ethyl Ether	4.586	59	91647	79.34	ug/L		96
10) Ethanol	4.806	45	37978	5898.46	ug/L		90
11) 1,2-Dichlorotrifluoroe...	4.830	67	131596	67.26	ug/L		95
12) 1,1-Dichloroethene	4.861	61	163606	66.25	ug/L		94
13) Freon 113	4.897	101	110510	66.42	ug/L		98
14) Carbon Disulfide	4.915	76	340269	65.83	ug/L		99
15) Iodomethane	5.056	142	119978	47.63	ug/L		98
16) Acrolein	5.287	56	143173	962.31	ug/L		95
17) Allyl chloride	5.458	41	128634	61.21	ug/L		96
18) Methylene Chloride	5.586	49	149692	63.09	ug/L		97
19) Acetone	5.647	43	266015	1193.35	ug/L		100
20) Methyl acetate	5.781	43	634849	1169.21	ug/L		100
21) trans-1,2-Dichloroethene	5.787	61	157654	72.49	ug/L		95
22) Hexane	5.867	56	84867	63.49	ug/L	#	86
23) Methyl Tert Butyl Ether	5.897	73	362691	85.79	ug/L		83
24) Acetonitrile	6.220	41	179251	2754.07	ug/L		96
25) Di-isopropyl ether	6.324	45	328988	68.11	ug/L		97
26) Chloroprene	6.488	53	147213	64.55	ug/L		96
27) 1,1-Dichloroethane	6.519	63	213683	68.48	ug/L		98
28) Acrylonitrile	6.574	53	292244	1013.54	ug/L		92
29) ETBE	6.744	59	351824	71.98	ug/L		98
30) Tert Butyl Alcohol	5.988	59	306619	2266.95	ug/L		93
31) Vinyl acetate	6.769	43	1236721	502.76	ug/L		99
32) cis-1,2-Dichloroethene	7.128	96	138015	74.73	ug/L		91
33) 2,2-Dichloropropane	7.250	77	167214	67.00	ug/L		99
34) Bromochloromethane	7.348	128	74499	76.42	ug/L		96
35) Cyclohexane	7.366	56	174141	64.58	ug/L		94

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\12-20-2023\
Data File : 5E44764.D
Acq On : 20 Dec 2023 6:10 pm
Operator : joannel
Sample : IC1994-6
Misc : MS55506,V5E1994,,,,,
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Dec 21 04:41:25 2023
Quant Method : C:\msdchem\1\methods\V5E_12-20-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Mon Dec 18 08:44:27 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
36) Chloroform	7.409	83	236824	72.26	ug/L		99
37) Ethyl acetate	7.500	43	794984	916.33	ug/L		98
38) Tetrahydrofuran	7.598	42	57996	251.71	ug/L		96
40) Carbon Tetrachloride	7.586	117	183024	72.42	ug/L		98
41) 1,1,1-Trichloroethane	7.653	97	200591	71.59	ug/L		99
42) 2-Butanone	7.726	43	452129	1228.31	ug/L		99
43) 1,1-Dichloropropene	7.781	75	166145	75.96	ug/L		96
44) tert-Butyl formate	7.872	59	439016	1230.73	ug/L		100
45) Propionitrile	8.055	54	309557	1995.95	ug/L	#	55
46) Methacrylonitrile	8.073	41	1048070	1682.38	ug/L		97
47) Benzene	8.043	78	507241	75.12	ug/L		95
48) TAME	8.116	73	389509	85.96	ug/L		97
50) 1,2-Dichloroethane	8.250	62	179770	90.37	ug/L		99
51) tert Amyl alcohol	8.287	59	283099	2415.01	ug/L		94
52) Trichloroethene	8.640	95	141758	73.47	ug/L		98
53) Methylcyclohexane	8.640	83	213706	71.29	ug/L		98
54) Dibromomethane	9.079	93	95974	101.97	ug/L		97
55) 1,2-Dichloropropane	9.171	63	119069	76.12	ug/L		99
56) Bromodichloromethane	9.220	83	181795	76.03	ug/L		96
57) Methyl methacrylate	9.329	41	112933	128.20	ug/L		95
58) 1,4-Dioxane	9.421	88	52204	6437.46	ug/L		93
59) 2-Chloroethyl vinyl ether	9.750	63	279434	4968.96	ug/L		96
60) cis-1,3-Dichloropropene	9.847	75	193074	74.57	ug/L		98
63) Toluene	10.085	91	538895	65.21	ug/L		98
64) Isobutyl alcohol	8.177	43	220015	4369.63	ug/L		93
65) 2-Nitropropane	10.317	41	283042	977.61	ug/L		92
66) 4-Methyl-2-pentanone	10.427	43	916053	928.76	ug/L		99
67) trans-1,3-Dichloropropene	10.488	75	189731	78.48	ug/L		97
68) Tetrachloroethene	10.488	166	163265	72.12	ug/L		99
69) Ethyl methacrylate	10.585	69	172422	101.95	ug/L		96
70) 1,1,2-Trichloroethane	10.652	83	106976	89.80	ug/L		97
71) Dibromochloromethane	10.847	129	158200	85.28	ug/L		94
72) 1,3-Dichloropropane	10.939	76	195736	88.38	ug/L		94
73) 1,2-Dibromoethane	11.115	107	143906	100.81	ug/L		94
74) 3,3-Dimethyl-1-butanol	11.195	57	1319260	19091.79	ug/L		97
75) 2-hexanone	11.250	43	718232	1040.11	ug/L		96
76) 1-Chlorohexane	11.542	91	182769	73.00	ug/L		96
77) Ethylbenzene	11.609	91	639646	68.74	ug/L		98
78) Chlorobenzene	11.615	112	397107	71.99	ug/L		98
79) 1,1,1,2-Tetrachloroethane	11.664	131	146672	72.26	ug/L		97
80) m,p-Xylene	11.743	91	975628	141.03	ug/L		98
81) o-Xylene	12.188	91	470917	68.06	ug/L		99
82) Styrene	12.237	104	382616	75.16	ug/L		98
83) Bromoform	12.304	173	115785	106.78	ug/L		95
84) Isopropylbenzene	12.493	105	622732	70.38	ug/L		99
87) cis-1,4-Dichloro-2-butene	12.853	53	50328	208.18	ug/L		93
88) n-Propylbenzene	12.914	91	728657	62.49	ug/L		98
89) Bromobenzene	12.938	156	154361	69.61	ug/L		95
90) 1,1,2,2-Tetrachloroethane	12.981	83	211093	123.55	ug/L		97
91) 1,3,5-Trimethylbenzene	13.091	105	522446	64.96	ug/L		99

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\12-20-2023\
Data File : 5E44764.D
Acq On : 20 Dec 2023 6:10 pm
Operator : joannel
Sample : IC1994-6
Misc : MS55506,V5E1994,,,,,
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Dec 21 04:41:25 2023
Quant Method : C:\msdchem\1\methods\V5E_12-20-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Mon Dec 18 08:44:27 2023
Response via : Initial Calibration

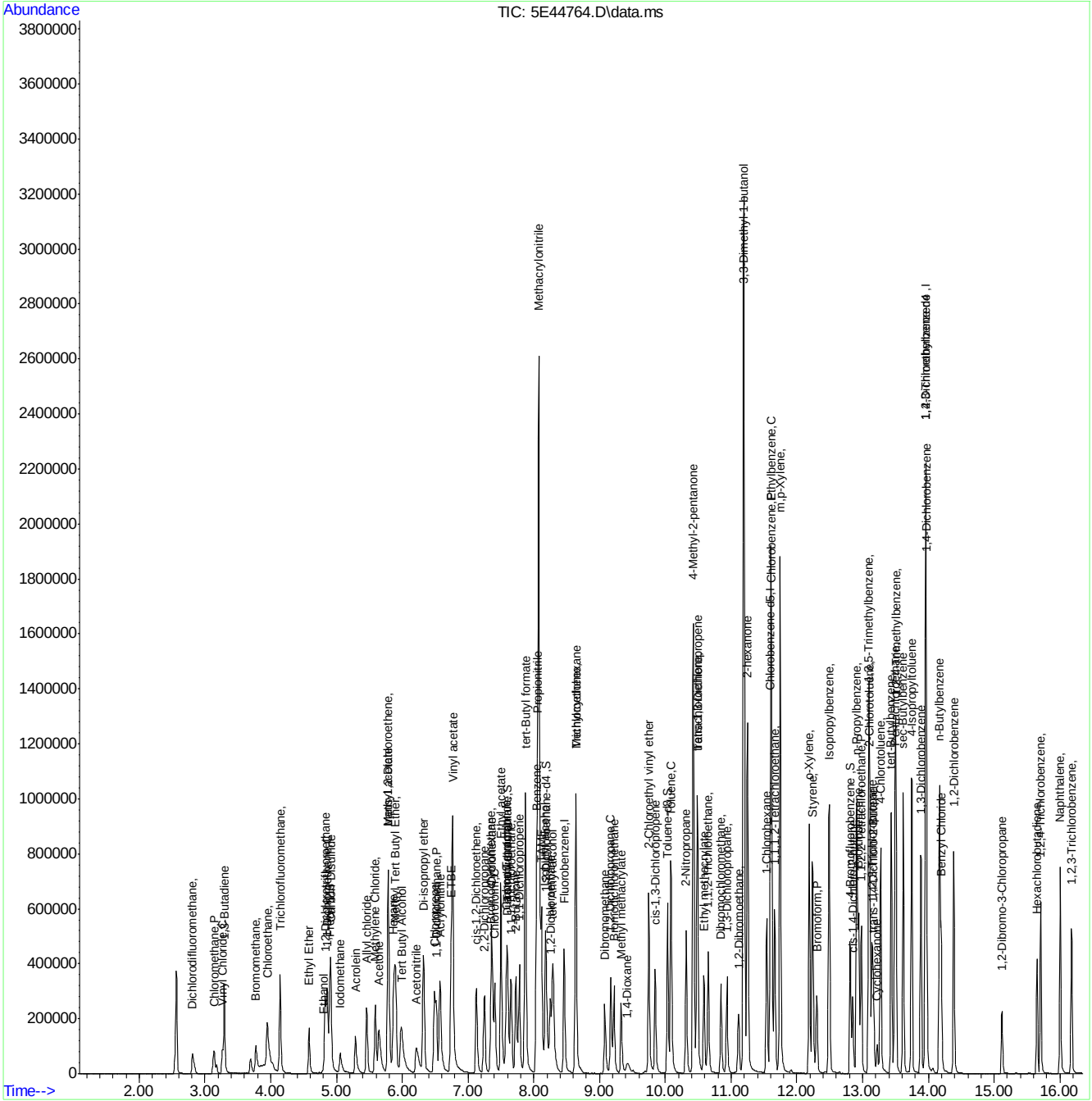
	Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
92)	2-Chlorotoluene	13.109	91	456055	61.47	ug/L		95
93)	trans-1,4-Dichloro-2-B...	13.164	53	48977	226.33	ug/L	#	68
94)	1,2,3-Trichloropropane	13.146	110	63358	148.51	ug/L		95
95)	Cyclohexanone	13.219	55	41569	1942.27	ug/L		86
96)	4-Chlorotoluene	13.274	91	402148	61.76	ug/L		100
98)	tert-Butylbenzene	13.432	91	265632	61.26	ug/L		97
99)	1,2,4-Trimethylbenzene	13.505	105	512860	65.86	ug/L		97
100)	Pentachloroethane	13.493	167	88256	68.59	ug/L		97
101)	sec-Butylbenzene	13.615	105	668212	64.59	ug/L		99
102)	4-Isopropyltoluene	13.749	119	588597	68.94	ug/L		98
103)	1,3-Dichlorobenzene	13.889	146	308833	68.25	ug/L		99
104)	1,2,3-Trimethylbenzene	13.956	105	551790	67.43	ug/L		98
105)	1,4-Dichlorobenzene	13.969	146	350177	69.58	ug/L		96
106)	n-Butylbenzene	14.170	92	290643	77.60	ug/L		94
107)	Benzyl Chloride	14.194	126	74022	131.63	ug/L	#	79
108)	1,2-Dichlorobenzene	14.389	146	301365	75.46	ug/L		98
109)	1,2-Dibromo-3-Chloropr...	15.115	75	39616	181.16	ug/L		86
110)	Hexachlorobutadiene	15.651	225	53824	71.49	ug/L		96
111)	1,2,4-Trichlorobenzene	15.706	180	166216	89.14	ug/L		99
112)	Naphthalene	16.005	128	533252	184.86	ug/L		99
113)	1,2,3-Trichlorobenzene	16.175	180	144901	119.09	ug/L		94

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\12-20-2023\
Data File : 5E44764.D
Acq On : 20 Dec 2023 6:10 pm
Operator : joannel
Sample : IC1994-6
Misc : MS55506,V5E1994,,,,,
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Dec 21 04:41:25 2023
Quant Method : C:\msdchem\1\methods\V5E_12-20-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Mon Dec 18 08:44:27 2023
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\12-20-2023\
Data File : 5E44765.D
Acq On : 20 Dec 2023 6:33 pm
Operator : joannel
Sample : IC1994-7
Misc : MS55506,V5E1994,,,,,
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Dec 21 04:41:27 2023
Quant Method : C:\msdchem\1\methods\V5E_12-20-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Mon Dec 18 08:44:27 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	8.457	96	424439	50.00	ug/L	0.00
61) Chlorobenzene-d5	11.597	117	348769	50.00	ug/L	0.00
85) 1,4-Dichlorobenzene-d4	13.956	152	210371	50.00	ug/L	0.00
System Monitoring Compounds						
39) Dibromofluoromethane	7.604	113	125092	49.08	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 98.16%			
49) 1,2-Dichloroethane-d4	8.177	65	127173	57.56	ug/L	0.00
Spiked Amount 50.000	Range 79 - 125		Recovery = 115.12%			
62) Toluene-d8	10.036	98	406587	43.57	ug/L	0.00
Spiked Amount 50.000	Range 85 - 112		Recovery = 87.14%			
86) 4-Bromofluorobenzene	12.810	95	143262	43.22	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 86.44%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	2.806	85	156040	85.45	ug/L	97
3) Chloromethane	3.135	50	154403	89.40	ug/L	99
4) Vinyl Chloride	3.263	62	171622	92.88	ug/L	96
5) 1,3-Butadiene	3.294	39	152517	75.79	ug/L	96
6) Bromomethane	3.769	94	139277	90.61	ug/L	99
7) Chloroethane	3.946	64	242462	165.55	ug/L	98
8) Trichlorofluoromethane	4.135	101	684118	246.79	ug/L	100
9) Ethyl Ether	4.586	59	138214	114.80	ug/L	97
10) Ethanol	4.818	45	54261	8085.28	ug/L	86
11) 1,2-Dichlorotrifluoroe...	4.824	67	202412	99.25	ug/L	99
12) 1,1-Dichloroethene	4.854	61	246572	95.79	ug/L	96
13) Freon 113	4.897	101	171814	99.08	ug/L	99
14) Carbon Disulfide	4.909	76	512729	95.17	ug/L	100
15) Iodomethane	5.056	142	167826	63.92	ug/L	98
16) Acrolein	5.287	56	222019	1431.68	ug/L	91
17) Allyl chloride	5.458	41	191678	87.51	ug/L	97
18) Methylene Chloride	5.586	49	224683	90.86	ug/L	96
19) Acetone	5.647	43	420835	1811.24	ug/L	99
20) Methyl acetate	5.781	43	985814	1741.87	ug/L	99
21) trans-1,2-Dichloroethene	5.787	61	240732	106.20	ug/L	96
22) Hexane	5.866	56	130594	93.73	ug/L	89
23) Methyl Tert Butyl Ether	5.897	73	553193	125.54	ug/L	82
24) Acetonitrile	6.214	41	274636	4048.29	ug/L	94
25) Di-isopropyl ether	6.324	45	507730	100.84	ug/L	97
26) Chloroprene	6.488	53	224492	94.43	ug/L	93
27) 1,1-Dichloroethane	6.513	63	329443	101.29	ug/L	99
28) Acrylonitrile	6.574	53	458485	1525.54	ug/L	97
29) ETBE	6.744	59	548763	107.72	ug/L	98
30) Tert Butyl Alcohol	5.995	59	457720	3246.72	ug/L	92
31) Vinyl acetate	6.763	43	1978831	771.79	ug/L	99
32) cis-1,2-Dichloroethene	7.128	96	215050	111.71	ug/L	89
33) 2,2-Dichloropropane	7.250	77	250406	96.26	ug/L	99
34) Bromochloromethane	7.348	128	112569	110.78	ug/L	96
35) Cyclohexane	7.366	56	279552	99.46	ug/L	96

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\12-20-2023\
Data File : 5E44765.D
Acq On : 20 Dec 2023 6:33 pm
Operator : joannel
Sample : IC1994-7
Misc : MS55506,V5E1994,,,,,
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Dec 21 04:41:27 2023
Quant Method : C:\msdchem\1\methods\V5E_12-20-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Mon Dec 18 08:44:27 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
36) Chloroform	7.409	83	358878	105.05 ug/L	99
37) Ethyl acetate	7.500	43	1249473	1381.73 ug/L	99
38) Tetrahydrofuran	7.598	42	90531	Below Cal	93
40) Carbon Tetrachloride	7.586	117	278114	105.58 ug/L	98
41) 1,1,1-Trichloroethane	7.653	97	305036	104.45 ug/L	99
42) 2-Butanone	7.726	43	708919	1847.75 ug/L	99
43) 1,1-Dichloropropene	7.781	75	251096	110.14 ug/L	96
44) tert-Butyl formate	7.872	59	691405	1859.58 ug/L	99
45) Propionitrile	8.055	54	485157	2632.58 ug/L #	54
46) Methacrylonitrile	8.073	41	1703380	2623.28 ug/L	98
47) Benzene	8.043	78	774776	110.09 ug/L	97
48) TAME	8.116	73	607516	128.63 ug/L	98
50) 1,2-Dichloroethane	8.250	62	274653	132.46 ug/L	98
51) tert Amyl alcohol	8.293	59	437424	3151.16 ug/L	96
52) Trichloroethene	8.640	95	218573	108.68 ug/L	96
53) Methylcyclohexane	8.640	83	341146	109.19 ug/L	96
54) Dibromomethane	9.079	93	145859	148.68 ug/L	98
55) 1,2-Dichloropropane	9.171	63	179193	109.91 ug/L	98
56) Bromodichloromethane	9.219	83	276842	111.08 ug/L	99
57) Methyl methacrylate	9.323	41	176493	192.22 ug/L	96
58) 1,4-Dioxane	9.427	88	77366	9152.96 ug/L	91
59) 2-Chloroethyl vinyl ether	9.744	63	431449	7360.66 ug/L	95
60) cis-1,3-Dichloropropene	9.847	75	297014	110.06 ug/L	96
63) Toluene	10.085	91	818742	92.99 ug/L	99
64) Isobutyl alcohol	8.183	43	331849	5566.26 ug/L	90
65) 2-Nitropropane	10.317	41	454147	1472.29 ug/L	93
66) 4-Methyl-2-pentanone	10.427	43	1469785	1398.68 ug/L	99
67) trans-1,3-Dichloropropene	10.481	75	299137	112.37 ug/L	95
68) Tetrachloroethene	10.488	166	251790	104.39 ug/L	95
69) Ethyl methacrylate	10.585	69	275130	147.14 ug/L	98
70) 1,1,2-Trichloroethane	10.652	83	164552	129.65 ug/L	97
71) Dibromochloromethane	10.847	129	246073	124.50 ug/L	96
72) 1,3-Dichloropropane	10.933	76	299304	126.85 ug/L	97
73) 1,2-Dibromoethane	11.109	107	225213	149.46 ug/L	93
74) 3,3-Dimethyl-1-butanol	11.195	57	2120682	23832.14 ug/L	97
75) 2-hexanone	11.250	43	1165053	1451.57 ug/L	96
76) 1-Chlorohexane	11.542	91	287468	107.76 ug/L	95
77) Ethylbenzene	11.609	91	987475	99.61 ug/L	99
78) Chlorobenzene	11.615	112	620739	105.62 ug/L	96
79) 1,1,1,2-Tetrachloroethane	11.664	131	227808	105.35 ug/L	96
80) m,p-Xylene	11.743	91	1528369	207.36 ug/L	99
81) o-Xylene	12.188	91	737683	100.07 ug/L	99
82) Styrene	12.237	104	600158	110.66 ug/L	96
83) Bromoform	12.304	173	184961	152.45 ug/L	97
84) Isopropylbenzene	12.493	105	984014	104.39 ug/L	99
87) cis-1,4-Dichloro-2-butene	12.847	53	81709	314.47 ug/L	91
88) n-Propylbenzene	12.914	91	1142668	91.18 ug/L	97
89) Bromobenzene	12.938	156	249453	104.67 ug/L	92
90) 1,1,2,2-Tetrachloroethane	12.981	83	331637	180.60 ug/L	97
91) 1,3,5-Trimethylbenzene	13.091	105	824750	95.41 ug/L	98

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\12-20-2023\
Data File : 5E44765.D
Acq On : 20 Dec 2023 6:33 pm
Operator : joannel
Sample : IC1994-7
Misc : MS55506,V5E1994,,,,,
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Dec 21 04:41:27 2023
Quant Method : C:\msdchem\1\methods\V5E_12-20-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Mon Dec 18 08:44:27 2023
Response via : Initial Calibration

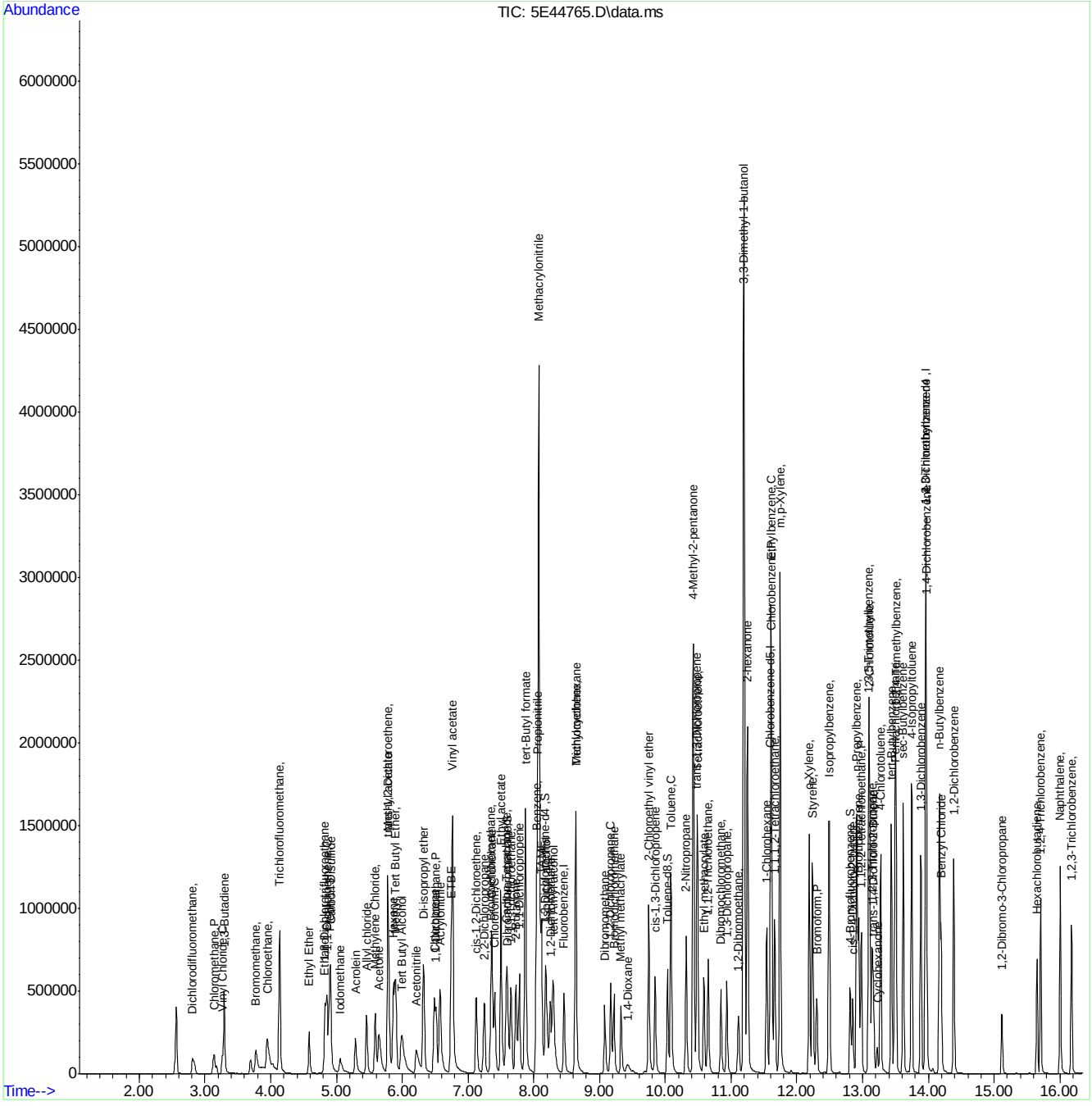
	Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
92)	2-Chlorotoluene	13.103	91	719947	90.30	ug/L		98
93)	trans-1,4-Dichloro-2-B...	13.164	53	74387	319.85	ug/L	#	65
94)	1,2,3-Trichloropropane	13.146	110	99530	217.07	ug/L		97
95)	Cyclohexanone	13.225	55	62453	2715.09	ug/L	#	85
96)	4-Chlorotoluene	13.274	91	640931	91.58	ug/L		99
98)	tert-Butylbenzene	13.438	91	418061	89.70	ug/L		94
99)	1,2,4-Trimethylbenzene	13.505	105	814103	97.27	ug/L		96
100)	Pentachloroethane	13.493	167	139872	101.15	ug/L		96
101)	sec-Butylbenzene	13.615	105	1058275	95.18	ug/L		98
102)	4-Isopropyltoluene	13.743	119	938566	102.28	ug/L		99
103)	1,3-Dichlorobenzene	13.883	146	501788	103.18	ug/L		98
104)	1,2,3-Trimethylbenzene	13.956	105	879045	99.95	ug/L		99
105)	1,4-Dichlorobenzene	13.969	146	547297	101.19	ug/L		96
106)	n-Butylbenzene	14.170	92	464157	115.31	ug/L		96
107)	Benzyl Chloride	14.194	126	120349	177.97	ug/L	#	78
108)	1,2-Dichlorobenzene	14.389	146	481882	112.28	ug/L		99
109)	1,2-Dibromo-3-Chloropr...	15.115	75	63011	236.93	ug/L		87
110)	Hexachlorobutadiene	15.651	225	85229	105.34	ug/L		96
111)	1,2,4-Trichlorobenzene	15.706	180	266207	124.93	ug/L		97
112)	Naphthalene	16.005	128	858128	247.03	ug/L		98
113)	1,2,3-Trichlorobenzene	16.175	180	233510	166.83	ug/L		95

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\12-20-2023\
Data File : 5E44765.D
Acq On : 20 Dec 2023 6:33 pm
Operator : joannel
Sample : IC1994-7
Misc : MS55506,V5E1994,,,,,
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Dec 21 04:41:27 2023
Quant Method : C:\msdchem\1\methods\V5E_12-20-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Mon Dec 18 08:44:27 2023
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\12-20-2023\
Data File : 5E44767.D
Acq On : 20 Dec 2023 7:19 pm
Operator : joannel
Sample : ICV1994-5
Misc : MS55506,V5E1994,,,,,
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Dec 21 08:41:57 2023
Quant Method : C:\msdchem\1\methods\V5E_12-20-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Thu Dec 21 08:38:40 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	8.457	96	379591	50.00	ug/L	0.00
61) Chlorobenzene-d5	11.597	117	295148	50.00	ug/L	0.00
85) 1,4-Dichlorobenzene-d4	13.956	152	168824	50.00	ug/L	0.00
System Monitoring Compounds						
39) Dibromofluoromethane	7.604	113	112334	49.32	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 98.64%			
49) 1,2-Dichloroethane-d4	8.177	65	110875	49.40	ug/L	0.00
Spiked Amount 50.000	Range 79 - 125		Recovery = 98.80%			
62) Toluene-d8	10.036	98	364918	49.49	ug/L	0.00
Spiked Amount 50.000	Range 85 - 112		Recovery = 98.98%			
86) 4-Bromofluorobenzene	12.810	95	119598	48.66	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 97.32%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	2.806	85	53925	37.52	ug/L	95
3) Chloromethane	3.135	50	54652	38.40	ug/L	96
4) Vinyl Chloride	3.263	62	62334	37.16	ug/L	100
5) 1,3-Butadiene	3.294	39	50004	33.75	ug/L	98
6) Bromomethane	3.769	94	46852	39.42	ug/L	95
7) Chloroethane	3.946	64	92193	36.73	ug/L	93
8) Trichlorofluoromethane	4.153	101	120193	42.92	ug/L	98
9) Ethyl Ether	4.580	59	50910	38.65	ug/L	94
10) Ethanol	4.769	45	22883	924.90	ug/L	88
11) 1,2-Dichlorotrifluoroe...	4.824	67	74052	38.58	ug/L	97
12) 1,1-Dichloroethene	4.861	61	83142	35.03	ug/L	98
13) Freon 113	4.897	101	66662	42.49	ug/L	97
14) Carbon Disulfide	4.915	76	177542	37.82	ug/L	100
15) Iodomethane	5.056	142	53140	32.10	ug/L	96
16) Acrolein	5.287	56	78598	224.62	ug/L	94
17) Allyl chloride	5.458	41	67085	38.72	ug/L	99
18) Methylene Chloride	5.586	49	81826	36.29	ug/L	96
19) Acetone	5.641	43	153174	194.24	ug/L	98
20) Methyl acetate	5.775	43	295067	173.34	ug/L	99
21) trans-1,2-Dichloroethene	5.793	61	79985	35.68	ug/L	97
22) Hexane	5.873	56	45980	37.76	ug/L	95
23) Methyl Tert Butyl Ether	5.897	73	195506	38.03	ug/L	98
24) Acetonitrile	6.208	41	105879	435.45	ug/L	98
25) Di-isopropyl ether	6.324	45	169005	35.49	ug/L	99
26) Chloroprene	6.488	53	69390	35.56	ug/L	98
27) 1,1-Dichloroethane	6.513	63	105557	33.10	ug/L	99
28) Acrylonitrile	6.568	53	156218	198.53	ug/L	97
29) ETBE	6.738	59	186219	37.84	ug/L	99
30) Tert Butyl Alcohol	5.976	59	157094	373.80	ug/L	95
31) Vinyl acetate	6.763	43	673382	200.81	ug/L	100
32) cis-1,2-Dichloroethene	7.128	96	68546	34.39	ug/L	99
33) 2,2-Dichloropropane	7.244	77	85221	34.87	ug/L	98
34) Bromochloromethane	7.348	128	37304	35.64	ug/L	96
35) Cyclohexane	7.366	56	88444	36.70	ug/L	98

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\12-20-2023\
Data File : 5E44767.D
Acq On : 20 Dec 2023 7:19 pm
Operator : joannel
Sample : ICV1994-5
Misc : MS55506,V5E1994,,,,,
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Dec 21 08:41:57 2023
Quant Method : C:\msdchem\1\methods\V5E_12-20-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Thu Dec 21 08:38:40 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
36) Chloroform	7.409	83	120513	36.14	ug/L	98
37) Ethyl acetate	7.494	43	458032	210.80	ug/L	98
38) Tetrahydrofuran	7.598	42	28685	34.16	ug/L	97
40) Carbon Tetrachloride	7.586	117	89734	35.00	ug/L	96
41) 1,1,1-Trichloroethane	7.653	97	100662	35.40	ug/L	98
42) 2-Butanone	7.726	43	219433	183.43	ug/L	97
43) 1,1-Dichloropropene	7.781	75	83600	36.55	ug/L	98
44) tert-Butyl formate	7.872	59	271990	497.62	ug/L	100
45) Propionitrile	8.055	54	167137	425.74	ug/L	89
46) Methacrylonitrile	8.073	41	554112	428.82	ug/L	98
47) Benzene	8.043	78	255406	34.97	ug/L	96
48) TAME	8.116	73	199066	38.57	ug/L	96
50) 1,2-Dichloroethane	8.250	62	91249	36.76	ug/L	99
51) tert Amyl alcohol	8.287	59	134913	374.31	ug/L	97
52) Trichloroethene	8.640	95	71993	37.19	ug/L	96
53) Methylcyclohexane	8.640	83	105558	36.47	ug/L	98
54) Dibromomethane	9.079	93	48639	38.81	ug/L	97
55) 1,2-Dichloropropane	9.171	63	63166	38.58	ug/L	97
56) Bromodichloromethane	9.219	83	87484	35.27	ug/L	99
57) Methyl methacrylate	9.329	41	62567	42.02	ug/L	99
58) 1,4-Dioxane	9.421	88	23925	687.20	ug/L	96
59) 2-Chloroethyl vinyl ether	9.750	63	143870	220.06	ug/L	99
60) cis-1,3-Dichloropropene	9.847	75	98120	38.58	ug/L	98
63) Toluene	10.085	91	269641	38.07	ug/L	99
64) Isobutyl alcohol	8.177	43	117458	886.66	ug/L	97
65) 2-Nitropropane	10.317	41	134193	183.25	ug/L	97
66) 4-Methyl-2-pentanone	10.427	43	478605	193.95	ug/L	99
67) trans-1,3-Dichloropropene	10.488	75	89015	37.55	ug/L	97
68) Tetrachloroethene	10.488	166	81127	37.00	ug/L	98
69) Ethyl methacrylate	10.585	69	95855	43.86	ug/L	98
70) 1,1,2-Trichloroethane	10.652	83	52616	35.97	ug/L	97
71) Dibromochloromethane	10.847	129	79495	38.54	ug/L	96
72) 1,3-Dichloropropane	10.939	76	103662	39.71	ug/L	98
73) 1,2-Dibromoethane	11.109	107	71030	38.77	ug/L	100
74) 3,3-Dimethyl-1-butanol	11.189	57	615896	2004.94	ug/L	99
75) 2-hexanone	11.250	43	369081	214.95	ug/L	99
76) 1-Chlorohexane	11.542	91	85089	36.10	ug/L	97
77) Ethylbenzene	11.609	91	306110	36.79	ug/L	99
78) Chlorobenzene	11.615	112	192692	35.31	ug/L	99
79) 1,1,1,2-Tetrachloroethane	11.664	131	71746	36.50	ug/L	98
80) m,p-Xylene	11.743	91	464114	72.83	ug/L	99
81) o-Xylene	12.188	91	224099	35.97	ug/L	98
82) Styrene	12.243	104	188638	39.60	ug/L	97
83) Bromoform	12.304	173	53160	39.09	ug/L	98
84) Isopropylbenzene	12.493	105	293278	34.58	ug/L	98
87) cis-1,4-Dichloro-2-butene	12.853	53	25974	41.10	ug/L	90
88) n-Propylbenzene	12.914	91	336491	36.48	ug/L	98
89) Bromobenzene	12.938	156	80203	37.43	ug/L	98
90) 1,1,2,2-Tetrachloroethane	12.981	83	101437	36.57	ug/L	96
91) 1,3,5-Trimethylbenzene	13.091	105	245946	37.33	ug/L	99

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\12-20-2023\
Data File : 5E44767.D
Acq On : 20 Dec 2023 7:19 pm
Operator : joannel
Sample : ICV1994-5
Misc : MS55506,V5E1994,,,,,
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Dec 21 08:41:57 2023
Quant Method : C:\msdchem\1\methods\V5E_12-20-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Thu Dec 21 08:38:40 2023
Response via : Initial Calibration

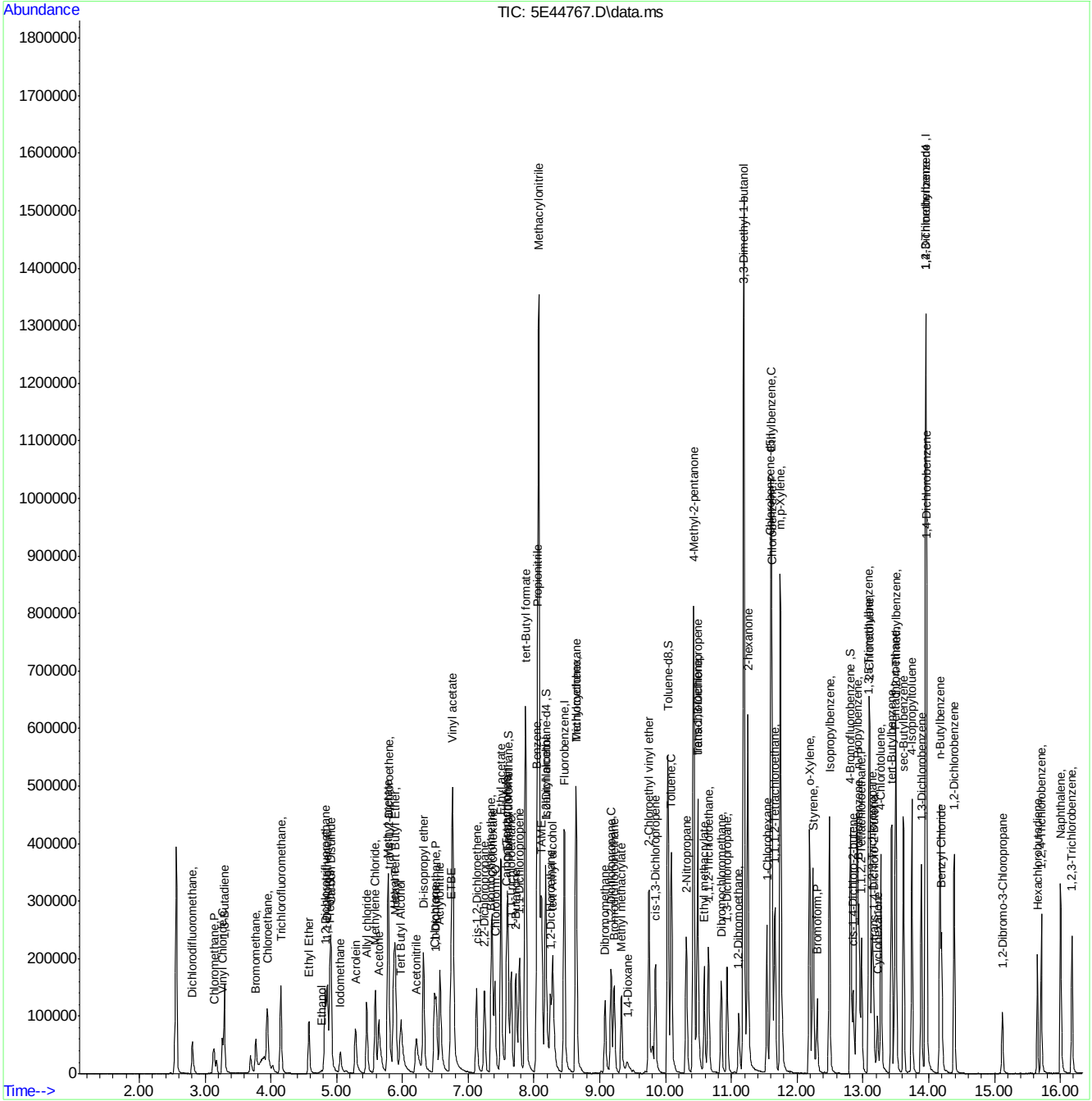
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
92) 2-Chlorotoluene	13.103	91	212910	36.64	ug/L	96
93) trans-1,4-Dichloro-2-B...	13.164	53	21041	35.61	ug/L	98
94) 1,2,3-Trichloropropane	13.146	110	32586	39.26	ug/L	95
95) Cyclohexanone	13.225	55	39767	372.66	ug/L	95
96) 4-Chlorotoluene	13.274	91	189432	33.74	ug/L	98
98) tert-Butylbenzene	13.432	91	123245	36.60	ug/L	96
99) 1,2,4-Trimethylbenzene	13.505	105	241094	37.22	ug/L	96
100) Pentachloroethane	13.493	167	44931	40.93	ug/L	96
101) sec-Butylbenzene	13.615	105	294347	32.55	ug/L	99
102) 4-Isopropyltoluene	13.743	119	264174	33.93	ug/L	99
103) 1,3-Dichlorobenzene	13.889	146	145568	34.36	ug/L	98
104) 1,2,3-Trimethylbenzene	13.956	105	253001	36.33	ug/L	98
105) 1,4-Dichlorobenzene	13.969	146	163783	37.24	ug/L	98
106) n-Butylbenzene	14.170	92	136639	36.95	ug/L	99
107) Benzyl Chloride	14.194	126	33263	38.51	ug/L	96
108) 1,2-Dichlorobenzene	14.389	146	142412	34.76	ug/L	99
109) 1,2-Dibromo-3-Chloropr...	15.121	75	18581	39.36	ug/L	83
110) Hexachlorobutadiene	15.651	225	25438	37.30	ug/L	95
111) 1,2,4-Trichlorobenzene	15.712	180	78307	36.42	ug/L	97
112) Naphthalene	16.005	128	245456	36.96	ug/L	100
113) 1,2,3-Trichlorobenzene	16.175	180	67971	36.58	ug/L	98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\12-20-2023\
Data File : 5E44767.D
Acq On : 20 Dec 2023 7:19 pm
Operator : joannel
Sample : ICV1994-5
Misc : MS55506,V5E1994,,,,,
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Dec 21 08:41:57 2023
Quant Method : C:\msdchem\1\methods\V5E_12-20-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Thu Dec 21 08:38:40 2023
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\12-22-2023\
Data File : 5E44803.D
Acq On : 22 Dec 2023 9:08 am
Operator : jeniferw
Sample : CC1994-5
Misc : MS55597,V5E1996,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Dec 22 09:28:42 2023
Quant Method : C:\msdchem\1\methods\V5E_12-20-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Thu Dec 21 09:37:06 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	8.463	96	364014	50.00	ug/L	0.00
61) Chlorobenzene-d5	11.597	117	293025	50.00	ug/L	0.00
85) 1,4-Dichlorobenzene-d4	13.956	152	168837	50.00	ug/L	0.00
System Monitoring Compounds						
39) Dibromofluoromethane	7.604	113	109523	50.14	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 100.28%			
49) 1,2-Dichloroethane-d4	8.183	65	111597	51.85	ug/L	0.00
Spiked Amount 50.000	Range 79 - 125		Recovery = 103.70%			
62) Toluene-d8	10.036	98	356709	48.73	ug/L	0.00
Spiked Amount 50.000	Range 85 - 112		Recovery = 97.46%			
86) 4-Bromofluorobenzene	12.810	95	120848	49.16	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 98.32%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	2.806	85	57363	41.62	ug/L	94
3) Chloromethane	3.135	50	51509	37.74	ug/L	95
4) Vinyl Chloride	3.263	62	62953	39.14	ug/L	97
5) 1,3-Butadiene	3.294	39	59407	41.82	ug/L	95
6) Bromomethane	3.769	94	46977	41.22	ug/L	96
7) Chloroethane	3.946	64	96411	40.33	ug/L	96
8) Trichlorofluoromethane	4.153	101	119024	43.67	ug/L	93
9) Ethyl Ether	4.580	59	45865	36.31	ug/L	96
10) Ethanol	4.781	45	20185	850.76	ug/L	82
11) 1,2-Dichlorotrifluoroe...	4.824	67	68236	37.07	ug/L	99
12) 1,1-Dichloroethene	4.860	61	82149	36.09	ug/L	96
13) Freon 113	4.897	101	60240	40.04	ug/L	97
14) Carbon Disulfide	4.915	76	176716	39.26	ug/L	98
15) Iodomethane	5.056	142	50032	33.28	ug/L	100
16) Acrolein	5.287	56	70575	210.33	ug/L	98
17) Allyl chloride	5.458	41	63504	38.22	ug/L	98
18) Methylene Chloride	5.586	49	81443	37.66	ug/L	95
19) Acetone	5.641	43	133501	176.54	ug/L	99
20) Methyl acetate	5.775	43	305104	186.91	ug/L	99
21) trans-1,2-Dichloroethene	5.787	61	76776	35.71	ug/L	98
22) Hexane	5.866	56	45030	38.56	ug/L	96
23) Methyl Tert Butyl Ether	5.897	73	180367	36.59	ug/L	98
24) Acetonitrile	6.214	41	87234	374.12	ug/L	94
25) Di-isopropyl ether	6.317	45	163439	35.79	ug/L	99
26) Chloroprene	6.488	53	73109	39.07	ug/L	96
27) 1,1-Dichloroethane	6.519	63	106584	34.86	ug/L	96
28) Acrylonitrile	6.567	53	144633	191.67	ug/L	94
29) ETBE	6.744	59	172552	36.56	ug/L	98
30) Tert Butyl Alcohol	5.976	59	152228	377.72	ug/L	96
31) Vinyl acetate	6.763	43	590234	183.55	ug/L	100
32) cis-1,2-Dichloroethene	7.128	96	70030	36.64	ug/L	98
33) 2,2-Dichloropropane	7.244	77	88781	37.89	ug/L	99
34) Bromochloromethane	7.354	128	38304	38.16	ug/L	90
35) Cyclohexane	7.366	56	90264	39.06	ug/L	99

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\12-22-2023\
Data File : 5E44803.D
Acq On : 22 Dec 2023 9:08 am
Operator : jeniferw
Sample : CC1994-5
Misc : MS55597,V5E1996,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Dec 22 09:28:42 2023
Quant Method : C:\msdchem\1\methods\V5E_12-20-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Thu Dec 21 09:37:06 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
36) Chloroform	7.409	83	116279	36.36	ug/L	96
37) Ethyl acetate	7.500	43	388094	186.25	ug/L	99
38) Tetrahydrofuran	7.598	42	29746	37.05	ug/L	94
40) Carbon Tetrachloride	7.586	117	92352	37.57	ug/L	99
41) 1,1,1-Trichloroethane	7.653	97	98539	36.13	ug/L	99
42) 2-Butanone	7.726	43	221962	193.48	ug/L	99
43) 1,1-Dichloropropene	7.781	75	80635	36.77	ug/L	97
44) tert-Butyl formate	7.872	59	212690	405.78	ug/L	98
45) Propionitrile	8.049	54	146079	390.56	ug/L	90
46) Methacrylonitrile	8.073	41	488365	394.11	ug/L	99
47) Benzene	8.043	78	246004	35.13	ug/L	98
48) TAME	8.116	73	185430	37.47	ug/L	97
50) 1,2-Dichloroethane	8.250	62	90464	38.00	ug/L	98
51) tert Amyl alcohol	8.287	59	131754	381.19	ug/L	97
52) Trichloroethene	8.640	95	70463	37.96	ug/L	97
53) Methylcyclohexane	8.640	83	109227	39.35	ug/L	98
54) Dibromomethane	9.085	93	46647	38.82	ug/L	94
55) 1,2-Dichloropropane	9.171	63	58850	37.49	ug/L	99
56) Bromodichloromethane	9.219	83	90576	38.08	ug/L	95
57) Methyl methacrylate	9.329	41	56378	39.59	ug/L	94
58) 1,4-Dioxane	9.421	88	25348	759.23	ug/L	99
59) 2-Chloroethyl vinyl ether	9.750	63	139087	221.59	ug/L	98
60) cis-1,3-Dichloropropene	9.847	75	95228	39.05	ug/L	97
63) Toluene	10.091	91	269099	38.27	ug/L	98
64) Isobutyl alcohol	8.171	43	101912	774.88	ug/L	97
65) 2-Nitropropane	10.317	41	135570	186.47	ug/L	98
66) 4-Methyl-2-pentanone	10.426	43	443215	180.91	ug/L	99
67) trans-1,3-Dichloropropene	10.487	75	92286	39.22	ug/L	98
68) Tetrachloroethene	10.487	166	77500	35.61	ug/L	97
69) Ethyl methacrylate	10.585	69	83740	38.83	ug/L	96
70) 1,1,2-Trichloroethane	10.652	83	53342	36.73	ug/L	98
71) Dibromochloromethane	10.847	129	77383	37.78	ug/L	99
72) 1,3-Dichloropropane	10.939	76	96586	37.26	ug/L	100
73) 1,2-Dibromoethane	11.115	107	70503	38.77	ug/L	97
74) 3,3-Dimethyl-1-butanol	11.188	57	574441	1895.91	ug/L	100
75) 2-hexanone	11.249	43	335752	196.96	ug/L	99
76) 1-Chlorohexane	11.542	91	88336	37.75	ug/L	97
77) Ethylbenzene	11.609	91	303301	36.72	ug/L	99
78) Chlorobenzene	11.615	112	190775	35.21	ug/L	100
79) 1,1,1,2-Tetrachloroethane	11.664	131	72890	37.35	ug/L	92
80) m,p-Xylene	11.743	91	460857	72.84	ug/L	100
81) o-Xylene	12.188	91	231880	37.49	ug/L	100
82) Styrene	12.243	104	184280	38.97	ug/L	98
83) Bromoform	12.304	173	51426	38.09	ug/L	98
84) Isopropylbenzene	12.493	105	304947	36.22	ug/L	99
87) cis-1,4-Dichloro-2-butene	12.853	53	20299	32.12	ug/L	90
88) n-Propylbenzene	12.914	91	351857	38.14	ug/L	100
89) Bromobenzene	12.944	156	77408	36.13	ug/L	84
90) 1,1,2,2-Tetrachloroethane	12.981	83	101705	36.66	ug/L	97
91) 1,3,5-Trimethylbenzene	13.091	105	245864	37.32	ug/L	99

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\12-22-2023\
Data File : 5E44803.D
Acq On : 22 Dec 2023 9:08 am
Operator : jeniferw
Sample : CC1994-5
Misc : MS55597,V5E1996,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Dec 22 09:28:42 2023
Quant Method : C:\msdchem\1\methods\V5E_12-20-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Thu Dec 21 09:37:06 2023
Response via : Initial Calibration

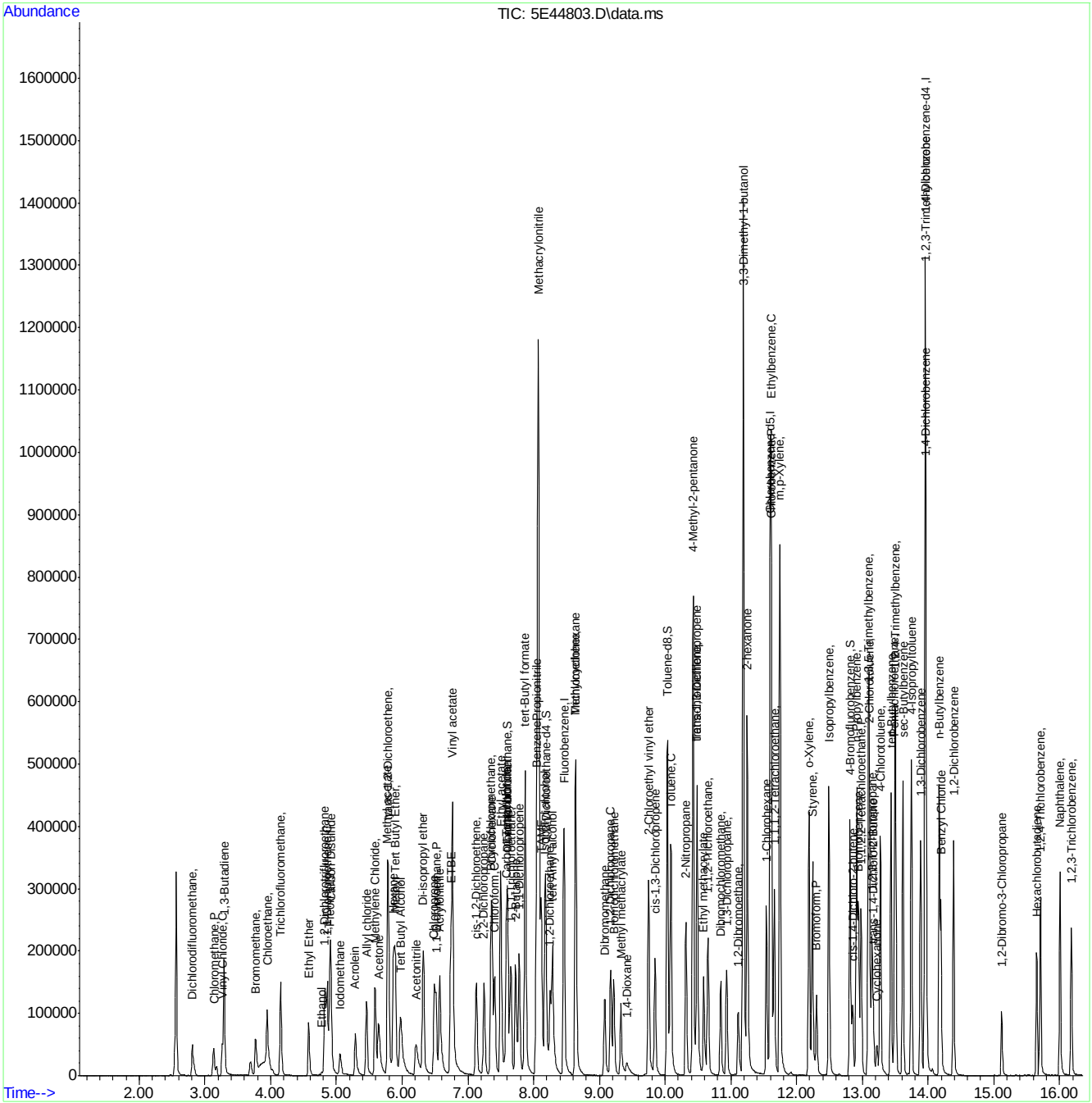
	Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
92)	2-Chlorotoluene	13.109	91	213838	36.80	ug/L		99
93)	trans-1,4-Dichloro-2-B...	13.164	53	19376	32.79	ug/L	#	76
94)	1,2,3-Trichloropropane	13.145	110	29991	36.13	ug/L		95
95)	Cyclohexanone	13.225	55	18387	172.29	ug/L		91
96)	4-Chlorotoluene	13.273	91	192889	34.35	ug/L		100
98)	tert-Butylbenzene	13.438	91	122418	36.36	ug/L		94
99)	1,2,4-Trimethylbenzene	13.505	105	242162	37.38	ug/L		98
100)	Pentachloroethane	13.493	167	43510	39.63	ug/L		96
101)	sec-Butylbenzene	13.621	105	318418	35.21	ug/L		98
102)	4-Isopropyltoluene	13.749	119	282455	36.28	ug/L		99
103)	1,3-Dichlorobenzene	13.889	146	150601	35.54	ug/L		98
104)	1,2,3-Trimethylbenzene	13.962	105	258077	37.05	ug/L		99
105)	1,4-Dichlorobenzene	13.968	146	167374	38.05	ug/L		100
106)	n-Butylbenzene	14.170	92	136240	36.84	ug/L		95
107)	Benzyl Chloride	14.194	126	37032	42.52	ug/L		98
108)	1,2-Dichlorobenzene	14.389	146	144705	35.32	ug/L		99
109)	1,2-Dibromo-3-Chloropr...	15.121	75	18048	38.28	ug/L		95
110)	Hexachlorobutadiene	15.657	225	25171	36.90	ug/L		96
111)	1,2,4-Trichlorobenzene	15.712	180	76689	35.66	ug/L		98
112)	Naphthalene	16.005	128	243770	36.70	ug/L		99
113)	1,2,3-Trichlorobenzene	16.181	180	65673	35.34	ug/L		97

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\12-22-2023\
Data File : 5E44803.D
Acq On : 22 Dec 2023 9:08 am
Operator : jeniferw
Sample : CC1994-5
Misc : MS55597,V5E1996,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Dec 22 09:28:42 2023
Quant Method : C:\msdchem\1\methods\V5E_12-20-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Thu Dec 21 09:37:06 2023
Response via : Initial Calibration



SGS FC12099

Quantitation Report (QT Reviewed)

Data Path : X:\Orlando VOA\celinec\December 2023\12-26-2023\V5E1996\V5E1996\
Data File : 5E44829.d
Acq On : 22 Dec 2023 7:17 pm
Operator : joannel
Sample : ECC1994-5 Inst : MSVOA20
Misc : MS55608,V5E1996,,,,,
ALS Vial : 28 Sample Multiplier: 1

Quant Time: Dec 26 00:10:08 2023
Quant Method : X:\Orlando VOA\celinec\December 2023\12-26-2023\V5E1996\METHOD\V5E_12-20-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Thu Dec 21 09:37:06 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	8.463	96	352112	50.00	ug/L	0.00
61) Chlorobenzene-d5	11.597	117	280290	50.00	ug/L	0.00
85) 1,4-Dichlorobenzene-d4	13.956	152	163329	50.00	ug/L	0.00
System Monitoring Compounds						
39) Dibromofluoromethane	7.604	113	105195	49.79	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 99.58%			
49) 1,2-Dichloroethane-d4	8.177	65	101669	48.83	ug/L	0.00
Spiked Amount 50.000	Range 79 - 125		Recovery = 97.66%			
62) Toluene-d8	10.036	98	343446	49.05	ug/L	0.00
Spiked Amount 50.000	Range 85 - 112		Recovery = 98.10%			
86) 4-Bromofluorobenzene	12.810	95	115992	48.78	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 97.56%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	2.806	85	50063	37.5467	ug/L	95
3) Chloromethane	3.129	50	48841	36.9986	ug/L	98
4) Vinyl Chloride	3.263	62	54889	35.2759	ug/L	97
5) 1,3-Butadiene	3.294	39	67304	48.9759	ug/L	96
6) Bromomethane	3.769	94	39447	35.7819	ug/L	98
7) Chloroethane	3.946	64	95271	41.2689	ug/L	98
8) Trichlorofluoromethane	4.153	101	106519	41.8678	ug/L	95
9) Ethyl Ether	4.580	59	45982	37.6326	ug/L	98
10) Ethanol	4.787	45	21234	925.2262	ug/L	88
11) 1,2-Dichlorotrifluoroe...	4.824	67	64707	36.3459	ug/L	98
12) 1,1-Dichloroethene	4.860	61	78326	35.5742	ug/L	97
13) Freon 113	4.903	101	56463	38.7958	ug/L	95
14) Carbon Disulfide	4.915	76	160440	36.8469	ug/L	97
15) Iodomethane	5.062	142	70360	48.3905	ug/L	98
16) Acrolein	5.287	56	62233	191.7345	ug/L	93
17) Allyl chloride	5.458	41	57092	35.5216	ug/L	94
18) Methylene Chloride	5.586	49	73683	35.2248	ug/L	93
19) Acetone	5.641	43	139806	191.1219	ug/L	100
20) Methyl acetate	5.781	43	317785	201.2565	ug/L	96
21) trans-1,2-Dichloroethene	5.793	61	73112	35.1576	ug/L	96
22) Hexane	5.866	56	39129	34.6408	ug/L	97
23) Methyl Tert Butyl Ether	5.891	73	178021	37.3336	ug/L	91
24) Acetonitrile	6.208	41	86767	384.6928	ug/L	98
25) Di-isopropyl ether	6.324	45	155327	35.1586	ug/L	96
26) Chloroprene	6.488	53	67952	37.5449	ug/L	93
27) 1,1-Dichloroethane	6.519	63	102387	34.6146	ug/L	99
28) Acrylonitrile	6.574	53	141146	193.3728	ug/L	94
29) ETBE	6.744	59	167066	36.5948	ug/L	98
30) Tert Butyl Alcohol	5.976	59	149940	384.6184	ug/L	95
31) Vinyl acetate	6.769	43	518841	166.8028	ug/L	100
32) cis-1,2-Dichloroethene	7.128	96	68892	37.2622	ug/L	97
33) 2,2-Dichloropropane	7.250	77	72421	31.9489	ug/L	98
34) Bromochloromethane	7.348	128	36461	37.5510	ug/L	94
35) Cyclohexane	7.366	56	82715	37.0023	ug/L	98
36) Chloroform	7.409	83	112385	36.3318	ug/L	96
37) Ethyl acetate	7.500	43	371361	184.2457	ug/L	99
38) Tetrahydrofuran	7.598	42	28379	36.5228	ug/L	94
40) Carbon Tetrachloride	7.586	117	87232	36.6832	ug/L	99
41) 1,1,1-Trichloroethane	7.653	97	96072	36.4178	ug/L	98
42) 2-Butanone	7.726	43	226167	203.8125	ug/L	98
43) 1,1-Dichloropropene	7.781	75	77572	36.5651	ug/L	98
44) tert-Butyl formate	7.872	59	190747	376.2157	ug/L	99

Quantitation Report (QT Reviewed)

Data Path : X:\Orlando VOA\celinec\December 2023\12-26-2023\V5E1996\V5E1996\
Data File : 5E44829.d
Acq On : 22 Dec 2023 7:17 pm
Operator : joannel
Sample : ECC1994-5 Inst : MSVOA20
Misc : MS55608,V5E1996,,,,,
ALS Vial : 28 Sample Multiplier: 1

Quant Time: Dec 26 00:10:08 2023
Quant Method : X:\Orlando VOA\celinec\December 2023\12-26-2023\V5E1996\METHOD\V5E_12-20-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Thu Dec 21 09:37:06 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
45) Propionitrile	8.055	54	147903	407.5208	ug/L		96
46) Methacrylonitrile	8.073	41	483630	403.4824	ug/L		99
47) Benzene	8.043	78	234956	34.6819	ug/L		98
48) TAME	8.116	73	182470	38.1148	ug/L		97
50) 1,2-Dichloroethane	8.250	62	85265	37.0305	ug/L		99
51) tert Amyl alcohol	8.287	59	130041	388.9519	ug/L		97
52) Trichloroethene	8.640	95	68349	38.0614	ug/L		98
53) Methylcyclohexane	8.640	83	102614	38.2203	ug/L		98
54) Dibromomethane	9.079	93	46718	40.1890	ug/L		97
55) 1,2-Dichloropropane	9.171	63	55635	36.6362	ug/L		92
56) Bromodichloromethane	9.219	83	85478	37.1550	ug/L		96
57) Methyl methacrylate	9.329	41	55159	40.0223	ug/L		95
58) 1,4-Dioxane	9.414	88	26313	814.7789	ug/L		91
59) 2-Chloroethyl vinyl ether	9.750	63	120181	200.9924	ug/L		99
60) cis-1,3-Dichloropropene	9.847	75	88292	37.4267	ug/L		96
63) Toluene	10.085	91	254733	37.8727	ug/L		95
64) Isobutyl alcohol	8.177	43	101459	806.4902	ug/L		98
65) 2-Nitropropane	10.317	41	132165	190.0472	ug/L		95
66) 4-Methyl-2-pentanone	10.426	43	457543	195.2412	ug/L		99
67) trans-1,3-Dichloropropene	10.487	75	85344	37.9132	ug/L		97
68) Tetrachloroethene	10.493	166	80230	38.5348	ug/L		93
69) Ethyl methacrylate	10.585	69	85026	41.1038	ug/L		94
70) 1,1,2-Trichloroethane	10.652	83	52350	37.6821	ug/L		99
71) Dibromochloromethane	10.847	129	73379	37.4571	ug/L		99
72) 1,3-Dichloropropane	10.939	76	92901	37.4709	ug/L		98
73) 1,2-Dibromoethane	11.115	107	70267	40.3913	ug/L		97
74) 3,3-Dimethyl-1-butanol	11.188	57	534442	1849.2431	ug/L		99
75) 2-hexanone	11.249	43	346997	212.8044	ug/L		99
76) 1-Chlorohexane	11.542	91	83416	37.2699	ug/L		98
77) Ethylbenzene	11.609	91	292940	37.0772	ug/L		99
78) Chlorobenzene	11.615	112	186968	36.0781	ug/L		100
79) 1,1,1,2-Tetrachloroethane	11.664	131	69773	37.3789	ug/L		99
80) m,p-Xylene	11.749	91	446685	73.8110	ug/L		100
81) o-Xylene	12.188	91	222316	37.5794	ug/L		99
82) Styrene	12.243	104	173021	38.2495	ug/L		95
83) Bromoform	12.304	173	43330	33.5526	ug/L		95
84) Isopropylbenzene	12.493	105	290431	36.0604	ug/L		99
87) cis-1,4-Dichloro-2-butene	12.853	53	8571	14.0191	ug/L	#	90
88) n-Propylbenzene	12.914	91	330583	37.0468	ug/L		98
89) Bromobenzene	12.944	156	76238	36.7795	ug/L		82
90) 1,1,2,2-Tetrachloroethane	12.981	83	97629	36.3781	ug/L		99
91) 1,3,5-Trimethylbenzene	13.091	105	238211	37.3747	ug/L		99
92) 2-Chlorotoluene	13.109	91	211530	37.6291	ug/L		100
93) trans-1,4-Dichloro-2-B...	13.164	53	10319	18.0530	ug/L	#	36
94) 1,2,3-Trichloropropane	13.145	110	30586	38.0927	ug/L		95
95) Cyclohexanone	13.225	55	18850	182.5855	ug/L		94
96) 4-Chlorotoluene	13.273	91	184854	34.0303	ug/L		97
98) tert-Butylbenzene	13.438	91	122555	37.6234	ug/L		95
99) 1,2,4-Trimethylbenzene	13.505	105	237499	37.8940	ug/L		99
100) Pentachloroethane	13.493	167	37248	35.0707	ug/L		94
101) sec-Butylbenzene	13.621	105	306533	35.0376	ug/L		98
102) 4-Isopropyltoluene	13.749	119	266734	35.4135	ug/L		99
103) 1,3-Dichlorobenzene	13.889	146	148124	36.1360	ug/L		99
104) 1,2,3-Trimethylbenzene	13.962	105	250138	37.1237	ug/L		100
105) 1,4-Dichlorobenzene	13.968	146	159605	37.5123	ug/L		97
106) n-Butylbenzene	14.170	92	126098	35.2439	ug/L		98
107) Benzyl Chloride	14.200	126	27793	33.5898	ug/L	#	81
108) 1,2-Dichlorobenzene	14.389	146	142664	35.9963	ug/L		99

Quantitation Report (QT Reviewed)

Data Path : X:\Orlando VOA\celinec\December 2023\12-26-2023\V5E1996\V5E1996\
Data File : 5E44829.d
Acq On : 22 Dec 2023 7:17 pm
Operator : joannel
Sample : ECC1994-5 Inst : MSVOA20
Misc : MS55608,V5E1996,,,,,
ALS Vial : 28 Sample Multiplier: 1

Quant Time: Dec 26 00:10:08 2023
Quant Method : X:\Orlando VOA\celinec\December 2023\12-26-2023\V5E1996\METHOD\V5E_12-20-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Thu Dec 21 09:37:06 2023
Response via : Initial Calibration

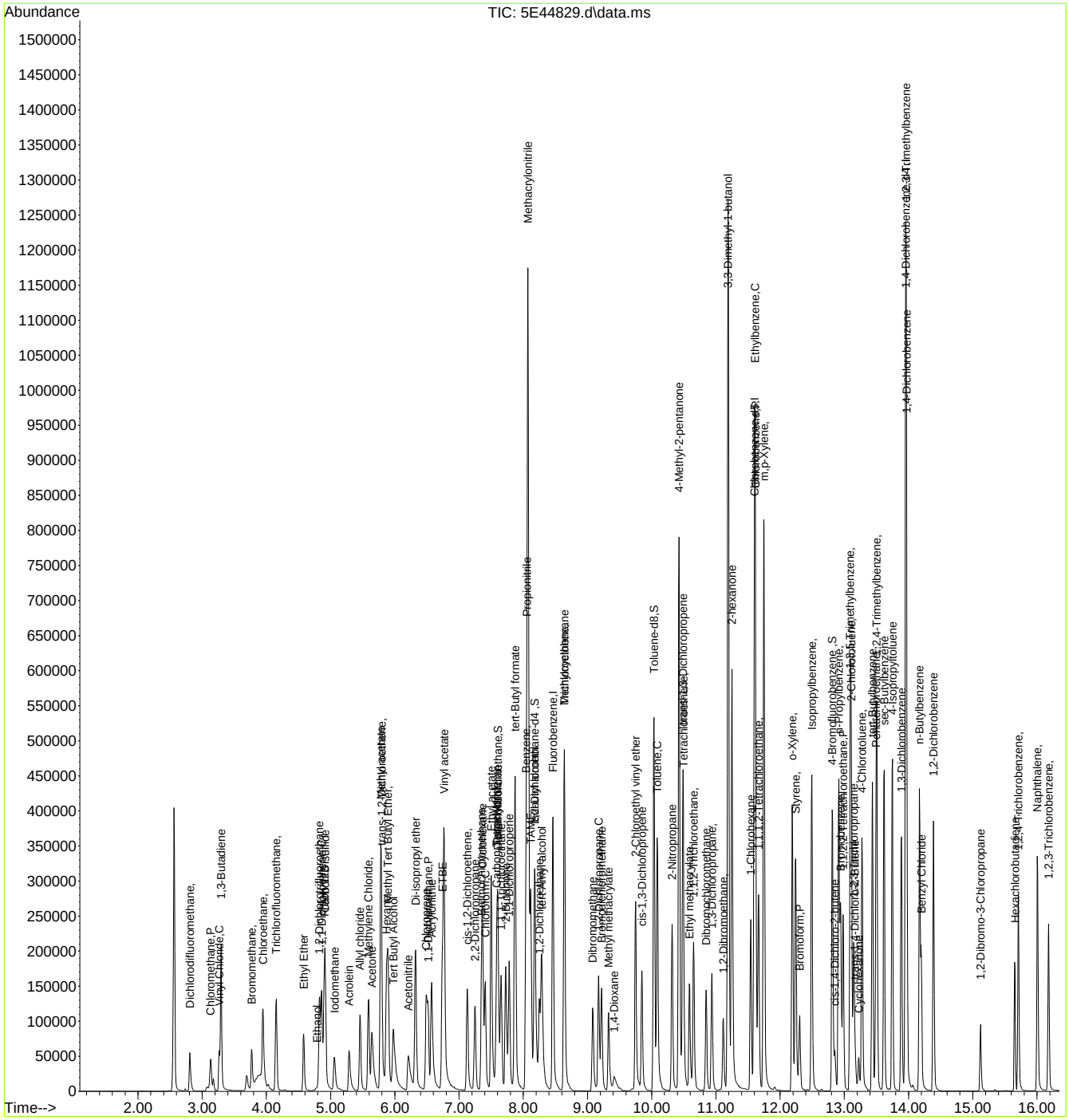
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
109) 1,2-Dibromo-3-Chloropr...	15.121	75	16609	36.4979	ug/L	85
110) Hexachlorobutadiene	15.657	225	24192	36.6654	ug/L	93
111) 1,2,4-Trichlorobenzene	15.712	180	76854	36.9418	ug/L	95
112) Naphthalene	16.005	128	248928	38.7396	ug/L	98
113) 1,2,3-Trichlorobenzene	16.181	180	67318	37.4476	ug/L	96

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : X:\Orlando VOA\celinec\December 2023\12-26-2023\V5E1996\V5E1996\
Data File : 5E44829.d
Acq On : 22 Dec 2023 7:17 pm
Operator : joannel
Sample : ECC1994-5 Inst : MSVOA20
Misc : MS55608,V5E1996,,,,,
ALS Vial : 28 Sample Multiplier: 1

Quant Time: Dec 26 00:10:08 2023
Quant Method : X:\Orlando VOA\celinec\December 2023\12-26-2023\V5E1996\METHOD\V5E_12-20-2023_.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Thu Dec 21 09:37:06 2023
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\120323\
Data File : A0239067.D
Acq On : 4 Dec 2023 12:29 pm
Operator : TRANGD
Sample : ic3444-1
Misc : MS55453,VA3444,,,,,
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Dec 04 14:42:06 2023
Quant Method : C:\msdchem\1\METHODS\2023-12-3_SIMDIOX.M
Quant Title : 1,4-Dioxane by SIM
QLast Update : Wed Nov 29 06:42:19 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	7.809	96	37249	5.00	ug/L	0.00
4) 1,4-Dioxane-d8	8.703	96	4844	50.00	ug/L	0.00
System Monitoring Compounds						
2) 1,2-Dichloroethane-d4	7.541	65	15331	5.02	ug/L	0.00
Spiked Amount 5.000	Range 74 - 125		Recovery = 100.40%			
3) Toluene-d8	9.347	98	24830	4.73	ug/L	0.00
Spiked Amount 5.000	Range 88 - 111		Recovery = 94.60%			
Target Compounds						Qvalue
5) 1,4-Dioxane	8.736	88	402	1.67	ug/L	93

(#) = qualifier out of range (m) = manual integration (+) = signals summed

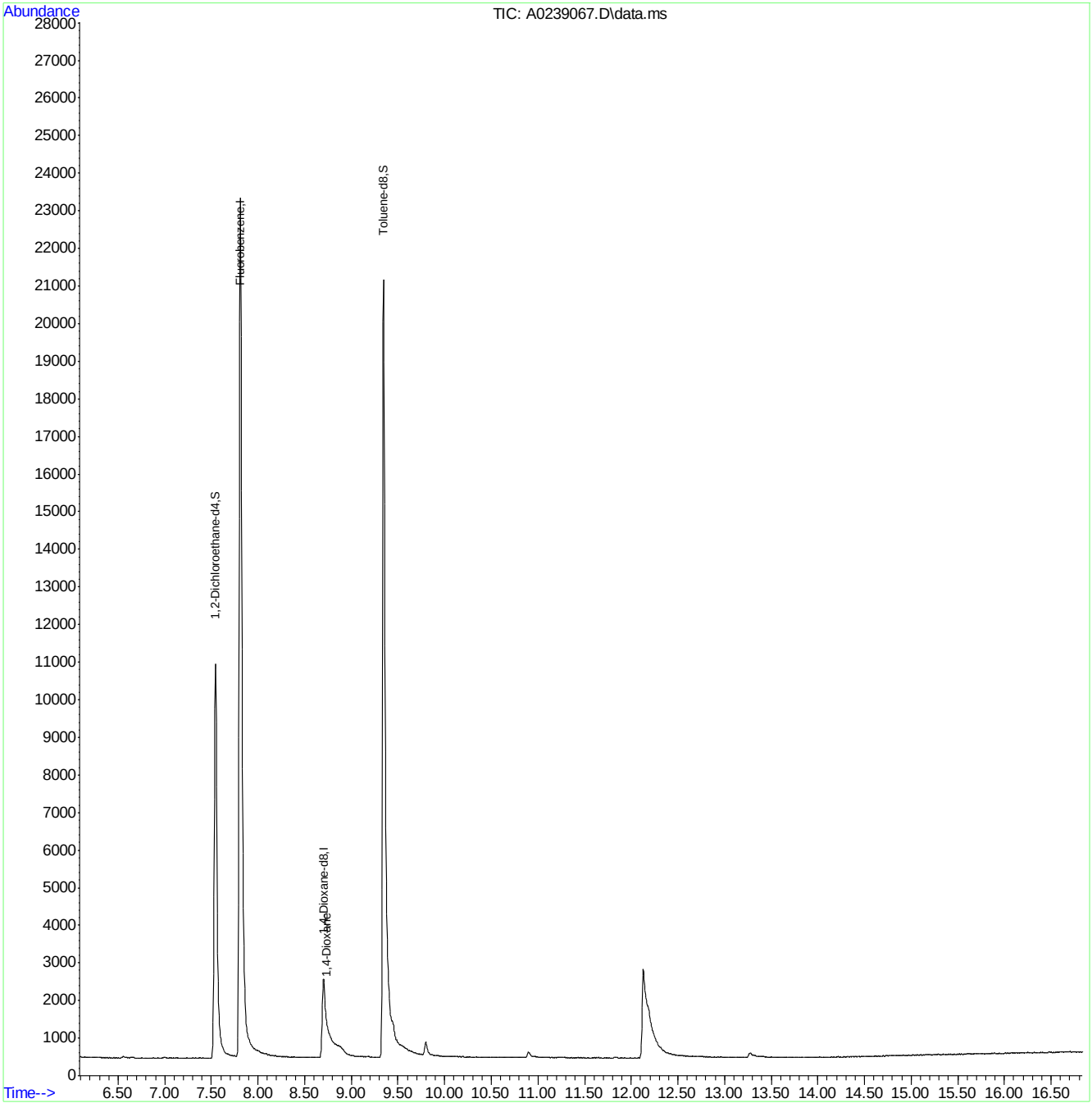
7.6.23

7

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\120323\
Data File : A0239067.D
Acq On : 4 Dec 2023 12:29 pm
Operator : TRANGD
Sample : ic3444-1
Misc : MS55453,VA3444,,,,,
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Dec 04 14:42:06 2023
Quant Method : C:\msdchem\1\METHODS\2023-12-3_SIMDIOX.M
Quant Title : 1,4-Dioxane by SIM
QLast Update : Wed Nov 29 06:42:19 2023
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\120323\
Data File : A0239068.D
Acq On : 4 Dec 2023 12:56 pm
Operator : TRANGD
Sample : ic3444-2
Misc : MS55453,VA3444,,,,,
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Dec 04 14:42:08 2023
Quant Method : C:\msdchem\1\METHODS\2023-12-3_SIMDIOX.M
Quant Title : 1,4-Dioxane by SIM
QLast Update : Wed Nov 29 06:42:19 2023
Response via : Initial Calibration

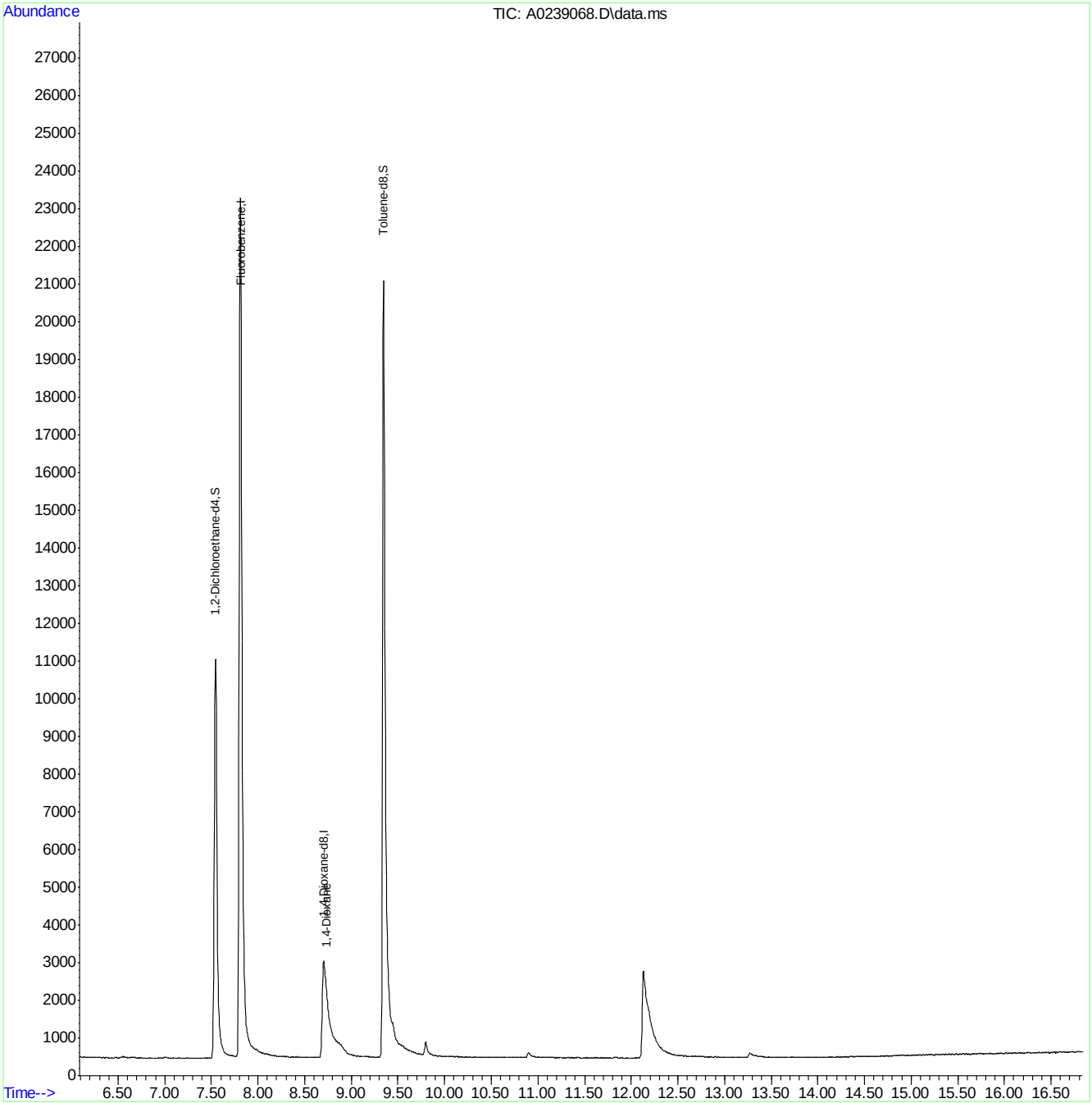
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	7.814	96	36984	5.00	ug/L	0.00
4) 1,4-Dioxane-d8	8.703	96	5880	50.00	ug/L	0.00
System Monitoring Compounds						
2) 1,2-Dichloroethane-d4	7.541	65	15393	5.07	ug/L	0.00
Spiked Amount 5.000	Range 74 - 125		Recovery = 101.40%			
3) Toluene-d8	9.347	98	24829	4.77	ug/L	0.00
Spiked Amount 5.000	Range 88 - 111		Recovery = 95.40%			
Target Compounds						Qvalue
5) 1,4-Dioxane	8.736	88	1701	5.82	ug/L	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\120323\
Data File : A0239068.D
Acq On : 4 Dec 2023 12:56 pm
Operator : TRANGD
Sample : ic3444-2
Misc : MS55453,VA3444,,,,,
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Dec 04 14:42:08 2023
Quant Method : C:\msdchem\1\METHODS\2023-12-3_SIMDIOX.M
Quant Title : 1,4-Dioxane by SIM
QLast Update : Wed Nov 29 06:42:19 2023
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\120323\
Data File : A0239069.D
Acq On : 4 Dec 2023 1:27 pm
Operator : TRANGD
Sample : ic3444-3
Misc : MS55453,VA3444,,,,,
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Dec 04 14:42:10 2023
Quant Method : C:\msdchem\1\METHODS\2023-12-3_SIMDIOX.M
Quant Title : 1,4-Dioxane by SIM
QLast Update : Wed Nov 29 06:42:19 2023
Response via : Initial Calibration

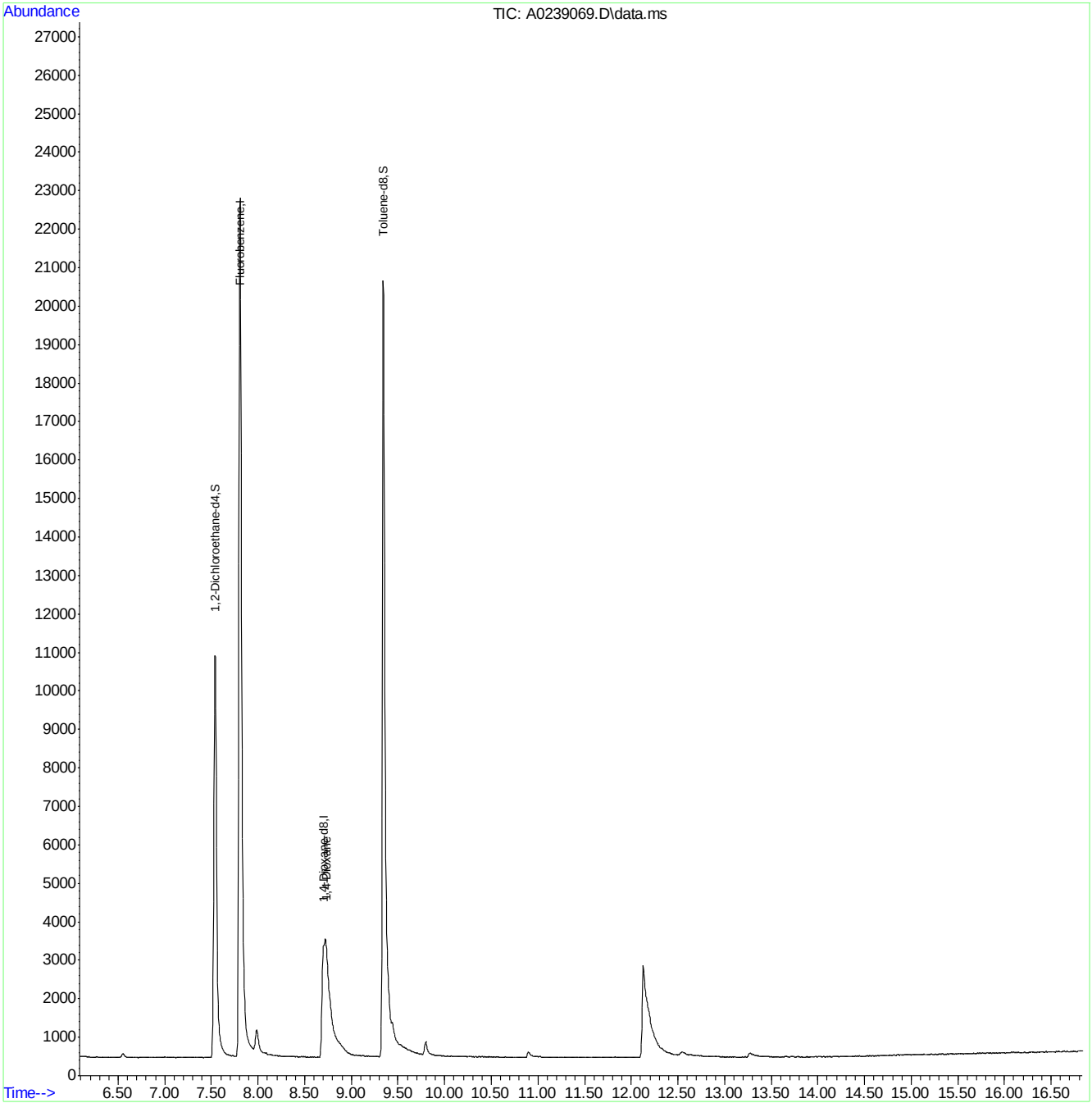
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	7.809	96	36310	5.00	ug/L	0.00
4) 1,4-Dioxane-d8	8.698	96	6644	50.00	ug/L	0.00
System Monitoring Compounds						
2) 1,2-Dichloroethane-d4	7.536	65	15053	5.05	ug/L	0.00
Spiked Amount 5.000	Range 74 - 125		Recovery = 101.00%			
3) Toluene-d8	9.342	98	24276	4.75	ug/L	0.00
Spiked Amount 5.000	Range 88 - 111		Recovery = 95.00%			
Target Compounds						Qvalue
5) 1,4-Dioxane	8.731	88	3672	11.11	ug/L	96

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\120323\
Data File : A0239069.D
Acq On : 4 Dec 2023 1:27 pm
Operator : TRANGD
Sample : ic3444-3
Misc : MS55453,VA3444,,,,,
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Dec 04 14:42:10 2023
Quant Method : C:\msdchem\1\METHODS\2023-12-3_SIMDIOX.M
Quant Title : 1,4-Dioxane by SIM
QLast Update : Wed Nov 29 06:42:19 2023
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\120323\
Data File : A0239070.D
Acq On : 4 Dec 2023 1:53 pm
Operator : TRANGD
Sample : ic3444-4
Misc : MS55453,VA3444,,,,,
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Dec 04 14:42:12 2023
Quant Method : C:\msdchem\1\METHODS\2023-12-3_SIMDIOX.M
Quant Title : 1,4-Dioxane by SIM
QLast Update : Wed Nov 29 06:42:19 2023
Response via : Initial Calibration

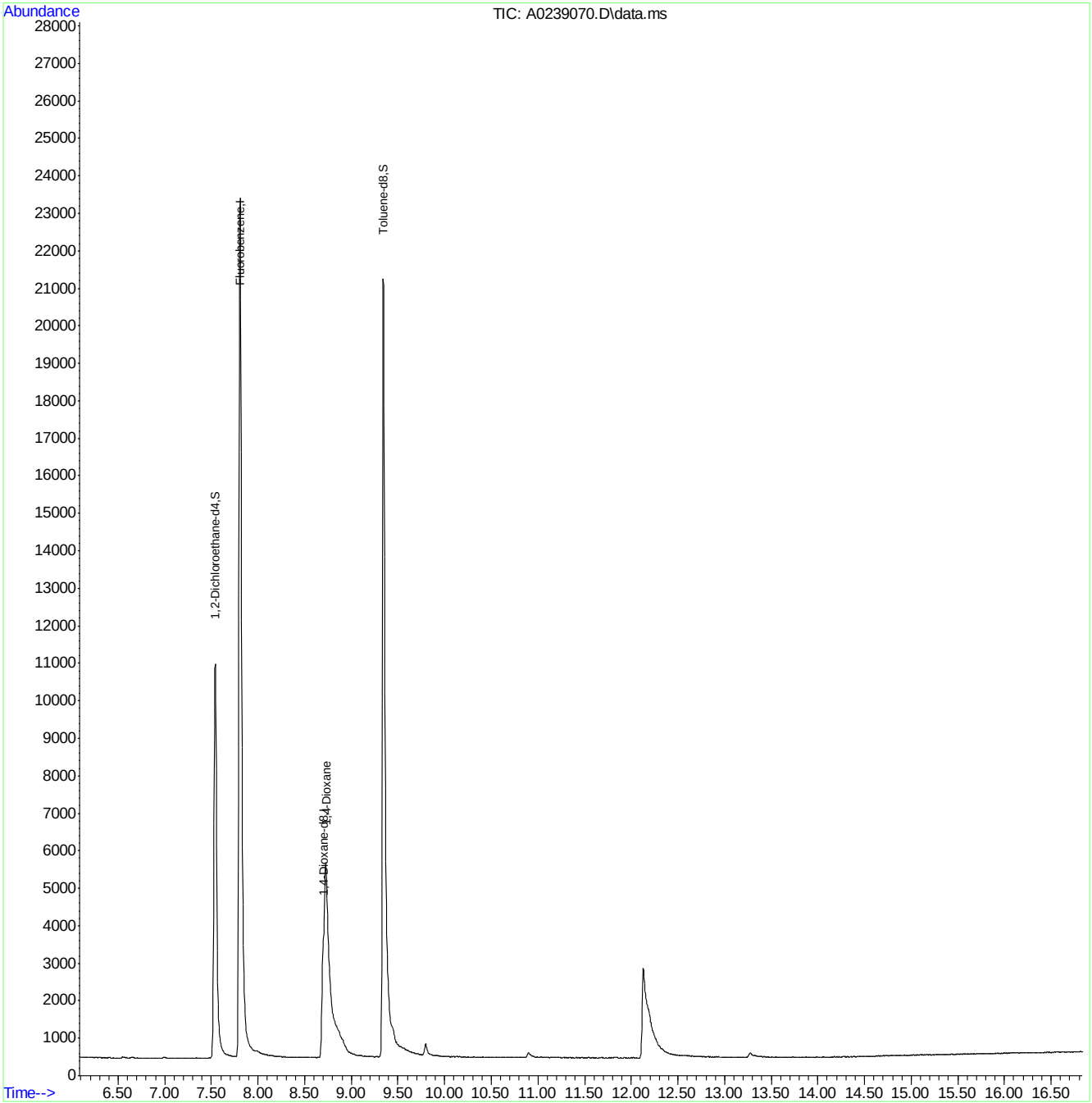
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	7.809	96	36424	5.00	ug/L	0.00
4) 1,4-Dioxane-d8	8.698	96	6671	50.00	ug/L	0.00
System Monitoring Compounds						
2) 1,2-Dichloroethane-d4	7.541	65	15049	5.04	ug/L	0.00
Spiked Amount 5.000	Range 74 - 125		Recovery = 100.80%			
3) Toluene-d8	9.342	98	24579	4.79	ug/L	0.00
Spiked Amount 5.000	Range 88 - 111		Recovery = 95.80%			
Target Compounds						Qvalue
5) 1,4-Dioxane	8.731	88	8597	25.91	ug/L	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\120323\
Data File : A0239070.D
Acq On : 4 Dec 2023 1:53 pm
Operator : TRANGD
Sample : ic3444-4
Misc : MS55453,VA3444,,,,,
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Dec 04 14:42:12 2023
Quant Method : C:\msdchem\1\METHODS\2023-12-3_SIMDIOX.M
Quant Title : 1,4-Dioxane by SIM
QLast Update : Wed Nov 29 06:42:19 2023
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\120323\
Data File : A0239071.D
Acq On : 4 Dec 2023 2:20 pm
Operator : TRANGD
Sample : icc3444-5
Misc : MS55453,VA3444,,,,,
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Dec 04 14:42:14 2023
Quant Method : C:\msdchem\1\METHODS\2023-12-3_SIMDIOX.M
Quant Title : 1,4-Dioxane by SIM
QLast Update : Wed Nov 29 06:42:19 2023
Response via : Initial Calibration

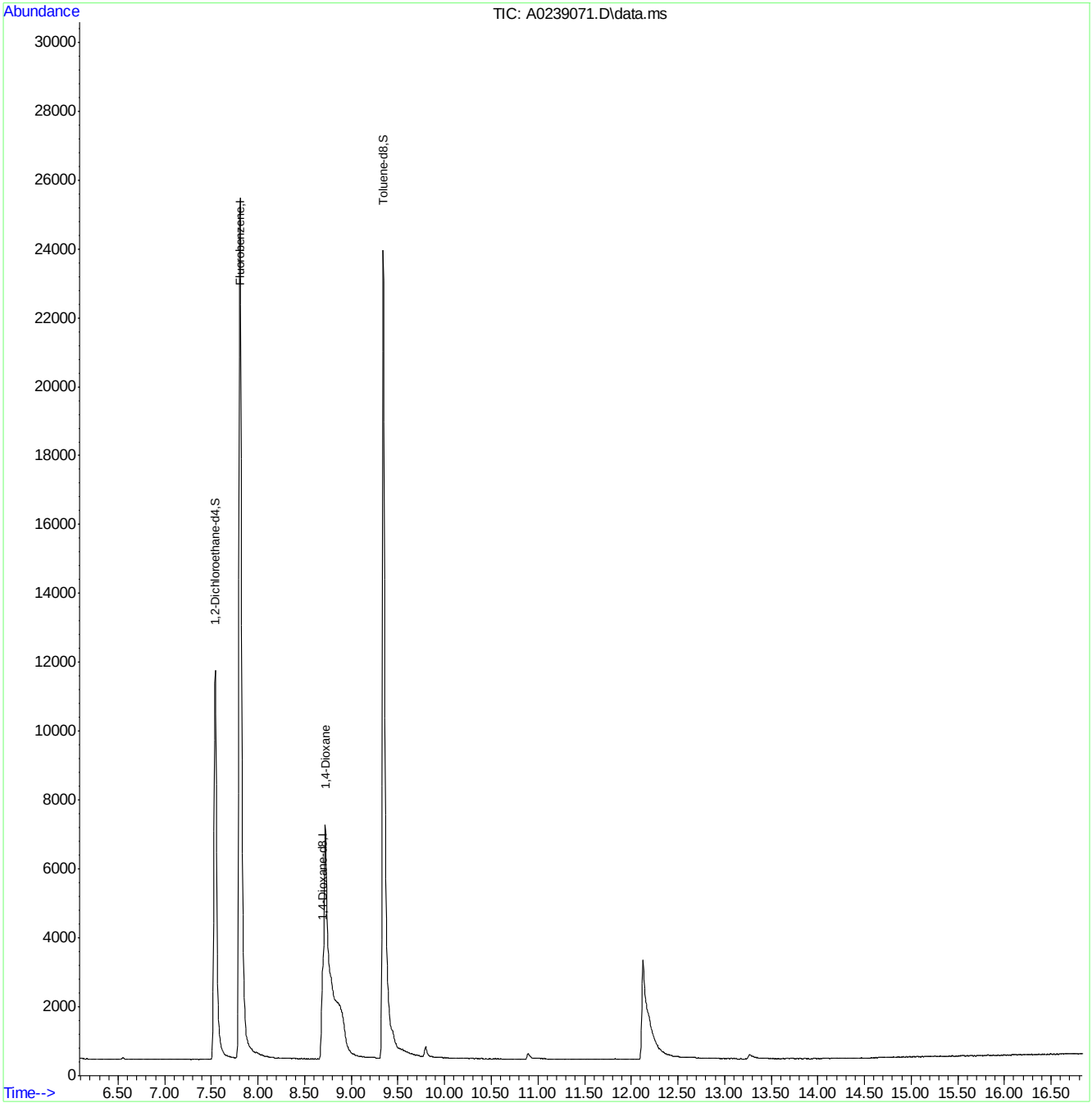
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	7.810	96	39466	5.00	ug/L	0.00
4) 1,4-Dioxane-d8	8.694	96	5851	50.00	ug/L	0.00
System Monitoring Compounds						
2) 1,2-Dichloroethane-d4	7.541	65	15989	4.94	ug/L	0.00
Spiked Amount 5.000	Range 74 - 125		Recovery = 98.80%			
3) Toluene-d8	9.342	98	26913	4.84	ug/L	0.00
Spiked Amount 5.000	Range 88 - 111		Recovery = 96.80%			
Target Compounds						Qvalue
5) 1,4-Dioxane	8.726	88	15346	52.73	ug/L	97

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\120323\
Data File : A0239071.D
Acq On : 4 Dec 2023 2:20 pm
Operator : TRANGD
Sample : icc3444-5
Misc : MS55453,VA3444,,,,,
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Dec 04 14:42:14 2023
Quant Method : C:\msdchem\1\METHODS\2023-12-3_SIMDIOX.M
Quant Title : 1,4-Dioxane by SIM
QLast Update : Wed Nov 29 06:42:19 2023
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\120323\
Data File : A0239072.D
Acq On : 4 Dec 2023 2:48 pm
Operator : TRANGD
Sample : ic3444-6
Misc : MS55453,VA3444,,,,,
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Dec 04 15:31:13 2023
Quant Method : C:\msdchem\1\METHODS\2023-12-3_SIMDIOX.M
Quant Title : 1,4-Dioxane by SIM
QLast Update : Wed Nov 29 06:42:19 2023
Response via : Initial Calibration

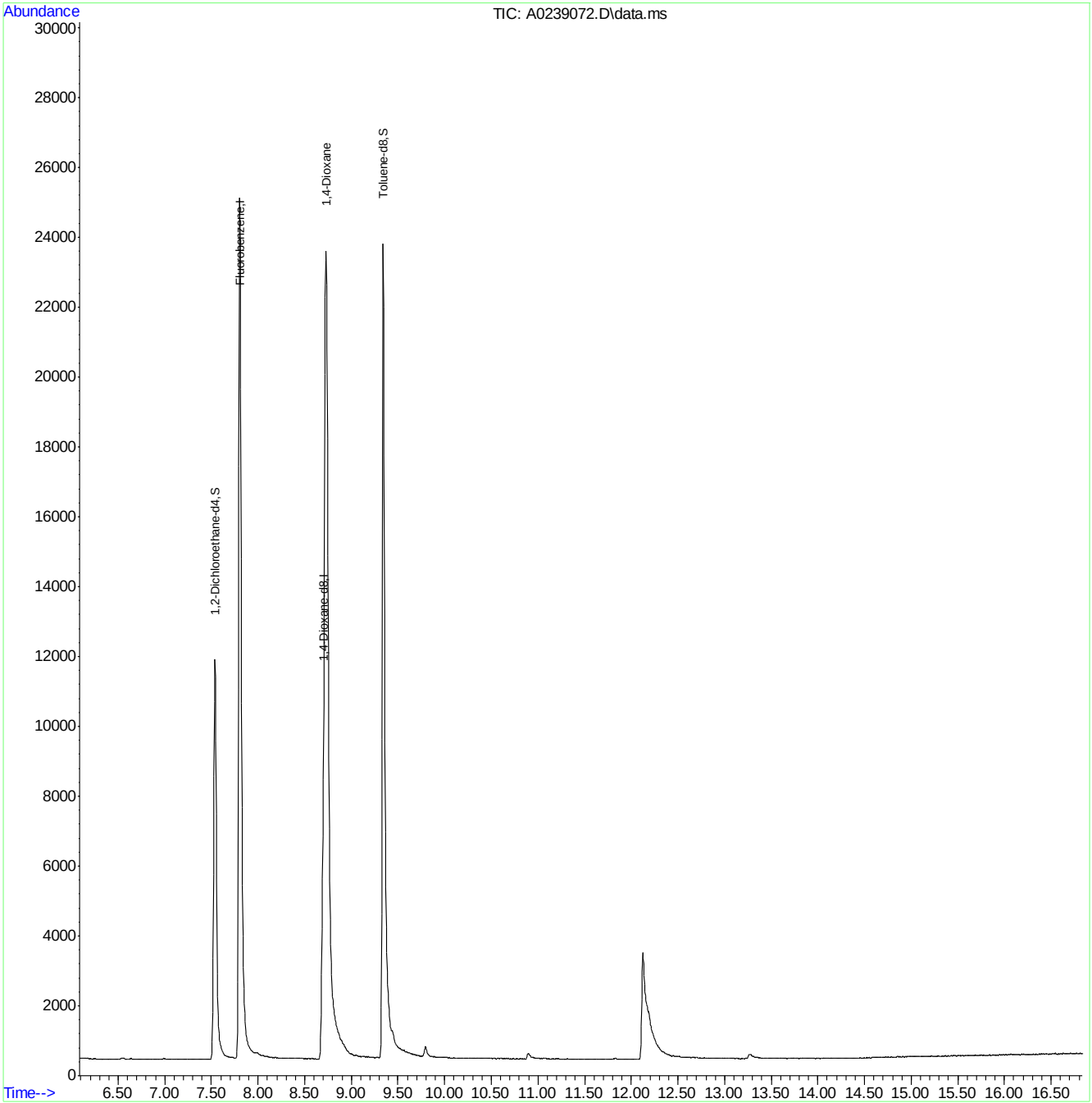
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	7.805	96	38791	5.00	ug/L	0.00
4) 1,4-Dioxane-d8	8.703	96	10392	50.00	ug/L	0.00
System Monitoring Compounds						
2) 1,2-Dichloroethane-d4	7.536	65	15932	5.01	ug/L	0.00
Spiked Amount 5.000	Range 74 - 125		Recovery = 100.20%			
3) Toluene-d8	9.342	98	26391	4.83	ug/L	0.00
Spiked Amount 5.000	Range 88 - 111		Recovery = 96.60%			
Target Compounds						Qvalue
5) 1,4-Dioxane	8.731	88	36393	70.41	ug/L	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\120323\
Data File : A0239072.D
Acq On : 4 Dec 2023 2:48 pm
Operator : TRANGD
Sample : ic3444-6
Misc : MS55453,VA3444,,,,,
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Dec 04 15:31:13 2023
Quant Method : C:\msdchem\1\METHODS\2023-12-3_SIMDIOX.M
Quant Title : 1,4-Dioxane by SIM
QLast Update : Wed Nov 29 06:42:19 2023
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\120323\
Data File : A0239073.D
Acq On : 4 Dec 2023 3:14 pm
Operator : TRANGD
Sample : ic3444-7
Misc : MS55453,VA3444,,,,,
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Dec 04 15:31:44 2023
Quant Method : C:\msdchem\1\METHODS\2023-12-3_SIMDIOX.M
Quant Title : 1,4-Dioxane by SIM
QLast Update : Wed Nov 29 06:42:19 2023
Response via : Initial Calibration

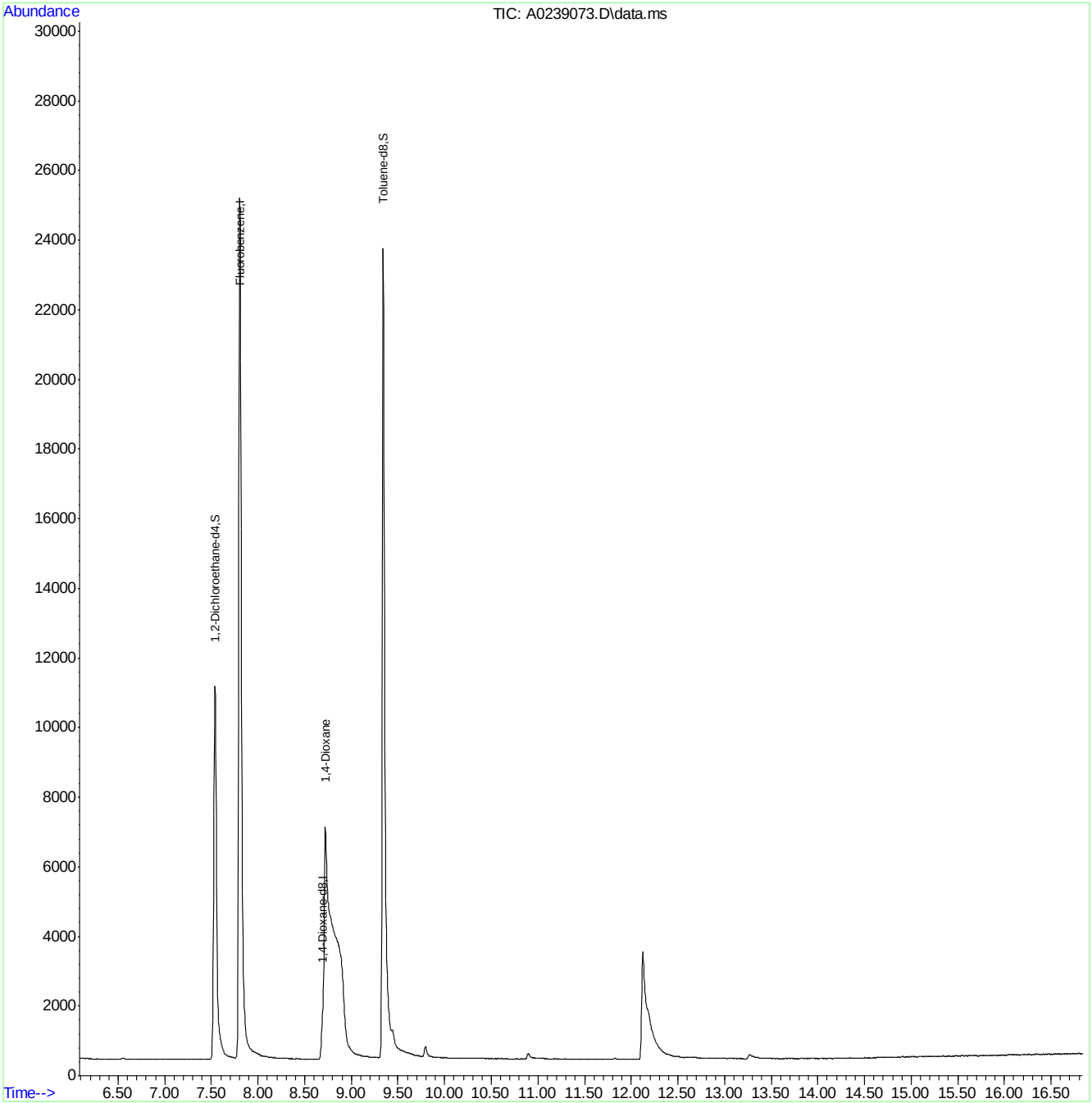
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	7.805	96	38508	5.00	ug/L	0.00
4) 1,4-Dioxane-d8	8.694	96	4746	50.00	ug/L	0.00
System Monitoring Compounds						
2) 1,2-Dichloroethane-d4	7.536	65	15566	4.93	ug/L	0.00
Spiked Amount 5.000	Range 74 - 125		Recovery = 98.60%			
3) Toluene-d8	9.342	98	26078	4.81	ug/L	0.00
Spiked Amount 5.000	Range 88 - 111		Recovery = 96.20%			
Target Compounds						Qvalue
5) 1,4-Dioxane	8.722	88	25468	107.89	ug/L	98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\120323\
Data File : A0239073.D
Acq On : 4 Dec 2023 3:14 pm
Operator : TRANGD
Sample : ic3444-7
Misc : MS55453,VA3444,,,,,
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Dec 04 15:31:44 2023
Quant Method : C:\msdchem\1\METHODS\2023-12-3_SIMDIOX.M
Quant Title : 1,4-Dioxane by SIM
QLast Update : Wed Nov 29 06:42:19 2023
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\120323\
Data File : A0239075.D
Acq On : 4 Dec 2023 4:07 pm
Operator : TRANGD
Sample : icv3444-5
Misc : MS55453,VA3444,,,,,
ALS Vial : 17 Sample Multiplier: 1

Quant Time: Dec 05 10:04:20 2023
Quant Method : C:\msdchem\1\METHODS\2023-12-3_SIMDIOX.M
Quant Title : 1,4-Dioxane by SIM
QLast Update : Mon Dec 04 15:33:06 2023
Response via : Initial Calibration

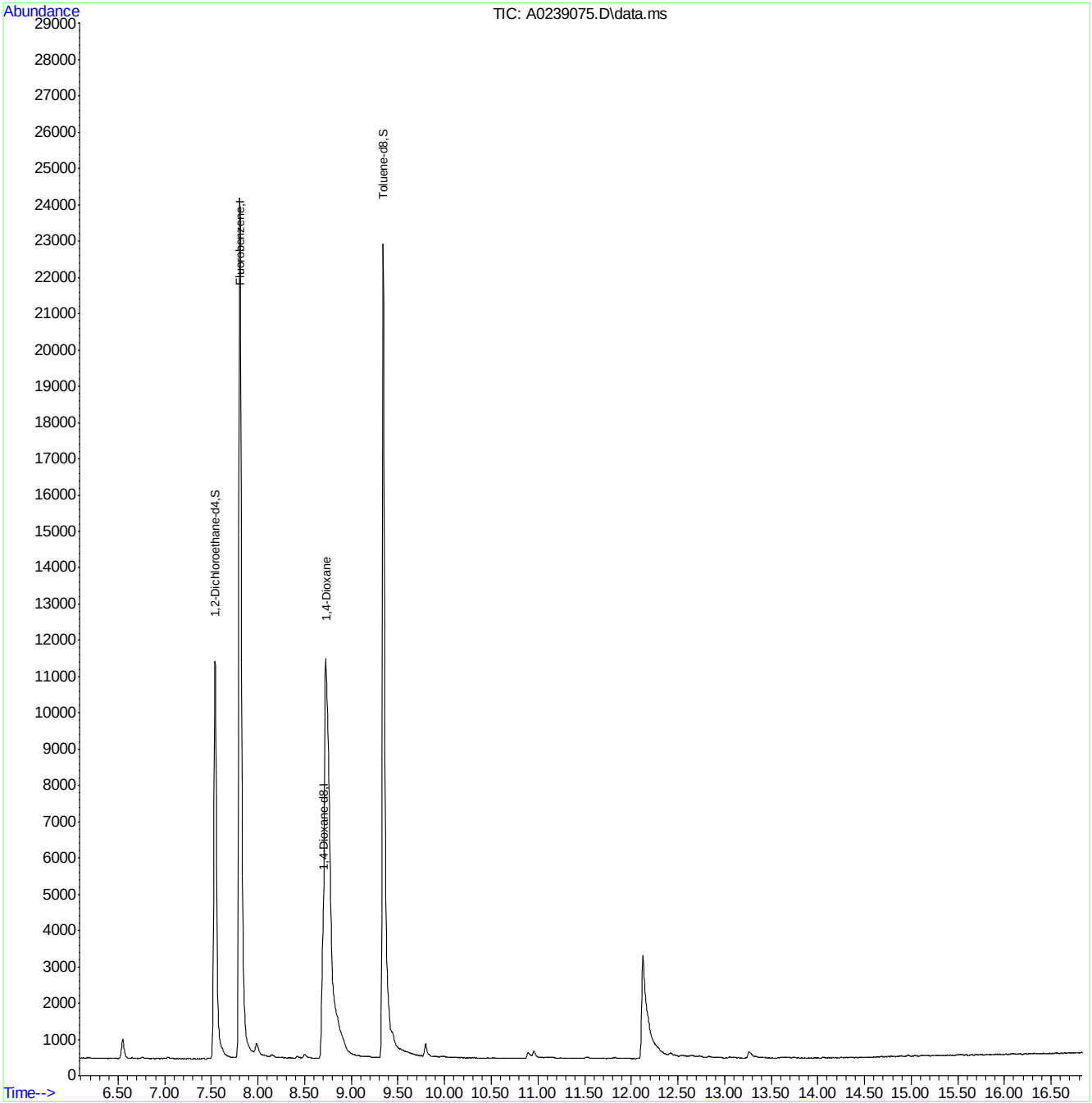
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	7.805	96	37025	5.00	ug/L	0.00
4) 1,4-Dioxane-d8	8.698	96	8700	50.00	ug/L	0.00
System Monitoring Compounds						
2) 1,2-Dichloroethane-d4	7.536	65	15235	5.01	ug/L	0.00
Spiked Amount 5.000	Range 74 - 125		Recovery = 100.20%			
3) Toluene-d8	9.342	98	24746	4.96	ug/L	0.00
Spiked Amount 5.000	Range 88 - 111		Recovery = 99.20%			
Target Compounds						Qvalue
5) 1,4-Dioxane	8.731	88	21482	38.28	ug/L	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\120323\
Data File : A0239075.D
Acq On : 4 Dec 2023 4:07 pm
Operator : TRANGD
Sample : icv3444-5
Misc : MS55453,VA3444,,,,,
ALS Vial : 17 Sample Multiplier: 1

Quant Time: Dec 05 10:04:20 2023
Quant Method : C:\msdchem\1\METHODS\2023-12-3_SIMDIOX.M
Quant Title : 1,4-Dioxane by SIM
QLast Update : Mon Dec 04 15:33:06 2023
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\122623\
Data File : A0239266.D
Acq On : 26 Dec 2023 10:16 am
Operator : TRANGD
Sample : cc3444-5
Misc : MS55613,VA3455,,,,,
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Dec 26 10:37:03 2023
Quant Method : C:\msdchem\1\METHODS\2023-12-14_SIMDIOX.M
Quant Title : 1,4-Dioxane by SIM
QLast Update : Fri Dec 15 10:44:46 2023
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	7.809	96	27417	5.00	ug/L	0.00
4) 1,4-Dioxane-d8	8.699	96	3989	50.00	ug/L	0.00
System Monitoring Compounds						
2) 1,2-Dichloroethane-d4	7.536	65	11249	4.81	ug/L	0.00
Spiked Amount 5.000	Range 74 - 125		Recovery = 96.20%			
3) Toluene-d8	9.347	98	21304	5.06	ug/L	0.00
Spiked Amount 5.000	Range 88 - 111		Recovery = 101.20%			
Target Compounds						Qvalue
5) 1,4-Dioxane	8.736	88	10831	47.02	ug/L	87

(#) = qualifier out of range (m) = manual integration (+) = signals summed

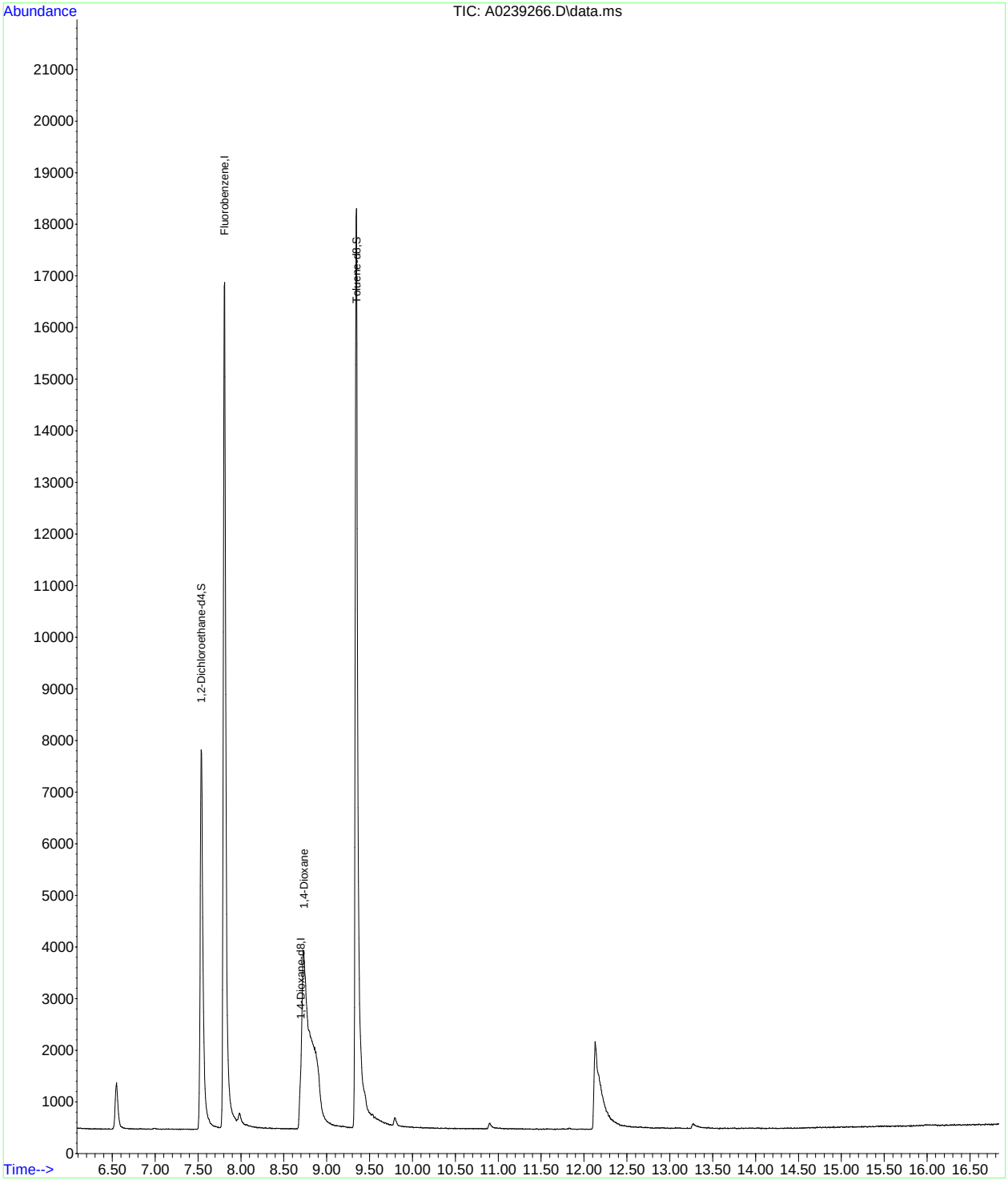
7.6.31

7

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\122623\
Data File : A0239266.D
Acq On : 26 Dec 2023 10:16 am
Operator : TRANGD
Sample : cc3444-5
Misc : MS55613,VA3455,,,,,
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Dec 26 10:37:03 2023
Quant Method : C:\msdchem\1\METHODS\2023-12-14_SIMDIOX.M
Quant Title : 1,4-Dioxane by SIM
QLast Update : Fri Dec 15 10:44:46 2023
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\122623\
Data File : A0239294.D
Acq On : 26 Dec 2023 9:23 pm
Operator : TRANGD
Sample : cc3444-5
Misc : MS55619,VA3456,,,,,
ALS Vial : 33 Sample Multiplier: 1

Quant Time: Dec 27 06:09:14 2023
Quant Method : C:\msdchem\1\METHODS\2023-12-14_SIMDIOX.M
Quant Title : 1,4-Dioxane by SIM
QLast Update : Fri Dec 15 10:44:46 2023
Response via : Initial Calibration

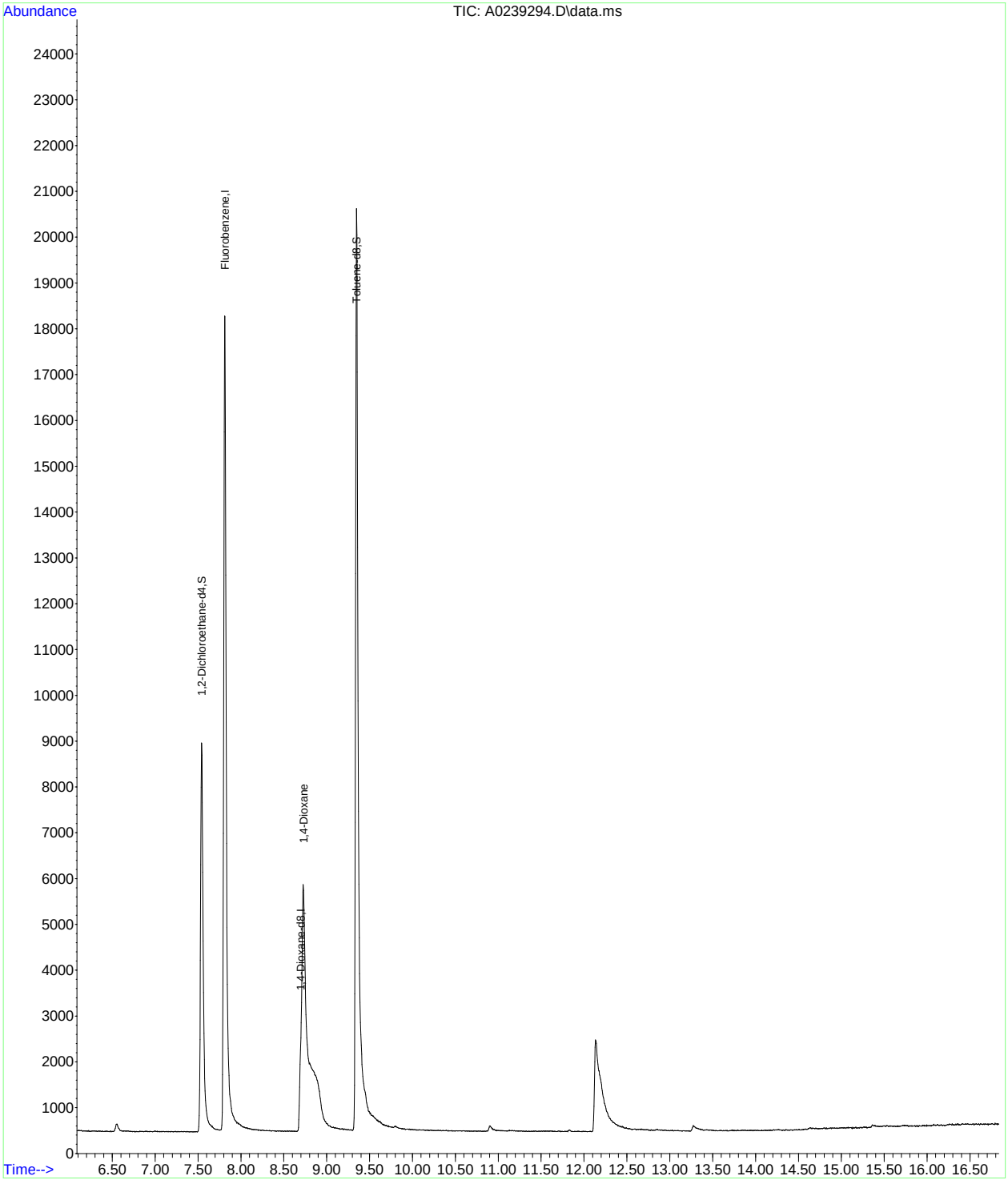
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	7.814	96	29781	5.00	ug/L	0.00
4) 1,4-Dioxane-d8	8.698	96	4459	50.00	ug/L	0.00
System Monitoring Compounds						
2) 1,2-Dichloroethane-d4	7.541	65	12582	4.96	ug/L	0.00
Spiked Amount 5.000	Range 74 - 125		Recovery = 99.20%			
3) Toluene-d8	9.347	98	24200	5.29	ug/L	0.00
Spiked Amount 5.000	Range 88 - 111		Recovery = 105.80%			
Target Compounds						Qvalue
5) 1,4-Dioxane	8.731	88	11738	45.58	ug/L	88

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\122623\
Data File : A0239294.D
Acq On : 26 Dec 2023 9:23 pm
Operator : TRANGD
Sample : cc3444-5
Misc : MS55619,VA3456,,,,,
ALS Vial : 33 Sample Multiplier: 1

Quant Time: Dec 27 06:09:14 2023
Quant Method : C:\msdchem\1\METHODS\2023-12-14_SIMDIOX.M
Quant Title : 1,4-Dioxane by SIM
QLast Update : Fri Dec 15 10:44:46 2023
Response via : Initial Calibration



SGS -ORLANDO **VOA-GCMS ANALYSIS LOG**

Instrument:	MSVOA17-1A
Date:	11/15/2023
Analyst:	Jenifer W
Column Type	RTXVMS
Detector	5975C-MSD
Purge Pressure	1.4 psi
Purge Volume	5mL

Method(s):	VMS8260
Method File:	V1A_11-15-2023.M
Calibration Date:	11/15/2023
Acq. Method:	8260_NITROGEN40.M
EM Voltage:	1624V
Run ID:	**V1A1985**

revised 12/08/23 KKW

BFB:	VS3507
ICAL/CC:	VS3523, VS3537, VS3524
VS3538, VS3525, VS3518,VS3526,,	
ICV/BS:	VS3547, VS3534, VS3527
VS3528, VS3536, VS3535,	
ISTD/Surr.:	VS3507

pH Paper Lot#:	230320A/206722
KI Paper Lot#:	14-860 05/09/2022
AFA Lot#:	VS3511
Data processed by:	Jenfier W
Sample ID Ver. by:	Jenifer W.
Date Verified:	11/15/2023

Data File	Sample ID	Dilution Factor	Vial #	Matrix	A.S. Pos.	Work Group	pH	CI? (Y/N)	RR	Comments and Manually Integrated Peaks (Peak # and Rational)
1A50649	BFB	-	-	Water	1	-	-	-	-	Autofind Tune Passed
1A50651	IC1985-1	-	-	Water	2	-	-	-	-	1uL→100mL (OP)#40,76,77 (MP)#6,7,10,13,15,34,38,55,59,70,83,87,93-95,99,104,106,108,109,11
1A50653	IC1985-8	-	-	Water	2	-	-	-	-	uL→100mL (OP)#40 (PBL)#76 (MP)#6,15,38,59,87,94,95,106,108,109
1A50655	IC1985-2	-	-	Water	3	-	-	-	-	5uL→100mL (PBL)#10, (OP)#40,76,77
1A50657	IC1985-3	-	-	Water	4	-	-	-	-	10uL→100mL (OP)#40,76,77
1A50659	IC1985-4	-	-	Water	5	-	-	-	-	25uL→100mL (OP)#40,76,77
1A50661	ICC1985-5	-	-	Water	6	-	-	-	-	40uL→100mL (OP)#40,76,77
1A50663	IC1985-6	-	-	Water	7	-	-	-	-	70uL→100mL (PBL)#10, (OP)#40,76,77
1A50665	IC1985-7	-	-	Water	8	-	-	-	-	100uL→100mL (PBL)#10, (OP)#40,76,77
1A50667	rinse	-	-	Water	9	-	-	-	-	
1A50669	ICV1985-5	-	-	Water	10	-	-	-	-	40uL→100mL (OP)#40 (PBL)#10,76

Matrix: Designate "W" for Water "S" for soil, "O" for Oil, "Liq" for Non-aquous Liquid, and "TCLP" or "SPLP" for Leachate
Manual Integration Rational SOP QA029: MP Missed Peak, OP Overlapping Peak, SP Split Peak, PDB Poorly Defined Baseline, BR Baseline Ripple, PII Poor Instrument

SGS -ORLANDO **VOA-GCMS ANALYSIS LOG**

Instrument:	MSVOA17-1A
Date:	12/26/2023
Analyst:	Liana T
Column Type	RTXVMS
Detector	5975C-MSD
Purge Pressure	1.4 psi
Purge Volume	5mL

Method(s):	VMS8260
Method File:	V1A_11-15-2023.M
Calibration Date:	11/15/2023
Acq. Method:	8260_NITROGEN40.M
EM Voltage:	1718V
Run ID:	**V1A2028**

BFB:	VS3617
ICAL/CC:	VS3590, VS3591, VS3652
VS3628, VS3627, VS3653,VS3650,,	
ICV/BS:	VS3612, VS3607, VS3637
VS3642, VS3643, VS3651,	
ISTD/Surr.:	VS3617

pH Paper Lot#:	230320A/206722
KI Paper Lot#:	14-860 05/09/2022
AFA Lot#:	VS3511
Data processed by:	Liana T / Celine C.
Sample ID Ver. by:	Liana T
Date Verified:	12/26/2023

Data File	Sample ID	Dilution Factor	Vial #	Matrix	A.S. Pos.	Work Group	pH	CI? (Y/N)	RR	Comments and Manually Integrated Peaks (Peak # and Rational)
1A51660	BFB	-	-	Water	1	-	-	-	-	Autofind Tune Passed✓
1A51661	CC1985-5	-	-	Water	2	-	-	-	-	40uL→100mL (OP)#40,76,77 ✓
1A51662	BS	-	-	Water	3	-	-	-	-	25uL→100mL (OP)#40,76,77 ✓
1A51663	rinse	-	-	Water	4	-	-	-	-	-
1A51664	MB	-	-	Water	5	-	-	-	-	AFA, ND ✓
1A51665	CC1985-1	-	-	Water	6	-	-	-	-	1uL→100mL ✓
1A51666	FC12194-1	-	1	Water	7	MS55614	1	N	-	ND ✓
1A51667	FC12194-2	-	1	Water	8	MS55614	1	N	-	ND ✓
1A51668	FC12194-3	-	1	Water	9	MS55614	1	N	-	ND ✓
1A51669	FC12194-4	-	1	Water	10	MS55614	1	N	-	ND ✓
1A51670	FC12194-5	-	1	Water	11	MS55614	1	N	-	ND ✓
1A51671	FC12194-6	-	1	Water	12	MS55614	1	N	-	✓
1A51672	FC12194-7	-	1	Water	13	MS55614	1	N	-	✓
1A51673	FC12194-8	-	1	Water	14	MS55614	1	N	-	ND ✓
1A51674	FC12194-9	-	1	Water	15	MS55614	1	N	-	✓
1A51675	FC12194-10	-	1	Water	16	MS55614	1	N	-	✓
1A51676	FC12194-11	-	1	Water	17	MS55614	1	N	-	✓
1A51677	FC12194-12	-	1	Water	18	MS55614	1	N	-	✓
1A51678	FC12194-13	-	1	Water	19	MS55614	1	N	-	ND ✓
1A51679	FC12194-14	-	1	Water	20	MS55614	1	N	-	ND ✓
1A51680	FC12194-15	-	1	Water	21	MS55614	1	N	-	ND ✓
1A51681	FC12031-2	5X	2	Water	22	MS55614	1	N	-	10mL(-)50mL Ecombine ✓
1A51682	FC12071-9	-	3	Water	23	MS55614	1	N	-	2-Butanone only ✓
1A51683	FC12099-12	5X	3	Water	24	MS55614	1	N	-	10mL(-)50mL Ecombine ✓
1A51684	FC12099-13	5X	3	Water	25	MS55614	1	N	-	10mL(-)50mL Ecombine ✓
1A51685	FC12142-3	-	3	Water	26	MS55614	1	N	-	✓
1A51686	FC12194-13MS	-	2	Water	27	MS55614	1	N	-	10uL→40mL (OP)#40,76,77 ✓
1A51687	FC12194-13MSD	-	3	Water	28	MS55614	1	N	-	10uL→40mL (OP)#40,76,77 ✓
1A51688	ECC1985-5	-	-	Water	29	-	-	-	-	40uL→100mL (OP)#40,76,77 ✓

Matrix: Designate "W" for Water "S" for soil, "O" for Oil, "Liq" for Non-aquous Liquid, and "TCLP" or "SPLP" for Leachate
Manual Integration Rational SOP QA029: MP Missed Peak, OP Overlapping Peak, SP Split Peak, PDB Poorly Defined Baseline, BR Baseline Ripple, PII Poor Instrument

SGS -ORLANDO

VOA-GCMS ANALYSIS LOG

Instrument:	MSVOA20-5E
Date:	12/20/2023
Analyst:	JoAnn L
Column Type	RTXVMS
Detector	5975 MSD
Purge Pressure	1.1 PSI
Purge Volume	5 mL

Method(s):	8260
Method File:	applX12-20-2023_.M
Calibration Date:	12/20/2023
Acq. Method:	8260VMSVI
EM Voltage:	1447V
Run ID:	**V5E1994**

BFB:	VS3484
ICAL/CC:	VS3590, VS3591, VS3592
VS3599, VS3598, VS3584,VS3635,,	
ICV/BS:	VS3612, VS3607, VS3604
VS3606, VS3605, VS3636,	
ISTD/Surr.:	VS3484

pH Paper Lot#:	206722
KI Paper Lot#:	14-860;05/09/2022
AFA Lot#:	VS3511C
Data processed by:	JoAnn L/ Jenifer W
Sample ID Ver. by:	JoAnn L
Date Verified:	12/20/2023

Data File	Sample ID	Dilution Factor	Vial #	Matrix	A.S. Pos.	Work Group	pH	CI? (Y/N)	RR	Comments and Manually Integrated Peaks (Peak # and Rational)
5E44753	bfb	-	-	Water	1	-	-	-	-	Passed autofind✓
5E44754	IC1994-1	-	-	Water	2	-	-	-	-	reprep rerun
5E44755	IC1994-8	-	-	Water	3	-	-	-	-	reprep rerun
5E44756	no data	-	-	Water	4	-	-	-	-	
5E44757	rinse	-	-	Water	5	-	-	-	-	
5E44758	IC1994-1	-	-	Water	2	-	-	-	-	1uL(-)100mL ✓ c109mp
5E44759	IC1994-8	-	-	Water	3	-	-	-	-	2uL(-)100mL ✓
5E44760	IC1994-2	-	-	Water	4	-	-	-	-	5uL(-)100mL ✓
5E44761	IC1994-3	-	-	Water	5	-	-	-	-	10uL(-)100mL✓
5E44762	IC1994-4	-	-	Water	6	-	-	-	-	12.5uL(-)50mL ✓
5E44763	ICC1994-5	-	-	Water	7	-	-	-	-	20uL(-)50mL ✓
5E44764	IC1994-6	-	-	Water	8	-	-	-	-	35uL(-)50mL ✓
5E44765	IC1994-7	-	-	Water	9	-	-	-	-	50uL(-)50mL ✓
5E44766	BLANK	-	-	Water	10	-	-	-	-	
5E44767	ICV1994-5	-	-	Water	11	-	-	-	-	20uL(-)50mL ✓

Matrix: Designate "W" for Water "S" for soil, "O" for Oil, "Liq" for Non-aquous Liquid, and "TCLP" or "SPLP" for Leachate
Manual Integration Rational SOP QA029: MP Missed Peak, OP Overlapping Peak, SP Split Peak, PDB Poorly Defined Baseline, BR Baseline Ripple, PII Poor Instrument

SGS -ORLANDO

VOA-GCMS ANALYSIS LOG

Instrument:	MSVOA20-5E
Date:	12/22/2023
Analyst:	JoAnn L
Column Type	RTXVMS
Detector	5975 MSD
Purge Pressure	1.1 PSI
Purge Volume	5 mL

Method(s):	8260
Method File:	applX12-20-2023_.M
Calibration Date:	12/20/2023
Acq. Method:	8260VMSVI
EM Voltage:	1447V
Run ID:	**V5E1996**

BFB:	VS3484
ICAL/CC:	VS3590, VS3591, VS3626
VS3628, VS3627, VS3653,VS3635,	
ICV/BS:	VS3612, VS3607, VS3637
VS3606, VS3605, VS3636,	
ISTD/Surr.:	VS3484

pH Paper Lot#:	206722
KI Paper Lot#:	14-860;05/09/202
AFA Lot#:	VS3511
Data processed by:	JoAnn L / C
Sample ID Ver. by:	JoAn
Date Verified:	12/22/2

Run Sequence: V5E1996

Data File	Sample ID	Dilution Factor	Vial #	Matrix	A.S. Pos.	Work Group	pH	CI? (Y/N)	RR	Comments and Manually Integrated Peaks (Peak # and Rational)
5E44802	BFB	-	-	Water	1	-	-	-	-	Autofind Tune Passed✓
5E44803	CC1994-5	-	-	Water	2	-	-	-	-	40uL→100mL ✓
5E44804	BS	-	-	Water	3	-	-	-	-	25uL→100mL ✓
5E44805	rinse	-	-	Water	4	-	-	-	-	-
5E44806	MB	-	-	Water	5	-	-	-	-	AFA, ND ✓
5E44807	FC12099-3	-	3	Water	6	MS55608	1	N	-	ND ✓
5E44808	FC12099-9	-	2	Water	7	MS55608	1	N	-	✓
5E44809	FC12099-10	-	2	Water	8	MS55608	1	N	-	ND ✓
5E44810	FC12099-11	-	3	Water	9	MS55608	1	N	-	✓
5E44811	**FC12099-12**	-	2	Water	10	MS55608	1	N	**5x**	**VC O/R**
5E44812	**FC12099-13**	-	2	Water	11	MS55608	1	N	**5x**	**VC O/R**
5E44813	FC12099-17	-	2	Water	12	MS55608	1	N	-	ND ✓
5E44814	FC12099-18	-	3	Water	13	MS55608	1	N	-	✓
5E44815	FC12099-20	-	3	Water	14	MS55608	1	N	-	✓
5E44816	FC12099-21	-	1	Water	15	MS55608	1	N	-	ND ✓
5E44817	FC12099-22	-	1	Water	16	MS55608	1	N	-	ND ✓
5E44818	FC12139-1	-	7	Water	17	MS55608	1	N	-	✓
5E44819	FC12139-2	-	4	Water	18	MS55608	1	N	-	✓
5E44820	FC12139-3	-	4	Water	19	MS55608	1	N	-	✓
5E44821	FC12139-5	-	1	Water	20	MS55608	1	N	-	ND ✓
5E44822	FC12142-1	-	1	Water	21	MS55608	1	N	-	AFA ✓
5E44823	FC12142-2	-	2	Water	22	MS55608	1	N	-	AFA ✓
5E44824	**FC12142-3**	-	2	Water	23	MS55608	1	N	**1x**	AFA **VC hit (Trip blank w/ detection)**
5E44825	FC12099-15 2.5	2.5X	2	Water	24	MS55608	1	N	**-**	20mL(-)50mL ✓
5E44826	**FC12139-4 20X**	20X	6	Water	25	MS55608	1	N	**10x**	2.5mL(-)50mL **O/D**
5E44827	FC12099-3MS 5	5X	3	Water	26	MS55608	1	N	-	20mL(-)100mL; 25uL→100mL ✓
5E44828	FC12099-3MSD	5X	3	Water	27	MS55608	1	N	-	20mL(-)100mL; 25uL→100mL ✓
5E44829	ECC1994-5	-	-	Water	28	-	-	-	-	40uL→100mL ✓

Matrix: Designate "W" for Water "S" for soil, "O" for Oil, "Liq" for Non-aquous Liquid, and "TCLP" or "SPLP" for Leachate
Manual Integration Rational SOP QA029: MP Missed Peak, OP Overlapping Peak, SP Split Peak, PDB Poorly Defined Baseline, BR Baseline Ripple, PII Poor Instrument

SGS -ORLANDO

VOA-GCMS ANALYSIS LOG

Instrument:	MSVOA15-A
Date:	12/04/2023
Analyst:	trangd
Column Type	RTXVMS
Detector	5975C-MSD
Purge Pressure	11 psi
Purge Volume	5mL

Method(s):	8260 SIMDiox
Method File:	2023-12-3_SIMdiox.M
Calibration Date:	12/3/2023
Acq. Method:	ACQ_SIMCLB
EM Voltage:	1659
Run ID:	**VA3444**

BFB:	VS3333
ICAL/CC:	, VS3588,
ICV/BS:	, VS3587,
ISTD/Surr.:	VS3351

pH Paper Lot#:	212521
KI Paper Lot#:	NA
AFA Lot#:	NA
Data processed by:	td
Sample ID Ver. by:	td
Date Verified:	12/4/2023 0:00

Data File	Sample ID	Dilution Factor	Vial #	Matrix	A.S. Pos.	Work Group	pH	CI? (Y/N)	RR	Comments and Manually Integrated Peaks (Peak # and Rational)
A0239059	rinse	-	-	W	1	-	-	-	-	
A0239060	rinse	-	-	W	2	-	-	-	-	
A0239061	BFB	-	-	W	3	-	-	-	-	10.5µL → 50mL ; passed auto tune
A0239062	cc3444-5	-	-	W	4	-	-	-	-	50µL → 50mL ; responses low; ccv fail high
A0239063	bs	-	-	W	5	-	-	-	-	25µL → 50mL ; responses low; increase EMV
A0239064	BFB	-	-	W	6	-	-	-	-	SEQ STOPPED; NOT USED
A0239065	BFB	-	-	W	6	-	-	-	-	10.5µL → 50mL ; passed auto tune
A0239066	rinse	-	-	W	7	-	-	-	-	
A0239067	ic3444-1	-	-	W	8	-	-	-	-	1uL-100mL
A0239068	ic3444-2	-	-	W	9	-	-	-	-	5uL-100mL
A0239069	ic3444-3	-	-	W	10	-	-	-	-	5uL-50mL
A0239070	ic3444-4	-	-	W	11	-	-	-	-	10uL-50mL
A0239071	icc3444-5	-	-	W	12	-	-	-	-	20uL-50mL
A0239072	ic3444-6	-	-	W	13	-	-	-	-	30uL-50mL
A0239073	ic3444-7	-	-	W	14	-	-	-	-	40uL-50mL
A0239074	rinse	-	-	W	15	-	-	-	-	
A0239075	icv3444-5	-	-	W	16	-	-	-	-	20uL-50mL
A0239076	bs	-	-	W	17	-	-	-	-	12.5uL-50mL
A0239077	rinse	-	-	W	18	-	-	-	-	
A0239078	mb	-	-	W	19	-	-	-	-	ND
A0239079	DA60292-1	1X	1	W	20	ms55453	1	N	-	✓
A0239080	DA60292-2	1X	1	W	21	ms55453	1	N	-	✓
A0239081	DA60292-3	1X	1	W	22	ms55453	1	N	-	✓
A0239082	DA60292-4	1X	1	W	23	ms55453	1	N	-	✓
A0239083	DA60292-2MS	5X	1	W	24	ms55453	1	N	-	10.5uL-40mL
A0239084	DA60292-2MSD	5X	1	W	25	ms55453	1	N	-	10.5uL-40mL

Matrix: Designate "W" for Water "S" for soil, "O" for Oil, "Liq" for Non-aquous Liquid, and "TCLP" or "SPLP" for Leachate
Manual Integration Rational SOP QA029: MP Missed Peak, OP Overlapping Peak, SP Split Peak, PDB Poorly Defined Baseline, BR Baseline Ripple, PII Poor Instrument

SGS -ORLANDO

Instrument:	MSVOA15-A
Date:	12/26/2023
Analyst:	trangd
Column Type	RTXVMS
Detector	5975C-MSD
Purge Pressure	11 psi
Purge Volume	5mL

Method(s):	8260 SIMDiox
Method File:	2023-12-3_SIMdiox.M
Calibration Date:	12/3/2023
Acq. Method:	SIMDIOX21
EM Voltage:	1694
Run ID:	**VA3455/3457**

BFB:	VS3333
ICAL/CC:	, VS3623,
ICV/BS:	, VS3587,
ISTD/Surr.:	VS3351

pH Paper Lot#:	212021
KI Paper Lot#:	NA
AFA Lot#:	VS3511
Data processed by:	td
Sample ID Ver. by:	t
Date Verified:	12/26/

Data File	Sample ID	Dilution Factor	Vial #	Matrix	A.S. Pos.	Work Group	pH	CI? (Y/N)	RR	Comments and Manually Integrated Peaks (Peak # and Rational)
A0239262	rinse	-	-	W	1	-	-	-	-	
A0239263	rinse	-	-	W	2	-	-	-	-	
A0239264	BFB	-	-	W	3	-	-	-	-	10.5µL → 50mL
A0239265	blk	-	-	W	4	-	-	-	-	
A0239266	cc3444-5	-	-	W	5	-	-	-	-	20µL → 50mL
A0239267	bs	-	-	W	6	-	-	-	-	12.5µL → 50mL ; high; reprep
A0239268	bs	-	-	W	7	-	-	-	-	12.5µL → 50mL
A0239269	rinse	-	-	W	8	-	-	-	-	
A0239270	mb	-	-	W	9	-	-	-	-	
A0239271	FC12099-3	1X	2	W	10	MS55618	1	N	-	
A0239272	FC12099-11	1X	2	W	11	MS55618	1	N	-	
A0239273	FC12099-18	1X	2	W	12	MS55618	1	N	-	✓
A0239274	FC12099-20	1X	2	W	13	MS55618	1	N	-	✓
A0239275	FC12127-1	1X	1	W	14	MS55618	1	N	-	✓
A0239276	FC12196-1	1X	4	W	15	MS55618	1	N	1X	✓ RR1X C/O
A0239277	FC12196-2	1X	1	W	16	MS55618	1	N	-	✓
A0239278	FC12196-3	1X	1	W	17	MS55618	1	N	-	✓
A0239279	FC12196-4	5X	1	W	18	MS55618	1	N	-	✓ 10mL/50mL
A0239280	FC12196-5	10X	1	W	19	MS55618	1	N	-	✓ 5mL/50mL
A0239281	FC12196-6	1X	1	W	20	MS55618	1	N	1X	✓ RR1X HIGH SURR
A0239282	FC12196-7	10X	4	W	21	MS55618	1	N	1X	✓ RR1X O/R C/O 5mL/50mL
A0239283	FC12196-8	1X	1	W	22	MS55618	1	N	-	✓
A0239284	FC12196-9	1X	4	W	23	MS55618	1	N	1X	✓ RR1X HIGH SURR
A0239285	FC12196-10	1X	4	W	24	MS55618	1	N	1X	✓ RR1X HIGH SURR
A0239286	FC12196-11	1X	4	W	25	MS55618	1	N	1X	✓ RR1X HIGH SURR
A0239287	FC12196-12	1X	1	W	26	MS55618	1	N	1X	✓ RR1X HIGH SURR
A0239288	FC12196-13	1X	4	W	27	MS55618	1	N	-	✓
A0239289	FC12196-14	1X	1	W	28	MS55618	1	N	20X	✓ 1,4D O/R HIGH SURR
A0239290	FC12196-15	1X	4	W	29	MS55618	1	N	5X	✓ 1,4D O/R HIGH SURR, POSSIBLE C/O
A0239291	FC12127-1MS	5X	2	W	30	MS55618	1	N	-	✓
A0239292	FC12127-1MSD	5X	2	W	31	MS55618	1	N	-	✓

SGS -ORLANDO

VOA-GCMS ANALYSIS LOG

Instrument:	MSVOA15-A
Date:	12/26/2023
Analyst:	trangd
Column Type	RTXVMS
Detector	5975C-MSD
Purge Pressure	11 psi
Purge Volume	5mL

Method(s):	8260 SIMDiox
Method File:	2023-12-3_SIMdiox.M
Calibration Date:	12/3/2023
Acq. Method:	SIMDIOX21
EM Voltage:	1694
Run ID:	**VA3456**

BFB:	VS3333
ICAL/CC:	, VS3623,
ICV/BS:	, VS3587,
ISTD/Surr.:	VS3351

pH Paper Lot#:	212021
KI Paper Lot#:	NA
AFA Lot#:	VS3511
Data processed by:	td
Sample ID Ver. by:	t
Date Verified:	12/26/

Data File	Sample ID	Dilution Factor	Vial #	Matrix	A.S. Pos.	Work Group	pH	CI? (Y/N)	RR	Comments and Manually Integrated Peaks (Peak # and Rational)
A0239293	rinse	-	-	W	32	-	-	-	-	
A0239294	cc3414-5	-	-	W	33	-	-	-	-	20µL → 50mL
A0239295	bs	-	-	W	34	-	-	-	-	12.5µL → 50m high 1,4-diox, hits rerunning
A0239296	rinse	-	-	W	35	-	-	-	-	
A0239297	mb	-	-	W	36	-	-	-	-	
A0239298	FC12196-16	1X	1	W	37	MS55619	1	N	1x	✓ high bs
A0239299	FC12196-17	1X	4	W	38	MS55619	1	N	1x	✓ high bs
A0239300	FC12196-18	1X	1	W	39	MS55619	1	N	1x	✓ high bs
A0239301	FC12196-19	5X	4	W	40	MS55619	1	N	10x	✓ high bs; 10mL/50mL
A0239302	FC12196-20	1X	1	W	41	MS55619	1	N	1X	HIGH BS C/O
A0239303	FC12196-21	10X	1	W	42	MS55619	1	N	5x	high bs; 5mL/50mL
A0239304	FC12196-22	1X	1	W	43	MS55619	1	N	-	ND
A0239305	FC12196-23	1X	1	W	44	MS55619	1	N	1x	high bs
A0239306	FC12196-24	1X	4	W	45	MS55619	1	N	5X	HIGH BS, 14D O/R
A0239307	FC12196-25	1X	4	W	46	MS55619	1	N	1x	POSSIBLE C/O
A0239308	FC12196-26	1X	4	W	47	MS55619	1	N	1x	high bs
A0239309	FC12196-27	1X	5	W	48	MS55619	1	N	2x	high bs
A0239310	FC12196-28	1X	2	W	49	MS55619	1	N	1x	POSSIBLE C/O
A0239311	FC12196-29	1X	4	W	50	MS55619	1	N	-	ND
A0239312	FC12196-30	1X	4	W	51	MS55619	1	N	-	ND
A0239313	FC12196-17MS	5X	5	W	1	MS55619	1	N	-	✓
A0239314	FC12196-17MSD	5X	5	W	2	MS55619	1	N	-	✓

Matrix: Designate "W" for Water "S" for soil, "O" for Oil, "Liq" for Non-aquous Liquid, and "TCLP" or "SPLP" for Leachate
Manual Integration Rational SOP QA029: MP Missed Peak, OP Overlapping Peak, SP Split Peak, PDB Poorly Defined Baseline, BR Baseline Ripple, PII Poor Instrument

MS Semi-volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Ion Ratio Summaries
- Isotope Dilution Standard Recovery Summaries
- Initial and Continuing Calibration Summaries
- Run Sequence Reports

Instrument Blank

Job Number: FC12099
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S5Q375-IBLK	5Q23916.D	1	12/28/23	NG	n/a	n/a	S5Q375

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FC12099-1, FC12099-2, FC12099-4, FC12099-5, FC12099-6, FC12099-7, FC12099-8, FC12099-16, FC12099-17

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	0.0080	0.0020	ug/l	
2706-90-3	Perfluoropentanoic acid	ND	0.0040	0.0010	ug/l	
307-24-4	Perfluorohexanoic acid	ND	0.0040	0.0010	ug/l	
375-85-9	Perfluoroheptanoic acid	ND	0.0040	0.0010	ug/l	
335-67-1	Perfluorooctanoic acid	ND	0.0040	0.0010	ug/l	
375-95-1	Perfluorononanoic acid	ND	0.0040	0.0010	ug/l	
335-76-2	Perfluorodecanoic acid	ND	0.0040	0.0010	ug/l	
2058-94-8	Perfluoroundecanoic acid	ND	0.0040	0.0010	ug/l	
307-55-1	Perfluorododecanoic acid	ND	0.0040	0.0010	ug/l	
72629-94-8	Perfluorotridecanoic acid	ND	0.0040	0.0010	ug/l	
376-06-7	Perfluorotetradecanoic acid	ND	0.0040	0.0010	ug/l	
375-73-5	Perfluorobutanesulfonic acid	ND	0.0040	0.0010	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0040	0.0010	ug/l	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0040	0.0010	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0040	0.0010	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0040	0.0010	ug/l	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0040	0.0010	ug/l	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0040	0.0010	ug/l	
754-91-6	PFOSA	ND	0.0040	0.0010	ug/l	
2355-31-9	MeFOSAA	0.0024	0.0080	0.0020	ug/l	J
2991-50-6	EtFOSAA	0.0025	0.0080	0.0020	ug/l	J
757124-72-4	4:2 Fluorotelomer sulfonate	ND	0.0080	0.0020	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.0080	0.0020	ug/l	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.0080	0.0020	ug/l	
13252-13-6	HFPO-DA (GenX)	ND	0.0080	0.0020	ug/l	

CAS No.	ID Standard Recoveries		Limits
	13C4-PFBA	88%	50-150%
	13C5-PFPeA	90%	50-150%
	13C5-PFHxA	89%	50-150%
	13C4-PFHpA	91%	50-150%
	13C8-PFOA	89%	50-150%
	13C9-PFNA	91%	50-150%
	13C6-PFDA	93%	50-150%

Instrument Blank

Job Number: FC12099
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S5Q375-IBLK	5Q23916.D	1	12/28/23	NG	n/a	n/a	S5Q375

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FC12099-1, FC12099-2, FC12099-4, FC12099-5, FC12099-6, FC12099-7, FC12099-8, FC12099-16, FC12099-17

CAS No.	ID Standard Recoveries		Limits
	13C7-PFUnDA	91%	50-150%
	13C2-PFDoDA	90%	50-150%
	13C2-PFTeDA	88%	50-150%
	13C3-PFBS	88%	50-150%
	13C3-PFHxS	90%	50-150%
	13C8-PFOS	90%	50-150%
	13C8-FOSA	95%	50-150%
	d3-MeFOSAA	94%	50-150%
	d5-EtFOSAA	92%	50-150%
	13C2-4:2FTS	83%	50-150%
	13C2-6:2FTS	85%	50-150%
	13C2-8:2FTS	85%	50-150%

Instrument Blank

Job Number: FC12099
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S5Q377-IBLK	5Q24034.D	1	01/02/24	LR	n/a	n/a	S5Q377

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FC12099-4, FC12099-6

CAS No.	Compound	Result	RL	MDL	Units	Q
754-91-6	PFOSA	ND	0.0040	0.0010	ug/l	

CAS No.	ID Standard Recoveries		Limits
	13C4-PFBA	86%	50-150%
	13C5-PFPeA	86%	50-150%
	13C5-PFHxA	84%	50-150%
	13C4-PFHpA	86%	50-150%
	13C8-PFOA	87%	50-150%
	13C9-PFNA	88%	50-150%
	13C6-PFDA	88%	50-150%
	13C7-PFUnDA	89%	50-150%
	13C2-PFDoDA	87%	50-150%
	13C2-PFTeDA	86%	50-150%
	13C3-PFBS	84%	50-150%
	13C3-PFHxS	87%	50-150%
	13C8-PFOS	88%	50-150%
	13C8-FOSA	96%	50-150%
	d3-MeFOSAA	92%	50-150%
	d5-EtFOSAA	90%	50-150%
	13C2-4:2FTS	81%	50-150%
	13C2-6:2FTS	79%	50-150%
	13C2-8:2FTS	85%	50-150%

Instrument Blank

Job Number: FC12099
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S2Q1693-IBLK	2Q118600.D	1	01/04/24	LR	n/a	n/a	S2Q1693

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FC12099-3, FC12099-14, FC12099-15

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	0.0080	0.0020	ug/l	
2706-90-3	Perfluoropentanoic acid	ND	0.0040	0.0010	ug/l	
307-24-4	Perfluorohexanoic acid	ND	0.0040	0.0010	ug/l	
375-85-9	Perfluoroheptanoic acid	ND	0.0040	0.0010	ug/l	
335-67-1	Perfluorooctanoic acid	ND	0.0040	0.0010	ug/l	
375-95-1	Perfluorononanoic acid	ND	0.0040	0.0010	ug/l	
335-76-2	Perfluorodecanoic acid	ND	0.0040	0.0010	ug/l	
2058-94-8	Perfluoroundecanoic acid	ND	0.0040	0.0010	ug/l	
307-55-1	Perfluorododecanoic acid	ND	0.0040	0.0010	ug/l	
72629-94-8	Perfluorotridecanoic acid	ND	0.0040	0.0010	ug/l	
376-06-7	Perfluorotetradecanoic acid	ND	0.0040	0.0010	ug/l	
375-73-5	Perfluorobutanesulfonic acid	ND	0.0040	0.0010	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0040	0.0010	ug/l	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0040	0.0010	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0040	0.0010	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0040	0.0010	ug/l	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0040	0.0010	ug/l	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0040	0.0010	ug/l	
754-91-6	PFOSA	ND	0.0040	0.0010	ug/l	
2355-31-9	MeFOSAA	ND	0.0080	0.0020	ug/l	
2991-50-6	EtFOSAA	ND	0.0080	0.0020	ug/l	
757124-72-4	4:2 Fluorotelomer sulfonate	ND	0.0080	0.0020	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.0080	0.0020	ug/l	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.0080	0.0020	ug/l	
13252-13-6	HFPO-DA (GenX)	ND	0.0080	0.0020	ug/l	

CAS No.	ID Standard Recoveries		Limits
	13C4-PFBA	95%	50-150%
	13C5-PFPeA	95%	50-150%
	13C5-PFHxA	96%	50-150%
	13C4-PFHpA	97%	50-150%
	13C8-PFOA	99%	50-150%
	13C9-PFNA	95%	50-150%
	13C6-PFDA	98%	50-150%

Instrument Blank

Job Number: FC12099
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S2Q1693-IBLK	2Q118600.D	1	01/04/24	LR	n/a	n/a	S2Q1693

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FC12099-3, FC12099-14, FC12099-15

CAS No.	ID Standard Recoveries		Limits
	13C7-PFUnDA	96%	50-150%
	13C2-PFDoDA	95%	50-150%
	13C2-PFTeDA	97%	50-150%
	13C3-PFBS	93%	50-150%
	13C3-PFHxS	96%	50-150%
	13C8-PFOS	96%	50-150%
	13C8-FOSA	100%	50-150%
	d3-MeFOSAA	103%	50-150%
	d5-EtFOSAA	100%	50-150%
	13C2-4:2FTS	90%	50-150%
	13C2-6:2FTS	88%	50-150%
	13C2-8:2FTS	89%	50-150%

Instrument Blank

Job Number: FC12099
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S5Q380-IBLK	5Q24197.D	1	01/05/24	LR	n/a	n/a	S5Q380

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FC12099-3, FC12099-14

CAS No.	Compound	Result	RL	MDL	Units	Q
754-91-6	PFOSA	ND	0.0040	0.0010	ug/l	

CAS No.	ID Standard Recoveries		Limits
	13C4-PFBA	111%	50-150%
	13C5-PFPeA	110%	50-150%
	13C5-PFHxA	107%	50-150%
	13C4-PFHpA	109%	50-150%
	13C8-PFOA	109%	50-150%
	13C9-PFNA	112%	50-150%
	13C6-PFDA	108%	50-150%
	13C7-PFUnDA	103%	50-150%
	13C2-PFDoDA	103%	50-150%
	13C2-PFTeDA	103%	50-150%
	13C3-PFBS	106%	50-150%
	13C3-PFHxS	109%	50-150%
	13C8-PFOS	106%	50-150%
	13C8-FOSA	123%	50-150%
	d3-MeFOSAA	122%	50-150%
	d5-EtFOSAA	118%	50-150%
	13C2-4:2FTS	99%	50-150%
	13C2-6:2FTS	98%	50-150%
	13C2-8:2FTS	103%	50-150%

Method Blank Summary

Job Number: FC12099
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP835-MB	5Q23945.D	1	12/29/23	NG	12/26/23	OP835	S5Q375

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FC12099-1, FC12099-2, FC12099-4, FC12099-5, FC12099-6, FC12099-7, FC12099-8, FC12099-16, FC12099-17

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	0.016	0.0040	ug/l	
2706-90-3	Perfluoropentanoic acid	ND	0.0080	0.0020	ug/l	
307-24-4	Perfluorohexanoic acid	ND	0.0080	0.0020	ug/l	
375-85-9	Perfluoroheptanoic acid	ND	0.0080	0.0020	ug/l	
335-67-1	Perfluorooctanoic acid	ND	0.0080	0.0020	ug/l	
375-95-1	Perfluorononanoic acid	ND	0.0080	0.0020	ug/l	
335-76-2	Perfluorodecanoic acid	ND	0.0080	0.0020	ug/l	
2058-94-8	Perfluoroundecanoic acid	ND	0.0080	0.0020	ug/l	
307-55-1	Perfluorododecanoic acid	ND	0.0080	0.0020	ug/l	
72629-94-8	Perfluorotridecanoic acid	ND	0.0080	0.0020	ug/l	
376-06-7	Perfluorotetradecanoic acid	ND	0.0080	0.0020	ug/l	
375-73-5	Perfluorobutanesulfonic acid	ND	0.0080	0.0020	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0080	0.0020	ug/l	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0080	0.0020	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0080	0.0020	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0080	0.0020	ug/l	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0080	0.0020	ug/l	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0080	0.0020	ug/l	
754-91-6	PFOSA	ND	0.0080	0.0020	ug/l	
2355-31-9	MeFOSAA	ND	0.016	0.0040	ug/l	
2991-50-6	EtFOSAA	ND	0.016	0.0040	ug/l	
757124-72-4	4:2 Fluorotelomer sulfonate	ND	0.016	0.0040	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.016	0.0040	ug/l	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.016	0.0040	ug/l	
13252-13-6	HFPO-DA (GenX)	ND	0.016	0.0040	ug/l	

CAS No.	ID Standard Recoveries		Limits
	13C4-PFBA	68%	50-150%
	13C5-PFPeA	65%	50-150%
	13C5-PFHxA	62%	50-150%
	13C4-PFHpA	61%	50-150%
	13C8-PFOA	59%	50-150%
	13C9-PFNA	59%	50-150%
	13C6-PFDA	58%	50-150%

Method Blank Summary

Job Number: FC12099
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP835-MB	5Q23945.D	1	12/29/23	NG	12/26/23	OP835	S5Q375

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FC12099-1, FC12099-2, FC12099-4, FC12099-5, FC12099-6, FC12099-7, FC12099-8, FC12099-16, FC12099-17

CAS No.	ID Standard Recoveries		Limits
	13C7-PFUnDA	54%	50-150%
	13C2-PFDoDA	50%	50-150%
	13C2-PFTeDA	44%* [a]	50-150%
	13C3-PFBS	51%	50-150%
	13C3-PFHxS	51%	50-150%
	13C8-PFOS	45%* [a]	50-150%
	13C8-FOSA	97%	50-150%
	d3-MeFOSAA	60%	50-150%
	d5-EtFOSAA	57%	50-150%
	13C2-4:2FTS	64%	50-150%
	13C2-6:2FTS	61%	50-150%
	13C2-8:2FTS	56%	50-150%

(a) Outside control limits.

Method Blank Summary

Job Number: FC12099
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP937-MB	2Q118605.D	1	01/04/24	LR	01/03/24	OP937	S2Q1693

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FC12099-3, FC12099-14, FC12099-15

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	0.016	0.0040	ug/l	
2706-90-3	Perfluoropentanoic acid	ND	0.0080	0.0020	ug/l	
307-24-4	Perfluorohexanoic acid	ND	0.0080	0.0020	ug/l	
375-85-9	Perfluoroheptanoic acid	ND	0.0080	0.0020	ug/l	
335-67-1	Perfluorooctanoic acid	ND	0.0080	0.0020	ug/l	
375-95-1	Perfluorononanoic acid	ND	0.0080	0.0020	ug/l	
335-76-2	Perfluorodecanoic acid	ND	0.0080	0.0020	ug/l	
2058-94-8	Perfluoroundecanoic acid	ND	0.0080	0.0020	ug/l	
307-55-1	Perfluorododecanoic acid	ND	0.0080	0.0020	ug/l	
72629-94-8	Perfluorotridecanoic acid	ND	0.0080	0.0020	ug/l	
376-06-7	Perfluorotetradecanoic acid	ND	0.0080	0.0020	ug/l	
375-73-5	Perfluorobutanesulfonic acid	ND	0.0080	0.0020	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0080	0.0020	ug/l	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0080	0.0020	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0080	0.0020	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0080	0.0020	ug/l	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0080	0.0020	ug/l	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0080	0.0020	ug/l	
754-91-6	PFOSA	ND	0.0080	0.0020	ug/l	
2355-31-9	MeFOSAA	ND	0.016	0.0040	ug/l	
2991-50-6	EtFOSAA	ND	0.016	0.0040	ug/l	
757124-72-4	4:2 Fluorotelomer sulfonate	ND	0.016	0.0040	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.016	0.0040	ug/l	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.016	0.0040	ug/l	
13252-13-6	HFPO-DA (GenX)	ND	0.016	0.0040	ug/l	

CAS No.	ID Standard Recoveries		Limits
	13C4-PFBA	84%	50-150%
	13C5-PFPeA	84%	50-150%
	13C5-PFHxA	83%	50-150%
	13C4-PFHpA	82%	50-150%
	13C8-PFOA	78%	50-150%
	13C9-PFNA	69%	50-150%
	13C6-PFDA	65%	50-150%

Method Blank Summary

Job Number: FC12099
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP937-MB	2Q118605.D	1	01/04/24	LR	01/03/24	OP937	S2Q1693

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FC12099-3, FC12099-14, FC12099-15

CAS No.	ID Standard Recoveries		Limits
	13C7-PFUnDA	60%	50-150%
	13C2-PFDoDA	54%	50-150%
	13C2-PFTeDA	47%* [a]	50-150%
	13C3-PFBS	80%	50-150%
	13C3-PFHxS	72%	50-150%
	13C8-PFOS	57%	50-150%
	13C8-FOSA	67%	50-150%
	d3-MeFOSAA	68%	50-150%
	d5-EtFOSAA	66%	50-150%
	13C2-4:2FTS	80%	50-150%
	13C2-6:2FTS	73%	50-150%
	13C2-8:2FTS	64%	50-150%

(a) Outside control limits.

Blank Spike Summary

Job Number: FC12099
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP835-BS	5Q23944.D	1	12/29/23	NG	12/26/23	OP835	S5Q375

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FC12099-1, FC12099-2, FC12099-4, FC12099-5, FC12099-6, FC12099-7, FC12099-8, FC12099-16, FC12099-17

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
375-22-4	Perfluorobutanoic acid	0.16	0.142	89	73-129
2706-90-3	Perfluoropentanoic acid	0.16	0.142	89	72-129
307-24-4	Perfluorohexanoic acid	0.16	0.140	88	72-129
375-85-9	Perfluoroheptanoic acid	0.16	0.143	89	72-130
335-67-1	Perfluorooctanoic acid	0.16	0.143	89	71-133
375-95-1	Perfluorononanoic acid	0.16	0.142	89	69-130
335-76-2	Perfluorodecanoic acid	0.16	0.141	88	71-129
2058-94-8	Perfluoroundecanoic acid	0.16	0.141	88	69-133
307-55-1	Perfluorododecanoic acid	0.16	0.142	89	72-134
72629-94-8	Perfluorotridecanoic acid	0.16	0.127	79	65-144
376-06-7	Perfluorotetradecanoic acid	0.16	0.141	88	71-132
375-73-5	Perfluorobutanesulfonic acid	0.16	0.143	89	72-130
2706-91-4	Perfluoropentanesulfonic acid	0.16	0.134	84	71-127
355-46-4	Perfluorohexanesulfonic acid	0.16	0.139	87	68-131
375-92-8	Perfluoroheptanesulfonic acid	0.16	0.137	86	69-134
1763-23-1	Perfluorooctanesulfonic acid	0.16	0.132	83	65-140
68259-12-1	Perfluorononanesulfonic acid	0.16	0.128	80	69-127
335-77-3	Perfluorodecanesulfonic acid	0.16	0.0951	59	53-142
754-91-6	PFOSA	0.16	0.143	89	67-137
2355-31-9	MeFOSAA	0.16	0.139	87	65-136
2991-50-6	EtFOSAA	0.16	0.135	84	61-135
757124-72-4	4:2 Fluorotelomer sulfonate	0.16	0.146	91	63-143
27619-97-2	6:2 Fluorotelomer sulfonate	0.16	0.149	93	64-140
39108-34-4	8:2 Fluorotelomer sulfonate	0.16	0.148	93	67-138
13252-13-6	HFPO-DA (GenX)	0.16	0.135	84	60-140

CAS No.	ID Standard Recoveries	BSP	Limits
	13C4-PFBA	76%	50-150%
	13C5-PFPeA	73%	50-150%
	13C5-PFHxA	70%	50-150%
	13C4-PFHpA	67%	50-150%
	13C8-PFOA	65%	50-150%
	13C9-PFNA	63%	50-150%
	13C6-PFDA	61%	50-150%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FC12099
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP835-BS	5Q23944.D	1	12/29/23	NG	12/26/23	OP835	S5Q375

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FC12099-1, FC12099-2, FC12099-4, FC12099-5, FC12099-6, FC12099-7, FC12099-8, FC12099-16, FC12099-17

CAS No.	ID Standard Recoveries	BSP	Limits
	13C7-PFUnDA	56%	50-150%
	13C2-PFDoDA	51%	50-150%
	13C2-PFTeDA	46%* [a]	50-150%
	13C3-PFBS	55%	50-150%
	13C3-PFHxS	50%	50-150%
	13C8-PFOS	48%* [a]	50-150%
	13C8-FOSA	102%	50-150%
	d3-MeFOSAA	59%	50-150%
	d5-EtFOSAA	55%	50-150%
	13C2-4:2FTS	80%	50-150%
	13C2-6:2FTS	73%	50-150%
	13C2-8:2FTS	66%	50-150%

(a) Outside control limits.

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FC12099
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP937-BS	2Q118604.D	1	01/04/24	LR	01/03/24	OP937	S2Q1693

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FC12099-3, FC12099-14, FC12099-15

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
375-22-4	Perfluorobutanoic acid	0.16	0.169	106	73-129
2706-90-3	Perfluoropentanoic acid	0.16	0.164	103	72-129
307-24-4	Perfluorohexanoic acid	0.16	0.163	102	72-129
375-85-9	Perfluoroheptanoic acid	0.16	0.165	103	72-130
335-67-1	Perfluorooctanoic acid	0.16	0.161	101	71-133
375-95-1	Perfluorononanoic acid	0.16	0.172	108	69-130
335-76-2	Perfluorodecanoic acid	0.16	0.167	104	71-129
2058-94-8	Perfluoroundecanoic acid	0.16	0.175	109	69-133
307-55-1	Perfluorododecanoic acid	0.16	0.176	110	72-134
72629-94-8	Perfluorotridecanoic acid	0.16	0.177	111	65-144
376-06-7	Perfluorotetradecanoic acid	0.16	0.176	110	71-132
375-73-5	Perfluorobutanesulfonic acid	0.16	0.168	105	72-130
2706-91-4	Perfluoropentanesulfonic acid	0.16	0.168	105	71-127
355-46-4	Perfluorohexanesulfonic acid	0.16	0.170	106	68-131
375-92-8	Perfluoroheptanesulfonic acid	0.16	0.168	105	69-134
1763-23-1	Perfluorooctanesulfonic acid	0.16	0.186	116	65-140
68259-12-1	Perfluorononanesulfonic acid	0.16	0.170	106	69-127
335-77-3	Perfluorodecanesulfonic acid	0.16	0.167	104	53-142
754-91-6	PFOSA	0.16	0.167	104	67-137
2355-31-9	MeFOSAA	0.16	0.175	109	65-136
2991-50-6	EtFOSAA	0.16	0.171	107	61-135
757124-72-4	4:2 Fluorotelomer sulfonate	0.16	0.168	105	63-143
27619-97-2	6:2 Fluorotelomer sulfonate	0.16	0.181	113	64-140
39108-34-4	8:2 Fluorotelomer sulfonate	0.16	0.172	108	67-138
13252-13-6	HFPO-DA (GenX)	0.16	0.177	111	60-140

CAS No.	ID Standard Recoveries	BSP	Limits
	13C4-PFBA	90%	50-150%
	13C5-PFPeA	91%	50-150%
	13C5-PFHxA	91%	50-150%
	13C4-PFHpA	90%	50-150%
	13C8-PFOA	88%	50-150%
	13C9-PFNA	78%	50-150%
	13C6-PFDA	76%	50-150%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FC12099
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP937-BS	2Q118604.D	1	01/04/24	LR	01/03/24	OP937	S2Q1693

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FC12099-3, FC12099-14, FC12099-15

CAS No.	ID Standard Recoveries	BSP	Limits
	13C7-PFUnDA	72%	50-150%
	13C2-PFDoDA	69%	50-150%
	13C2-PFTeDA	69%	50-150%
	13C3-PFBS	88%	50-150%
	13C3-PFHxS	78%	50-150%
	13C8-PFOS	70%	50-150%
	13C8-FOSA	81%	50-150%
	d3-MeFOSAA	79%	50-150%
	d5-EtFOSAA	80%	50-150%
	13C2-4:2FTS	95%	50-150%
	13C2-6:2FTS	83%	50-150%
	13C2-8:2FTS	79%	50-150%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: FC12099
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP835-MS	5Q23964.D	1	12/29/23	NG	12/26/23	OP835	S5Q375
OP835-MSD	5Q23965.D	1	12/29/23	NG	12/26/23	OP835	S5Q375
FC12189-4	5Q23963.D	1	12/29/23	NG	12/26/23	OP835	S5Q375

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FC12099-1, FC12099-2, FC12099-4, FC12099-5, FC12099-6, FC12099-7, FC12099-8, FC12099-16, FC12099-17

CAS No.	Compound	FC12189-4 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
375-22-4	Perfluorobutanoic acid	0.0297		0.16	0.184	96	0.16	0.179	93	3	73-129/30
2706-90-3	Perfluoropentanoic acid	0.0845		0.16	0.240	97	0.16	0.233	93	3	72-129/30
307-24-4	Perfluorohexanoic acid	0.0541		0.16	0.208	96	0.16	0.202	92	3	72-129/30
375-85-9	Perfluoroheptanoic acid	0.0528		0.16	0.208	97	0.16	0.203	94	2	72-130/30
335-67-1	Perfluorooctanoic acid	0.0752		0.16	0.232	98	0.16	0.223	92	4	71-133/30
375-95-1	Perfluorononanoic acid	0.0069	J	0.16	0.163	98	0.16	0.158	94	3	69-130/30
335-76-2	Perfluorodecanoic acid	0.0080	U	0.16	0.156	98	0.16	0.150	94	4	71-129/30
2058-94-8	Perfluoroundecanoic acid	0.0080	U	0.16	0.156	98	0.16	0.153	96	2	69-133/30
307-55-1	Perfluorododecanoic acid	0.0080	U	0.16	0.155	97	0.16	0.152	95	2	72-134/30
72629-94-8	Perfluorotridecanoic acid	0.0080	U	0.16	0.147	92	0.16	0.146	91	1	65-144/30
376-06-7	Perfluorotetradecanoic acid	0.0080	U	0.16	0.152	95	0.16	0.153	96	1	71-132/30
375-73-5	Perfluorobutanesulfonic acid	0.0025	J	0.16	0.157	97	0.16	0.155	95	1	72-130/30
2706-91-4	Perfluoropentanesulfonic acid	0.0027	J	0.16	0.151	93	0.16	0.149	91	1	71-127/30
355-46-4	Perfluorohexanesulfonic acid	0.0767		0.16	0.224	92	0.16	0.226	93	1	68-131/30
375-92-8	Perfluoroheptanesulfonic acid	0.0068	J	0.16	0.171	103	0.16	0.169	101	1	69-134/30
1763-23-1	Perfluorooctanesulfonic acid	0.132		0.16	0.288	98	0.16	0.282	94	2	65-140/30
68259-12-1	Perfluorononanesulfonic acid	0.0080	U	0.16	0.151	94	0.16	0.145	91	4	69-127/30
335-77-3	Perfluorodecanesulfonic acid	0.0080	U	0.16	0.135	84	0.16	0.131	82	3	53-142/30
754-91-6	PFOSA	0.0080	U	0.16	0.152	95	0.16	0.150	94	1	67-137/30
2355-31-9	MeFOSAA	0.016	U	0.16	0.156	98	0.16	0.148	93	5	65-136/30
2991-50-6	EtFOSAA	0.016	U	0.16	0.148	93	0.16	0.147	92	1	61-135/30
757124-72-4	4:2 Fluorotelomer sulfonate	0.016	U	0.16	0.162	101	0.16	0.159	99	2	63-143/30
27619-97-2	6:2 Fluorotelomer sulfonate	0.016	U	0.16	0.162	101	0.16	0.160	100	1	64-140/30
39108-34-4	8:2 Fluorotelomer sulfonate	0.016	U	0.16	0.160	100	0.16	0.156	98	3	67-138/30
13252-13-6	HFPO-DA (GenX)	0.016	U	0.16	0.144	90	0.16	0.141	88	2	60-140/30

CAS No.	ID Standard Recoveries	MS	MSD	FC12189-4	Limits
	13C4-PFBA	116%	125%	118%	50-150%
	13C5-PFPeA	113%	122%	114%	50-150%
	13C5-PFHxA	113%	121%	115%	50-150%
	13C4-PFHpA	112%	119%	115%	50-150%
	13C8-PFOA	110%	120%	113%	50-150%
	13C9-PFNA	105%	114%	110%	50-150%
	13C6-PFDA	99%	110%	105%	50-150%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: FC12099
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP835-MS	5Q23964.D	1	12/29/23	NG	12/26/23	OP835	S5Q375
OP835-MSD	5Q23965.D	1	12/29/23	NG	12/26/23	OP835	S5Q375
FC12189-4	5Q23963.D	1	12/29/23	NG	12/26/23	OP835	S5Q375

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FC12099-1, FC12099-2, FC12099-4, FC12099-5, FC12099-6, FC12099-7, FC12099-8, FC12099-16, FC12099-17

CAS No.	ID Standard Recoveries	MS	MSD	FC12189-4	Limits
	13C7-PFUnDA	94%	102%	96%	50-150%
	13C2-PFDoDA	93%	100%	93%	50-150%
	13C2-PFTeDA	93%	99%	94%	50-150%
	13C3-PFBS	109%	115%	111%	50-150%
	13C3-PFHxS	107%	113%	110%	50-150%
	13C8-PFOS	91%	99%	98%	50-150%
	13C8-FOSA	113%	124%	118%	50-150%
	d3-MeFOSAA	102%	112%	105%	50-150%
	d5-EtFOSAA	104%	109%	104%	50-150%
	13C2-4:2FTS	119%	127%	110%	50-150%
	13C2-6:2FTS	117%	125%	108%	50-150%
	13C2-8:2FTS	100%	109%	96%	50-150%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: FC12099
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP937-MS	2Q118615.D	1	01/04/24	LR	01/03/24	OP937	S2Q1693
OP937-MSD	2Q118616.D	1	01/04/24	LR	01/03/24	OP937	S2Q1693
FC12185-2	2Q118614.D	1	01/04/24	LR	01/03/24	OP937	S2Q1693

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FC12099-3, FC12099-14, FC12099-15

CAS No.	Compound	FC12185-2 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
375-22-4	Perfluorobutanoic acid	0.017	U	0.16	0.173	108	0.16	0.169	106	2	73-129/30
2706-90-3	Perfluoropentanoic acid	0.0083	U	0.16	0.168	105	0.16	0.163	102	3	72-129/30
307-24-4	Perfluorohexanoic acid	0.0083	U	0.16	0.166	104	0.16	0.163	102	2	72-129/30
375-85-9	Perfluoroheptanoic acid	0.0083	U	0.16	0.166	104	0.16	0.164	103	1	72-130/30
335-67-1	Perfluorooctanoic acid	0.0083	U	0.16	0.164	103	0.16	0.161	101	2	71-133/30
375-95-1	Perfluorononanoic acid	0.0083	U	0.16	0.165	103	0.16	0.166	104	1	69-130/30
335-76-2	Perfluorodecanoic acid	0.0083	U	0.16	0.167	104	0.16	0.165	103	1	71-129/30
2058-94-8	Perfluoroundecanoic acid	0.0083	U	0.16	0.168	105	0.16	0.163	102	3	69-133/30
307-55-1	Perfluorododecanoic acid	0.0083	U	0.16	0.166	104	0.16	0.163	102	2	72-134/30
72629-94-8	Perfluorotridecanoic acid	0.0083	U	0.16	0.166	104	0.16	0.165	103	1	65-144/30
376-06-7	Perfluorotetradecanoic acid	0.0083	U	0.16	0.162	101	0.16	0.157	98	3	71-132/30
375-73-5	Perfluorobutanesulfonic acid	0.0083	U	0.16	0.173	108	0.16	0.168	105	3	72-130/30
2706-91-4	Perfluoropentanesulfonic acid	0.0083	U	0.16	0.175	109	0.16	0.169	106	3	71-127/30
355-46-4	Perfluorohexanesulfonic acid	0.0140		0.16	0.181	104	0.16	0.176	101	3	68-131/30
375-92-8	Perfluoroheptanesulfonic acid	0.0083	U	0.16	0.160	100	0.16	0.162	101	1	69-134/30
1763-23-1	Perfluorooctanesulfonic acid	0.0029	J	0.16	0.168	103	0.16	0.170	104	1	65-140/30
68259-12-1	Perfluorononanesulfonic acid	0.0083	U	0.16	0.160	100	0.16	0.157	98	2	69-127/30
335-77-3	Perfluorodecanesulfonic acid	0.0083	U	0.16	0.155	97	0.16	0.155	97	0	53-142/30
754-91-6	PFOSA	0.0083	U	0.16	0.170	106	0.16	0.165	103	3	67-137/30
2355-31-9	MeFOSAA	0.017	U	0.16	0.169	106	0.16	0.166	104	2	65-136/30
2991-50-6	EtFOSAA	0.017	U	0.16	0.170	106	0.16	0.169	106	1	61-135/30
757124-72-4	4:2 Fluorotelomer sulfonate	0.017	U	0.16	0.167	104	0.16	0.160	100	4	63-143/30
27619-97-2	6:2 Fluorotelomer sulfonate	0.017	U	0.16	0.178	111	0.16	0.173	108	3	64-140/30
39108-34-4	8:2 Fluorotelomer sulfonate	0.017	U	0.16	0.164	103	0.16	0.169	106	3	67-138/30
13252-13-6	HFPO-DA (GenX)	0.017	U	0.16	0.173	108	0.16	0.163	102	6	60-140/30

CAS No.	ID Standard Recoveries	MS	MSD	FC12185-2	Limits
	13C4-PFBA	78%	79%	76%	50-150%
	13C5-PFPeA	79%	80%	78%	50-150%
	13C5-PFHxA	80%	81%	79%	50-150%
	13C4-PFHpA	80%	81%	79%	50-150%
	13C8-PFOA	81%	82%	80%	50-150%
	13C9-PFNA	77%	78%	73%	50-150%
	13C6-PFDA	72%	73%	69%	50-150%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: FC12099
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP937-MS	2Q118615.D	1	01/04/24	LR	01/03/24	OP937	S2Q1693
OP937-MSD	2Q118616.D	1	01/04/24	LR	01/03/24	OP937	S2Q1693
FC12185-2	2Q118614.D	1	01/04/24	LR	01/03/24	OP937	S2Q1693

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FC12099-3, FC12099-14, FC12099-15

CAS No.	ID Standard Recoveries	MS	MSD	FC12185-2	Limits
	13C7-PFUnDA	65%	68%	66%	50-150%
	13C2-PFDoDA	63%	65%	64%	50-150%
	13C2-PFTeDA	63%	69%	63%	50-150%
	13C3-PFBS	75%	77%	75%	50-150%
	13C3-PFHxS	76%	76%	73%	50-150%
	13C8-PFOS	68%	69%	64%	50-150%
	13C8-FOSA	76%	79%	78%	50-150%
	d3-MeFOSAA	72%	74%	74%	50-150%
	d5-EtFOSAA	71%	72%	74%	50-150%
	13C2-4:2FTS	85%	89%	76%	50-150%
	13C2-6:2FTS	81%	82%	72%	50-150%
	13C2-8:2FTS	76%	77%	65%	50-150%

* = Outside of Control Limits.

Ion Ratio Summary

Job Number: FC12099
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Run ID: S2Q1693 **Method:** EPA 537M QSM5.3 B-15

Lab Sample ID	Lab File ID	Ion Ratios (Set 1) PFBA	PFPeA	PFHxA	PFHpA	PFOA	PFPeS	PFHxS
S2Q1691-ICC16912Q118515.D		0	0	3.9	16.7	18.1	42.7	51.2
FC12099-3	2Q118606.D		0	3.5		21.5	23.1	50.7
FC12099-14	2Q118607.D	0	0	4.9	18.9	20.5		51.8
FC12099-15	2Q118608.D		0	4	17.7	20.4		44.8

Ion Ratio Summary

Job Number: FC12099
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Run ID: S2Q1693 **Method:** EPA 537M QSM5.3 B-15

Lab Sample ID	Lab File ID	Ion Ratios (Set 2) PFOS
S2Q1691-ICC16912	Q118515.D	51
FC12099-3	2Q118606.D	
FC12099-14	2Q118607.D	39.7
FC12099-15	2Q118608.D	43.9

Ion Ratio Summary

Job Number: FC12099
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Run ID: S5Q375 **Method:** EPA 537M QSM5.3 B-15

Lab Sample ID	Lab File ID	Ion Ratios (Set 1) PFBA	PFPeA	PFHxA	PFHpA	PFOA	PFNA	PFDA
S5Q375-ICC375	5Q23913.D	0	0	4.1	21.1	24.9	21.1	17.6
FC12099-1	5Q23946.D	0	0	3.6	20.8	26.2		
FC12099-2	5Q23947.D	0	0	4.3	21.8	26.3	20.9	17.3
FC12099-3	5Q23948.D							
FC12099-4	5Q23949.D	0	0	4.1	21.1	26.4		
FC12099-5	5Q23950.D	0	0	4.5	23.5	26.3	21.3	17.5
FC12099-6	5Q23951.D	0	0	4.9	21.9	28.6		
FC12099-7	5Q23952.D							
FC12099-8	5Q23953.D							
FC12099-14	5Q23956.D							
FC12099-16	5Q23958.D	0						
FC12099-17	5Q23959.D	0						

Ion Ratio Summary

Job Number: FC12099
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Run ID: S5Q375 **Method:** EPA 537M QSM5.3 B-15

Lab Sample ID	Lab File ID	Ion Ratios (Set 2) PFBS	PFPeS	PFHxS	PFOS
S5Q375-ICC375	5Q23913.D	43.9	49.8	55.9	50.2
FC12099-1	5Q23946.D				42.6
FC12099-2	5Q23947.D	42.2		57.5	47.4
FC12099-3	5Q23948.D				
FC12099-4	5Q23949.D	17.1	47.2	59.8	40.9
FC12099-5	5Q23950.D				49.1
FC12099-6	5Q23951.D	44.6		56.4	48.2
FC12099-7	5Q23952.D				
FC12099-8	5Q23953.D				
FC12099-14	5Q23956.D				
FC12099-16	5Q23958.D				41.7
FC12099-17	5Q23959.D				

Isotope Dilution Standard Recovery Summary

Job Number: FC12099
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Method: EPA 537M QSM5.3 B-15 **Matrix:** AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3	S4	S5	S6	S7	S8
FC12099-1	5Q23946.D	106	95	104	106	109	107	102	89
FC12099-2	5Q23947.D	100	82	91	90	91	86	81	75
FC12099-3	5Q23948.D	82	67	91	94	97	96	95	90
FC12099-3	2Q118606.D	58	58	60	66	70	68	75	68
FC12099-3	5Q24255.D	58	56	66	68	72	71	65	54
FC12099-4	5Q23949.D	75	63	80	81	81	75	78	82
FC12099-4	5Q24076.D	65	59	69	77	83	88	82	74
FC12099-5	5Q23950.D	111	105	103	104	98	85	75	65
FC12099-6	5Q24077.D	78	80	87	98	102	103	96	83
FC12099-6	5Q23951.D	103	88	86	81	77	75	81	87
FC12099-7	5Q23952.D	105	100	95	90	87	82	80	76
FC12099-8	5Q23953.D	126	122	119	116	109	102	100	91
FC12099-14	5Q23956.D	101	86	92	89	86	75	63	57
FC12099-14	5Q24256.D	65	64	67	69	68	63	54	48* [a]
FC12099-14	2Q118607.D	71	70	69	70	72	68	70	60
FC12099-15	2Q118608.D	63	63	64	67	71	70	75	68
FC12099-16	5Q23958.D	99	78	83	82	80	69	60	55
FC12099-17	5Q23959.D	101	97	97	97	95	90	81	69
OP835-BS	5Q23944.D	76	73	70	67	65	63	61	56
OP835-MB	5Q23945.D	68	65	62	61	59	59	58	54
OP835-MS	5Q23964.D	116	113	113	112	110	105	99	94
OP835-MSD	5Q23965.D	125	122	121	119	120	114	110	102
OP937-BS	2Q118604.D	90	91	91	90	88	78	76	72
OP937-MB	2Q118605.D	84	84	83	82	78	69	65	60
OP937-MS	2Q118615.D	78	79	80	80	81	77	72	65
OP937-MSD	2Q118616.D	79	80	81	81	82	78	73	68
S2Q1693-IBLK	2Q118600.D	95	95	96	97	99	95	98	96
S5Q375-IBLK	5Q23916.D	88	90	89	91	89	91	93	91
S5Q377-IBLK	5Q24034.D	86	86	84	86	87	88	88	89
S5Q380-IBLK	5Q24197.D	111	110	107	109	109	112	108	103

Isotope Dilution Standards	Recovery Limits
S1 = 13C4-PFBA	50-150%
S2 = 13C5-PFPeA	50-150%
S3 = 13C5-PFHxA	50-150%
S4 = 13C4-PFHpA	50-150%
S5 = 13C8-PFOA	50-150%
S6 = 13C9-PFNA	50-150%

Isotope Dilution Standard Recovery Summary

Job Number: FC12099
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Method: EPA 537M QSM5.3 B-15 **Matrix:** AQ

Samples and QC shown here apply to the above method

Isotope Dilution Standards	Recovery Limits
S7 = 13C6-PFDA	50-150%
S8 = 13C7-PFUnDA	50-150%

(a) Outside control limits.

Isotope Dilution Standard Recovery Summary

Job Number: FC12099
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Method: EPA 537M QSM5.3 B-15 **Matrix:** AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S9	S10	S11	S12	S13	S14	S15	S16
FC12099-1	5Q23946.D	81	61	97	101	91	75	109	100
FC12099-2	5Q23947.D	75	69	85	84	69	63	93	87
FC12099-3	5Q23948.D	76	23* [a]	81	85	85	37* [a]	96	94
FC12099-3	2Q118606.D	61	44* [a]	58	63	64	39* [a]	79	72
FC12099-3	5Q24255.D	47* [a]	27* [a]	61	67	71	49* [a]	73	68
FC12099-4	5Q23949.D	85	80	76	69	68	27* [a]	80	85
FC12099-4	5Q24076.D	69	51	68	78	78	46* [a]	91	81
FC12099-5	5Q23950.D	61	66	99	91	64	81	74	72
FC12099-6	5Q24077.D	79	69	87	103	90	52	99	96
FC12099-6	5Q23951.D	89	84	79	69	77	44* [a]	93	91
FC12099-7	5Q23952.D	76	81	91	83	70	79	81	77
FC12099-8	5Q23953.D	90	97	112	105	87	87	101	97
FC12099-14	5Q23956.D	56	49* [a]	83	74	54	58	71	65
FC12099-14	5Q24256.D	44* [a]	38* [a]	63	69	51	51	55	57
FC12099-14	2Q118607.D	51	42* [a]	69	65	61	43* [a]	70	67
FC12099-15	2Q118608.D	59	50	62	61	65	59	74	71
FC12099-16	5Q23958.D	55	63	78	69	54	51	67	61
FC12099-17	5Q23959.D	65	58	94	92	71	74	84	77
OP835-BS	5Q23944.D	51	46* [a]	55	50	48* [a]	102	59	55
OP835-MB	5Q23945.D	50	44* [a]	51	51	45* [a]	97	60	57
OP835-MS	5Q23964.D	93	93	109	107	91	113	102	104
OP835-MSD	5Q23965.D	100	99	115	113	99	124	112	109
OP937-BS	2Q118604.D	69	69	88	78	70	81	79	80
OP937-MB	2Q118605.D	54	47* [a]	80	72	57	67	68	66
OP937-MS	2Q118615.D	63	63	75	76	68	76	72	71
OP937-MSD	2Q118616.D	65	69	77	76	69	79	74	72
S2Q1693-IBLK	2Q118600.D	95	97	93	96	96	100	103	100
S5Q375-IBLK	5Q23916.D	90	88	88	90	90	95	94	92
S5Q377-IBLK	5Q24034.D	87	86	84	87	88	96	92	90
S5Q380-IBLK	5Q24197.D	103	103	106	109	106	123	122	118

Isotope Dilution Standards	Recovery Limits
S9 = 13C2-PFDoDA	50-150%
S10 = 13C2-PFTeDA	50-150%
S11 = 13C3-PFBS	50-150%
S12 = 13C3-PFHxS	50-150%
S13 = 13C8-PFOS	50-150%
S14 = 13C8-FOSA	50-150%

Isotope Dilution Standard Recovery Summary

Job Number: FC12099
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Method: EPA 537M QSM5.3 B-15 **Matrix:** AQ

Samples and QC shown here apply to the above method

Isotope Dilution Standards	Recovery Limits
S15 = d3-MeFOSAA	50-150%
S16 = d5-EtFOSAA	50-150%

(a) Outside control limits.

Isotope Dilution Standard Recovery Summary

Job Number: FC12099
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Method: EPA 537M QSM5.3 B-15 **Matrix:** AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S17	S18	S19	S20
FC12099-1	5Q23946.D	100	108	93	100
FC12099-2	5Q23947.D	93	96	78	87
FC12099-3	5Q23948.D	94	103	85	93
FC12099-3	2Q118606.D	61	72	72	62
FC12099-3	5Q24255.D	66	67	63	66
FC12099-4	5Q23949.D	85	90	69	85
FC12099-4	5Q24076.D	70	83	85	63
FC12099-5	5Q23950.D	102	100	71	101
FC12099-6	5Q24077.D	85	96	94	80
FC12099-6	5Q23951.D	94	85	73	84
FC12099-7	5Q23952.D	93	86	73	91
FC12099-8	5Q23953.D	115	109	93	110
FC12099-14	5Q23956.D	94	92	63	87
FC12099-14	5Q24256.D	64	65	54	68
FC12099-14	2Q118607.D	69	70	67	68
FC12099-15	2Q118608.D	65	69	71	63
FC12099-16	5Q23958.D	86	87	59	78
FC12099-17	5Q23959.D	94	95	76	89
OP835-BS	5Q23944.D	80	73	66	
OP835-MB	5Q23945.D	64	61	56	
OP835-MS	5Q23964.D	119	117	100	
OP835-MSD	5Q23965.D	127	125	109	
OP937-BS	2Q118604.D	95	83	79	
OP937-MB	2Q118605.D	80	73	64	
OP937-MS	2Q118615.D	85	81	76	
OP937-MSD	2Q118616.D	89	82	77	
S2Q1693-IBLK	2Q118600.D	90	88	89	
S5Q375-IBLK	5Q23916.D	83	85	85	
S5Q377-IBLK	5Q24034.D	81	79	85	
S5Q380-IBLK	5Q24197.D	99	98	103	

Isotope Dilution Standards	Recovery Limits
S17 = 13C2-4:2FTS	50-150%
S18 = 13C2-6:2FTS	50-150%
S19 = 13C2-8:2FTS	50-150%
S20 = 13C3-HFPO-DA	50-150%

Initial Calibration Report

Method Path	D:\MassHunter\damethods
Method File	ID_010224_S2Q1691.quantmethod.xml
Batch Name	D:\MassHunter\Data\010224_ID_S2Q1691\QuantResults\s2q1691.batch.bin
Last Calib Update	1/2/2024 3:18:49 PM

Level Name	Calibration Files	Acq. Date-Time	Level Last Update Time
1	D:\MassHunter\Data\010224_ID_S2Q1691\2q118510.d	1/2/2024 12:34:31 PM	1/2/2024 3:18:49 PM
2	D:\MassHunter\Data\010224_ID_S2Q1691\2q118511.d	1/2/2024 12:51:02 PM	1/2/2024 3:18:49 PM
3	D:\MassHunter\Data\010224_ID_S2Q1691\2q118512.d	1/2/2024 1:07:34 PM	1/2/2024 3:18:49 PM
4	D:\MassHunter\Data\010224_ID_S2Q1691\2q118513.d	1/2/2024 1:24:05 PM	1/2/2024 3:18:49 PM
5	D:\MassHunter\Data\010224_ID_S2Q1691\2q118514.d	1/2/2024 1:40:36 PM	1/2/2024 3:18:49 PM
6	D:\MassHunter\Data\010224_ID_S2Q1691\2q118515.d	1/2/2024 1:57:07 PM	1/2/2024 3:18:49 PM
7	D:\MassHunter\Data\010224_ID_S2Q1691\2q118516.d	1/2/2024 2:13:39 PM	1/2/2024 3:18:49 PM
8	D:\MassHunter\Data\010224_ID_S2Q1691\2q118517.d	1/2/2024 2:30:10 PM	1/2/2024 3:18:49 PM

Compound	Curve Fit	1	2	3	4	5	6	7	8	Avg RF	%RSD
S 13C4-PFBA	Linear	5231	5144	5143	5170	5172	5306	4959	5179	5163	1.907
S 13C5-PFPeA	Linear	7973	7982	7958	7983	7984	8169	7644	7915	7951	1.818
S 13C3-PFBS	Linear	596.1	611.3	601.9	607.1	612.5	602.4	574.9	601.1	600.9	1.972
S 13C2-4:2FTS	Linear	3418	3448	3508	3548	3717	3950	4236		3689	8.228
S 13C5-PFHxA	Linear	9812	9992	10011	9850	9987	10152	9442	9664	9864	2.290
S 13C3-HFPO-DA	Linear	812.0	802.6	826.7	826.8	854.3	862.2	815.4	848.9	831.1	2.606
S 13C4-PFHpA	Linear	8638	8588	8769	8763	8648	8768	8352	8190	8590	2.472
S 13C3-PFHxS	Linear	608.3	641.2	639.5	574.6	636.2	640.2	571.9	584.6	612.1	5.081
S 13C2-6:2FTS	Linear	5182	5330	5279	5483	5469	5850	6143	7202	5742	11.673
S 13C8-PFOA	Linear	17190	17126	17312	17325	17004	17647	16192	15616	16927	3.994
S 13C8-FOSA	Linear	2107	2102	2165	2143	2136	2149	1870	1756	2054	7.450
S 13C8-PFOS	Linear	571.3	557.0	565.3	587.6	530.2	556.0	546.8	553.6	558.5	3.047
S 13C9-PFNA	Linear	13778	13724	13680	13724	13329	13881	12819	12846	13473	3.161
S d3-MeFOSA	Linear	687.5	728.9	740.9	758.2	753.3	749.6	689.7	637.7	718.2	5.927
S d3-MeFOSAA	Linear	2314	2308	2334	2280	2269	2335	2266	2193	2287	2.038
S d5-EtFOSAA	Linear	1895	1908	1955	1999	1949	1978	1898	1856	1929	2.495
S 13C6-PFDA	Linear	10392	10567	10572	10725	10578	10770	10013	9997	10452	2.853
S 13C2-8:2FTS	Linear	3639	3549	3642	3852	3867	4111	4469		3876	8.331
S 13C7-PFUnDA	Linear	17598	17659	17478	17707	17319	17823	16714	16758	17382	2.453
S 13C2-PFDoDA	Linear	17335	17403	17538	17573	17616	18008	17122	17511	17513	1.458
S 13C2-PFTeDA	Linear	13037	13235	13167	13190	13548	13747	12955	13462	13293	2.029
I M5-EtFOSAA				---------- ISTD ----------							
T EtFOSAA	Linear	0.8275	0.7336	0.8849	0.8532	0.8936	0.8455	0.8978	0.8991	0.8544	6.523
I M4-PFBA				---------- ISTD ----------							
T PFBA	Linear	0.2928	0.2754	0.3122	0.3110	0.3182	0.2919	0.3177	0.3150	0.3043	5.147
I M5-PFPeA				---------- ISTD ----------							
T PFPeA	Linear	0.7365	0.6894	0.7782	0.7667	0.7902	0.7309	0.7952	0.7889	0.7595	4.912

Initial Calibration Summary

Job Number: FC12099
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample: S2Q1691-ICC1691
Lab FileID: 2Q118515.D

Initial Calibration Report

Compound	Curve Fit	1	2	3	4	5	6	7	8	Avg RF	%RSD
I M5-PFHxA						ISTD					
T PFHxA	Linear	0.9547	0.8609	0.9905	1.0030	1.0257	0.9556	1.0350	1.0307	0.9820	5.925
I M4-PFHpA						ISTD					
T PFHpA	Linear	1.5199	1.4050	1.5907	1.5847	1.6689	1.5107	1.6345	1.6641	1.5723	5.723
I M8-PFOA						ISTD					
T ADONA	Linear	0.8749	0.8636	0.9480	0.9840	1.0195	0.9178	1.0280	1.0753	0.9639	7.879
T 4-PFECHS	Linear		0.2532	0.2595	0.2574	0.2685	0.2491	0.2729	0.2885	0.2642	5.126
T PFOA	Linear	0.9759	0.9128	1.0174	1.0310	1.0639	0.9643	1.0575	1.0752	1.0123	5.610
I M9-PFNA						ISTD					
T PFNA	Linear	0.7362	0.6598	0.7677	0.7802	0.8130	0.7388	0.8077	0.8043	0.7635	6.728
I M6-PFDA						ISTD					
T 9Cl-PF3ONS	Linear	0.3735	0.3570	0.3952	0.3926	0.4205	0.3835	0.4203	0.4281	0.3964	6.340
T PFDA	Linear	0.8738	0.8297	0.9271	0.9637	0.9927	0.9069	0.9973	0.9920	0.9354	6.638
I M7-PFUnDA						ISTD					
T PFDS	Linear	0.0328	0.0276	0.0301	0.0315	0.0322	0.0282	0.0309	0.0311	0.0306	6.029
T PFUnDA	Linear	0.6720	0.6123	0.7254	0.7184	0.7531	0.6775	0.7392	0.7506	0.7061	6.894
I M2-PFDoDA						ISTD					
T 11Cl-PF3OUdS	Linear	0.2193	0.1854	0.2219	0.2151	0.2222	0.2030	0.2215	0.2173	0.2132	6.035
T PFDoDA	Linear	0.7227	0.6827	0.7536	0.7593	0.7855	0.7215	0.7790	0.7838	0.7485	4.897
T PFTrDA	Linear	0.7914	0.7512	0.8498	0.8558	0.9004	0.8337	0.8932	0.8932	0.8461	6.262
I M2-PFTeDA						ISTD					
T PFTeDA	Linear	0.9780	0.9318	1.0729	1.0661	1.1016	1.0200	1.0979	1.0886	1.0446	5.951
I M8-FOSA						ISTD					
T FBSA	Linear	1.1771	1.2583	1.3752	1.3345	1.3970	1.2788	1.4485	1.5175	1.3484	8.135
T FHxSA	Linear	1.3843	1.2713	1.4215	1.4114	1.4209	1.3210	1.4781	1.4856	1.3993	5.229
T FOSA	Linear	0.8384	0.7937	0.8547	0.8740	0.8626	0.7970	0.8874	0.8782	0.8483	4.237
I M3-PFBS						ISTD					
T PFBS	Linear	2.3559	2.1914	2.5610	2.4632	2.5427	2.3897	2.5755	2.5190	2.4498	5.367
T PFPeS	Linear	1.7353	1.5835	1.8481	1.8048	1.8381	1.7211	1.8749	1.8204	1.7783	5.348
I M3-PFHxS						ISTD					
T PFHxS	Linear	2.0693	2.0352	2.0966	2.2448	2.1164	1.9961	2.1472	2.2085	2.1143	3.979
T PFHpS	Linear	1.4890	1.4521	1.5957	1.7621	1.5659	1.4899	1.7096	1.6428	1.5884	6.999
I M8-PFOS						ISTD					
T PFOS	Linear	1.3892	1.4391	1.5630	1.5304	1.7317	1.5349	1.5848	1.5629	1.5420	6.614
T PFNS	Linear	1.0337	0.8798	1.0867	1.0428	1.1551	1.0425	1.0364	1.0571	1.0418	7.382
I M2-4:2FTS						ISTD					

Generated at 3:19 PM on 1/2/2024

8.6.1

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FC12099

Initial Calibration Summary

Job Number: FC12099
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample: S2Q1691-ICC1691
Lab FileID: 2Q118515.D

Initial Calibration Report

Compound	Curve Fit	1	2	3	4	5	6	7	8	Avg RF	%RSD
T 4:2FTS	Avg RF	1.0396	0.9760	1.0981	1.0755	1.0813	0.9385	0.9019		1.0159	7.598
I M2-6:2FTS						ISTD					
T 6:2FTS	Avg RF	0.9526	0.8365	0.9617	0.9355	0.9905	0.8532	0.7949	0.6539	0.8724	12.835
I M2-8:2FTS						ISTD					
T 8:2FTS	Avg RF	0.7903	0.8441	0.9574	0.9192	0.9280	0.8085	0.7702		0.8597	8.687
I M3-MeFOSAA						ISTD					
T MeFOSAA	Linear	0.8327	0.6922	0.8263	0.8377	0.8856	0.8030	0.8570	0.8445	0.8224	7.027
I M3-HFPO-DA						ISTD					
T HFPO-DA	Linear	3.1545	2.8265	3.1423	3.1738	3.0552	2.8672	3.1495	3.0975	3.0583	4.452
I M3-MeFOSA						ISTD					
T MeFOSA	Linear	0.6796	0.7796	0.8792	0.8064	0.8407	0.7900	0.8800	0.8952	0.8188	8.710

(RedFont and #) = Outlier Flag; (I) = Internal Standard; (T) = Target; (S) = Surrogate; (M) = Matrix Spike

Generated at 3:19 PM on 1/2/2024

8.6.1

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FC12099

Initial Calibration Summary

Job Number: FC12099
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample: S2Q1691-ICC1691
Lab FileID: 2Q118515.D

Initial Calibration Report

Compounds with Curve fitting not using Avg Response Factor:

Compound	Curve Fit	Curve Fit Formula	Curve Fit R2
T PFBA	Linear	y = 0.314857 * x	0.999725
S 13C4-PFBA	Linear	y = 5162.873137 * x	0.000000
S 13C5-PFPeA	Linear	y = 7950.981091 * x	0.000000
T PFPeA	Linear	y = 0.788263 * x	0.999728
T PFBS	Linear	y = 2.525925 * x	0.999740
S 13C3-PFBS	Linear	y = 600.916319 * x	0.000000
T FBSA	Linear	y = 1.495628 * x	0.998432
S 13C2-4:2FTS	Linear	y = 3689.269876 * x	0.000000
S 13C5-PFHxA	Linear	y = 9863.846352 * x	0.000000
T PFHxA	Linear	y = 1.029055 * x	0.999746
T PFPeS	Linear	y = 1.827924 * x	0.999627
T HFPO-DA	Linear	y = 3.100240 * x	0.999659
S 13C3-HFPO-DA	Linear	y = 831.113640 * x	0.000000
S 13C4-PFHpA	Linear	y = 8589.504643 * x	0.000000
T PFHpA	Linear	y = 1.653587 * x	0.999562
T PFHxS	Linear	y = 2.189530 * x	0.999432
S 13C3-PFHxS	Linear	y = 612.076420 * x	0.000000
T ADONA	Linear	y = 1.060739 * x	0.998644
T FHxSA	Linear	y = 1.478432 * x	0.999426
T 4-PFECHS	Linear	y = 0.284079 * x	0.998424
T PFHpS	Linear	y = 1.650550 * x	0.999121
S 13C2-6:2FTS	Linear	y = 5742.312839 * x	0.000000
S 13C8-PFOA	Linear	y = 16926.554607 * x	0.000000
T PFOA	Linear	y = 1.068201 * x	0.999480
S 13C8-FOSA	Linear	y = 2053.530494 * x	0.000000
T FOSA	Linear	y = 0.877307 * x	0.999569
S 13C8-PFOS	Linear	y = 558.490261 * x	0.000000
T PFOS	Linear	y = 1.567462 * x	0.999803
S 13C9-PFNA	Linear	y = 13472.569625 * x	0.000000
T PFNA	Linear	y = 0.802927 * x	0.999683
S d3-MeFOSA	Linear	y = 718.215707 * x	0.000000
T MeFOSA	Linear	y = 0.888413 * x	0.999286
S d3-MeFOSAA	Linear	y = 2287.359903 * x	0.000000
T MeFOSAA	Linear	y = 0.845917 * x	0.999797
T 9Cl-PF3ONS	Linear	y = 0.425127 * x	0.999442
S d5-EtFOSAA	Linear	y = 1929.433296 * x	0.000000
T EtFOSAA	Linear	y = 0.897024 * x	0.999830
T PFNS	Linear	y = 1.053374 * x	0.999793
S 13C6-PFDA	Linear	y = 10451.754299 * x	0.000000
T PFDA	Linear	y = 0.990315 * x	0.999647
S 13C2-8:2FTS	Linear	y = 3875.533883 * x	0.000000
T PFDS	Linear	y = 0.030988 * x	0.999580
S 13C7-PFUnDA	Linear	y = 17382.070785 * x	0.000000

Generated at 3:19 PM on 1/2/2024

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Initial Calibration Summary

Job Number: FC12099
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample: S2Q1691-ICC1691
Lab FileID: 2Q118515.D

Initial Calibration Report

T PFUnDA	Linear	y = 0.746081 * x	0.999536
T 11Cl-PF3OUdS	Linear	y = 0.217692 * x	0.999685
S 13C2-PFDoDA	Linear	y = 17513.105600 * x	0.000000
T PFDoDA	Linear	y = 0.780890 * x	0.999711
T PFTrDA	Linear	y = 0.891346 * x	0.999791
S 13C2-PFTeDA	Linear	y = 13292.631376 * x	0.000000
T PFTeDA	Linear	y = 1.088311 * x	0.999789

(RedFont and #) = Outlier Flag; (I) = Internal Standard; (T) = Target; (S) = Surrogate; (M) = Matrix Spike

Initial Calibration Verification

Job Number: FC12099
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample: S2Q1691-ICV1691
Lab FileID: 2Q118519.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\010224_ID_S2Q1691\s2q1691.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\010224_ID_S2Q1691\2q118510.d
2:D:\MassHunter\Data\010224_ID_S2Q1691\2q118511.d
3:D:\MassHunter\Data\010224_ID_S2Q1691\2q118512.d
4:D:\MassHunter\Data\010224_ID_S2Q1691\2q118513.d
5:D:\MassHunter\Data\010224_ID_S2Q1691\2q118514.d
6:D:\MassHunter\Data\010224_ID_S2Q1691\2q118515.d
7:D:\MassHunter\Data\010224_ID_S2Q1691\2q118516.d
8:D:\MassHunter\Data\010224_ID_S2Q1691\2q118517.d

Data File: 2q118519
Type : QC
Level : 6

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	10.000	10.874	8.7	108.7
13C2-6:2FTS	10.000	10.300	3.0	103.0
13C2-8:2FTS	10.000	10.941	9.4	109.4
13C2-PFDoDA	10.000	10.476	4.8	104.8
M5-EtFOSAA	---	--ISTD--		
13C2-PFTeDA	10.000	10.502	5.0	105.0
13C3-PFBS	10.000	10.396	4.0	104.0
13C3-PFHxS	10.000	9.772	-2.3	97.7
13C4-PFBA	10.000	10.330	3.3	103.3
13C4-PFHpA	10.000	10.440	4.4	104.4
d5-EtFOSAA	10.000	10.380	3.8	103.8
13C5-PFHxA	10.000	10.427	4.3	104.3
13C5-PFPeA	10.000	10.387	3.9	103.9
13C6-PFDA	10.000	10.421	4.2	104.2
13C7-PFUnDA	10.000	10.308	3.1	103.1
13C8-FOSA	10.000	10.553	5.5	105.5
13C8-PFOA	10.000	10.300	3.0	103.0
13C8-PFOS	10.000	10.003	0.0	100.0
13C9-PFNA	10.000	10.162	1.6	101.6
4:2FTS	20.000	19.592	-2.0	98.0
6:2FTS	20.000	20.586	2.9	102.9
8:2FTS	20.000	20.766	3.8	103.8
d3-MeFOSAA	10.000	10.488	4.9	104.9
EtFOSAA	20.000	21.635	8.2	108.2
FOSA	20.000	21.647	8.2	108.2
MeFOSAA	20.000	20.344	1.7	101.7
PFBA	20.000	21.952	9.8	109.8
PFBS	20.000	19.106	-4.5	95.5
PFDA	20.000	21.007	5.0	105.0
PFDoDA	20.000	23.569	17.8	117.8
PFDS	20.000	20.443	2.2	102.2
PFHpA	20.000	21.229	6.1	106.1
PFHpS	20.000	21.533	7.7	107.7
PFHxA	20.000	19.636	-1.8	98.2
PFHxS	20.000	18.336	-8.3	91.7
PFNA	20.000	19.976	-0.1	99.9
PFNS	20.000	22.242	11.2	111.2

Initial Calibration Verification

Job Number: FC12099
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample: S2Q1691-ICV1691
Lab FileID: 2Q118519.D

PFOA	20.000	21.394	7.0	107.0
PFOS	20.000	22.520	12.6	112.6
PFPeA	20.000	21.353	6.8	106.8
PFPeS	20.000	19.003	-5.0	95.0
PFTeDA	20.000	19.201	-4.0	96.0
PFTrDA	20.000	22.704	13.5	113.5
PFUnDA	20.000	21.796	9.0	109.0
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11Cl-PF3OUdS	20.000	20.445	2.2	102.2
13C3-HFPO-DA	10.000	10.633	6.3	106.3
9Cl-PF3ONS	20.000	19.821	-0.9	99.1
ADONA	20.000	19.337	-3.3	96.7
HFPO-DA	20.000	21.590	8.0	108.0
M3-HFPO-DA	---	--ISTD--		
M3-MeFOSA	---	--ISTD--		
MeFOSA	20.000	0.000	# -100.0	0.0
d3-MeFOSA	10.000	11.120	11.2	111.2
4-PFECHS	20.000	0.000	# -100.0	0.0
FBSA	20.000	20.375	1.9	101.9
FHxSA	20.000	22.439	12.2	112.2

CC Criteria: +/- 30%

Initial Calibration Verification

Job Number: FC12099
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample: S2Q1691-ICV1691
Lab FileID: 2Q118520.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\010224_ID_S2Q1691\s2q1691.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\010224_ID_S2Q1691\2q118510.d
2:D:\MassHunter\Data\010224_ID_S2Q1691\2q118511.d
3:D:\MassHunter\Data\010224_ID_S2Q1691\2q118512.d
4:D:\MassHunter\Data\010224_ID_S2Q1691\2q118513.d
5:D:\MassHunter\Data\010224_ID_S2Q1691\2q118514.d
6:D:\MassHunter\Data\010224_ID_S2Q1691\2q118515.d
7:D:\MassHunter\Data\010224_ID_S2Q1691\2q118516.d
8:D:\MassHunter\Data\010224_ID_S2Q1691\2q118517.d

Data File: 2q118520
Type : QC
Level : 6

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	10.000	10.513	5.1	105.1
13C2-6:2FTS	10.000	9.756	-2.4	97.6
13C2-8:2FTS	10.000	10.383	3.8	103.8
13C2-PFDoDA	10.000	10.121	1.2	101.2
M5-EtFOSAA	---	--ISTD--		
13C2-PFTeDA	10.000	10.174	1.7	101.7
13C3-PFBS	10.000	10.188	1.9	101.9
13C3-PFHxS	10.000	9.578	-4.2	95.8
13C4-PFBA	10.000	10.006	0.1	100.1
13C4-PFHpA	10.000	9.957	-0.4	99.6
d5-EtFOSAA	10.000	10.066	0.7	100.7
13C5-PFHxA	10.000	10.092	0.9	100.9
13C5-PFPeA	10.000	9.942	-0.6	99.4
13C6-PFDA	10.000	9.942	-0.6	99.4
13C7-PFUnDA	10.000	9.973	-0.3	99.7
13C8-FOSA	10.000	9.956	-0.4	99.6
13C8-PFOA	10.000	9.846	-1.5	98.5
13C8-PFOS	10.000	9.509	-4.9	95.1
13C9-PFNA	10.000	9.717	-2.8	97.2
4:2FTS	20.000	19.046	-4.8	95.2
6:2FTS	20.000	19.002	-5.0	95.0
8:2FTS	20.000	18.819	-5.9	94.1
d3-MeFOSAA	10.000	9.845	-1.5	98.5
EtFOSAA	20.000	16.829	-15.9	84.1
FOSA	20.000	19.174	-4.1	95.9
MeFOSAA	20.000	18.281	-8.6	91.4
PFBA	20.000	19.144	-4.3	95.7
PFBS	20.000	18.077	-9.6	90.4
PFDA	20.000	18.212	-8.9	91.1
PFDoDA	20.000	21.043	5.2	105.2
PFDS	20.000	18.987	-5.1	94.9
PFHpA	20.000	16.796	-16.0	84.0
PFHpS	20.000	19.303	-3.5	96.5
PFHxA	20.000	17.459	-12.7	87.3
PFHxS	20.000	18.795	-6.0	94.0
PFNA	20.000	18.474	-7.6	92.4
PFNS	20.000	0.000	# -100.0	0.0

Initial Calibration Verification

Job Number: FC12099
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample: S2Q1691-ICV1691
Lab FileID: 2Q118520.D

PFOA	20.000	18.229	-8.9	91.1
PFOS	20.000	20.485	2.4	102.4
PFPeA	20.000	19.030	-4.9	95.1
PFPeS	20.000	18.068	-9.7	90.3
PFTeDA	20.000	17.731	-11.3	88.7
PFTrDA	20.000	21.458	7.3	107.3
PFUnDA	20.000	20.186	0.9	100.9
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11Cl-PF3OUdS	20.000	0.000	# -100.0	0.0
13C3-HFPO-DA	10.000	10.240	2.4	102.4
9Cl-PF3ONS	20.000	0.000	# -100.0	0.0
ADONA	20.000	0.000	# -100.0	0.0
HFPO-DA	20.000	0.000	# -100.0	0.0
M3-HFPO-DA	---	--ISTD--		
M3-MeFOSA	---	--ISTD--		
MeFOSA	20.000	20.650	3.2	103.2
d3-MeFOSA	10.000	10.057	0.6	100.6
4-PFECHS	20.000	0.000	# -100.0	0.0
FBSA	20.000	0.000	# -100.0	0.0
FHxSA	20.000	0.000	# -100.0	0.0

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FC12099
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample: S2Q1693-CC1691
Lab FileID: 2Q118602.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\010424_ID_S2Q1693\s2q1693.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\010224_ID_S2Q1691\2q118510.d
2:D:\MassHunter\Data\010224_ID_S2Q1691\2q118511.d
3:D:\MassHunter\Data\010224_ID_S2Q1691\2q118512.d
4:D:\MassHunter\Data\010224_ID_S2Q1691\2q118513.d
5:D:\MassHunter\Data\010224_ID_S2Q1691\2q118514.d
6:D:\MassHunter\Data\010224_ID_S2Q1691\2q118515.d
7:D:\MassHunter\Data\010224_ID_S2Q1691\2q118516.d
8:D:\MassHunter\Data\010224_ID_S2Q1691\2q118517.d

Data File: 2q118602
Type : QC
Level : 6

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	10.000	11.658	16.6	116.6
13C2-6:2FTS	10.000	10.807	8.1	108.1
13C2-8:2FTS	10.000	11.082	10.8	110.8
13C2-PFDoDA	10.000	11.039	10.4	110.4
M5-EtFOSAA	---	--ISTD--		
13C2-PFTeDA	10.000	11.219	12.2	112.2
13C3-PFBS	10.000	10.729	7.3	107.3
13C3-PFHxS	10.000	10.585	5.8	105.8
13C4-PFBA	10.000	10.992	9.9	109.9
13C4-PFHpA	10.000	11.164	11.6	111.6
d5-EtFOSAA	10.000	11.503	15.0	115.0
13C5-PFHxA	10.000	11.100	11.0	111.0
13C5-PFPeA	10.000	11.056	10.6	110.6
13C6-PFDA	10.000	10.981	9.8	109.8
13C7-PFUnDA	10.000	11.082	10.8	110.8
13C8-FOSA	10.000	11.212	12.1	112.1
13C8-PFOA	10.000	11.067	10.7	110.7
13C8-PFOS	10.000	10.978	9.8	109.8
13C9-PFNA	10.000	10.818	8.2	108.2
4:2FTS	20.000	18.627	-6.9	93.1
6:2FTS	20.000	19.701	-1.5	98.5
8:2FTS	20.000	18.900	-5.5	94.5
d3-MeFOSAA	10.000	11.690	16.9	116.9
EtFOSAA	20.000	18.715	-6.4	93.6
FOSA	20.000	18.326	-8.4	91.6
MeFOSAA	20.000	18.920	-5.4	94.6
PFBA	20.000	18.797	-6.0	94.0
PFBS	20.000	18.728	-6.4	93.6
PFDA	20.000	18.414	-7.9	92.1
PFDoDA	20.000	18.678	-6.6	93.4
PFDS	20.000	18.810	-6.0	94.0
PFHpA	20.000	17.864	-10.7	89.3
PFHpS	20.000	18.888	-5.6	94.4
PFHxA	20.000	18.214	-8.9	91.1
PFHxS	20.000	18.387	-8.1	91.9
PFNA	20.000	18.721	-6.4	93.6
PFNS	20.000	18.646	-6.8	93.2

Continuing Calibration Summary

Job Number: FC12099
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample: S2Q1693-CC1691
Lab FileID: 2Q118602.D

PFOA	20.000	18.221	-8.9	91.1
PFOS	20.000	19.135	-4.3	95.7
PFPeA	20.000	18.135	-9.3	90.7
PFPeS	20.000	19.090	-4.6	95.4
PFTeDA	20.000	18.615	-6.9	93.1
PFTrDA	20.000	18.978	-5.1	94.9
PFUnDA	20.000	18.251	-8.7	91.3
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11Cl-PF3OUdS	20.000	18.370	-8.1	91.9
13C3-HFPO-DA	10.000	11.114	11.1	111.1
9Cl-PF3ONS	20.000	18.182	-9.1	90.9
ADONA	20.000	17.567	-12.2	87.8
HFPO-DA	20.000	19.456	-2.7	97.3
M3-HFPO-DA	---	--ISTD--		
M3-MeFOSA	---	--ISTD--		
MeFOSA	20.000	18.063	-9.7	90.3
d3-MeFOSA	10.000	11.332	13.3	113.3
4-PFECHS	20.000	17.517	-12.4	87.6
FBSA	20.000	17.068	-14.7	85.3
FHxSA	20.000	18.103	-9.5	90.5

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FC12099
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample: S2Q1693-CC1691
Lab FileID: 2Q118603.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\010424_ID_S2Q1693\s2q1693.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\010224_ID_S2Q1691\2q118510.d
2:D:\MassHunter\Data\010224_ID_S2Q1691\2q118511.d
3:D:\MassHunter\Data\010224_ID_S2Q1691\2q118512.d
4:D:\MassHunter\Data\010224_ID_S2Q1691\2q118513.d
5:D:\MassHunter\Data\010224_ID_S2Q1691\2q118514.d
6:D:\MassHunter\Data\010224_ID_S2Q1691\2q118515.d
7:D:\MassHunter\Data\010224_ID_S2Q1691\2q118516.d
8:D:\MassHunter\Data\010224_ID_S2Q1691\2q118517.d

Data File: 2q118603
Type : QC
Level : 2

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	10.000	10.352	3.5	103.5
13C2-6:2FTS	10.000	9.872	-1.3	98.7
13C2-8:2FTS	10.000	9.766	-2.3	97.7
13C2-PFDoDA	10.000	10.662	6.6	106.6
M5-EtFOSAA	---	--ISTD--		
13C2-PFTeDA	10.000	10.942	9.4	109.4
13C3-PFBS	10.000	10.462	4.6	104.6
13C3-PFHxS	10.000	10.228	2.3	102.3
13C4-PFBA	10.000	10.789	7.9	107.9
13C4-PFHpA	10.000	10.892	8.9	108.9
d5-EtFOSAA	10.000	11.262	12.6	112.6
13C5-PFHxA	10.000	10.724	7.2	107.2
13C5-PFPeA	10.000	10.726	7.3	107.3
13C6-PFDA	10.000	10.898	9.0	109.0
13C7-PFUnDA	10.000	10.809	8.1	108.1
13C8-FOSA	10.000	11.497	15.0	115.0
13C8-PFOA	10.000	10.903	9.0	109.0
13C8-PFOS	10.000	10.553	5.5	105.5
13C9-PFNA	10.000	10.733	7.3	107.3
4:2FTS	1.000	0.956	-4.4	95.6
6:2FTS	1.000	1.043	4.3	104.3
8:2FTS	1.000	0.925	-7.5	92.5
d3-MeFOSAA	10.000	11.465	14.7	114.7
EtFOSAA	1.000	1.025	2.5	102.5
FOSA	1.000	0.867	-13.3	86.7
MeFOSAA	1.000	0.959	-4.1	95.9
PFBA	1.000	0.893	-10.7	89.3
PFBS	1.000	0.898	-10.2	89.8
PFDA	1.000	0.862	-13.8	86.2
PFDoDA	1.000	0.862	-13.8	86.2
PFDS	1.000	0.881	-11.9	88.1
PFHpA	1.000	0.844	-15.6	84.4
PFHpS	1.000	0.883	-11.7	88.3
PFHxA	1.000	0.833	-16.7	83.3
PFHxS	1.000	0.906	-9.4	90.6
PFNA	1.000	0.816	-18.4	81.6
PFNS	1.000	0.846	-15.4	84.6

Continuing Calibration Summary

Job Number: FC12099
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample: S2Q1693-CC1691
Lab FileID: 2Q118603.D

PFOA	1.000	0.847	-15.3	84.7
PFOS	1.000	1.001	0.1	100.1
PFPeA	1.000	0.868	-13.2	86.8
PFPeS	1.000	0.872	-12.8	87.2
PFTeDA	1.000	0.867	-13.3	86.7
PFTrDA	1.000	0.881	-11.9	88.1
PFUnDA	1.000	0.837	-16.3	83.7
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11Cl-PF3OUdS	1.000	0.883	-11.7	88.3
13C3-HFPO-DA	10.000	10.484	4.8	104.8
9Cl-PF3ONS	1.000	0.810	-19.0	81.0
ADONA	1.000	0.805	-19.5	80.5
HFPO-DA	1.000	0.915	-8.5	91.5
M3-HFPO-DA	---	--ISTD--		
M3-MeFOSA	---	--ISTD--		
MeFOSA	1.000	0.827	-17.3	82.7
d3-MeFOSA	10.000	11.475	14.7	114.7
4-PFECHS	1.000	0.824	-17.6	82.4
FBSA	1.000	0.764	-23.6	76.4
FHxSA	1.000	0.818	-18.2	81.8

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FC12099
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample: S2Q1693-CC1691
Lab FileID: 2Q118612.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\010424_ID_S2Q1693\s2q1693.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\010224_ID_S2Q1691\2q118510.d
2:D:\MassHunter\Data\010224_ID_S2Q1691\2q118511.d
3:D:\MassHunter\Data\010224_ID_S2Q1691\2q118512.d
4:D:\MassHunter\Data\010224_ID_S2Q1691\2q118513.d
5:D:\MassHunter\Data\010224_ID_S2Q1691\2q118514.d
6:D:\MassHunter\Data\010224_ID_S2Q1691\2q118515.d
7:D:\MassHunter\Data\010224_ID_S2Q1691\2q118516.d
8:D:\MassHunter\Data\010224_ID_S2Q1691\2q118517.d

Data File: 2q118612
Type : QC
Level : 6

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	10.000	11.706	17.1	117.1
13C2-6:2FTS	10.000	10.860	8.6	108.6
13C2-8:2FTS	10.000	11.331	13.3	113.3
13C2-PFDoDA	10.000	11.201	12.0	112.0
M5-EtFOSAA	---	--ISTD--		
13C2-PFTeDA	10.000	11.388	13.9	113.9
13C3-PFBS	10.000	10.662	6.6	106.6
13C3-PFHxS	10.000	10.655	6.5	106.5
13C4-PFBA	10.000	11.144	11.4	111.4
13C4-PFHpA	10.000	11.101	11.0	111.0
d5-EtFOSAA	10.000	12.032	20.3	120.3
13C5-PFHxA	10.000	11.045	10.4	110.4
13C5-PFPeA	10.000	11.153	11.5	111.5
13C6-PFDA	10.000	11.479	14.8	114.8
13C7-PFUnDA	10.000	11.212	12.1	112.1
13C8-FOSA	10.000	11.646	16.5	116.5
13C8-PFOA	10.000	11.036	10.4	110.4
13C8-PFOS	10.000	11.092	10.9	110.9
13C9-PFNA	10.000	10.957	9.6	109.6
4:2FTS	20.000	18.815	-5.9	94.1
6:2FTS	20.000	19.565	-2.2	97.8
8:2FTS	20.000	18.488	-7.6	92.4
d3-MeFOSAA	10.000	12.128	21.3	121.3
EtFOSAA	20.000	18.813	-5.9	94.1
FOSA	20.000	18.516	-7.4	92.6
MeFOSAA	20.000	18.039	-9.8	90.2
PFBA	20.000	18.658	-6.7	93.3
PFBS	20.000	18.731	-6.3	93.7
PFDA	20.000	17.572	-12.1	87.9
PFDoDA	20.000	18.590	-7.0	93.0
PFDS	20.000	18.237	-8.8	91.2
PFHpA	20.000	18.127	-9.4	90.6
PFHpS	20.000	18.592	-7.0	93.0
PFHxA	20.000	18.063	-9.7	90.3
PFHxS	20.000	17.903	-10.5	89.5
PFNA	20.000	18.137	-9.3	90.7
PFNS	20.000	18.894	-5.5	94.5

Continuing Calibration Summary

Job Number: FC12099
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample: S2Q1693-CC1691
Lab FileID: 2Q118612.D

PFOA	20.000	18.169	-9.2	90.8
PFOS	20.000	18.471	-7.6	92.4
PFPeA	20.000	18.107	-9.5	90.5
PFPeS	20.000	19.030	-4.8	95.2
PFTeDA	20.000	18.734	-6.3	93.7
PFTrDA	20.000	18.864	-5.7	94.3
PFUnDA	20.000	18.126	-9.4	90.6
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11Cl-PF3OUdS	20.000	18.196	-9.0	91.0
13C3-HFPO-DA	10.000	10.621	6.2	106.2
9Cl-PF3ONS	20.000	17.313	-13.4	86.6
ADONA	20.000	17.527	-12.4	87.6
HFPO-DA	20.000	19.232	-3.8	96.2
M3-HFPO-DA	---	--ISTD--		
M3-MeFOSA	---	--ISTD--		
MeFOSA	20.000	18.215	-8.9	91.1
d3-MeFOSA	10.000	11.949	19.5	119.5
4-PFECHS	20.000	17.224	-13.9	86.1
FBSA	20.000	16.928	-15.4	84.6
FHxSA	20.000	17.707	-11.5	88.5

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FC12099
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample: S2Q1693-CC1691
Lab FileID: 2Q118624.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\010424_ID_S2Q1693\s2q1693.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\010224_ID_S2Q1691\2q118510.d
2:D:\MassHunter\Data\010224_ID_S2Q1691\2q118511.d
3:D:\MassHunter\Data\010224_ID_S2Q1691\2q118512.d
4:D:\MassHunter\Data\010224_ID_S2Q1691\2q118513.d
5:D:\MassHunter\Data\010224_ID_S2Q1691\2q118514.d
6:D:\MassHunter\Data\010224_ID_S2Q1691\2q118515.d
7:D:\MassHunter\Data\010224_ID_S2Q1691\2q118516.d
8:D:\MassHunter\Data\010224_ID_S2Q1691\2q118517.d

Data File: 2q118624
Type : QC
Level : 6

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	10.000	12.277	22.8	122.8
13C2-6:2FTS	10.000	11.368	13.7	113.7
13C2-8:2FTS	10.000	11.577	15.8	115.8
13C2-PFDoDA	10.000	11.445	14.5	114.5
M5-EtFOSAA	---	--ISTD--		
13C2-PFTeDA	10.000	11.919	19.2	119.2
13C3-PFBS	10.000	10.959	9.6	109.6
13C3-PFHxS	10.000	11.129	11.3	111.3
13C4-PFBA	10.000	11.474	14.7	114.7
13C4-PFHpA	10.000	11.313	13.1	113.1
d5-EtFOSAA	10.000	12.483	24.8	124.8
13C5-PFHxA	10.000	11.543	15.4	115.4
13C5-PFPeA	10.000	11.448	14.5	114.5
13C6-PFDA	10.000	11.823	18.2	118.2
13C7-PFUnDA	10.000	11.537	15.4	115.4
13C8-FOSA	10.000	12.049	20.5	120.5
13C8-PFOA	10.000	11.403	14.0	114.0
13C8-PFOS	10.000	11.022	10.2	110.2
13C9-PFNA	10.000	11.104	11.0	111.0
4:2FTS	20.000	18.636	-6.8	93.2
6:2FTS	20.000	19.268	-3.7	96.3
8:2FTS	20.000	19.054	-4.7	95.3
d3-MeFOSAA	10.000	12.856	28.6	128.6
EtFOSAA	20.000	18.725	-6.4	93.6
FOSA	20.000	18.510	-7.5	92.5
MeFOSAA	20.000	18.159	-9.2	90.8
PFBA	20.000	18.874	-5.6	94.4
PFBS	20.000	18.740	-6.3	93.7
PFDA	20.000	17.536	-12.3	87.7
PFDoDA	20.000	18.699	-6.5	93.5
PFDS	20.000	18.418	-7.9	92.1
PFHpA	20.000	18.325	-8.4	91.6
PFHpS	20.000	17.925	-10.4	89.6
PFHxA	20.000	17.879	-10.6	89.4
PFHxS	20.000	18.031	-9.8	90.2
PFNA	20.000	18.198	-9.0	91.0
PFNS	20.000	19.096	-4.5	95.5

Continuing Calibration Summary

Job Number: FC12099
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample: S2Q1693-CC1691
Lab FileID: 2Q118624.D

PFOA	20.000	17.976	-10.1	89.9
PFOS	20.000	18.975	-5.1	94.9
PFPeA	20.000	18.138	-9.3	90.7
PFPeS	20.000	18.871	-5.6	94.4
PFTeDA	20.000	18.491	-7.5	92.5
PFTrDA	20.000	18.959	-5.2	94.8
PFUnDA	20.000	18.126	-9.4	90.6
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11Cl-PF3OUdS	20.000	18.441	-7.8	92.2
13C3-HFPO-DA	10.000	10.750	7.5	107.5
9Cl-PF3ONS	20.000	17.329	-13.4	86.6
ADONA	20.000	17.638	-11.8	88.2
HFPO-DA	20.000	19.045	-4.8	95.2
M3-HFPO-DA	---	--ISTD--		
M3-MeFOSA	---	--ISTD--		
MeFOSA	20.000	17.549	-12.3	87.7
d3-MeFOSA	10.000	12.691	26.9	126.9
4-PFECHS	20.000	16.651	-16.7	83.3
FBSA	20.000	16.811	-15.9	84.1
FHxSA	20.000	17.790	-11.0	89.0

CC Criteria: +/- 30%

Initial Calibration Summary

Job Number: FC12099
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample: 5Q375-ICC375
Lab FileID: 5Q23913.D

Initial Calibration Report

Method Path	D:\MassHunter\Methods
Method File	ID_122823_S5Q375.quantmethod.xml
Batch Name	D:\MassHunter\Data\122823_ID_S5Q375\QuantResults\s5q375.batch.bin
Last Calib Update	12/28/2023 5:36:01 PM

Level Name	Calibration Files	Acq. Date-Time	Level Last Update Time
1	D:\MassHunter\Data\122823_ID_S5Q375\5Q23908.d	12/28/2023 2:33:55 PM	12/28/2023 5:36:01 PM
2	D:\MassHunter\Data\122823_ID_S5Q375\5Q23909.d	12/28/2023 2:50:26 PM	12/28/2023 5:36:01 PM
3	D:\MassHunter\Data\122823_ID_S5Q375\5Q23910.d	12/28/2023 3:06:59 PM	12/28/2023 5:36:01 PM
4	D:\MassHunter\Data\122823_ID_S5Q375\5Q23911.d	12/28/2023 3:23:31 PM	12/28/2023 5:36:01 PM
5	D:\MassHunter\Data\122823_ID_S5Q375\5Q23912.d	12/28/2023 3:40:03 PM	12/28/2023 5:36:01 PM
6	D:\MassHunter\Data\122823_ID_S5Q375\5Q23913.d	12/28/2023 3:56:35 PM	12/28/2023 5:36:01 PM
7	D:\MassHunter\Data\122823_ID_S5Q375\5Q23914.d	12/28/2023 4:13:07 PM	12/28/2023 5:36:01 PM
8	D:\MassHunter\Data\122823_ID_S5Q375\5Q23915.d	12/28/2023 4:29:42 PM	12/28/2023 5:36:01 PM

Compound	Curve Fit	1	2	3	4	5	6	7	8	Avg RF	%RSD
S 13C4-PFBA	Linear	4614	4813	4720	4732	4768	4788	4685	4678	4725	1.375
S 13C5-PFPeA	Linear	7805	8020	7688	7908	7786	8057	7807	7995	7883	1.670
S 13C3-PFBS	Linear	951.3	986.8	961.7	966.1	988.7	980.7	970.2	961.4	970.8	1.376
S 13C2-4:2FTS	Linear	3689	3819	3769	3846	4051	4211	4764		4021	9.274
S 13C5-PFHxA	Linear	11694	12154	11904	12253	11896	12091	11812	11808	11951	1.621
S 13C3-HFPO-DA	Linear	661.6	648.5	630.0	633.7	682.9	632.1	638.7	638.3	645.7	2.824
S 13C4-PFHpA	Linear	12069	12295	11999	12245	12176	12117	11827	11488	12027	2.183
S 13C3-PFHxS	Linear	1170	1181	1176	1195	1200	1200	1161	1157	1180	1.449
S 13C8-PFOA	Linear	16278	16742	16405	16435	16954	17020	16408	16198	16555	1.874
S 13C2-6:2FTS	Linear	6531	6718	6577	6762	7162	7593	8267		7087	9.045
S 13C8-FOSA	Linear	3979	4281	4135	4192	4219	4221	3836	3557	4053	6.131
S d3-MeFOSA	Linear	1392	1408	1379	1454	1516	1398	1362	1310	1402	4.397
S 13C8-PFOS	Linear	1597	1569	1560	1561	1662	1578	1544	1503	1572	2.889
S d3-MeFOSAA	Linear	3066	3060	3155	3134	3171	3080	2945	2783	3049	4.221
S 13C9-PFNA	Linear	16443	17114	16471	16687	17277	16743	16224	15881	16605	2.742
S d5-EtFOSAA	Linear	2701	2816	2742	2765	2776	2874	2674	2607	2745	3.054
S 13C6-PFDA	Linear	16639	17458	17049	17001	17179	17264	16321	15785	16837	3.307
S 13C2-8:2FTS	Linear	6377	6664	6550	6849	7086	7208	8145		6983	8.445
S 13C7-PFUnDA	Linear	23208	23963	23557	23623	23562	23941	22680	21924	23307	2.980
S 13C2-PFDoDA	Linear	20836	21112	21017	20907	21079	21325	20447	20074	20850	1.938
S 13C2-PFTeDA	Linear	17226	17834	17412	17848	18160	18235	17787	17443	17743	2.025
I M4-PFBA				---------- ISTD ----------							
T PFBA	Linear	0.8110	0.7536	0.8981	0.8815	0.9110	0.8592	0.9199	0.9309	0.8707	6.993
I M5-PFPeA				---------- ISTD ----------							
T PFPeA	Linear	0.8805	0.7718	0.9446	0.9213	0.9632	0.9030	0.9709	0.9723	0.9160	7.324
I M5-PFHxA				---------- ISTD ----------							
T FBSA	Linear	0.3155	0.2580	0.3373	0.3262	0.3479	0.3276	0.3419	0.3328	0.3234	8.736
T PFHxA	Linear	0.8270	0.7807	0.9088	0.9016	0.9588	0.8921	0.9529	0.9745	0.8995	7.457

Generated at 5:36 PM on 12/28/2023

Initial Calibration Summary

Job Number: FC12099
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample: S5Q375-ICC375
Lab FileID: 5Q23913.D

Initial Calibration Report

Compound	Curve Fit	1	2	3	4	5	6	7	8	Avg RF	%RSD
I M4-PFHpA						ISTD					
T PFHpA	Linear	1.0074	0.9000	1.1335	1.0719	1.1428	1.0818	1.1504	1.1489	1.0796	8.156
I M8-PFOA						ISTD					
T FHxSA	Quadratic	0.2523	0.2056	0.2630	0.2596	0.2606	0.2404	0.2490	0.2253	0.2445	8.192
T 4-PFECHS	Linear		0.4167	0.4255	0.4058	0.4216	0.3950	0.4311	0.4367	0.4189	3.469
T PFOA	Linear	0.8440	0.7651	0.9431	0.9528	0.9673	0.9252	0.9853	0.9824	0.9206	8.393
I M9-PFNA						ISTD					
T PFNA	Linear	0.8056	0.7450	0.8787	0.8880	0.9013	0.8657	0.9137	0.9184	0.8646	6.938
I M6-PFDA						ISTD					
T 9Cl-PF3ONS	Linear	0.6298	0.5396	0.6635	0.6840	0.7214	0.6765	0.7084	0.7492	0.6715	9.627
T PFDA	Linear	0.8584	0.7837	0.8913	0.8961	0.9460	0.8869	0.9404	0.9552	0.8947	6.280
I M7-PFUnDA						ISTD					
T PFDS	Linear	0.1128	0.1112	0.1290	0.1255	0.1308	0.1228	0.1344	0.1377	0.1255	7.628
T PFUnDA	Linear	0.7797	0.7390	0.8440	0.8503	0.9012	0.8358	0.9048	0.9043	0.8449	7.196
I M2-PFDoDA						ISTD					
T 11Cl-PF3OUdS	Linear	0.5634	0.4902	0.6175	0.6187	0.6427	0.6025	0.6505	0.6669	0.6066	9.357
T PFDoDA	Linear	0.7675	0.7154	0.8122	0.8098	0.8533	0.8076	0.8599	0.8603	0.8107	6.194
T PFTrDA	Linear	0.7126	0.6752	0.7860	0.8018	0.8349	0.7873	0.8565	0.8634	0.7897	8.449
I M2-PFTeDA						ISTD					
T PFTeDA	Linear	0.8708	0.8362	0.9830	0.9433	1.0061	0.9329	0.9982	1.0175	0.9485	6.979
I M8-FOSA						ISTD					
T FOSA	Linear	0.7649	0.6787	0.8606	0.8772	0.9296	0.8402	0.9179	0.9205	0.8487	10.294
I M3-PFBS						ISTD					
T PFBS	Linear	2.2081	1.9731	2.4418	2.4167	2.4439	2.3390	2.4660	2.4839	2.3466	7.473
T PFPeS	Linear	1.6259	1.4529	1.7423	1.6835	1.7133	1.6295	1.7151	1.7541	1.6646	5.871
I M3-PFHxS						ISTD					
T PFHxS	Linear	1.7627	1.4681	1.7919	1.7373	1.8423	1.7251	1.8485	1.8627	1.7548	7.237
T ADONA	Linear	14.16	12.77	15.89	15.10	16.26	15.34	16.70	16.84	15.38	8.956
I M8-PFOS						ISTD					
T PFHpS	Linear	1.1272	1.1894	1.3299	1.3591	1.3307	1.3067	1.4057	1.3984	1.3059	7.550
T PFOS	Linear	1.3631	1.3913	1.7087	1.7007	1.6739	1.6360	1.7398	1.7882	1.6252	9.819
T PFNS	Linear	0.9400	0.9498	1.0998	1.1469	1.1331	1.1303	1.1539	1.1576	1.0889	8.329
I M2-4:2FTS						ISTD					
T 4:2FTS	Avg RF	0.9895	0.8543	1.0749	1.0731	1.0589	0.9658	0.8775		0.9849	9.299
I M2-6:2FTS						ISTD					
T 6:2FTS	Avg RF	0.9178	0.8692	0.9756	0.9837	0.9740	0.8646	0.8200		0.9150	7.131

Generated at 5:36 PM on 12/28/2023

8.6.8

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FC12099

Initial Calibration Summary

Job Number: FC12099
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample: S5Q375-ICC375
Lab FileID: 5Q23913.D

Initial Calibration Report

Compound	Curve Fit	1	2	3	4	5	6	7	8	Avg RF	%RSD
I M2-8:2FTS						ISTD					
T 8:2FTS	Avg RF	0.8544	0.7918	0.9630	0.9277	0.9307	0.8623	0.7857		0.8736	7.972
I M3-MeFOSAA						ISTD					
T MeFOSAA	Linear	0.7126	0.6590	0.6813	0.7118	0.7683	0.7405	0.7751	0.7837	0.7290	6.250
I M3-HFPO-DA						ISTD					
T HFPO-DA	Linear	3.8690	3.5625	4.4476	4.3814	4.1482	4.3306	4.4454	4.5883	4.2216	8.192
I M3-MeFOSA						ISTD					
T MeFOSA	Linear	0.6818	0.6812	0.8680	0.8179	0.8327	0.8274	0.8604	0.8682	0.8047	9.737
I M5-EtFOSAA						ISTD					
T EtFOSAA	Linear	0.7687	0.6253	0.7610	0.7916	0.8042	0.7647	0.8073	0.8203	0.7679	8.022

(RedFont and #) = Outlier Flag; (I) = Internal Standard; (T) = Target; (S) = Surrogate; (M) = Matrix Spike

Generated at 5:36 PM on 12/28/2023

Initial Calibration Summary

Job Number: FC12099
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample: S5Q375-ICC375
Lab FileID: 5Q23913.D

Initial Calibration Report

Compounds with Curve fitting not using Avg Response Factor:

Compound	Curve Fit	Curve Fit Formula	Curve Fit R2
S 13C4-PFBA	Linear	y = 4724.745755 * x	0.000000
T PFBA	Linear	y = 0.926322 * x	0.999702
S 13C5-PFPeA	Linear	y = 7883.265461 * x	0.000000
T PFPeA	Linear	y = 0.969737 * x	0.999759
T PFBS	Linear	y = 2.475497 * x	0.999834
S 13C3-PFBS	Linear	y = 970.846617 * x	0.000000
T FBSA	Linear	y = 0.334479 * x	0.999779
S 13C2-4:2FTS	Linear	y = 4021.267813 * x	0.000000
S 13C5-PFHxA	Linear	y = 11951.481924 * x	0.000000
T PFHxA	Linear	y = 0.967507 * x	0.999575
T PFPeS	Linear	y = 1.742317 * x	0.999674
T HFPO-DA	Linear	y = 4.549021 * x	0.999561
S 13C3-HFPO-DA	Linear	y = 645.721995 * x	0.000000
T FHxSA	Quadratic	y = -0.003826 * x ^ 2 + 0.263982 * x	0.999667
S 13C4-PFHpA	Linear	y = 12027.088585 * x	0.000000
T PFHpA	Linear	y = 1.146950 * x	0.999826
S 13C3-PFHxS	Linear	y = 1180.138067 * x	0.000000
T PFHxS	Linear	y = 1.855274 * x	0.999733
T ADONA	Linear	y = 16.757776 * x	0.999597
T 4-PFECHS	Linear	y = 0.434180 * x	0.999516
T PFHpS	Linear	y = 1.396359 * x	0.999762
S 13C8-PFOA	Linear	y = 16555.133677 * x	0.000000
T PFOA	Linear	y = 0.980994 * x	0.999831
S 13C2-6:2FTS	Linear	y = 7087.093792 * x	0.000000
S 13C8-FOSA	Linear	y = 4052.572289 * x	0.000000
T FOSA	Linear	y = 0.917492 * x	0.999643
S d3-MeFOSA	Linear	y = 1402.218451 * x	0.000000
T MeFOSA	Linear	y = 0.865033 * x	0.999858
S 13C8-PFOS	Linear	y = 1571.729513 * x	0.000000
T PFOS	Linear	y = 1.773103 * x	0.999494
S d3-MeFOSAA	Linear	y = 3049.062128 * x	0.000000
T MeFOSAA	Linear	y = 0.780445 * x	0.999810
S 13C9-PFNA	Linear	y = 16604.986831 * x	0.000000
T PFNA	Linear	y = 0.915666 * x	0.999840
S d5-EtFOSAA	Linear	y = 2744.574478 * x	0.000000
T EtFOSAA	Linear	y = 0.815899 * x	0.999739
T 9Cl-PF3ONS	Linear	y = 0.738762 * x	0.998931
T PFNS	Linear	y = 1.155771 * x	0.999964
S 13C6-PFDA	Linear	y = 16836.887124 * x	0.000000
T PFDA	Linear	y = 0.950023 * x	0.999718
S 13C2-8:2FTS	Linear	y = 6982.895065 * x	0.000000
T PFDS	Linear	y = 0.136530 * x	0.999339
S 13C7-PFUnDA	Linear	y = 23307.107172 * x	0.000000

Generated at 5:36 PM on 12/28/2023

Initial Calibration Summary

Job Number: FC12099
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample: S5Q375-ICC375
Lab FileID: 5Q23913.D

Initial Calibration Report

T PFUnDA	Linear	y = 0.902162 * x	0.999725
T 11Cl-PF3OUdS	Linear	y = 0.661433 * x	0.999450
S 13C2-PFDoDA	Linear	y = 20849.630321 * x	0.000000
T PFDoDA	Linear	y = 0.858392 * x	0.999817
T PFTrDA	Linear	y = 0.859369 * x	0.999616
S 13C2-PFTeDA	Linear	y = 17743.121497 * x	0.000000
T PFTeDA	Linear	y = 1.010973 * x	0.999614

(RedFont and #) = Outlier Flag; (I) = Internal Standard; (T) = Target; (S) = Surrogate; (M) = Matrix Spike

Generated at 5:36 PM on 12/28/2023

Initial Calibration Verification

Job Number: FC12099
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample: S5Q375-ICV375
Lab FileID: 5Q23917.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\122823_ID_S5Q375\s5q375.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\122823_ID_S5Q375\5Q23908.d
2:D:\MassHunter\Data\122823_ID_S5Q375\5Q23909.d
3:D:\MassHunter\Data\122823_ID_S5Q375\5Q23910.d
4:D:\MassHunter\Data\122823_ID_S5Q375\5Q23911.d
5:D:\MassHunter\Data\122823_ID_S5Q375\5Q23912.d
6:D:\MassHunter\Data\122823_ID_S5Q375\5Q23913.d
7:D:\MassHunter\Data\122823_ID_S5Q375\5Q23914.d
8:D:\MassHunter\Data\122823_ID_S5Q375\5Q23915.d

Data File: 5Q23917
Type : QC
Level : 6

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	10.000	10.753	7.5	107.5
13C2-6:2FTS	10.000	10.694	6.9	106.9
13C2-8:2FTS	10.000	10.728	7.3	107.3
13C2-PFDoDA	10.000	10.416	4.2	104.2
13C2-PFTeDA	10.000	10.277	2.8	102.8
13C3-PFBS	10.000	10.094	0.9	100.9
13C3-PFHxS	10.000	10.524	5.2	105.2
13C4-PFBA	10.000	10.255	2.5	102.5
13C4-PFHpA	10.000	10.276	2.8	102.8
13C5-PFHxA	10.000	10.477	4.8	104.8
13C5-PFPeA	10.000	10.215	2.2	102.2
13C6-PFDA	10.000	10.639	6.4	106.4
13C7-PFUnDA	10.000	10.348	3.5	103.5
13C8-FOSA	10.000	10.528	5.3	105.3
13C8-PFOA	10.000	10.266	2.7	102.7
13C8-PFOS	10.000	10.242	2.4	102.4
13C9-PFNA	10.000	10.362	3.6	103.6
4:2FTS	20.000	20.093	0.5	100.5
6:2FTS	20.000	19.667	-1.7	98.3
8:2FTS	20.000	20.905	4.5	104.5
d3-MeFOSAA	10.000	10.529	5.3	105.3
EtFOSAA	20.000	20.325	1.6	101.6
FOSA	20.000	21.698	8.5	108.5
MeFOSAA	20.000	20.433	2.2	102.2
PFBA	20.000	21.563	7.8	107.8
PFBS	20.000	18.959	-5.2	94.8
PFDA	20.000	20.514	2.6	102.6
PFDoDA	20.000	23.344	16.7	116.7
PFDS	20.000	19.209	-4.0	96.0
PFHpA	20.000	21.515	7.6	107.6
PFHpS	20.000	20.276	1.4	101.4
PFHxA	20.000	19.396	-3.0	97.0
PFHxS	20.000	18.135	-9.3	90.7
PFNA	20.000	19.736	-1.3	98.7
PFNS	20.000	21.212	6.1	106.1
PFOA	20.000	21.524	7.6	107.6
PFOS	20.000	20.930	4.7	104.7

Initial Calibration Verification

Job Number: FC12099
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample: S5Q375-ICV375
Lab FileID: 5Q23917.D

PFPeA	20.000	21.194	6.0	106.0
PFPeS	20.000	18.969	-5.2	94.8
PFTeDA	20.000	19.137	-4.3	95.7
PFTrDA	20.000	21.642	8.2	108.2
PFUnDA	20.000	22.088	10.4	110.4
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11Cl-PF3OUdS	20.000	19.787	-1.1	98.9
13C3-HFPO-DA	10.000	9.700	-3.0	97.0
9Cl-PF3ONS	20.000	19.032	-4.8	95.2
ADONA	20.000	18.977	-5.1	94.9
HFPO-DA	20.000	21.060	5.3	105.3
M3-HFPO-DA	---	--ISTD--		
d3-MeFOSA	10.000	11.231	12.3	112.3
MeFOSA	20.000	0.000	# -100.0	0.0
M3-MeFOSA	---	--ISTD--		
M5-EtFOSAA	---	--ISTD--		
d5-EtFOSAA	10.000	10.802	8.0	108.0
4-PFECHS	20.000	0.000	# -100.0	0.0
FBSA	20.000	22.325	11.6	111.6
FHxSA	20.000	23.733	18.7	118.7

CC Criteria: +/- 30%

Initial Calibration Verification

Job Number: FC12099
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample: S5Q375-ICV375
Lab FileID: 5Q23918.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\122823_ID_S5Q375\s5q375.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\122823_ID_S5Q375\5Q23908.d
2:D:\MassHunter\Data\122823_ID_S5Q375\5Q23909.d
3:D:\MassHunter\Data\122823_ID_S5Q375\5Q23910.d
4:D:\MassHunter\Data\122823_ID_S5Q375\5Q23911.d
5:D:\MassHunter\Data\122823_ID_S5Q375\5Q23912.d
6:D:\MassHunter\Data\122823_ID_S5Q375\5Q23913.d
7:D:\MassHunter\Data\122823_ID_S5Q375\5Q23914.d
8:D:\MassHunter\Data\122823_ID_S5Q375\5Q23915.d

Data File: 5Q23918
Type : QC
Level : 6

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	10.000	10.665	6.7	106.7
13C2-6:2FTS	10.000	10.728	7.3	107.3
13C2-8:2FTS	10.000	10.713	7.1	107.1
13C2-PFDoDA	10.000	10.293	2.9	102.9
13C2-PFTeDA	10.000	10.288	2.9	102.9
13C3-PFBS	10.000	10.151	1.5	101.5
13C3-PFHxS	10.000	10.123	1.2	101.2
13C4-PFBA	10.000	10.368	3.7	103.7
13C4-PFHpA	10.000	10.223	2.2	102.2
13C5-PFHxA	10.000	10.299	3.0	103.0
13C5-PFPeA	10.000	10.352	3.5	103.5
13C6-PFDA	10.000	10.570	5.7	105.7
13C7-PFUnDA	10.000	10.414	4.1	104.1
13C8-FOSA	10.000	10.783	7.8	107.8
13C8-PFOA	10.000	10.518	5.2	105.2
13C8-PFOS	10.000	10.509	5.1	105.1
13C9-PFNA	10.000	10.361	3.6	103.6
4:2FTS	20.000	19.522	-2.4	97.6
6:2FTS	20.000	18.325	-8.4	91.6
8:2FTS	20.000	19.339	-3.3	96.7
d3-MeFOSAA	10.000	10.126	1.3	101.3
EtFOSAA	20.000	16.197	-19.0	81.0
FOSA	20.000	18.557	-7.2	92.8
MeFOSAA	20.000	17.662	-11.7	88.3
PFBA	20.000	18.900	-5.5	94.5
PFBS	20.000	18.456	-7.7	92.3
PFDA	20.000	17.828	-10.9	89.1
PFDoDA	20.000	21.047	5.2	105.2
PFDS	20.000	17.967	-10.2	89.8
PFHpA	20.000	16.983	-15.1	84.9
PFHpS	20.000	18.459	-7.7	92.3
PFHxA	20.000	17.453	-12.7	87.3
PFHxS	20.000	18.612	-6.9	93.1
PFNA	20.000	18.365	-8.2	91.8
PFNS	20.000	0.000	# -100.0	0.0
PFOA	20.000	18.480	-7.6	92.4
PFOS	20.000	18.481	-7.6	92.4

8.6.10

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Initial Calibration Verification

Job Number: FC12099
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample: S5Q375-ICV375
Lab FileID: 5Q23918.D

PFPeA	20.000	18.719	-6.4	93.6
PFPeS	20.000	18.280	-8.6	91.4
PFTeDA	20.000	17.115	-14.4	85.6
PFTrDA	20.000	20.851	4.3	104.3
PFUnDA	20.000	20.593	3.0	103.0
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11Cl-PF3OUdS	20.000	0.000	# -100.0	0.0
13C3-HFPO-DA	10.000	9.929	-0.7	99.3
9Cl-PF3ONS	20.000	0.000	# -100.0	0.0
ADONA	20.000	0.000	# -100.0	0.0
HFPO-DA	20.000	0.000	# -100.0	0.0
M3-HFPO-DA	---	--ISTD--		
d3-MeFOSA	10.000	10.464	4.6	104.6
MeFOSA	20.000	20.479	2.4	102.4
M3-MeFOSA	---	--ISTD--		
M5-EtFOSAA	---	--ISTD--		
d5-EtFOSAA	10.000	10.756	7.6	107.6
4-PFECHS	20.000	0.000	# -100.0	0.0
FBSA	20.000	0.000	# -100.0	0.0
FHxSA	20.000	0.000	# -100.0	0.0

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FC12099
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample: S5Q375-CC375
Lab FileID: 5Q23920.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\122823_ID_S5Q375\s5q375.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\122823_ID_S5Q375\5Q23908.d
2:D:\MassHunter\Data\122823_ID_S5Q375\5Q23909.d
3:D:\MassHunter\Data\122823_ID_S5Q375\5Q23910.d
4:D:\MassHunter\Data\122823_ID_S5Q375\5Q23911.d
5:D:\MassHunter\Data\122823_ID_S5Q375\5Q23912.d
6:D:\MassHunter\Data\122823_ID_S5Q375\5Q23913.d
7:D:\MassHunter\Data\122823_ID_S5Q375\5Q23914.d
8:D:\MassHunter\Data\122823_ID_S5Q375\5Q23915.d

Data File: 5Q23920
Type : QC
Level : 6

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	10.000	10.405	4.1	104.1
13C2-6:2FTS	10.000	10.550	5.5	105.5
13C2-8:2FTS	10.000	10.684	6.8	106.8
13C2-PFDoDA	10.000	10.214	2.1	102.1
13C2-PFTeDA	10.000	10.342	3.4	103.4
13C3-PFBS	10.000	9.938	-0.6	99.4
13C3-PFHxS	10.000	10.367	3.7	103.7
13C4-PFBA	10.000	10.218	2.2	102.2
13C4-PFHpA	10.000	10.012	0.1	100.1
13C5-PFHxA	10.000	10.045	0.5	100.5
13C5-PFPeA	10.000	10.177	1.8	101.8
13C6-PFDA	10.000	10.486	4.9	104.9
13C7-PFUnDA	10.000	10.244	2.4	102.4
13C8-FOSA	10.000	10.748	7.5	107.5
13C8-PFOA	10.000	10.217	2.2	102.2
13C8-PFOS	10.000	10.428	4.3	104.3
13C9-PFNA	10.000	10.403	4.0	104.0
4:2FTS	20.000	19.544	-2.3	97.7
6:2FTS	20.000	19.501	-2.5	97.5
8:2FTS	20.000	19.278	-3.6	96.4
d3-MeFOSAA	10.000	10.592	5.9	105.9
EtFOSAA	20.000	18.396	-8.0	92.0
FOSA	20.000	18.752	-6.2	93.8
MeFOSAA	20.000	18.800	-6.0	94.0
PFBA	20.000	18.385	-8.1	91.9
PFBS	20.000	18.895	-5.5	94.5
PFDA	20.000	18.476	-7.6	92.4
PFDoDA	20.000	18.804	-6.0	94.0
PFDS	20.000	17.901	-10.5	89.5
PFHpA	20.000	18.724	-6.4	93.6
PFHpS	20.000	17.759	-11.2	88.8
PFHxA	20.000	18.466	-7.7	92.3
PFHxS	20.000	18.192	-9.0	91.0
PFNA	20.000	18.738	-6.3	93.7
PFNS	20.000	18.306	-8.5	91.5
PFOA	20.000	18.784	-6.1	93.9
PFOS	20.000	18.155	-9.2	90.8

8.6.11

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Continuing Calibration Summary

Job Number: FC12099
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample: S5Q375-CC375
Lab FileID: 5Q23920.D

PFPeA	20.000	18.754	-6.2	93.8
PFPeS	20.000	18.832	-5.8	94.2
PFTeDA	20.000	18.727	-6.4	93.6
PFTrDA	20.000	18.286	-8.6	91.4
PFUnDA	20.000	18.502	-7.5	92.5
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11Cl-PF3OUdS	20.000	18.240	-8.8	91.2
13C3-HFPO-DA	10.000	10.379	3.8	103.8
9Cl-PF3ONS	20.000	18.021	-9.9	90.1
ADONA	20.000	18.056	-9.7	90.3
HFPO-DA	20.000	17.451	-12.7	87.3
M3-HFPO-DA	---	--ISTD--		
d3-MeFOSA	10.000	10.712	7.1	107.1
MeFOSA	20.000	19.410	-2.9	97.1
M3-MeFOSA	---	--ISTD--		
M5-EtFOSAA	---	--ISTD--		
d5-EtFOSAA	10.000	10.666	6.7	106.7
4-PFECHS	20.000	18.468	-7.7	92.3
FBSA	20.000	19.631	-1.8	98.2
FHxSA	20.000	19.195	-4.0	96.0

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FC12099
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample: S5Q375-CC375
Lab FileID: 5Q23921.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\122823_ID_S5Q375\s5q375.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\122823_ID_S5Q375\5Q23908.d
2:D:\MassHunter\Data\122823_ID_S5Q375\5Q23909.d
3:D:\MassHunter\Data\122823_ID_S5Q375\5Q23910.d
4:D:\MassHunter\Data\122823_ID_S5Q375\5Q23911.d
5:D:\MassHunter\Data\122823_ID_S5Q375\5Q23912.d
6:D:\MassHunter\Data\122823_ID_S5Q375\5Q23913.d
7:D:\MassHunter\Data\122823_ID_S5Q375\5Q23914.d
8:D:\MassHunter\Data\122823_ID_S5Q375\5Q23915.d

Data File: 5Q23921
Type : QC
Level : 2

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	10.000	9.711	-2.9	97.1
13C2-6:2FTS	10.000	9.701	-3.0	97.0
13C2-8:2FTS	10.000	9.964	-0.4	99.6
13C2-PFDoDA	10.000	10.349	3.5	103.5
13C2-PFTeDA	10.000	10.254	2.5	102.5
13C3-PFBS	10.000	10.220	2.2	102.2
13C3-PFHxS	10.000	10.304	3.0	103.0
13C4-PFBA	10.000	10.154	1.5	101.5
13C4-PFHpA	10.000	10.361	3.6	103.6
13C5-PFHxA	10.000	10.258	2.6	102.6
13C5-PFPeA	10.000	10.168	1.7	101.7
13C6-PFDA	10.000	10.760	7.6	107.6
13C7-PFUnDA	10.000	10.389	3.9	103.9
13C8-FOSA	10.000	11.230	12.3	112.3
13C8-PFOA	10.000	10.323	3.2	103.2
13C8-PFOS	10.000	10.413	4.1	104.1
13C9-PFNA	10.000	10.490	4.9	104.9
4:2FTS	1.000	0.949	-5.1	94.9
6:2FTS	1.000	0.899	-10.1	89.9
8:2FTS	1.000	0.936	-6.4	93.6
d3-MeFOSAA	10.000	10.861	8.6	108.6
EtFOSAA	1.000	0.923	-7.7	92.3
FOSA	1.000	0.773	-22.7	77.3
MeFOSAA	1.000	0.903	-9.7	90.3
PFBA	1.000	0.803	-19.7	80.3
PFBS	1.000	0.808	-19.2	80.8
PFDA	1.000	0.793	-20.7	79.3
PFDoDA	1.000	0.853	-14.7	85.3
PFDS	1.000	0.827	-17.3	82.7
PFHpA	1.000	0.798	-20.2	79.8
PFHpS	1.000	0.835	-16.5	83.5
PFHxA	1.000	0.776	-22.4	77.6
PFHxS	1.000	0.796	-20.4	79.6
PFNA	1.000	0.816	-18.4	81.6
PFNS	1.000	0.796	-20.4	79.6
PFOA	1.000	0.799	-20.1	79.9
PFOS	1.000	0.801	-19.9	80.1

Continuing Calibration Summary

Job Number: FC12099
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample: S5Q375-CC375
Lab FileID: 5Q23921.D

PFPeA	1.000	0.811	-18.9	81.1
PFPeS	1.000	0.752	-24.8	75.2
PFTeDA	1.000	0.835	-16.5	83.5
PFTrDA	1.000	0.803	-19.7	80.3
PFUnDA	1.000	0.819	-18.1	81.9
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11Cl-PF3OUdS	1.000	0.725	-27.5	72.5
13C3-HFPO-DA	10.000	10.026	0.3	100.3
9Cl-PF3ONS	1.000	0.727	-27.3	72.7
ADONA	1.000	0.738	-26.2	73.8
HFPO-DA	1.000	0.727	-27.3	72.7
M3-HFPO-DA	---	--ISTD--		
d3-MeFOSA	10.000	10.864	8.6	108.6
MeFOSA	1.000	0.845	-15.5	84.5
M3-MeFOSA	---	--ISTD--		
M5-EtFOSAA	---	--ISTD--		
d5-EtFOSAA	10.000	10.697	7.0	107.0
4-PFECHS	1.000	0.914	-8.6	91.4
FBSA	1.000	0.808	-19.2	80.8
FHxSA	1.000	0.804	-19.6	80.4

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FC12099
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample: S5Q375-CC375
Lab FileID: 5Q23942.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\122823_ID_S5Q375\s5q375.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\122823_ID_S5Q375\5Q23908.d
2:D:\MassHunter\Data\122823_ID_S5Q375\5Q23909.d
3:D:\MassHunter\Data\122823_ID_S5Q375\5Q23910.d
4:D:\MassHunter\Data\122823_ID_S5Q375\5Q23911.d
5:D:\MassHunter\Data\122823_ID_S5Q375\5Q23912.d
6:D:\MassHunter\Data\122823_ID_S5Q375\5Q23913.d
7:D:\MassHunter\Data\122823_ID_S5Q375\5Q23914.d
8:D:\MassHunter\Data\122823_ID_S5Q375\5Q23915.d

Data File: 5Q23942
Type : QC
Level : 6

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	10.000	11.201	12.0	112.0
13C2-6:2FTS	10.000	10.974	9.7	109.7
13C2-8:2FTS	10.000	10.706	7.1	107.1
13C2-PFDoDA	10.000	10.581	5.8	105.8
13C2-PFTeDA	10.000	10.478	4.8	104.8
13C3-PFBS	10.000	10.689	6.9	106.9
13C3-PFHxS	10.000	10.411	4.1	104.1
13C4-PFBA	10.000	10.994	9.9	109.9
13C4-PFHpA	10.000	10.353	3.5	103.5
13C5-PFHxA	10.000	10.853	8.5	108.5
13C5-PFPeA	10.000	10.698	7.0	107.0
13C6-PFDA	10.000	10.573	5.7	105.7
13C7-PFUnDA	10.000	10.594	5.9	105.9
13C8-FOSA	10.000	11.320	13.2	113.2
13C8-PFOA	10.000	10.581	5.8	105.8
13C8-PFOS	10.000	10.477	4.8	104.8
13C9-PFNA	10.000	10.663	6.6	106.6
4:2FTS	20.000	19.134	-4.3	95.7
6:2FTS	20.000	19.016	-4.9	95.1
8:2FTS	20.000	19.448	-2.8	97.2
d3-MeFOSAA	10.000	11.201	12.0	112.0
EtFOSAA	20.000	18.725	-6.4	93.6
FOSA	20.000	18.351	-8.2	91.8
MeFOSAA	20.000	18.566	-7.2	92.8
PFBA	20.000	18.468	-7.7	92.3
PFBS	20.000	18.535	-7.3	92.7
PFDA	20.000	18.667	-6.7	93.3
PFDoDA	20.000	18.820	-5.9	94.1
PFDS	20.000	17.639	-11.8	88.2
PFHpA	20.000	18.866	-5.7	94.3
PFHpS	20.000	18.087	-9.6	90.4
PFHxA	20.000	18.323	-8.4	91.6
PFHxS	20.000	18.683	-6.6	93.4
PFNA	20.000	19.084	-4.6	95.4
PFNS	20.000	18.742	-6.3	93.7
PFOA	20.000	18.414	-7.9	92.1
PFOS	20.000	18.227	-8.9	91.1

8.6.13

8

Continuing Calibration Summary

Job Number: FC12099
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample: S5Q375-CC375
Lab FileID: 5Q23942.D

PFPeA	20.000	18.775	-6.1	93.9
PFPeS	20.000	17.872	-10.6	89.4
PFTeDA	20.000	18.994	-5.0	95.0
PFTrDA	20.000	18.100	-9.5	90.5
PFUnDA	20.000	18.702	-6.5	93.5
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11Cl-PF3OUdS	20.000	18.019	-9.9	90.1
13C3-HFPO-DA	10.000	10.004	0.0	100.0
9Cl-PF3ONS	20.000	17.818	-10.9	89.1
ADONA	20.000	18.580	-7.1	92.9
HFPO-DA	20.000	17.763	-11.2	88.8
M3-HFPO-DA	---	--ISTD--		
d3-MeFOSA	10.000	11.481	14.8	114.8
MeFOSA	20.000	18.836	-5.8	94.2
M3-MeFOSA	---	--ISTD--		
M5-EtFOSAA	---	--ISTD--		
d5-EtFOSAA	10.000	11.243	12.4	112.4
4-PFECHS	20.000	18.104	-9.5	90.5
FBSA	20.000	19.498	-2.5	97.5
FHxSA	20.000	19.300	-3.5	96.5

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FC12099
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample: S5Q375-CC375
Lab FileID: 5Q23943.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\122823_ID_S5Q375\s5q375.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\122823_ID_S5Q375\5Q23908.d
2:D:\MassHunter\Data\122823_ID_S5Q375\5Q23909.d
3:D:\MassHunter\Data\122823_ID_S5Q375\5Q23910.d
4:D:\MassHunter\Data\122823_ID_S5Q375\5Q23911.d
5:D:\MassHunter\Data\122823_ID_S5Q375\5Q23912.d
6:D:\MassHunter\Data\122823_ID_S5Q375\5Q23913.d
7:D:\MassHunter\Data\122823_ID_S5Q375\5Q23914.d
8:D:\MassHunter\Data\122823_ID_S5Q375\5Q23915.d

Data File: 5Q23943
Type : QC
Level : 2

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	10.000	10.206	2.1	102.1
13C2-6:2FTS	10.000	10.450	4.5	104.5
13C2-8:2FTS	10.000	10.314	3.1	103.1
13C2-PFDoDA	10.000	11.005	10.0	110.0
13C2-PFTeDA	10.000	10.672	6.7	106.7
13C3-PFBS	10.000	10.872	8.7	108.7
13C3-PFHxS	10.000	11.195	12.0	112.0
13C4-PFBA	10.000	11.198	12.0	112.0
13C4-PFHpA	10.000	11.016	10.2	110.2
13C5-PFHxA	10.000	10.767	7.7	107.7
13C5-PFPeA	10.000	11.165	11.7	111.7
13C6-PFDA	10.000	11.325	13.2	113.2
13C7-PFUnDA	10.000	11.086	10.9	110.9
13C8-FOSA	10.000	12.101	21.0	121.0
13C8-PFOA	10.000	11.113	11.1	111.1
13C8-PFOS	10.000	10.896	9.0	109.0
13C9-PFNA	10.000	11.194	11.9	111.9
4:2FTS	1.000	0.931	-6.9	93.1
6:2FTS	1.000	0.934	-6.6	93.4
8:2FTS	1.000	0.932	-6.8	93.2
d3-MeFOSAA	10.000	11.638	16.4	116.4
EtFOSAA	1.000	0.937	-6.3	93.7
FOSA	1.000	0.858	-14.2	85.8
MeFOSAA	1.000	0.910	-9.0	91.0
PFBA	1.000	0.789	-21.1	78.9
PFBS	1.000	0.836	-16.4	83.6
PFDA	1.000	0.806	-19.4	80.6
PFDoDA	1.000	0.825	-17.5	82.5
PFDS	1.000	0.800	-20.0	80.0
PFHpA	1.000	0.792	-20.8	79.2
PFHpS	1.000	0.832	-16.8	83.2
PFHxA	1.000	0.785	-21.5	78.5
PFHxS	1.000	0.818	-18.2	81.8
PFNA	1.000	0.867	-13.3	86.7
PFNS	1.000	0.809	-19.1	80.9
PFOA	1.000	0.782	-21.8	78.2
PFOS	1.000	0.806	-19.4	80.6

Continuing Calibration Summary

Job Number: FC12099
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample: S5Q375-CC375
Lab FileID: 5Q23943.D

PFPeA	1.000	0.795	-20.5	79.5
PFPeS	1.000	0.791	-20.9	79.1
PFTeDA	1.000	0.838	-16.2	83.8
PFTrDA	1.000	0.786	-21.4	78.6
PFUnDA	1.000	0.814	-18.6	81.4
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11Cl-PF3OUdS	1.000	0.723	-27.7	72.3
13C3-HFPO-DA	10.000	10.425	4.3	104.3
9Cl-PF3ONS	1.000	0.702	-29.8	70.2
ADONA	1.000	0.718	-28.2	71.8
HFPO-DA	1.000	0.729	-27.1	72.9
M3-HFPO-DA	---	--ISTD--		
d3-MeFOSA	10.000	11.677	16.8	116.8
MeFOSA	1.000	0.788	-21.2	78.8
M3-MeFOSA	---	--ISTD--		
M5-EtFOSAA	---	--ISTD--		
d5-EtFOSAA	10.000	11.731	17.3	117.3
4-PFECHS	1.000	0.933	-6.7	93.3
FBSA	1.000	0.821	-17.9	82.1
FHxSA	1.000	0.801	-19.9	80.1

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FC12099
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample: S5Q375-CC375
Lab FileID: 5Q23954.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\122823_ID_S5Q375\s5q375.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\122823_ID_S5Q375\5Q23908.d
2:D:\MassHunter\Data\122823_ID_S5Q375\5Q23909.d
3:D:\MassHunter\Data\122823_ID_S5Q375\5Q23910.d
4:D:\MassHunter\Data\122823_ID_S5Q375\5Q23911.d
5:D:\MassHunter\Data\122823_ID_S5Q375\5Q23912.d
6:D:\MassHunter\Data\122823_ID_S5Q375\5Q23913.d
7:D:\MassHunter\Data\122823_ID_S5Q375\5Q23914.d
8:D:\MassHunter\Data\122823_ID_S5Q375\5Q23915.d

Data File: 5Q23954
Type : QC
Level : 6

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	10.000	12.209	22.1	122.1
13C2-6:2FTS	10.000	12.272	22.7	122.7
13C2-8:2FTS	10.000	11.681	16.8	116.8
13C2-PFDoDA	10.000	11.825	18.2	118.2
13C2-PFTeDA	10.000	11.673	16.7	116.7
13C3-PFBS	10.000	11.670	16.7	116.7
13C3-PFHxS	10.000	11.944	19.4	119.4
13C4-PFBA	10.000	12.136	21.4	121.4
13C4-PFHpA	10.000	11.720	17.2	117.2
13C5-PFHxA	10.000	11.746	17.5	117.5
13C5-PFPeA	10.000	11.921	19.2	119.2
13C6-PFDA	10.000	11.936	19.4	119.4
13C7-PFUnDA	10.000	11.799	18.0	118.0
13C8-FOSA	10.000	12.630	26.3	126.3
13C8-PFOA	10.000	11.937	19.4	119.4
13C8-PFOS	10.000	11.768	17.7	117.7
13C9-PFNA	10.000	11.852	18.5	118.5
4:2FTS	20.000	19.453	-2.7	97.3
6:2FTS	20.000	19.248	-3.8	96.2
8:2FTS	20.000	19.771	-1.1	98.9
d3-MeFOSAA	10.000	12.596	26.0	126.0
EtFOSAA	20.000	19.025	-4.9	95.1
FOSA	20.000	18.463	-7.7	92.3
MeFOSAA	20.000	18.603	-7.0	93.0
PFBA	20.000	18.428	-7.9	92.1
PFBS	20.000	18.776	-6.1	93.9
PFDA	20.000	18.500	-7.5	92.5
PFDoDA	20.000	18.681	-6.6	93.4
PFDS	20.000	17.355	-13.2	86.8
PFHpA	20.000	18.413	-7.9	92.1
PFHpS	20.000	18.028	-9.9	90.1
PFHxA	20.000	18.456	-7.7	92.3
PFHxS	20.000	18.187	-9.1	90.9
PFNA	20.000	18.696	-6.5	93.5
PFNS	20.000	18.235	-8.8	91.2
PFOA	20.000	18.489	-7.6	92.4
PFOS	20.000	17.937	-10.3	89.7

8.6.15

8

Continuing Calibration Summary

Job Number: FC12099
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample: S5Q375-CC375
Lab FileID: 5Q23954.D

PFPeA	20.000	18.710	-6.5	93.5
PFPeS	20.000	18.142	-9.3	90.7
PFTeDA	20.000	18.468	-7.7	92.3
PFTrDA	20.000	18.201	-9.0	91.0
PFUnDA	20.000	18.640	-6.8	93.2
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11Cl-PF3OUdS	20.000	17.636	-11.8	88.2
13C3-HFPO-DA	10.000	10.763	7.6	107.6
9Cl-PF3ONS	20.000	17.363	-13.2	86.8
ADONA	20.000	17.960	-10.2	89.8
HFPO-DA	20.000	17.910	-10.4	89.6
M3-HFPO-DA	---	--ISTD--		
d3-MeFOSA	10.000	12.302	23.0	123.0
MeFOSA	20.000	19.224	-3.9	96.1
M3-MeFOSA	---	--ISTD--		
M5-EtFOSAA	---	--ISTD--		
d5-EtFOSAA	10.000	12.417	24.2	124.2
4-PFECHS	20.000	17.784	-11.1	88.9
FBSA	20.000	19.906	-0.5	99.5
FHxSA	20.000	19.106	-4.5	95.5

CC Criteria: +/- 30%

8.6.15

8

Continuing Calibration Summary

Job Number: FC12099
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample: S5Q375-CC375
Lab FileID: 5Q23966.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\122823_ID_S5Q375\s5q375.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\122823_ID_S5Q375\5Q23908.d
2:D:\MassHunter\Data\122823_ID_S5Q375\5Q23909.d
3:D:\MassHunter\Data\122823_ID_S5Q375\5Q23910.d
4:D:\MassHunter\Data\122823_ID_S5Q375\5Q23911.d
5:D:\MassHunter\Data\122823_ID_S5Q375\5Q23912.d
6:D:\MassHunter\Data\122823_ID_S5Q375\5Q23913.d
7:D:\MassHunter\Data\122823_ID_S5Q375\5Q23914.d
8:D:\MassHunter\Data\122823_ID_S5Q375\5Q23915.d

Data File: 5Q23966
Type : QC
Level : 6

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	10.000	12.350	23.5	123.5
13C2-6:2FTS	10.000	12.615	26.1	126.1
13C2-8:2FTS	10.000	11.905	19.1	119.1
13C2-PFDoDA	10.000	12.078	20.8	120.8
13C2-PFTeDA	10.000	11.821	18.2	118.2
13C3-PFBS	10.000	11.982	19.8	119.8
13C3-PFHxS	10.000	12.021	20.2	120.2
13C4-PFBA	10.000	12.464	24.6	124.6
13C4-PFHpA	10.000	11.943	19.4	119.4
13C5-PFHxA	10.000	12.131	21.3	121.3
13C5-PFPeA	10.000	12.265	22.6	122.6
13C6-PFDA	10.000	12.131	21.3	121.3
13C7-PFUnDA	10.000	12.093	20.9	120.9
13C8-FOSA	10.000	12.729	27.3	127.3
13C8-PFOA	10.000	12.053	20.5	120.5
13C8-PFOS	10.000	11.861	18.6	118.6
13C9-PFNA	10.000	12.041	20.4	120.4
4:2FTS	20.000	19.553	-2.2	97.8
6:2FTS	20.000	19.164	-4.2	95.8
8:2FTS	20.000	19.295	-3.5	96.5
d3-MeFOSAA	10.000	12.811	28.1	128.1
EtFOSAA	20.000	18.642	-6.8	93.2
FOSA	20.000	18.808	-6.0	94.0
MeFOSAA	20.000	18.559	-7.2	92.8
PFBA	20.000	18.351	-8.2	91.8
PFBS	20.000	18.736	-6.3	93.7
PFDA	20.000	18.611	-6.9	93.1
PFDoDA	20.000	18.760	-6.2	93.8
PFDS	20.000	17.192	-14.0	86.0
PFHpA	20.000	18.469	-7.7	92.3
PFHpS	20.000	18.339	-8.3	91.7
PFHxA	20.000	18.376	-8.1	91.9
PFHxS	20.000	18.448	-7.8	92.2
PFNA	20.000	18.851	-5.7	94.3
PFNS	20.000	18.346	-8.3	91.7
PFOA	20.000	18.647	-6.8	93.2
PFOS	20.000	18.001	-10.0	90.0

8.6.16

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Continuing Calibration Summary

Job Number: FC12099
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample: S5Q375-CC375
Lab FileID: 5Q23966.D

PFPeA	20.000	18.680	-6.6	93.4
PFPeS	20.000	18.054	-9.7	90.3
PFTeDA	20.000	18.780	-6.1	93.9
PFTrDA	20.000	18.015	-9.9	90.1
PFUnDA	20.000	18.472	-7.6	92.4
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11Cl-PF3OUdS	20.000	17.535	-12.3	87.7
13C3-HFPO-DA	10.000	11.302	13.0	113.0
9Cl-PF3ONS	20.000	17.629	-11.9	88.1
ADONA	20.000	18.043	-9.8	90.2
HFPO-DA	20.000	17.397	-13.0	87.0
M3-HFPO-DA	---	--ISTD--		
d3-MeFOSA	10.000	12.516	25.2	125.2
MeFOSA	20.000	19.913	-0.4	99.6
M3-MeFOSA	---	--ISTD--		
M5-EtFOSAA	---	--ISTD--		
d5-EtFOSAA	10.000	12.692	26.9	126.9
4-PFECHS	20.000	17.979	-10.1	89.9
FBSA	20.000	19.801	-1.0	99.0
FHxSA	20.000	19.568	-2.2	97.8

CC Criteria: +/- 30%

8.6.16

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Initial Calibration Report

Method Path	D:\MassHunter\Methods
Method File	ID_010224_S5Q377.quantmethod.xml
Batch Name	D:\MassHunter\Data\010224_ID_S5Q377\QuantResults\s5q377.batch.bin
Last Calib Update	1/3/2024 12:05:55 PM

Level Name	Calibration Files	Acq. Date-Time	Level Last Update Time
1	D:\MassHunter\Data\010224_ID_S5Q377\5Q24026.d	1/2/2024 5:05:42 PM	1/3/2024 12:05:55 PM
2	D:\MassHunter\Data\010224_ID_S5Q377\5Q24027.d	1/2/2024 5:22:13 PM	1/3/2024 12:05:55 PM
3	D:\MassHunter\Data\010224_ID_S5Q377\5Q24028.d	1/2/2024 5:38:45 PM	1/3/2024 12:05:55 PM
4	D:\MassHunter\Data\010224_ID_S5Q377\5Q24029.d	1/2/2024 5:55:17 PM	1/3/2024 12:05:55 PM
5	D:\MassHunter\Data\010224_ID_S5Q377\5Q24030.d	1/2/2024 6:11:49 PM	1/3/2024 12:05:55 PM
6	D:\MassHunter\Data\010224_ID_S5Q377\5Q24031.d	1/2/2024 6:28:21 PM	1/3/2024 12:05:55 PM
7	D:\MassHunter\Data\010224_ID_S5Q377\5Q24032.d	1/2/2024 6:44:53 PM	1/3/2024 12:05:55 PM
8	D:\MassHunter\Data\010224_ID_S5Q377\5Q24033.d	1/2/2024 7:01:27 PM	1/3/2024 12:05:55 PM

Compound	Curve Fit	1	2	3	4	5	6	7	8	Avg RF	%RSD
S 13C4-PFBA	Linear	4396	4598	4468	4489	4474	4332	4216	4315	4411	2.736
S 13C5-PFPeA	Linear	7125	7914	7527	7683	7576	7219	7089	7314	7431	3.930
S 13C3-PFBS	Linear	937.9	957.9	936.3	954.1	942.7	891.7	880.3	879.3	922.5	3.592
S 13C2-4:2FTS	Linear	3574	3815	3687	3886	3905	3962	4530		3908	7.816
S 13C5-PFHxA	Linear	11352	12009	11638	12033	11733	11283	11080	10716	11480	3.997
S 13C3-HFPO-DA	Linear	618.5	646.5	593.6	622.8	596.1	584.9	558.3	556.7	597.2	5.242
S 13C4-PFHpA	Linear	11842	12494	11968	12391	12163	11554	11327	10794	11817	4.838
S 13C3-PFHxS	Linear	1140	1195	1163	1158	1138	1108	1069	1070	1130	3.963
S 13C2-6:2FTS	Linear	6940	6875	6788	6882	7214	7242	7962	8934	7355	10.074
S 13C8-PFOA	Linear	16226	17429	16826	17066	17096	16532	16090	15127	16549	4.424
S 13C8-FOSA	Linear	3930	4361	4334	4355	4340	4162	3843	3386	4089	8.537
S d3-MeFOSA	Linear	1220	1471	1432	1528	1511	1452	1342	1187	1393	9.338
S d3-MeFOSAA	Linear	3418	3587	3507	3505	3470	3379	3142	2900	3363	6.830
S 13C8-PFOS	Linear	1580	1679	1658	1605	1620	1575	1456	1427	1575	5.711
S 13C9-PFNA	Linear	16611	17534	17018	17147	17157	16497	15691	14944	16575	5.216
S d5-EtFOSAA	Linear	2999	3223	3015	3174	3153	2989	2908	2921	3048	3.931
S 13C6-PFDA	Linear	17268	18460	17948	18088	17920	17126	15964	15709	17310	5.825
S 13C2-8:2FTS	Linear	6726	6869	6645	6884	7181	7179	8039		7075	6.672
S 13C7-PFUnDA	Linear	24340	25866	24997	25365	25142	24055	23020	22489	24409	4.814
S 13C2-PFDoDA	Linear	22282	24020	23030	23190	23434	21971	21681	21198	22601	4.281
S 13C2-PFTeDA	Linear	18924	20112	19280	19723	19783	18802	18730	18389	19218	3.147
I M4-PFBA				---------- ISTD ----------							
T PFBA	Linear	0.8878	0.7306	0.7872	0.8345	0.8864	0.8311	0.8915	0.9028	0.8440	7.191
I M5-PFPeA				---------- ISTD ----------							
T PFPeA	Linear	0.9275	0.7435	0.8201	0.8786	0.9300	0.8898	0.9430	0.9453	0.8847	8.004
I M5-PFHxA				---------- ISTD ----------							
T FBSA	Linear	0.2913	0.2797	0.3079	0.3214	0.3384	0.3150	0.3283	0.3318	0.3142	6.478
T PFHxA	Linear	0.8693	0.7665	0.8317	0.8571	0.9275	0.8731	0.9365	0.9332	0.8744	6.685

Generated at 12:08 PM on 1/3/2024

Initial Calibration Summary

Job Number: FC12099
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample: S5Q377-ICC377
Lab FileID: 5Q24031.D

Raw Data:
5Q24025.D
5Q24026.D
5Q24027.D
5Q24028.D
5Q24029.D
5Q24030.D
5Q24031.D
5Q24032.D
5Q24033.D

Initial Calibration Summary

Job Number: FC12099
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample: S5Q377-ICC377
Lab FileID: 5Q24031.D

Initial Calibration Report

Compound	Curve Fit	1	2	3	4	5	6	7	8	Avg RF	%RSD
I M4-PFHpA						ISTD					
T PFHpA	Linear	1.0111	0.9223	0.9955	1.0197	1.1108	1.0451	1.1036	1.1018	1.0387	6.300
I M8-PFOA						ISTD					
T FHxSA	Linear	0.2367	0.2111	0.2352	0.2391	0.2559	0.2325	0.2369	0.2236	0.2339	5.501
T 4-PFECHS	Linear	0.4532	0.3360	0.3721	0.3906	0.4101	0.3838	0.4096	0.4287	0.3980	9.024
T PFOA	Linear	0.9330	0.7631	0.8444	0.8956	0.9595	0.8861	0.9491	0.9591	0.8987	7.589
I M9-PFNA						ISTD					
T PFNA	Linear	0.8909	0.7327	0.7925	0.8369	0.8878	0.8262	0.9013	0.9125	0.8476	7.382
I M6-PFDA						ISTD					
T 9Cl-PF3ONS	Linear	0.6153	0.5558	0.5954	0.6338	0.6816	0.6439	0.6995	0.6915	0.6396	7.855
T PFDA	Linear	0.8717	0.7859	0.7943	0.8527	0.9287	0.8523	0.9279	0.9206	0.8667	6.570
I M7-PFUnDA						ISTD					
T PFDS	Linear	0.1186	0.1022	0.1097	0.1142	0.1224	0.1149	0.1242	0.1235	0.1162	6.557
T PFUnDA	Linear	0.8053	0.7129	0.7575	0.8063	0.8745	0.8190	0.8654	0.8696	0.8138	7.040
I M2-PFDoDA						ISTD					
T 11Cl-PF3OUdS	Linear	0.5511	0.4761	0.5050	0.5435	0.5734	0.5467	0.5837	0.5946	0.5468	7.294
T PFDoDA	Linear	0.7926	0.6942	0.7259	0.7761	0.8170	0.7801	0.8313	0.8231	0.7800	6.190
T PFTrDA	Linear	0.7610	0.6557	0.6833	0.7521	0.7664	0.7577	0.8227	0.8308	0.7537	8.007
I M2-PFTeDA						ISTD					
T PFTeDA	Linear	0.9203	0.8288	0.8551	0.9201	0.9760	0.9240	0.9848	0.9620	0.9214	6.034
I M8-FOSA						ISTD					
T FOSA	Linear	0.7862	0.7501	0.7941	0.8429	0.8939	0.8313	0.8731	0.8880	0.8325	6.259
I M3-PFBS						ISTD					
T PFBS	Linear	2.4265	1.9512	2.1791	2.2319	2.3514	2.2637	2.3988	2.4734	2.2845	7.377
T PFPeS	Linear	1.4974	1.4196	1.5250	1.6425	1.6961	1.6107	1.7315	1.6992	1.6027	6.952
I M3-PFHxS						ISTD					
T PFHxS	Linear	1.8424	1.5424	1.5453	1.7017	1.8213	1.6824	1.8218	1.7902	1.7185	7.105
T ADONA	Linear	14.46	13.04	14.04	15.31	16.82	15.39	16.91	16.40	15.30	9.082
I M8-PFOS						ISTD					
T PFHpS	Linear	1.2145	1.1309	1.1368	1.2274	1.3272	1.1884	1.3847	1.3118	1.2402	7.447
T PFOS	Linear	1.6131	1.4044	1.4575	1.6297	1.6666	1.5129	1.7128	1.6791	1.5845	7.105
T PFNS	Linear	1.1607	1.0402	1.0416	1.1240	1.1599	1.0505	1.1598	1.1521	1.1111	5.113
I M2-4:2FTS						ISTD					
T 4:2FTS	Avg RF	0.9946	0.8567	0.9816	0.9842	1.0522	0.9350	0.8552		0.9513	7.737
I M2-6:2FTS						ISTD					
T 6:2FTS	Avg RF	0.9126	0.8265	0.8521	0.9369	0.9417	0.8450	0.7998	0.6643	0.8473	10.688

Generated at 12:08 PM on 1/3/2024

8.6.17

8

FC12099

Initial Calibration Summary

Job Number: FC12099
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample: S5Q377-ICC377
Lab FileID: 5Q24031.D

Initial Calibration Report

Compound	Curve Fit	1	2	3	4	5	6	7	8	Avg RF	%RSD
I M2-8:2FTS						ISTD					
T 8:2FTS	Avg RF	0.9042	0.8061	0.8077	0.8738	0.9177	0.8042	0.7649		0.8398	6.947
I M3-MeFOSAA						ISTD					
T MeFOSAA	Linear	0.6496	0.6802	0.6432	0.6727	0.7529	0.6979	0.7520	0.7458	0.6993	6.509
I M3-HFPO-DA						ISTD					
T HFPO-DA	Linear	3.5904	3.3582	3.7080	3.8842	4.1354	3.8061	4.1271	4.0599	3.8337	7.196
I M3-MeFOSA						ISTD					
T MeFOSA	Linear	0.6473	0.6652	0.7627	0.7807	0.8420	0.7489	0.8191	0.8672	0.7666	10.294
I M5-EtFOSAA						ISTD					
T EtFOSAA	Linear	0.8072	0.6808	0.6699	0.7075	0.8013	0.7233	0.7892	0.7607	0.7425	7.346

(RedFont and #) = Outlier Flag; (I) = Internal Standard; (T) = Target; (S) = Surrogate; (M) = Matrix Spike

Generated at 12:08 PM on 1/3/2024

8.6.17

8

Initial Calibration Summary

Job Number: FC12099
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample: S5Q377-ICC377
Lab FileID: 5Q24031.D

Initial Calibration Report

Compounds with Curve fitting not using Avg Response Factor:

Compound	Curve Fit	Curve Fit Formula	Curve Fit R2
S 13C4-PFBA	Linear	y = 4411.089404 * x	0.000000
T PFBA	Linear	y = 0.898098 * x	0.999670
S 13C5-PFPeA	Linear	y = 7430.764060 * x	0.000000
T PFPeA	Linear	y = 0.942817 * x	0.999818
S 13C3-PFBS	Linear	y = 922.535409 * x	0.000000
T PFBS	Linear	y = 2.451128 * x	0.999454
T FBSA	Linear	y = 0.330663 * x	0.999853
S 13C2-4:2FTS	Linear	y = 3908.392047 * x	0.000000
S 13C5-PFHxA	Linear	y = 11480.478943 * x	0.000000
T PFHxA	Linear	y = 0.931719 * x	0.999780
T PFPeS	Linear	y = 1.702448 * x	0.999765
T HFPO-DA	Linear	y = 4.065101 * x	0.999726
S 13C3-HFPO-DA	Linear	y = 597.171171 * x	0.000000
T FHxSA	Linear	y = 0.226713 * x	0.998946
S 13C4-PFHpA	Linear	y = 11816.632615 * x	0.000000
T PFHpA	Linear	y = 1.100296 * x	0.999855
S 13C3-PFHxS	Linear	y = 1130.060472 * x	0.000000
T PFHxS	Linear	y = 1.792962 * x	0.999725
T ADONA	Linear	y = 16.465029 * x	0.999536
T 4-PFECHS	Linear	y = 0.423393 * x	0.999084
T PFHpS	Linear	y = 1.321897 * x	0.998784
S 13C2-6:2FTS	Linear	y = 7354.588346 * x	0.000000
S 13C8-PFOA	Linear	y = 16549.160623 * x	0.000000
T PFOA	Linear	y = 0.954748 * x	0.999706
T FOSA	Linear	y = 0.883342 * x	0.999753
S 13C8-FOSA	Linear	y = 4088.826483 * x	0.000000
S d3-MeFOSA	Linear	y = 1392.861795 * x	0.000000
T MeFOSA	Linear	y = 0.853917 * x	0.998529
T PFOS	Linear	y = 1.680202 * x	0.999419
S d3-MeFOSAA	Linear	y = 3363.342145 * x	0.000000
T MeFOSAA	Linear	y = 0.745422 * x	0.999751
S 13C8-PFOS	Linear	y = 1574.844448 * x	0.000000
S 13C9-PFNA	Linear	y = 16574.894257 * x	0.000000
T PFNA	Linear	y = 0.907314 * x	0.999549
S d5-EtFOSAA	Linear	y = 3047.680822 * x	0.000000
T EtFOSAA	Linear	y = 0.765199 * x	0.999483
T 9Cl-PF3ONS	Linear	y = 0.691363 * x	0.999707
T PFNS	Linear	y = 1.150399 * x	0.999622
S 13C6-PFDA	Linear	y = 17310.443033 * x	0.000000
T PFDA	Linear	y = 0.919775 * x	0.999701
S 13C2-8:2FTS	Linear	y = 7074.816065 * x	0.000000
T PFDS	Linear	y = 0.123323 * x	0.999741
S 13C7-PFUnDA	Linear	y = 24409.380959 * x	0.000000

Generated at 12:08 PM on 1/3/2024

Initial Calibration Summary

Job Number: FC12099
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample: S5Q377-ICC377
Lab FileID: 5Q24031.D

Initial Calibration Report

T PFUnDA	Linear	y = 0.867071 * x	0.999822
T 11Cl-PF3OUdS	Linear	y = 0.590754 * x	0.999612
S 13C2-PFDoDA	Linear	y = 22600.877125 * x	0.000000
T PFDoDA	Linear	y = 0.823202 * x	0.999826
T PFTrDA	Linear	y = 0.826281 * x	0.999544
S 13C2-PFTeDA	Linear	y = 19217.998839 * x	0.000000
T PFTeDA	Linear	y = 0.965186 * x	0.999767

(RedFont and #) = Outlier Flag; (I) = Internal Standard; (T) = Target; (S) = Surrogate; (M) = Matrix Spike

Initial Calibration Verification

Job Number: FC12099
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample: S5Q377-ICV377
Lab FileID: 5Q24035.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\010224_ID_S5Q377\s5q377.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\010224_ID_S5Q377\5Q24026.d
2:D:\MassHunter\Data\010224_ID_S5Q377\5Q24027.d
3:D:\MassHunter\Data\010224_ID_S5Q377\5Q24028.d
4:D:\MassHunter\Data\010224_ID_S5Q377\5Q24029.d
5:D:\MassHunter\Data\010224_ID_S5Q377\5Q24030.d
6:D:\MassHunter\Data\010224_ID_S5Q377\5Q24031.d
7:D:\MassHunter\Data\010224_ID_S5Q377\5Q24032.d
8:D:\MassHunter\Data\010224_ID_S5Q377\5Q24033.d

Data File: 5Q24035
Type : QC
Level : 6

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	10.000	9.608	-3.9	96.1
13C2-6:2FTS	10.000	9.360	-6.4	93.6
13C2-8:2FTS	10.000	9.940	-0.6	99.4
13C2-PFDoDA	10.000	9.390	-6.1	93.9
13C2-PFTeDA	10.000	9.527	-4.7	95.3
13C3-PFBS	10.000	9.112	-8.9	91.1
13C3-PFHxS	10.000	9.588	-4.1	95.9
13C4-PFBA	10.000	9.102	-9.0	91.0
13C4-PFHpA	10.000	9.386	-6.1	93.9
13C5-PFHxA	10.000	9.312	-6.9	93.1
13C5-PFPeA	10.000	9.219	-7.8	92.2
13C6-PFDA	10.000	9.534	-4.7	95.3
13C7-PFUnDA	10.000	9.343	-6.6	93.4
13C8-FOSA	10.000	9.908	-0.9	99.1
13C8-PFOA	10.000	9.483	-5.2	94.8
13C8-PFOS	10.000	9.382	-6.2	93.8
13C9-PFNA	10.000	9.632	-3.7	96.3
4:2FTS	20.000	15.920	-20.4	79.6
6:2FTS	20.000	17.351	-13.2	86.8
8:2FTS	20.000	16.667	-16.7	83.3
d3-MeFOSAA	10.000	9.622	-3.8	96.2
EtFOSAA	20.000	17.170	-14.2	85.8
FOSA	20.000	16.599	-17.0	83.0
MeFOSAA	20.000	16.395	-18.0	82.0
PFBA	20.000	16.678	-16.6	83.4
PFBS	20.000	14.380	-28.1	71.9
PFDA	20.000	15.901	-20.5	79.5
PFDoDA	20.000	18.720	-6.4	93.6
PFDS	20.000	15.544	-22.3	77.7
PFHpA	20.000	16.564	-17.2	82.8
PFHpS	20.000	15.702	-21.5	78.5
PFHxA	20.000	15.307	-23.5	76.5
PFHxS	20.000	0.000	# -100.0	0.0
PFNA	20.000	14.823	-25.9	74.1
PFNS	20.000	15.995	-20.0	80.0
PFOA	20.000	16.241	-18.8	81.2
PFOS	20.000	16.429	-17.9	82.1

8.6.18

8

Initial Calibration Verification

Job Number: FC12099
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample: S5Q377-ICV377
Lab FileID: 5Q24035.D

PFPeA	20.000	16.427	-17.9	82.1
PFPeS	20.000	14.856	-25.7	74.3
PFTeDA	20.000	15.357	-23.2	76.8
PFTrDA	20.000	17.437	-12.8	87.2
PFUnDA	20.000	17.449	-12.8	87.2
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11Cl-PF3OUdS	20.000	15.527	-22.4	77.6
13C3-HFPO-DA	10.000	9.038	-9.6	90.4
9Cl-PF3ONS	20.000	15.691	-21.5	78.5
ADONA	20.000	15.093	-24.5	75.5
HFPO-DA	20.000	16.835	-15.8	84.2
M3-HFPO-DA	---	--ISTD--		
d3-MeFOSA	10.000	10.321	3.2	103.2
MeFOSA	20.000	0.000	# -100.0	0.0
M3-MeFOSA	---	--ISTD--		
M5-EtFOSAA	---	--ISTD--		
d5-EtFOSAA	10.000	9.485	-5.1	94.9
4-PFECHS	20.000	0.000	# -100.0	0.0
FBSA	20.000	18.668	-6.7	93.3
FHxSA	20.000	20.414	2.1	102.1

CC Criteria: +/- 30%

Initial Calibration Verification

Job Number: FC12099
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample: S5Q377-ICV377
Lab FileID: 5Q24036.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\010224_ID_S5Q377\s5q377.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\010224_ID_S5Q377\5Q24026.d
2:D:\MassHunter\Data\010224_ID_S5Q377\5Q24027.d
3:D:\MassHunter\Data\010224_ID_S5Q377\5Q24028.d
4:D:\MassHunter\Data\010224_ID_S5Q377\5Q24029.d
5:D:\MassHunter\Data\010224_ID_S5Q377\5Q24030.d
6:D:\MassHunter\Data\010224_ID_S5Q377\5Q24031.d
7:D:\MassHunter\Data\010224_ID_S5Q377\5Q24032.d
8:D:\MassHunter\Data\010224_ID_S5Q377\5Q24033.d

Data File: 5Q24036
Type : QC
Level : 6

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	10.000	9.198	-8.0	92.0
13C2-6:2FTS	10.000	8.791	-12.1	87.9
13C2-8:2FTS	10.000	9.651	-3.5	96.5
13C2-PFDoDA	10.000	9.088	-9.1	90.9
13C2-PFTeDA	10.000	9.252	-7.5	92.5
13C3-PFBS	10.000	8.674	-13.3	86.7
13C3-PFHxS	10.000	9.206	-7.9	92.1
13C4-PFBA	10.000	8.756	-12.4	87.6
13C4-PFHpA	10.000	8.923	-10.8	89.2
13C5-PFHxA	10.000	8.859	-11.4	88.6
13C5-PFPeA	10.000	8.806	-11.9	88.1
13C6-PFDA	10.000	9.287	-7.1	92.9
13C7-PFUnDA	10.000	9.074	-9.3	90.7
13C8-FOSA	10.000	9.618	-3.8	96.2
13C8-PFOA	10.000	9.005	-9.9	90.1
13C8-PFOS	10.000	9.141	-8.6	91.4
13C9-PFNA	10.000	9.269	-7.3	92.7
4:2FTS	20.000	18.449	-7.8	92.2
6:2FTS	20.000	18.045	-9.8	90.2
8:2FTS	20.000	18.544	-7.3	92.7
d3-MeFOSAA	10.000	9.321	-6.8	93.2
EtFOSAA	20.000	15.499	-22.5	77.5
FOSA	20.000	17.214	-13.9	86.1
MeFOSAA	20.000	16.149	-19.3	80.7
PFBA	20.000	17.881	-10.6	89.4
PFBS	20.000	16.990	-15.0	85.0
PFDA	20.000	16.662	-16.7	83.3
PFDoDA	20.000	19.569	-2.2	97.8
PFDS	20.000	17.369	-13.2	86.8
PFHpA	20.000	16.060	-19.7	80.3
PFHpS	20.000	17.375	-13.1	86.9
PFHxA	20.000	16.732	-16.3	83.7
PFHxS	20.000	16.707	-16.5	83.5
PFNA	20.000	16.699	-16.5	83.5
PFNS	20.000	0.000	# -100.0	0.0
PFOA	20.000	17.119	-14.4	85.6
PFOS	20.000	17.937	-10.3	89.7

Initial Calibration Verification

Job Number: FC12099
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample: S5Q377-ICV377
Lab FileID: 5Q24036.D

PFPeA	20.000	17.590	-12.0	88.0
PFPeS	20.000	17.577	-12.1	87.9
PFTeDA	20.000	16.320	-18.4	81.6
PFTrDA	20.000	19.103	-4.5	95.5
PFUnDA	20.000	19.380	-3.1	96.9
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11Cl-PF3OUdS	20.000	0.000	# -100.0	0.0
13C3-HFPO-DA	10.000	8.859	-11.4	88.6
9Cl-PF3ONS	20.000	0.000	# -100.0	0.0
ADONA	20.000	0.000	# -100.0	0.0
HFPO-DA	20.000	0.000	# -100.0	0.0
M3-HFPO-DA	---	--ISTD--		
d3-MeFOSA	10.000	9.348	-6.5	93.5
MeFOSA	20.000	18.772	-6.1	93.9
M3-MeFOSA	---	--ISTD--		
M5-EtFOSAA	---	--ISTD--		
d5-EtFOSAA	10.000	9.532	-4.7	95.3
4-PFECHS	20.000	0.000	# -100.0	0.0
FBSA	20.000	0.000	# -100.0	0.0
FHxSA	20.000	0.000	# -100.0	0.0

CC Criteria: +/- 30%

8.6.19

8

Continuing Calibration Summary

Job Number: FC12099
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample: S5Q377-CC377
Lab FileID: 5Q24038.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\010224_ID_S5Q377\s5q377.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\010224_ID_S5Q377\5Q24026.d
2:D:\MassHunter\Data\010224_ID_S5Q377\5Q24027.d
3:D:\MassHunter\Data\010224_ID_S5Q377\5Q24028.d
4:D:\MassHunter\Data\010224_ID_S5Q377\5Q24029.d
5:D:\MassHunter\Data\010224_ID_S5Q377\5Q24030.d
6:D:\MassHunter\Data\010224_ID_S5Q377\5Q24031.d
7:D:\MassHunter\Data\010224_ID_S5Q377\5Q24032.d
8:D:\MassHunter\Data\010224_ID_S5Q377\5Q24033.d

Data File: 5Q24038
Type : QC
Level : 6

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	10.000	9.305	-6.9	93.1
13C2-6:2FTS	10.000	9.117	-8.8	91.2
13C2-8:2FTS	10.000	9.598	-4.0	96.0
13C2-PFDoDA	10.000	8.994	-10.1	89.9
13C2-PFTeDA	10.000	9.270	-7.3	92.7
13C3-PFBS	10.000	8.508	-14.9	85.1
13C3-PFHxS	10.000	9.176	-8.2	91.8
13C4-PFBA	10.000	8.594	-14.1	85.9
13C4-PFHpA	10.000	8.843	-11.6	88.4
13C5-PFHxA	10.000	8.799	-12.0	88.0
13C5-PFPeA	10.000	8.632	-13.7	86.3
13C6-PFDA	10.000	9.062	-9.4	90.6
13C7-PFUnDA	10.000	8.992	-10.1	89.9
13C8-FOSA	10.000	9.655	-3.5	96.5
13C8-PFOA	10.000	9.021	-9.8	90.2
13C8-PFOS	10.000	8.669	-13.3	86.7
13C9-PFNA	10.000	9.201	-8.0	92.0
4:2FTS	20.000	19.007	-5.0	95.0
6:2FTS	20.000	19.812	-0.9	99.1
8:2FTS	20.000	19.688	-1.6	98.4
d3-MeFOSAA	10.000	9.458	-5.4	94.6
EtFOSAA	20.000	18.122	-9.4	90.6
FOSA	20.000	18.504	-7.5	92.5
MeFOSAA	20.000	18.740	-6.3	93.7
PFBA	20.000	18.467	-7.7	92.3
PFBS	20.000	18.527	-7.4	92.6
PFDA	20.000	18.722	-6.4	93.6
PFDoDA	20.000	18.931	-5.3	94.7
PFDS	20.000	18.643	-6.8	93.2
PFHpA	20.000	18.910	-5.5	94.5
PFHpS	20.000	19.507	-2.5	97.5
PFHxA	20.000	18.674	-6.6	93.4
PFHxS	20.000	18.412	-7.9	92.1
PFNA	20.000	18.135	-9.3	90.7
PFNS	20.000	19.814	-0.9	99.1
PFOA	20.000	18.638	-6.8	93.2
PFOS	20.000	19.419	-2.9	97.1

8.6.20

8

Continuing Calibration Summary

Job Number: FC12099
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample: S5Q377-CC377
Lab FileID: 5Q24038.D

PFPeA	20.000	18.671	-6.6	93.4
PFPeS	20.000	19.248	-3.8	96.2
PFTeDA	20.000	18.972	-5.1	94.9
PFTrDA	20.000	18.174	-9.1	90.9
PFUnDA	20.000	18.883	-5.6	94.4
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11Cl-PF3OUdS	20.000	18.609	-7.0	93.0
13C3-HFPO-DA	10.000	8.480	-15.2	84.8
9Cl-PF3ONS	20.000	18.635	-6.8	93.2
ADONA	20.000	18.396	-8.0	92.0
HFPO-DA	20.000	18.600	-7.0	93.0
M3-HFPO-DA	---	--ISTD--		
d3-MeFOSA	10.000	9.769	-2.3	97.7
MeFOSA	20.000	18.501	-7.5	92.5
M3-MeFOSA	---	--ISTD--		
M5-EtFOSAA	---	--ISTD--		
d5-EtFOSAA	10.000	9.638	-3.6	96.4
4-PFECHS	20.000	17.940	-10.3	89.7
FBSA	20.000	19.060	-4.7	95.3
FHxSA	20.000	20.699	3.5	103.5

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FC12099
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample: S5Q377-CC377
Lab FileID: 5Q24039.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\010224_ID_S5Q377\s5q377.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\010224_ID_S5Q377\5Q24026.d
2:D:\MassHunter\Data\010224_ID_S5Q377\5Q24027.d
3:D:\MassHunter\Data\010224_ID_S5Q377\5Q24028.d
4:D:\MassHunter\Data\010224_ID_S5Q377\5Q24029.d
5:D:\MassHunter\Data\010224_ID_S5Q377\5Q24030.d
6:D:\MassHunter\Data\010224_ID_S5Q377\5Q24031.d
7:D:\MassHunter\Data\010224_ID_S5Q377\5Q24032.d
8:D:\MassHunter\Data\010224_ID_S5Q377\5Q24033.d

Data File: 5Q24039
Type : QC
Level : 2

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	10.000	8.628	-13.7	86.3
13C2-6:2FTS	10.000	8.343	-16.6	83.4
13C2-8:2FTS	10.000	9.195	-8.0	92.0
13C2-PFDoDA	10.000	9.288	-7.1	92.9
13C2-PFTeDA	10.000	9.447	-5.5	94.5
13C3-PFBS	10.000	8.942	-10.6	89.4
13C3-PFHxS	10.000	9.291	-7.1	92.9
13C4-PFBA	10.000	8.801	-12.0	88.0
13C4-PFHpA	10.000	9.203	-8.0	92.0
13C5-PFHxA	10.000	8.985	-10.2	89.8
13C5-PFPeA	10.000	8.928	-10.7	89.3
13C6-PFDA	10.000	9.574	-4.3	95.7
13C7-PFUnDA	10.000	9.392	-6.1	93.9
13C8-FOSA	10.000	10.310	3.1	103.1
13C8-PFOA	10.000	9.310	-6.9	93.1
13C8-PFOS	10.000	9.295	-7.0	93.0
13C9-PFNA	10.000	9.642	-3.6	96.4
4:2FTS	1.000	0.949	-5.1	94.9
6:2FTS	1.000	0.982	-1.8	98.2
8:2FTS	1.000	0.980	-2.0	98.0
d3-MeFOSAA	10.000	9.908	-0.9	99.1
EtFOSAA	1.000	1.034	3.4	103.4
FOSA	1.000	0.819	-18.1	81.9
MeFOSAA	1.000	0.898	-10.2	89.8
PFBA	1.000	0.806	-19.4	80.6
PFBS	1.000	0.775	-22.5	77.5
PFDA	1.000	0.830	-17.0	83.0
PFDoDA	1.000	0.865	-13.5	86.5
PFDS	1.000	0.842	-15.8	84.2
PFHpA	1.000	0.808	-19.2	80.8
PFHpS	1.000	0.730	-27.0	73.0
PFHxA	1.000	0.812	-18.8	81.2
PFHxS	1.000	0.884	-11.6	88.4
PFNA	1.000	0.801	-19.9	80.1
PFNS	1.000	0.873	-12.7	87.3
PFOA	1.000	0.812	-18.8	81.2
PFOS	1.000	0.821	-17.9	82.1

8.6.21

8

Continuing Calibration Summary

Job Number: FC12099
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample: S5Q377-CC377
Lab FileID: 5Q24039.D

PFPeA	1.000	0.806	-19.4	80.6
PFPeS	1.000	0.902	-9.8	90.2
PFTeDA	1.000	0.866	-13.4	86.6
PFTrDA	1.000	0.834	-16.6	83.4
PFUnDA	1.000	0.841	-15.9	84.1
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11Cl-PF3OUdS	1.000	0.831	-16.9	83.1
13C3-HFPO-DA	10.000	8.752	-12.5	87.5
9Cl-PF3ONS	1.000	0.796	-20.4	79.6
ADONA	1.000	0.790	-21.0	79.0
HFPO-DA	1.000	0.837	-16.3	83.7
M3-HFPO-DA	---	--ISTD--		
d3-MeFOSA	10.000	9.992	-0.1	99.9
MeFOSA	1.000	0.721	-27.9	72.1
M3-MeFOSA	---	--ISTD--		
M5-EtFOSAA	---	--ISTD--		
d5-EtFOSAA	10.000	9.966	-0.3	99.7
4-PFECHS	1.000	0.804	-19.6	80.4
FBSA	1.000	0.816	-18.4	81.6
FHxSA	1.000	0.927	-7.3	92.7

CC Criteria: +/- 30%

8.6.21

8

Continuing Calibration Summary

Job Number: FC12099
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample: S5Q377-CC377
Lab FileID: 5Q24050.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\010224_ID_S5Q377\s5q377.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\010224_ID_S5Q377\5Q24026.d
2:D:\MassHunter\Data\010224_ID_S5Q377\5Q24027.d
3:D:\MassHunter\Data\010224_ID_S5Q377\5Q24028.d
4:D:\MassHunter\Data\010224_ID_S5Q377\5Q24029.d
5:D:\MassHunter\Data\010224_ID_S5Q377\5Q24030.d
6:D:\MassHunter\Data\010224_ID_S5Q377\5Q24031.d
7:D:\MassHunter\Data\010224_ID_S5Q377\5Q24032.d
8:D:\MassHunter\Data\010224_ID_S5Q377\5Q24033.d

Data File: 5Q24050
Type : QC
Level : 6

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	10.000	8.734	-12.7	87.3
13C2-6:2FTS	10.000	8.783	-12.2	87.8
13C2-8:2FTS	10.000	9.616	-3.8	96.2
13C2-PFDoDA	10.000	9.009	-9.9	90.1
13C2-PFTeDA	10.000	9.069	-9.3	90.7
13C3-PFBS	10.000	8.035	-19.7	80.3
13C3-PFHxS	10.000	8.810	-11.9	88.1
13C4-PFBA	10.000	8.093	-19.1	80.9
13C4-PFHpA	10.000	8.407	-15.9	84.1
13C5-PFHxA	10.000	8.263	-17.4	82.6
13C5-PFPeA	10.000	8.126	-18.7	81.3
13C6-PFDA	10.000	8.884	-11.2	88.8
13C7-PFUnDA	10.000	8.922	-10.8	89.2
13C8-FOSA	10.000	9.525	-4.8	95.2
13C8-PFOA	10.000	8.610	-13.9	86.1
13C8-PFOS	10.000	8.554	-14.5	85.5
13C9-PFNA	10.000	9.075	-9.3	90.7
4:2FTS	20.000	19.675	-1.6	98.4
6:2FTS	20.000	20.376	1.9	101.9
8:2FTS	20.000	19.246	-3.8	96.2
d3-MeFOSAA	10.000	9.524	-4.8	95.2
EtFOSAA	20.000	19.036	-4.8	95.2
FOSA	20.000	18.539	-7.3	92.7
MeFOSAA	20.000	18.576	-7.1	92.9
PFBA	20.000	18.424	-7.9	92.1
PFBS	20.000	18.485	-7.6	92.4
PFDA	20.000	18.861	-5.7	94.3
PFDoDA	20.000	18.835	-5.8	94.2
PFDS	20.000	18.201	-9.0	91.0
PFHpA	20.000	19.063	-4.7	95.3
PFHpS	20.000	18.760	-6.2	93.8
PFHxA	20.000	18.659	-6.7	93.3
PFHxS	20.000	18.236	-8.8	91.2
PFNA	20.000	18.495	-7.5	92.5
PFNS	20.000	19.574	-2.1	97.9
PFOA	20.000	18.813	-5.9	94.1
PFOS	20.000	18.591	-7.0	93.0

Continuing Calibration Summary

Job Number: FC12099
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample: S5Q377-CC377
Lab FileID: 5Q24050.D

PFPeA	20.000	18.671	-6.6	93.4
PFPeS	20.000	19.124	-4.4	95.6
PFTeDA	20.000	18.849	-5.8	94.2
PFTrDA	20.000	18.477	-7.6	92.4
PFUnDA	20.000	18.958	-5.2	94.8
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11Cl-PF3OUdS	20.000	18.157	-9.2	90.8
13C3-HFPO-DA	10.000	7.688	-23.1	76.9
9Cl-PF3ONS	20.000	18.434	-7.8	92.2
ADONA	20.000	18.153	-9.2	90.8
HFPO-DA	20.000	18.837	-5.8	94.2
M3-HFPO-DA	---	--ISTD--		
d3-MeFOSA	10.000	9.318	-6.8	93.2
MeFOSA	20.000	18.920	-5.4	94.6
M3-MeFOSA	---	--ISTD--		
M5-EtFOSAA	---	--ISTD--		
d5-EtFOSAA	10.000	9.657	-3.4	96.6
4-PFECHS	20.000	18.224	-8.9	91.1
FBSA	20.000	19.187	-4.1	95.9
FHxSA	20.000	20.835	4.2	104.2

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FC12099
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample: S5Q377-CC377
Lab FileID: 5Q24074.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\010224_ID_S5Q377\s5q377.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\010224_ID_S5Q377\5Q24026.d
2:D:\MassHunter\Data\010224_ID_S5Q377\5Q24027.d
3:D:\MassHunter\Data\010224_ID_S5Q377\5Q24028.d
4:D:\MassHunter\Data\010224_ID_S5Q377\5Q24029.d
5:D:\MassHunter\Data\010224_ID_S5Q377\5Q24030.d
6:D:\MassHunter\Data\010224_ID_S5Q377\5Q24031.d
7:D:\MassHunter\Data\010224_ID_S5Q377\5Q24032.d
8:D:\MassHunter\Data\010224_ID_S5Q377\5Q24033.d

Data File: 5Q24074
Type : QC
Level : 6

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	10.000	8.728	-12.7	87.3
13C2-6:2FTS	10.000	9.027	-9.7	90.3
13C2-8:2FTS	10.000	9.706	-2.9	97.1
13C2-PFDoDA	10.000	9.184	-8.2	91.8
13C2-PFTeDA	10.000	9.232	-7.7	92.3
13C3-PFBS	10.000	7.735	-22.7	77.3
13C3-PFHxS	10.000	8.945	-10.5	89.5
13C4-PFBA	10.000	7.736	-22.6	77.4
13C4-PFHpA	10.000	8.138	-18.6	81.4
13C5-PFHxA	10.000	8.017	-19.8	80.2
13C5-PFPeA	10.000	7.770	-22.3	77.7
13C6-PFDA	10.000	9.056	-9.4	90.6
13C7-PFUnDA	10.000	9.058	-9.4	90.6
13C8-FOSA	10.000	9.453	-5.5	94.5
13C8-PFOA	10.000	8.455	-15.4	84.6
13C8-PFOS	10.000	8.381	-16.2	83.8
13C9-PFNA	10.000	8.956	-10.4	89.6
4:2FTS	20.000	19.619	-1.9	98.1
6:2FTS	20.000	19.752	-1.2	98.8
8:2FTS	20.000	19.696	-1.5	98.5
d3-MeFOSAA	10.000	9.601	-4.0	96.0
EtFOSAA	20.000	19.172	-4.1	95.9
FOSA	20.000	18.666	-6.7	93.3
MeFOSAA	20.000	18.846	-5.8	94.2
PFBA	20.000	18.490	-7.5	92.5
PFBS	20.000	18.510	-7.4	92.6
PFDA	20.000	18.733	-6.3	93.7
PFDoDA	20.000	18.838	-5.8	94.2
PFDS	20.000	17.980	-10.1	89.9
PFHpA	20.000	19.252	-3.7	96.3
PFHpS	20.000	18.692	-6.5	93.5
PFHxA	20.000	18.708	-6.5	93.5
PFHxS	20.000	18.178	-9.1	90.9
PFNA	20.000	18.296	-8.5	91.5
PFNS	20.000	19.589	-2.1	97.9
PFOA	20.000	18.982	-5.1	94.9
PFOS	20.000	18.803	-6.0	94.0

Continuing Calibration Summary

Job Number: FC12099
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample: S5Q377-CC377
Lab FileID: 5Q24074.D

PFPeA	20.000	18.962	-5.2	94.8
PFPeS	20.000	19.152	-4.2	95.8
PFTeDA	20.000	19.343	-3.3	96.7
PFTrDA	20.000	18.253	-8.7	91.3
PFUnDA	20.000	18.682	-6.6	93.4
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11Cl-PF3OUdS	20.000	17.899	-10.5	89.5
13C3-HFPO-DA	10.000	7.511	-24.9	75.1
9Cl-PF3ONS	20.000	18.172	-9.1	90.9
ADONA	20.000	17.113	-14.4	85.6
HFPO-DA	20.000	18.027	-9.9	90.1
M3-HFPO-DA	---	--ISTD--		
d3-MeFOSA	10.000	9.641	-3.6	96.4
MeFOSA	20.000	18.557	-7.2	92.8
M3-MeFOSA	---	--ISTD--		
M5-EtFOSAA	---	--ISTD--		
d5-EtFOSAA	10.000	9.891	-1.1	98.9
4-PFECHS	20.000	18.263	-8.7	91.3
FBSA	20.000	18.941	-5.3	94.7
FHxSA	20.000	21.090	5.5	105.5

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FC12099
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample: S5Q377-ECC377
Lab FileID: 5Q24080.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\010224_ID_S5Q377\s5q377.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\010224_ID_S5Q377\5Q24026.d
2:D:\MassHunter\Data\010224_ID_S5Q377\5Q24027.d
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4:D:\MassHunter\Data\010224_ID_S5Q377\5Q24029.d
5:D:\MassHunter\Data\010224_ID_S5Q377\5Q24030.d
6:D:\MassHunter\Data\010224_ID_S5Q377\5Q24031.d
7:D:\MassHunter\Data\010224_ID_S5Q377\5Q24032.d
8:D:\MassHunter\Data\010224_ID_S5Q377\5Q24033.d

Data File: 5Q24080
Type : QC
Level : 6

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	10.000	8.660	-13.4	86.6
13C2-6:2FTS	10.000	8.907	-10.9	89.1
13C2-8:2FTS	10.000	9.749	-2.5	97.5
13C2-PFDoDA	10.000	9.171	-8.3	91.7
13C2-PFTeDA	10.000	9.313	-6.9	93.1
13C3-PFBS	10.000	7.694	-23.1	76.9
13C3-PFHxS	10.000	8.245	-17.5	82.5
13C4-PFBA	10.000	7.794	-22.1	77.9
13C4-PFHpA	10.000	8.228	-17.7	82.3
13C5-PFHxA	10.000	8.046	-19.5	80.5
13C5-PFPeA	10.000	7.749	-22.5	77.5
13C6-PFDA	10.000	9.019	-9.8	90.2
13C7-PFUnDA	10.000	9.146	-8.5	91.5
13C8-FOSA	10.000	9.455	-5.4	94.6
13C8-PFOA	10.000	8.634	-13.7	86.3
13C8-PFOS	10.000	8.662	-13.4	86.6
13C9-PFNA	10.000	8.961	-10.4	89.6
4:2FTS	20.000	19.823	-0.9	99.1
6:2FTS	20.000	20.389	1.9	101.9
8:2FTS	20.000	19.755	-1.2	98.8
d3-MeFOSAA	10.000	9.765	-2.4	97.6
EtFOSAA	20.000	19.700	-1.5	98.5
FOSA	20.000	18.769	-6.2	93.8
MeFOSAA	20.000	19.080	-4.6	95.4
PFBA	20.000	18.271	-8.6	91.4
PFBS	20.000	18.473	-7.6	92.4
PFDA	20.000	18.614	-6.9	93.1
PFDoDA	20.000	19.025	-4.9	95.1
PFDS	20.000	17.956	-10.2	89.8
PFHpA	20.000	19.189	-4.1	95.9
PFHpS	20.000	17.856	-10.7	89.3
PFHxA	20.000	18.656	-6.7	93.3
PFHxS	20.000	18.918	-5.4	94.6
PFNA	20.000	18.419	-7.9	92.1
PFNS	20.000	18.937	-5.3	94.7
PFOA	20.000	18.487	-7.6	92.4
PFOS	20.000	18.921	-5.4	94.6

Continuing Calibration Summary

Job Number: FC12099
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample: S5Q377-ECC377
Lab FileID: 5Q24080.D

PFPeA	20.000	18.837	-5.8	94.2
PFPeS	20.000	19.815	-0.9	99.1
PFTeDA	20.000	18.866	-5.7	94.3
PFTrDA	20.000	18.342	-8.3	91.7
PFUnDA	20.000	18.721	-6.4	93.6
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11Cl-PF3OUdS	20.000	17.869	-10.7	89.3
13C3-HFPO-DA	10.000	7.831	-21.7	78.3
9Cl-PF3ONS	20.000	18.108	-9.5	90.5
ADONA	20.000	19.166	-4.2	95.8
HFPO-DA	20.000	18.814	-5.9	94.1
M3-HFPO-DA	---	--ISTD--		
d3-MeFOSA	10.000	9.694	-3.1	96.9
MeFOSA	20.000	18.532	-7.3	92.7
M3-MeFOSA	---	--ISTD--		
M5-EtFOSAA	---	--ISTD--		
d5-EtFOSAA	10.000	9.846	-1.5	98.5
4-PFECHS	20.000	17.887	-10.6	89.4
FBSA	20.000	19.181	-4.1	95.9
FHxSA	20.000	20.798	4.0	104.0

CC Criteria: +/- 30%

8.6.24

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Continuing Calibration Summary

Job Number: FC12099
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample: S5Q380-CC377
Lab FileID: 5Q24238.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\010524_ID_S5Q380\s5q380.batch.bin

Level ID:Calibration File
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2:D:\MassHunter\Data\010224_ID_S5Q377\5Q24027.d
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4:D:\MassHunter\Data\010224_ID_S5Q377\5Q24029.d
5:D:\MassHunter\Data\010224_ID_S5Q377\5Q24030.d
6:D:\MassHunter\Data\010224_ID_S5Q377\5Q24031.d
7:D:\MassHunter\Data\010224_ID_S5Q377\5Q24032.d
8:D:\MassHunter\Data\010224_ID_S5Q377\5Q24033.d

Data File: 5Q24238
Type : QC
Level : 2

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	10.000	9.151	-8.5	91.5
13C2-6:2FTS	10.000	9.115	-8.9	91.1
13C2-8:2FTS	10.000	9.557	-4.4	95.6
13C2-PFDoDA	10.000	8.992	-10.1	89.9
13C2-PFTeDA	10.000	9.246	-7.5	92.5
13C3-PFBS	10.000	8.763	-12.4	87.6
13C3-PFHxS	10.000	9.610	-3.9	96.1
13C4-PFBA	10.000	9.539	-4.6	95.4
13C4-PFHpA	10.000	9.395	-6.1	93.9
13C5-PFHxA	10.000	9.572	-4.3	95.7
13C5-PFPeA	10.000	9.110	-8.9	91.1
13C6-PFDA	10.000	9.995	-0.1	99.9
13C7-PFUnDA	10.000	9.554	-4.5	95.5
13C8-FOSA	10.000	11.432	14.3	114.3
13C8-PFOA	10.000	9.498	-5.0	95.0
13C8-PFOS	10.000	9.497	-5.0	95.0
13C9-PFNA	10.000	10.014	0.1	100.1
4:2FTS	1.000	0.953	-4.7	95.3
6:2FTS	1.000	0.942	-5.8	94.2
8:2FTS	1.000	0.968	-3.2	96.8
d3-MeFOSAA	10.000	11.199	12.0	112.0
EtFOSAA	1.000	1.011	1.1	101.1
FOSA	1.000	0.816	-18.4	81.6
MeFOSAA	1.000	0.941	-5.9	94.1
PFBA	1.000	0.789	-21.1	78.9
PFBS	1.000	0.808	-19.2	80.8
PFDA	1.000	0.805	-19.5	80.5
PFDoDA	1.000	0.910	-9.0	91.0
PFDS	1.000	0.825	-17.5	82.5
PFHpA	1.000	0.841	-15.9	84.1
PFHpS	1.000	0.801	-19.9	80.1
PFHxA	1.000	0.797	-20.3	79.7
PFHxS	1.000	0.741	-25.9	74.1
PFNA	1.000	0.839	-16.1	83.9
PFNS	1.000	0.883	-11.7	88.3
PFOA	1.000	0.830	-17.0	83.0
PFOS	1.000	0.763	-23.7	76.3

Continuing Calibration Summary

Job Number: FC12099
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample: S5Q380-CC377
Lab FileID: 5Q24238.D

PFPeA	1.000	0.827	-17.3	82.7
PFPeS	1.000	0.792	-20.8	79.2
PFTeDA	1.000	0.923	-7.7	92.3
PFTrDA	1.000	0.871	-12.9	87.1
PFUnDA	1.000	0.802	-19.8	80.2
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11Cl-PF3OUdS	1.000	0.849	-15.1	84.9
13C3-HFPO-DA	10.000	9.562	-4.4	95.6
9Cl-PF3ONS	1.000	0.765	-23.5	76.5
ADONA	1.000	0.787	-21.3	78.7
HFPO-DA	1.000	0.872	-12.8	87.2
M3-HFPO-DA	---	--ISTD--		
d3-MeFOSA	10.000	11.209	12.1	112.1
MeFOSA	1.000	0.782	-21.8	78.2
M3-MeFOSA	---	--ISTD--		
M5-EtFOSAA	---	--ISTD--		
d5-EtFOSAA	10.000	11.081	10.8	110.8
4-PFECHS	1.000	0.792	-20.8	79.2
FBSA	1.000	0.866	-13.4	86.6
FHxSA	1.000	0.995	-0.5	99.5

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FC12099
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample: S5Q380-CC377
Lab FileID: 5Q24246.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\010524_ID_S5Q380\s5q380.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\010224_ID_S5Q377\5Q24026.d
2:D:\MassHunter\Data\010224_ID_S5Q377\5Q24027.d
3:D:\MassHunter\Data\010224_ID_S5Q377\5Q24028.d
4:D:\MassHunter\Data\010224_ID_S5Q377\5Q24029.d
5:D:\MassHunter\Data\010224_ID_S5Q377\5Q24030.d
6:D:\MassHunter\Data\010224_ID_S5Q377\5Q24031.d
7:D:\MassHunter\Data\010224_ID_S5Q377\5Q24032.d
8:D:\MassHunter\Data\010224_ID_S5Q377\5Q24033.d

Data File: 5Q24246
Type : QC
Level : 6

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	10.000	10.000	0.0	100.0
13C2-6:2FTS	10.000	9.838	-1.6	98.4
13C2-8:2FTS	10.000	10.313	3.1	103.1
13C2-PFDoDA	10.000	9.338	-6.6	93.4
13C2-PFTeDA	10.000	9.542	-4.6	95.4
13C3-PFBS	10.000	8.537	-14.6	85.4
13C3-PFHxS	10.000	9.185	-8.1	91.9
13C4-PFBA	10.000	9.218	-7.8	92.2
13C4-PFHpA	10.000	9.564	-4.4	95.6
13C5-PFHxA	10.000	9.715	-2.8	97.2
13C5-PFPeA	10.000	9.448	-5.5	94.5
13C6-PFDA	10.000	9.708	-2.9	97.1
13C7-PFUnDA	10.000	8.972	-10.3	89.7
13C8-FOSA	10.000	10.929	9.3	109.3
13C8-PFOA	10.000	9.747	-2.5	97.5
13C8-PFOS	10.000	9.517	-4.8	95.2
13C9-PFNA	10.000	9.976	-0.2	99.8
4:2FTS	20.000	20.020	0.1	100.1
6:2FTS	20.000	20.185	0.9	100.9
8:2FTS	20.000	19.440	-2.8	97.2
d3-MeFOSAA	10.000	11.014	10.1	110.1
EtFOSAA	20.000	18.958	-5.2	94.8
FOSA	20.000	18.447	-7.8	92.2
MeFOSAA	20.000	18.350	-8.3	91.7
PFBA	20.000	18.378	-8.1	91.9
PFBS	20.000	18.669	-6.7	93.3
PFDA	20.000	18.836	-5.8	94.2
PFDoDA	20.000	18.635	-6.8	93.2
PFDS	20.000	18.477	-7.6	92.4
PFHpA	20.000	18.485	-7.6	92.4
PFHpS	20.000	17.832	-10.8	89.2
PFHxA	20.000	18.416	-7.9	92.1
PFHxS	20.000	18.225	-8.9	91.1
PFNA	20.000	18.206	-9.0	91.0
PFNS	20.000	18.778	-6.1	93.9
PFOA	20.000	18.084	-9.6	90.4
PFOS	20.000	18.312	-8.4	91.6

Continuing Calibration Summary

Job Number: FC12099
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample: S5Q380-CC377
Lab FileID: 5Q24246.D

PFPeA	20.000	18.324	-8.4	91.6
PFPeS	20.000	19.804	-1.0	99.0
PFTeDA	20.000	18.295	-8.5	91.5
PFTrDA	20.000	18.393	-8.0	92.0
PFUnDA	20.000	19.491	-2.5	97.5
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11Cl-PF3OUdS	20.000	18.290	-8.6	91.4
13C3-HFPO-DA	10.000	9.536	-4.6	95.4
9Cl-PF3ONS	20.000	18.082	-9.6	90.4
ADONA	20.000	19.786	-1.1	98.9
HFPO-DA	20.000	19.085	-4.6	95.4
M3-HFPO-DA	---	--ISTD--		
d3-MeFOSA	10.000	10.963	9.6	109.6
MeFOSA	20.000	17.664	-11.7	88.3
M3-MeFOSA	---	--ISTD--		
M5-EtFOSAA	---	--ISTD--		
d5-EtFOSAA	10.000	10.877	8.8	108.8
4-PFECHS	20.000	17.164	-14.2	85.8
FBSA	20.000	19.527	-2.4	97.6
FHxSA	20.000	21.475	7.4	107.4

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FC12099
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample: S5Q380-CC377
Lab FileID: 5Q24258.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\010524_ID_S5Q380\s5q380.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\010224_ID_S5Q377\5Q24026.d
2:D:\MassHunter\Data\010224_ID_S5Q377\5Q24027.d
3:D:\MassHunter\Data\010224_ID_S5Q377\5Q24028.d
4:D:\MassHunter\Data\010224_ID_S5Q377\5Q24029.d
5:D:\MassHunter\Data\010224_ID_S5Q377\5Q24030.d
6:D:\MassHunter\Data\010224_ID_S5Q377\5Q24031.d
7:D:\MassHunter\Data\010224_ID_S5Q377\5Q24032.d
8:D:\MassHunter\Data\010224_ID_S5Q377\5Q24033.d

Data File: 5Q24258
Type : QC
Level : 6

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	10.000	10.008	0.1	100.1
13C2-6:2FTS	10.000	9.539	-4.6	95.4
13C2-8:2FTS	10.000	10.150	1.5	101.5
13C2-PFDoDA	10.000	9.065	-9.4	90.6
13C2-PFTeDA	10.000	9.534	-4.7	95.3
13C3-PFBS	10.000	9.046	-9.5	90.5
13C3-PFHxS	10.000	9.428	-5.7	94.3
13C4-PFBA	10.000	9.394	-6.1	93.9
13C4-PFHpA	10.000	9.435	-5.6	94.4
13C5-PFHxA	10.000	9.407	-5.9	94.1
13C5-PFPeA	10.000	9.416	-5.8	94.2
13C6-PFDA	10.000	9.612	-3.9	96.1
13C7-PFUnDA	10.000	9.045	-9.5	90.5
13C8-FOSA	10.000	10.625	6.3	106.3
13C8-PFOA	10.000	9.529	-4.7	95.3
13C8-PFOS	10.000	9.361	-6.4	93.6
13C9-PFNA	10.000	9.661	-3.4	96.6
4:2FTS	20.000	19.663	-1.7	98.3
6:2FTS	20.000	20.588	2.9	102.9
8:2FTS	20.000	19.723	-1.4	98.6
d3-MeFOSAA	10.000	10.745	7.4	107.4
EtFOSAA	20.000	18.930	-5.3	94.7
FOSA	20.000	18.523	-7.4	92.6
MeFOSAA	20.000	18.765	-6.2	93.8
PFBA	20.000	18.472	-7.6	92.4
PFBS	20.000	18.345	-8.3	91.7
PFDA	20.000	18.482	-7.6	92.4
PFDoDA	20.000	19.273	-3.6	96.4
PFDS	20.000	18.952	-5.2	94.8
PFHpA	20.000	18.992	-5.0	95.0
PFHpS	20.000	18.569	-7.2	92.8
PFHxA	20.000	18.786	-6.1	93.9
PFHxS	20.000	18.651	-6.7	93.3
PFNA	20.000	18.554	-7.2	92.8
PFNS	20.000	18.484	-7.6	92.4
PFOA	20.000	18.516	-7.4	92.6
PFOS	20.000	18.961	-5.2	94.8

Continuing Calibration Summary

Job Number: FC12099
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Sample: S5Q380-CC377
Lab FileID: 5Q24258.D

PFPeA	20.000	18.599	-7.0	93.0
PFPeS	20.000	18.983	-5.1	94.9
PFTeDA	20.000	18.885	-5.6	94.4
PFTrDA	20.000	18.391	-8.0	92.0
PFUnDA	20.000	18.783	-6.1	93.9
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11Cl-PF3OUdS	20.000	18.276	-8.6	91.4
13C3-HFPO-DA	10.000	8.923	-10.8	89.2
9Cl-PF3ONS	20.000	17.958	-10.2	89.8
ADONA	20.000	18.971	-5.1	94.9
HFPO-DA	20.000	19.672	-1.6	98.4
M3-HFPO-DA	---	--ISTD--		
d3-MeFOSA	10.000	11.022	10.2	110.2
MeFOSA	20.000	18.269	-8.7	91.3
M3-MeFOSA	---	--ISTD--		
M5-EtFOSAA	---	--ISTD--		
d5-EtFOSAA	10.000	10.847	8.5	108.5
4-PFECHS	20.000	17.740	-11.3	88.7
FBSA	20.000	19.784	-1.1	98.9
FHxSA	20.000	21.940	9.7	109.7

CC Criteria: +/- 30%

Run Sequence Report

Job Number: FC12099
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Run ID: S2Q1691 **Method:** EPA 537M QSM5.3 B-1 **Instrument ID:** GCMS2Q

Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
S2Q1691-IC1691	2Q118509.D	01/02/24 12:18	n/a	Mass Calibration Verification
S2Q1691-IC1691	2Q118510.D	01/02/24 12:34	n/a	Initial cal 0.5
S2Q1691-IC1691	2Q118511.D	01/02/24 12:51	n/a	Initial cal 1
S2Q1691-IC1691	2Q118512.D	01/02/24 13:07	n/a	Initial cal 2
S2Q1691-IC1691	2Q118513.D	01/02/24 13:24	n/a	Initial cal 5
S2Q1691-IC1691	2Q118514.D	01/02/24 13:40	n/a	Initial cal 10
S2Q1691-ICC1691	2Q118515.D	01/02/24 13:57	n/a	Initial cal 20
S2Q1691-IC1691	2Q118516.D	01/02/24 14:13	n/a	Initial cal 50
S2Q1691-IC1691	2Q118517.D	01/02/24 14:30	n/a	Initial cal 100
S2Q1691-IBLK	2Q118518.D	01/02/24 14:46	n/a	Instrument Blank
S2Q1691-ICV1691	2Q118519.D	01/02/24 15:03	n/a	Initial cal verification 20
S2Q1691-ICV1691	2Q118520.D	01/02/24 15:19	n/a	Initial cal verification 20
S2Q1691-RT	2Q118521.D	01/02/24 15:36	n/a	Retention Time Marker
S2Q1691-CC1691	2Q118522.D	01/02/24 15:52	n/a	Continuing cal 20
S2Q1691-CC1691	2Q118523.D	01/02/24 16:09	n/a	Continuing cal 1.0LL
OP894-BS1	2Q118524.D	01/02/24 16:25	OP894	Blank Spike
OP894-BS2	2Q118525.D	01/02/24 16:42	OP894	Blank Spike
OP894-BS3	2Q118526.D	01/02/24 16:58	OP894	Blank Spike
OP894-BS4	2Q118527.D	01/02/24 17:15	OP894	Blank Spike
OP894-MB	2Q118528.D	01/02/24 17:31	OP894	Method Blank
ZZZZZZ	2Q118529.D	01/02/24 17:48	OP894	(unrelated sample)
ZZZZZZ	2Q118530.D	01/02/24 18:04	OP894	(unrelated sample)
FC12165-1	2Q118531.D	01/02/24 18:21	OP894	(used for QC only; not part of job FC12099)
OP894-MS	2Q118532.D	01/02/24 18:37	OP894	Matrix Spike
S2Q1691-CC1691	2Q118533.D	01/02/24 18:54	n/a	Continuing cal 20
FC12165-2	2Q118535.D	01/02/24 19:27	OP894	(used for QC only; not part of job FC12099)
ZZZZZZ	2Q118537.D	01/02/24 20:00	OP894	(unrelated sample)
FC12106-1	2Q118540.D	01/02/24 20:50	OP875	(used for QC only; not part of job FC12099)
FC12106-2	2Q118542.D	01/02/24 21:23	OP875	(used for QC only; not part of job FC12099)
S2Q1691-CC1691	2Q118545.D	01/02/24 22:12	n/a	Continuing cal 20
ZZZZZZ	2Q118547.D	01/02/24 22:45	OP875	(unrelated sample)
ZZZZZZ	2Q118548.D	01/02/24 23:02	OP875	(unrelated sample)
S2Q1691-ECC1691	2Q118549.D	01/02/24 23:18	n/a	Ending cal 20

Run Sequence Report

Job Number: FC12099
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Run ID: S2Q1693 **Method:** EPA 537M QSM5.3 B-1 **Instrument ID:** GCMS2Q

Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
S2Q1693-IBLK	2Q118600.D	01/04/24 15:13	n/a	Instrument Blank
S2Q1693-RT	2Q118601.D	01/04/24 15:29	n/a	Retention Time Marker
S2Q1693-CC1691	2Q118602.D	01/04/24 15:46	n/a	Continuing cal 20
S2Q1693-CC1691	2Q118603.D	01/04/24 16:02	n/a	Continuing cal 1.0LL
OP937-BS	2Q118604.D	01/04/24 16:19	OP937	Blank Spike
OP937-MB	2Q118605.D	01/04/24 16:35	OP937	Method Blank
FC12099-3	2Q118606.D	01/04/24 16:52	OP937	CRHE-MW0025-030.0-20231218
FC12099-14	2Q118607.D	01/04/24 17:08	OP937	CRHE-IW0001S-008.0-20231218
FC12099-15	2Q118608.D	01/04/24 17:25	OP937	CRHE-IW0019I-040.0-20231218
ZZZZZZ	2Q118609.D	01/04/24 17:41	OP937	(unrelated sample)
ZZZZZZ	2Q118610.D	01/04/24 17:58	OP937	(unrelated sample)
ZZZZZZ	2Q118611.D	01/04/24 18:14	OP937	(unrelated sample)
S2Q1693-CC1691	2Q118612.D	01/04/24 18:31	n/a	Continuing cal 20
FC12185-2	2Q118614.D	01/04/24 19:04	OP937	(used for QC only; not part of job FC12099)
OP937-MS	2Q118615.D	01/04/24 19:20	OP937	Matrix Spike
OP937-MSD	2Q118616.D	01/04/24 19:37	OP937	Matrix Spike Duplicate
ZZZZZZ	2Q118617.D	01/04/24 19:53	OP937	(unrelated sample)
ZZZZZZ	2Q118618.D	01/04/24 20:10	OP937	(unrelated sample)
ZZZZZZ	2Q118619.D	01/04/24 20:26	OP937	(unrelated sample)
ZZZZZZ	2Q118620.D	01/04/24 20:43	OP937	(unrelated sample)
ZZZZZZ	2Q118621.D	01/04/24 20:59	OP937	(unrelated sample)
ZZZZZZ	2Q118622.D	01/04/24 21:16	OP937	(unrelated sample)
ZZZZZZ	2Q118623.D	01/04/24 21:33	OP937	(unrelated sample)
S2Q1693-CC1691	2Q118624.D	01/04/24 21:49	n/a	Continuing cal 20
ZZZZZZ	2Q118626.D	01/04/24 22:22	OP937	(unrelated sample)
ZZZZZZ	2Q118627.D	01/04/24 22:39	OP937	(unrelated sample)
ZZZZZZ	2Q118628.D	01/04/24 22:55	OP937	(unrelated sample)
OP939-BS	2Q118629.D	01/04/24 23:12	OP939	Blank Spike
OP939-MB	2Q118630.D	01/04/24 23:28	OP939	Method Blank
ZZZZZZ	2Q118631.D	01/04/24 23:45	OP939	(unrelated sample)
ZZZZZZ	2Q118632.D	01/05/24 00:01	OP939	(unrelated sample)
FC12242-3	2Q118633.D	01/05/24 00:18	OP939	(used for QC only; not part of job FC12099)
OP939-MS	2Q118634.D	01/05/24 00:34	OP939	Matrix Spike
ZZZZZZ	2Q118635.D	01/05/24 00:51	OP939	(unrelated sample)
S2Q1693-CC1691	2Q118636.D	01/05/24 01:07	n/a	Continuing cal 20
S2Q1693-CC1691	2Q118637.D	01/05/24 01:24	n/a	Continuing cal 1.0LL
ZZZZZZ	2Q118638.D	01/05/24 01:40	OP939	(unrelated sample)
ZZZZZZ	2Q118639.D	01/05/24 01:57	OP939	(unrelated sample)
ZZZZZZ	2Q118640.D	01/05/24 02:13	OP939	(unrelated sample)
FC12245-4	2Q118641.D	01/05/24 02:30	OP939	(used for QC only; not part of job FC12099)
OP939-DUP	2Q118642.D	01/05/24 02:46	OP939	Duplicate
ZZZZZZ	2Q118643.D	01/05/24 03:03	OP939	(unrelated sample)
ZZZZZZ	2Q118644.D	01/05/24 03:19	OP939	(unrelated sample)
ZZZZZZ	2Q118645.D	01/05/24 03:36	OP939	(unrelated sample)
ZZZZZZ	2Q118646.D	01/05/24 03:52	OP939	(unrelated sample)
ZZZZZZ	2Q118647.D	01/05/24 04:09	OP939	(unrelated sample)

Run Sequence Report

Job Number: FC12099
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Run ID: S2Q1693 **Method:** EPA 537M QSM5.3 B-1 **Instrument ID:** GCMS2Q

Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
S2Q1693-CC1691	2Q118648.D	01/05/24 04:25	n/a	Continuing cal 20
ZZZZZZ	2Q118650.D	01/05/24 04:59	OP939	(unrelated sample)
ZZZZZZ	2Q118651.D	01/05/24 05:15	OP939	(unrelated sample)
ZZZZZZ	2Q118653.D	01/05/24 05:48	OP939	(unrelated sample)
S2Q1693-ECC1691	2Q118654.D	01/05/24 06:05	n/a	Ending cal 20

Run Sequence Report

Job Number: FC12099
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Run ID: S5Q375 **Method:** EPA 537M QSM5.3 B-1 **Instrument ID:** GCMS5Q

Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
S5Q375-IC375	5Q23907.D	12/28/23 14:17	n/a	Mass Calibration Verification
S5Q375-IC375	5Q23908.D	12/28/23 14:33	n/a	Initial cal 0.5
S5Q375-IC375	5Q23909.D	12/28/23 14:50	n/a	Initial cal 1
S5Q375-IC375	5Q23910.D	12/28/23 15:06	n/a	Initial cal 2
S5Q375-IC375	5Q23911.D	12/28/23 15:23	n/a	Initial cal 5
S5Q375-IC375	5Q23912.D	12/28/23 15:40	n/a	Initial cal 10
S5Q375-ICC375	5Q23913.D	12/28/23 15:56	n/a	Initial cal 20
S5Q375-IC375	5Q23914.D	12/28/23 16:13	n/a	Initial cal 50
S5Q375-IC375	5Q23915.D	12/28/23 16:29	n/a	Initial cal 100
S5Q375-IBLK	5Q23916.D	12/28/23 16:46	n/a	Instrument Blank
S5Q375-ICV375	5Q23917.D	12/28/23 17:02	n/a	Initial cal verification 20
S5Q375-ICV375	5Q23918.D	12/28/23 17:19	n/a	Initial cal verification 20
S5Q375-RT	5Q23919.D	12/28/23 17:35	n/a	Retention Time Marker
S5Q375-CC375	5Q23920.D	12/28/23 17:52	n/a	Continuing cal 20
S5Q375-CC375	5Q23921.D	12/28/23 18:08	n/a	Continuing cal 1.0LL
OP834-BS	5Q23922.D	12/28/23 18:25	OP834	Blank Spike
OP834-MB	5Q23923.D	12/28/23 18:42	OP834	Method Blank
ZZZZZZ	5Q23924.D	12/28/23 18:58	OP834	(unrelated sample)
OP834-MS	5Q23928.D	12/28/23 20:04	OP834	Matrix Spike
OP834-MSD	5Q23929.D	12/28/23 20:21	OP834	Matrix Spike Duplicate
ZZZZZZ	5Q23931.D	12/28/23 20:54	OP834	(unrelated sample)
S5Q375-CC375	5Q23932.D	12/28/23 21:10	n/a	Continuing cal 20
ZZZZZZ	5Q23934.D	12/28/23 21:43	OP834	(unrelated sample)
ZZZZZZ	5Q23936.D	12/28/23 22:17	OP834	(unrelated sample)
ZZZZZZ	5Q23937.D	12/28/23 22:33	OP834	(unrelated sample)
S5Q375-CC375	5Q23942.D	12/28/23 23:56	n/a	Continuing cal 20
S5Q375-CC375	5Q23943.D	12/29/23 00:12	n/a	Continuing cal 1.0LL
OP835-BS	5Q23944.D	12/29/23 00:29	OP835	Blank Spike
OP835-MB	5Q23945.D	12/29/23 00:45	OP835	Method Blank
FC12099-1	5Q23946.D	12/29/23 01:02	OP835	CRHE-MW0030-016.0-20231218
FC12099-2	5Q23947.D	12/29/23 01:19	OP835	CRHE-IW0009S-007.0-20231218
FC12099-3	5Q23948.D	12/29/23 01:35	OP835	CRHE-MW0025-030.0-20231218
FC12099-4	5Q23949.D	12/29/23 01:52	OP835	CRHE-MW0024-010.0-20231218
FC12099-5	5Q23950.D	12/29/23 02:08	OP835	CRHE-IW0002S-008.0-20231218
FC12099-6	5Q23951.D	12/29/23 02:25	OP835	CRHE-IW0004I-035.0-20231218
FC12099-7	5Q23952.D	12/29/23 02:41	OP835	CRHE-FB-20231218-01
FC12099-8	5Q23953.D	12/29/23 02:58	OP835	CRHE-EB-20231218-01
S5Q375-CC375	5Q23954.D	12/29/23 03:14	n/a	Continuing cal 20
FC12099-14	5Q23956.D	12/29/23 03:47	OP835	CRHE-IW0001S-008.0-20231218
FC12099-16	5Q23958.D	12/29/23 04:21	OP835	CRHE-IW0013S-007.5-20231218
FC12099-17	5Q23959.D	12/29/23 04:37	OP835	CRHE-IW0017I-030.0-20231218
ZZZZZZ	5Q23960.D	12/29/23 04:54	OP835	(unrelated sample)
ZZZZZZ	5Q23961.D	12/29/23 05:10	OP835	(unrelated sample)
ZZZZZZ	5Q23962.D	12/29/23 05:27	OP835	(unrelated sample)
FC12189-4	5Q23963.D	12/29/23 05:43	OP835	(used for QC only; not part of job FC12099)
OP835-MS	5Q23964.D	12/29/23 06:00	OP835	Matrix Spike

Run Sequence Report

Job Number: FC12099
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Run ID: S5Q375 **Method:** EPA 537M QSM5.3 B-1 **Instrument ID:** GCMS5Q

Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
OP835-MSD	5Q23965.D	12/29/23 06:17	OP835	Matrix Spike Duplicate
S5Q375-CC375	5Q23966.D	12/29/23 06:33	n/a	Continuing cal 20
ZZZZZZ	5Q23968.D	12/29/23 07:06	OP835	(unrelated sample)
ZZZZZZ	5Q23969.D	12/29/23 07:23	OP835	(unrelated sample)
ZZZZZZ	5Q23970.D	12/29/23 07:39	OP835	(unrelated sample)
S5Q375-ECC375	5Q23971.D	12/29/23 07:56	n/a	Ending cal 20

Run Sequence Report

Job Number: FC12099
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Run ID: S5Q377 **Method:** EPA 537M BY ID **Instrument ID:** GCMS5Q

Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
S5Q377-IC377	5Q24025.D	01/02/24 16:49	n/a	Mass Calibration Verification
S5Q377-IC377	5Q24026.D	01/02/24 17:05	n/a	Initial cal 0.5
S5Q377-IC377	5Q24027.D	01/02/24 17:22	n/a	Initial cal 1
S5Q377-IC377	5Q24028.D	01/02/24 17:38	n/a	Initial cal 2
S5Q377-IC377	5Q24029.D	01/02/24 17:55	n/a	Initial cal 5
S5Q377-IC377	5Q24030.D	01/02/24 18:11	n/a	Initial cal 10
S5Q377-ICC377	5Q24031.D	01/02/24 18:28	n/a	Initial cal 20
S5Q377-IC377	5Q24032.D	01/02/24 18:44	n/a	Initial cal 50
S5Q377-IC377	5Q24033.D	01/02/24 19:01	n/a	Initial cal 100
S5Q377-IBLK	5Q24034.D	01/02/24 19:18	n/a	Instrument Blank
S5Q377-ICV377	5Q24035.D	01/02/24 19:34	n/a	Initial cal verification 20
S5Q377-ICV377	5Q24036.D	01/02/24 19:51	n/a	Initial cal verification 20
S5Q377-RT	5Q24037.D	01/02/24 20:07	n/a	Retention Time Marker
S5Q377-CC377	5Q24038.D	01/02/24 20:24	n/a	Continuing cal 20
S5Q377-CC377	5Q24039.D	01/02/24 20:40	n/a	Continuing cal 1.0LL
OP877-BS	5Q24040.D	01/02/24 20:57	OP877	Blank Spike
OP877-MB	5Q24041.D	01/02/24 21:13	OP877	Method Blank
OP877-MS	5Q24042.D	01/02/24 21:30	OP877	Matrix Spike
FC12145-1	5Q24043.D	01/02/24 21:46	OP877	(used for QC only; not part of job FC12099)
FC12145-2	5Q24044.D	01/02/24 22:03	OP877	(used for QC only; not part of job FC12099)
OP877-DUP	5Q24045.D	01/02/24 22:20	OP877	Duplicate
ZZZZZZ	5Q24046.D	01/02/24 22:36	OP877	(unrelated sample)
ZZZZZZ	5Q24047.D	01/02/24 22:53	OP877	(unrelated sample)
ZZZZZZ	5Q24048.D	01/02/24 23:09	OP877	(unrelated sample)
ZZZZZZ	5Q24049.D	01/02/24 23:26	OP877	(unrelated sample)
S5Q377-CC377	5Q24050.D	01/02/24 23:42	n/a	Continuing cal 20
ZZZZZZ	5Q24052.D	01/03/24 00:15	OP877	(unrelated sample)
ZZZZZZ	5Q24053.D	01/03/24 00:32	OP877	(unrelated sample)
ZZZZZZ	5Q24054.D	01/03/24 00:48	OP877	(unrelated sample)
ZZZZZZ	5Q24055.D	01/03/24 01:05	OP877	(unrelated sample)
ZZZZZZ	5Q24056.D	01/03/24 01:22	OP877	(unrelated sample)
ZZZZZZ	5Q24057.D	01/03/24 01:38	OP877	(unrelated sample)
ZZZZZZ	5Q24058.D	01/03/24 01:55	OP877	(unrelated sample)
ZZZZZZ	5Q24059.D	01/03/24 02:11	OP877	(unrelated sample)
ZZZZZZ	5Q24060.D	01/03/24 02:28	OP877	(unrelated sample)
ZZZZZZ	5Q24061.D	01/03/24 02:44	OP877	(unrelated sample)
S5Q377-CC377	5Q24062.D	01/03/24 03:01	n/a	Continuing cal 20
ZZZZZZ	5Q24064.D	01/03/24 03:34	OP877	(unrelated sample)
ZZZZZZ	5Q24065.D	01/03/24 03:51	OP877	(unrelated sample)
S5Q377-CC377	5Q24074.D	01/03/24 06:19	n/a	Continuing cal 20
FC12099-4	5Q24076.D	01/03/24 06:52	OP835	CRHE-MW0024-010.0-20231218
FC12099-6	5Q24077.D	01/03/24 07:09	OP835	CRHE-IW0004I-035.0-20231218
S5Q377-ECC377	5Q24080.D	01/03/24 07:59	n/a	Ending cal 20

Run Sequence Report

Job Number: FC12099
Account: HGLFLMI Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Run ID: S5Q380 **Method:** EPA 537M QSM5.3 B-1 **Instrument ID:** GCMS5Q

Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
S5Q380-IBLK	5Q24197.D	01/05/24 06:13	n/a	Instrument Blank
S5Q380-IBLK	5Q24197.D	01/05/24 06:13	n/a	Instrument Blank
S5Q380-RT	5Q24198.D	01/05/24 06:30	n/a	Retention Time Marker
S5Q380-CC377	5Q24199.D	01/05/24 06:46	n/a	Continuing cal 20
S5Q380-CC377	5Q24200.D	01/05/24 07:03	n/a	Continuing cal 1.0LL
ZZZZZZ	5Q24201.D	01/05/24 07:19	OP923	(unrelated sample)
ZZZZZZ	5Q24202.D	01/05/24 07:36	OP923	(unrelated sample)
FC12110-4	5Q24203.D	01/05/24 07:52	OP923	(used for QC only; not part of job FC12099)
ZZZZZZ	5Q24204.D	01/05/24 08:09	OP923	(unrelated sample)
ZZZZZZ	5Q24205.D	01/05/24 08:26	OP923	(unrelated sample)
ZZZZZZ	5Q24206.D	01/05/24 08:42	OP923	(unrelated sample)
ZZZZZZ	5Q24207.D	01/05/24 08:59	OP923	(unrelated sample)
S5Q380-CC377	5Q24209.D	01/05/24 09:46	n/a	Continuing cal 20
ZZZZZZ	5Q24211.D	01/05/24 10:19	OP923	(unrelated sample)
ZZZZZZ	5Q24212.D	01/05/24 10:36	OP923	(unrelated sample)
ZZZZZZ	5Q24213.D	01/05/24 10:52	OP923	(unrelated sample)
S5Q380-CC377	5Q24214.D	01/05/24 11:09	n/a	Continuing cal 20
ZZZZZZ	5Q24216.D	01/05/24 11:42	OP923	(unrelated sample)
OP927-BS	5Q24217.D	01/05/24 11:58	OP927	Blank Spike
OP927-MB	5Q24218.D	01/05/24 12:15	OP927	Method Blank
FC12113-1	5Q24220.D	01/05/24 12:37	OP927	(used for QC only; not part of job FC12099)
OP927-DUP	5Q24222.D	01/05/24 12:59	OP927	Duplicate
S5Q380-CC377	5Q24225.D	01/05/24 13:38	n/a	Continuing cal 20
DA60865-1	5Q24235.D	01/05/24 15:39	OP927	(used for QC only; not part of job FC12099)
S5Q380-CC377	5Q24237.D	01/05/24 16:01	n/a	Continuing cal 20
S5Q380-CC377	5Q24238.D	01/05/24 16:18	n/a	Continuing cal 1.0LL
S5Q380-CC377	5Q24246.D	01/05/24 18:07	n/a	Continuing cal 20
ZZZZZZ	5Q24248.D	01/05/24 18:40	OP927	(unrelated sample)
ZZZZZZ	5Q24249.D	01/05/24 18:56	OP947	(unrelated sample)
ZZZZZZ	5Q24250.D	01/05/24 19:13	OP947	(unrelated sample)
ZZZZZZ	5Q24251.D	01/05/24 19:29	OP948	(unrelated sample)
ZZZZZZ	5Q24252.D	01/05/24 19:46	OP939	(unrelated sample)
ZZZZZZ	5Q24253.D	01/05/24 20:02	OP939	(unrelated sample)
ZZZZZZ	5Q24254.D	01/05/24 20:19	OP939	(unrelated sample)
FC12099-3	5Q24255.D	01/05/24 20:36	OP937	CRHE-MW0025-030.0-20231218
FC12099-14	5Q24256.D	01/05/24 20:52	OP937	CRHE-IW0001S-008.0-20231218
S5Q380-CC377	5Q24258.D	01/05/24 21:25	n/a	Continuing cal 20
ZZZZZZ	5Q24260.D	01/05/24 21:58	OP937	(unrelated sample)
S5Q380-ECC377	5Q24264.D	01/05/24 23:04	n/a	Ending cal 20

MS Semi-volatiles

Raw Data

Manual Integrations APPROVED (compounds with "m" flag)
Natasha Gumtie 01/02/24 14:27

Perfluorinated Compounds by LC/MS/MS

Data File : 5Q23946.d
Operator : natashag
Acq. Method : 537_ID.m
Acq. Date-Time : 12/29/2023 1:02:30 AM
Sample Name : fc12099-1
Vial : P2-C3
DA Method File : ID_122823_S5Q375.quantmethod.xml
Batch Name : s5q375.batch.bin
Sample Information : OP835,S5Q375,120,,,1.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.937	217.0 -> 172.0	50316	10.00	µg/L	-0.050
M5-PFPeA	3.394	268.0 -> 223.0	75205	10.00	µg/L	-0.037
M5-PFHxA	4.540	318.0 -> 273.0	123705	10.00	µg/L	-0.012
M4-PFHpA	5.400	367.0 -> 322.0	127778	10.00	µg/L	-0.012
M8-PFOA	6.112	421.0 -> 376.0	180477	10.00	µg/L	-0.012
M9-PFNA	6.744	472.0 -> 427.0	178503	10.00	µg/L	-0.012
M6-PFDA	7.276	519.0 -> 474.0	171046	10.00	µg/L	-0.012
M7-PFUnDA	8.034	570.0 -> 525.0	208309	10.00	µg/L	-0.025
M2-PFDoDA	9.013	615.0 -> 570.0	168407	10.00	µg/L	-0.025
M2-PFTeDA	10.524	715.0 -> 670.0	108916	10.00	µg/L	-0.013
M8-FOSA	6.192	506.0 -> 78.0	30294	10.00	µg/L	0.000
M3-PFBS	3.599	302.0 -> 99.0	9443	10.00	µg/L	-0.037
M3-PFHxS	5.419	402.0 -> 99.0	11935	10.00	µg/L	-0.012
M8-PFOS	6.716	507.0 -> 99.0	14229	10.00	µg/L	-0.012
M2-4:2FTS	4.449	329.0 -> 309.0	40134	10.00	µg/L	-0.025
M2-6:2FTS	6.122	429.0 -> 409.0	76514	10.00	µg/L	-0.013
M2-8:2FTS	7.338	529.0 -> 509.0	65227	10.00	µg/L	-0.012
M3-MeFOSAA	6.735	573.0 -> 419.0	33164	10.00	µg/L	-0.012
M3-HFPO-DA	4.794	287.0 -> 169.0	6439	10.00	µg/L	-0.025
M3-MeFOSA	6.589	515.0 -> 169.0	113	10.00	µg/L	0.000
M5-EtFOSAA	6.845	589.0 -> 419.0	27327	10.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.449	329.0 -> 309.0	40134	9.98	µg/L	-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.8%		
13C2-6:2FTS	6.122	429.0 -> 409.0	76514	10.80	µg/L	-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 108.0%		
13C2-8:2FTS	7.338	529.0 -> 509.0	65227	9.34	µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 93.4%		
13C2-PFDoDA	9.013	615.0 -> 570.0	168407	8.08	µg/L	-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 80.8%		
13C2-PFTeDA	10.524	715.0 -> 670.0	108916	6.14	µg/L	-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 61.4%		
13C3-PFBS	3.599	302.0 -> 99.0	9443	9.73	µg/L	-0.037
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 97.3%		
13C3-PFHxS	5.419	402.0 -> 99.0	11935	10.11	µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.1%		
13C4-PFBA	1.937	217.0 -> 172.0	50316	10.65	µg/L	-0.050
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 106.5%		
13C4-PFHpA	5.400	367.0 -> 322.0	127778	10.62	µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 106.2%		
13C5-PFHxA	4.540	318.0 -> 273.0	123705	10.35	µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 103.5%		
13C5-PFPeA	3.394	268.0 -> 223.0	75205	9.54	µg/L	-0.037
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 95.4%		
13C6-PFDA	7.276	519.0 -> 474.0	171046	10.16	µg/L	-0.012

Perfluorinated Compounds by LC/MS/MS

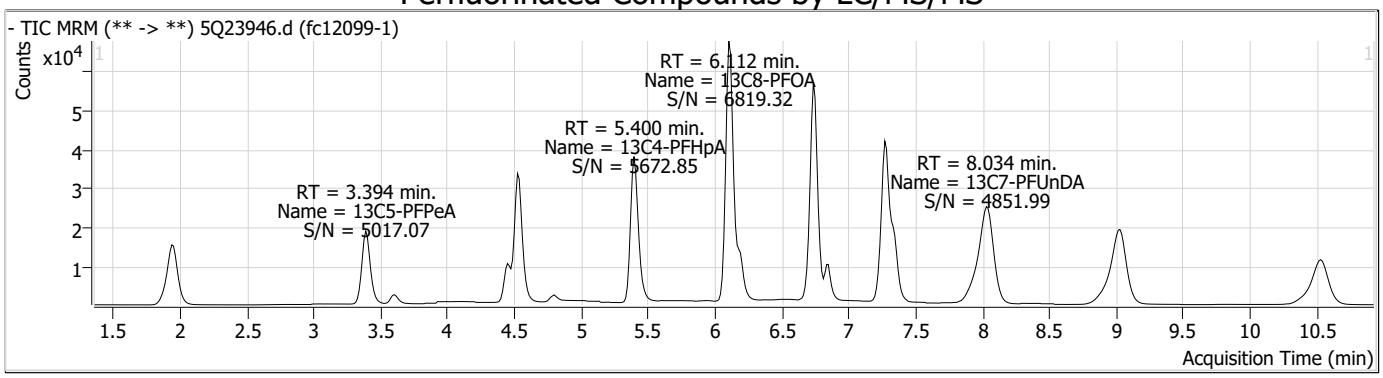
Compound	RT	Transition	Response	Conc. Units		Dev(Min)
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.6%		
13C7-PFUnDA	8.034	570.0 -> 525.0	208309	8.94 µg/L		-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 89.4%		
13C8-FOSA	6.192	506.0 -> 78.0	30294	7.48 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 74.8%		
13C8-PFOA	6.112	421.0 -> 376.0	180477	10.90 µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 109.0%		
13C8-PFOS	6.716	507.0 -> 99.0	14229	9.05 µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 90.5%		
13C9-PFNA	6.744	472.0 -> 427.0	178503	10.75 µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 107.5%		
d3-MeFOSAA	6.735	573.0 -> 419.0	33164	10.88 µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 108.8%		
13C3-HFPO-DA	4.794	287.0 -> 169.0	6439	9.97 µg/L		-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.7%		
d3-MeFOSA	6.589	515.0 -> 169.0	113	0.08 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 0.8%		
d5-EtFOSAA	6.845	589.0 -> 419.0	27327	9.96 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.6%		
Target Compounds						QValue
4:2FTS	-	327.0 -> 307.0	-	N.D.		
		327.0 -> 81.0				
6:2FTS	-	427.0 -> 407.0	-	N.D.		
		427.0 -> 81.0				
8:2FTS	-	527.0 -> 507.0	-	N.D.		
		527.0 -> 81.0				
EtFOSAA	-	584.0 -> 419.0	-	N.D.		
		584.0 -> 483.0				
FOSA	-	498.0 -> 78.0	-	N.D.		
		498.0 -> 478.0				
MeFOSAA	-	570.0 -> 419.0	-	N.D.		
		570.0 -> 512.0				
PFBA	1.944	213.0 -> 169.0	38801	8.32 µg/L		100
PFBS	-	299.0 -> 80.0	-	N.D.		
		299.0 -> 99.0				
PFDA	-	513.0 -> 469.0	-	N.D.		
		513.0 -> 219.0				
PFDoDA	-	613.0 -> 569.0	-	N.D.		
		613.0 -> 319.0				
PFDS	-	599.0 -> 80.0	-	N.D.		
		599.0 -> 99.0				
PFHpA	5.401	363.0 -> 319.0	13581	0.93 µg/L		99
		363.0 -> 169.0	2828			
PFHpS	-	449.0 -> 80.0	-	N.D.		
		449.0 -> 99.0				
PFHxA	4.541	313.0 -> 269.0	8944	0.75 µg/L		98
		313.0 -> 119.0	319			
PFHxS	5.421	399.0 -> 80.0	523	0.24 µg/L	m	86
		399.0 -> 99.0	344			
PFNA	-	463.0 -> 419.0	-	N.D.		
		463.0 -> 219.0				
PFNS	-	549.0 -> 80.0	-	N.D.		
		549.0 -> 99.0				
PFOA	6.112	413.0 -> 369.0	16241	0.92 µg/L	m	97
		413.0 -> 169.0	4250			
PFOS	6.718	499.0 -> 80.0	2578	1.02 µg/L	m	89

Perfluorinated Compounds by LC/MS/MS

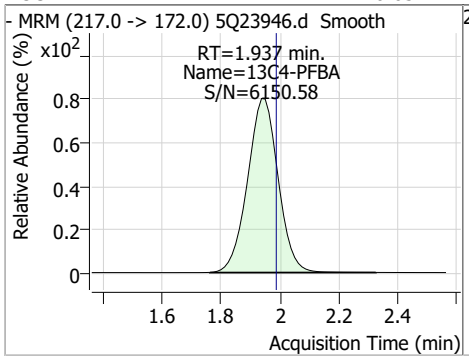
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		499.0 -> 99.0	1098			
PFPeA	3.397	263.0 -> 219.0	8718	1.20	µg/L	100
PFPeS	-	349.0 -> 80.0	-	N.D.		
		349.0 -> 99.0				
PFTeDA	-	713.0 -> 669.0	-	N.D.		
		713.0 -> 219.0				
PFTrDA	-	663.0 -> 619.0	-	N.D.		
		663.0 -> 369.0				
PFUnDA	-	563.0 -> 519.0	-	N.D.		
		563.0 -> 269.0				
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.		
		633.0 -> 453.0				
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.		
		533.0 -> 353.0				
ADONA	-	377.0 -> 251.0	-	N.D.		
		377.0 -> 85.0				
HFPO-DA	-	329.0 -> 169.0	-	N.D.		
		285.0 -> 169.0				
MeFOSA	-	512.0 -> 169.0	-	N.D.		
		512.0 -> 219.0				
4-PFECHS	-	461.0 -> 381.0	-	N.D.		
		461.0 -> 99.0				
FBSA	-	298.0 -> 78.0	-	N.D.		
		298.0 -> 64.0				
FHxSA	-	398.0 -> 78.0	-	N.D.		
		398.0 -> 64.0				

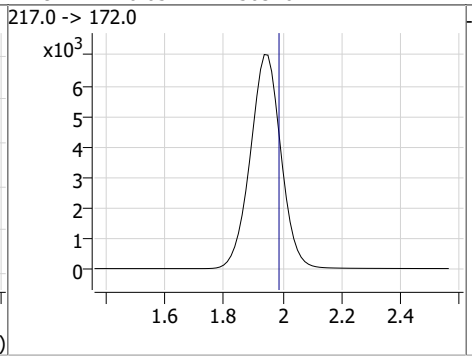
 # = Qualifier out of range, m = manually integrated, + = Area summed

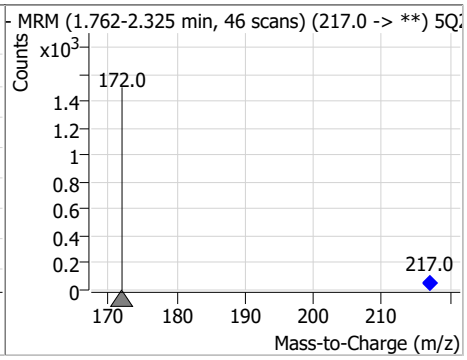
Perfluorinated Compounds by LC/MS/MS



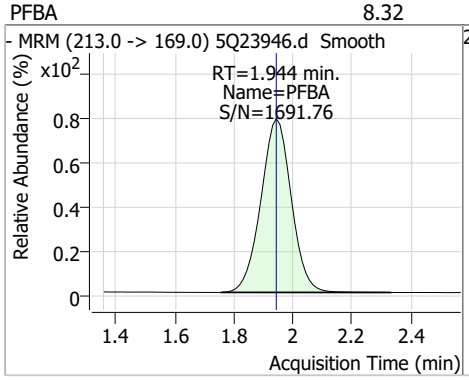
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	10.65	1.94	-0.05	50316				

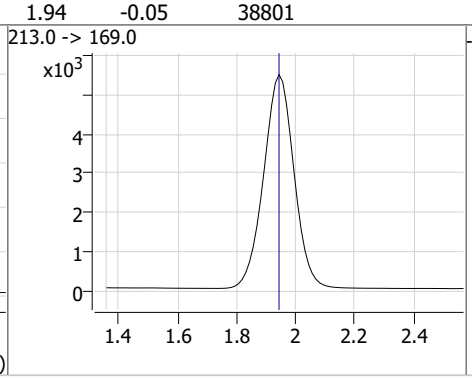


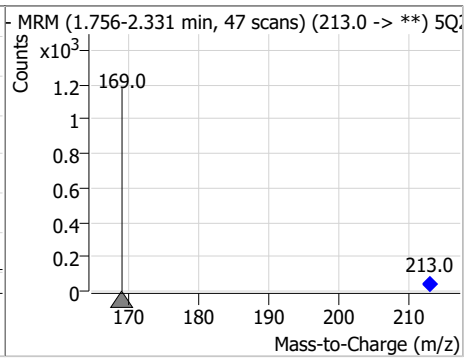




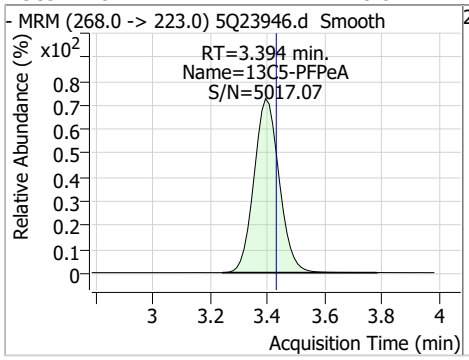
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	8.32	1.94	-0.05	38801				

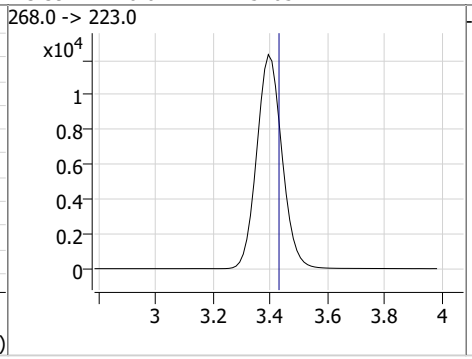


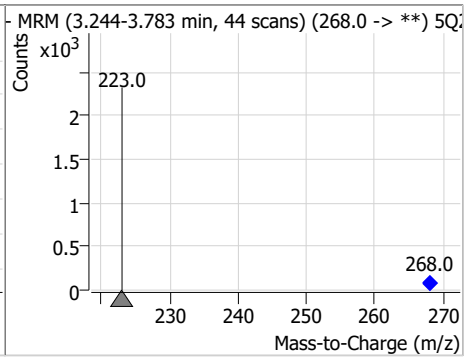




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	9.54	3.39	-0.04	75205				

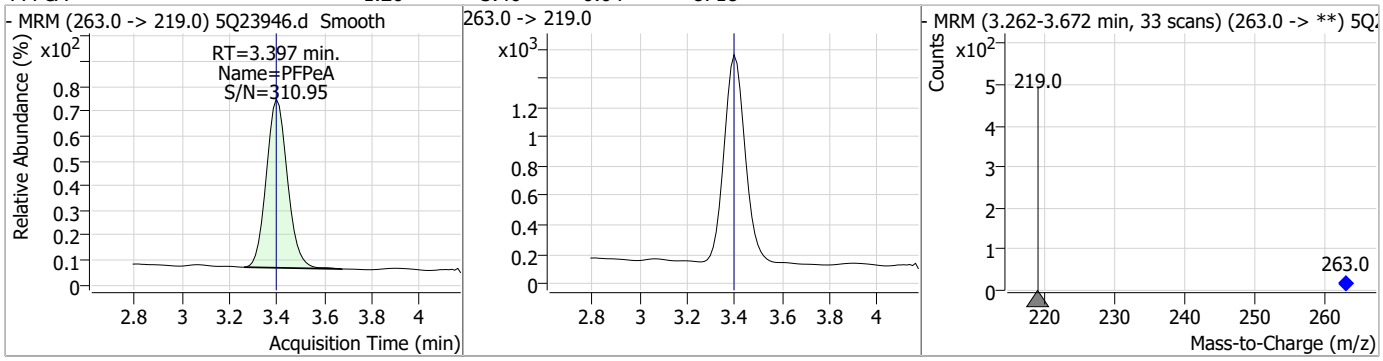




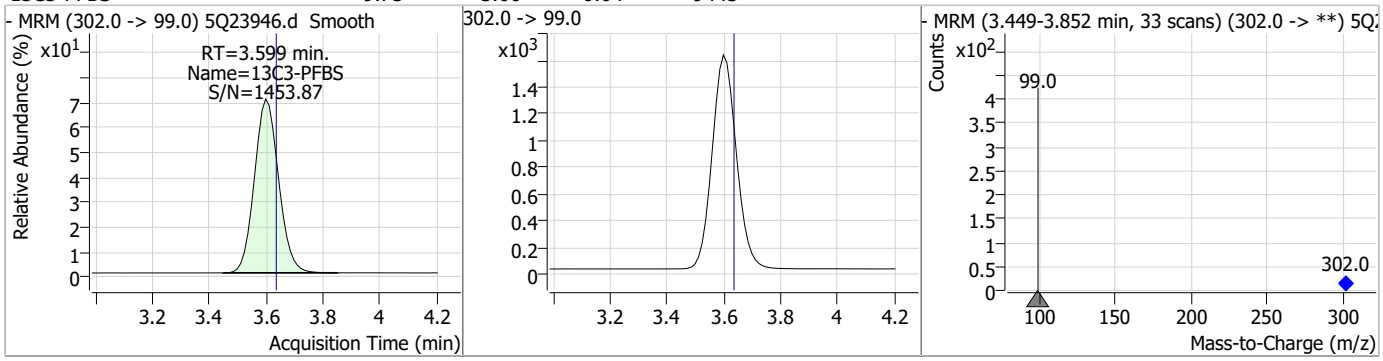


Perfluorinated Compounds by LC/MS/MS

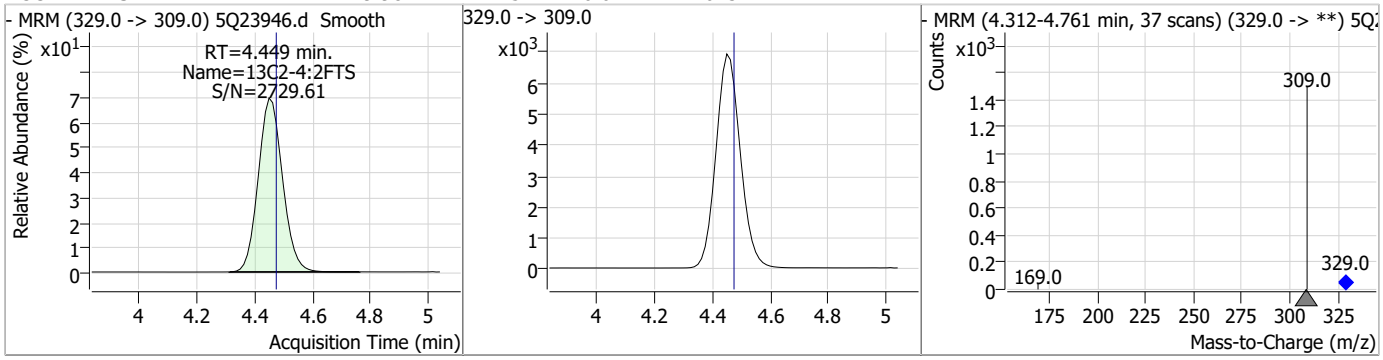
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	1.20	3.40	-0.04	8718				



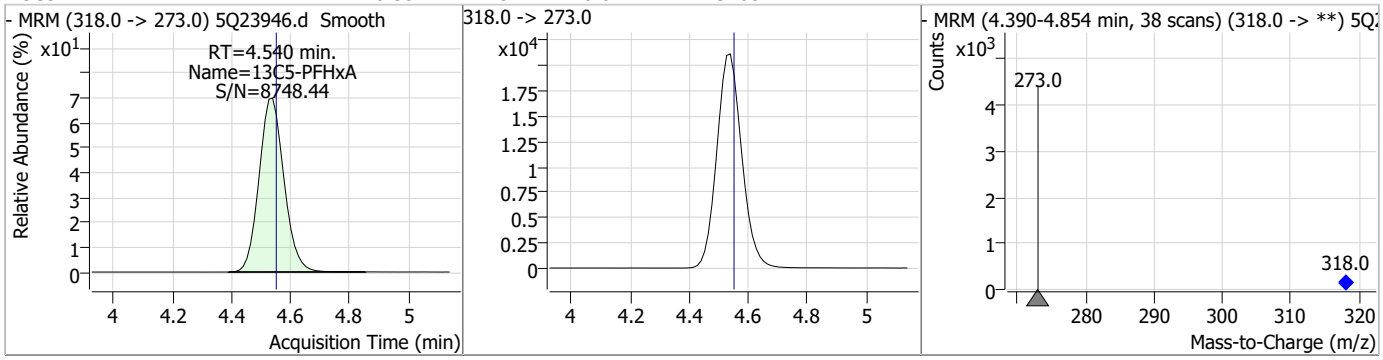
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	9.73	3.60	-0.04	9443				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	9.98	4.45	-0.02	40134				

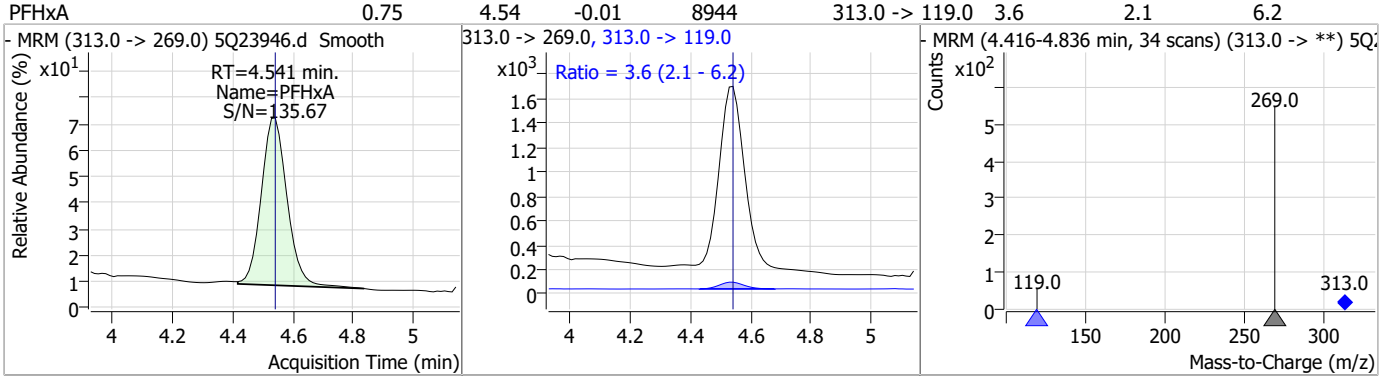


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	10.35	4.54	-0.01	123705				

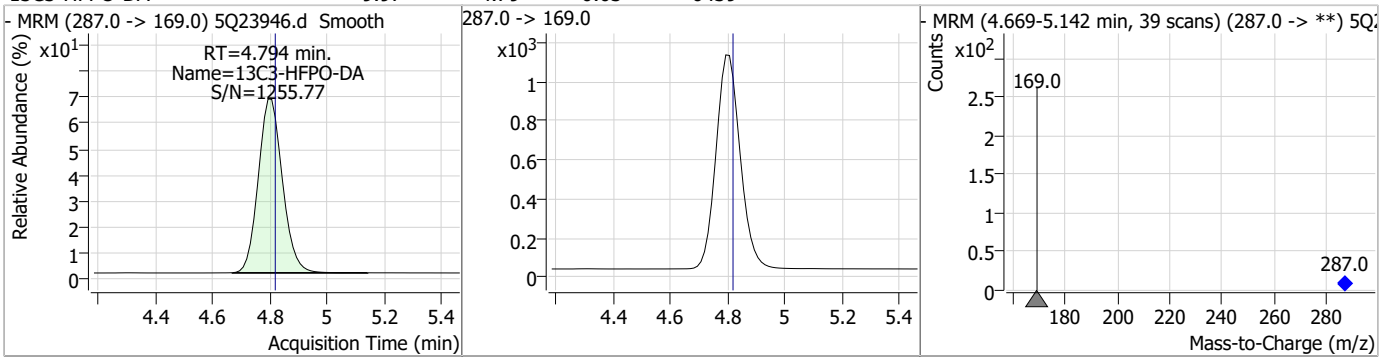


Perfluorinated Compounds by LC/MS/MS

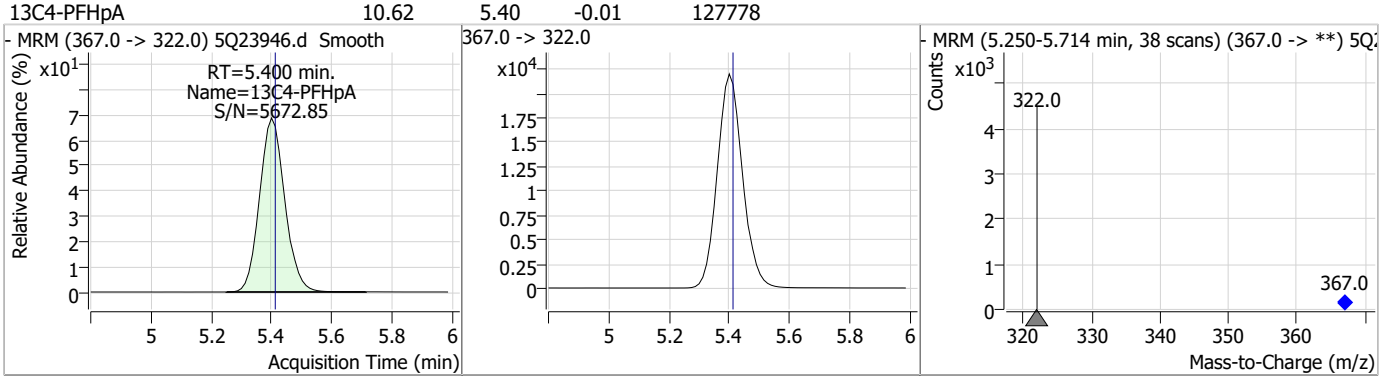
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	0.75	4.54	-0.01	8944	313.0 -> 119.0	3.6	2.1	6.2



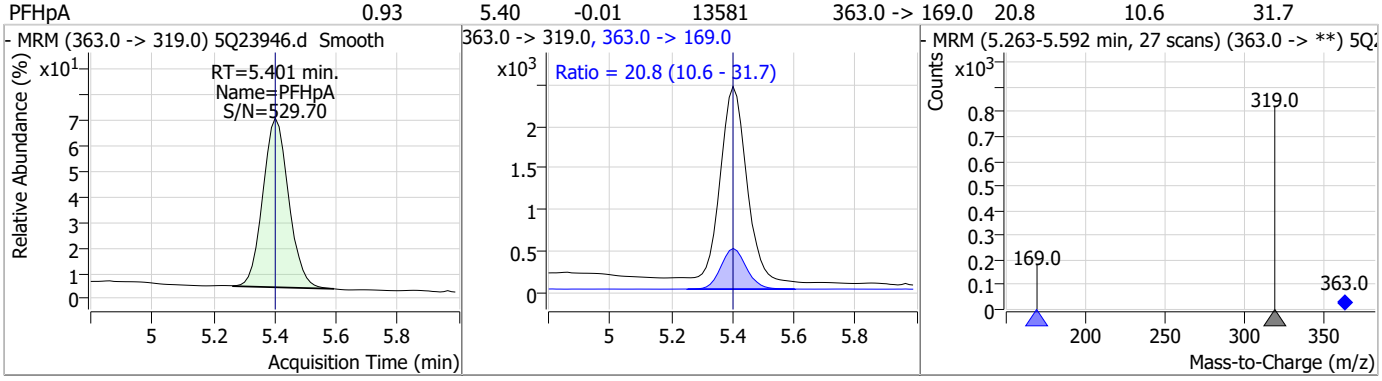
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	9.97	4.79	-0.03	6439				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	10.62	5.40	-0.01	127778				

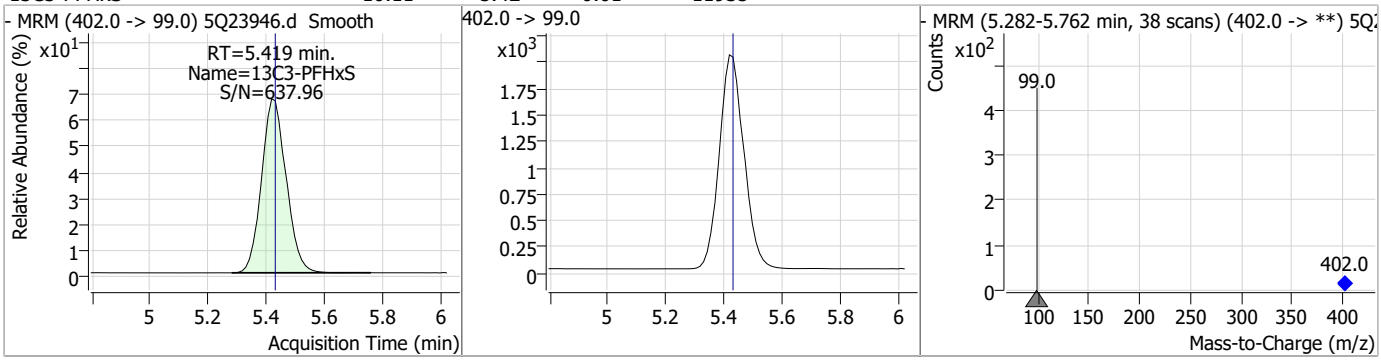


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	0.93	5.40	-0.01	13581	363.0 -> 169.0	20.8	10.6	31.7

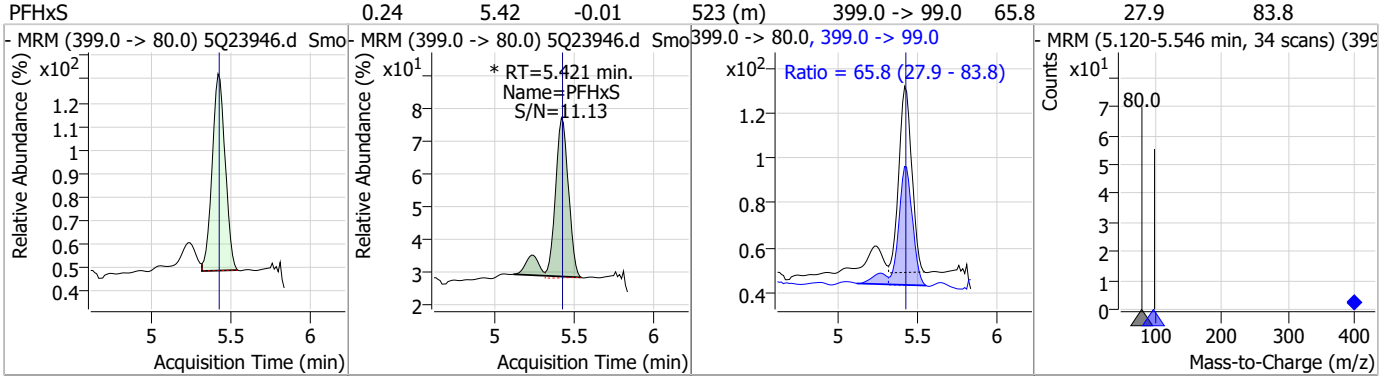


Perfluorinated Compounds by LC/MS/MS

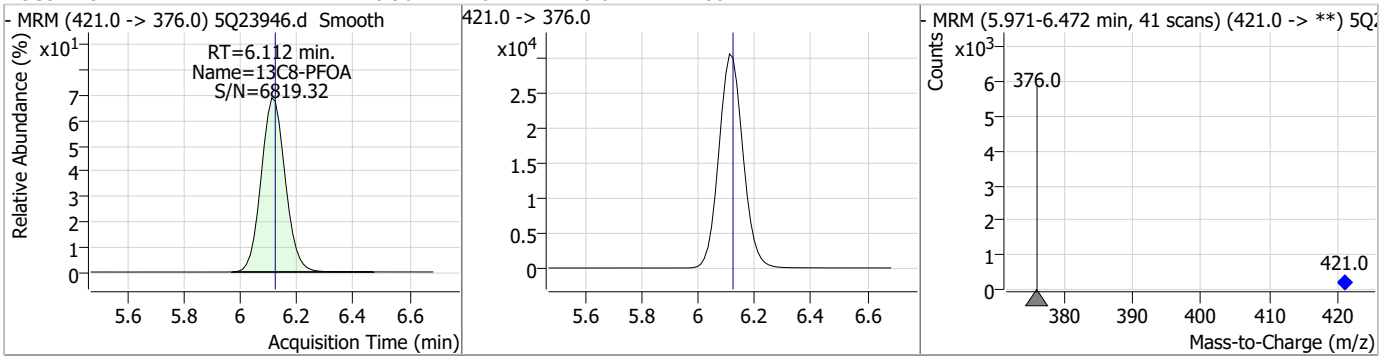
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	10.11	5.42	-0.01	11935				



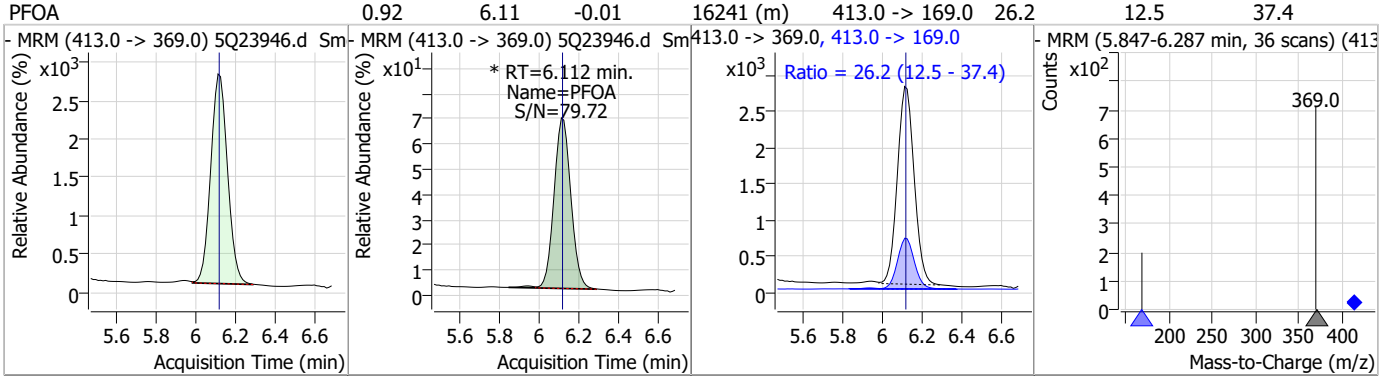
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	0.24	5.42	-0.01	523 (m)	399.0 -> 99.0	65.8	27.9	83.8



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	10.90	6.11	-0.01	180477				

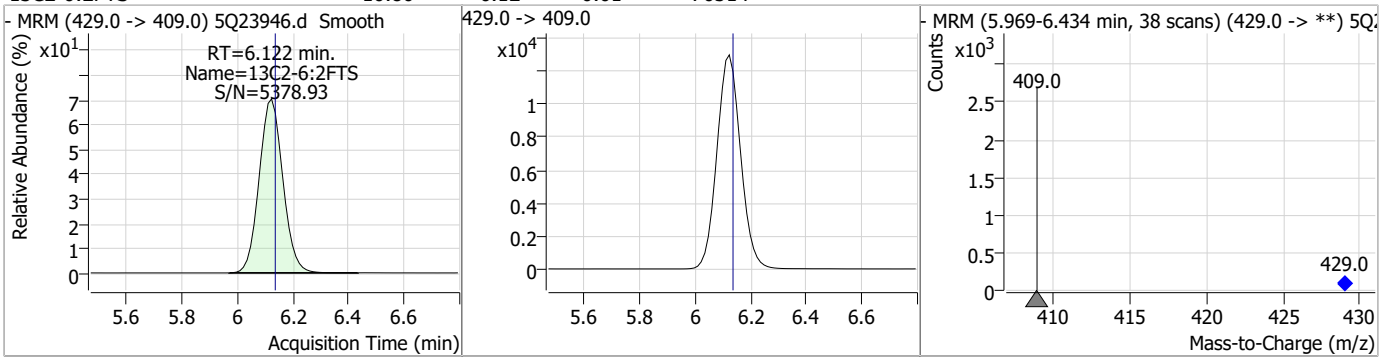


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	0.92	6.11	-0.01	16241 (m)	413.0 -> 169.0	26.2	12.5	37.4

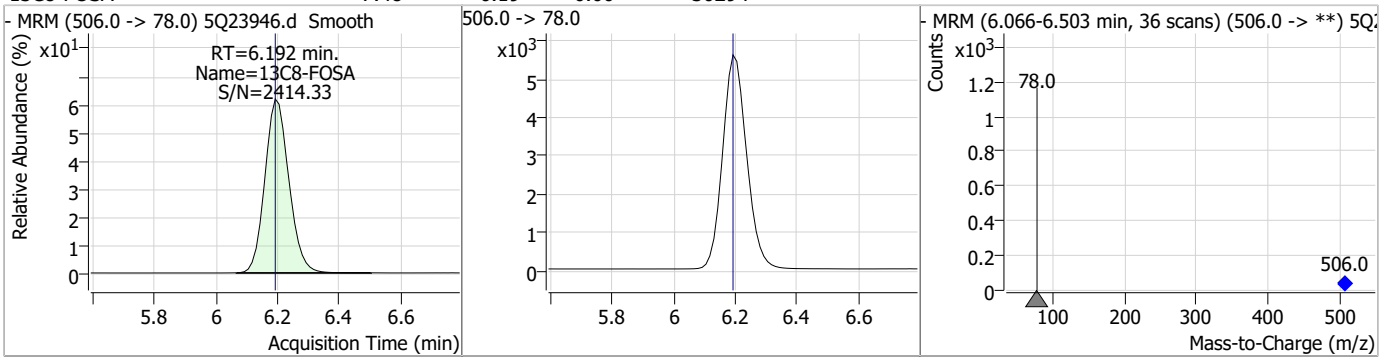


Perfluorinated Compounds by LC/MS/MS

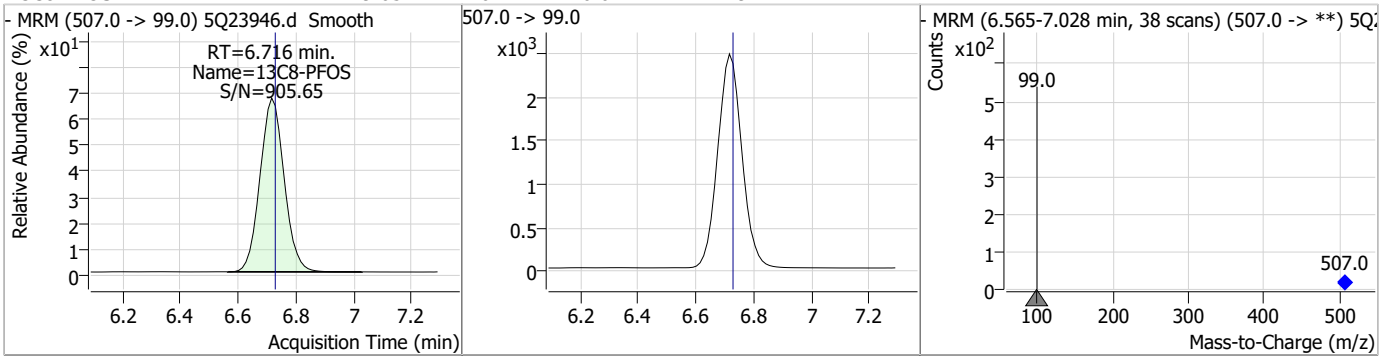
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	10.80	6.12	-0.01	76514				



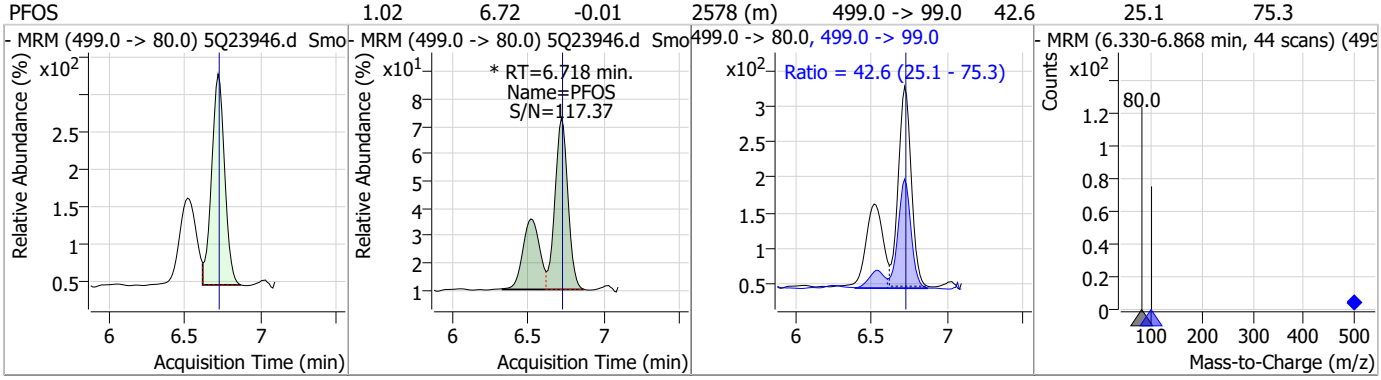
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	7.48	6.19	0.00	30294				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	9.05	6.72	-0.01	14229				

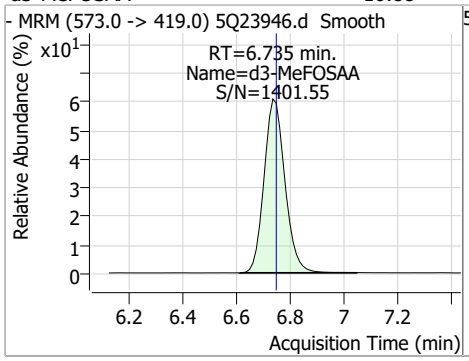


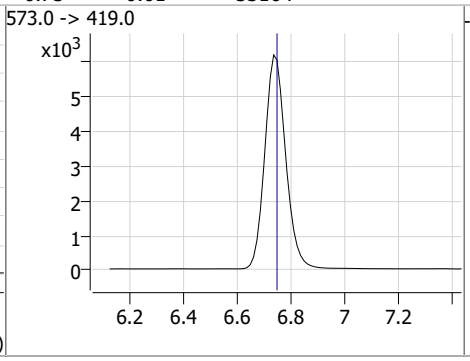
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	1.02	6.72	-0.01	2578 (m)	499.0 -> 99.0	42.6	25.1	75.3

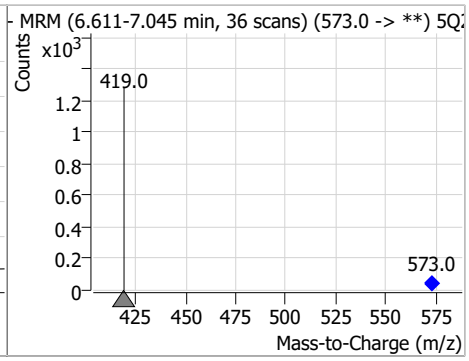


Perfluorinated Compounds by LC/MS/MS

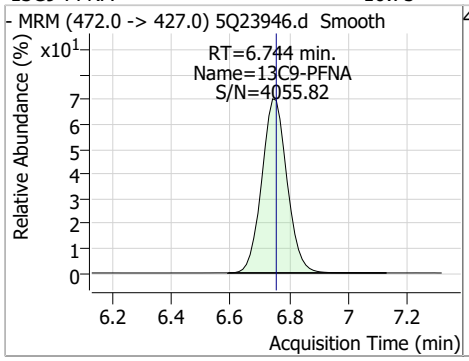
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	10.88	6.73	-0.01	33164				

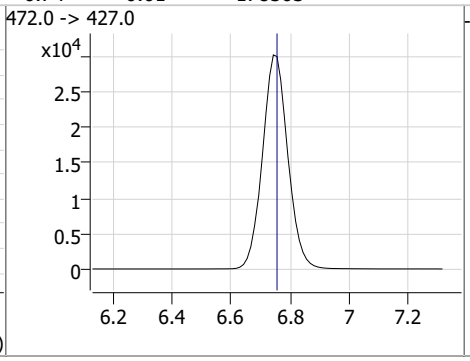


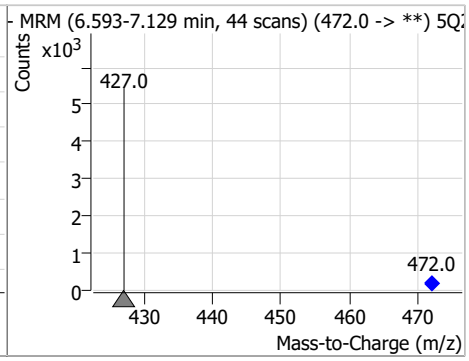




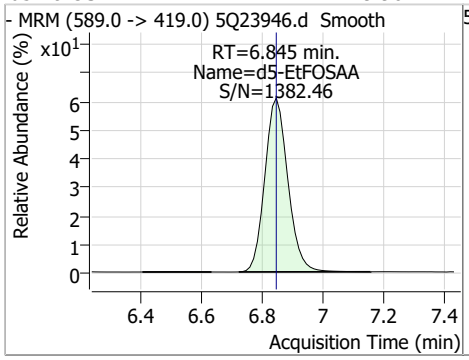
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	10.75	6.74	-0.01	178503				

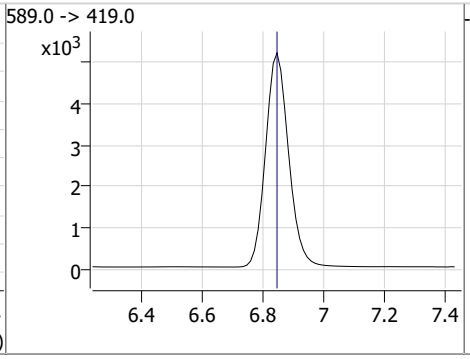


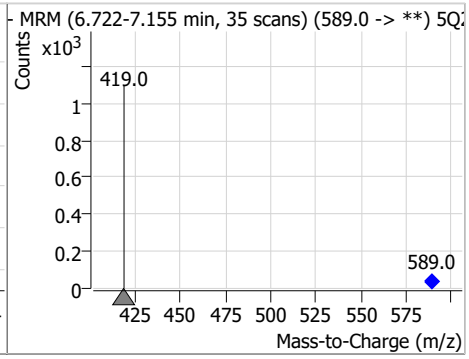




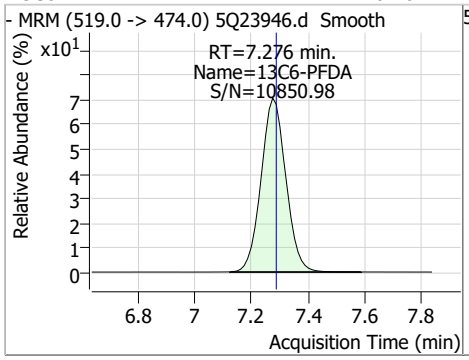
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	9.96	6.85	0.00	27327				

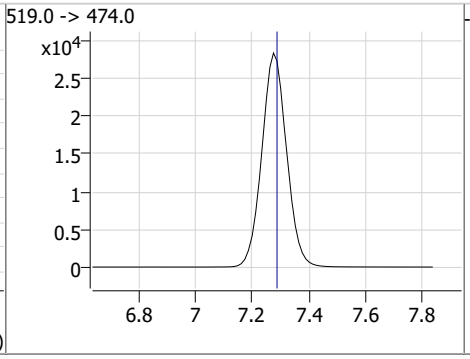


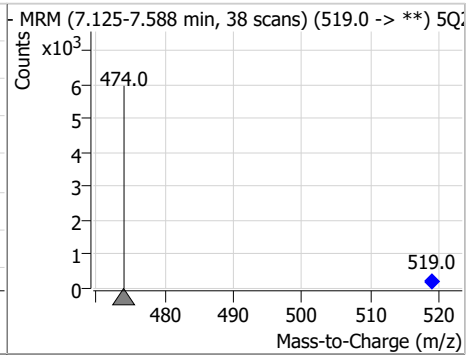




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	10.16	7.28	-0.01	171046				

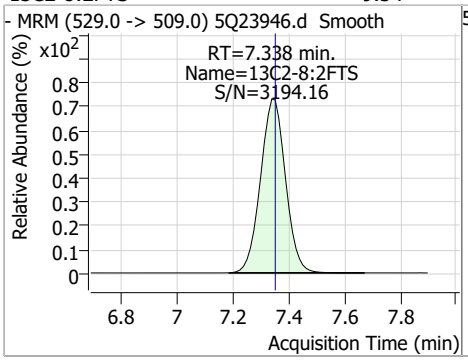


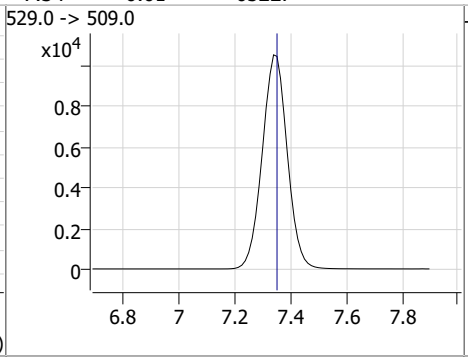


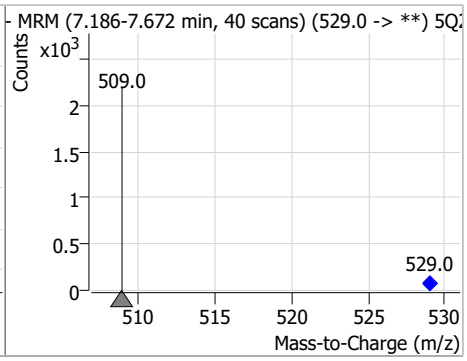


Perfluorinated Compounds by LC/MS/MS

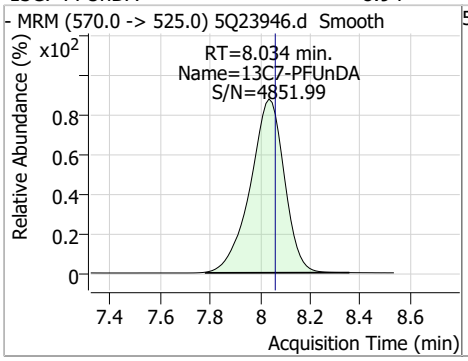
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	9.34	7.34	-0.01	65227				

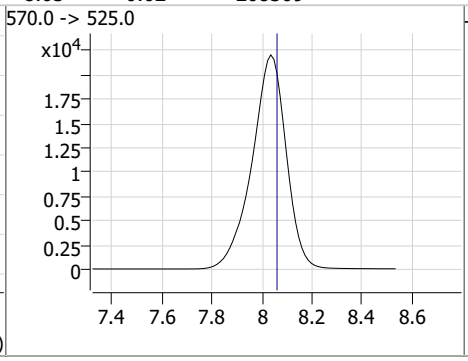


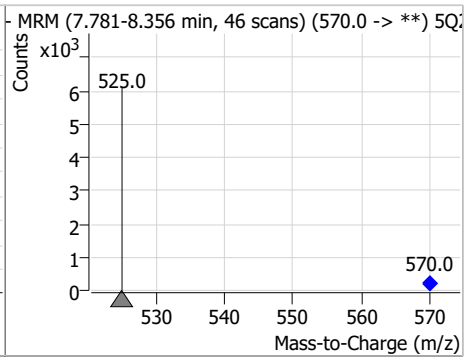




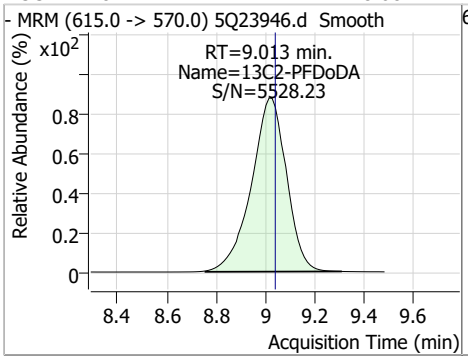
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	8.94	8.03	-0.02	208309				

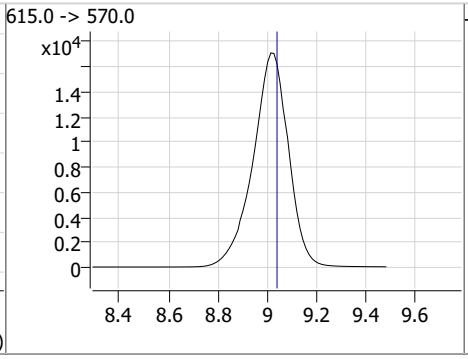


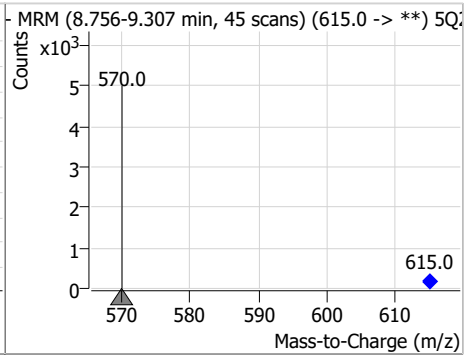




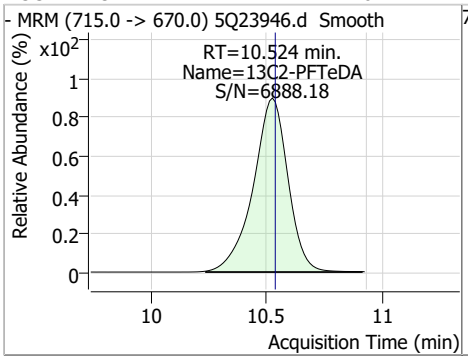
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	8.08	9.01	-0.03	168407				

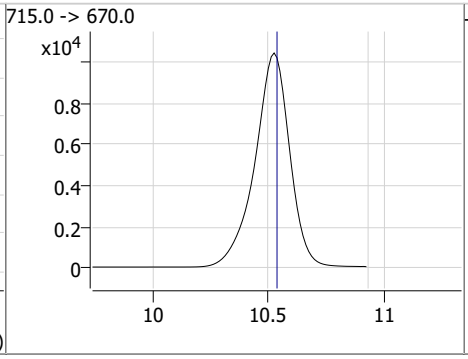


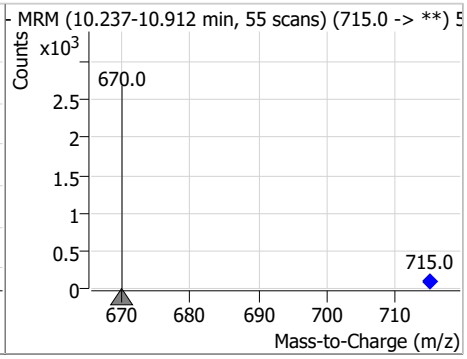




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	6.14	10.52	-0.01	108916				







Manual Integration Approval Summary

Sample Number: FC12099-1
Lab FileID: 5Q23946.D
Injection Time: 12/29/23 01:02
Method: EPA 537M QSM5.3 B-15
Analyst approved: 12/29/23 14:22 Lindsay Ritner
Supervisor approved: 01/02/24 14:27 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.42	Split peak
Perfluorooctanoic acid	335-67-1		6.11	Split peak
Perfluorooctanesulfonic acid	1763-23-1		6.72	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Natasha Gumtie 01/02/24 14:27

Perfluorinated Compounds by LC/MS/MS

Data File : 5Q23947.d
Operator : natashag
Acq. Method : 537_ID.m
Acq. Date-Time : 12/29/2023 1:19:03 AM
Sample Name : fc12099-2
Vial : P2-C4
DA Method File : ID_122823_S5Q375.quantmethod.xml
Batch Name : s5q375.batch.bin
Sample Information : OP835,S5Q375,120,,,1.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.962	217.0 -> 172.0	47323	10.00	µg/L	-0.025
M5-PFPeA	3.407	268.0 -> 223.0	64480	10.00	µg/L	-0.025
M5-PFHxA	4.540	318.0 -> 273.0	108607	10.00	µg/L	-0.012
M4-PFHpA	5.400	367.0 -> 322.0	108331	10.00	µg/L	-0.012
M8-PFOA	6.112	421.0 -> 376.0	151242	10.00	µg/L	-0.012
M9-PFNA	6.744	472.0 -> 427.0	143332	10.00	µg/L	-0.012
M6-PFDA	7.276	519.0 -> 474.0	135758	10.00	µg/L	-0.012
M7-PFUnDA	8.034	570.0 -> 525.0	175588	10.00	µg/L	-0.025
M2-PFDoDA	9.013	615.0 -> 570.0	157192	10.00	µg/L	-0.025
M2-PFTeDA	10.524	715.0 -> 670.0	122717	10.00	µg/L	-0.013
M8-FOSA	6.192	506.0 -> 78.0	25676	10.00	µg/L	0.000
M3-PFBS	3.612	302.0 -> 99.0	8262	10.00	µg/L	-0.025
M3-PFHxS	5.419	402.0 -> 99.0	9901	10.00	µg/L	-0.012
M8-PFOS	6.716	507.0 -> 99.0	10784	10.00	µg/L	-0.012
M2-4:2FTS	4.461	329.0 -> 309.0	37543	10.00	µg/L	-0.012
M2-6:2FTS	6.122	429.0 -> 409.0	67869	10.00	µg/L	-0.013
M2-8:2FTS	7.338	529.0 -> 509.0	54636	10.00	µg/L	-0.012
M3-MeFOSAA	6.735	573.0 -> 419.0	28489	10.00	µg/L	-0.012
M3-HFPO-DA	4.807	287.0 -> 169.0	5620	10.00	µg/L	-0.012
M3-MeFOSA	6.589	515.0 -> 169.0	209	10.00	µg/L	0.000
M5-EtFOSAA	6.845	589.0 -> 419.0	23986	10.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.461	329.0 -> 309.0	37543	9.34	µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 93.4%		
13C2-6:2FTS	6.122	429.0 -> 409.0	67869	9.58	µg/L	-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 95.8%		
13C2-8:2FTS	7.338	529.0 -> 509.0	54636	7.82	µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 78.2%		
13C2-PFDoDA	9.013	615.0 -> 570.0	157192	7.54	µg/L	-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 75.4%		
13C2-PFTeDA	10.524	715.0 -> 670.0	122717	6.92	µg/L	-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 69.2%		
13C3-PFBS	3.612	302.0 -> 99.0	8262	8.51	µg/L	-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 85.1%		
13C3-PFHxS	5.419	402.0 -> 99.0	9901	8.39	µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 83.9%		
13C4-PFBA	1.962	217.0 -> 172.0	47323	10.02	µg/L	-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.2%		
13C4-PFHpA	5.400	367.0 -> 322.0	108331	9.01	µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 90.1%		
13C5-PFHxA	4.540	318.0 -> 273.0	108607	9.09	µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 90.9%		
13C5-PFPeA	3.407	268.0 -> 223.0	64480	8.18	µg/L	-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 81.8%		
13C6-PFDA	7.276	519.0 -> 474.0	135758	8.06	µg/L	-0.012

Perfluorinated Compounds by LC/MS/MS

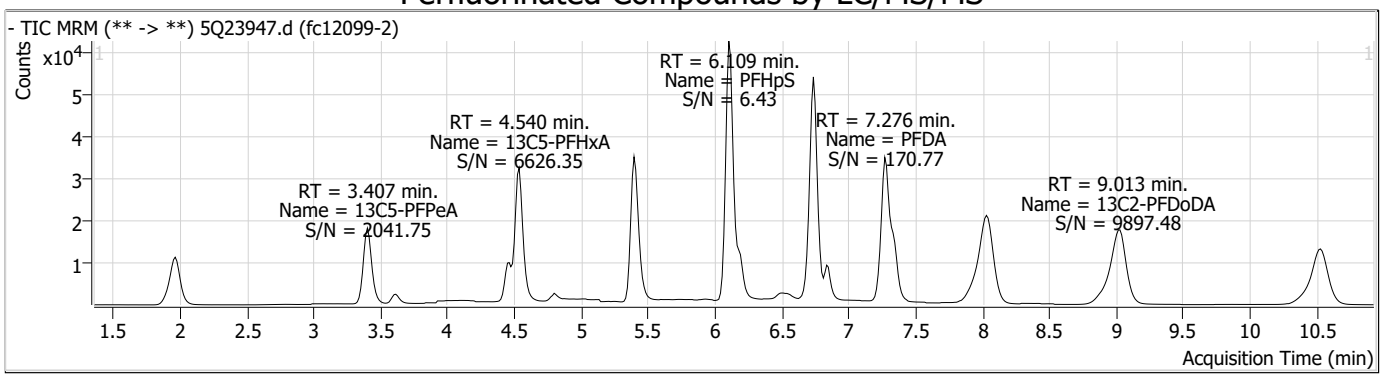
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 80.6%			
13C7-PFUnDA	8.034	570.0 -> 525.0	175588	7.53	µg/L		-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 75.3%			
13C8-FOSA	6.192	506.0 -> 78.0	25676	6.34	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 63.4%			
13C8-PFOA	6.112	421.0 -> 376.0	151242	9.14	µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 91.4%			
13C8-PFOS	6.716	507.0 -> 99.0	10784	6.86	µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 68.6%			
13C9-PFNA	6.744	472.0 -> 427.0	143332	8.63	µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 86.3%			
d3-MeFOSAA	6.735	573.0 -> 419.0	28489	9.34	µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 93.4%			
13C3-HFPO-DA	4.807	287.0 -> 169.0	5620	8.70	µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 87.0%			
d3-MeFOSA	6.589	515.0 -> 169.0	209	0.15	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 1.5%			
d5-EtFOSAA	6.845	589.0 -> 419.0	23986	8.74	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 87.4%			
Target Compounds							QValue
4:2FTS	-	327.0 -> 307.0	-	N.D.			
		327.0 -> 81.0					
6:2FTS	-	427.0 -> 407.0	-	N.D.			
		427.0 -> 81.0					
8:2FTS	-	527.0 -> 507.0	-	N.D.			
		527.0 -> 81.0					
EtFOSAA	-	584.0 -> 419.0	-	N.D.			
		584.0 -> 483.0					
FOSA	-	498.0 -> 78.0	-	N.D.			
		498.0 -> 478.0					
MeFOSAA	-	570.0 -> 419.0	-	N.D.			
		570.0 -> 512.0					
PFBA	1.956	213.0 -> 169.0	17060	3.89	µg/L		100
PFBS	3.615	299.0 -> 80.0	584	0.29	µg/L	m	97
		299.0 -> 99.0	247				
PFDA	7.276	513.0 -> 469.0	4773	0.37	µg/L	m	99
		513.0 -> 219.0	825				
PFDoDA	-	613.0 -> 569.0	-	N.D.			
		613.0 -> 319.0					
PFDS	-	599.0 -> 80.0	-	N.D.			
		599.0 -> 99.0					
PFHpA	5.401	363.0 -> 319.0	18262	1.47	µg/L		99
		363.0 -> 169.0	3979				
PFHpS	6.109	449.0 -> 80.0	319	0.21	µg/L	m	81
		449.0 -> 99.0	126				
PFHxA	4.541	313.0 -> 269.0	17080	1.63	µg/L		99
		313.0 -> 119.0	733				
PFHxS	5.421	399.0 -> 80.0	3695	2.01	µg/L	m	98
		399.0 -> 99.0	2126				
PFNA	6.744	463.0 -> 419.0	14839	1.13	µg/L		99
		463.0 -> 219.0	3095				
PFNS	-	549.0 -> 80.0	-	N.D.			
		549.0 -> 99.0					
PFOA	6.112	413.0 -> 369.0	27616	1.86	µg/L	m	97
		413.0 -> 169.0	7267				
PFOS	6.718	499.0 -> 80.0	22734	11.89	µg/L	m	96

Perfluorinated Compounds by LC/MS/MS

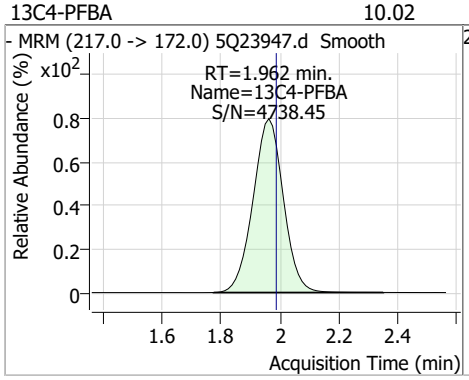
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
		499.0 -> 99.0	10775				
PFPeA	3.409	263.0 -> 219.0	15409	2.46	µg/L		100
PFPeS	4.636	349.0 -> 80.0	233	0.16	µg/L	m	95
		349.0 -> 99.0	124				
PFTeDA	-	713.0 -> 669.0	-	N.D.			
		713.0 -> 219.0					
PFTrDA	-	663.0 -> 619.0	-	N.D.			
		663.0 -> 369.0					
PFUnDA	-	563.0 -> 519.0	-	N.D.			
		563.0 -> 269.0					
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.			
		633.0 -> 453.0					
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.			
		533.0 -> 353.0					
ADONA	-	377.0 -> 251.0	-	N.D.			
		377.0 -> 85.0					
HFPO-DA	-	329.0 -> 169.0	-	N.D.			
		285.0 -> 169.0					
MeFOSA	-	512.0 -> 169.0	-	N.D.			
		512.0 -> 219.0					
4-PFECHS	-	461.0 -> 381.0	-	N.D.			
		461.0 -> 99.0					
FBSA	-	298.0 -> 78.0	-	N.D.			
		298.0 -> 64.0					
FHxSA	-	398.0 -> 78.0	-	N.D.			
		398.0 -> 64.0					

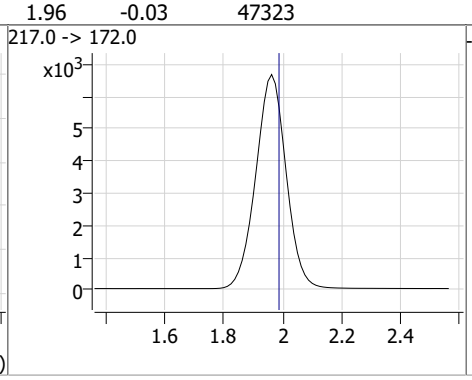
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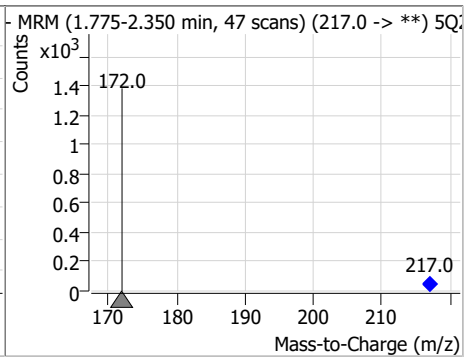
Perfluorinated Compounds by LC/MS/MS



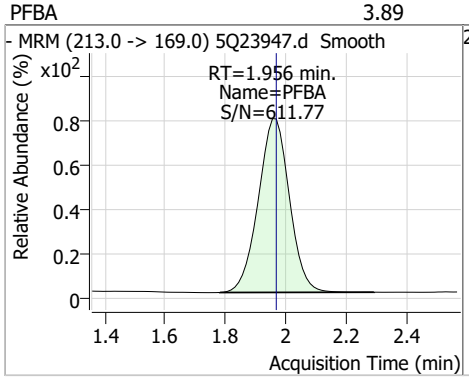
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	10.02	1.96	-0.03	47323				

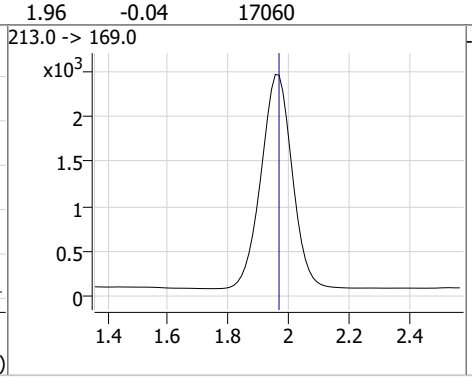


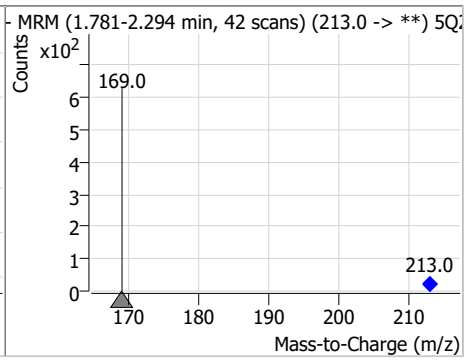




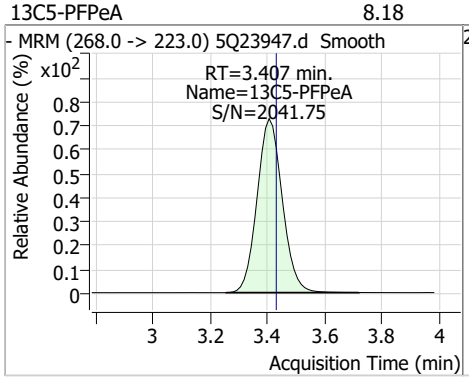
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	3.89	1.96	-0.04	17060				

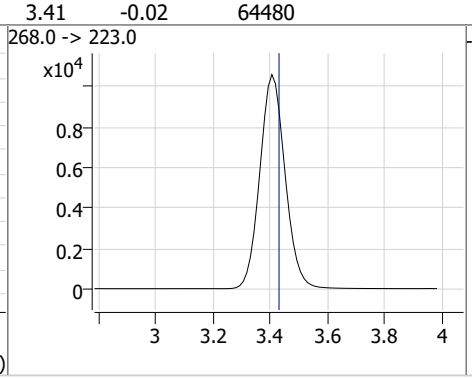


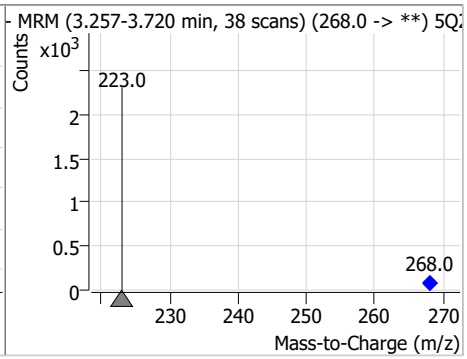




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	8.18	3.41	-0.02	64480				

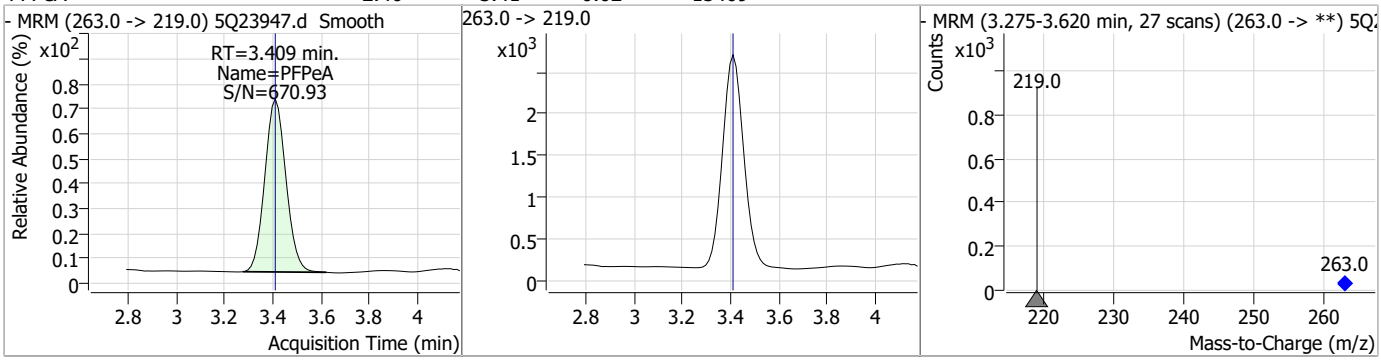




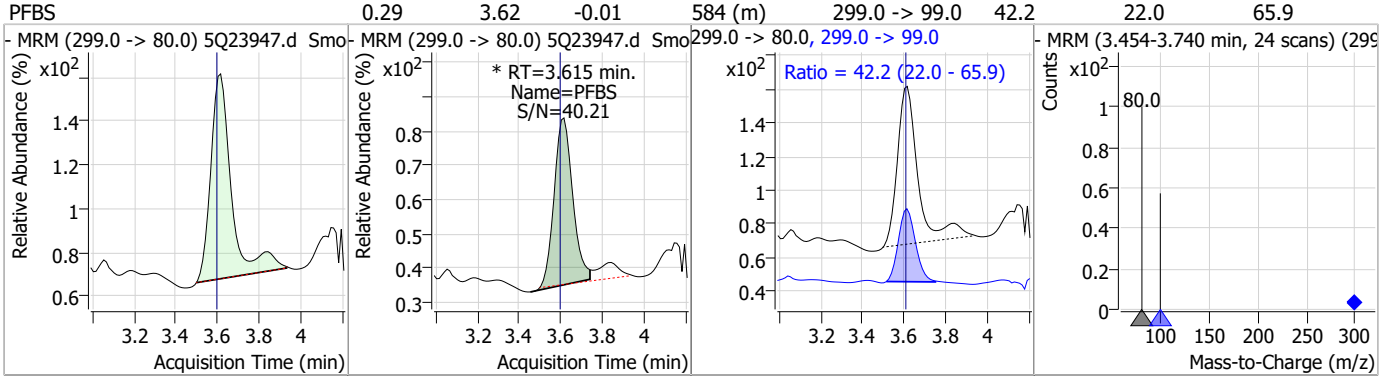


Perfluorinated Compounds by LC/MS/MS

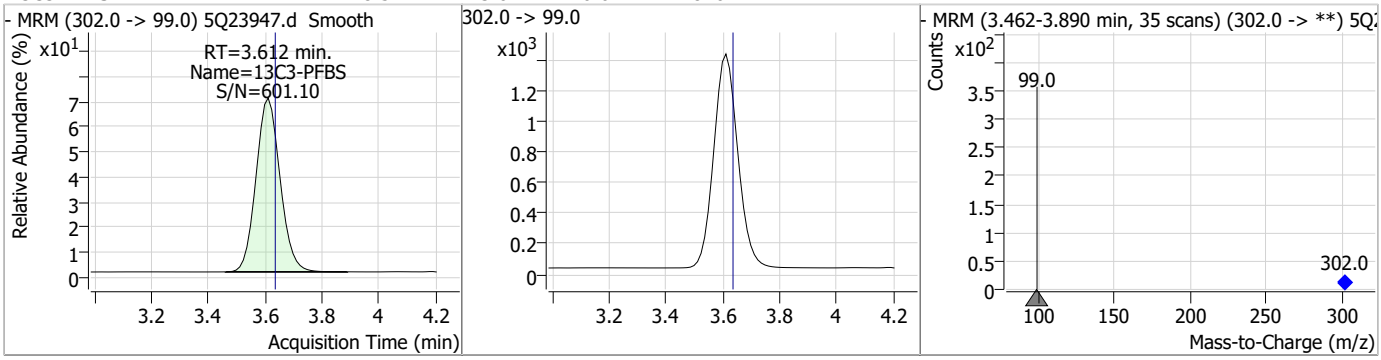
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	2.46	3.41	-0.02	15409				



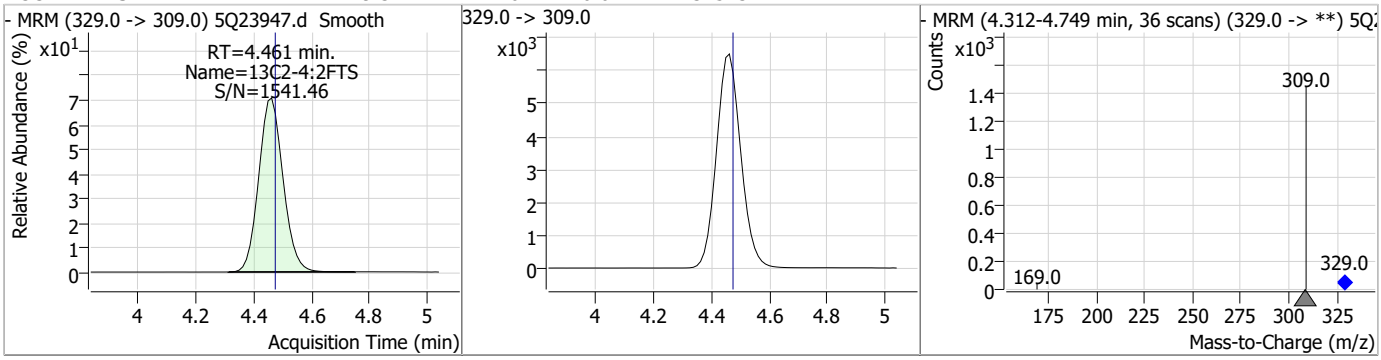
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	0.29	3.62	-0.01	584 (m)	299.0 -> 99.0	42.2	22.0	65.9



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	8.51	3.61	-0.02	8262				

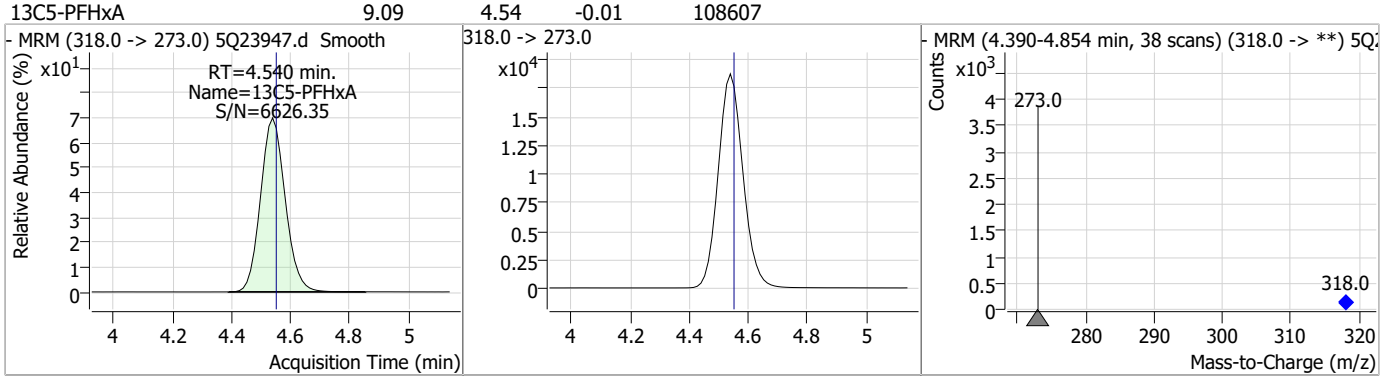


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	9.34	4.46	-0.01	37543				

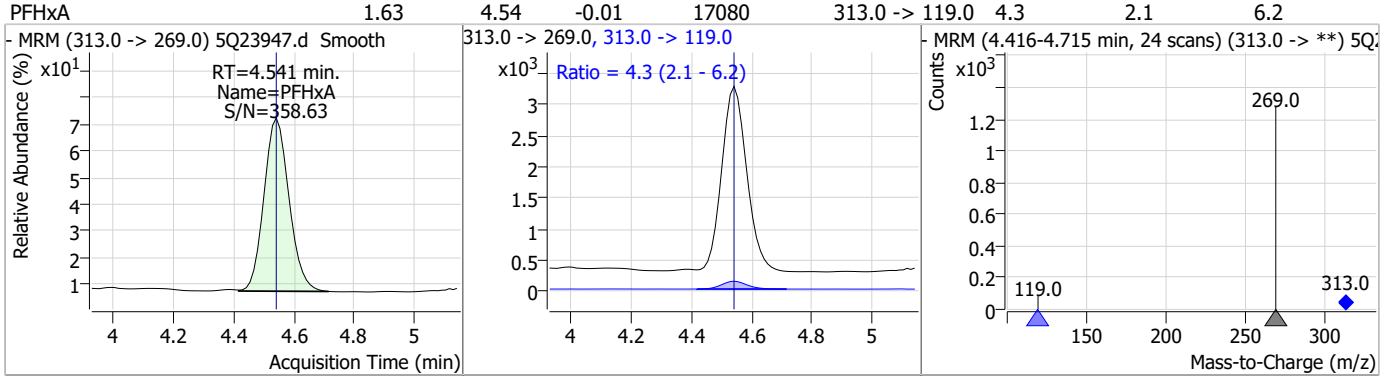


Perfluorinated Compounds by LC/MS/MS

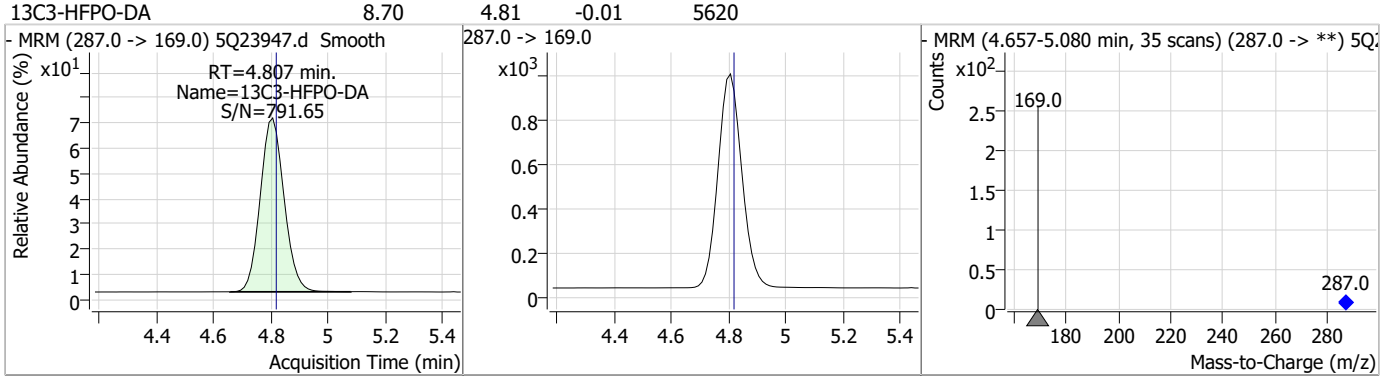
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	9.09	4.54	-0.01	108607				



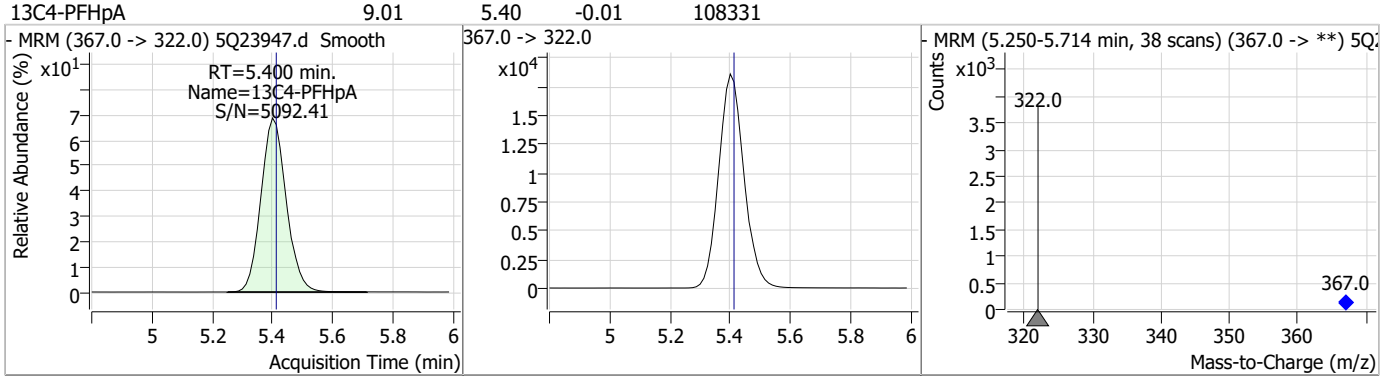
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	1.63	4.54	-0.01	17080	313.0 -> 119.0	4.3	2.1	6.2



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	8.70	4.81	-0.01	5620				

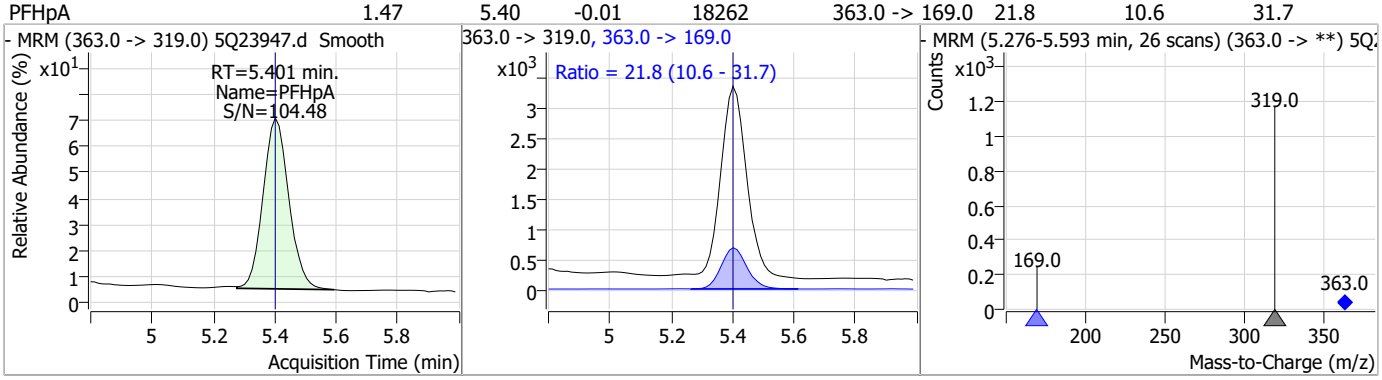


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	9.01	5.40	-0.01	108331				

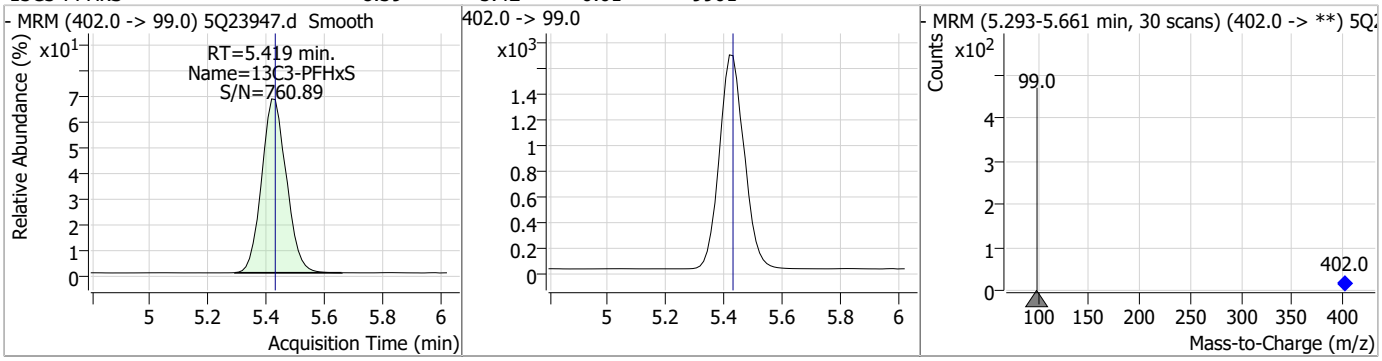


Perfluorinated Compounds by LC/MS/MS

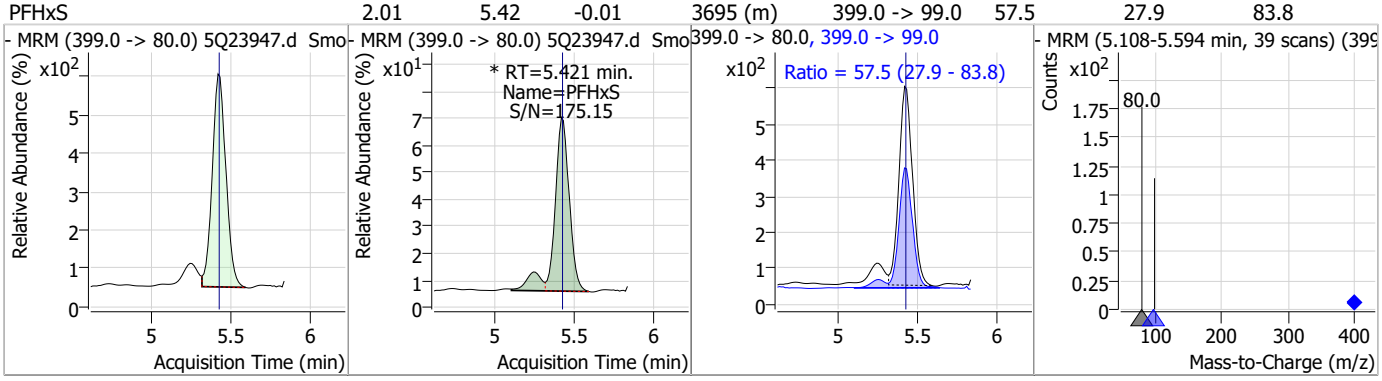
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	1.47	5.40	-0.01	18262	363.0 -> 169.0	21.8	10.6	31.7



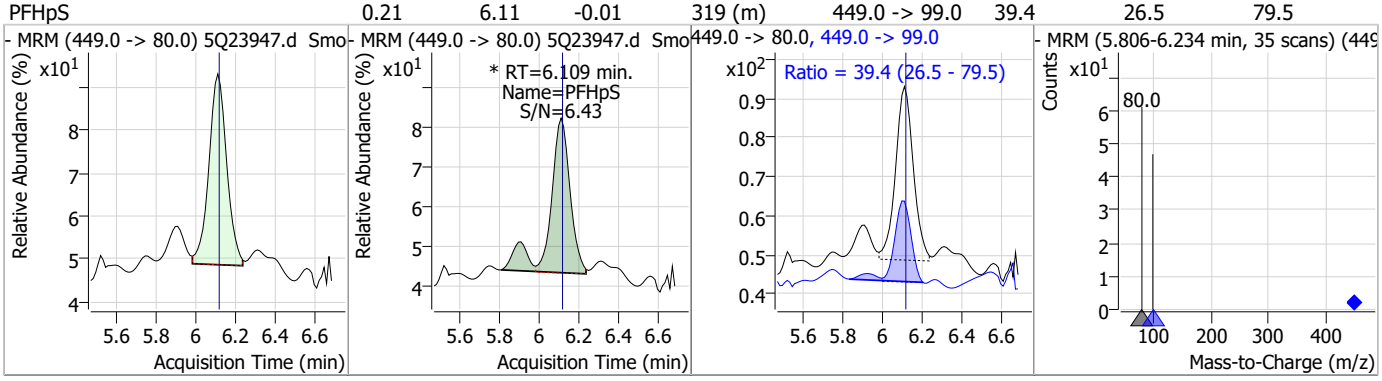
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	8.39	5.42	-0.01	9901				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	2.01	5.42	-0.01	3695 (m)	399.0 -> 99.0	57.5	27.9	83.8

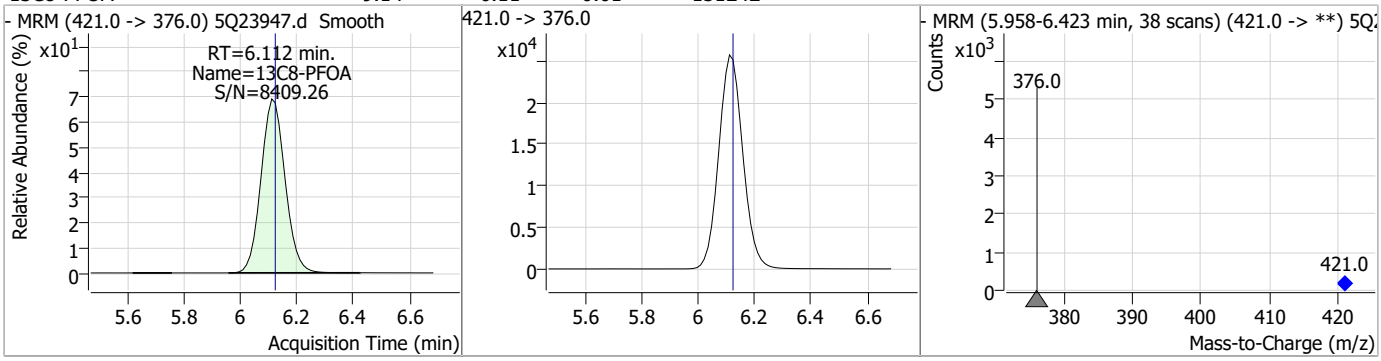


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	0.21	6.11	-0.01	319 (m)	449.0 -> 99.0	39.4	26.5	79.5

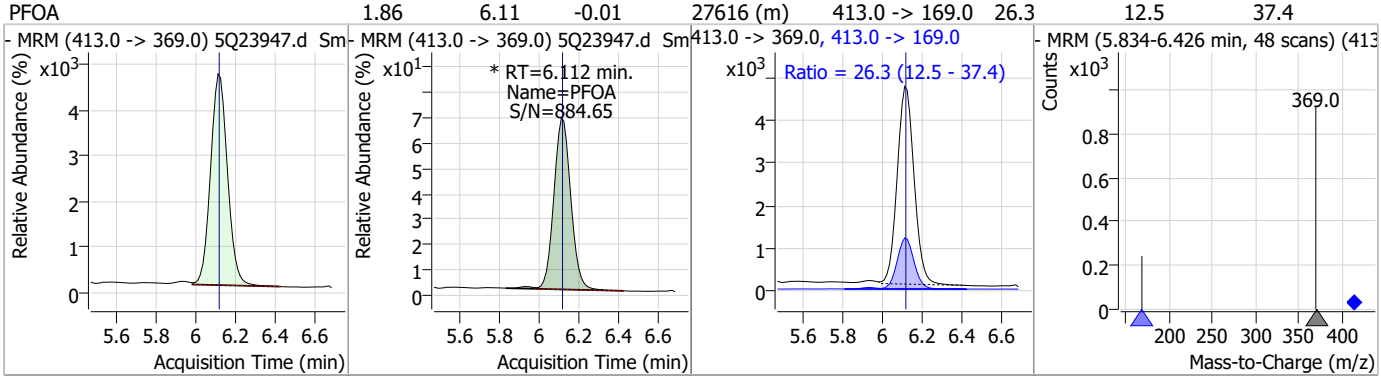


Perfluorinated Compounds by LC/MS/MS

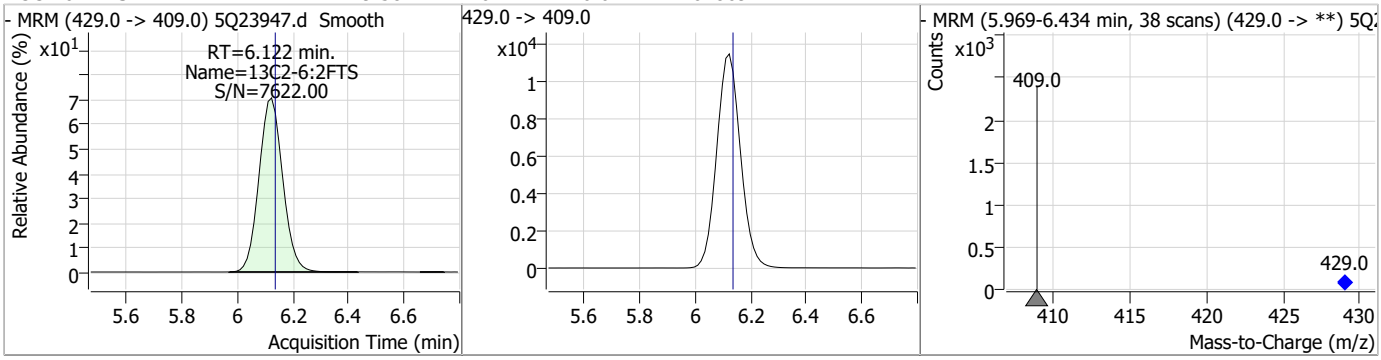
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	9.14	6.11	-0.01	151242				



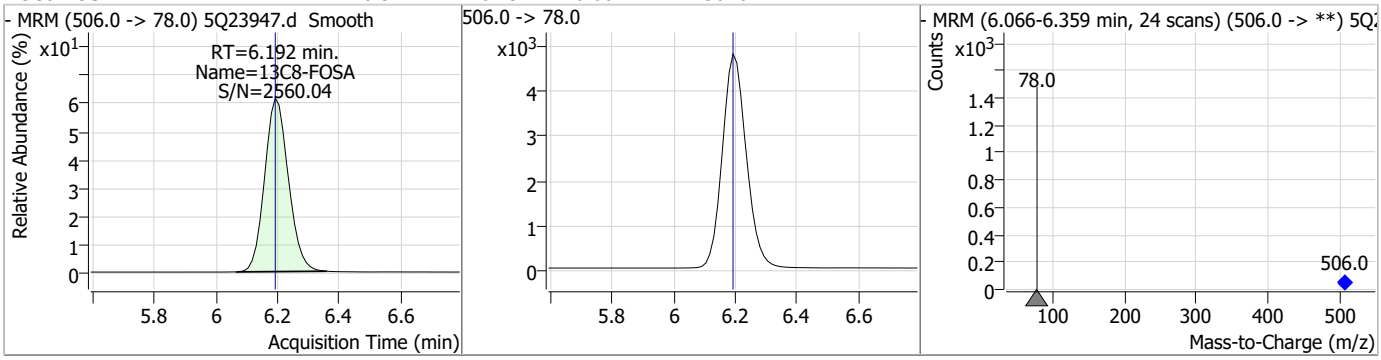
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	1.86	6.11	-0.01	27616 (m)	413.0 -> 169.0	26.3	12.5	37.4



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	9.58	6.12	-0.01	67869				

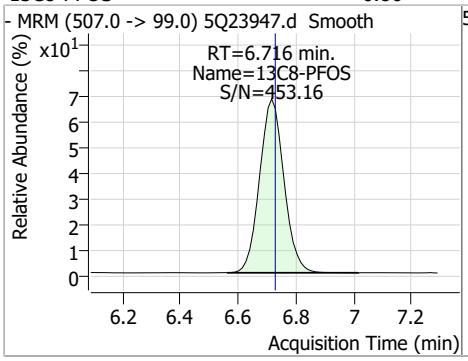


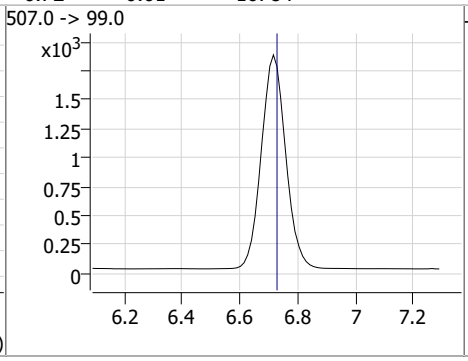
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	6.34	6.19	0.00	25676				

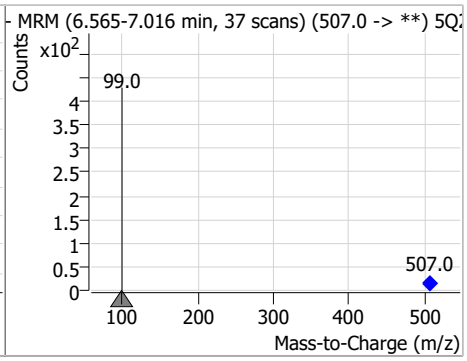


Perfluorinated Compounds by LC/MS/MS

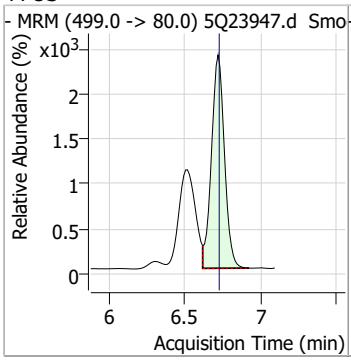
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	6.86	6.72	-0.01	10784				

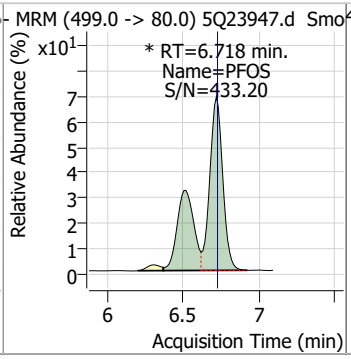


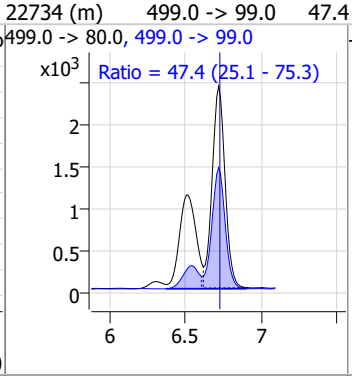


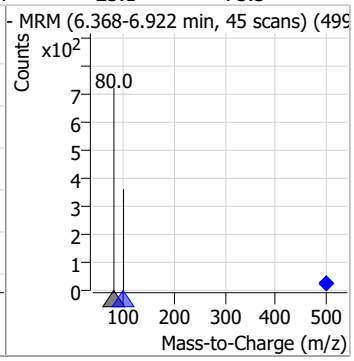


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	11.89	6.72	-0.01	22734 (m)	499.0 -> 99.0	47.4	25.1	75.3

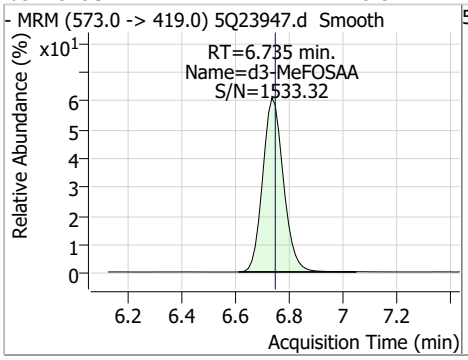


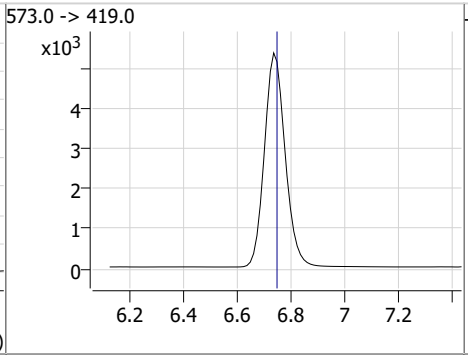


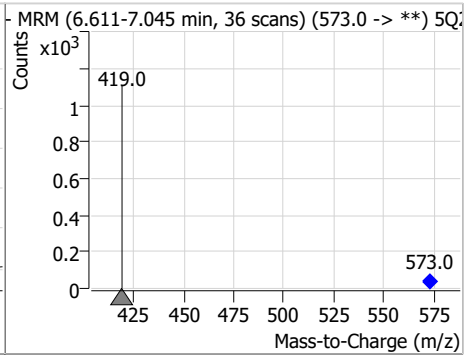




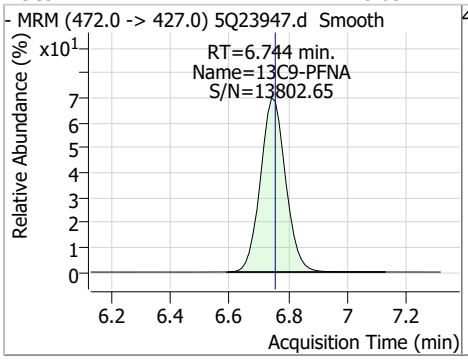
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	9.34	6.73	-0.01	28489				

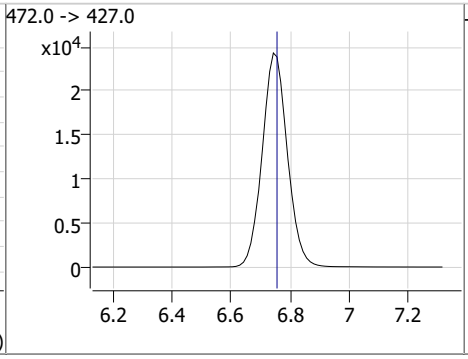


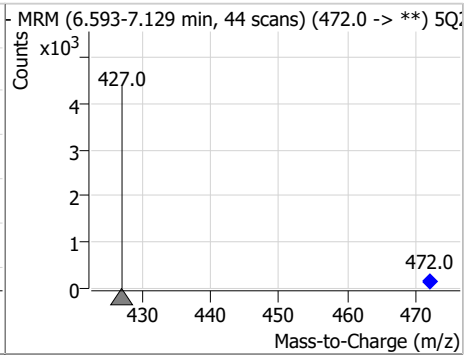




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	8.63	6.74	-0.01	143332				

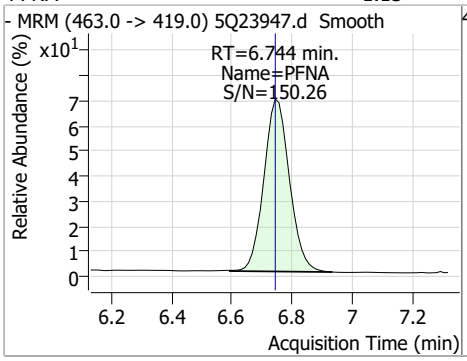


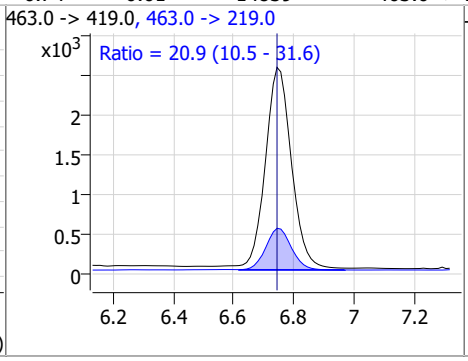


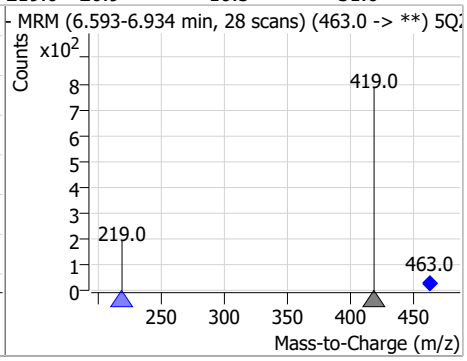


Perfluorinated Compounds by LC/MS/MS

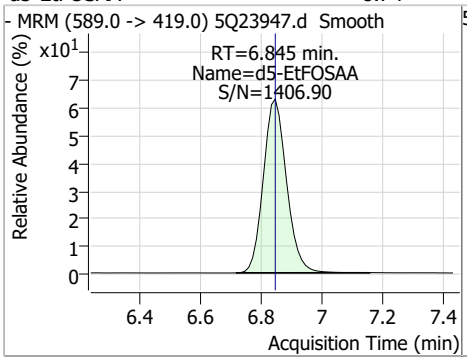
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	1.13	6.74	-0.01	14839	463.0 -> 219.0	20.9	10.5	31.6

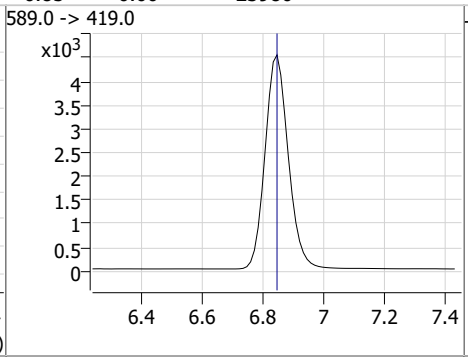


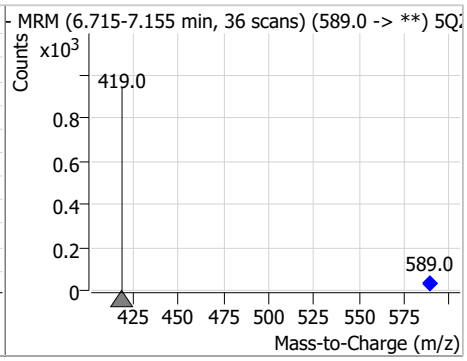




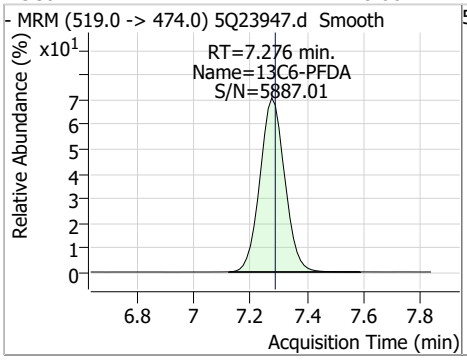
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	8.74	6.85	0.00	23986				

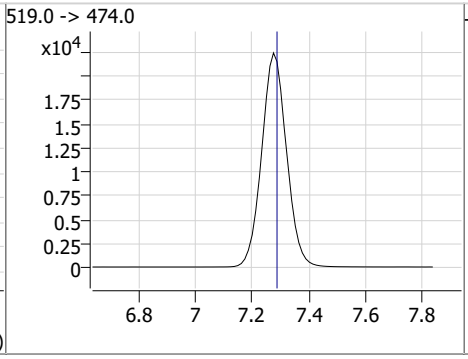


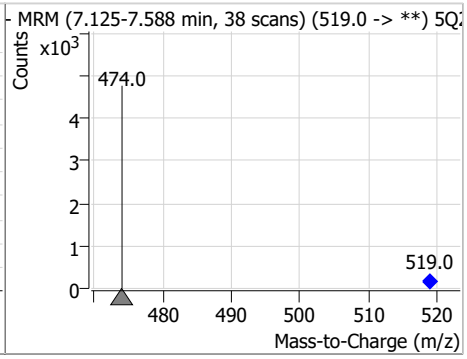




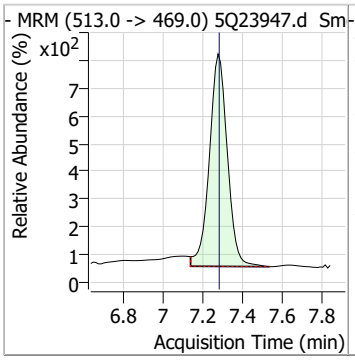
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	8.06	7.28	-0.01	135758				

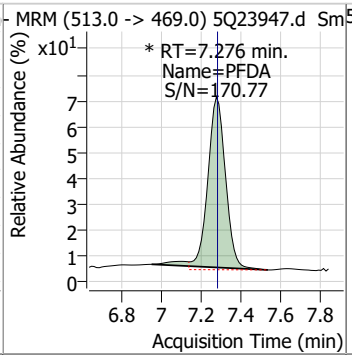


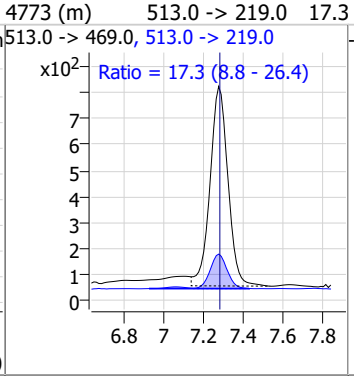


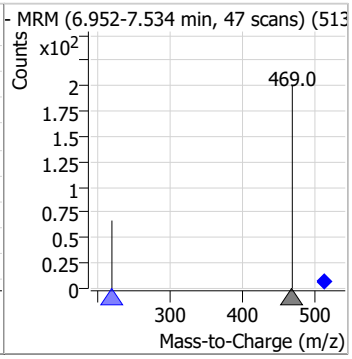


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	0.37	7.28	-0.01	4773 (m)	513.0 -> 219.0	17.3	8.8	26.4



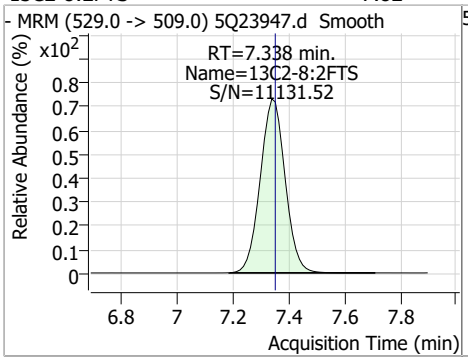


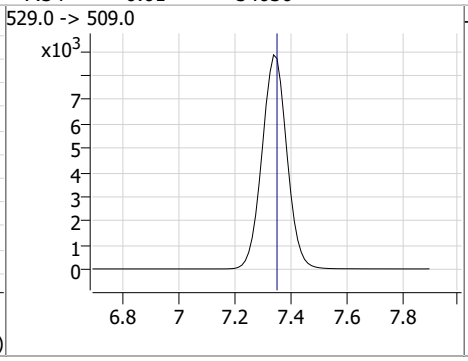


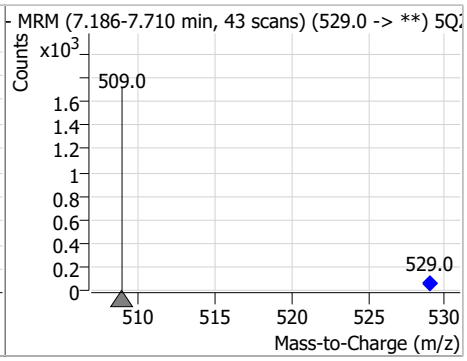


Perfluorinated Compounds by LC/MS/MS

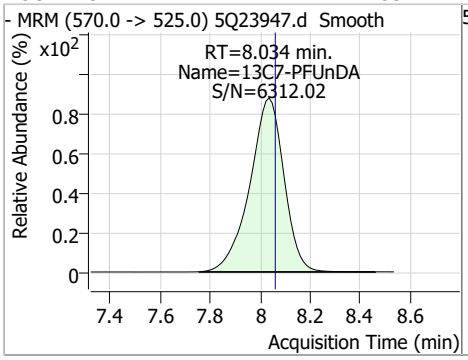
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	7.82	7.34	-0.01	54636				

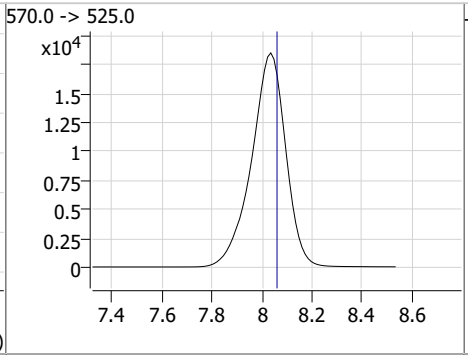


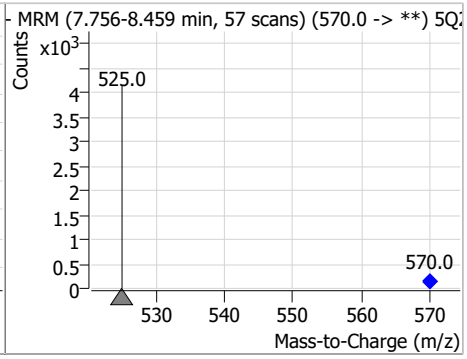




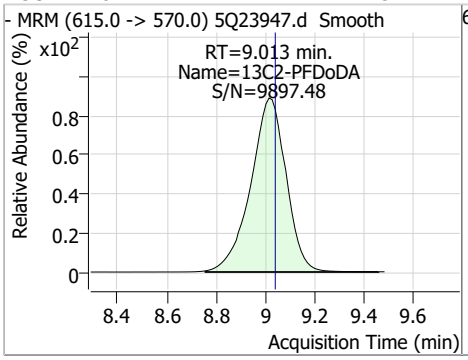
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	7.53	8.03	-0.02	175588				

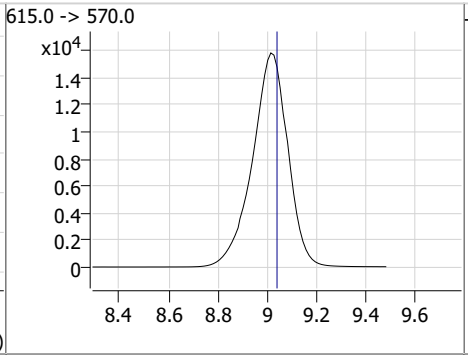


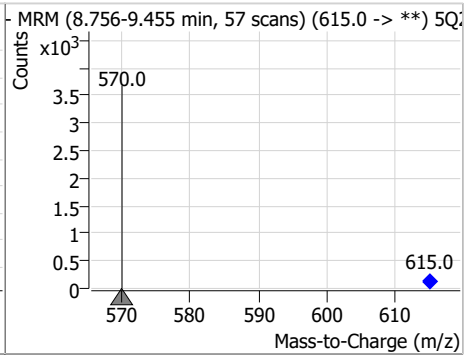




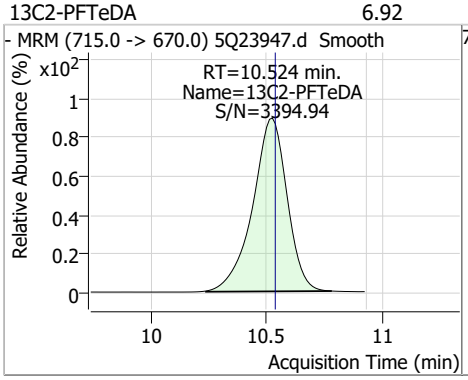
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	7.54	9.01	-0.03	157192				

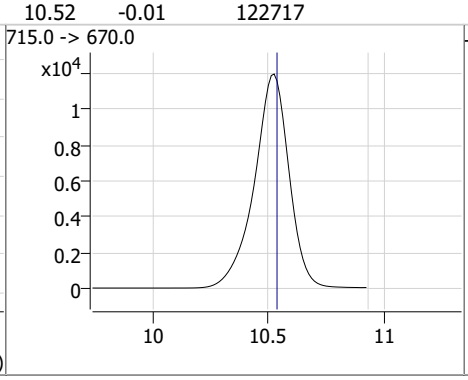


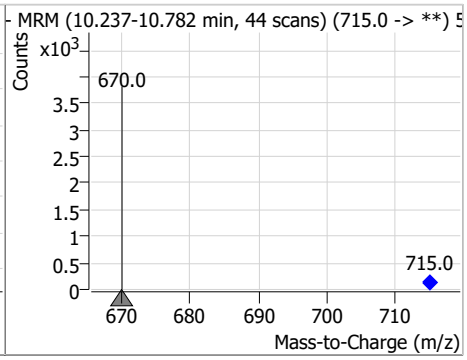




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	6.92	10.52	-0.01	122717				







Manual Integration Approval Summary

Sample Number: FC12099-2
Lab FileID: 5Q23947.D
Injection Time: 12/29/23 01:19
Method: EPA 537M QSM5.3 B-15
Analyst approved: 12/29/23 14:22 Lindsay Ritner
Supervisor approved: 01/02/24 14:27 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorobutanesulfonic acid	375-73-5		3.62	Overlapping peak
Perfluoropentanesulfonic acid	2706-91-4		4.64	Overlapping peak
Perfluorohexanesulfonic acid	355-46-4		5.42	Split peak
Perfluoroheptanesulfonic acid	375-92-8		6.11	Split peak
Perfluorooctanoic acid	335-67-1		6.11	Split peak
Perfluorooctanesulfonic acid	1763-23-1		6.72	Split peak
Perfluorodecanoic acid	335-76-2		7.28	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Natasha Gumtie 01/09/24 10:18

Perfluorinated Compounds by LC/MS/MS

Data File : 2q118606.d
Operator : lindsayr
Acq. Method : 537_ID.m
Acq. Date-Time : 1/4/2024 4:52:09 PM
Sample Name : fc12099-3re
Vial : P6-A3
DA Method File : ID_010224_S2Q1691.quantmethod.xml
Batch Name : s2q1693.batch.bin
Sample Information : op937,S2Q1693,125,,,1.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M5-EtFOSAA	7.722	589.0 -> 419.0	13943	10.00	µg/L	0.000
M4-PFBA	2.177	217.0 -> 172.0	29891	10.00	µg/L	-0.063
M5-PFPeA	4.012	268.0 -> 223.0	46110	10.00	µg/L	-0.050
M5-PFHxA	5.301	318.0 -> 273.0	59505	10.00	µg/L	-0.038
M4-PFHpA	6.182	367.0 -> 322.0	56439	10.00	µg/L	-0.025
M8-PFOA	6.862	421.0 -> 376.0	119014	10.00	µg/L	-0.025
M9-PFNA	7.442	472.0 -> 427.0	91055	10.00	µg/L	-0.013
M6-PFDA	7.919	519.0 -> 474.0	78364	10.00	µg/L	-0.013
M7-PFUnDA	8.381	570.0 -> 525.0	118672	10.00	µg/L	0.000
M2-PFDoDA	8.908	615.0 -> 570.0	106810	10.00	µg/L	-0.013
M2-PFTeDA	10.017	715.0 -> 670.0	58966	10.00	µg/L	0.000
M8-FOSA	7.147	506.0 -> 78.0	7924	10.00	µg/L	-0.013
M3-PFBS	4.279	302.0 -> 99.0	3479	10.00	µg/L	-0.050
M3-PFHxS	6.201	402.0 -> 99.0	3826	10.00	µg/L	-0.042
M8-PFOS	7.413	507.0 -> 99.0	3568	10.00	µg/L	-0.014
M2-4:2FTS	5.196	329.0 -> 309.0	22433	10.00	µg/L	-0.038
M2-6:2FTS	6.860	429.0 -> 409.0	41169	10.00	µg/L	-0.025
M2-8:2FTS	7.967	529.0 -> 509.0	27885	10.00	µg/L	0.000
M3-MeFOSAA	7.609	573.0 -> 419.0	18063	10.00	µg/L	0.000
M3-HFPO-DA	5.569	287.0 -> 169.0	5161	10.00	µg/L	-0.038
M3-MeFOSA	7.513	515.0 -> 169.0	154	10.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	5.196	329.0 -> 309.0	22433	6.08	µg/L	-0.038
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 60.8%		
13C2-6:2FTS	6.860	429.0 -> 409.0	41169	7.17	µg/L	-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 71.7%		
13C2-8:2FTS	7.967	529.0 -> 509.0	27885	7.20	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 72.0%		
13C2-PFDoDA	8.908	615.0 -> 570.0	106810	6.10	µg/L	-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 61.0%		
13C2-PFTeDA	10.017	715.0 -> 670.0	58966	4.44	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 44.4%		
13C3-PFBS	4.279	302.0 -> 99.0	3479	5.79	µg/L	-0.050
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 57.9%		
13C3-PFHxS	6.201	402.0 -> 99.0	3826	6.25	µg/L	-0.042
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 62.5%		
13C4-PFBA	2.177	217.0 -> 172.0	29891	5.79	µg/L	-0.063
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 57.9%		
13C4-PFHpA	6.182	367.0 -> 322.0	56439	6.57	µg/L	-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 65.7%		
d5-EtFOSAA	7.722	589.0 -> 419.0	13943	7.23	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 72.3%		
13C5-PFHxA	5.301	318.0 -> 273.0	59505	6.03	µg/L	-0.038
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 60.3%		
13C5-PFPeA	4.012	268.0 -> 223.0	46110	5.80	µg/L	-0.050

Perfluorinated Compounds by LC/MS/MS

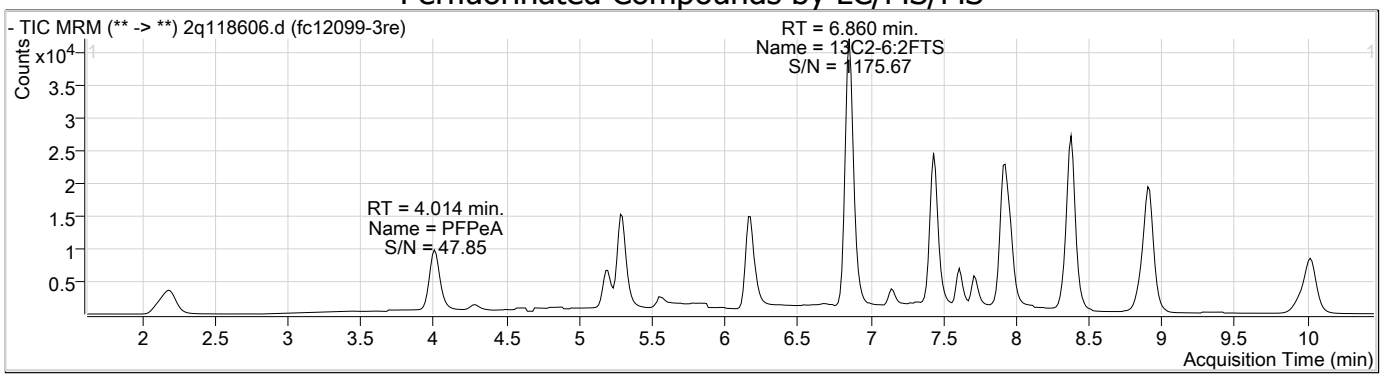
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 58.0%			
13C6-PFDA	7.919	519.0 -> 474.0	78364	7.50	µg/L		-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 75.0%			
13C7-PFUnDA	8.381	570.0 -> 525.0	118672	6.83	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 68.3%			
13C8-FOSA	7.147	506.0 -> 78.0	7924	3.86	µg/L		-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 38.6%			
13C8-PFOA	6.862	421.0 -> 376.0	119014	7.03	µg/L		-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 70.3%			
13C8-PFOS	7.413	507.0 -> 99.0	3568	6.39	µg/L		-0.014
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 63.9%			
13C9-PFNA	7.442	472.0 -> 427.0	91055	6.76	µg/L		-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 67.6%			
d3-MeFOSAA	7.609	573.0 -> 419.0	18063	7.90	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 79.0%			
13C3-HFPO-DA	5.569	287.0 -> 169.0	5161	6.21	µg/L		-0.038
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 62.1%			
d3-MeFOSA	7.513	515.0 -> 169.0	154	0.21	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 2.1%			
Target Compounds							QValue
4:2FTS	-	327.0 -> 307.0	-	N.D.			
		327.0 -> 81.0					
6:2FTS	-	427.0 -> 407.0	-	N.D.			
		427.0 -> 81.0					
8:2FTS	-	527.0 -> 507.0	-	N.D.			
		527.0 -> 81.0					
EtFOSAA	-	584.0 -> 419.0	-	N.D.			
		584.0 -> 483.0					
FOSA	-	498.0 -> 78.0	-	N.D.			
		498.0 -> 478.0					
MeFOSAA	-	570.0 -> 419.0	-	N.D.			
		570.0 -> 512.0					
PFBA	2.183	213.0 -> 169.0	208	0.22	µg/L		100
PFBS	4.294	299.0 -> 80.0	100	0.11	µg/L	#m	37
		299.0 -> 99.0	76				
PFDA	-	513.0 -> 469.0	-	N.D.			
		513.0 -> 219.0					
PFDoDA	-	613.0 -> 569.0	-	N.D.			
		613.0 -> 319.0					
PFDS	-	599.0 -> 80.0	-	N.D.			
		599.0 -> 99.0					
PFHpA	6.183	363.0 -> 319.0	1683	0.18	µg/L	m	100
		363.0 -> 169.0	283				
PFHpS	-	449.0 -> 80.0	-	N.D.			
		449.0 -> 99.0					
PFHxA	5.302	313.0 -> 269.0	2473	0.40	µg/L		99
		313.0 -> 119.0	87				
PFHxS	6.202	399.0 -> 80.0	728	0.87	µg/L	m	99
		399.0 -> 99.0	369				
PFNA	-	463.0 -> 419.0	-	N.D.			
		463.0 -> 219.0					
PFNS	-	549.0 -> 80.0	-	N.D.			
		549.0 -> 99.0					
PFOA	6.863	413.0 -> 369.0	5254	0.41	µg/L	m	92
		413.0 -> 169.0	1129				
PFOS	-	499.0 -> 80.0	-	N.D.			

Perfluorinated Compounds by LC/MS/MS

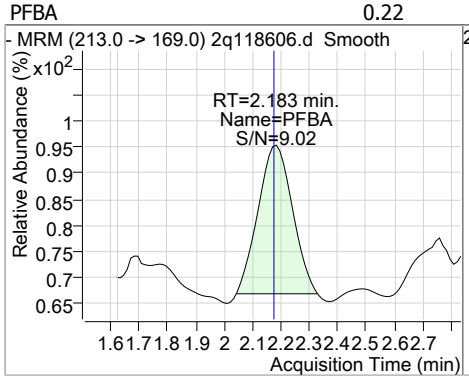
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
		499.0 -> 99.0					
PFPeA	4.014	263.0 -> 219.0	1968	0.54	µg/L		100
PFPeS	5.433	349.0 -> 80.0	166	0.26	µg/L	m	69
		349.0 -> 99.0	38				
PFTeDA	-	713.0 -> 669.0	-	N.D.			
		713.0 -> 219.0					
PFTrDA	-	663.0 -> 619.0	-	N.D.			
		663.0 -> 369.0					
PFUnDA	-	563.0 -> 519.0	-	N.D.			
		563.0 -> 269.0					
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.			
		633.0 -> 453.0					
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.			
		533.0 -> 353.0					
ADONA	-	377.0 -> 251.0	-	N.D.			
		377.0 -> 85.0					
HFPO-DA	-	329.0 -> 169.0	-	N.D.			
		285.0 -> 169.0					
MeFOSA	-	512.0 -> 169.0	-	N.D.			
		512.0 -> 219.0					
4-PFECHS	-	461.0 -> 381.0	-	N.D.			
		461.0 -> 99.0					
FBSA	-	298.0 -> 78.0	-	N.D.			
		298.0 -> 64.0					
FHxSA	-	398.0 -> 78.0	-	N.D.			
		398.0 -> 64.0					

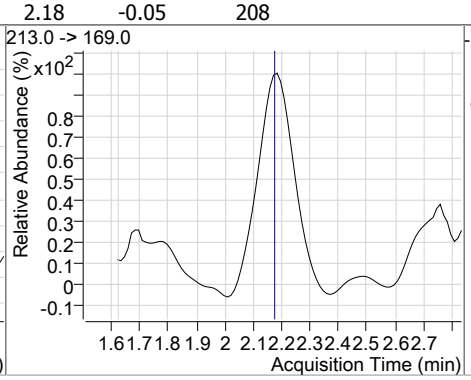
 # = Qualifier out of range, m = manually integrated, + = Area summed

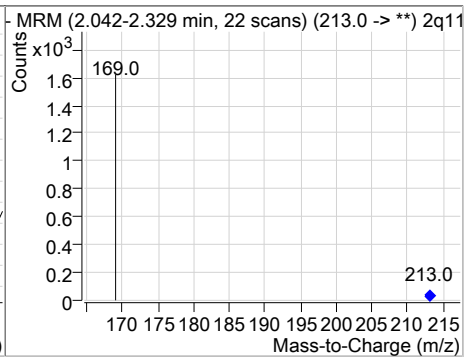
Perfluorinated Compounds by LC/MS/MS



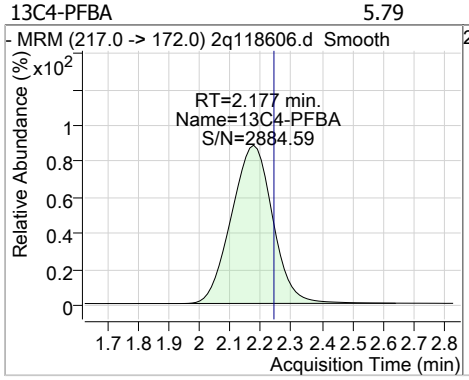
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	0.22	2.18	-0.05	208				

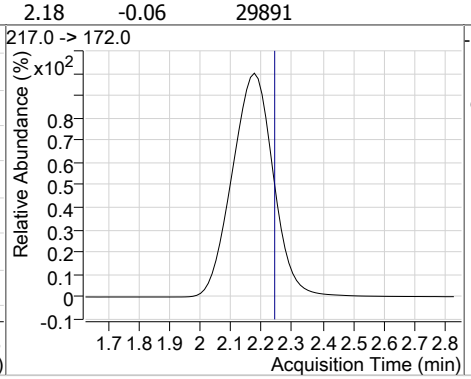


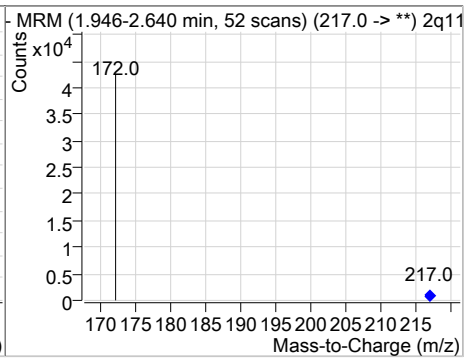




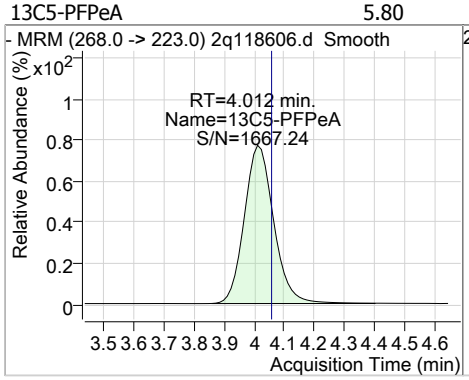
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	5.79	2.18	-0.06	29891				

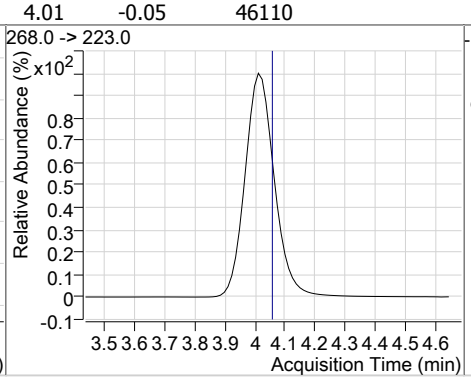


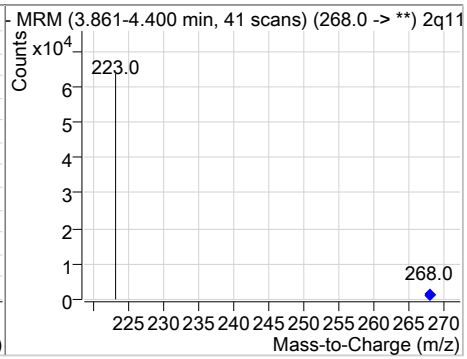




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	5.80	4.01	-0.05	46110				

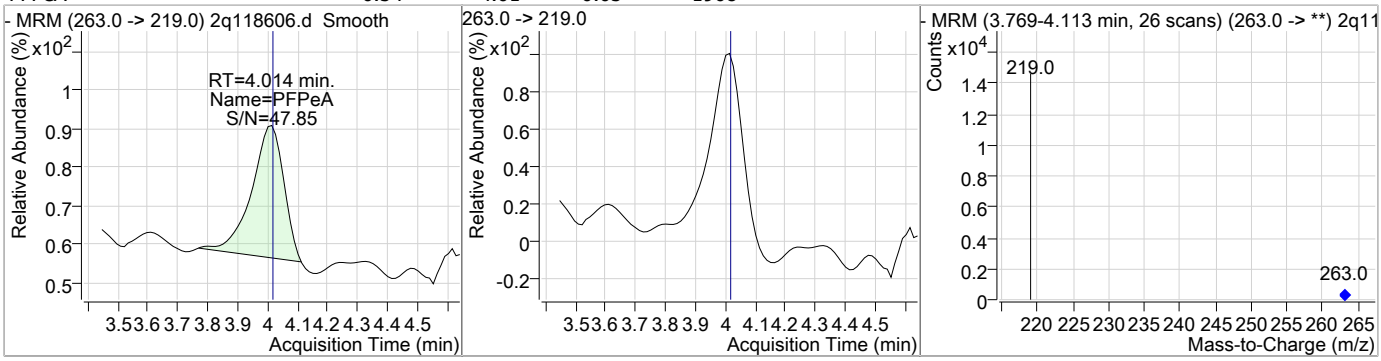




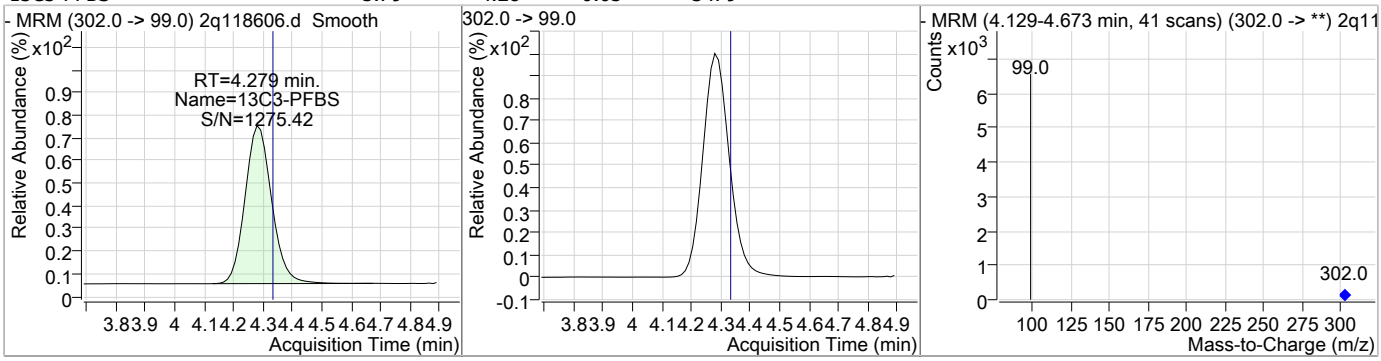


Perfluorinated Compounds by LC/MS/MS

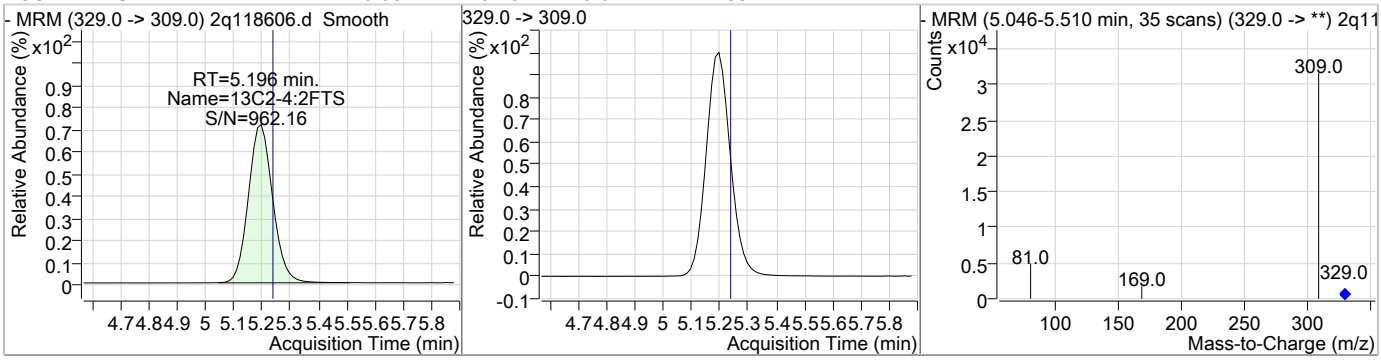
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	0.54	4.01	-0.05	1968				



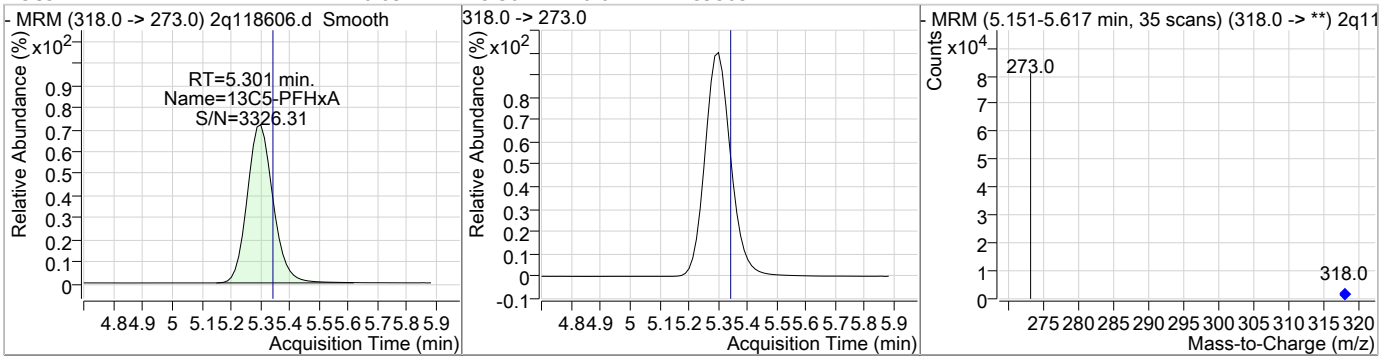
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	5.79	4.28	-0.05	3479				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	6.08	5.20	-0.04	22433				

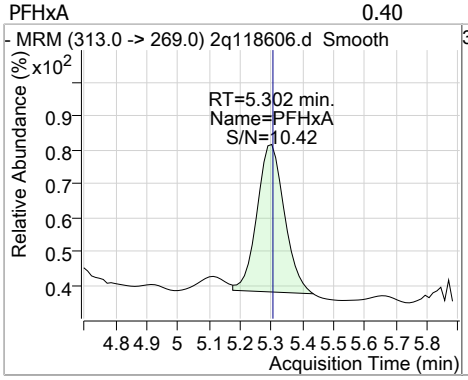


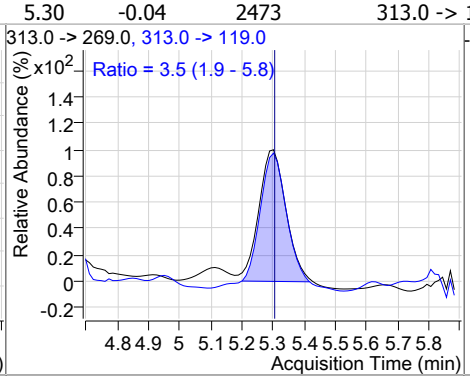
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	6.03	5.30	-0.04	59505				

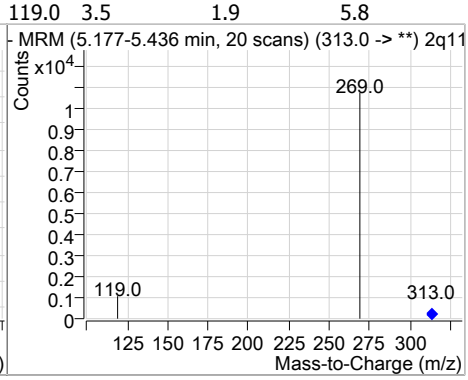


Perfluorinated Compounds by LC/MS/MS

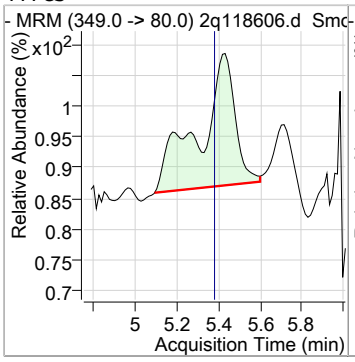
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	0.40	5.30	-0.04	2473	313.0 -> 119.0	3.5	1.9	5.8

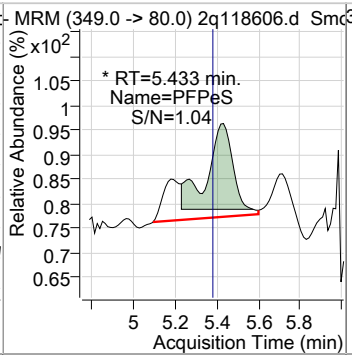


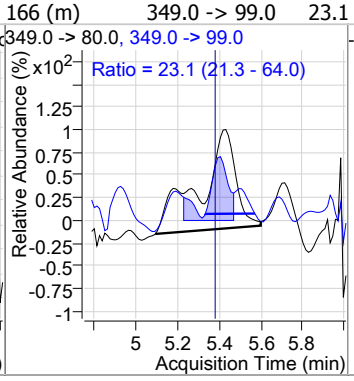


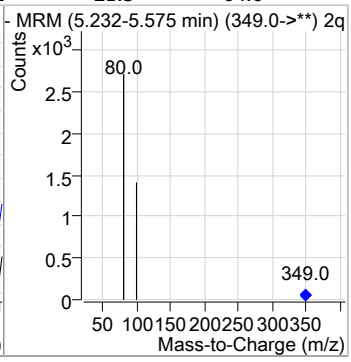


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	0.26	5.43	-0.01	166 (m)	349.0 -> 99.0	23.1	21.3	64.0

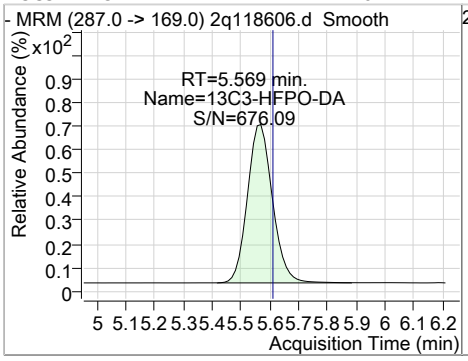


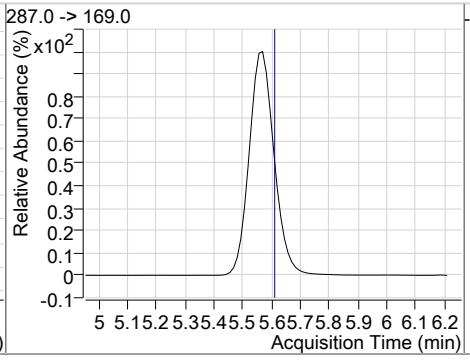


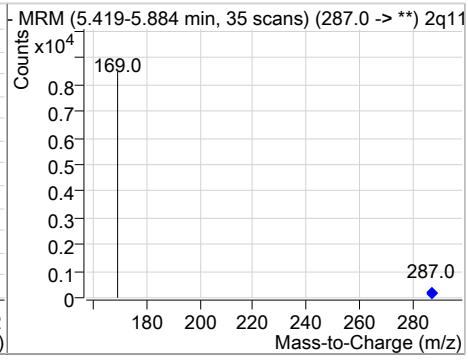




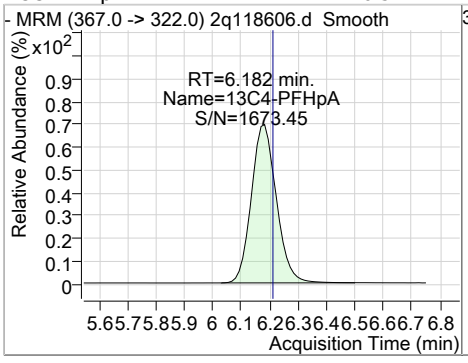
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	6.21	5.57	-0.04	5161				

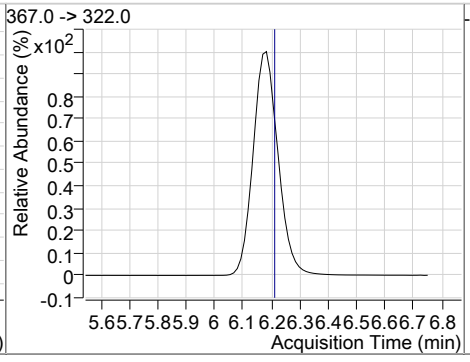


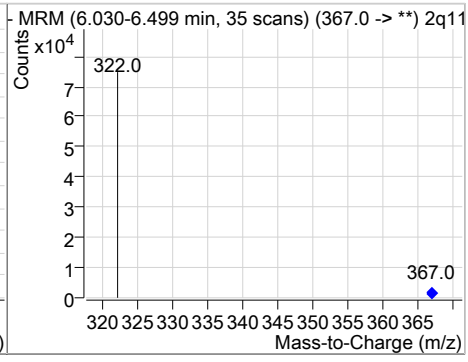




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	6.57	6.18	-0.03	56439				

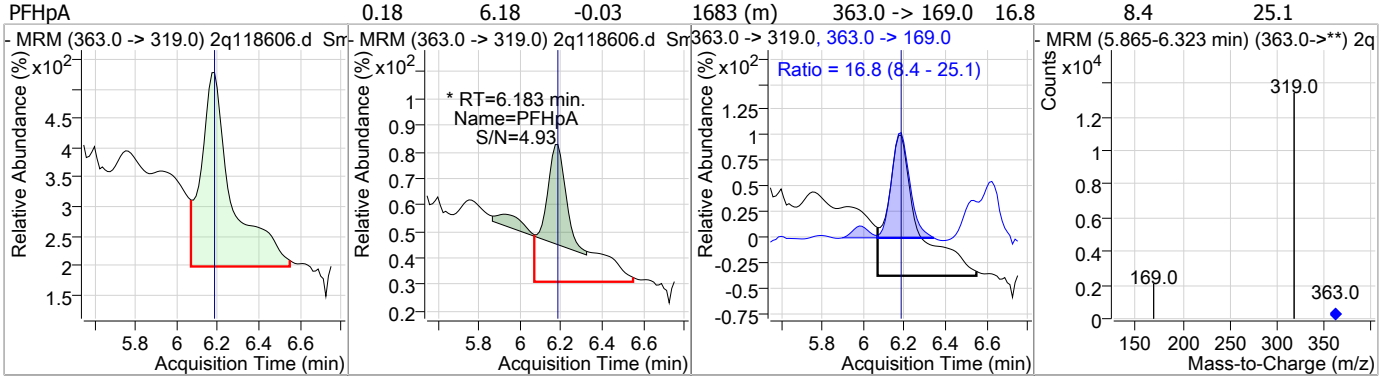




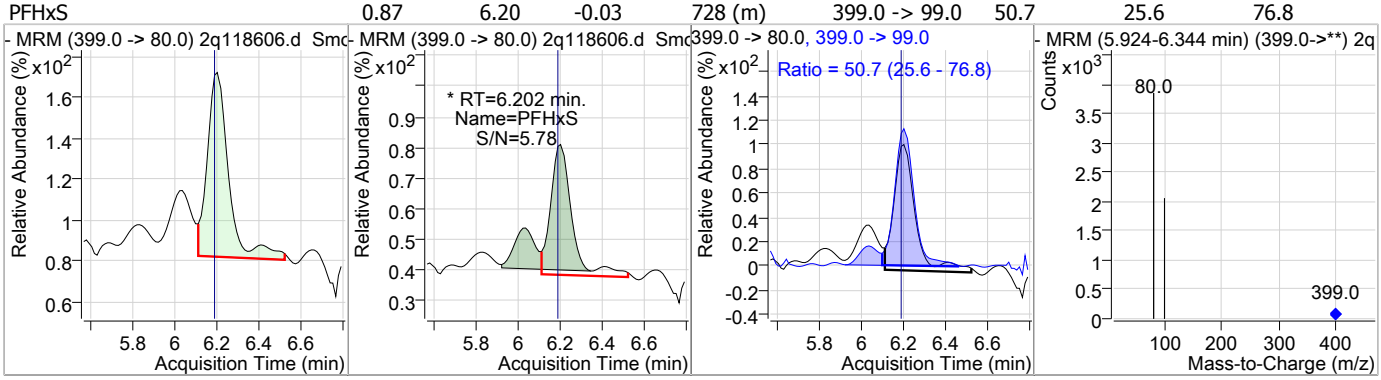


Perfluorinated Compounds by LC/MS/MS

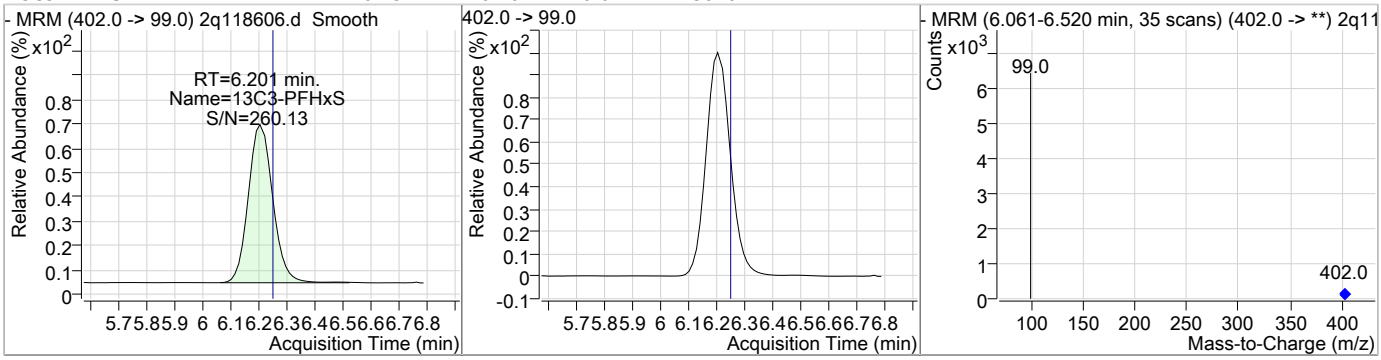
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	0.18	6.18	-0.03	1683 (m)	363.0 -> 169.0	16.8	8.4	25.1



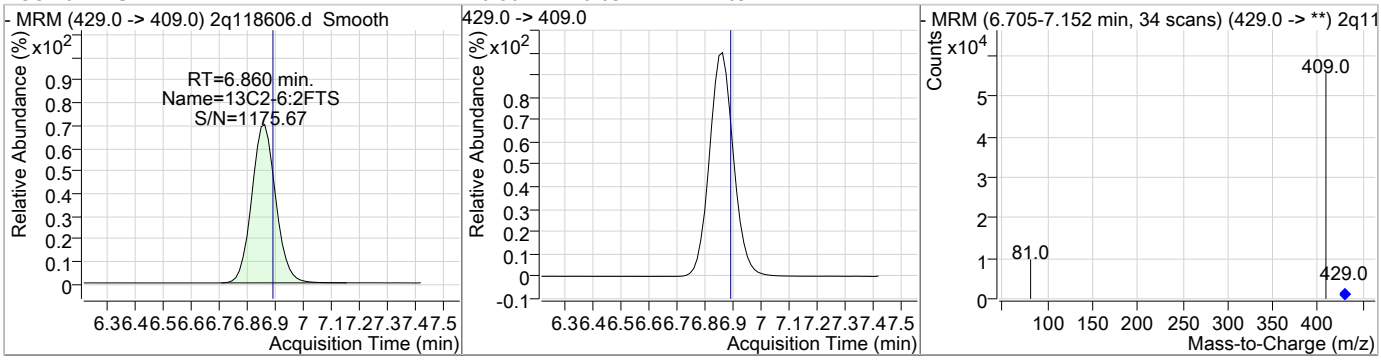
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	0.87	6.20	-0.03	728 (m)	399.0 -> 99.0	50.7	25.6	76.8



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	6.25	6.20	-0.04	3826				

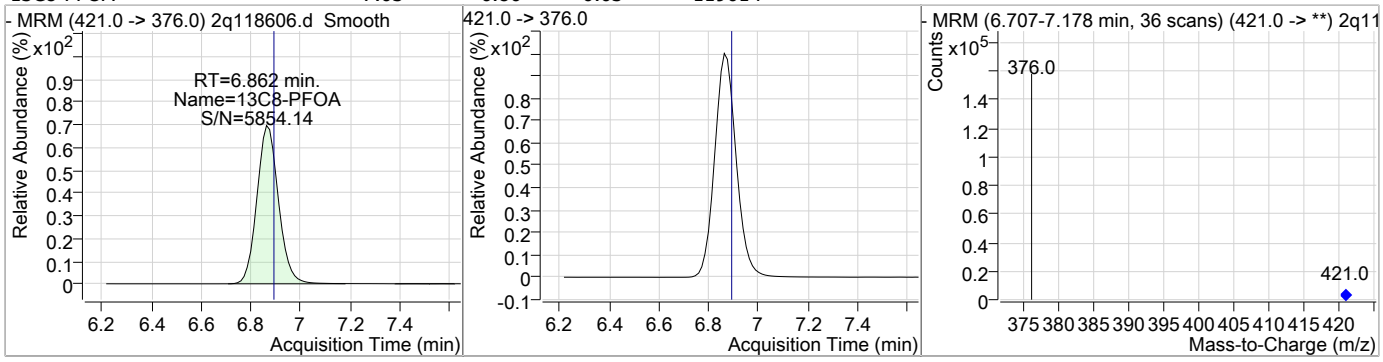


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	7.17	6.86	-0.03	41169				

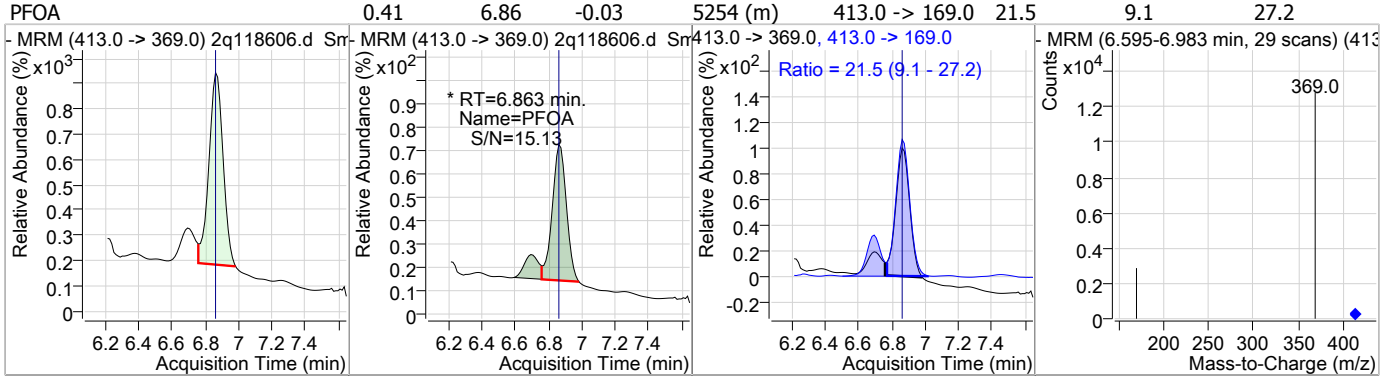


Perfluorinated Compounds by LC/MS/MS

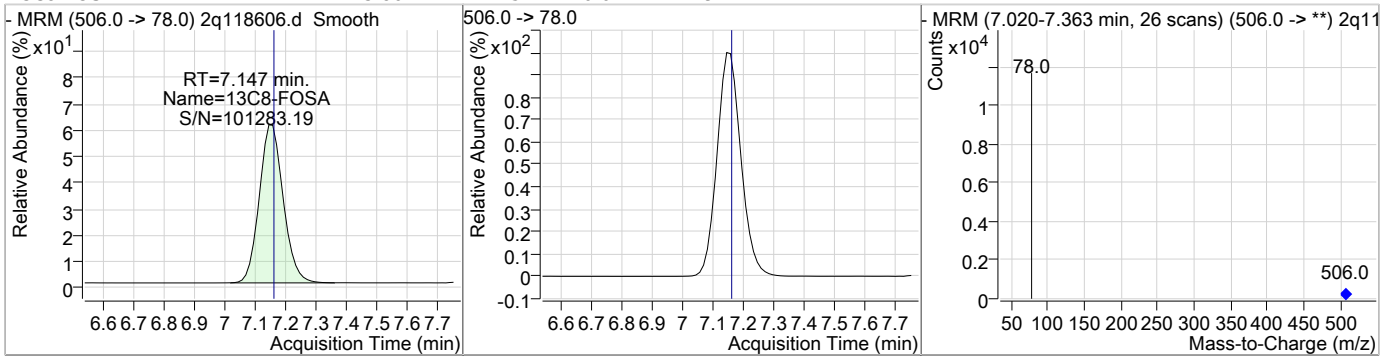
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	7.03	6.86	-0.03	119014				



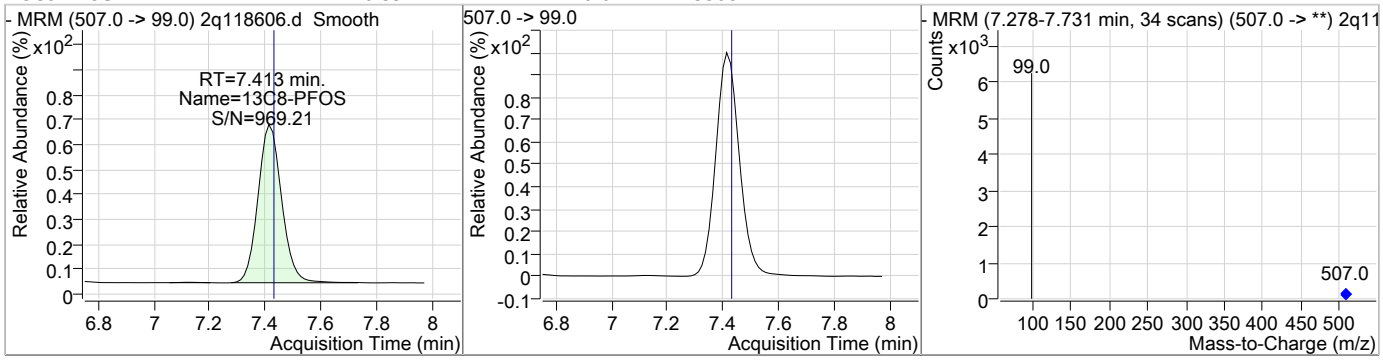
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	0.41	6.86	-0.03	5254 (m)	413.0 -> 169.0	21.5	9.1	27.2



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	3.86	7.15	-0.01	7924				

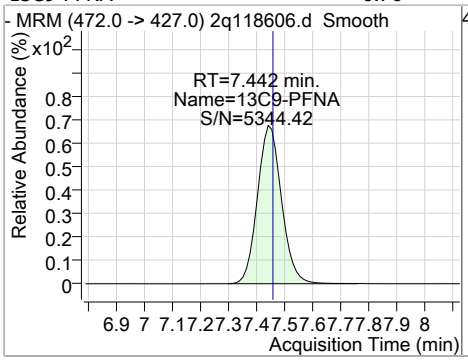


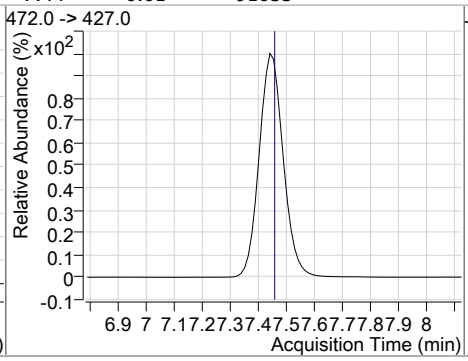
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	6.39	7.41	-0.01	3568				

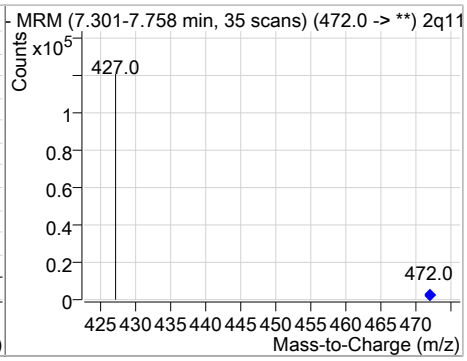


Perfluorinated Compounds by LC/MS/MS

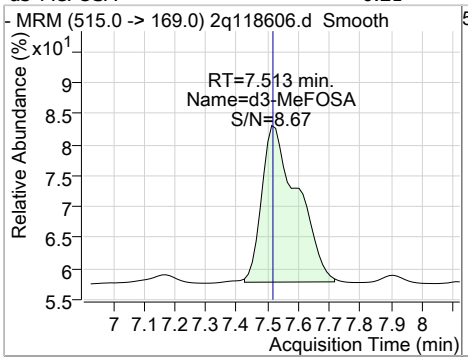
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	6.76	7.44	-0.01	91055				

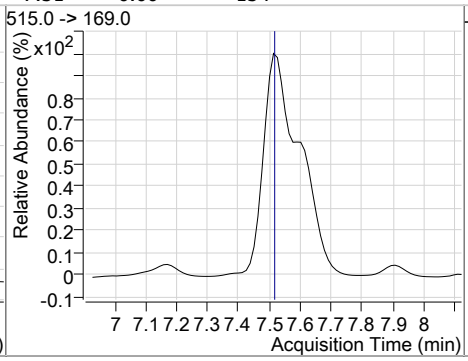


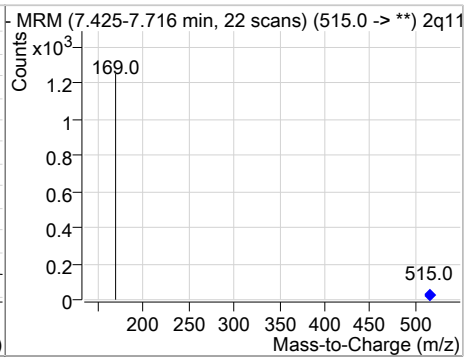




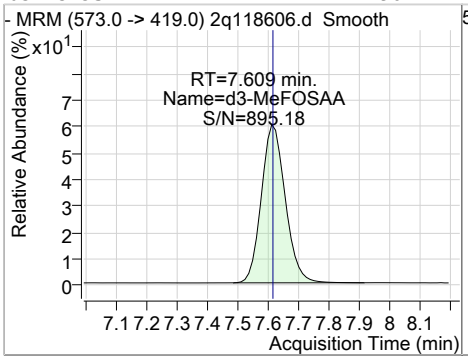
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	0.21	7.51	0.00	154				

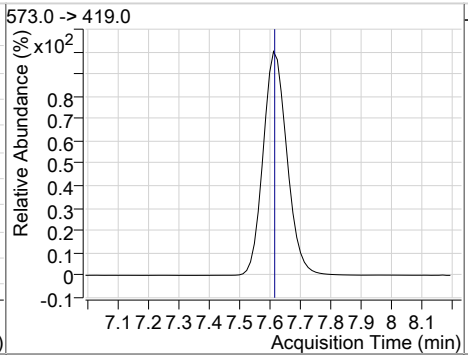


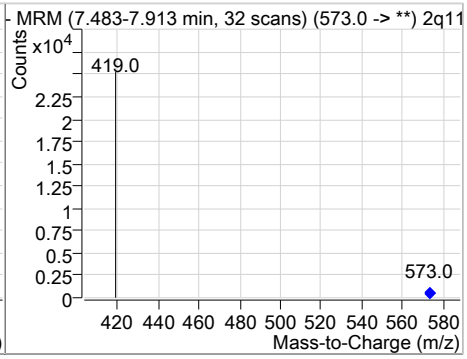




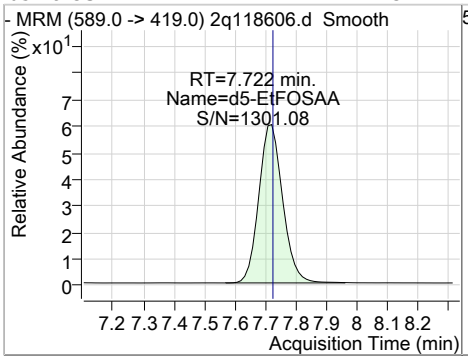
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	7.90	7.61	0.00	18063				

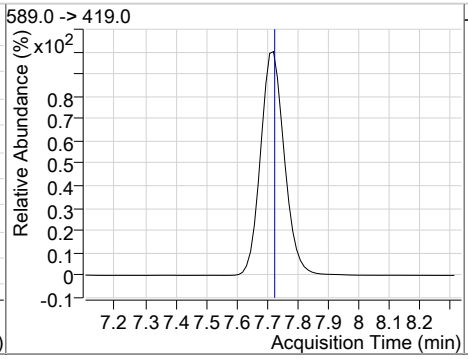


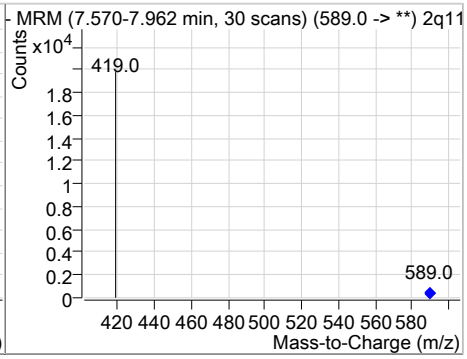




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	7.23	7.72	0.00	13943				

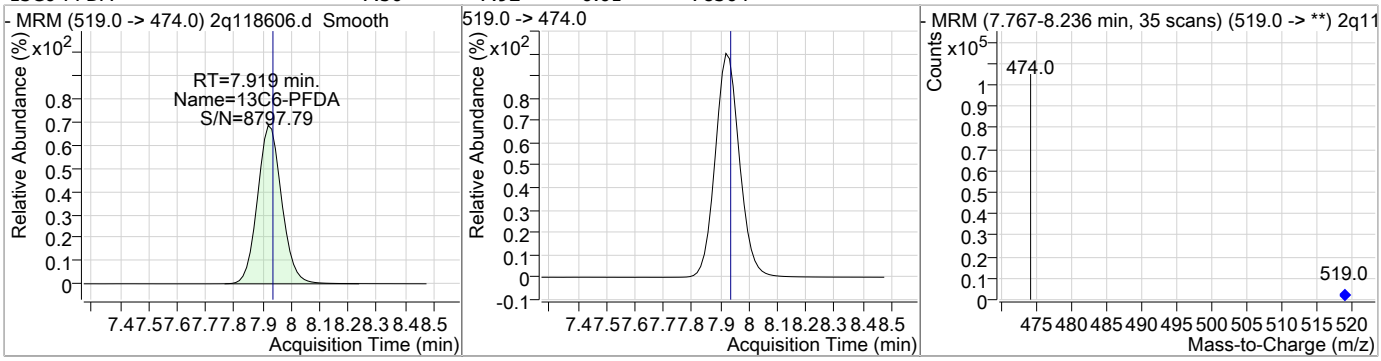




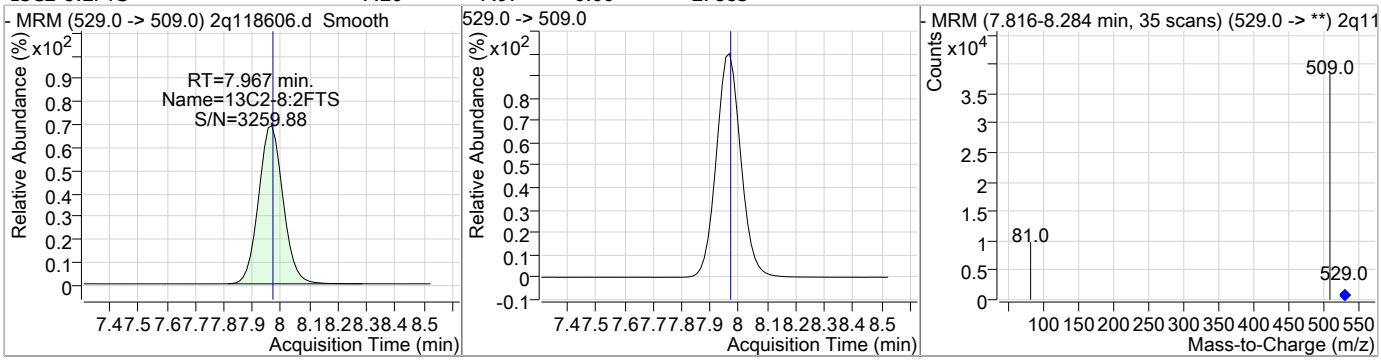


Perfluorinated Compounds by LC/MS/MS

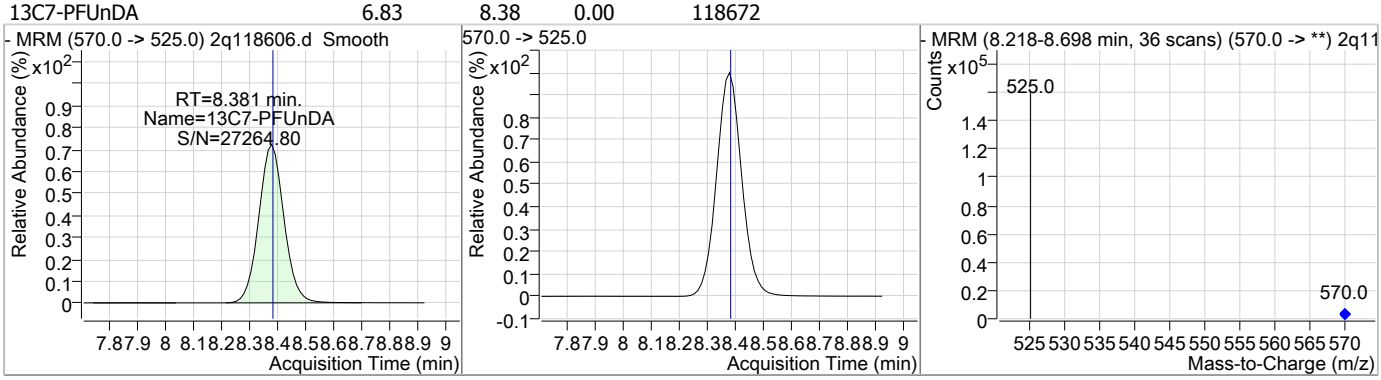
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	7.50	7.92	-0.01	78364				



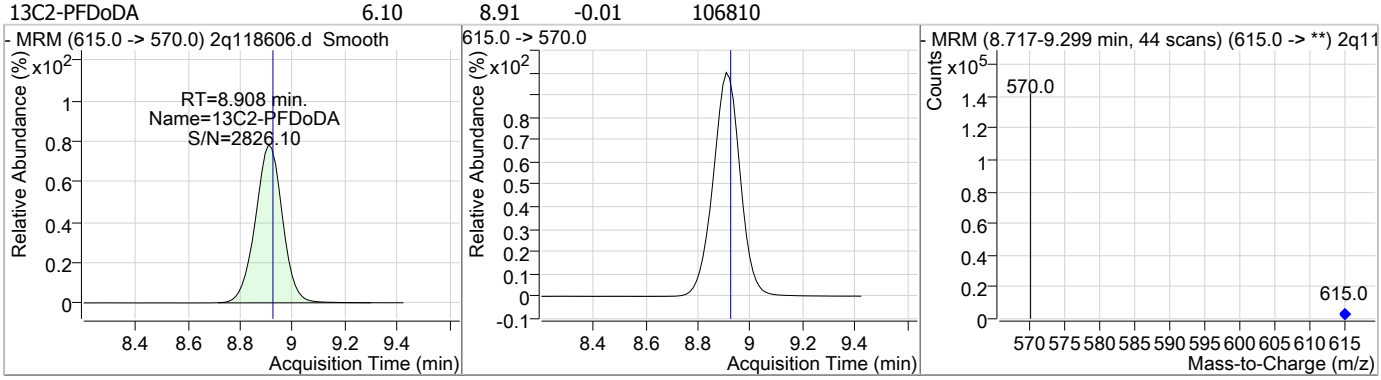
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	7.20	7.97	0.00	27885				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	6.83	8.38	0.00	118672				

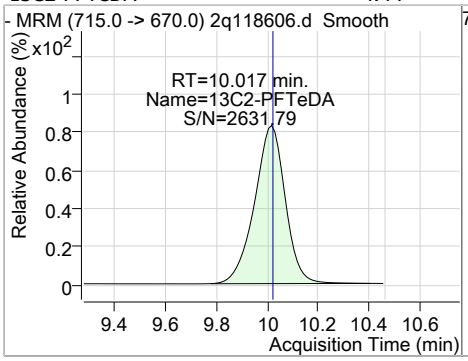


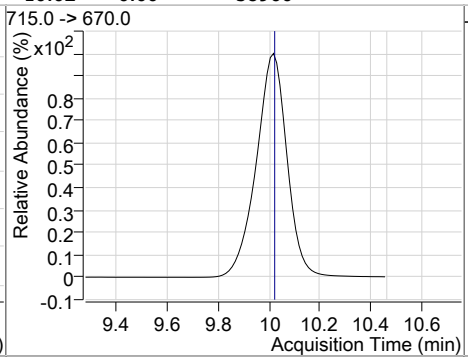
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	6.10	8.91	-0.01	106810				

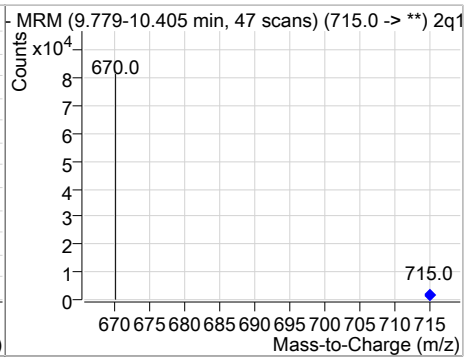


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	4.44	10.02	0.00	58966				







Manual Integration Approval Summary

Sample Number: FC12099-3
Lab FileID: 2Q118606.D
Injection Time: 01/04/24 16:52
Method: EPA 537M QSM5.3 B-15
Analyst approved: 01/08/24 15:06 Lindsay Ritner
Supervisor approved: 01/09/24 10:18 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorobutanesulfonic acid	375-73-5		4.29	Poor instrument integration
Perfluoropentanesulfonic acid	2706-91-4		5.43	Poor instrument integration
Perfluoroheptanoic acid	375-85-9		6.18	Split peak
Perfluorohexanesulfonic acid	355-46-4		6.20	Split peak
Perfluorooctanoic acid	335-67-1		6.86	Split peak

Perfluorinated Compounds by LC/MS/MS

Data File : 5Q24255.d
Operator : lindsayr
Acq. Method : 537_ID.m
Acq. Date-Time : 1/5/2024 8:36:01 PM
Sample Name : fc12099-3re
Vial : P2-A4
DA Method File : ID_010224_S5Q377.quantmethod.xml
Batch Name : s5q380.batch.bin
Sample Information : OP937,S5Q380,125,,,1.0,5,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	1.975	217.0 -> 172.0	5084	2.00 µg/L	-0.013
M5-PFPeA	3.407	268.0 -> 223.0	8392	2.00 µg/L	-0.025
M5-PFHxA	4.540	318.0 -> 273.0	15062	2.00 µg/L	-0.025
M4-PFHpA	5.413	367.0 -> 322.0	16005	2.00 µg/L	-0.012
M8-PFOA	6.124	421.0 -> 376.0	23704	2.00 µg/L	-0.025
M9-PFNA	6.756	472.0 -> 427.0	23632	2.00 µg/L	-0.025
M6-PFDA	7.288	519.0 -> 474.0	22596	2.00 µg/L	-0.025
M7-PFUnDA	8.084	570.0 -> 525.0	26563	2.00 µg/L	-0.050
M2-PFDoDA	9.063	615.0 -> 570.0	21041	2.00 µg/L	-0.055
M2-PFTeDA	10.549	715.0 -> 670.0	10402	2.00 µg/L	-0.062
M8-FOSA	6.192	506.0 -> 78.0	3995	2.00 µg/L	-0.012
M3-PFBS	3.612	302.0 -> 99.0	1131	2.00 µg/L	-0.025
M3-PFHxS	5.432	402.0 -> 99.0	1515	2.00 µg/L	-0.012
M8-PFOS	6.729	507.0 -> 99.0	2243	2.00 µg/L	-0.025
M2-4:2FTS	4.461	329.0 -> 309.0	5195	2.00 µg/L	-0.025
M2-6:2FTS	6.135	429.0 -> 409.0	9786	2.00 µg/L	-0.012
M2-8:2FTS	7.363	529.0 -> 509.0	8919	2.00 µg/L	-0.012
M3-MeFOSAA	6.747	573.0 -> 419.0	4925	2.00 µg/L	0.000
M3-HFPO-DA	4.807	287.0 -> 169.0	787	2.00 µg/L	-0.025
M3-MeFOSA	6.589	515.0 -> 169.0	23	2.00 µg/L	0.000
M5-EtFOSAA	6.845	589.0 -> 419.0	4118	2.00 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	4.461	329.0 -> 309.0	5195	1.33 µg/L	-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 13.3%	
13C2-6:2FTS	6.135	429.0 -> 409.0	9786	1.33 µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 13.3%	
13C2-8:2FTS	7.363	529.0 -> 509.0	8919	1.26 µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 12.6%	
13C2-PFDoDA	9.063	615.0 -> 570.0	21041	0.93 µg/L	-0.055
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 9.3%	
13C2-PFTeDA	10.549	715.0 -> 670.0	10402	0.54 µg/L	-0.062
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 5.4%	
13C3-PFBS	3.612	302.0 -> 99.0	1131	1.23 µg/L	-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 12.3%	
13C3-PFHxS	5.432	402.0 -> 99.0	1515	1.34 µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 13.4%	
13C4-PFBA	1.975	217.0 -> 172.0	5084	1.15 µg/L	-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 11.5%	
13C4-PFHpA	5.413	367.0 -> 322.0	16005	1.35 µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 13.5%	
13C5-PFHxA	4.540	318.0 -> 273.0	15062	1.31 µg/L	-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 13.1%	
13C5-PFPeA	3.407	268.0 -> 223.0	8392	1.13 µg/L	-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 11.3%	
13C6-PFDA	7.288	519.0 -> 474.0	22596	1.31 µg/L	-0.025

Perfluorinated Compounds by LC/MS/MS

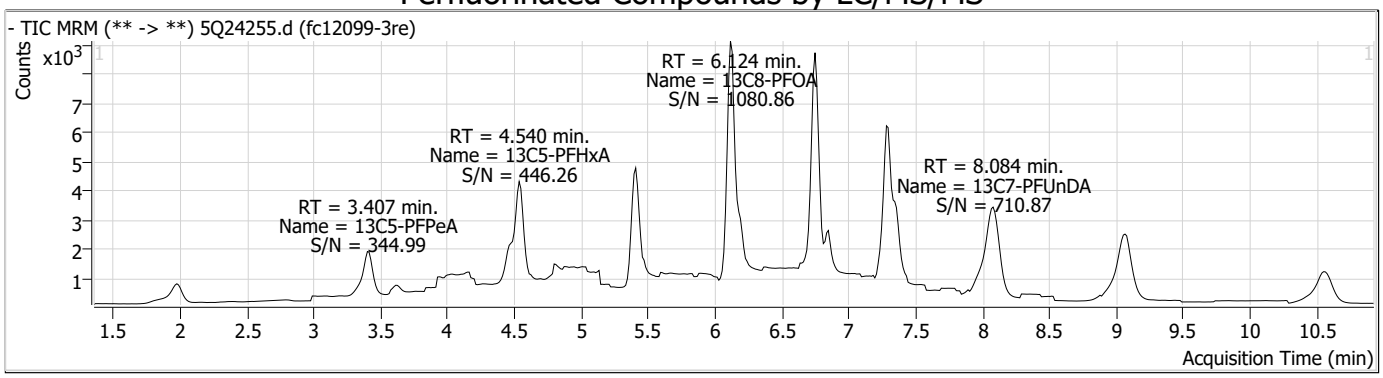
Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 13.1%	
13C7-PFUnDA	8.084	570.0 -> 525.0	26563	1.09 µg/L	-0.050
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 10.9%	
13C8-FOSA	6.192	506.0 -> 78.0	3995	0.98 µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 9.8%	
13C8-PFOA	6.124	421.0 -> 376.0	23704	1.43 µg/L	-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 14.3%	
13C8-PFOS	6.729	507.0 -> 99.0	2243	1.42 µg/L	-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 14.2%	
13C9-PFNA	6.756	472.0 -> 427.0	23632	1.43 µg/L	-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 14.3%	
d3-MeFOSAA	6.747	573.0 -> 419.0	4925	1.46 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 14.6%	
13C3-HFPO-DA	4.807	287.0 -> 169.0	787	1.32 µg/L	-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 13.2%	
d3-MeFOSA	6.589	515.0 -> 169.0	23	0.02 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 0.2%	
d5-EtFOSAA	6.845	589.0 -> 419.0	4118	1.35 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 13.5%	
Target Compounds					QValue
4:2FTS	-	327.0 -> 307.0	-	N.D.	
		327.0 -> 81.0			
6:2FTS	-	427.0 -> 407.0	-	N.D.	
		427.0 -> 81.0			
8:2FTS	-	527.0 -> 507.0	-	N.D.	
		527.0 -> 81.0			
EtFOSAA	-	584.0 -> 419.0	-	N.D.	
		584.0 -> 483.0			
FOSA	-	498.0 -> 78.0	-	N.D.	
		498.0 -> 478.0			
MeFOSAA	-	570.0 -> 419.0	-	N.D.	
		570.0 -> 512.0			
PFBA	-	213.0 -> 169.0	-	N.D.	
PFBS	-	299.0 -> 80.0	-	N.D.	
		299.0 -> 99.0			
PFDA	-	513.0 -> 469.0	-	N.D.	
		513.0 -> 219.0			
PFDoDA	-	613.0 -> 569.0	-	N.D.	
		613.0 -> 319.0			
PFDS	-	599.0 -> 80.0	-	N.D.	
		599.0 -> 99.0			
PFHpA	-	363.0 -> 319.0	-	N.D.	
		363.0 -> 169.0			
PFHpS	-	449.0 -> 80.0	-	N.D.	
		449.0 -> 99.0			
PFHxA	-	313.0 -> 269.0	-	N.D.	
		313.0 -> 119.0			
PFHxS	5.433	399.0 -> 80.0	291	0.21 µg/L	88
		399.0 -> 99.0	136		
PFNA	-	463.0 -> 419.0	-	N.D.	
		463.0 -> 219.0			
PFNS	-	549.0 -> 80.0	-	N.D.	
		549.0 -> 99.0			
PFOA	-	413.0 -> 369.0	-	N.D.	
		413.0 -> 169.0			
PFOS	-	499.0 -> 80.0	-	N.D.	

Perfluorinated Compounds by LC/MS/MS

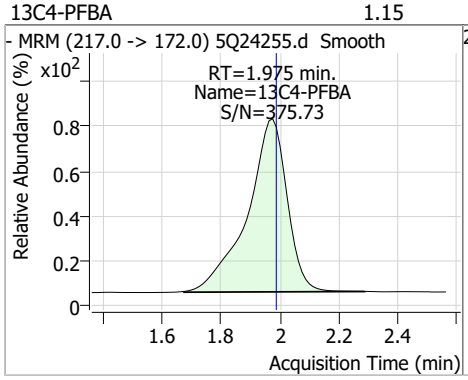
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		499.0 -> 99.0				
PFPeA	-	263.0 -> 219.0	-	N.D.		
PFPeS	-	349.0 -> 80.0	-	N.D.		
		349.0 -> 99.0				
PFTeDA	-	713.0 -> 669.0	-	N.D.		
		713.0 -> 219.0				
PFTrDA	-	663.0 -> 619.0	-	N.D.		
		663.0 -> 369.0				
PFUnDA	-	563.0 -> 519.0	-	N.D.		
		563.0 -> 269.0				
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.		
		633.0 -> 453.0				
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.		
		533.0 -> 353.0				
ADONA	-	377.0 -> 251.0	-	N.D.		
		377.0 -> 85.0				
HFPO-DA	-	329.0 -> 169.0	-	N.D.		
		285.0 -> 169.0				
MeFOSA	-	512.0 -> 169.0	-	N.D.		
		512.0 -> 219.0				
4-PFECHS	-	461.0 -> 381.0	-	N.D.		
		461.0 -> 99.0				
FBSA	-	298.0 -> 78.0	-	N.D.		
		298.0 -> 64.0				
FHxSA	-	398.0 -> 78.0	-	N.D.		
		398.0 -> 64.0				

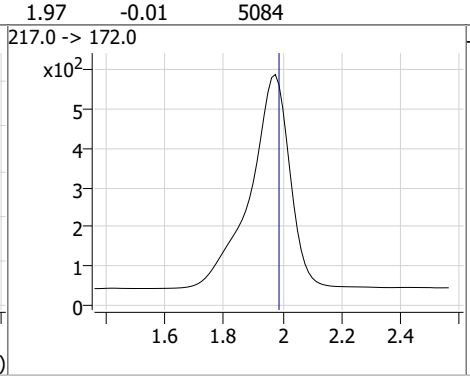
 # = Qualifier out of range, m = manually integrated, + = Area summed

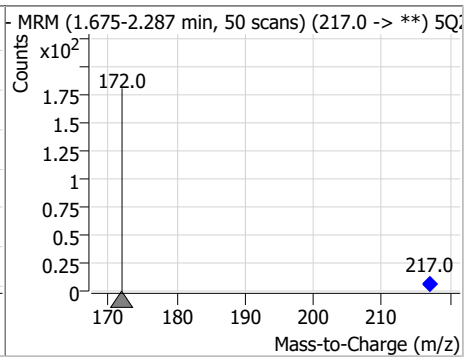
Perfluorinated Compounds by LC/MS/MS



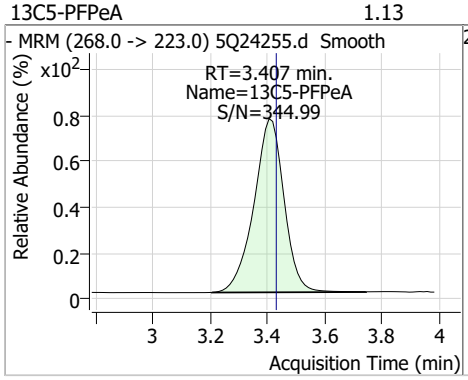
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	1.15	1.97	-0.01	5084				

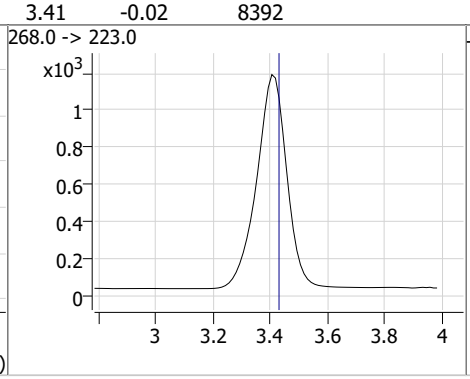


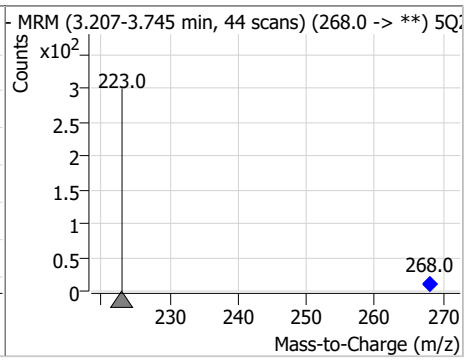




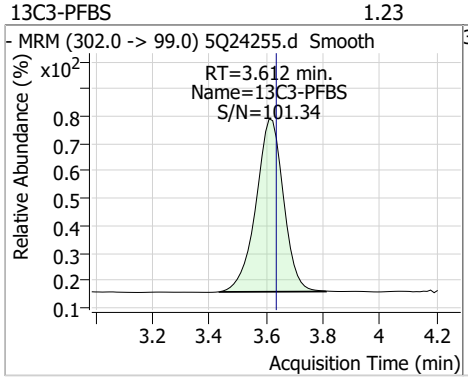
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	1.13	3.41	-0.02	8392				

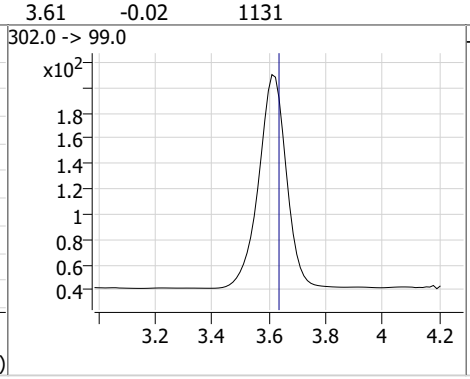


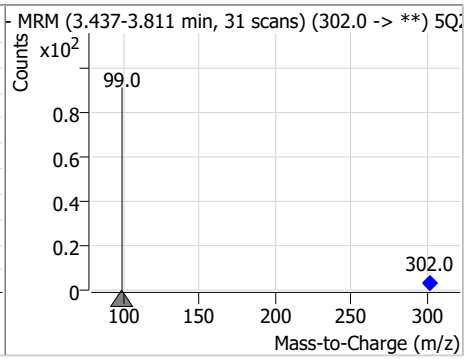




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	1.23	3.61	-0.02	1131				

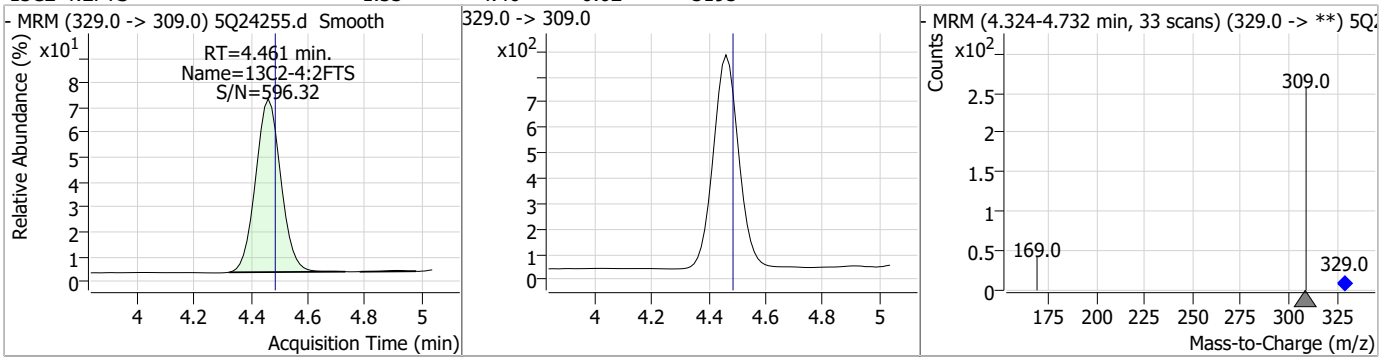




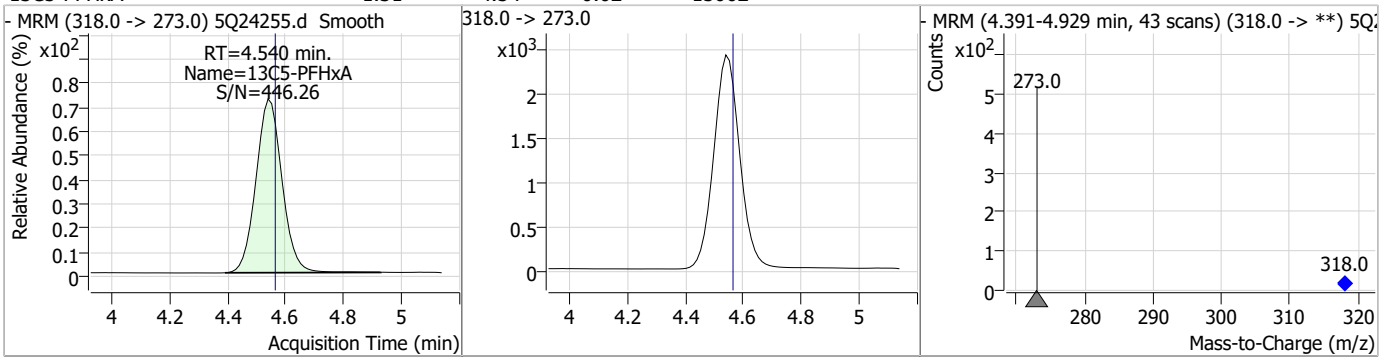


Perfluorinated Compounds by LC/MS/MS

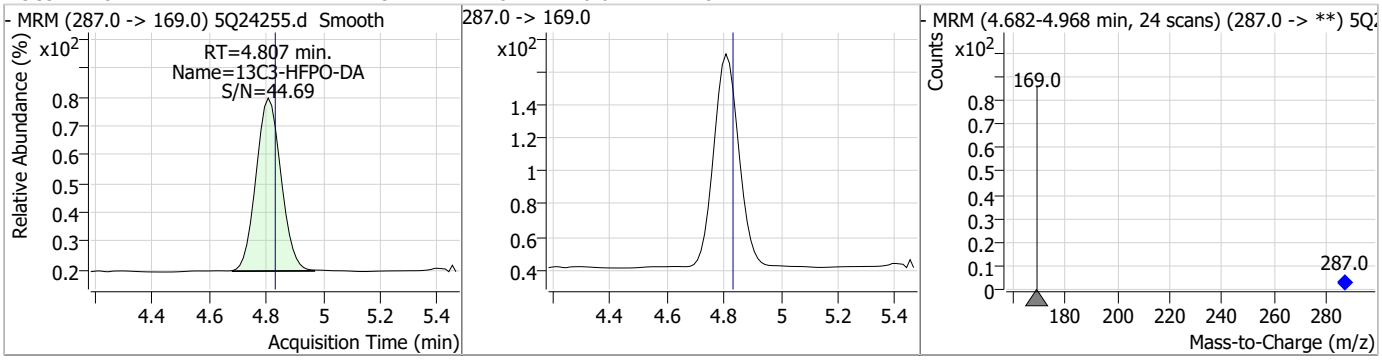
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	1.33	4.46	-0.02	5195				



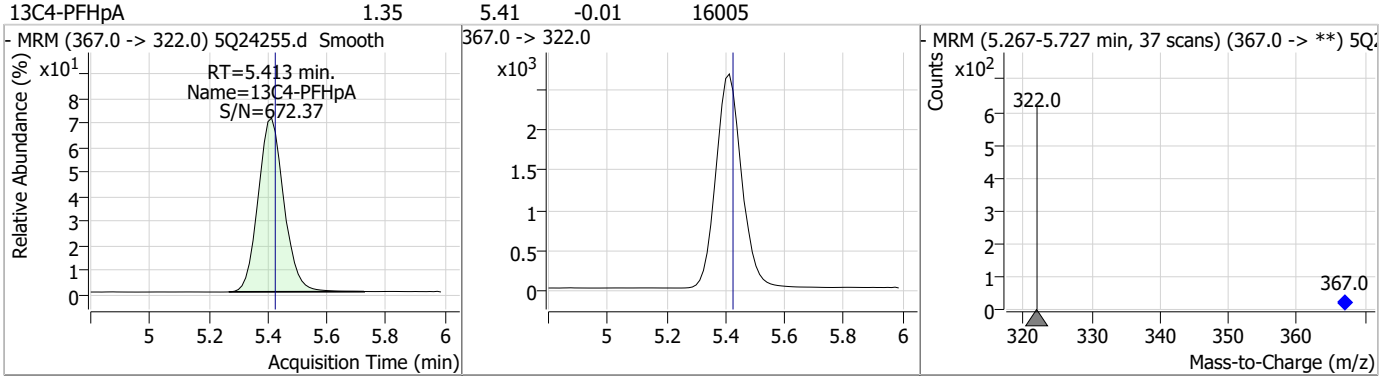
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	1.31	4.54	-0.02	15062				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	1.32	4.81	-0.02	787				

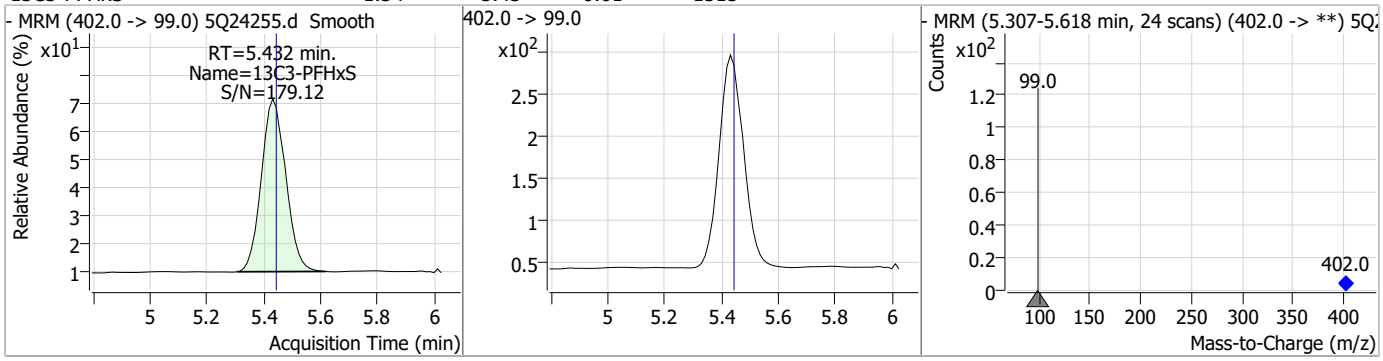


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	1.35	5.41	-0.01	16005				

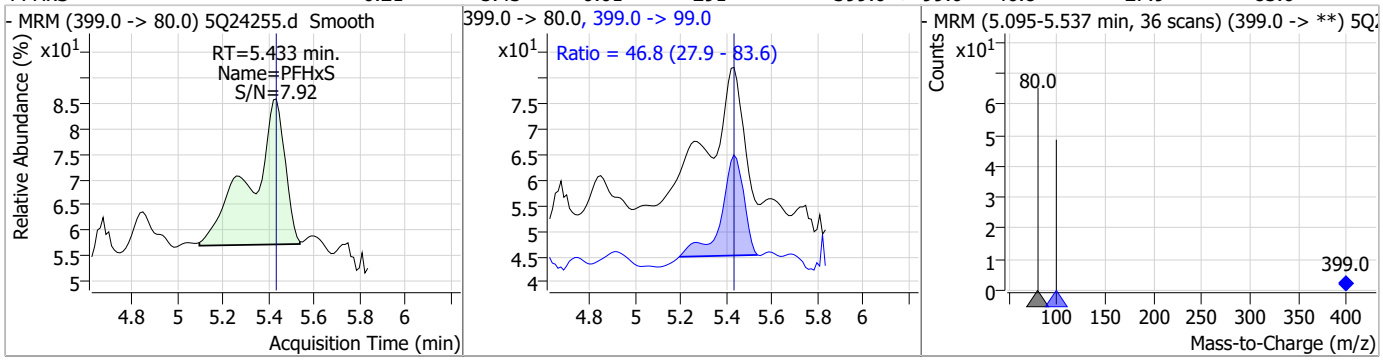


Perfluorinated Compounds by LC/MS/MS

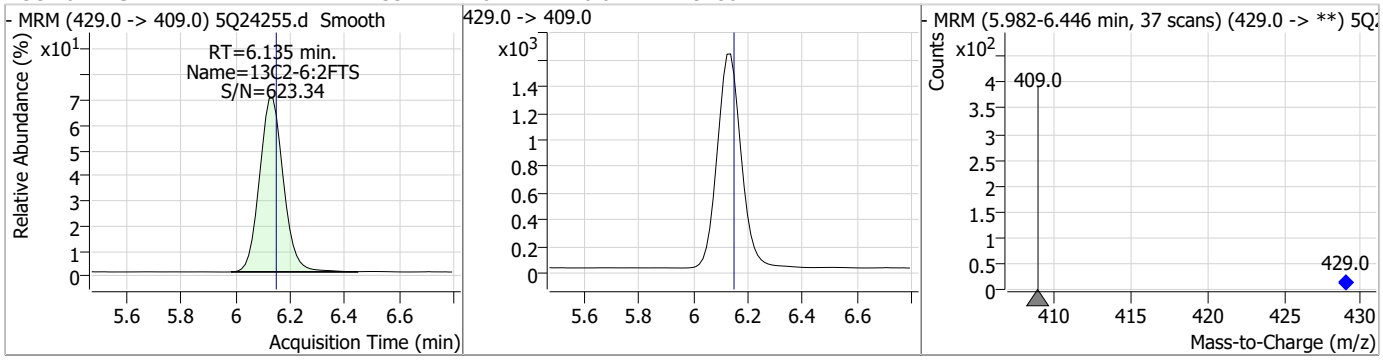
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	1.34	5.43	-0.01	1515				



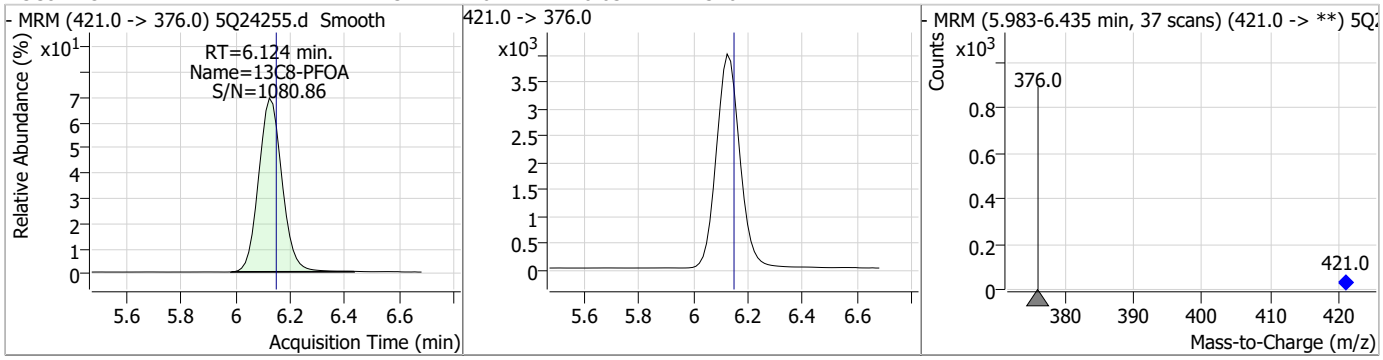
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	0.21	5.43	-0.01	291	399.0 -> 99.0	46.8	27.9	83.6



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	1.33	6.14	-0.01	9786				

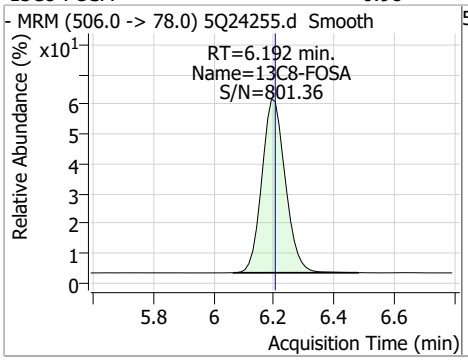


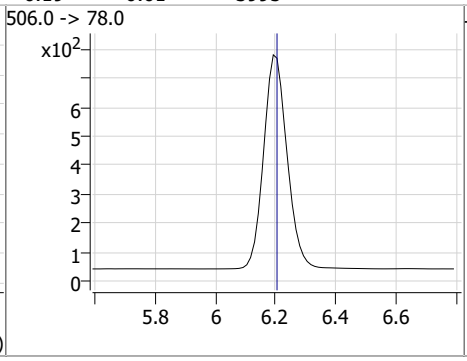
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	1.43	6.12	-0.03	23704				

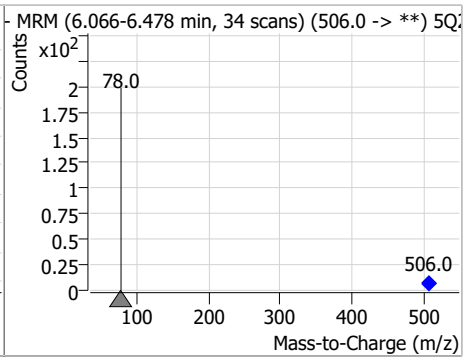


Perfluorinated Compounds by LC/MS/MS

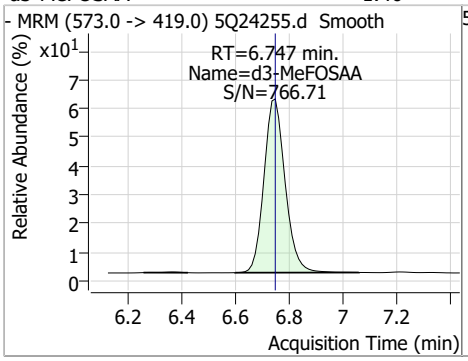
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	0.98	6.19	-0.01	3995				

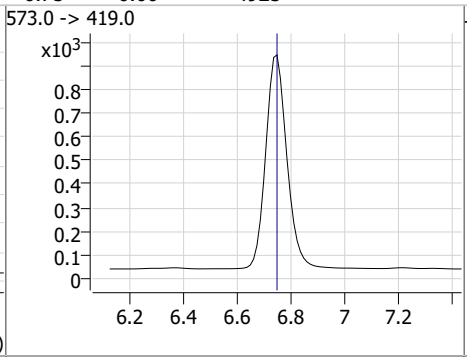


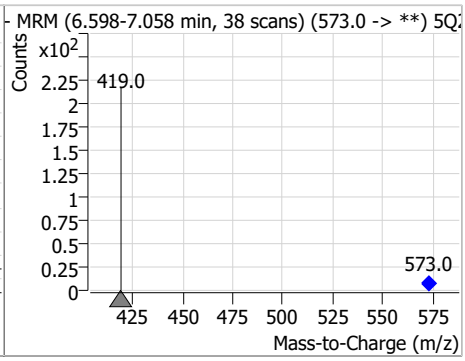




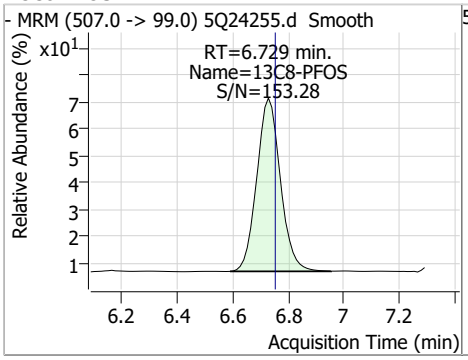
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	1.46	6.75	0.00	4925				

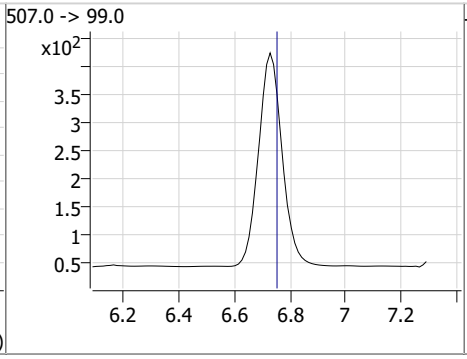


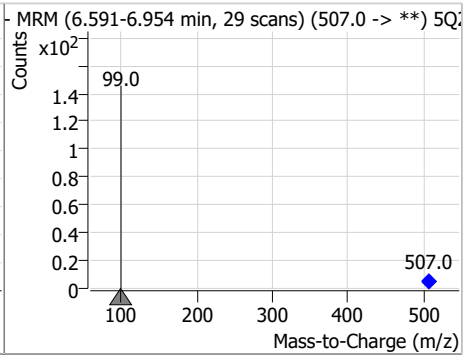




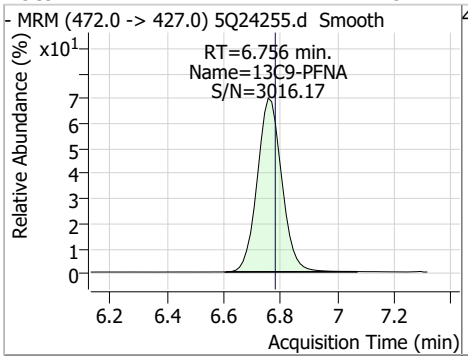
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	1.42	6.73	-0.02	2243				

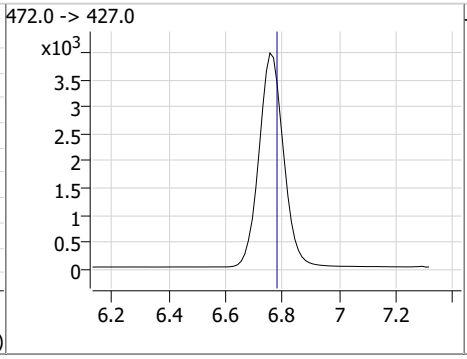


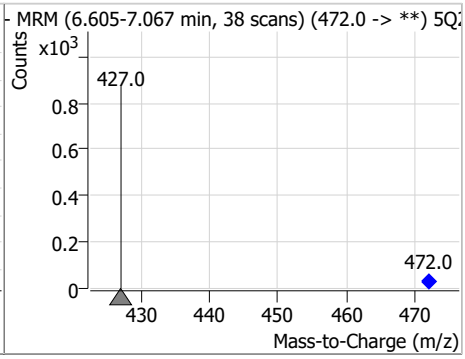




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.43	6.76	-0.02	23632				

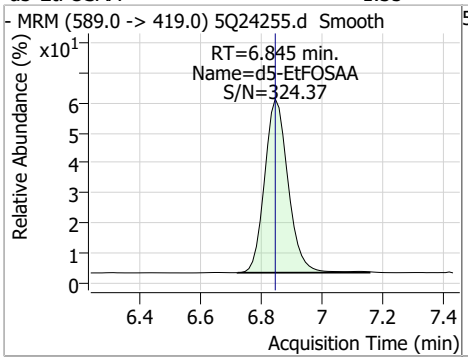


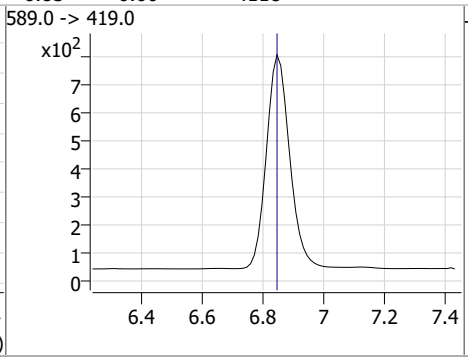


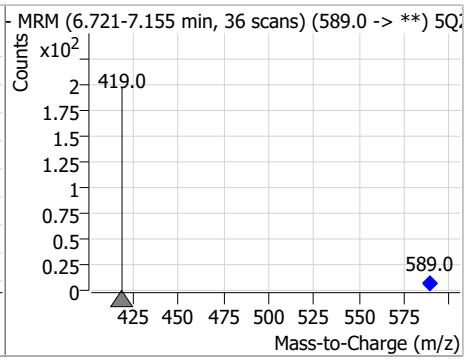


Perfluorinated Compounds by LC/MS/MS

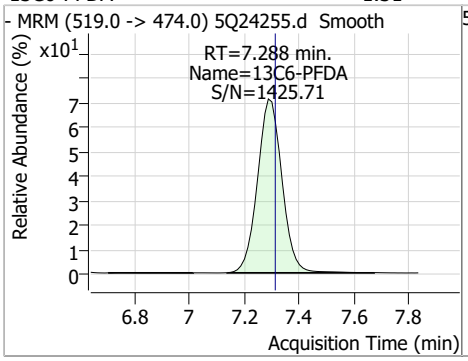
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	1.35	6.85	0.00	4118				

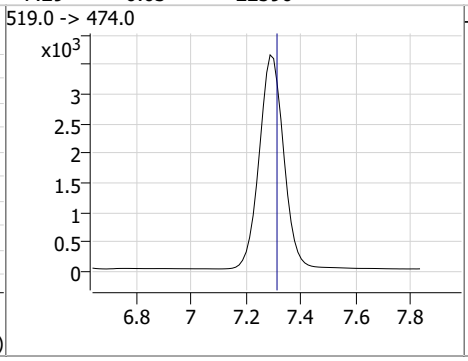


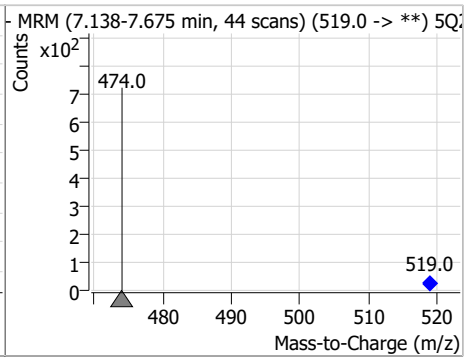




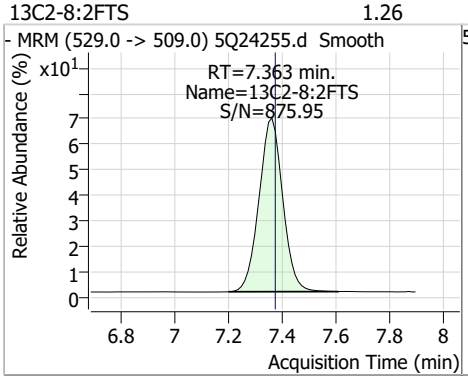
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	1.31	7.29	-0.03	22596				

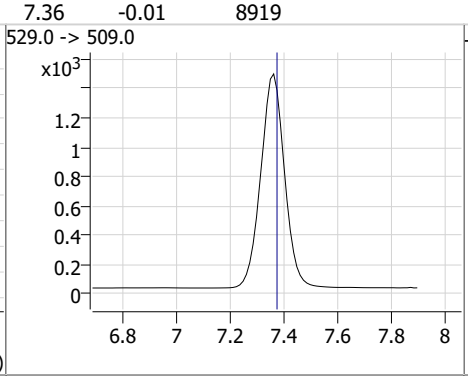


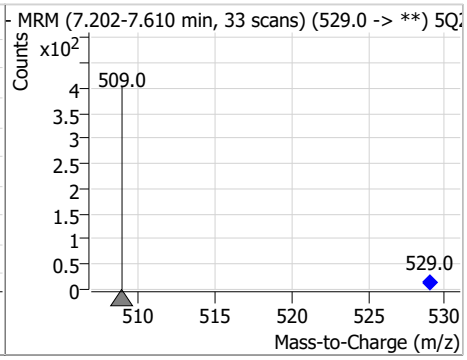




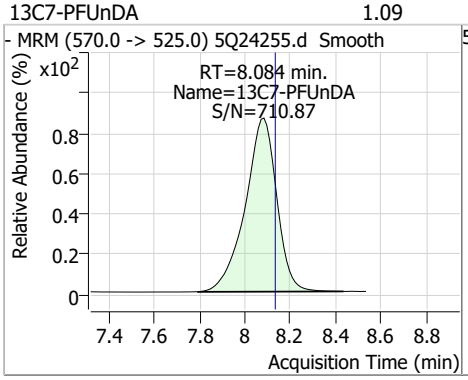
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	1.26	7.36	-0.01	8919				

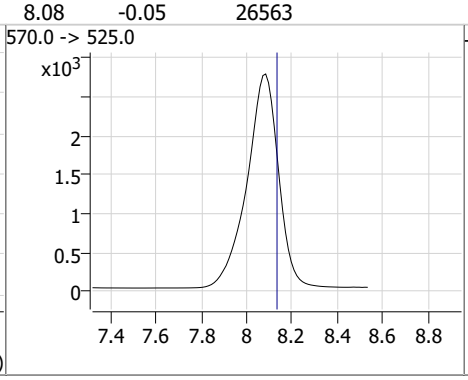


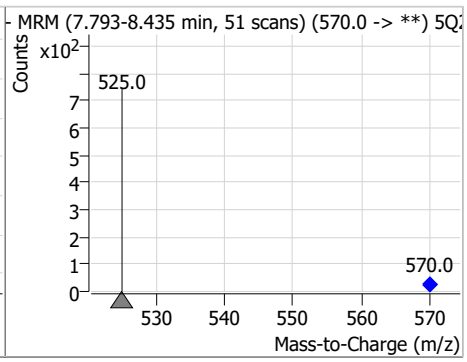




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.09	8.08	-0.05	26563				

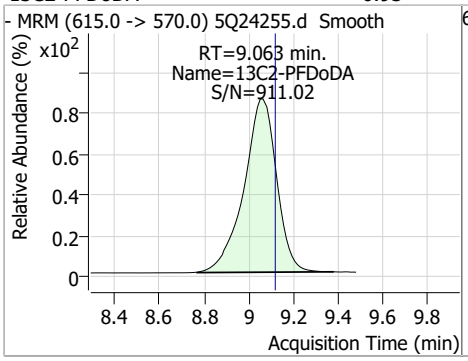


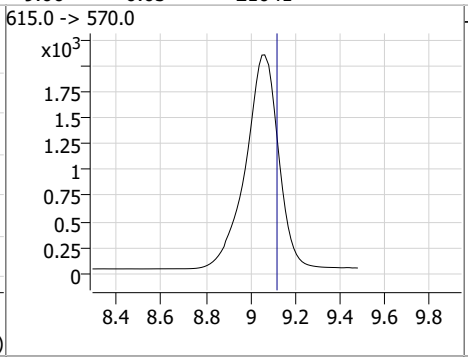


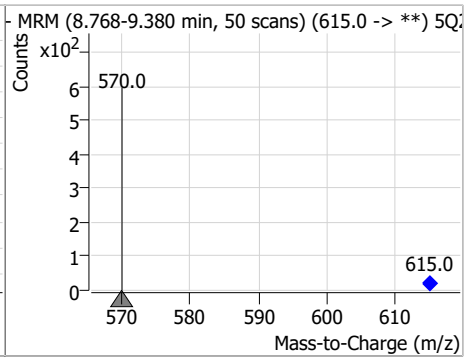


Perfluorinated Compounds by LC/MS/MS

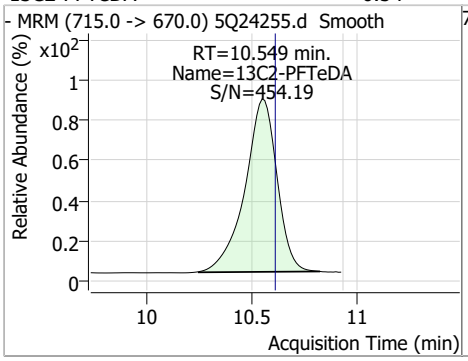
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	0.93	9.06	-0.05	21041				

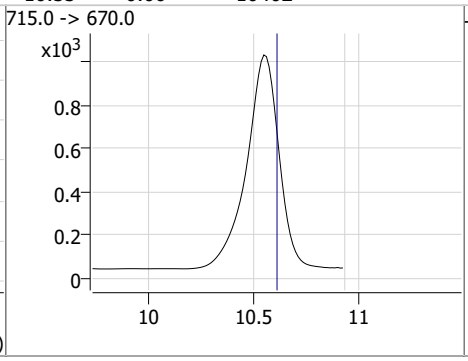


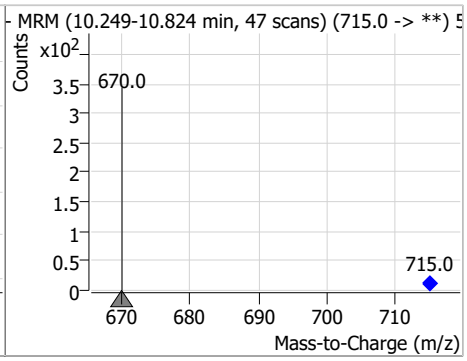




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	0.54	10.55	-0.06	10402				







Manual Integrations APPROVED (compounds with "m" flag)
Natasha Gumtie 01/09/24 10:18

Perfluorinated Compounds by LC/MS/MS

Data File : 5Q23948.d
Operator : natashag
Acq. Method : 537_ID.m
Acq. Date-Time : 12/29/2023 1:35:35 AM
Sample Name : fc12099-3
Vial : P2-C5
DA Method File : ID_122823_S5Q375.quantmethod.xml
Batch Name : s5q375.batch.bin
Sample Information : OP835,S5Q375,120,,,1.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.912	217.0 -> 172.0	38712	10.00	µg/L	-0.075
M5-PFPeA	3.369	268.0 -> 223.0	52601	10.00	µg/L	-0.062
M5-PFHxA	4.515	318.0 -> 273.0	109347	10.00	µg/L	-0.037
M4-PFHpA	5.388	367.0 -> 322.0	112735	10.00	µg/L	-0.025
M8-PFOA	6.112	421.0 -> 376.0	160026	10.00	µg/L	-0.012
M9-PFNA	6.744	472.0 -> 427.0	158792	10.00	µg/L	-0.012
M6-PFDA	7.276	519.0 -> 474.0	159273	10.00	µg/L	-0.012
M7-PFUnDA	8.034	570.0 -> 525.0	210041	10.00	µg/L	-0.025
M2-PFDoDA	9.013	615.0 -> 570.0	158522	10.00	µg/L	-0.025
M2-PFTeDA	10.524	715.0 -> 670.0	41474	10.00	µg/L	-0.012
M8-FOSA	6.192	506.0 -> 78.0	15179	10.00	µg/L	0.000
M3-PFBS	3.587	302.0 -> 99.0	7899	10.00	µg/L	-0.050
M3-PFHxS	5.419	402.0 -> 99.0	10069	10.00	µg/L	-0.012
M8-PFOS	6.716	507.0 -> 99.0	13301	10.00	µg/L	-0.012
M2-4:2FTS	4.436	329.0 -> 309.0	37967	10.00	µg/L	-0.037
M2-6:2FTS	6.110	429.0 -> 409.0	73219	10.00	µg/L	-0.026
M2-8:2FTS	7.338	529.0 -> 509.0	59343	10.00	µg/L	-0.012
M3-MeFOSAA	6.735	573.0 -> 419.0	29158	10.00	µg/L	-0.012
M3-HFPO-DA	4.781	287.0 -> 169.0	6000	10.00	µg/L	-0.038
M3-MeFOSA	6.589	515.0 -> 169.0	58	10.00	µg/L	0.000
M5-EtFOSAA	6.845	589.0 -> 419.0	25689	10.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.436	329.0 -> 309.0	37967	9.44	µg/L	-0.037
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 94.4%		
13C2-6:2FTS	6.110	429.0 -> 409.0	73219	10.33	µg/L	-0.026
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 103.3%		
13C2-8:2FTS	7.338	529.0 -> 509.0	59343	8.50	µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 85.0%		
13C2-PFDoDA	9.013	615.0 -> 570.0	158522	7.60	µg/L	-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 76.0%		
13C2-PFTeDA	10.524	715.0 -> 670.0	41474	2.34	µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 23.4%		
13C3-PFBS	3.587	302.0 -> 99.0	7899	8.14	µg/L	-0.050
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 81.4%		
13C3-PFHxS	5.419	402.0 -> 99.0	10069	8.53	µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 85.3%		
13C4-PFBA	1.912	217.0 -> 172.0	38712	8.19	µg/L	-0.075
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 81.9%		
13C4-PFHpA	5.388	367.0 -> 322.0	112735	9.37	µg/L	-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 93.7%		
13C5-PFHxA	4.515	318.0 -> 273.0	109347	9.15	µg/L	-0.037
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 91.5%		
13C5-PFPeA	3.369	268.0 -> 223.0	52601	6.67	µg/L	-0.062
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 66.7%		
13C6-PFDA	7.276	519.0 -> 474.0	159273	9.46	µg/L	-0.012

Perfluorinated Compounds by LC/MS/MS

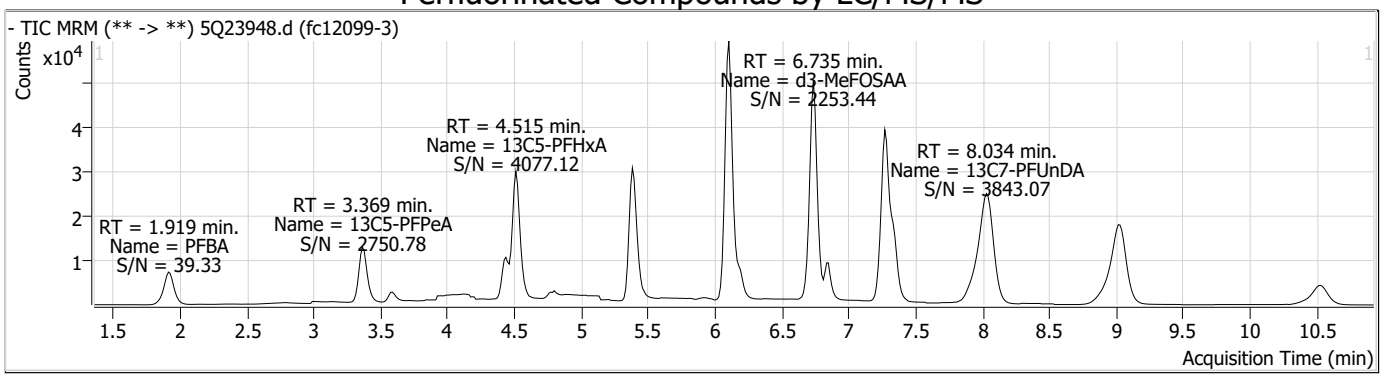
Compound	RT	Transition	Response	Conc. Units		Dev(Min)
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 94.6%		
13C7-PFUnDA	8.034	570.0 -> 525.0	210041	9.01 µg/L		-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 90.1%		
13C8-FOSA	6.192	506.0 -> 78.0	15179	3.75 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 37.5%		
13C8-PFOA	6.112	421.0 -> 376.0	160026	9.67 µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 96.7%		
13C8-PFOS	6.716	507.0 -> 99.0	13301	8.46 µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 84.6%		
13C9-PFNA	6.744	472.0 -> 427.0	158792	9.56 µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 95.6%		
d3-MeFOSAA	6.735	573.0 -> 419.0	29158	9.56 µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 95.6%		
13C3-HFPO-DA	4.781	287.0 -> 169.0	6000	9.29 µg/L		-0.038
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 92.9%		
d3-MeFOSA	6.589	515.0 -> 169.0	58	0.04 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 0.4%		
d5-EtFOSAA	6.845	589.0 -> 419.0	25689	9.36 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 93.6%		
Target Compounds						QValue
4:2FTS	-	327.0 -> 307.0	-	N.D.		
		327.0 -> 81.0				
6:2FTS	-	427.0 -> 407.0	-	N.D.		
		427.0 -> 81.0				
8:2FTS	-	527.0 -> 507.0	-	N.D.		
		527.0 -> 81.0				
EtFOSAA	-	584.0 -> 419.0	-	N.D.		
		584.0 -> 483.0				
FOSA	-	498.0 -> 78.0	-	N.D.		
		498.0 -> 478.0				
MeFOSAA	-	570.0 -> 419.0	-	N.D.		
		570.0 -> 512.0				
PFBA	1.919	213.0 -> 169.0	779	0.22 µg/L		100
PFBS	3.615	299.0 -> 80.0	1043	0.53 µg/L	#m	53
		299.0 -> 99.0	139			
PFDA	-	513.0 -> 469.0	-	N.D.		
		513.0 -> 219.0				
PFDoDA	-	613.0 -> 569.0	-	N.D.		
		613.0 -> 319.0				
PFDS	-	599.0 -> 80.0	-	N.D.		
		599.0 -> 99.0				
PFHpA	5.389	363.0 -> 319.0	2171	0.17 µg/L	m	95
		363.0 -> 169.0	408			
PFHpS	-	449.0 -> 80.0	-	N.D.		
		449.0 -> 99.0				
PFHxA	4.516	313.0 -> 269.0	3343	0.32 µg/L		97
		313.0 -> 119.0	165			
PFHxS	5.408	399.0 -> 80.0	1347	0.72 µg/L	m	87
		399.0 -> 99.0	624			
PFNA	-	463.0 -> 419.0	-	N.D.		
		463.0 -> 219.0				
PFNS	-	549.0 -> 80.0	-	N.D.		
		549.0 -> 99.0				
PFOA	6.112	413.0 -> 369.0	5242	0.33 µg/L	m	89
		413.0 -> 169.0	1596			
PFOS	-	499.0 -> 80.0	-	N.D.		

Perfluorinated Compounds by LC/MS/MS

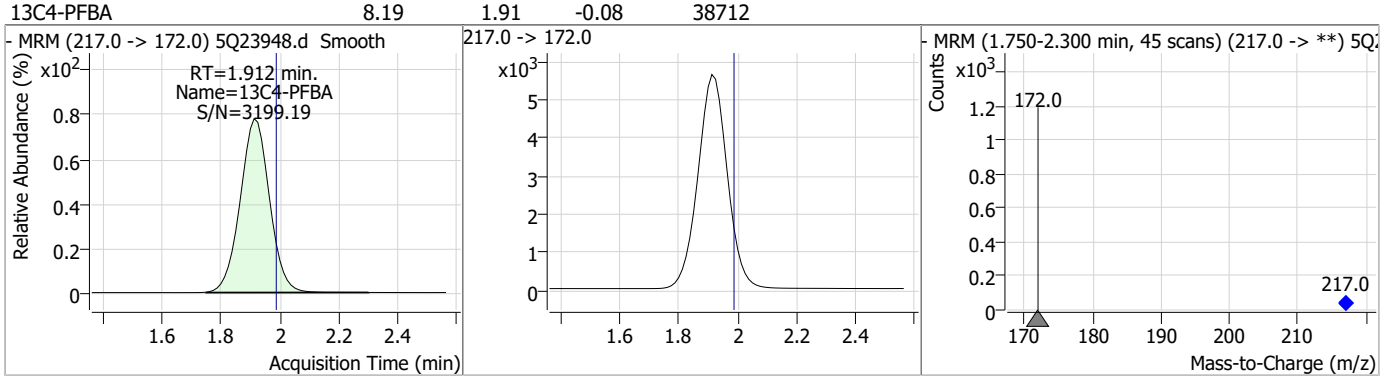
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
		499.0 -> 99.0					
PFPeA	3.372	263.0 -> 219.0	1627	0.32	µg/L		100
PFPeS	4.698	349.0 -> 80.0	0		µg/L	m	1
		349.0 -> 99.0	0				
PFTeDA	-	713.0 -> 669.0	-	N.D.			
		713.0 -> 219.0					
PFTrDA	-	663.0 -> 619.0	-	N.D.			
		663.0 -> 369.0					
PFUnDA	-	563.0 -> 519.0	-	N.D.			
		563.0 -> 269.0					
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.			
		633.0 -> 453.0					
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.			
		533.0 -> 353.0					
ADONA	-	377.0 -> 251.0	-	N.D.			
		377.0 -> 85.0					
HFPO-DA	-	329.0 -> 169.0	-	N.D.			
		285.0 -> 169.0					
MeFOSA	-	512.0 -> 169.0	-	N.D.			
		512.0 -> 219.0					
4-PFECHS	-	461.0 -> 381.0	-	N.D.			
		461.0 -> 99.0					
FBSA	-	298.0 -> 78.0	-	N.D.			
		298.0 -> 64.0					
FHxSA	-	398.0 -> 78.0	-	N.D.			
		398.0 -> 64.0					

 # = Qualifier out of range, m = manually integrated, + = Area summed

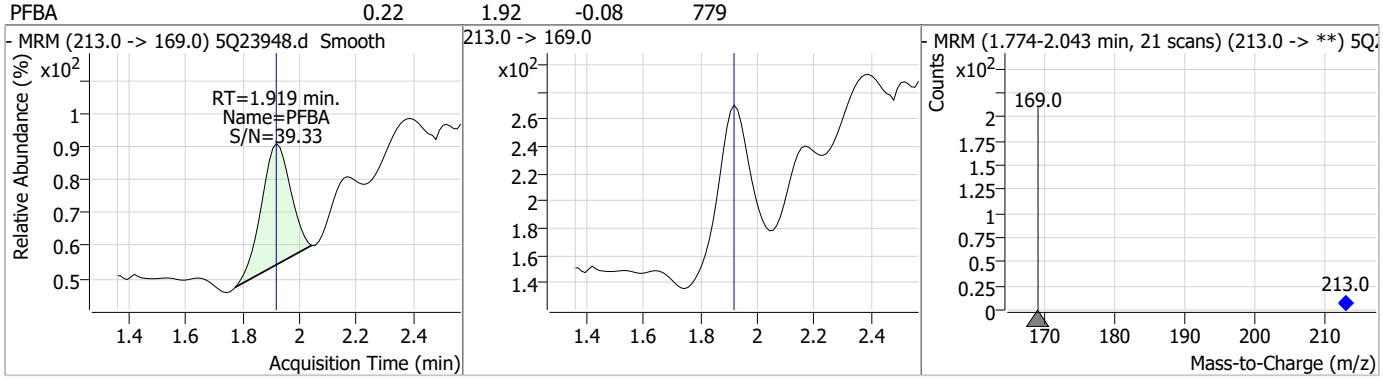
Perfluorinated Compounds by LC/MS/MS



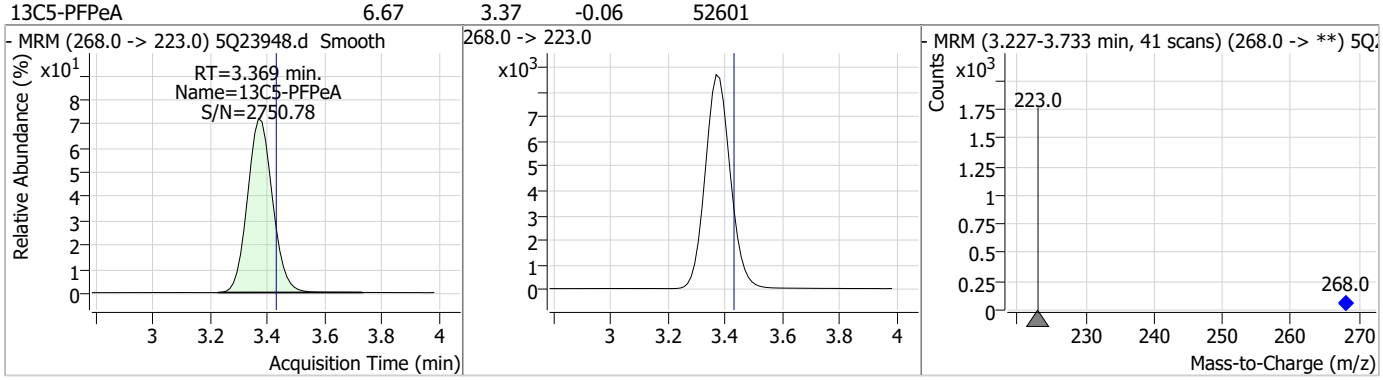
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	8.19	1.91	-0.08	38712				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	0.22	1.92	-0.08	779				

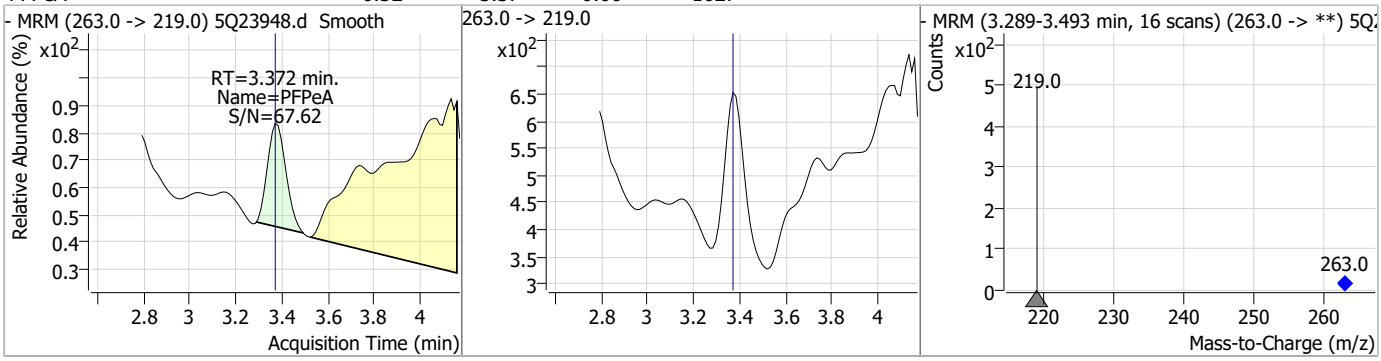


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	6.67	3.37	-0.06	52601				

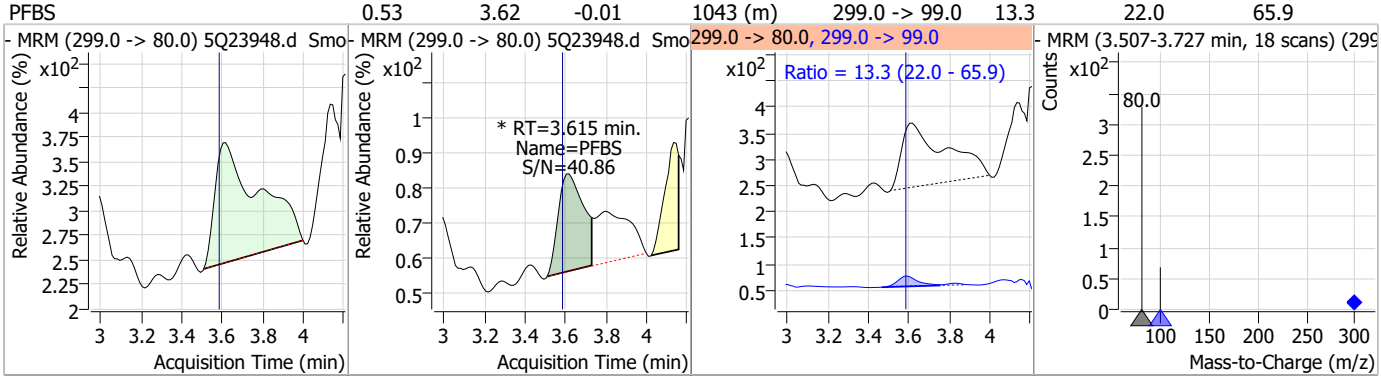


Perfluorinated Compounds by LC/MS/MS

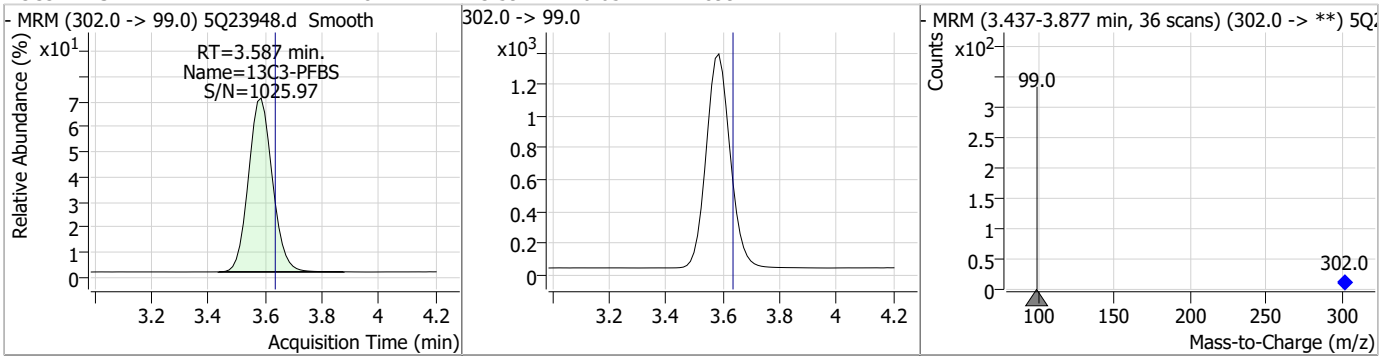
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	0.32	3.37	-0.06	1627				



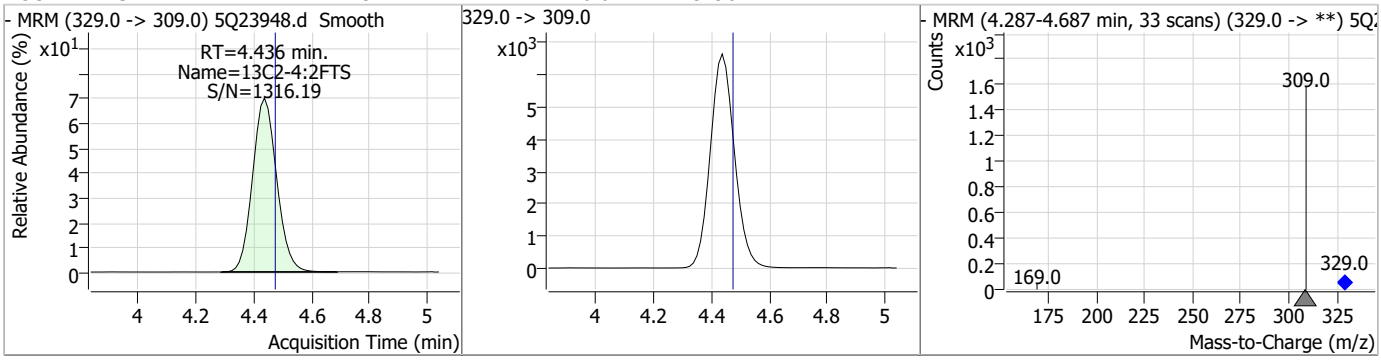
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	0.53	3.62	-0.01	1043 (m)	299.0 -> 99.0	13.3	22.0	65.9



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	8.14	3.59	-0.05	7899				

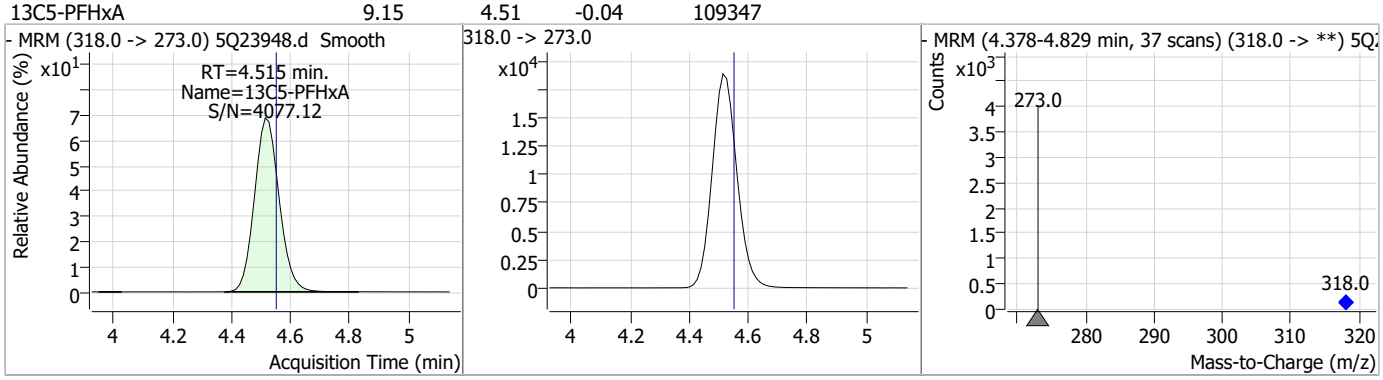


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	9.44	4.44	-0.04	37967				

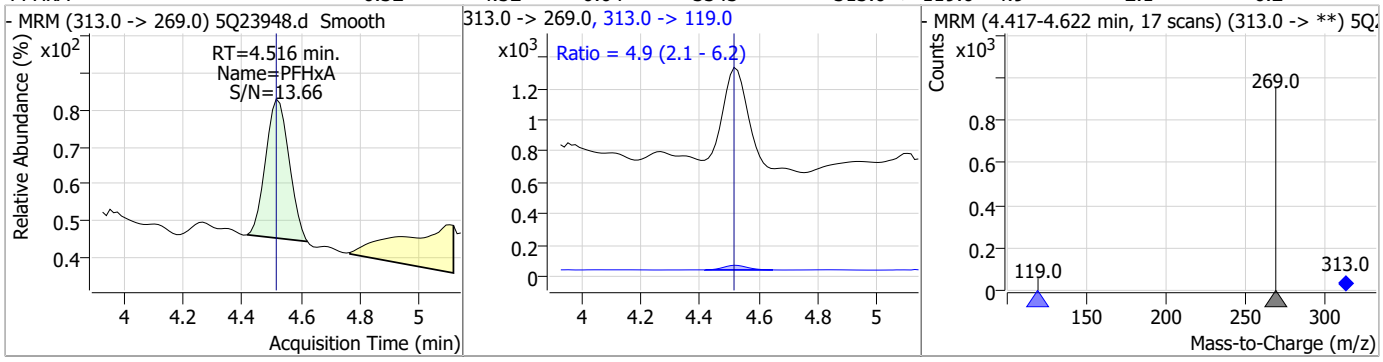


Perfluorinated Compounds by LC/MS/MS

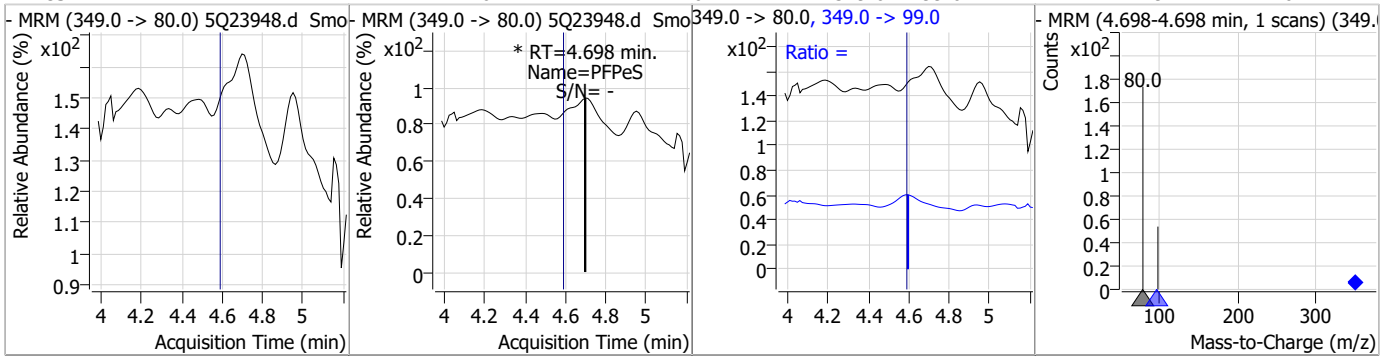
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	9.15	4.51	-0.04	109347				



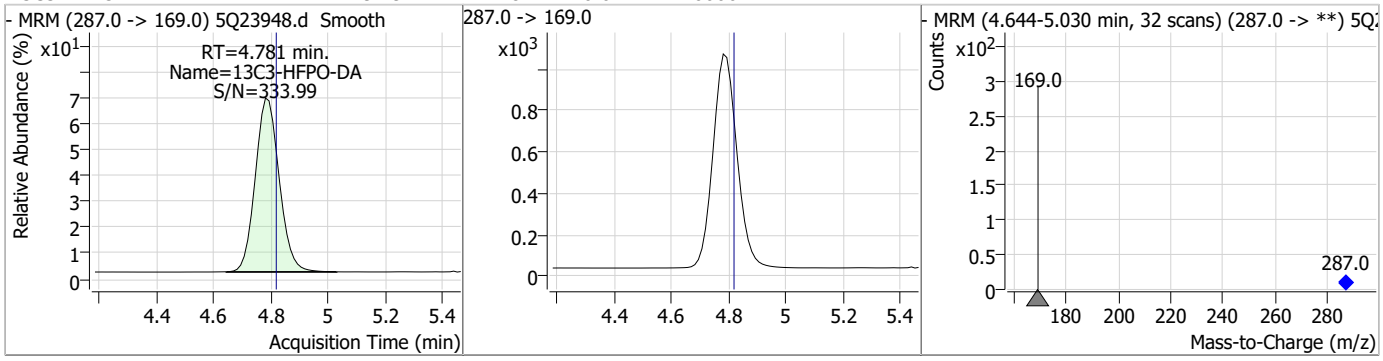
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	0.32	4.52	-0.04	3343	313.0 -> 119.0	4.9	2.1	6.2



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS		0		0	349.0 -> 99.0		24.9	74.6

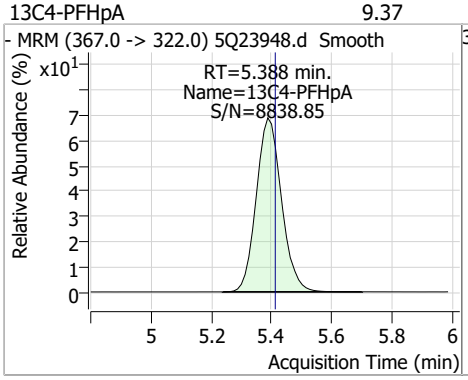


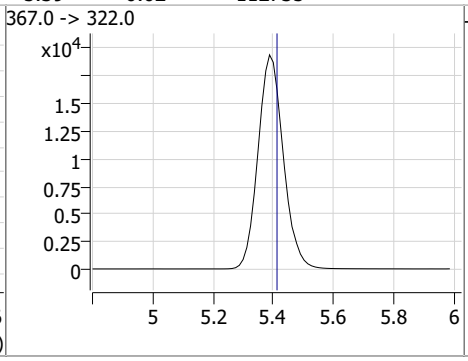
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	9.29	4.78	-0.04	6000				

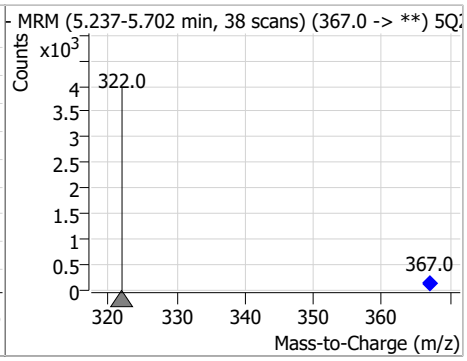


Perfluorinated Compounds by LC/MS/MS

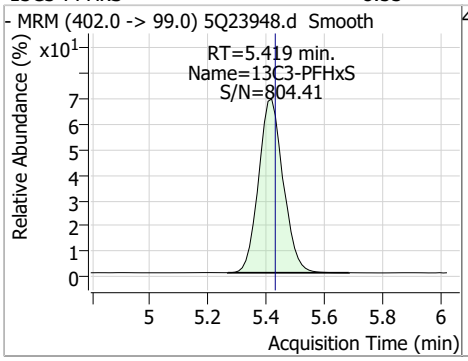
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	9.37	5.39	-0.02	112735				

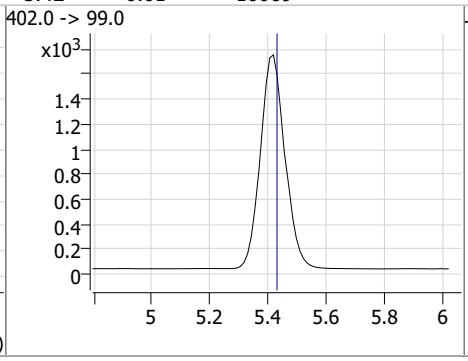


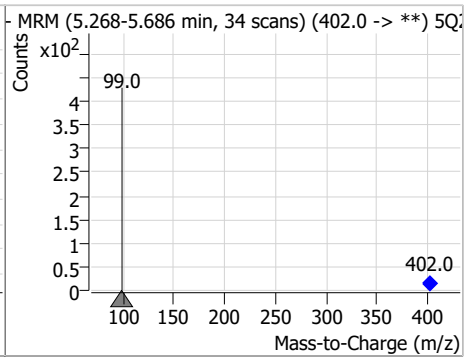




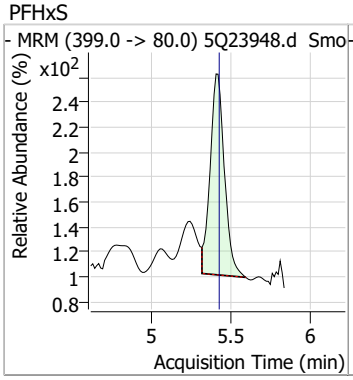
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	8.53	5.42	-0.01	10069				

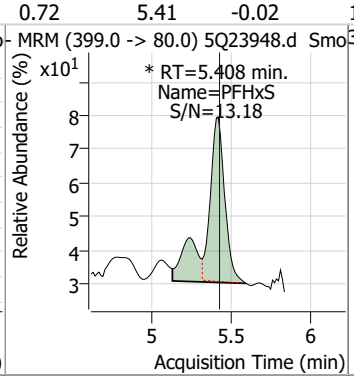


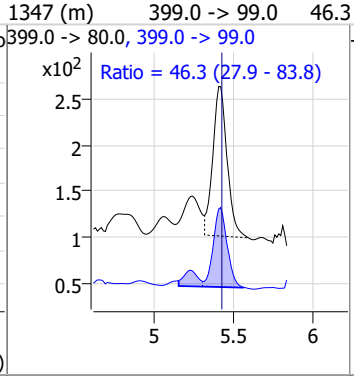


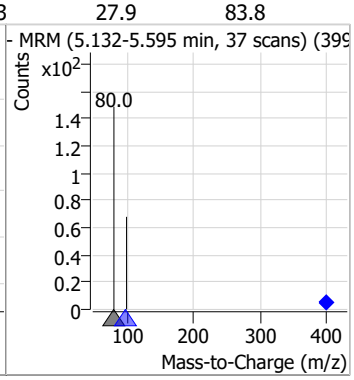


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	0.72	5.41	-0.02	1347 (m)	399.0 -> 99.0	46.3	27.9	83.8

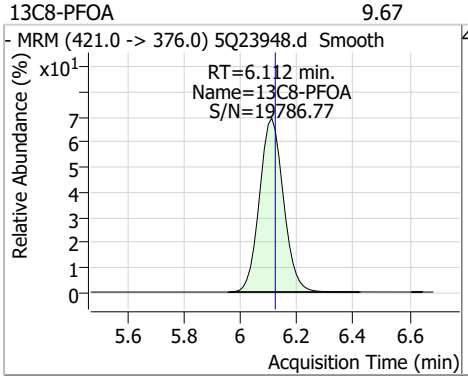


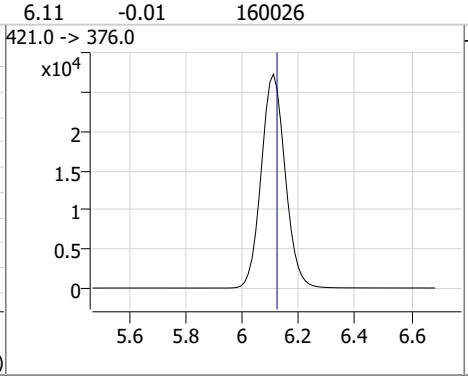


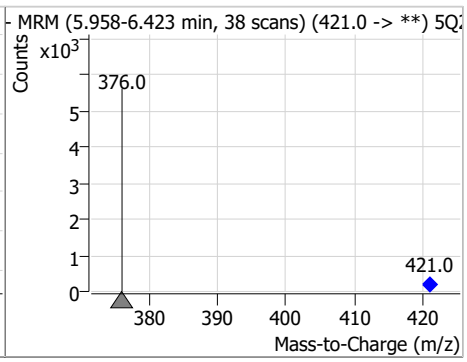




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	9.67	6.11	-0.01	160026				

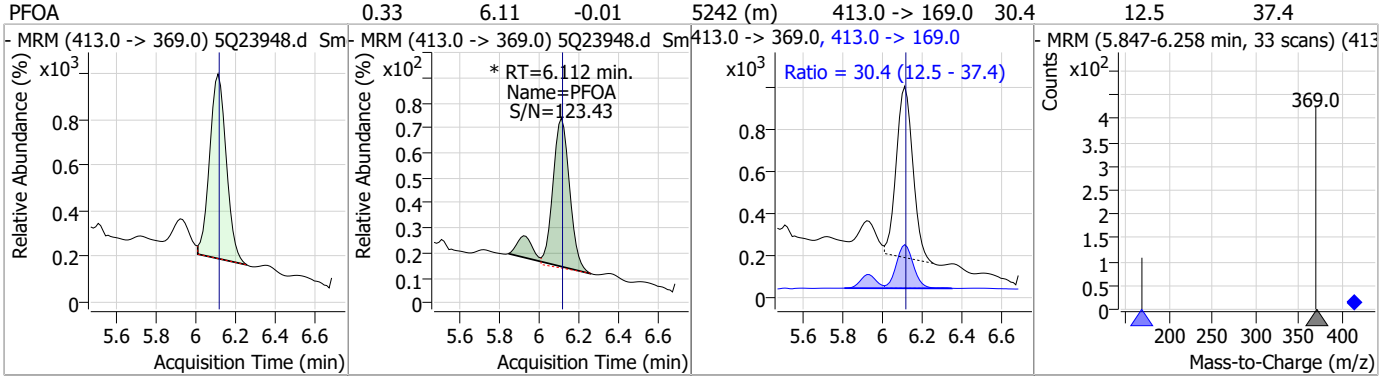




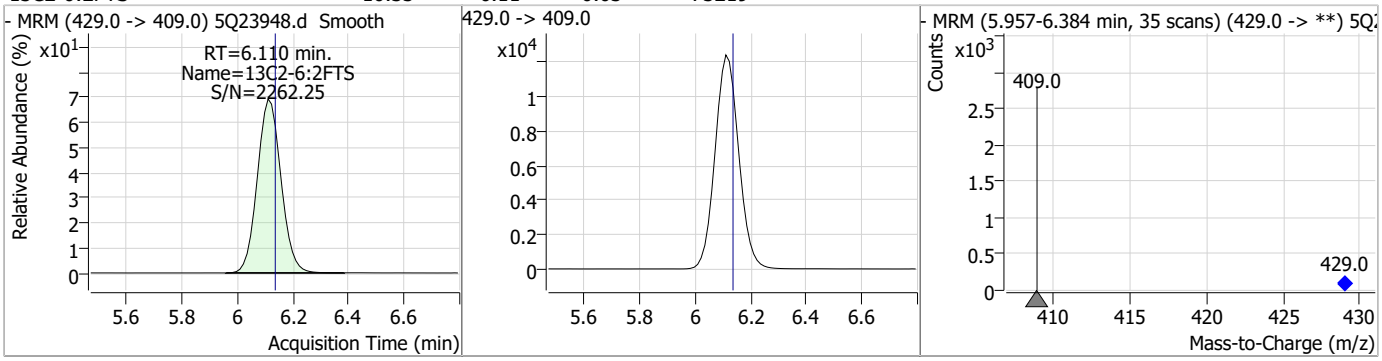


Perfluorinated Compounds by LC/MS/MS

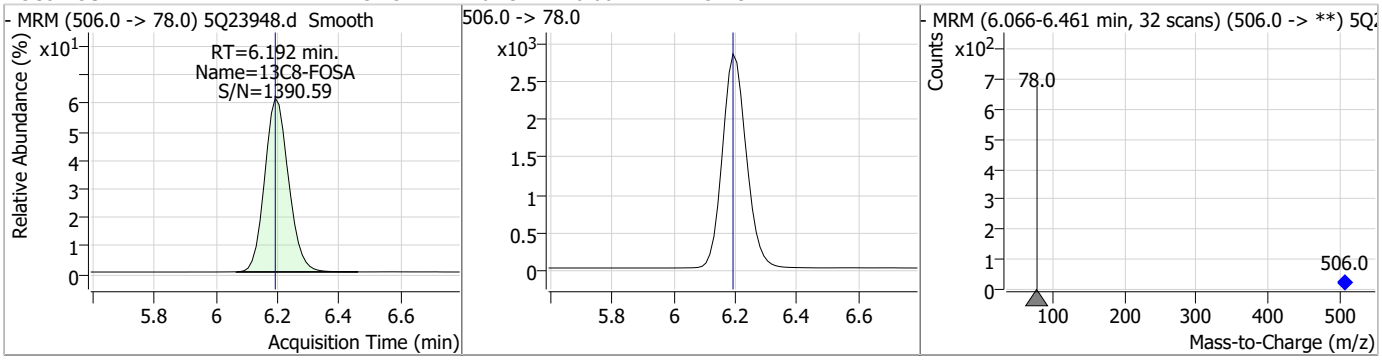
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	0.33	6.11	-0.01	5242 (m)	413.0 -> 169.0	30.4	12.5	37.4



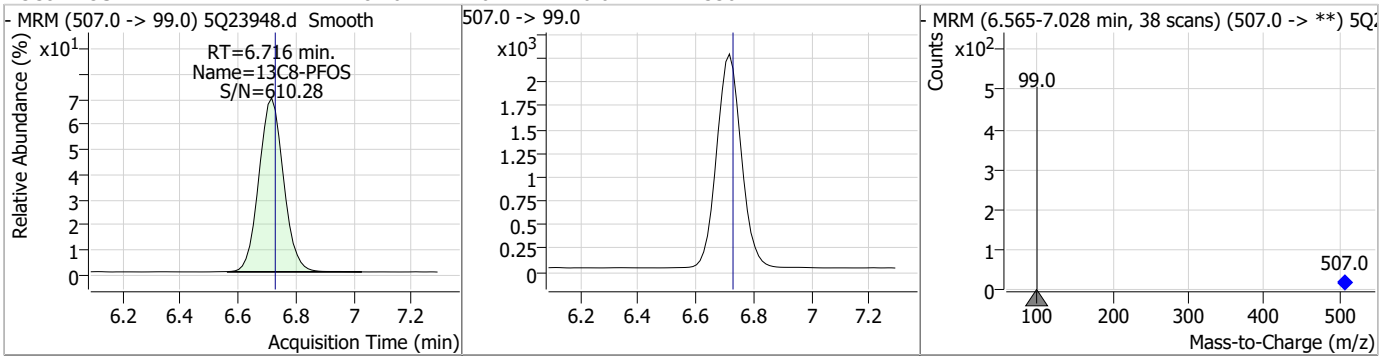
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	10.33	6.11	-0.03	73219				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	3.75	6.19	0.00	15179				

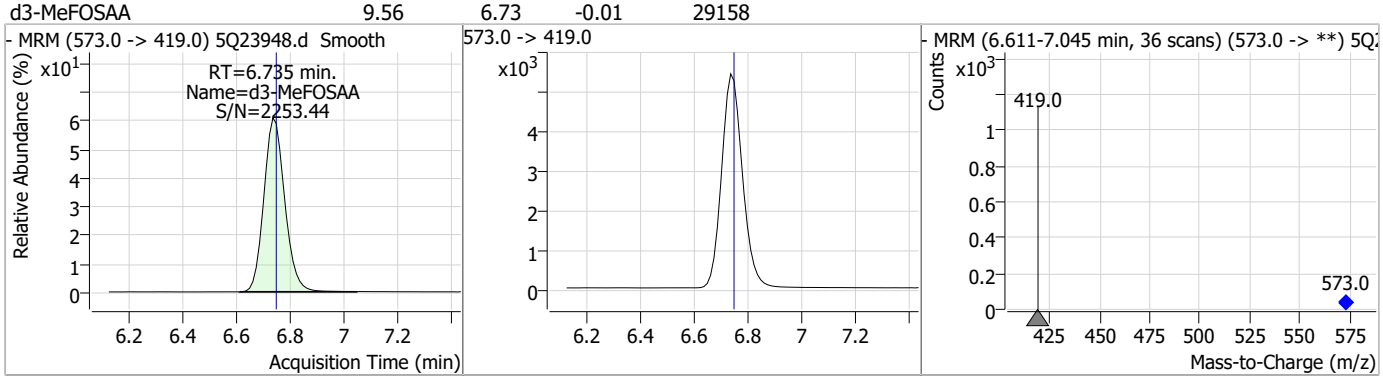


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	8.46	6.72	-0.01	13301				

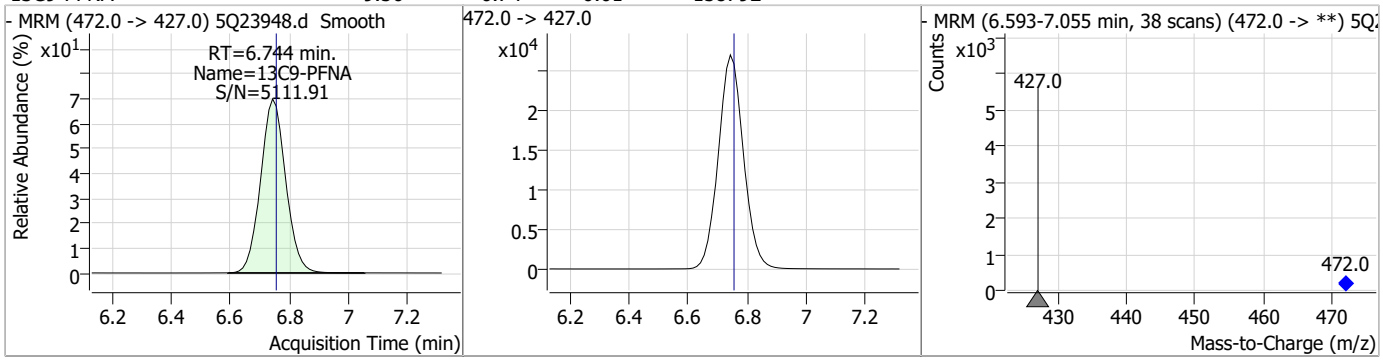


Perfluorinated Compounds by LC/MS/MS

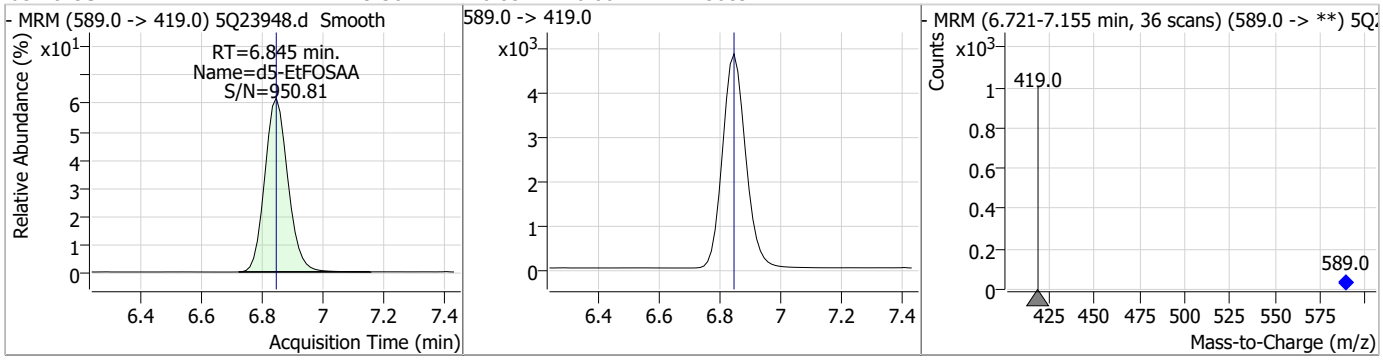
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	9.56	6.73	-0.01	29158				



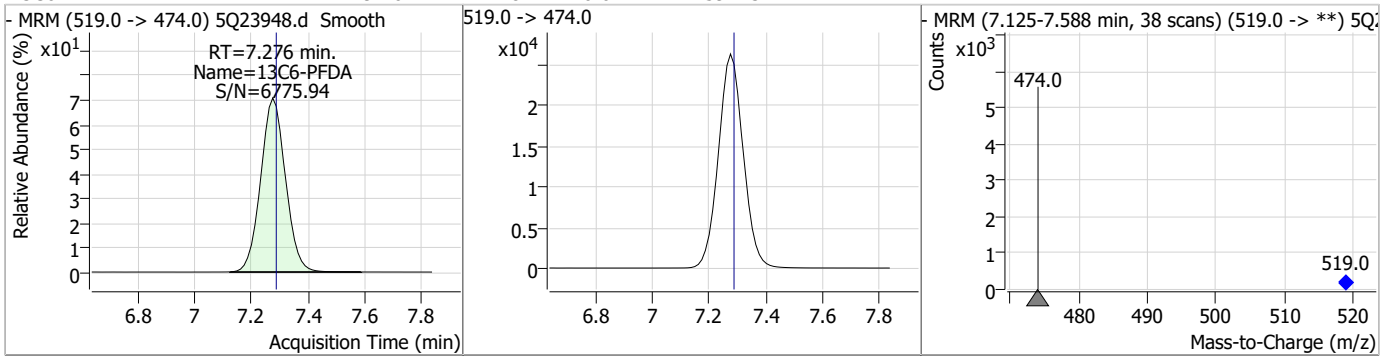
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	9.56	6.74	-0.01	158792				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	9.36	6.85	0.00	25689				

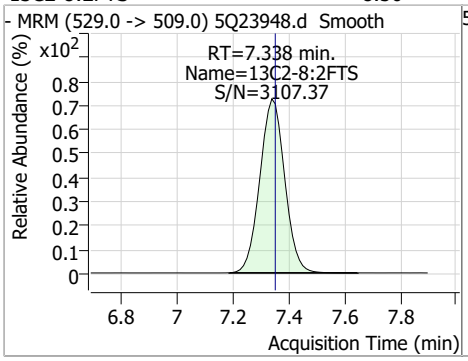


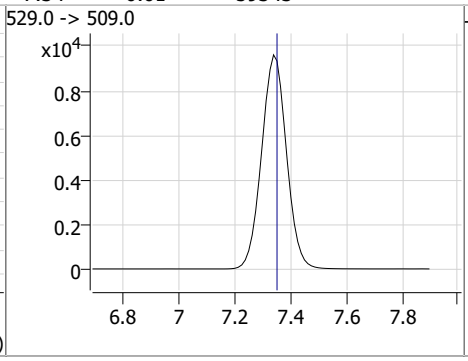
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	9.46	7.28	-0.01	159273				

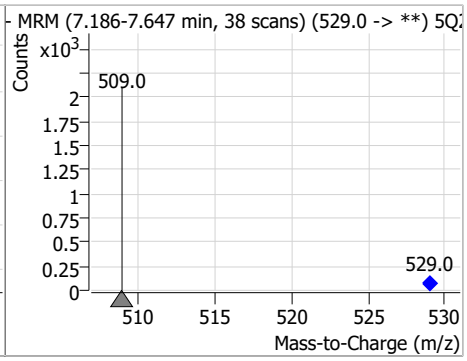


Perfluorinated Compounds by LC/MS/MS

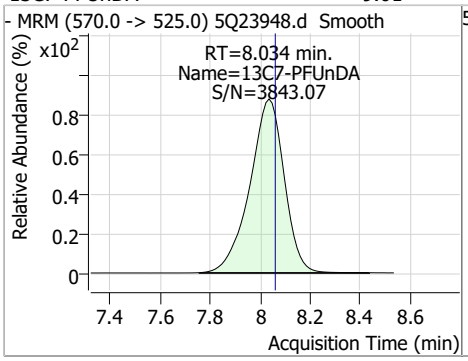
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	8.50	7.34	-0.01	59343				

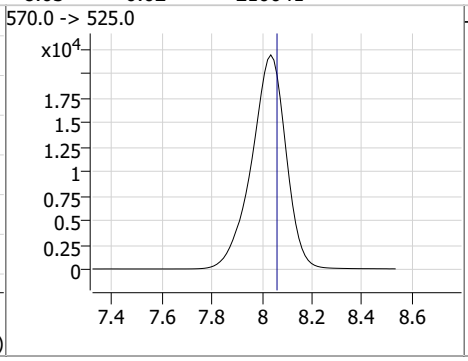


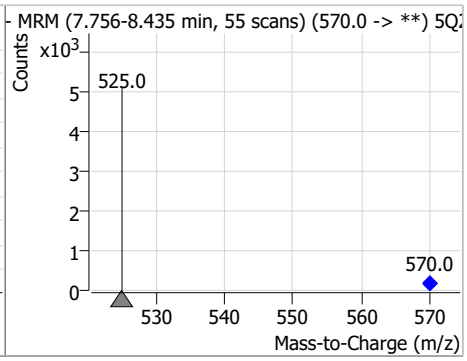




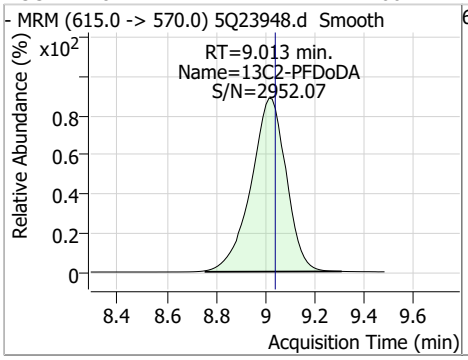
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	9.01	8.03	-0.02	210041				

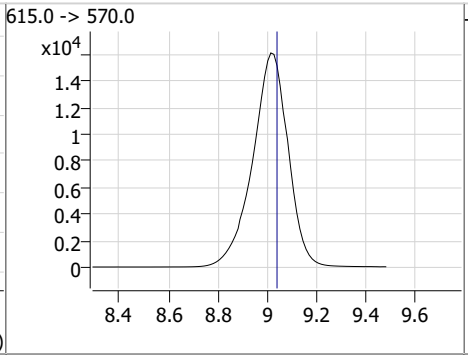


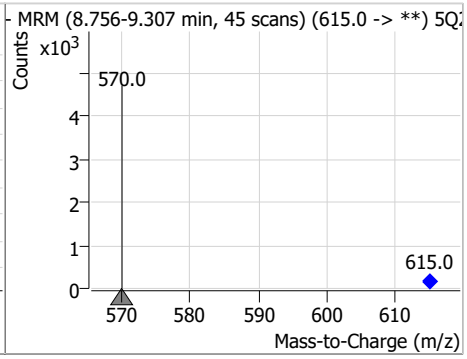




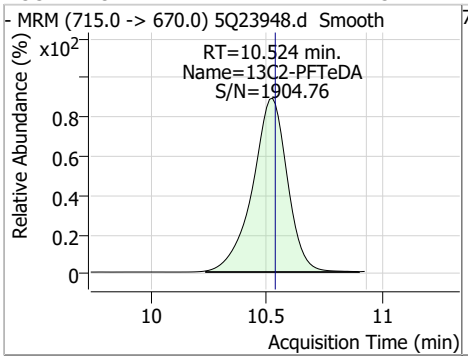
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	7.60	9.01	-0.03	158522				

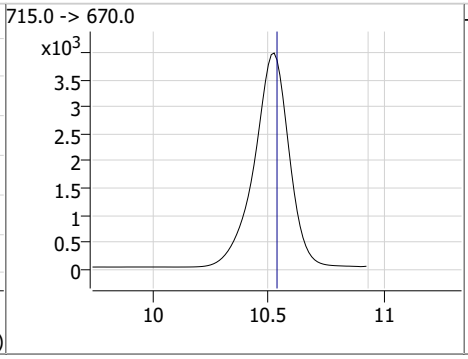


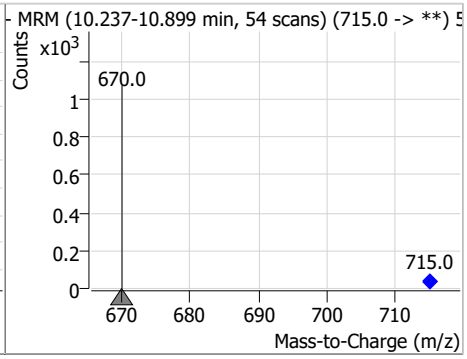




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	2.34	10.52	-0.01	41474				







Manual Integration Approval Summary

Sample Number: FC12099-3
Lab FileID: 5Q23948.D
Injection Time: 12/29/23 01:35
Method: EPA 537M QSM5.3 B-15
Analyst approved: 01/08/24 15:06 Lindsay Ritner
Supervisor approved: 01/09/24 10:18 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorobutanesulfonic acid	375-73-5		3.62	Overlapping peak
Perfluoroheptanoic acid	375-85-9		5.39	Split peak
Perfluorohexanesulfonic acid	355-46-4		5.41	Split peak
Perfluorooctanoic acid	335-67-1		6.11	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Natasha Gumtie 01/04/24 13:35

Perfluorinated Compounds by LC/MS/MS

Data File : 5Q23949.d
Operator : natashag
Acq. Method : 537_ID.m
Acq. Date-Time : 12/29/2023 1:52:08 AM
Sample Name : fc12099-4
Vial : P2-C6
DA Method File : ID_122823_S5Q375.quantmethod.xml
Batch Name : s5q375.batch.bin
Sample Information : OP835,S5Q375,120,,,1.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.925	217.0 -> 172.0	35475	10.00	µg/L	-0.063
M5-PFPeA	3.369	268.0 -> 223.0	49705	10.00	µg/L	-0.062
M5-PFHxA	4.515	318.0 -> 273.0	95527	10.00	µg/L	-0.037
M4-PFHpA	5.388	367.0 -> 322.0	97398	10.00	µg/L	-0.025
M8-PFOA	6.099	421.0 -> 376.0	133308	10.00	µg/L	-0.025
M9-PFNA	6.744	472.0 -> 427.0	123763	10.00	µg/L	-0.012
M6-PFDA	7.276	519.0 -> 474.0	130621	10.00	µg/L	-0.012
M7-PFUnDA	8.022	570.0 -> 525.0	191422	10.00	µg/L	-0.037
M2-PFDoDA	9.013	615.0 -> 570.0	176877	10.00	µg/L	-0.025
M2-PFTeDA	10.524	715.0 -> 670.0	141792	10.00	µg/L	-0.013
M8-FOSA	6.192	506.0 -> 78.0	10934	10.00	µg/L	0.000
M3-PFBS	3.587	302.0 -> 99.0	7376	10.00	µg/L	-0.050
M3-PFHxS	5.407	402.0 -> 99.0	8176	10.00	µg/L	-0.025
M8-PFOS	6.704	507.0 -> 99.0	10734	10.00	µg/L	-0.025
M2-4:2FTS	4.436	329.0 -> 309.0	34238	10.00	µg/L	-0.037
M2-6:2FTS	6.110	429.0 -> 409.0	63788	10.00	µg/L	-0.026
M2-8:2FTS	7.338	529.0 -> 509.0	47963	10.00	µg/L	-0.012
M3-MeFOSAA	6.735	573.0 -> 419.0	24242	10.00	µg/L	-0.012
M3-HFPO-DA	4.781	287.0 -> 169.0	5504	10.00	µg/L	-0.038
M3-MeFOSA	6.589	515.0 -> 169.0	44	10.00	µg/L	0.000
M5-EtFOSAA	6.845	589.0 -> 419.0	23284	10.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.436	329.0 -> 309.0	34238	8.51	µg/L	-0.037
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 85.1%		
13C2-6:2FTS	6.110	429.0 -> 409.0	63788	9.00	µg/L	-0.026
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 90.0%		
13C2-8:2FTS	7.338	529.0 -> 509.0	47963	6.87	µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 68.7%		
13C2-PFDoDA	9.013	615.0 -> 570.0	176877	8.48	µg/L	-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 84.8%		
13C2-PFTeDA	10.524	715.0 -> 670.0	141792	7.99	µg/L	-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 79.9%		
13C3-PFBS	3.587	302.0 -> 99.0	7376	7.60	µg/L	-0.050
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 76.0%		
13C3-PFHxS	5.407	402.0 -> 99.0	8176	6.93	µg/L	-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 69.3%		
13C4-PFBA	1.925	217.0 -> 172.0	35475	7.51	µg/L	-0.063
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 75.1%		
13C4-PFHpA	5.388	367.0 -> 322.0	97398	8.10	µg/L	-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 81.0%		
13C5-PFHxA	4.515	318.0 -> 273.0	95527	7.99	µg/L	-0.037
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 79.9%		
13C5-PFPeA	3.369	268.0 -> 223.0	49705	6.31	µg/L	-0.062
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 63.1%		
13C6-PFDA	7.276	519.0 -> 474.0	130621	7.76	µg/L	-0.012

Perfluorinated Compounds by LC/MS/MS

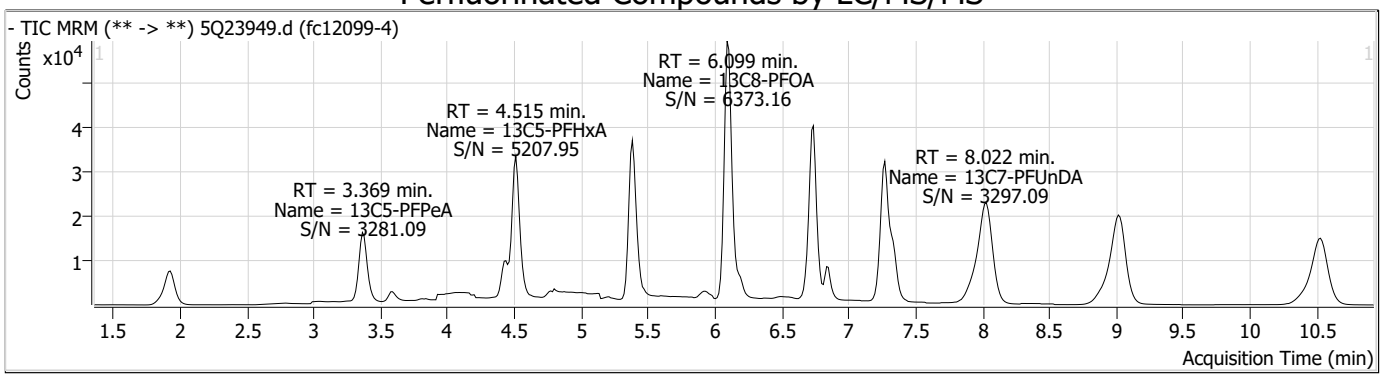
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 77.6%			
13C7-PFUnDA	8.022	570.0 -> 525.0	191422	8.21	µg/L		-0.037
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 82.1%			
13C8-FOSA	6.192	506.0 -> 78.0	10934	2.70	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 27.0%			
13C8-PFOA	6.099	421.0 -> 376.0	133308	8.05	µg/L		-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 80.5%			
13C8-PFOS	6.704	507.0 -> 99.0	10734	6.83	µg/L		-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 68.3%			
13C9-PFNA	6.744	472.0 -> 427.0	123763	7.45	µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 74.5%			
d3-MeFOSAA	6.735	573.0 -> 419.0	24242	7.95	µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 79.5%			
13C3-HFPO-DA	4.781	287.0 -> 169.0	5504	8.52	µg/L		-0.038
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 85.2%			
d3-MeFOSA	6.589	515.0 -> 169.0	44	0.03	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 0.3%			
d5-EtFOSAA	6.845	589.0 -> 419.0	23284	8.48	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 84.8%			
Target Compounds							QValue
4:2FTS	-	327.0 -> 307.0	-	N.D.			
		327.0 -> 81.0					
6:2FTS	6.110	427.0 -> 407.0	874	0.15	µg/L		99
		427.0 -> 81.0	351				
8:2FTS	-	527.0 -> 507.0	-	N.D.			
		527.0 -> 81.0					
EtFOSAA	-	584.0 -> 419.0	-	N.D.			
		584.0 -> 483.0					
FOSA	-	498.0 -> 78.0	-	N.D.			
		498.0 -> 478.0					
MeFOSAA	-	570.0 -> 419.0	-	N.D.			
		570.0 -> 512.0					
PFBA	1.919	213.0 -> 169.0	9595	2.92	µg/L		100
PFBS	3.603	299.0 -> 80.0	1708	0.94	µg/L	#	58
		299.0 -> 99.0	291				
PFDA	-	513.0 -> 469.0	-	N.D.			
		513.0 -> 219.0					
PFDoDA	-	613.0 -> 569.0	-	N.D.			
		613.0 -> 319.0					
PFDS	-	599.0 -> 80.0	-	N.D.			
		599.0 -> 99.0					
PFHpA	5.389	363.0 -> 319.0	33083	2.96	µg/L	m	100
		363.0 -> 169.0	6973				
PFHpS	-	449.0 -> 80.0	-	N.D.			
		449.0 -> 99.0					
PFHxA	4.516	313.0 -> 269.0	30331	3.28	µg/L		100
		313.0 -> 119.0	1229				
PFHxS	5.408	399.0 -> 80.0	3810	2.51	µg/L	m	95
		399.0 -> 99.0	2280				
PFNA	-	463.0 -> 419.0	-	N.D.			
		463.0 -> 219.0					
PFNS	-	549.0 -> 80.0	-	N.D.			
		549.0 -> 99.0					
PFOA	6.100	413.0 -> 369.0	39000	2.98	µg/L	m	97
		413.0 -> 169.0	10291				
PFOS	6.705	499.0 -> 80.0	5536	2.91	µg/L	m	87

Perfluorinated Compounds by LC/MS/MS

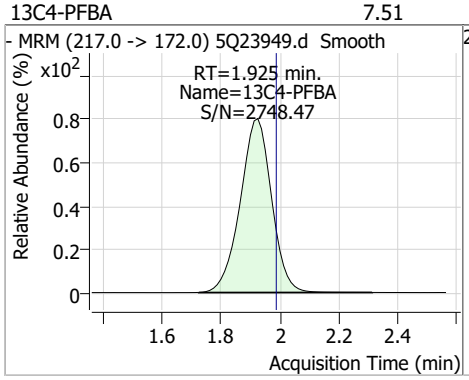
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
		499.0 -> 99.0	2264				
PFPeA	3.372	263.0 -> 219.0	20183	4.19	µg/L		100
PFPeS	4.610	349.0 -> 80.0	356	0.28	µg/L	m	96
		349.0 -> 99.0	168				
PFTeDA	-	713.0 -> 669.0	-	N.D.			
		713.0 -> 219.0					
PFTrDA	-	663.0 -> 619.0	-	N.D.			
		663.0 -> 369.0					
PFUnDA	-	563.0 -> 519.0	-	N.D.			
		563.0 -> 269.0					
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.			
		633.0 -> 453.0					
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.			
		533.0 -> 353.0					
ADONA	-	377.0 -> 251.0	-	N.D.			
		377.0 -> 85.0					
HFPO-DA	-	329.0 -> 169.0	-	N.D.			
		285.0 -> 169.0					
MeFOSA	-	512.0 -> 169.0	-	N.D.			
		512.0 -> 219.0					
4-PFECHS	-	461.0 -> 381.0	-	N.D.			
		461.0 -> 99.0					
FBSA	-	298.0 -> 78.0	-	N.D.			
		298.0 -> 64.0					
FHxSA	-	398.0 -> 78.0	-	N.D.			
		398.0 -> 64.0					

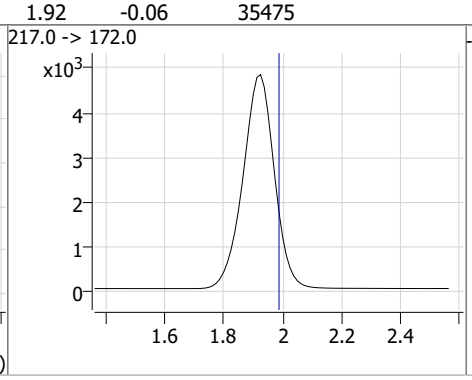
 # = Qualifier out of range, m = manually integrated, + = Area summed

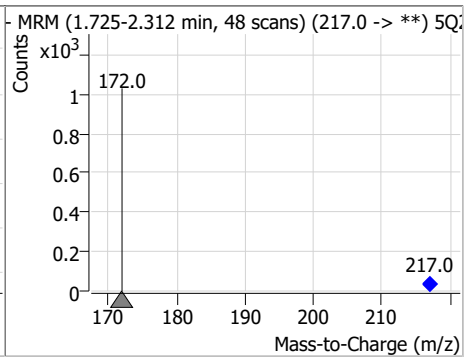
Perfluorinated Compounds by LC/MS/MS



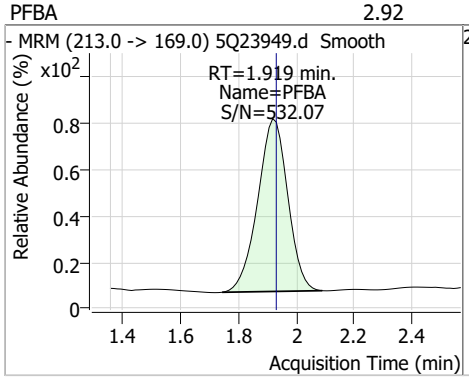
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	7.51	1.92	-0.06	35475				

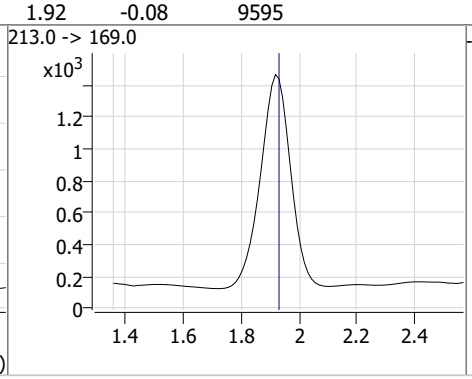


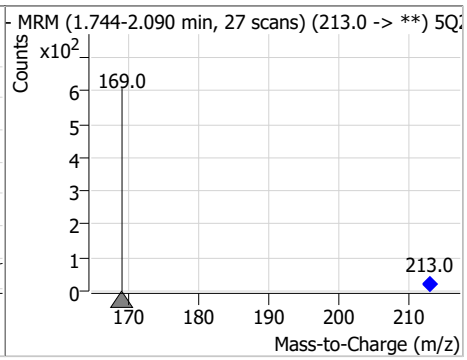




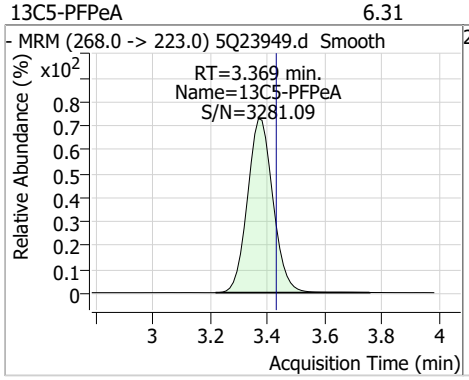
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	2.92	1.92	-0.08	9595				

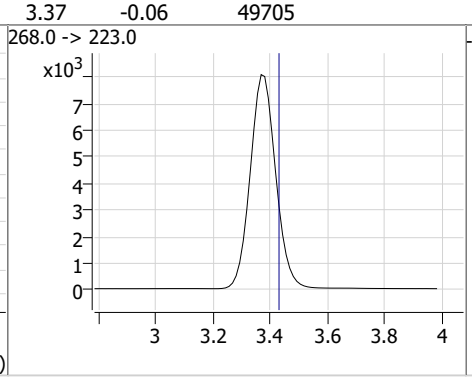


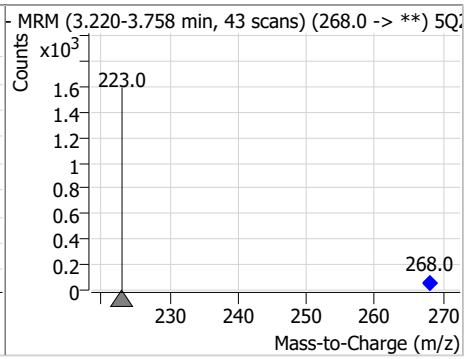




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	6.31	3.37	-0.06	49705				

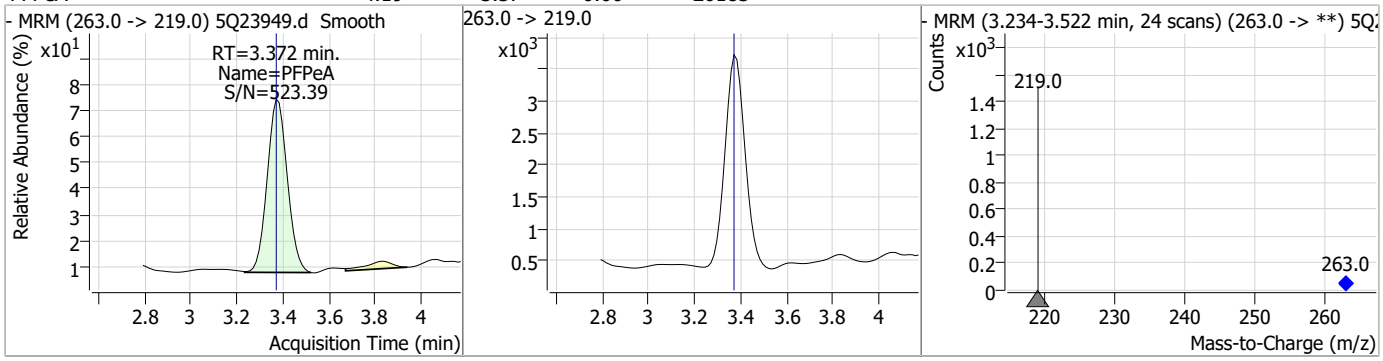




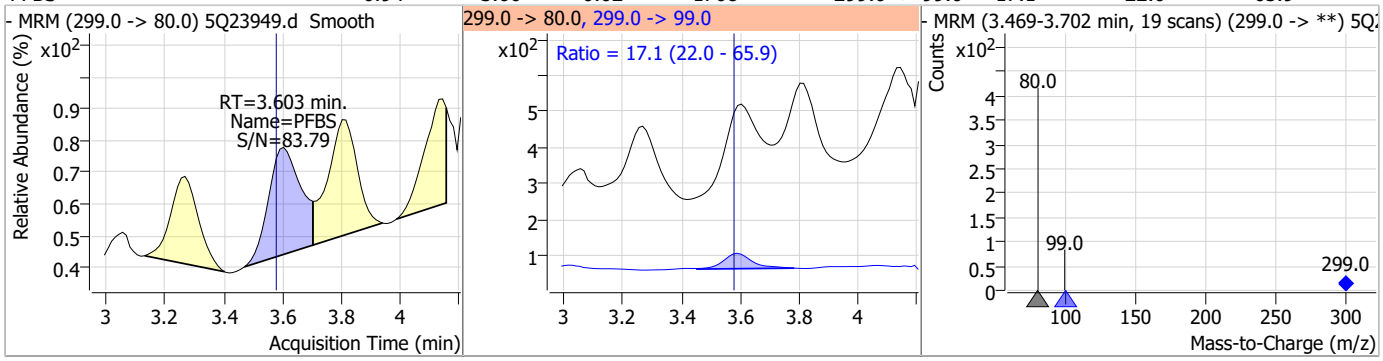


Perfluorinated Compounds by LC/MS/MS

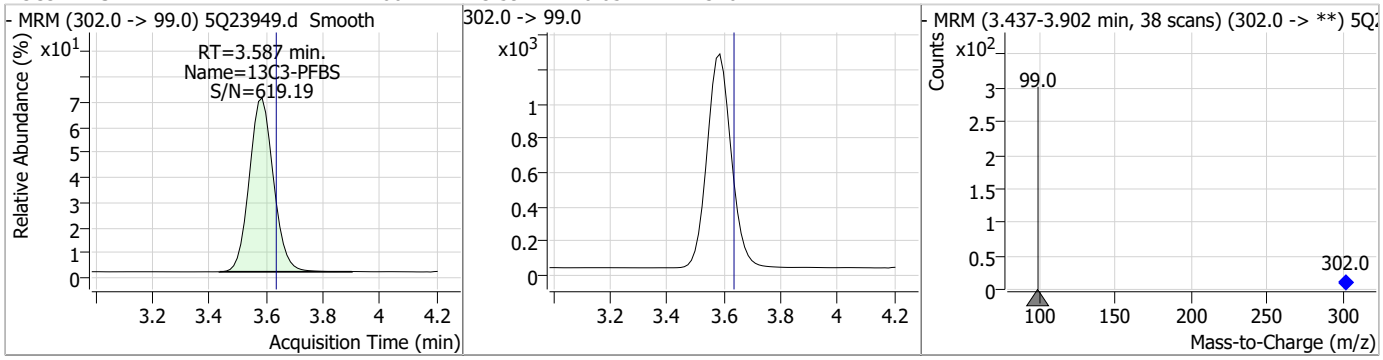
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	4.19	3.37	-0.06	20183				



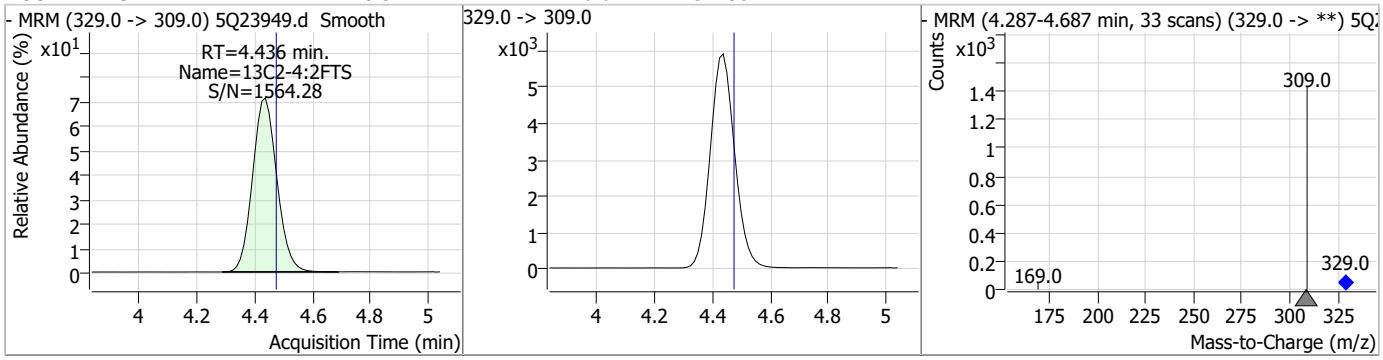
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	0.94	3.60	-0.02	1708	299.0 -> 99.0	17.1	22.0	65.9



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	7.60	3.59	-0.05	7376				

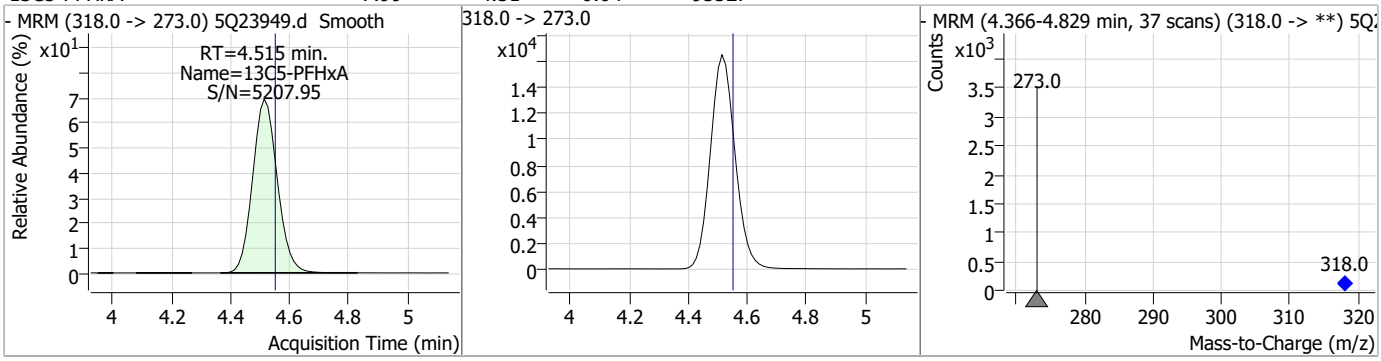


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	8.51	4.44	-0.04	34238				

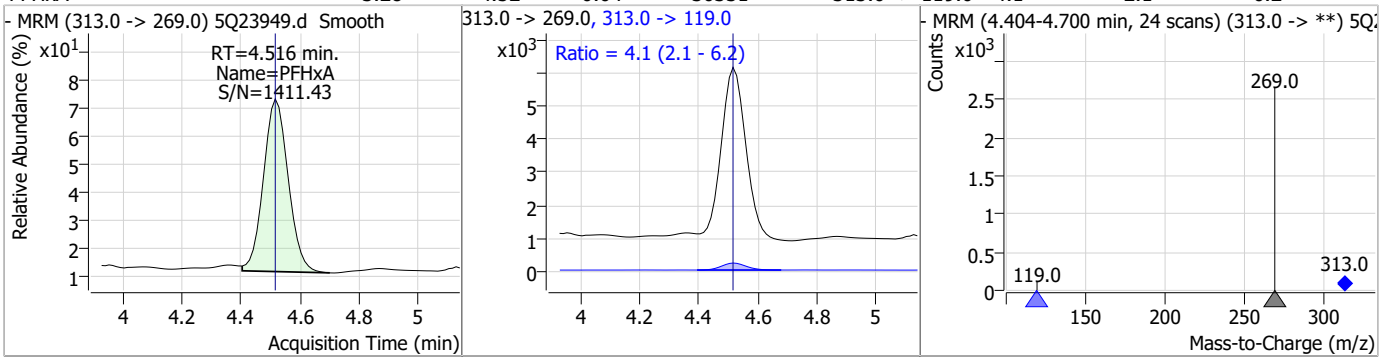


Perfluorinated Compounds by LC/MS/MS

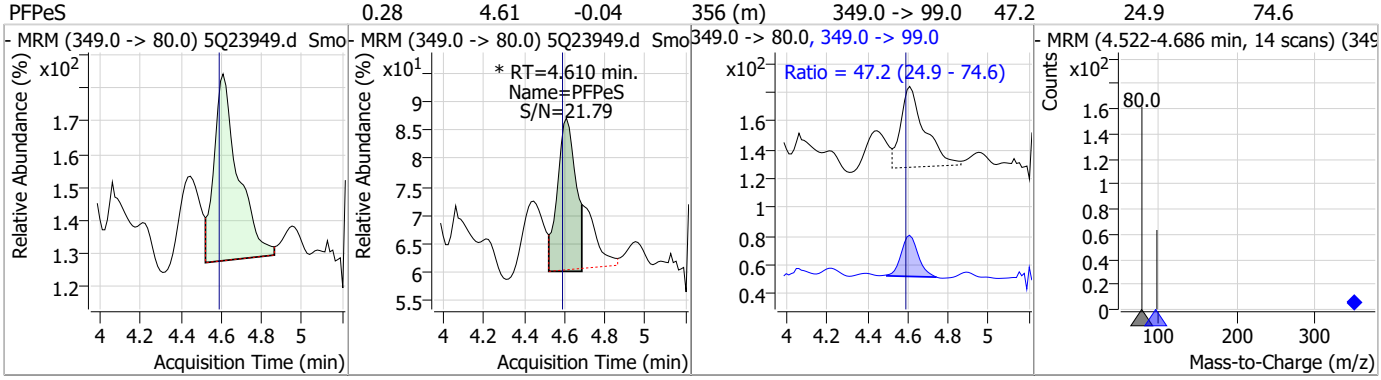
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	7.99	4.51	-0.04	95527				



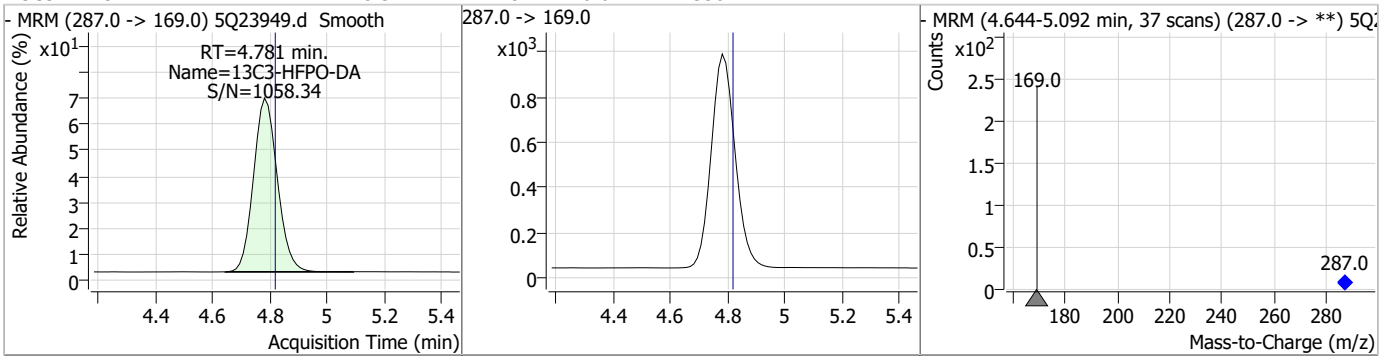
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	3.28	4.52	-0.04	30331	313.0 -> 119.0	4.1	2.1	6.2



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	0.28	4.61	-0.04	356 (m)	349.0 -> 99.0	47.2	24.9	74.6

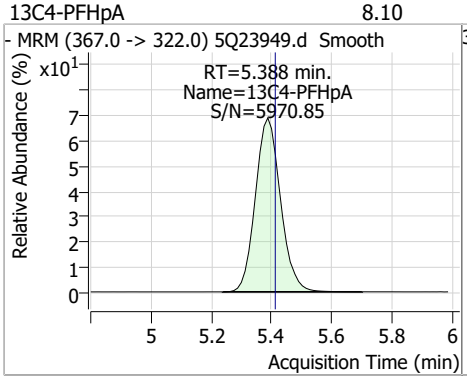


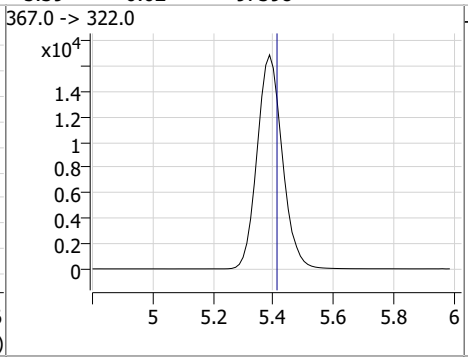
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	8.52	4.78	-0.04	5504				

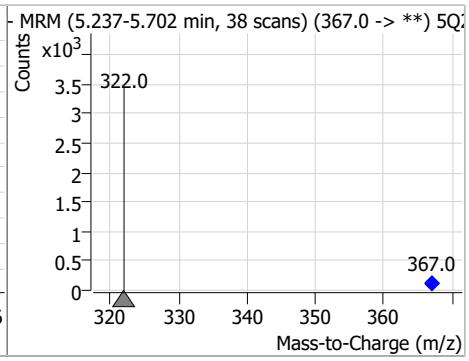


Perfluorinated Compounds by LC/MS/MS

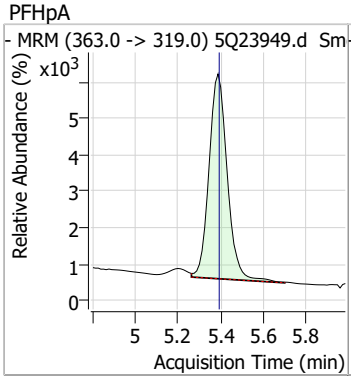
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	8.10	5.39	-0.02	97398				

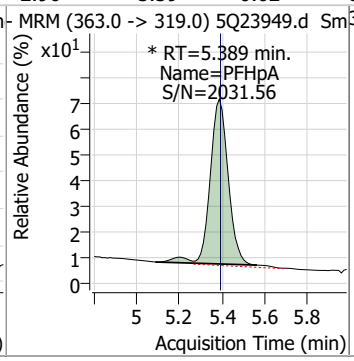


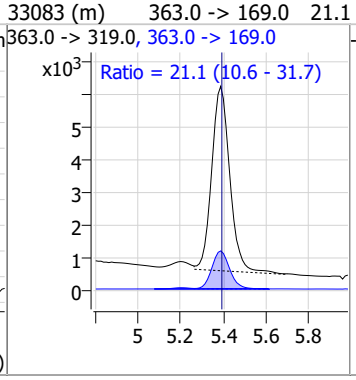


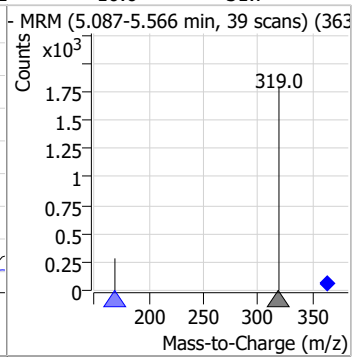


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	2.96	5.39	-0.02	33083 (m)	363.0 -> 169.0	21.1	10.6	31.7

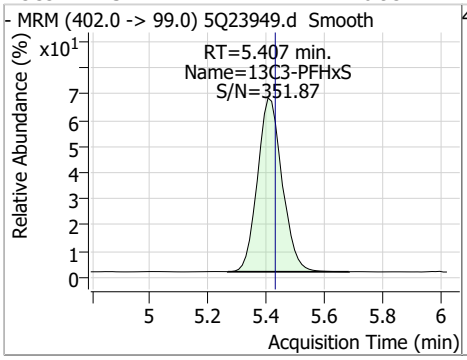


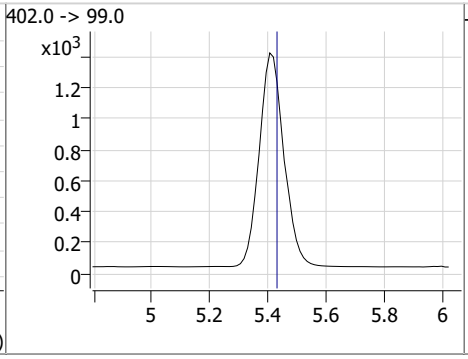


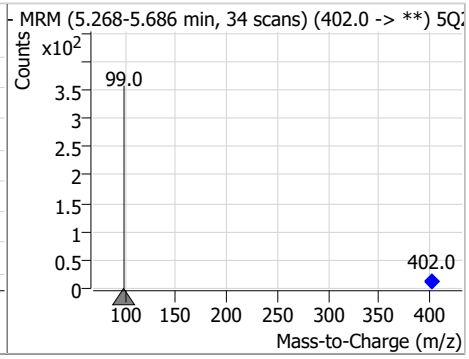




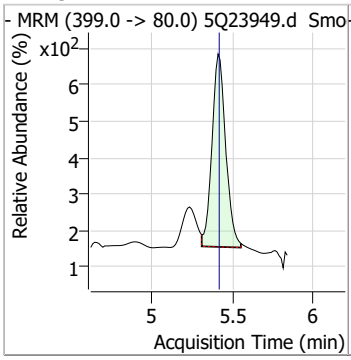
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	6.93	5.41	-0.02	8176				

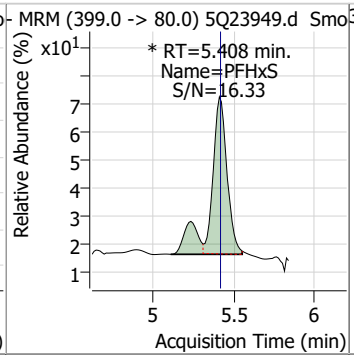


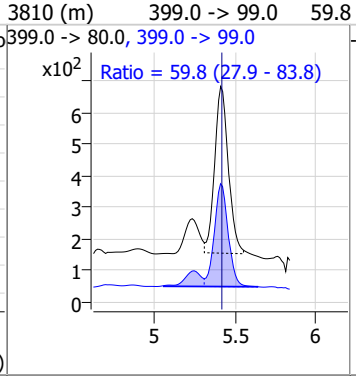


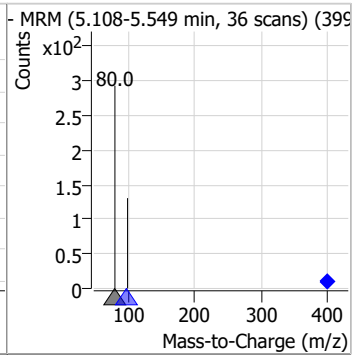


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	2.51	5.41	-0.02	3810 (m)	399.0 -> 99.0	59.8	27.9	83.8



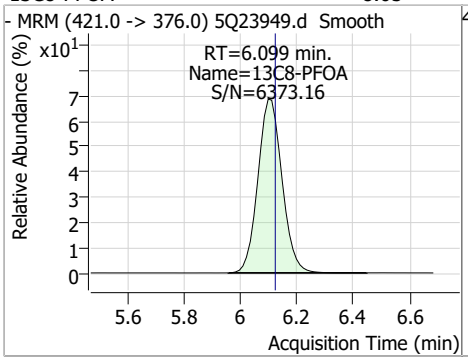


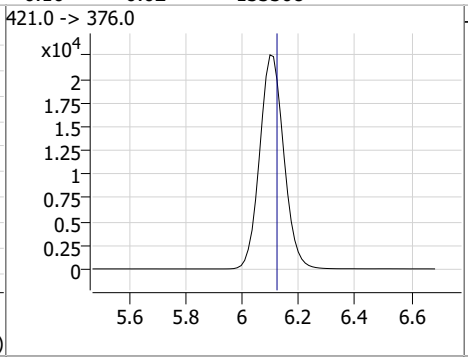


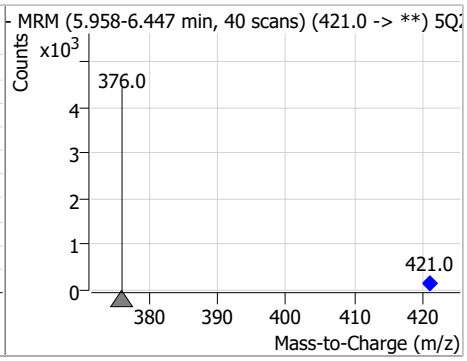


Perfluorinated Compounds by LC/MS/MS

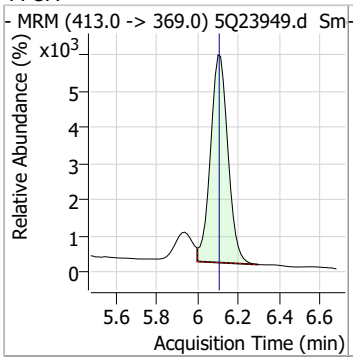
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	8.05	6.10	-0.02	133308				

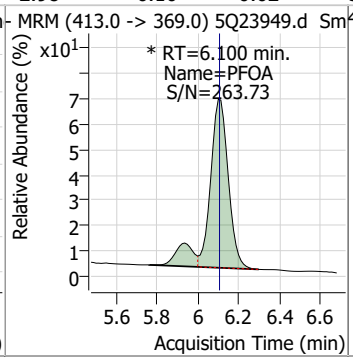


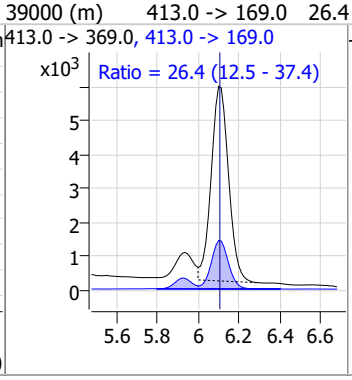


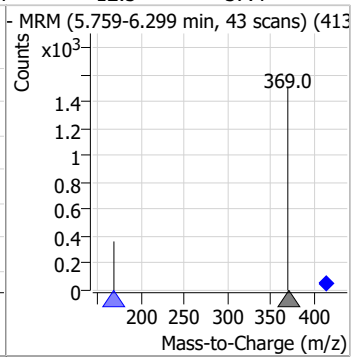


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	2.98	6.10	-0.02	39000 (m)	413.0 -> 169.0	26.4	12.5	37.4

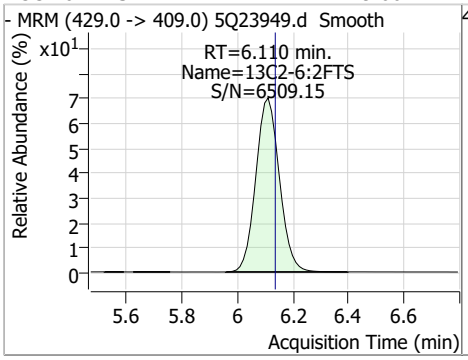


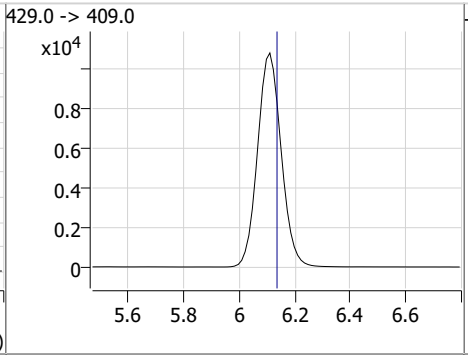


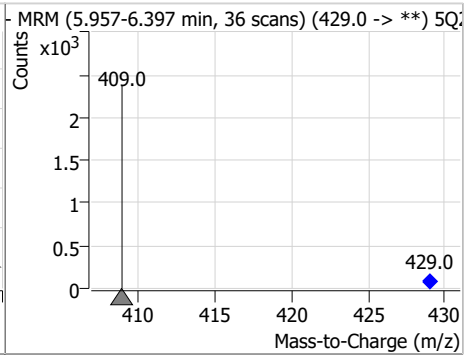




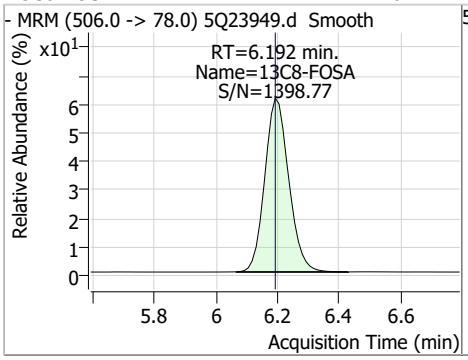
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	9.00	6.11	-0.03	63788				

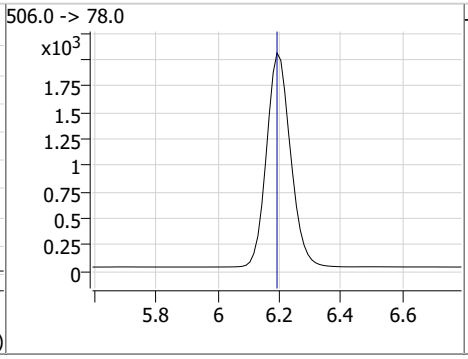


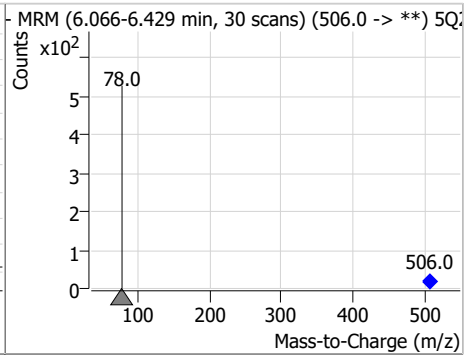




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.70	6.19	0.00	10934				

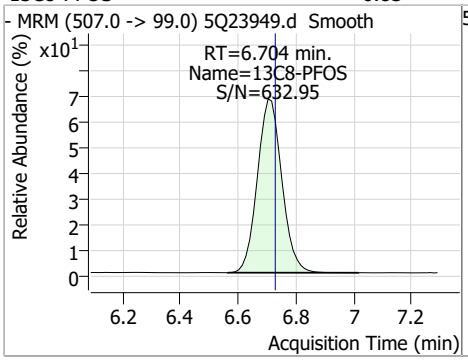


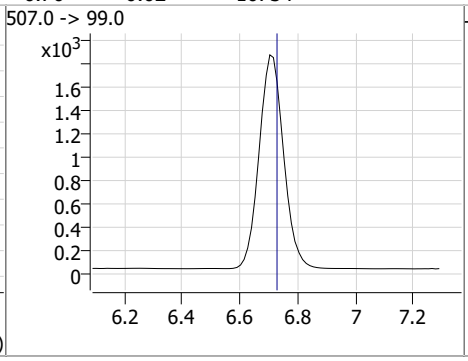


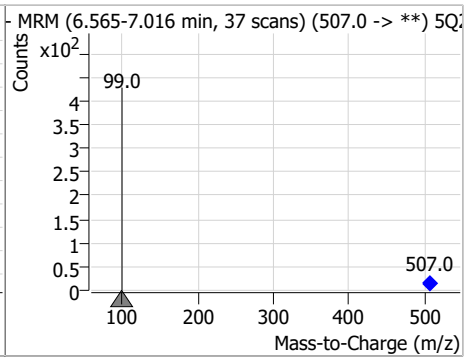


Perfluorinated Compounds by LC/MS/MS

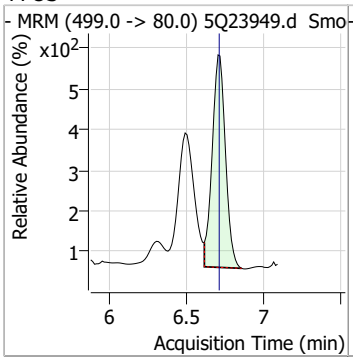
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	6.83	6.70	-0.02	10734				

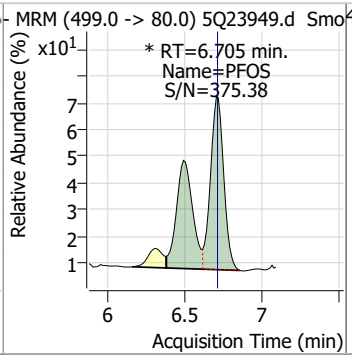


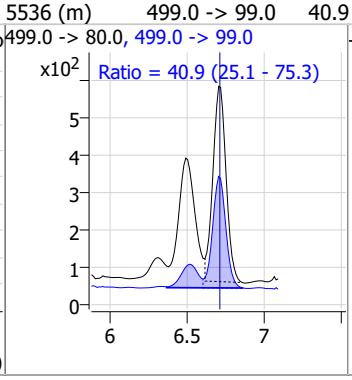


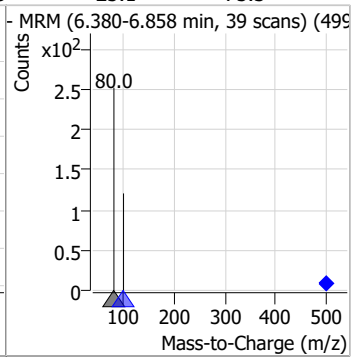


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	2.91	6.71	-0.02	5536 (m)	499.0 -> 99.0	40.9	25.1	75.3

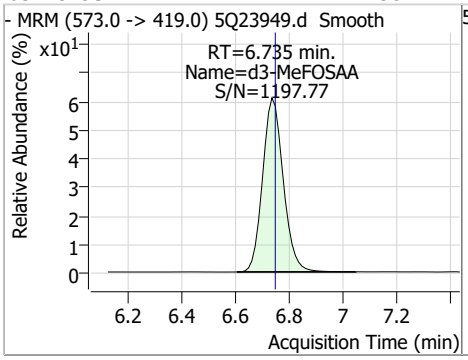


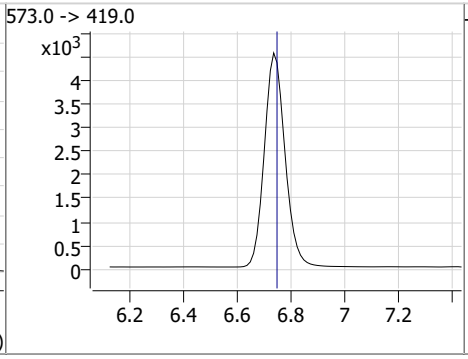


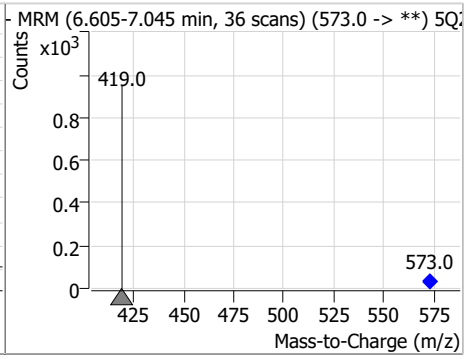




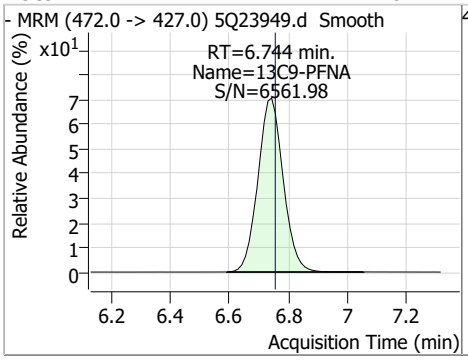
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	7.95	6.73	-0.01	24242				

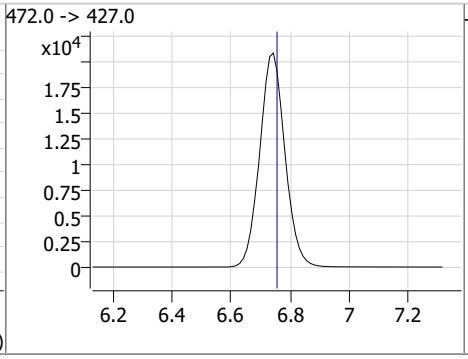


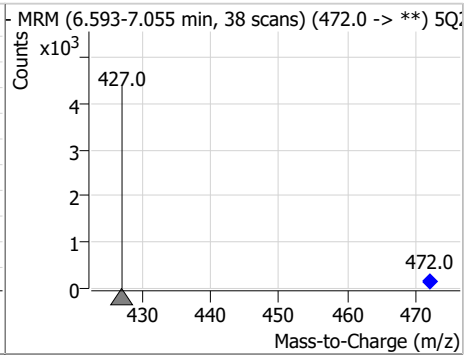




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	7.45	6.74	-0.01	123763				

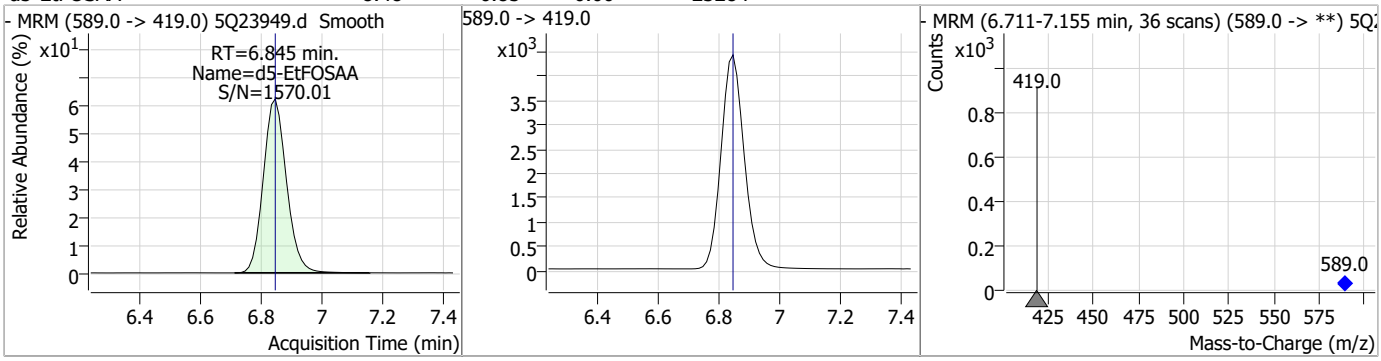




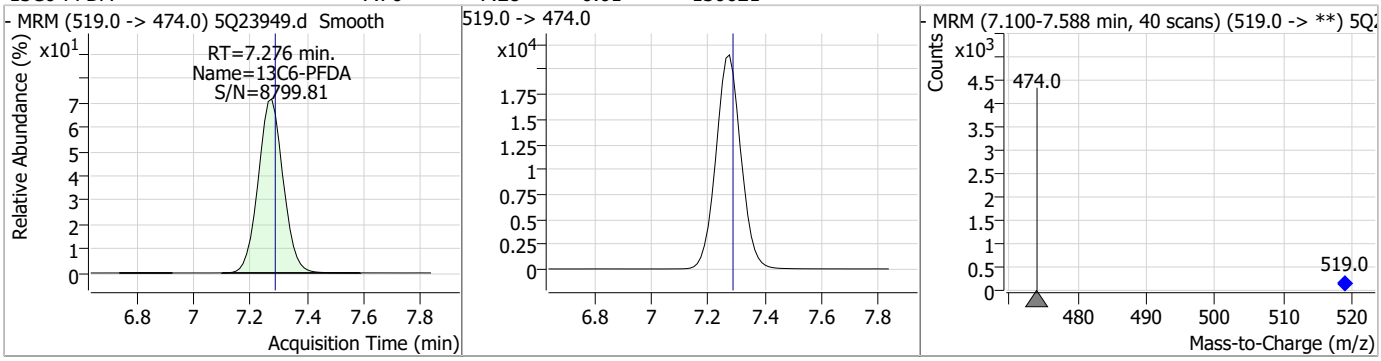


Perfluorinated Compounds by LC/MS/MS

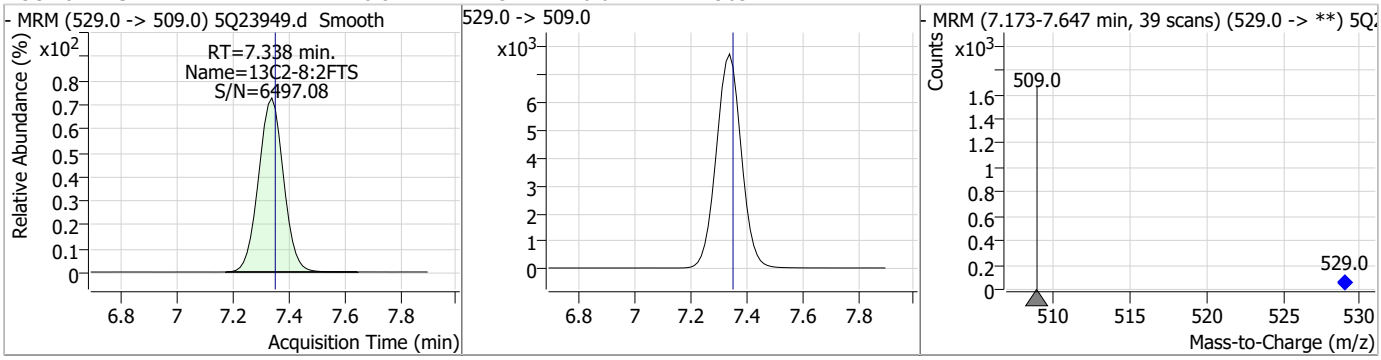
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	8.48	6.85	0.00	23284				



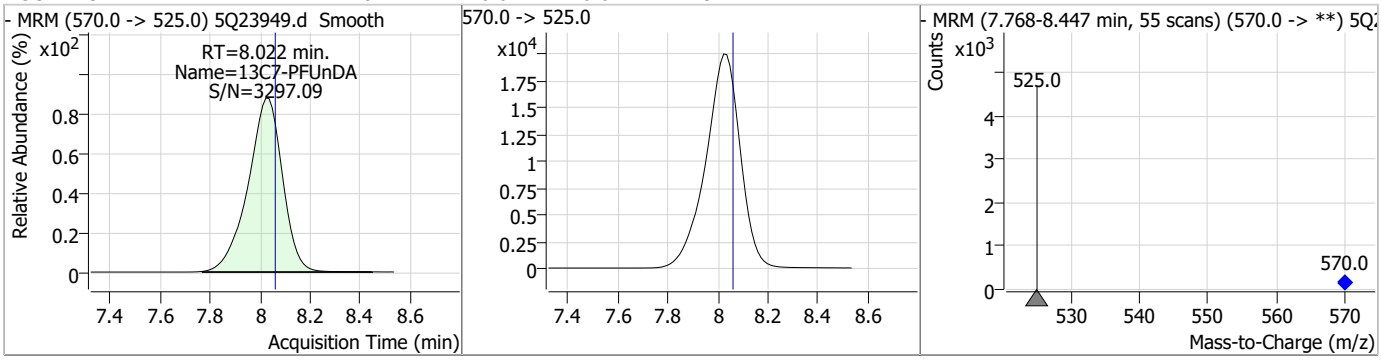
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	7.76	7.28	-0.01	130621				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	6.87	7.34	-0.01	47963				

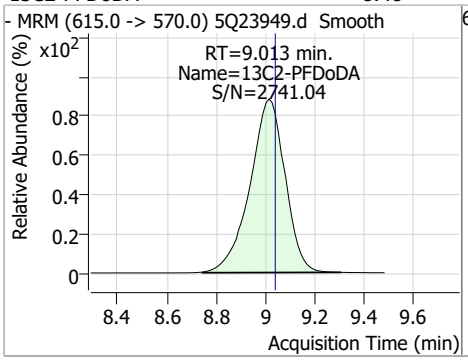


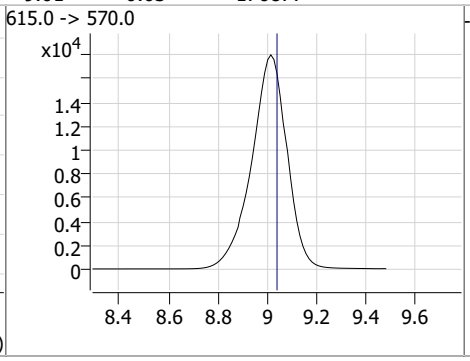
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	8.21	8.02	-0.04	191422				

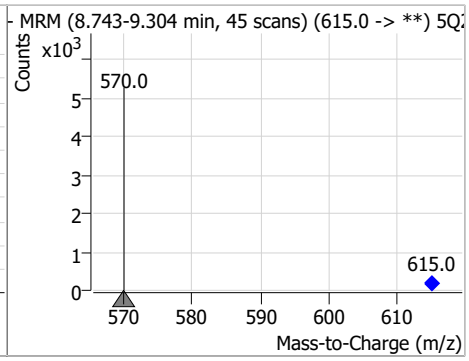


Perfluorinated Compounds by LC/MS/MS

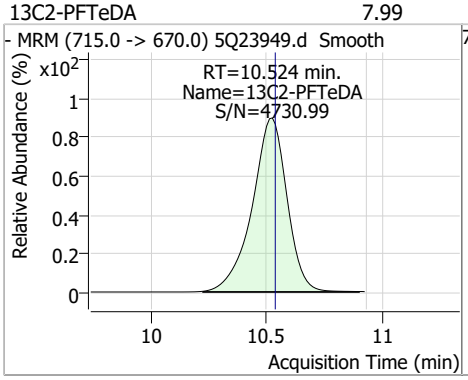
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	8.48	9.01	-0.03	176877				

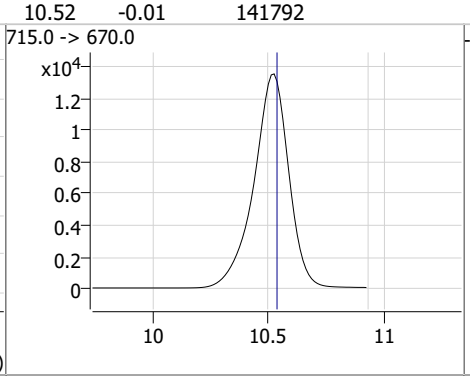


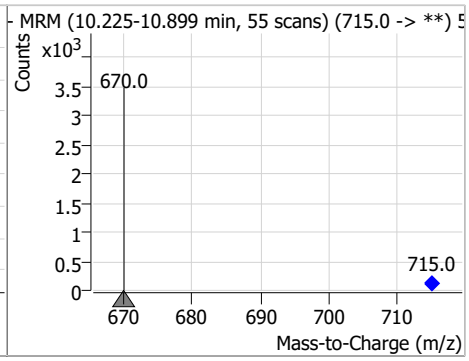




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	7.99	10.52	-0.01	141792				







Manual Integration Approval Summary

Sample Number: FC12099-4
Lab FileID: 5Q23949.D
Injection Time: 12/29/23 01:52
Method: EPA 537M QSM5.3 B-15
Analyst approved: 01/03/24 16:21 Lindsay Ritner
Supervisor approved: 01/04/24 13:35 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluoropentanesulfonic acid	2706-91-4		4.61	Overlapping peak
Perfluoroheptanoic acid	375-85-9		5.39	Split peak
Perfluorohexanesulfonic acid	355-46-4		5.41	Split peak
Perfluorooctanoic acid	335-67-1		6.10	Split peak
Perfluorooctanesulfonic acid	1763-23-1		6.71	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Natasha Gumtie 01/04/24 13:35

Perfluorinated Compounds by LC/MS/MS

Data File : 5Q24076.d
Operator : lindsayr
Acq. Method : 537_ID.m
Acq. Date-Time : 1/3/2024 6:52:56 AM
Sample Name : fc12099-4
Vial : P3-D9
DA Method File : ID_010224_S5Q377.quantmethod.xml
Batch Name : s5q377.batch.bin
Sample Information : OP835,S5Q377,120,,,1.0,5,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.975	217.0 -> 172.0	5720	2.00	µg/L	-0.013
M5-PFPeA	3.419	268.0 -> 223.0	8701	2.00	µg/L	-0.012
M5-PFHxA	4.552	318.0 -> 273.0	15927	2.00	µg/L	-0.012
M4-PFHpA	5.413	367.0 -> 322.0	18165	2.00	µg/L	-0.012
M8-PFOA	6.137	421.0 -> 376.0	27335	2.00	µg/L	-0.012
M9-PFNA	6.768	472.0 -> 427.0	29116	2.00	µg/L	-0.012
M6-PFDA	7.301	519.0 -> 474.0	28333	2.00	µg/L	-0.012
M7-PFUnDA	8.097	570.0 -> 525.0	36140	2.00	µg/L	-0.037
M2-PFDoDA	9.093	615.0 -> 570.0	31185	2.00	µg/L	-0.025
M2-PFTeDA	10.587	715.0 -> 670.0	19501	2.00	µg/L	-0.025
M8-FOSA	6.192	506.0 -> 78.0	3801	2.00	µg/L	-0.012
M3-PFBS	3.612	302.0 -> 99.0	1260	2.00	µg/L	-0.025
M3-PFHxS	5.432	402.0 -> 99.0	1765	2.00	µg/L	-0.012
M8-PFOS	6.741	507.0 -> 99.0	2451	2.00	µg/L	-0.012
M2-4:2FTS	4.461	329.0 -> 309.0	5485	2.00	µg/L	-0.025
M2-6:2FTS	6.136	429.0 -> 409.0	12247	2.00	µg/L	-0.012
M2-8:2FTS	7.363	529.0 -> 509.0	12016	2.00	µg/L	-0.012
M3-MeFOSAA	6.747	573.0 -> 419.0	6115	2.00	µg/L	0.000
M3-HFPO-DA	4.819	287.0 -> 169.0	754	2.00	µg/L	-0.012
M3-MeFOSA	6.601	515.0 -> 169.0	32	2.00	µg/L	0.012
M5-EtFOSAA	6.845	589.0 -> 419.0	4955	2.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.461	329.0 -> 309.0	5485	1.40	µg/L	-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 14.0%		
13C2-6:2FTS	6.136	429.0 -> 409.0	12247	1.67	µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 16.7%		
13C2-8:2FTS	7.363	529.0 -> 509.0	12016	1.70	µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 17.0%		
13C2-PFDoDA	9.093	615.0 -> 570.0	31185	1.38	µg/L	-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 13.8%		
13C2-PFTeDA	10.587	715.0 -> 670.0	19501	1.01	µg/L	-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 10.1%		
13C3-PFBS	3.612	302.0 -> 99.0	1260	1.37	µg/L	-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 13.7%		
13C3-PFHxS	5.432	402.0 -> 99.0	1765	1.56	µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 15.6%		
13C4-PFBA	1.975	217.0 -> 172.0	5720	1.30	µg/L	-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 13.0%		
13C4-PFHpA	5.413	367.0 -> 322.0	18165	1.54	µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 15.4%		
13C5-PFHxA	4.552	318.0 -> 273.0	15927	1.39	µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 13.9%		
13C5-PFPeA	3.419	268.0 -> 223.0	8701	1.17	µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 11.7%		
13C6-PFDA	7.301	519.0 -> 474.0	28333	1.64	µg/L	-0.012

Perfluorinated Compounds by LC/MS/MS

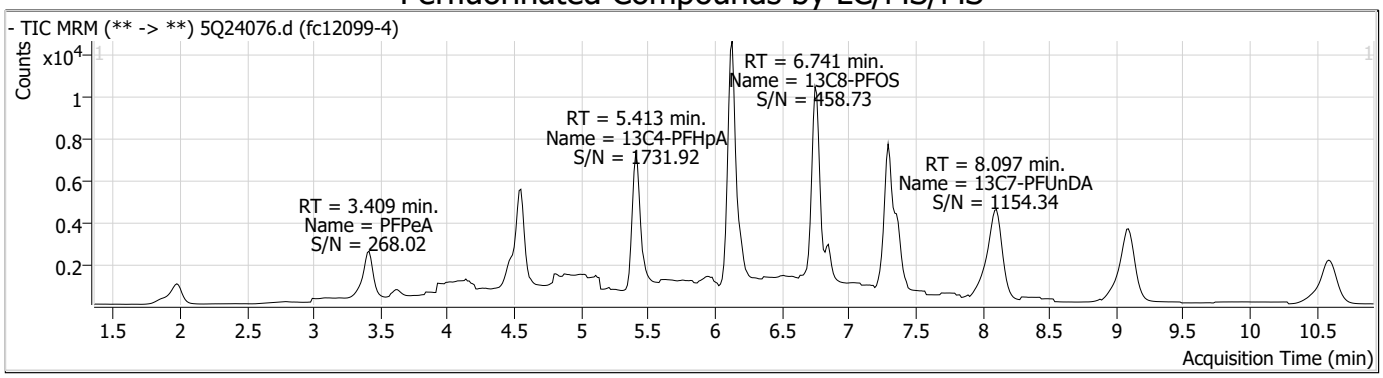
Compound	RT	Transition	Response	Conc. Units		Dev(Min)
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 16.4%		
13C7-PFUnDA	8.097	570.0 -> 525.0	36140	1.48 µg/L		-0.037
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 14.8%		
13C8-FOSA	6.192	506.0 -> 78.0	3801	0.93 µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 9.3%		
13C8-PFOA	6.137	421.0 -> 376.0	27335	1.65 µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 16.5%		
13C8-PFOS	6.741	507.0 -> 99.0	2451	1.56 µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 15.6%		
13C9-PFNA	6.768	472.0 -> 427.0	29116	1.76 µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 17.6%		
d3-MeFOSAA	6.747	573.0 -> 419.0	6115	1.82 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 18.2%		
13C3-HFPO-DA	4.819	287.0 -> 169.0	754	1.26 µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 12.6%		
d3-MeFOSA	6.601	515.0 -> 169.0	32	0.02 µg/L		0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 0.2%		
d5-EtFOSAA	6.845	589.0 -> 419.0	4955	1.63 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 16.3%		
Target Compounds						QValue
4:2FTS	-	327.0 -> 307.0	-	N.D.		
		327.0 -> 81.0				
6:2FTS	-	427.0 -> 407.0	-	N.D.		
		427.0 -> 81.0				
8:2FTS	-	527.0 -> 507.0	-	N.D.		
		527.0 -> 81.0				
EtFOSAA	-	584.0 -> 419.0	-	N.D.		
		584.0 -> 483.0				
FOSA	-	498.0 -> 78.0	-	N.D.		
		498.0 -> 478.0				
MeFOSAA	-	570.0 -> 419.0	-	N.D.		
		570.0 -> 512.0				
PFBA	1.969	213.0 -> 169.0	1444	0.56 µg/L		100
PFBS	-	299.0 -> 80.0	-	N.D.		
		299.0 -> 99.0				
PFDA	-	513.0 -> 469.0	-	N.D.		
		513.0 -> 219.0				
PFDoDA	-	613.0 -> 569.0	-	N.D.		
		613.0 -> 319.0				
PFDS	-	599.0 -> 80.0	-	N.D.		
		599.0 -> 99.0				
PFHpA	5.413	363.0 -> 319.0	6248	0.63 µg/L	m	100
		363.0 -> 169.0	1324			
PFHpS	-	449.0 -> 80.0	-	N.D.		
		449.0 -> 99.0				
PFHxA	4.553	313.0 -> 269.0	4866	0.66 µg/L		98
		313.0 -> 119.0	235			
PFHxS	5.433	399.0 -> 80.0	856	0.54 µg/L	m	94
		399.0 -> 99.0	440			
PFNA	-	463.0 -> 419.0	-	N.D.		
		463.0 -> 219.0				
PFNS	-	549.0 -> 80.0	-	N.D.		
		549.0 -> 99.0				
PFOA	6.137	413.0 -> 369.0	8500	0.65 µg/L	m	100
		413.0 -> 169.0	2087			
PFOS	6.730	499.0 -> 80.0	1308	0.64 µg/L	m	83

Perfluorinated Compounds by LC/MS/MS

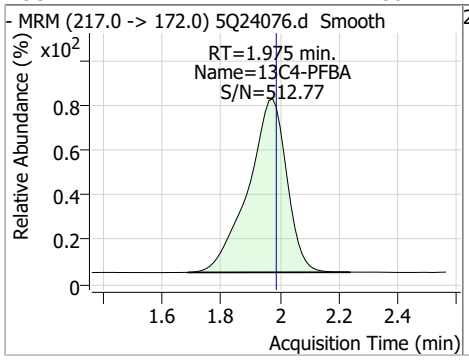
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		499.0 -> 99.0	499			
PFPeA	3.409	263.0 -> 219.0	3416	0.83	µg/L	100
PFPeS	-	349.0 -> 80.0	-	N.D.		
		349.0 -> 99.0				
PFTeDA	-	713.0 -> 669.0	-	N.D.		
		713.0 -> 219.0				
PFTrDA	-	663.0 -> 619.0	-	N.D.		
		663.0 -> 369.0				
PFUnDA	-	563.0 -> 519.0	-	N.D.		
		563.0 -> 269.0				
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.		
		633.0 -> 453.0				
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.		
		533.0 -> 353.0				
ADONA	-	377.0 -> 251.0	-	N.D.		
		377.0 -> 85.0				
HFPO-DA	-	329.0 -> 169.0	-	N.D.		
		285.0 -> 169.0				
MeFOSA	-	512.0 -> 169.0	-	N.D.		
		512.0 -> 219.0				
4-PFECHS	-	461.0 -> 381.0	-	N.D.		
		461.0 -> 99.0				
FBSA	-	298.0 -> 78.0	-	N.D.		
		298.0 -> 64.0				
FHxSA	-	398.0 -> 78.0	-	N.D.		
		398.0 -> 64.0				

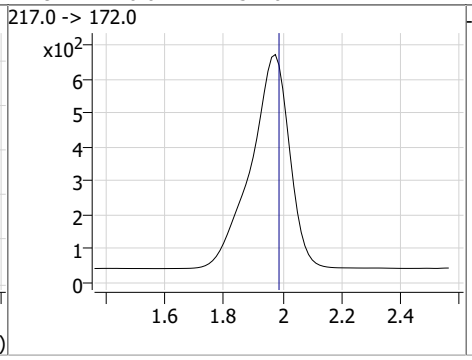
 # = Qualifier out of range, m = manually integrated, + = Area summed

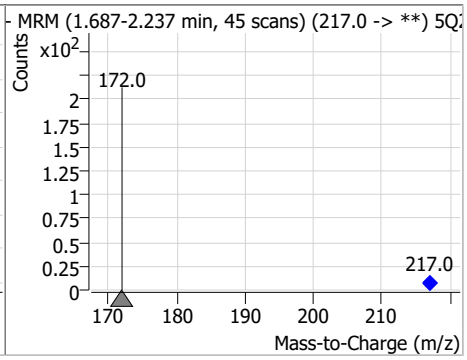
Perfluorinated Compounds by LC/MS/MS



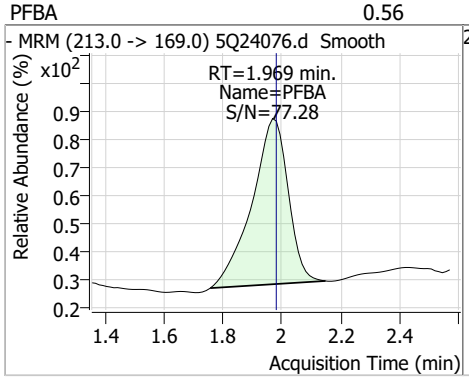
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	1.30	1.97	-0.01	5720				

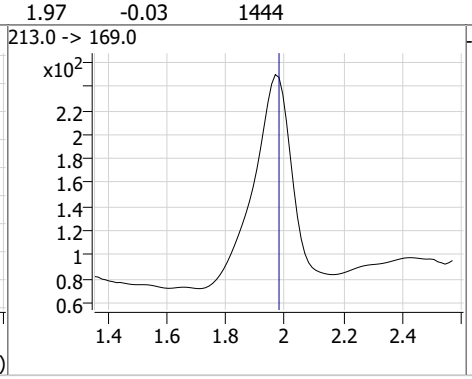


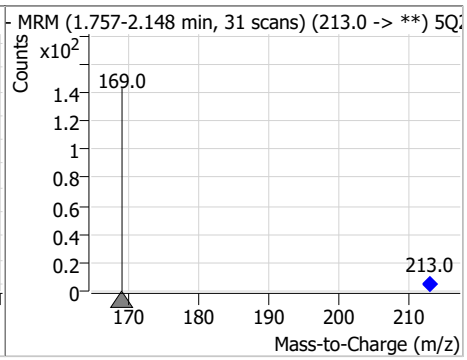




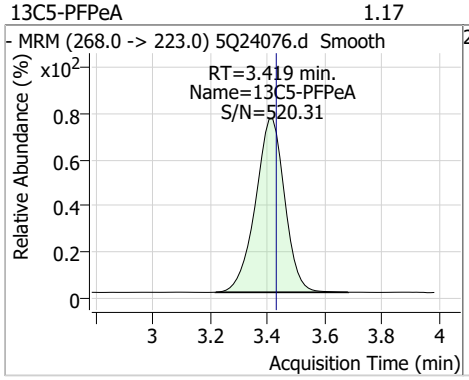
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	0.56	1.97	-0.03	1444				

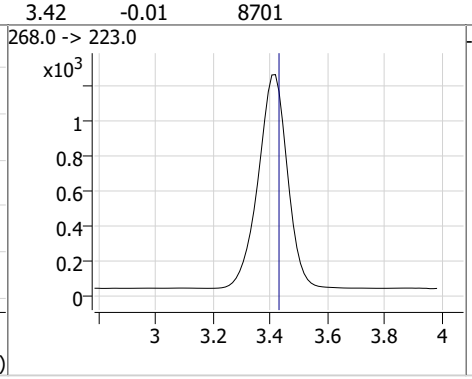


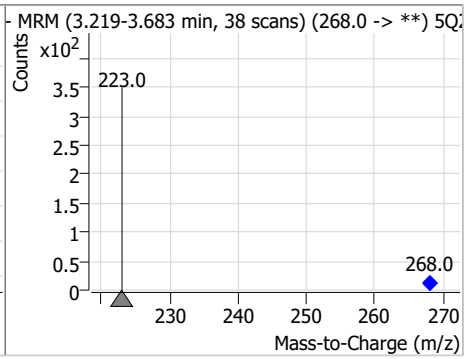




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	1.17	3.42	-0.01	8701				

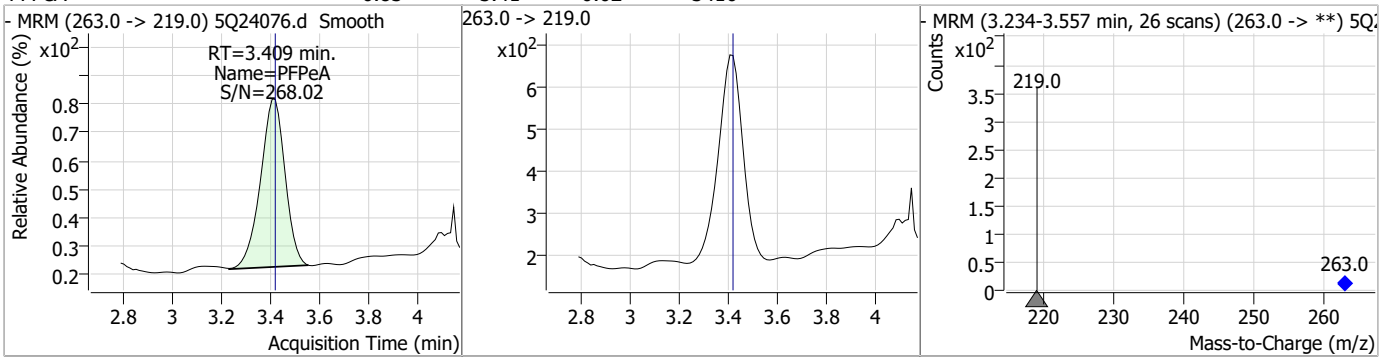




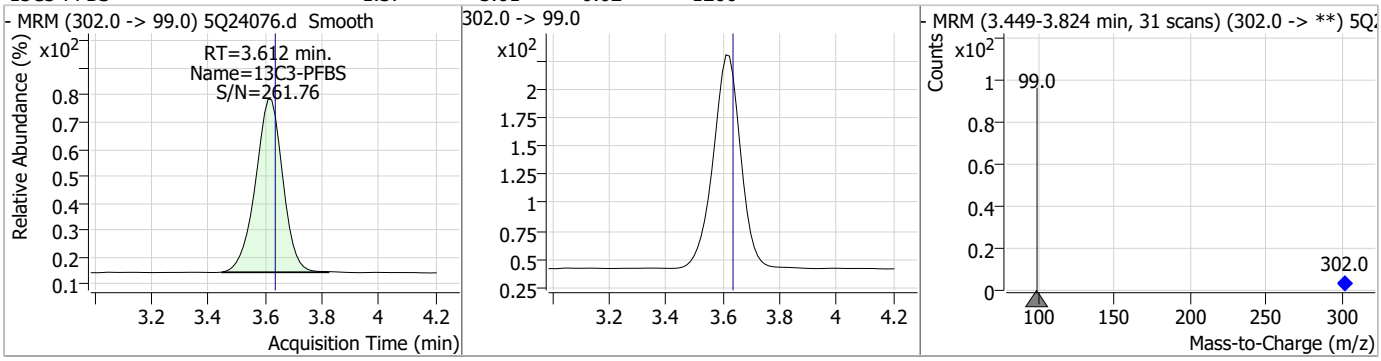


Perfluorinated Compounds by LC/MS/MS

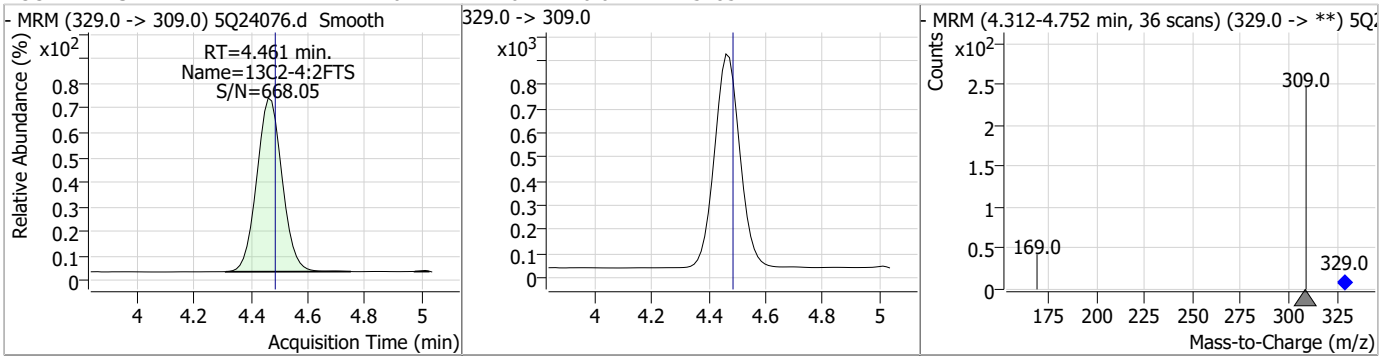
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	0.83	3.41	-0.02	3416				



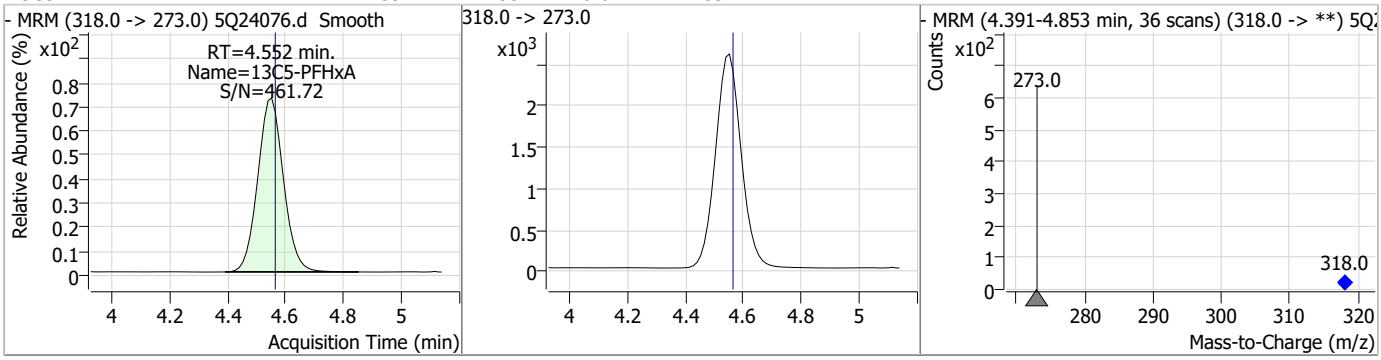
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	1.37	3.61	-0.02	1260				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	1.40	4.46	-0.02	5485				

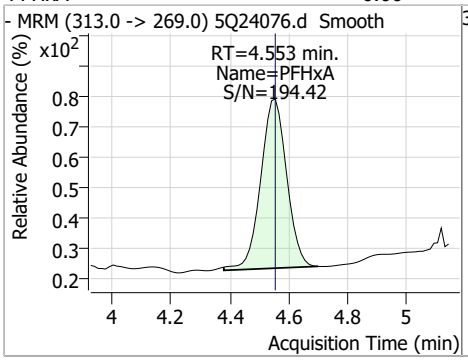


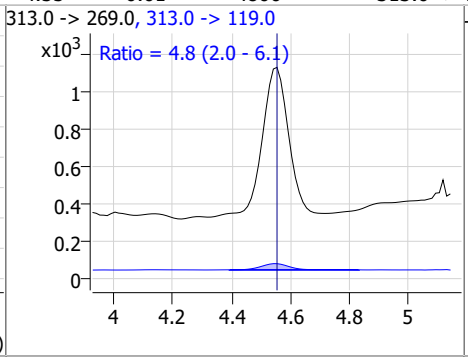
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	1.39	4.55	-0.01	15927				

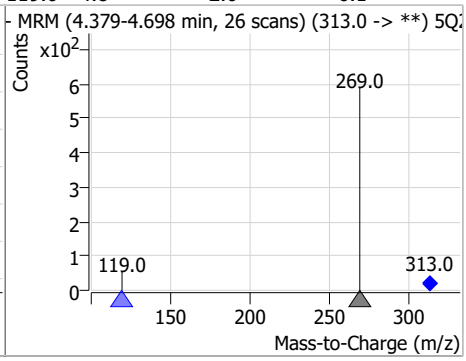


Perfluorinated Compounds by LC/MS/MS

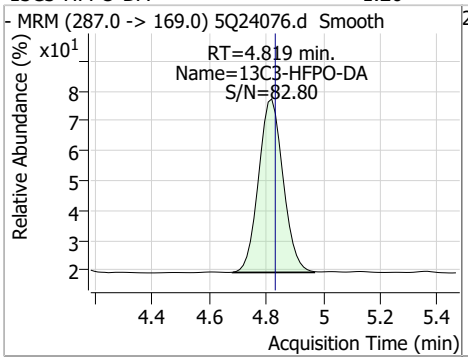
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	0.66	4.55	-0.01	4866	313.0 -> 119.0	4.8	2.0	6.1

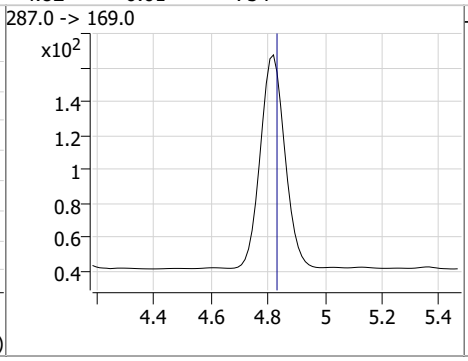


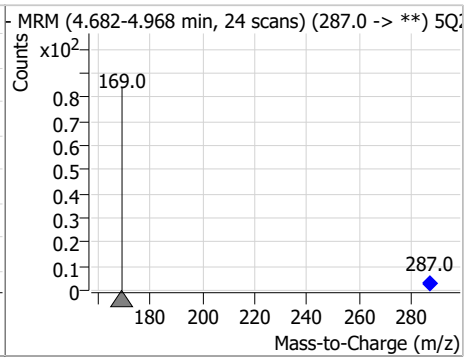




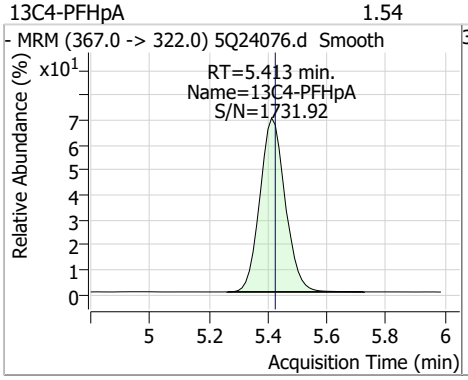
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	1.26	4.82	-0.01	754				

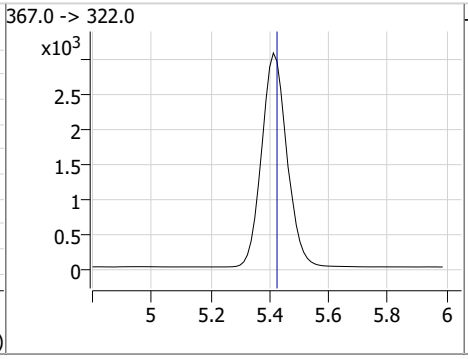


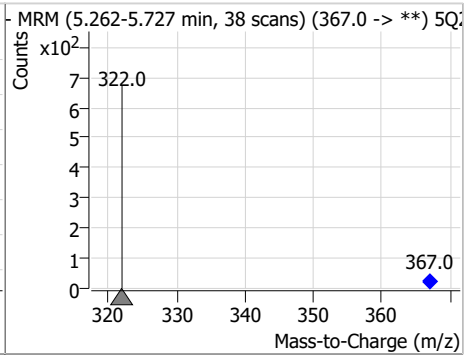




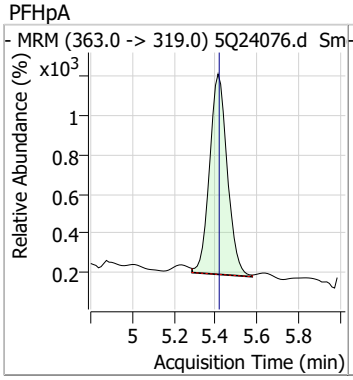
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	1.54	5.41	-0.01	18165				

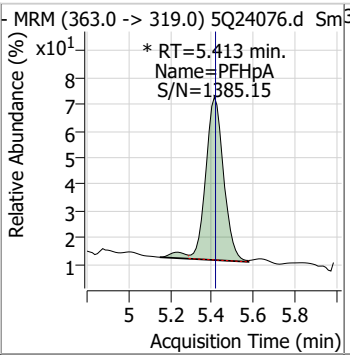


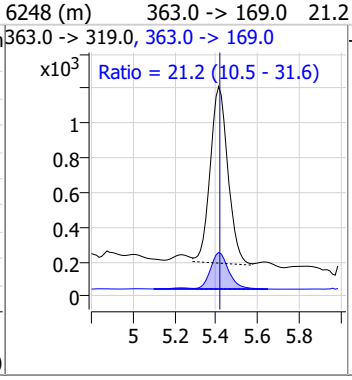


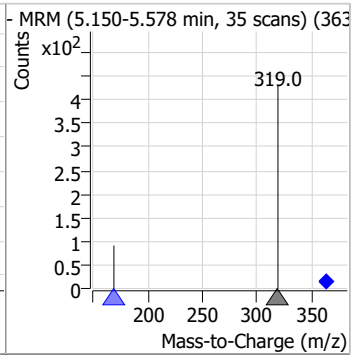


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	0.63	5.41	-0.01	6248 (m)	363.0 -> 169.0	21.2	10.5	31.6



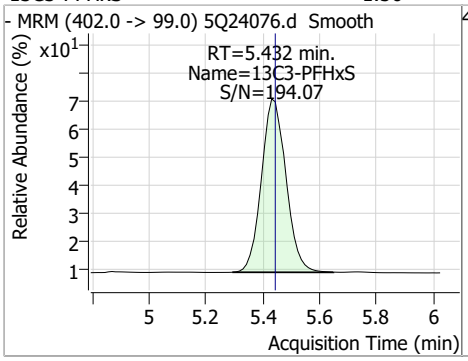


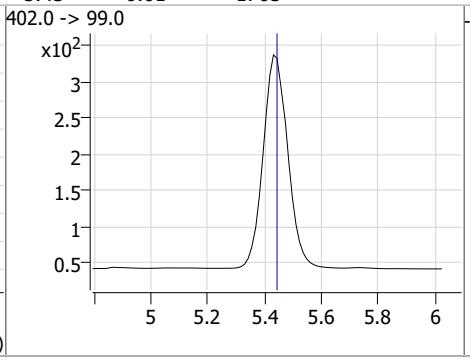


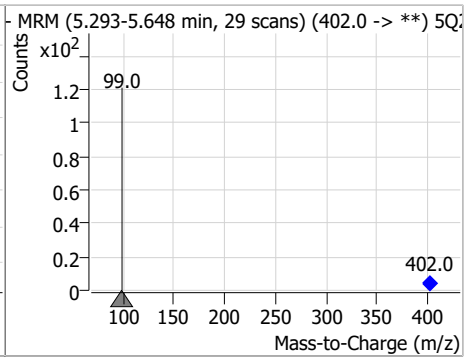


Perfluorinated Compounds by LC/MS/MS

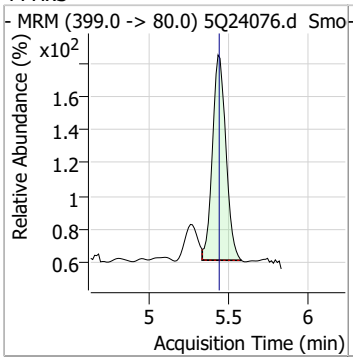
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	1.56	5.43	-0.01	1765				

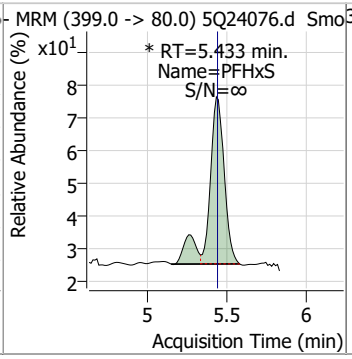


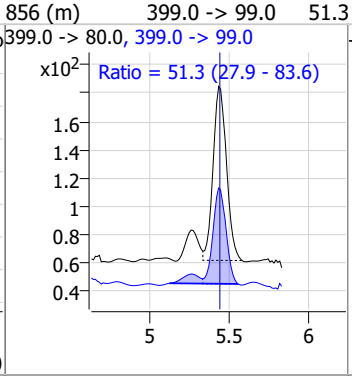


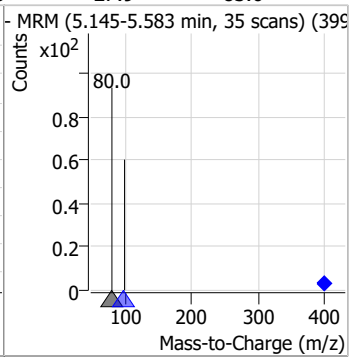


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	0.54	5.43	-0.01	856 (m)	399.0 -> 99.0	51.3	27.9	83.6

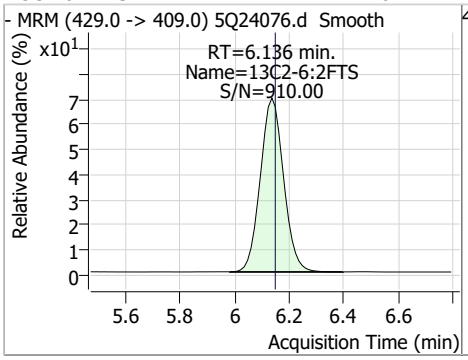


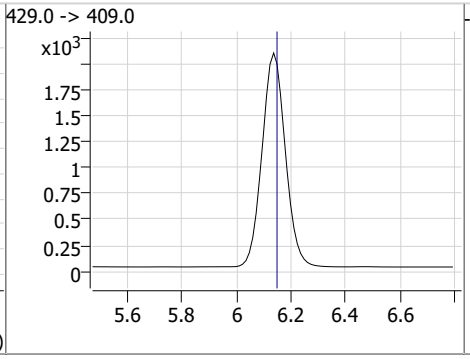


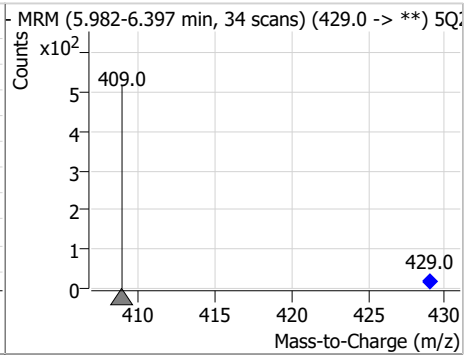




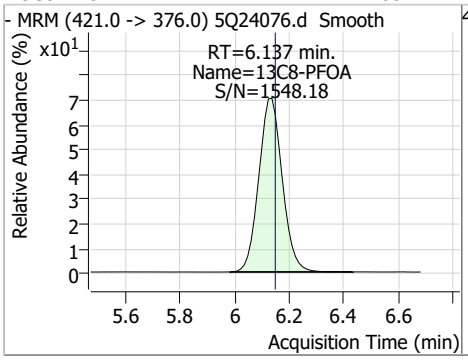
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	1.67	6.14	-0.01	12247				

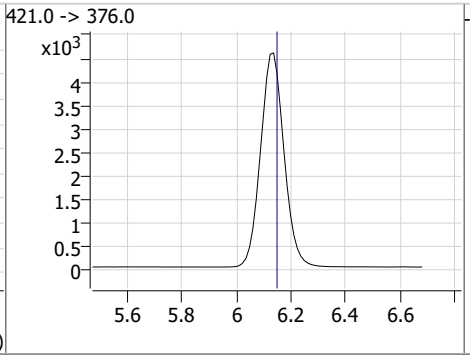


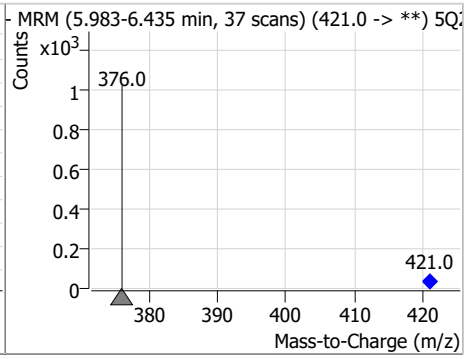




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	1.65	6.14	-0.01	27335				

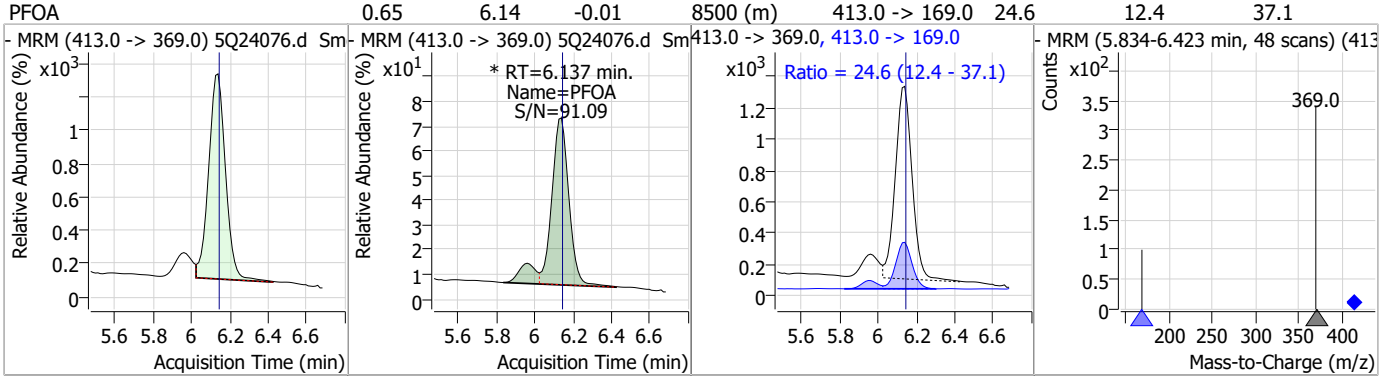




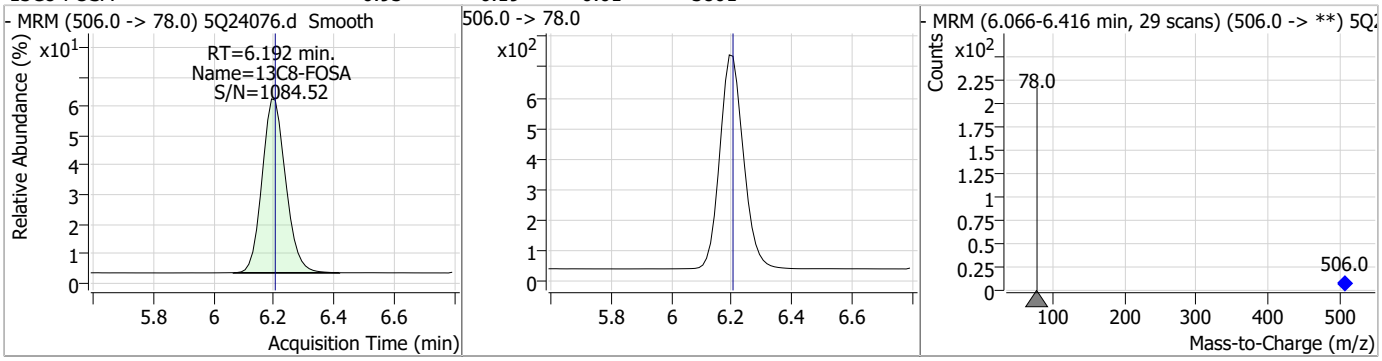


Perfluorinated Compounds by LC/MS/MS

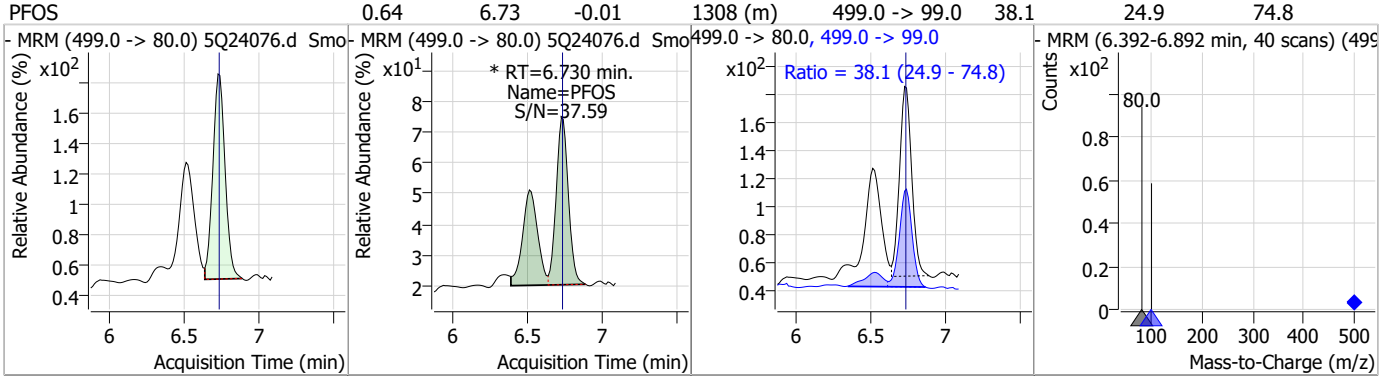
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	0.65	6.14	-0.01	8500 (m)	413.0 -> 169.0	24.6	12.4	37.1



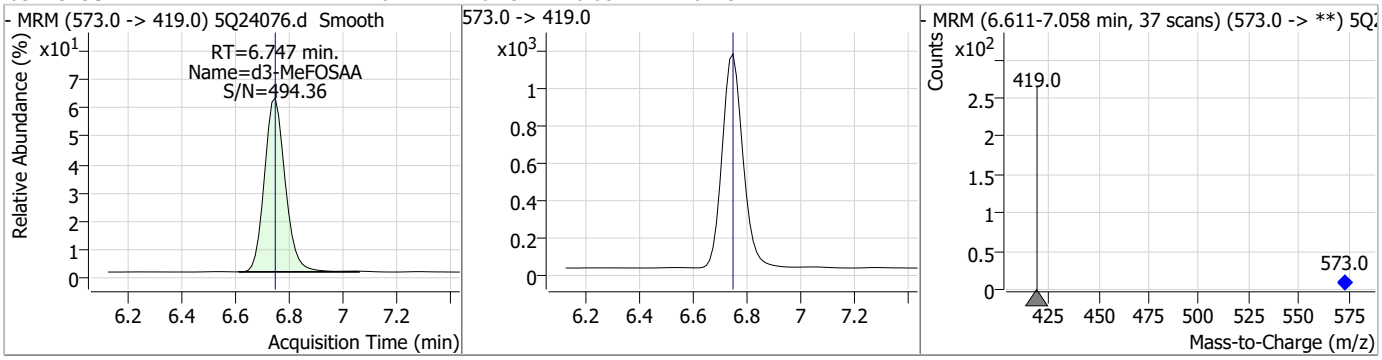
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	0.93	6.19	-0.01	3801				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	0.64	6.73	-0.01	1308 (m)	499.0 -> 99.0	38.1	24.9	74.8

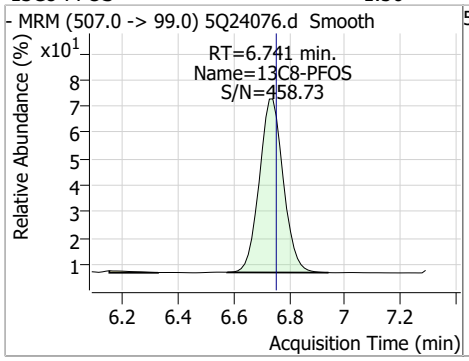


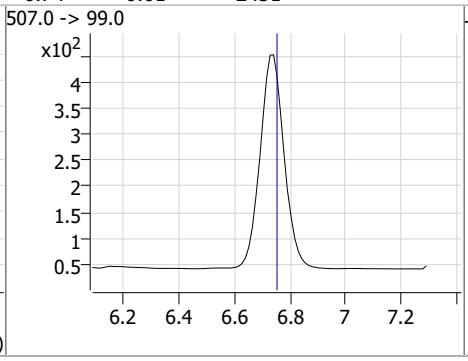
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	1.82	6.75	0.00	6115				

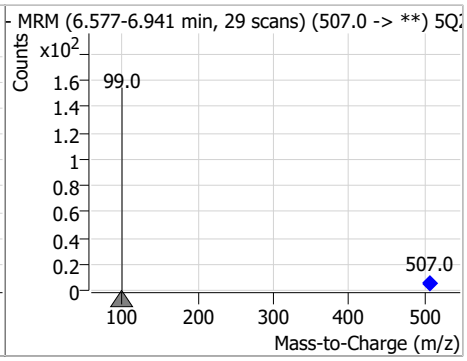


Perfluorinated Compounds by LC/MS/MS

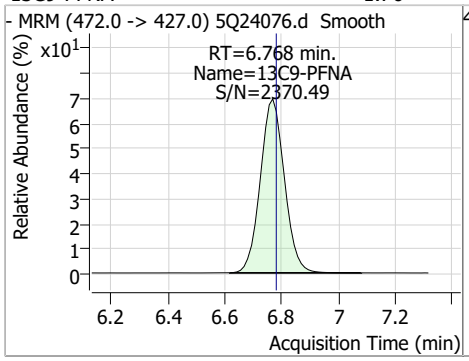
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	1.56	6.74	-0.01	2451				

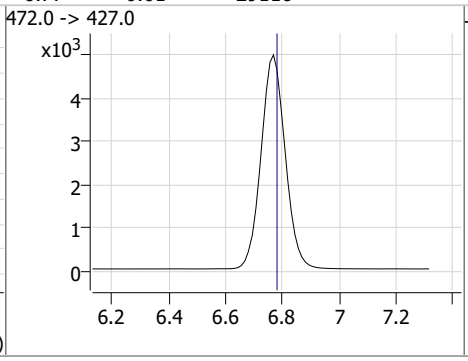


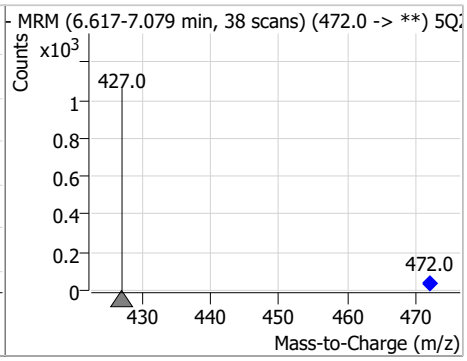




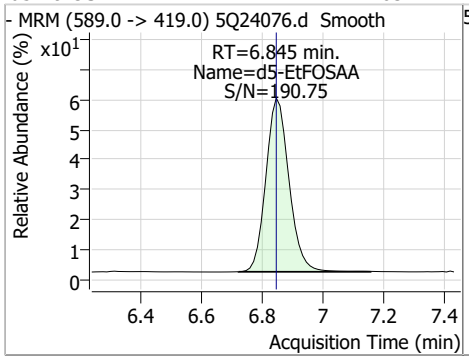
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.76	6.77	-0.01	29116				

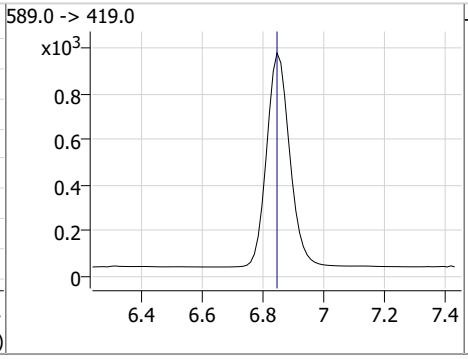


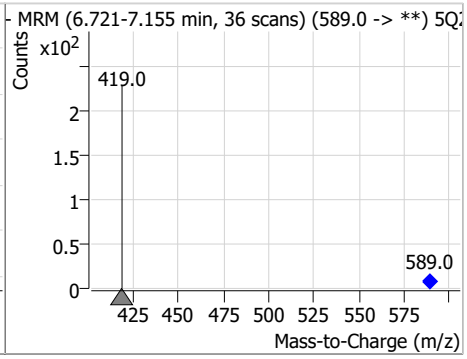




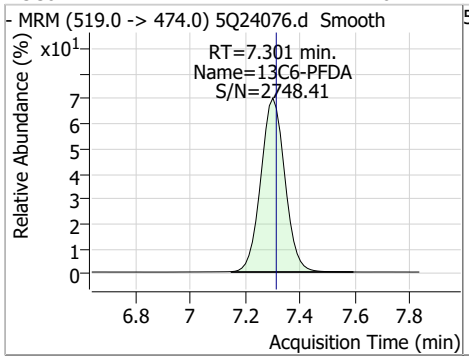
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	1.63	6.85	0.00	4955				

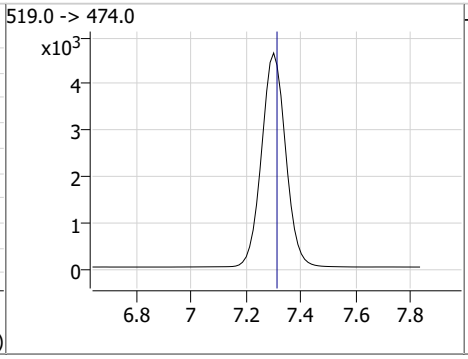


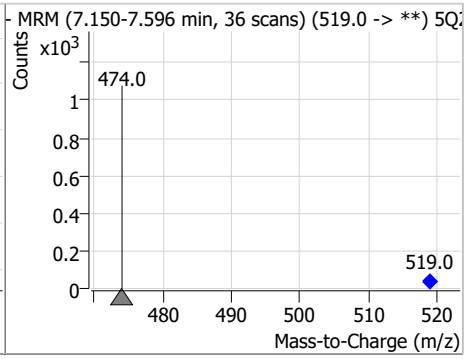




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	1.64	7.30	-0.01	28333				

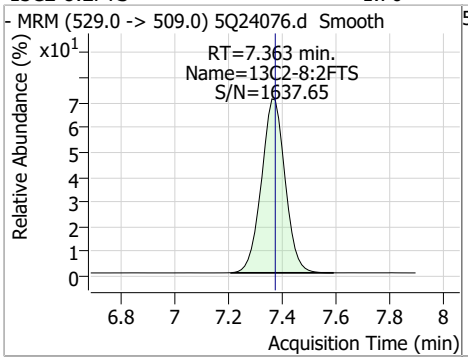


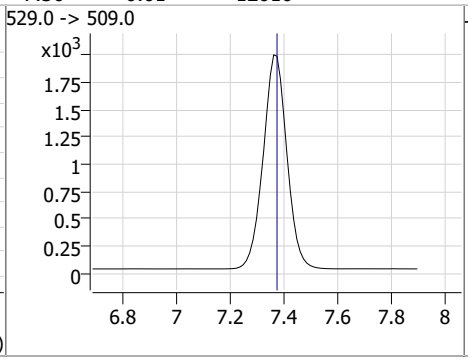


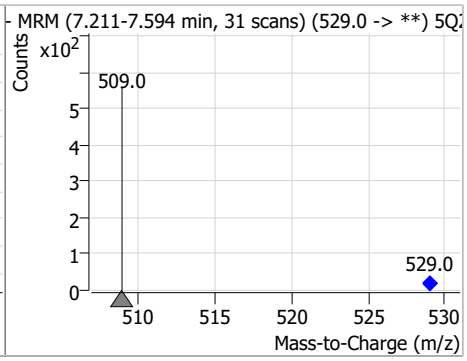


Perfluorinated Compounds by LC/MS/MS

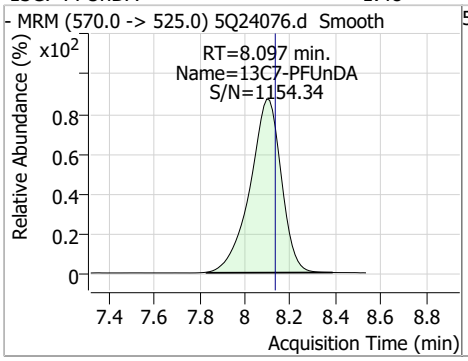
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	1.70	7.36	-0.01	12016				

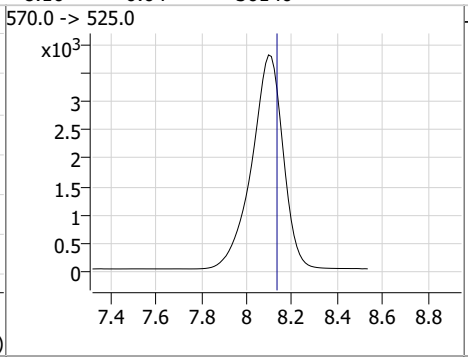


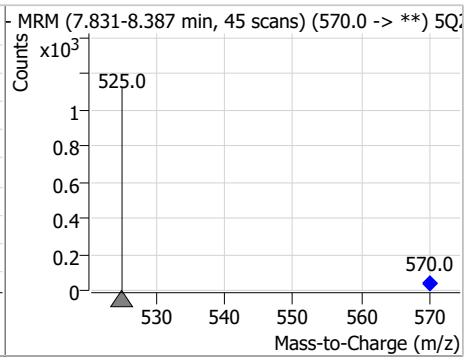




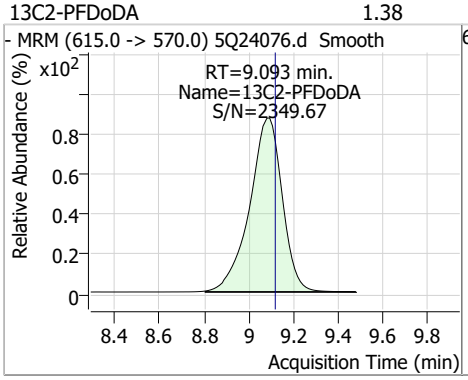
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.48	8.10	-0.04	36140				

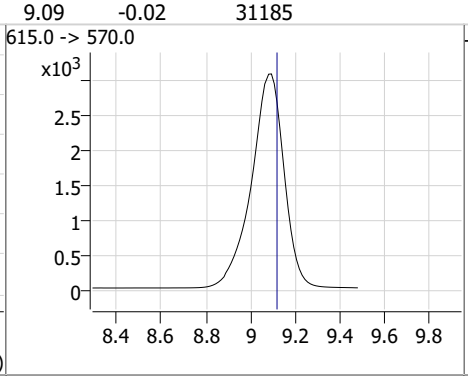


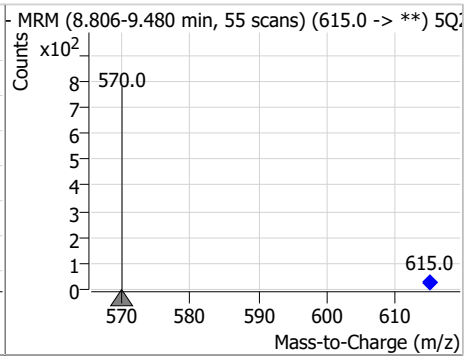




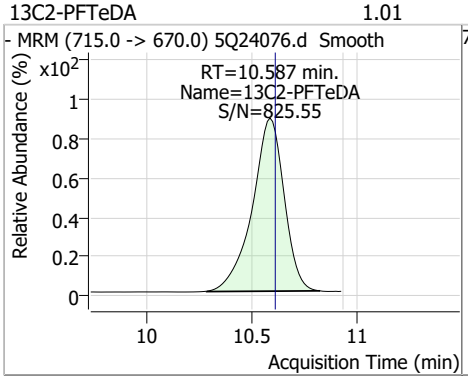
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.38	9.09	-0.02	31185				

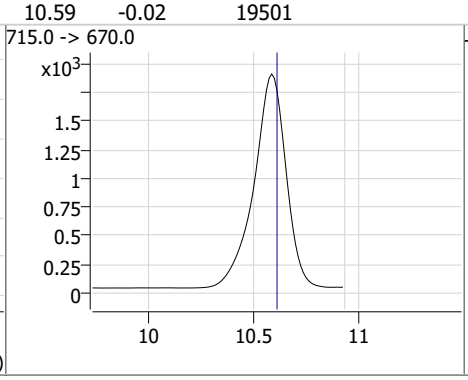


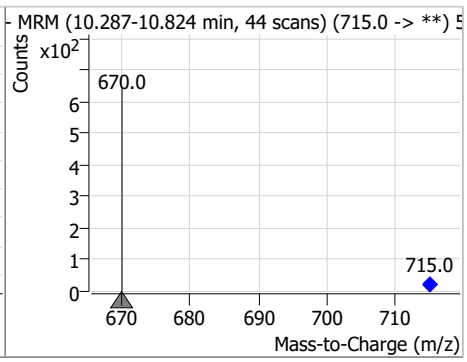




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.01	10.59	-0.02	19501				







Manual Integration Approval Summary

Sample Number: FC12099-4
Lab FileID: 5Q24076.D
Injection Time: 01/03/24 06:52
Method: EPA 537M QSM5.3 B-15
Analyst approved: 01/03/24 16:21 Lindsay Ritner
Supervisor approved: 01/04/24 13:35 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluoroheptanoic acid	375-85-9		5.41	Split peak
Perfluorohexanesulfonic acid	355-46-4		5.43	Split peak
Perfluorooctanoic acid	335-67-1		6.14	Split peak
Perfluorooctanesulfonic acid	1763-23-1		6.73	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Natasha Gumtie 01/02/24 14:27

Perfluorinated Compounds by LC/MS/MS

Data File : 5Q23950.d
Operator : natashag
Acq. Method : 537_ID.m
Acq. Date-Time : 12/29/2023 2:08:40 AM
Sample Name : fc12099-5
Vial : P2-C7
DA Method File : ID_122823_S5Q375.quantmethod.xml
Batch Name : s5q375.batch.bin
Sample Information : OP835,S5Q375,120,,,1.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.975	217.0 -> 172.0	52459	10.00	µg/L	-0.013
M5-PFPeA	3.419	268.0 -> 223.0	82487	10.00	µg/L	-0.012
M5-PFHxA	4.540	318.0 -> 273.0	123366	10.00	µg/L	-0.012
M4-PFHpA	5.413	367.0 -> 322.0	124786	10.00	µg/L	0.000
M8-PFOA	6.124	421.0 -> 376.0	161714	10.00	µg/L	0.000
M9-PFNA	6.756	472.0 -> 427.0	141522	10.00	µg/L	0.000
M6-PFDA	7.276	519.0 -> 474.0	126934	10.00	µg/L	-0.012
M7-PFUnDA	8.034	570.0 -> 525.0	150909	10.00	µg/L	-0.025
M2-PFDoDA	9.013	615.0 -> 570.0	126254	10.00	µg/L	-0.025
M2-PFTeDA	10.524	715.0 -> 670.0	116327	10.00	µg/L	-0.012
M8-FOSA	6.192	506.0 -> 78.0	32776	10.00	µg/L	0.000
M3-PFBS	3.612	302.0 -> 99.0	9603	10.00	µg/L	-0.025
M3-PFHxS	5.432	402.0 -> 99.0	10714	10.00	µg/L	0.000
M8-PFOS	6.716	507.0 -> 99.0	9982	10.00	µg/L	-0.012
M2-4:2FTS	4.461	329.0 -> 309.0	40945	10.00	µg/L	-0.012
M2-6:2FTS	6.122	429.0 -> 409.0	71031	10.00	µg/L	-0.013
M2-8:2FTS	7.351	529.0 -> 509.0	49499	10.00	µg/L	0.000
M3-MeFOSAA	6.735	573.0 -> 419.0	22628	10.00	µg/L	-0.012
M3-HFPO-DA	4.807	287.0 -> 169.0	6518	10.00	µg/L	-0.012
M3-MeFOSA	6.589	515.0 -> 169.0	1131	10.00	µg/L	0.000
M5-EtFOSAA	6.845	589.0 -> 419.0	19680	10.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.461	329.0 -> 309.0	40945	10.18	µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.8%		
13C2-6:2FTS	6.122	429.0 -> 409.0	71031	10.02	µg/L	-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.2%		
13C2-8:2FTS	7.351	529.0 -> 509.0	49499	7.09	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 70.9%		
13C2-PFDoDA	9.013	615.0 -> 570.0	126254	6.06	µg/L	-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 60.6%		
13C2-PFTeDA	10.524	715.0 -> 670.0	116327	6.56	µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 65.6%		
13C3-PFBS	3.612	302.0 -> 99.0	9603	9.89	µg/L	-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 98.9%		
13C3-PFHxS	5.432	402.0 -> 99.0	10714	9.08	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 90.8%		
13C4-PFBA	1.975	217.0 -> 172.0	52459	11.10	µg/L	-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 111.0%		
13C4-PFHpA	5.413	367.0 -> 322.0	124786	10.38	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 103.8%		
13C5-PFHxA	4.540	318.0 -> 273.0	123366	10.32	µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 103.2%		
13C5-PFPeA	3.419	268.0 -> 223.0	82487	10.46	µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 104.6%		
13C6-PFDA	7.276	519.0 -> 474.0	126934	7.54	µg/L	-0.012

Perfluorinated Compounds by LC/MS/MS

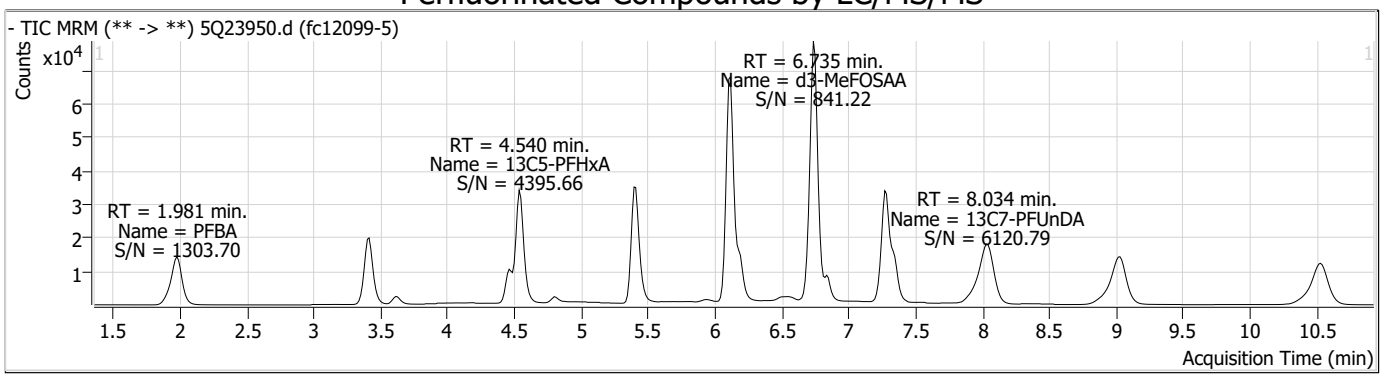
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 75.4%			
13C7-PFUnDA	8.034	570.0 -> 525.0	150909	6.47	µg/L		-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 64.7%			
13C8-FOSA	6.192	506.0 -> 78.0	32776	8.09	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 80.9%			
13C8-PFOA	6.124	421.0 -> 376.0	161714	9.77	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 97.7%			
13C8-PFOS	6.716	507.0 -> 99.0	9982	6.35	µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 63.5%			
13C9-PFNA	6.756	472.0 -> 427.0	141522	8.52	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 85.2%			
d3-MeFOSAA	6.735	573.0 -> 419.0	22628	7.42	µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 74.2%			
13C3-HFPO-DA	4.807	287.0 -> 169.0	6518	10.09	µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.9%			
d3-MeFOSA	6.589	515.0 -> 169.0	1131	0.81	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 8.1%			
d5-EtFOSAA	6.845	589.0 -> 419.0	19680	7.17	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 71.7%			
Target Compounds							QValue
4:2FTS	-	327.0 -> 307.0	-	N.D.			
		327.0 -> 81.0					
6:2FTS	-	427.0 -> 407.0	-	N.D.			
		427.0 -> 81.0					
8:2FTS	-	527.0 -> 507.0	-	N.D.			
		527.0 -> 81.0					
EtFOSAA	-	584.0 -> 419.0	-	N.D.			
		584.0 -> 483.0					
FOSA	-	498.0 -> 78.0	-	N.D.			
		498.0 -> 478.0					
MeFOSAA	-	570.0 -> 419.0	-	N.D.			
		570.0 -> 512.0					
PFBA	1.981	213.0 -> 169.0	32250	6.64	µg/L		100
PFBS	-	299.0 -> 80.0	-	N.D.			
		299.0 -> 99.0					
PFDA	7.276	513.0 -> 469.0	10654	0.88	µg/L	m	100
		513.0 -> 219.0	1865				
PFDoDA	-	613.0 -> 569.0	-	N.D.			
		613.0 -> 319.0					
PFDS	7.529	599.0 -> 80.0	0		µg/L	m	1
		599.0 -> 99.0	0				
PFHpA	5.413	363.0 -> 319.0	10677	0.75	µg/L		95
		363.0 -> 169.0	2513				
PFHpS	-	449.0 -> 80.0	-	N.D.			
		449.0 -> 99.0					
PFHxA	4.541	313.0 -> 269.0	11061	0.93	µg/L		99
		313.0 -> 119.0	495				
PFHxS	5.433	399.0 -> 80.0	349	0.18	µg/L	m	70
		399.0 -> 99.0	272				
PFNA	6.756	463.0 -> 419.0	101226	7.81	µg/L		99
		463.0 -> 219.0	21602				
PFNS	7.022	549.0 -> 80.0	254	0.22	µg/L	#m	53
		549.0 -> 99.0	61				
PFOA	6.125	413.0 -> 369.0	42067	2.65	µg/L	m	97
		413.0 -> 169.0	11056				
PFOS	6.718	499.0 -> 80.0	30331	17.14	µg/L	m	98

Perfluorinated Compounds by LC/MS/MS

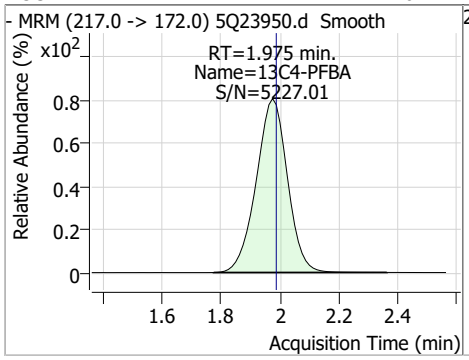
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		499.0 -> 99.0	14897			
PFPeA	3.422	263.0 -> 219.0	9998	1.25	µg/L	100
PFPeS	-	349.0 -> 80.0	-	N.D.		
		349.0 -> 99.0				
PFTeDA	-	713.0 -> 669.0	-	N.D.		
		713.0 -> 219.0				
PFTrDA	-	663.0 -> 619.0	-	N.D.		
		663.0 -> 369.0				
PFUnDA	-	563.0 -> 519.0	-	N.D.		
		563.0 -> 269.0				
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.		
		633.0 -> 453.0				
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.		
		533.0 -> 353.0				
ADONA	-	377.0 -> 251.0	-	N.D.		
		377.0 -> 85.0				
HFPO-DA	-	329.0 -> 169.0	-	N.D.		
		285.0 -> 169.0				
MeFOSA	-	512.0 -> 169.0	-	N.D.		
		512.0 -> 219.0				
4-PFECHS	-	461.0 -> 381.0	-	N.D.		
		461.0 -> 99.0				
FBSA	-	298.0 -> 78.0	-	N.D.		
		298.0 -> 64.0				
FHxSA	-	398.0 -> 78.0	-	N.D.		
		398.0 -> 64.0				

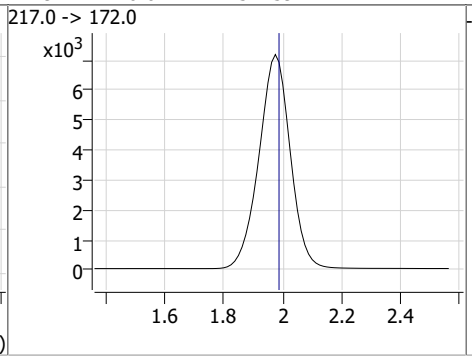
 # = Qualifier out of range, m = manually integrated, + = Area summed

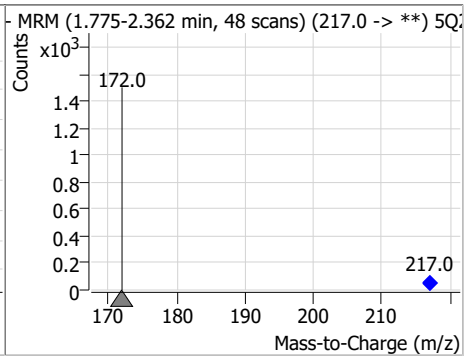
Perfluorinated Compounds by LC/MS/MS



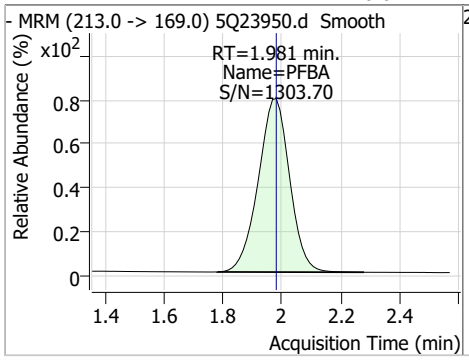
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	11.10	1.97	-0.01	52459				

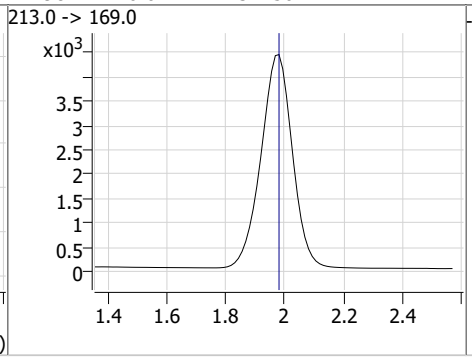


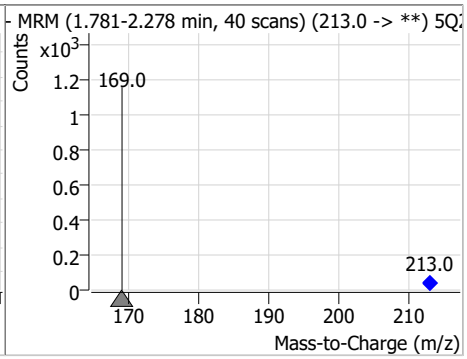




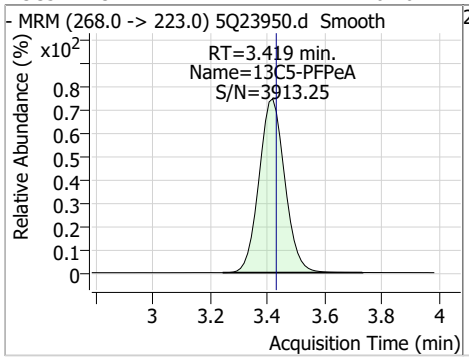
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	6.64	1.98	-0.01	32250				

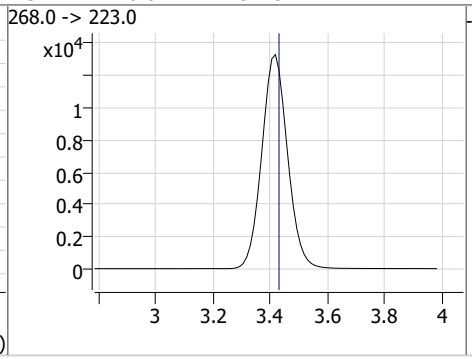


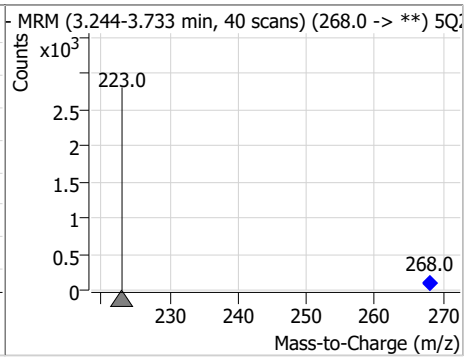




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	10.46	3.42	-0.01	82487				

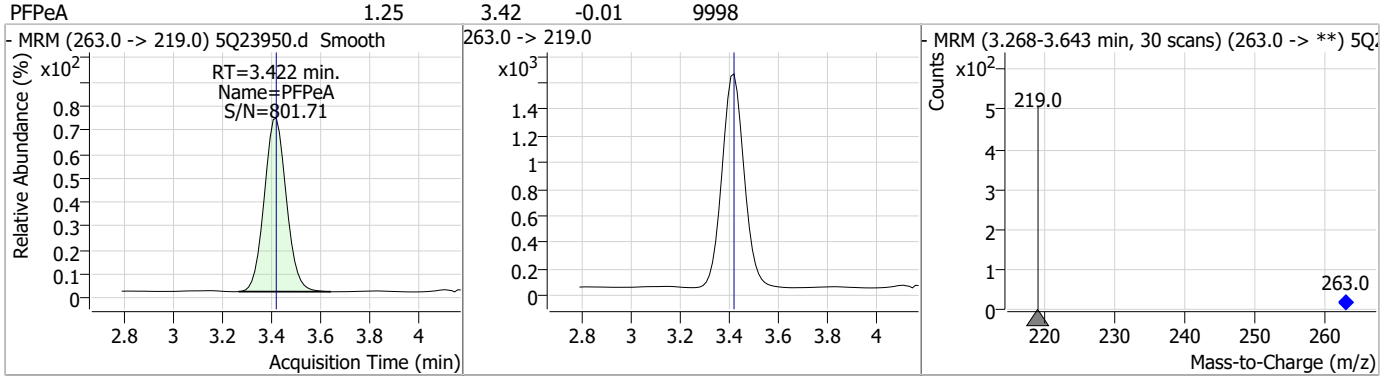




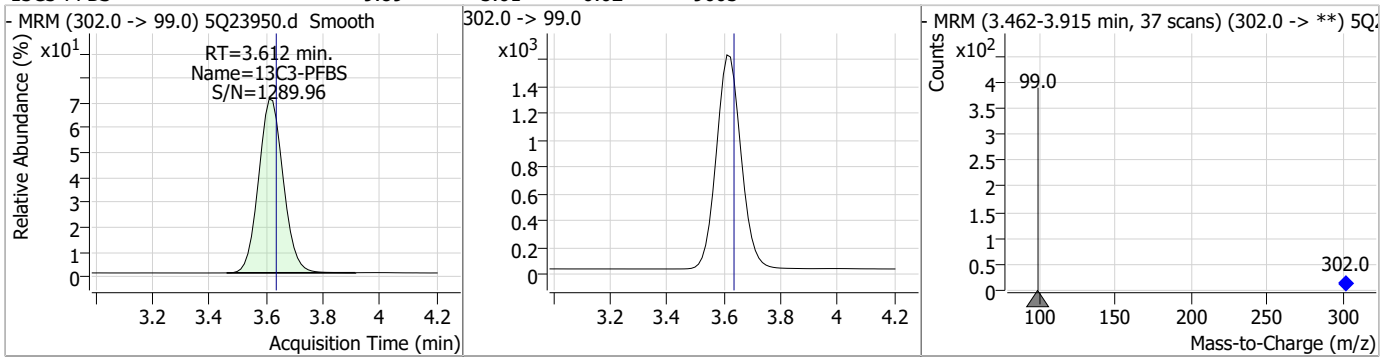


Perfluorinated Compounds by LC/MS/MS

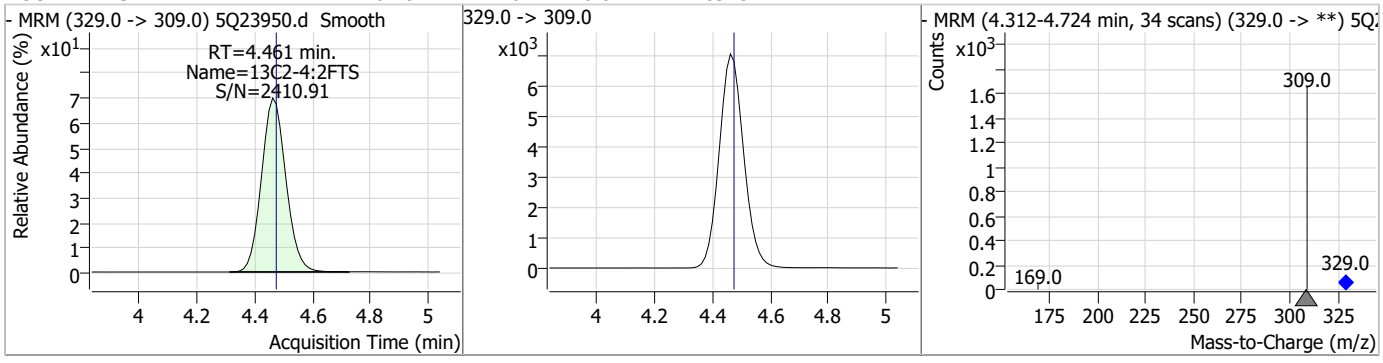
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	1.25	3.42	-0.01	9998				



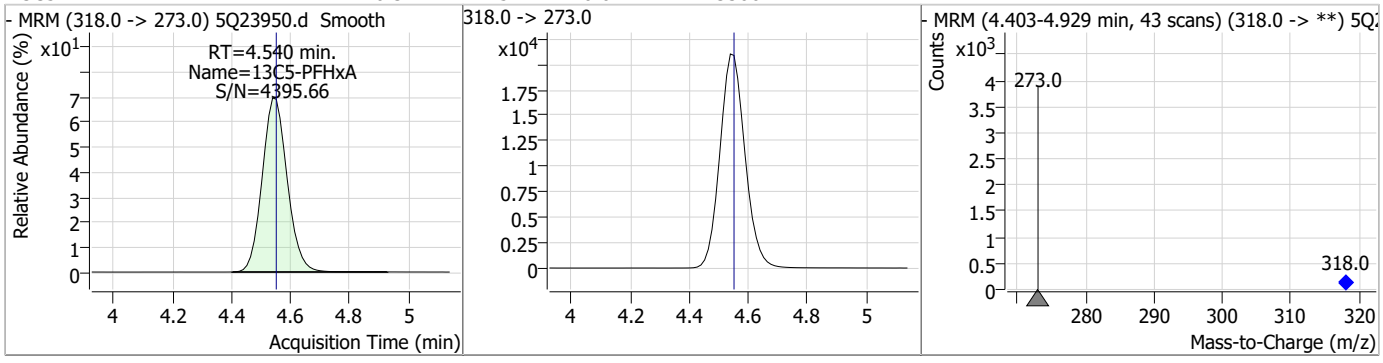
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	9.89	3.61	-0.02	9603				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	10.18	4.46	-0.01	40945				

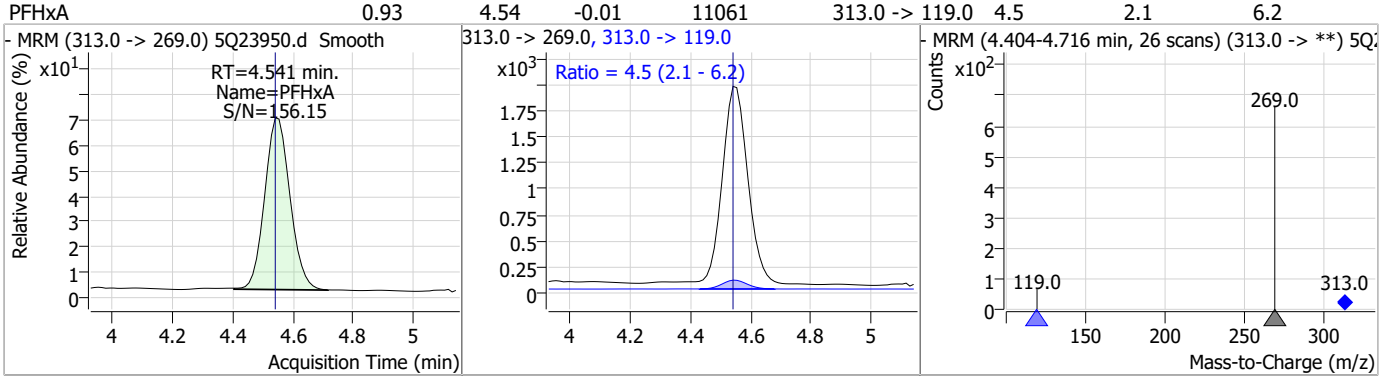


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	10.32	4.54	-0.01	123366				

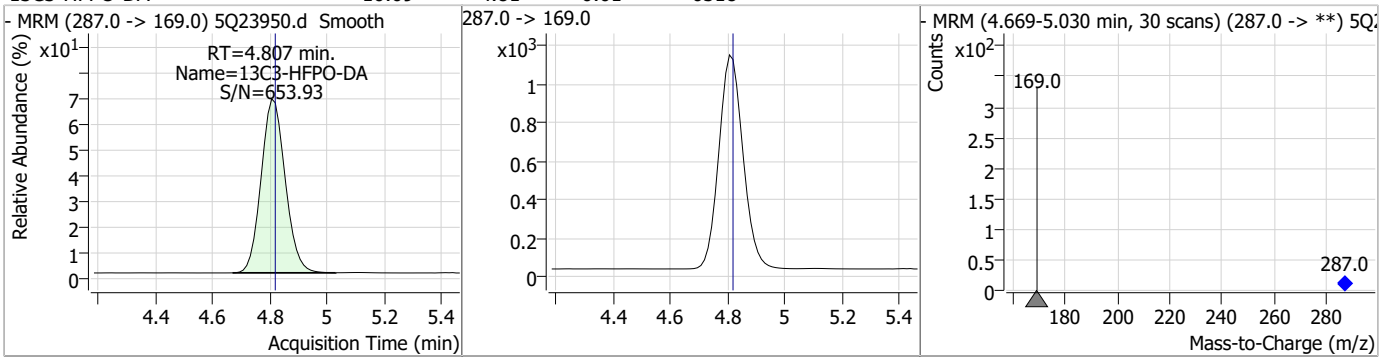


Perfluorinated Compounds by LC/MS/MS

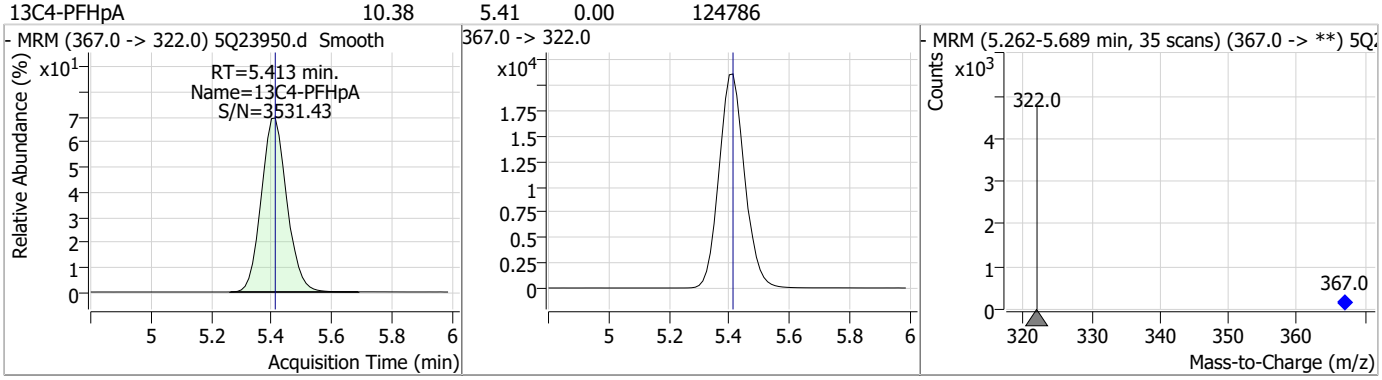
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	0.93	4.54	-0.01	11061	313.0 -> 119.0	4.5	2.1	6.2



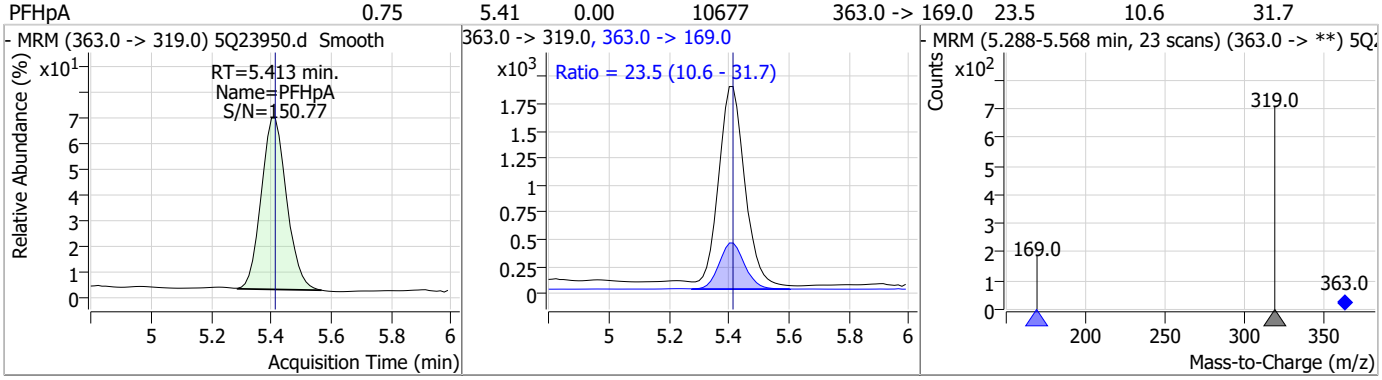
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	10.09	4.81	-0.01	6518				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	10.38	5.41	0.00	124786				

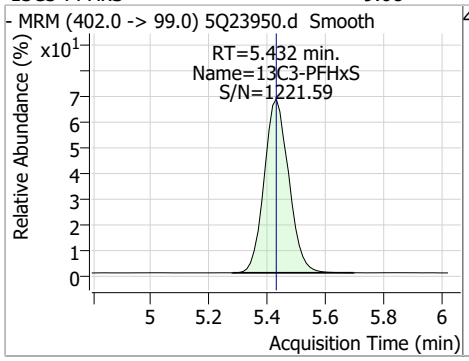


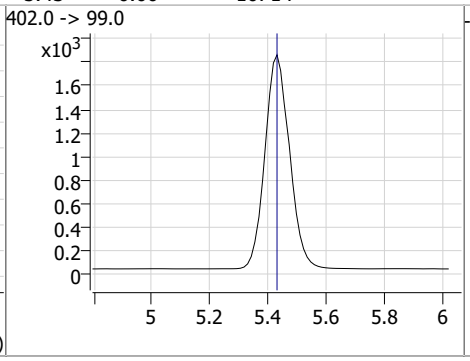
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	0.75	5.41	0.00	10677	363.0 -> 169.0	23.5	10.6	31.7

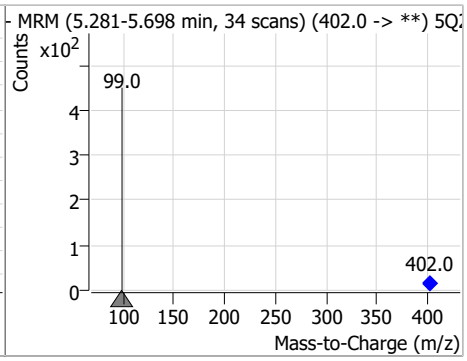


Perfluorinated Compounds by LC/MS/MS

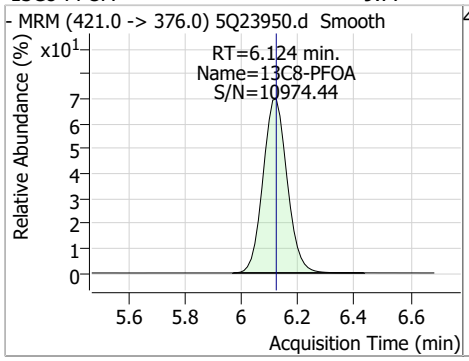
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	9.08	5.43	0.00	10714				

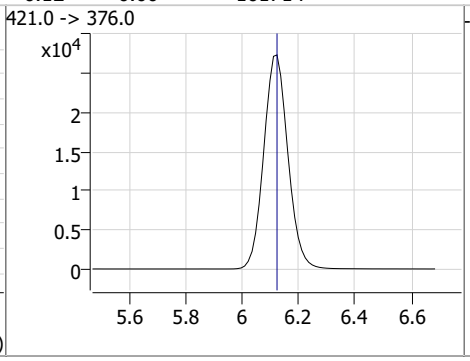


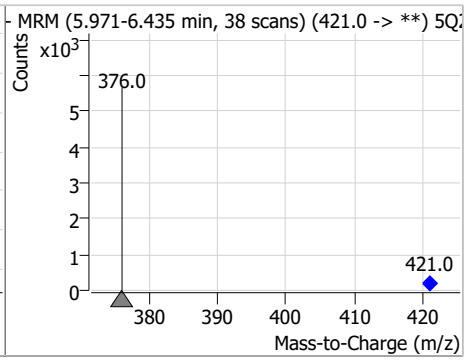




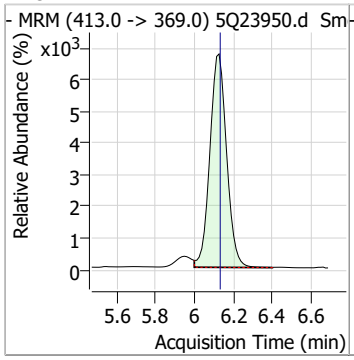
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	9.77	6.12	0.00	161714				

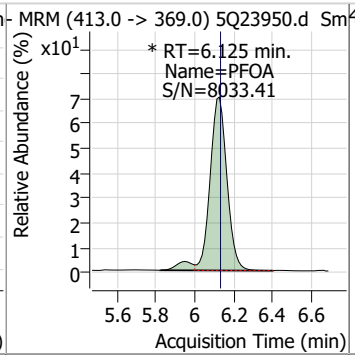


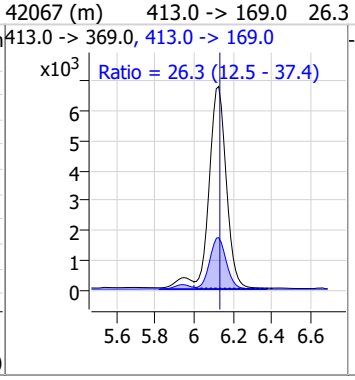


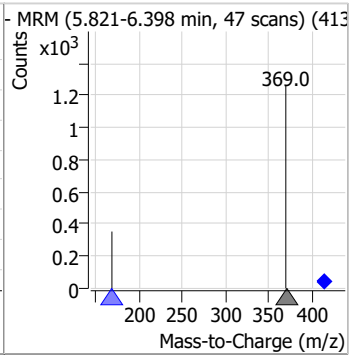


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	2.65	6.12	0.00	42067 (m)	413.0 -> 169.0	26.3	12.5	37.4

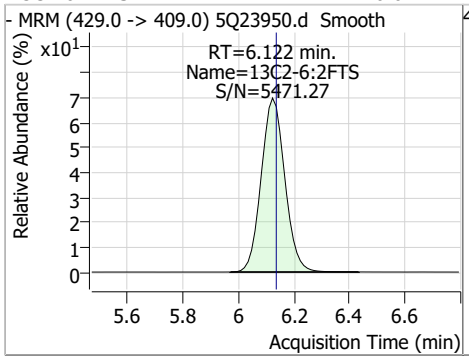


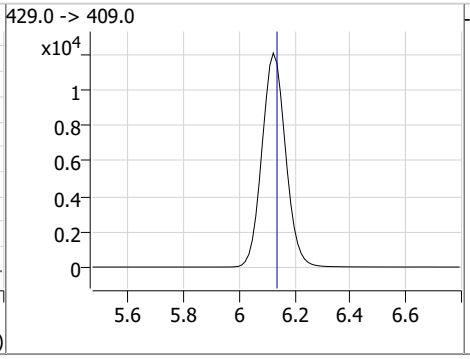


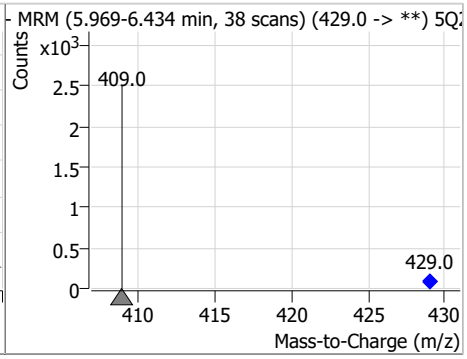




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	10.02	6.12	-0.01	71031				

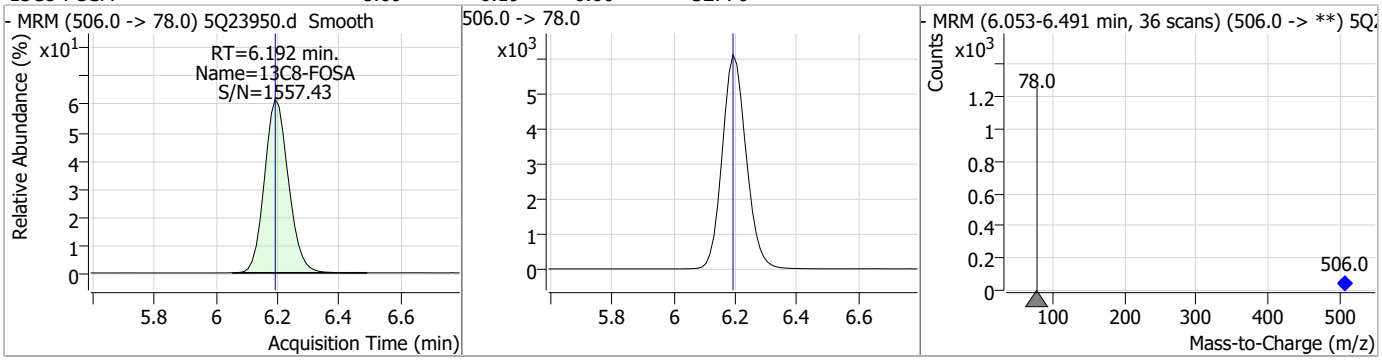




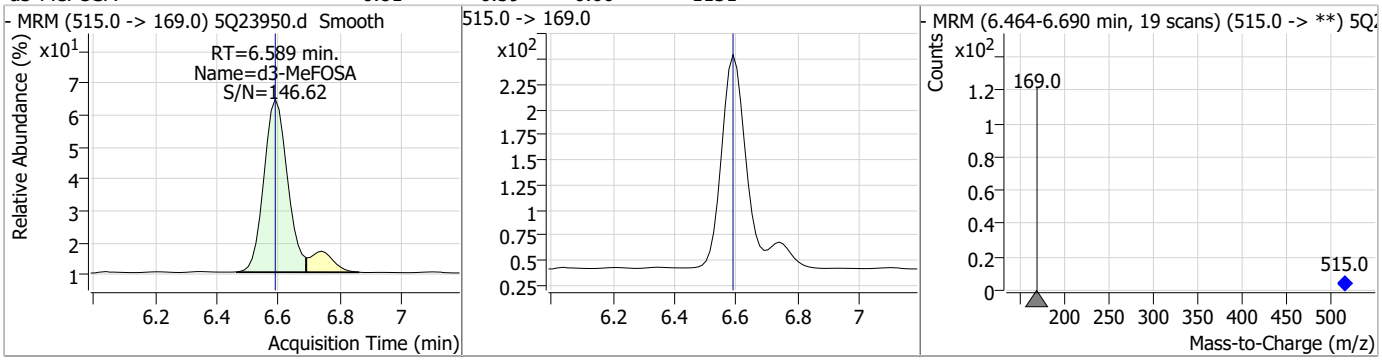


Perfluorinated Compounds by LC/MS/MS

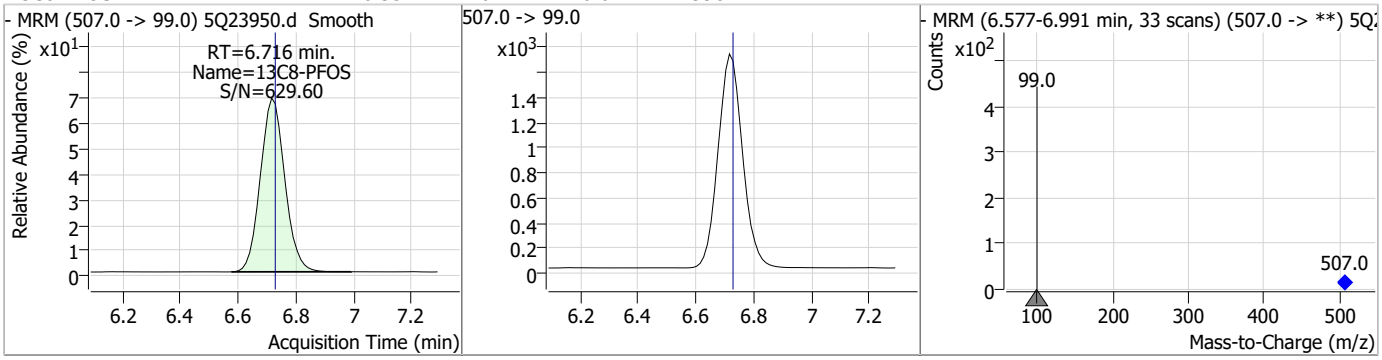
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	8.09	6.19	0.00	32776				



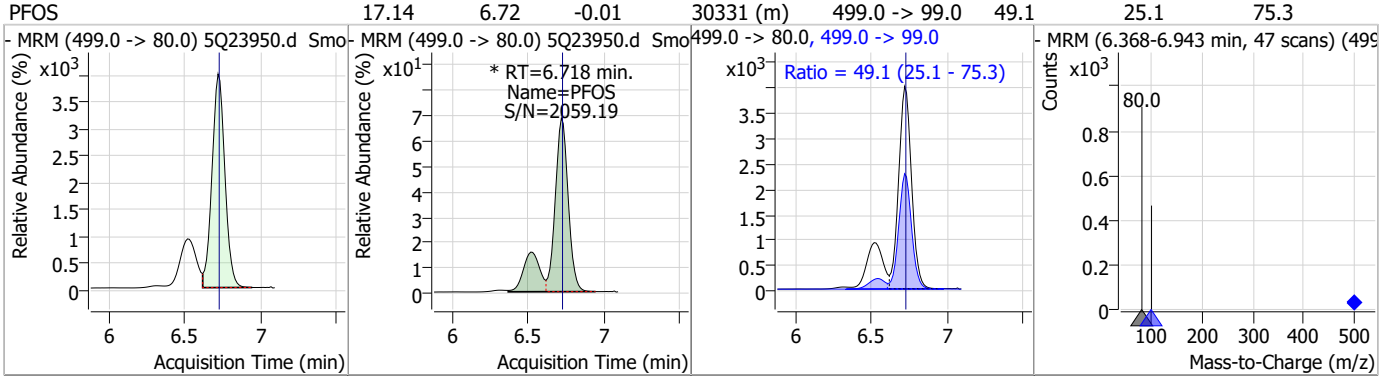
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	0.81	6.59	0.00	1131				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	6.35	6.72	-0.01	9982				

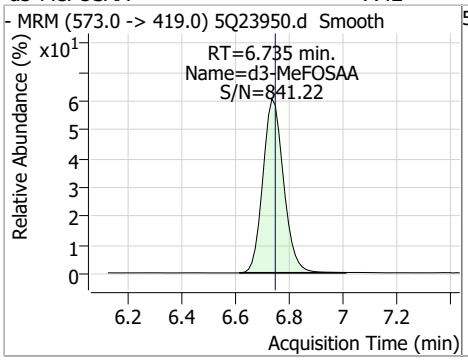


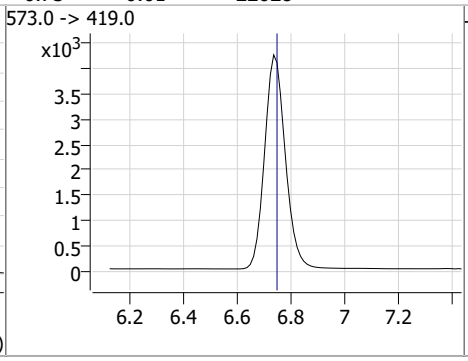
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	17.14	6.72	-0.01	30331 (m)	499.0 -> 99.0	49.1	25.1	75.3

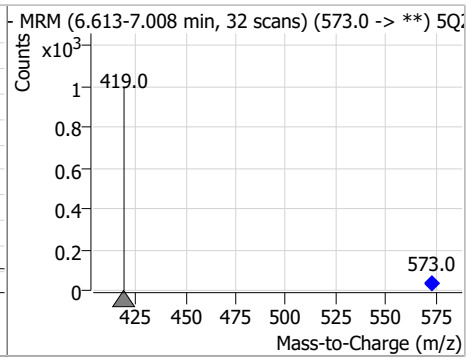


Perfluorinated Compounds by LC/MS/MS

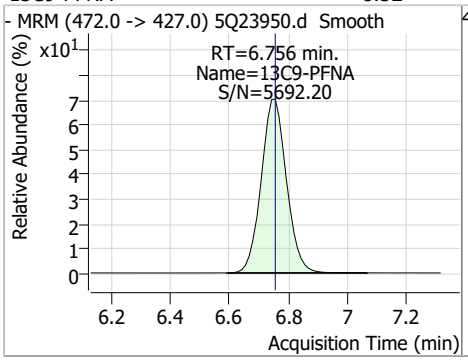
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	7.42	6.73	-0.01	22628				

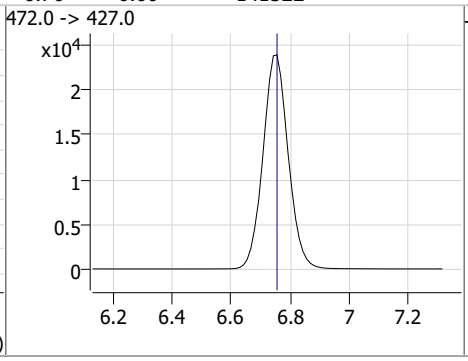


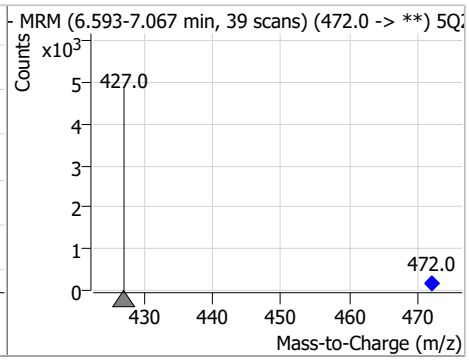




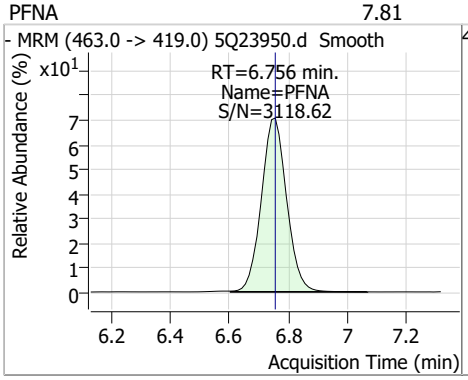
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	8.52	6.76	0.00	141522				

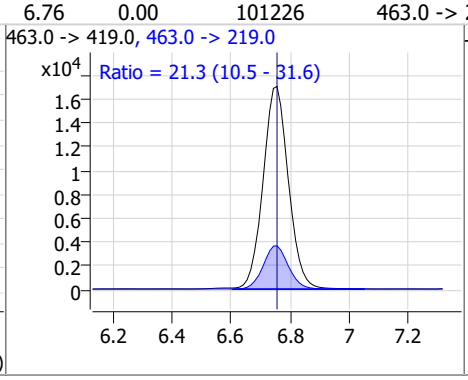


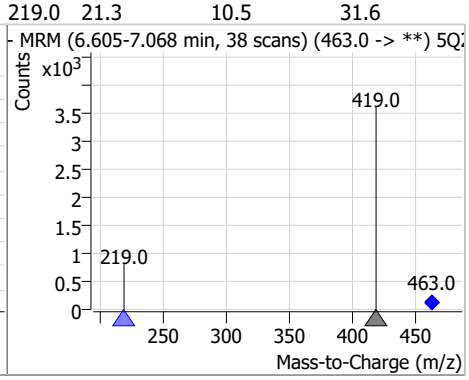




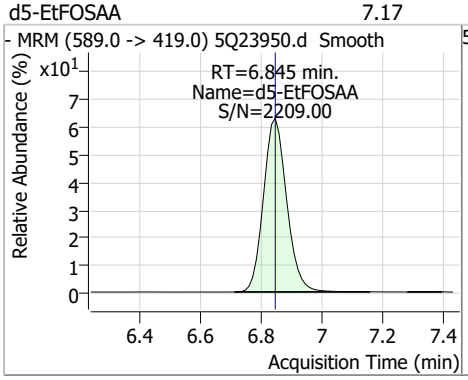
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	7.81	6.76	0.00	101226	463.0 -> 219.0	21.3	10.5	31.6

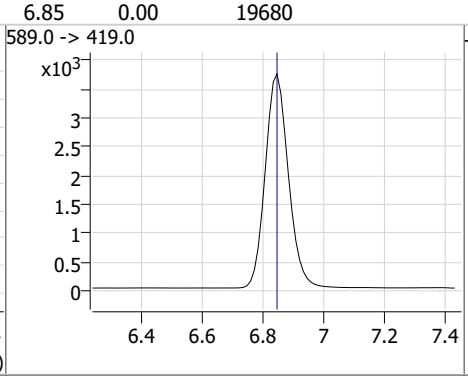


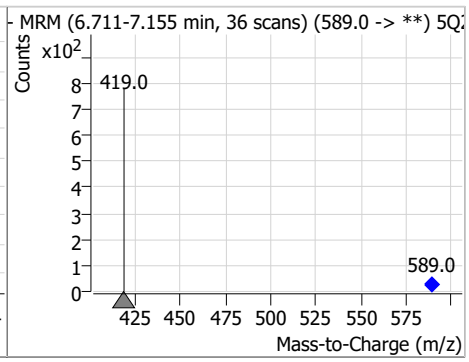




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	7.17	6.85	0.00	19680				

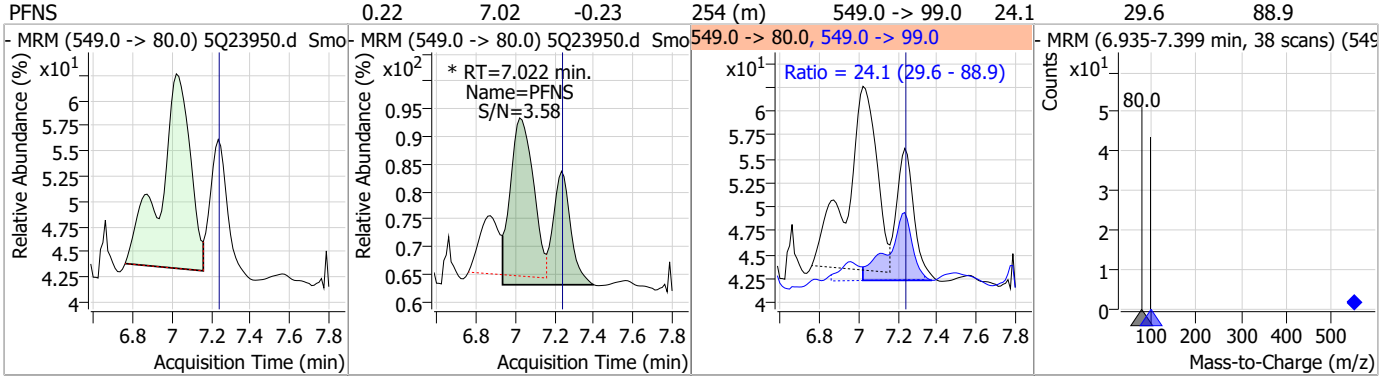




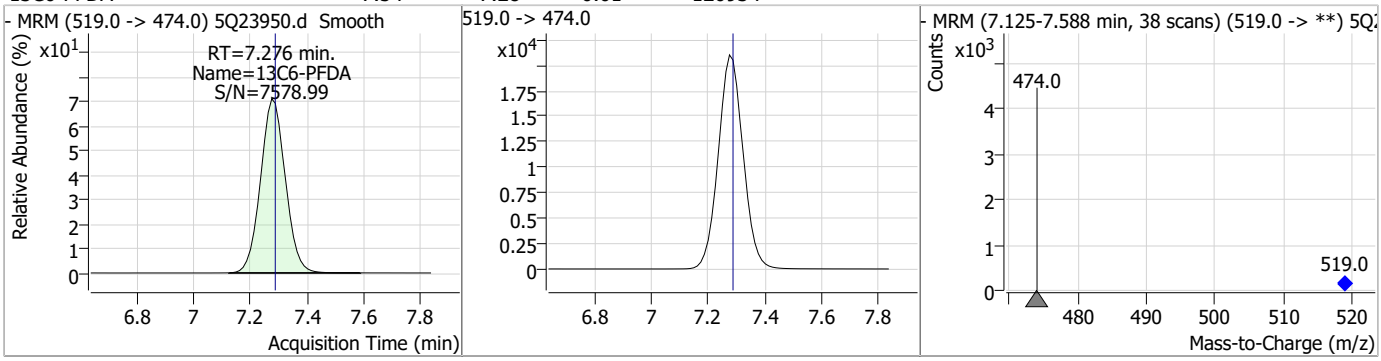


Perfluorinated Compounds by LC/MS/MS

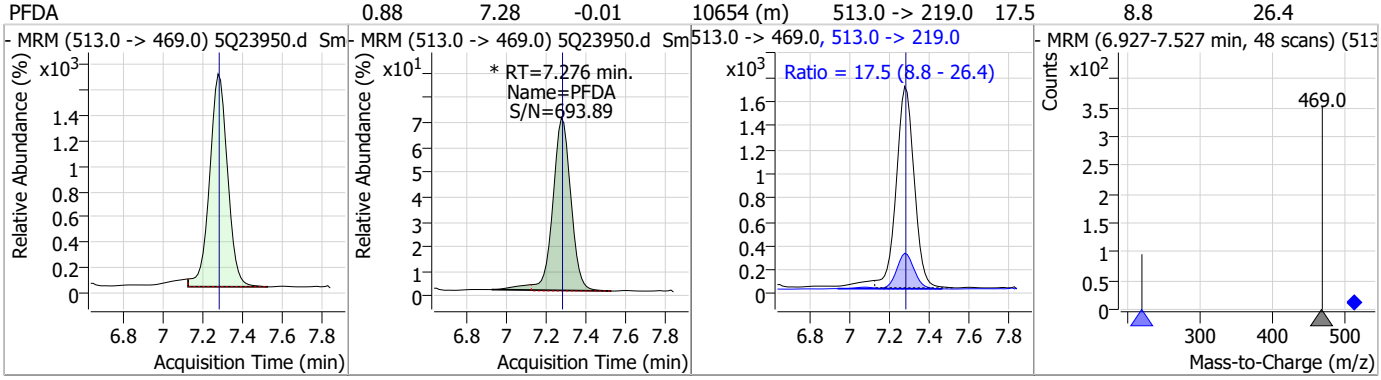
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	0.22	7.02	-0.23	254 (m)	549.0 -> 99.0	24.1	29.6	88.9



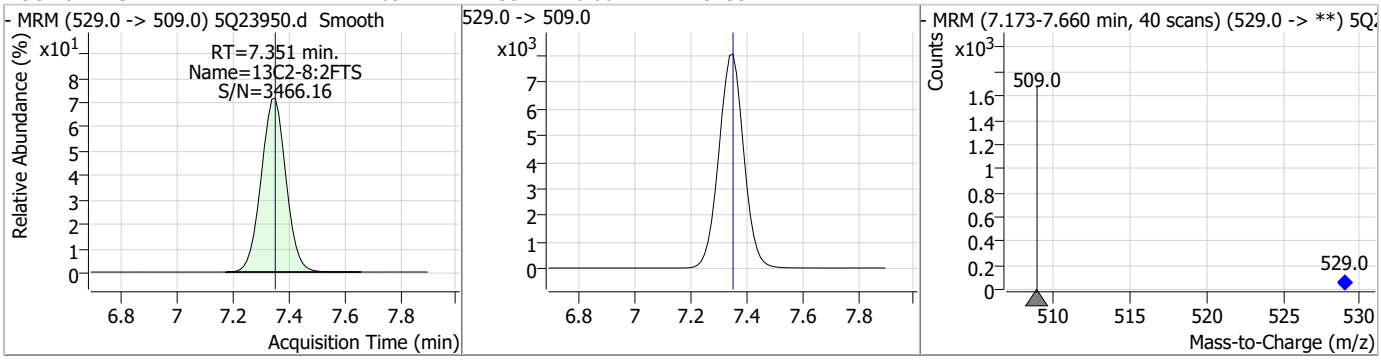
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	7.54	7.28	-0.01	126934				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	0.88	7.28	-0.01	10654 (m)	513.0 -> 219.0	17.5	8.8	26.4

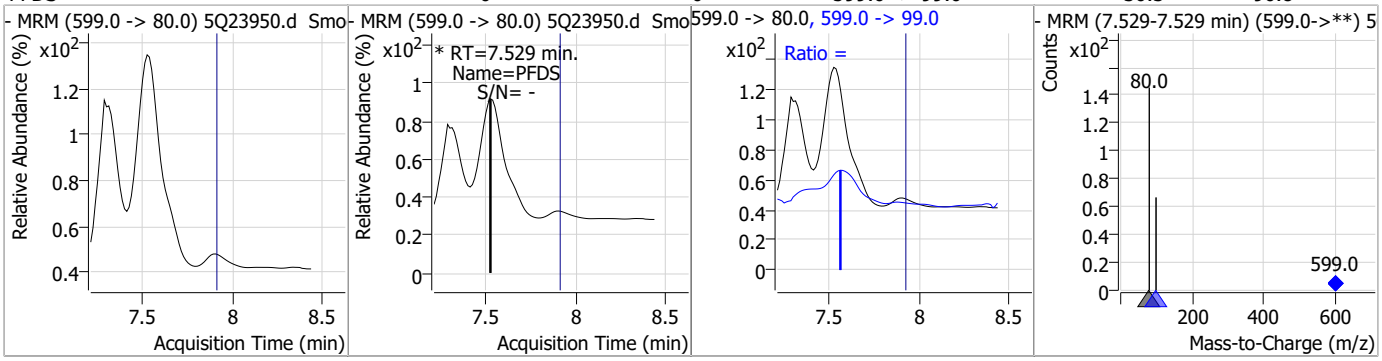


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	7.09	7.35	0.00	49499				

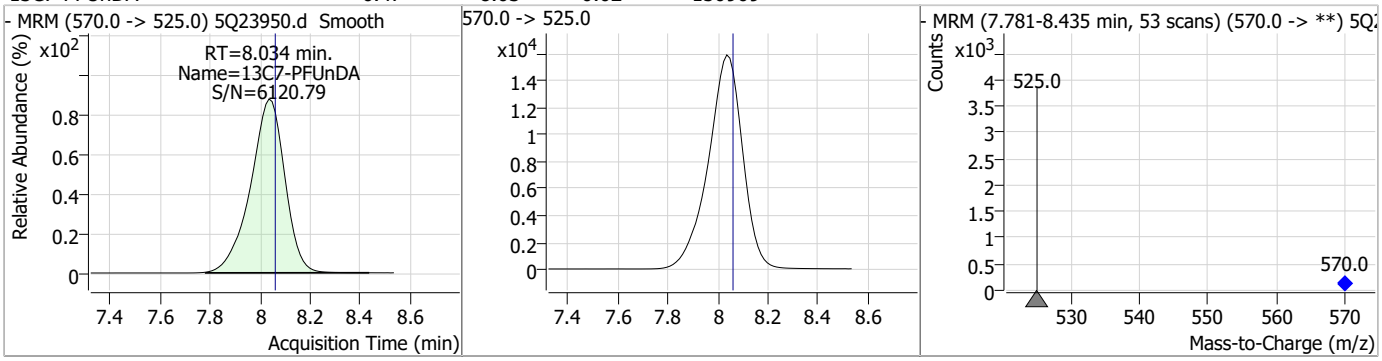


Perfluorinated Compounds by LC/MS/MS

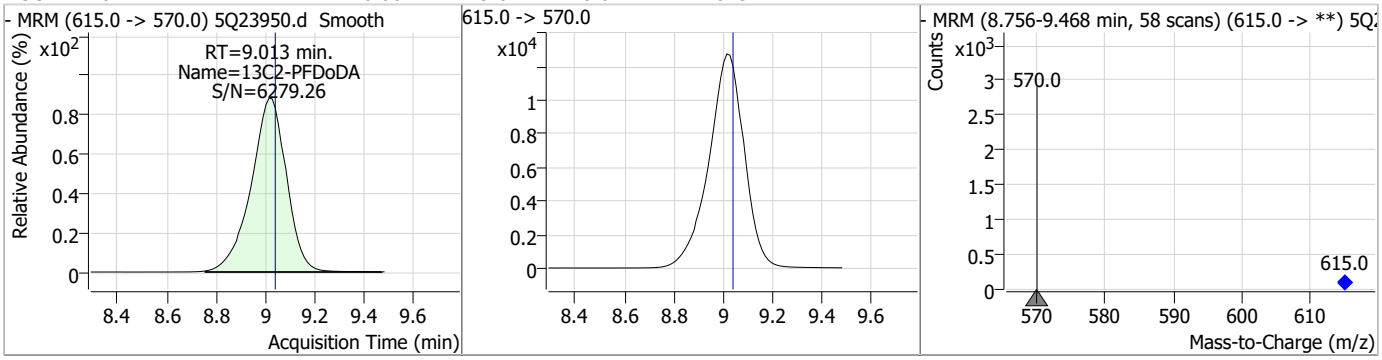
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS		0		0	599.0 -> 99.0		30.3	90.8



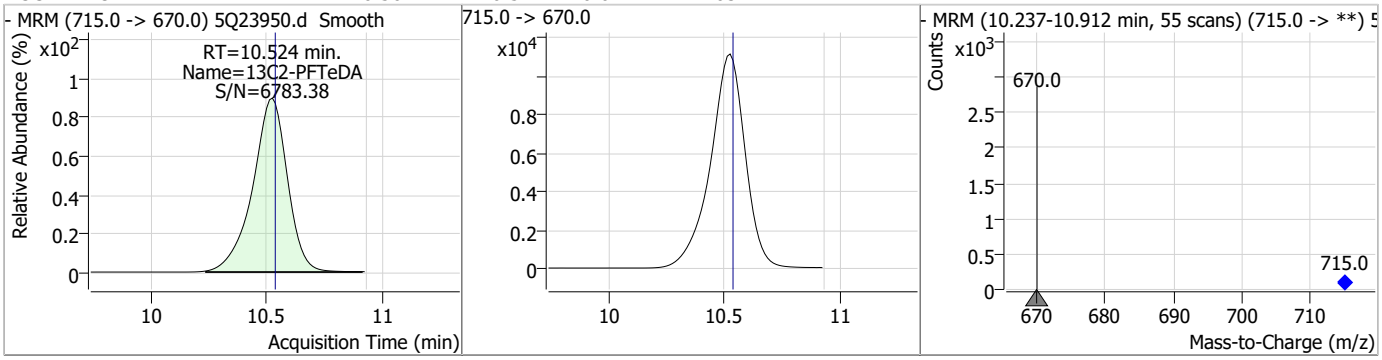
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	6.47	8.03	-0.02	150909				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	6.06	9.01	-0.02	126254				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	6.56	10.52	-0.01	116327				



Manual Integration Approval Summary

Sample Number: FC12099-5
Lab FileID: 5Q23950.D
Injection Time: 12/29/23 02:08
Method: EPA 537M QSM5.3 B-15
Analyst approved: 12/29/23 14:22 Lindsay Ritner
Supervisor approved: 01/02/24 14:27 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.43	Split peak
Perfluorooctanoic acid	335-67-1		6.12	Split peak
Perfluorooctanesulfonic acid	1763-23-1		6.72	Split peak
Perfluorononanesulfonic acid	68259-12-1		7.02	Split peak
Perfluorodecanoic acid	335-76-2		7.28	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Natasha Gumtie 01/04/24 13:36

Perfluorinated Compounds by LC/MS/MS

Data File : 5Q23951.d
Operator : natashag
Acq. Method : 537_ID.m
Acq. Date-Time : 12/29/2023 2:25:12 AM
Sample Name : fc12099-6
Vial : P2-C8
DA Method File : ID_122823_S5Q375.quantmethod.xml
Batch Name : s5q375.batch.bin
Sample Information : OP835,S5Q375,120,,,1.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.962	217.0 -> 172.0	48859	10.00	µg/L	-0.025
M5-PFPeA	3.407	268.0 -> 223.0	69027	10.00	µg/L	-0.025
M5-PFHxA	4.540	318.0 -> 273.0	102652	10.00	µg/L	-0.012
M4-PFHpA	5.400	367.0 -> 322.0	97334	10.00	µg/L	-0.012
M8-PFOA	6.112	421.0 -> 376.0	127596	10.00	µg/L	-0.012
M9-PFNA	6.744	472.0 -> 427.0	124967	10.00	µg/L	-0.012
M6-PFDA	7.276	519.0 -> 474.0	137117	10.00	µg/L	-0.012
M7-PFUnDA	8.034	570.0 -> 525.0	201837	10.00	µg/L	-0.025
M2-PFDoDA	9.013	615.0 -> 570.0	185202	10.00	µg/L	-0.025
M2-PFTeDA	10.524	715.0 -> 670.0	148724	10.00	µg/L	-0.012
M8-FOSA	6.192	506.0 -> 78.0	17979	10.00	µg/L	0.000
M3-PFBS	3.612	302.0 -> 99.0	7653	10.00	µg/L	-0.025
M3-PFHxS	5.432	402.0 -> 99.0	8091	10.00	µg/L	0.000
M8-PFOS	6.716	507.0 -> 99.0	12122	10.00	µg/L	-0.012
M2-4:2FTS	4.461	329.0 -> 309.0	37938	10.00	µg/L	-0.012
M2-6:2FTS	6.122	429.0 -> 409.0	59967	10.00	µg/L	-0.013
M2-8:2FTS	7.338	529.0 -> 509.0	50938	10.00	µg/L	-0.012
M3-MeFOSAA	6.735	573.0 -> 419.0	28472	10.00	µg/L	-0.012
M3-HFPO-DA	4.807	287.0 -> 169.0	5435	10.00	µg/L	-0.012
M3-MeFOSA	6.589	515.0 -> 169.0	123	10.00	µg/L	0.000
M5-EtFOSAA	6.845	589.0 -> 419.0	24849	10.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.461	329.0 -> 309.0	37938	9.43	µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 94.3%		
13C2-6:2FTS	6.122	429.0 -> 409.0	59967	8.46	µg/L	-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 84.6%		
13C2-8:2FTS	7.338	529.0 -> 509.0	50938	7.29	µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 72.9%		
13C2-PFDoDA	9.013	615.0 -> 570.0	185202	8.88	µg/L	-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 88.8%		
13C2-PFTeDA	10.524	715.0 -> 670.0	148724	8.38	µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 83.8%		
13C3-PFBS	3.612	302.0 -> 99.0	7653	7.88	µg/L	-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 78.8%		
13C3-PFHxS	5.432	402.0 -> 99.0	8091	6.86	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 68.6%		
13C4-PFBA	1.962	217.0 -> 172.0	48859	10.34	µg/L	-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 103.4%		
13C4-PFHpA	5.400	367.0 -> 322.0	97334	8.09	µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 80.9%		
13C5-PFHxA	4.540	318.0 -> 273.0	102652	8.59	µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 85.9%		
13C5-PFPeA	3.407	268.0 -> 223.0	69027	8.76	µg/L	-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 87.6%		
13C6-PFDA	7.276	519.0 -> 474.0	137117	8.14	µg/L	-0.012

Perfluorinated Compounds by LC/MS/MS

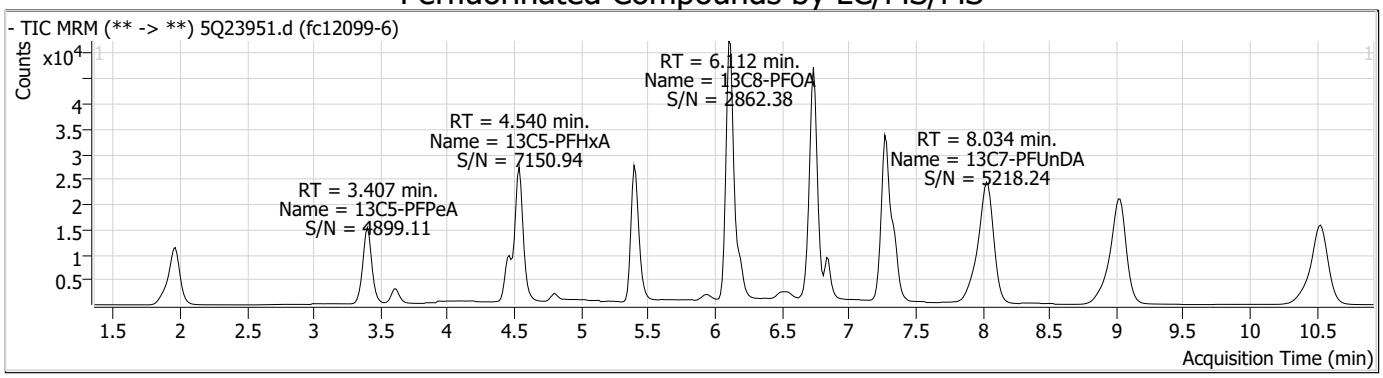
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 81.4%			
13C7-PFUnDA	8.034	570.0 -> 525.0	201837	8.66	µg/L		-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 86.6%			
13C8-FOSA	6.192	506.0 -> 78.0	17979	4.44	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 44.4%			
13C8-PFOA	6.112	421.0 -> 376.0	127596	7.71	µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 77.1%			
13C8-PFOS	6.716	507.0 -> 99.0	12122	7.71	µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 77.1%			
13C9-PFNA	6.744	472.0 -> 427.0	124967	7.53	µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 75.3%			
d3-MeFOSAA	6.735	573.0 -> 419.0	28472	9.34	µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 93.4%			
13C3-HFPO-DA	4.807	287.0 -> 169.0	5435	8.42	µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 84.2%			
d3-MeFOSA	6.589	515.0 -> 169.0	123	0.09	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 0.9%			
d5-EtFOSAA	6.845	589.0 -> 419.0	24849	9.05	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 90.5%			
Target Compounds							QValue
4:2FTS	-	327.0 -> 307.0	-	N.D.			
		327.0 -> 81.0					
6:2FTS	-	427.0 -> 407.0	-	N.D.			
		427.0 -> 81.0					
8:2FTS	-	527.0 -> 507.0	-	N.D.			
		527.0 -> 81.0					
EtFOSAA	-	584.0 -> 419.0	-	N.D.			
		584.0 -> 483.0					
FOSA	-	498.0 -> 78.0	-	N.D.			
		498.0 -> 478.0					
MeFOSAA	-	570.0 -> 419.0	-	N.D.			
		570.0 -> 512.0					
PFBA	1.956	213.0 -> 169.0	22945	5.07	µg/L		100
PFBS	3.615	299.0 -> 80.0	3734	1.97	µg/L		99
		299.0 -> 99.0	1667				
PFDA	-	513.0 -> 469.0	-	N.D.			
		513.0 -> 219.0					
PFDoDA	-	613.0 -> 569.0	-	N.D.			
		613.0 -> 319.0					
PFDS	-	599.0 -> 80.0	-	N.D.			
		599.0 -> 99.0					
PFHpA	5.401	363.0 -> 319.0	6568	0.59	µg/L	m	98
		363.0 -> 169.0	1440				
PFHpS	-	449.0 -> 80.0	-	N.D.			
		449.0 -> 99.0					
PFHxA	4.541	313.0 -> 269.0	5646	0.57	µg/L		97
		313.0 -> 119.0	279				
PFHxS	5.433	399.0 -> 80.0	1552	1.03	µg/L	m	99
		399.0 -> 99.0	876				
PFNA	-	463.0 -> 419.0	-	N.D.			
		463.0 -> 219.0					
PFNS	-	549.0 -> 80.0	-	N.D.			
		549.0 -> 99.0					
PFOA	6.112	413.0 -> 369.0	26383	2.11	µg/L	m	93
		413.0 -> 169.0	7539				
PFOS	6.718	499.0 -> 80.0	27770	12.92	µg/L	m	97

Perfluorinated Compounds by LC/MS/MS

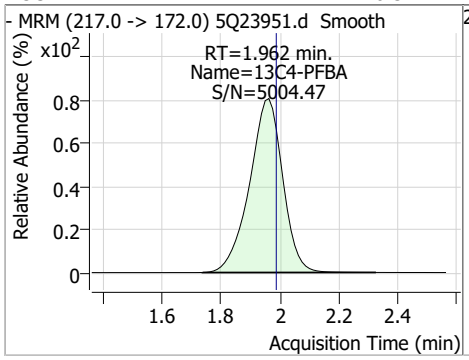
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		499.0 -> 99.0	13381			
PFPeA	3.409	263.0 -> 219.0	2845	0.43	µg/L	100
PFPeS	4.636	349.0 -> 80.0	206	0.15	µg/L	95
		349.0 -> 99.0	110			
PFTeDA	-	713.0 -> 669.0	-	N.D.		
		713.0 -> 219.0				
PFTrDA	-	663.0 -> 619.0	-	N.D.		
		663.0 -> 369.0				
PFUnDA	-	563.0 -> 519.0	-	N.D.		
		563.0 -> 269.0				
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.		
		633.0 -> 453.0				
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.		
		533.0 -> 353.0				
ADONA	-	377.0 -> 251.0	-	N.D.		
		377.0 -> 85.0				
HFPO-DA	-	329.0 -> 169.0	-	N.D.		
		285.0 -> 169.0				
MeFOSA	-	512.0 -> 169.0	-	N.D.		
		512.0 -> 219.0				
4-PFECHS	-	461.0 -> 381.0	-	N.D.		
		461.0 -> 99.0				
FBSA	-	298.0 -> 78.0	-	N.D.		
		298.0 -> 64.0				
FHxSA	-	398.0 -> 78.0	-	N.D.		
		398.0 -> 64.0				

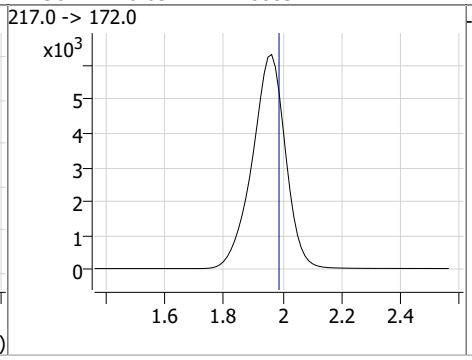
 # = Qualifier out of range, m = manually integrated, + = Area summed

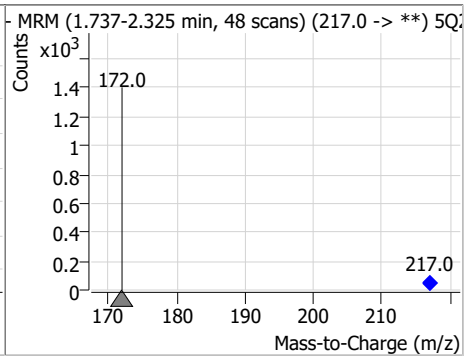
Perfluorinated Compounds by LC/MS/MS



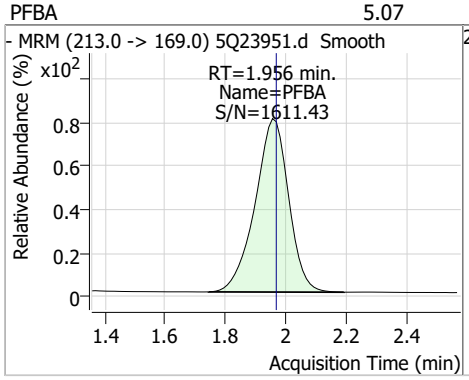
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	10.34	1.96	-0.03	48859				

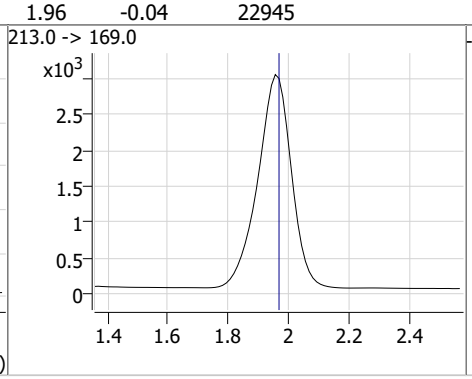


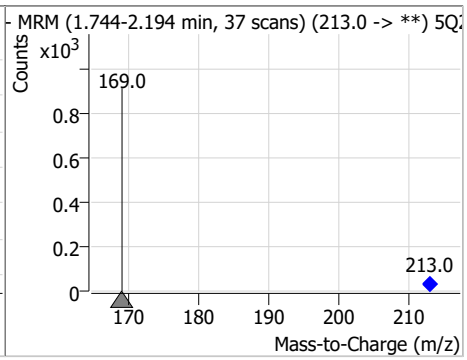




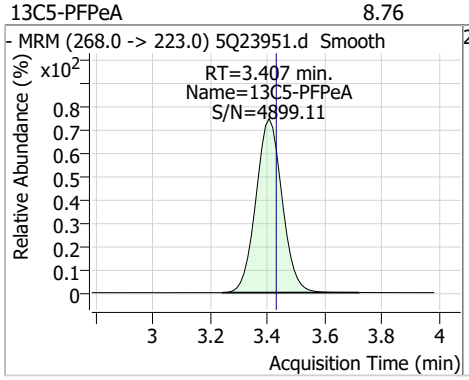
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	5.07	1.96	-0.04	22945				

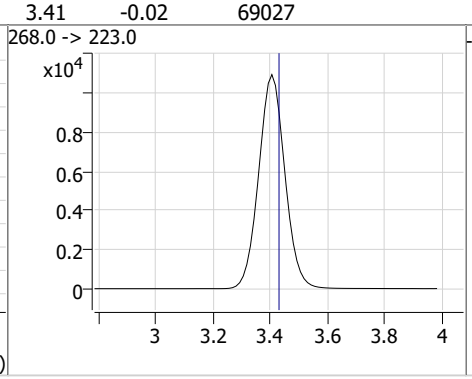


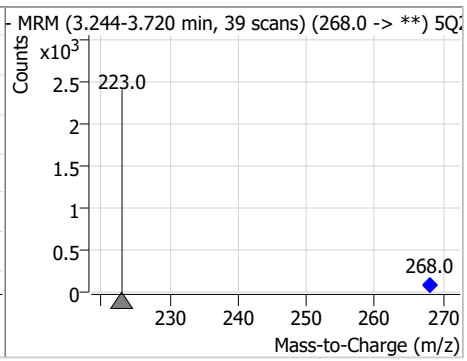




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	8.76	3.41	-0.02	69027				

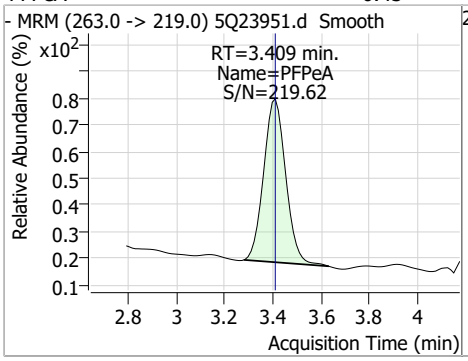


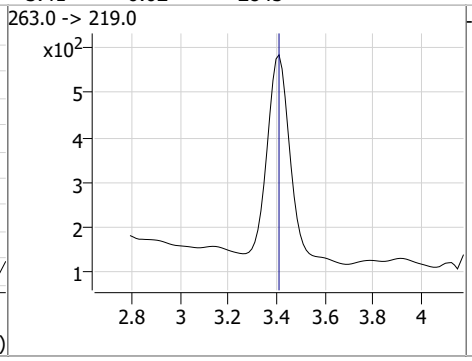


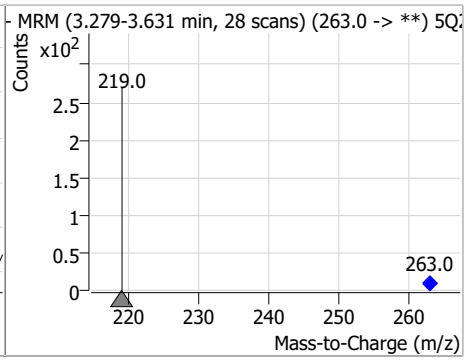


Perfluorinated Compounds by LC/MS/MS

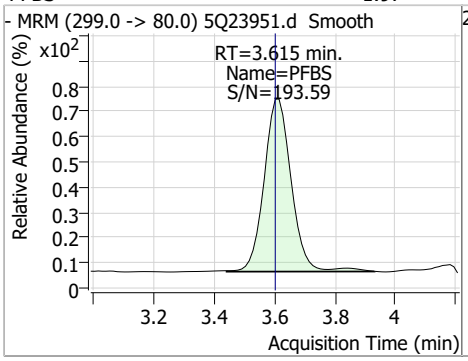
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	0.43	3.41	-0.02	2845				

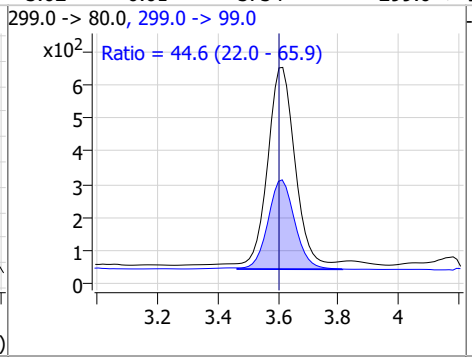


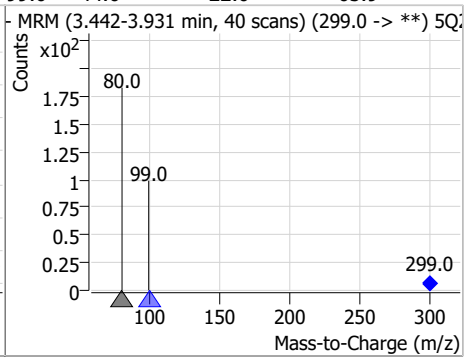




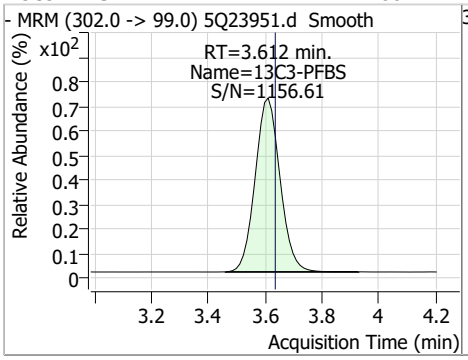
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	1.97	3.62	-0.01	3734	299.0 -> 99.0	44.6	22.0	65.9

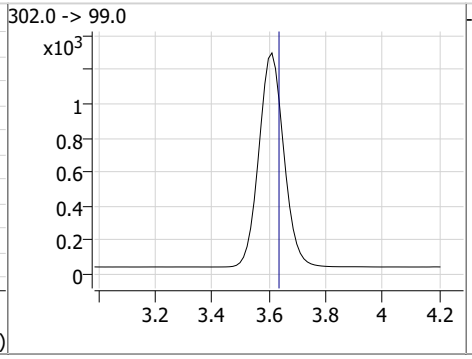


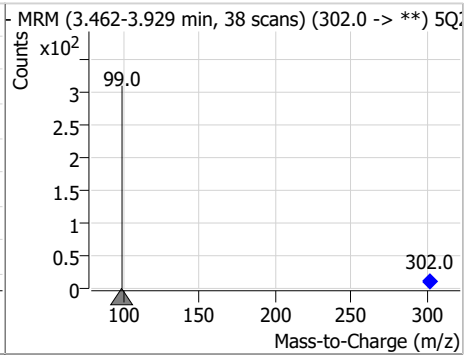




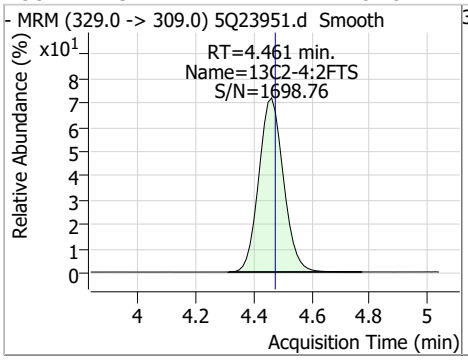
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	7.88	3.61	-0.02	7653				

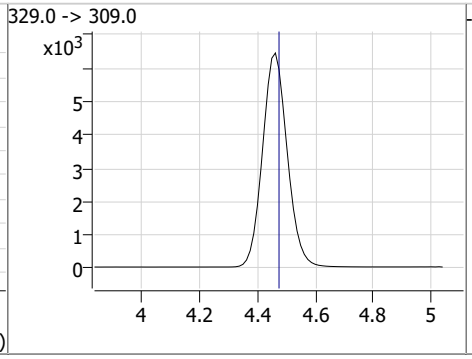


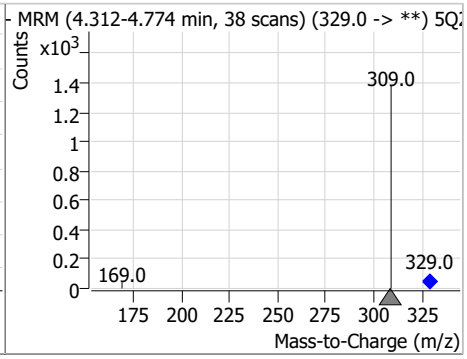




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	9.43	4.46	-0.01	37938				

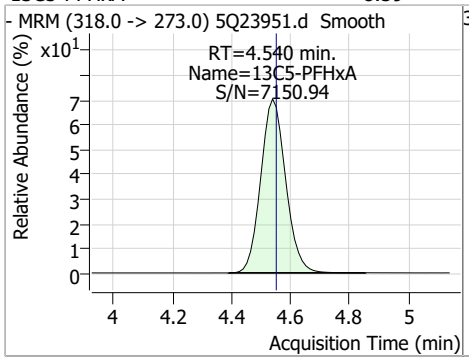


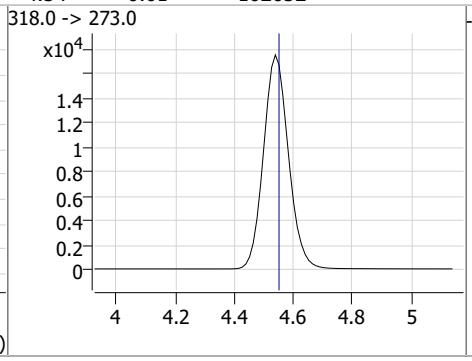


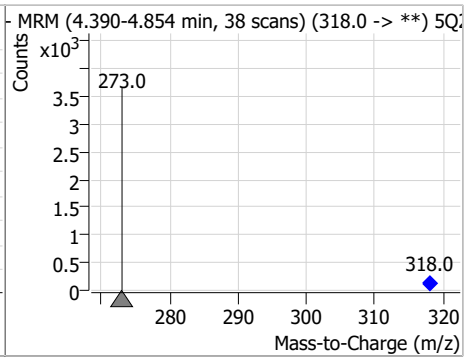


Perfluorinated Compounds by LC/MS/MS

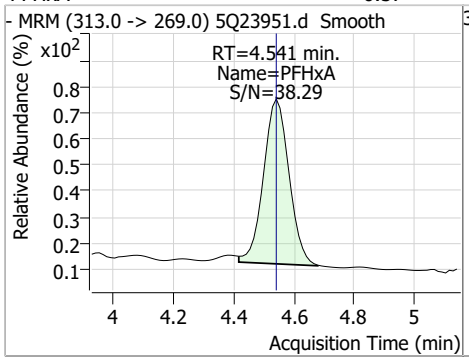
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	8.59	4.54	-0.01	102652				

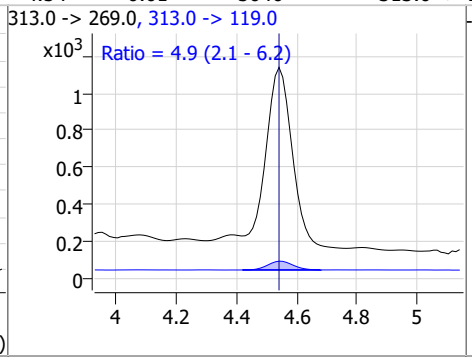


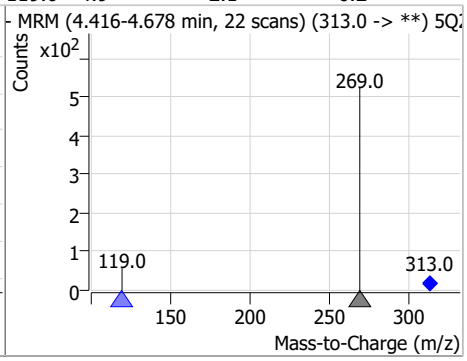




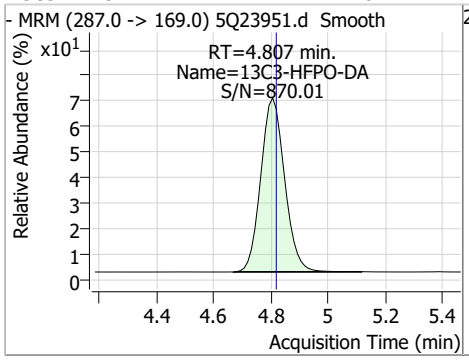
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	0.57	4.54	-0.01	5646	313.0 -> 119.0	4.9	2.1	6.2

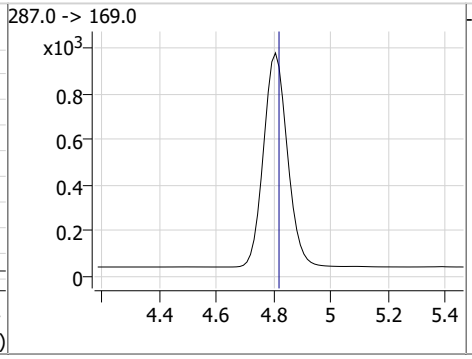


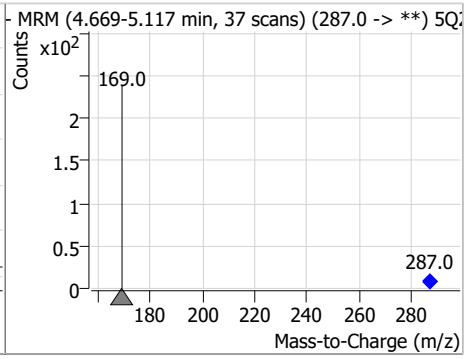




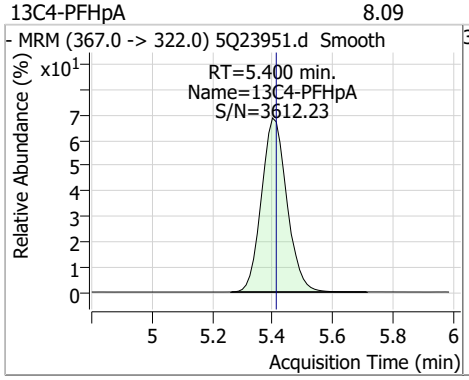
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	8.42	4.81	-0.01	5435				

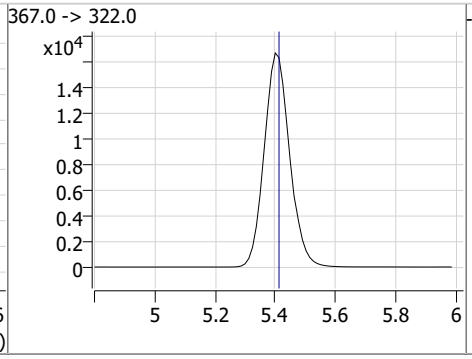


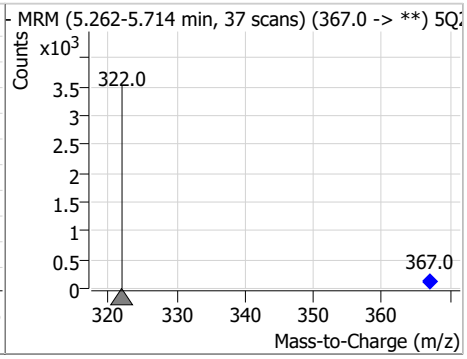




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	8.09	5.40	-0.01	97334				

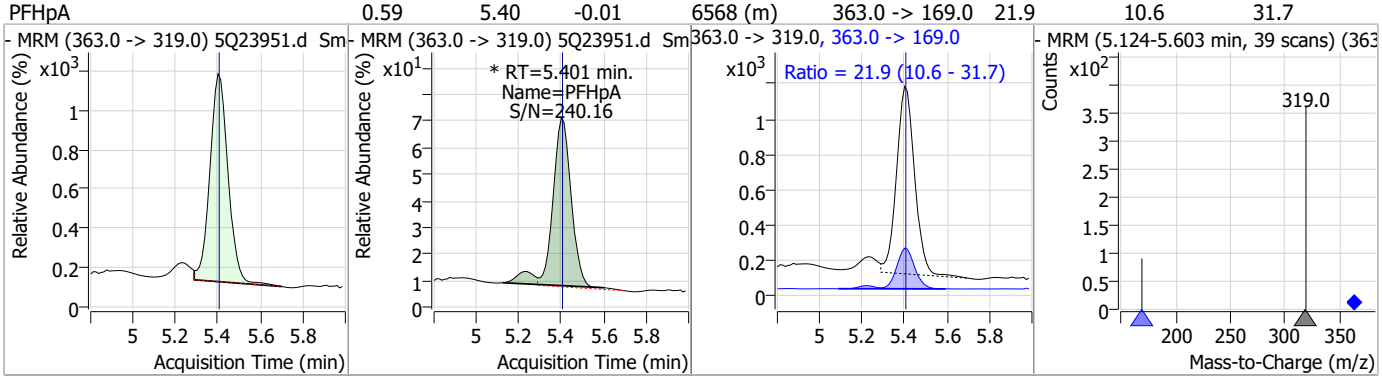




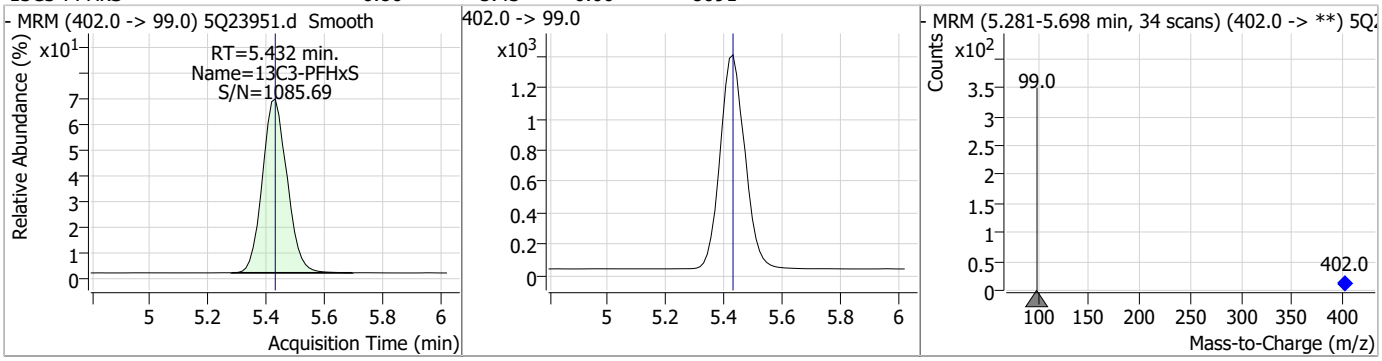


Perfluorinated Compounds by LC/MS/MS

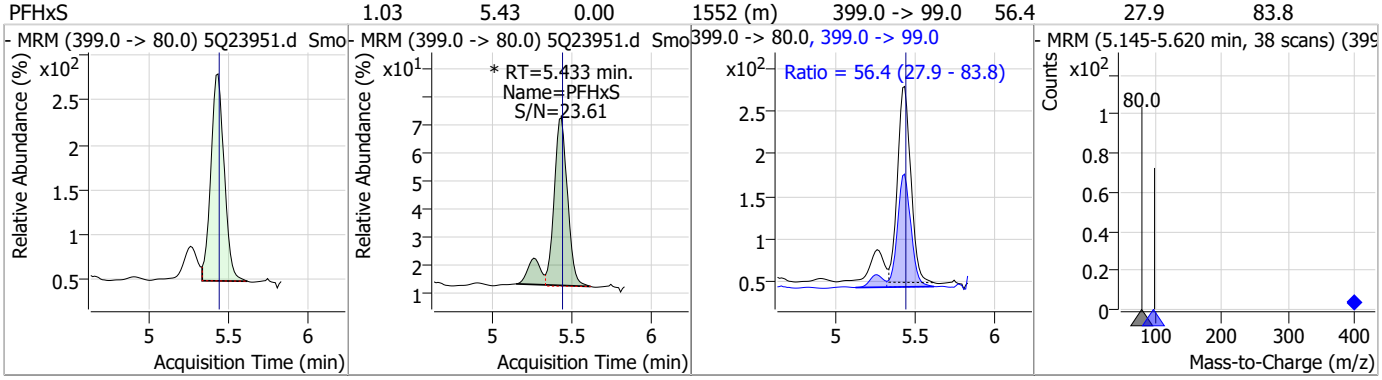
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	0.59	5.40	-0.01	6568 (m)	363.0 -> 169.0	21.9	10.6	31.7



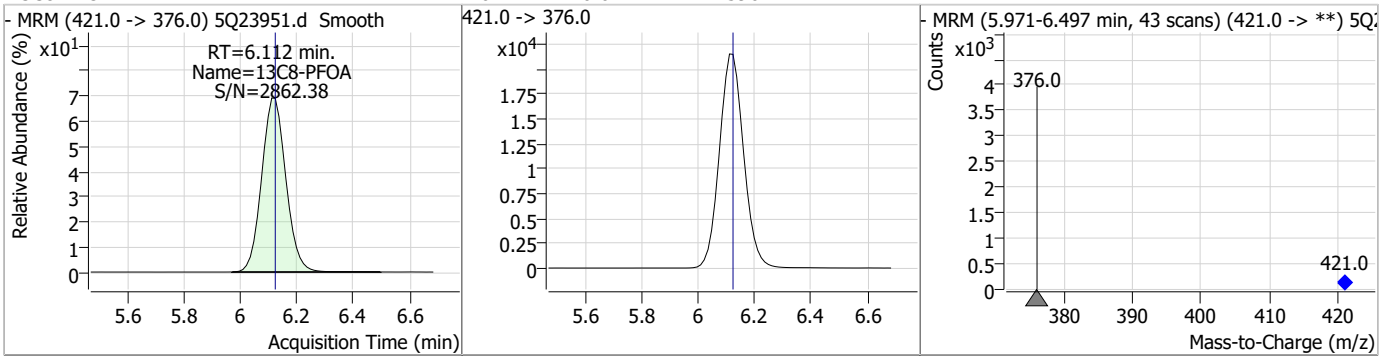
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	6.86	5.43	0.00	8091				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	1.03	5.43	0.00	1552 (m)	399.0 -> 99.0	56.4	27.9	83.8

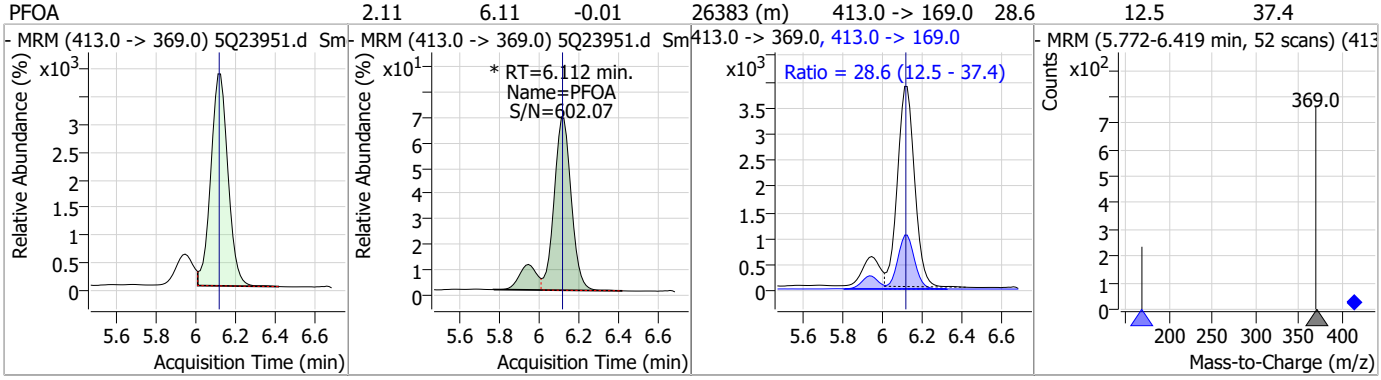


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	7.71	6.11	-0.01	127596				

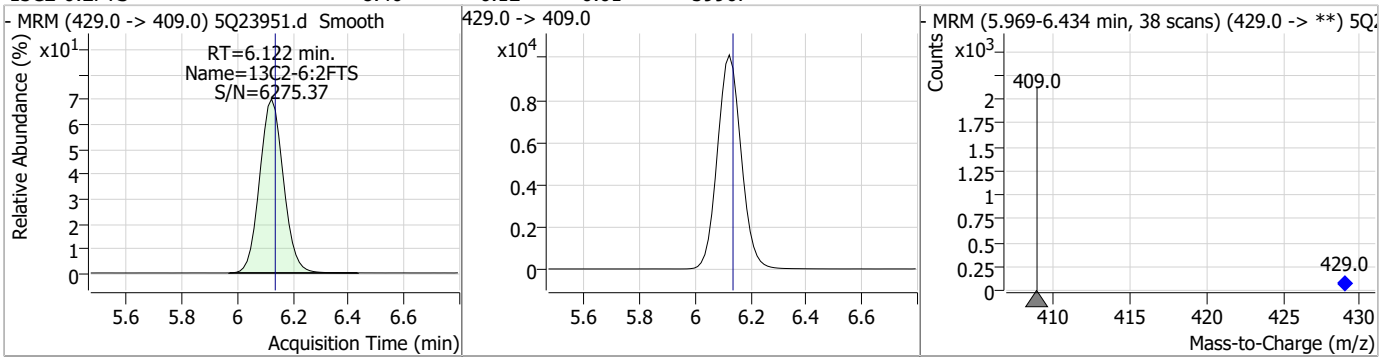


Perfluorinated Compounds by LC/MS/MS

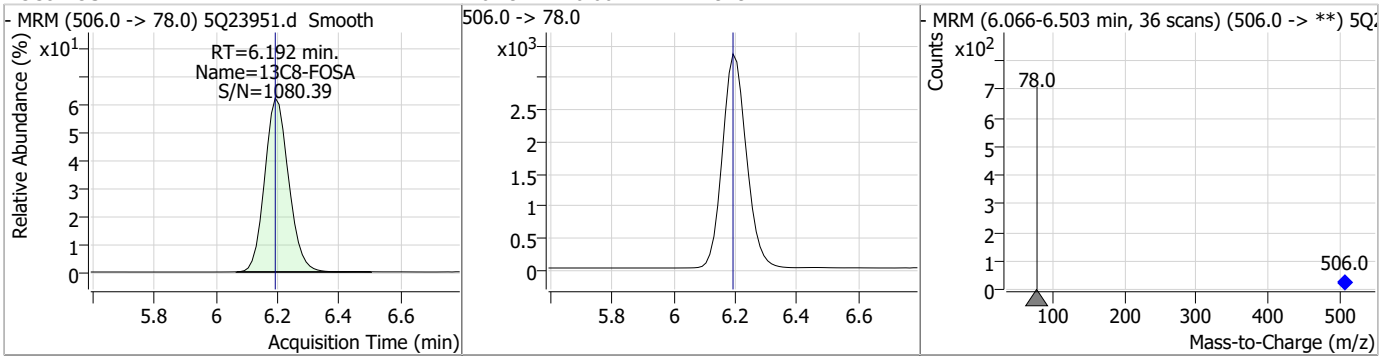
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	2.11	6.11	-0.01	26383 (m)	413.0 -> 169.0	28.6	12.5	37.4



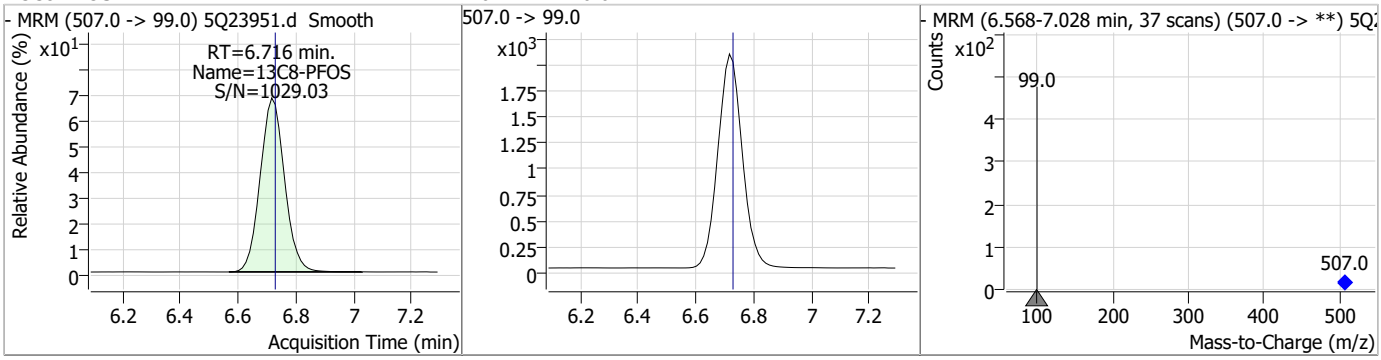
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	8.46	6.12	-0.01	59967				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	4.44	6.19	0.00	17979				

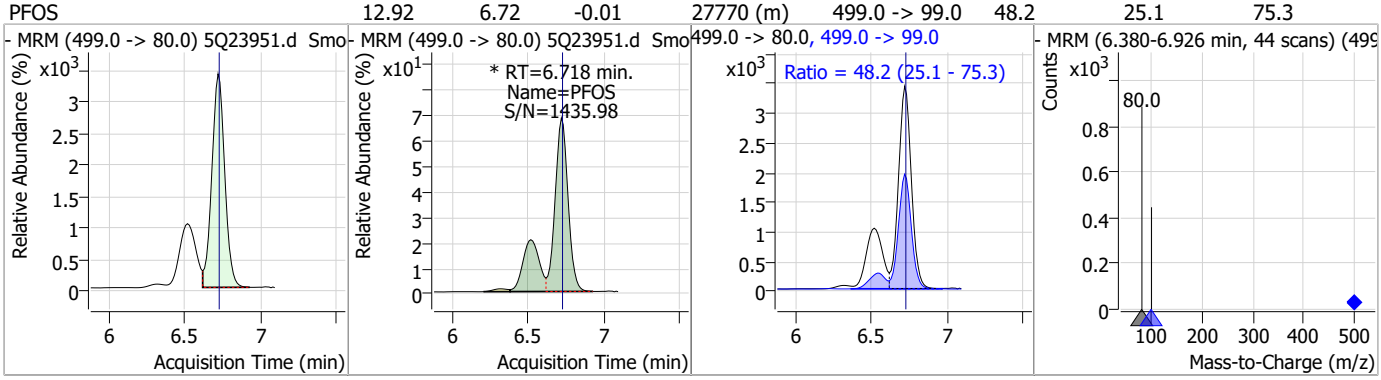


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	7.71	6.72	-0.01	12122				

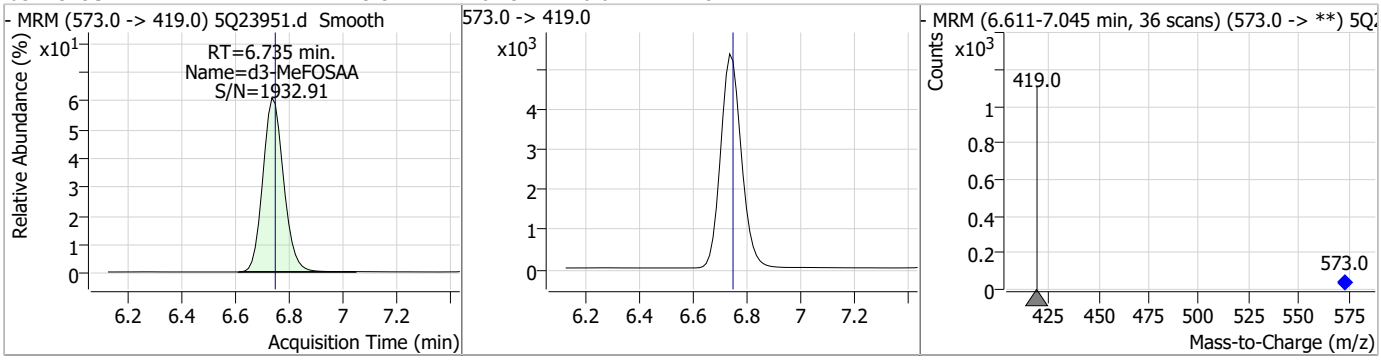


Perfluorinated Compounds by LC/MS/MS

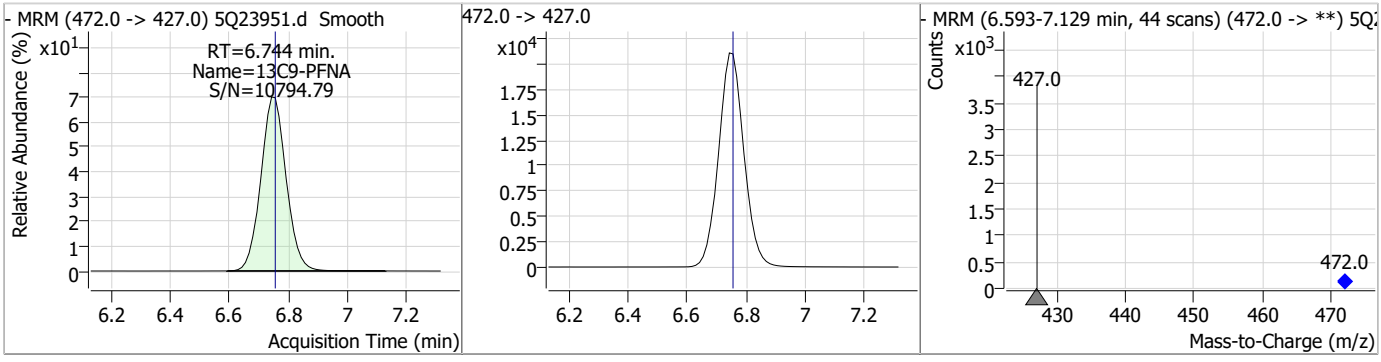
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	12.92	6.72	-0.01	27770 (m)	499.0 -> 99.0	48.2	25.1	75.3



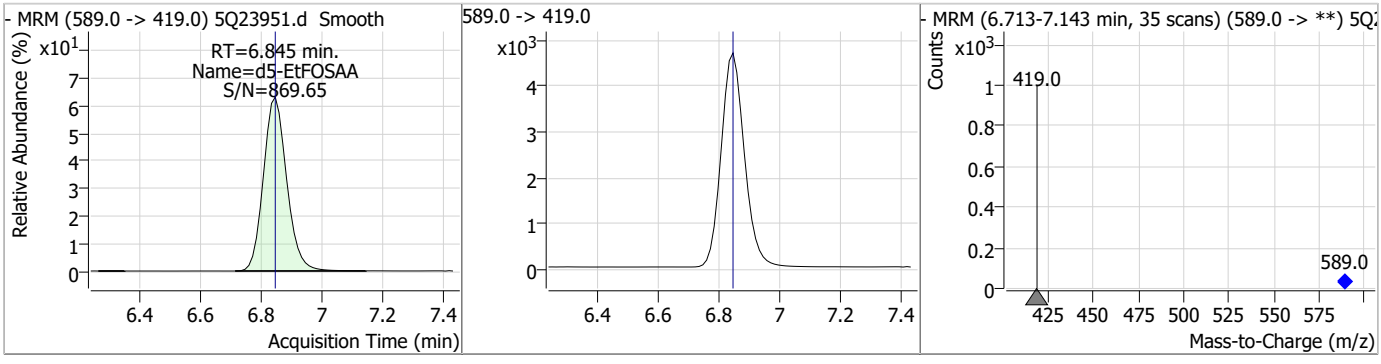
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	9.34	6.73	-0.01	28472				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	7.53	6.74	-0.01	124967				

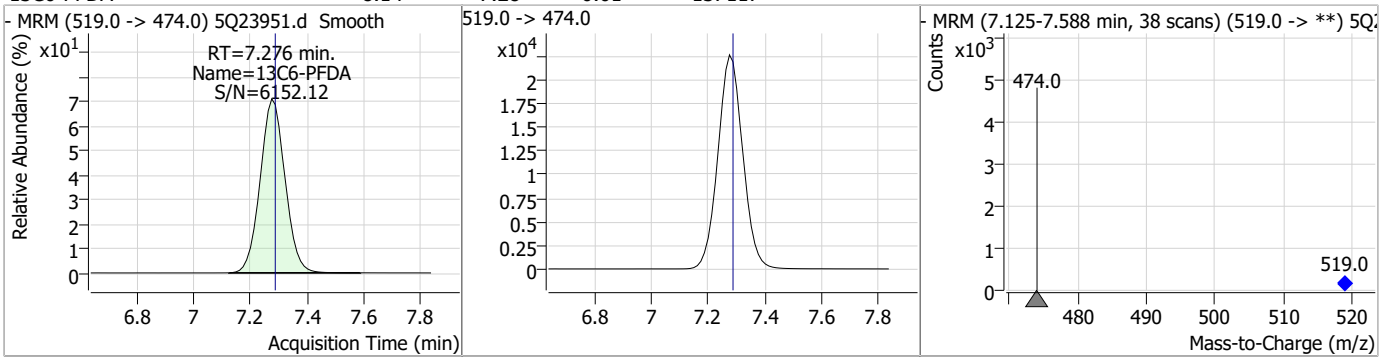


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	9.05	6.85	0.00	24849				

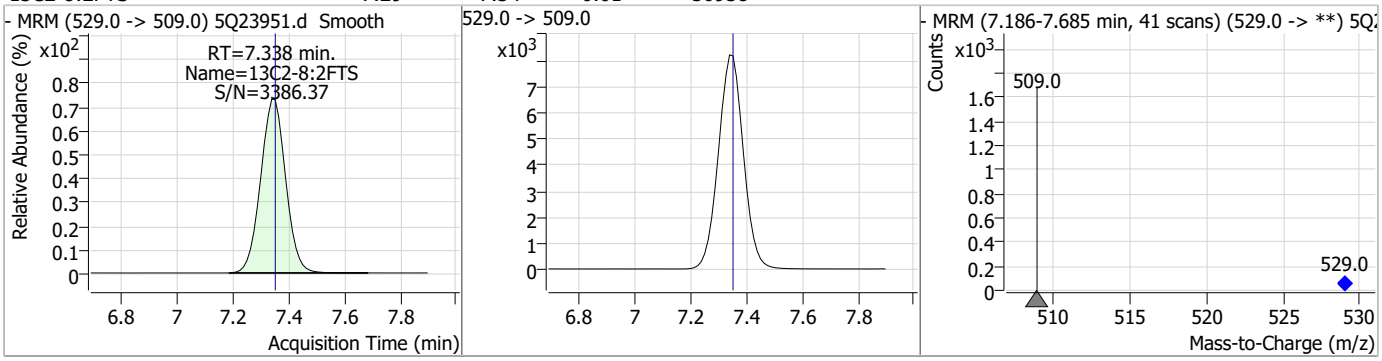


Perfluorinated Compounds by LC/MS/MS

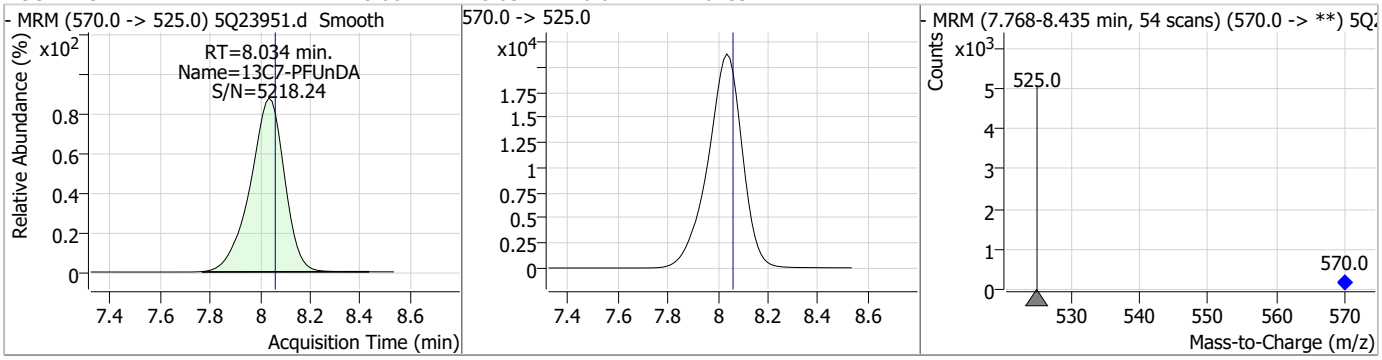
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	8.14	7.28	-0.01	137117				



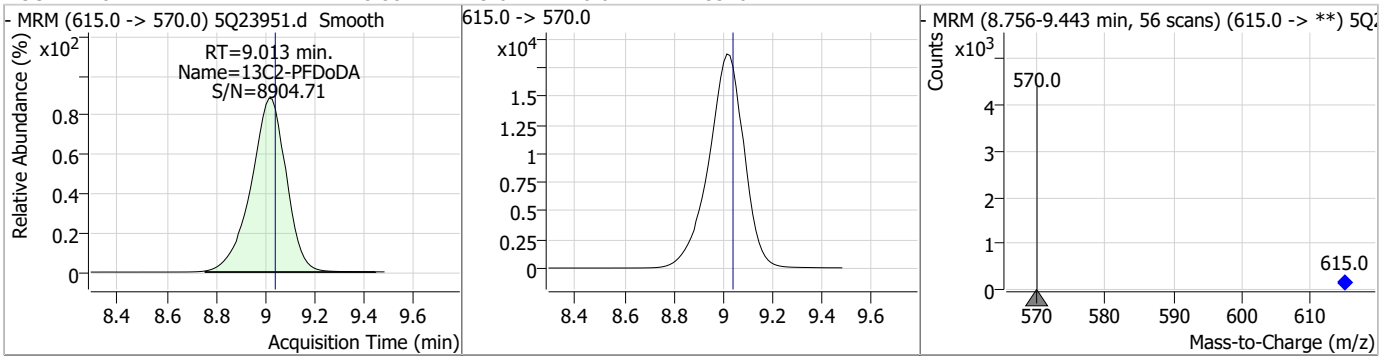
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	7.29	7.34	-0.01	50938				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	8.66	8.03	-0.02	201837				

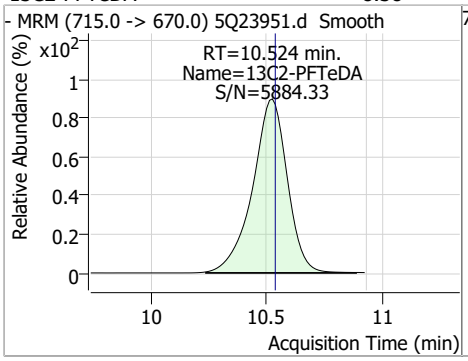


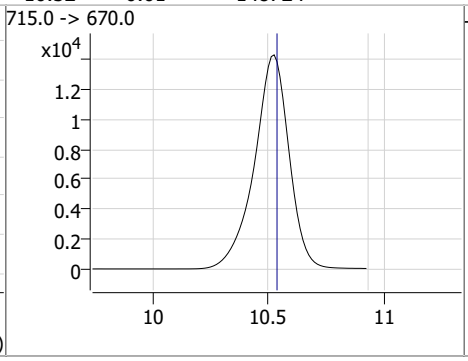
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	8.88	9.01	-0.02	185202				

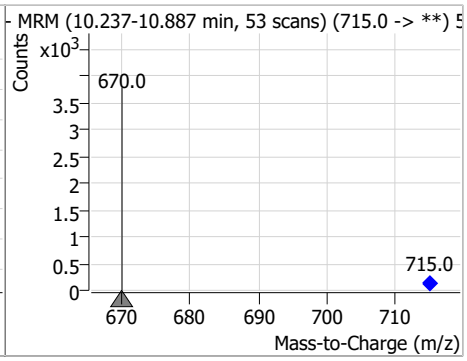


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	8.38	10.52	-0.01	148724				







Manual Integration Approval Summary

Sample Number: FC12099-6
Lab FileID: 5Q23951.D
Injection Time: 12/29/23 02:25
Method: EPA 537M QSM5.3 B-15
Analyst approved: 01/03/24 16:22 Lindsay Ritner
Supervisor approved: 01/04/24 13:36 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluoroheptanoic acid	375-85-9		5.40	Split peak
Perfluorohexanesulfonic acid	355-46-4		5.43	Split peak
Perfluorooctanoic acid	335-67-1		6.11	Split peak
Perfluorooctanesulfonic acid	1763-23-1		6.72	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Natasha Gumtie 01/04/24 13:36

Perfluorinated Compounds by LC/MS/MS

Data File : 5Q24077.d
Operator : lindsayr
Acq. Method : 537_ID.m
Acq. Date-Time : 1/3/2024 7:09:28 AM
Sample Name : fc12099-6
Vial : P3-E1
DA Method File : ID_010224_S5Q377.quantmethod.xml
Batch Name : s5q377.batch.bin
Sample Information : OP835,S5Q377,120,,,1.0,5,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.975	217.0 -> 172.0	6878	2.00	µg/L	-0.013
M5-PFPeA	3.419	268.0 -> 223.0	11959	2.00	µg/L	-0.012
M5-PFHxA	4.552	318.0 -> 273.0	20050	2.00	µg/L	-0.012
M4-PFHpA	5.413	367.0 -> 322.0	23070	2.00	µg/L	-0.012
M8-PFOA	6.137	421.0 -> 376.0	33695	2.00	µg/L	-0.012
M9-PFNA	6.768	472.0 -> 427.0	34271	2.00	µg/L	-0.012
M6-PFDA	7.301	519.0 -> 474.0	33088	2.00	µg/L	-0.012
M7-PFUnDA	8.109	570.0 -> 525.0	40673	2.00	µg/L	-0.025
M2-PFDoDA	9.093	615.0 -> 570.0	35531	2.00	µg/L	-0.025
M2-PFTeDA	10.587	715.0 -> 670.0	26632	2.00	µg/L	-0.025
M8-FOSA	6.192	506.0 -> 78.0	4272	2.00	µg/L	-0.012
M3-PFBS	3.624	302.0 -> 99.0	1604	2.00	µg/L	-0.012
M3-PFHxS	5.444	402.0 -> 99.0	2328	2.00	µg/L	0.000
M8-PFOS	6.741	507.0 -> 99.0	2844	2.00	µg/L	-0.012
M2-4:2FTS	4.474	329.0 -> 309.0	6615	2.00	µg/L	-0.012
M2-6:2FTS	6.135	429.0 -> 409.0	14108	2.00	µg/L	-0.012
M2-8:2FTS	7.376	529.0 -> 509.0	13306	2.00	µg/L	0.000
M3-MeFOSAA	6.747	573.0 -> 419.0	6670	2.00	µg/L	0.000
M3-HFPO-DA	4.819	287.0 -> 169.0	953	2.00	µg/L	-0.012
M3-MeFOSA	6.589	515.0 -> 169.0	29	2.00	µg/L	0.000
M5-EtFOSAA	6.845	589.0 -> 419.0	5843	2.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.474	329.0 -> 309.0	6615	1.69	µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 16.9%		
13C2-6:2FTS	6.135	429.0 -> 409.0	14108	1.92	µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 19.2%		
13C2-8:2FTS	7.376	529.0 -> 509.0	13306	1.88	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 18.8%		
13C2-PFDoDA	9.093	615.0 -> 570.0	35531	1.57	µg/L	-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 15.7%		
13C2-PFTeDA	10.587	715.0 -> 670.0	26632	1.39	µg/L	-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 13.9%		
13C3-PFBS	3.624	302.0 -> 99.0	1604	1.74	µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 17.4%		
13C3-PFHxS	5.444	402.0 -> 99.0	2328	2.06	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 20.6%		
13C4-PFBA	1.975	217.0 -> 172.0	6878	1.56	µg/L	-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 15.6%		
13C4-PFHpA	5.413	367.0 -> 322.0	23070	1.95	µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 19.5%		
13C5-PFHxA	4.552	318.0 -> 273.0	20050	1.75	µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 17.5%		
13C5-PFPeA	3.419	268.0 -> 223.0	11959	1.61	µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 16.1%		
13C6-PFDA	7.301	519.0 -> 474.0	33088	1.91	µg/L	-0.012

Perfluorinated Compounds by LC/MS/MS

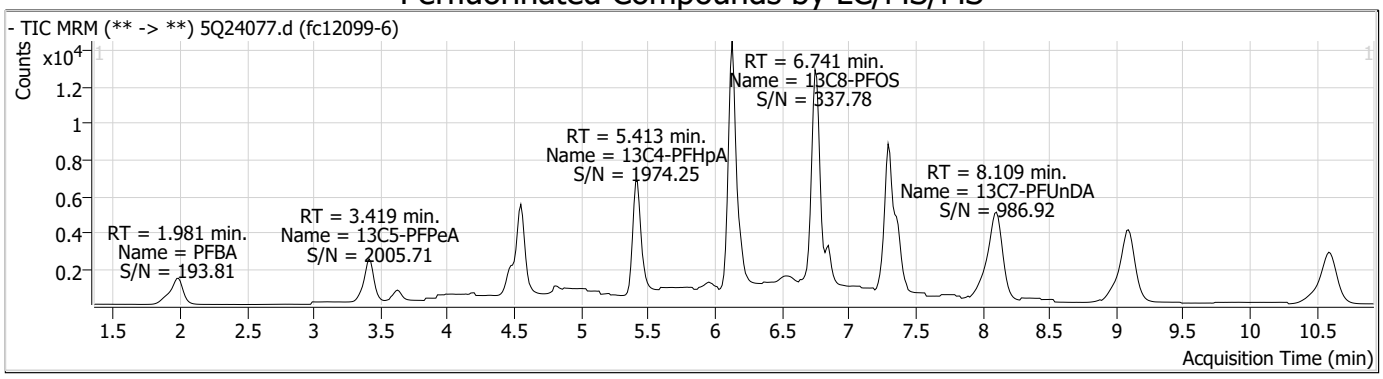
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 19.1%			
13C7-PFUnDA	8.109	570.0 -> 525.0	40673	1.67	µg/L		-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 16.7%			
13C8-FOSA	6.192	506.0 -> 78.0	4272	1.04	µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 10.4%			
13C8-PFOA	6.137	421.0 -> 376.0	33695	2.04	µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 20.4%			
13C8-PFOS	6.741	507.0 -> 99.0	2844	1.81	µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 18.1%			
13C9-PFNA	6.768	472.0 -> 427.0	34271	2.07	µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 20.7%			
d3-MeFOSAA	6.747	573.0 -> 419.0	6670	1.98	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 19.8%			
13C3-HFPO-DA	4.819	287.0 -> 169.0	953	1.60	µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 16.0%			
d3-MeFOSA	6.589	515.0 -> 169.0	29	0.02	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 0.2%			
d5-EtFOSAA	6.845	589.0 -> 419.0	5843	1.92	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 19.2%			
Target Compounds							QValue
4:2FTS	-	327.0 -> 307.0	-	N.D.			
		327.0 -> 81.0					
6:2FTS	-	427.0 -> 407.0	-	N.D.			
		427.0 -> 81.0					
8:2FTS	-	527.0 -> 507.0	-	N.D.			
		527.0 -> 81.0					
EtFOSAA	-	584.0 -> 419.0	-	N.D.			
		584.0 -> 483.0					
FOSA	-	498.0 -> 78.0	-	N.D.			
		498.0 -> 478.0					
MeFOSAA	-	570.0 -> 419.0	-	N.D.			
		570.0 -> 512.0					
PFBA	1.981	213.0 -> 169.0	3219	1.04	µg/L		100
PFBS	3.628	299.0 -> 80.0	827	0.42	µg/L		97
		299.0 -> 99.0	371				
PFDA	-	513.0 -> 469.0	-	N.D.			
		513.0 -> 219.0					
PFDoDA	-	613.0 -> 569.0	-	N.D.			
		613.0 -> 319.0					
PFDS	-	599.0 -> 80.0	-	N.D.			
		599.0 -> 99.0					
PFHpA	-	363.0 -> 319.0	-	N.D.			
		363.0 -> 169.0					
PFHpS	-	449.0 -> 80.0	-	N.D.			
		449.0 -> 99.0					
PFHxA	-	313.0 -> 269.0	-	N.D.			
		313.0 -> 119.0					
PFHxS	5.433	399.0 -> 80.0	371	0.18	µg/L	m	78
		399.0 -> 99.0	266				
PFNA	-	463.0 -> 419.0	-	N.D.			
		463.0 -> 219.0					
PFNS	-	549.0 -> 80.0	-	N.D.			
		549.0 -> 99.0					
PFOA	6.137	413.0 -> 369.0	6905	0.43	µg/L	m	94
		413.0 -> 169.0	1918				
PFOS	6.742	499.0 -> 80.0	6685	2.80	µg/L	m	98

Perfluorinated Compounds by LC/MS/MS

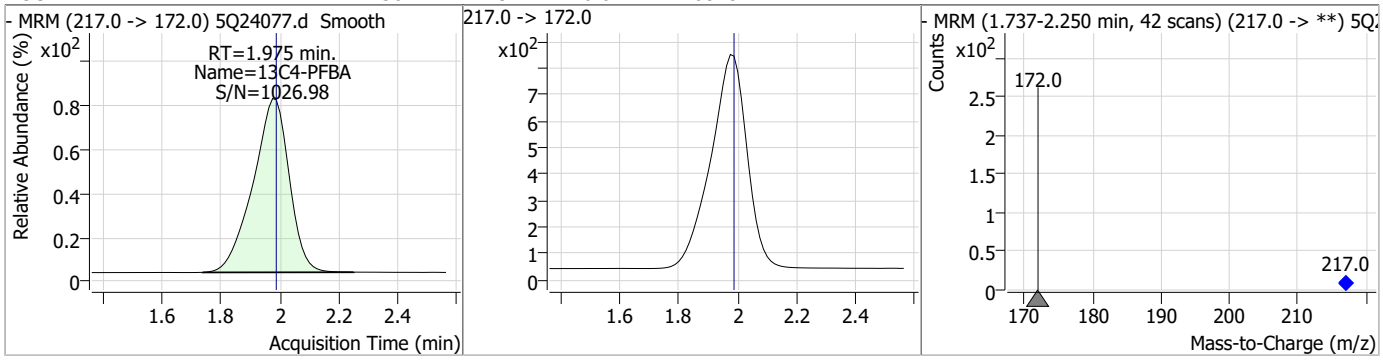
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		499.0 -> 99.0	3225			
PFPeA	-	263.0 -> 219.0	-	N.D.		
PFPeS	-	349.0 -> 80.0	-	N.D.		
		349.0 -> 99.0				
PFTeDA	-	713.0 -> 669.0	-	N.D.		
		713.0 -> 219.0				
PFTrDA	-	663.0 -> 619.0	-	N.D.		
		663.0 -> 369.0				
PFUnDA	-	563.0 -> 519.0	-	N.D.		
		563.0 -> 269.0				
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.		
		633.0 -> 453.0				
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.		
		533.0 -> 353.0				
ADONA	-	377.0 -> 251.0	-	N.D.		
		377.0 -> 85.0				
HFPO-DA	-	329.0 -> 169.0	-	N.D.		
		285.0 -> 169.0				
MeFOSA	-	512.0 -> 169.0	-	N.D.		
		512.0 -> 219.0				
4-PFECHS	-	461.0 -> 381.0	-	N.D.		
		461.0 -> 99.0				
FBSA	-	298.0 -> 78.0	-	N.D.		
		298.0 -> 64.0				
FHxSA	-	398.0 -> 78.0	-	N.D.		
		398.0 -> 64.0				

 # = Qualifier out of range, m = manually integrated, + = Area summed

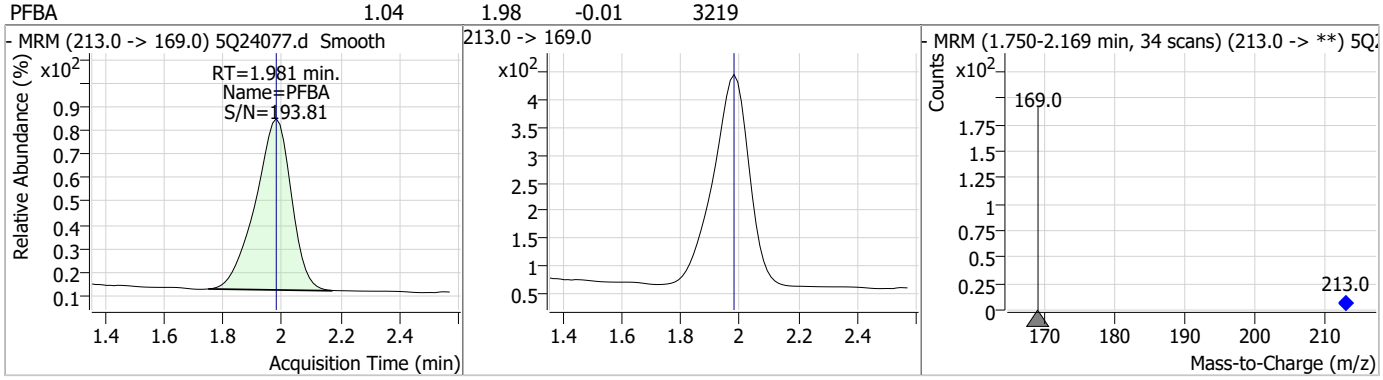
Perfluorinated Compounds by LC/MS/MS



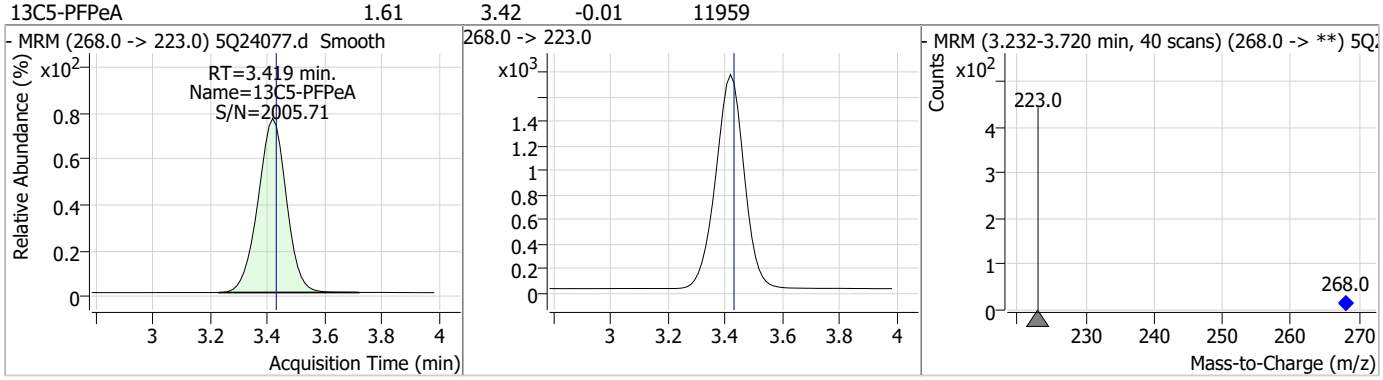
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	1.56	1.97	-0.01	6878				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	1.04	1.98	-0.01	3219				

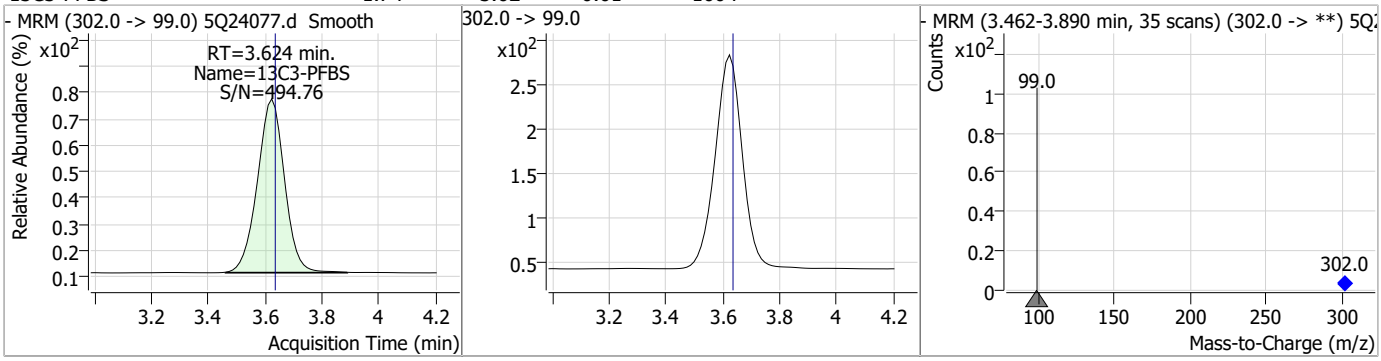


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	1.61	3.42	-0.01	11959				

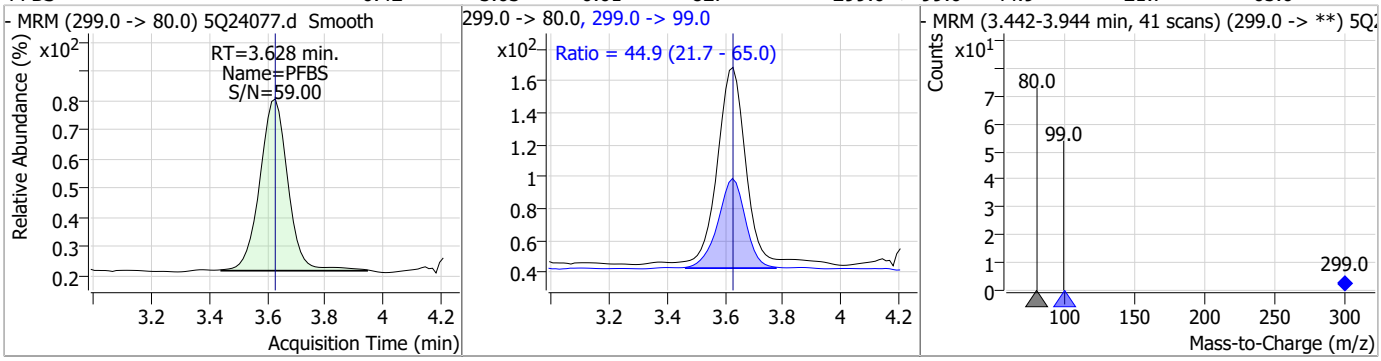


Perfluorinated Compounds by LC/MS/MS

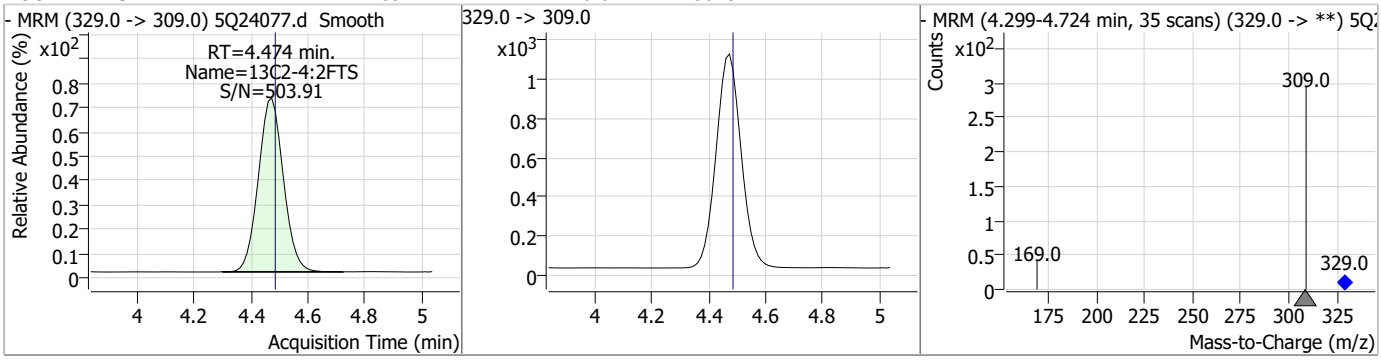
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	1.74	3.62	-0.01	1604				



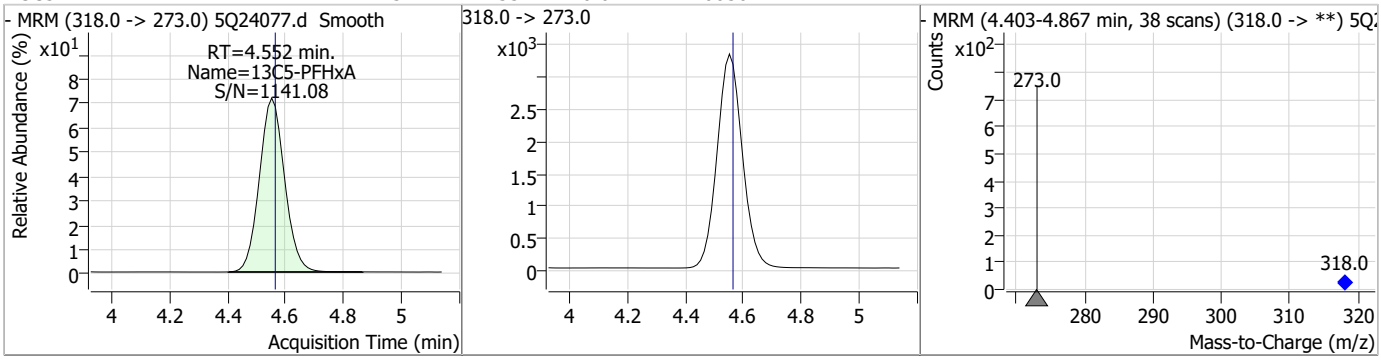
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	0.42	3.63	-0.01	827	299.0 -> 99.0	44.9	21.7	65.0



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	1.69	4.47	-0.01	6615				

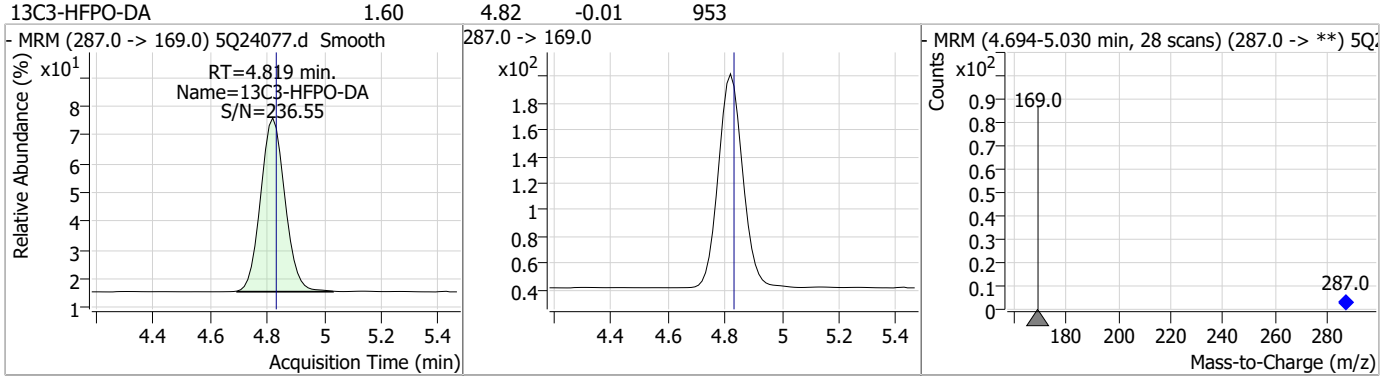


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	1.75	4.55	-0.01	20050				

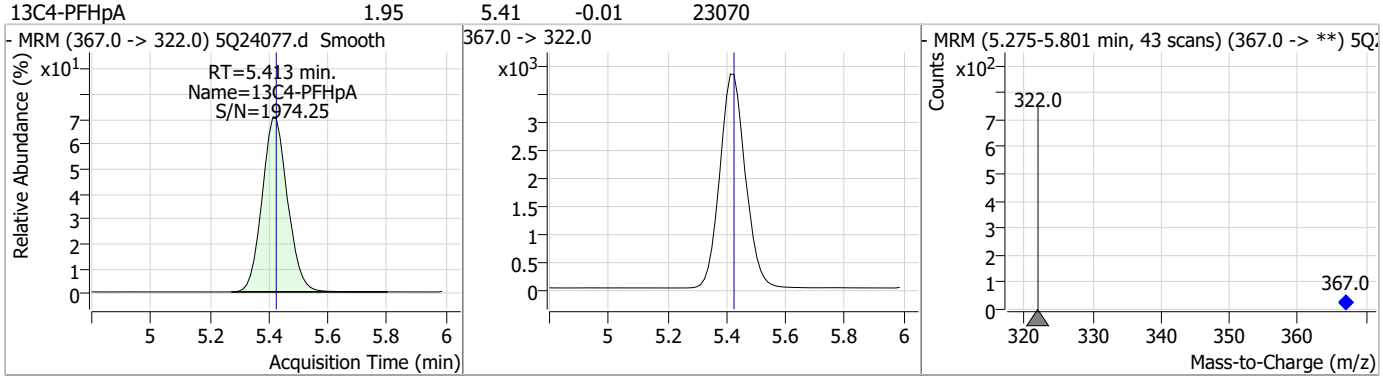


Perfluorinated Compounds by LC/MS/MS

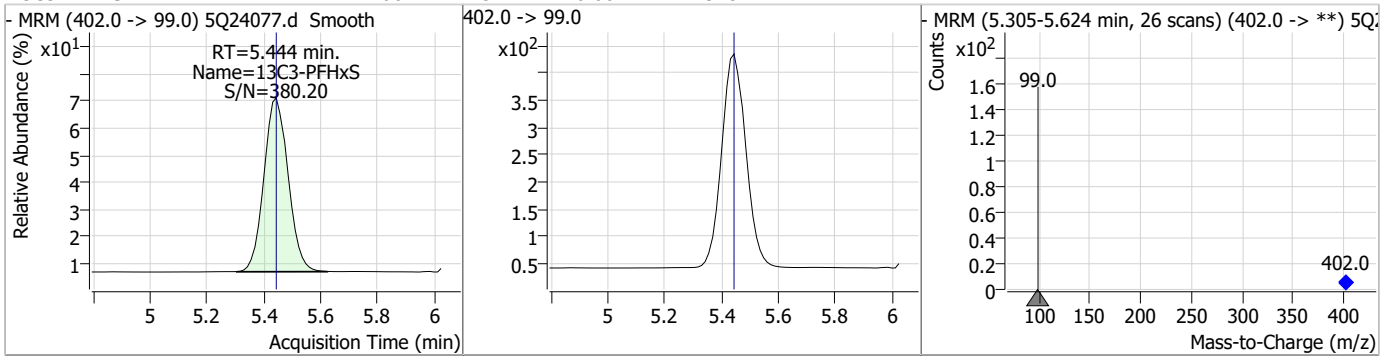
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	1.60	4.82	-0.01	953				



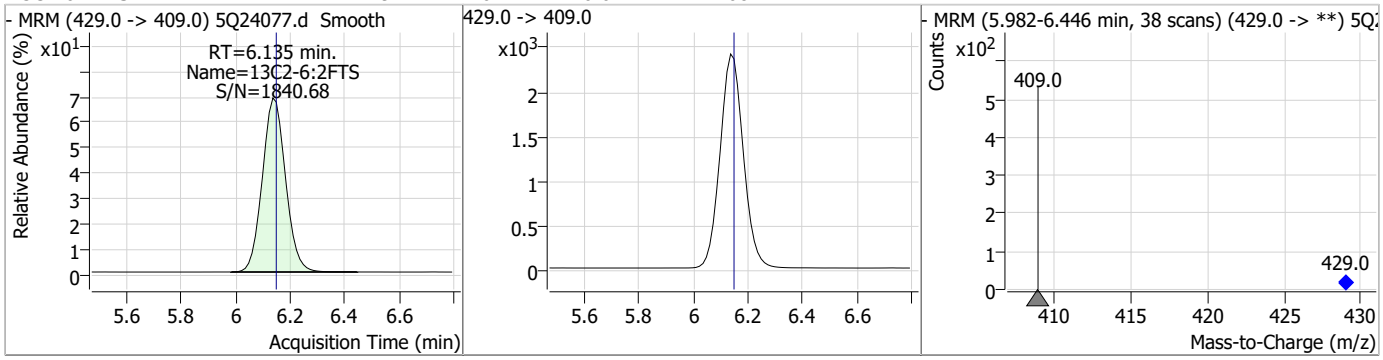
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	1.95	5.41	-0.01	23070				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	2.06	5.44	0.00	2328				

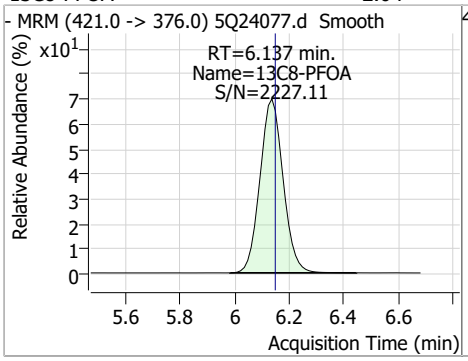


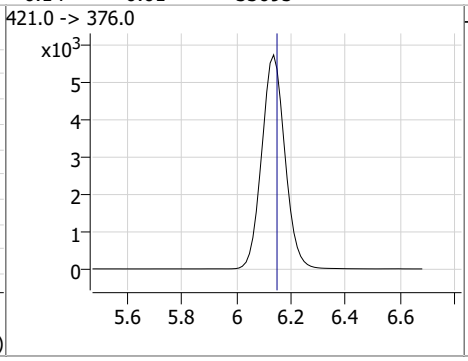
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	1.92	6.14	-0.01	14108				

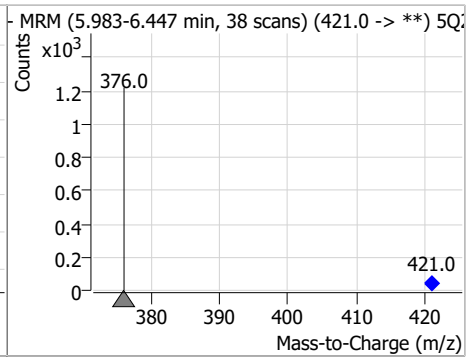


Perfluorinated Compounds by LC/MS/MS

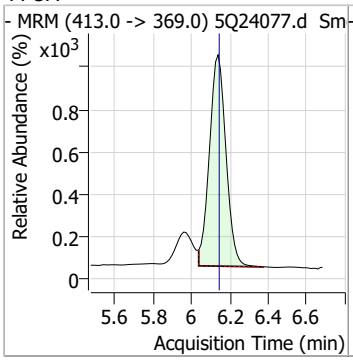
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	2.04	6.14	-0.01	33695				

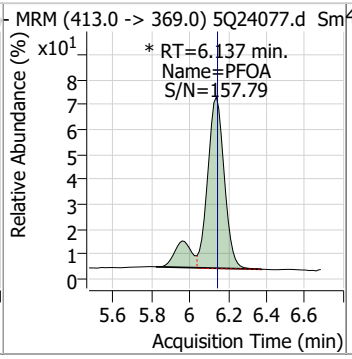


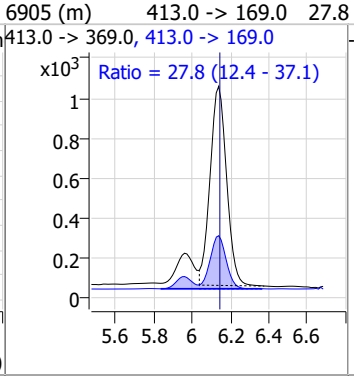


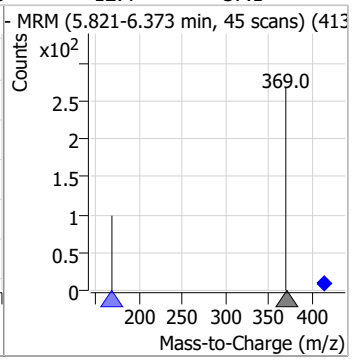


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	0.43	6.14	-0.01	6905 (m)	413.0 -> 169.0	27.8	12.4	37.1

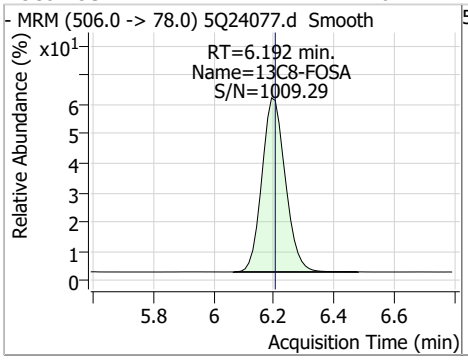


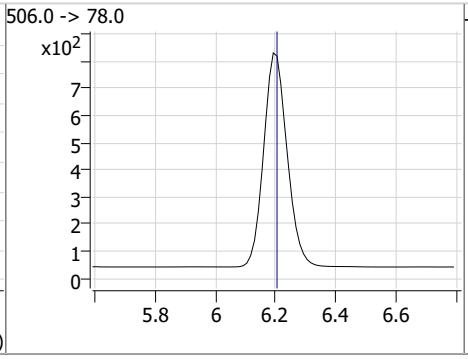


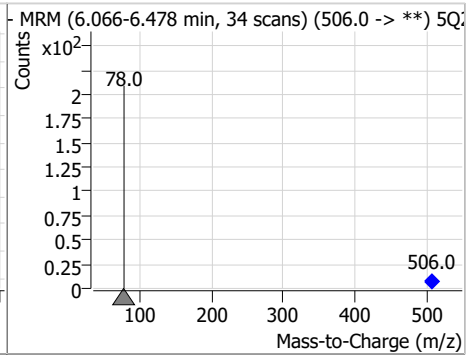




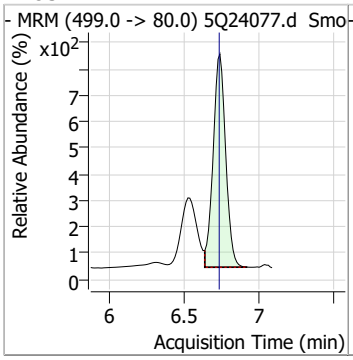
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	1.04	6.19	-0.01	4272				

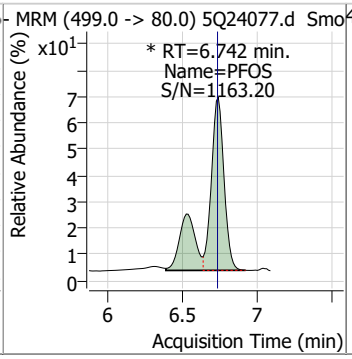


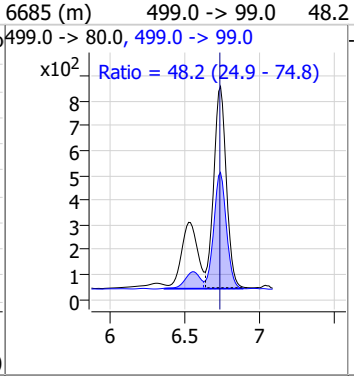


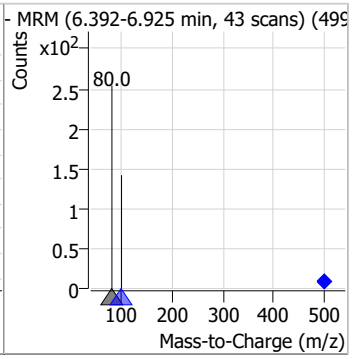


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	2.80	6.74	0.00	6685 (m)	499.0 -> 99.0	48.2	24.9	74.8



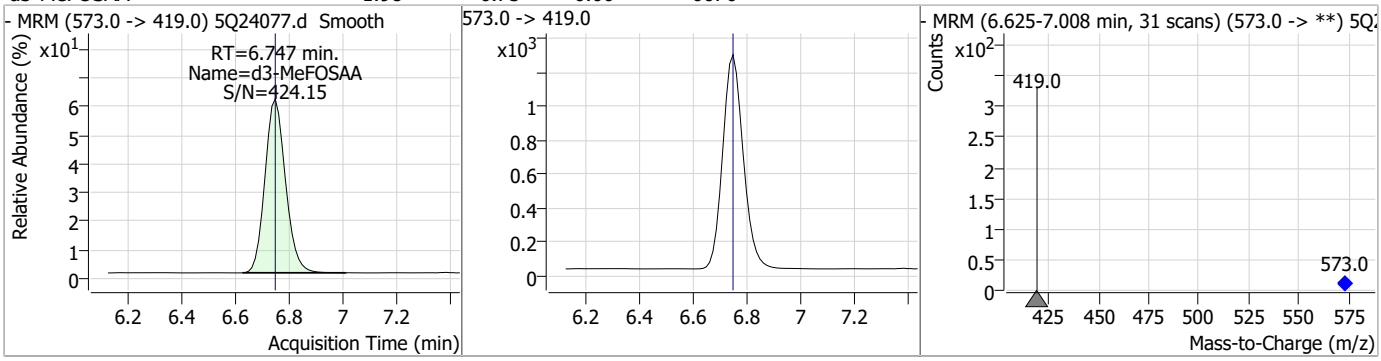




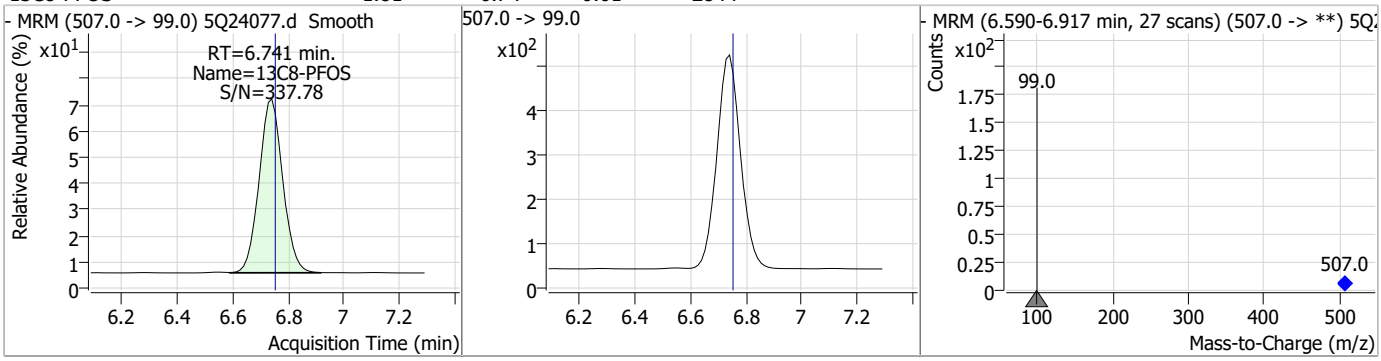


Perfluorinated Compounds by LC/MS/MS

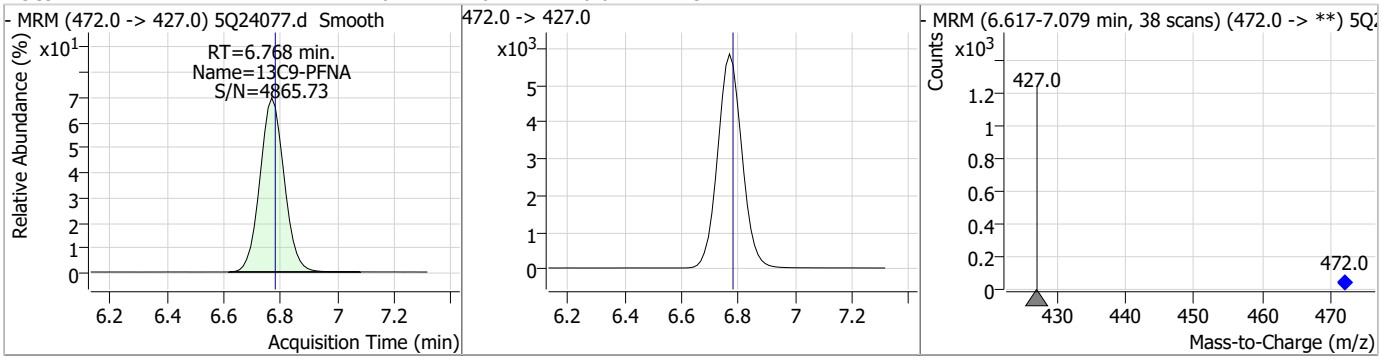
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	1.98	6.75	0.00	6670				



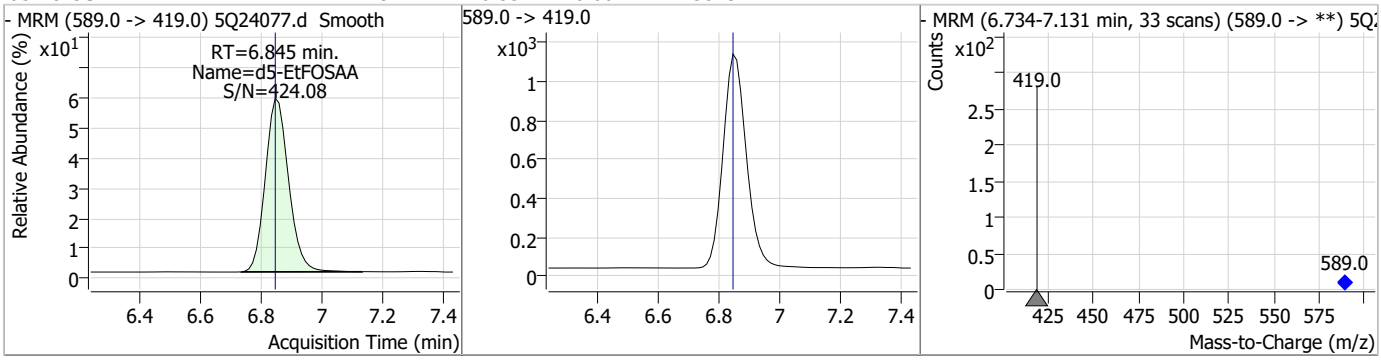
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	1.81	6.74	-0.01	2844				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	2.07	6.77	-0.01	34271				

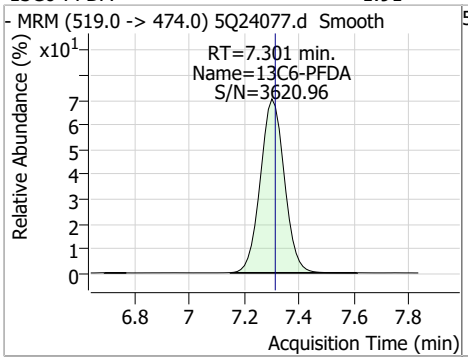


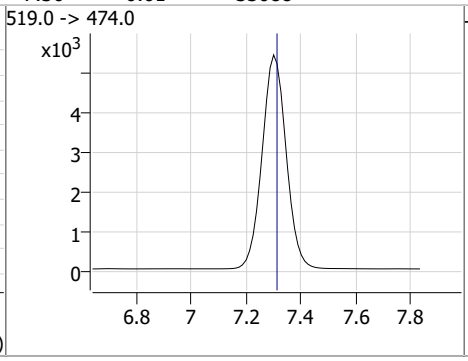
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	1.92	6.85	0.00	5843				

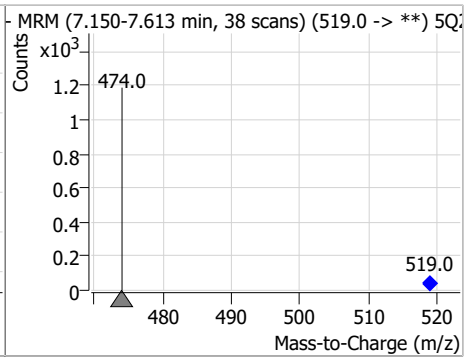


Perfluorinated Compounds by LC/MS/MS

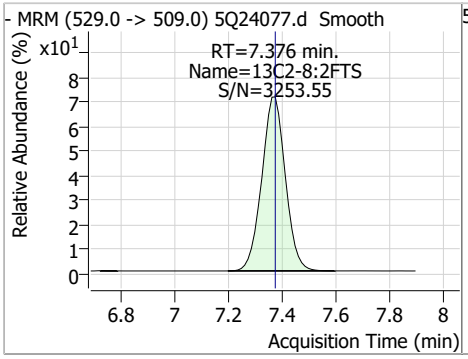
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	1.91	7.30	-0.01	33088				

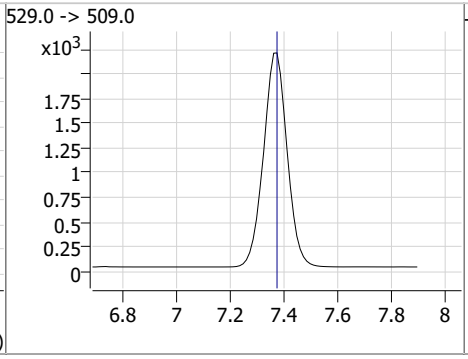


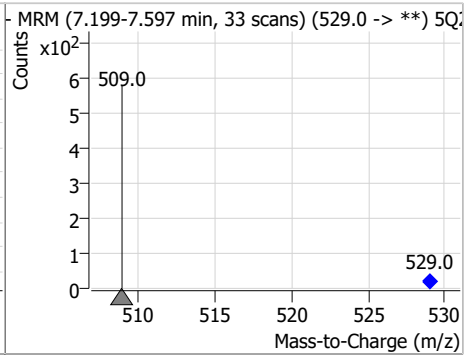




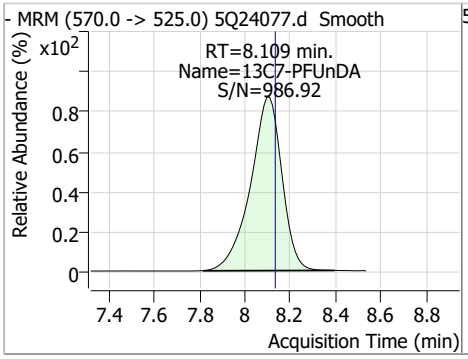
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	1.88	7.38	0.00	13306				

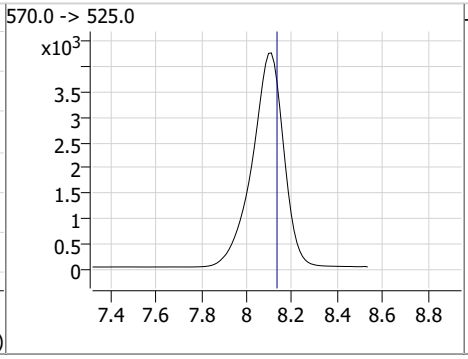


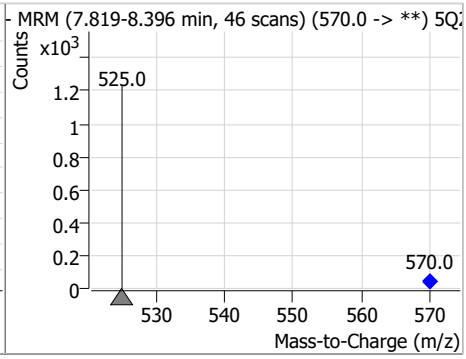




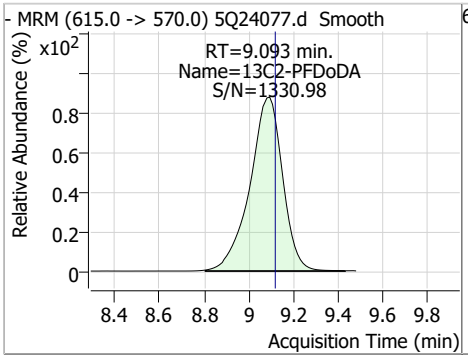
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.67	8.11	-0.02	40673				

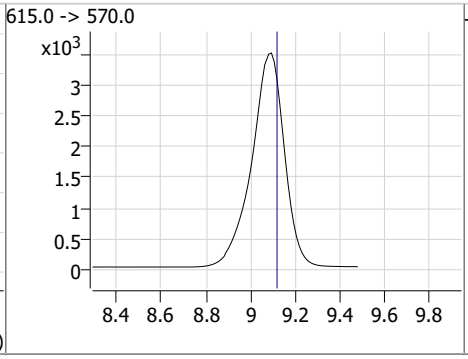


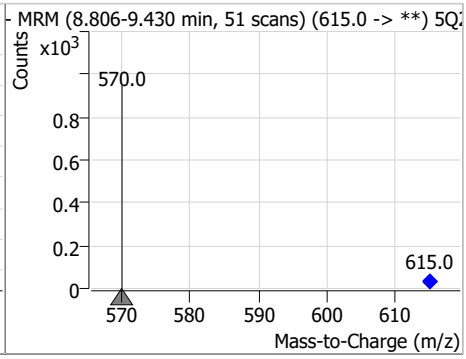




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.57	9.09	-0.02	35531				

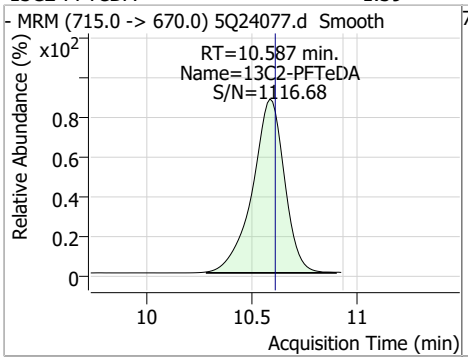


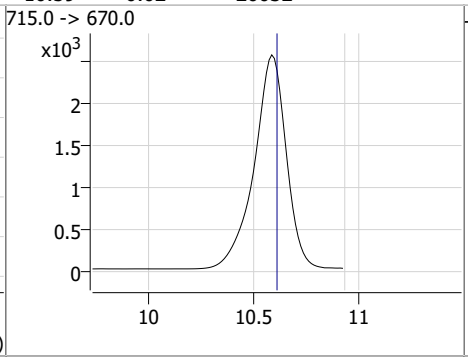


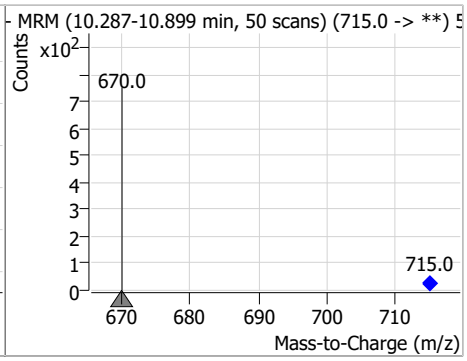


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.39	10.59	-0.02	26632				







Manual Integration Approval Summary

Sample Number:	FC12099-6	**Method:**	EPA 537M QSM5.3 B-15
Lab FileID:	5Q24077.D	**Analyst approved:**	01/03/24 16:22 Lindsay Ritner
Injection Time:	01/03/24 07:09	**Supervisor approved:**	01/04/24 13:36 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.43	Split peak
Perfluorooctanoic acid	335-67-1		6.14	Split peak
Perfluorooctanesulfonic acid	1763-23-1		6.74	Split peak

Perfluorinated Compounds by LC/MS/MS

Data File : 5Q23952.d
Operator : natashag
Acq. Method : 537_ID.m
Acq. Date-Time : 12/29/2023 2:41:44 AM
Sample Name : fc12099-7
Vial : P2-C9
DA Method File : ID_122823_S5Q375.quantmethod.xml
Batch Name : s5q375.batch.bin
Sample Information : OP835,S5Q375,120,,,1.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.975	217.0 -> 172.0	49402	10.00	µg/L	-0.013
M5-PFPeA	3.419	268.0 -> 223.0	78658	10.00	µg/L	-0.012
M5-PFHxA	4.540	318.0 -> 273.0	113224	10.00	µg/L	-0.012
M4-PFHpA	5.413	367.0 -> 322.0	108664	10.00	µg/L	0.000
M8-PFOA	6.124	421.0 -> 376.0	143671	10.00	µg/L	0.000
M9-PFNA	6.756	472.0 -> 427.0	135421	10.00	µg/L	0.000
M6-PFDA	7.276	519.0 -> 474.0	134694	10.00	µg/L	-0.012
M7-PFUnDA	8.047	570.0 -> 525.0	177378	10.00	µg/L	-0.013
M2-PFDoDA	9.026	615.0 -> 570.0	158616	10.00	µg/L	-0.013
M2-PFTeDA	10.524	715.0 -> 670.0	142876	10.00	µg/L	-0.012
M8-FOSA	6.192	506.0 -> 78.0	32159	10.00	µg/L	0.000
M3-PFBS	3.624	302.0 -> 99.0	8848	10.00	µg/L	-0.012
M3-PFHxS	5.432	402.0 -> 99.0	9774	10.00	µg/L	0.000
M8-PFOS	6.716	507.0 -> 99.0	10985	10.00	µg/L	-0.012
M2-4:2FTS	4.461	329.0 -> 309.0	37592	10.00	µg/L	-0.012
M2-6:2FTS	6.122	429.0 -> 409.0	60628	10.00	µg/L	-0.013
M2-8:2FTS	7.351	529.0 -> 509.0	50964	10.00	µg/L	0.000
M3-MeFOSAA	6.735	573.0 -> 419.0	24724	10.00	µg/L	-0.012
M3-HFPO-DA	4.807	287.0 -> 169.0	5875	10.00	µg/L	-0.012
M3-MeFOSA	6.589	515.0 -> 169.0	1207	10.00	µg/L	0.000
M5-EtFOSAA	6.845	589.0 -> 419.0	21193	10.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.461	329.0 -> 309.0	37592	9.35	µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 93.5%		
13C2-6:2FTS	6.122	429.0 -> 409.0	60628	8.55	µg/L	-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 85.5%		
13C2-8:2FTS	7.351	529.0 -> 509.0	50964	7.30	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 73.0%		
13C2-PFDoDA	9.026	615.0 -> 570.0	158616	7.61	µg/L	-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 76.1%		
13C2-PFTeDA	10.524	715.0 -> 670.0	142876	8.05	µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 80.5%		
13C3-PFBS	3.624	302.0 -> 99.0	8848	9.11	µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 91.1%		
13C3-PFHxS	5.432	402.0 -> 99.0	9774	8.28	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 82.8%		
13C4-PFBA	1.975	217.0 -> 172.0	49402	10.46	µg/L	-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 104.6%		
13C4-PFHpA	5.413	367.0 -> 322.0	108664	9.03	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 90.3%		
13C5-PFHxA	4.540	318.0 -> 273.0	113224	9.47	µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 94.7%		
13C5-PFPeA	3.419	268.0 -> 223.0	78658	9.98	µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.8%		
13C6-PFDA	7.276	519.0 -> 474.0	134694	8.00	µg/L	-0.012

Perfluorinated Compounds by LC/MS/MS

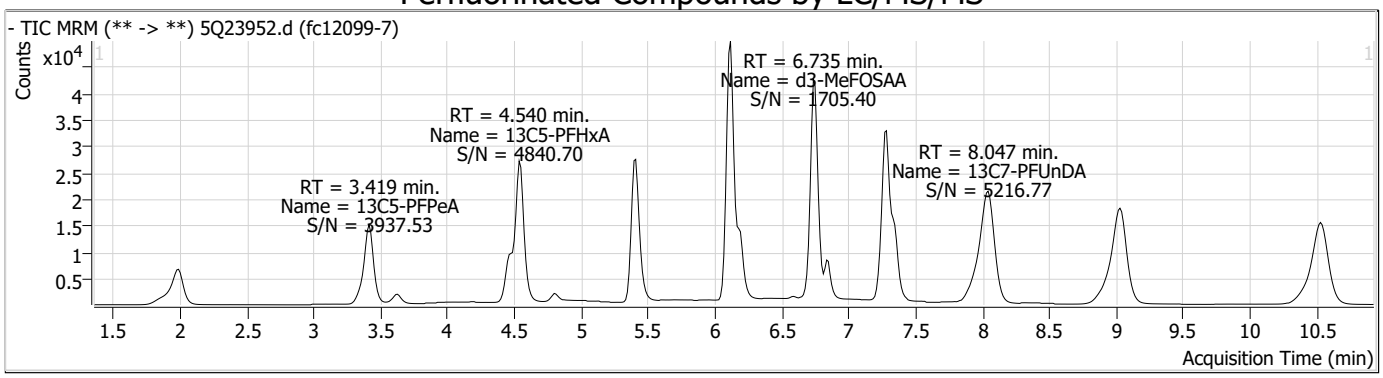
Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 80.0%	
13C7-PFUnDA	8.047	570.0 -> 525.0	177378	7.61 µg/L	-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 76.1%	
13C8-FOSA	6.192	506.0 -> 78.0	32159	7.94 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 79.4%	
13C8-PFOA	6.124	421.0 -> 376.0	143671	8.68 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 86.8%	
13C8-PFOS	6.716	507.0 -> 99.0	10985	6.99 µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 69.9%	
13C9-PFNA	6.756	472.0 -> 427.0	135421	8.16 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 81.6%	
d3-MeFOSAA	6.735	573.0 -> 419.0	24724	8.11 µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 81.1%	
13C3-HFPO-DA	4.807	287.0 -> 169.0	5875	9.10 µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 91.0%	
d3-MeFOSA	6.589	515.0 -> 169.0	1207	0.86 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 8.6%	
d5-EtFOSAA	6.845	589.0 -> 419.0	21193	7.72 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 77.2%	
Target Compounds					QValue
4:2FTS	-	327.0 -> 307.0	-	N.D.	
		327.0 -> 81.0			
6:2FTS	-	427.0 -> 407.0	-	N.D.	
		427.0 -> 81.0			
8:2FTS	-	527.0 -> 507.0	-	N.D.	
		527.0 -> 81.0			
EtFOSAA	-	584.0 -> 419.0	-	N.D.	
		584.0 -> 483.0			
FOSA	-	498.0 -> 78.0	-	N.D.	
		498.0 -> 478.0			
MeFOSAA	-	570.0 -> 419.0	-	N.D.	
		570.0 -> 512.0			
PFBA	-	213.0 -> 169.0	-	N.D.	
PFBS	-	299.0 -> 80.0	-	N.D.	
		299.0 -> 99.0			
PFDA	-	513.0 -> 469.0	-	N.D.	
		513.0 -> 219.0			
PFDoDA	-	613.0 -> 569.0	-	N.D.	
		613.0 -> 319.0			
PFDS	-	599.0 -> 80.0	-	N.D.	
		599.0 -> 99.0			
PFHpA	-	363.0 -> 319.0	-	N.D.	
		363.0 -> 169.0			
PFHpS	-	449.0 -> 80.0	-	N.D.	
		449.0 -> 99.0			
PFHxA	-	313.0 -> 269.0	-	N.D.	
		313.0 -> 119.0			
PFHxS	-	399.0 -> 80.0	-	N.D.	
		399.0 -> 99.0			
PFNA	-	463.0 -> 419.0	-	N.D.	
		463.0 -> 219.0			
PFNS	-	549.0 -> 80.0	-	N.D.	
		549.0 -> 99.0			
PFOA	-	413.0 -> 369.0	-	N.D.	
		413.0 -> 169.0			
PFOS	-	499.0 -> 80.0	-	N.D.	

Perfluorinated Compounds by LC/MS/MS

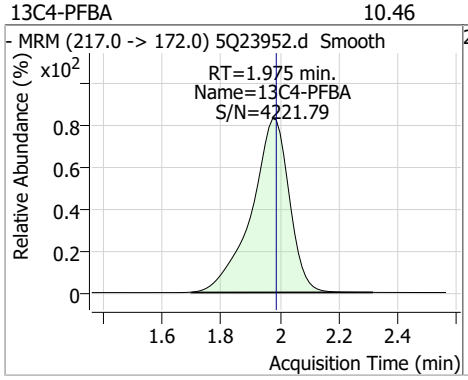
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		499.0 -> 99.0				
PFPeA	-	263.0 -> 219.0	-	N.D.		
PFPeS	-	349.0 -> 80.0	-	N.D.		
		349.0 -> 99.0				
PFTeDA	-	713.0 -> 669.0	-	N.D.		
		713.0 -> 219.0				
PFTrDA	-	663.0 -> 619.0	-	N.D.		
		663.0 -> 369.0				
PFUnDA	-	563.0 -> 519.0	-	N.D.		
		563.0 -> 269.0				
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.		
		633.0 -> 453.0				
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.		
		533.0 -> 353.0				
ADONA	-	377.0 -> 251.0	-	N.D.		
		377.0 -> 85.0				
HFPO-DA	-	329.0 -> 169.0	-	N.D.		
		285.0 -> 169.0				
MeFOSA	-	512.0 -> 169.0	-	N.D.		
		512.0 -> 219.0				
4-PFECHS	-	461.0 -> 381.0	-	N.D.		
		461.0 -> 99.0				
FBSA	-	298.0 -> 78.0	-	N.D.		
		298.0 -> 64.0				
FHxSA	-	398.0 -> 78.0	-	N.D.		
		398.0 -> 64.0				

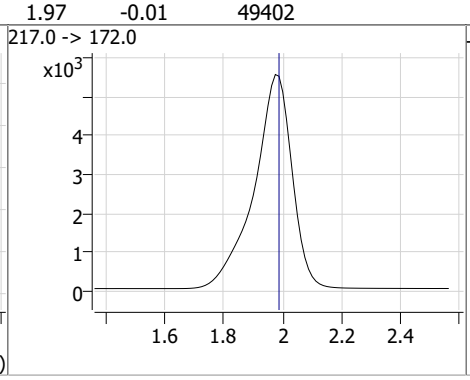
 # = Qualifier out of range, m = manually integrated, + = Area summed

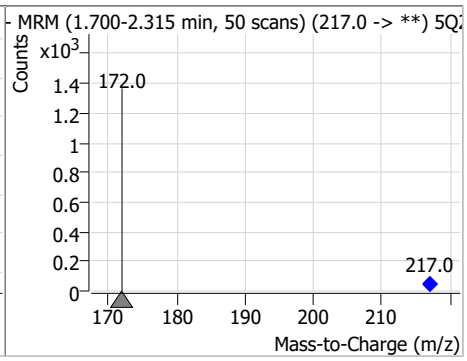
Perfluorinated Compounds by LC/MS/MS



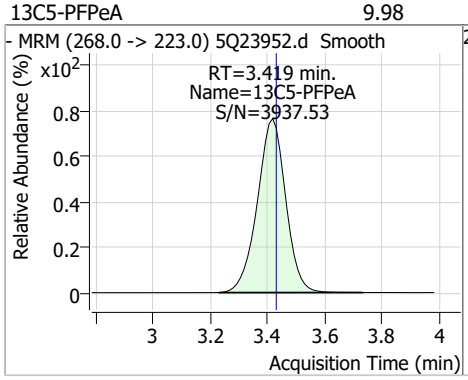
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	10.46	1.97	-0.01	49402				

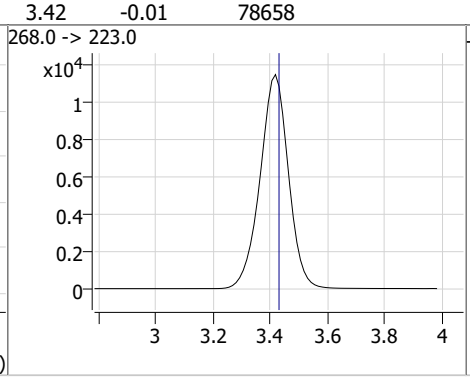


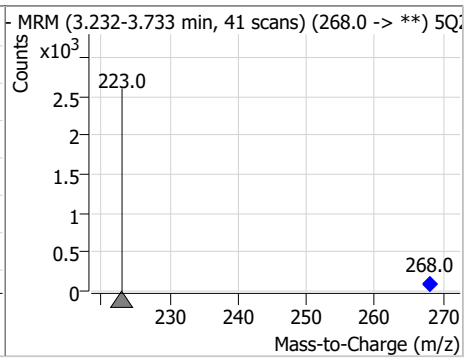




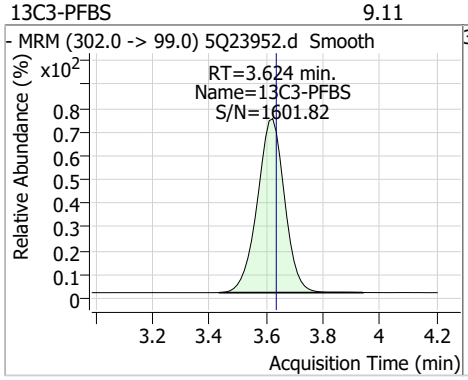
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	9.98	3.42	-0.01	78658				

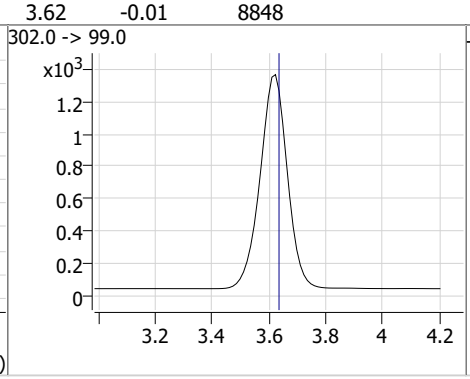


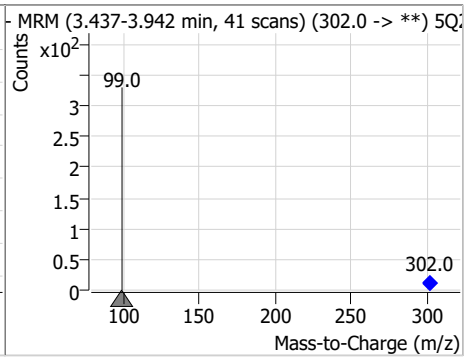




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	9.11	3.62	-0.01	8848				

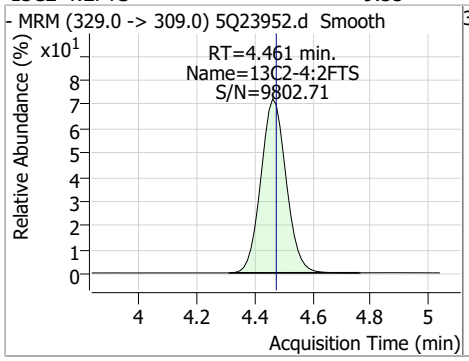


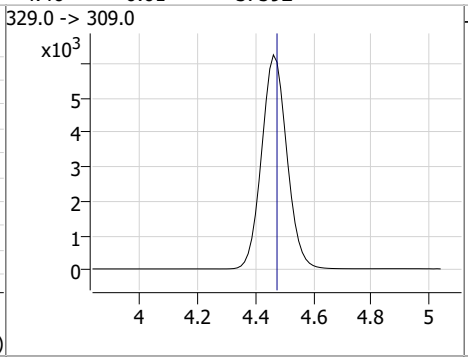


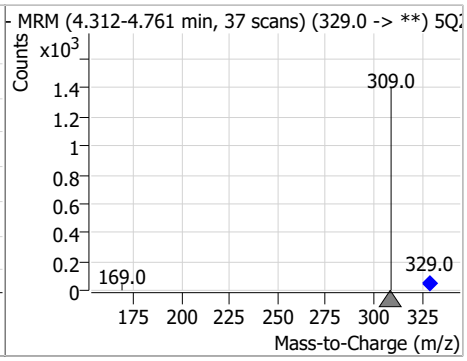


Perfluorinated Compounds by LC/MS/MS

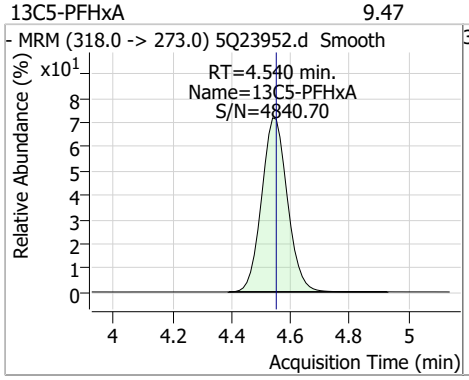
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	9.35	4.46	-0.01	37592				

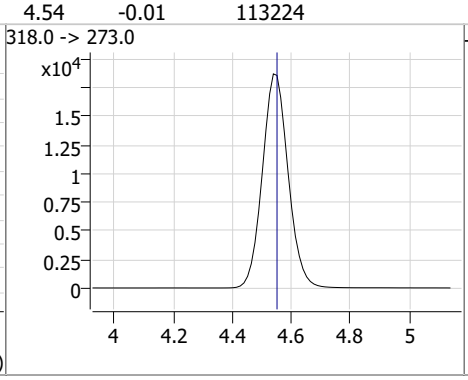


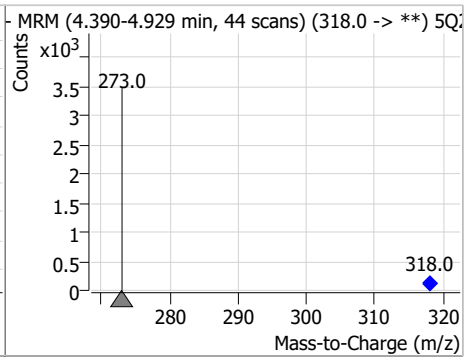




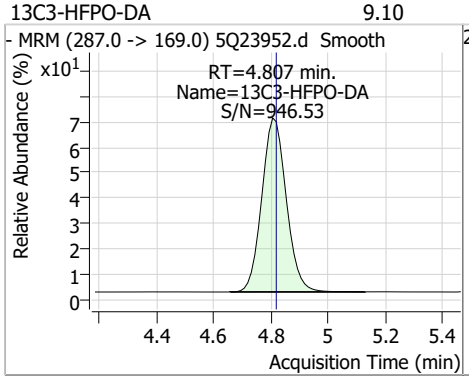
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	9.47	4.54	-0.01	113224				

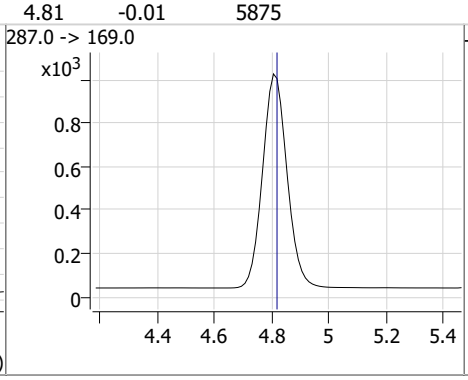


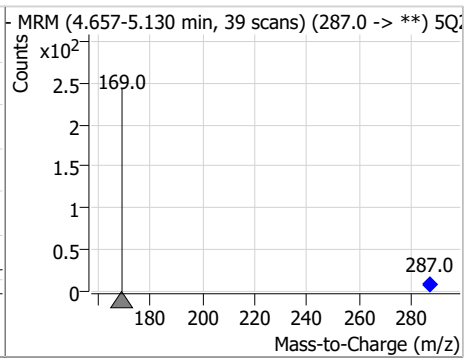




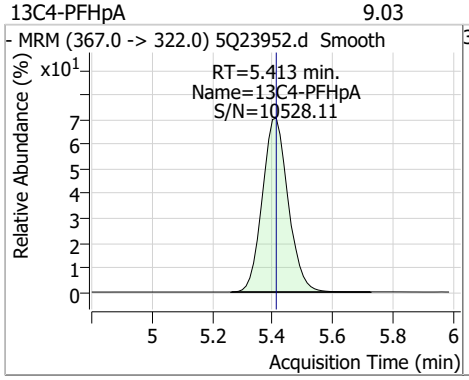
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	9.10	4.81	-0.01	5875				

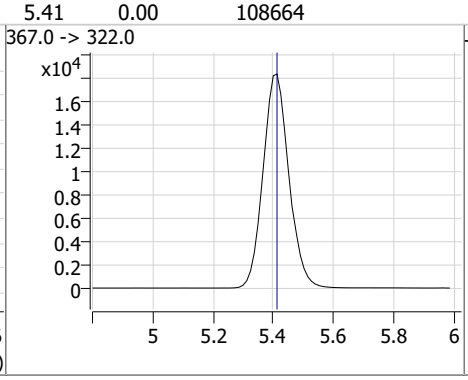


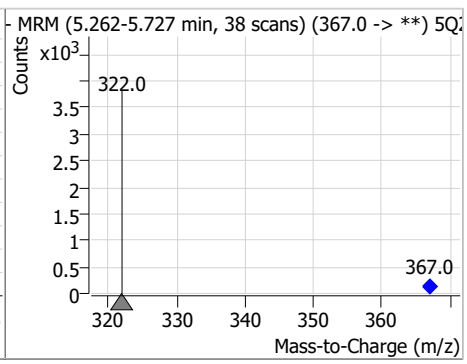




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	9.03	5.41	0.00	108664				

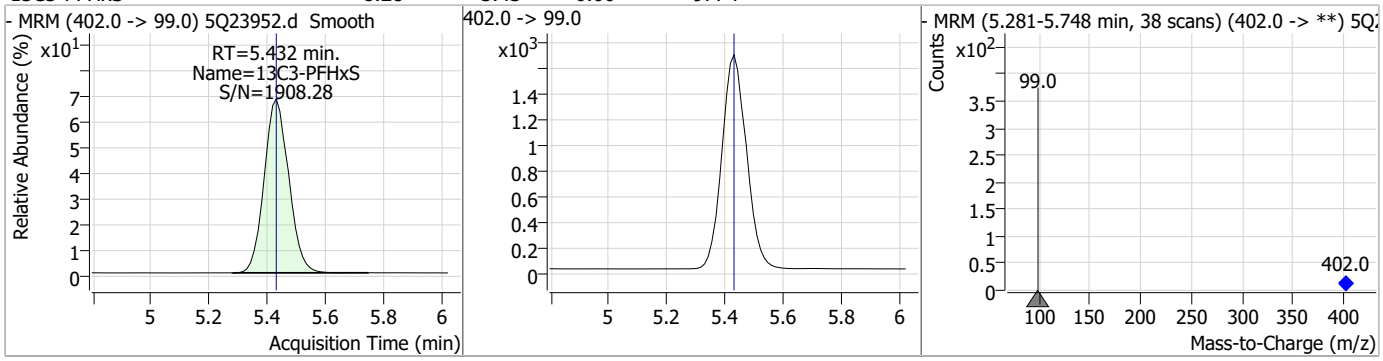




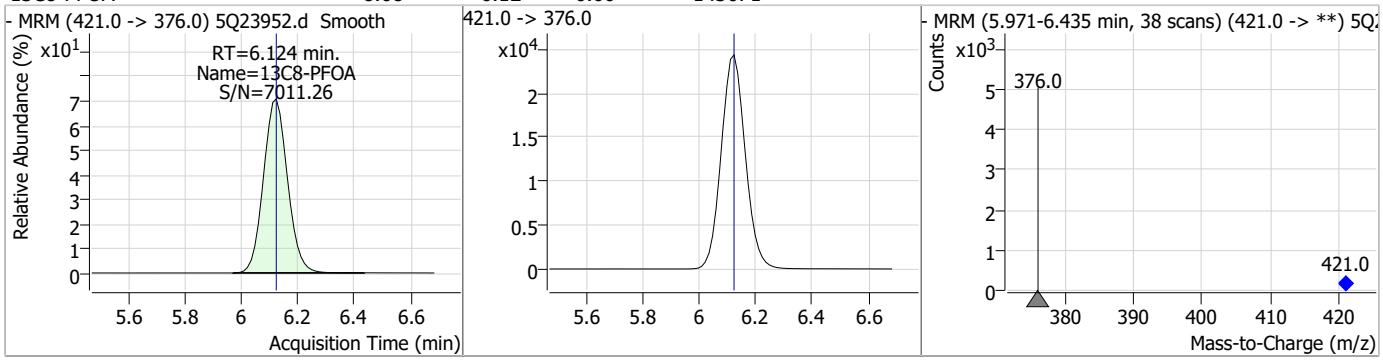


Perfluorinated Compounds by LC/MS/MS

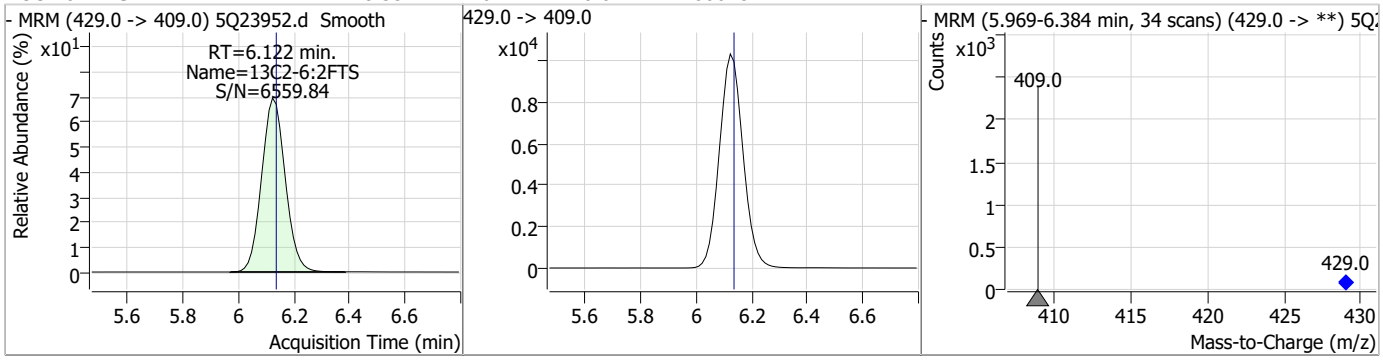
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	8.28	5.43	0.00	9774				



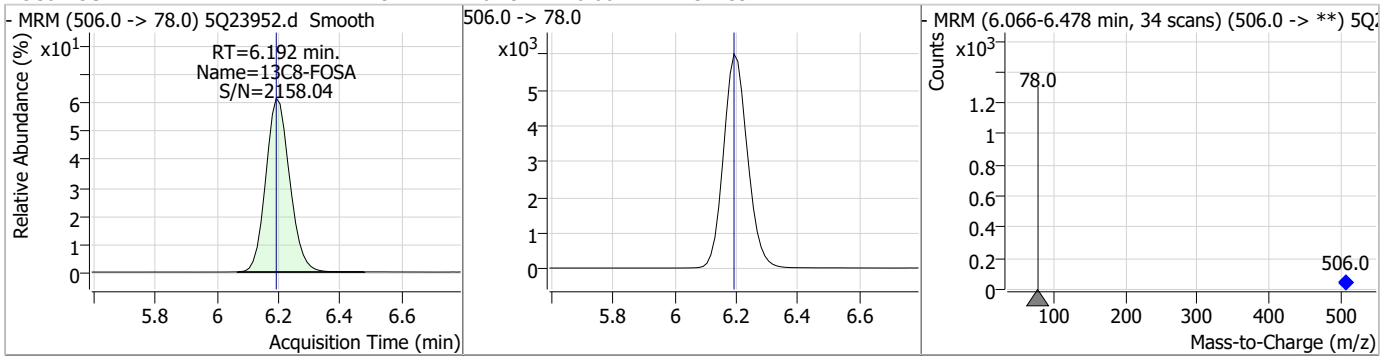
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	8.68	6.12	0.00	143671				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	8.55	6.12	-0.01	60628				

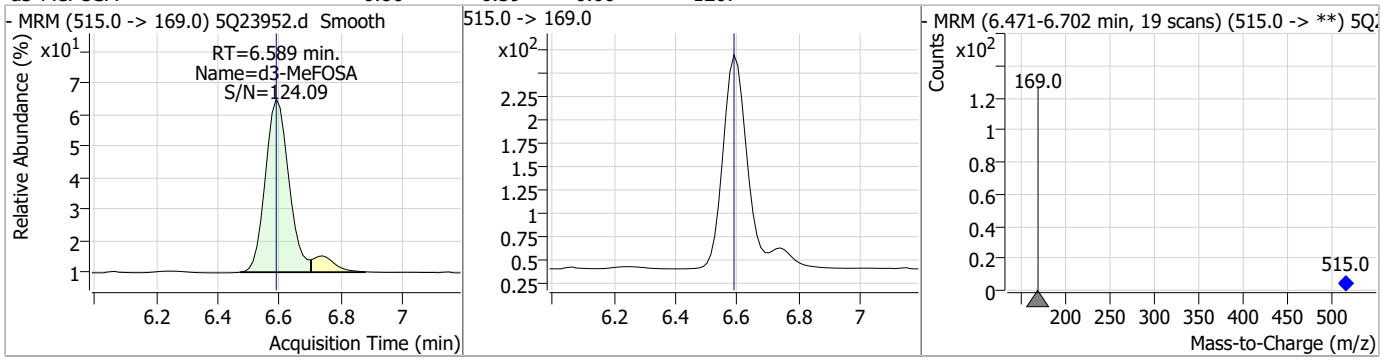


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	7.94	6.19	0.00	32159				

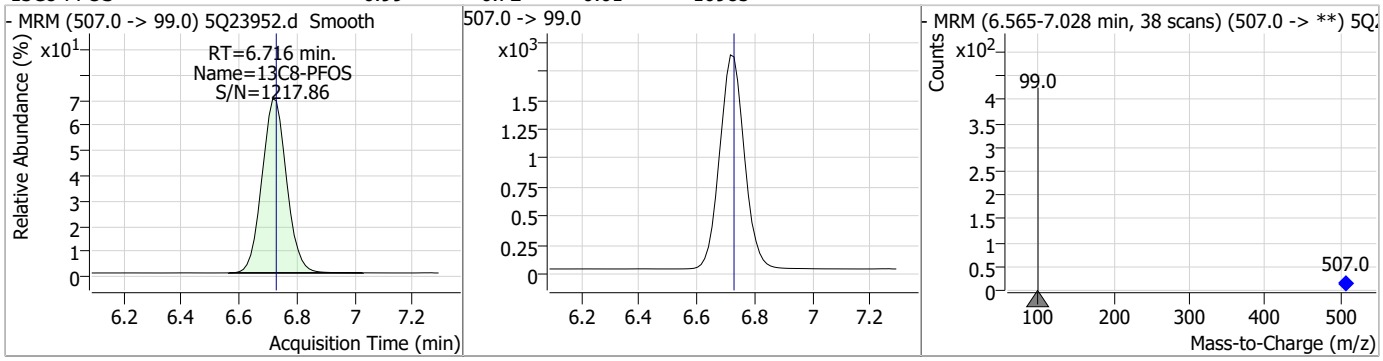


Perfluorinated Compounds by LC/MS/MS

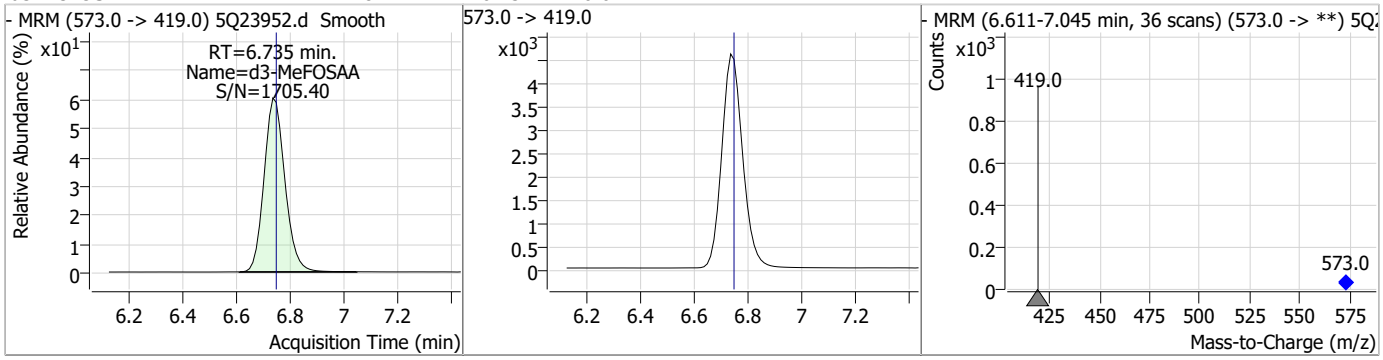
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	0.86	6.59	0.00	1207				



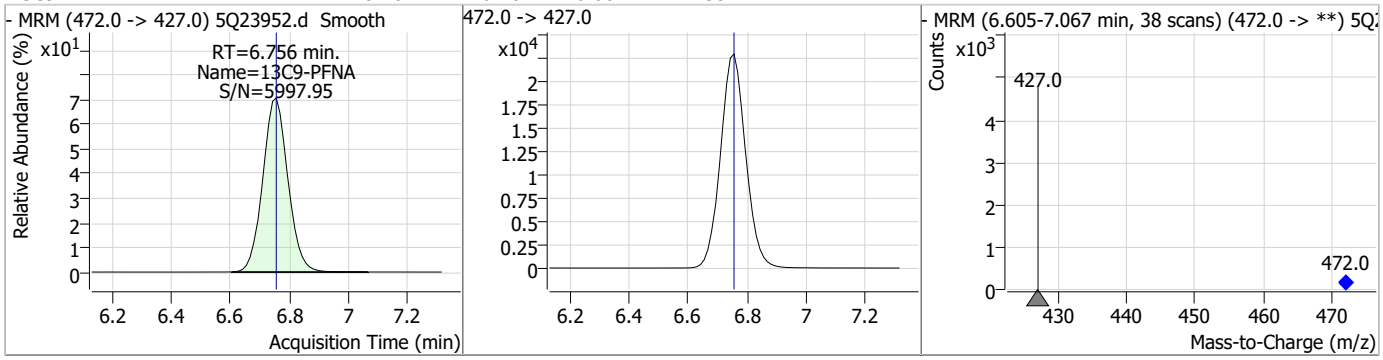
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	6.99	6.72	-0.01	10985				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	8.11	6.73	-0.01	24724				

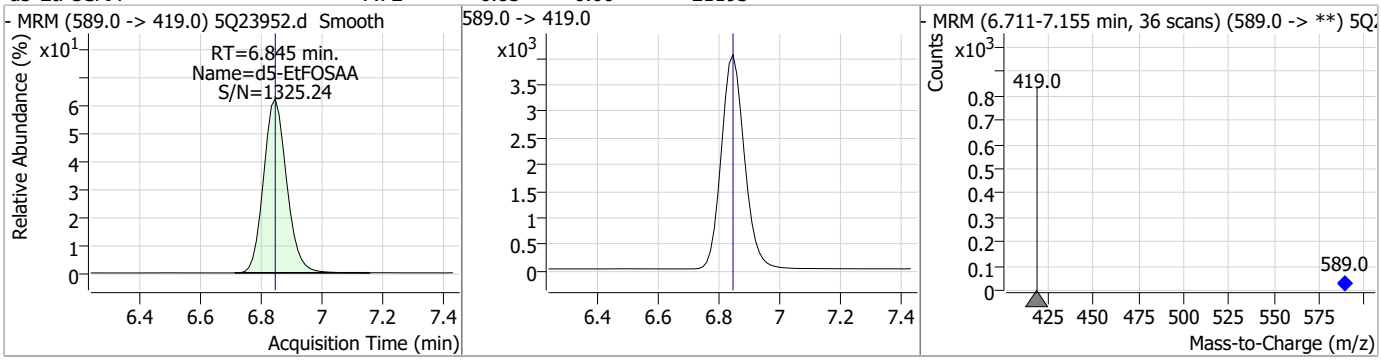


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	8.16	6.76	0.00	135421				

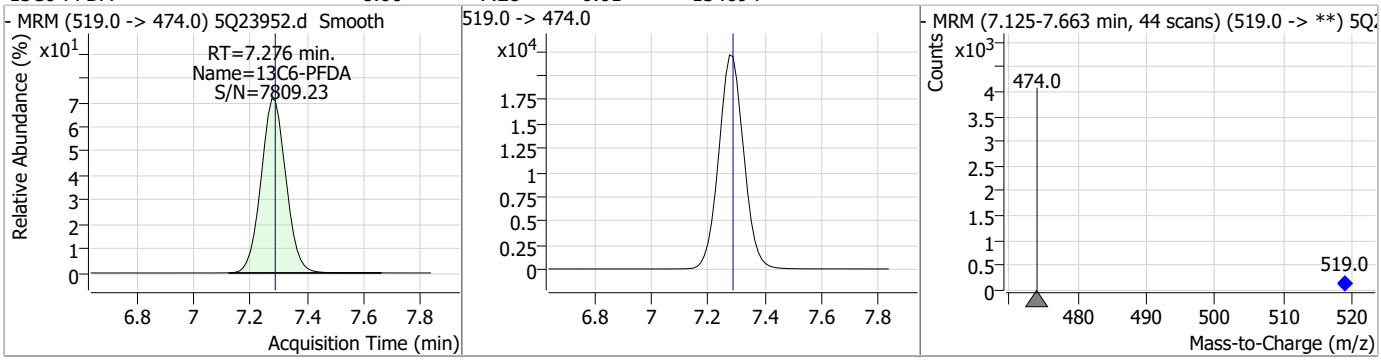


Perfluorinated Compounds by LC/MS/MS

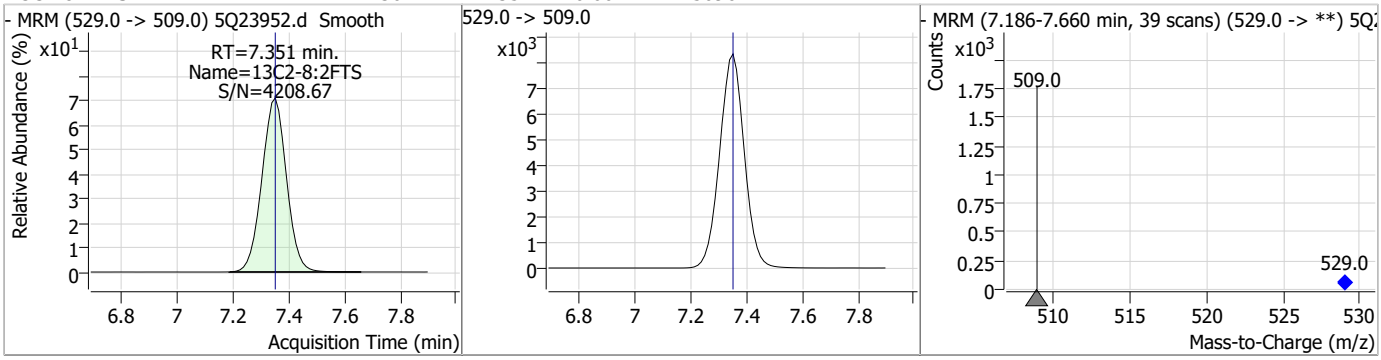
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	7.72	6.85	0.00	21193				



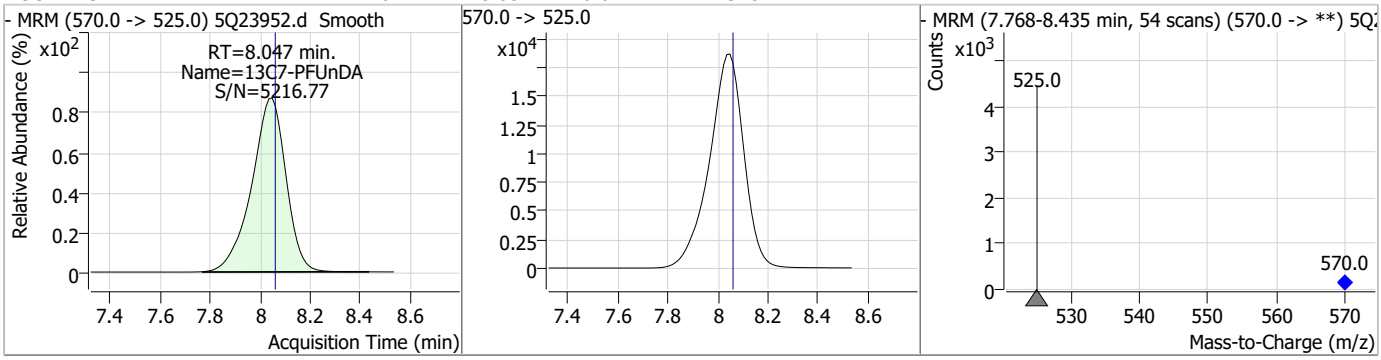
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	8.00	7.28	-0.01	134694				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	7.30	7.35	0.00	50964				

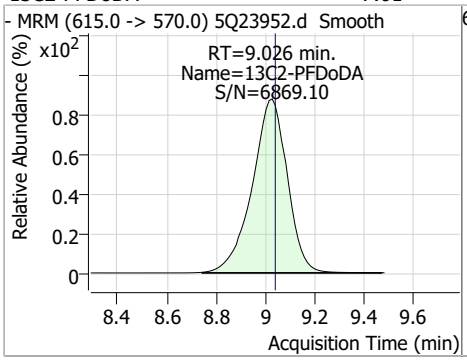


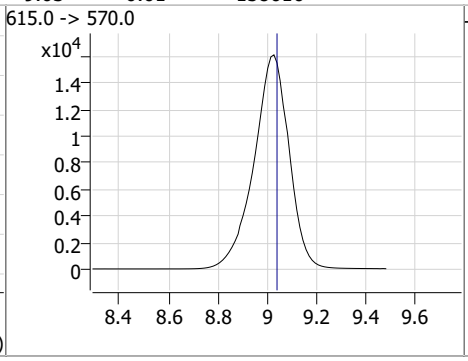
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	7.61	8.05	-0.01	177378				

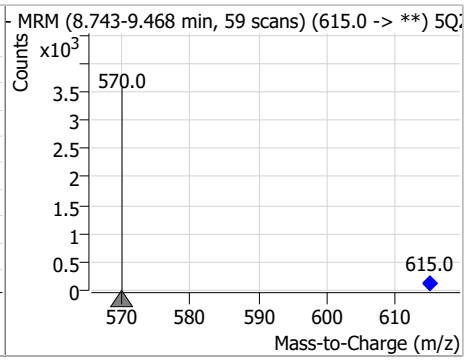


Perfluorinated Compounds by LC/MS/MS

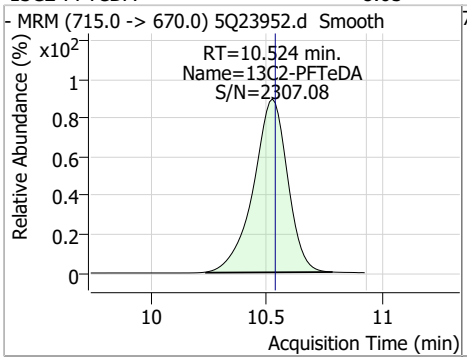
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	7.61	9.03	-0.01	158616				

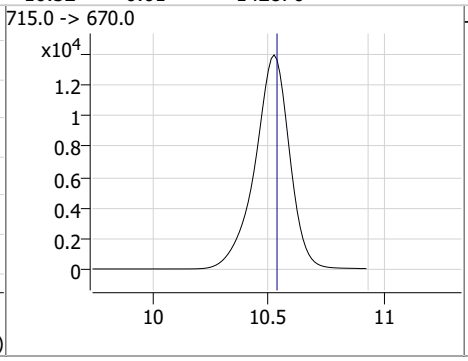


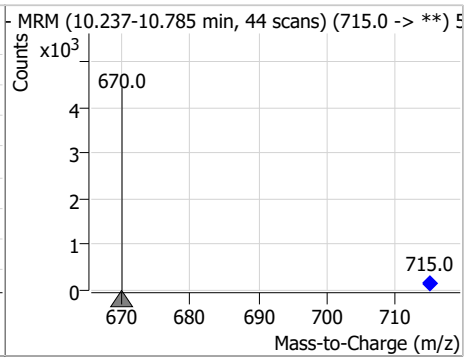




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	8.05	10.52	-0.01	142876				







Perfluorinated Compounds by LC/MS/MS

Data File : 5Q23953.d
Operator : natashag
Acq. Method : 537_ID.m
Acq. Date-Time : 12/29/2023 2:58:16 AM
Sample Name : fc12099-8
Vial : P2-D1
DA Method File : ID_122823_S5Q375.quantmethod.xml
Batch Name : s5q375.batch.bin
Sample Information : OP835,S5Q375,120,,,1.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	1.975	217.0 -> 172.0	59300	10.00 µg/L	-0.013
M5-PFPeA	3.419	268.0 -> 223.0	96035	10.00 µg/L	-0.012
M5-PFHxA	4.540	318.0 -> 273.0	141852	10.00 µg/L	-0.012
M4-PFHpA	5.413	367.0 -> 322.0	139239	10.00 µg/L	0.000
M8-PFOA	6.124	421.0 -> 376.0	181245	10.00 µg/L	0.000
M9-PFNA	6.756	472.0 -> 427.0	168885	10.00 µg/L	0.000
M6-PFDA	7.276	519.0 -> 474.0	168033	10.00 µg/L	-0.012
M7-PFUnDA	8.034	570.0 -> 525.0	211974	10.00 µg/L	-0.025
M2-PFDoDA	9.013	615.0 -> 570.0	187093	10.00 µg/L	-0.025
M2-PFTeDA	10.524	715.0 -> 670.0	171576	10.00 µg/L	-0.013
M8-FOSA	6.192	506.0 -> 78.0	35432	10.00 µg/L	0.000
M3-PFBS	3.612	302.0 -> 99.0	10876	10.00 µg/L	-0.025
M3-PFHxS	5.432	402.0 -> 99.0	12359	10.00 µg/L	0.000
M8-PFOS	6.716	507.0 -> 99.0	13720	10.00 µg/L	-0.012
M2-4:2FTS	4.461	329.0 -> 309.0	46191	10.00 µg/L	-0.012
M2-6:2FTS	6.122	429.0 -> 409.0	77475	10.00 µg/L	-0.013
M2-8:2FTS	7.351	529.0 -> 509.0	65278	10.00 µg/L	0.000
M3-MeFOSAA	6.735	573.0 -> 419.0	30921	10.00 µg/L	-0.012
M3-HFPO-DA	4.807	287.0 -> 169.0	7080	10.00 µg/L	-0.012
M3-MeFOSA	6.589	515.0 -> 169.0	1292	10.00 µg/L	0.000
M5-EtFOSAA	6.845	589.0 -> 419.0	26554	10.00 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	4.461	329.0 -> 309.0	46191	11.49 µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 114.9%	
13C2-6:2FTS	6.122	429.0 -> 409.0	77475	10.93 µg/L	-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 109.3%	
13C2-8:2FTS	7.351	529.0 -> 509.0	65278	9.35 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 93.5%	
13C2-PFDoDA	9.013	615.0 -> 570.0	187093	8.97 µg/L	-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 89.7%	
13C2-PFTeDA	10.524	715.0 -> 670.0	171576	9.67 µg/L	-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 96.7%	
13C3-PFBS	3.612	302.0 -> 99.0	10876	11.20 µg/L	-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 112.0%	
13C3-PFHxS	5.432	402.0 -> 99.0	12359	10.47 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 104.7%	
13C4-PFBA	1.975	217.0 -> 172.0	59300	12.55 µg/L	-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 125.5%	
13C4-PFHpA	5.413	367.0 -> 322.0	139239	11.58 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 115.8%	
13C5-PFHxA	4.540	318.0 -> 273.0	141852	11.87 µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 118.7%	
13C5-PFPeA	3.419	268.0 -> 223.0	96035	12.18 µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 121.8%	
13C6-PFDA	7.276	519.0 -> 474.0	168033	9.98 µg/L	-0.012

Perfluorinated Compounds by LC/MS/MS

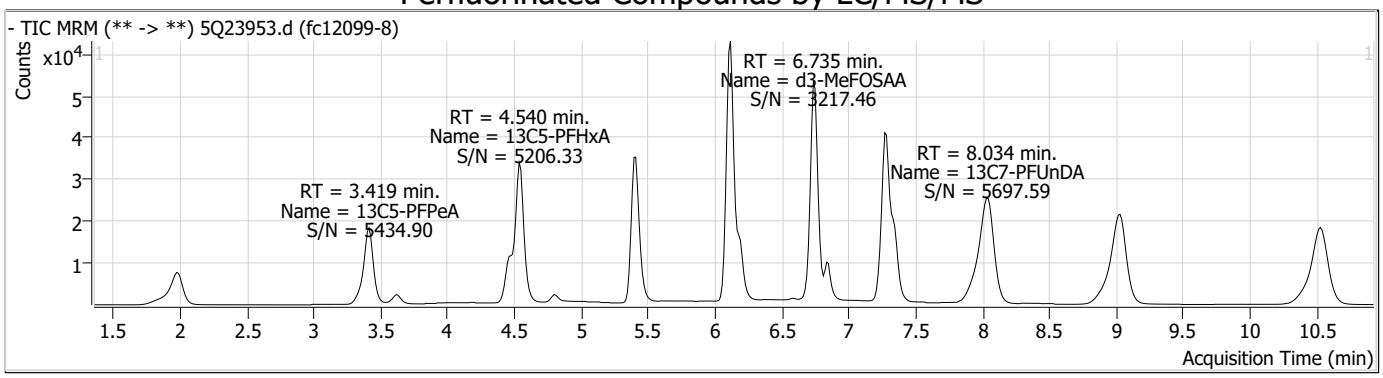
Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.8%	
13C7-PFUnDA	8.034	570.0 -> 525.0	211974	9.09 µg/L	-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 90.9%	
13C8-FOSA	6.192	506.0 -> 78.0	35432	8.74 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 87.4%	
13C8-PFOA	6.124	421.0 -> 376.0	181245	10.95 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 109.5%	
13C8-PFOS	6.716	507.0 -> 99.0	13720	8.73 µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 87.3%	
13C9-PFNA	6.756	472.0 -> 427.0	168885	10.17 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.7%	
d3-MeFOSAA	6.735	573.0 -> 419.0	30921	10.14 µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.4%	
13C3-HFPO-DA	4.807	287.0 -> 169.0	7080	10.96 µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 109.6%	
d3-MeFOSA	6.589	515.0 -> 169.0	1292	0.92 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 9.2%	
d5-EtFOSAA	6.845	589.0 -> 419.0	26554	9.67 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 96.7%	
Target Compounds					QValue
4:2FTS	-	327.0 -> 307.0	-	N.D.	
		327.0 -> 81.0			
6:2FTS	-	427.0 -> 407.0	-	N.D.	
		427.0 -> 81.0			
8:2FTS	-	527.0 -> 507.0	-	N.D.	
		527.0 -> 81.0			
EtFOSAA	-	584.0 -> 419.0	-	N.D.	
		584.0 -> 483.0			
FOSA	-	498.0 -> 78.0	-	N.D.	
		498.0 -> 478.0			
MeFOSAA	-	570.0 -> 419.0	-	N.D.	
		570.0 -> 512.0			
PFBA	-	213.0 -> 169.0	-	N.D.	
PFBS	-	299.0 -> 80.0	-	N.D.	
		299.0 -> 99.0			
PFDA	-	513.0 -> 469.0	-	N.D.	
		513.0 -> 219.0			
PFDoDA	-	613.0 -> 569.0	-	N.D.	
		613.0 -> 319.0			
PFDS	-	599.0 -> 80.0	-	N.D.	
		599.0 -> 99.0			
PFHpA	-	363.0 -> 319.0	-	N.D.	
		363.0 -> 169.0			
PFHpS	-	449.0 -> 80.0	-	N.D.	
		449.0 -> 99.0			
PFHxA	-	313.0 -> 269.0	-	N.D.	
		313.0 -> 119.0			
PFHxS	-	399.0 -> 80.0	-	N.D.	
		399.0 -> 99.0			
PFNA	-	463.0 -> 419.0	-	N.D.	
		463.0 -> 219.0			
PFNS	-	549.0 -> 80.0	-	N.D.	
		549.0 -> 99.0			
PFOA	-	413.0 -> 369.0	-	N.D.	
		413.0 -> 169.0			
PFOS	-	499.0 -> 80.0	-	N.D.	

Perfluorinated Compounds by LC/MS/MS

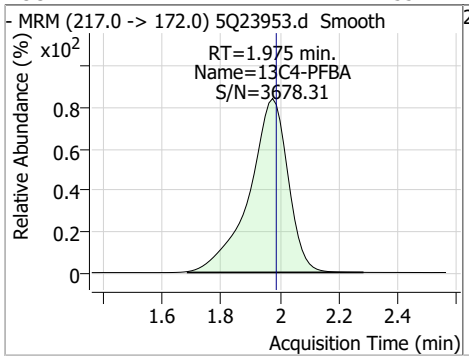
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		499.0 -> 99.0				
PFPeA	-	263.0 -> 219.0	-	N.D.		
PFPeS	-	349.0 -> 80.0	-	N.D.		
		349.0 -> 99.0				
PFTeDA	-	713.0 -> 669.0	-	N.D.		
		713.0 -> 219.0				
PFTrDA	-	663.0 -> 619.0	-	N.D.		
		663.0 -> 369.0				
PFUnDA	-	563.0 -> 519.0	-	N.D.		
		563.0 -> 269.0				
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.		
		633.0 -> 453.0				
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.		
		533.0 -> 353.0				
ADONA	-	377.0 -> 251.0	-	N.D.		
		377.0 -> 85.0				
HFPO-DA	-	329.0 -> 169.0	-	N.D.		
		285.0 -> 169.0				
MeFOSA	-	512.0 -> 169.0	-	N.D.		
		512.0 -> 219.0				
4-PFECHS	-	461.0 -> 381.0	-	N.D.		
		461.0 -> 99.0				
FBSA	-	298.0 -> 78.0	-	N.D.		
		298.0 -> 64.0				
FHxSA	-	398.0 -> 78.0	-	N.D.		
		398.0 -> 64.0				

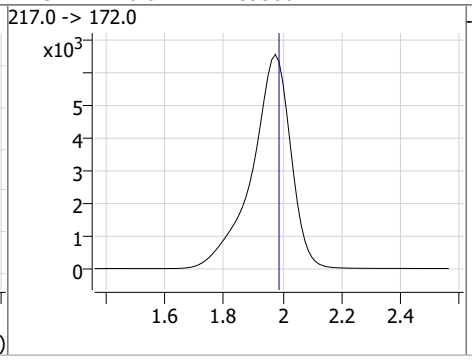
 # = Qualifier out of range, m = manually integrated, + = Area summed

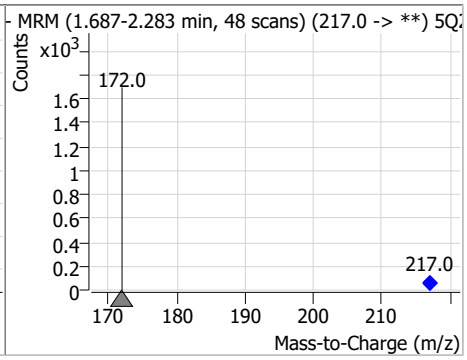
Perfluorinated Compounds by LC/MS/MS



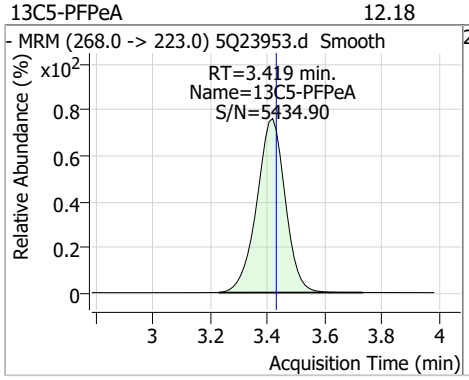
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	12.55	1.97	-0.01	59300				

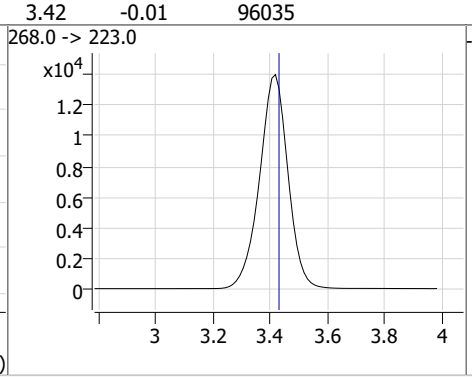


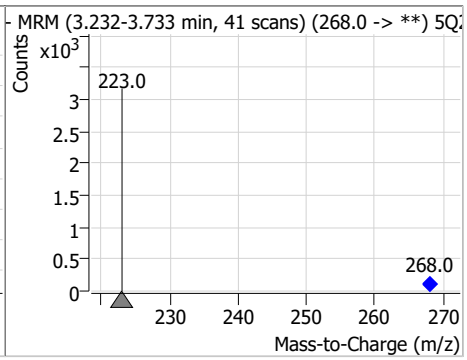




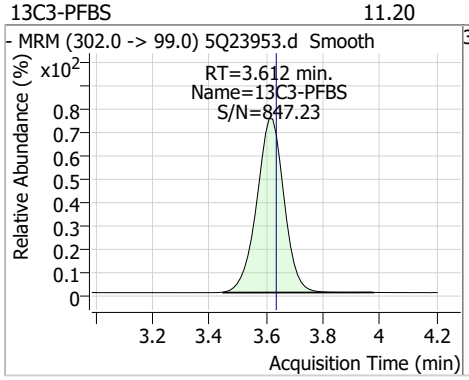
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	12.18	3.42	-0.01	96035				

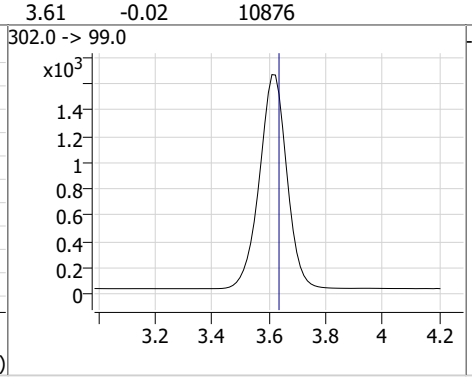


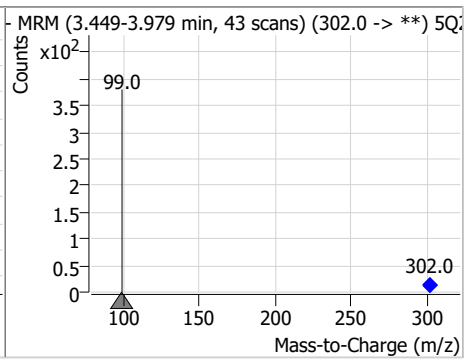




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	11.20	3.61	-0.02	10876				

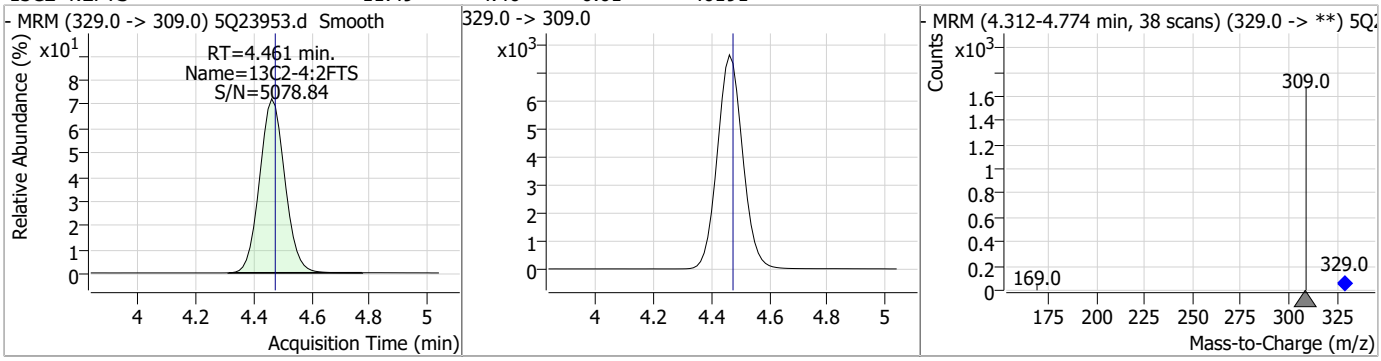




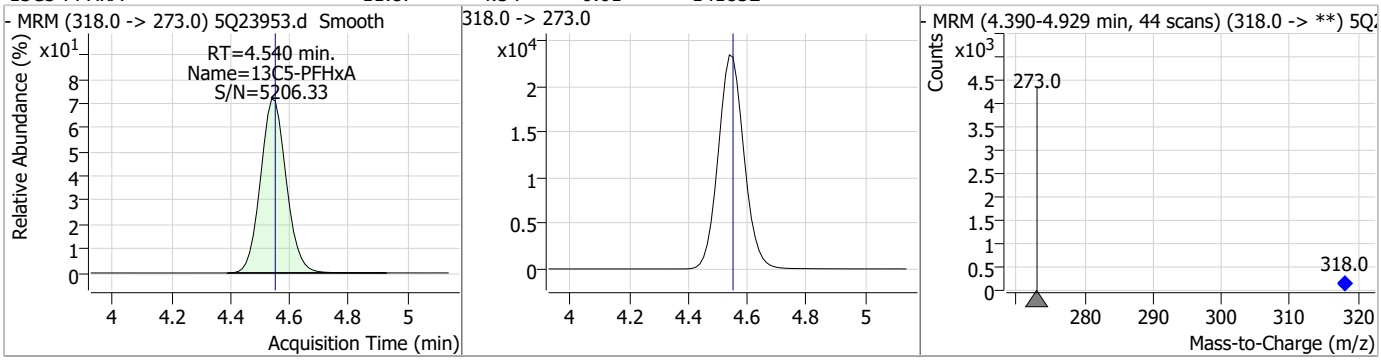


Perfluorinated Compounds by LC/MS/MS

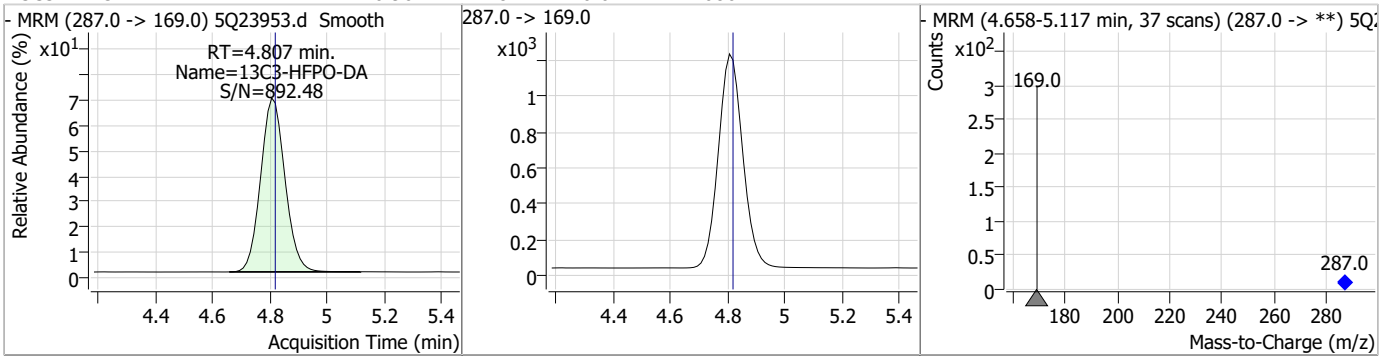
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	11.49	4.46	-0.01	46191				



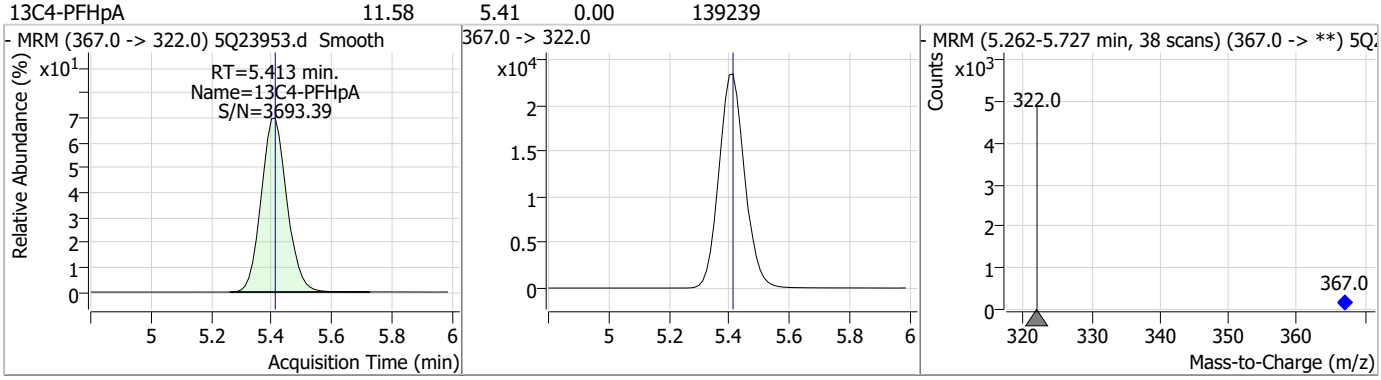
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	11.87	4.54	-0.01	141852				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	10.96	4.81	-0.01	7080				

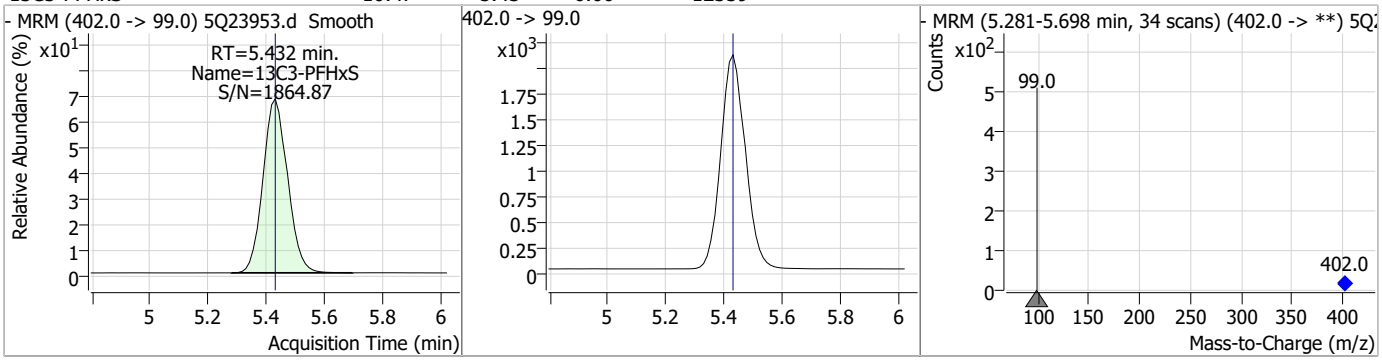


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	11.58	5.41	0.00	139239				

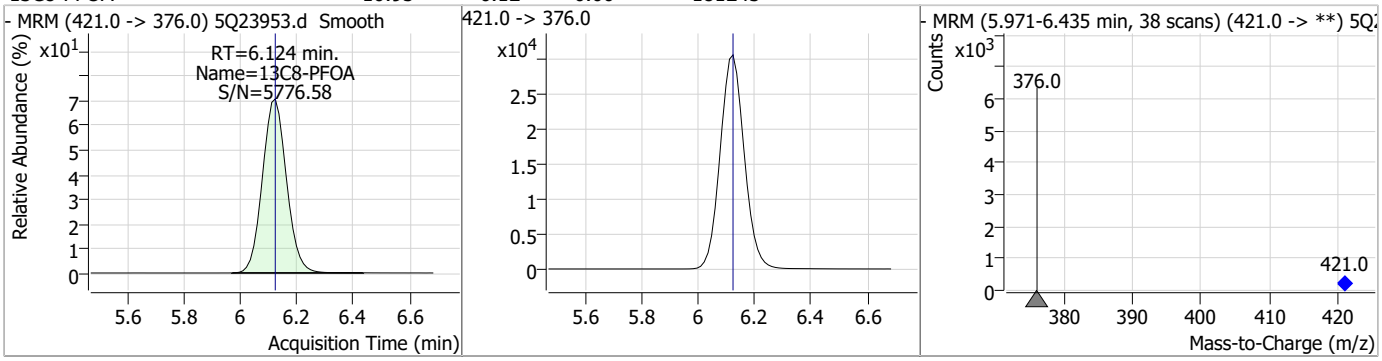


Perfluorinated Compounds by LC/MS/MS

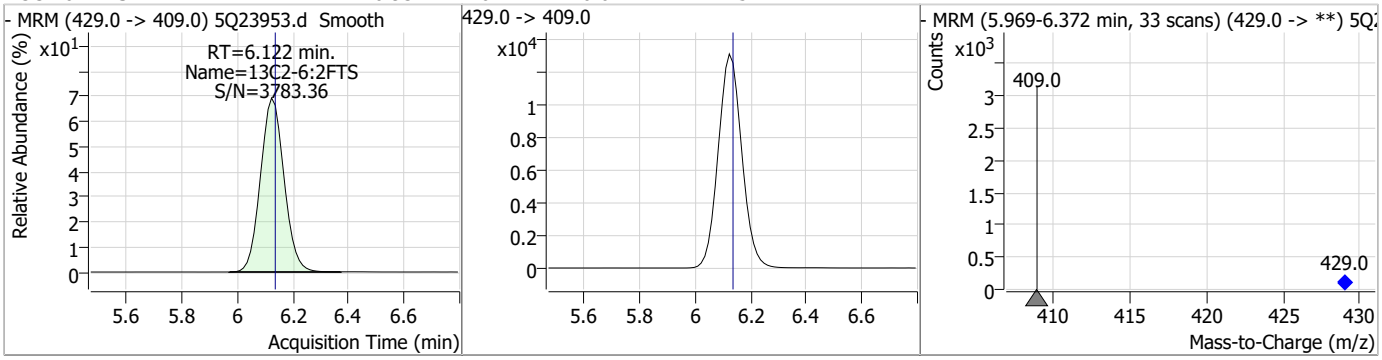
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	10.47	5.43	0.00	12359				



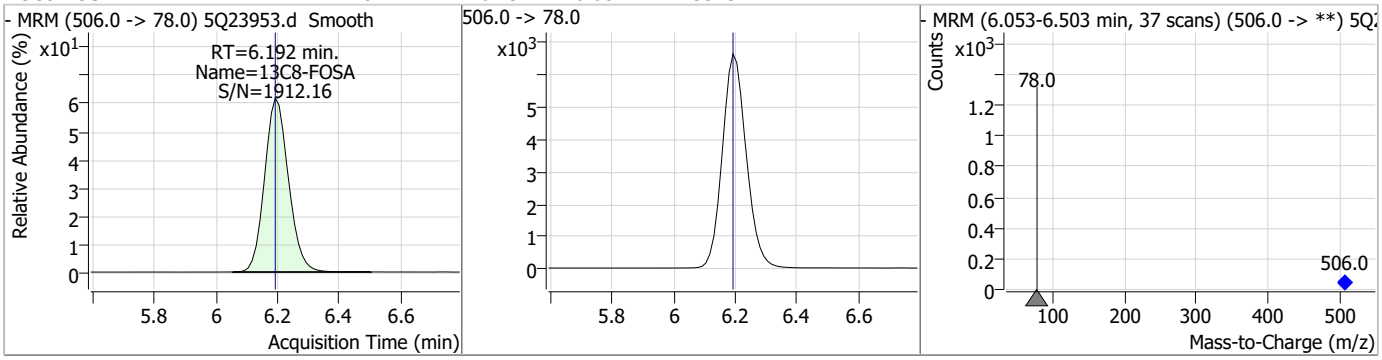
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	10.95	6.12	0.00	181245				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	10.93	6.12	-0.01	77475				

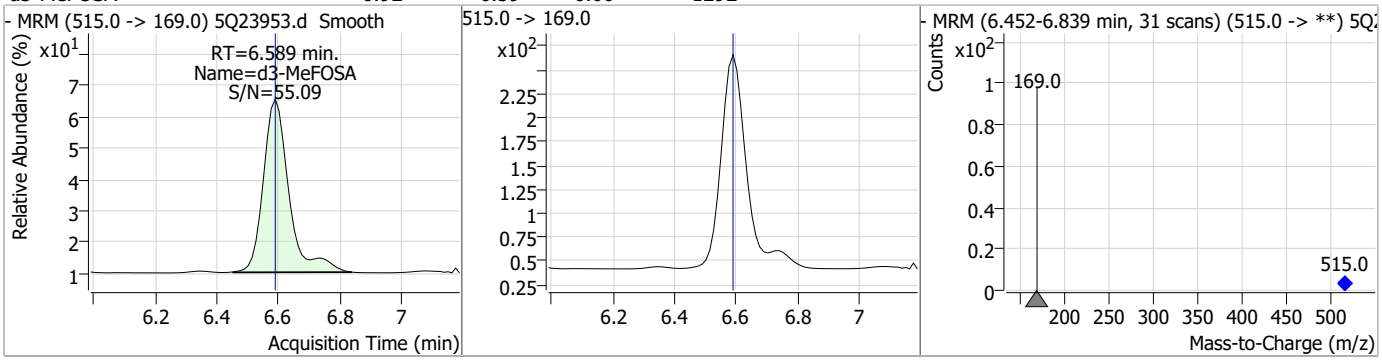


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	8.74	6.19	0.00	35432				

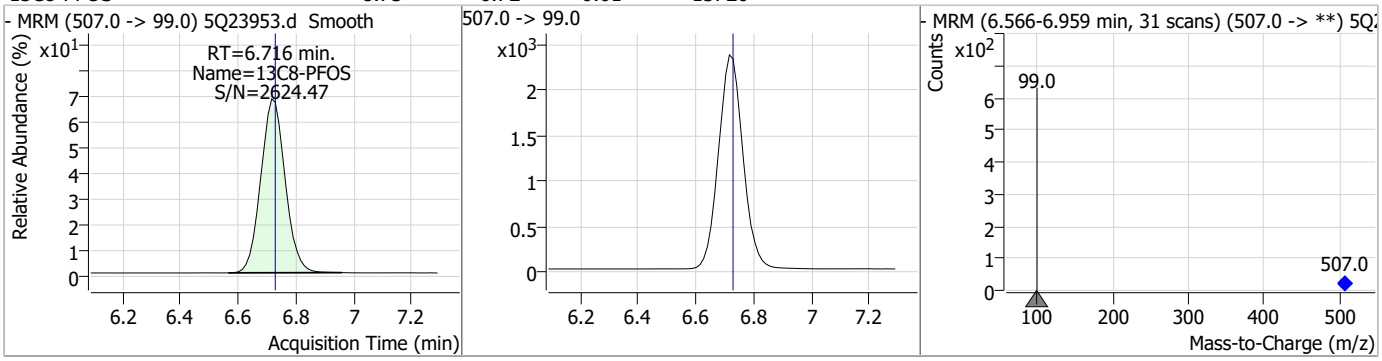


Perfluorinated Compounds by LC/MS/MS

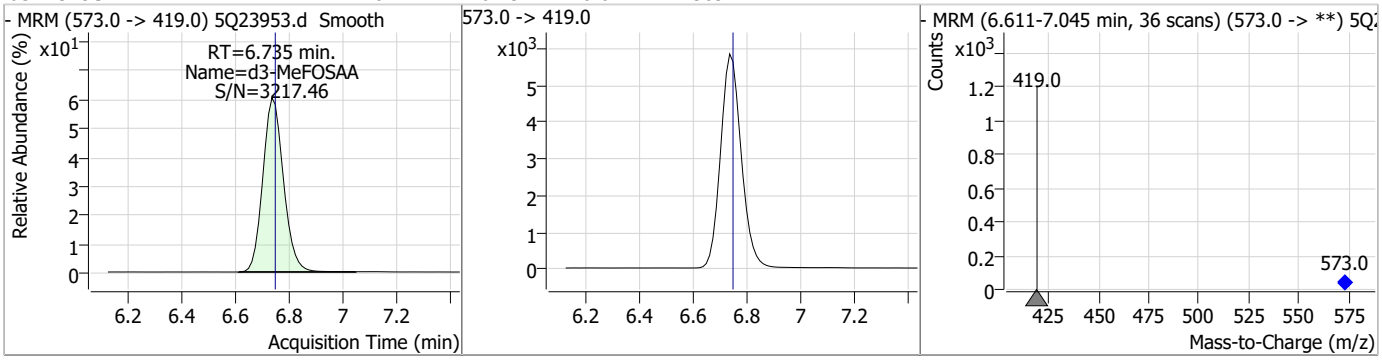
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	0.92	6.59	0.00	1292				



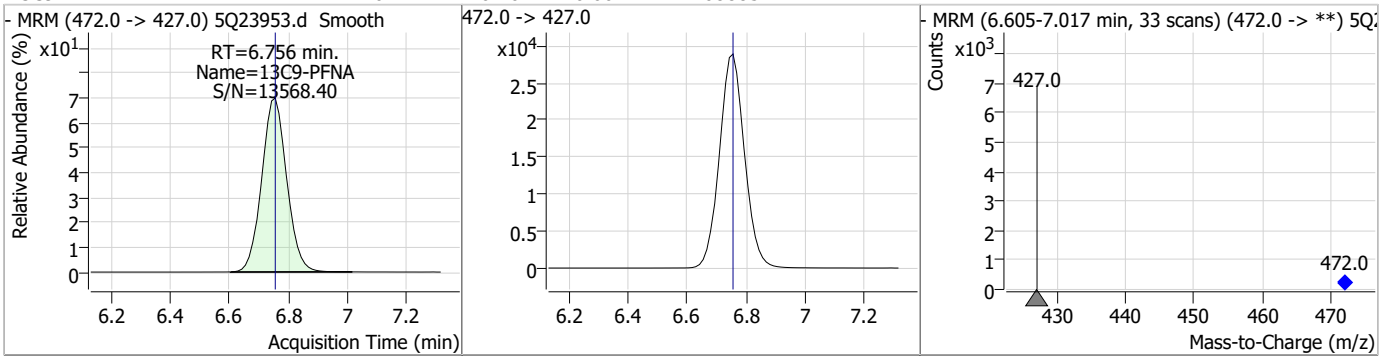
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	8.73	6.72	-0.01	13720				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	10.14	6.73	-0.01	30921				

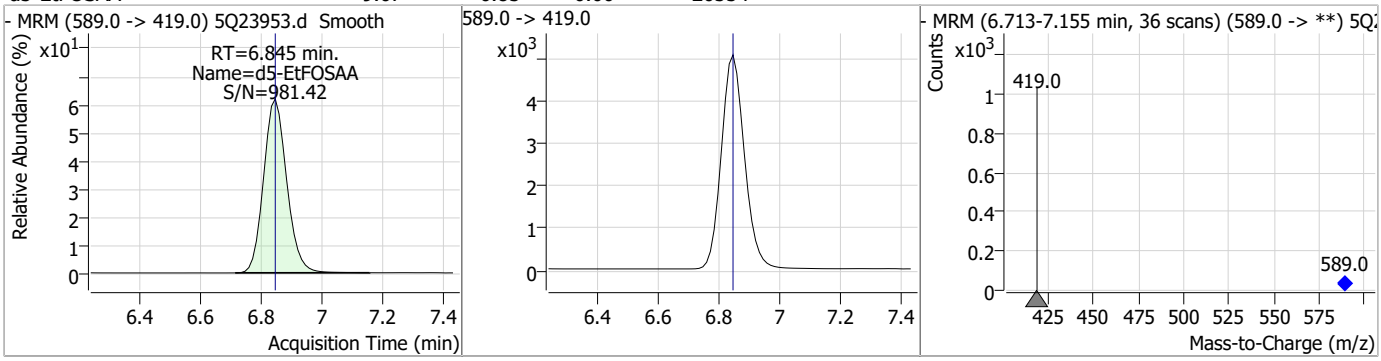


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	10.17	6.76	0.00	168885				

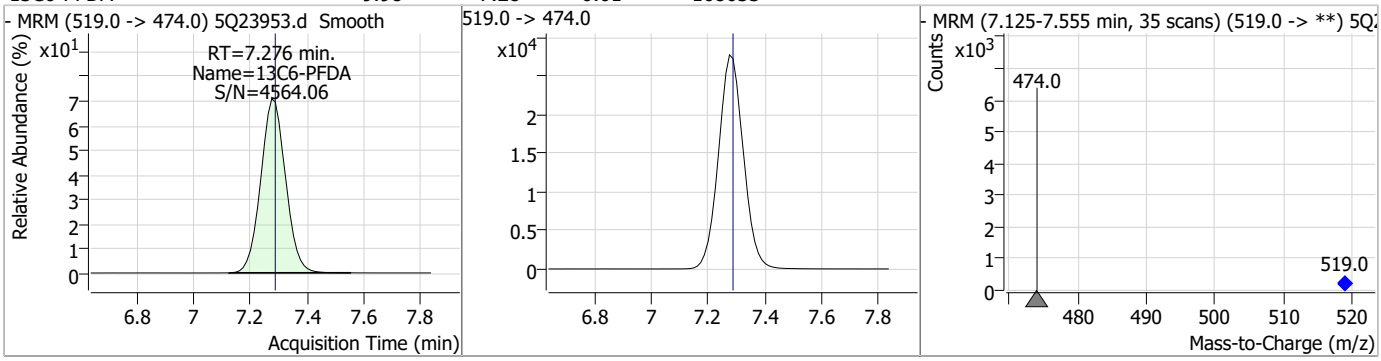


Perfluorinated Compounds by LC/MS/MS

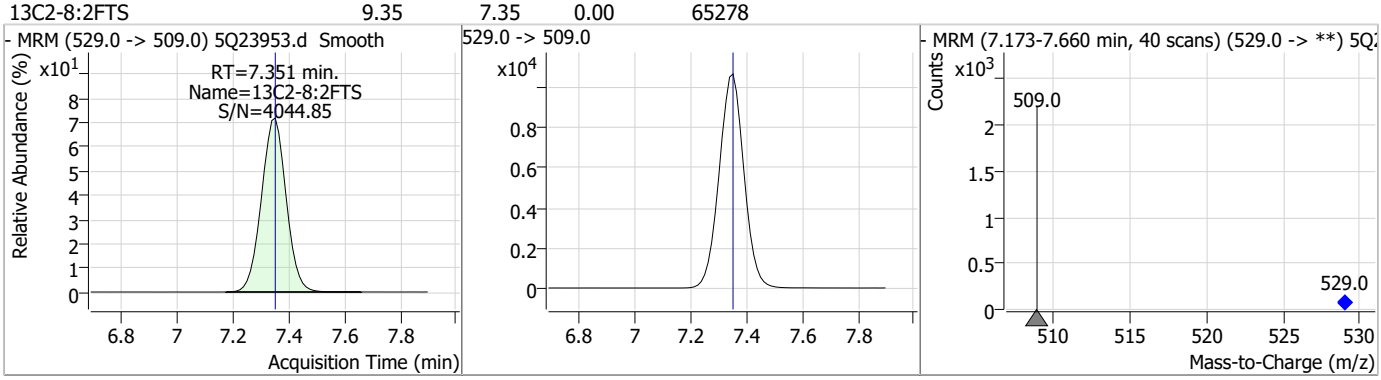
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	9.67	6.85	0.00	26554				



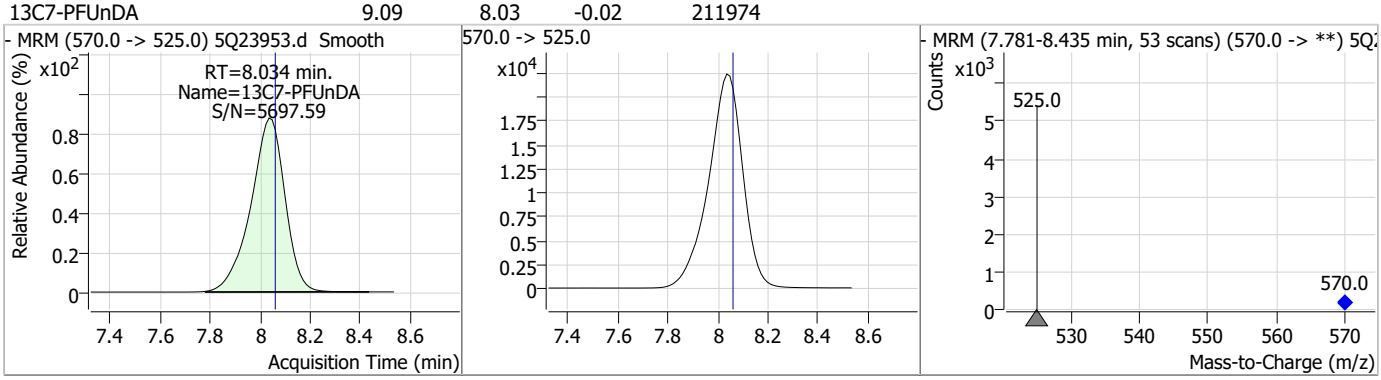
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	9.98	7.28	-0.01	168033				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	9.35	7.35	0.00	65278				

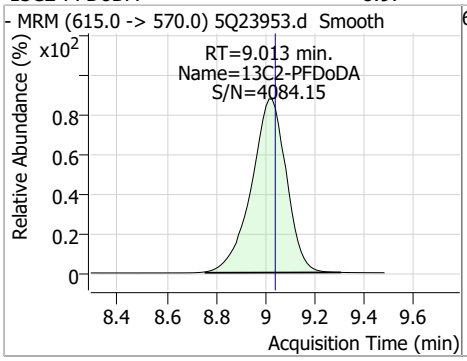


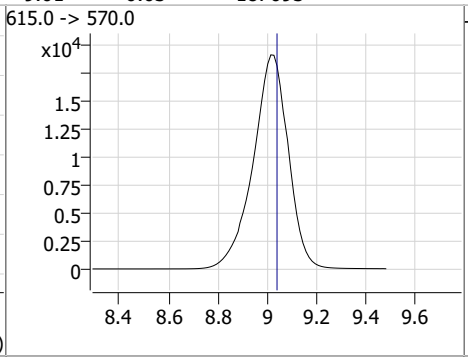
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	9.09	8.03	-0.02	211974				

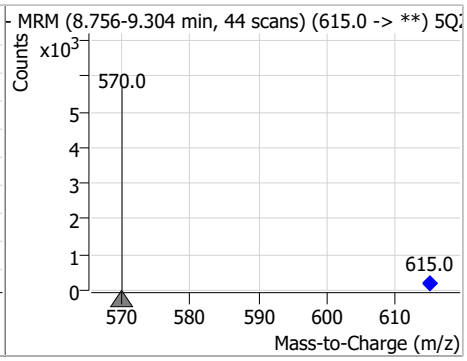


Perfluorinated Compounds by LC/MS/MS

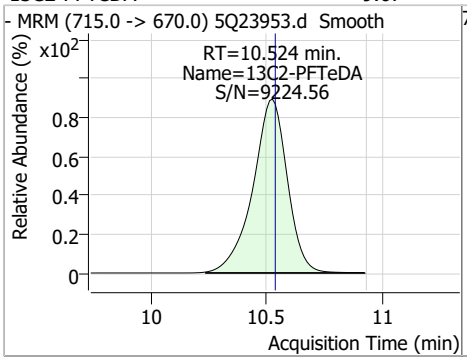
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	8.97	9.01	-0.03	187093				

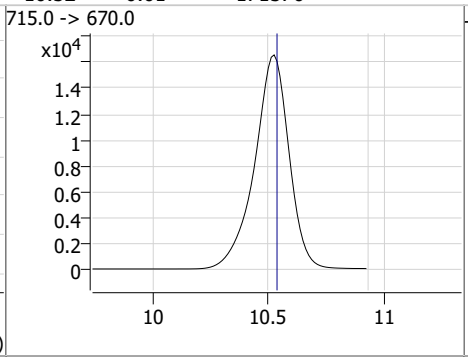


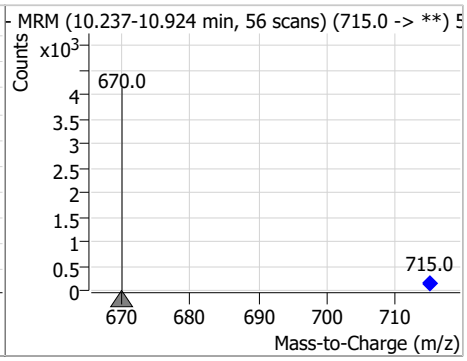




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	9.67	10.52	-0.01	171576				







Manual Integrations APPROVED (compounds with "m" flag)
Natasha Gumtie 01/09/24 10:19

Perfluorinated Compounds by LC/MS/MS

Data File : 2q118607.d
Operator : lindsayr
Acq. Method : 537_ID.m
Acq. Date-Time : 1/4/2024 5:08:40 PM
Sample Name : fc12099-14re
Vial : P6-A4
DA Method File : ID_010224_S2Q1691.quantmethod.xml
Batch Name : s2q1693.batch.bin
Sample Information : op937,S2Q1693,125,,,1.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M5-EtFOSAA	7.722	589.0 -> 419.0	12841	10.00	µg/L	0.000
M4-PFBA	2.227	217.0 -> 172.0	36544	10.00	µg/L	-0.013
M5-PFPeA	4.049	268.0 -> 223.0	55696	10.00	µg/L	-0.013
M5-PFHxA	5.314	318.0 -> 273.0	67904	10.00	µg/L	-0.025
M4-PFHpA	6.182	367.0 -> 322.0	60150	10.00	µg/L	-0.025
M8-PFOA	6.875	421.0 -> 376.0	122129	10.00	µg/L	-0.013
M9-PFNA	7.442	472.0 -> 427.0	91987	10.00	µg/L	-0.013
M6-PFDA	7.919	519.0 -> 474.0	72736	10.00	µg/L	-0.013
M7-PFUnDA	8.381	570.0 -> 525.0	103938	10.00	µg/L	0.000
M2-PFDoDA	8.908	615.0 -> 570.0	89813	10.00	µg/L	-0.013
M2-PFTeDA	10.005	715.0 -> 670.0	55337	10.00	µg/L	-0.013
M8-FOSA	7.147	506.0 -> 78.0	8853	10.00	µg/L	-0.013
M3-PFBS	4.317	302.0 -> 99.0	4149	10.00	µg/L	-0.013
M3-PFHxS	6.218	402.0 -> 99.0	3981	10.00	µg/L	-0.025
M8-PFOS	7.413	507.0 -> 99.0	3389	10.00	µg/L	-0.014
M2-4:2FTS	5.221	329.0 -> 309.0	25419	10.00	µg/L	-0.013
M2-6:2FTS	6.860	429.0 -> 409.0	40330	10.00	µg/L	-0.025
M2-8:2FTS	7.967	529.0 -> 509.0	25955	10.00	µg/L	0.000
M3-MeFOSAA	7.609	573.0 -> 419.0	15905	10.00	µg/L	0.000
M3-HFPO-DA	5.582	287.0 -> 169.0	5644	10.00	µg/L	-0.025
M3-MeFOSA	7.513	515.0 -> 169.0	653	10.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	5.221	329.0 -> 309.0	25419	6.89	µg/L	-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 68.9%		
13C2-6:2FTS	6.860	429.0 -> 409.0	40330	7.02	µg/L	-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 70.2%		
13C2-8:2FTS	7.967	529.0 -> 509.0	25955	6.70	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 67.0%		
13C2-PFDoDA	8.908	615.0 -> 570.0	89813	5.13	µg/L	-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 51.3%		
13C2-PFTeDA	10.005	715.0 -> 670.0	55337	4.16	µg/L	-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 41.6%		
13C3-PFBS	4.317	302.0 -> 99.0	4149	6.91	µg/L	-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 69.1%		
13C3-PFHxS	6.218	402.0 -> 99.0	3981	6.50	µg/L	-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 65.0%		
13C4-PFBA	2.227	217.0 -> 172.0	36544	7.08	µg/L	-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 70.8%		
13C4-PFHpA	6.182	367.0 -> 322.0	60150	7.00	µg/L	-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 70.0%		
d5-EtFOSAA	7.722	589.0 -> 419.0	12841	6.66	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 66.6%		
13C5-PFHxA	5.314	318.0 -> 273.0	67904	6.88	µg/L	-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 68.8%		
13C5-PFPeA	4.049	268.0 -> 223.0	55696	7.00	µg/L	-0.013

Perfluorinated Compounds by LC/MS/MS

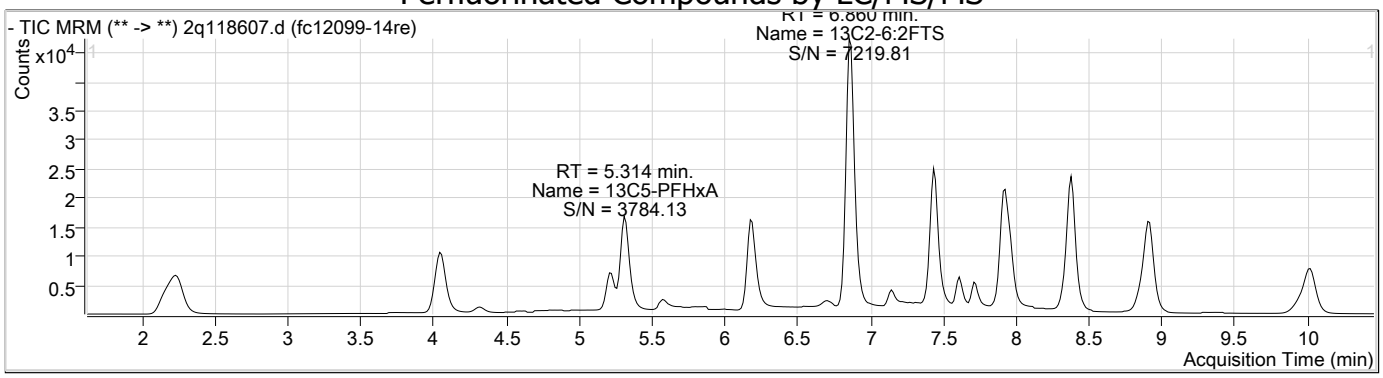
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 70.0%			
13C6-PFDA	7.919	519.0 -> 474.0	72736	6.96	µg/L		-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 69.6%			
13C7-PFUnDA	8.381	570.0 -> 525.0	103938	5.98	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 59.8%			
13C8-FOSA	7.147	506.0 -> 78.0	8853	4.31	µg/L		-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 43.1%			
13C8-PFOA	6.875	421.0 -> 376.0	122129	7.22	µg/L		-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 72.2%			
13C8-PFOS	7.413	507.0 -> 99.0	3389	6.07	µg/L		-0.014
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 60.7%			
13C9-PFNA	7.442	472.0 -> 427.0	91987	6.83	µg/L		-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 68.3%			
d3-MeFOSAA	7.609	573.0 -> 419.0	15905	6.95	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 69.5%			
13C3-HFPO-DA	5.582	287.0 -> 169.0	5644	6.79	µg/L		-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 67.9%			
d3-MeFOSA	7.513	515.0 -> 169.0	653	0.91	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 9.1%			
Target Compounds							QValue
4:2FTS	-	327.0 -> 307.0	-	N.D.			
		327.0 -> 81.0					
6:2FTS	-	427.0 -> 407.0	-	N.D.			
		427.0 -> 81.0					
8:2FTS	-	527.0 -> 507.0	-	N.D.			
		527.0 -> 81.0					
EtFOSAA	-	584.0 -> 419.0	-	N.D.			
		584.0 -> 483.0					
FOSA	-	498.0 -> 78.0	-	N.D.			
		498.0 -> 478.0					
MeFOSAA	-	570.0 -> 419.0	-	N.D.			
		570.0 -> 512.0					
PFBA	2.221	213.0 -> 169.0	22520	19.57	µg/L		100
PFBS	-	299.0 -> 80.0	-	N.D.			
		299.0 -> 99.0					
PFDA	-	513.0 -> 469.0	-	N.D.			
		513.0 -> 219.0					
PFDoDA	-	613.0 -> 569.0	-	N.D.			
		613.0 -> 319.0					
PFDS	-	599.0 -> 80.0	-	N.D.			
		599.0 -> 99.0					
PFHpA	6.183	363.0 -> 319.0	3238	0.33	µg/L	m	95
		363.0 -> 169.0	610				
PFHpS	-	449.0 -> 80.0	-	N.D.			
		449.0 -> 99.0					
PFHxA	5.315	313.0 -> 269.0	2103	0.30	µg/L		97
		313.0 -> 119.0	102				
PFHxS	6.219	399.0 -> 80.0	984	1.13	µg/L	m	99
		399.0 -> 99.0	510				
PFNA	-	463.0 -> 419.0	-	N.D.			
		463.0 -> 219.0					
PFNS	-	549.0 -> 80.0	-	N.D.			
		549.0 -> 99.0					
PFOA	6.875	413.0 -> 369.0	28491	2.18	µg/L	m	95
		413.0 -> 169.0	5847				
PFOS	7.223	499.0 -> 80.0	3620	6.81	µg/L	m	84

Perfluorinated Compounds by LC/MS/MS

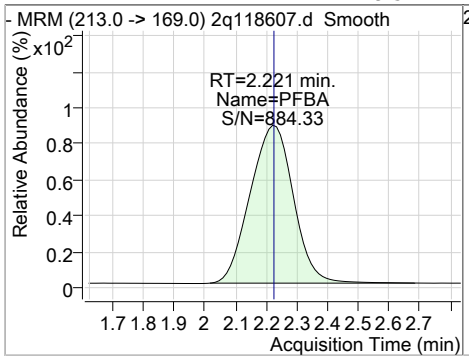
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		499.0 -> 99.0	1438			
PFPeA	4.052	263.0 -> 219.0	1148	0.26	µg/L	100
PFPeS	-	349.0 -> 80.0	-	N.D.		
		349.0 -> 99.0				
PFTeDA	-	713.0 -> 669.0	-	N.D.		
		713.0 -> 219.0				
PFTrDA	-	663.0 -> 619.0	-	N.D.		
		663.0 -> 369.0				
PFUnDA	-	563.0 -> 519.0	-	N.D.		
		563.0 -> 269.0				
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.		
		633.0 -> 453.0				
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.		
		533.0 -> 353.0				
ADONA	-	377.0 -> 251.0	-	N.D.		
		377.0 -> 85.0				
HFPO-DA	-	329.0 -> 169.0	-	N.D.		
		285.0 -> 169.0				
MeFOSA	-	512.0 -> 169.0	-	N.D.		
		512.0 -> 219.0				
4-PFECHS	-	461.0 -> 381.0	-	N.D.		
		461.0 -> 99.0				
FBSA	-	298.0 -> 78.0	-	N.D.		
		298.0 -> 64.0				
FHxSA	-	398.0 -> 78.0	-	N.D.		
		398.0 -> 64.0				

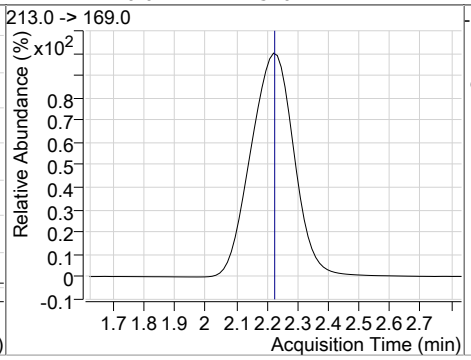
 # = Qualifier out of range, m = manually integrated, + = Area summed

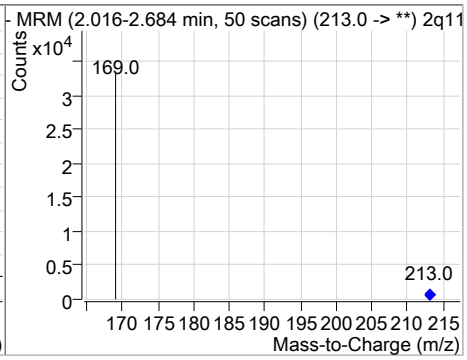
Perfluorinated Compounds by LC/MS/MS



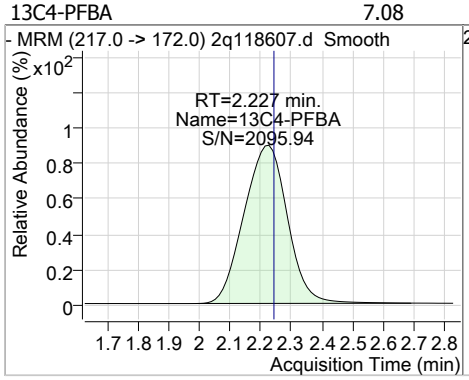
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	19.57	2.22	-0.01	22520				

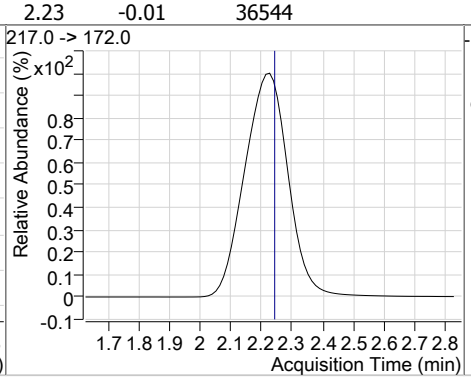


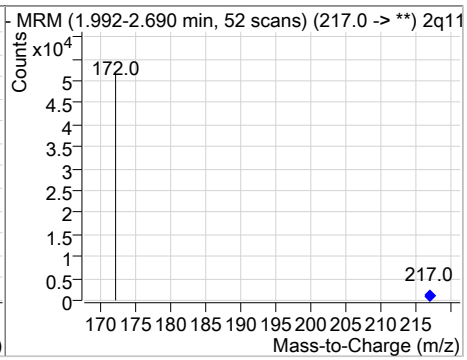




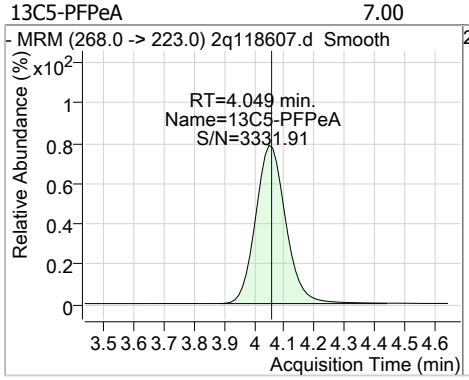
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	7.08	2.23	-0.01	36544				

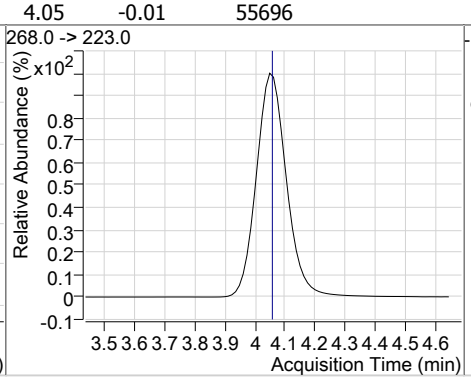


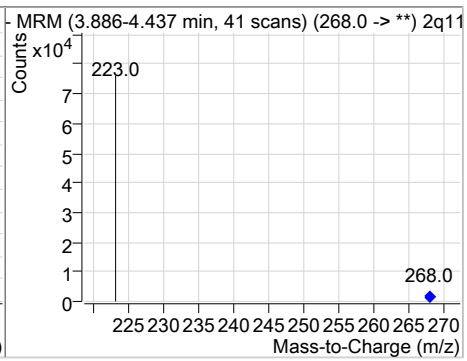




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	7.00	4.05	-0.01	55696				

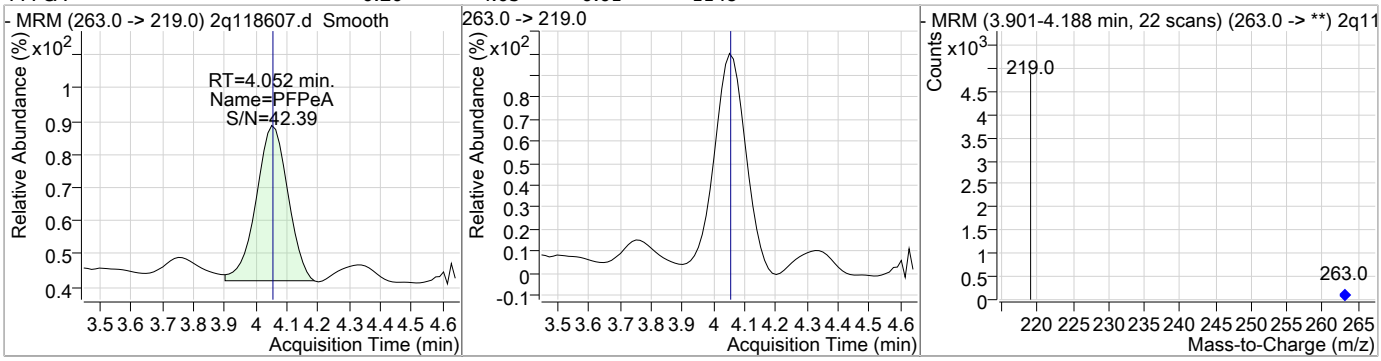




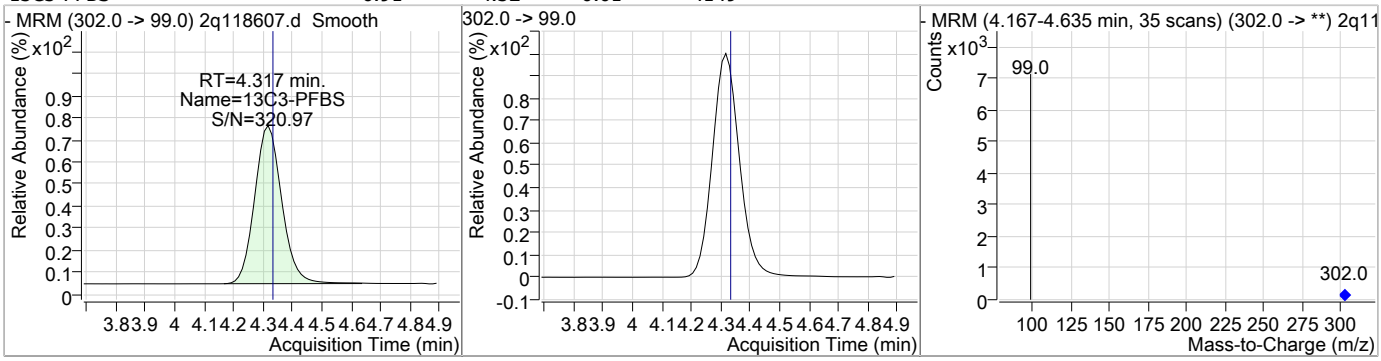


Perfluorinated Compounds by LC/MS/MS

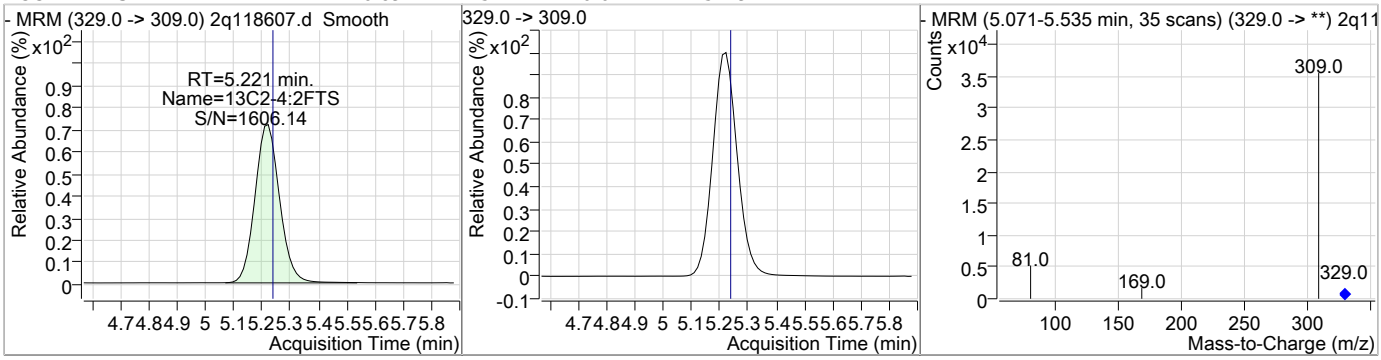
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	0.26	4.05	-0.01	1148				



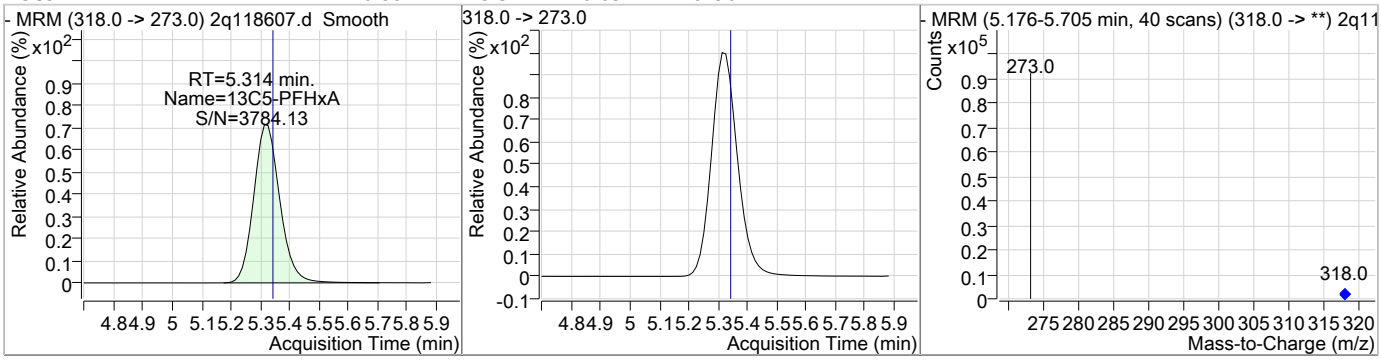
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	6.91	4.32	-0.01	4149				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	6.89	5.22	-0.01	25419				

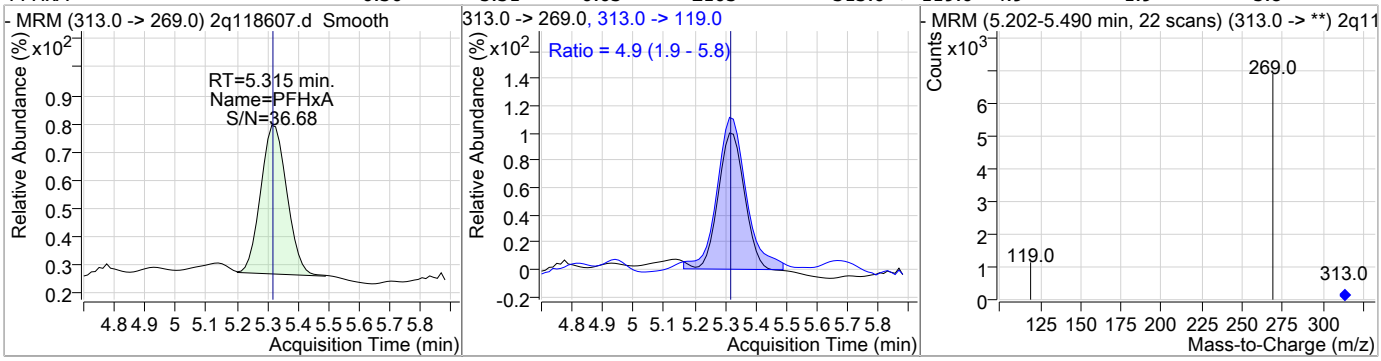


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	6.88	5.31	-0.03	67904				

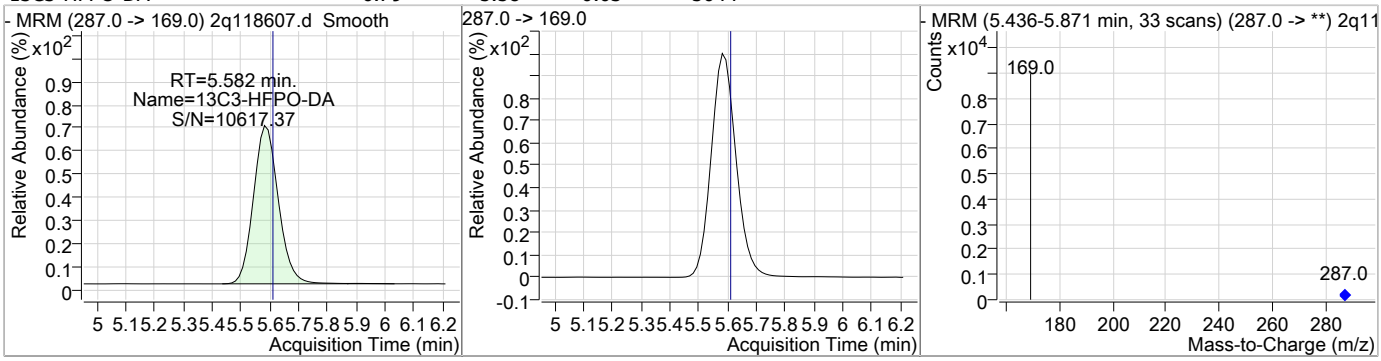


Perfluorinated Compounds by LC/MS/MS

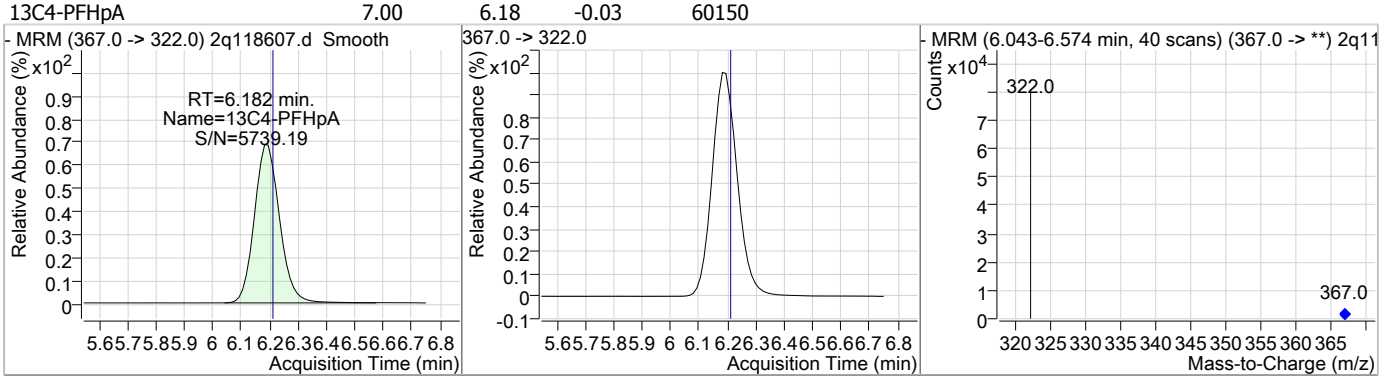
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	0.30	5.31	-0.03	2103	313.0 -> 119.0	4.9	1.9	5.8



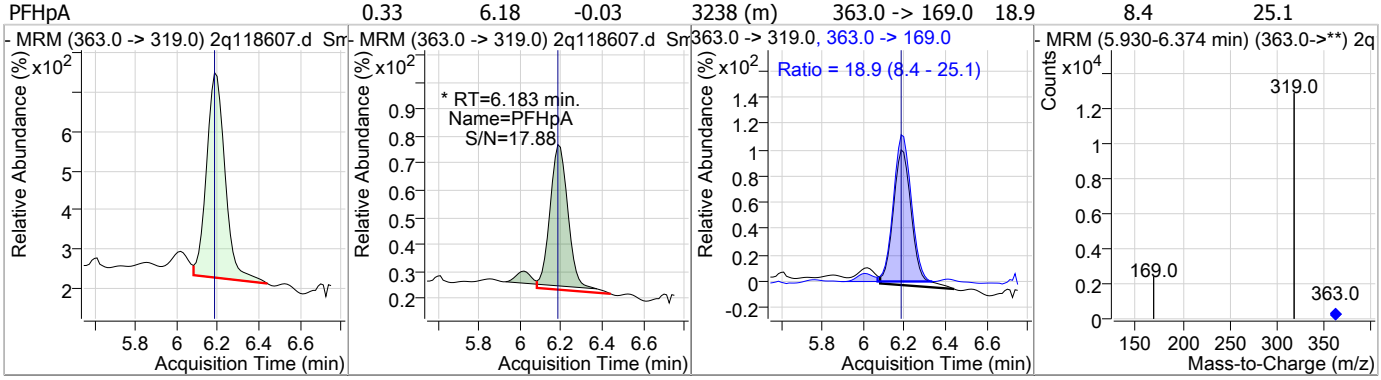
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	6.79	5.58	-0.03	5644				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	7.00	6.18	-0.03	60150				

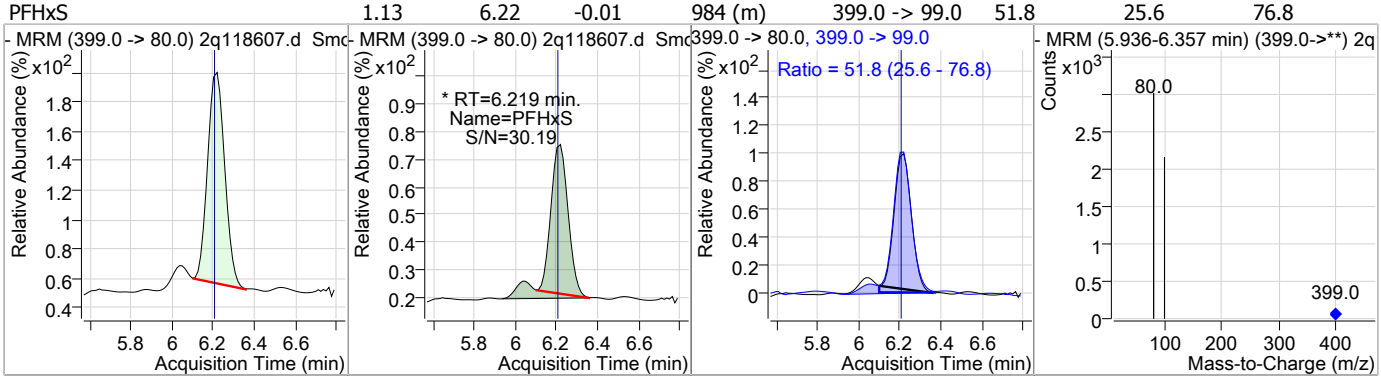


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	0.33	6.18	-0.03	3238 (m)	363.0 -> 169.0	18.9	8.4	25.1

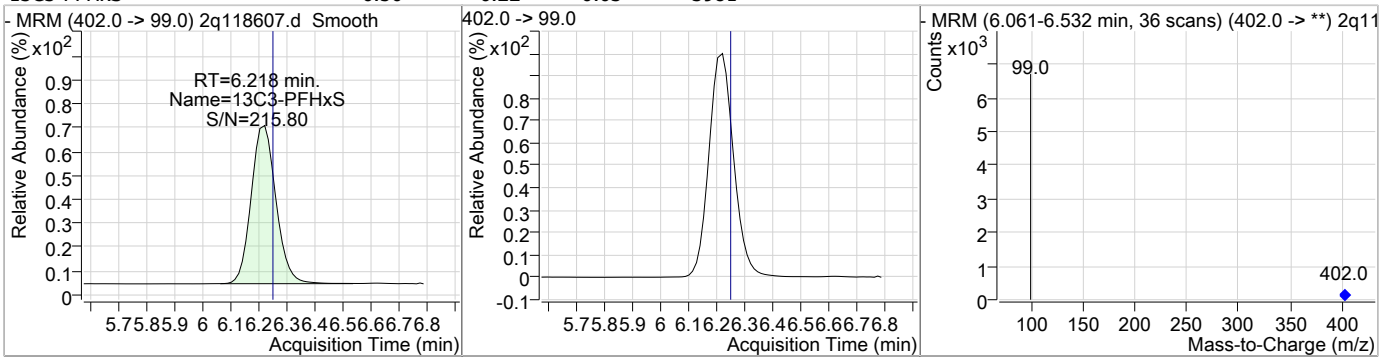


Perfluorinated Compounds by LC/MS/MS

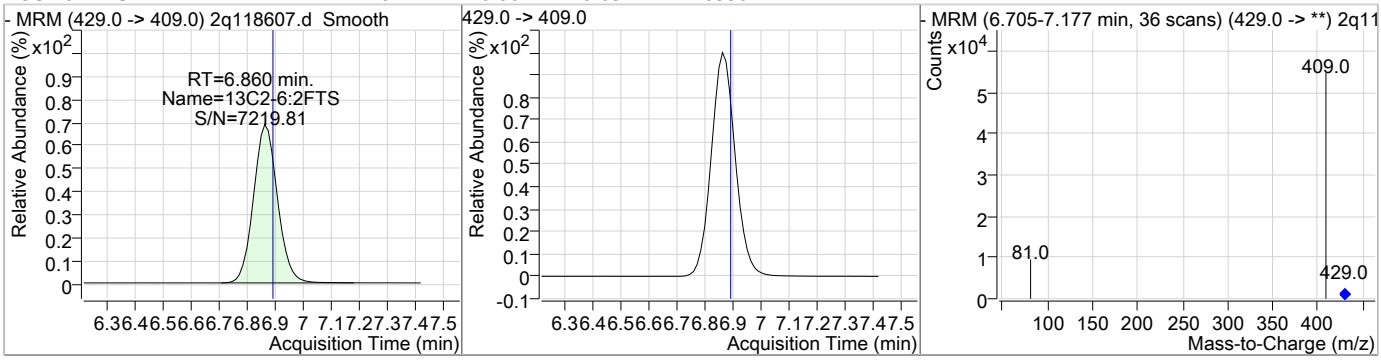
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	1.13	6.22	-0.01	984 (m)	399.0 -> 99.0	51.8	25.6	76.8



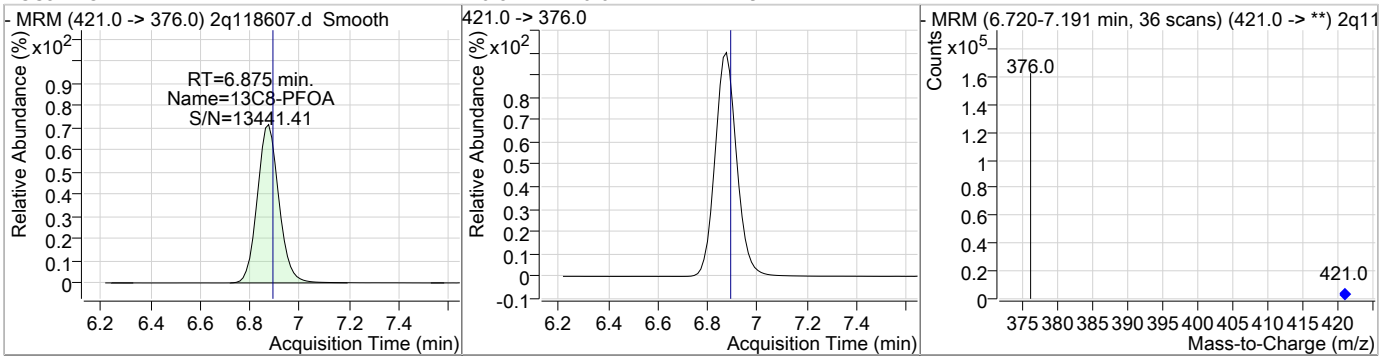
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	6.50	6.22	-0.03	3981				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	7.02	6.86	-0.03	40330				

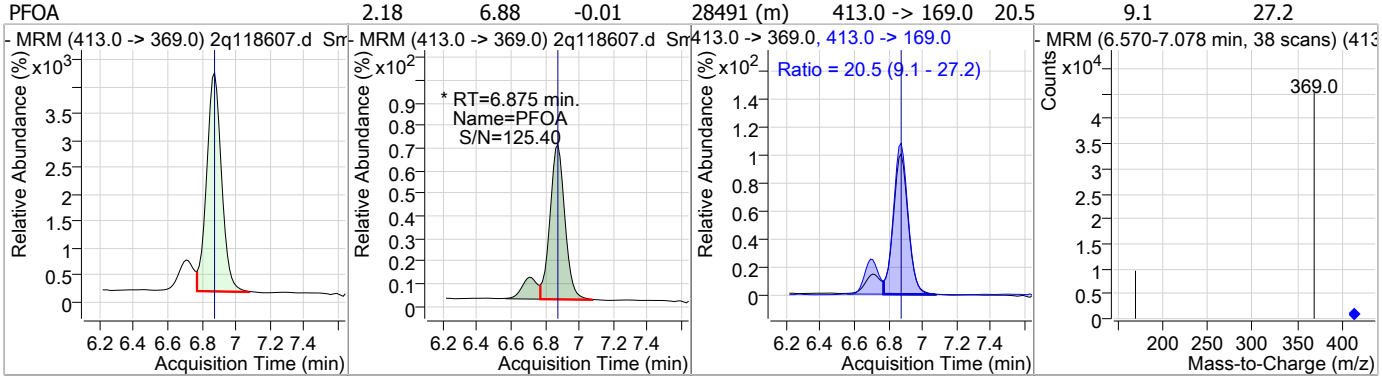


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	7.22	6.87	-0.01	122129				

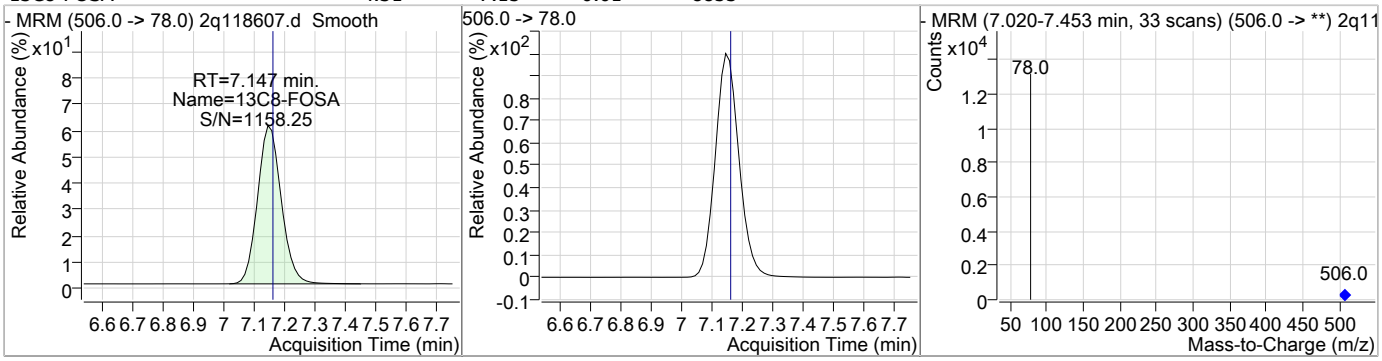


Perfluorinated Compounds by LC/MS/MS

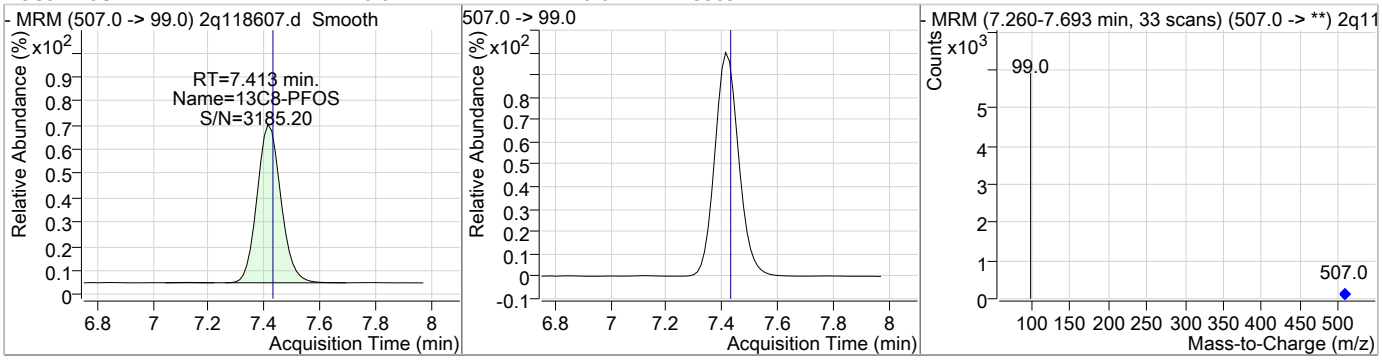
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	2.18	6.88	-0.01	28491 (m)	413.0 -> 169.0	20.5	9.1	27.2



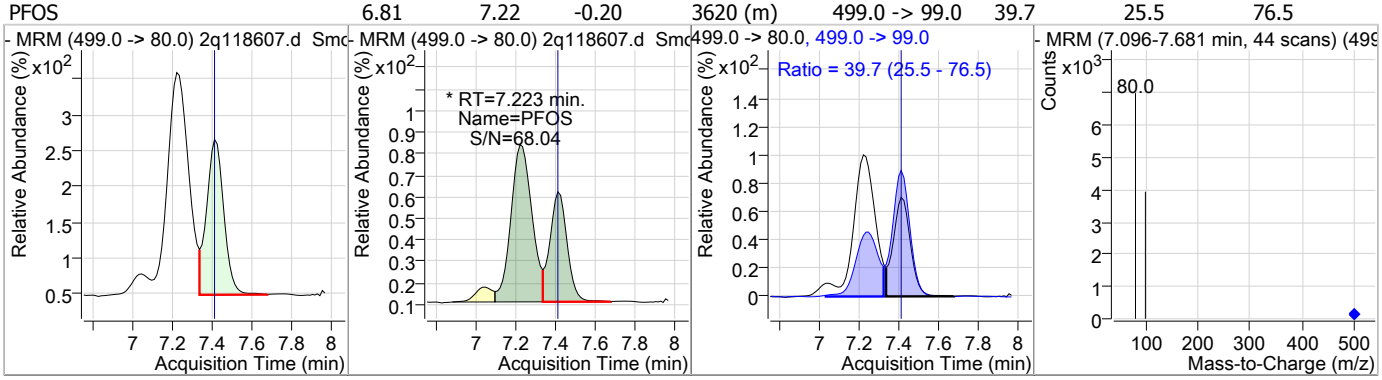
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	4.31	7.15	-0.01	8853				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	6.07	7.41	-0.01	3389				

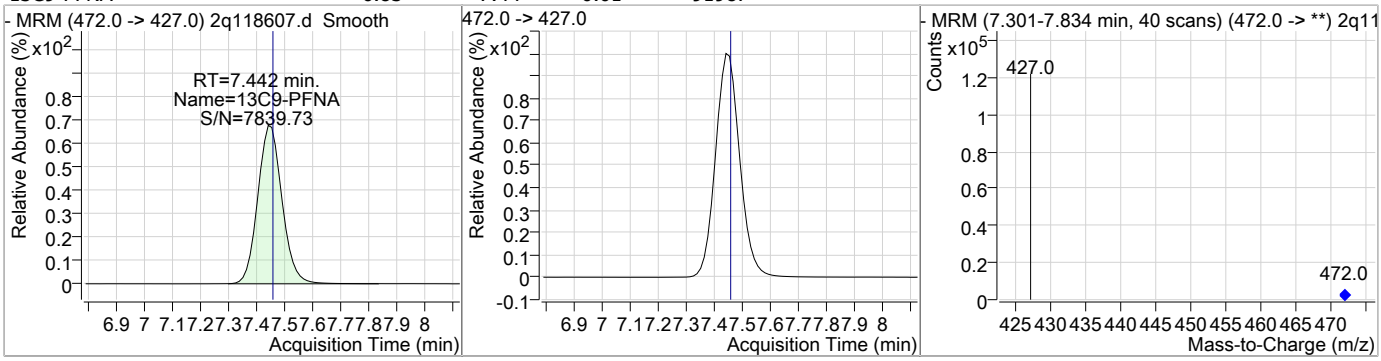


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	6.81	7.22	-0.20	3620 (m)	499.0 -> 99.0	39.7	25.5	76.5

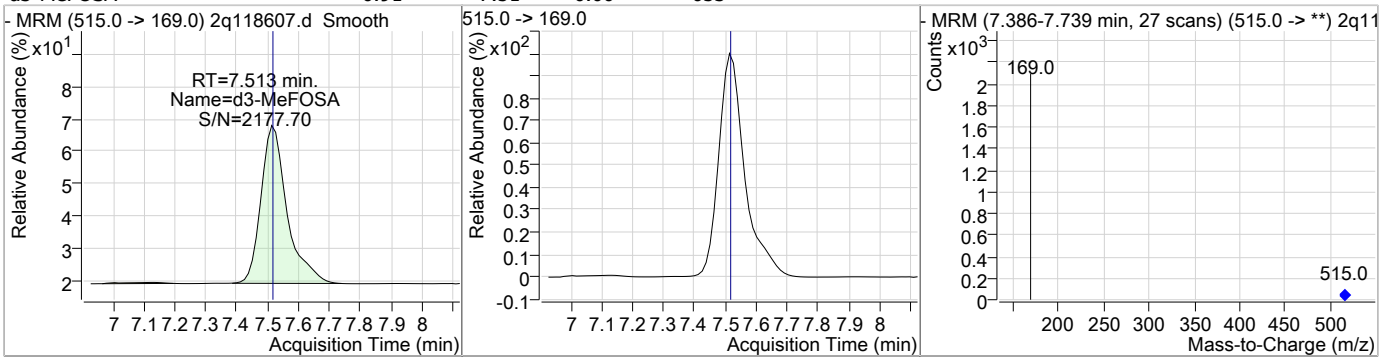


Perfluorinated Compounds by LC/MS/MS

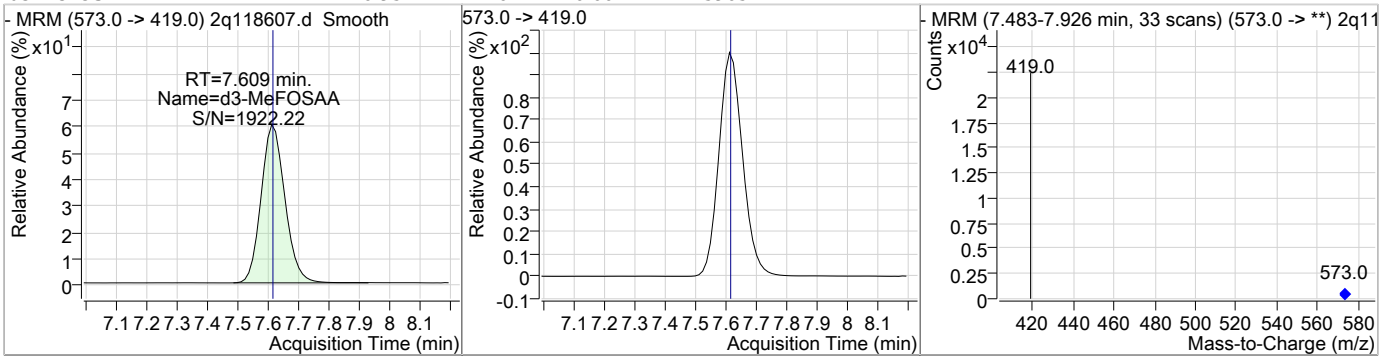
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	6.83	7.44	-0.01	91987				



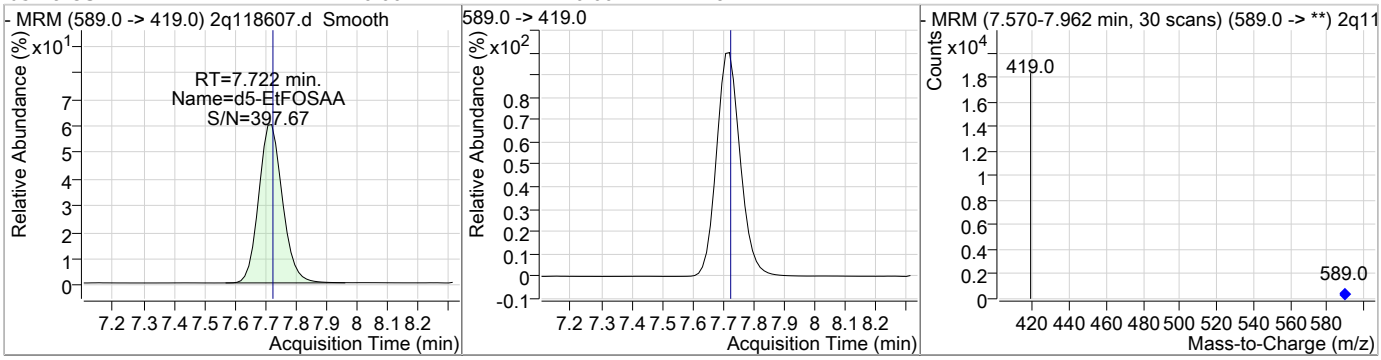
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	0.91	7.51	0.00	653				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	6.95	7.61	0.00	15905				

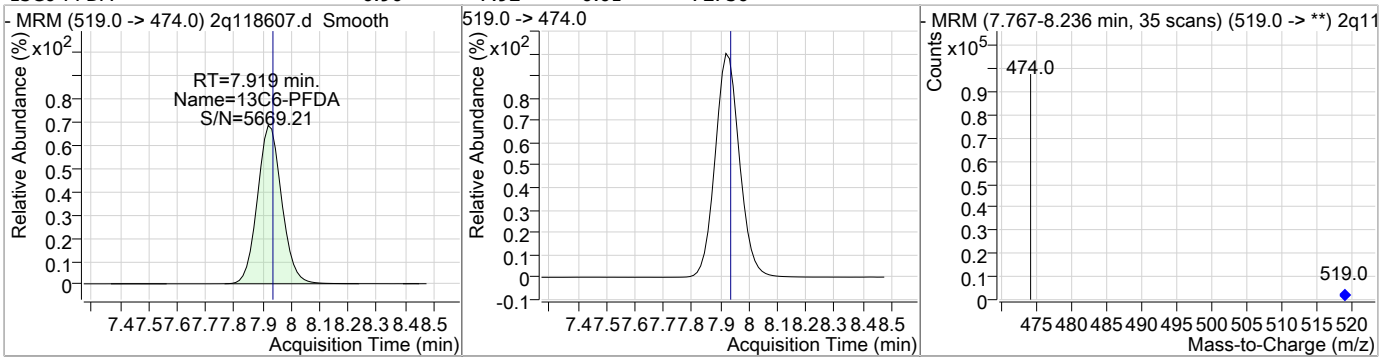


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	6.66	7.72	0.00	12841				

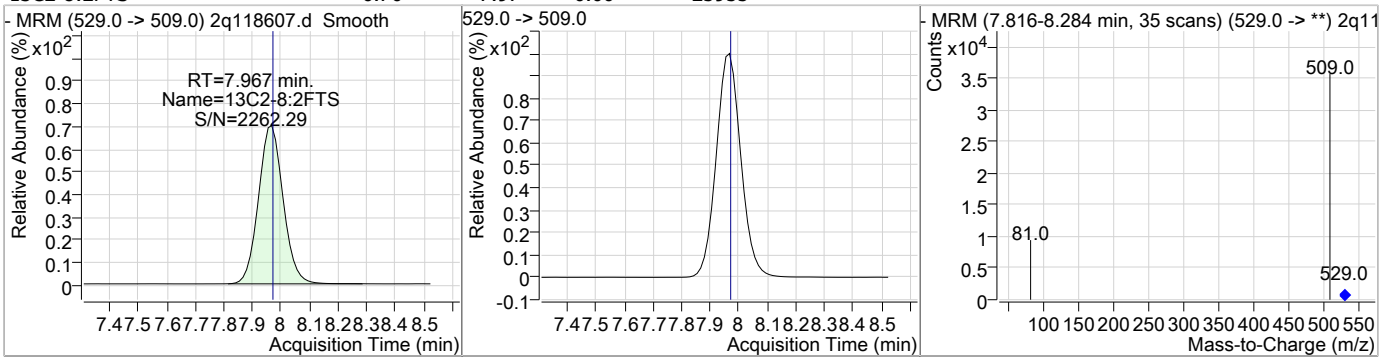


Perfluorinated Compounds by LC/MS/MS

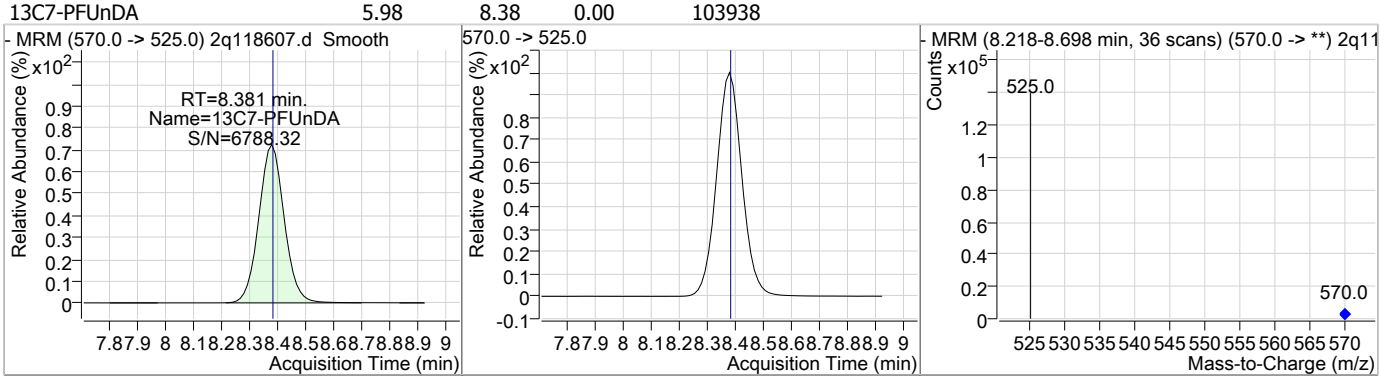
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	6.96	7.92	-0.01	72736				



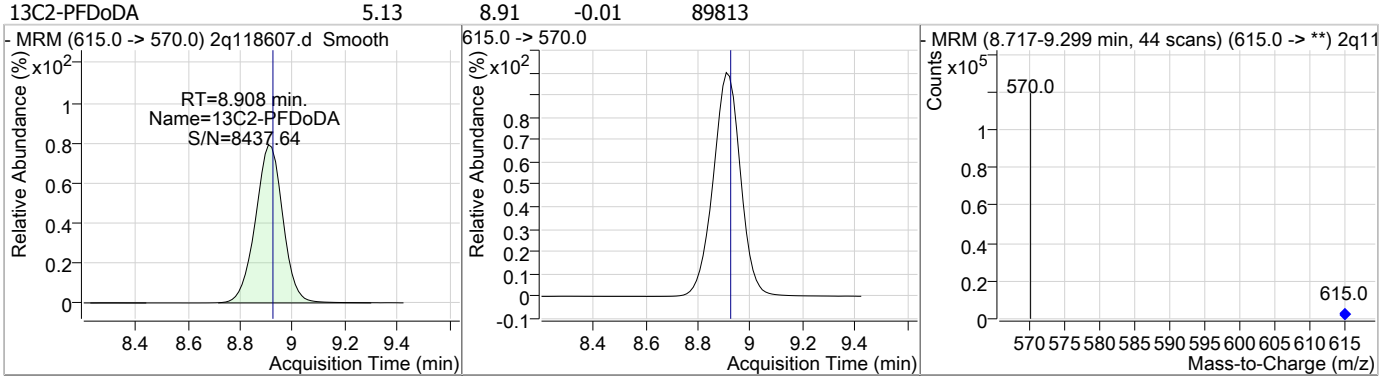
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	6.70	7.97	0.00	25955				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	5.98	8.38	0.00	103938				

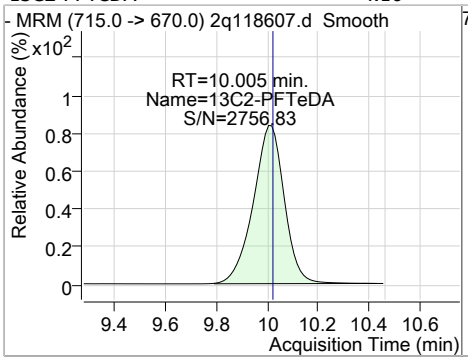


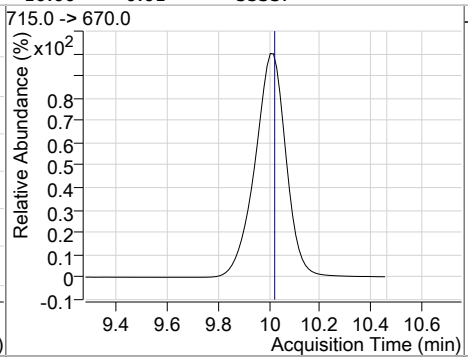
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	5.13	8.91	-0.01	89813				

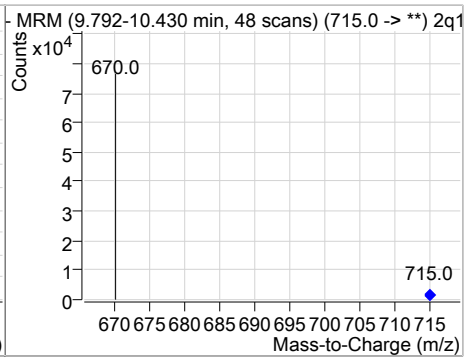


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	4.16	10.00	-0.01	55337				







Manual Integration Approval Summary

Sample Number: FC12099-14
Lab FileID: 2Q118607.D
Injection Time: 01/04/24 17:08
Method: EPA 537M QSM5.3 B-15
Analyst approved: 01/08/24 15:07 Lindsay Ritner
Supervisor approved: 01/09/24 10:19 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluoroheptanoic acid	375-85-9		6.18	Split peak
Perfluorohexanesulfonic acid	355-46-4		6.22	Split peak
Perfluorooctanoic acid	335-67-1		6.88	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.22	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Natasha Gumtie 01/09/24 10:19

Perfluorinated Compounds by LC/MS/MS

Data File : 5Q24256.d
Operator : lindsayr
Acq. Method : 537_ID.m
Acq. Date-Time : 1/5/2024 8:52:33 PM
Sample Name : fc12099-14re
Vial : P2-A5
DA Method File : ID_010224_S5Q377.quantmethod.xml
Batch Name : s5q380.batch.bin
Sample Information : OP937,S5Q380,125,,,1.0,5,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.975	217.0 -> 172.0	5731	2.00	µg/L	-0.013
M5-PFPeA	3.419	268.0 -> 223.0	9540	2.00	µg/L	-0.012
M5-PFHxA	4.552	318.0 -> 273.0	15332	2.00	µg/L	-0.012
M4-PFHpA	5.413	367.0 -> 322.0	16244	2.00	µg/L	-0.012
M8-PFOA	6.124	421.0 -> 376.0	22570	2.00	µg/L	-0.025
M9-PFNA	6.768	472.0 -> 427.0	20976	2.00	µg/L	-0.012
M6-PFDA	7.301	519.0 -> 474.0	18715	2.00	µg/L	-0.012
M7-PFUnDA	8.097	570.0 -> 525.0	23415	2.00	µg/L	-0.037
M2-PFDoDA	9.063	615.0 -> 570.0	19776	2.00	µg/L	-0.055
M2-PFTeDA	10.562	715.0 -> 670.0	14638	2.00	µg/L	-0.050
M8-FOSA	6.192	506.0 -> 78.0	4137	2.00	µg/L	-0.012
M3-PFBS	3.624	302.0 -> 99.0	1171	2.00	µg/L	-0.012
M3-PFHxS	5.432	402.0 -> 99.0	1553	2.00	µg/L	-0.012
M8-PFOS	6.729	507.0 -> 99.0	1621	2.00	µg/L	-0.025
M2-4:2FTS	4.461	329.0 -> 309.0	5023	2.00	µg/L	-0.025
M2-6:2FTS	6.135	429.0 -> 409.0	9571	2.00	µg/L	-0.012
M2-8:2FTS	7.363	529.0 -> 509.0	7642	2.00	µg/L	-0.012
M3-MeFOSAA	6.747	573.0 -> 419.0	3669	2.00	µg/L	0.000
M3-HFPO-DA	4.807	287.0 -> 169.0	808	2.00	µg/L	-0.025
M3-MeFOSA	6.589	515.0 -> 169.0	403	2.00	µg/L	0.000
M5-EtFOSAA	6.845	589.0 -> 419.0	3452	2.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.461	329.0 -> 309.0	5023	1.29	µg/L	-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 12.9%		
13C2-6:2FTS	6.135	429.0 -> 409.0	9571	1.30	µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 13.0%		
13C2-8:2FTS	7.363	529.0 -> 509.0	7642	1.08	µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 10.8%		
13C2-PFDoDA	9.063	615.0 -> 570.0	19776	0.88	µg/L	-0.055
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 8.8%		
13C2-PFTeDA	10.562	715.0 -> 670.0	14638	0.76	µg/L	-0.050
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 7.6%		
13C3-PFBS	3.624	302.0 -> 99.0	1171	1.27	µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 12.7%		
13C3-PFHxS	5.432	402.0 -> 99.0	1553	1.37	µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 13.7%		
13C4-PFBA	1.975	217.0 -> 172.0	5731	1.30	µg/L	-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 13.0%		
13C4-PFHpA	5.413	367.0 -> 322.0	16244	1.37	µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 13.7%		
13C5-PFHxA	4.552	318.0 -> 273.0	15332	1.34	µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 13.4%		
13C5-PFPeA	3.419	268.0 -> 223.0	9540	1.28	µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 12.8%		
13C6-PFDA	7.301	519.0 -> 474.0	18715	1.08	µg/L	-0.012

Perfluorinated Compounds by LC/MS/MS

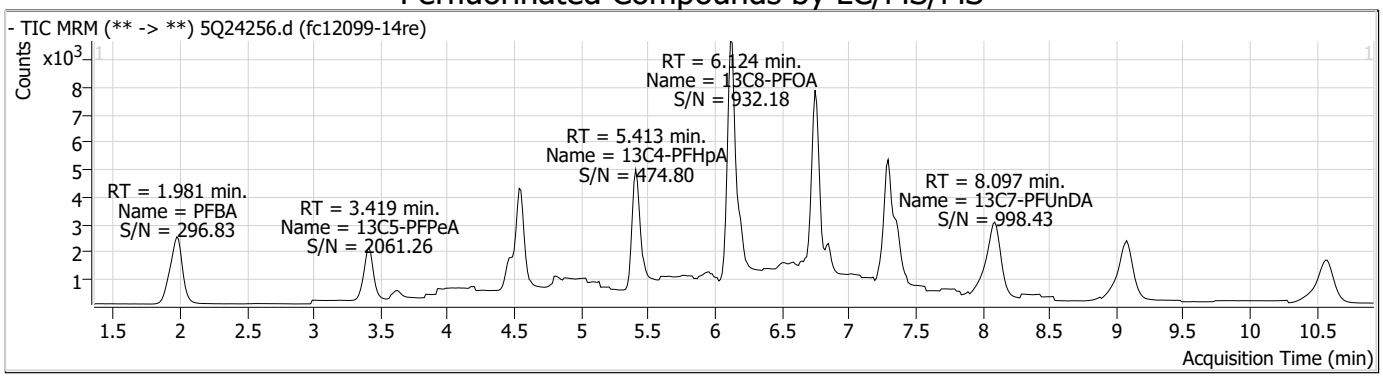
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 10.8%			
13C7-PFUnDA	8.097	570.0 -> 525.0	23415	0.96	µg/L		-0.037
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 9.6%			
13C8-FOSA	6.192	506.0 -> 78.0	4137	1.01	µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 10.1%			
13C8-PFOA	6.124	421.0 -> 376.0	22570	1.36	µg/L		-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 13.6%			
13C8-PFOS	6.729	507.0 -> 99.0	1621	1.03	µg/L		-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 10.3%			
13C9-PFNA	6.768	472.0 -> 427.0	20976	1.27	µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 12.7%			
d3-MeFOSAA	6.747	573.0 -> 419.0	3669	1.09	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 10.9%			
13C3-HFPO-DA	4.807	287.0 -> 169.0	808	1.35	µg/L		-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 13.5%			
d3-MeFOSA	6.589	515.0 -> 169.0	403	0.29	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 2.9%			
d5-EtFOSAA	6.845	589.0 -> 419.0	3452	1.13	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 11.3%			
Target Compounds							QValue
4:2FTS	-	327.0 -> 307.0	-	N.D.			
		327.0 -> 81.0					
6:2FTS	-	427.0 -> 407.0	-	N.D.			
		427.0 -> 81.0					
8:2FTS	-	527.0 -> 507.0	-	N.D.			
		527.0 -> 81.0					
EtFOSAA	-	584.0 -> 419.0	-	N.D.			
		584.0 -> 483.0					
FOSA	-	498.0 -> 78.0	-	N.D.			
		498.0 -> 478.0					
MeFOSAA	-	570.0 -> 419.0	-	N.D.			
		570.0 -> 512.0					
PFBA	1.981	213.0 -> 169.0	10150	3.94	µg/L		100
PFBS	-	299.0 -> 80.0	-	N.D.			
		299.0 -> 99.0					
PFDA	-	513.0 -> 469.0	-	N.D.			
		513.0 -> 219.0					
PFDoDA	-	613.0 -> 569.0	-	N.D.			
		613.0 -> 319.0					
PFDS	7.243	599.0 -> 80.0	0		µg/L	m	1
		599.0 -> 99.0					
PFHpA	-	363.0 -> 319.0	-	N.D.			
		363.0 -> 169.0					
PFHpS	-	449.0 -> 80.0	-	N.D.			
		449.0 -> 99.0					
PFHxA	-	313.0 -> 269.0	-	N.D.			
		313.0 -> 119.0					
PFHxS	5.433	399.0 -> 80.0	277	0.20	µg/L	m	96
		399.0 -> 99.0	147				
PFNA	-	463.0 -> 419.0	-	N.D.			
		463.0 -> 219.0					
PFNS	-	549.0 -> 80.0	-	N.D.			
		549.0 -> 99.0					
PFOA	6.125	413.0 -> 369.0	4592	0.43	µg/L	m	93
		413.0 -> 169.0	1293				
PFOS	6.516	499.0 -> 80.0	1941	1.43	µg/L	m	81

Perfluorinated Compounds by LC/MS/MS

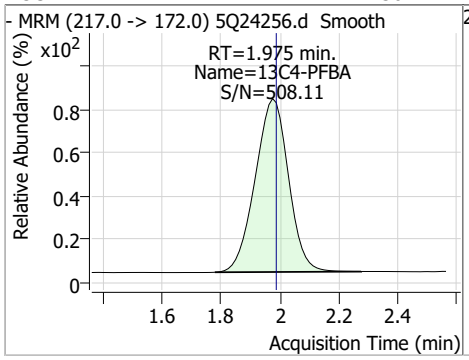
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		499.0 -> 99.0	715			
PFPeA	-	263.0 -> 219.0	-	N.D.		
PFPeS	-	349.0 -> 80.0	-	N.D.		
		349.0 -> 99.0				
PFTeDA	-	713.0 -> 669.0	-	N.D.		
		713.0 -> 219.0				
PFTrDA	-	663.0 -> 619.0	-	N.D.		
		663.0 -> 369.0				
PFUnDA	-	563.0 -> 519.0	-	N.D.		
		563.0 -> 269.0				
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.		
		633.0 -> 453.0				
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.		
		533.0 -> 353.0				
ADONA	-	377.0 -> 251.0	-	N.D.		
		377.0 -> 85.0				
HFPO-DA	-	329.0 -> 169.0	-	N.D.		
		285.0 -> 169.0				
MeFOSA	-	512.0 -> 169.0	-	N.D.		
		512.0 -> 219.0				
4-PFECHS	-	461.0 -> 381.0	-	N.D.		
		461.0 -> 99.0				
FBSA	-	298.0 -> 78.0	-	N.D.		
		298.0 -> 64.0				
FHxSA	-	398.0 -> 78.0	-	N.D.		
		398.0 -> 64.0				

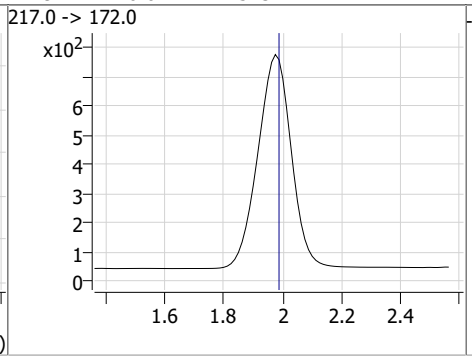
 # = Qualifier out of range, m = manually integrated, + = Area summed

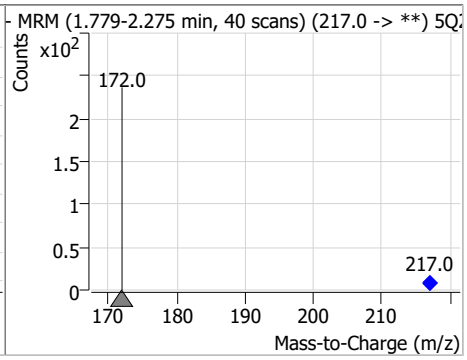
Perfluorinated Compounds by LC/MS/MS



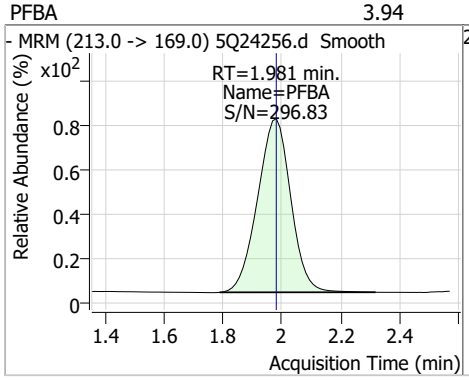
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	1.30	1.97	-0.01	5731				

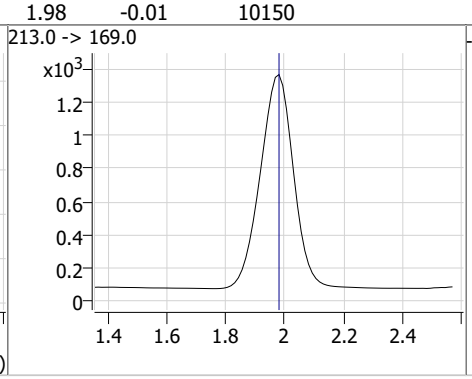


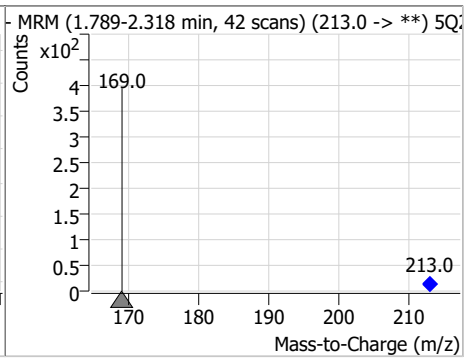




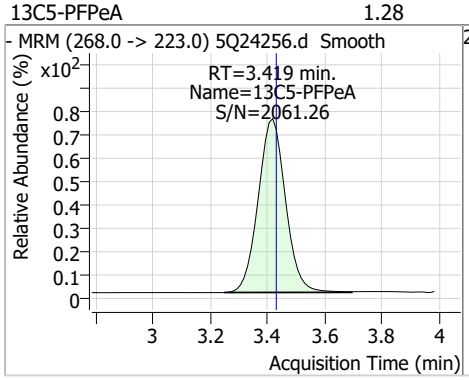
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	3.94	1.98	-0.01	10150				

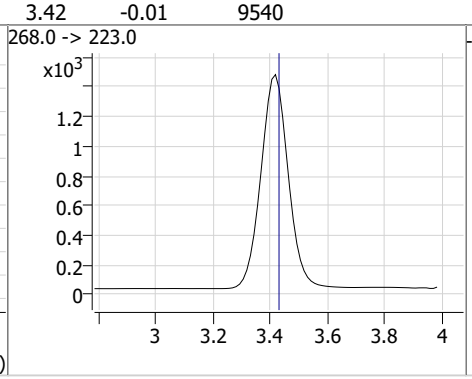


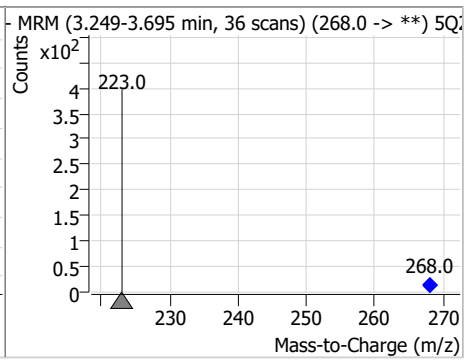




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	1.28	3.42	-0.01	9540				

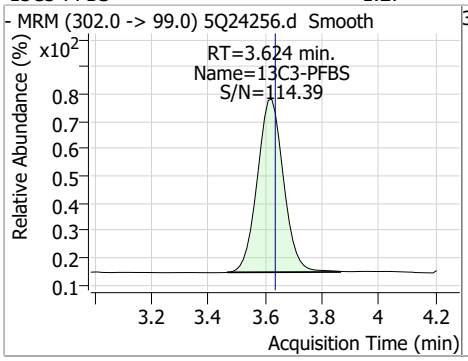


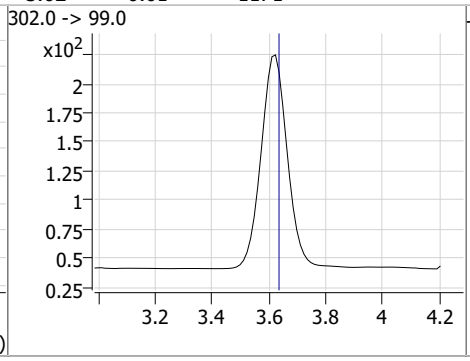


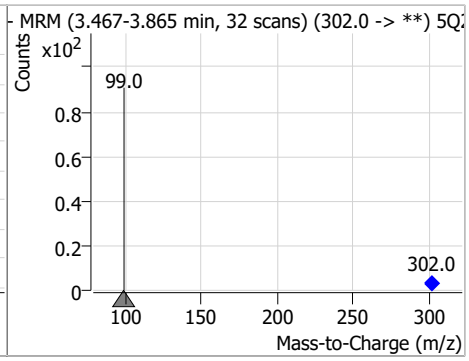


Perfluorinated Compounds by LC/MS/MS

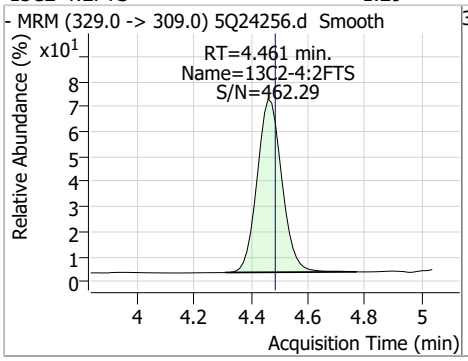
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	1.27	3.62	-0.01	1171				

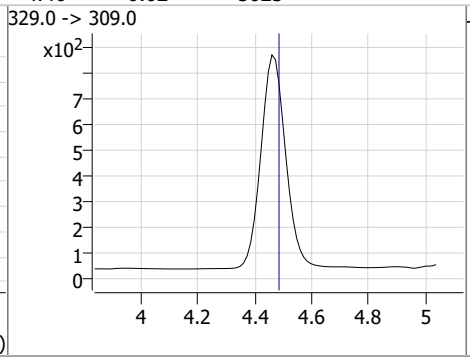


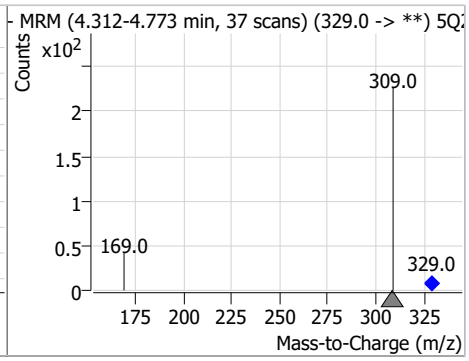




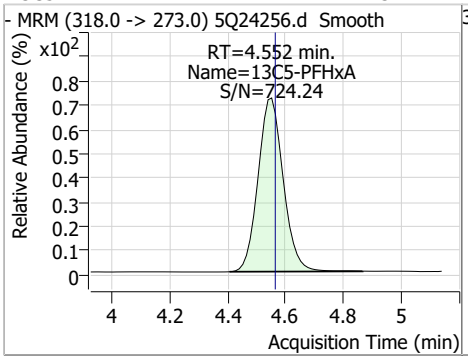
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	1.29	4.46	-0.02	5023				

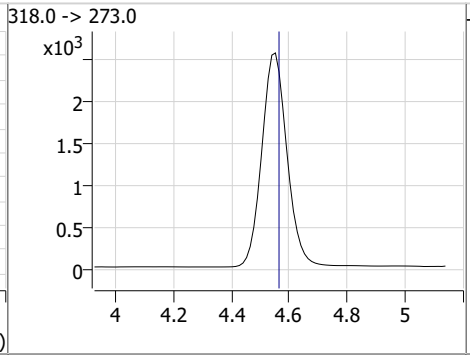


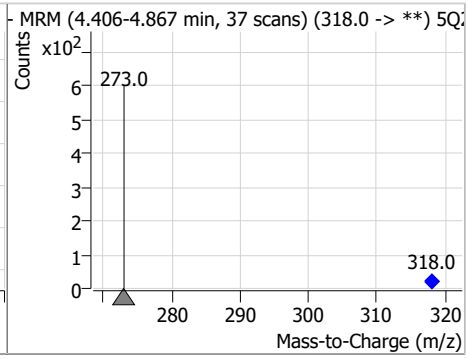




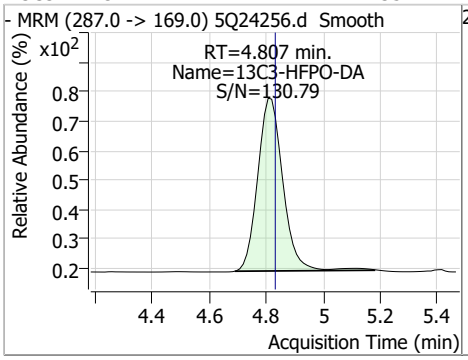
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	1.34	4.55	-0.01	15332				

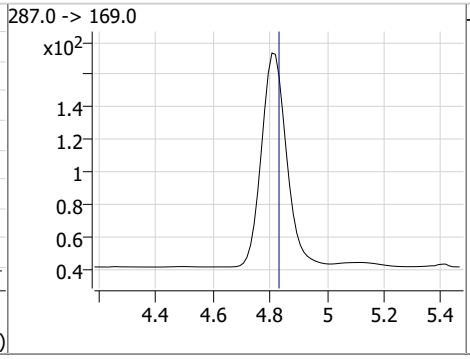


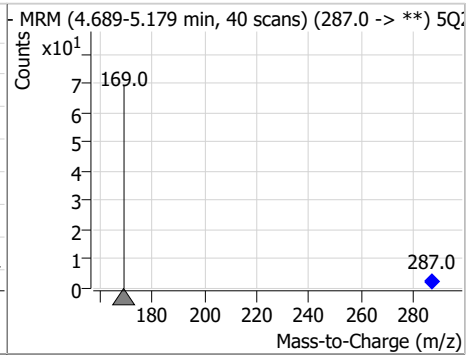




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	1.35	4.81	-0.02	808				

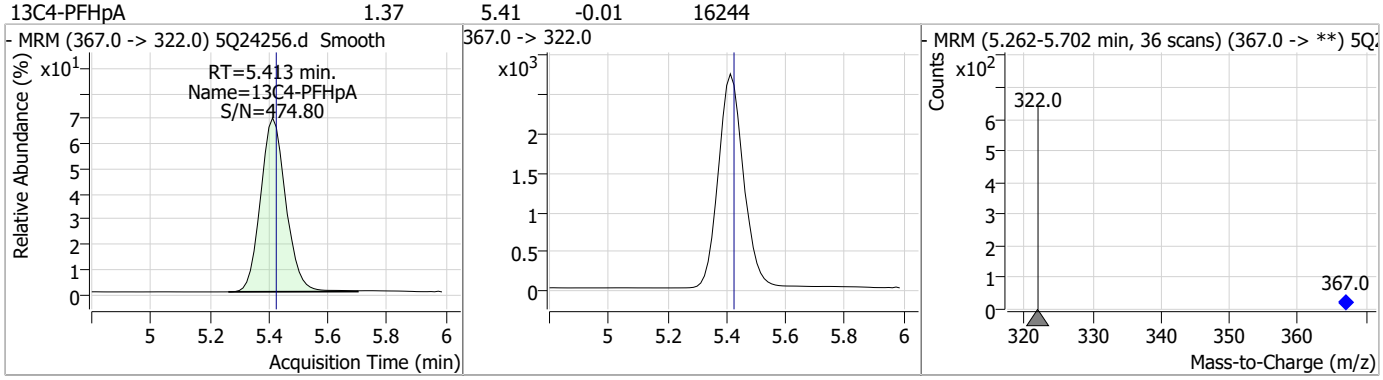




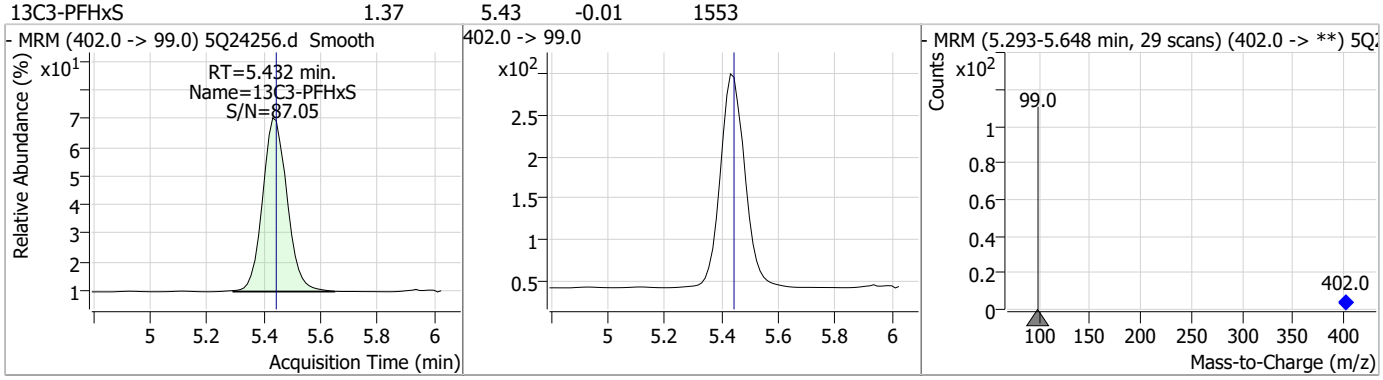


Perfluorinated Compounds by LC/MS/MS

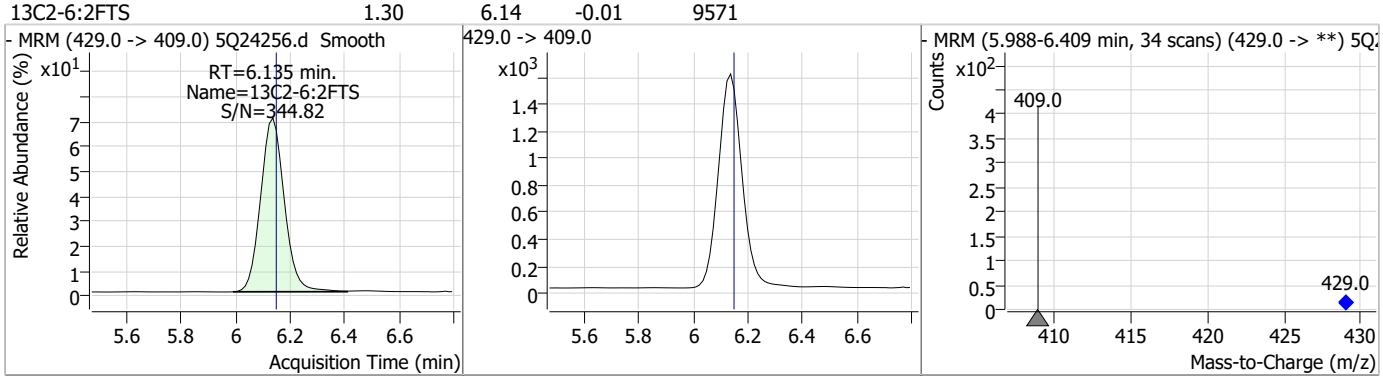
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	1.37	5.41	-0.01	16244				



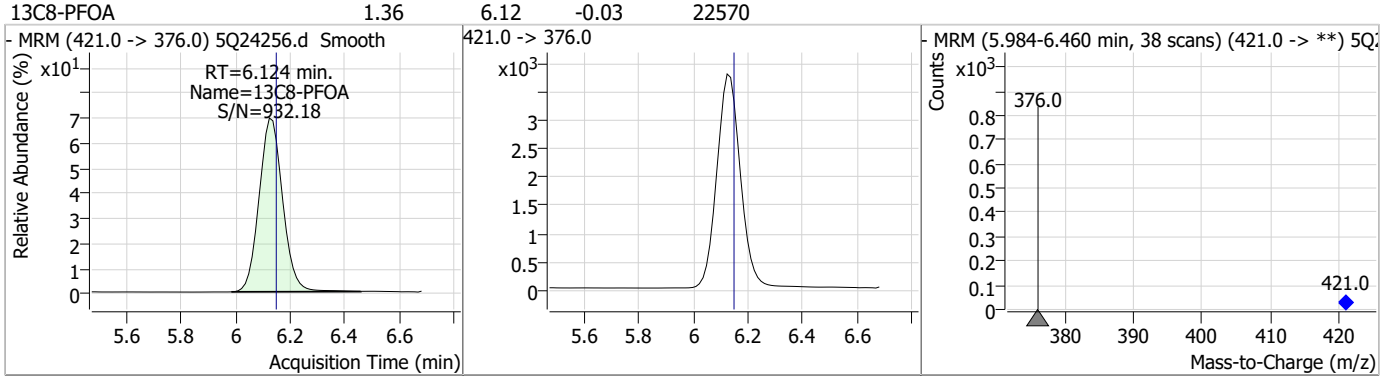
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	1.37	5.43	-0.01	1553				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	1.30	6.14	-0.01	9571				

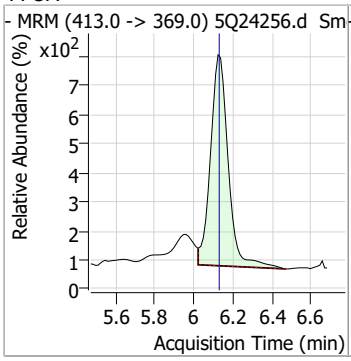


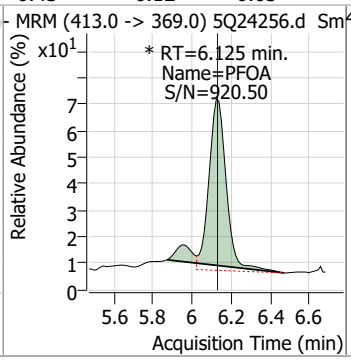
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	1.36	6.12	-0.03	22570				

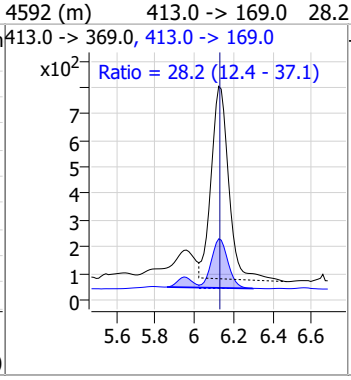


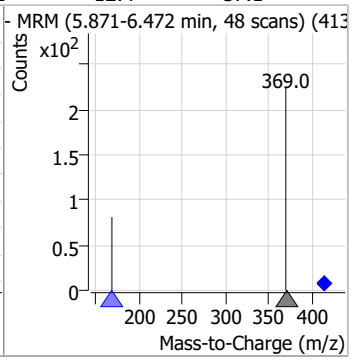
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	0.43	6.12	-0.03	4592 (m)	413.0 -> 169.0	28.2	12.4	37.1

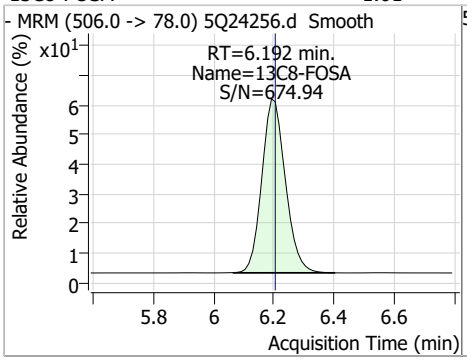


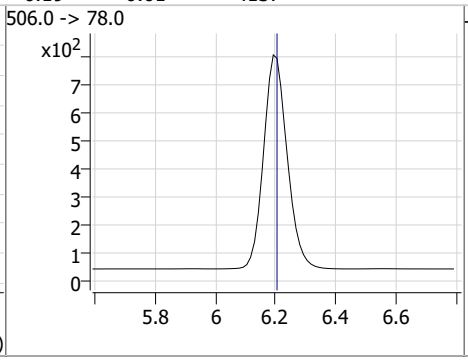


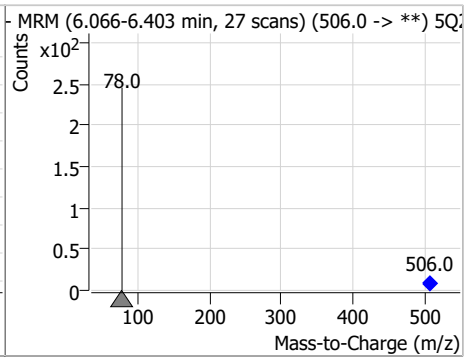




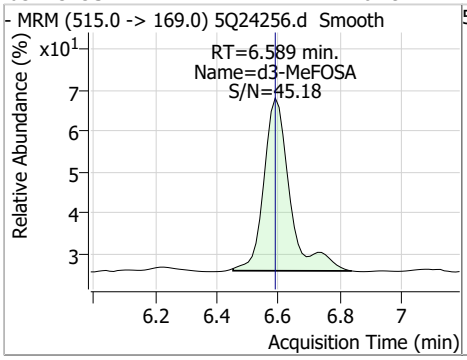
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	1.01	6.19	-0.01	4137				

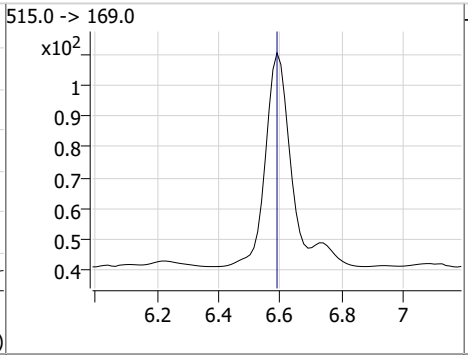


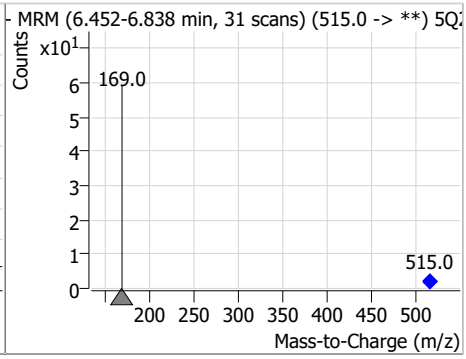




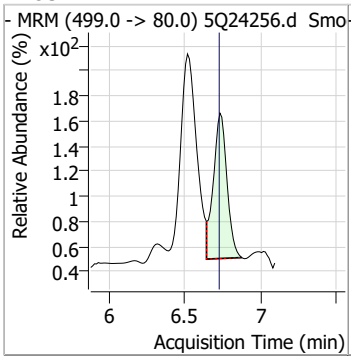
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	0.29	6.59	0.00	403				

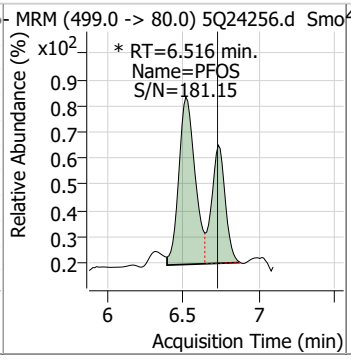


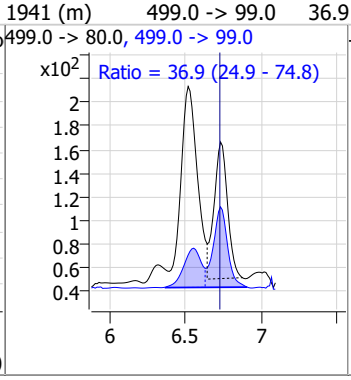


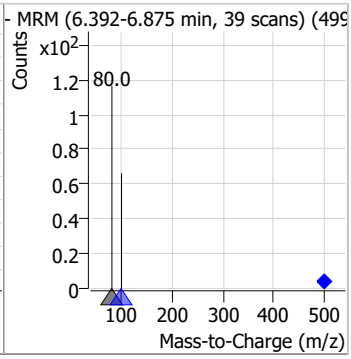


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	1.43	6.52	-0.23	1941 (m)	499.0 -> 99.0	36.9	24.9	74.8



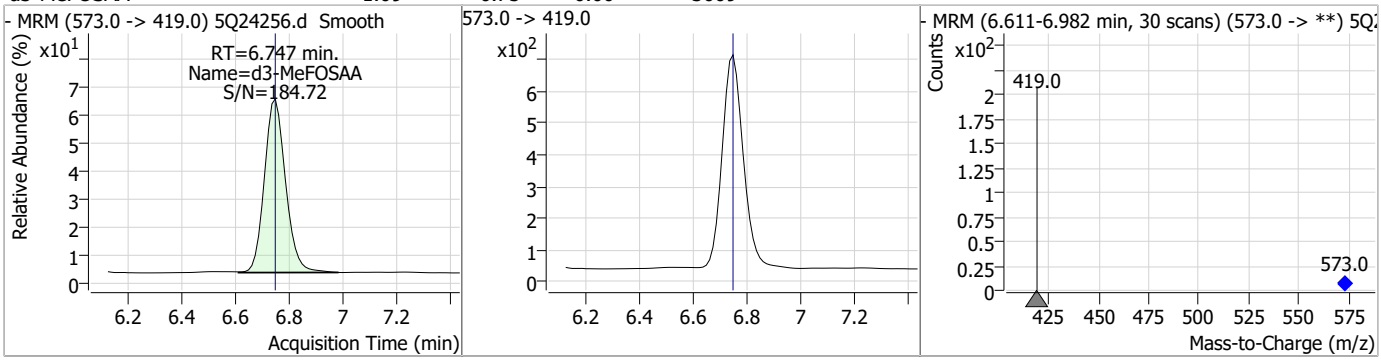




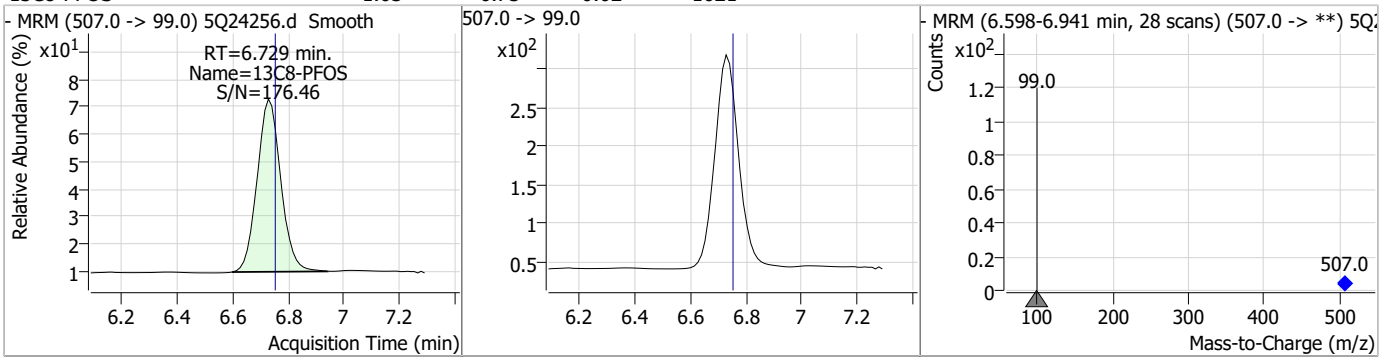


Perfluorinated Compounds by LC/MS/MS

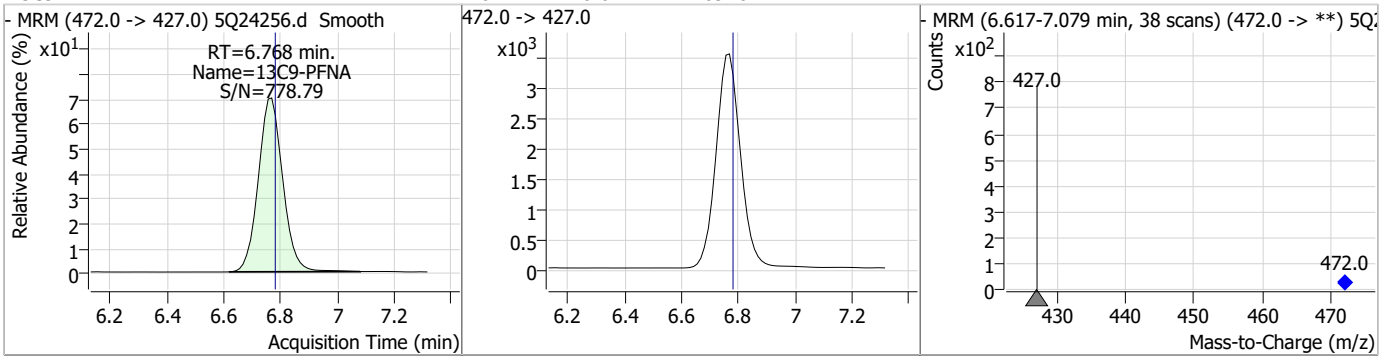
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	1.09	6.75	0.00	3669				



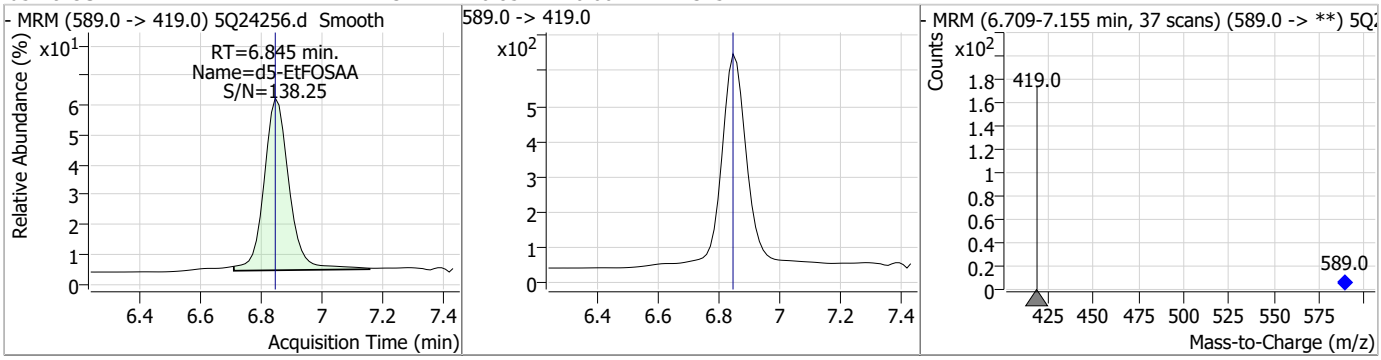
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	1.03	6.73	-0.02	1621				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.27	6.77	-0.01	20976				

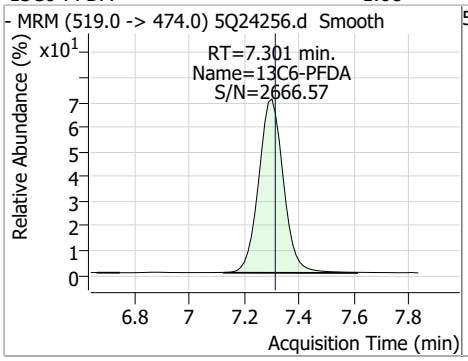


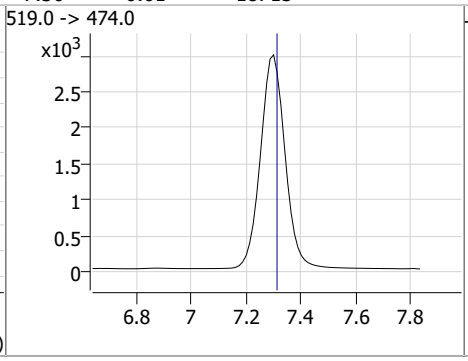
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	1.13	6.85	0.00	3452				

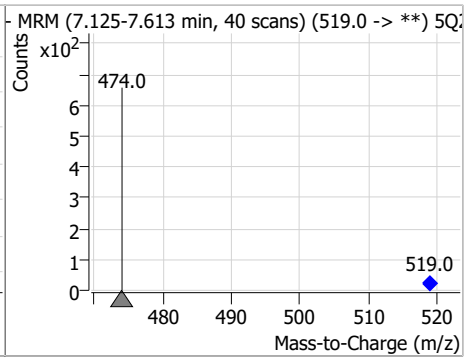


Perfluorinated Compounds by LC/MS/MS

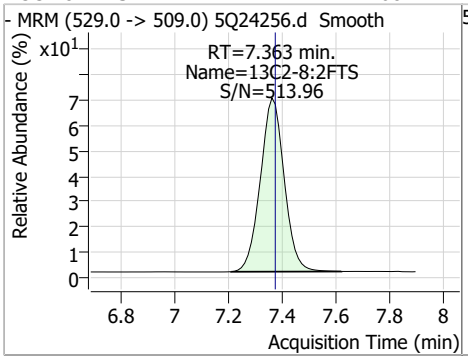
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	1.08	7.30	-0.01	18715				

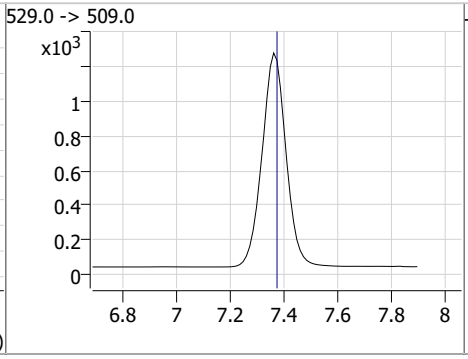


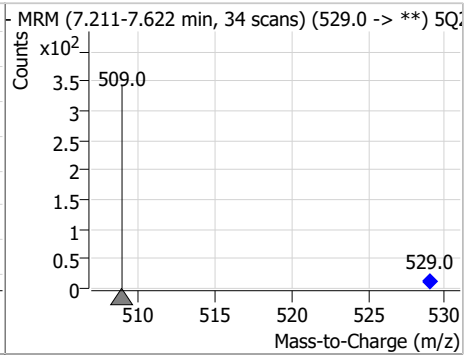




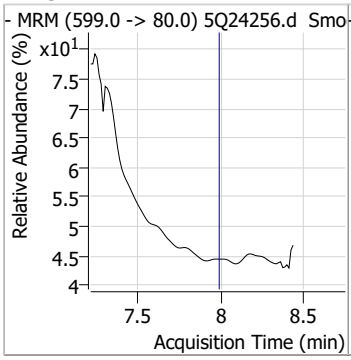
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	1.08	7.36	-0.01	7642				

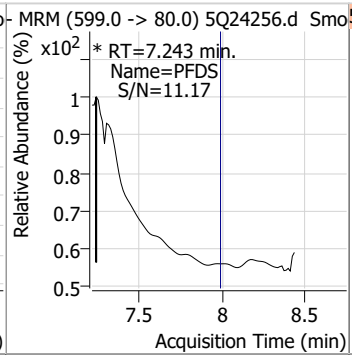


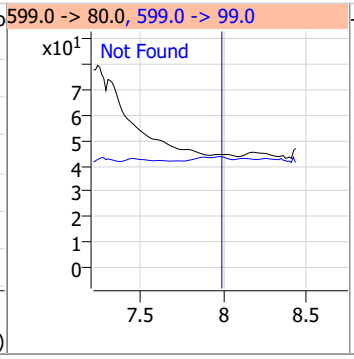


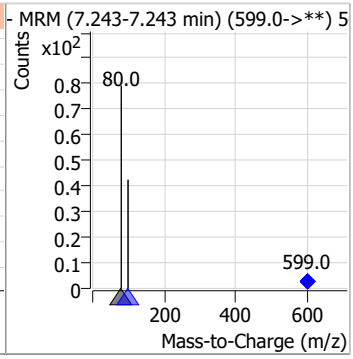


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS		0		0	599.0 -> 99.0		30.0	90.1

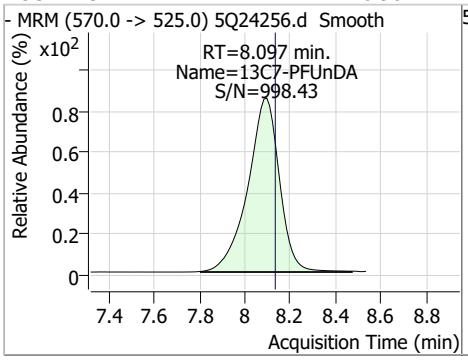


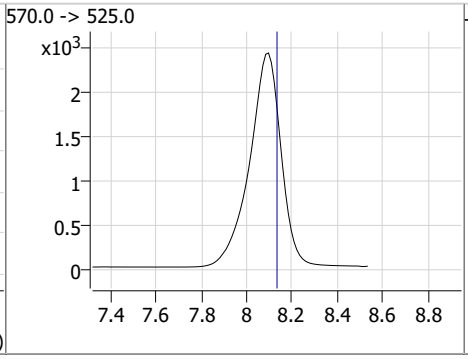


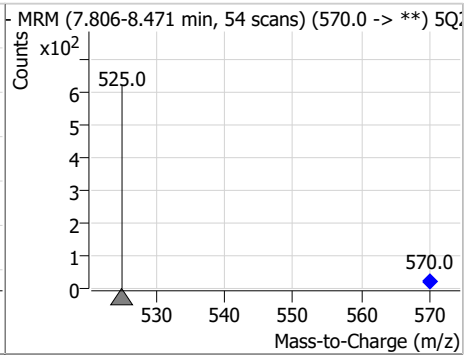




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	0.96	8.10	-0.04	23415				

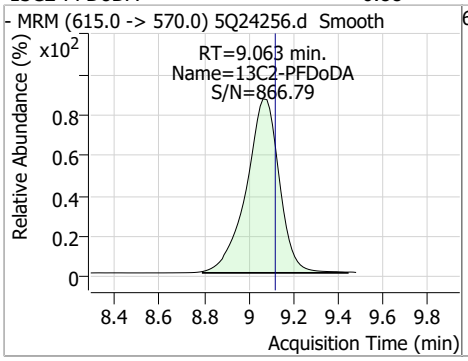


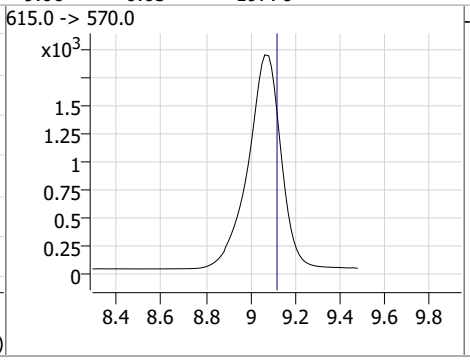


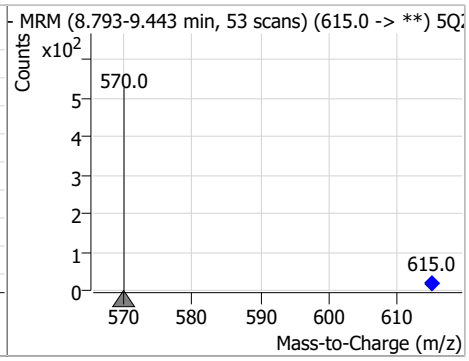


Perfluorinated Compounds by LC/MS/MS

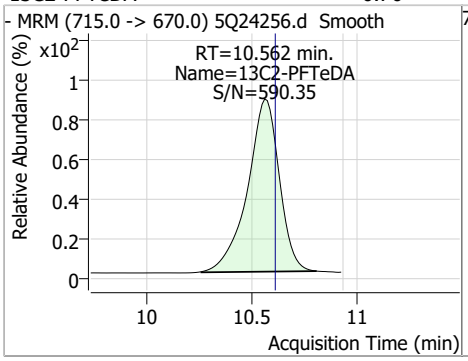
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	0.88	9.06	-0.05	19776				

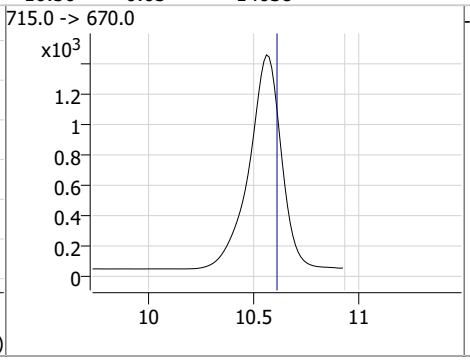


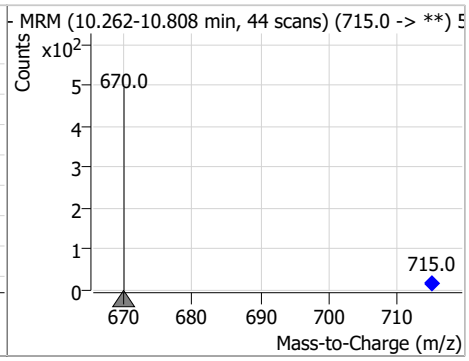




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	0.76	10.56	-0.05	14638				







Manual Integration Approval Summary

Sample Number: FC12099-14
Lab FileID: 5Q24256.D
Injection Time: 01/05/24 20:52
Method: EPA 537M QSM5.3 B-15
Analyst approved: 01/08/24 15:07 Lindsay Ritner
Supervisor approved: 01/09/24 10:19 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.43	Poor instrument integration
Perfluorooctanoic acid	335-67-1		6.12	Split peak
Perfluorooctanesulfonic acid	1763-23-1		6.52	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Natasha Gumtie 01/09/24 10:19

Perfluorinated Compounds by LC/MS/MS

Data File : 5Q23956.d
Operator : natashag
Acq. Method : 537_ID.m
Acq. Date-Time : 12/29/2023 3:47:56 AM
Sample Name : fc12099-14
Vial : P2-D2
DA Method File : ID_122823_S5Q375.quantmethod.xml
Batch Name : s5q375.batch.bin
Sample Information : OP835,S5Q375,120,,,1.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.962	217.0 -> 172.0	47766	10.00	µg/L	-0.025
M5-PFPeA	3.407	268.0 -> 223.0	67880	10.00	µg/L	-0.025
M5-PFHxA	4.540	318.0 -> 273.0	109870	10.00	µg/L	-0.012
M4-PFHpA	5.400	367.0 -> 322.0	107353	10.00	µg/L	-0.012
M8-PFOA	6.112	421.0 -> 376.0	141880	10.00	µg/L	-0.012
M9-PFNA	6.744	472.0 -> 427.0	123851	10.00	µg/L	-0.012
M6-PFDA	7.276	519.0 -> 474.0	106689	10.00	µg/L	-0.012
M7-PFUnDA	8.034	570.0 -> 525.0	132028	10.00	µg/L	-0.025
M2-PFDoDA	9.013	615.0 -> 570.0	117584	10.00	µg/L	-0.025
M2-PFTeDA	10.524	715.0 -> 670.0	87056	10.00	µg/L	-0.012
M8-FOSA	6.192	506.0 -> 78.0	23600	10.00	µg/L	0.000
M3-PFBS	3.612	302.0 -> 99.0	8058	10.00	µg/L	-0.025
M3-PFHxS	5.432	402.0 -> 99.0	8776	10.00	µg/L	0.000
M8-PFOS	6.716	507.0 -> 99.0	8442	10.00	µg/L	-0.012
M2-4:2FTS	4.461	329.0 -> 309.0	37957	10.00	µg/L	-0.012
M2-6:2FTS	6.122	429.0 -> 409.0	64981	10.00	µg/L	-0.013
M2-8:2FTS	7.338	529.0 -> 509.0	43849	10.00	µg/L	-0.012
M3-MeFOSAA	6.735	573.0 -> 419.0	21564	10.00	µg/L	-0.012
M3-HFPO-DA	4.807	287.0 -> 169.0	5640	10.00	µg/L	-0.012
M3-MeFOSA	6.589	515.0 -> 169.0	114	10.00	µg/L	0.000
M5-EtFOSAA	6.845	589.0 -> 419.0	17946	10.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.461	329.0 -> 309.0	37957	9.44	µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 94.4%		
13C2-6:2FTS	6.122	429.0 -> 409.0	64981	9.17	µg/L	-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 91.7%		
13C2-8:2FTS	7.338	529.0 -> 509.0	43849	6.28	µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 62.8%		
13C2-PFDoDA	9.013	615.0 -> 570.0	117584	5.64	µg/L	-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 56.4%		
13C2-PFTeDA	10.524	715.0 -> 670.0	87056	4.91	µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 49.1%		
13C3-PFBS	3.612	302.0 -> 99.0	8058	8.30	µg/L	-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 83.0%		
13C3-PFHxS	5.432	402.0 -> 99.0	8776	7.44	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 74.4%		
13C4-PFBA	1.962	217.0 -> 172.0	47766	10.11	µg/L	-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.1%		
13C4-PFHpA	5.400	367.0 -> 322.0	107353	8.93	µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 89.3%		
13C5-PFHxA	4.540	318.0 -> 273.0	109870	9.19	µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 91.9%		
13C5-PFPeA	3.407	268.0 -> 223.0	67880	8.61	µg/L	-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 86.1%		
13C6-PFDA	7.276	519.0 -> 474.0	106689	6.34	µg/L	-0.012

Perfluorinated Compounds by LC/MS/MS

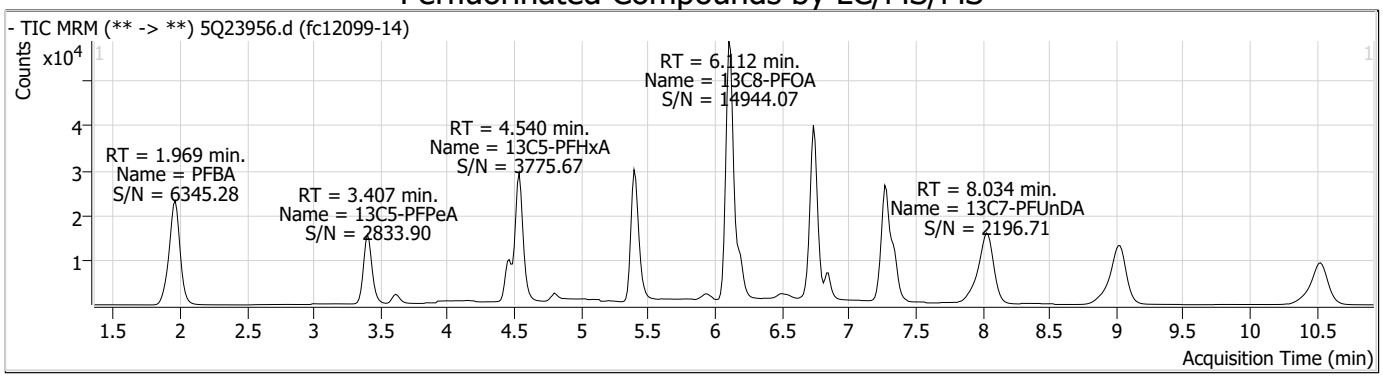
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 63.4%			
13C7-PFUnDA	8.034	570.0 -> 525.0	132028	5.66	µg/L		-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 56.6%			
13C8-FOSA	6.192	506.0 -> 78.0	23600	5.82	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 58.2%			
13C8-PFOA	6.112	421.0 -> 376.0	141880	8.57	µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 85.7%			
13C8-PFOS	6.716	507.0 -> 99.0	8442	5.37	µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 53.7%			
13C9-PFNA	6.744	472.0 -> 427.0	123851	7.46	µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 74.6%			
d3-MeFOSAA	6.735	573.0 -> 419.0	21564	7.07	µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 70.7%			
13C3-HFPO-DA	4.807	287.0 -> 169.0	5640	8.73	µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 87.3%			
d3-MeFOSA	6.589	515.0 -> 169.0	114	0.08	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 0.8%			
d5-EtFOSAA	6.845	589.0 -> 419.0	17946	6.54	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 65.4%			
Target Compounds							QValue
4:2FTS	-	327.0 -> 307.0	-	N.D.			
		327.0 -> 81.0					
6:2FTS	-	427.0 -> 407.0	-	N.D.			
		427.0 -> 81.0					
8:2FTS	-	527.0 -> 507.0	-	N.D.			
		527.0 -> 81.0					
EtFOSAA	-	584.0 -> 419.0	-	N.D.			
		584.0 -> 483.0					
FOSA	-	498.0 -> 78.0	-	N.D.			
		498.0 -> 478.0					
MeFOSAA	-	570.0 -> 419.0	-	N.D.			
		570.0 -> 512.0					
PFBA	1.969	213.0 -> 169.0	85481	19.32	µg/L		100
PFBS	3.615	299.0 -> 80.0	339	0.17	µg/L		99
		299.0 -> 99.0	150				
PFDA	-	513.0 -> 469.0	-	N.D.			
		513.0 -> 219.0					
PFDoDA	-	613.0 -> 569.0	-	N.D.			
		613.0 -> 319.0					
PFDS	-	599.0 -> 80.0	-	N.D.			
		599.0 -> 99.0					
PFHpA	5.401	363.0 -> 319.0	4372	0.36	µg/L	m	97
		363.0 -> 169.0	867				
PFHpS	-	449.0 -> 80.0	-	N.D.			
		449.0 -> 99.0					
PFHxA	4.541	313.0 -> 269.0	2961	0.28	µg/L		96
		313.0 -> 119.0	157				
PFHxS	5.421	399.0 -> 80.0	1863	1.14	µg/L	m	96
		399.0 -> 99.0	1096				
PFNA	-	463.0 -> 419.0	-	N.D.			
		463.0 -> 219.0					
PFNS	-	549.0 -> 80.0	-	N.D.			
		549.0 -> 99.0					
PFOA	6.112	413.0 -> 369.0	31028	2.23	µg/L	m	97
		413.0 -> 169.0	8226				
PFOS	6.504	499.0 -> 80.0	9651	6.45	µg/L	m	83

Perfluorinated Compounds by LC/MS/MS

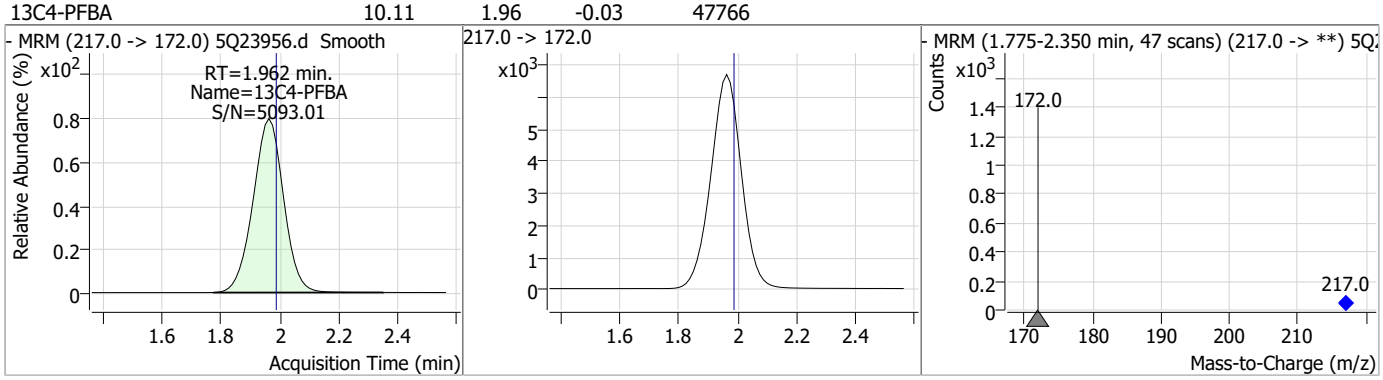
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		499.0 -> 99.0	3708			
PFPeA	3.409	263.0 -> 219.0	1526	0.23	µg/L	100
PFPeS	-	349.0 -> 80.0	-	N.D.		
		349.0 -> 99.0				
PFTeDA	-	713.0 -> 669.0	-	N.D.		
		713.0 -> 219.0				
PFTrDA	-	663.0 -> 619.0	-	N.D.		
		663.0 -> 369.0				
PFUnDA	-	563.0 -> 519.0	-	N.D.		
		563.0 -> 269.0				
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.		
		633.0 -> 453.0				
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.		
		533.0 -> 353.0				
ADONA	-	377.0 -> 251.0	-	N.D.		
		377.0 -> 85.0				
HFPO-DA	-	329.0 -> 169.0	-	N.D.		
		285.0 -> 169.0				
MeFOSA	-	512.0 -> 169.0	-	N.D.		
		512.0 -> 219.0				
4-PFECHS	-	461.0 -> 381.0	-	N.D.		
		461.0 -> 99.0				
FBSA	-	298.0 -> 78.0	-	N.D.		
		298.0 -> 64.0				
FHxSA	-	398.0 -> 78.0	-	N.D.		
		398.0 -> 64.0				

 # = Qualifier out of range, m = manually integrated, + = Area summed

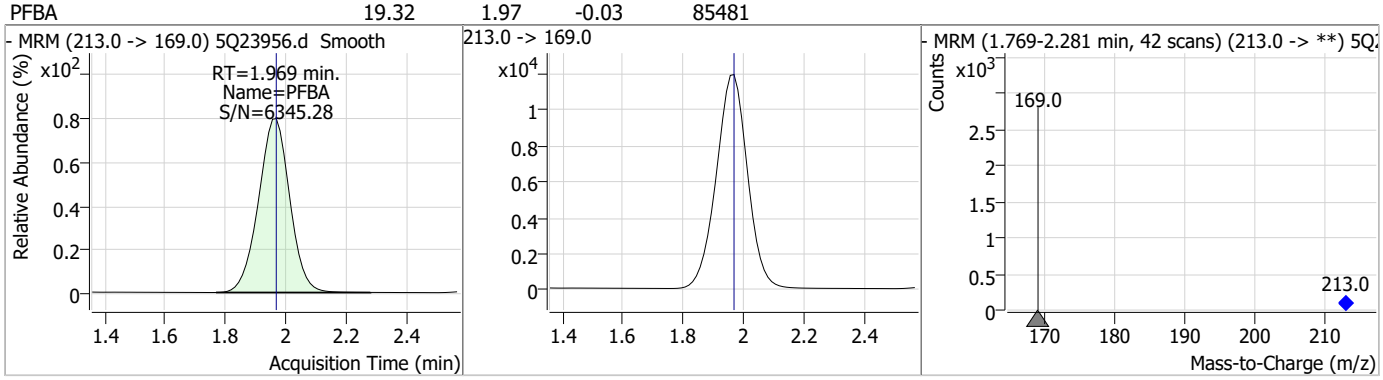
Perfluorinated Compounds by LC/MS/MS



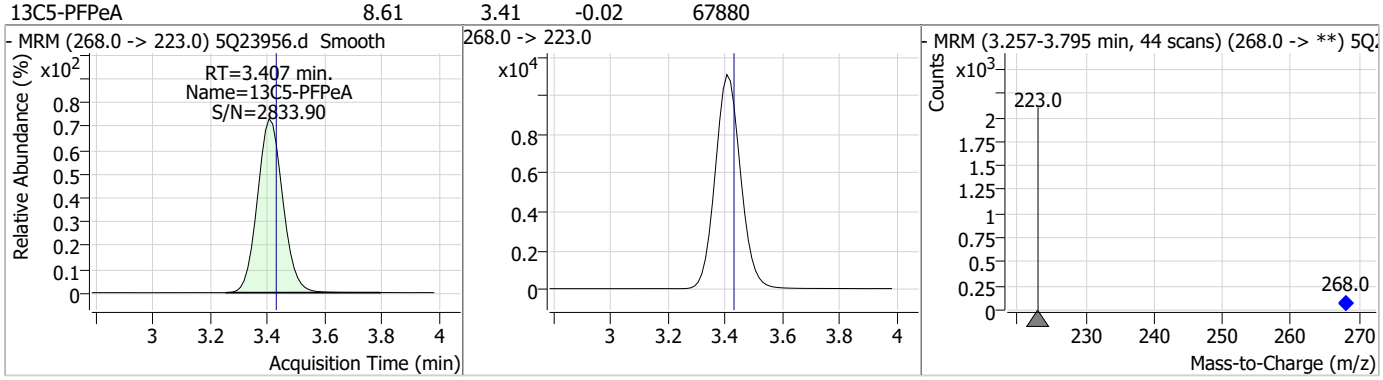
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13C4-PFBA	10.11	1.96	-0.03	47766				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	19.32	1.97	-0.03	85481				

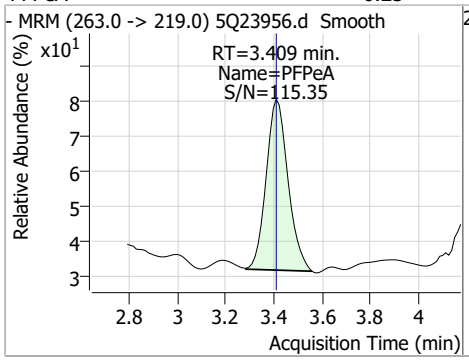


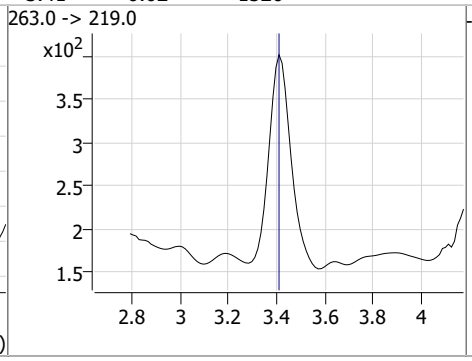
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13C5-PFPeA	8.61	3.41	-0.02	67880				

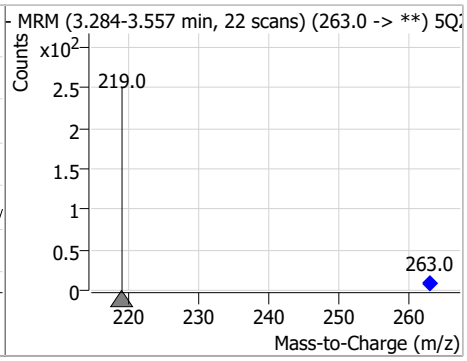


Perfluorinated Compounds by LC/MS/MS

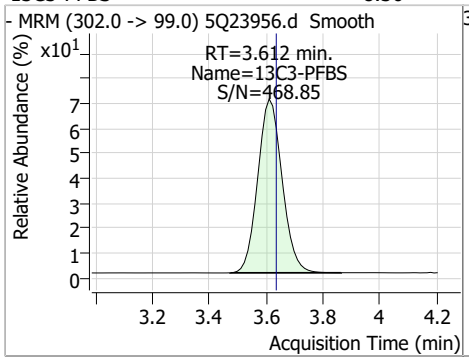
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	0.23	3.41	-0.02	1526				

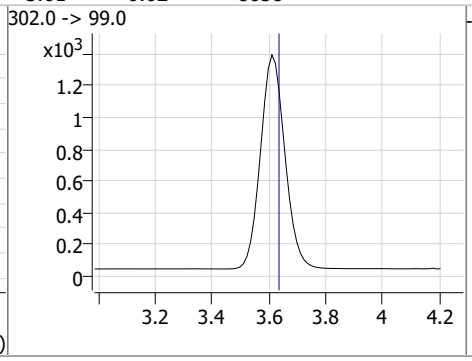


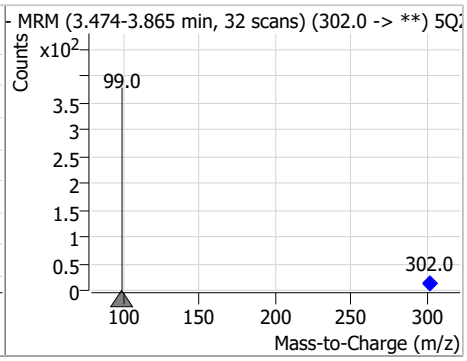




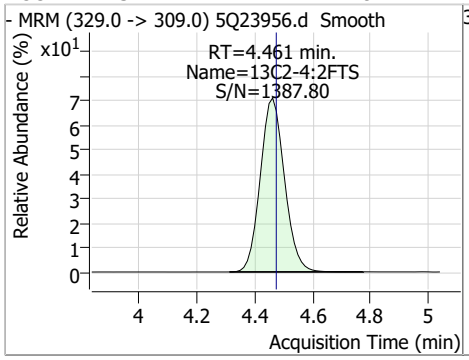
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13C3-PFBS	8.30	3.61	-0.02	8058				

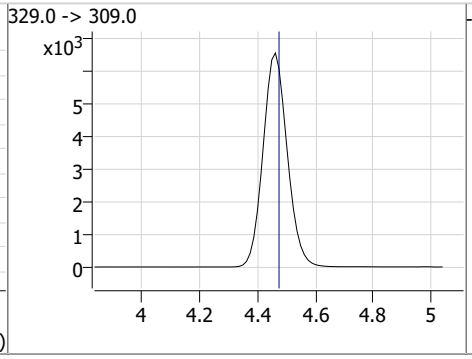


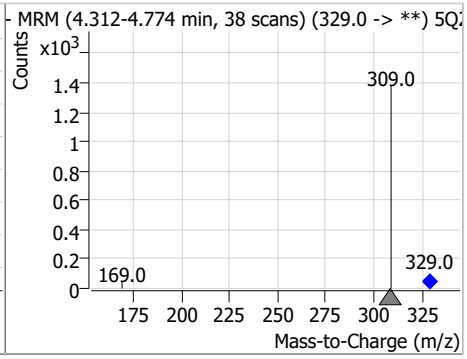




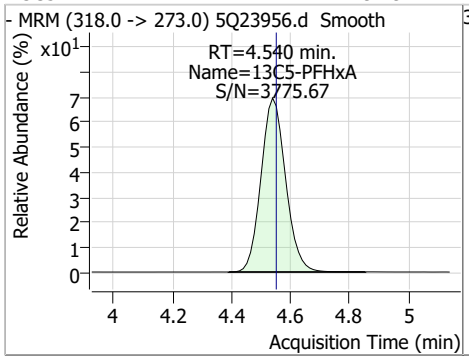
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	9.44	4.46	-0.01	37957				

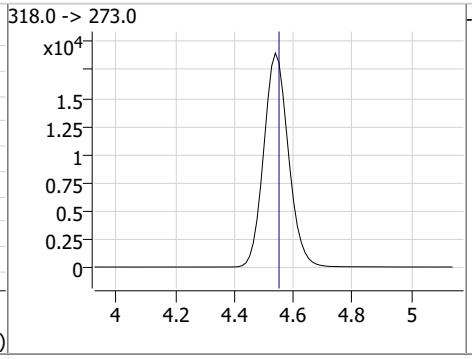


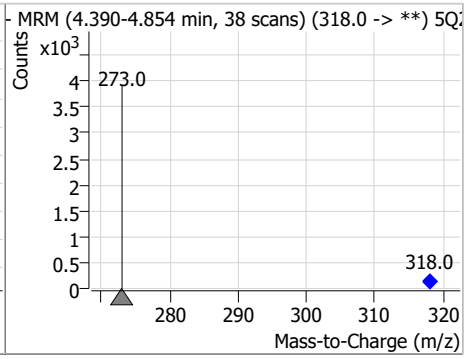




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	9.19	4.54	-0.01	109870				

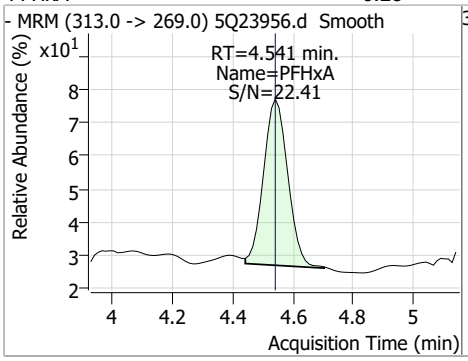


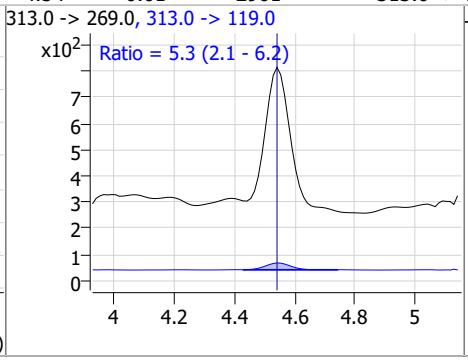


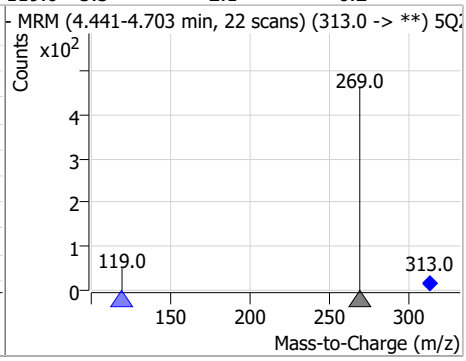


Perfluorinated Compounds by LC/MS/MS

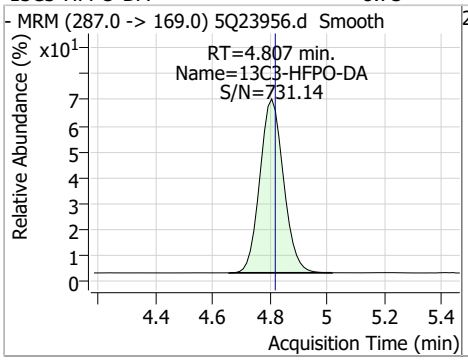
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	0.28	4.54	-0.01	2961	313.0 -> 119.0	5.3	2.1	6.2

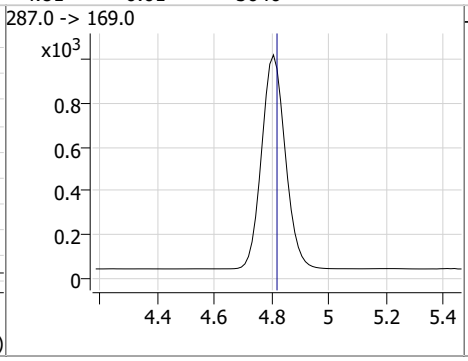


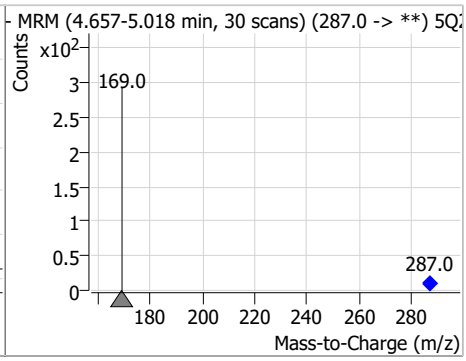




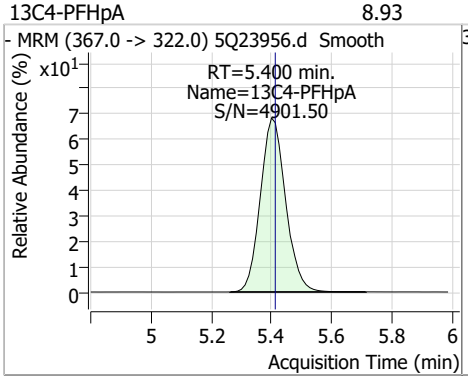
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	8.73	4.81	-0.01	5640				

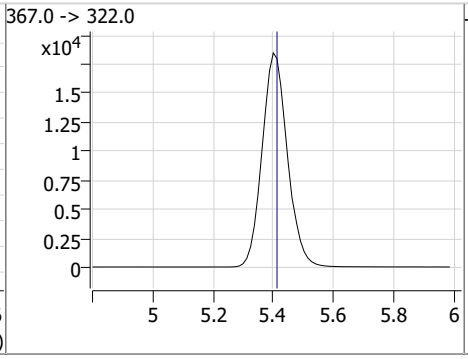


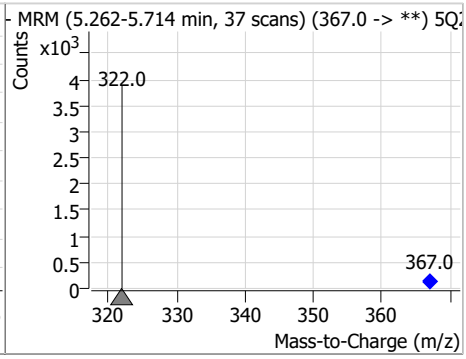




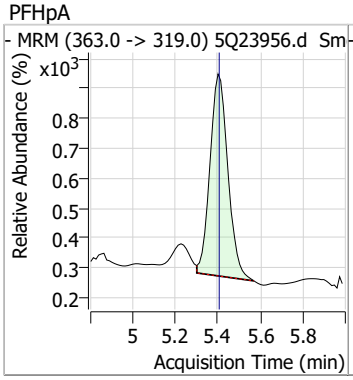
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	8.93	5.40	-0.01	107353				

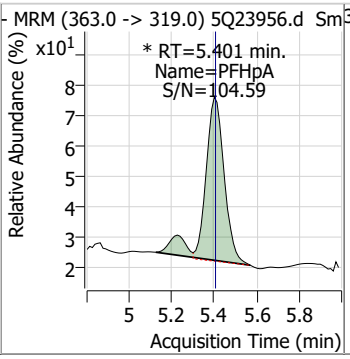


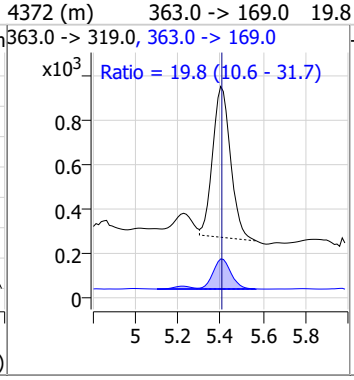


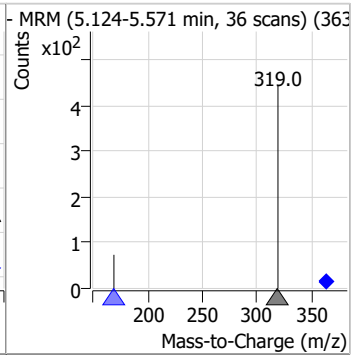


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	0.36	5.40	-0.01	4372 (m)	363.0 -> 169.0	19.8	10.6	31.7



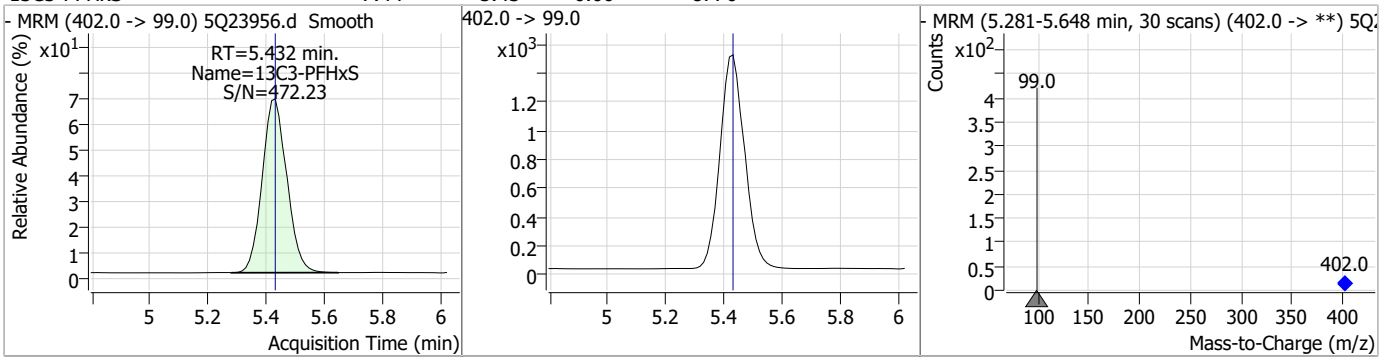




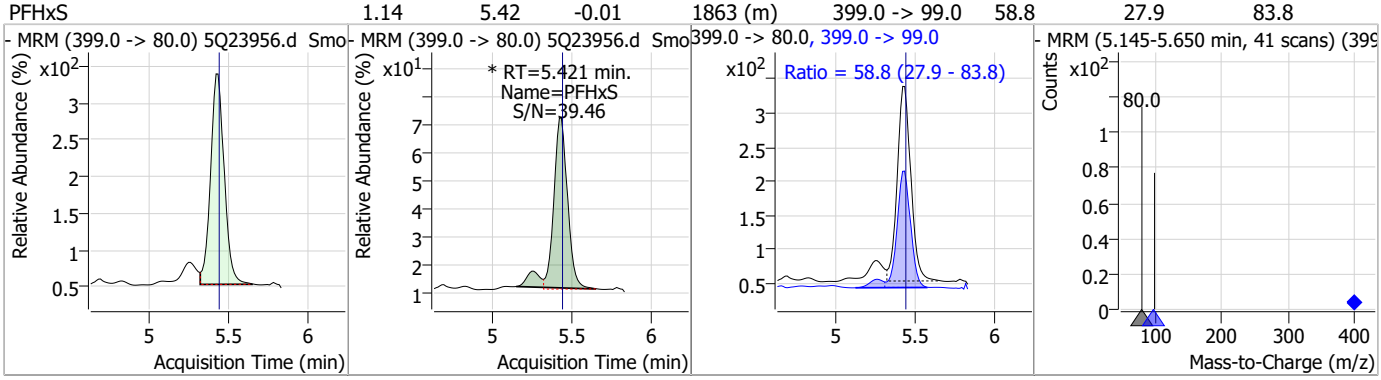


Perfluorinated Compounds by LC/MS/MS

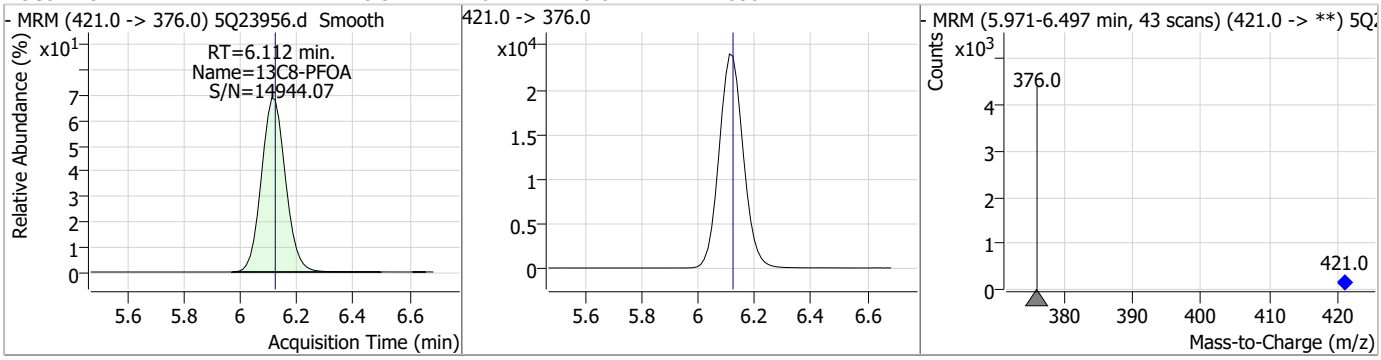
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	7.44	5.43	0.00	8776				



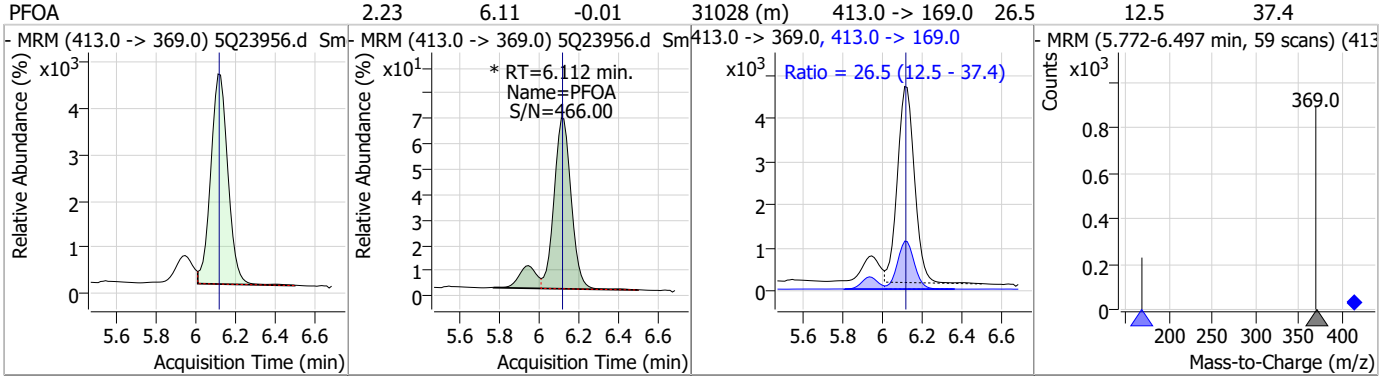
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	1.14	5.42	-0.01	1863 (m)	399.0 -> 99.0	58.8	27.9	83.8



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	8.57	6.11	-0.01	141880				

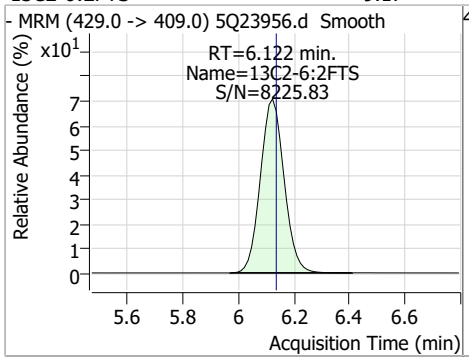


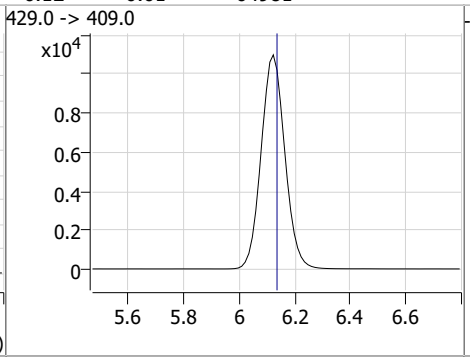
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	2.23	6.11	-0.01	31028 (m)	413.0 -> 169.0	26.5	12.5	37.4

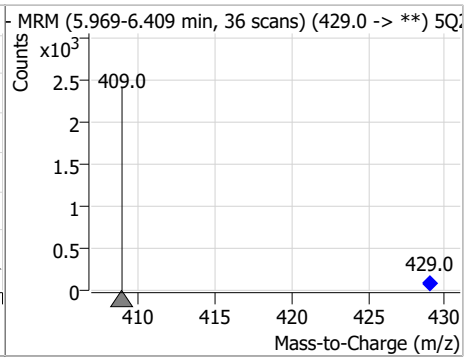


Perfluorinated Compounds by LC/MS/MS

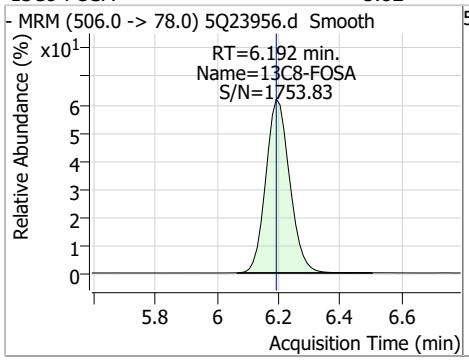
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	9.17	6.12	-0.01	64981				

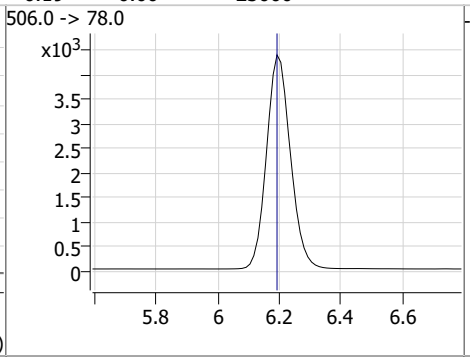


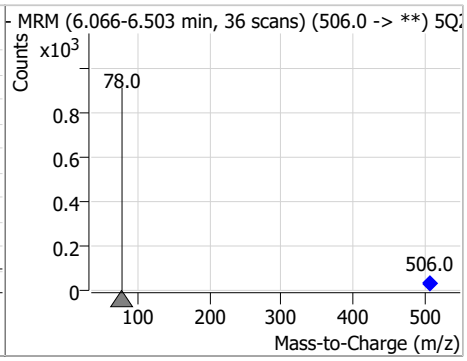




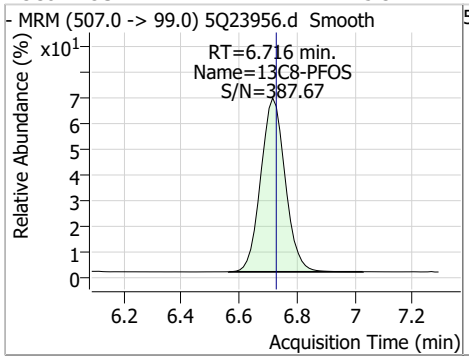
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	5.82	6.19	0.00	23600				

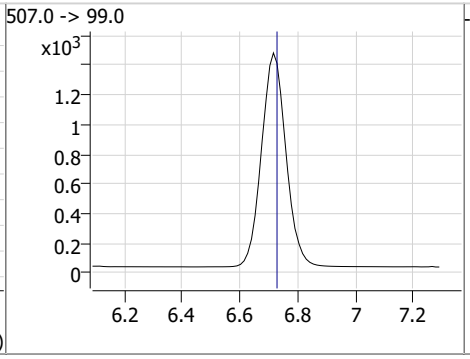


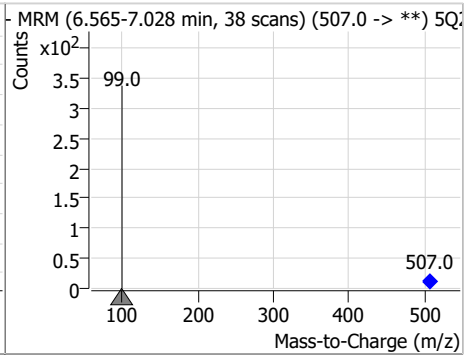




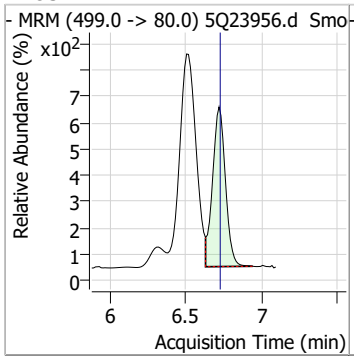
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	5.37	6.72	-0.01	8442				

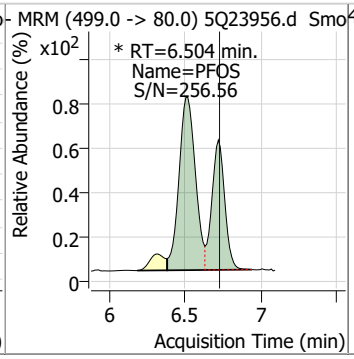


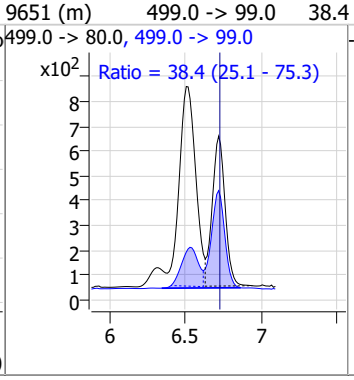


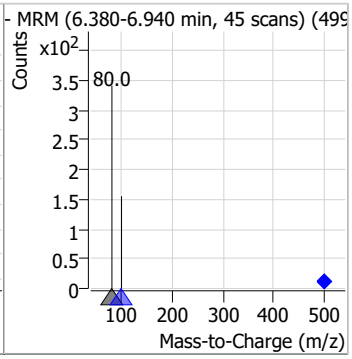


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	6.45	6.50	-0.23	9651 (m)	499.0 -> 99.0	38.4	25.1	75.3



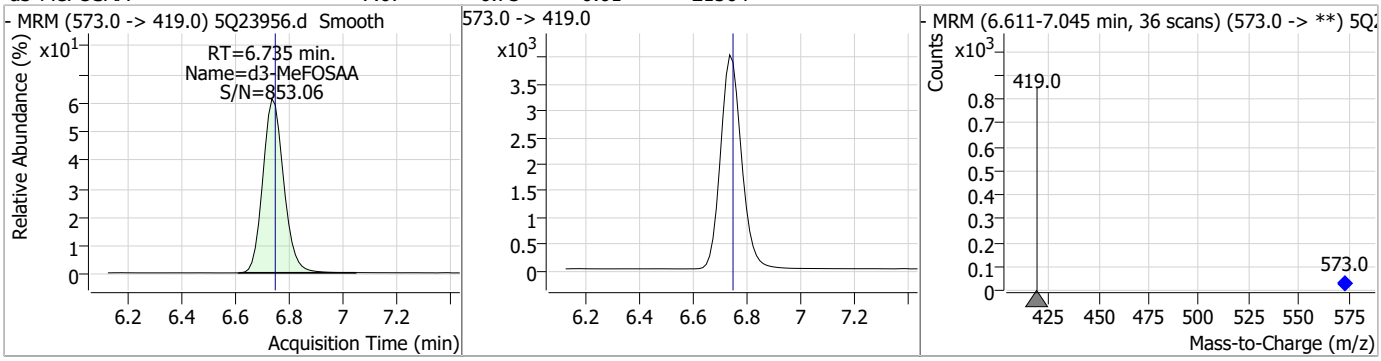




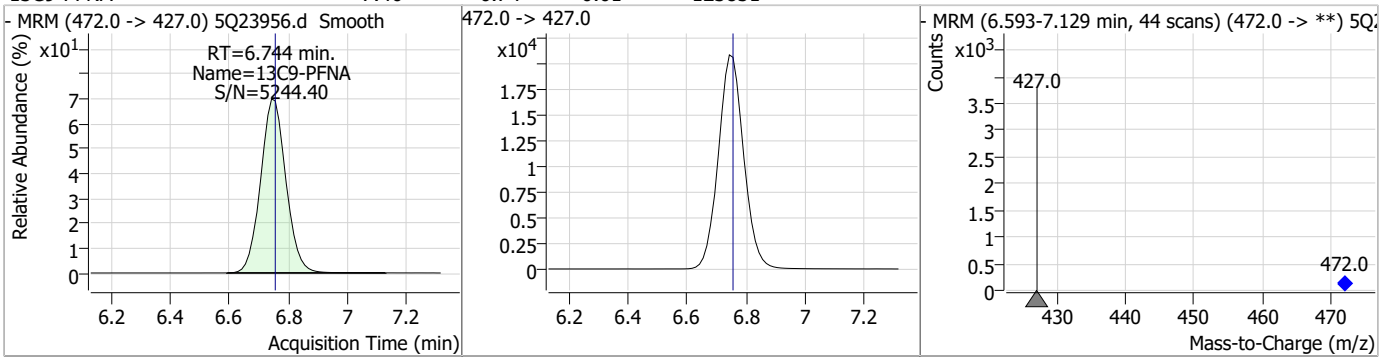


Perfluorinated Compounds by LC/MS/MS

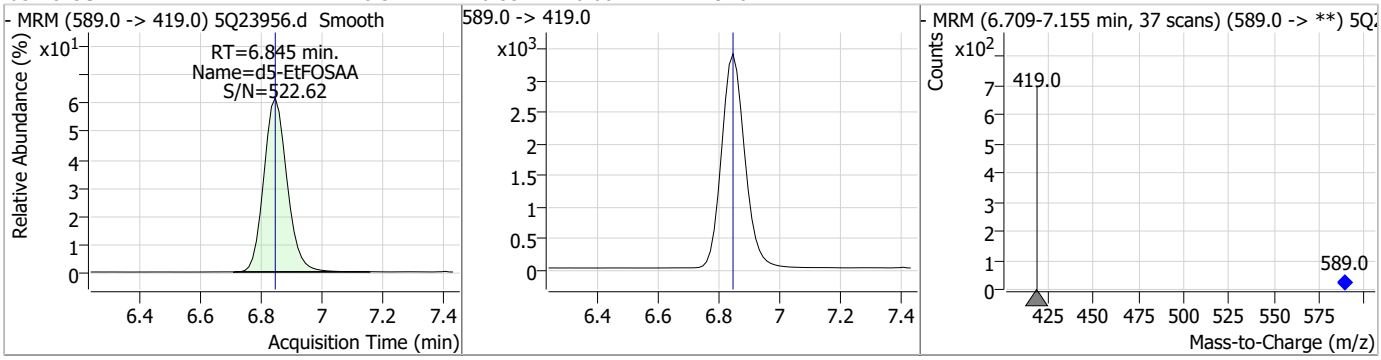
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	7.07	6.73	-0.01	21564				



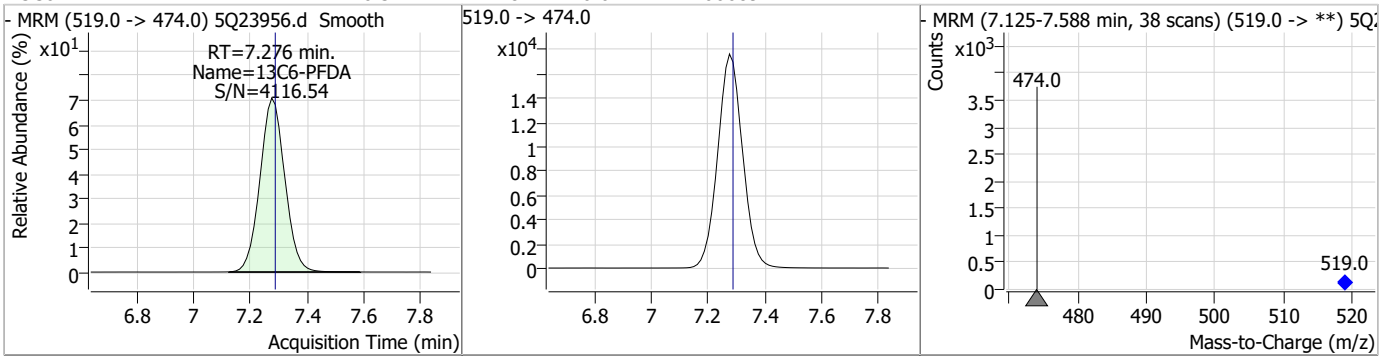
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	7.46	6.74	-0.01	123851				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	6.54	6.85	0.00	17946				

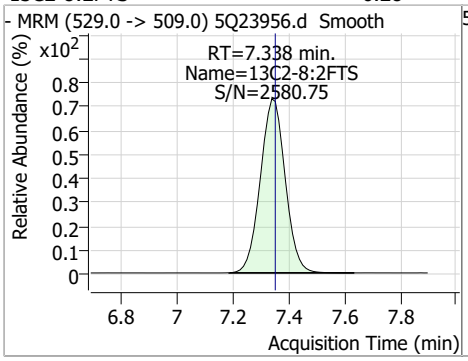


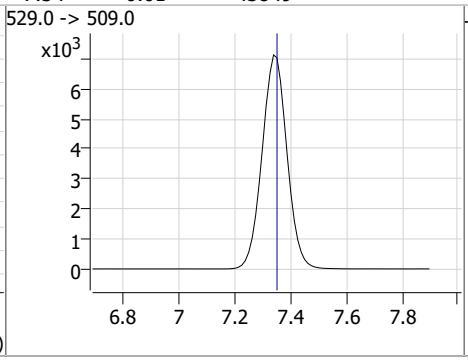
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	6.34	7.28	-0.01	106689				

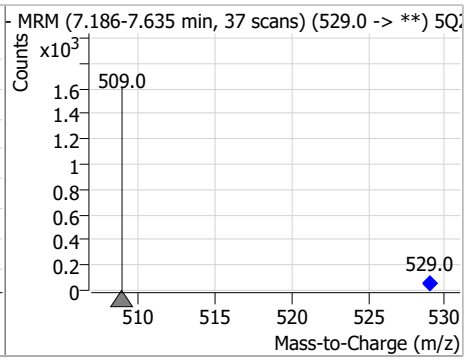


Perfluorinated Compounds by LC/MS/MS

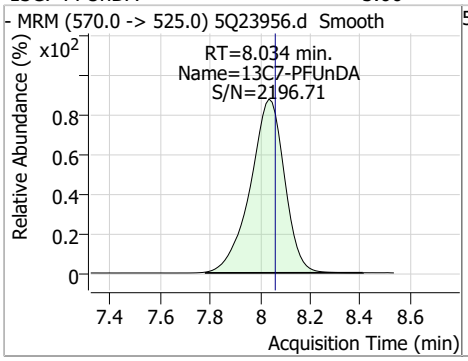
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	6.28	7.34	-0.01	43849				

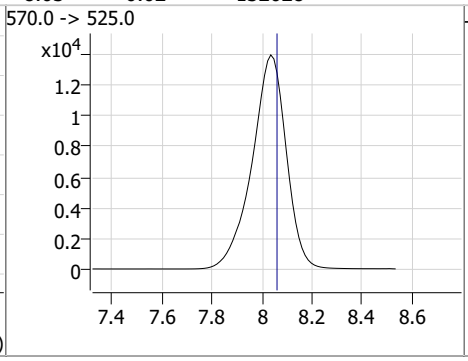


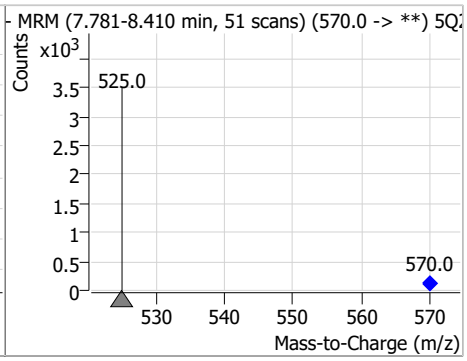




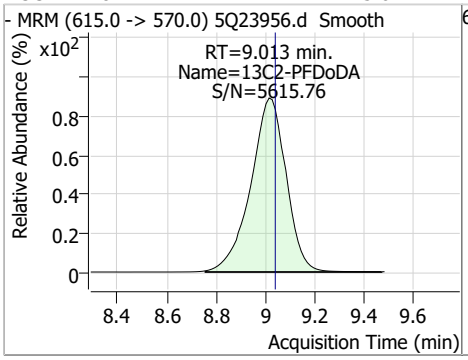
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	5.66	8.03	-0.02	132028				

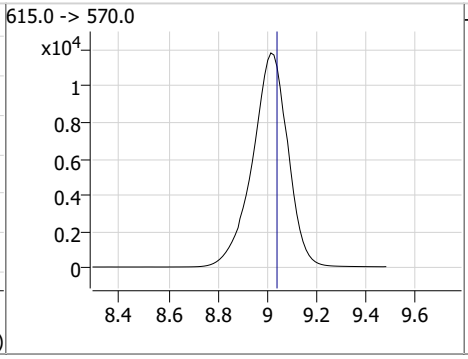


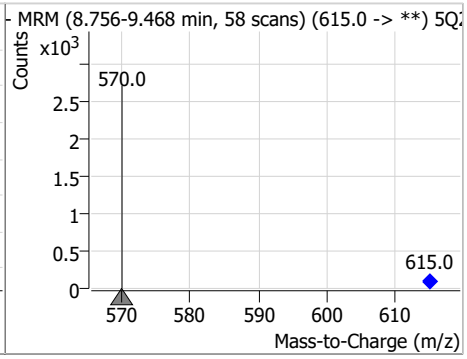




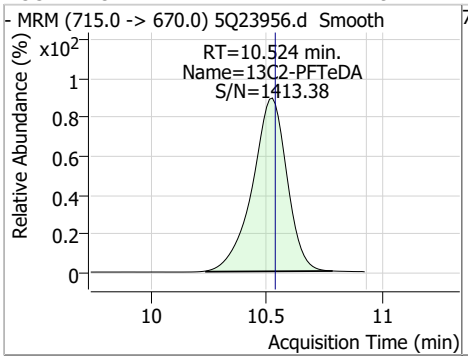
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	5.64	9.01	-0.02	117584				

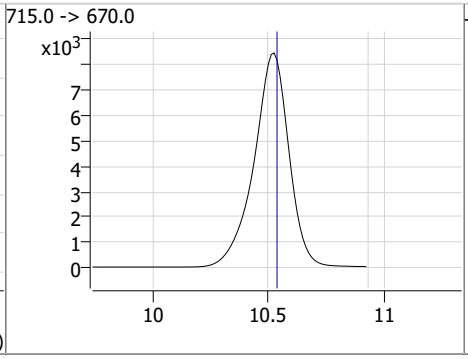


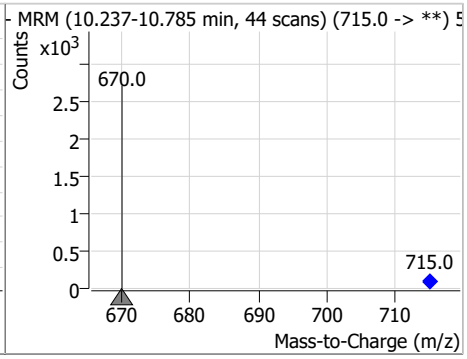




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	4.91	10.52	-0.01	87056				







Manual Integration Approval Summary

Sample Number: FC12099-14
Lab FileID: 5Q23956.D
Injection Time: 12/29/23 03:47
Method: EPA 537M QSM5.3 B-15
Analyst approved: 01/08/24 15:07 Lindsay Ritner
Supervisor approved: 01/09/24 10:19 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluoroheptanoic acid	375-85-9		5.40	Split peak
Perfluorohexanesulfonic acid	355-46-4		5.42	Split peak
Perfluorooctanoic acid	335-67-1		6.11	Split peak
Perfluorooctanesulfonic acid	1763-23-1		6.50	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Natasha Gumtie
01/05/24 17:11

Perfluorinated Compounds by LC/MS/MS

Data File : 2q118608.d
Operator : lindsayr
Acq. Method : 537_ID.m
Acq. Date-Time : 1/4/2024 5:25:12 PM
Sample Name : fc12099-15re
Vial : P6-A5
DA Method File : ID_010224_S2Q1691.quantmethod.xml
Batch Name : s2q1693.batch.bin
Sample Information : op937,S2Q1693,125,,,1.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M5-EtFOSAA	7.722	589.0 -> 419.0	13655	10.00	µg/L	0.000
M4-PFBA	2.202	217.0 -> 172.0	32269	10.00	µg/L	-0.038
M5-PFPeA	4.037	268.0 -> 223.0	50019	10.00	µg/L	-0.025
M5-PFHxA	5.314	318.0 -> 273.0	62822	10.00	µg/L	-0.025
M4-PFHpA	6.182	367.0 -> 322.0	57903	10.00	µg/L	-0.025
M8-PFOA	6.875	421.0 -> 376.0	120187	10.00	µg/L	-0.013
M9-PFNA	7.442	472.0 -> 427.0	94629	10.00	µg/L	-0.013
M6-PFDA	7.931	519.0 -> 474.0	78354	10.00	µg/L	0.000
M7-PFUnDA	8.381	570.0 -> 525.0	119044	10.00	µg/L	0.000
M2-PFDoDA	8.908	615.0 -> 570.0	103794	10.00	µg/L	-0.013
M2-PFTeDA	10.017	715.0 -> 670.0	66979	10.00	µg/L	0.000
M8-FOSA	7.147	506.0 -> 78.0	12169	10.00	µg/L	-0.013
M3-PFBS	4.304	302.0 -> 99.0	3708	10.00	µg/L	-0.025
M3-PFHxS	6.201	402.0 -> 99.0	3743	10.00	µg/L	-0.042
M8-PFOS	7.413	507.0 -> 99.0	3606	10.00	µg/L	-0.014
M2-4:2FTS	5.209	329.0 -> 309.0	23882	10.00	µg/L	-0.025
M2-6:2FTS	6.860	429.0 -> 409.0	39590	10.00	µg/L	-0.025
M2-8:2FTS	7.967	529.0 -> 509.0	27683	10.00	µg/L	0.000
M3-MeFOSAA	7.609	573.0 -> 419.0	16986	10.00	µg/L	0.000
M3-HFPO-DA	5.582	287.0 -> 169.0	5249	10.00	µg/L	-0.025
M3-MeFOSA	7.513	515.0 -> 169.0	426	10.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	5.209	329.0 -> 309.0	23882	6.47	µg/L	-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 64.7%		
13C2-6:2FTS	6.860	429.0 -> 409.0	39590	6.89	µg/L	-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 68.9%		
13C2-8:2FTS	7.967	529.0 -> 509.0	27683	7.14	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 71.4%		
13C2-PFDoDA	8.908	615.0 -> 570.0	103794	5.93	µg/L	-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 59.3%		
13C2-PFTeDA	10.017	715.0 -> 670.0	66979	5.04	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 50.4%		
13C3-PFBS	4.304	302.0 -> 99.0	3708	6.17	µg/L	-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 61.7%		
13C3-PFHxS	6.201	402.0 -> 99.0	3743	6.11	µg/L	-0.042
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 61.1%		
13C4-PFBA	2.202	217.0 -> 172.0	32269	6.25	µg/L	-0.038
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 62.5%		
13C4-PFHpA	6.182	367.0 -> 322.0	57903	6.74	µg/L	-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 67.4%		
d5-EtFOSAA	7.722	589.0 -> 419.0	13655	7.08	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 70.8%		
13C5-PFHxA	5.314	318.0 -> 273.0	62822	6.37	µg/L	-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 63.7%		
13C5-PFPeA	4.037	268.0 -> 223.0	50019	6.29	µg/L	-0.025

Perfluorinated Compounds by LC/MS/MS

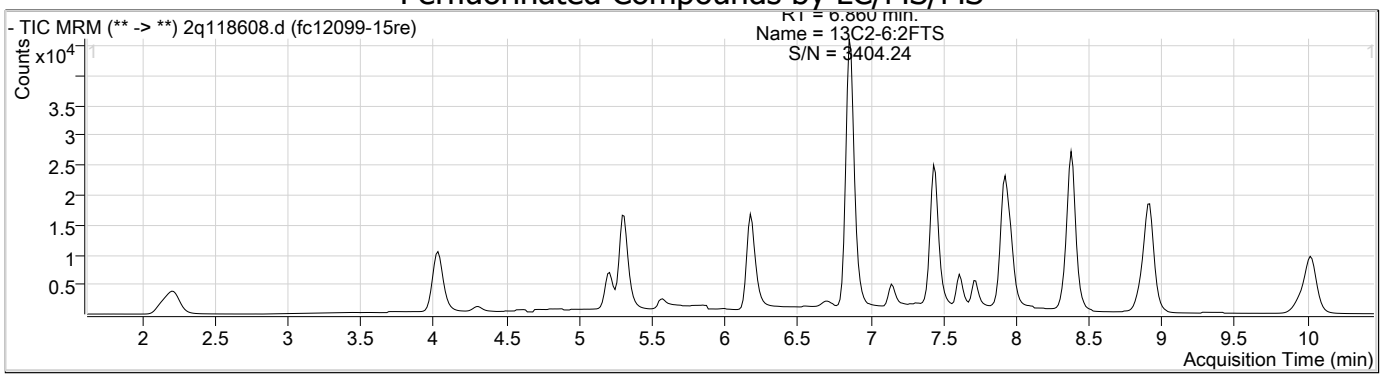
Compound	RT	Transition	Response	Conc. Units		Dev(Min)
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 62.9%		
13C6-PFDA	7.931	519.0 -> 474.0	78354	7.50 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 75.0%		
13C7-PFUnDA	8.381	570.0 -> 525.0	119044	6.85 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 68.5%		
13C8-FOSA	7.147	506.0 -> 78.0	12169	5.93 µg/L		-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 59.3%		
13C8-PFOA	6.875	421.0 -> 376.0	120187	7.10 µg/L		-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 71.0%		
13C8-PFOS	7.413	507.0 -> 99.0	3606	6.46 µg/L		-0.014
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 64.6%		
13C9-PFNA	7.442	472.0 -> 427.0	94629	7.02 µg/L		-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 70.2%		
d3-MeFOSAA	7.609	573.0 -> 419.0	16986	7.43 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 74.3%		
13C3-HFPO-DA	5.582	287.0 -> 169.0	5249	6.32 µg/L		-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 63.2%		
d3-MeFOSA	7.513	515.0 -> 169.0	426	0.59 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 5.9%		
Target Compounds						QValue
4:2FTS	-	327.0 -> 307.0	-	N.D.		
		327.0 -> 81.0				
6:2FTS	-	427.0 -> 407.0	-	N.D.		
		427.0 -> 81.0				
8:2FTS	-	527.0 -> 507.0	-	N.D.		
		527.0 -> 81.0				
EtFOSAA	-	584.0 -> 419.0	-	N.D.		
		584.0 -> 483.0				
FOSA	-	498.0 -> 78.0	-	N.D.		
		498.0 -> 478.0				
MeFOSAA	-	570.0 -> 419.0	-	N.D.		
		570.0 -> 512.0				
PFBA	2.196	213.0 -> 169.0	427	0.42 µg/L		100
PFBS	-	299.0 -> 80.0	-	N.D.		
		299.0 -> 99.0				
PFDA	-	513.0 -> 469.0	-	N.D.		
		513.0 -> 219.0				
PFDoDA	-	613.0 -> 569.0	-	N.D.		
		613.0 -> 319.0				
PFDS	-	599.0 -> 80.0	-	N.D.		
		599.0 -> 99.0				
PFHpA	6.183	363.0 -> 319.0	6270	0.65 µg/L	m	98
		363.0 -> 169.0	1110			
PFHpS	-	449.0 -> 80.0	-	N.D.		
		449.0 -> 99.0				
PFHxA	5.315	313.0 -> 269.0	5496	0.85 µg/L		100
		313.0 -> 119.0	219			
PFHxS	6.202	399.0 -> 80.0	521	0.64 µg/L	m	91
		399.0 -> 99.0	233			
PFNA	-	463.0 -> 419.0	-	N.D.		
		463.0 -> 219.0				
PFNS	-	549.0 -> 80.0	-	N.D.		
		549.0 -> 99.0				
PFOA	6.875	413.0 -> 369.0	24014	1.87 µg/L	m	95
		413.0 -> 169.0	4888			
PFOS	7.236	499.0 -> 80.0	785	1.39 µg/L	m	90

Perfluorinated Compounds by LC/MS/MS

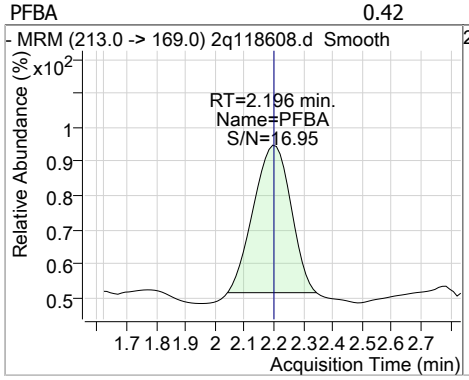
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		499.0 -> 99.0	345			
PFPeA	4.039	263.0 -> 219.0	3278	0.83	µg/L	100
PFPeS	-	349.0 -> 80.0	-	N.D.		
		349.0 -> 99.0				
PFTeDA	-	713.0 -> 669.0	-	N.D.		
		713.0 -> 219.0				
PFTrDA	-	663.0 -> 619.0	-	N.D.		
		663.0 -> 369.0				
PFUnDA	-	563.0 -> 519.0	-	N.D.		
		563.0 -> 269.0				
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.		
		633.0 -> 453.0				
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.		
		533.0 -> 353.0				
ADONA	-	377.0 -> 251.0	-	N.D.		
		377.0 -> 85.0				
HFPO-DA	-	329.0 -> 169.0	-	N.D.		
		285.0 -> 169.0				
MeFOSA	-	512.0 -> 169.0	-	N.D.		
		512.0 -> 219.0				
4-PFECHS	-	461.0 -> 381.0	-	N.D.		
		461.0 -> 99.0				
FBSA	-	298.0 -> 78.0	-	N.D.		
		298.0 -> 64.0				
FHxSA	-	398.0 -> 78.0	-	N.D.		
		398.0 -> 64.0				

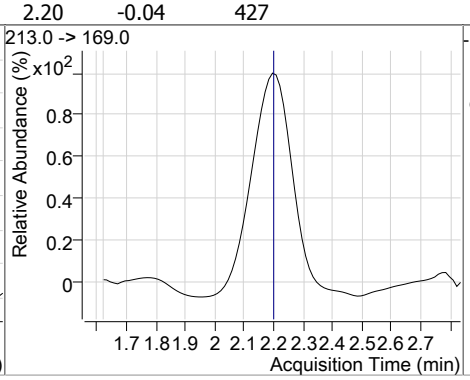
 # = Qualifier out of range, m = manually integrated, + = Area summed

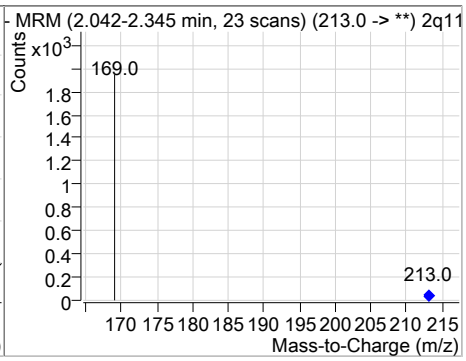
Perfluorinated Compounds by LC/MS/MS



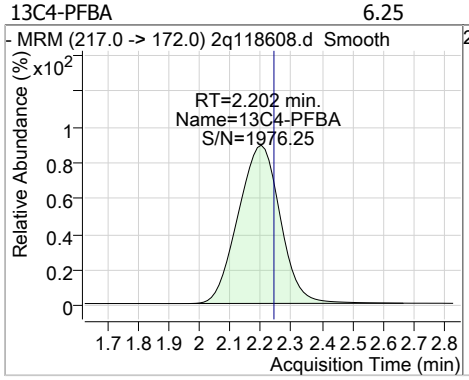
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	0.42	2.20	-0.04	427				

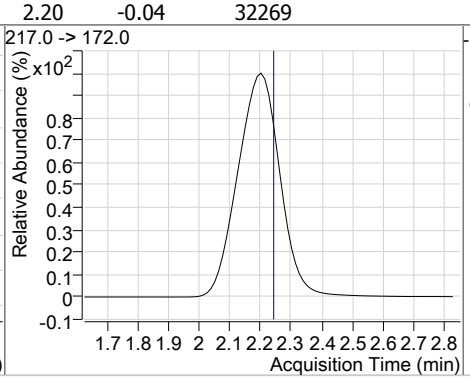


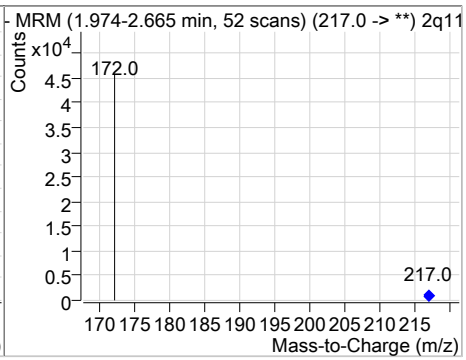




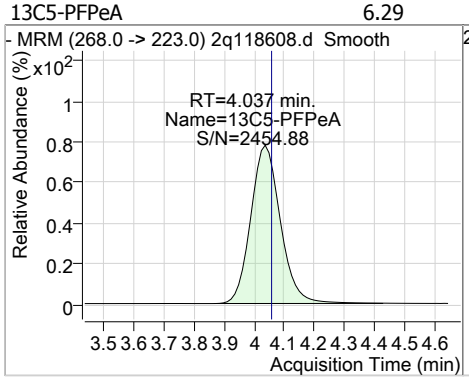
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	6.25	2.20	-0.04	32269				

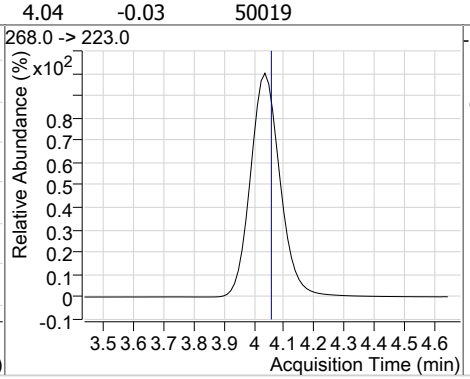


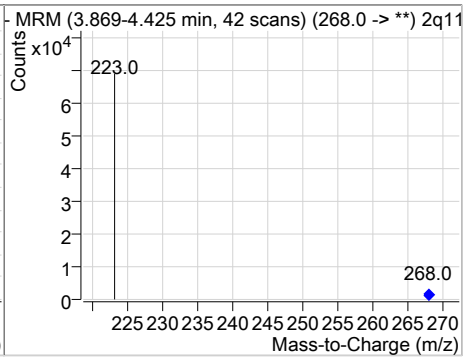




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	6.29	4.04	-0.03	50019				

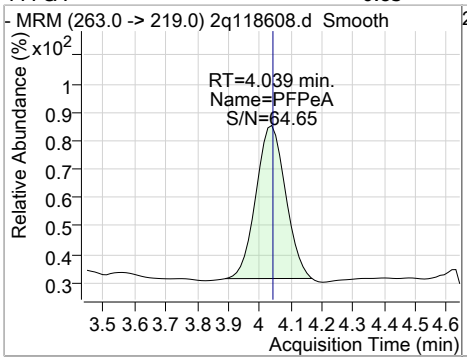


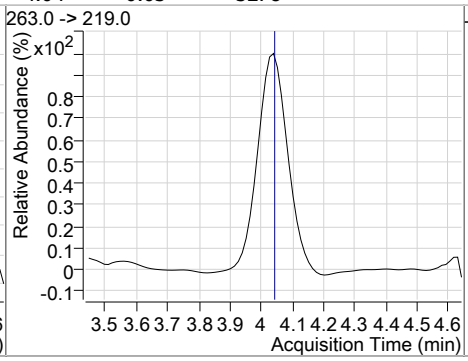


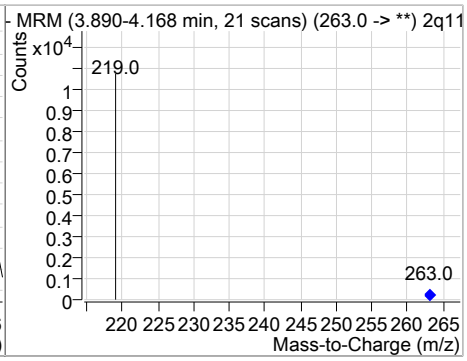


Perfluorinated Compounds by LC/MS/MS

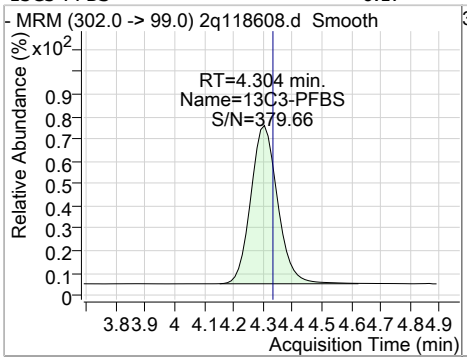
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	0.83	4.04	-0.03	3278				

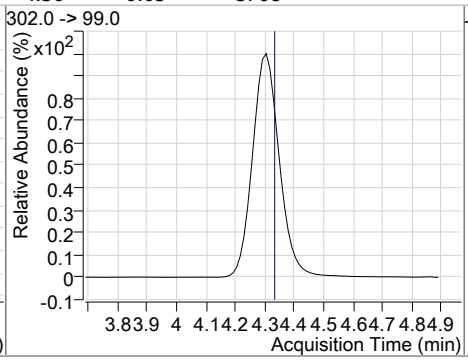


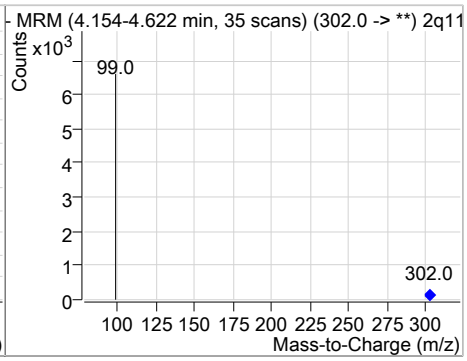




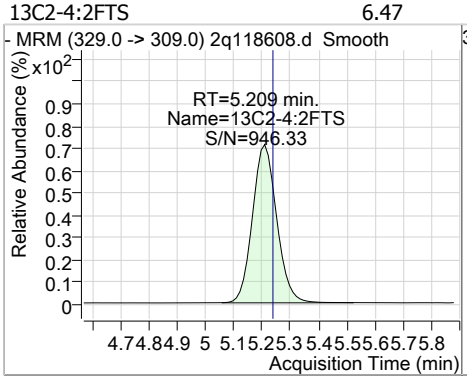
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	6.17	4.30	-0.03	3708				

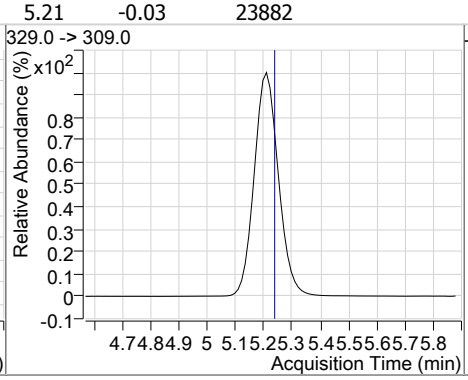


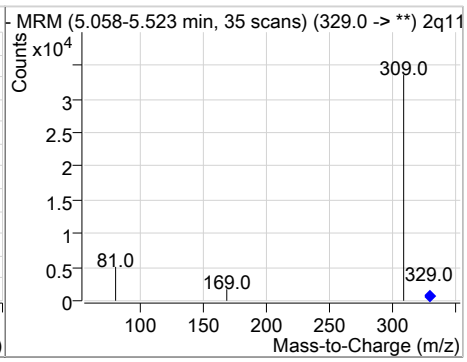




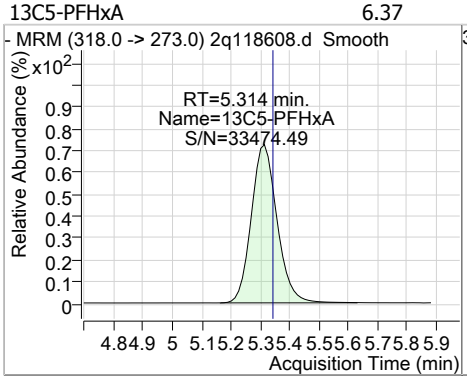
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	6.47	5.21	-0.03	23882				

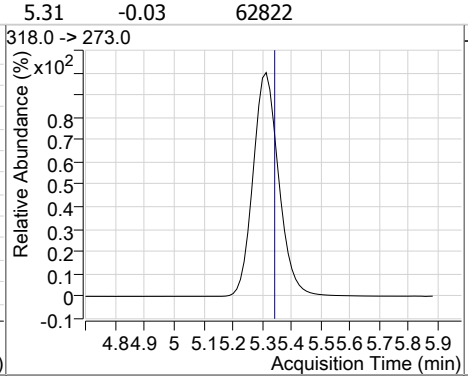


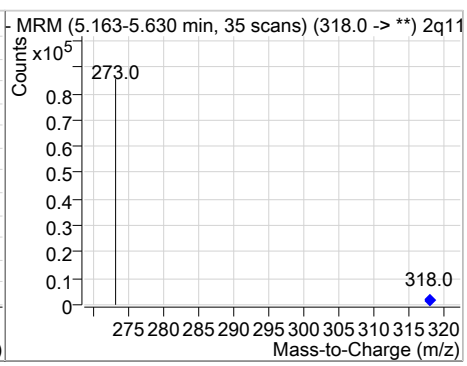




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	6.37	5.31	-0.03	62822				

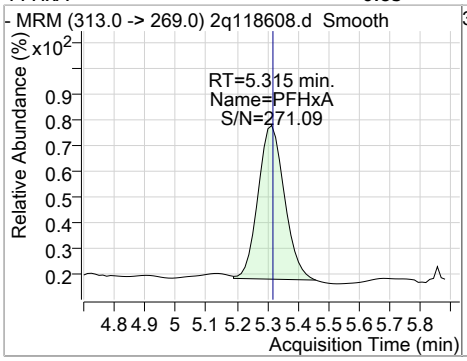


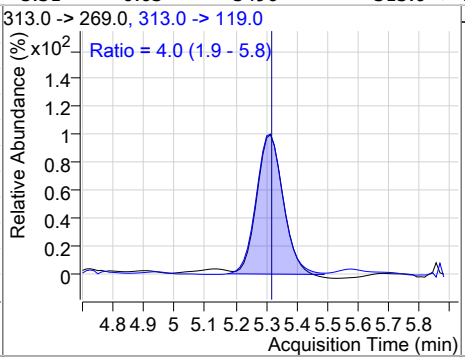


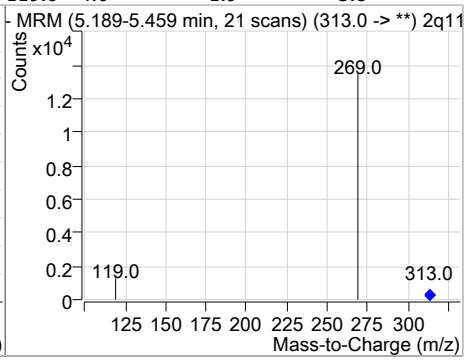


Perfluorinated Compounds by LC/MS/MS

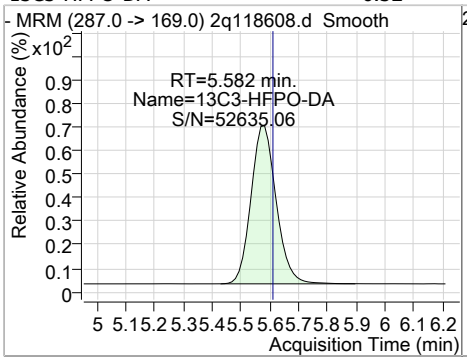
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	0.85	5.31	-0.03	5496	313.0 -> 119.0	4.0	1.9	5.8

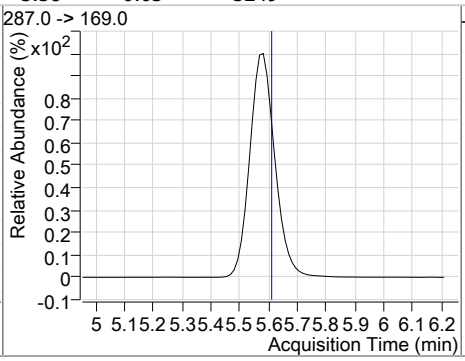


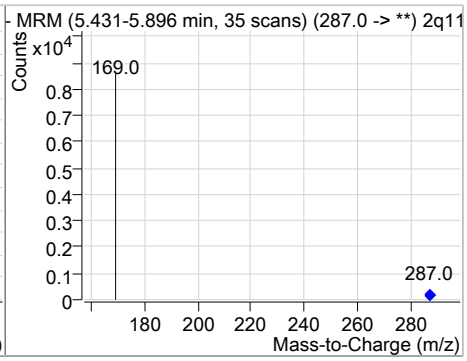




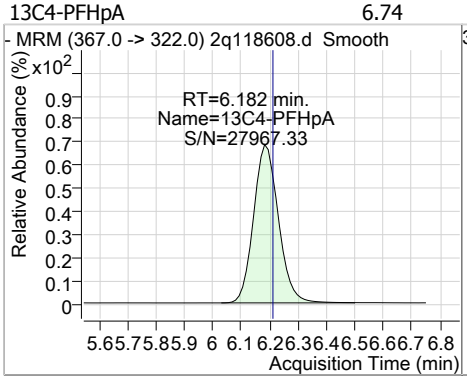
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	6.32	5.58	-0.03	5249				

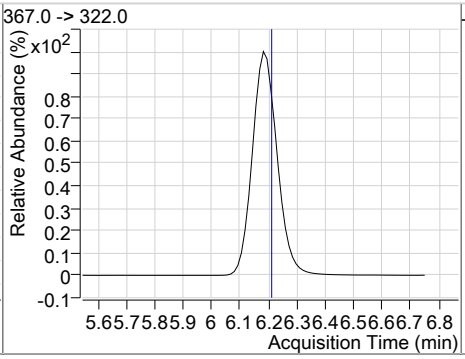


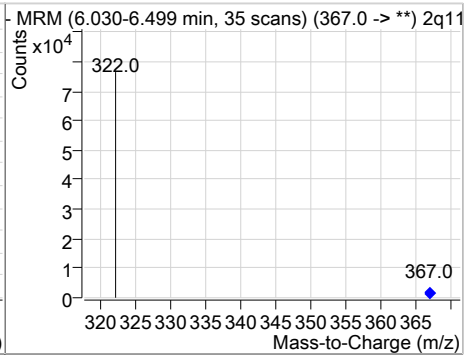




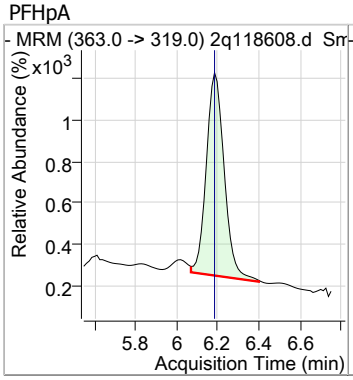
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	6.74	6.18	-0.03	57903				

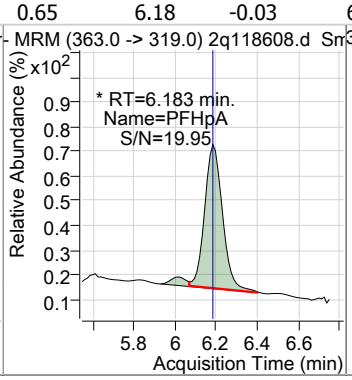


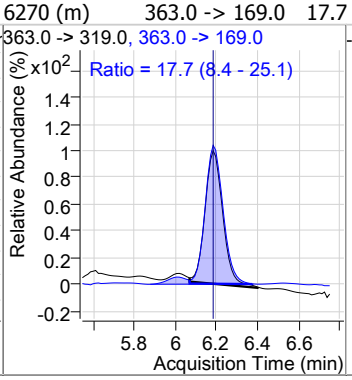


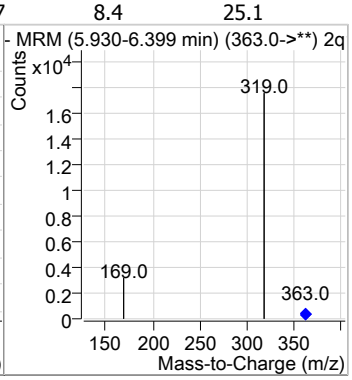


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	0.65	6.18	-0.03	6270 (m)	363.0 -> 169.0	17.7	8.4	25.1



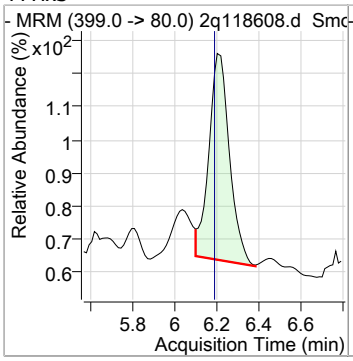


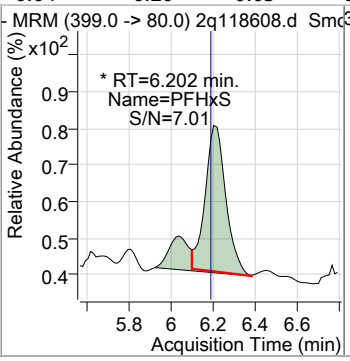


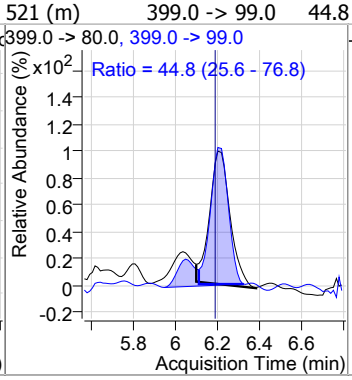


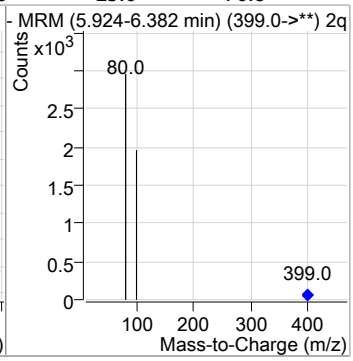
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	0.64	6.20	-0.03	521 (m)	399.0 -> 99.0	44.8	25.6	76.8

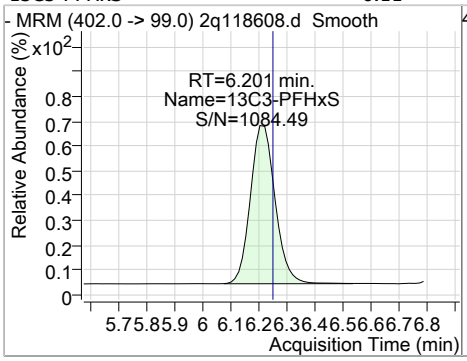


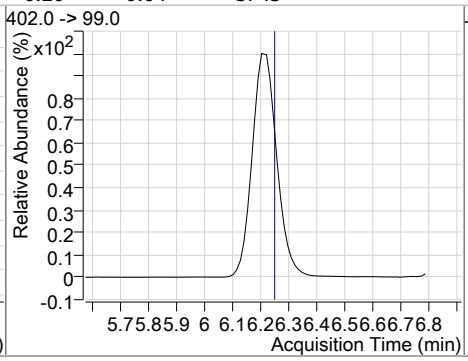


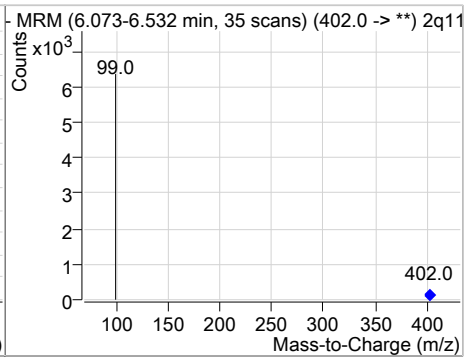




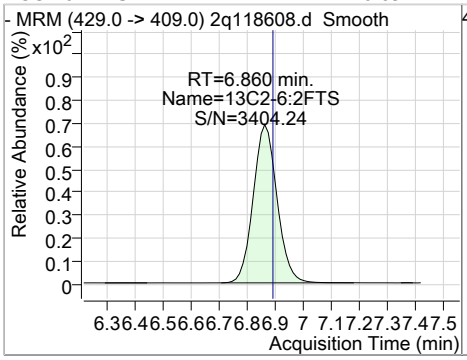
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	6.11	6.20	-0.04	3743				

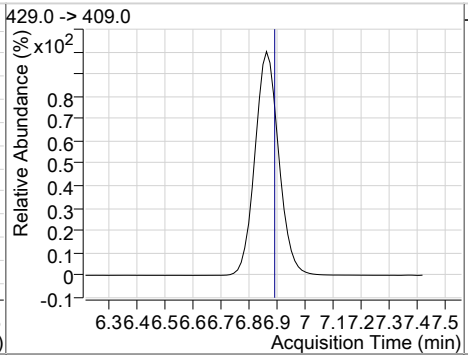


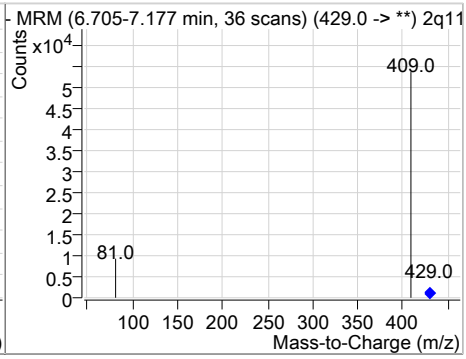




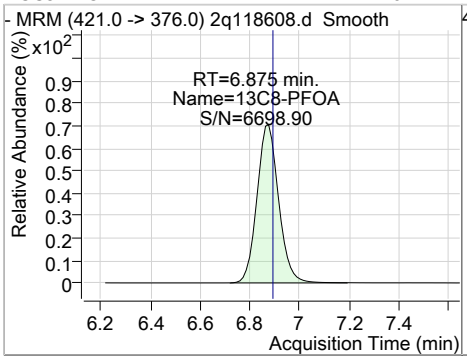
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	6.89	6.86	-0.03	39590				

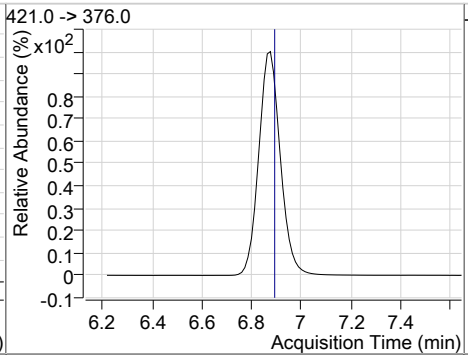


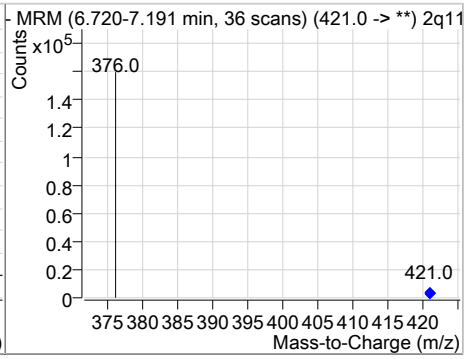




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	7.10	6.87	-0.01	120187				

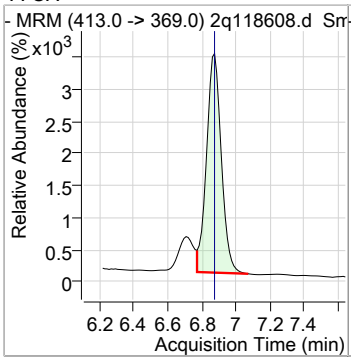


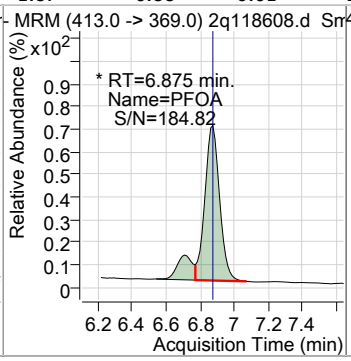


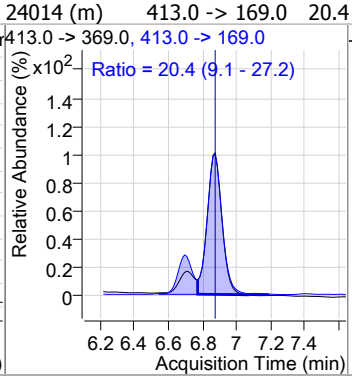


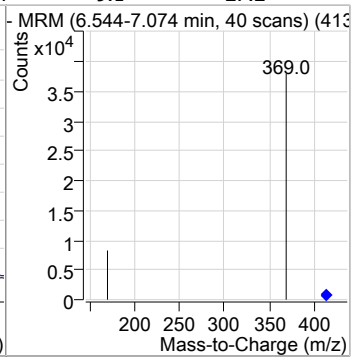
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	1.87	6.88	-0.01	24014 (m)	413.0 -> 169.0	20.4	9.1	27.2

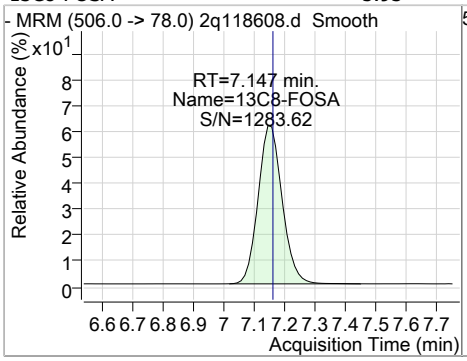


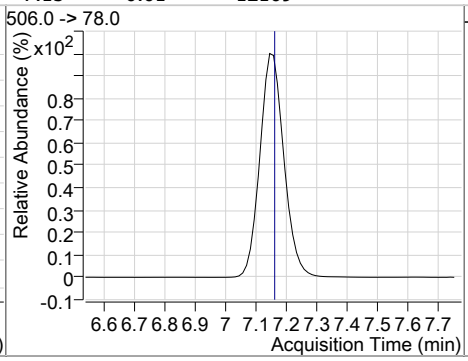


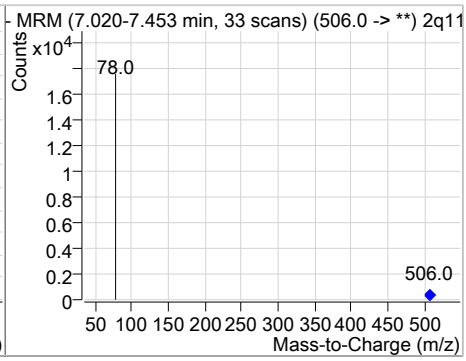




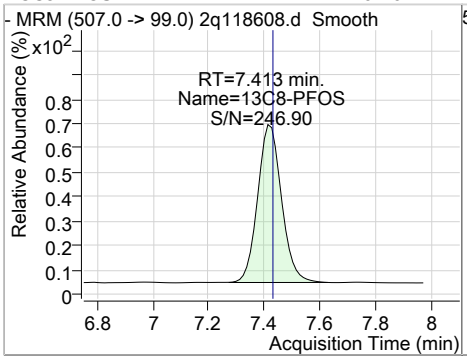
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	5.93	7.15	-0.01	12169				

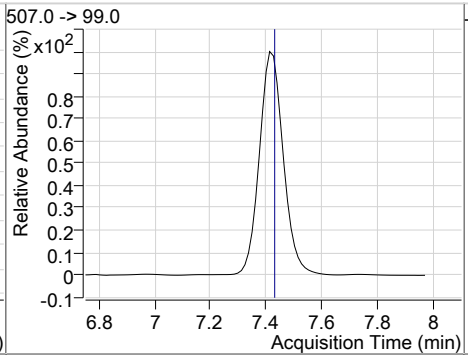


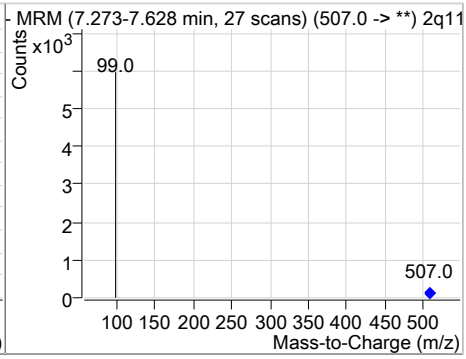




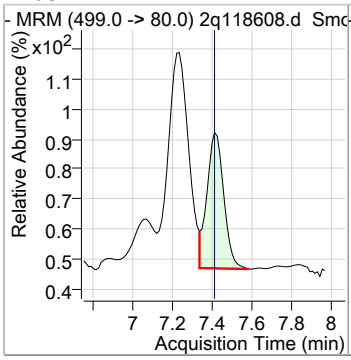
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	6.46	7.41	-0.01	3606				

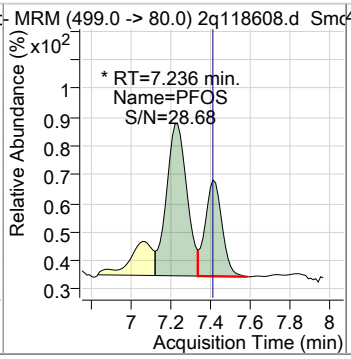


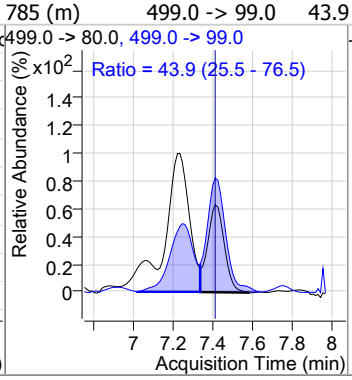


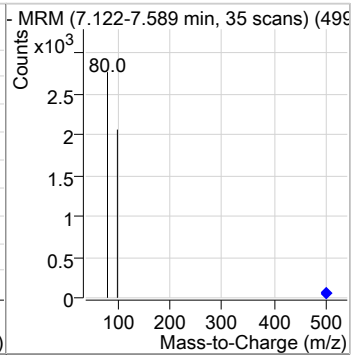


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	1.39	7.24	-0.19	785 (m)	499.0 -> 99.0	43.9	25.5	76.5



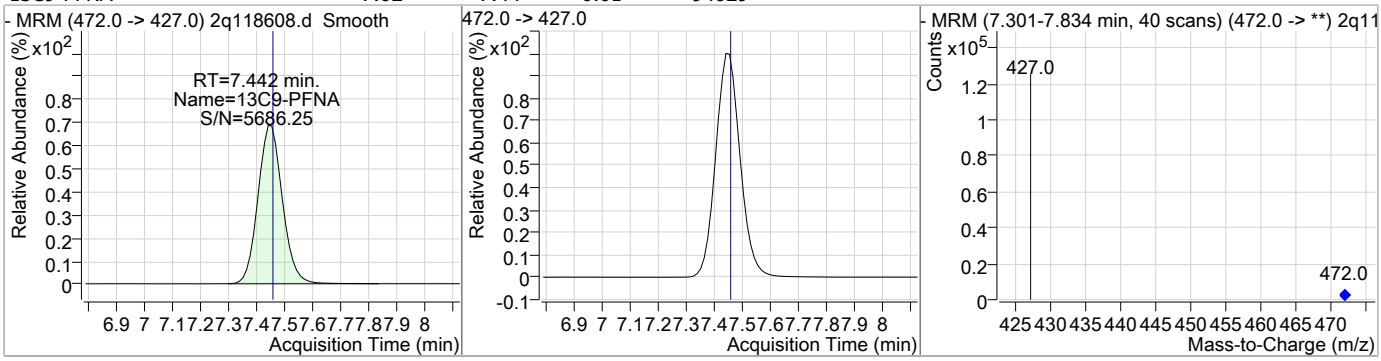




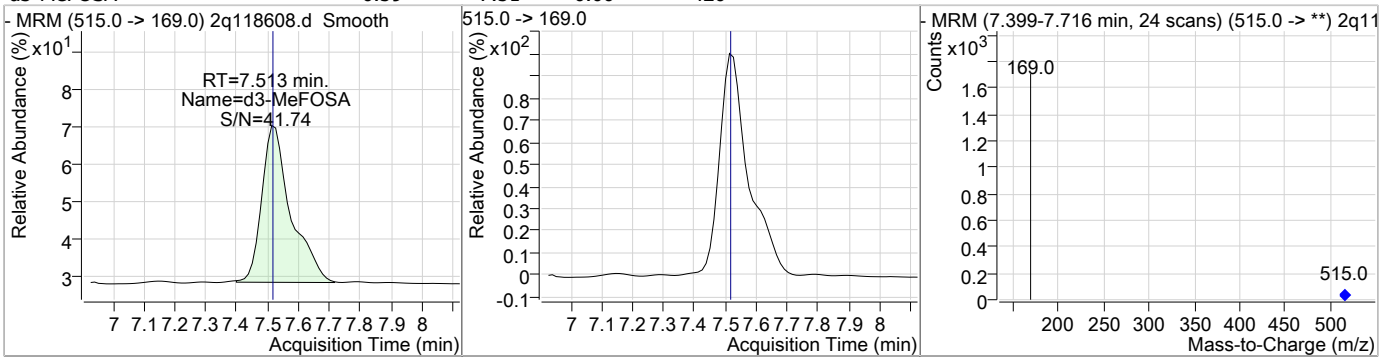


Perfluorinated Compounds by LC/MS/MS

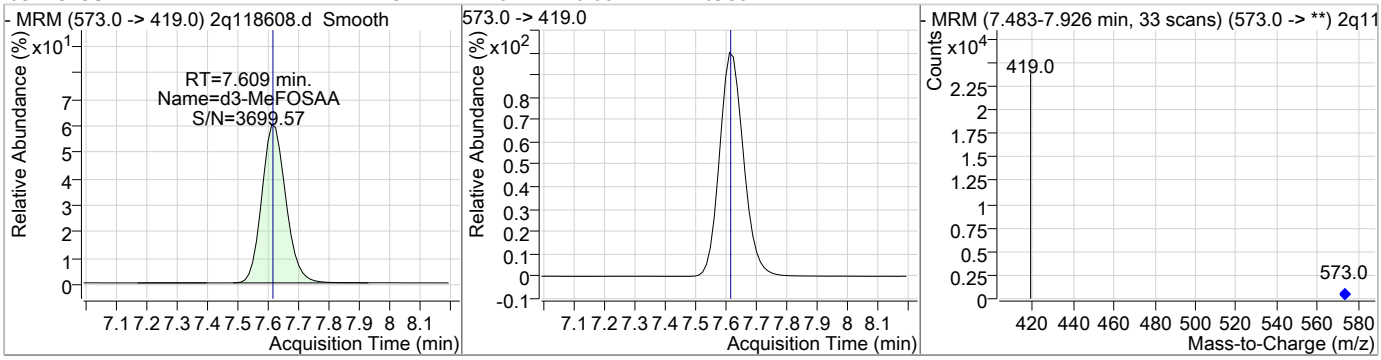
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	7.02	7.44	-0.01	94629				



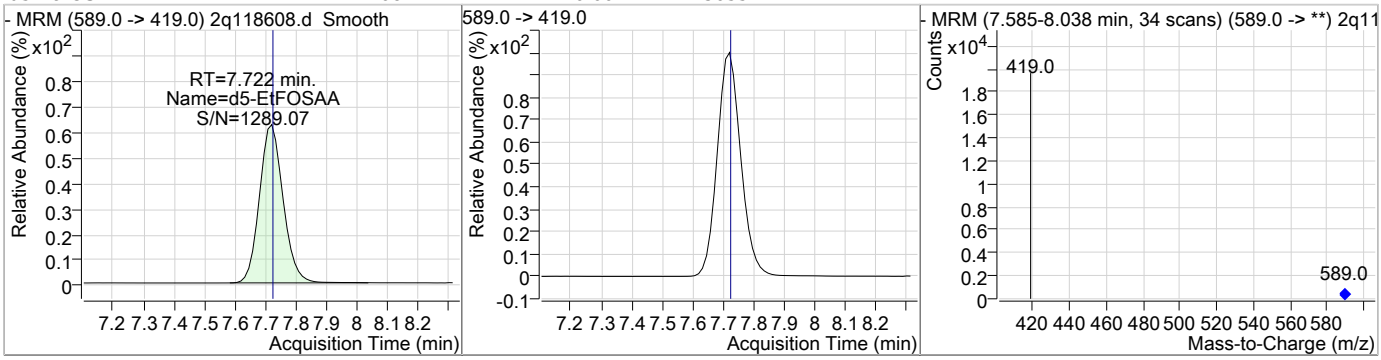
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	0.59	7.51	0.00	426				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	7.43	7.61	0.00	16986				

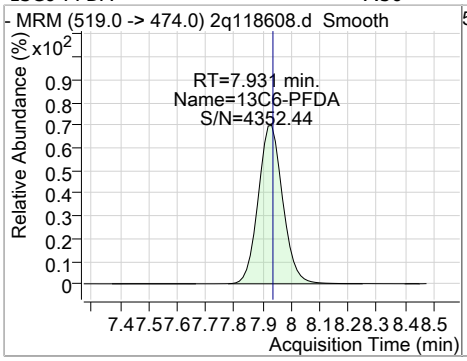


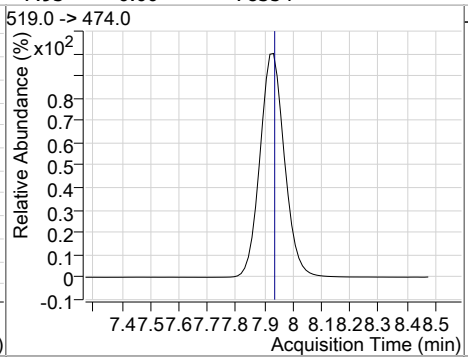
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	7.08	7.72	0.00	13655				

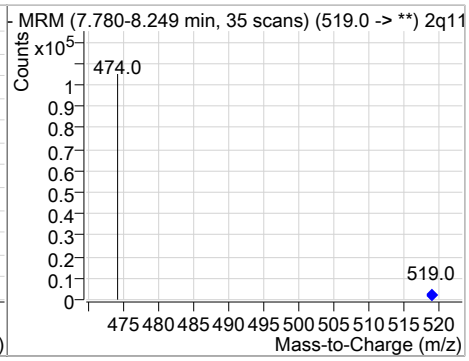


Perfluorinated Compounds by LC/MS/MS

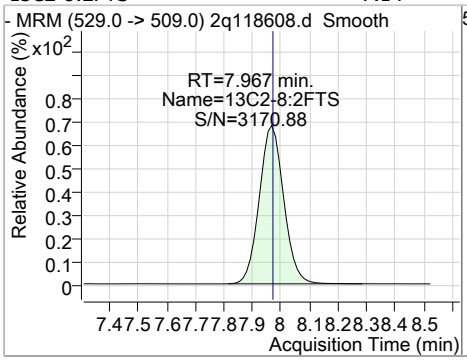
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	7.50	7.93	0.00	78354				

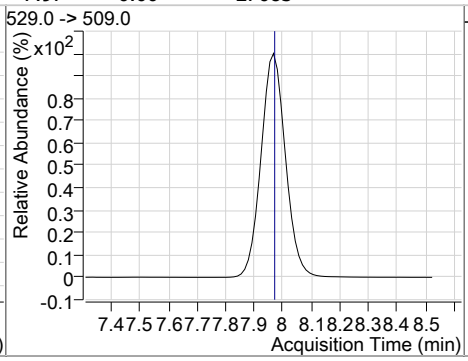


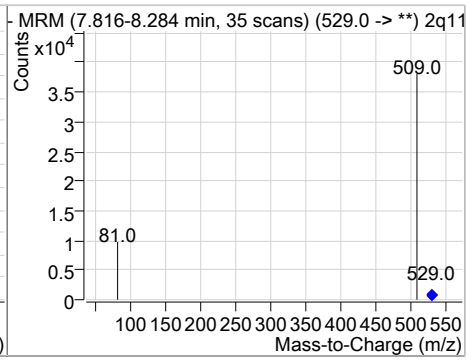




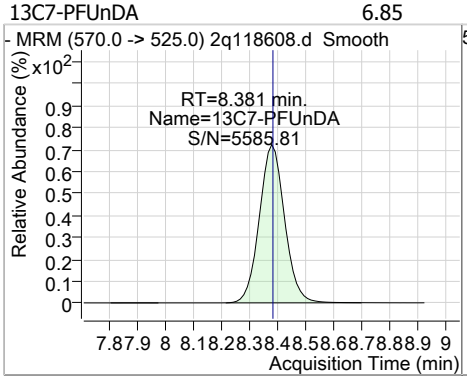
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	7.14	7.97	0.00	27683				

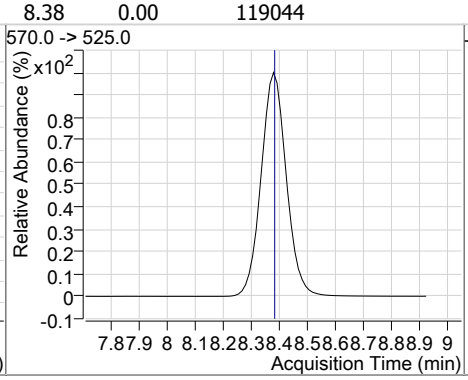


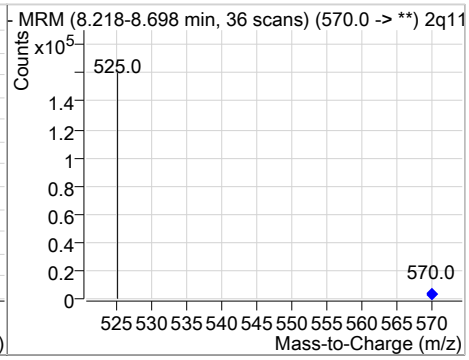




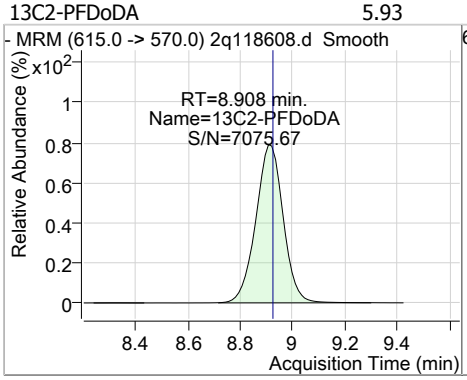
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	6.85	8.38	0.00	119044				

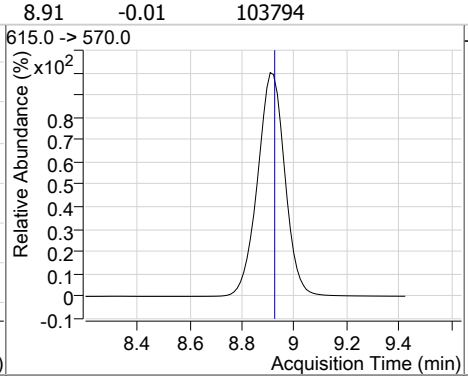


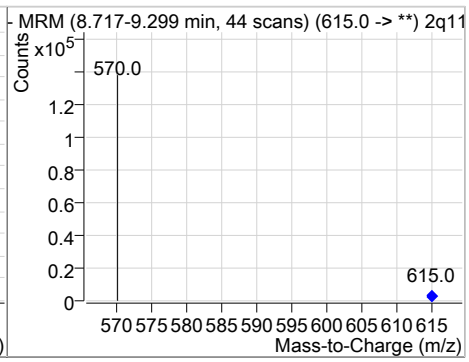




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	5.93	8.91	-0.01	103794				

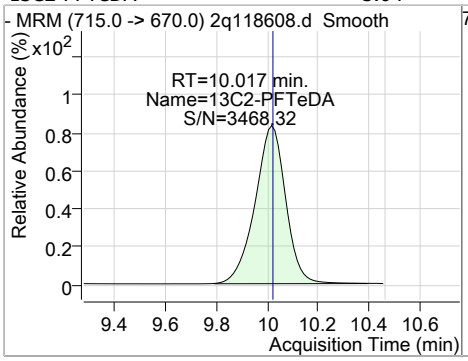


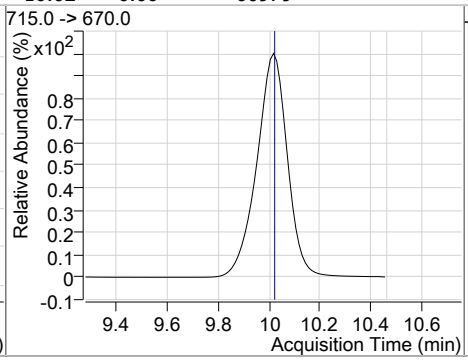


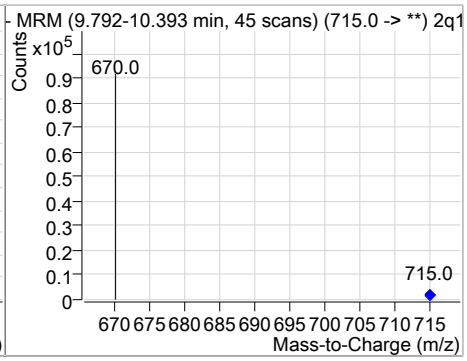


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	5.04	10.02	0.00	66979				







Manual Integration Approval Summary

Sample Number: FC12099-15
Lab FileID: 2Q118608.D
Injection Time: 01/04/24 17:25
Method: EPA 537M QSM5.3 B-15
Analyst approved: 01/05/24 16:21 Lindsay Ritner
Supervisor approved: 01/05/24 17:11 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluoroheptanoic acid	375-85-9		6.18	Split peak
Perfluorohexanesulfonic acid	355-46-4		6.20	Split peak
Perfluorooctanoic acid	335-67-1		6.88	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.24	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Natasha Gumtie 01/02/24 14:27

Perfluorinated Compounds by LC/MS/MS

Data File : 5Q23958.d
Operator : natashag
Acq. Method : 537_ID.m
Acq. Date-Time : 12/29/2023 4:21:08 AM
Sample Name : fc12099-16
Vial : P2-D4
DA Method File : ID_122823_S5Q375.quantmethod.xml
Batch Name : s5q375.batch.bin
Sample Information : OP835,S5Q375,120,,,1.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.950	217.0 -> 172.0	46752	10.00	µg/L	-0.038
M5-PFPeA	3.407	268.0 -> 223.0	61584	10.00	µg/L	-0.025
M5-PFHxA	4.540	318.0 -> 273.0	99045	10.00	µg/L	-0.012
M4-PFHpA	5.400	367.0 -> 322.0	98889	10.00	µg/L	-0.012
M8-PFOA	6.112	421.0 -> 376.0	132906	10.00	µg/L	-0.012
M9-PFNA	6.744	472.0 -> 427.0	115333	10.00	µg/L	-0.012
M6-PFDA	7.276	519.0 -> 474.0	100274	10.00	µg/L	-0.012
M7-PFUnDA	8.034	570.0 -> 525.0	127816	10.00	µg/L	-0.025
M2-PFDoDA	9.013	615.0 -> 570.0	114927	10.00	µg/L	-0.025
M2-PFTeDA	10.524	715.0 -> 670.0	111048	10.00	µg/L	-0.013
M8-FOSA	6.192	506.0 -> 78.0	20528	10.00	µg/L	0.000
M3-PFBS	3.599	302.0 -> 99.0	7537	10.00	µg/L	-0.037
M3-PFHxS	5.419	402.0 -> 99.0	8129	10.00	µg/L	-0.012
M8-PFOS	6.716	507.0 -> 99.0	8491	10.00	µg/L	-0.012
M2-4:2FTS	4.449	329.0 -> 309.0	34442	10.00	µg/L	-0.025
M2-6:2FTS	6.122	429.0 -> 409.0	61329	10.00	µg/L	-0.013
M2-8:2FTS	7.338	529.0 -> 509.0	41231	10.00	µg/L	-0.012
M3-MeFOSAA	6.735	573.0 -> 419.0	20443	10.00	µg/L	-0.012
M3-HFPO-DA	4.807	287.0 -> 169.0	5036	10.00	µg/L	-0.012
M3-MeFOSA	6.589	515.0 -> 169.0	57	10.00	µg/L	0.000
M5-EtFOSAA	6.845	589.0 -> 419.0	16771	10.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.449	329.0 -> 309.0	34442	8.56	µg/L	-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 85.6%		
13C2-6:2FTS	6.122	429.0 -> 409.0	61329	8.65	µg/L	-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 86.5%		
13C2-8:2FTS	7.338	529.0 -> 509.0	41231	5.90	µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 59.0%		
13C2-PFDoDA	9.013	615.0 -> 570.0	114927	5.51	µg/L	-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 55.1%		
13C2-PFTeDA	10.524	715.0 -> 670.0	111048	6.26	µg/L	-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 62.6%		
13C3-PFBS	3.599	302.0 -> 99.0	7537	7.76	µg/L	-0.037
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 77.6%		
13C3-PFHxS	5.419	402.0 -> 99.0	8129	6.89	µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 68.9%		
13C4-PFBA	1.950	217.0 -> 172.0	46752	9.90	µg/L	-0.038
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.0%		
13C4-PFHpA	5.400	367.0 -> 322.0	98889	8.22	µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 82.2%		
13C5-PFHxA	4.540	318.0 -> 273.0	99045	8.29	µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 82.9%		
13C5-PFPeA	3.407	268.0 -> 223.0	61584	7.81	µg/L	-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 78.1%		
13C6-PFDA	7.276	519.0 -> 474.0	100274	5.96	µg/L	-0.012

Perfluorinated Compounds by LC/MS/MS

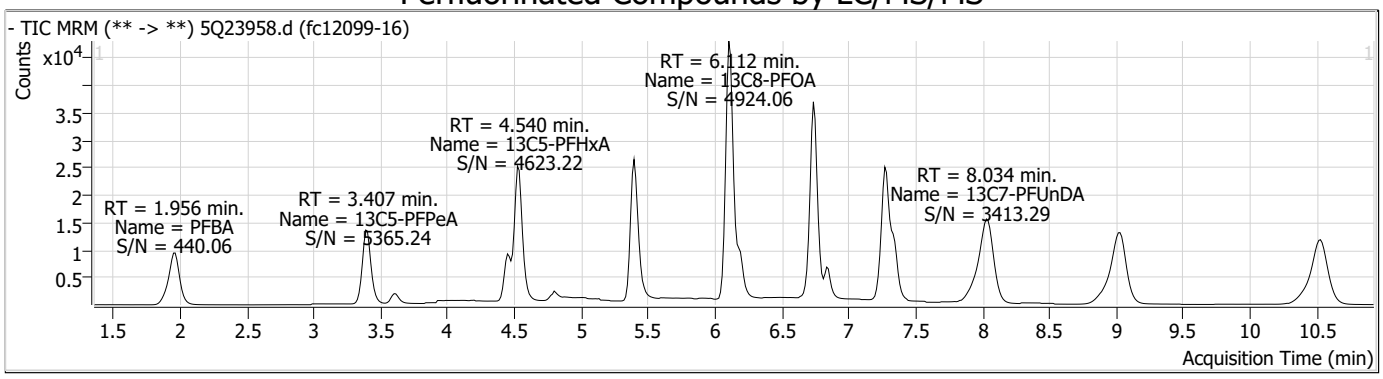
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 59.6%			
13C7-PFUnDA	8.034	570.0 -> 525.0	127816	5.48	µg/L		-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 54.8%			
13C8-FOSA	6.192	506.0 -> 78.0	20528	5.07	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 50.7%			
13C8-PFOA	6.112	421.0 -> 376.0	132906	8.03	µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 80.3%			
13C8-PFOS	6.716	507.0 -> 99.0	8491	5.40	µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 54.0%			
13C9-PFNA	6.744	472.0 -> 427.0	115333	6.95	µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 69.5%			
d3-MeFOSAA	6.735	573.0 -> 419.0	20443	6.70	µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 67.0%			
13C3-HFPO-DA	4.807	287.0 -> 169.0	5036	7.80	µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 78.0%			
d3-MeFOSA	6.589	515.0 -> 169.0	57	0.04	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 0.4%			
d5-EtFOSAA	6.845	589.0 -> 419.0	16771	6.11	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 61.1%			
Target Compounds							QValue
4:2FTS	-	327.0 -> 307.0 327.0 -> 81.0	-	N.D.			
6:2FTS	-	427.0 -> 407.0 427.0 -> 81.0	-	N.D.			
8:2FTS	-	527.0 -> 507.0 527.0 -> 81.0	-	N.D.			
EtFOSAA	-	584.0 -> 419.0 584.0 -> 483.0	-	N.D.			
FOSA	-	498.0 -> 78.0 498.0 -> 478.0	-	N.D.			
MeFOSAA	-	570.0 -> 419.0 570.0 -> 512.0	-	N.D.			
PFBA	1.956	213.0 -> 169.0	8822	2.04	µg/L		100
PFBS	-	299.0 -> 80.0 299.0 -> 99.0	-	N.D.			
PFDA	-	513.0 -> 469.0 513.0 -> 219.0	-	N.D.			
PFDoDA	-	613.0 -> 569.0 613.0 -> 319.0	-	N.D.			
PFDS	-	599.0 -> 80.0 599.0 -> 99.0	-	N.D.			
PFHpA	-	363.0 -> 319.0 363.0 -> 169.0	-	N.D.			
PFHpS	-	449.0 -> 80.0 449.0 -> 99.0	-	N.D.			
PFHxA	-	313.0 -> 269.0 313.0 -> 119.0	-	N.D.			
PFHxS	-	399.0 -> 80.0 399.0 -> 99.0	-	N.D.			
PFNA	-	463.0 -> 419.0 463.0 -> 219.0	-	N.D.			
PFNS	-	549.0 -> 80.0 549.0 -> 99.0	-	N.D.			
PFOA	-	413.0 -> 369.0 413.0 -> 169.0	-	N.D.			
PFOS	6.718	499.0 -> 80.0	587	0.39	µg/L	m	88

Perfluorinated Compounds by LC/MS/MS

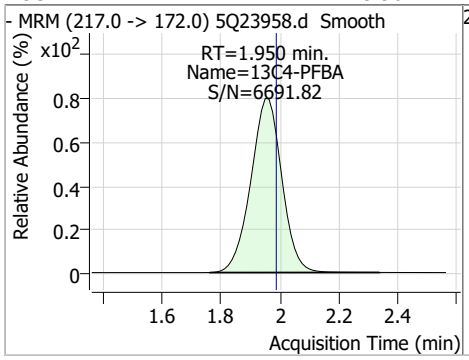
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		499.0 -> 99.0	245			
PFPeA	-	263.0 -> 219.0	-	N.D.		
PFPeS	-	349.0 -> 80.0	-	N.D.		
		349.0 -> 99.0				
PFTeDA	-	713.0 -> 669.0	-	N.D.		
		713.0 -> 219.0				
PFTrDA	-	663.0 -> 619.0	-	N.D.		
		663.0 -> 369.0				
PFUnDA	-	563.0 -> 519.0	-	N.D.		
		563.0 -> 269.0				
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.		
		633.0 -> 453.0				
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.		
		533.0 -> 353.0				
ADONA	-	377.0 -> 251.0	-	N.D.		
		377.0 -> 85.0				
HFPO-DA	-	329.0 -> 169.0	-	N.D.		
		285.0 -> 169.0				
MeFOSA	-	512.0 -> 169.0	-	N.D.		
		512.0 -> 219.0				
4-PFECHS	-	461.0 -> 381.0	-	N.D.		
		461.0 -> 99.0				
FBSA	-	298.0 -> 78.0	-	N.D.		
		298.0 -> 64.0				
FHxSA	-	398.0 -> 78.0	-	N.D.		
		398.0 -> 64.0				

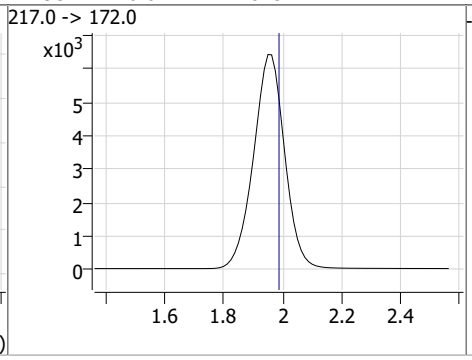
 # = Qualifier out of range, m = manually integrated, + = Area summed

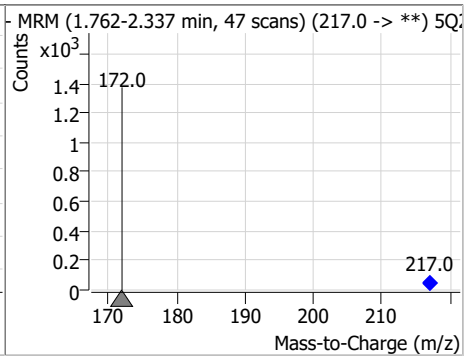
Perfluorinated Compounds by LC/MS/MS



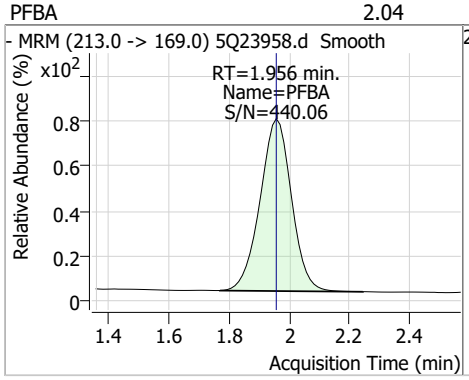
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	9.90	1.95	-0.04	46752				

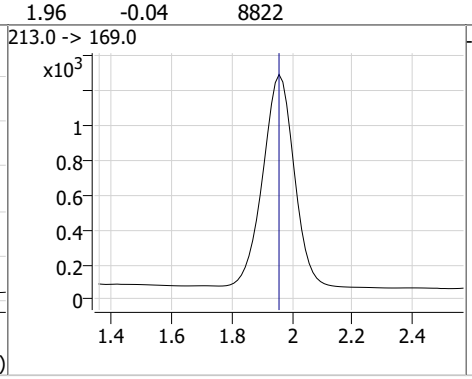


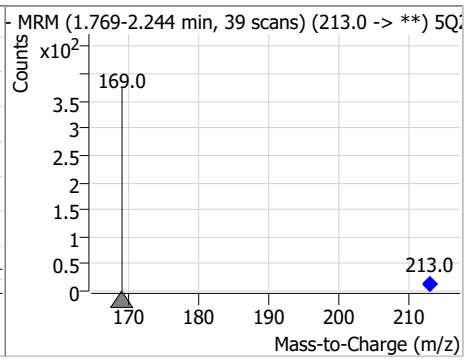




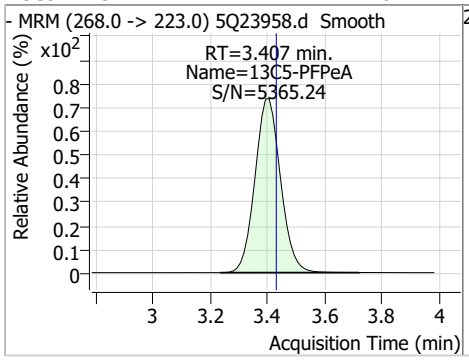
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	2.04	1.96	-0.04	8822				

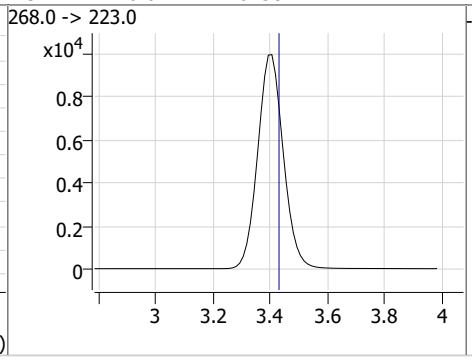


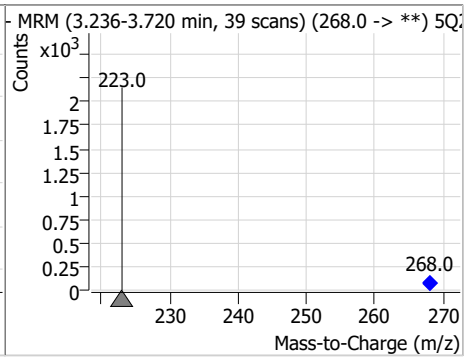




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	7.81	3.41	-0.02	61584				

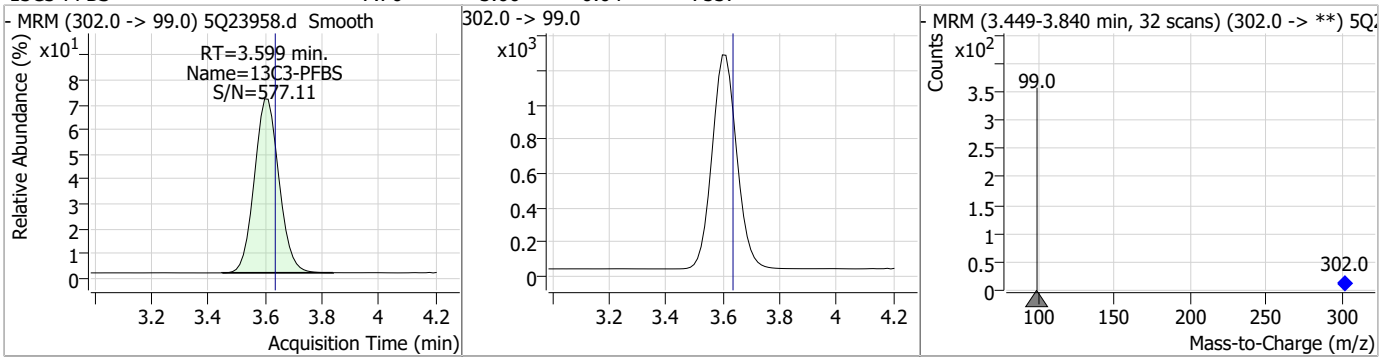




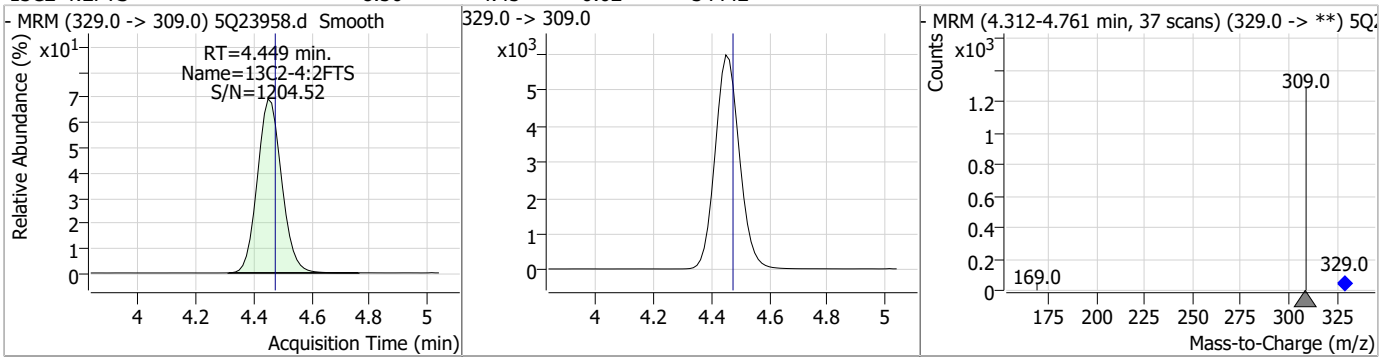


Perfluorinated Compounds by LC/MS/MS

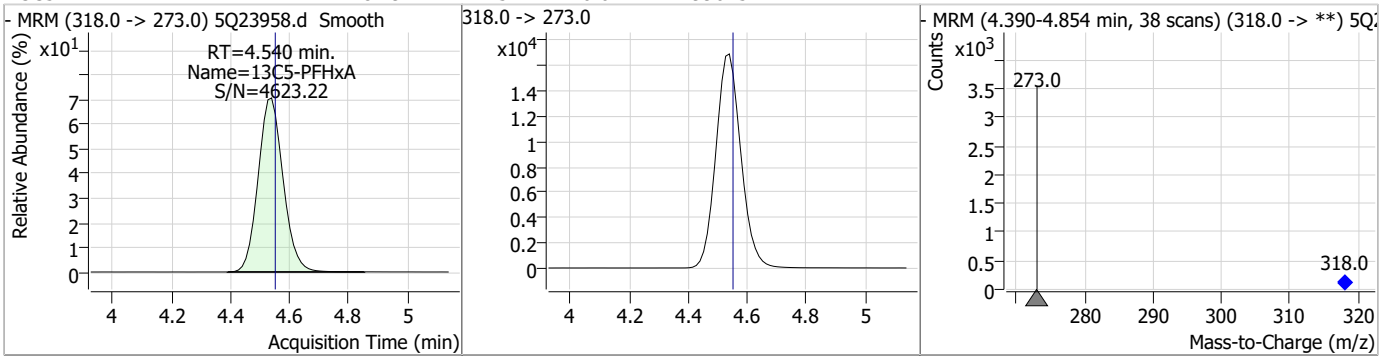
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	7.76	3.60	-0.04	7537				



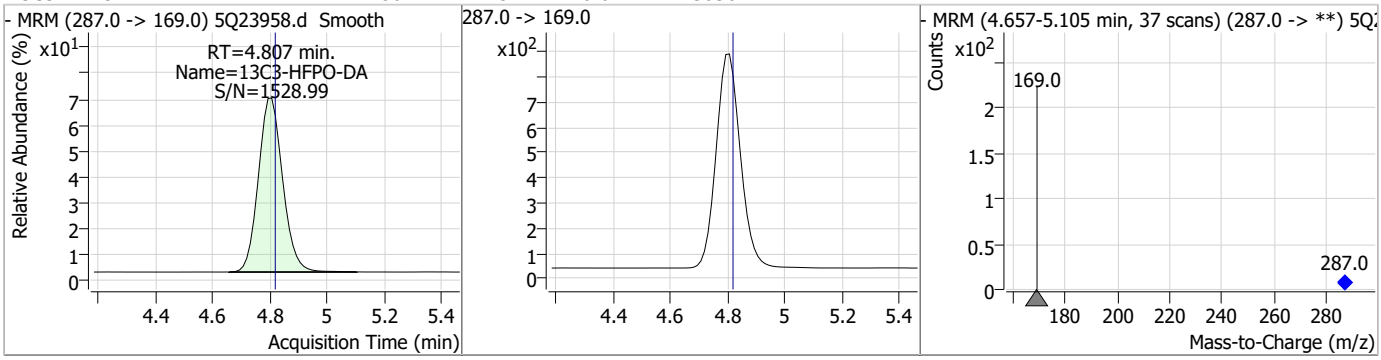
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	8.56	4.45	-0.02	34442				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	8.29	4.54	-0.01	99045				

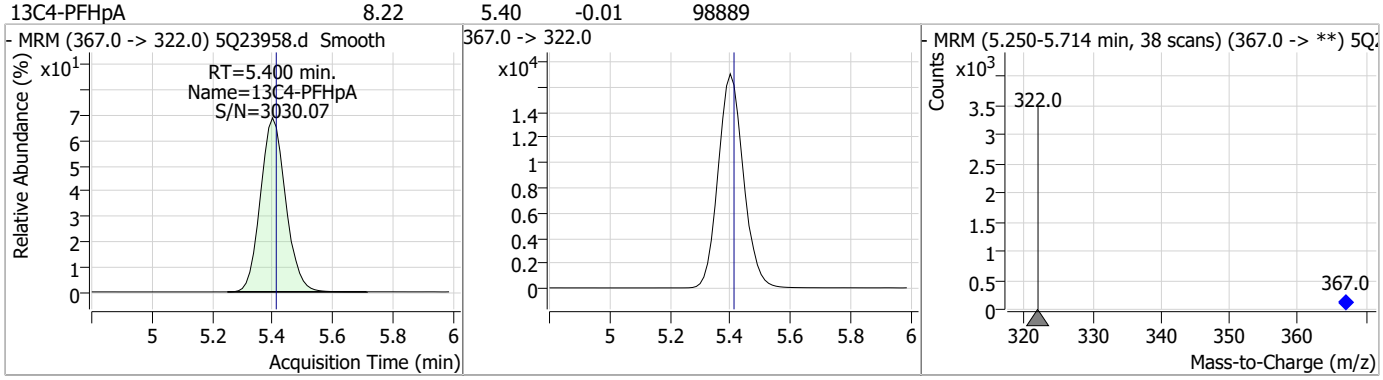


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	7.80	4.81	-0.01	5036				

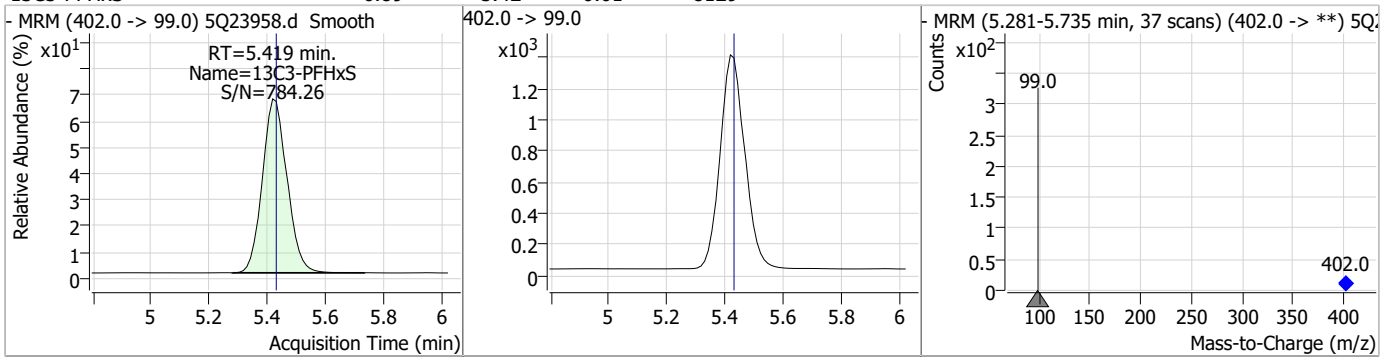


Perfluorinated Compounds by LC/MS/MS

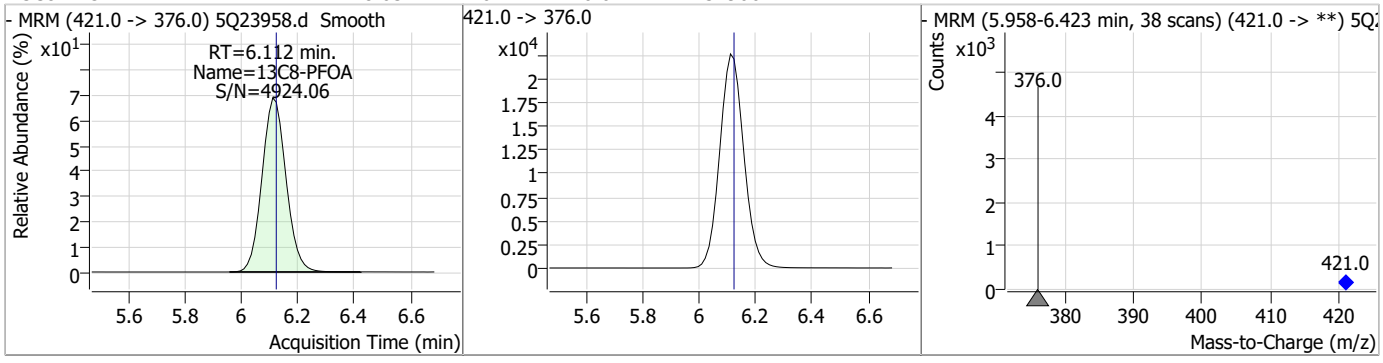
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	8.22	5.40	-0.01	98889				



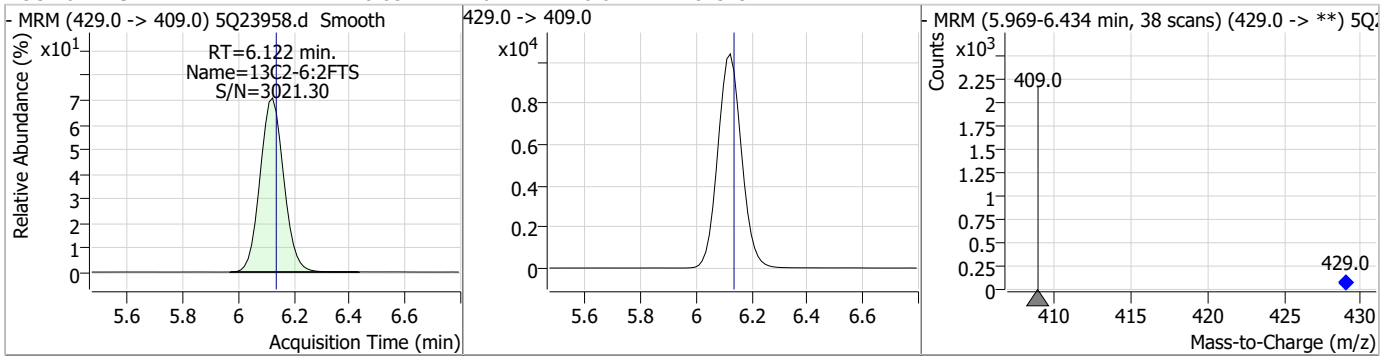
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	6.89	5.42	-0.01	8129				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	8.03	6.11	-0.01	132906				

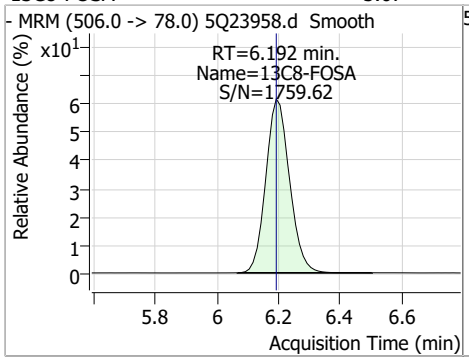


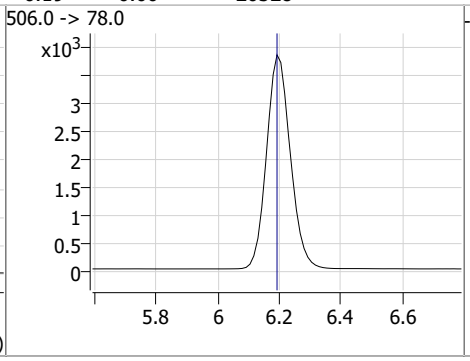
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	8.65	6.12	-0.01	61329				

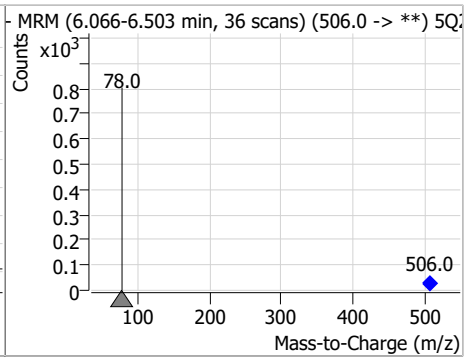


Perfluorinated Compounds by LC/MS/MS

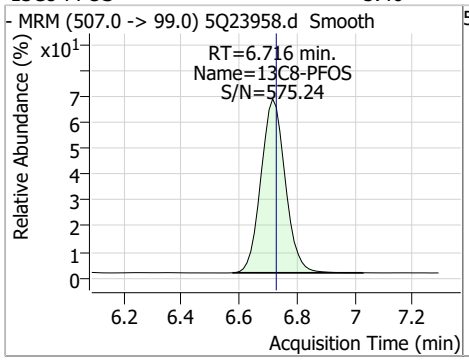
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	5.07	6.19	0.00	20528				

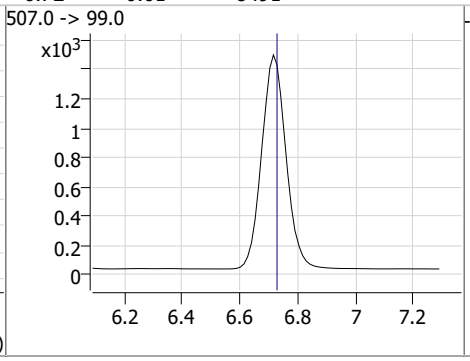


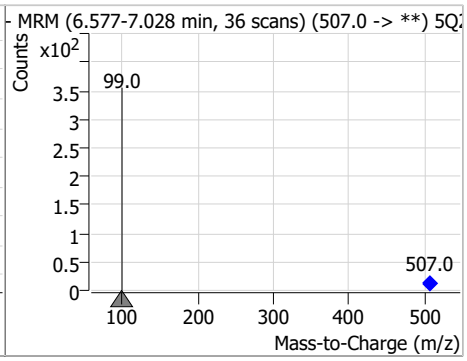




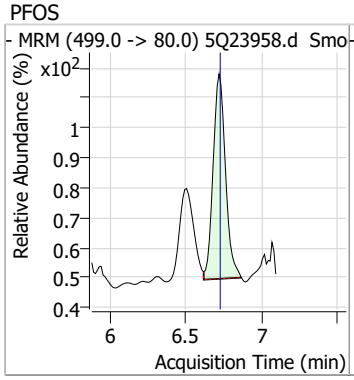
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	5.40	6.72	-0.01	8491				

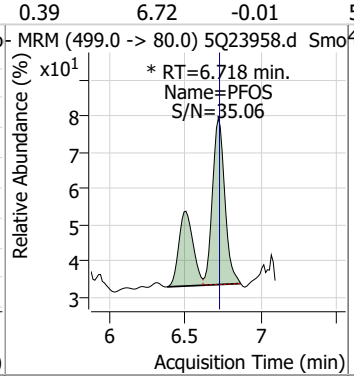


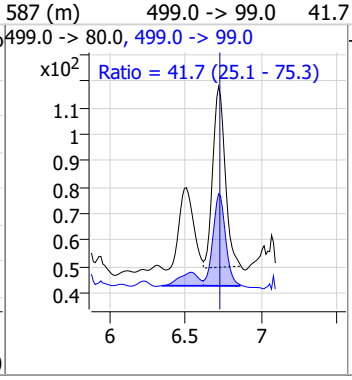


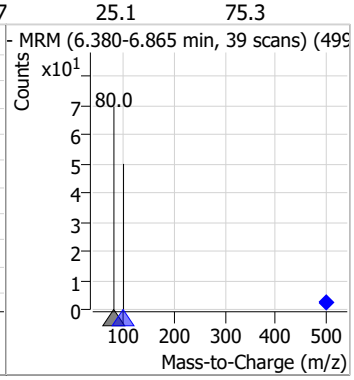


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	0.39	6.72	-0.01	587 (m)	499.0 -> 99.0	41.7	25.1	75.3

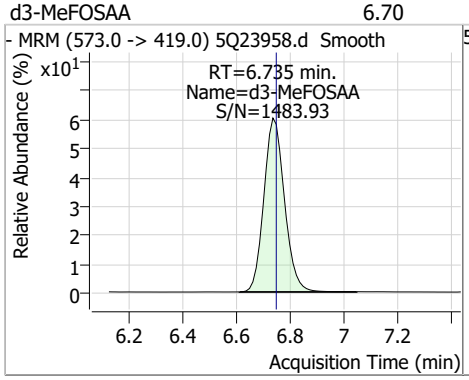


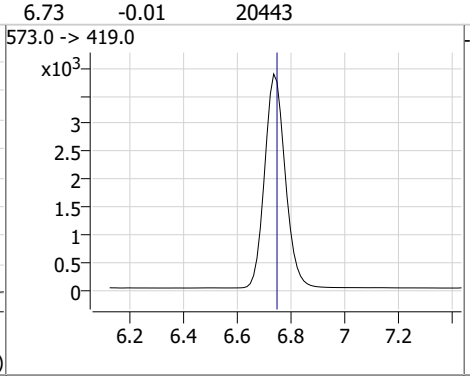


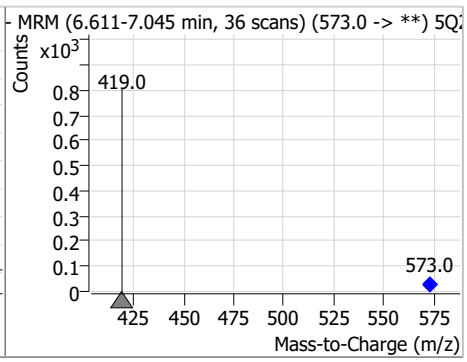




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	6.70	6.73	-0.01	20443				

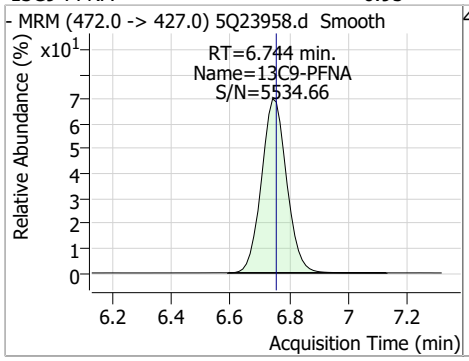


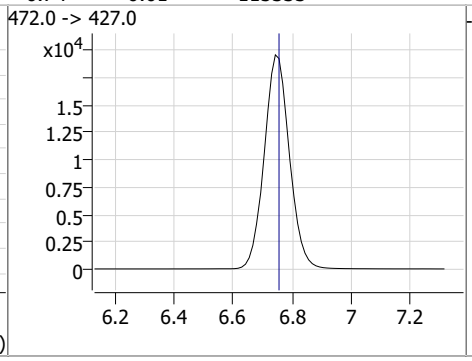


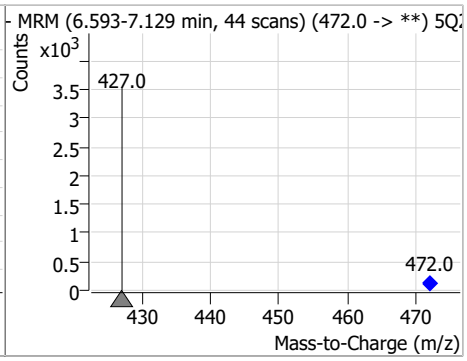


Perfluorinated Compounds by LC/MS/MS

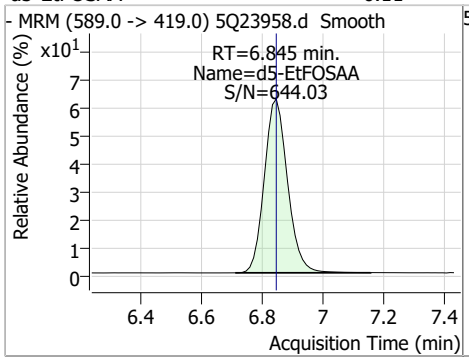
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	6.95	6.74	-0.01	115333				

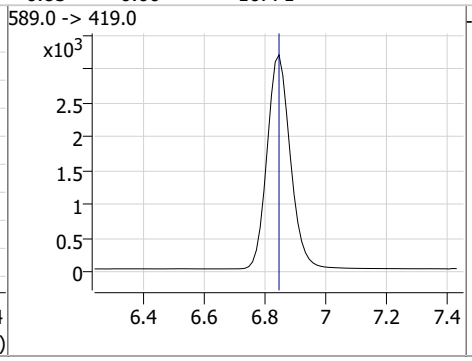


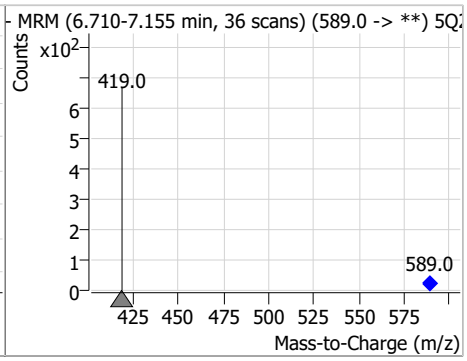




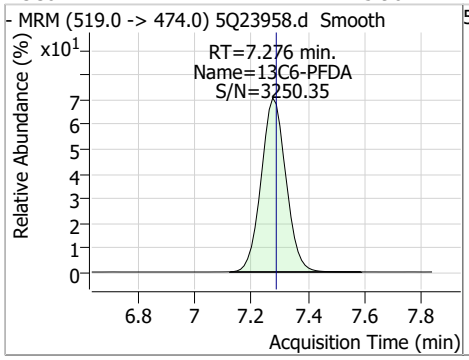
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	6.11	6.85	0.00	16771				

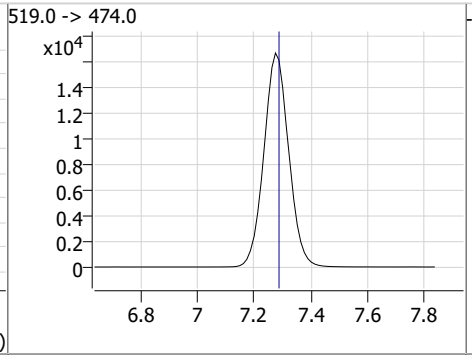


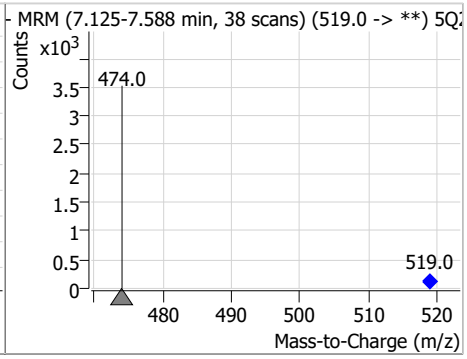




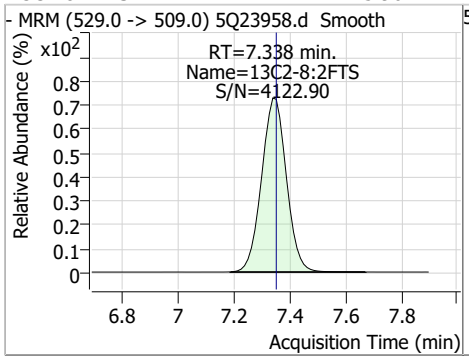
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	5.96	7.28	-0.01	100274				

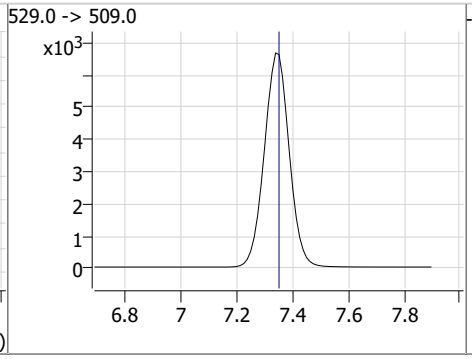


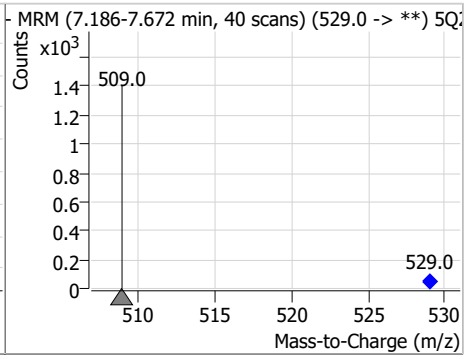




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	5.90	7.34	-0.01	41231				

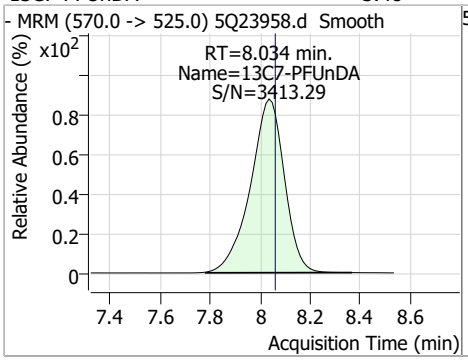


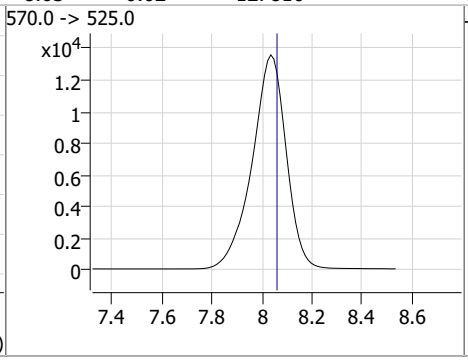


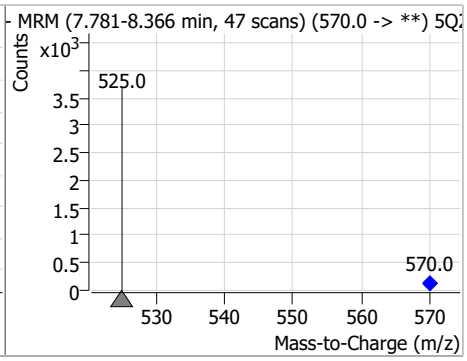


Perfluorinated Compounds by LC/MS/MS

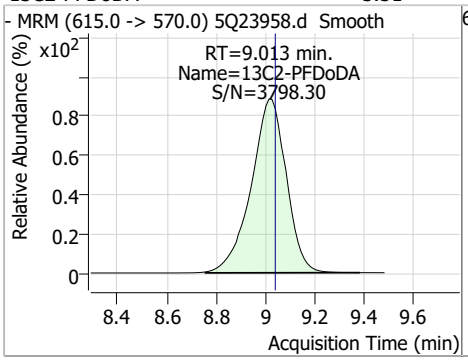
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	5.48	8.03	-0.02	127816				

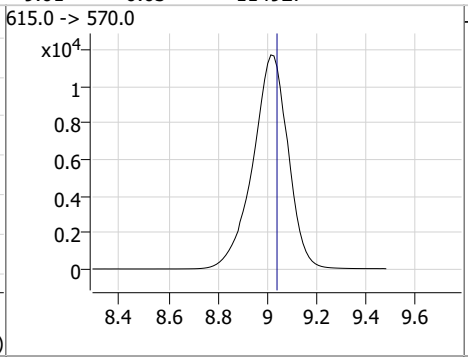


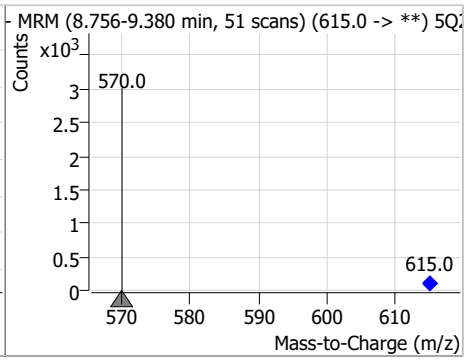




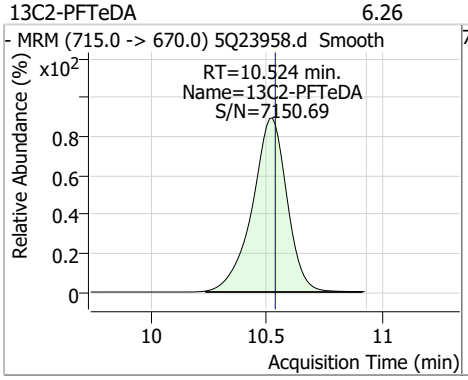
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	5.51	9.01	-0.03	114927				

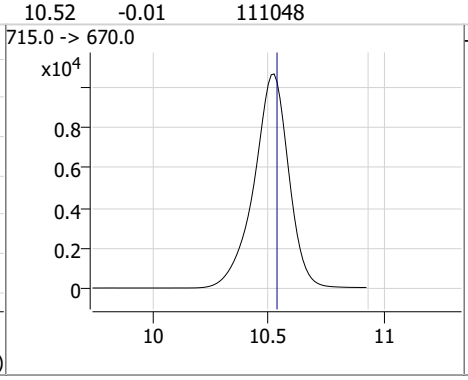


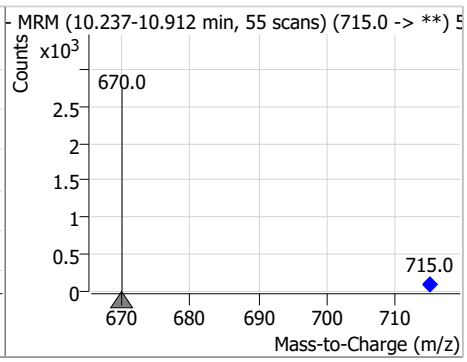




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	6.26	10.52	-0.01	111048				







Manual Integration Approval Summary

Sample Number: FC12099-16
Lab FileID: 5Q23958.D
Injection Time: 12/29/23 04:21

Method: EPA 537M QSM5.3 B-15
Analyst approved: 12/29/23 14:22 Lindsay Ritner
Supervisor approved: 01/02/24 14:27 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorooctanesulfonic acid	1763-23-1		6.72	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Natasha Gumtie 01/02/24 14:27

Perfluorinated Compounds by LC/MS/MS

Data File : 5Q23959.d
Operator : natashag
Acq. Method : 537_ID.m
Acq. Date-Time : 12/29/2023 4:37:40 AM
Sample Name : fc12099-17
Vial : P2-D5
DA Method File : ID_122823_S5Q375.quantmethod.xml
Batch Name : s5q375.batch.bin
Sample Information : OP835,S5Q375,120,,,1.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.975	217.0 -> 172.0	47661	10.00	µg/L	-0.013
M5-PFPeA	3.419	268.0 -> 223.0	76576	10.00	µg/L	-0.012
M5-PFHxA	4.540	318.0 -> 273.0	115374	10.00	µg/L	-0.012
M4-PFHpA	5.413	367.0 -> 322.0	116368	10.00	µg/L	0.000
M8-PFOA	6.124	421.0 -> 376.0	156474	10.00	µg/L	0.000
M9-PFNA	6.756	472.0 -> 427.0	149337	10.00	µg/L	0.000
M6-PFDA	7.276	519.0 -> 474.0	136589	10.00	µg/L	-0.012
M7-PFUnDA	8.034	570.0 -> 525.0	160210	10.00	µg/L	-0.025
M2-PFDoDA	9.013	615.0 -> 570.0	135166	10.00	µg/L	-0.025
M2-PFTeDA	10.524	715.0 -> 670.0	103294	10.00	µg/L	-0.013
M8-FOSA	6.192	506.0 -> 78.0	30098	10.00	µg/L	0.000
M3-PFBS	3.624	302.0 -> 99.0	9116	10.00	µg/L	-0.012
M3-PFHxS	5.432	402.0 -> 99.0	10862	10.00	µg/L	0.000
M8-PFOS	6.716	507.0 -> 99.0	11237	10.00	µg/L	-0.012
M2-4:2FTS	4.461	329.0 -> 309.0	37718	10.00	µg/L	-0.012
M2-6:2FTS	6.122	429.0 -> 409.0	67144	10.00	µg/L	-0.013
M2-8:2FTS	7.338	529.0 -> 509.0	53161	10.00	µg/L	-0.012
M3-MeFOSAA	6.735	573.0 -> 419.0	25474	10.00	µg/L	-0.012
M3-HFPO-DA	4.807	287.0 -> 169.0	5755	10.00	µg/L	-0.012
M3-MeFOSA	6.589	515.0 -> 169.0	526	10.00	µg/L	0.000
M5-EtFOSAA	6.845	589.0 -> 419.0	21019	10.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.461	329.0 -> 309.0	37718	9.38	µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 93.8%		
13C2-6:2FTS	6.122	429.0 -> 409.0	67144	9.47	µg/L	-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 94.7%		
13C2-8:2FTS	7.338	529.0 -> 509.0	53161	7.61	µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 76.1%		
13C2-PFDoDA	9.013	615.0 -> 570.0	135166	6.48	µg/L	-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 64.8%		
13C2-PFTeDA	10.524	715.0 -> 670.0	103294	5.82	µg/L	-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 58.2%		
13C3-PFBS	3.624	302.0 -> 99.0	9116	9.39	µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 93.9%		
13C3-PFHxS	5.432	402.0 -> 99.0	10862	9.20	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 92.0%		
13C4-PFBA	1.975	217.0 -> 172.0	47661	10.09	µg/L	-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.9%		
13C4-PFHpA	5.413	367.0 -> 322.0	116368	9.68	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 96.8%		
13C5-PFHxA	4.540	318.0 -> 273.0	115374	9.65	µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 96.5%		
13C5-PFPeA	3.419	268.0 -> 223.0	76576	9.71	µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 97.1%		
13C6-PFDA	7.276	519.0 -> 474.0	136589	8.11	µg/L	-0.012

Perfluorinated Compounds by LC/MS/MS

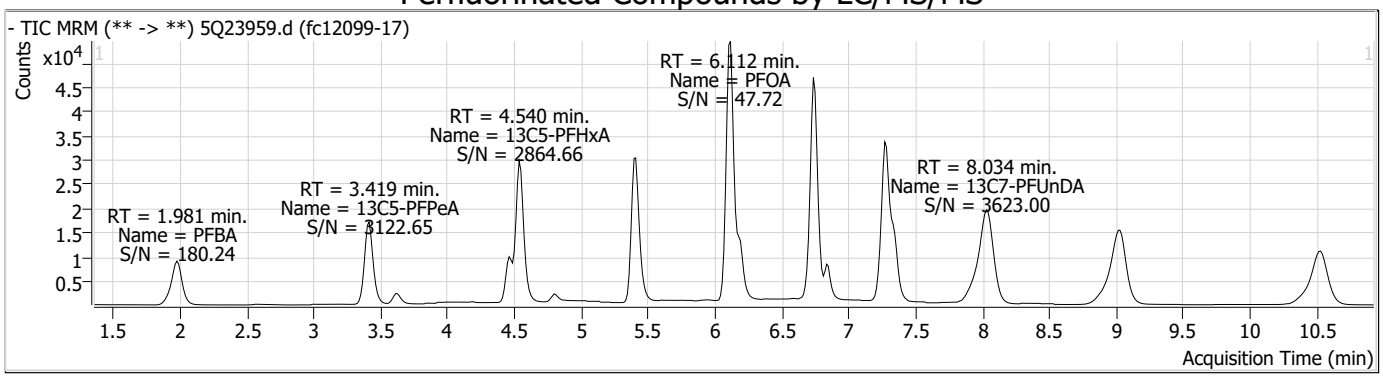
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 81.1%			
13C7-PFUnDA	8.034	570.0 -> 525.0	160210	6.87	µg/L		-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 68.7%			
13C8-FOSA	6.192	506.0 -> 78.0	30098	7.43	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 74.3%			
13C8-PFOA	6.124	421.0 -> 376.0	156474	9.45	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 94.5%			
13C8-PFOS	6.716	507.0 -> 99.0	11237	7.15	µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 71.5%			
13C9-PFNA	6.756	472.0 -> 427.0	149337	8.99	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 89.9%			
d3-MeFOSAA	6.735	573.0 -> 419.0	25474	8.35	µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 83.5%			
13C3-HFPO-DA	4.807	287.0 -> 169.0	5755	8.91	µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 89.1%			
d3-MeFOSA	6.589	515.0 -> 169.0	526	0.38	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 3.8%			
d5-EtFOSAA	6.845	589.0 -> 419.0	21019	7.66	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 76.6%			
Target Compounds							QValue
4:2FTS	-	327.0 -> 307.0	-	N.D.			
		327.0 -> 81.0					
6:2FTS	-	427.0 -> 407.0	-	N.D.			
		427.0 -> 81.0					
8:2FTS	-	527.0 -> 507.0	-	N.D.			
		527.0 -> 81.0					
EtFOSAA	-	584.0 -> 419.0	-	N.D.			
		584.0 -> 483.0					
FOSA	-	498.0 -> 78.0	-	N.D.			
		498.0 -> 478.0					
MeFOSAA	-	570.0 -> 419.0	-	N.D.			
		570.0 -> 512.0					
PFBA	1.981	213.0 -> 169.0	3774	0.85	µg/L		100
PFBS	-	299.0 -> 80.0	-	N.D.			
		299.0 -> 99.0					
PFDA	-	513.0 -> 469.0	-	N.D.			
		513.0 -> 219.0					
PFDoDA	-	613.0 -> 569.0	-	N.D.			
		613.0 -> 319.0					
PFDS	-	599.0 -> 80.0	-	N.D.			
		599.0 -> 99.0					
PFHpA	-	363.0 -> 319.0	-	N.D.			
		363.0 -> 169.0					
PFHpS	-	449.0 -> 80.0	-	N.D.			
		449.0 -> 99.0					
PFHxA	-	313.0 -> 269.0	-	N.D.			
		313.0 -> 119.0					
PFHxS	5.433	399.0 -> 80.0	308	0.15	µg/L	m	85
		399.0 -> 99.0	138				
PFNA	-	463.0 -> 419.0	-	N.D.			
		463.0 -> 219.0					
PFNS	-	549.0 -> 80.0	-	N.D.			
		549.0 -> 99.0					
PFOA	6.112	413.0 -> 369.0	2044	0.13	µg/L	m	93
		413.0 -> 169.0	585				
PFOS	-	499.0 -> 80.0	-	N.D.			

Perfluorinated Compounds by LC/MS/MS

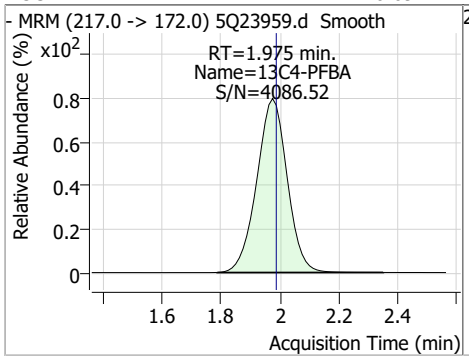
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		499.0 -> 99.0				
PFPeA	-	263.0 -> 219.0	-	N.D.		
PFPeS	-	349.0 -> 80.0	-	N.D.		
		349.0 -> 99.0				
PFTeDA	-	713.0 -> 669.0	-	N.D.		
		713.0 -> 219.0				
PFTrDA	-	663.0 -> 619.0	-	N.D.		
		663.0 -> 369.0				
PFUnDA	-	563.0 -> 519.0	-	N.D.		
		563.0 -> 269.0				
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.		
		633.0 -> 453.0				
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.		
		533.0 -> 353.0				
ADONA	-	377.0 -> 251.0	-	N.D.		
		377.0 -> 85.0				
HFPO-DA	-	329.0 -> 169.0	-	N.D.		
		285.0 -> 169.0				
MeFOSA	-	512.0 -> 169.0	-	N.D.		
		512.0 -> 219.0				
4-PFECHS	-	461.0 -> 381.0	-	N.D.		
		461.0 -> 99.0				
FBSA	-	298.0 -> 78.0	-	N.D.		
		298.0 -> 64.0				
FHxSA	-	398.0 -> 78.0	-	N.D.		
		398.0 -> 64.0				

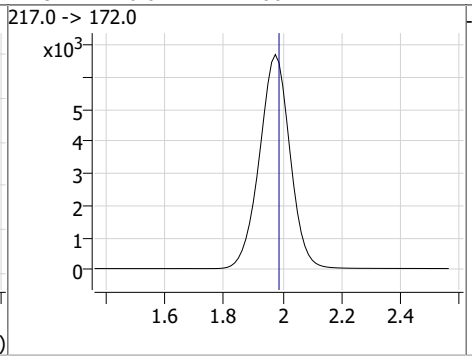
 # = Qualifier out of range, m = manually integrated, + = Area summed

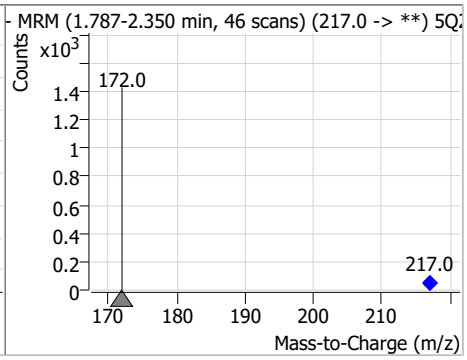
Perfluorinated Compounds by LC/MS/MS



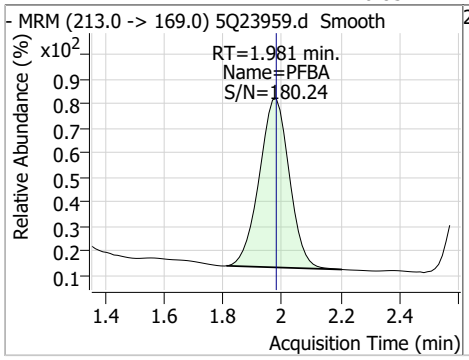
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	10.09	1.97	-0.01	47661				

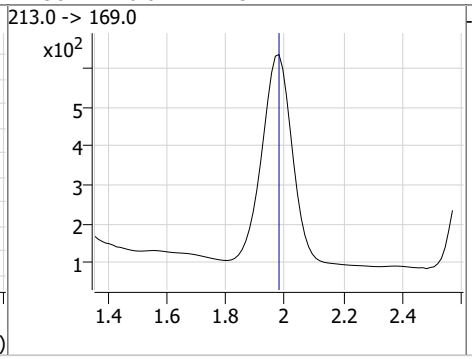


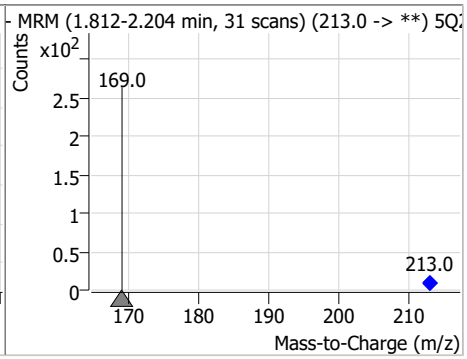




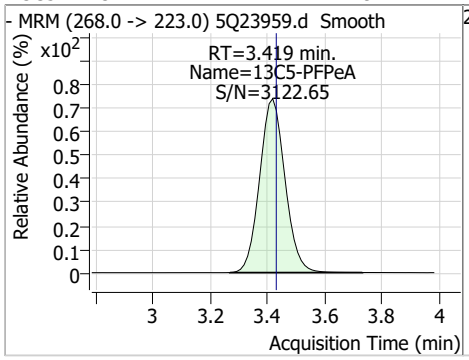
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	0.85	1.98	-0.01	3774				

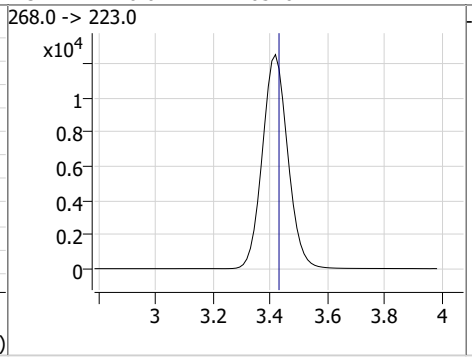


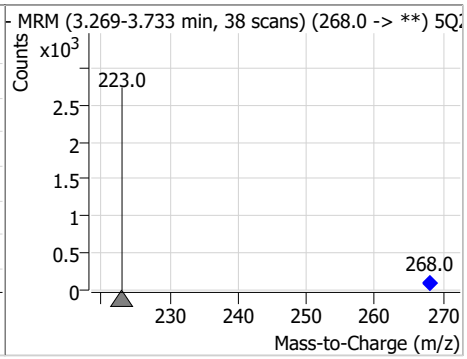




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	9.71	3.42	-0.01	76576				

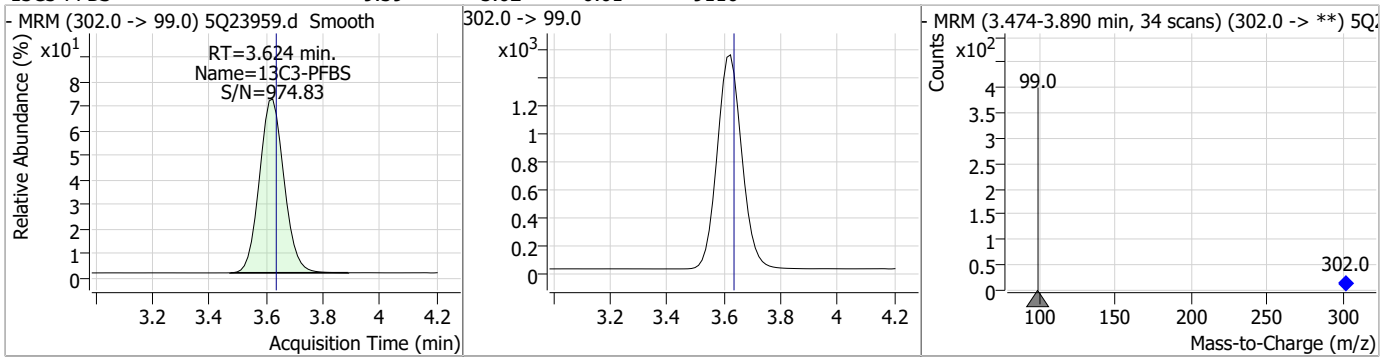




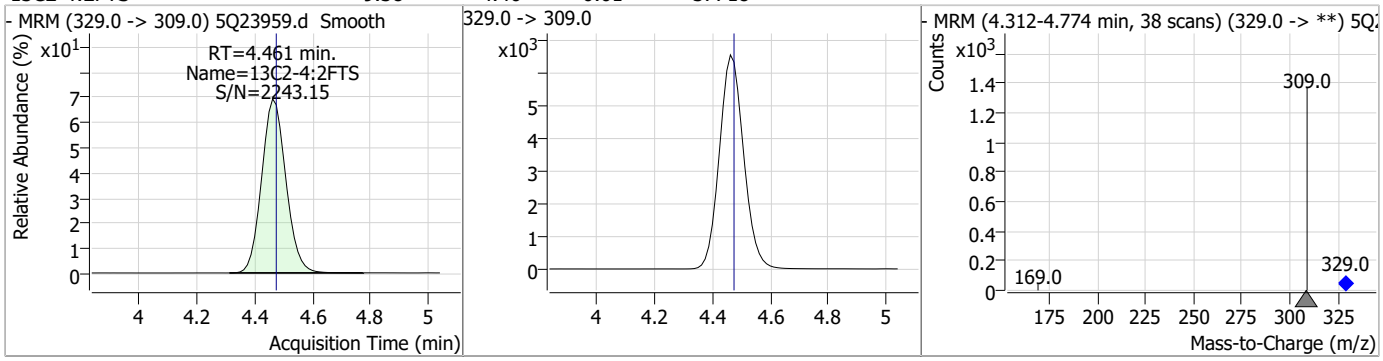


Perfluorinated Compounds by LC/MS/MS

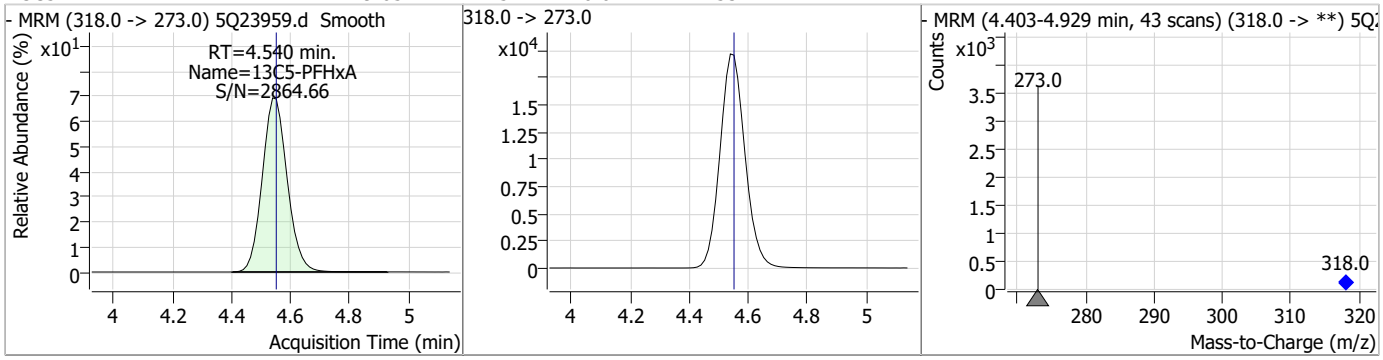
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	9.39	3.62	-0.01	9116				



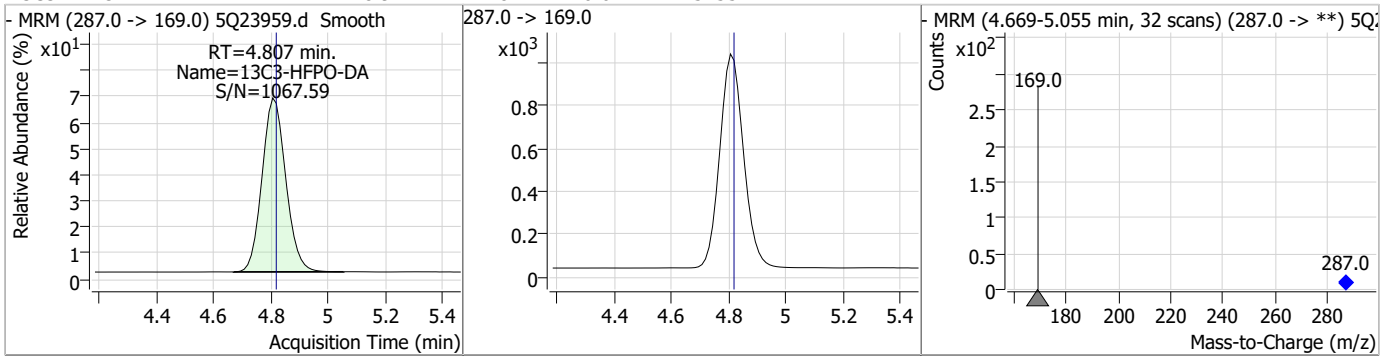
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	9.38	4.46	-0.01	37718				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	9.65	4.54	-0.01	115374				

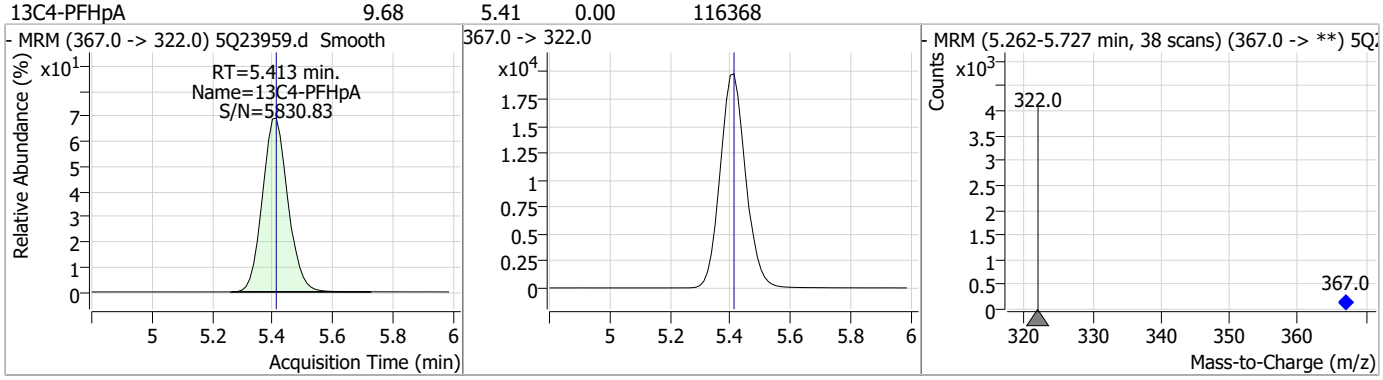


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	8.91	4.81	-0.01	5755				

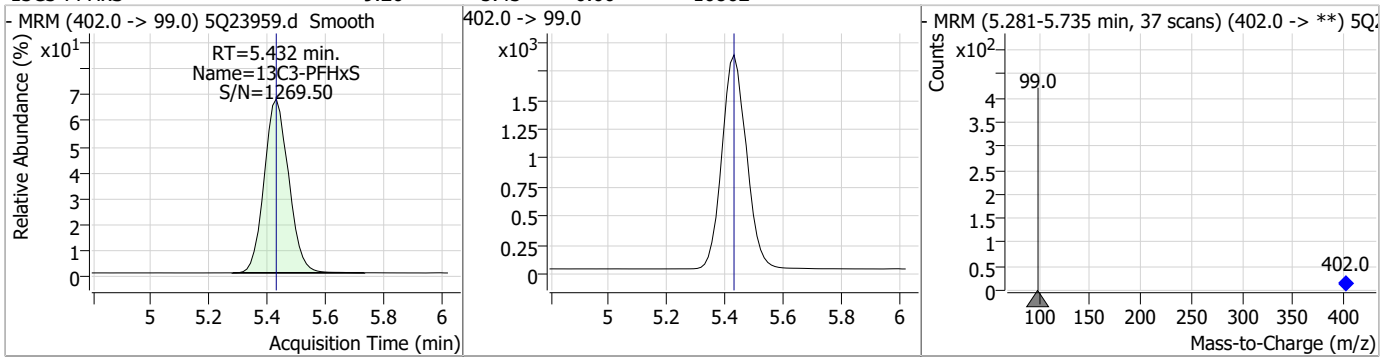


Perfluorinated Compounds by LC/MS/MS

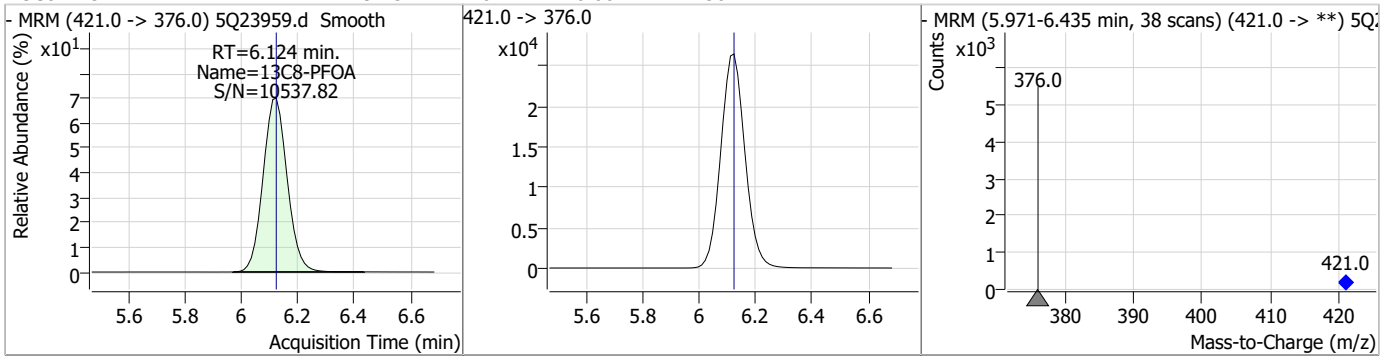
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	9.68	5.41	0.00	116368				



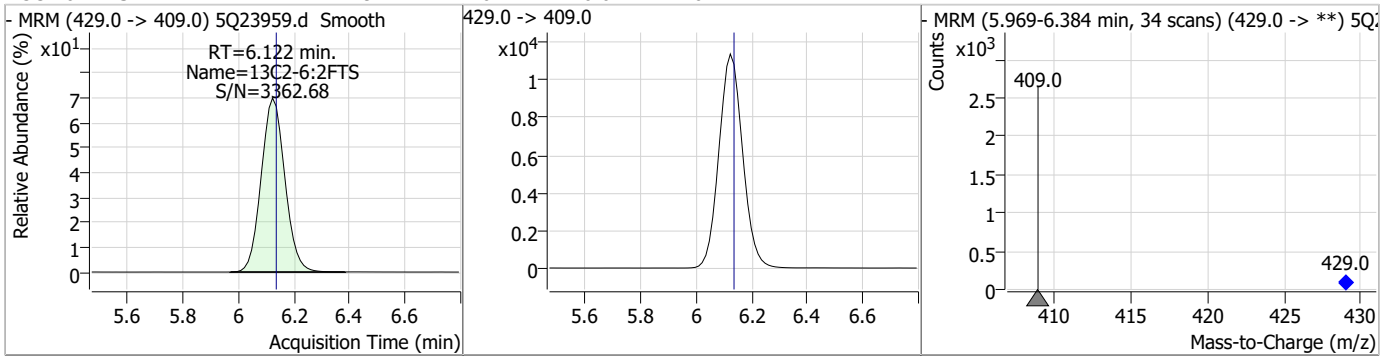
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	9.20	5.43	0.00	10862				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	9.45	6.12	0.00	156474				

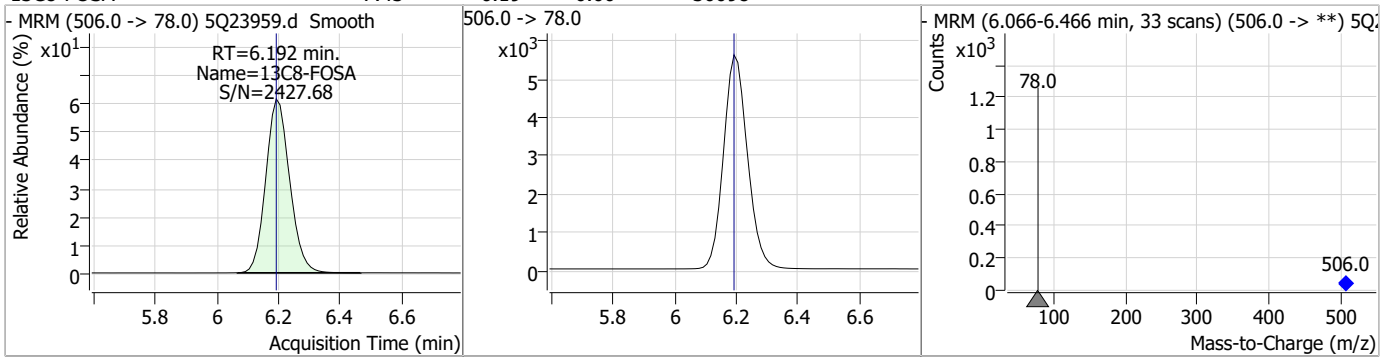


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	9.47	6.12	-0.01	67144				

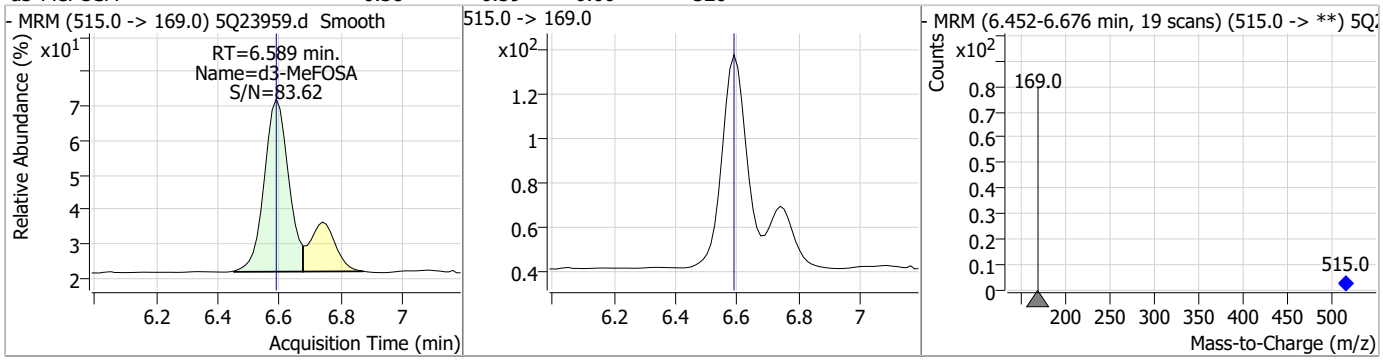


Perfluorinated Compounds by LC/MS/MS

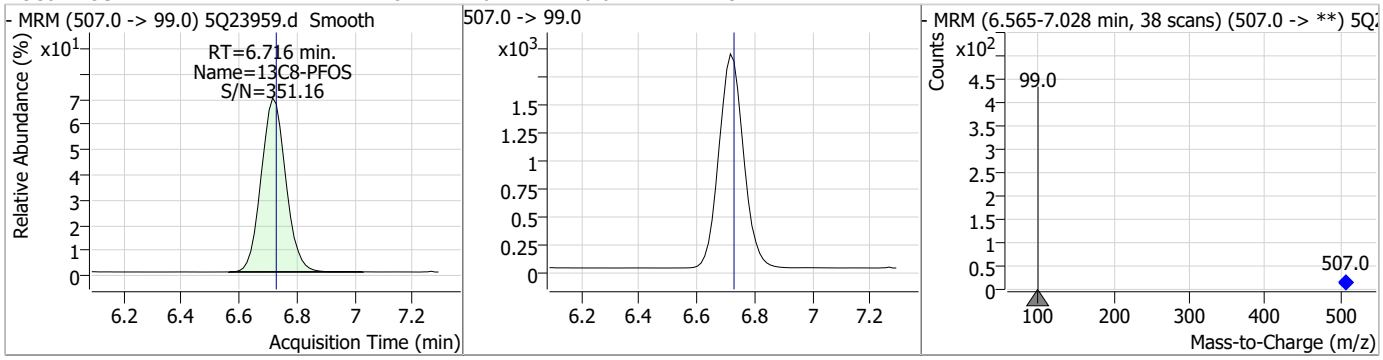
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	7.43	6.19	0.00	30098				



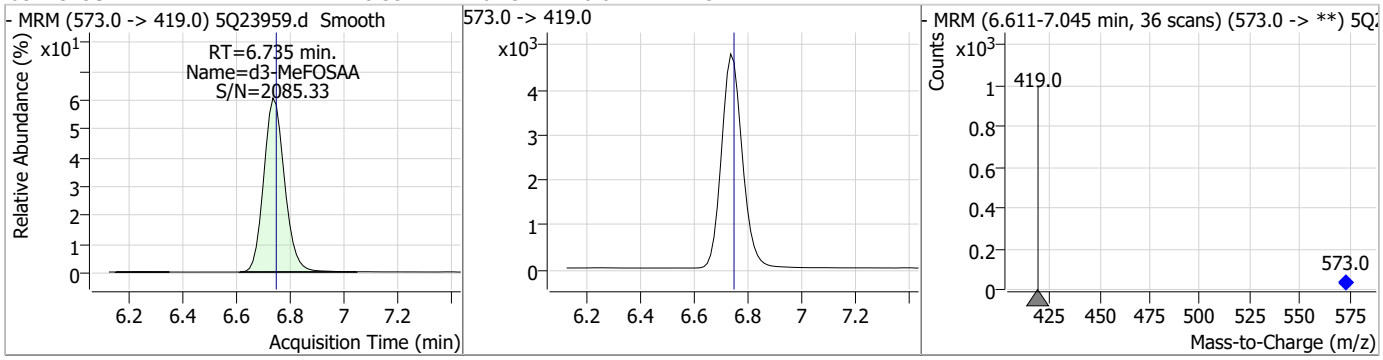
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	0.38	6.59	0.00	526				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	7.15	6.72	-0.01	11237				

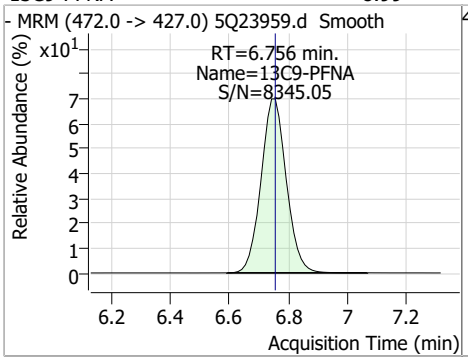


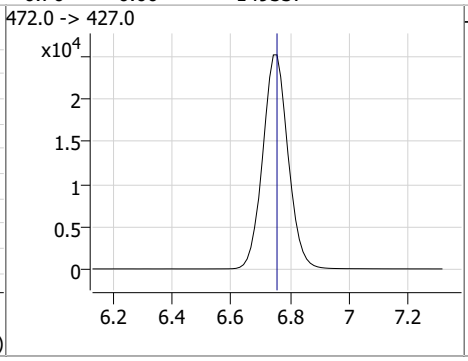
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	8.35	6.73	-0.01	25474				

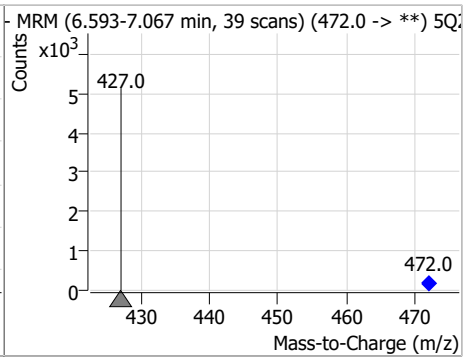


Perfluorinated Compounds by LC/MS/MS

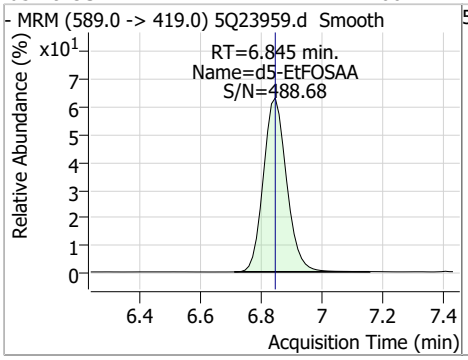
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	8.99	6.76	0.00	149337				

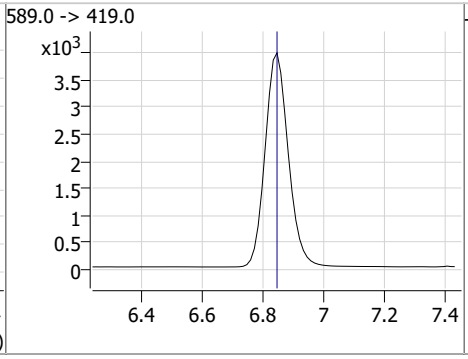


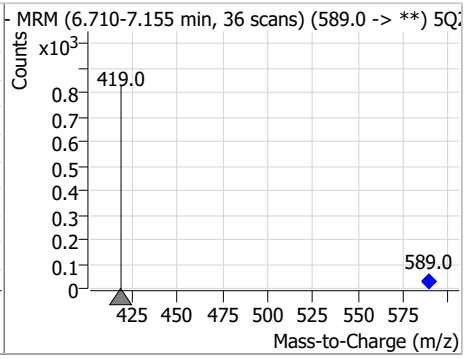




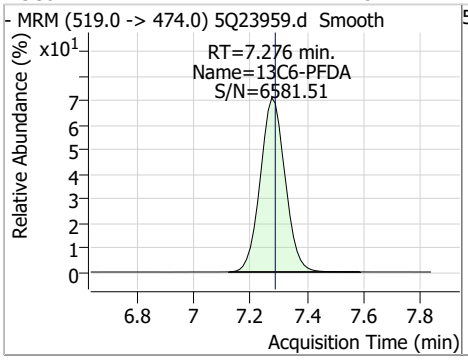
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	7.66	6.85	0.00	21019				

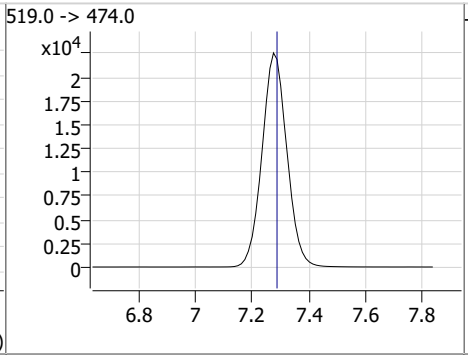


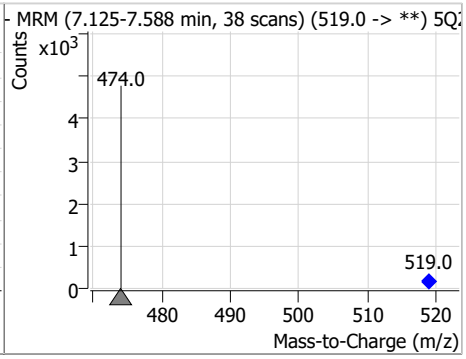




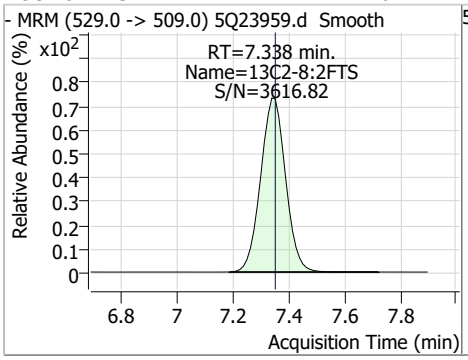
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	8.11	7.28	-0.01	136589				

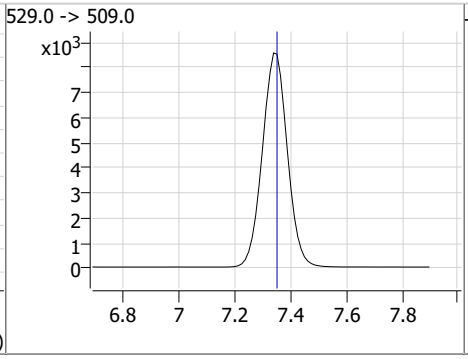


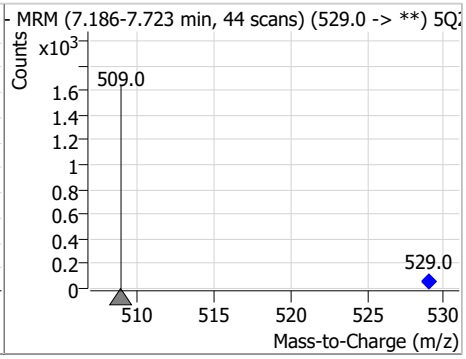




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	7.61	7.34	-0.01	53161				

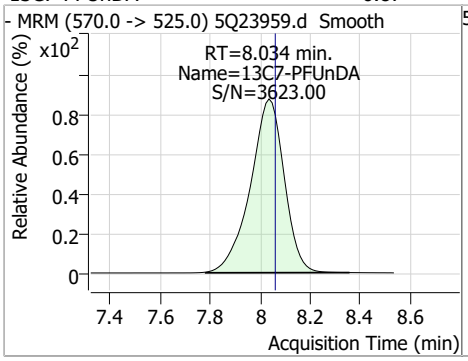


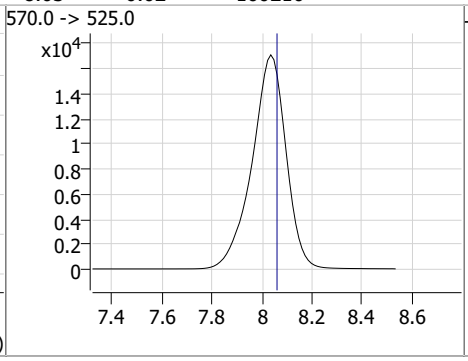


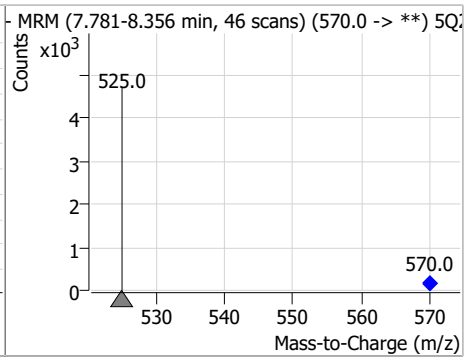


Perfluorinated Compounds by LC/MS/MS

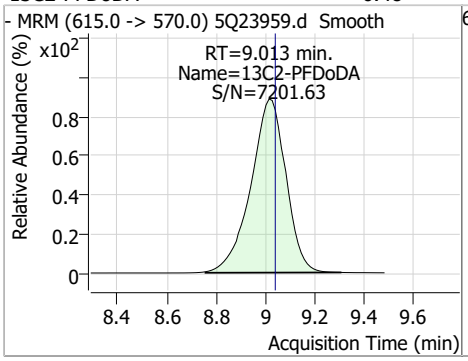
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	6.87	8.03	-0.02	160210				

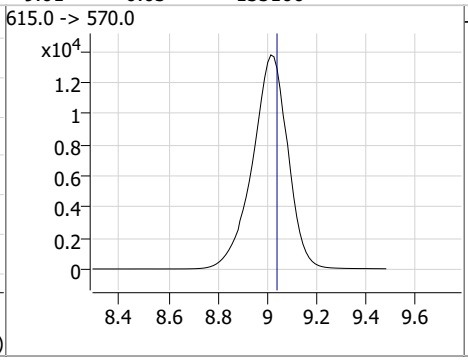


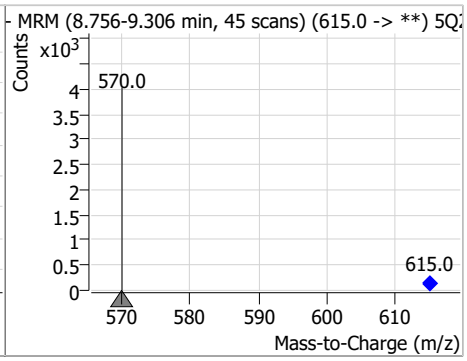




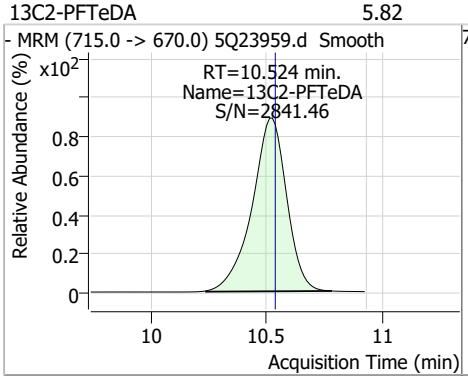
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	6.48	9.01	-0.03	135166				

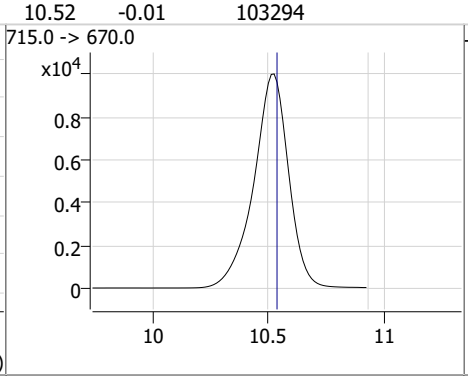


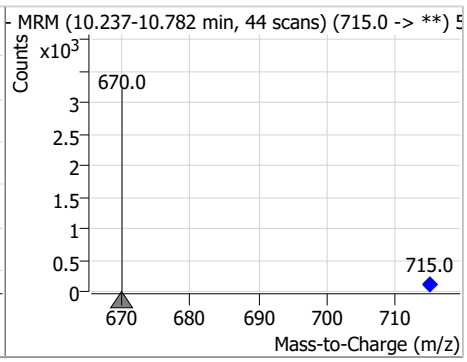




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	5.82	10.52	-0.01	103294				







Manual Integration Approval Summary

Sample Number:	FC12099-17	**Method:**	EPA 537M QSM5.3 B-15
Lab FileID:	5Q23959.D	**Analyst approved:**	12/29/23 14:22 Lindsay Ritner
Injection Time:	12/29/23 04:37	**Supervisor approved:**	01/02/24 14:27 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.43	Split peak
Perfluorooctanoic acid	335-67-1		6.11	Split peak

Perfluorinated Compounds by LC/MS/MS

Data File	:	5Q23945.d
Operator	:	natashag
Acq. Method	:	537_ID.m
Acq. Date-Time	:	12/29/2023 12:45:58 AM
Sample Name	:	op835-mb
Vial	:	P2-C2
DA Method File	:	ID_122823_S5Q375.quantmethod.xml
Batch Name	:	s5q375.batch.bin
Sample Information	:	OP835,S5Q375,125,,,1.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.987	217.0 -> 172.0	32219	10.00	µg/L	0.000
M5-PFPeA	3.419	268.0 -> 223.0	51541	10.00	µg/L	-0.012
M5-PFHxA	4.552	318.0 -> 273.0	74107	10.00	µg/L	0.000
M4-PFHpA	5.413	367.0 -> 322.0	73577	10.00	µg/L	0.000
M8-PFOA	6.124	421.0 -> 376.0	98304	10.00	µg/L	0.000
M9-PFNA	6.756	472.0 -> 427.0	98075	10.00	µg/L	0.000
M6-PFDA	7.276	519.0 -> 474.0	97743	10.00	µg/L	-0.012
M7-PFUnDA	8.047	570.0 -> 525.0	125753	10.00	µg/L	-0.013
M2-PFDoDA	9.026	615.0 -> 570.0	104045	10.00	µg/L	-0.013
M2-PFTeDA	10.524	715.0 -> 670.0	77310	10.00	µg/L	-0.013
M8-FOSA	6.192	506.0 -> 78.0	39381	10.00	µg/L	0.000
M3-PFBS	3.624	302.0 -> 99.0	4998	10.00	µg/L	-0.012
M3-PFHxS	5.432	402.0 -> 99.0	5975	10.00	µg/L	0.000
M8-PFOS	6.716	507.0 -> 99.0	7047	10.00	µg/L	-0.012
M2-4:2FTS	4.474	329.0 -> 309.0	25649	10.00	µg/L	0.000
M2-6:2FTS	6.122	429.0 -> 409.0	43163	10.00	µg/L	-0.013
M2-8:2FTS	7.351	529.0 -> 509.0	38769	10.00	µg/L	0.000
M3-MeFOSAA	6.735	573.0 -> 419.0	18222	10.00	µg/L	-0.012
M3-HFPO-DA	4.819	287.0 -> 169.0	4109	10.00	µg/L	0.000
M3-MeFOSA	6.589	515.0 -> 169.0	10731	10.00	µg/L	0.000
M5-EtFOSAA	6.845	589.0 -> 419.0	15700	10.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.474	329.0 -> 309.0	25649	6.38	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 63.8%		
13C2-6:2FTS	6.122	429.0 -> 409.0	43163	6.09	µg/L	-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 60.9%		
13C2-8:2FTS	7.351	529.0 -> 509.0	38769	5.55	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 55.5%		
13C2-PFDoDA	9.026	615.0 -> 570.0	104045	4.99	µg/L	-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 49.9%		
13C2-PFTeDA	10.524	715.0 -> 670.0	77310	4.36	µg/L	-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 43.6%		
13C3-PFBS	3.624	302.0 -> 99.0	4998	5.15	µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 51.5%		
13C3-PFHxS	5.432	402.0 -> 99.0	5975	5.06	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 50.6%		
13C4-PFBA	1.987	217.0 -> 172.0	32219	6.82	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 68.2%		
13C4-PFHpA	5.413	367.0 -> 322.0	73577	6.12	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 61.2%		
13C5-PFHxA	4.552	318.0 -> 273.0	74107	6.20	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 62.0%		
13C5-PFPeA	3.419	268.0 -> 223.0	51541	6.54	µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 65.4%		
13C6-PFDA	7.276	519.0 -> 474.0	97743	5.81	µg/L	-0.012

Perfluorinated Compounds by LC/MS/MS

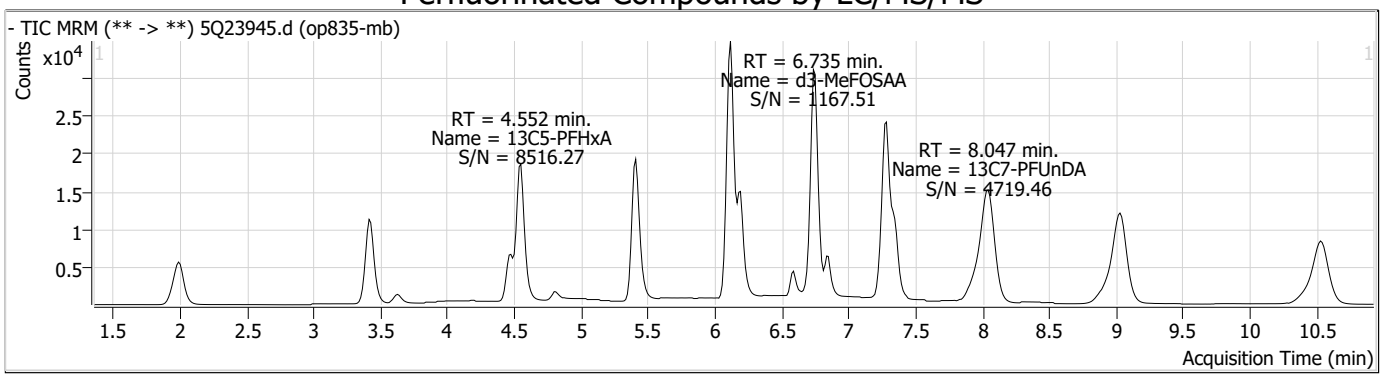
Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 58.1%	
13C7-PFUnDA	8.047	570.0 -> 525.0	125753	5.40 µg/L	-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 54.0%	
13C8-FOSA	6.192	506.0 -> 78.0	39381	9.72 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 97.2%	
13C8-PFOA	6.124	421.0 -> 376.0	98304	5.94 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 59.4%	
13C8-PFOS	6.716	507.0 -> 99.0	7047	4.48 µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 44.8%	
13C9-PFNA	6.756	472.0 -> 427.0	98075	5.91 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 59.1%	
d3-MeFOSAA	6.735	573.0 -> 419.0	18222	5.98 µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 59.8%	
13C3-HFPO-DA	4.819	287.0 -> 169.0	4109	6.36 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 63.6%	
d3-MeFOSA	6.589	515.0 -> 169.0	10731	7.65 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 76.5%	
d5-EtFOSAA	6.845	589.0 -> 419.0	15700	5.72 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 57.2%	
Target Compounds					QValue
4:2FTS	-	327.0 -> 307.0	-	N.D.	
		327.0 -> 81.0			
6:2FTS	-	427.0 -> 407.0	-	N.D.	
		427.0 -> 81.0			
8:2FTS	-	527.0 -> 507.0	-	N.D.	
		527.0 -> 81.0			
EtFOSAA	-	584.0 -> 419.0	-	N.D.	
		584.0 -> 483.0			
FOSA	-	498.0 -> 78.0	-	N.D.	
		498.0 -> 478.0			
MeFOSAA	-	570.0 -> 419.0	-	N.D.	
		570.0 -> 512.0			
PFBA	-	213.0 -> 169.0	-	N.D.	
PFBS	-	299.0 -> 80.0	-	N.D.	
		299.0 -> 99.0			
PFDA	-	513.0 -> 469.0	-	N.D.	
		513.0 -> 219.0			
PFDoDA	-	613.0 -> 569.0	-	N.D.	
		613.0 -> 319.0			
PFDS	-	599.0 -> 80.0	-	N.D.	
		599.0 -> 99.0			
PFHpA	-	363.0 -> 319.0	-	N.D.	
		363.0 -> 169.0			
PFHpS	-	449.0 -> 80.0	-	N.D.	
		449.0 -> 99.0			
PFHxA	-	313.0 -> 269.0	-	N.D.	
		313.0 -> 119.0			
PFHxS	-	399.0 -> 80.0	-	N.D.	
		399.0 -> 99.0			
PFNA	-	463.0 -> 419.0	-	N.D.	
		463.0 -> 219.0			
PFNS	-	549.0 -> 80.0	-	N.D.	
		549.0 -> 99.0			
PFOA	-	413.0 -> 369.0	-	N.D.	
		413.0 -> 169.0			
PFOS	-	499.0 -> 80.0	-	N.D.	

Perfluorinated Compounds by LC/MS/MS

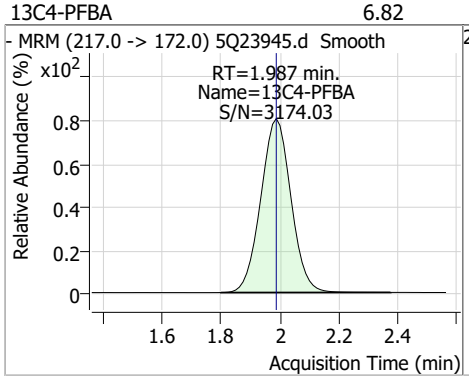
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		499.0 -> 99.0				
PFPeA	-	263.0 -> 219.0	-	N.D.		
PFPeS	-	349.0 -> 80.0	-	N.D.		
		349.0 -> 99.0				
PFTeDA	-	713.0 -> 669.0	-	N.D.		
		713.0 -> 219.0				
PFTrDA	-	663.0 -> 619.0	-	N.D.		
		663.0 -> 369.0				
PFUnDA	-	563.0 -> 519.0	-	N.D.		
		563.0 -> 269.0				
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.		
		633.0 -> 453.0				
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.		
		533.0 -> 353.0				
ADONA	-	377.0 -> 251.0	-	N.D.		
		377.0 -> 85.0				
HFPO-DA	-	329.0 -> 169.0	-	N.D.		
		285.0 -> 169.0				
MeFOSA	-	512.0 -> 169.0	-	N.D.		
		512.0 -> 219.0				
4-PFECHS	-	461.0 -> 381.0	-	N.D.		
		461.0 -> 99.0				
FBSA	-	298.0 -> 78.0	-	N.D.		
		298.0 -> 64.0				
FHxSA	-	398.0 -> 78.0	-	N.D.		
		398.0 -> 64.0				

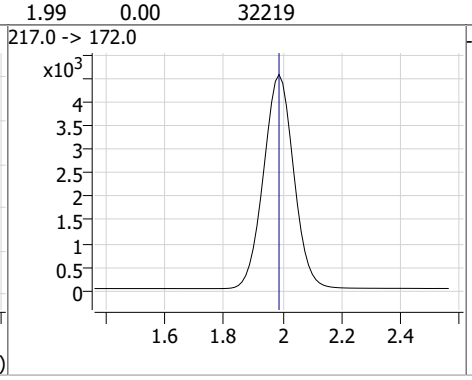
 # = Qualifier out of range, m = manually integrated, + = Area summed

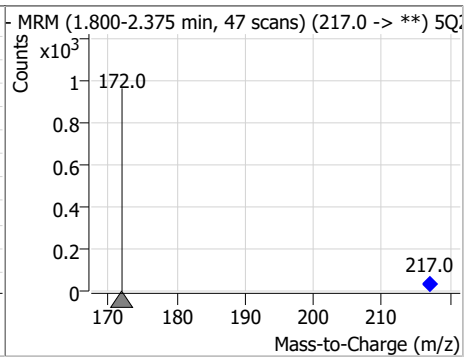
Perfluorinated Compounds by LC/MS/MS



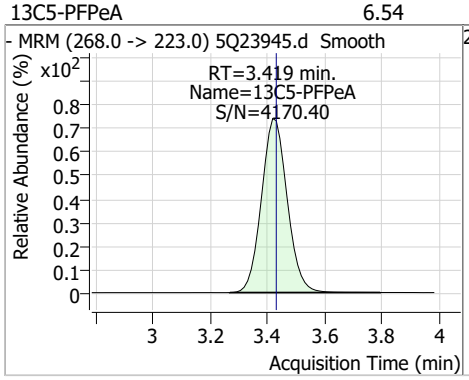
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	6.82	1.99	0.00	32219				

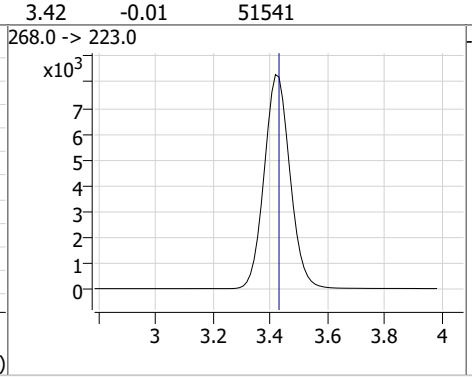


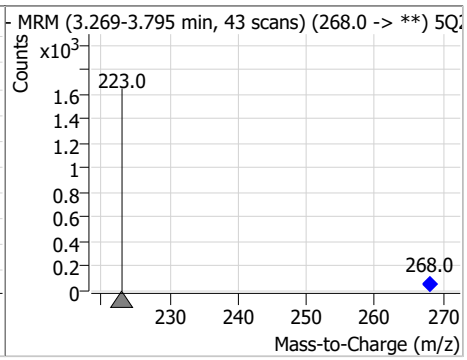




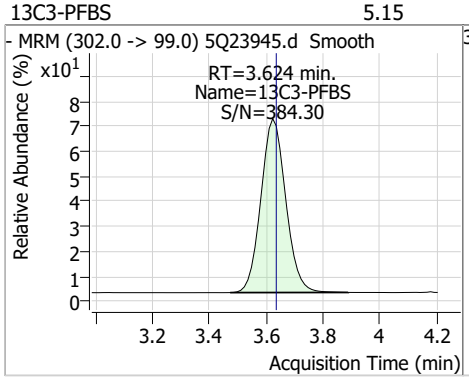
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	6.54	3.42	-0.01	51541				

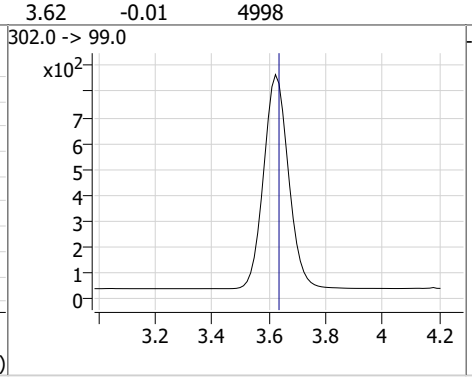


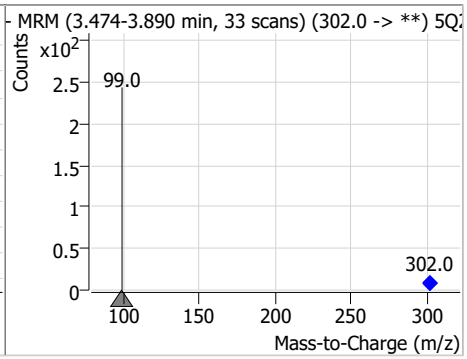




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	5.15	3.62	-0.01	4998				

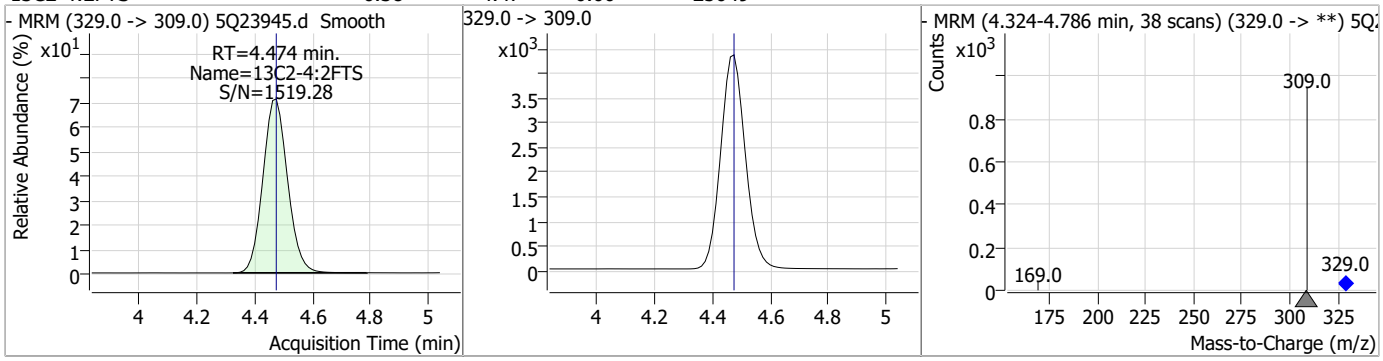




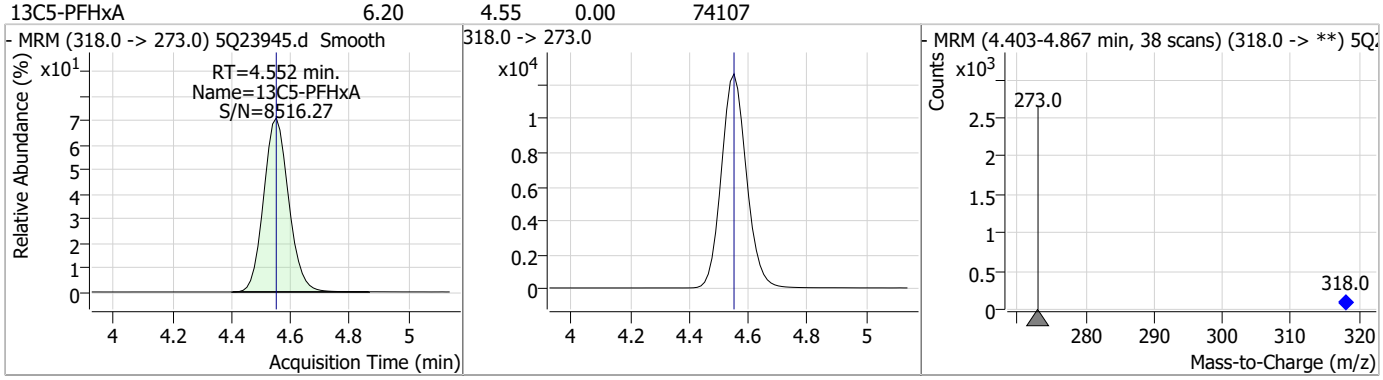


Perfluorinated Compounds by LC/MS/MS

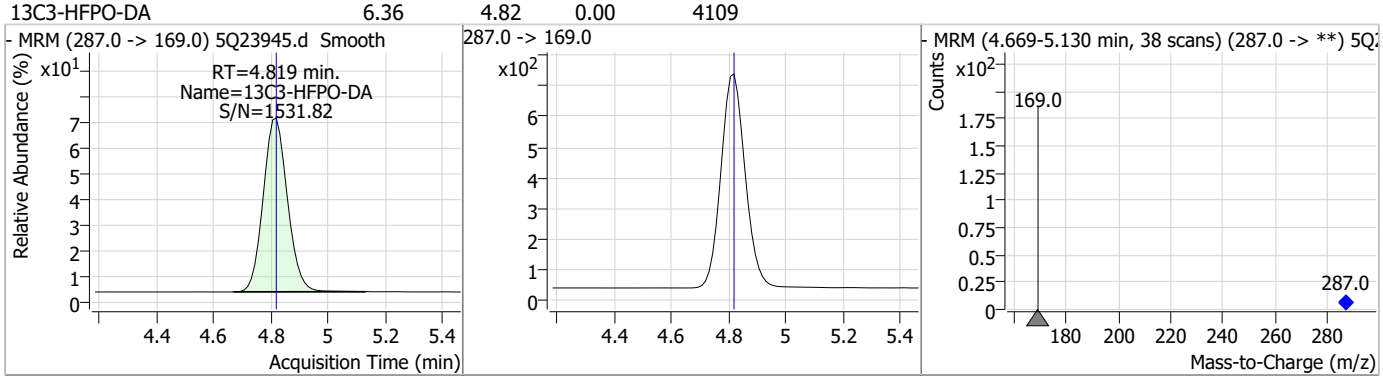
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	6.38	4.47	0.00	25649				



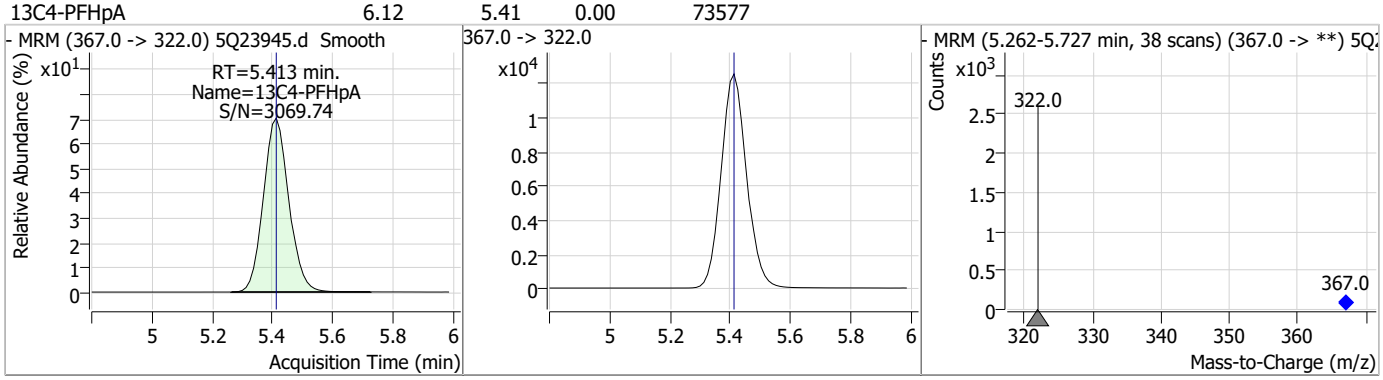
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	6.20	4.55	0.00	74107				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	6.36	4.82	0.00	4109				

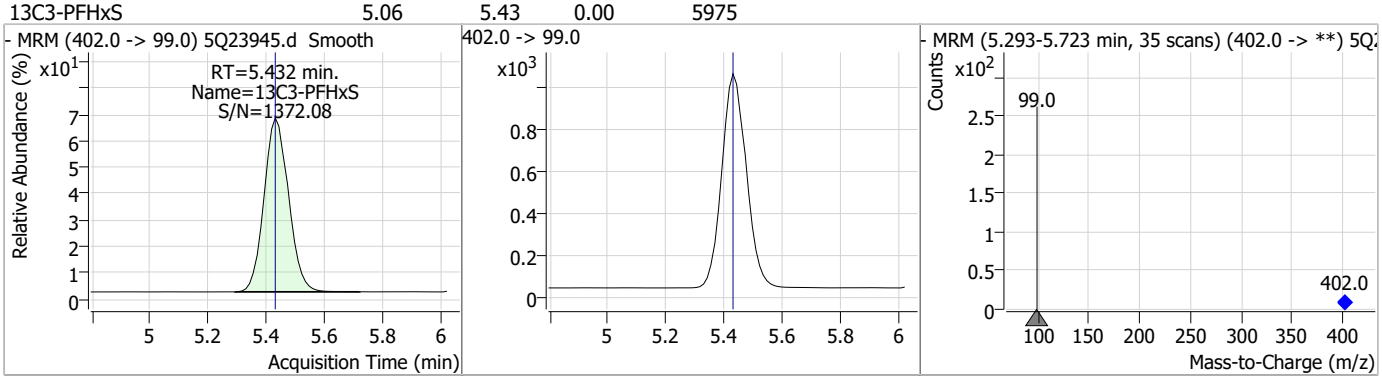


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	6.12	5.41	0.00	73577				

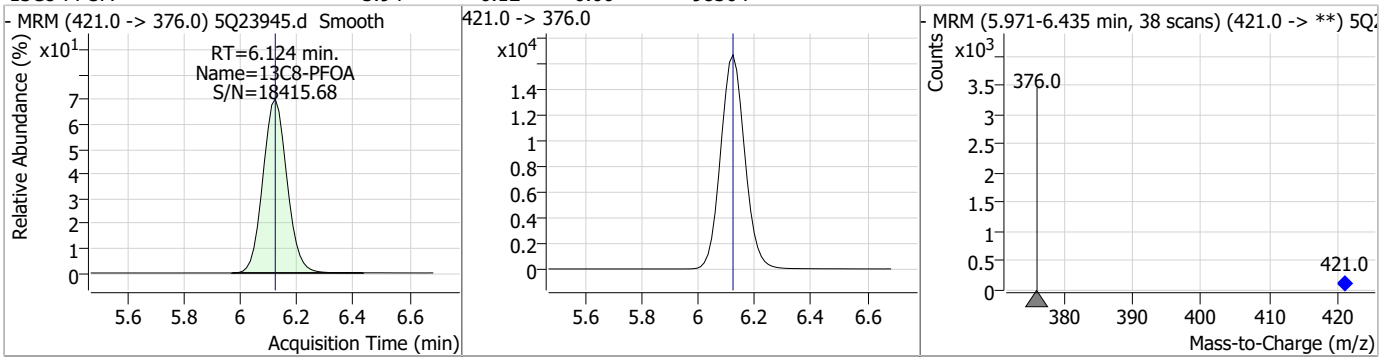


Perfluorinated Compounds by LC/MS/MS

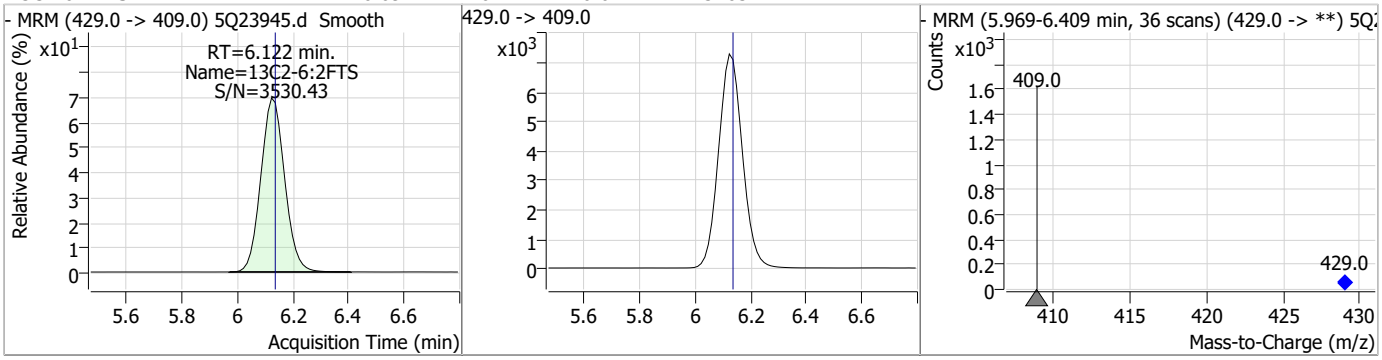
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	5.06	5.43	0.00	5975				



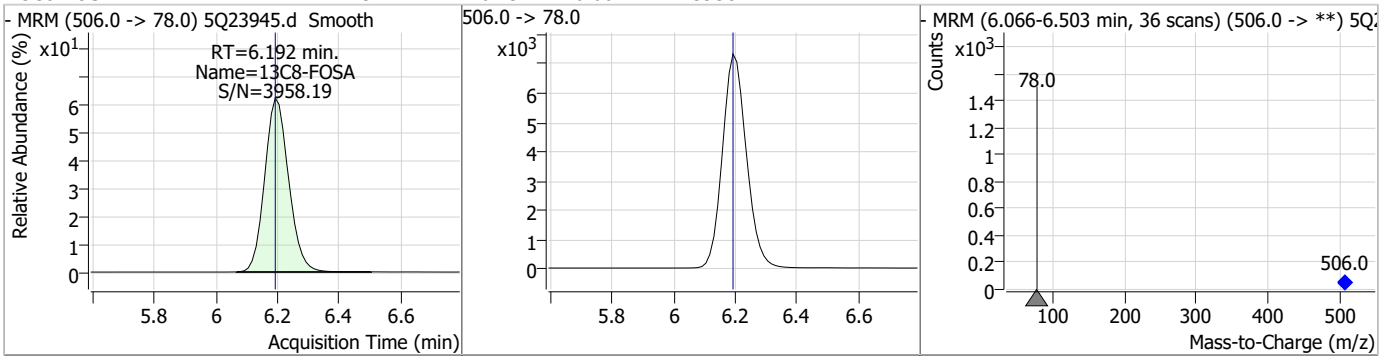
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	5.94	6.12	0.00	98304				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	6.09	6.12	-0.01	43163				

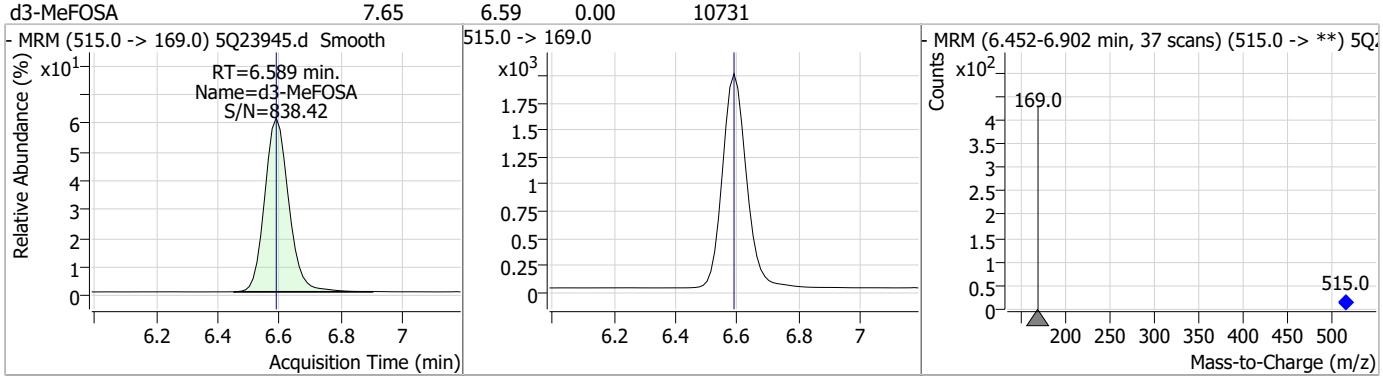


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	9.72	6.19	0.00	39381				

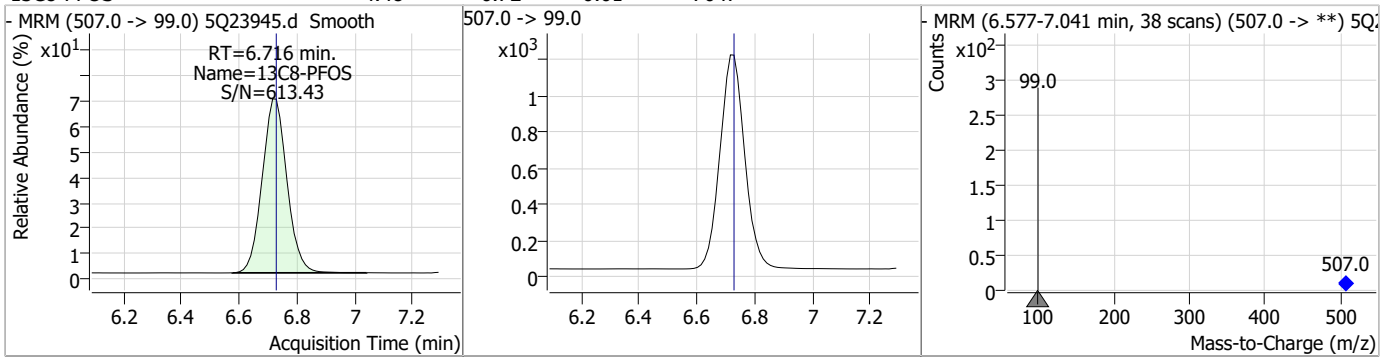


Perfluorinated Compounds by LC/MS/MS

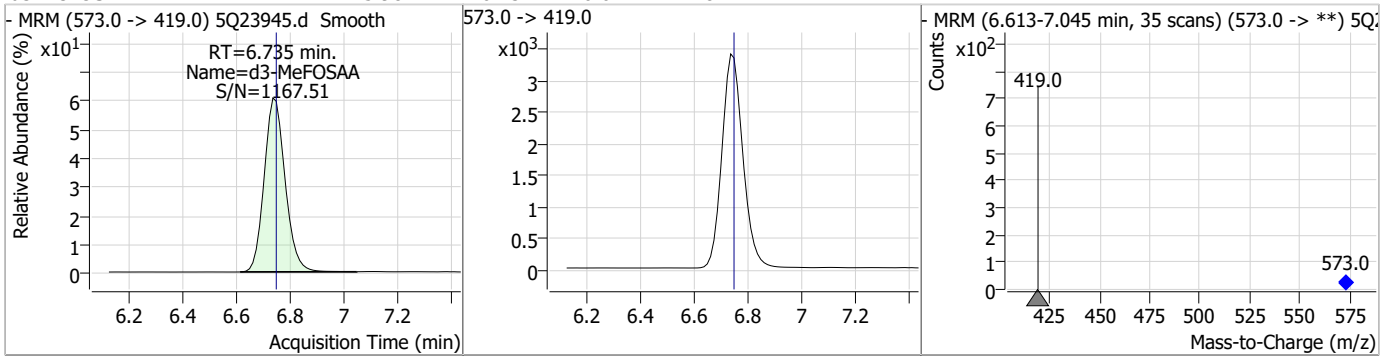
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	7.65	6.59	0.00	10731				



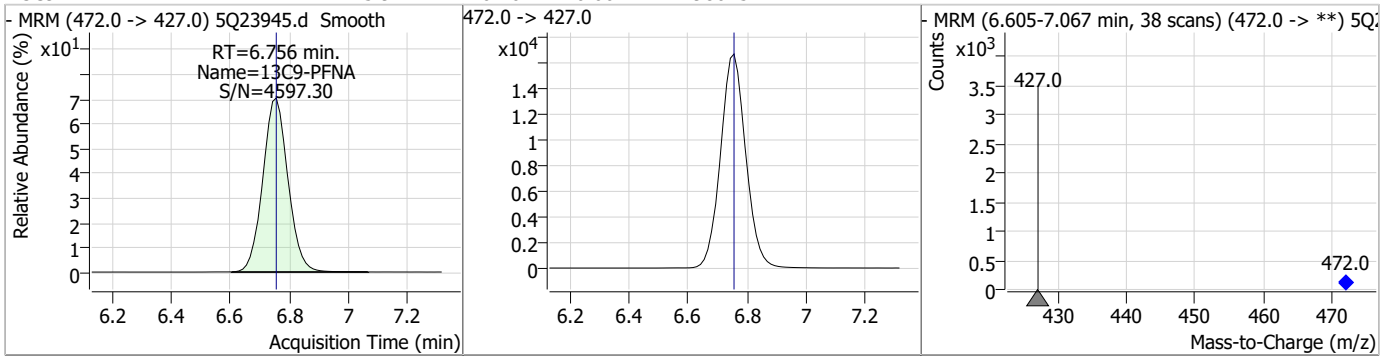
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	4.48	6.72	-0.01	7047				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	5.98	6.73	-0.01	18222				

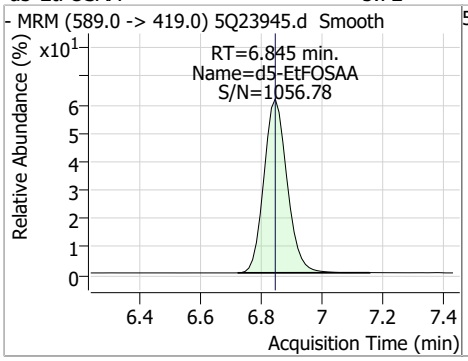


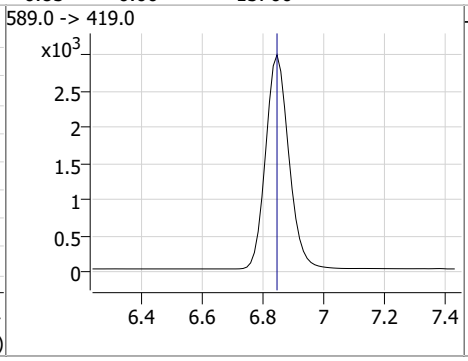
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	5.91	6.76	0.00	98075				

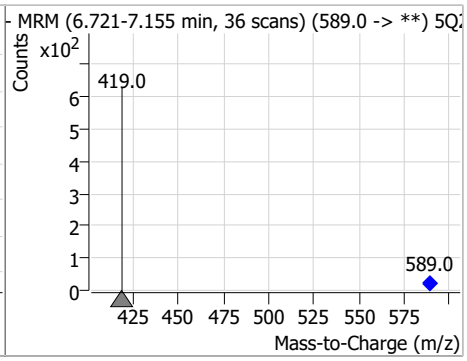


Perfluorinated Compounds by LC/MS/MS

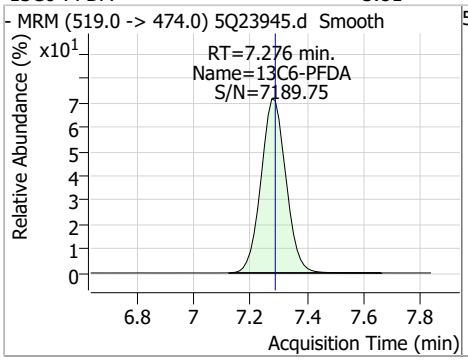
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	5.72	6.85	0.00	15700				

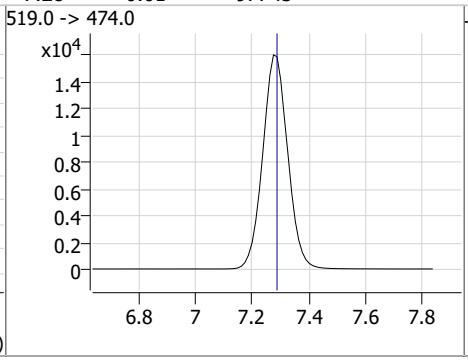


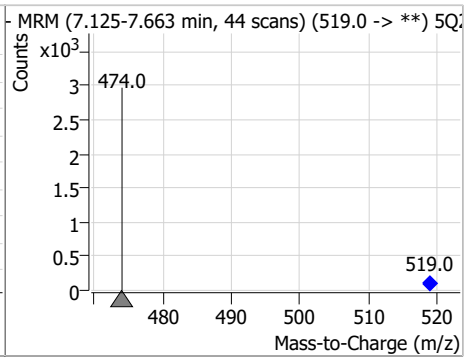




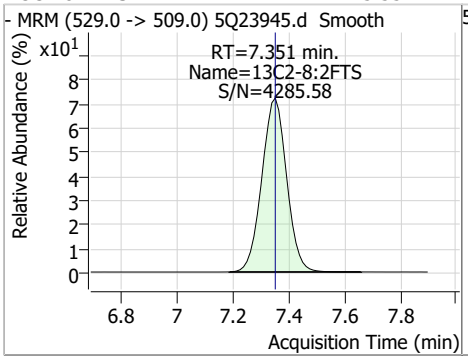
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	5.81	7.28	-0.01	97743				

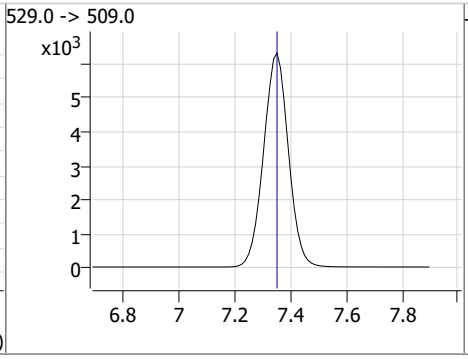


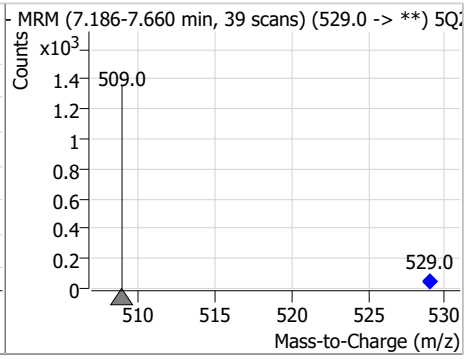




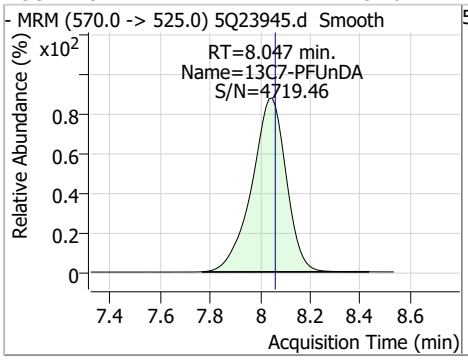
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	5.55	7.35	0.00	38769				

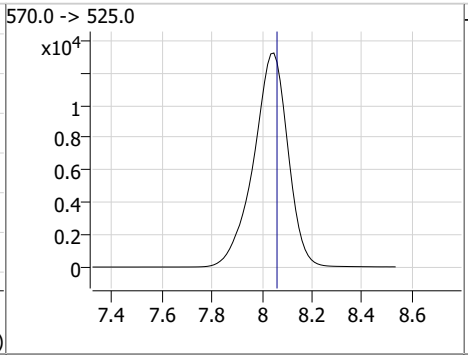


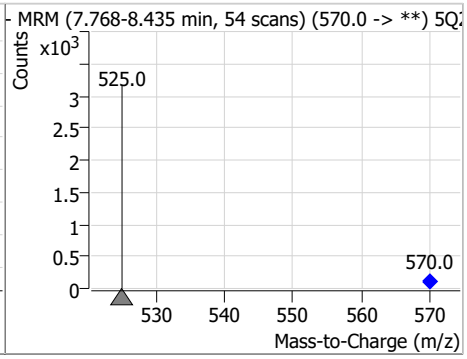




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	5.40	8.05	-0.01	125753				

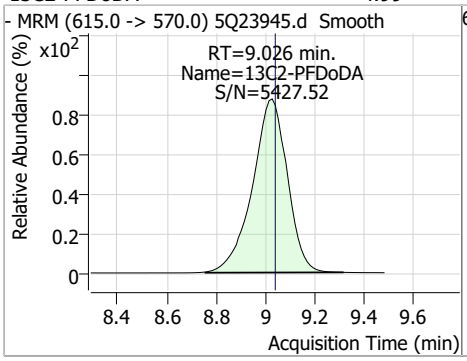


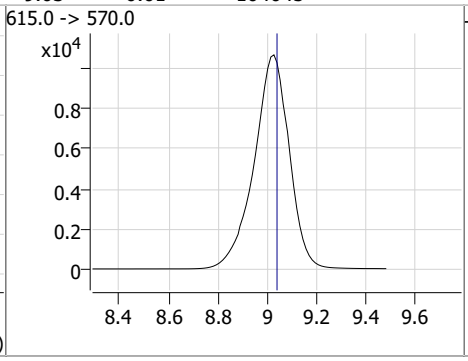


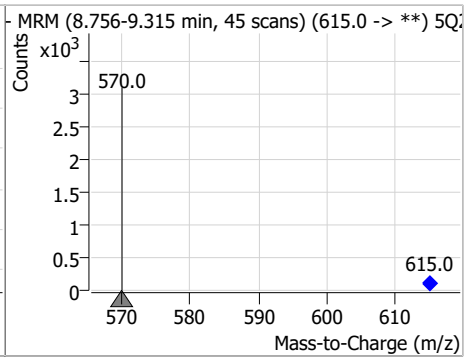


Perfluorinated Compounds by LC/MS/MS

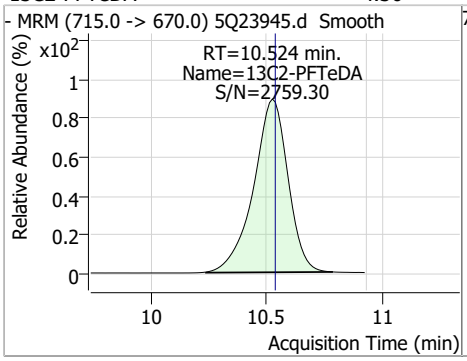
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	4.99	9.03	-0.01	104045				

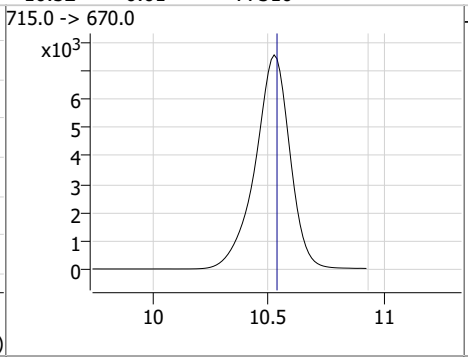


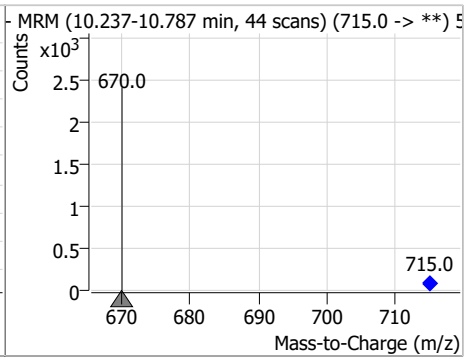




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	4.36	10.52	-0.01	77310				







Perfluorinated Compounds by LC/MS/MS

Data File	:	2q118605.d
Operator	:	lindsayr
Acq. Method	:	537_ID.m
Acq. Date-Time	:	1/4/2024 4:35:38 PM
Sample Name	:	op937-mb
Vial	:	P6-A2
DA Method File	:	ID_010224_S2Q1691.quantmethod.xml
Batch Name	:	s2q1693.batch.bin
Sample Information	:	op937,S2Q1693,125,,,1.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M5-EtFOSAA	7.722	589.0 -> 419.0	12659	10.00 µg/L	0.000
M4-PFBA	2.227	217.0 -> 172.0	43391	10.00 µg/L	-0.013
M5-PFPeA	4.049	268.0 -> 223.0	66971	10.00 µg/L	-0.013
M5-PFHxA	5.326	318.0 -> 273.0	81995	10.00 µg/L	-0.013
M4-PFHpA	6.195	367.0 -> 322.0	70049	10.00 µg/L	-0.013
M8-PFOA	6.875	421.0 -> 376.0	132517	10.00 µg/L	-0.013
M9-PFNA	7.455	472.0 -> 427.0	93416	10.00 µg/L	0.000
M6-PFDA	7.931	519.0 -> 474.0	67838	10.00 µg/L	0.000
M7-PFUnDA	8.381	570.0 -> 525.0	103684	10.00 µg/L	0.000
M2-PFDoDA	8.920	615.0 -> 570.0	95060	10.00 µg/L	0.000
M2-PFTeDA	10.030	715.0 -> 670.0	62505	10.00 µg/L	0.012
M8-FOSA	7.147	506.0 -> 78.0	13788	10.00 µg/L	-0.013
M3-PFBS	4.317	302.0 -> 99.0	4815	10.00 µg/L	-0.013
M3-PFHxS	6.218	402.0 -> 99.0	4396	10.00 µg/L	-0.025
M8-PFOS	7.427	507.0 -> 99.0	3181	10.00 µg/L	0.000
M2-4:2FTS	5.221	329.0 -> 309.0	29571	10.00 µg/L	-0.013
M2-6:2FTS	6.860	429.0 -> 409.0	41707	10.00 µg/L	-0.025
M2-8:2FTS	7.967	529.0 -> 509.0	24888	10.00 µg/L	0.000
M3-MeFOSAA	7.609	573.0 -> 419.0	15512	10.00 µg/L	0.000
M3-HFPO-DA	5.595	287.0 -> 169.0	6967	10.00 µg/L	-0.013
M3-MeFOSA	7.513	515.0 -> 169.0	1368	10.00 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.221	329.0 -> 309.0	29571	8.02 µg/L	-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 80.2%	
13C2-6:2FTS	6.860	429.0 -> 409.0	41707	7.26 µg/L	-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 72.6%	
13C2-8:2FTS	7.967	529.0 -> 509.0	24888	6.42 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 64.2%	
13C2-PFDoDA	8.920	615.0 -> 570.0	95060	5.43 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 54.3%	
13C2-PFTeDA	10.030	715.0 -> 670.0	62505	4.70 µg/L	0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 47.0%	
13C3-PFBS	4.317	302.0 -> 99.0	4815	8.01 µg/L	-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 80.1%	
13C3-PFHxS	6.218	402.0 -> 99.0	4396	7.18 µg/L	-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 71.8%	
13C4-PFBA	2.227	217.0 -> 172.0	43391	8.40 µg/L	-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 84.0%	
13C4-PFHpA	6.195	367.0 -> 322.0	70049	8.16 µg/L	-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 81.6%	
d5-EtFOSAA	7.722	589.0 -> 419.0	12659	6.56 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 65.6%	
13C5-PFHxA	5.326	318.0 -> 273.0	81995	8.31 µg/L	-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 83.1%	
13C5-PFPeA	4.049	268.0 -> 223.0	66971	8.42 µg/L	-0.013

Perfluorinated Compounds by LC/MS/MS

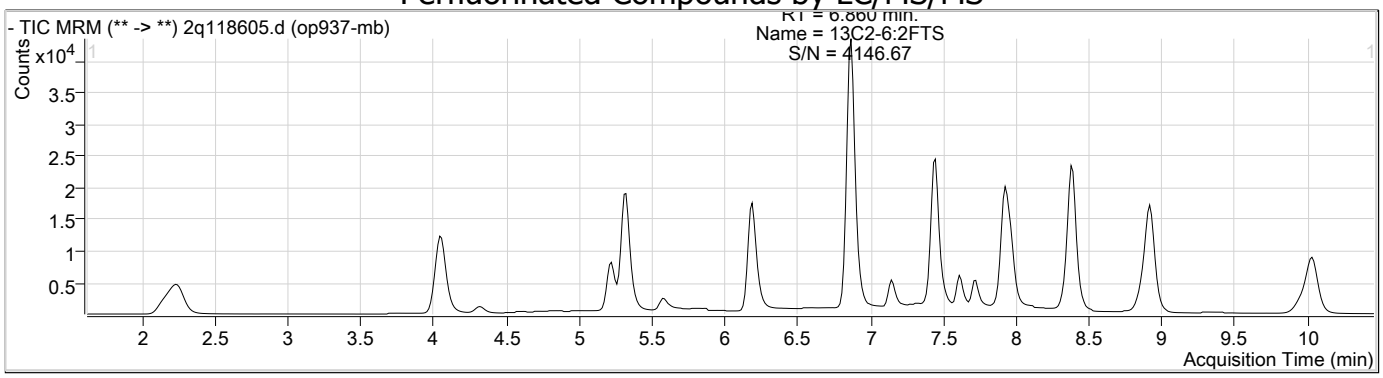
Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 84.2%	
13C6-PFDA	7.931	519.0 -> 474.0	67838	6.49 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 64.9%	
13C7-PFUnDA	8.381	570.0 -> 525.0	103684	5.97 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 59.7%	
13C8-FOSA	7.147	506.0 -> 78.0	13788	6.71 µg/L	-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 67.1%	
13C8-PFOA	6.875	421.0 -> 376.0	132517	7.83 µg/L	-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 78.3%	
13C8-PFOS	7.427	507.0 -> 99.0	3181	5.70 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 57.0%	
13C9-PFNA	7.455	472.0 -> 427.0	93416	6.93 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 69.3%	
d3-MeFOSAA	7.609	573.0 -> 419.0	15512	6.78 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 67.8%	
13C3-HFPO-DA	5.595	287.0 -> 169.0	6967	8.38 µg/L	-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 83.8%	
d3-MeFOSA	7.513	515.0 -> 169.0	1368	1.90 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 19.0%	
Target Compounds					QValue
4:2FTS	-	327.0 -> 307.0	-	N.D.	
		327.0 -> 81.0			
6:2FTS	-	427.0 -> 407.0	-	N.D.	
		427.0 -> 81.0			
8:2FTS	-	527.0 -> 507.0	-	N.D.	
		527.0 -> 81.0			
EtFOSAA	-	584.0 -> 419.0	-	N.D.	
		584.0 -> 483.0			
FOSA	-	498.0 -> 78.0	-	N.D.	
		498.0 -> 478.0			
MeFOSAA	-	570.0 -> 419.0	-	N.D.	
		570.0 -> 512.0			
PFBA	-	213.0 -> 169.0	-	N.D.	
PFBS	-	299.0 -> 80.0	-	N.D.	
		299.0 -> 99.0			
PFDA	-	513.0 -> 469.0	-	N.D.	
		513.0 -> 219.0			
PFDoDA	-	613.0 -> 569.0	-	N.D.	
		613.0 -> 319.0			
PFDS	-	599.0 -> 80.0	-	N.D.	
		599.0 -> 99.0			
PFHpA	-	363.0 -> 319.0	-	N.D.	
		363.0 -> 169.0			
PFHpS	-	449.0 -> 80.0	-	N.D.	
		449.0 -> 99.0			
PFHxA	-	313.0 -> 269.0	-	N.D.	
		313.0 -> 119.0			
PFHxS	-	399.0 -> 80.0	-	N.D.	
		399.0 -> 99.0			
PFNA	-	463.0 -> 419.0	-	N.D.	
		463.0 -> 219.0			
PFNS	-	549.0 -> 80.0	-	N.D.	
		549.0 -> 99.0			
PFOA	-	413.0 -> 369.0	-	N.D.	
		413.0 -> 169.0			
PFOS	-	499.0 -> 80.0	-	N.D.	

Perfluorinated Compounds by LC/MS/MS

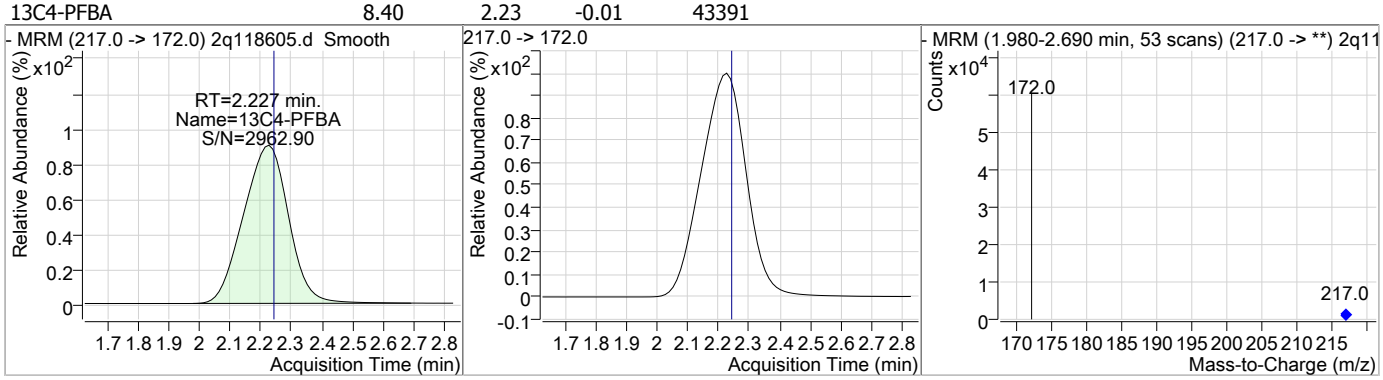
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		499.0 -> 99.0				
PFPeA	-	263.0 -> 219.0	-	N.D.		
PFPeS	-	349.0 -> 80.0	-	N.D.		
		349.0 -> 99.0				
PFTeDA	-	713.0 -> 669.0	-	N.D.		
		713.0 -> 219.0				
PFTrDA	-	663.0 -> 619.0	-	N.D.		
		663.0 -> 369.0				
PFUnDA	-	563.0 -> 519.0	-	N.D.		
		563.0 -> 269.0				
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.		
		633.0 -> 453.0				
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.		
		533.0 -> 353.0				
ADONA	-	377.0 -> 251.0	-	N.D.		
		377.0 -> 85.0				
HFPO-DA	-	329.0 -> 169.0	-	N.D.		
		285.0 -> 169.0				
MeFOSA	-	512.0 -> 169.0	-	N.D.		
		512.0 -> 219.0				
4-PFECHS	-	461.0 -> 381.0	-	N.D.		
		461.0 -> 99.0				
FBSA	-	298.0 -> 78.0	-	N.D.		
		298.0 -> 64.0				
FHxSA	-	398.0 -> 78.0	-	N.D.		
		398.0 -> 64.0				

 # = Qualifier out of range, m = manually integrated, + = Area summed

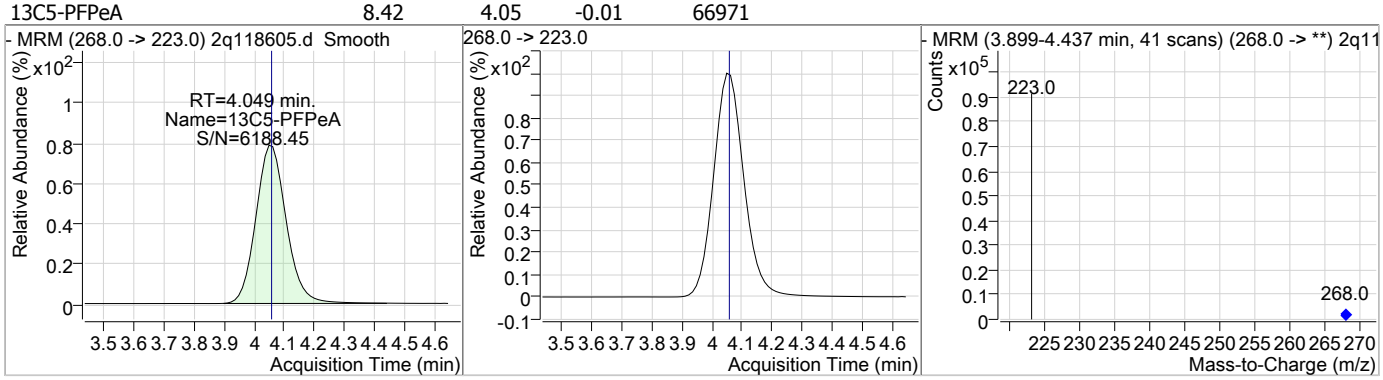
Perfluorinated Compounds by LC/MS/MS



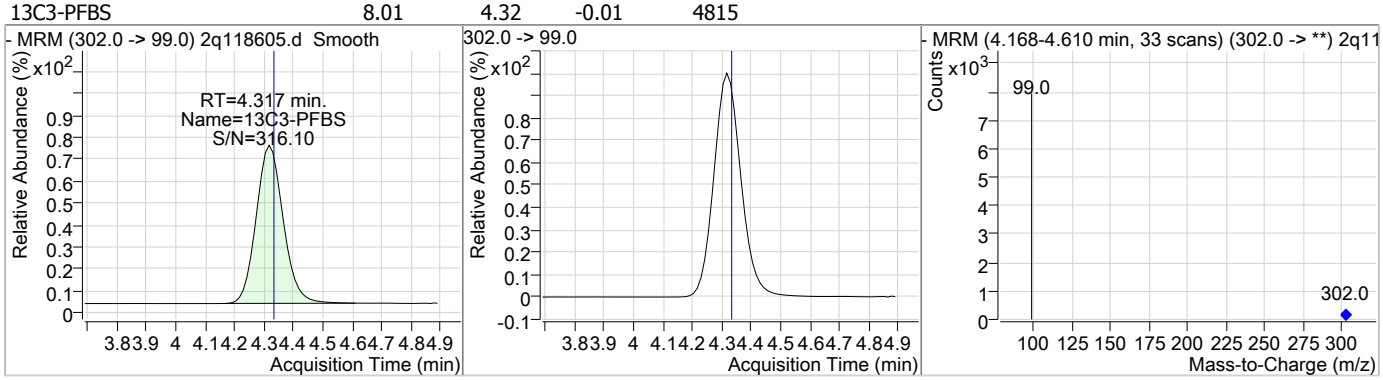
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	8.40	2.23	-0.01	43391				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	8.42	4.05	-0.01	66971				

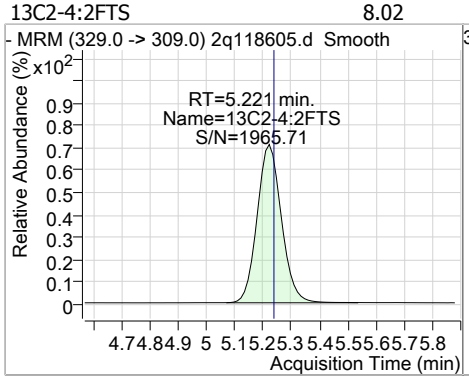


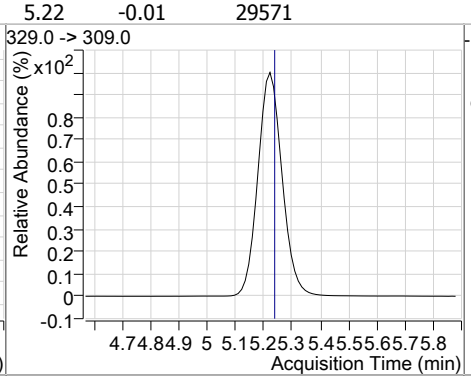
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13C3-PFBS	8.01	4.32	-0.01	4815				

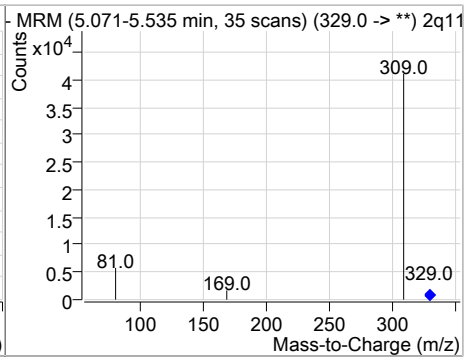


Perfluorinated Compounds by LC/MS/MS

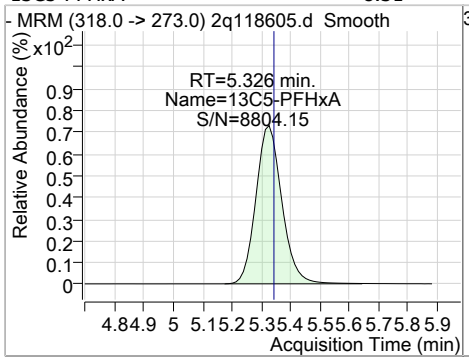
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	8.02	5.22	-0.01	29571				

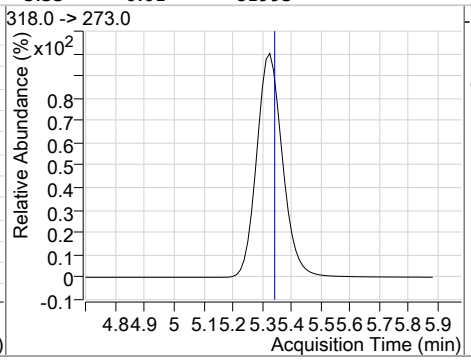


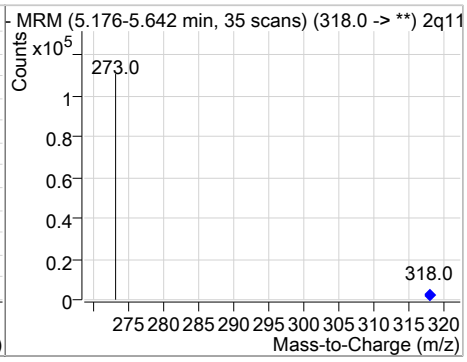




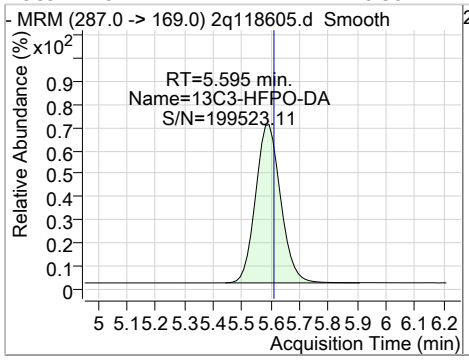
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	8.31	5.33	-0.01	81995				

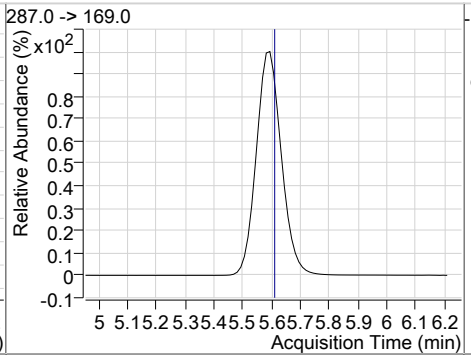


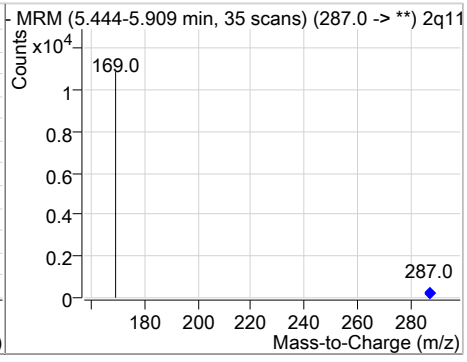




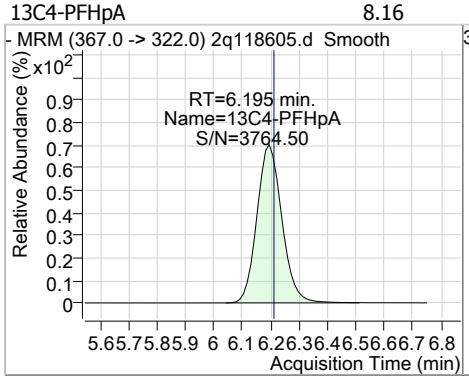
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	8.38	5.59	-0.01	6967				

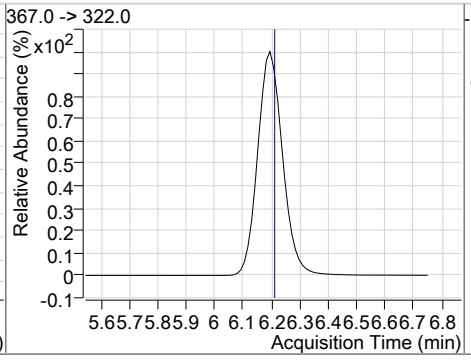


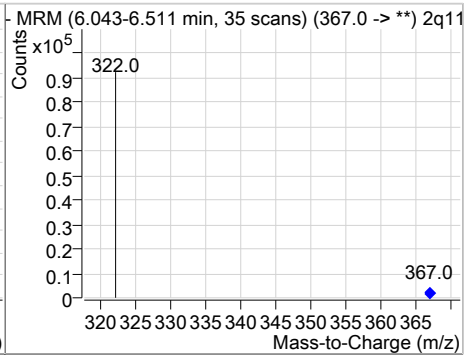




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	8.16	6.20	-0.01	70049				

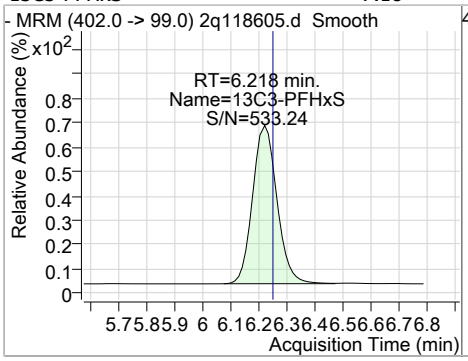


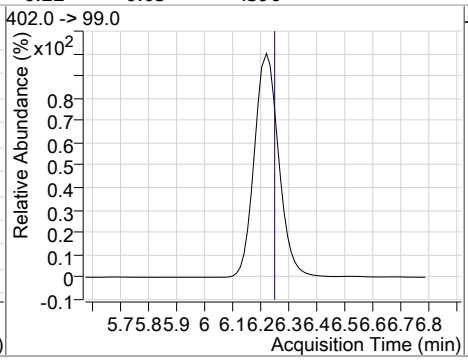


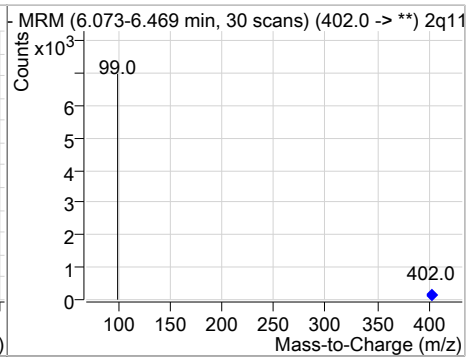


Perfluorinated Compounds by LC/MS/MS

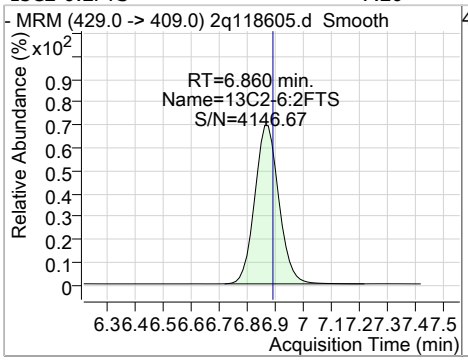
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13C3-PFHxS	7.18	6.22	-0.03	4396				

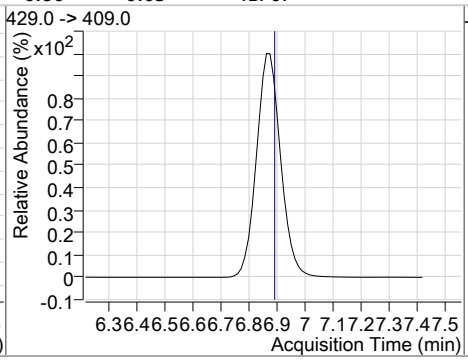


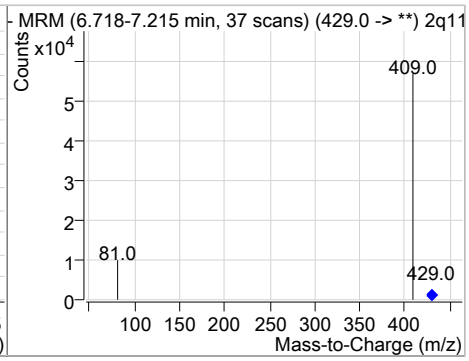




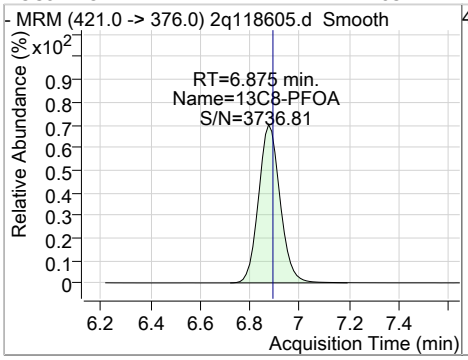
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	7.26	6.86	-0.03	41707				

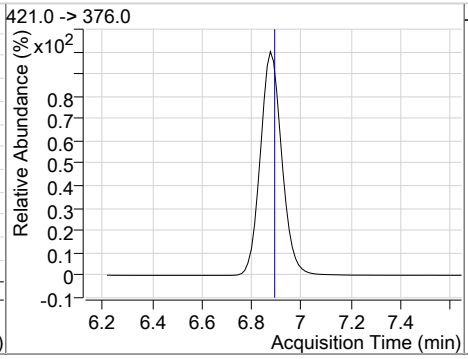


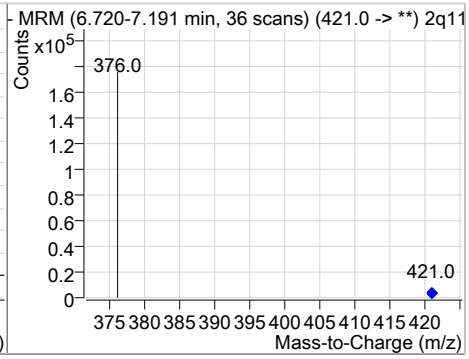




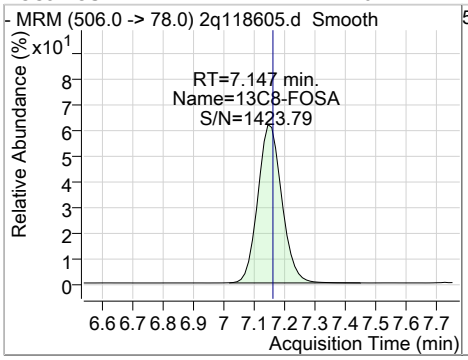
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	7.83	6.87	-0.01	132517				

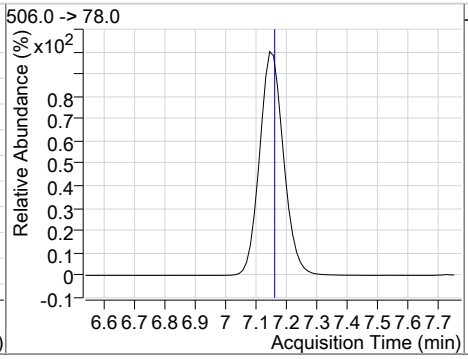


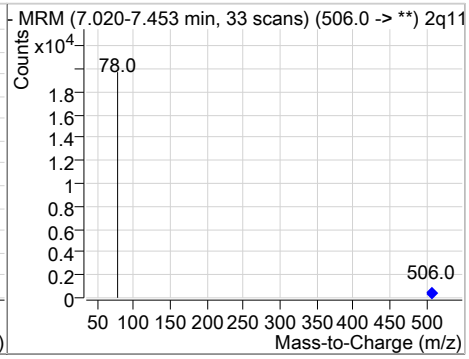




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	6.71	7.15	-0.01	13788				

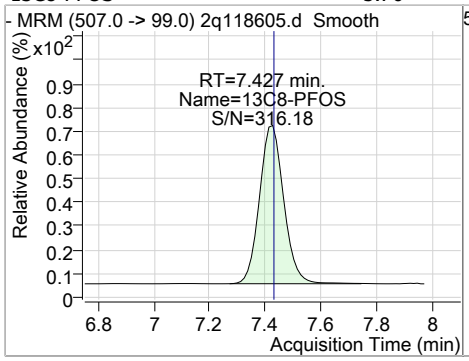


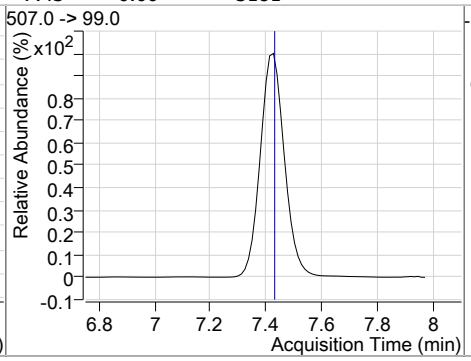


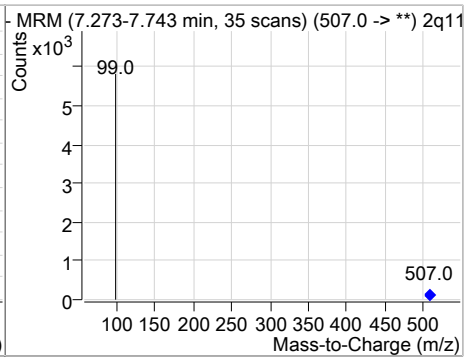


Perfluorinated Compounds by LC/MS/MS

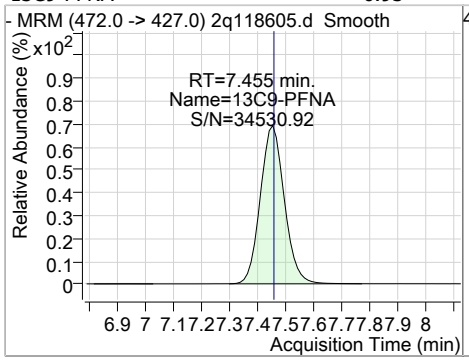
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	5.70	7.43	0.00	3181				

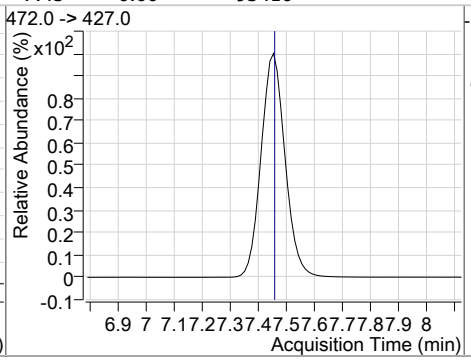


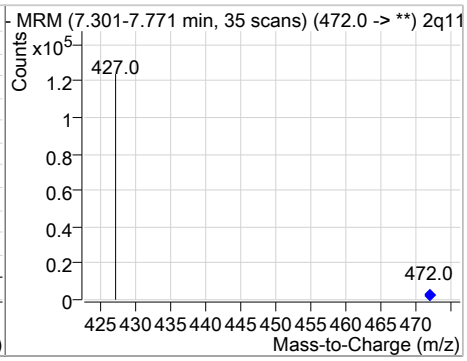




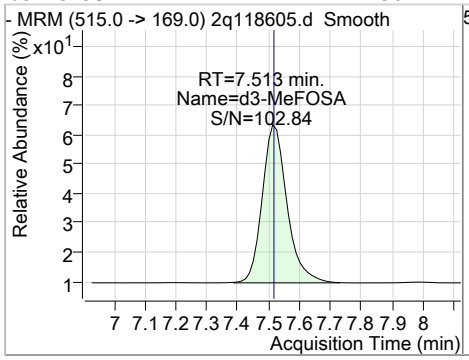
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13C9-PFNA	6.93	7.45	0.00	93416				

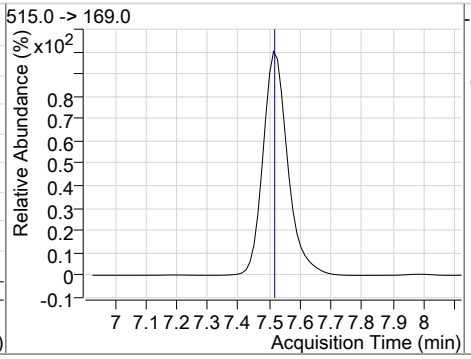


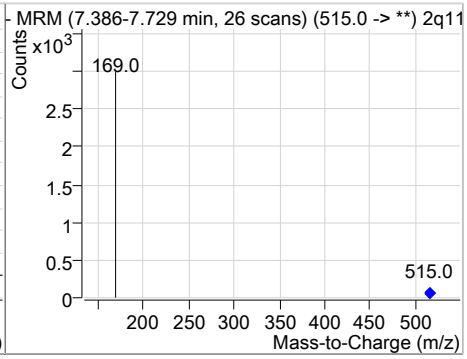




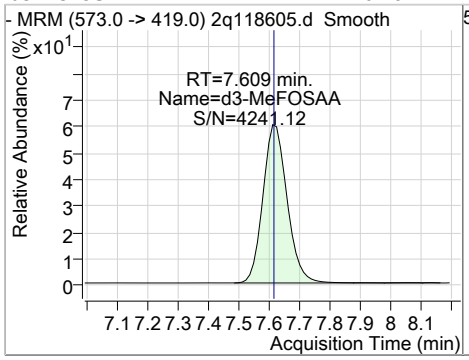
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	1.90	7.51	0.00	1368				

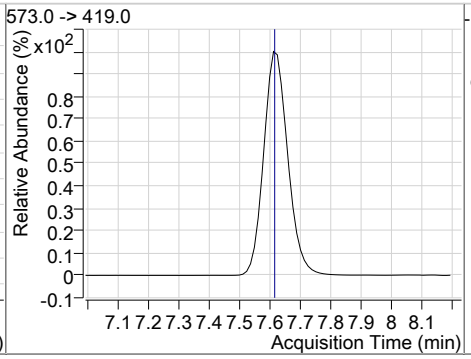


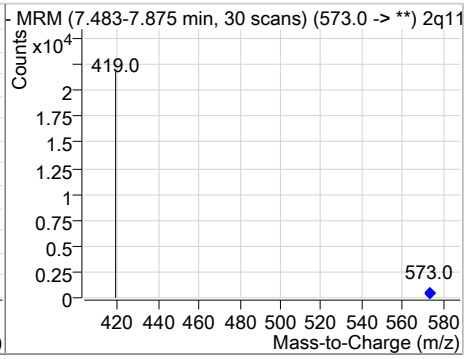




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	6.78	7.61	0.00	15512				

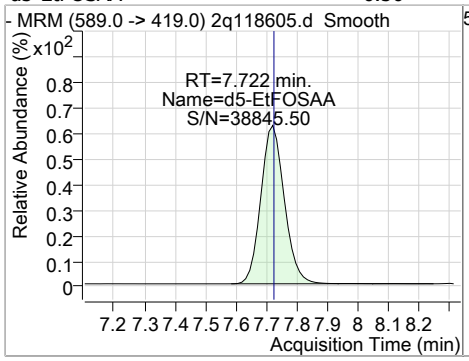


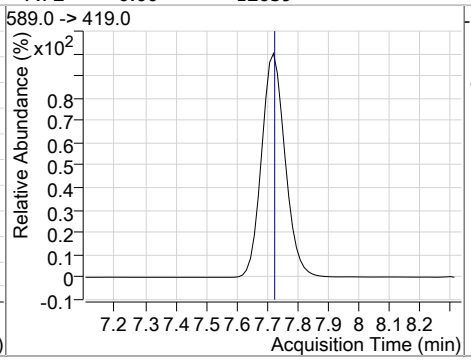


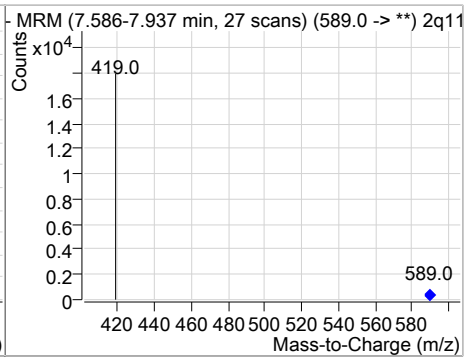


Perfluorinated Compounds by LC/MS/MS

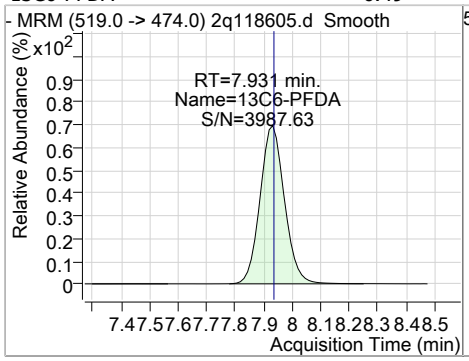
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	6.56	7.72	0.00	12659				

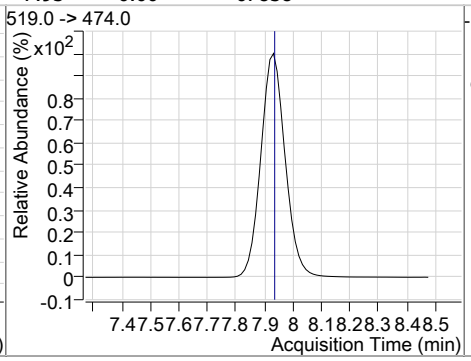


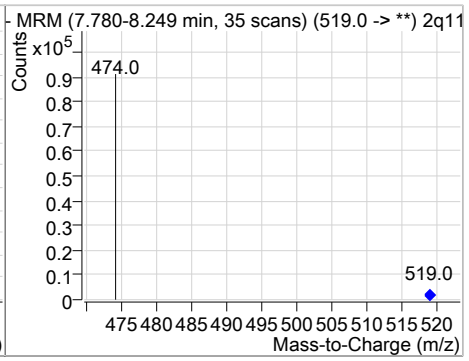




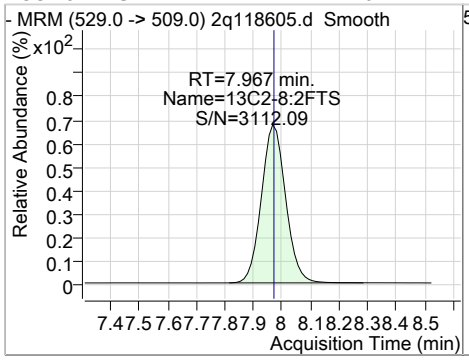
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	6.49	7.93	0.00	67838				

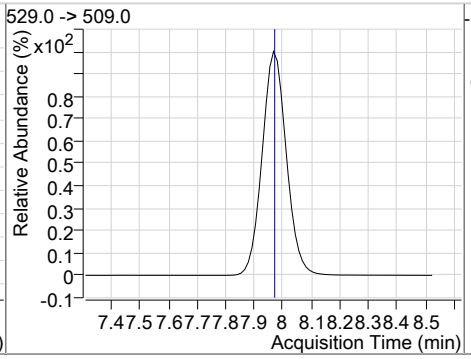


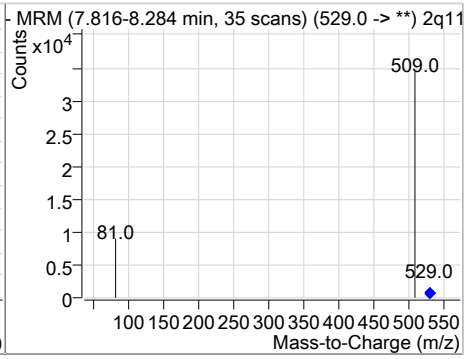




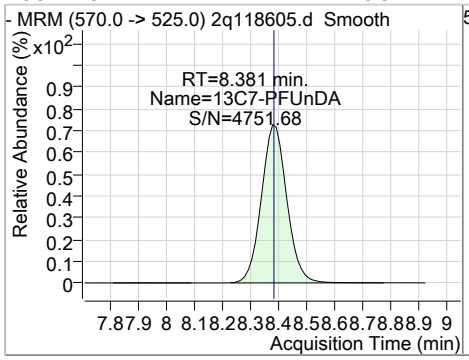
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	6.42	7.97	0.00	24888				

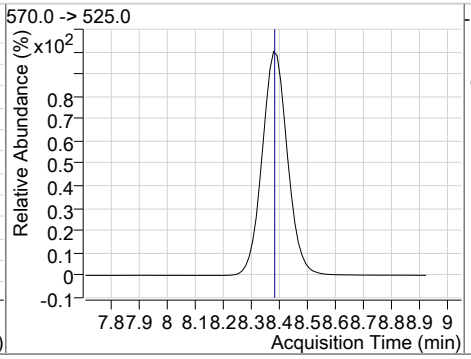


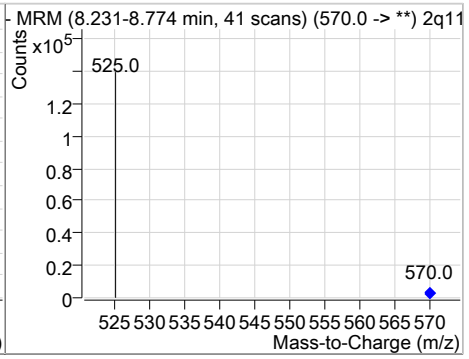




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	5.97	8.38	0.00	103684				

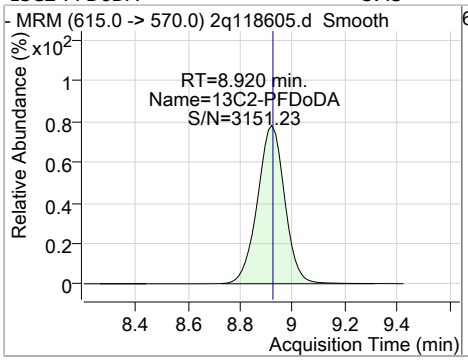


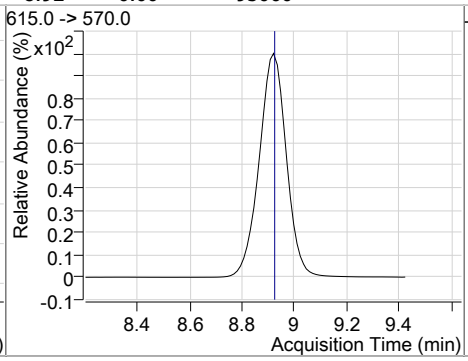


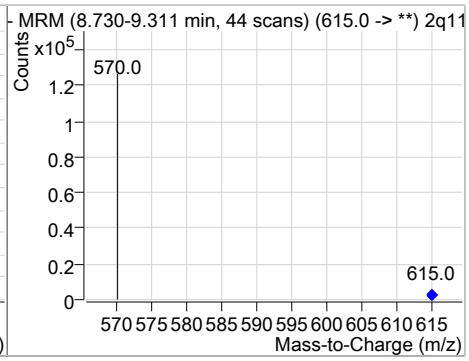


Perfluorinated Compounds by LC/MS/MS

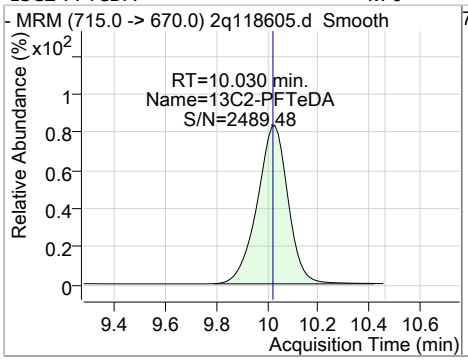
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	5.43	8.92	0.00	95060				

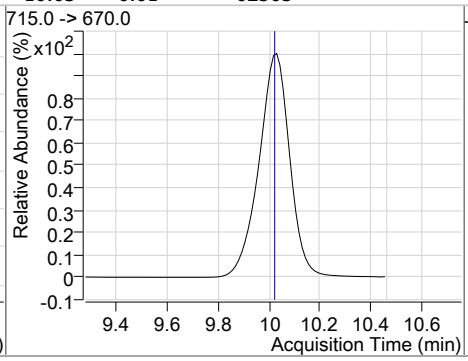


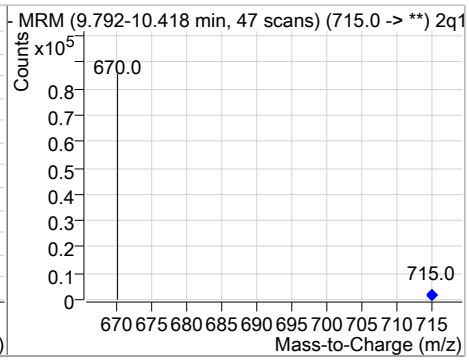




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	4.70	10.03	0.01	62505				







Perfluorinated Compounds by LC/MS/MS

Data File	:	5Q23916.d
Operator	:	natashag
Acq. Method	:	537_ID.m
Acq. Date-Time	:	12/28/2023 4:46:15 PM
Sample Name	:	iblk
Vial	:	P1-A1
DA Method File	:	ID_122823_S5Q375.quantmethod.xml
Batch Name	:	s5q375.batch.bin
Sample Information	:	OP401,S5Q375,250,,,1.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.987	217.0 -> 172.0	41521	10.00	µg/L	0.000
M5-PFPeA	3.432	268.0 -> 223.0	70770	10.00	µg/L	0.000
M5-PFHxA	4.552	318.0 -> 273.0	106294	10.00	µg/L	0.000
M4-PFHpA	5.413	367.0 -> 322.0	109451	10.00	µg/L	0.000
M8-PFOA	6.124	421.0 -> 376.0	147750	10.00	µg/L	0.000
M9-PFNA	6.756	472.0 -> 427.0	151479	10.00	µg/L	0.000
M6-PFDA	7.288	519.0 -> 474.0	156232	10.00	µg/L	0.000
M7-PFUnDA	8.059	570.0 -> 525.0	212229	10.00	µg/L	0.000
M2-PFDoDA	9.038	615.0 -> 570.0	187279	10.00	µg/L	0.000
M2-PFTeDA	10.537	715.0 -> 670.0	155757	10.00	µg/L	0.000
M8-FOSA	6.192	506.0 -> 78.0	38393	10.00	µg/L	0.000
M3-PFBS	3.624	302.0 -> 99.0	8537	10.00	µg/L	-0.012
M3-PFHxS	5.432	402.0 -> 99.0	10592	10.00	µg/L	0.000
M8-PFOS	6.729	507.0 -> 99.0	14208	10.00	µg/L	0.000
M2-4:2FTS	4.474	329.0 -> 309.0	33495	10.00	µg/L	0.000
M2-6:2FTS	6.136	429.0 -> 409.0	59954	10.00	µg/L	0.000
M2-8:2FTS	7.351	529.0 -> 509.0	59393	10.00	µg/L	0.000
M3-MeFOSAA	6.735	573.0 -> 419.0	28731	10.00	µg/L	-0.012
M3-HFPO-DA	4.819	287.0 -> 169.0	5666	10.00	µg/L	0.000
M3-MeFOSA	6.589	515.0 -> 169.0	12918	10.00	µg/L	0.000
M5-EtFOSAA	6.845	589.0 -> 419.0	25326	10.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.474	329.0 -> 309.0	33495	8.33	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 83.3%		
13C2-6:2FTS	6.136	429.0 -> 409.0	59954	8.46	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 84.6%		
13C2-8:2FTS	7.351	529.0 -> 509.0	59393	8.51	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 85.1%		
13C2-PFDoDA	9.038	615.0 -> 570.0	187279	8.98	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 89.8%		
13C2-PFTeDA	10.537	715.0 -> 670.0	155757	8.78	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 87.8%		
13C3-PFBS	3.624	302.0 -> 99.0	8537	8.79	µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 87.9%		
13C3-PFHxS	5.432	402.0 -> 99.0	10592	8.98	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 89.8%		
13C4-PFBA	1.987	217.0 -> 172.0	41521	8.79	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 87.9%		
13C4-PFHpA	5.413	367.0 -> 322.0	109451	9.10	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 91.0%		
13C5-PFHxA	4.552	318.0 -> 273.0	106294	8.89	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 88.9%		
13C5-PFPeA	3.432	268.0 -> 223.0	70770	8.98	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 89.8%		
13C6-PFDA	7.288	519.0 -> 474.0	156232	9.28	µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

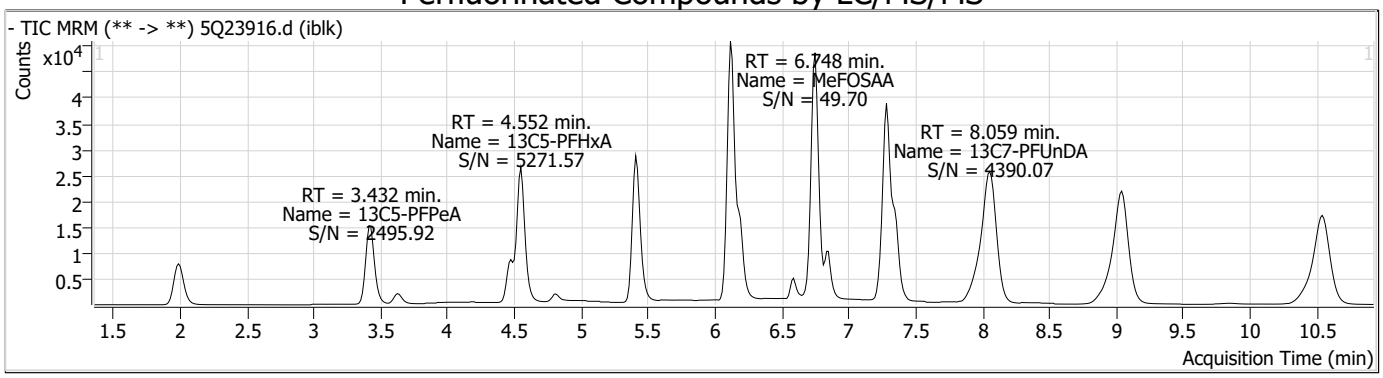
Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 92.8%	
13C7-PFUnDA	8.059	570.0 -> 525.0	212229	9.11 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 91.1%	
13C8-FOSA	6.192	506.0 -> 78.0	38393	9.47 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 94.7%	
13C8-PFOA	6.124	421.0 -> 376.0	147750	8.92 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 89.2%	
13C8-PFOS	6.729	507.0 -> 99.0	14208	9.04 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 90.4%	
13C9-PFNA	6.756	472.0 -> 427.0	151479	9.12 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 91.2%	
d3-MeFOSAA	6.735	573.0 -> 419.0	28731	9.42 µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 94.2%	
13C3-HFPO-DA	4.819	287.0 -> 169.0	5666	8.77 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 87.7%	
d3-MeFOSA	6.589	515.0 -> 169.0	12918	9.21 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 92.1%	
d5-EtFOSAA	6.845	589.0 -> 419.0	25326	9.23 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 92.3%	
Target Compounds					QValue
4:2FTS	-	327.0 -> 307.0	-	N.D.	
		327.0 -> 81.0			
6:2FTS	-	427.0 -> 407.0	-	N.D.	
		427.0 -> 81.0			
8:2FTS	-	527.0 -> 507.0	-	N.D.	
		527.0 -> 81.0			
EtFOSAA	6.846	584.0 -> 419.0	1284	0.62 µg/L	98
		584.0 -> 483.0	758		
FOSA	-	498.0 -> 78.0	-	N.D.	
		498.0 -> 478.0			
MeFOSAA	6.748	570.0 -> 419.0	1333	0.59 µg/L	99
		570.0 -> 512.0	490		
PFBA	-	213.0 -> 169.0	-	N.D.	
PFBS	-	299.0 -> 80.0	-	N.D.	
		299.0 -> 99.0			
PFDA	-	513.0 -> 469.0	-	N.D.	
		513.0 -> 219.0			
PFDoDA	-	613.0 -> 569.0	-	N.D.	
		613.0 -> 319.0			
PFDS	-	599.0 -> 80.0	-	N.D.	
		599.0 -> 99.0			
PFHpA	-	363.0 -> 319.0	-	N.D.	
		363.0 -> 169.0			
PFHpS	-	449.0 -> 80.0	-	N.D.	
		449.0 -> 99.0			
PFHxA	-	313.0 -> 269.0	-	N.D.	
		313.0 -> 119.0			
PFHxS	-	399.0 -> 80.0	-	N.D.	
		399.0 -> 99.0			
PFNA	-	463.0 -> 419.0	-	N.D.	
		463.0 -> 219.0			
PFNS	-	549.0 -> 80.0	-	N.D.	
		549.0 -> 99.0			
PFOA	-	413.0 -> 369.0	-	N.D.	
		413.0 -> 169.0			
PFOS	-	499.0 -> 80.0	-	N.D.	

Perfluorinated Compounds by LC/MS/MS

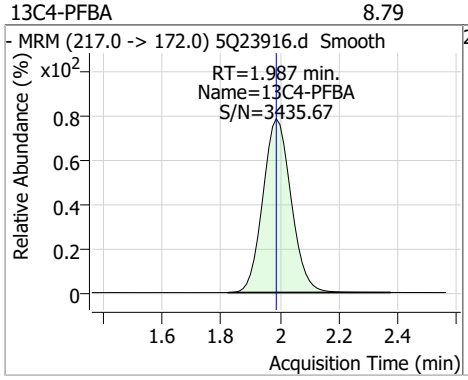
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		499.0 -> 99.0				
PFPeA	-	263.0 -> 219.0	-	N.D.		
PFPeS	-	349.0 -> 80.0	-	N.D.		
		349.0 -> 99.0				
PFTeDA	10.541	713.0 -> 669.0	1914	0.12	µg/L	100
		713.0 -> 219.0	211			
PFTrDA	-	663.0 -> 619.0	-	N.D.		
		663.0 -> 369.0				
PFUnDA	-	563.0 -> 519.0	-	N.D.		
		563.0 -> 269.0				
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.		
		633.0 -> 453.0				
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.		
		533.0 -> 353.0				
ADONA	-	377.0 -> 251.0	-	N.D.		
		377.0 -> 85.0				
HFPO-DA	-	329.0 -> 169.0	-	N.D.		
		285.0 -> 169.0				
MeFOSA	-	512.0 -> 169.0	-	N.D.		
		512.0 -> 219.0				
4-PFECHS	-	461.0 -> 381.0	-	N.D.		
		461.0 -> 99.0				
FBSA	-	298.0 -> 78.0	-	N.D.		
		298.0 -> 64.0				
FHxSA	-	398.0 -> 78.0	-	N.D.		
		398.0 -> 64.0				

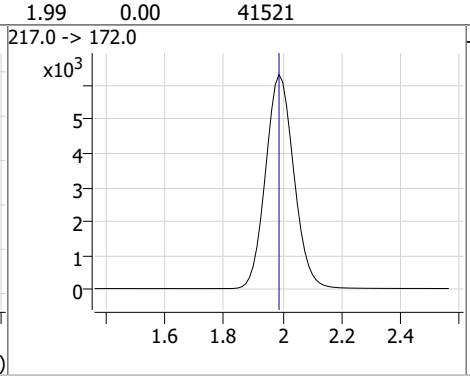
 # = Qualifier out of range, m = manually integrated, + = Area summed

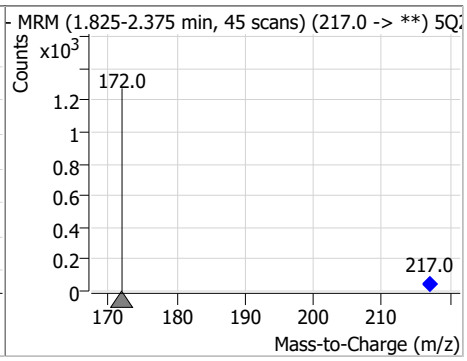
Perfluorinated Compounds by LC/MS/MS



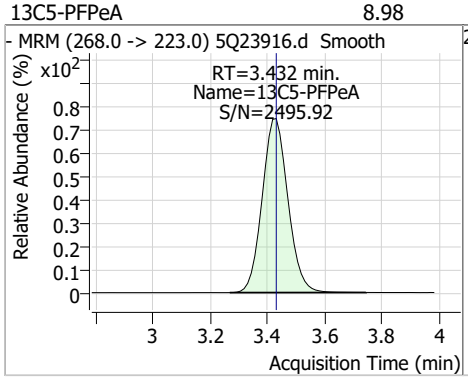
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	8.79	1.99	0.00	41521				

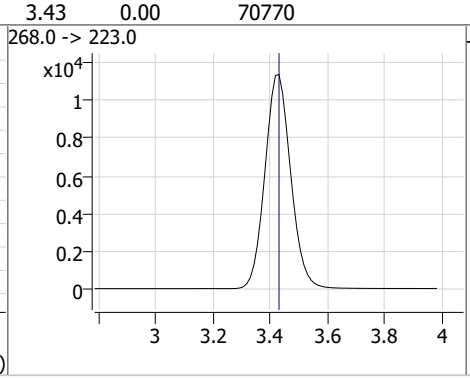


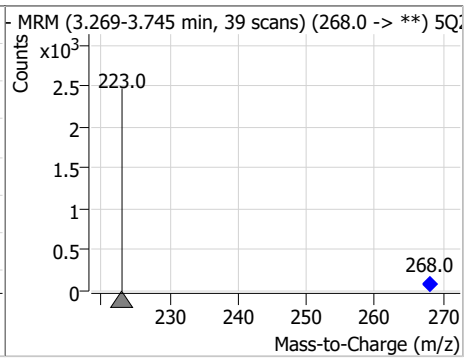




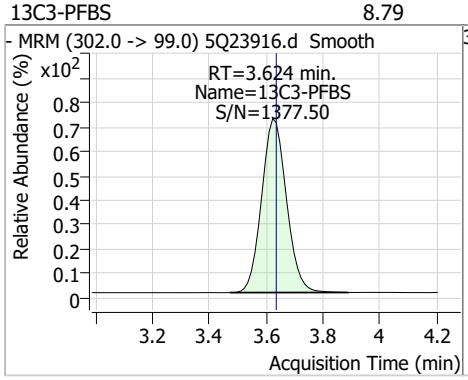
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	8.98	3.43	0.00	70770				

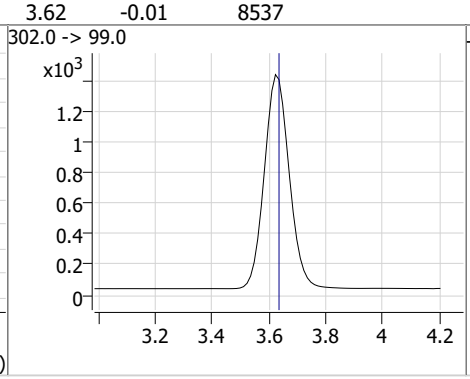


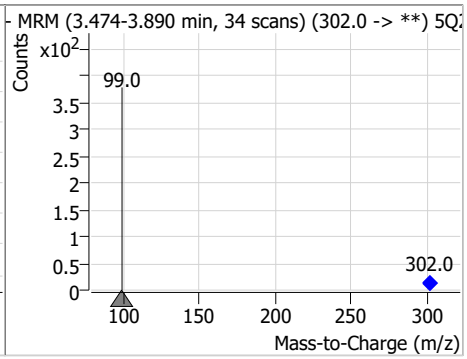




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	8.79	3.62	-0.01	8537				

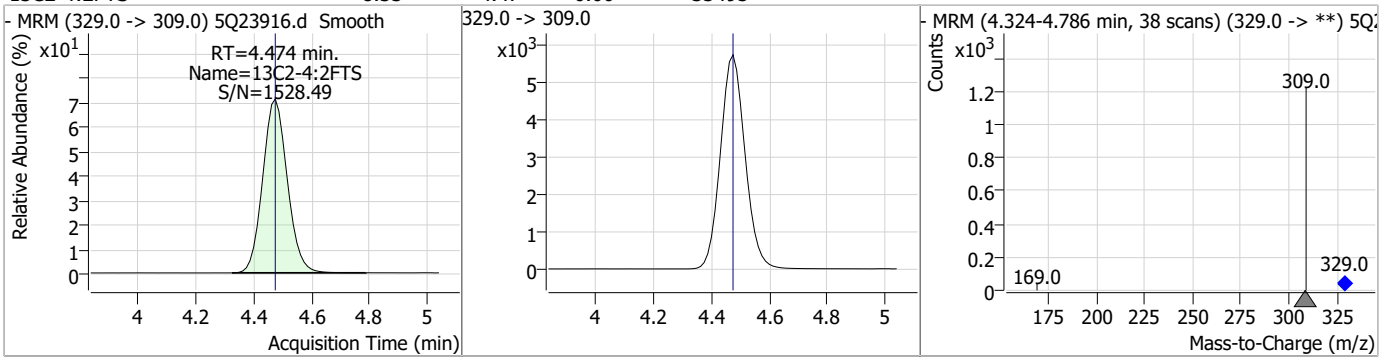




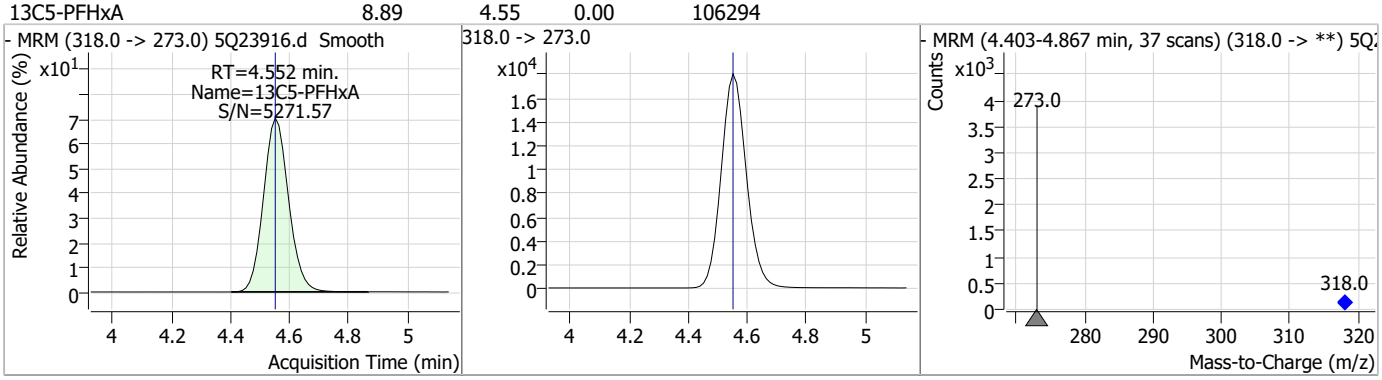


Perfluorinated Compounds by LC/MS/MS

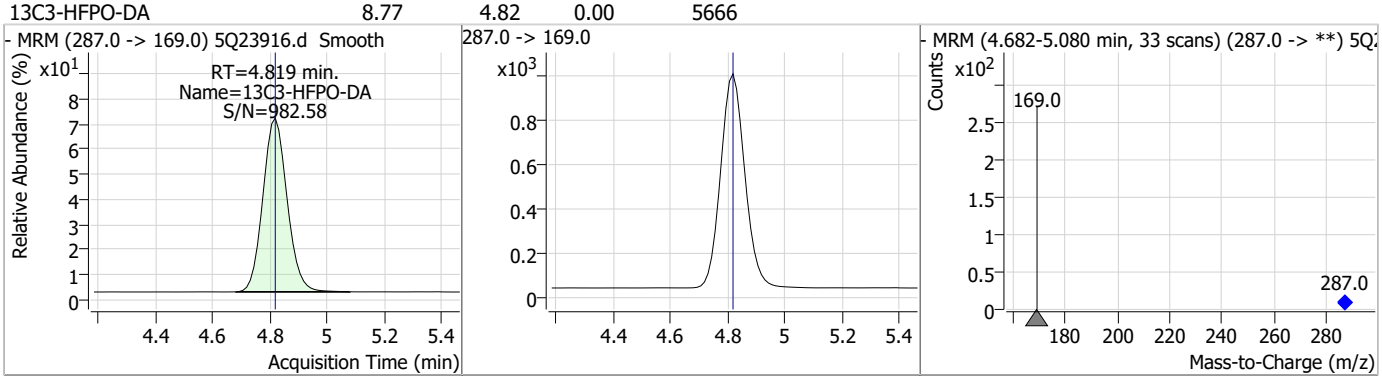
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	8.33	4.47	0.00	33495				



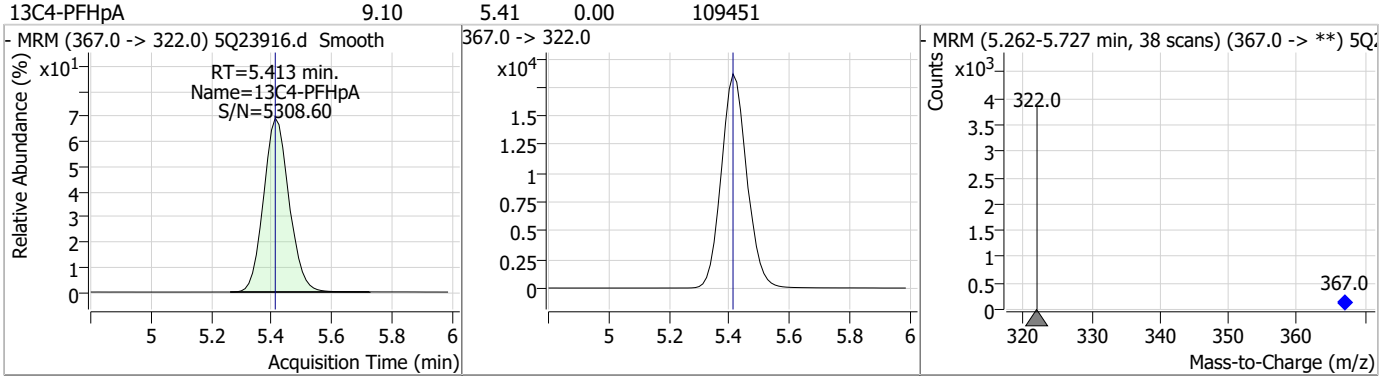
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	8.89	4.55	0.00	106294				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	8.77	4.82	0.00	5666				

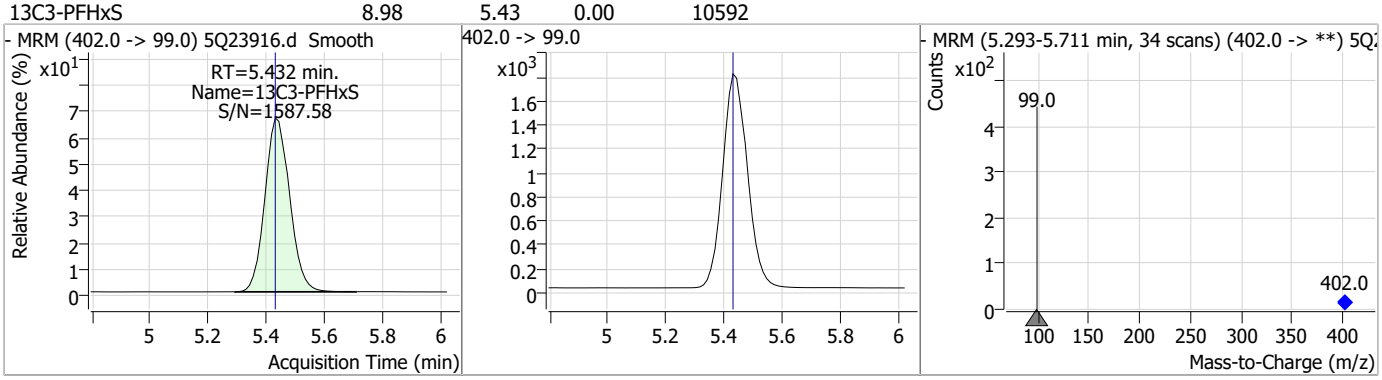


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	9.10	5.41	0.00	109451				

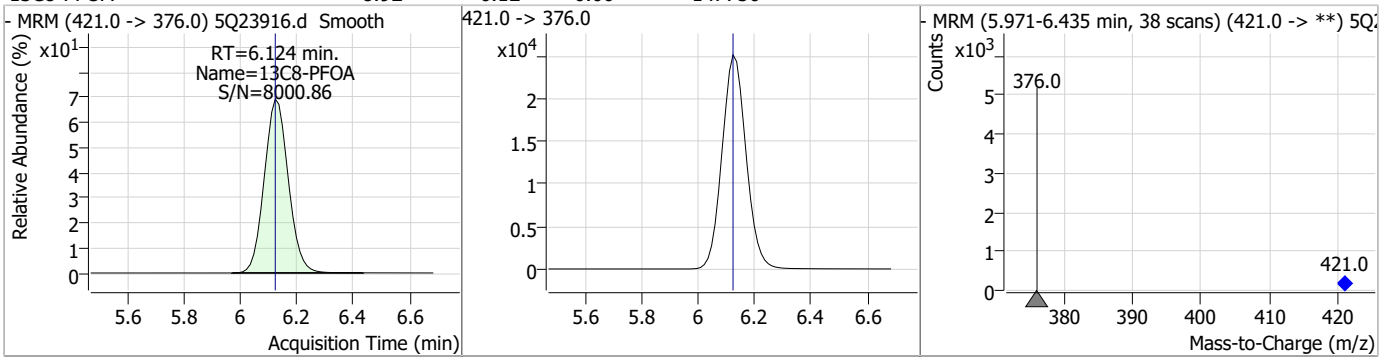


Perfluorinated Compounds by LC/MS/MS

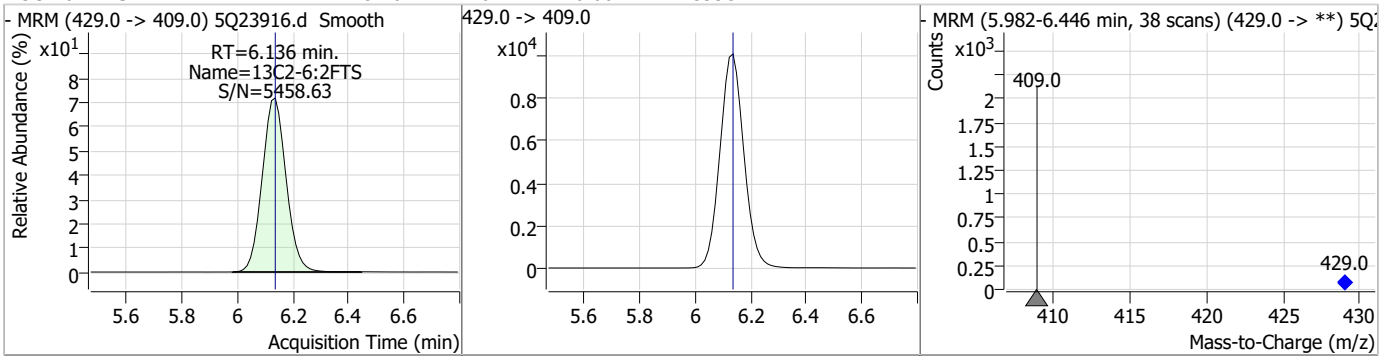
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	8.98	5.43	0.00	10592				



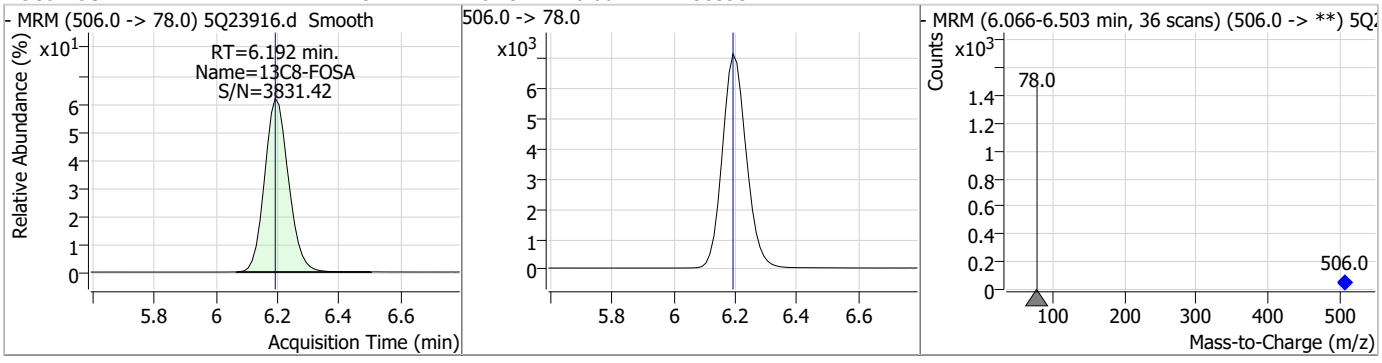
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	8.92	6.12	0.00	147750				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	8.46	6.14	0.00	59954				

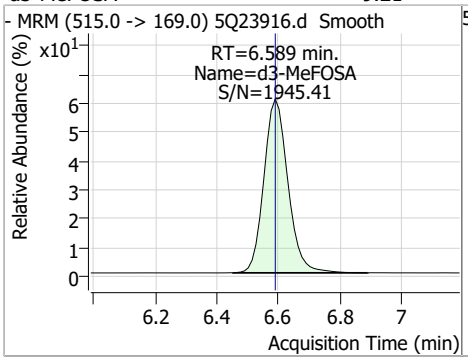


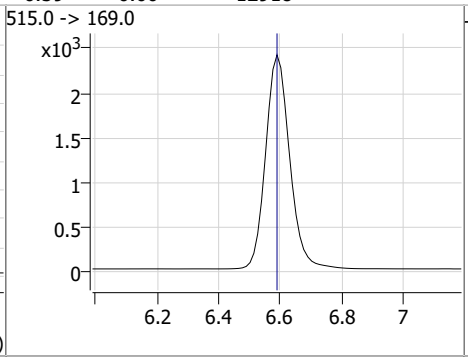
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	9.47	6.19	0.00	38393				

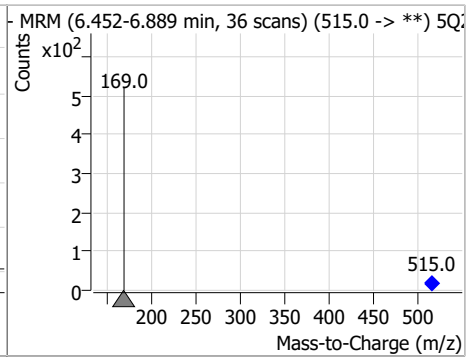


Perfluorinated Compounds by LC/MS/MS

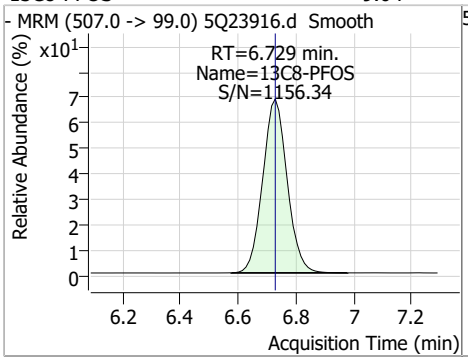
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	9.21	6.59	0.00	12918				

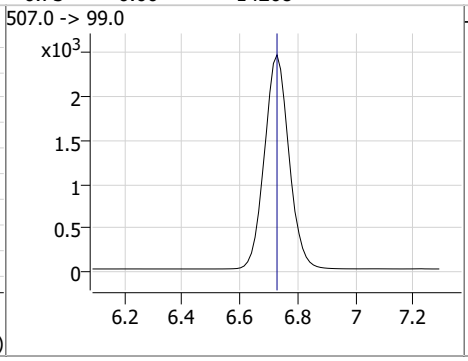


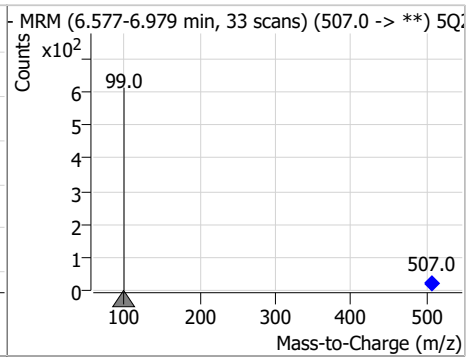




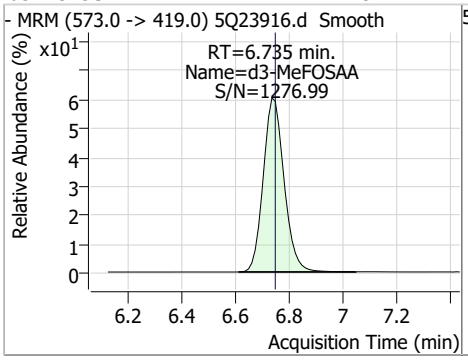
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	9.04	6.73	0.00	14208				

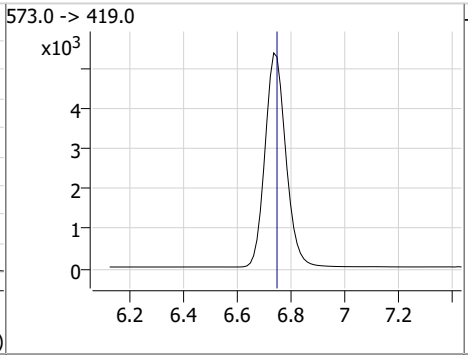


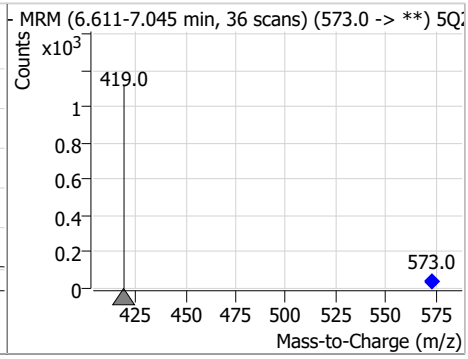




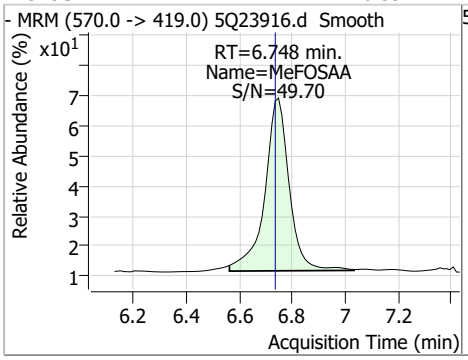
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	9.42	6.73	-0.01	28731				

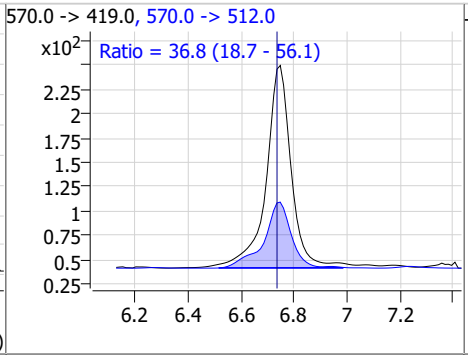


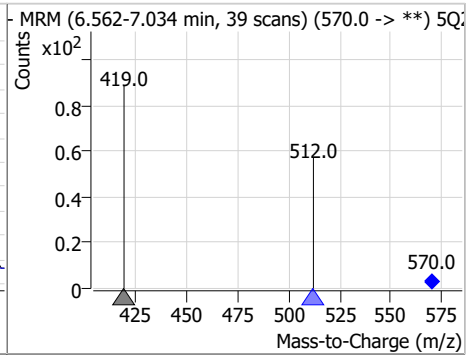




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	0.59	6.75	0.00	1333	570.0 -> 512.0	36.8	18.7	56.1

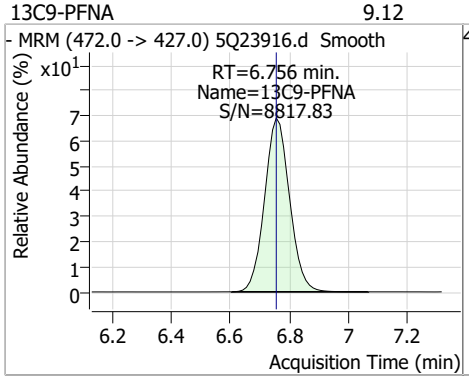


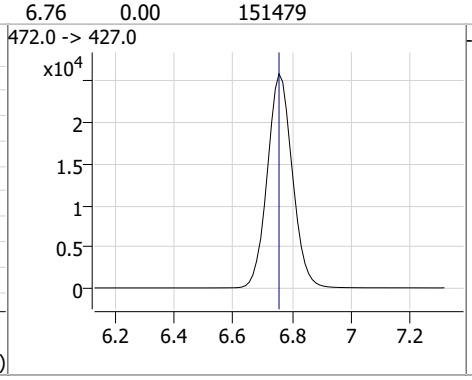


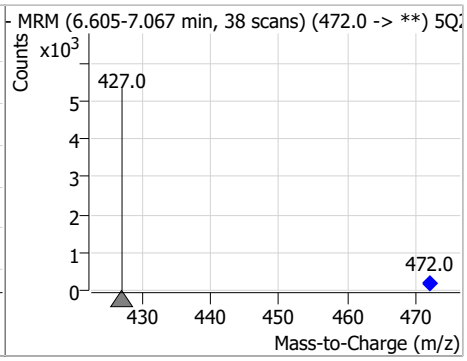


Perfluorinated Compounds by LC/MS/MS

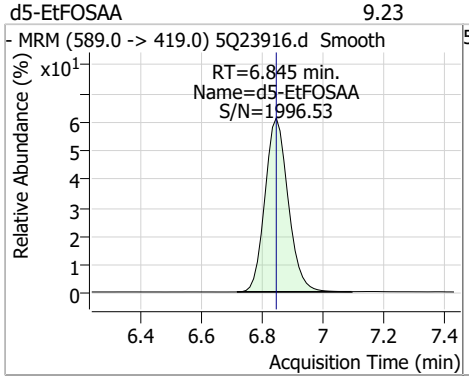
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	9.12	6.76	0.00	151479				

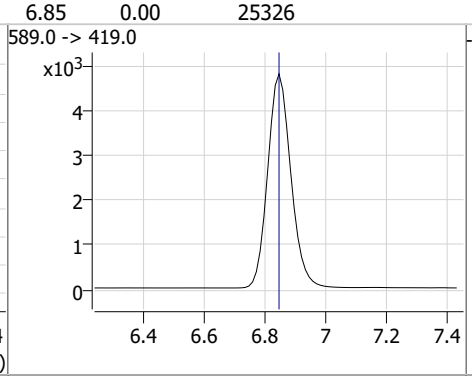


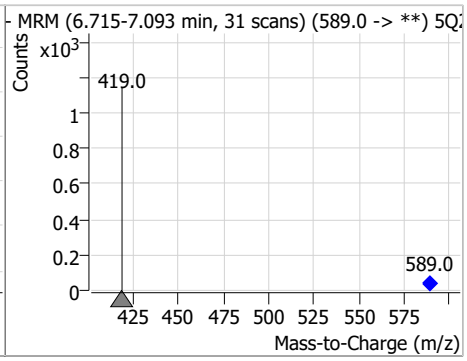




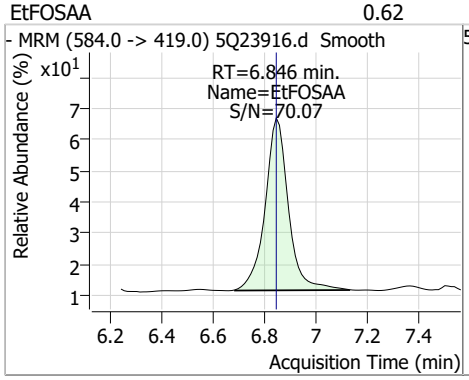
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	9.23	6.85	0.00	25326				

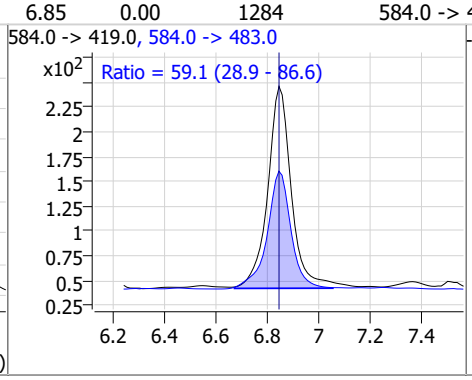


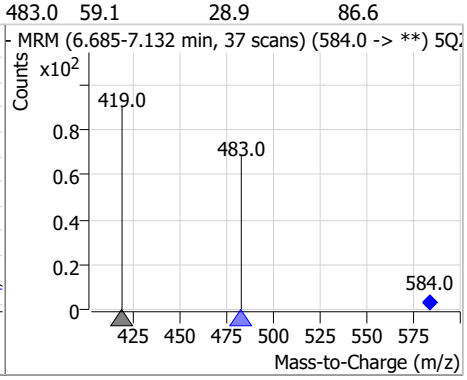




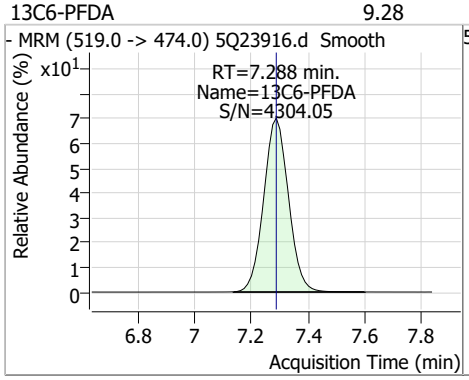
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	0.62	6.85	0.00	1284	584.0 -> 483.0	59.1	28.9	86.6

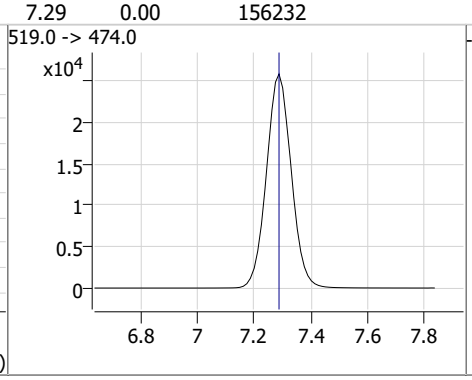


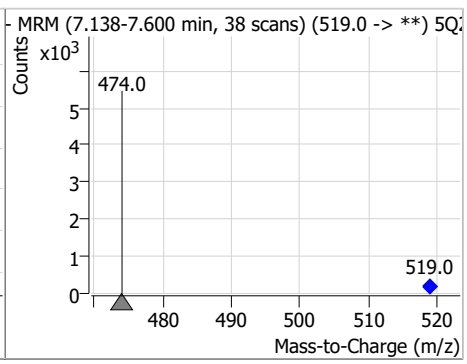




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	9.28	7.29	0.00	156232				

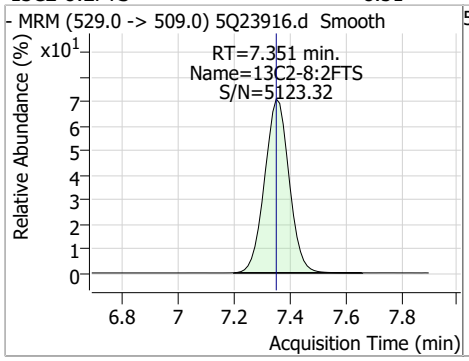


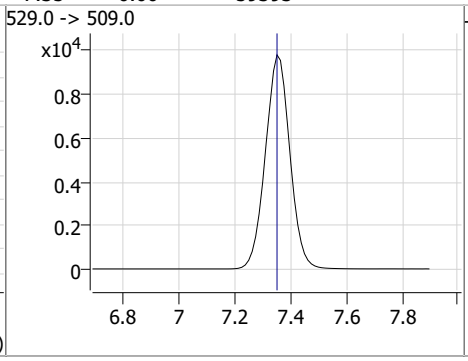


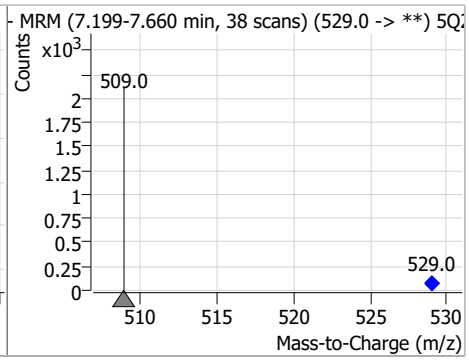


Perfluorinated Compounds by LC/MS/MS

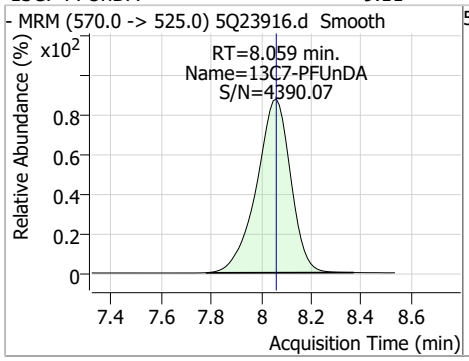
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	8.51	7.35	0.00	59393				

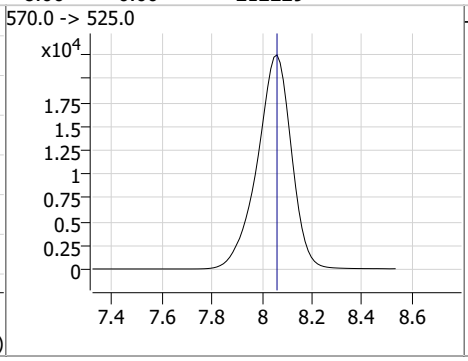


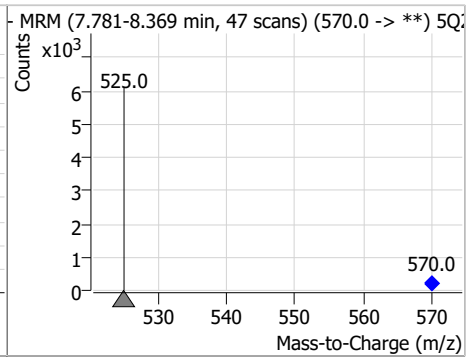




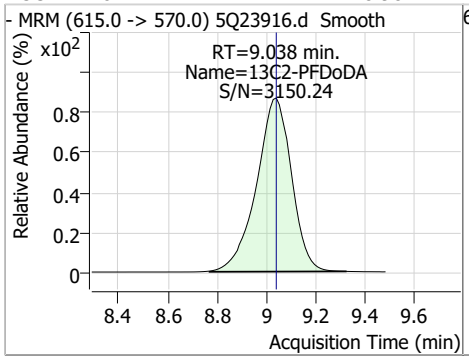
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	9.11	8.06	0.00	212229				

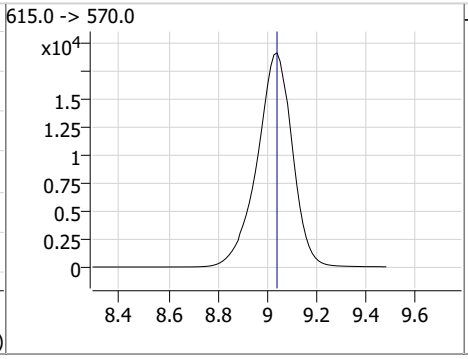


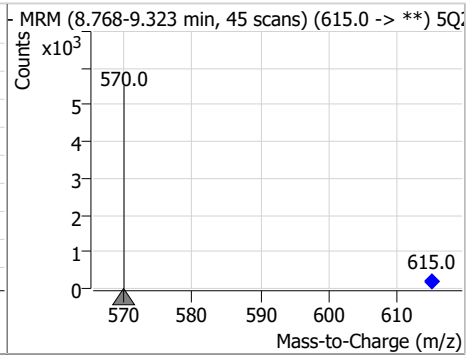




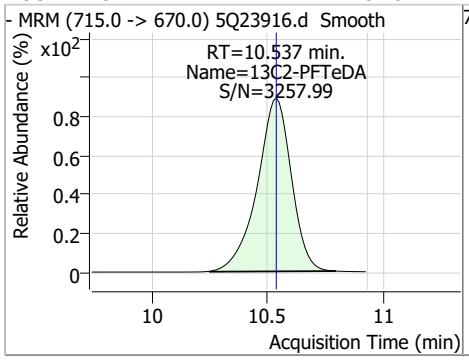
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	8.98	9.04	0.00	187279				

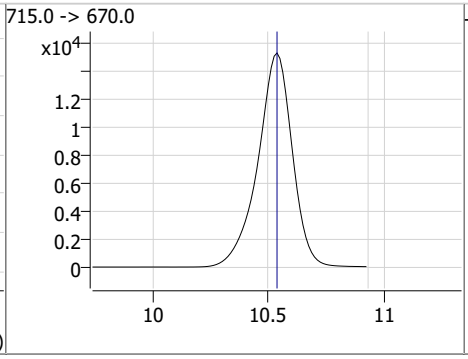


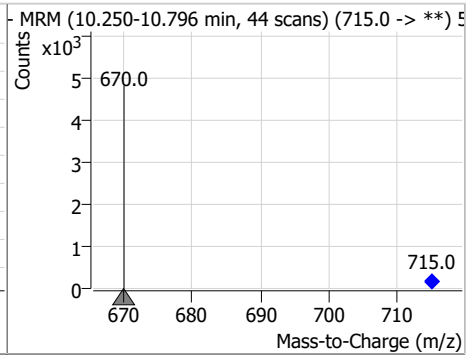




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	8.78	10.54	0.00	155757				







Perfluorinated Compounds by LC/MS/MS

Data File	:	5Q24034.d
Operator	:	lindsayr
Acq. Method	:	537_ID.m
Acq. Date-Time	:	1/2/2024 7:18:01 PM
Sample Name	:	iblk
Vial	:	P1-A1
DA Method File	:	ID_010224_S5Q377.quantmethod.xml
Batch Name	:	s5q377.batch.bin
Sample Information	:	OP401,S5Q377,250,,,1.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.987	217.0 -> 172.0	37739	10.00	µg/L	0.000
M5-PFPeA	3.432	268.0 -> 223.0	63670	10.00	µg/L	0.000
M5-PFHxA	4.565	318.0 -> 273.0	96880	10.00	µg/L	0.000
M4-PFHpA	5.425	367.0 -> 322.0	101193	10.00	µg/L	0.000
M8-PFOA	6.137	421.0 -> 376.0	144379	10.00	µg/L	-0.012
M9-PFNA	6.781	472.0 -> 427.0	146492	10.00	µg/L	0.000
M6-PFDA	7.314	519.0 -> 474.0	152616	10.00	µg/L	0.000
M7-PFUnDA	8.121	570.0 -> 525.0	217030	10.00	µg/L	-0.012
M2-PFDoDA	9.106	615.0 -> 570.0	196665	10.00	µg/L	-0.012
M2-PFTeDA	10.599	715.0 -> 670.0	166169	10.00	µg/L	-0.012
M8-FOSA	6.192	506.0 -> 78.0	39344	10.00	µg/L	-0.012
M3-PFBS	3.637	302.0 -> 99.0	7745	10.00	µg/L	0.000
M3-PFHxS	5.444	402.0 -> 99.0	9861	10.00	µg/L	0.000
M8-PFOS	6.741	507.0 -> 99.0	13859	10.00	µg/L	-0.012
M2-4:2FTS	4.474	329.0 -> 309.0	31785	10.00	µg/L	-0.012
M2-6:2FTS	6.148	429.0 -> 409.0	57867	10.00	µg/L	0.000
M2-8:2FTS	7.376	529.0 -> 509.0	59902	10.00	µg/L	0.000
M3-MeFOSAA	6.747	573.0 -> 419.0	31032	10.00	µg/L	0.000
M3-HFPO-DA	4.831	287.0 -> 169.0	5064	10.00	µg/L	0.000
M3-MeFOSA	6.589	515.0 -> 169.0	13341	10.00	µg/L	0.000
M5-EtFOSAA	6.845	589.0 -> 419.0	27440	10.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.474	329.0 -> 309.0	31785	8.13	µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 81.3%		
13C2-6:2FTS	6.148	429.0 -> 409.0	57867	7.87	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 78.7%		
13C2-8:2FTS	7.376	529.0 -> 509.0	59902	8.47	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 84.7%		
13C2-PFDoDA	9.106	615.0 -> 570.0	196665	8.70	µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 87.0%		
13C2-PFTeDA	10.599	715.0 -> 670.0	166169	8.65	µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 86.5%		
13C3-PFBS	3.637	302.0 -> 99.0	7745	8.39	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 83.9%		
13C3-PFHxS	5.444	402.0 -> 99.0	9861	8.73	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 87.3%		
13C4-PFBA	1.987	217.0 -> 172.0	37739	8.56	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 85.6%		
13C4-PFHpA	5.425	367.0 -> 322.0	101193	8.56	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 85.6%		
13C5-PFHxA	4.565	318.0 -> 273.0	96880	8.44	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 84.4%		
13C5-PFPeA	3.432	268.0 -> 223.0	63670	8.57	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 85.7%		
13C6-PFDA	7.314	519.0 -> 474.0	152616	8.82	µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

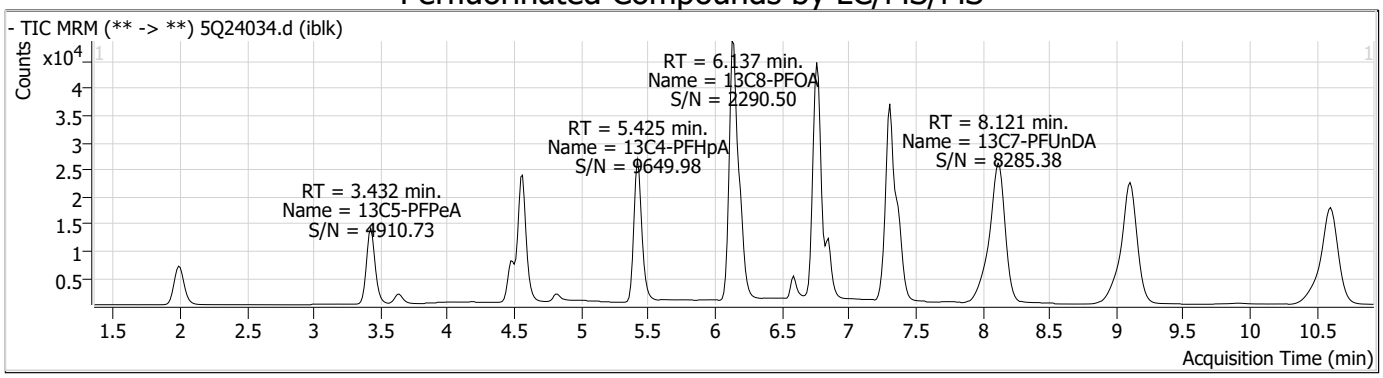
Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 88.2%	
13C7-PFUnDA	8.121	570.0 -> 525.0	217030	8.89 µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 88.9%	
13C8-FOSA	6.192	506.0 -> 78.0	39344	9.62 µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 96.2%	
13C8-PFOA	6.137	421.0 -> 376.0	144379	8.72 µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 87.2%	
13C8-PFOS	6.741	507.0 -> 99.0	13859	8.80 µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 88.0%	
13C9-PFNA	6.781	472.0 -> 427.0	146492	8.84 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 88.4%	
d3-MeFOSAA	6.747	573.0 -> 419.0	31032	9.23 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 92.3%	
13C3-HFPO-DA	4.831	287.0 -> 169.0	5064	8.48 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 84.8%	
d3-MeFOSA	6.589	515.0 -> 169.0	13341	9.58 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 95.8%	
d5-EtFOSAA	6.845	589.0 -> 419.0	27440	9.00 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 90.0%	
Target Compounds					QValue
4:2FTS	-	327.0 -> 307.0	-	N.D.	
		327.0 -> 81.0			
6:2FTS	-	427.0 -> 407.0	-	N.D.	
		427.0 -> 81.0			
8:2FTS	-	527.0 -> 507.0	-	N.D.	
		527.0 -> 81.0			
EtFOSAA	6.859	584.0 -> 419.0	1193	0.57 µg/L	98
		584.0 -> 483.0	706		
FOSA	-	498.0 -> 78.0	-	N.D.	
		498.0 -> 478.0			
MeFOSAA	6.748	570.0 -> 419.0	1205	0.52 µg/L	93
		570.0 -> 512.0	384		
PFBA	-	213.0 -> 169.0	-	N.D.	
PFBS	-	299.0 -> 80.0	-	N.D.	
		299.0 -> 99.0			
PFDA	-	513.0 -> 469.0	-	N.D.	
		513.0 -> 219.0			
PFDoDA	-	613.0 -> 569.0	-	N.D.	
		613.0 -> 319.0			
PFDS	-	599.0 -> 80.0	-	N.D.	
		599.0 -> 99.0			
PFHpA	-	363.0 -> 319.0	-	N.D.	
		363.0 -> 169.0			
PFHpS	-	449.0 -> 80.0	-	N.D.	
		449.0 -> 99.0			
PFHxA	-	313.0 -> 269.0	-	N.D.	
		313.0 -> 119.0			
PFHxS	-	399.0 -> 80.0	-	N.D.	
		399.0 -> 99.0			
PFNA	-	463.0 -> 419.0	-	N.D.	
		463.0 -> 219.0			
PFNS	-	549.0 -> 80.0	-	N.D.	
		549.0 -> 99.0			
PFOA	-	413.0 -> 369.0	-	N.D.	
		413.0 -> 169.0			
PFOS	-	499.0 -> 80.0	-	N.D.	

Perfluorinated Compounds by LC/MS/MS

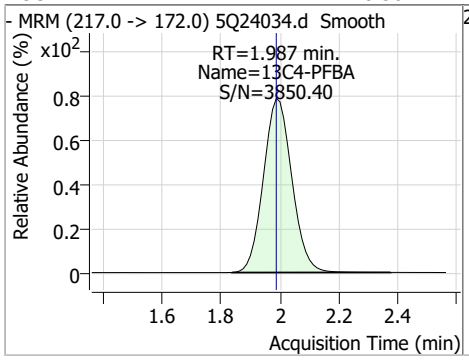
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		499.0 -> 99.0				
PFPeA	-	263.0 -> 219.0	-	N.D.		
PFPeS	-	349.0 -> 80.0	-	N.D.		
		349.0 -> 99.0				
PFTeDA	-	713.0 -> 669.0	-	N.D.		
		713.0 -> 219.0				
PFTrDA	-	663.0 -> 619.0	-	N.D.		
		663.0 -> 369.0				
PFUnDA	-	563.0 -> 519.0	-	N.D.		
		563.0 -> 269.0				
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.		
		633.0 -> 453.0				
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.		
		533.0 -> 353.0				
ADONA	-	377.0 -> 251.0	-	N.D.		
		377.0 -> 85.0				
HFPO-DA	-	329.0 -> 169.0	-	N.D.		
		285.0 -> 169.0				
MeFOSA	-	512.0 -> 169.0	-	N.D.		
		512.0 -> 219.0				
4-PFECHS	-	461.0 -> 381.0	-	N.D.		
		461.0 -> 99.0				
FBSA	-	298.0 -> 78.0	-	N.D.		
		298.0 -> 64.0				
FHxSA	-	398.0 -> 78.0	-	N.D.		
		398.0 -> 64.0				

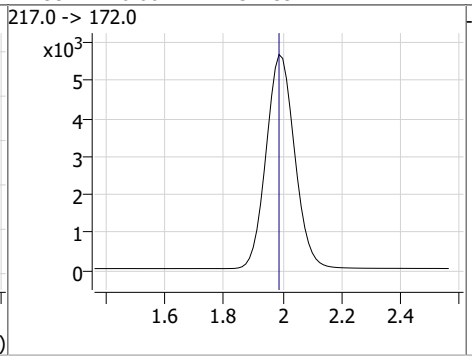
 # = Qualifier out of range, m = manually integrated, + = Area summed

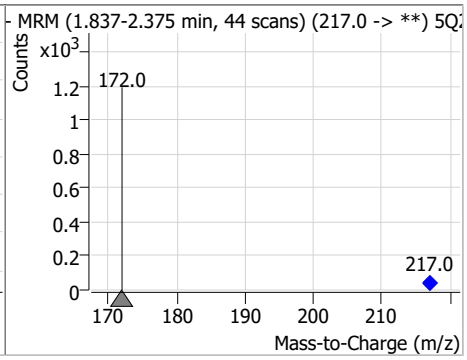
Perfluorinated Compounds by LC/MS/MS



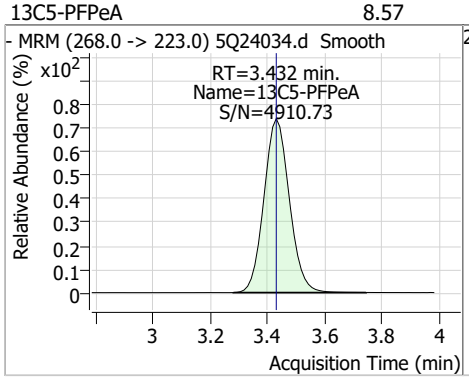
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	8.56	1.99	0.00	37739				

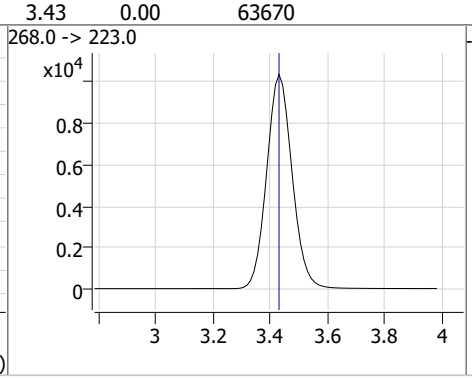


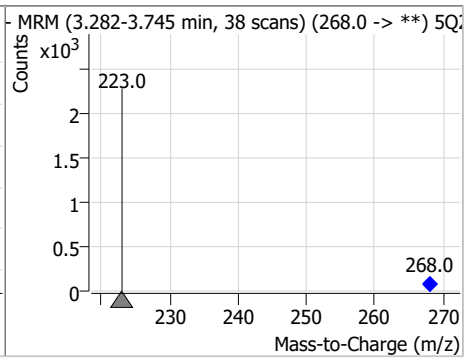




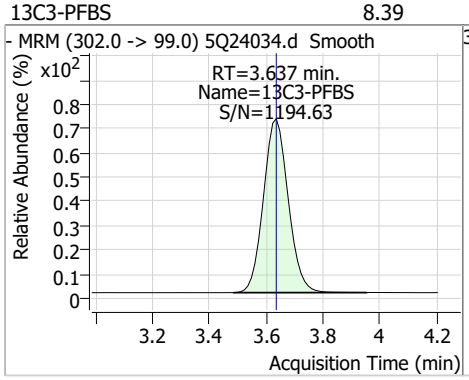
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	8.57	3.43	0.00	63670				

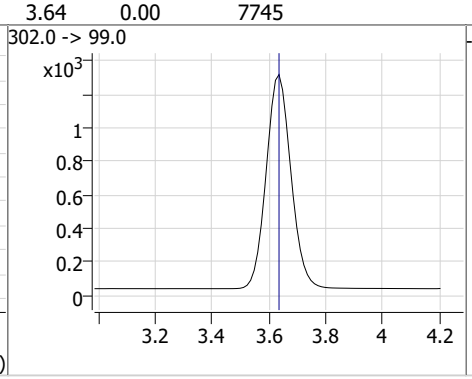


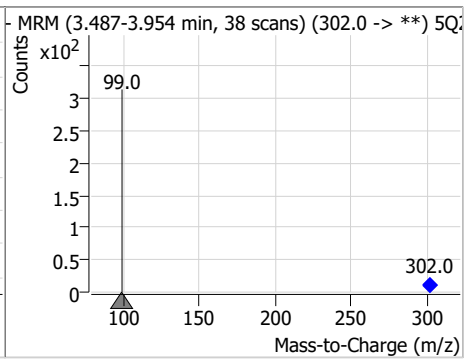




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	8.39	3.64	0.00	7745				

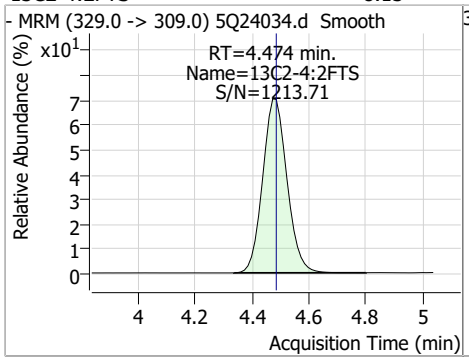


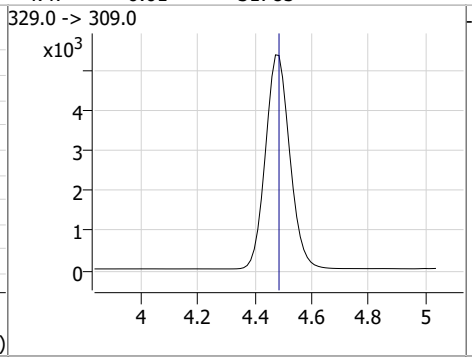


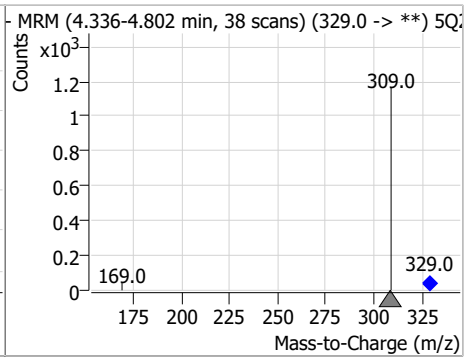


Perfluorinated Compounds by LC/MS/MS

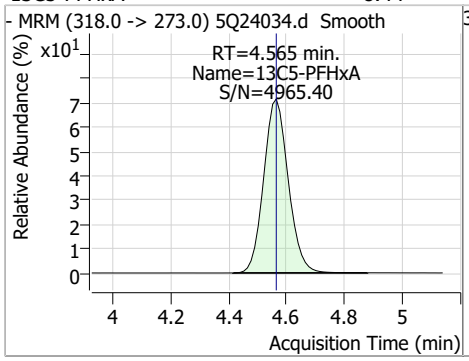
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	8.13	4.47	-0.01	31785				

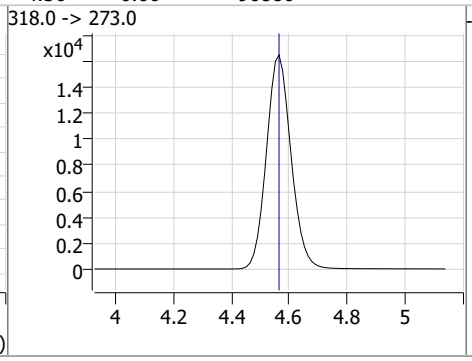


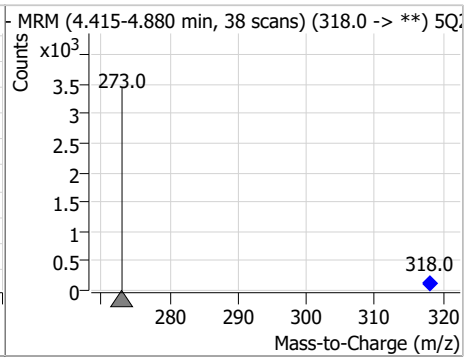




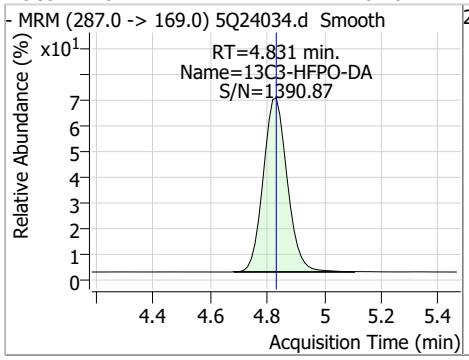
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	8.44	4.56	0.00	96880				

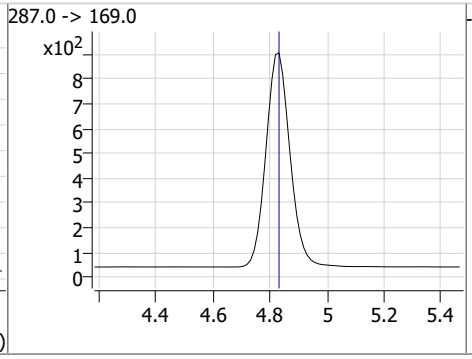


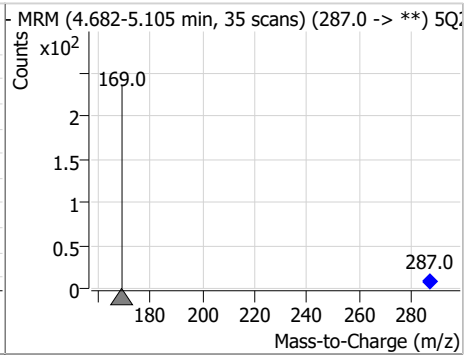




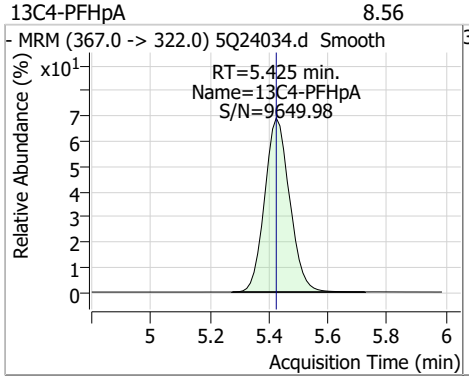
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	8.48	4.83	0.00	5064				

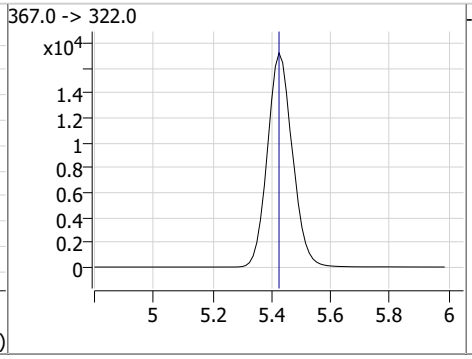


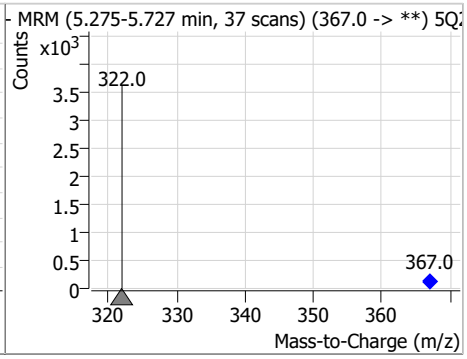




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	8.56	5.43	0.00	101193				

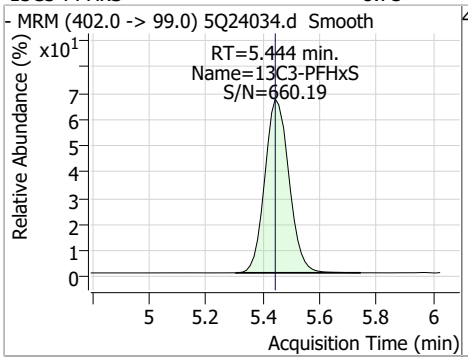


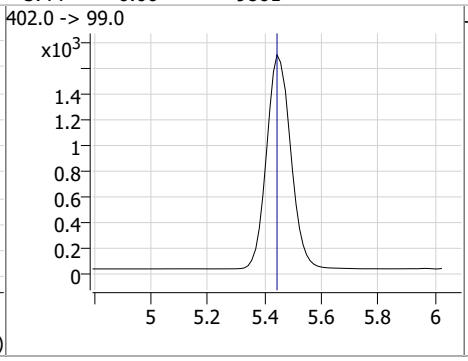


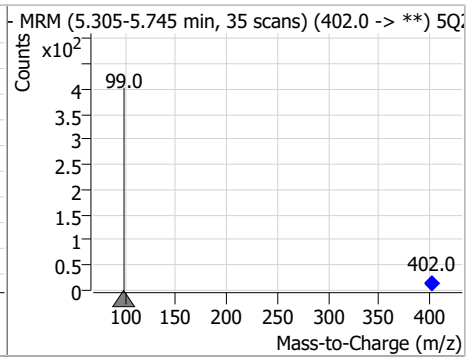


Perfluorinated Compounds by LC/MS/MS

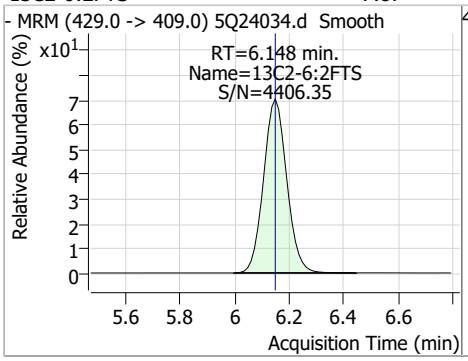
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	8.73	5.44	0.00	9861				

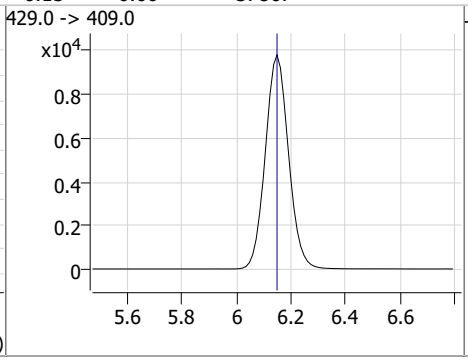


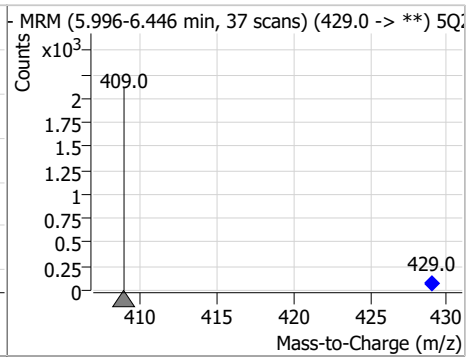




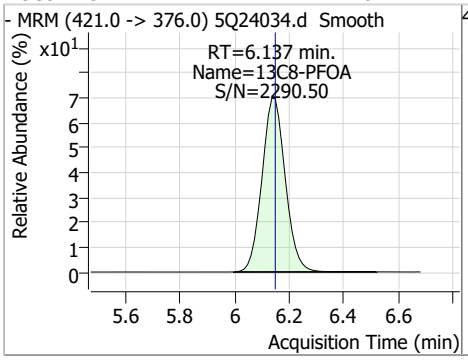
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	7.87	6.15	0.00	57867				

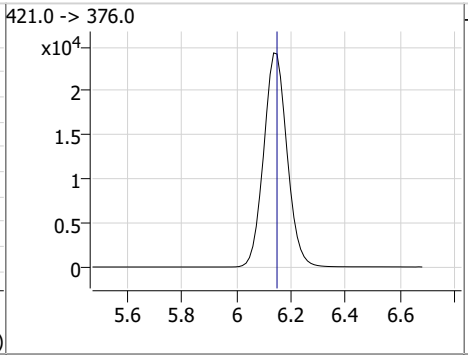


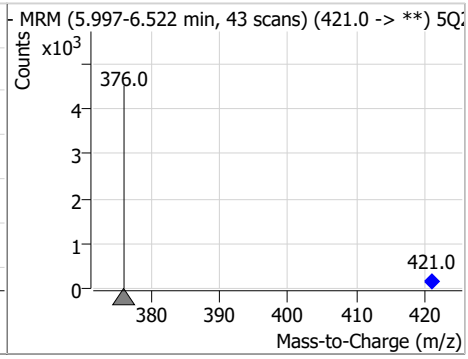




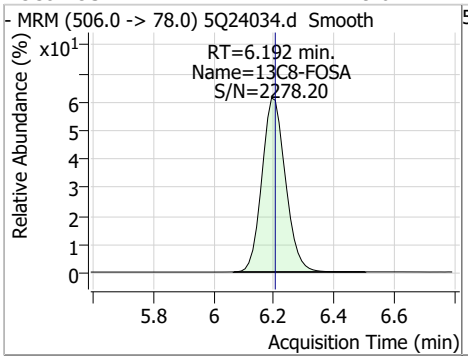
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	8.72	6.14	-0.01	144379				

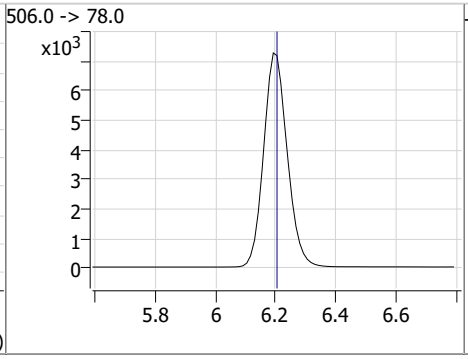


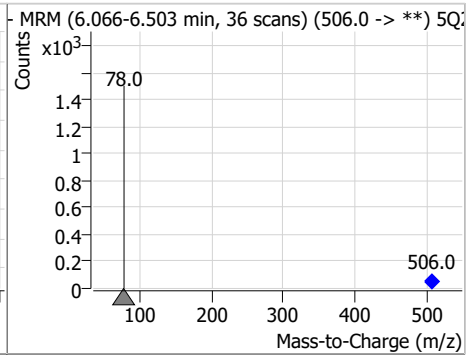




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	9.62	6.19	-0.01	39344				

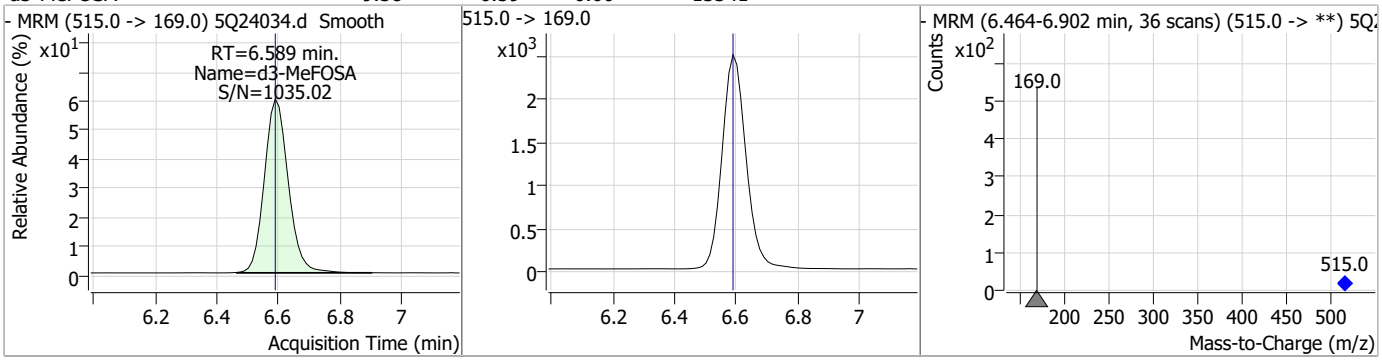




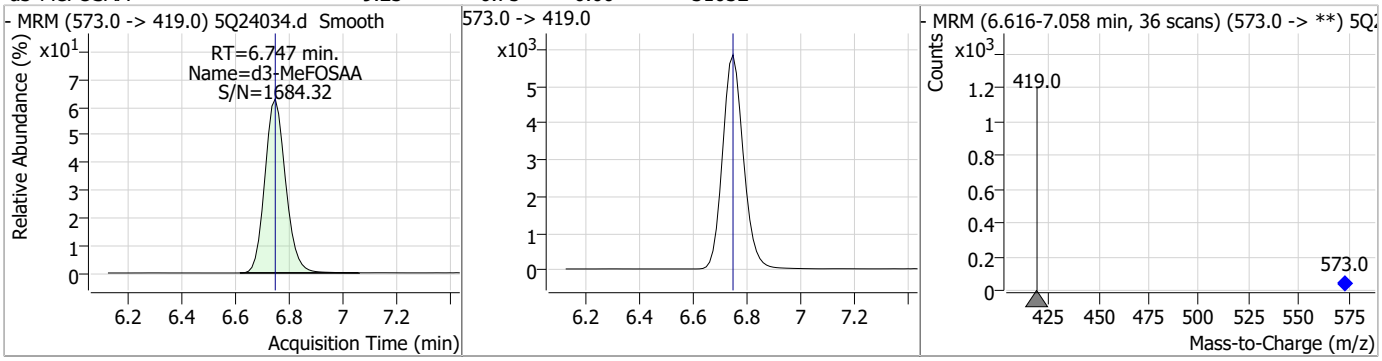


Perfluorinated Compounds by LC/MS/MS

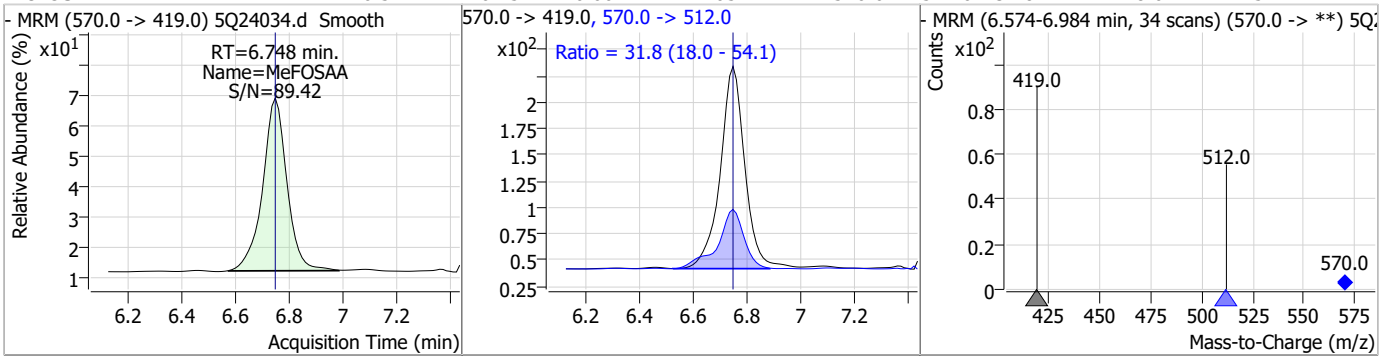
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	9.58	6.59	0.00	13341				



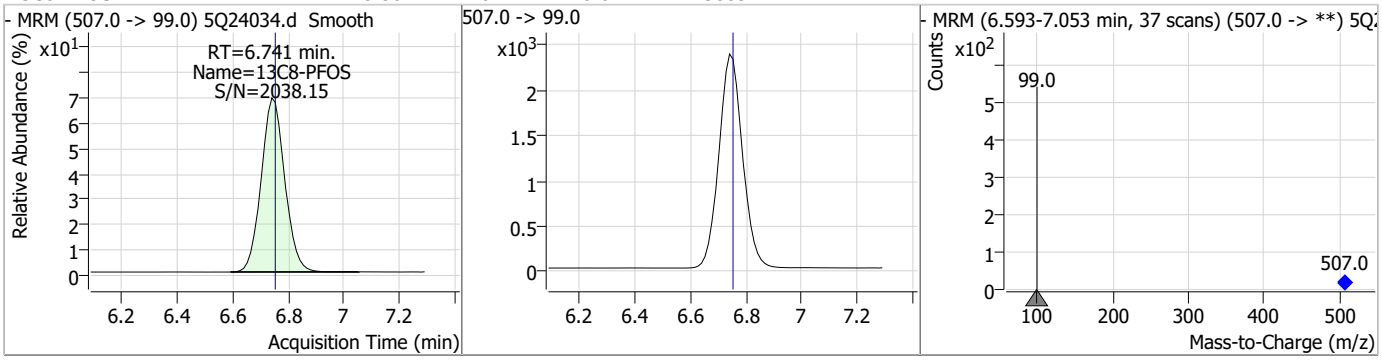
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	9.23	6.75	0.00	31032				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	0.52	6.75	0.00	1205	570.0 -> 512.0	31.8	18.0	54.1

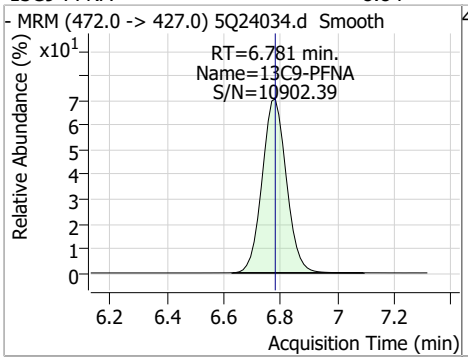


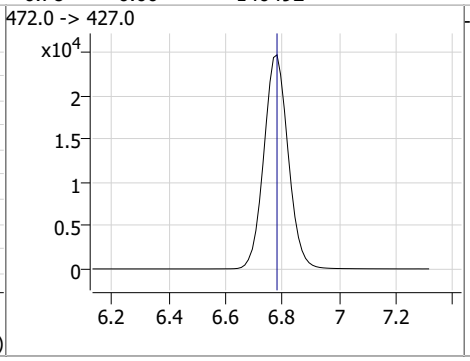
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	8.80	6.74	-0.01	13859				

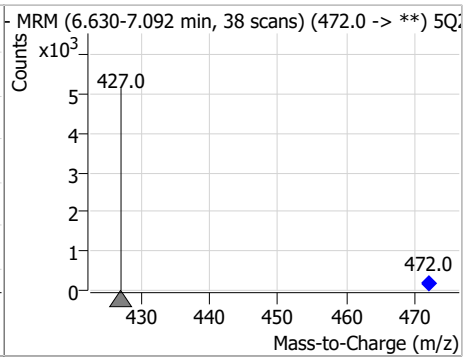


Perfluorinated Compounds by LC/MS/MS

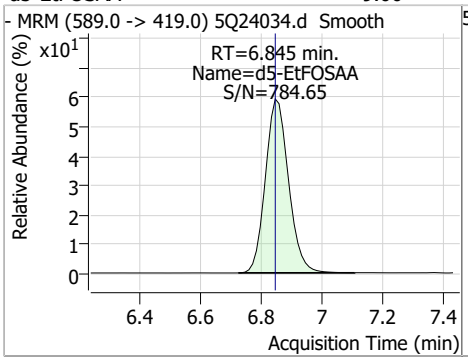
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	8.84	6.78	0.00	146492				

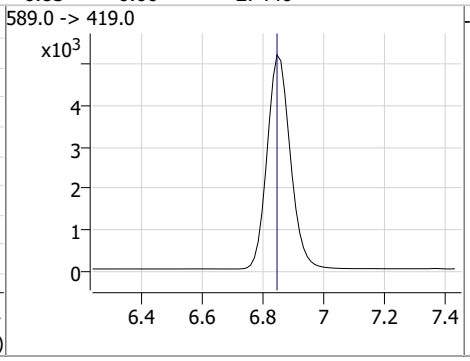


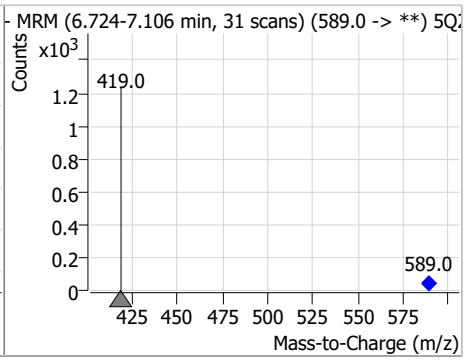




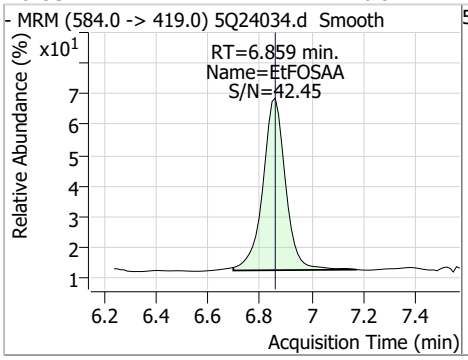
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	9.00	6.85	0.00	27440				

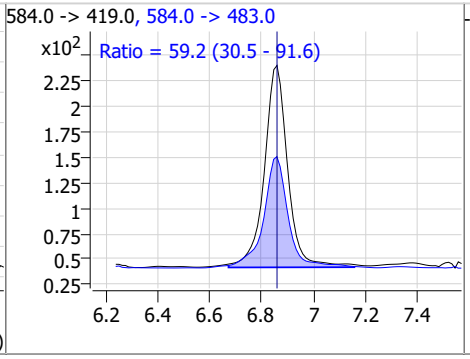


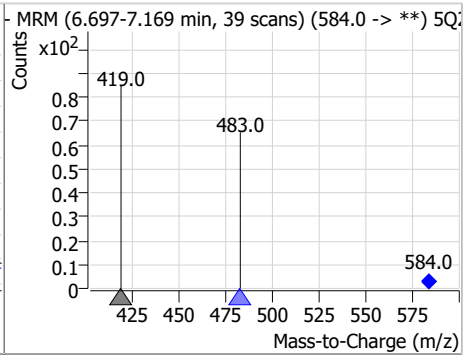




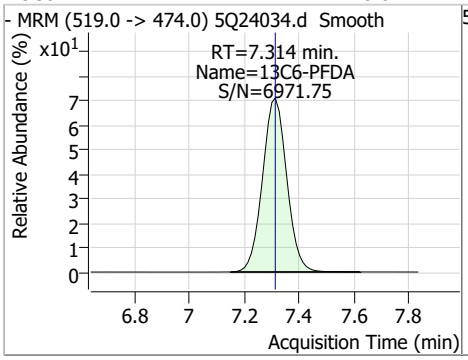
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	0.57	6.86	0.00	1193	584.0 -> 483.0	59.2	30.5	91.6

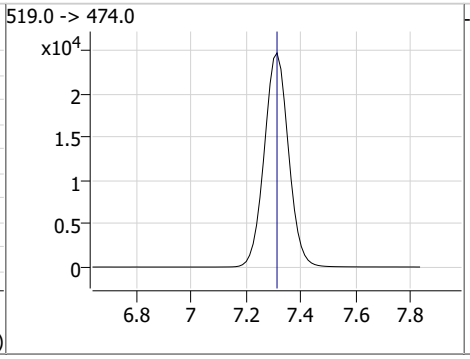


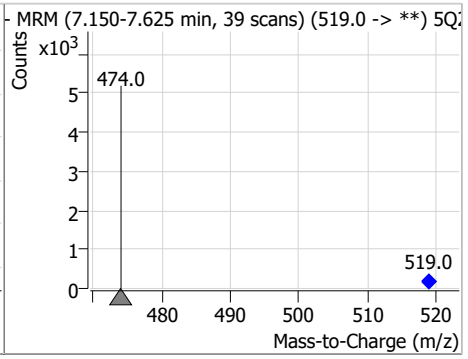




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	8.82	7.31	0.00	152616				

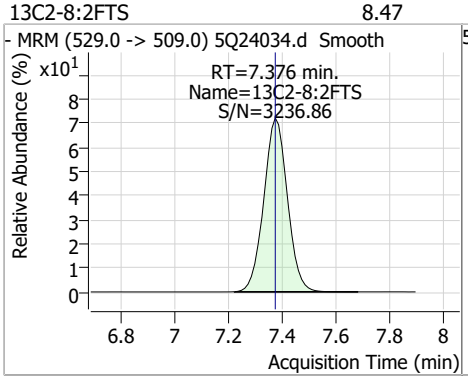


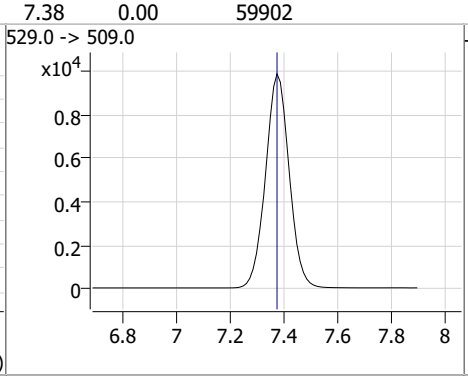


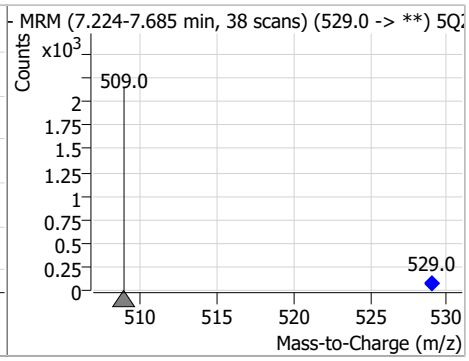


Perfluorinated Compounds by LC/MS/MS

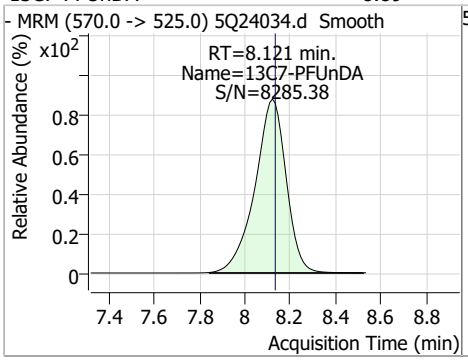
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	8.47	7.38	0.00	59902				

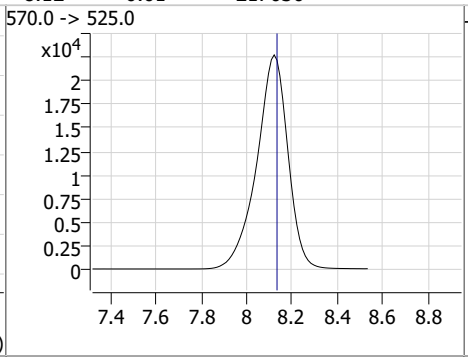


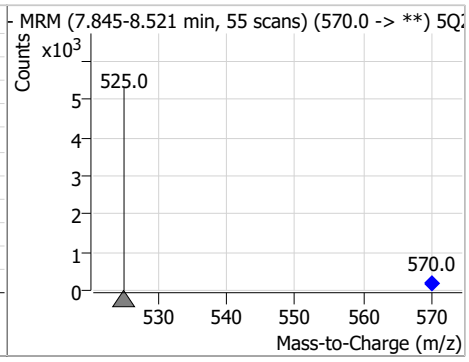




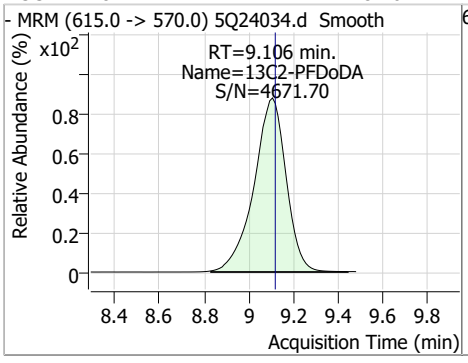
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	8.89	8.12	-0.01	217030				

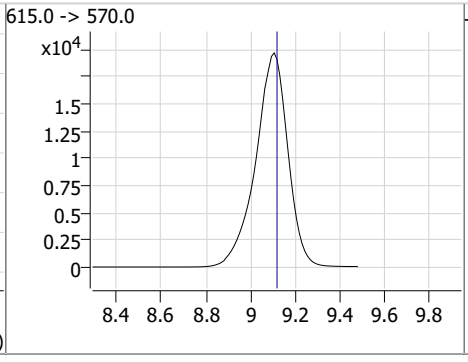


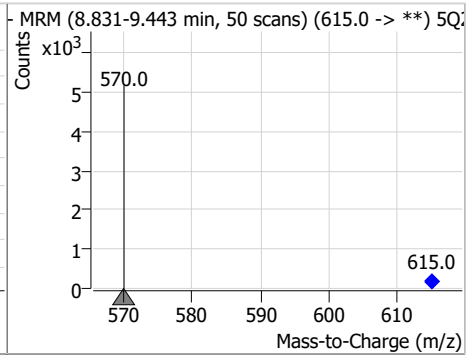




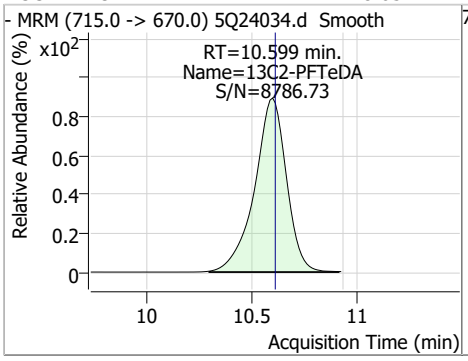
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	8.70	9.11	-0.01	196665				

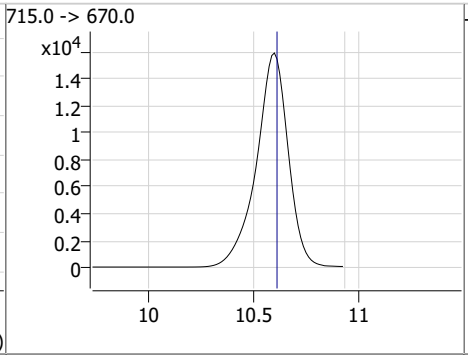


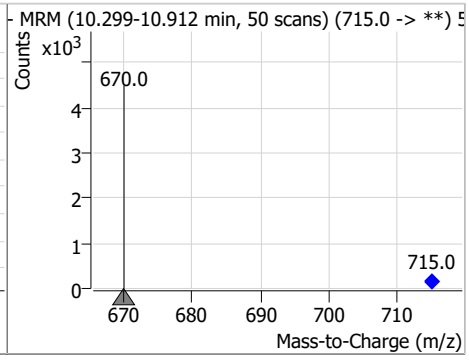




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	8.65	10.60	-0.01	166169				







Perfluorinated Compounds by LC/MS/MS

Data File	:	2q118600.d
Operator	:	lindsayr
Acq. Method	:	537_ID.m
Acq. Date-Time	:	1/4/2024 3:13:03 PM
Sample Name	:	iblk
Vial	:	P1-A1
DA Method File	:	ID_010224_S2Q1691.quantmethod.xml
Batch Name	:	s2q1693.batch.bin
Sample Information	:	op401,S2Q1693,250,,,1.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M5-EtFOSAA	7.710	589.0 -> 419.0	19326	10.00	µg/L	-0.013
M4-PFBA	2.227	217.0 -> 172.0	49160	10.00	µg/L	-0.013
M5-PFPeA	4.049	268.0 -> 223.0	75542	10.00	µg/L	-0.013
M5-PFHxA	5.314	318.0 -> 273.0	94274	10.00	µg/L	-0.025
M4-PFHpA	6.182	367.0 -> 322.0	83253	10.00	µg/L	-0.025
M8-PFOA	6.875	421.0 -> 376.0	166858	10.00	µg/L	-0.013
M9-PFNA	7.442	472.0 -> 427.0	128559	10.00	µg/L	-0.013
M6-PFDA	7.919	519.0 -> 474.0	102122	10.00	µg/L	-0.013
M7-PFUnDA	8.381	570.0 -> 525.0	166414	10.00	µg/L	0.000
M2-PFDoDA	8.920	615.0 -> 570.0	166383	10.00	µg/L	0.000
M2-PFTeDA	10.017	715.0 -> 670.0	129539	10.00	µg/L	0.000
M8-FOSA	7.147	506.0 -> 78.0	20606	10.00	µg/L	-0.013
M3-PFBS	4.304	302.0 -> 99.0	5563	10.00	µg/L	-0.025
M3-PFHxS	6.201	402.0 -> 99.0	5863	10.00	µg/L	-0.042
M8-PFOS	7.413	507.0 -> 99.0	5382	10.00	µg/L	-0.014
M2-4:2FTS	5.209	329.0 -> 309.0	33076	10.00	µg/L	-0.025
M2-6:2FTS	6.860	429.0 -> 409.0	50511	10.00	µg/L	-0.025
M2-8:2FTS	7.967	529.0 -> 509.0	34658	10.00	µg/L	0.000
M3-MeFOSAA	7.609	573.0 -> 419.0	23591	10.00	µg/L	0.000
M3-HFPO-DA	5.582	287.0 -> 169.0	8048	10.00	µg/L	-0.025
M3-MeFOSA	7.513	515.0 -> 169.0	7324	10.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	5.209	329.0 -> 309.0	33076	8.97	µg/L	-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 89.7%		
13C2-6:2FTS	6.860	429.0 -> 409.0	50511	8.80	µg/L	-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 88.0%		
13C2-8:2FTS	7.967	529.0 -> 509.0	34658	8.94	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 89.4%		
13C2-PFDoDA	8.920	615.0 -> 570.0	166383	9.50	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 95.0%		
13C2-PFTeDA	10.017	715.0 -> 670.0	129539	9.75	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 97.5%		
13C3-PFBS	4.304	302.0 -> 99.0	5563	9.26	µg/L	-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 92.6%		
13C3-PFHxS	6.201	402.0 -> 99.0	5863	9.58	µg/L	-0.042
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 95.8%		
13C4-PFBA	2.227	217.0 -> 172.0	49160	9.52	µg/L	-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 95.2%		
13C4-PFHpA	6.182	367.0 -> 322.0	83253	9.69	µg/L	-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 96.9%		
d5-EtFOSAA	7.710	589.0 -> 419.0	19326	10.02	µg/L	-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.2%		
13C5-PFHxA	5.314	318.0 -> 273.0	94274	9.56	µg/L	-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 95.6%		
13C5-PFPeA	4.049	268.0 -> 223.0	75542	9.50	µg/L	-0.013

Perfluorinated Compounds by LC/MS/MS

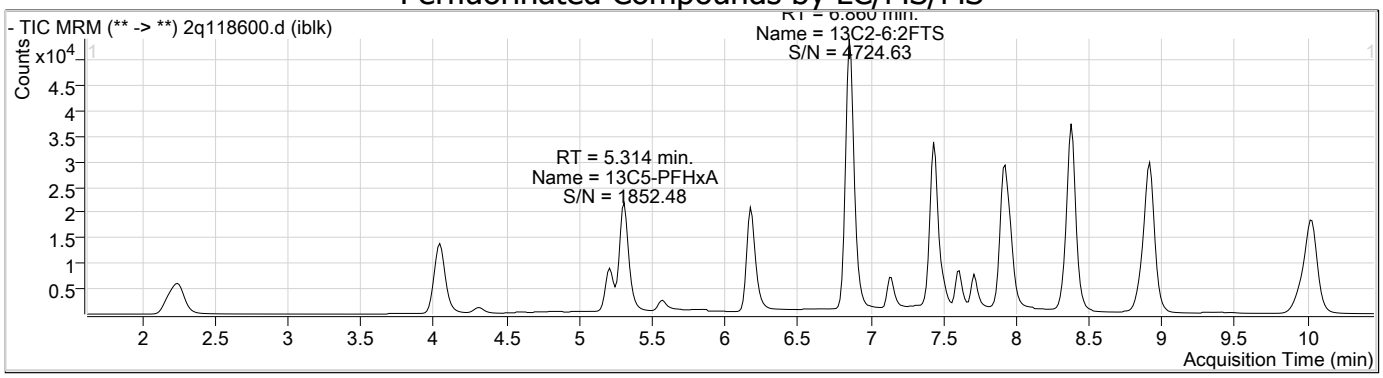
Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 95.0%	
13C6-PFDA	7.919	519.0 -> 474.0	102122	9.77 µg/L	-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 97.7%	
13C7-PFUnDA	8.381	570.0 -> 525.0	166414	9.57 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 95.7%	
13C8-FOSA	7.147	506.0 -> 78.0	20606	10.03 µg/L	-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.3%	
13C8-PFOA	6.875	421.0 -> 376.0	166858	9.86 µg/L	-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 98.6%	
13C8-PFOS	7.413	507.0 -> 99.0	5382	9.64 µg/L	-0.014
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 96.4%	
13C9-PFNA	7.442	472.0 -> 427.0	128559	9.54 µg/L	-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 95.4%	
d3-MeFOSAA	7.609	573.0 -> 419.0	23591	10.31 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 103.1%	
13C3-HFPO-DA	5.582	287.0 -> 169.0	8048	9.68 µg/L	-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 96.8%	
d3-MeFOSA	7.513	515.0 -> 169.0	7324	10.20 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 102.0%	
Target Compounds					QValue
4:2FTS	-	327.0 -> 307.0	-	N.D.	
		327.0 -> 81.0			
6:2FTS	-	427.0 -> 407.0	-	N.D.	
		427.0 -> 81.0			
8:2FTS	-	527.0 -> 507.0	-	N.D.	
		527.0 -> 81.0			
EtFOSAA	7.723	584.0 -> 419.0	366	0.21 µg/L	98
		584.0 -> 483.0	223		
FOSA	-	498.0 -> 78.0	-	N.D.	
		498.0 -> 478.0			
MeFOSAA	7.610	570.0 -> 419.0	381	0.19 µg/L	75
		570.0 -> 512.0	80		
PFBA	-	213.0 -> 169.0	-	N.D.	
PFBS	-	299.0 -> 80.0	-	N.D.	
		299.0 -> 99.0			
PFDA	-	513.0 -> 469.0	-	N.D.	
		513.0 -> 219.0			
PFDoDA	-	613.0 -> 569.0	-	N.D.	
		613.0 -> 319.0			
PFDS	-	599.0 -> 80.0	-	N.D.	
		599.0 -> 99.0			
PFHpA	-	363.0 -> 319.0	-	N.D.	
		363.0 -> 169.0			
PFHpS	-	449.0 -> 80.0	-	N.D.	
		449.0 -> 99.0			
PFHxA	-	313.0 -> 269.0	-	N.D.	
		313.0 -> 119.0			
PFHxS	-	399.0 -> 80.0	-	N.D.	
		399.0 -> 99.0			
PFNA	-	463.0 -> 419.0	-	N.D.	
		463.0 -> 219.0			
PFNS	-	549.0 -> 80.0	-	N.D.	
		549.0 -> 99.0			
PFOA	-	413.0 -> 369.0	-	N.D.	
		413.0 -> 169.0			
PFOS	-	499.0 -> 80.0	-	N.D.	

Perfluorinated Compounds by LC/MS/MS

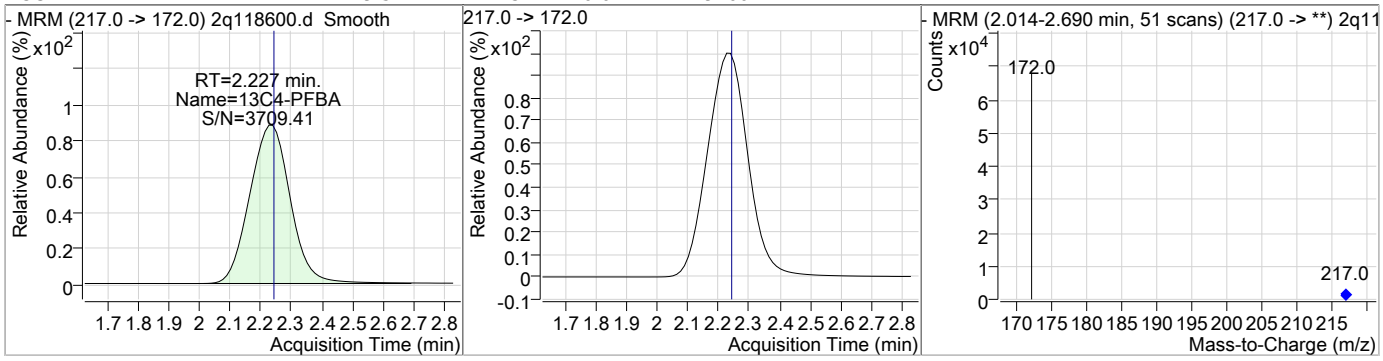
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		499.0 -> 99.0				
PFPeA	-	263.0 -> 219.0	-	N.D.		
PFPeS	-	349.0 -> 80.0	-	N.D.		
		349.0 -> 99.0				
PFTeDA	-	713.0 -> 669.0	-	N.D.		
		713.0 -> 219.0				
PFTrDA	-	663.0 -> 619.0	-	N.D.		
		663.0 -> 369.0				
PFUnDA	-	563.0 -> 519.0	-	N.D.		
		563.0 -> 269.0				
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.		
		633.0 -> 453.0				
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.		
		533.0 -> 353.0				
ADONA	-	377.0 -> 251.0	-	N.D.		
		377.0 -> 85.0				
HFPO-DA	-	329.0 -> 169.0	-	N.D.		
		285.0 -> 169.0				
MeFOSA	-	512.0 -> 169.0	-	N.D.		
		512.0 -> 219.0				
4-PFECHS	-	461.0 -> 381.0	-	N.D.		
		461.0 -> 99.0				
FBSA	-	298.0 -> 78.0	-	N.D.		
		298.0 -> 64.0				
FHxSA	-	398.0 -> 78.0	-	N.D.		
		398.0 -> 64.0				

 # = Qualifier out of range, m = manually integrated, + = Area summed

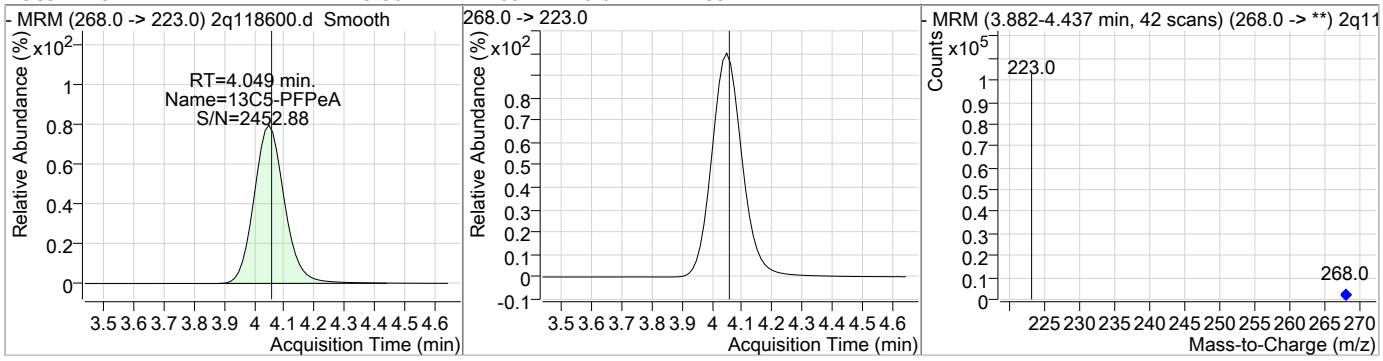
Perfluorinated Compounds by LC/MS/MS



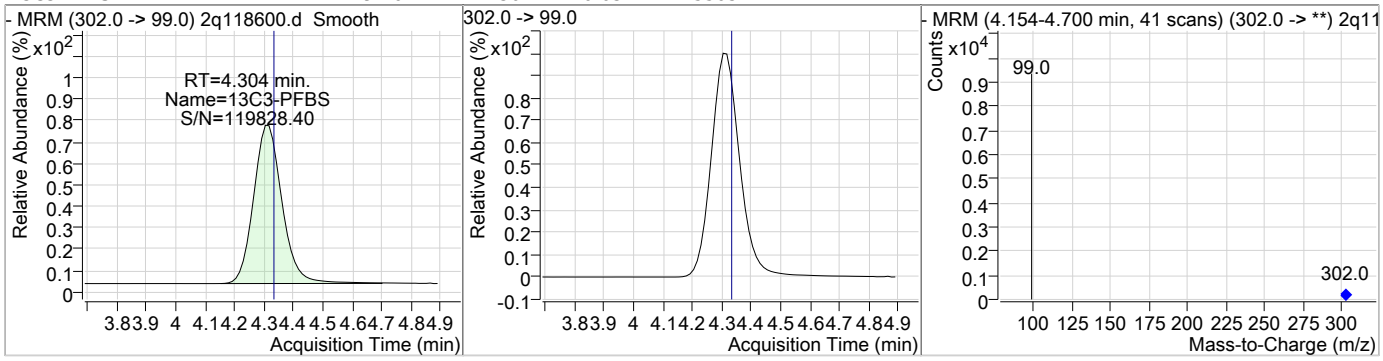
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	9.52	2.23	-0.01	49160				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	9.50	4.05	-0.01	75542				

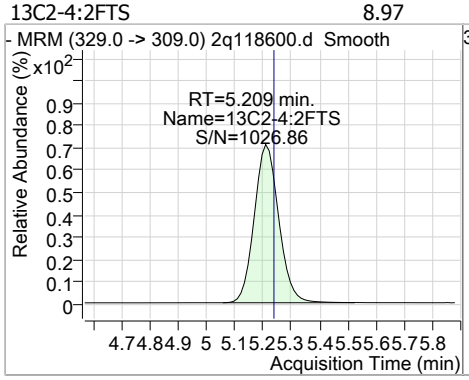


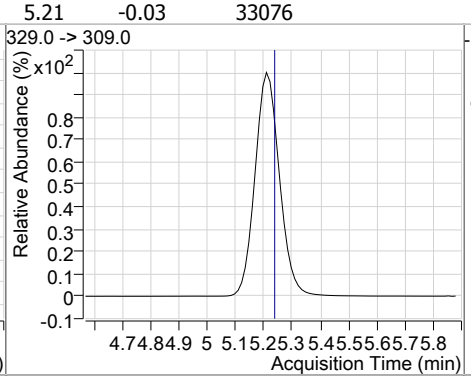
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	9.26	4.30	-0.03	5563				

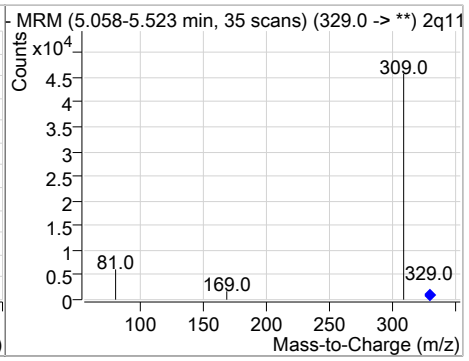


Perfluorinated Compounds by LC/MS/MS

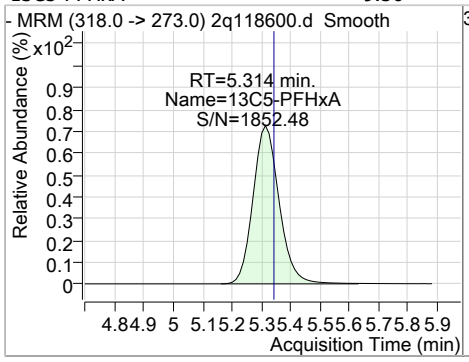
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	8.97	5.21	-0.03	33076				

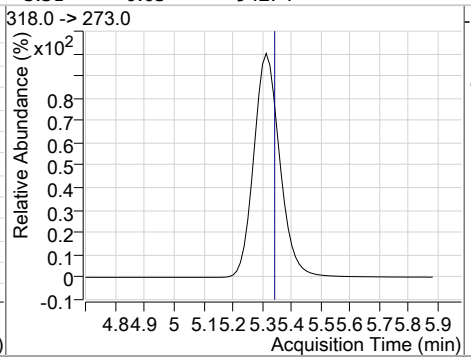


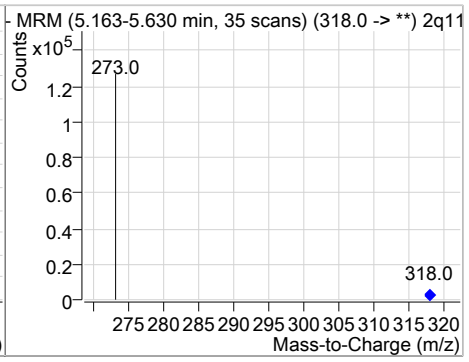




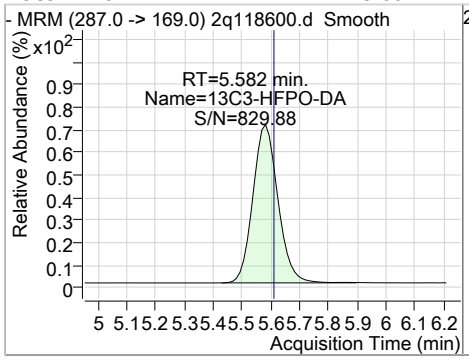
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	9.56	5.31	-0.03	94274				

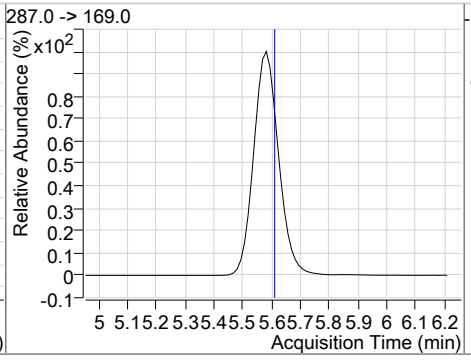


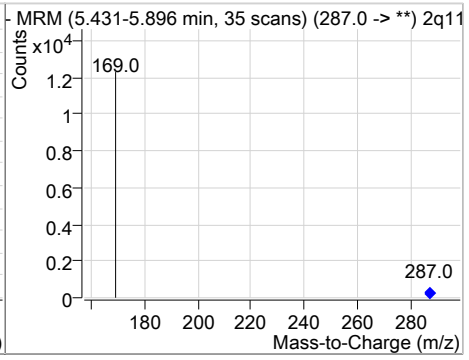




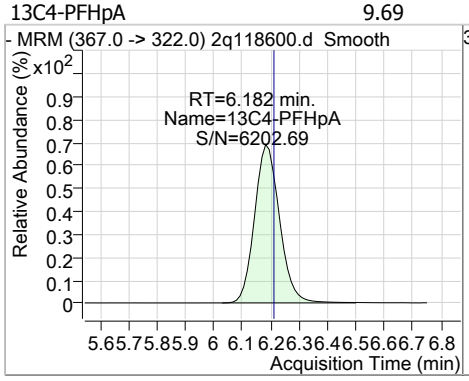
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	9.68	5.58	-0.03	8048				

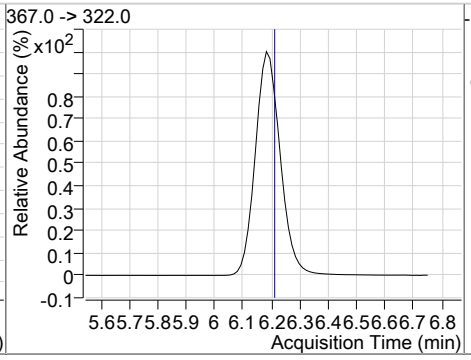


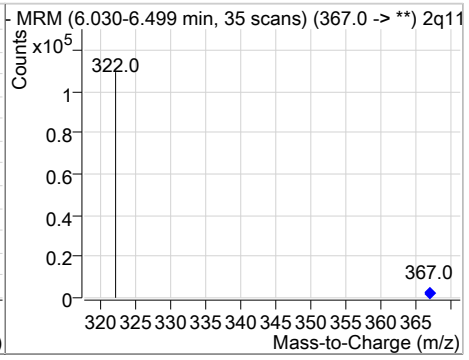




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	9.69	6.18	-0.03	83253				

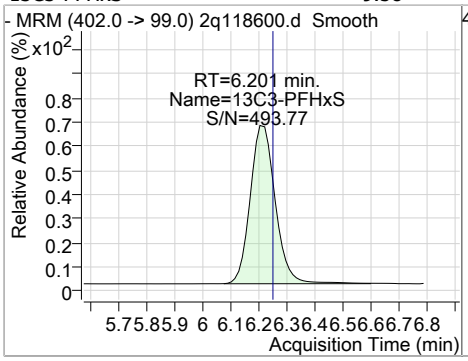


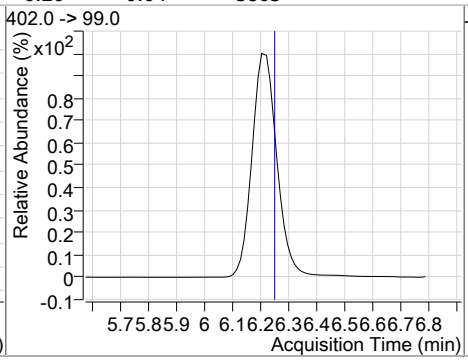


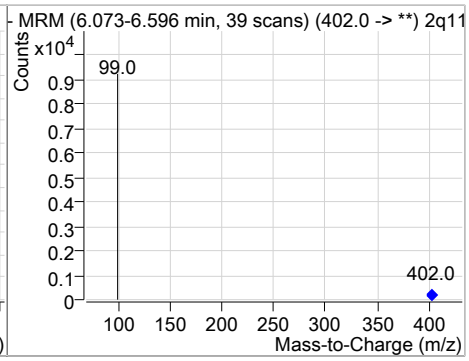


Perfluorinated Compounds by LC/MS/MS

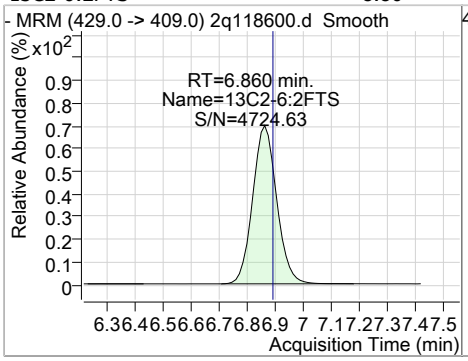
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13C3-PFHxS	9.58	6.20	-0.04	5863				

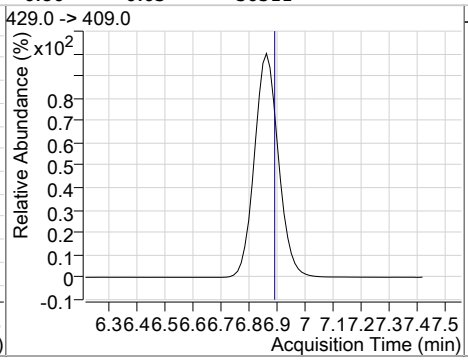


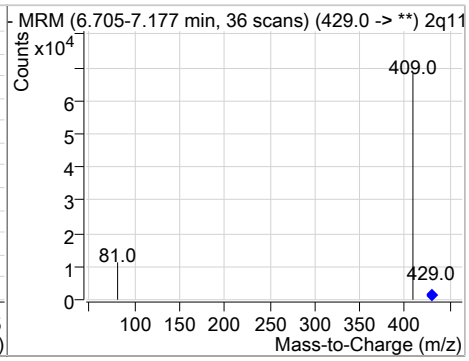




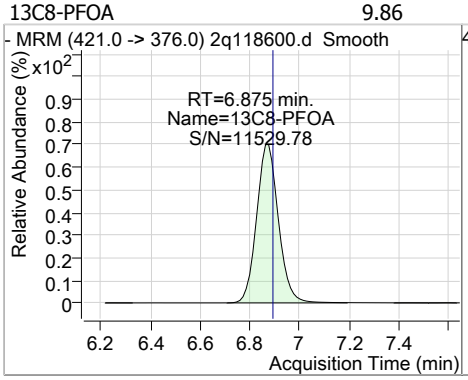
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	8.80	6.86	-0.03	50511				

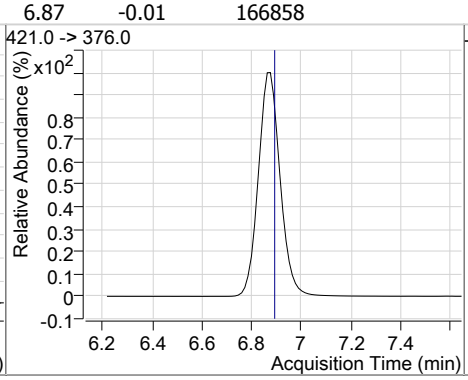


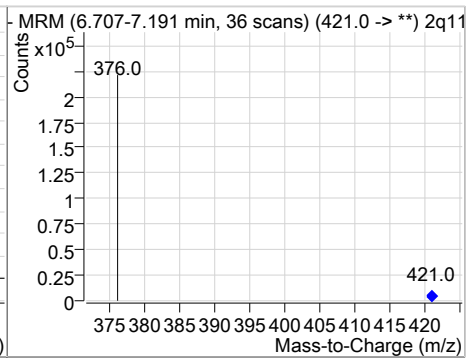




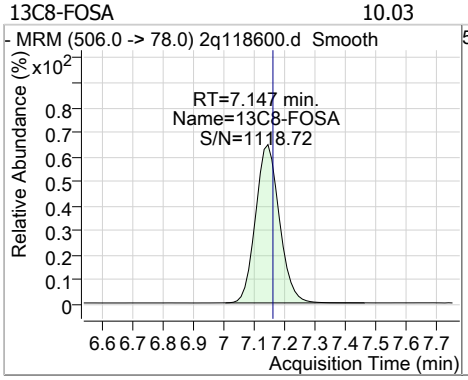
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13C8-PFOA	9.86	6.87	-0.01	166858				

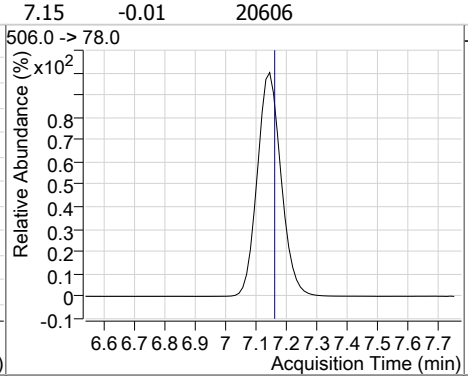


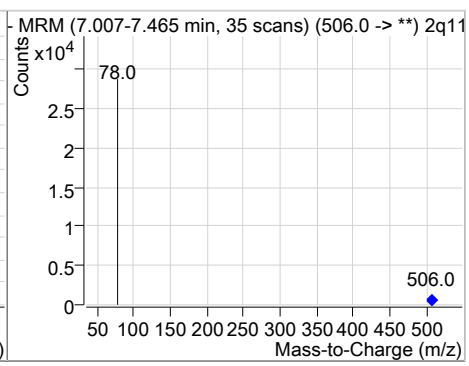




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	10.03	7.15	-0.01	20606				

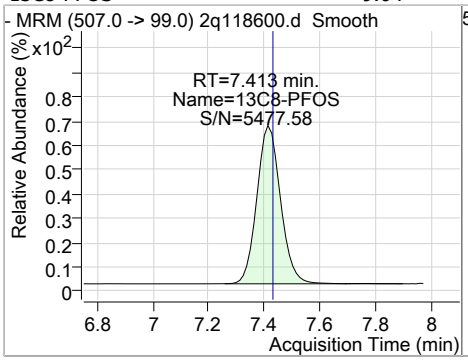


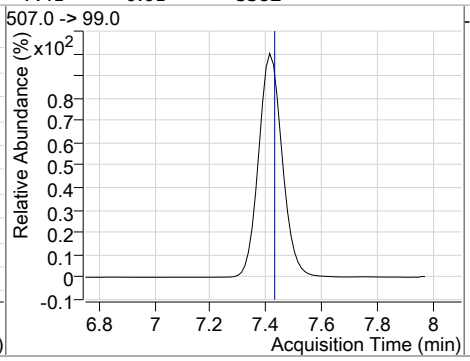


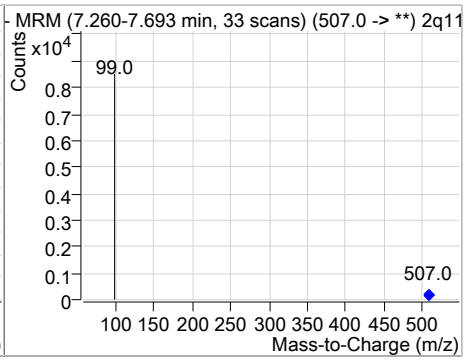


Perfluorinated Compounds by LC/MS/MS

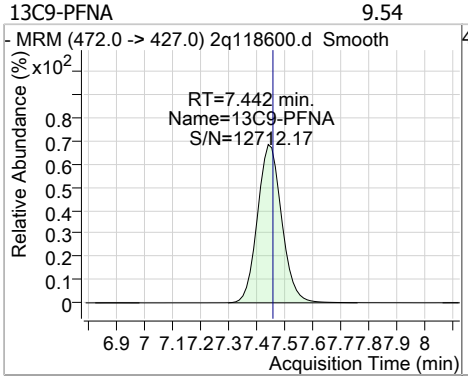
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	9.64	7.41	-0.01	5382				

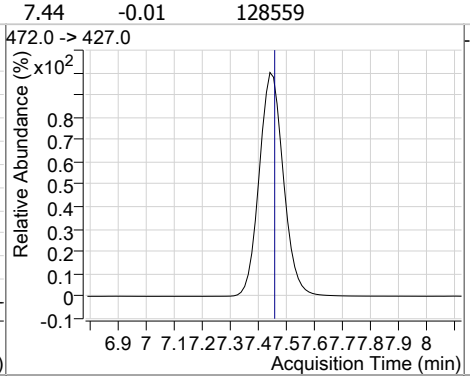


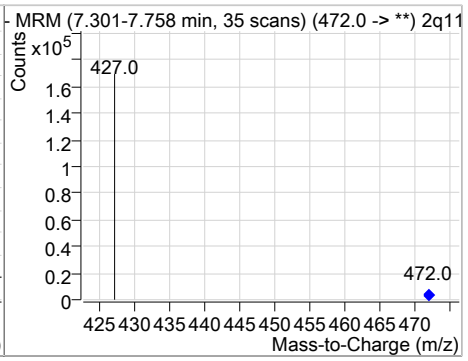




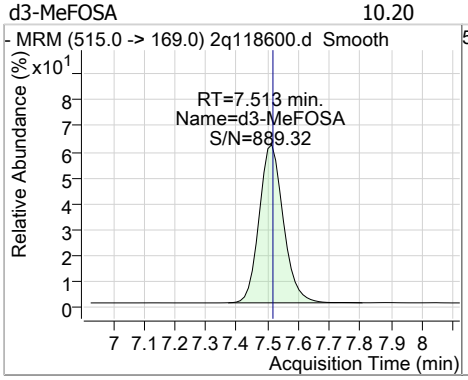
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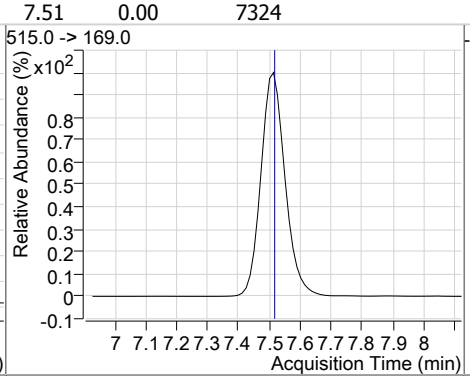


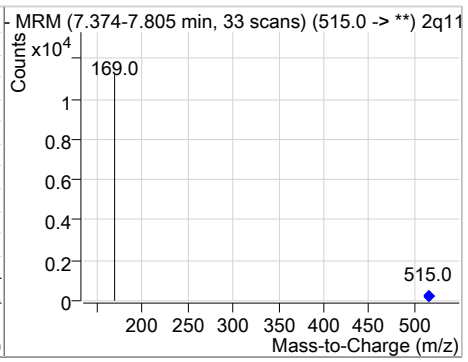




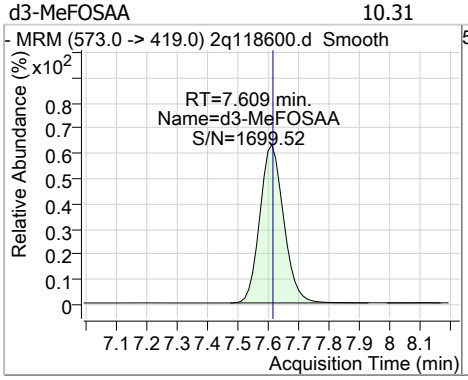
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	10.20	7.51	0.00	7324				

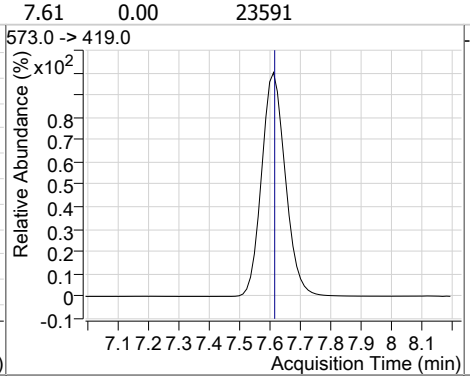


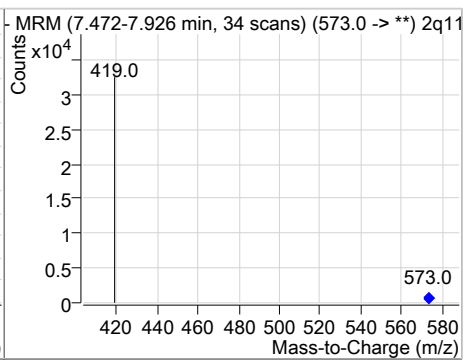




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	10.31	7.61	0.00	23591				

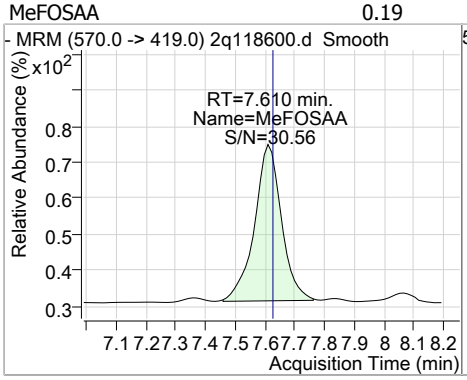


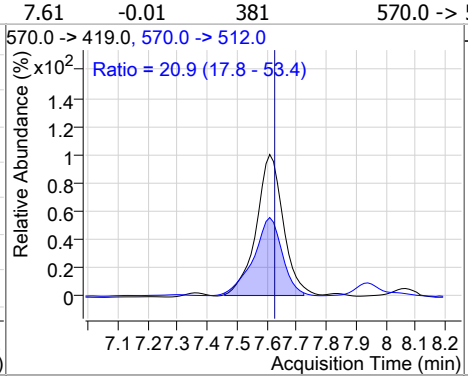


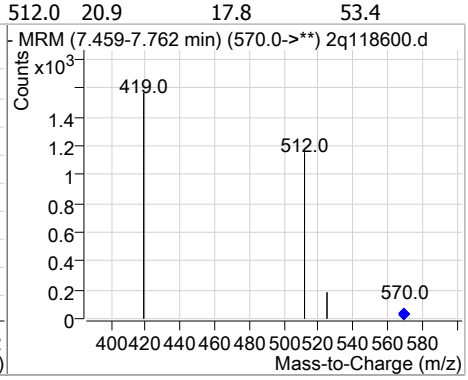


Perfluorinated Compounds by LC/MS/MS

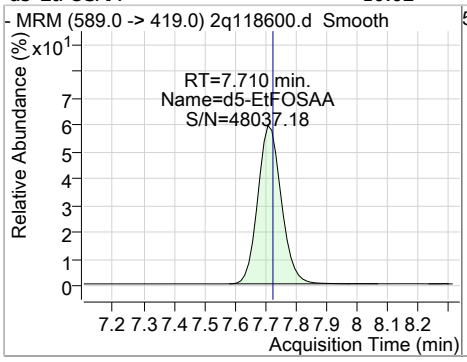
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	0.19	7.61	-0.01	381	570.0 -> 512.0	20.9	17.8	53.4

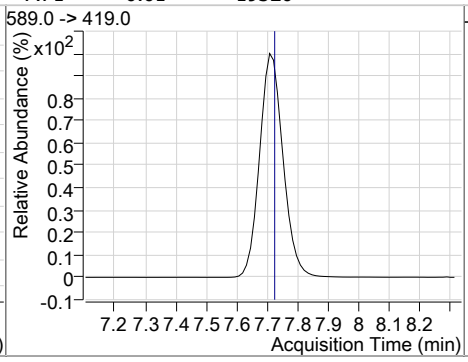


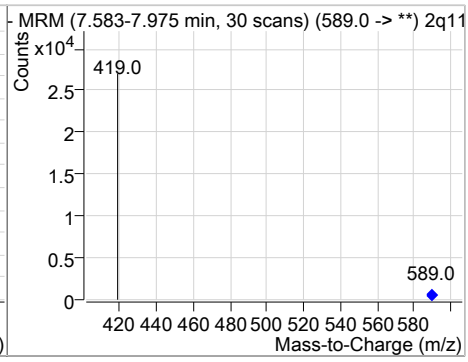




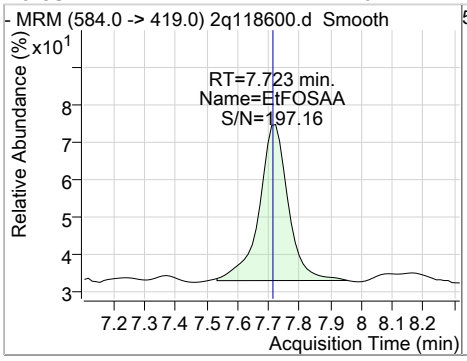
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	10.02	7.71	-0.01	19326				

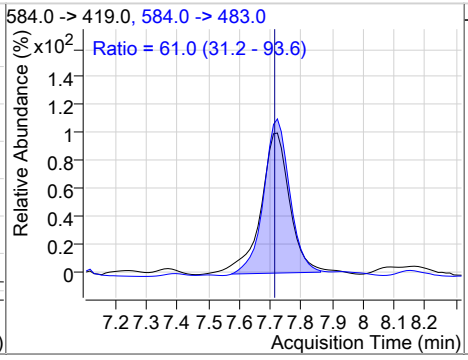


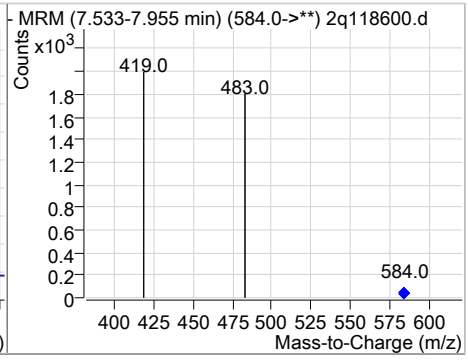




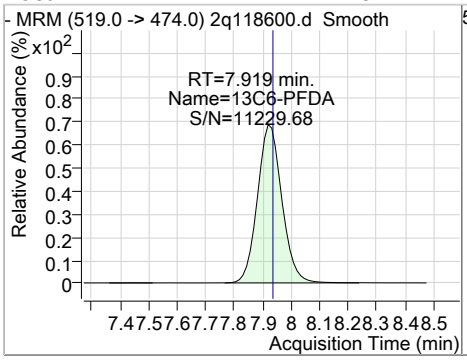
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	0.21	7.72	0.00	366	584.0 -> 483.0	61.0	31.2	93.6

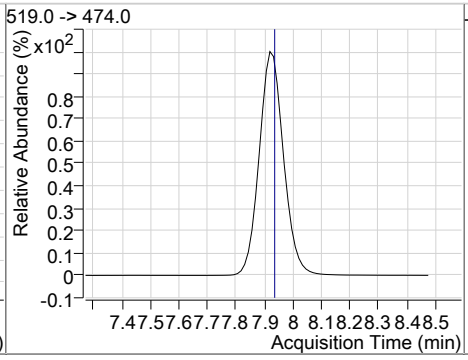


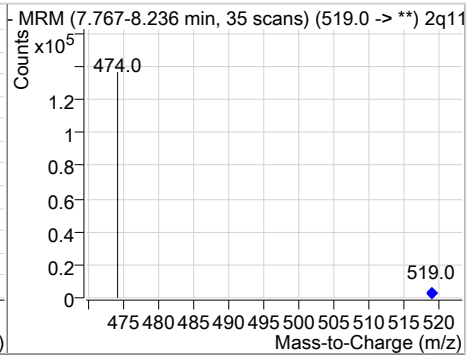




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	9.77	7.92	-0.01	102122				

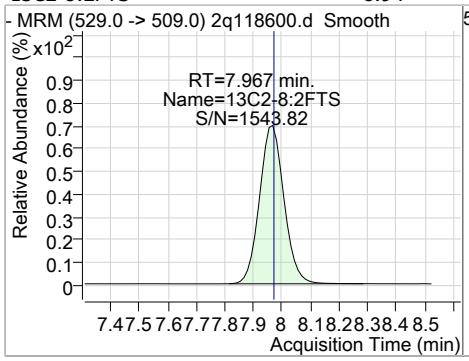


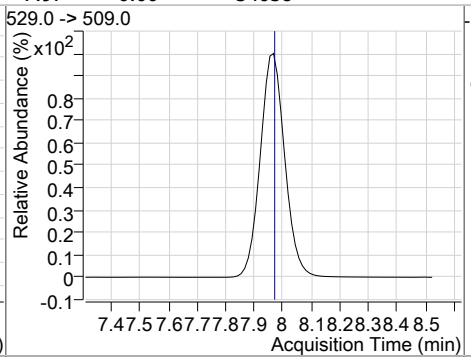


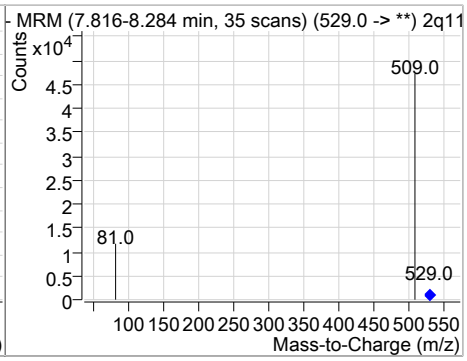


Perfluorinated Compounds by LC/MS/MS

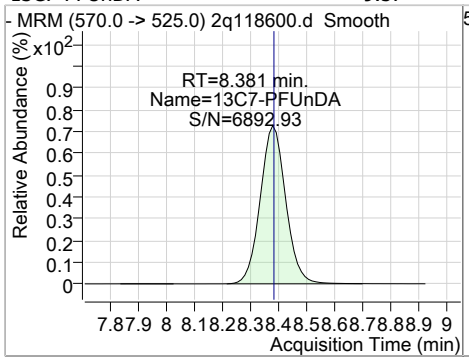
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	8.94	7.97	0.00	34658				

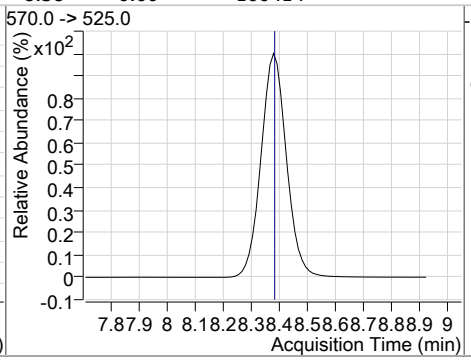


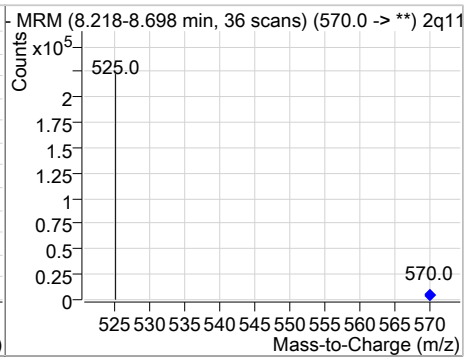




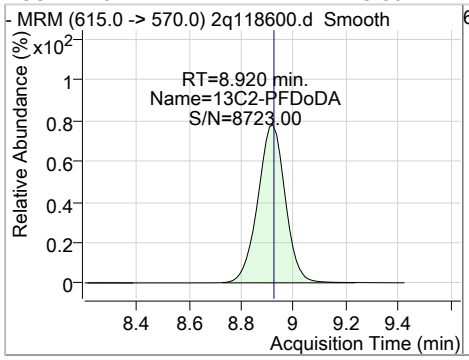
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	9.57	8.38	0.00	166414				

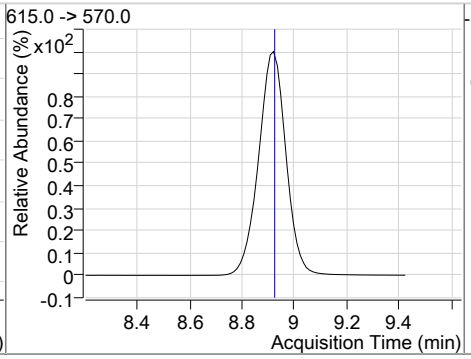


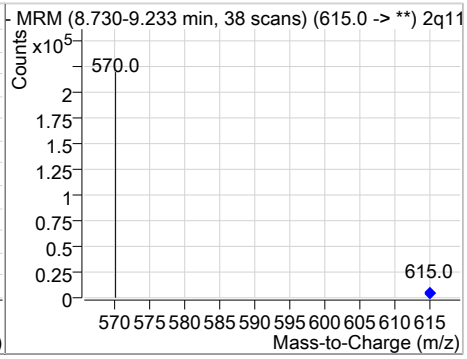




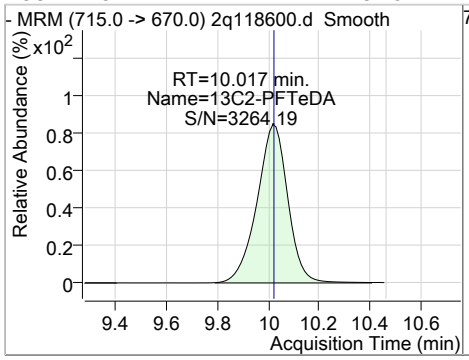
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	9.50	8.92	0.00	166383				

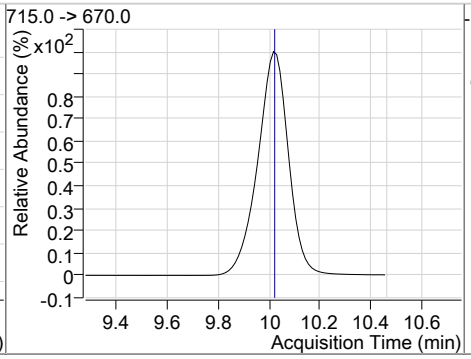


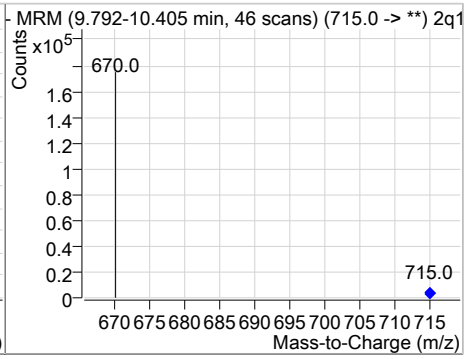




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	9.75	10.02	0.00	129539				







Perfluorinated Compounds by LC/MS/MS

Data File	:	5Q24197.d
Operator	:	lindsayr
Acq. Method	:	537_ID.m
Acq. Date-Time	:	1/5/2024 6:13:39 AM
Sample Name	:	iblk
Vial	:	P1-A1
DA Method File	:	ID_010224_S5Q377.quantmethod.xml
Batch Name	:	s5q380.batch.bin
Sample Information	:	OP401,S5Q380,250,,,1.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.987	217.0 -> 172.0	48863	10.00	µg/L	0.000
M5-PFPeA	3.419	268.0 -> 223.0	81378	10.00	µg/L	-0.012
M5-PFHxA	4.552	318.0 -> 273.0	122962	10.00	µg/L	-0.012
M4-PFHpA	5.425	367.0 -> 322.0	128305	10.00	µg/L	0.000
M8-PFOA	6.137	421.0 -> 376.0	179758	10.00	µg/L	-0.012
M9-PFNA	6.768	472.0 -> 427.0	185660	10.00	µg/L	-0.012
M6-PFDA	7.301	519.0 -> 474.0	187568	10.00	µg/L	-0.012
M7-PFUnDA	8.097	570.0 -> 525.0	250782	10.00	µg/L	-0.037
M2-PFDoDA	9.081	615.0 -> 570.0	232101	10.00	µg/L	-0.037
M2-PFTeDA	10.574	715.0 -> 670.0	198039	10.00	µg/L	-0.037
M8-FOSA	6.192	506.0 -> 78.0	50298	10.00	µg/L	-0.012
M3-PFBS	3.624	302.0 -> 99.0	9781	10.00	µg/L	-0.012
M3-PFHxS	5.444	402.0 -> 99.0	12292	10.00	µg/L	0.000
M8-PFOS	6.741	507.0 -> 99.0	16706	10.00	µg/L	-0.012
M2-4:2FTS	4.474	329.0 -> 309.0	38880	10.00	µg/L	-0.012
M2-6:2FTS	6.135	429.0 -> 409.0	72301	10.00	µg/L	-0.012
M2-8:2FTS	7.363	529.0 -> 509.0	73201	10.00	µg/L	-0.012
M3-MeFOSAA	6.747	573.0 -> 419.0	41180	10.00	µg/L	0.000
M3-HFPO-DA	4.819	287.0 -> 169.0	5907	10.00	µg/L	-0.012
M3-MeFOSA	6.589	515.0 -> 169.0	16638	10.00	µg/L	0.000
M5-EtFOSAA	6.845	589.0 -> 419.0	36103	10.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.474	329.0 -> 309.0	38880	9.95	µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.5%		
13C2-6:2FTS	6.135	429.0 -> 409.0	72301	9.83	µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 98.3%		
13C2-8:2FTS	7.363	529.0 -> 509.0	73201	10.35	µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 103.5%		
13C2-PFDoDA	9.081	615.0 -> 570.0	232101	10.27	µg/L	-0.037
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 102.7%		
13C2-PFTeDA	10.574	715.0 -> 670.0	198039	10.30	µg/L	-0.037
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 103.0%		
13C3-PFBS	3.624	302.0 -> 99.0	9781	10.60	µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 106.0%		
13C3-PFHxS	5.444	402.0 -> 99.0	12292	10.88	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 108.8%		
13C4-PFBA	1.987	217.0 -> 172.0	48863	11.08	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 110.8%		
13C4-PFHpA	5.425	367.0 -> 322.0	128305	10.86	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 108.6%		
13C5-PFHxA	4.552	318.0 -> 273.0	122962	10.71	µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 107.1%		
13C5-PFPeA	3.419	268.0 -> 223.0	81378	10.95	µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 109.5%		
13C6-PFDA	7.301	519.0 -> 474.0	187568	10.84	µg/L	-0.012

Perfluorinated Compounds by LC/MS/MS

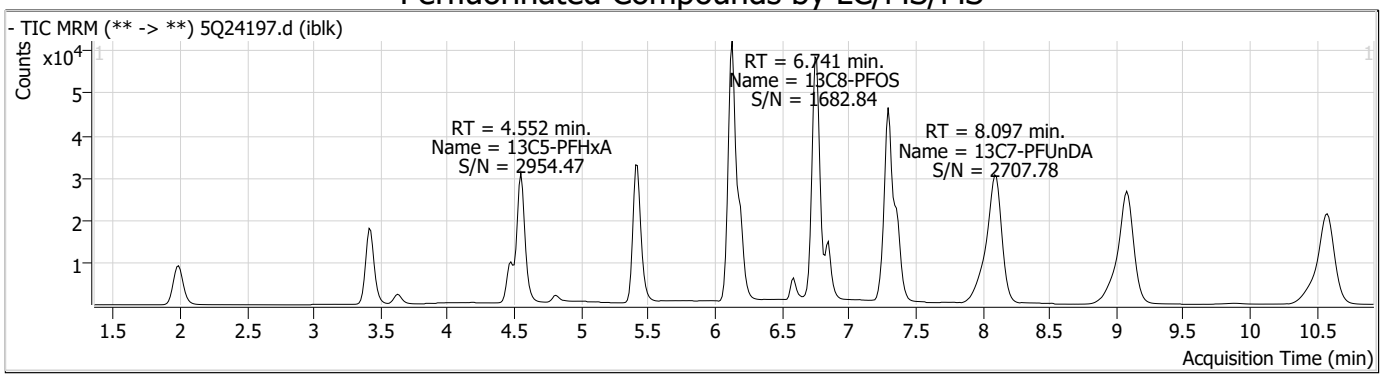
Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 108.4%	
13C7-PFUnDA	8.097	570.0 -> 525.0	250782	10.27 µg/L	-0.037
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 102.7%	
13C8-FOSA	6.192	506.0 -> 78.0	50298	12.30 µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 123.0%	
13C8-PFOA	6.137	421.0 -> 376.0	179758	10.86 µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 108.6%	
13C8-PFOS	6.741	507.0 -> 99.0	16706	10.61 µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 106.1%	
13C9-PFNA	6.768	472.0 -> 427.0	185660	11.20 µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 112.0%	
d3-MeFOSAA	6.747	573.0 -> 419.0	41180	12.24 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 122.4%	
13C3-HFPO-DA	4.819	287.0 -> 169.0	5907	9.89 µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 98.9%	
d3-MeFOSA	6.589	515.0 -> 169.0	16638	11.95 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 119.5%	
d5-EtFOSAA	6.845	589.0 -> 419.0	36103	11.85 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 118.5%	
Target Compounds					QValue
4:2FTS	-	327.0 -> 307.0	-	N.D.	
		327.0 -> 81.0			
6:2FTS	-	427.0 -> 407.0	-	N.D.	
		427.0 -> 81.0			
8:2FTS	-	527.0 -> 507.0	-	N.D.	
		527.0 -> 81.0			
EtFOSAA	6.859	584.0 -> 419.0	1587	0.57 µg/L	99
		584.0 -> 483.0	956		
FOSA	-	498.0 -> 78.0	-	N.D.	
		498.0 -> 478.0			
MeFOSAA	6.748	570.0 -> 419.0	1325	0.43 µg/L	87
		570.0 -> 512.0	580		
PFBA	-	213.0 -> 169.0	-	N.D.	
PFBS	-	299.0 -> 80.0	-	N.D.	
		299.0 -> 99.0			
PFDA	-	513.0 -> 469.0	-	N.D.	
		513.0 -> 219.0			
PFDoDA	-	613.0 -> 569.0	-	N.D.	
		613.0 -> 319.0			
PFDS	-	599.0 -> 80.0	-	N.D.	
		599.0 -> 99.0			
PFHpA	-	363.0 -> 319.0	-	N.D.	
		363.0 -> 169.0			
PFHpS	-	449.0 -> 80.0	-	N.D.	
		449.0 -> 99.0			
PFHxA	-	313.0 -> 269.0	-	N.D.	
		313.0 -> 119.0			
PFHxS	-	399.0 -> 80.0	-	N.D.	
		399.0 -> 99.0			
PFNA	-	463.0 -> 419.0	-	N.D.	
		463.0 -> 219.0			
PFNS	-	549.0 -> 80.0	-	N.D.	
		549.0 -> 99.0			
PFOA	-	413.0 -> 369.0	-	N.D.	
		413.0 -> 169.0			
PFOS	-	499.0 -> 80.0	-	N.D.	

Perfluorinated Compounds by LC/MS/MS

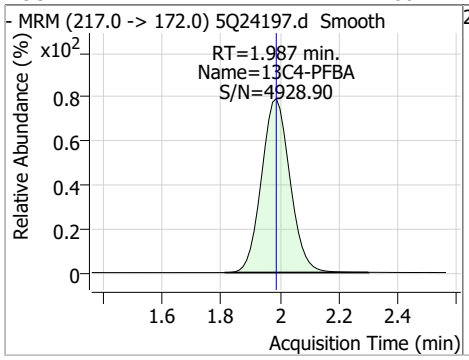
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		499.0 -> 99.0				
PFPeA	-	263.0 -> 219.0	-	N.D.		
PFPeS	-	349.0 -> 80.0	-	N.D.		
		349.0 -> 99.0				
PFTeDA	10.566	713.0 -> 669.0	2643	0.14	µg/L	100
		713.0 -> 219.0	300			
PFTrDA	-	663.0 -> 619.0	-	N.D.		
		663.0 -> 369.0				
PFUnDA	-	563.0 -> 519.0	-	N.D.		
		563.0 -> 269.0				
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.		
		633.0 -> 453.0				
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.		
		533.0 -> 353.0				
ADONA	-	377.0 -> 251.0	-	N.D.		
		377.0 -> 85.0				
HFPO-DA	-	329.0 -> 169.0	-	N.D.		
		285.0 -> 169.0				
MeFOSA	-	512.0 -> 169.0	-	N.D.		
		512.0 -> 219.0				
4-PFECHS	-	461.0 -> 381.0	-	N.D.		
		461.0 -> 99.0				
FBSA	-	298.0 -> 78.0	-	N.D.		
		298.0 -> 64.0				
FHxSA	-	398.0 -> 78.0	-	N.D.		
		398.0 -> 64.0				

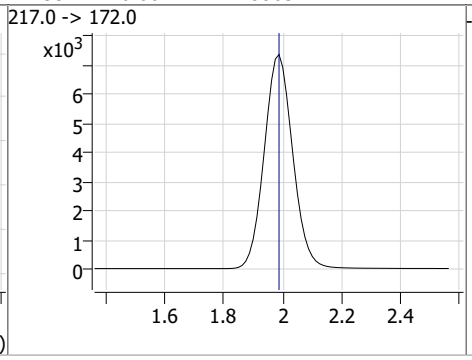
 # = Qualifier out of range, m = manually integrated, + = Area summed

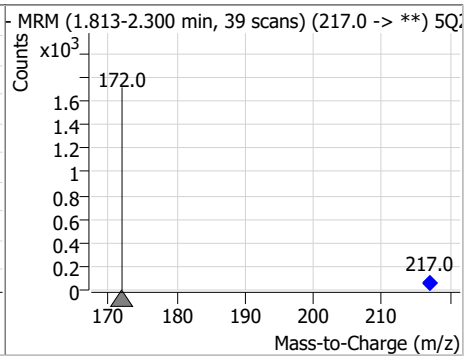
Perfluorinated Compounds by LC/MS/MS



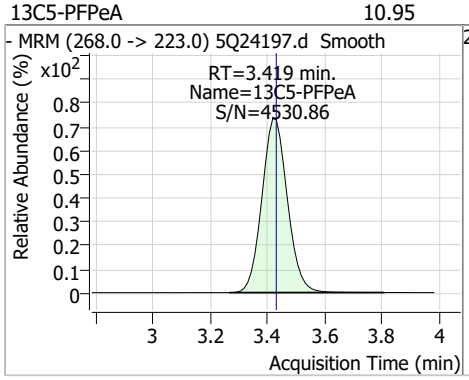
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	11.08	1.99	0.00	48863				

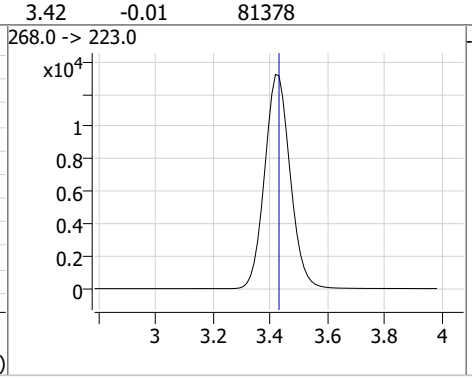


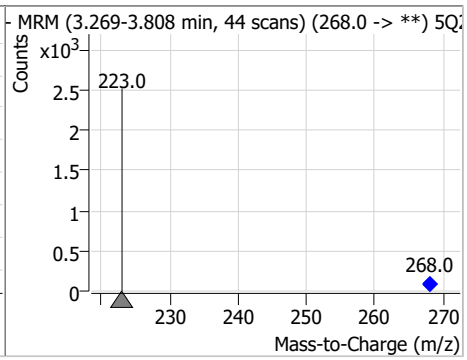




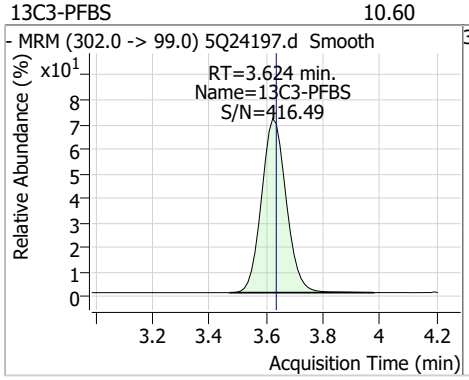
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	10.95	3.42	-0.01	81378				

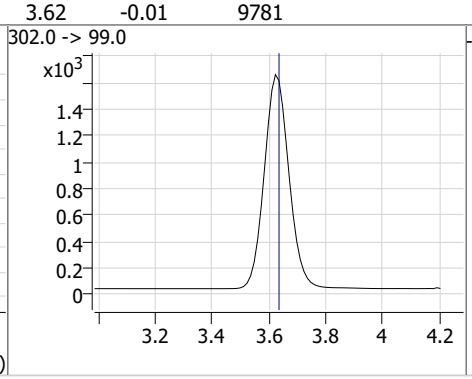


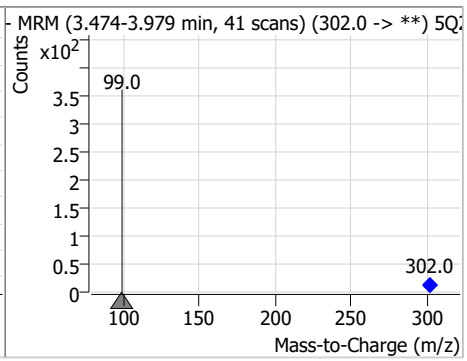




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	10.60	3.62	-0.01	9781				

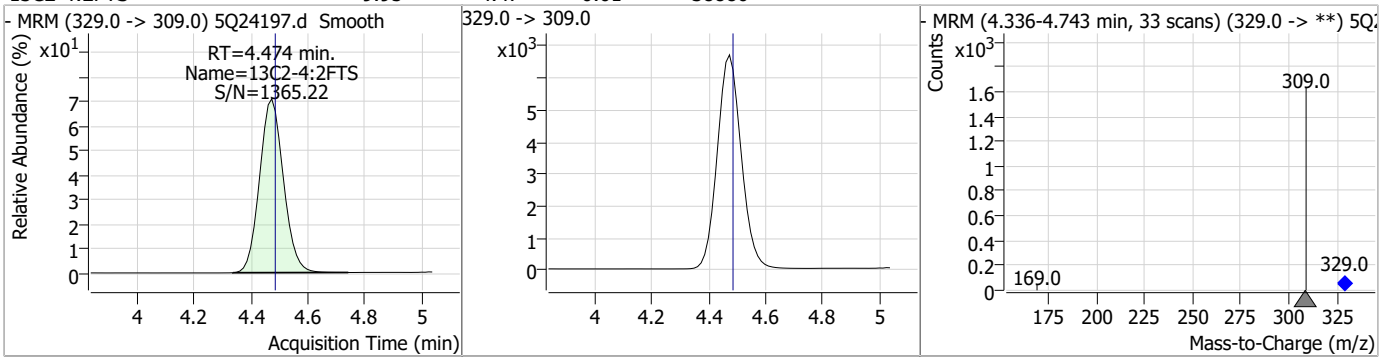




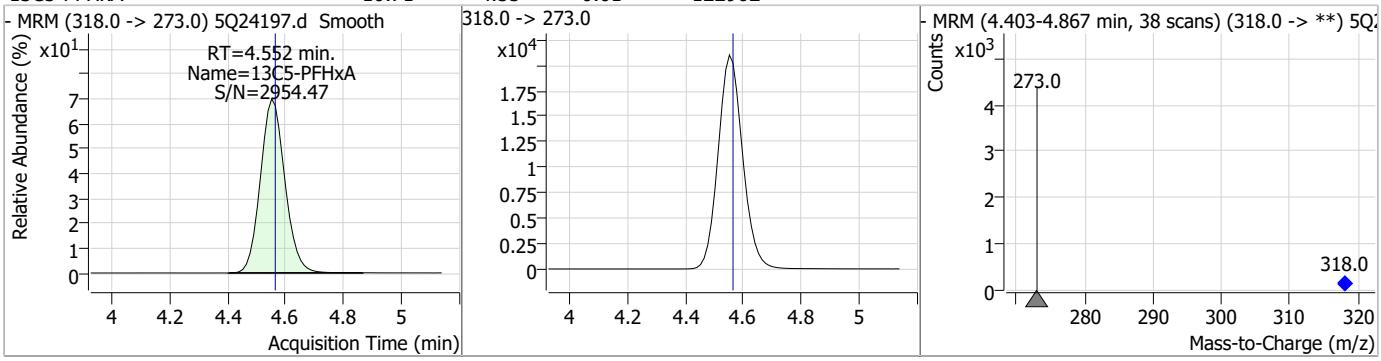


Perfluorinated Compounds by LC/MS/MS

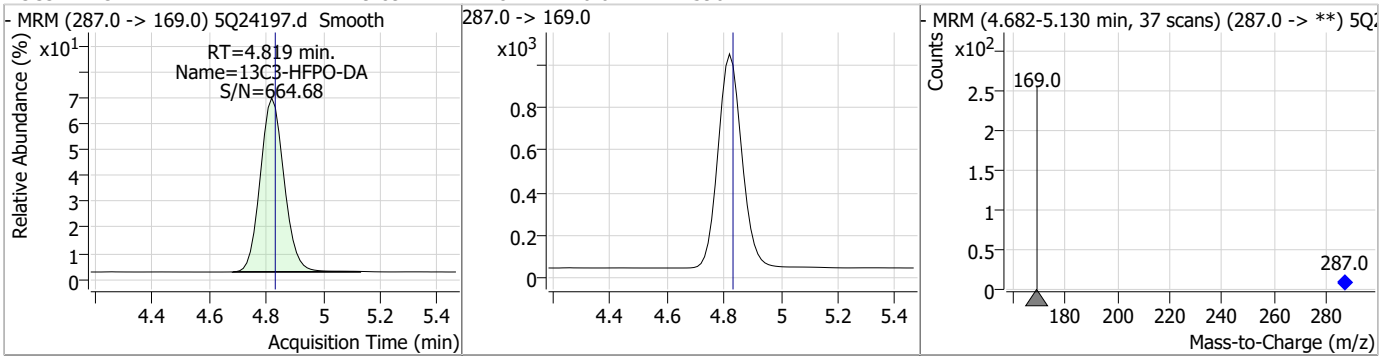
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	9.95	4.47	-0.01	38880				



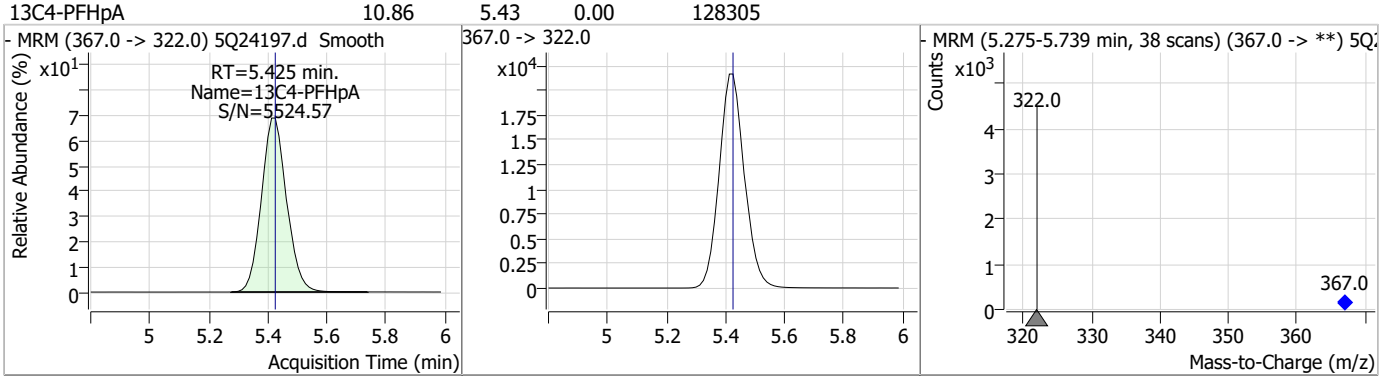
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	10.71	4.55	-0.01	122962				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	9.89	4.82	-0.01	5907				

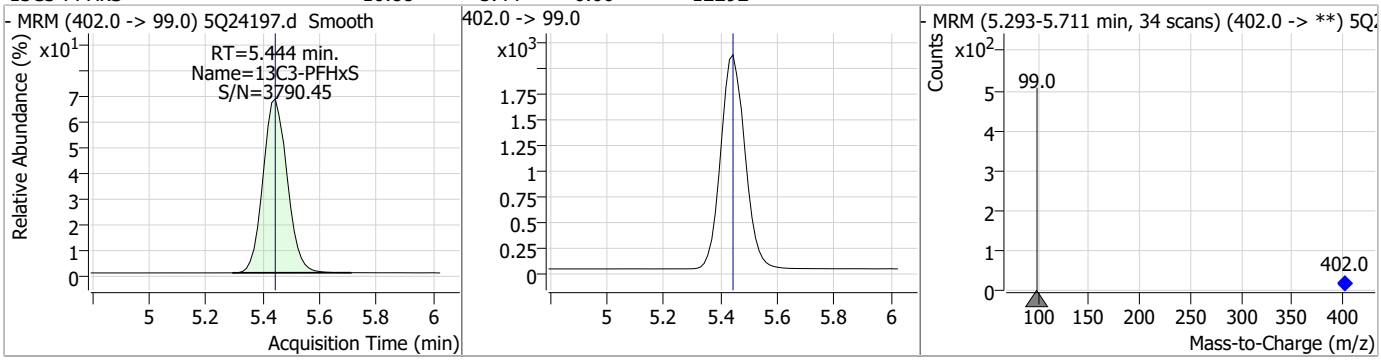


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	10.86	5.43	0.00	128305				

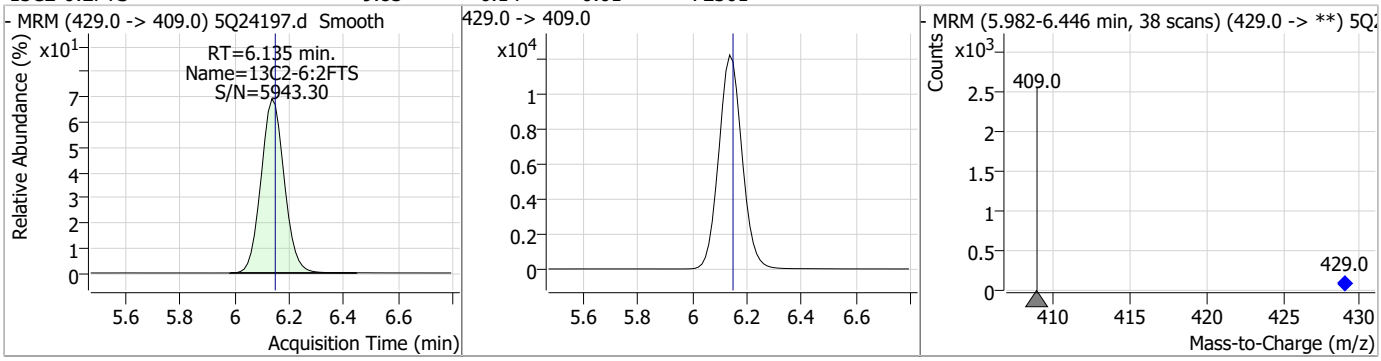


Perfluorinated Compounds by LC/MS/MS

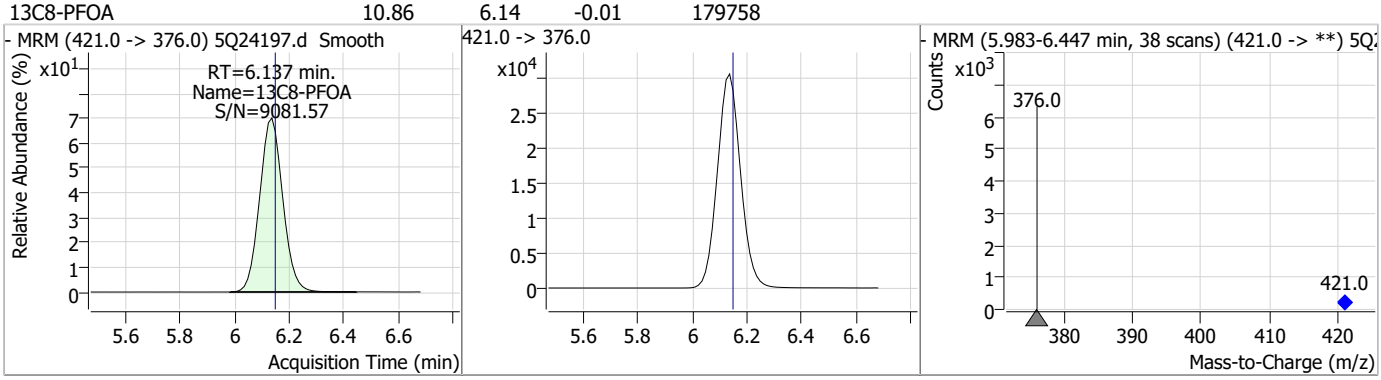
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	10.88	5.44	0.00	12292				



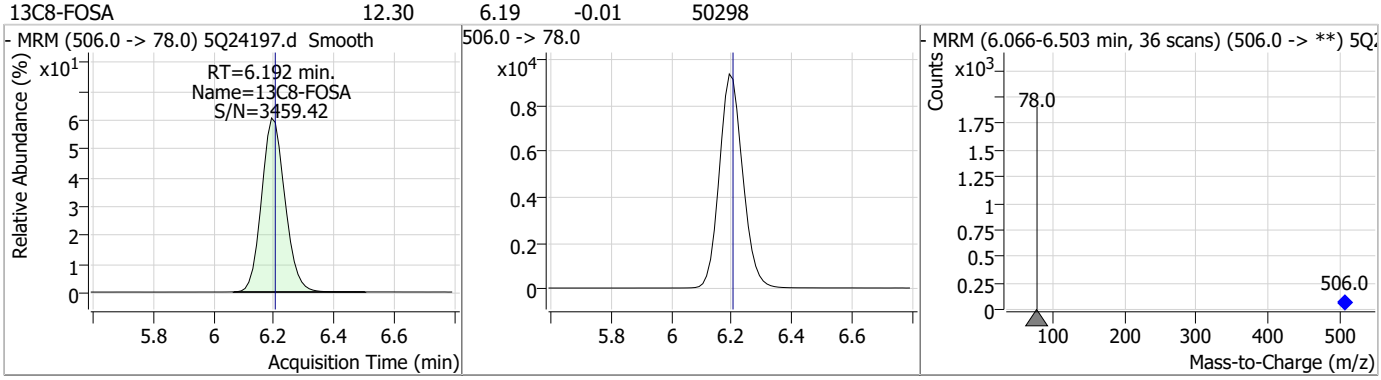
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	9.83	6.14	-0.01	72301				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	10.86	6.14	-0.01	179758				

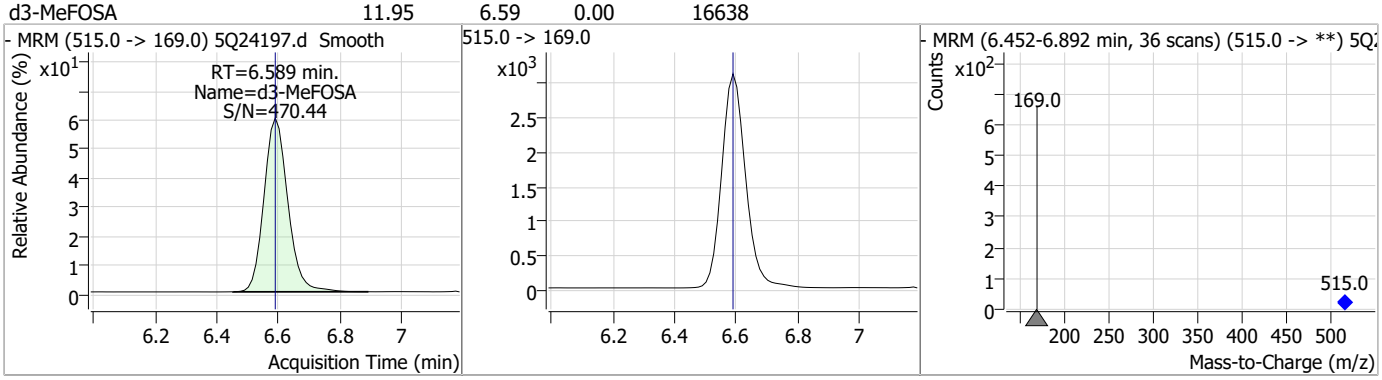


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	12.30	6.19	-0.01	50298				

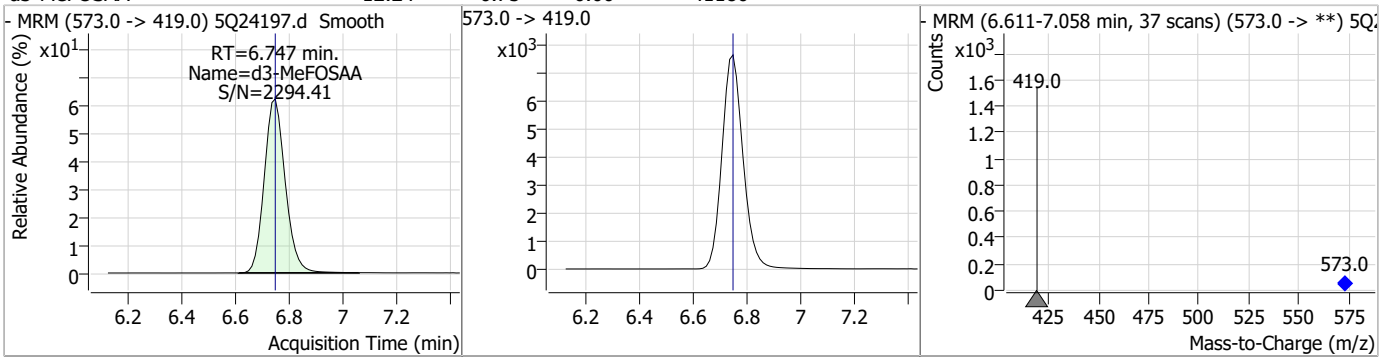


Perfluorinated Compounds by LC/MS/MS

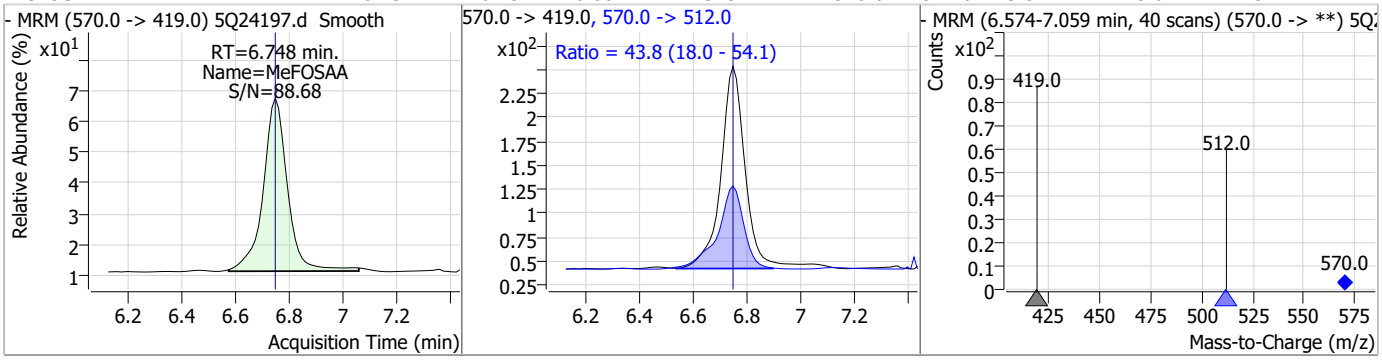
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	11.95	6.59	0.00	16638				



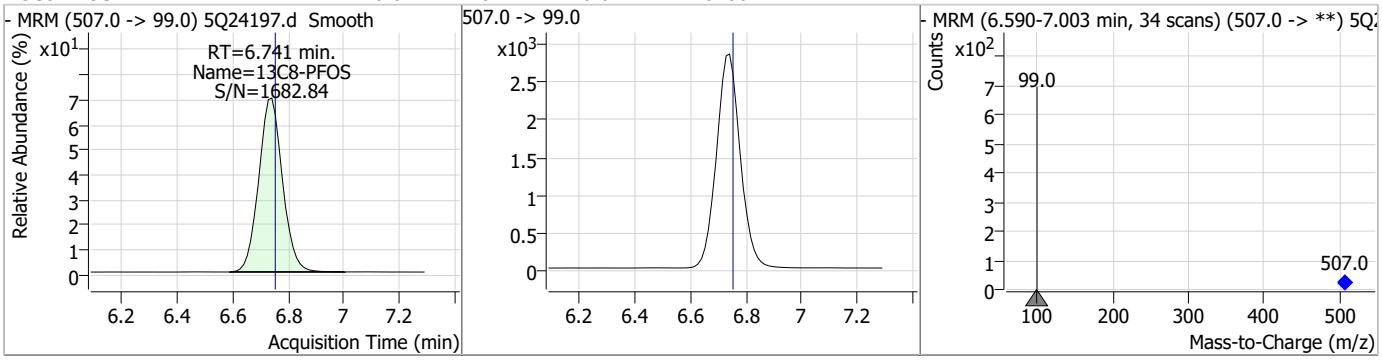
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	12.24	6.75	0.00	41180				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	0.43	6.75	0.00	1325	570.0 -> 512.0	43.8	18.0	54.1

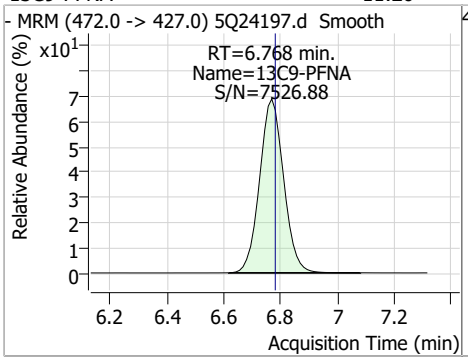


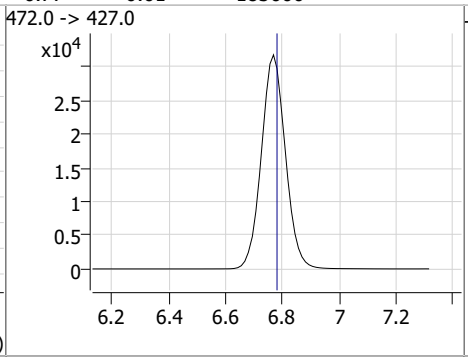
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	10.61	6.74	-0.01	16706				

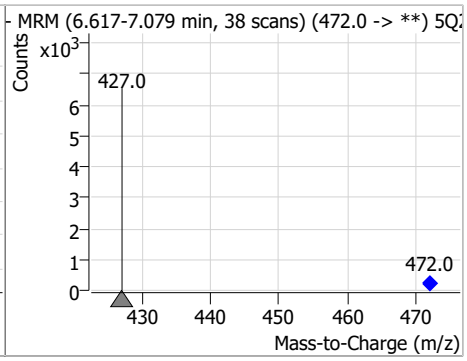


Perfluorinated Compounds by LC/MS/MS

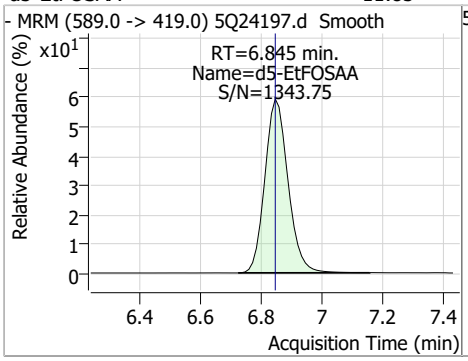
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	11.20	6.77	-0.01	185660				

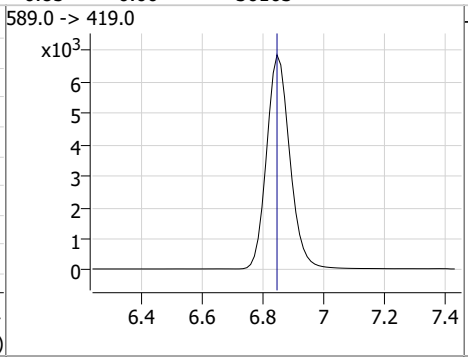


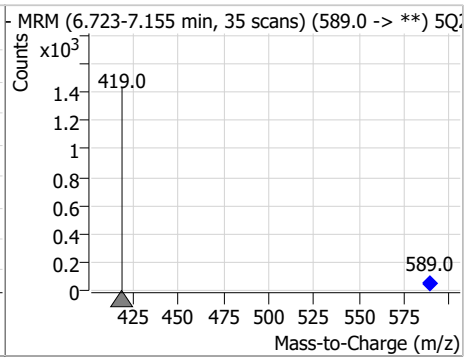




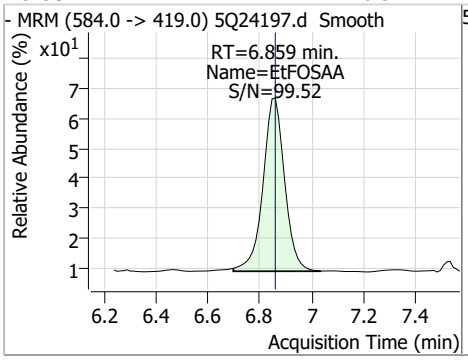
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	11.85	6.85	0.00	36103				

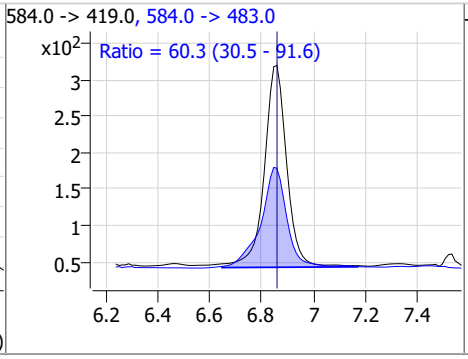


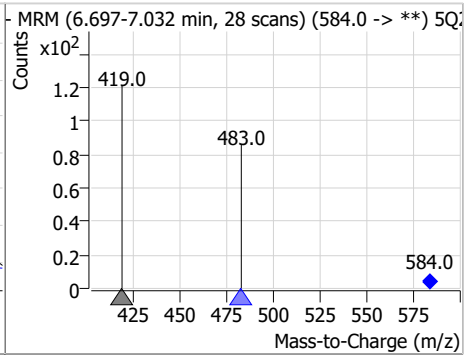




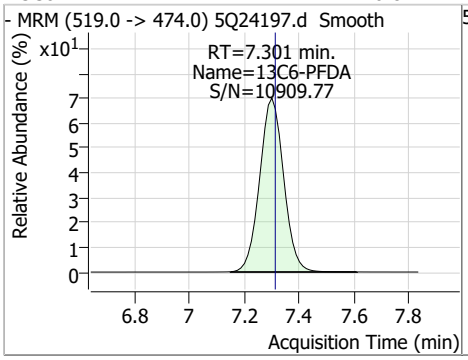
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	0.57	6.86	0.00	1587	584.0 -> 483.0	60.3	30.5	91.6

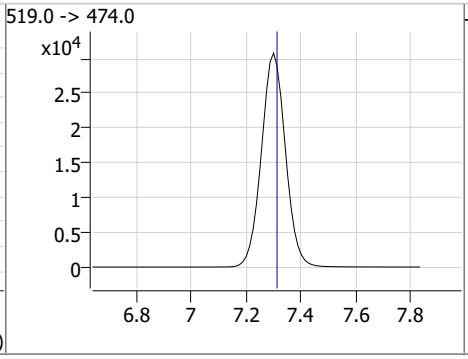


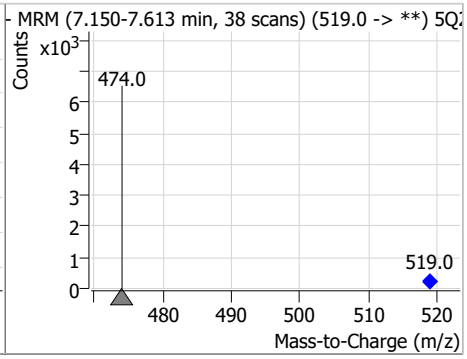




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	10.84	7.30	-0.01	187568				

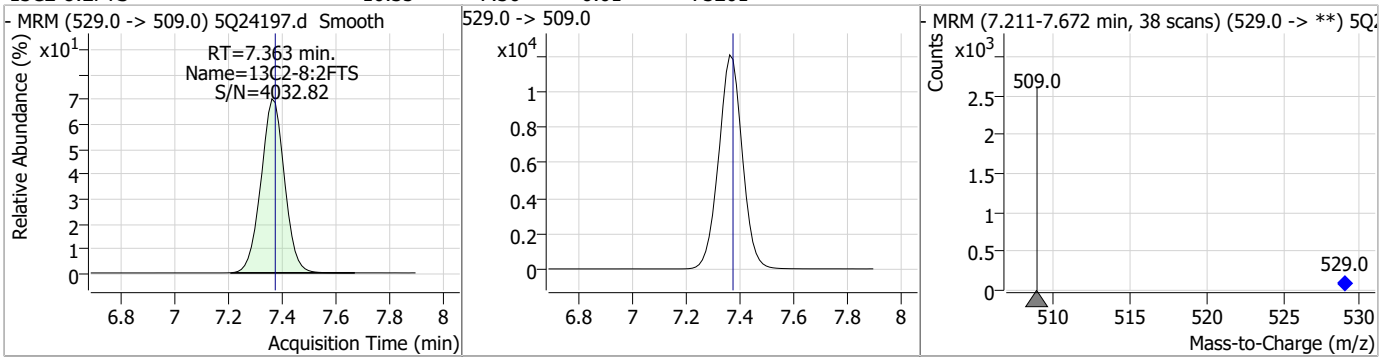




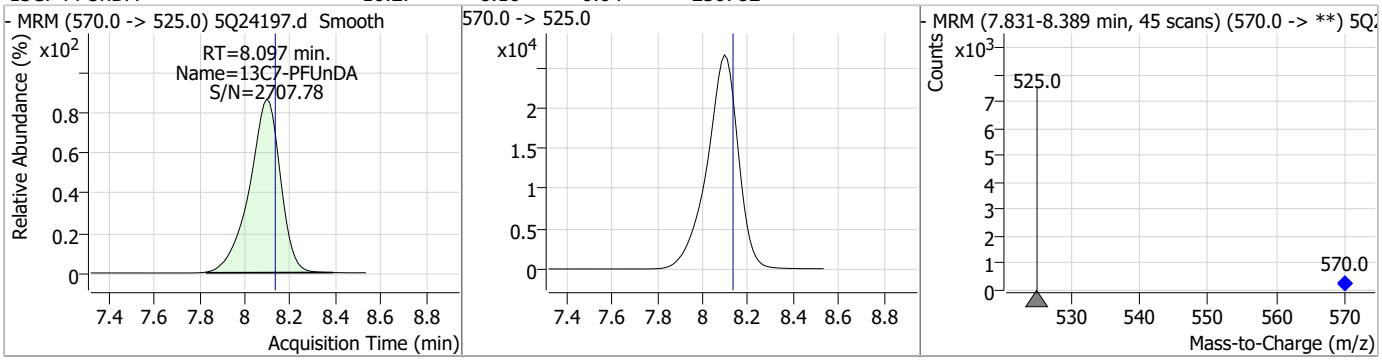


Perfluorinated Compounds by LC/MS/MS

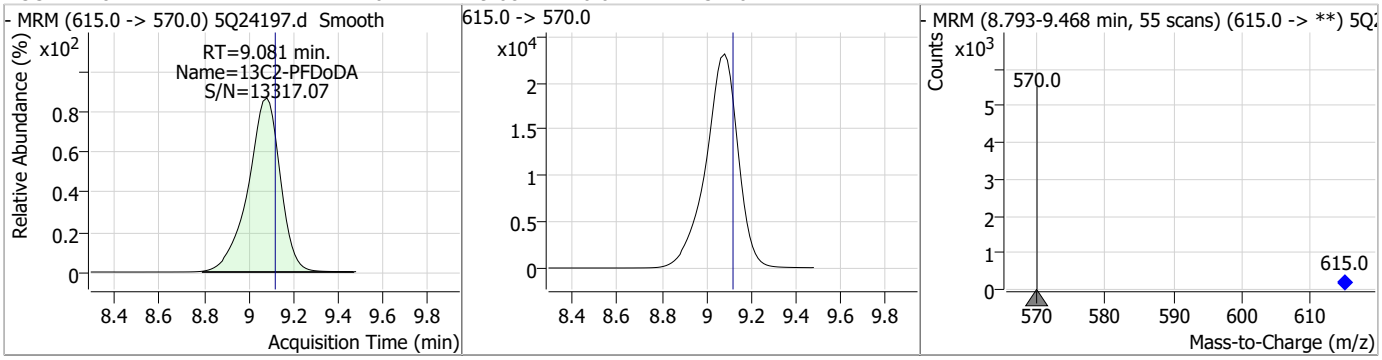
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	10.35	7.36	-0.01	73201				



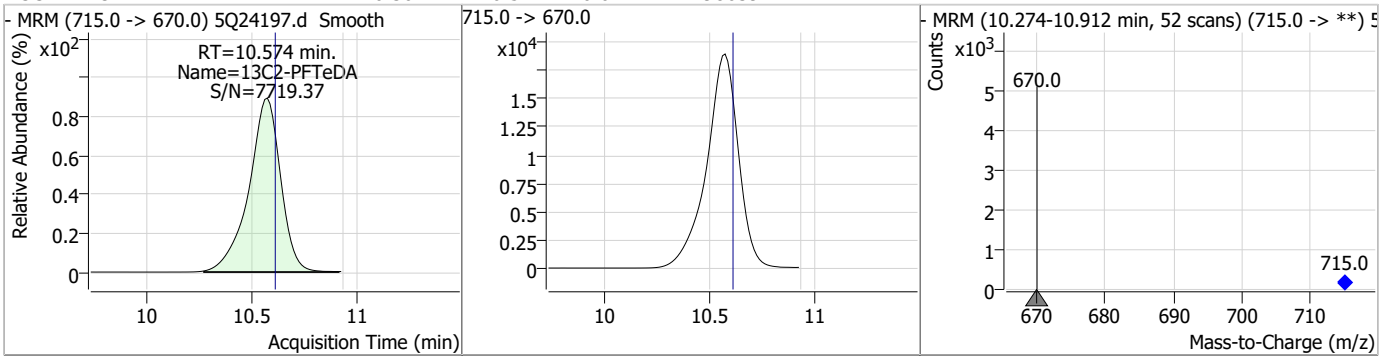
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	10.27	8.10	-0.04	250782				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	10.27	9.08	-0.04	232101				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	10.30	10.57	-0.04	198039				



Manual Integrations APPROVED (compounds with "m" flag)
Natasha Gumtie
01/02/24 14:27

Perfluorinated Compounds by LC/MS/MS

Data File : 5Q23944.d
Operator : natashag
Acq. Method : 537_ID.m
Acq. Date-Time : 12/29/2023 12:29:22 AM
Sample Name : op835-bs
Vial : P2-C1
DA Method File : ID_122823_S5Q375.quantmethod.xml
Batch Name : s5q375.batch.bin
Sample Information : OP835,S5Q375,125,,,1.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.975	217.0 -> 172.0	35936	10.00	µg/L	-0.013
M5-PFPeA	3.419	268.0 -> 223.0	57381	10.00	µg/L	-0.012
M5-PFHxA	4.552	318.0 -> 273.0	84016	10.00	µg/L	0.000
M4-PFHpA	5.413	367.0 -> 322.0	80379	10.00	µg/L	0.000
M8-PFOA	6.124	421.0 -> 376.0	107259	10.00	µg/L	0.000
M9-PFNA	6.756	472.0 -> 427.0	103861	10.00	µg/L	0.000
M6-PFDA	7.276	519.0 -> 474.0	102576	10.00	µg/L	-0.012
M7-PFUnDA	8.034	570.0 -> 525.0	131061	10.00	µg/L	-0.025
M2-PFDoDA	9.026	615.0 -> 570.0	107100	10.00	µg/L	-0.013
M2-PFTeDA	10.524	715.0 -> 670.0	82283	10.00	µg/L	-0.013
M8-FOSA	6.192	506.0 -> 78.0	41293	10.00	µg/L	0.000
M3-PFBS	3.624	302.0 -> 99.0	5311	10.00	µg/L	-0.012
M3-PFHxS	5.432	402.0 -> 99.0	5952	10.00	µg/L	0.000
M8-PFOS	6.716	507.0 -> 99.0	7532	10.00	µg/L	-0.012
M2-4:2FTS	4.461	329.0 -> 309.0	32230	10.00	µg/L	-0.012
M2-6:2FTS	6.122	429.0 -> 409.0	52001	10.00	µg/L	-0.013
M2-8:2FTS	7.351	529.0 -> 509.0	46248	10.00	µg/L	0.000
M3-MeFOSAA	6.735	573.0 -> 419.0	18058	10.00	µg/L	-0.012
M3-HFPO-DA	4.807	287.0 -> 169.0	4480	10.00	µg/L	-0.012
M3-MeFOSA	6.589	515.0 -> 169.0	6967	10.00	µg/L	0.000
M5-EtFOSAA	6.845	589.0 -> 419.0	15173	10.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.461	329.0 -> 309.0	32230	8.01	µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 80.1%		
13C2-6:2FTS	6.122	429.0 -> 409.0	52001	7.34	µg/L	-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 73.4%		
13C2-8:2FTS	7.351	529.0 -> 509.0	46248	6.62	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 66.2%		
13C2-PFDoDA	9.026	615.0 -> 570.0	107100	5.14	µg/L	-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 51.4%		
13C2-PFTeDA	10.524	715.0 -> 670.0	82283	4.64	µg/L	-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 46.4%		
13C3-PFBS	3.624	302.0 -> 99.0	5311	5.47	µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 54.7%		
13C3-PFHxS	5.432	402.0 -> 99.0	5952	5.04	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 50.4%		
13C4-PFBA	1.975	217.0 -> 172.0	35936	7.61	µg/L	-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 76.1%		
13C4-PFHpA	5.413	367.0 -> 322.0	80379	6.68	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 66.8%		
13C5-PFHxA	4.552	318.0 -> 273.0	84016	7.03	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 70.3%		
13C5-PFPeA	3.419	268.0 -> 223.0	57381	7.28	µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 72.8%		
13C6-PFDA	7.276	519.0 -> 474.0	102576	6.09	µg/L	-0.012

Perfluorinated Compounds by LC/MS/MS

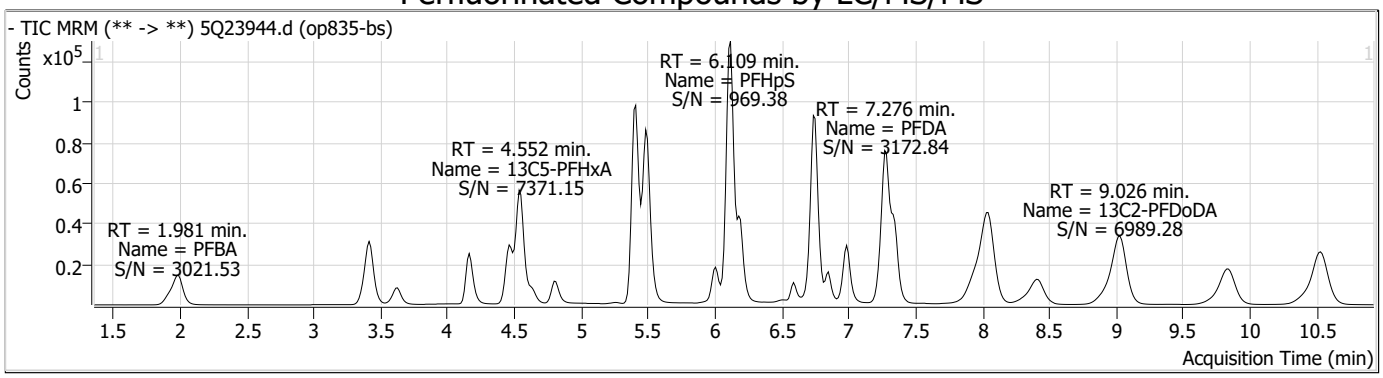
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 60.9%			
13C7-PFUnDA	8.034	570.0 -> 525.0	131061	5.62	µg/L		-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 56.2%			
13C8-FOSA	6.192	506.0 -> 78.0	41293	10.19	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.9%			
13C8-PFOA	6.124	421.0 -> 376.0	107259	6.48	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 64.8%			
13C8-PFOS	6.716	507.0 -> 99.0	7532	4.79	µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 47.9%			
13C9-PFNA	6.756	472.0 -> 427.0	103861	6.25	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 62.5%			
d3-MeFOSAA	6.735	573.0 -> 419.0	18058	5.92	µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 59.2%			
13C3-HFPO-DA	4.807	287.0 -> 169.0	4480	6.94	µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 69.4%			
d3-MeFOSA	6.589	515.0 -> 169.0	6967	4.97	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 49.7%			
d5-EtFOSAA	6.845	589.0 -> 419.0	15173	5.53	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 55.3%			
Target Compounds							QValue
4:2FTS	4.463	327.0 -> 307.0	57932	18.25	µg/L		100
		327.0 -> 81.0	32790				
6:2FTS	6.123	427.0 -> 407.0	88449	18.59	µg/L		99
		427.0 -> 81.0	35543				
8:2FTS	7.351	527.0 -> 507.0	74666	18.48	µg/L		99
		527.0 -> 81.0	35071				
EtFOSAA	6.846	584.0 -> 419.0	20854	16.85	µg/L		93
		584.0 -> 483.0	13109				
FOSA	6.194	498.0 -> 78.0	67809	17.90	µg/L		100
		498.0 -> 478.0	2196				
MeFOSAA	6.748	570.0 -> 419.0	24418	17.33	µg/L		99
		570.0 -> 512.0	9237				
PFBA	1.981	213.0 -> 169.0	58916	17.70	µg/L		100
PFBS	3.615	299.0 -> 80.0	23460	17.84	µg/L		100
		299.0 -> 99.0	10348				
PFDA	7.276	513.0 -> 469.0	171863	17.64	µg/L		99
		513.0 -> 219.0	30729				
PFDoDA	9.017	613.0 -> 569.0	162793	17.71	µg/L		100
		613.0 -> 319.0	26960				
PFDS	7.933	599.0 -> 80.0	21261	11.88	µg/L		99
		599.0 -> 99.0	12982				
PFHpA	5.413	363.0 -> 319.0	164445	17.84	µg/L		100
		363.0 -> 169.0	34859				
PFHpS	6.109	449.0 -> 80.0	18046	17.16	µg/L		98
		449.0 -> 99.0	9865				
PFHxA	4.553	313.0 -> 269.0	142716	17.56	µg/L		100
		313.0 -> 119.0	5809				
PFHxS	5.433	399.0 -> 80.0	19223	17.41	µg/L	m	100
		399.0 -> 99.0	10687				
PFNA	6.756	463.0 -> 419.0	168451	17.71	µg/L		100
		463.0 -> 219.0	35600				
PFNS	7.235	549.0 -> 80.0	13930	16.00	µg/L		99
		549.0 -> 99.0	8332				
PFOA	6.125	413.0 -> 369.0	187559	17.83	µg/L		99
		413.0 -> 169.0	46122				
PFOS	6.718	499.0 -> 80.0	22019	16.49	µg/L	m	99

Perfluorinated Compounds by LC/MS/MS

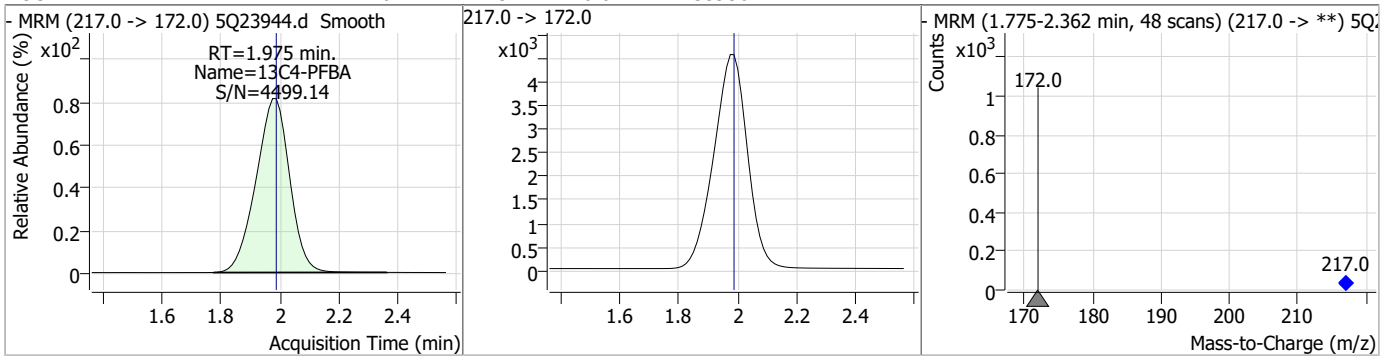
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		499.0 -> 99.0	10834			
PFPeA	3.422	263.0 -> 219.0	98544	17.71	µg/L	100
PFPeS	4.636	349.0 -> 80.0	15516	16.77	µg/L	97
		349.0 -> 99.0	8054			
PFTeDA	10.529	713.0 -> 669.0	146957	17.67	µg/L	100
		713.0 -> 219.0	16590			
PFTrDA	9.832	663.0 -> 619.0	145758	15.84	µg/L	100
		663.0 -> 369.0	16542			
PFUnDA	8.036	563.0 -> 519.0	209025	17.68	µg/L	100
		563.0 -> 269.0	37156			
11Cl-PF3OUdS	8.403	631.0 -> 451.0	79957	11.29	µg/L	100
		633.0 -> 453.0	24877			
9Cl-PF3ONS	6.986	531.0 -> 351.0	84452	11.14	µg/L	99
		533.0 -> 353.0	27022			
ADONA	5.502	377.0 -> 251.0	241909	24.25	µg/L	99
		377.0 -> 85.0	87629			
HFPO-DA	4.815	329.0 -> 169.0	34316	16.84	µg/L	97
		285.0 -> 169.0	7778			
MeFOSA	6.590	512.0 -> 169.0	12799	21.24	µg/L	99
		512.0 -> 219.0	10444			
4-PFECHS	6.006	461.0 -> 381.0	47998	10.31	µg/L	100
		461.0 -> 99.0	24887			
FBSA	4.170	298.0 -> 78.0	86612	30.82	µg/L	100
		298.0 -> 64.0	8112			
FHxSA	5.409	398.0 -> 78.0	89954	33.38	µg/L	99
		398.0 -> 64.0	8589			

 # = Qualifier out of range, m = manually integrated, + = Area summed

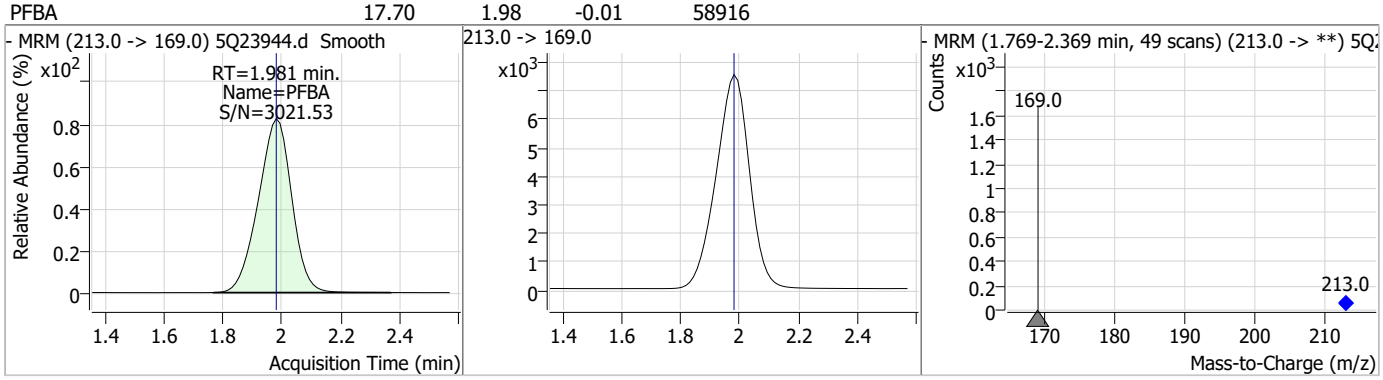
Perfluorinated Compounds by LC/MS/MS



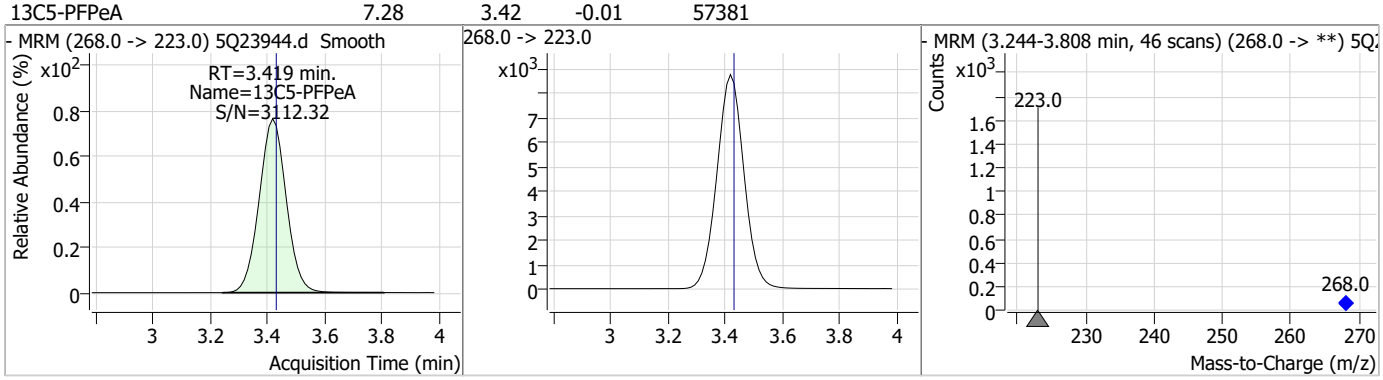
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	7.61	1.97	-0.01	35936				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	17.70	1.98	-0.01	58916				

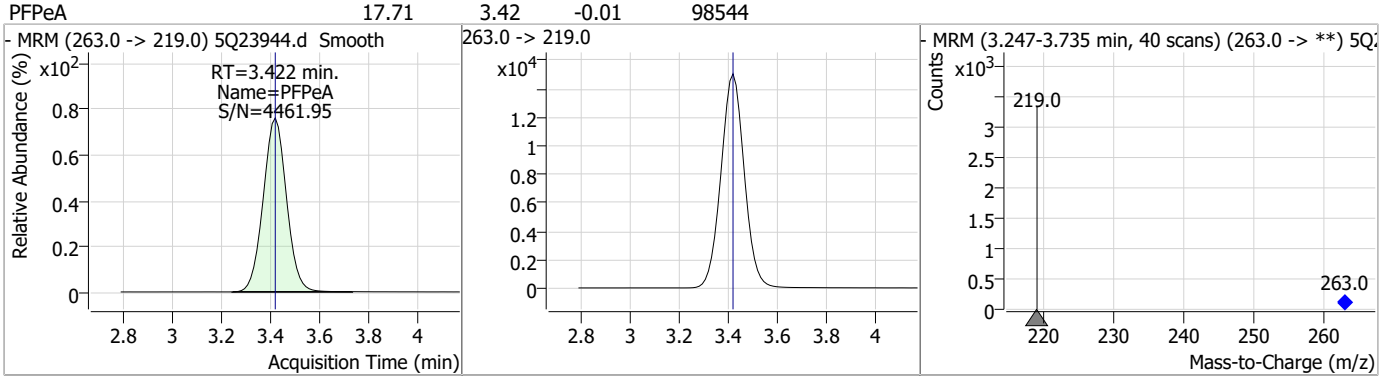


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	7.28	3.42	-0.01	57381				

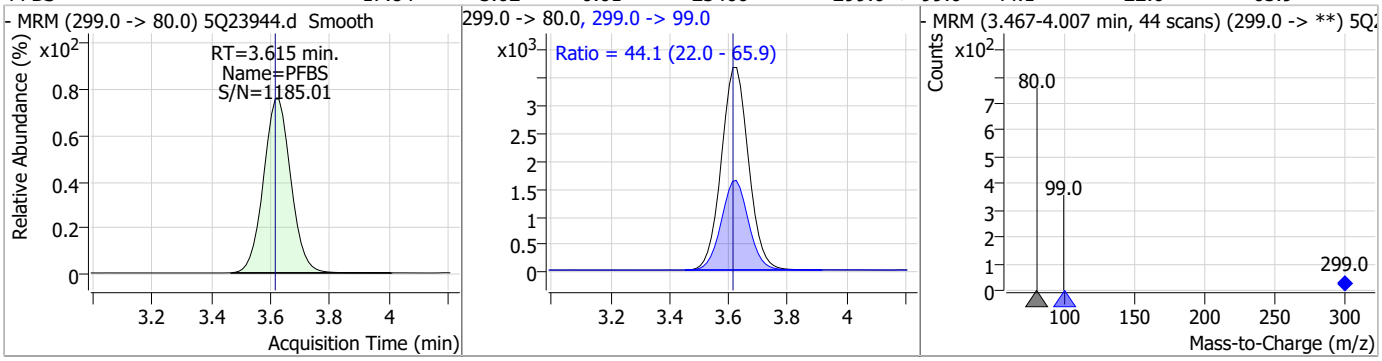


Perfluorinated Compounds by LC/MS/MS

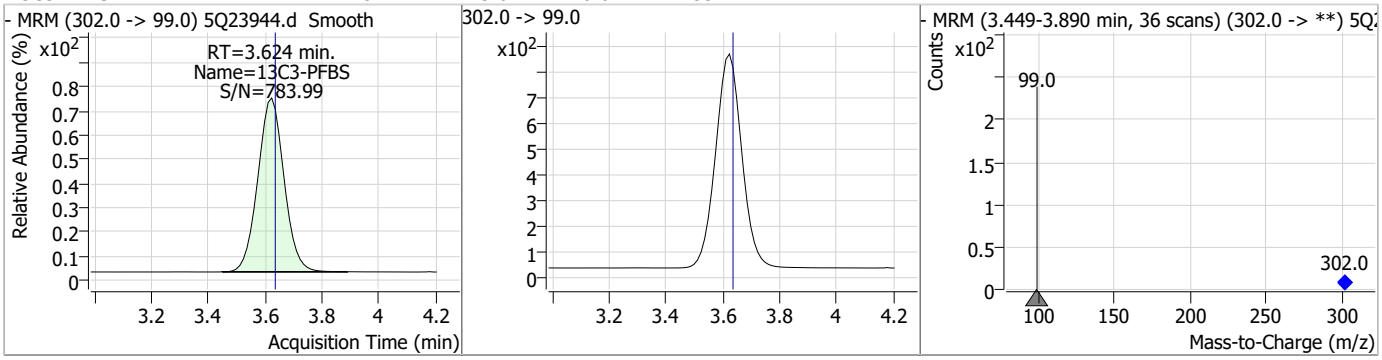
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	17.71	3.42	-0.01	98544				



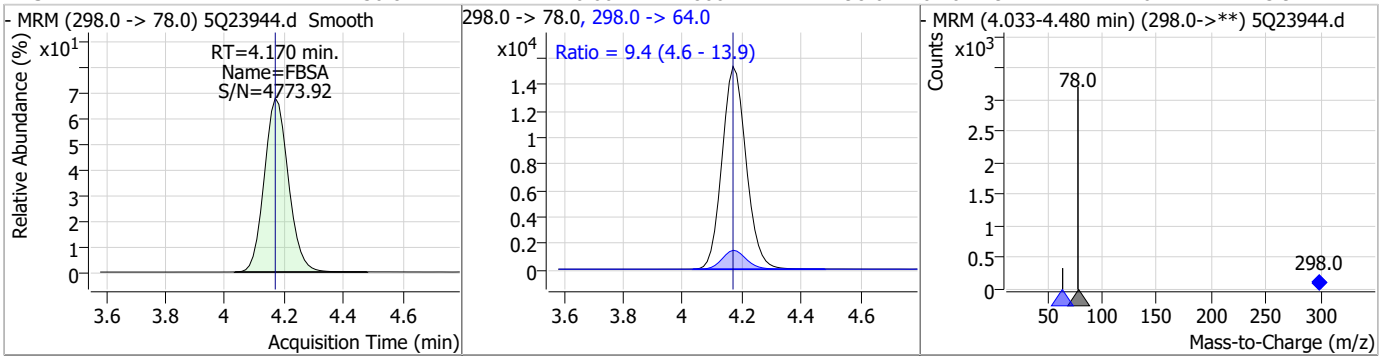
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	17.84	3.62	-0.01	23460	299.0 -> 99.0	44.1	22.0	65.9



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	5.47	3.62	-0.01	5311				

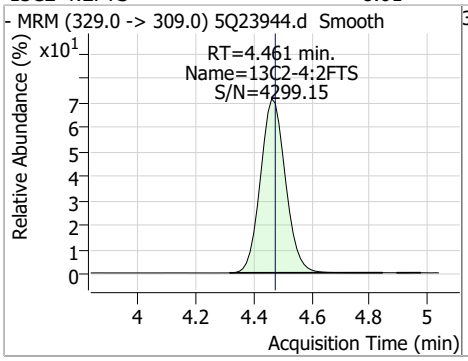


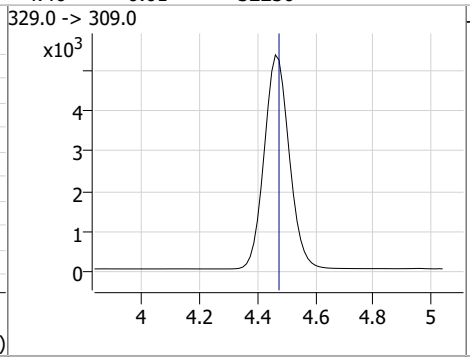
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	30.82	4.17	0.00	86612	298.0 -> 64.0	9.4	4.6	13.9

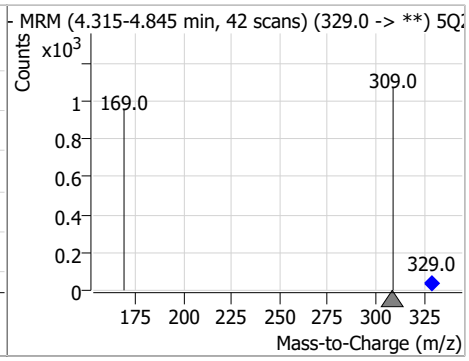


Perfluorinated Compounds by LC/MS/MS

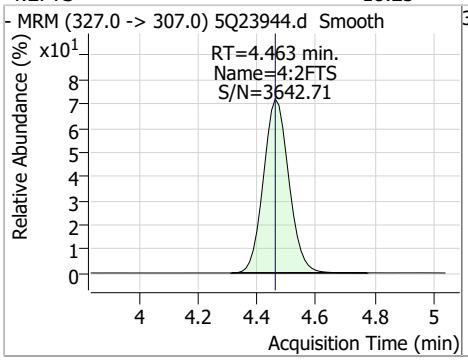
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	8.01	4.46	-0.01	32230				

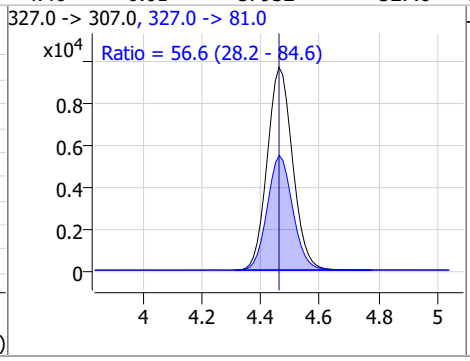


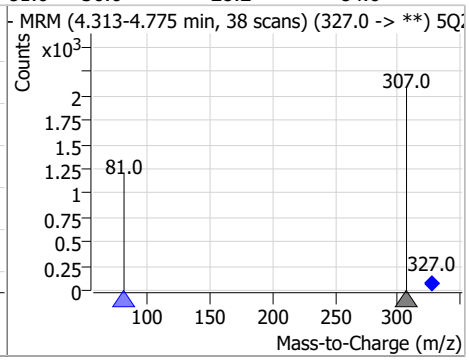




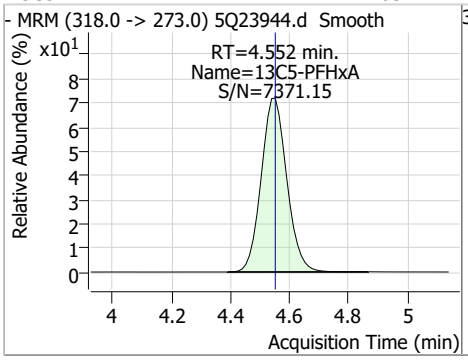
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	18.25	4.46	-0.01	57932	327.0 -> 81.0	56.6	28.2	84.6

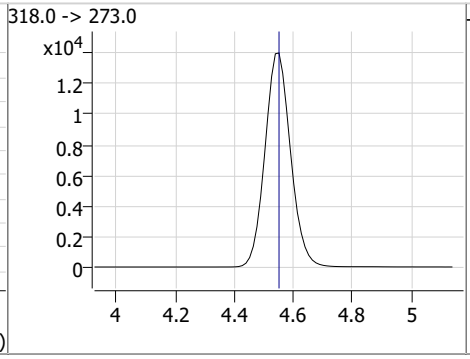


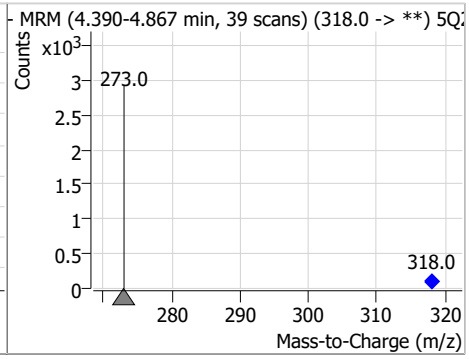




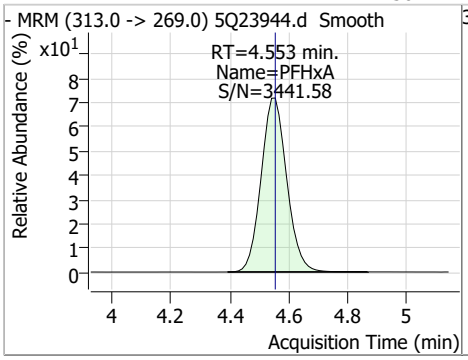
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	7.03	4.55	0.00	84016				

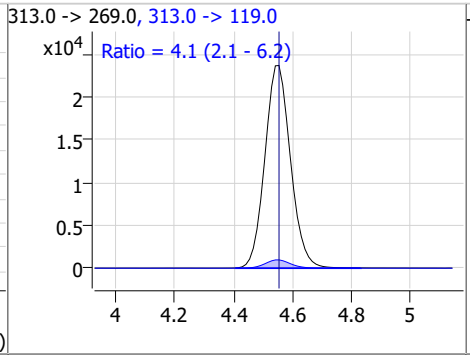


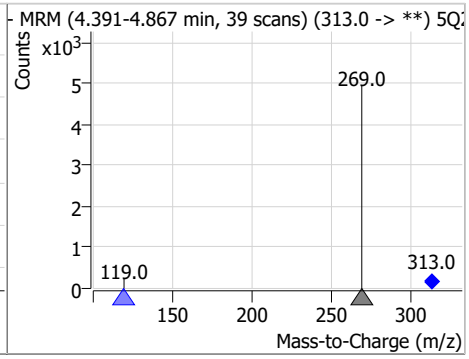




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	17.56	4.55	0.00	142716	313.0 -> 119.0	4.1	2.1	6.2

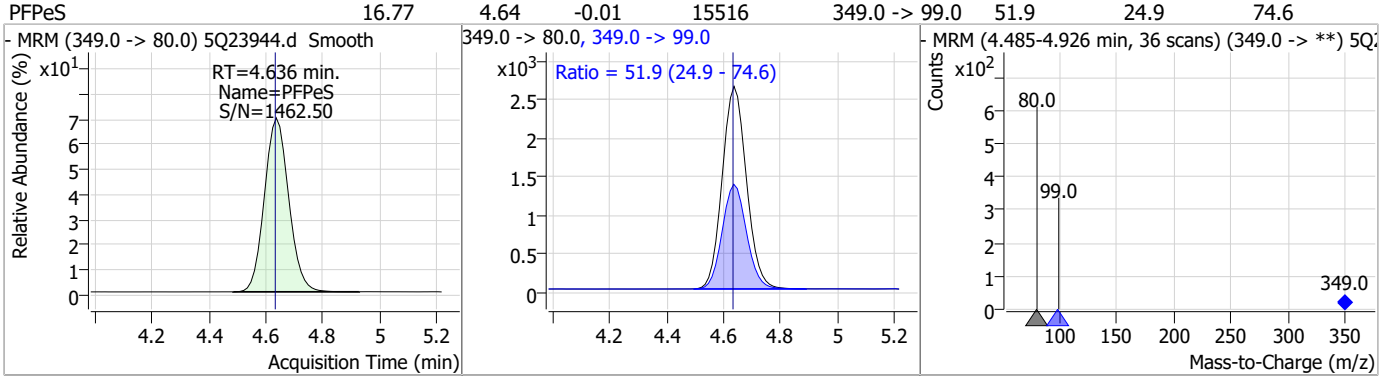




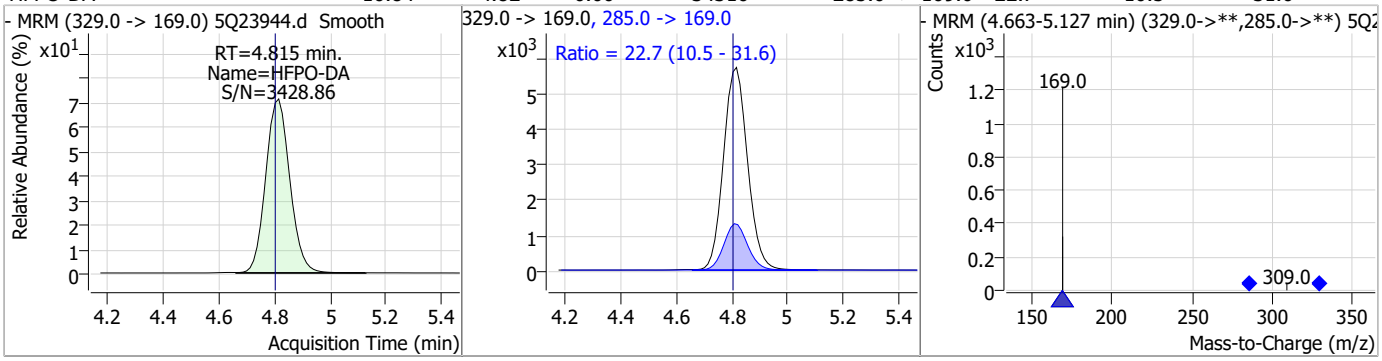


Perfluorinated Compounds by LC/MS/MS

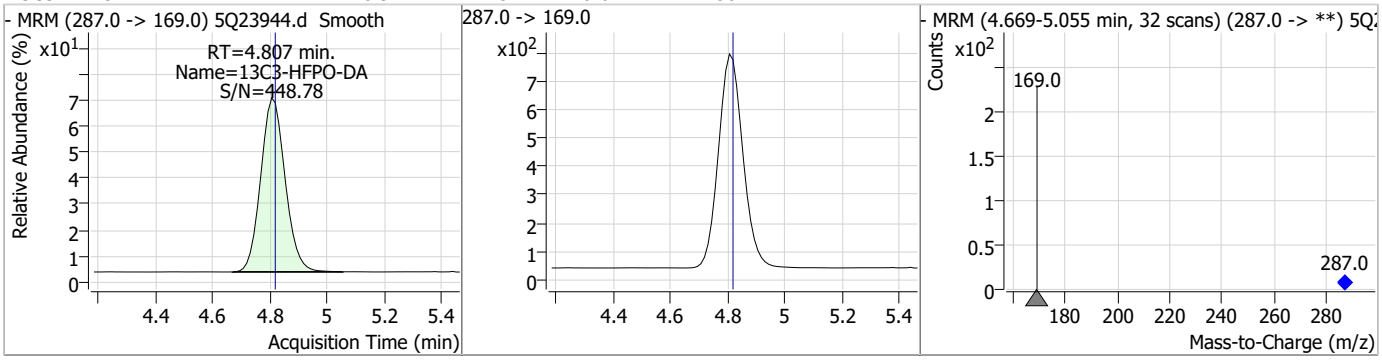
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	16.77	4.64	-0.01	15516	349.0 -> 99.0	51.9	24.9	74.6



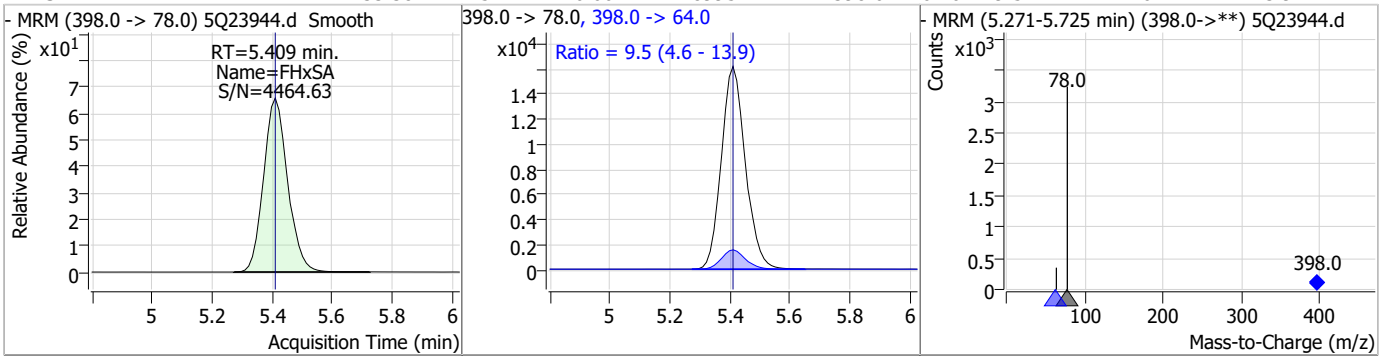
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	16.84	4.82	0.00	34316	285.0 -> 169.0	22.7	10.5	31.6



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	6.94	4.81	-0.01	4480				

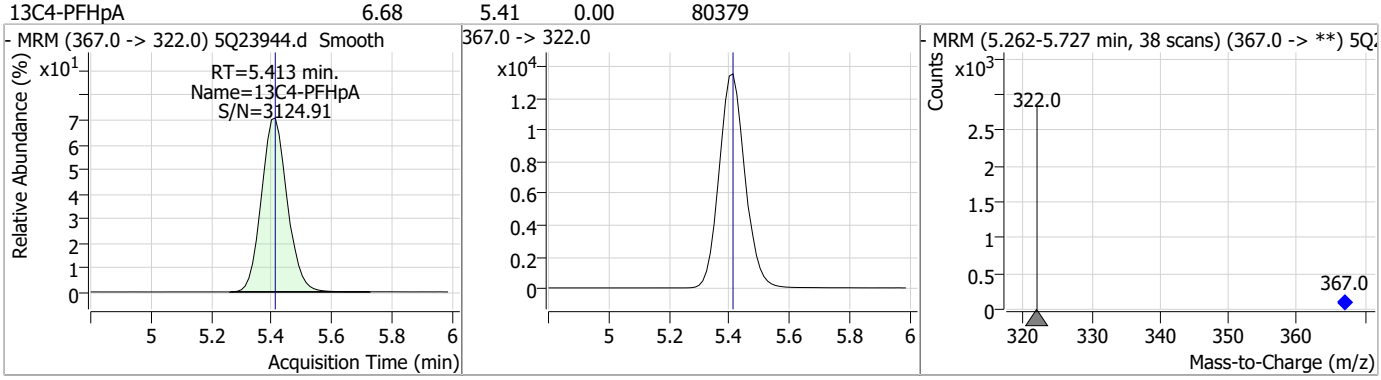


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	33.38	5.41	0.00	89954	398.0 -> 64.0	9.5	4.6	13.9

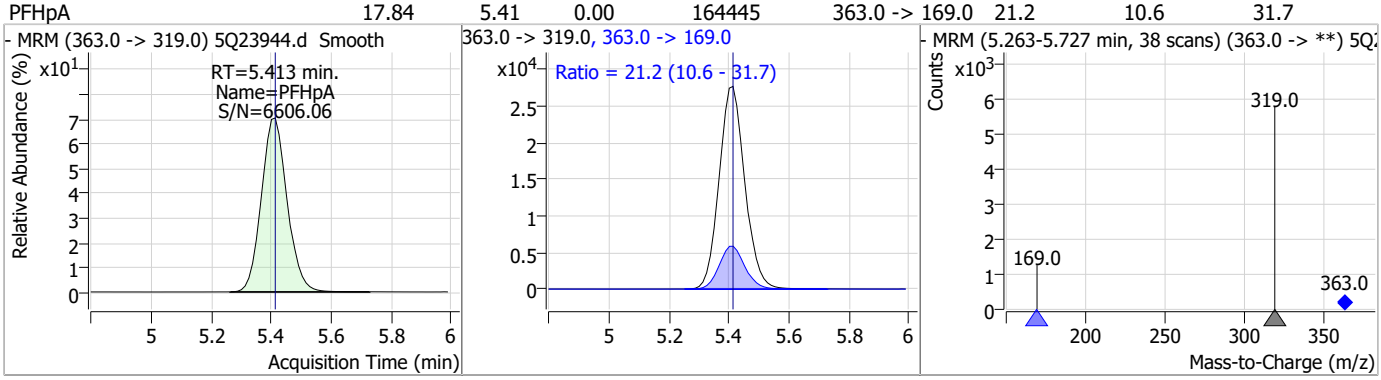


Perfluorinated Compounds by LC/MS/MS

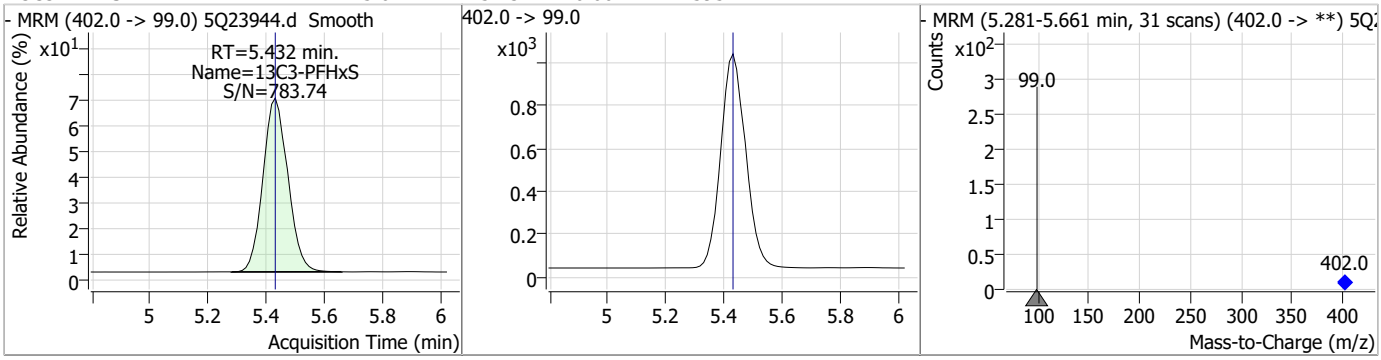
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	6.68	5.41	0.00	80379				



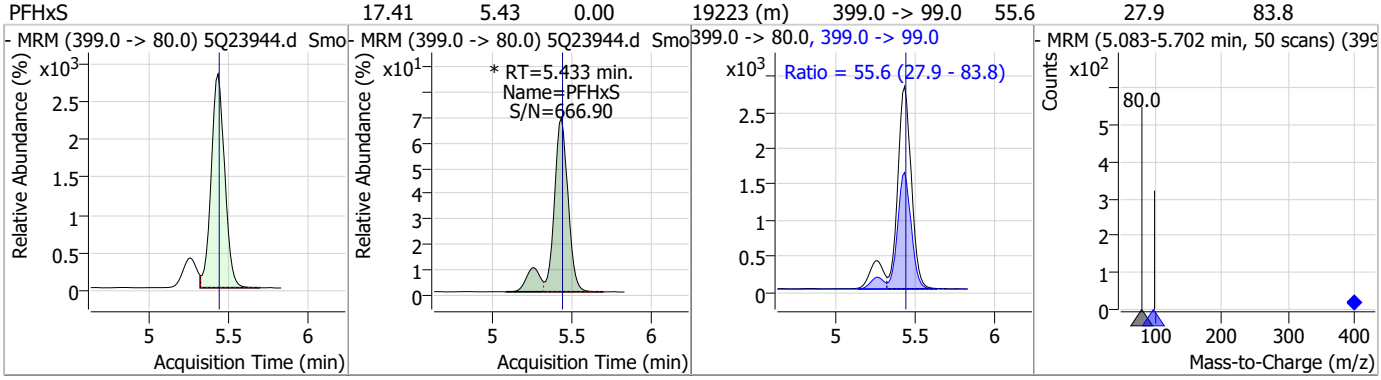
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	17.84	5.41	0.00	164445	363.0 -> 169.0	21.2	10.6	31.7



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	5.04	5.43	0.00	5952				

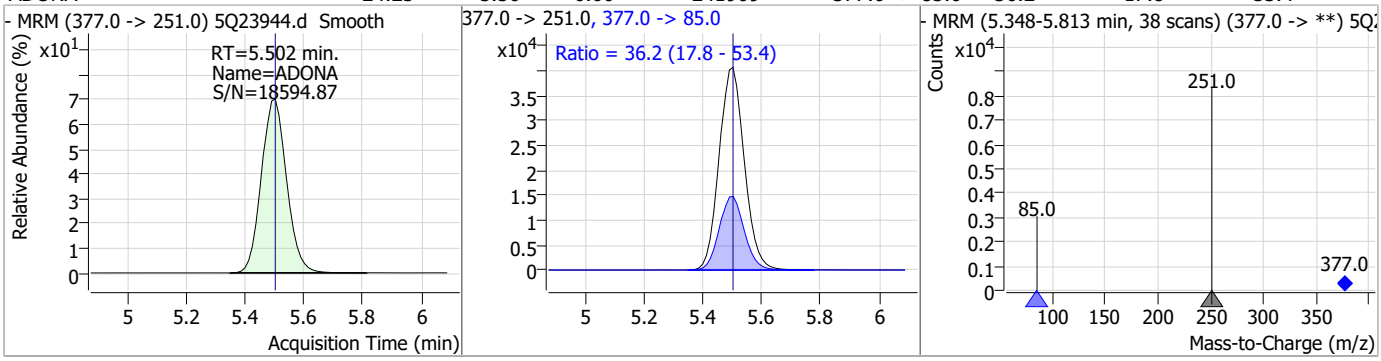


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	17.41	5.43	0.00	19223 (m)	399.0 -> 99.0	55.6	27.9	83.8

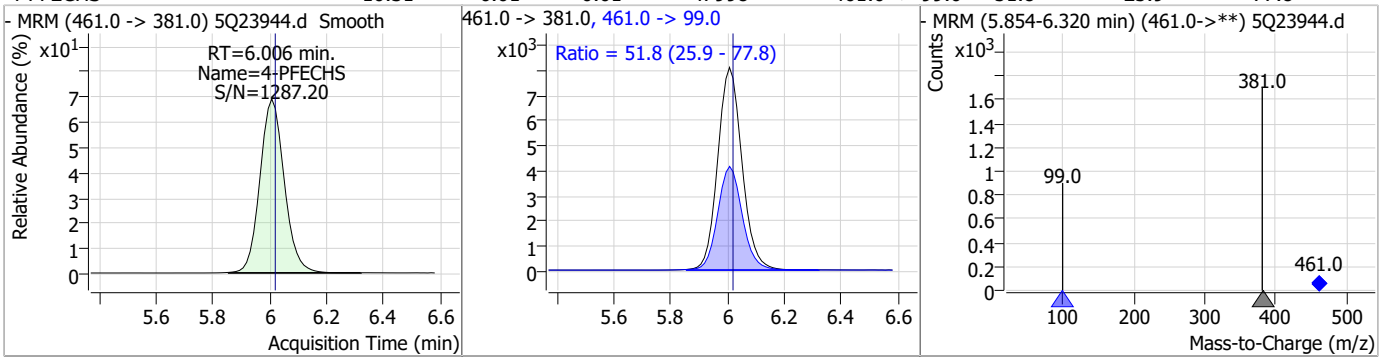


Perfluorinated Compounds by LC/MS/MS

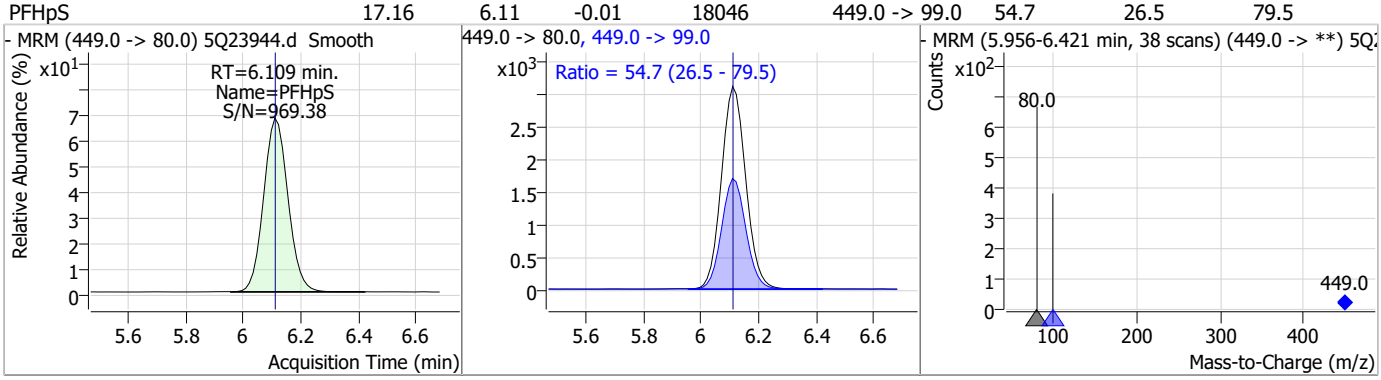
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	24.25	5.50	0.00	241909	377.0 -> 85.0	36.2	17.8	53.4



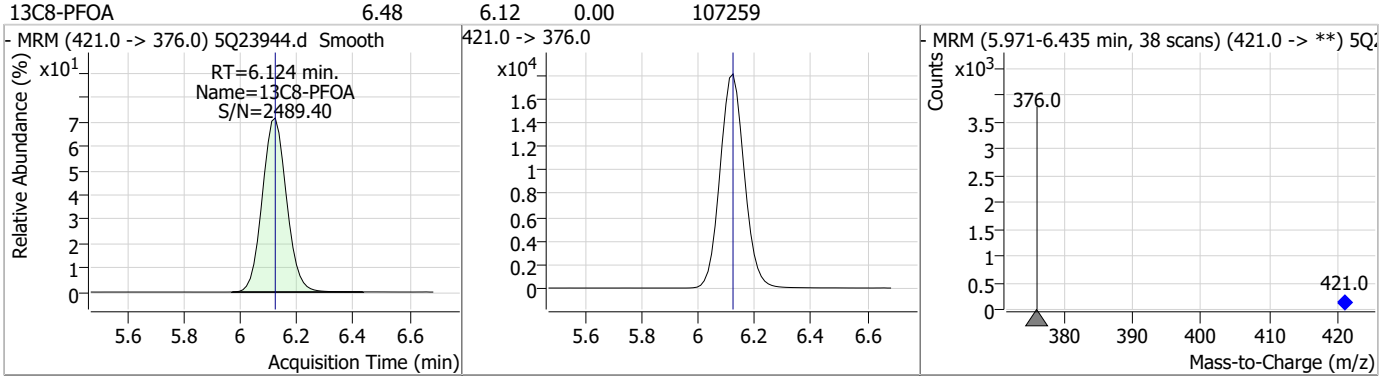
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS	10.31	6.01	-0.01	47998	461.0 -> 99.0	51.8	25.9	77.8



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	17.16	6.11	-0.01	18046	449.0 -> 99.0	54.7	26.5	79.5

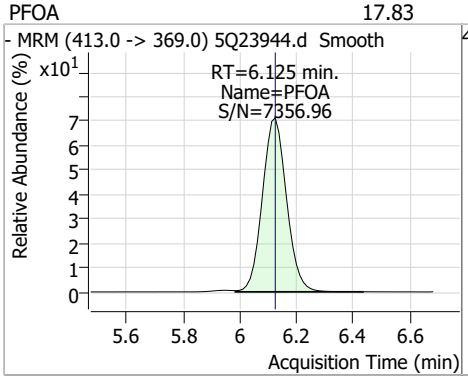


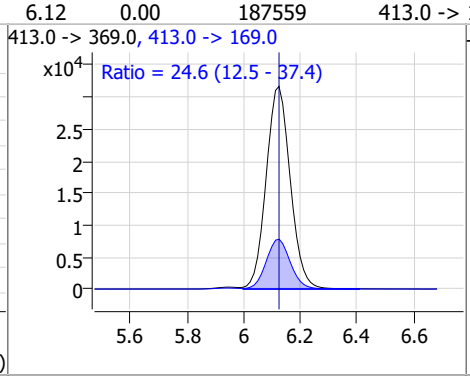
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	6.48	6.12	0.00	107259				

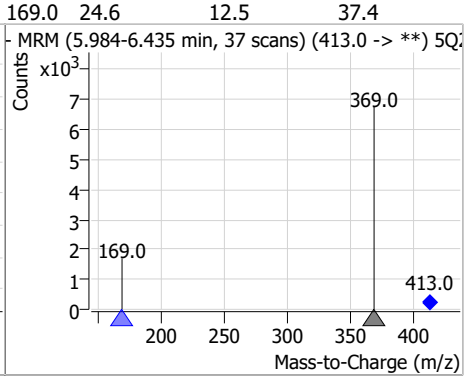


Perfluorinated Compounds by LC/MS/MS

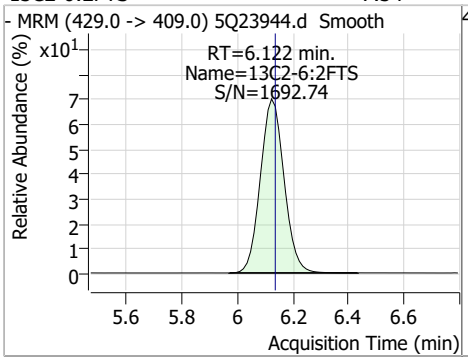
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	17.83	6.12	0.00	187559	413.0 -> 169.0	24.6	12.5	37.4

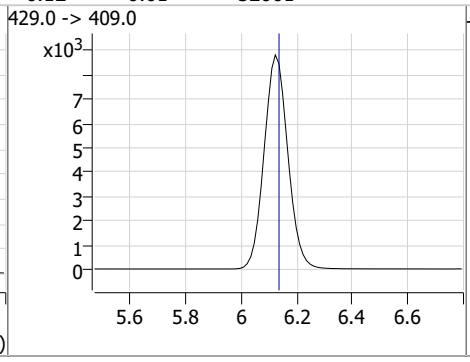


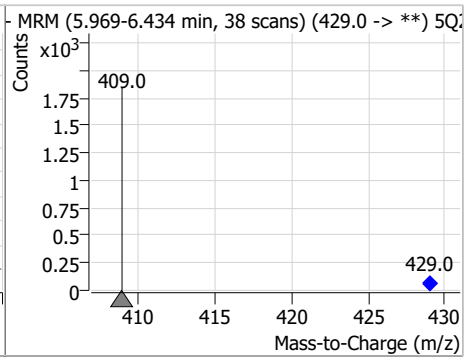




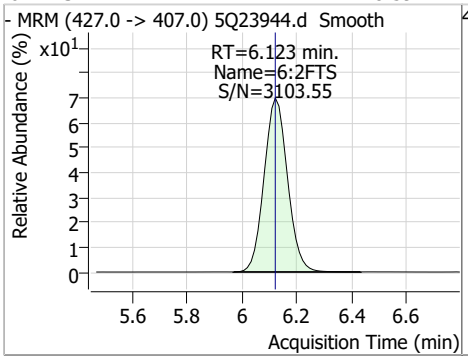
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	7.34	6.12	-0.01	52001				

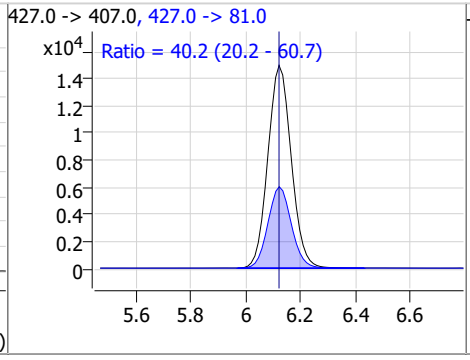


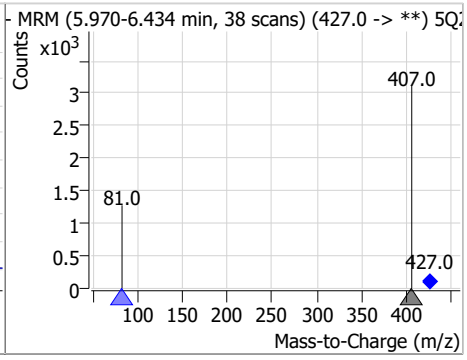




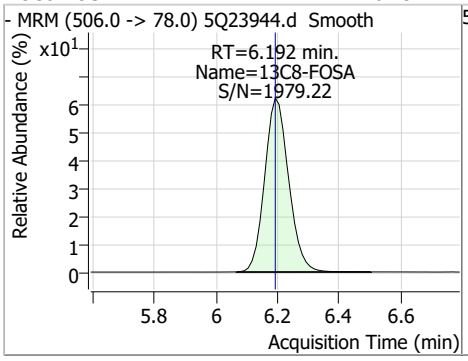
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	18.59	6.12	-0.01	88449	427.0 -> 81.0	40.2	20.2	60.7

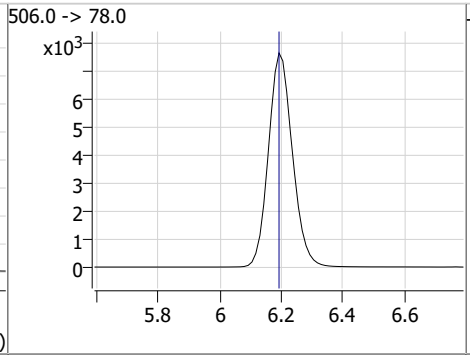


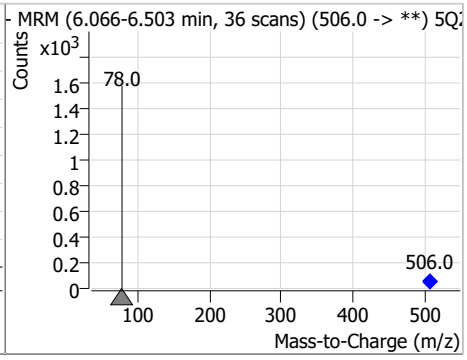




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	10.19	6.19	0.00	41293				

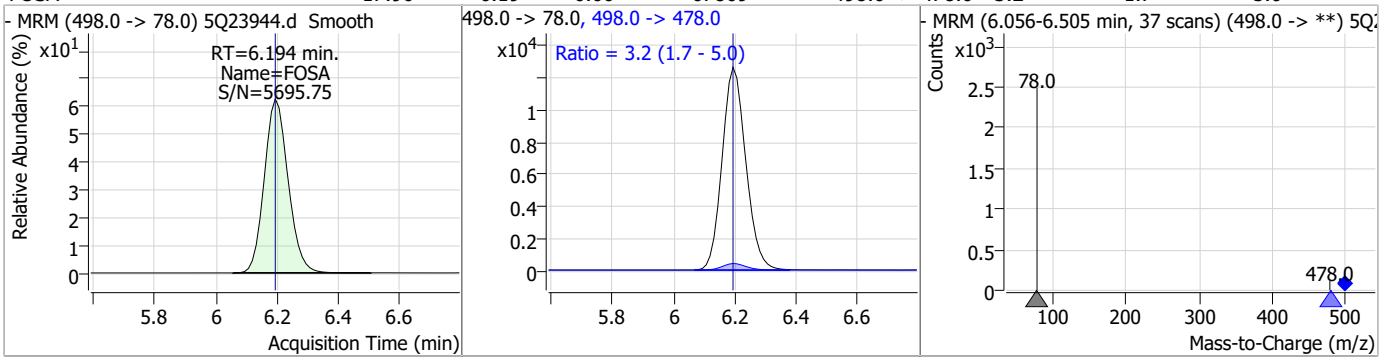




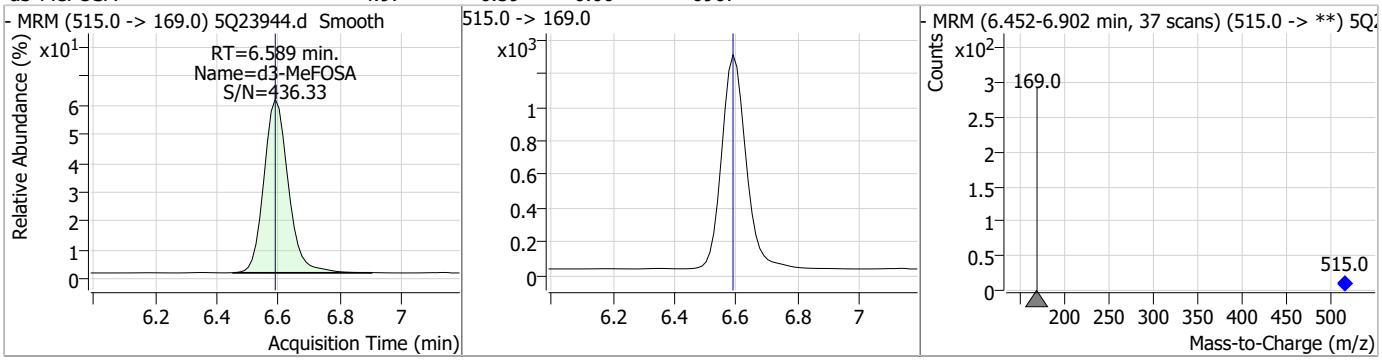


Perfluorinated Compounds by LC/MS/MS

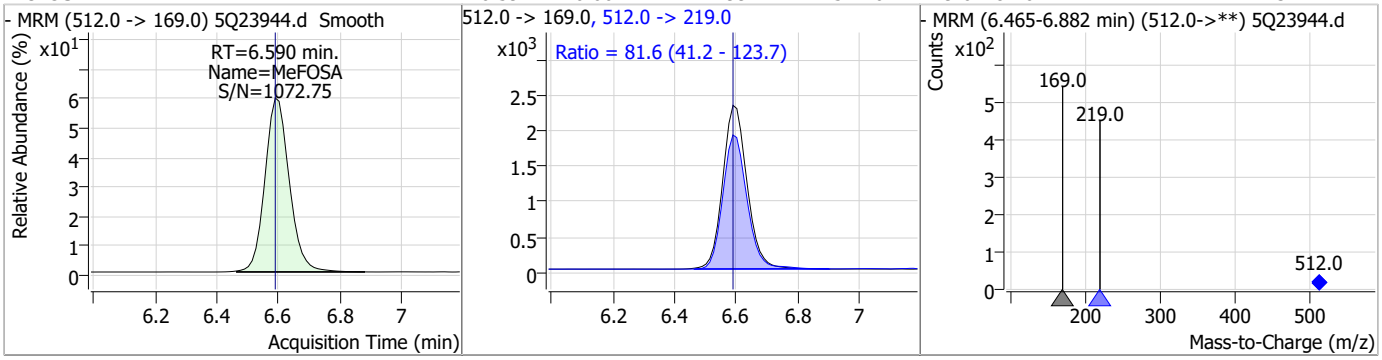
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	17.90	6.19	0.00	67809	498.0 -> 478.0	3.2	1.7	5.0



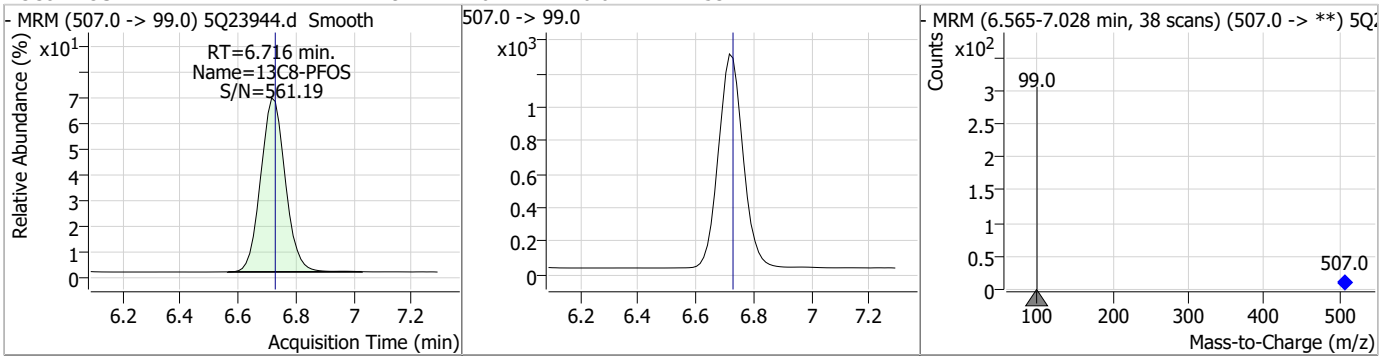
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	4.97	6.59	0.00	6967				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	21.24	6.59	0.00	12799	512.0 -> 219.0	81.6	41.2	123.7

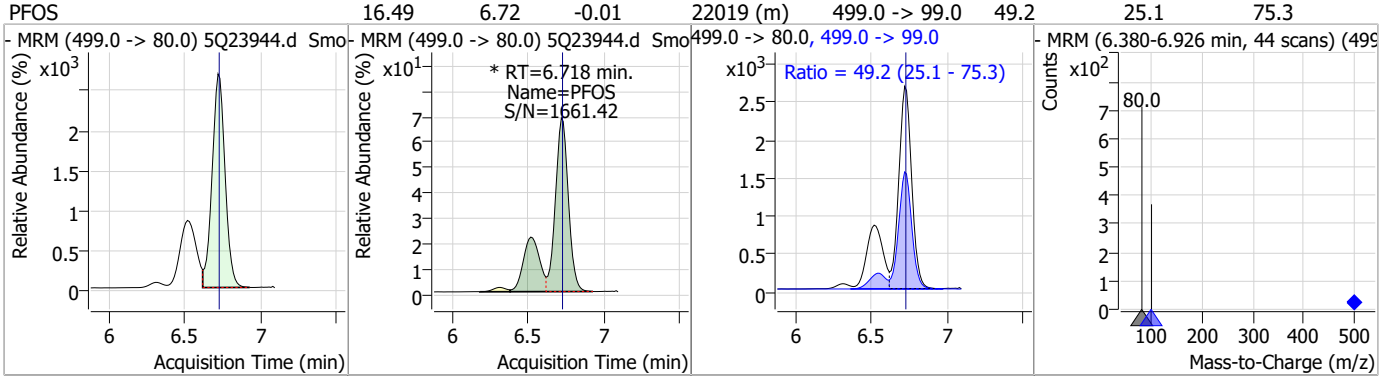


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	4.79	6.72	-0.01	7532				

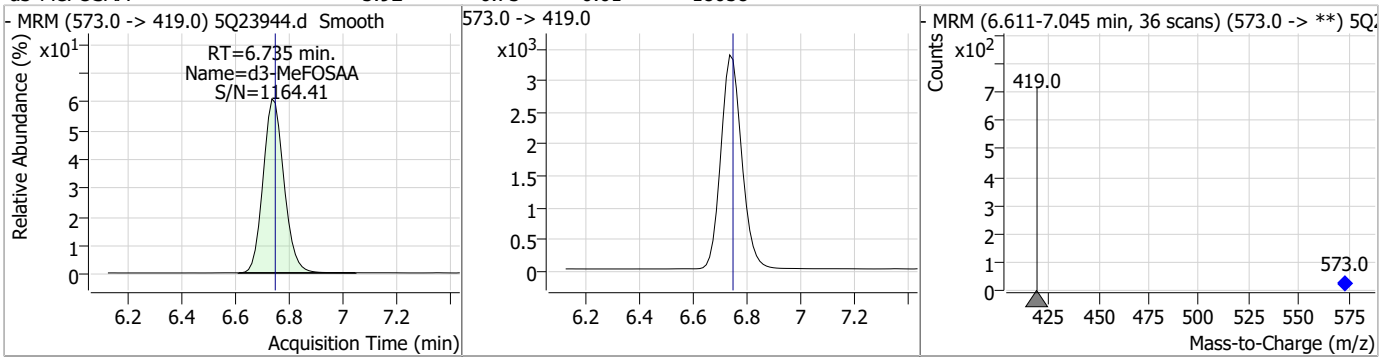


Perfluorinated Compounds by LC/MS/MS

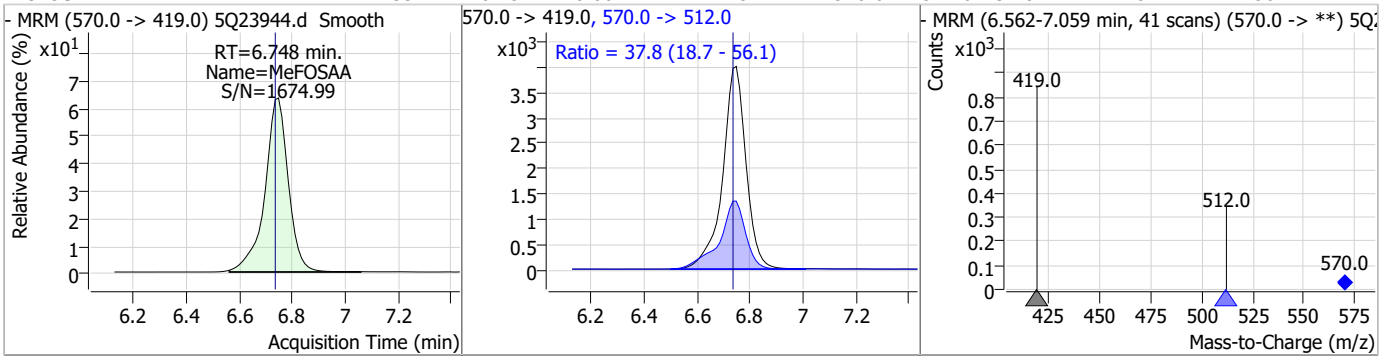
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	16.49	6.72	-0.01	22019 (m)	499.0 -> 99.0	49.2	25.1	75.3



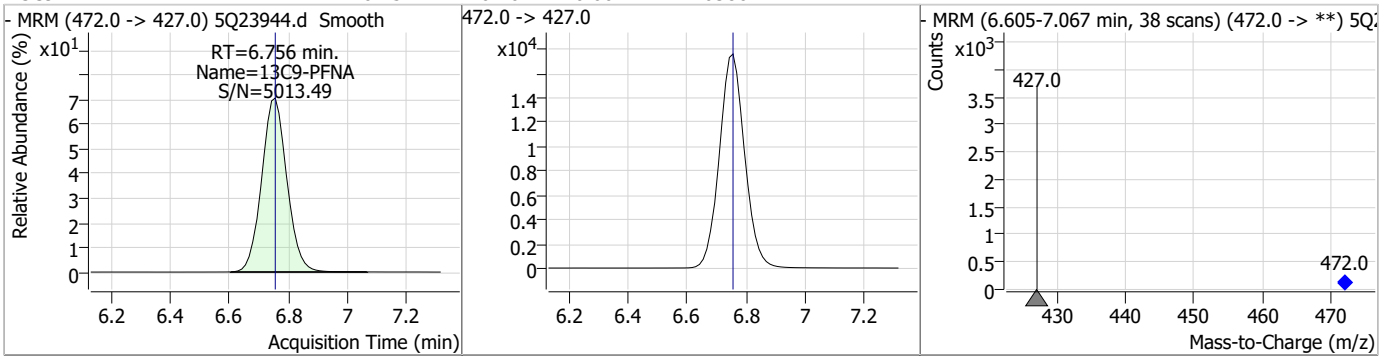
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	5.92	6.73	-0.01	18058				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	17.33	6.75	0.00	24418	570.0 -> 512.0	37.8	18.7	56.1

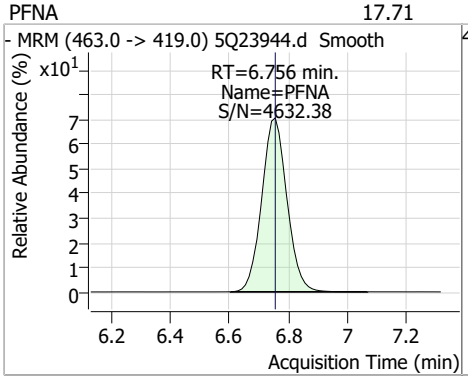


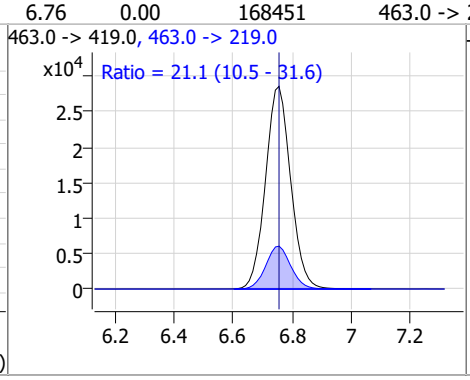
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	6.25	6.76	0.00	103861				

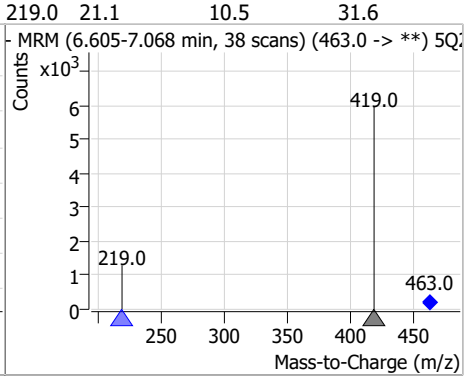


Perfluorinated Compounds by LC/MS/MS

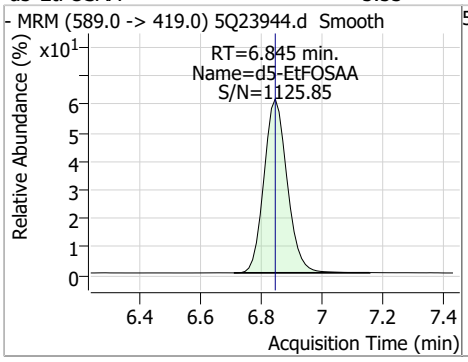
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	17.71	6.76	0.00	168451	463.0 -> 219.0	21.1	10.5	31.6

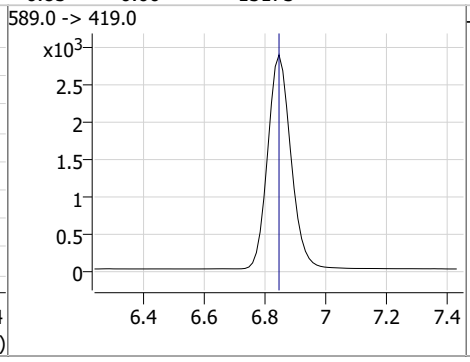


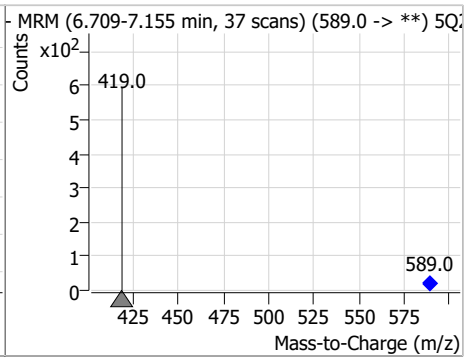




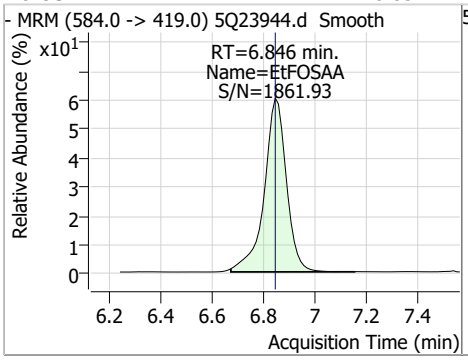
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	5.53	6.85	0.00	15173				

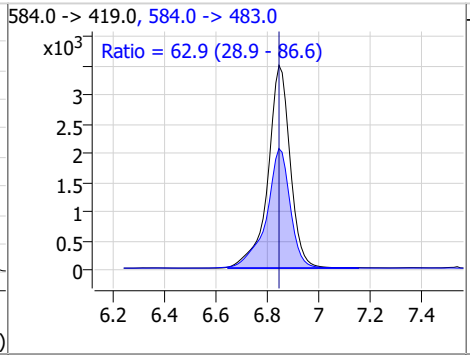


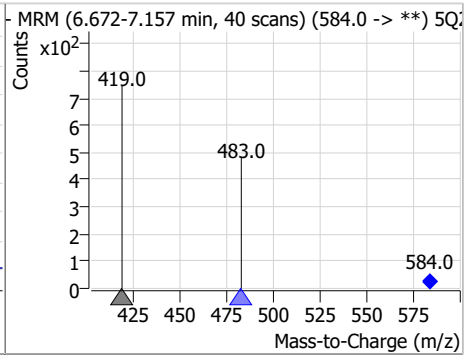




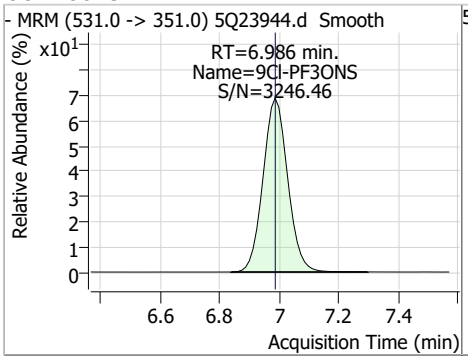
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	16.85	6.85	0.00	20854	584.0 -> 483.0	62.9	28.9	86.6

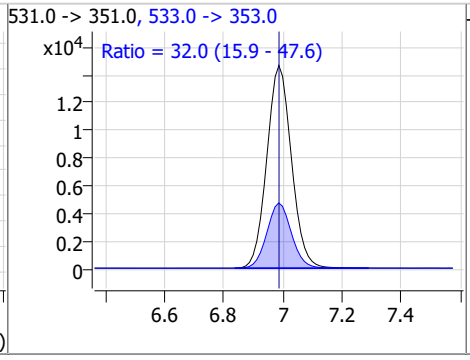


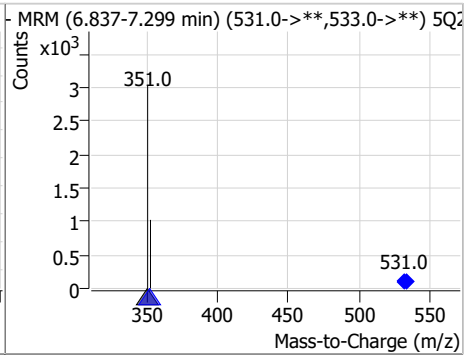




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	11.14	6.99	-0.01	84452	533.0 -> 353.0	32.0	15.9	47.6

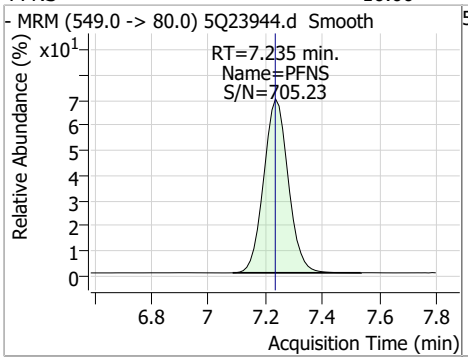


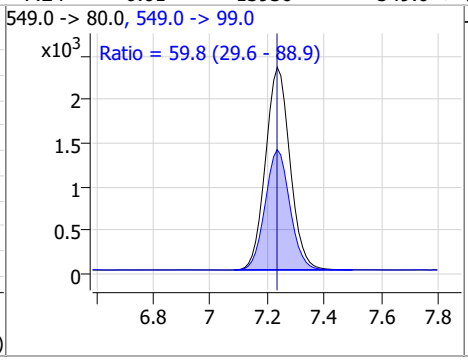


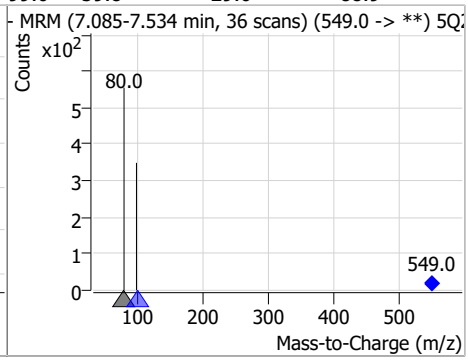


Perfluorinated Compounds by LC/MS/MS

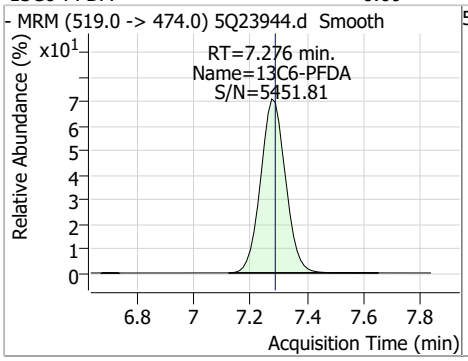
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	16.00	7.24	-0.01	13930	549.0 -> 99.0	59.8	29.6	88.9

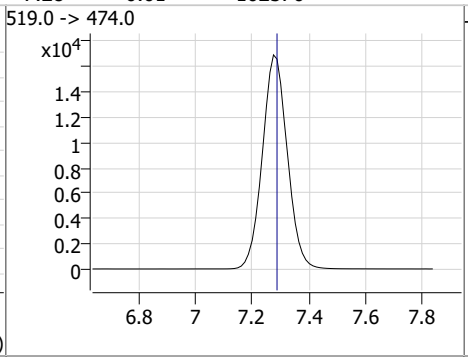


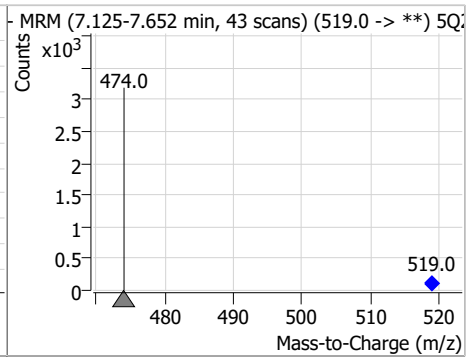




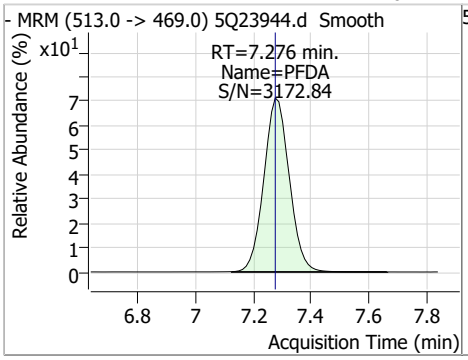
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	6.09	7.28	-0.01	102576				

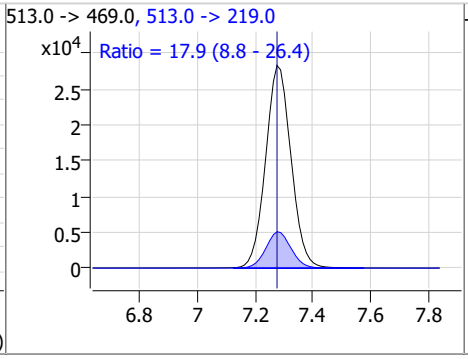


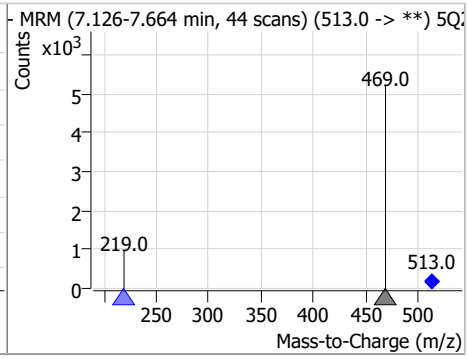




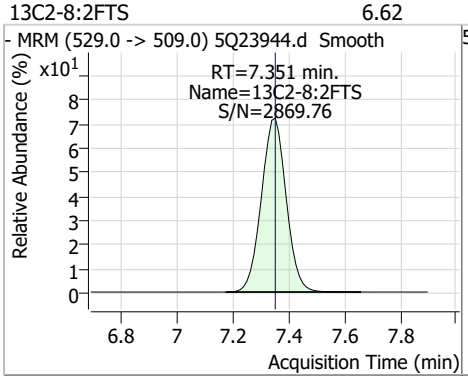
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	17.64	7.28	-0.01	171863	513.0 -> 219.0	17.9	8.8	26.4

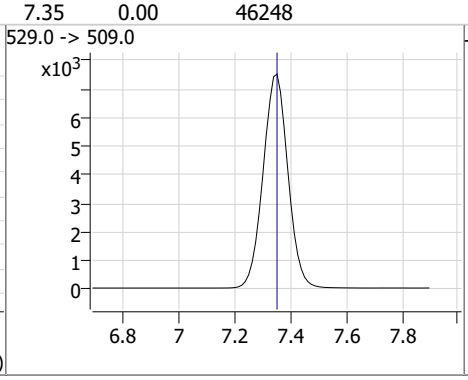


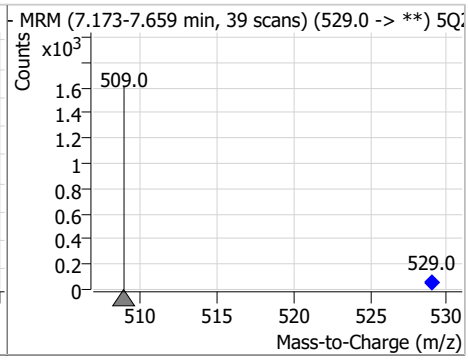




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	6.62	7.35	0.00	46248				

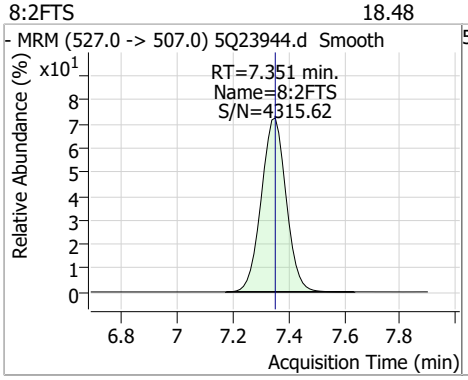


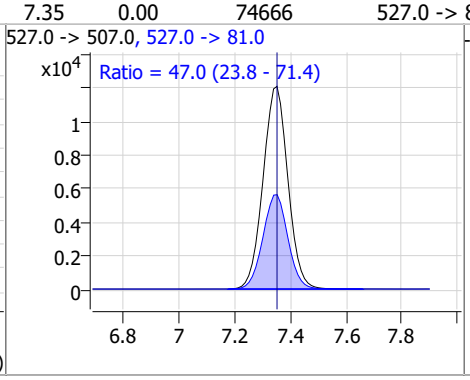


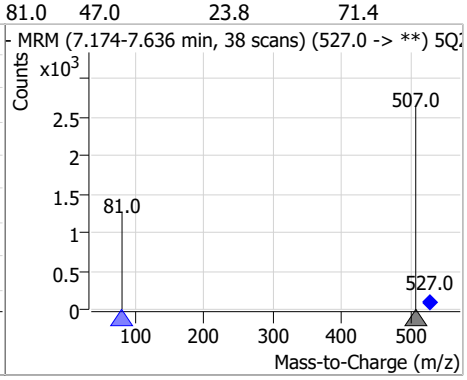


Perfluorinated Compounds by LC/MS/MS

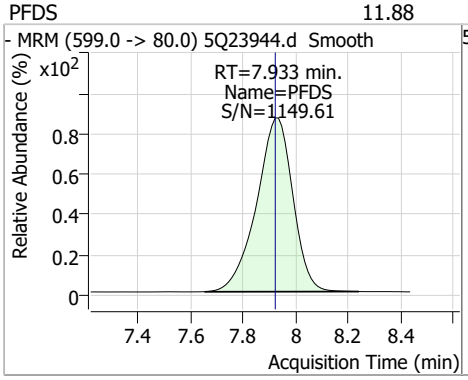
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	18.48	7.35	0.00	74666	527.0 -> 81.0	47.0	23.8	71.4

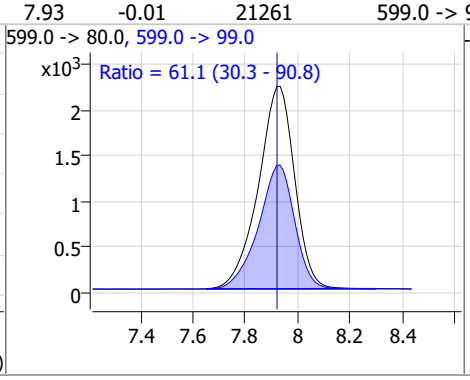


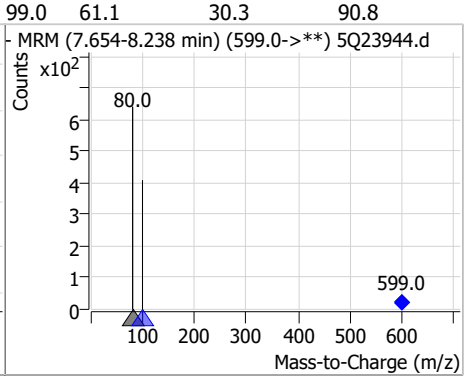




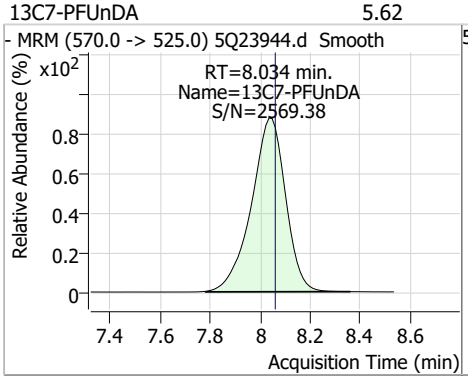
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	11.88	7.93	-0.01	21261	599.0 -> 99.0	61.1	30.3	90.8

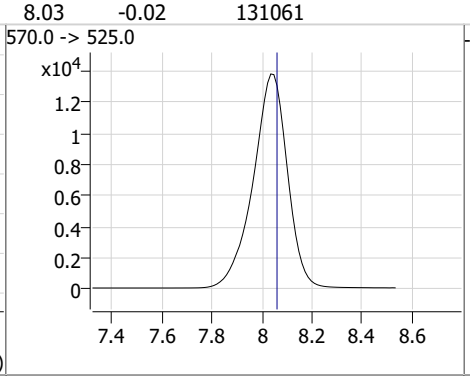


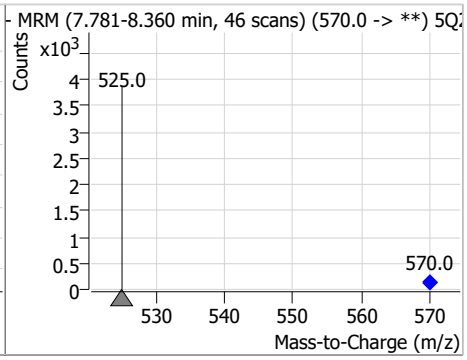




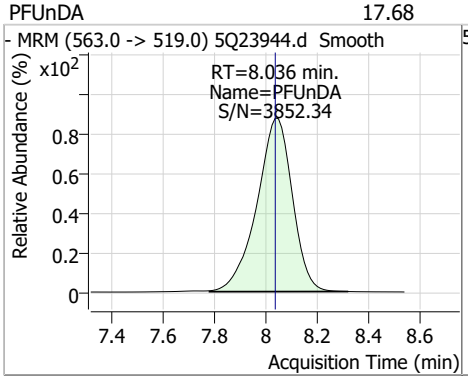
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	5.62	8.03	-0.02	131061				

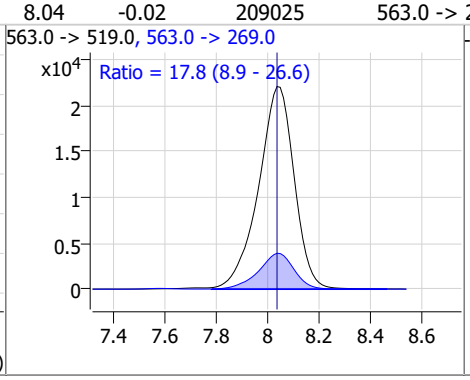


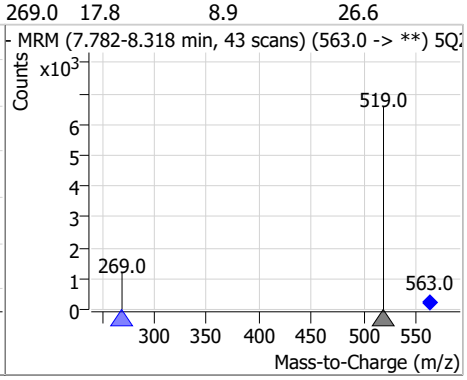




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	17.68	8.04	-0.02	209025	563.0 -> 269.0	17.8	8.9	26.6

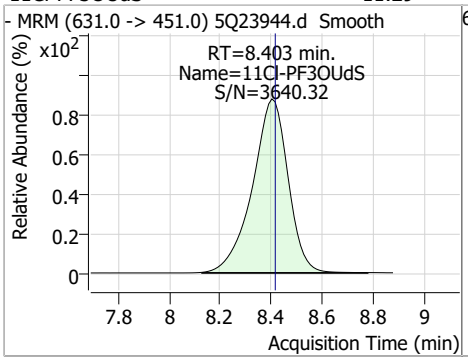


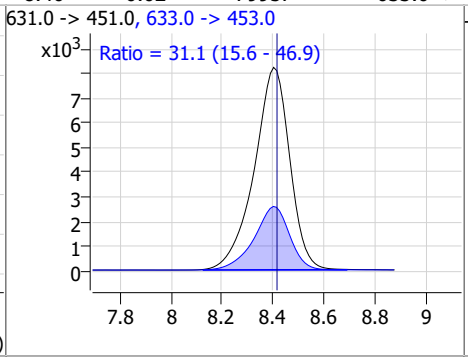


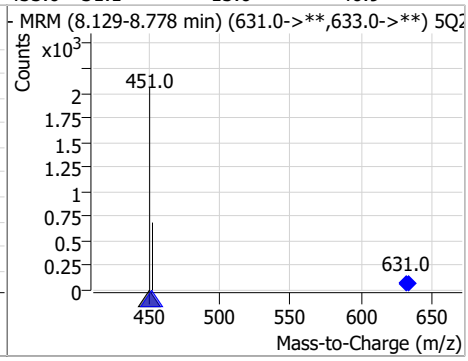


Perfluorinated Compounds by LC/MS/MS

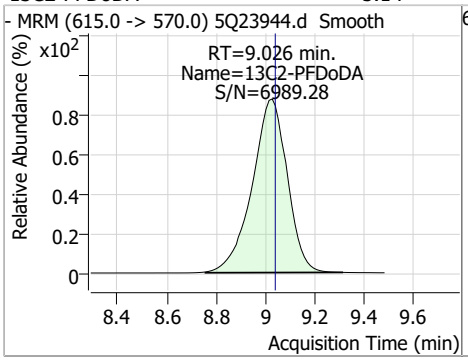
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	11.29	8.40	-0.02	79957	633.0 -> 453.0	31.1	15.6	46.9

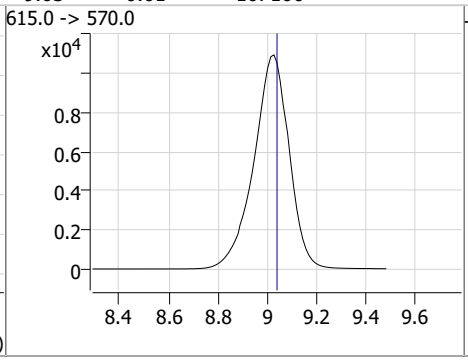


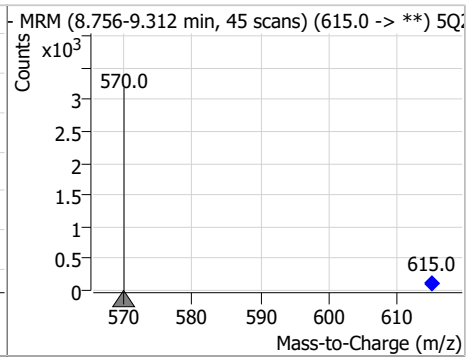




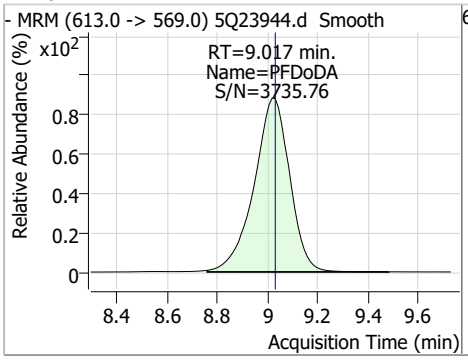
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	5.14	9.03	-0.01	107100				

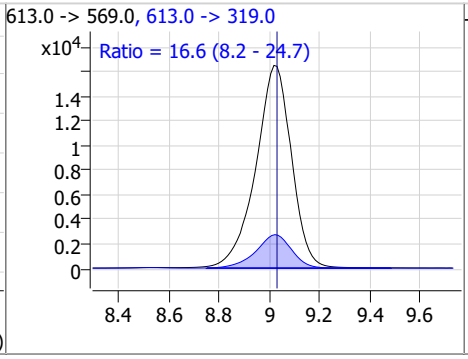


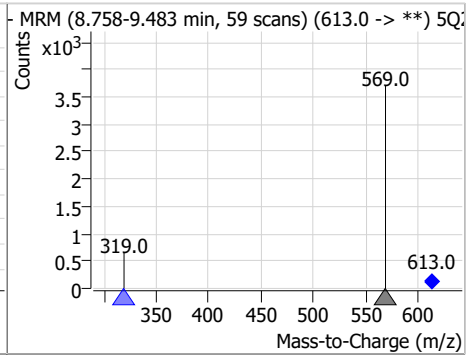




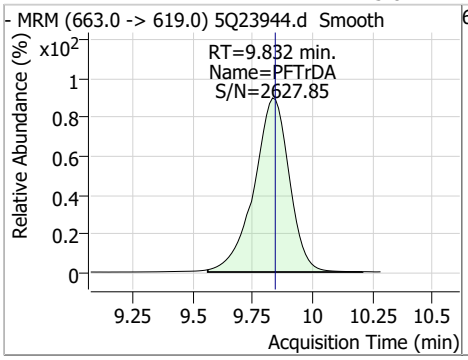
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	17.71	9.02	-0.03	162793	613.0 -> 319.0	16.6	8.2	24.7

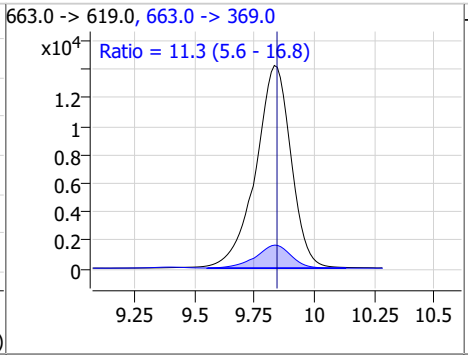


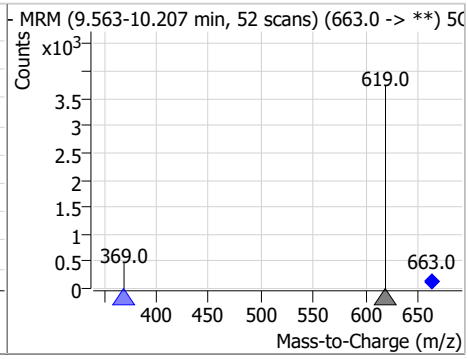




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	15.84	9.83	-0.03	145758	663.0 -> 369.0	11.3	5.6	16.8

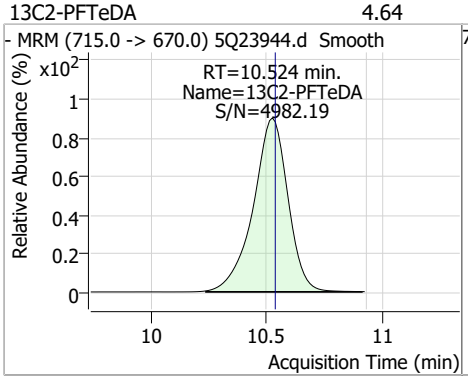


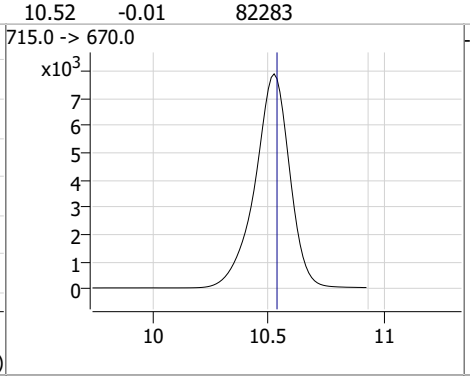


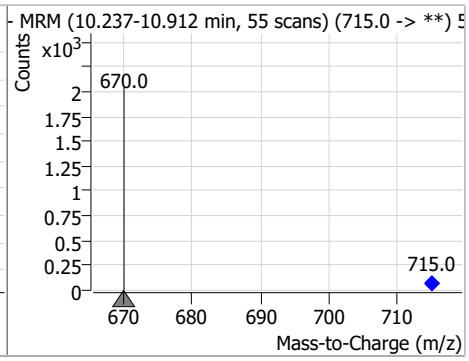


Perfluorinated Compounds by LC/MS/MS

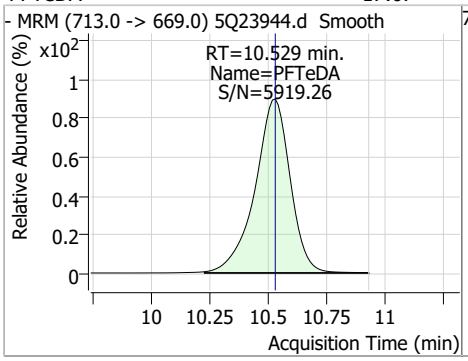
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	4.64	10.52	-0.01	82283				

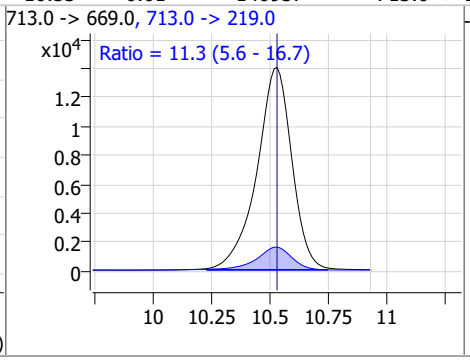


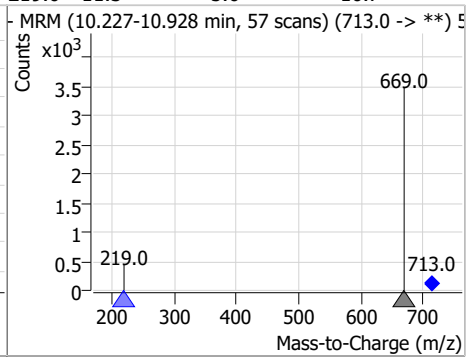




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	17.67	10.53	-0.01	146957	713.0 -> 219.0	11.3	5.6	16.7







Manual Integration Approval Summary

Sample Number: OP835-BS
Lab FileID: 5Q23944.D
Injection Time: 12/29/23 00:29
Method: EPA 537M QSM5.3 B-15
Analyst approved: 12/29/23 14:15 Lindsay Ritner
Supervisor approved: 01/02/24 14:27 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.43	Split peak
Perfluorooctanesulfonic acid	1763-23-1		6.72	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Natasha Gumtie
01/05/24 17:11

Perfluorinated Compounds by LC/MS/MS

Data File : 2q118604.d
Operator : lindsayr
Acq. Method : 537_ID.m
Acq. Date-Time : 1/4/2024 4:19:07 PM
Sample Name : op937-bs
Vial : P6-A1
DA Method File : ID_010224_S2Q1691.quantmethod.xml
Batch Name : s2q1693.batch.bin
Sample Information : op937,S2Q1693,125,,,1.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M5-EtFOSAA	7.722	589.0 -> 419.0	15494	10.00	µg/L	0.000
M4-PFBA	2.215	217.0 -> 172.0	46596	10.00	µg/L	-0.025
M5-PFPeA	4.049	268.0 -> 223.0	72194	10.00	µg/L	-0.013
M5-PFHxA	5.326	318.0 -> 273.0	89979	10.00	µg/L	-0.013
M4-PFHpA	6.195	367.0 -> 322.0	77527	10.00	µg/L	-0.013
M8-PFOA	6.875	421.0 -> 376.0	148137	10.00	µg/L	-0.013
M9-PFNA	7.455	472.0 -> 427.0	104902	10.00	µg/L	0.000
M6-PFDA	7.931	519.0 -> 474.0	79876	10.00	µg/L	0.000
M7-PFUnDA	8.381	570.0 -> 525.0	124369	10.00	µg/L	0.000
M2-PFDoDA	8.920	615.0 -> 570.0	121239	10.00	µg/L	0.000
M2-PFTeDA	10.017	715.0 -> 670.0	91616	10.00	µg/L	0.000
M8-FOSA	7.147	506.0 -> 78.0	16705	10.00	µg/L	-0.013
M3-PFBS	4.317	302.0 -> 99.0	5304	10.00	µg/L	-0.013
M3-PFHxS	6.218	402.0 -> 99.0	4773	10.00	µg/L	-0.025
M8-PFOS	7.413	507.0 -> 99.0	3901	10.00	µg/L	-0.014
M2-4:2FTS	5.221	329.0 -> 309.0	35026	10.00	µg/L	-0.013
M2-6:2FTS	6.860	429.0 -> 409.0	47652	10.00	µg/L	-0.025
M2-8:2FTS	7.967	529.0 -> 509.0	30431	10.00	µg/L	0.000
M3-MeFOSAA	7.609	573.0 -> 419.0	18030	10.00	µg/L	0.000
M3-HFPO-DA	5.582	287.0 -> 169.0	7460	10.00	µg/L	-0.025
M3-MeFOSA	7.513	515.0 -> 169.0	4951	10.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	5.221	329.0 -> 309.0	35026	9.49	µg/L	-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 94.9%		
13C2-6:2FTS	6.860	429.0 -> 409.0	47652	8.30	µg/L	-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 83.0%		
13C2-8:2FTS	7.967	529.0 -> 509.0	30431	7.85	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 78.5%		
13C2-PFDoDA	8.920	615.0 -> 570.0	121239	6.92	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 69.2%		
13C2-PFTeDA	10.017	715.0 -> 670.0	91616	6.89	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 68.9%		
13C3-PFBS	4.317	302.0 -> 99.0	5304	8.83	µg/L	-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 88.3%		
13C3-PFHxS	6.218	402.0 -> 99.0	4773	7.80	µg/L	-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 78.0%		
13C4-PFBA	2.215	217.0 -> 172.0	46596	9.03	µg/L	-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 90.3%		
13C4-PFHpA	6.195	367.0 -> 322.0	77527	9.03	µg/L	-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 90.3%		
d5-EtFOSAA	7.722	589.0 -> 419.0	15494	8.03	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 80.3%		
13C5-PFHxA	5.326	318.0 -> 273.0	89979	9.12	µg/L	-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 91.2%		
13C5-PFPeA	4.049	268.0 -> 223.0	72194	9.08	µg/L	-0.013

Perfluorinated Compounds by LC/MS/MS

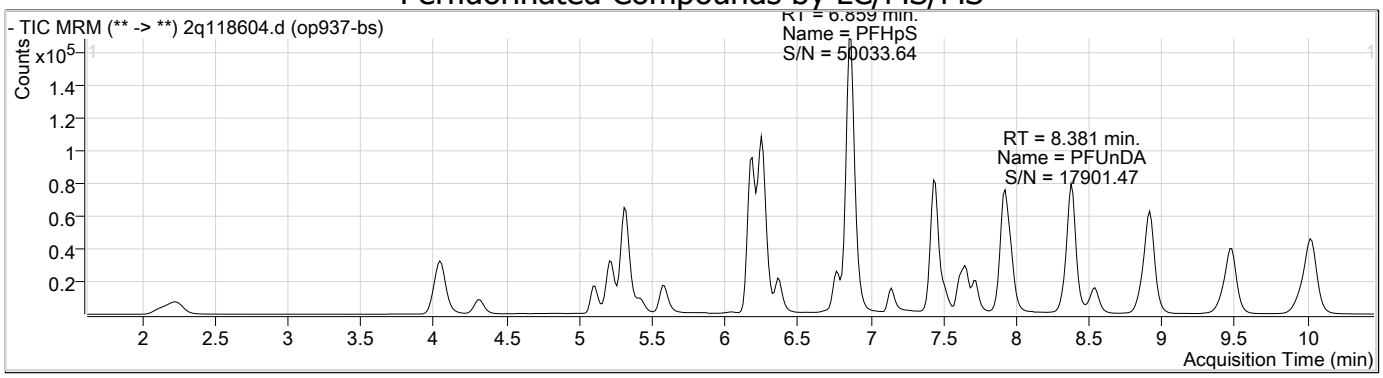
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 90.8%			
13C6-PFDA	7.931	519.0 -> 474.0	79876	7.64	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 76.4%			
13C7-PFUnDA	8.381	570.0 -> 525.0	124369	7.16	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 71.6%			
13C8-FOSA	7.147	506.0 -> 78.0	16705	8.13	µg/L		-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 81.3%			
13C8-PFOA	6.875	421.0 -> 376.0	148137	8.75	µg/L		-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 87.5%			
13C8-PFOS	7.413	507.0 -> 99.0	3901	6.98	µg/L		-0.014
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 69.8%			
13C9-PFNA	7.455	472.0 -> 427.0	104902	7.79	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 77.9%			
d3-MeFOSAA	7.609	573.0 -> 419.0	18030	7.88	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 78.8%			
13C3-HFPO-DA	5.582	287.0 -> 169.0	7460	8.98	µg/L		-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 89.8%			
d3-MeFOSA	7.513	515.0 -> 169.0	4951	6.89	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 68.9%			
Target Compounds							QValue
4:2FTS	5.224	327.0 -> 307.0	74716	21.00	µg/L		98
		327.0 -> 81.0	26859				
6:2FTS	6.861	427.0 -> 407.0	94169	22.65	µg/L		99
		427.0 -> 81.0	27525				
8:2FTS	7.968	527.0 -> 507.0	56173	21.47	µg/L		98
		527.0 -> 81.0	15229				
EtFOSAA	7.723	584.0 -> 419.0	29764	21.42	µg/L		98
		584.0 -> 483.0	18069				
FOSA	7.148	498.0 -> 78.0	30595	20.88	µg/L		100
		498.0 -> 478.0	1341				
MeFOSAA	7.610	570.0 -> 419.0	33279	21.82	µg/L		100
		570.0 -> 512.0	11875				
PFBA	2.221	213.0 -> 169.0	31061	21.17	µg/L		100
PFBS	4.307	299.0 -> 80.0	28164	21.02	µg/L		99
		299.0 -> 99.0	10537				
PFDA	7.919	513.0 -> 469.0	165169	20.88	µg/L		100
		513.0 -> 219.0	26658				
PFDoDA	8.922	613.0 -> 569.0	207909	21.96	µg/L		100
		613.0 -> 319.0	27019				
PFDS	8.316	599.0 -> 80.0	8044	20.87	µg/L		95
		599.0 -> 99.0	4067				
PFHpA	6.196	363.0 -> 319.0	263611	20.56	µg/L		99
		363.0 -> 169.0	45042				
PFHpS	6.859	449.0 -> 80.0	16502	20.94	µg/L		99
		449.0 -> 99.0	9086				
PFHxA	5.327	313.0 -> 269.0	188720	20.38	µg/L		100
		313.0 -> 119.0	7392				
PFHxS	6.219	399.0 -> 80.0	22198	21.24	µg/L	m	99
		399.0 -> 99.0	11560				
PFNA	7.455	463.0 -> 419.0	181412	21.54	µg/L		100
		463.0 -> 219.0	37135				
PFNS	7.878	549.0 -> 80.0	8750	21.29	µg/L		98
		549.0 -> 99.0	5024				
PFOA	6.875	413.0 -> 369.0	318687	20.14	µg/L		99
		413.0 -> 169.0	58442				
PFOS	7.414	499.0 -> 80.0	14223	23.26	µg/L	m	93

Perfluorinated Compounds by LC/MS/MS

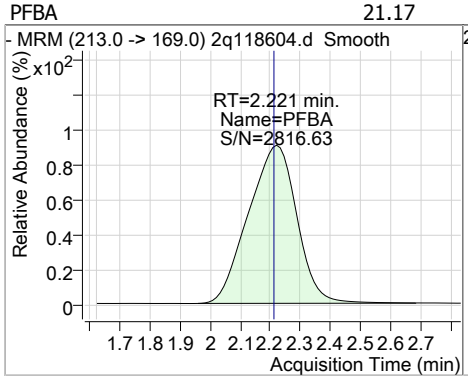
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		499.0 -> 99.0	6579			
PFPeA	4.052	263.0 -> 219.0	116986	20.56	µg/L	100
PFPeS	5.420	349.0 -> 80.0	20364	21.00	µg/L	99
		349.0 -> 99.0	8539			
PFTeDA	10.022	713.0 -> 669.0	219782	22.04	µg/L	100
		713.0 -> 219.0	13538			
PFTrDA	9.474	663.0 -> 619.0	238577	22.08	µg/L	100
		663.0 -> 369.0	16131			
PFUnDA	8.381	563.0 -> 519.0	203038	21.88	µg/L	100
		563.0 -> 269.0	32595			
11Cl-PF3OUdS	8.541	631.0 -> 451.0	56012	21.22	µg/L	99
		633.0 -> 453.0	17330			
9Cl-PF3ONS	7.663	531.0 -> 351.0	66394	19.55	µg/L	97
		533.0 -> 353.0	19594			
ADONA	6.271	377.0 -> 251.0	318414	20.26	µg/L	100
		377.0 -> 85.0	83056			
HFPO-DA	5.589	329.0 -> 169.0	51054	22.07	µg/L	100
		285.0 -> 169.0	14693			
MeFOSA	7.514	512.0 -> 169.0	9952	22.62	µg/L	91
		512.0 -> 219.0	9601			
4-PFECHS	6.768	461.0 -> 381.0	77924	18.52	µg/L	99
		461.0 -> 99.0	26570			
FBSA	5.116	298.0 -> 78.0	58773	23.52	µg/L	100
		298.0 -> 64.0	6079			
FHxSA	6.383	398.0 -> 78.0	60029	24.31	µg/L	100
		398.0 -> 64.0	6447			

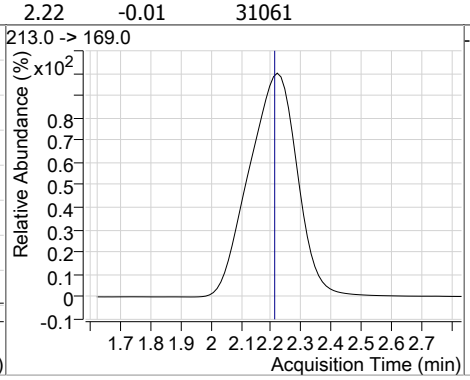
 # = Qualifier out of range, m = manually integrated, + = Area summed

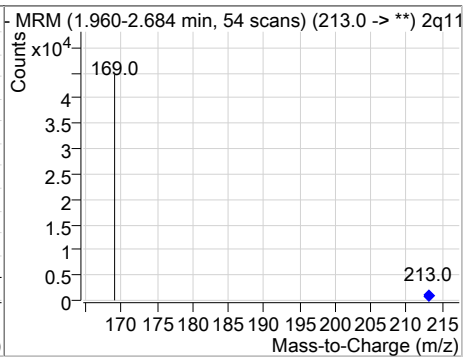
Perfluorinated Compounds by LC/MS/MS



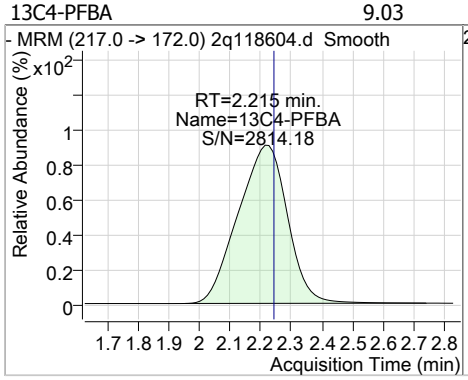
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	21.17	2.22	-0.01	31061				

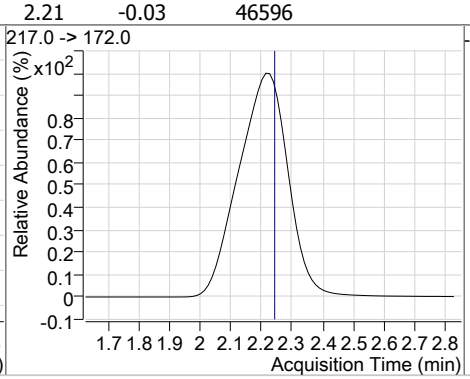


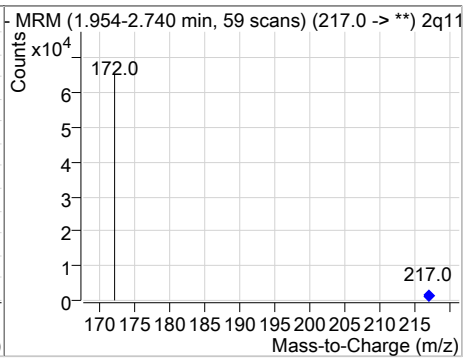




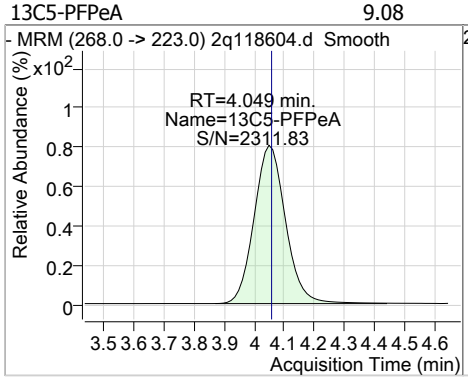
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	9.03	2.21	-0.03	46596				

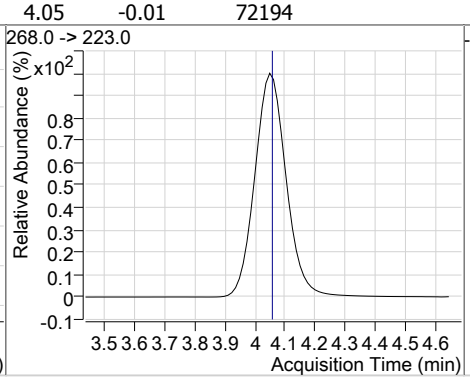


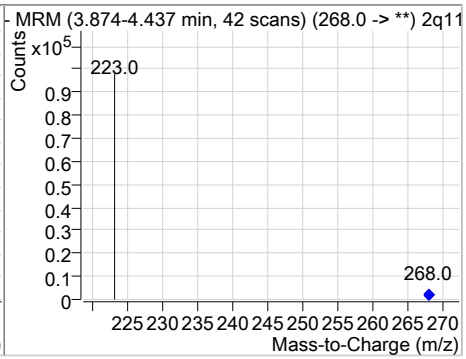




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	9.08	4.05	-0.01	72194				

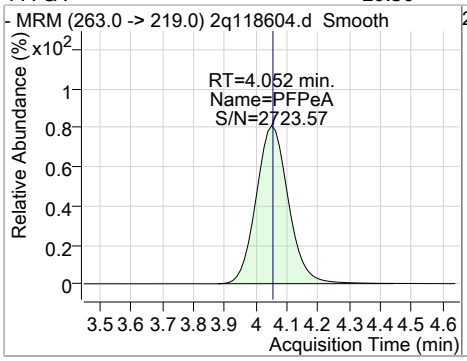


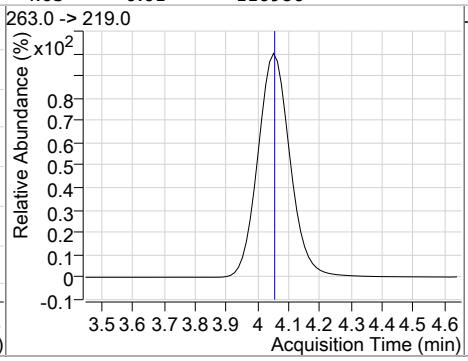


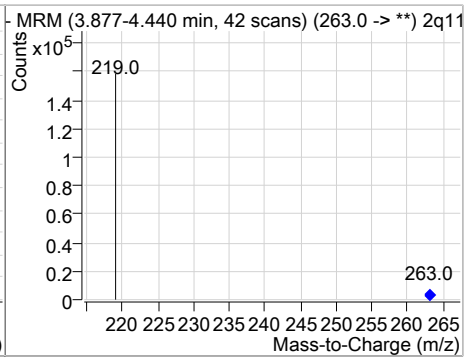


Perfluorinated Compounds by LC/MS/MS

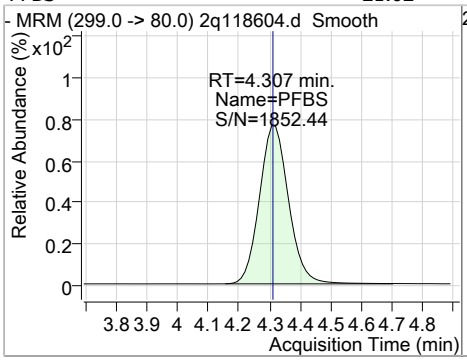
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	20.56	4.05	-0.01	116986				

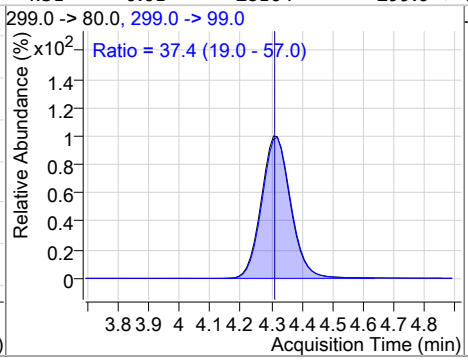


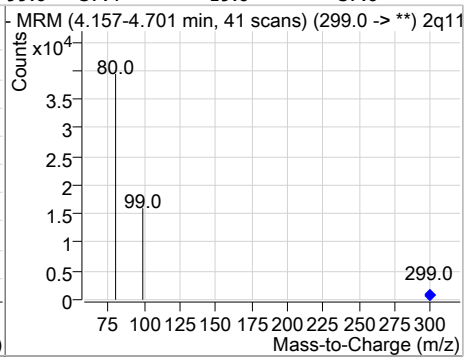




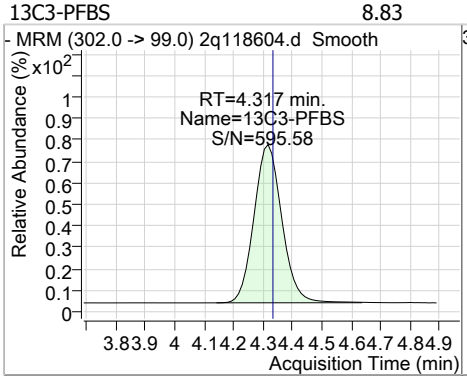
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	21.02	4.31	-0.01	28164	299.0 -> 99.0	37.4	19.0	57.0

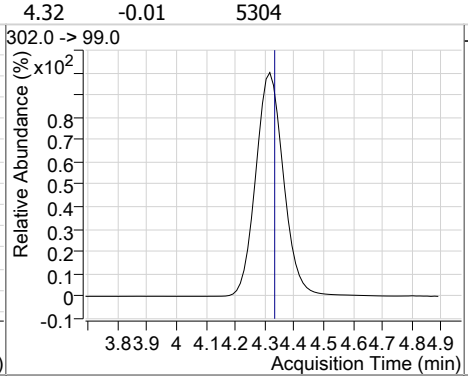


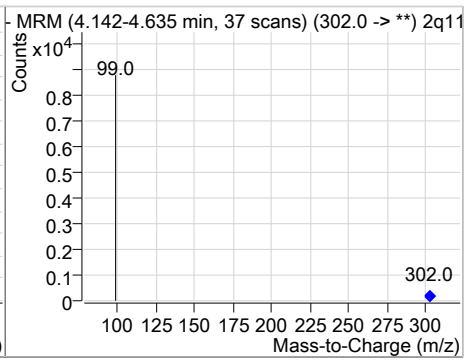




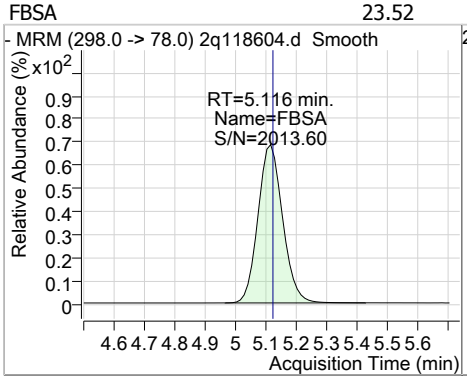
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	8.83	4.32	-0.01	5304				

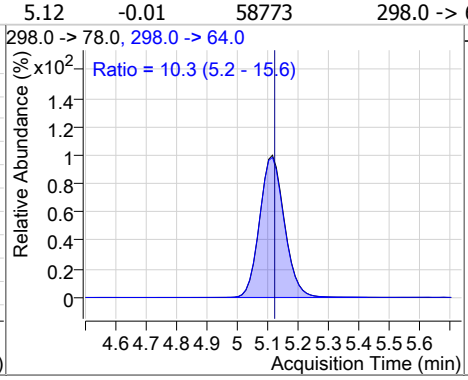


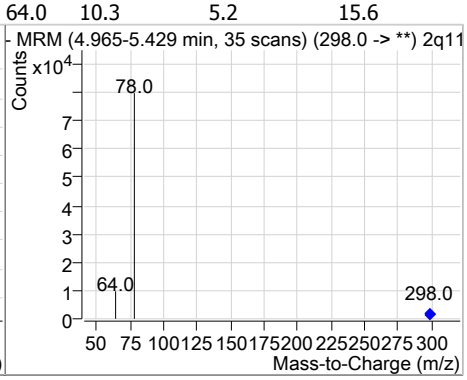




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	23.52	5.12	-0.01	58773	298.0 -> 64.0	10.3	5.2	15.6

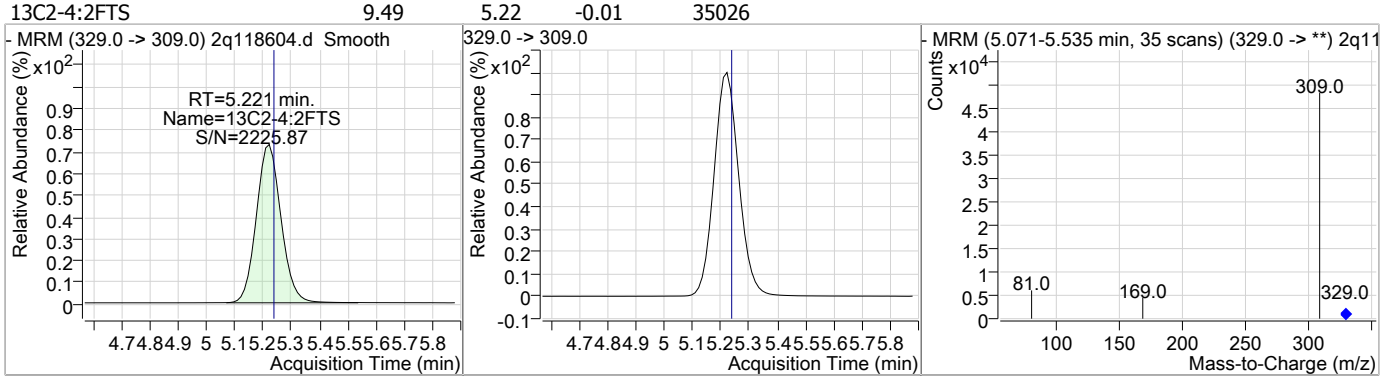




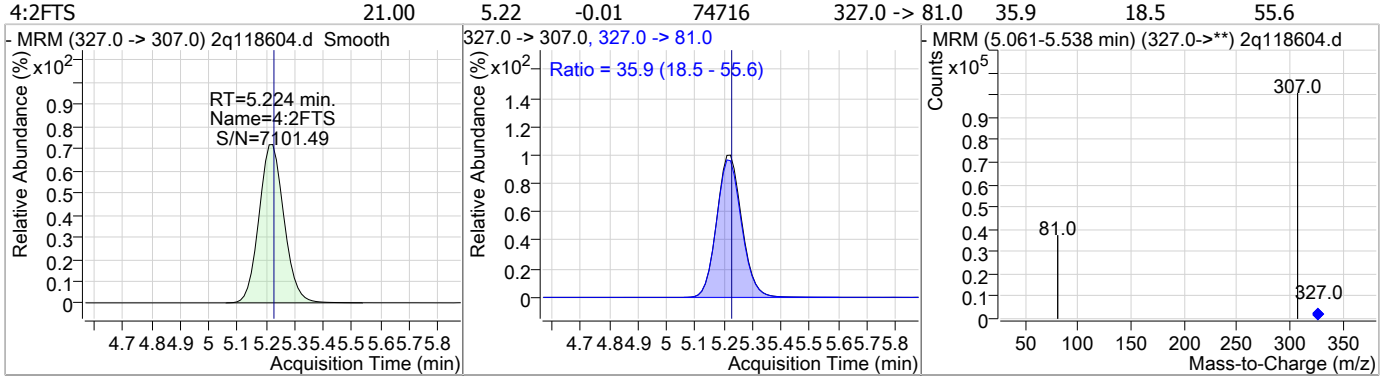


Perfluorinated Compounds by LC/MS/MS

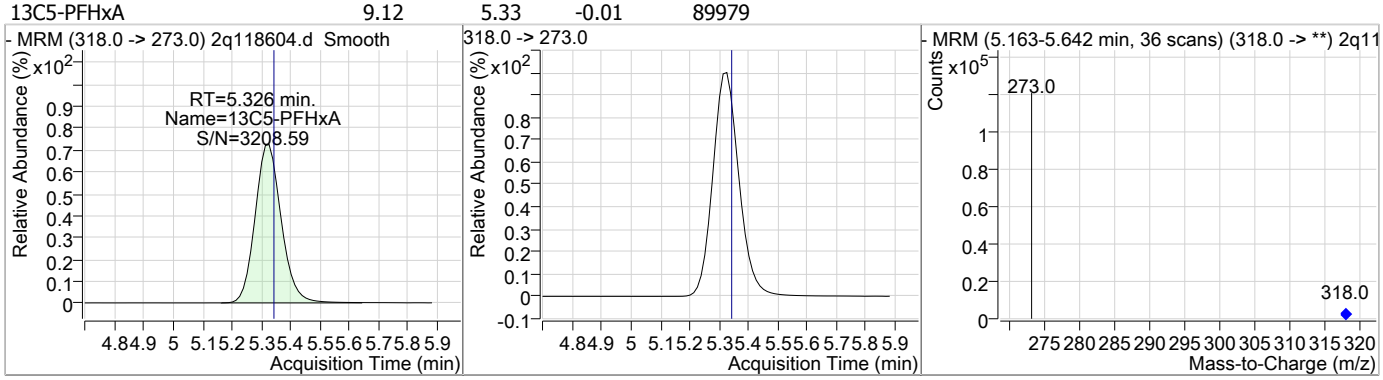
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	9.49	5.22	-0.01	35026				



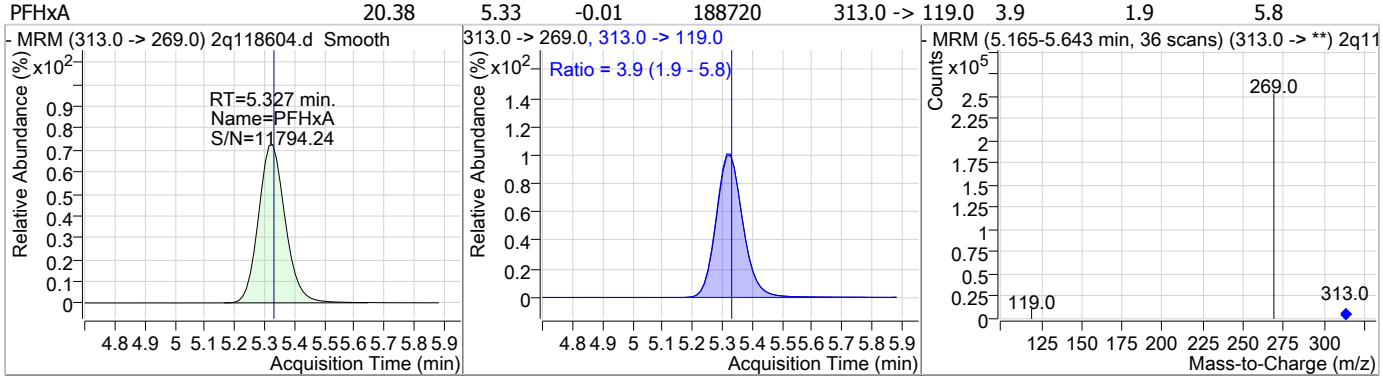
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	21.00	5.22	-0.01	74716	327.0 -> 81.0	35.9	18.5	55.6



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	9.12	5.33	-0.01	89979				

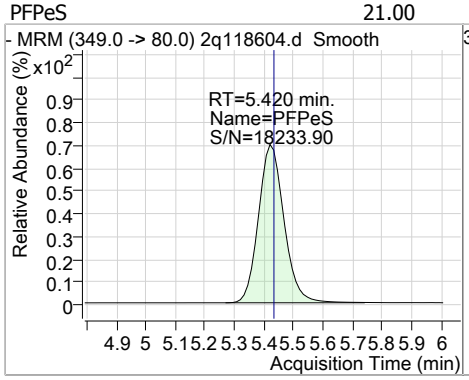


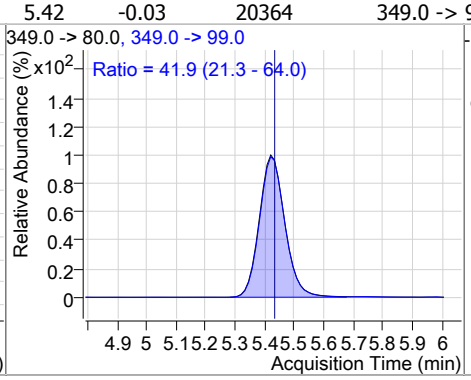
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	20.38	5.33	-0.01	188720	313.0 -> 119.0	3.9	1.9	5.8

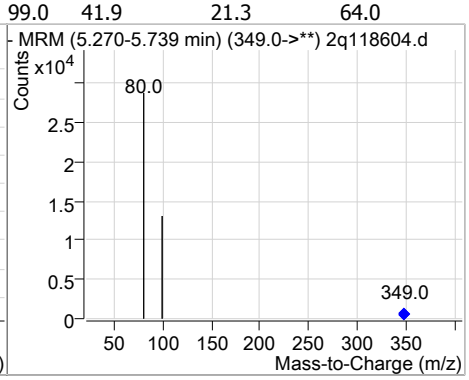


Perfluorinated Compounds by LC/MS/MS

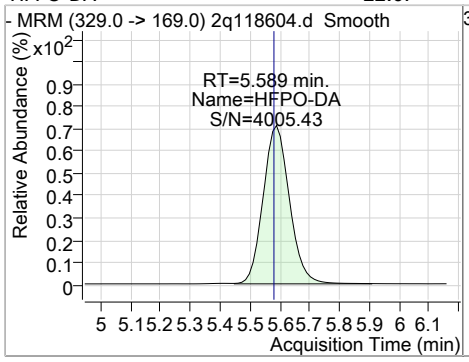
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	21.00	5.42	-0.03	20364	349.0 -> 99.0	41.9	21.3	64.0

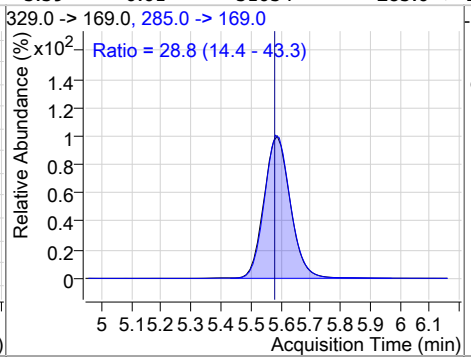


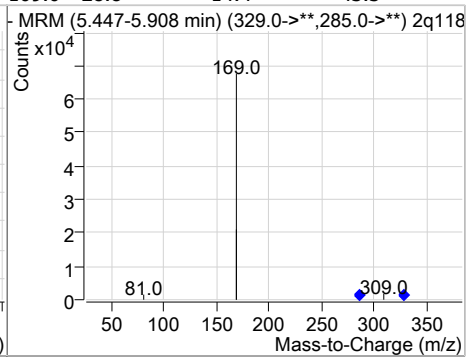




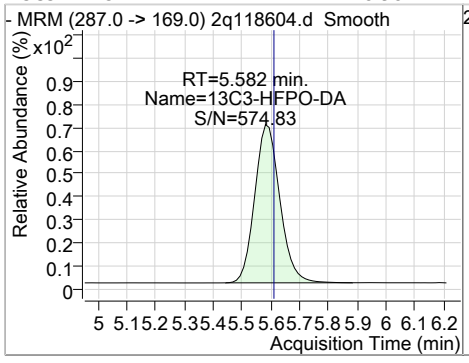
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	22.07	5.59	-0.01	51054	285.0 -> 169.0	28.8	14.4	43.3

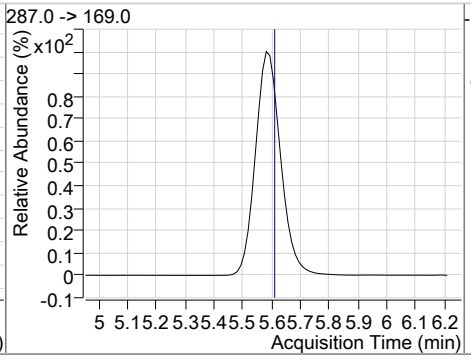


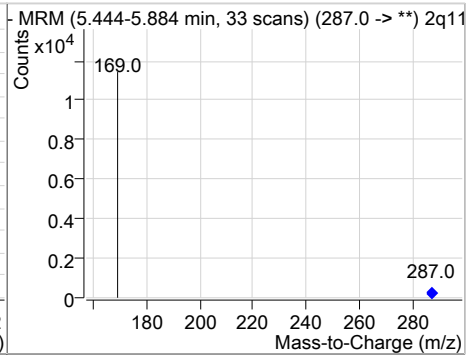




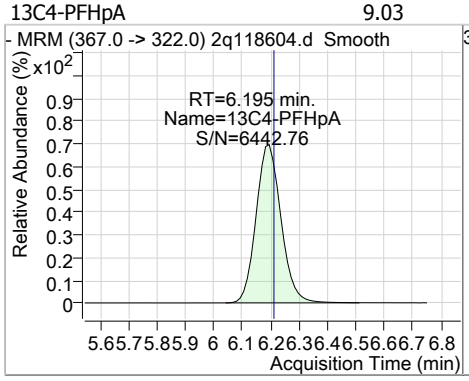
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	8.98	5.58	-0.03	7460				

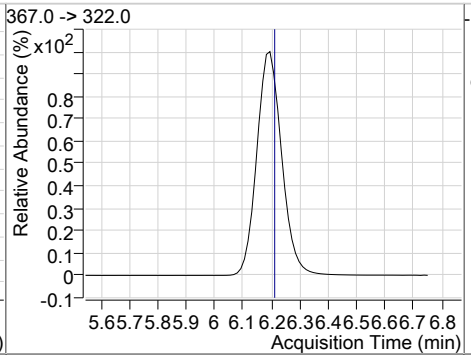


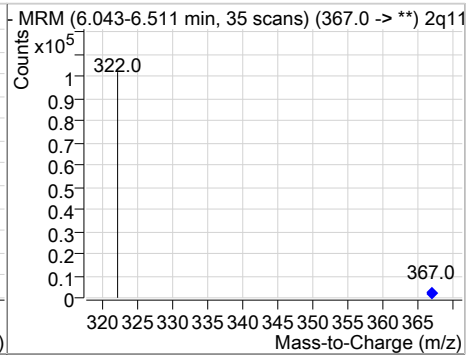




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	9.03	6.20	-0.01	77527				

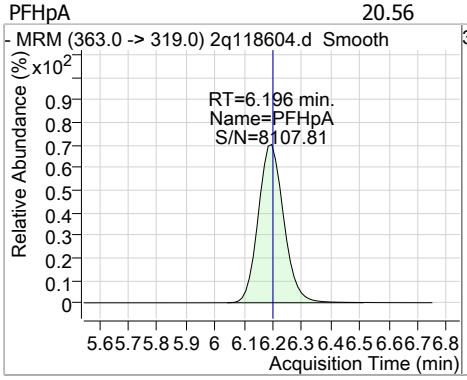


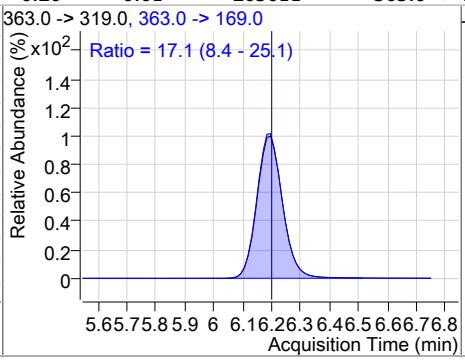


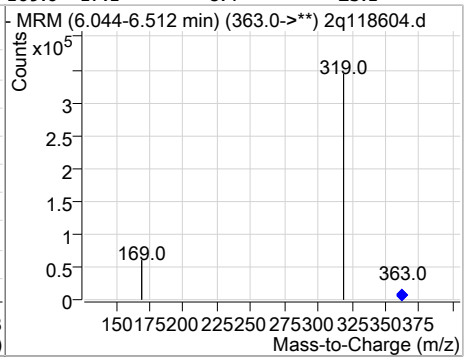


Perfluorinated Compounds by LC/MS/MS

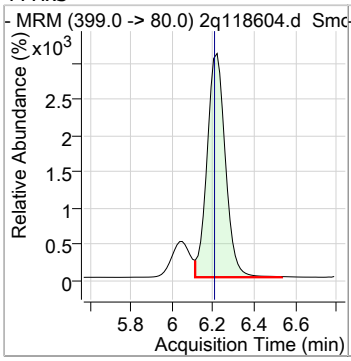
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	20.56	6.20	-0.01	263611	363.0 -> 169.0	17.1	8.4	25.1

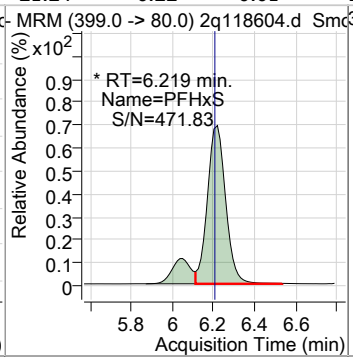


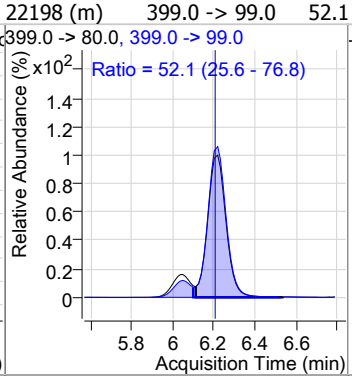


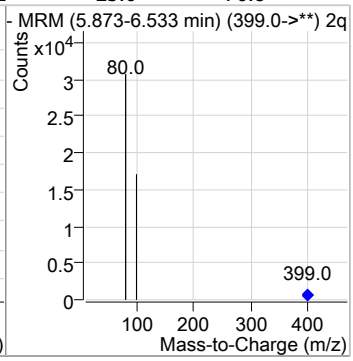


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	21.24	6.22	-0.01	22198 (m)	399.0 -> 99.0	52.1	25.6	76.8

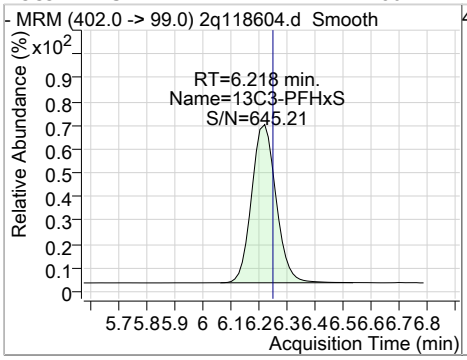


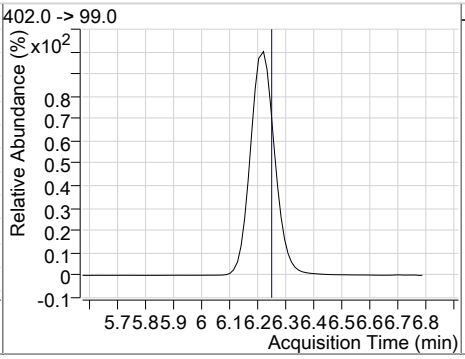


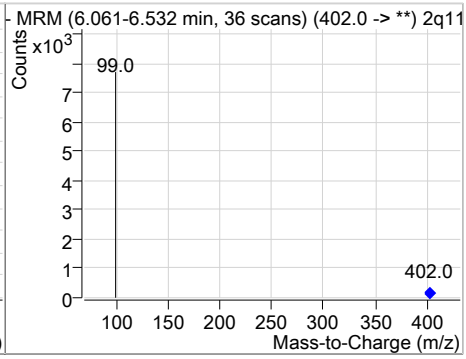




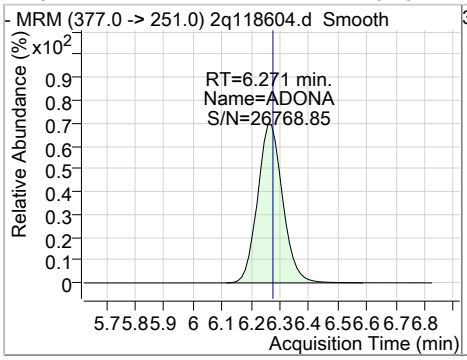
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	7.80	6.22	-0.03	4773				

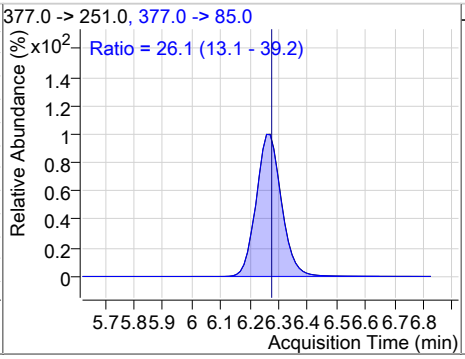


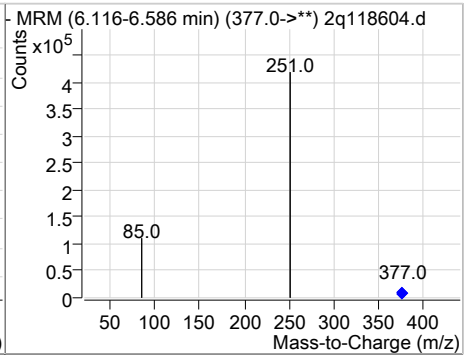




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	20.26	6.27	-0.01	318414	377.0 -> 85.0	26.1	13.1	39.2

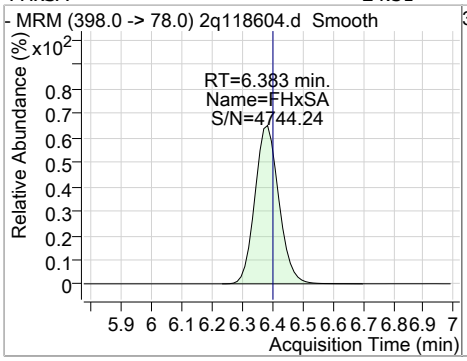


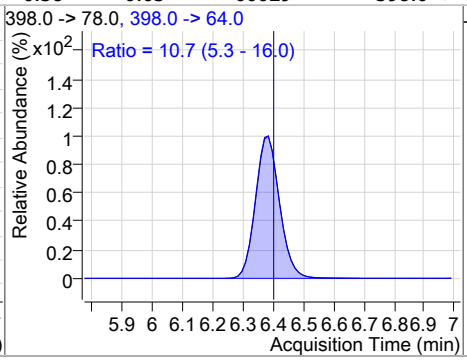


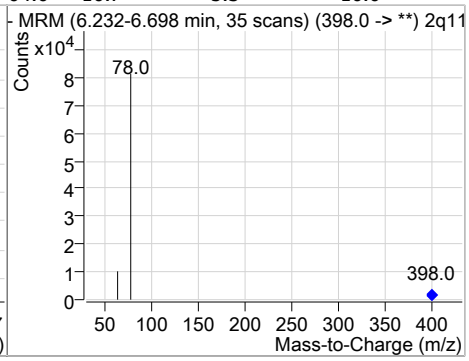


Perfluorinated Compounds by LC/MS/MS

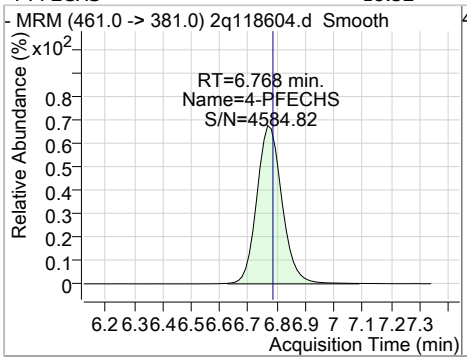
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	24.31	6.38	-0.03	60029	398.0 -> 64.0	10.7	5.3	16.0

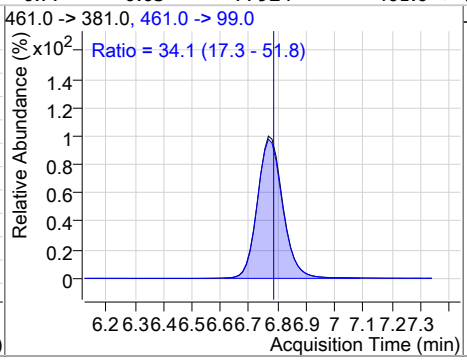


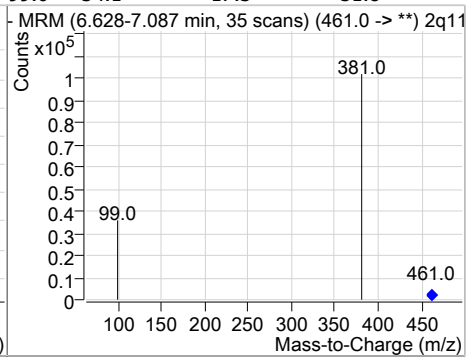




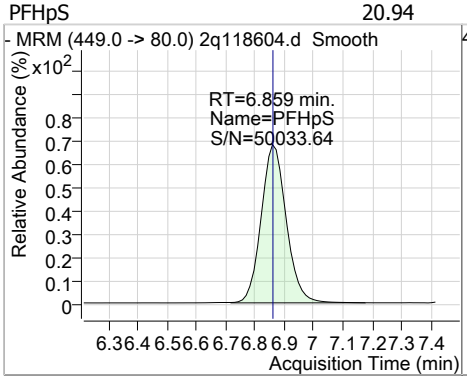
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS	18.52	6.77	-0.03	77924	461.0 -> 99.0	34.1	17.3	51.8

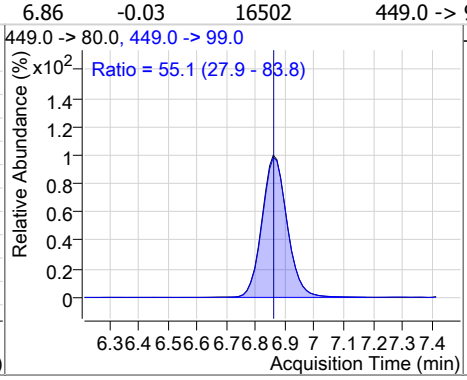


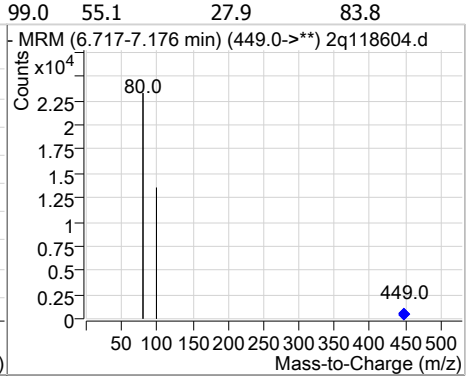




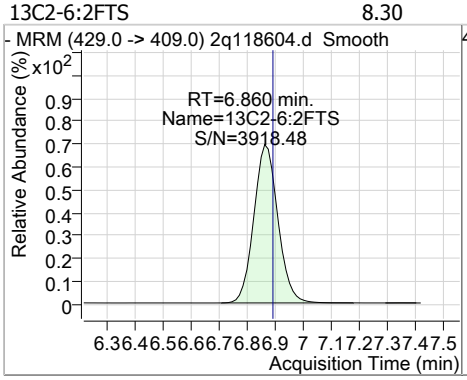
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	20.94	6.86	-0.03	16502	449.0 -> 99.0	55.1	27.9	83.8

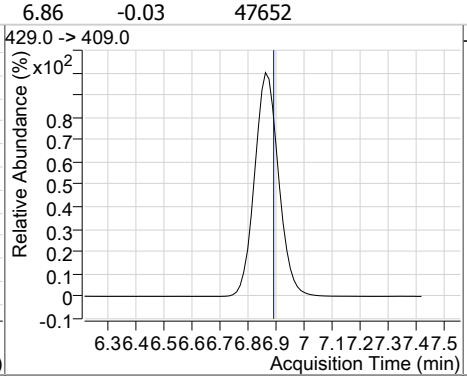


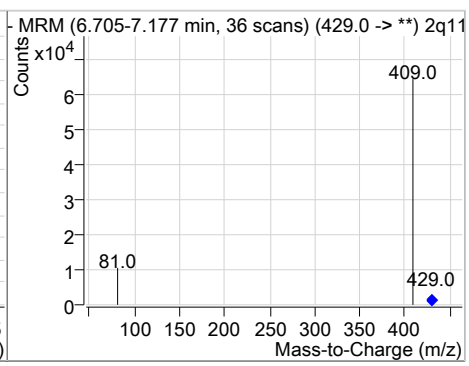




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	8.30	6.86	-0.03	47652				

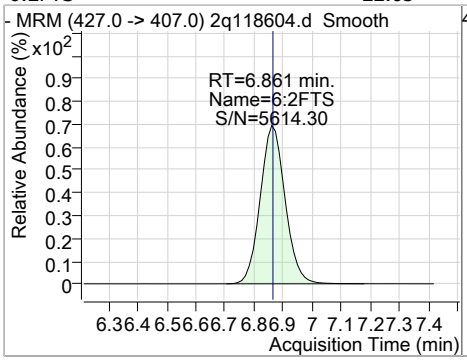


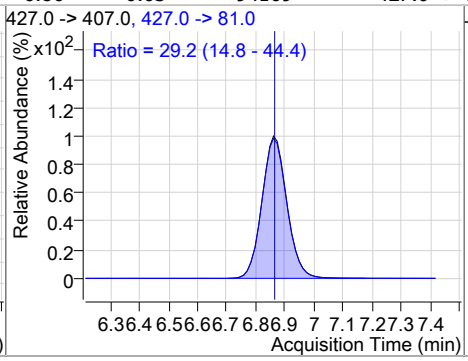


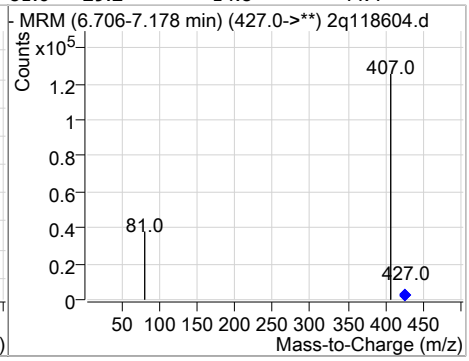


Perfluorinated Compounds by LC/MS/MS

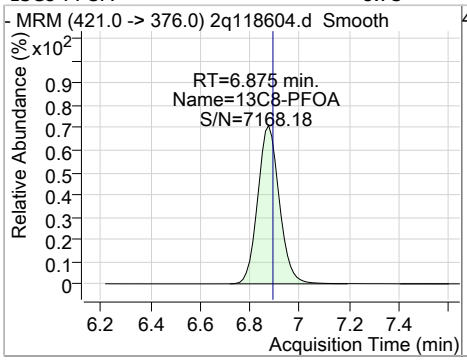
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	22.65	6.86	-0.03	94169	427.0 -> 81.0	29.2	14.8	44.4

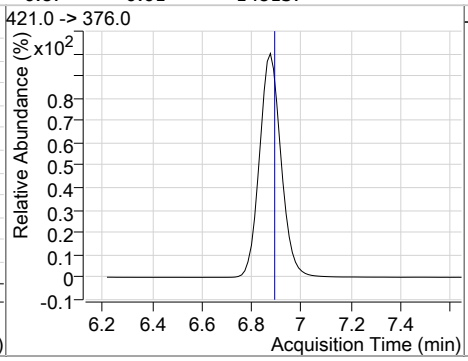


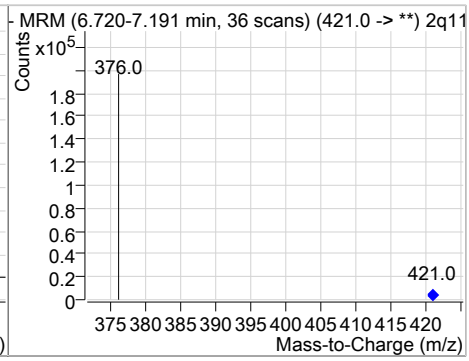




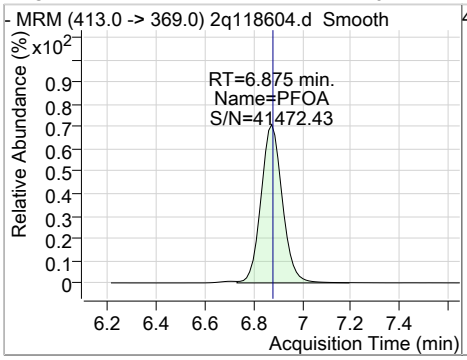
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	8.75	6.87	-0.01	148137				

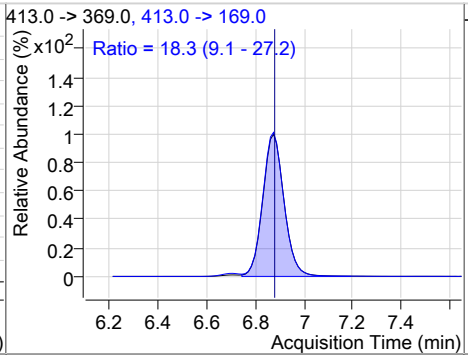


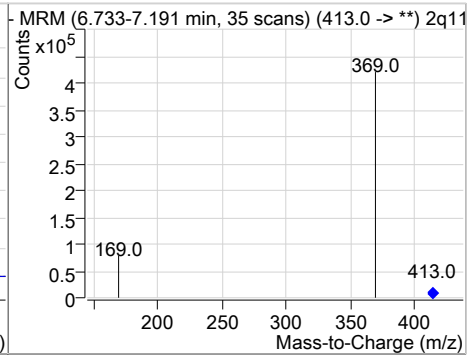




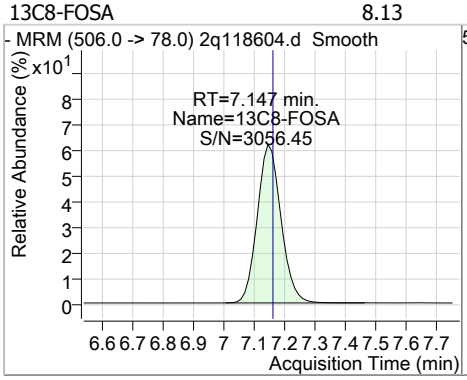
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	20.14	6.88	-0.01	318687	413.0 -> 169.0	18.3	9.1	27.2

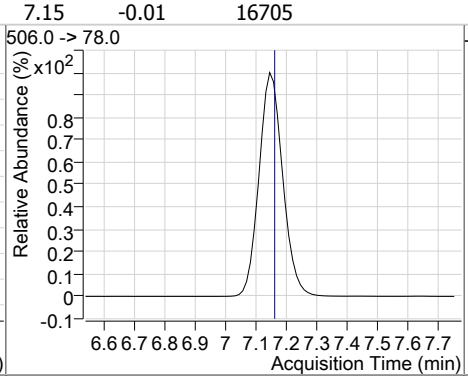


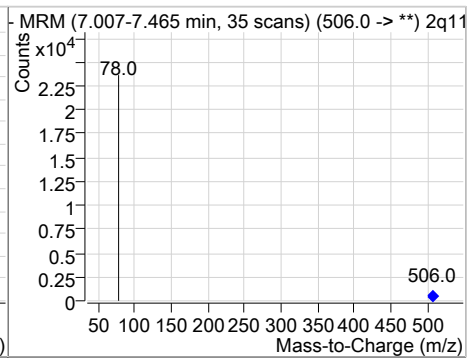




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	8.13	7.15	-0.01	16705				

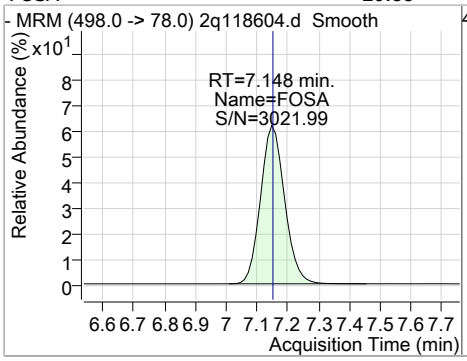


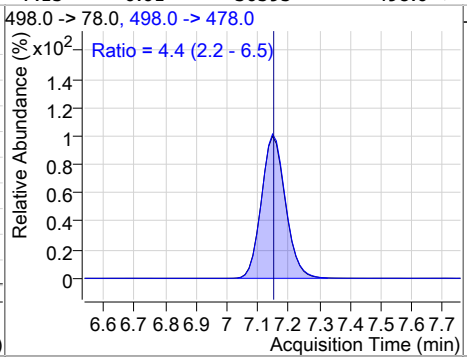


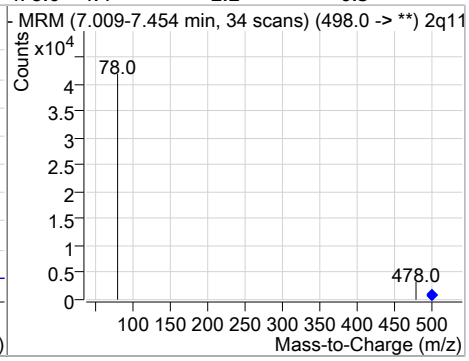


Perfluorinated Compounds by LC/MS/MS

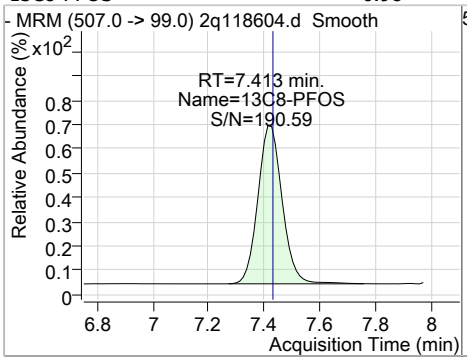
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	20.88	7.15	-0.01	30595	498.0 -> 478.0	4.4	2.2	6.5

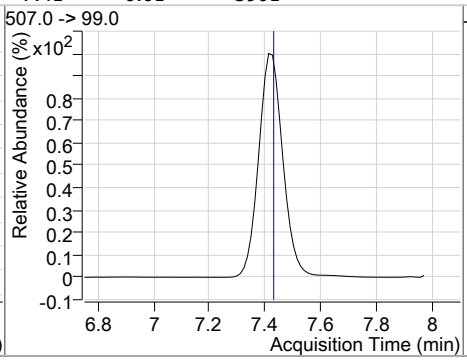


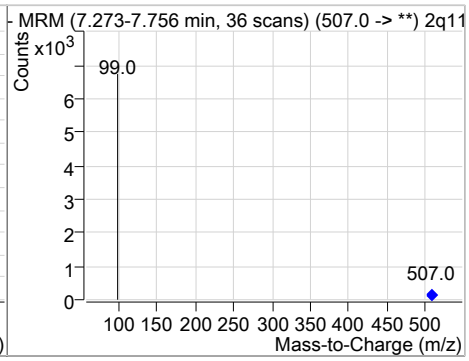




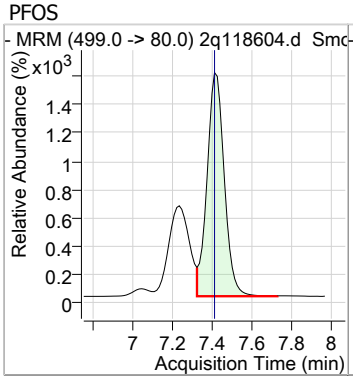
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	6.98	7.41	-0.01	3901				

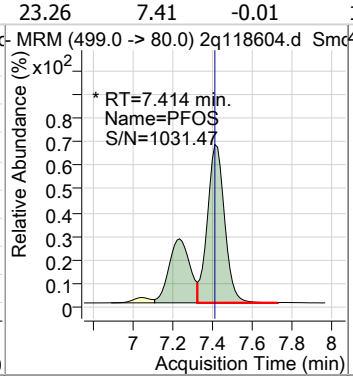


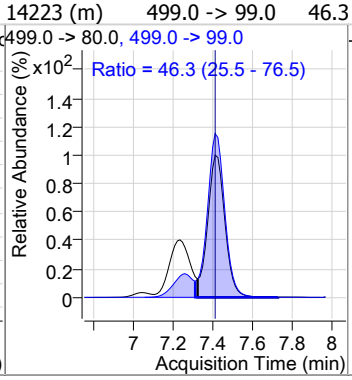


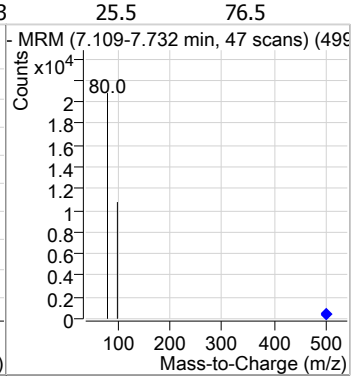


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	23.26	7.41	-0.01	14223 (m)	499.0 -> 99.0	46.3	25.5	76.5

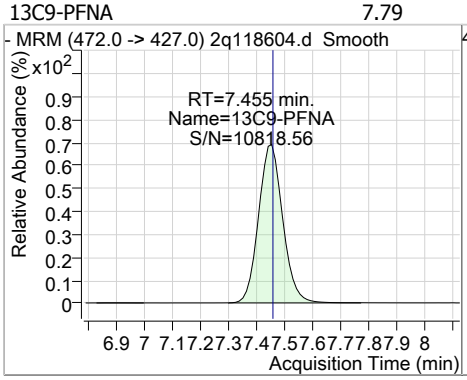


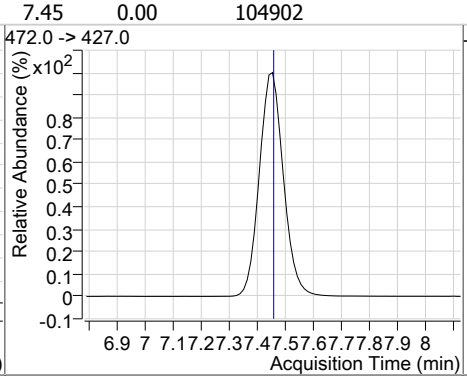


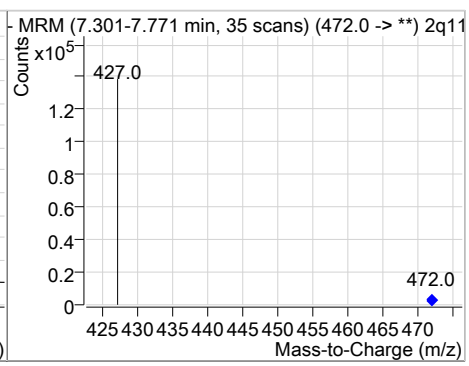




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	7.79	7.45	0.00	104902				

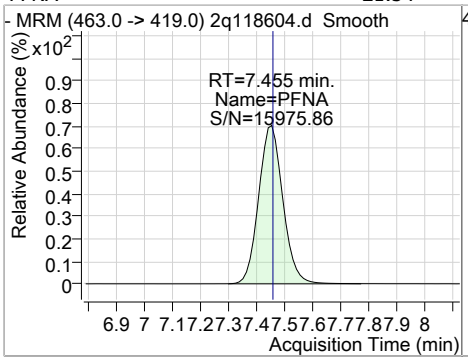


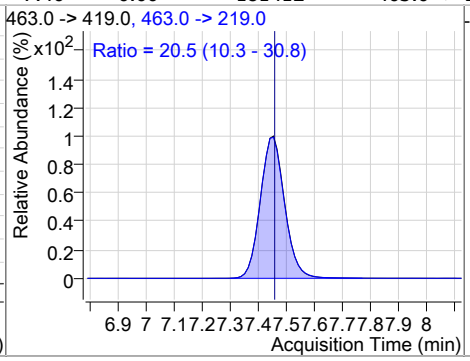


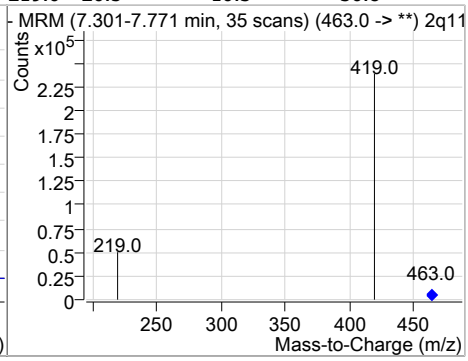


Perfluorinated Compounds by LC/MS/MS

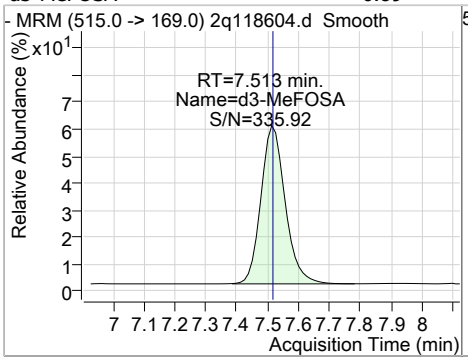
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	21.54	7.46	0.00	181412	463.0 -> 219.0	20.5	10.3	30.8

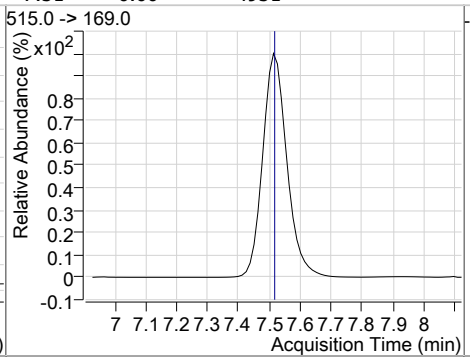


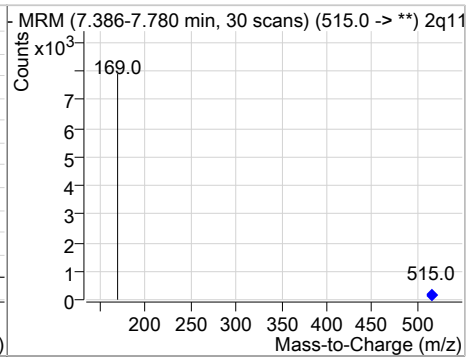




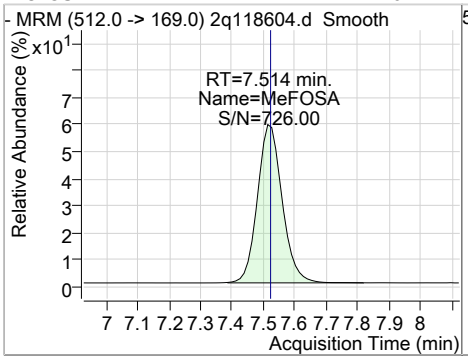
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	6.89	7.51	0.00	4951				

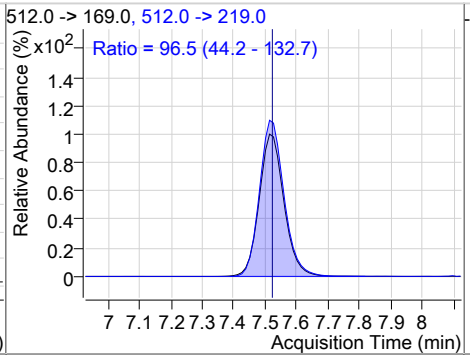


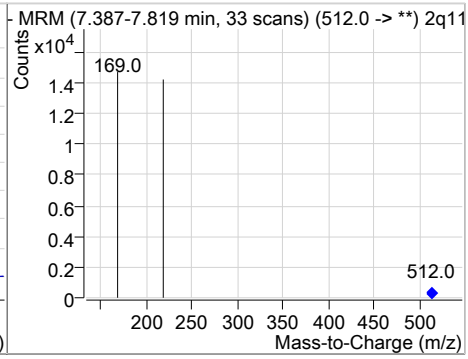




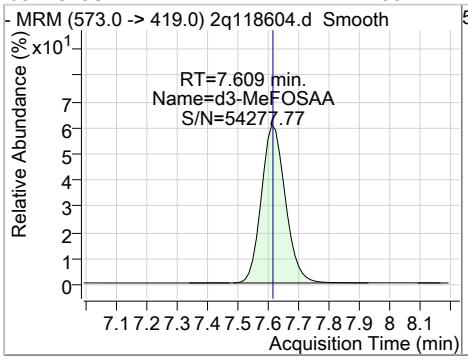
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	22.62	7.51	-0.01	9952	512.0 -> 219.0	96.5	44.2	132.7

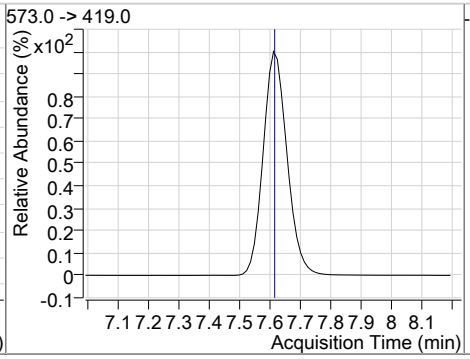


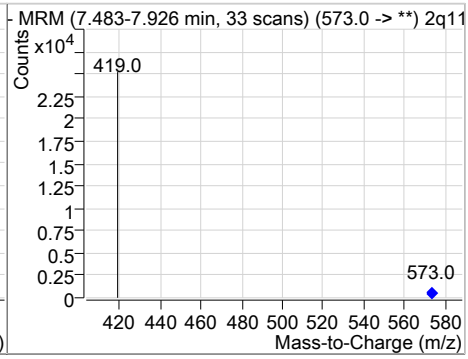




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	7.88	7.61	0.00	18030				

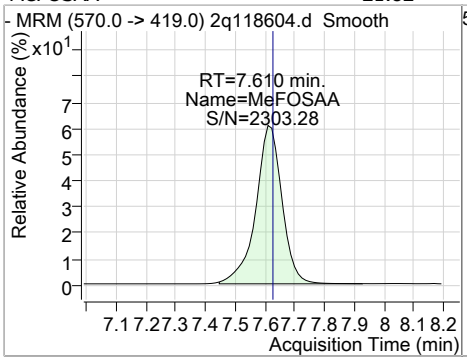


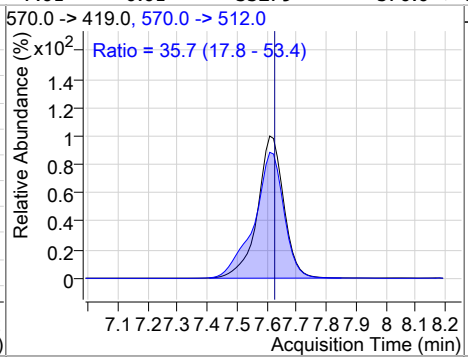


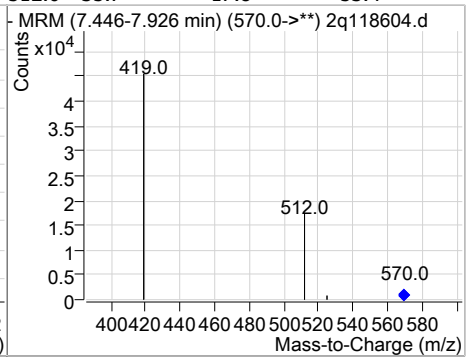


Perfluorinated Compounds by LC/MS/MS

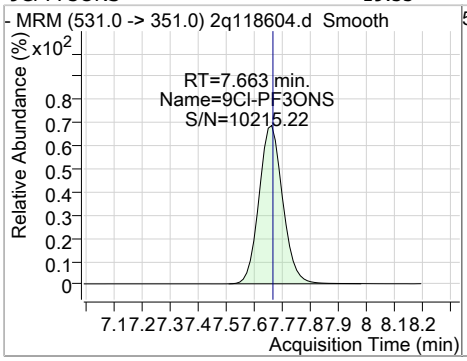
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	21.82	7.61	-0.01	33279	570.0 -> 512.0	35.7	17.8	53.4

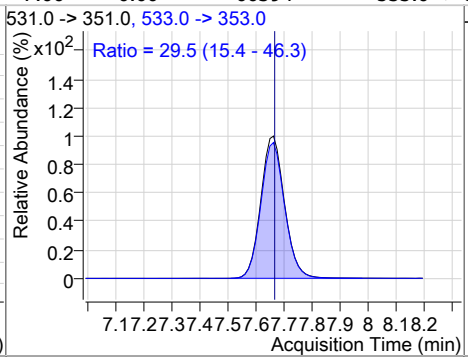


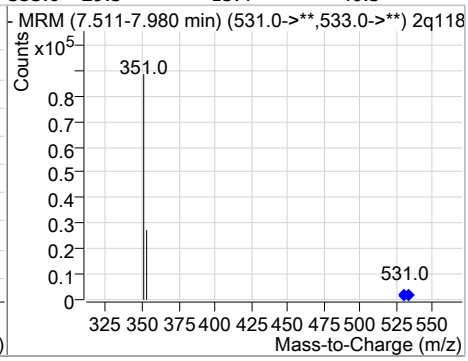




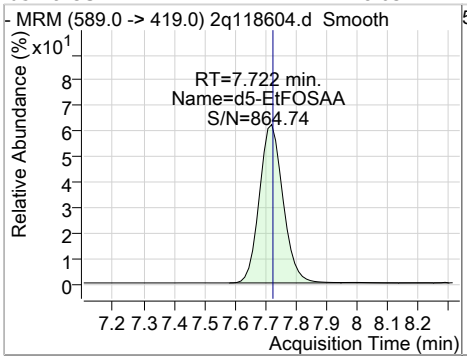
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	19.55	7.66	0.00	66394	533.0 -> 353.0	29.5	15.4	46.3

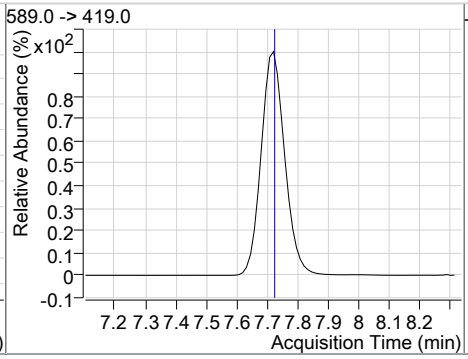


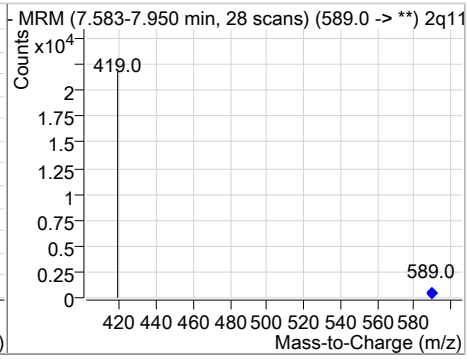




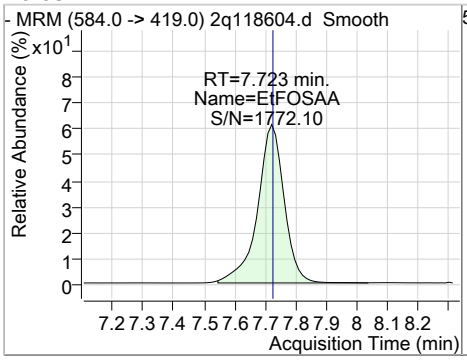
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	8.03	7.72	0.00	15494				

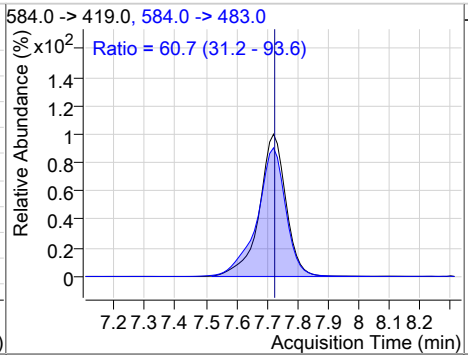


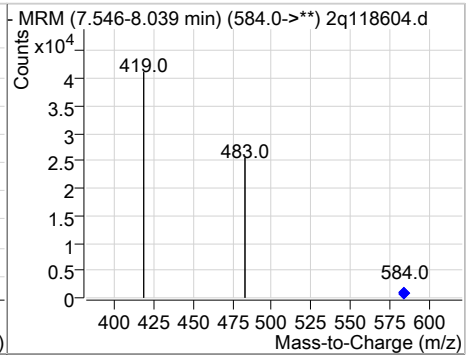




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	21.42	7.72	0.00	29764	584.0 -> 483.0	60.7	31.2	93.6

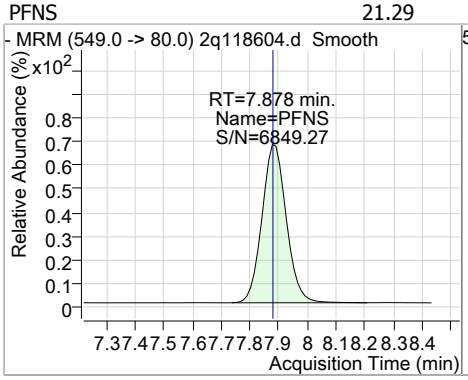


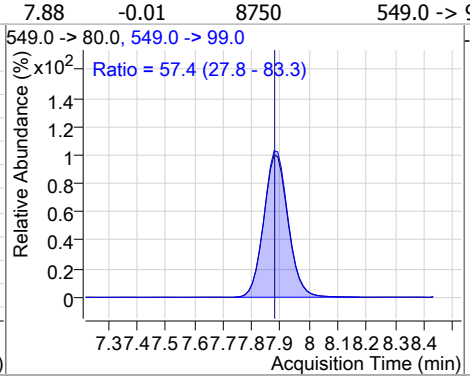


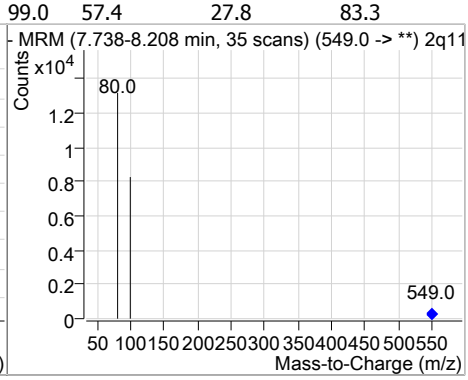


Perfluorinated Compounds by LC/MS/MS

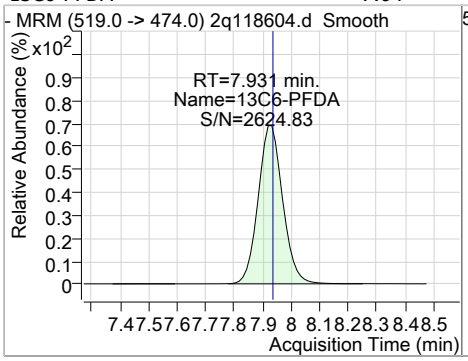
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	21.29	7.88	-0.01	8750	549.0 -> 99.0	57.4	27.8	83.3

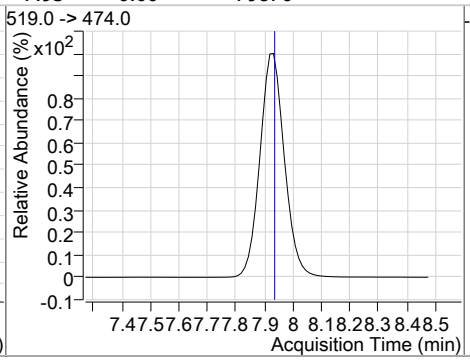


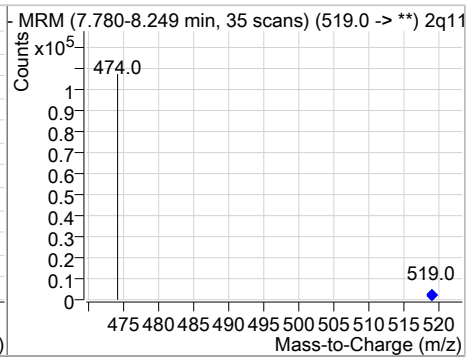




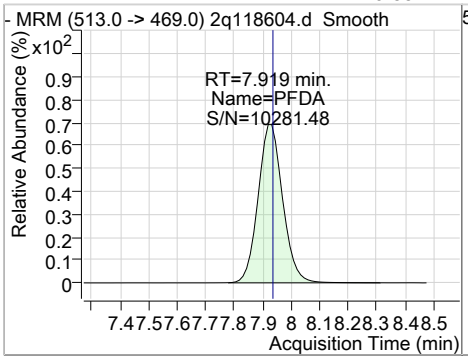
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	7.64	7.93	0.00	79876				

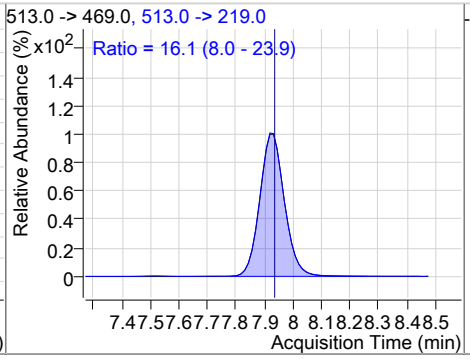


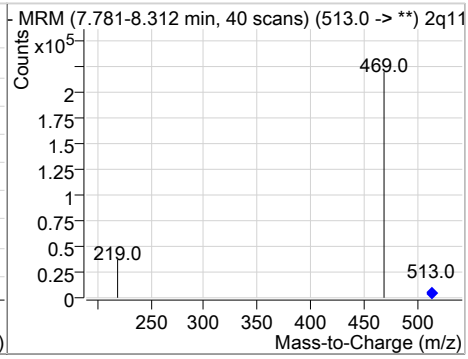




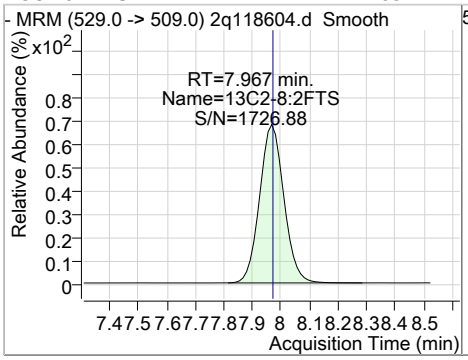
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	20.88	7.92	-0.01	165169	513.0 -> 219.0	16.1	8.0	23.9

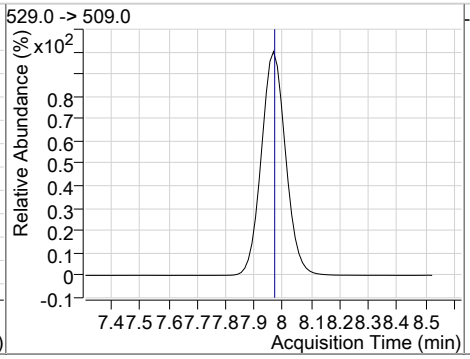


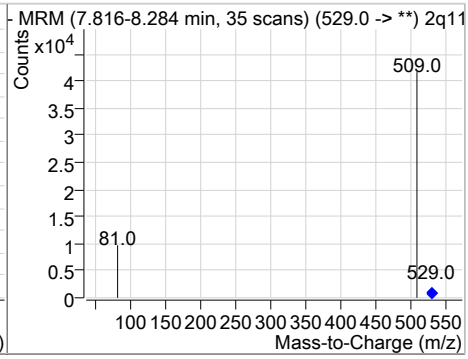




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	7.85	7.97	0.00	30431				

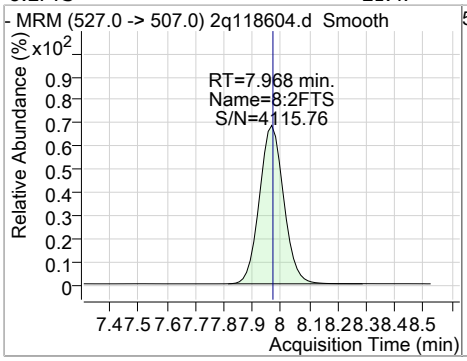


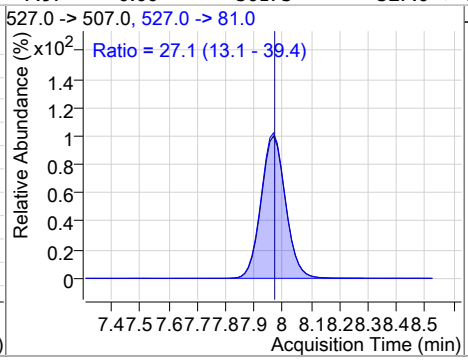


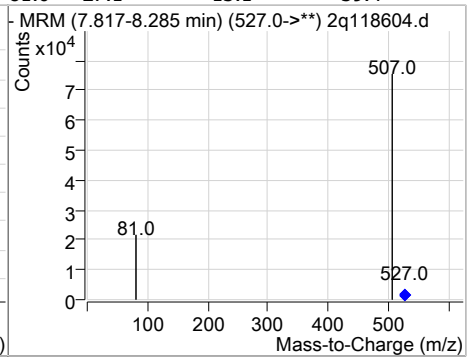


Perfluorinated Compounds by LC/MS/MS

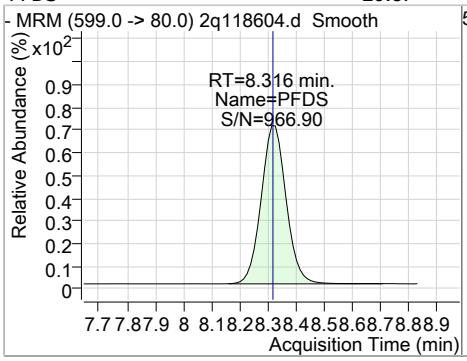
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	21.47	7.97	0.00	56173	527.0 -> 81.0	27.1	13.1	39.4

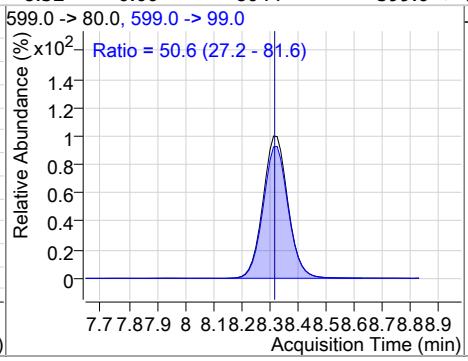


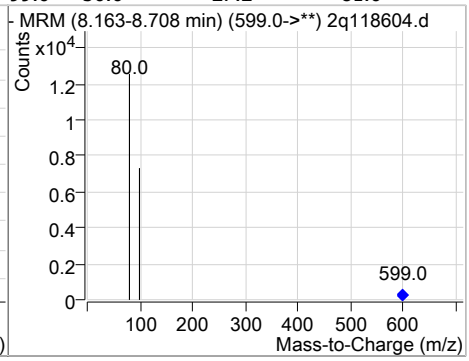




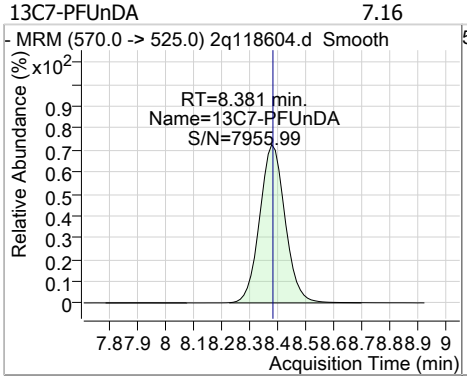
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	20.87	8.32	0.00	8044	599.0 -> 99.0	50.6	27.2	81.6

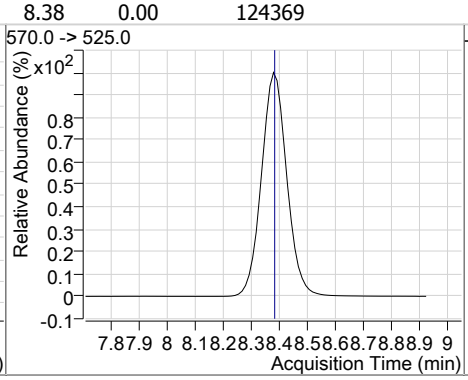


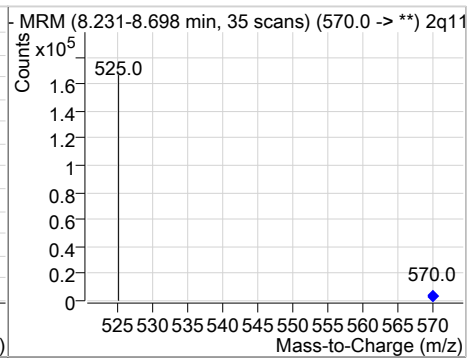




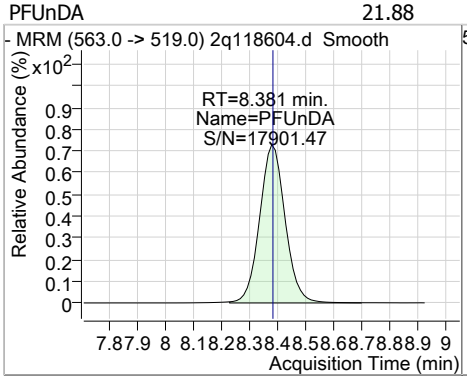
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	7.16	8.38	0.00	124369				

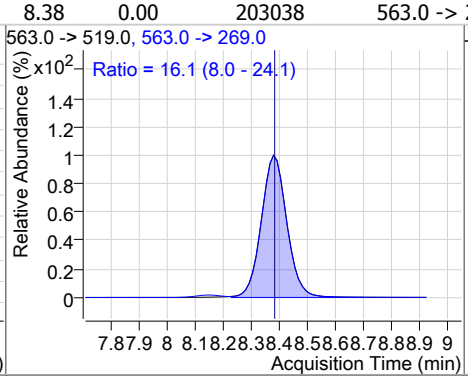


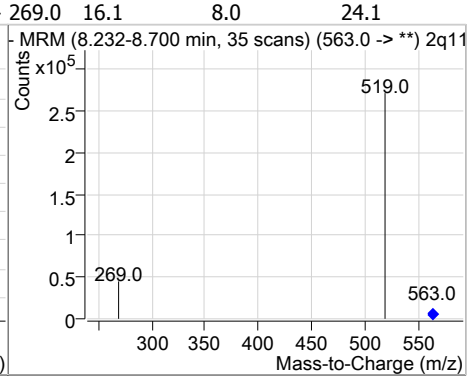




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	21.88	8.38	0.00	203038	563.0 -> 269.0	16.1	8.0	24.1

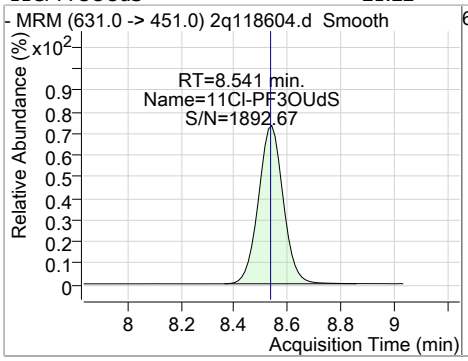


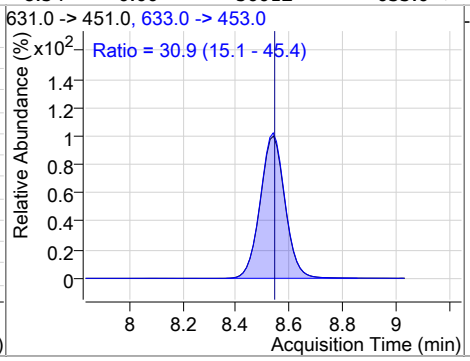


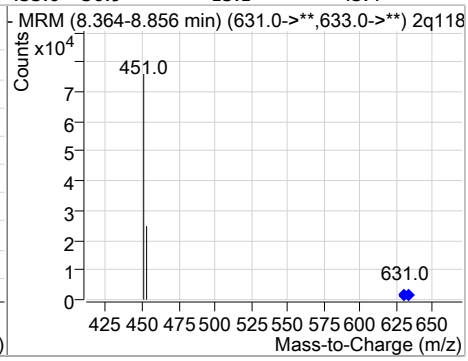


Perfluorinated Compounds by LC/MS/MS

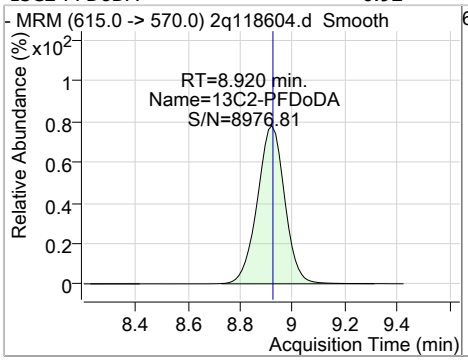
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	21.22	8.54	0.00	56012	633.0 -> 453.0	30.9	15.1	45.4

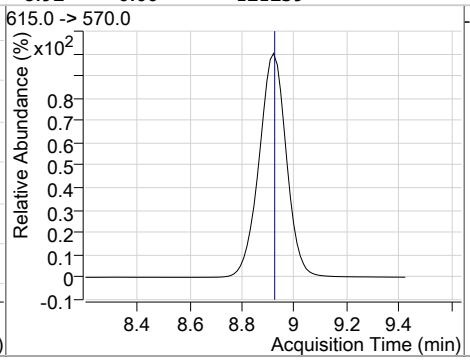


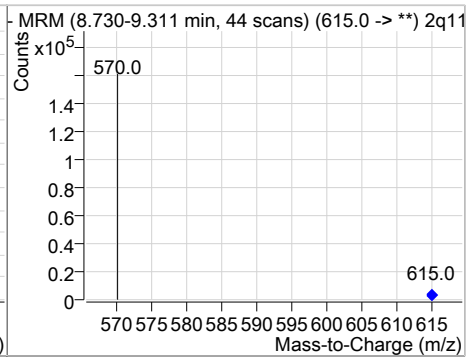




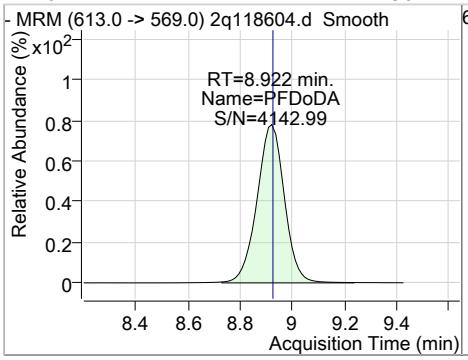
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	6.92	8.92	0.00	121239				

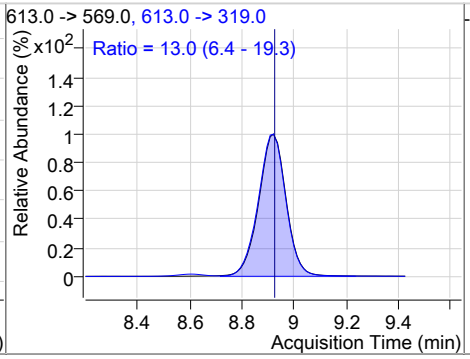


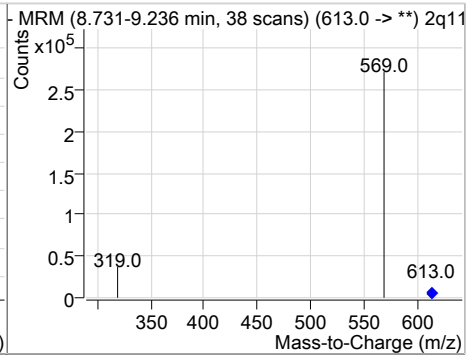




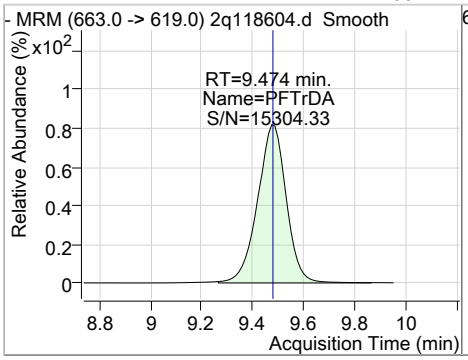
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	21.96	8.92	0.00	207909	613.0 -> 319.0	13.0	6.4	19.3

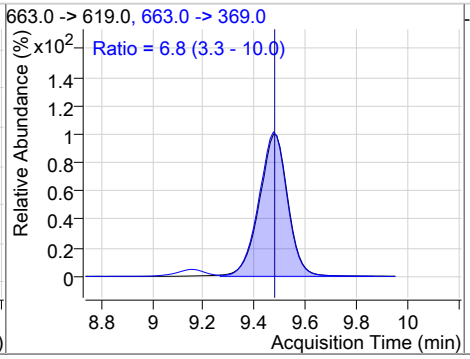


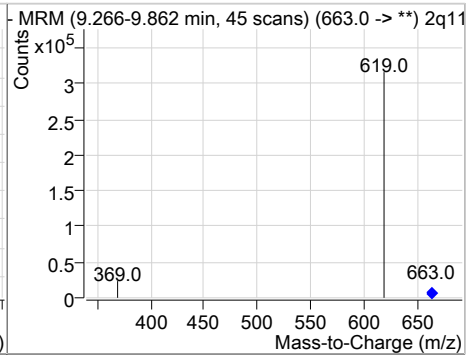




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	22.08	9.47	0.00	238577	663.0 -> 369.0	6.8	3.3	10.0

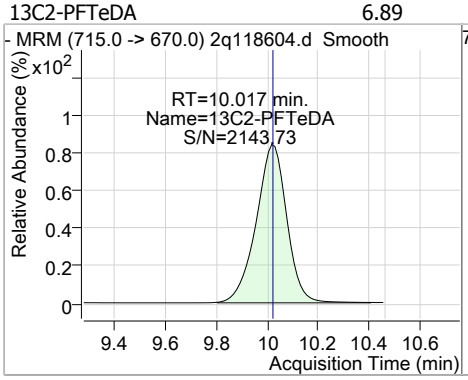


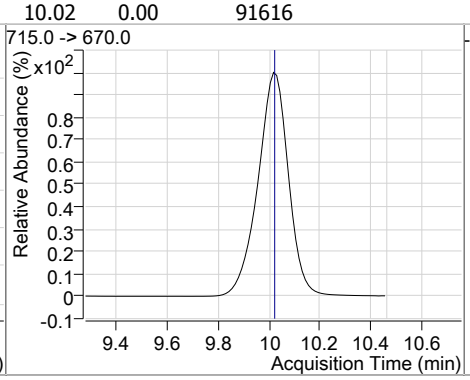


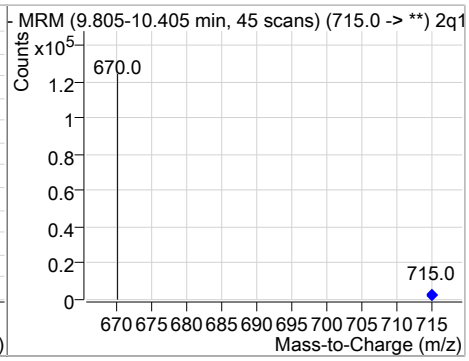


Perfluorinated Compounds by LC/MS/MS

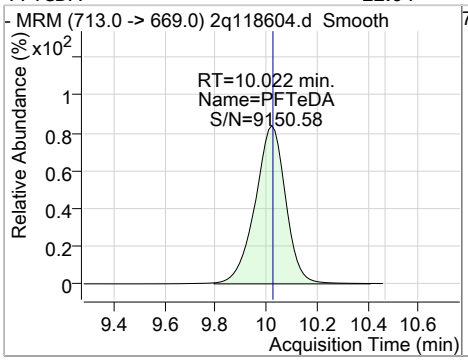
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	6.89	10.02	0.00	91616				

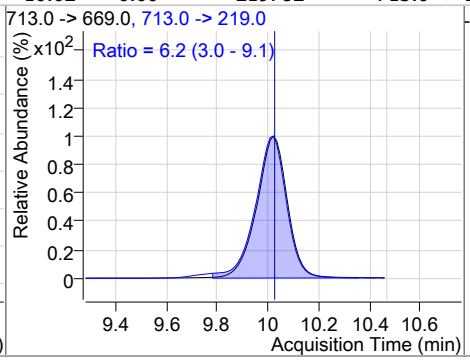


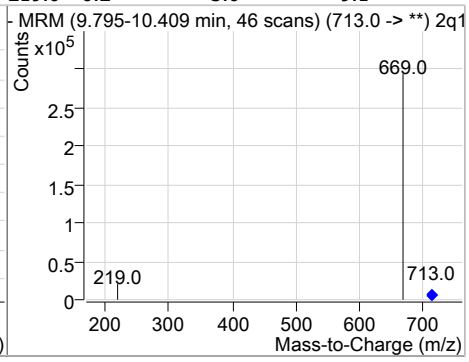




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	22.04	10.02	0.00	219782	713.0 -> 219.0	6.2	3.0	9.1







Manual Integration Approval Summary

Sample Number: OP937-BS
Lab FileID: 2Q118604.D
Injection Time: 01/04/24 16:19
Method: EPA 537M QSM5.3 B-15
Analyst approved: 01/05/24 15:53 Lindsay Ritner
Supervisor approved: 01/05/24 17:11 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.22	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.41	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Natasha Gumtie 01/02/24 14:27

Perfluorinated Compounds by LC/MS/MS

Data File : 5Q23964.d
Operator : natashag
Acq. Method : 537_ID.m
Acq. Date-Time : 12/29/2023 6:00:26 AM
Sample Name : op835-ms
Vial : P2-E1
DA Method File : ID_122823_S5Q375.quantmethod.xml
Batch Name : s5q375.batch.bin
Sample Information : OP835,S5Q375,125,,,1.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	1.975	217.0 -> 172.0	54807	10.00 µg/L	-0.013
M5-PFPeA	3.419	268.0 -> 223.0	88900	10.00 µg/L	-0.012
M5-PFHxA	4.540	318.0 -> 273.0	134747	10.00 µg/L	-0.012
M4-PFHpA	5.413	367.0 -> 322.0	134196	10.00 µg/L	0.000
M8-PFOA	6.124	421.0 -> 376.0	182726	10.00 µg/L	0.000
M9-PFNA	6.756	472.0 -> 427.0	175137	10.00 µg/L	0.000
M6-PFDA	7.276	519.0 -> 474.0	167076	10.00 µg/L	-0.012
M7-PFUnDA	8.034	570.0 -> 525.0	218968	10.00 µg/L	-0.025
M2-PFDoDA	9.013	615.0 -> 570.0	194241	10.00 µg/L	-0.025
M2-PFTeDA	10.512	715.0 -> 670.0	165359	10.00 µg/L	-0.025
M8-FOSA	6.192	506.0 -> 78.0	45738	10.00 µg/L	0.000
M3-PFBS	3.624	302.0 -> 99.0	10604	10.00 µg/L	-0.012
M3-PFHxS	5.432	402.0 -> 99.0	12652	10.00 µg/L	0.000
M8-PFOS	6.716	507.0 -> 99.0	14351	10.00 µg/L	-0.012
M2-4:2FTS	4.461	329.0 -> 309.0	47928	10.00 µg/L	-0.012
M2-6:2FTS	6.122	429.0 -> 409.0	83230	10.00 µg/L	-0.013
M2-8:2FTS	7.351	529.0 -> 509.0	70073	10.00 µg/L	0.000
M3-MeFOSAA	6.735	573.0 -> 419.0	31142	10.00 µg/L	-0.012
M3-HFPO-DA	4.807	287.0 -> 169.0	6893	10.00 µg/L	-0.012
M3-MeFOSA	6.589	515.0 -> 169.0	14015	10.00 µg/L	0.000
M5-EtFOSAA	6.845	589.0 -> 419.0	28500	10.00 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	4.461	329.0 -> 309.0	47928	11.92 µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 119.2%	
13C2-6:2FTS	6.122	429.0 -> 409.0	83230	11.74 µg/L	-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 117.4%	
13C2-8:2FTS	7.351	529.0 -> 509.0	70073	10.03 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.3%	
13C2-PFDoDA	9.013	615.0 -> 570.0	194241	9.32 µg/L	-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 93.2%	
13C2-PFTeDA	10.512	715.0 -> 670.0	165359	9.32 µg/L	-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 93.2%	
13C3-PFBS	3.624	302.0 -> 99.0	10604	10.92 µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 109.2%	
13C3-PFHxS	5.432	402.0 -> 99.0	12652	10.72 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 107.2%	
13C4-PFBA	1.975	217.0 -> 172.0	54807	11.60 µg/L	-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 116.0%	
13C4-PFHpA	5.413	367.0 -> 322.0	134196	11.16 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 111.6%	
13C5-PFHxA	4.540	318.0 -> 273.0	134747	11.27 µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 112.7%	
13C5-PFPeA	3.419	268.0 -> 223.0	88900	11.28 µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 112.8%	
13C6-PFDA	7.276	519.0 -> 474.0	167076	9.92 µg/L	-0.012

Perfluorinated Compounds by LC/MS/MS

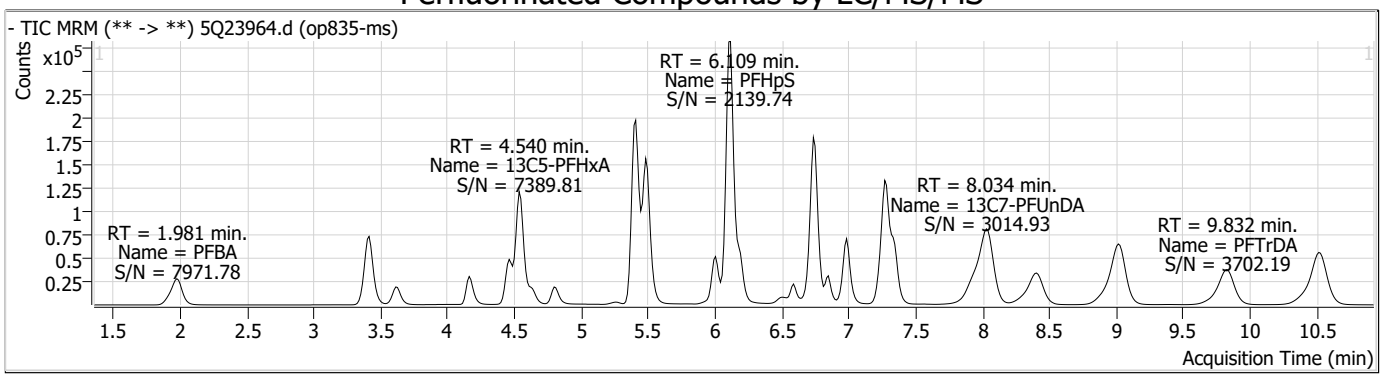
Compound	RT	Transition	Response	Conc. Units		Dev(Min)
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.2%		
13C7-PFUnDA	8.034	570.0 -> 525.0	218968	9.39 µg/L		-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 93.9%		
13C8-FOSA	6.192	506.0 -> 78.0	45738	11.29 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 112.9%		
13C8-PFOA	6.124	421.0 -> 376.0	182726	11.04 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 110.4%		
13C8-PFOS	6.716	507.0 -> 99.0	14351	9.13 µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 91.3%		
13C9-PFNA	6.756	472.0 -> 427.0	175137	10.55 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 105.5%		
d3-MeFOSAA	6.735	573.0 -> 419.0	31142	10.21 µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 102.1%		
13C3-HFPO-DA	4.807	287.0 -> 169.0	6893	10.67 µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 106.7%		
d3-MeFOSA	6.589	515.0 -> 169.0	14015	10.00 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.0%		
d5-EtFOSAA	6.845	589.0 -> 419.0	28500	10.38 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 103.8%		
Target Compounds						QValue
4:2FTS	4.463	327.0 -> 307.0	95545	20.24 µg/L		100
		327.0 -> 81.0	53775			
6:2FTS	6.123	427.0 -> 407.0	154442	20.28 µg/L		100
		427.0 -> 81.0	62292			
8:2FTS	7.339	527.0 -> 507.0	122538	20.02 µg/L		100
		527.0 -> 81.0	58074			
EtFOSAA	6.846	584.0 -> 419.0	42982	18.48 µg/L		95
		584.0 -> 483.0	26490			
FOSA	6.194	498.0 -> 78.0	79872	19.03 µg/L		99
		498.0 -> 478.0	2397			
MeFOSAA	6.748	570.0 -> 419.0	47484	19.54 µg/L		98
		570.0 -> 512.0	17317			
PFBA	1.981	213.0 -> 169.0	116992	23.04 µg/L		100
PFBS	3.615	299.0 -> 80.0	51578	19.65 µg/L	m	100
		299.0 -> 99.0	22712			
PFDA	7.276	513.0 -> 469.0	308678	19.45 µg/L		100
		513.0 -> 219.0	54345			
PFDoDA	9.017	613.0 -> 569.0	322270	19.33 µg/L		100
		613.0 -> 319.0	52536			
PFDS	7.920	599.0 -> 80.0	50581	16.92 µg/L		98
		599.0 -> 99.0	31189			
PFHpA	5.413	363.0 -> 319.0	400012	25.99 µg/L		100
		363.0 -> 169.0	84819			
PFHpS	6.109	449.0 -> 80.0	42861	21.39 µg/L	m	99
		449.0 -> 99.0	23020			
PFHxA	4.541	313.0 -> 269.0	339706	26.06 µg/L		100
		313.0 -> 119.0	13663			
PFHxS	5.433	399.0 -> 80.0	65584	27.94 µg/L	m	99
		399.0 -> 99.0	37260			
PFNA	6.756	463.0 -> 419.0	326976	20.39 µg/L		99
		463.0 -> 219.0	67959			
PFNS	7.235	549.0 -> 80.0	31292	18.87 µg/L		99
		549.0 -> 99.0	18303			
PFOA	6.125	413.0 -> 369.0	519603	28.99 µg/L	m	99
		413.0 -> 169.0	131701			
PFOS	6.718	499.0 -> 80.0	91645	36.02 µg/L	m	91

Perfluorinated Compounds by LC/MS/MS

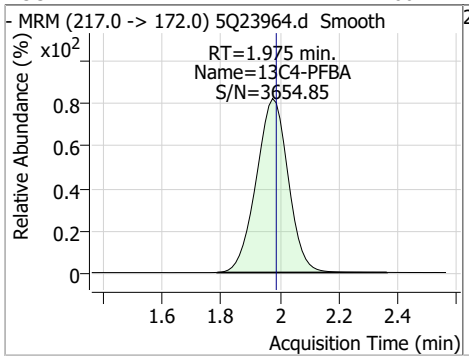
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
		499.0 -> 99.0	40294				
PFPeA	3.422	263.0 -> 219.0	258393	29.97	µg/L		100
PFPeS	4.636	349.0 -> 80.0	34812	18.84	µg/L	m	96
		349.0 -> 99.0	18246				
PFTeDA	10.516	713.0 -> 669.0	317579	19.00	µg/L		99
		713.0 -> 219.0	36630				
PFTrDA	9.832	663.0 -> 619.0	307292	18.41	µg/L		99
		663.0 -> 369.0	33792				
PFUnDA	8.036	563.0 -> 519.0	386111	19.55	µg/L		99
		563.0 -> 269.0	67778				
11Cl-PF3OUdS	8.403	631.0 -> 451.0	221235	17.22	µg/L		100
		633.0 -> 453.0	69610				
9Cl-PF3ONS	6.986	531.0 -> 351.0	207972	16.85	µg/L		100
		533.0 -> 353.0	65721				
ADONA	5.502	377.0 -> 251.0	428443	20.21	µg/L		100
		377.0 -> 85.0	152828				
HFPO-DA	4.815	329.0 -> 169.0	56415	17.99	µg/L		97
		285.0 -> 169.0	12649				
MeFOSA	6.590	512.0 -> 169.0	25899	21.36	µg/L		96
		512.0 -> 219.0	20488				
4-PFECHS	6.006	461.0 -> 381.0	136631	17.22	µg/L		100
		461.0 -> 99.0	70383				
FBSA	4.170	298.0 -> 78.0	102185	22.67	µg/L		100
		298.0 -> 64.0	9222				
FHxSA	5.409	398.0 -> 78.0	113192	24.32	µg/L	m	100
		398.0 -> 64.0	10699				

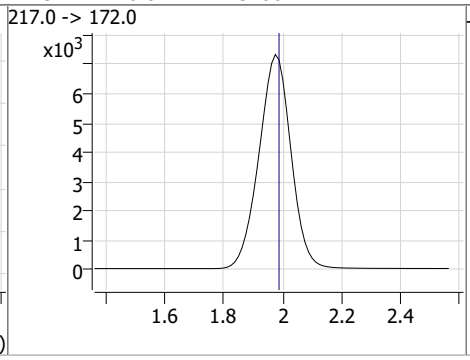
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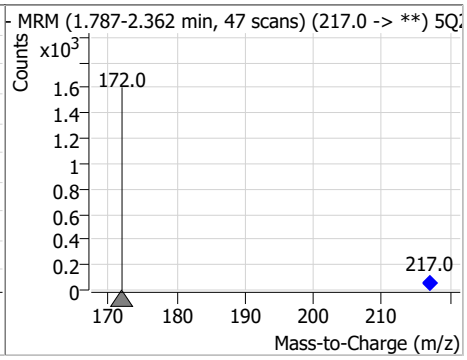
Perfluorinated Compounds by LC/MS/MS



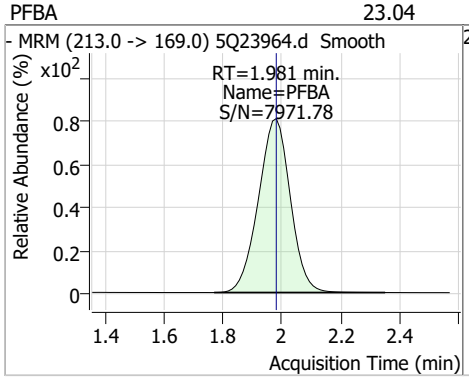
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	11.60	1.97	-0.01	54807				

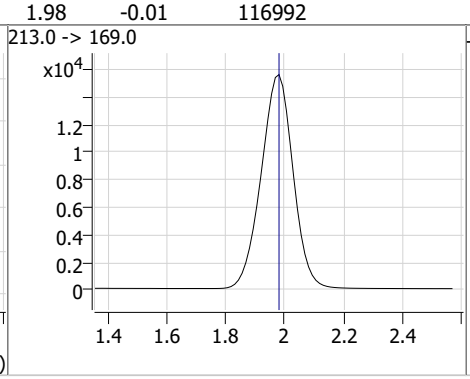


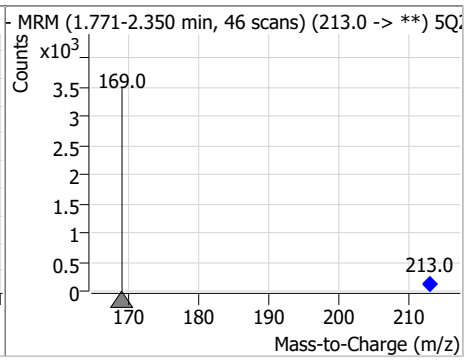




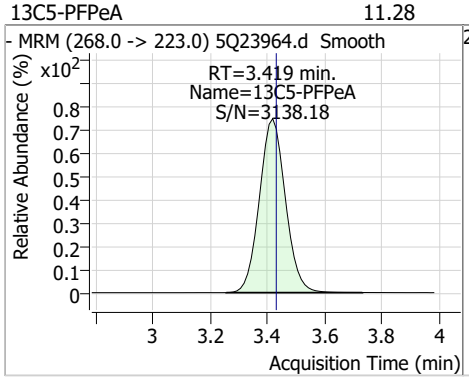
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	23.04	1.98	-0.01	116992				

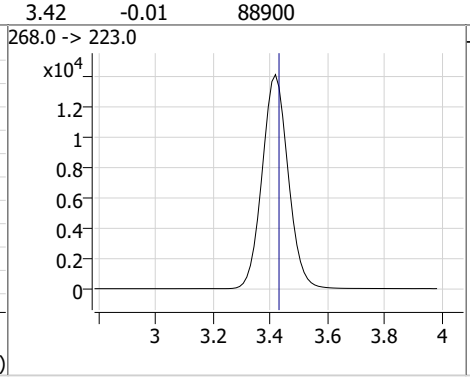


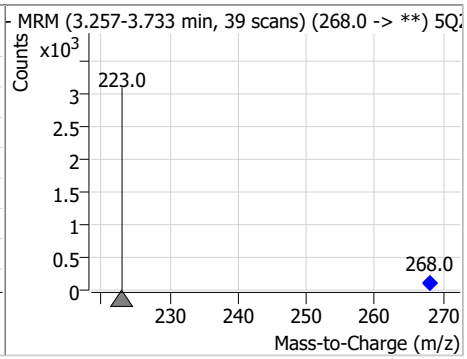




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	11.28	3.42	-0.01	88900				

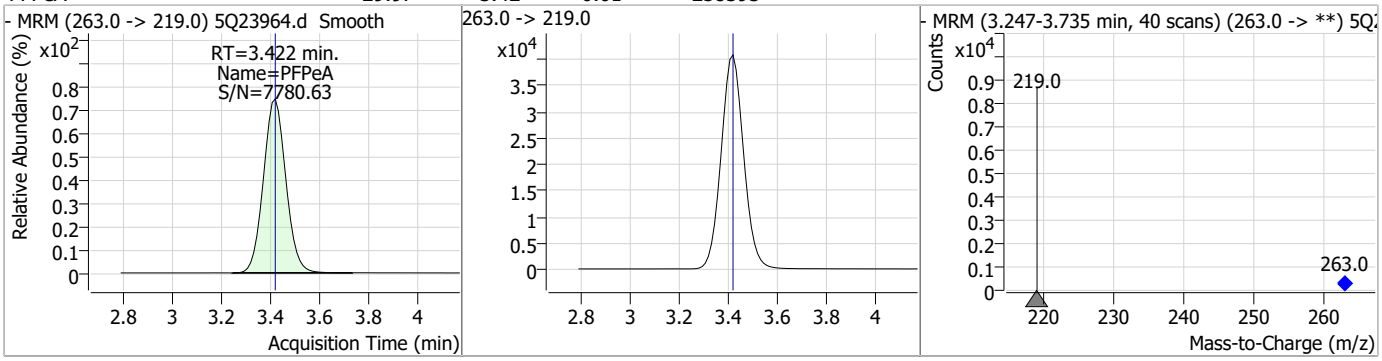




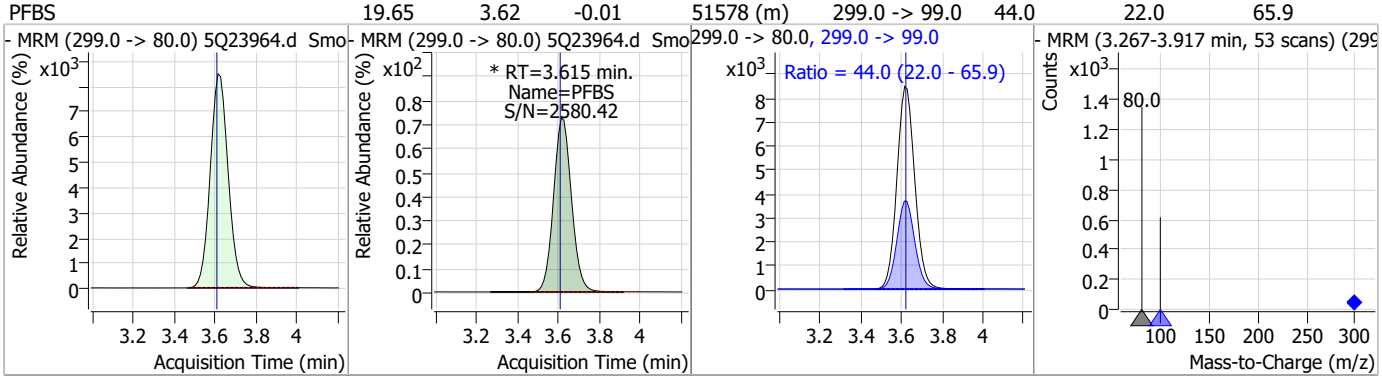


Perfluorinated Compounds by LC/MS/MS

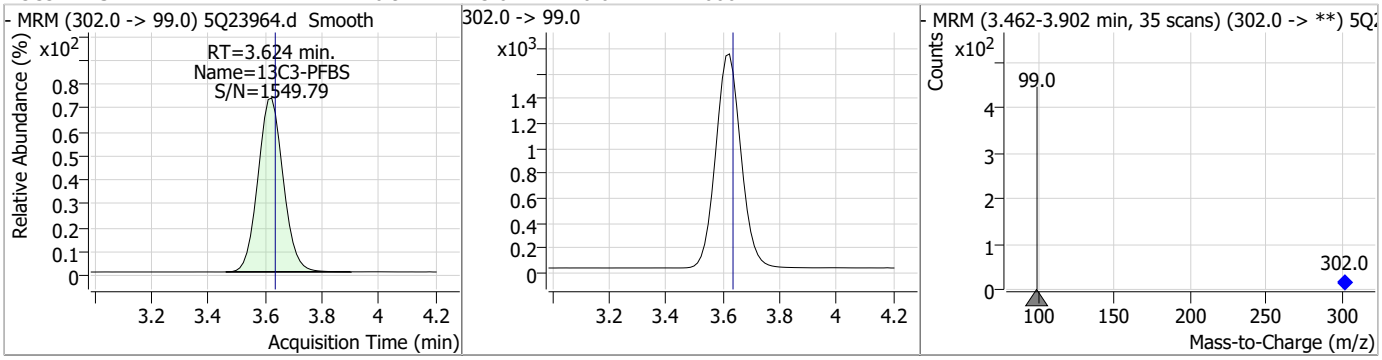
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	29.97	3.42	-0.01	258393				



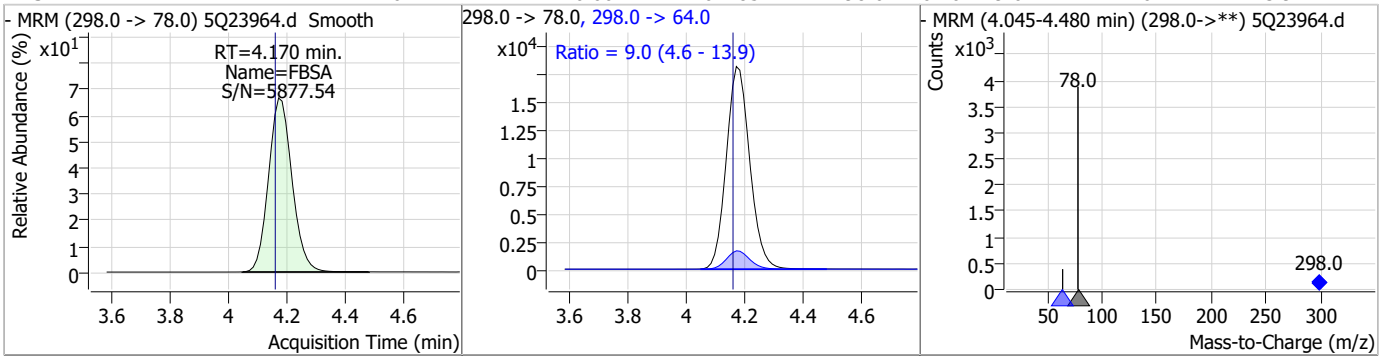
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	19.65	3.62	-0.01	51578 (m)	299.0 -> 99.0	44.0	22.0	65.9



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	10.92	3.62	-0.01	10604				

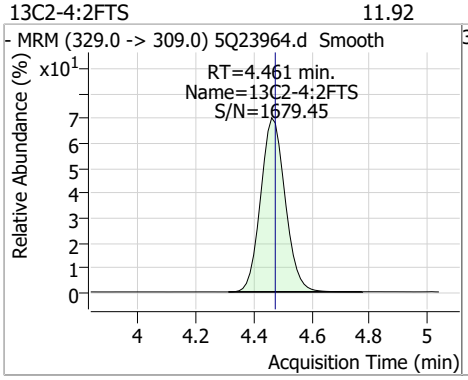


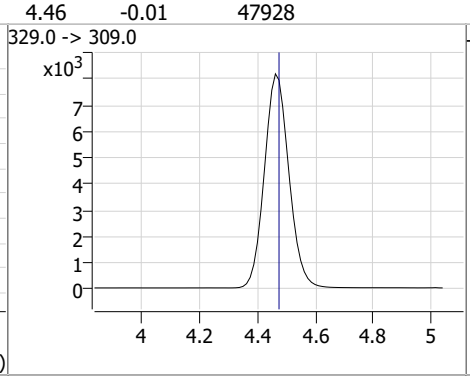
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	22.67	4.17	0.00	102185	298.0 -> 64.0	9.0	4.6	13.9

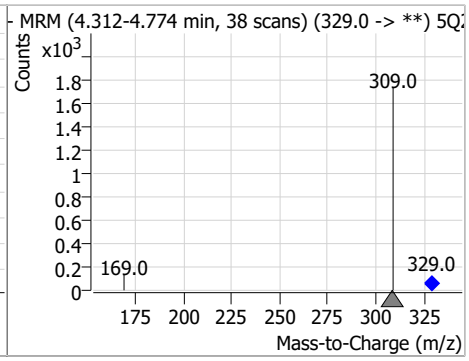


Perfluorinated Compounds by LC/MS/MS

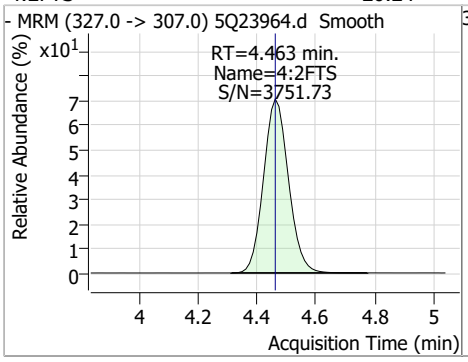
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	11.92	4.46	-0.01	47928				

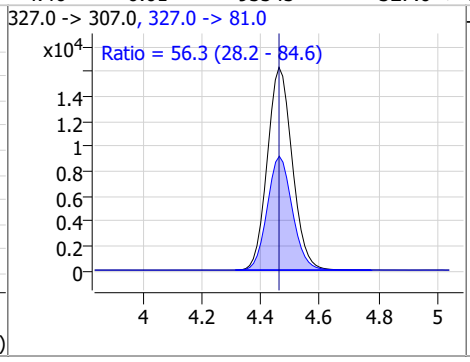


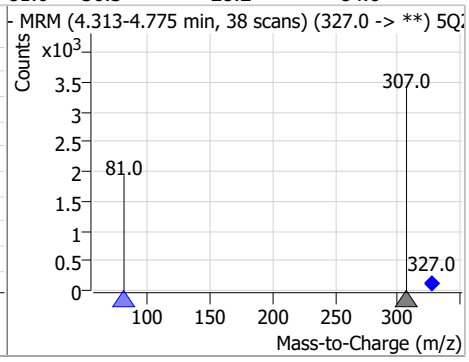




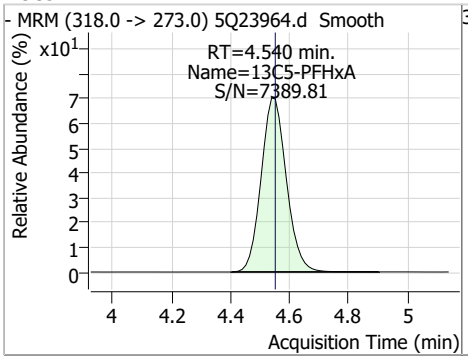
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	20.24	4.46	-0.01	95545	327.0 -> 81.0	56.3	28.2	84.6

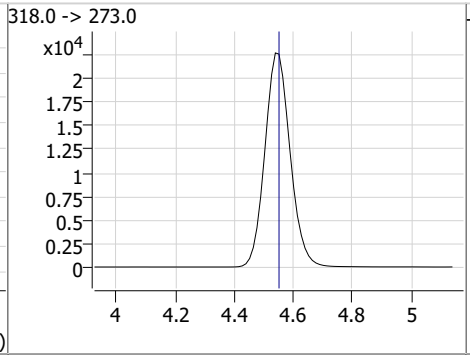


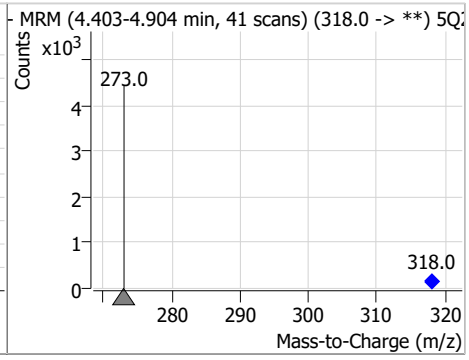




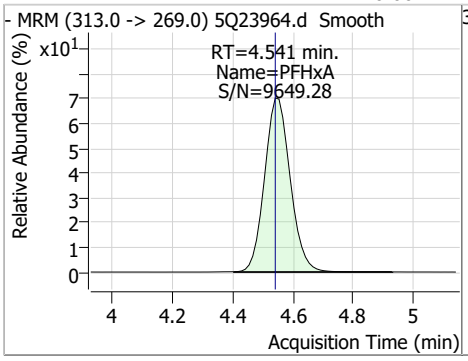
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	11.27	4.54	-0.01	134747				

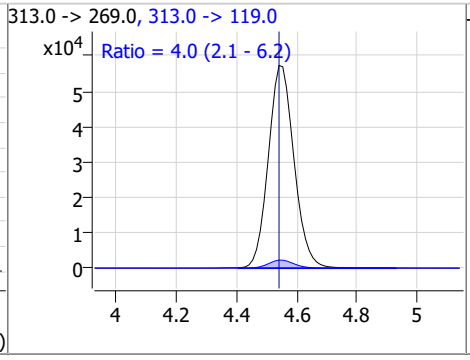


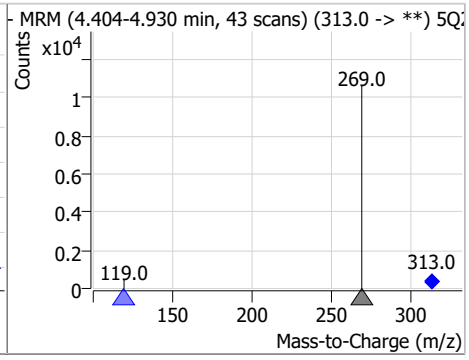




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	26.06	4.54	-0.01	339706	313.0 -> 119.0	4.0	2.1	6.2

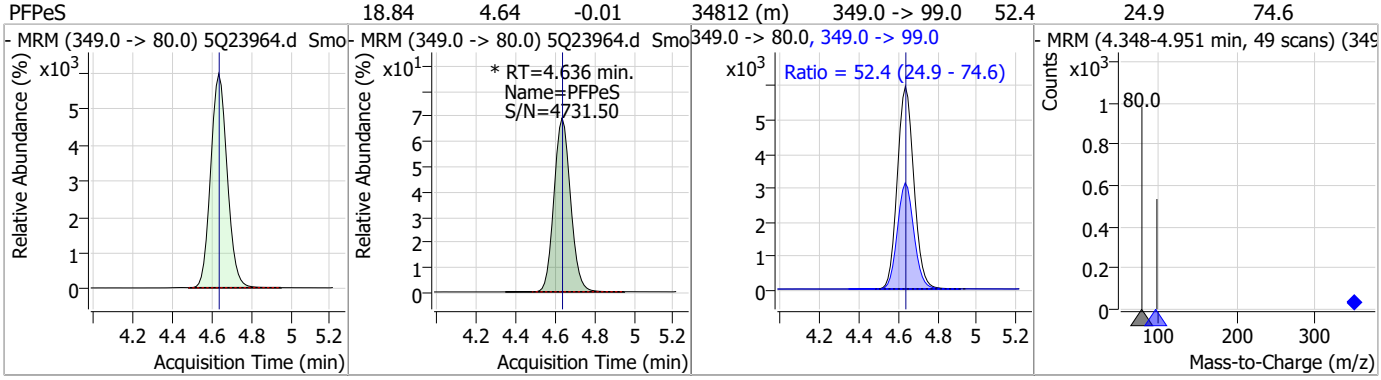




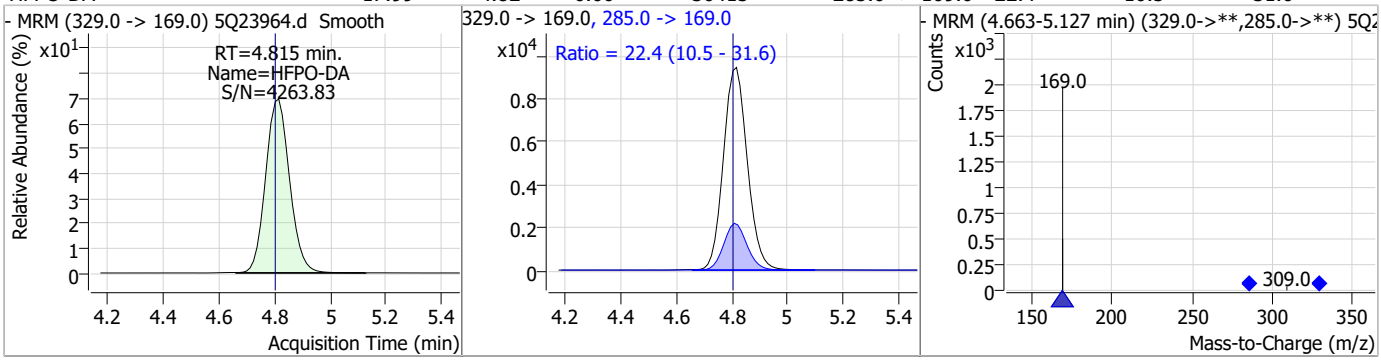


Perfluorinated Compounds by LC/MS/MS

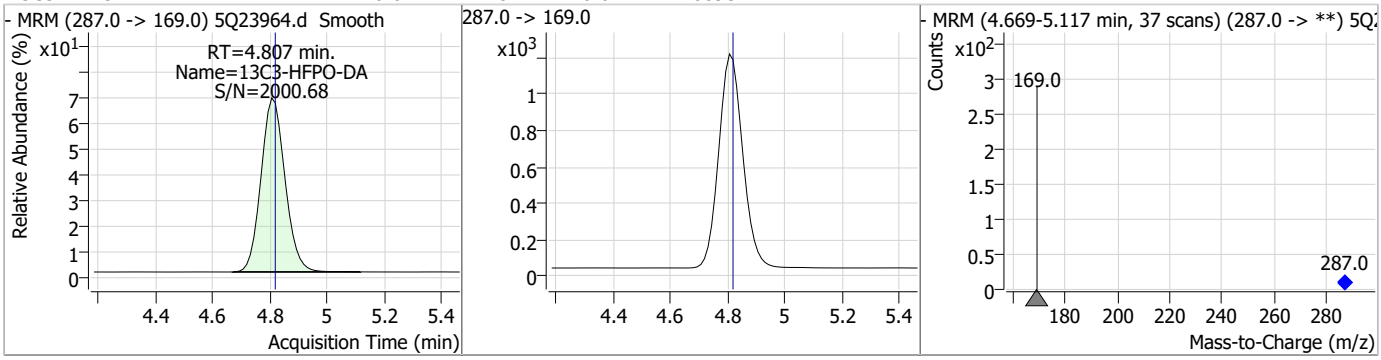
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	18.84	4.64	-0.01	34812 (m)	349.0 -> 99.0	52.4	24.9	74.6



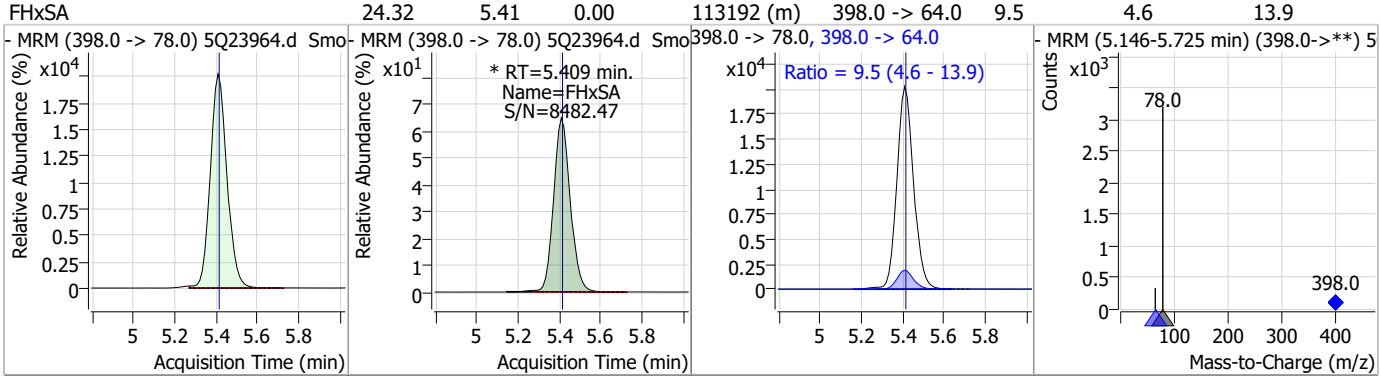
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	17.99	4.82	0.00	56415	285.0 -> 169.0	22.4	10.5	31.6



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	10.67	4.81	-0.01	6893				

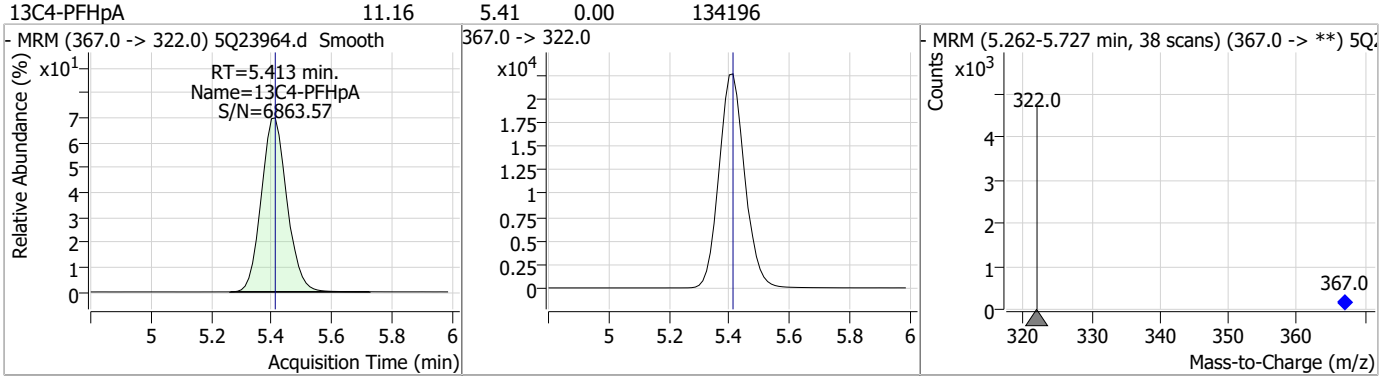


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	24.32	5.41	0.00	113192 (m)	398.0 -> 64.0	9.5	4.6	13.9

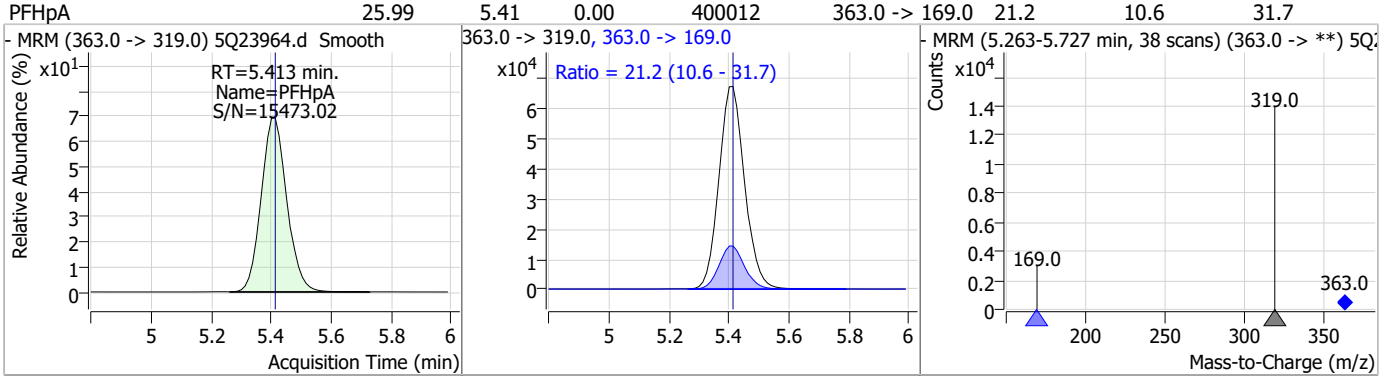


Perfluorinated Compounds by LC/MS/MS

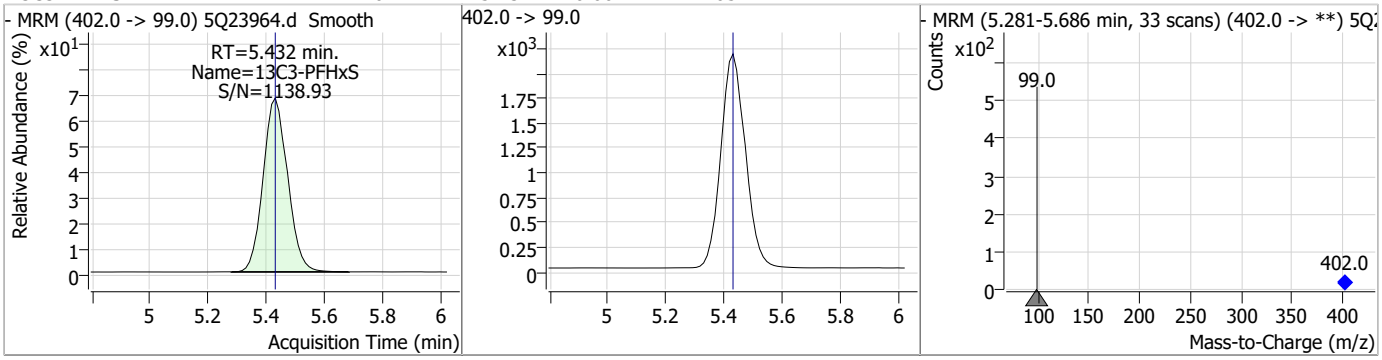
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	11.16	5.41	0.00	134196				



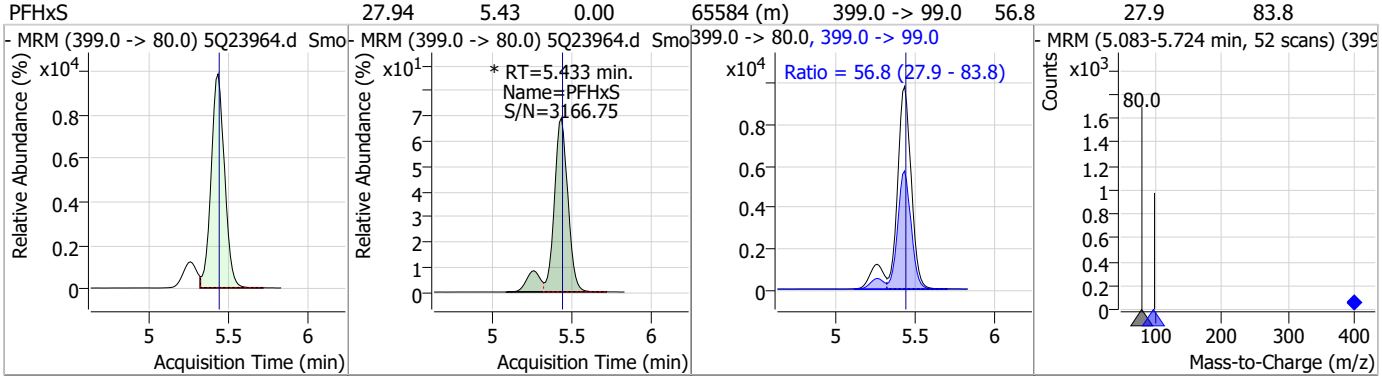
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	25.99	5.41	0.00	400012	363.0 -> 169.0	21.2	10.6	31.7



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	10.72	5.43	0.00	12652				

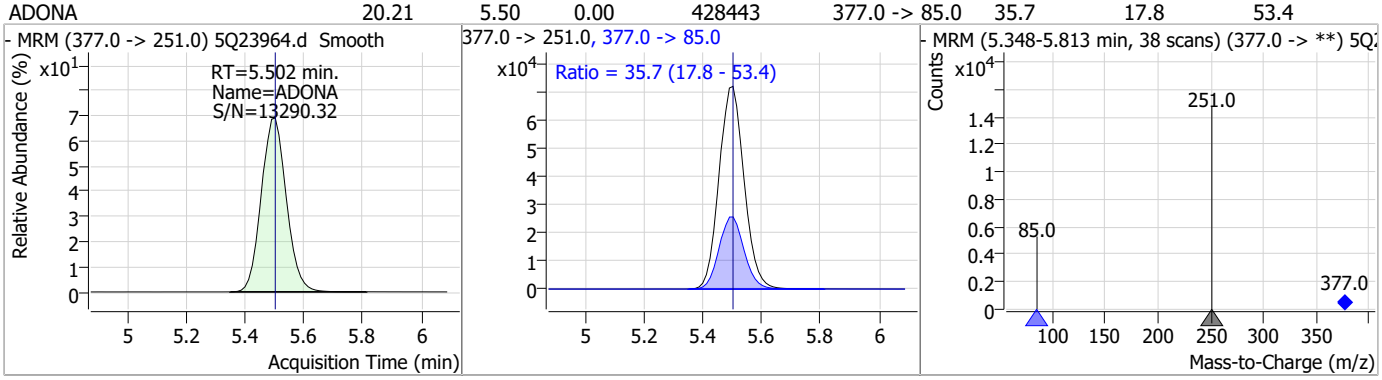


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	27.94	5.43	0.00	65584 (m)	399.0 -> 99.0	56.8	27.9	83.8

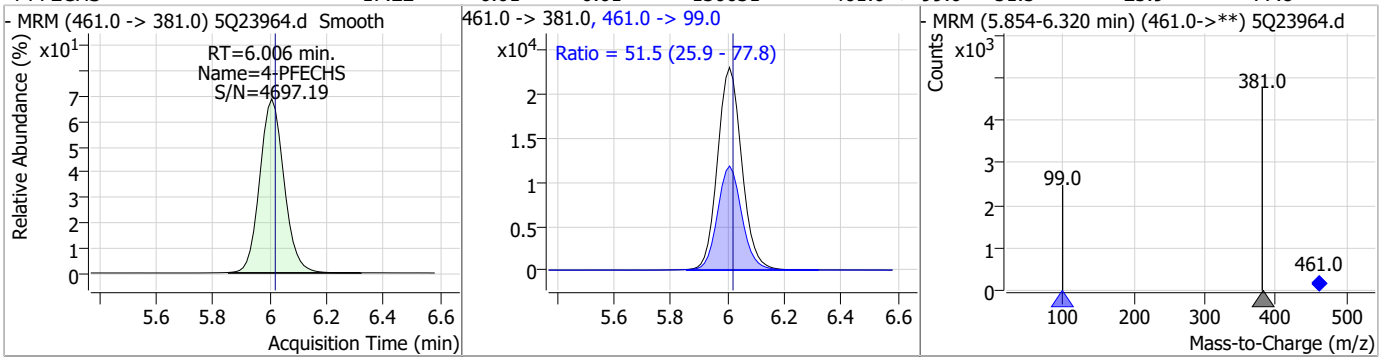


Perfluorinated Compounds by LC/MS/MS

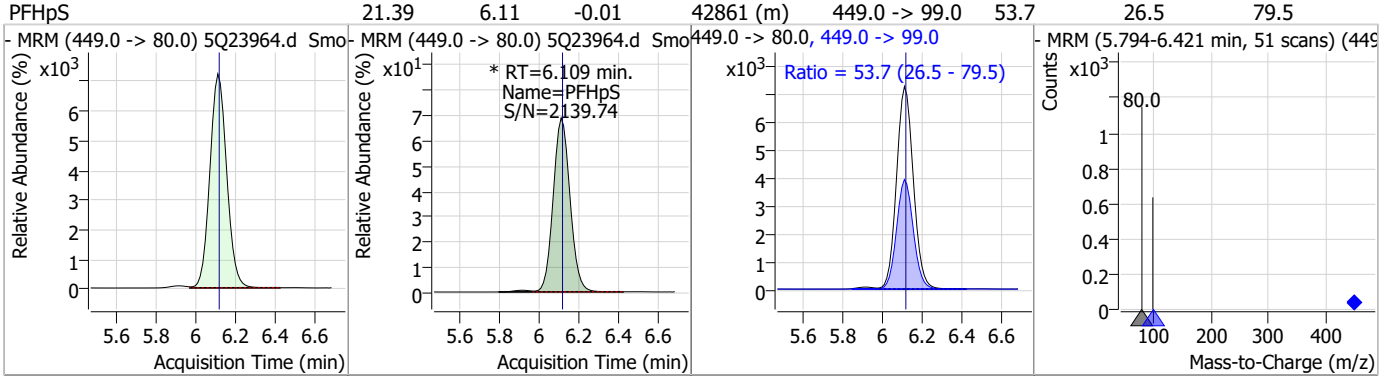
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	20.21	5.50	0.00	428443	377.0 -> 85.0	35.7	17.8	53.4



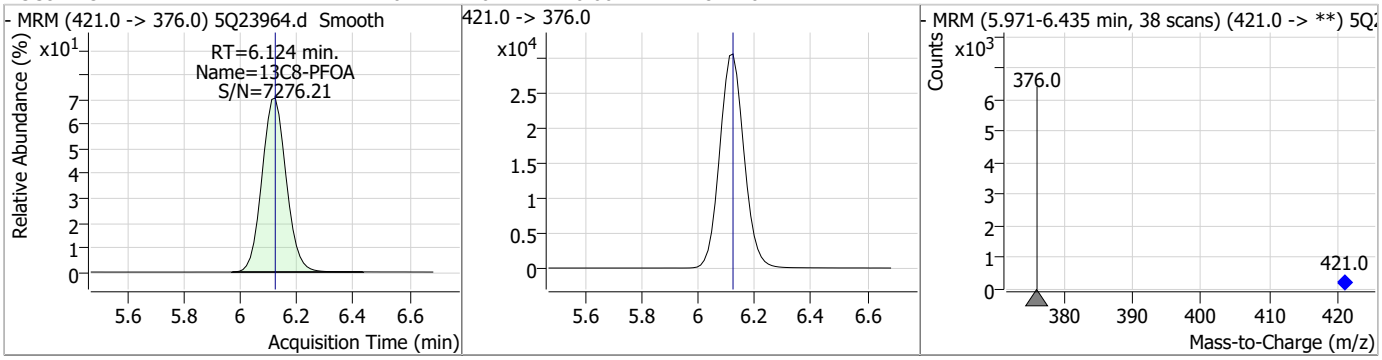
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS	17.22	6.01	-0.01	136631	461.0 -> 99.0	51.5	25.9	77.8



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	21.39	6.11	-0.01	42861 (m)	449.0 -> 99.0	53.7	26.5	79.5

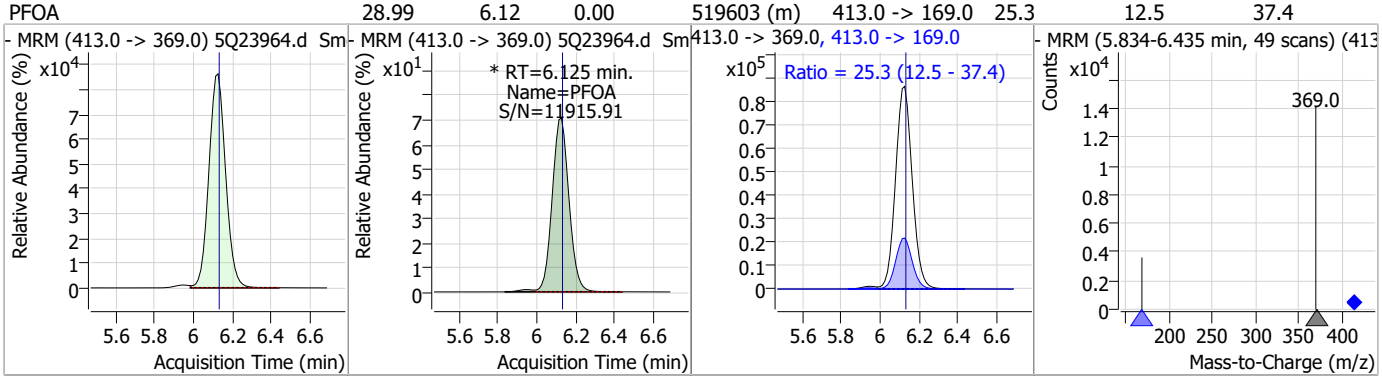


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	11.04	6.12	0.00	182726				

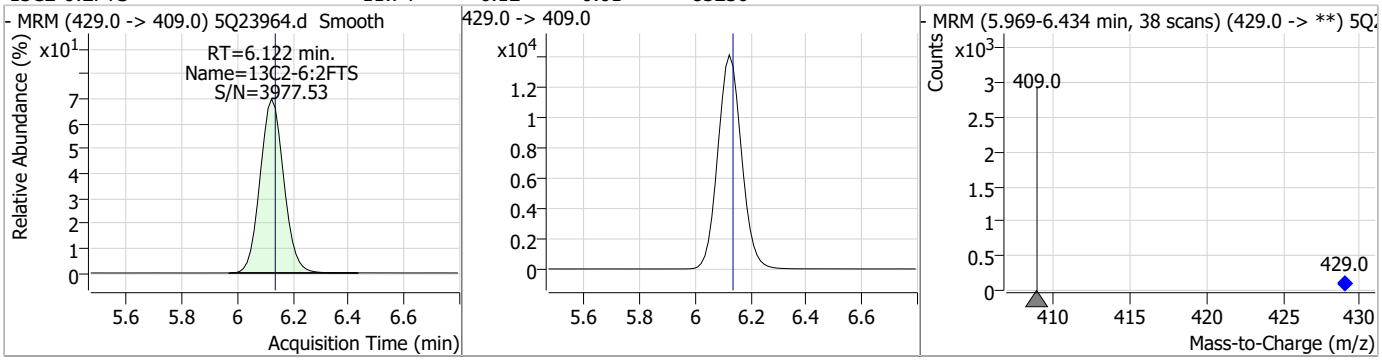


Perfluorinated Compounds by LC/MS/MS

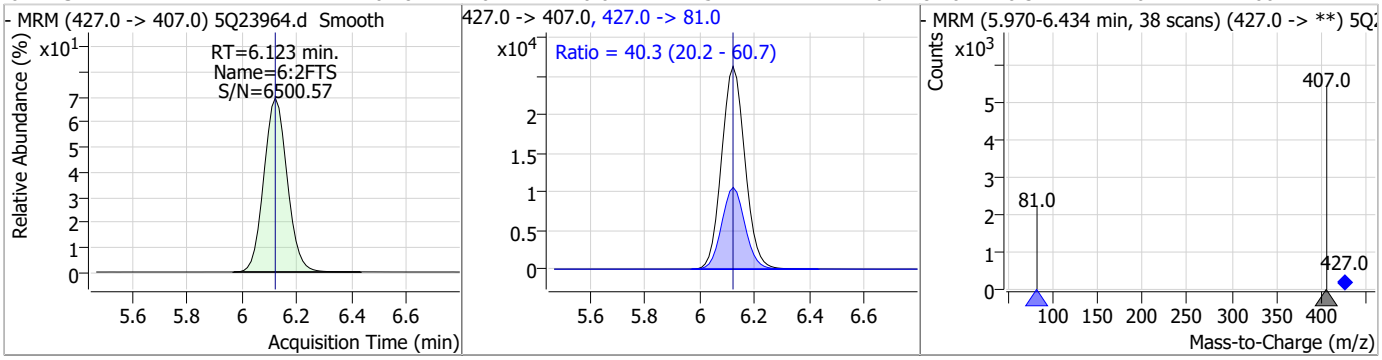
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	28.99	6.12	0.00	519603 (m)	413.0 -> 169.0	25.3	12.5	37.4



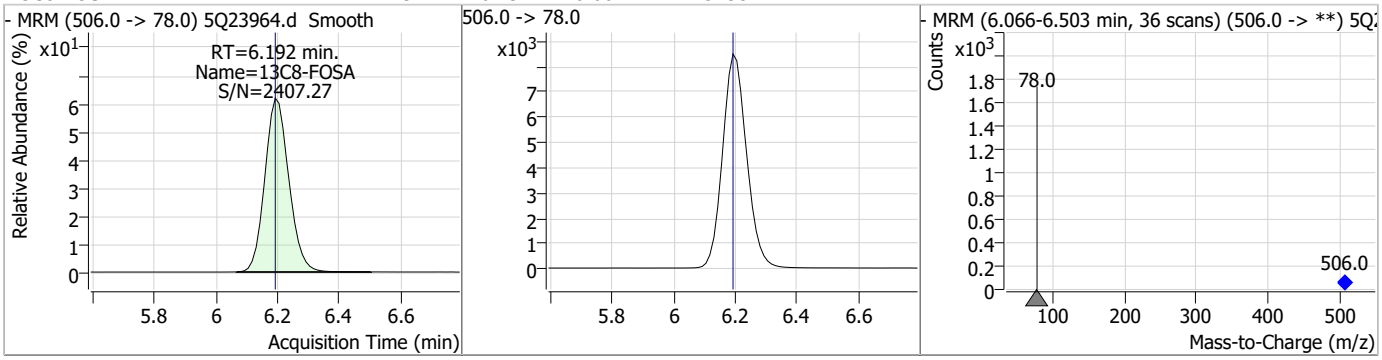
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	11.74	6.12	-0.01	83230				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	20.28	6.12	-0.01	154442	427.0 -> 81.0	40.3	20.2	60.7

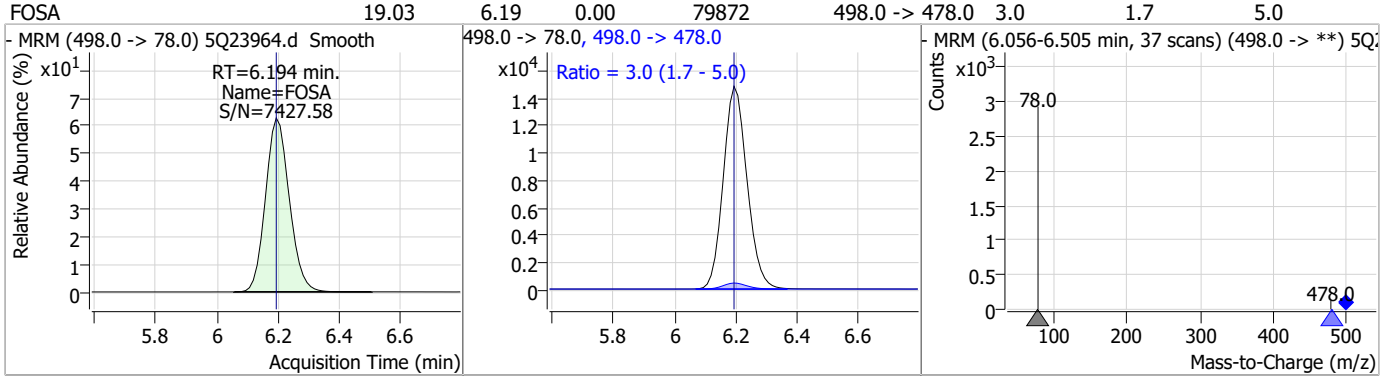


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	11.29	6.19	0.00	45738				

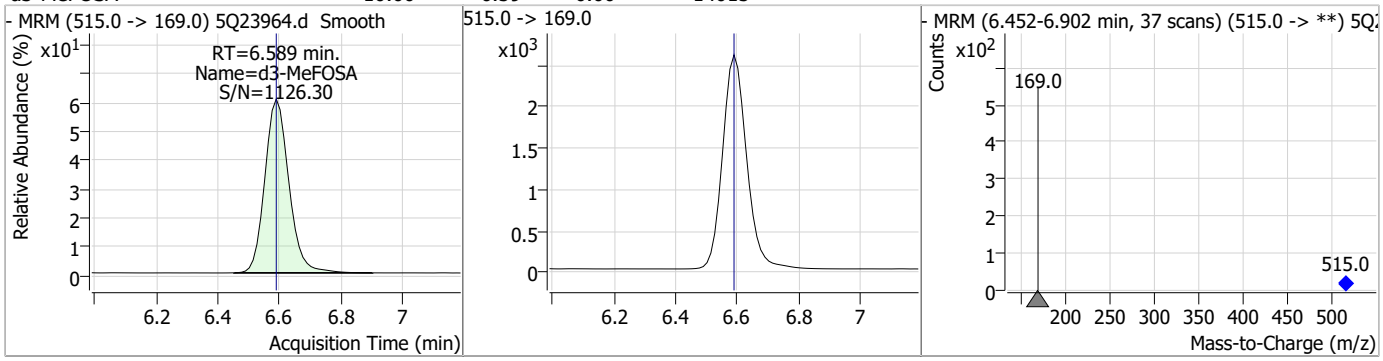


Perfluorinated Compounds by LC/MS/MS

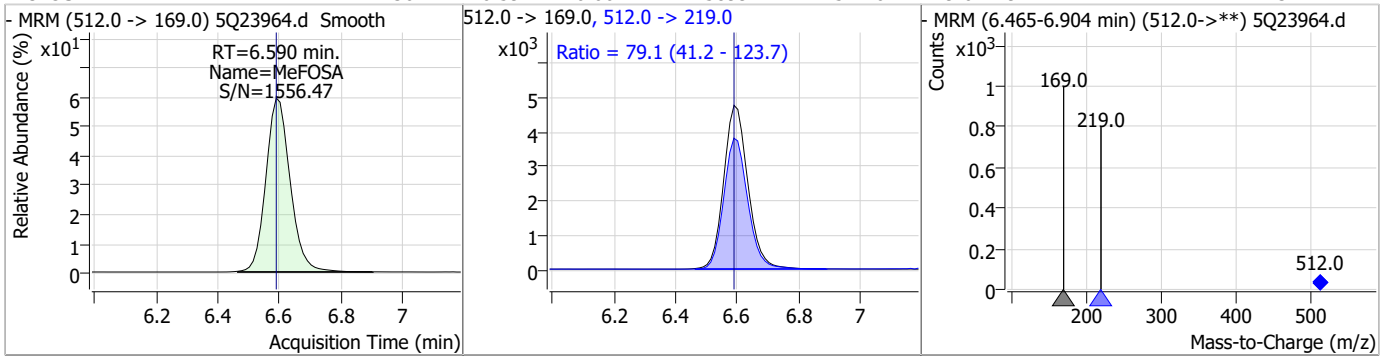
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	19.03	6.19	0.00	79872	498.0 -> 478.0	3.0	1.7	5.0



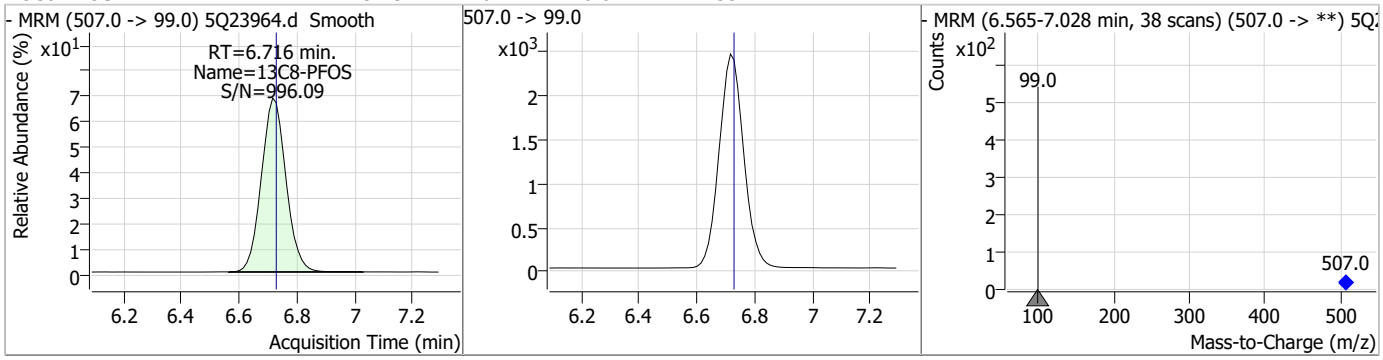
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	10.00	6.59	0.00	14015				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	21.36	6.59	0.00	25899	512.0 -> 219.0	79.1	41.2	123.7

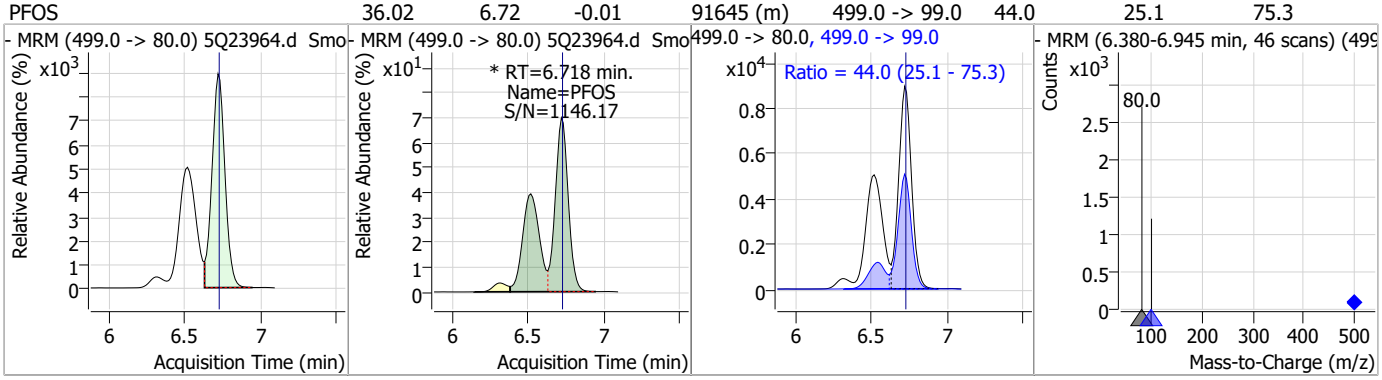


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	9.13	6.72	-0.01	14351				

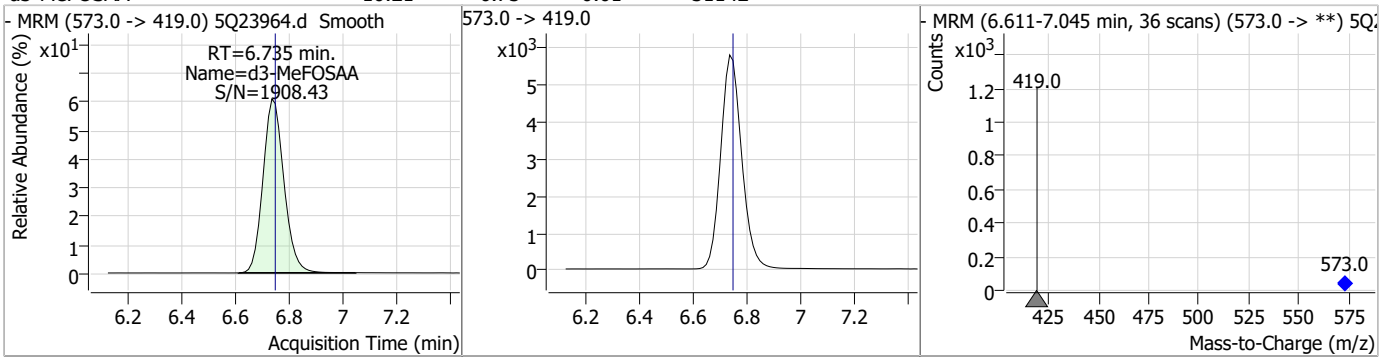


Perfluorinated Compounds by LC/MS/MS

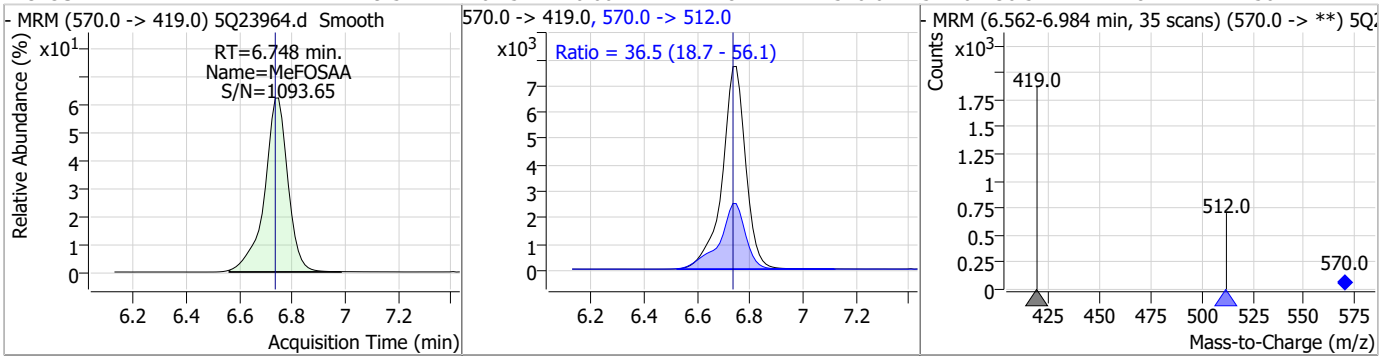
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	36.02	6.72	-0.01	91645 (m)	499.0 -> 99.0	44.0	25.1	75.3



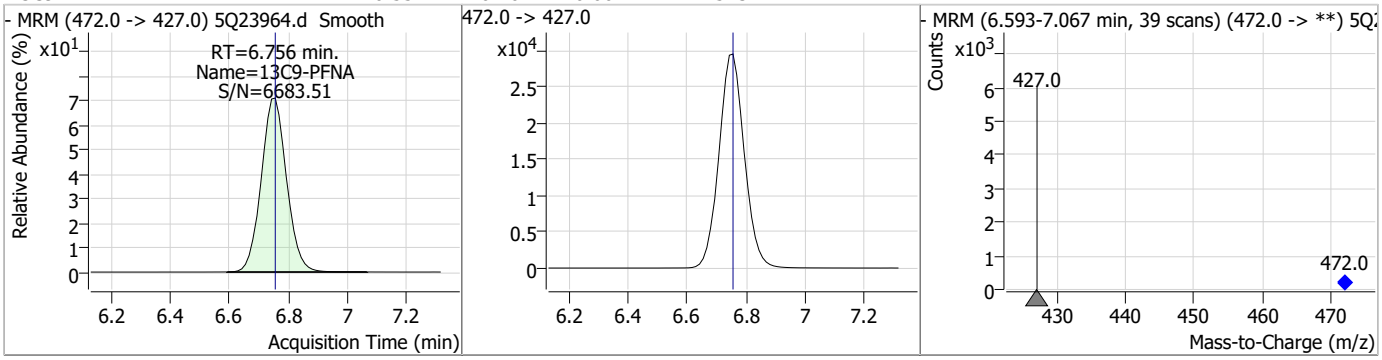
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	10.21	6.73	-0.01	31142				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	19.54	6.75	0.00	47484	570.0 -> 512.0	36.5	18.7	56.1

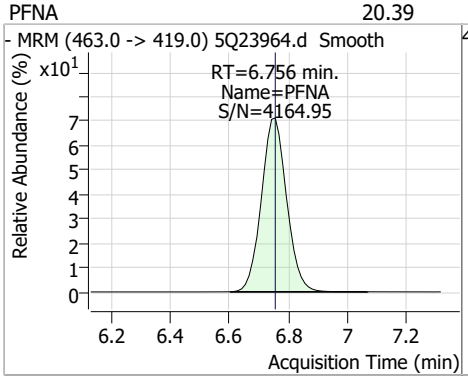


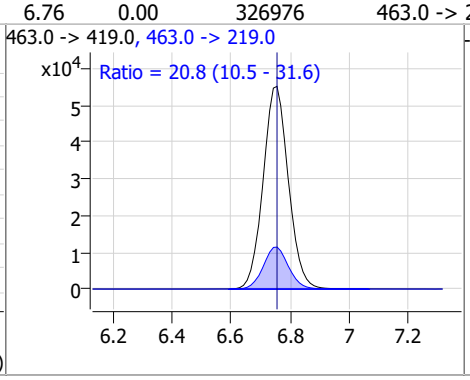
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	10.55	6.76	0.00	175137				

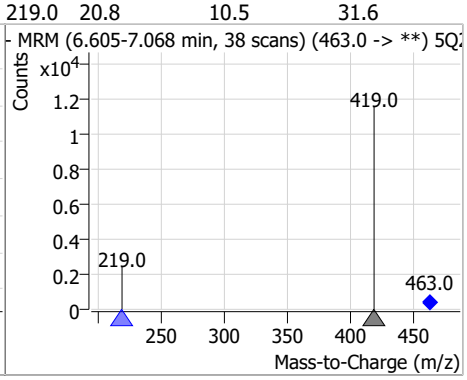


Perfluorinated Compounds by LC/MS/MS

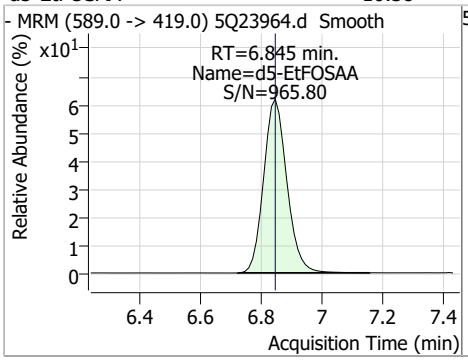
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	20.39	6.76	0.00	326976	463.0 -> 219.0	20.8	10.5	31.6

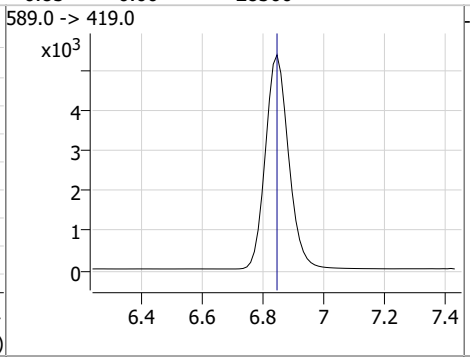


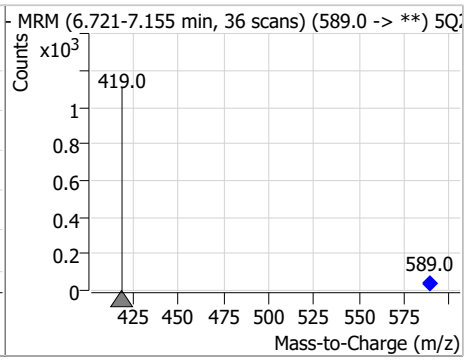




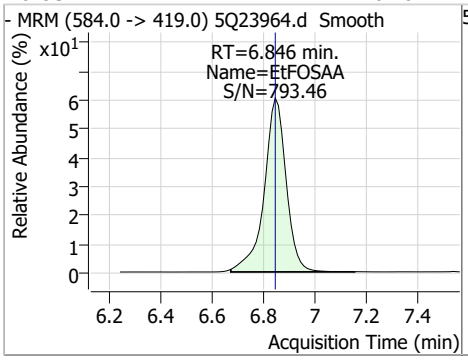
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	10.38	6.85	0.00	28500				

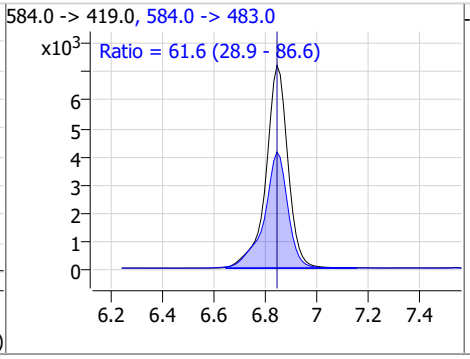


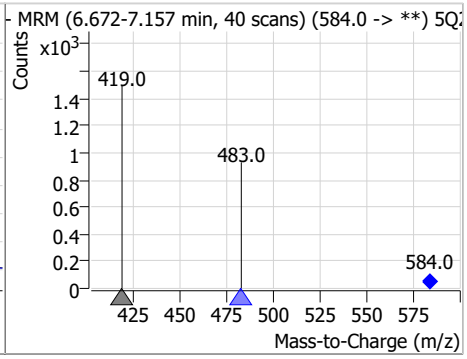




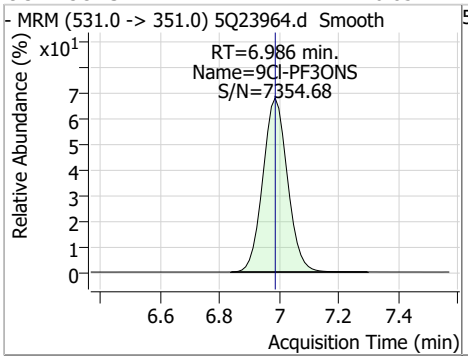
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	18.48	6.85	0.00	42982	584.0 -> 483.0	61.6	28.9	86.6

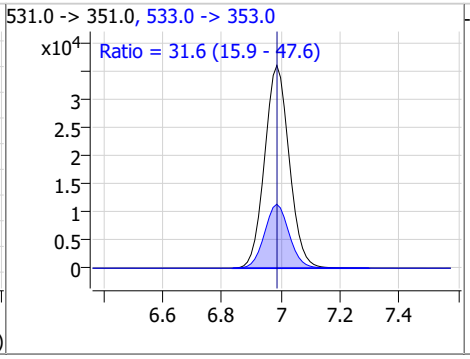


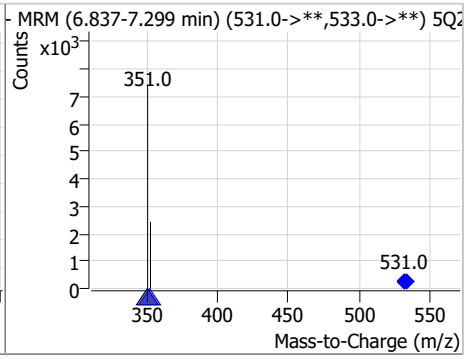




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	16.85	6.99	-0.01	207972	533.0 -> 353.0	31.6	15.9	47.6

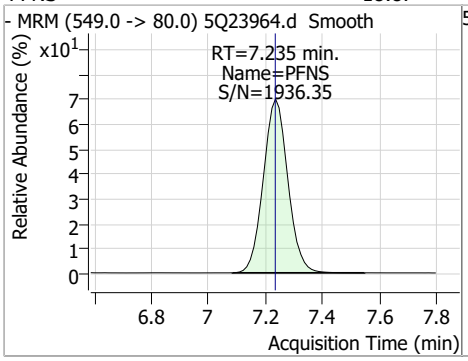


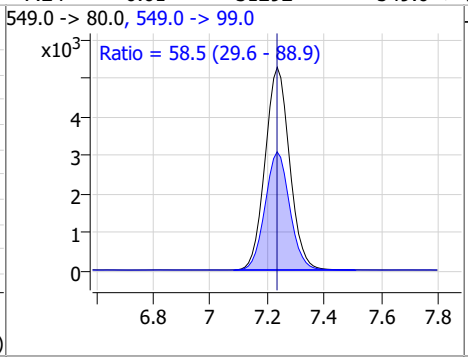


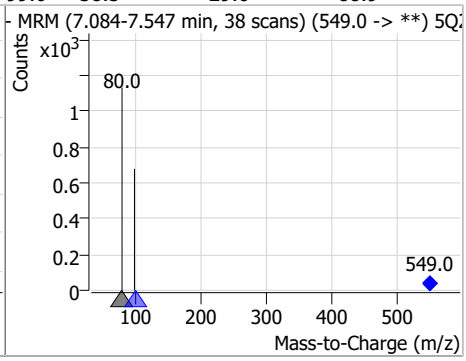


Perfluorinated Compounds by LC/MS/MS

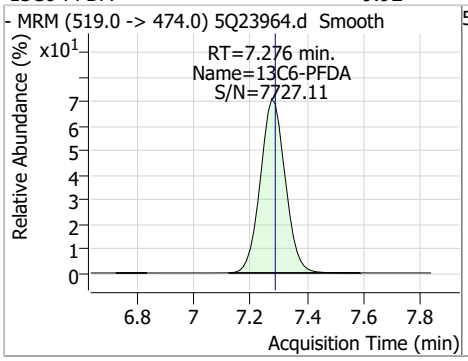
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	18.87	7.24	-0.01	31292	549.0 -> 99.0	58.5	29.6	88.9

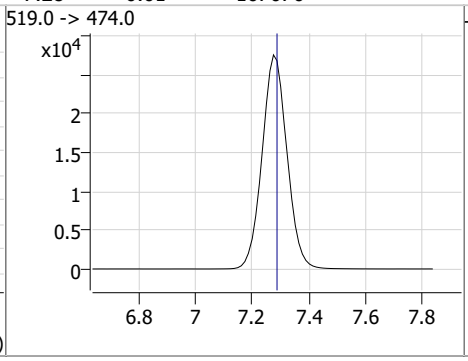


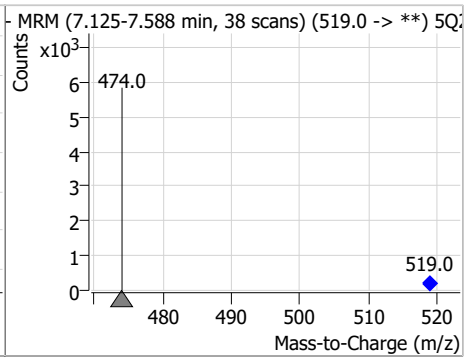




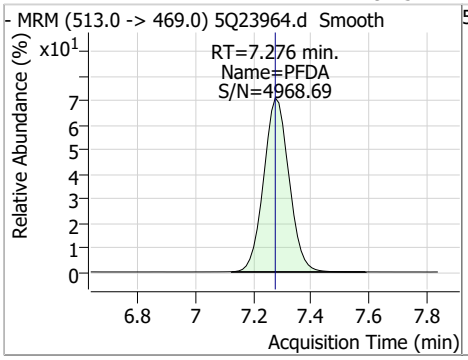
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	9.92	7.28	-0.01	167076				

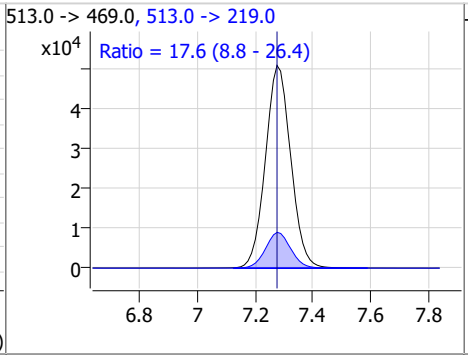


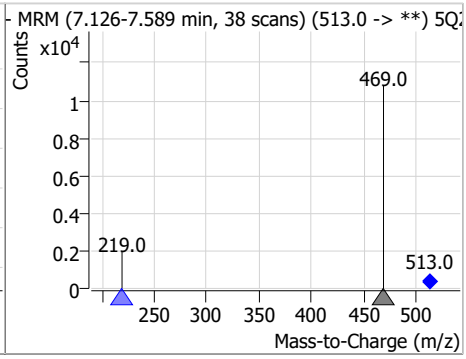




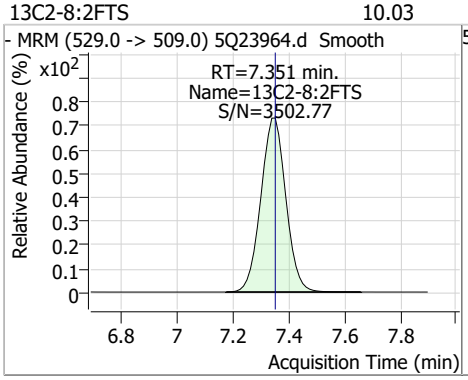
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	19.45	7.28	-0.01	308678	513.0 -> 219.0	17.6	8.8	26.4

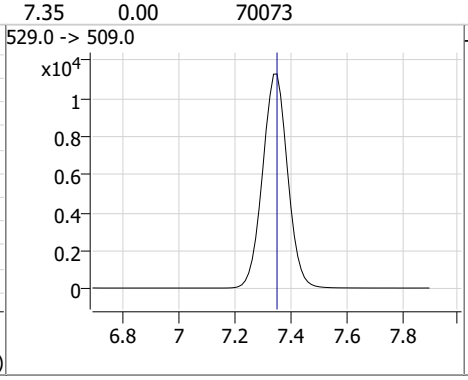


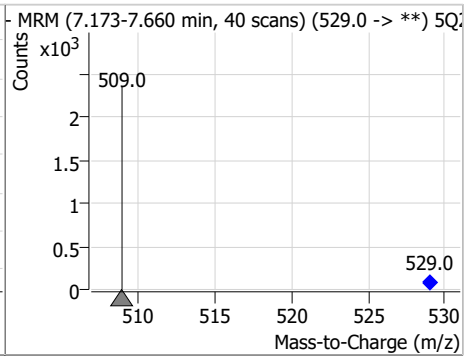




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	10.03	7.35	0.00	70073				

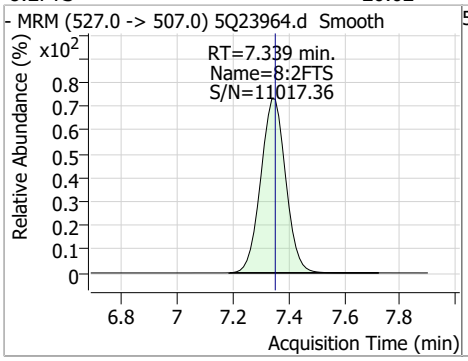


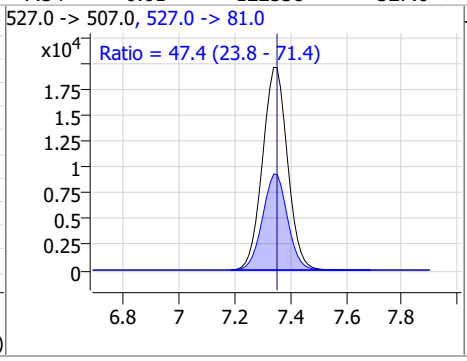


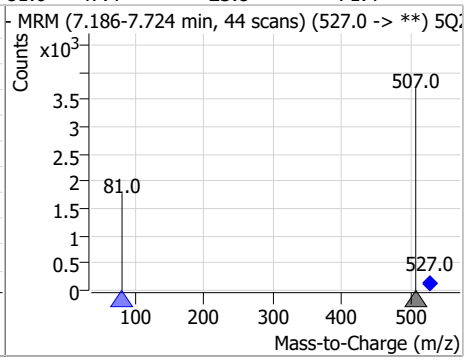


Perfluorinated Compounds by LC/MS/MS

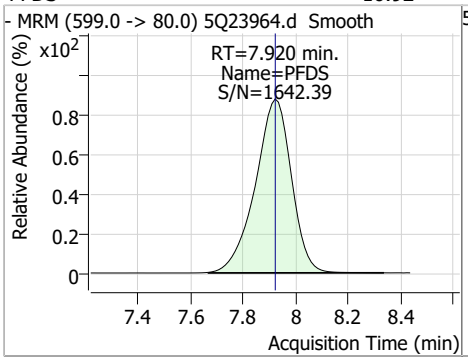
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	20.02	7.34	-0.01	122538	527.0 -> 81.0	47.4	23.8	71.4

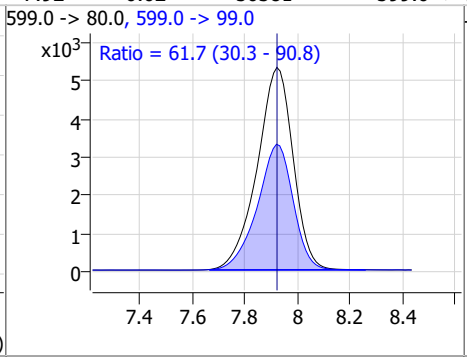


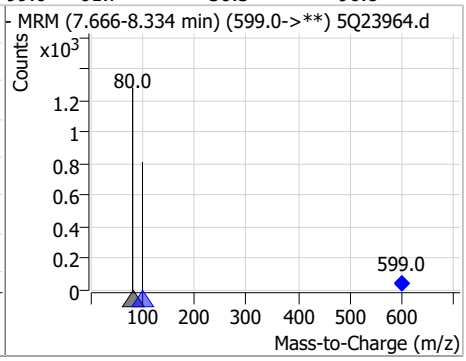




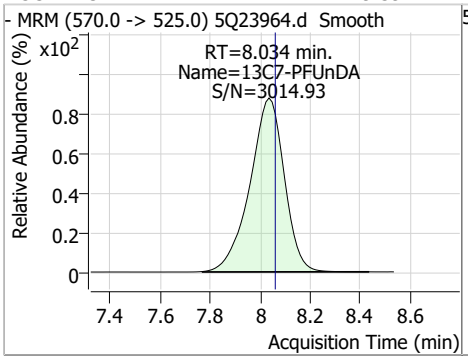
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	16.92	7.92	-0.02	50581	599.0 -> 99.0	61.7	30.3	90.8

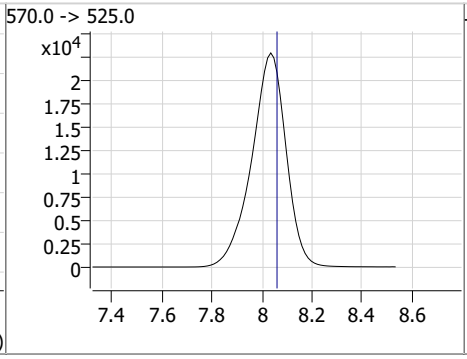


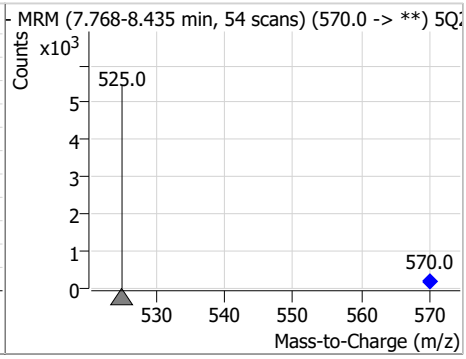




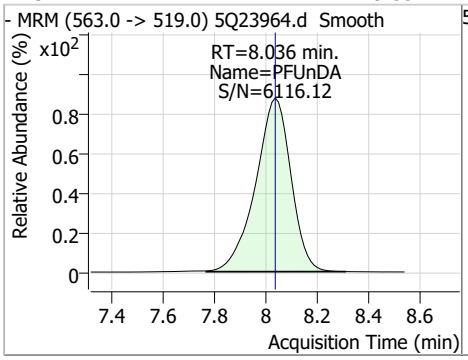
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	9.39	8.03	-0.02	218968				

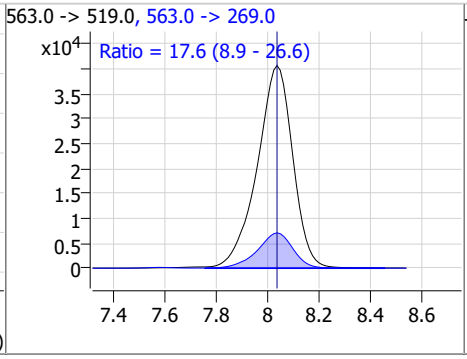


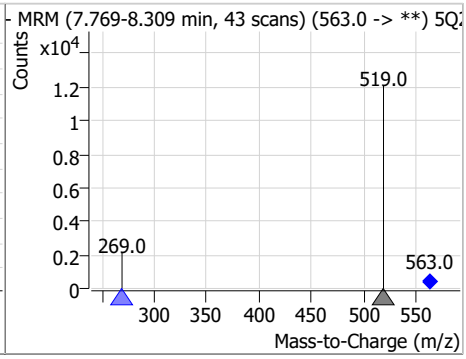




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	19.55	8.04	-0.02	386111	563.0 -> 269.0	17.6	8.9	26.6

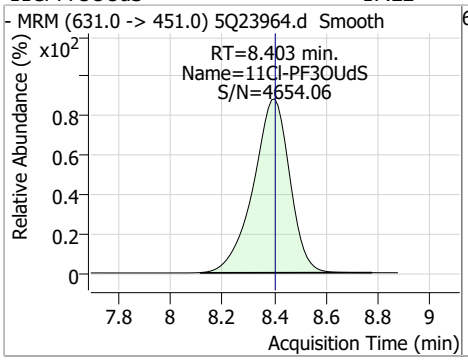


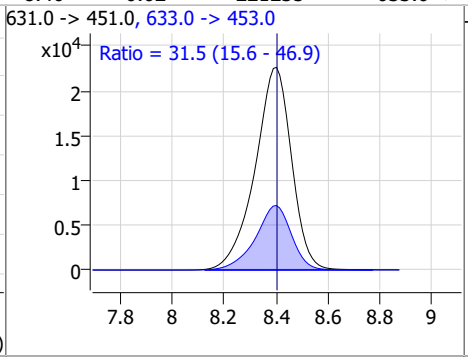


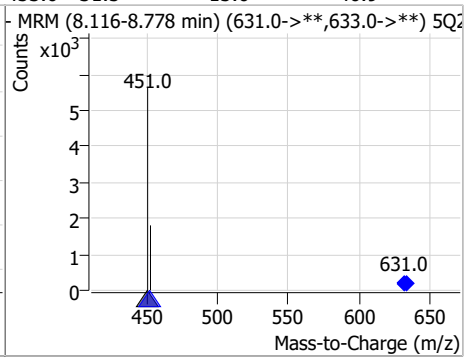


Perfluorinated Compounds by LC/MS/MS

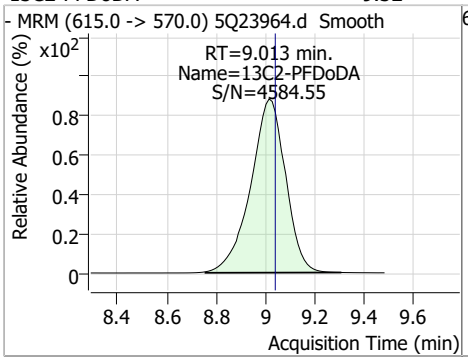
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	17.22	8.40	-0.02	221235	633.0 -> 453.0	31.5	15.6	46.9

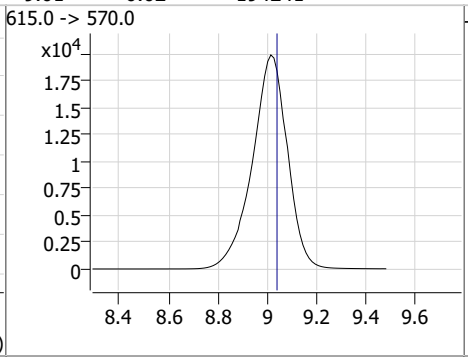


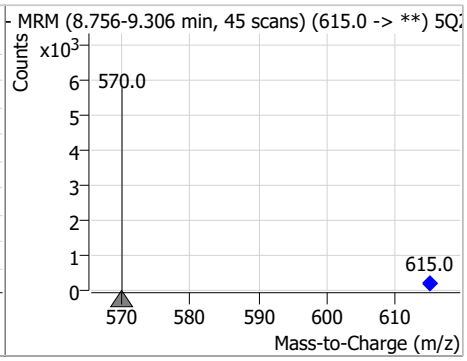




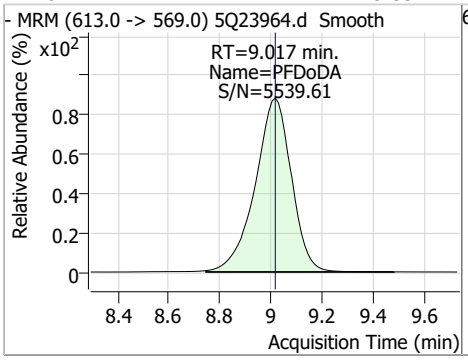
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	9.32	9.01	-0.02	194241				

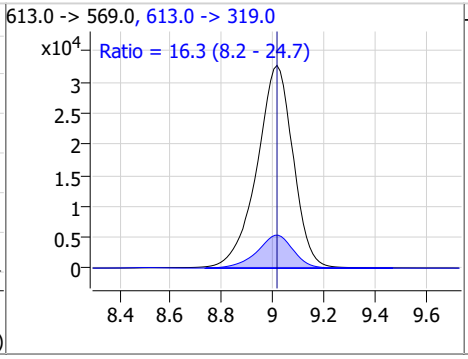


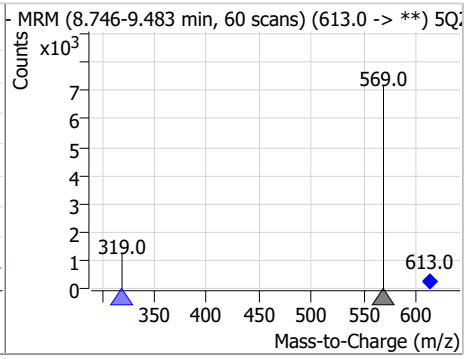




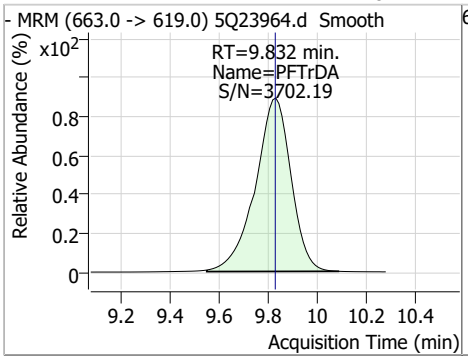
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	19.33	9.02	-0.02	322270	613.0 -> 319.0	16.3	8.2	24.7

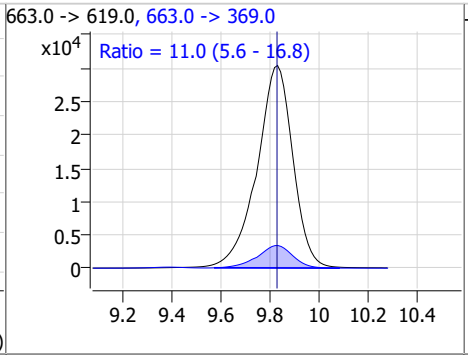


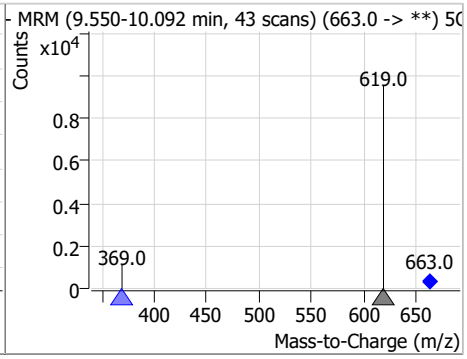




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	18.41	9.83	-0.02	307292	663.0 -> 369.0	11.0	5.6	16.8

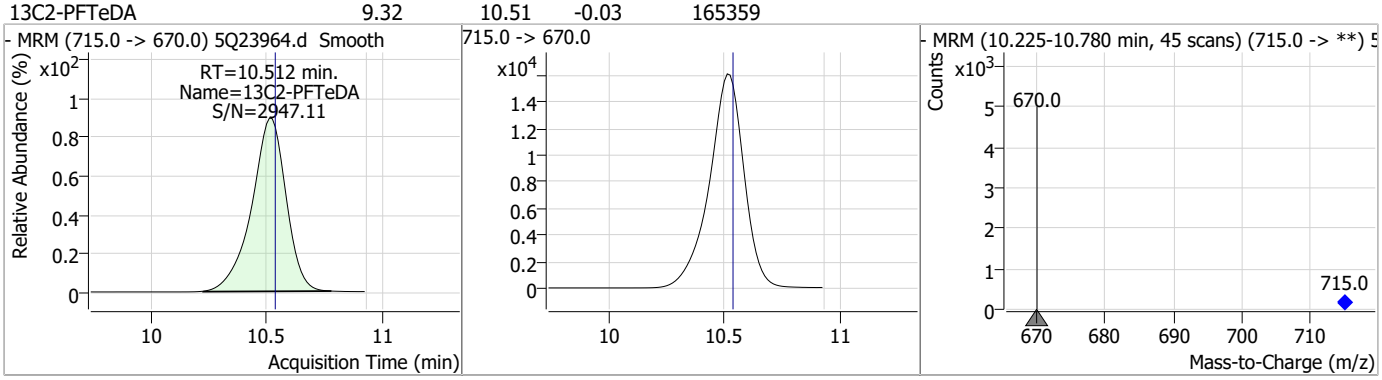




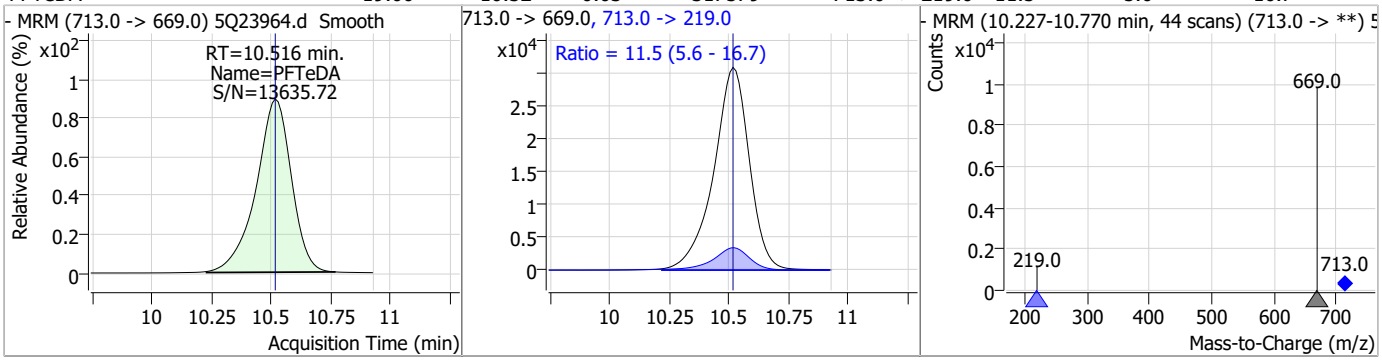


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	9.32	10.51	-0.03	165359				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	19.00	10.52	-0.03	317579	713.0 -> 219.0	11.5	5.6	16.7



Manual Integration Approval Summary

Sample Number: OP835-MS
Lab FileID: 5Q23964.D
Injection Time: 12/29/23 06:00

Method: EPA 537M QSM5.3 B-15
Analyst approved: 12/29/23 14:22 Lindsay Ritner
Supervisor approved: 01/02/24 14:27 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorobutanesulfonic acid	375-73-5		3.62	Split peak
Perfluoropentanesulfonic acid	2706-91-4		4.64	Split peak
PFHxSA	41997-13-1		5.41	Split peak
Perfluorohexanesulfonic acid	355-46-4		5.43	Split peak
Perfluoroheptanesulfonic acid	375-92-8		6.11	Split peak
Perfluorooctanoic acid	335-67-1		6.12	Split peak
Perfluorooctanesulfonic acid	1763-23-1		6.72	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Natasha Gumtie
01/02/24 14:27

Perfluorinated Compounds by LC/MS/MS

Data File : 5Q23965.d
Operator : natashag
Acq. Method : 537_ID.m
Acq. Date-Time : 12/29/2023 6:17:00 AM
Sample Name : op835-msd
Vial : P2-E2
DA Method File : ID_122823_S5Q375.quantmethod.xml
Batch Name : s5q375.batch.bin
Sample Information : OP835,S5Q375,125,,,1.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.975	217.0 -> 172.0	58998	10.00	µg/L	-0.013
M5-PFPeA	3.419	268.0 -> 223.0	96017	10.00	µg/L	-0.012
M5-PFHxA	4.552	318.0 -> 273.0	144252	10.00	µg/L	0.000
M4-PFHpA	5.413	367.0 -> 322.0	142787	10.00	µg/L	0.000
M8-PFOA	6.124	421.0 -> 376.0	197917	10.00	µg/L	0.000
M9-PFNA	6.756	472.0 -> 427.0	190051	10.00	µg/L	0.000
M6-PFDA	7.276	519.0 -> 474.0	184644	10.00	µg/L	-0.012
M7-PFUnDA	8.034	570.0 -> 525.0	236793	10.00	µg/L	-0.025
M2-PFDoDA	9.013	615.0 -> 570.0	208007	10.00	µg/L	-0.025
M2-PFTeDA	10.512	715.0 -> 670.0	175690	10.00	µg/L	-0.025
M8-FOSA	6.192	506.0 -> 78.0	50167	10.00	µg/L	0.000
M3-PFBS	3.624	302.0 -> 99.0	11121	10.00	µg/L	-0.012
M3-PFHxS	5.432	402.0 -> 99.0	13347	10.00	µg/L	0.000
M8-PFOS	6.716	507.0 -> 99.0	15529	10.00	µg/L	-0.012
M2-4:2FTS	4.461	329.0 -> 309.0	51196	10.00	µg/L	-0.012
M2-6:2FTS	6.122	429.0 -> 409.0	88824	10.00	µg/L	-0.013
M2-8:2FTS	7.351	529.0 -> 509.0	75787	10.00	µg/L	0.000
M3-MeFOSAA	6.735	573.0 -> 419.0	34001	10.00	µg/L	-0.012
M3-HFPO-DA	4.807	287.0 -> 169.0	7185	10.00	µg/L	-0.012
M3-MeFOSA	6.589	515.0 -> 169.0	15299	10.00	µg/L	0.000
M5-EtFOSAA	6.845	589.0 -> 419.0	29971	10.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.461	329.0 -> 309.0	51196	12.73	µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 127.3%		
13C2-6:2FTS	6.122	429.0 -> 409.0	88824	12.53	µg/L	-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 125.3%		
13C2-8:2FTS	7.351	529.0 -> 509.0	75787	10.85	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 108.5%		
13C2-PFDoDA	9.013	615.0 -> 570.0	208007	9.98	µg/L	-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.8%		
13C2-PFTeDA	10.512	715.0 -> 670.0	175690	9.90	µg/L	-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.0%		
13C3-PFBS	3.624	302.0 -> 99.0	11121	11.46	µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 114.6%		
13C3-PFHxS	5.432	402.0 -> 99.0	13347	11.31	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 113.1%		
13C4-PFBA	1.975	217.0 -> 172.0	58998	12.49	µg/L	-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 124.9%		
13C4-PFHpA	5.413	367.0 -> 322.0	142787	11.87	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 118.7%		
13C5-PFHxA	4.552	318.0 -> 273.0	144252	12.07	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 120.7%		
13C5-PFPeA	3.419	268.0 -> 223.0	96017	12.18	µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 121.8%		
13C6-PFDA	7.276	519.0 -> 474.0	184644	10.97	µg/L	-0.012

Perfluorinated Compounds by LC/MS/MS

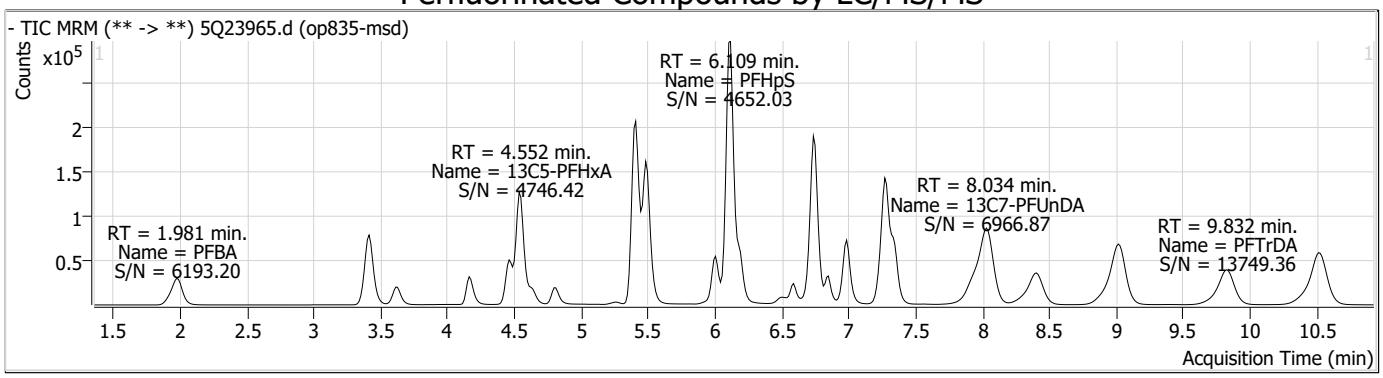
Compound	RT	Transition	Response	Conc. Units		Dev(Min)
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 109.7%		
13C7-PFUnDA	8.034	570.0 -> 525.0	236793	10.16 µg/L		-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.6%		
13C8-FOSA	6.192	506.0 -> 78.0	50167	12.38 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 123.8%		
13C8-PFOA	6.124	421.0 -> 376.0	197917	11.96 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 119.6%		
13C8-PFOS	6.716	507.0 -> 99.0	15529	9.88 µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 98.8%		
13C9-PFNA	6.756	472.0 -> 427.0	190051	11.45 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 114.5%		
d3-MeFOSAA	6.735	573.0 -> 419.0	34001	11.15 µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 111.5%		
13C3-HFPO-DA	4.807	287.0 -> 169.0	7185	11.13 µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 111.3%		
d3-MeFOSA	6.589	515.0 -> 169.0	15299	10.91 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 109.1%		
d5-EtFOSAA	6.845	589.0 -> 419.0	29971	10.92 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 109.2%		
Target Compounds						QValue
4:2FTS	4.463	327.0 -> 307.0	99899	19.81 µg/L		99
		327.0 -> 81.0	55441			
6:2FTS	6.123	427.0 -> 407.0	162858	20.04 µg/L		98
		427.0 -> 81.0	64014			
8:2FTS	7.339	527.0 -> 507.0	128987	19.48 µg/L		99
		527.0 -> 81.0	60930			
EtFOSAA	6.846	584.0 -> 419.0	44936	18.38 µg/L		93
		584.0 -> 483.0	28266			
FOSA	6.194	498.0 -> 78.0	86474	18.79 µg/L		100
		498.0 -> 478.0	2936			
MeFOSAA	6.736	570.0 -> 419.0	48972	18.46 µg/L		98
		570.0 -> 512.0	18930			
PFBA	1.981	213.0 -> 169.0	122482	22.41 µg/L		100
PFBS	3.615	299.0 -> 80.0	53430	19.41 µg/L	m	99
		299.0 -> 99.0	23701			
PFDA	7.276	513.0 -> 469.0	328233	18.71 µg/L		100
		513.0 -> 219.0	57221			
PFDoDA	9.017	613.0 -> 569.0	339127	18.99 µg/L		100
		613.0 -> 319.0	55237			
PFDS	7.920	599.0 -> 80.0	52920	16.37 µg/L		99
		599.0 -> 99.0	32419			
PFHpA	5.413	363.0 -> 319.0	415093	25.35 µg/L		100
		363.0 -> 169.0	87575			
PFHpS	6.109	449.0 -> 80.0	45732	21.09 µg/L	m	99
		449.0 -> 99.0	24485			
PFHxA	4.553	313.0 -> 269.0	353052	25.30 µg/L		100
		313.0 -> 119.0	14626			
PFHxS	5.433	399.0 -> 80.0	69931	28.24 µg/L	m	100
		399.0 -> 99.0	39239			
PFNA	6.756	463.0 -> 419.0	343111	19.72 µg/L		100
		463.0 -> 219.0	73012			
PFNS	7.235	549.0 -> 80.0	32464	18.09 µg/L		100
		549.0 -> 99.0	19112			
PFOA	6.125	413.0 -> 369.0	541554	27.89 µg/L	m	99
		413.0 -> 169.0	137708			
PFOS	6.718	499.0 -> 80.0	96971	35.22 µg/L	m	94

Perfluorinated Compounds by LC/MS/MS

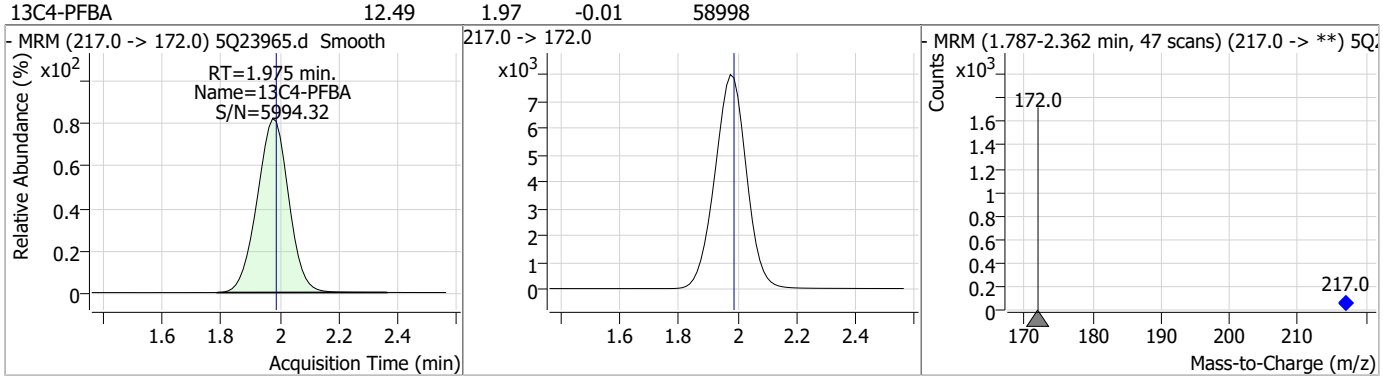
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
		499.0 -> 99.0	44848				
PFPeA	3.422	263.0 -> 219.0	271215	29.13	µg/L		100
PFPeS	4.636	349.0 -> 80.0	36173	18.67	µg/L	m	96
		349.0 -> 99.0	18983				
PFTeDA	10.516	713.0 -> 669.0	339328	19.10	µg/L		99
		713.0 -> 219.0	36901				
PFTrDA	9.832	663.0 -> 619.0	325785	18.23	µg/L		100
		663.0 -> 369.0	35922				
PFUnDA	8.036	563.0 -> 519.0	409209	19.16	µg/L		99
		563.0 -> 269.0	70731				
11Cl-PF3OUdS	8.403	631.0 -> 451.0	230932	16.78	µg/L		100
		633.0 -> 453.0	72438				
9Cl-PF3ONS	6.986	531.0 -> 351.0	217579	15.95	µg/L		100
		533.0 -> 353.0	69149				
ADONA	5.502	377.0 -> 251.0	443112	19.81	µg/L		100
		377.0 -> 85.0	158222				
HFPO-DA	4.815	329.0 -> 169.0	57500	17.59	µg/L		96
		285.0 -> 169.0	13195				
MeFOSA	6.590	512.0 -> 169.0	28720	21.70	µg/L		94
		512.0 -> 219.0	22264				
4-PFECHS	6.006	461.0 -> 381.0	145297	16.91	µg/L		99
		461.0 -> 99.0	74326				
FBSA	4.170	298.0 -> 78.0	106132	22.00	µg/L		99
		298.0 -> 64.0	10067				
FHxSA	5.409	398.0 -> 78.0	118820	23.55	µg/L	m	99
		398.0 -> 64.0	11326				

 # = Qualifier out of range, m = manually integrated, + = Area summed

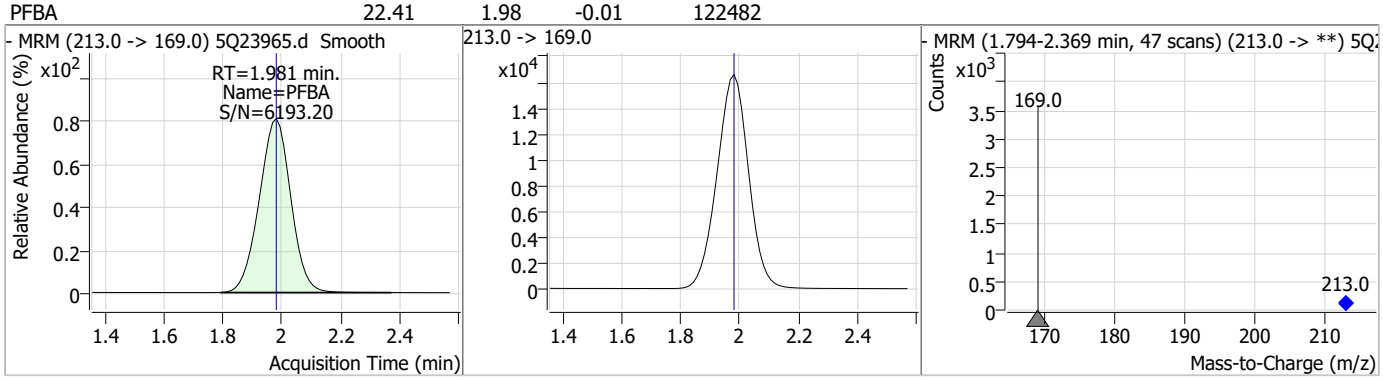
Perfluorinated Compounds by LC/MS/MS



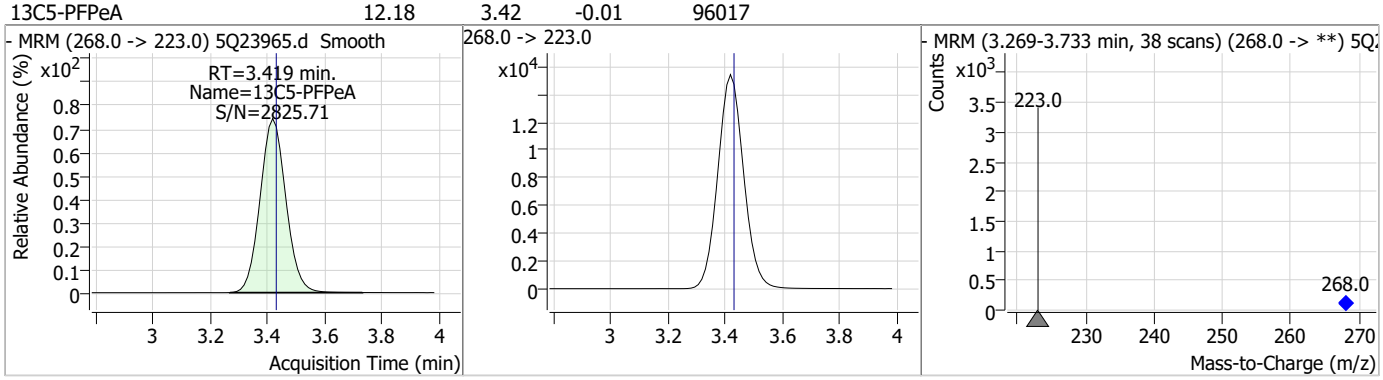
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	12.49	1.97	-0.01	58998				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	22.41	1.98	-0.01	122482				

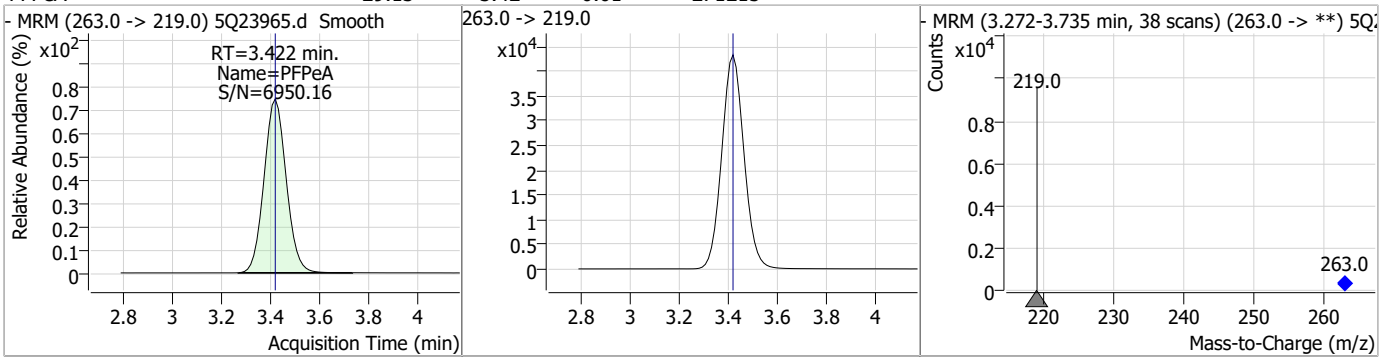


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	12.18	3.42	-0.01	96017				

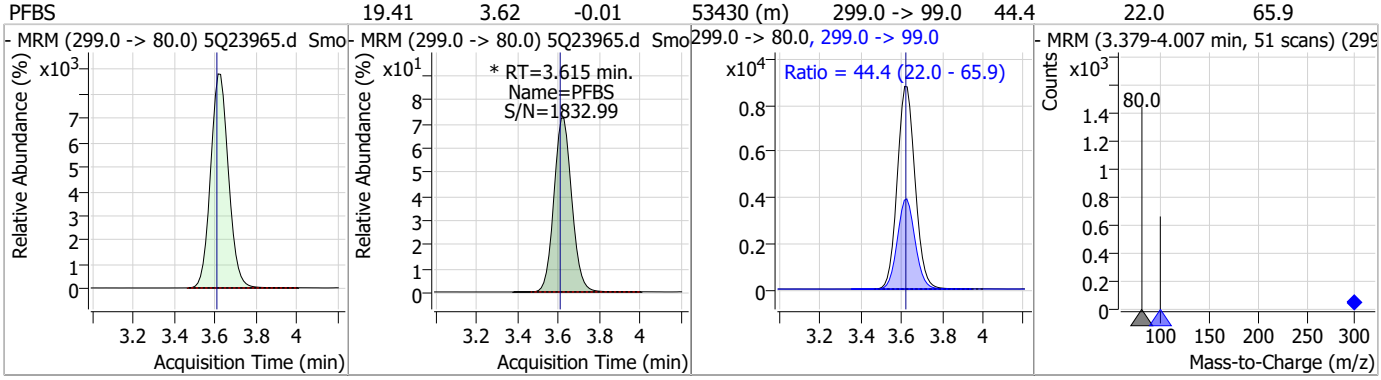


Perfluorinated Compounds by LC/MS/MS

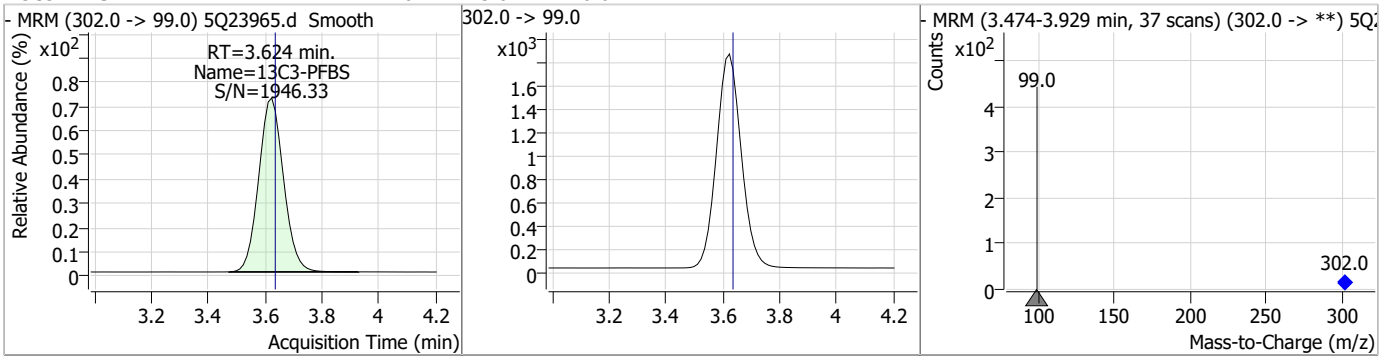
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	29.13	3.42	-0.01	271215				



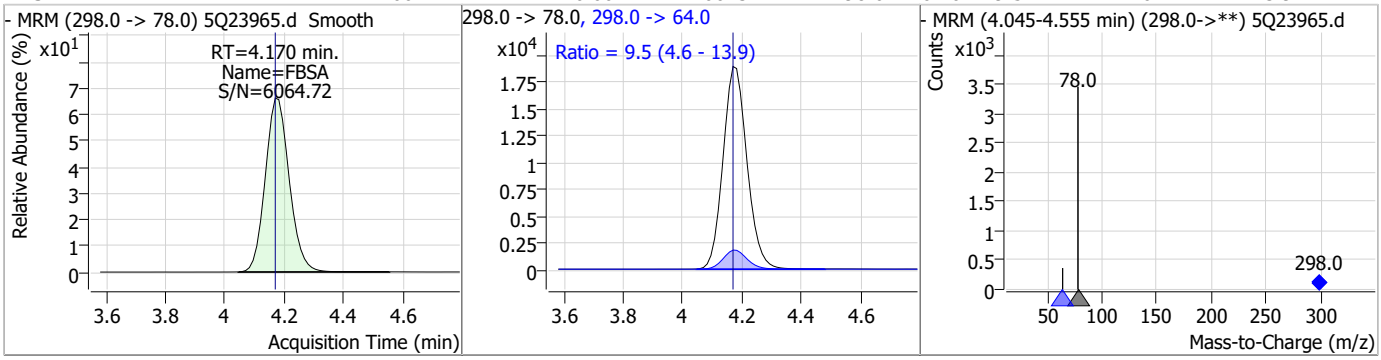
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	19.41	3.62	-0.01	53430 (m)	299.0 -> 99.0	44.4	22.0	65.9



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	11.46	3.62	-0.01	11121				

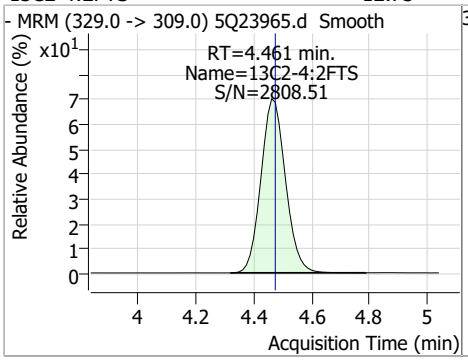


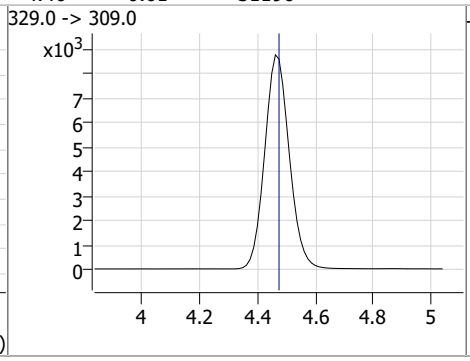
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	22.00	4.17	0.00	106132	298.0 -> 64.0	9.5	4.6	13.9

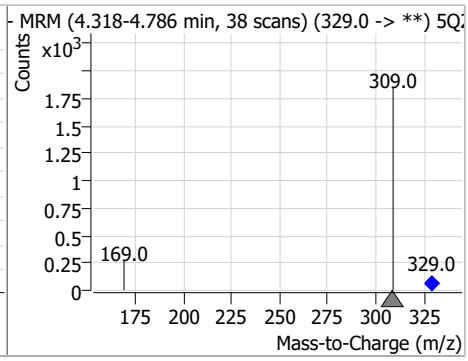


Perfluorinated Compounds by LC/MS/MS

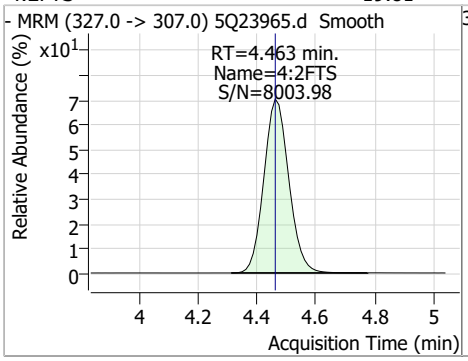
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	12.73	4.46	-0.01	51196				

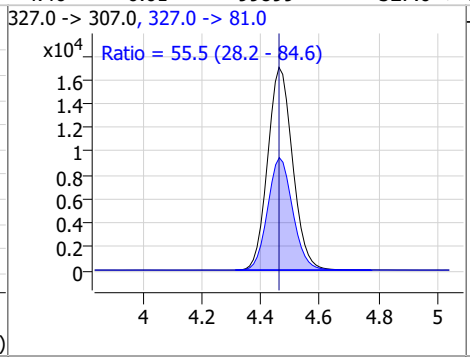


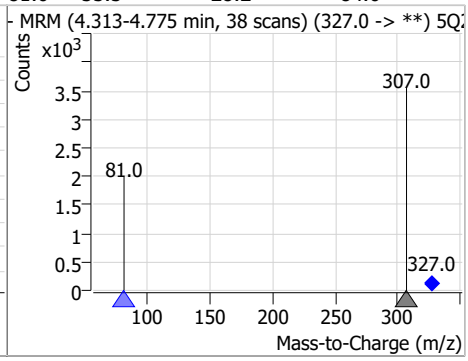




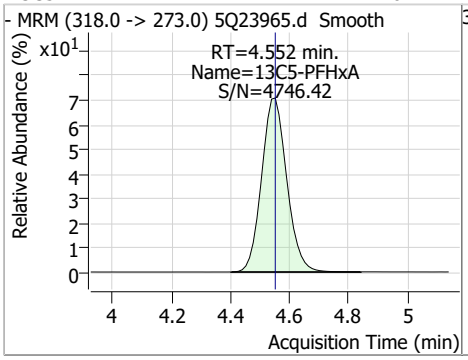
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	19.81	4.46	-0.01	99899	327.0 -> 81.0	55.5	28.2	84.6

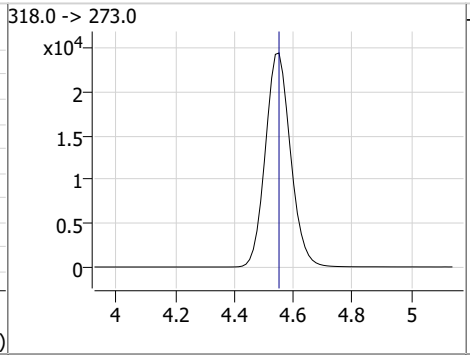


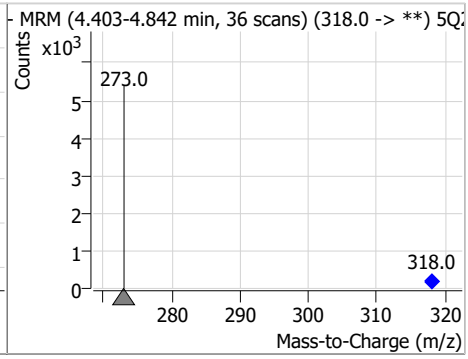




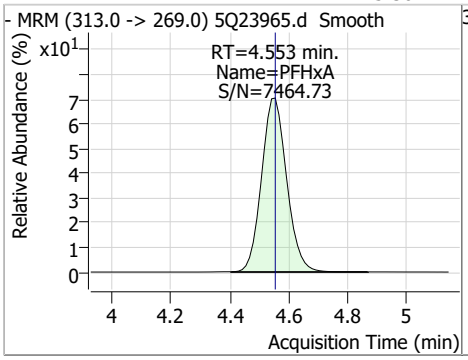
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	12.07	4.55	0.00	144252				

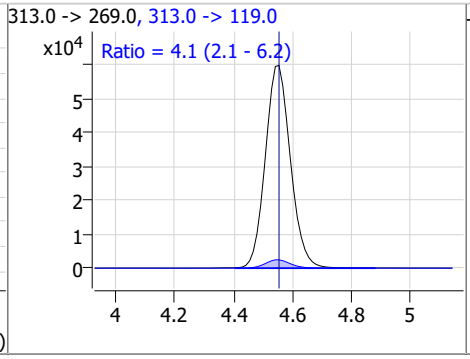


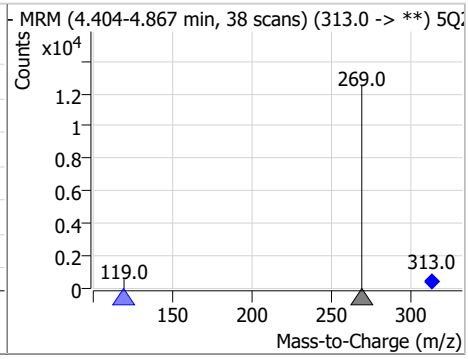




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	25.30	4.55	0.00	353052	313.0 -> 119.0	4.1	2.1	6.2

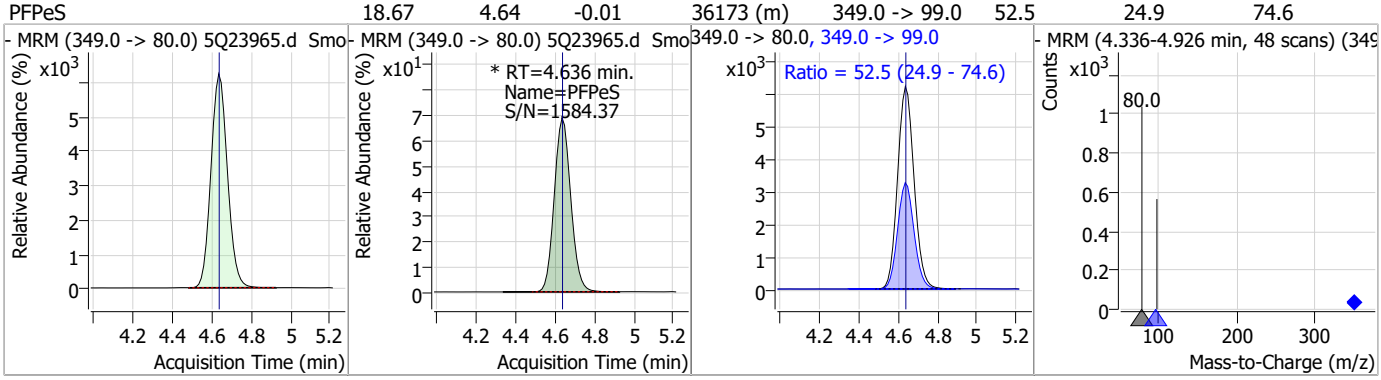




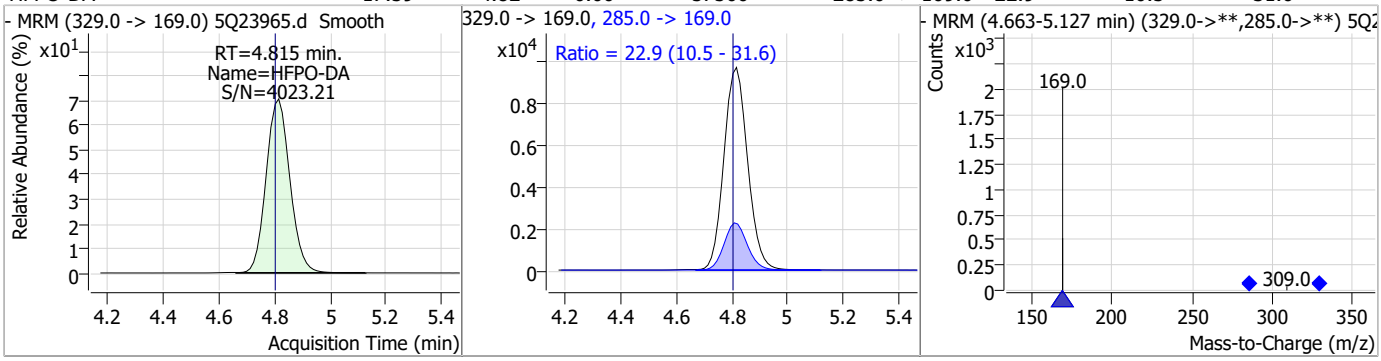


Perfluorinated Compounds by LC/MS/MS

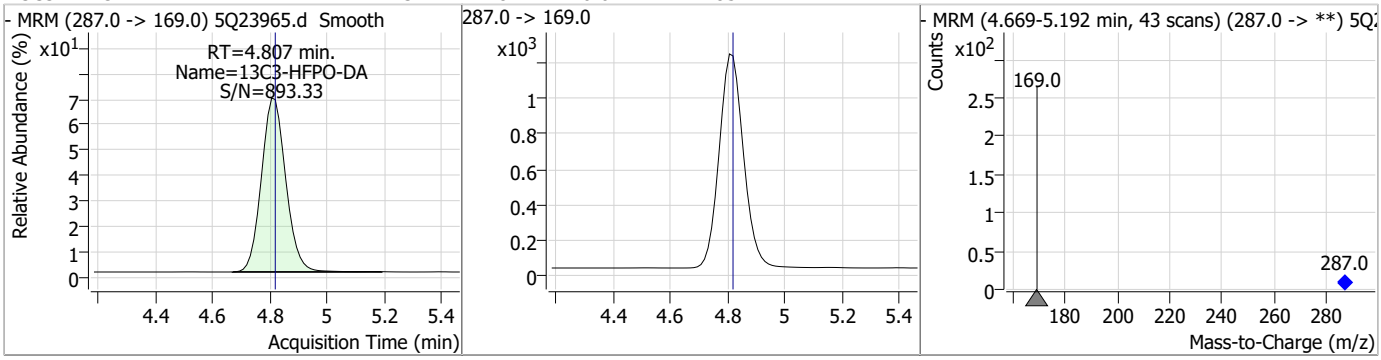
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	18.67	4.64	-0.01	36173 (m)	349.0 -> 99.0	52.5	24.9	74.6



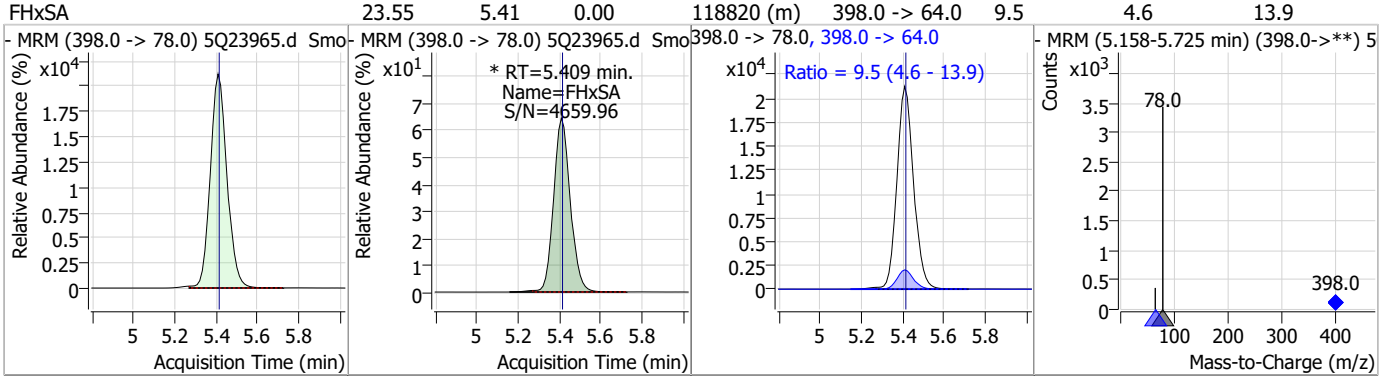
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	17.59	4.82	0.00	57500	285.0 -> 169.0	22.9	10.5	31.6



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	11.13	4.81	-0.01	7185				

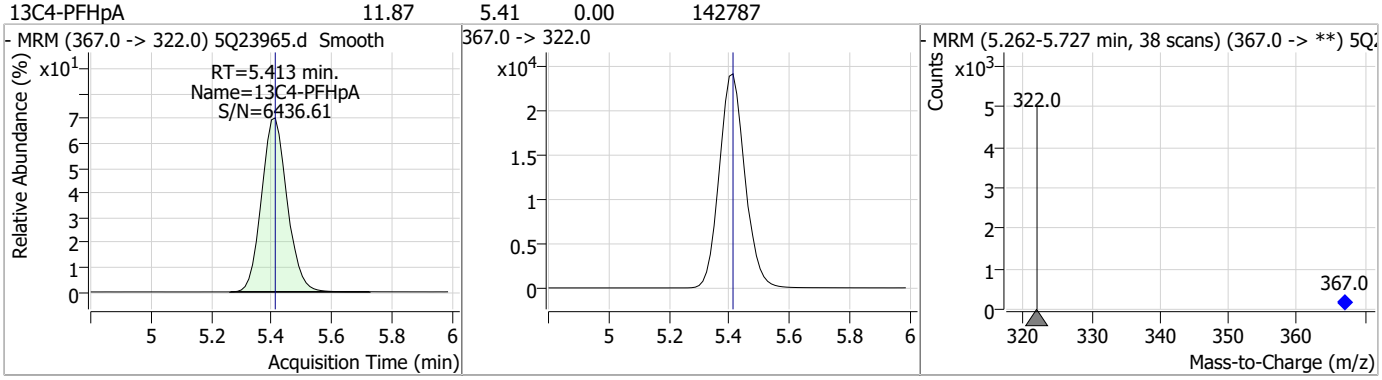


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	23.55	5.41	0.00	118820 (m)	398.0 -> 64.0	9.5	4.6	13.9

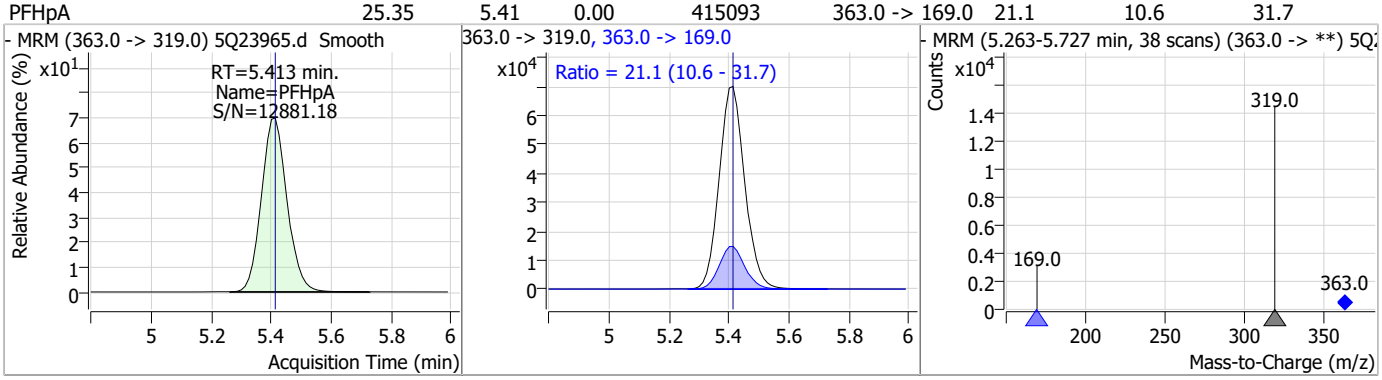


Perfluorinated Compounds by LC/MS/MS

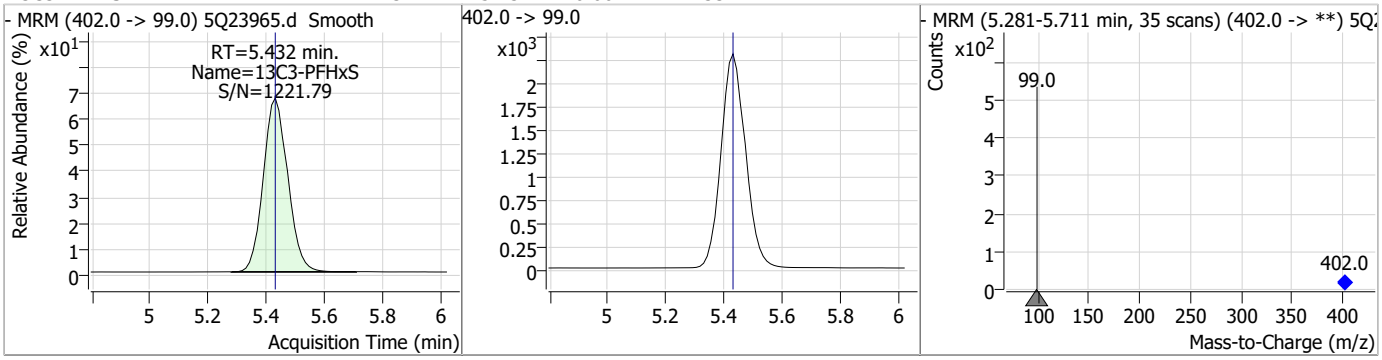
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	11.87	5.41	0.00	142787				



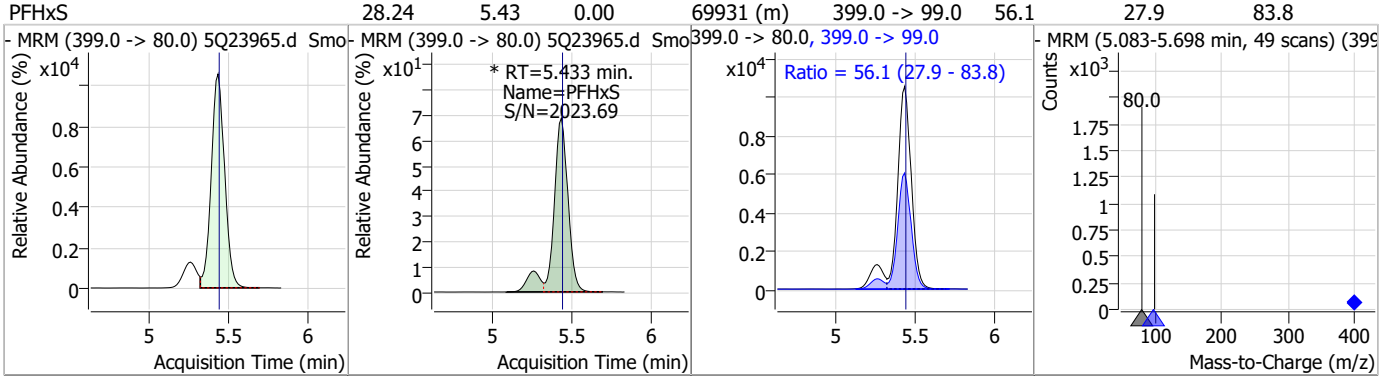
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	25.35	5.41	0.00	415093	363.0 -> 169.0	21.1	10.6	31.7



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	11.31	5.43	0.00	13347				

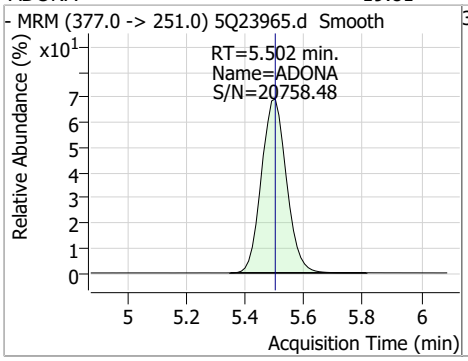


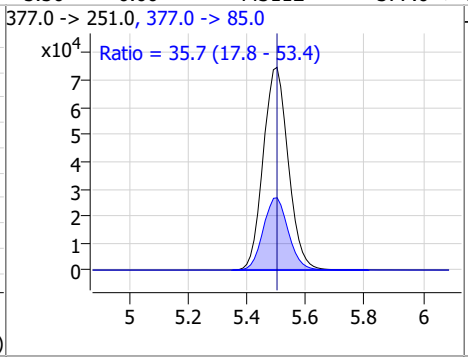
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	28.24	5.43	0.00	69931 (m)	399.0 -> 99.0	56.1	27.9	83.8

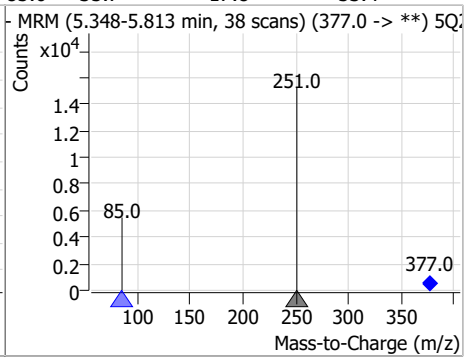


Perfluorinated Compounds by LC/MS/MS

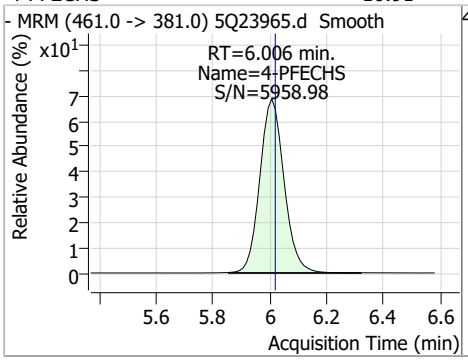
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	19.81	5.50	0.00	443112	377.0 -> 85.0	35.7	17.8	53.4

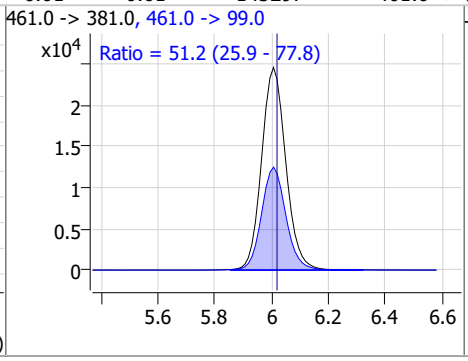


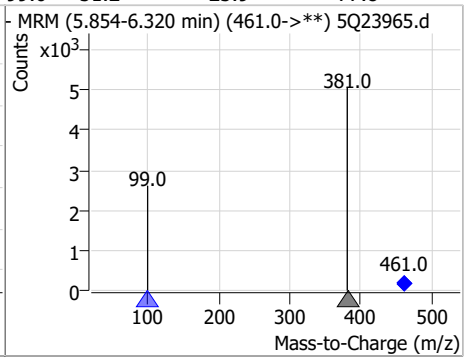




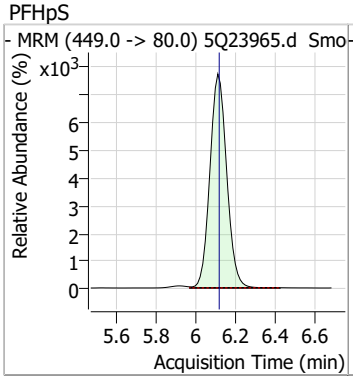
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS	16.91	6.01	-0.01	145297	461.0 -> 99.0	51.2	25.9	77.8

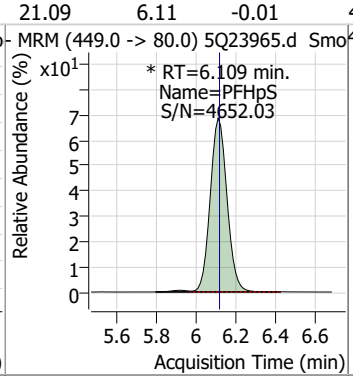


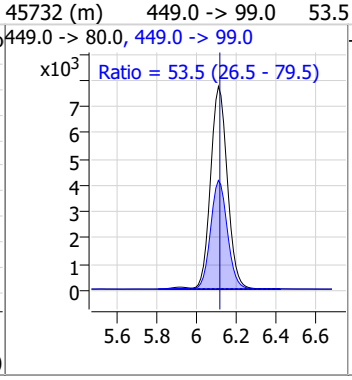


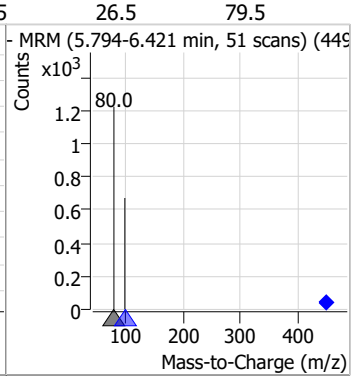


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	21.09	6.11	-0.01	45732 (m)	449.0 -> 99.0	53.5	26.5	79.5

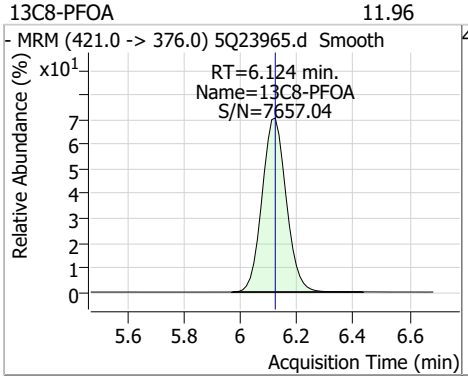


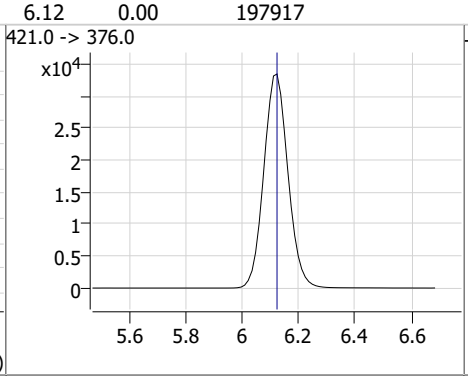


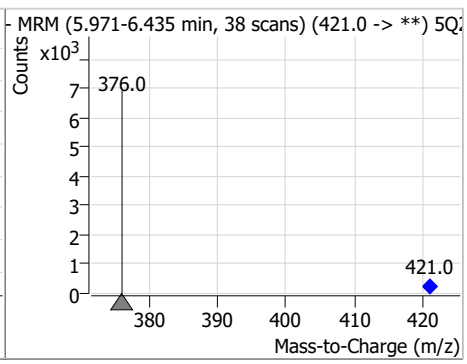




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	11.96	6.12	0.00	197917				

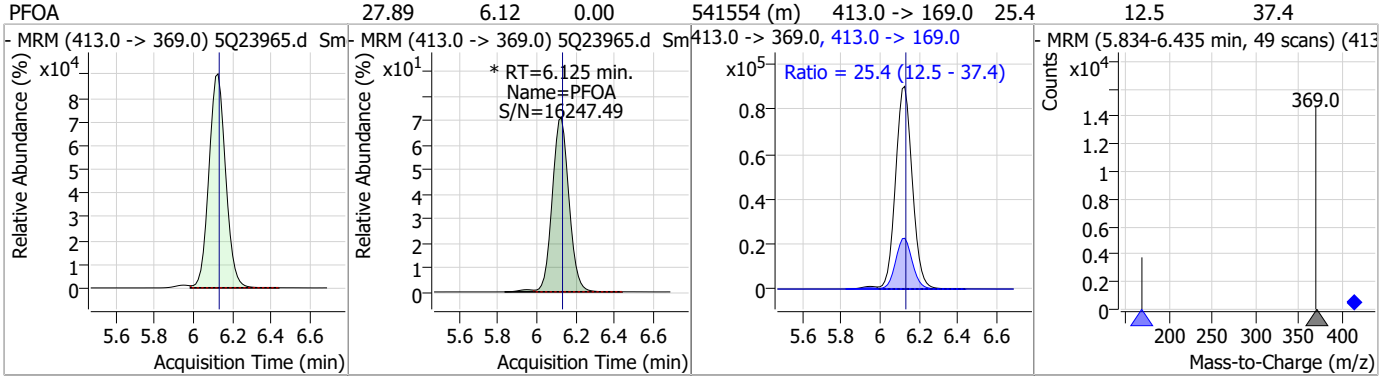




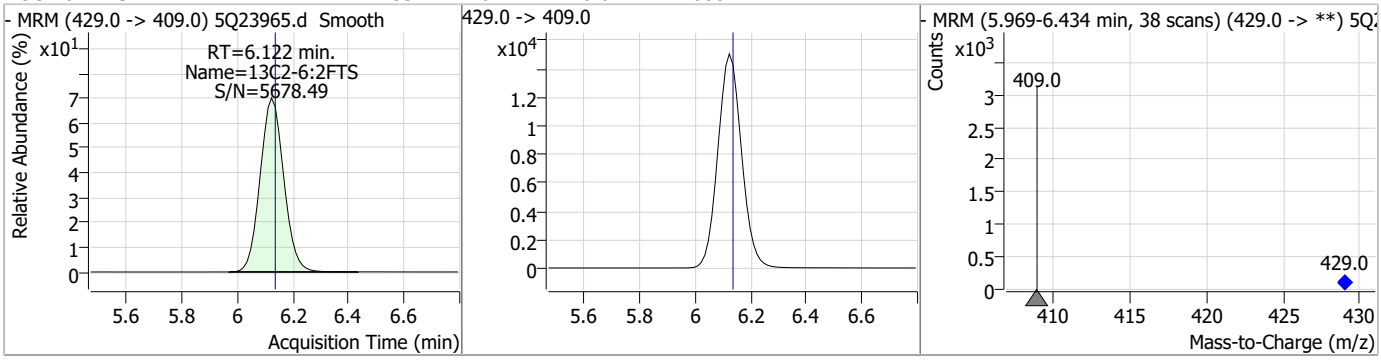


Perfluorinated Compounds by LC/MS/MS

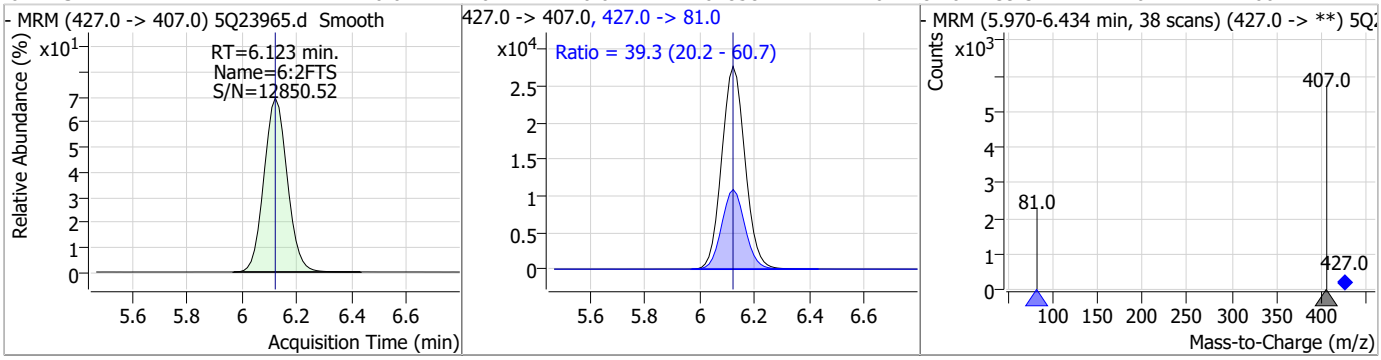
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	27.89	6.12	0.00	541554 (m)	413.0 -> 169.0	25.4	12.5	37.4



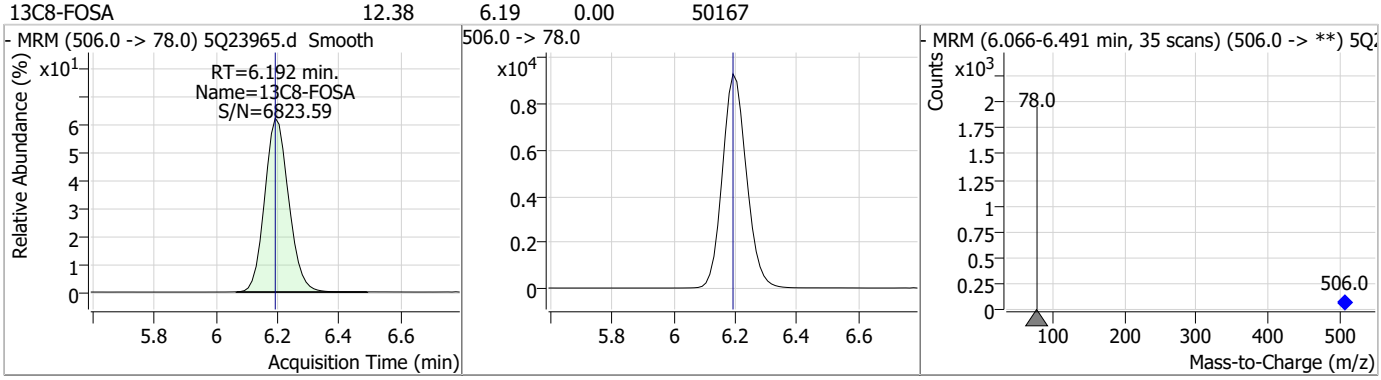
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	12.53	6.12	-0.01	88824				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	20.04	6.12	-0.01	162858	427.0 -> 81.0	39.3	20.2	60.7

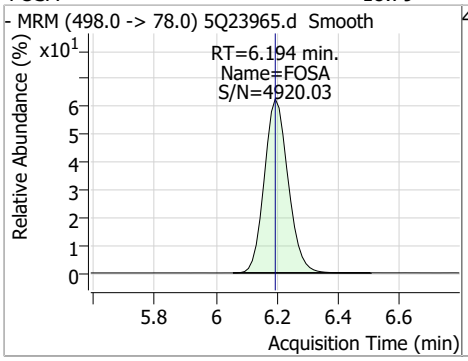


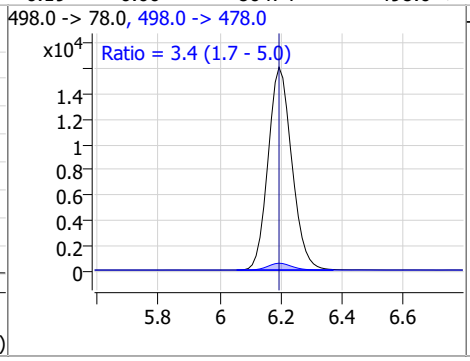
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	12.38	6.19	0.00	50167				

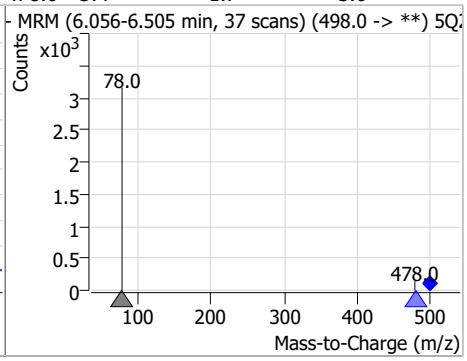


Perfluorinated Compounds by LC/MS/MS

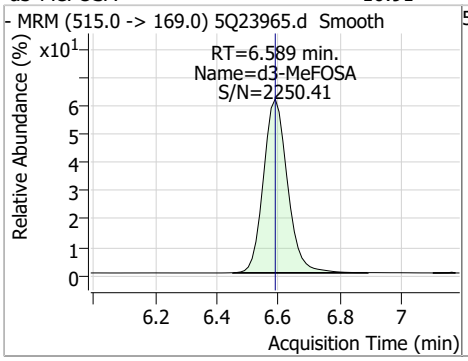
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	18.79	6.19	0.00	86474	498.0 -> 478.0	3.4	1.7	5.0

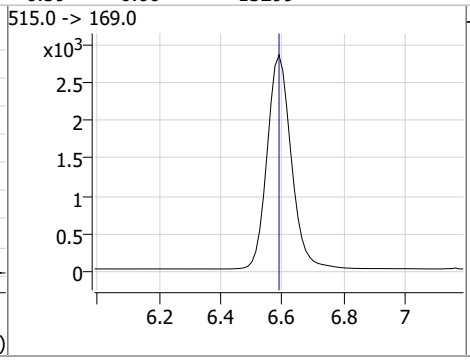


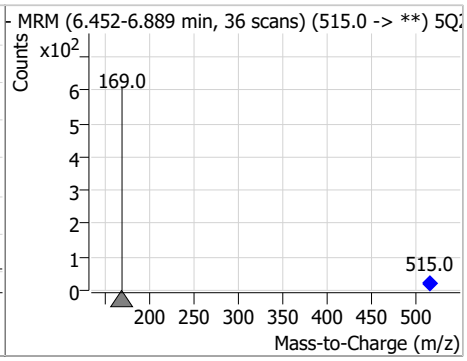




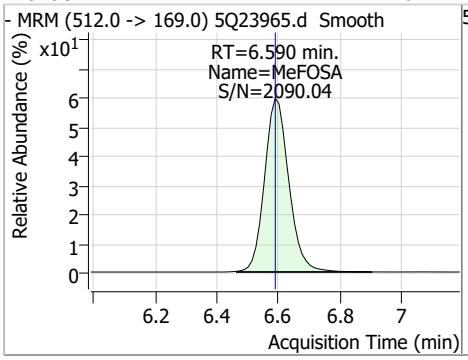
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	10.91	6.59	0.00	15299				

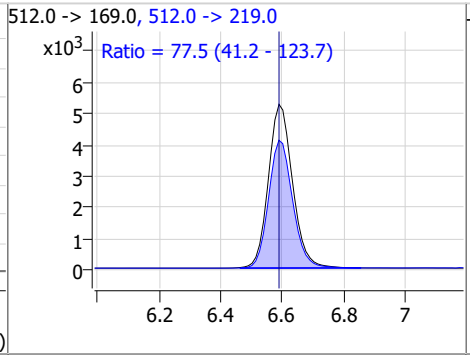


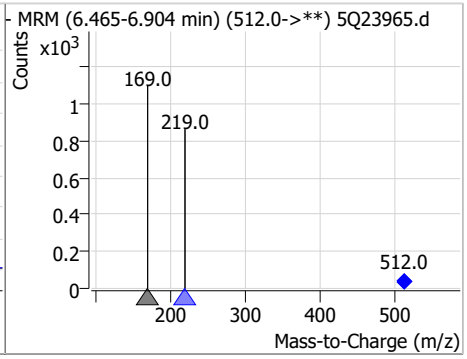




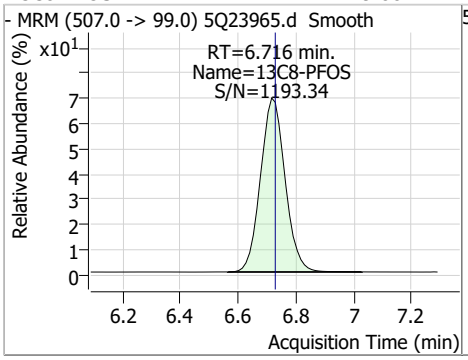
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	21.70	6.59	0.00	28720	512.0 -> 219.0	77.5	41.2	123.7

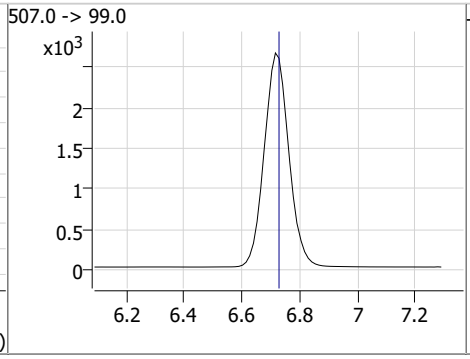


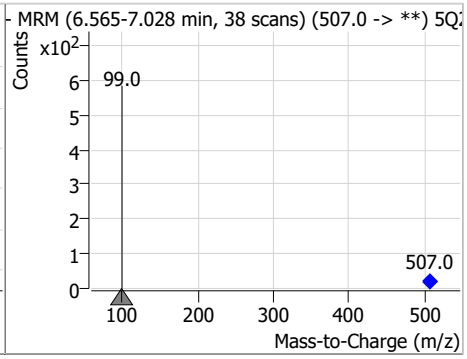




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	9.88	6.72	-0.01	15529				

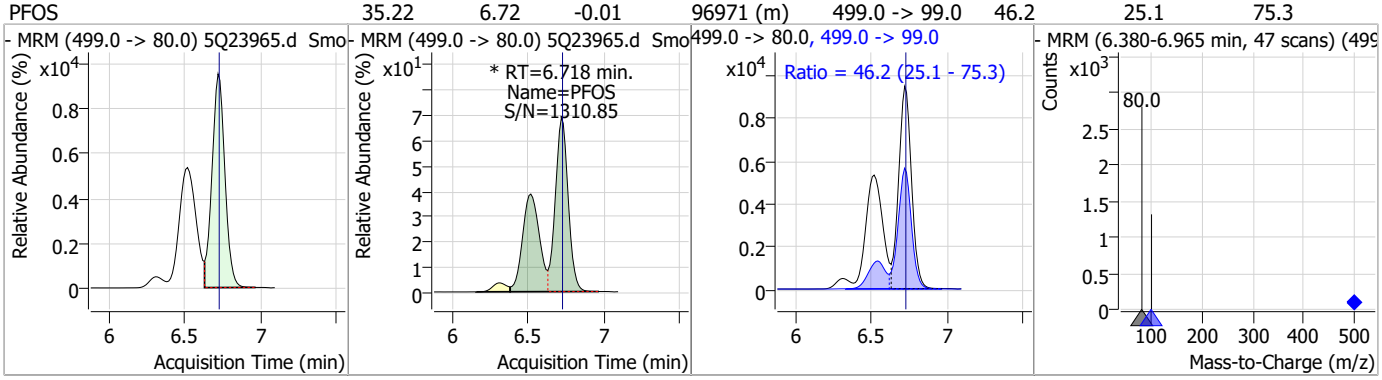




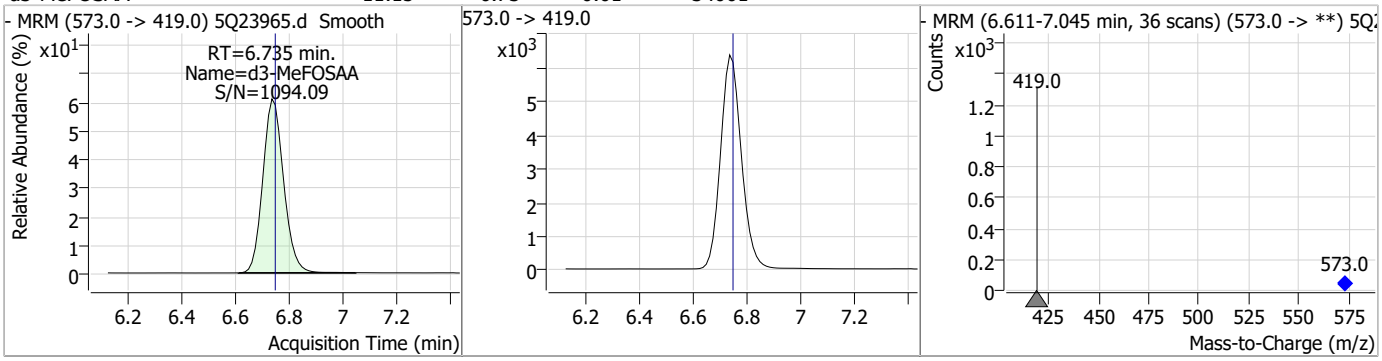


Perfluorinated Compounds by LC/MS/MS

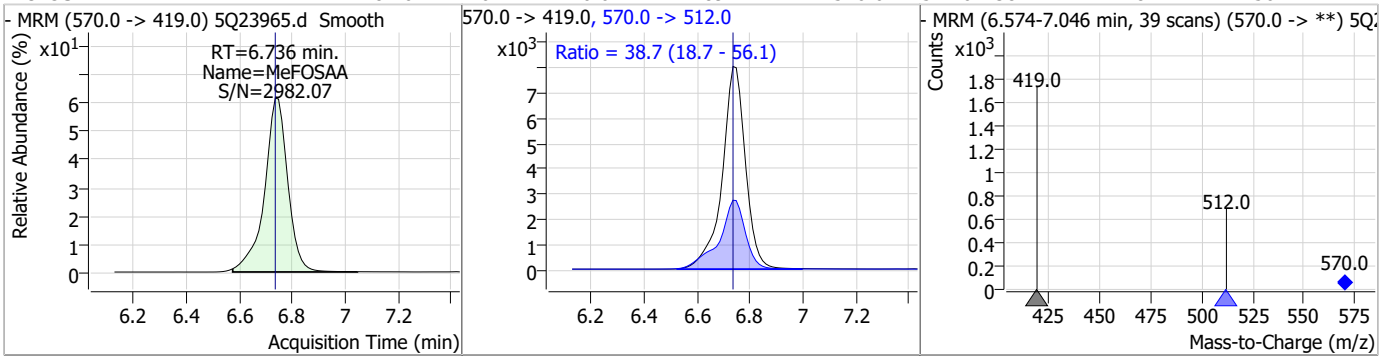
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	35.22	6.72	-0.01	96971 (m)	499.0 -> 99.0	46.2	25.1	75.3



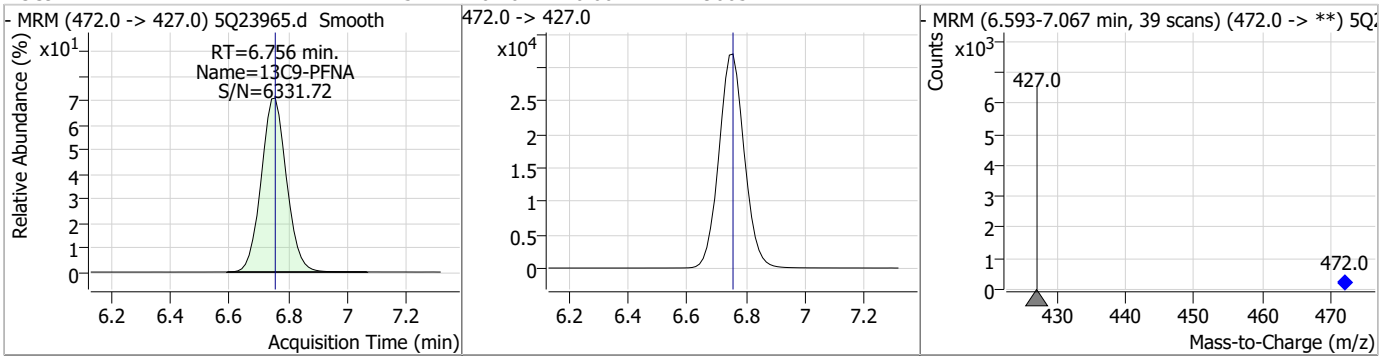
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	11.15	6.73	-0.01	34001				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	18.46	6.74	-0.01	48972	570.0 -> 512.0	38.7	18.7	56.1

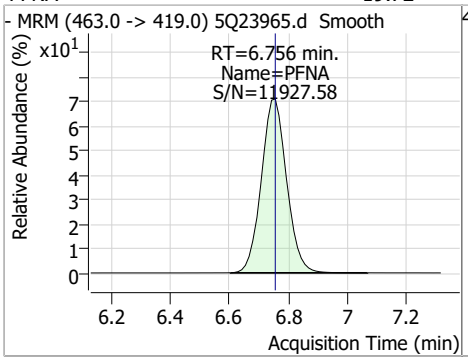


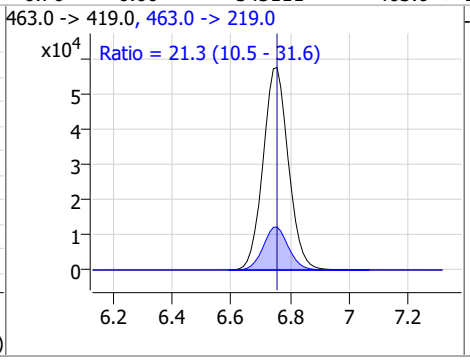
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	11.45	6.76	0.00	190051				

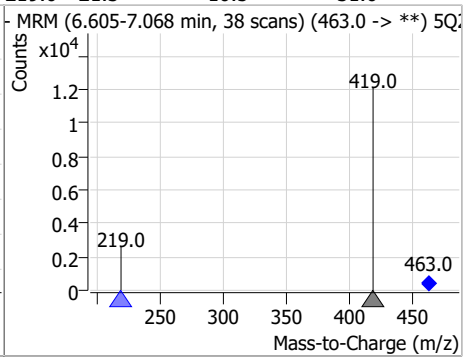


Perfluorinated Compounds by LC/MS/MS

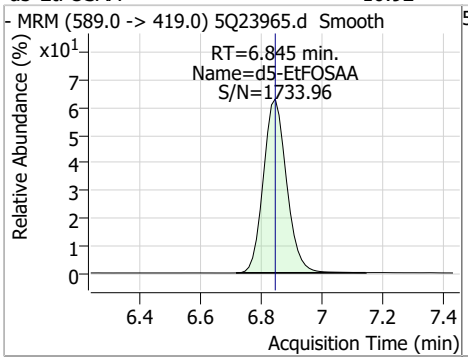
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	19.72	6.76	0.00	343111	463.0 -> 219.0	21.3	10.5	31.6

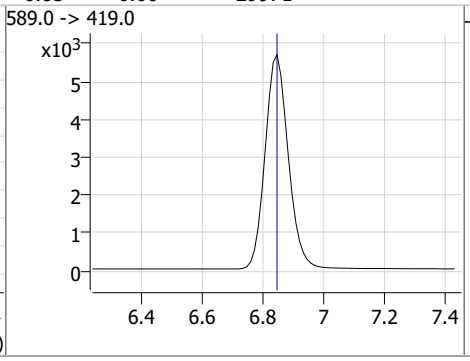


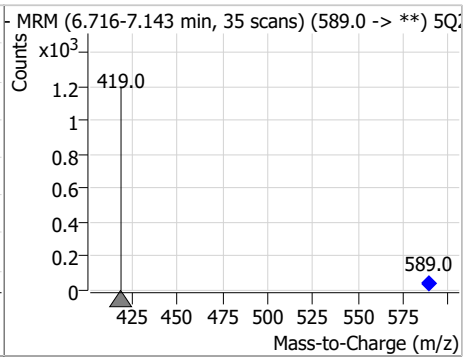




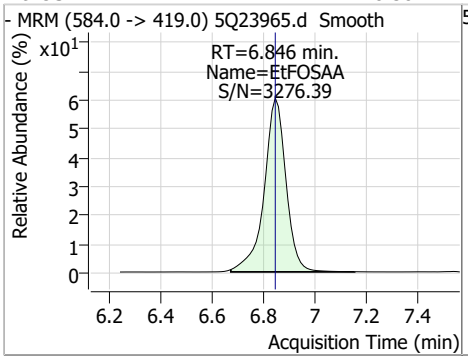
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	10.92	6.85	0.00	29971				

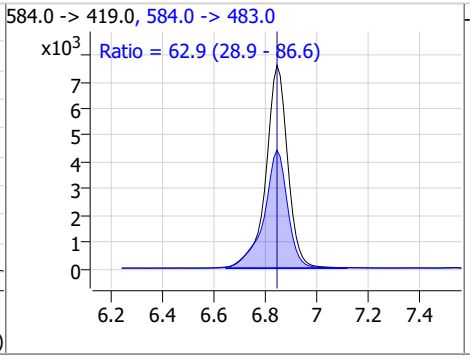


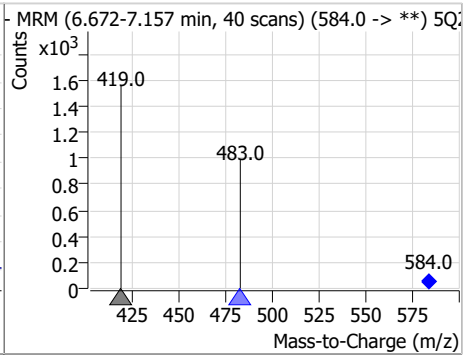




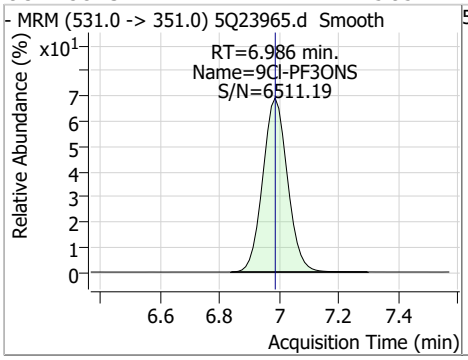
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	18.38	6.85	0.00	44936	584.0 -> 483.0	62.9	28.9	86.6

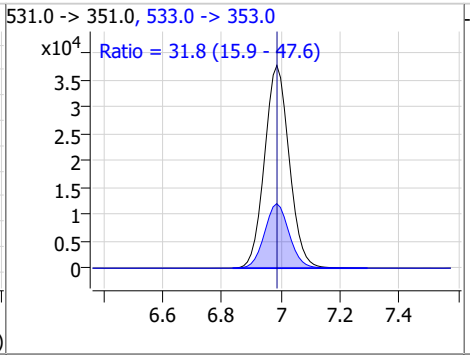


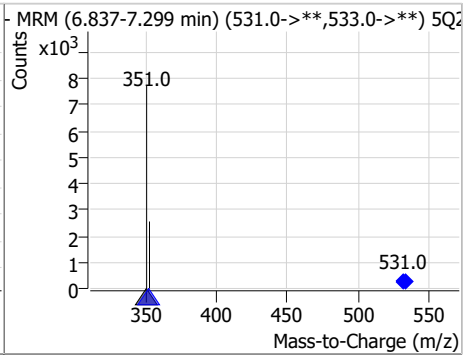




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	15.95	6.99	-0.01	217579	533.0 -> 353.0	31.8	15.9	47.6

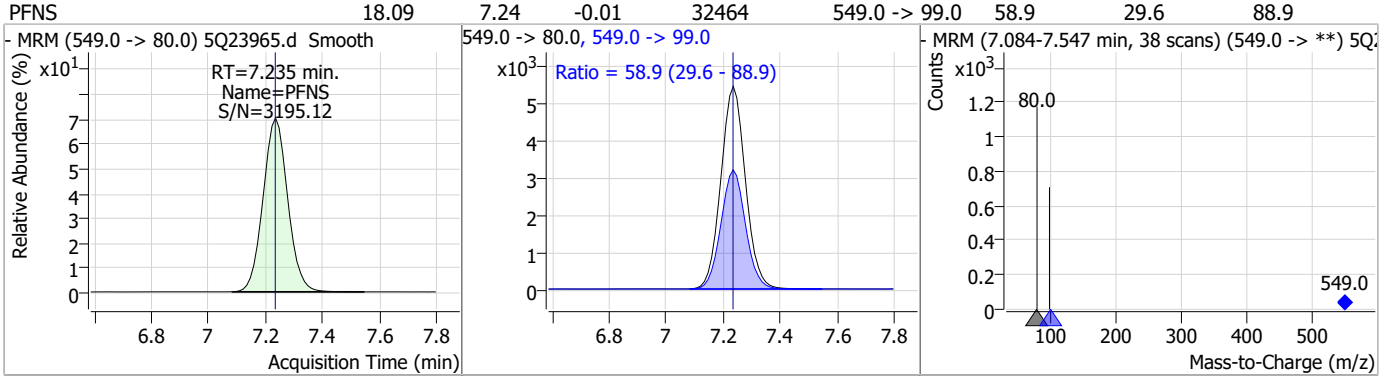




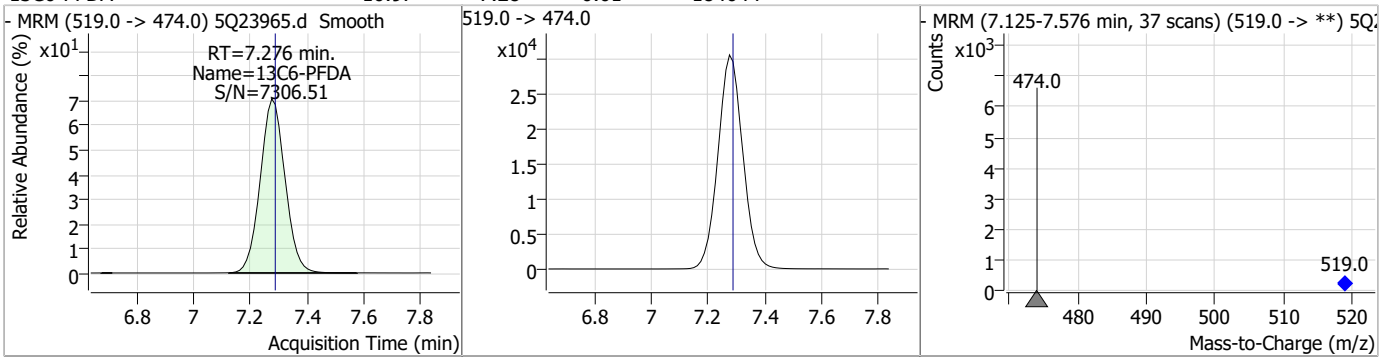


Perfluorinated Compounds by LC/MS/MS

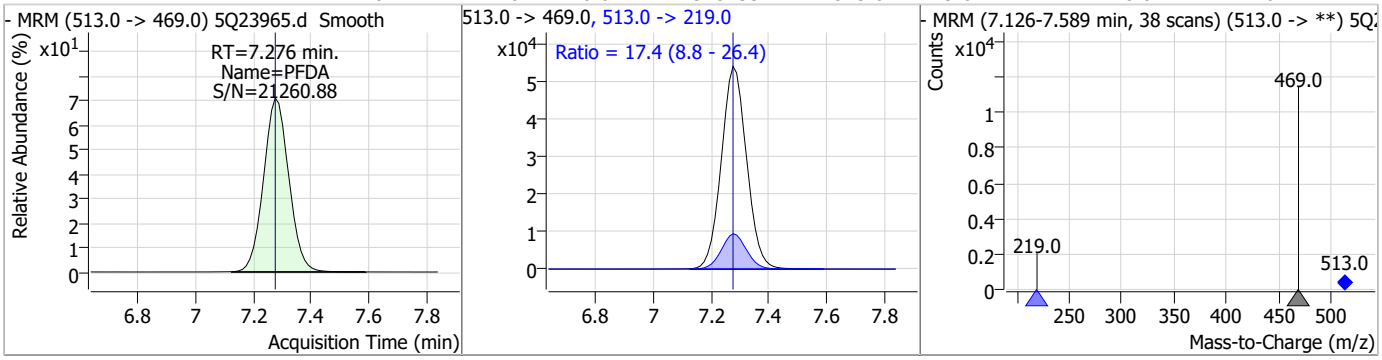
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	18.09	7.24	-0.01	32464	549.0 -> 99.0	58.9	29.6	88.9



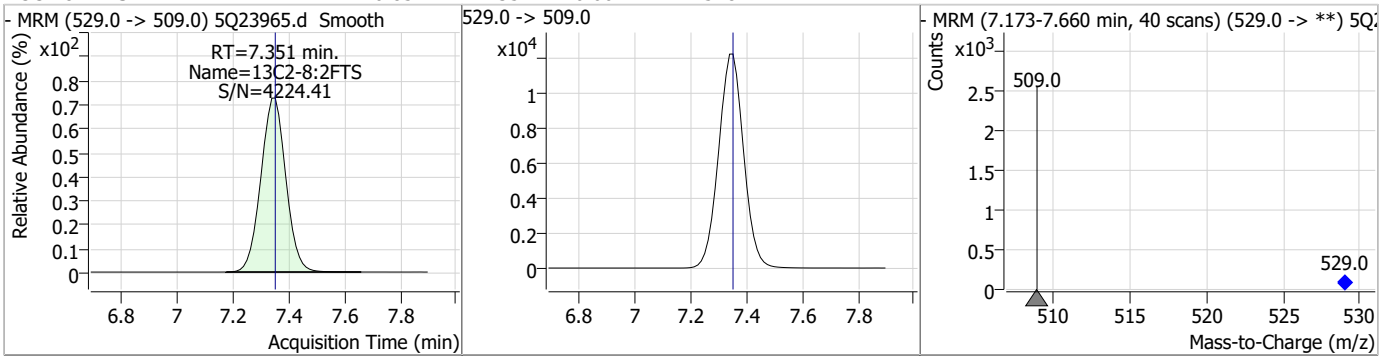
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	10.97	7.28	-0.01	184644				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	18.71	7.28	-0.01	328233	513.0 -> 219.0	17.4	8.8	26.4

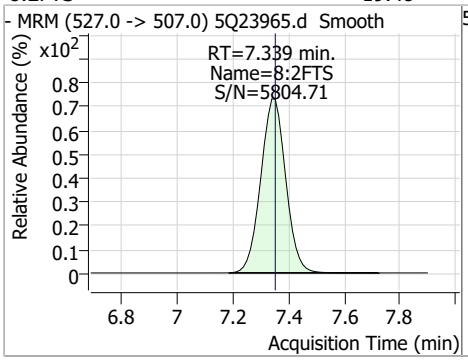


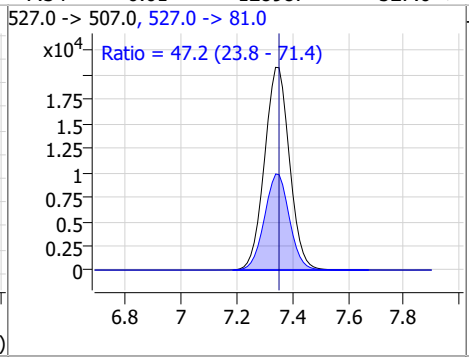
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	10.85	7.35	0.00	75787				

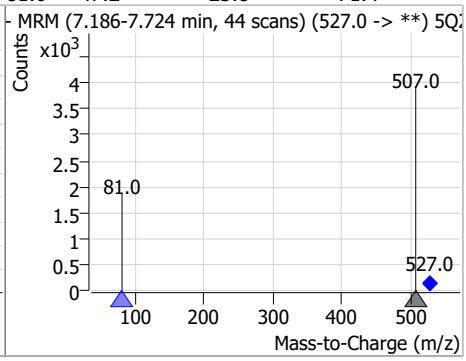


Perfluorinated Compounds by LC/MS/MS

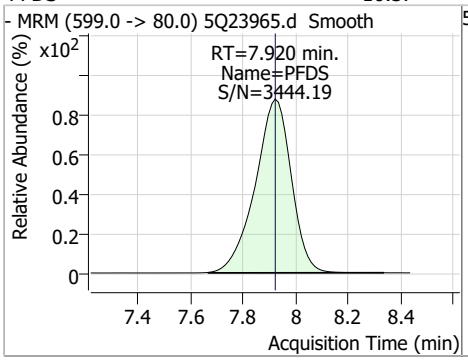
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	19.48	7.34	-0.01	128987	527.0 -> 81.0	47.2	23.8	71.4

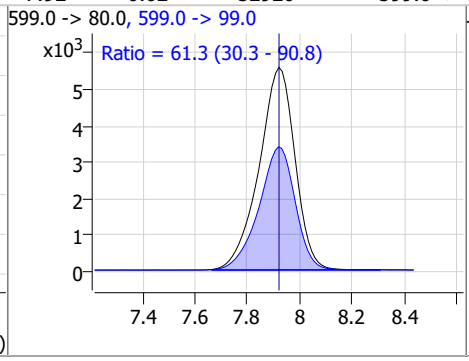


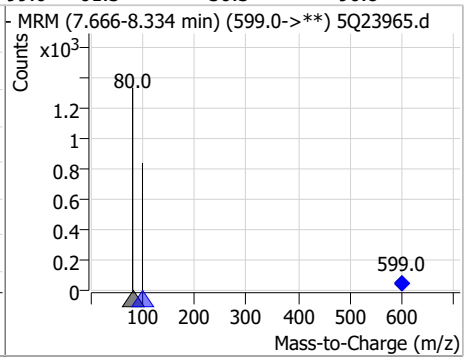




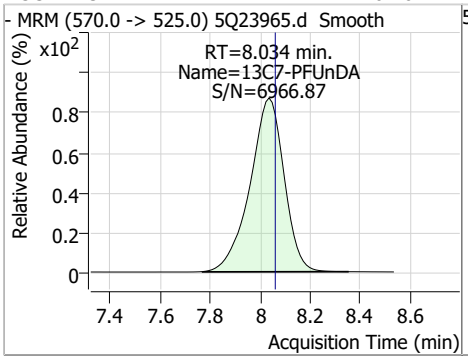
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	16.37	7.92	-0.02	52920	599.0 -> 99.0	61.3	30.3	90.8

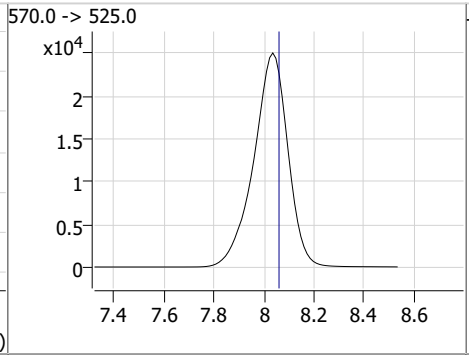


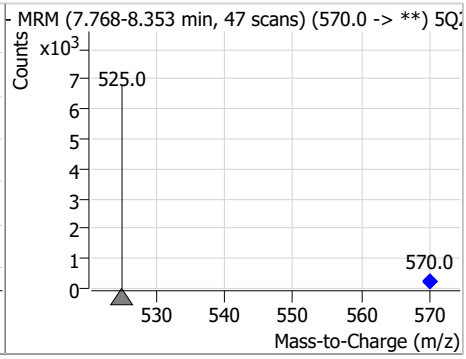




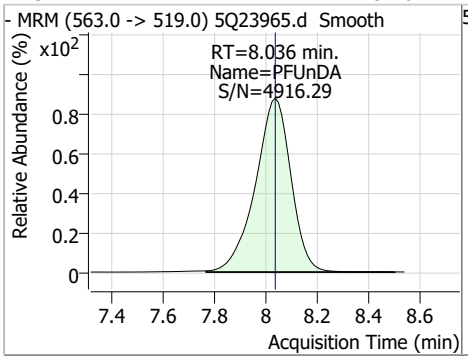
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	10.16	8.03	-0.02	236793				

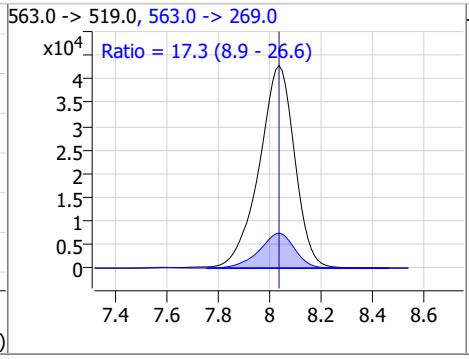


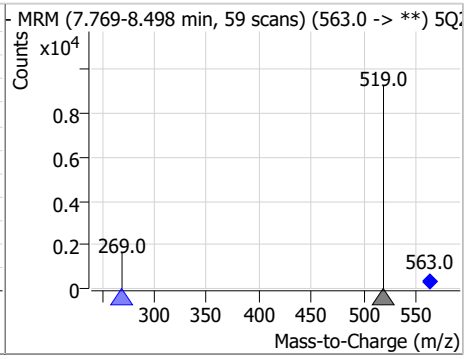




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	19.16	8.04	-0.02	409209	563.0 -> 269.0	17.3	8.9	26.6

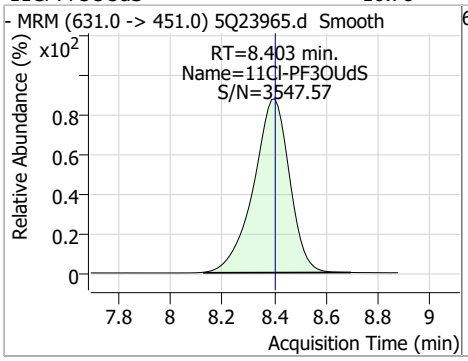


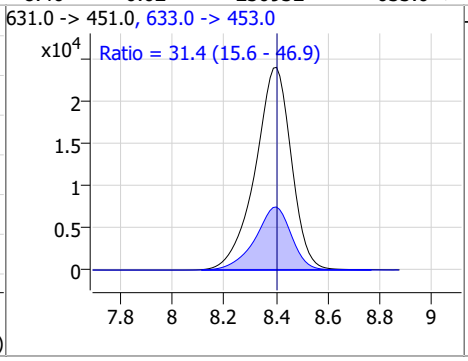


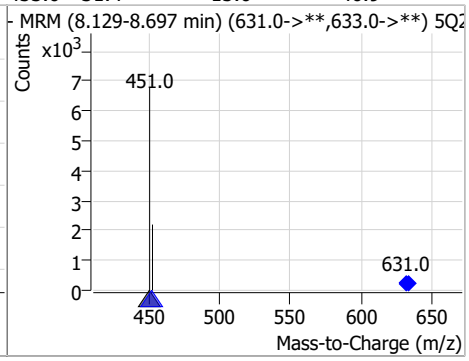


Perfluorinated Compounds by LC/MS/MS

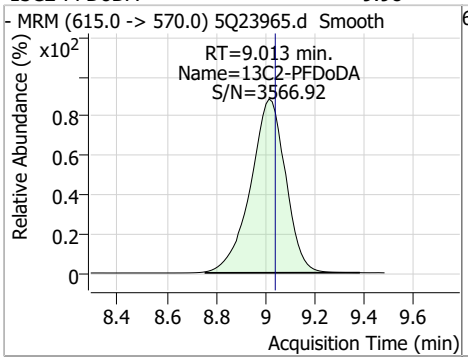
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	16.78	8.40	-0.02	230932	633.0 -> 453.0	31.4	15.6	46.9

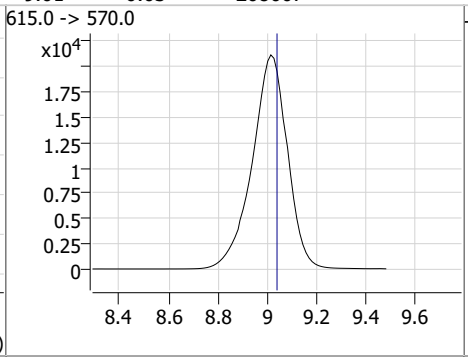


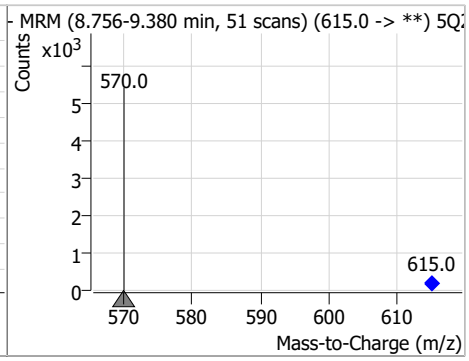




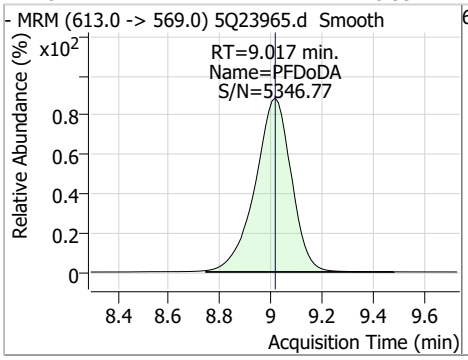
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	9.98	9.01	-0.03	208007				

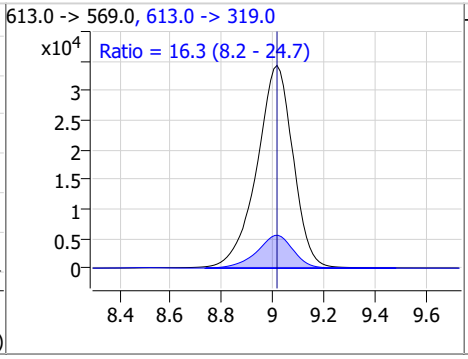


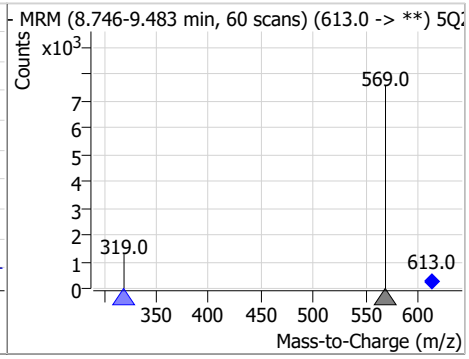




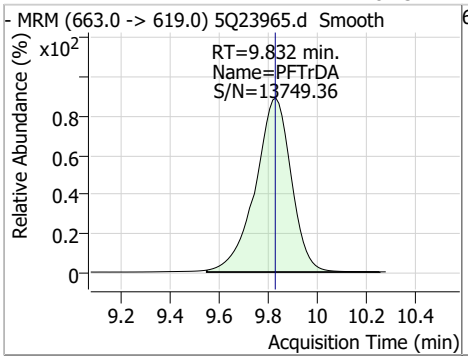
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	18.99	9.02	-0.03	339127	613.0 -> 319.0	16.3	8.2	24.7

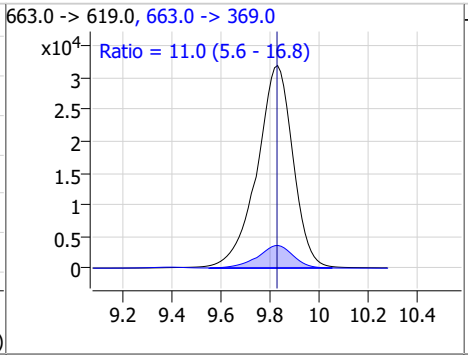


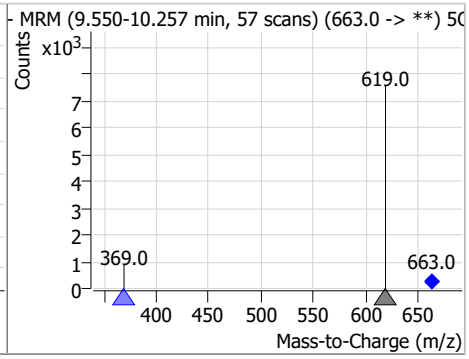




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	18.23	9.83	-0.03	325785	663.0 -> 369.0	11.0	5.6	16.8

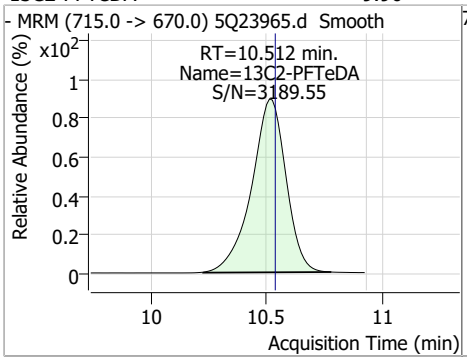


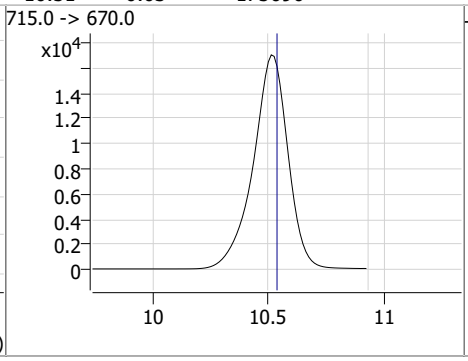


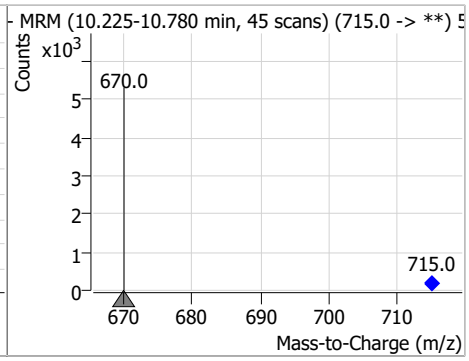


Perfluorinated Compounds by LC/MS/MS

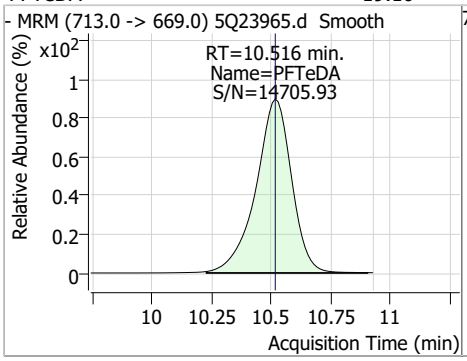
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	9.90	10.51	-0.03	175690				

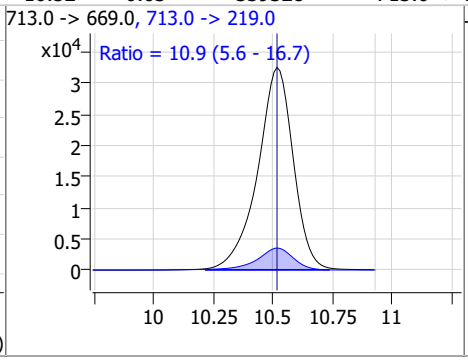


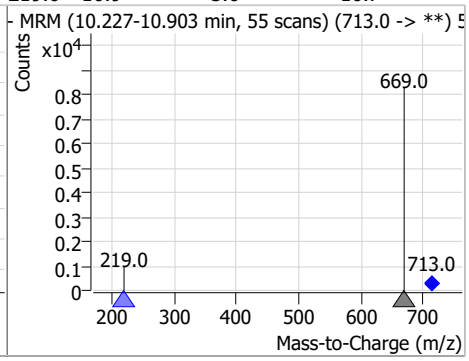




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	19.10	10.52	-0.03	339328	713.0 -> 219.0	10.9	5.6	16.7







Manual Integration Approval Summary

Sample Number: OP835-MSD
Lab FileID: 5Q23965.D
Injection Time: 12/29/23 06:17
Method: EPA 537M QSM5.3 B-15
Analyst approved: 12/29/23 14:22 Lindsay Ritner
Supervisor approved: 01/02/24 14:27 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorobutanesulfonic acid	375-73-5		3.62	Split peak
Perfluoropentanesulfonic acid	2706-91-4		4.64	Split peak
PFHxSA	41997-13-1		5.41	Split peak
Perfluorohexanesulfonic acid	355-46-4		5.43	Split peak
Perfluoroheptanesulfonic acid	375-92-8		6.11	Split peak
Perfluorooctanoic acid	335-67-1		6.12	Split peak
Perfluorooctanesulfonic acid	1763-23-1		6.72	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Natasha Gumtie 01/05/24 17:11

Perfluorinated Compounds by LC/MS/MS

Data File	:	2q118615.d
Operator	:	lindsayr
Acq. Method	:	537_ID.m
Acq. Date-Time	:	1/4/2024 7:20:50 PM
Sample Name	:	op937-ms
Vial	:	P6-B1
DA Method File	:	ID_010224_S2Q1691.quantmethod.xml
Batch Name	:	s2q1693.batch.bin
Sample Information	:	op937,S2Q1693,125,,,1.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M5-EtFOSAA	7.722	589.0 -> 419.0	13665	10.00	µg/L	0.000
M4-PFBA	2.240	217.0 -> 172.0	40210	10.00	µg/L	0.000
M5-PFPeA	4.062	268.0 -> 223.0	62887	10.00	µg/L	0.000
M5-PFHxA	5.326	318.0 -> 273.0	78631	10.00	µg/L	-0.013
M4-PFHpA	6.195	367.0 -> 322.0	69120	10.00	µg/L	-0.013
M8-PFOA	6.875	421.0 -> 376.0	137273	10.00	µg/L	-0.013
M9-PFNA	7.455	472.0 -> 427.0	104198	10.00	µg/L	0.000
M6-PFDA	7.931	519.0 -> 474.0	74991	10.00	µg/L	0.000
M7-PFUnDA	8.381	570.0 -> 525.0	113122	10.00	µg/L	0.000
M2-PFDoDA	8.920	615.0 -> 570.0	109788	10.00	µg/L	0.000
M2-PFTeDA	10.030	715.0 -> 670.0	84119	10.00	µg/L	0.012
M8-FOSA	7.159	506.0 -> 78.0	15628	10.00	µg/L	0.000
M3-PFBS	4.317	302.0 -> 99.0	4506	10.00	µg/L	-0.013
M3-PFHxS	6.218	402.0 -> 99.0	4671	10.00	µg/L	-0.025
M8-PFOS	7.427	507.0 -> 99.0	3825	10.00	µg/L	0.000
M2-4:2FTS	5.221	329.0 -> 309.0	31339	10.00	µg/L	-0.013
M2-6:2FTS	6.872	429.0 -> 409.0	46377	10.00	µg/L	-0.013
M2-8:2FTS	7.967	529.0 -> 509.0	29296	10.00	µg/L	0.000
M3-MeFOSAA	7.622	573.0 -> 419.0	16482	10.00	µg/L	0.013
M3-HFPO-DA	5.595	287.0 -> 169.0	6349	10.00	µg/L	-0.013
M3-MeFOSA	7.526	515.0 -> 169.0	1369	10.00	µg/L	0.013
System Monitoring Compounds						
13C2-4:2FTS	5.221	329.0 -> 309.0	31339	8.49	µg/L	-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 84.9%		
13C2-6:2FTS	6.872	429.0 -> 409.0	46377	8.08	µg/L	-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 80.8%		
13C2-8:2FTS	7.967	529.0 -> 509.0	29296	7.56	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 75.6%		
13C2-PFDoDA	8.920	615.0 -> 570.0	109788	6.27	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 62.7%		
13C2-PFTeDA	10.030	715.0 -> 670.0	84119	6.33	µg/L	0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 63.3%		
13C3-PFBS	4.317	302.0 -> 99.0	4506	7.50	µg/L	-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 75.0%		
13C3-PFHxS	6.218	402.0 -> 99.0	4671	7.63	µg/L	-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 76.3%		
13C4-PFBA	2.240	217.0 -> 172.0	40210	7.79	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 77.9%		
13C4-PFHpA	6.195	367.0 -> 322.0	69120	8.05	µg/L	-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 80.5%		
d5-EtFOSAA	7.722	589.0 -> 419.0	13665	7.08	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 70.8%		
13C5-PFHxA	5.326	318.0 -> 273.0	78631	7.97	µg/L	-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 79.7%		
13C5-PFPeA	4.062	268.0 -> 223.0	62887	7.91	µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

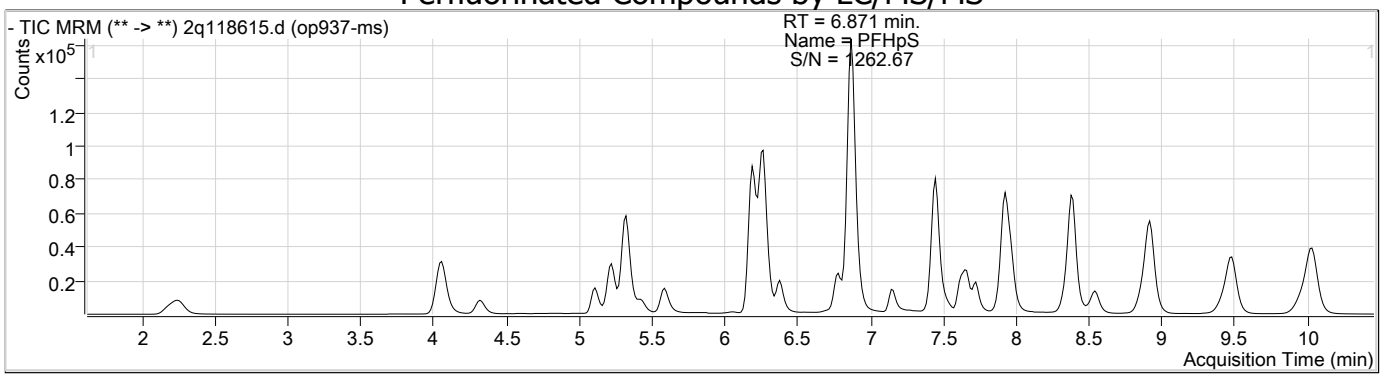
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 79.1%			
13C6-PFDA	7.931	519.0 -> 474.0	74991	7.17	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 71.7%			
13C7-PFUnDA	8.381	570.0 -> 525.0	113122	6.51	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 65.1%			
13C8-FOSA	7.159	506.0 -> 78.0	15628	7.61	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 76.1%			
13C8-PFOA	6.875	421.0 -> 376.0	137273	8.11	µg/L		-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 81.1%			
13C8-PFOS	7.427	507.0 -> 99.0	3825	6.85	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 68.5%			
13C9-PFNA	7.455	472.0 -> 427.0	104198	7.73	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 77.3%			
d3-MeFOSAA	7.622	573.0 -> 419.0	16482	7.21	µg/L		0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 72.1%			
13C3-HFPO-DA	5.595	287.0 -> 169.0	6349	7.64	µg/L		-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 76.4%			
d3-MeFOSA	7.526	515.0 -> 169.0	1369	1.91	µg/L		0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 19.1%			
Target Compounds							QValue
4:2FTS	5.224	327.0 -> 307.0	66449	20.87	µg/L		99
		327.0 -> 81.0	24265				
6:2FTS	6.874	427.0 -> 407.0	90139	22.28	µg/L		100
		427.0 -> 81.0	26643				
8:2FTS	7.968	527.0 -> 507.0	51656	20.51	µg/L		98
		527.0 -> 81.0	14007				
EtFOSAA	7.723	584.0 -> 419.0	26120	21.31	µg/L		98
		584.0 -> 483.0	15867				
FOSA	7.161	498.0 -> 78.0	29137	21.25	µg/L		98
		498.0 -> 478.0	1095				
MeFOSAA	7.622	570.0 -> 419.0	29522	21.17	µg/L		99
		570.0 -> 512.0	10421				
PFBA	2.233	213.0 -> 169.0	27319	21.58	µg/L		100
PFBS	4.319	299.0 -> 80.0	24623	21.63	µg/L	m	100
		299.0 -> 99.0	9391				
PFDA	7.932	513.0 -> 469.0	155109	20.89	µg/L		98
		513.0 -> 219.0	23565				
PFDoDA	8.922	613.0 -> 569.0	178171	20.78	µg/L		100
		613.0 -> 319.0	23129				
PFDS	8.329	599.0 -> 80.0	6801	19.40	µg/L		98
		599.0 -> 99.0	3613				
PFHpA	6.196	363.0 -> 319.0	237436	20.77	µg/L		99
		363.0 -> 169.0	40456				
PFHpS	6.871	449.0 -> 80.0	15378	19.95	µg/L		100
		449.0 -> 99.0	8579				
PFHxA	5.327	313.0 -> 269.0	167474	20.70	µg/L		100
		313.0 -> 119.0	6558				
PFHxS	6.219	399.0 -> 80.0	23176	22.66	µg/L	m	99
		399.0 -> 99.0	11699				
PFNA	7.455	463.0 -> 419.0	172507	20.62	µg/L		100
		463.0 -> 219.0	35596				
PFNS	7.890	549.0 -> 80.0	8035	19.94	µg/L		100
		549.0 -> 99.0	4448				
PFOA	6.875	413.0 -> 369.0	300497	20.49	µg/L		100
		413.0 -> 169.0	54705				
PFOS	7.428	499.0 -> 80.0	12608	21.03	µg/L	m	98

Perfluorinated Compounds by LC/MS/MS

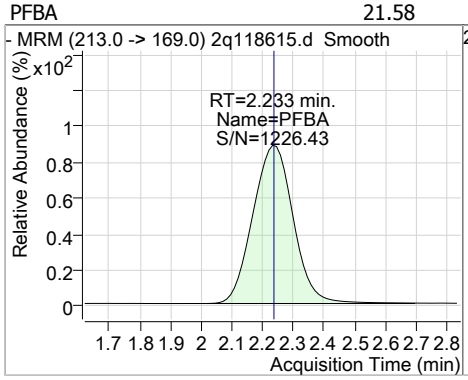
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		499.0 -> 99.0	6565			
PFPeA	4.064	263.0 -> 219.0	104371	21.05	µg/L	100
PFPeS	5.433	349.0 -> 80.0	18028	21.89	µg/L	100
		349.0 -> 99.0	7738			
PFTeDA	10.022	713.0 -> 669.0	184978	20.21	µg/L	100
		713.0 -> 219.0	11368			
PFTrDA	9.474	663.0 -> 619.0	202557	20.70	µg/L	100
		663.0 -> 369.0	13806			
PFUnDA	8.381	563.0 -> 519.0	177331	21.01	µg/L	100
		563.0 -> 269.0	28482			
11Cl-PF3OUdS	8.541	631.0 -> 451.0	46959	19.65	µg/L	98
		633.0 -> 453.0	14654			
9Cl-PF3ONS	7.663	531.0 -> 351.0	58793	18.44	µg/L	99
		533.0 -> 353.0	18550			
ADONA	6.271	377.0 -> 251.0	290154	19.93	µg/L	99
		377.0 -> 85.0	74557			
HFPO-DA	5.589	329.0 -> 169.0	42601	21.64	µg/L	99
		285.0 -> 169.0	12504			
MeFOSA	7.527	512.0 -> 169.0	2944	24.20	µg/L	97
		512.0 -> 219.0	2518			
4-PFECHS	6.780	461.0 -> 381.0	72618	18.62	µg/L	100
		461.0 -> 99.0	25033			
FBSA	5.116	298.0 -> 78.0	51637	22.09	µg/L	100
		298.0 -> 64.0	5432			
FHxSA	6.383	398.0 -> 78.0	53827	23.30	µg/L	99
		398.0 -> 64.0	6006			

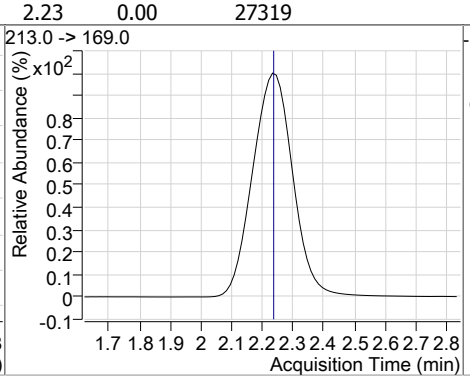
 # = Qualifier out of range, m = manually integrated, + = Area summed

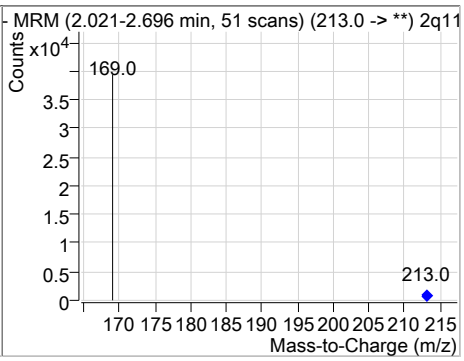
Perfluorinated Compounds by LC/MS/MS



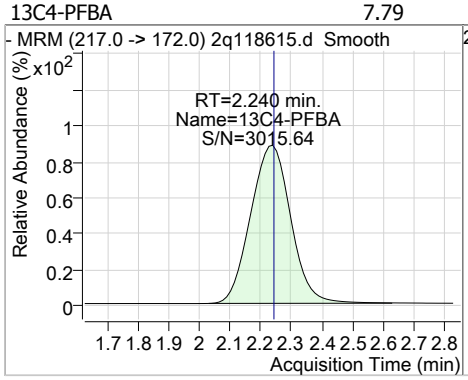
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	21.58	2.23	0.00	27319				

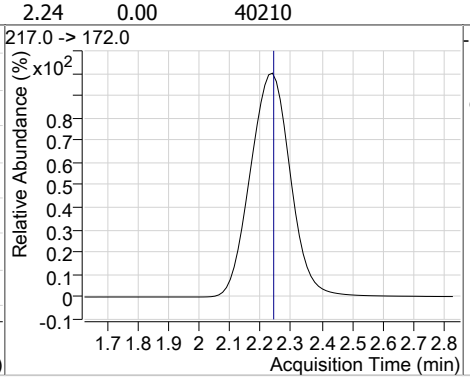


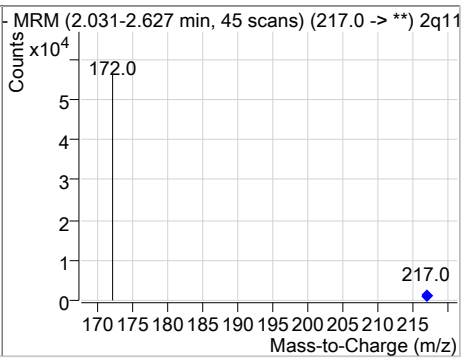




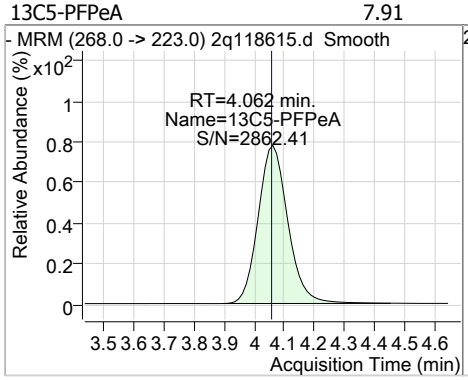
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	7.79	2.24	0.00	40210				

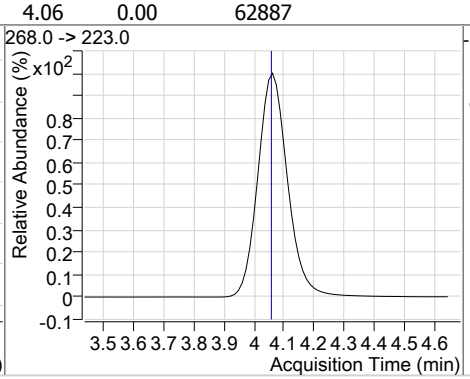


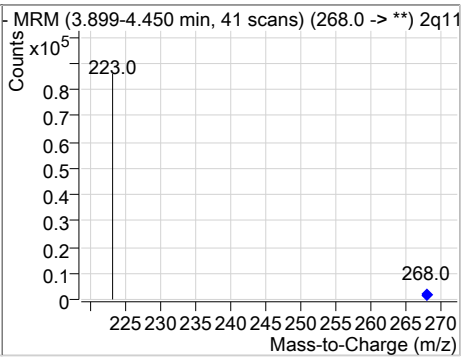




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	7.91	4.06	0.00	62887				

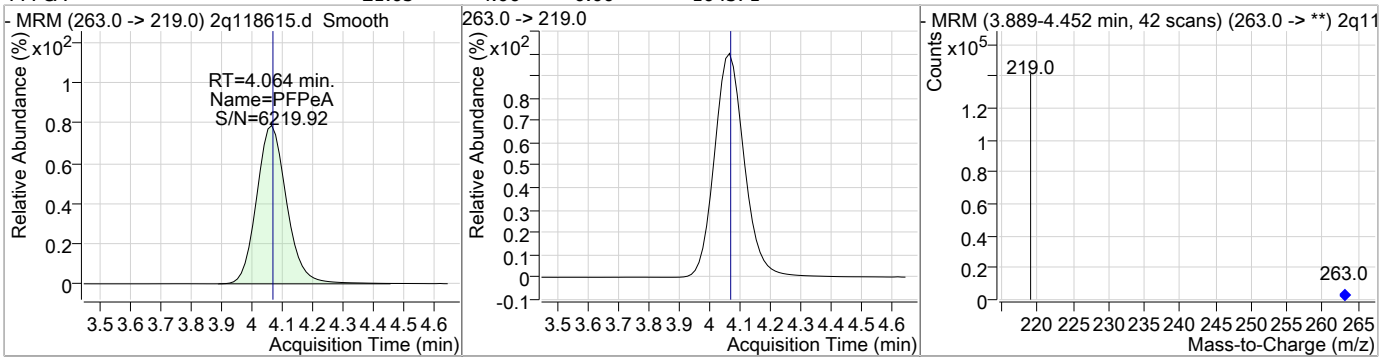




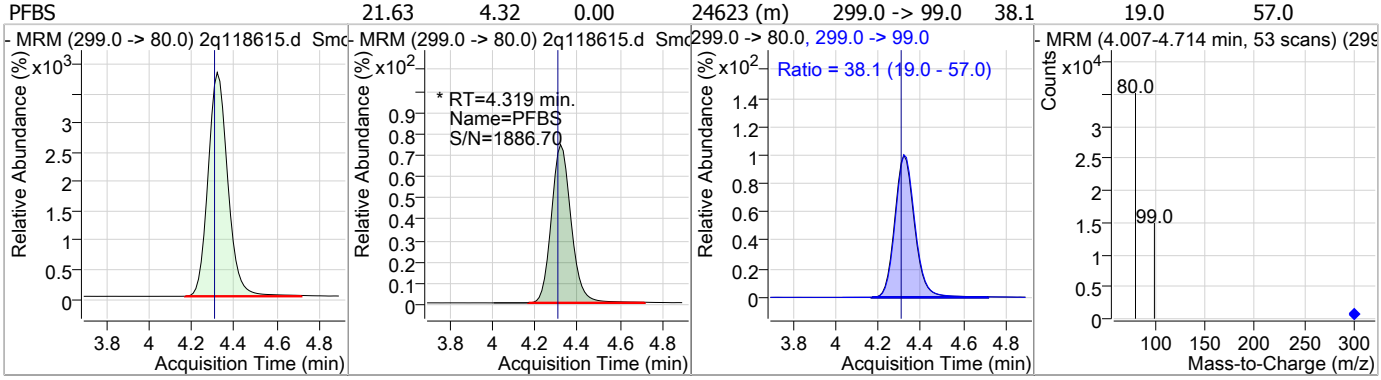


Perfluorinated Compounds by LC/MS/MS

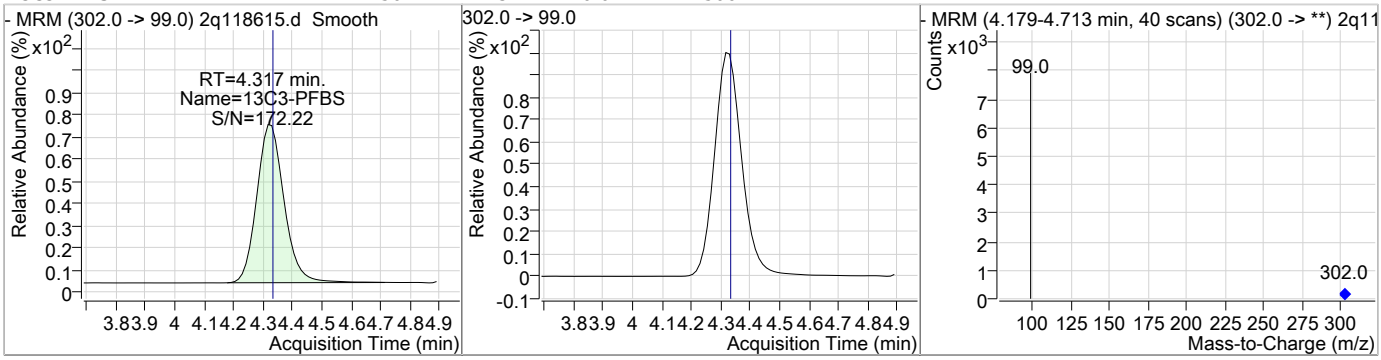
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	21.05	4.06	0.00	104371				



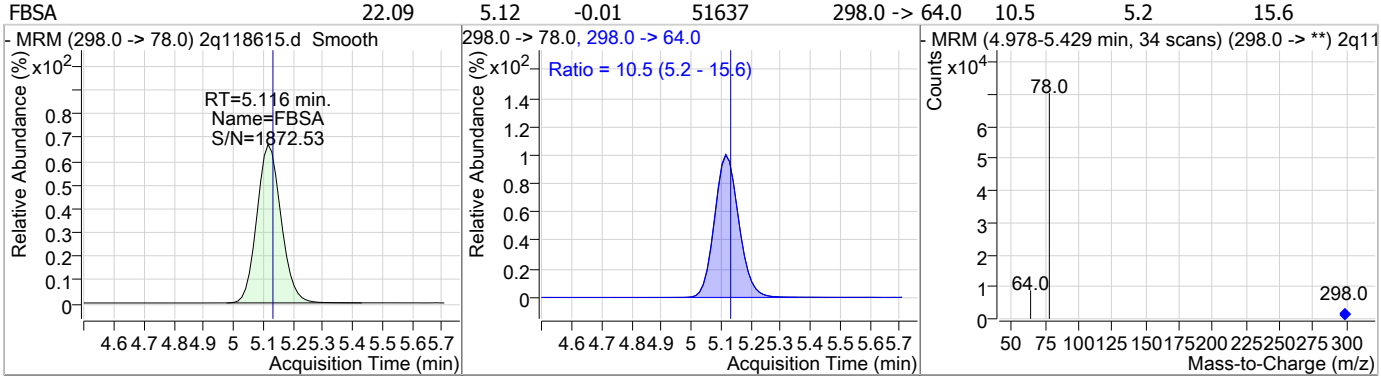
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	21.63	4.32	0.00	24623 (m)	299.0 -> 99.0	38.1	19.0	57.0



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	7.50	4.32	-0.01	4506				

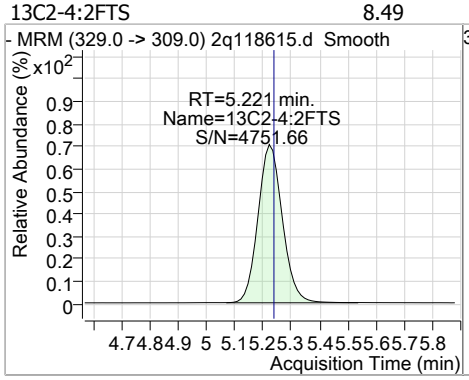


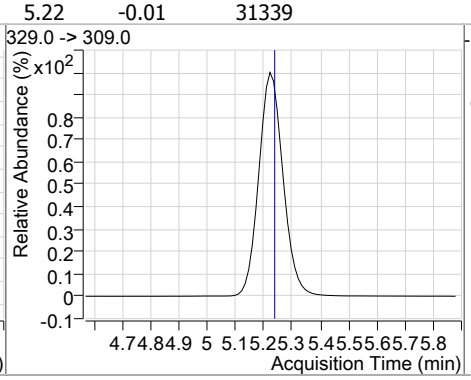
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	22.09	5.12	-0.01	51637	298.0 -> 64.0	10.5	5.2	15.6

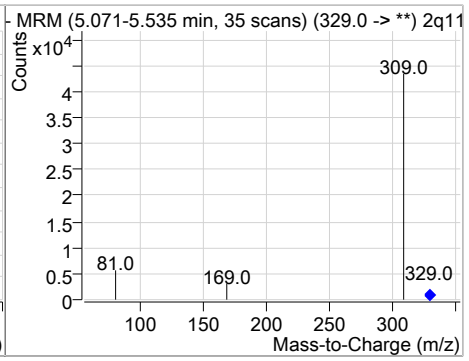


Perfluorinated Compounds by LC/MS/MS

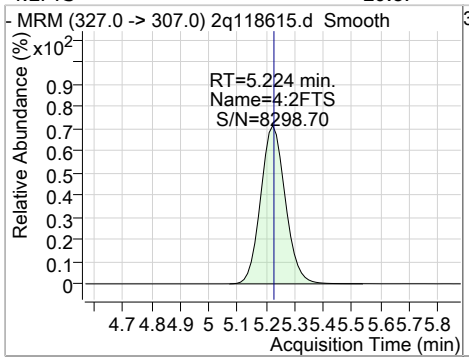
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	8.49	5.22	-0.01	31339				

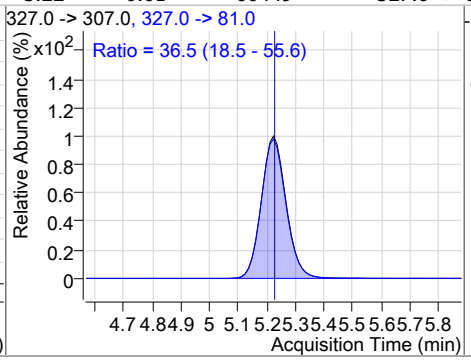


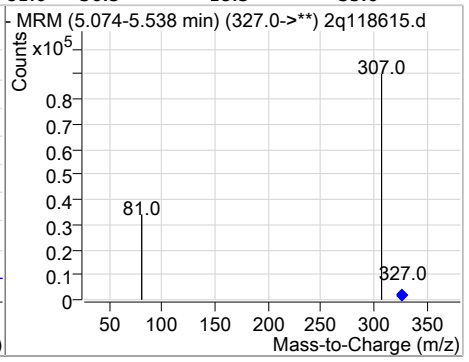




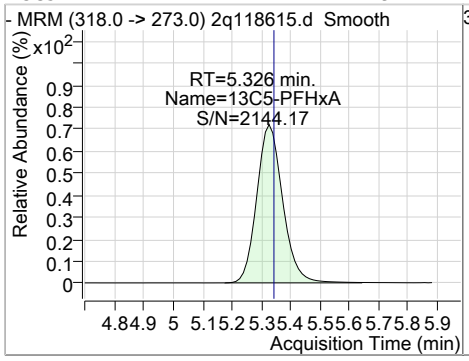
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	20.87	5.22	-0.01	66449	327.0 -> 81.0	36.5	18.5	55.6

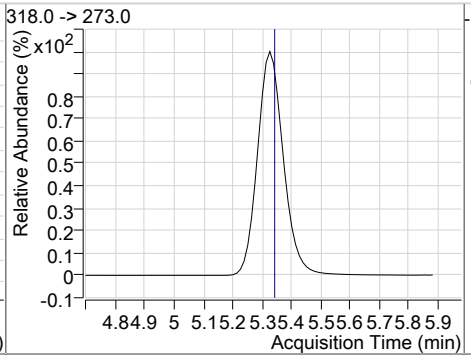


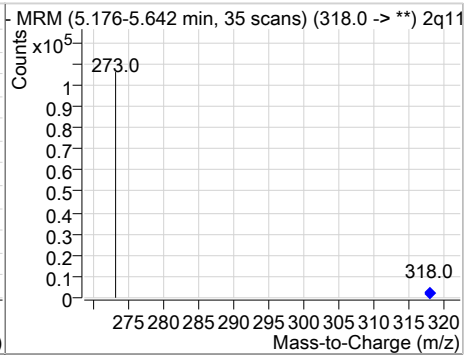




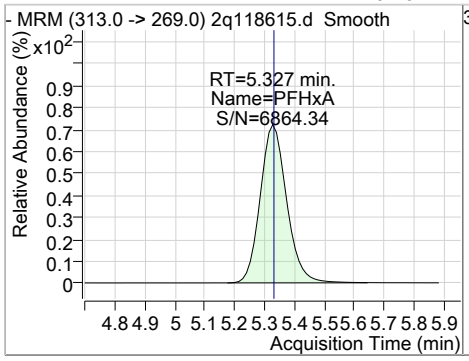
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	7.97	5.33	-0.01	78631				

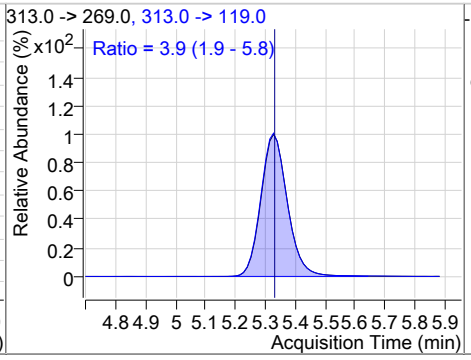


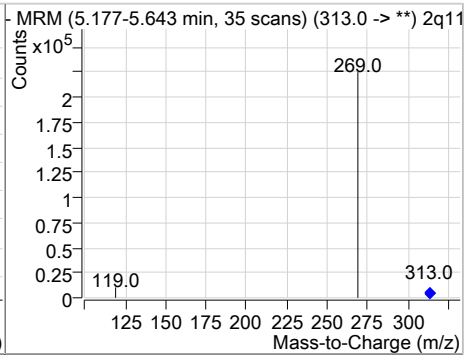




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	20.70	5.33	-0.01	167474	313.0 -> 119.0	3.9	1.9	5.8

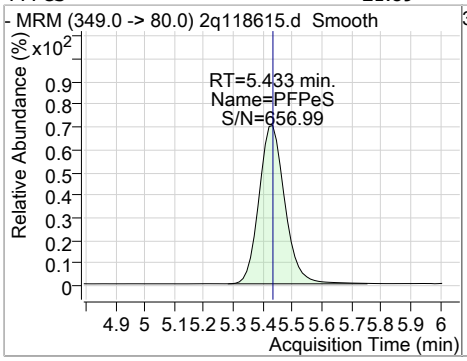


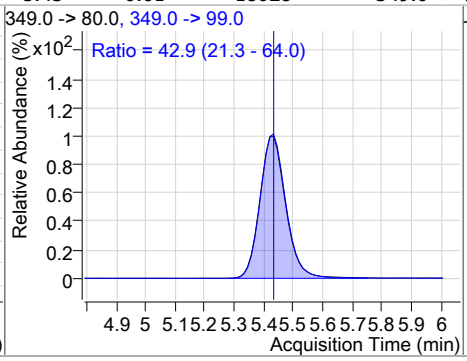


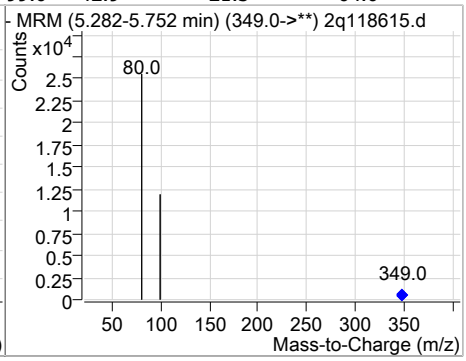


Perfluorinated Compounds by LC/MS/MS

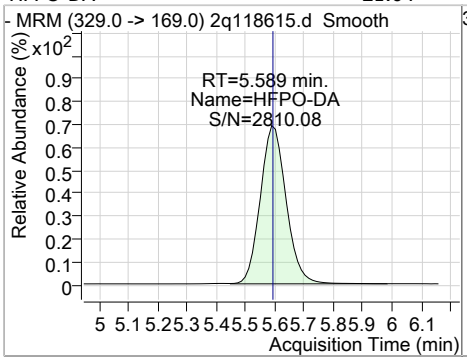
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	21.89	5.43	-0.01	18028	349.0 -> 99.0	42.9	21.3	64.0

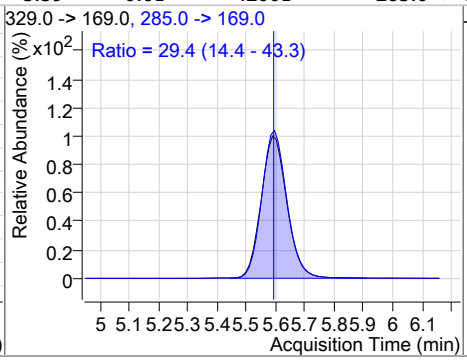


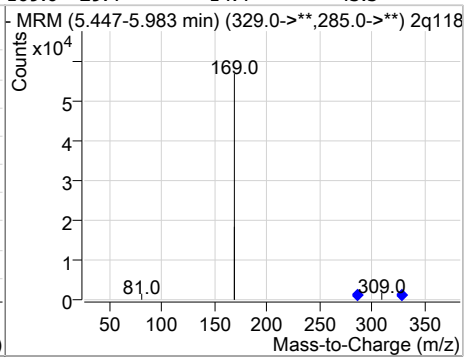




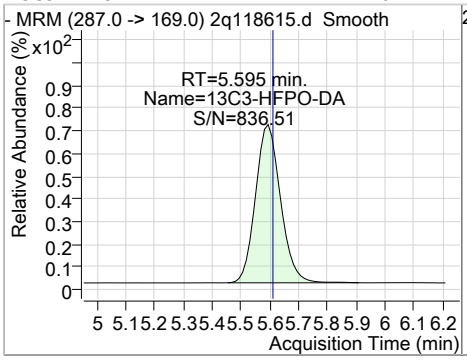
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	21.64	5.59	-0.01	42601	285.0 -> 169.0	29.4	14.4	43.3

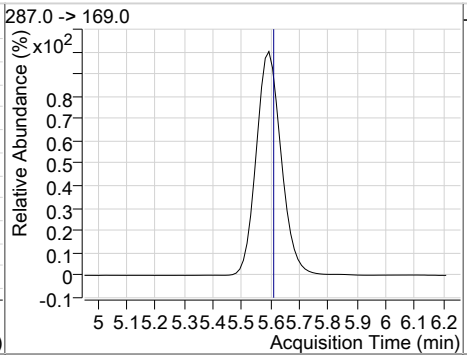


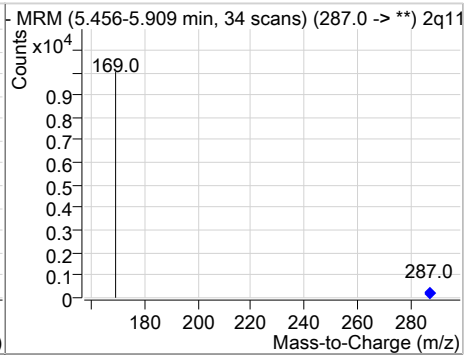




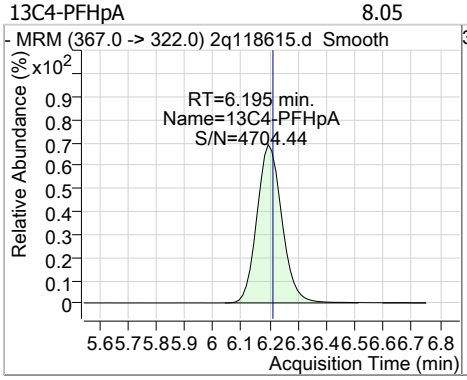
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	7.64	5.59	-0.01	6349				

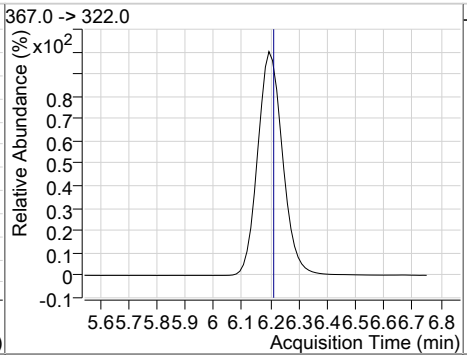


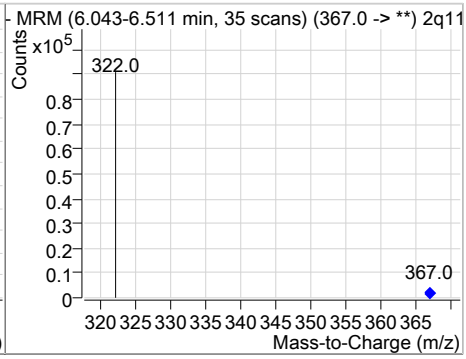




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	8.05	6.20	-0.01	69120				

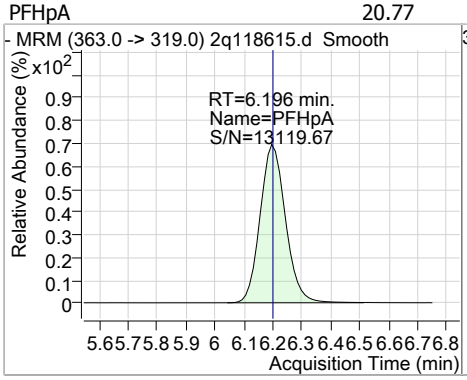


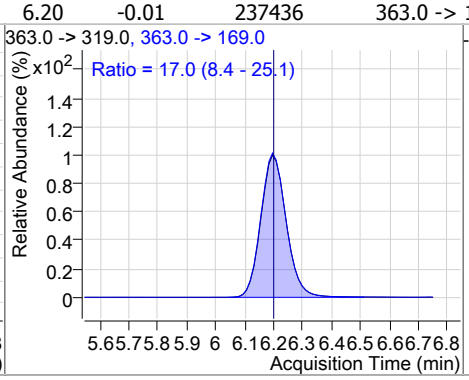


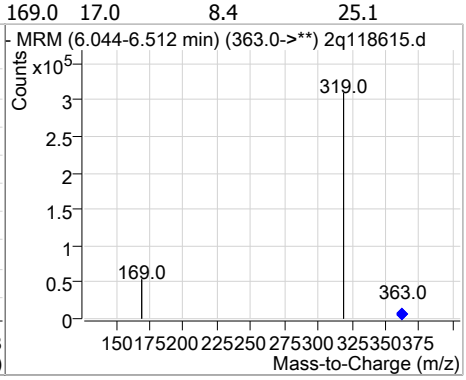


Perfluorinated Compounds by LC/MS/MS

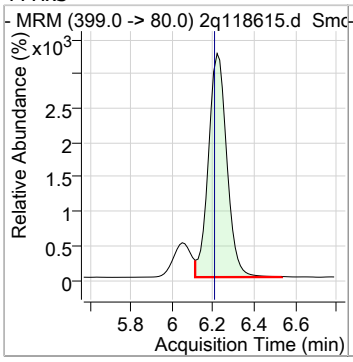
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	20.77	6.20	-0.01	237436	363.0 -> 169.0	17.0	8.4	25.1

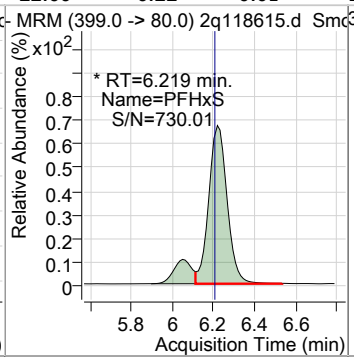


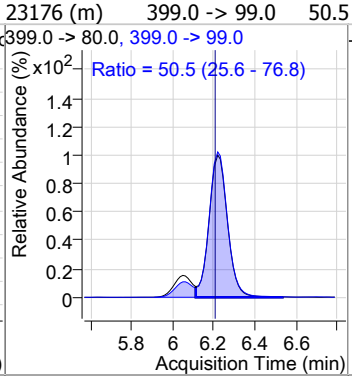


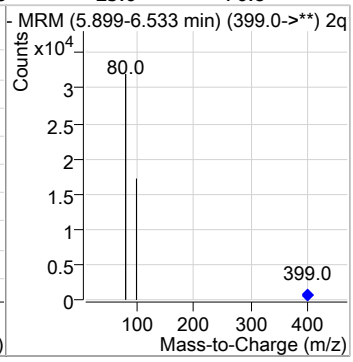


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	22.66	6.22	-0.01	23176 (m)	399.0 -> 99.0	50.5	25.6	76.8

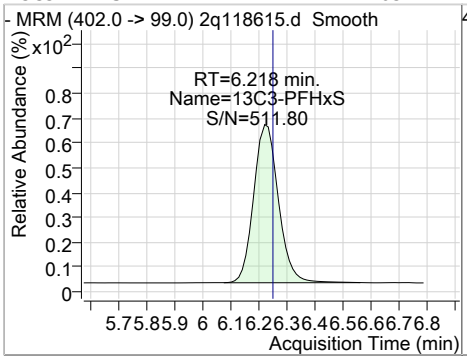


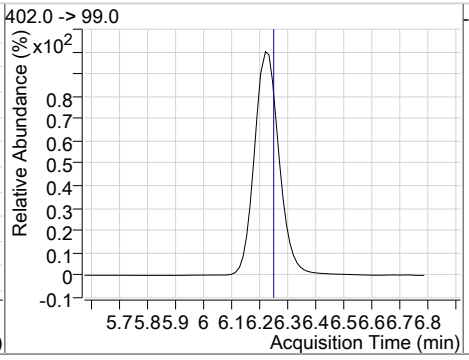


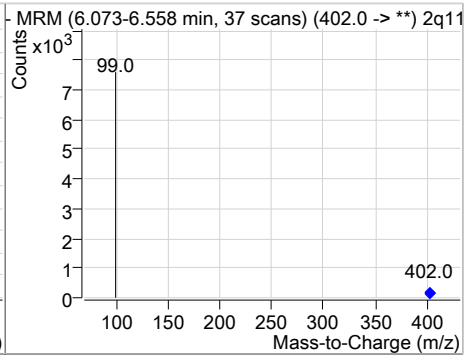




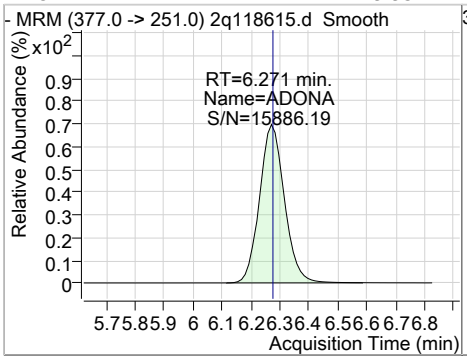
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	7.63	6.22	-0.03	4671				

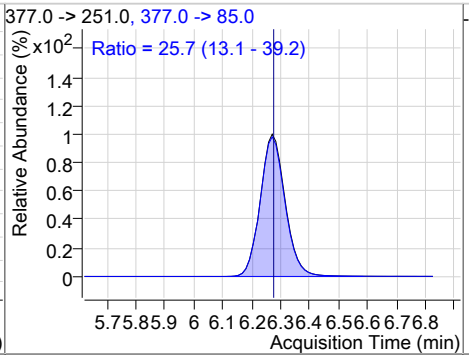


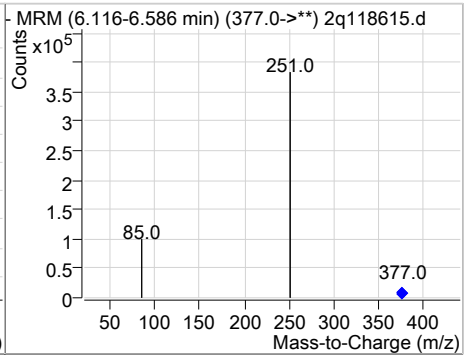




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	19.93	6.27	-0.01	290154	377.0 -> 85.0	25.7	13.1	39.2

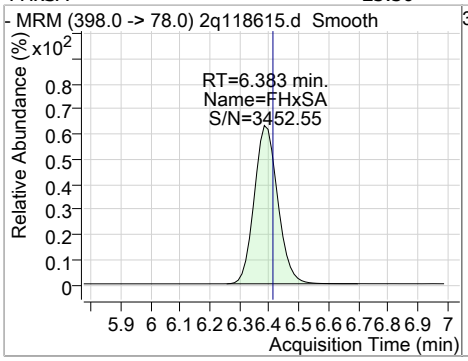


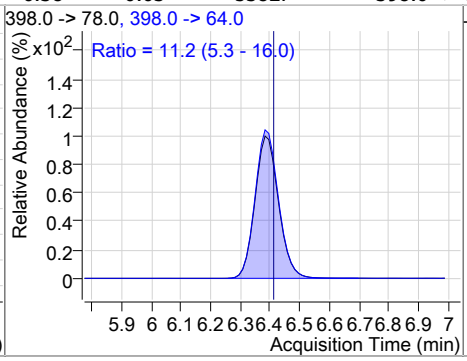


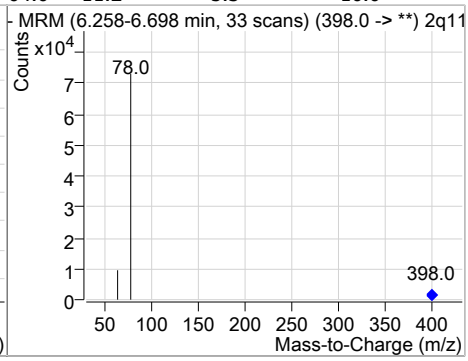


Perfluorinated Compounds by LC/MS/MS

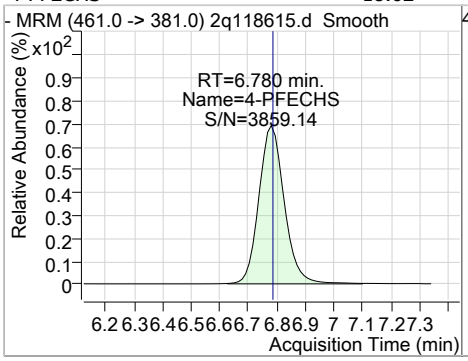
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	23.30	6.38	-0.03	53827	398.0 -> 64.0	11.2	5.3	16.0

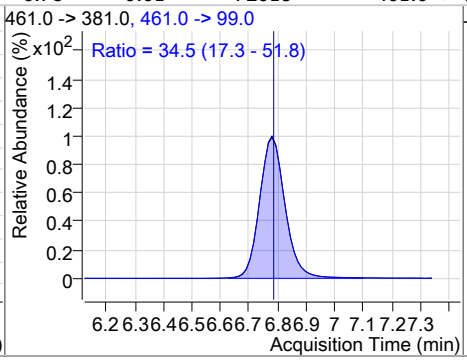


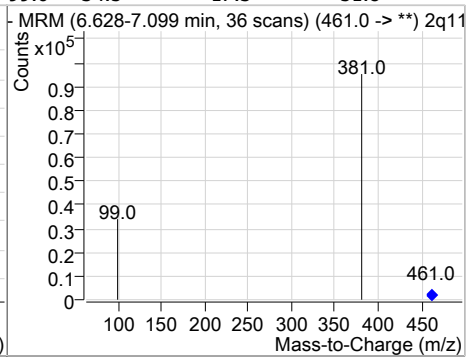




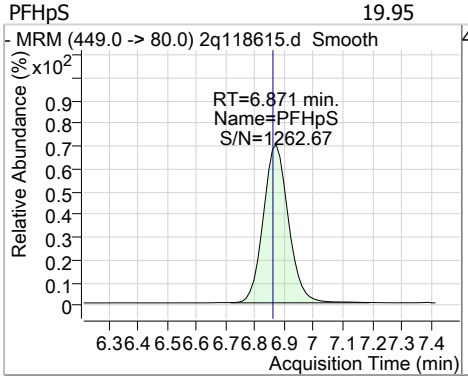
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS	18.62	6.78	-0.01	72618	461.0 -> 99.0	34.5	17.3	51.8

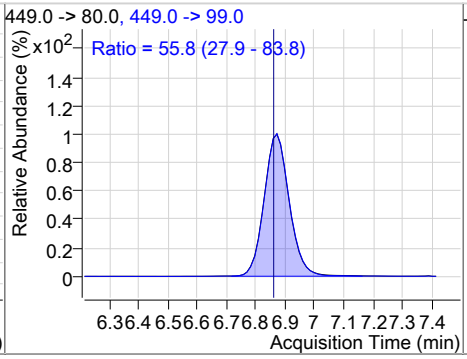


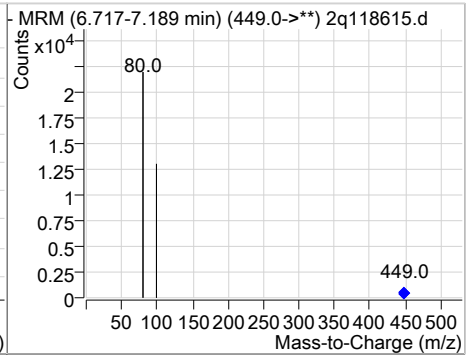




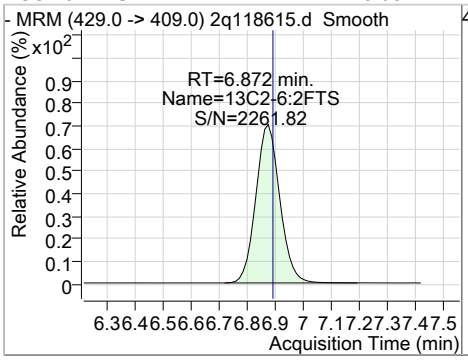
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	19.95	6.87	-0.01	15378	449.0 -> 99.0	55.8	27.9	83.8

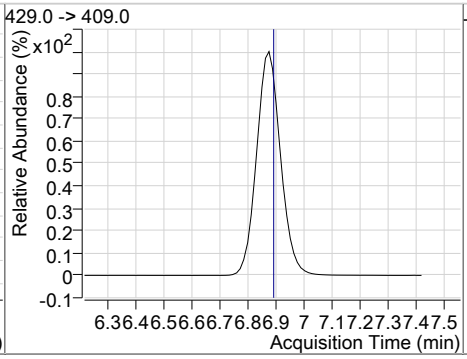


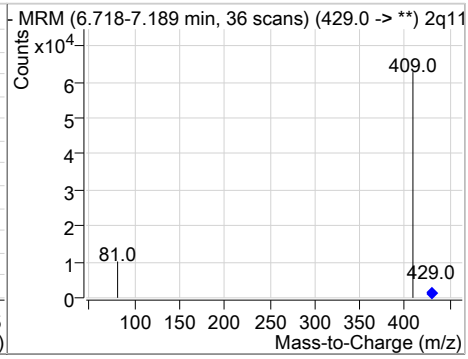




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	8.08	6.87	-0.01	46377				

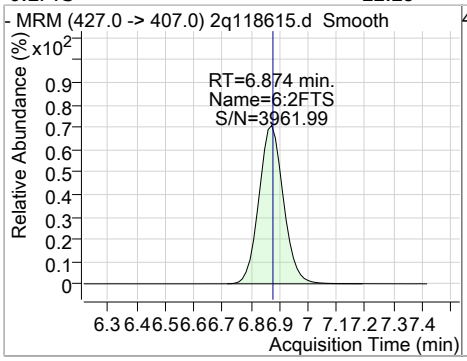


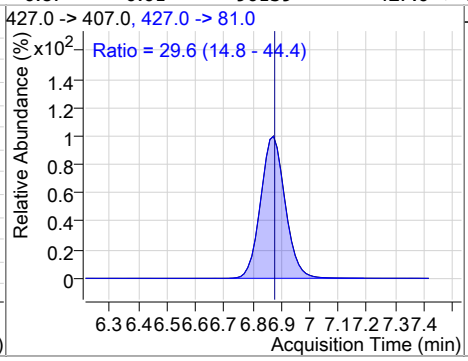


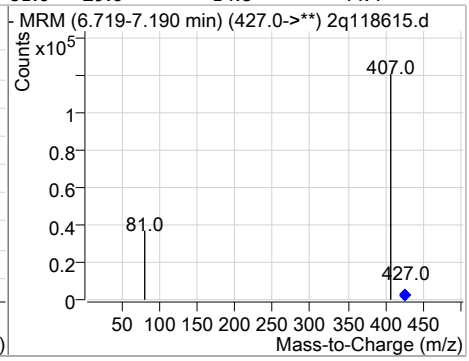


Perfluorinated Compounds by LC/MS/MS

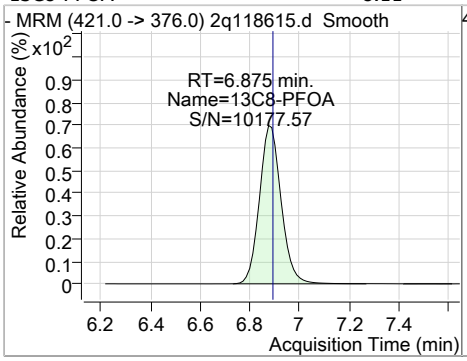
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	22.28	6.87	-0.01	90139	427.0 -> 81.0	29.6	14.8	44.4

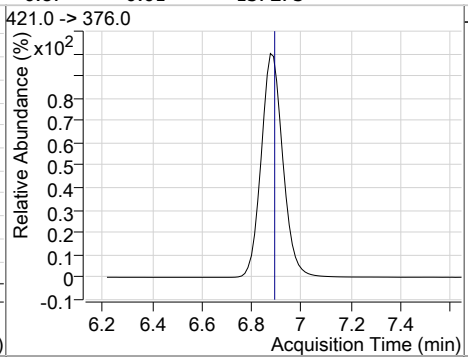


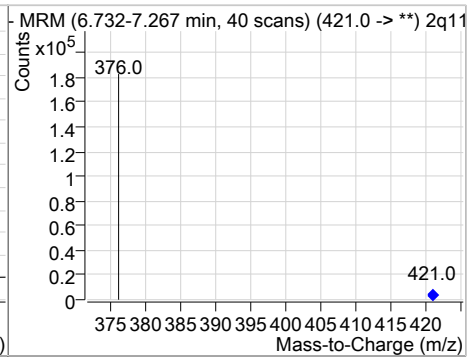




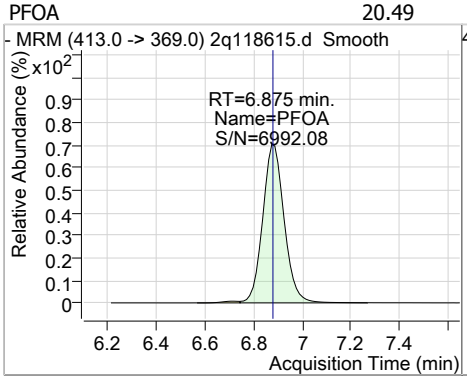
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	8.11	6.87	-0.01	137273				

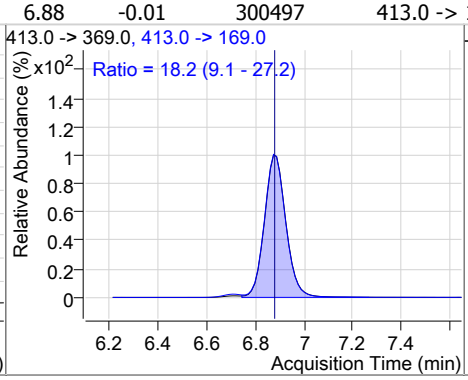


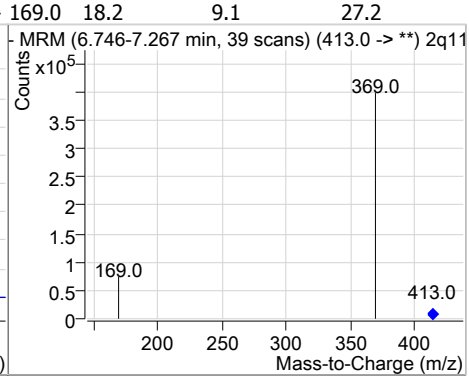




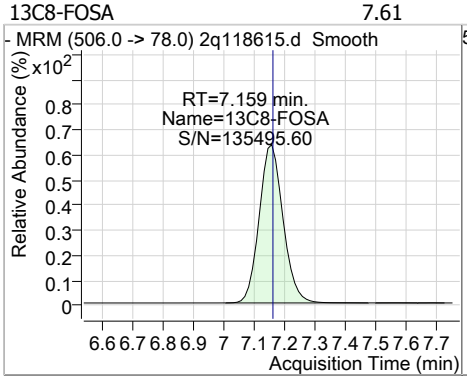
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	20.49	6.88	-0.01	300497	413.0 -> 169.0	18.2	9.1	27.2

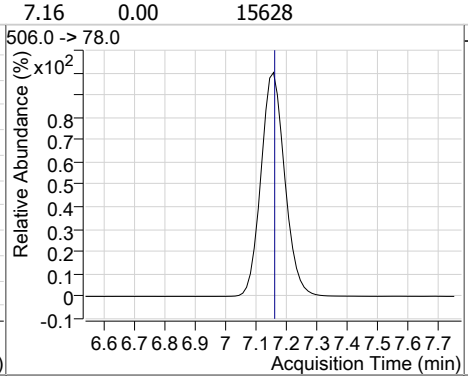


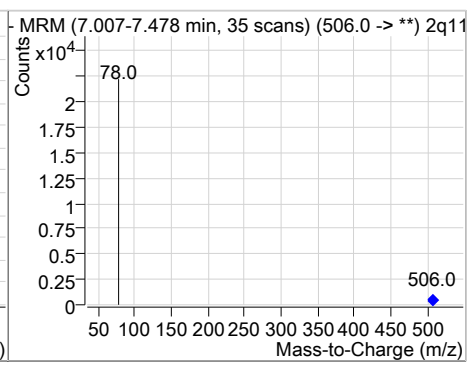




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	7.61	7.16	0.00	15628				

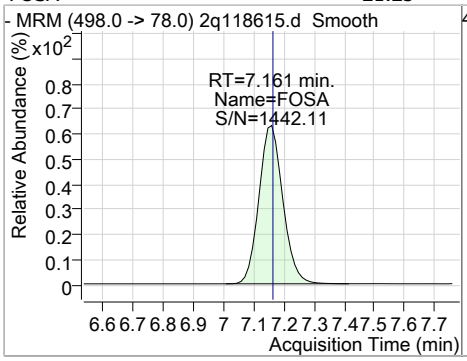


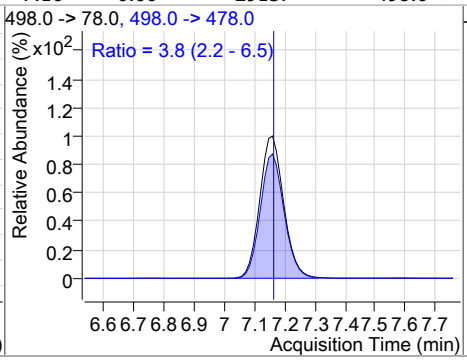


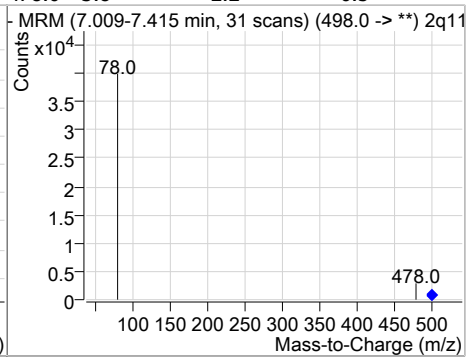


Perfluorinated Compounds by LC/MS/MS

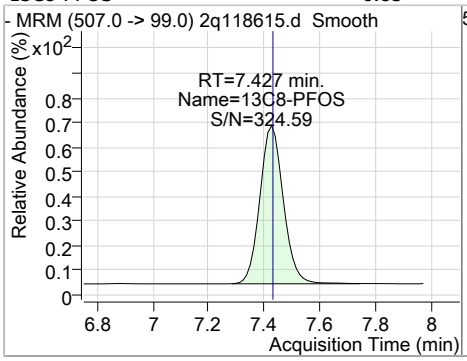
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	21.25	7.16	0.00	29137	498.0 -> 478.0	3.8	2.2	6.5

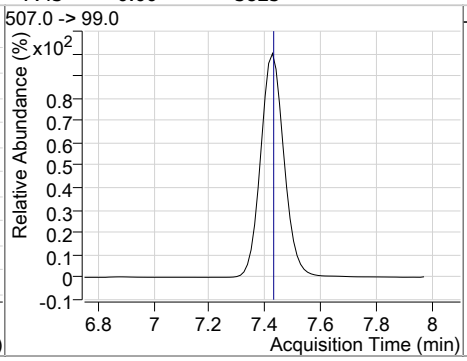


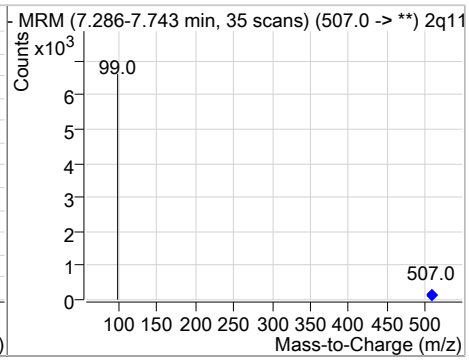




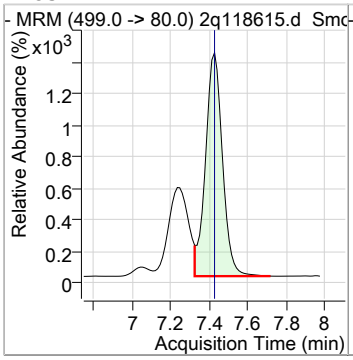
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	6.85	7.43	0.00	3825				

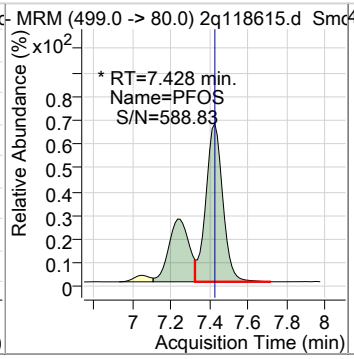


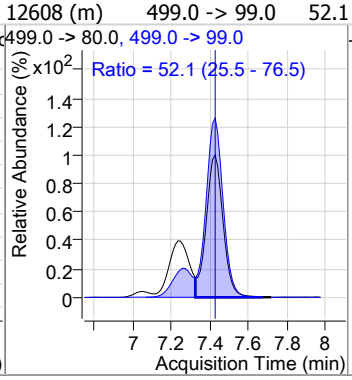


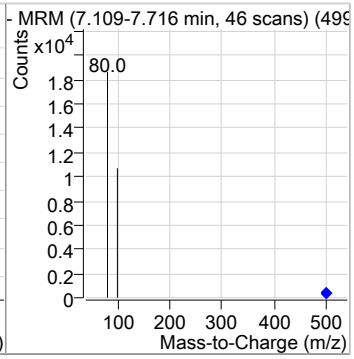


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	21.03	7.43	0.00	12608 (m)	499.0 -> 99.0	52.1	25.5	76.5

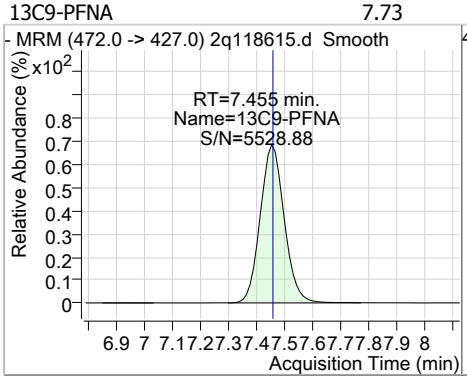


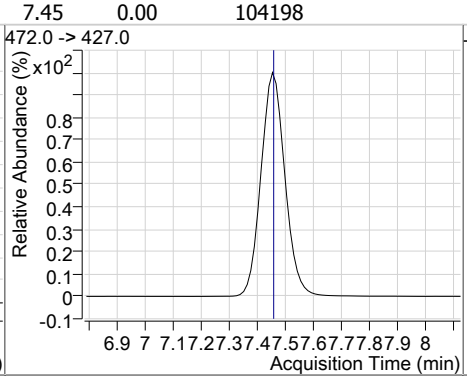


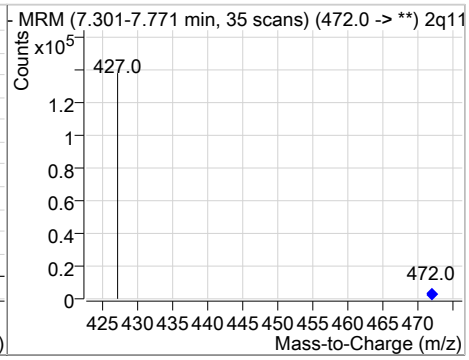




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	7.73	7.45	0.00	104198				

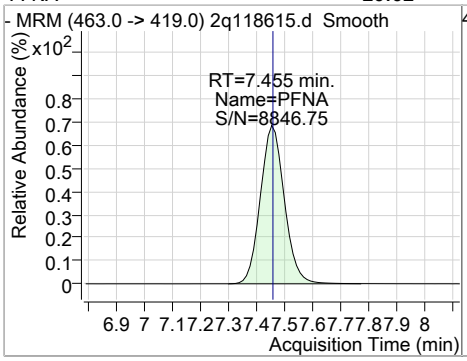


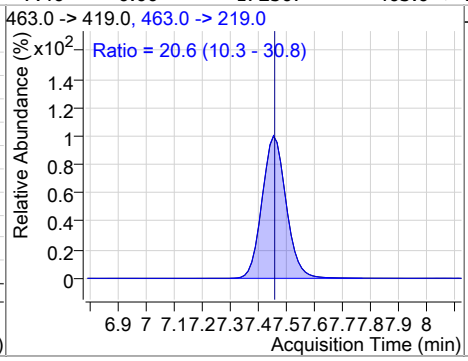


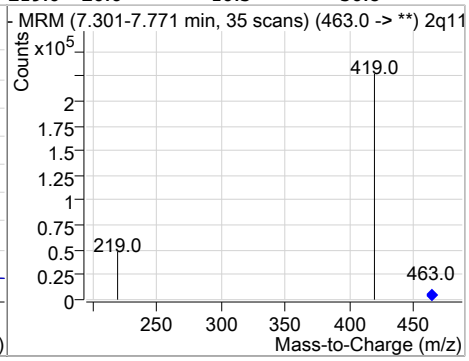


Perfluorinated Compounds by LC/MS/MS

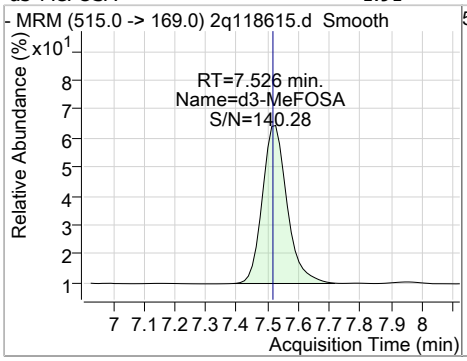
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	20.62	7.46	0.00	172507	463.0 -> 219.0	20.6	10.3	30.8

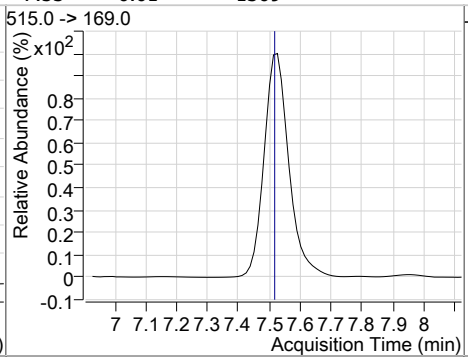


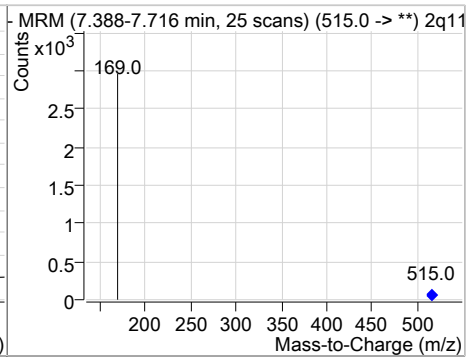




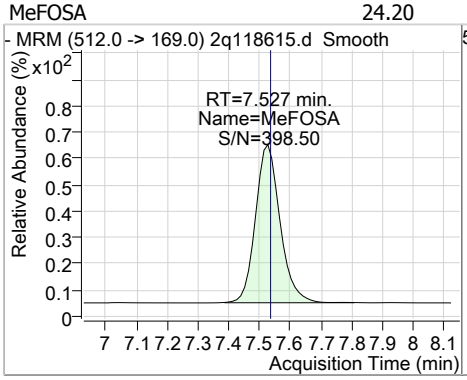
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	1.91	7.53	0.01	1369				

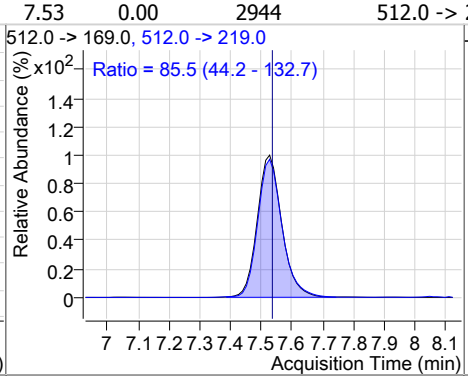


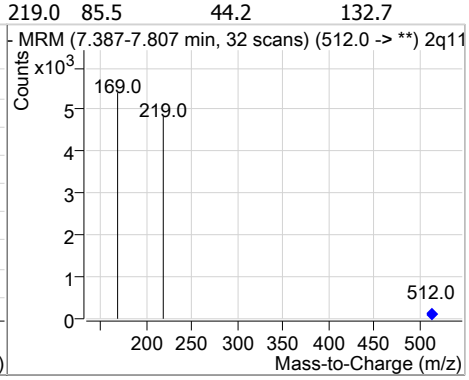




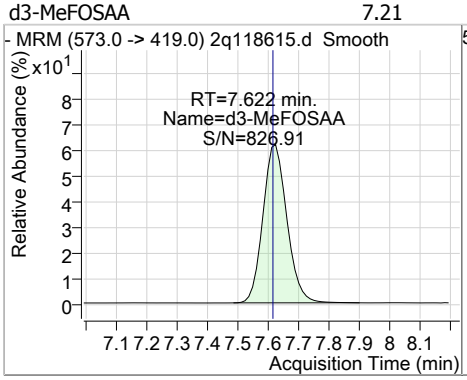
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	24.20	7.53	0.00	2944	512.0 -> 219.0	85.5	44.2	132.7

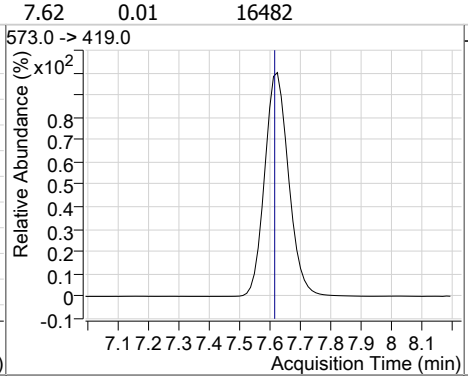


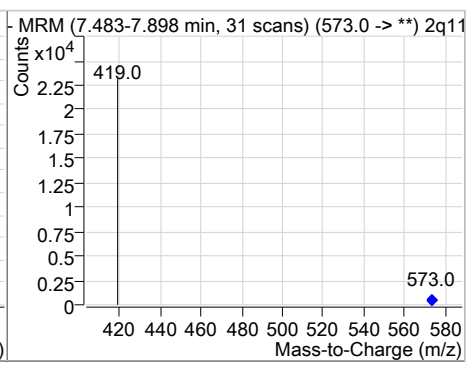




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	7.21	7.62	0.01	16482				

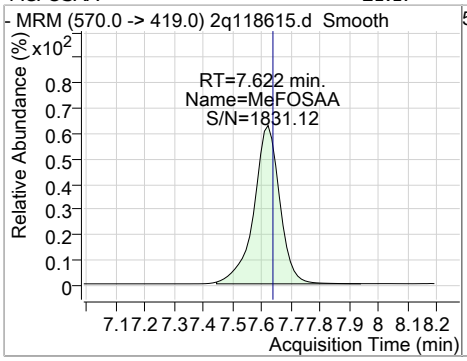


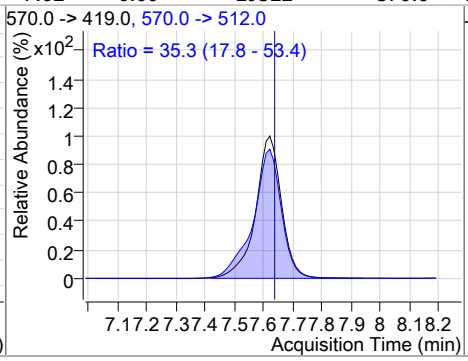


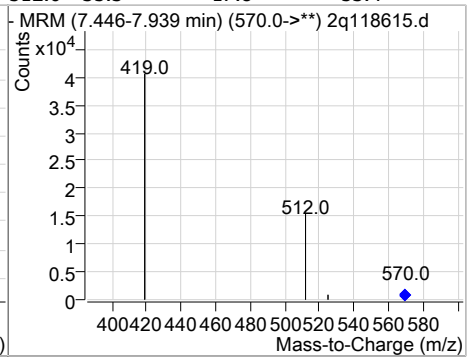


Perfluorinated Compounds by LC/MS/MS

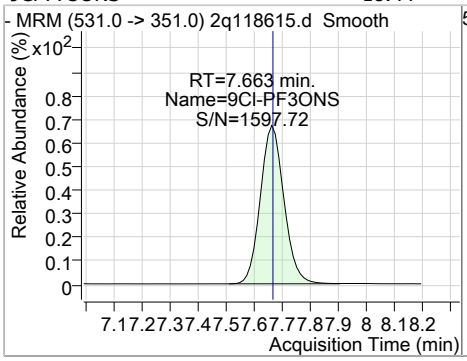
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	21.17	7.62	0.00	29522	570.0 -> 512.0	35.3	17.8	53.4

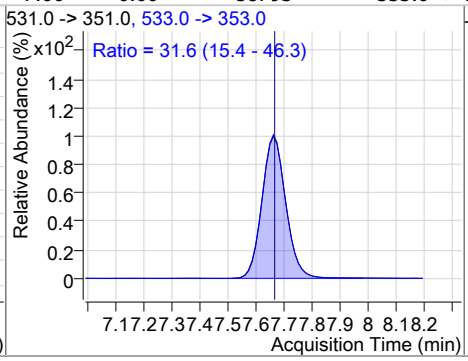


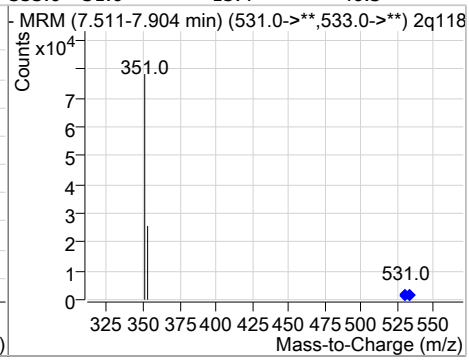




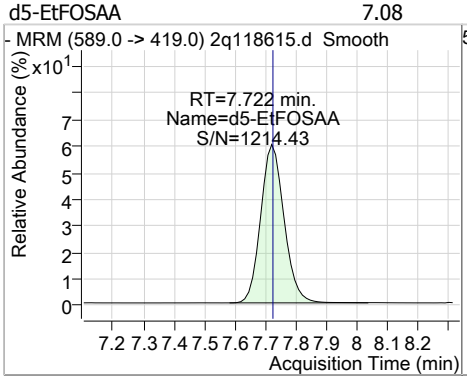
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	18.44	7.66	0.00	58793	533.0 -> 353.0	31.6	15.4	46.3

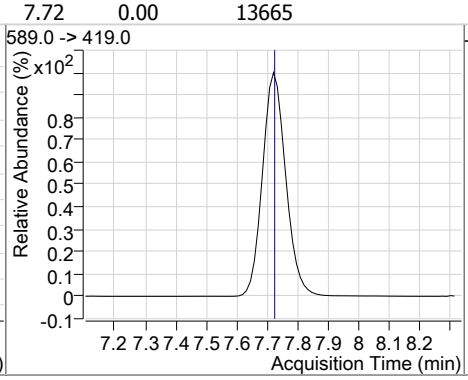


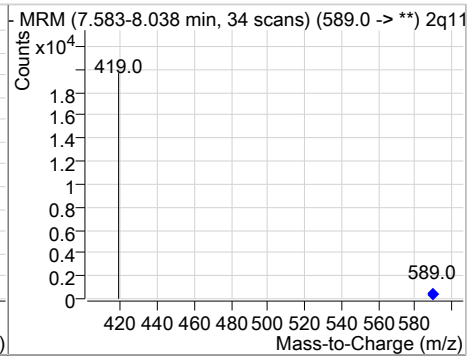




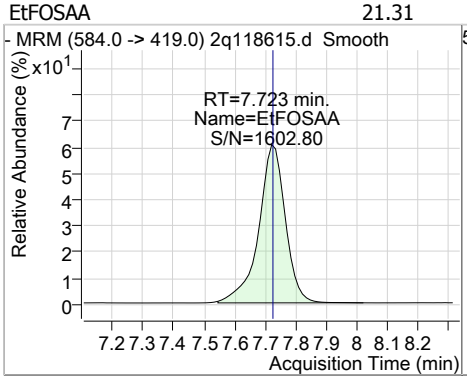
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	7.08	7.72	0.00	13665				

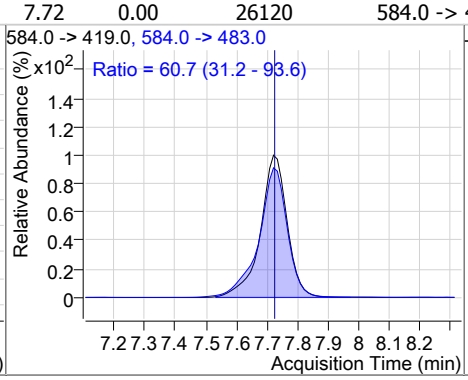


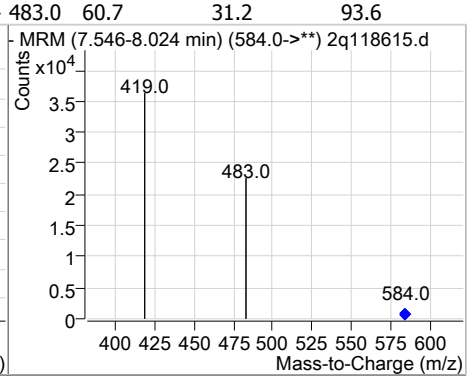




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	21.31	7.72	0.00	26120	584.0 -> 483.0	60.7	31.2	93.6

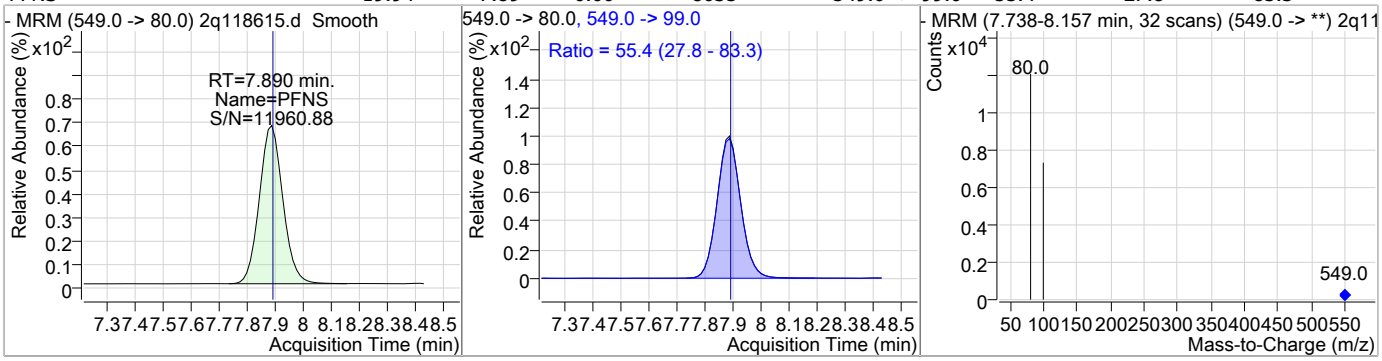




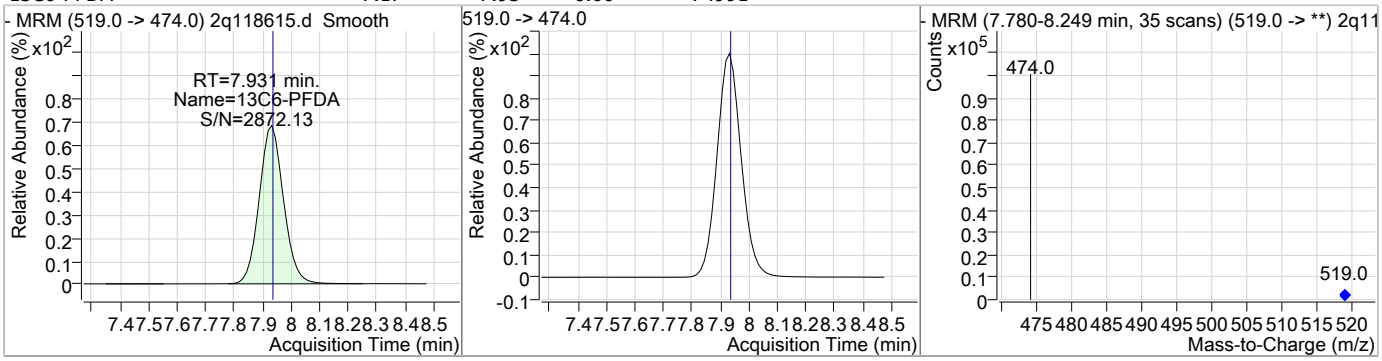


Perfluorinated Compounds by LC/MS/MS

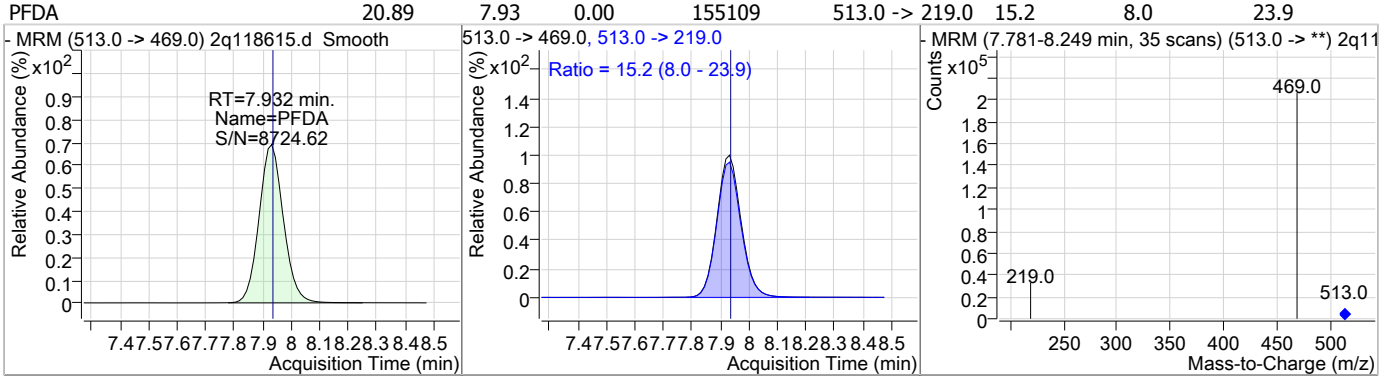
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	19.94	7.89	0.00	8035	549.0 -> 99.0	55.4	27.8	83.3



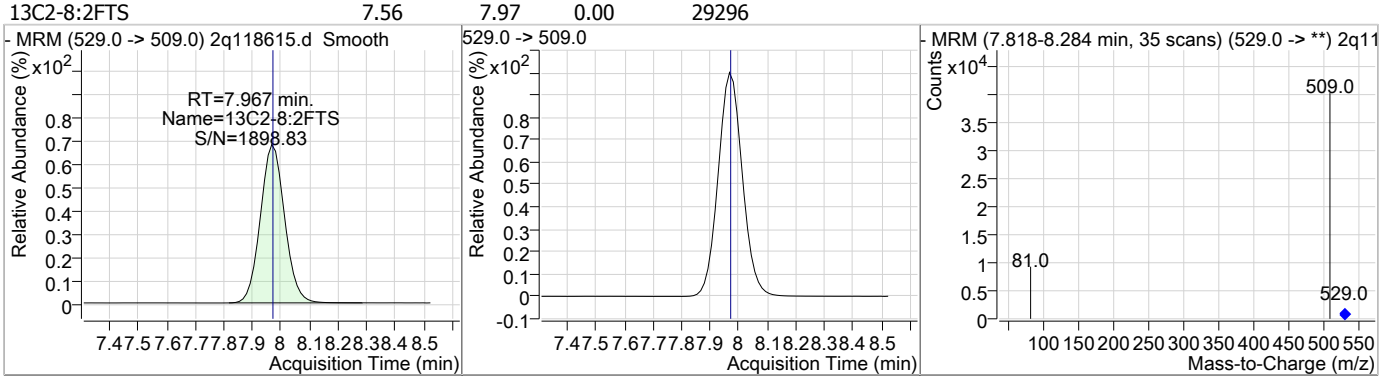
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	7.17	7.93	0.00	74991				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	20.89	7.93	0.00	155109	513.0 -> 219.0	15.2	8.0	23.9

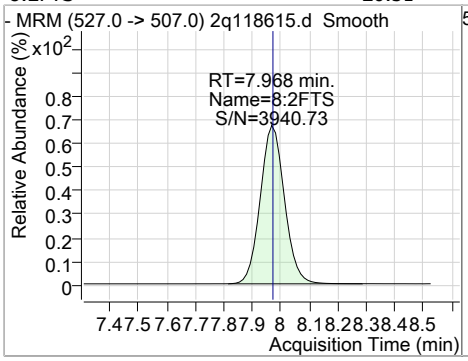


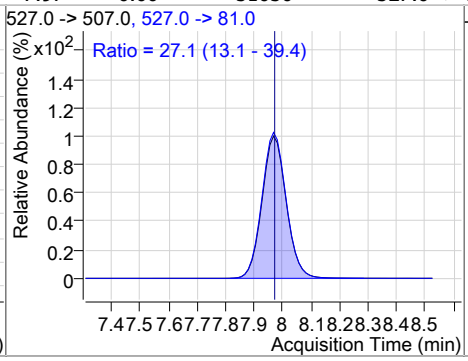
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	7.56	7.97	0.00	29296				

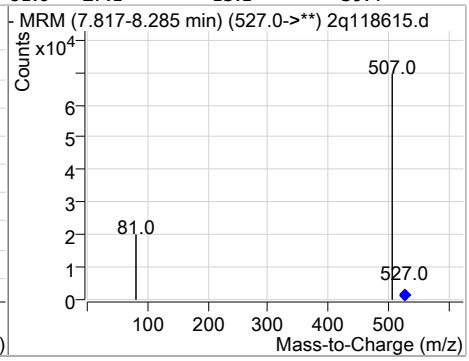


Perfluorinated Compounds by LC/MS/MS

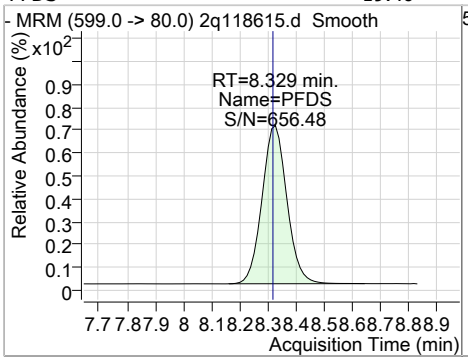
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	20.51	7.97	0.00	51656	527.0 -> 81.0	27.1	13.1	39.4

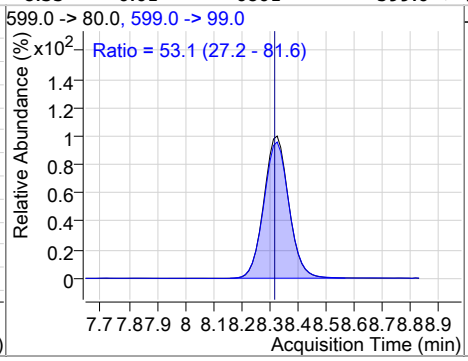


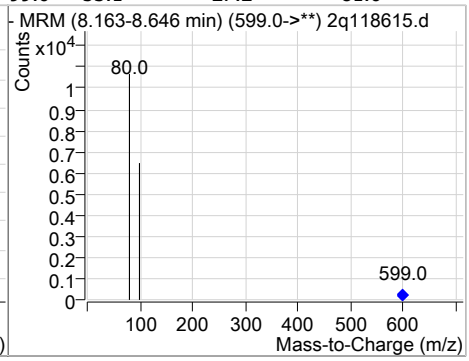




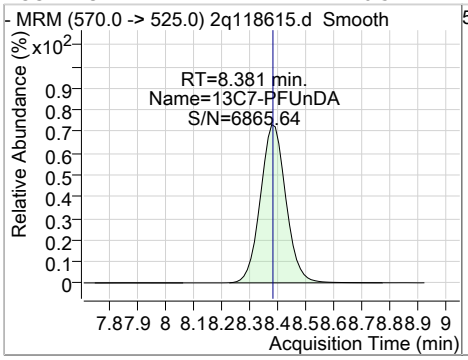
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	19.40	8.33	0.01	6801	599.0 -> 99.0	53.1	27.2	81.6

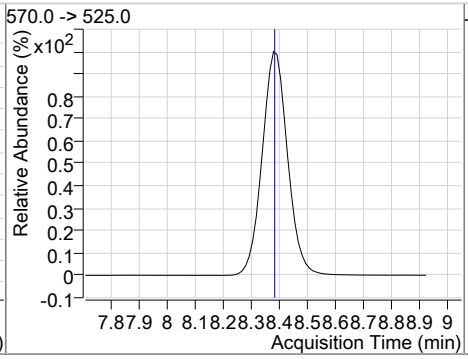


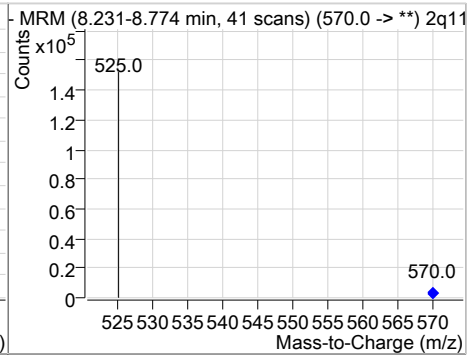




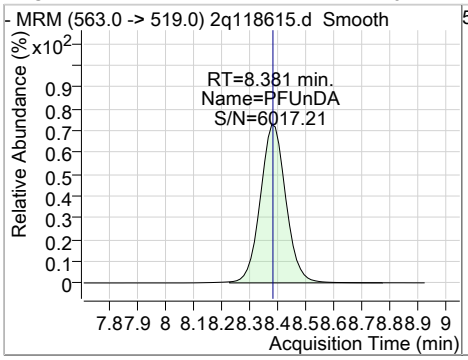
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	6.51	8.38	0.00	113122				

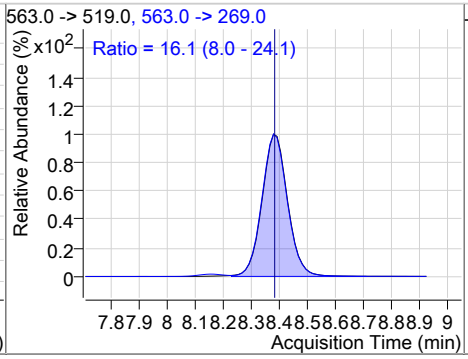


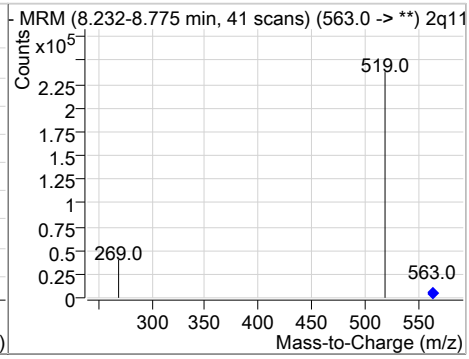




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	21.01	8.38	0.00	177331	563.0 -> 269.0	16.1	8.0	24.1

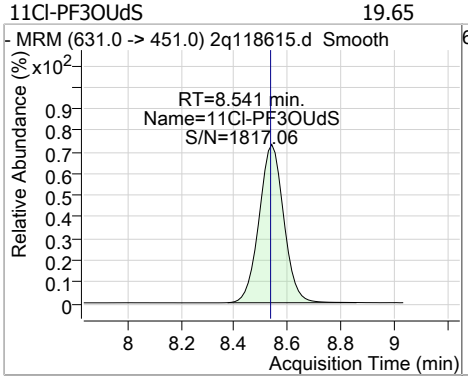


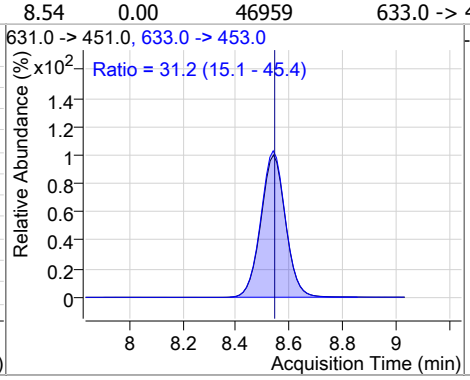


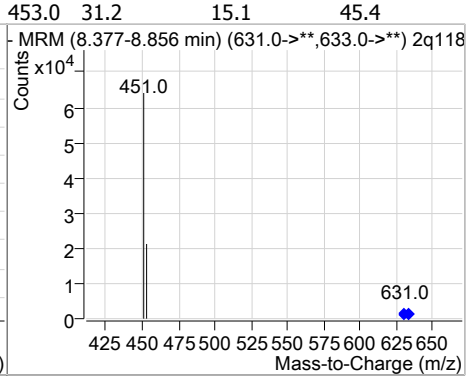


Perfluorinated Compounds by LC/MS/MS

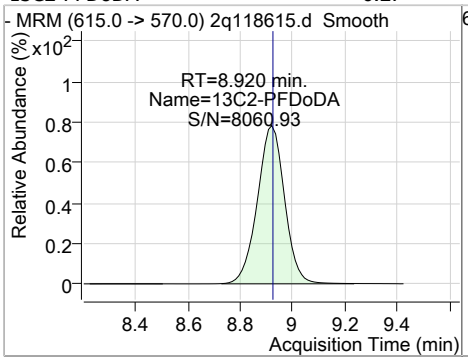
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	19.65	8.54	0.00	46959	633.0 -> 453.0	31.2	15.1	45.4

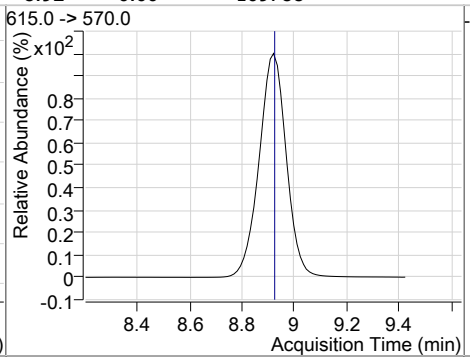


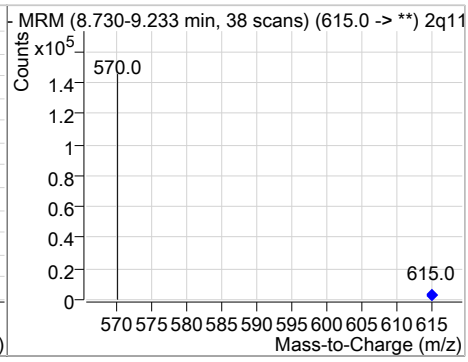




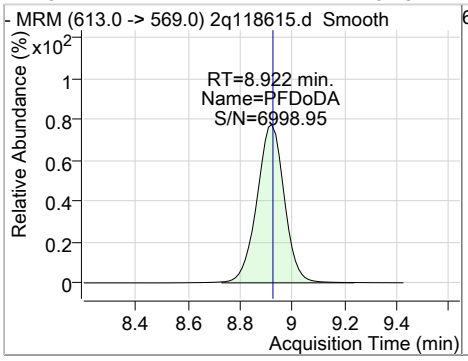
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	6.27	8.92	0.00	109788				

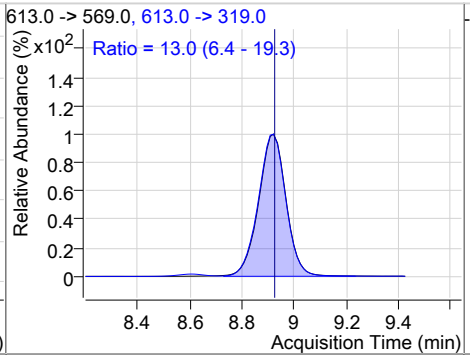


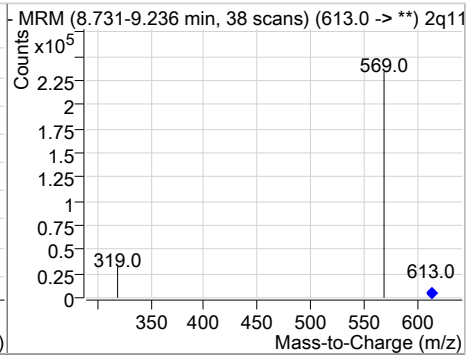




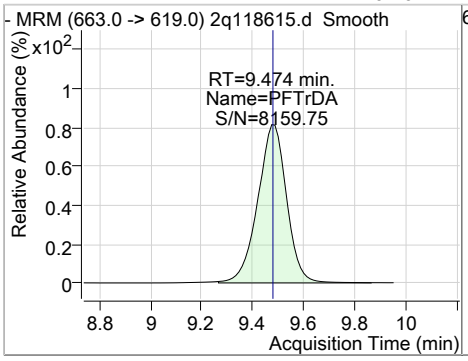
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	20.78	8.92	0.00	178171	613.0 -> 319.0	13.0	6.4	19.3

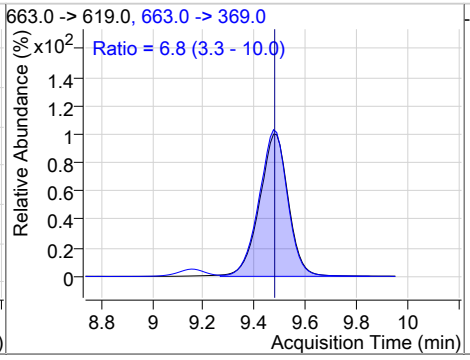


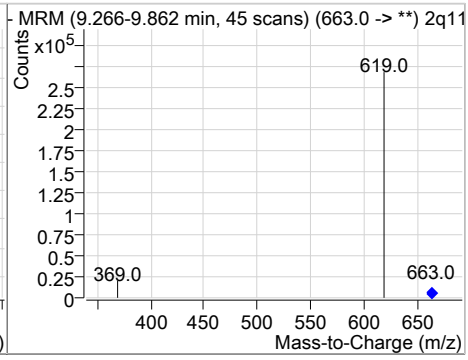




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	20.70	9.47	0.00	202557	663.0 -> 369.0	6.8	3.3	10.0

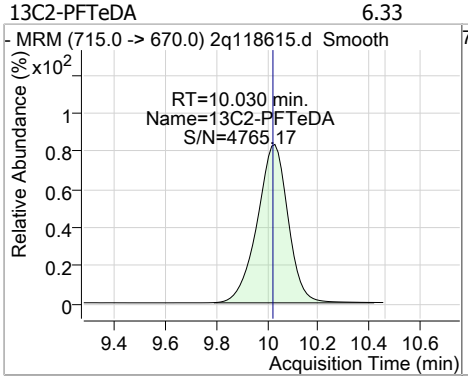


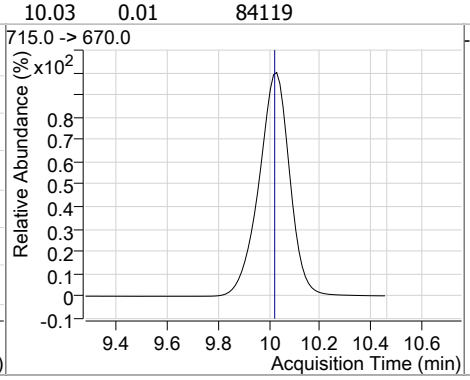


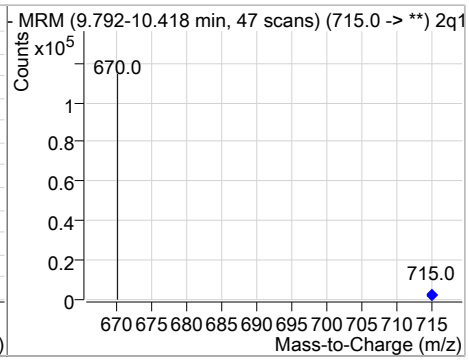


Perfluorinated Compounds by LC/MS/MS

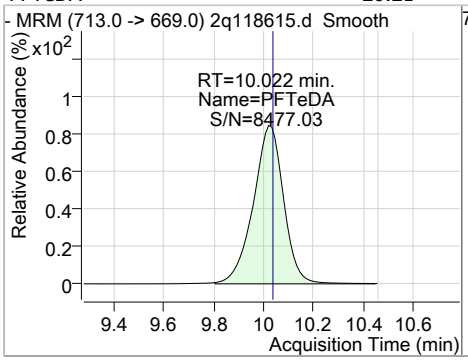
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	6.33	10.03	0.01	84119				

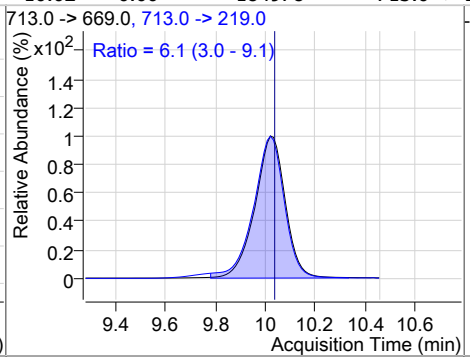


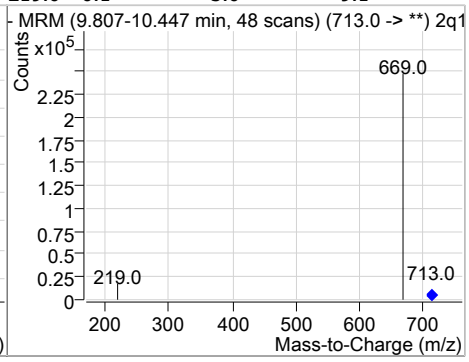




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	20.21	10.02	0.00	184978	713.0 -> 219.0	6.1	3.0	9.1







Manual Integration Approval Summary

Sample Number: OP937-MS
Lab FileID: 2Q118615.D
Injection Time: 01/04/24 19:20
Method: EPA 537M QSM5.3 B-15
Analyst approved: 01/05/24 16:33 Lindsay Ritner
Supervisor approved: 01/05/24 17:11 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorobutanesulfonic acid	375-73-5		4.32	Split peak
Perfluorohexanesulfonic acid	355-46-4		6.22	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.43	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Natasha Gumtie
01/05/24 17:11

Perfluorinated Compounds by LC/MS/MS

Data File : 2q118616.d
Operator : lindsayr
Acq. Method : 537_ID.m
Acq. Date-Time : 1/4/2024 7:37:22 PM
Sample Name : op937-msd
Vial : P6-B2
DA Method File : ID_010224_S2Q1691.quantmethod.xml
Batch Name : s2q1693.batch.bin
Sample Information : op937,S2Q1693,125,,,1.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M5-EtFOSAA	7.722	589.0 -> 419.0	13936	10.00	µg/L	0.000
M4-PFBA	2.240	217.0 -> 172.0	40907	10.00	µg/L	0.000
M5-PFPeA	4.062	268.0 -> 223.0	63960	10.00	µg/L	0.000
M5-PFHxA	5.326	318.0 -> 273.0	79731	10.00	µg/L	-0.013
M4-PFHpA	6.195	367.0 -> 322.0	69627	10.00	µg/L	-0.013
M8-PFOA	6.875	421.0 -> 376.0	139033	10.00	µg/L	-0.013
M9-PFNA	7.455	472.0 -> 427.0	104599	10.00	µg/L	0.000
M6-PFDA	7.931	519.0 -> 474.0	76380	10.00	µg/L	0.000
M7-PFUnDA	8.381	570.0 -> 525.0	117916	10.00	µg/L	0.000
M2-PFDoDA	8.908	615.0 -> 570.0	114002	10.00	µg/L	-0.013
M2-PFTeDA	10.017	715.0 -> 670.0	91067	10.00	µg/L	0.000
M8-FOSA	7.147	506.0 -> 78.0	16319	10.00	µg/L	-0.013
M3-PFBS	4.317	302.0 -> 99.0	4628	10.00	µg/L	-0.013
M3-PFHxS	6.218	402.0 -> 99.0	4661	10.00	µg/L	-0.025
M8-PFOS	7.427	507.0 -> 99.0	3826	10.00	µg/L	0.000
M2-4:2FTS	5.221	329.0 -> 309.0	32690	10.00	µg/L	-0.013
M2-6:2FTS	6.860	429.0 -> 409.0	47204	10.00	µg/L	-0.025
M2-8:2FTS	7.967	529.0 -> 509.0	29864	10.00	µg/L	0.000
M3-MeFOSAA	7.609	573.0 -> 419.0	16952	10.00	µg/L	0.000
M3-HFPO-DA	5.595	287.0 -> 169.0	6673	10.00	µg/L	-0.013
M3-MeFOSA	7.513	515.0 -> 169.0	4559	10.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	5.221	329.0 -> 309.0	32690	8.86	µg/L	-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 88.6%		
13C2-6:2FTS	6.860	429.0 -> 409.0	47204	8.22	µg/L	-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 82.2%		
13C2-8:2FTS	7.967	529.0 -> 509.0	29864	7.71	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 77.1%		
13C2-PFDoDA	8.908	615.0 -> 570.0	114002	6.51	µg/L	-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 65.1%		
13C2-PFTeDA	10.017	715.0 -> 670.0	91067	6.85	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 68.5%		
13C3-PFBS	4.317	302.0 -> 99.0	4628	7.70	µg/L	-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 77.0%		
13C3-PFHxS	6.218	402.0 -> 99.0	4661	7.62	µg/L	-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 76.2%		
13C4-PFBA	2.240	217.0 -> 172.0	40907	7.92	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 79.2%		
13C4-PFHpA	6.195	367.0 -> 322.0	69627	8.11	µg/L	-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 81.1%		
d5-EtFOSAA	7.722	589.0 -> 419.0	13936	7.22	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 72.2%		
13C5-PFHxA	5.326	318.0 -> 273.0	79731	8.08	µg/L	-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 80.8%		
13C5-PFPeA	4.062	268.0 -> 223.0	63960	8.04	µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

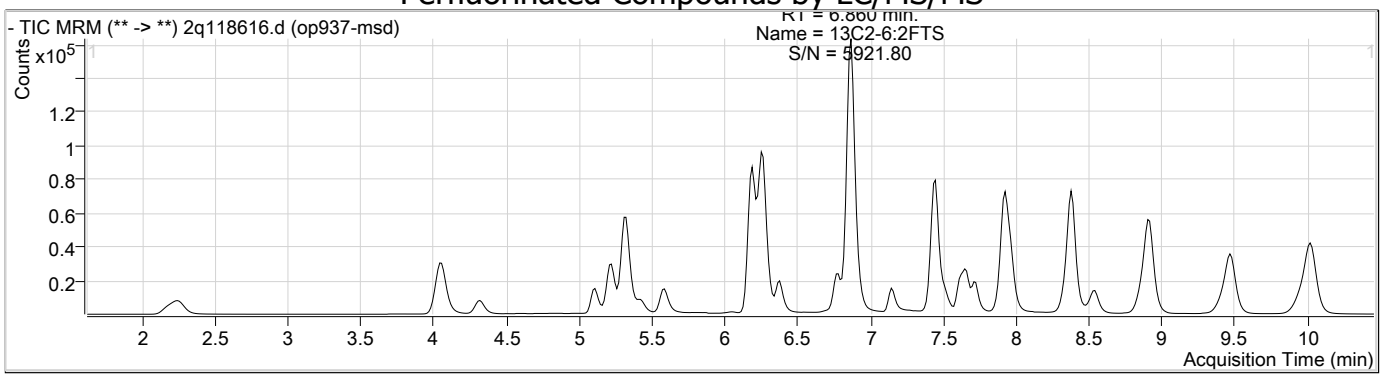
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 80.4%			
13C6-PFDA	7.931	519.0 -> 474.0	76380	7.31	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 73.1%			
13C7-PFUnDA	8.381	570.0 -> 525.0	117916	6.78	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 67.8%			
13C8-FOSA	7.147	506.0 -> 78.0	16319	7.95	µg/L		-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 79.5%			
13C8-PFOA	6.875	421.0 -> 376.0	139033	8.21	µg/L		-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 82.1%			
13C8-PFOS	7.427	507.0 -> 99.0	3826	6.85	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 68.5%			
13C9-PFNA	7.455	472.0 -> 427.0	104599	7.76	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 77.6%			
d3-MeFOSAA	7.609	573.0 -> 419.0	16952	7.41	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 74.1%			
13C3-HFPO-DA	5.595	287.0 -> 169.0	6673	8.03	µg/L		-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 80.3%			
d3-MeFOSA	7.513	515.0 -> 169.0	4559	6.35	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 63.5%			
Target Compounds							QValue
4:2FTS	5.224	327.0 -> 307.0	66273	19.96	µg/L		99
		327.0 -> 81.0	24322				
6:2FTS	6.861	427.0 -> 407.0	89258	21.68	µg/L		100
		427.0 -> 81.0	26554				
8:2FTS	7.968	527.0 -> 507.0	54109	21.08	µg/L		100
		527.0 -> 81.0	14170				
EtFOSAA	7.723	584.0 -> 419.0	26379	21.10	µg/L		98
		584.0 -> 483.0	15965				
FOSA	7.148	498.0 -> 78.0	29472	20.58	µg/L		99
		498.0 -> 478.0	1191				
MeFOSAA	7.610	570.0 -> 419.0	29710	20.72	µg/L		99
		570.0 -> 512.0	10708				
PFBA	2.233	213.0 -> 169.0	27136	21.07	µg/L		100
PFBS	4.319	299.0 -> 80.0	24588	21.03	µg/L	m	100
		299.0 -> 99.0	9346				
PFDA	7.932	513.0 -> 469.0	155631	20.58	µg/L		99
		513.0 -> 219.0	24408				
PFDoDA	8.909	613.0 -> 569.0	181604	20.40	µg/L		100
		613.0 -> 319.0	23320				
PFDS	8.316	599.0 -> 80.0	7100	19.43	µg/L		98
		599.0 -> 99.0	3738				
PFHpA	6.196	363.0 -> 319.0	236156	20.51	µg/L		99
		363.0 -> 169.0	39974				
PFHpS	6.871	449.0 -> 80.0	15588	20.26	µg/L		100
		449.0 -> 99.0	8681				
PFHxA	5.327	313.0 -> 269.0	167342	20.40	µg/L		100
		313.0 -> 119.0	6770				
PFHxS	6.219	399.0 -> 80.0	22442	21.99	µg/L	m	99
		399.0 -> 99.0	11672				
PFNA	7.455	463.0 -> 419.0	173760	20.69	µg/L		100
		463.0 -> 219.0	35360				
PFNS	7.890	549.0 -> 80.0	7921	19.65	µg/L		100
		549.0 -> 99.0	4415				
PFOA	6.875	413.0 -> 369.0	298160	20.08	µg/L		99
		413.0 -> 169.0	54736				
PFOS	7.428	499.0 -> 80.0	12737	21.24	µg/L	m	98

Perfluorinated Compounds by LC/MS/MS

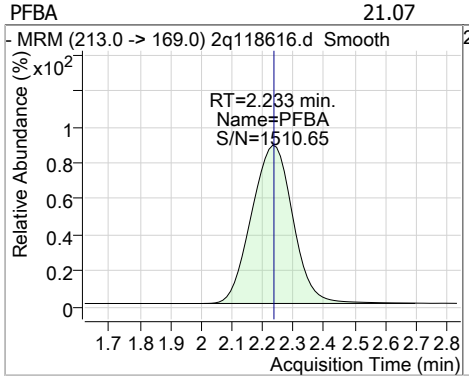
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		499.0 -> 99.0	6357			
PFPeA	4.064	263.0 -> 219.0	102830	20.40	µg/L	100
PFPeS	5.420	349.0 -> 80.0	17833	21.08	µg/L	98
		349.0 -> 99.0	7827			
PFTeDA	10.022	713.0 -> 669.0	194752	19.65	µg/L	100
		713.0 -> 219.0	12023			
PFTrDA	9.474	663.0 -> 619.0	209016	20.57	µg/L	100
		663.0 -> 369.0	14051			
PFUnDA	8.381	563.0 -> 519.0	179752	20.43	µg/L	100
		563.0 -> 269.0	28755			
11Cl-PF3OUdS	8.541	631.0 -> 451.0	48960	19.73	µg/L	98
		633.0 -> 453.0	15253			
9Cl-PF3ONS	7.663	531.0 -> 351.0	61358	18.90	µg/L	98
		533.0 -> 353.0	18356			
ADONA	6.271	377.0 -> 251.0	285959	19.39	µg/L	99
		377.0 -> 85.0	73865			
HFPO-DA	5.589	329.0 -> 169.0	42062	20.33	µg/L	99
		285.0 -> 169.0	12410			
MeFOSA	7.527	512.0 -> 169.0	9026	22.28	µg/L	97
		512.0 -> 219.0	7766			
4-PFECHS	6.780	461.0 -> 381.0	73135	18.52	µg/L	99
		461.0 -> 99.0	24807			
FBSA	5.116	298.0 -> 78.0	51031	20.91	µg/L	99
		298.0 -> 64.0	5198			
FHxSA	6.383	398.0 -> 78.0	53735	22.27	µg/L	99
		398.0 -> 64.0	5948			

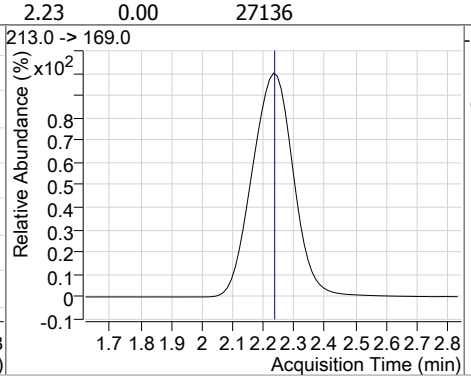
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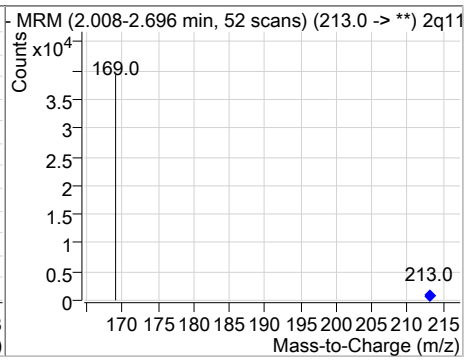
Perfluorinated Compounds by LC/MS/MS



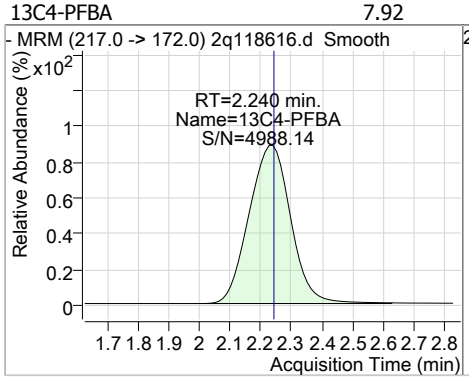
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	21.07	2.23	0.00	27136				

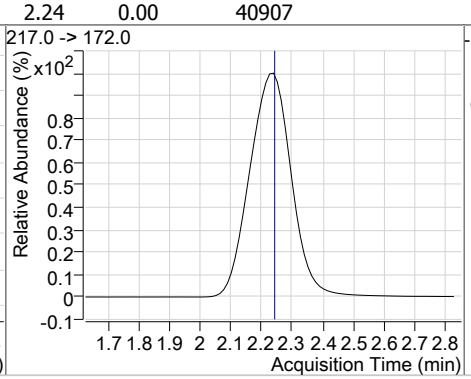


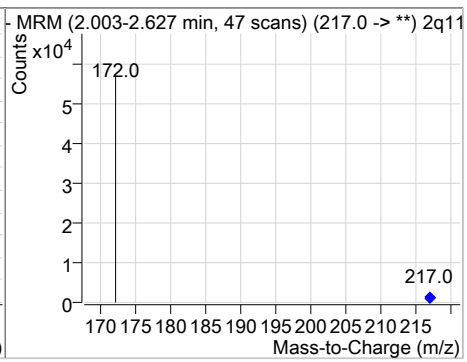




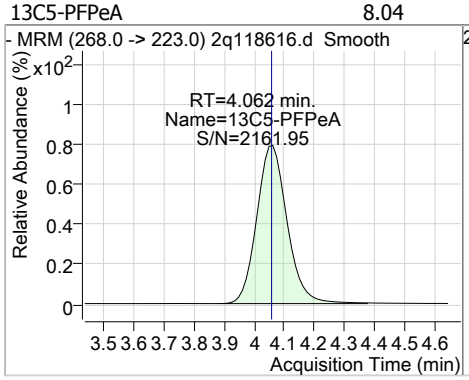
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	7.92	2.24	0.00	40907				

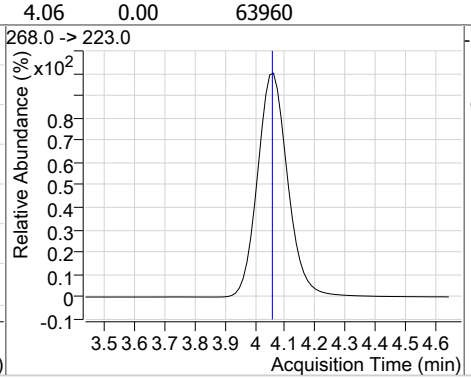


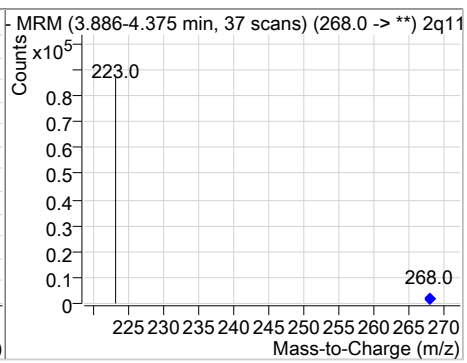




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	8.04	4.06	0.00	63960				

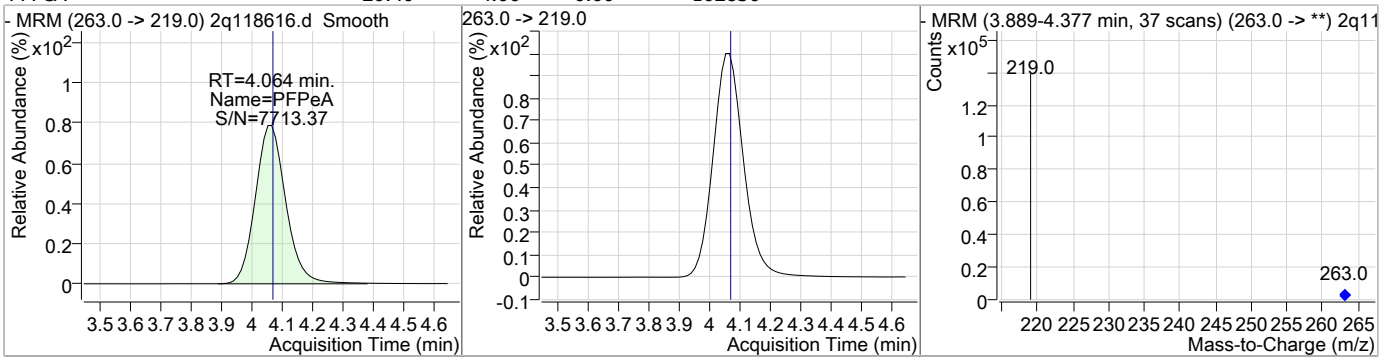




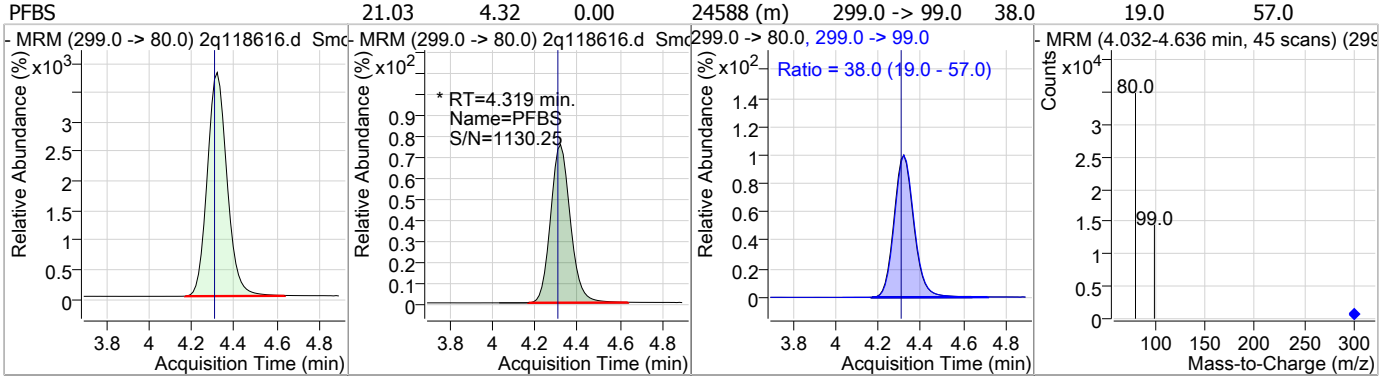


Perfluorinated Compounds by LC/MS/MS

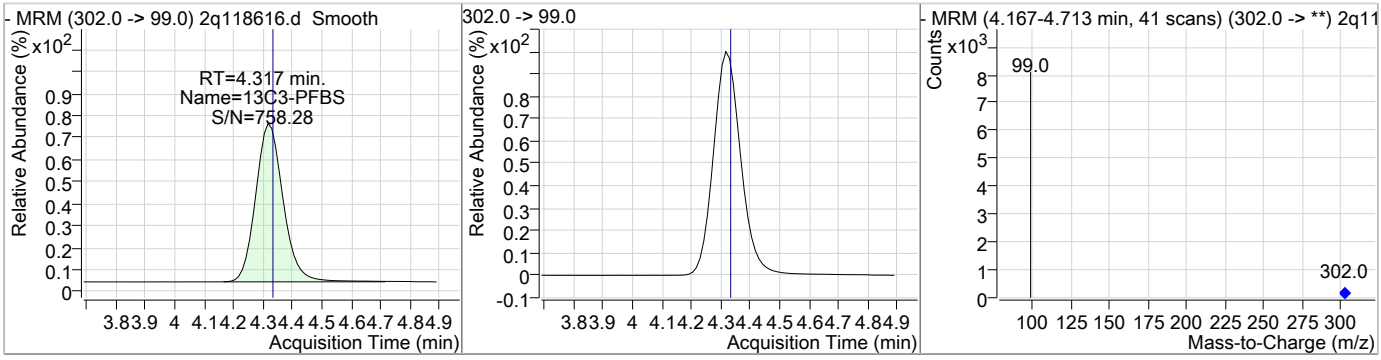
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	20.40	4.06	0.00	102830				



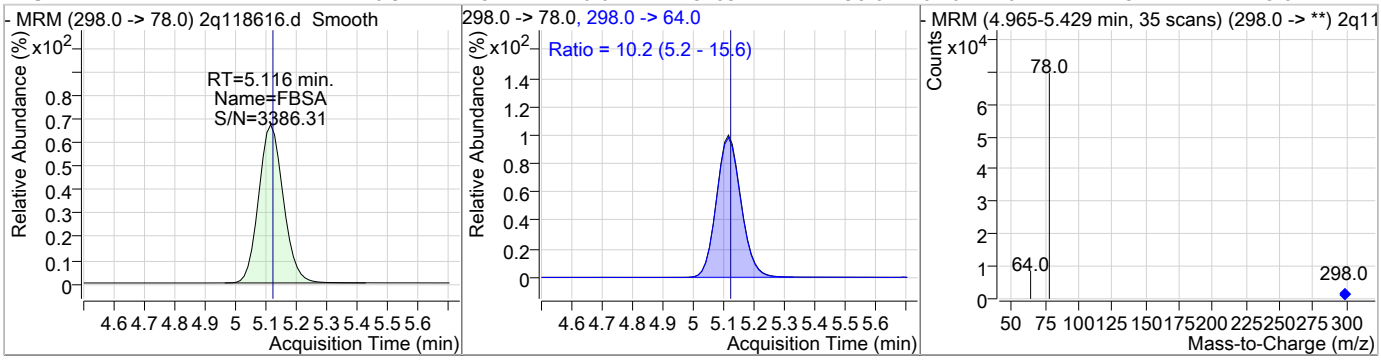
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	21.03	4.32	0.00	24588 (m)	299.0 -> 99.0	38.0	19.0	57.0



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	7.70	4.32	-0.01	4628				

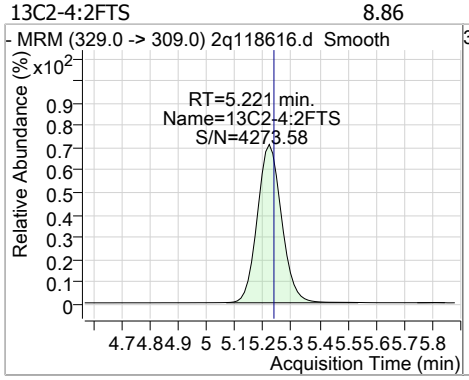


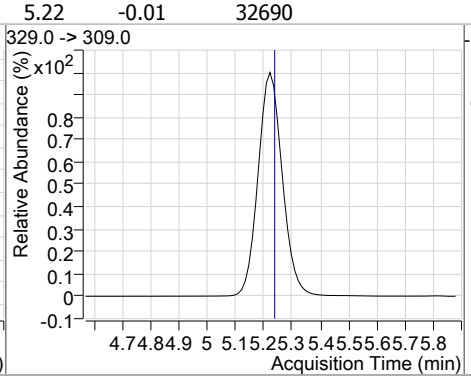
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	20.91	5.12	-0.01	51031	298.0 -> 64.0	10.2	5.2	15.6

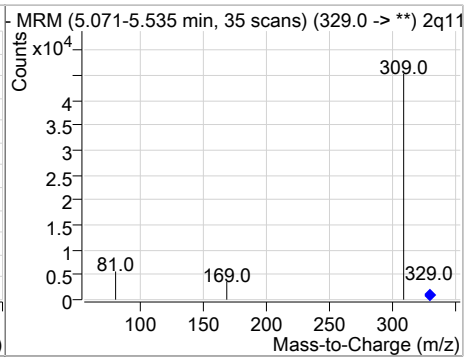


Perfluorinated Compounds by LC/MS/MS

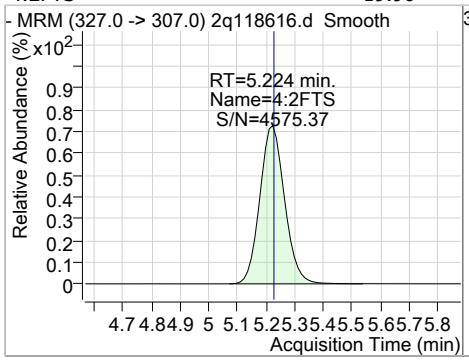
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	8.86	5.22	-0.01	32690				

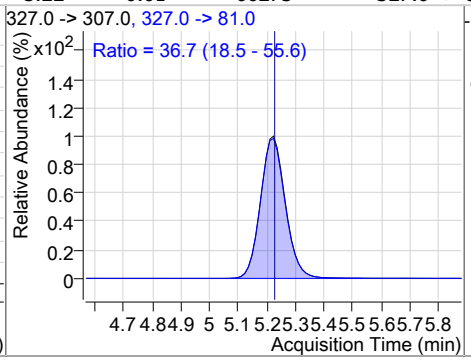


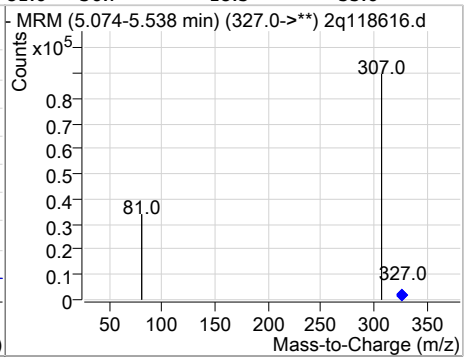




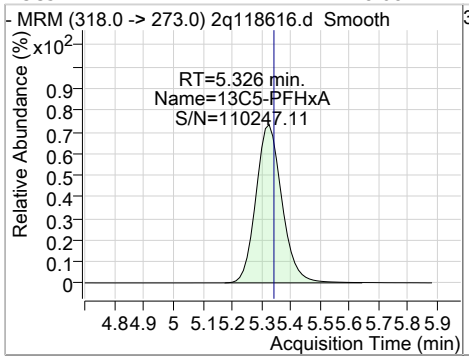
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	19.96	5.22	-0.01	66273	327.0 -> 81.0	36.7	18.5	55.6

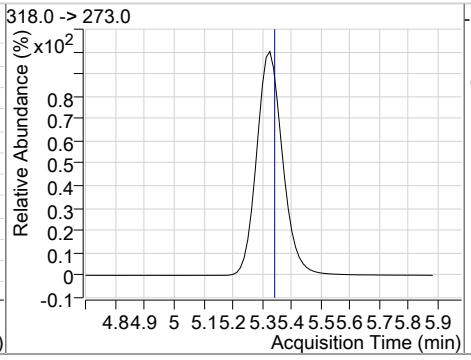


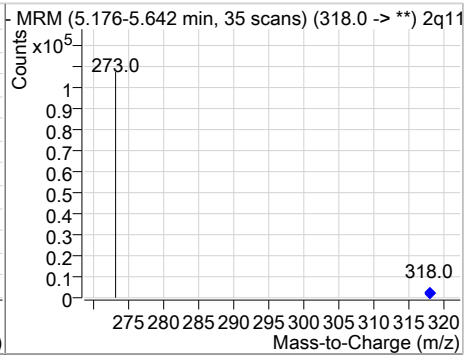




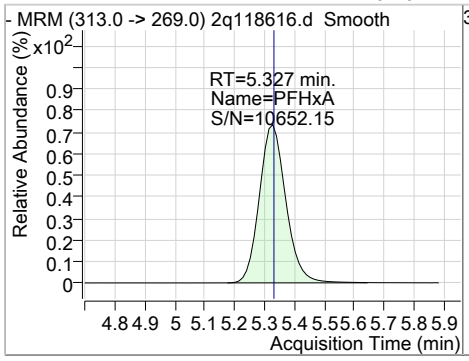
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	8.08	5.33	-0.01	79731				

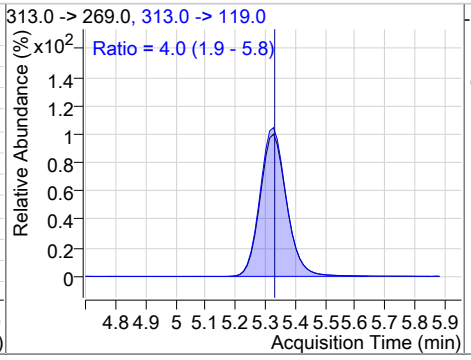


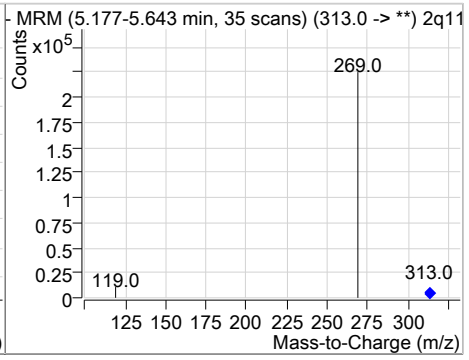




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	20.40	5.33	-0.01	167342	313.0 -> 119.0	4.0	1.9	5.8

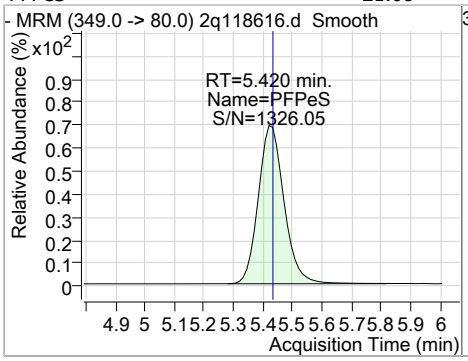


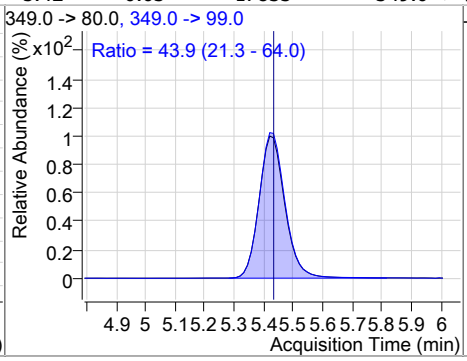


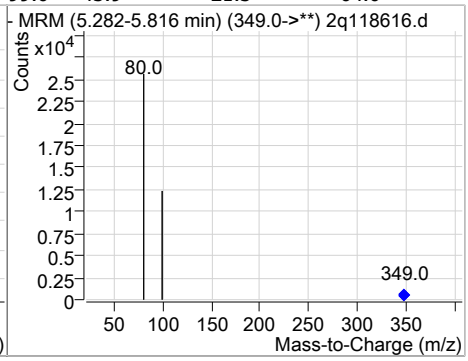


Perfluorinated Compounds by LC/MS/MS

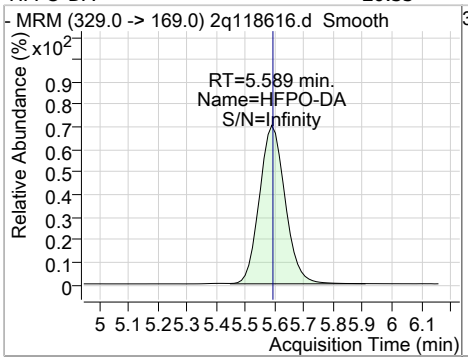
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	21.08	5.42	-0.03	17833	349.0 -> 99.0	43.9	21.3	64.0

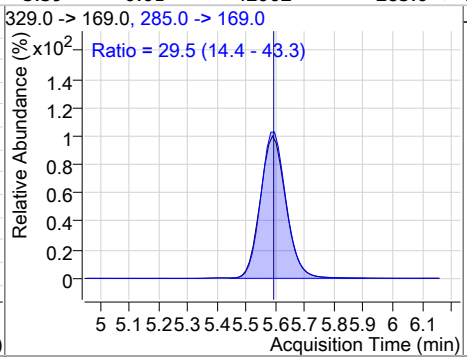


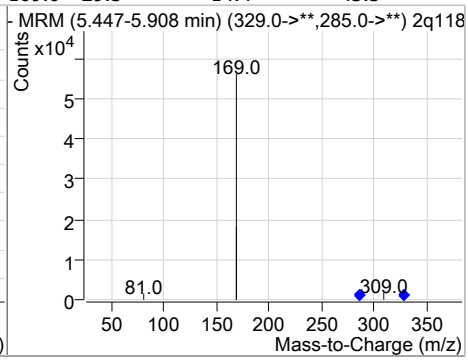




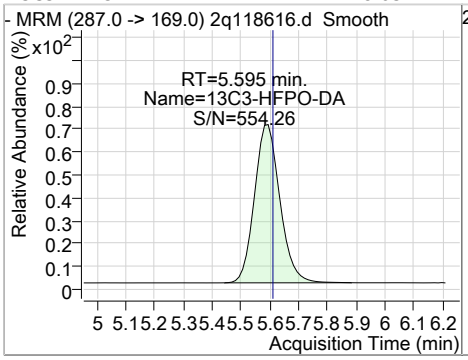
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	20.33	5.59	-0.01	42062	285.0 -> 169.0	29.5	14.4	43.3

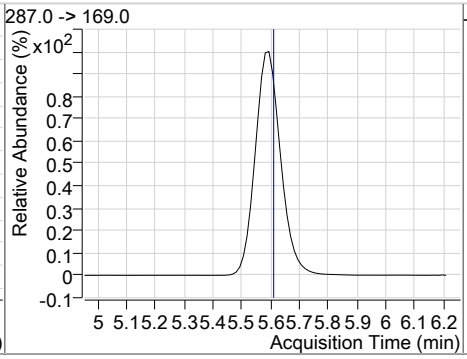


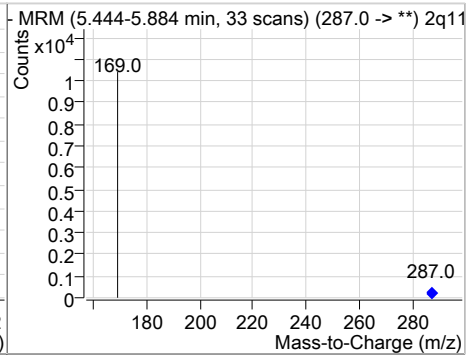




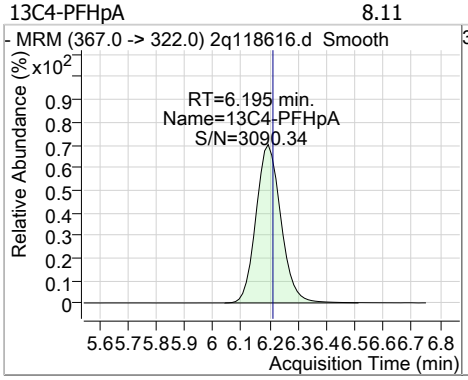
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	8.03	5.59	-0.01	6673				

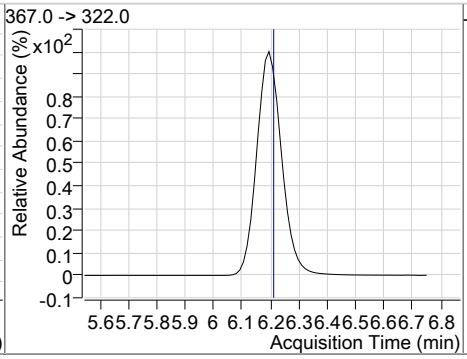


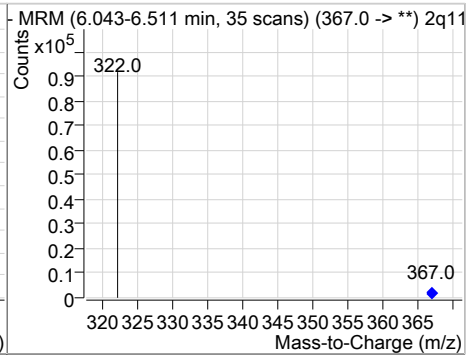




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	8.11	6.20	-0.01	69627				

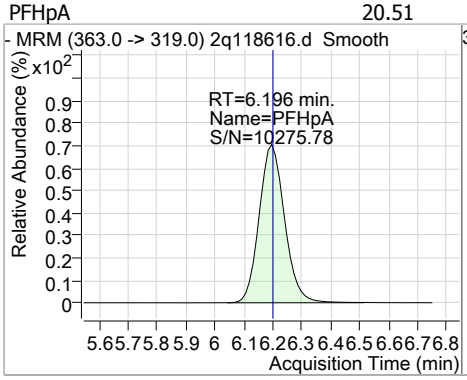


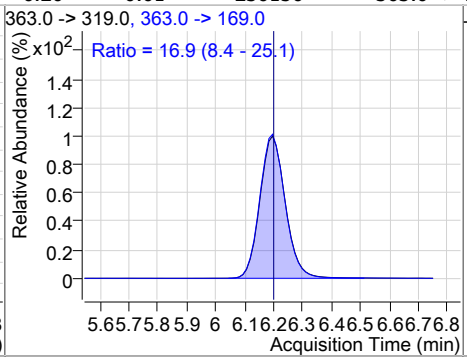


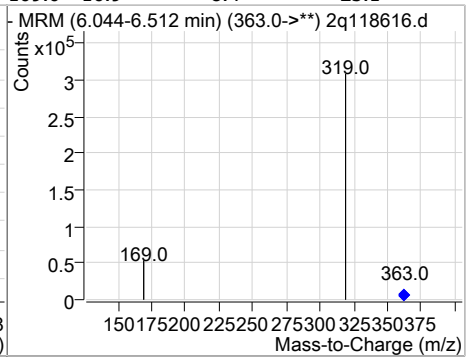


Perfluorinated Compounds by LC/MS/MS

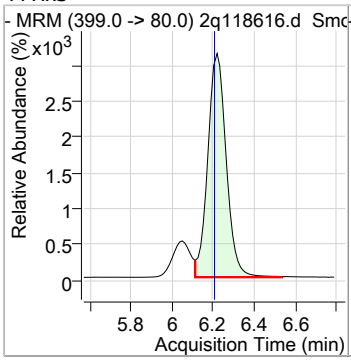
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	20.51	6.20	-0.01	236156	363.0 -> 169.0	16.9	8.4	25.1

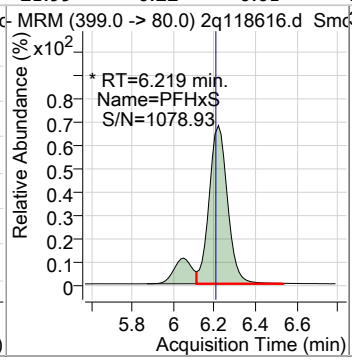


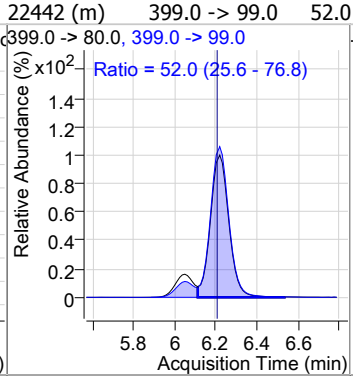


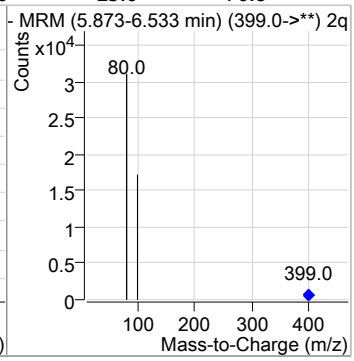


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	21.99	6.22	-0.01	22442 (m)	399.0 -> 99.0	52.0	25.6	76.8

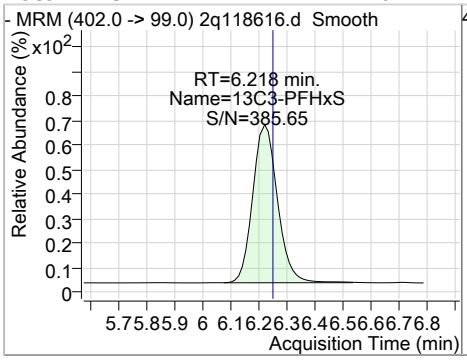


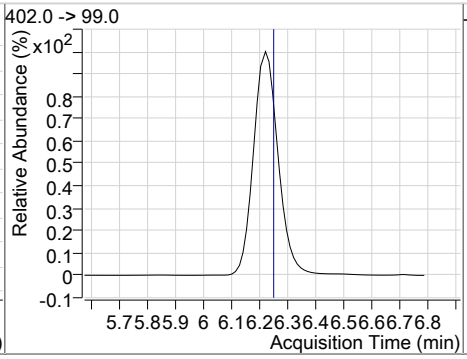


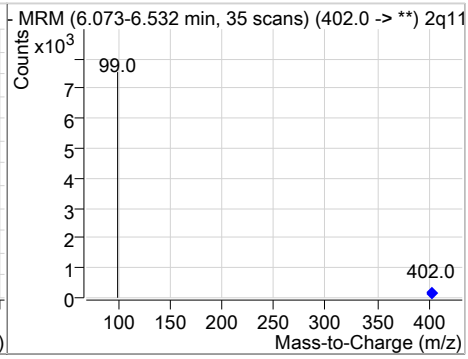




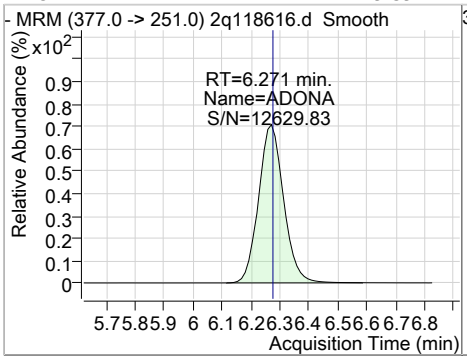
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	7.62	6.22	-0.03	4661				

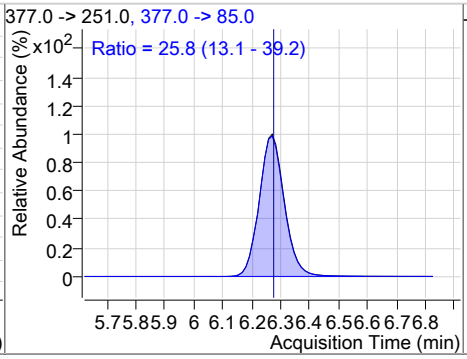


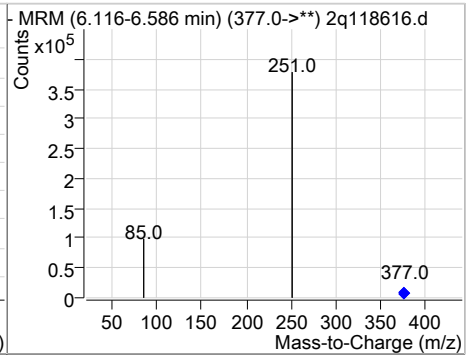




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	19.39	6.27	-0.01	285959	377.0 -> 85.0	25.8	13.1	39.2

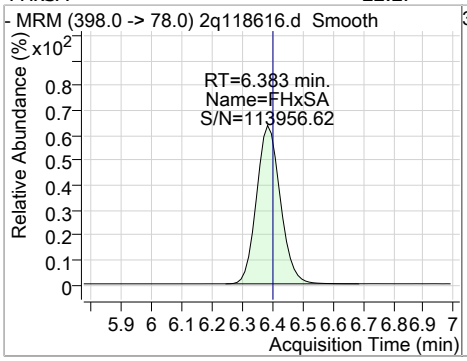


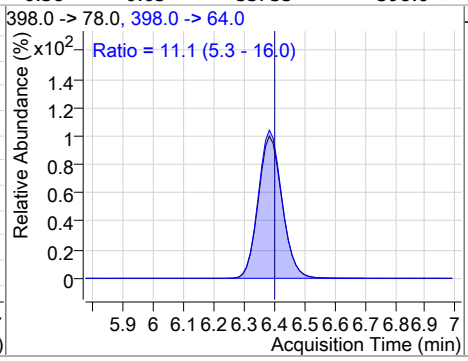


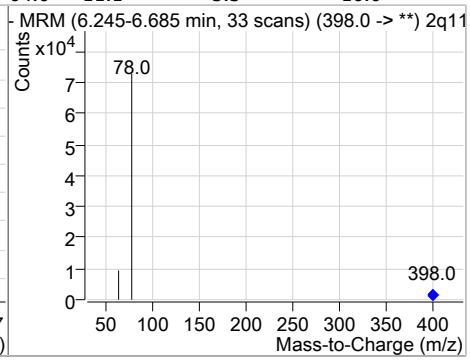


Perfluorinated Compounds by LC/MS/MS

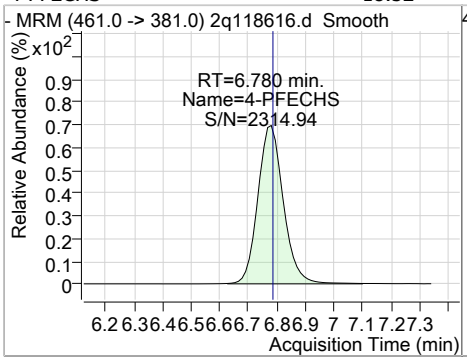
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	22.27	6.38	-0.03	53735	398.0 -> 64.0	11.1	5.3	16.0

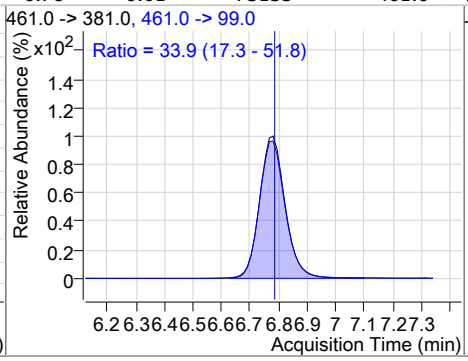


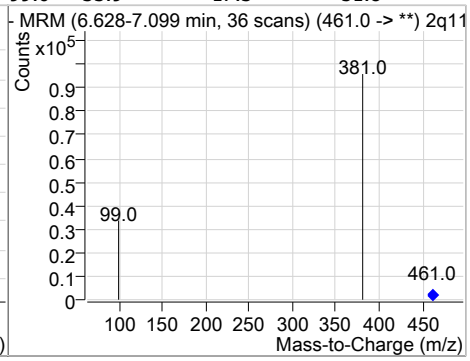




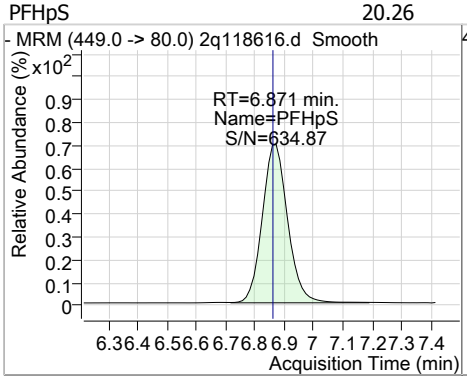
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS	18.52	6.78	-0.01	73135	461.0 -> 99.0	33.9	17.3	51.8

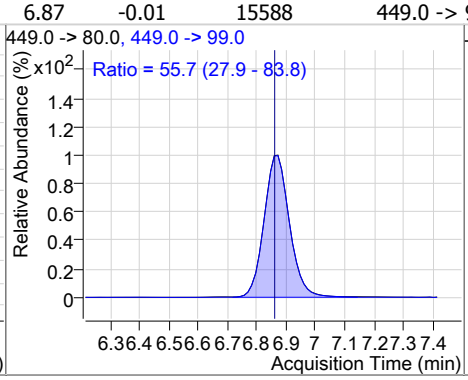


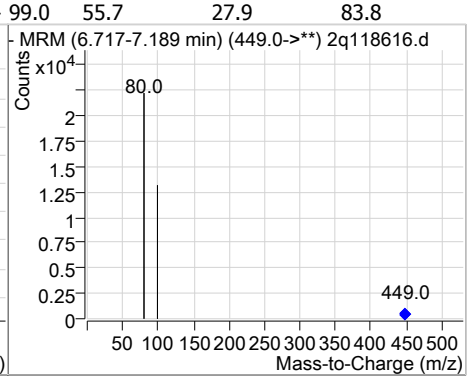




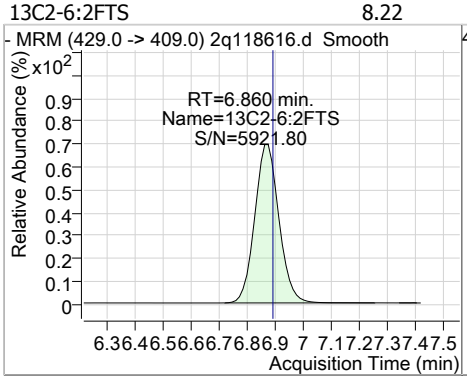
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	20.26	6.87	-0.01	15588	449.0 -> 99.0	55.7	27.9	83.8

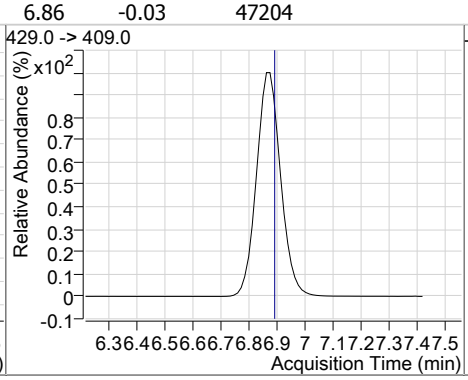


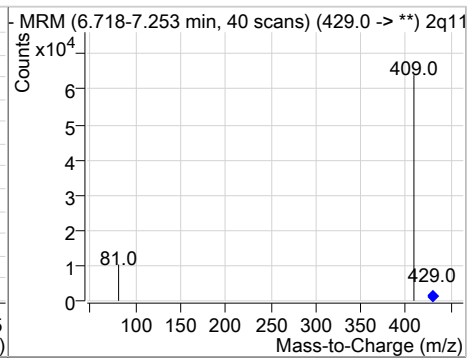




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	8.22	6.86	-0.03	47204				

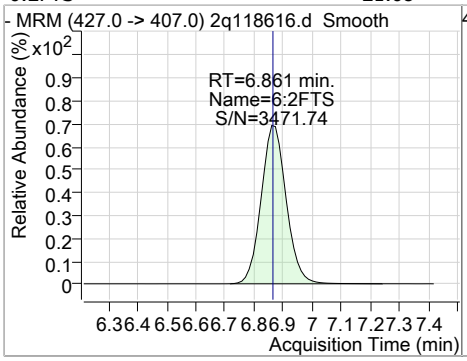


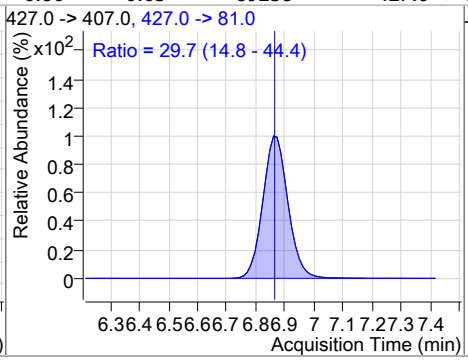


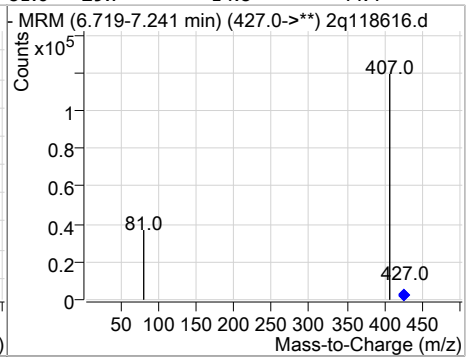


Perfluorinated Compounds by LC/MS/MS

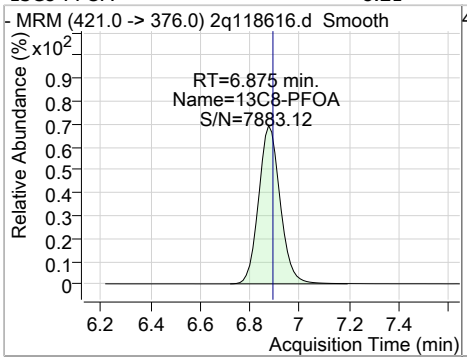
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	21.68	6.86	-0.03	89258	427.0 -> 81.0	29.7	14.8	44.4

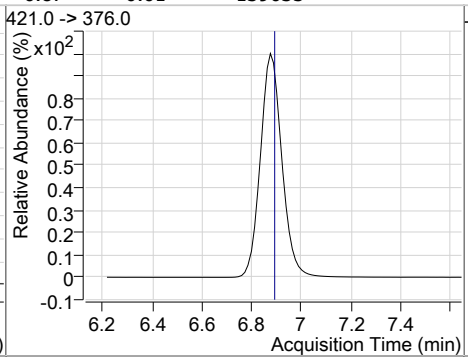


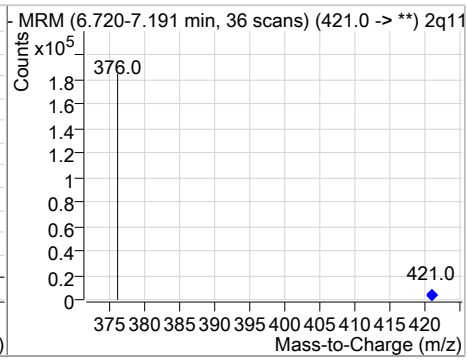




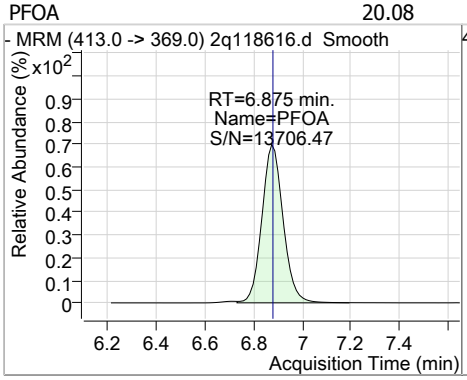
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	8.21	6.87	-0.01	139033				

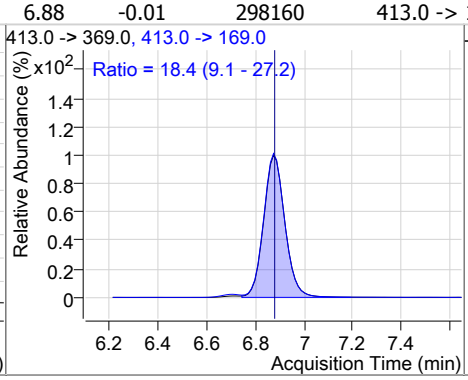


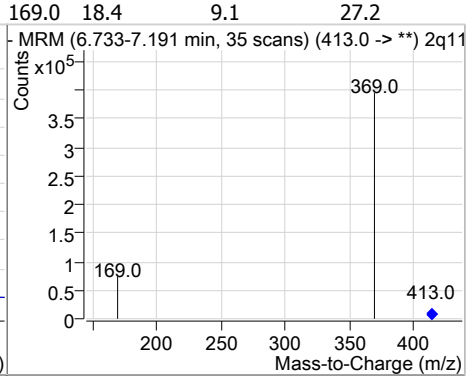




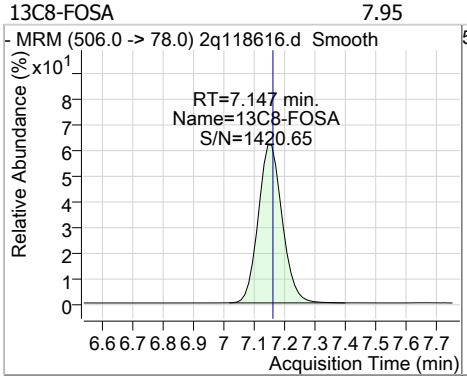
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	20.08	6.88	-0.01	298160	413.0 -> 169.0	18.4	9.1	27.2

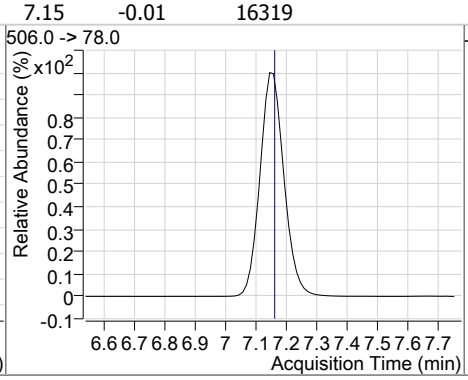


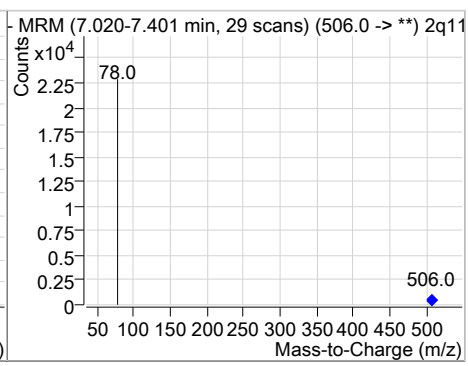




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	7.95	7.15	-0.01	16319				

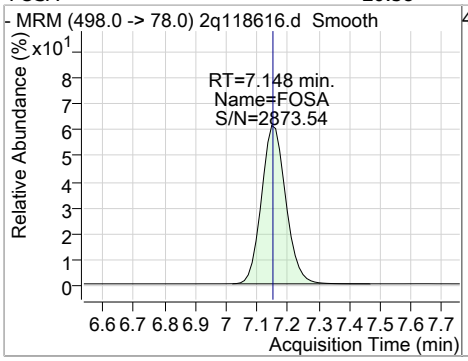


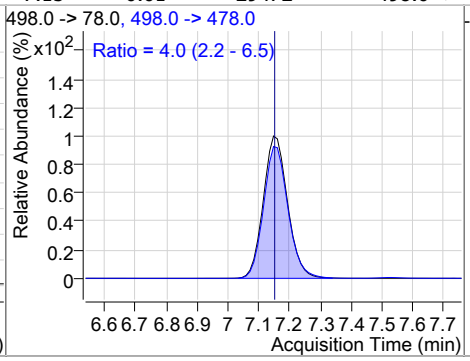


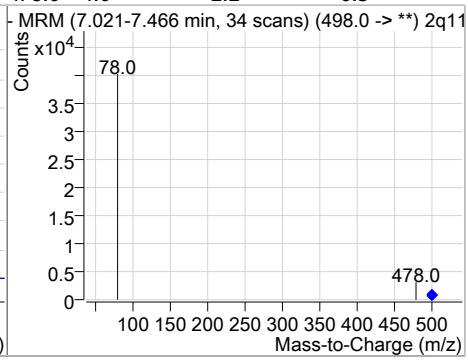


Perfluorinated Compounds by LC/MS/MS

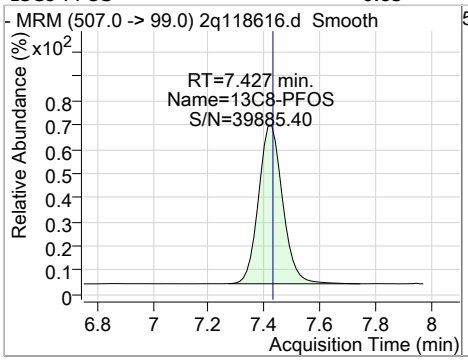
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	20.58	7.15	-0.01	29472	498.0 -> 478.0	4.0	2.2	6.5

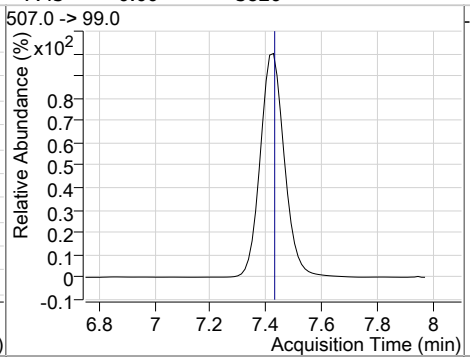


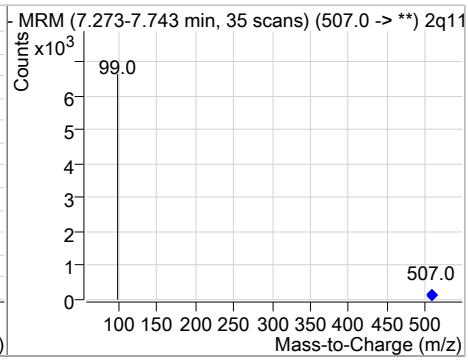




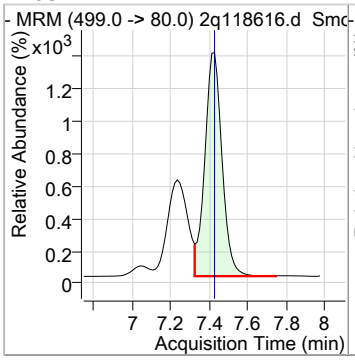
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	6.85	7.43	0.00	3826				

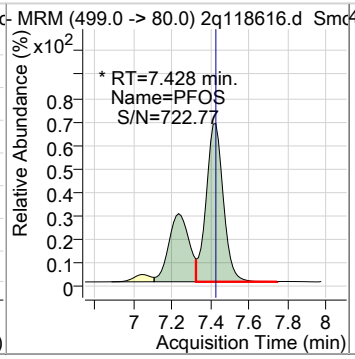


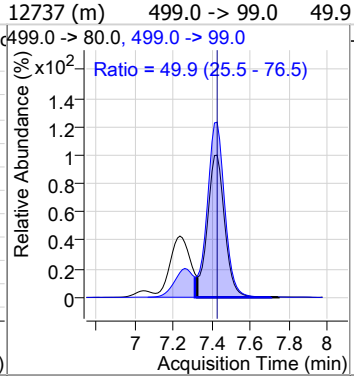


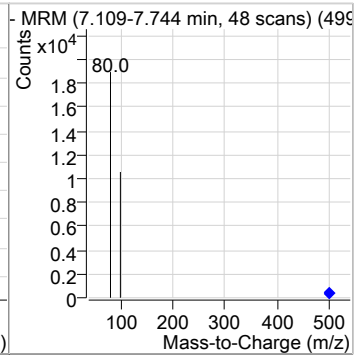


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	21.24	7.43	0.00	12737 (m)	499.0 -> 99.0	49.9	25.5	76.5

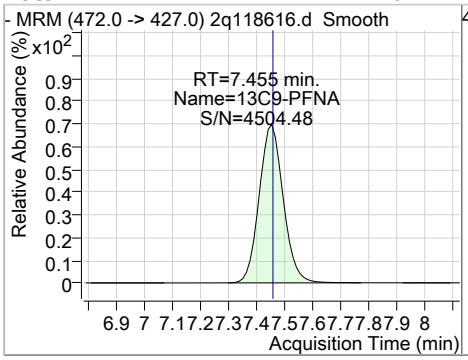


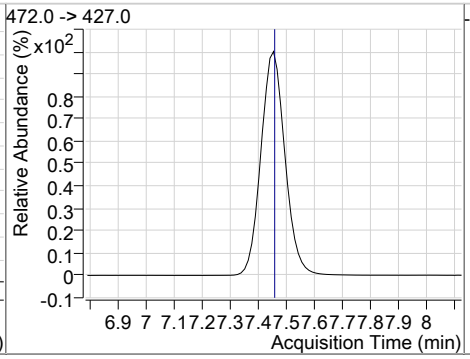


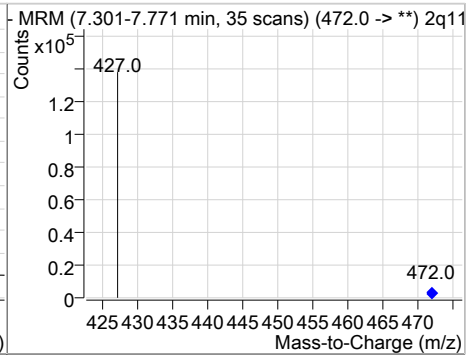




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	7.76	7.45	0.00	104599				

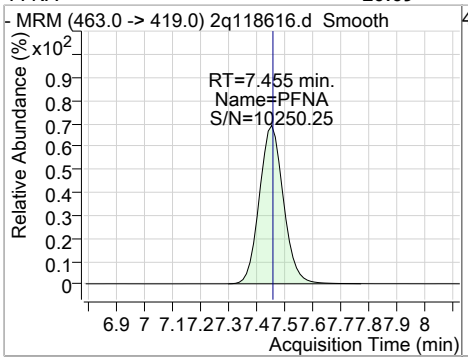


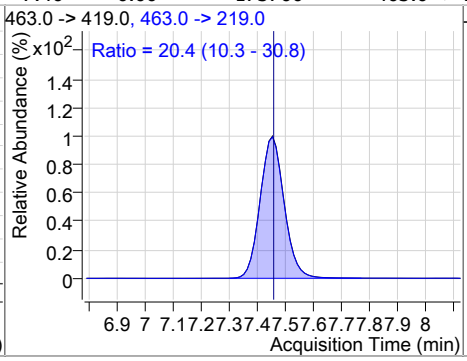


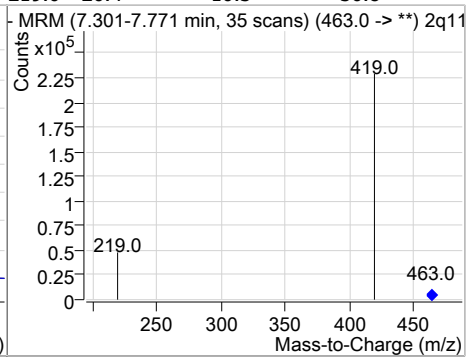


Perfluorinated Compounds by LC/MS/MS

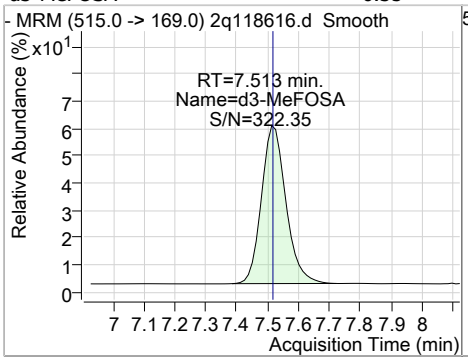
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	20.69	7.46	0.00	173760	463.0 -> 219.0	20.4	10.3	30.8

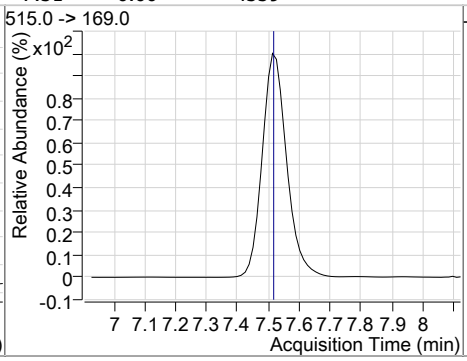


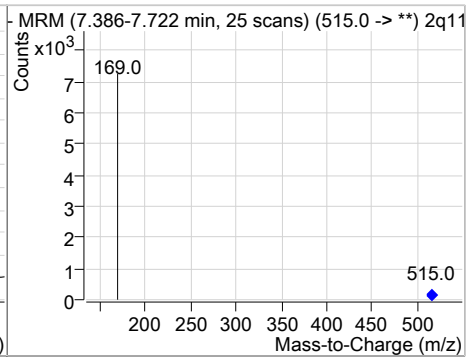




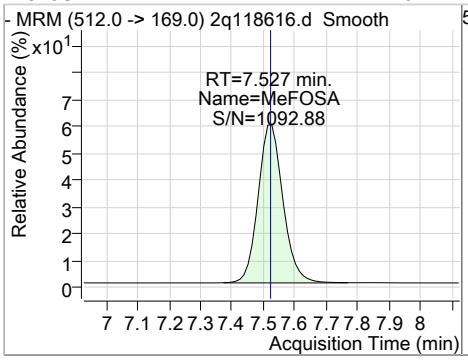
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	6.35	7.51	0.00	4559				

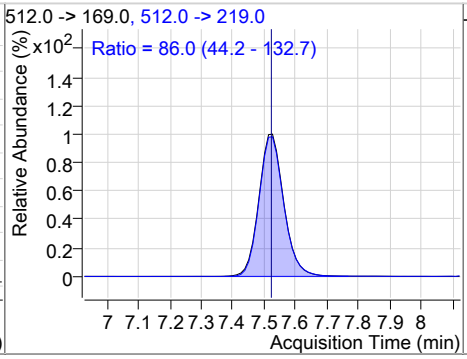


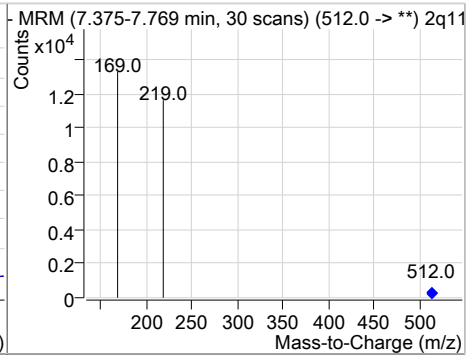




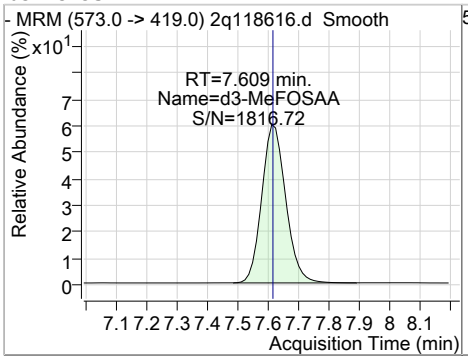
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	22.28	7.53	0.00	9026	512.0 -> 219.0	86.0	44.2	132.7

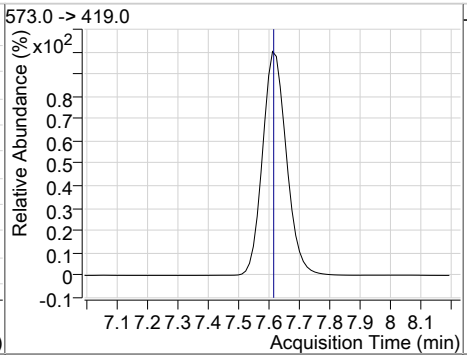


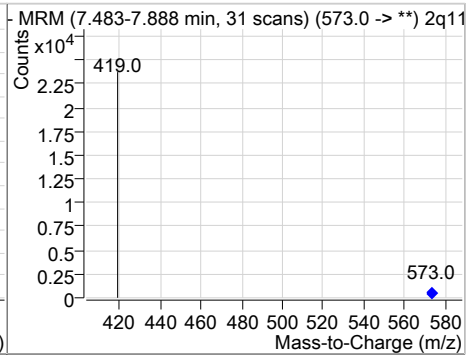




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	7.41	7.61	0.00	16952				

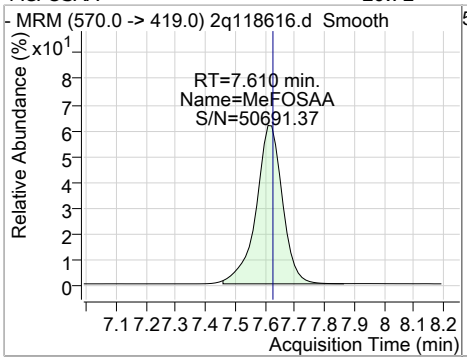


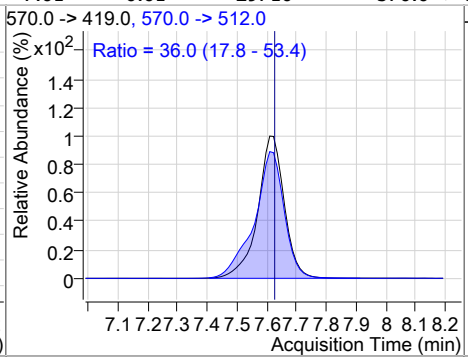


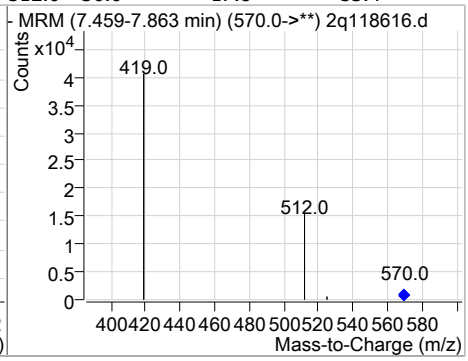


Perfluorinated Compounds by LC/MS/MS

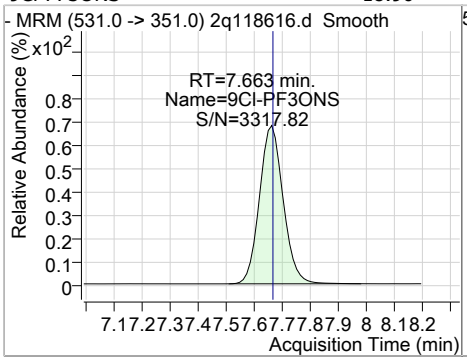
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	20.72	7.61	-0.01	29710	570.0 -> 512.0	36.0	17.8	53.4

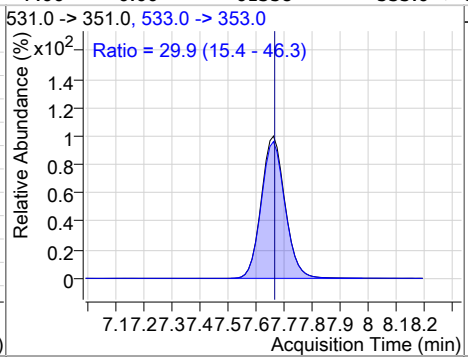


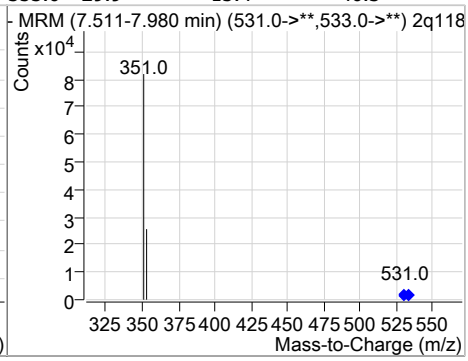




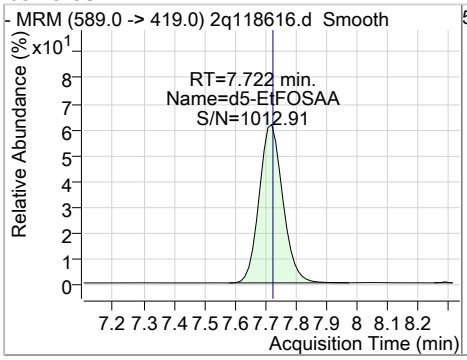
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	18.90	7.66	0.00	61358	533.0 -> 353.0	29.9	15.4	46.3

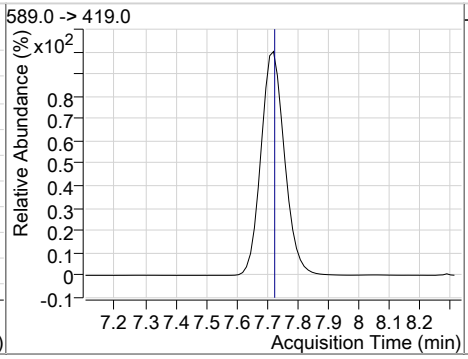


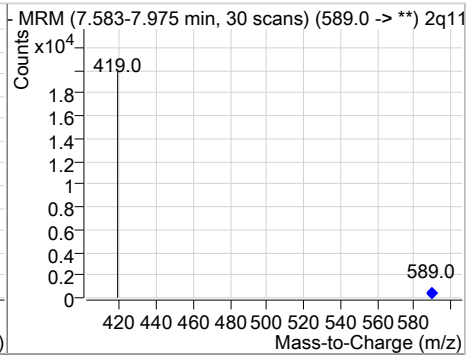




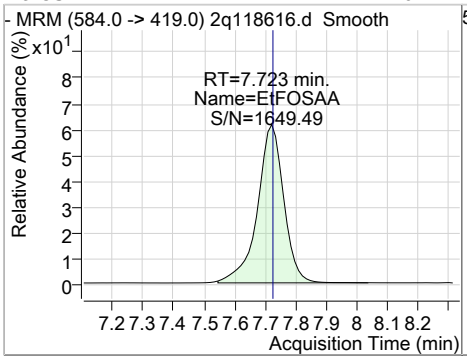
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	7.22	7.72	0.00	13936				

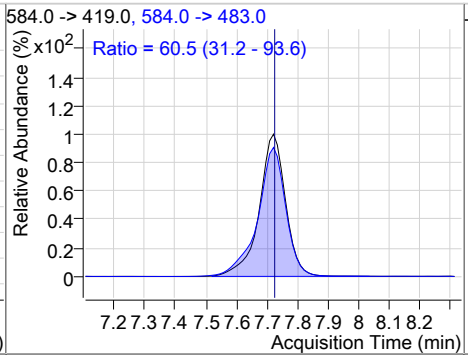


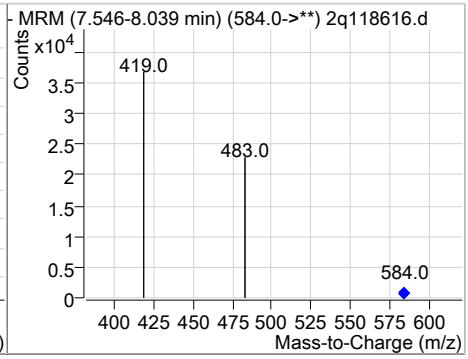




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	21.10	7.72	0.00	26379	584.0 -> 483.0	60.5	31.2	93.6

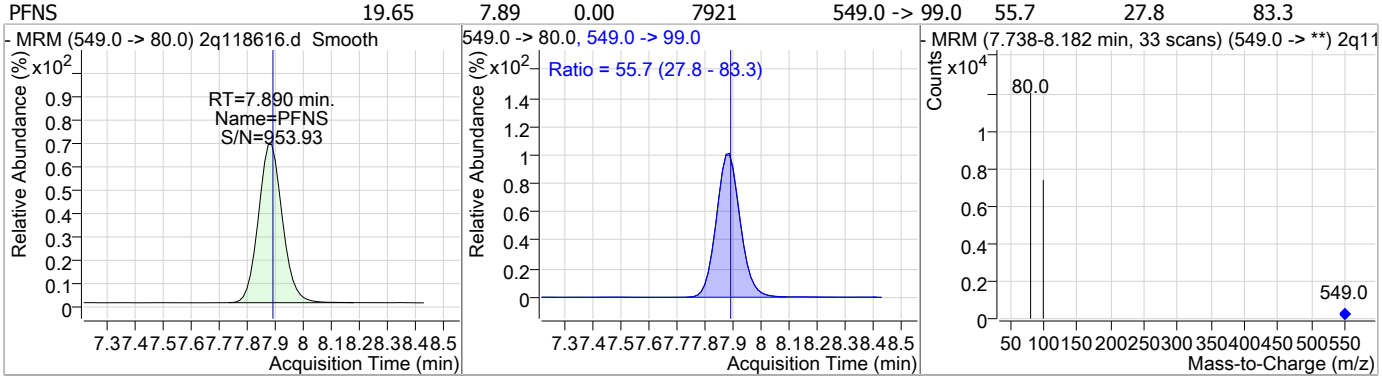




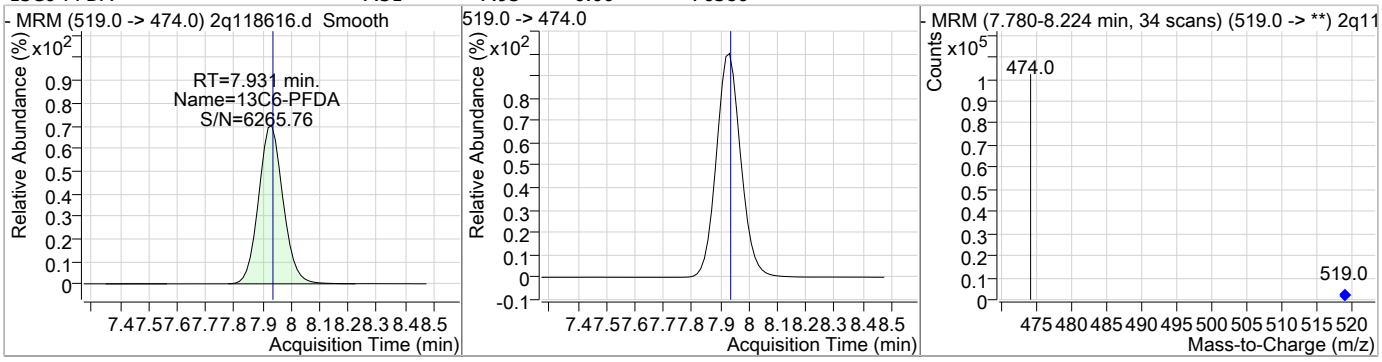


Perfluorinated Compounds by LC/MS/MS

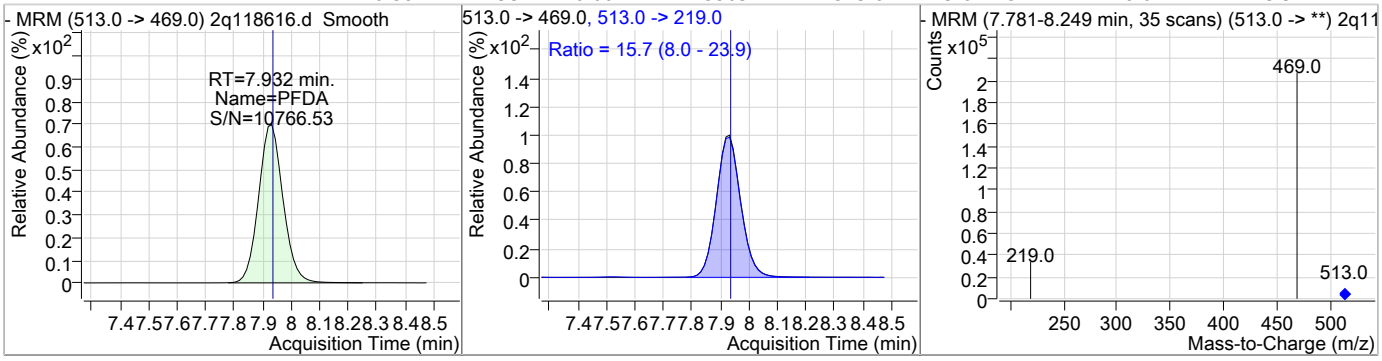
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	19.65	7.89	0.00	7921	549.0 -> 99.0	55.7	27.8	83.3



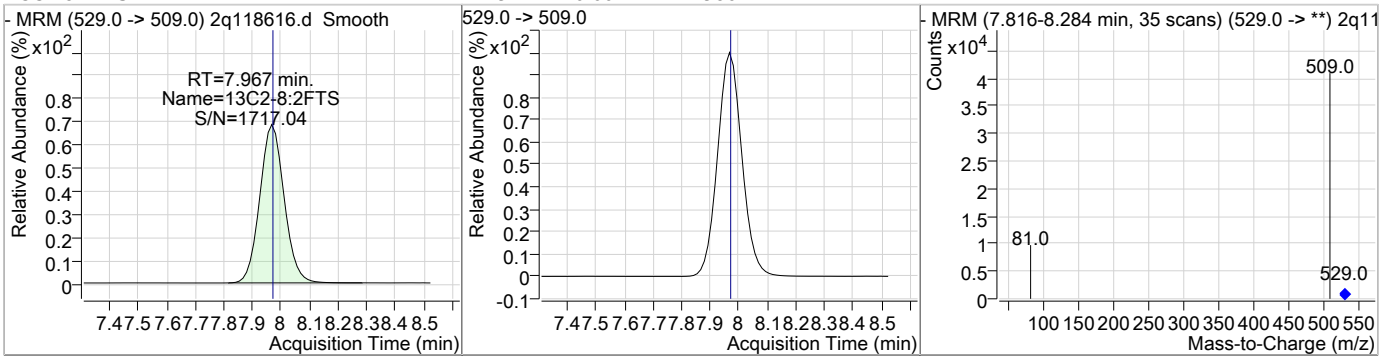
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	7.31	7.93	0.00	76380				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	20.58	7.93	0.00	155631	513.0 -> 219.0	15.7	8.0	23.9

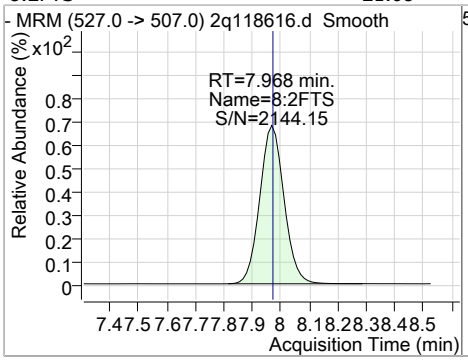


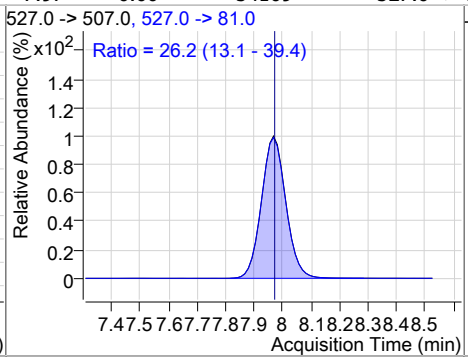
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	7.71	7.97	0.00	29864				

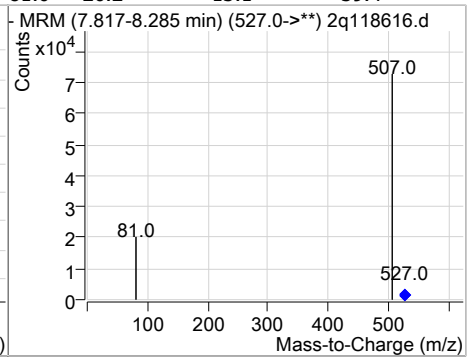


Perfluorinated Compounds by LC/MS/MS

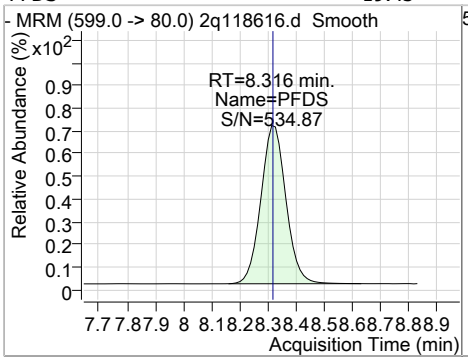
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	21.08	7.97	0.00	54109	527.0 -> 81.0	26.2	13.1	39.4

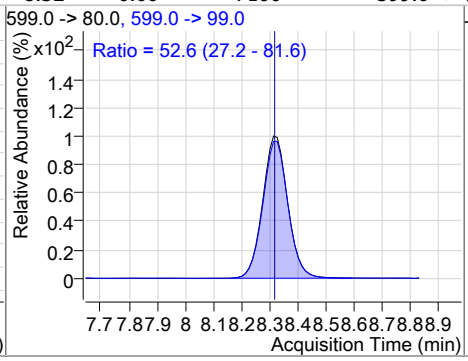


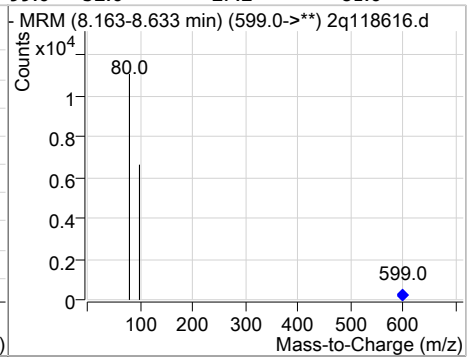




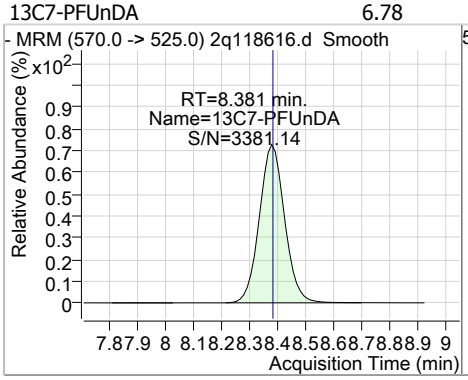
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	19.43	8.32	0.00	7100	599.0 -> 99.0	52.6	27.2	81.6

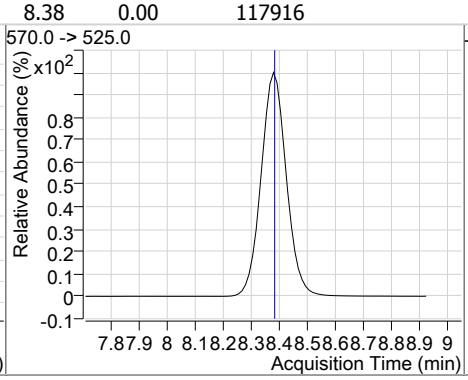


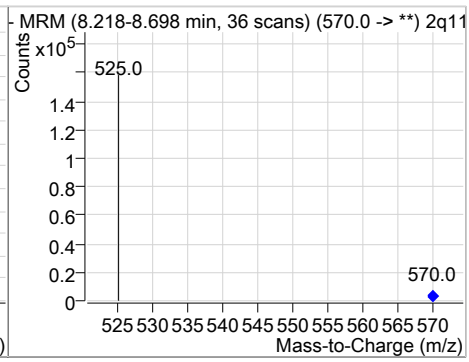




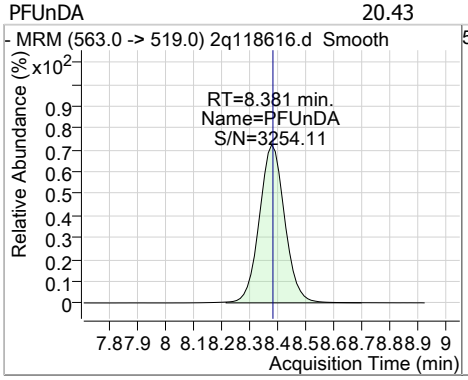
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	6.78	8.38	0.00	117916				

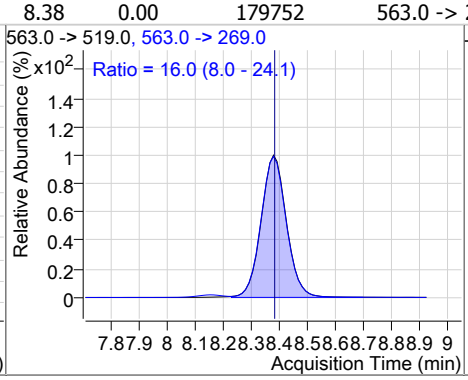


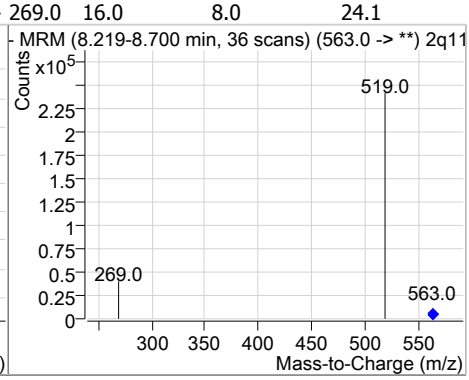




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	20.43	8.38	0.00	179752	563.0 -> 269.0	16.0	8.0	24.1

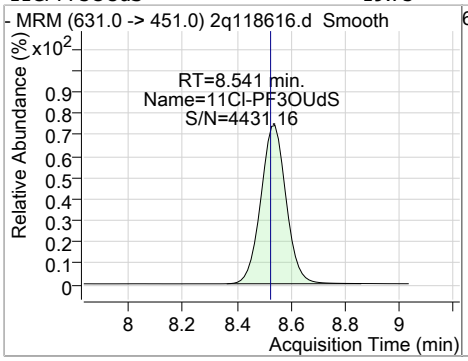


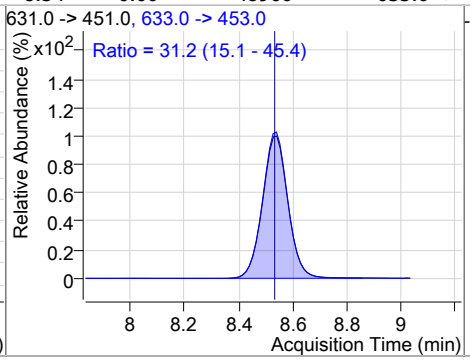


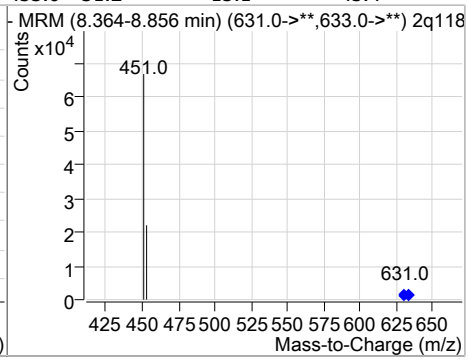


Perfluorinated Compounds by LC/MS/MS

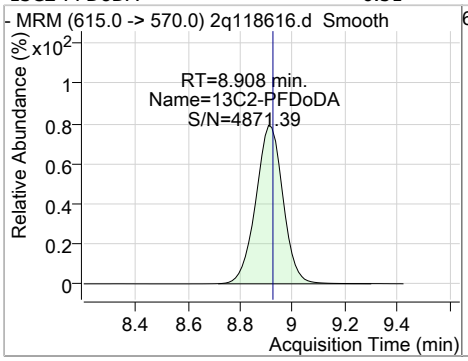
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	19.73	8.54	0.00	48960	633.0 -> 453.0	31.2	15.1	45.4

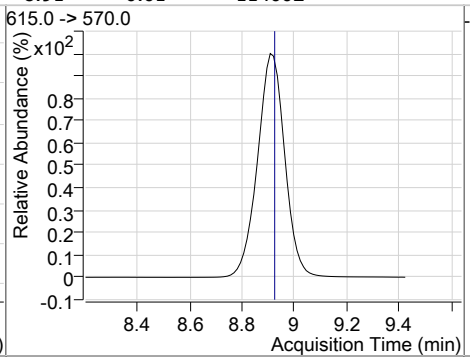


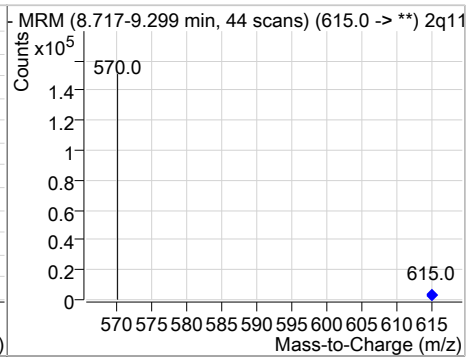




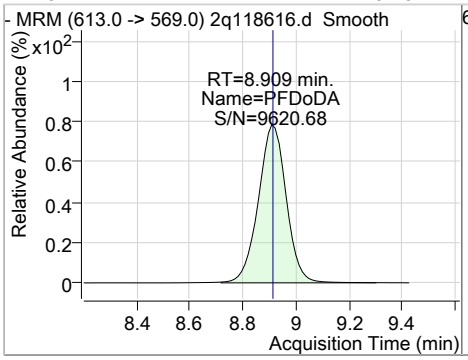
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	6.51	8.91	-0.01	114002				

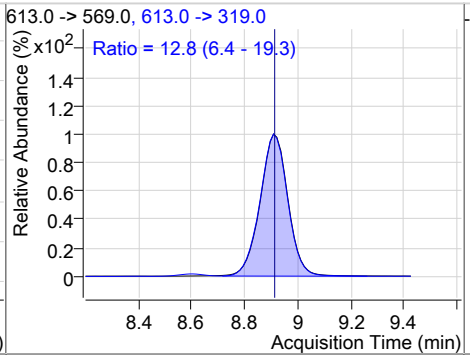


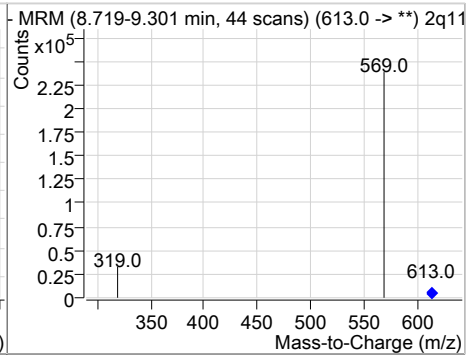




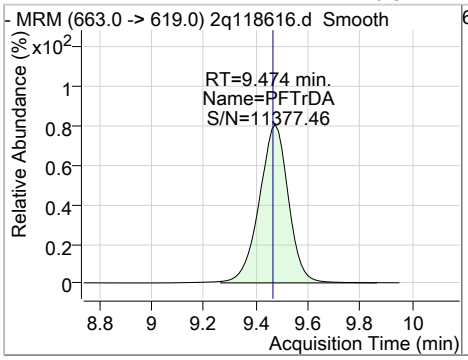
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	20.40	8.91	-0.01	181604	613.0 -> 319.0	12.8	6.4	19.3

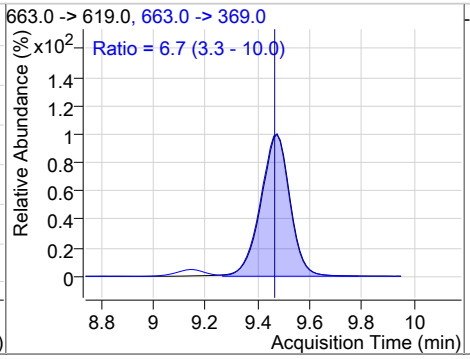


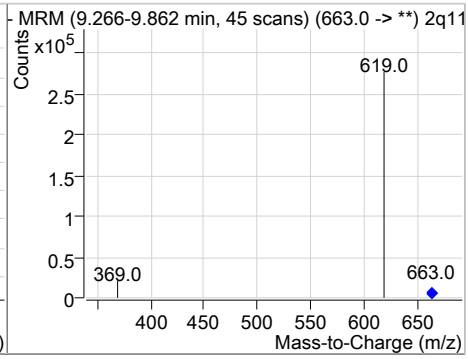




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	20.57	9.47	0.00	209016	663.0 -> 369.0	6.7	3.3	10.0

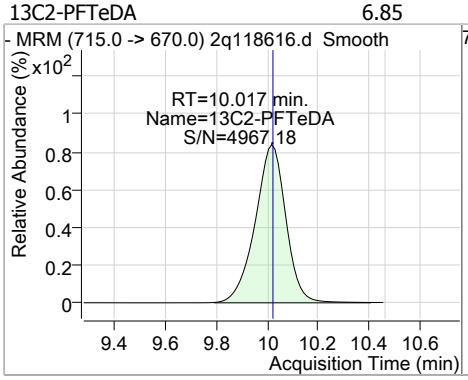


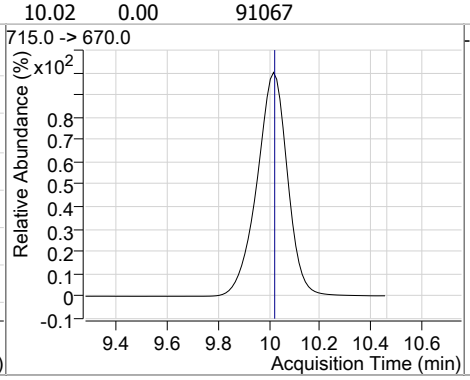


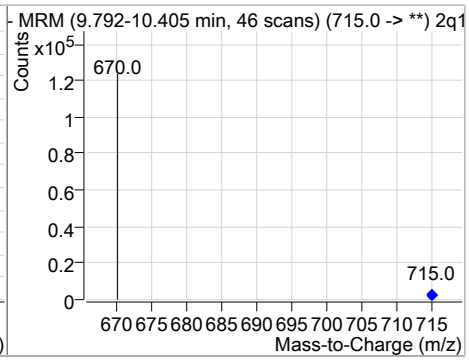


Perfluorinated Compounds by LC/MS/MS

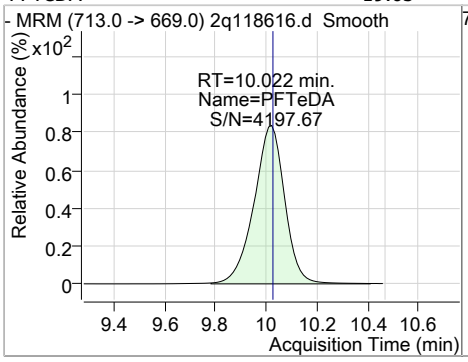
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	6.85	10.02	0.00	91067				

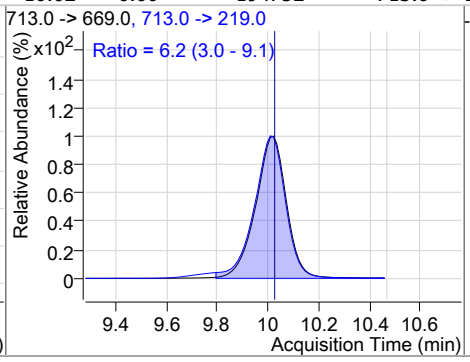


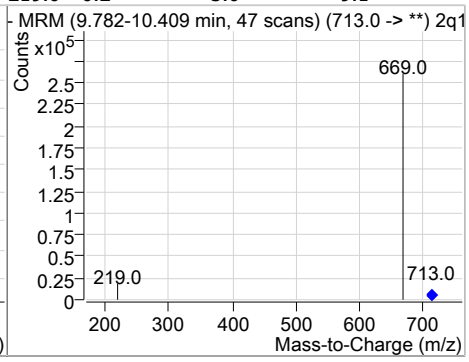




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	19.65	10.02	0.00	194752	713.0 -> 219.0	6.2	3.0	9.1







Manual Integration Approval Summary

Sample Number: OP937-MSD
Lab FileID: 2Q118616.D
Injection Time: 01/04/24 19:37
Method: EPA 537M QSM5.3 B-15
Analyst approved: 01/05/24 16:33 Lindsay Ritner
Supervisor approved: 01/05/24 17:11 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorobutanesulfonic acid	375-73-5		4.32	Split peak
Perfluorohexanesulfonic acid	355-46-4		6.22	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.43	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Natasha Gumtie 01/05/24 12:24

Perfluorinated Compounds by LC/MS/MS

Data File	:	2q118556.d
Operator	:	lindsayr
Acq. Method	:	537_ID.m
Acq. Date-Time	:	1/3/2024 3:26:45 PM
Sample Name	:	rt
Vial	:	P1-B3
DA Method File	:	ID_010224_S2Q1691.quantmethod.xml
Batch Name	:	s2q1692.batch.bin
Sample Information	:	op401,S2Q1692,250,,,1.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M5-EtFOSAA	7.710	589.0 -> 419.0	21405	10.00 µg/L	-0.013
M4-PFBA	2.227	217.0 -> 172.0	56387	10.00 µg/L	-0.013
M5-PFPeA	4.037	268.0 -> 223.0	87228	10.00 µg/L	-0.025
M5-PFHxA	5.301	318.0 -> 273.0	106359	10.00 µg/L	-0.038
M4-PFHpA	6.182	367.0 -> 322.0	95225	10.00 µg/L	-0.025
M8-PFOA	6.862	421.0 -> 376.0	186496	10.00 µg/L	-0.025
M9-PFNA	7.442	472.0 -> 427.0	146023	10.00 µg/L	-0.013
M6-PFDA	7.906	519.0 -> 474.0	114762	10.00 µg/L	-0.025
M7-PFUnDA	8.368	570.0 -> 525.0	189157	10.00 µg/L	-0.013
M2-PFDoDA	8.908	615.0 -> 570.0	193140	10.00 µg/L	-0.013
M2-PFTeDA	10.005	715.0 -> 670.0	146910	10.00 µg/L	-0.013
M8-FOSA	7.134	506.0 -> 78.0	23317	10.00 µg/L	-0.025
M3-PFBS	4.304	302.0 -> 99.0	6543	10.00 µg/L	-0.025
M3-PFHxS	6.201	402.0 -> 99.0	6552	10.00 µg/L	-0.042
M8-PFOS	7.401	507.0 -> 99.0	6178	10.00 µg/L	-0.026
M2-4:2FTS	5.196	329.0 -> 309.0	37654	10.00 µg/L	-0.038
M2-6:2FTS	6.847	429.0 -> 409.0	57149	10.00 µg/L	-0.038
M2-8:2FTS	7.955	529.0 -> 509.0	40150	10.00 µg/L	-0.013
M3-MeFOSAA	7.597	573.0 -> 419.0	25304	10.00 µg/L	-0.013
M3-HFPO-DA	5.569	287.0 -> 169.0	8736	10.00 µg/L	-0.038
M3-MeFOSA	7.501	515.0 -> 169.0	7892	10.00 µg/L	-0.013
System Monitoring Compounds					
13C2-4:2FTS	5.196	329.0 -> 309.0	37654	10.21 µg/L	-0.038
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 102.1%	
13C2-6:2FTS	6.847	429.0 -> 409.0	57149	9.95 µg/L	-0.038
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.5%	
13C2-8:2FTS	7.955	529.0 -> 509.0	40150	10.36 µg/L	-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 103.6%	
13C2-PFDoDA	8.908	615.0 -> 570.0	193140	11.03 µg/L	-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 110.3%	
13C2-PFTeDA	10.005	715.0 -> 670.0	146910	11.05 µg/L	-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 110.5%	
13C3-PFBS	4.304	302.0 -> 99.0	6543	10.89 µg/L	-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 108.9%	
13C3-PFHxS	6.201	402.0 -> 99.0	6552	10.70 µg/L	-0.042
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 107.0%	
13C4-PFBA	2.227	217.0 -> 172.0	56387	10.92 µg/L	-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 109.2%	
13C4-PFHpA	6.182	367.0 -> 322.0	95225	11.09 µg/L	-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 110.9%	
d5-EtFOSAA	7.710	589.0 -> 419.0	21405	11.09 µg/L	-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 110.9%	
13C5-PFHxA	5.301	318.0 -> 273.0	106359	10.78 µg/L	-0.038
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 107.8%	
13C5-PFPeA	4.037	268.0 -> 223.0	87228	10.97 µg/L	-0.025

Perfluorinated Compounds by LC/MS/MS

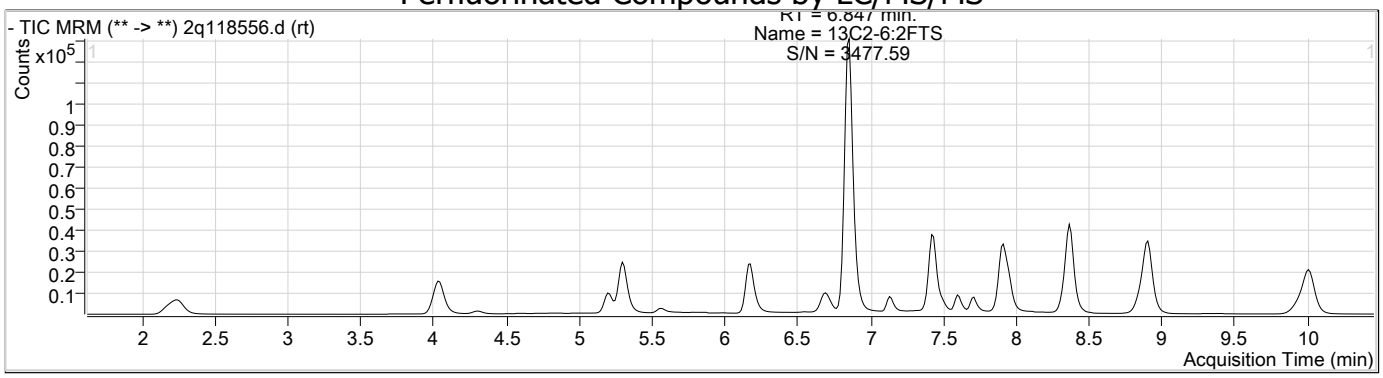
Compound	RT	Transition	Response	Conc. Units		Dev(Min)
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 109.7%		
13C6-PFDA	7.906	519.0 -> 474.0	114762	10.98 µg/L		-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 109.8%		
13C7-PFUnDA	8.368	570.0 -> 525.0	189157	10.88 µg/L		-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 108.8%		
13C8-FOSA	7.134	506.0 -> 78.0	23317	11.35 µg/L		-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 113.5%		
13C8-PFOA	6.862	421.0 -> 376.0	186496	11.02 µg/L		-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 110.2%		
13C8-PFOS	7.401	507.0 -> 99.0	6178	11.06 µg/L		-0.026
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 110.6%		
13C9-PFNA	7.442	472.0 -> 427.0	146023	10.84 µg/L		-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 108.4%		
d3-MeFOSAA	7.597	573.0 -> 419.0	25304	11.06 µg/L		-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 110.6%		
13C3-HFPO-DA	5.569	287.0 -> 169.0	8736	10.51 µg/L		-0.038
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 105.1%		
d3-MeFOSA	7.501	515.0 -> 169.0	7892	10.99 µg/L		-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 109.9%		
Target Compounds						QValue
4:2FTS	-	327.0 -> 307.0	-	N.D.		
		327.0 -> 81.0				
6:2FTS	-	427.0 -> 407.0	-	N.D.		
		427.0 -> 81.0				
8:2FTS	-	527.0 -> 507.0	-	N.D.		
		527.0 -> 81.0				
EtFOSAA	-	584.0 -> 419.0	-	N.D.		
		584.0 -> 483.0				
FOSA	-	498.0 -> 78.0	-	N.D.		
		498.0 -> 478.0				
MeFOSAA	-	570.0 -> 419.0	-	N.D.		
		570.0 -> 512.0				
PFBA	-	213.0 -> 169.0	-	N.D.		
PFBS	-	299.0 -> 80.0	-	N.D.		
		299.0 -> 99.0				
PFDA	-	513.0 -> 469.0	-	N.D.		
		513.0 -> 219.0				
PFDoDA	-	613.0 -> 569.0	-	N.D.		
		613.0 -> 319.0				
PFDS	-	599.0 -> 80.0	-	N.D.		
		599.0 -> 99.0				
PFHpA	6.183	363.0 -> 319.0	0	0.00 µg/L	m	1
		363.0 -> 169.0	0			
PFHpS	-	449.0 -> 80.0	-	N.D.		
		449.0 -> 99.0				
PFHxA	-	313.0 -> 269.0	-	N.D.		
		313.0 -> 119.0				
PFHxS	-	399.0 -> 80.0	-	N.D.		
		399.0 -> 99.0				
PFNA	-	463.0 -> 419.0	-	N.D.		
		463.0 -> 219.0				
PFNS	-	549.0 -> 80.0	-	N.D.		
		549.0 -> 99.0				
PFOA	6.863	413.0 -> 369.0	293838	14.75 µg/L	m	97
		413.0 -> 169.0	56810			
PFOS	-	499.0 -> 80.0	-	N.D.		

Perfluorinated Compounds by LC/MS/MS

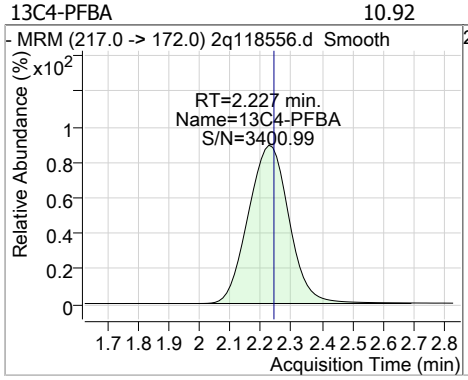
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		499.0 -> 99.0				
PFPeA	-	263.0 -> 219.0	-	N.D.		
PFPeS	-	349.0 -> 80.0	-	N.D.		
		349.0 -> 99.0				
PFTeDA	-	713.0 -> 669.0	-	N.D.		
		713.0 -> 219.0				
PFTrDA	-	663.0 -> 619.0	-	N.D.		
		663.0 -> 369.0				
PFUnDA	-	563.0 -> 519.0	-	N.D.		
		563.0 -> 269.0				
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.		
		633.0 -> 453.0				
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.		
		533.0 -> 353.0				
ADONA	-	377.0 -> 251.0	-	N.D.		
		377.0 -> 85.0				
HFPO-DA	-	329.0 -> 169.0	-	N.D.		
		285.0 -> 169.0				
MeFOSA	-	512.0 -> 169.0	-	N.D.		
		512.0 -> 219.0				
4-PFECHS	-	461.0 -> 381.0	-	N.D.		
		461.0 -> 99.0				
FBSA	-	298.0 -> 78.0	-	N.D.		
		298.0 -> 64.0				
FHxSA	-	398.0 -> 78.0	-	N.D.		
		398.0 -> 64.0				

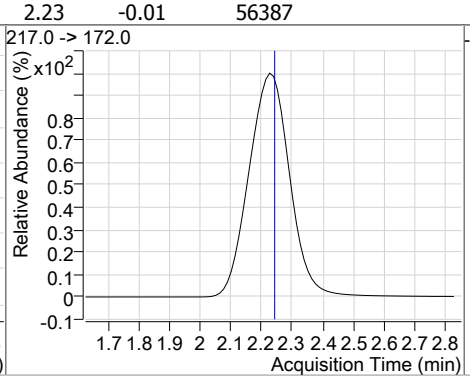
 # = Qualifier out of range, m = manually integrated, + = Area summed

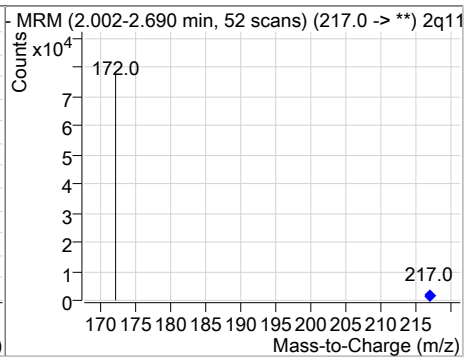
Perfluorinated Compounds by LC/MS/MS



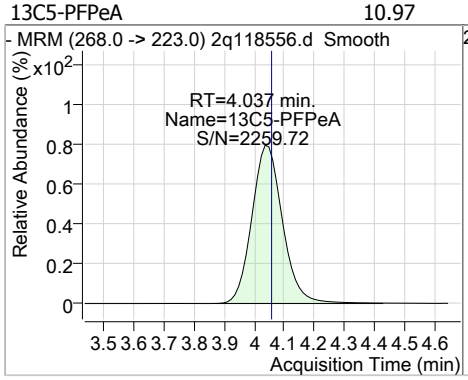
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	10.92	2.23	-0.01	56387				

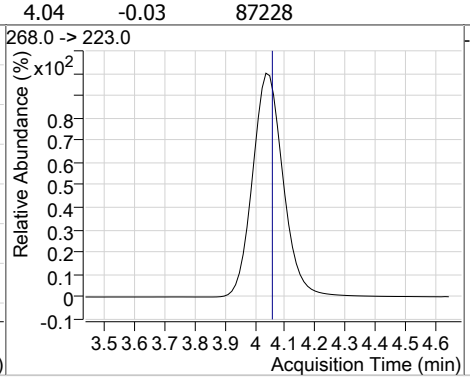


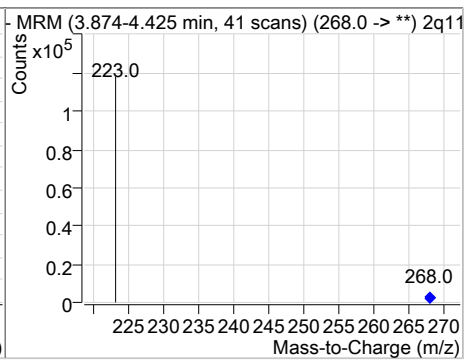




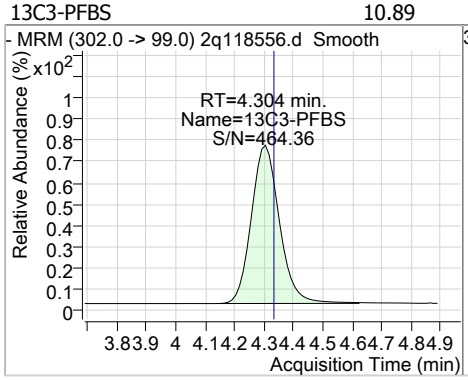
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	10.97	4.04	-0.03	87228				

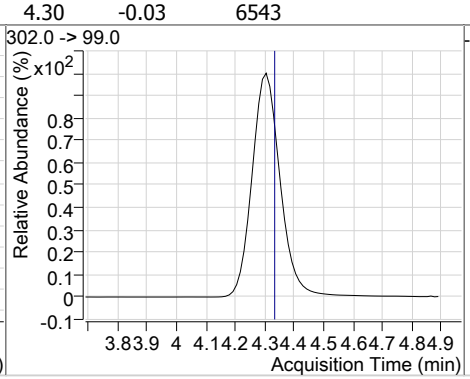


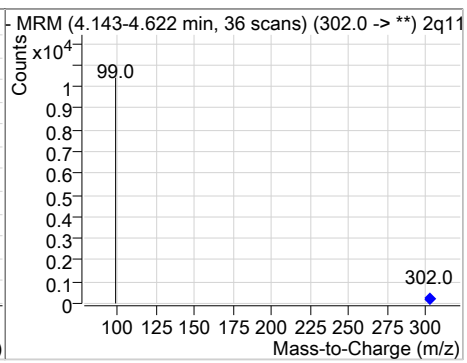




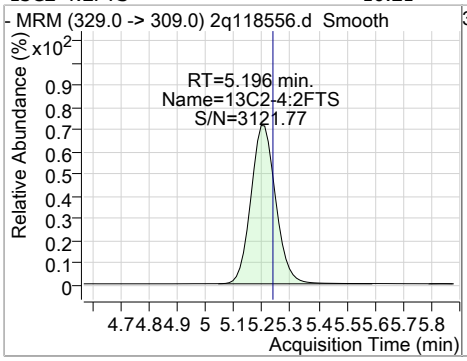
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13C3-PFBS	10.89	4.30	-0.03	6543				

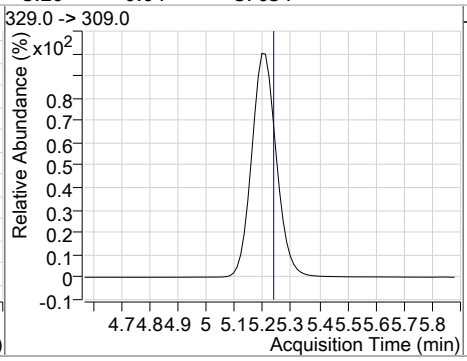


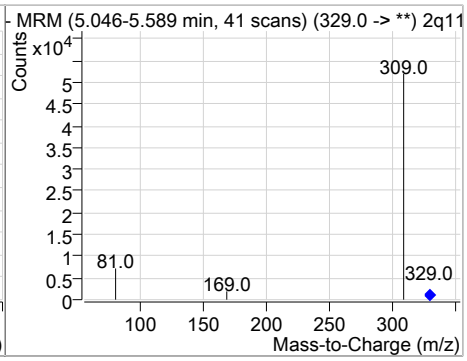




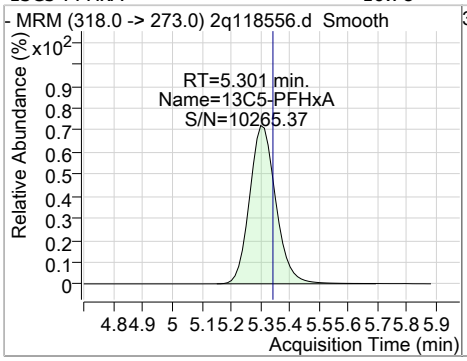
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13C2-4:2FTS	10.21	5.20	-0.04	37654				

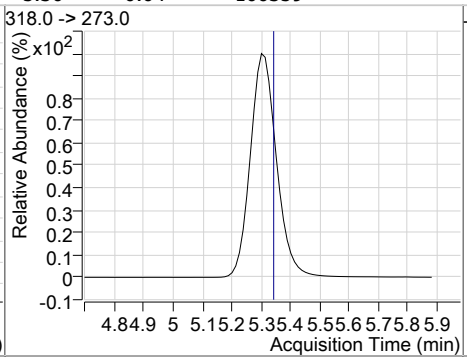


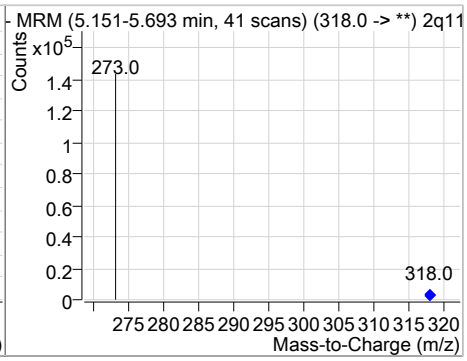




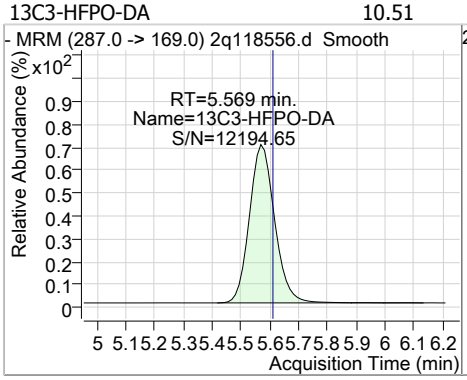
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	10.78	5.30	-0.04	106359				

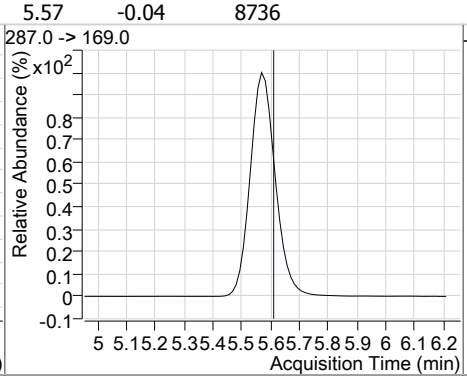


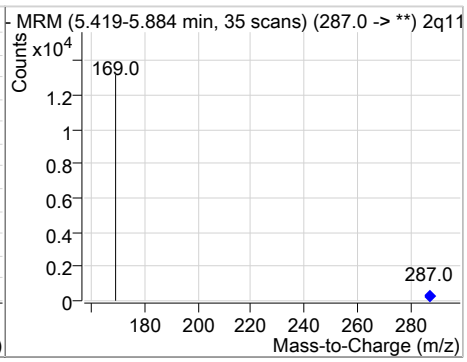




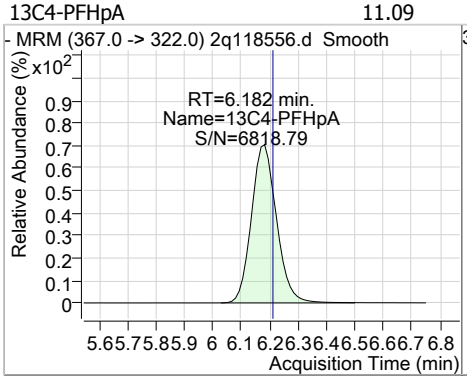
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	10.51	5.57	-0.04	8736				

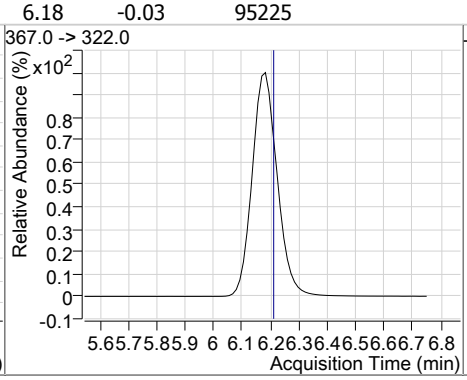


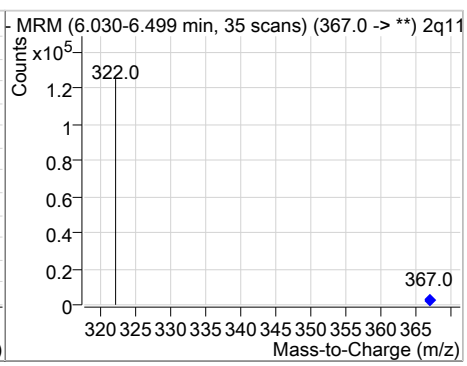




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	11.09	6.18	-0.03	95225				

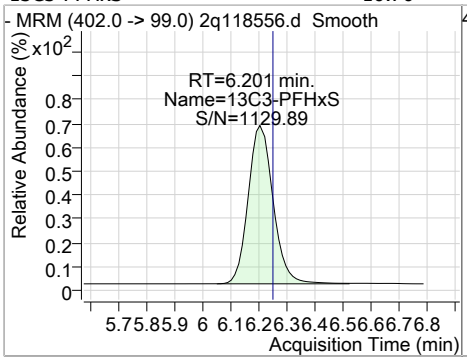


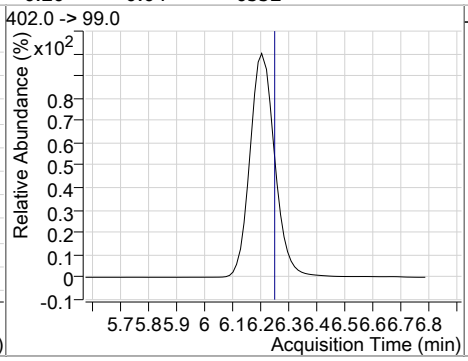


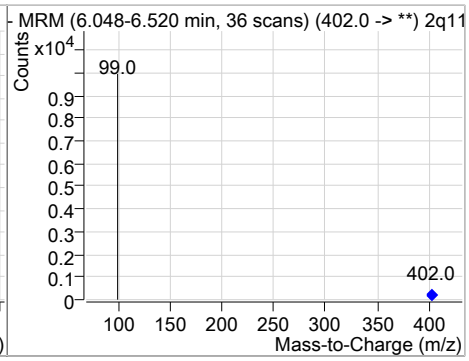


Perfluorinated Compounds by LC/MS/MS

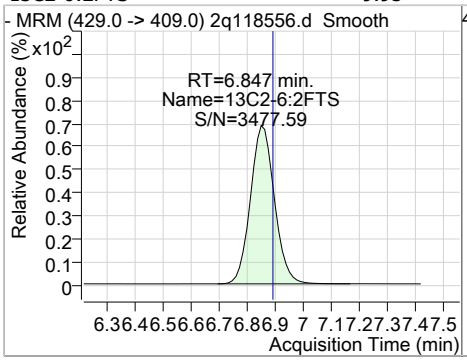
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	10.70	6.20	-0.04	6552				

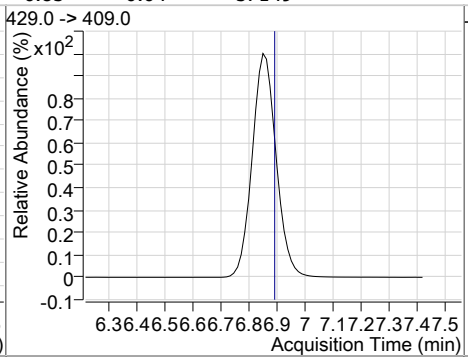


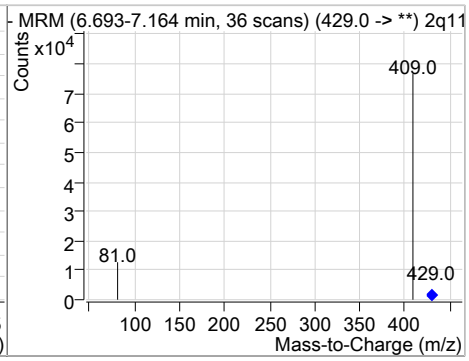




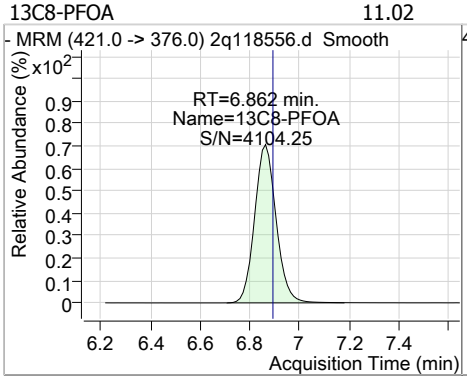
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	9.95	6.85	-0.04	57149				

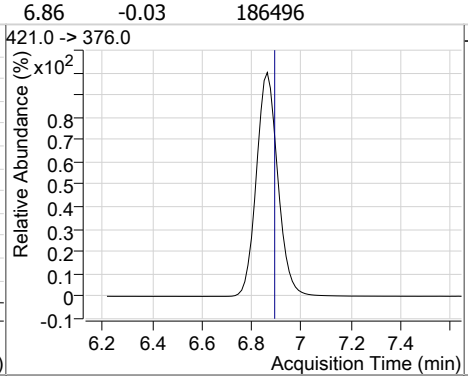


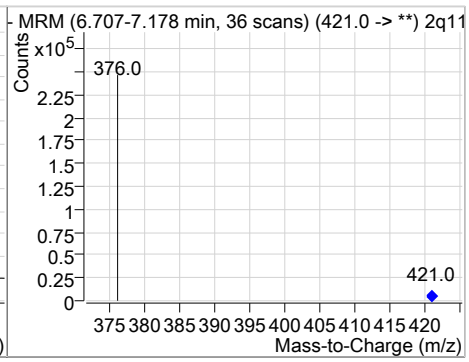




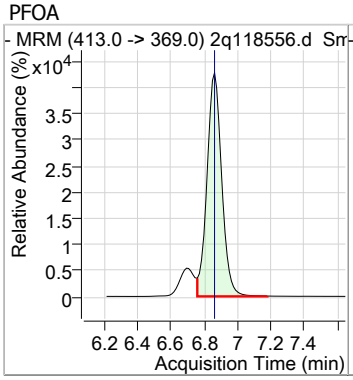
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	11.02	6.86	-0.03	186496				

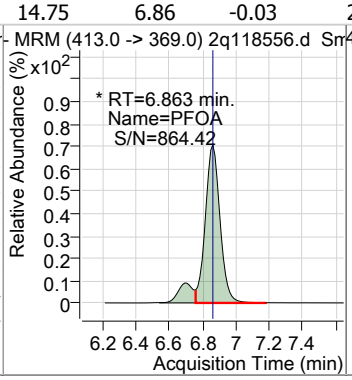


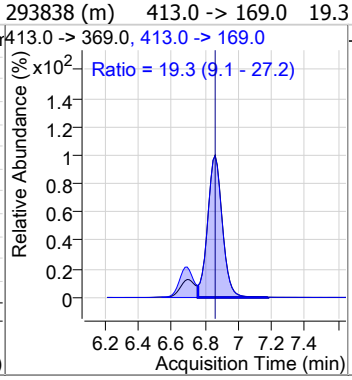


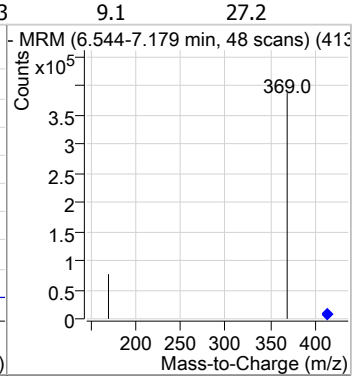


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	14.75	6.86	-0.03	293838 (m)	413.0 -> 169.0	19.3	9.1	27.2

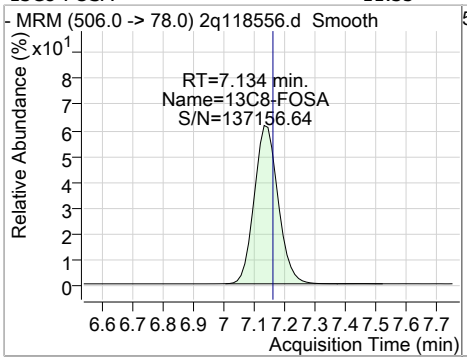


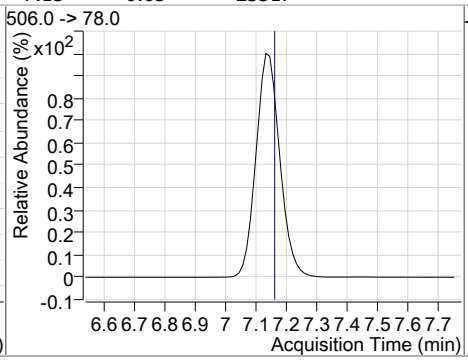


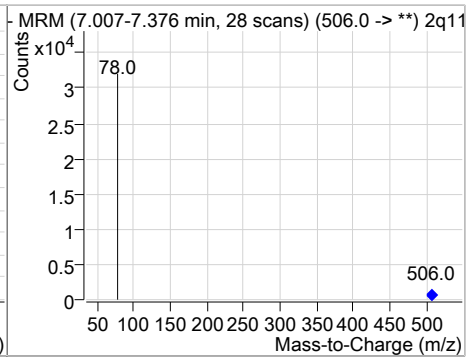




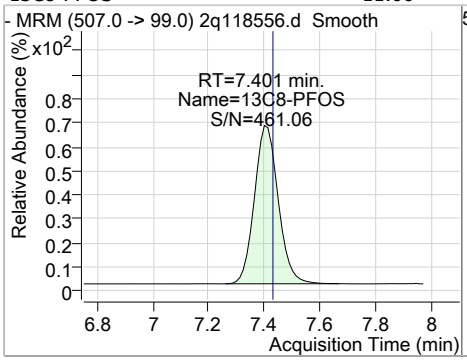
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	11.35	7.13	-0.03	23317				

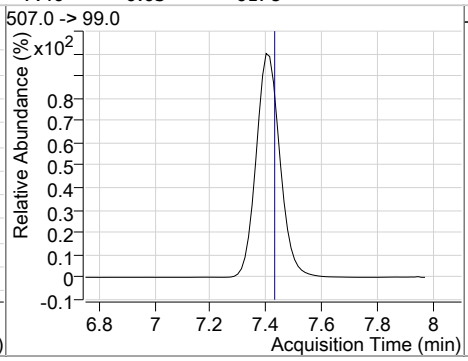


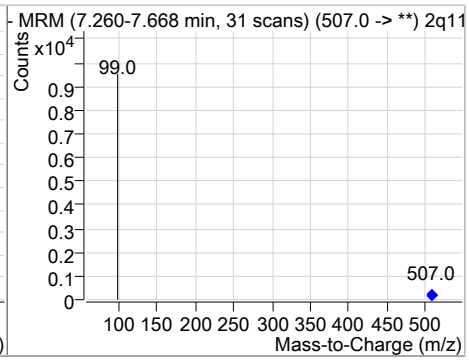




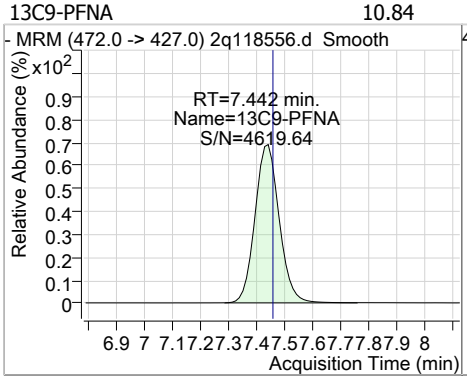
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	11.06	7.40	-0.03	6178				

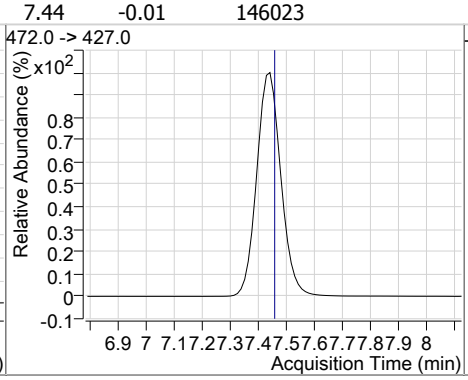


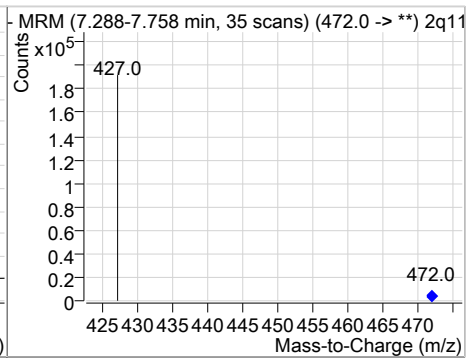




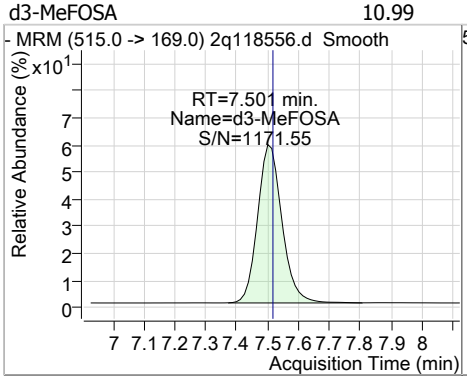
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	10.84	7.44	-0.01	146023				

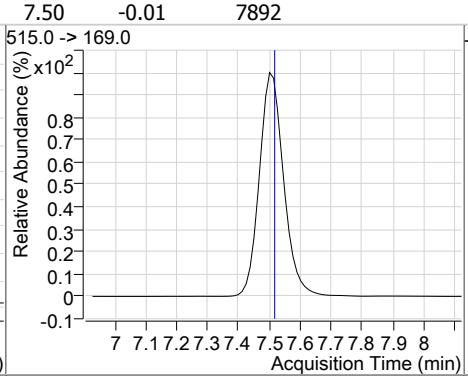


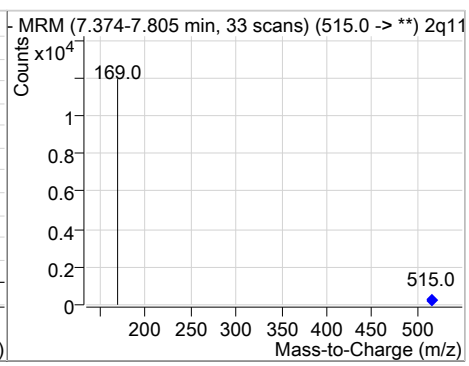




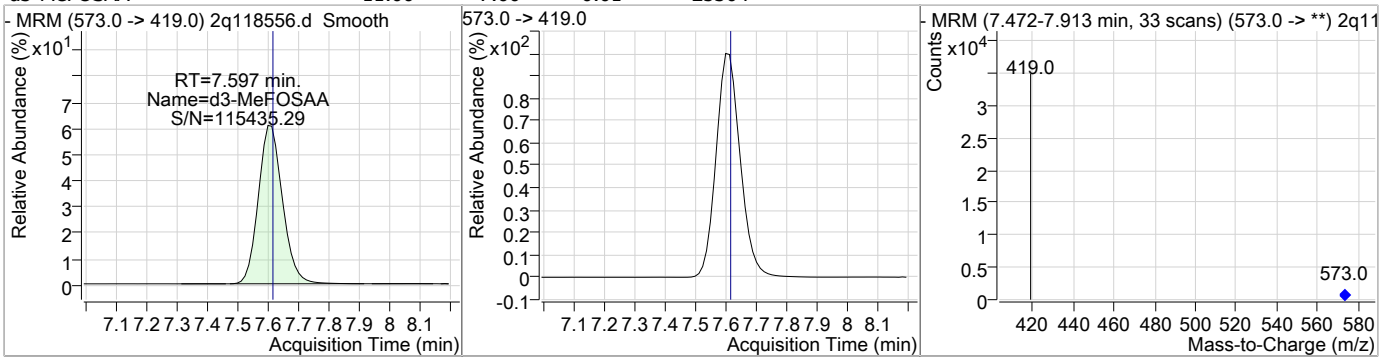
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	10.99	7.50	-0.01	7892				



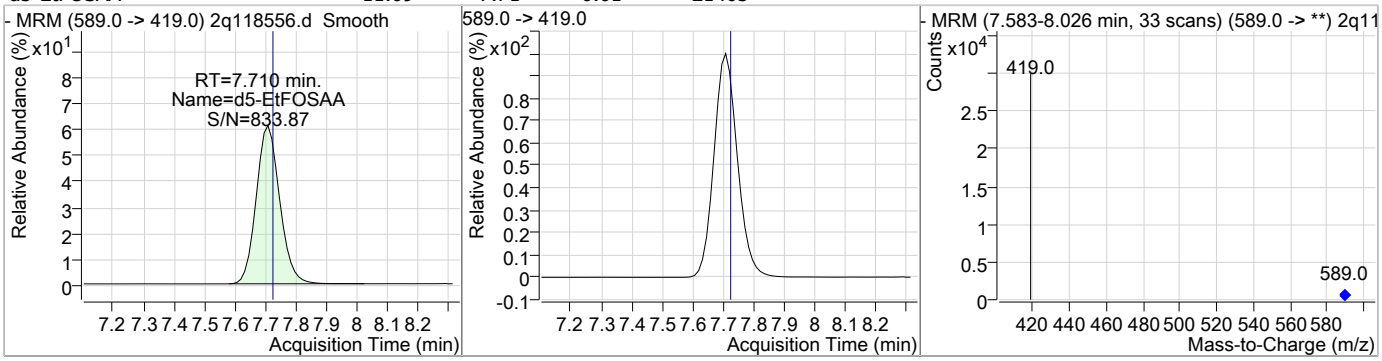




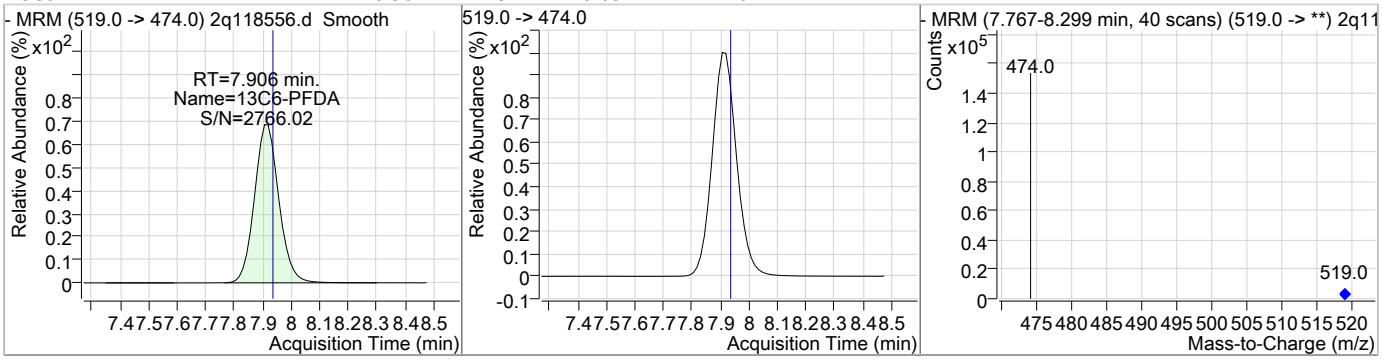
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	11.06	7.60	-0.01	25304				



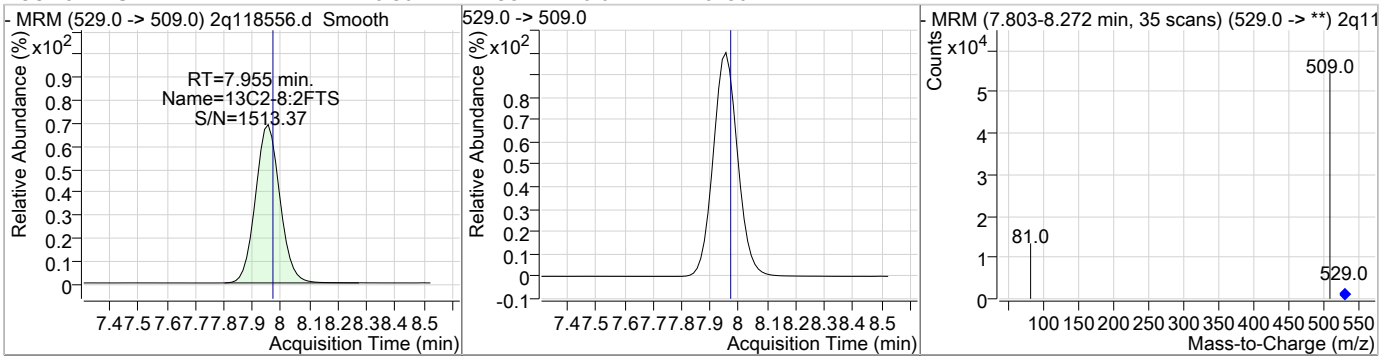
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	11.09	7.71	-0.01	21405				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	10.98	7.91	-0.03	114762				

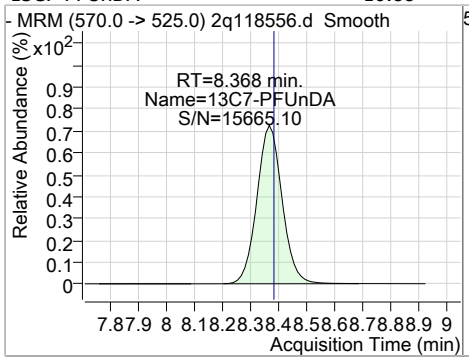


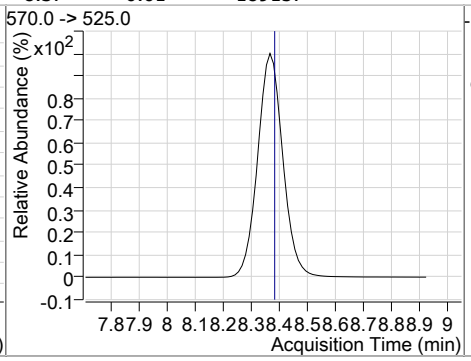
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	10.36	7.95	-0.01	40150				

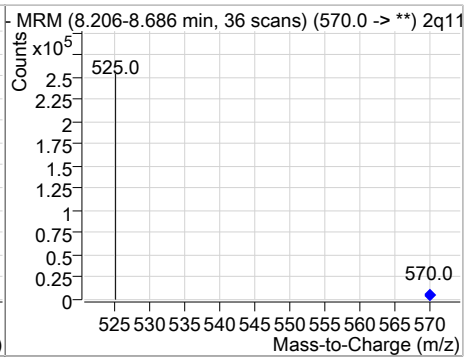


Perfluorinated Compounds by LC/MS/MS

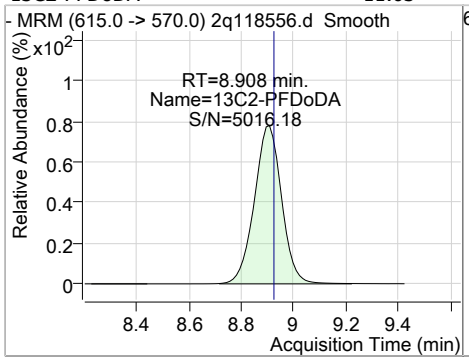
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	10.88	8.37	-0.01	189157				

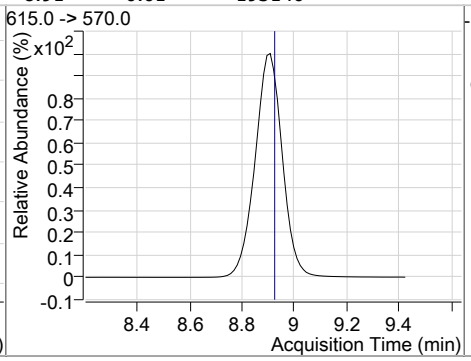


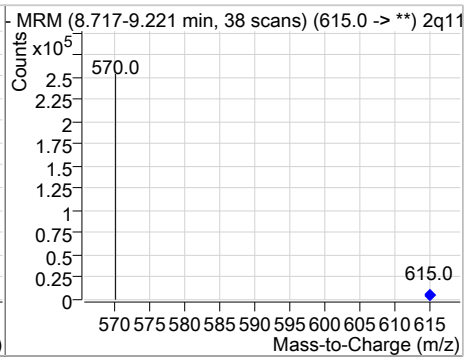




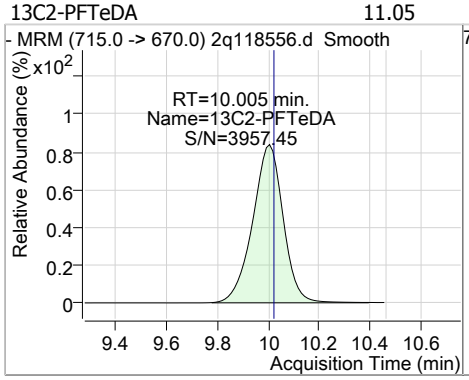
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	11.03	8.91	-0.01	193140				

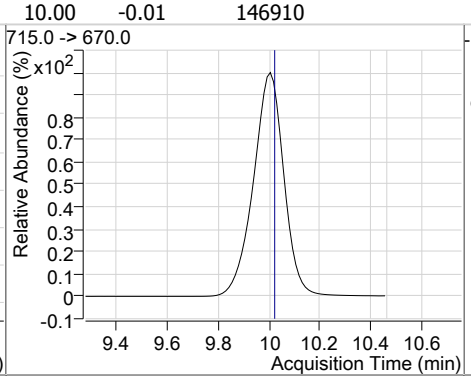


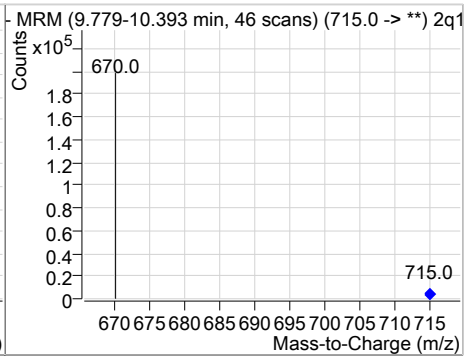




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	11.05	10.00	-0.01	146910				







Manual Integration Approval Summary

Sample Number: S2Q1692-RT
Lab FileID: 2Q118556.D
Injection Time: 01/03/24 15:26
Method: EPA 537M QSM5.3 B-15
Analyst approved: 01/04/24 16:01 Lindsay Ritner
Supervisor approved: 01/05/24 12:24 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorooctanoic acid	335-67-1		6.86	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Natasha Gumtie 01/05/24 17:02

Perfluorinated Compounds by LC/MS/MS

Data File : 2q118601.d
Operator : lindsayr
Acq. Method : 537_ID.m
Acq. Date-Time : 1/4/2024 3:29:34 PM
Sample Name : rt
Vial : P1-B3
DA Method File : ID_010224_S2Q1691.quantmethod.xml
Batch Name : s2q1693.batch.bin
Sample Information : op401,S2Q1693,250,,,1.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M5-EtFOSAA	7.722	589.0 -> 419.0	22920	10.00	µg/L	0.000
M4-PFBA	2.240	217.0 -> 172.0	57447	10.00	µg/L	0.000
M5-PFPeA	4.049	268.0 -> 223.0	88868	10.00	µg/L	-0.013
M5-PFHxA	5.314	318.0 -> 273.0	111102	10.00	µg/L	-0.025
M4-PFHpA	6.195	367.0 -> 322.0	98108	10.00	µg/L	-0.013
M8-PFOA	6.875	421.0 -> 376.0	193233	10.00	µg/L	-0.013
M9-PFNA	7.455	472.0 -> 427.0	152101	10.00	µg/L	0.000
M6-PFDA	7.931	519.0 -> 474.0	120958	10.00	µg/L	0.000
M7-PFUnDA	8.381	570.0 -> 525.0	194707	10.00	µg/L	0.000
M2-PFDoDA	8.920	615.0 -> 570.0	196985	10.00	µg/L	0.000
M2-PFTeDA	10.017	715.0 -> 670.0	150807	10.00	µg/L	0.000
M8-FOSA	7.147	506.0 -> 78.0	23850	10.00	µg/L	-0.013
M3-PFBS	4.317	302.0 -> 99.0	6578	10.00	µg/L	-0.013
M3-PFHxS	6.218	402.0 -> 99.0	6584	10.00	µg/L	-0.025
M8-PFOS	7.413	507.0 -> 99.0	6102	10.00	µg/L	-0.014
M2-4:2FTS	5.221	329.0 -> 309.0	38974	10.00	µg/L	-0.013
M2-6:2FTS	6.860	429.0 -> 409.0	58932	10.00	µg/L	-0.025
M2-8:2FTS	7.967	529.0 -> 509.0	40035	10.00	µg/L	0.000
M3-MeFOSAA	7.609	573.0 -> 419.0	26562	10.00	µg/L	0.000
M3-HFPO-DA	5.582	287.0 -> 169.0	9425	10.00	µg/L	-0.025
M3-MeFOSA	7.513	515.0 -> 169.0	8381	10.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	5.221	329.0 -> 309.0	38974	10.56	µg/L	-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 105.6%		
13C2-6:2FTS	6.860	429.0 -> 409.0	58932	10.26	µg/L	-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 102.6%		
13C2-8:2FTS	7.967	529.0 -> 509.0	40035	10.33	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 103.3%		
13C2-PFDoDA	8.920	615.0 -> 570.0	196985	11.25	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 112.5%		
13C2-PFTeDA	10.017	715.0 -> 670.0	150807	11.35	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 113.5%		
13C3-PFBS	4.317	302.0 -> 99.0	6578	10.95	µg/L	-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 109.5%		
13C3-PFHxS	6.218	402.0 -> 99.0	6584	10.76	µg/L	-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 107.6%		
13C4-PFBA	2.240	217.0 -> 172.0	57447	11.13	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 111.3%		
13C4-PFHpA	6.195	367.0 -> 322.0	98108	11.42	µg/L	-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 114.2%		
d5-EtFOSAA	7.722	589.0 -> 419.0	22920	11.88	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 118.8%		
13C5-PFHxA	5.314	318.0 -> 273.0	111102	11.26	µg/L	-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 112.6%		
13C5-PFPeA	4.049	268.0 -> 223.0	88868	11.18	µg/L	-0.013

Perfluorinated Compounds by LC/MS/MS

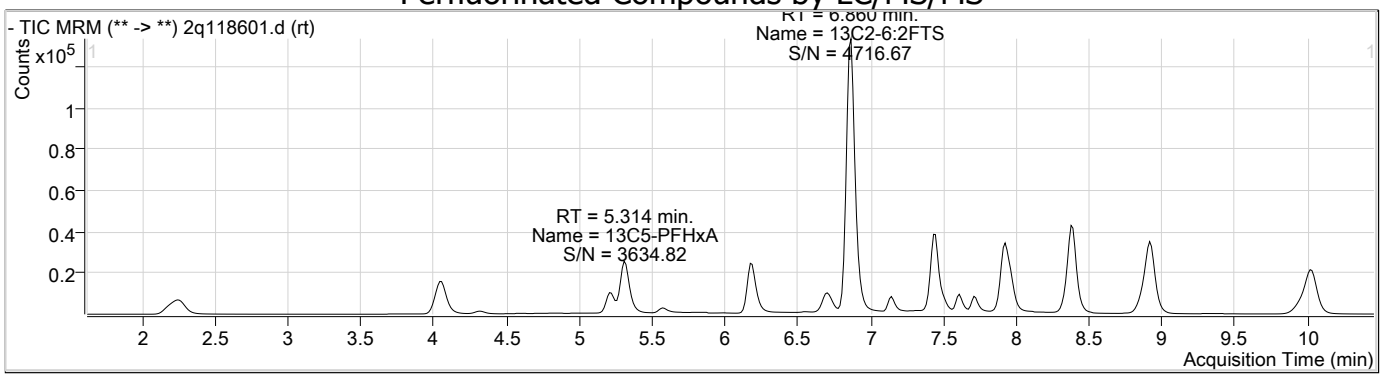
Compound	RT	Transition	Response	Conc. Units		Dev(Min)
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 111.8%		
13C6-PFDA	7.931	519.0 -> 474.0	120958	11.57 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 115.7%		
13C7-PFUnDA	8.381	570.0 -> 525.0	194707	11.20 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 112.0%		
13C8-FOSA	7.147	506.0 -> 78.0	23850	11.61 µg/L		-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 116.1%		
13C8-PFOA	6.875	421.0 -> 376.0	193233	11.42 µg/L		-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 114.2%		
13C8-PFOS	7.413	507.0 -> 99.0	6102	10.93 µg/L		-0.014
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 109.3%		
13C9-PFNA	7.455	472.0 -> 427.0	152101	11.29 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 112.9%		
d3-MeFOSAA	7.609	573.0 -> 419.0	26562	11.61 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 116.1%		
13C3-HFPO-DA	5.582	287.0 -> 169.0	9425	11.34 µg/L		-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 113.4%		
d3-MeFOSA	7.513	515.0 -> 169.0	8381	11.67 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 116.7%		
Target Compounds						QValue
4:2FTS	-	327.0 -> 307.0	-	N.D.		
		327.0 -> 81.0				
6:2FTS	-	427.0 -> 407.0	-	N.D.		
		427.0 -> 81.0				
8:2FTS	-	527.0 -> 507.0	-	N.D.		
		527.0 -> 81.0				
EtFOSAA	-	584.0 -> 419.0	-	N.D.		
		584.0 -> 483.0				
FOSA	-	498.0 -> 78.0	-	N.D.		
		498.0 -> 478.0				
MeFOSAA	-	570.0 -> 419.0	-	N.D.		
		570.0 -> 512.0				
PFBA	-	213.0 -> 169.0	-	N.D.		
PFBS	-	299.0 -> 80.0	-	N.D.		
		299.0 -> 99.0				
PFDA	-	513.0 -> 469.0	-	N.D.		
		513.0 -> 219.0				
PFDoDA	-	613.0 -> 569.0	-	N.D.		
		613.0 -> 319.0				
PFDS	-	599.0 -> 80.0	-	N.D.		
		599.0 -> 99.0				
PFHpA	6.196	363.0 -> 319.0	0	0.00 µg/L	m	1
		363.0 -> 169.0	0			
PFHpS	-	449.0 -> 80.0	-	N.D.		
		449.0 -> 99.0				
PFHxA	-	313.0 -> 269.0	-	N.D.		
		313.0 -> 119.0				
PFHxS	-	399.0 -> 80.0	-	N.D.		
		399.0 -> 99.0				
PFNA	-	463.0 -> 419.0	-	N.D.		
		463.0 -> 219.0				
PFNS	-	549.0 -> 80.0	-	N.D.		
		549.0 -> 99.0				
PFOA	6.875	413.0 -> 369.0	299972	14.53 µg/L	m	97
		413.0 -> 169.0	58268			
PFOS	-	499.0 -> 80.0	-	N.D.		

Perfluorinated Compounds by LC/MS/MS

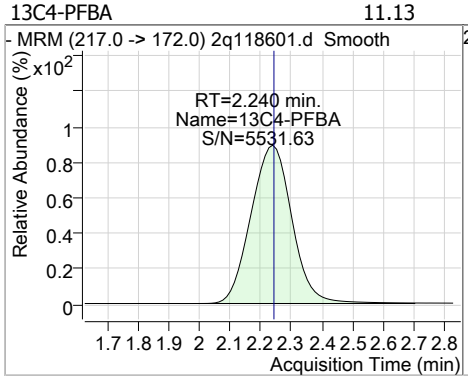
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		499.0 -> 99.0				
PFPeA	-	263.0 -> 219.0	-	N.D.		
PFPeS	-	349.0 -> 80.0	-	N.D.		
		349.0 -> 99.0				
PFTeDA	-	713.0 -> 669.0	-	N.D.		
		713.0 -> 219.0				
PFTrDA	-	663.0 -> 619.0	-	N.D.		
		663.0 -> 369.0				
PFUnDA	-	563.0 -> 519.0	-	N.D.		
		563.0 -> 269.0				
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.		
		633.0 -> 453.0				
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.		
		533.0 -> 353.0				
ADONA	-	377.0 -> 251.0	-	N.D.		
		377.0 -> 85.0				
HFPO-DA	-	329.0 -> 169.0	-	N.D.		
		285.0 -> 169.0				
MeFOSA	-	512.0 -> 169.0	-	N.D.		
		512.0 -> 219.0				
4-PFECHS	-	461.0 -> 381.0	-	N.D.		
		461.0 -> 99.0				
FBSA	-	298.0 -> 78.0	-	N.D.		
		298.0 -> 64.0				
FHxSA	-	398.0 -> 78.0	-	N.D.		
		398.0 -> 64.0				

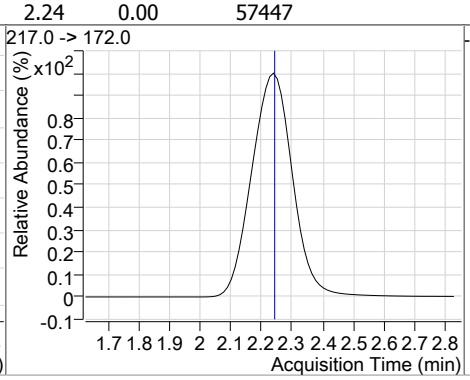
 # = Qualifier out of range, m = manually integrated, + = Area summed

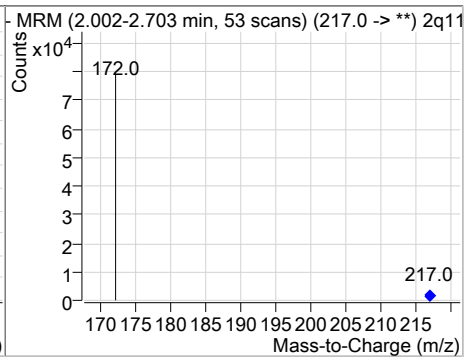
Perfluorinated Compounds by LC/MS/MS



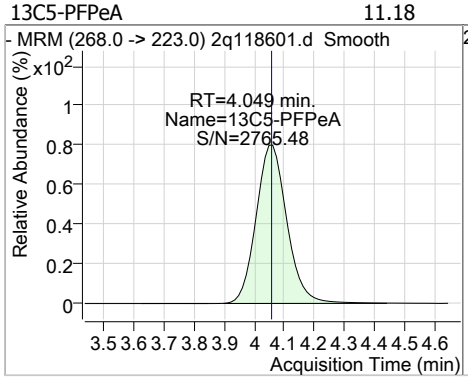
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	11.13	2.24	0.00	57447				

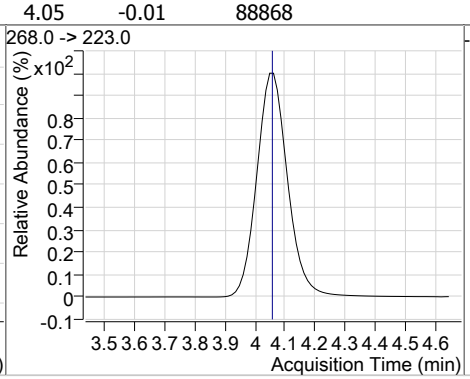


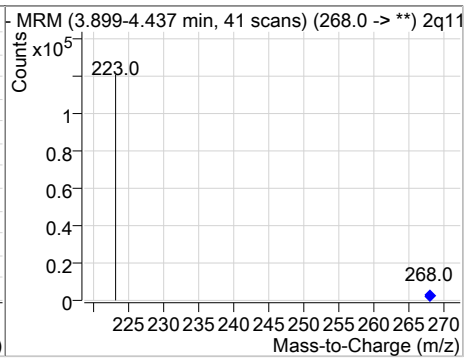




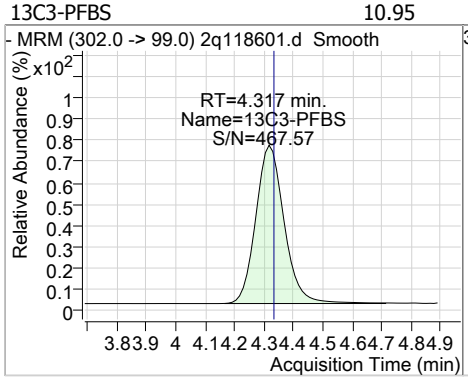
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	11.18	4.05	-0.01	88868				

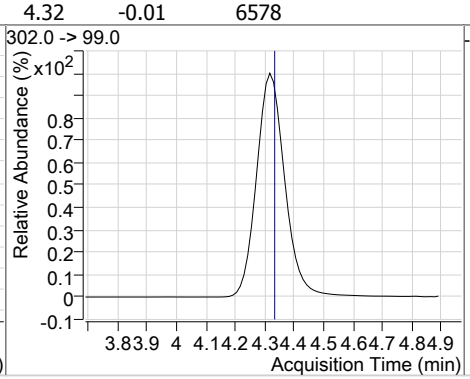


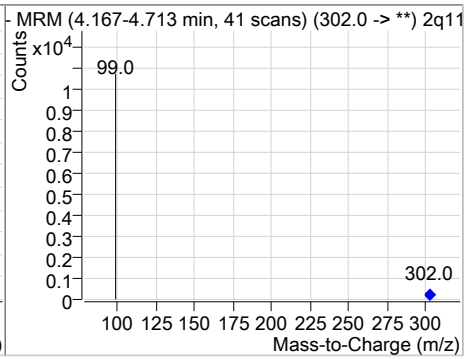




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	10.95	4.32	-0.01	6578				

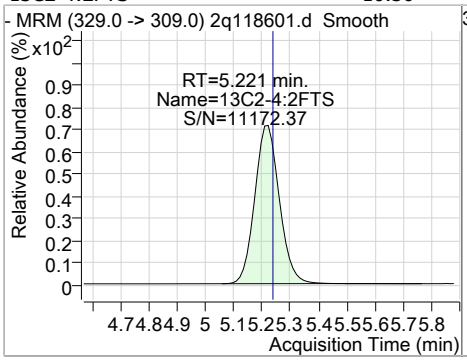


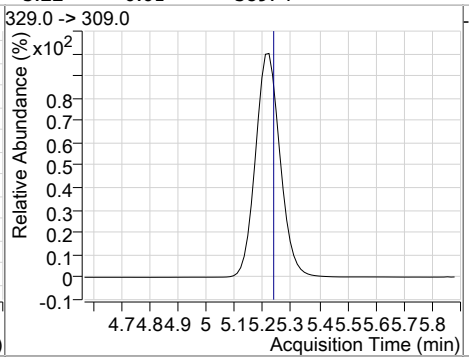


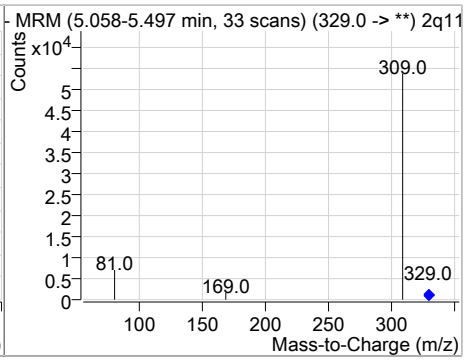


Perfluorinated Compounds by LC/MS/MS

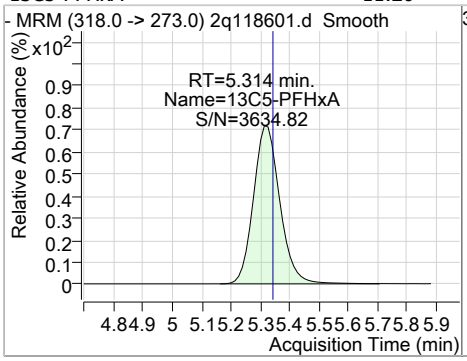
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	10.56	5.22	-0.01	38974				

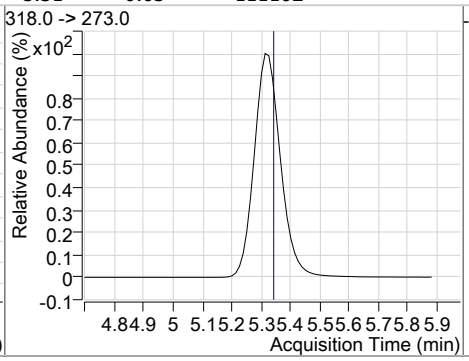


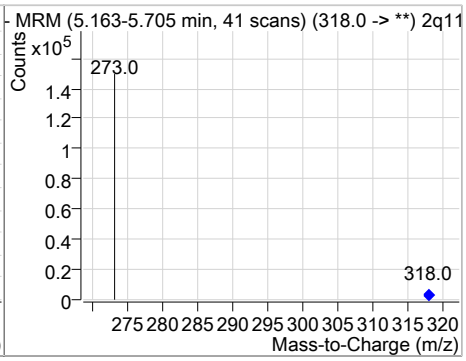




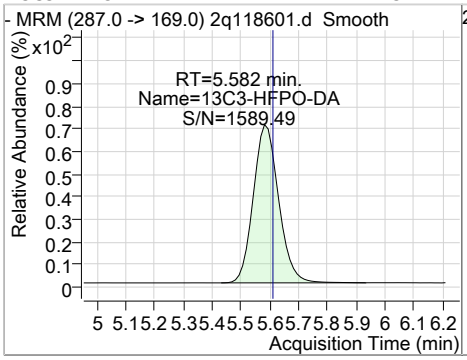
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	11.26	5.31	-0.03	111102				

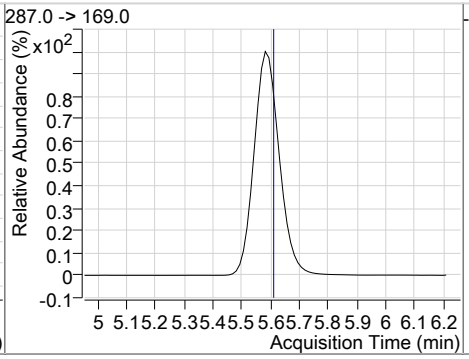


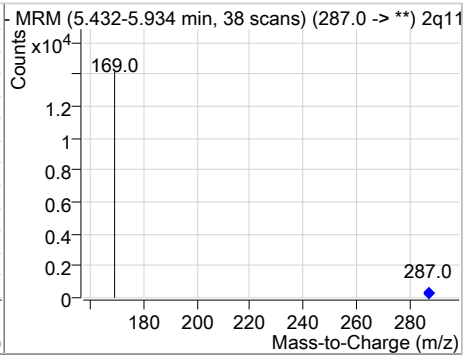




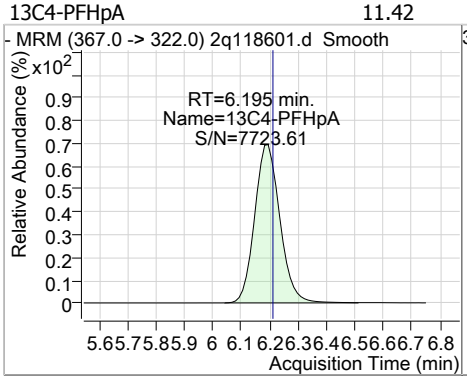
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	11.34	5.58	-0.03	9425				

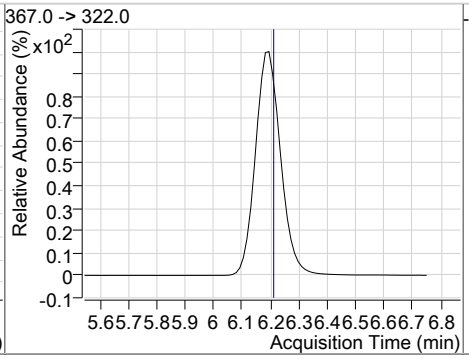


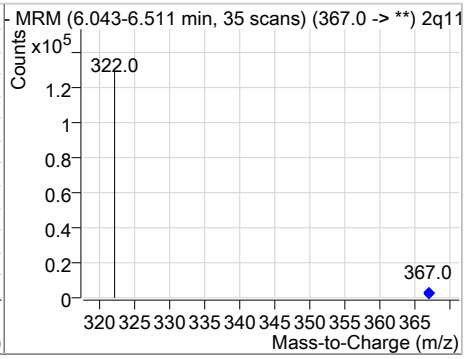




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	11.42	6.20	-0.01	98108				

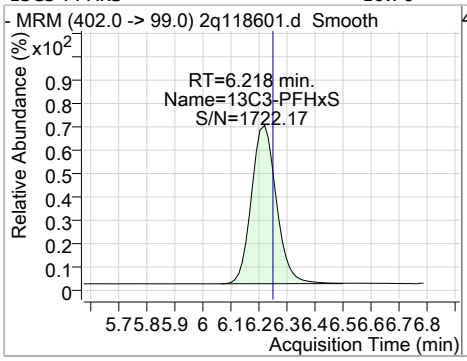


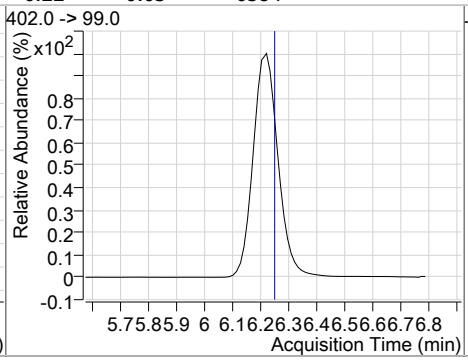


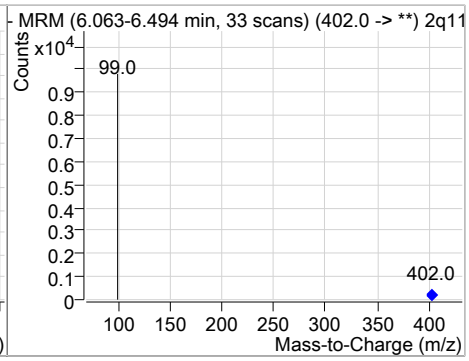


Perfluorinated Compounds by LC/MS/MS

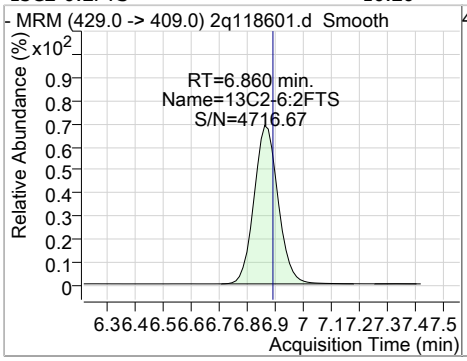
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	10.76	6.22	-0.03	6584				

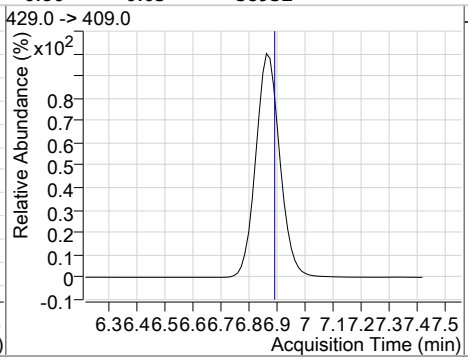


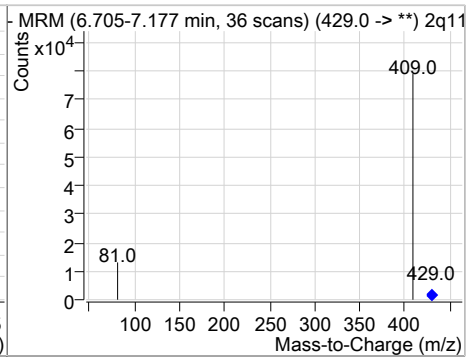




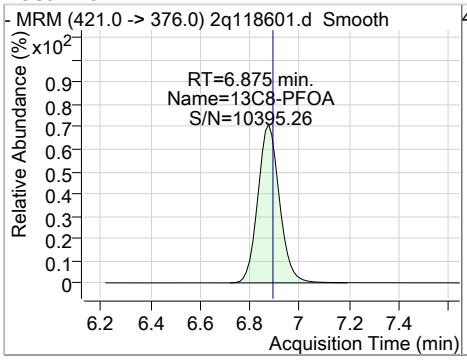
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	10.26	6.86	-0.03	58932				

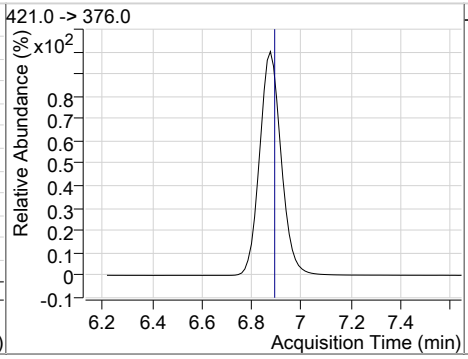


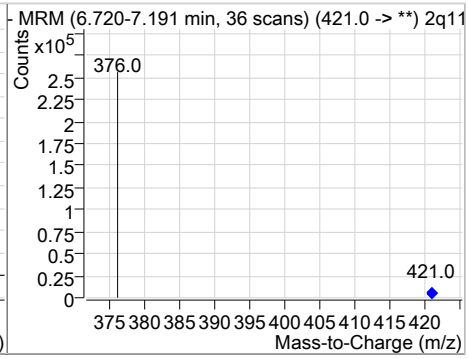




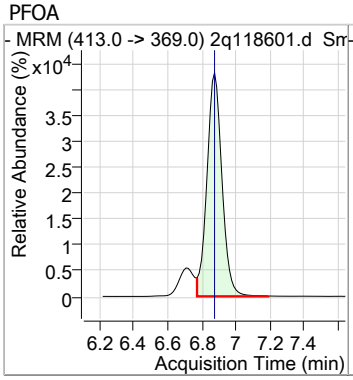
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	11.42	6.87	-0.01	193233				

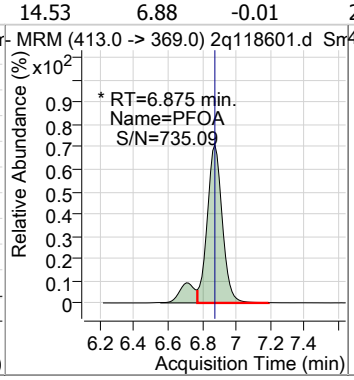


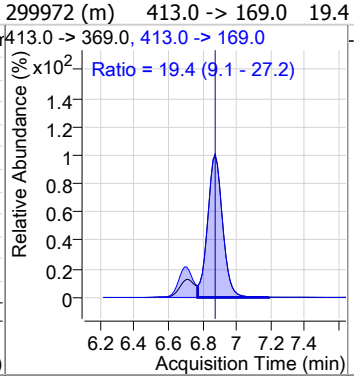


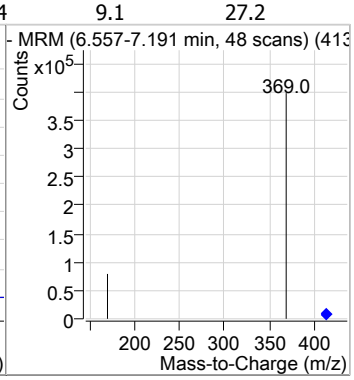


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	14.53	6.88	-0.01	299972 (m)	413.0 -> 169.0	19.4	9.1	27.2

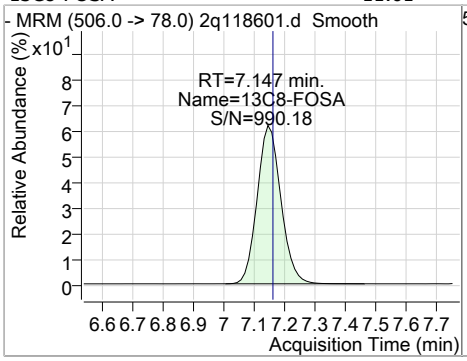


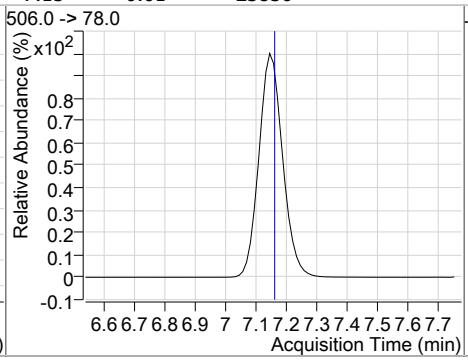


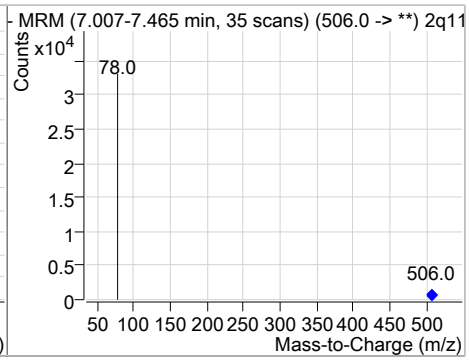




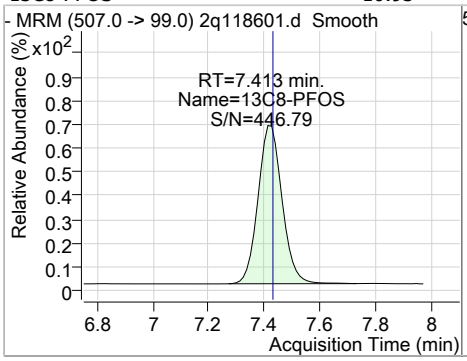
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	11.61	7.15	-0.01	23850				

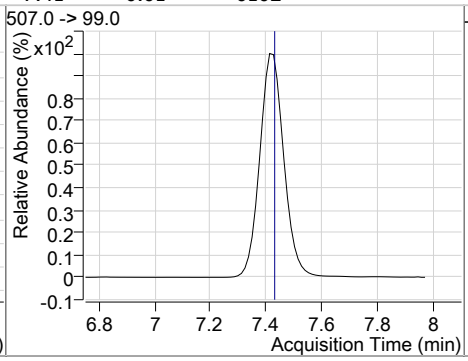


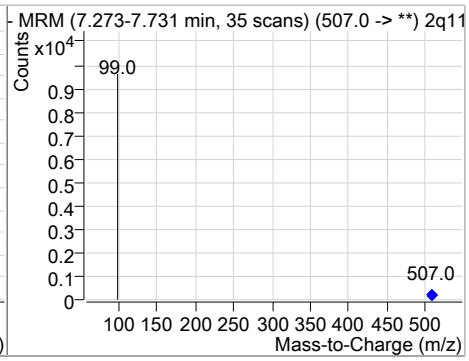




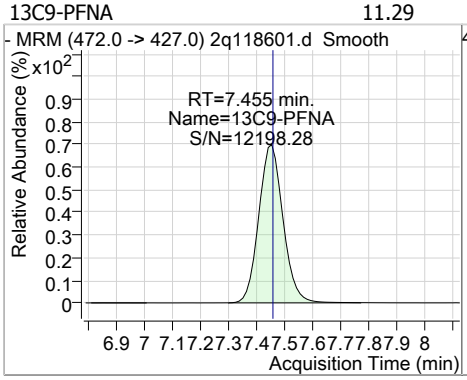
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	10.93	7.41	-0.01	6102				

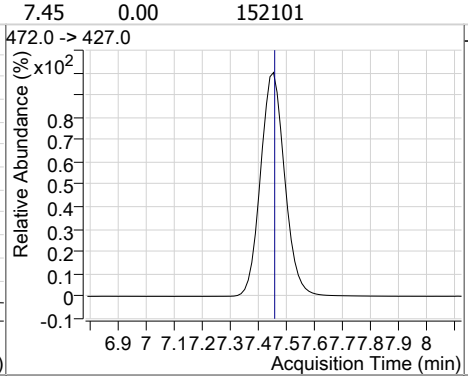


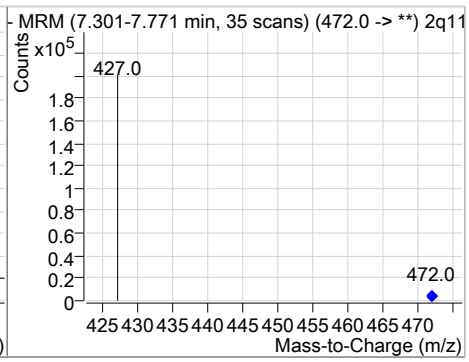




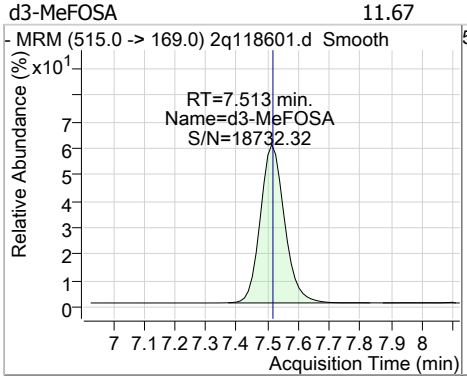
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	11.29	7.45	0.00	152101				

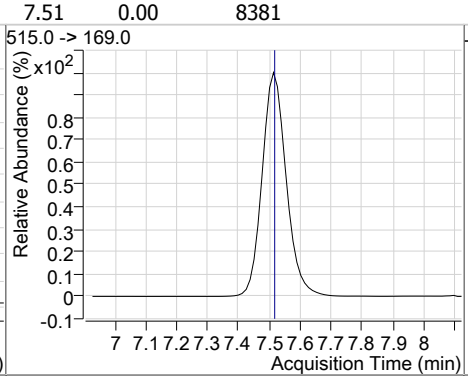


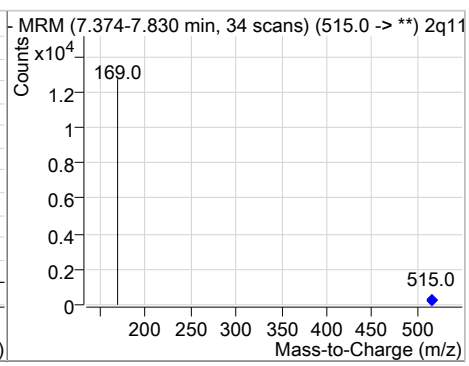




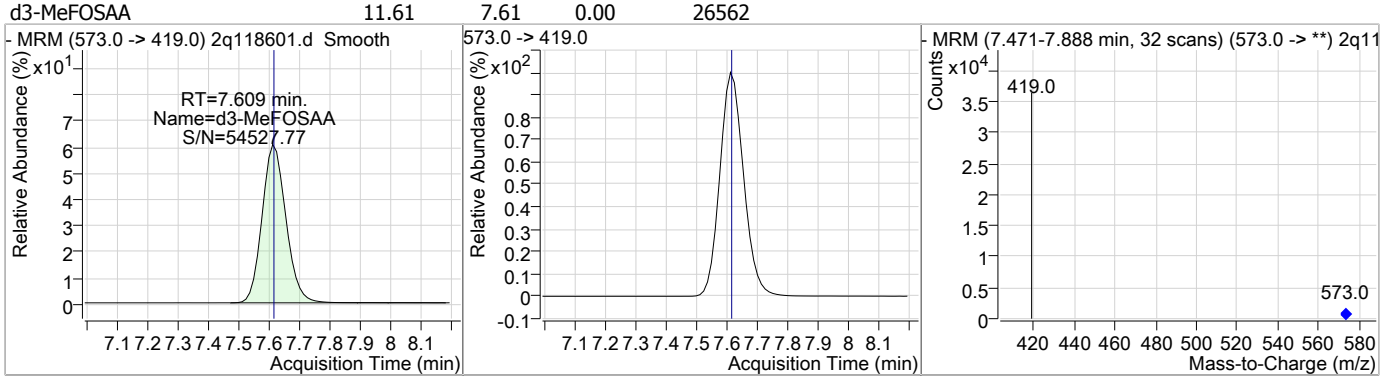
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	11.67	7.51	0.00	8381				



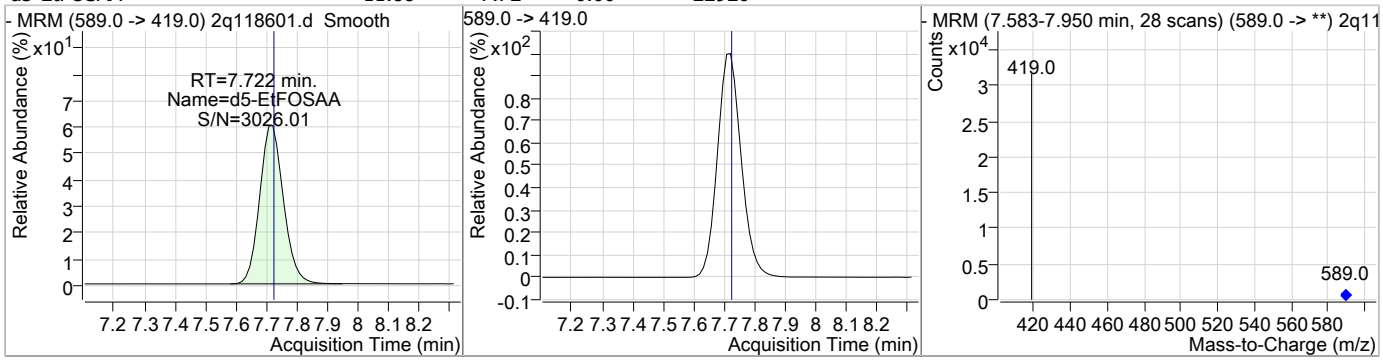




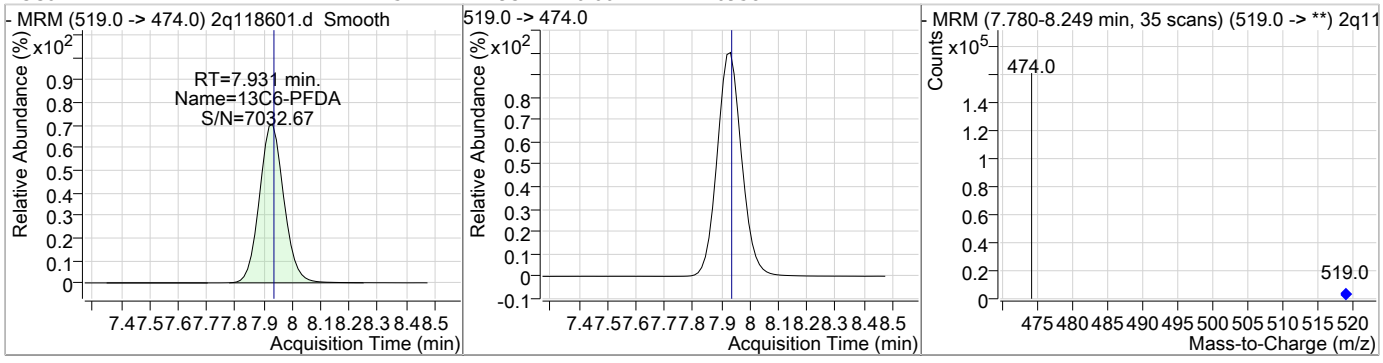
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	11.61	7.61	0.00	26562				



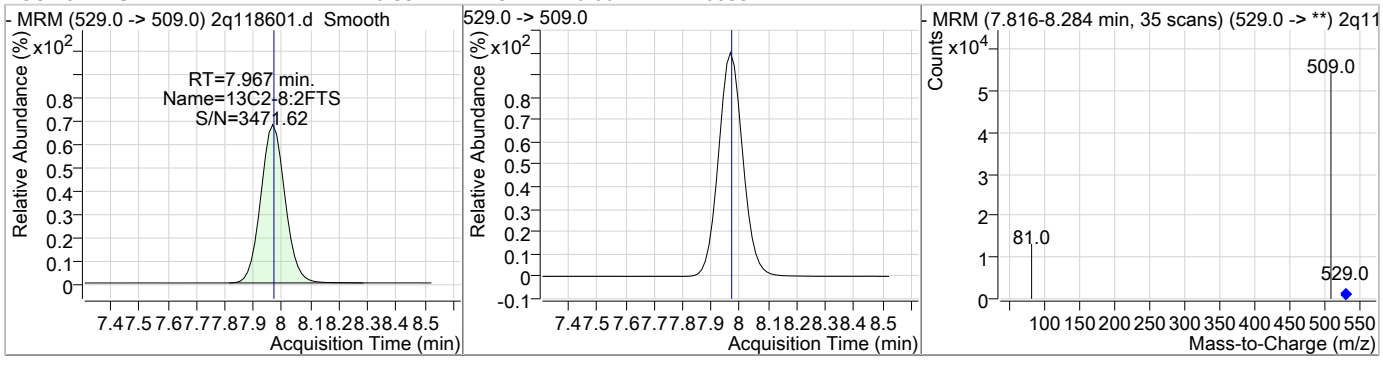
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	11.88	7.72	0.00	22920				



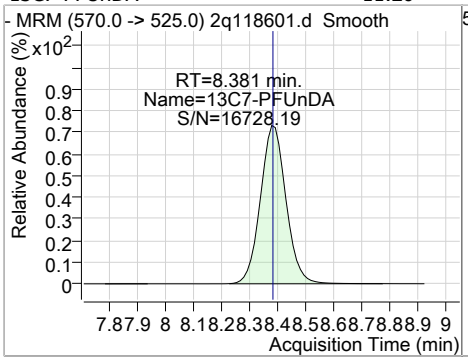
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	11.57	7.93	0.00	120958				

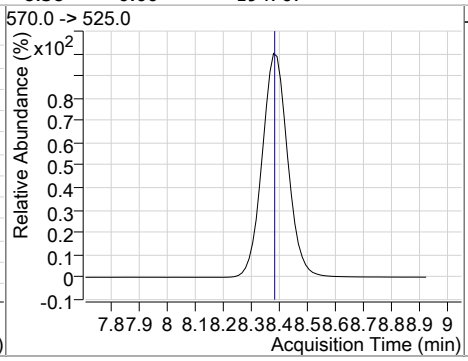


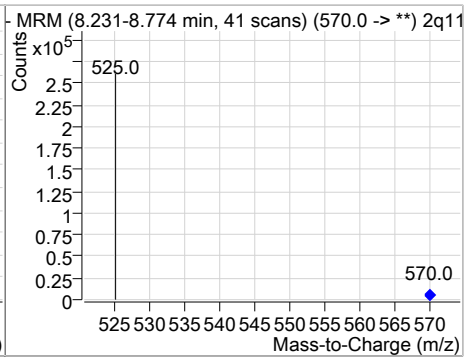
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	10.33	7.97	0.00	40035				



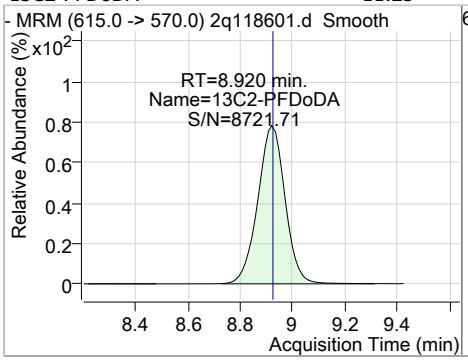
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	11.20	8.38	0.00	194707				

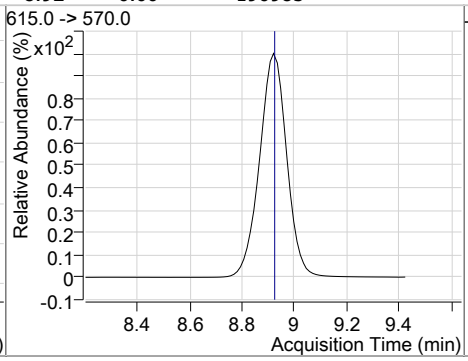


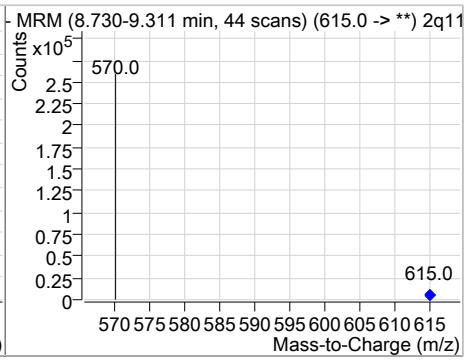




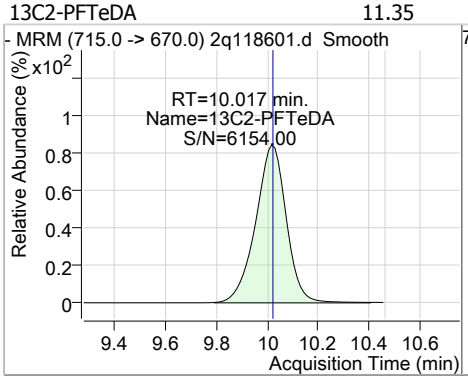
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	11.25	8.92	0.00	196985				

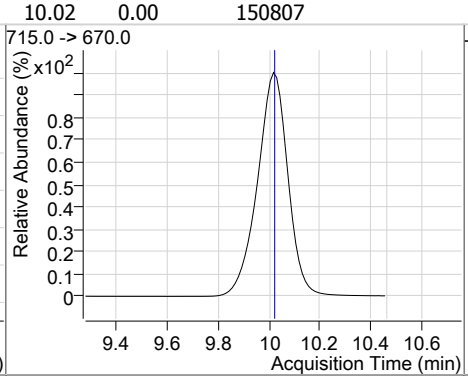


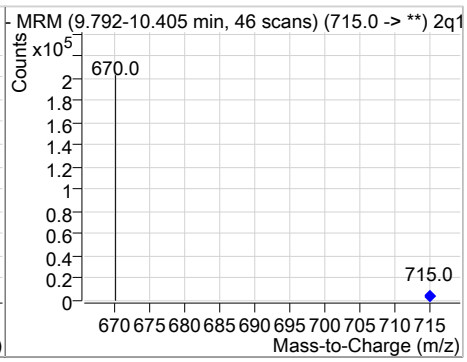




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	11.35	10.02	0.00	150807				







Manual Integration Approval Summary

Sample Number: S2Q1693-RT
Lab FileID: 2Q118601.D
Injection Time: 01/04/24 15:29
Method: EPA 537M QSM5.3 B-15
Analyst approved: 01/05/24 15:53 Lindsay Ritner
Supervisor approved: 01/05/24 17:02 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorooctanoic acid	335-67-1		6.88	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Natasha Gumtie 01/02/24 14:05

Perfluorinated Compounds by LC/MS/MS

Data File : 5Q23919.d
Operator : natashag
Acq. Method : 537_ID.m
Acq. Date-Time : 12/28/2023 5:35:50 PM
Sample Name : rt
Vial : P1-B3
DA Method File : ID_122823_S5Q375.quantmethod.xml
Batch Name : s5q375.batch.bin
Sample Information : OP401,S5Q375,250,,,1.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.987	217.0 -> 172.0	45214	10.00	µg/L	0.000
M5-PFPeA	3.432	268.0 -> 223.0	77182	10.00	µg/L	0.000
M5-PFHxA	4.552	318.0 -> 273.0	113924	10.00	µg/L	0.000
M4-PFHpA	5.413	367.0 -> 322.0	117198	10.00	µg/L	0.000
M8-PFOA	6.124	421.0 -> 376.0	160128	10.00	µg/L	0.000
M9-PFNA	6.756	472.0 -> 427.0	164814	10.00	µg/L	0.000
M6-PFDA	7.288	519.0 -> 474.0	165862	10.00	µg/L	0.000
M7-PFUnDA	8.047	570.0 -> 525.0	227784	10.00	µg/L	-0.012
M2-PFDoDA	9.026	615.0 -> 570.0	205216	10.00	µg/L	-0.012
M2-PFTeDA	10.524	715.0 -> 670.0	168772	10.00	µg/L	-0.012
M8-FOSA	6.192	506.0 -> 78.0	42803	10.00	µg/L	0.000
M3-PFBS	3.624	302.0 -> 99.0	9090	10.00	µg/L	-0.012
M3-PFHxS	5.432	402.0 -> 99.0	11699	10.00	µg/L	0.000
M8-PFOS	6.729	507.0 -> 99.0	15194	10.00	µg/L	0.000
M2-4:2FTS	4.474	329.0 -> 309.0	36147	10.00	µg/L	0.000
M2-6:2FTS	6.122	429.0 -> 409.0	63338	10.00	µg/L	-0.013
M2-8:2FTS	7.351	529.0 -> 509.0	63840	10.00	µg/L	0.000
M3-MeFOSAA	6.735	573.0 -> 419.0	31211	10.00	µg/L	-0.012
M3-HFPO-DA	4.819	287.0 -> 169.0	6162	10.00	µg/L	0.000
M3-MeFOSA	6.589	515.0 -> 169.0	14145	10.00	µg/L	0.000
M5-EtFOSAA	6.845	589.0 -> 419.0	28005	10.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.474	329.0 -> 309.0	36147	8.99	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 89.9%		
13C2-6:2FTS	6.122	429.0 -> 409.0	63338	8.94	µg/L	-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 89.4%		
13C2-8:2FTS	7.351	529.0 -> 509.0	63840	9.14	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 91.4%		
13C2-PFDoDA	9.026	615.0 -> 570.0	205216	9.84	µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 98.4%		
13C2-PFTeDA	10.524	715.0 -> 670.0	168772	9.51	µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 95.1%		
13C3-PFBS	3.624	302.0 -> 99.0	9090	9.36	µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 93.6%		
13C3-PFHxS	5.432	402.0 -> 99.0	11699	9.91	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.1%		
13C4-PFBA	1.987	217.0 -> 172.0	45214	9.57	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 95.7%		
13C4-PFHpA	5.413	367.0 -> 322.0	117198	9.74	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 97.4%		
13C5-PFHxA	4.552	318.0 -> 273.0	113924	9.53	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 95.3%		
13C5-PFPeA	3.432	268.0 -> 223.0	77182	9.79	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 97.9%		
13C6-PFDA	7.288	519.0 -> 474.0	165862	9.85	µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

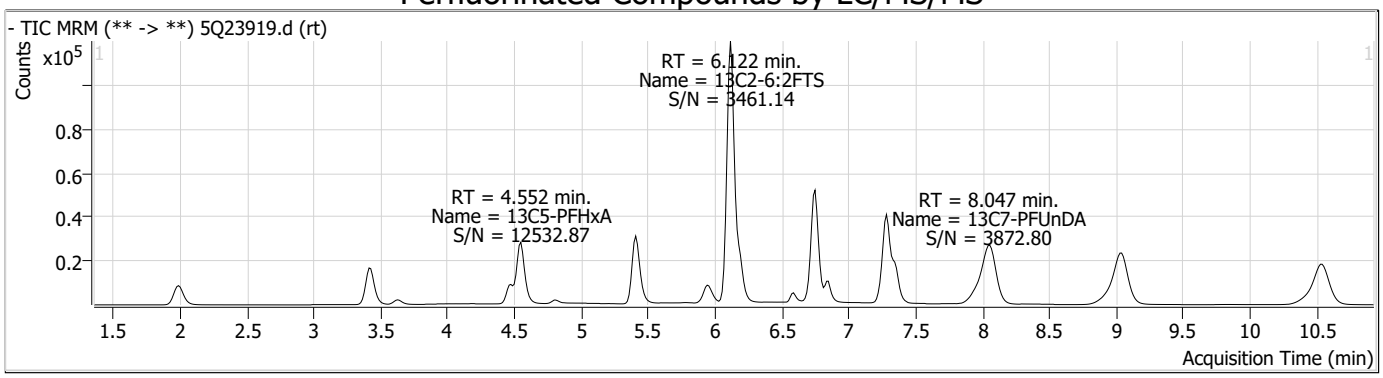
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 98.5%			
13C7-PFUnDA	8.047	570.0 -> 525.0	227784	9.77	µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 97.7%			
13C8-FOSA	6.192	506.0 -> 78.0	42803	10.56	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 105.6%			
13C8-PFOA	6.124	421.0 -> 376.0	160128	9.67	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 96.7%			
13C8-PFOS	6.729	507.0 -> 99.0	15194	9.67	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 96.7%			
13C9-PFNA	6.756	472.0 -> 427.0	164814	9.93	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.3%			
d3-MeFOSAA	6.735	573.0 -> 419.0	31211	10.24	µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 102.4%			
13C3-HFPO-DA	4.819	287.0 -> 169.0	6162	9.54	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 95.4%			
d3-MeFOSA	6.589	515.0 -> 169.0	14145	10.09	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.9%			
d5-EtFOSAA	6.845	589.0 -> 419.0	28005	10.20	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 102.0%			
Target Compounds							QValue
4:2FTS	-	327.0 -> 307.0	-	N.D.			
		327.0 -> 81.0					
6:2FTS	-	427.0 -> 407.0	-	N.D.			
		427.0 -> 81.0					
8:2FTS	-	527.0 -> 507.0	-	N.D.			
		527.0 -> 81.0					
EtFOSAA	6.846	584.0 -> 419.0	0		µg/L	m	1
		584.0 -> 483.0	0				
FOSA	-	498.0 -> 78.0	-	N.D.			
		498.0 -> 478.0					
MeFOSAA	6.748	570.0 -> 419.0	0		µg/L	m	1
		570.0 -> 512.0	0				
PFBA	-	213.0 -> 169.0	-	N.D.			
PFBS	-	299.0 -> 80.0	-	N.D.			
		299.0 -> 99.0					
PFDA	-	513.0 -> 469.0	-	N.D.			
		513.0 -> 219.0					
PFDoDA	-	613.0 -> 569.0	-	N.D.			
		613.0 -> 319.0					
PFDS	-	599.0 -> 80.0	-	N.D.			
		599.0 -> 99.0					
PFHpA	5.413	363.0 -> 319.0	0		µg/L	m	1
		363.0 -> 169.0	0				
PFHpS	-	449.0 -> 80.0	-	N.D.			
		449.0 -> 99.0					
PFHxA	-	313.0 -> 269.0	-	N.D.			
		313.0 -> 119.0					
PFHxS	-	399.0 -> 80.0	-	N.D.			
		399.0 -> 99.0					
PFNA	-	463.0 -> 419.0	-	N.D.			
		463.0 -> 219.0					
PFNS	-	549.0 -> 80.0	-	N.D.			
		549.0 -> 99.0					
PFOA	6.125	413.0 -> 369.0	242463	15.44	µg/L	m	97
		413.0 -> 169.0	63618				
PFOS	-	499.0 -> 80.0	-	N.D.			

Perfluorinated Compounds by LC/MS/MS

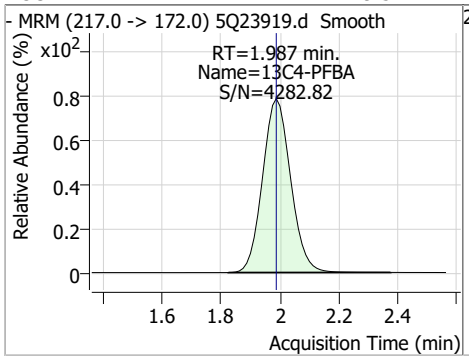
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		499.0 -> 99.0				
PFPeA	-	263.0 -> 219.0	-	N.D.		
PFPeS	-	349.0 -> 80.0	-	N.D.		
		349.0 -> 99.0				
PFTeDA	-	713.0 -> 669.0	-	N.D.		
		713.0 -> 219.0				
PFTrDA	-	663.0 -> 619.0	-	N.D.		
		663.0 -> 369.0				
PFUnDA	-	563.0 -> 519.0	-	N.D.		
		563.0 -> 269.0				
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.		
		633.0 -> 453.0				
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.		
		533.0 -> 353.0				
ADONA	-	377.0 -> 251.0	-	N.D.		
		377.0 -> 85.0				
HFPO-DA	-	329.0 -> 169.0	-	N.D.		
		285.0 -> 169.0				
MeFOSA	-	512.0 -> 169.0	-	N.D.		
		512.0 -> 219.0				
4-PFECHS	-	461.0 -> 381.0	-	N.D.		
		461.0 -> 99.0				
FBSA	-	298.0 -> 78.0	-	N.D.		
		298.0 -> 64.0				
FHxSA	-	398.0 -> 78.0	-	N.D.		
		398.0 -> 64.0				

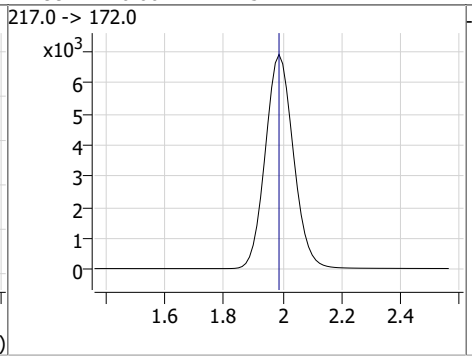
 # = Qualifier out of range, m = manually integrated, + = Area summed

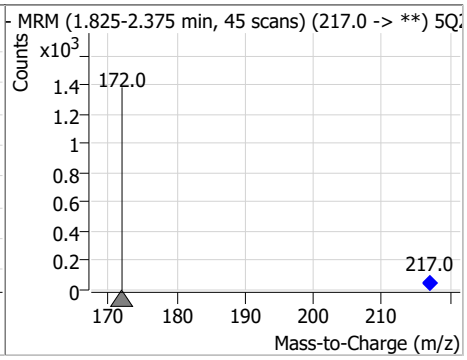
Perfluorinated Compounds by LC/MS/MS



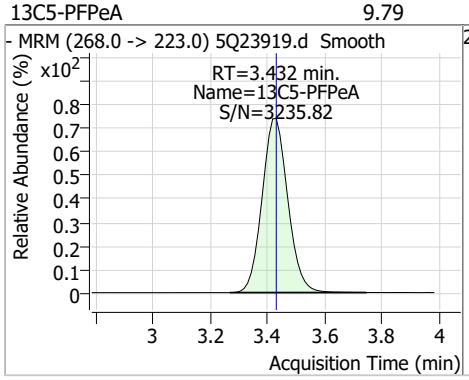
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	9.57	1.99	0.00	45214				

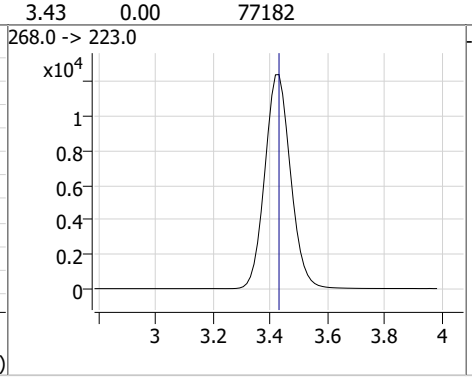


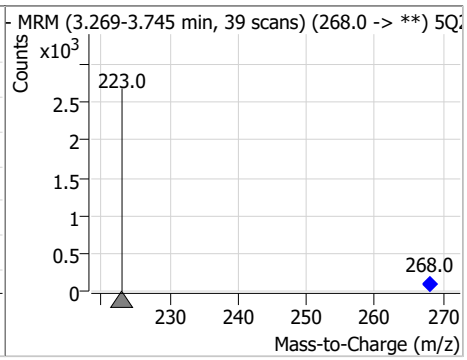




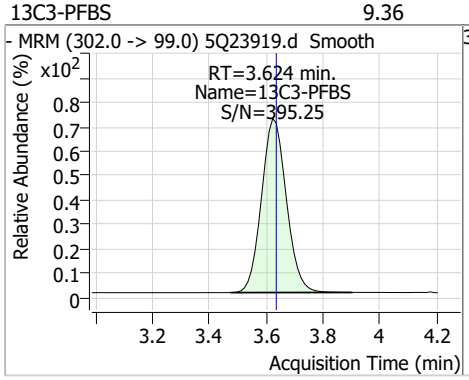
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	9.79	3.43	0.00	77182				

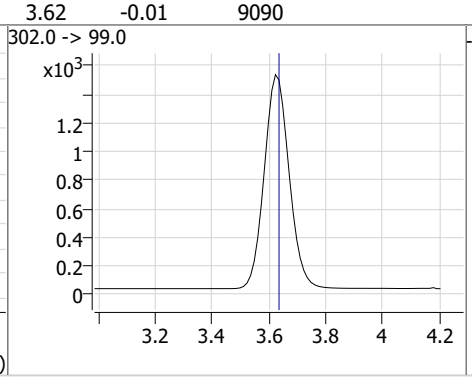


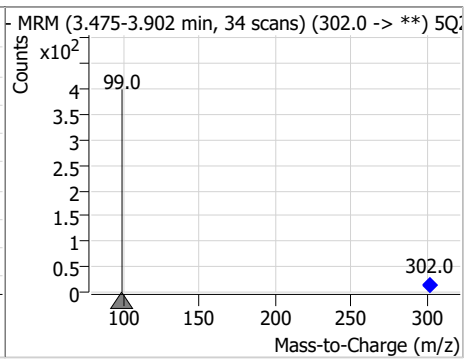




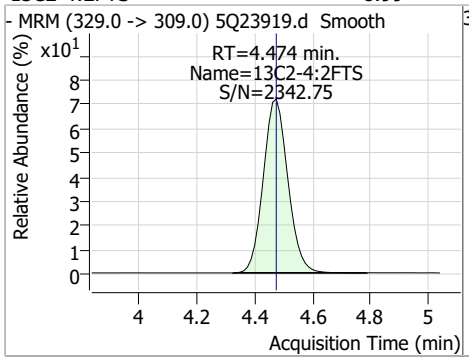
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	9.36	3.62	-0.01	9090				

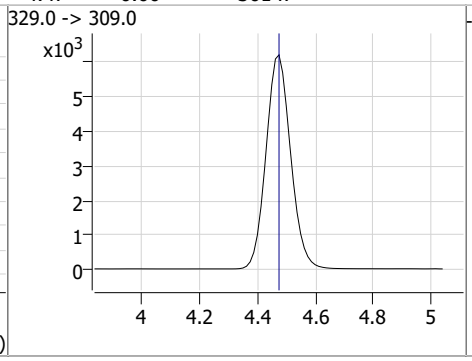


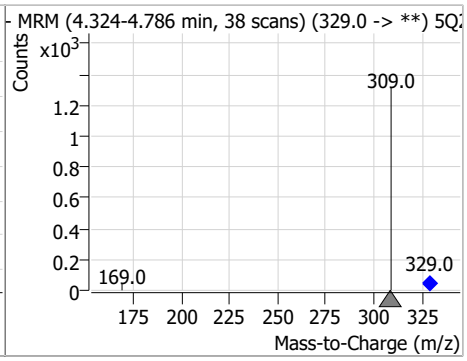




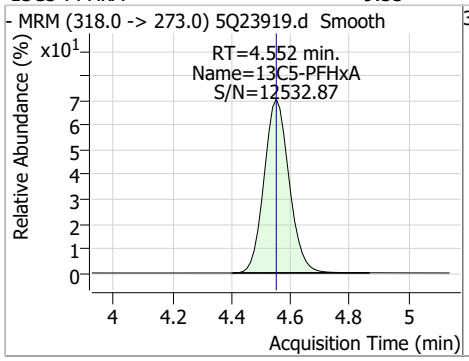
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	8.99	4.47	0.00	36147				

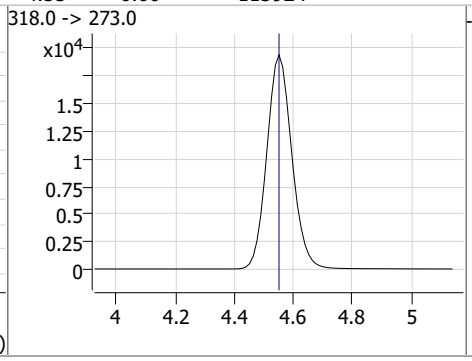


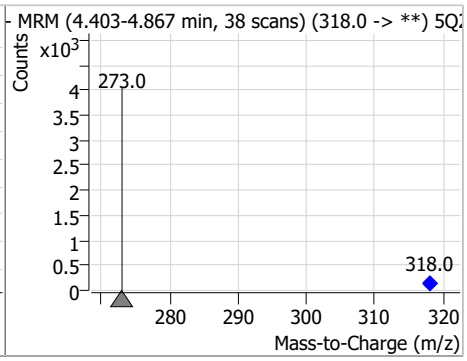




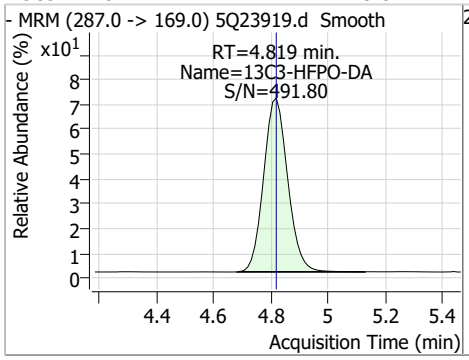
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	9.53	4.55	0.00	113924				

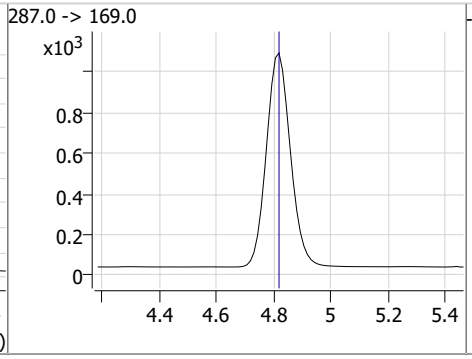


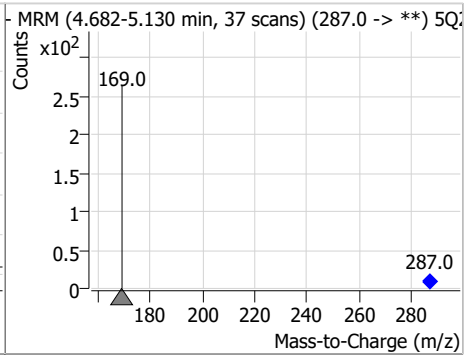




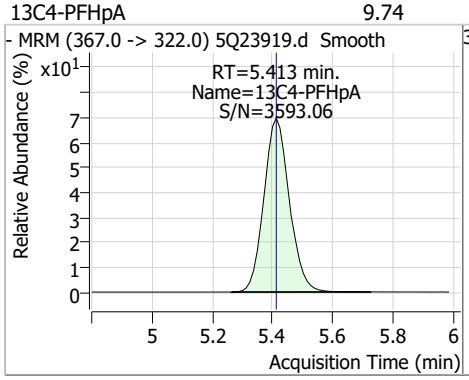
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	9.54	4.82	0.00	6162				

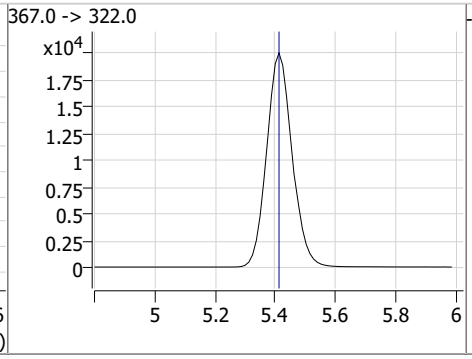


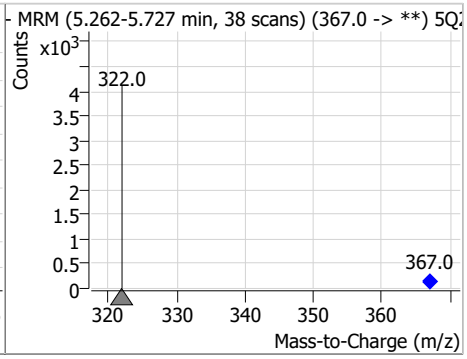




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	9.74	5.41	0.00	117198				

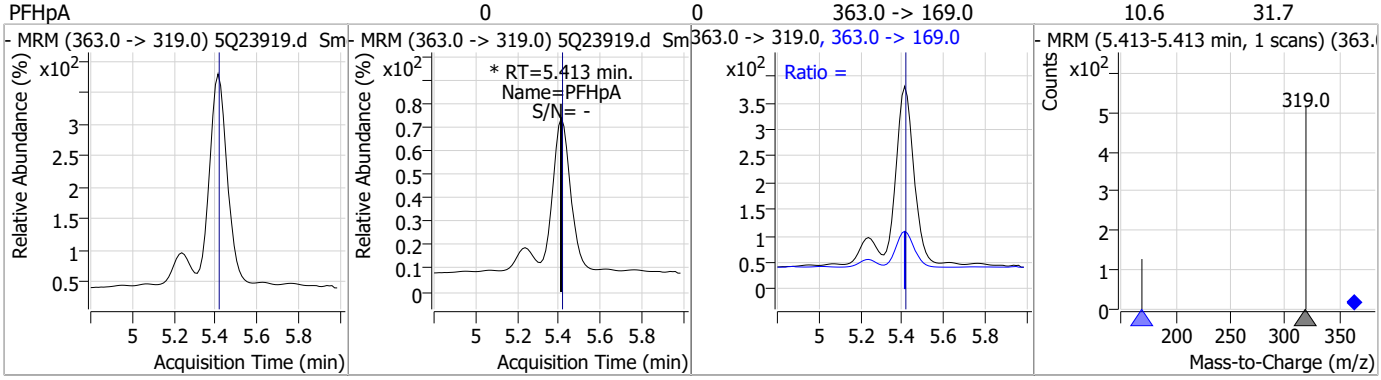




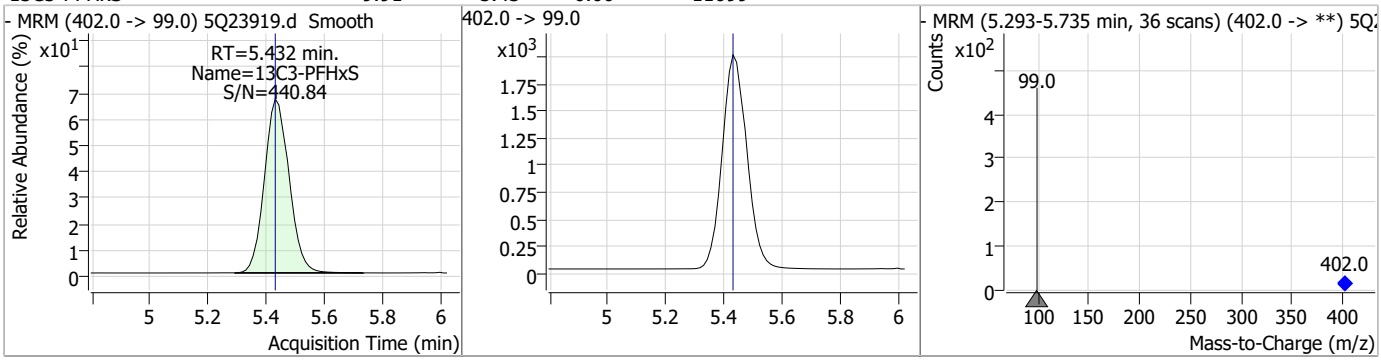


Perfluorinated Compounds by LC/MS/MS

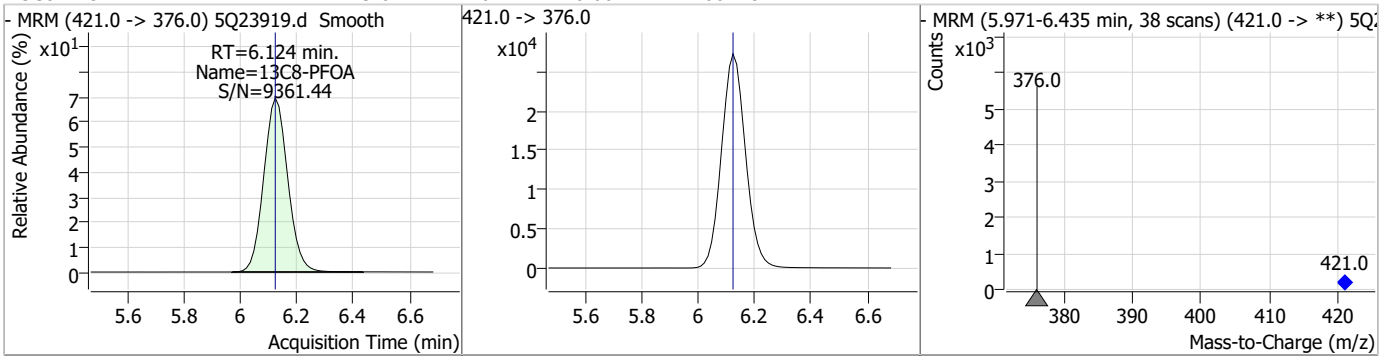
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA		0		0	363.0 -> 169.0		10.6	31.7



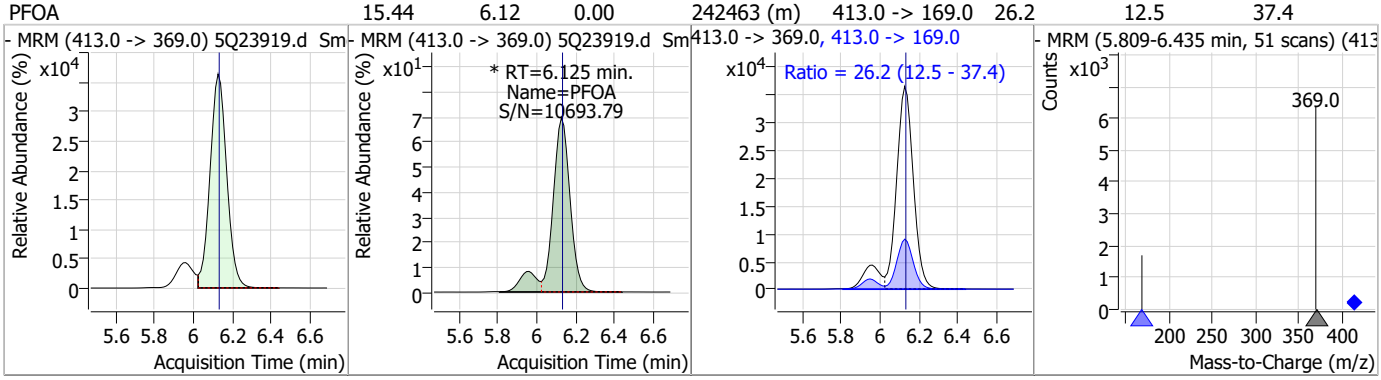
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	9.91	5.43	0.00	11699				



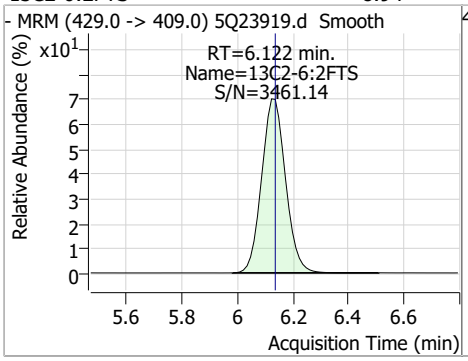
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	9.67	6.12	0.00	160128				

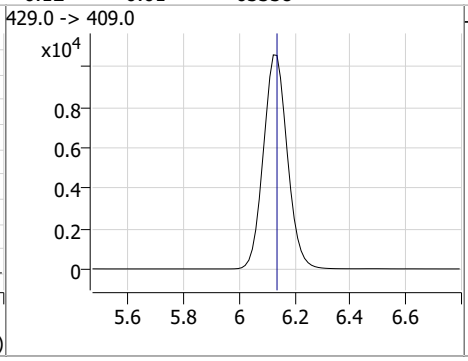


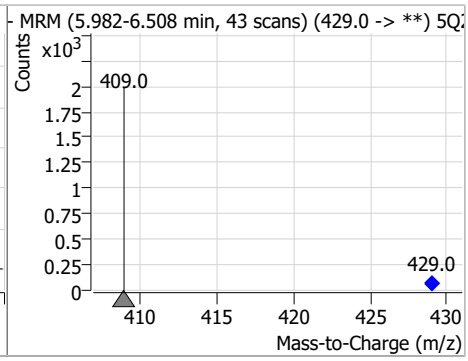
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	15.44	6.12	0.00	242463 (m)	413.0 -> 169.0	26.2	12.5	37.4



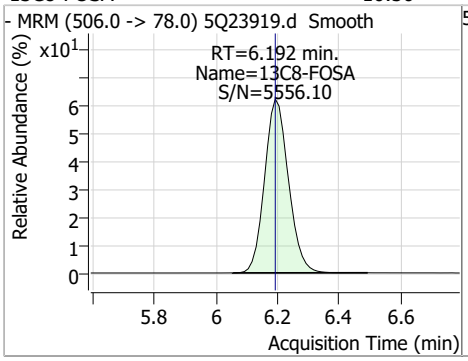
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	8.94	6.12	-0.01	63338				

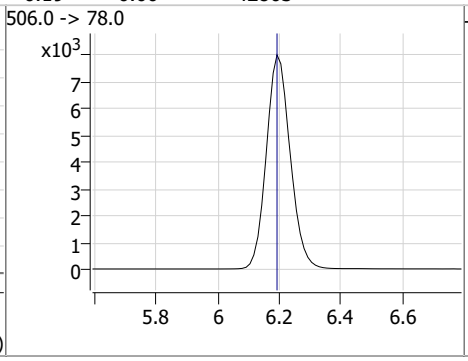


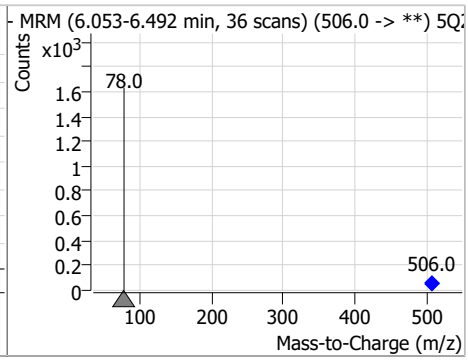




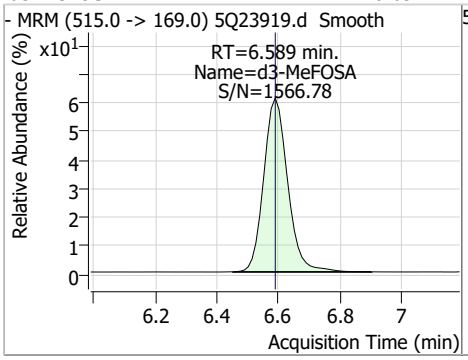
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	10.56	6.19	0.00	42803				

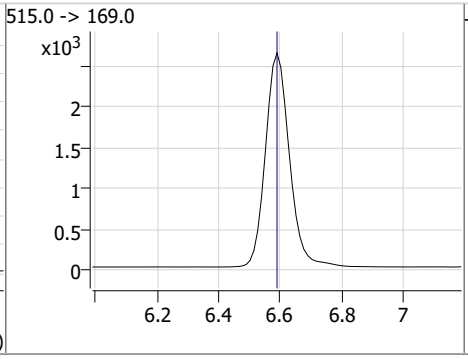


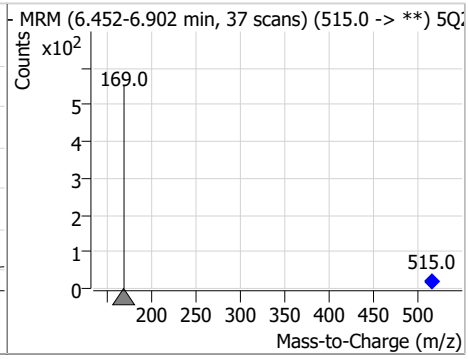




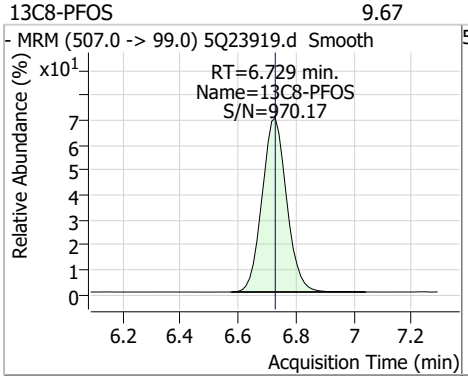
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	10.09	6.59	0.00	14145				

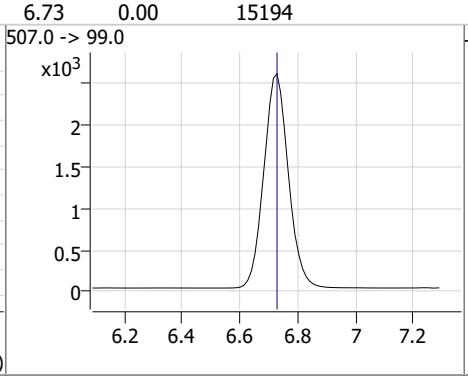


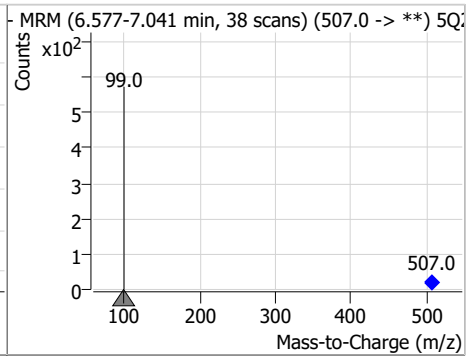




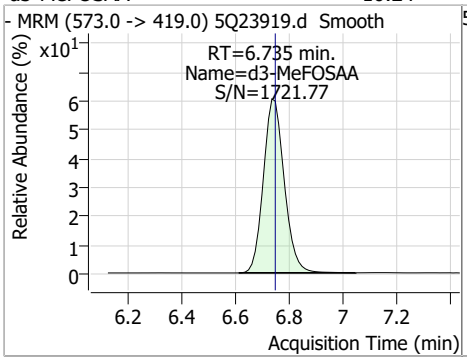
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	9.67	6.73	0.00	15194				

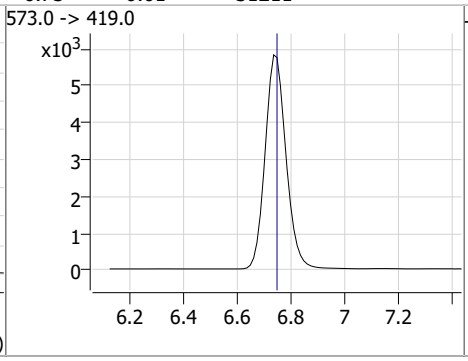


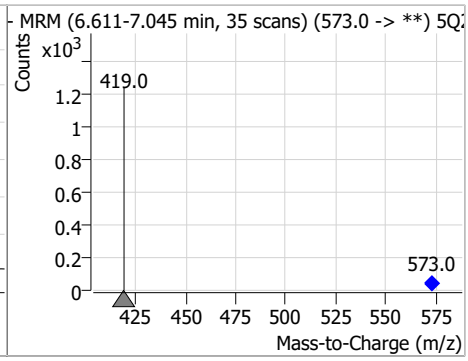




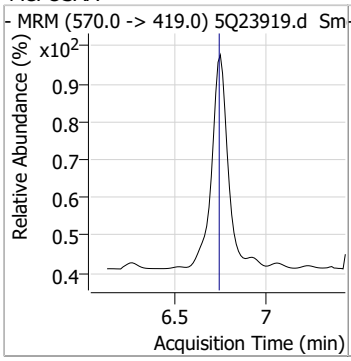
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	10.24	6.73	-0.01	31211				

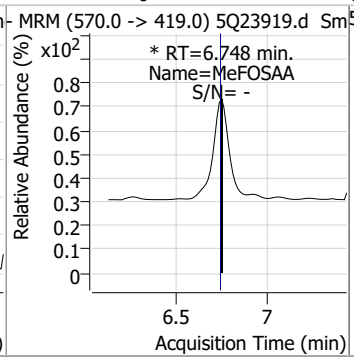


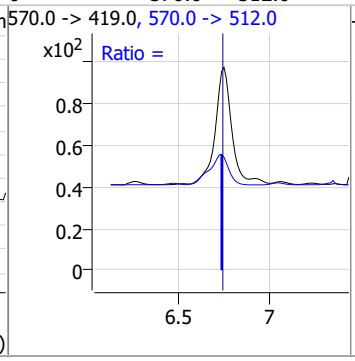


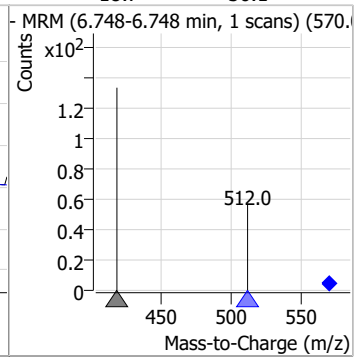


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA		0		0	570.0 -> 512.0		18.7	56.1

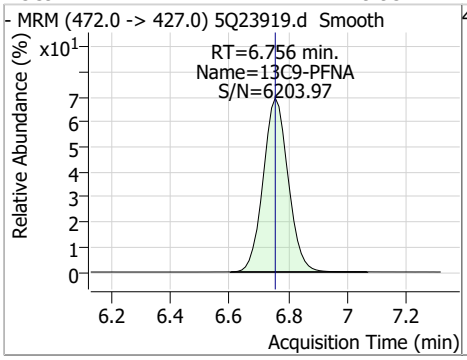


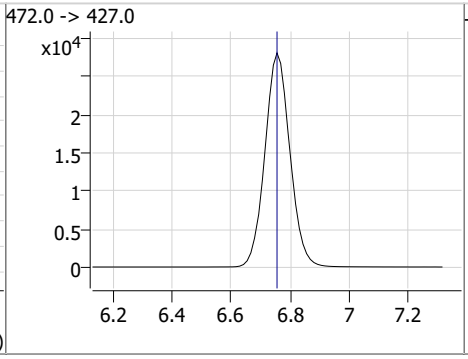


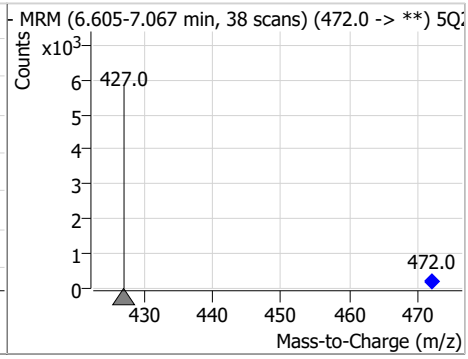




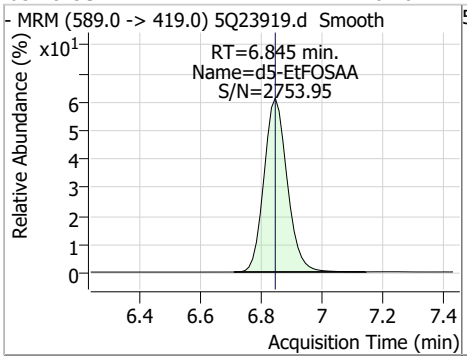
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	9.93	6.76	0.00	164814				

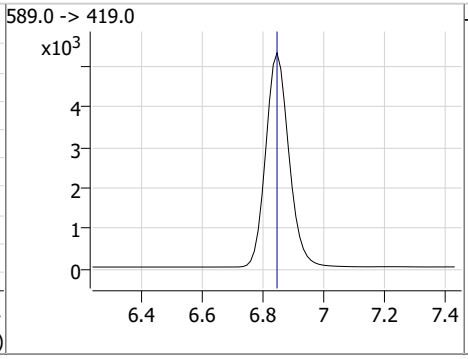


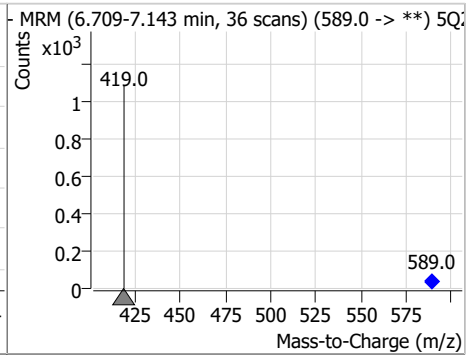




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	10.20	6.85	0.00	28005				

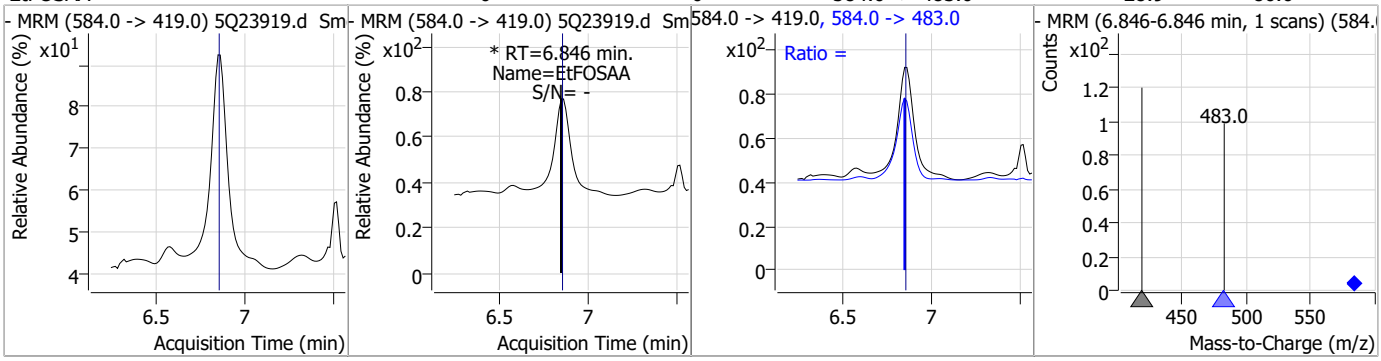




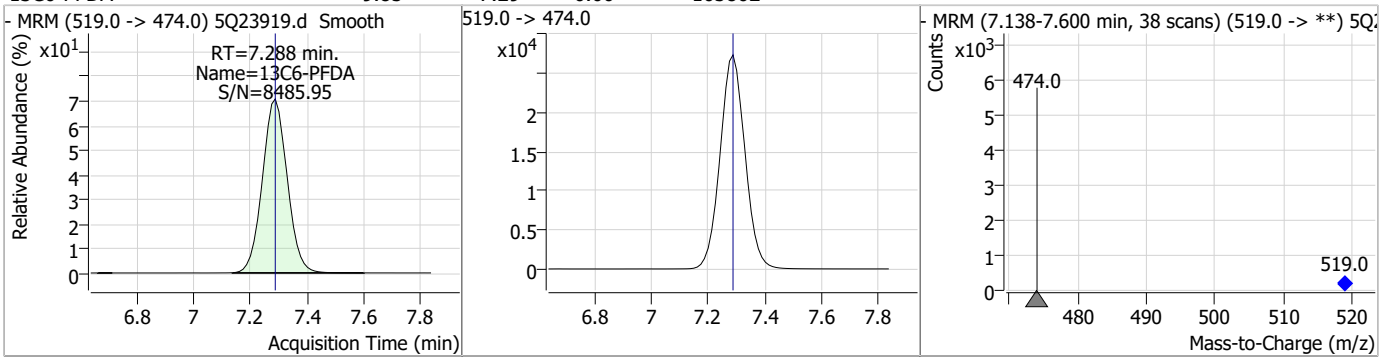


Perfluorinated Compounds by LC/MS/MS

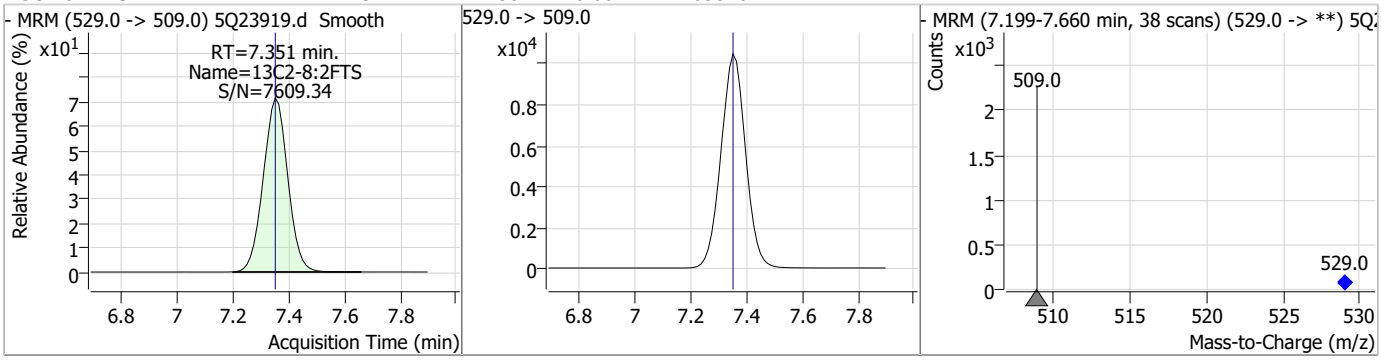
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA		0		0	584.0 -> 483.0		28.9	86.6



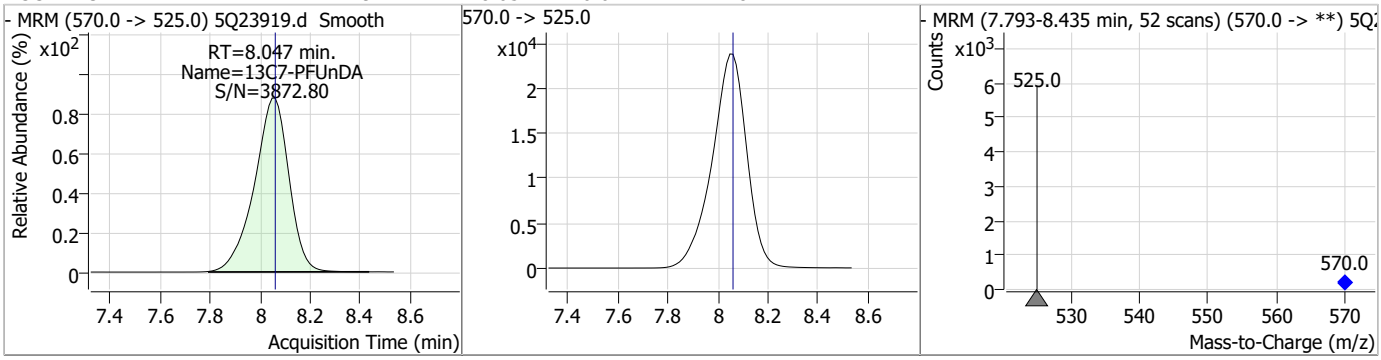
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	9.85	7.29	0.00	165862				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	9.14	7.35	0.00	63840				

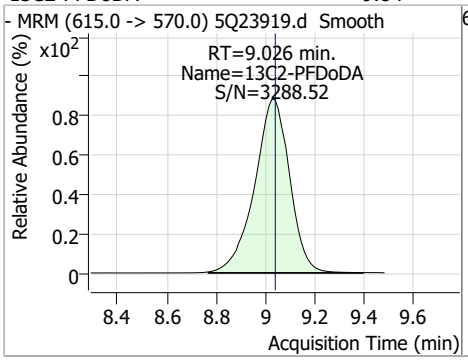


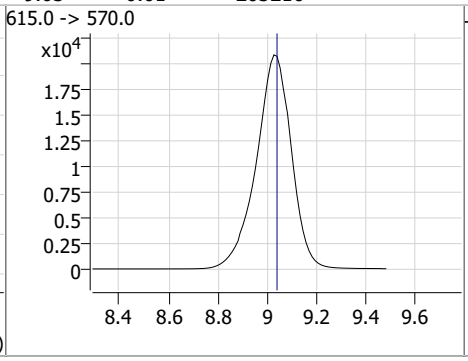
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	9.77	8.05	-0.01	227784				

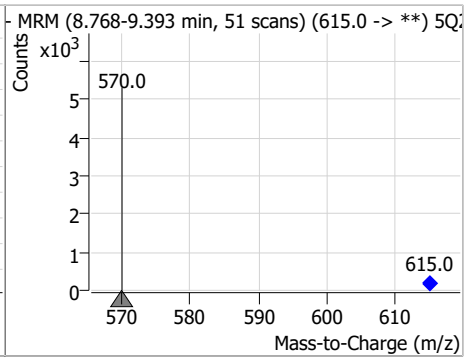


Perfluorinated Compounds by LC/MS/MS

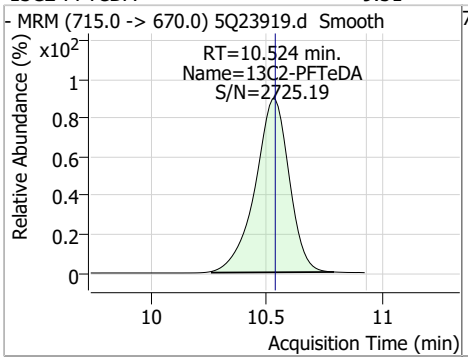
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	9.84	9.03	-0.01	205216				

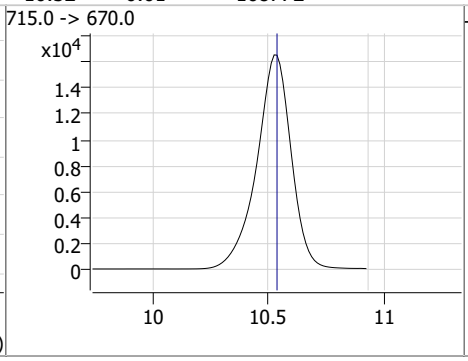


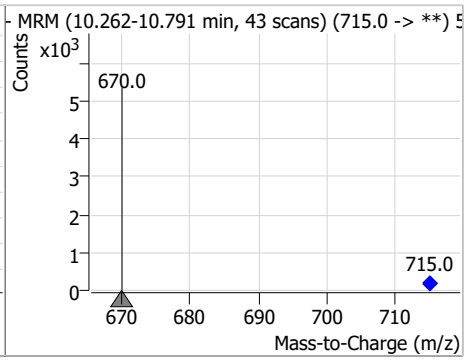




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	9.51	10.52	-0.01	168772				







Manual Integration Approval Summary

Sample Number:	S5Q375-RT	**Method:**	EPA 537M QSM5.3 B-15
Lab FileID:	5Q23919.D	**Analyst approved:**	12/29/23 14:15 Lindsay Ritner
Injection Time:	12/28/23 17:35	**Supervisor approved:**	01/02/24 14:05 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorooctanoic acid	335-67-1		6.12	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Natasha Gumtie 01/04/24 12:54

Perfluorinated Compounds by LC/MS/MS

Data File : 5Q24037.d
Operator : lindsayr
Acq. Method : 537_ID.m
Acq. Date-Time : 1/2/2024 8:07:37 PM
Sample Name : rt
Vial : P1-B3
DA Method File : ID_010224_S5Q377.quantmethod.xml
Batch Name : s5q377.batch.bin
Sample Information : OP401,S5Q377,250,,,1.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.987	217.0 -> 172.0	35133	10.00	µg/L	0.000
M5-PFPeA	3.432	268.0 -> 223.0	58733	10.00	µg/L	0.000
M5-PFHxA	4.565	318.0 -> 273.0	92693	10.00	µg/L	0.000
M4-PFHpA	5.425	367.0 -> 322.0	96149	10.00	µg/L	0.000
M8-PFOA	6.137	421.0 -> 376.0	134815	10.00	µg/L	-0.012
M9-PFNA	6.768	472.0 -> 427.0	139620	10.00	µg/L	-0.012
M6-PFDA	7.301	519.0 -> 474.0	144328	10.00	µg/L	-0.012
M7-PFUnDA	8.109	570.0 -> 525.0	203528	10.00	µg/L	-0.025
M2-PFDoDA	9.093	615.0 -> 570.0	185627	10.00	µg/L	-0.025
M2-PFTeDA	10.587	715.0 -> 670.0	158794	10.00	µg/L	-0.025
M8-FOSA	6.192	506.0 -> 78.0	36827	10.00	µg/L	-0.012
M3-PFBS	3.637	302.0 -> 99.0	7223	10.00	µg/L	0.000
M3-PFHxS	5.444	402.0 -> 99.0	9487	10.00	µg/L	0.000
M8-PFOS	6.741	507.0 -> 99.0	13075	10.00	µg/L	-0.012
M2-4:2FTS	4.474	329.0 -> 309.0	30054	10.00	µg/L	-0.012
M2-6:2FTS	6.148	429.0 -> 409.0	54660	10.00	µg/L	0.000
M2-8:2FTS	7.376	529.0 -> 509.0	56670	10.00	µg/L	0.000
M3-MeFOSAA	6.747	573.0 -> 419.0	29197	10.00	µg/L	0.000
M3-HFPO-DA	4.819	287.0 -> 169.0	4713	10.00	µg/L	-0.012
M3-MeFOSA	6.589	515.0 -> 169.0	12743	10.00	µg/L	0.000
M5-EtFOSAA	6.845	589.0 -> 419.0	25734	10.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.474	329.0 -> 309.0	30054	7.69	µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 76.9%		
13C2-6:2FTS	6.148	429.0 -> 409.0	54660	7.43	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 74.3%		
13C2-8:2FTS	7.376	529.0 -> 509.0	56670	8.01	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 80.1%		
13C2-PFDoDA	9.093	615.0 -> 570.0	185627	8.21	µg/L	-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 82.1%		
13C2-PFTeDA	10.587	715.0 -> 670.0	158794	8.26	µg/L	-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 82.6%		
13C3-PFBS	3.637	302.0 -> 99.0	7223	7.83	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 78.3%		
13C3-PFHxS	5.444	402.0 -> 99.0	9487	8.40	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 84.0%		
13C4-PFBA	1.987	217.0 -> 172.0	35133	7.96	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 79.6%		
13C4-PFHpA	5.425	367.0 -> 322.0	96149	8.14	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 81.4%		
13C5-PFHxA	4.565	318.0 -> 273.0	92693	8.07	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 80.7%		
13C5-PFPeA	3.432	268.0 -> 223.0	58733	7.90	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 79.0%		
13C6-PFDA	7.301	519.0 -> 474.0	144328	8.34	µg/L	-0.012

Perfluorinated Compounds by LC/MS/MS

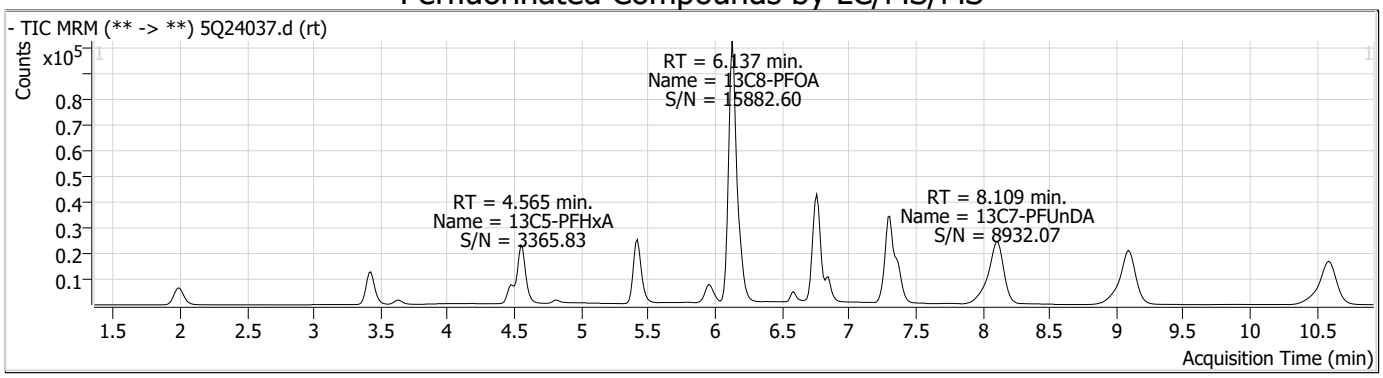
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 83.4%			
13C7-PFUnDA	8.109	570.0 -> 525.0	203528	8.34	µg/L		-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 83.4%			
13C8-FOSA	6.192	506.0 -> 78.0	36827	9.01	µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 90.1%			
13C8-PFOA	6.137	421.0 -> 376.0	134815	8.15	µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 81.5%			
13C8-PFOS	6.741	507.0 -> 99.0	13075	8.30	µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 83.0%			
13C9-PFNA	6.768	472.0 -> 427.0	139620	8.42	µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 84.2%			
d3-MeFOSAA	6.747	573.0 -> 419.0	29197	8.68	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 86.8%			
13C3-HFPO-DA	4.819	287.0 -> 169.0	4713	7.89	µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 78.9%			
d3-MeFOSA	6.589	515.0 -> 169.0	12743	9.15	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 91.5%			
d5-EtFOSAA	6.845	589.0 -> 419.0	25734	8.44	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 84.4%			
Target Compounds							QValue
4:2FTS	-	327.0 -> 307.0	-	N.D.			
		327.0 -> 81.0					
6:2FTS	-	427.0 -> 407.0	-	N.D.			
		427.0 -> 81.0					
8:2FTS	-	527.0 -> 507.0	-	N.D.			
		527.0 -> 81.0					
EtFOSAA	6.859	584.0 -> 419.0	0		µg/L	m	1
		584.0 -> 483.0	0				
FOSA	-	498.0 -> 78.0	-	N.D.			
		498.0 -> 478.0					
MeFOSAA	6.748	570.0 -> 419.0	0		µg/L	m	1
		570.0 -> 512.0	0				
PFBA	-	213.0 -> 169.0	-	N.D.			
PFBS	-	299.0 -> 80.0	-	N.D.			
		299.0 -> 99.0					
PFDA	-	513.0 -> 469.0	-	N.D.			
		513.0 -> 219.0					
PFDoDA	-	613.0 -> 569.0	-	N.D.			
		613.0 -> 319.0					
PFDS	-	599.0 -> 80.0	-	N.D.			
		599.0 -> 99.0					
PFHpA	5.426	363.0 -> 319.0	0		µg/L	m	1
		363.0 -> 169.0	0				
PFHpS	-	449.0 -> 80.0	-	N.D.			
		449.0 -> 99.0					
PFHxA	-	313.0 -> 269.0	-	N.D.			
		313.0 -> 119.0					
PFHxS	-	399.0 -> 80.0	-	N.D.			
		399.0 -> 99.0					
PFNA	-	463.0 -> 419.0	-	N.D.			
		463.0 -> 219.0					
PFNS	-	549.0 -> 80.0	-	N.D.			
		549.0 -> 99.0					
PFOA	6.137	413.0 -> 369.0	209142	16.25	µg/L	m	97
		413.0 -> 169.0	54866				
PFOS	-	499.0 -> 80.0	-	N.D.			

Perfluorinated Compounds by LC/MS/MS

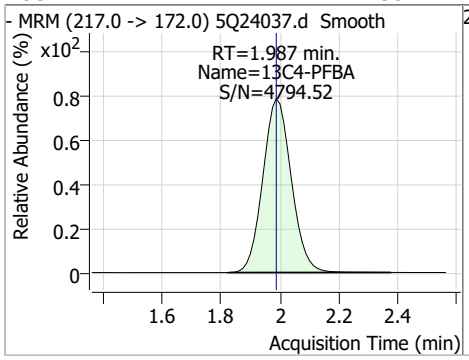
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		499.0 -> 99.0				
PFPeA	-	263.0 -> 219.0	-	N.D.		
PFPeS	-	349.0 -> 80.0	-	N.D.		
		349.0 -> 99.0				
PFTeDA	-	713.0 -> 669.0	-	N.D.		
		713.0 -> 219.0				
PFTrDA	-	663.0 -> 619.0	-	N.D.		
		663.0 -> 369.0				
PFUnDA	-	563.0 -> 519.0	-	N.D.		
		563.0 -> 269.0				
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.		
		633.0 -> 453.0				
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.		
		533.0 -> 353.0				
ADONA	-	377.0 -> 251.0	-	N.D.		
		377.0 -> 85.0				
HFPO-DA	-	329.0 -> 169.0	-	N.D.		
		285.0 -> 169.0				
MeFOSA	-	512.0 -> 169.0	-	N.D.		
		512.0 -> 219.0				
4-PFECHS	-	461.0 -> 381.0	-	N.D.		
		461.0 -> 99.0				
FBSA	-	298.0 -> 78.0	-	N.D.		
		298.0 -> 64.0				
FHxSA	-	398.0 -> 78.0	-	N.D.		
		398.0 -> 64.0				

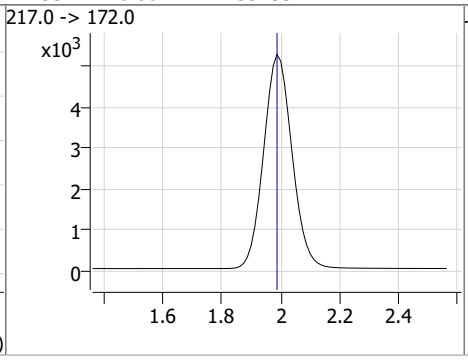
 # = Qualifier out of range, m = manually integrated, + = Area summed

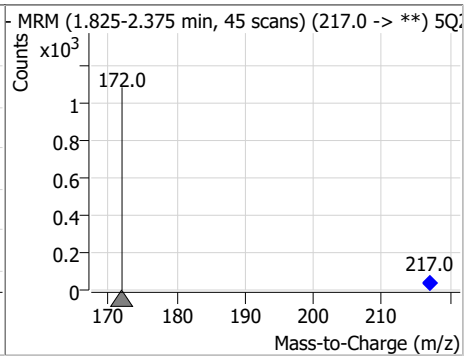
Perfluorinated Compounds by LC/MS/MS



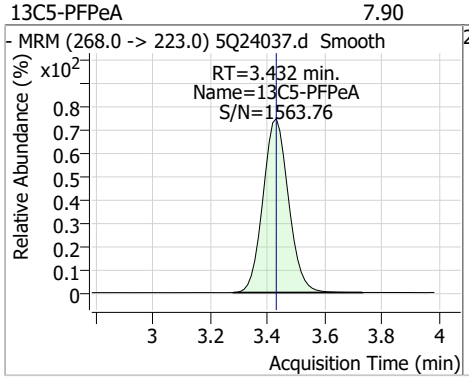
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	7.96	1.99	0.00	35133				

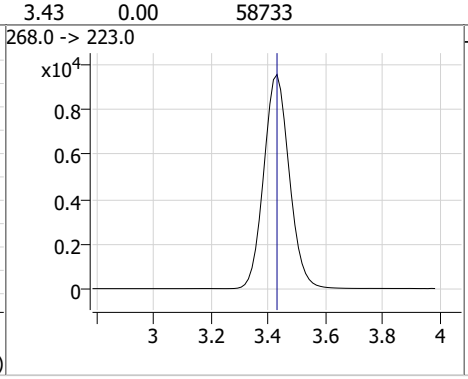


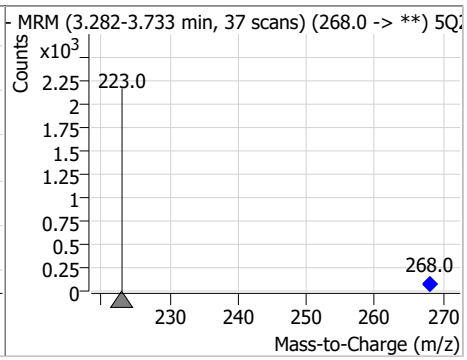




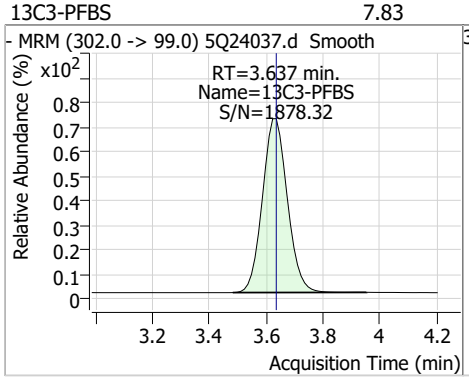
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	7.90	3.43	0.00	58733				

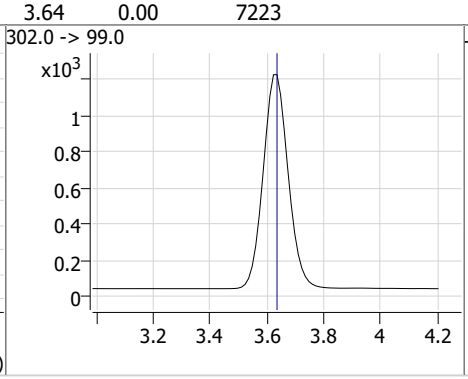


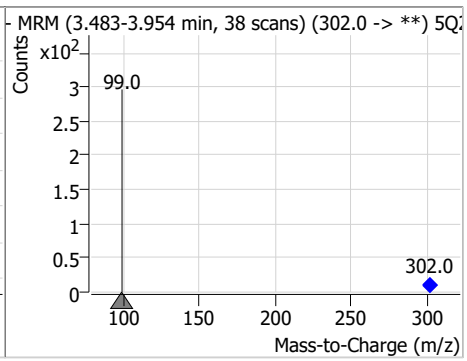




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	7.83	3.64	0.00	7223				

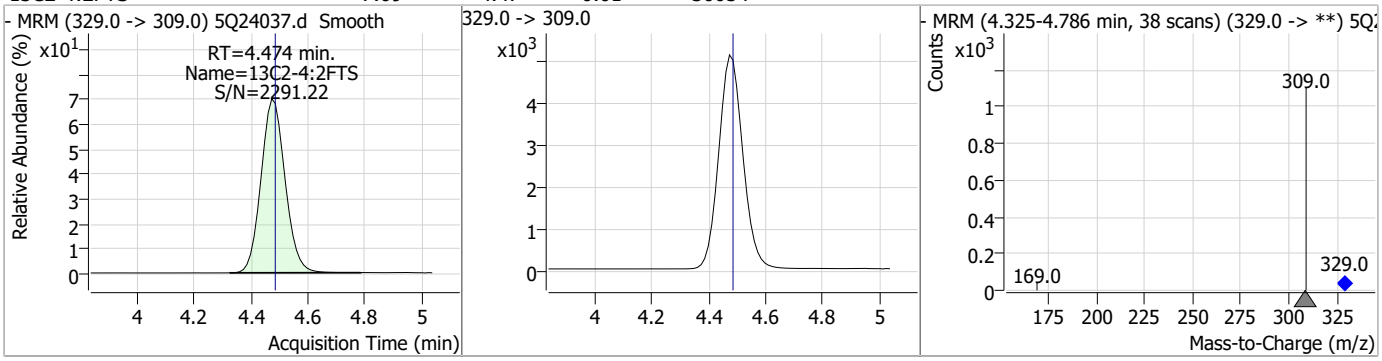




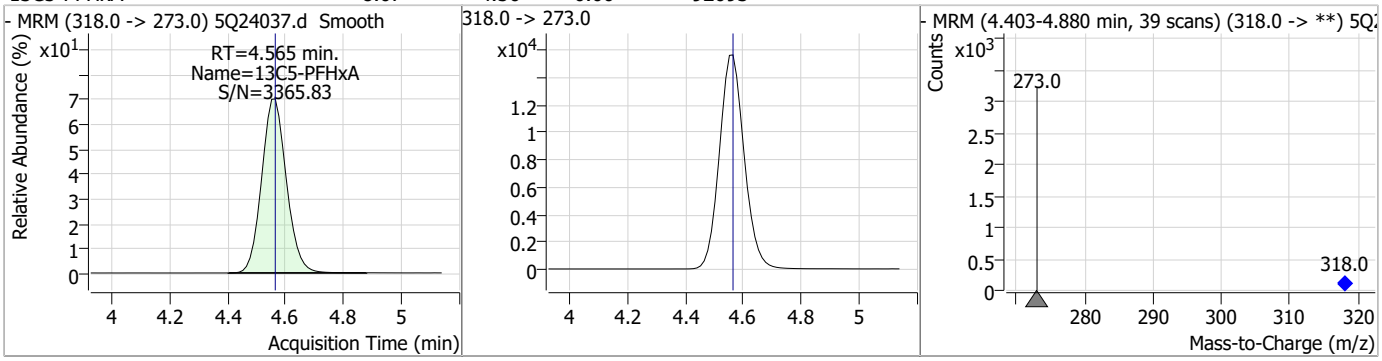


Perfluorinated Compounds by LC/MS/MS

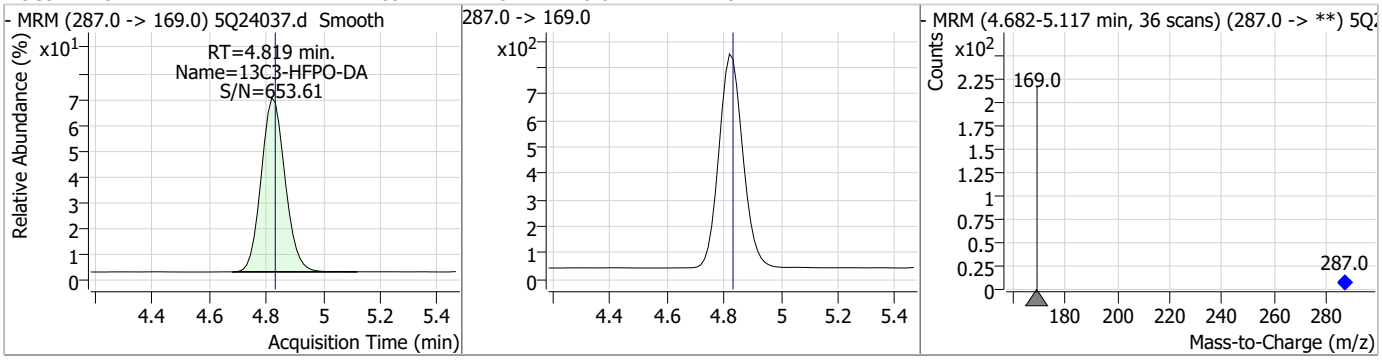
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	7.69	4.47	-0.01	30054				



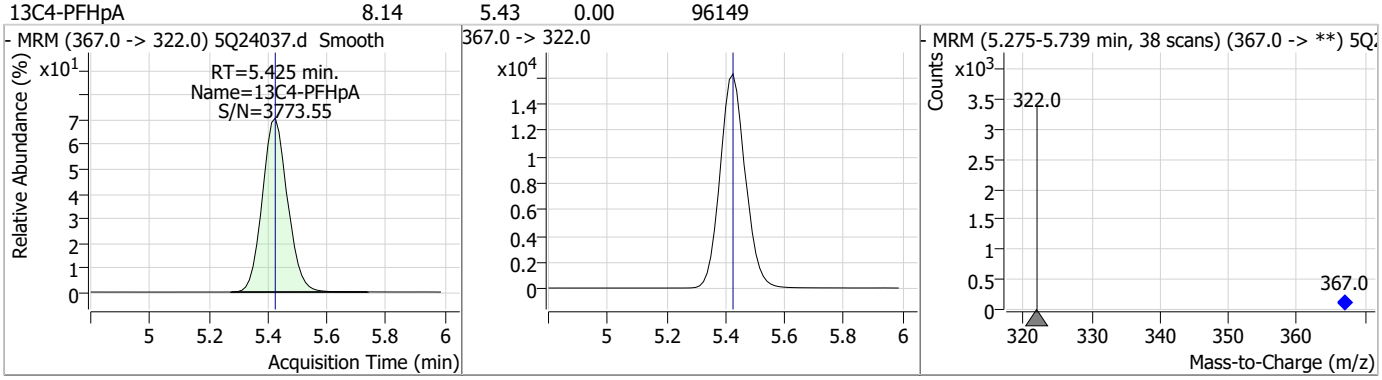
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	8.07	4.56	0.00	92693				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	7.89	4.82	-0.01	4713				

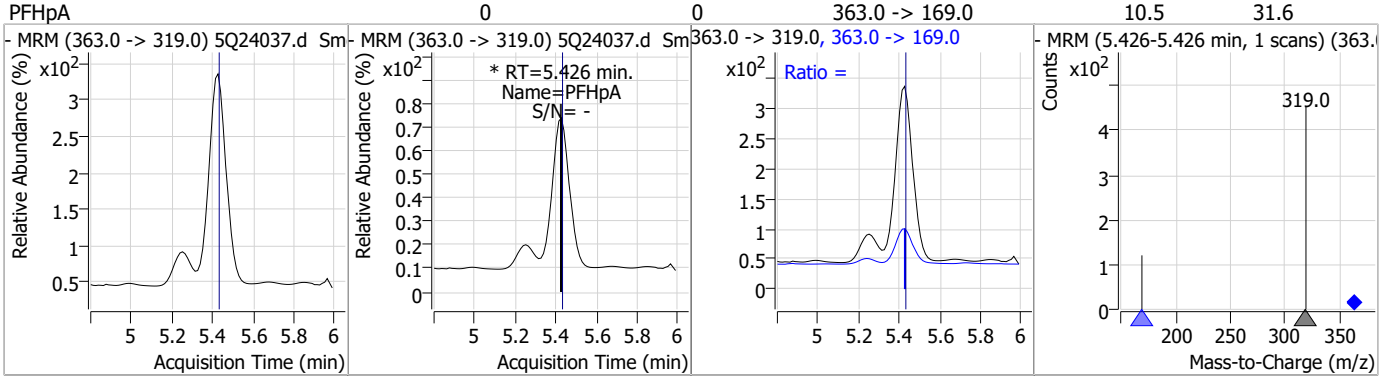


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	8.14	5.43	0.00	96149				

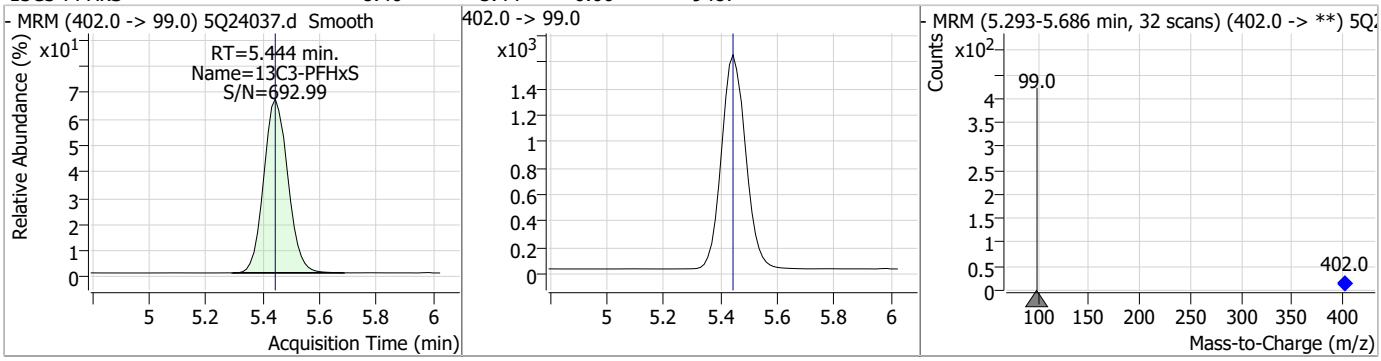


Perfluorinated Compounds by LC/MS/MS

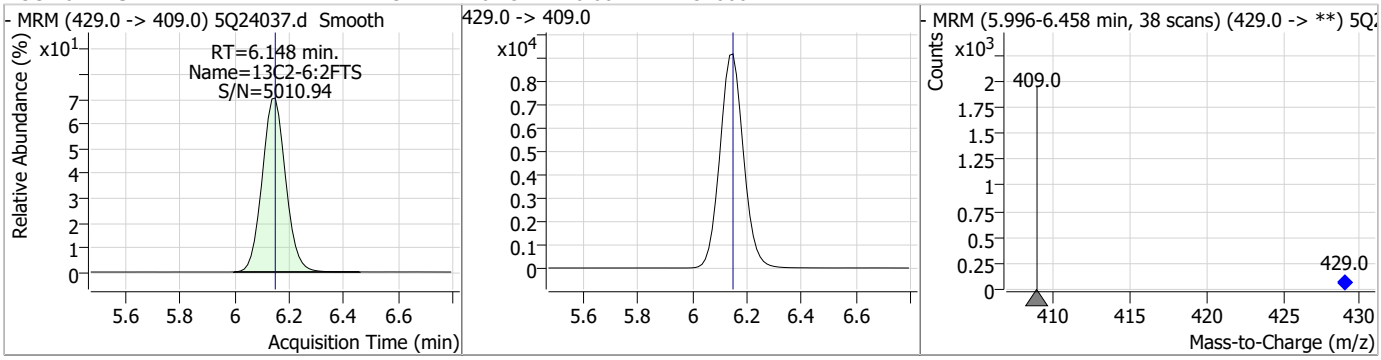
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA		0		0	363.0 -> 169.0		10.5	31.6



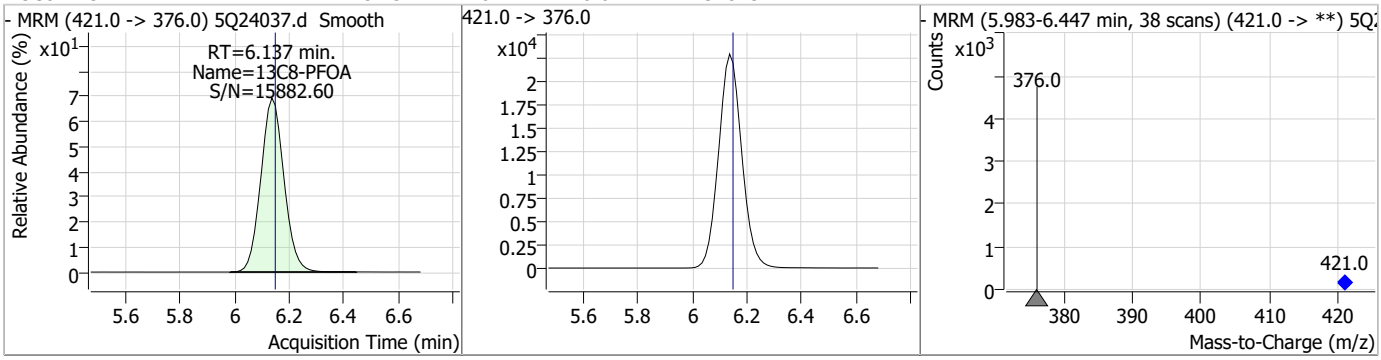
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	8.40	5.44	0.00	9487				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	7.43	6.15	0.00	54660				

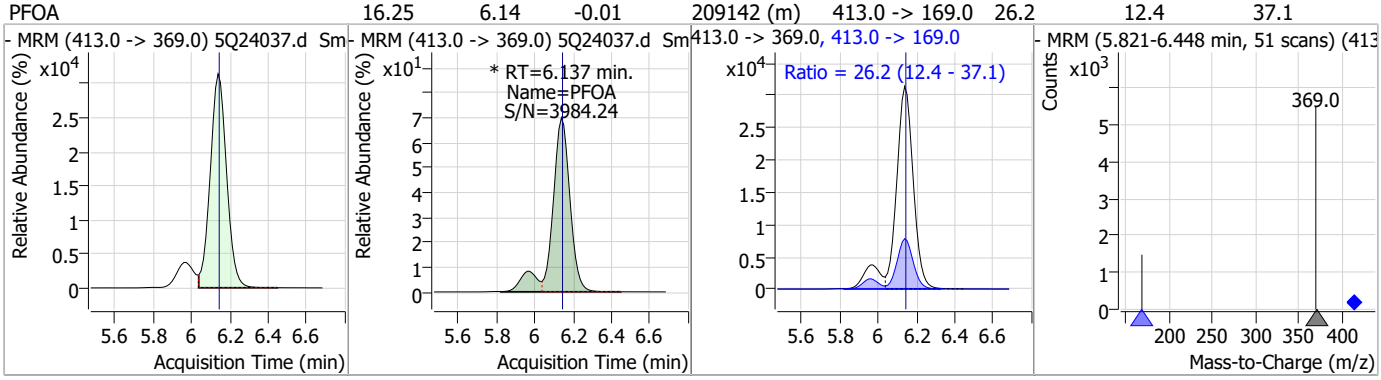


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	8.15	6.14	-0.01	134815				

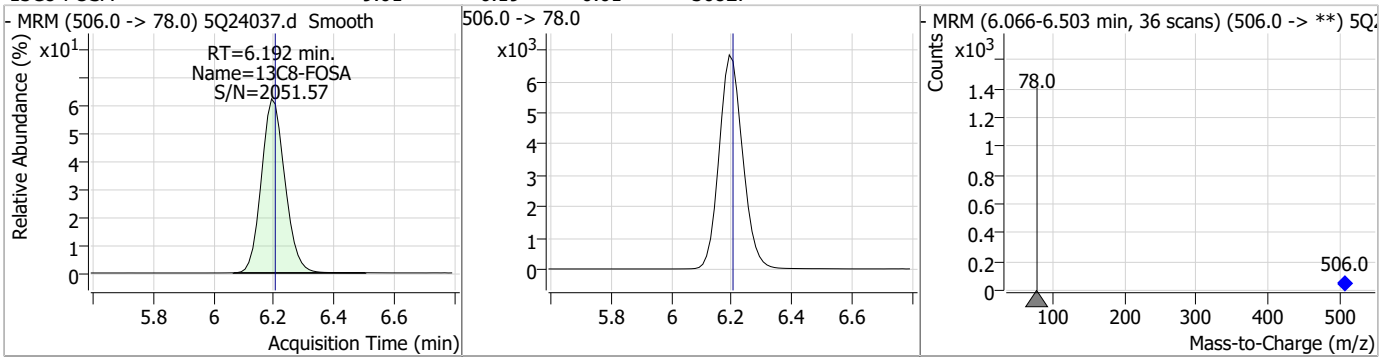


Perfluorinated Compounds by LC/MS/MS

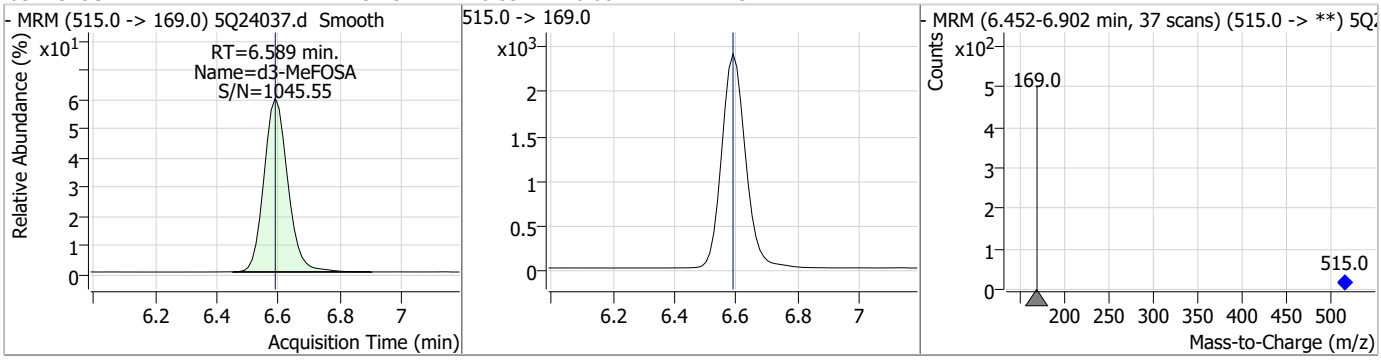
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	16.25	6.14	-0.01	209142 (m)	413.0 -> 169.0	26.2	12.4	37.1



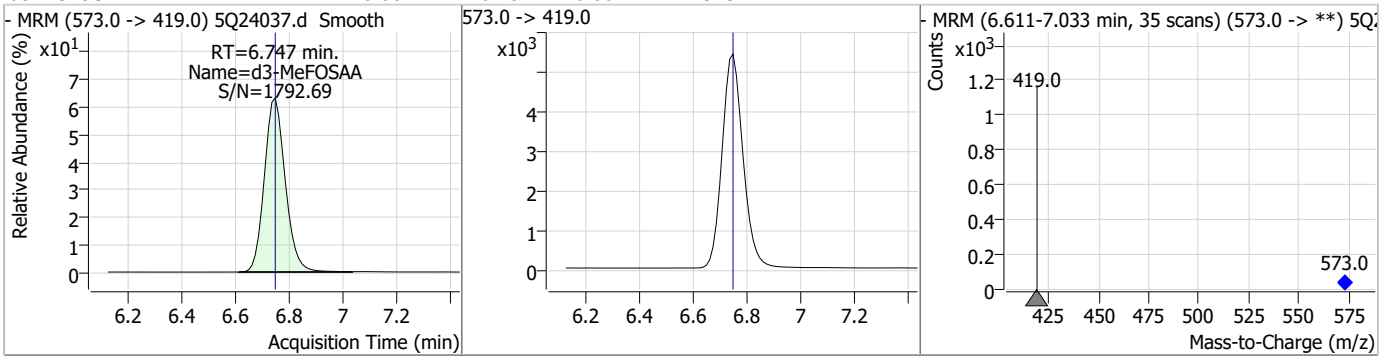
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	9.01	6.19	-0.01	36827				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	9.15	6.59	0.00	12743				

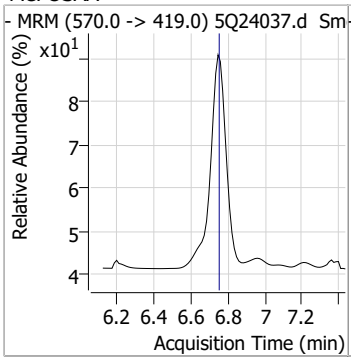


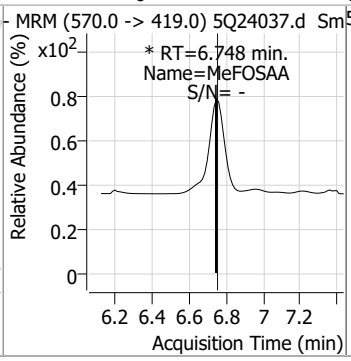
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	8.68	6.75	0.00	29197				

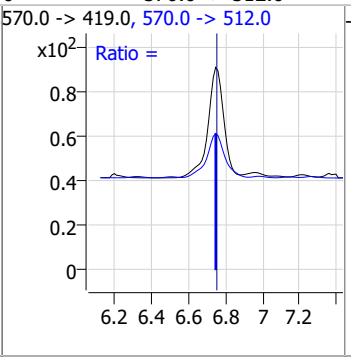


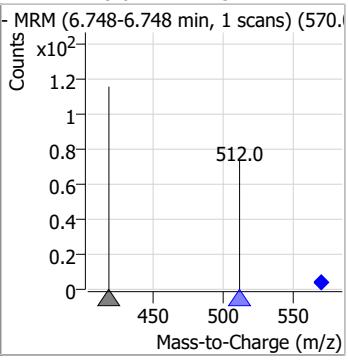
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA		0		0	570.0 -> 512.0		18.0	54.1

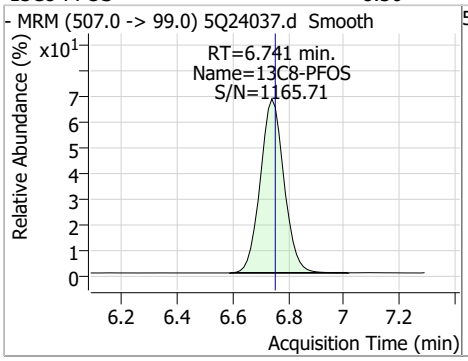


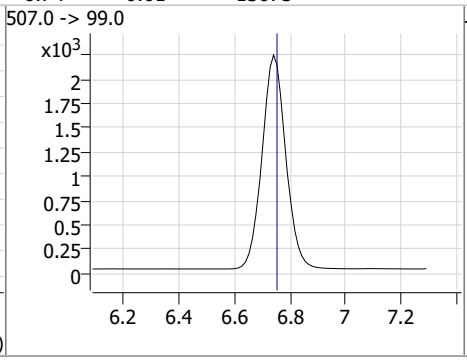


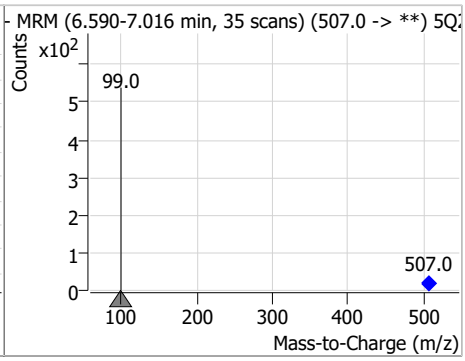




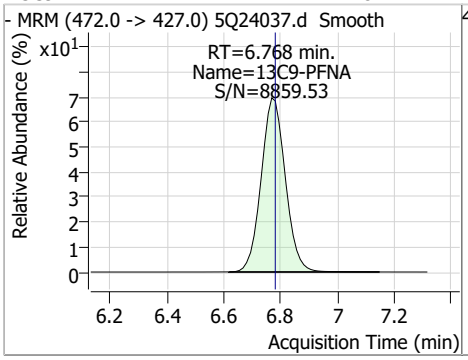
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	8.30	6.74	-0.01	13075				

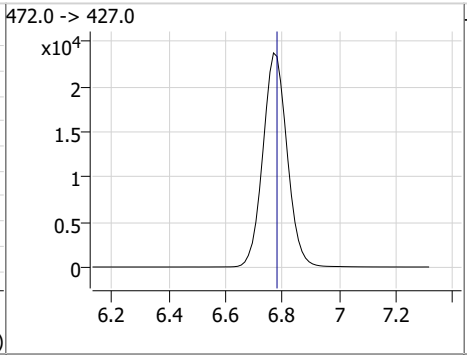


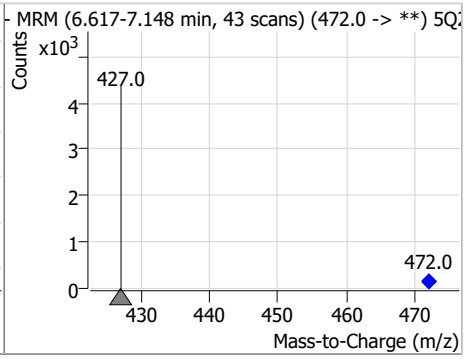




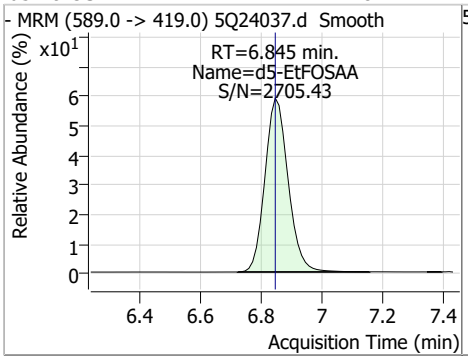
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13C9-PFNA	8.42	6.77	-0.01	139620				

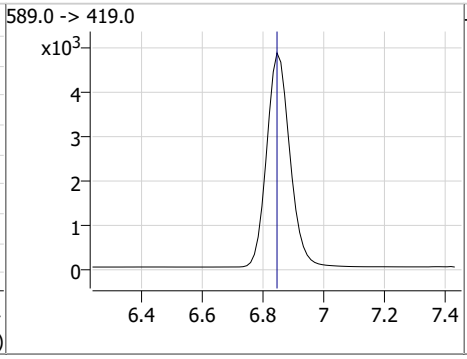


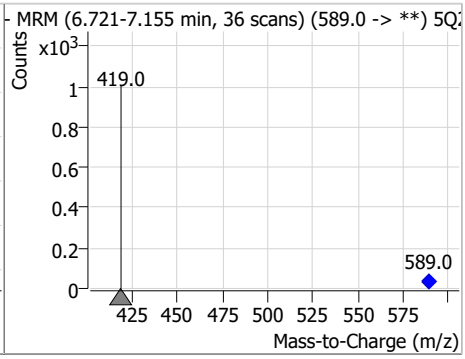




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	8.44	6.85	0.00	25734				

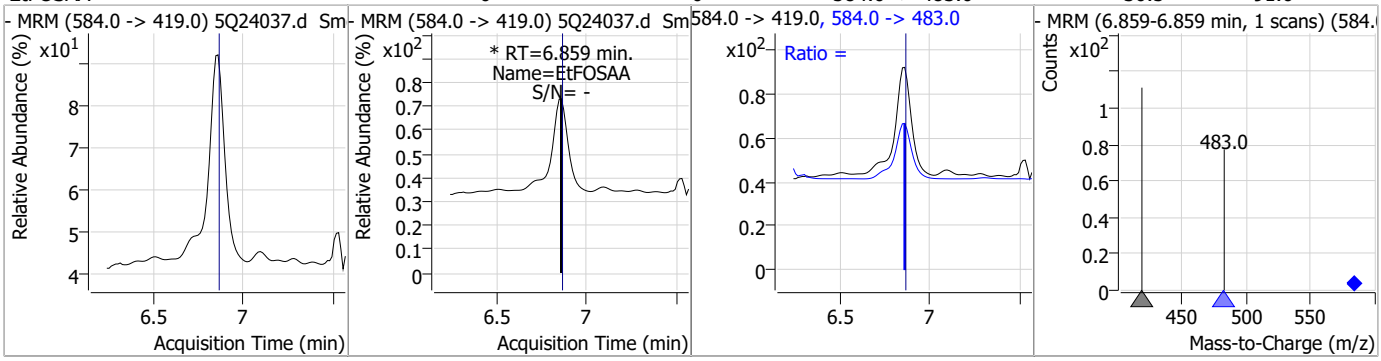




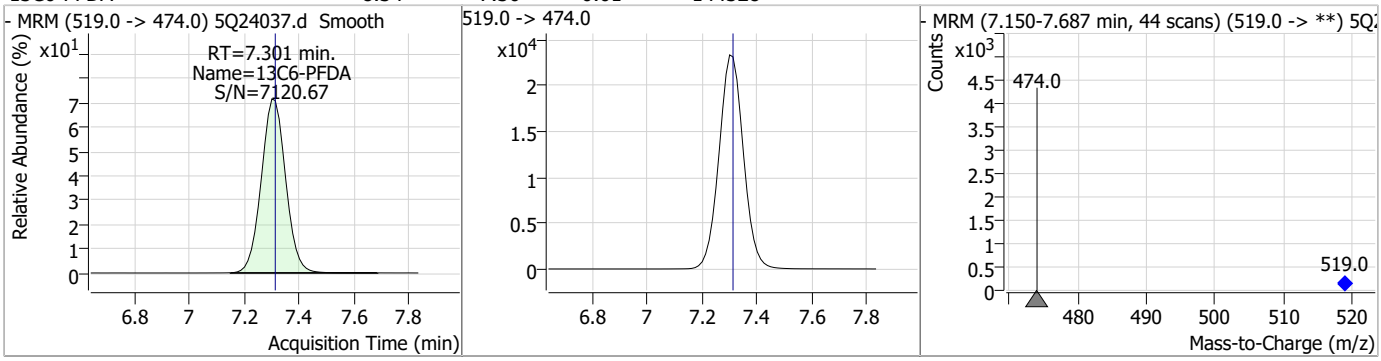


Perfluorinated Compounds by LC/MS/MS

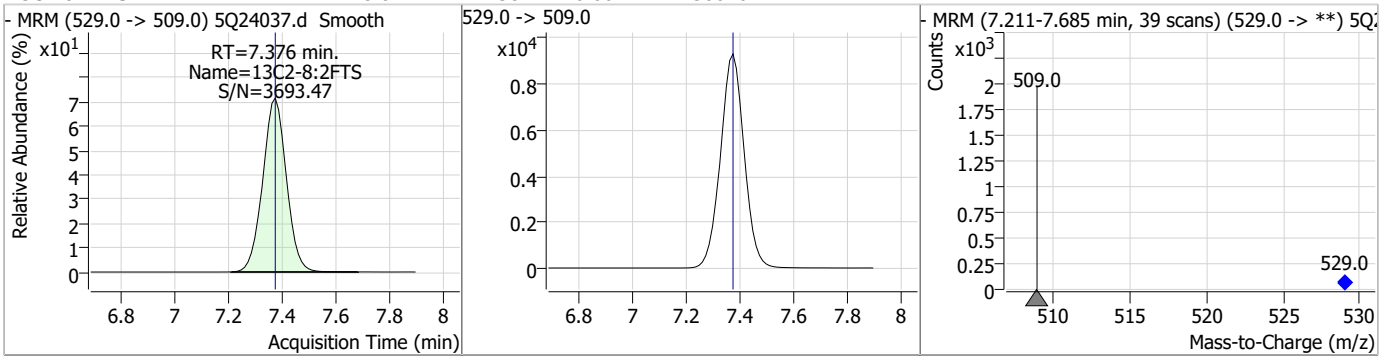
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA		0		0	584.0 -> 483.0		30.5	91.6



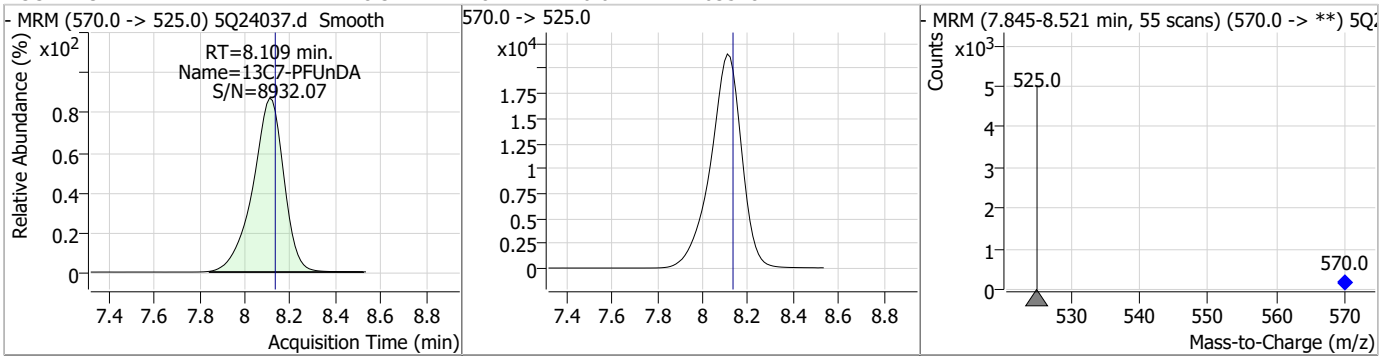
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	8.34	7.30	-0.01	144328				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	8.01	7.38	0.00	56670				

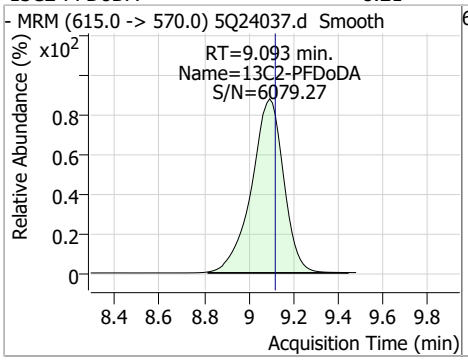


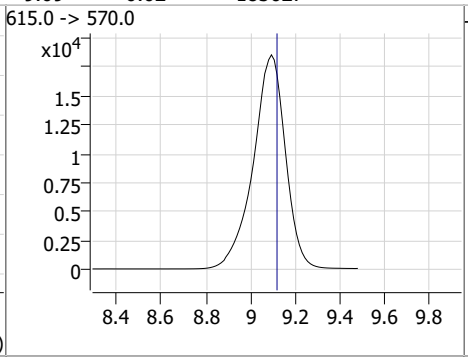
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	8.34	8.11	-0.02	203528				

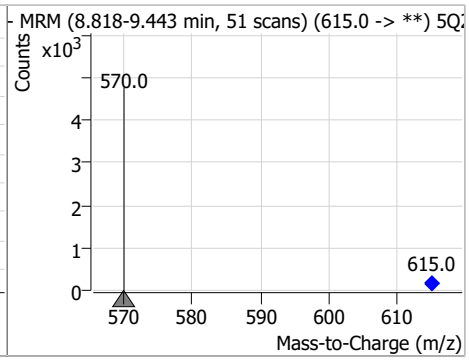


Perfluorinated Compounds by LC/MS/MS

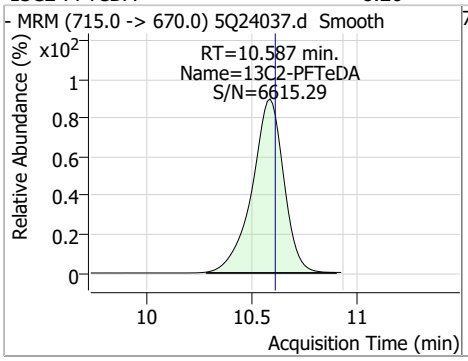
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	8.21	9.09	-0.02	185627				

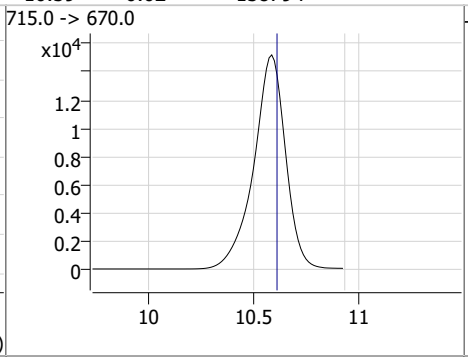


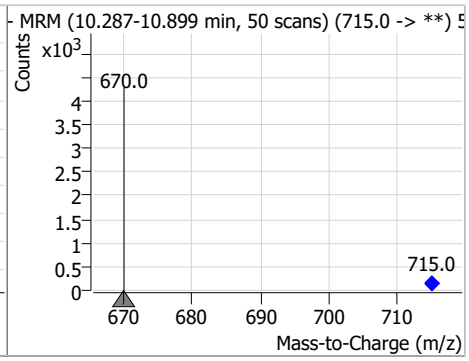




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	8.26	10.59	-0.02	158794				







9.5.4

9

Manual Integration Approval Summary

Sample Number:	S5Q377-RT	**Method:**	EPA 537M QSM5.3 B-15
Lab FileID:	5Q24037.D	**Analyst approved:**	01/03/24 16:03 Lindsay Ritner
Injection Time:	01/02/24 20:07	**Supervisor approved:**	01/04/24 12:54 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorooctanoic acid	335-67-1		6.14	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Natasha Gumtie 01/05/24 15:55

Perfluorinated Compounds by LC/MS/MS

Data File : 5Q24135.d
Operator : lindsayr
Acq. Method : 537_ID.m
Acq. Date-Time : 1/4/2024 1:02:01 PM
Sample Name : rt
Vial : P1-B3
DA Method File : ID_010224_S5Q377.quantmethod.xml
Batch Name : s5q379.batch.bin
Sample Information : OP401,S5Q379,250,,,1.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.987	217.0 -> 172.0	38198	10.00	µg/L	0.000
M5-PFPeA	3.432	268.0 -> 223.0	64053	10.00	µg/L	0.000
M5-PFHxA	4.540	318.0 -> 273.0	98460	10.00	µg/L	-0.025
M4-PFHpA	5.400	367.0 -> 322.0	101475	10.00	µg/L	-0.025
M8-PFOA	6.112	421.0 -> 376.0	140942	10.00	µg/L	-0.038
M9-PFNA	6.756	472.0 -> 427.0	146097	10.00	µg/L	-0.025
M6-PFDA	7.288	519.0 -> 474.0	151179	10.00	µg/L	-0.025
M7-PFUnDA	8.084	570.0 -> 525.0	202406	10.00	µg/L	-0.050
M2-PFDoDA	9.081	615.0 -> 570.0	182698	10.00	µg/L	-0.037
M2-PFTeDA	10.574	715.0 -> 670.0	152031	10.00	µg/L	-0.037
M8-FOSA	6.179	506.0 -> 78.0	38302	10.00	µg/L	-0.025
M3-PFBS	3.624	302.0 -> 99.0	7793	10.00	µg/L	-0.012
M3-PFHxS	5.419	402.0 -> 99.0	10335	10.00	µg/L	-0.025
M8-PFOS	6.729	507.0 -> 99.0	13613	10.00	µg/L	-0.025
M2-4:2FTS	4.461	329.0 -> 309.0	31117	10.00	µg/L	-0.025
M2-6:2FTS	6.122	429.0 -> 409.0	55036	10.00	µg/L	-0.026
M2-8:2FTS	7.363	529.0 -> 509.0	58260	10.00	µg/L	-0.012
M3-MeFOSAA	6.722	573.0 -> 419.0	29968	10.00	µg/L	-0.025
M3-HFPO-DA	4.807	287.0 -> 169.0	5269	10.00	µg/L	-0.025
M3-MeFOSA	6.576	515.0 -> 169.0	12743	10.00	µg/L	-0.013
M5-EtFOSAA	6.833	589.0 -> 419.0	27333	10.00	µg/L	-0.012
System Monitoring Compounds						
13C2-4:2FTS	4.461	329.0 -> 309.0	31117	7.96	µg/L	-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 79.6%		
13C2-6:2FTS	6.122	429.0 -> 409.0	55036	7.48	µg/L	-0.026
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 74.8%		
13C2-8:2FTS	7.363	529.0 -> 509.0	58260	8.23	µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 82.3%		
13C2-PFDoDA	9.081	615.0 -> 570.0	182698	8.08	µg/L	-0.037
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 80.8%		
13C2-PFTeDA	10.574	715.0 -> 670.0	152031	7.91	µg/L	-0.037
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 79.1%		
13C3-PFBS	3.624	302.0 -> 99.0	7793	8.45	µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 84.5%		
13C3-PFHxS	5.419	402.0 -> 99.0	10335	9.15	µg/L	-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 91.5%		
13C4-PFBA	1.987	217.0 -> 172.0	38198	8.66	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 86.6%		
13C4-PFHpA	5.400	367.0 -> 322.0	101475	8.59	µg/L	-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 85.9%		
13C5-PFHxA	4.540	318.0 -> 273.0	98460	8.58	µg/L	-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 85.8%		
13C5-PFPeA	3.432	268.0 -> 223.0	64053	8.62	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 86.2%		
13C6-PFDA	7.288	519.0 -> 474.0	151179	8.73	µg/L	-0.025

Perfluorinated Compounds by LC/MS/MS

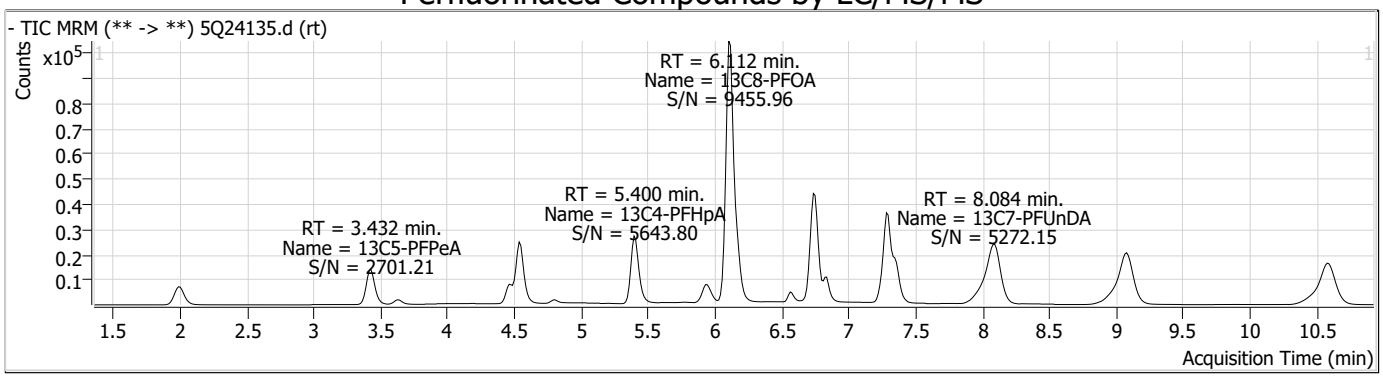
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 87.3%			
13C7-PFUnDA	8.084	570.0 -> 525.0	202406	8.29	µg/L		-0.050
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 82.9%			
13C8-FOSA	6.179	506.0 -> 78.0	38302	9.37	µg/L		-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 93.7%			
13C8-PFOA	6.112	421.0 -> 376.0	140942	8.52	µg/L		-0.038
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 85.2%			
13C8-PFOS	6.729	507.0 -> 99.0	13613	8.64	µg/L		-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 86.4%			
13C9-PFNA	6.756	472.0 -> 427.0	146097	8.81	µg/L		-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 88.1%			
d3-MeFOSAA	6.722	573.0 -> 419.0	29968	8.91	µg/L		-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 89.1%			
13C3-HFPO-DA	4.807	287.0 -> 169.0	5269	8.82	µg/L		-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 88.2%			
d3-MeFOSA	6.576	515.0 -> 169.0	12743	9.15	µg/L		-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 91.5%			
d5-EtFOSAA	6.833	589.0 -> 419.0	27333	8.97	µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 89.7%			
Target Compounds							QValue
4:2FTS	-	327.0 -> 307.0	-	N.D.			
		327.0 -> 81.0					
6:2FTS	-	427.0 -> 407.0	-	N.D.			
		427.0 -> 81.0					
8:2FTS	-	527.0 -> 507.0	-	N.D.			
		527.0 -> 81.0					
EtFOSAA	-	584.0 -> 419.0	-	N.D.			
		584.0 -> 483.0					
FOSA	-	498.0 -> 78.0	-	N.D.			
		498.0 -> 478.0					
MeFOSAA	-	570.0 -> 419.0	-	N.D.			
		570.0 -> 512.0					
PFBA	-	213.0 -> 169.0	-	N.D.			
PFBS	-	299.0 -> 80.0	-	N.D.			
		299.0 -> 99.0					
PFDA	-	513.0 -> 469.0	-	N.D.			
		513.0 -> 219.0					
PFDoDA	-	613.0 -> 569.0	-	N.D.			
		613.0 -> 319.0					
PFDS	-	599.0 -> 80.0	-	N.D.			
		599.0 -> 99.0					
PFHpA	5.401	363.0 -> 319.0	0		µg/L	m	1
		363.0 -> 169.0	0				
PFHpS	-	449.0 -> 80.0	-	N.D.			
		449.0 -> 99.0					
PFHxA	-	313.0 -> 269.0	-	N.D.			
		313.0 -> 119.0					
PFHxS	-	399.0 -> 80.0	-	N.D.			
		399.0 -> 99.0					
PFNA	-	463.0 -> 419.0	-	N.D.			
		463.0 -> 219.0					
PFNS	-	549.0 -> 80.0	-	N.D.			
		549.0 -> 99.0					
PFOA	6.125	413.0 -> 369.0	220216	16.37	µg/L	m	97
		413.0 -> 169.0	57153				
PFOS	-	499.0 -> 80.0	-	N.D.			

Perfluorinated Compounds by LC/MS/MS

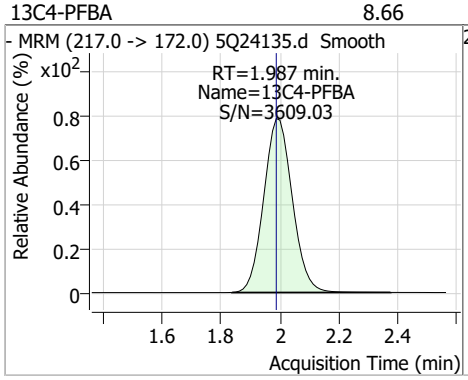
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		499.0 -> 99.0				
PFPeA	-	263.0 -> 219.0	-	N.D.		
PFPeS	-	349.0 -> 80.0	-	N.D.		
		349.0 -> 99.0				
PFTeDA	-	713.0 -> 669.0	-	N.D.		
		713.0 -> 219.0				
PFTrDA	-	663.0 -> 619.0	-	N.D.		
		663.0 -> 369.0				
PFUnDA	-	563.0 -> 519.0	-	N.D.		
		563.0 -> 269.0				
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.		
		633.0 -> 453.0				
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.		
		533.0 -> 353.0				
ADONA	-	377.0 -> 251.0	-	N.D.		
		377.0 -> 85.0				
HFPO-DA	-	329.0 -> 169.0	-	N.D.		
		285.0 -> 169.0				
MeFOSA	-	512.0 -> 169.0	-	N.D.		
		512.0 -> 219.0				
4-PFECHS	-	461.0 -> 381.0	-	N.D.		
		461.0 -> 99.0				
FBSA	-	298.0 -> 78.0	-	N.D.		
		298.0 -> 64.0				
FHxSA	-	398.0 -> 78.0	-	N.D.		
		398.0 -> 64.0				

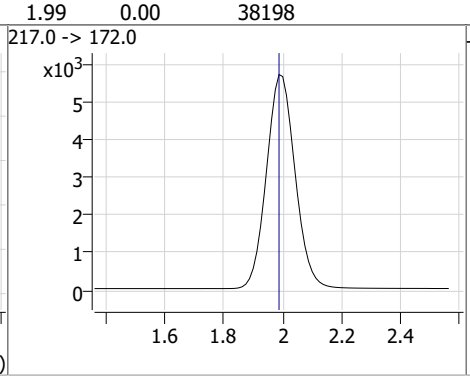
 # = Qualifier out of range, m = manually integrated, + = Area summed

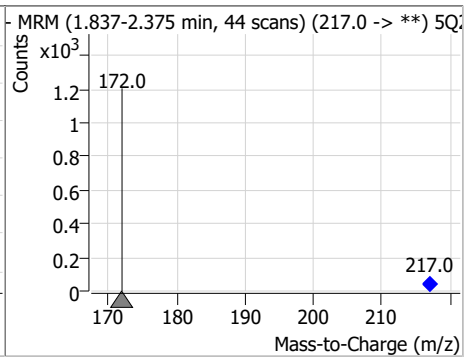
Perfluorinated Compounds by LC/MS/MS



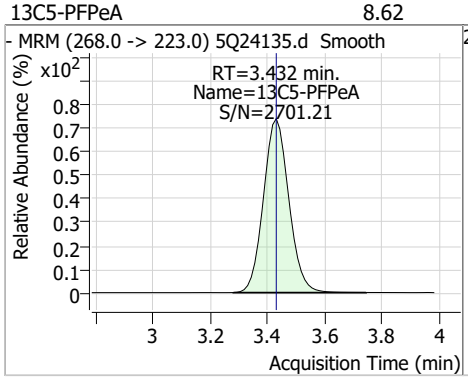
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	8.66	1.99	0.00	38198				

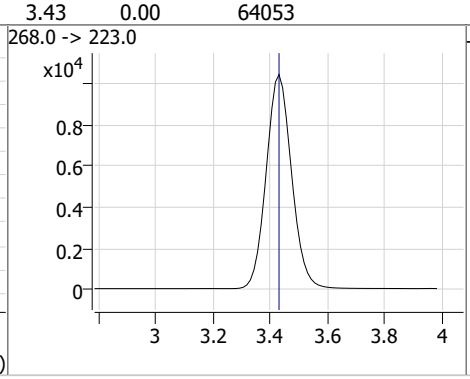


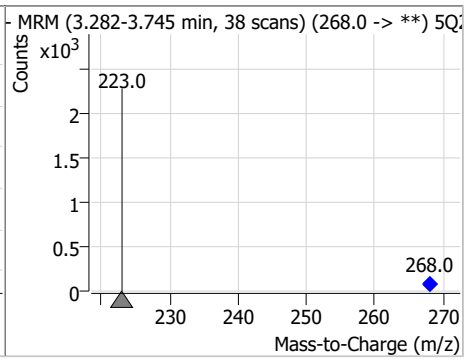




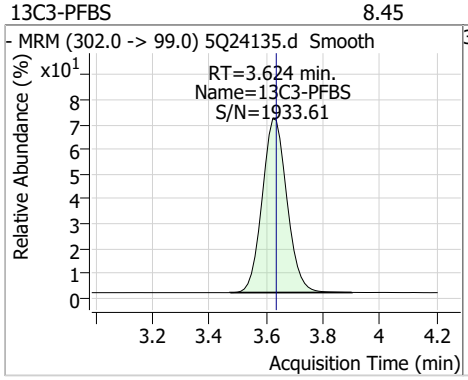
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	8.62	3.43	0.00	64053				

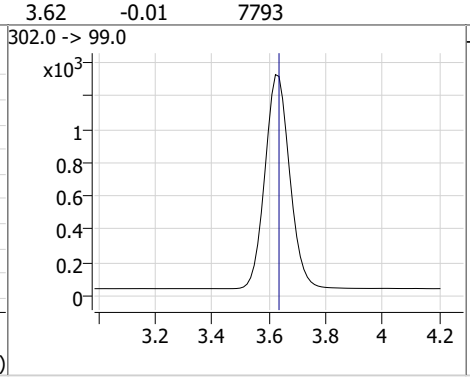


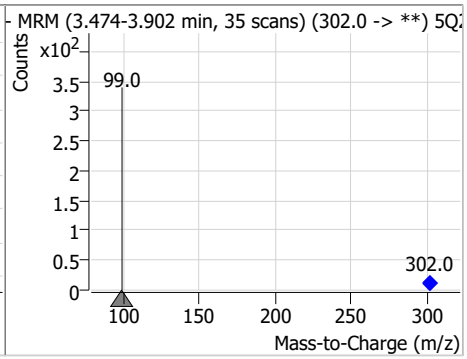




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	8.45	3.62	-0.01	7793				

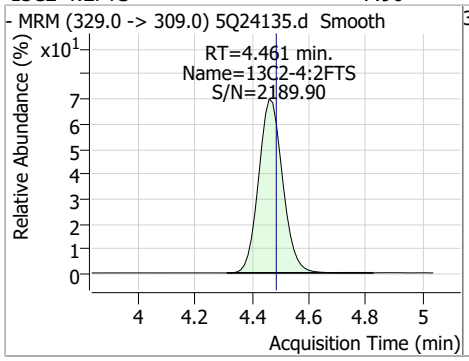


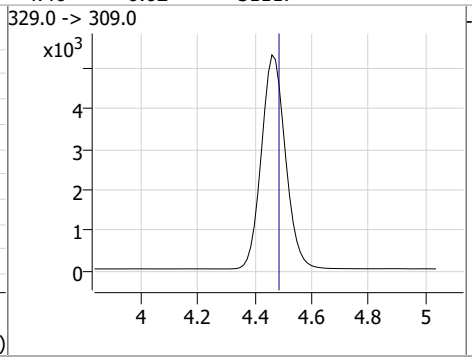


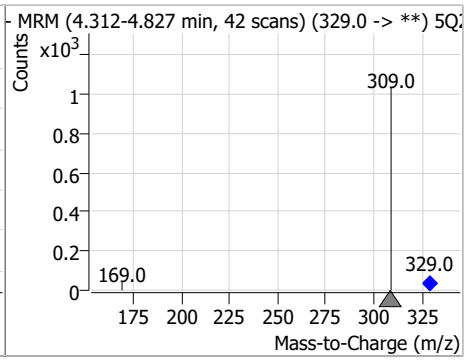


Perfluorinated Compounds by LC/MS/MS

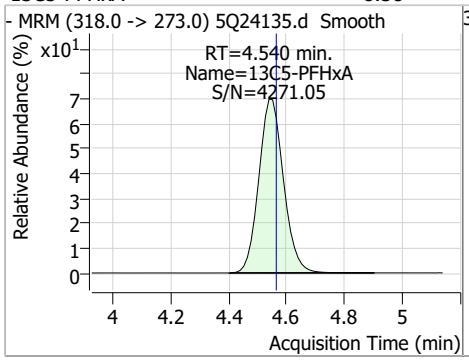
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	7.96	4.46	-0.02	31117				

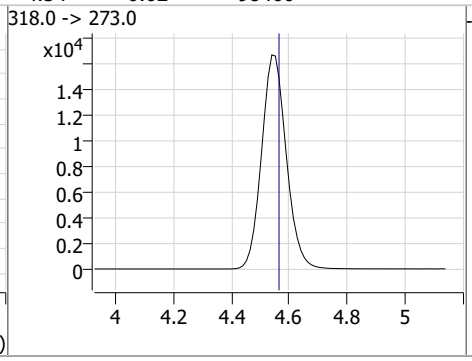


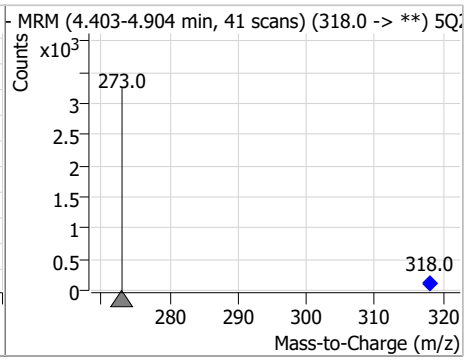




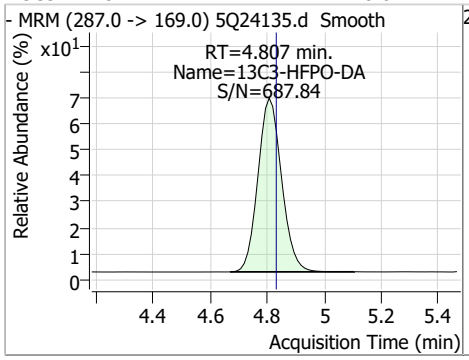
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	8.58	4.54	-0.02	98460				

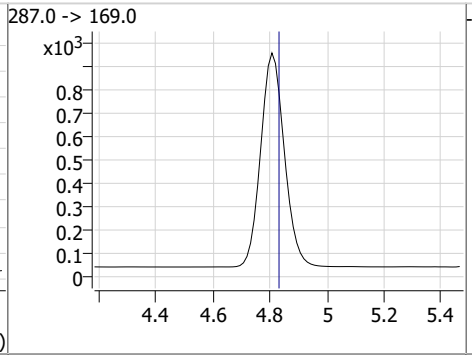


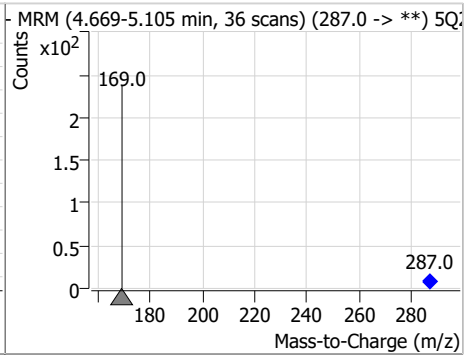




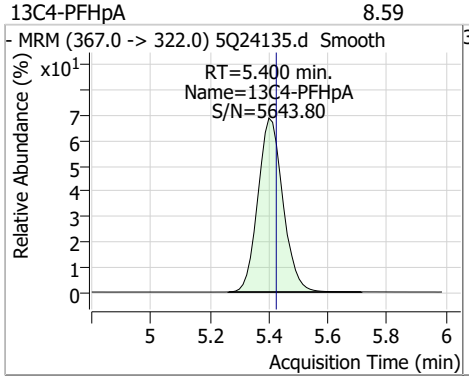
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	8.82	4.81	-0.02	5269				

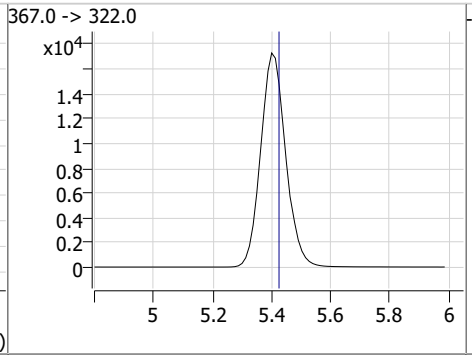


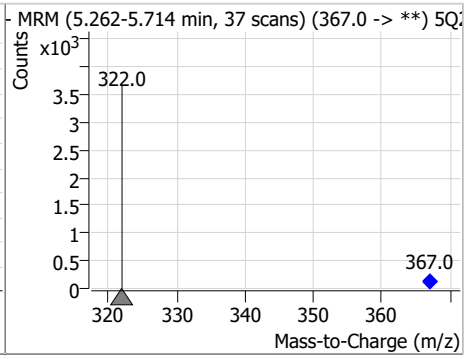




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	8.59	5.40	-0.02	101475				

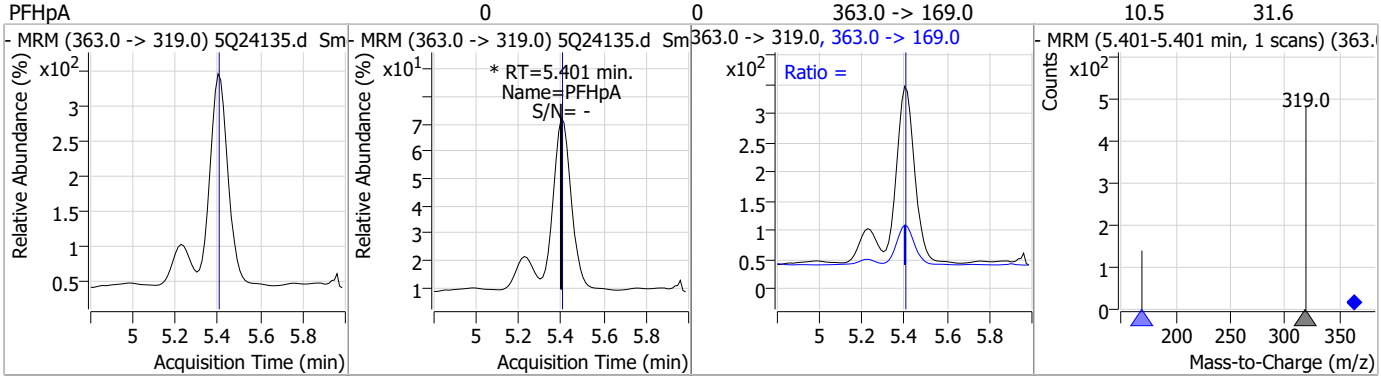




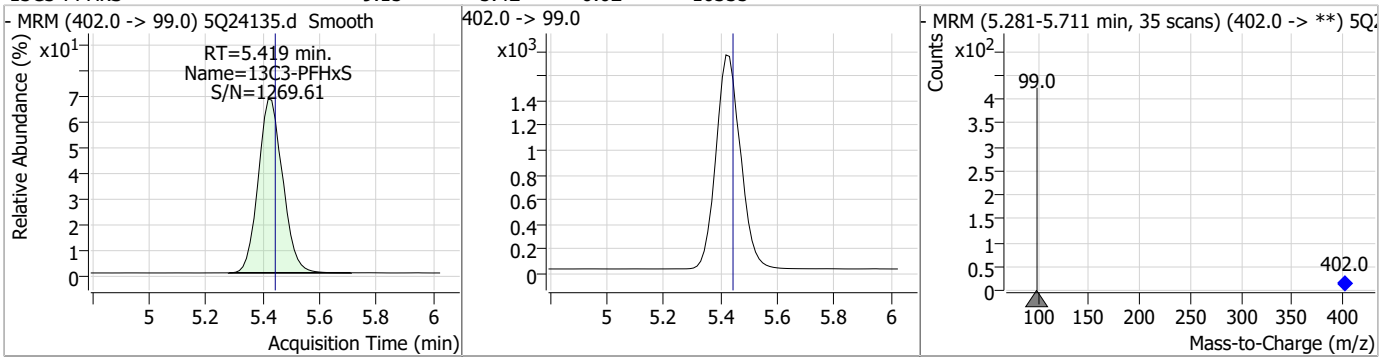


Perfluorinated Compounds by LC/MS/MS

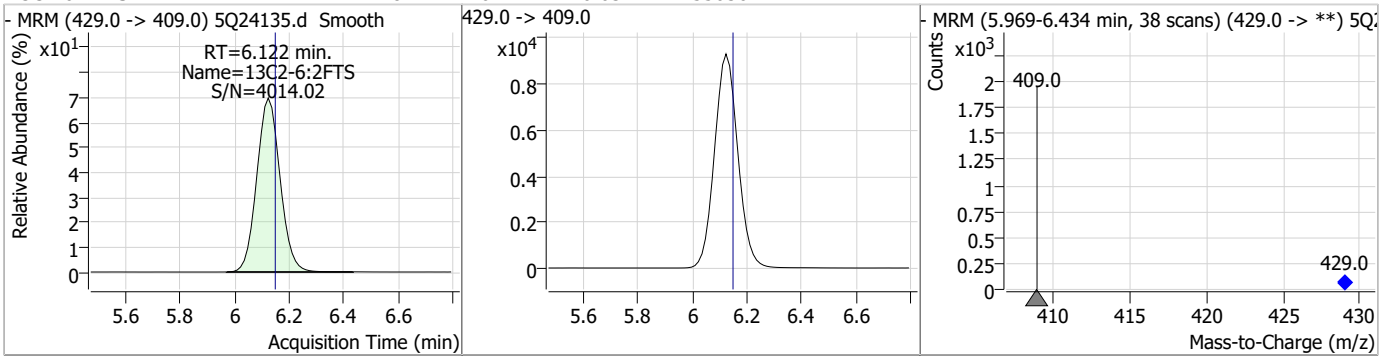
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA		0		0	363.0 -> 169.0		10.5	31.6



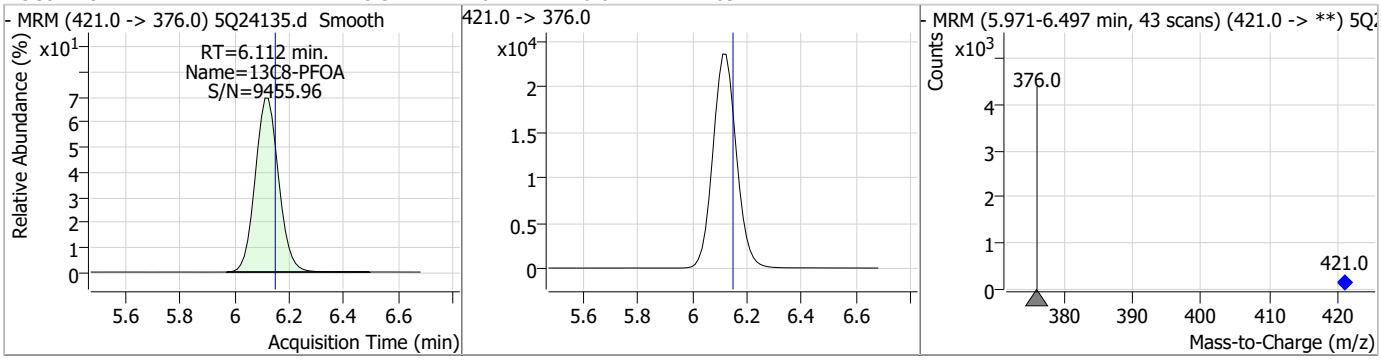
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	9.15	5.42	-0.02	10335				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	7.48	6.12	-0.03	55036				

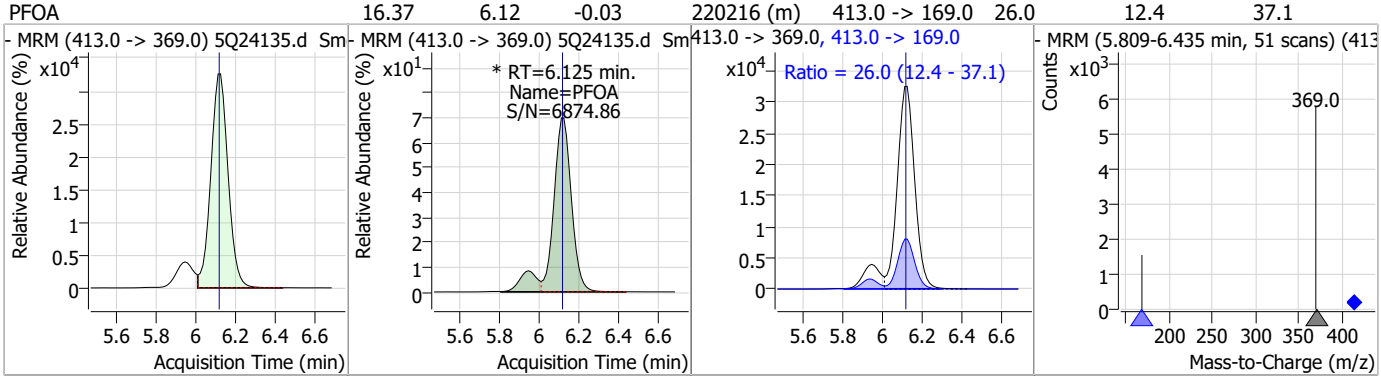


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	8.52	6.11	-0.04	140942				

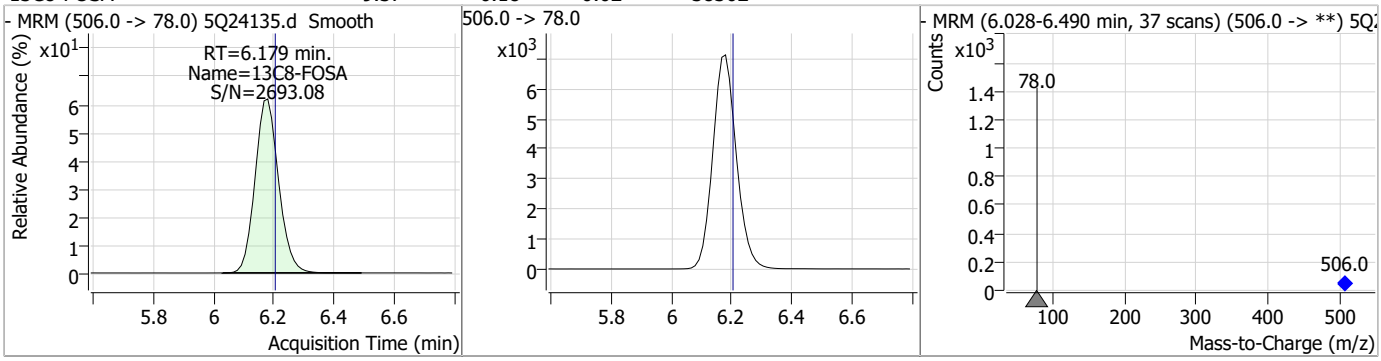


Perfluorinated Compounds by LC/MS/MS

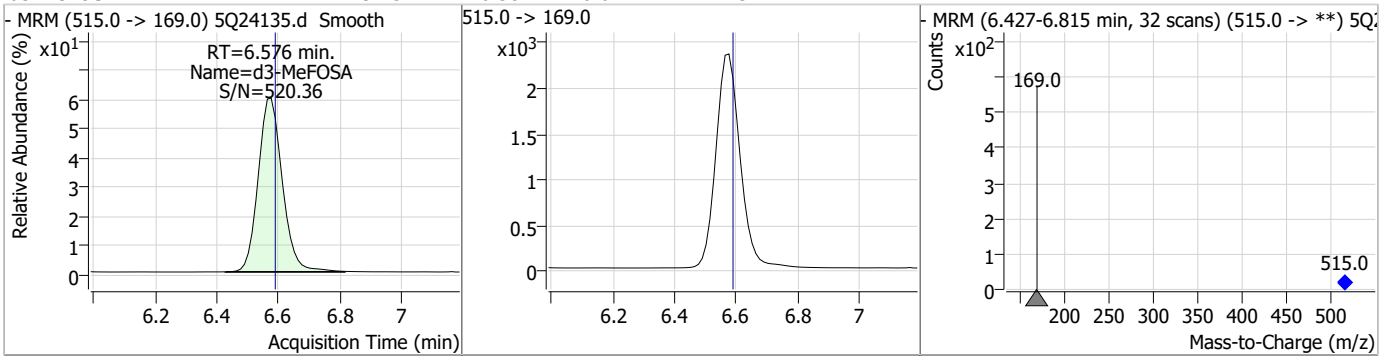
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	16.37	6.12	-0.03	220216 (m)	413.0 -> 169.0	26.0	12.4	37.1



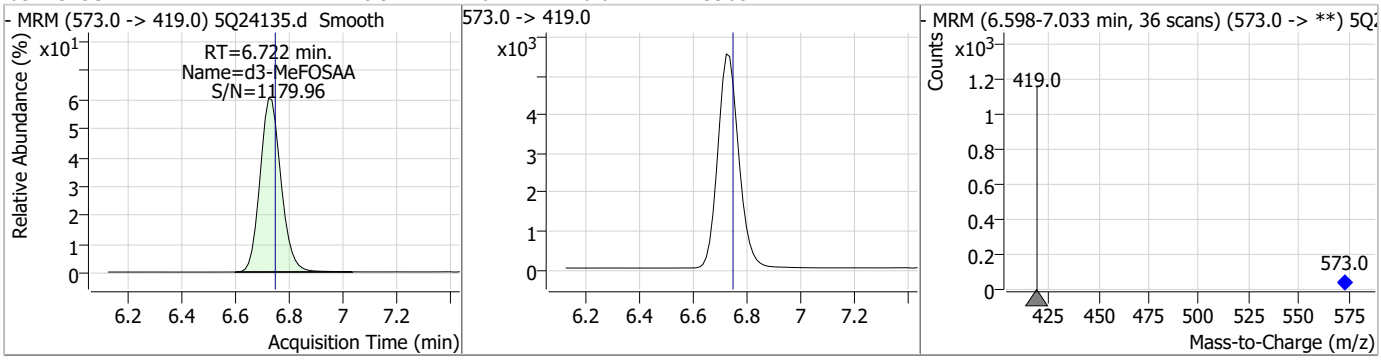
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	9.37	6.18	-0.02	38302				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	9.15	6.58	-0.01	12743				

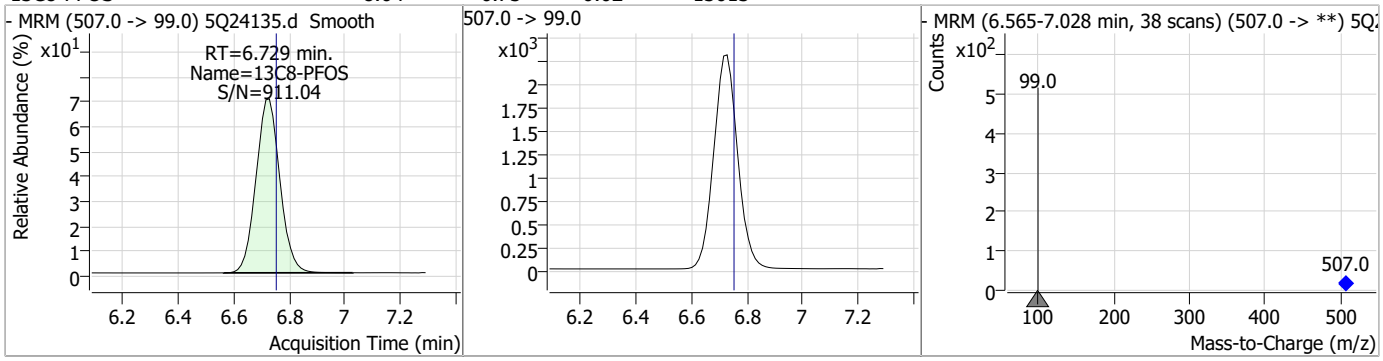


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	8.91	6.72	-0.02	29968				

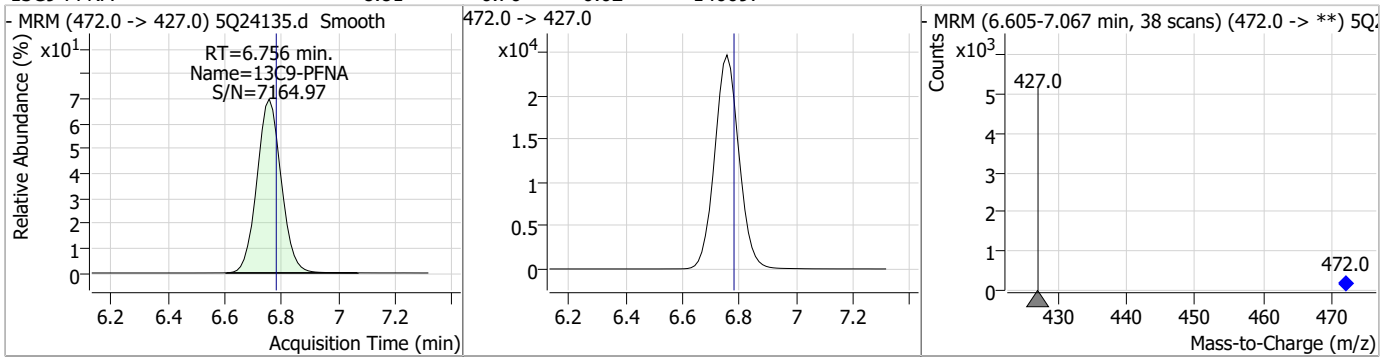


Perfluorinated Compounds by LC/MS/MS

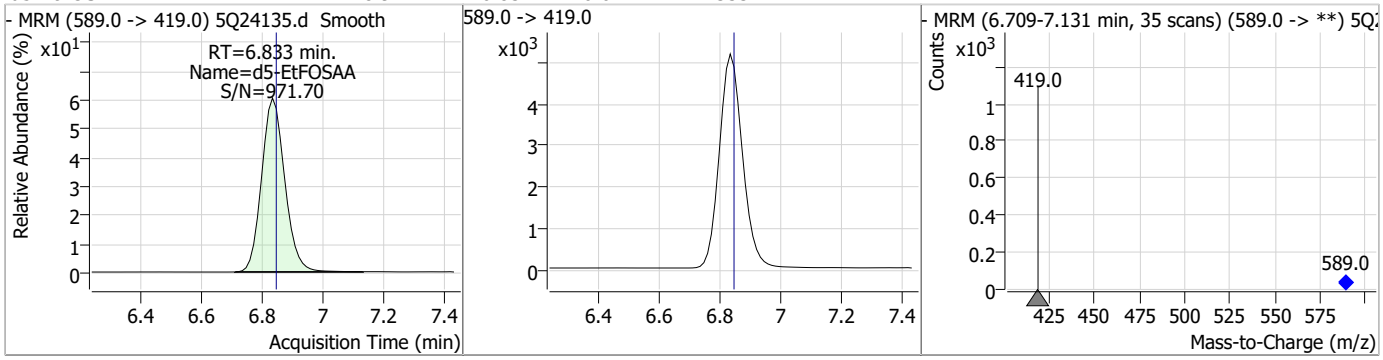
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	8.64	6.73	-0.02	13613				



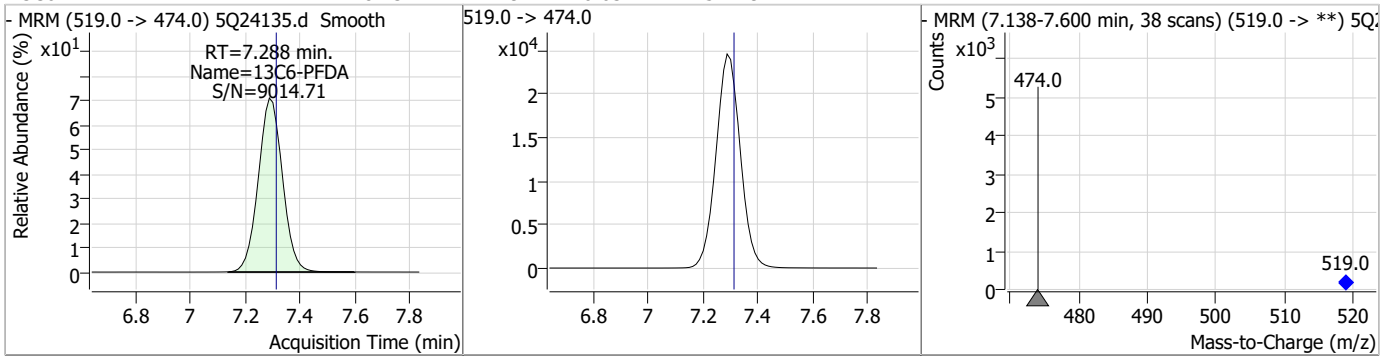
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	8.81	6.76	-0.02	146097				



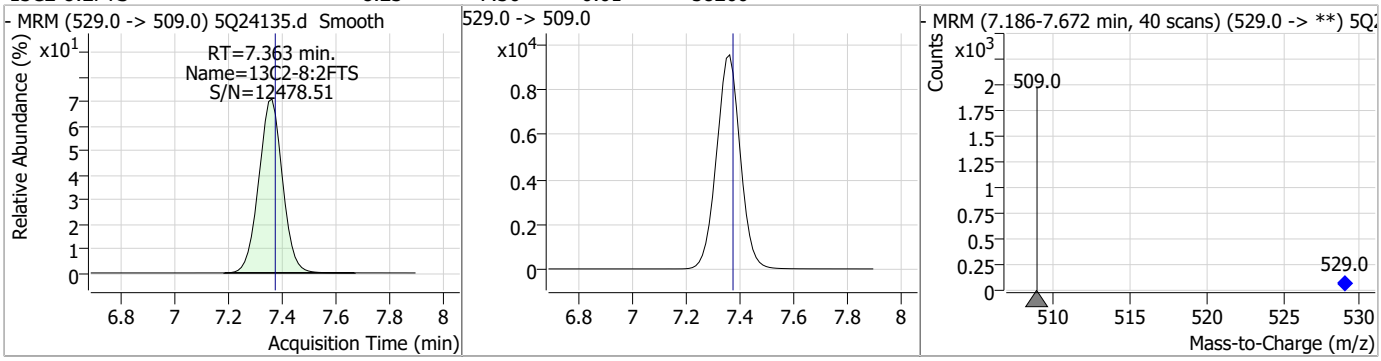
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	8.97	6.83	-0.01	27333				



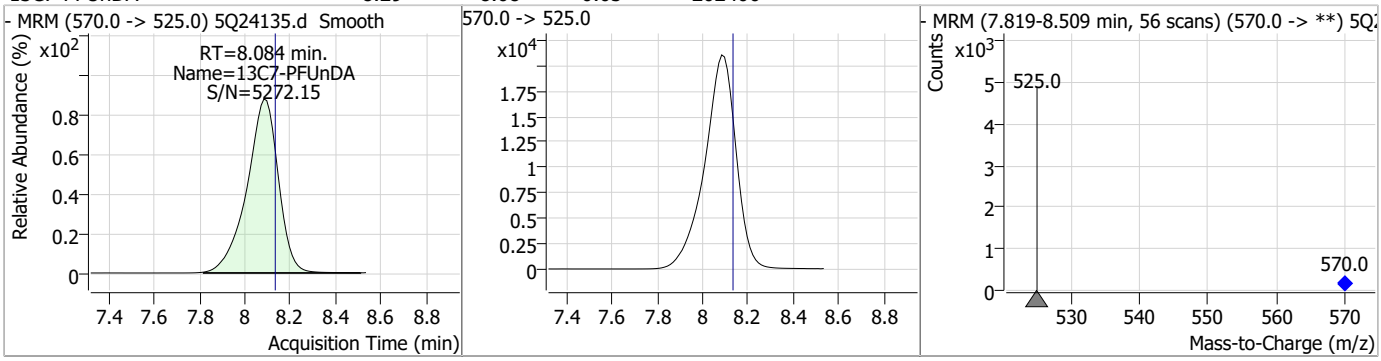
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	8.73	7.29	-0.03	151179				



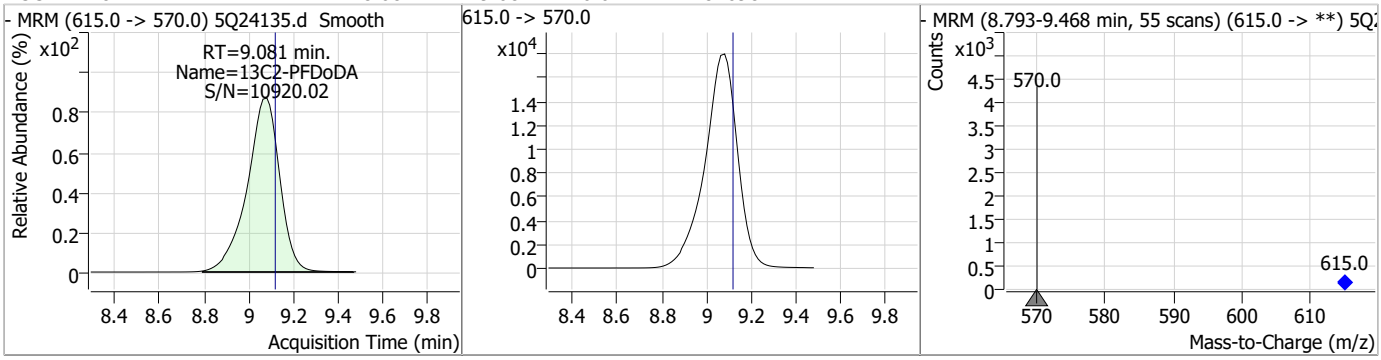
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	8.23	7.36	-0.01	58260				



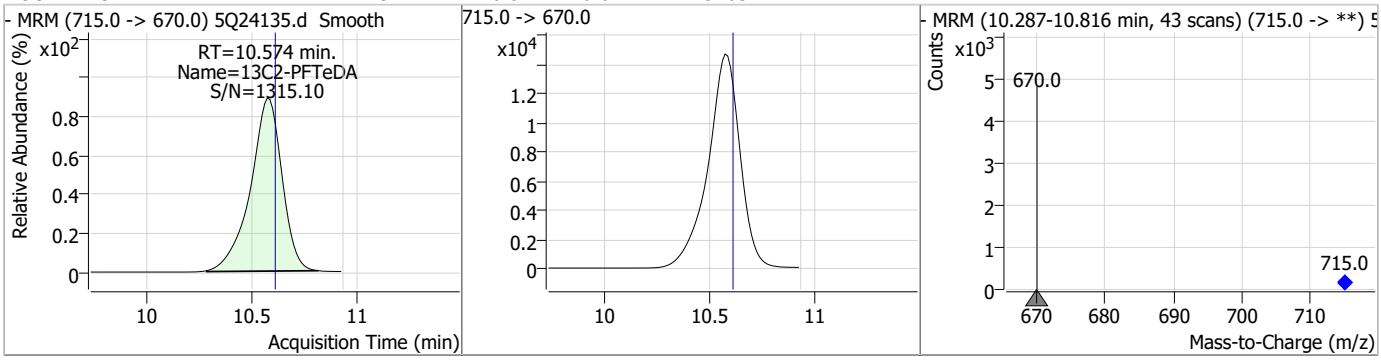
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	8.29	8.08	-0.05	202406				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	8.08	9.08	-0.04	182698				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	7.91	10.57	-0.04	152031				



Manual Integration Approval Summary

Sample Number:	S5Q379-RT	**Method:**	EPA 537M QSM5.3 B-15
Lab FileID:	5Q24135.D	**Analyst approved:**	01/05/24 11:22 Lindsay Ritner
Injection Time:	01/04/24 13:02	**Supervisor approved:**	01/05/24 15:55 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorooctanoic acid	335-67-1		6.12	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Natasha Gumtie 01/09/24 09:58

Perfluorinated Compounds by LC/MS/MS

Data File : 5Q24198.d
Operator : lindsayr
Acq. Method : 537_ID.m
Acq. Date-Time : 1/5/2024 6:30:11 AM
Sample Name : rt
Vial : P1-B3
DA Method File : ID_010224_S5Q377.quantmethod.xml
Batch Name : s5q380.batch.bin
Sample Information : OP401,S5Q380,250,,,1.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.987	217.0 -> 172.0	42567	10.00	µg/L	0.000
M5-PFPeA	3.419	268.0 -> 223.0	71960	10.00	µg/L	-0.012
M5-PFHxA	4.552	318.0 -> 273.0	111685	10.00	µg/L	-0.012
M4-PFHpA	5.413	367.0 -> 322.0	113598	10.00	µg/L	-0.012
M8-PFOA	6.137	421.0 -> 376.0	158938	10.00	µg/L	-0.012
M9-PFNA	6.768	472.0 -> 427.0	158720	10.00	µg/L	-0.012
M6-PFDA	7.301	519.0 -> 474.0	161935	10.00	µg/L	-0.012
M7-PFUnDA	8.097	570.0 -> 525.0	217442	10.00	µg/L	-0.037
M2-PFDoDA	9.081	615.0 -> 570.0	198656	10.00	µg/L	-0.037
M2-PFTeDA	10.574	715.0 -> 670.0	169520	10.00	µg/L	-0.037
M8-FOSA	6.192	506.0 -> 78.0	45045	10.00	µg/L	-0.012
M3-PFBS	3.624	302.0 -> 99.0	8559	10.00	µg/L	-0.012
M3-PFHxS	5.444	402.0 -> 99.0	11110	10.00	µg/L	0.000
M8-PFOS	6.741	507.0 -> 99.0	14551	10.00	µg/L	-0.012
M2-4:2FTS	4.474	329.0 -> 309.0	35871	10.00	µg/L	-0.012
M2-6:2FTS	6.136	429.0 -> 409.0	64038	10.00	µg/L	-0.012
M2-8:2FTS	7.363	529.0 -> 509.0	63145	10.00	µg/L	-0.012
M3-MeFOSAA	6.747	573.0 -> 419.0	34828	10.00	µg/L	0.000
M3-HFPO-DA	4.819	287.0 -> 169.0	5518	10.00	µg/L	-0.012
M3-MeFOSA	6.589	515.0 -> 169.0	15124	10.00	µg/L	0.000
M5-EtFOSAA	6.845	589.0 -> 419.0	31107	10.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.474	329.0 -> 309.0	35871	9.18	µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 91.8%		
13C2-6:2FTS	6.136	429.0 -> 409.0	64038	8.71	µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 87.1%		
13C2-8:2FTS	7.363	529.0 -> 509.0	63145	8.93	µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 89.3%		
13C2-PFDoDA	9.081	615.0 -> 570.0	198656	8.79	µg/L	-0.037
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 87.9%		
13C2-PFTeDA	10.574	715.0 -> 670.0	169520	8.82	µg/L	-0.037
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 88.2%		
13C3-PFBS	3.624	302.0 -> 99.0	8559	9.28	µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 92.8%		
13C3-PFHxS	5.444	402.0 -> 99.0	11110	9.83	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 98.3%		
13C4-PFBA	1.987	217.0 -> 172.0	42567	9.65	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 96.5%		
13C4-PFHpA	5.413	367.0 -> 322.0	113598	9.61	µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 96.1%		
13C5-PFHxA	4.552	318.0 -> 273.0	111685	9.73	µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 97.3%		
13C5-PFPeA	3.419	268.0 -> 223.0	71960	9.68	µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 96.8%		
13C6-PFDA	7.301	519.0 -> 474.0	161935	9.35	µg/L	-0.012

Perfluorinated Compounds by LC/MS/MS

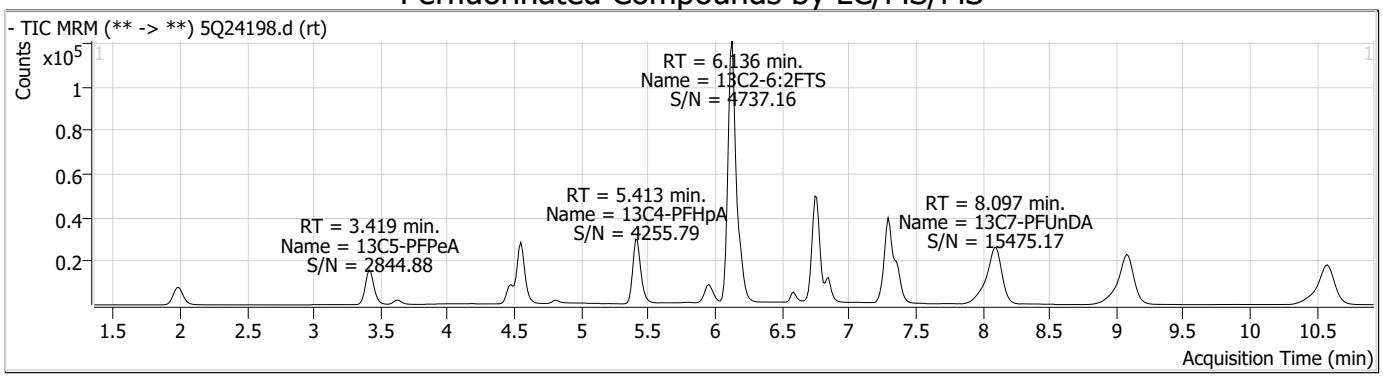
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 93.5%			
13C7-PFUnDA	8.097	570.0 -> 525.0	217442	8.91	µg/L		-0.037
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 89.1%			
13C8-FOSA	6.192	506.0 -> 78.0	45045	11.02	µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 110.2%			
13C8-PFOA	6.137	421.0 -> 376.0	158938	9.60	µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 96.0%			
13C8-PFOS	6.741	507.0 -> 99.0	14551	9.24	µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 92.4%			
13C9-PFNA	6.768	472.0 -> 427.0	158720	9.58	µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 95.8%			
d3-MeFOSAA	6.747	573.0 -> 419.0	34828	10.36	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 103.6%			
13C3-HFPO-DA	4.819	287.0 -> 169.0	5518	9.24	µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 92.4%			
d3-MeFOSA	6.589	515.0 -> 169.0	15124	10.86	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 108.6%			
d5-EtFOSAA	6.845	589.0 -> 419.0	31107	10.21	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 102.1%			
Target Compounds							QValue
4:2FTS	-	327.0 -> 307.0	-	N.D.			
		327.0 -> 81.0					
6:2FTS	-	427.0 -> 407.0	-	N.D.			
		427.0 -> 81.0					
8:2FTS	-	527.0 -> 507.0	-	N.D.			
		527.0 -> 81.0					
EtFOSAA	6.859	584.0 -> 419.0	0		µg/L	m	1
		584.0 -> 483.0	0				
FOSA	-	498.0 -> 78.0	-	N.D.			
		498.0 -> 478.0					
MeFOSAA	6.748	570.0 -> 419.0	0		µg/L	m	1
		570.0 -> 512.0	0				
PFBA	-	213.0 -> 169.0	-	N.D.			
PFBS	-	299.0 -> 80.0	-	N.D.			
		299.0 -> 99.0					
PFDA	-	513.0 -> 469.0	-	N.D.			
		513.0 -> 219.0					
PFDoDA	-	613.0 -> 569.0	-	N.D.			
		613.0 -> 319.0					
PFDS	-	599.0 -> 80.0	-	N.D.			
		599.0 -> 99.0					
PFHpA	5.413	363.0 -> 319.0	0		µg/L	m	1
		363.0 -> 169.0	0				
PFHpS	-	449.0 -> 80.0	-	N.D.			
		449.0 -> 99.0					
PFHxA	-	313.0 -> 269.0	-	N.D.			
		313.0 -> 119.0					
PFHxS	-	399.0 -> 80.0	-	N.D.			
		399.0 -> 99.0					
PFNA	-	463.0 -> 419.0	-	N.D.			
		463.0 -> 219.0					
PFNS	-	549.0 -> 80.0	-	N.D.			
		549.0 -> 99.0					
PFOA	6.137	413.0 -> 369.0	248237	16.36	µg/L	m	97
		413.0 -> 169.0	64639				
PFOS	-	499.0 -> 80.0	-	N.D.			

Perfluorinated Compounds by LC/MS/MS

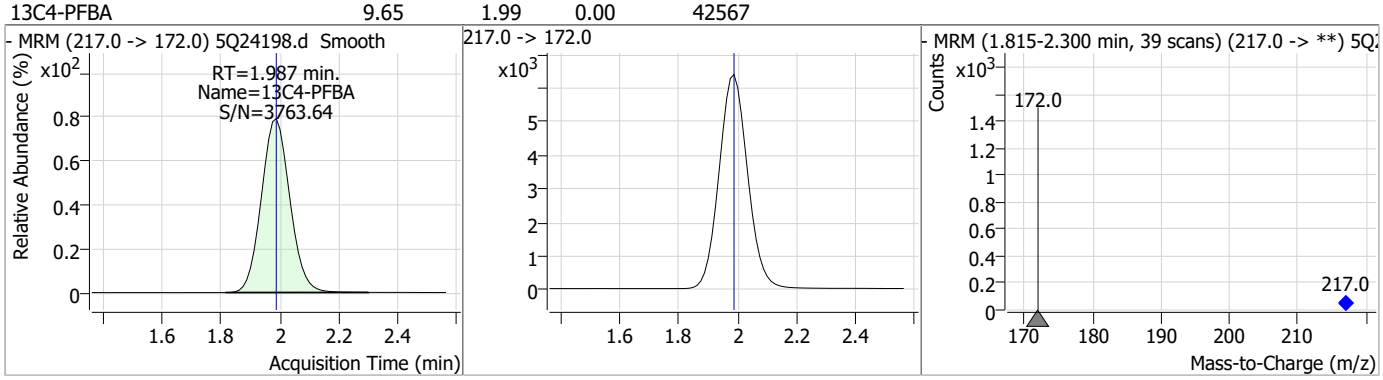
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		499.0 -> 99.0				
PFPeA	-	263.0 -> 219.0	-	N.D.		
PFPeS	-	349.0 -> 80.0	-	N.D.		
		349.0 -> 99.0				
PFTeDA	-	713.0 -> 669.0	-	N.D.		
		713.0 -> 219.0				
PFTrDA	-	663.0 -> 619.0	-	N.D.		
		663.0 -> 369.0				
PFUnDA	-	563.0 -> 519.0	-	N.D.		
		563.0 -> 269.0				
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.		
		633.0 -> 453.0				
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.		
		533.0 -> 353.0				
ADONA	-	377.0 -> 251.0	-	N.D.		
		377.0 -> 85.0				
HFPO-DA	-	329.0 -> 169.0	-	N.D.		
		285.0 -> 169.0				
MeFOSA	-	512.0 -> 169.0	-	N.D.		
		512.0 -> 219.0				
4-PFECHS	-	461.0 -> 381.0	-	N.D.		
		461.0 -> 99.0				
FBSA	-	298.0 -> 78.0	-	N.D.		
		298.0 -> 64.0				
FHxSA	-	398.0 -> 78.0	-	N.D.		
		398.0 -> 64.0				

 # = Qualifier out of range, m = manually integrated, + = Area summed

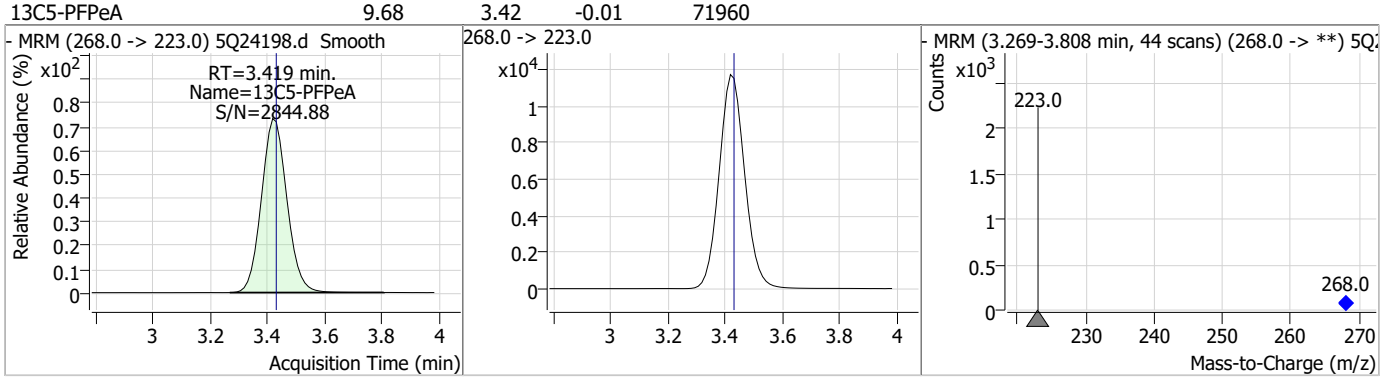
Perfluorinated Compounds by LC/MS/MS



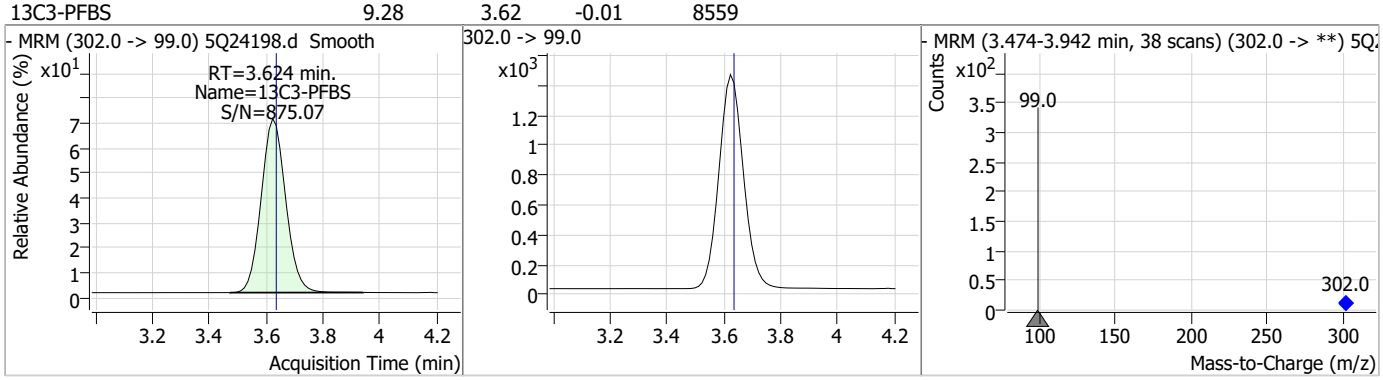
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	9.65	1.99	0.00	42567				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	9.68	3.42	-0.01	71960				

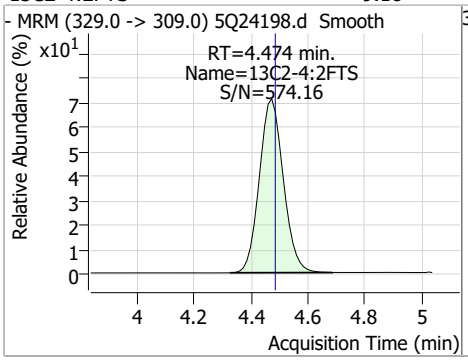


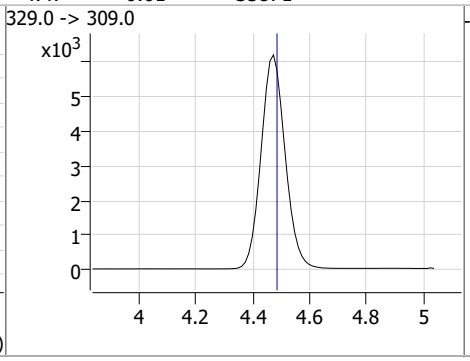
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	9.28	3.62	-0.01	8559				

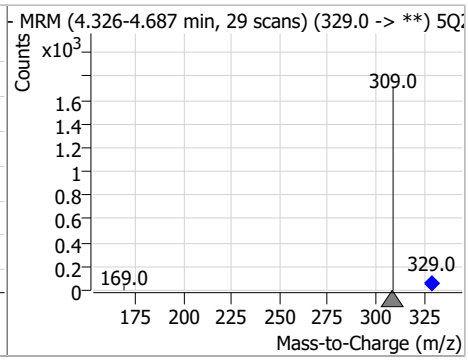


Perfluorinated Compounds by LC/MS/MS

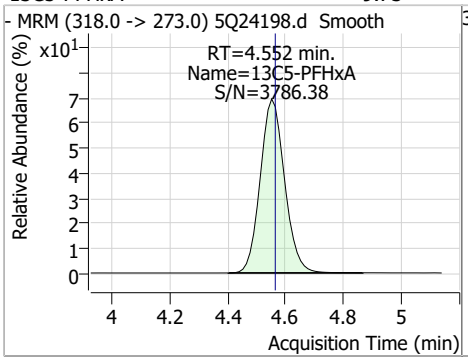
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	9.18	4.47	-0.01	35871				

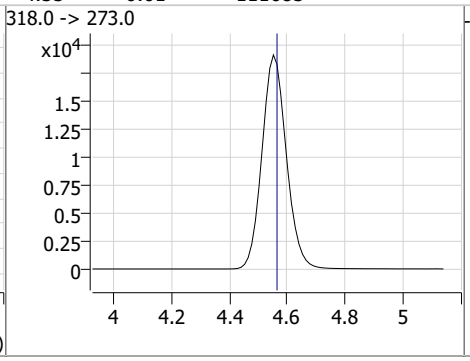


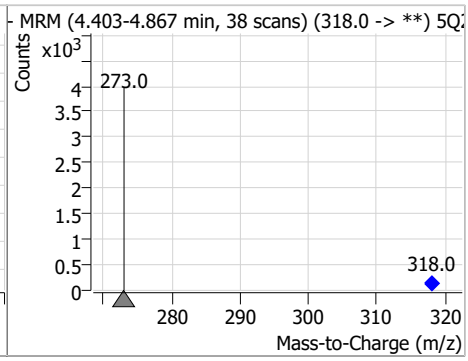




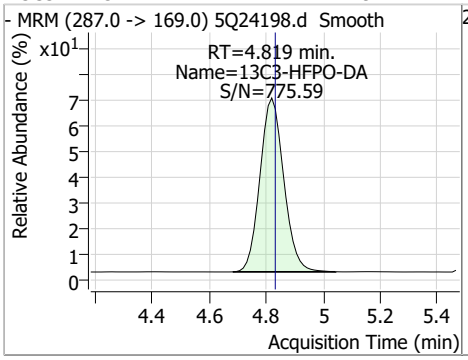
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	9.73	4.55	-0.01	111685				

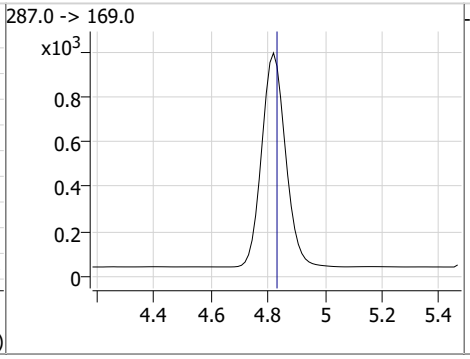


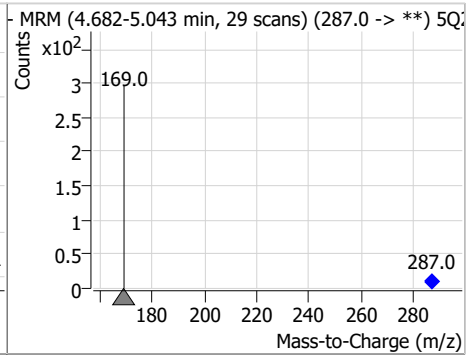




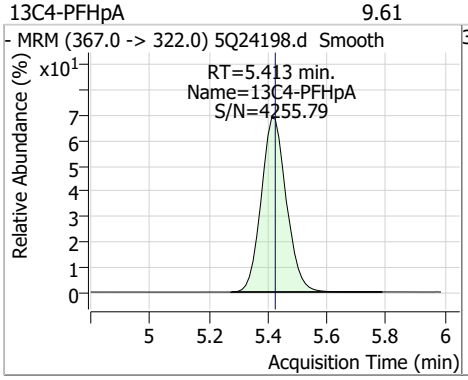
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	9.24	4.82	-0.01	5518				

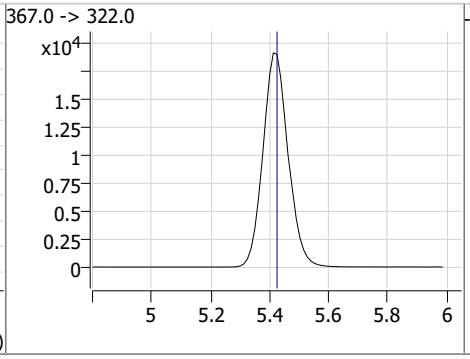


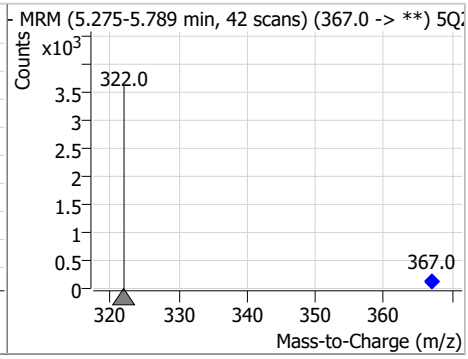




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	9.61	5.41	-0.01	113598				

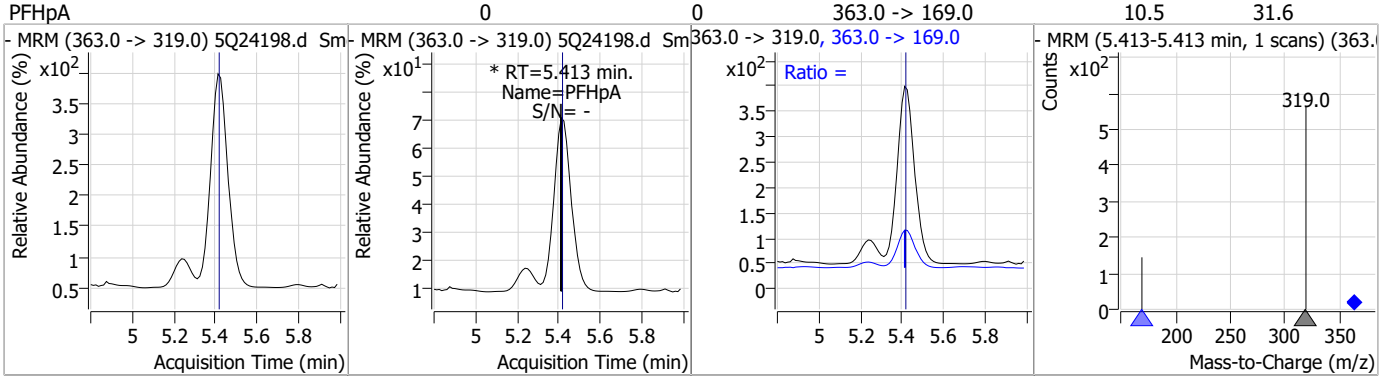




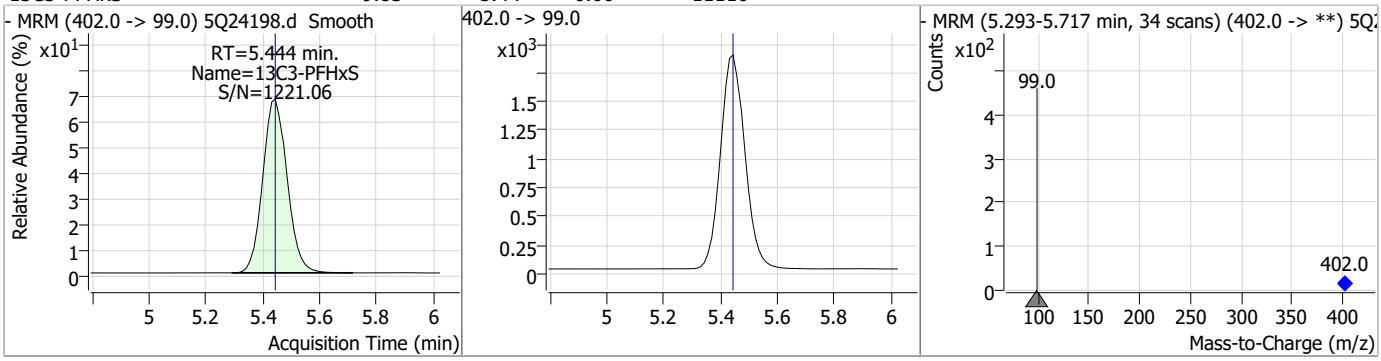


Perfluorinated Compounds by LC/MS/MS

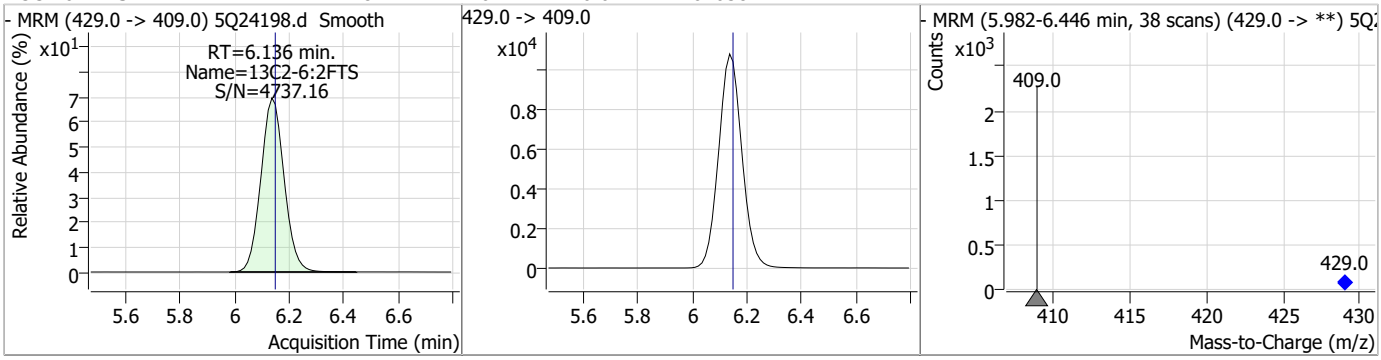
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA		0		0	363.0 -> 169.0		10.5	31.6



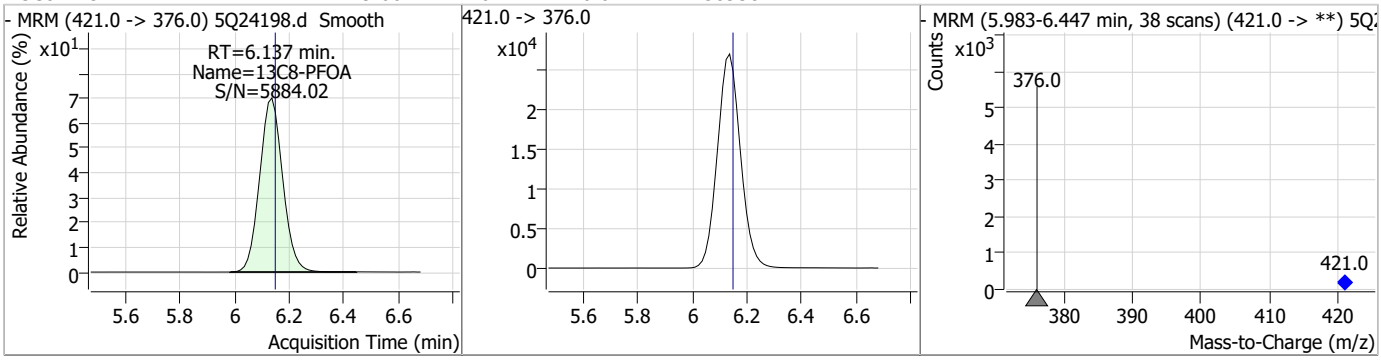
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	9.83	5.44	0.00	11110				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	8.71	6.14	-0.01	64038				

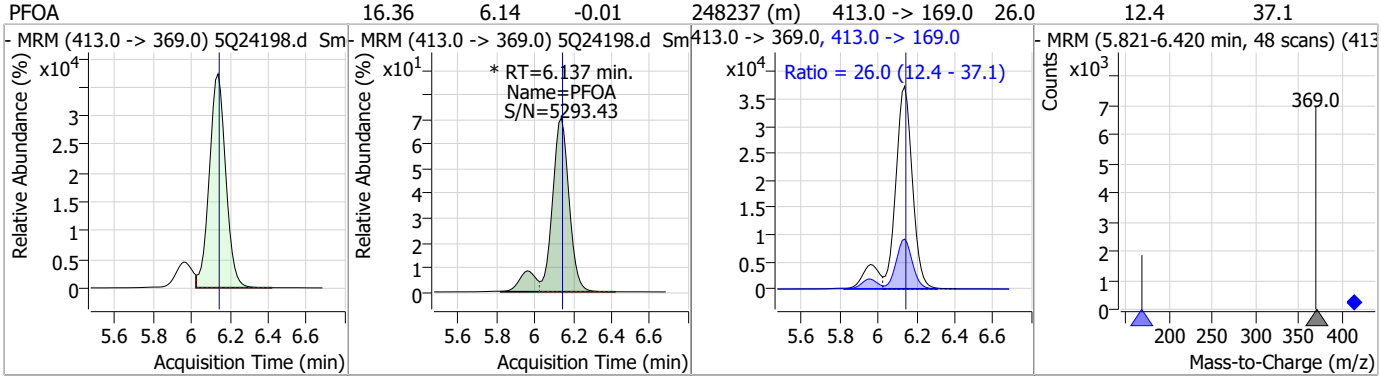


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	9.60	6.14	-0.01	158938				

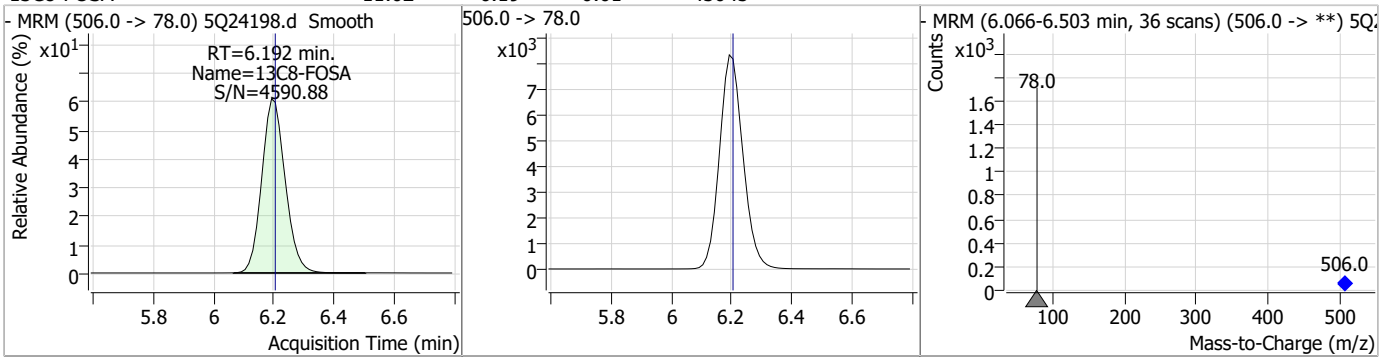


Perfluorinated Compounds by LC/MS/MS

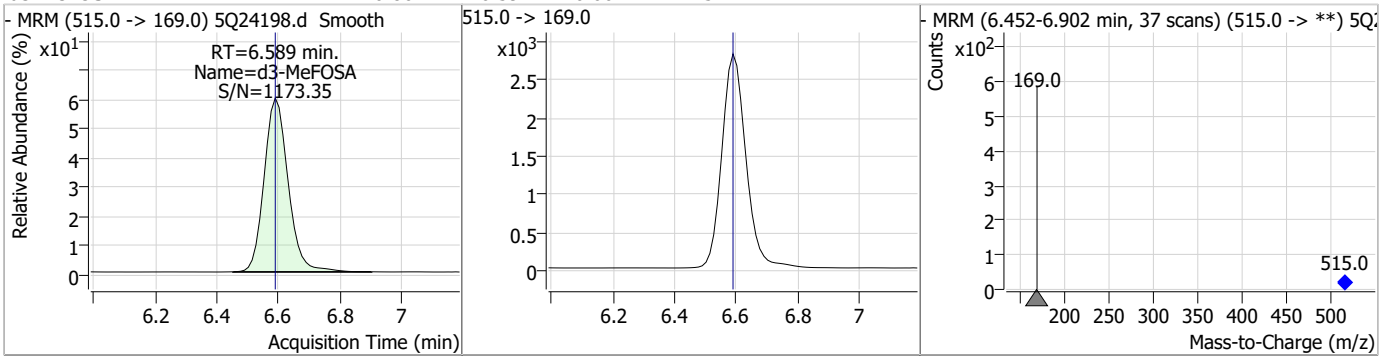
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	16.36	6.14	-0.01	248237 (m)	413.0 -> 169.0	26.0	12.4	37.1



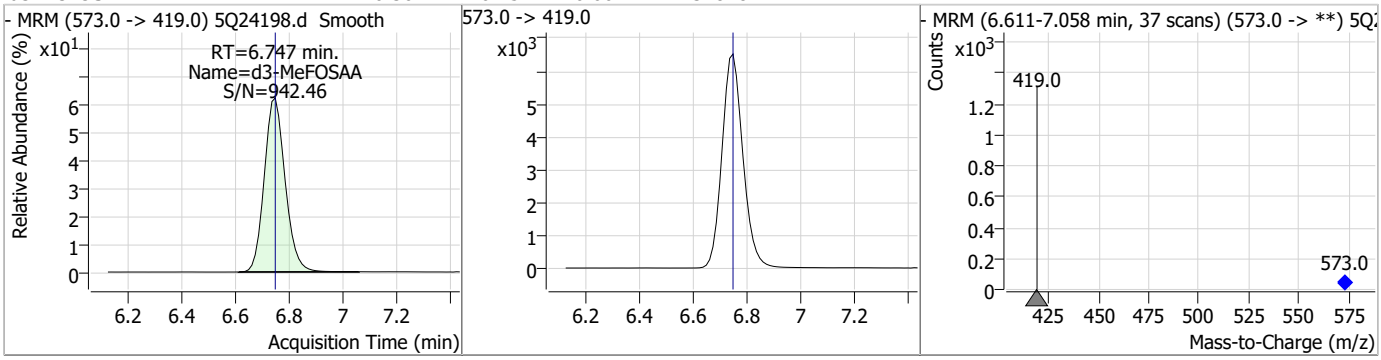
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	11.02	6.19	-0.01	45045				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	10.86	6.59	0.00	15124				

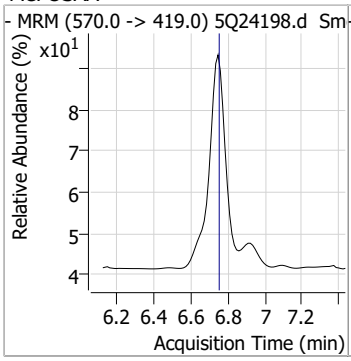


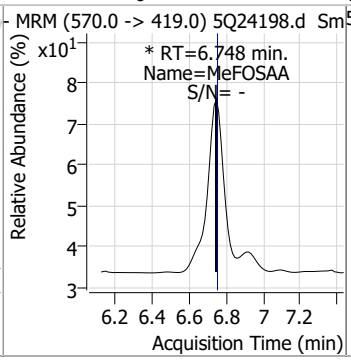
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	10.36	6.75	0.00	34828				

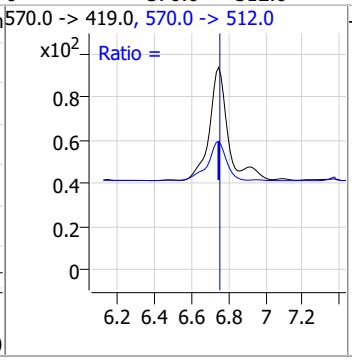


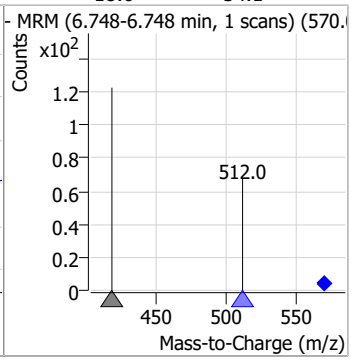
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA		0		0	570.0 -> 512.0		18.0	54.1

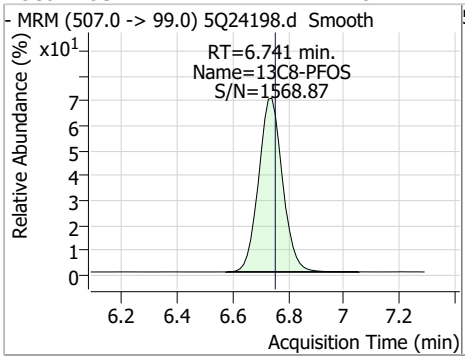


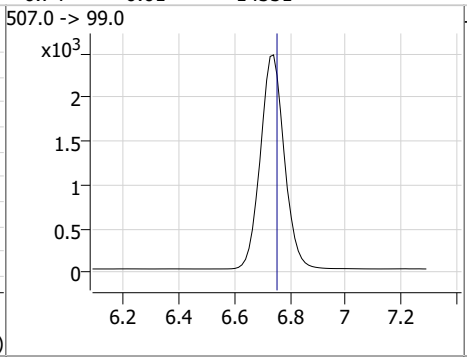


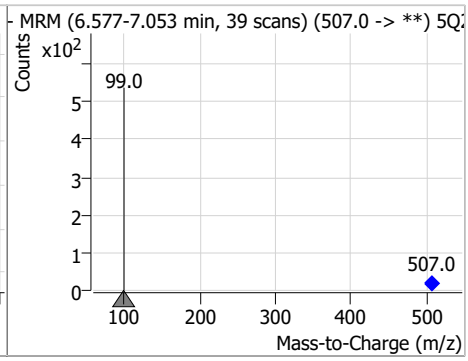




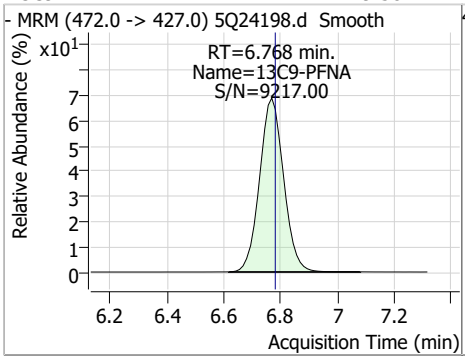
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	9.24	6.74	-0.01	14551				

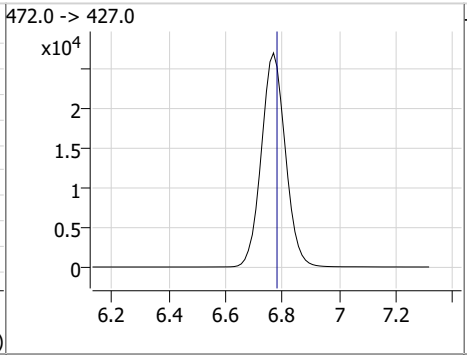


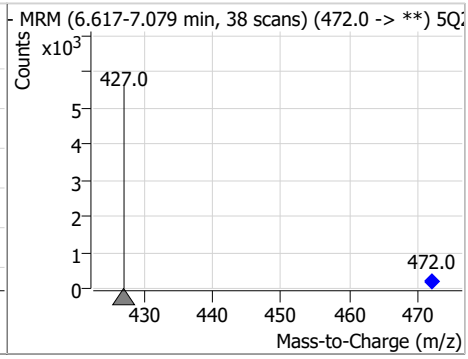




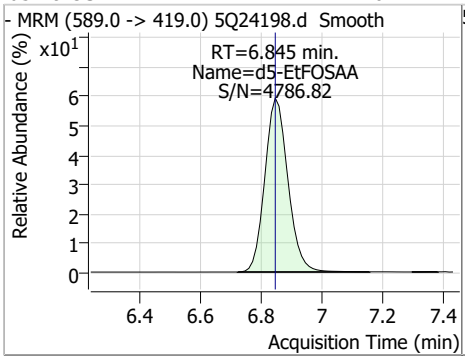
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	9.58	6.77	-0.01	158720				

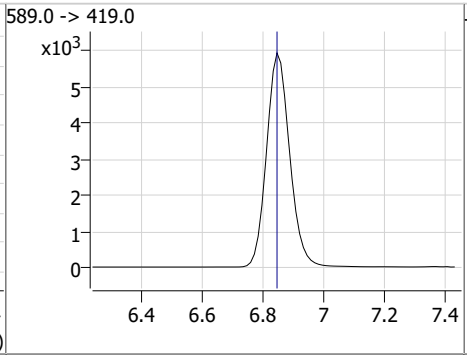


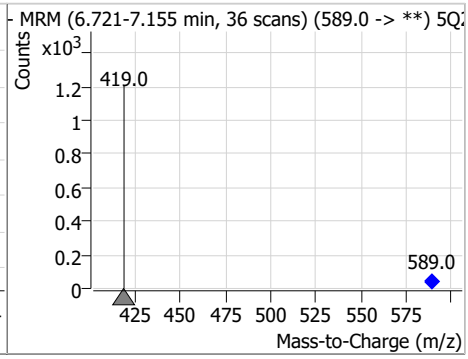




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	10.21	6.85	0.00	31107				

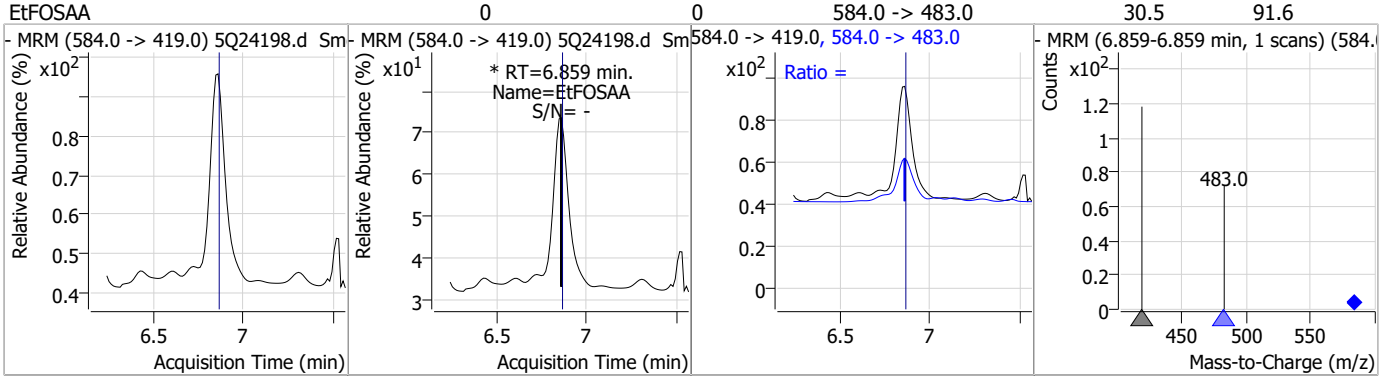




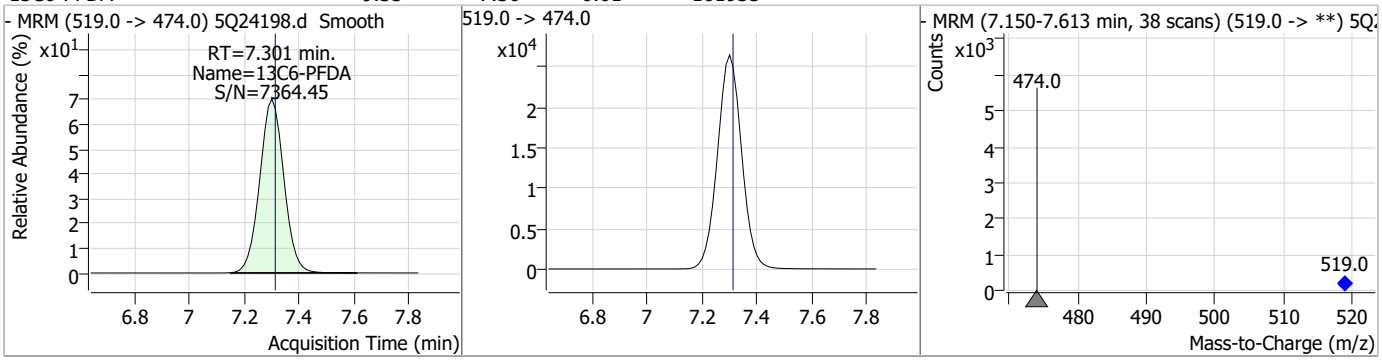


Perfluorinated Compounds by LC/MS/MS

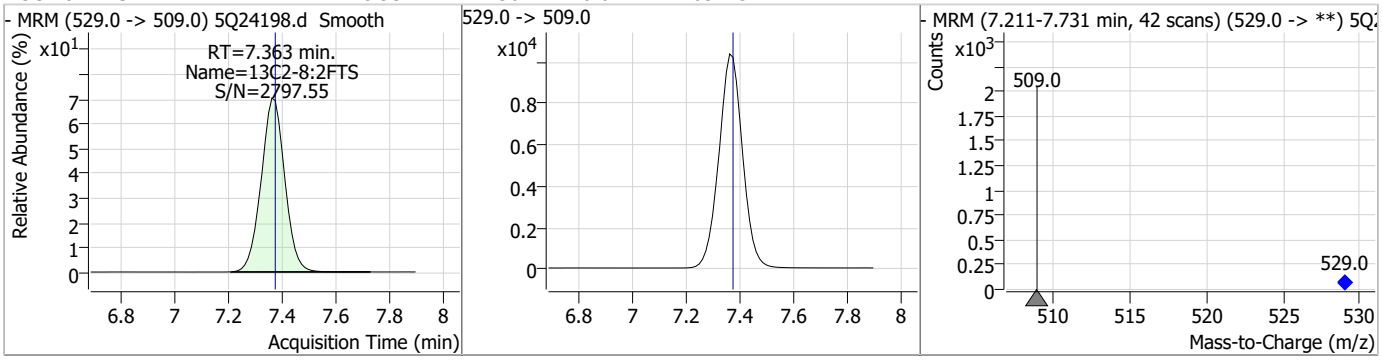
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA		0		0	584.0 -> 483.0		30.5	91.6



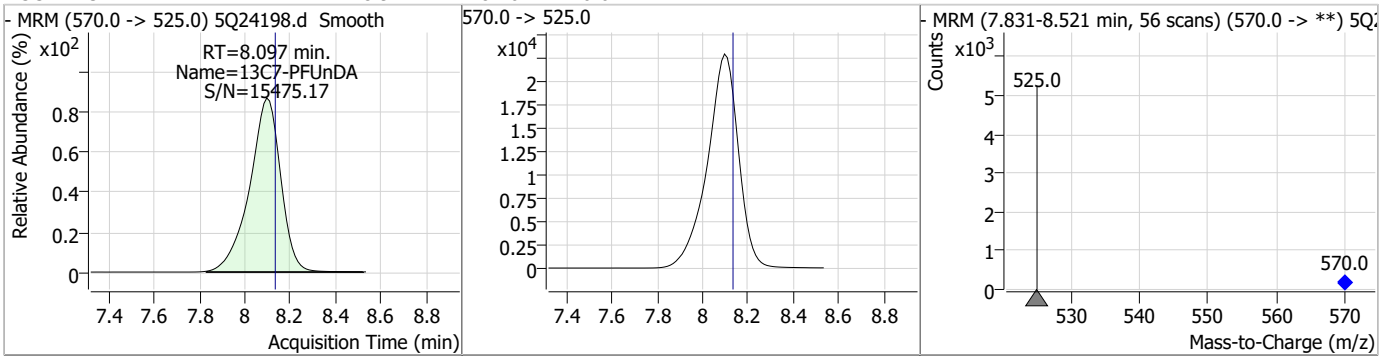
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	9.35	7.30	-0.01	161935				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	8.93	7.36	-0.01	63145				

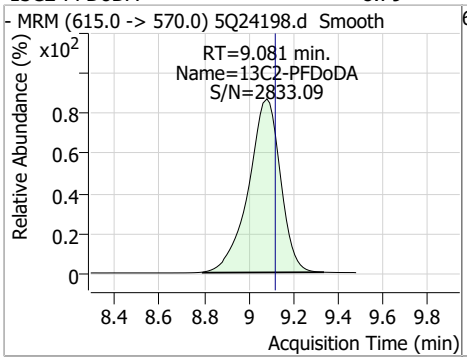


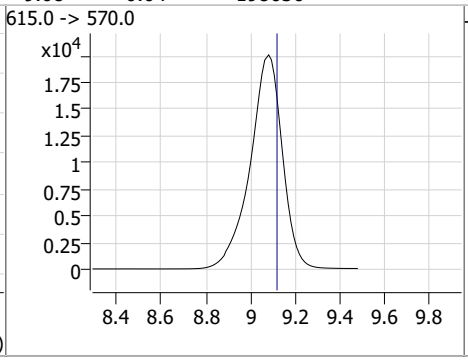
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	8.91	8.10	-0.04	217442				

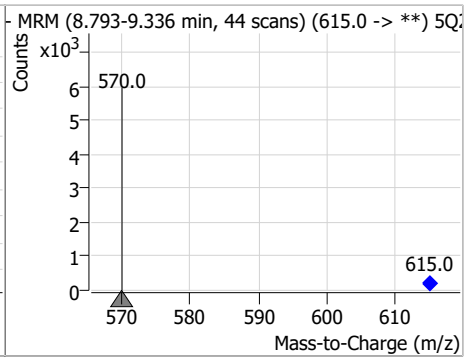


Perfluorinated Compounds by LC/MS/MS

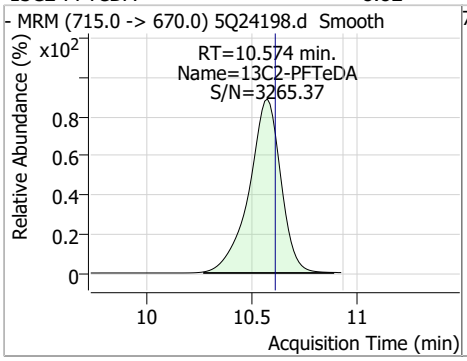
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	8.79	9.08	-0.04	198656				

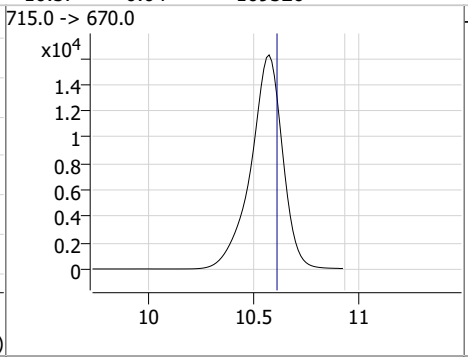


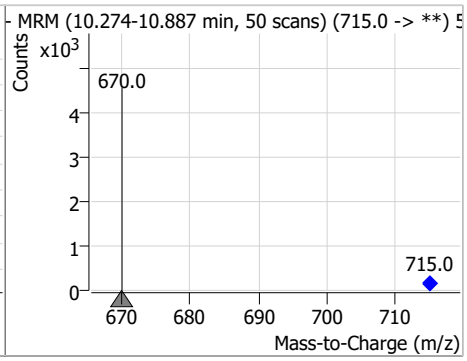




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	8.82	10.57	-0.04	169520				







9.5.6

6

Manual Integration Approval Summary

Sample Number:	S5Q380-RT	**Method:**	EPA 537M QSM5.3 B-15
Lab FileID:	5Q24198.D	**Analyst approved:**	01/08/24 14:10 Lindsay Ritner
Injection Time:	01/05/24 06:30	**Supervisor approved:**	01/09/24 09:58 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorooctanoic acid	335-67-1		6.14	Split peak

QQQ Check Tune Report

Agilent Technologies

Instrument Name	Instrument 1
MS Model	G6470A
MS Instrument Serial	SG1636G008
Software_Firmware Version	B.08.00.B8023.0, FW: A.00.08.21
Tune Date & Time	01:02:24 11:02:16
Data Path	D:\MassHunter\Tune\QQQ\G6470A\atunes.TUNE.XML
Ion Source	AJS ESI
Ionization Mode	AJS ESI
Tuned Resolution	All
Vacuum Pressure	1.55E+0[R]; 3.08E-5[H]

Source Parameters

Parameter	Value
Gas Temp	300
Gas Flow	8
Nebulizer	15
Capillary	4000
Nozzle Voltage	1500
Sheath Gas Temp	250
Sheath Gas Flow	7

QQQ Check Tune Report

Agilent Technologies

Negative Results

Analyzer: MS1 Polarity: Negative Width: Unit

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
112.99	113.00	0.01	Pass	0.70	0.68	-0.02	Pass	131030
302.00	301.99	-0.01	Pass	0.70	0.70	0.00	Pass	86493
601.98	601.93	-0.05	Pass	0.70	0.75	0.05	Pass	213395
1033.99	1033.93	-0.06	Pass	0.70	0.79	0.09	Pass	369317
1633.95	1633.85	-0.10	Pass	0.70	0.83	0.13	Pass	453514
2233.91	2233.75	-0.16	Pass	0.70	0.82	0.12	Pass	137916

Analyzer: MS2 Polarity: Negative Width: Unit

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
69.00	68.96	-0.04	Pass	0.70	0.73	0.03	Pass	38432
112.99	112.96	-0.03	Pass	0.70	0.74	0.04	Pass	108172
302.00	302.01	0.01	Pass	0.70	0.69	-0.01	Pass	91987
601.98	601.91	-0.07	Pass	0.70	0.73	0.03	Pass	263538
1033.99	1033.92	-0.07	Pass	0.70	0.73	0.03	Pass	337470
1633.95	1633.75	-0.20	Pass	0.70	0.68	-0.02	Pass	1223334
2233.91	2233.68	-0.23	Pass	0.70	0.76	0.06	Pass	591581

Analyzer: MS1 Polarity: Negative Width: Wide

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
112.99	113.02	0.03	Pass	1.20	1.18	-0.02	Pass	157583
302.00	302.00	0.00	Pass	1.20	1.27	0.07	Pass	121975
601.98	601.91	-0.07	Pass	1.20	1.38	0.18	Pass	299469
1033.99	1033.92	-0.07	Pass	1.20	1.41	0.21	Pass	566102
1633.95	1633.86	-0.09	Pass	1.20	1.19	-0.01	Pass	843428
2233.91	2233.80	-0.11	Pass	1.20	1.10	-0.10	Pass	279258

Analyzer: MS2 Polarity: Negative Width: Wide

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
69.00	68.92	-0.08	Pass	1.20	1.22	0.02	Pass	48460
112.99	112.95	-0.04	Pass	1.20	1.24	0.04	Pass	149523
302.00	302.04	0.04	Pass	1.20	1.22	0.02	Pass	120264
601.98	601.97	-0.01	Pass	1.20	1.31	0.11	Pass	367749
1033.99	1033.81	-0.18	Pass	1.20	1.34	0.14	Pass	625737
1633.95	1633.81	-0.14	Pass	1.20	1.42	0.22	Pass	2551781
2233.91	2233.86	-0.05	Pass	1.20	1.41	0.21	Pass	1741903

Analyzer: MS1 Polarity: Negative Width: Widest

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
112.99	113.02	0.03	Pass	2.50	2.44	-0.06	Pass	209028
302.00	301.97	-0.03	Pass	2.50	2.60	0.10	Pass	150623
601.98	601.91	-0.07	Pass	2.50	2.65	0.15	Pass	404471
1033.99	1033.88	-0.11	Pass	2.50	3.03	0.53	Pass	864464
1633.95	1633.83	-0.12	Pass	2.50	3.11	0.61	Pass	1472536
2233.91	2233.88	-0.03	Pass	2.50	2.10	-0.40	Pass	575416

Analyzer: MS2 Polarity: Negative Width: Widest

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
69.00	68.84	-0.16	Pass	2.50	2.64	0.14	Pass	50972
112.99	112.90	-0.09	Pass	2.50	2.62	0.12	Pass	185832
302.00	301.99	-0.01	Pass	2.50	2.49	-0.01	Pass	160568
601.98	602.19	0.21	Pass	2.50	2.52	0.02	Pass	521651
1033.99	1033.61	-0.38	Pass	2.50	2.40	-0.10	Pass	1161965
1633.95	1633.76	-0.19	Pass	2.50	2.38	-0.12	Pass	5257376
2233.91	2233.68	-0.23	Pass	2.50	2.24	-0.26	Pass	4410482

Manual Integrations APPROVED (compounds with "m" flag)
Natasha Gumtie 01/04/24 11:31

Perfluorinated Compounds by LC/MS/MS

Data File : 2q118510.d
Operator : lindsayr
Acq. Method : 537_ID.m
Acq. Date-Time : 1/2/2024 12:34:31 PM
Sample Name : ic1691-0.5
Vial : P1-A2
DA Method File : ID_010224_S2Q1691.quantmethod.xml
Batch Name : s2q1691.batch.bin
Sample Information : op401,S2Q1691,250,,,1.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M5-EtFOSAA	7.748	589.0 -> 419.0	18946	10.00	µg/L	0.025
M4-PFBA	2.240	217.0 -> 172.0	52309	10.00	µg/L	0.000
M5-PFPeA	4.074	268.0 -> 223.0	79731	10.00	µg/L	0.013
M5-PFHxA	5.339	318.0 -> 273.0	98124	10.00	µg/L	0.000
M4-PFHpA	6.235	367.0 -> 322.0	86384	10.00	µg/L	0.027
M8-PFOA	6.925	421.0 -> 376.0	171902	10.00	µg/L	0.038
M9-PFNA	7.492	472.0 -> 427.0	137781	10.00	µg/L	0.038
M6-PFDA	7.956	519.0 -> 474.0	103918	10.00	µg/L	0.025
M7-PFUnDA	8.418	570.0 -> 525.0	175982	10.00	µg/L	0.038
M2-PFDoDA	8.960	615.0 -> 570.0	173347	10.00	µg/L	0.040
M2-PFTeDA	10.055	715.0 -> 670.0	130373	10.00	µg/L	0.038
M8-FOSA	7.197	506.0 -> 78.0	21070	10.00	µg/L	0.038
M3-PFBS	4.330	302.0 -> 99.0	5961	10.00	µg/L	0.000
M3-PFHxS	6.256	402.0 -> 99.0	6083	10.00	µg/L	0.013
M8-PFOS	7.465	507.0 -> 99.0	5713	10.00	µg/L	0.038
M2-4:2FTS	5.234	329.0 -> 309.0	34177	10.00	µg/L	0.000
M2-6:2FTS	6.910	429.0 -> 409.0	51820	10.00	µg/L	0.025
M2-8:2FTS	8.006	529.0 -> 509.0	36386	10.00	µg/L	0.038
M3-MeFOSAA	7.648	573.0 -> 419.0	23143	10.00	µg/L	0.039
M3-HFPO-DA	5.620	287.0 -> 169.0	8120	10.00	µg/L	0.013
M3-MeFOSA	7.551	515.0 -> 169.0	6875	10.00	µg/L	0.038
System Monitoring Compounds						
13C2-4:2FTS	5.234	329.0 -> 309.0	34177	9.26	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 92.6%		
13C2-6:2FTS	6.910	429.0 -> 409.0	51820	9.02	µg/L	0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 90.2%		
13C2-8:2FTS	8.006	529.0 -> 509.0	36386	9.39	µg/L	0.038
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 93.9%		
13C2-PFDoDA	8.960	615.0 -> 570.0	173347	9.90	µg/L	0.040
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.0%		
13C2-PFTeDA	10.055	715.0 -> 670.0	130373	9.81	µg/L	0.038
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 98.1%		
13C3-PFBS	4.330	302.0 -> 99.0	5961	9.92	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.2%		
13C3-PFHxS	6.256	402.0 -> 99.0	6083	9.94	µg/L	0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.4%		
13C4-PFBA	2.240	217.0 -> 172.0	52309	10.13	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.3%		
13C4-PFHpA	6.235	367.0 -> 322.0	86384	10.06	µg/L	0.027
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.6%		
d5-EtFOSAA	7.748	589.0 -> 419.0	18946	9.82	µg/L	0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 98.2%		
13C5-PFHxA	5.339	318.0 -> 273.0	98124	9.95	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.5%		
13C5-PFPeA	4.074	268.0 -> 223.0	79731	10.03	µg/L	0.013

Perfluorinated Compounds by LC/MS/MS

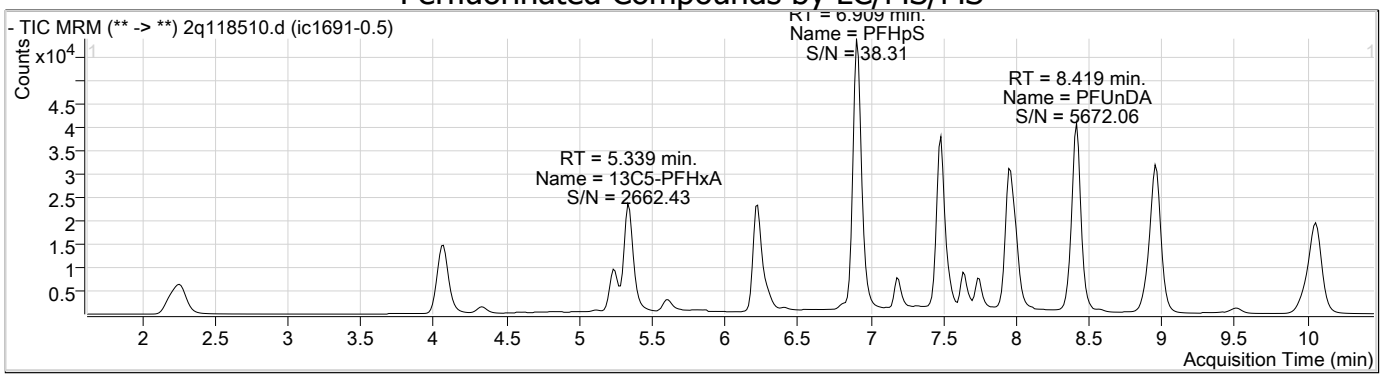
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.3%			
13C6-PFDA	7.956	519.0 -> 474.0	103918	9.94	µg/L		0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.4%			
13C7-PFUnDA	8.418	570.0 -> 525.0	175982	10.12	µg/L		0.038
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.2%			
13C8-FOSA	7.197	506.0 -> 78.0	21070	10.26	µg/L		0.038
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 102.6%			
13C8-PFOA	6.925	421.0 -> 376.0	171902	10.16	µg/L		0.038
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.6%			
13C8-PFOS	7.465	507.0 -> 99.0	5713	10.23	µg/L		0.038
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 102.3%			
13C9-PFNA	7.492	472.0 -> 427.0	137781	10.23	µg/L		0.038
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 102.3%			
d3-MeFOSAA	7.648	573.0 -> 419.0	23143	10.12	µg/L		0.039
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.2%			
13C3-HFPO-DA	5.620	287.0 -> 169.0	8120	9.77	µg/L		0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 97.7%			
d3-MeFOSA	7.551	515.0 -> 169.0	6875	9.57	µg/L		0.038
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 95.7%			
Target Compounds							QValue
4:2FTS	5.237	327.0 -> 307.0	1777	0.51	µg/L		96
		327.0 -> 81.0	698				
6:2FTS	6.911	427.0 -> 407.0	2468	0.55	µg/L		99
		427.0 -> 81.0	738				
8:2FTS	8.007	527.0 -> 507.0	1438	0.46	µg/L		96
		527.0 -> 81.0	409				
EtFOSAA	7.748	584.0 -> 419.0	784	0.46	µg/L		94
		584.0 -> 483.0	525				
FOSA	7.186	498.0 -> 78.0	883	0.48	µg/L	#	92
		498.0 -> 478.0	14				
MeFOSAA	7.648	570.0 -> 419.0	964	0.49	µg/L		90
		570.0 -> 512.0	398				
PFBA	2.246	213.0 -> 169.0	766	0.46	µg/L		100
PFBS	4.332	299.0 -> 80.0	702	0.47	µg/L		99
		299.0 -> 99.0	263				
PFDA	7.957	513.0 -> 469.0	4540	0.44	µg/L		97
		513.0 -> 219.0	785				
PFDoDA	8.962	613.0 -> 569.0	6264	0.46	µg/L		99
		613.0 -> 319.0	837				
PFDS	8.354	599.0 -> 80.0	289	0.53	µg/L		84
		599.0 -> 99.0	123				
PFHpA	6.235	363.0 -> 319.0	6565	0.46	µg/L		100
		363.0 -> 169.0	1103				
PFHpS	6.909	449.0 -> 80.0	453	0.45	µg/L		87
		449.0 -> 99.0	295				
PFHxA	5.340	313.0 -> 269.0	4684	0.46	µg/L		99
		313.0 -> 119.0	171				
PFHxS	6.256	399.0 -> 80.0	629	0.47	µg/L	m	98
		399.0 -> 99.0	313				
PFNA	7.493	463.0 -> 419.0	5072	0.46	µg/L		98
		463.0 -> 219.0	997				
PFNS	7.916	549.0 -> 80.0	295	0.49	µg/L		97
		549.0 -> 99.0	170				
PFOA	6.926	413.0 -> 369.0	8388	0.46	µg/L		100
		413.0 -> 169.0	1508				
PFOS	7.466	499.0 -> 80.0	397	0.44	µg/L	m	77

Perfluorinated Compounds by LC/MS/MS

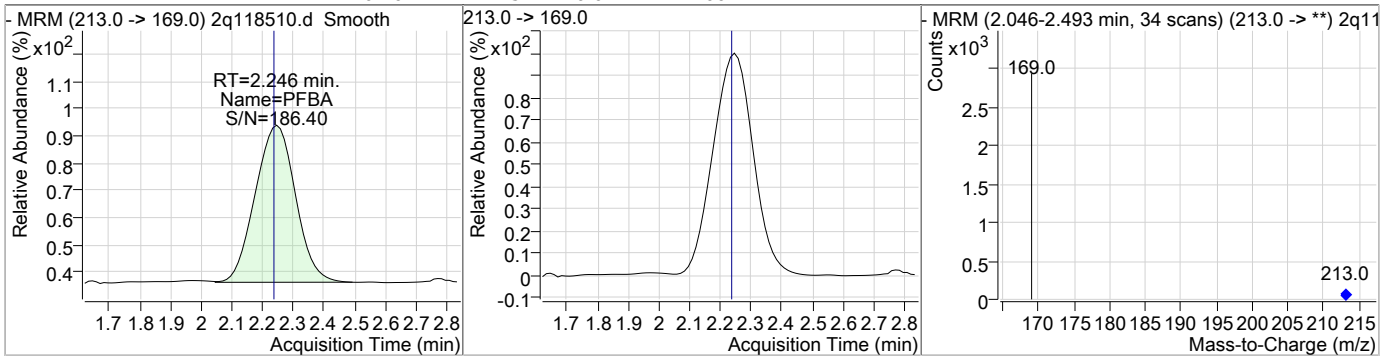
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		499.0 -> 99.0	265			
PFPeA	4.064	263.0 -> 219.0	2936	0.47	µg/L	100
PFPeS	5.445	349.0 -> 80.0	517	0.47	µg/L	92
		349.0 -> 99.0	248			
PFTeDA	10.047	713.0 -> 669.0	6376	0.45	µg/L	99
		713.0 -> 219.0	411			
PFTrDA	9.512	663.0 -> 619.0	6859	0.44	µg/L	99
		663.0 -> 369.0	492			
PFUnDA	8.419	563.0 -> 519.0	5913	0.45	µg/L	97
		563.0 -> 269.0	1022			
11Cl-PF3OUdS	8.578	631.0 -> 451.0	1901	0.50	µg/L	96
		633.0 -> 453.0	540			
9Cl-PF3ONS	7.688	531.0 -> 351.0	1941	0.44	µg/L	96
		533.0 -> 353.0	553			
ADONA	6.309	377.0 -> 251.0	7520	0.41	µg/L	100
		377.0 -> 85.0	1983			
HFPO-DA	5.614	329.0 -> 169.0	1281	0.51	µg/L	97
		285.0 -> 169.0	349			
MeFOSA	7.552	512.0 -> 169.0	234	0.38	µg/L	97
		512.0 -> 219.0	213			
4-PFECHS	6.819	461.0 -> 381.0	4096	0.84	µg/L	96
		461.0 -> 99.0	1508			
FBSA	5.128	298.0 -> 78.0	1240	0.39	µg/L	99
		298.0 -> 64.0	135			
FHxSA	6.421	398.0 -> 78.0	1458	0.47	µg/L	96
		398.0 -> 64.0	135			

 # = Qualifier out of range, m = manually integrated, + = Area summed

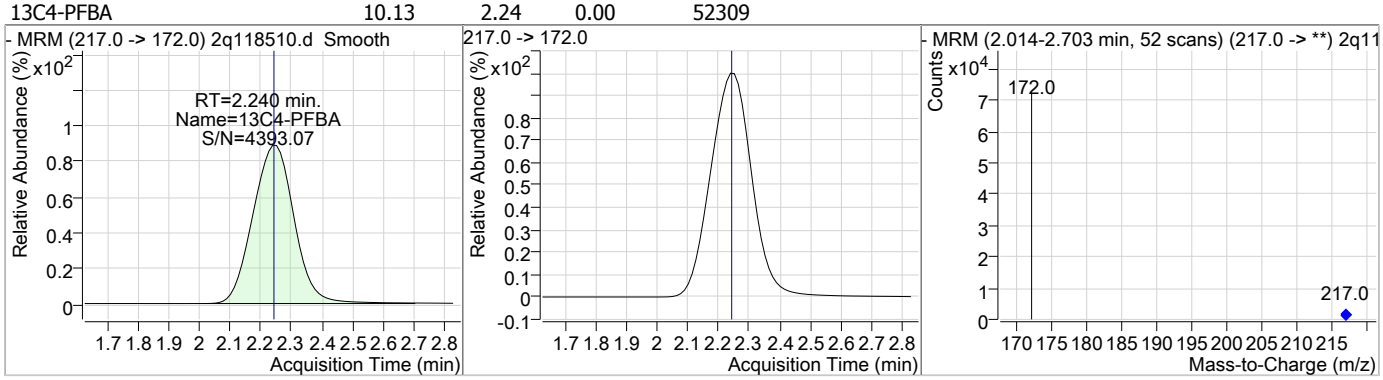
Perfluorinated Compounds by LC/MS/MS



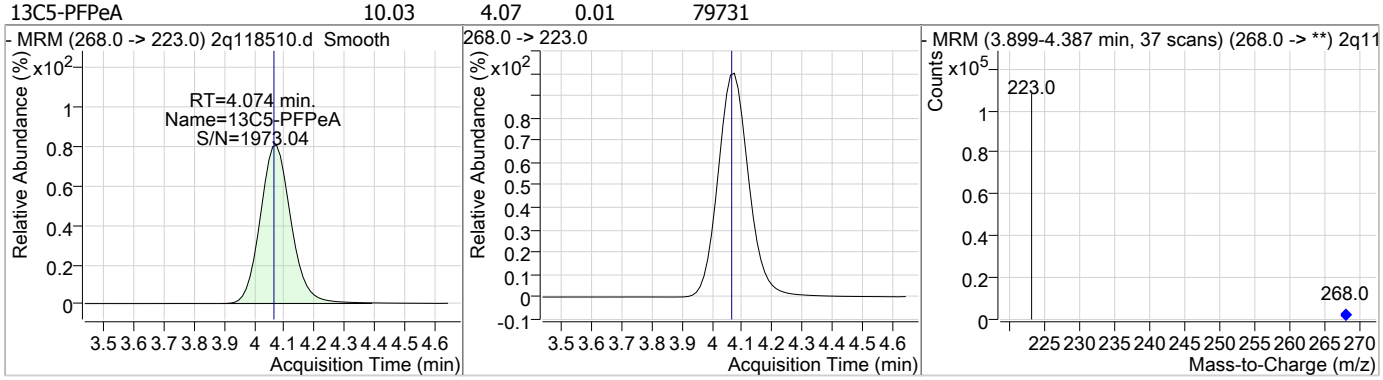
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	0.46	2.25	0.01	766				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	10.13	2.24	0.00	52309				

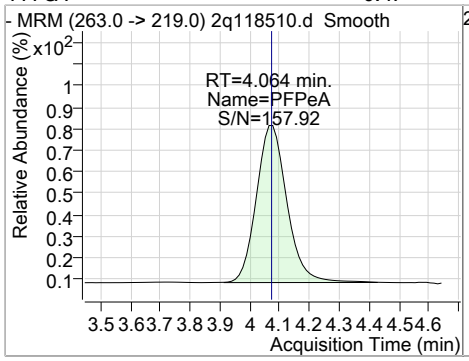


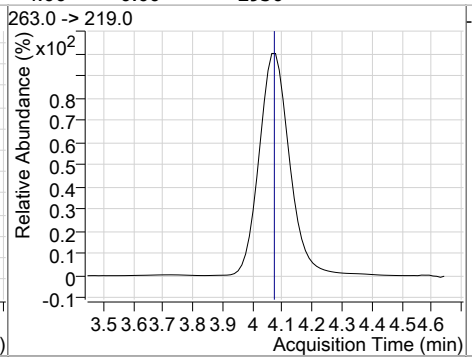
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	10.03	4.07	0.01	79731				

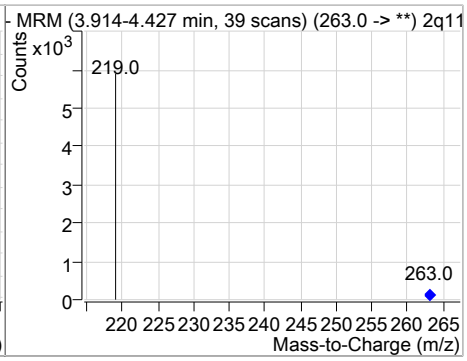


Perfluorinated Compounds by LC/MS/MS

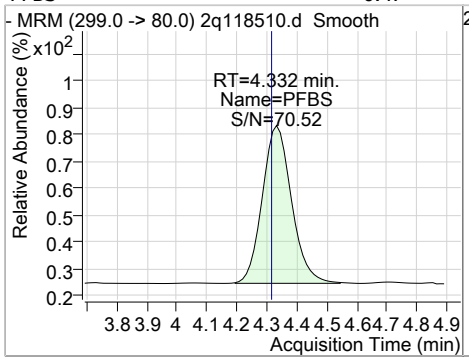
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	0.47	4.06	0.00	2936				

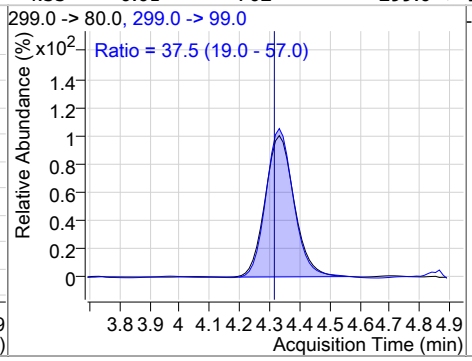


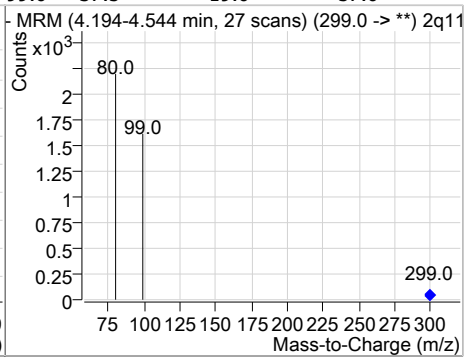




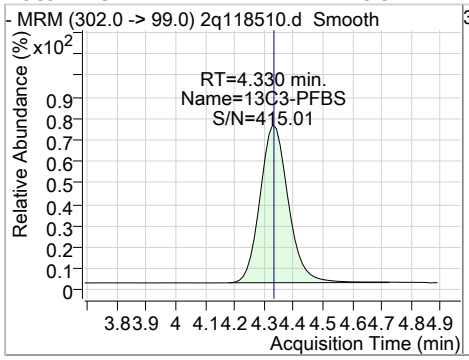
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	0.47	4.33	0.01	702	299.0 -> 99.0	37.5	19.0	57.0

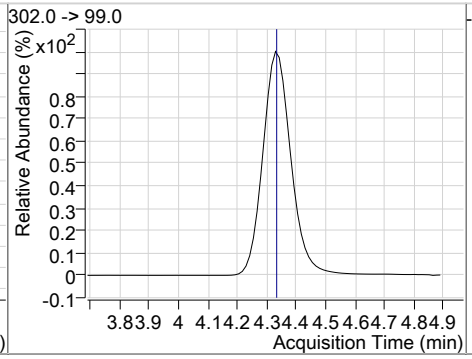


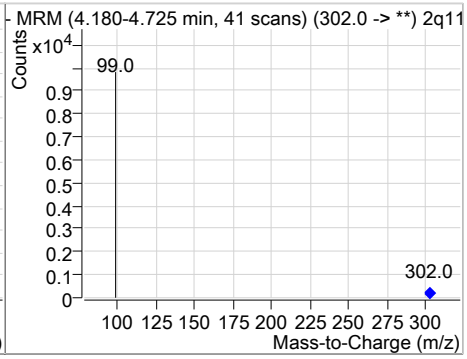




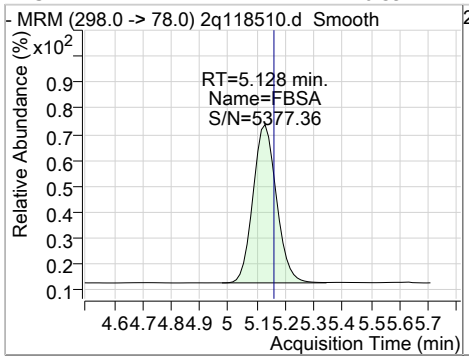
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	9.92	4.33	0.00	5961				

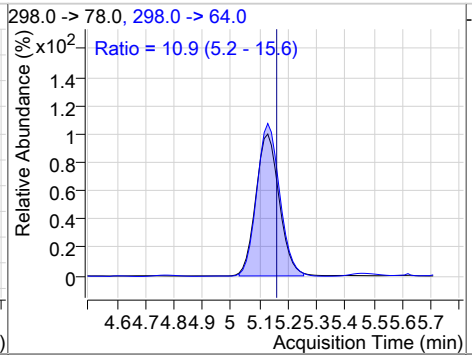


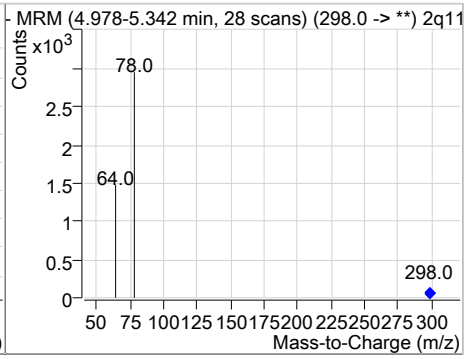




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	0.39	5.13	0.00	1240	298.0 -> 64.0	10.9	5.2	15.6

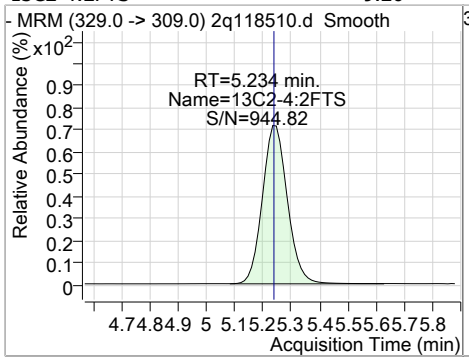


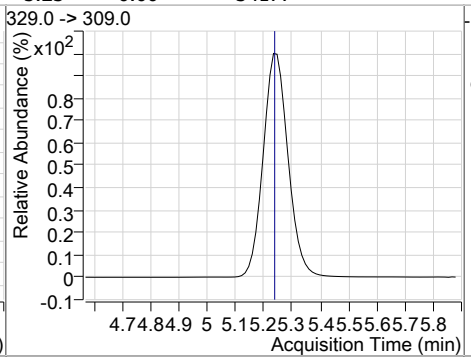


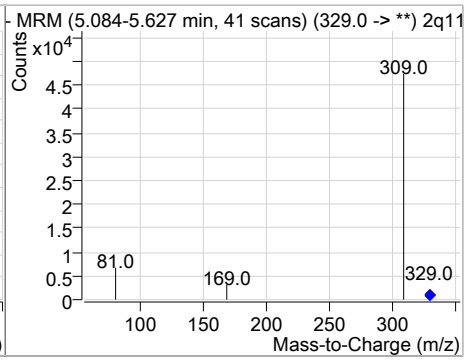


Perfluorinated Compounds by LC/MS/MS

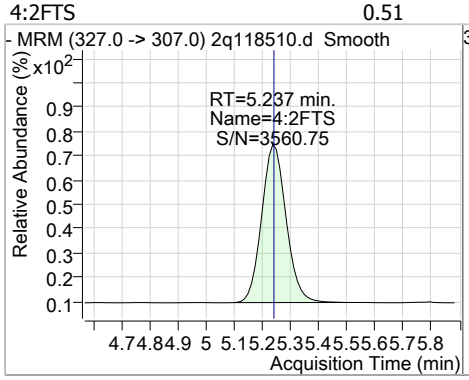
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	9.26	5.23	0.00	34177				

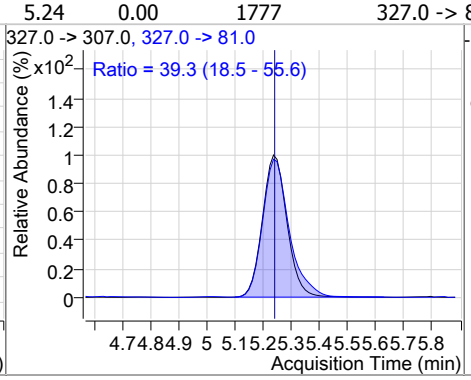


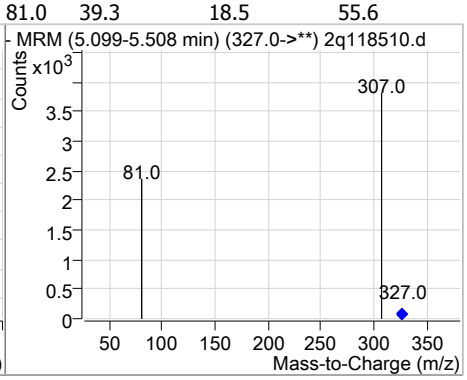




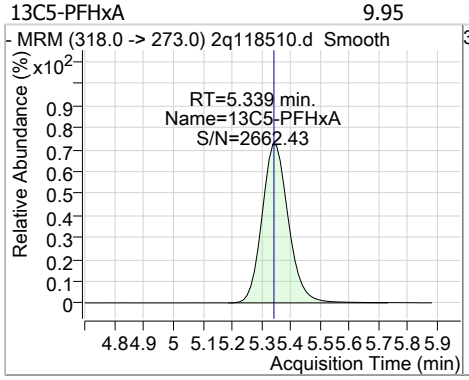
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	0.51	5.24	0.00	1777	327.0 -> 81.0	39.3	18.5	55.6

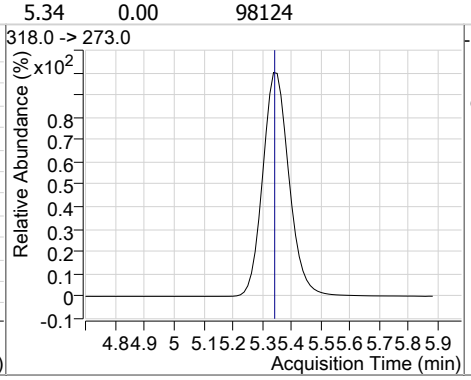


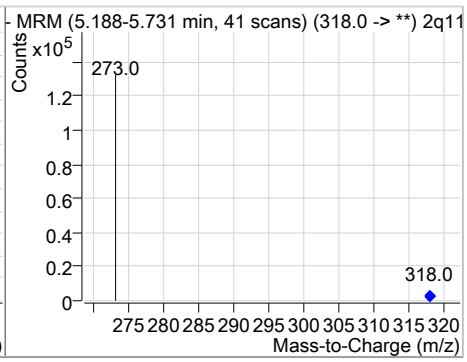




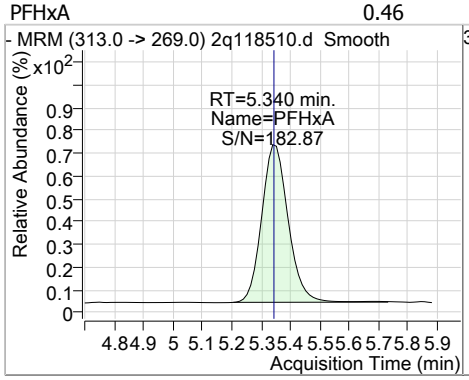
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	9.95	5.34	0.00	98124				

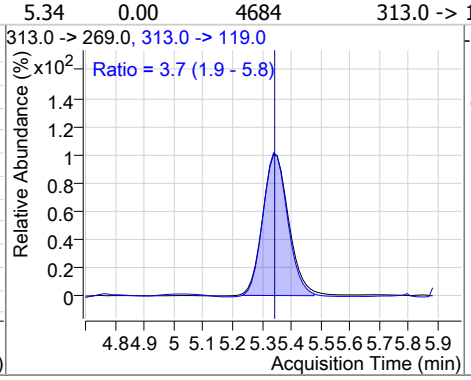


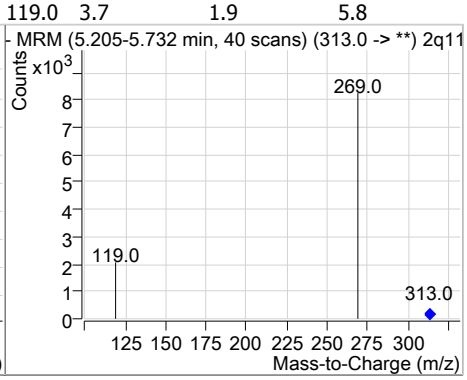




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	0.46	5.34	0.00	4684	313.0 -> 119.0	3.7	1.9	5.8

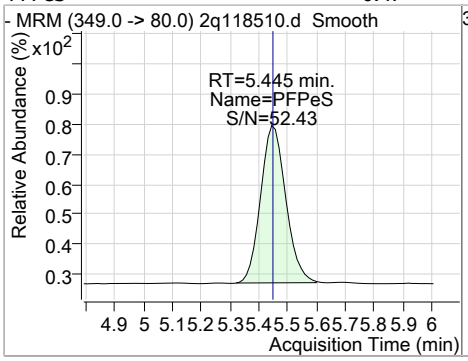


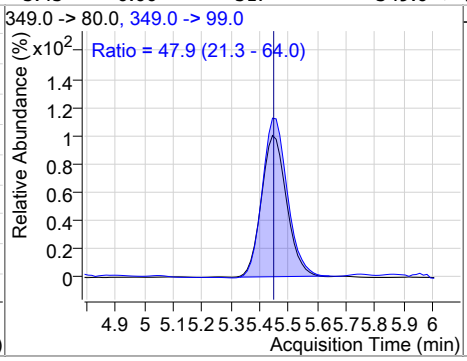


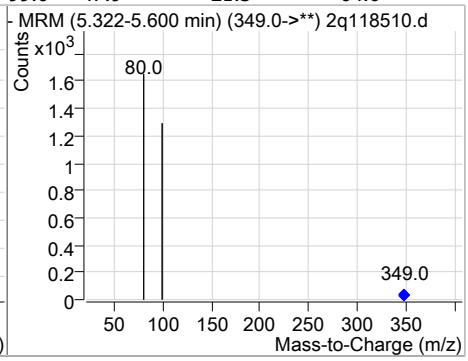


Perfluorinated Compounds by LC/MS/MS

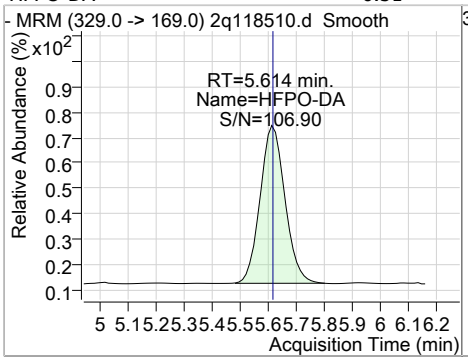
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	0.47	5.45	0.00	517	349.0 -> 99.0	47.9	21.3	64.0

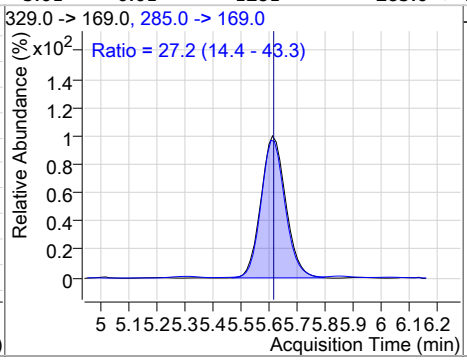


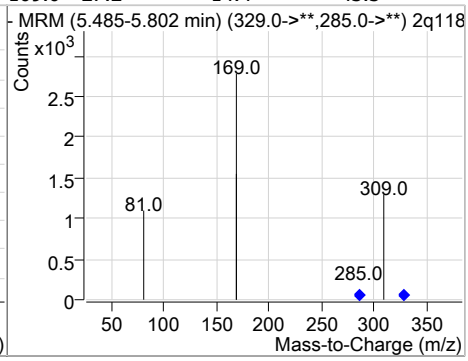




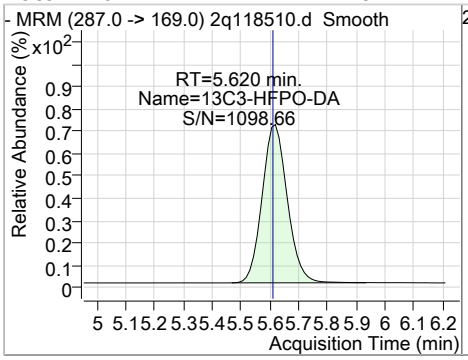
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	0.51	5.61	0.01	1281	285.0 -> 169.0	27.2	14.4	43.3

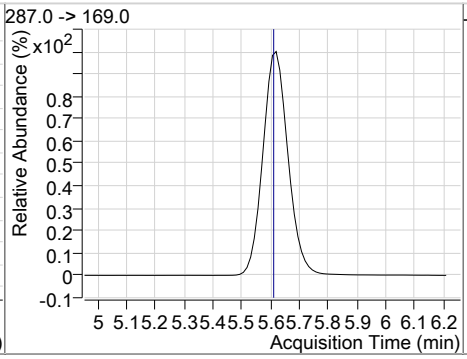


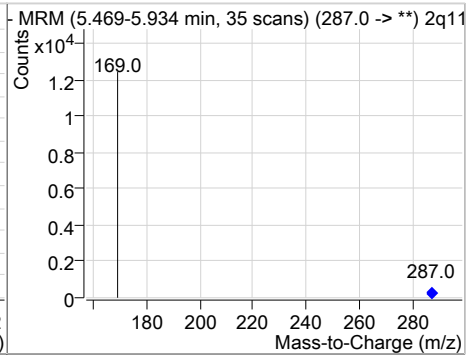




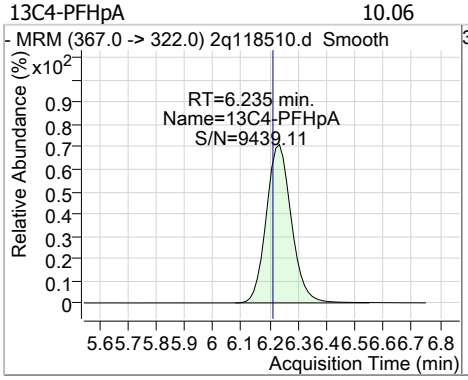
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	9.77	5.62	0.01	8120				

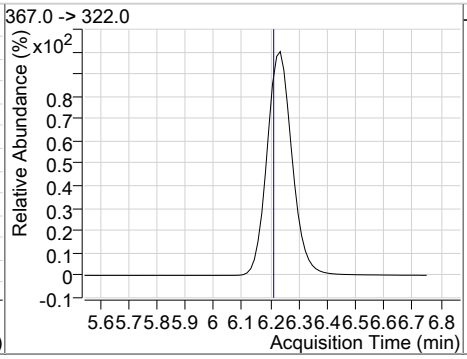


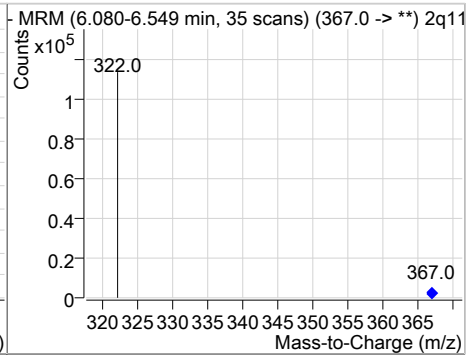




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	10.06	6.23	0.03	86384				

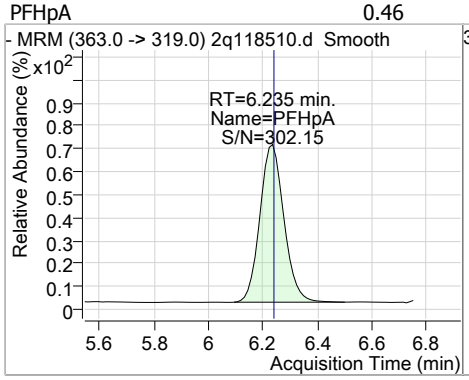


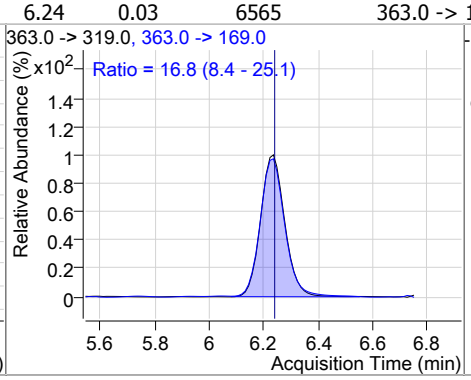


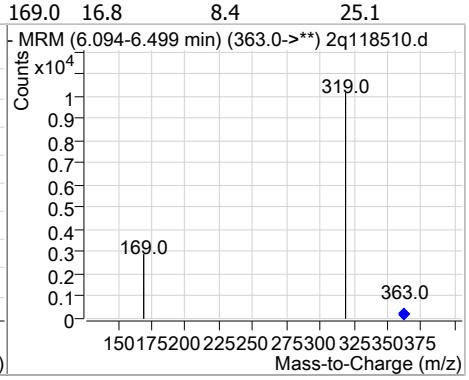


Perfluorinated Compounds by LC/MS/MS

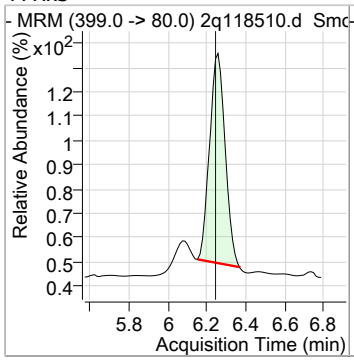
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	0.46	6.24	0.03	6565	363.0 -> 169.0	16.8	8.4	25.1

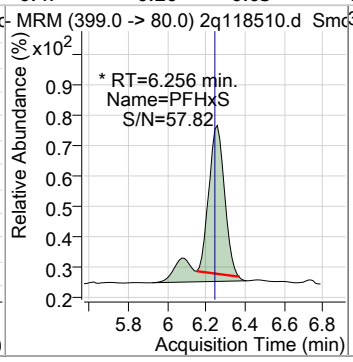


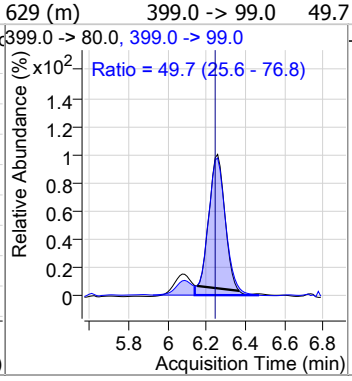


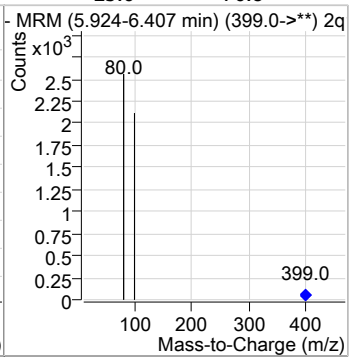


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	0.47	6.26	0.03	629 (m)	399.0 -> 99.0	49.7	25.6	76.8

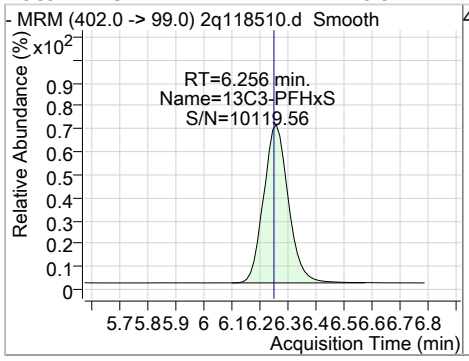


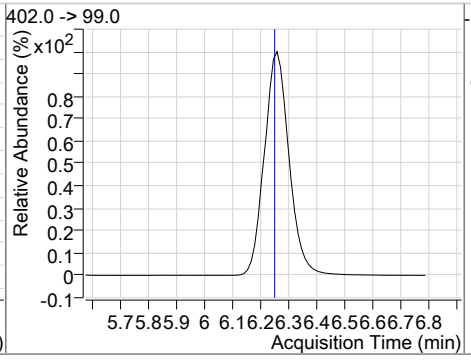


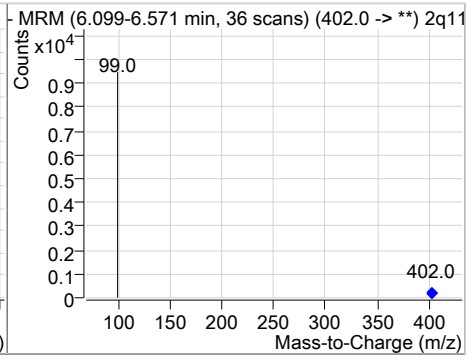




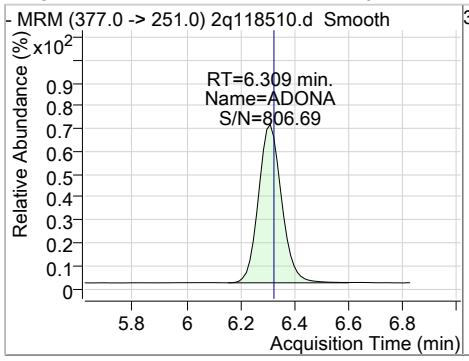
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	9.94	6.26	0.01	6083				

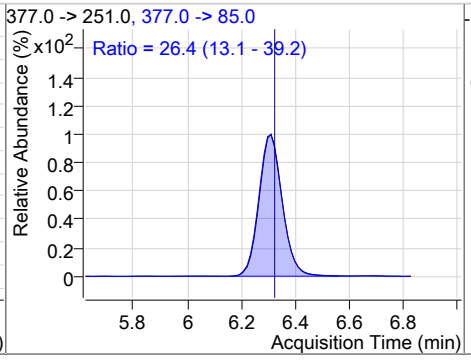


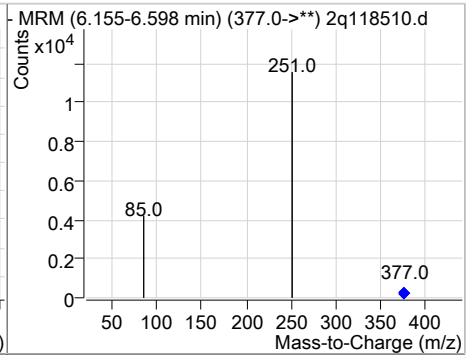




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	0.41	6.31	0.03	7520	377.0 -> 85.0	26.4	13.1	39.2

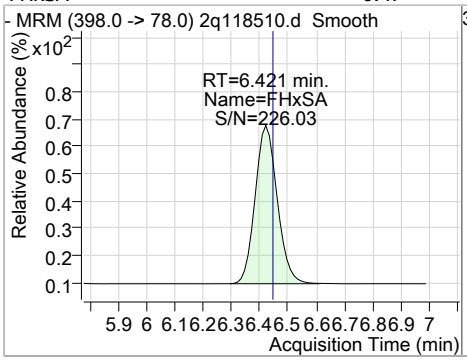


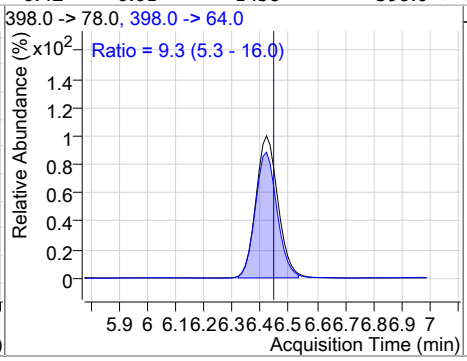


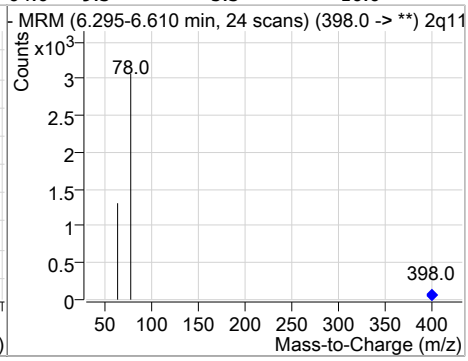


Perfluorinated Compounds by LC/MS/MS

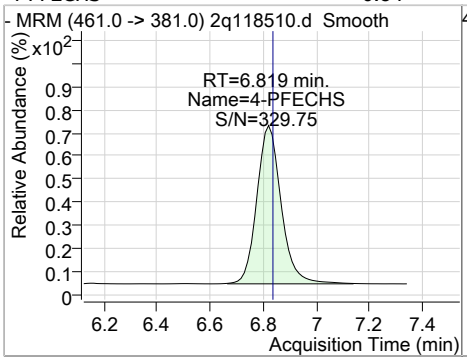
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	0.47	6.42	0.01	1458	398.0 -> 64.0	9.3	5.3	16.0

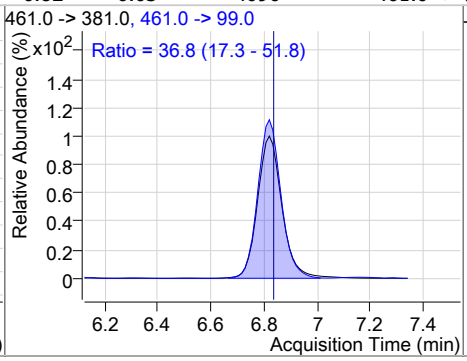


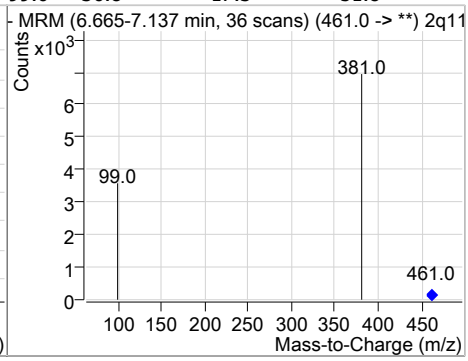




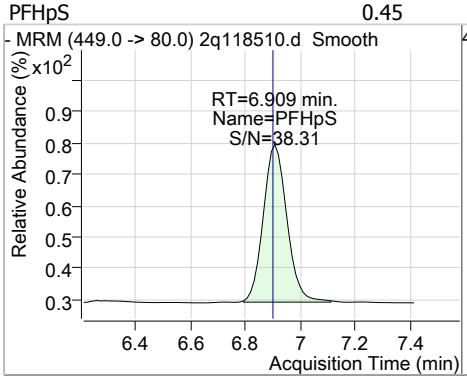
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS	0.84	6.82	0.03	4096	461.0 -> 99.0	36.8	17.3	51.8

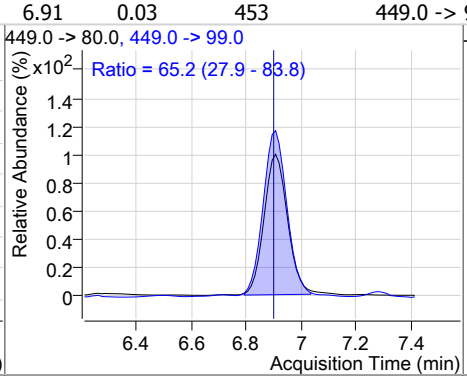


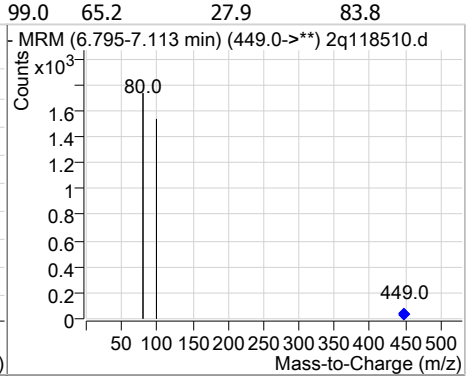




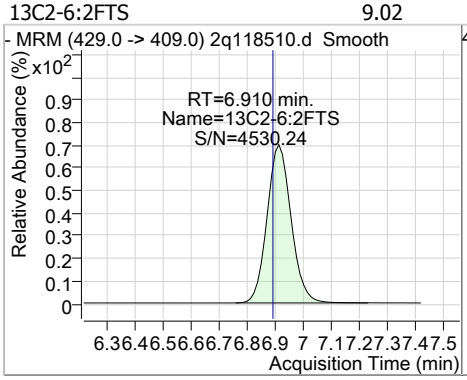
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	0.45	6.91	0.03	453	449.0 -> 99.0	65.2	27.9	83.8

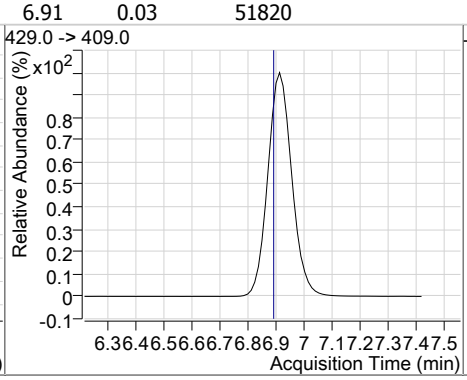


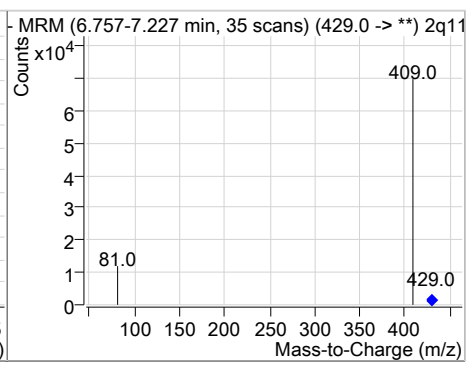




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	9.02	6.91	0.03	51820				

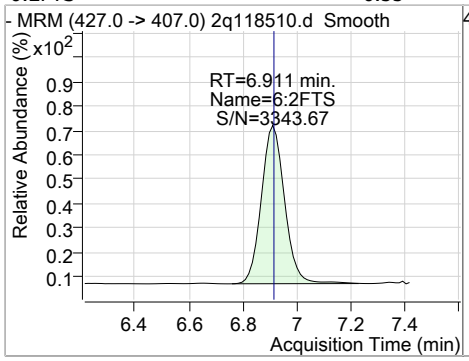


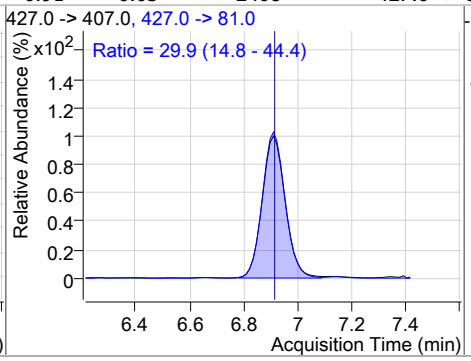


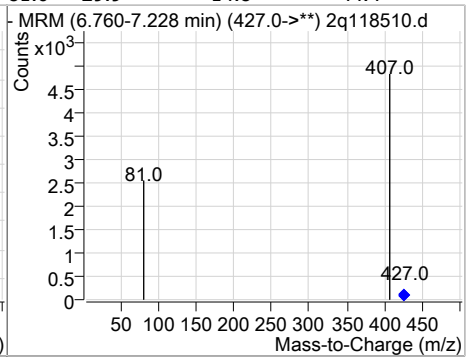


Perfluorinated Compounds by LC/MS/MS

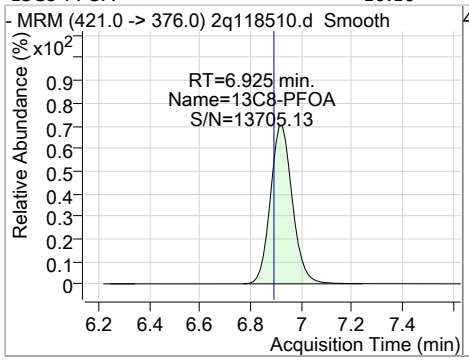
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	0.55	6.91	0.03	2468	427.0 -> 81.0	29.9	14.8	44.4

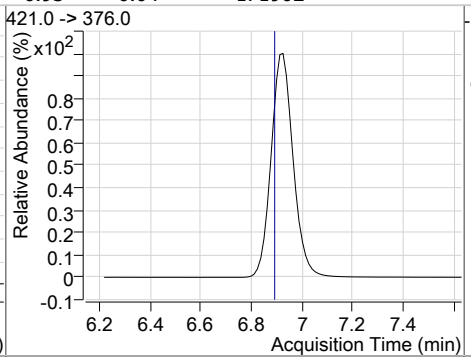


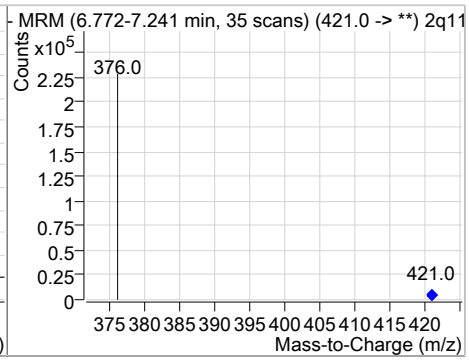




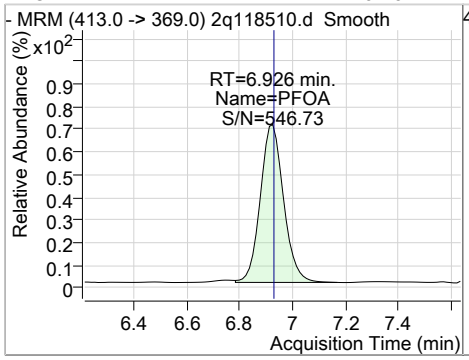
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	10.16	6.93	0.04	171902				

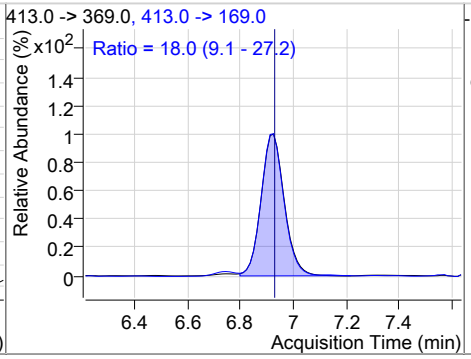


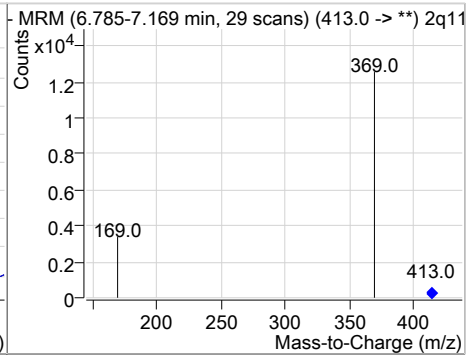




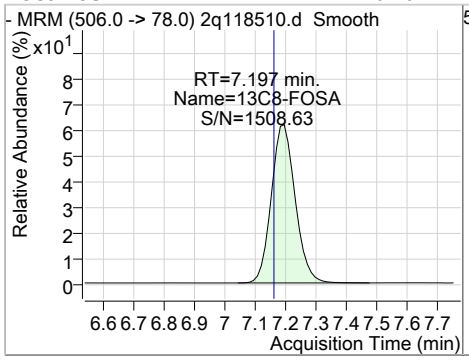
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	0.46	6.93	0.04	8388	413.0 -> 169.0	18.0	9.1	27.2

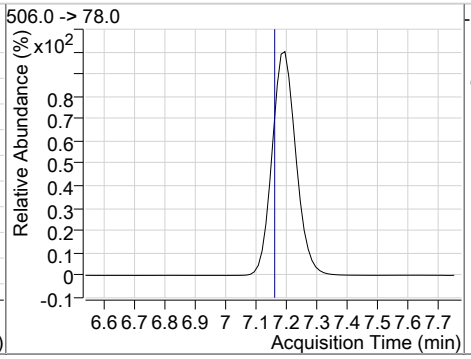


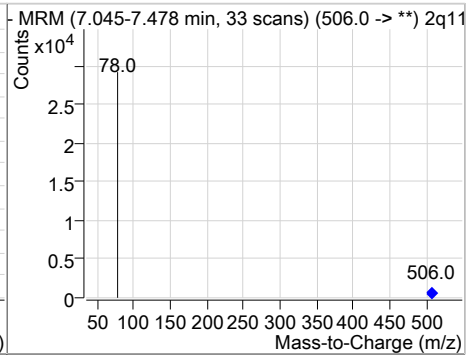




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	10.26	7.20	0.04	21070				

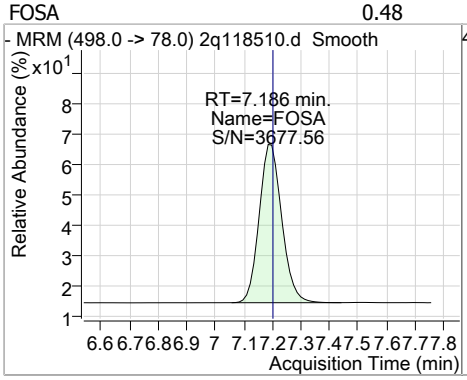


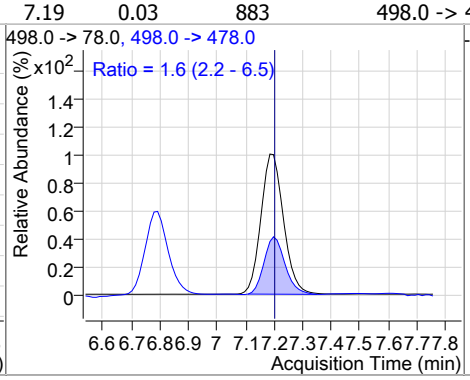


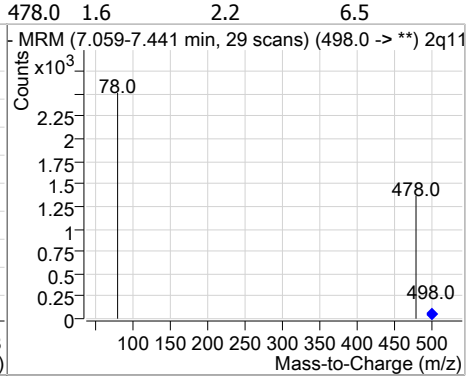


Perfluorinated Compounds by LC/MS/MS

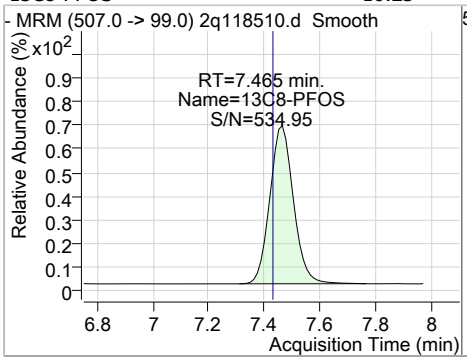
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	0.48	7.19	0.03	883	498.0 -> 478.0	1.6	2.2	6.5

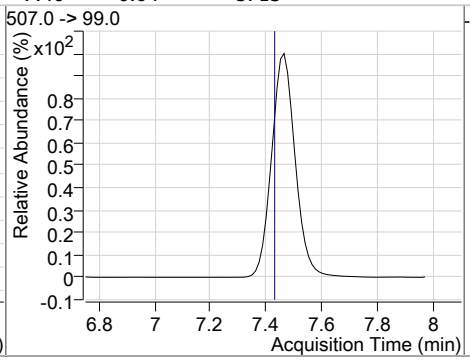


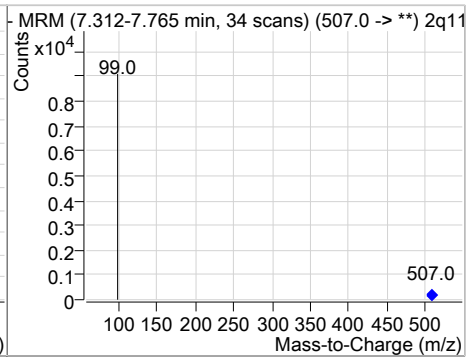




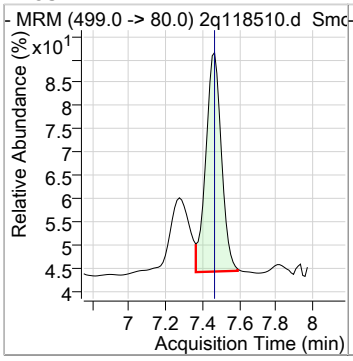
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	10.23	7.46	0.04	5713				

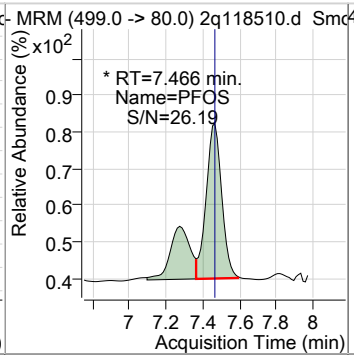


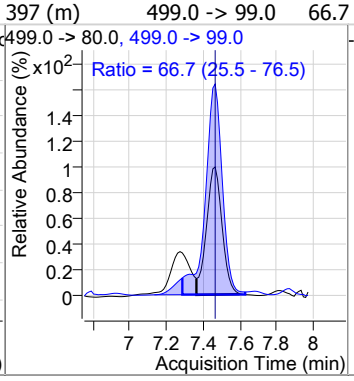


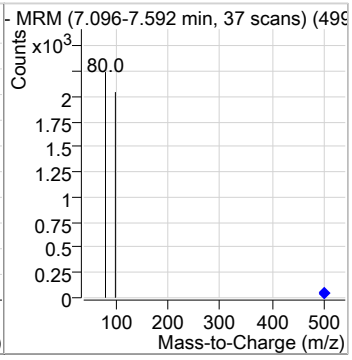


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	0.44	7.47	0.04	397 (m)	499.0 -> 99.0	66.7	25.5	76.5

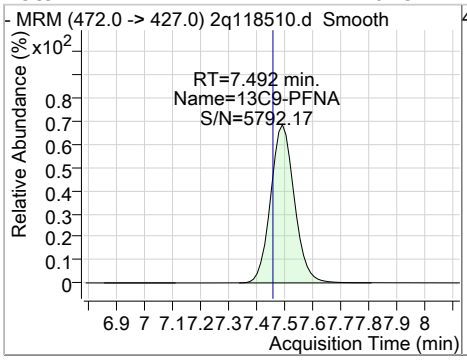


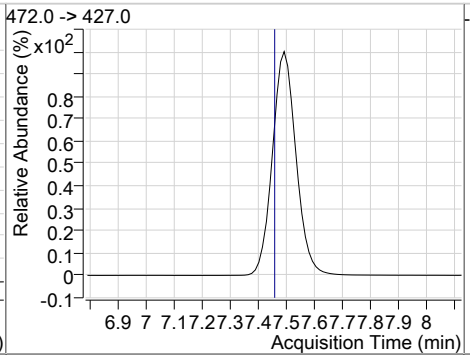


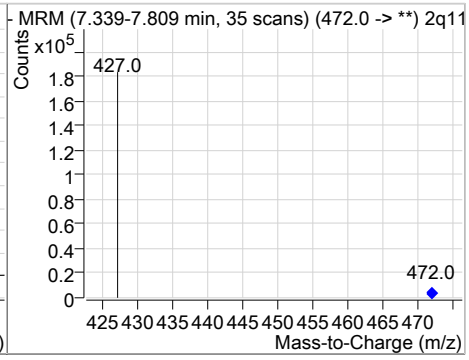




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	10.23	7.49	0.04	137781				

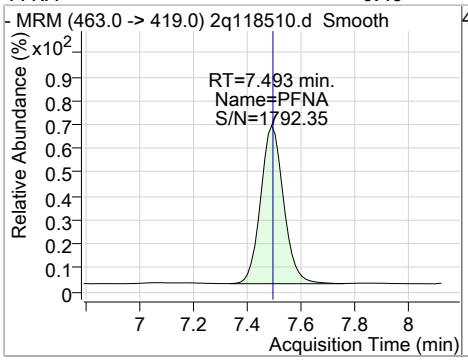


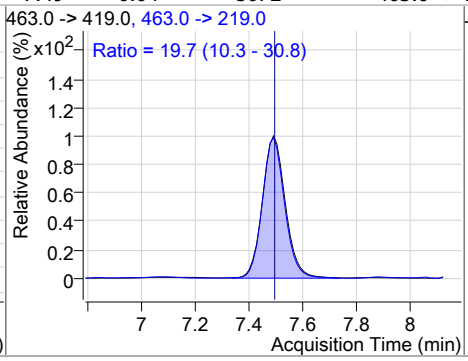


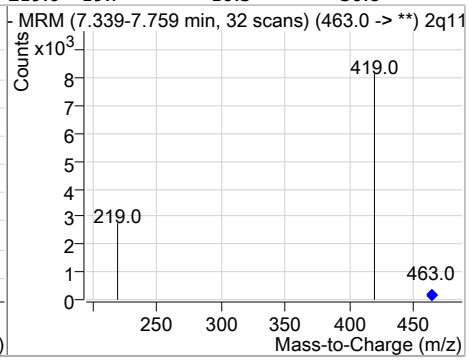


Perfluorinated Compounds by LC/MS/MS

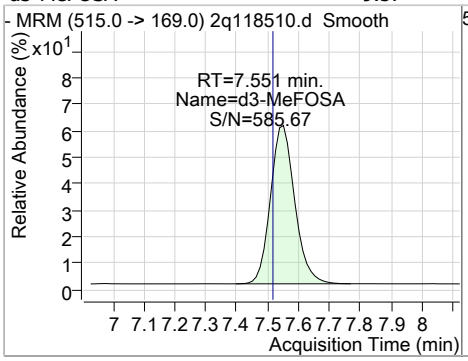
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	0.46	7.49	0.04	5072	463.0 -> 219.0	19.7	10.3	30.8

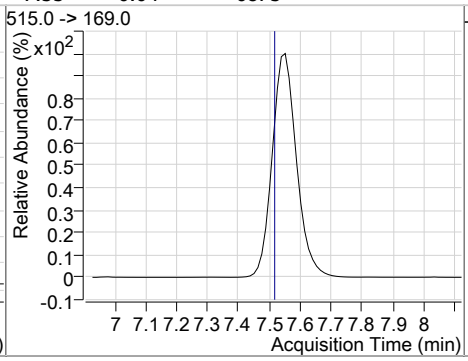


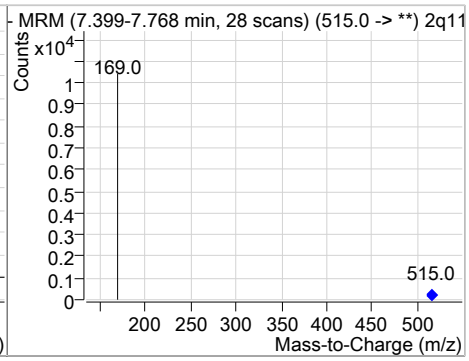




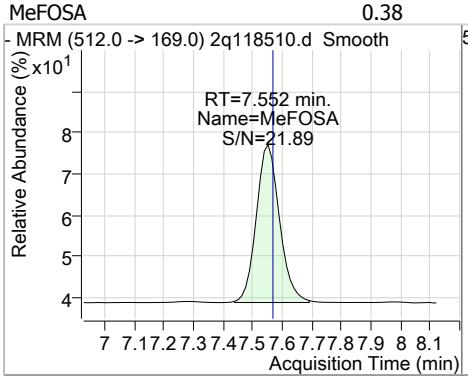
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	9.57	7.55	0.04	6875				

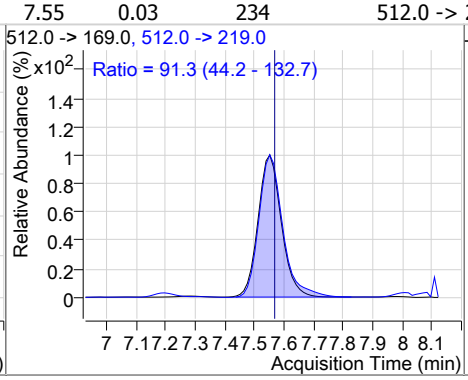


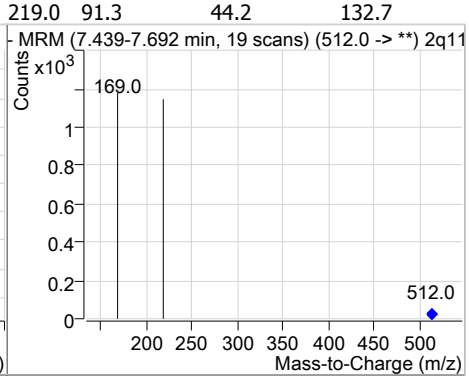




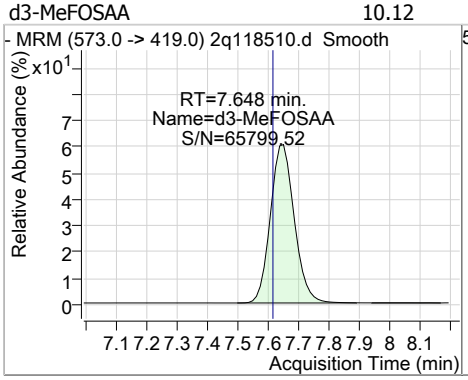
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	0.38	7.55	0.03	234	512.0 -> 219.0	91.3	44.2	132.7

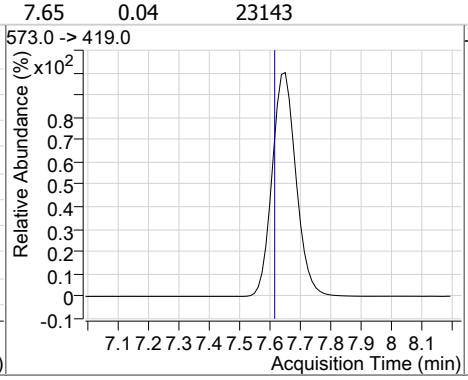


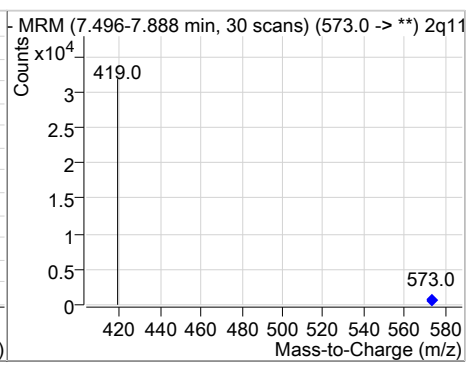




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	10.12	7.65	0.04	23143				

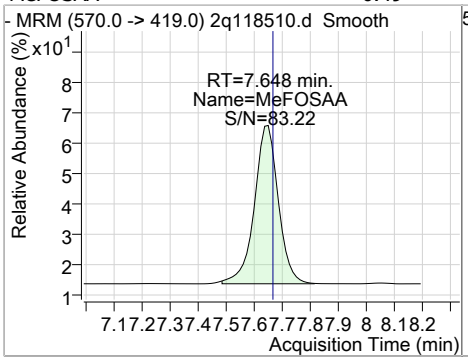


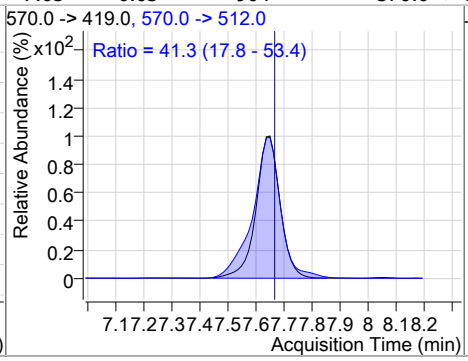


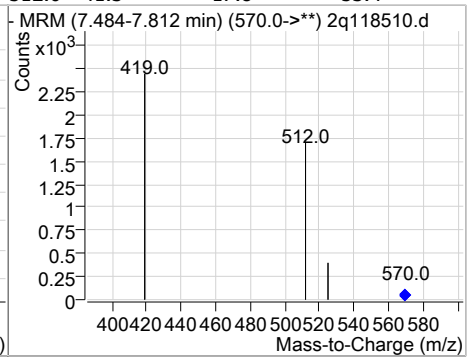


Perfluorinated Compounds by LC/MS/MS

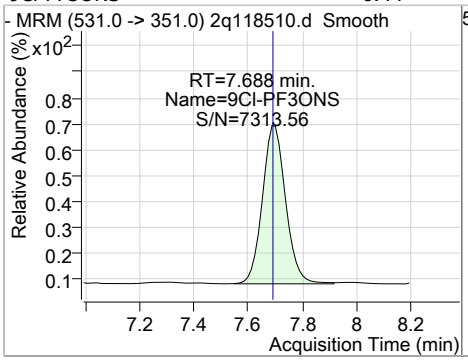
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	0.49	7.65	0.03	964	570.0 -> 512.0	41.3	17.8	53.4

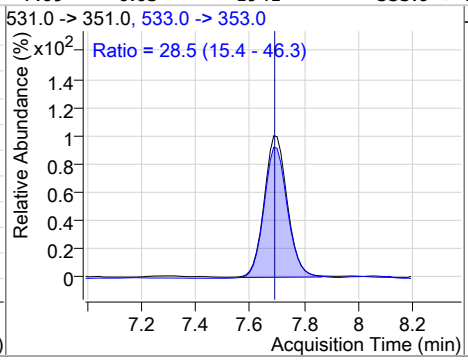


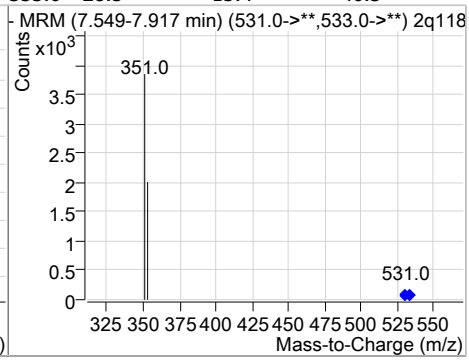




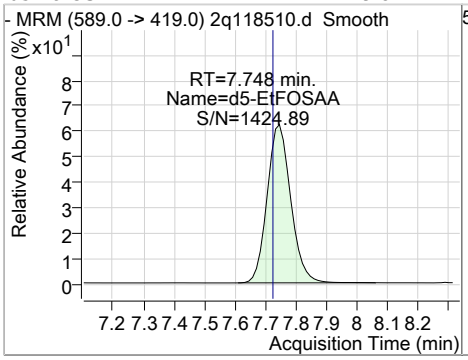
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	0.44	7.69	0.03	1941	533.0 -> 353.0	28.5	15.4	46.3

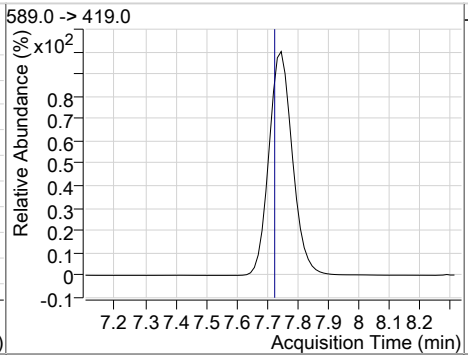


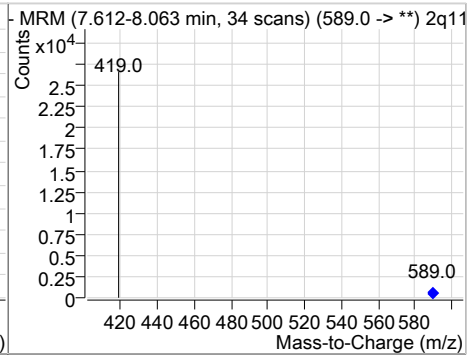




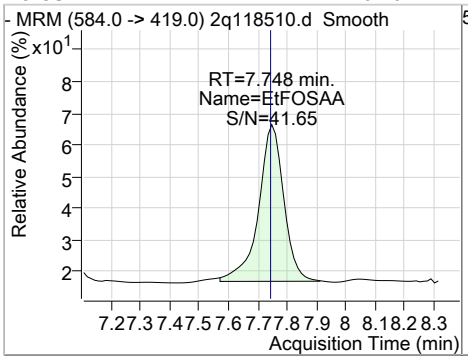
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	9.82	7.75	0.03	18946				

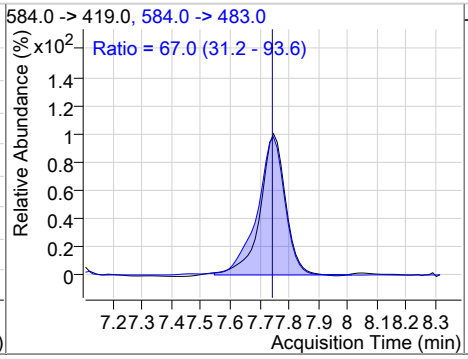


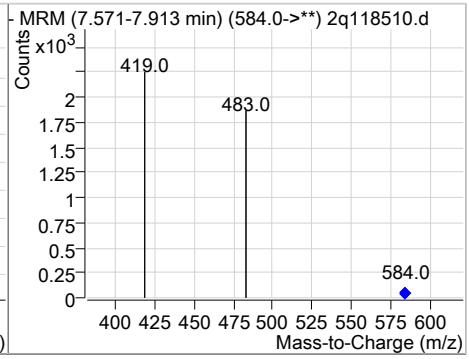




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	0.46	7.75	0.03	784	584.0 -> 483.0	67.0	31.2	93.6

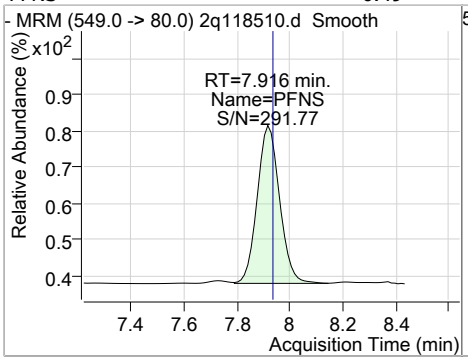


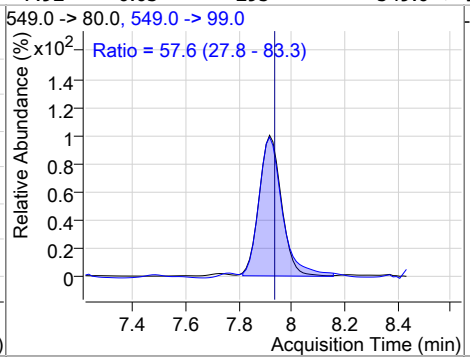


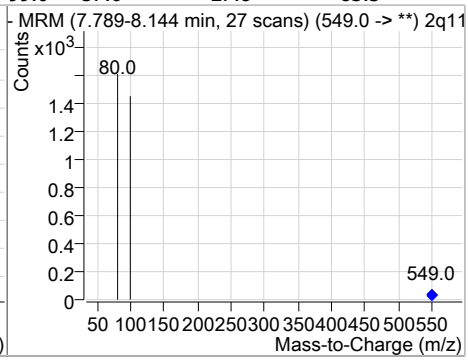


Perfluorinated Compounds by LC/MS/MS

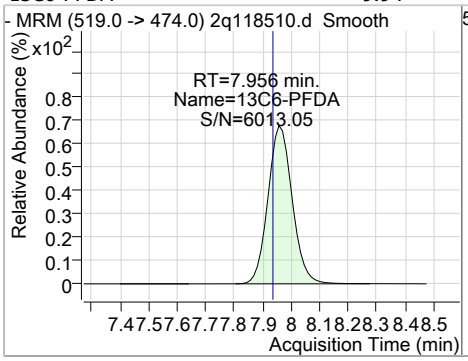
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	0.49	7.92	0.03	295	549.0 -> 99.0	57.6	27.8	83.3

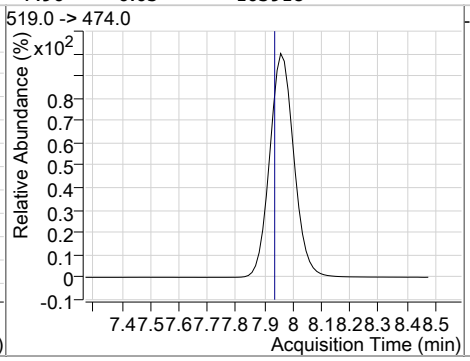


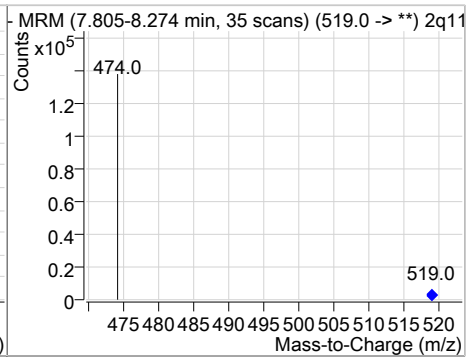




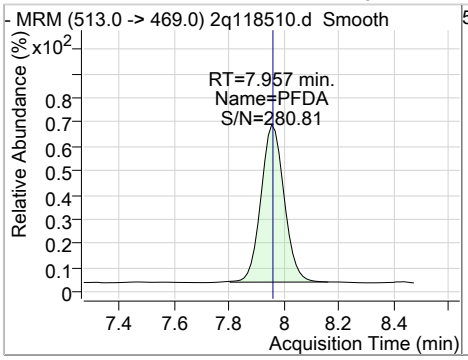
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	9.94	7.96	0.03	103918				

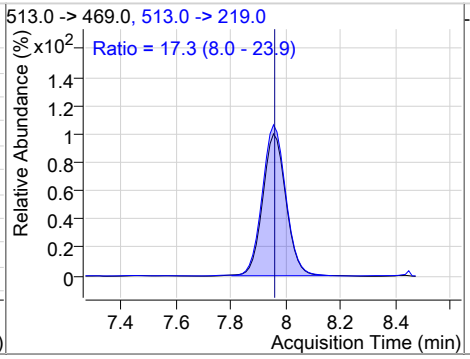


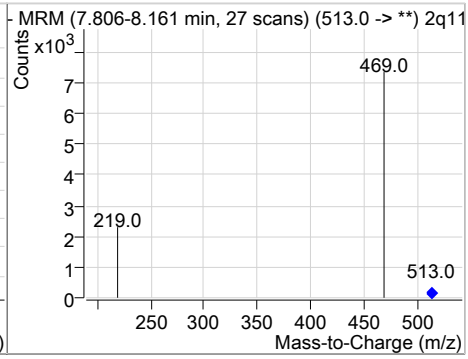




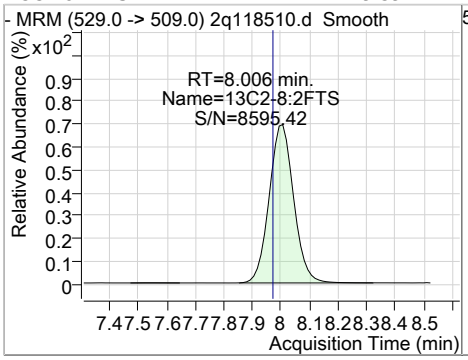
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	0.44	7.96	0.03	4540	513.0 -> 219.0	17.3	8.0	23.9

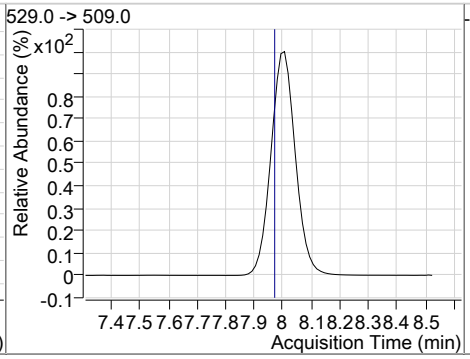


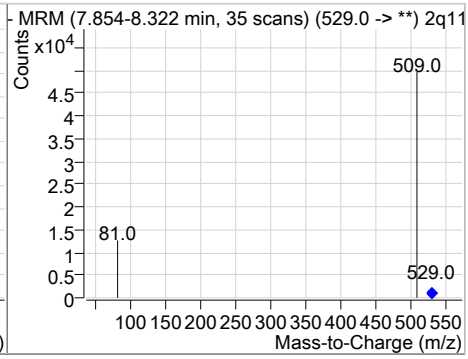




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	9.39	8.01	0.04	36386				

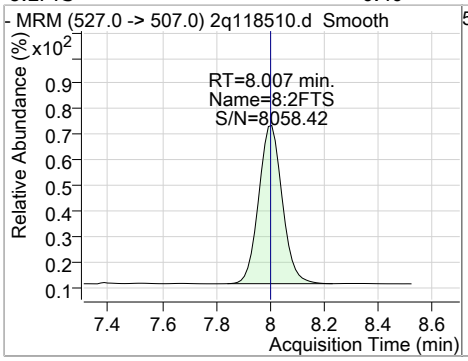


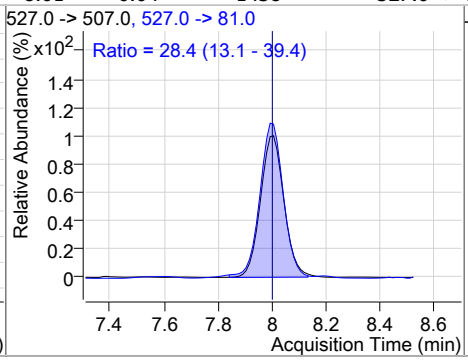


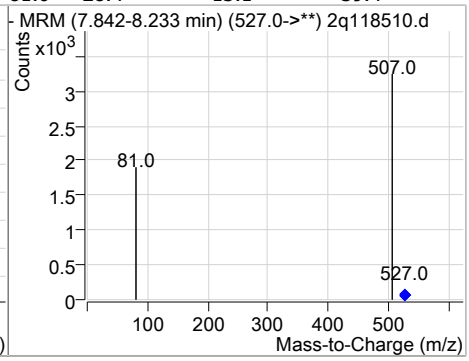


Perfluorinated Compounds by LC/MS/MS

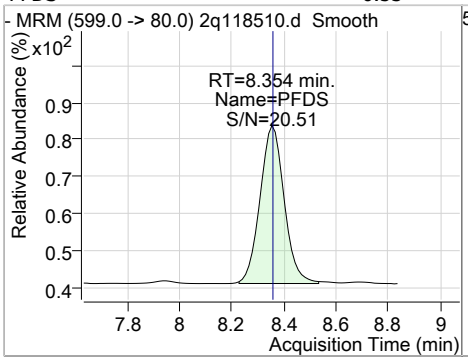
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	0.46	8.01	0.04	1438	527.0 -> 81.0	28.4	13.1	39.4

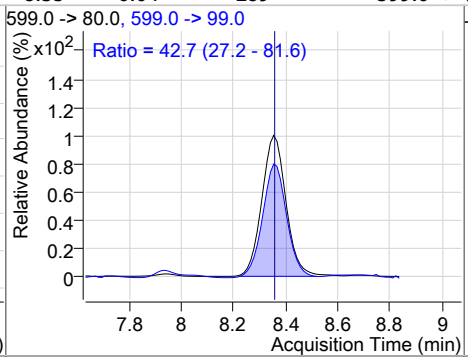


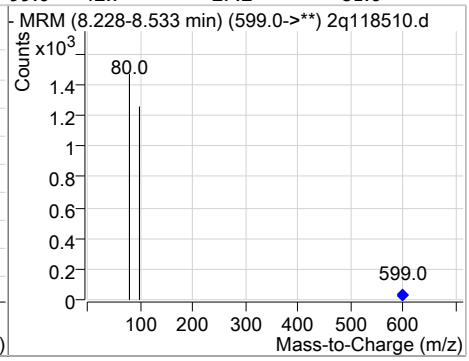




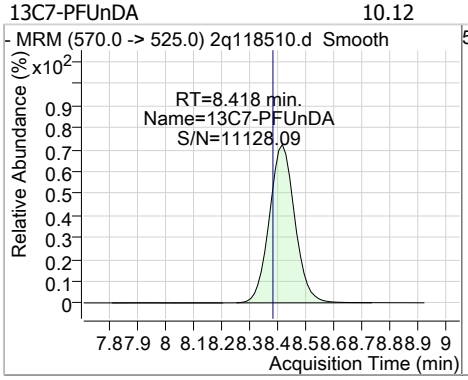
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	0.53	8.35	0.04	289	599.0 -> 99.0	42.7	27.2	81.6

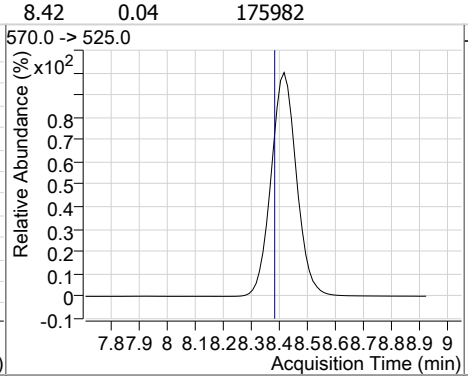


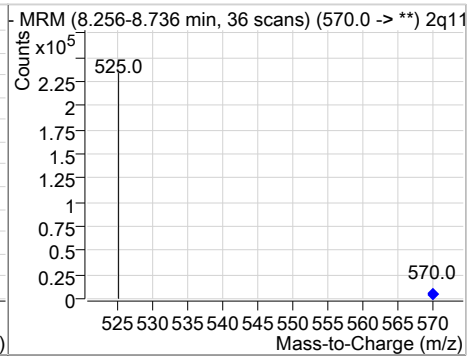




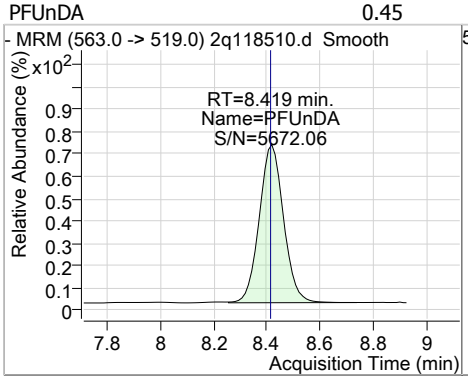
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	10.12	8.42	0.04	175982				

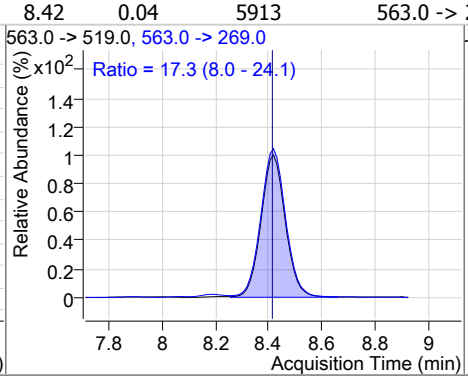


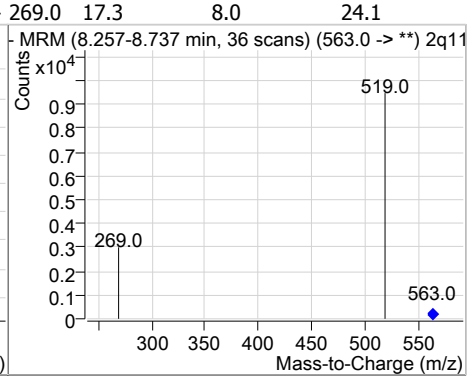




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	0.45	8.42	0.04	5913	563.0 -> 269.0	17.3	8.0	24.1

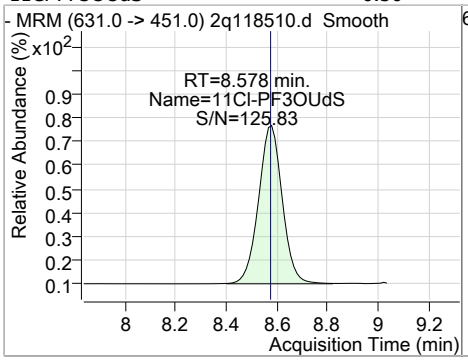


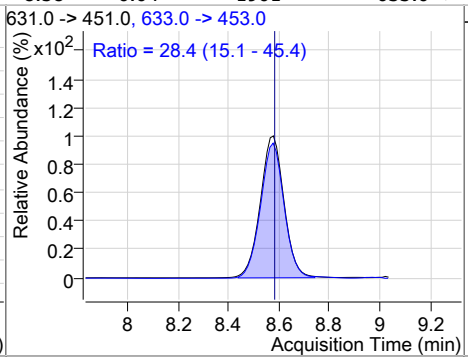


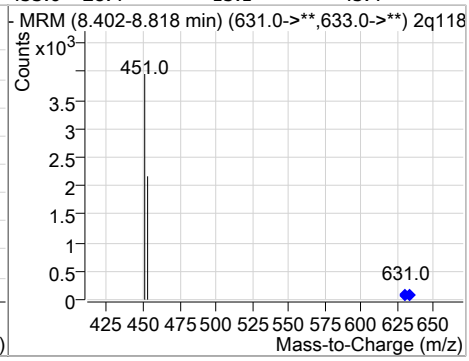


Perfluorinated Compounds by LC/MS/MS

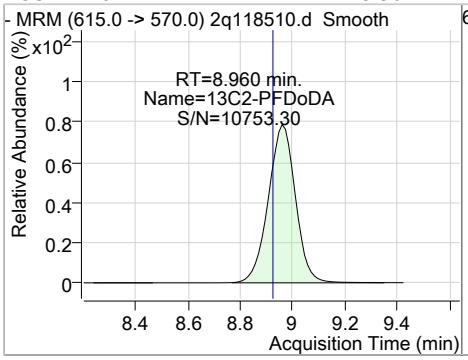
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	0.50	8.58	0.04	1901	633.0 -> 453.0	28.4	15.1	45.4

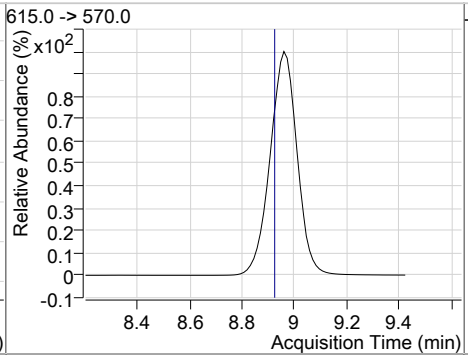


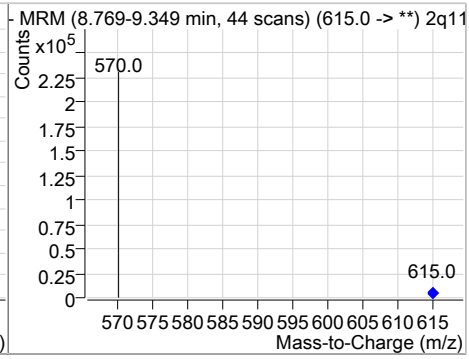




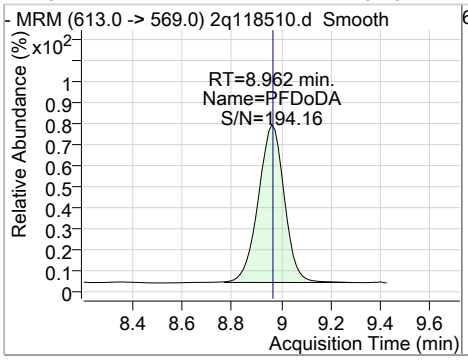
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	9.90	8.96	0.04	173347				

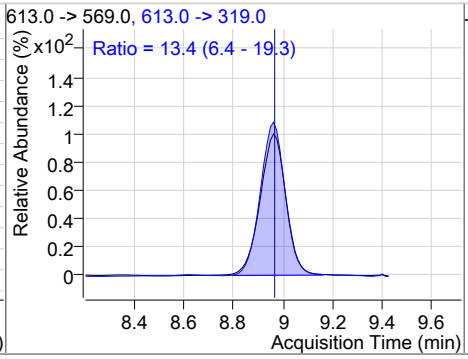


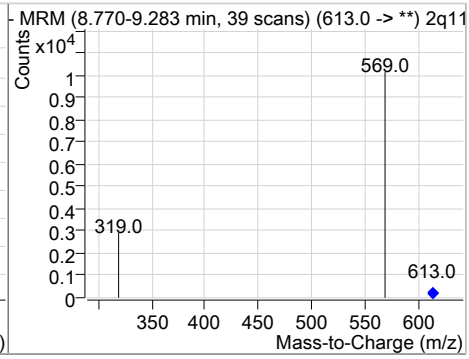




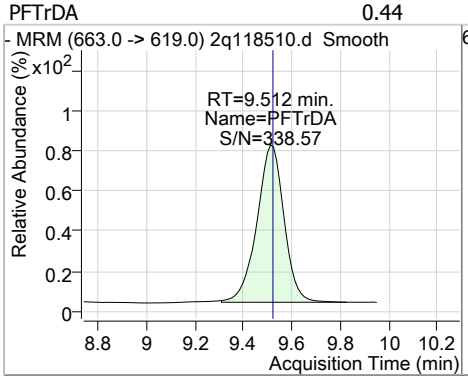
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	0.46	8.96	0.04	6264	613.0 -> 319.0	13.4	6.4	19.3

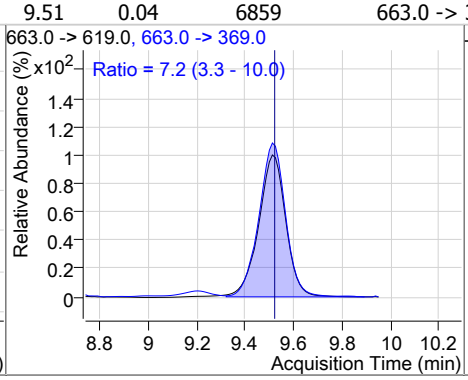


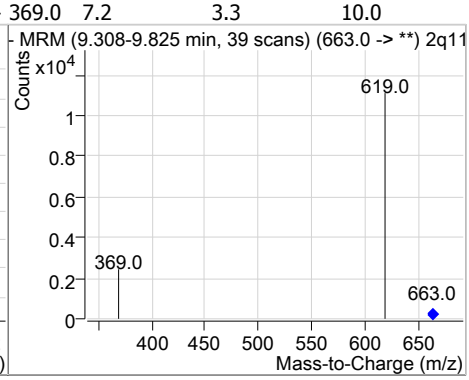




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	0.44	9.51	0.04	6859	663.0 -> 369.0	7.2	3.3	10.0

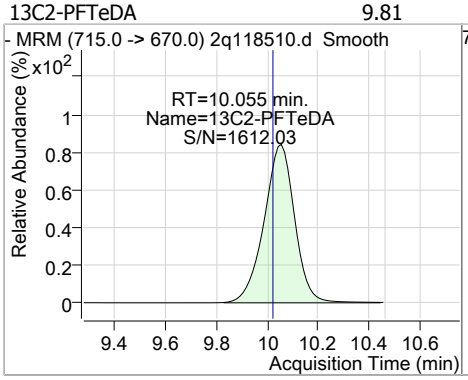


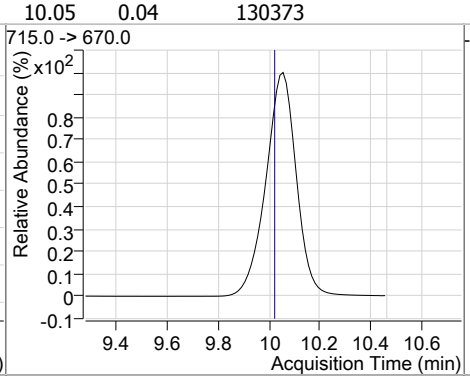


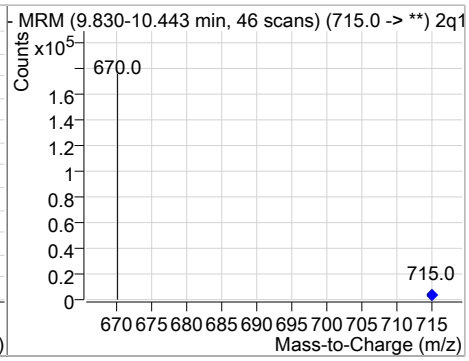


Perfluorinated Compounds by LC/MS/MS

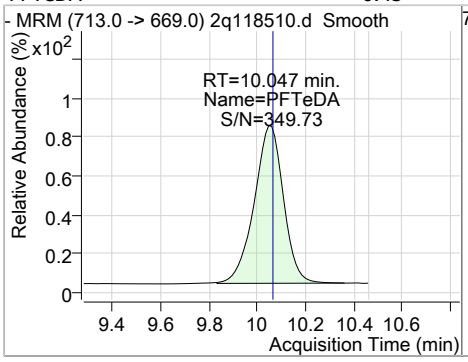
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	9.81	10.05	0.04	130373				

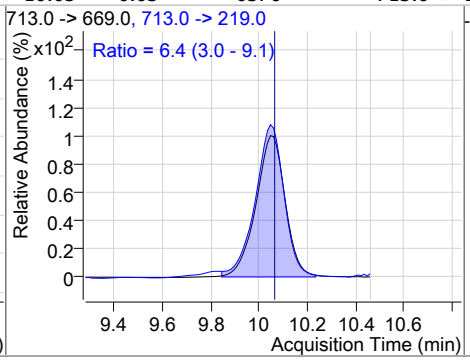


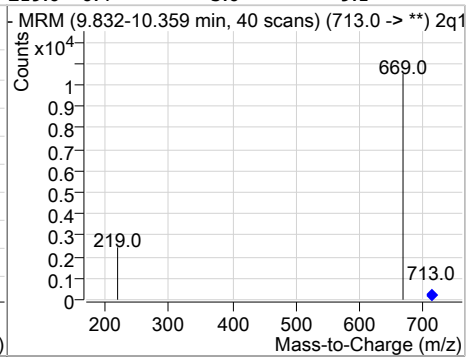




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	0.45	10.05	0.03	6376	713.0 -> 219.0	6.4	3.0	9.1







Manual Integration Approval Summary

Sample Number: S2Q1691-IC1691
Lab FileID: 2Q118510.D
Injection Time: 01/02/24 12:34
Method: EPA 537M QSM5.3 B-15
Analyst approved: 01/03/24 15:12 Lindsay Ritner
Supervisor approved: 01/04/24 11:31 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.26	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.47	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Natasha Gumtie 01/04/24 11:31

Perfluorinated Compounds by LC/MS/MS

Data File : 2q118511.d
Operator : lindsayr
Acq. Method : 537_ID.m
Acq. Date-Time : 1/2/2024 12:51:02 PM
Sample Name : ic1691-1
Vial : P1-A3
DA Method File : ID_010224_S2Q1691.quantmethod.xml
Batch Name : s2q1691.batch.bin
Sample Information : op401,S2Q1691,250,,,1.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M5-EtFOSAA	7.748	589.0 -> 419.0	19075	10.00	µg/L	0.025
M4-PFBA	2.240	217.0 -> 172.0	51438	10.00	µg/L	0.000
M5-PFPeA	4.062	268.0 -> 223.0	79817	10.00	µg/L	0.000
M5-PFHxA	5.339	318.0 -> 273.0	99915	10.00	µg/L	0.000
M4-PFHpA	6.222	367.0 -> 322.0	85882	10.00	µg/L	0.015
M8-PFOA	6.912	421.0 -> 376.0	171261	10.00	µg/L	0.025
M9-PFNA	7.480	472.0 -> 427.0	137239	10.00	µg/L	0.025
M6-PFDA	7.956	519.0 -> 474.0	105669	10.00	µg/L	0.025
M7-PFUnDA	8.406	570.0 -> 525.0	176589	10.00	µg/L	0.025
M2-PFDoDA	8.960	615.0 -> 570.0	174030	10.00	µg/L	0.040
M2-PFTeDA	10.042	715.0 -> 670.0	132349	10.00	µg/L	0.025
M8-FOSA	7.184	506.0 -> 78.0	21018	10.00	µg/L	0.025
M3-PFBS	4.330	302.0 -> 99.0	6113	10.00	µg/L	0.000
M3-PFHxS	6.243	402.0 -> 99.0	6412	10.00	µg/L	0.000
M8-PFOS	7.452	507.0 -> 99.0	5570	10.00	µg/L	0.025
M2-4:2FTS	5.234	329.0 -> 309.0	34479	10.00	µg/L	0.000
M2-6:2FTS	6.898	429.0 -> 409.0	53303	10.00	µg/L	0.013
M2-8:2FTS	7.993	529.0 -> 509.0	35488	10.00	µg/L	0.026
M3-MeFOSAA	7.635	573.0 -> 419.0	23075	10.00	µg/L	0.025
M3-HFPO-DA	5.607	287.0 -> 169.0	8026	10.00	µg/L	0.000
M3-MeFOSA	7.539	515.0 -> 169.0	7289	10.00	µg/L	0.025
System Monitoring Compounds						
13C2-4:2FTS	5.234	329.0 -> 309.0	34479	9.35	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 93.5%		
13C2-6:2FTS	6.898	429.0 -> 409.0	53303	9.28	µg/L	0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 92.8%		
13C2-8:2FTS	7.993	529.0 -> 509.0	35488	9.16	µg/L	0.026
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 91.6%		
13C2-PFDoDA	8.960	615.0 -> 570.0	174030	9.94	µg/L	0.040
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.4%		
13C2-PFTeDA	10.042	715.0 -> 670.0	132349	9.96	µg/L	0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.6%		
13C3-PFBS	4.330	302.0 -> 99.0	6113	10.17	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.7%		
13C3-PFHxS	6.243	402.0 -> 99.0	6412	10.48	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 104.8%		
13C4-PFBA	2.240	217.0 -> 172.0	51438	9.96	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.6%		
13C4-PFHpA	6.222	367.0 -> 322.0	85882	10.00	µg/L	0.015
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.0%		
d5-EtFOSAA	7.748	589.0 -> 419.0	19075	9.89	µg/L	0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 98.9%		
13C5-PFHxA	5.339	318.0 -> 273.0	99915	10.13	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.3%		
13C5-PFPeA	4.062	268.0 -> 223.0	79817	10.04	µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

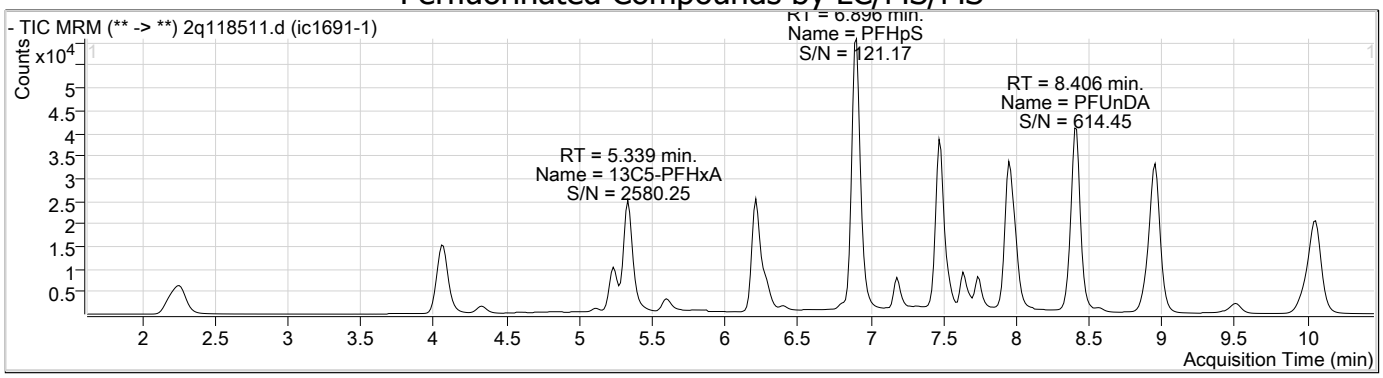
Compound	RT	Transition	Response	Conc. Units		Dev(Min)
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.4%		
13C6-PFDA	7.956	519.0 -> 474.0	105669	10.11 µg/L		0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.1%		
13C7-PFUnDA	8.406	570.0 -> 525.0	176589	10.16 µg/L		0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.6%		
13C8-FOSA	7.184	506.0 -> 78.0	21018	10.24 µg/L		0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 102.4%		
13C8-PFOA	6.912	421.0 -> 376.0	171261	10.12 µg/L		0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.2%		
13C8-PFOS	7.452	507.0 -> 99.0	5570	9.97 µg/L		0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.7%		
13C9-PFNA	7.480	472.0 -> 427.0	137239	10.19 µg/L		0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.9%		
d3-MeFOSAA	7.635	573.0 -> 419.0	23075	10.09 µg/L		0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.9%		
13C3-HFPO-DA	5.607	287.0 -> 169.0	8026	9.66 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 96.6%		
d3-MeFOSA	7.539	515.0 -> 169.0	7289	10.15 µg/L		0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.5%		
Target Compounds						QValue
4:2FTS	5.237	327.0 -> 307.0	3365	0.96 µg/L		96
		327.0 -> 81.0	1334			
6:2FTS	6.899	427.0 -> 407.0	4459	0.96 µg/L		98
		427.0 -> 81.0	1365			
8:2FTS	7.994	527.0 -> 507.0	2996	0.98 µg/L		98
		527.0 -> 81.0	812			
EtFOSAA	7.748	584.0 -> 419.0	1399	0.82 µg/L		94
		584.0 -> 483.0	941			
FOSA	7.186	498.0 -> 78.0	1668	0.90 µg/L		98
		498.0 -> 478.0	63			
MeFOSAA	7.635	570.0 -> 419.0	1597	0.82 µg/L		94
		570.0 -> 512.0	622			
PFBA	2.246	213.0 -> 169.0	1417	0.87 µg/L		100
PFBS	4.332	299.0 -> 80.0	1340	0.87 µg/L		99
		299.0 -> 99.0	502			
PFDA	7.957	513.0 -> 469.0	8767	0.84 µg/L		98
		513.0 -> 219.0	1485			
PFDoDA	8.962	613.0 -> 569.0	11881	0.87 µg/L		99
		613.0 -> 319.0	1592			
PFDS	8.354	599.0 -> 80.0	488	0.89 µg/L		91
		599.0 -> 99.0	235			
PFHpA	6.223	363.0 -> 319.0	12066	0.85 µg/L		98
		363.0 -> 169.0	2125			
PFHpS	6.896	449.0 -> 80.0	931	0.88 µg/L		100
		449.0 -> 99.0	522			
PFHxA	5.340	313.0 -> 269.0	8602	0.84 µg/L		100
		313.0 -> 119.0	323			
PFHxS	6.244	399.0 -> 80.0	1305	0.93 µg/L	m	94
		399.0 -> 99.0	617			
PFNA	7.480	463.0 -> 419.0	9055	0.82 µg/L		98
		463.0 -> 219.0	1945			
PFNS	7.916	549.0 -> 80.0	490	0.84 µg/L		96
		549.0 -> 99.0	287			
PFOA	6.913	413.0 -> 369.0	15632	0.85 µg/L		100
		413.0 -> 169.0	2854			
PFOS	7.453	499.0 -> 80.0	802	0.92 µg/L	m	92

Perfluorinated Compounds by LC/MS/MS

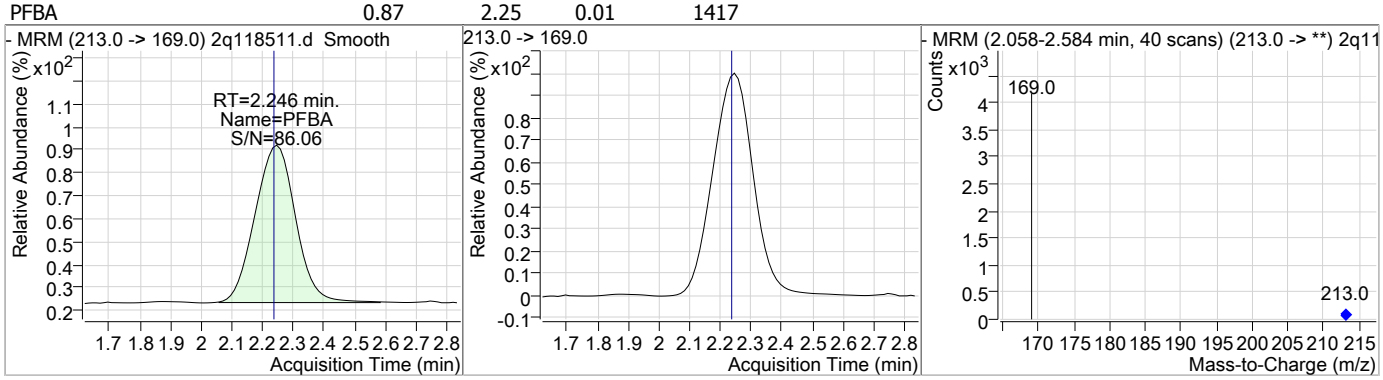
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		499.0 -> 99.0	451			
PFPeA	4.064	263.0 -> 219.0	5503	0.87	µg/L	100
PFPeS	5.445	349.0 -> 80.0	968	0.87	µg/L	96
		349.0 -> 99.0	437			
PFTeDA	10.047	713.0 -> 669.0	12332	0.86	µg/L	100
		713.0 -> 219.0	762			
PFTrDA	9.512	663.0 -> 619.0	13073	0.84	µg/L	98
		663.0 -> 369.0	981			
PFUnDA	8.406	563.0 -> 519.0	10813	0.82	µg/L	96
		563.0 -> 269.0	1919			
11Cl-PF3OUdS	8.566	631.0 -> 451.0	3227	0.85	µg/L	93
		633.0 -> 453.0	1105			
9Cl-PF3ONS	7.688	531.0 -> 351.0	3772	0.84	µg/L	96
		533.0 -> 353.0	1241			
ADONA	6.296	377.0 -> 251.0	14790	0.81	µg/L	100
		377.0 -> 85.0	3851			
HFPO-DA	5.614	329.0 -> 169.0	2268	0.91	µg/L	100
		285.0 -> 169.0	652			
MeFOSA	7.552	512.0 -> 169.0	568	0.88	µg/L	98
		512.0 -> 219.0	516			
4-PFECHS	6.807	461.0 -> 381.0	4337	0.89	µg/L	97
		461.0 -> 99.0	1570			
FBSA	5.128	298.0 -> 78.0	2645	0.84	µg/L	98
		298.0 -> 64.0	294			
FHxSA	6.408	398.0 -> 78.0	2672	0.86	µg/L	99
		398.0 -> 64.0	279			

 # = Qualifier out of range, m = manually integrated, + = Area summed

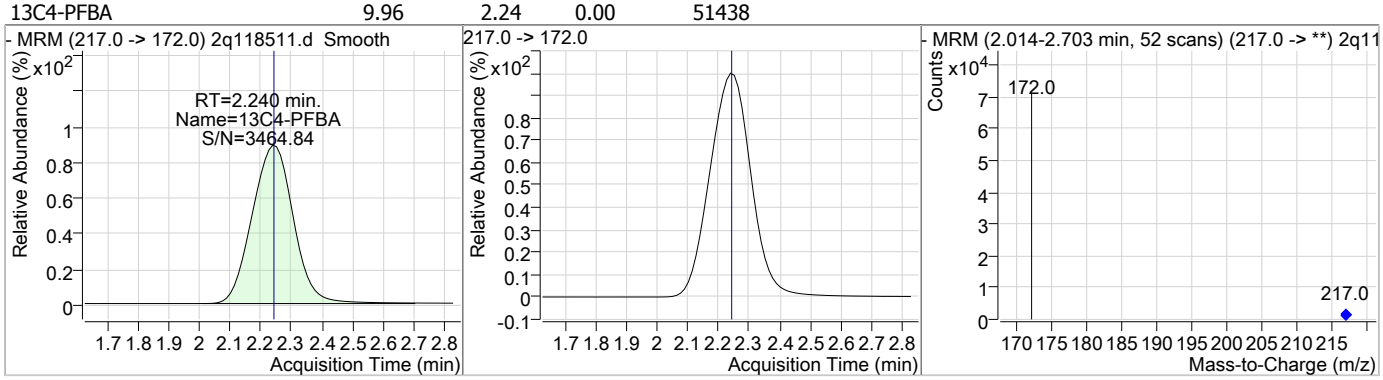
Perfluorinated Compounds by LC/MS/MS



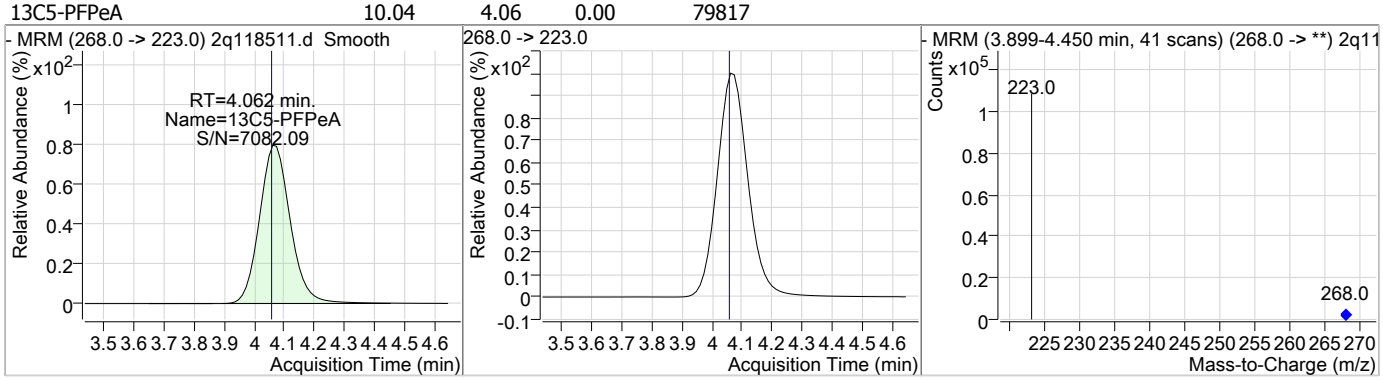
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	0.87	2.25	0.01	1417				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	9.96	2.24	0.00	51438				

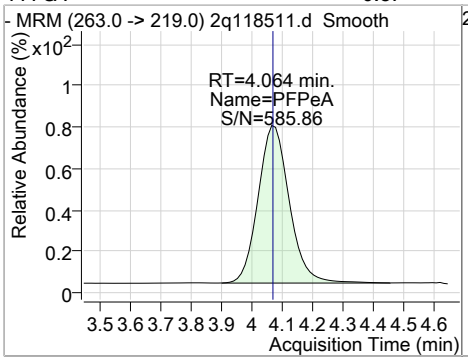


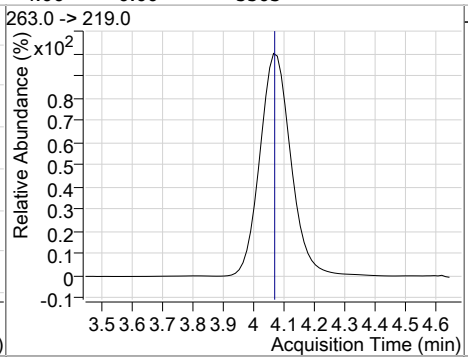
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	10.04	4.06	0.00	79817				

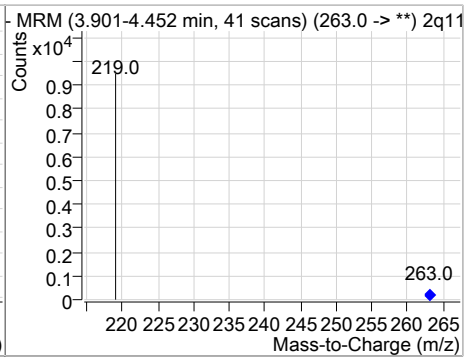


Perfluorinated Compounds by LC/MS/MS

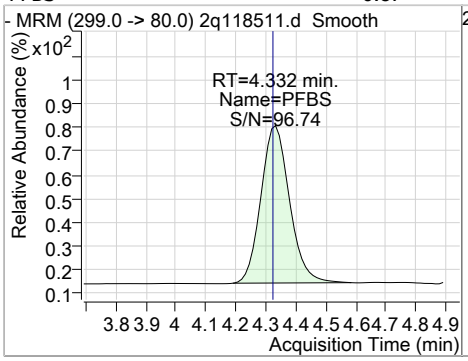
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	0.87	4.06	0.00	5503				

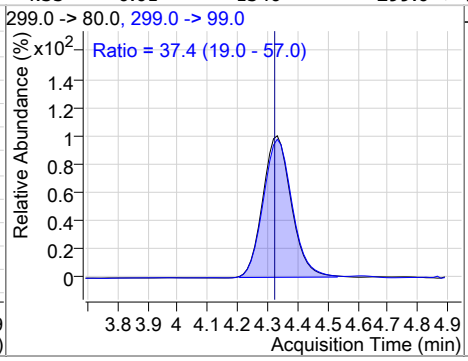


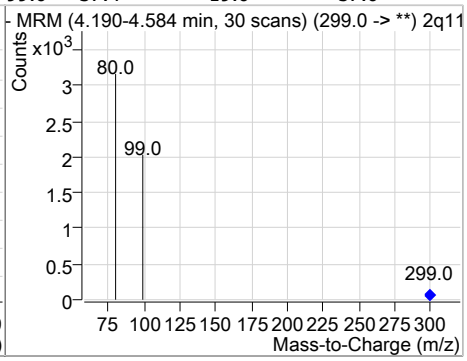




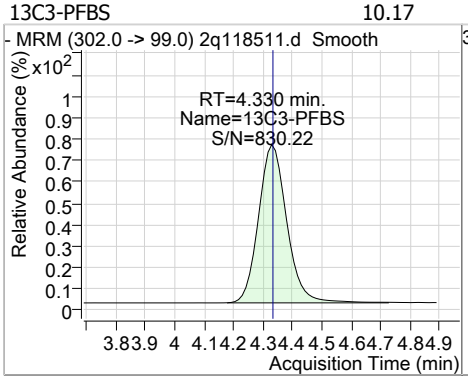
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	0.87	4.33	0.01	1340	299.0 -> 99.0	37.4	19.0	57.0

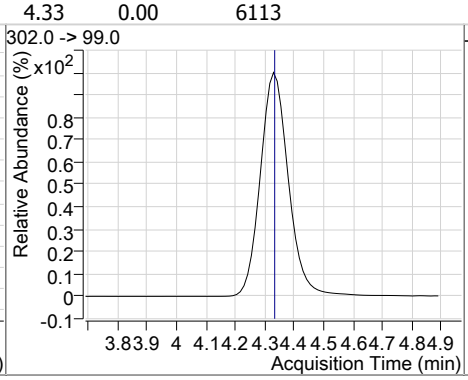


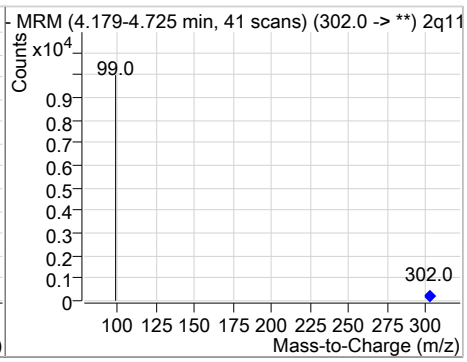




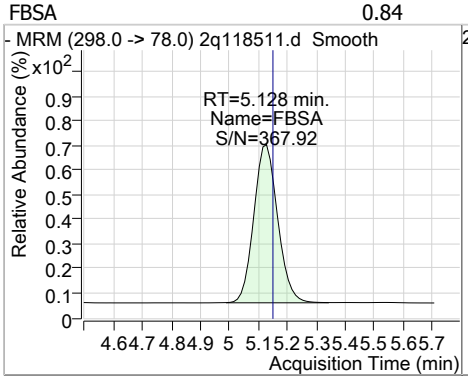
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	10.17	4.33	0.00	6113				

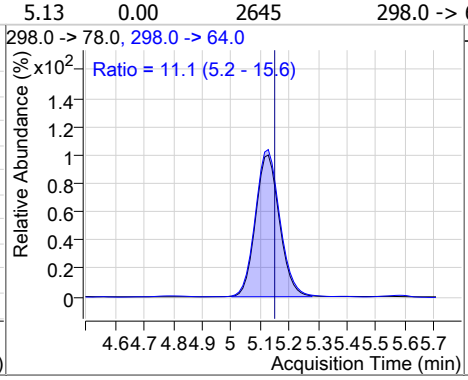


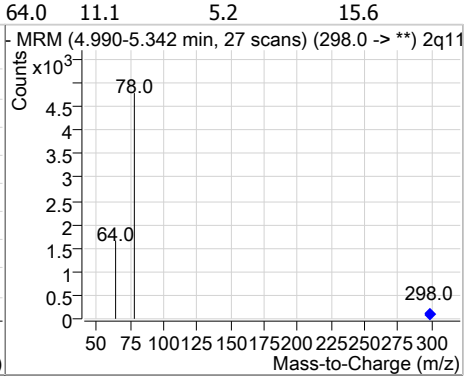




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	0.84	5.13	0.00	2645	298.0 -> 64.0	11.1	5.2	15.6

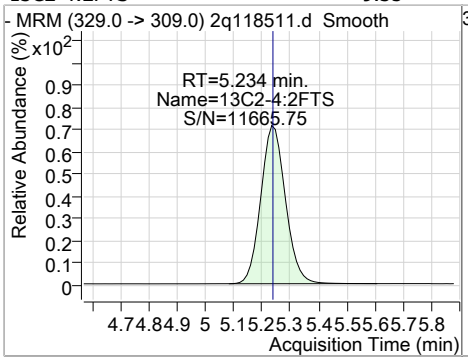


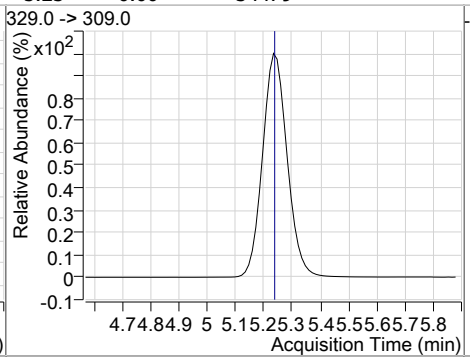


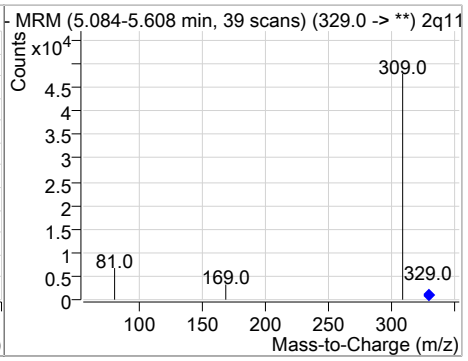


Perfluorinated Compounds by LC/MS/MS

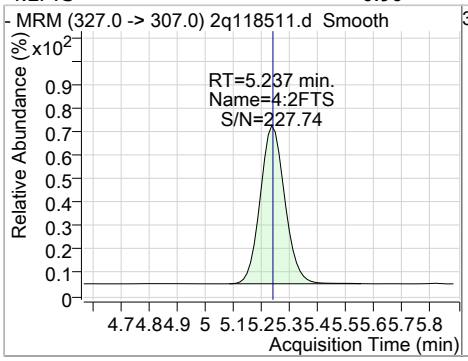
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	9.35	5.23	0.00	34479				

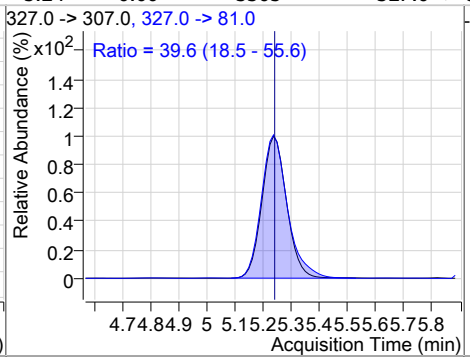


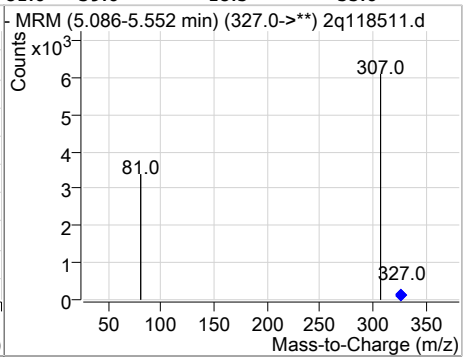




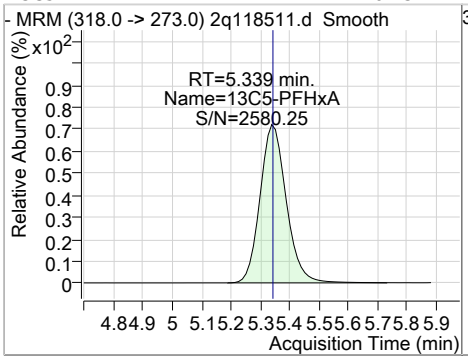
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	0.96	5.24	0.00	3365	327.0 -> 81.0	39.6	18.5	55.6

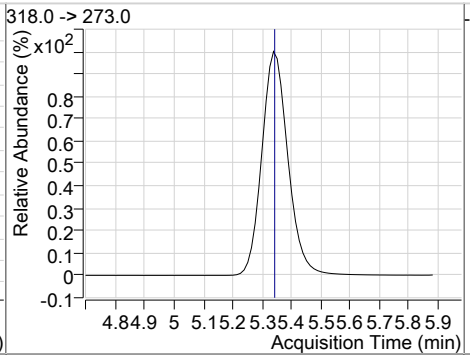


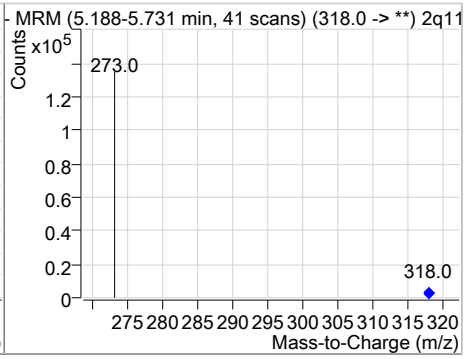




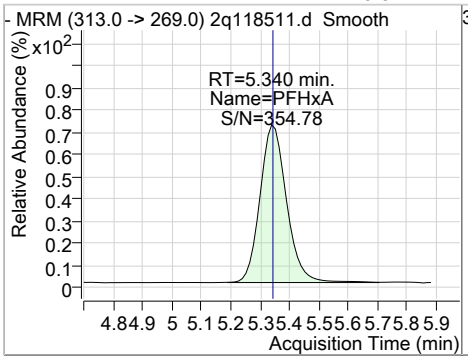
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	10.13	5.34	0.00	99915				

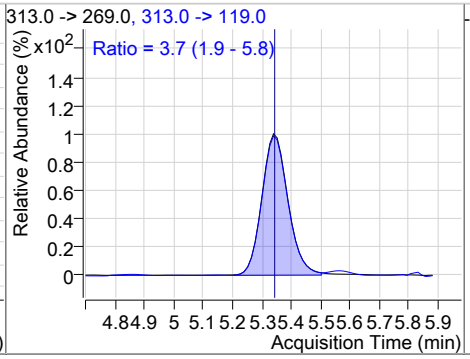


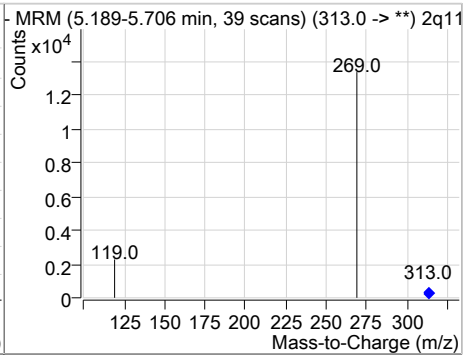




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	0.84	5.34	0.00	8602	313.0 -> 119.0	3.7	1.9	5.8

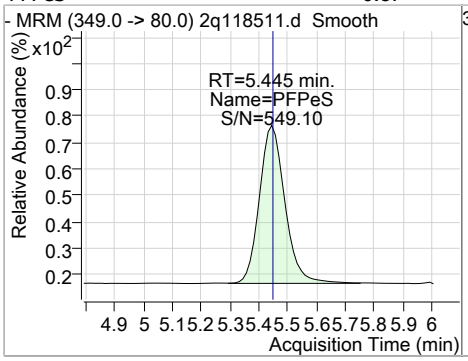


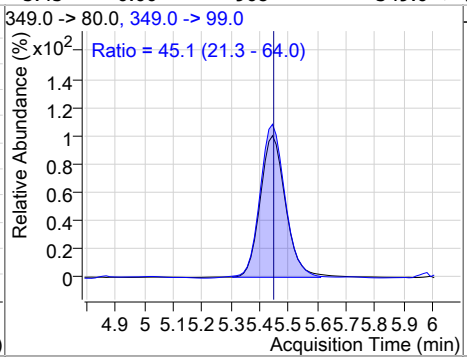


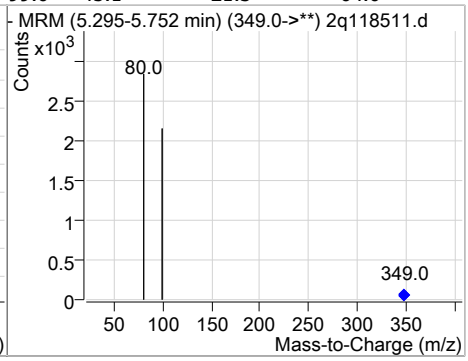


Perfluorinated Compounds by LC/MS/MS

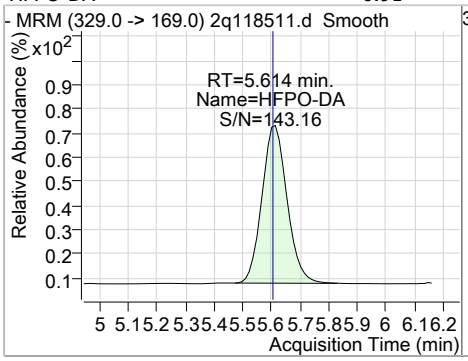
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	0.87	5.45	0.00	968	349.0 -> 99.0	45.1	21.3	64.0

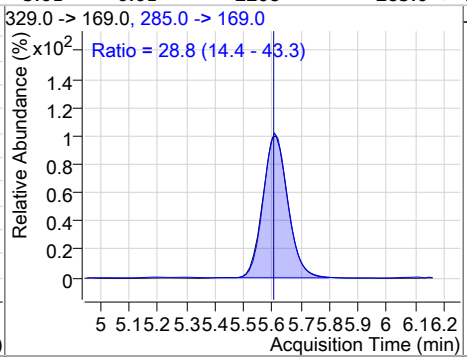


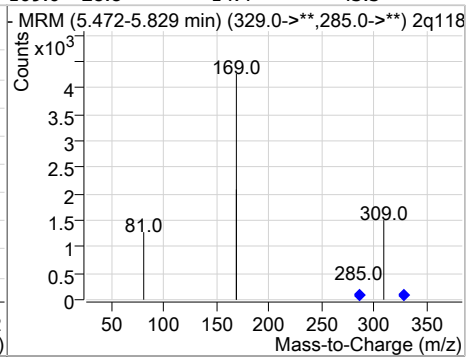




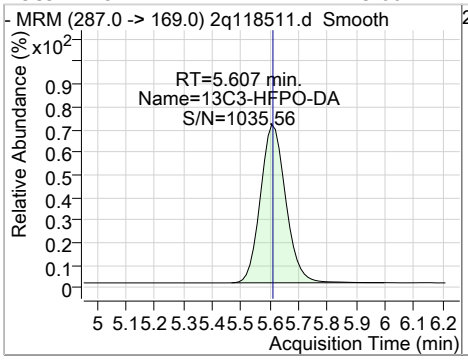
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	0.91	5.61	0.01	2268	285.0 -> 169.0	28.8	14.4	43.3

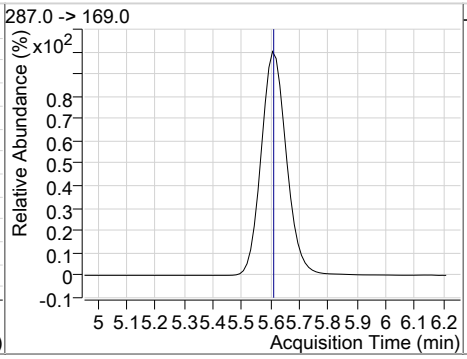


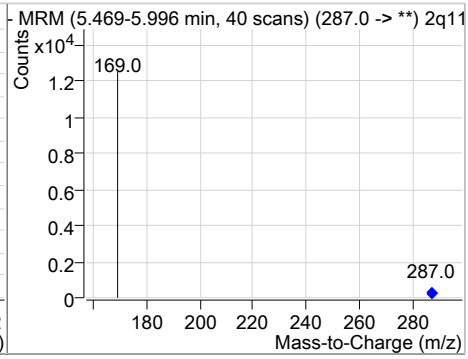




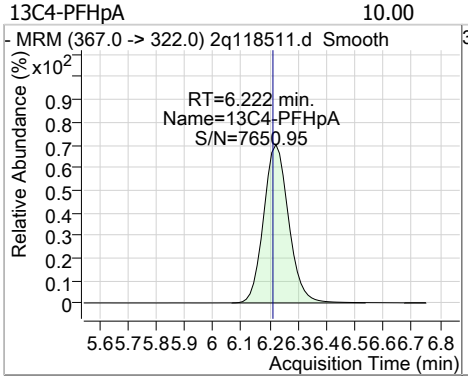
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	9.66	5.61	0.00	8026				

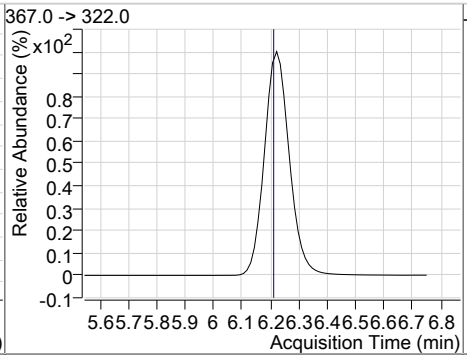


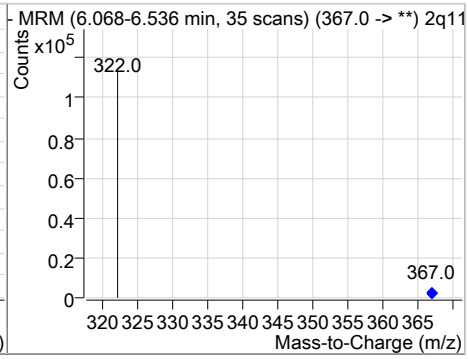




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	10.00	6.22	0.01	85882				

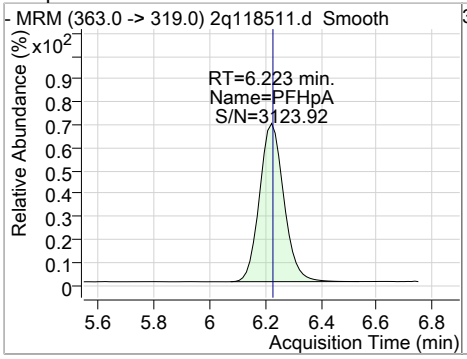


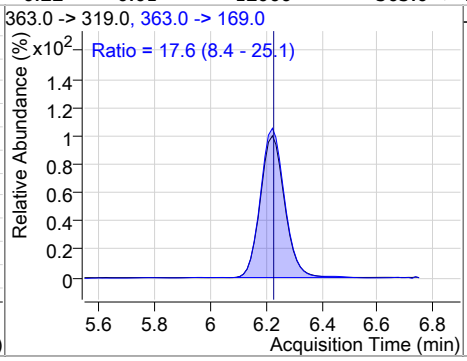


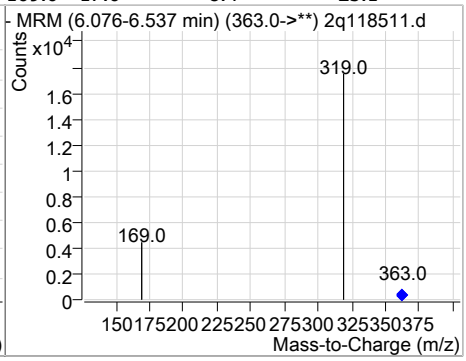


Perfluorinated Compounds by LC/MS/MS

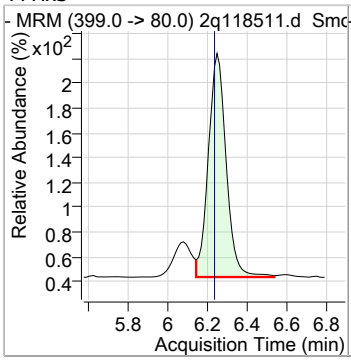
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	0.85	6.22	0.01	12066	363.0 -> 169.0	17.6	8.4	25.1

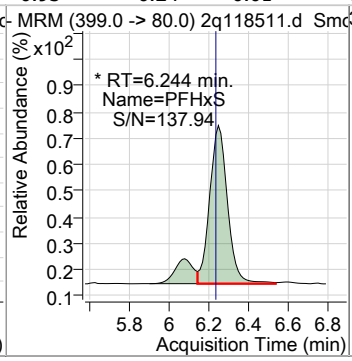


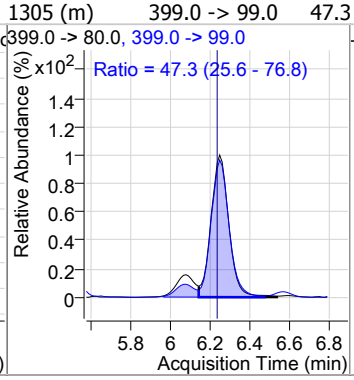


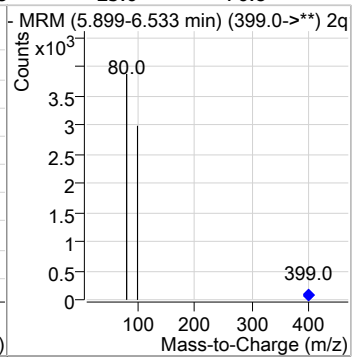


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	0.93	6.24	0.01	1305 (m)	399.0 -> 99.0	47.3	25.6	76.8

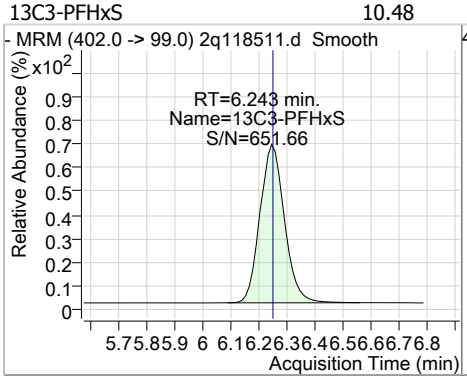


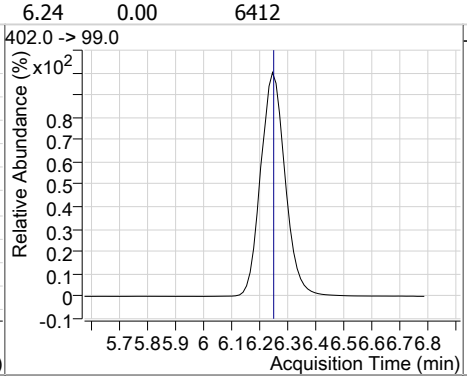


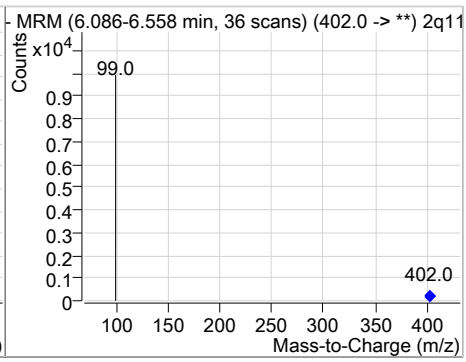




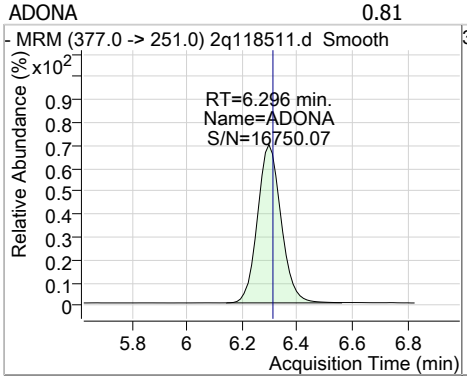
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	10.48	6.24	0.00	6412				

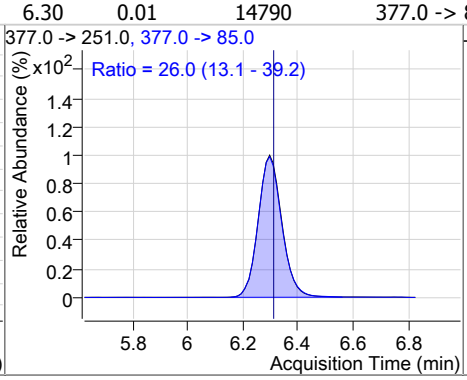


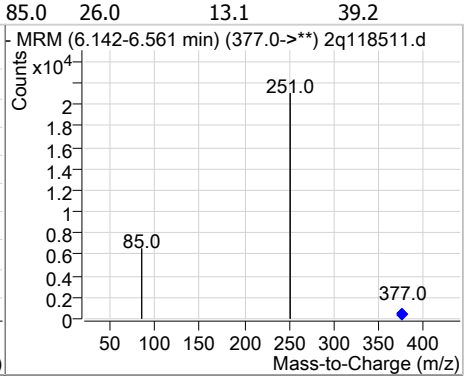




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	0.81	6.30	0.01	14790	377.0 -> 85.0	26.0	13.1	39.2

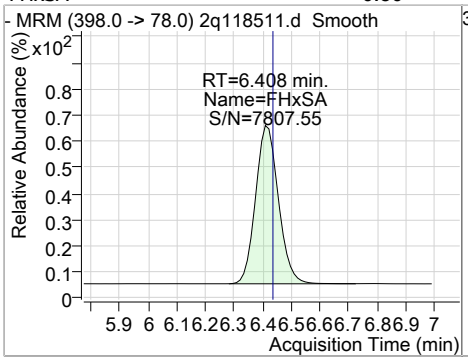


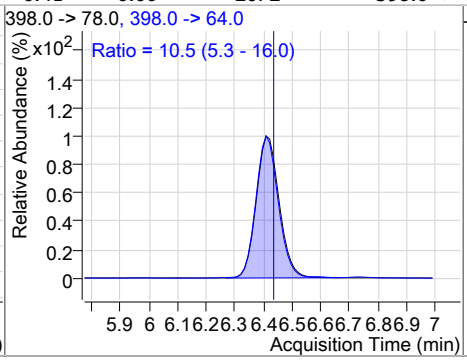


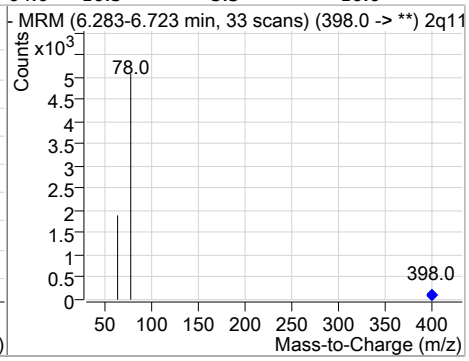


Perfluorinated Compounds by LC/MS/MS

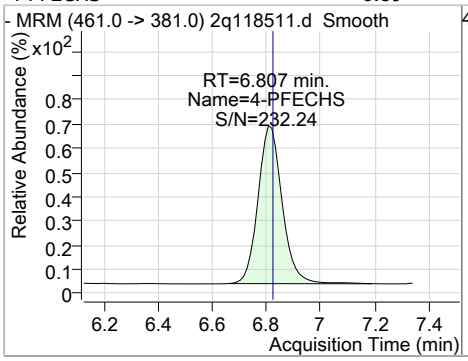
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	0.86	6.41	0.00	2672	398.0 -> 64.0	10.5	5.3	16.0

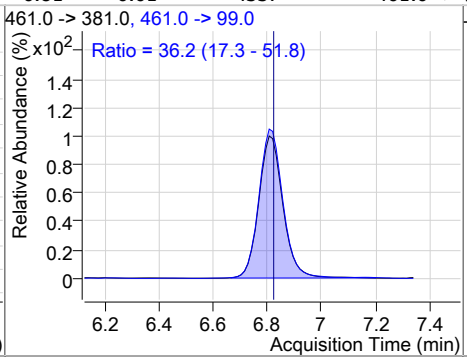


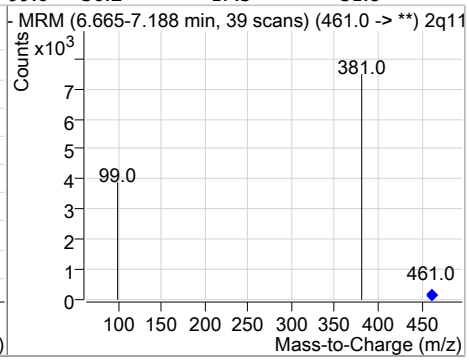




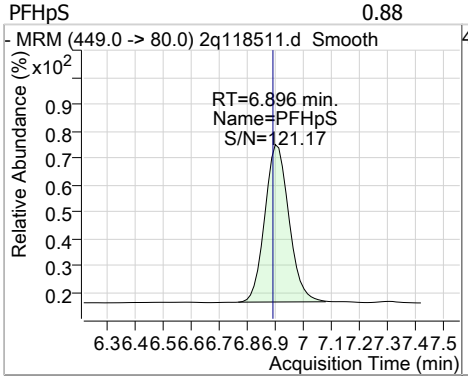
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS	0.89	6.81	0.01	4337	461.0 -> 99.0	36.2	17.3	51.8

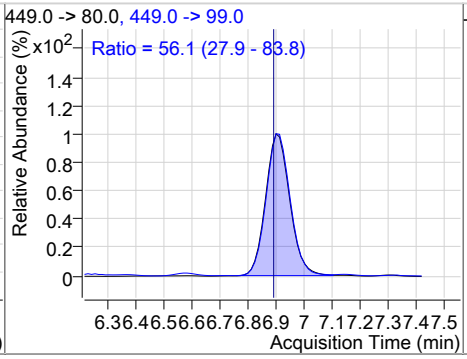


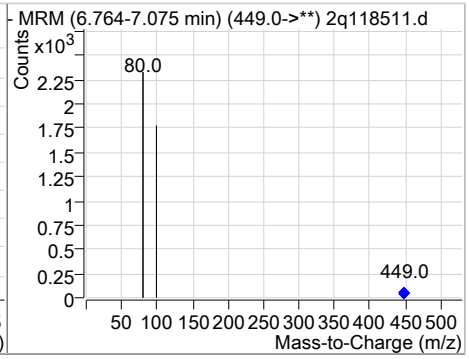




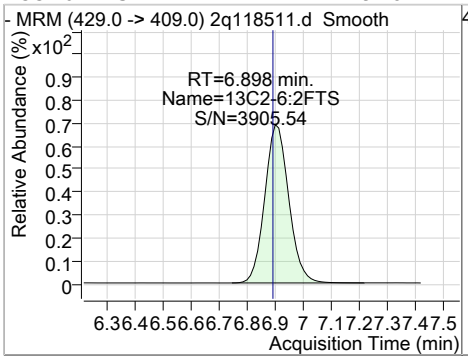
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	0.88	6.90	0.01	931	449.0 -> 99.0	56.1	27.9	83.8

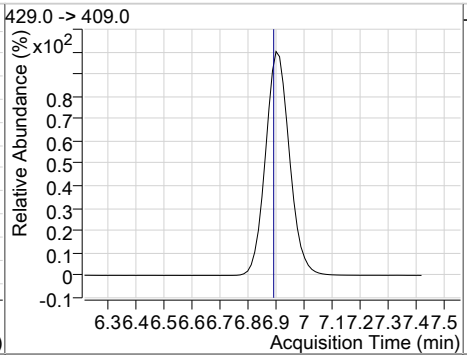


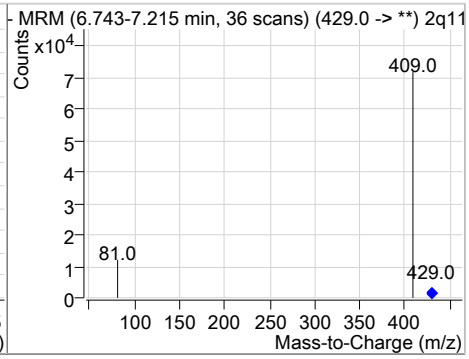




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	9.28	6.90	0.01	53303				

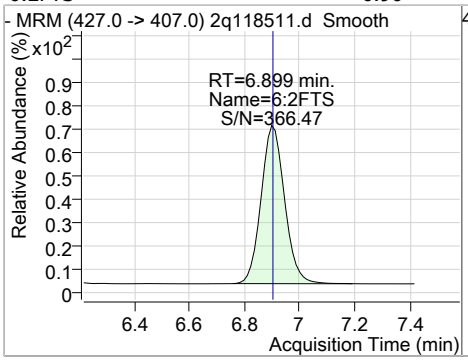


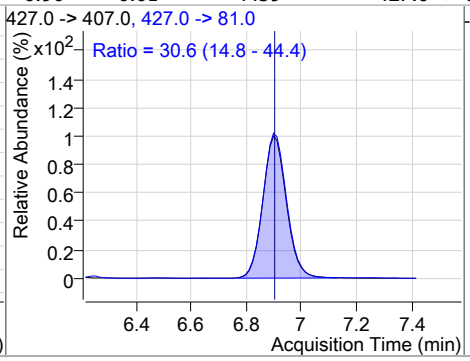


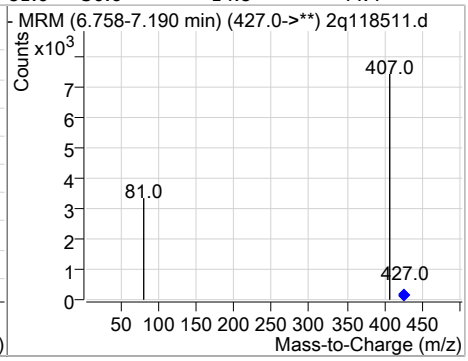


Perfluorinated Compounds by LC/MS/MS

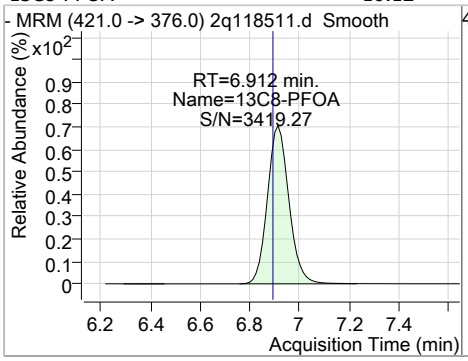
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	0.96	6.90	0.01	4459	427.0 -> 81.0	30.6	14.8	44.4

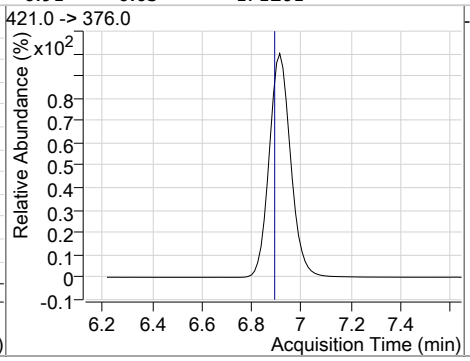


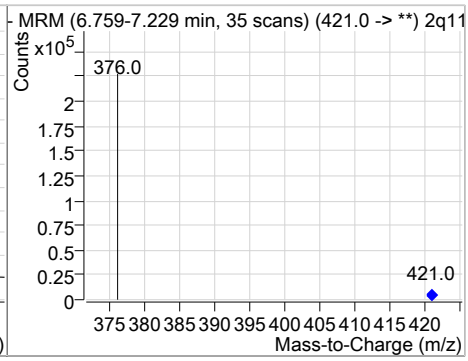




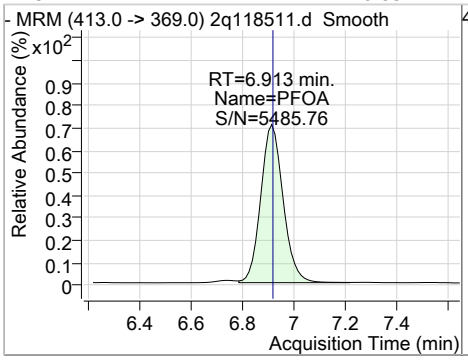
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	10.12	6.91	0.03	171261				

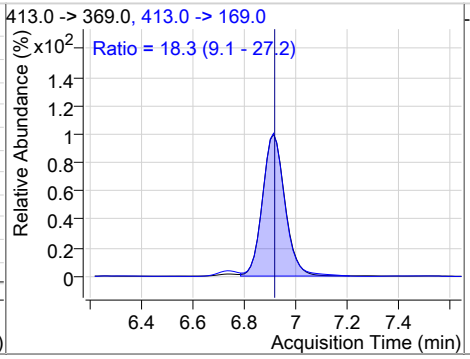


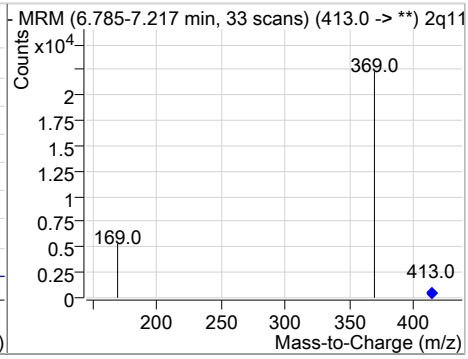




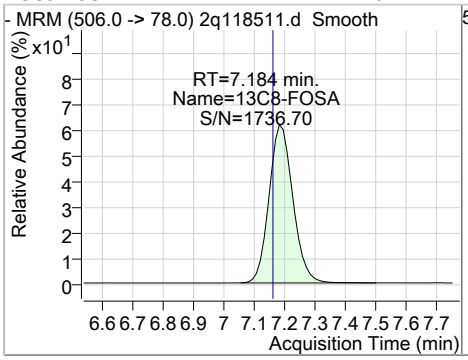
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	0.85	6.91	0.03	15632	413.0 -> 169.0	18.3	9.1	27.2

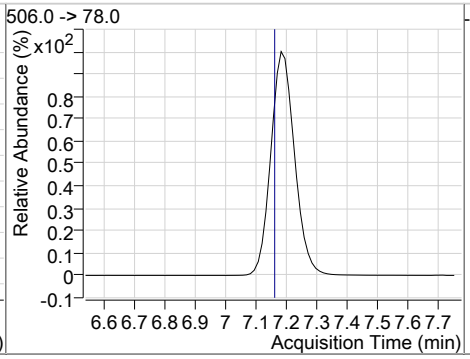


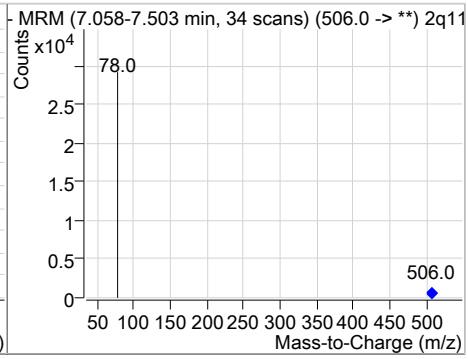




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	10.24	7.18	0.03	21018				

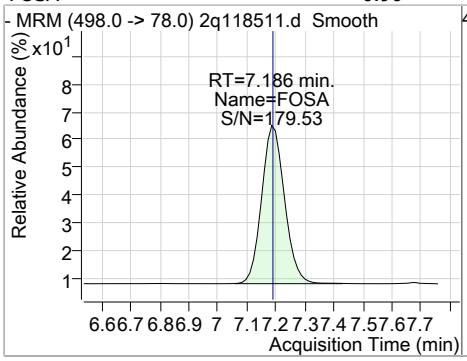


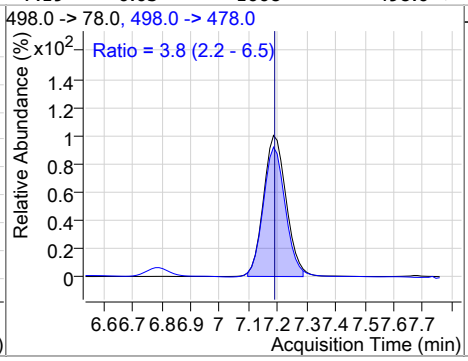


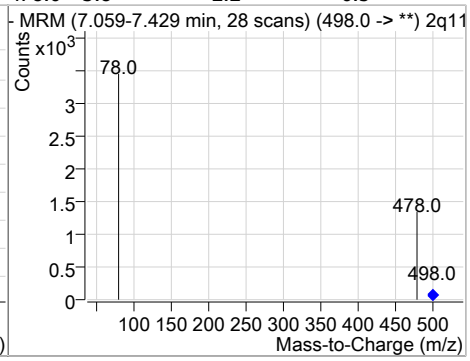


Perfluorinated Compounds by LC/MS/MS

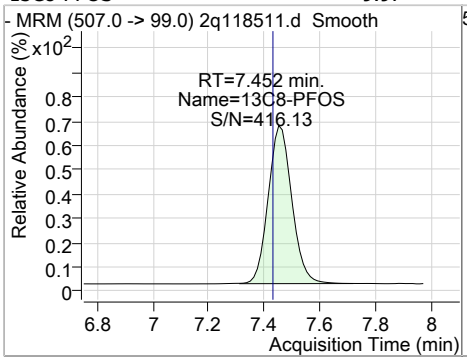
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	0.90	7.19	0.03	1668	498.0 -> 478.0	3.8	2.2	6.5

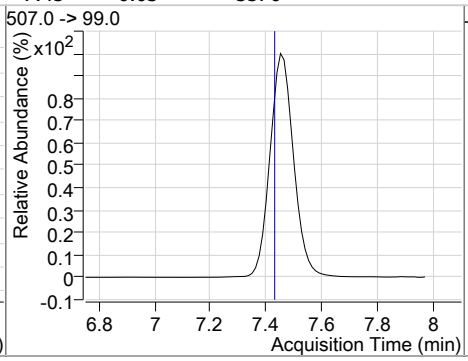


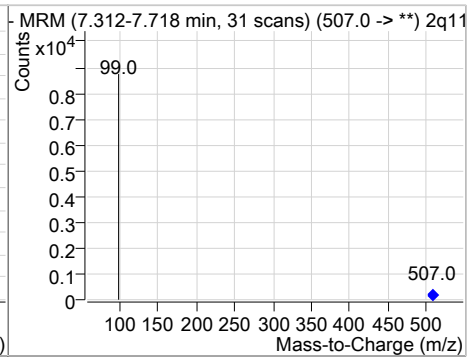




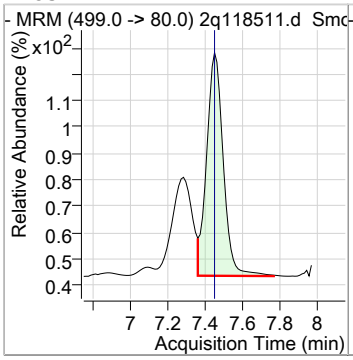
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	9.97	7.45	0.03	5570				

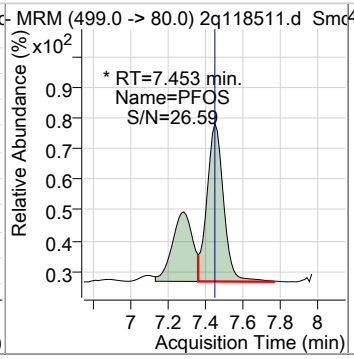


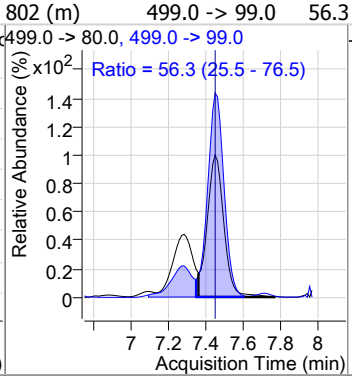


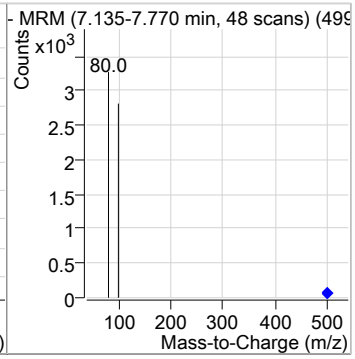


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	0.92	7.45	0.03	802 (m)	499.0 -> 99.0	56.3	25.5	76.5

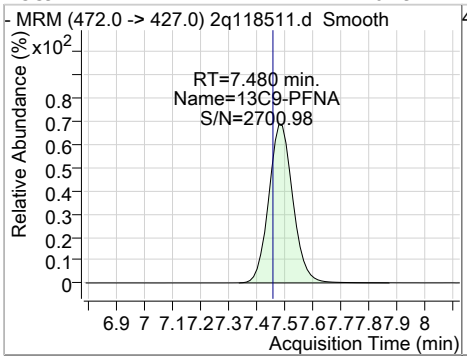


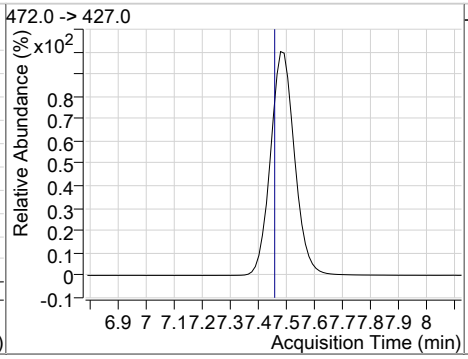


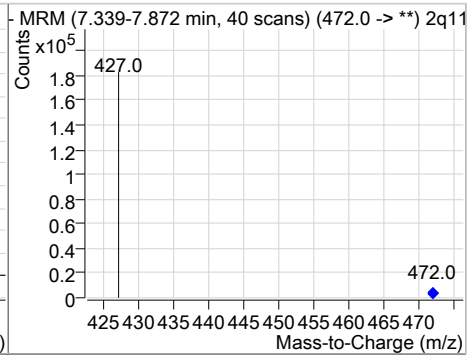




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	10.19	7.48	0.03	137239				

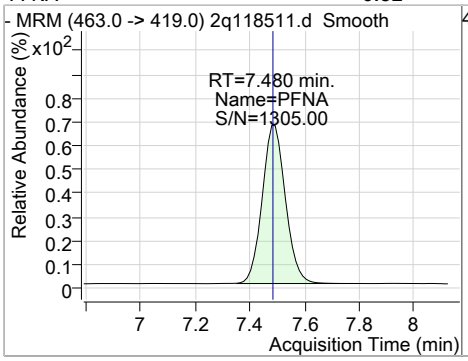


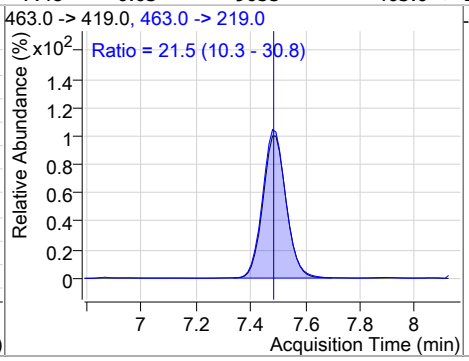


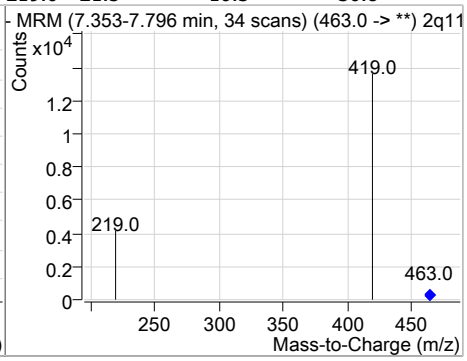


Perfluorinated Compounds by LC/MS/MS

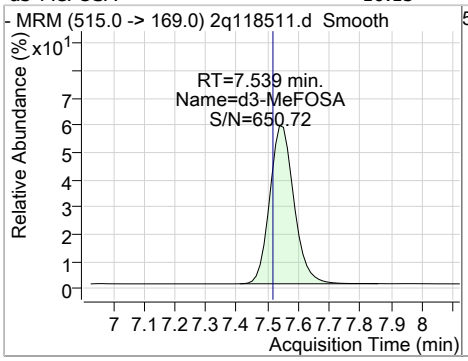
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	0.82	7.48	0.03	9055	463.0 -> 219.0	21.5	10.3	30.8

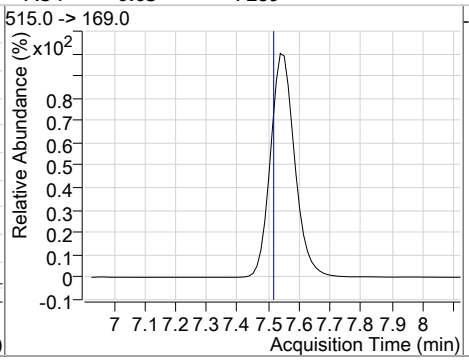


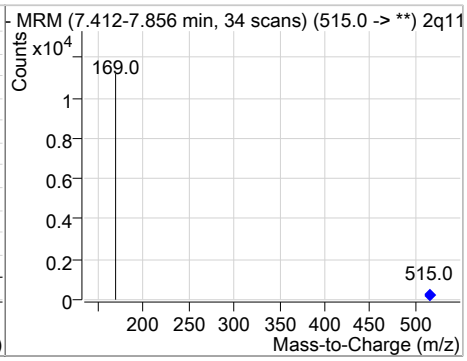




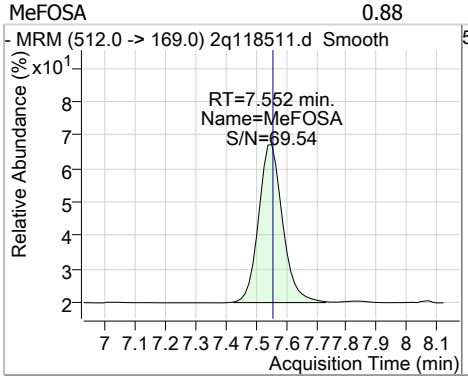
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	10.15	7.54	0.03	7289				

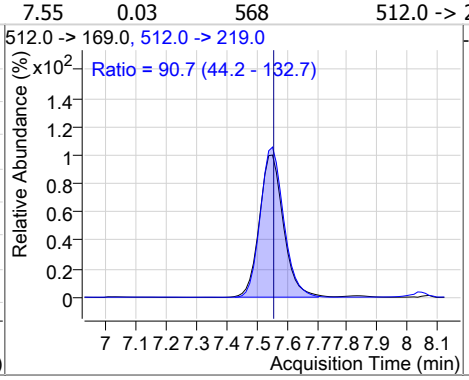


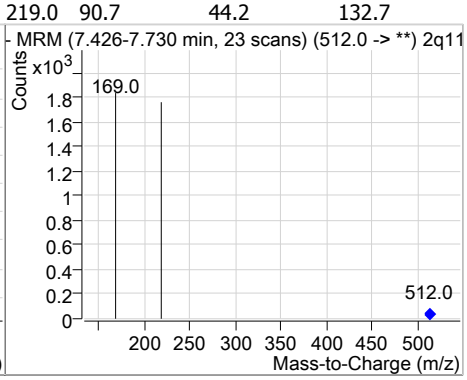




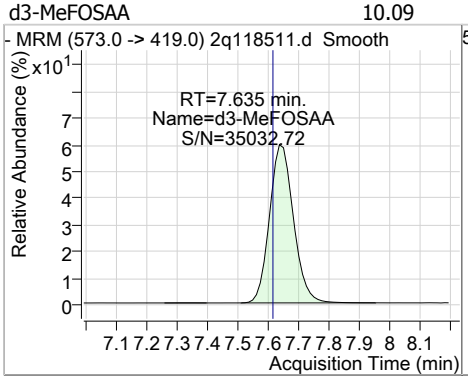
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	0.88	7.55	0.03	568	512.0 -> 219.0	90.7	44.2	132.7

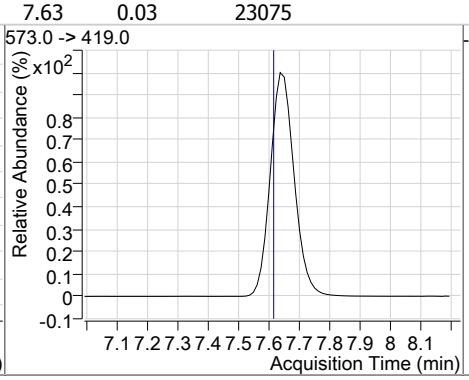


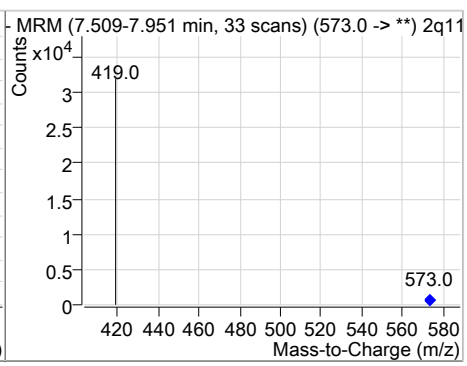




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	10.09	7.63	0.03	23075				

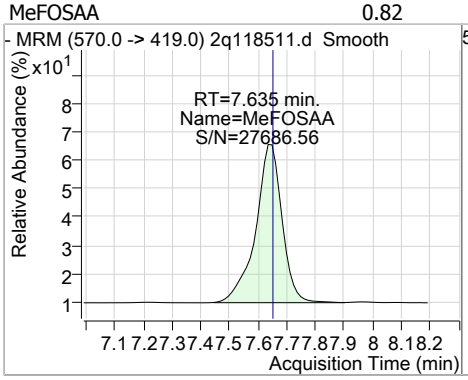


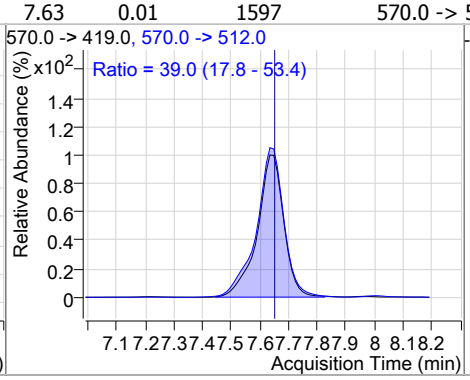


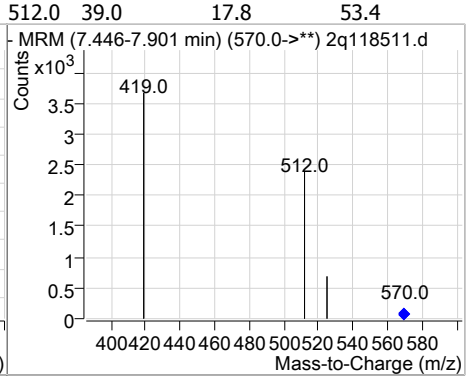


Perfluorinated Compounds by LC/MS/MS

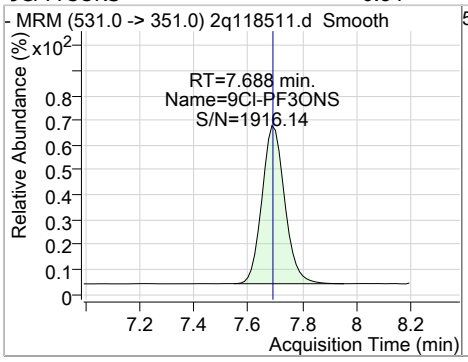
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	0.82	7.63	0.01	1597	570.0 -> 512.0	39.0	17.8	53.4

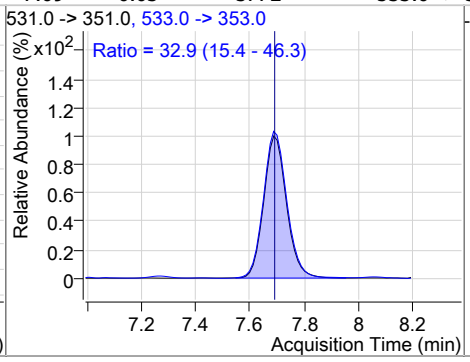


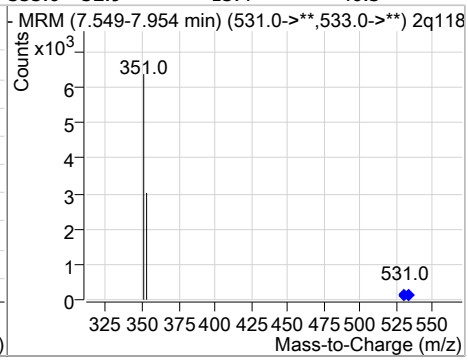




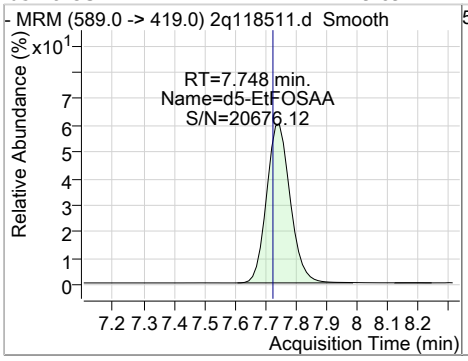
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	0.84	7.69	0.03	3772	533.0 -> 353.0	32.9	15.4	46.3

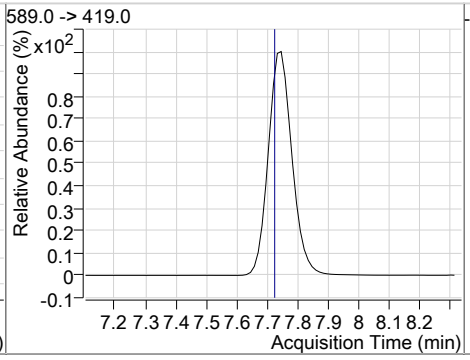


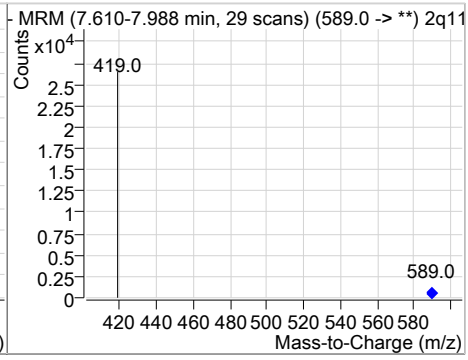




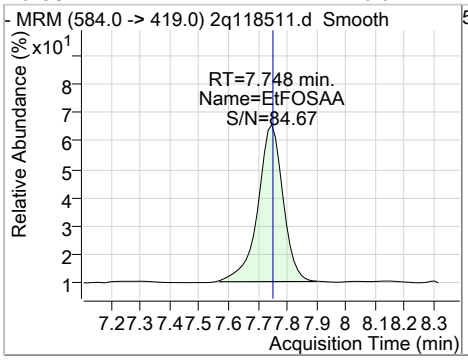
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	9.89	7.75	0.03	19075				

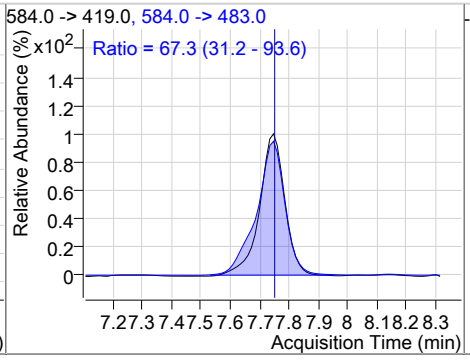


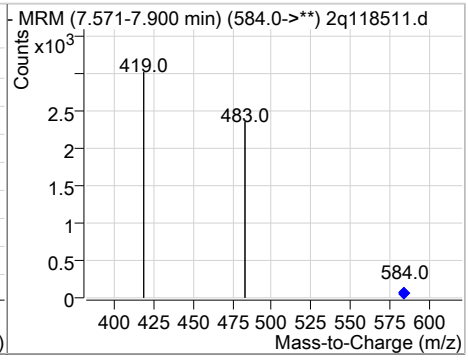




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	0.82	7.75	0.03	1399	584.0 -> 483.0	67.3	31.2	93.6

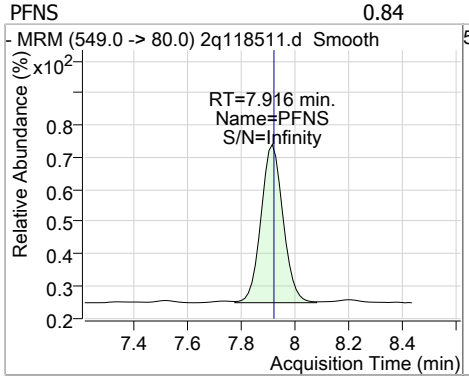


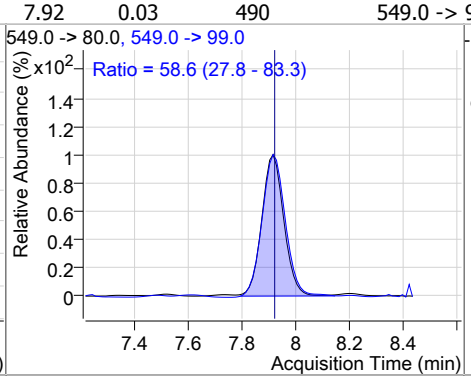


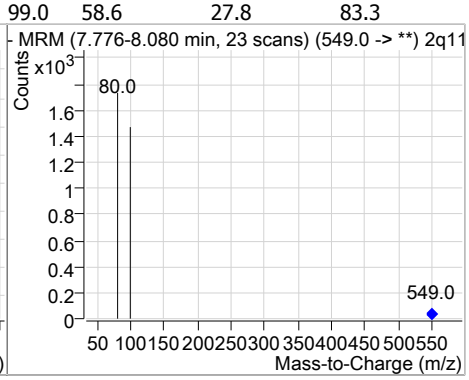


Perfluorinated Compounds by LC/MS/MS

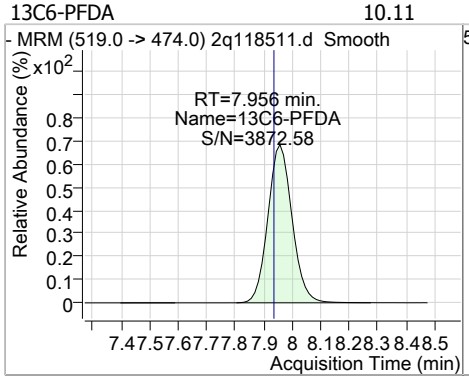
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	0.84	7.92	0.03	490	549.0 -> 99.0	58.6	27.8	83.3

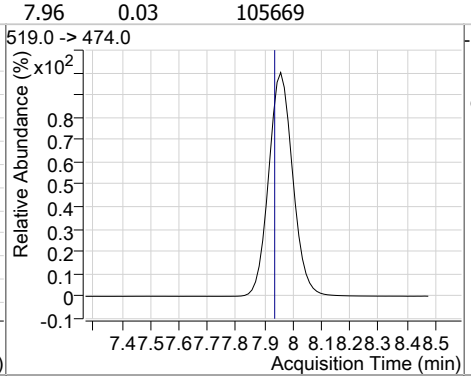


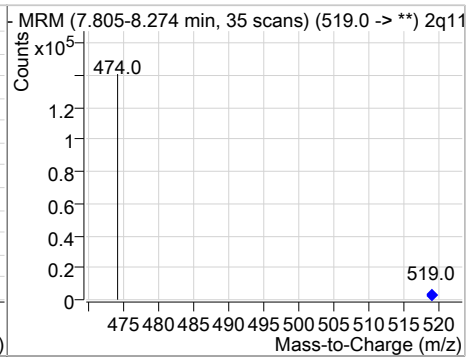




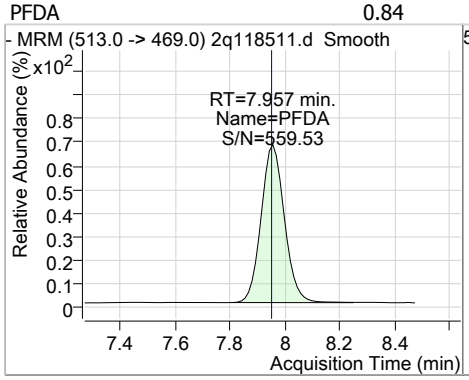
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	10.11	7.96	0.03	105669				

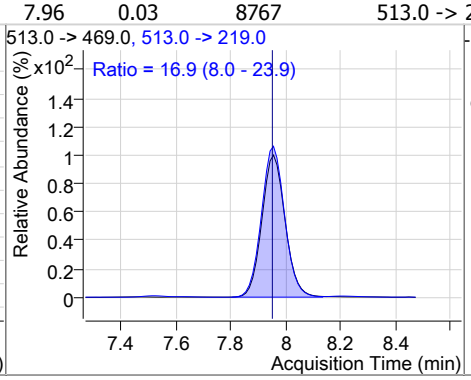


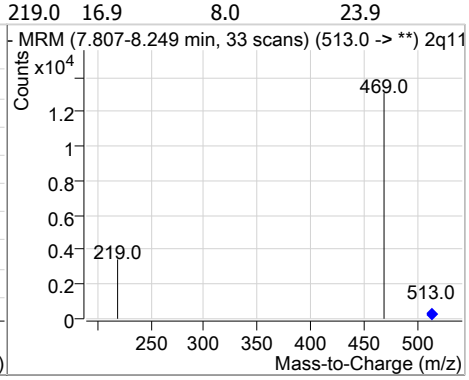




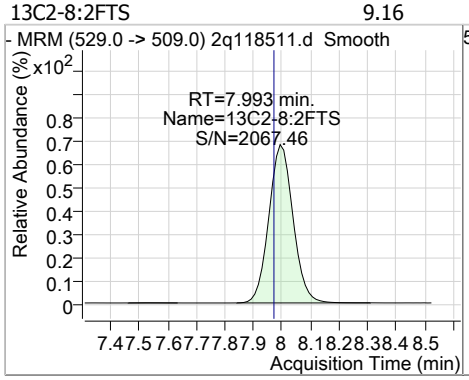
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	0.84	7.96	0.03	8767	513.0 -> 219.0	16.9	8.0	23.9

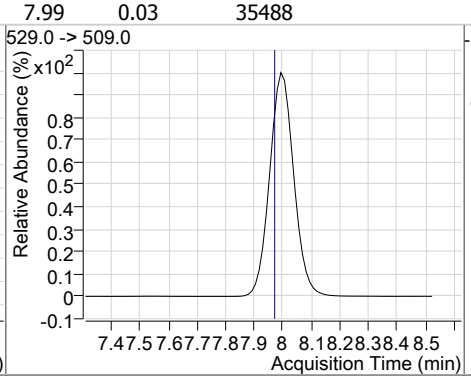


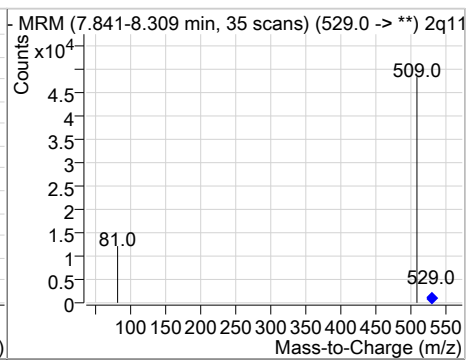




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	9.16	7.99	0.03	35488				

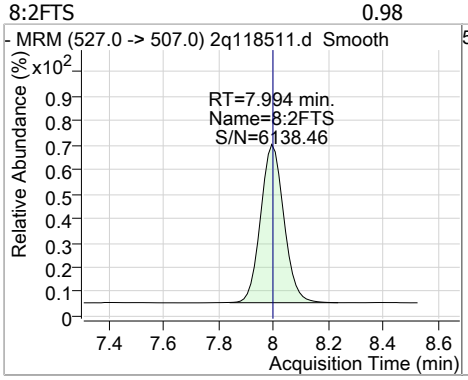


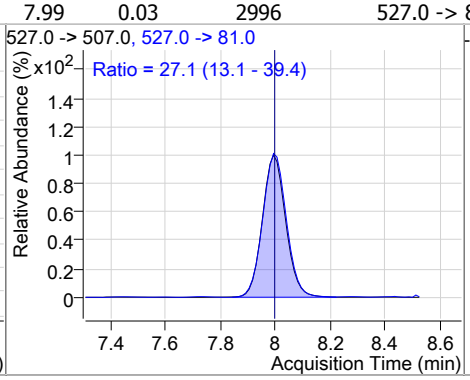


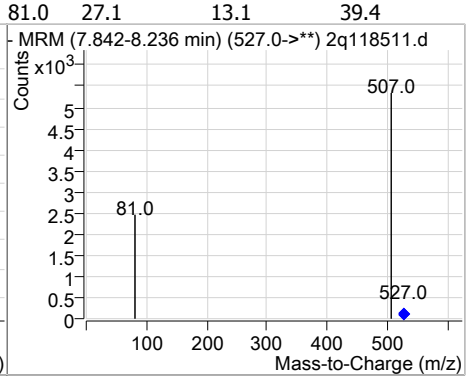


Perfluorinated Compounds by LC/MS/MS

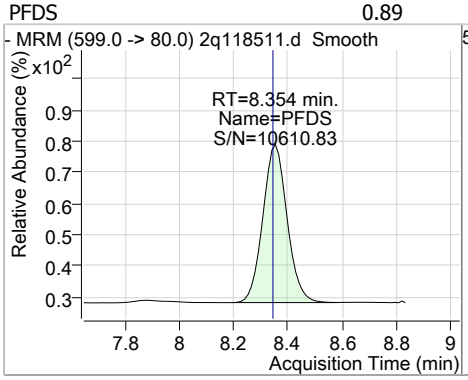
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	0.98	7.99	0.03	2996	527.0 -> 81.0	27.1	13.1	39.4

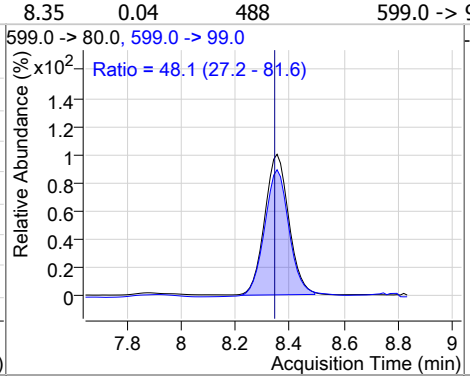


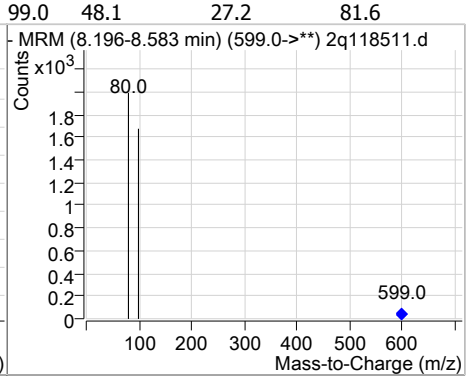




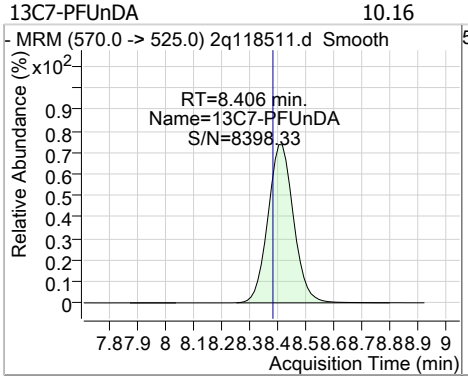
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	0.89	8.35	0.04	488	599.0 -> 99.0	48.1	27.2	81.6

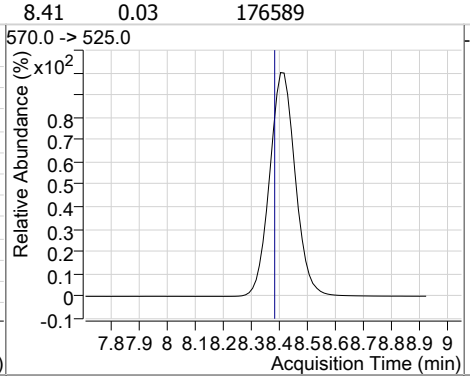


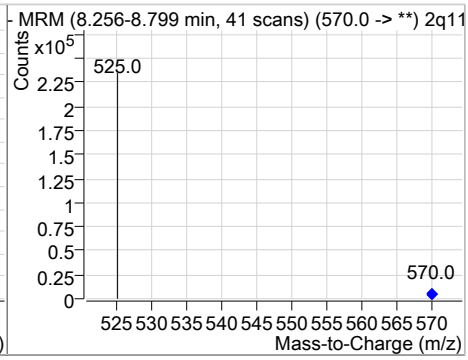




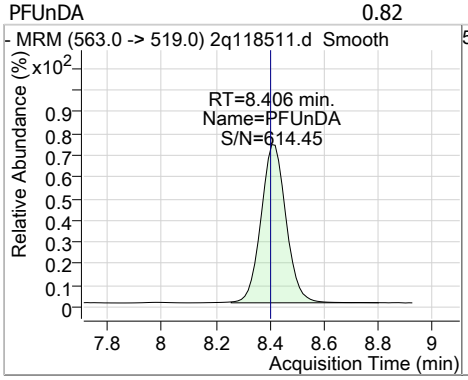
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	10.16	8.41	0.03	176589				

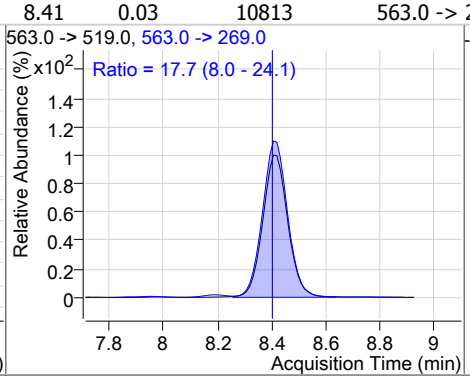


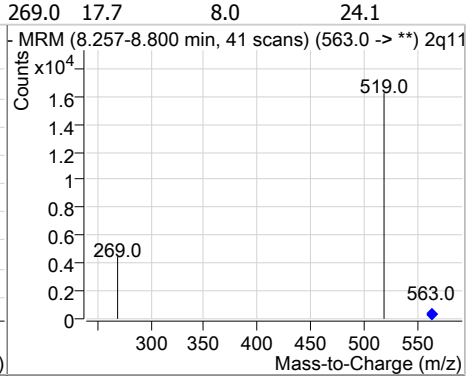




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	0.82	8.41	0.03	10813	563.0 -> 269.0	17.7	8.0	24.1

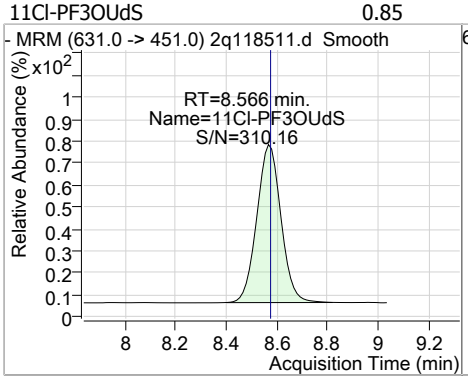


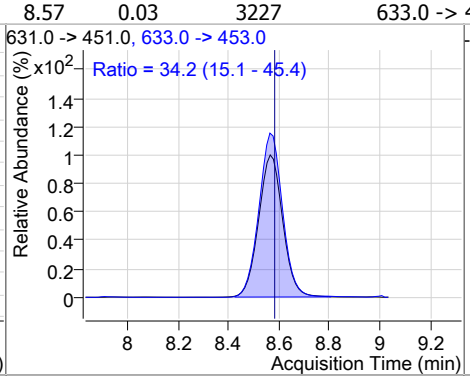


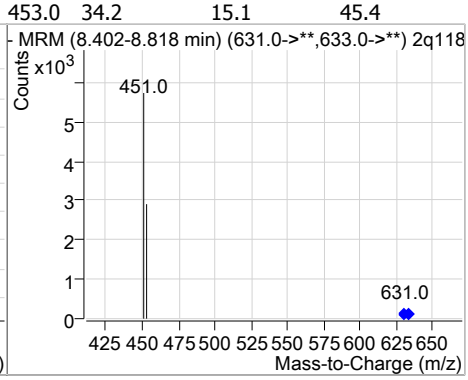


Perfluorinated Compounds by LC/MS/MS

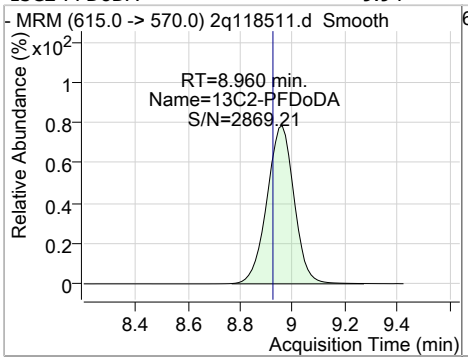
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	0.85	8.57	0.03	3227	633.0 -> 453.0	34.2	15.1	45.4

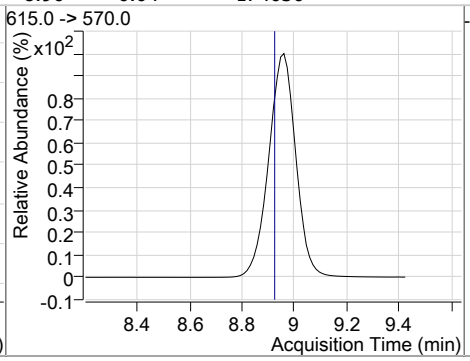


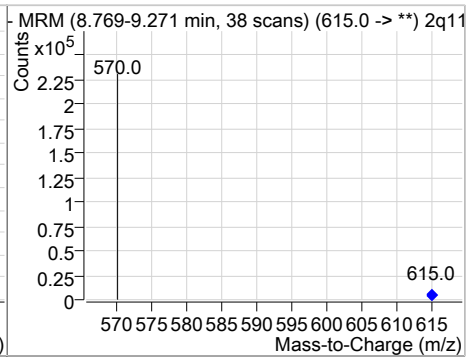




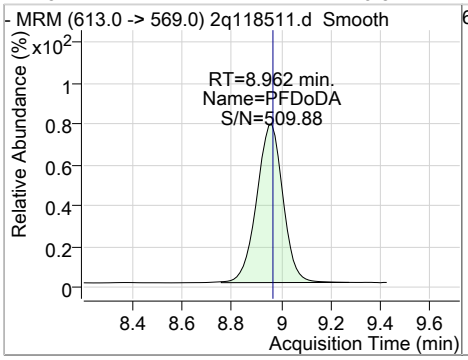
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	9.94	8.96	0.04	174030				

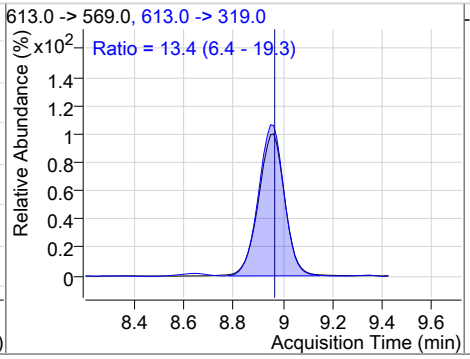


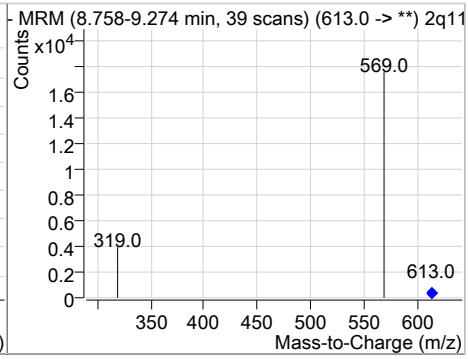




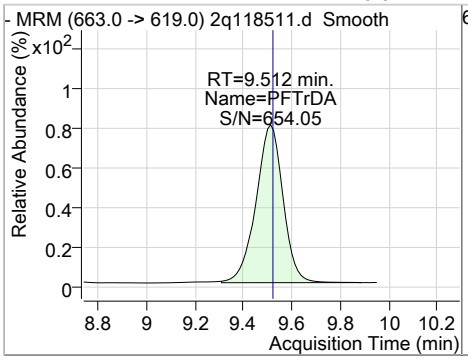
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	0.87	8.96	0.04	11881	613.0 -> 319.0	13.4	6.4	19.3

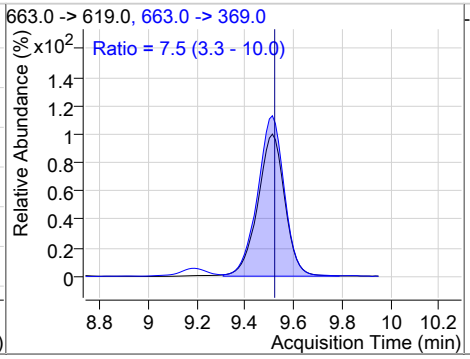


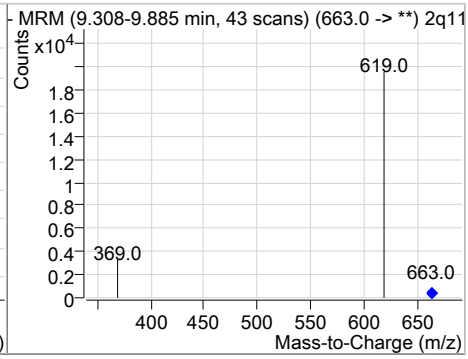




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	0.84	9.51	0.04	13073	663.0 -> 369.0	7.5	3.3	10.0

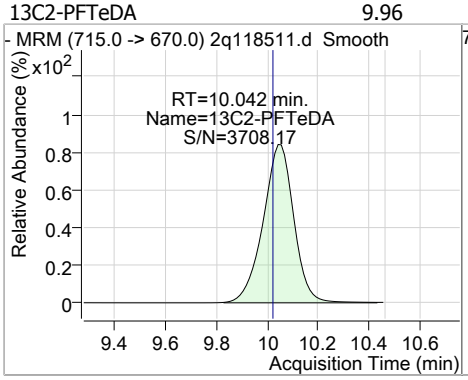


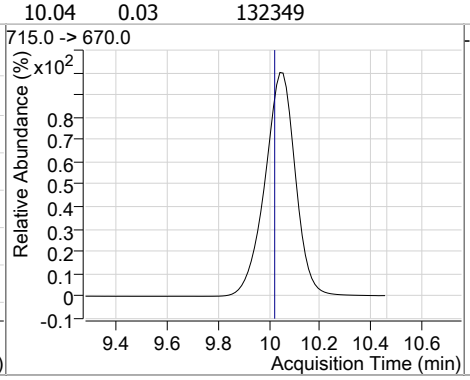


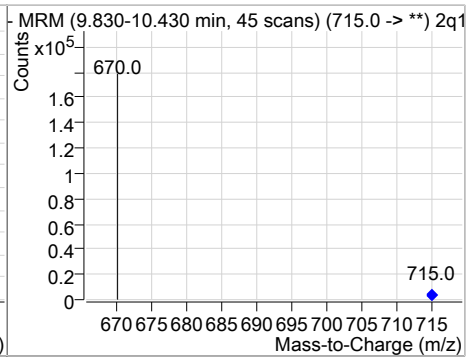


Perfluorinated Compounds by LC/MS/MS

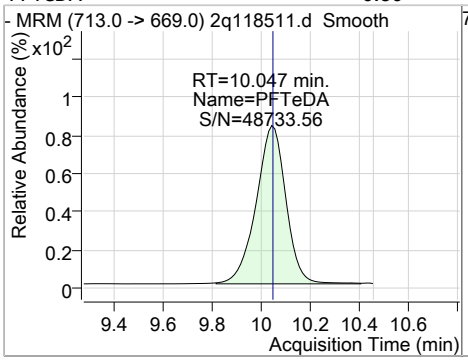
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	9.96	10.04	0.03	132349				

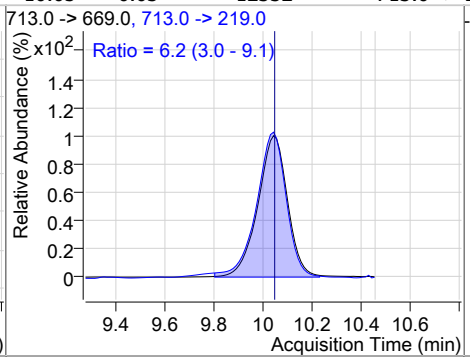


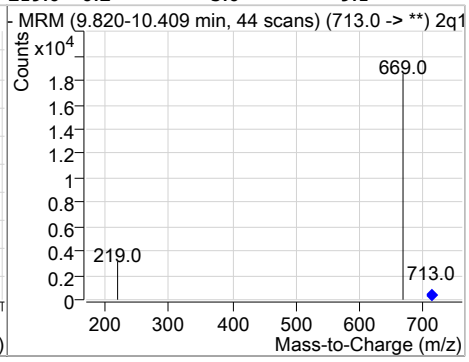




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	0.86	10.05	0.03	12332	713.0 -> 219.0	6.2	3.0	9.1







Manual Integration Approval Summary

Sample Number: S2Q1691-IC1691
Lab FileID: 2Q118511.D
Injection Time: 01/02/24 12:51
Method: EPA 537M QSM5.3 B-15
Analyst approved: 01/03/24 15:12 Lindsay Ritner
Supervisor approved: 01/04/24 11:31 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.24	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.45	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Natasha Gumtie 01/04/24 11:31

Perfluorinated Compounds by LC/MS/MS

Data File : 2q118512.d
Operator : lindsayr
Acq. Method : 537_ID.m
Acq. Date-Time : 1/2/2024 1:07:34 PM
Sample Name : ic1691-2
Vial : P1-A4
DA Method File : ID_010224_S2Q1691.quantmethod.xml
Batch Name : s2q1691.batch.bin
Sample Information : op401,S2Q1691,250,,,1.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M5-EtFOSAA	7.748	589.0 -> 419.0	19547	10.00	µg/L	0.025
M4-PFBA	2.252	217.0 -> 172.0	51430	10.00	µg/L	0.013
M5-PFPeA	4.062	268.0 -> 223.0	79576	10.00	µg/L	0.000
M5-PFHxA	5.339	318.0 -> 273.0	100111	10.00	µg/L	0.000
M4-PFHpA	6.222	367.0 -> 322.0	87693	10.00	µg/L	0.015
M8-PFOA	6.912	421.0 -> 376.0	173116	10.00	µg/L	0.025
M9-PFNA	7.480	472.0 -> 427.0	136798	10.00	µg/L	0.025
M6-PFDA	7.956	519.0 -> 474.0	105719	10.00	µg/L	0.025
M7-PFUnDA	8.418	570.0 -> 525.0	174777	10.00	µg/L	0.038
M2-PFDoDA	8.960	615.0 -> 570.0	175384	10.00	µg/L	0.040
M2-PFTeDA	10.055	715.0 -> 670.0	131669	10.00	µg/L	0.038
M8-FOSA	7.184	506.0 -> 78.0	21649	10.00	µg/L	0.025
M3-PFBS	4.330	302.0 -> 99.0	6019	10.00	µg/L	0.000
M3-PFHxS	6.243	402.0 -> 99.0	6395	10.00	µg/L	0.000
M8-PFOS	7.452	507.0 -> 99.0	5653	10.00	µg/L	0.025
M2-4:2FTS	5.234	329.0 -> 309.0	35081	10.00	µg/L	0.000
M2-6:2FTS	6.898	429.0 -> 409.0	52786	10.00	µg/L	0.013
M2-8:2FTS	7.993	529.0 -> 509.0	36422	10.00	µg/L	0.026
M3-MeFOSAA	7.648	573.0 -> 419.0	23340	10.00	µg/L	0.039
M3-HFPO-DA	5.607	287.0 -> 169.0	8267	10.00	µg/L	0.000
M3-MeFOSA	7.551	515.0 -> 169.0	7409	10.00	µg/L	0.038
System Monitoring Compounds						
13C2-4:2FTS	5.234	329.0 -> 309.0	35081	9.51	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 95.1%		
13C2-6:2FTS	6.898	429.0 -> 409.0	52786	9.19	µg/L	0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 91.9%		
13C2-8:2FTS	7.993	529.0 -> 509.0	36422	9.40	µg/L	0.026
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 94.0%		
13C2-PFDoDA	8.960	615.0 -> 570.0	175384	10.01	µg/L	0.040
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.1%		
13C2-PFTeDA	10.055	715.0 -> 670.0	131669	9.91	µg/L	0.038
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.1%		
13C3-PFBS	4.330	302.0 -> 99.0	6019	10.02	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.2%		
13C3-PFHxS	6.243	402.0 -> 99.0	6395	10.45	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 104.5%		
13C4-PFBA	2.252	217.0 -> 172.0	51430	9.96	µg/L	0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.6%		
13C4-PFHpA	6.222	367.0 -> 322.0	87693	10.21	µg/L	0.015
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 102.1%		
d5-EtFOSAA	7.748	589.0 -> 419.0	19547	10.13	µg/L	0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.3%		
13C5-PFHxA	5.339	318.0 -> 273.0	100111	10.15	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.5%		
13C5-PFPeA	4.062	268.0 -> 223.0	79576	10.01	µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

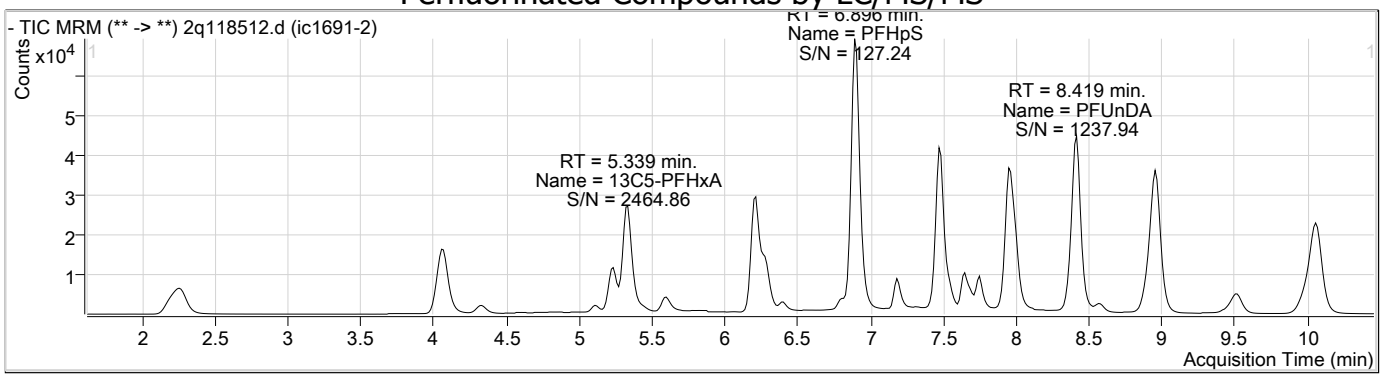
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.1%			
13C6-PFDA	7.956	519.0 -> 474.0	105719	10.11	µg/L		0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.1%			
13C7-PFUnDA	8.418	570.0 -> 525.0	174777	10.06	µg/L		0.038
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.6%			
13C8-FOSA	7.184	506.0 -> 78.0	21649	10.54	µg/L		0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 105.4%			
13C8-PFOA	6.912	421.0 -> 376.0	173116	10.23	µg/L		0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 102.3%			
13C8-PFOS	7.452	507.0 -> 99.0	5653	10.12	µg/L		0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.2%			
13C9-PFNA	7.480	472.0 -> 427.0	136798	10.15	µg/L		0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.5%			
d3-MeFOSAA	7.648	573.0 -> 419.0	23340	10.20	µg/L		0.039
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 102.0%			
13C3-HFPO-DA	5.607	287.0 -> 169.0	8267	9.95	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.5%			
d3-MeFOSA	7.551	515.0 -> 169.0	7409	10.32	µg/L		0.038
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 103.2%			
Target Compounds							QValue
4:2FTS	5.237	327.0 -> 307.0	7705	2.16	µg/L		97
		327.0 -> 81.0	3016				
6:2FTS	6.899	427.0 -> 407.0	10153	2.20	µg/L		100
		427.0 -> 81.0	3029				
8:2FTS	7.994	527.0 -> 507.0	6974	2.23	µg/L		97
		527.0 -> 81.0	1934				
EtFOSAA	7.748	584.0 -> 419.0	3460	1.97	µg/L		94
		584.0 -> 483.0	2324				
FOSA	7.186	498.0 -> 78.0	3701	1.95	µg/L		97
		498.0 -> 478.0	118				
MeFOSAA	7.648	570.0 -> 419.0	3857	1.95	µg/L		100
		570.0 -> 512.0	1369				
PFBA	2.246	213.0 -> 169.0	3211	1.98	µg/L		100
PFBS	4.332	299.0 -> 80.0	3083	2.03	µg/L		98
		299.0 -> 99.0	1126				
PFDA	7.957	513.0 -> 469.0	19602	1.87	µg/L		100
		513.0 -> 219.0	3134				
PFDoDA	8.962	613.0 -> 569.0	26434	1.93	µg/L		99
		613.0 -> 319.0	3476				
PFDS	8.354	599.0 -> 80.0	1051	1.94	µg/L		99
		599.0 -> 99.0	582				
PFHpA	6.223	363.0 -> 319.0	27899	1.92	µg/L		99
		363.0 -> 169.0	4819				
PFHpS	6.896	449.0 -> 80.0	2041	1.93	µg/L		98
		449.0 -> 99.0	1114				
PFHxA	5.340	313.0 -> 269.0	19831	1.92	µg/L		99
		313.0 -> 119.0	810				
PFHxS	6.244	399.0 -> 80.0	2682	1.92	µg/L	m	94
		399.0 -> 99.0	1261				
PFNA	7.493	463.0 -> 419.0	21004	1.91	µg/L		99
		463.0 -> 219.0	4384				
PFNS	7.916	549.0 -> 80.0	1229	2.06	µg/L		97
		549.0 -> 99.0	708				
PFOA	6.913	413.0 -> 369.0	35224	1.90	µg/L		99
		413.0 -> 169.0	6557				
PFOS	7.453	499.0 -> 80.0	1767	1.99	µg/L	m	100

Perfluorinated Compounds by LC/MS/MS

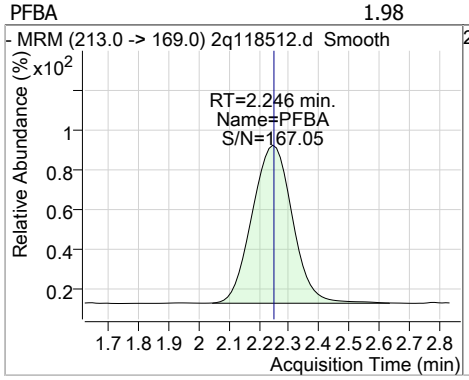
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		499.0 -> 99.0	898			
PFPeA	4.064	263.0 -> 219.0	12385	1.97	µg/L	100
PFPeS	5.445	349.0 -> 80.0	2225	2.02	µg/L	99
		349.0 -> 99.0	964			
PFTeDA	10.059	713.0 -> 669.0	28254	1.97	µg/L	99
		713.0 -> 219.0	1777			
PFTrDA	9.512	663.0 -> 619.0	29807	1.91	µg/L	99
		663.0 -> 369.0	2076			
PFUnDA	8.419	563.0 -> 519.0	25357	1.94	µg/L	97
		563.0 -> 269.0	4389			
11Cl-PF3OUdS	8.566	631.0 -> 451.0	7782	2.04	µg/L	96
		633.0 -> 453.0	2544			
9Cl-PF3ONS	7.688	531.0 -> 351.0	8357	1.86	µg/L	97
		533.0 -> 353.0	2703			
ADONA	6.296	377.0 -> 251.0	32821	1.79	µg/L	99
		377.0 -> 85.0	8775			
HFPO-DA	5.601	329.0 -> 169.0	5195	2.03	µg/L	99
		285.0 -> 169.0	1528			
MeFOSA	7.552	512.0 -> 169.0	1303	1.98	µg/L	94
		512.0 -> 219.0	1076			
4-PFECHS	6.807	461.0 -> 381.0	8986	1.83	µg/L	98
		461.0 -> 99.0	3186			
FBSA	5.116	298.0 -> 78.0	5955	1.84	µg/L	99
		298.0 -> 64.0	636			
FHxSA	6.408	398.0 -> 78.0	6155	1.92	µg/L	98
		398.0 -> 64.0	703			

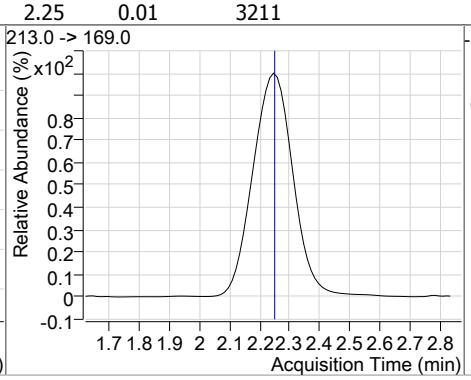
 # = Qualifier out of range, m = manually integrated, + = Area summed

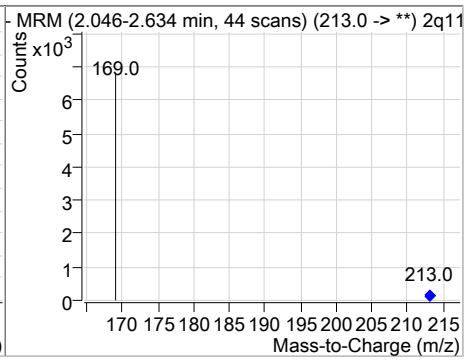
Perfluorinated Compounds by LC/MS/MS



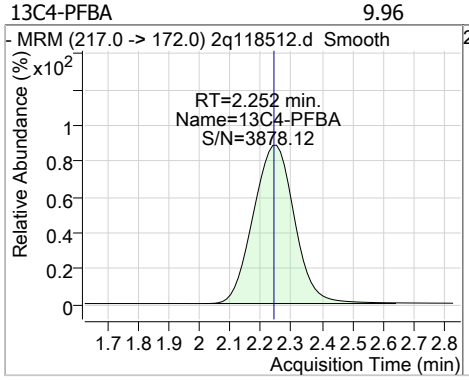
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	1.98	2.25	0.01	3211				

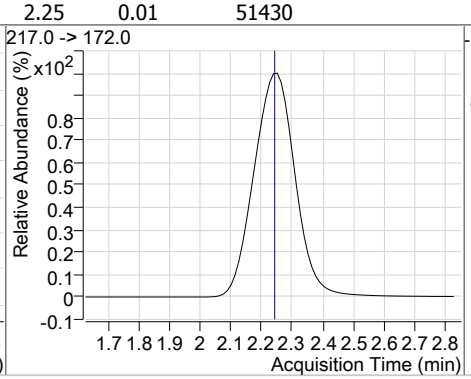


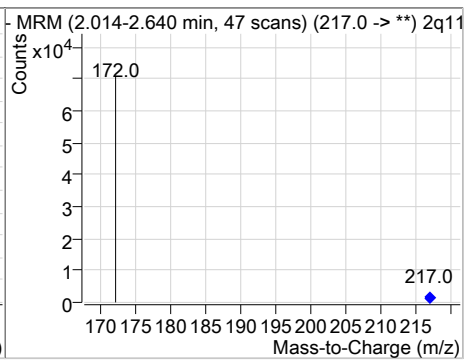




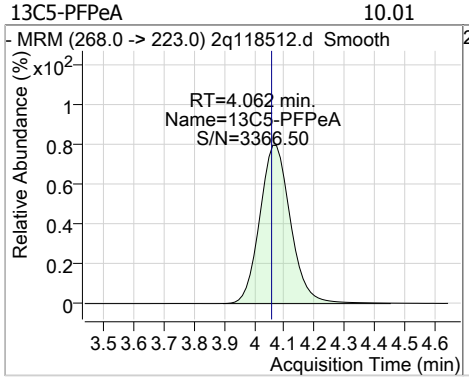
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	9.96	2.25	0.01	51430				

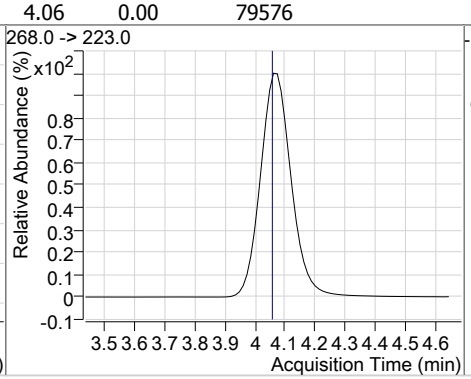


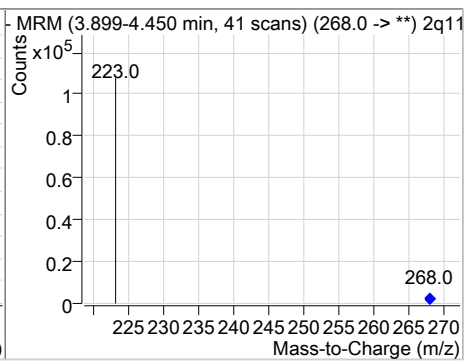




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	10.01	4.06	0.00	79576				

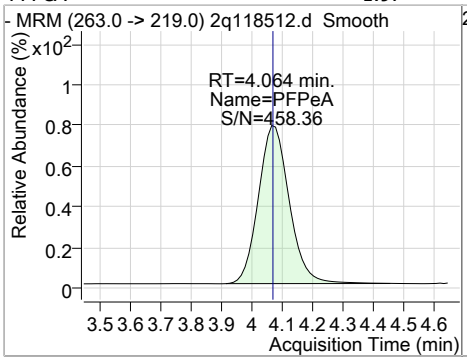


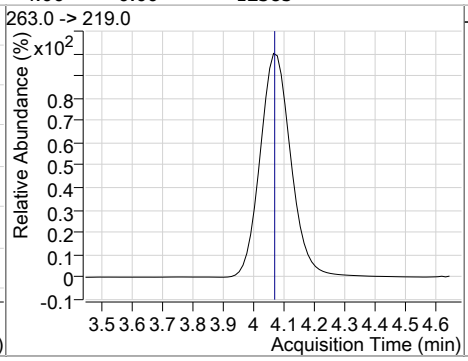


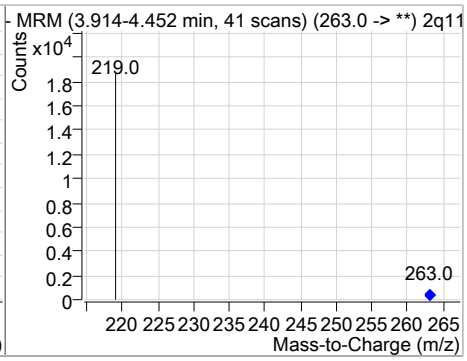


Perfluorinated Compounds by LC/MS/MS

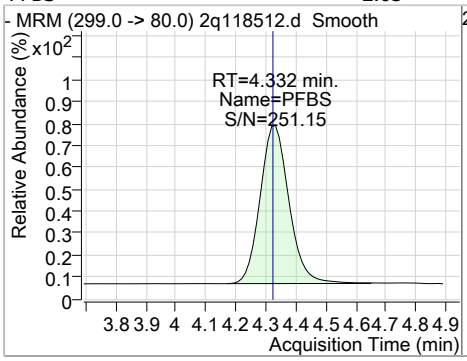
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	1.97	4.06	0.00	12385				

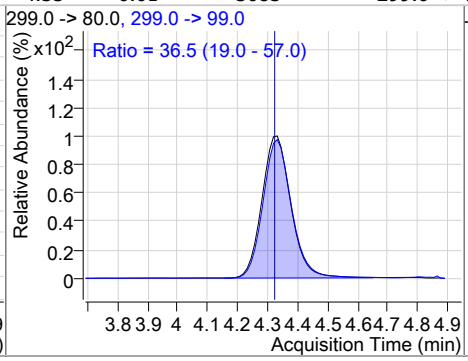


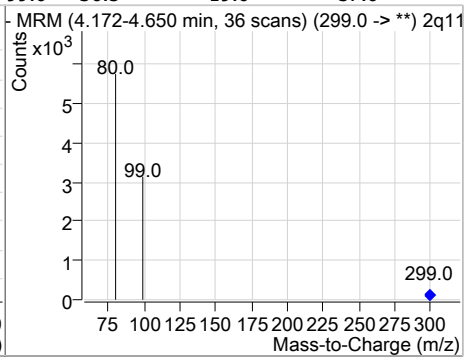




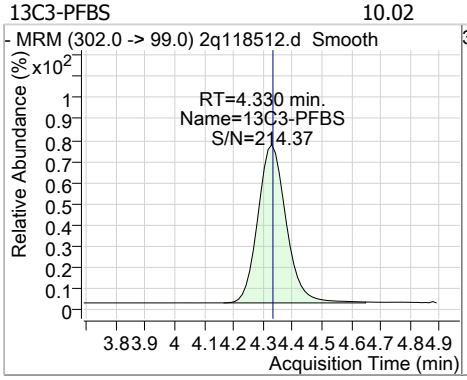
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	2.03	4.33	0.01	3083	299.0 -> 99.0	36.5	19.0	57.0

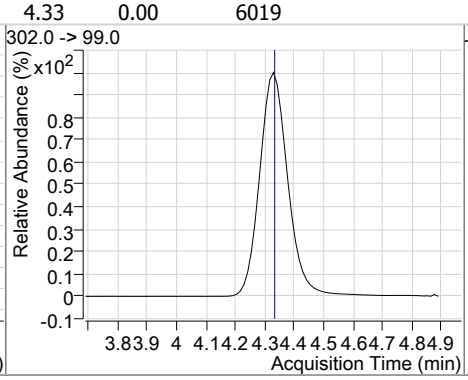


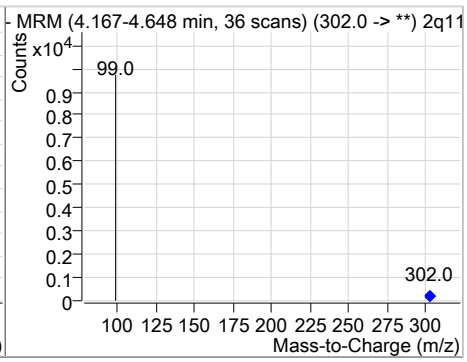




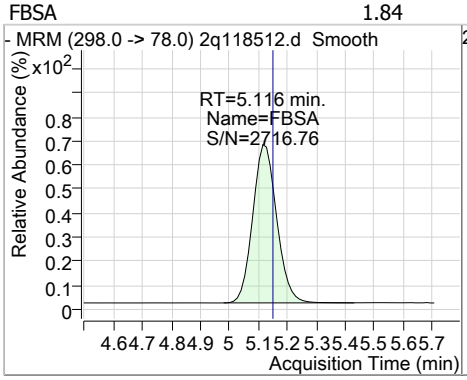
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	10.02	4.33	0.00	6019				

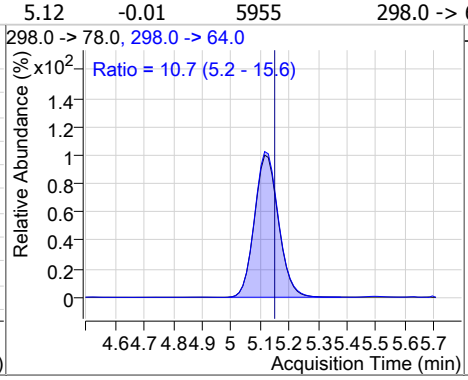


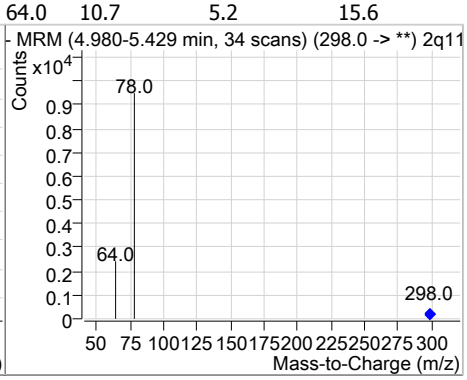




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	1.84	5.12	-0.01	5955	298.0 -> 64.0	10.7	5.2	15.6

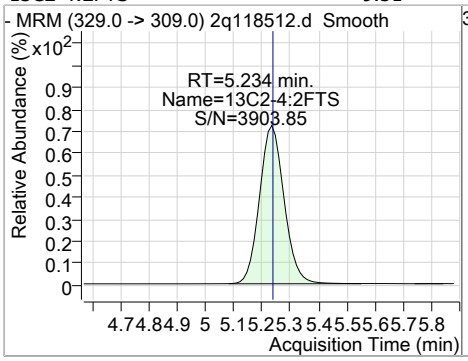


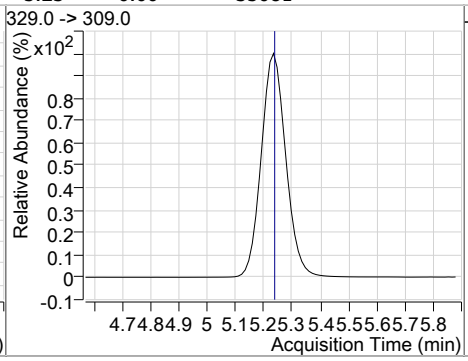


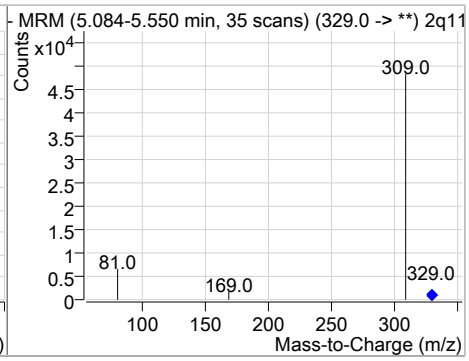


Perfluorinated Compounds by LC/MS/MS

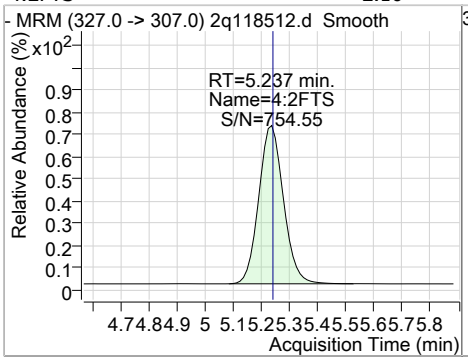
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	9.51	5.23	0.00	35081				

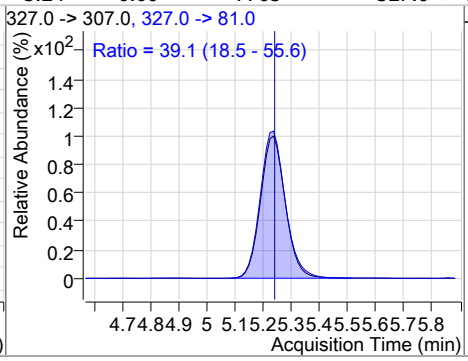


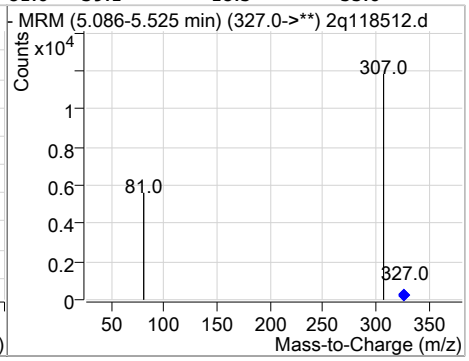




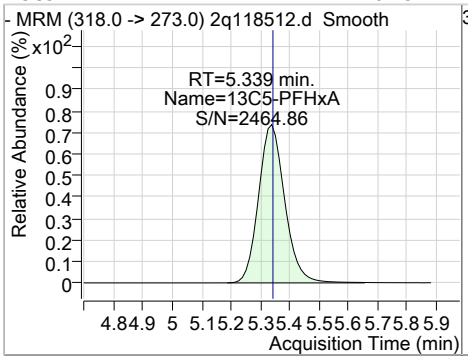
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	2.16	5.24	0.00	7705	327.0 -> 81.0	39.1	18.5	55.6

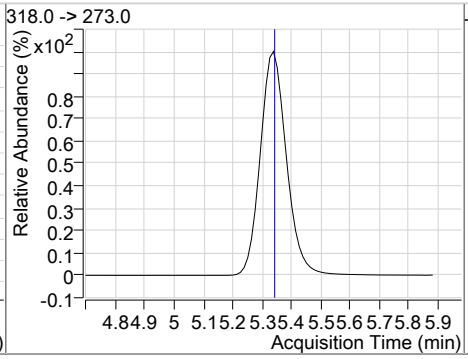


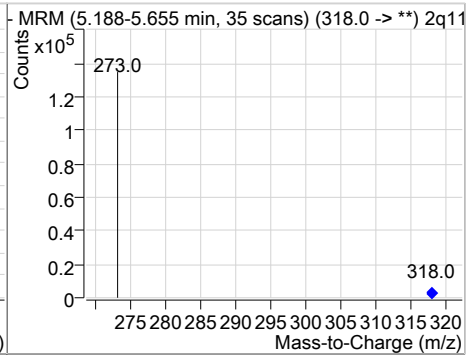




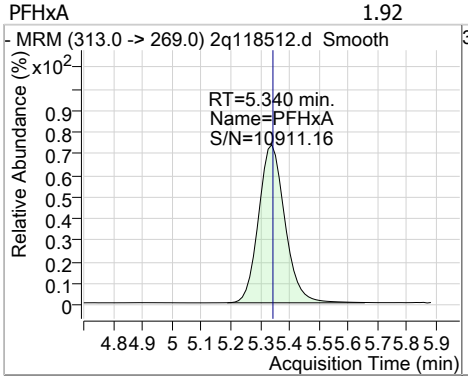
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	10.15	5.34	0.00	100111				

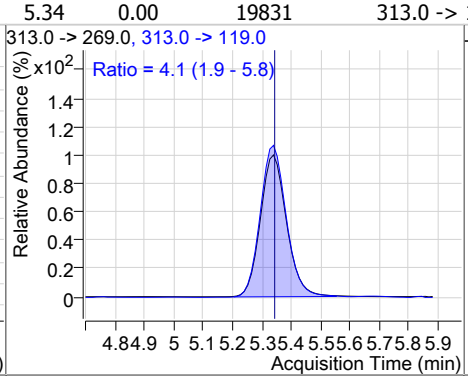


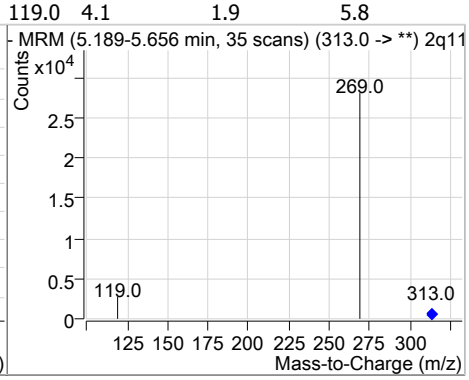




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	1.92	5.34	0.00	19831	313.0 -> 119.0	4.1	1.9	5.8

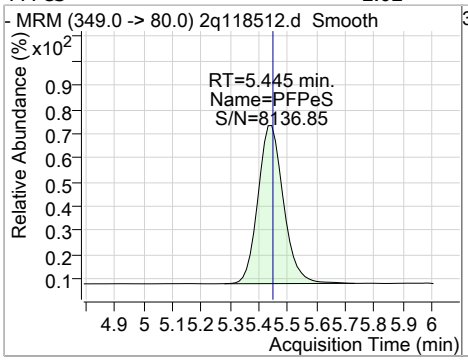


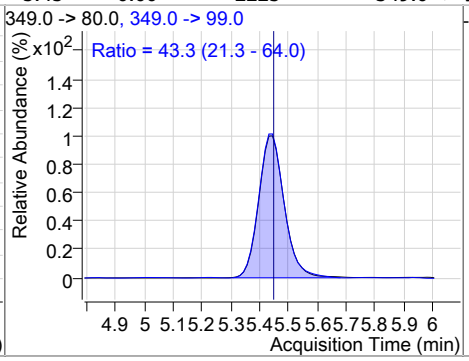


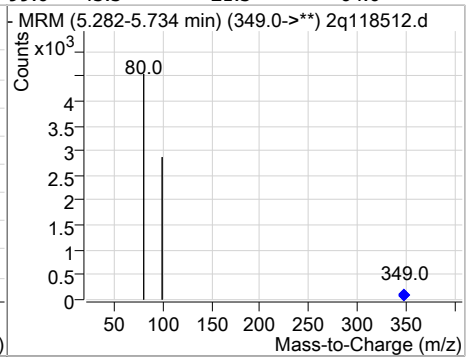


Perfluorinated Compounds by LC/MS/MS

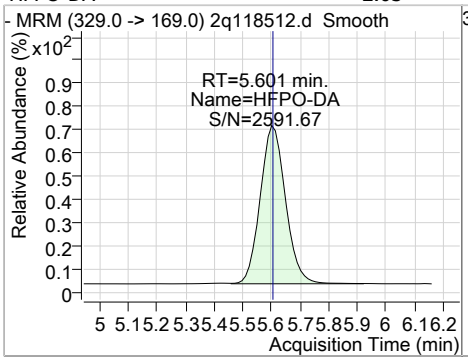
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	2.02	5.45	0.00	2225	349.0 -> 99.0	43.3	21.3	64.0

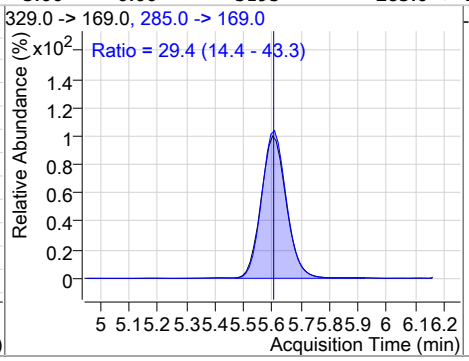


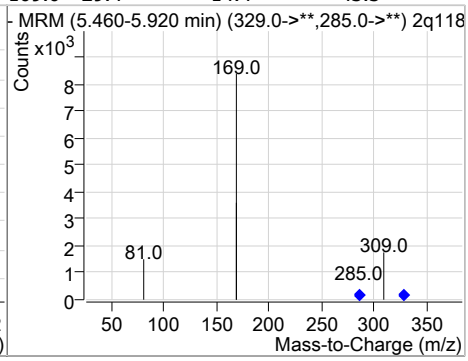




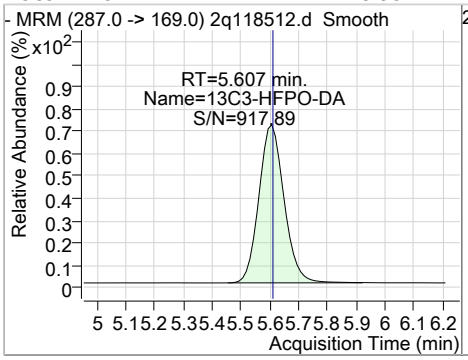
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	2.03	5.60	0.00	5195	285.0 -> 169.0	29.4	14.4	43.3

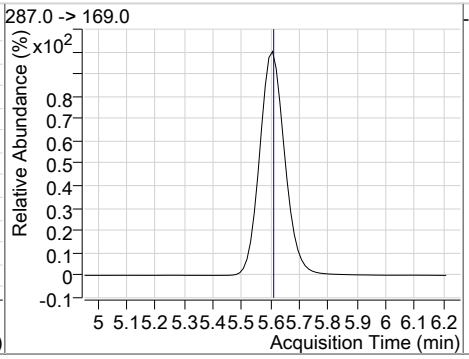


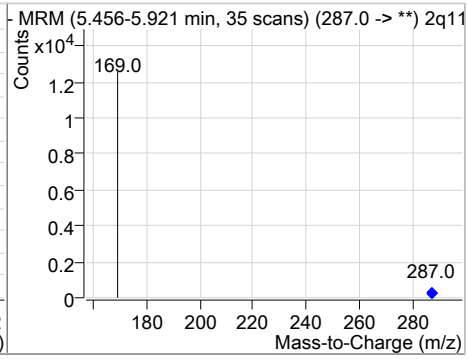




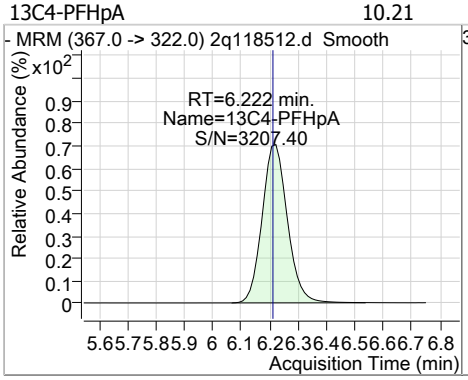
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	9.95	5.61	0.00	8267				

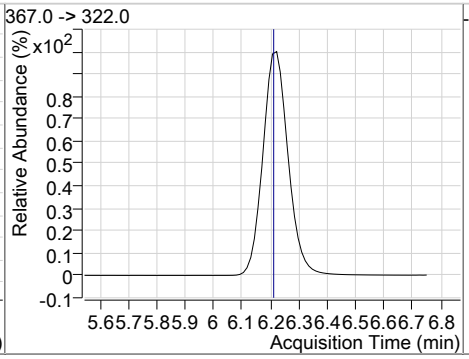


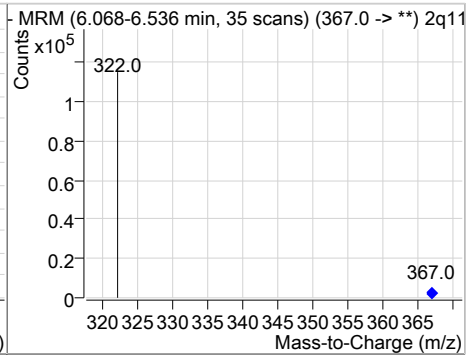




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	10.21	6.22	0.01	87693				

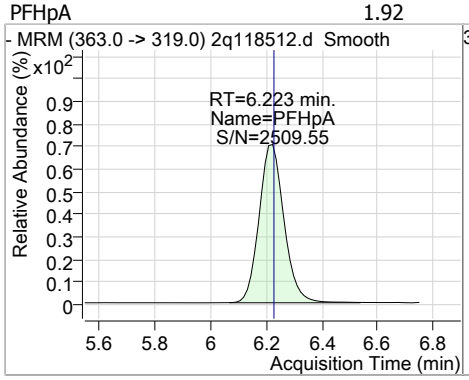


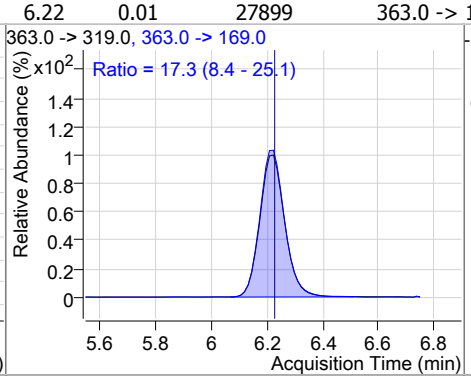


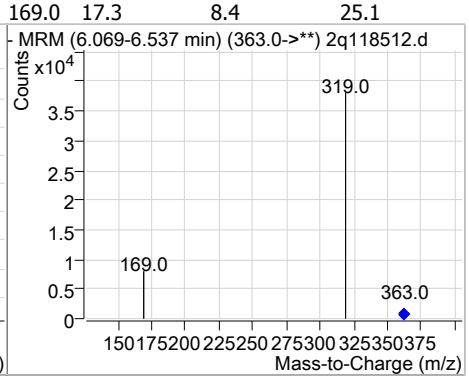


Perfluorinated Compounds by LC/MS/MS

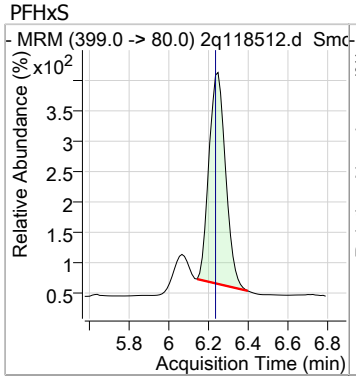
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	1.92	6.22	0.01	27899	363.0 -> 169.0	17.3	8.4	25.1

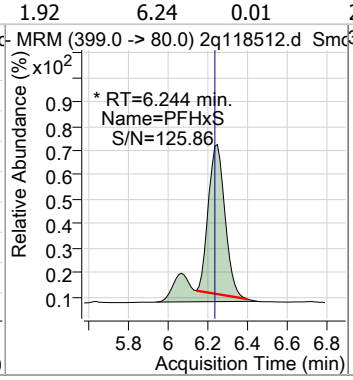


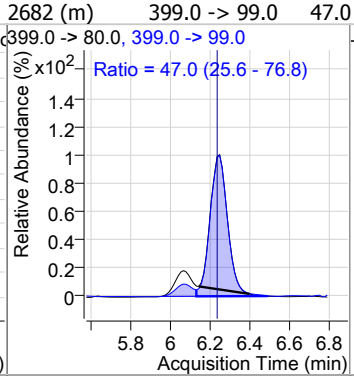


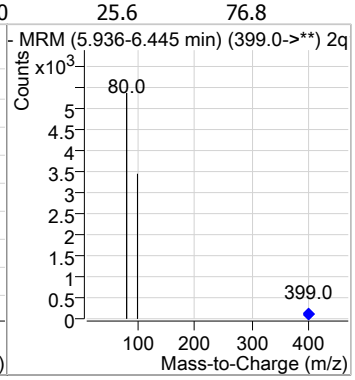


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	1.92	6.24	0.01	2682 (m)	399.0 -> 99.0	47.0	25.6	76.8

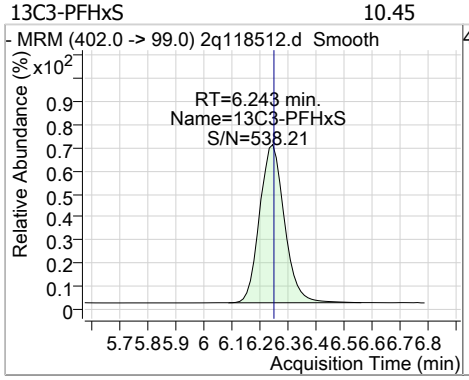


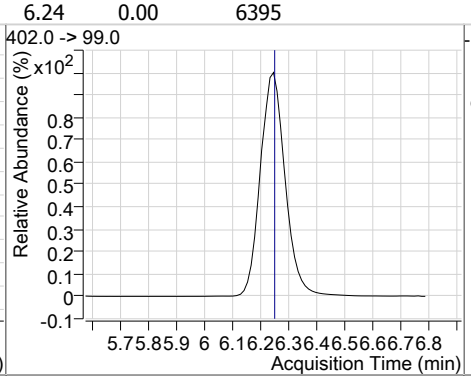


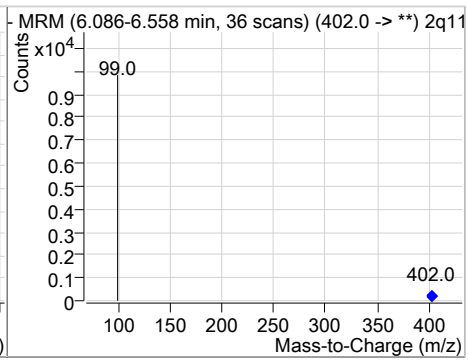




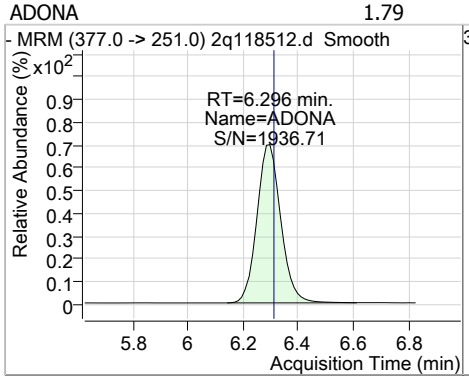
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	10.45	6.24	0.00	6395				

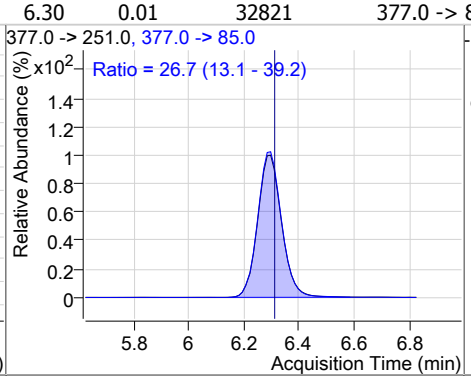


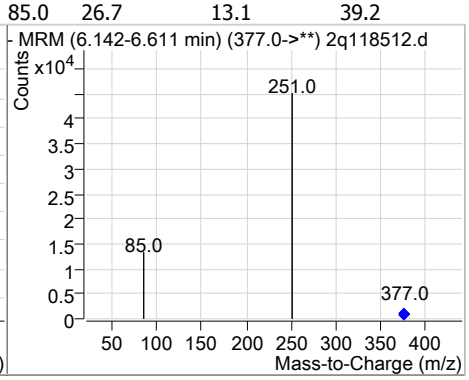




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	1.79	6.30	0.01	32821	377.0 -> 85.0	26.7	13.1	39.2

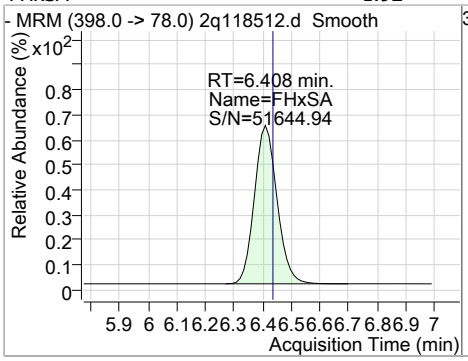


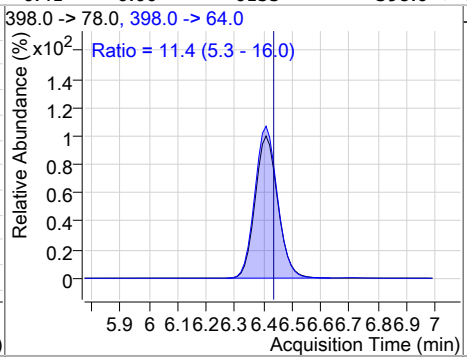


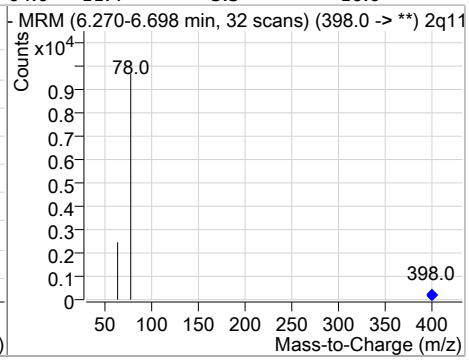


Perfluorinated Compounds by LC/MS/MS

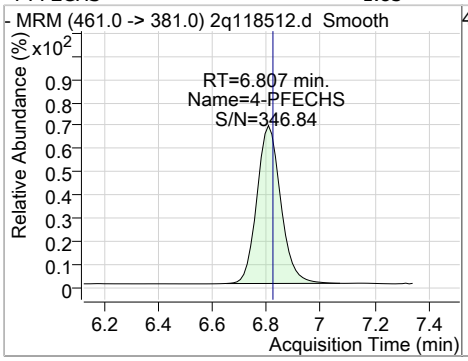
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	1.92	6.41	0.00	6155	398.0 -> 64.0	11.4	5.3	16.0

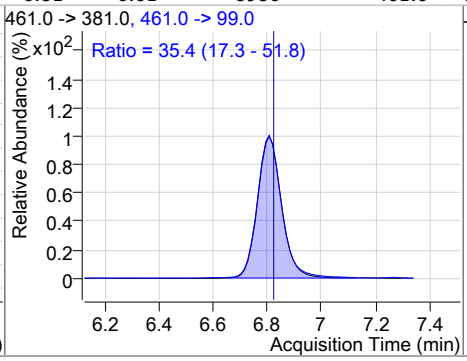


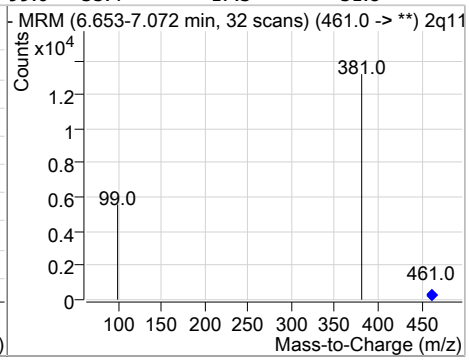




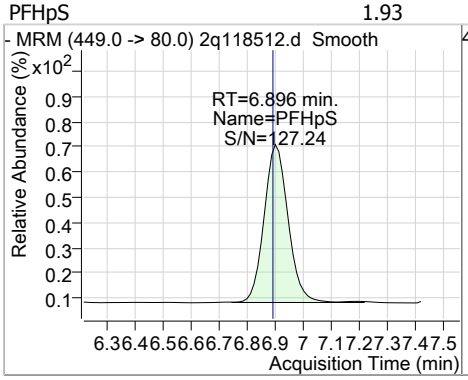
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS	1.83	6.81	0.01	8986	461.0 -> 99.0	35.4	17.3	51.8

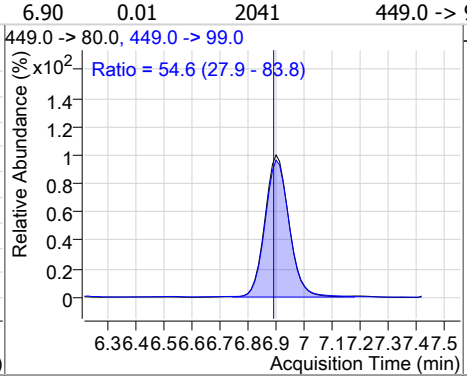


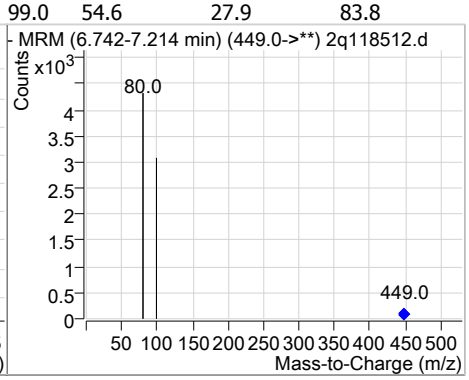




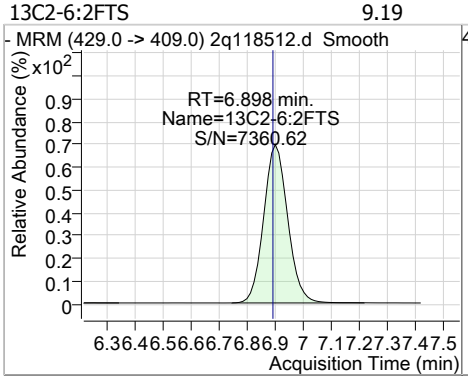
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	1.93	6.90	0.01	2041	449.0 -> 99.0	54.6	27.9	83.8

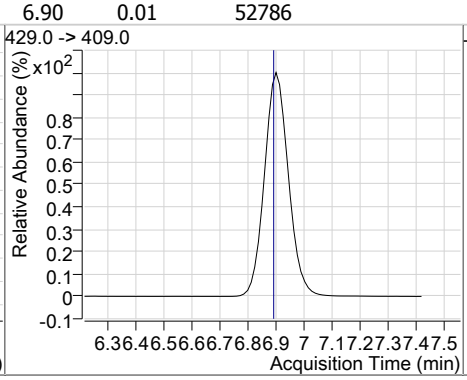


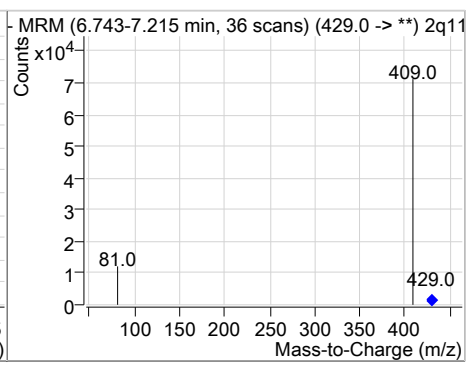




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	9.19	6.90	0.01	52786				

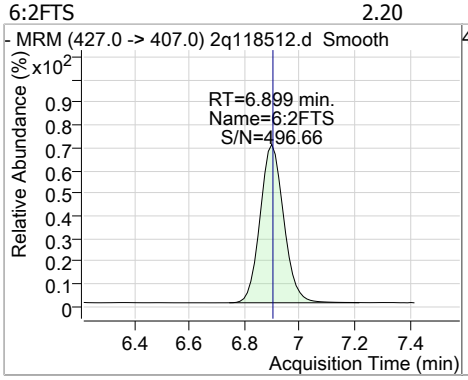


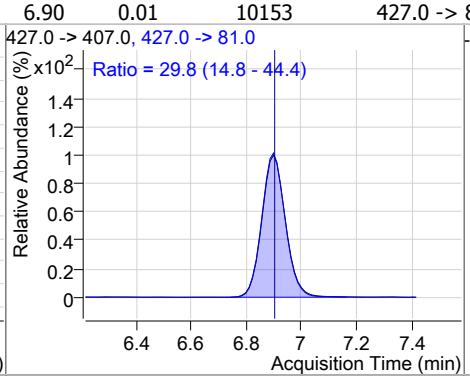


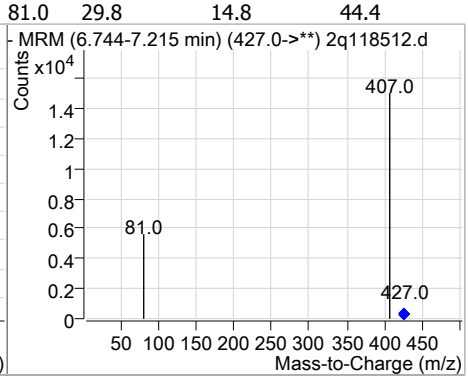


Perfluorinated Compounds by LC/MS/MS

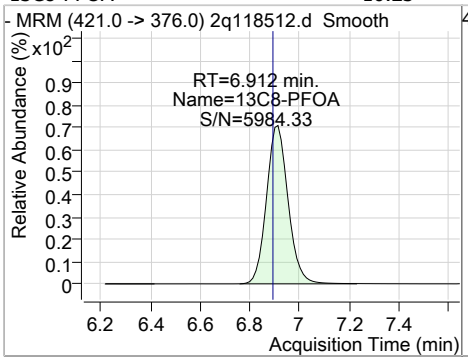
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	2.20	6.90	0.01	10153	427.0 -> 81.0	29.8	14.8	44.4

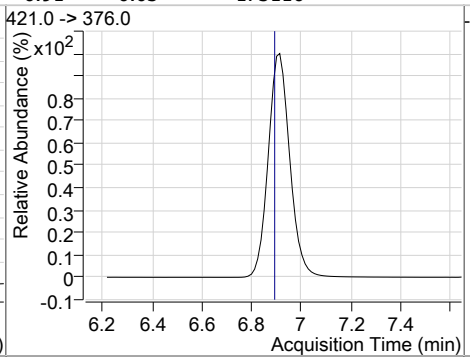


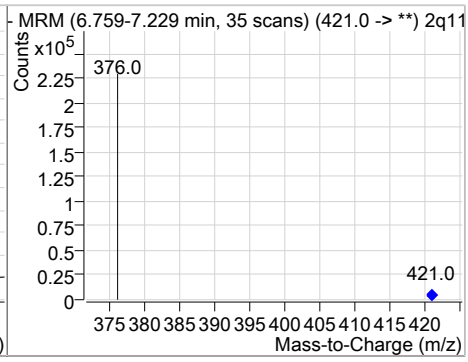




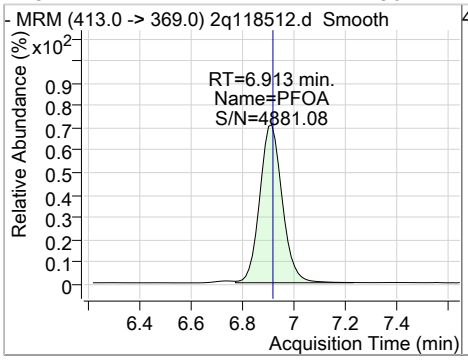
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	10.23	6.91	0.03	173116				

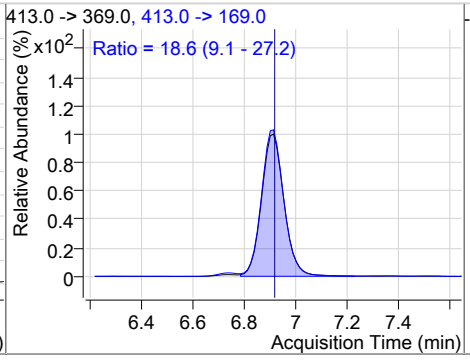


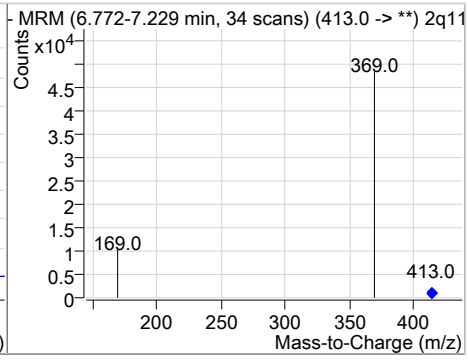




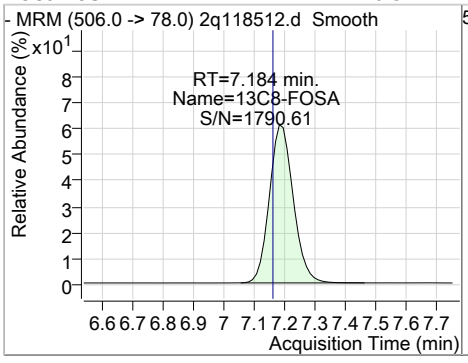
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	1.90	6.91	0.03	35224	413.0 -> 169.0	18.6	9.1	27.2

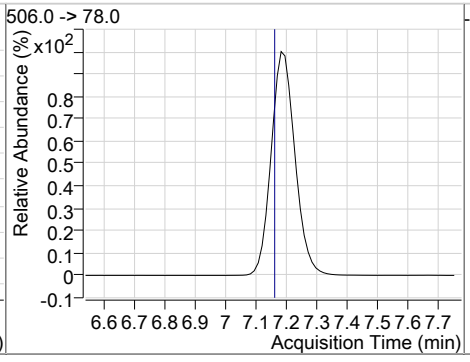


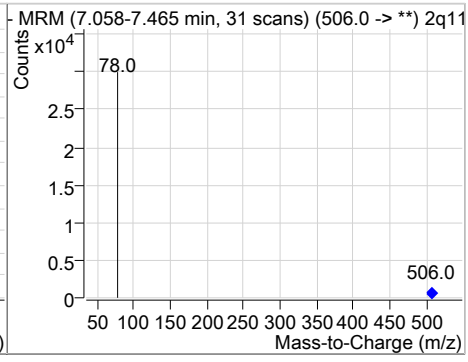




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	10.54	7.18	0.03	21649				

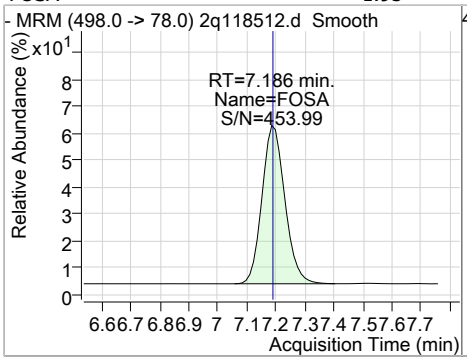


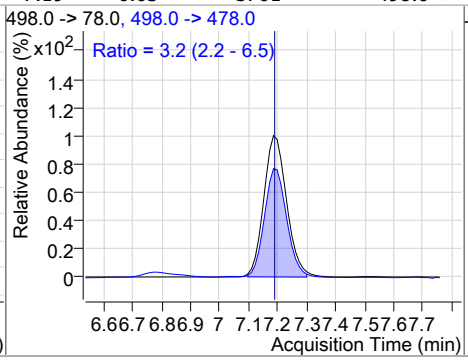


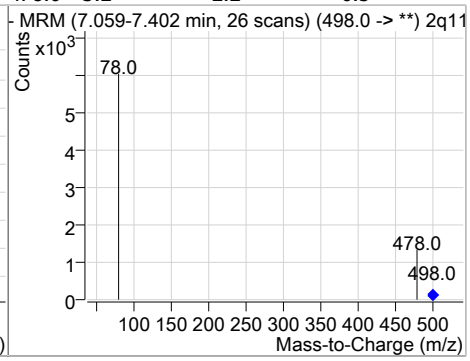


Perfluorinated Compounds by LC/MS/MS

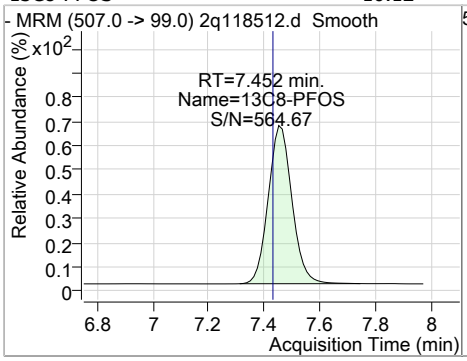
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	1.95	7.19	0.03	3701	498.0 -> 478.0	3.2	2.2	6.5

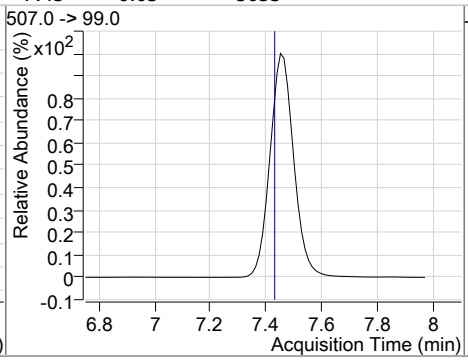


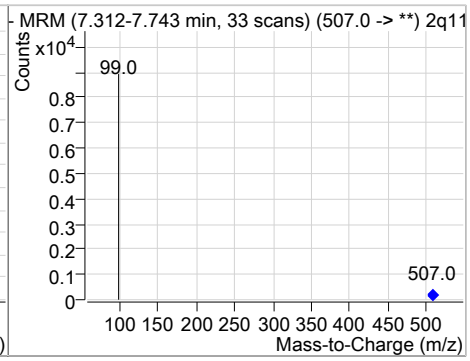




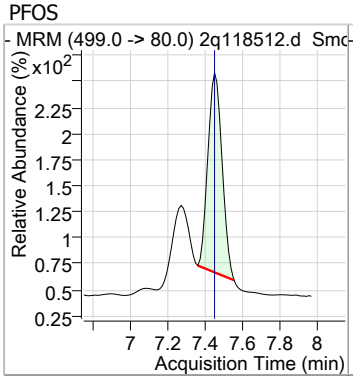
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	10.12	7.45	0.03	5653				

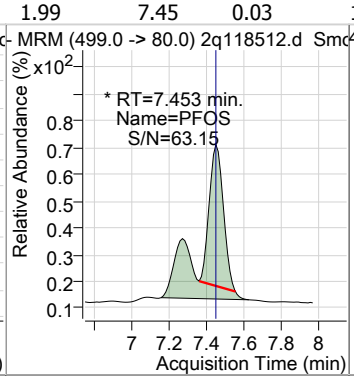


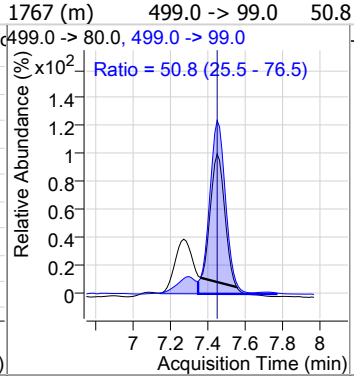


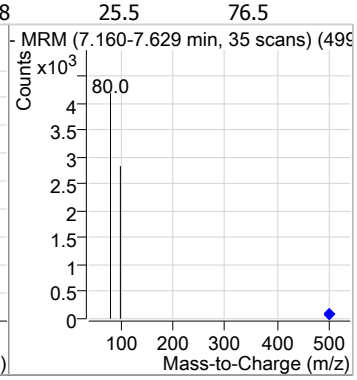


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	1.99	7.45	0.03	1767 (m)	499.0 -> 99.0	50.8	25.5	76.5

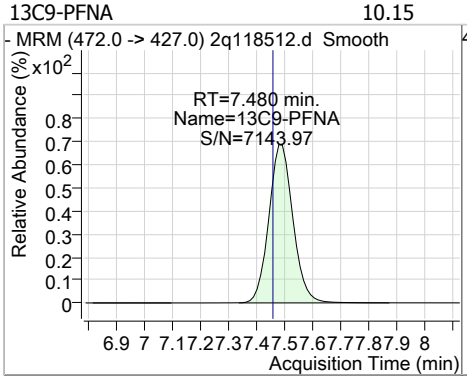


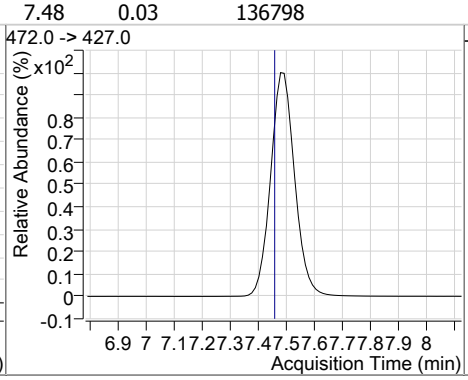


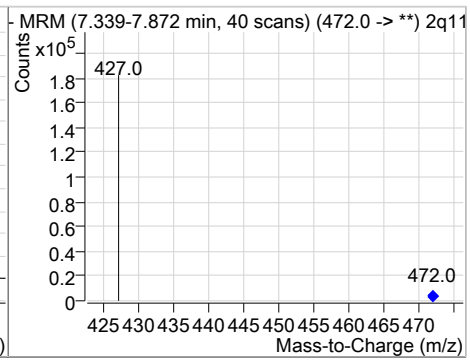




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	10.15	7.48	0.03	136798				

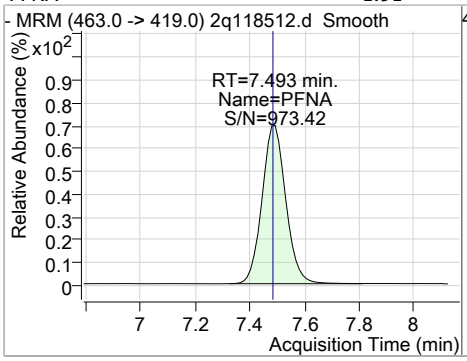


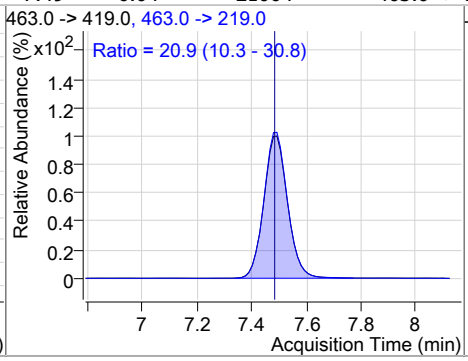


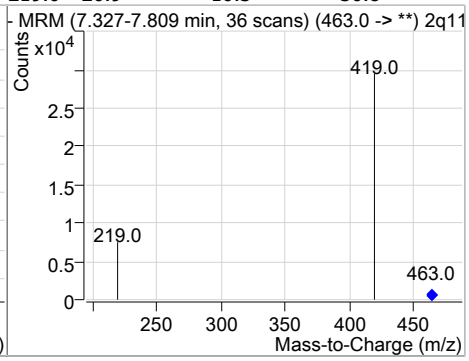


Perfluorinated Compounds by LC/MS/MS

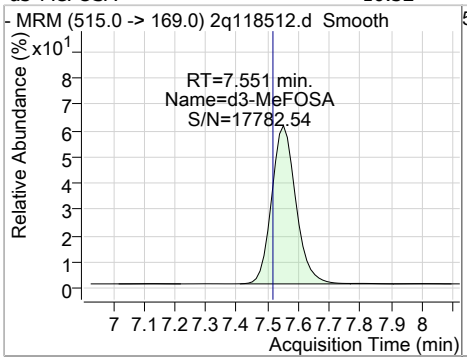
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	1.91	7.49	0.04	21004	463.0 -> 219.0	20.9	10.3	30.8

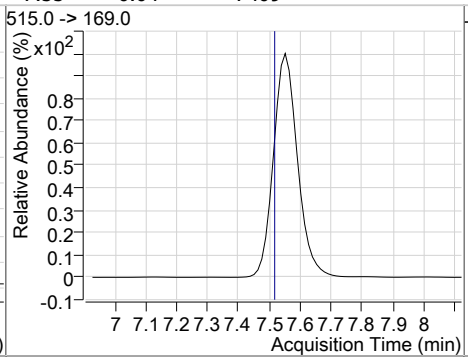


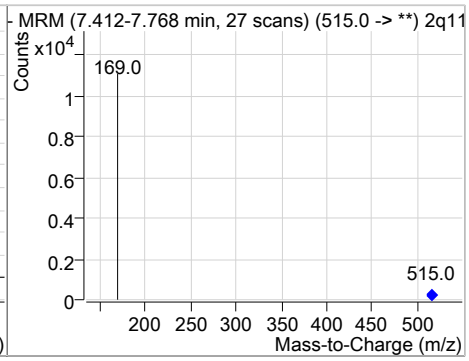




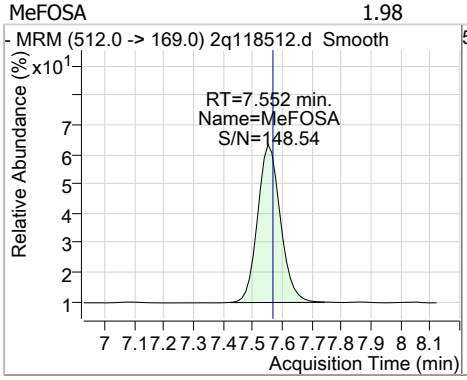
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	10.32	7.55	0.04	7409				

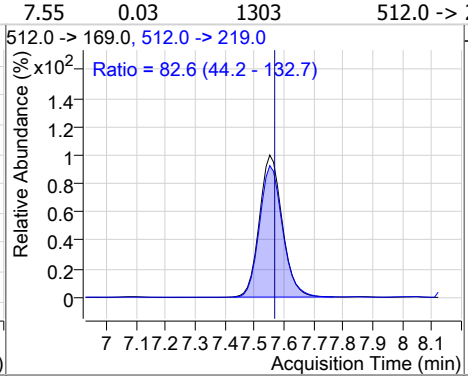


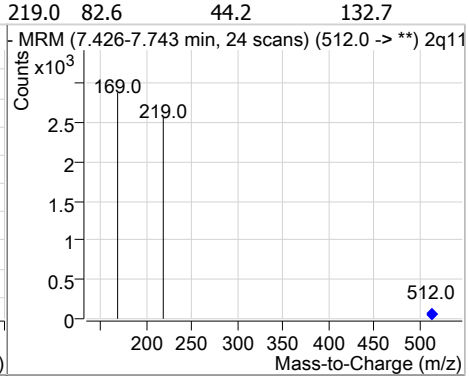




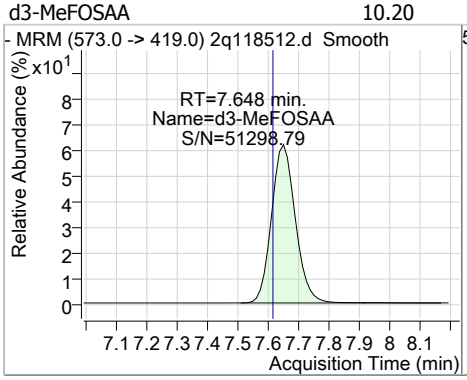
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	1.98	7.55	0.03	1303	512.0 -> 219.0	82.6	44.2	132.7

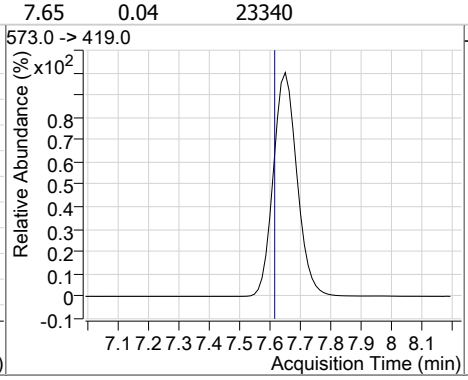


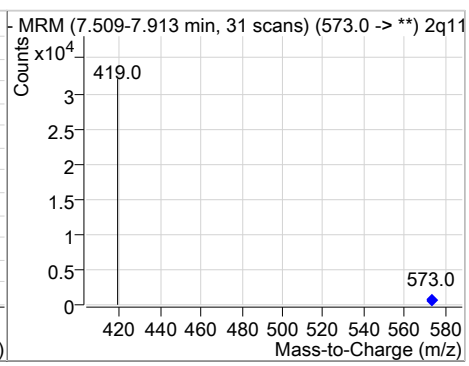




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	10.20	7.65	0.04	23340				

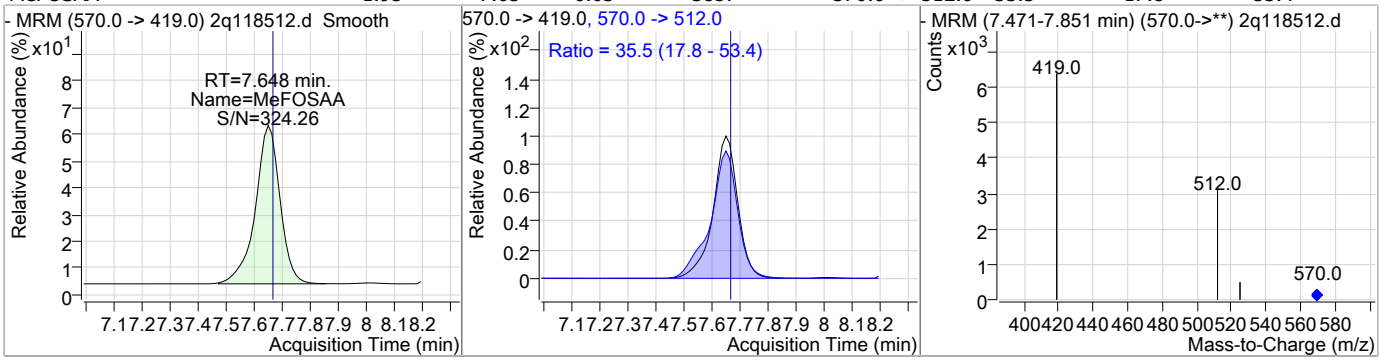




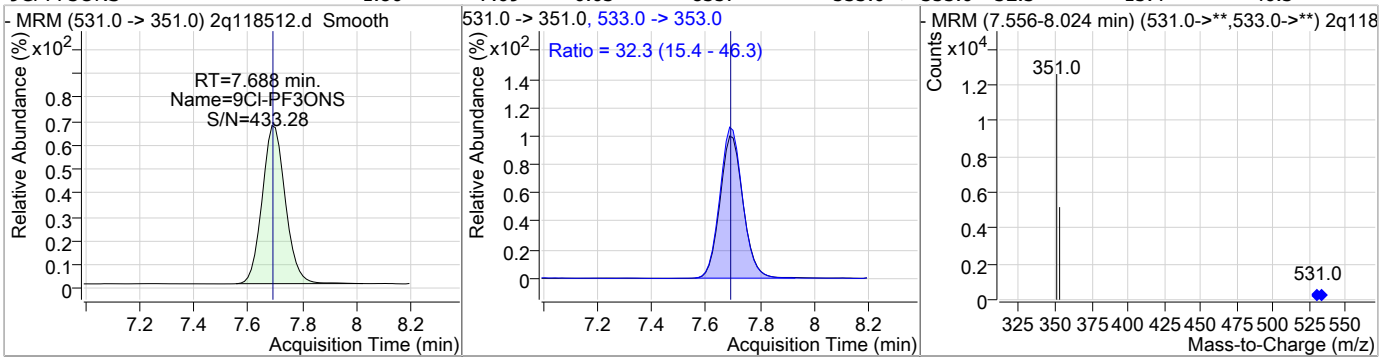


Perfluorinated Compounds by LC/MS/MS

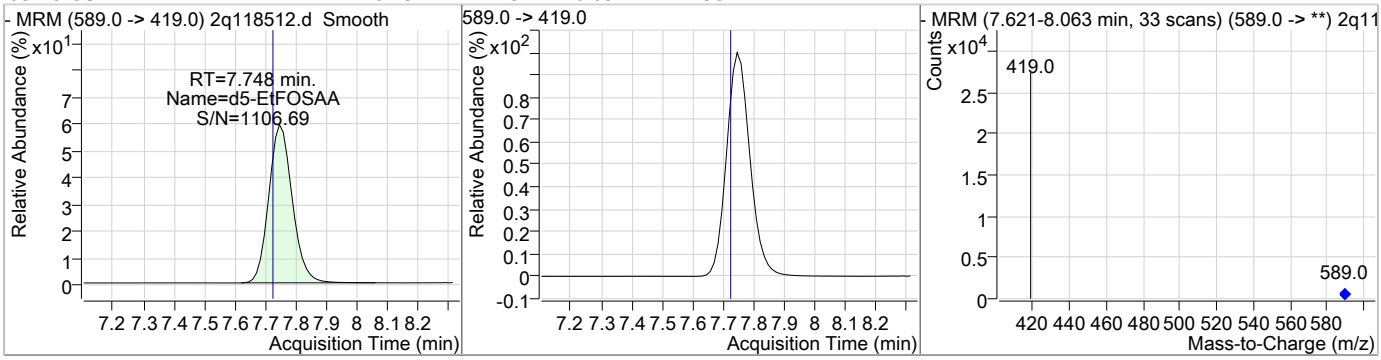
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	1.95	7.65	0.03	3857	570.0 -> 512.0	35.5	17.8	53.4



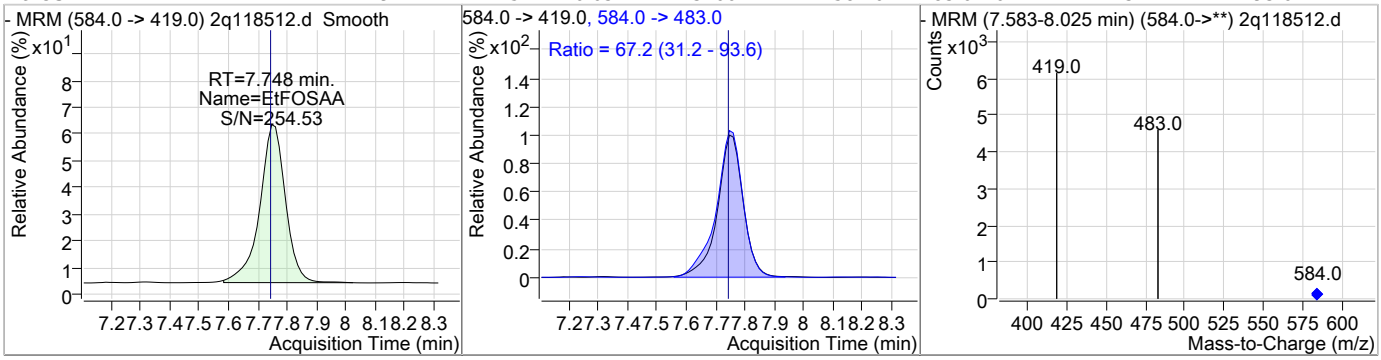
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	1.86	7.69	0.03	8357	533.0 -> 353.0	32.3	15.4	46.3



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	10.13	7.75	0.03	19547				

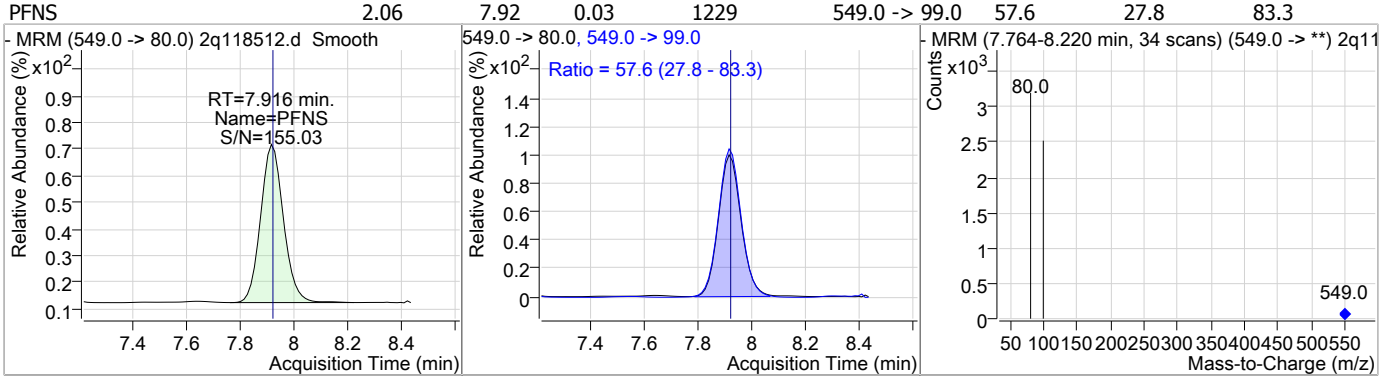


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	1.97	7.75	0.03	3460	584.0 -> 483.0	67.2	31.2	93.6

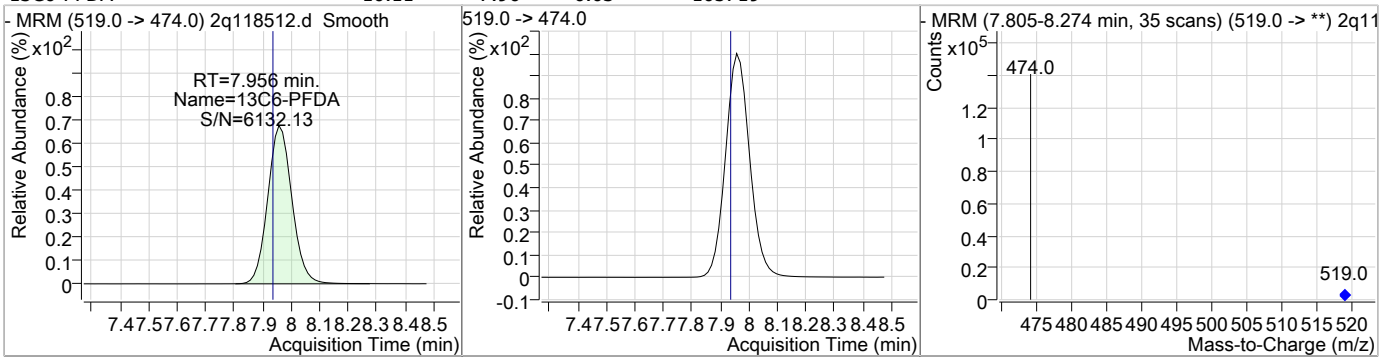


Perfluorinated Compounds by LC/MS/MS

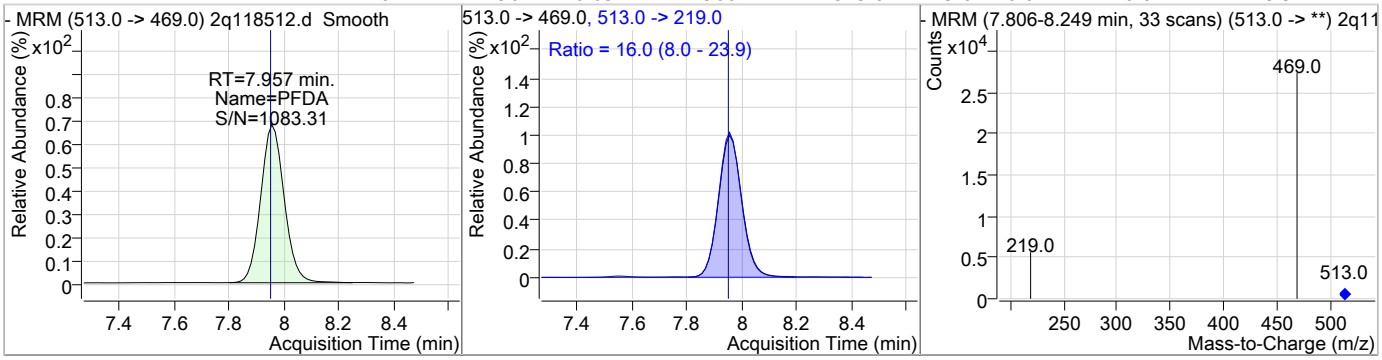
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	2.06	7.92	0.03	1229	549.0 -> 99.0	57.6	27.8	83.3



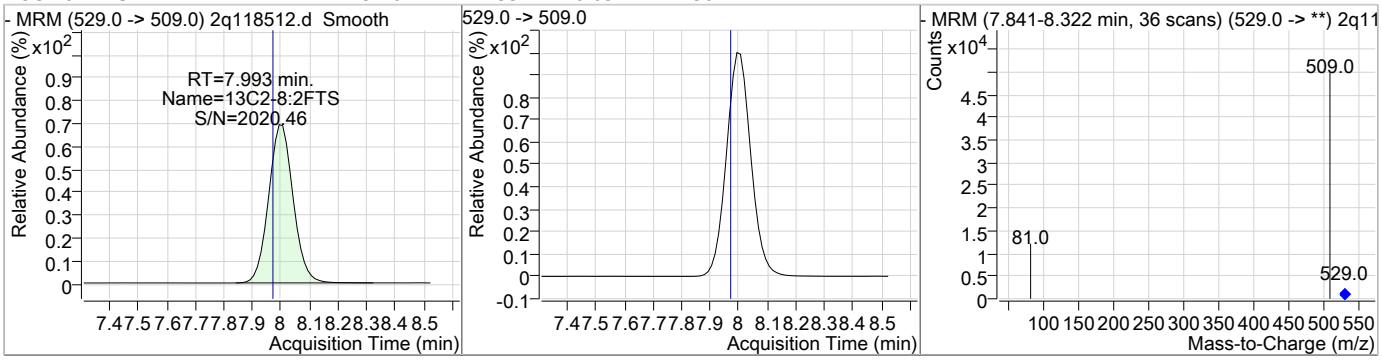
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	10.11	7.96	0.03	105719				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	1.87	7.96	0.03	19602	513.0 -> 219.0	16.0	8.0	23.9

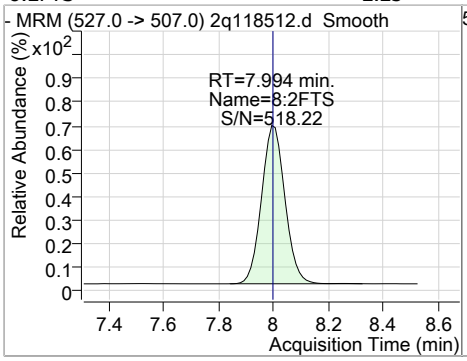


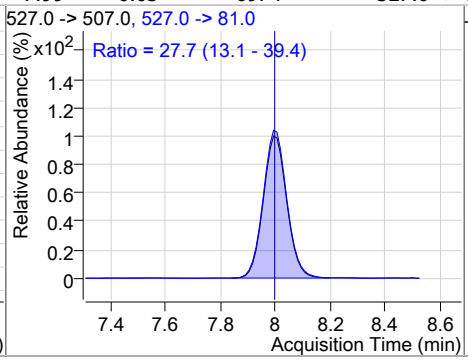
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	9.40	7.99	0.03	36422				

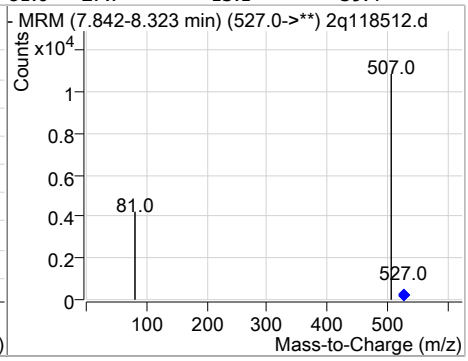


Perfluorinated Compounds by LC/MS/MS

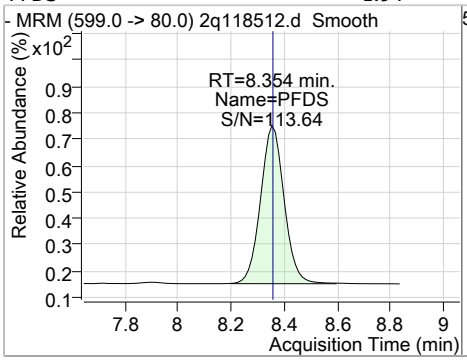
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	2.23	7.99	0.03	6974	527.0 -> 81.0	27.7	13.1	39.4

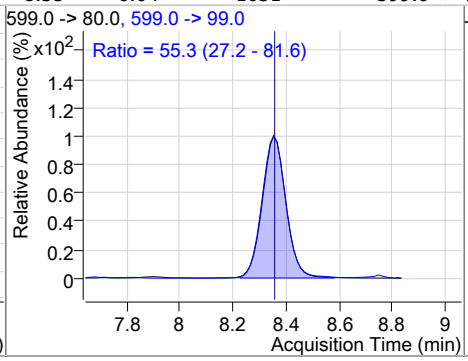


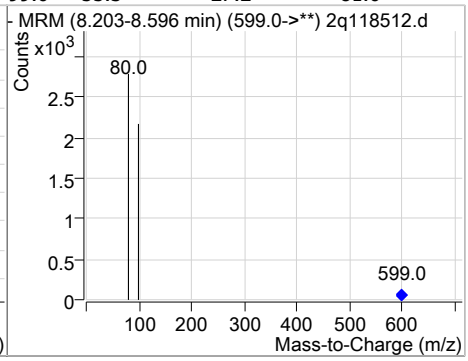




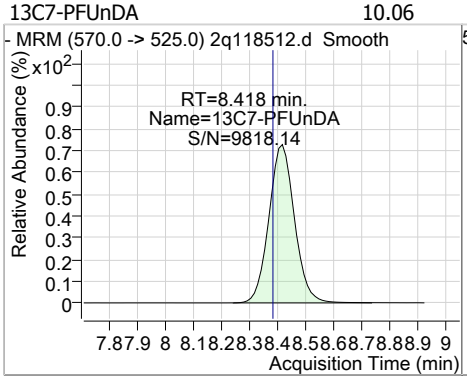
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	1.94	8.35	0.04	1051	599.0 -> 99.0	55.3	27.2	81.6

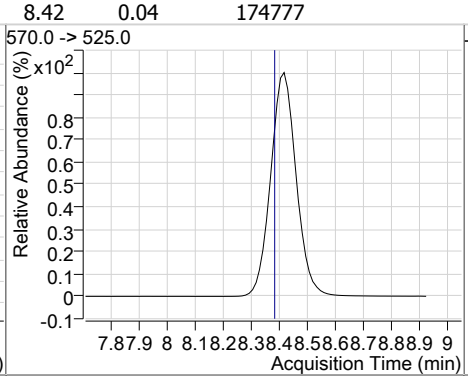


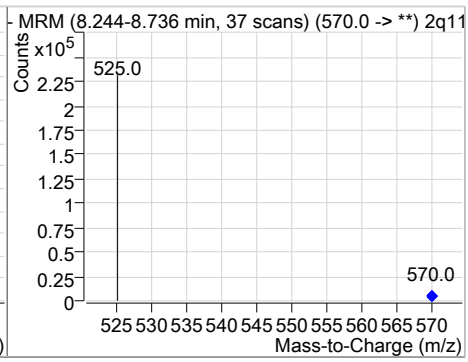




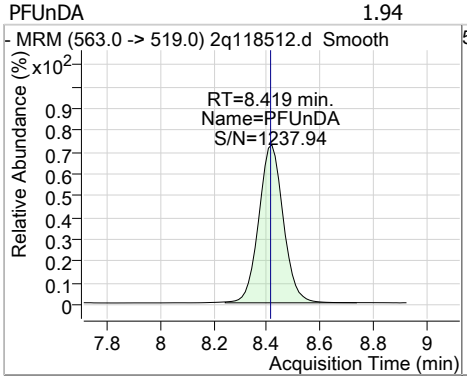
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	10.06	8.42	0.04	174777				

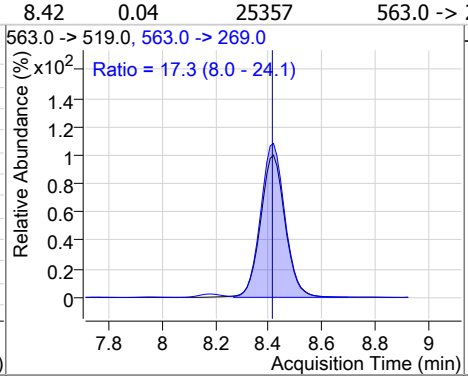


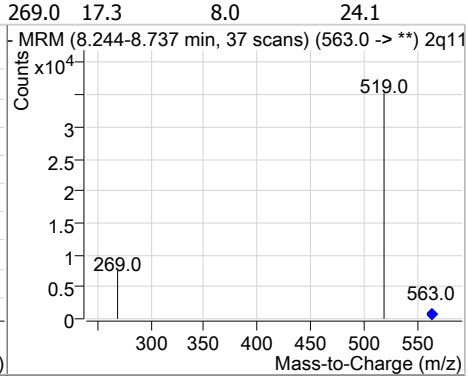




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	1.94	8.42	0.04	25357	563.0 -> 269.0	17.3	8.0	24.1

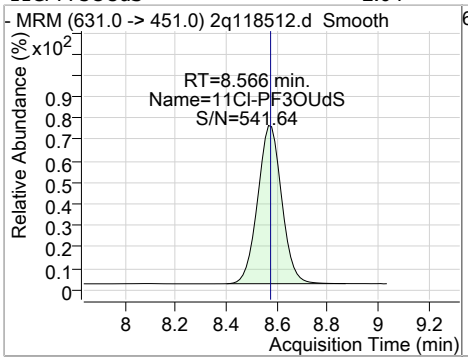


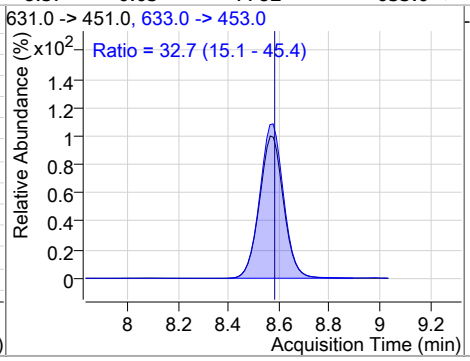


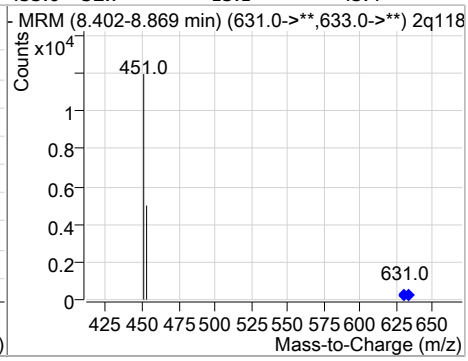


Perfluorinated Compounds by LC/MS/MS

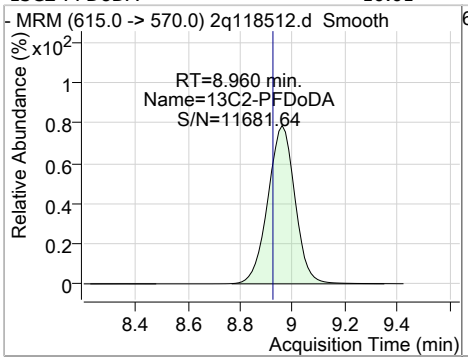
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	2.04	8.57	0.03	7782	633.0 -> 453.0	32.7	15.1	45.4

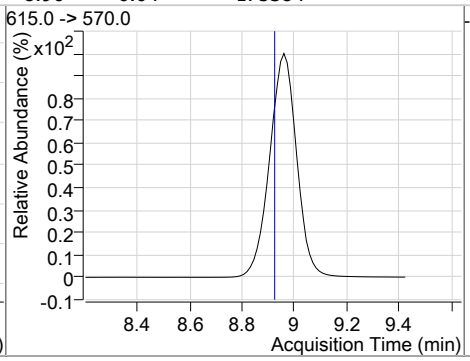


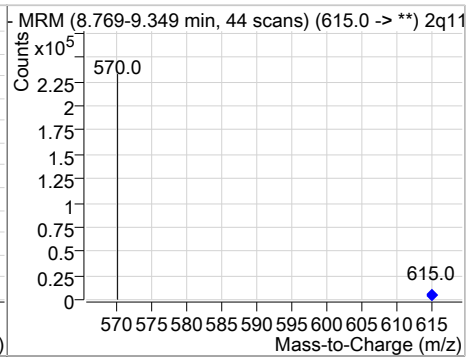




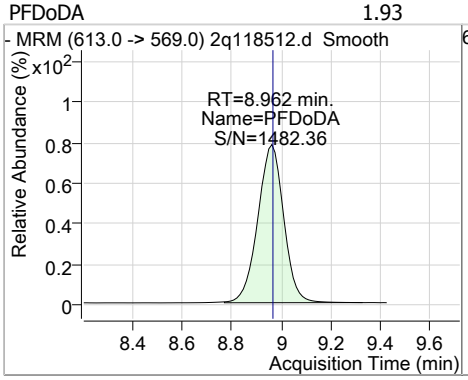
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	10.01	8.96	0.04	175384				

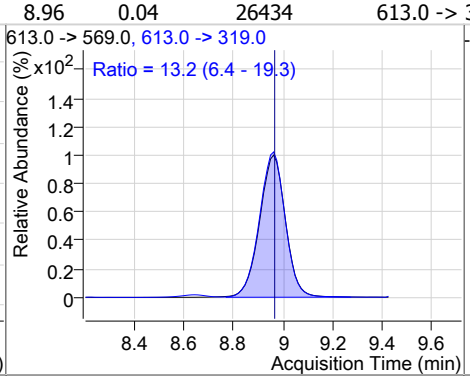


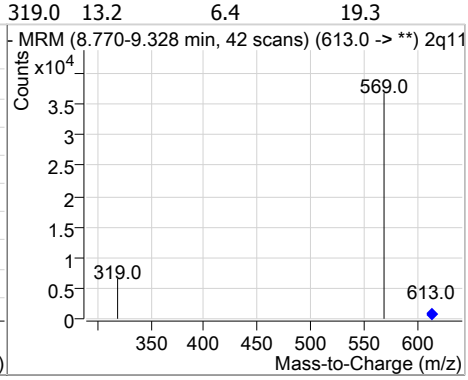




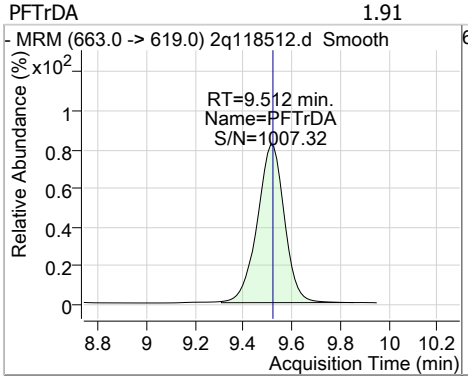
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	1.93	8.96	0.04	26434	613.0 -> 319.0	13.2	6.4	19.3

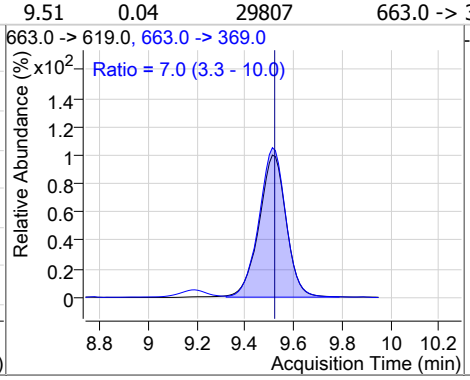


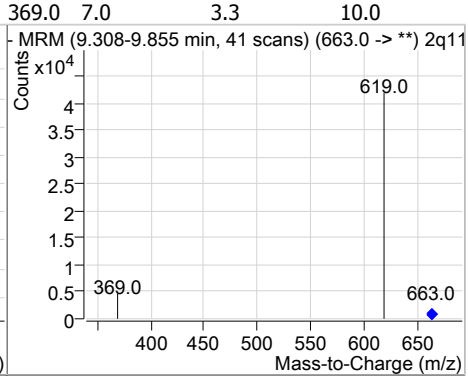




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	1.91	9.51	0.04	29807	663.0 -> 369.0	7.0	3.3	10.0

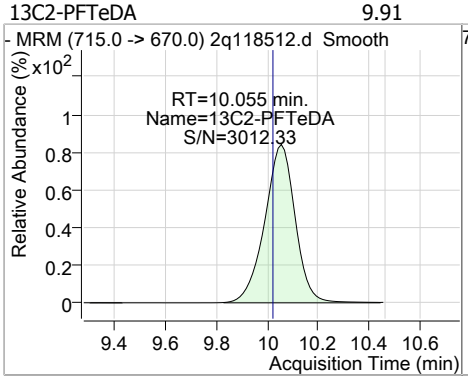


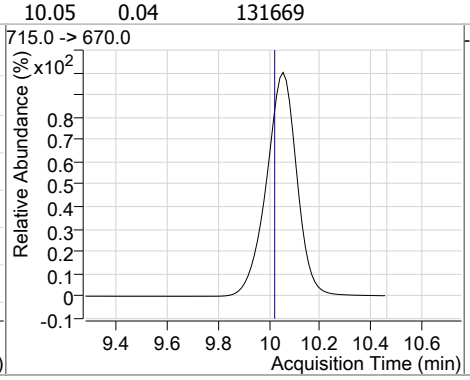


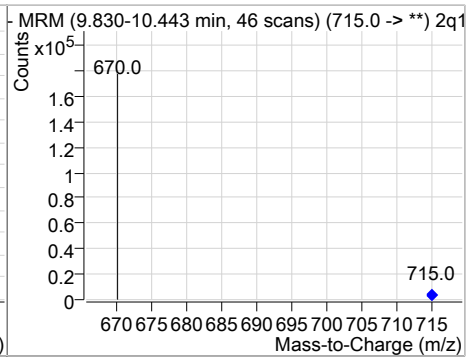


Perfluorinated Compounds by LC/MS/MS

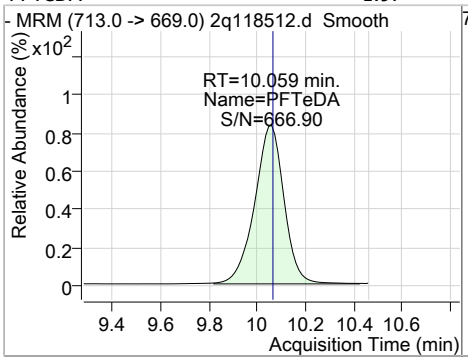
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	9.91	10.05	0.04	131669				

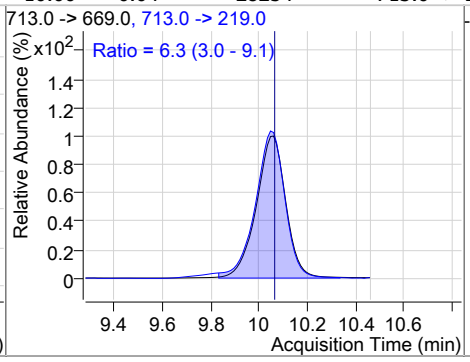


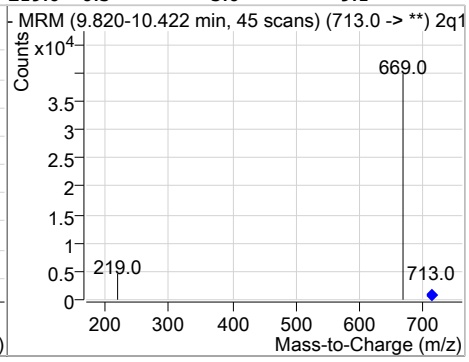




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	1.97	10.06	0.04	28254	713.0 -> 219.0	6.3	3.0	9.1







Manual Integration Approval Summary

Sample Number: S2Q1691-IC1691
Lab FileID: 2Q118512.D
Injection Time: 01/02/24 13:07
Method: EPA 537M QSM5.3 B-15
Analyst approved: 01/03/24 15:12 Lindsay Ritner
Supervisor approved: 01/04/24 11:31 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.24	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.45	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Natasha Gumtie 01/04/24 11:31

Perfluorinated Compounds by LC/MS/MS

Data File : 2q118513.d
Operator : lindsayr
Acq. Method : 537_ID.m
Acq. Date-Time : 1/2/2024 1:24:05 PM
Sample Name : ic1691-5
Vial : P1-A5
DA Method File : ID_010224_S2Q1691.quantmethod.xml
Batch Name : s2q1691.batch.bin
Sample Information : op401,S2Q1691,250,,,1.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M5-EtFOSAA	7.735	589.0 -> 419.0	19987	10.00	µg/L	0.013
M4-PFBA	2.252	217.0 -> 172.0	51702	10.00	µg/L	0.013
M5-PFPeA	4.074	268.0 -> 223.0	79833	10.00	µg/L	0.013
M5-PFHxA	5.326	318.0 -> 273.0	98502	10.00	µg/L	-0.013
M4-PFHpA	6.195	367.0 -> 322.0	87626	10.00	µg/L	-0.013
M8-PFOA	6.887	421.0 -> 376.0	173253	10.00	µg/L	0.000
M9-PFNA	7.467	472.0 -> 427.0	137237	10.00	µg/L	0.013
M6-PFDA	7.944	519.0 -> 474.0	107249	10.00	µg/L	0.013
M7-PFUnDA	8.393	570.0 -> 525.0	177074	10.00	µg/L	0.013
M2-PFDoDA	8.935	615.0 -> 570.0	175728	10.00	µg/L	0.015
M2-PFTeDA	10.030	715.0 -> 670.0	131897	10.00	µg/L	0.012
M8-FOSA	7.159	506.0 -> 78.0	21432	10.00	µg/L	0.000
M3-PFBS	4.330	302.0 -> 99.0	6071	10.00	µg/L	0.000
M3-PFHxS	6.218	402.0 -> 99.0	5746	10.00	µg/L	-0.025
M8-PFOS	7.427	507.0 -> 99.0	5876	10.00	µg/L	0.000
M2-4:2FTS	5.221	329.0 -> 309.0	35482	10.00	µg/L	-0.013
M2-6:2FTS	6.872	429.0 -> 409.0	54832	10.00	µg/L	-0.013
M2-8:2FTS	7.981	529.0 -> 509.0	38518	10.00	µg/L	0.013
M3-MeFOSAA	7.622	573.0 -> 419.0	22800	10.00	µg/L	0.013
M3-HFPO-DA	5.595	287.0 -> 169.0	8268	10.00	µg/L	-0.013
M3-MeFOSA	7.526	515.0 -> 169.0	7582	10.00	µg/L	0.013
System Monitoring Compounds						
13C2-4:2FTS	5.221	329.0 -> 309.0	35482	9.62	µg/L	-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 96.2%		
13C2-6:2FTS	6.872	429.0 -> 409.0	54832	9.55	µg/L	-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 95.5%		
13C2-8:2FTS	7.981	529.0 -> 509.0	38518	9.94	µg/L	0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.4%		
13C2-PFDoDA	8.935	615.0 -> 570.0	175728	10.03	µg/L	0.015
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.3%		
13C2-PFTeDA	10.030	715.0 -> 670.0	131897	9.92	µg/L	0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.2%		
13C3-PFBS	4.330	302.0 -> 99.0	6071	10.10	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.0%		
13C3-PFHxS	6.218	402.0 -> 99.0	5746	9.39	µg/L	-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 93.9%		
13C4-PFBA	2.252	217.0 -> 172.0	51702	10.01	µg/L	0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.1%		
13C4-PFHpA	6.195	367.0 -> 322.0	87626	10.20	µg/L	-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 102.0%		
d5-EtFOSAA	7.735	589.0 -> 419.0	19987	10.36	µg/L	0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 103.6%		
13C5-PFHxA	5.326	318.0 -> 273.0	98502	9.99	µg/L	-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.9%		
13C5-PFPeA	4.074	268.0 -> 223.0	79833	10.04	µg/L	0.013

Perfluorinated Compounds by LC/MS/MS

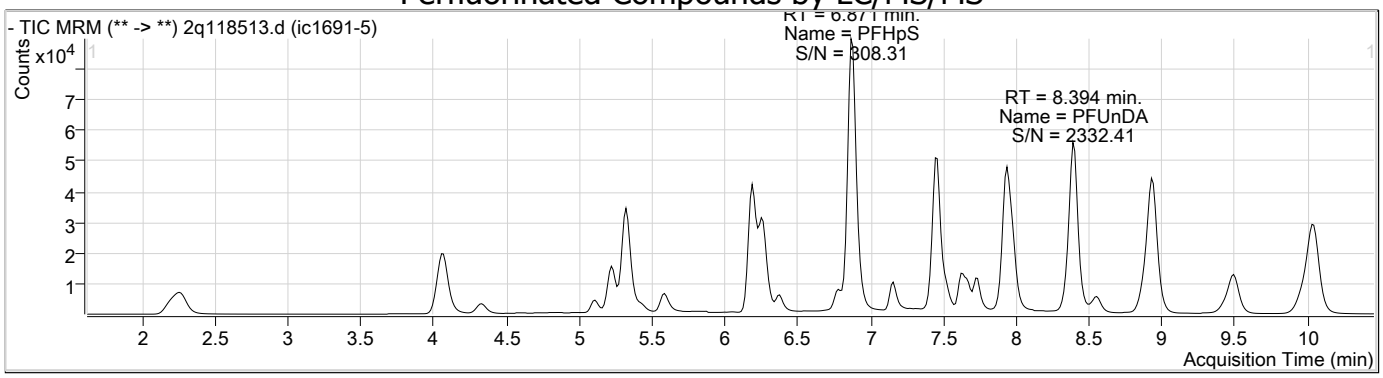
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.4%			
13C6-PFDA	7.944	519.0 -> 474.0	107249	10.26	µg/L		0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 102.6%			
13C7-PFUnDA	8.393	570.0 -> 525.0	177074	10.19	µg/L		0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.9%			
13C8-FOSA	7.159	506.0 -> 78.0	21432	10.44	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 104.4%			
13C8-PFOA	6.887	421.0 -> 376.0	173253	10.24	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 102.4%			
13C8-PFOS	7.427	507.0 -> 99.0	5876	10.52	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 105.2%			
13C9-PFNA	7.467	472.0 -> 427.0	137237	10.19	µg/L		0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.9%			
d3-MeFOSAA	7.622	573.0 -> 419.0	22800	9.97	µg/L		0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.7%			
13C3-HFPO-DA	5.595	287.0 -> 169.0	8268	9.95	µg/L		-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.5%			
d3-MeFOSA	7.526	515.0 -> 169.0	7582	10.56	µg/L		0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 105.6%			
Target Compounds							QValue
4:2FTS	5.224	327.0 -> 307.0	19081	5.29	µg/L		99
		327.0 -> 81.0	7211				
6:2FTS	6.874	427.0 -> 407.0	25648	5.36	µg/L		98
		427.0 -> 81.0	7816				
8:2FTS	7.982	527.0 -> 507.0	17703	5.35	µg/L		97
		527.0 -> 81.0	4899				
EtFOSAA	7.735	584.0 -> 419.0	8526	4.76	µg/L		100
		584.0 -> 483.0	5303				
FOSA	7.161	498.0 -> 78.0	9366	4.98	µg/L		100
		498.0 -> 478.0	388				
MeFOSAA	7.622	570.0 -> 419.0	9549	4.95	µg/L		97
		570.0 -> 512.0	3540				
PFBA	2.246	213.0 -> 169.0	8039	4.94	µg/L		100
PFBS	4.332	299.0 -> 80.0	7477	4.88	µg/L		100
		299.0 -> 99.0	2823				
PFDA	7.945	513.0 -> 469.0	51681	4.87	µg/L		100
		513.0 -> 219.0	8334				
PFDoDA	8.937	613.0 -> 569.0	66713	4.86	µg/L		100
		613.0 -> 319.0	8622				
PFDS	8.342	599.0 -> 80.0	2792	5.09	µg/L		96
		599.0 -> 99.0	1437				
PFHpA	6.196	363.0 -> 319.0	69431	4.79	µg/L		99
		363.0 -> 169.0	11807				
PFHpS	6.871	449.0 -> 80.0	5062	5.34	µg/L		99
		449.0 -> 99.0	2793				
PFHxA	5.327	313.0 -> 269.0	49401	4.87	µg/L		100
		313.0 -> 119.0	1988				
PFHxS	6.219	399.0 -> 80.0	6449	5.13	µg/L	m	99
		399.0 -> 99.0	3360				
PFNA	7.468	463.0 -> 419.0	53534	4.86	µg/L		100
		463.0 -> 219.0	10946				
PFNS	7.903	549.0 -> 80.0	3064	4.95	µg/L		100
		549.0 -> 99.0	1712				
PFOA	6.888	413.0 -> 369.0	89316	4.83	µg/L		99
		413.0 -> 169.0	15887				
PFOS	7.428	499.0 -> 80.0	4497	4.88	µg/L	m	100

Perfluorinated Compounds by LC/MS/MS

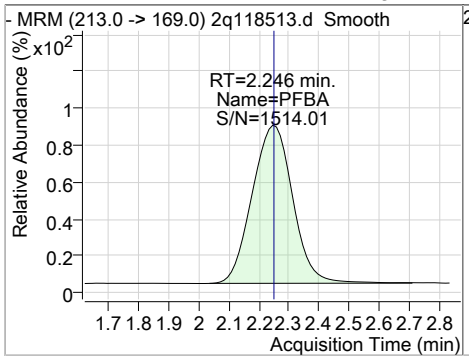
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		499.0 -> 99.0	2281			
PFPeA	4.064	263.0 -> 219.0	30606	4.86	µg/L	100
PFPeS	5.433	349.0 -> 80.0	5478	4.94	µg/L	100
		349.0 -> 99.0	2342			
PFTeDA	10.034	713.0 -> 669.0	70308	4.90	µg/L	100
		713.0 -> 219.0	4278			
PFTrDA	9.499	663.0 -> 619.0	75190	4.80	µg/L	99
		663.0 -> 369.0	5244			
PFUnDA	8.394	563.0 -> 519.0	63601	4.81	µg/L	99
		563.0 -> 269.0	10445			
11Cl-PF3OUdS	8.553	631.0 -> 451.0	18901	4.94	µg/L	99
		633.0 -> 453.0	5831			
9Cl-PF3ONS	7.676	531.0 -> 351.0	21055	4.62	µg/L	97
		533.0 -> 353.0	6896			
ADONA	6.271	377.0 -> 251.0	85242	4.64	µg/L	99
		377.0 -> 85.0	21702			
HFPO-DA	5.589	329.0 -> 169.0	13120	5.12	µg/L	99
		285.0 -> 169.0	3839			
MeFOSA	7.527	512.0 -> 169.0	3057	4.54	µg/L	98
		512.0 -> 219.0	2755			
4-PFECHS	6.780	461.0 -> 381.0	22301	4.53	µg/L	99
		461.0 -> 99.0	7833			
FBSA	5.116	298.0 -> 78.0	14301	4.46	µg/L	98
		298.0 -> 64.0	1614			
FHxSA	6.383	398.0 -> 78.0	15124	4.77	µg/L	99
		398.0 -> 64.0	1665			

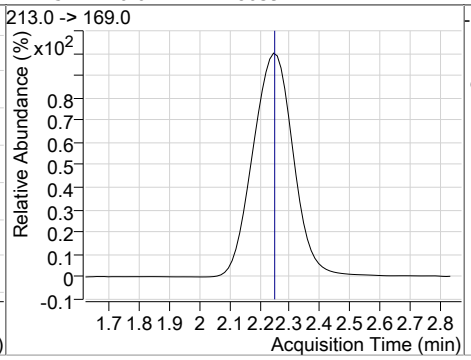
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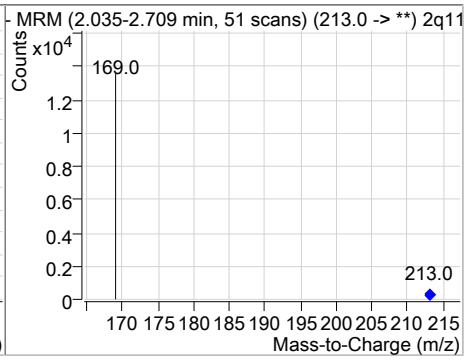
Perfluorinated Compounds by LC/MS/MS



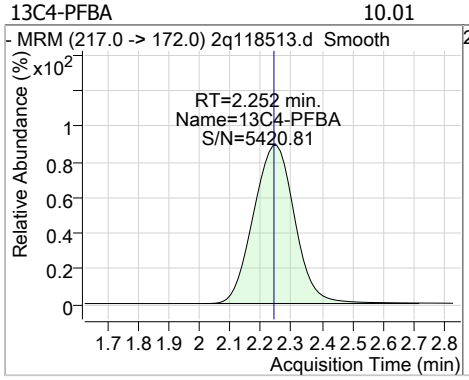
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	4.94	2.25	0.01	8039				

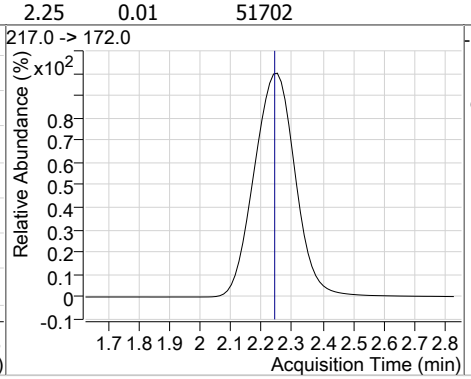


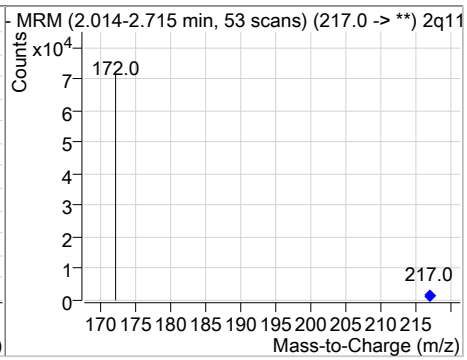




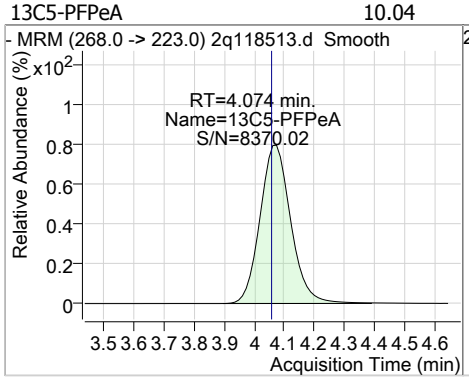
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	10.01	2.25	0.01	51702				

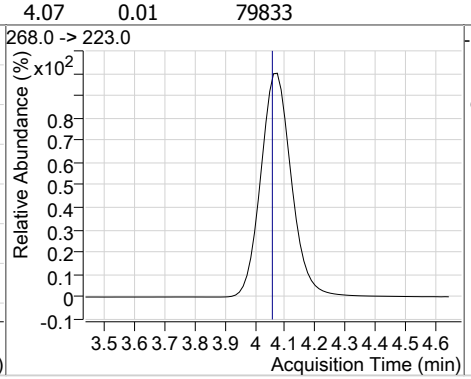


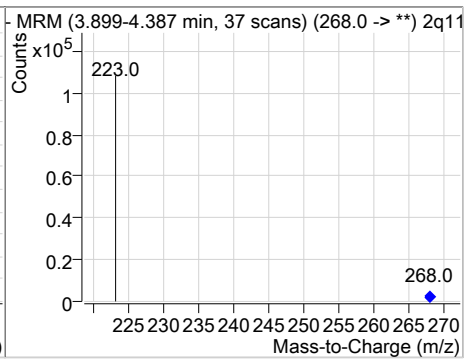




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	10.04	4.07	0.01	79833				

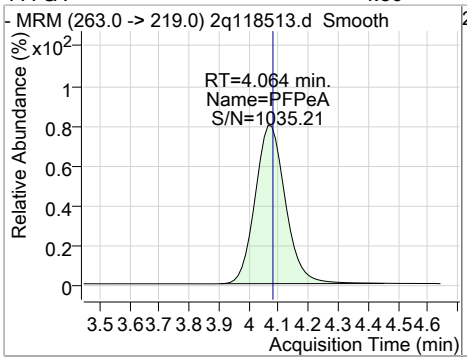


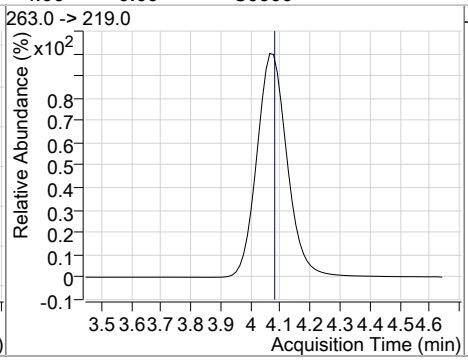


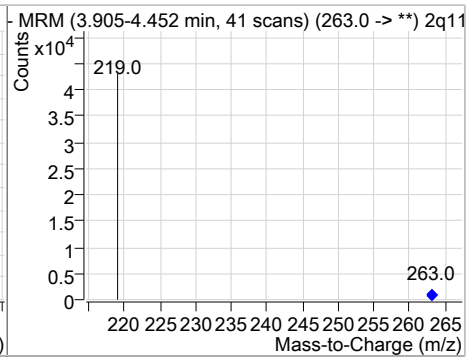


Perfluorinated Compounds by LC/MS/MS

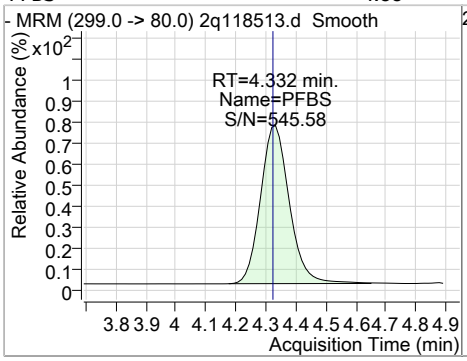
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	4.86	4.06	0.00	30606				

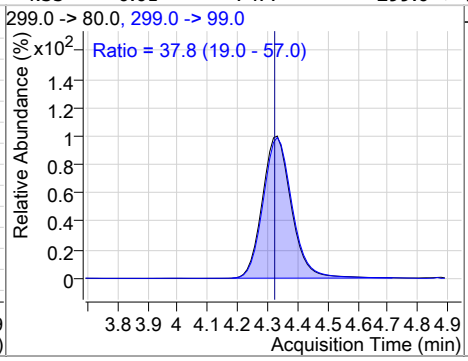


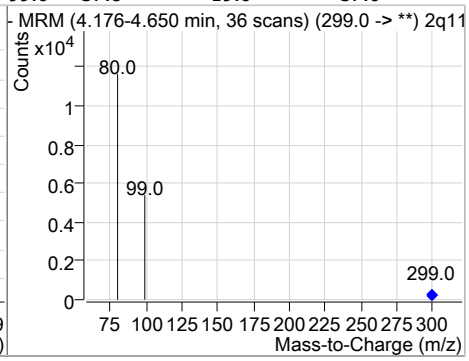




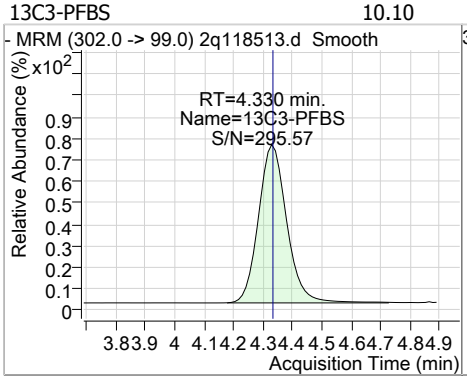
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	4.88	4.33	0.01	7477	299.0 -> 99.0	37.8	19.0	57.0

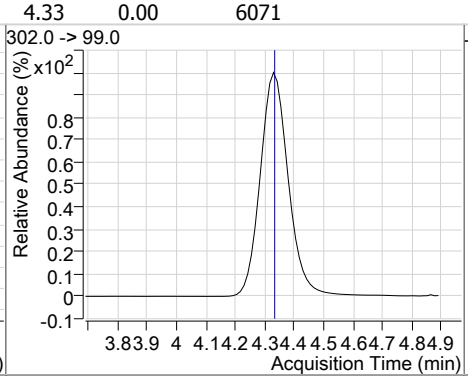


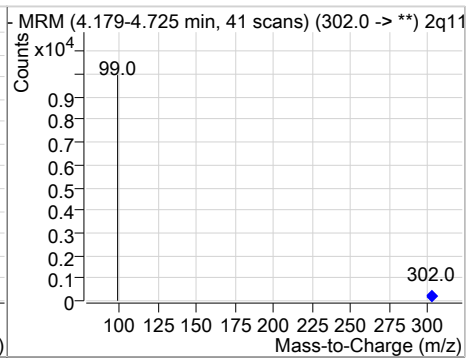




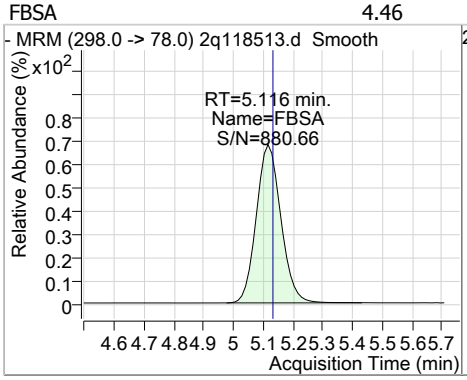
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	10.10	4.33	0.00	6071				

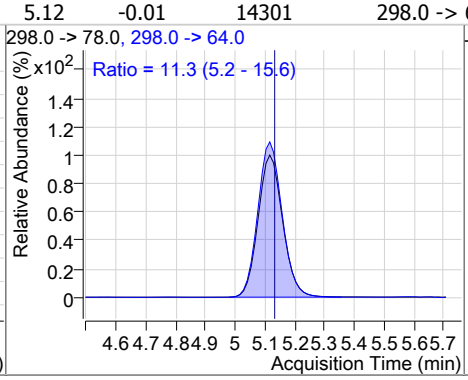


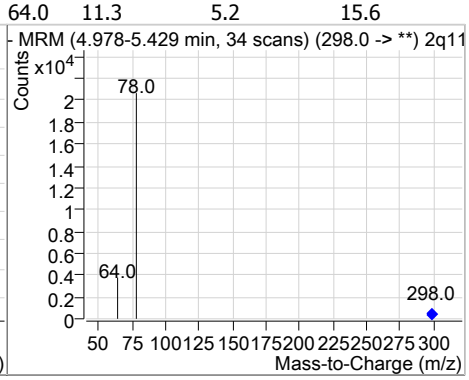




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	4.46	5.12	-0.01	14301	298.0 -> 64.0	11.3	5.2	15.6

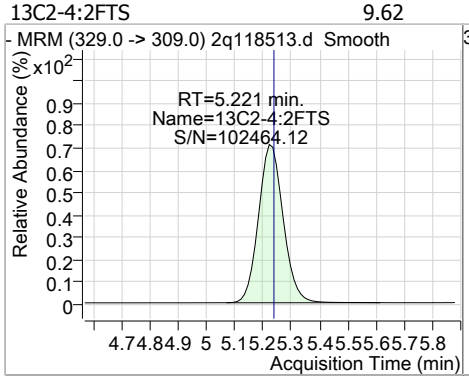


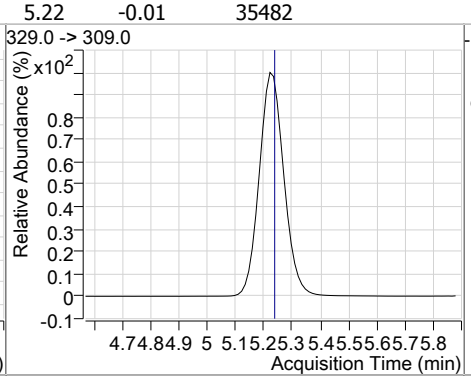


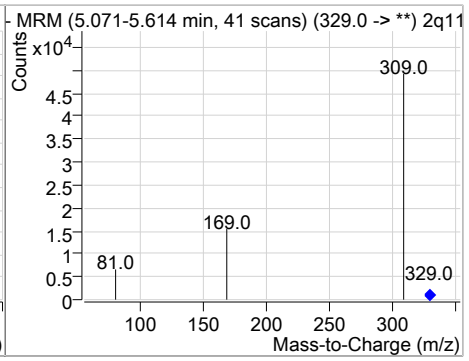


Perfluorinated Compounds by LC/MS/MS

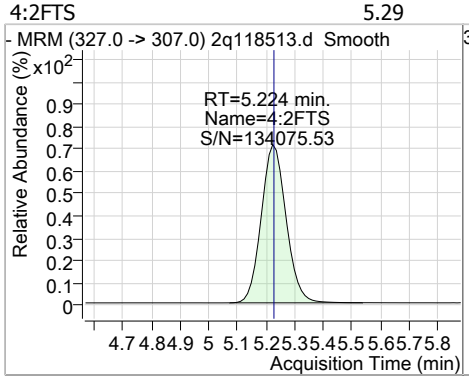
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	9.62	5.22	-0.01	35482				

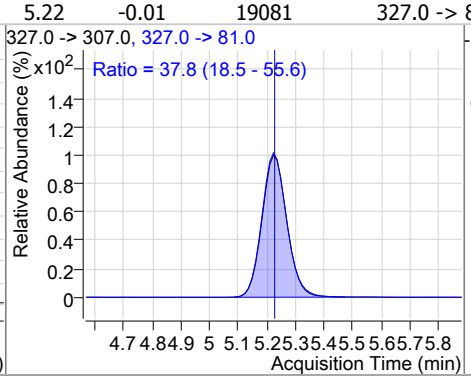


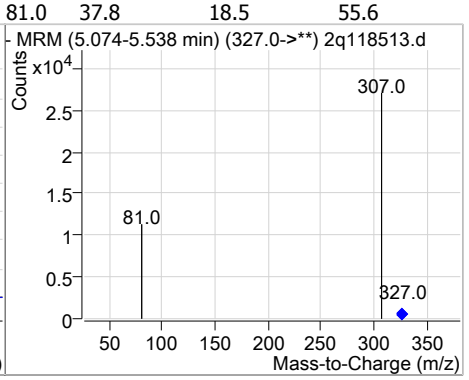




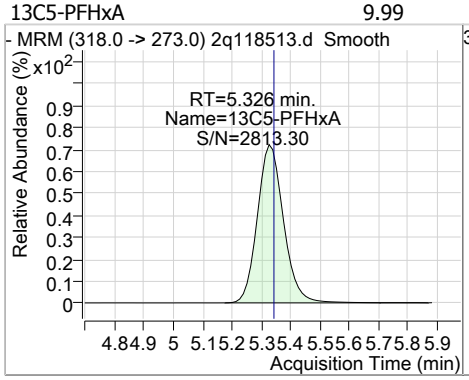
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	5.29	5.22	-0.01	19081	327.0 -> 81.0	37.8	18.5	55.6

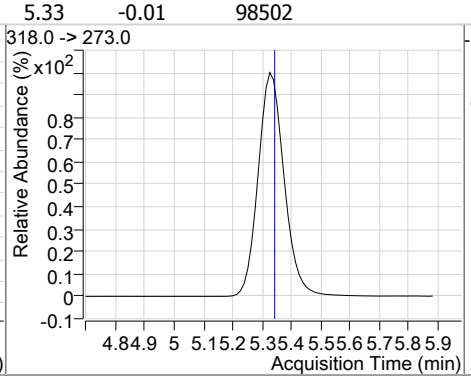


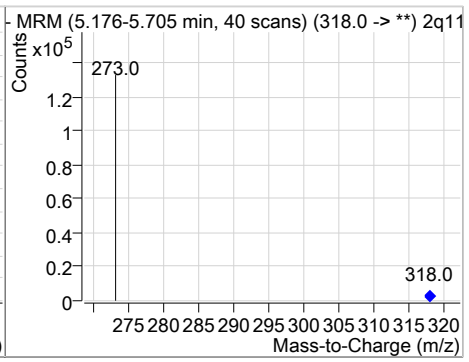




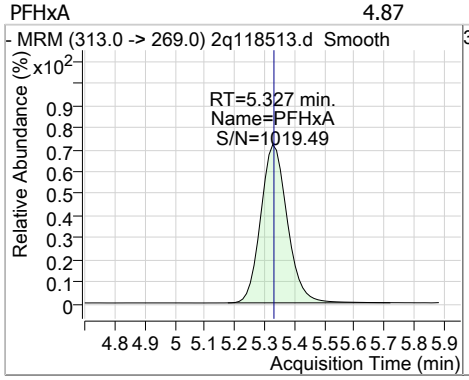
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	9.99	5.33	-0.01	98502				

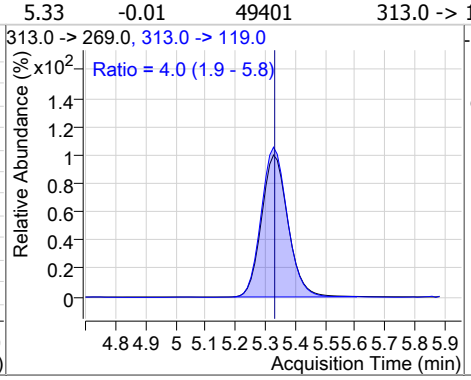


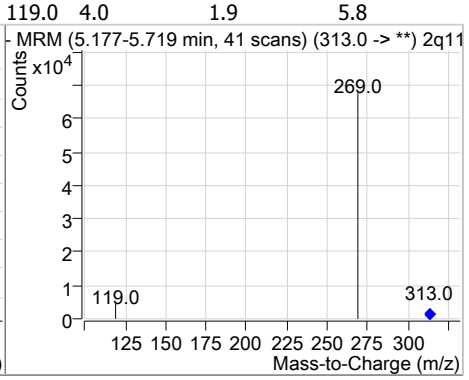




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	4.87	5.33	-0.01	49401	313.0 -> 119.0	4.0	1.9	5.8

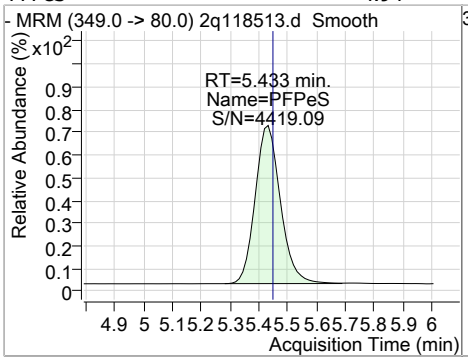


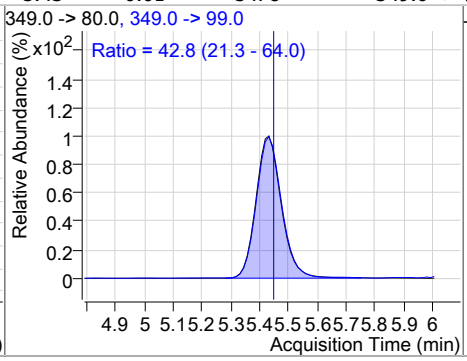


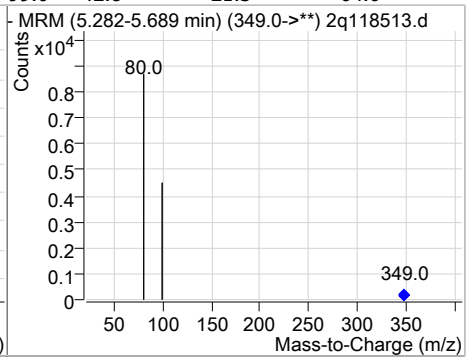


Perfluorinated Compounds by LC/MS/MS

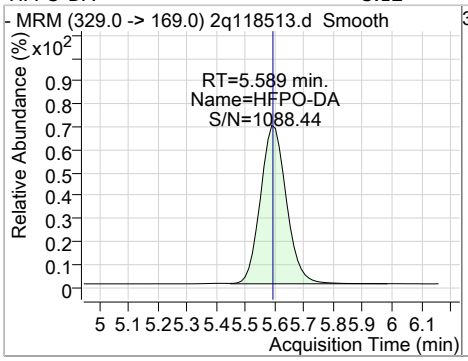
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	4.94	5.43	-0.01	5478	349.0 -> 99.0	42.8	21.3	64.0

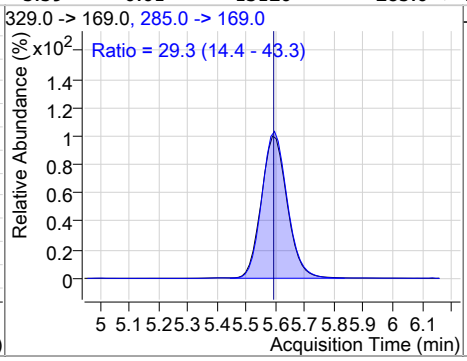


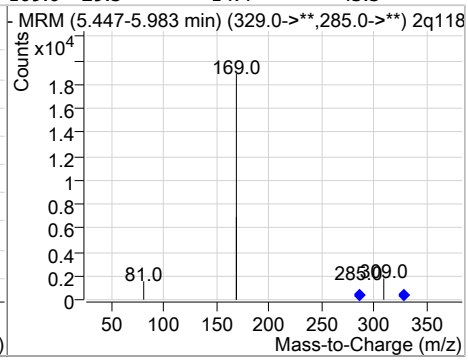




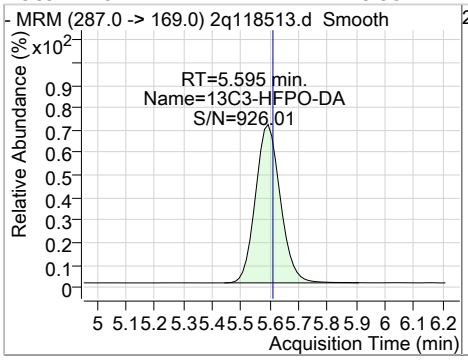
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	5.12	5.59	-0.01	13120	285.0 -> 169.0	29.3	14.4	43.3

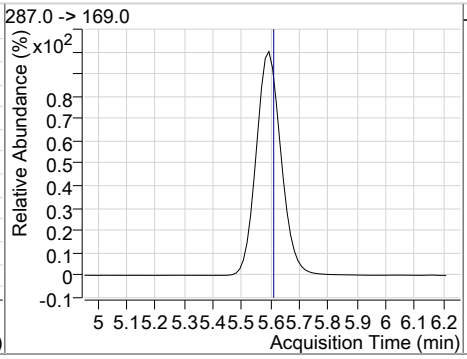


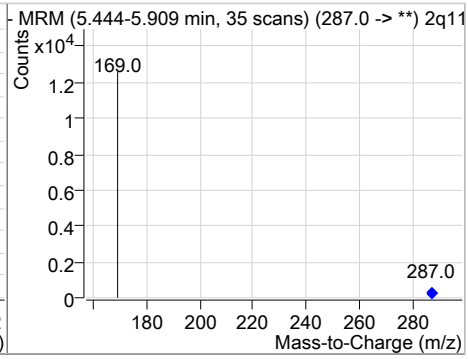




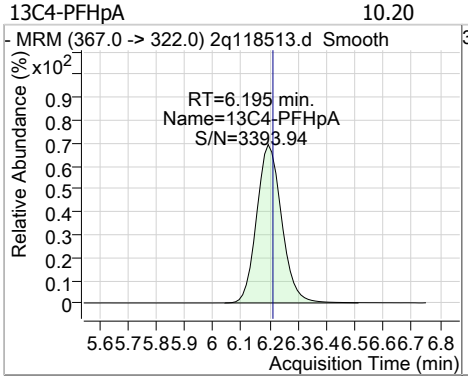
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	9.95	5.59	-0.01	8268				

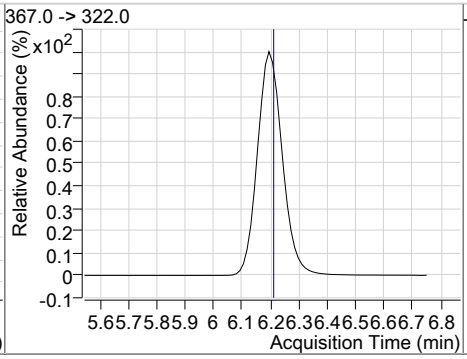


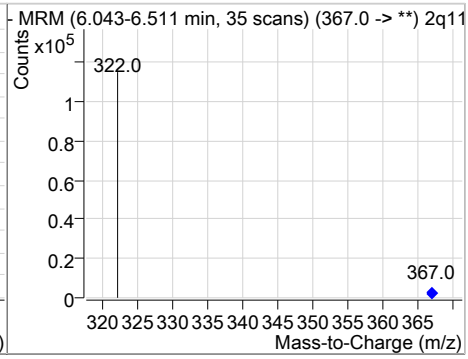




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	10.20	6.20	-0.01	87626				

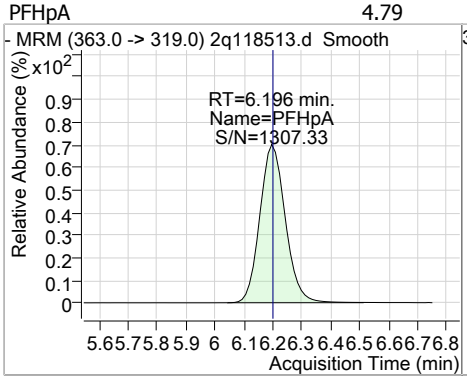


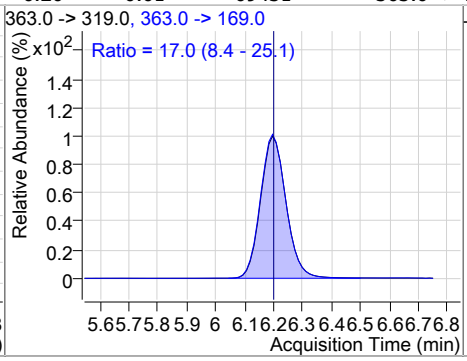


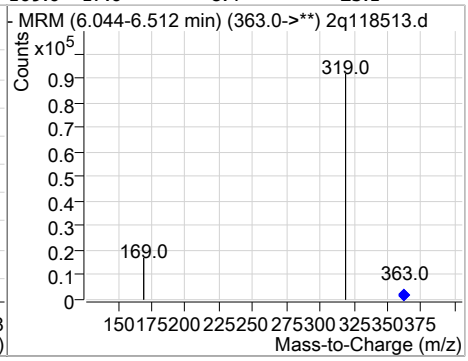


Perfluorinated Compounds by LC/MS/MS

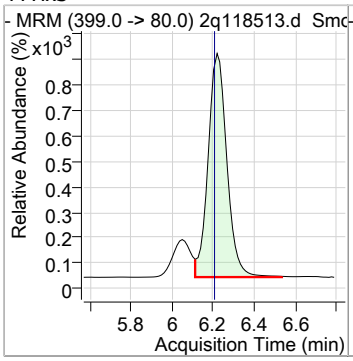
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	4.79	6.20	-0.01	69431	363.0 -> 169.0	17.0	8.4	25.1

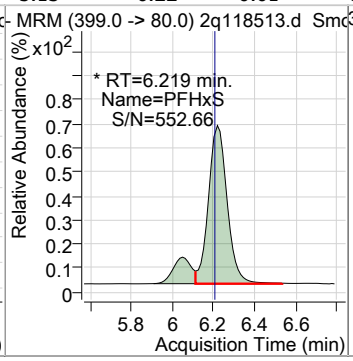


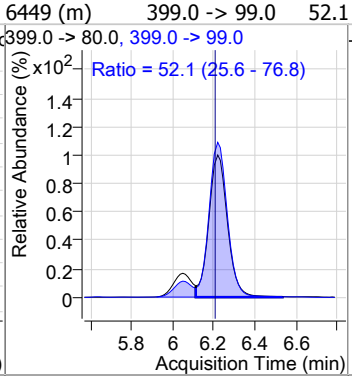


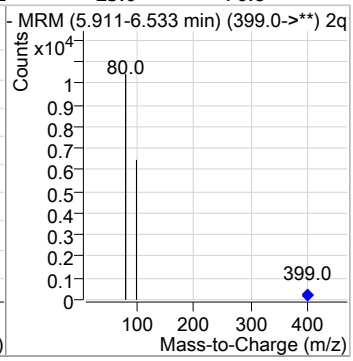


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	5.13	6.22	-0.01	6449 (m)	399.0 -> 99.0	52.1	25.6	76.8

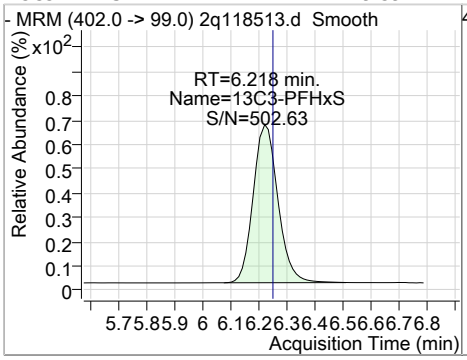


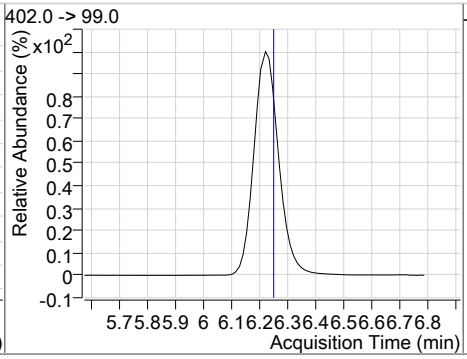


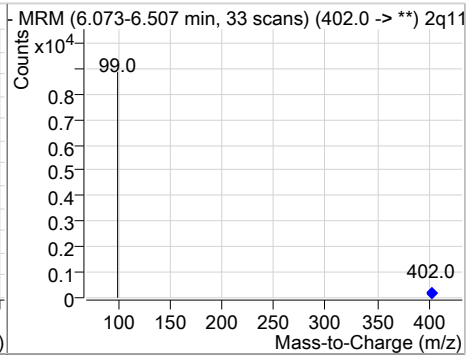




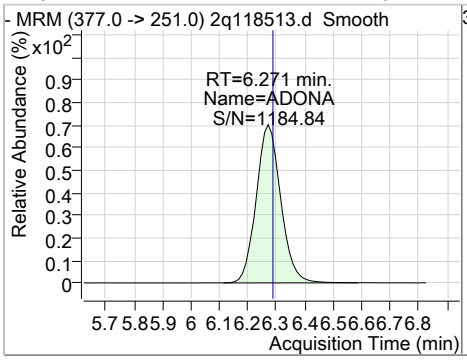
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	9.39	6.22	-0.03	5746				

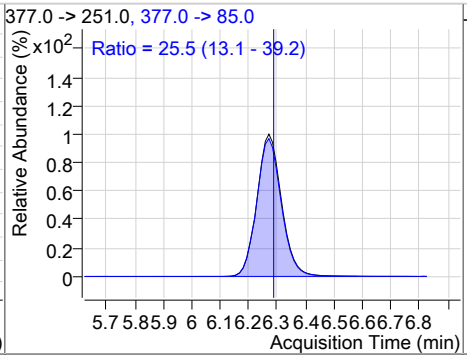


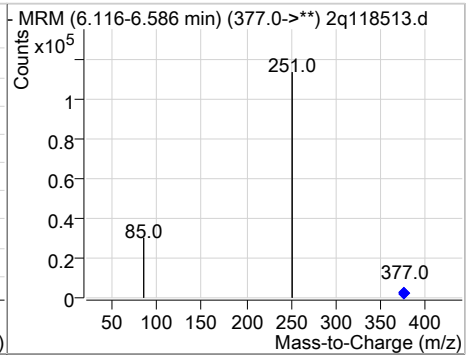




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	4.64	6.27	-0.01	85242	377.0 -> 85.0	25.5	13.1	39.2

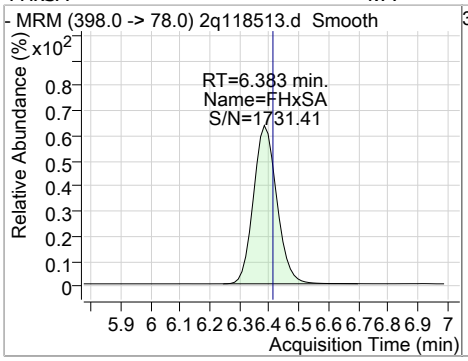


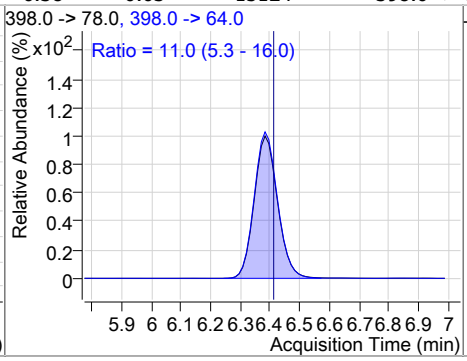


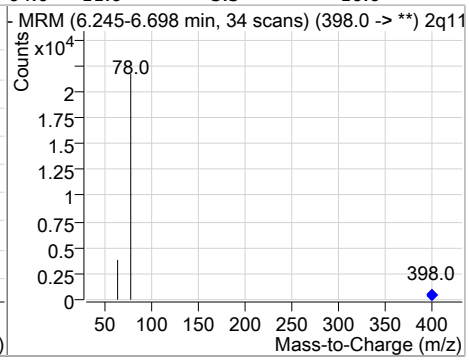


Perfluorinated Compounds by LC/MS/MS

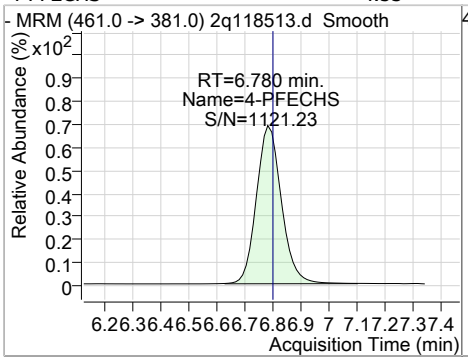
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	4.77	6.38	-0.03	15124	398.0 -> 64.0	11.0	5.3	16.0

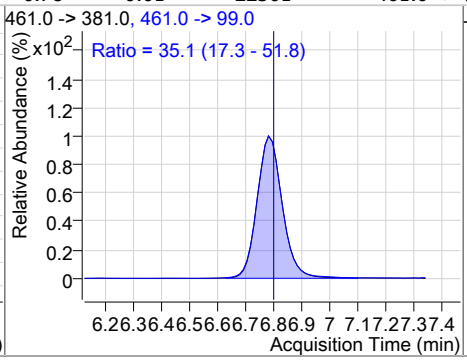


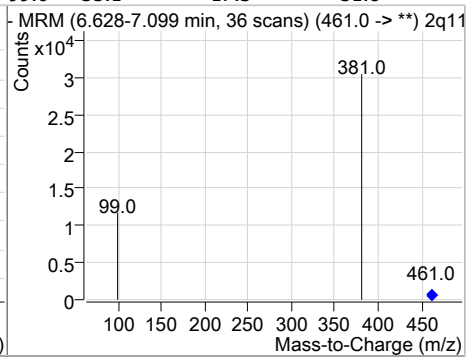




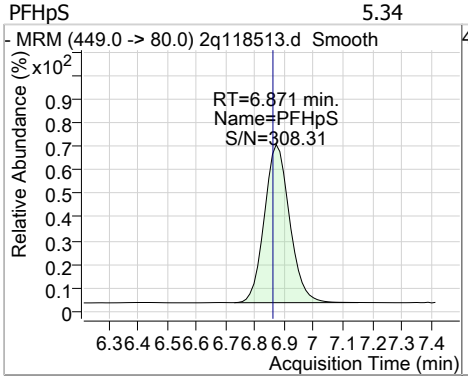
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS	4.53	6.78	-0.01	22301	461.0 -> 99.0	35.1	17.3	51.8

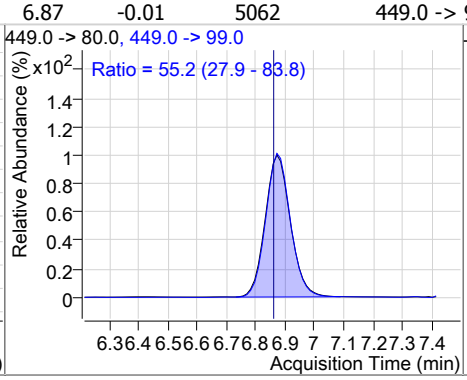


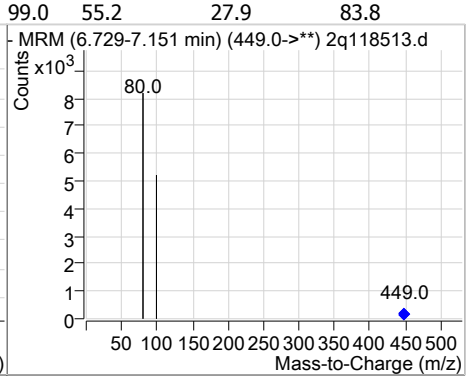




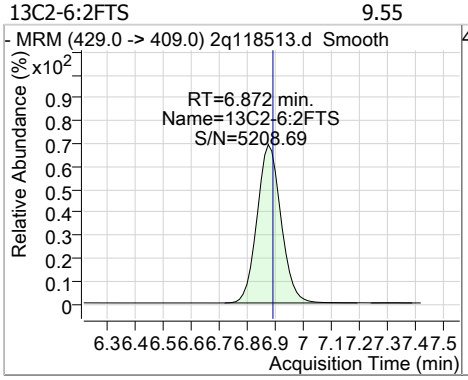
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	5.34	6.87	-0.01	5062	449.0 -> 99.0	55.2	27.9	83.8

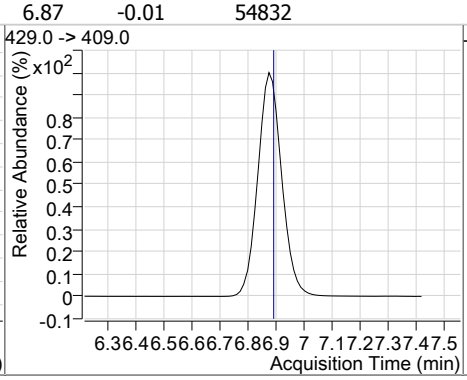


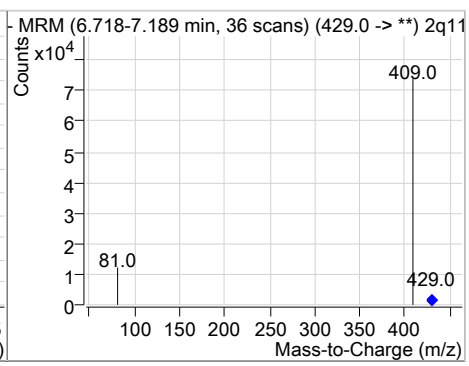




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	9.55	6.87	-0.01	54832				

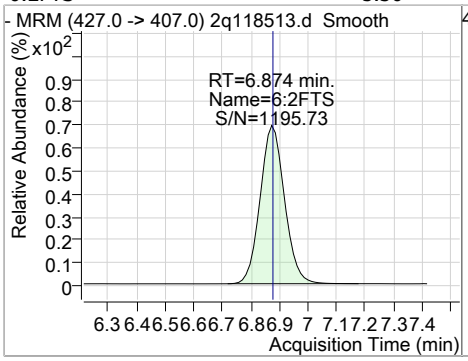


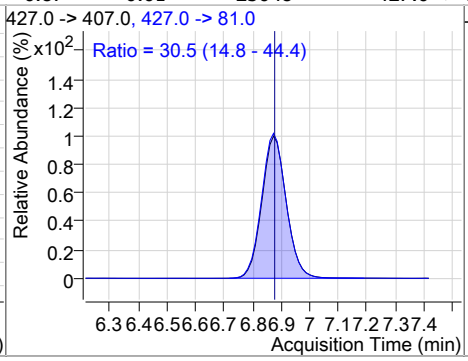


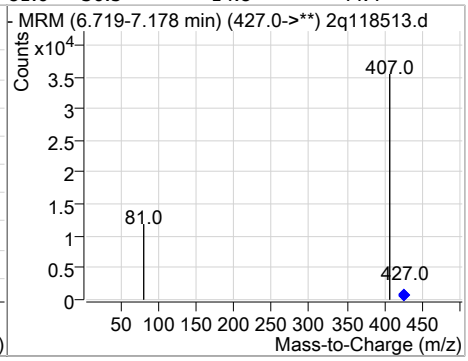


Perfluorinated Compounds by LC/MS/MS

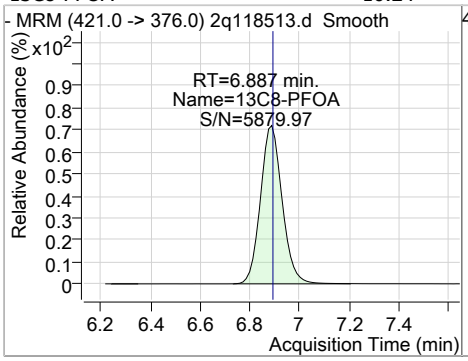
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	5.36	6.87	-0.01	25648	427.0 -> 81.0	30.5	14.8	44.4

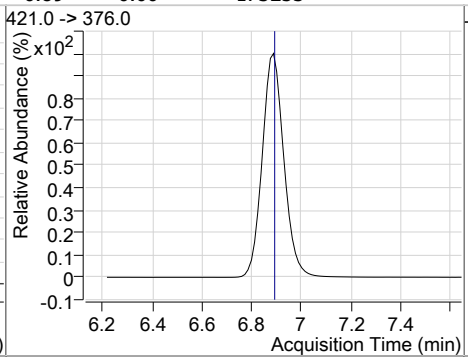


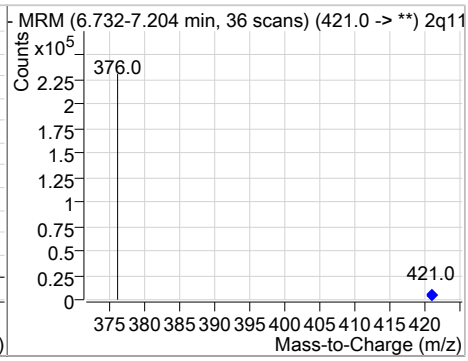




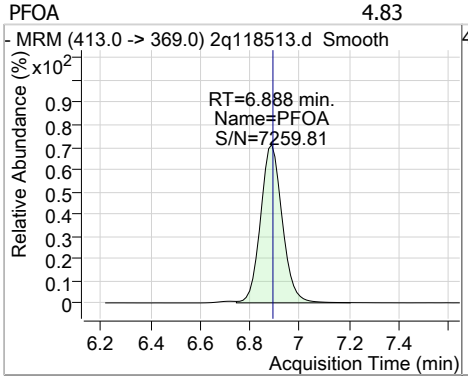
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	10.24	6.89	0.00	173253				

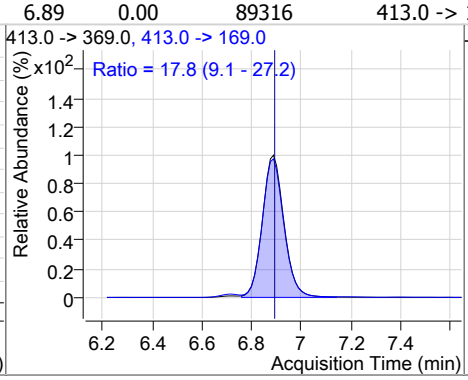


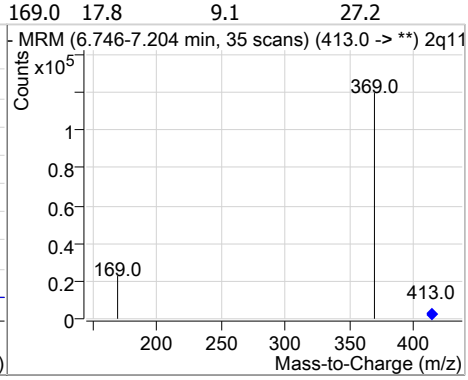




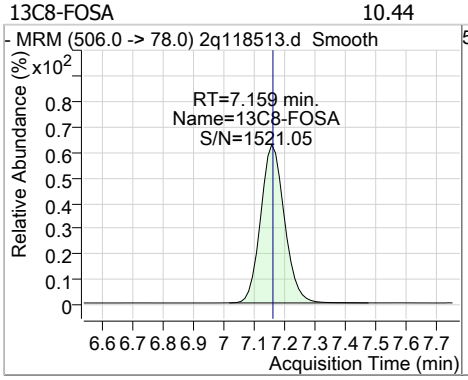
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	4.83	6.89	0.00	89316	413.0 -> 169.0	17.8	9.1	27.2

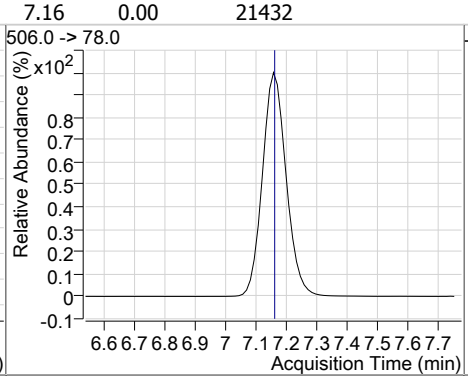


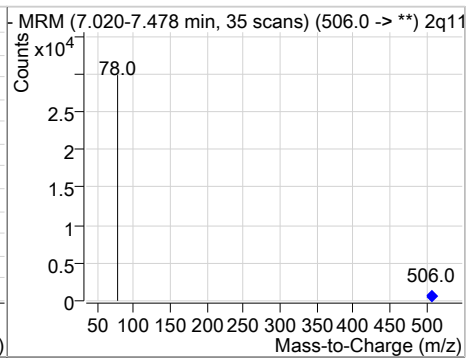




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	10.44	7.16	0.00	21432				

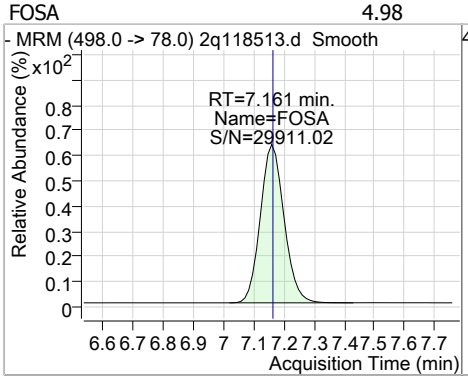


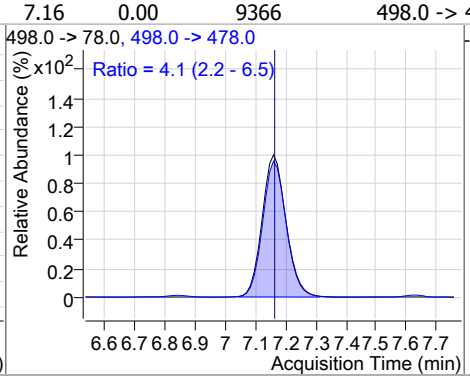


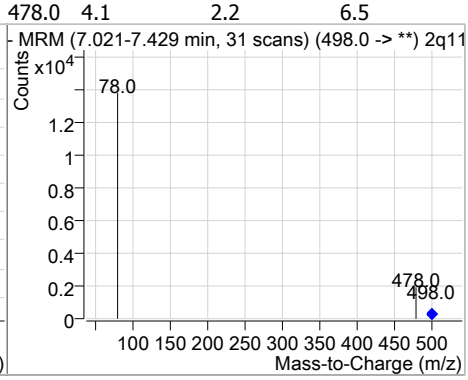


Perfluorinated Compounds by LC/MS/MS

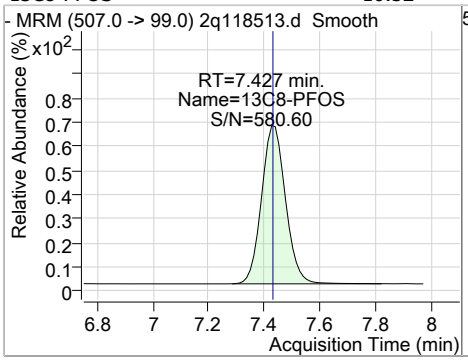
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	4.98	7.16	0.00	9366	498.0 -> 478.0	4.1	2.2	6.5

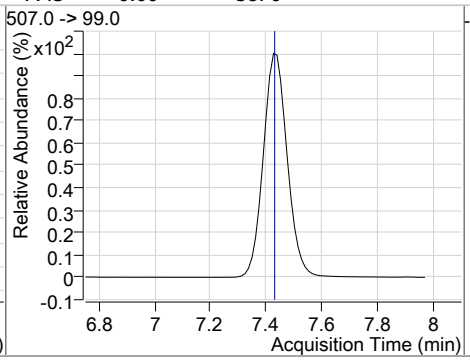


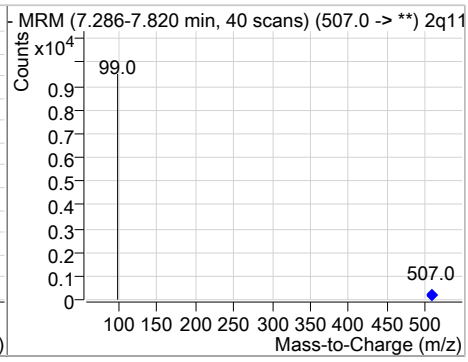




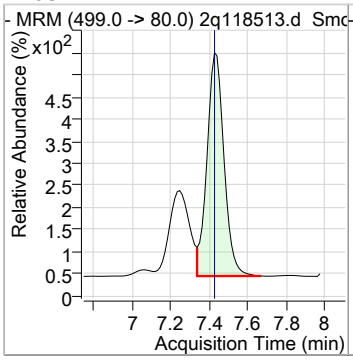
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	10.52	7.43	0.00	5876				

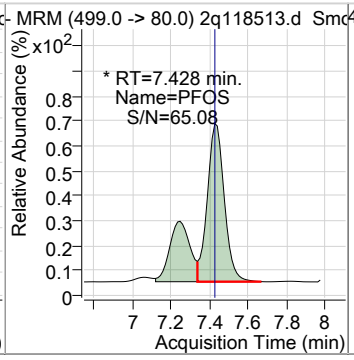


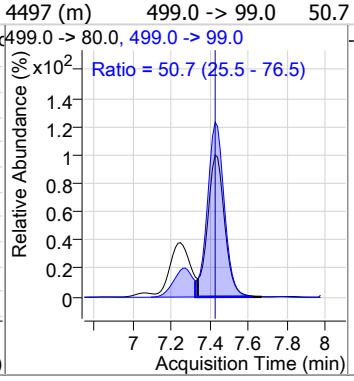


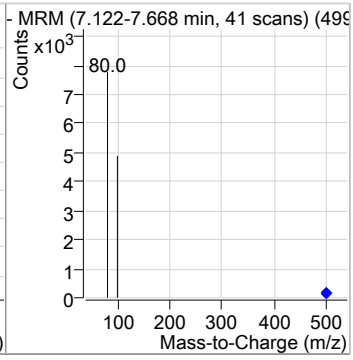


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	4.88	7.43	0.00	4497 (m)	499.0 -> 99.0	50.7	25.5	76.5

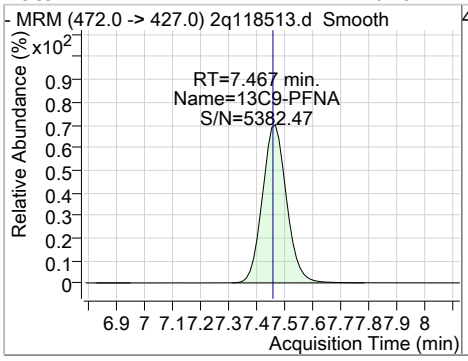


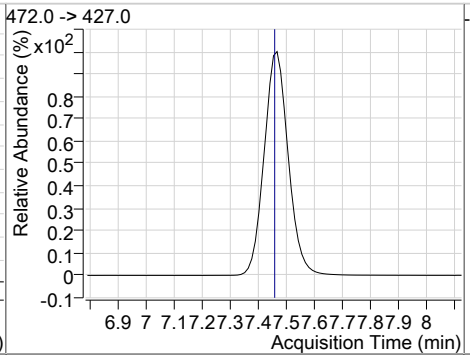


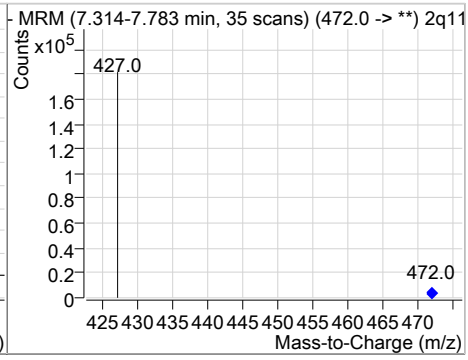




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	10.19	7.47	0.01	137237				

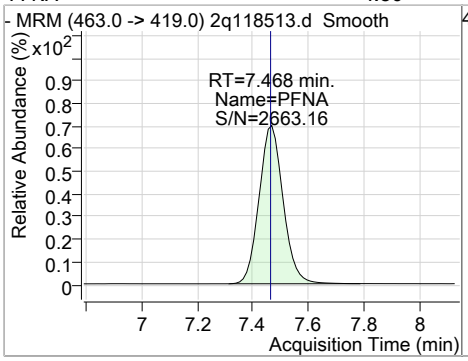


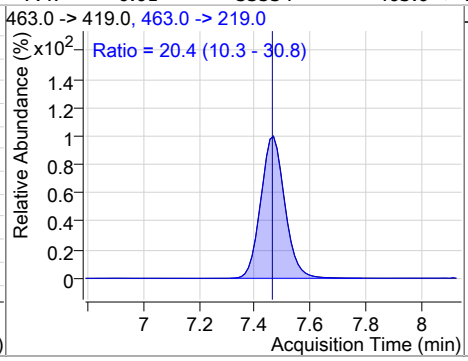


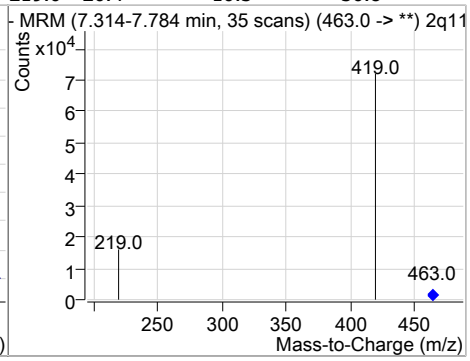


Perfluorinated Compounds by LC/MS/MS

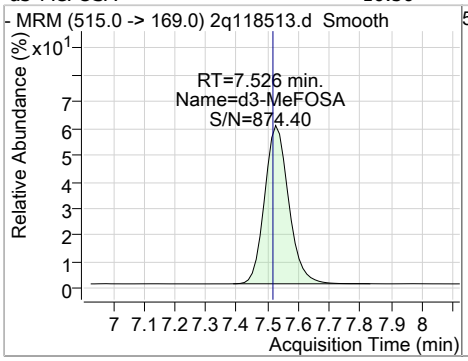
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	4.86	7.47	0.01	53534	463.0 -> 219.0	20.4	10.3	30.8

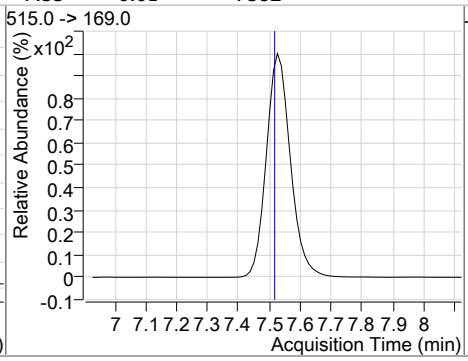


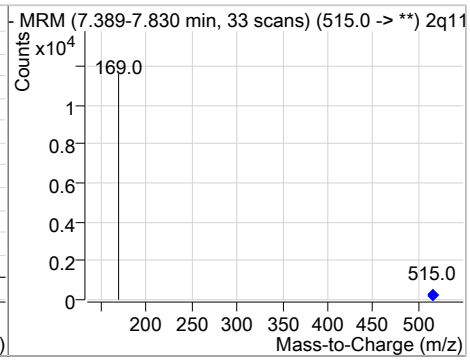




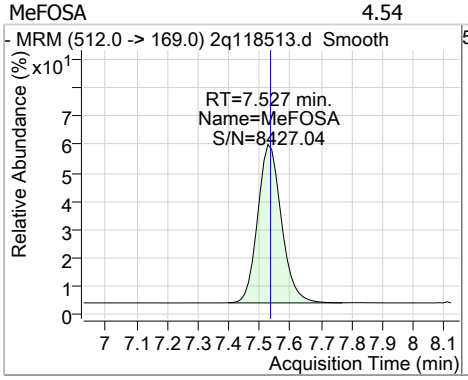
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	10.56	7.53	0.01	7582				

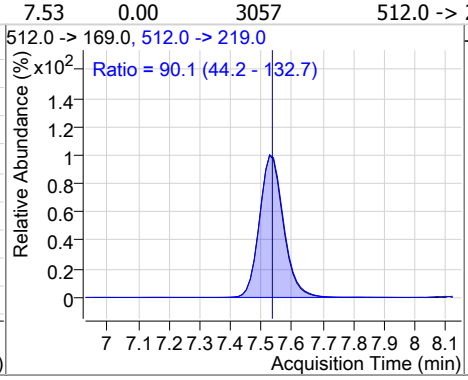


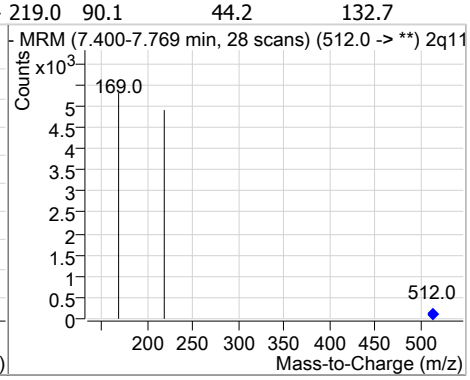




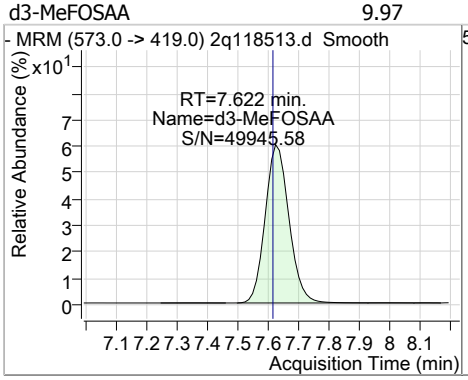
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	4.54	7.53	0.00	3057	512.0 -> 219.0	90.1	44.2	132.7

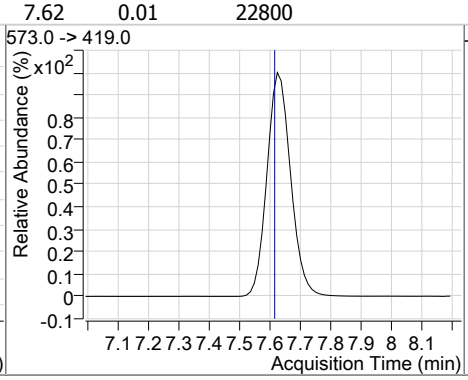


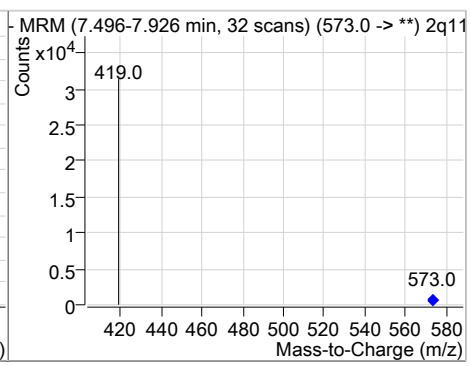




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	9.97	7.62	0.01	22800				

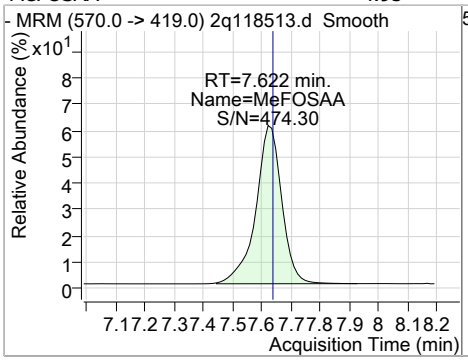


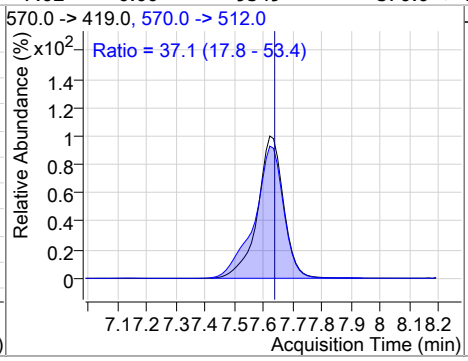


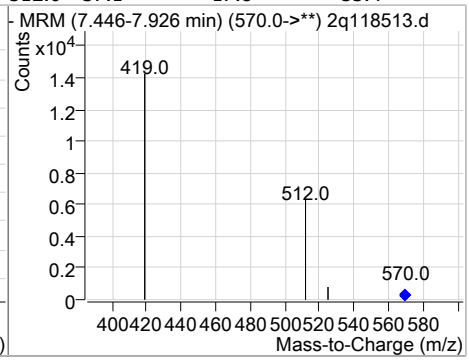


Perfluorinated Compounds by LC/MS/MS

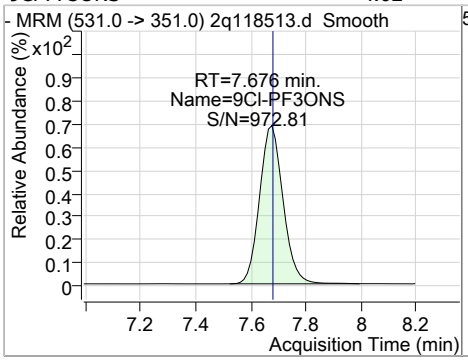
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	4.95	7.62	0.00	9549	570.0 -> 512.0	37.1	17.8	53.4

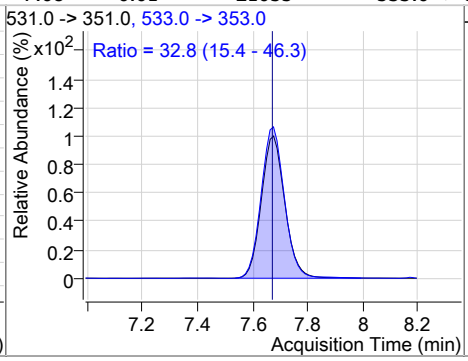


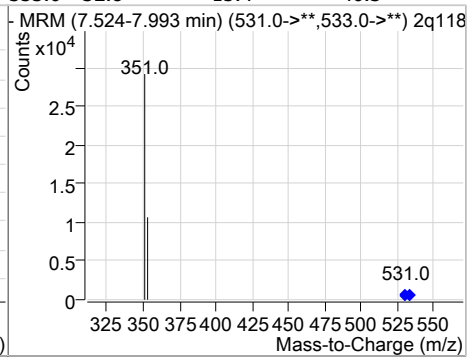




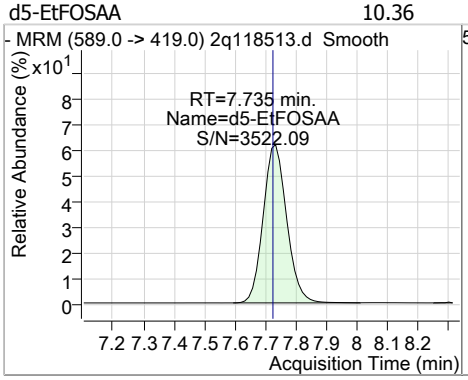
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	4.62	7.68	0.01	21055	533.0 -> 353.0	32.8	15.4	46.3

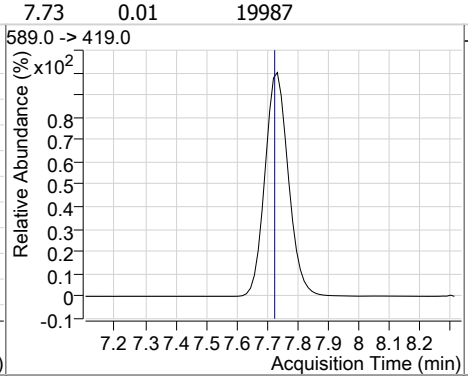


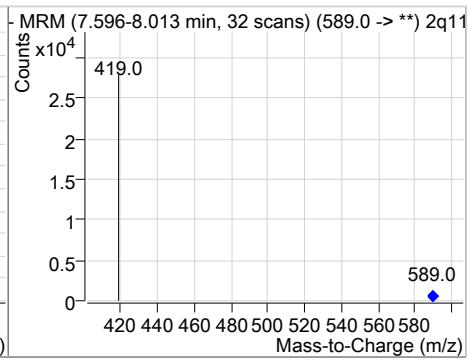




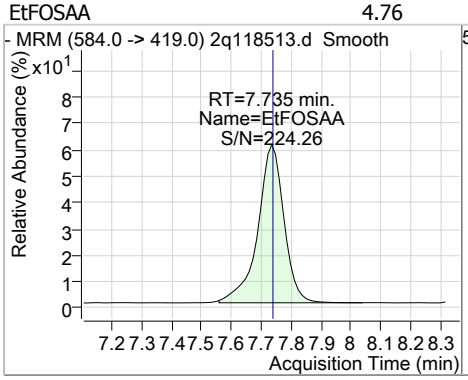
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	10.36	7.73	0.01	19987				

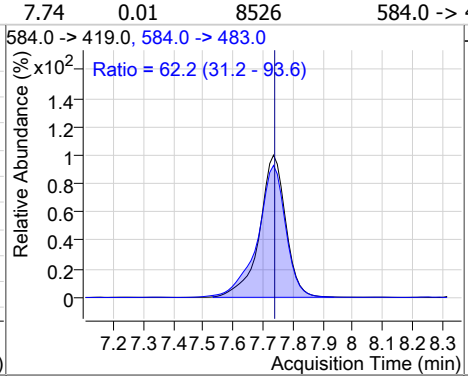


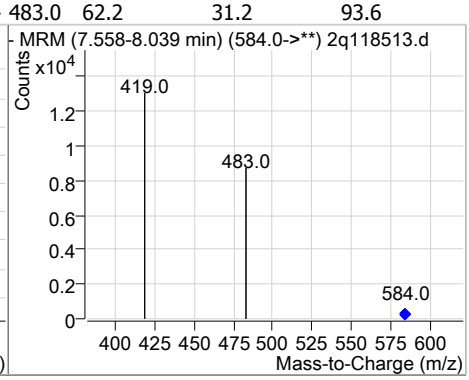




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	4.76	7.74	0.01	8526	584.0 -> 483.0	62.2	31.2	93.6

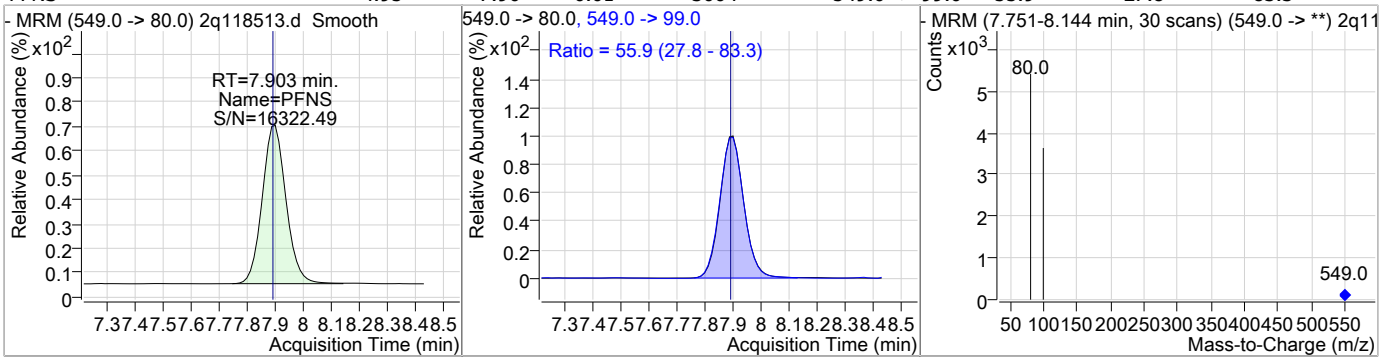




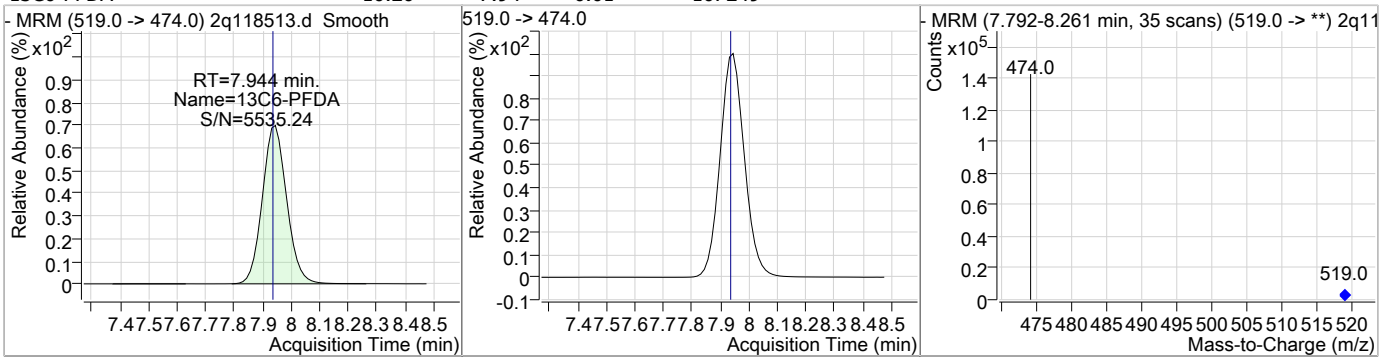


Perfluorinated Compounds by LC/MS/MS

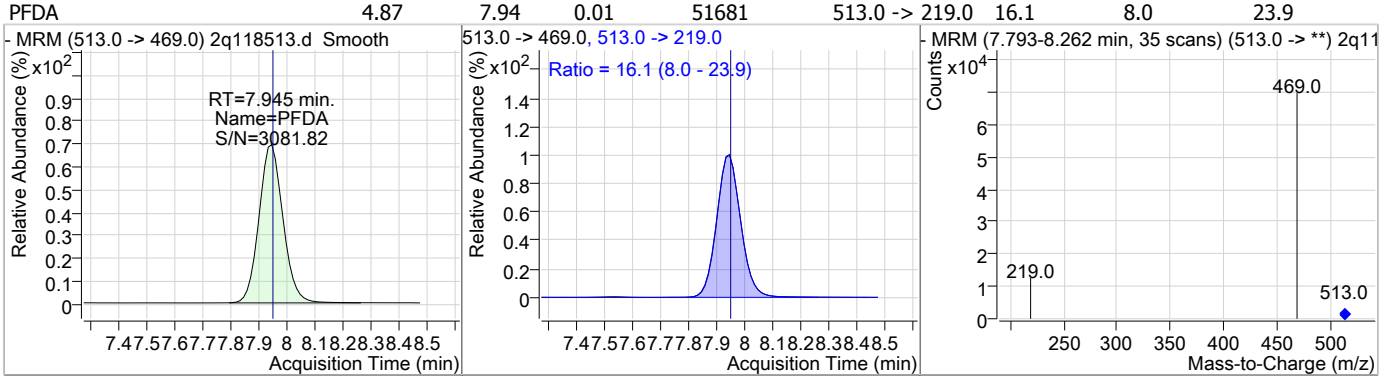
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	4.95	7.90	0.01	3064	549.0 -> 99.0	55.9	27.8	83.3



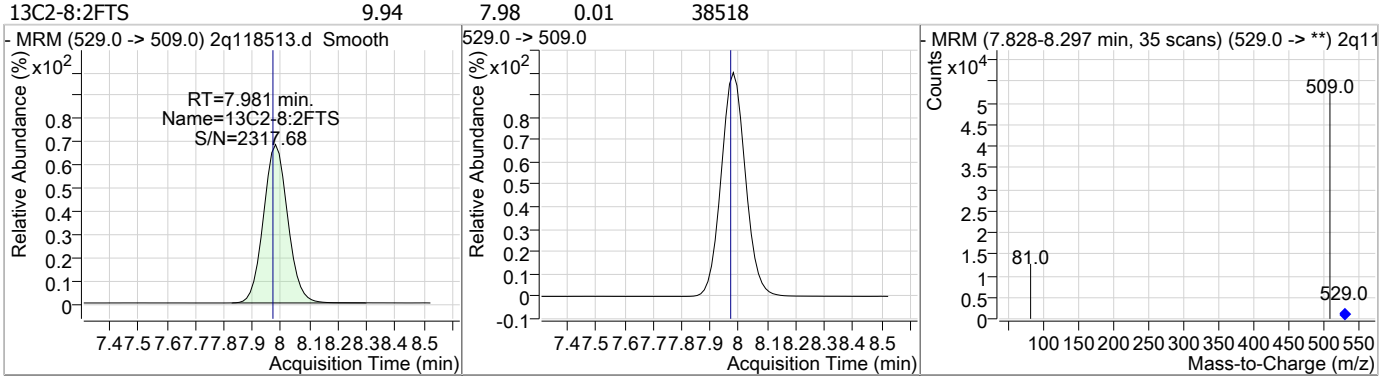
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	10.26	7.94	0.01	107249				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	4.87	7.94	0.01	51681	513.0 -> 219.0	16.1	8.0	23.9

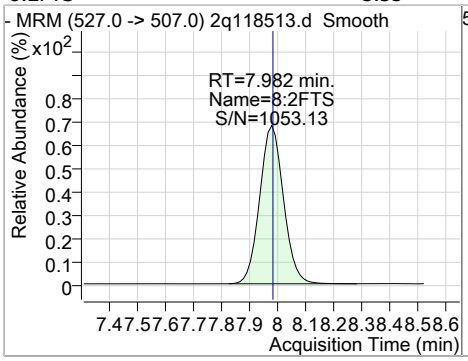


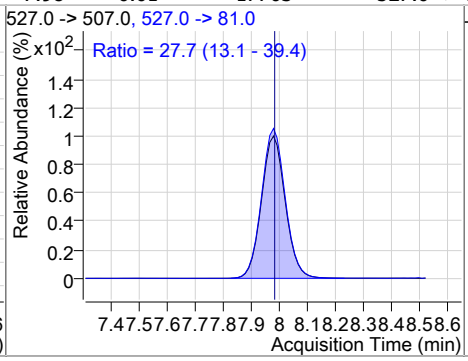
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	9.94	7.98	0.01	38518				

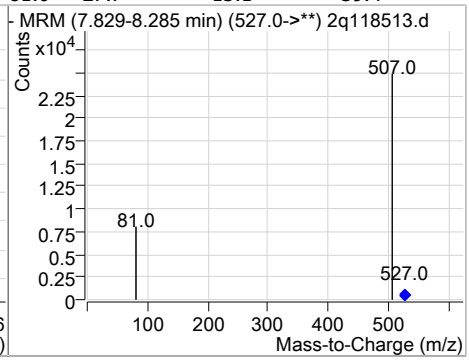


Perfluorinated Compounds by LC/MS/MS

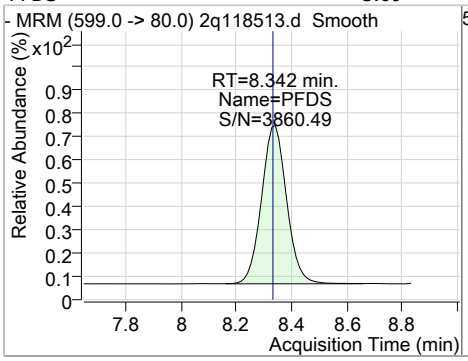
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	5.35	7.98	0.01	17703	527.0 -> 81.0	27.7	13.1	39.4

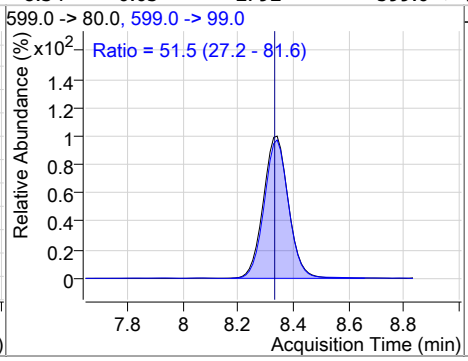


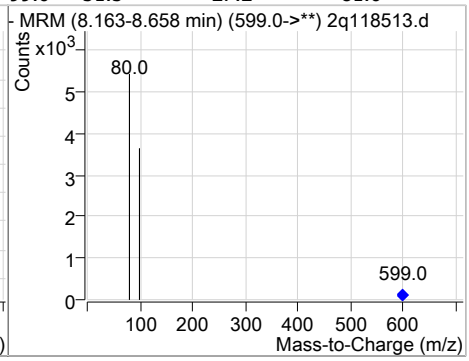




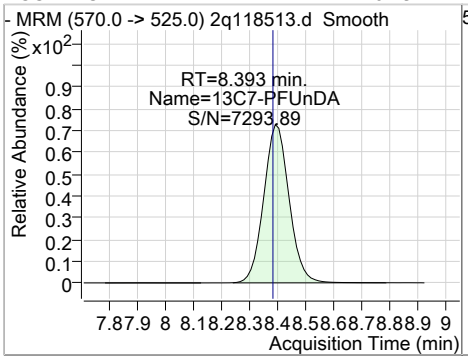
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	5.09	8.34	0.03	2792	599.0 -> 99.0	51.5	27.2	81.6

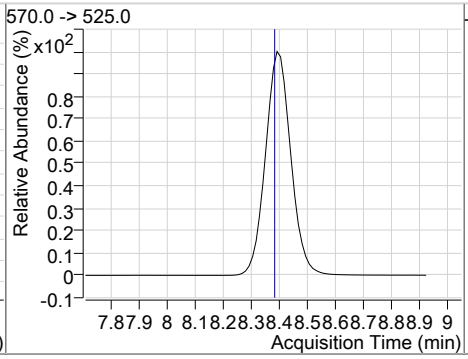


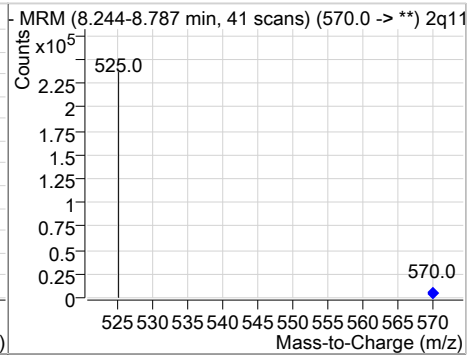




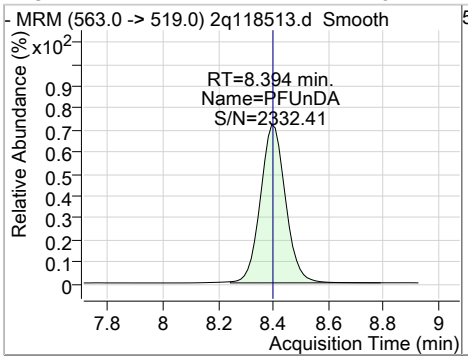
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	10.19	8.39	0.01	177074				

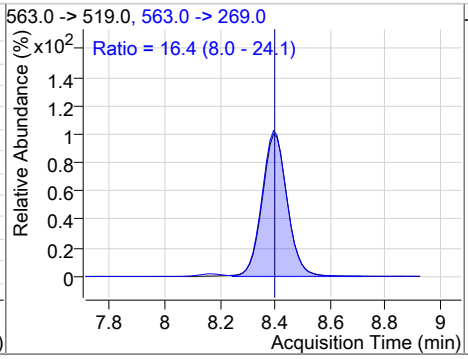


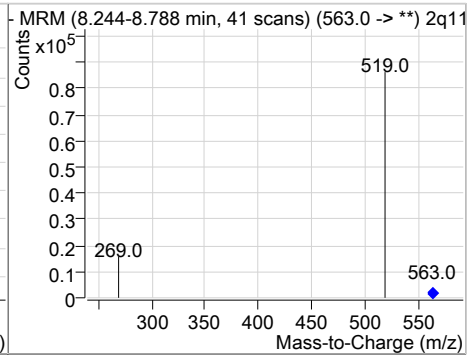




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	4.81	8.39	0.01	63601	563.0 -> 269.0	16.4	8.0	24.1

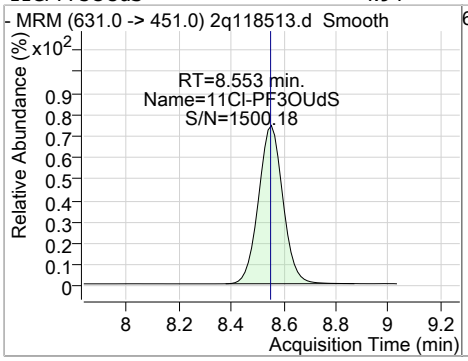


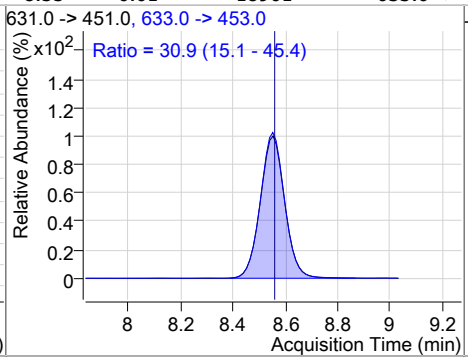


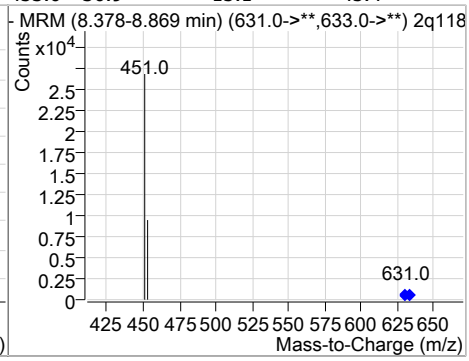


Perfluorinated Compounds by LC/MS/MS

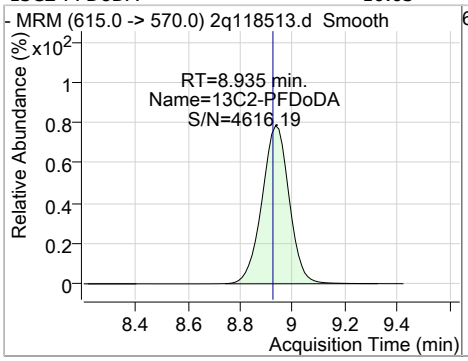
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	4.94	8.55	0.01	18901	633.0 -> 453.0	30.9	15.1	45.4

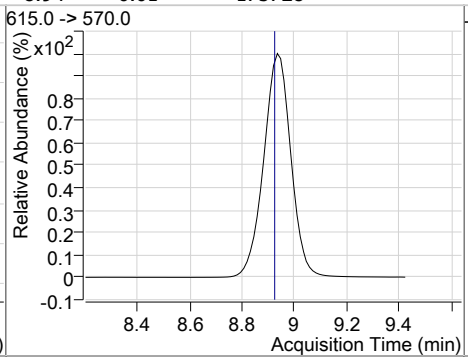


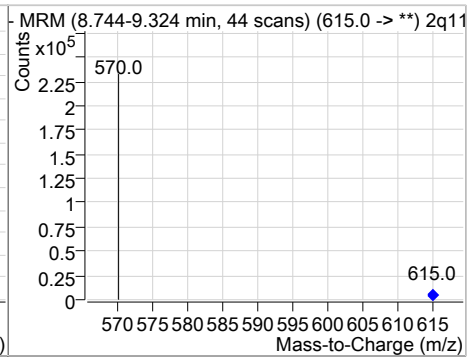




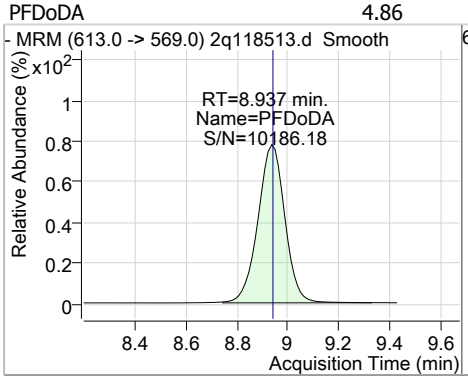
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	10.03	8.94	0.01	175728				

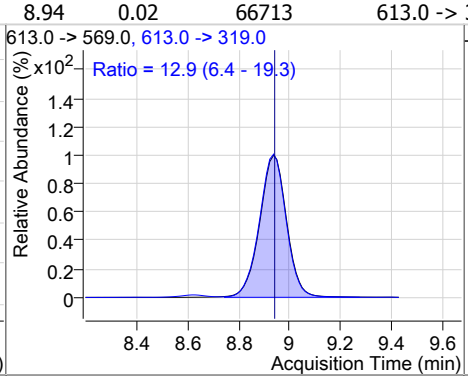


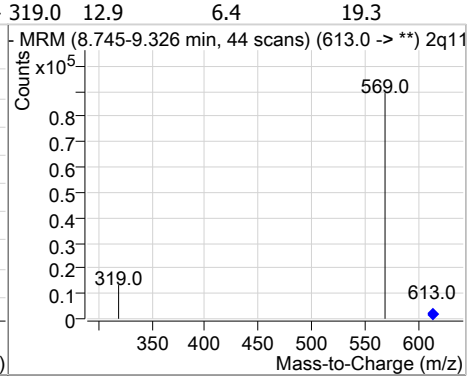




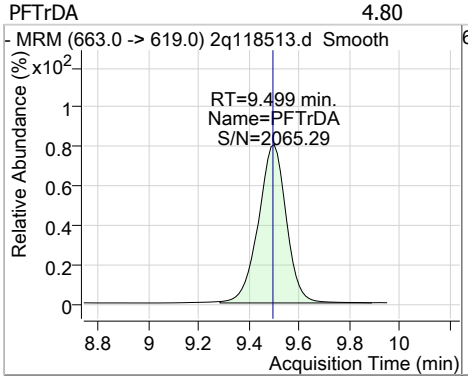
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	4.86	8.94	0.02	66713	613.0 -> 319.0	12.9	6.4	19.3

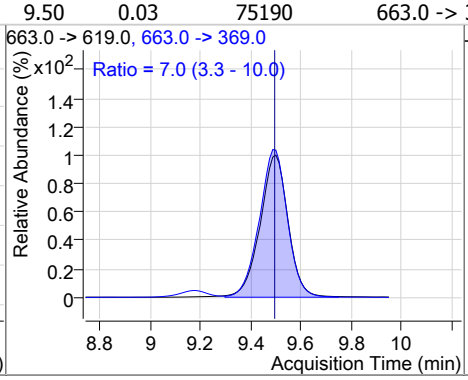


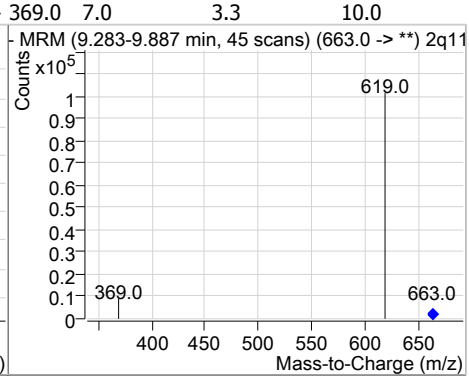




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	4.80	9.50	0.03	75190	663.0 -> 369.0	7.0	3.3	10.0

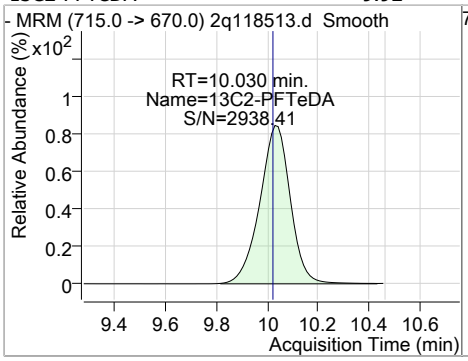


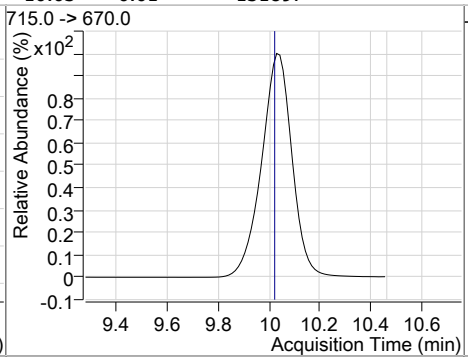


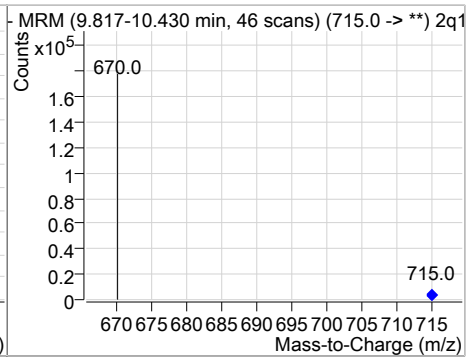


Perfluorinated Compounds by LC/MS/MS

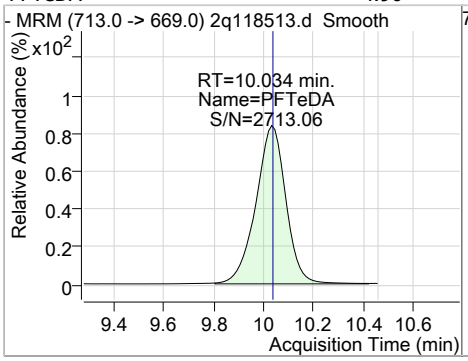
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	9.92	10.03	0.01	131897				

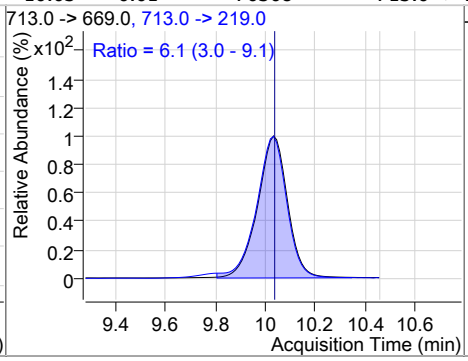


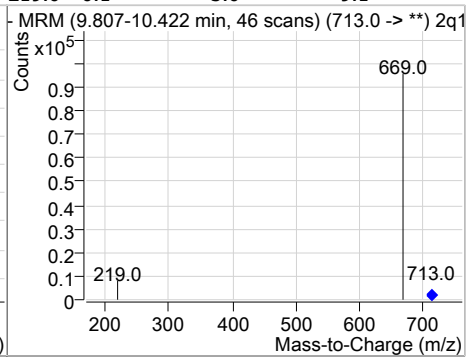




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	4.90	10.03	0.01	70308	713.0 -> 219.0	6.1	3.0	9.1







Manual Integration Approval Summary

Sample Number: S2Q1691-IC1691
Lab FileID: 2Q118513.D
Injection Time: 01/02/24 13:24
Method: EPA 537M QSM5.3 B-15
Analyst approved: 01/03/24 15:12 Lindsay Ritner
Supervisor approved: 01/04/24 11:31 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.22	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.43	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Natasha Gumtie 01/04/24 11:31

Perfluorinated Compounds by LC/MS/MS

Data File : 2q118514.d
Operator : lindsayr
Acq. Method : 537_ID.m
Acq. Date-Time : 1/2/2024 1:40:36 PM
Sample Name : ic1691-10
Vial : P1-A6
DA Method File : ID_010224_S2Q1691.quantmethod.xml
Batch Name : s2q1691.batch.bin
Sample Information : op401,S2Q1691,250,,,1.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M5-EtFOSAA	7.710	589.0 -> 419.0	19487	10.00	µg/L	-0.013
M4-PFBA	2.265	217.0 -> 172.0	51718	10.00	µg/L	0.025
M5-PFPeA	4.112	268.0 -> 223.0	79835	10.00	µg/L	0.050
M5-PFHxA	5.351	318.0 -> 273.0	99871	10.00	µg/L	0.013
M4-PFHpA	6.208	367.0 -> 322.0	86477	10.00	µg/L	0.000
M8-PFOA	6.875	421.0 -> 376.0	170042	10.00	µg/L	-0.013
M9-PFNA	7.455	472.0 -> 427.0	133286	10.00	µg/L	0.000
M6-PFDA	7.919	519.0 -> 474.0	105783	10.00	µg/L	-0.013
M7-PFUnDA	8.381	570.0 -> 525.0	173189	10.00	µg/L	0.000
M2-PFDoDA	8.920	615.0 -> 570.0	176158	10.00	µg/L	0.000
M2-PFTeDA	10.017	715.0 -> 670.0	135483	10.00	µg/L	0.000
M8-FOSA	7.147	506.0 -> 78.0	21363	10.00	µg/L	-0.013
M3-PFBS	4.367	302.0 -> 99.0	6125	10.00	µg/L	0.038
M3-PFHxS	6.231	402.0 -> 99.0	6362	10.00	µg/L	-0.013
M8-PFOS	7.413	507.0 -> 99.0	5302	10.00	µg/L	-0.014
M2-4:2FTS	5.259	329.0 -> 309.0	37167	10.00	µg/L	0.025
M2-6:2FTS	6.872	429.0 -> 409.0	54691	10.00	µg/L	-0.013
M2-8:2FTS	7.967	529.0 -> 509.0	38672	10.00	µg/L	0.000
M3-MeFOSAA	7.609	573.0 -> 419.0	22690	10.00	µg/L	0.000
M3-HFPO-DA	5.620	287.0 -> 169.0	8543	10.00	µg/L	0.013
M3-MeFOSA	7.513	515.0 -> 169.0	7533	10.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	5.259	329.0 -> 309.0	37167	10.07	µg/L	0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.7%		
13C2-6:2FTS	6.872	429.0 -> 409.0	54691	9.52	µg/L	-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 95.2%		
13C2-8:2FTS	7.967	529.0 -> 509.0	38672	9.98	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.8%		
13C2-PFDoDA	8.920	615.0 -> 570.0	176158	10.06	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.6%		
13C2-PFTeDA	10.017	715.0 -> 670.0	135483	10.19	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.9%		
13C3-PFBS	4.367	302.0 -> 99.0	6125	10.19	µg/L	0.038
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.9%		
13C3-PFHxS	6.231	402.0 -> 99.0	6362	10.39	µg/L	-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 103.9%		
13C4-PFBA	2.265	217.0 -> 172.0	51718	10.02	µg/L	0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.2%		
13C4-PFHpA	6.208	367.0 -> 322.0	86477	10.07	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.7%		
d5-EtFOSAA	7.710	589.0 -> 419.0	19487	10.10	µg/L	-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.0%		
13C5-PFHxA	5.351	318.0 -> 273.0	99871	10.12	µg/L	0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.2%		
13C5-PFPeA	4.112	268.0 -> 223.0	79835	10.04	µg/L	0.050

Perfluorinated Compounds by LC/MS/MS

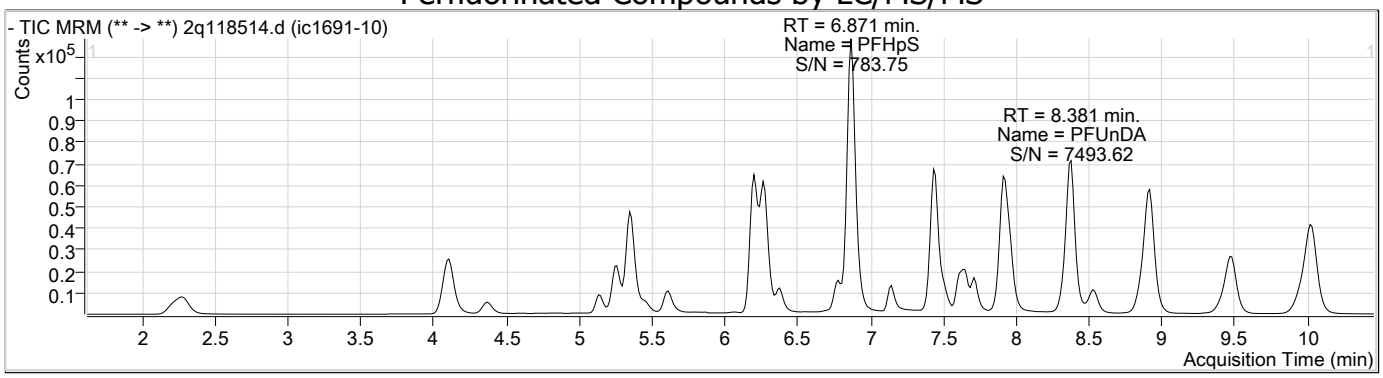
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.4%			
13C6-PFDA	7.919	519.0 -> 474.0	105783	10.12	µg/L		-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.2%			
13C7-PFUnDA	8.381	570.0 -> 525.0	173189	9.96	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.6%			
13C8-FOSA	7.147	506.0 -> 78.0	21363	10.40	µg/L		-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 104.0%			
13C8-PFOA	6.875	421.0 -> 376.0	170042	10.05	µg/L		-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.5%			
13C8-PFOS	7.413	507.0 -> 99.0	5302	9.49	µg/L		-0.014
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 94.9%			
13C9-PFNA	7.455	472.0 -> 427.0	133286	9.89	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 98.9%			
d3-MeFOSAA	7.609	573.0 -> 419.0	22690	9.92	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.2%			
13C3-HFPO-DA	5.620	287.0 -> 169.0	8543	10.28	µg/L		0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 102.8%			
d3-MeFOSA	7.513	515.0 -> 169.0	7533	10.49	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 104.9%			
Target Compounds							QValue
4:2FTS	5.262	327.0 -> 307.0	40189	10.64	µg/L		100
		327.0 -> 81.0	15009				
6:2FTS	6.874	427.0 -> 407.0	54173	11.35	µg/L		99
		427.0 -> 81.0	15709				
8:2FTS	7.956	527.0 -> 507.0	35889	10.80	µg/L		100
		527.0 -> 81.0	9386				
EtFOSAA	7.723	584.0 -> 419.0	17413	9.96	µg/L		99
		584.0 -> 483.0	11000				
FOSA	7.148	498.0 -> 78.0	18429	9.83	µg/L		99
		498.0 -> 478.0	707				
MeFOSAA	7.610	570.0 -> 419.0	20095	10.47	µg/L		99
		570.0 -> 512.0	6980				
PFBA	2.271	213.0 -> 169.0	16457	10.11	µg/L		100
PFBS	4.370	299.0 -> 80.0	15574	10.07	µg/L		99
		299.0 -> 99.0	5795				
PFDA	7.919	513.0 -> 469.0	105014	10.02	µg/L		100
		513.0 -> 219.0	16826				
PFDoDA	8.922	613.0 -> 569.0	138366	10.06	µg/L		100
		613.0 -> 319.0	17778				
PFDS	8.316	599.0 -> 80.0	5585	10.41	µg/L		96
		599.0 -> 99.0	2865				
PFHpA	6.209	363.0 -> 319.0	144323	10.09	µg/L		99
		363.0 -> 169.0	24443				
PFHpS	6.871	449.0 -> 80.0	9963	9.49	µg/L		99
		449.0 -> 99.0	5630				
PFHxA	5.352	313.0 -> 269.0	102434	9.97	µg/L		100
		313.0 -> 119.0	3996				
PFHxS	6.231	399.0 -> 80.0	13465	9.67	µg/L	m	99
		399.0 -> 99.0	7026				
PFNA	7.455	463.0 -> 419.0	108356	10.12	µg/L		99
		463.0 -> 219.0	21813				
PFNS	7.878	549.0 -> 80.0	6124	10.97	µg/L		98
		549.0 -> 99.0	3335				
PFOA	6.875	413.0 -> 369.0	180907	9.96	µg/L		99
		413.0 -> 169.0	33322				
PFOS	7.414	499.0 -> 80.0	9182	11.05	µg/L	m	93

Perfluorinated Compounds by LC/MS/MS

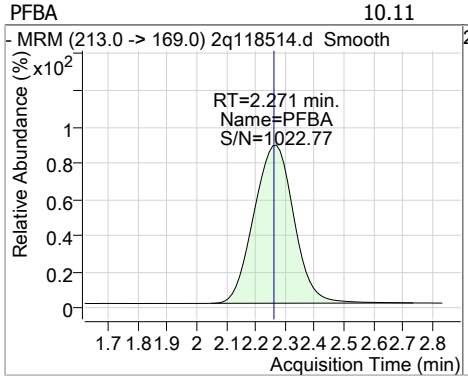
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		499.0 -> 99.0	4205			
PFPeA	4.114	263.0 -> 219.0	63086	10.02	µg/L	100
PFPeS	5.458	349.0 -> 80.0	11258	10.06	µg/L	99
		349.0 -> 99.0	4879			
PFTeDA	10.022	713.0 -> 669.0	149243	10.12	µg/L	100
		713.0 -> 219.0	9144			
PFTrDA	9.474	663.0 -> 619.0	158611	10.10	µg/L	100
		663.0 -> 369.0	10659			
PFUnDA	8.381	563.0 -> 519.0	130437	10.09	µg/L	100
		563.0 -> 269.0	20990			
11Cl-PF3OUdS	8.528	631.0 -> 451.0	39136	10.21	µg/L	99
		633.0 -> 453.0	12126			
9Cl-PF3ONS	7.650	531.0 -> 351.0	44485	9.89	µg/L	100
		533.0 -> 353.0	13702			
ADONA	6.284	377.0 -> 251.0	173352	9.61	µg/L	98
		377.0 -> 85.0	43810			
HFPO-DA	5.614	329.0 -> 169.0	26102	9.85	µg/L	98
		285.0 -> 169.0	7847			
MeFOSA	7.514	512.0 -> 169.0	6333	9.46	µg/L	97
		512.0 -> 219.0	5798			
4-PFECHS	6.780	461.0 -> 381.0	45653	9.45	µg/L	99
		461.0 -> 99.0	16069			
FBSA	5.153	298.0 -> 78.0	29844	9.34	µg/L	99
		298.0 -> 64.0	3184			
FHxSA	6.383	398.0 -> 78.0	30355	9.61	µg/L	100
		398.0 -> 64.0	3279			

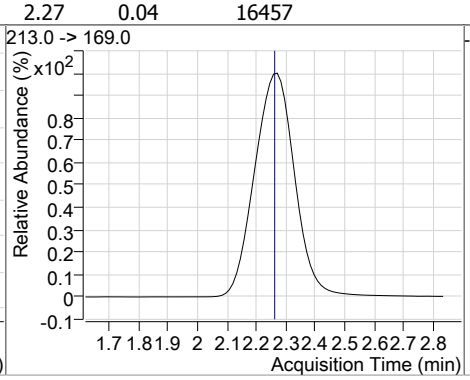
 # = Qualifier out of range, m = manually integrated, + = Area summed

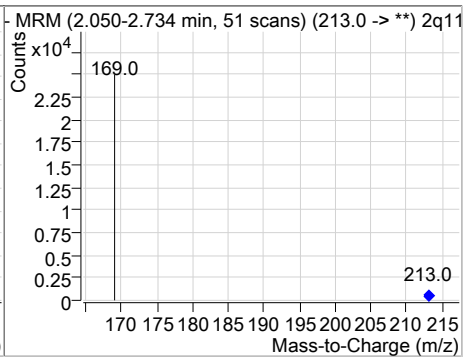
Perfluorinated Compounds by LC/MS/MS



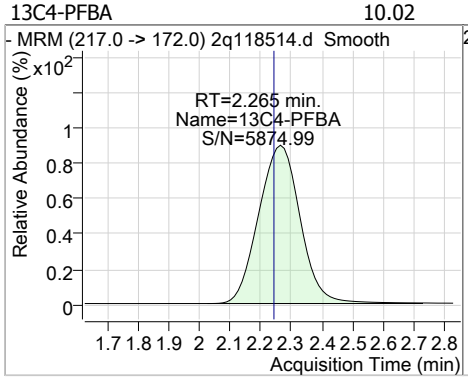
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	10.11	2.27	0.04	16457				

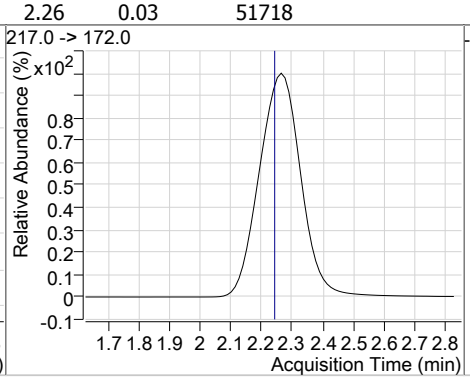


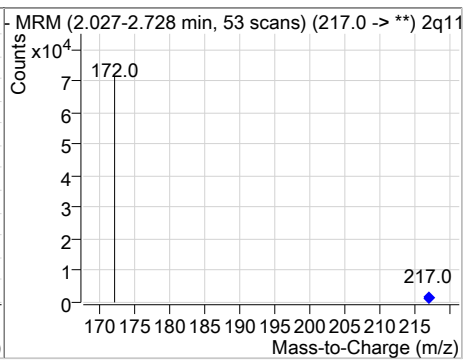




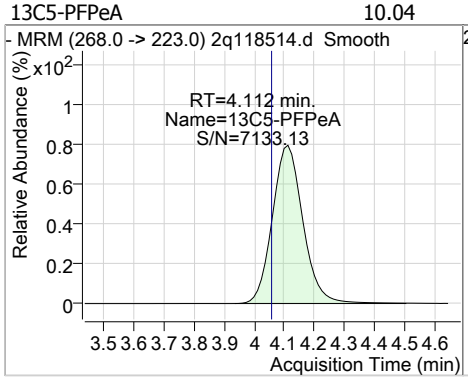
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	10.02	2.26	0.03	51718				

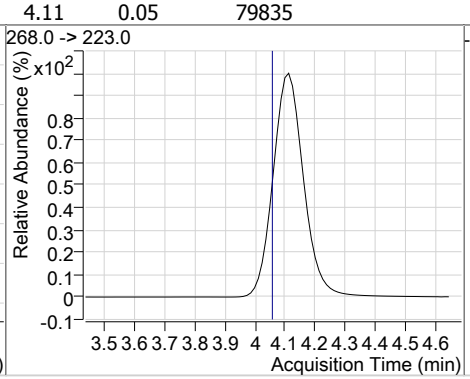


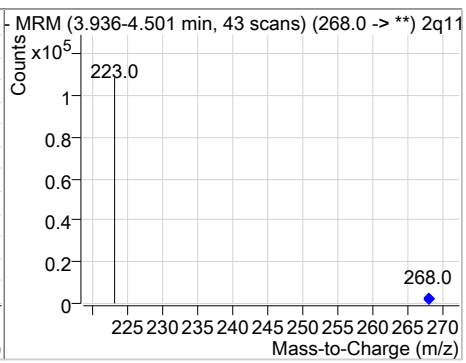




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	10.04	4.11	0.05	79835				

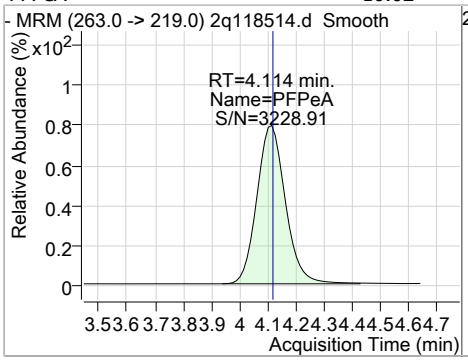


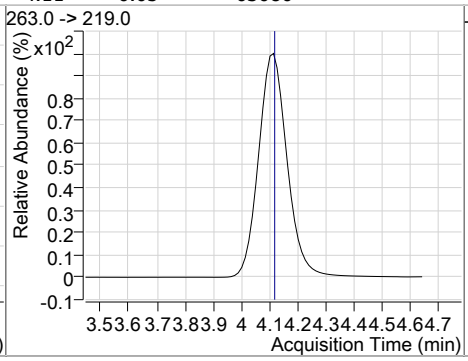


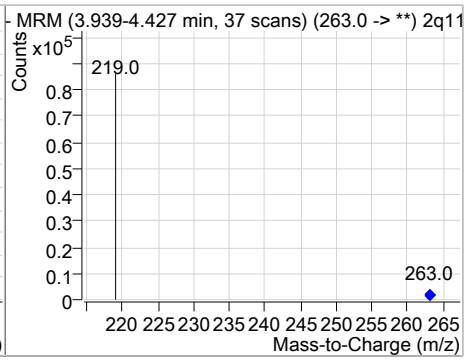


Perfluorinated Compounds by LC/MS/MS

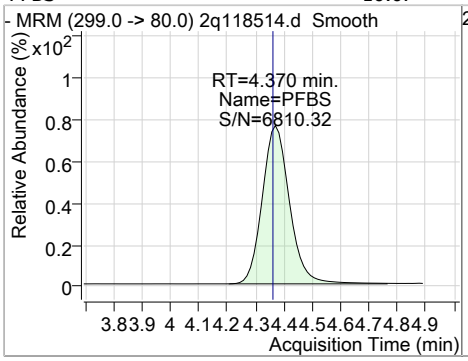
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	10.02	4.11	0.05	63086				

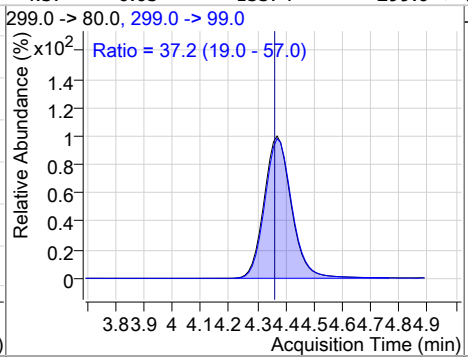


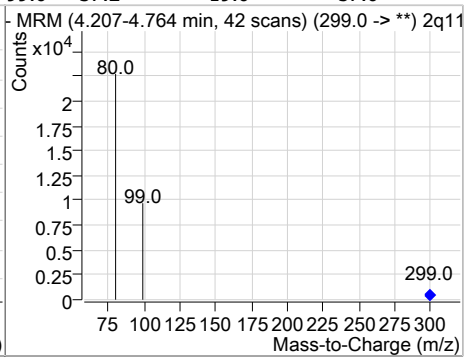




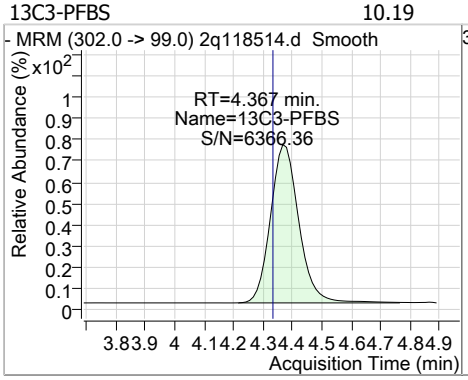
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	10.07	4.37	0.05	15574	299.0 -> 99.0	37.2	19.0	57.0

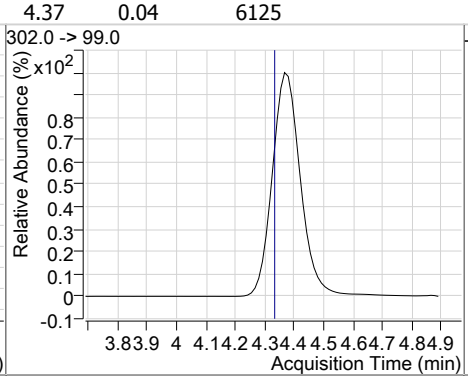


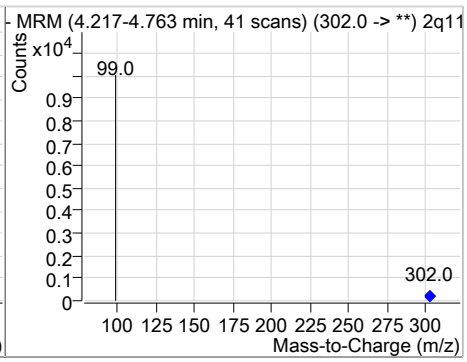




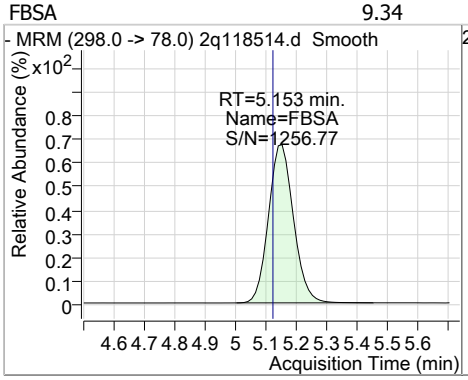
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	10.19	4.37	0.04	6125				

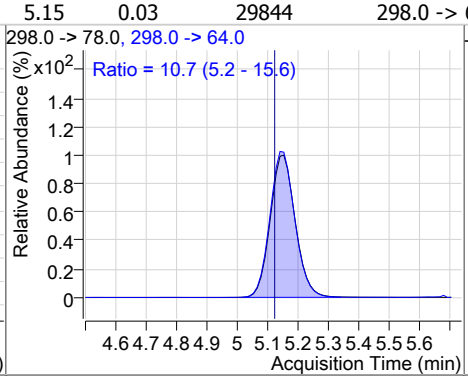


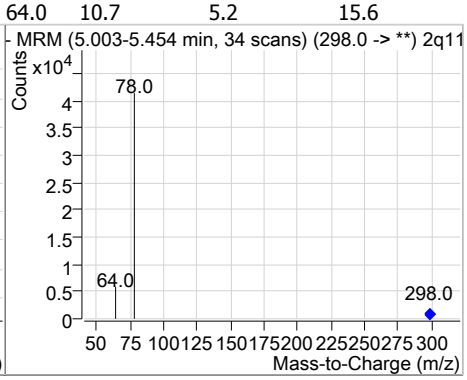




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	9.34	5.15	0.03	29844	298.0 -> 64.0	10.7	5.2	15.6

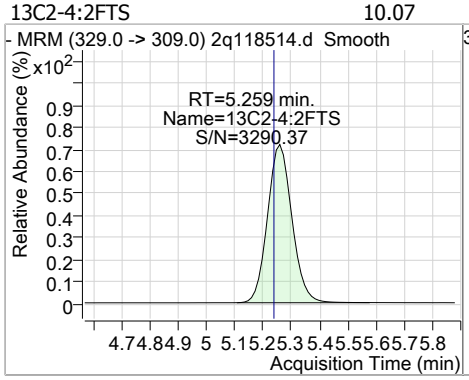


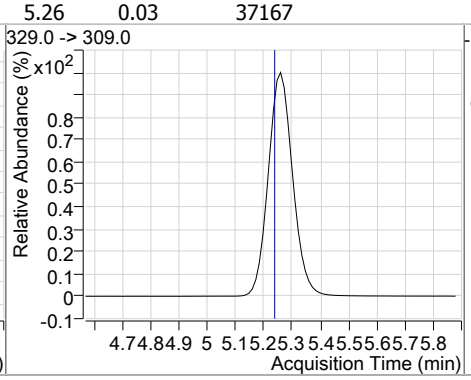


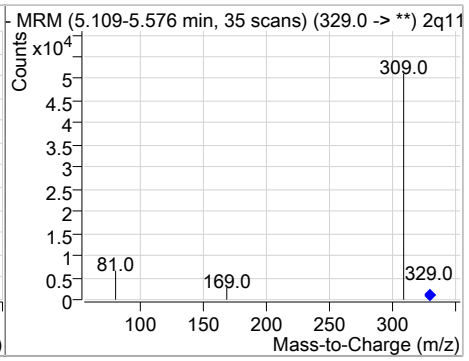


Perfluorinated Compounds by LC/MS/MS

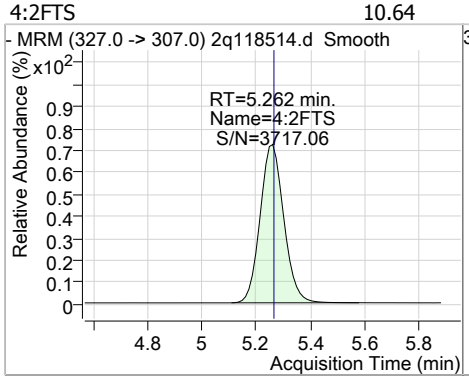
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	10.07	5.26	0.03	37167				

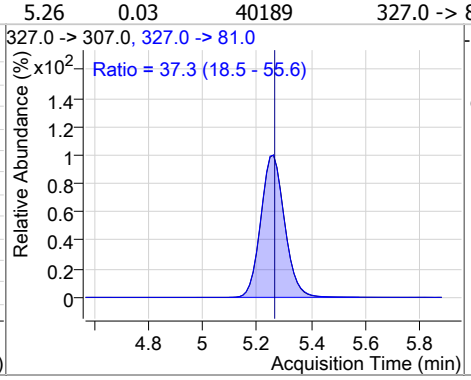


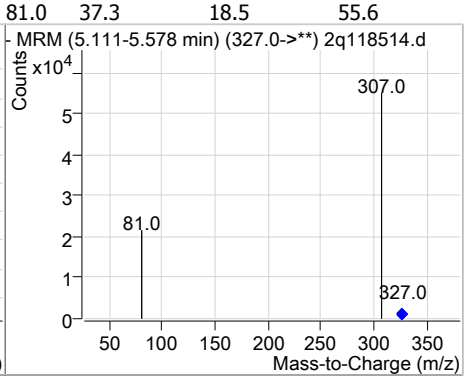




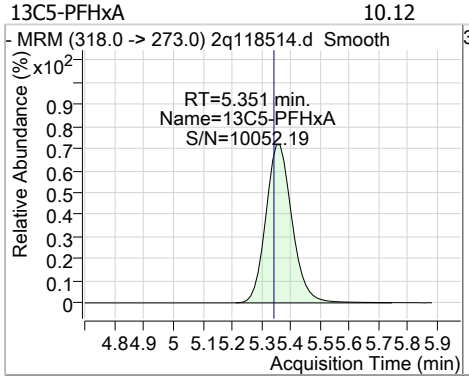
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	10.64	5.26	0.03	40189	327.0 -> 81.0	37.3	18.5	55.6

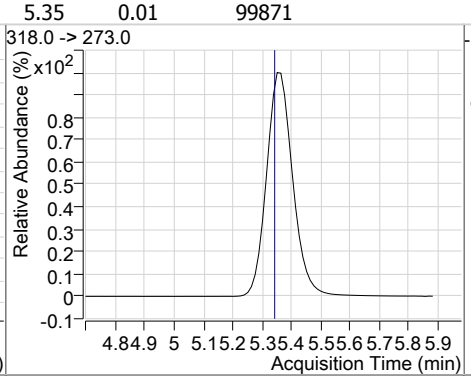


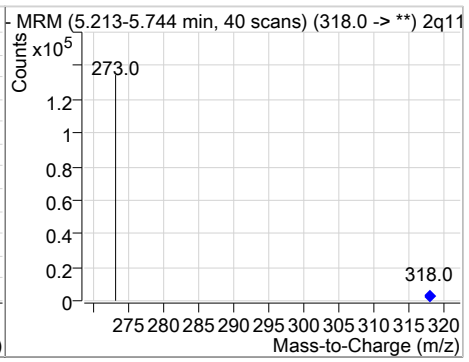




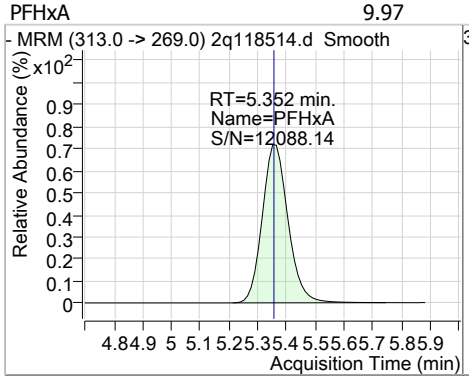
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	10.12	5.35	0.01	99871				

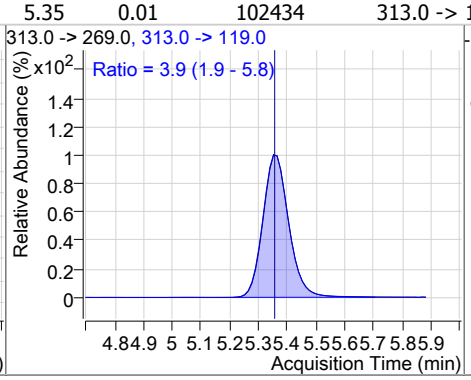


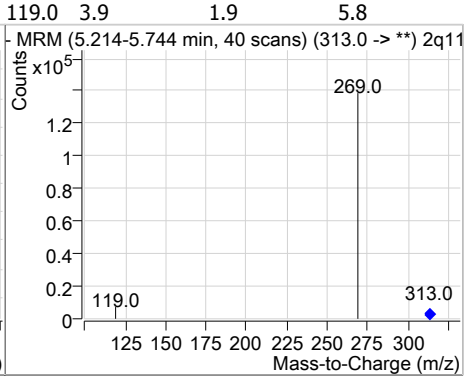




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	9.97	5.35	0.01	102434	313.0 -> 119.0	3.9	1.9	5.8

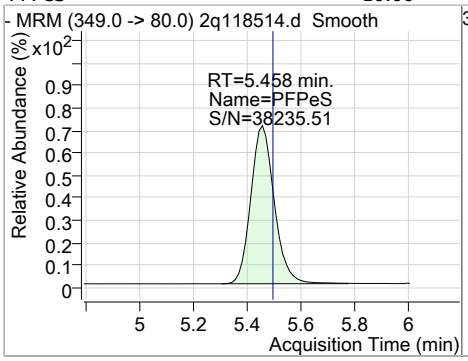


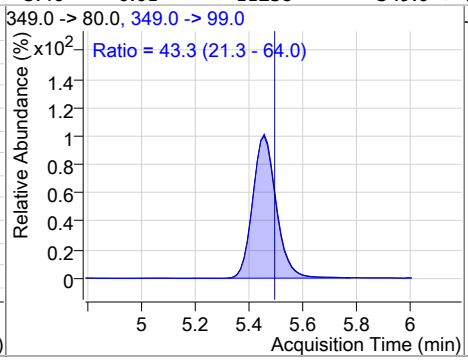


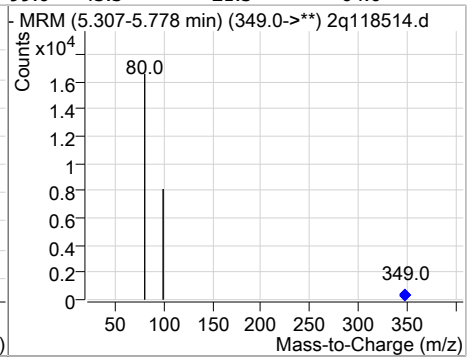


Perfluorinated Compounds by LC/MS/MS

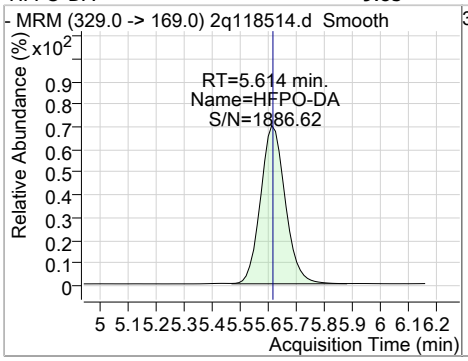
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	10.06	5.46	0.01	11258	349.0 -> 99.0	43.3	21.3	64.0

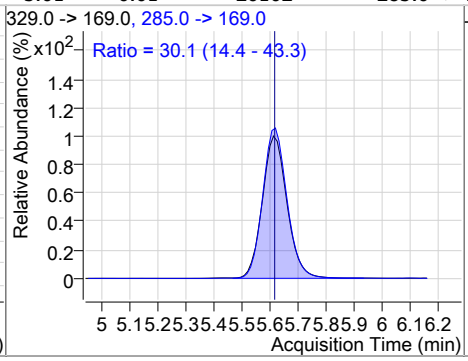


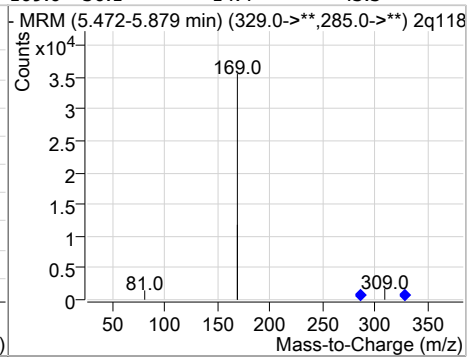




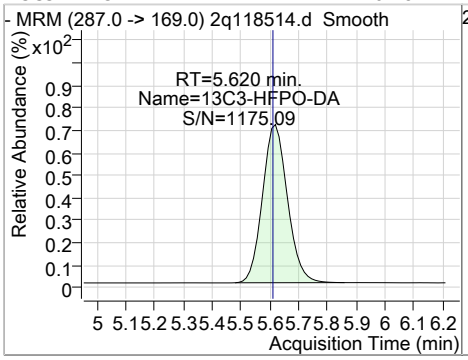
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	9.85	5.61	0.01	26102	285.0 -> 169.0	30.1	14.4	43.3

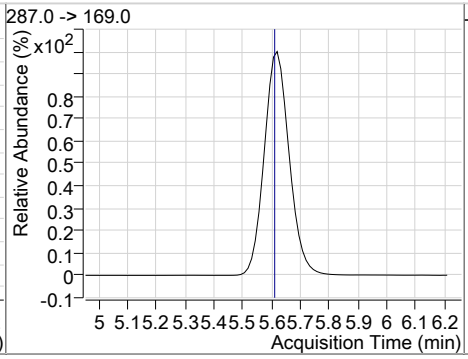


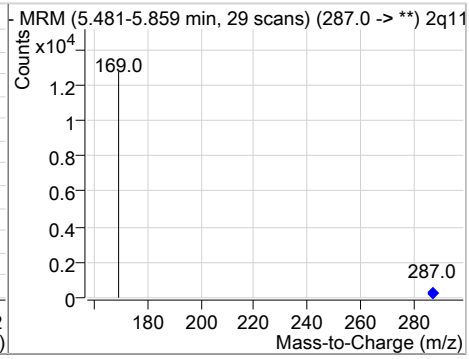




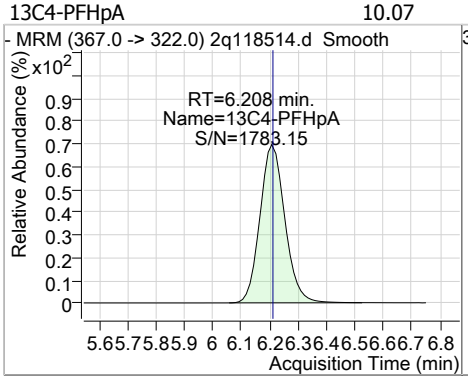
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	10.28	5.62	0.01	8543				

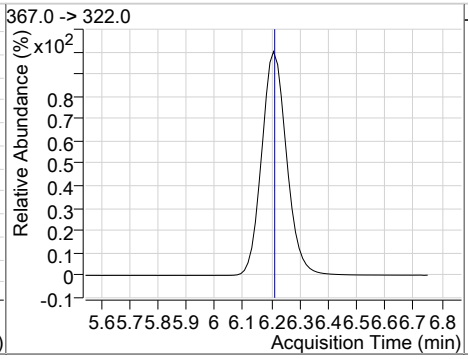


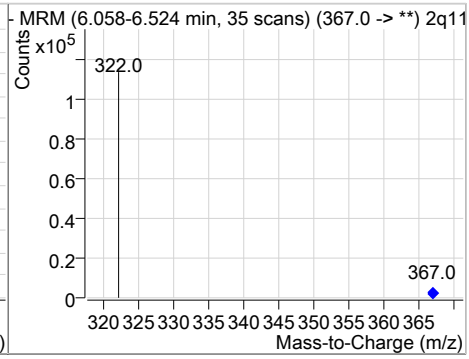




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	10.07	6.21	0.00	86477				

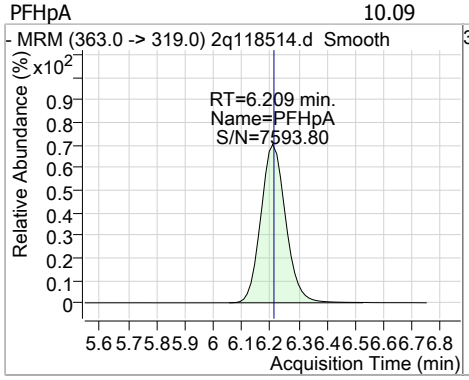


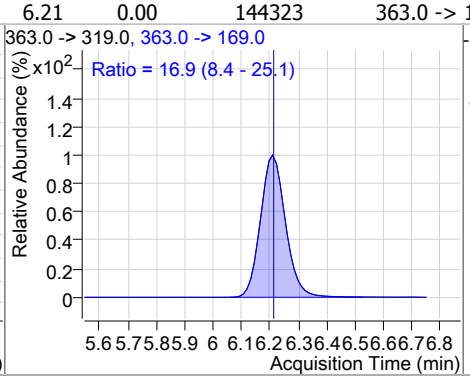


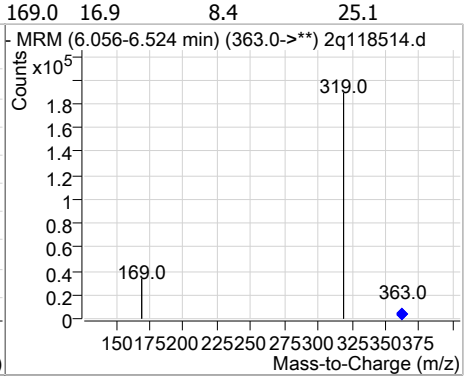


Perfluorinated Compounds by LC/MS/MS

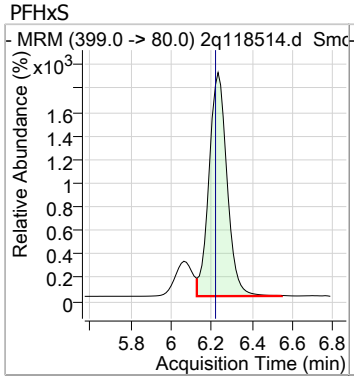
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	10.09	6.21	0.00	144323	363.0 -> 169.0	16.9	8.4	25.1

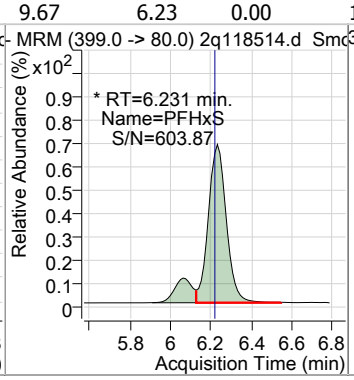


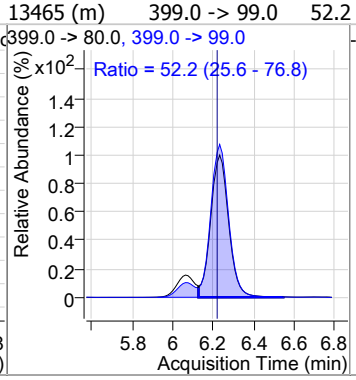


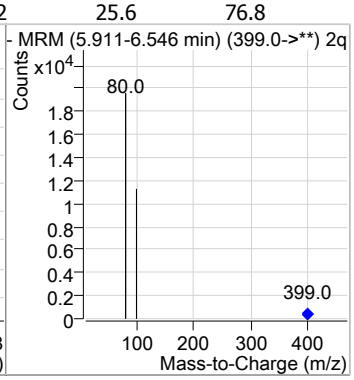


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	9.67	6.23	0.00	13465 (m)	399.0 -> 99.0	52.2	25.6	76.8

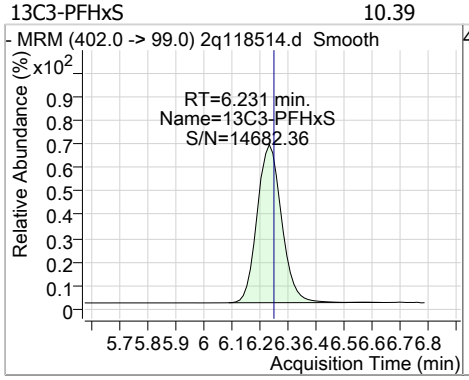


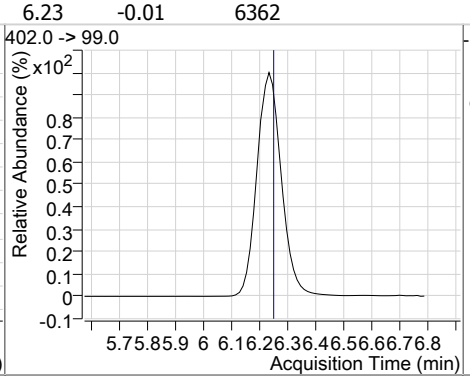


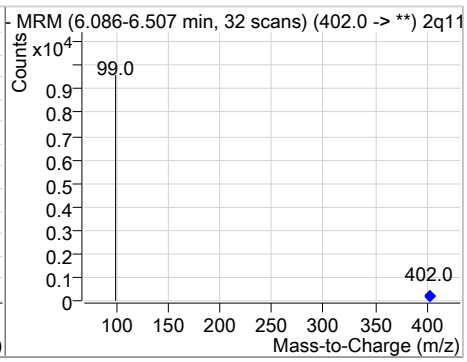




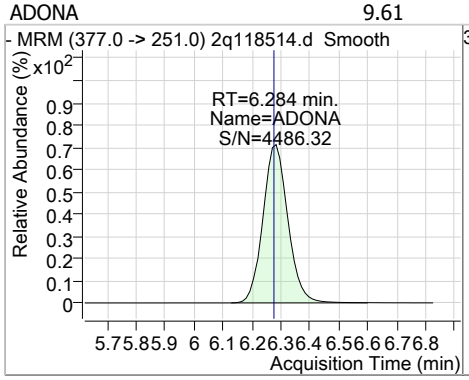
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	10.39	6.23	-0.01	6362				

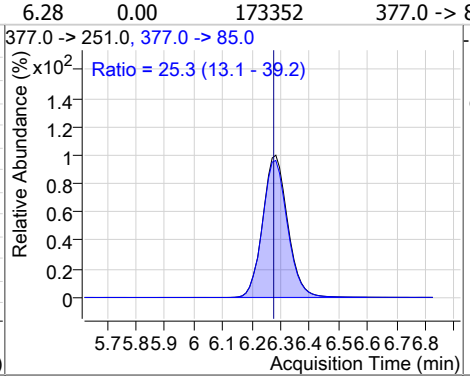


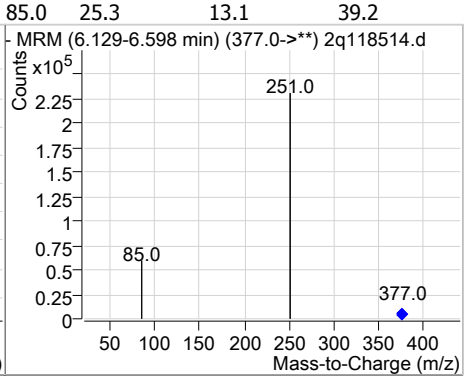




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	9.61	6.28	0.00	173352	377.0 -> 85.0	25.3	13.1	39.2

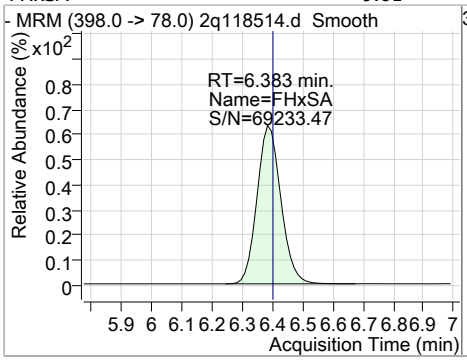


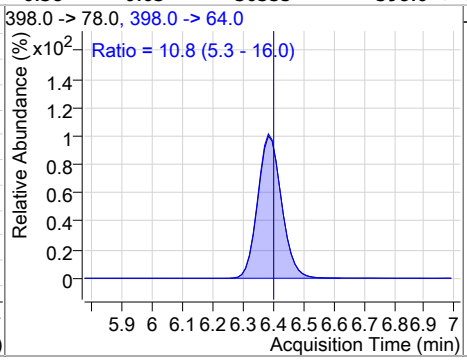


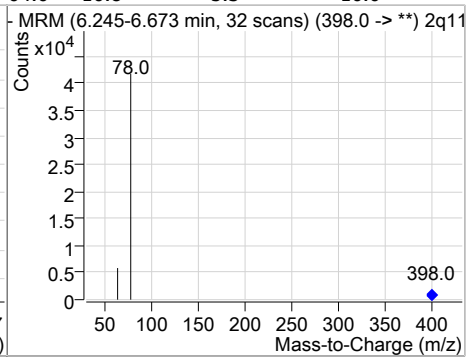


Perfluorinated Compounds by LC/MS/MS

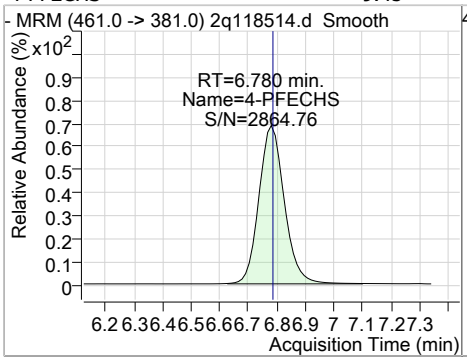
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	9.61	6.38	-0.03	30355	398.0 -> 64.0	10.8	5.3	16.0

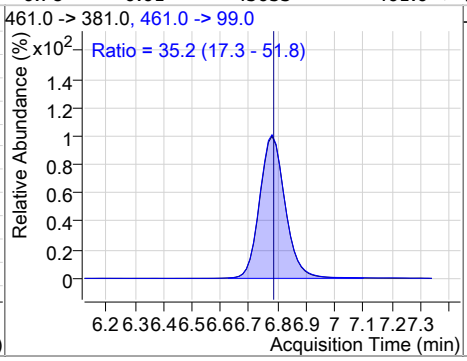


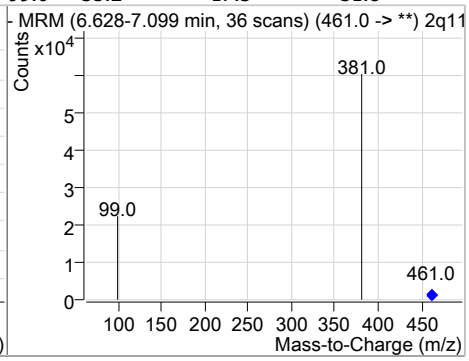




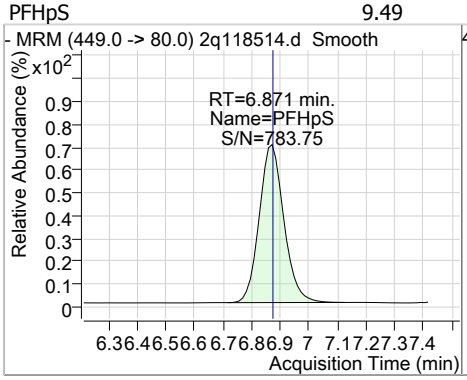
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS	9.45	6.78	-0.01	45653	461.0 -> 99.0	35.2	17.3	51.8

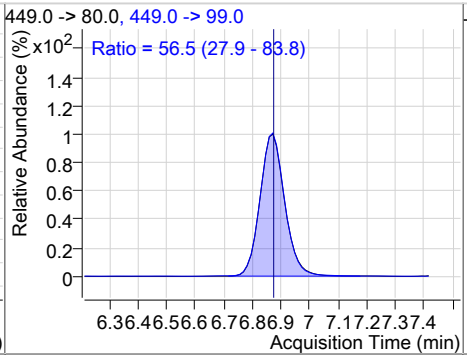


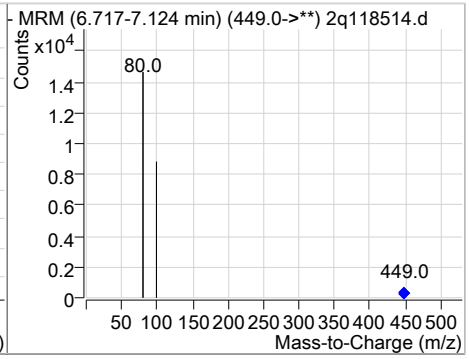




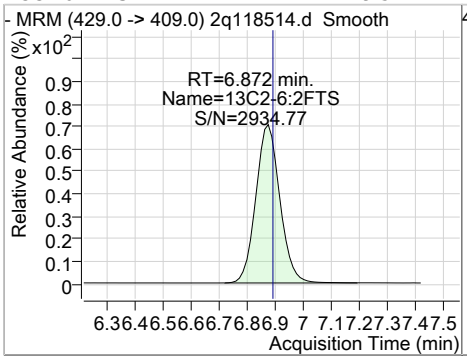
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	9.49	6.87	-0.01	9963	449.0 -> 99.0	56.5	27.9	83.8

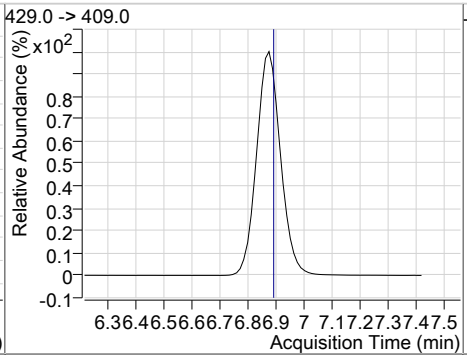


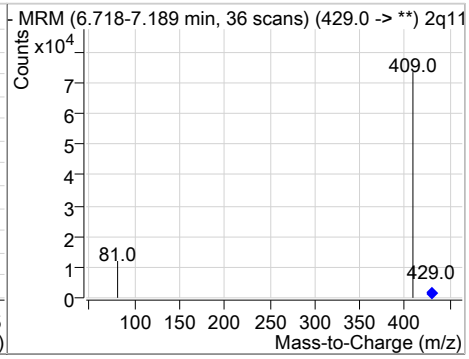




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	9.52	6.87	-0.01	54691				

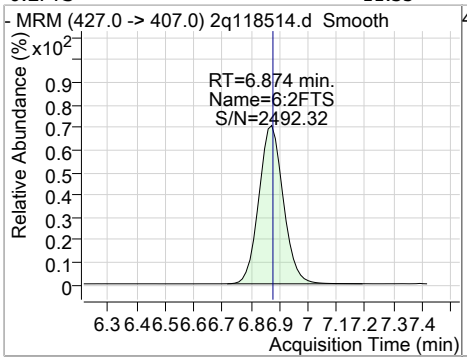


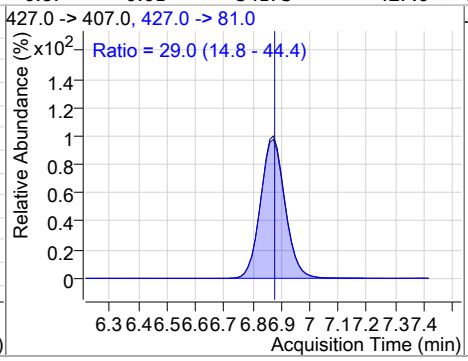


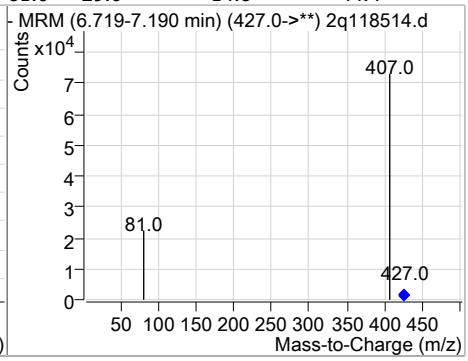


Perfluorinated Compounds by LC/MS/MS

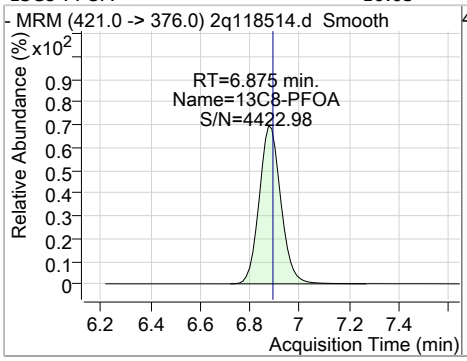
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	11.35	6.87	-0.01	54173	427.0 -> 81.0	29.0	14.8	44.4

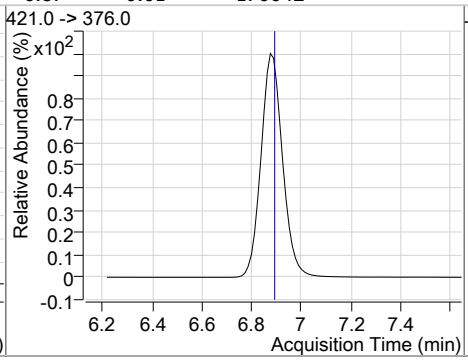


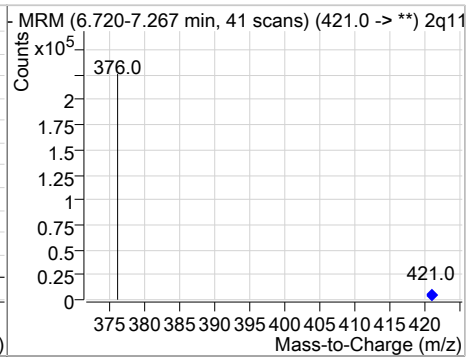




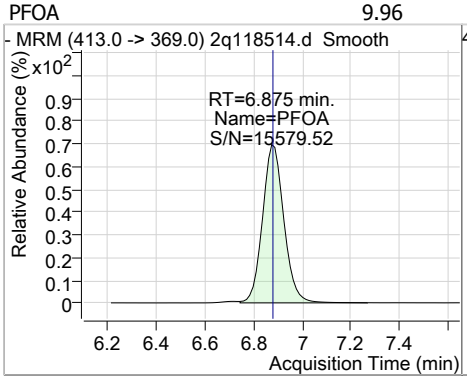
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	10.05	6.87	-0.01	170042				

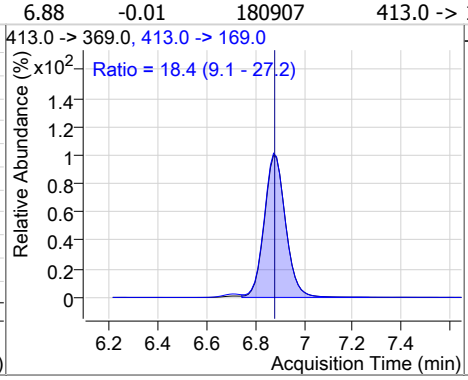


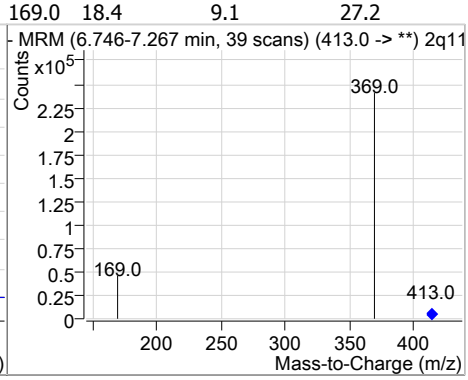




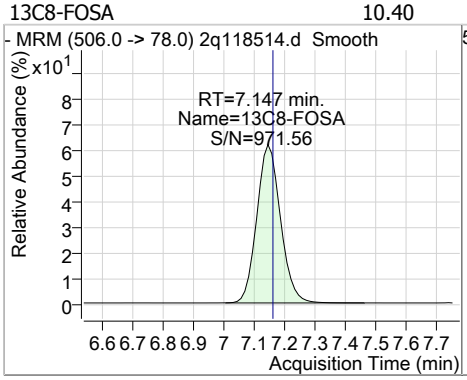
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	9.96	6.88	-0.01	180907	413.0 -> 169.0	18.4	9.1	27.2

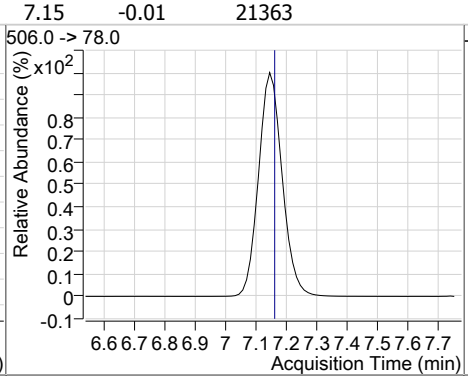


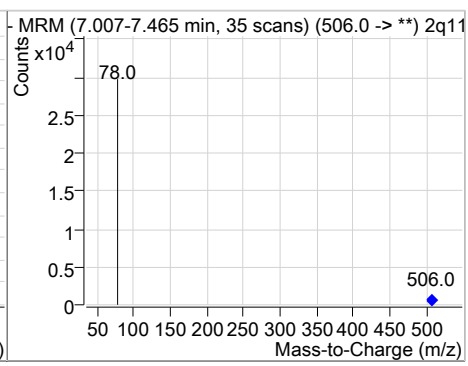




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	10.40	7.15	-0.01	21363				

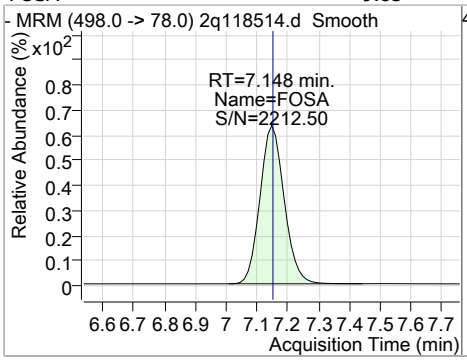


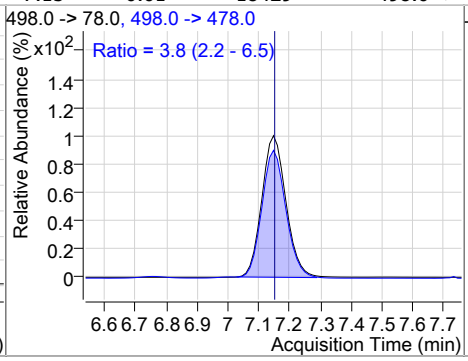


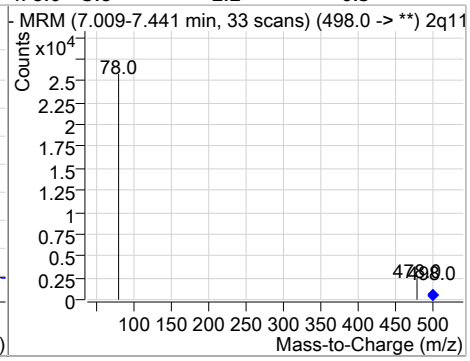


Perfluorinated Compounds by LC/MS/MS

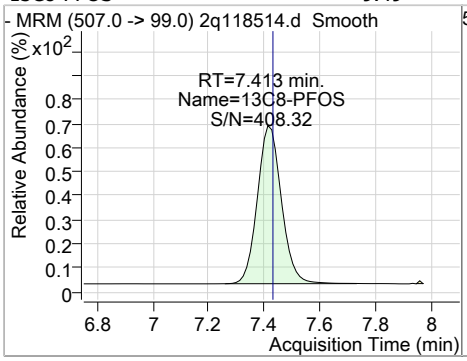
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	9.83	7.15	-0.01	18429	498.0 -> 478.0	3.8	2.2	6.5

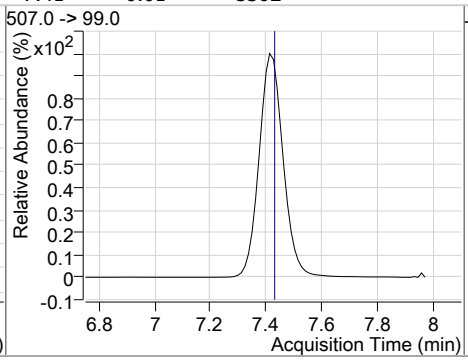


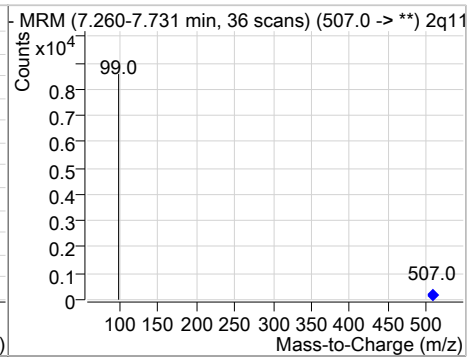




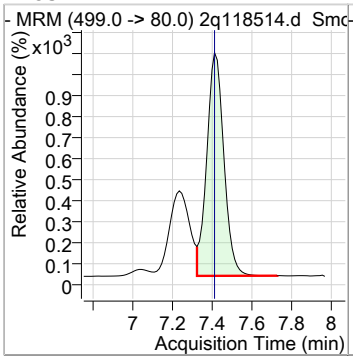
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	9.49	7.41	-0.01	5302				

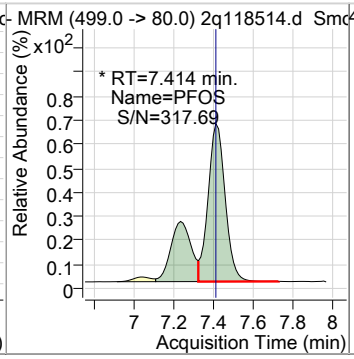


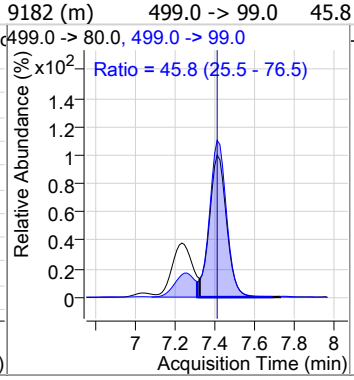


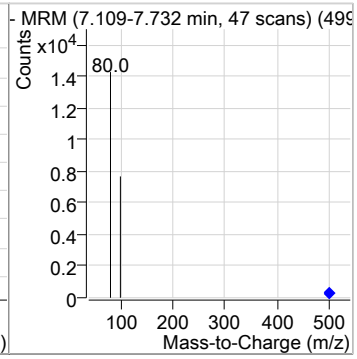


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	11.05	7.41	-0.01	9182 (m)	499.0 -> 99.0	45.8	25.5	76.5

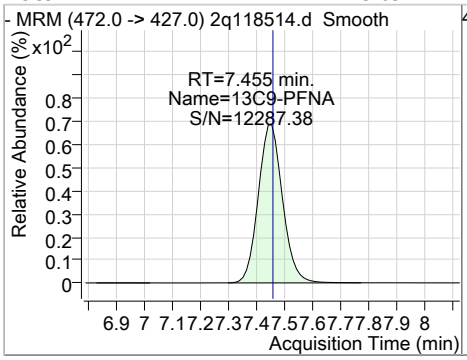


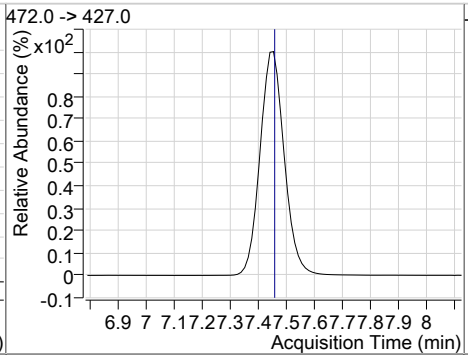


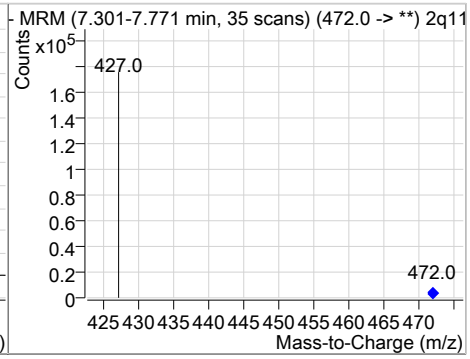




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	9.89	7.45	0.00	133286				

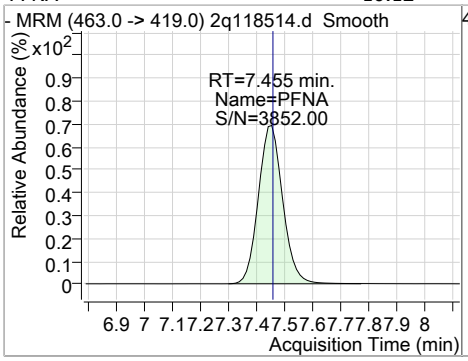


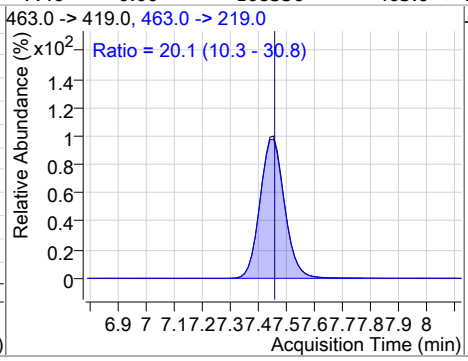


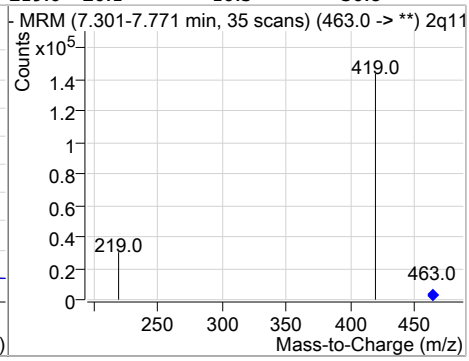


Perfluorinated Compounds by LC/MS/MS

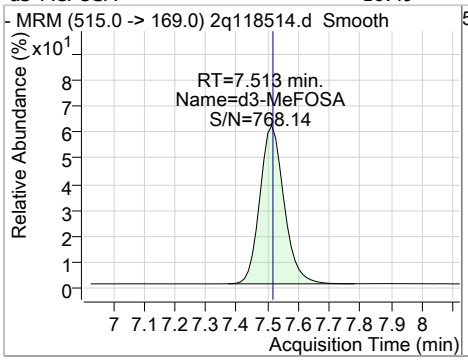
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	10.12	7.46	0.00	108356	463.0 -> 219.0	20.1	10.3	30.8

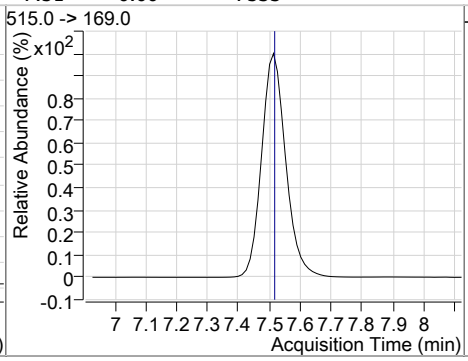


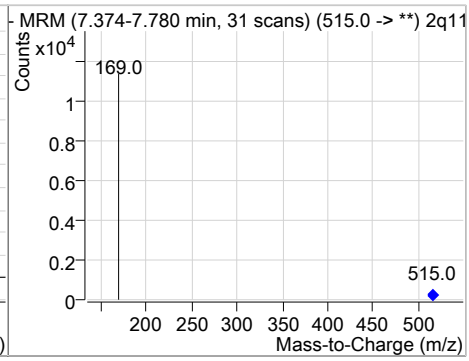




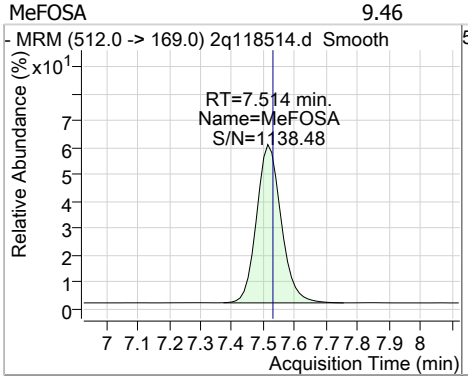
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	10.49	7.51	0.00	7533				

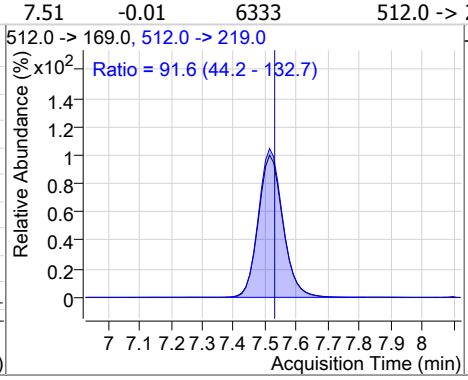


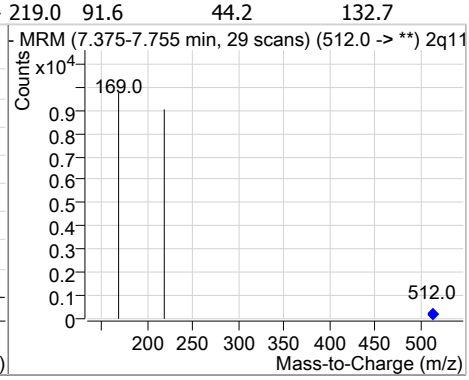




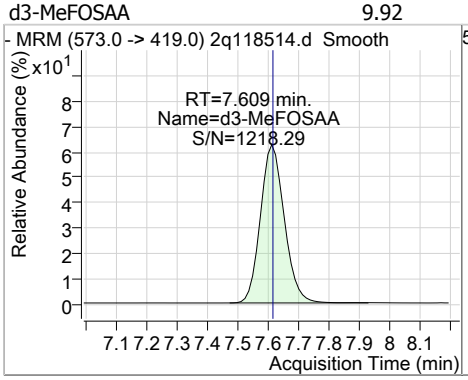
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	9.46	7.51	-0.01	6333	512.0 -> 219.0	91.6	44.2	132.7

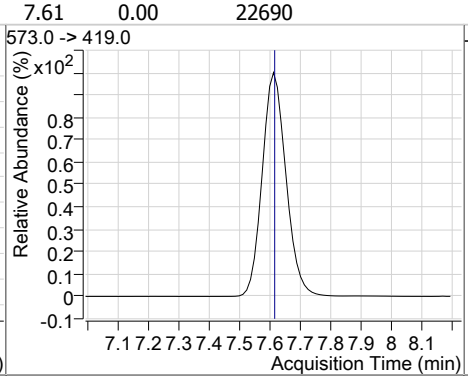


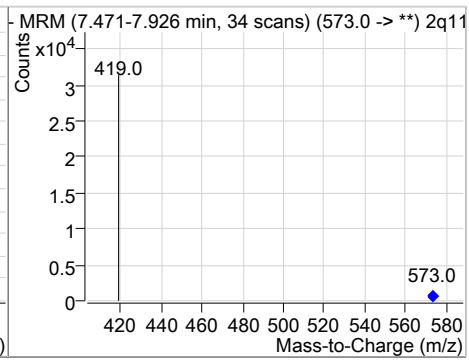




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	9.92	7.61	0.00	22690				

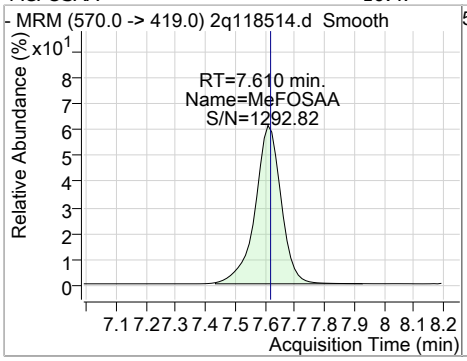


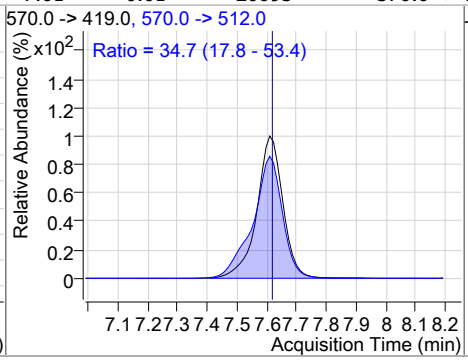


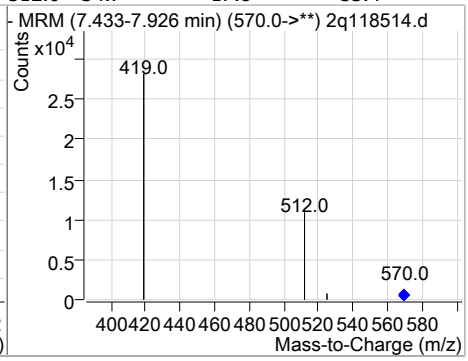


Perfluorinated Compounds by LC/MS/MS

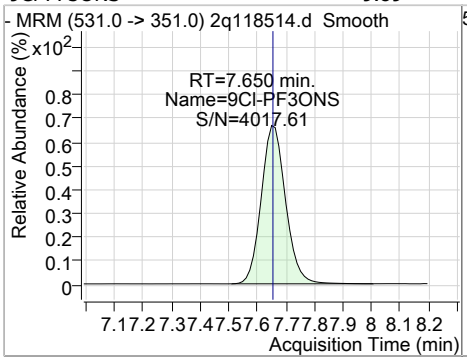
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	10.47	7.61	-0.01	20095	570.0 -> 512.0	34.7	17.8	53.4

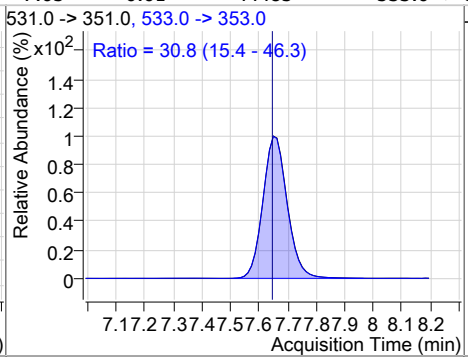


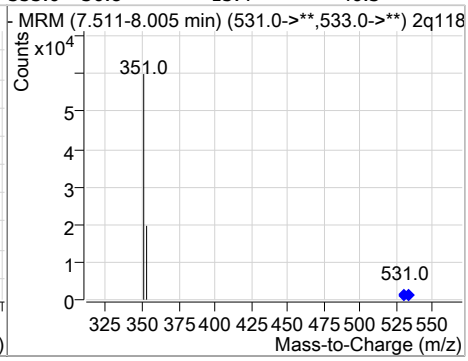




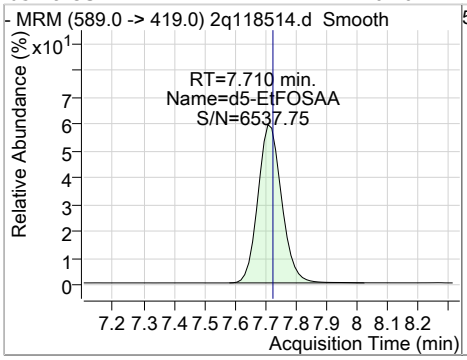
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	9.89	7.65	-0.01	44485	533.0 -> 353.0	30.8	15.4	46.3

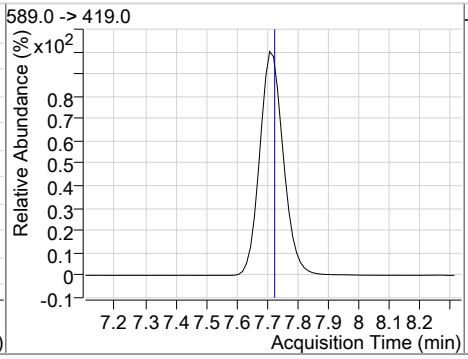


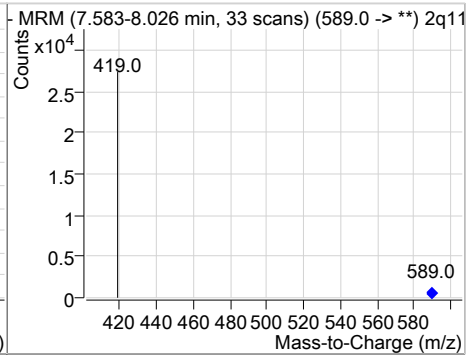




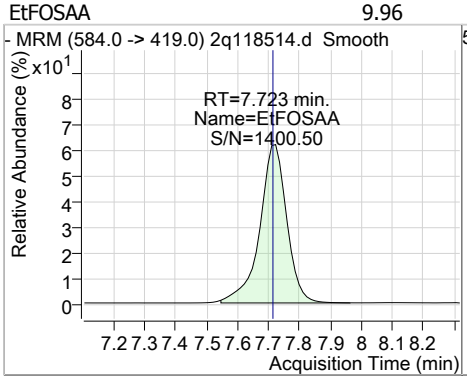
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	10.10	7.71	-0.01	19487				

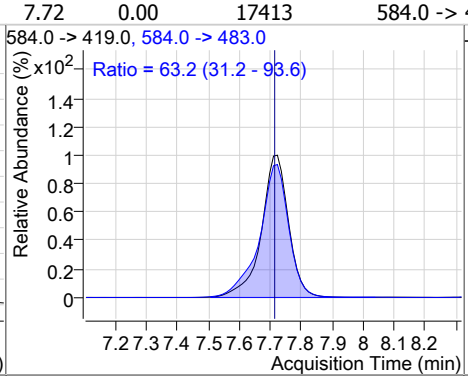


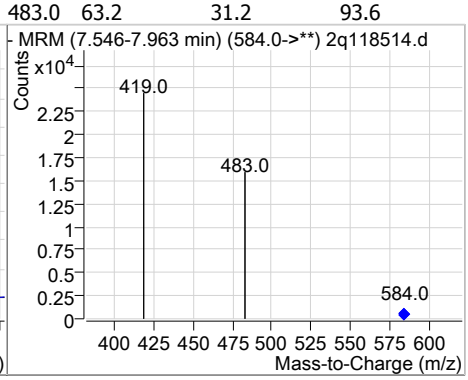




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	9.96	7.72	0.00	17413	584.0 -> 483.0	63.2	31.2	93.6

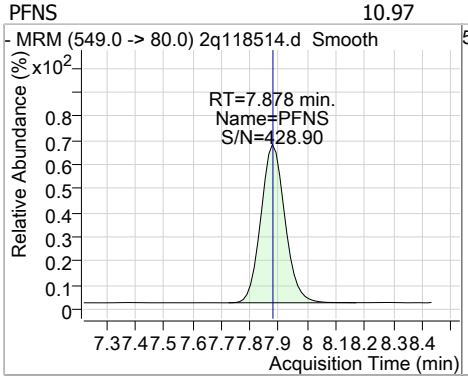


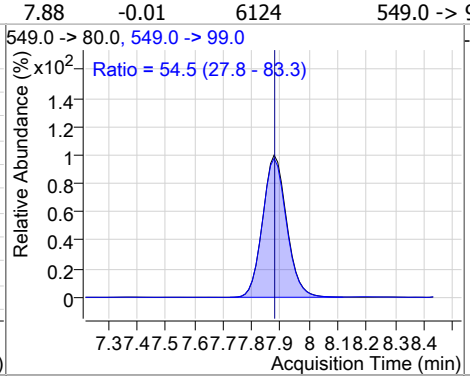


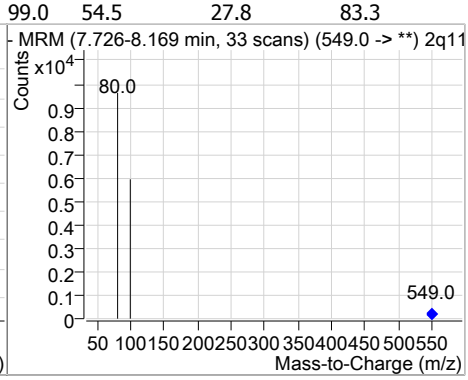


Perfluorinated Compounds by LC/MS/MS

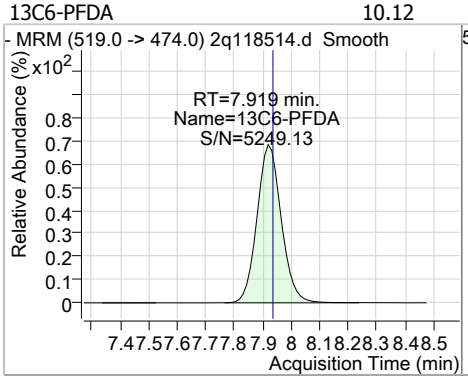
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	10.97	7.88	-0.01	6124	549.0 -> 99.0	54.5	27.8	83.3

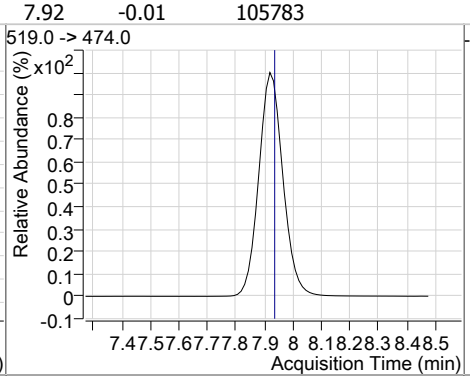


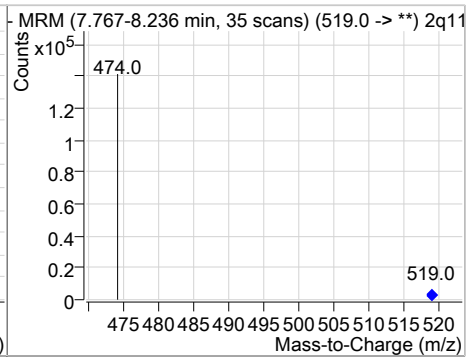




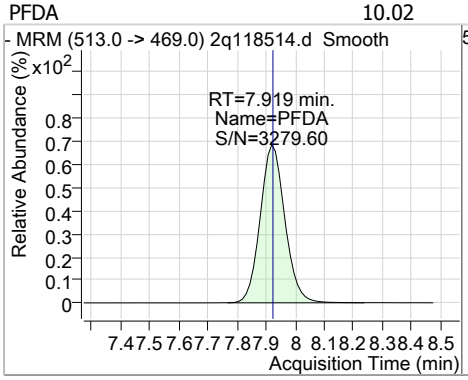
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	10.12	7.92	-0.01	105783				

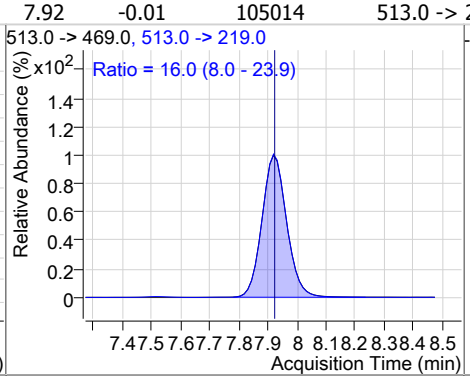


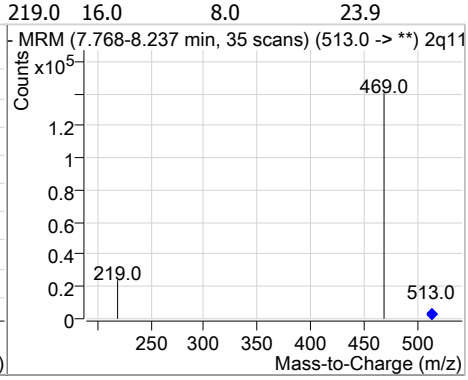




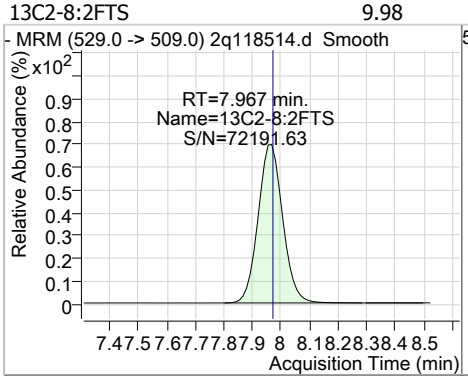
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	10.02	7.92	-0.01	105014	513.0 -> 219.0	16.0	8.0	23.9

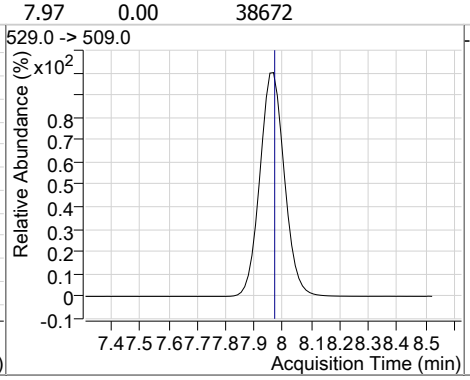


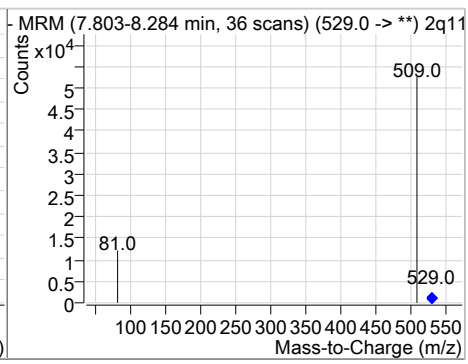




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	9.98	7.97	0.00	38672				

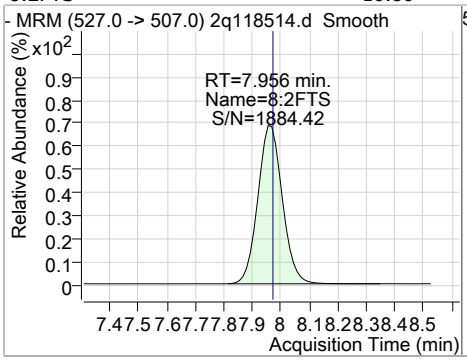


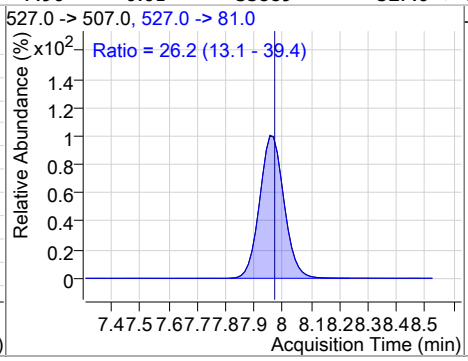


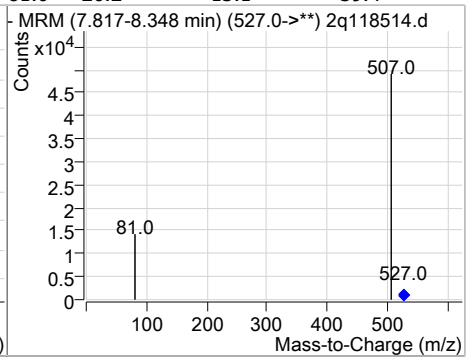


Perfluorinated Compounds by LC/MS/MS

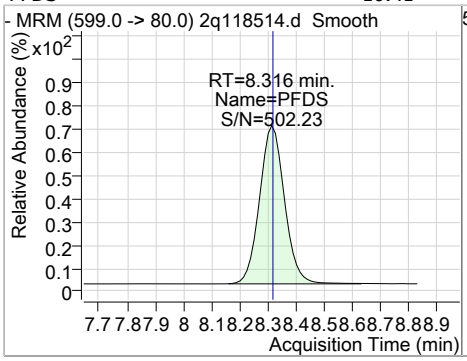
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	10.80	7.96	-0.01	35889	527.0 -> 81.0	26.2	13.1	39.4

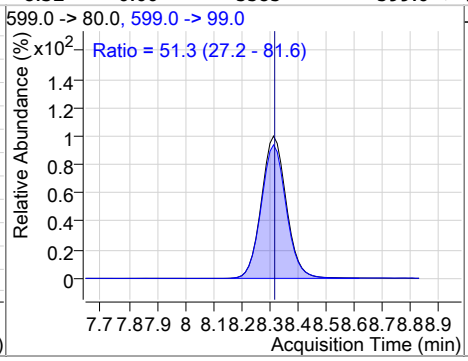


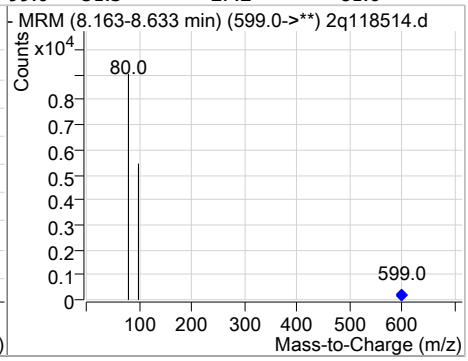




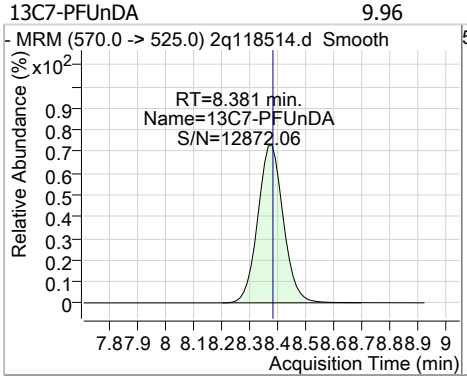
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	10.41	8.32	0.00	5585	599.0 -> 99.0	51.3	27.2	81.6

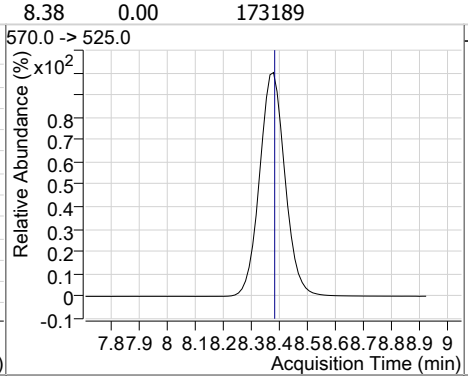


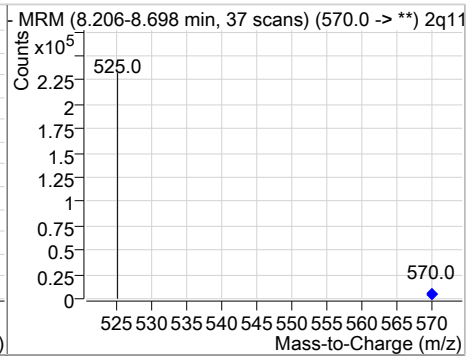




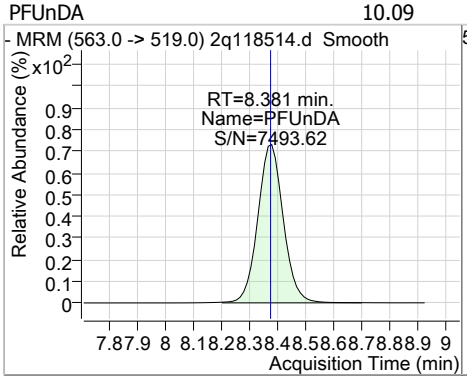
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	9.96	8.38	0.00	173189				

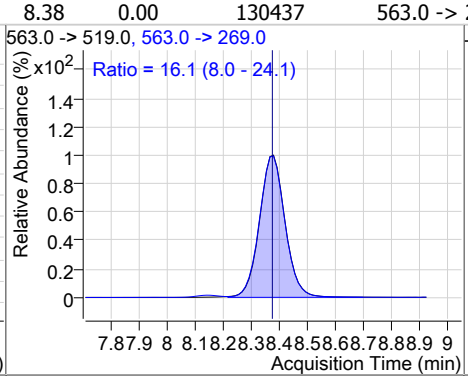


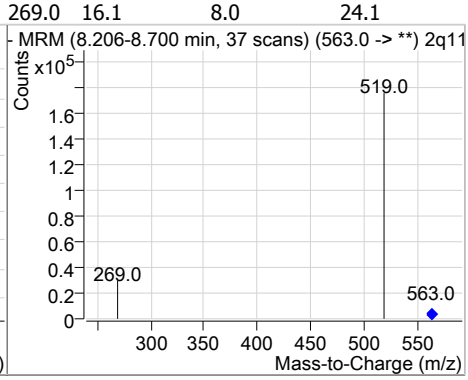




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	10.09	8.38	0.00	130437	563.0 -> 269.0	16.1	8.0	24.1

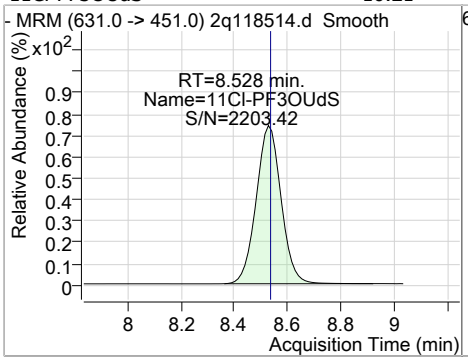


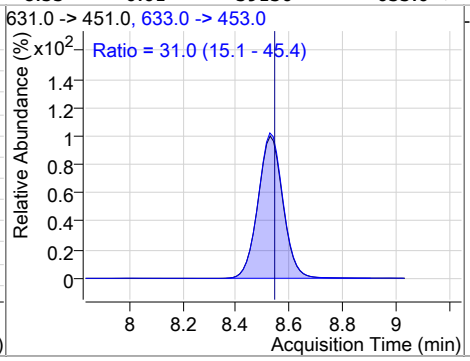


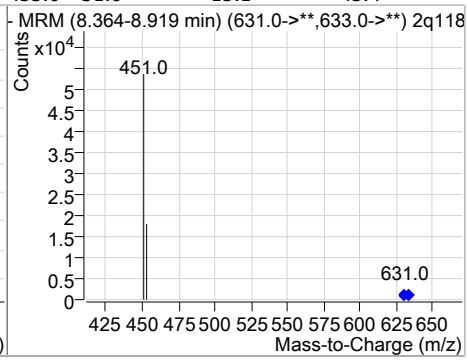


Perfluorinated Compounds by LC/MS/MS

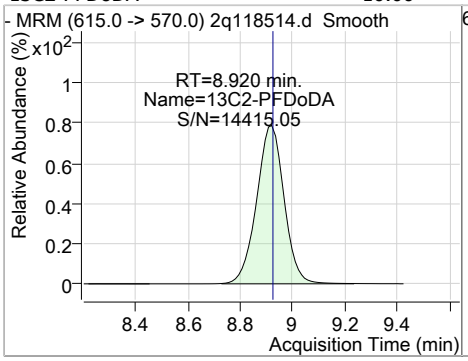
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	10.21	8.53	-0.01	39136	633.0 -> 453.0	31.0	15.1	45.4

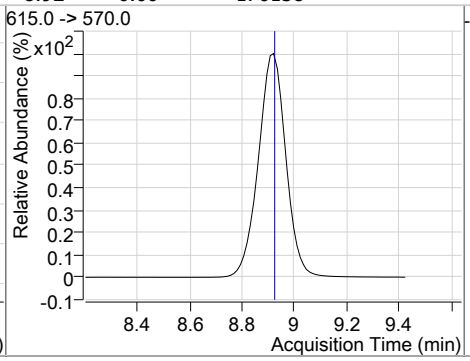


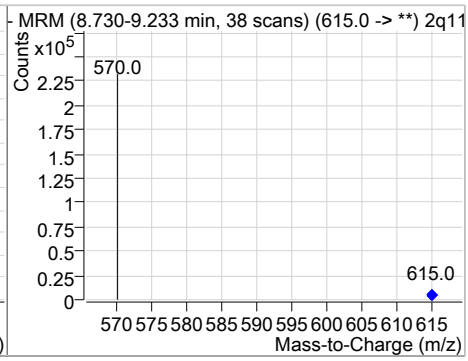




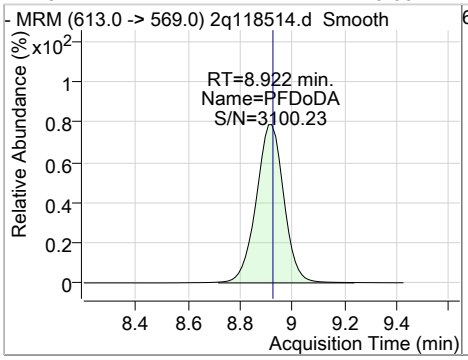
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	10.06	8.92	0.00	176158				

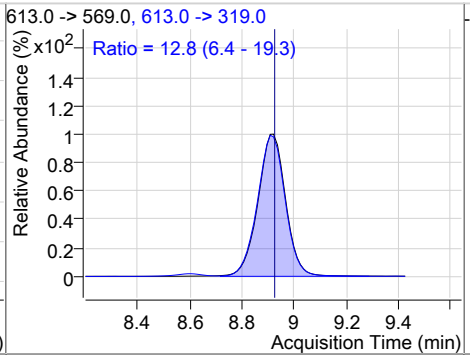


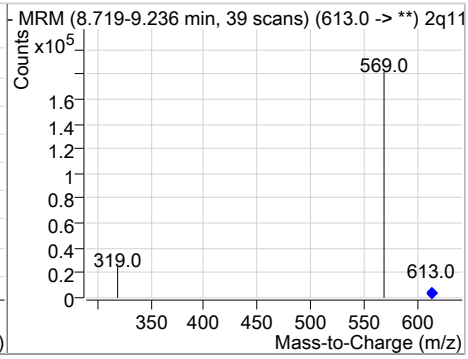




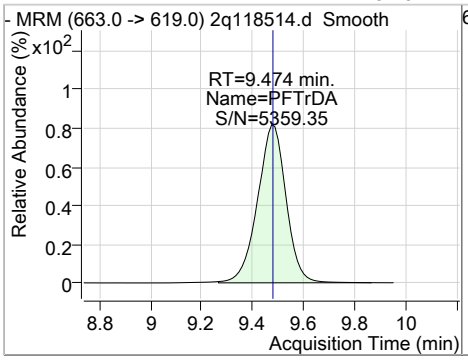
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	10.06	8.92	0.00	138366	613.0 -> 319.0	12.8	6.4	19.3

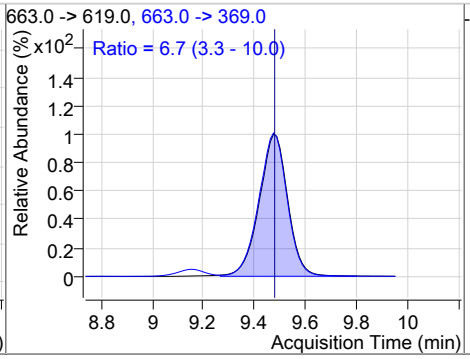


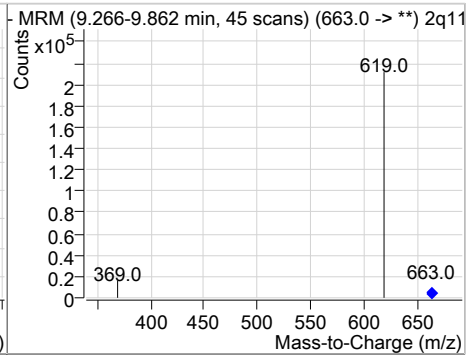




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	10.10	9.47	0.00	158611	663.0 -> 369.0	6.7	3.3	10.0

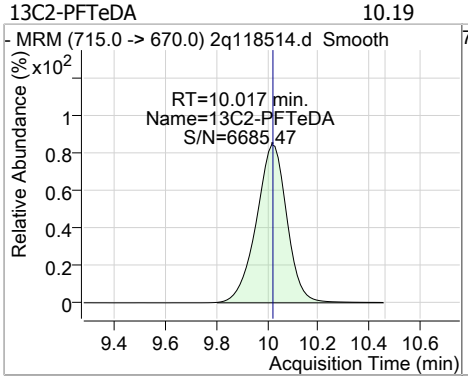


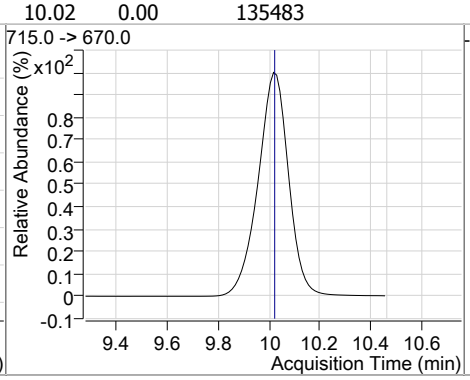


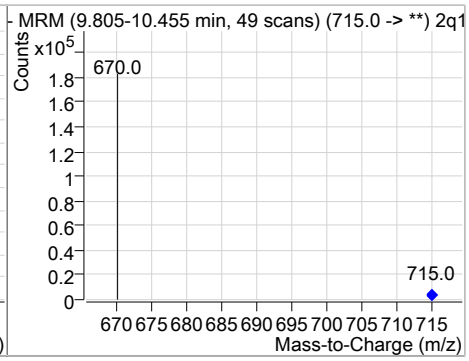


Perfluorinated Compounds by LC/MS/MS

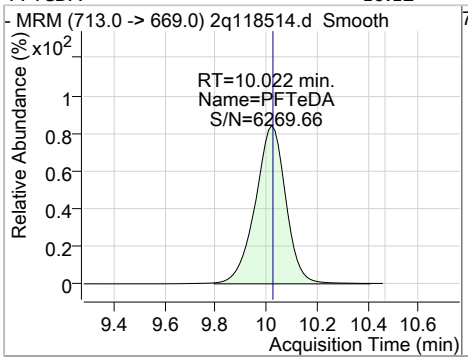
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	10.19	10.02	0.00	135483				

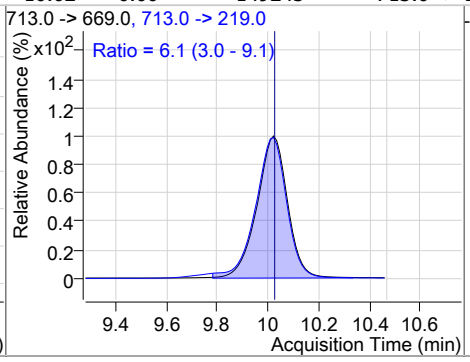


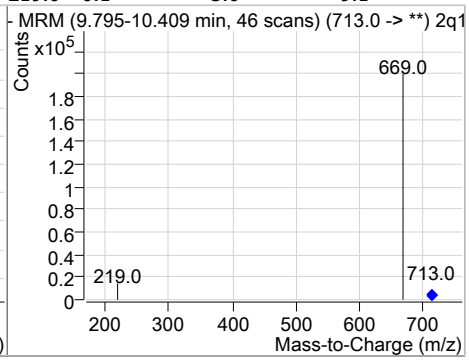




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	10.12	10.02	0.00	149243	713.0 -> 219.0	6.1	3.0	9.1







Manual Integration Approval Summary

Sample Number: S2Q1691-IC1691
Lab FileID: 2Q118514.D
Injection Time: 01/02/24 13:40
Method: EPA 537M QSM5.3 B-15
Analyst approved: 01/03/24 15:12 Lindsay Ritner
Supervisor approved: 01/04/24 11:31 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.23	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.41	Split peak

2Q118515.D

Manual Integrations APPROVED (compounds with "m" flag)

Natasha Gumtie 01/04/24 11:31

Perfluorinated Compounds by LC/MS/MS

Data File	:	2q118515.d
Operator	:	lindsayr
Acq. Method	:	537_ID.m
Acq. Date-Time	:	1/2/2024 1:57:07 PM
Sample Name	:	icc1691-20
Vial	:	P1-A7
DA Method File	:	ID_010224_S2Q1691.quantmethod.xml
Batch Name	:	s2q1691.batch.bin
Sample Information	:	op401,S2Q1691,250,,,1.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M5-EtFOSAA	7.722	589.0 -> 419.0	19775	10.00	µg/L	0.000
M4-PFBA	2.240	217.0 -> 172.0	53056	10.00	µg/L	0.000
M5-PFPeA	4.062	268.0 -> 223.0	81688	10.00	µg/L	0.000
M5-PFHxA	5.339	318.0 -> 273.0	101524	10.00	µg/L	0.000
M4-PFHpA	6.208	367.0 -> 322.0	87676	10.00	µg/L	0.000
M8-PFOA	6.887	421.0 -> 376.0	176474	10.00	µg/L	0.000
M9-PFNA	7.455	472.0 -> 427.0	138810	10.00	µg/L	0.000
M6-PFDA	7.931	519.0 -> 474.0	107702	10.00	µg/L	0.000
M7-PFUnDA	8.381	570.0 -> 525.0	178233	10.00	µg/L	0.000
M2-PFDoDA	8.920	615.0 -> 570.0	180076	10.00	µg/L	0.000
M2-PFTeDA	10.017	715.0 -> 670.0	137470	10.00	µg/L	0.000
M8-FOSA	7.159	506.0 -> 78.0	21492	10.00	µg/L	0.000
M3-PFBS	4.330	302.0 -> 99.0	6024	10.00	µg/L	0.000
M3-PFHxS	6.243	402.0 -> 99.0	6402	10.00	µg/L	0.000
M8-PFOS	7.427	507.0 -> 99.0	5560	10.00	µg/L	0.000
M2-4:2FTS	5.234	329.0 -> 309.0	39498	10.00	µg/L	0.000
M2-6:2FTS	6.885	429.0 -> 409.0	58496	10.00	µg/L	0.000
M2-8:2FTS	7.967	529.0 -> 509.0	41113	10.00	µg/L	0.000
M3-MeFOSAA	7.609	573.0 -> 419.0	23347	10.00	µg/L	0.000
M3-HFPO-DA	5.607	287.0 -> 169.0	8622	10.00	µg/L	0.000
M3-MeFOSA	7.513	515.0 -> 169.0	7496	10.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	5.234	329.0 -> 309.0	39498	10.71	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 107.1%		
13C2-6:2FTS	6.885	429.0 -> 409.0	58496	10.19	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.9%		
13C2-8:2FTS	7.967	529.0 -> 509.0	41113	10.61	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 106.1%		
13C2-PFDoDA	8.920	615.0 -> 570.0	180076	10.28	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 102.8%		
13C2-PFTeDA	10.017	715.0 -> 670.0	137470	10.34	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 103.4%		
13C3-PFBS	4.330	302.0 -> 99.0	6024	10.03	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.3%		
13C3-PFHxS	6.243	402.0 -> 99.0	6402	10.46	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 104.6%		
13C4-PFBA	2.240	217.0 -> 172.0	53056	10.28	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 102.8%		
13C4-PFHpA	6.208	367.0 -> 322.0	87676	10.21	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 102.1%		
d5-EtFOSAA	7.722	589.0 -> 419.0	19775	10.25	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 102.5%		
13C5-PFHxA	5.339	318.0 -> 273.0	101524	10.29	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 102.9%		
13C5-PFPeA	4.062	268.0 -> 223.0	81688	10.27	µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

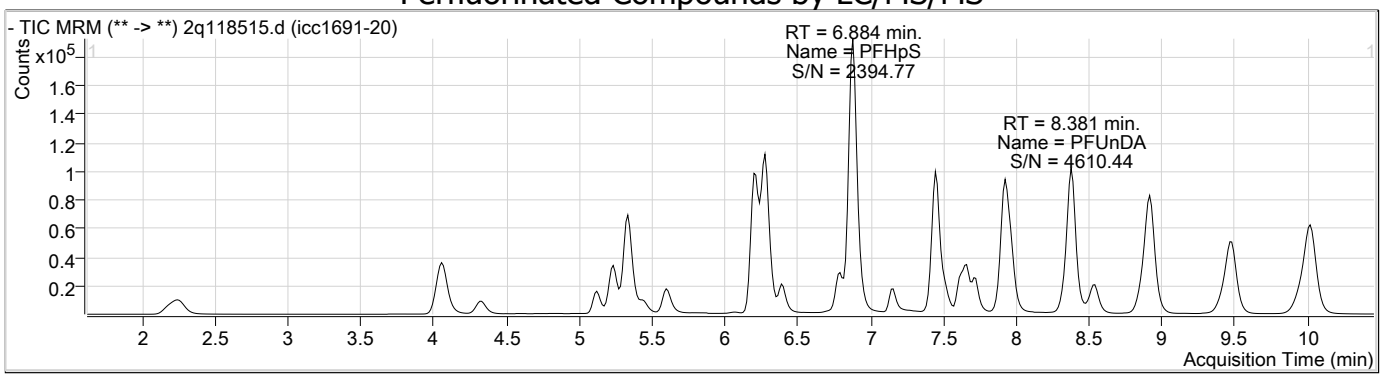
Compound	RT	Transition	Response	Conc. Units		Dev(Min)
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 102.7%		
13C6-PFDA	7.931	519.0 -> 474.0	107702	10.30 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 103.0%		
13C7-PFUnDA	8.381	570.0 -> 525.0	178233	10.25 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 102.5%		
13C8-FOSA	7.159	506.0 -> 78.0	21492	10.47 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 104.7%		
13C8-PFOA	6.887	421.0 -> 376.0	176474	10.43 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 104.3%		
13C8-PFOS	7.427	507.0 -> 99.0	5560	9.96 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.6%		
13C9-PFNA	7.455	472.0 -> 427.0	138810	10.30 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 103.0%		
d3-MeFOSAA	7.609	573.0 -> 419.0	23347	10.21 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 102.1%		
13C3-HFPO-DA	5.607	287.0 -> 169.0	8622	10.37 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 103.7%		
d3-MeFOSA	7.513	515.0 -> 169.0	7496	10.44 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 104.4%		
Target Compounds						QValue
4:2FTS	5.237	327.0 -> 307.0	74139	18.48 µg/L		100
		327.0 -> 81.0	27469			
6:2FTS	6.886	427.0 -> 407.0	99822	19.56 µg/L		100
		427.0 -> 81.0	29577			
8:2FTS	7.968	527.0 -> 507.0	66477	18.81 µg/L		100
		527.0 -> 81.0	17463			
EtFOSAA	7.723	584.0 -> 419.0	33439	18.85 µg/L		100
		584.0 -> 483.0	20863			
FOSA	7.161	498.0 -> 78.0	34260	18.17 µg/L		100
		498.0 -> 478.0	1482			
MeFOSAA	7.622	570.0 -> 419.0	37493	18.98 µg/L		100
		570.0 -> 512.0	13356			
PFBA	2.233	213.0 -> 169.0	30971	18.54 µg/L		100
PFBS	4.319	299.0 -> 80.0	28793	18.92 µg/L		100
		299.0 -> 99.0	10933			
PFDA	7.932	513.0 -> 469.0	195339	18.31 µg/L		100
		513.0 -> 219.0	31187			
PFDoDA	8.922	613.0 -> 569.0	259867	18.48 µg/L		100
		613.0 -> 319.0	33495			
PFDS	8.316	599.0 -> 80.0	10053	18.20 µg/L		100
		599.0 -> 99.0	5470			
PFHpA	6.209	363.0 -> 319.0	264905	18.27 µg/L		100
		363.0 -> 169.0	44362			
PFHpS	6.884	449.0 -> 80.0	19078	18.05 µg/L		100
		449.0 -> 99.0	10656			
PFHxA	5.340	313.0 -> 269.0	194023	18.57 µg/L		100
		313.0 -> 119.0	7504			
PFHxS	6.231	399.0 -> 80.0	25560	18.23 µg/L	m	100
		399.0 -> 99.0	13089			
PFNA	7.455	463.0 -> 419.0	205104	18.40 µg/L		100
		463.0 -> 219.0	42052			
PFNS	7.890	549.0 -> 80.0	11592	19.79 µg/L		100
		549.0 -> 99.0	6441			
PFOA	6.888	413.0 -> 369.0	340355	18.06 µg/L		100
		413.0 -> 169.0	61669			
PFOS	7.428	499.0 -> 80.0	17068	19.58 µg/L	m	100

Perfluorinated Compounds by LC/MS/MS

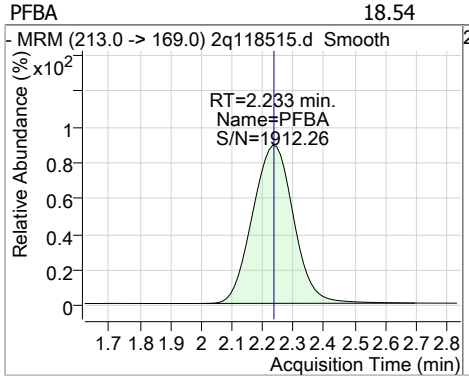
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		499.0 -> 99.0	8699			
PFPeA	4.064	263.0 -> 219.0	119405	18.54	µg/L	100
PFPeS	5.445	349.0 -> 80.0	20737	18.83	µg/L	100
		349.0 -> 99.0	8849			
PFTeDA	10.022	713.0 -> 669.0	280446	18.75	µg/L	100
		713.0 -> 219.0	16978			
PFTrDA	9.474	663.0 -> 619.0	300274	18.71	µg/L	100
		663.0 -> 369.0	20100			
PFUnDA	8.381	563.0 -> 519.0	241504	18.16	µg/L	100
		563.0 -> 269.0	38764			
11Cl-PF3OUdS	8.541	631.0 -> 451.0	73109	18.65	µg/L	100
		633.0 -> 453.0	22152			
9Cl-PF3ONS	7.663	531.0 -> 351.0	82609	18.04	µg/L	100
		533.0 -> 353.0	25524			
ADONA	6.284	377.0 -> 251.0	323918	17.30	µg/L	100
		377.0 -> 85.0	84732			
HFPO-DA	5.601	329.0 -> 169.0	49440	18.50	µg/L	100
		285.0 -> 169.0	14276			
MeFOSA	7.527	512.0 -> 169.0	11844	17.78	µg/L	100
		512.0 -> 219.0	10481			
4-PFECHS	6.794	461.0 -> 381.0	87921	17.54	µg/L	100
		461.0 -> 99.0	30367			
FBSA	5.128	298.0 -> 78.0	54966	17.10	µg/L	100
		298.0 -> 64.0	5726			
FHxSA	6.408	398.0 -> 78.0	56783	17.87	µg/L	100
		398.0 -> 64.0	6061			

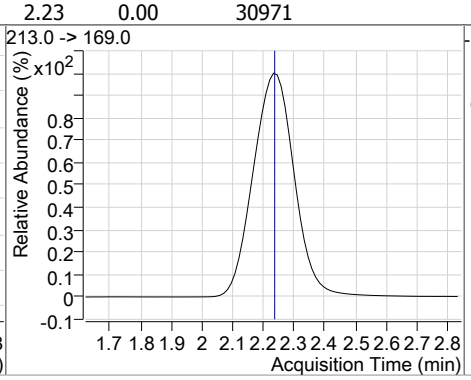
 # = Qualifier out of range, m = manually integrated, + = Area summed

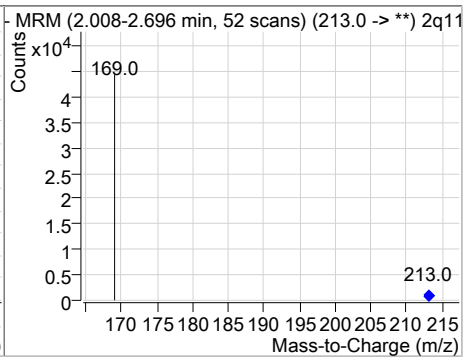
Perfluorinated Compounds by LC/MS/MS



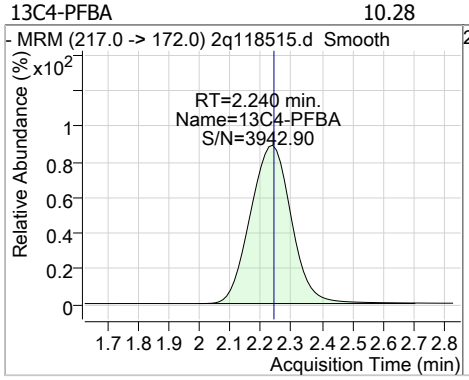
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	18.54	2.23	0.00	30971				

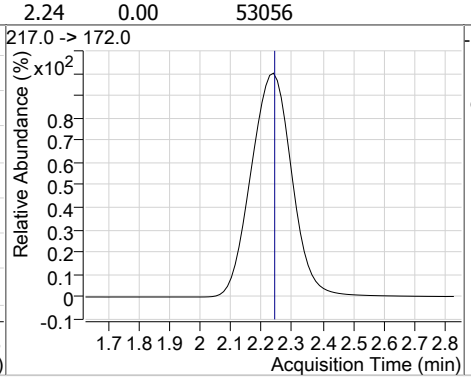


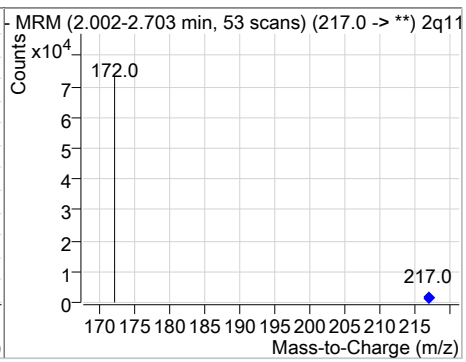




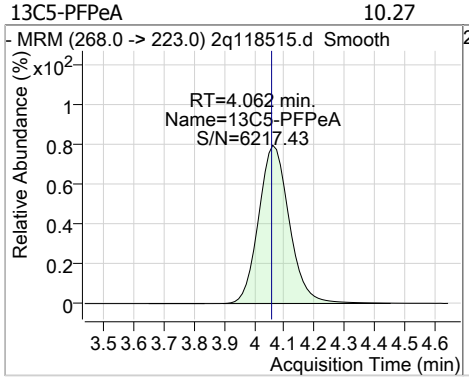
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	10.28	2.24	0.00	53056				

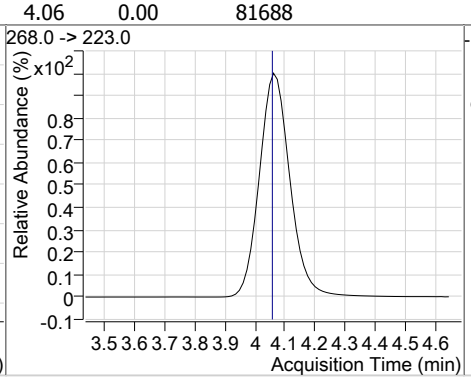


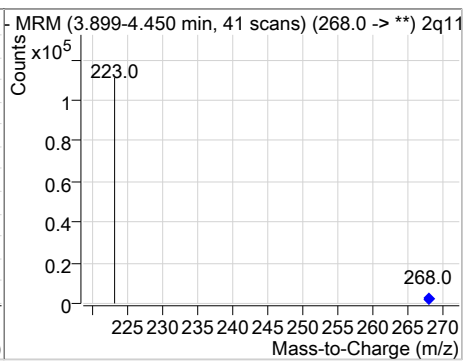




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	10.27	4.06	0.00	81688				

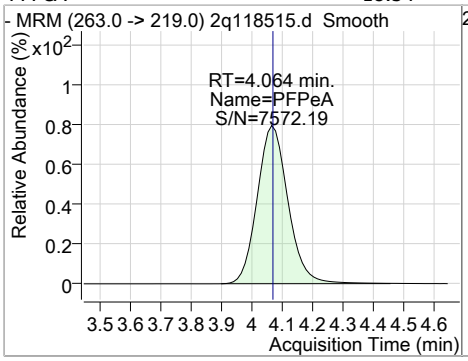


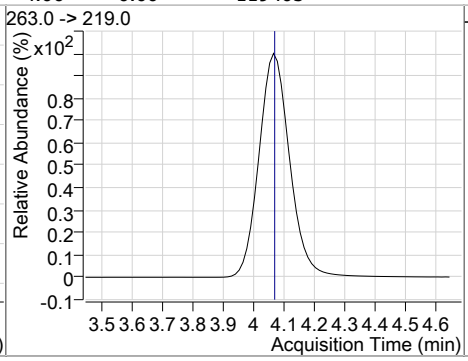


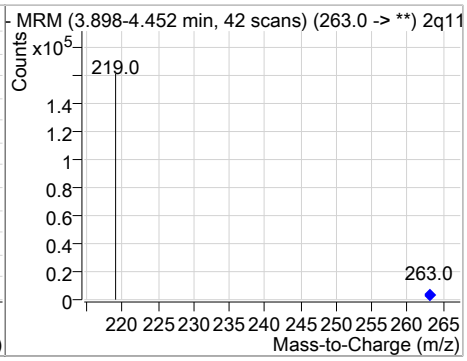


Perfluorinated Compounds by LC/MS/MS

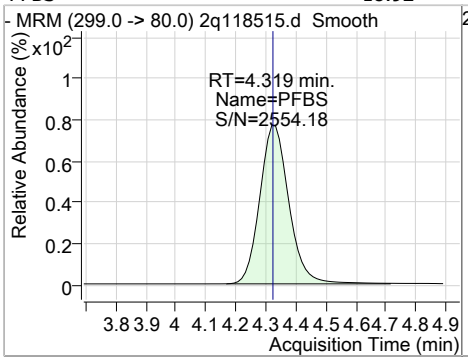
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	18.54	4.06	0.00	119405				

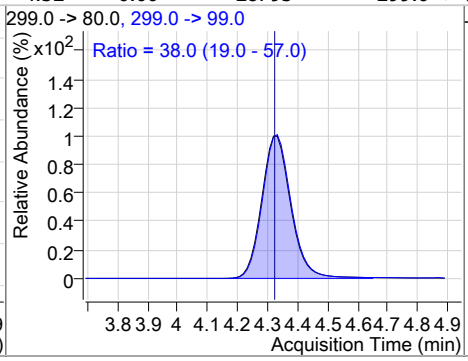


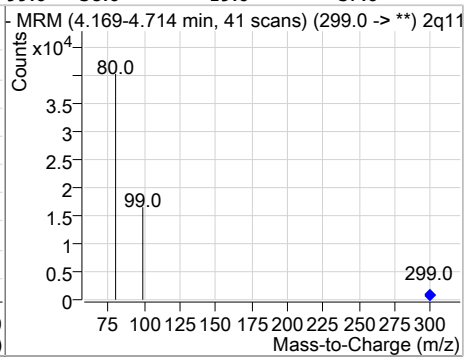




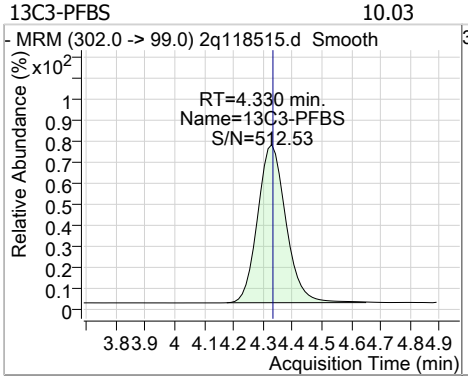
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	18.92	4.32	0.00	28793	299.0 -> 99.0	38.0	19.0	57.0

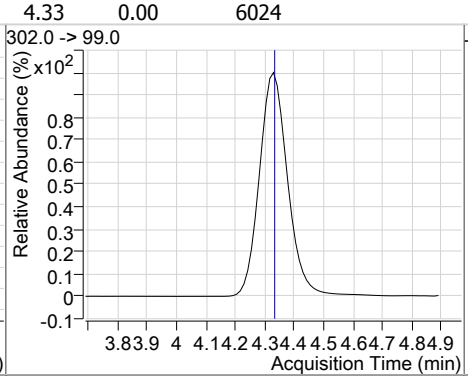


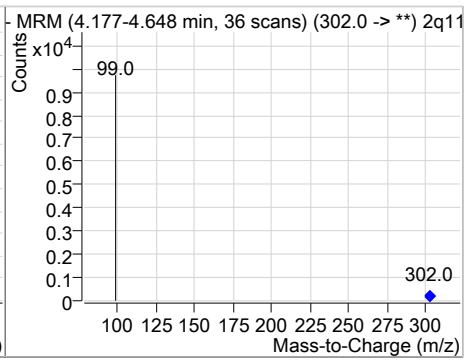




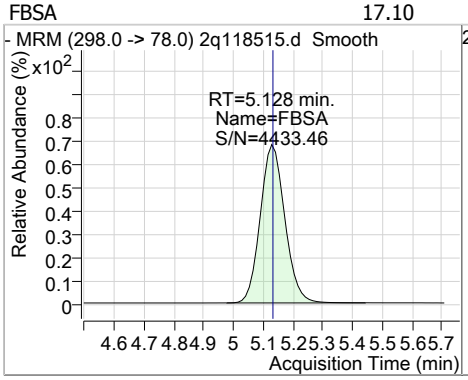
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	10.03	4.33	0.00	6024				

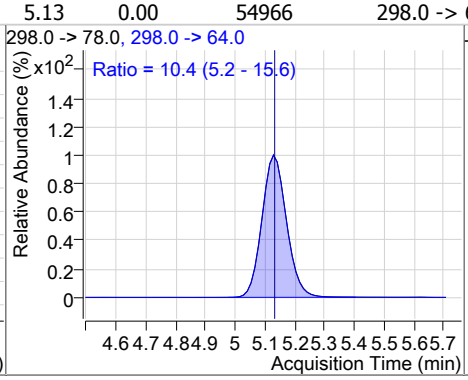


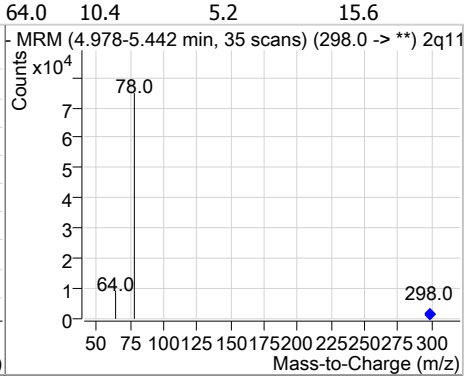




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	17.10	5.13	0.00	54966	298.0 -> 64.0	10.4	5.2	15.6

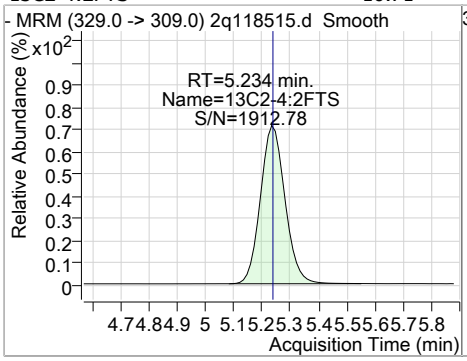


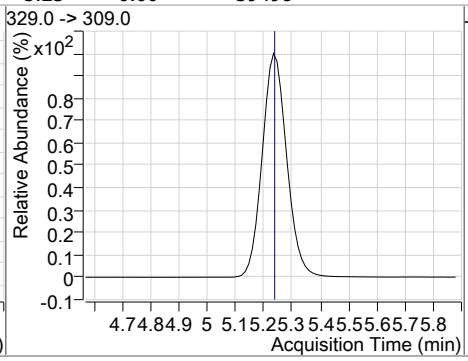


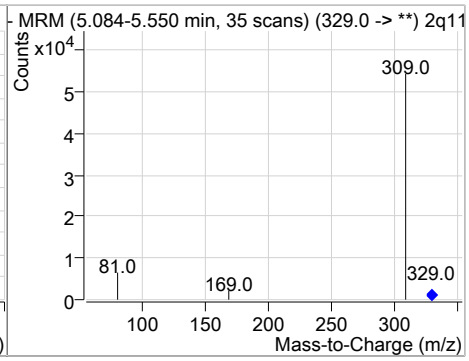


Perfluorinated Compounds by LC/MS/MS

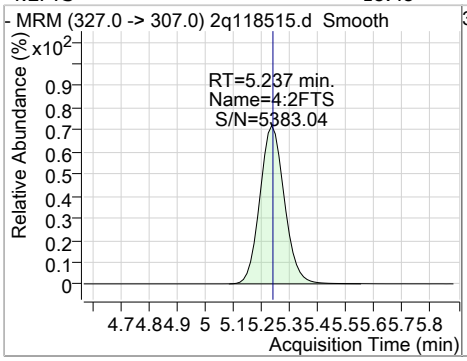
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	10.71	5.23	0.00	39498				

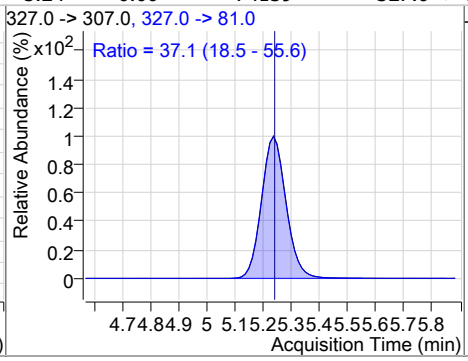


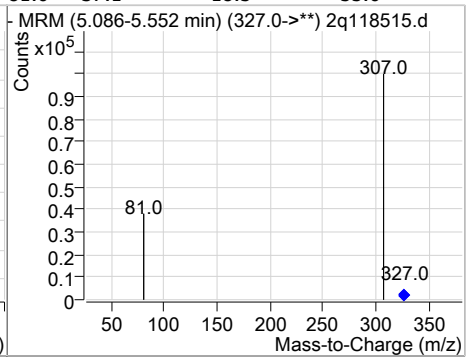




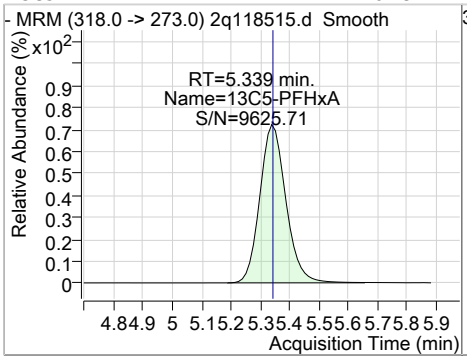
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	18.48	5.24	0.00	74139	327.0 -> 81.0	37.1	18.5	55.6

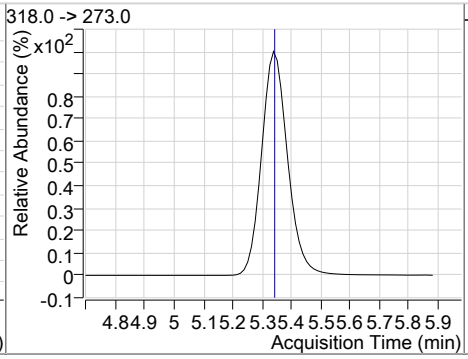


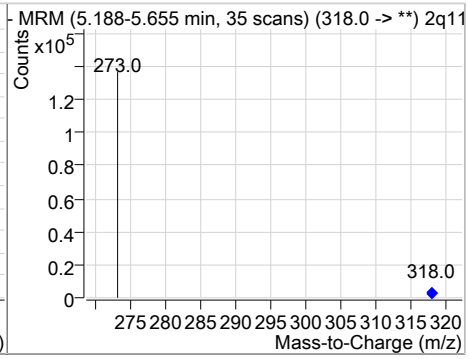




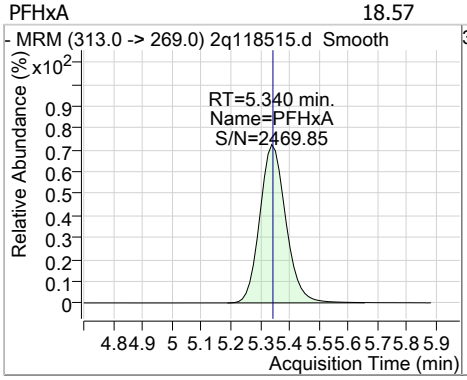
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	10.29	5.34	0.00	101524				

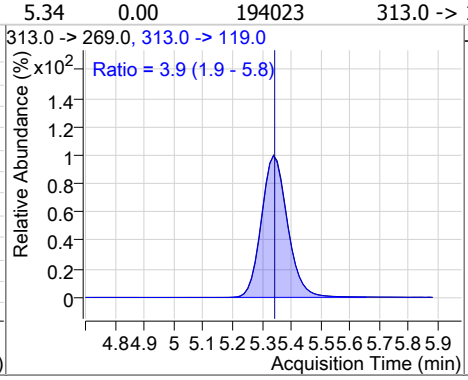


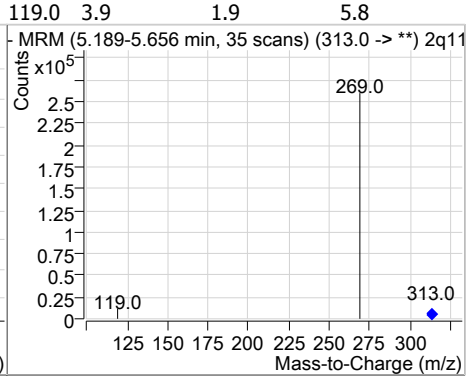




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	18.57	5.34	0.00	194023	313.0 -> 119.0	3.9	1.9	5.8

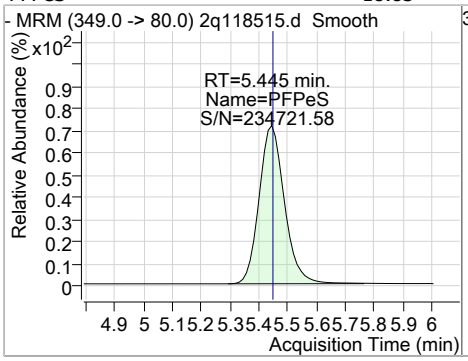


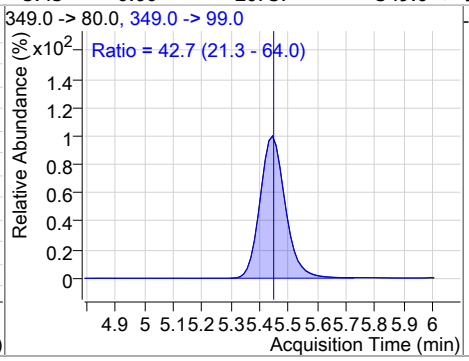


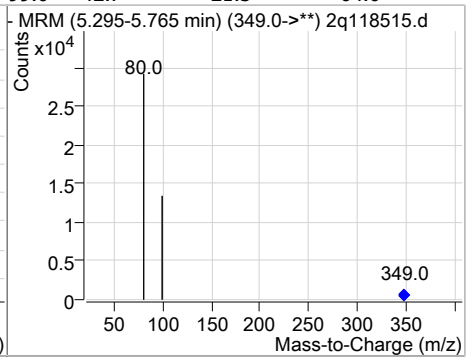


Perfluorinated Compounds by LC/MS/MS

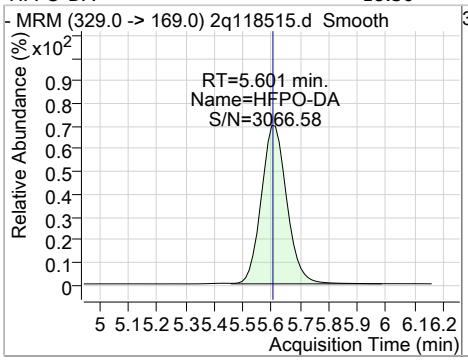
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	18.83	5.45	0.00	20737	349.0 -> 99.0	42.7	21.3	64.0

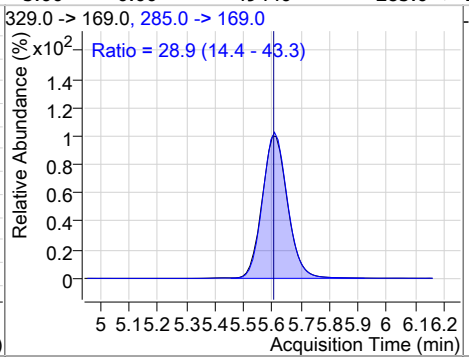


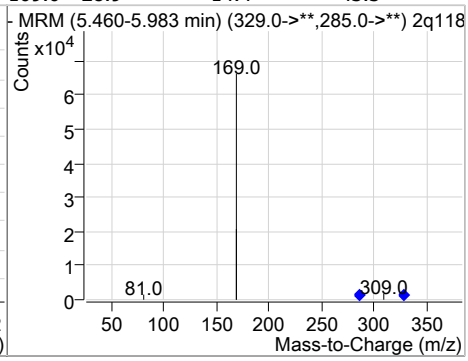




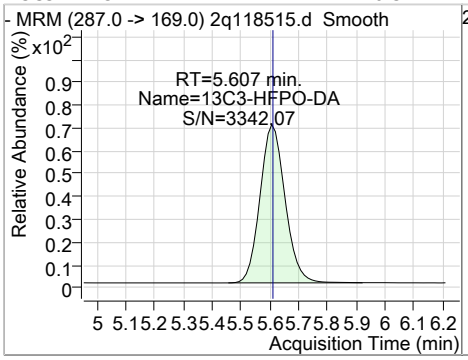
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	18.50	5.60	0.00	49440	285.0 -> 169.0	28.9	14.4	43.3

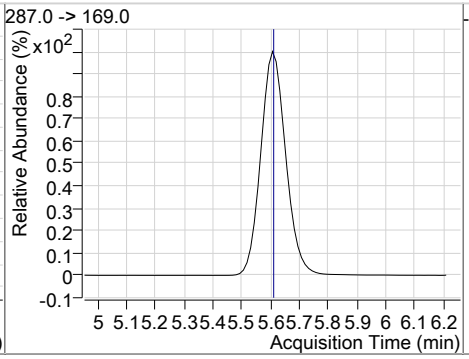


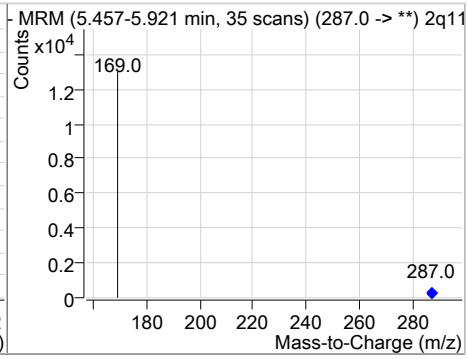




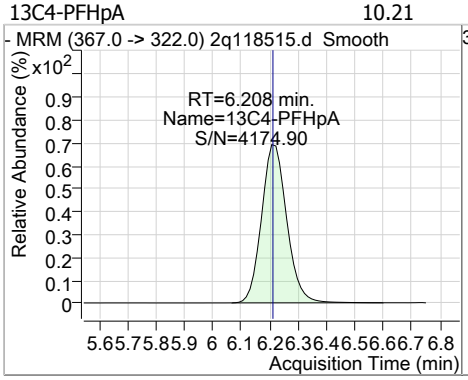
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	10.37	5.61	0.00	8622				

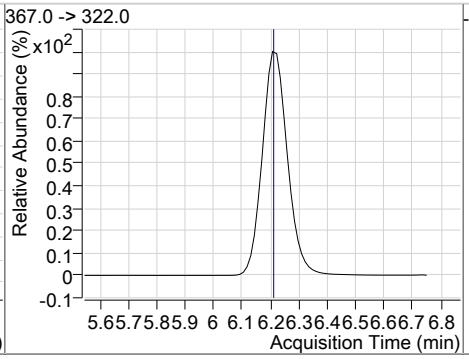


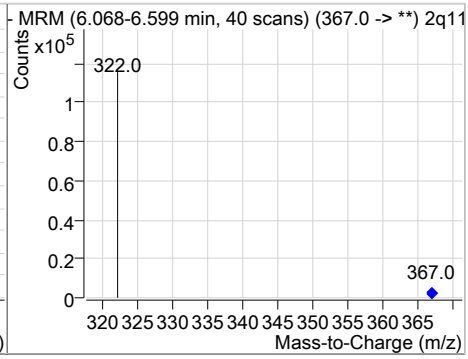




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	10.21	6.21	0.00	87676				

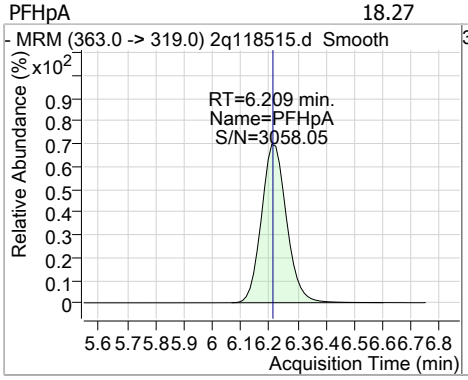


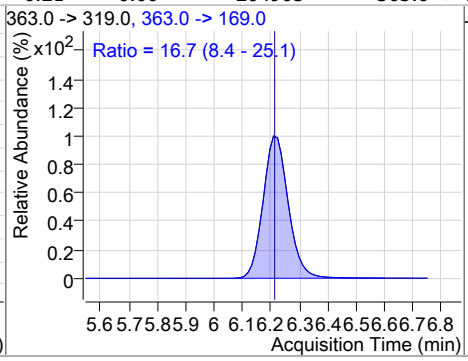


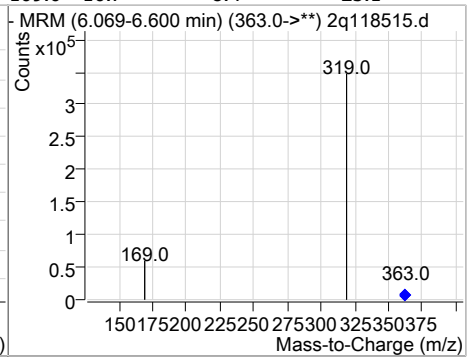


Perfluorinated Compounds by LC/MS/MS

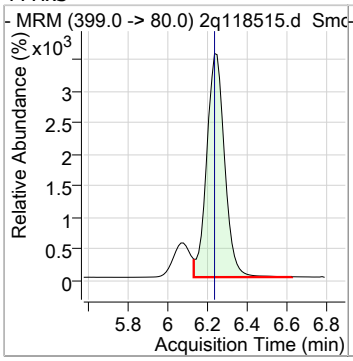
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	18.27	6.21	0.00	264905	363.0 -> 169.0	16.7	8.4	25.1

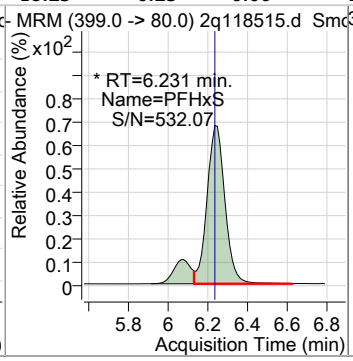


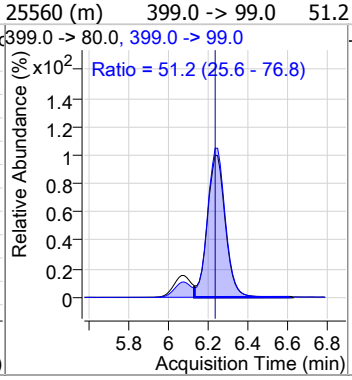


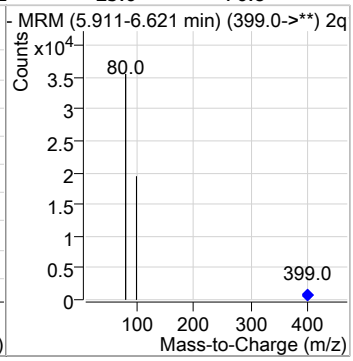


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	18.23	6.23	0.00	25560 (m)	399.0 -> 99.0	51.2	25.6	76.8

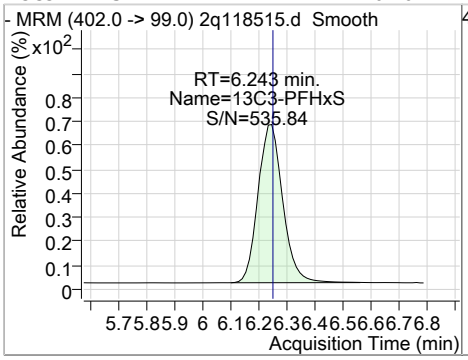


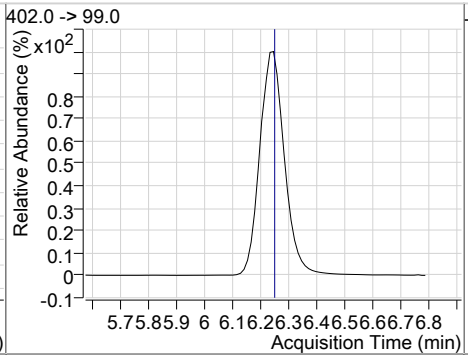


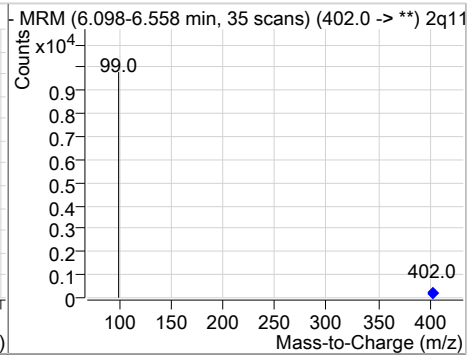




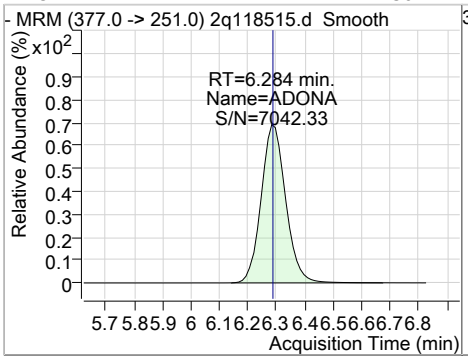
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	10.46	6.24	0.00	6402				

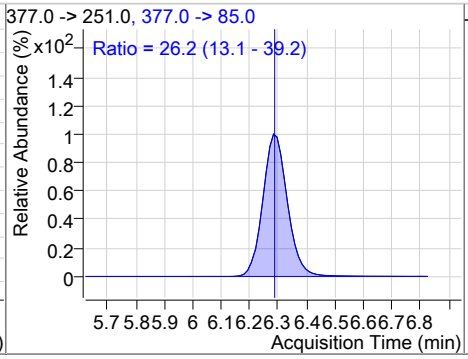


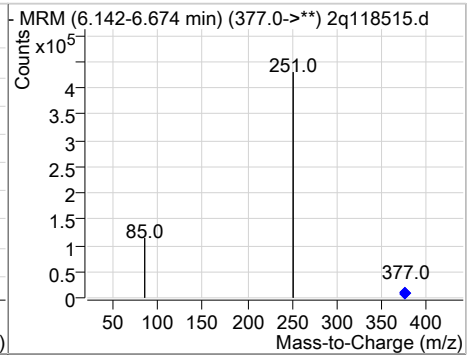




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	17.30	6.28	0.00	323918	377.0 -> 85.0	26.2	13.1	39.2

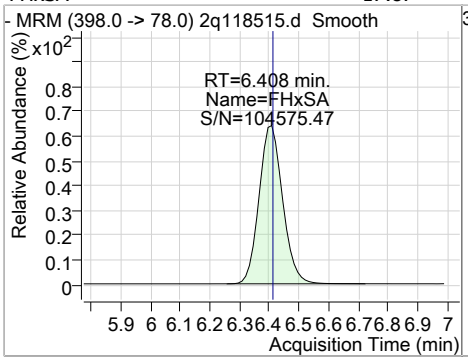


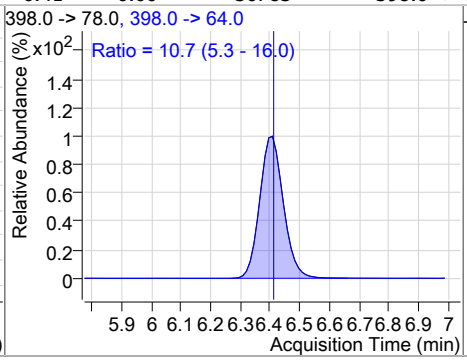


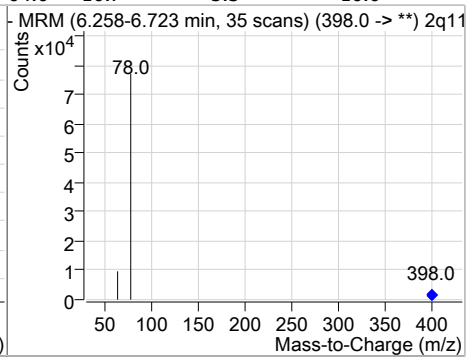


Perfluorinated Compounds by LC/MS/MS

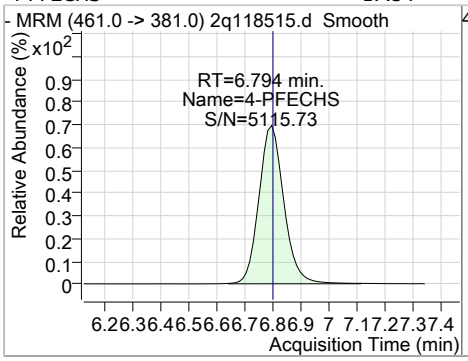
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	17.87	6.41	0.00	56783	398.0 -> 64.0	10.7	5.3	16.0

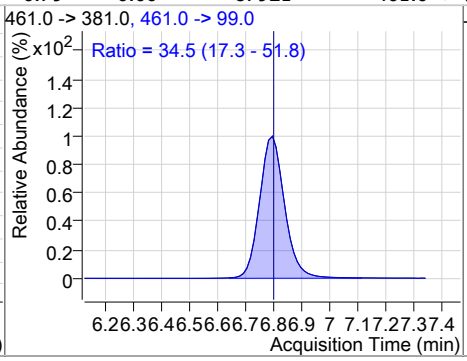


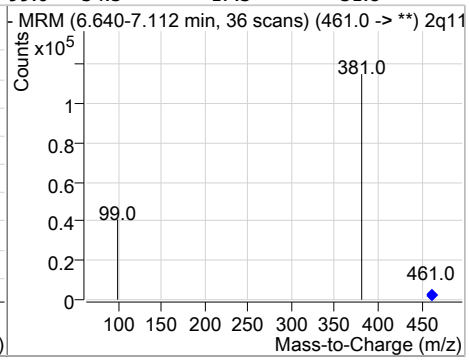




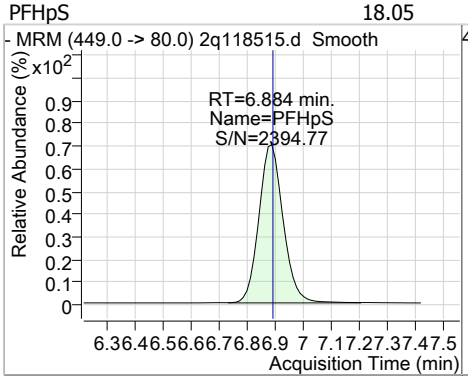
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS	17.54	6.79	0.00	87921	461.0 -> 99.0	34.5	17.3	51.8

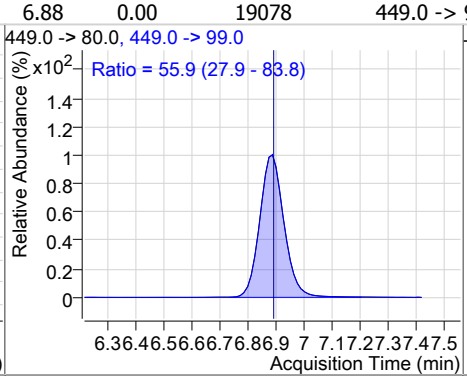


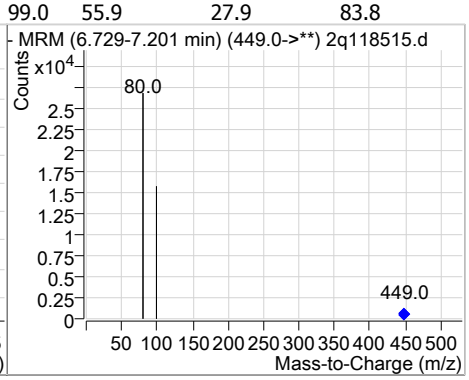




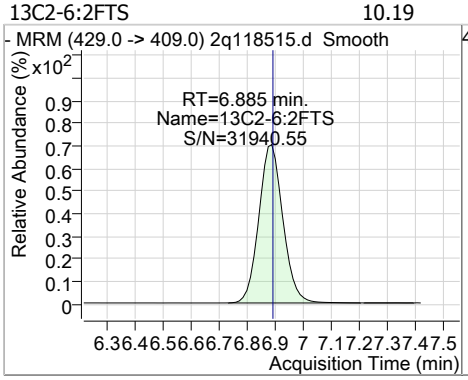
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	18.05	6.88	0.00	19078	449.0 -> 99.0	55.9	27.9	83.8

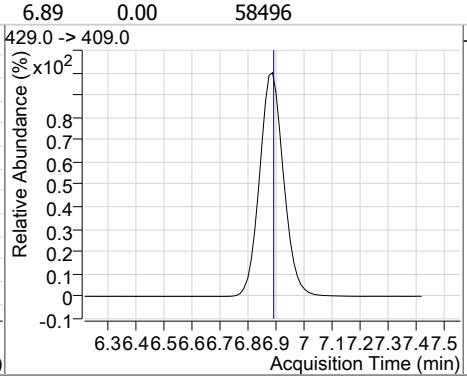


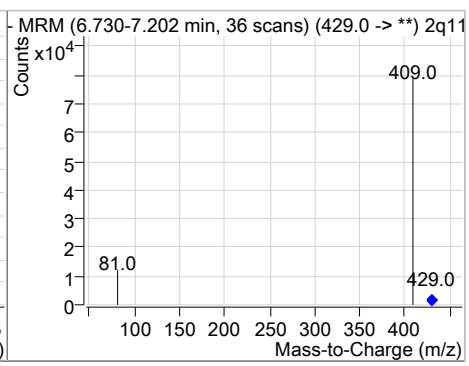




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	10.19	6.89	0.00	58496				

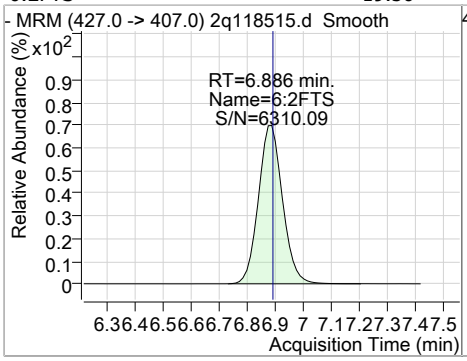


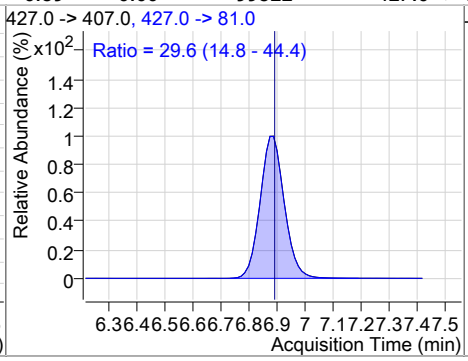


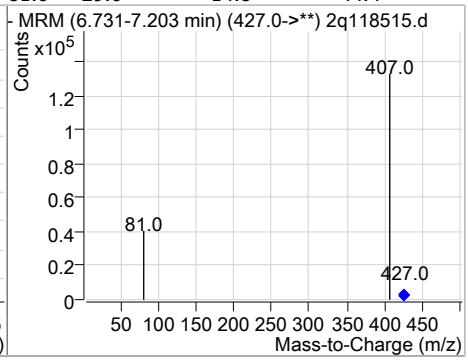


Perfluorinated Compounds by LC/MS/MS

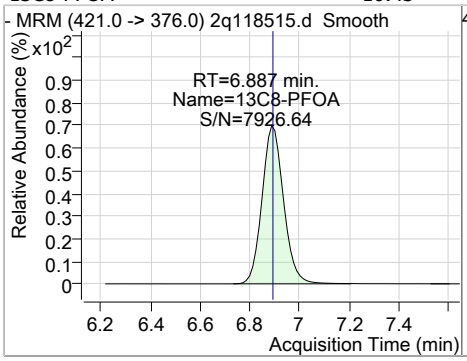
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	19.56	6.89	0.00	99822	427.0 -> 81.0	29.6	14.8	44.4

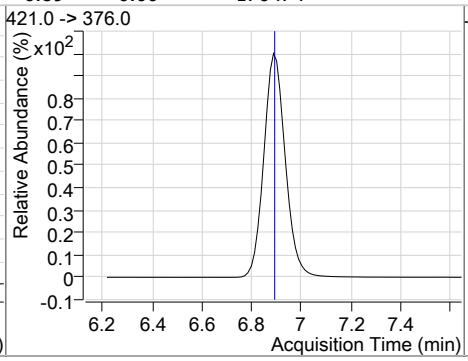


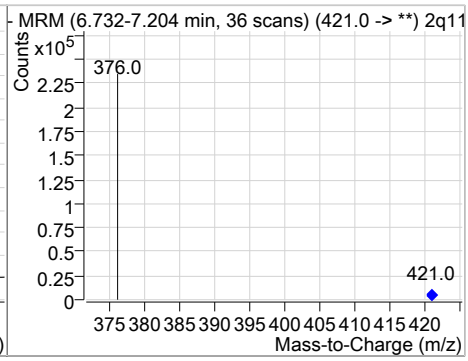




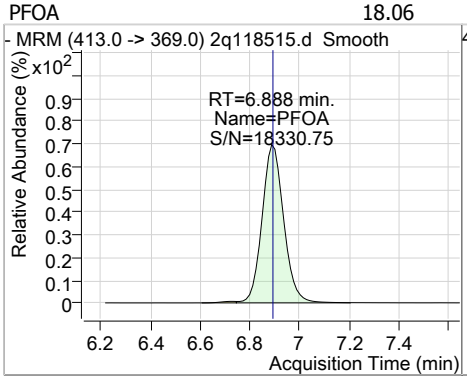
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	10.43	6.89	0.00	176474				

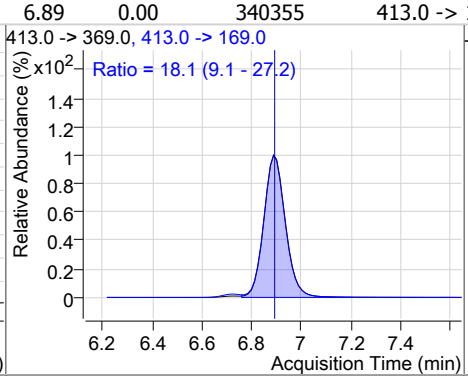


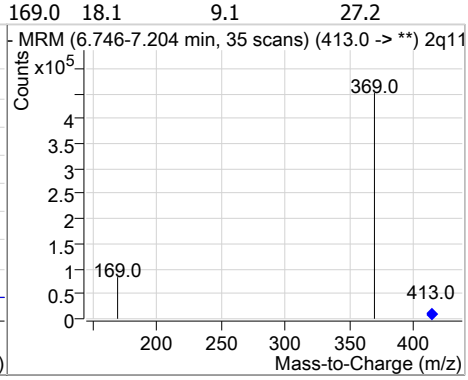




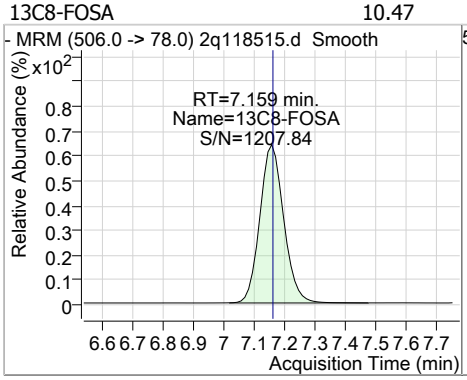
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	18.06	6.89	0.00	340355	413.0 -> 169.0	18.1	9.1	27.2

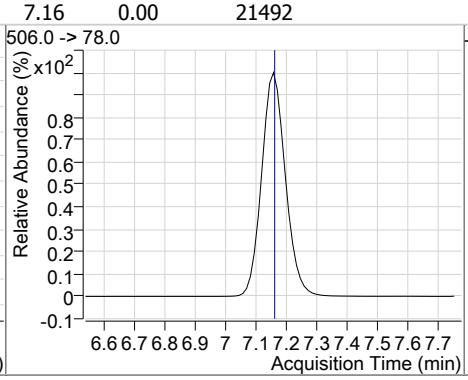


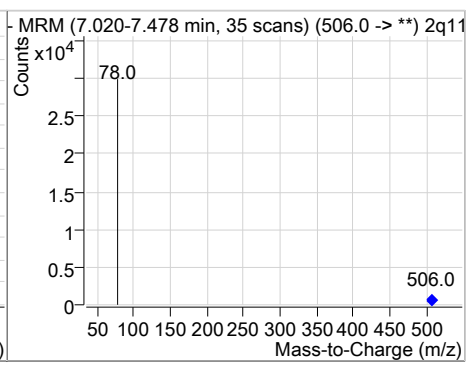




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	10.47	7.16	0.00	21492				

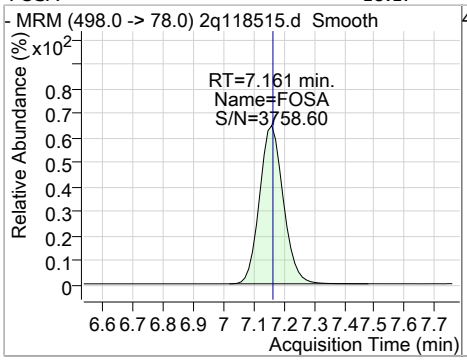


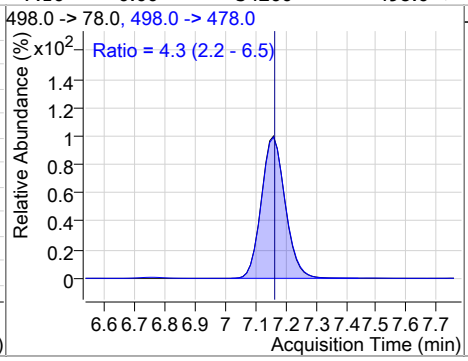


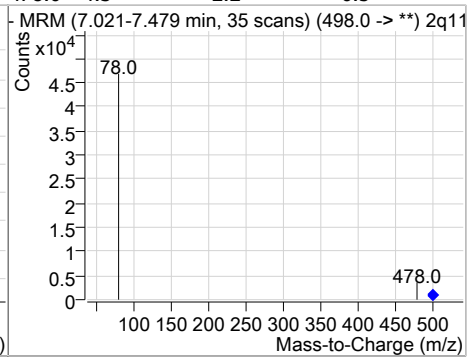


Perfluorinated Compounds by LC/MS/MS

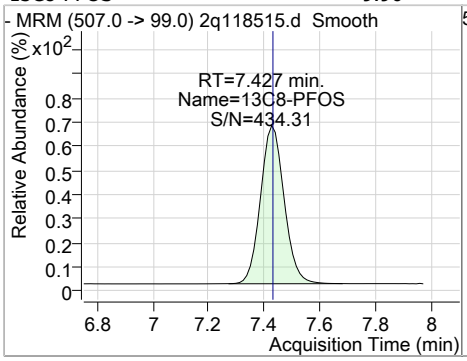
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	18.17	7.16	0.00	34260	498.0 -> 478.0	4.3	2.2	6.5

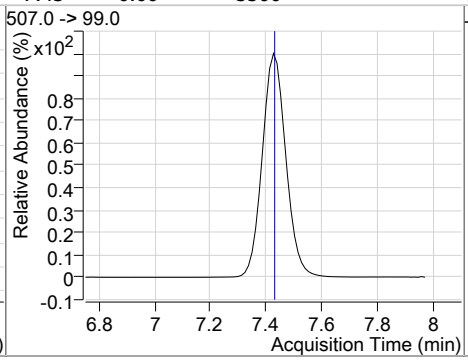


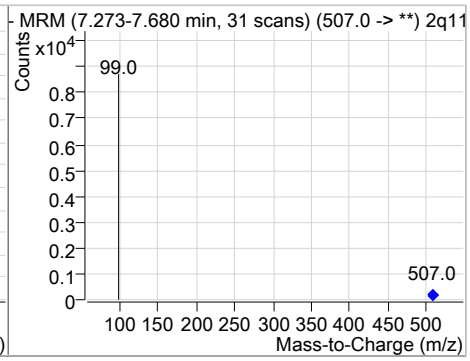




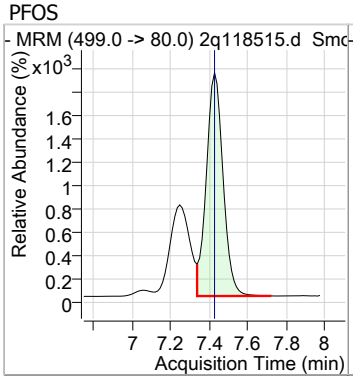
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	9.96	7.43	0.00	5560				

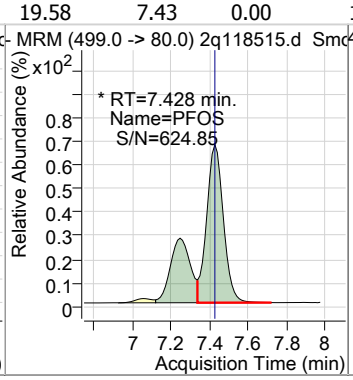


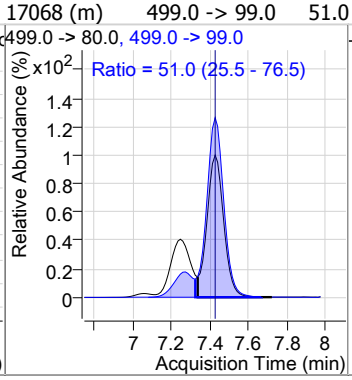


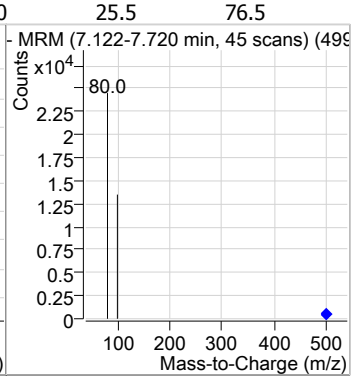


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	19.58	7.43	0.00	17068 (m)	499.0 -> 99.0	51.0	25.5	76.5

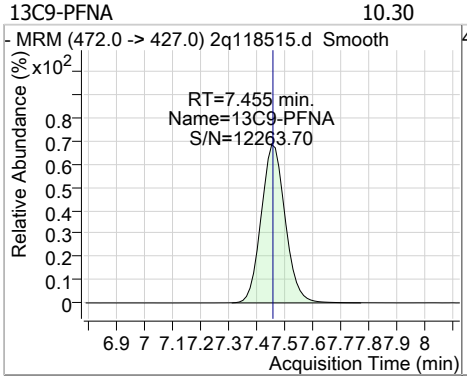


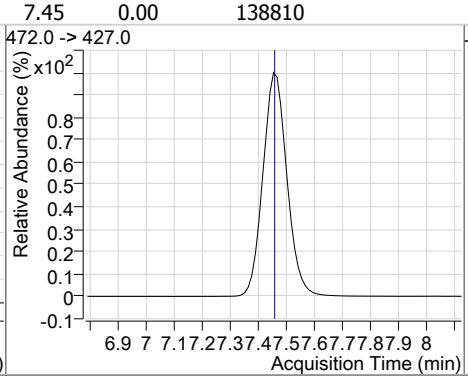


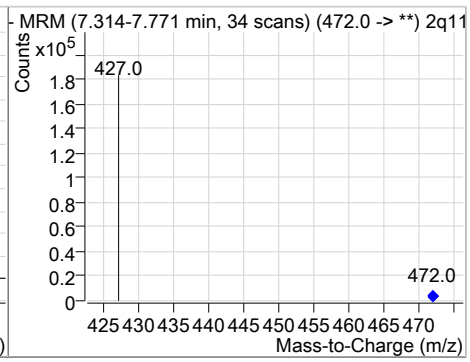




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	10.30	7.45	0.00	138810				

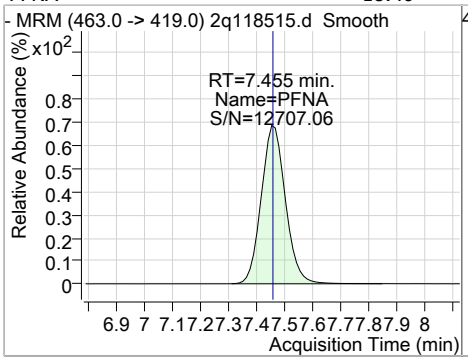


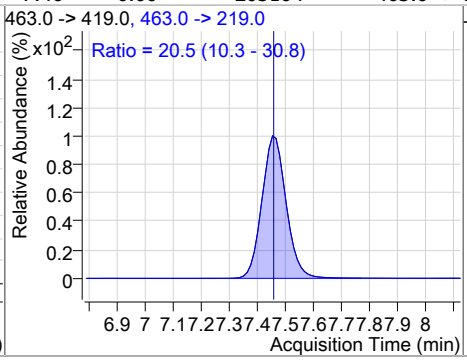


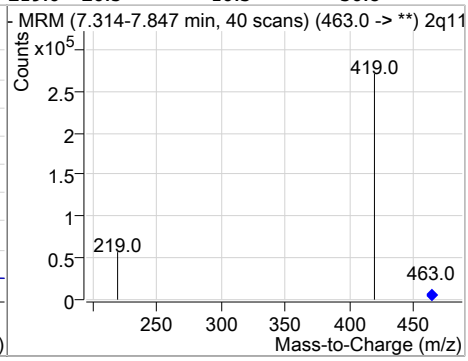


Perfluorinated Compounds by LC/MS/MS

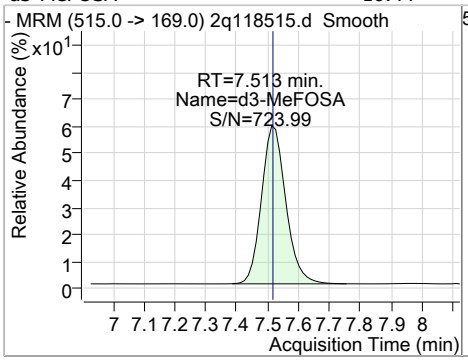
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	18.40	7.46	0.00	205104	463.0 -> 219.0	20.5	10.3	30.8

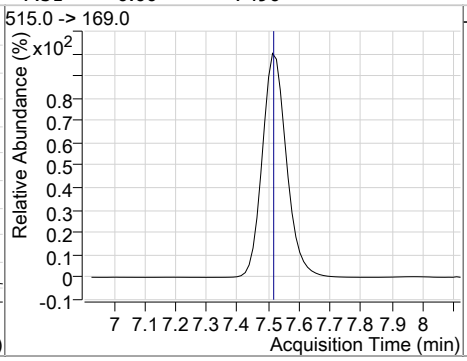


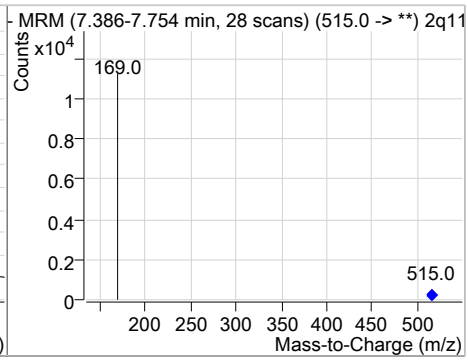




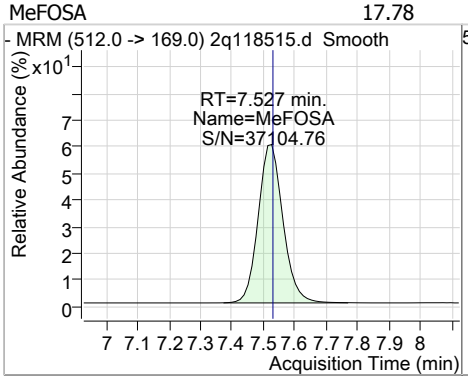
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	10.44	7.51	0.00	7496				

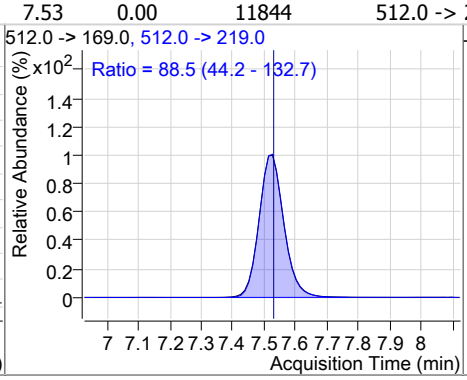


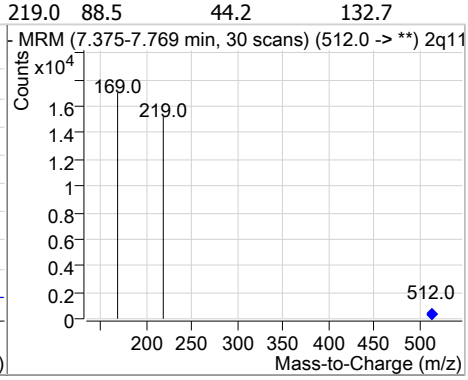




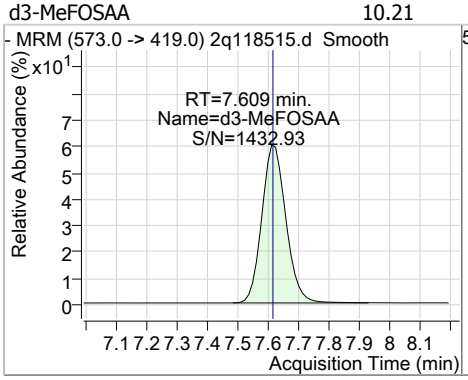
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	17.78	7.53	0.00	11844	512.0 -> 219.0	88.5	44.2	132.7

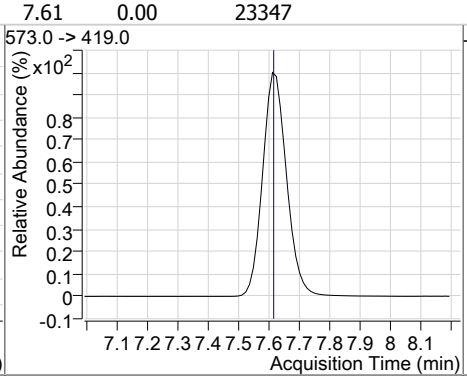


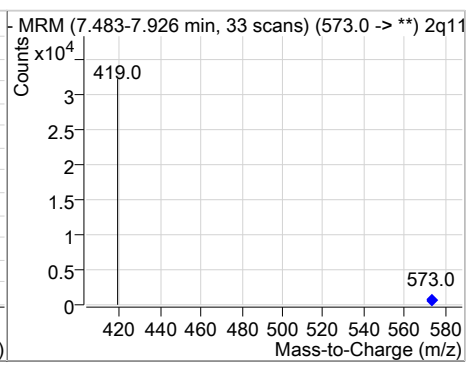




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	10.21	7.61	0.00	23347				

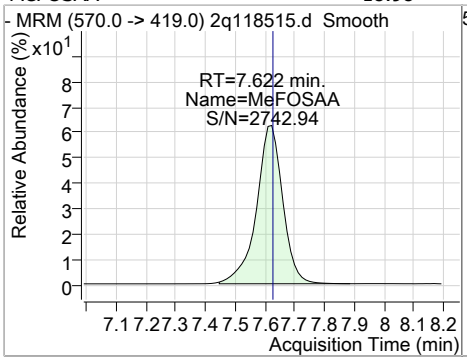


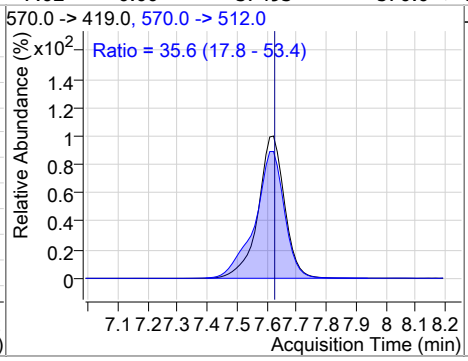


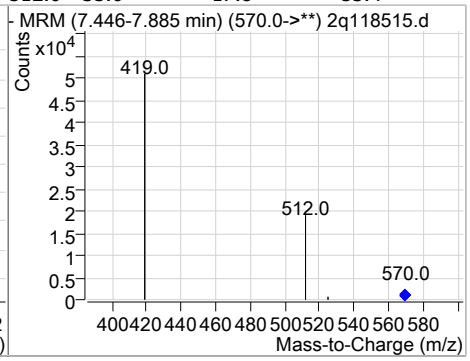


Perfluorinated Compounds by LC/MS/MS

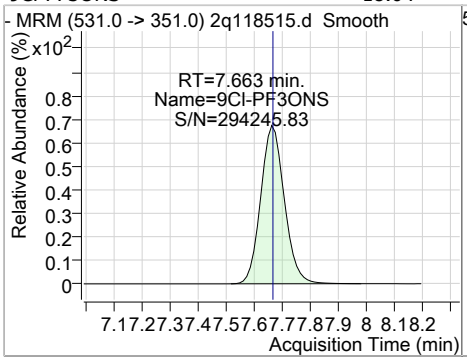
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	18.98	7.62	0.00	37493	570.0 -> 512.0	35.6	17.8	53.4

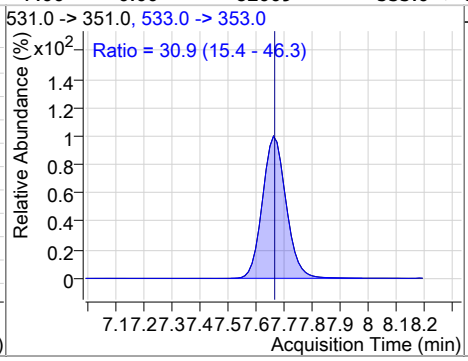


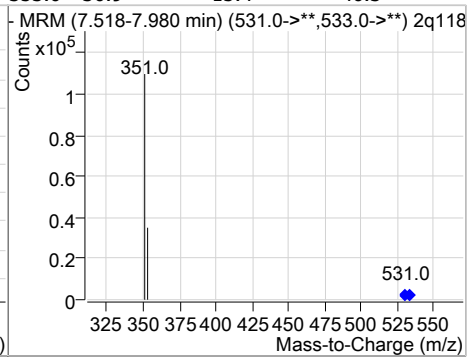




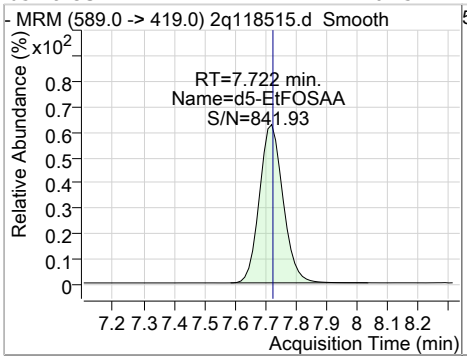
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	18.04	7.66	0.00	82609	533.0 -> 353.0	30.9	15.4	46.3

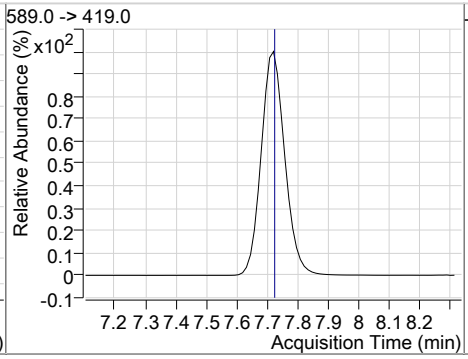


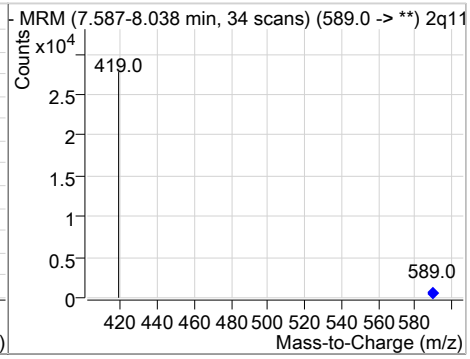




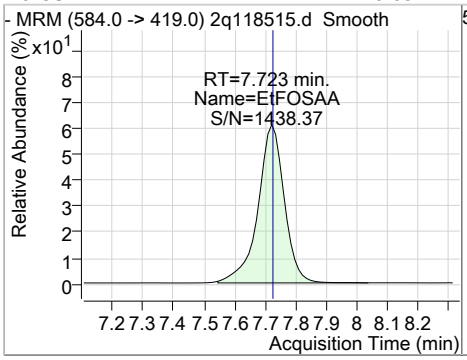
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	10.25	7.72	0.00	19775				

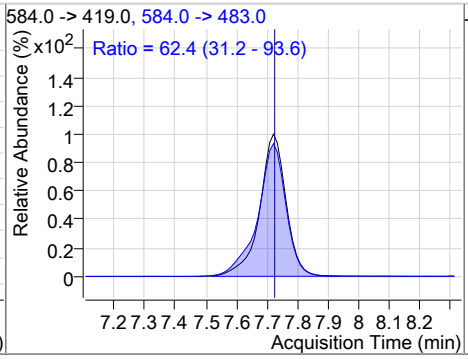


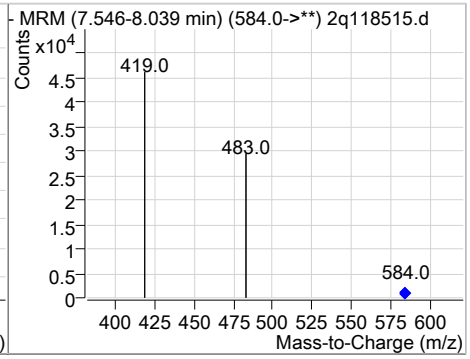




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	18.85	7.72	0.00	33439	584.0 -> 483.0	62.4	31.2	93.6

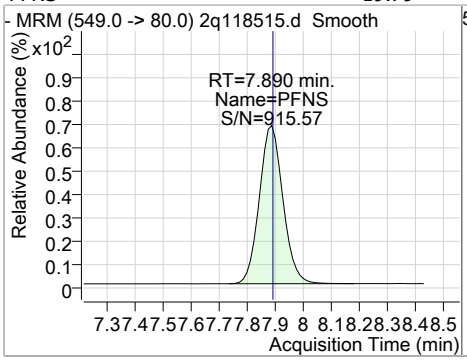


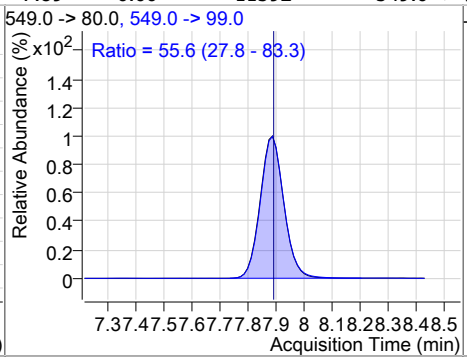


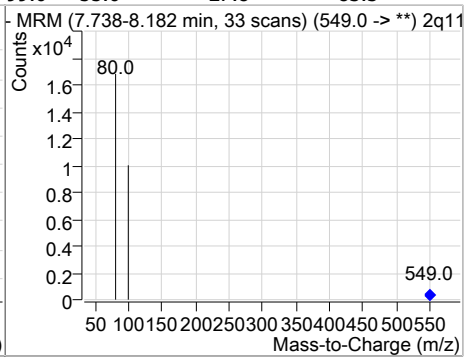


Perfluorinated Compounds by LC/MS/MS

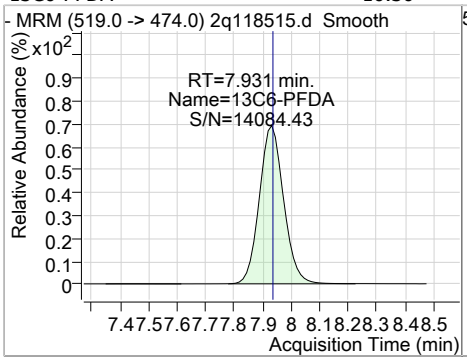
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	19.79	7.89	0.00	11592	549.0 -> 99.0	55.6	27.8	83.3

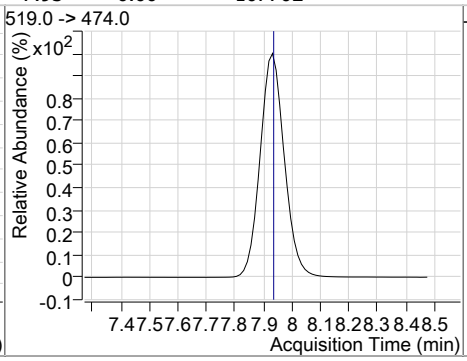


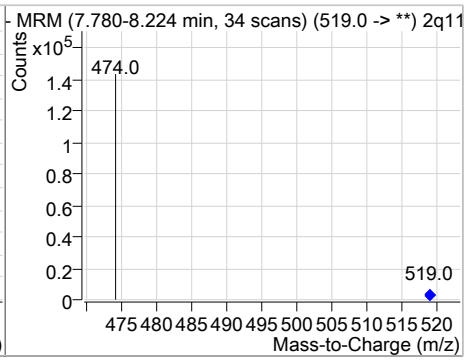




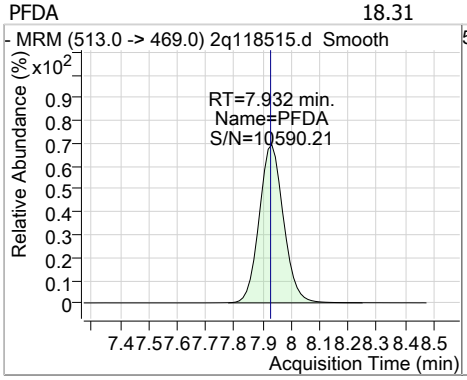
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	10.30	7.93	0.00	107702				

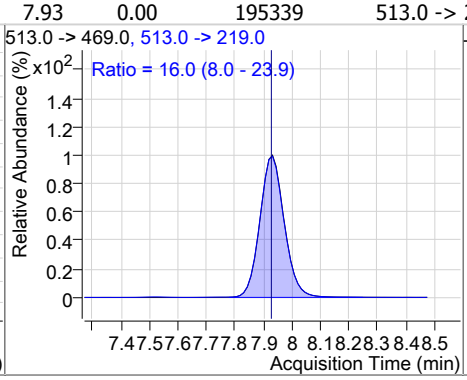


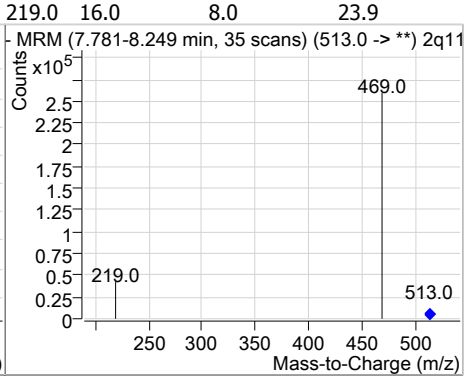




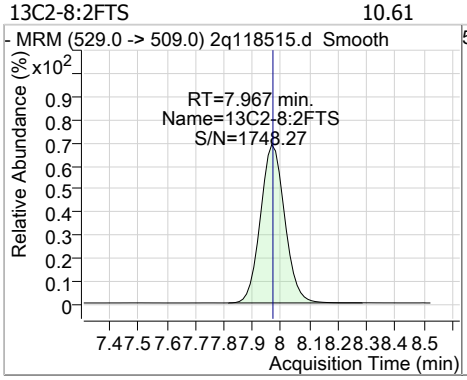
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	18.31	7.93	0.00	195339	513.0 -> 219.0	16.0	8.0	23.9

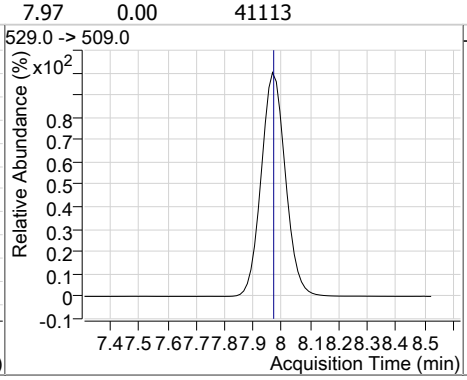


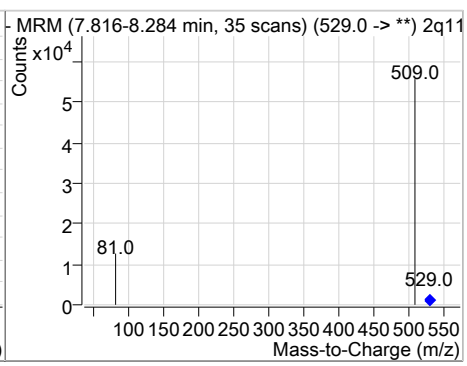




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	10.61	7.97	0.00	41113				

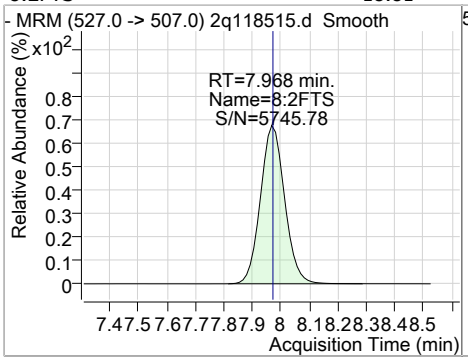


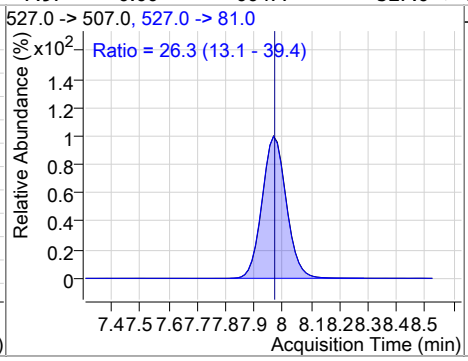


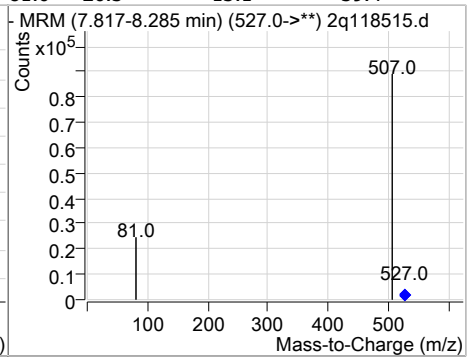


Perfluorinated Compounds by LC/MS/MS

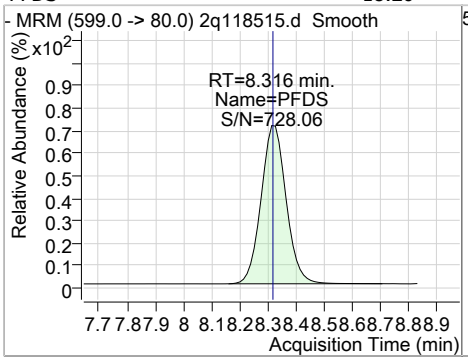
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	18.81	7.97	0.00	66477	527.0 -> 81.0	26.3	13.1	39.4

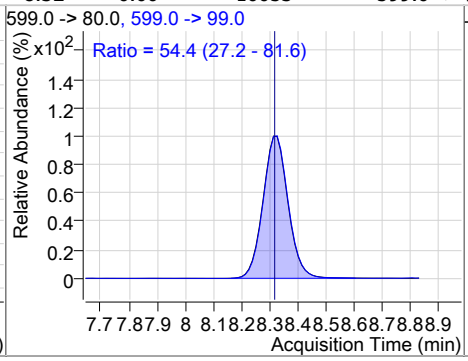


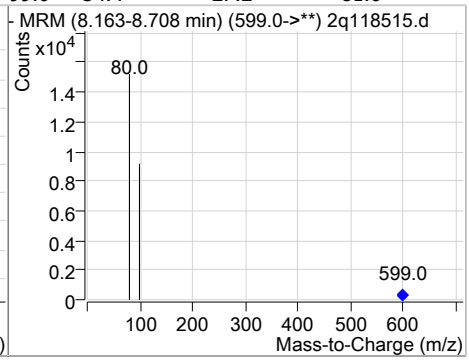




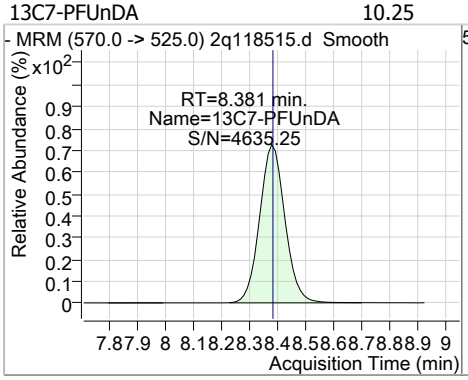
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	18.20	8.32	0.00	10053	599.0 -> 99.0	54.4	27.2	81.6

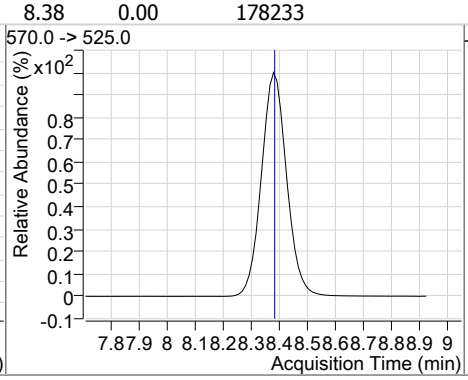


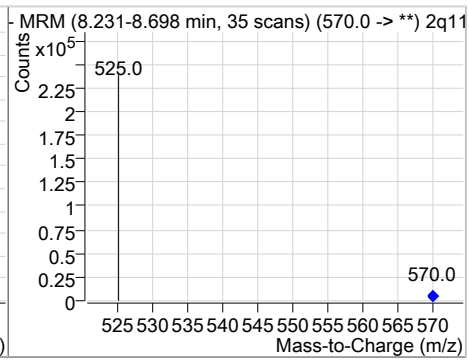




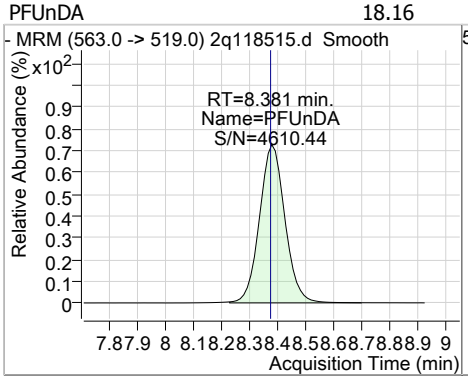
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	10.25	8.38	0.00	178233				

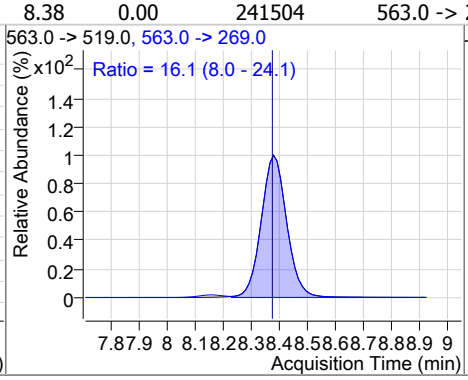


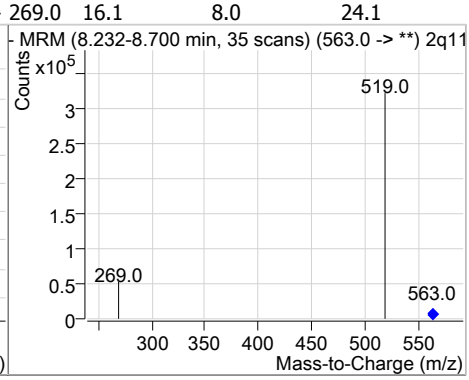




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	18.16	8.38	0.00	241504	563.0 -> 269.0	16.1	8.0	24.1

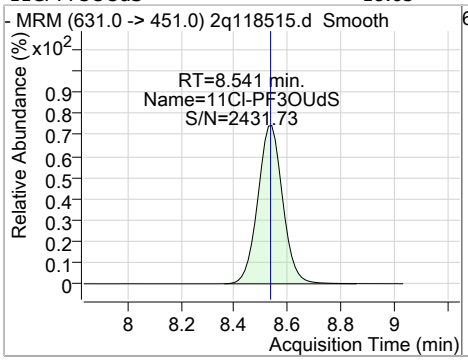


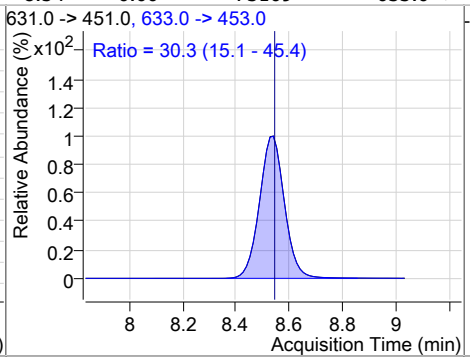


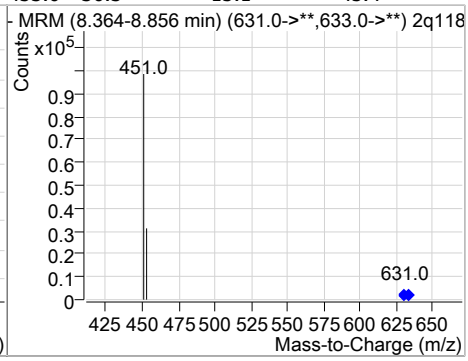


Perfluorinated Compounds by LC/MS/MS

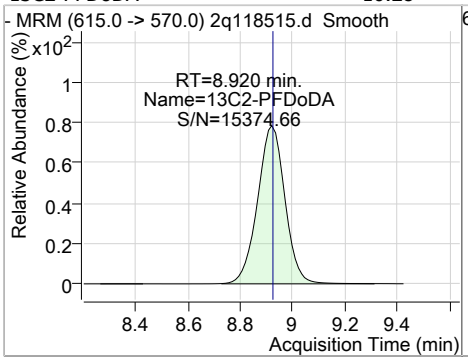
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	18.65	8.54	0.00	73109	633.0 -> 453.0	30.3	15.1	45.4

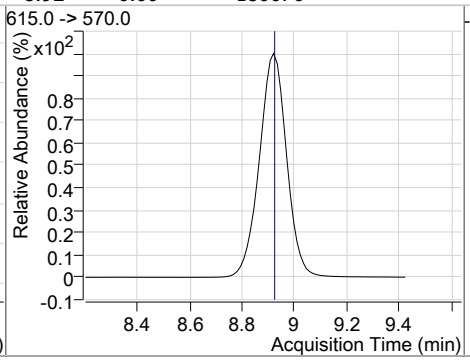


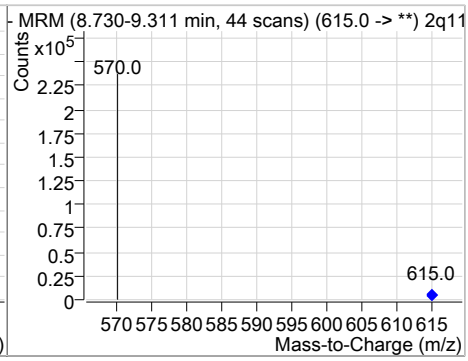




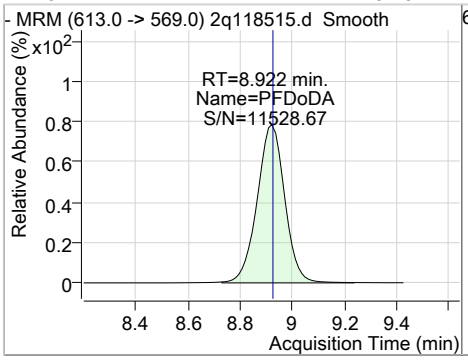
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	10.28	8.92	0.00	180076				

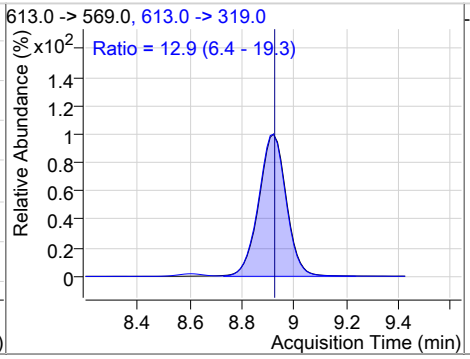


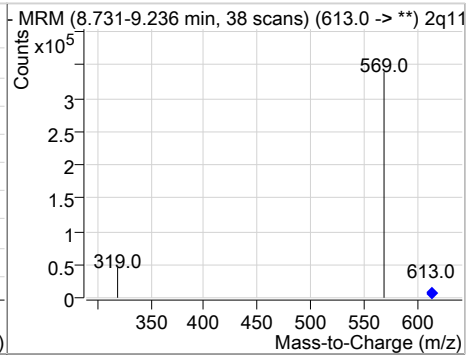




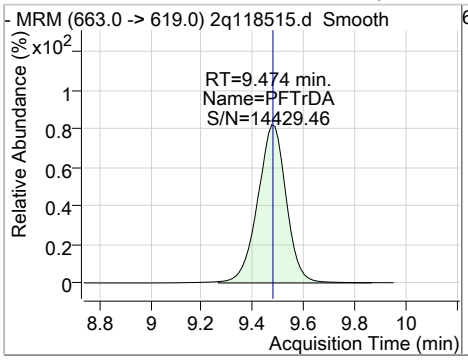
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	18.48	8.92	0.00	259867	613.0 -> 319.0	12.9	6.4	19.3

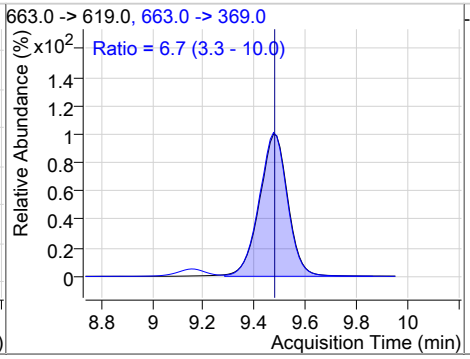


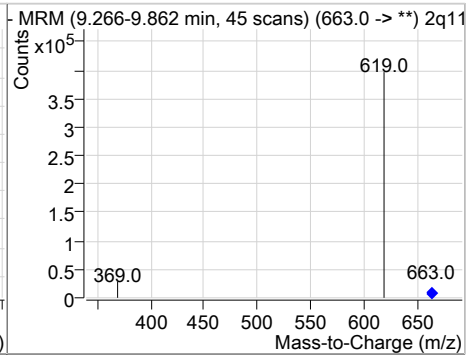




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	18.71	9.47	0.00	300274	663.0 -> 369.0	6.7	3.3	10.0

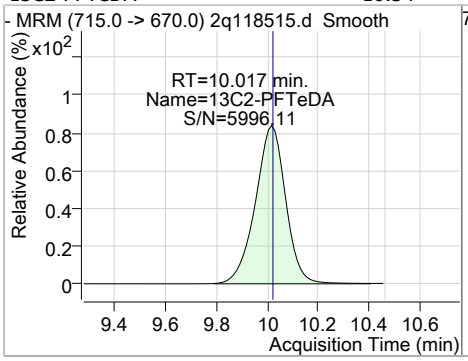


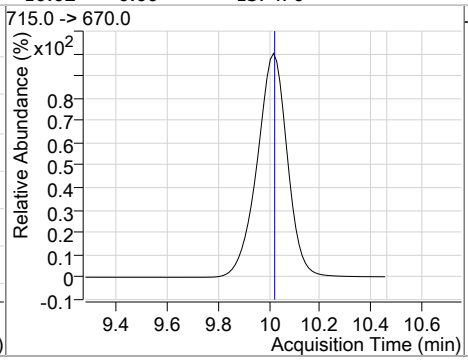


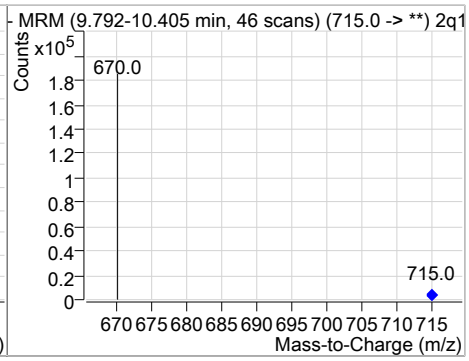


Perfluorinated Compounds by LC/MS/MS

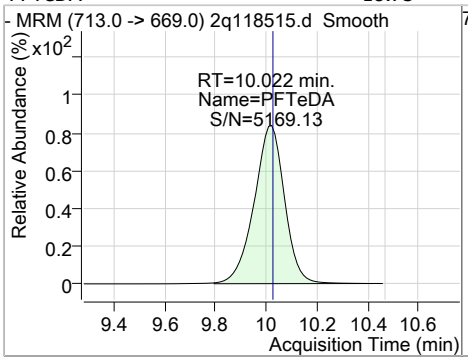
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	10.34	10.02	0.00	137470				

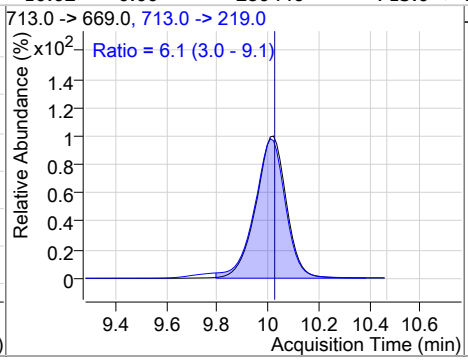


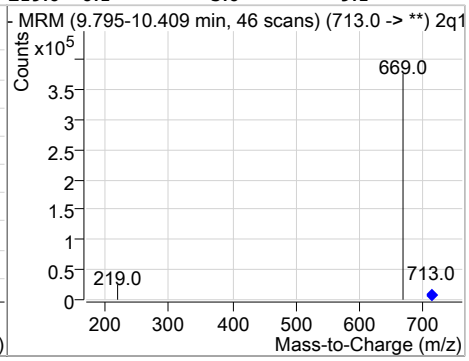




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	18.75	10.02	0.00	280446	713.0 -> 219.0	6.1	3.0	9.1







Manual Integration Approval Summary

Sample Number: S2Q1691-ICC1691
Lab FileID: 2Q118515.D
Injection Time: 01/02/24 13:57
Method: EPA 537M QSM5.3 B-15
Analyst approved: 01/03/24 15:12 Lindsay Ritner
Supervisor approved: 01/04/24 11:31 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.23	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.43	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Natasha Gumtie 01/04/24 11:31

Perfluorinated Compounds by LC/MS/MS

Data File : 2q118516.d
Operator : lindsayr
Acq. Method : 537_ID.m
Acq. Date-Time : 1/2/2024 2:13:39 PM
Sample Name : ic1691-50
Vial : P1-A8
DA Method File : ID_010224_S2Q1691.quantmethod.xml
Batch Name : s2q1691.batch.bin
Sample Information : op401,S2Q1691,250,,,1.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M5-EtFOSAA	7.710	589.0 -> 419.0	18979	10.00 µg/L	-0.013
M4-PFBA	2.240	217.0 -> 172.0	49586	10.00 µg/L	0.000
M5-PFPeA	4.049	268.0 -> 223.0	76444	10.00 µg/L	-0.013
M5-PFHxA	5.314	318.0 -> 273.0	94420	10.00 µg/L	-0.025
M4-PFHpA	6.182	367.0 -> 322.0	83520	10.00 µg/L	-0.025
M8-PFOA	6.862	421.0 -> 376.0	161919	10.00 µg/L	-0.025
M9-PFNA	7.442	472.0 -> 427.0	128193	10.00 µg/L	-0.013
M6-PFDA	7.906	519.0 -> 474.0	100131	10.00 µg/L	-0.025
M7-PFUnDA	8.368	570.0 -> 525.0	167145	10.00 µg/L	-0.013
M2-PFDoDA	8.908	615.0 -> 570.0	171218	10.00 µg/L	-0.013
M2-PFTeDA	10.005	715.0 -> 670.0	129552	10.00 µg/L	-0.013
M8-FOSA	7.147	506.0 -> 78.0	18698	10.00 µg/L	-0.013
M3-PFBS	4.317	302.0 -> 99.0	5749	10.00 µg/L	-0.013
M3-PFHxS	6.201	402.0 -> 99.0	5719	10.00 µg/L	-0.042
M8-PFOS	7.401	507.0 -> 99.0	5468	10.00 µg/L	-0.026
M2-4:2FTS	5.209	329.0 -> 309.0	42365	10.00 µg/L	-0.025
M2-6:2FTS	6.847	429.0 -> 409.0	61433	10.00 µg/L	-0.038
M2-8:2FTS	7.955	529.0 -> 509.0	44688	10.00 µg/L	-0.013
M3-MeFOSAA	7.609	573.0 -> 419.0	22659	10.00 µg/L	0.000
M3-HFPO-DA	5.582	287.0 -> 169.0	8154	10.00 µg/L	-0.025
M3-MeFOSA	7.513	515.0 -> 169.0	6897	10.00 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.209	329.0 -> 309.0	42365	11.48 µg/L	-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 114.8%	
13C2-6:2FTS	6.847	429.0 -> 409.0	61433	10.70 µg/L	-0.038
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 107.0%	
13C2-8:2FTS	7.955	529.0 -> 509.0	44688	11.53 µg/L	-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 115.3%	
13C2-PFDoDA	8.908	615.0 -> 570.0	171218	9.78 µg/L	-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 97.8%	
13C2-PFTeDA	10.005	715.0 -> 670.0	129552	9.75 µg/L	-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 97.5%	
13C3-PFBS	4.317	302.0 -> 99.0	5749	9.57 µg/L	-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 95.7%	
13C3-PFHxS	6.201	402.0 -> 99.0	5719	9.34 µg/L	-0.042
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 93.4%	
13C4-PFBA	2.240	217.0 -> 172.0	49586	9.60 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 96.0%	
13C4-PFHpA	6.182	367.0 -> 322.0	83520	9.72 µg/L	-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 97.2%	
d5-EtFOSAA	7.710	589.0 -> 419.0	18979	9.84 µg/L	-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 98.4%	
13C5-PFHxA	5.314	318.0 -> 273.0	94420	9.57 µg/L	-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 95.7%	
13C5-PFPeA	4.049	268.0 -> 223.0	76444	9.61 µg/L	-0.013

Perfluorinated Compounds by LC/MS/MS

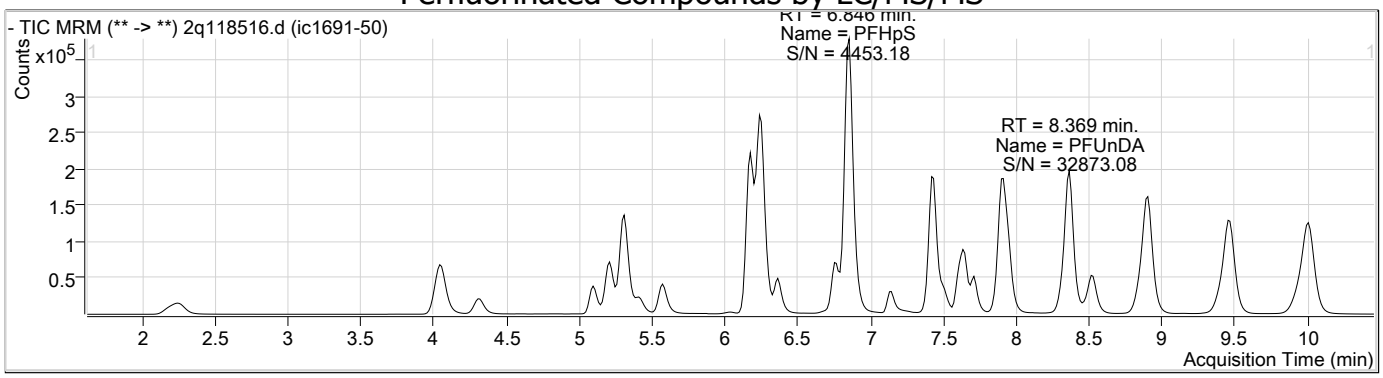
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 96.1%			
13C6-PFDA	7.906	519.0 -> 474.0	100131	9.58	µg/L		-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 95.8%			
13C7-PFUnDA	8.368	570.0 -> 525.0	167145	9.62	µg/L		-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 96.2%			
13C8-FOSA	7.147	506.0 -> 78.0	18698	9.11	µg/L		-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 91.1%			
13C8-PFOA	6.862	421.0 -> 376.0	161919	9.57	µg/L		-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 95.7%			
13C8-PFOS	7.401	507.0 -> 99.0	5468	9.79	µg/L		-0.026
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 97.9%			
13C9-PFNA	7.442	472.0 -> 427.0	128193	9.52	µg/L		-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 95.2%			
d3-MeFOSAA	7.609	573.0 -> 419.0	22659	9.91	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.1%			
13C3-HFPO-DA	5.582	287.0 -> 169.0	8154	9.81	µg/L		-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 98.1%			
d3-MeFOSA	7.513	515.0 -> 169.0	6897	9.60	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 96.0%			
Target Compounds							QValue
4:2FTS	5.212	327.0 -> 307.0	191043	44.39	µg/L		100
		327.0 -> 81.0	70420				
6:2FTS	6.848	427.0 -> 407.0	244152	45.56	µg/L		99
		427.0 -> 81.0	73123				
8:2FTS	7.956	527.0 -> 507.0	172086	44.79	µg/L		100
		527.0 -> 81.0	45444				
EtFOSAA	7.710	584.0 -> 419.0	85200	50.04	µg/L		97
		584.0 -> 483.0	55059				
FOSA	7.148	498.0 -> 78.0	82964	50.58	µg/L		100
		498.0 -> 478.0	3621				
MeFOSAA	7.610	570.0 -> 419.0	97097	50.66	µg/L		98
		570.0 -> 512.0	33586				
PFBA	2.246	213.0 -> 169.0	78771	50.45	µg/L		100
PFBS	4.307	299.0 -> 80.0	74036	50.98	µg/L		98
		299.0 -> 99.0	27424				
PFDA	7.907	513.0 -> 469.0	499317	50.35	µg/L		99
		513.0 -> 219.0	78176				
PFDoDA	8.909	613.0 -> 569.0	666930	49.88	µg/L		100
		613.0 -> 319.0	86644				
PFDS	8.304	599.0 -> 80.0	25798	49.81	µg/L		98
		599.0 -> 99.0	13740				
PFHpA	6.183	363.0 -> 319.0	682565	49.42	µg/L		100
		363.0 -> 169.0	114275				
PFHpS	6.846	449.0 -> 80.0	48886	51.79	µg/L		97
		449.0 -> 99.0	26361				
PFHxA	5.315	313.0 -> 269.0	488601	50.29	µg/L		100
		313.0 -> 119.0	19002				
PFHxS	6.202	399.0 -> 80.0	61401	49.03	µg/L	m	100
		399.0 -> 99.0	31388				
PFNA	7.442	463.0 -> 419.0	517678	50.29	µg/L		100
		463.0 -> 219.0	106099				
PFNS	7.865	549.0 -> 80.0	28338	49.20	µg/L		99
		549.0 -> 99.0	15555				
PFOA	6.863	413.0 -> 369.0	856185	49.50	µg/L		100
		413.0 -> 169.0	154088				
PFOS	7.401	499.0 -> 80.0	43333	50.55	µg/L	m	96

Perfluorinated Compounds by LC/MS/MS

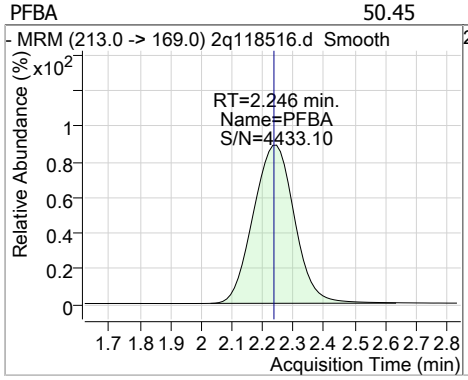
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		499.0 -> 99.0	20991			
PFPeA	4.052	263.0 -> 219.0	303935	50.44	µg/L	100
PFPeS	5.420	349.0 -> 80.0	53896	51.29	µg/L	99
		349.0 -> 99.0	22781			
PFTeDA	10.009	713.0 -> 669.0	711195	50.44	µg/L	100
		713.0 -> 219.0	42660			
PFTrDA	9.461	663.0 -> 619.0	764653	50.10	µg/L	100
		663.0 -> 369.0	50201			
PFUnDA	8.369	563.0 -> 519.0	617790	49.54	µg/L	99
		563.0 -> 269.0	101076			
11Cl-PF3OUdS	8.515	631.0 -> 451.0	189663	50.89	µg/L	100
		633.0 -> 453.0	57975			
9Cl-PF3ONS	7.650	531.0 -> 351.0	210423	49.43	µg/L	100
		533.0 -> 353.0	64940			
ADONA	6.259	377.0 -> 251.0	832223	48.45	µg/L	99
		377.0 -> 85.0	214007			
HFPO-DA	5.576	329.0 -> 169.0	128407	50.79	µg/L	100
		285.0 -> 169.0	36931			
MeFOSA	7.514	512.0 -> 169.0	30346	49.53	µg/L	99
		512.0 -> 219.0	26618			
4-PFECHS	6.768	461.0 -> 381.0	220920	48.03	µg/L	99
		461.0 -> 99.0	77481			
FBSA	5.103	298.0 -> 78.0	135419	48.43	µg/L	100
		298.0 -> 64.0	14173			
FHxSA	6.371	398.0 -> 78.0	138180	49.99	µg/L	100
		398.0 -> 64.0	14776			

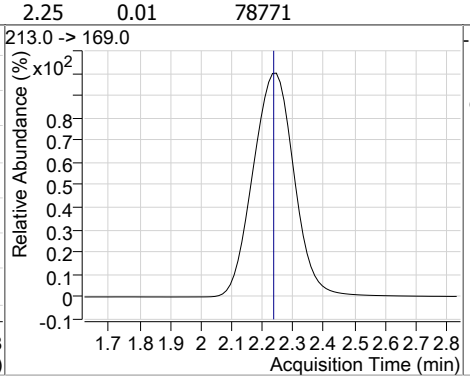
 # = Qualifier out of range, m = manually integrated, + = Area summed

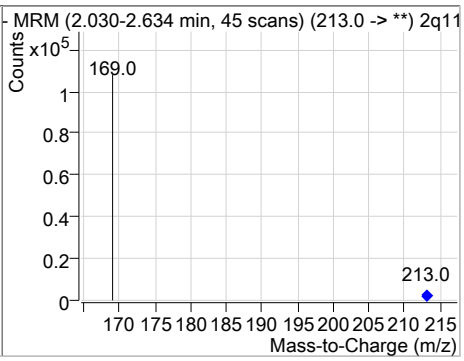
Perfluorinated Compounds by LC/MS/MS



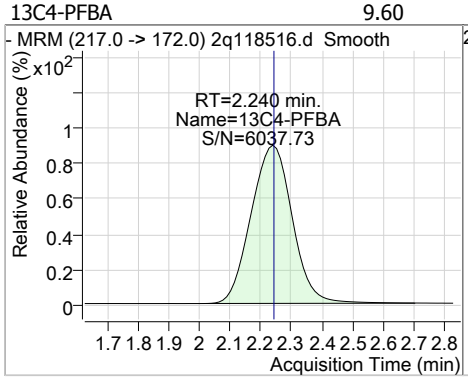
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	50.45	2.25	0.01	78771				

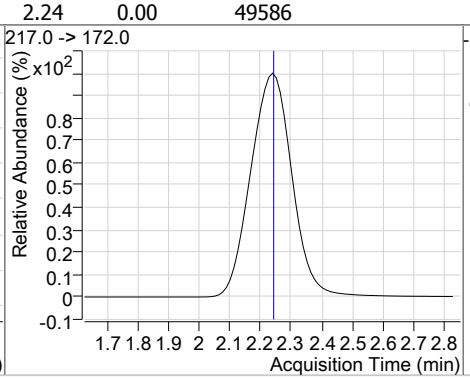


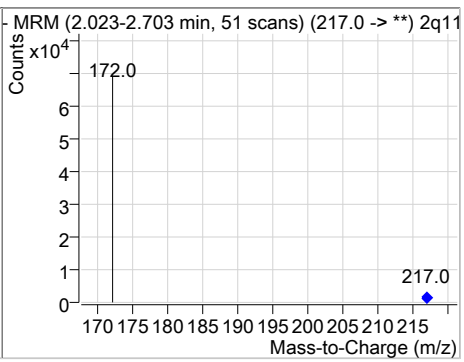




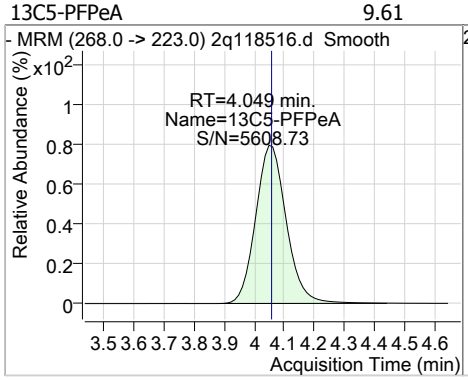
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	9.60	2.24	0.00	49586				

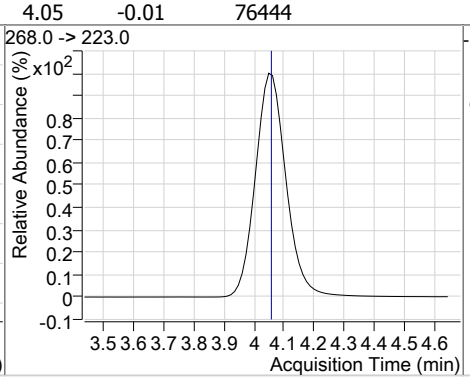


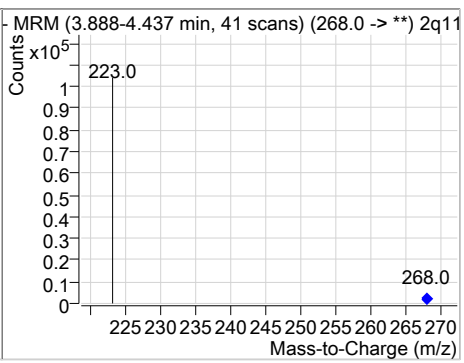




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	9.61	4.05	-0.01	76444				

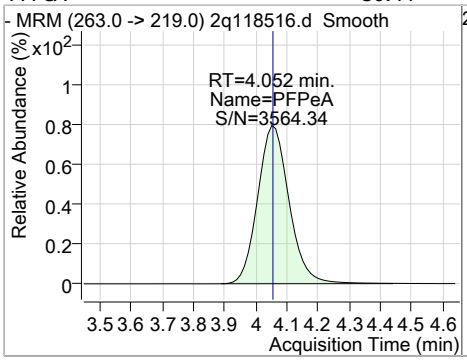


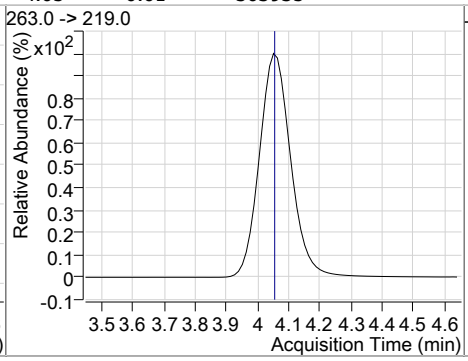


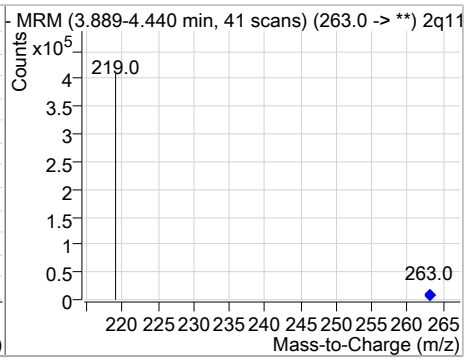


Perfluorinated Compounds by LC/MS/MS

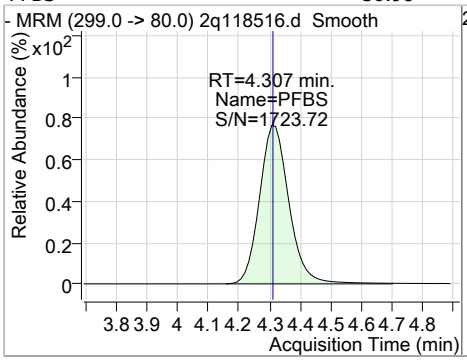
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	50.44	4.05	-0.01	303935				

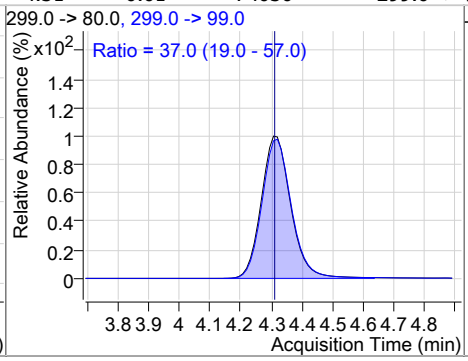


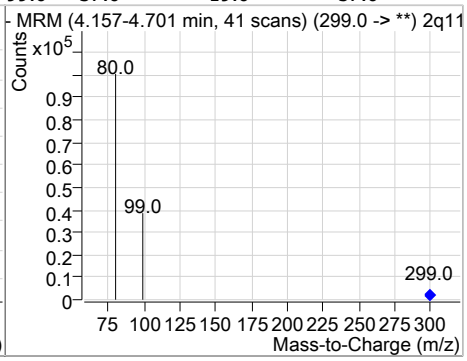




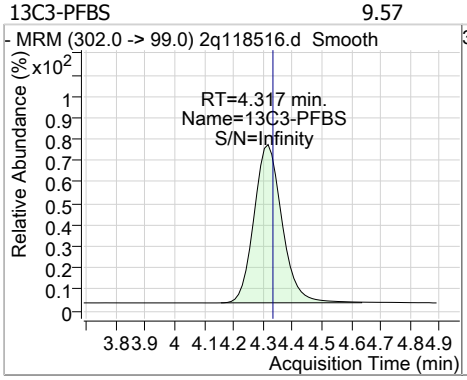
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	50.98	4.31	-0.01	74036	299.0 -> 99.0	37.0	19.0	57.0

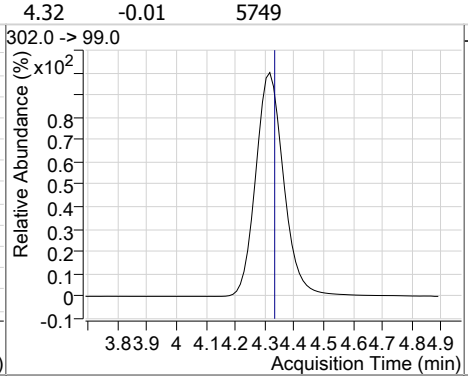


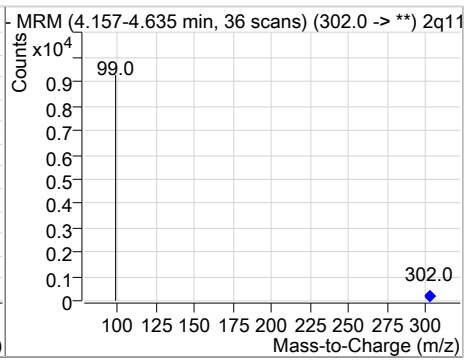




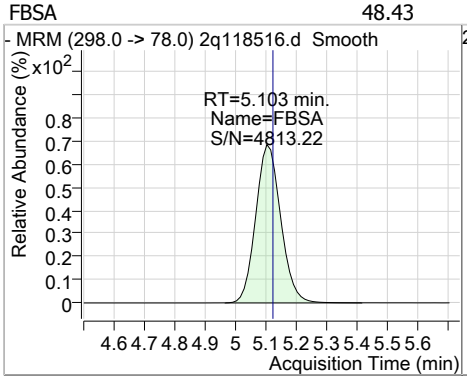
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	9.57	4.32	-0.01	5749				

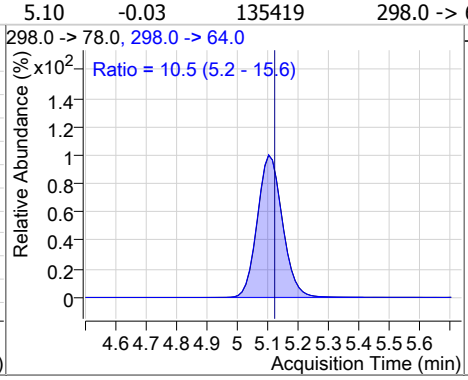


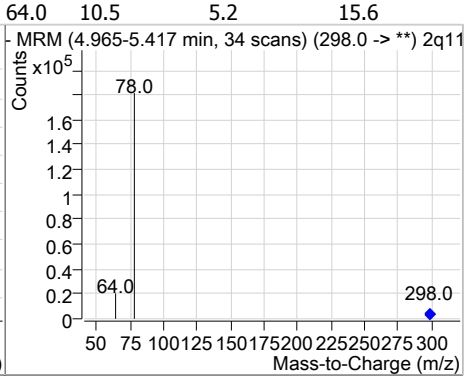




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	48.43	5.10	-0.03	135419	298.0 -> 64.0	10.5	5.2	15.6

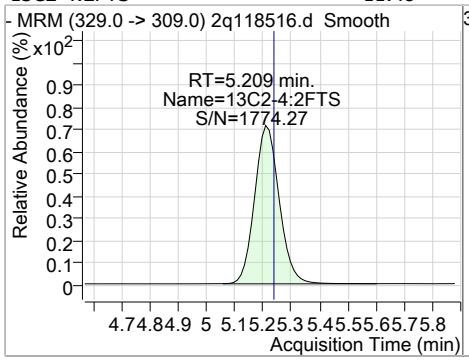


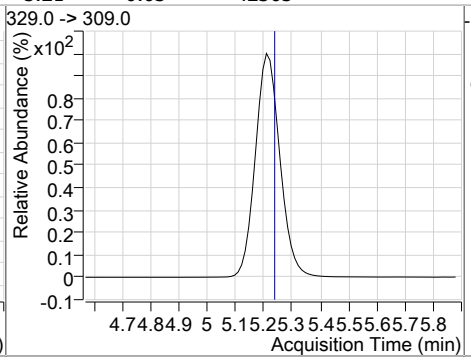


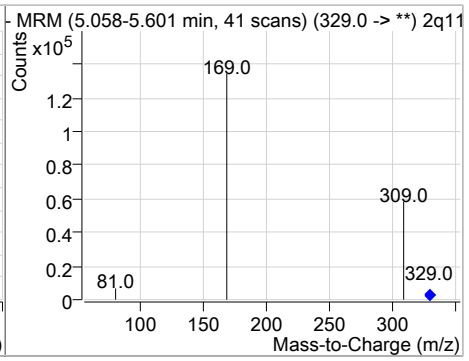


Perfluorinated Compounds by LC/MS/MS

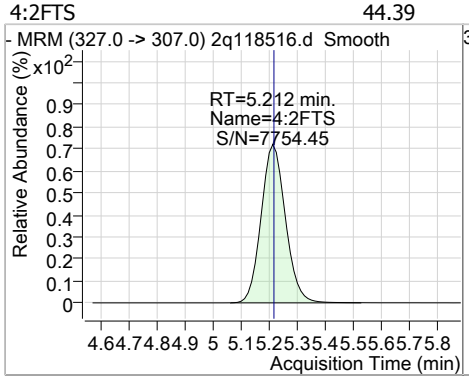
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	11.48	5.21	-0.03	42365				

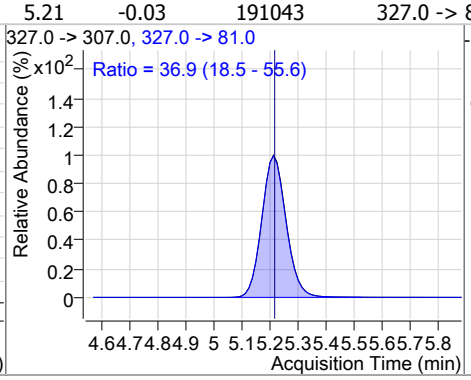


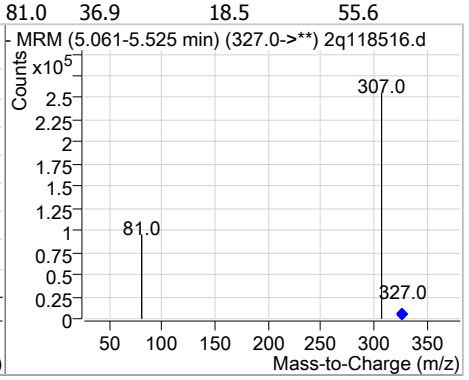




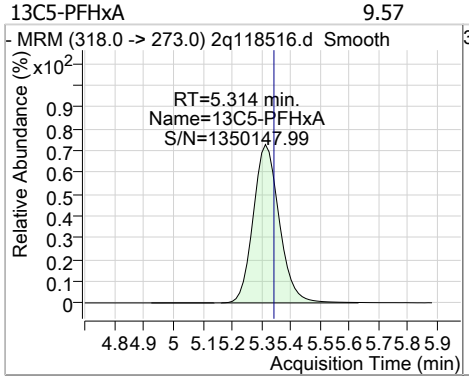
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	44.39	5.21	-0.03	191043	327.0 -> 81.0	36.9	18.5	55.6

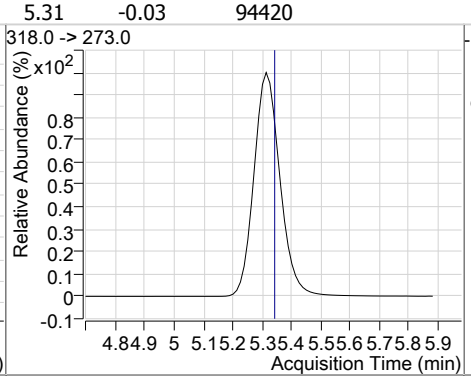


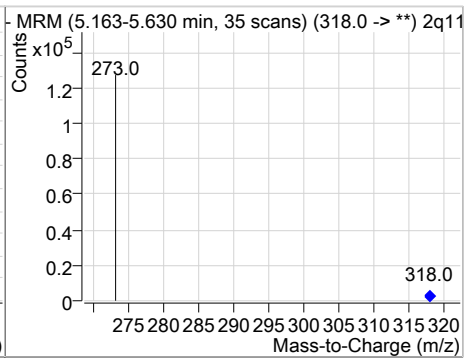




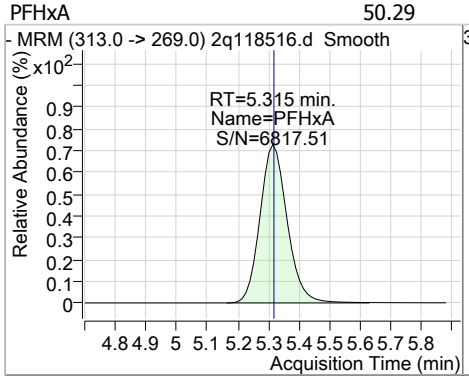
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	9.57	5.31	-0.03	94420				

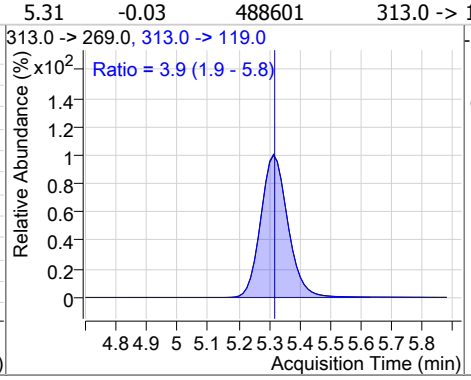


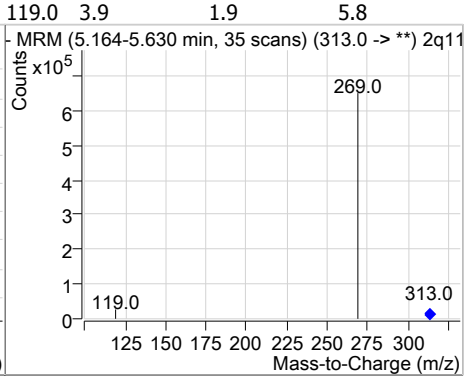




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	50.29	5.31	-0.03	488601	313.0 -> 119.0	3.9	1.9	5.8

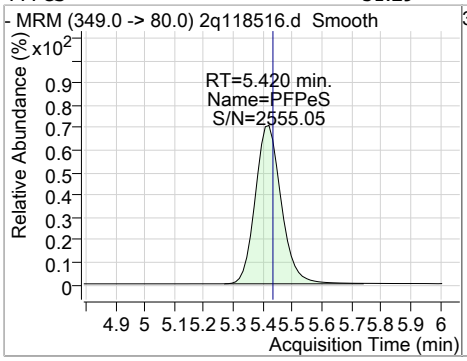


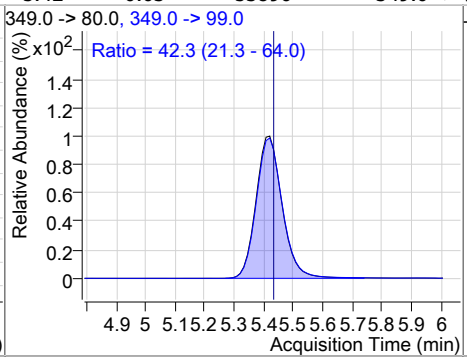


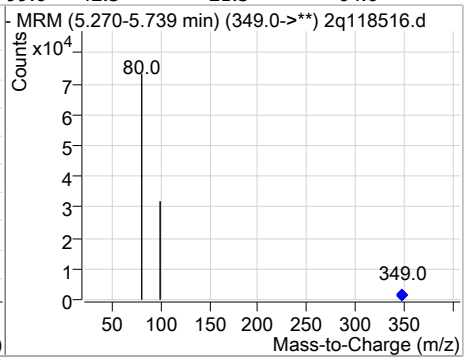


Perfluorinated Compounds by LC/MS/MS

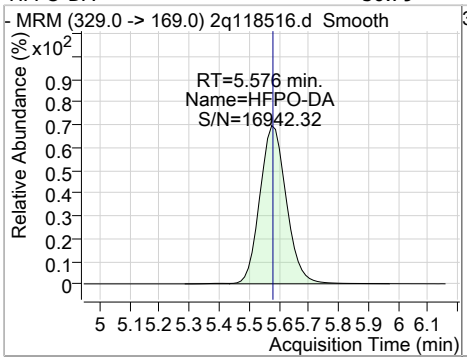
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	51.29	5.42	-0.03	53896	349.0 -> 99.0	42.3	21.3	64.0

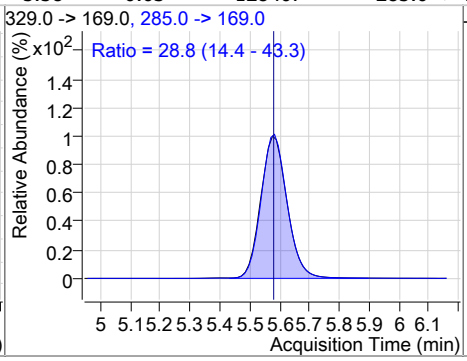


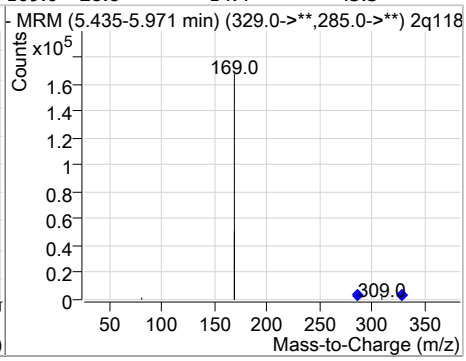




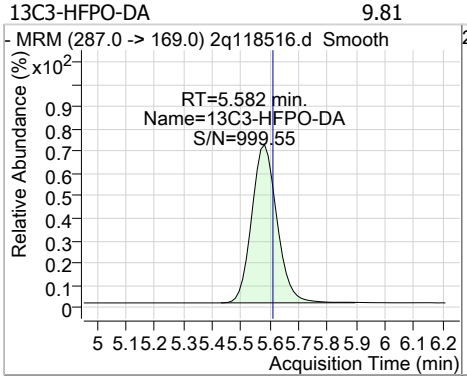
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	50.79	5.58	-0.03	128407	285.0 -> 169.0	28.8	14.4	43.3

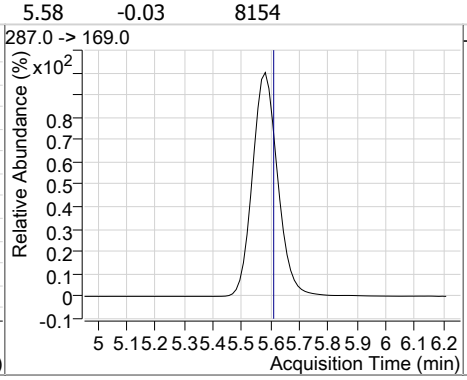


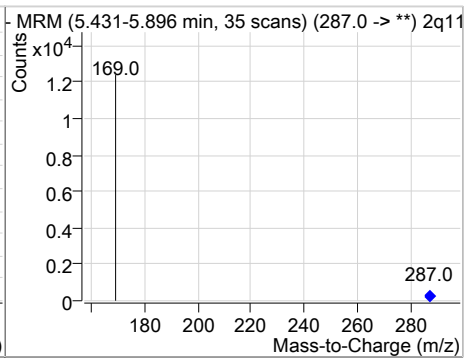




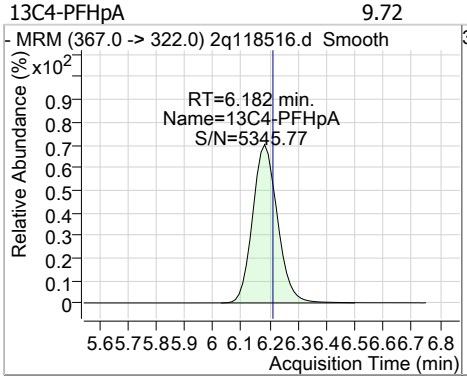
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	9.81	5.58	-0.03	8154				

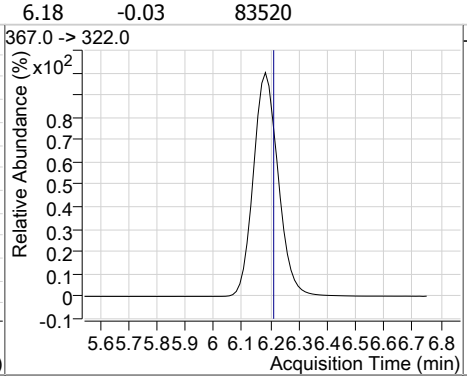


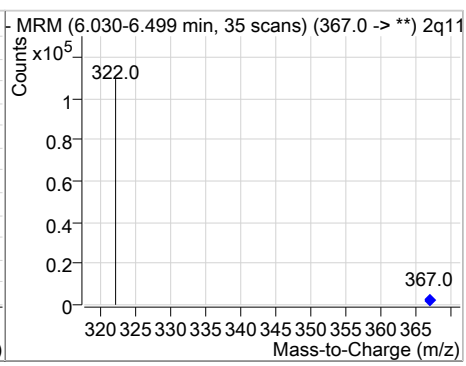




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	9.72	6.18	-0.03	83520				

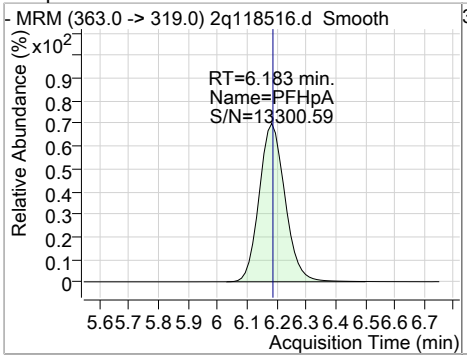


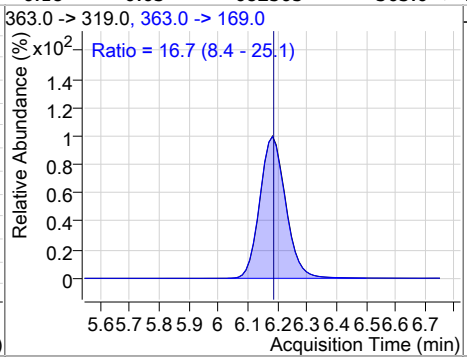


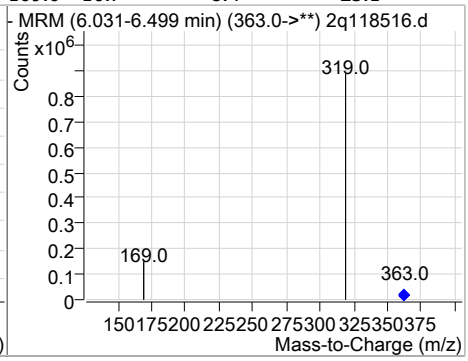


Perfluorinated Compounds by LC/MS/MS

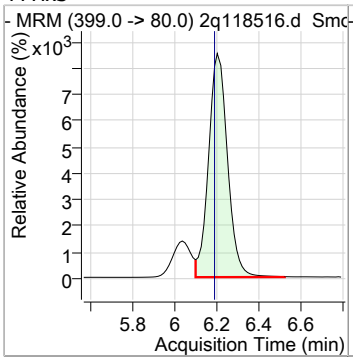
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	49.42	6.18	-0.03	682565	363.0 -> 169.0	16.7	8.4	25.1

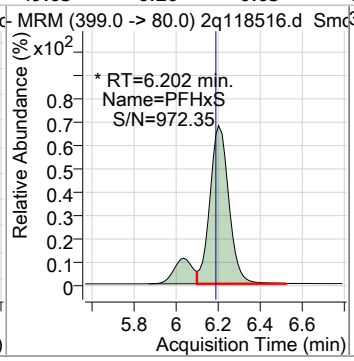


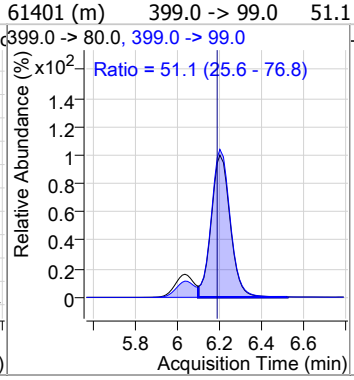


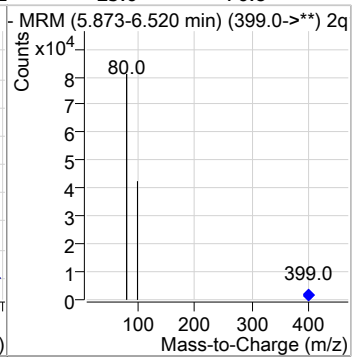


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	49.03	6.20	-0.03	61401 (m)	399.0 -> 99.0	51.1	25.6	76.8

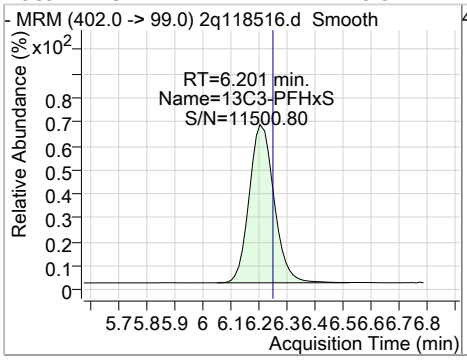


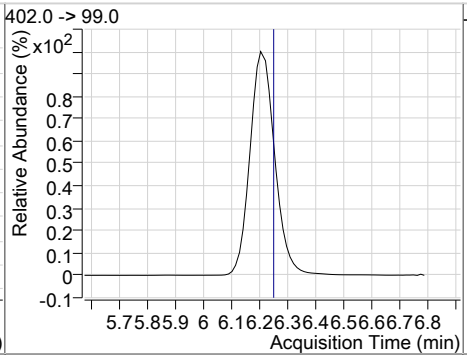


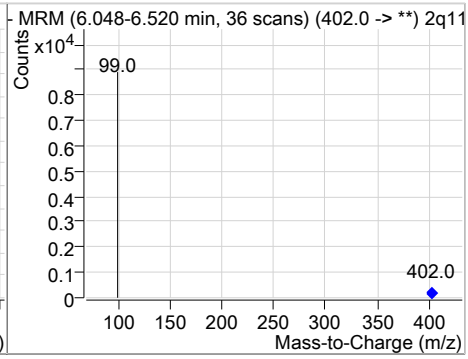




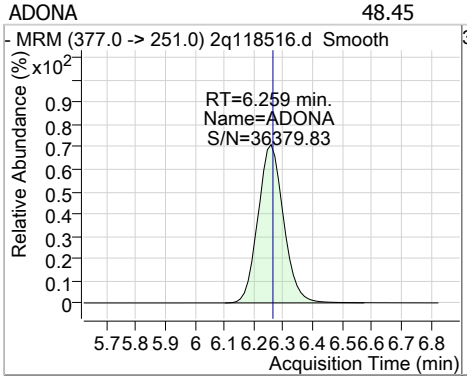
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	9.34	6.20	-0.04	5719				

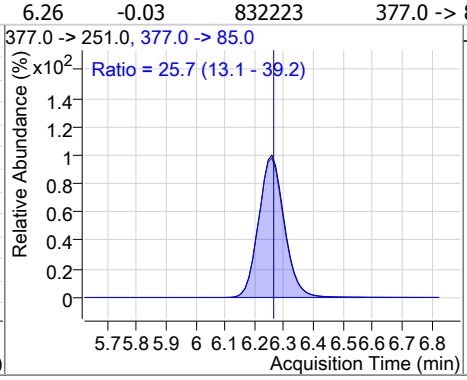


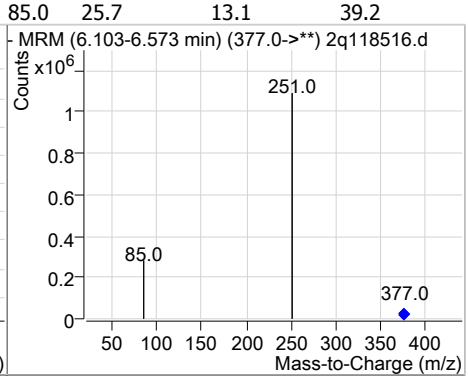




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	48.45	6.26	-0.03	832223	377.0 -> 85.0	25.7	13.1	39.2

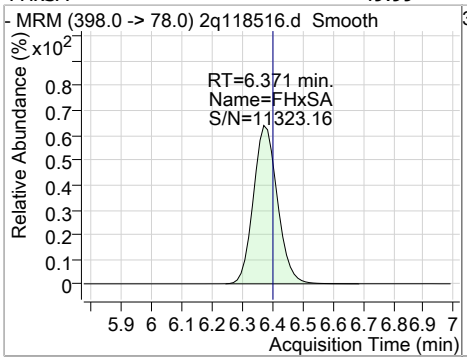


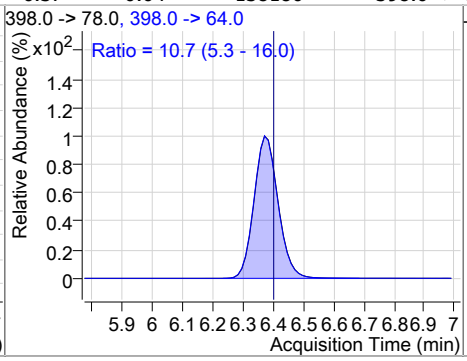


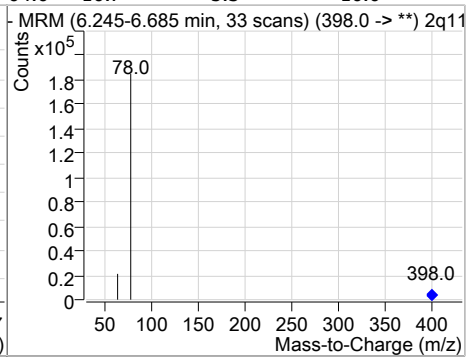


Perfluorinated Compounds by LC/MS/MS

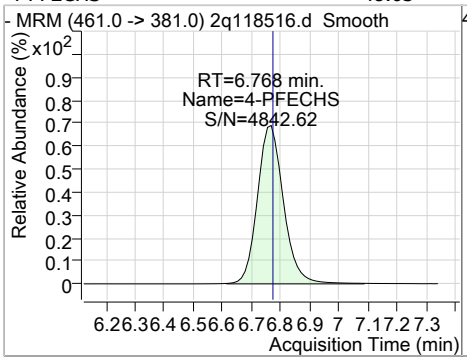
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	49.99	6.37	-0.04	138180	398.0 -> 64.0	10.7	5.3	16.0

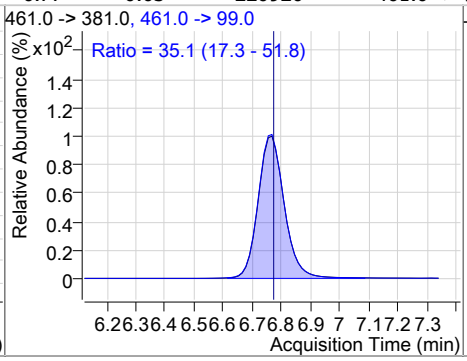


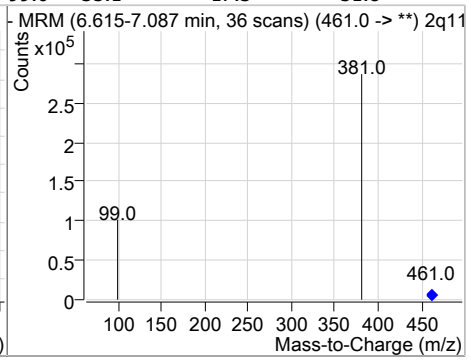




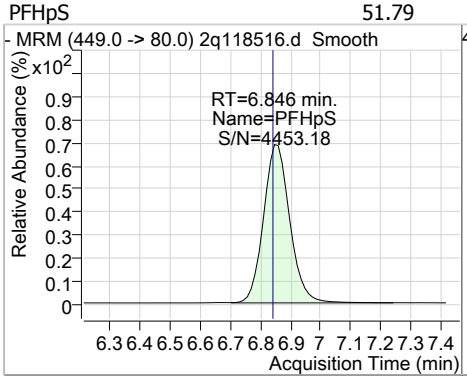
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS	48.03	6.77	-0.03	220920	461.0 -> 99.0	35.1	17.3	51.8

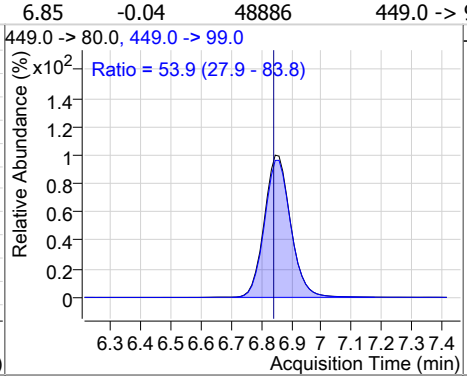


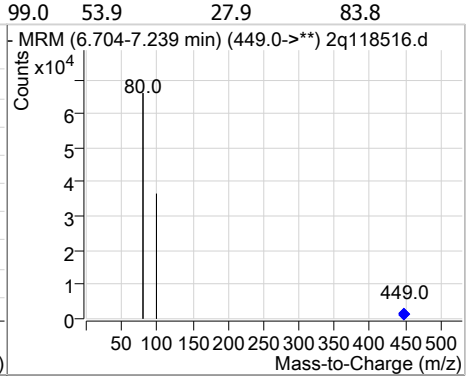




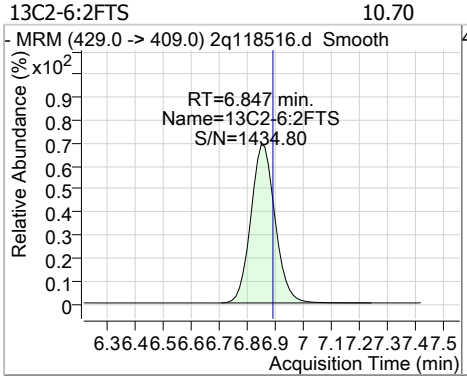
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	51.79	6.85	-0.04	48886	449.0 -> 99.0	53.9	27.9	83.8

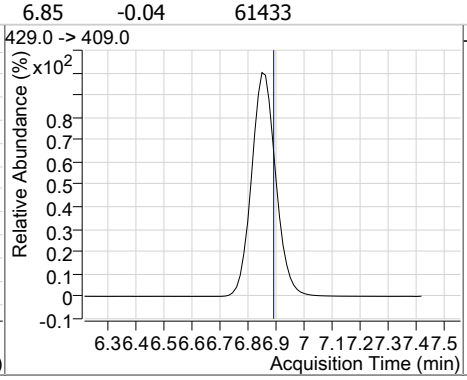


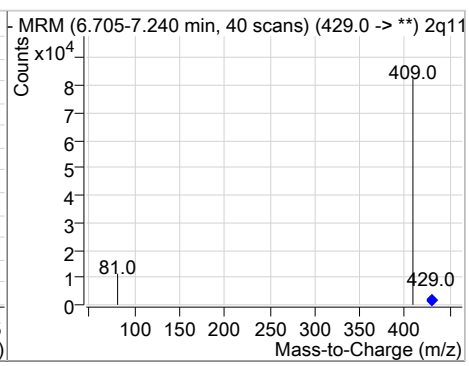




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	10.70	6.85	-0.04	61433				

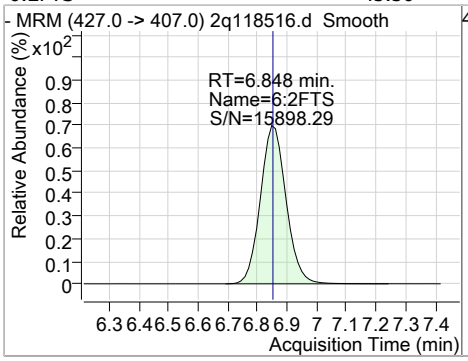


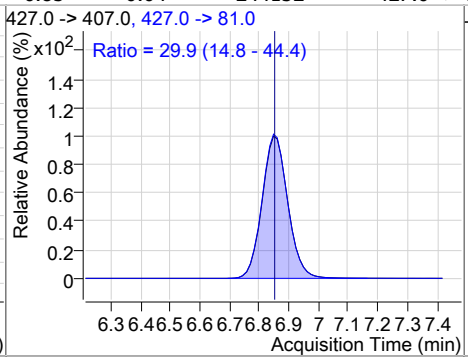


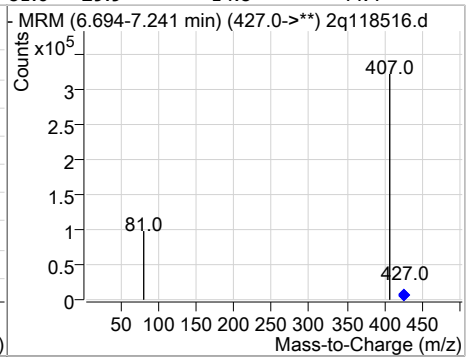


Perfluorinated Compounds by LC/MS/MS

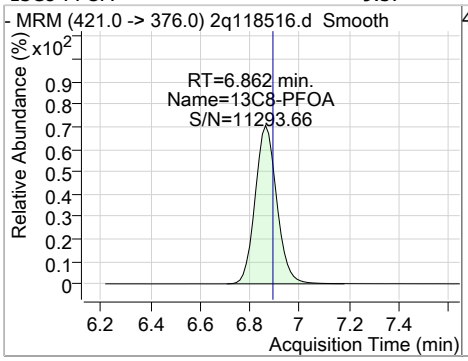
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	45.56	6.85	-0.04	244152	427.0 -> 81.0	29.9	14.8	44.4

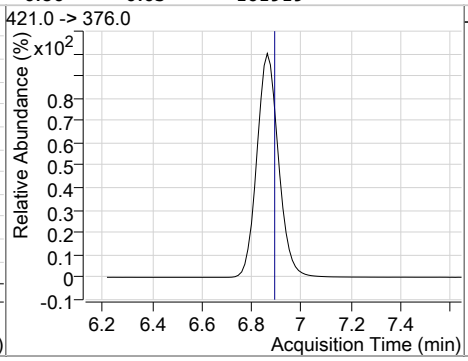


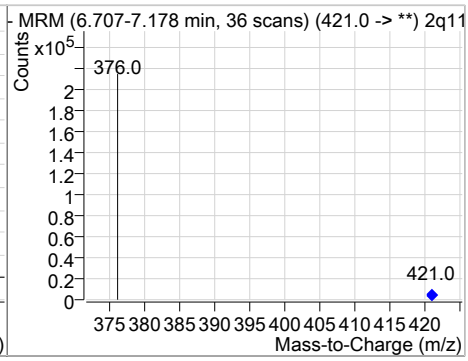




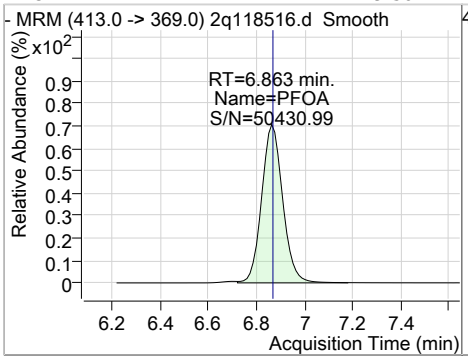
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	9.57	6.86	-0.03	161919				

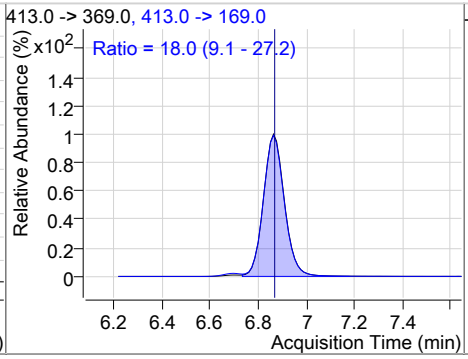


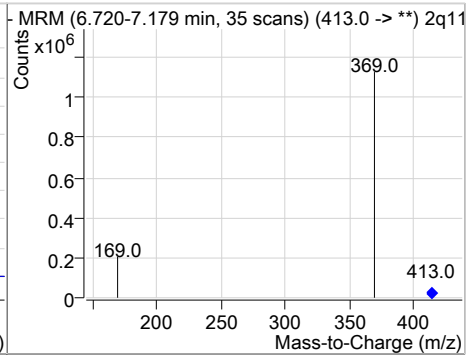




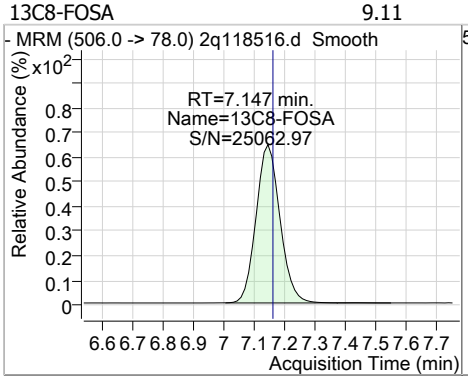
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	49.50	6.86	-0.03	856185	413.0 -> 169.0	18.0	9.1	27.2

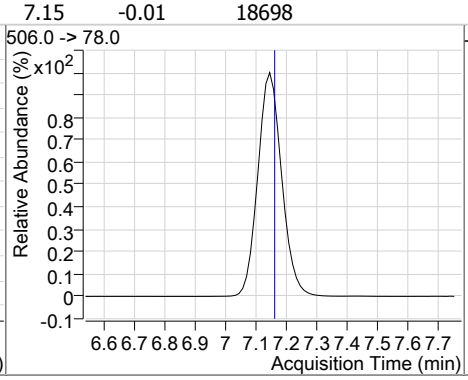


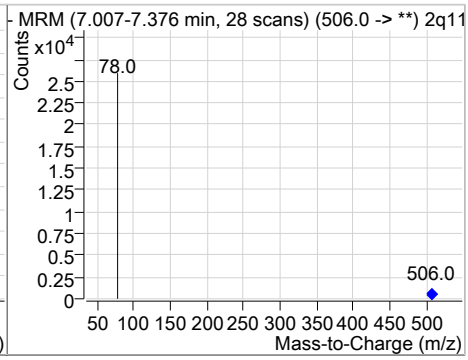




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	9.11	7.15	-0.01	18698				

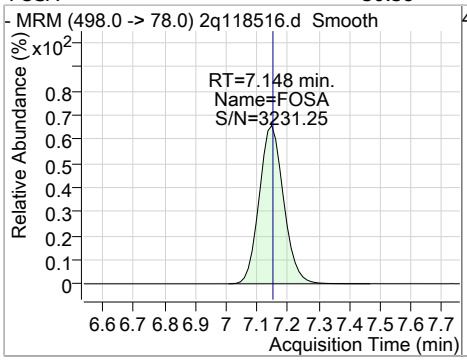


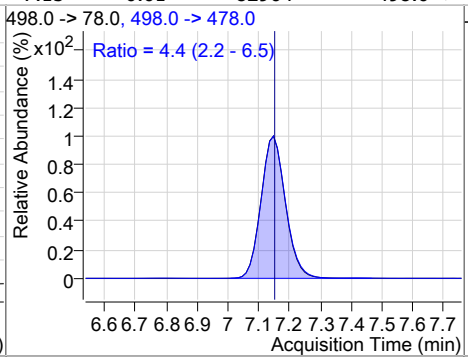


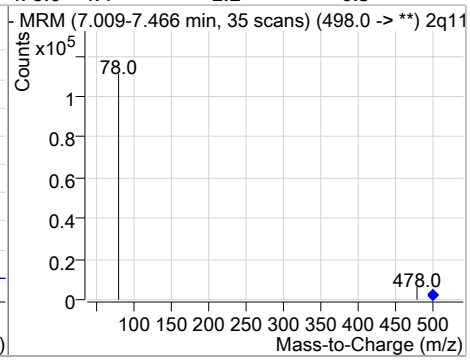


Perfluorinated Compounds by LC/MS/MS

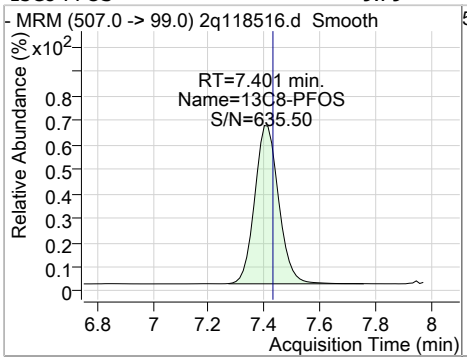
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	50.58	7.15	-0.01	82964	498.0 -> 478.0	4.4	2.2	6.5

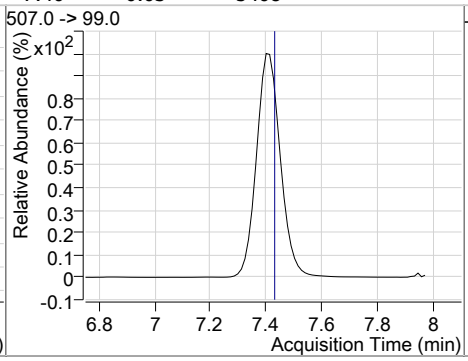


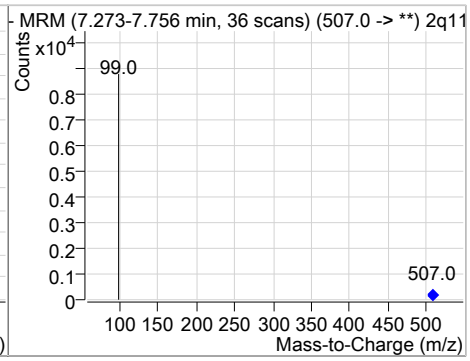




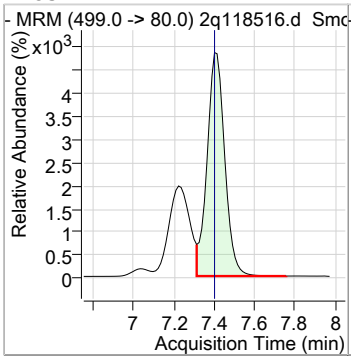
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	9.79	7.40	-0.03	5468				

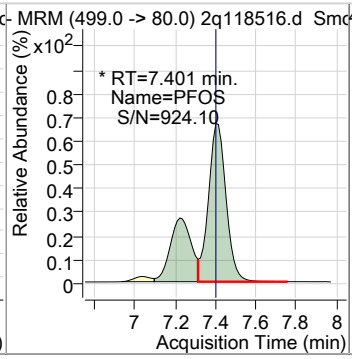


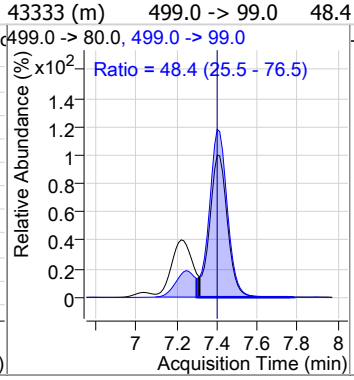


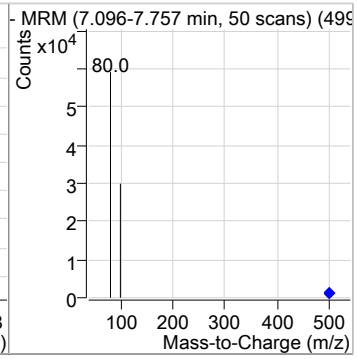


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	50.55	7.40	-0.03	43333 (m)	499.0 -> 99.0	48.4	25.5	76.5

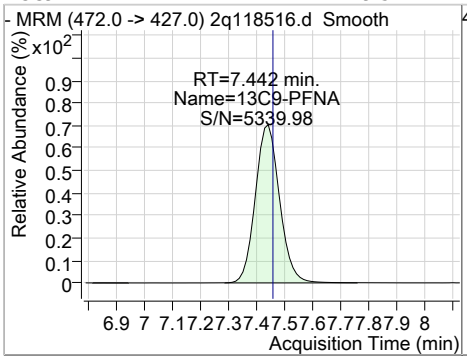


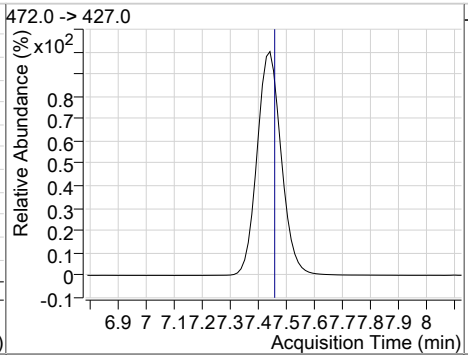


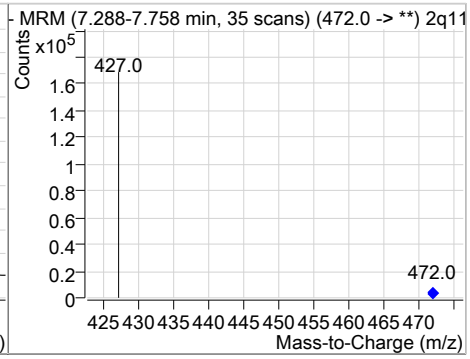




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	9.52	7.44	-0.01	128193				

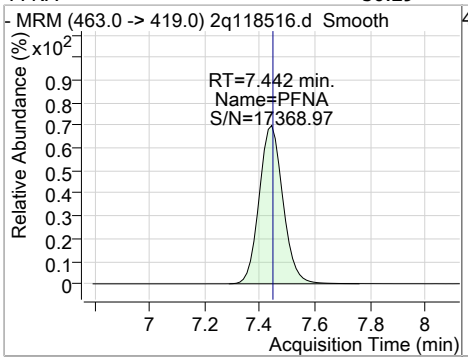


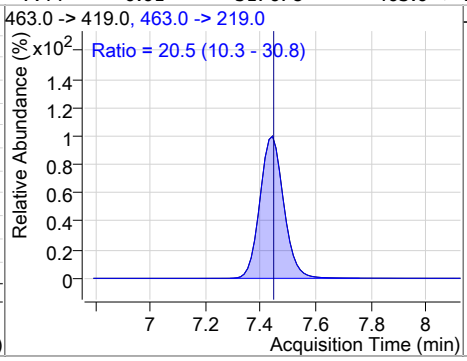


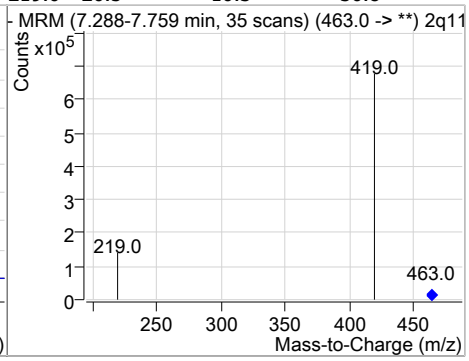


Perfluorinated Compounds by LC/MS/MS

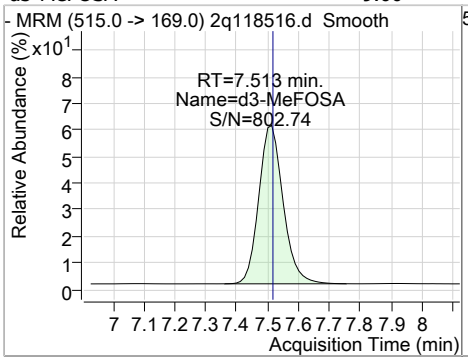
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	50.29	7.44	-0.01	517678	463.0 -> 219.0	20.5	10.3	30.8

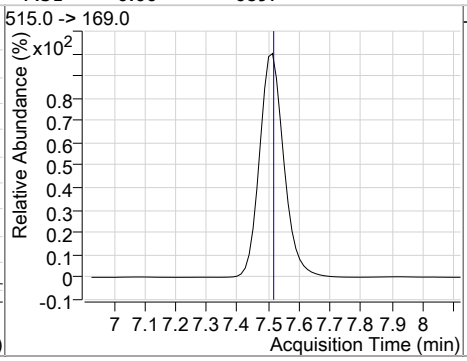


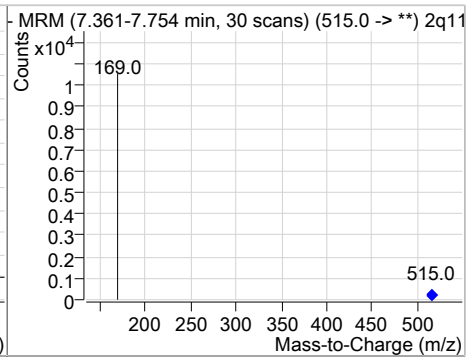




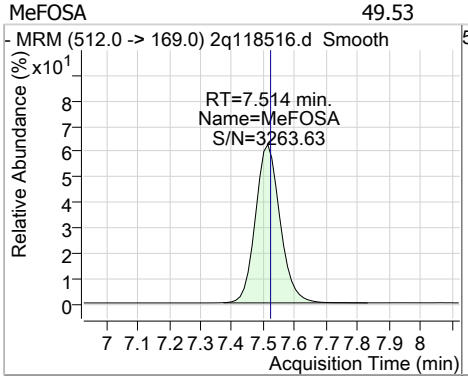
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	9.60	7.51	0.00	6897				

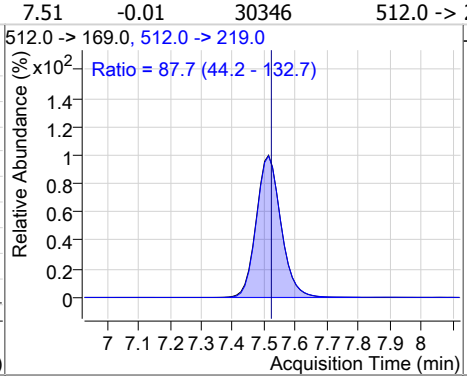


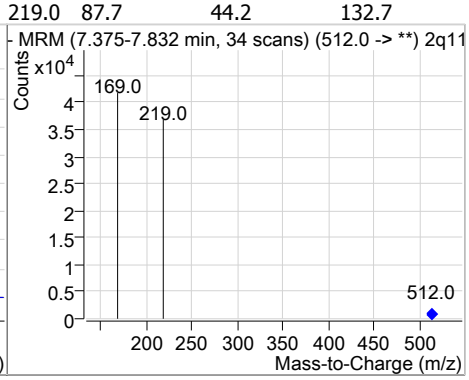




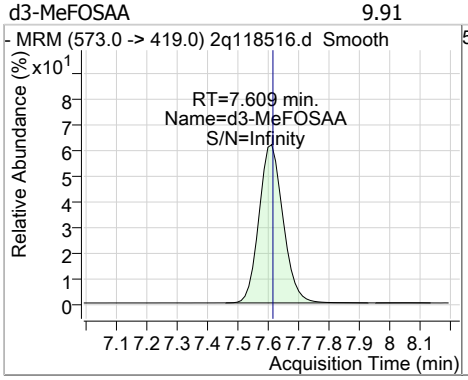
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	49.53	7.51	-0.01	30346	512.0 -> 219.0	87.7	44.2	132.7

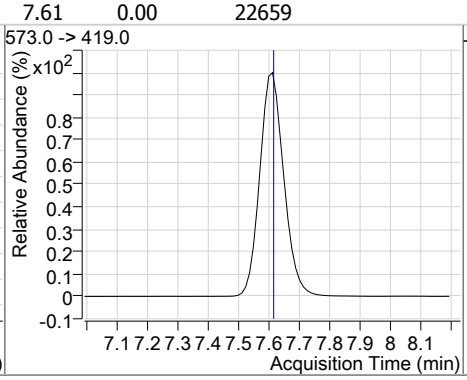


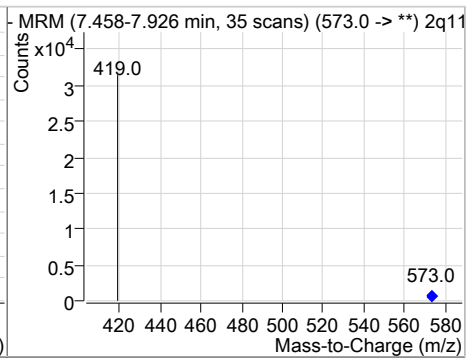




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	9.91	7.61	0.00	22659				

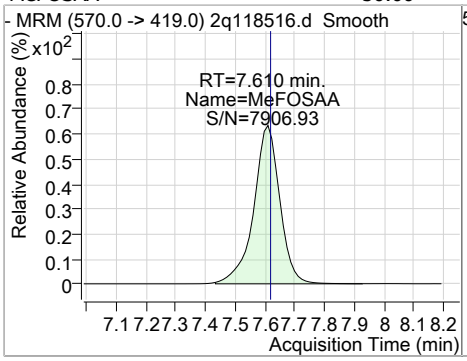


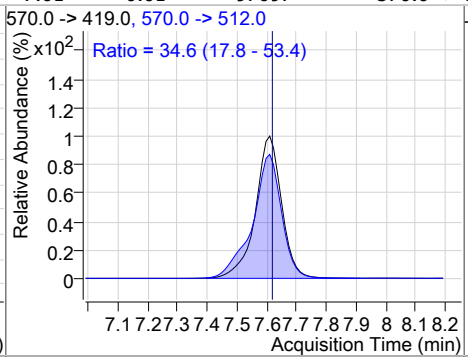


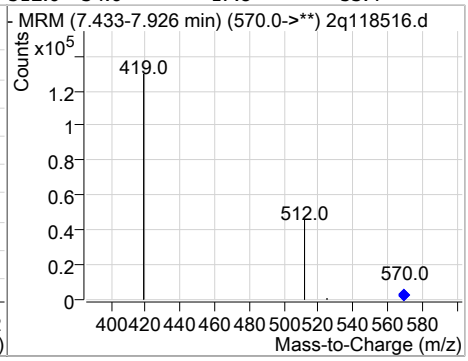


Perfluorinated Compounds by LC/MS/MS

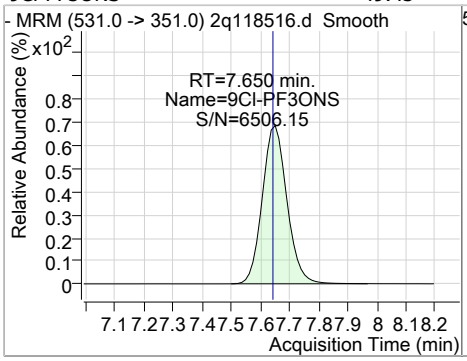
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	50.66	7.61	-0.01	97097	570.0 -> 512.0	34.6	17.8	53.4

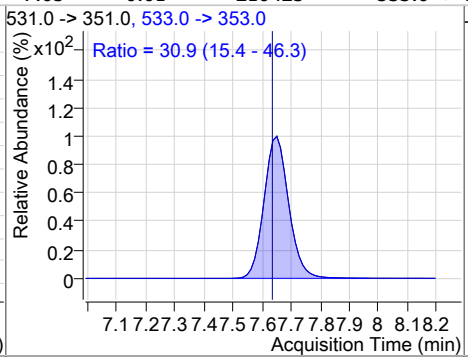


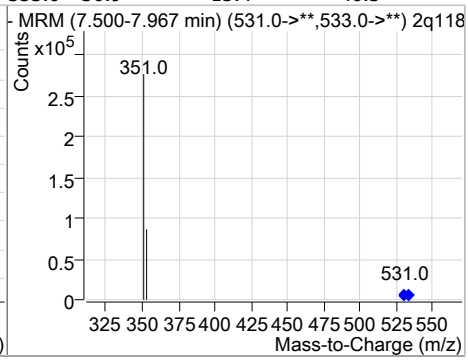




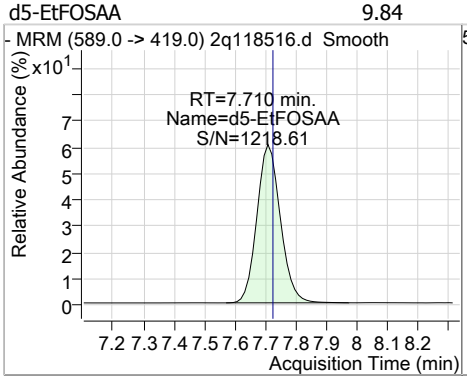
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	49.43	7.65	-0.01	210423	533.0 -> 353.0	30.9	15.4	46.3

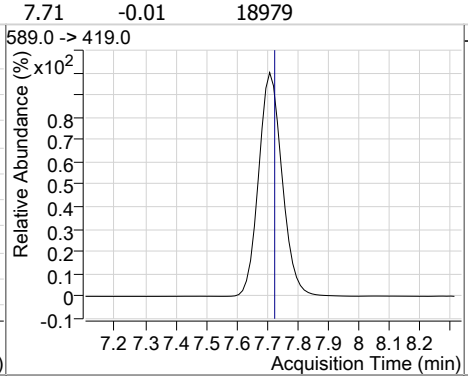


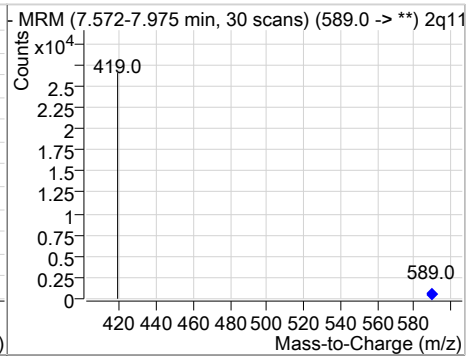




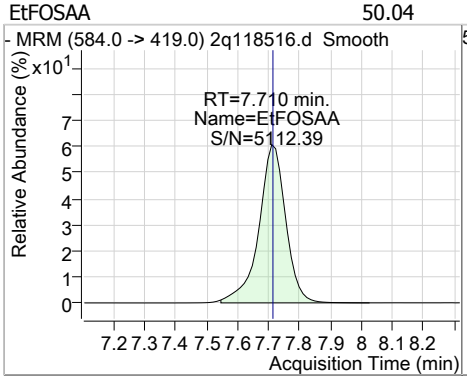
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	9.84	7.71	-0.01	18979				

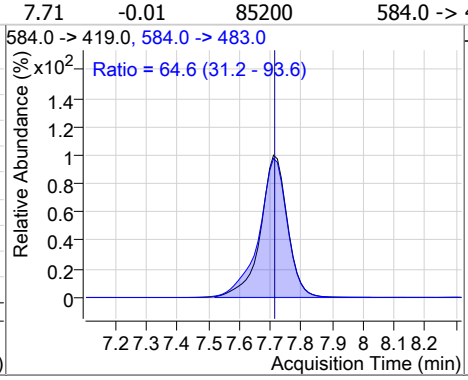


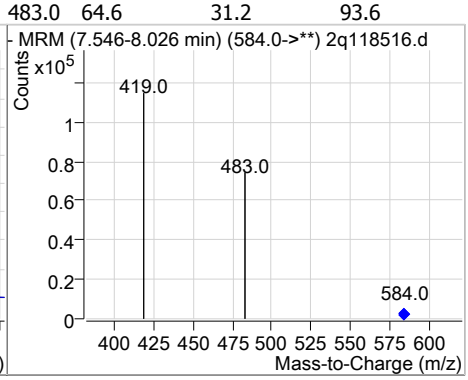




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	50.04	7.71	-0.01	85200	584.0 -> 483.0	64.6	31.2	93.6

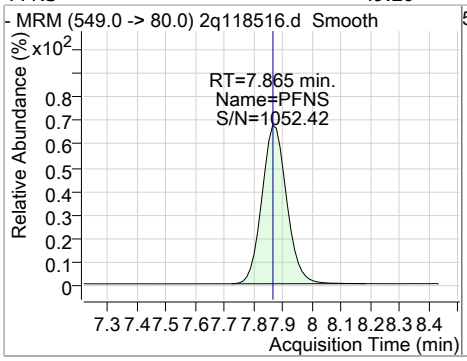


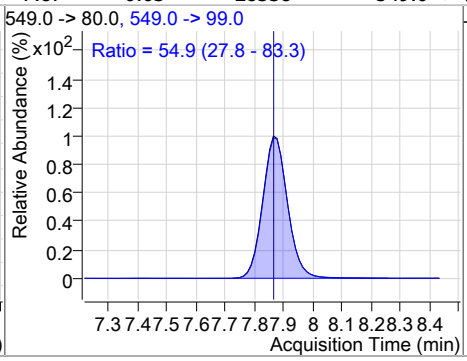


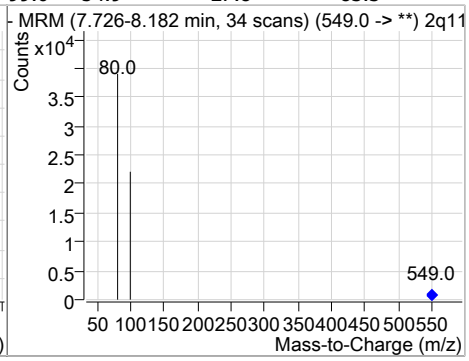


Perfluorinated Compounds by LC/MS/MS

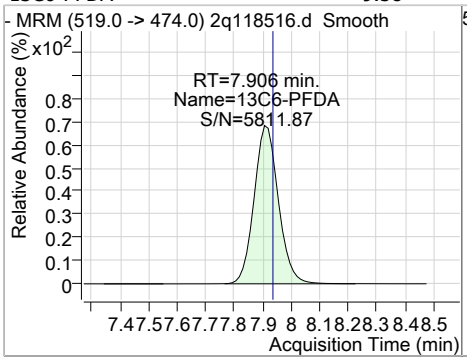
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	49.20	7.87	-0.03	28338	549.0 -> 99.0	54.9	27.8	83.3

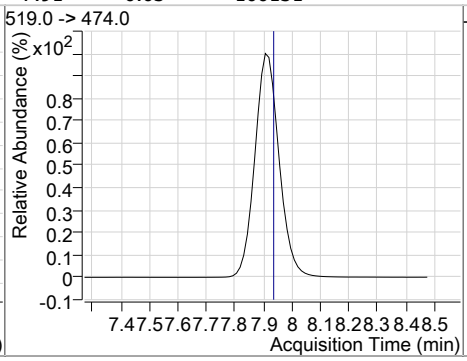


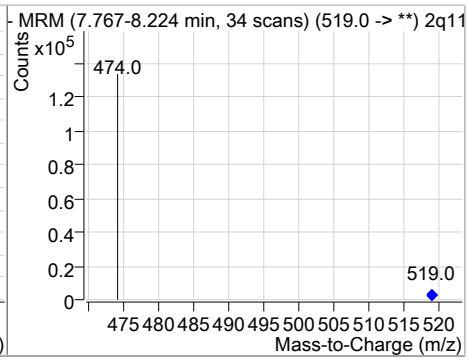




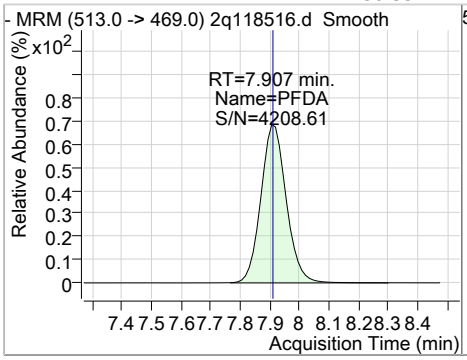
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	9.58	7.91	-0.03	100131				

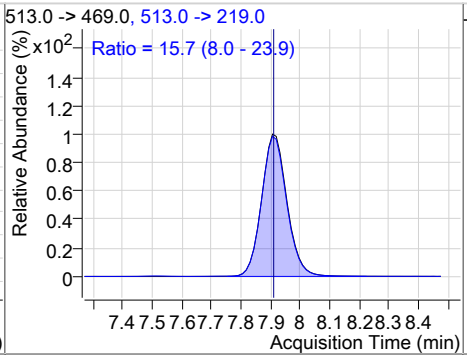


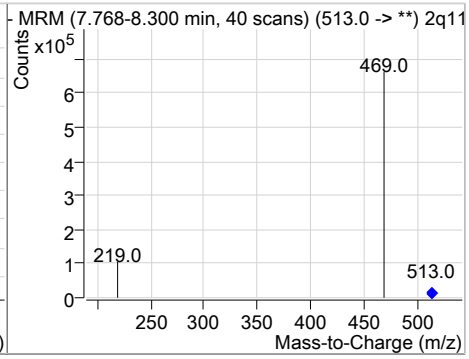




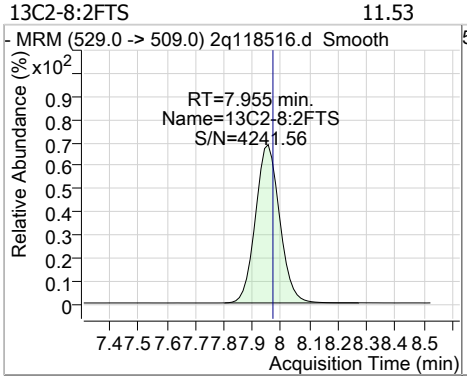
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	50.35	7.91	-0.03	499317	513.0 -> 219.0	15.7	8.0	23.9

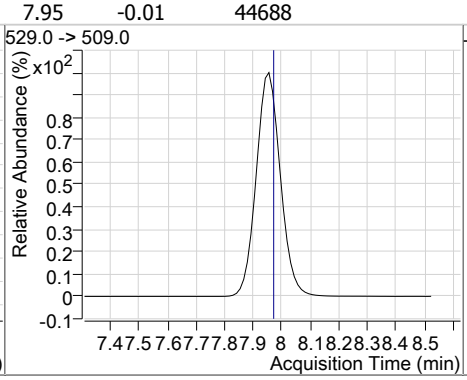


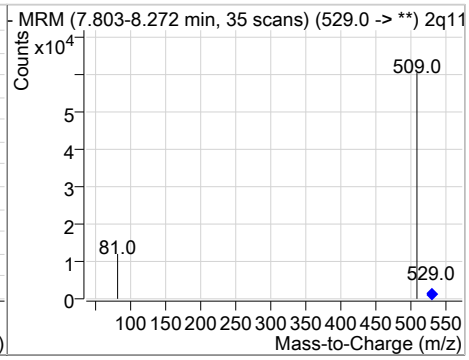




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	11.53	7.95	-0.01	44688				

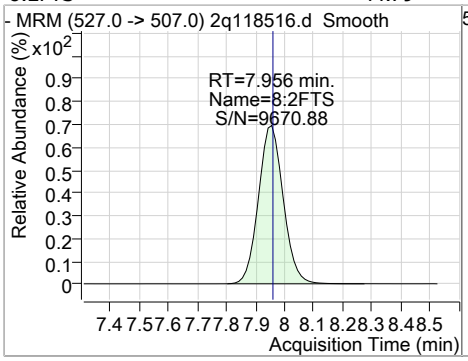


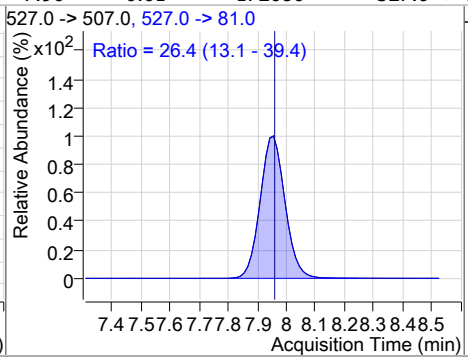


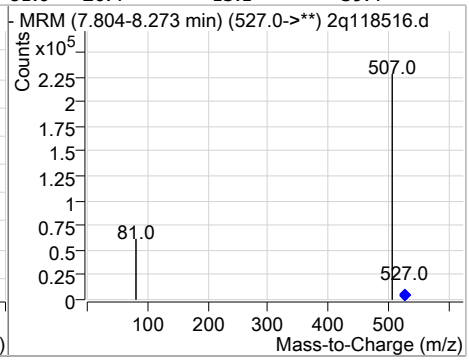


Perfluorinated Compounds by LC/MS/MS

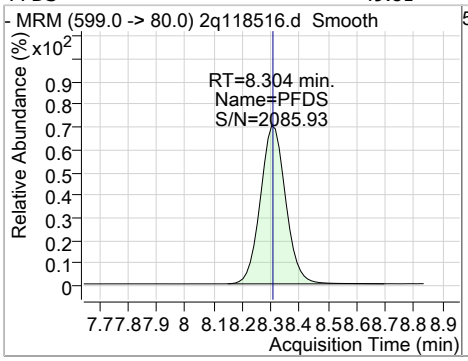
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	44.79	7.96	-0.01	172086	527.0 -> 81.0	26.4	13.1	39.4

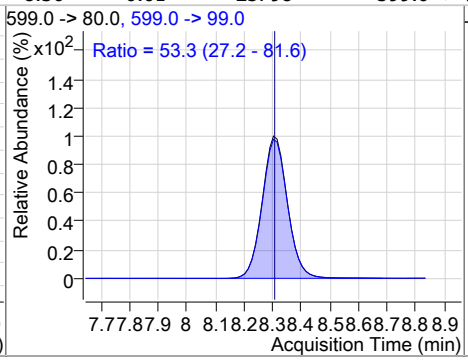


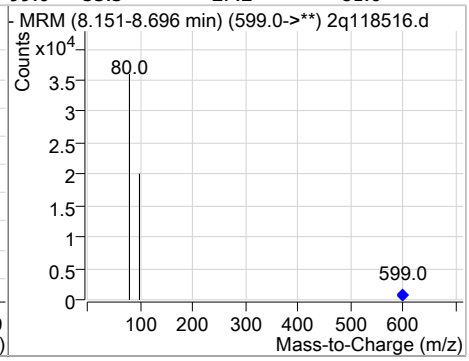




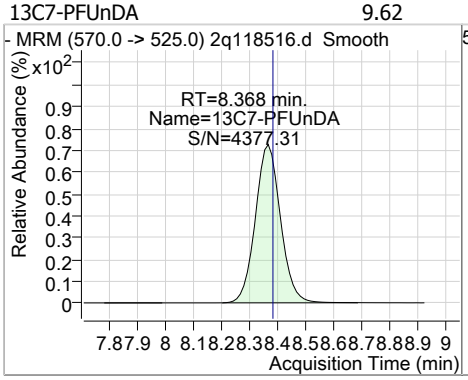
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	49.81	8.30	-0.01	25798	599.0 -> 99.0	53.3	27.2	81.6

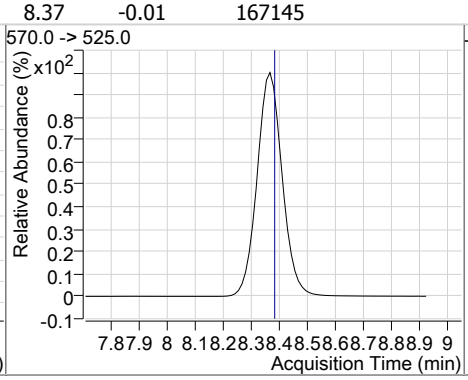


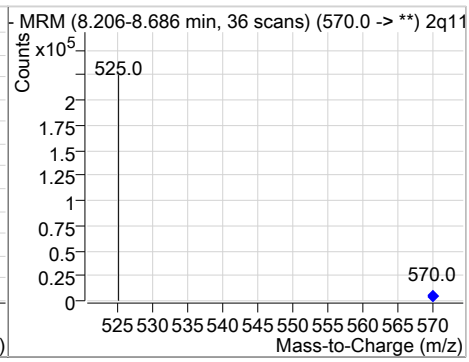




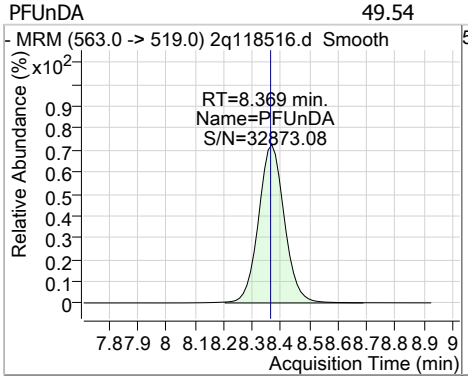
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	9.62	8.37	-0.01	167145				

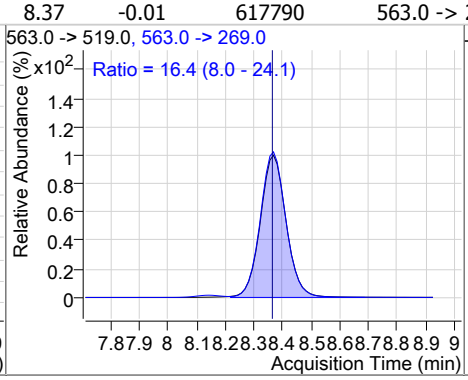


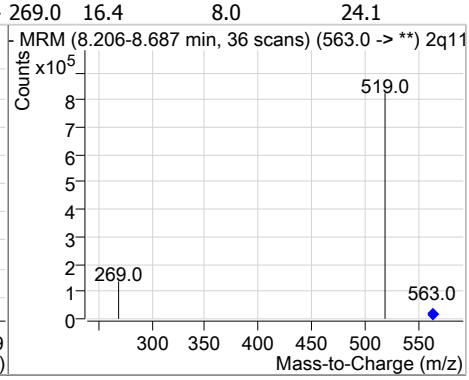




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	49.54	8.37	-0.01	617790	563.0 -> 269.0	16.4	8.0	24.1

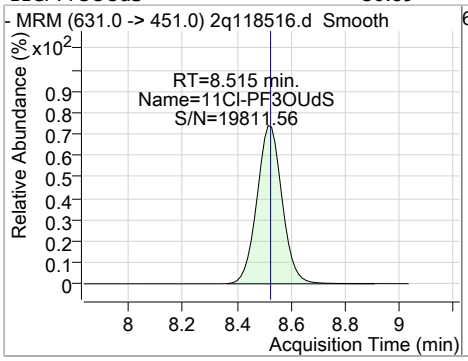


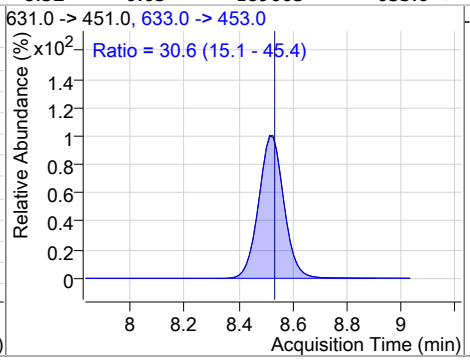


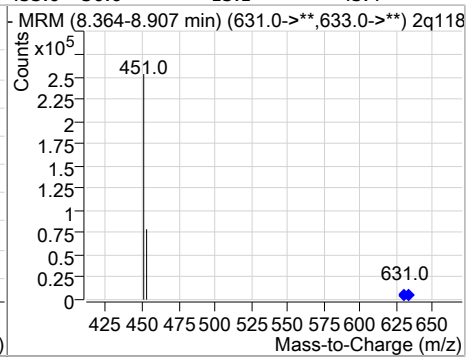


Perfluorinated Compounds by LC/MS/MS

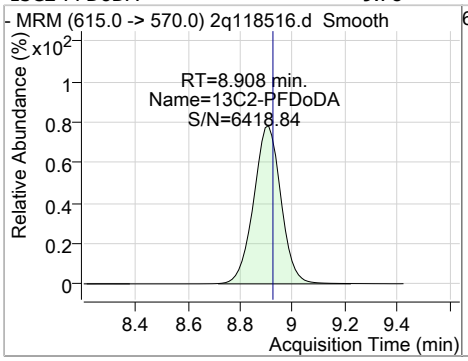
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	50.89	8.52	-0.03	189663	633.0 -> 453.0	30.6	15.1	45.4

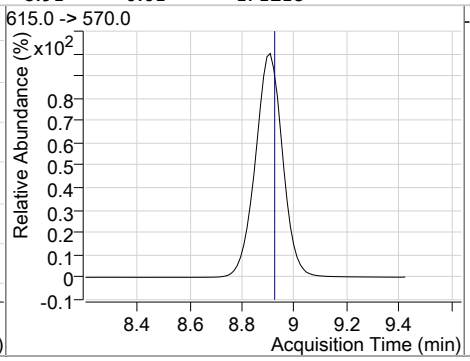


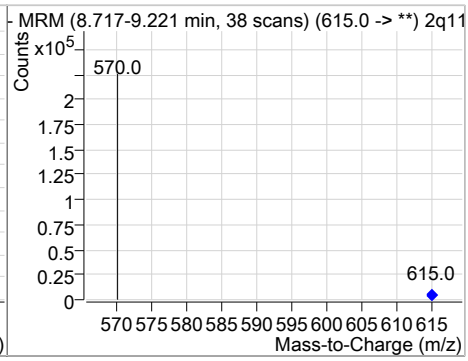




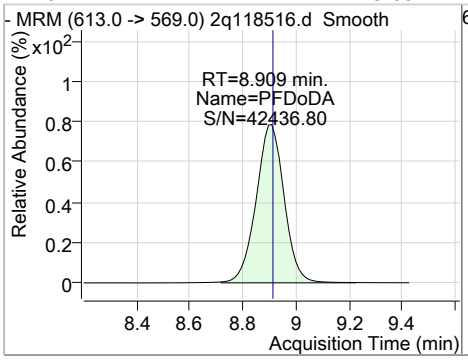
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	9.78	8.91	-0.01	171218				

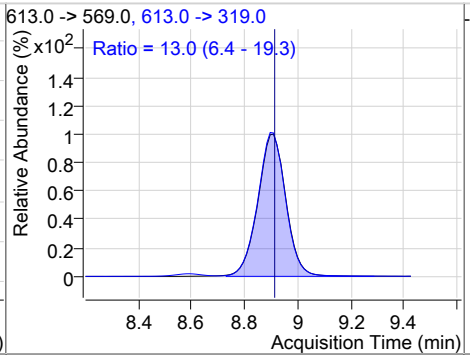


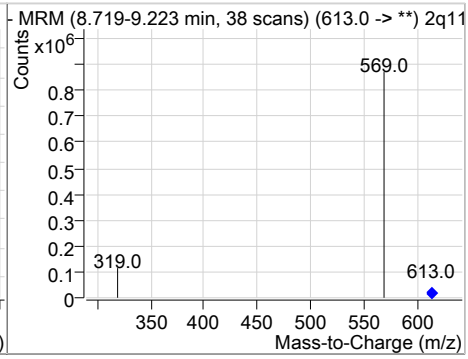




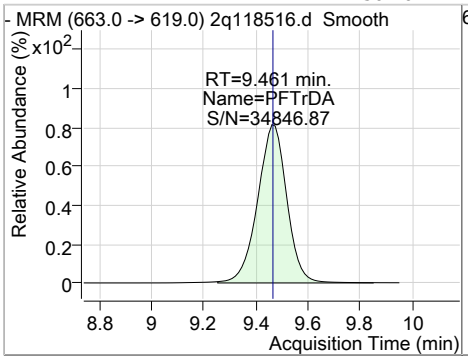
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	49.88	8.91	-0.01	666930	613.0 -> 319.0	13.0	6.4	19.3

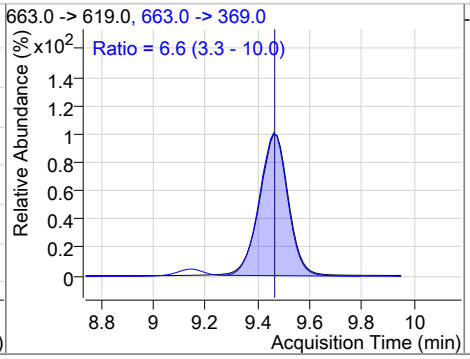


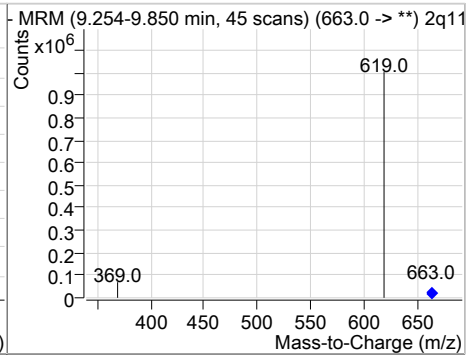




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	50.10	9.46	-0.01	764653	663.0 -> 369.0	6.6	3.3	10.0

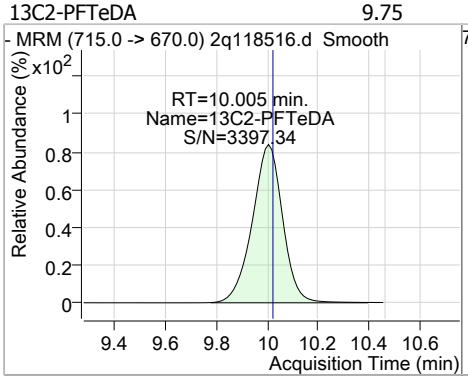


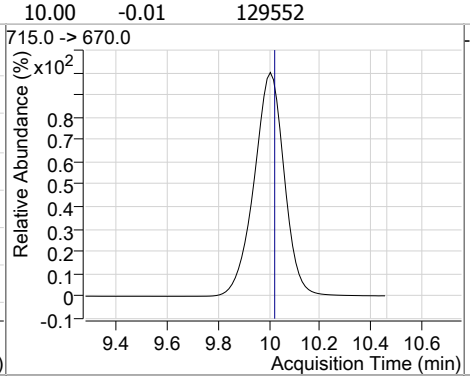


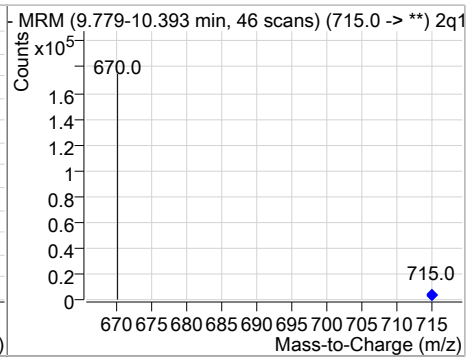


Perfluorinated Compounds by LC/MS/MS

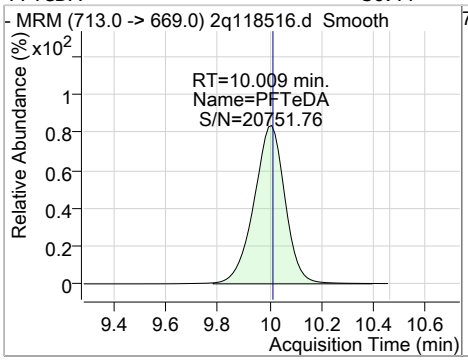
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	9.75	10.00	-0.01	129552				

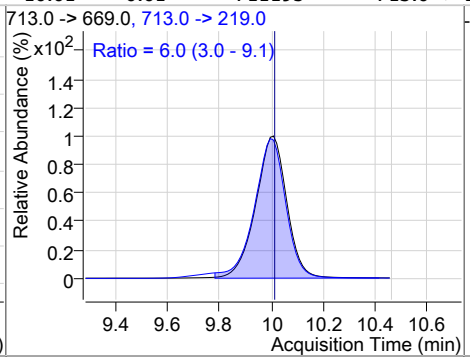


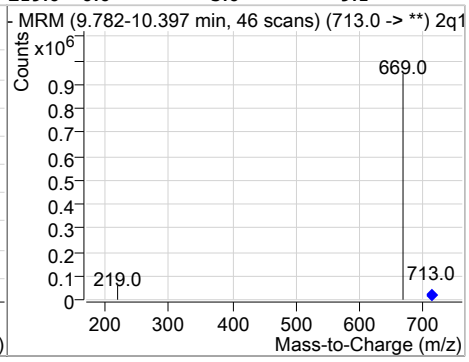




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	50.44	10.01	-0.01	711195	713.0 -> 219.0	6.0	3.0	9.1







Manual Integration Approval Summary

Sample Number: S2Q1691-IC1691
Lab FileID: 2Q118516.D
Injection Time: 01/02/24 14:13
Method: EPA 537M QSM5.3 B-15
Analyst approved: 01/03/24 15:12 Lindsay Ritner
Supervisor approved: 01/04/24 11:31 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.20	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.40	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Natasha Gumtie 01/04/24 11:31

Perfluorinated Compounds by LC/MS/MS

Data File : 2q118517.d
Operator : lindsayr
Acq. Method : 537_ID.m
Acq. Date-Time : 1/2/2024 2:30:10 PM
Sample Name : ic1691-100
Vial : P1-A9
DA Method File : ID_010224_S2Q1691.quantmethod.xml
Batch Name : s2q1691.batch.bin
Sample Information : op401,S2Q1691,250,,,1.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M5-EtFOSAA	7.710	589.0 -> 419.0	18558	10.00	µg/L	-0.013
M4-PFBA	2.240	217.0 -> 172.0	51791	10.00	µg/L	0.000
M5-PFPeA	4.074	268.0 -> 223.0	79153	10.00	µg/L	0.013
M5-PFHxA	5.351	318.0 -> 273.0	96642	10.00	µg/L	0.013
M4-PFHpA	6.208	367.0 -> 322.0	81902	10.00	µg/L	0.000
M8-PFOA	6.887	421.0 -> 376.0	156158	10.00	µg/L	0.000
M9-PFNA	7.455	472.0 -> 427.0	128461	10.00	µg/L	0.000
M6-PFDA	7.919	519.0 -> 474.0	99969	10.00	µg/L	-0.013
M7-PFUnDA	8.368	570.0 -> 525.0	167578	10.00	µg/L	-0.013
M2-PFDoDA	8.908	615.0 -> 570.0	175108	10.00	µg/L	-0.013
M2-PFTeDA	9.992	715.0 -> 670.0	134617	10.00	µg/L	-0.025
M8-FOSA	7.159	506.0 -> 78.0	17561	10.00	µg/L	0.000
M3-PFBS	4.342	302.0 -> 99.0	6011	10.00	µg/L	0.013
M3-PFHxS	6.231	402.0 -> 99.0	5846	10.00	µg/L	-0.013
M8-PFOS	7.413	507.0 -> 99.0	5536	10.00	µg/L	-0.014
M2-4:2FTS	5.247	329.0 -> 309.0	53716	10.00	µg/L	0.013
M2-6:2FTS	6.872	429.0 -> 409.0	72025	10.00	µg/L	-0.013
M2-8:2FTS	7.955	529.0 -> 509.0	54841	10.00	µg/L	-0.013
M3-MeFOSAA	7.609	573.0 -> 419.0	21934	10.00	µg/L	0.000
M3-HFPO-DA	5.607	287.0 -> 169.0	8489	10.00	µg/L	0.000
M3-MeFOSA	7.513	515.0 -> 169.0	6377	10.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	5.247	329.0 -> 309.0	53716	14.56	µg/L	0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 145.6%		
13C2-6:2FTS	6.872	429.0 -> 409.0	72025	12.54	µg/L	-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 125.4%		
13C2-8:2FTS	7.955	529.0 -> 509.0	54841	14.15	µg/L	-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 141.5%		
13C2-PFDoDA	8.908	615.0 -> 570.0	175108	10.00	µg/L	-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.0%		
13C2-PFTeDA	9.992	715.0 -> 670.0	134617	10.13	µg/L	-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.3%		
13C3-PFBS	4.342	302.0 -> 99.0	6011	10.00	µg/L	0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.0%		
13C3-PFHxS	6.231	402.0 -> 99.0	5846	9.55	µg/L	-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 95.5%		
13C4-PFBA	2.240	217.0 -> 172.0	51791	10.03	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.3%		
13C4-PFHpA	6.208	367.0 -> 322.0	81902	9.54	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 95.4%		
d5-EtFOSAA	7.710	589.0 -> 419.0	18558	9.62	µg/L	-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 96.2%		
13C5-PFHxA	5.351	318.0 -> 273.0	96642	9.80	µg/L	0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 98.0%		
13C5-PFPeA	4.074	268.0 -> 223.0	79153	9.96	µg/L	0.013

Perfluorinated Compounds by LC/MS/MS

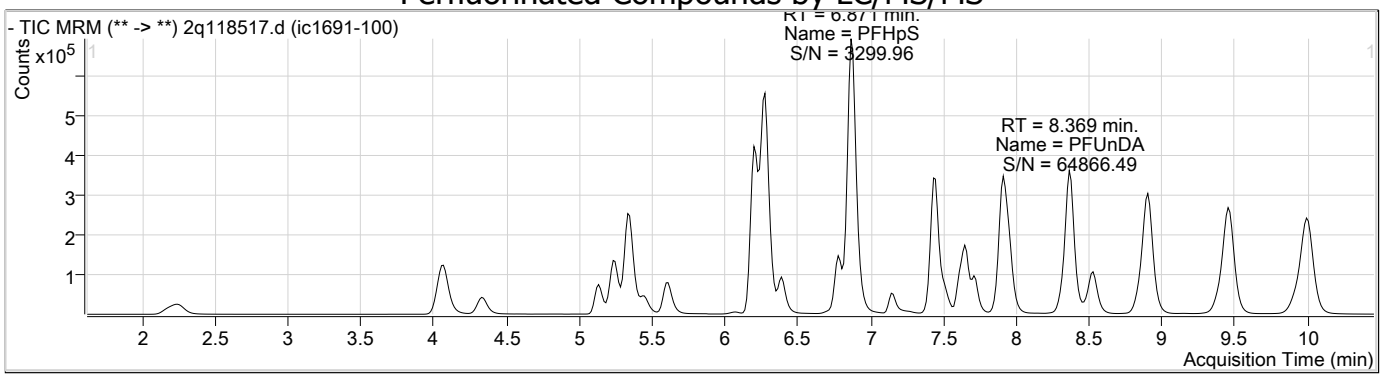
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.6%			
13C6-PFDA	7.919	519.0 -> 474.0	99969	9.56	µg/L		-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 95.6%			
13C7-PFUnDA	8.368	570.0 -> 525.0	167578	9.64	µg/L		-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 96.4%			
13C8-FOSA	7.159	506.0 -> 78.0	17561	8.55	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 85.5%			
13C8-PFOA	6.887	421.0 -> 376.0	156158	9.23	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 92.3%			
13C8-PFOS	7.413	507.0 -> 99.0	5536	9.91	µg/L		-0.014
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.1%			
13C9-PFNA	7.455	472.0 -> 427.0	128461	9.54	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 95.4%			
d3-MeFOSAA	7.609	573.0 -> 419.0	21934	9.59	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 95.9%			
13C3-HFPO-DA	5.607	287.0 -> 169.0	8489	10.21	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 102.1%			
d3-MeFOSA	7.513	515.0 -> 169.0	6377	8.88	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 88.8%			
Target Compounds							QValue
4:2FTS	5.249	327.0 -> 307.0	386139	70.76	µg/L		100
		327.0 -> 81.0	143870				
6:2FTS	6.874	427.0 -> 407.0	470978	74.96	µg/L		100
		427.0 -> 81.0	139349				
8:2FTS	7.956	527.0 -> 507.0	338122	71.72	µg/L		99
		527.0 -> 81.0	90027				
EtFOSAA	7.723	584.0 -> 419.0	166846	100.23	µg/L		100
		584.0 -> 483.0	104553				
FOSA	7.161	498.0 -> 78.0	154216	100.10	µg/L		100
		498.0 -> 478.0	6513				
MeFOSAA	7.610	570.0 -> 419.0	185238	99.83	µg/L		99
		570.0 -> 512.0	66548				
PFBA	2.233	213.0 -> 169.0	163163	100.06	µg/L		100
PFBS	4.332	299.0 -> 80.0	151410	99.73	µg/L		99
		299.0 -> 99.0	56641				
PFDA	7.919	513.0 -> 469.0	991680	100.17	µg/L		99
		513.0 -> 219.0	155209				
PFDoDA	8.909	613.0 -> 569.0	1372423	100.37	µg/L		100
		613.0 -> 319.0	176787				
PFDS	8.316	599.0 -> 80.0	52143	100.41	µg/L		98
		599.0 -> 99.0	27523				
PFHpA	6.209	363.0 -> 319.0	1362969	100.64	µg/L		99
		363.0 -> 169.0	223933				
PFHpS	6.871	449.0 -> 80.0	96033	99.53	µg/L		98
		449.0 -> 99.0	52600				
PFHxA	5.352	313.0 -> 269.0	996038	100.16	µg/L		100
		313.0 -> 119.0	38879				
PFHxS	6.231	399.0 -> 80.0	129099	100.87	µg/L	m	99
		399.0 -> 99.0	66917				
PFNA	7.455	463.0 -> 419.0	1033212	100.17	µg/L		99
		463.0 -> 219.0	208580				
PFNS	7.878	549.0 -> 80.0	58522	100.35	µg/L		98
		549.0 -> 99.0	31552				
PFOA	6.888	413.0 -> 369.0	1678998	100.65	µg/L		99
		413.0 -> 169.0	297795				
PFOS	7.414	499.0 -> 80.0	86526	99.71	µg/L	m	99

Perfluorinated Compounds by LC/MS/MS

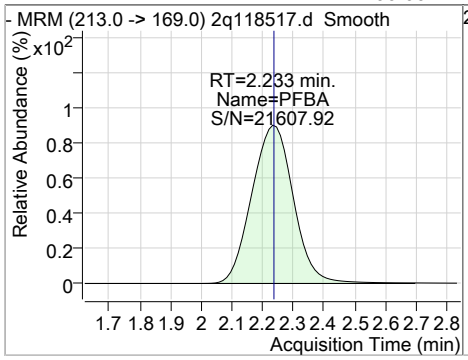
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		499.0 -> 99.0	43685			
PFPeA	4.077	263.0 -> 219.0	624421	100.08	µg/L	100
PFPeS	5.445	349.0 -> 80.0	109421	99.59	µg/L	99
		349.0 -> 99.0	45858			
PFTeDA	9.997	713.0 -> 669.0	1465426	100.03	µg/L	100
		713.0 -> 219.0	87683			
PFTrDA	9.461	663.0 -> 619.0	1564102	100.21	µg/L	100
		663.0 -> 369.0	102558			
PFUnDA	8.369	563.0 -> 519.0	1257772	100.60	µg/L	99
		563.0 -> 269.0	206205			
11Cl-PF3OUdS	8.528	631.0 -> 451.0	380474	99.81	µg/L	99
		633.0 -> 453.0	118242			
9Cl-PF3ONS	7.663	531.0 -> 351.0	428014	100.71	µg/L	100
		533.0 -> 353.0	133224			
ADONA	6.284	377.0 -> 251.0	1679212	101.38	µg/L	99
		377.0 -> 85.0	430481			
HFPO-DA	5.614	329.0 -> 169.0	262958	99.91	µg/L	99
		285.0 -> 169.0	76878			
MeFOSA	7.514	512.0 -> 169.0	57082	100.76	µg/L	99
		512.0 -> 219.0	49892			
4-PFECHS	6.780	461.0 -> 381.0	450537	101.56	µg/L	99
		461.0 -> 99.0	156802			
FBSA	5.141	298.0 -> 78.0	266501	101.47	µg/L	100
		298.0 -> 64.0	27825			
FHxSA	6.396	398.0 -> 78.0	260892	100.49	µg/L	99
		398.0 -> 64.0	28441			

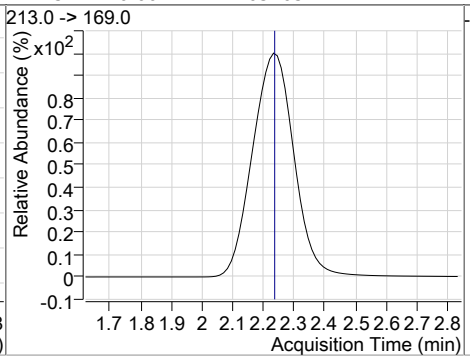
 # = Qualifier out of range, m = manually integrated, + = Area summed

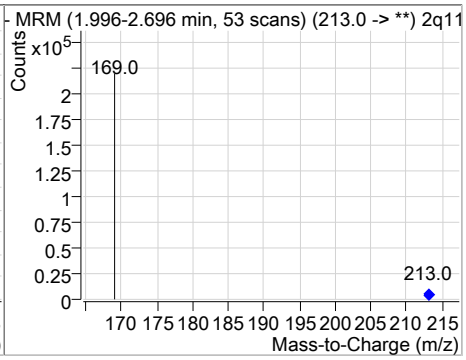
Perfluorinated Compounds by LC/MS/MS



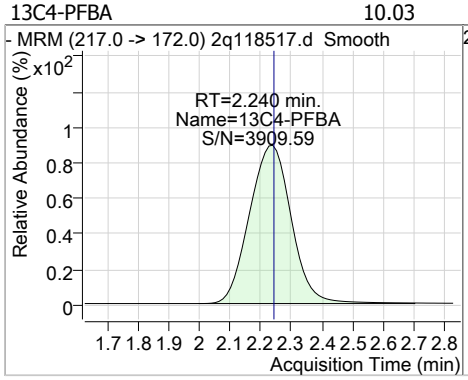
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	100.06	2.23	0.00	163163				

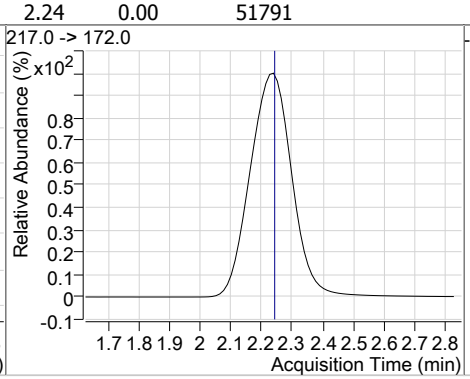


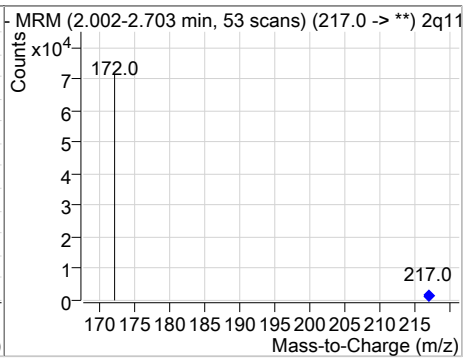




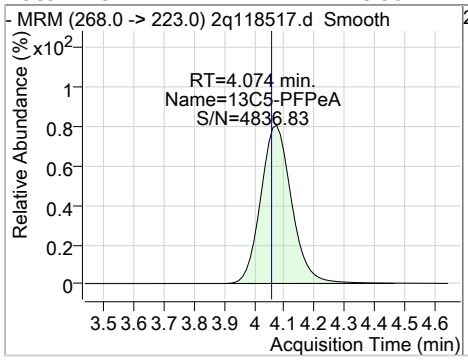
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	10.03	2.24	0.00	51791				

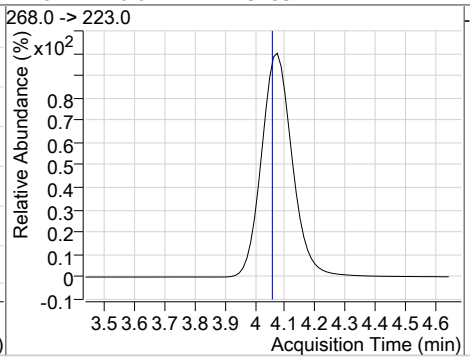


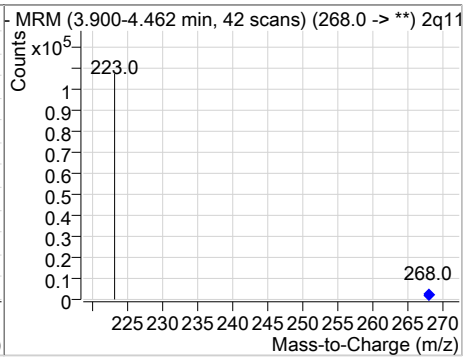




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	9.96	4.07	0.01	79153				

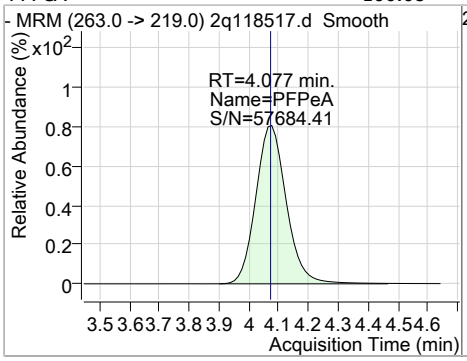


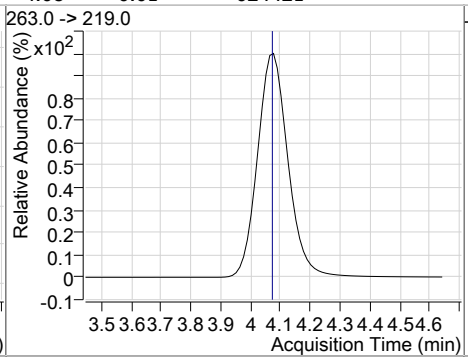


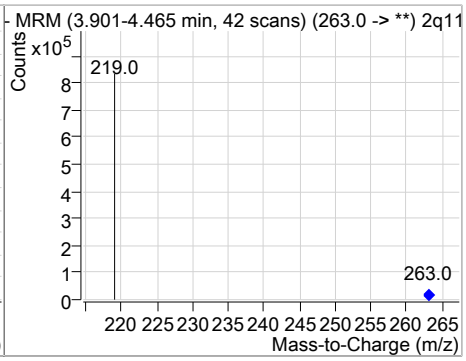


Perfluorinated Compounds by LC/MS/MS

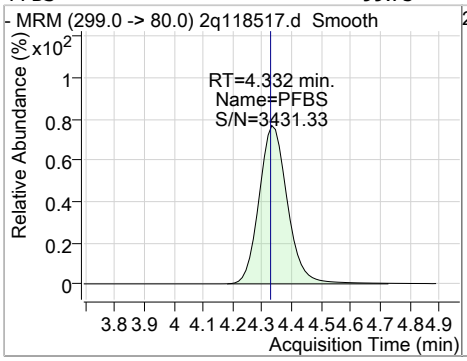
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	100.08	4.08	0.01	624421				

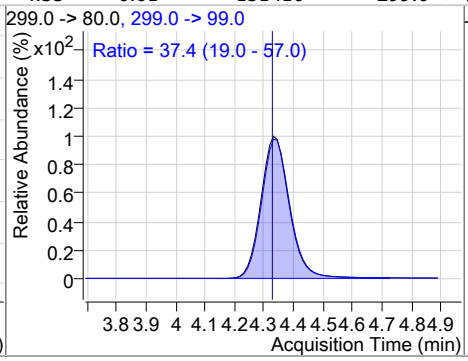


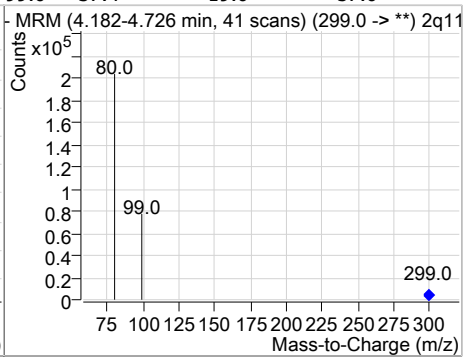




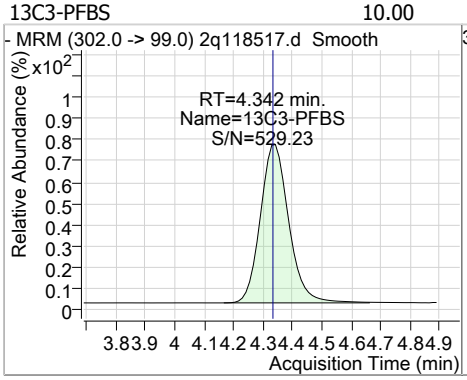
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	99.73	4.33	0.01	151410	299.0 -> 99.0	37.4	19.0	57.0

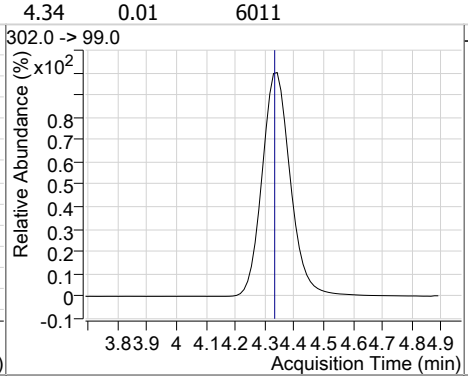


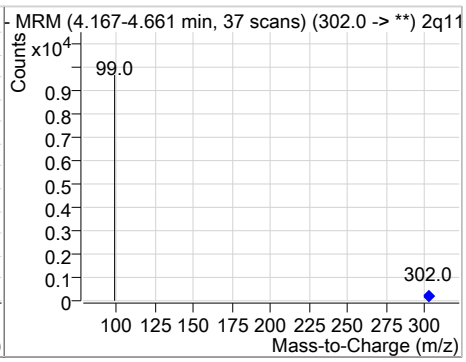




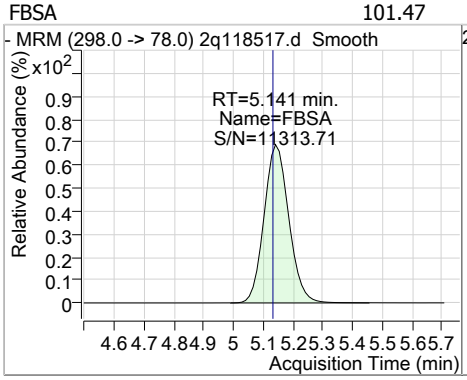
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	10.00	4.34	0.01	6011				

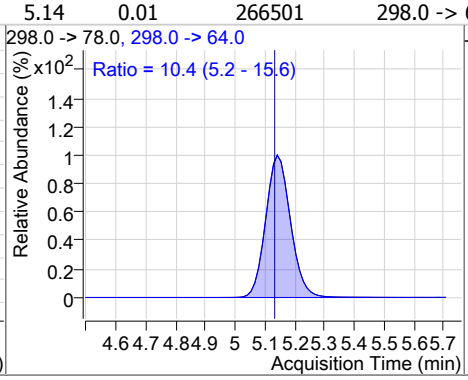


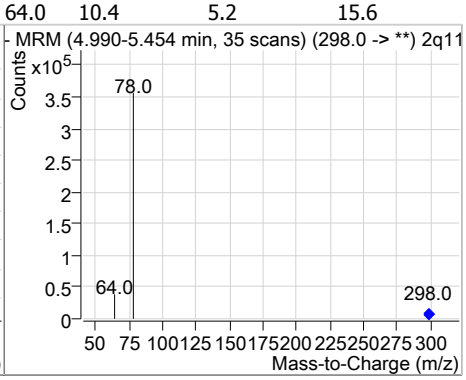




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	101.47	5.14	0.01	266501	298.0 -> 64.0	10.4	5.2	15.6

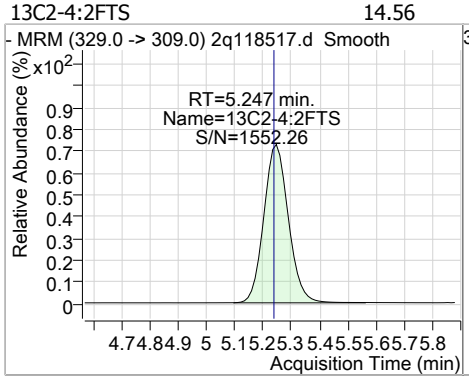


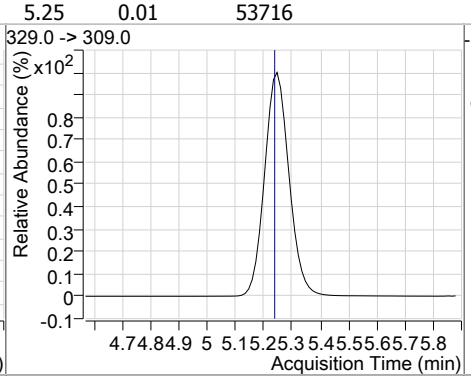


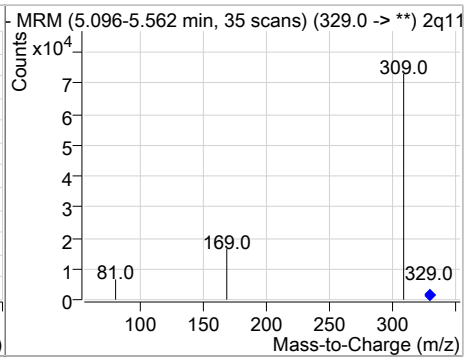


Perfluorinated Compounds by LC/MS/MS

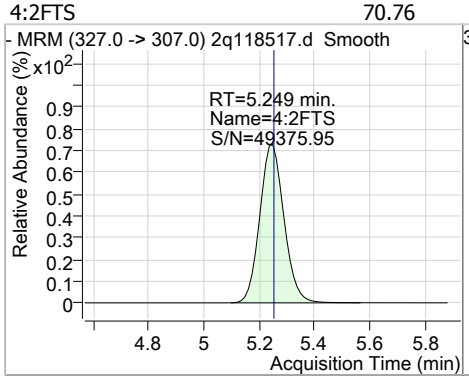
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	14.56	5.25	0.01	53716				

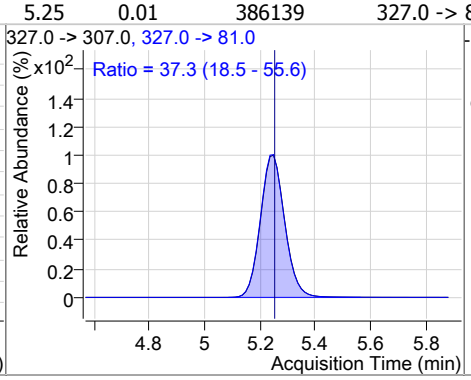


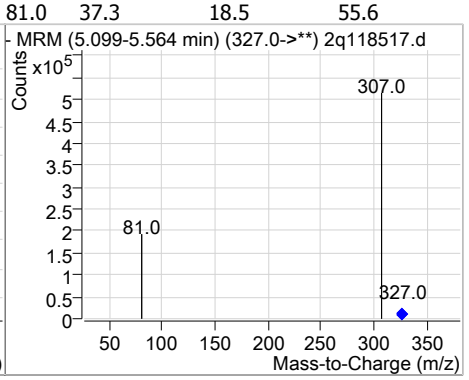




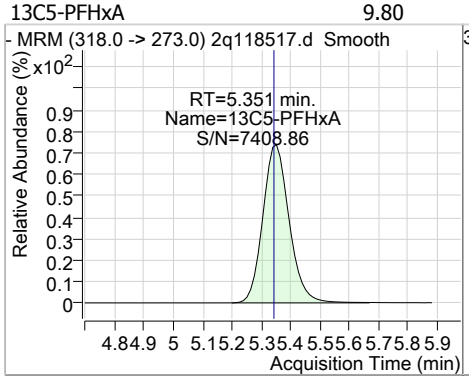
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	70.76	5.25	0.01	386139	327.0 -> 81.0	37.3	18.5	55.6

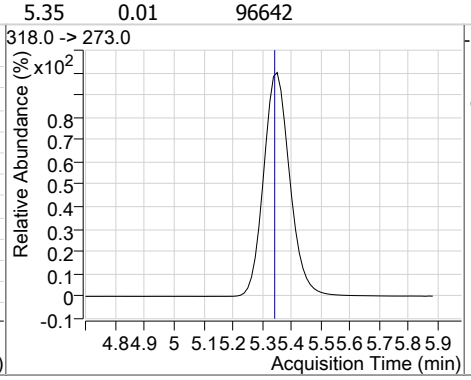


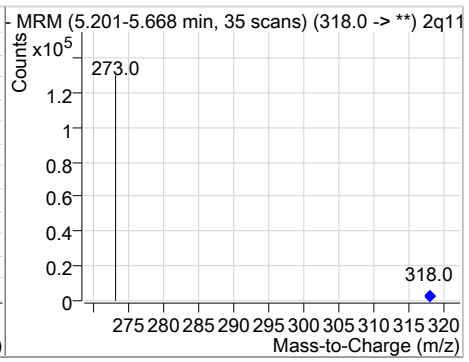




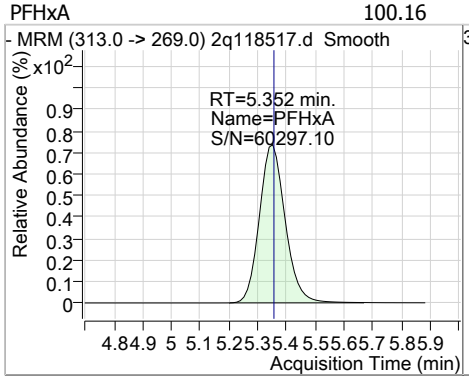
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	9.80	5.35	0.01	96642				

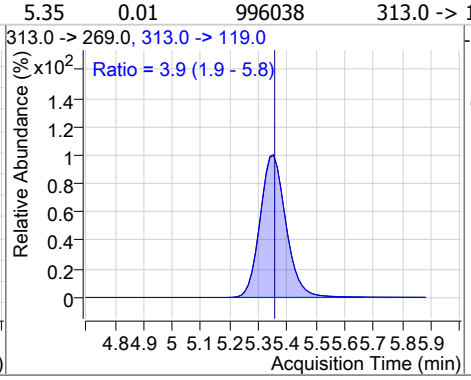


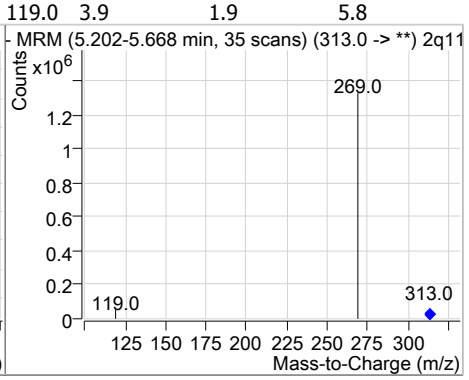




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	100.16	5.35	0.01	996038	313.0 -> 119.0	3.9	1.9	5.8

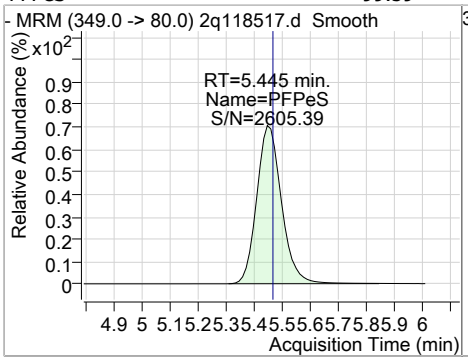


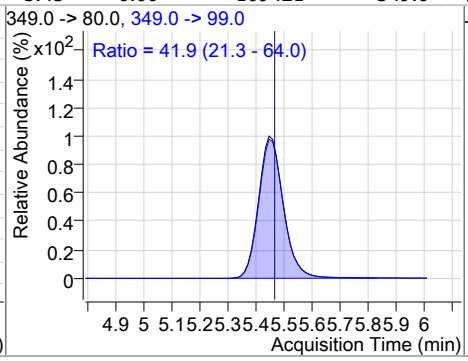


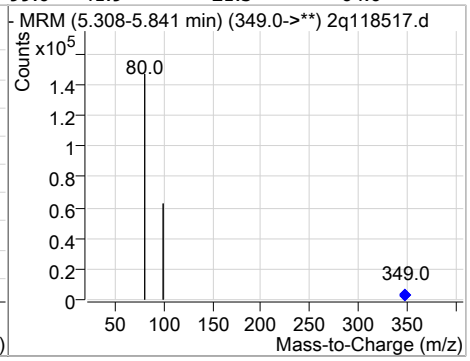


Perfluorinated Compounds by LC/MS/MS

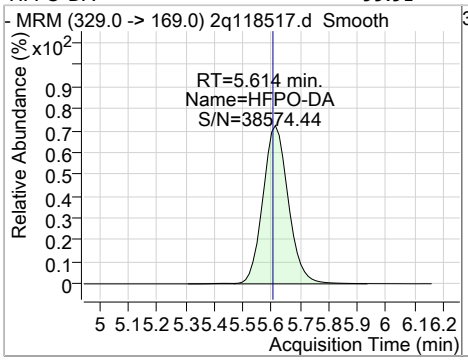
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	99.59	5.45	0.00	109421	349.0 -> 99.0	41.9	21.3	64.0

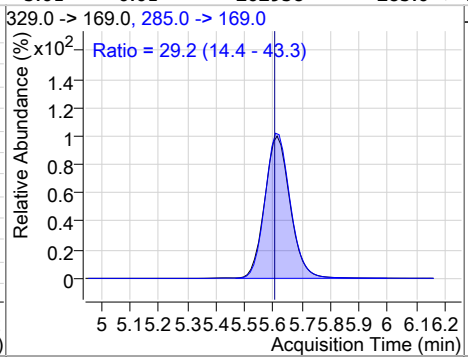


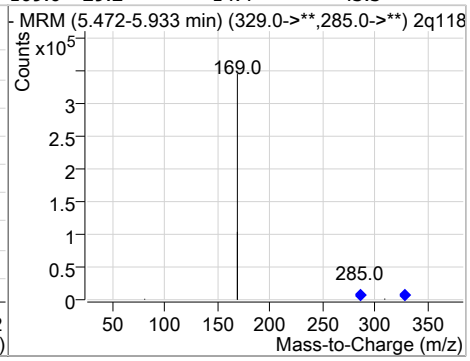




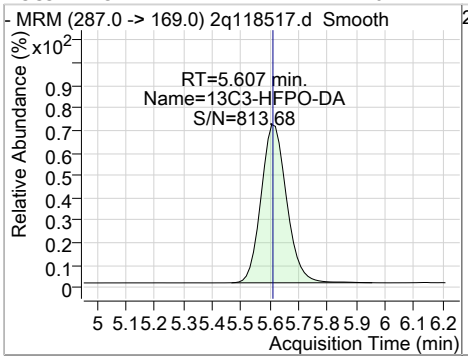
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	99.91	5.61	0.01	262958	285.0 -> 169.0	29.2	14.4	43.3

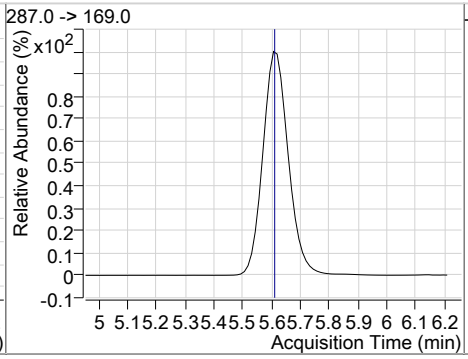


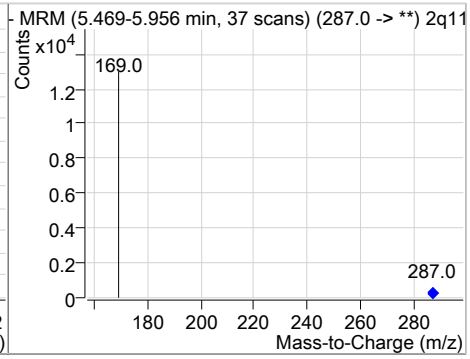




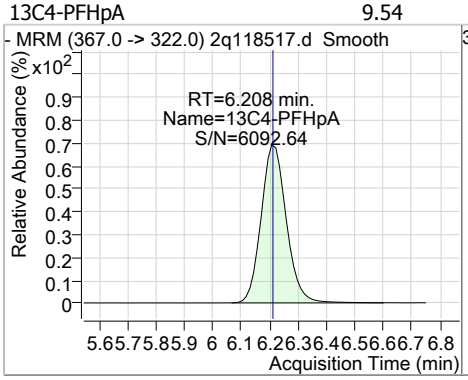
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	10.21	5.61	0.00	8489				

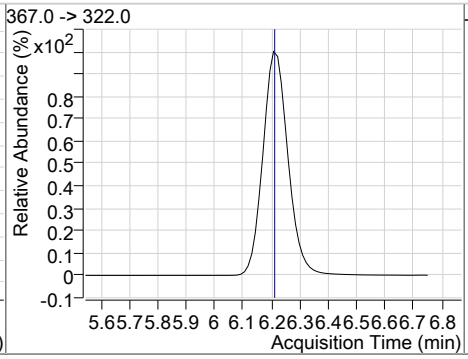


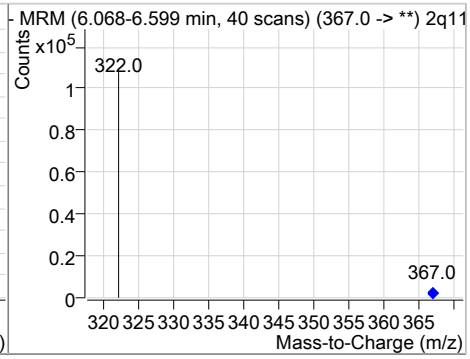




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	9.54	6.21	0.00	81902				

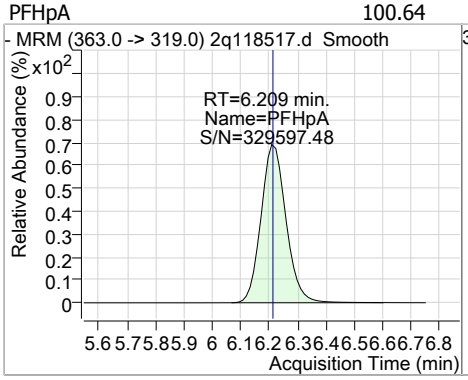


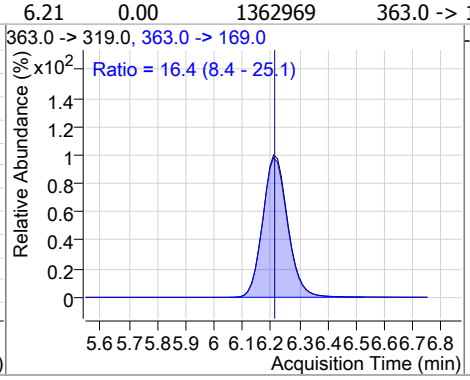


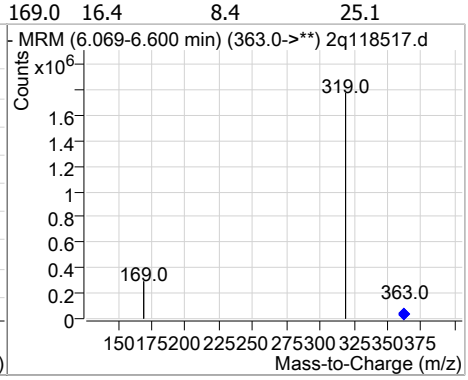


Perfluorinated Compounds by LC/MS/MS

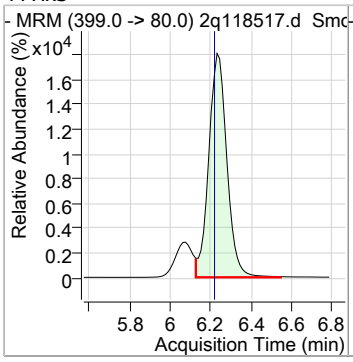
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	100.64	6.21	0.00	1362969	363.0 -> 169.0	16.4	8.4	25.1

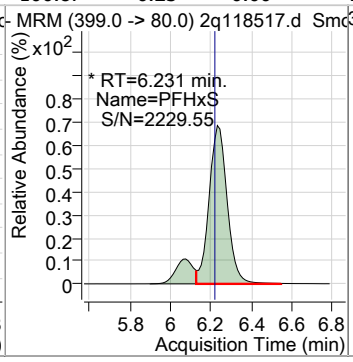


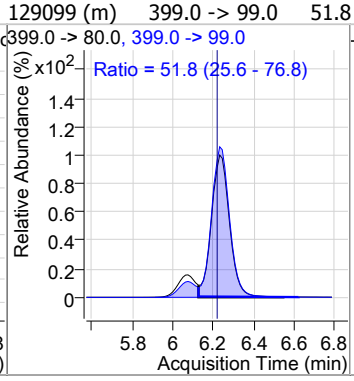


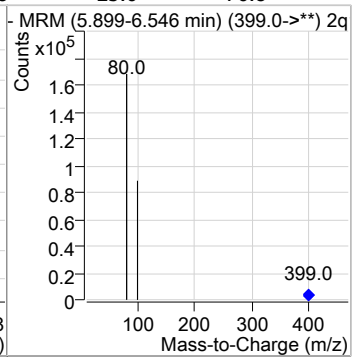


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	100.87	6.23	0.00	129099 (m)	399.0 -> 99.0	51.8	25.6	76.8

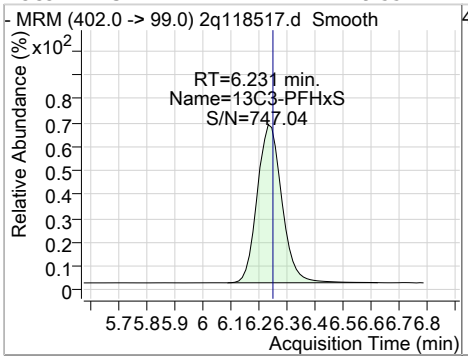


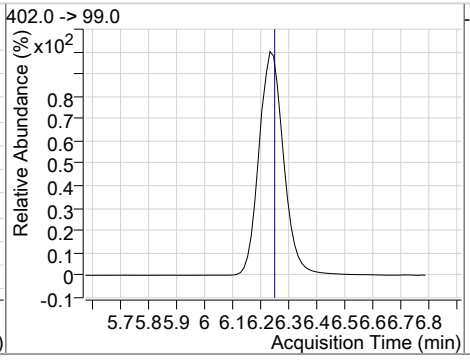


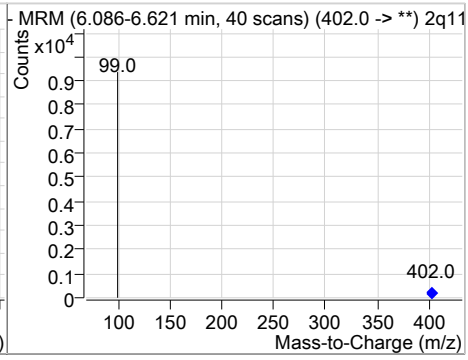




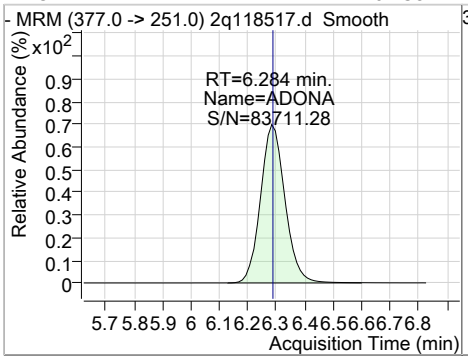
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	9.55	6.23	-0.01	5846				

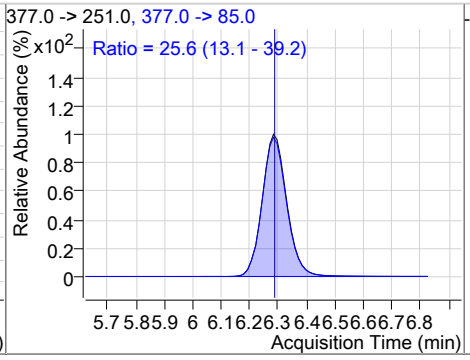


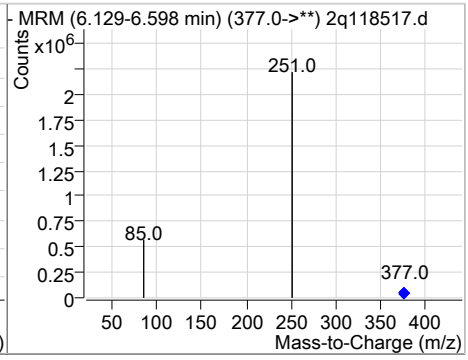




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	101.38	6.28	0.00	1679212	377.0 -> 85.0	25.6	13.1	39.2

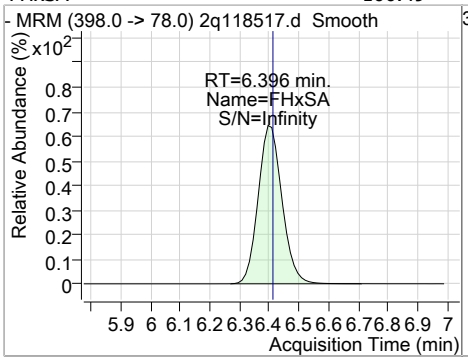


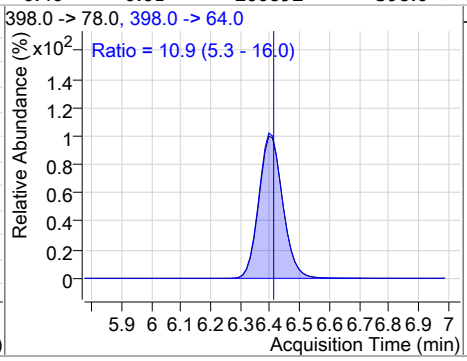


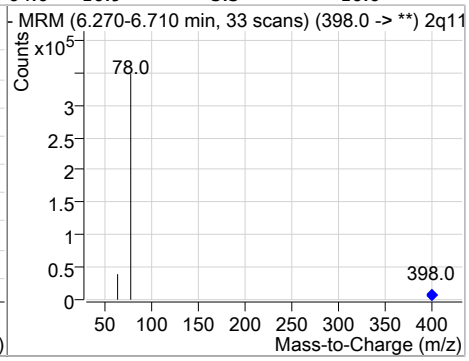


Perfluorinated Compounds by LC/MS/MS

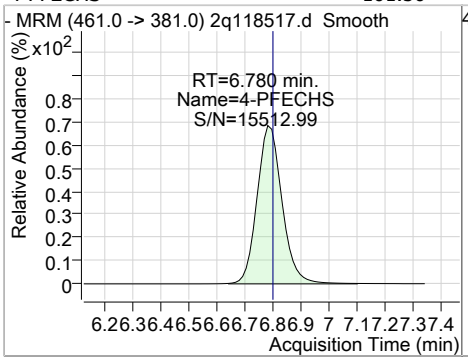
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	100.49	6.40	-0.01	260892	398.0 -> 64.0	10.9	5.3	16.0

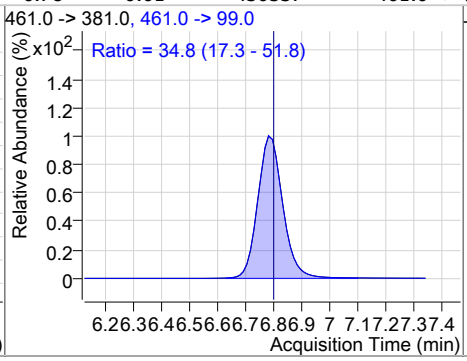


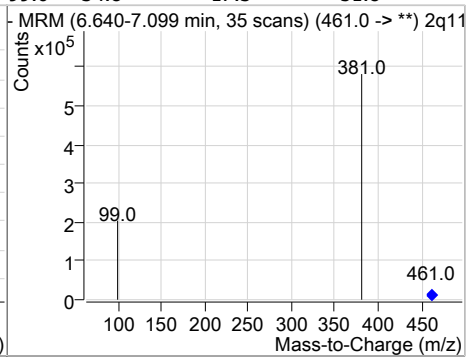




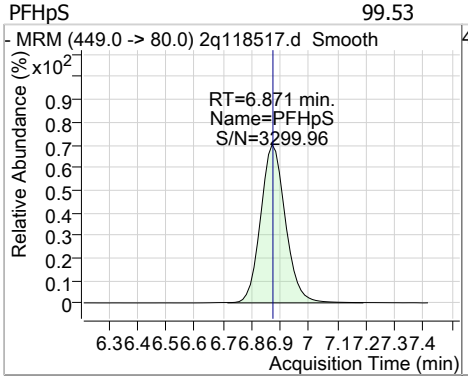
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS	101.56	6.78	-0.01	450537	461.0 -> 99.0	34.8	17.3	51.8

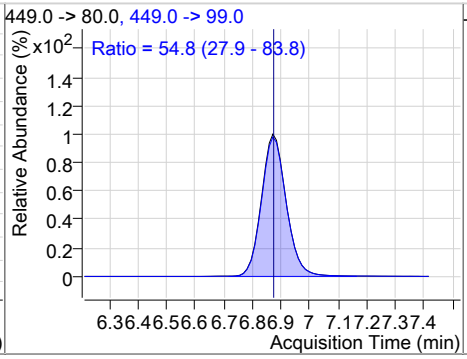


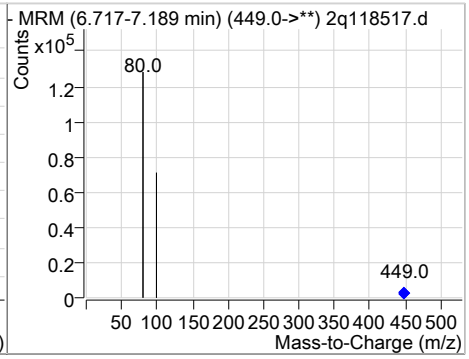




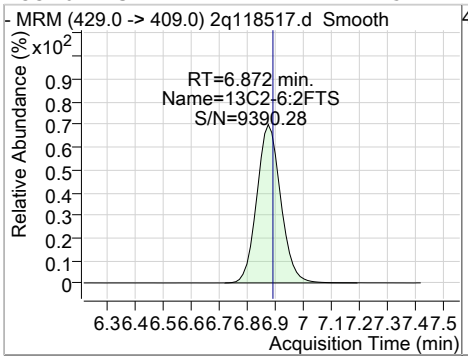
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	99.53	6.87	-0.01	96033	449.0 -> 99.0	54.8	27.9	83.8

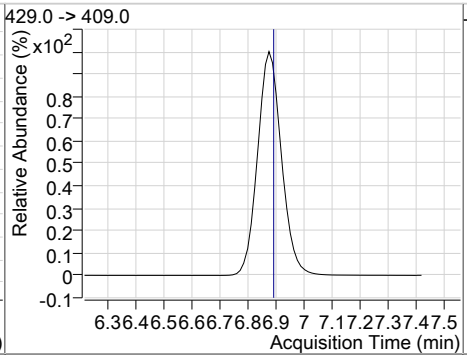


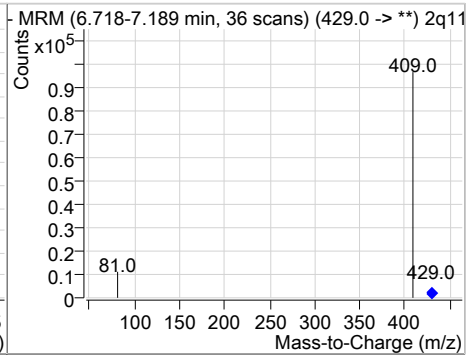




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	12.54	6.87	-0.01	72025				

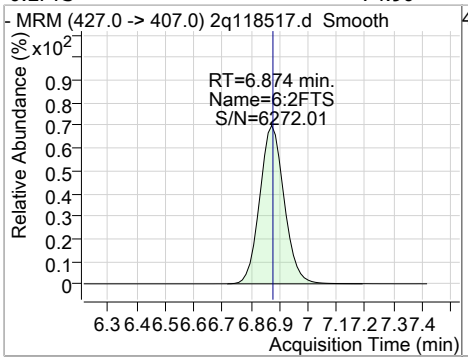


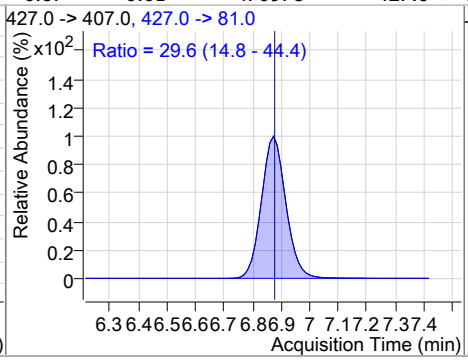


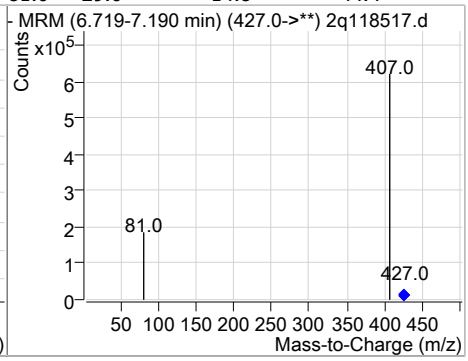


Perfluorinated Compounds by LC/MS/MS

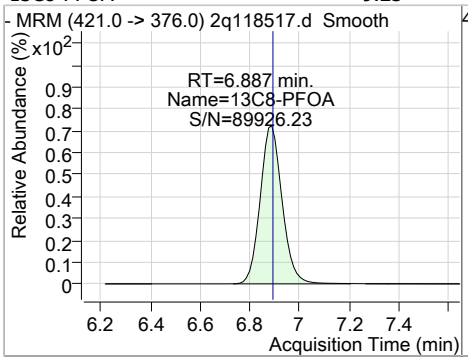
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	74.96	6.87	-0.01	470978	427.0 -> 81.0	29.6	14.8	44.4

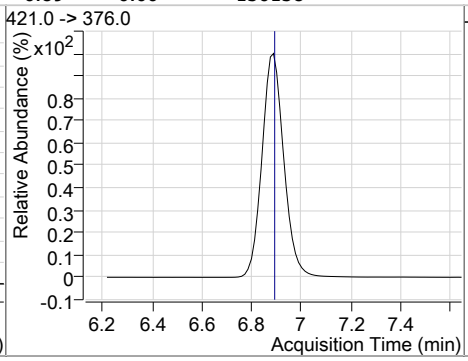


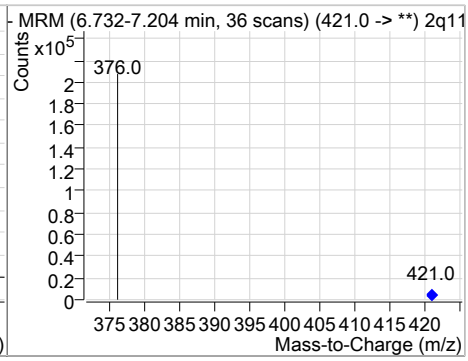




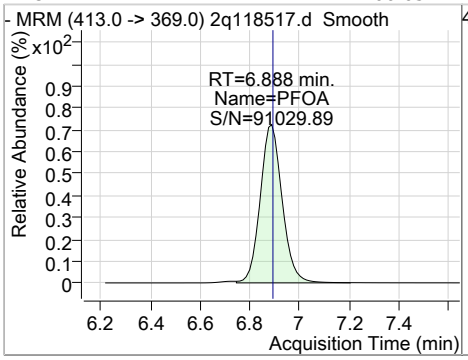
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	9.23	6.89	0.00	156158				

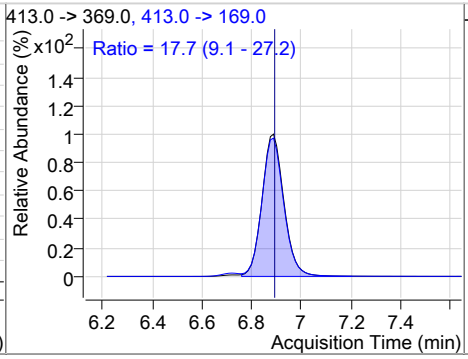


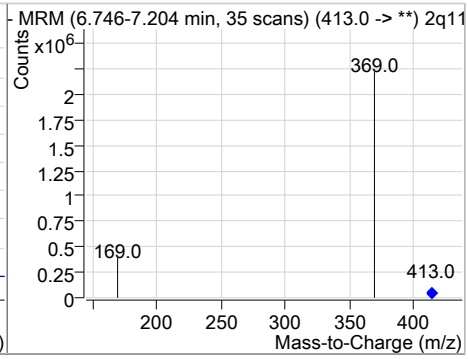




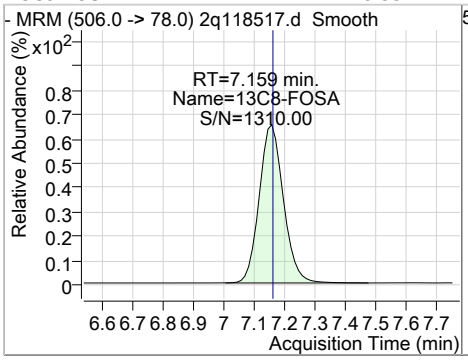
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	100.65	6.89	0.00	1678998	413.0 -> 169.0	17.7	9.1	27.2

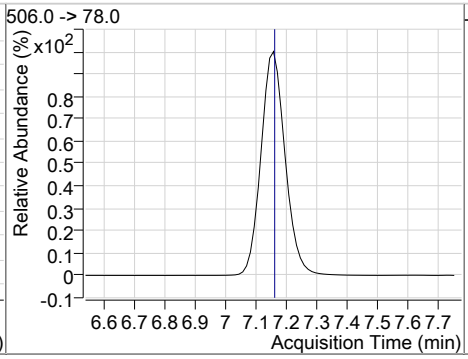


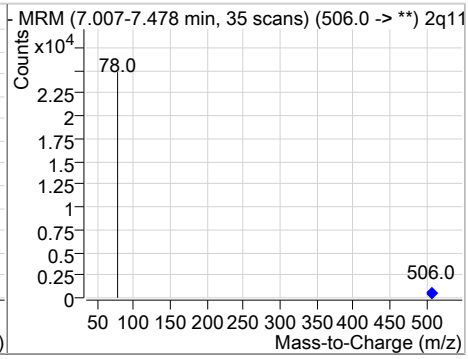




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	8.55	7.16	0.00	17561				

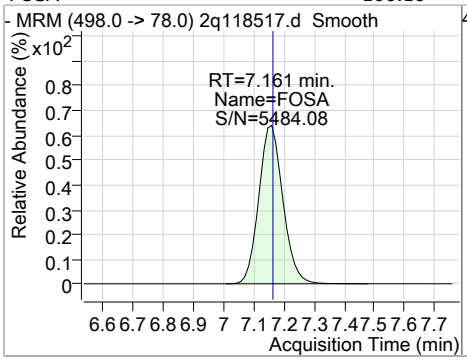


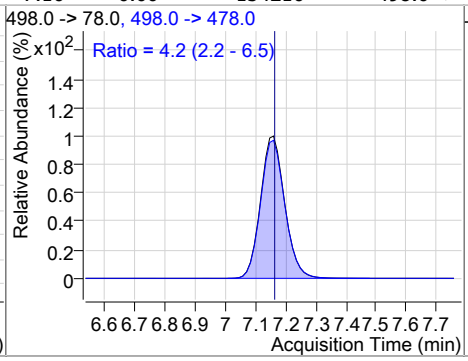


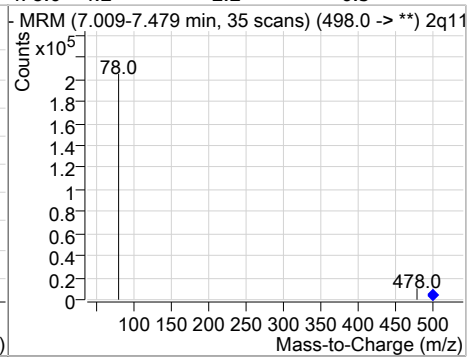


Perfluorinated Compounds by LC/MS/MS

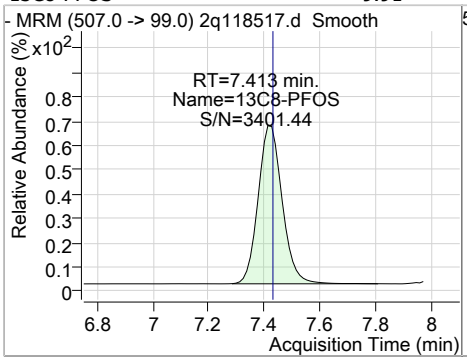
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	100.10	7.16	0.00	154216	498.0 -> 478.0	4.2	2.2	6.5

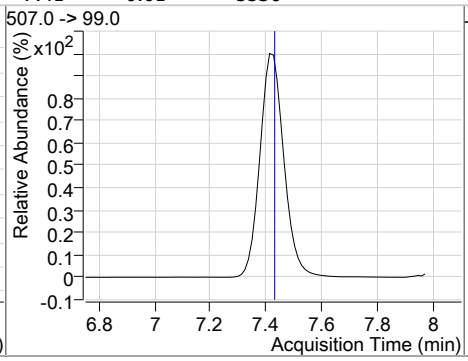


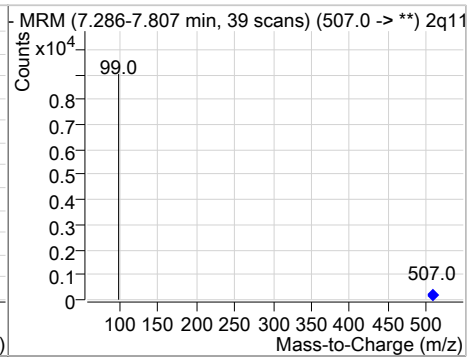




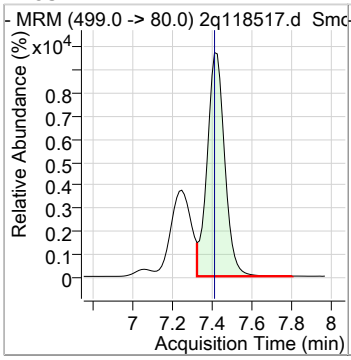
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	9.91	7.41	-0.01	5536				

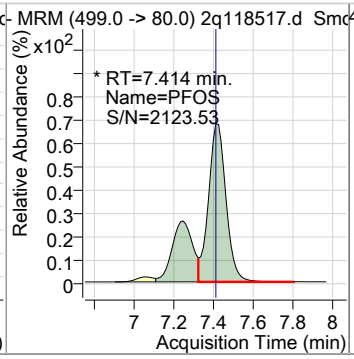


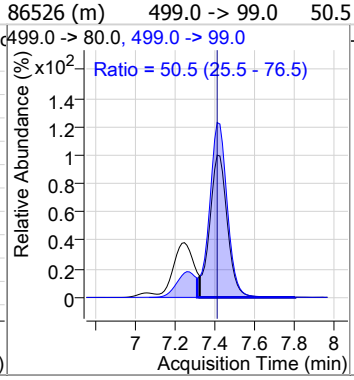


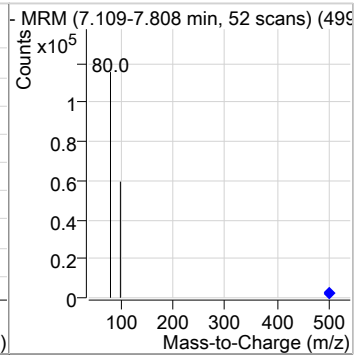


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	99.71	7.41	-0.01	86526 (m)	499.0 -> 99.0	50.5	25.5	76.5

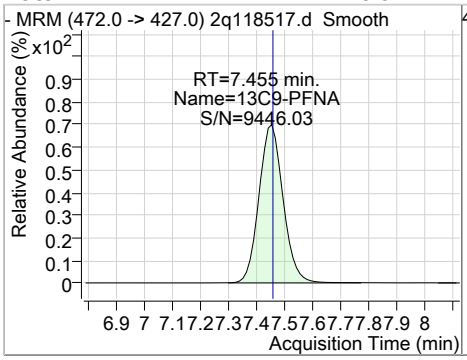


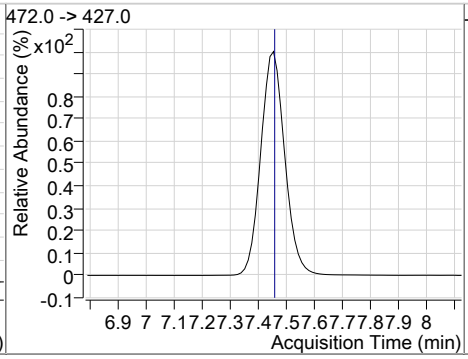


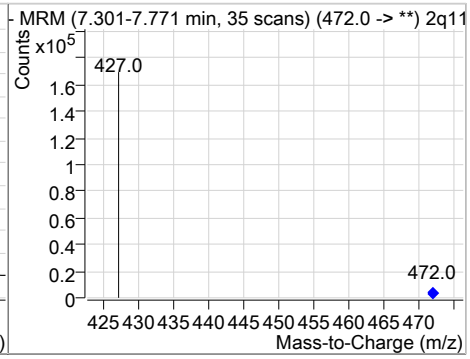




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	9.54	7.45	0.00	128461				

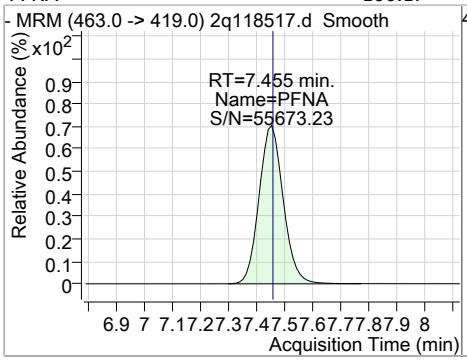


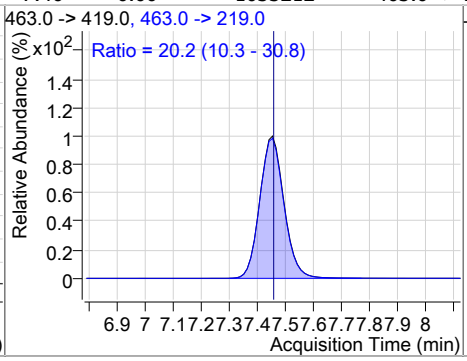


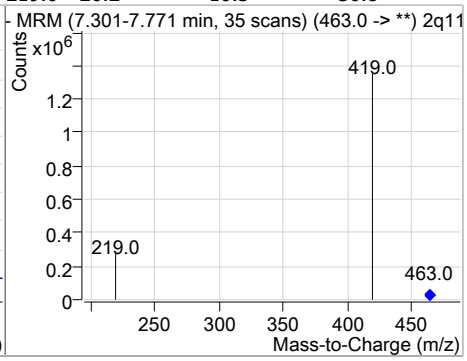


Perfluorinated Compounds by LC/MS/MS

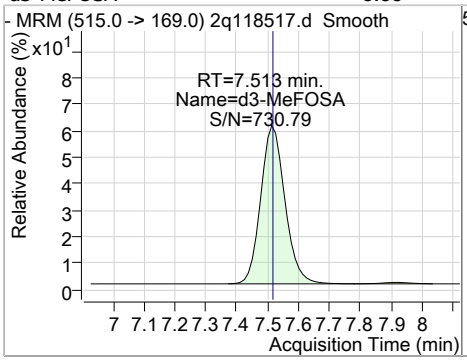
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	100.17	7.46	0.00	1033212	463.0 -> 219.0	20.2	10.3	30.8

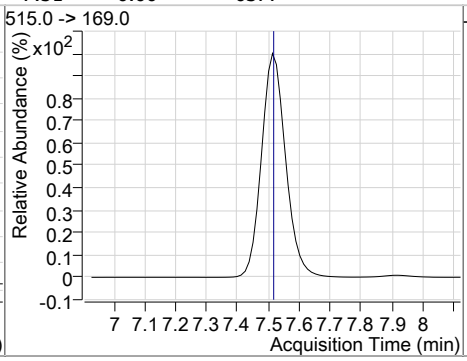


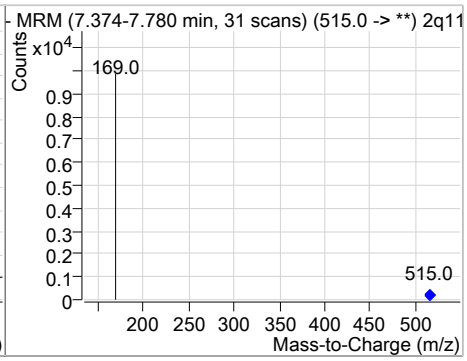




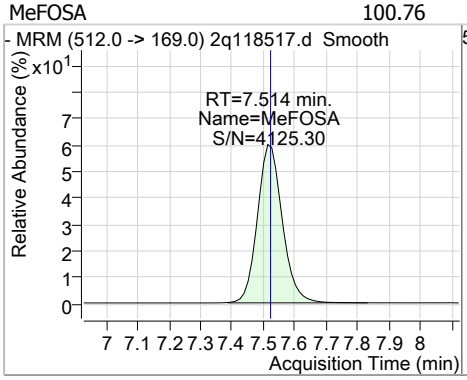
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	8.88	7.51	0.00	6377				

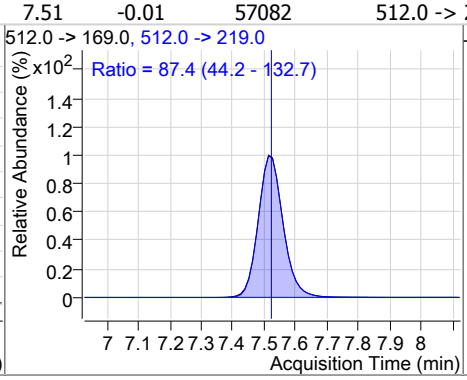


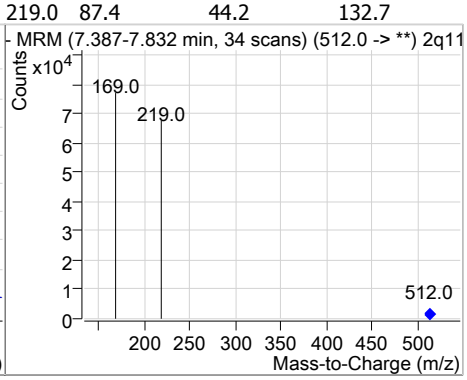




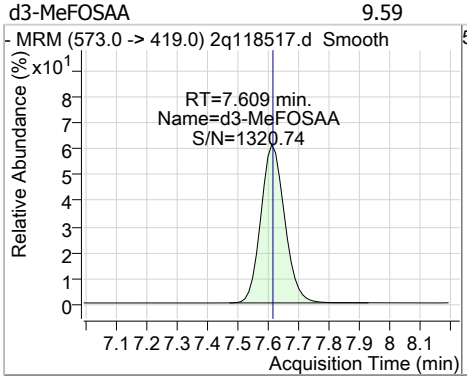
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	100.76	7.51	-0.01	57082	512.0 -> 219.0	87.4	44.2	132.7

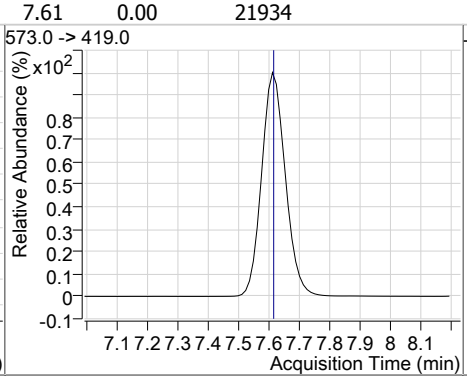


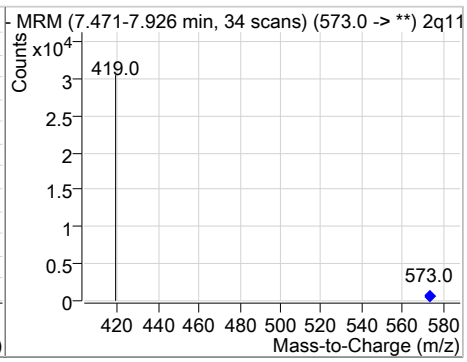




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	9.59	7.61	0.00	21934				

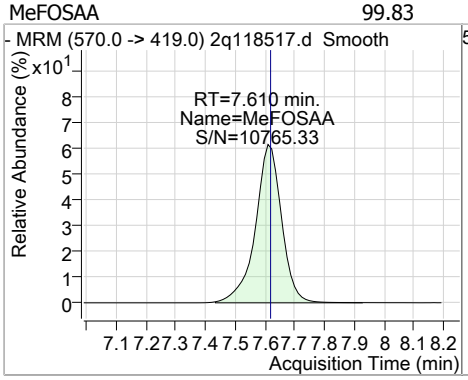


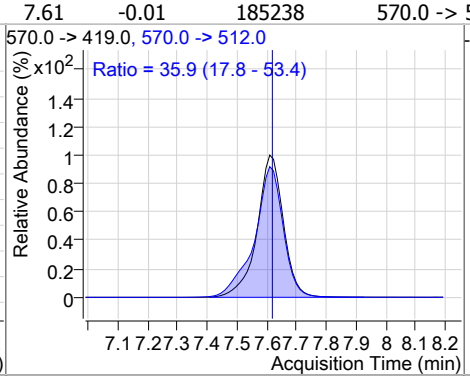


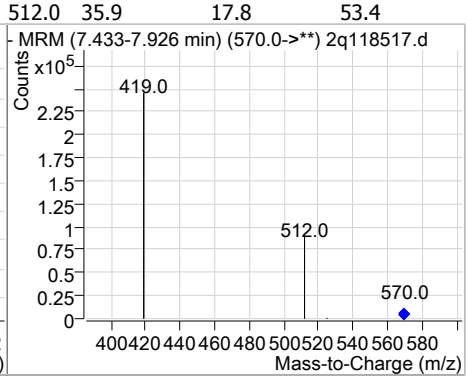


Perfluorinated Compounds by LC/MS/MS

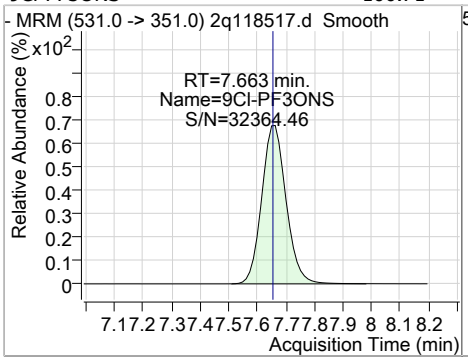
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	99.83	7.61	-0.01	185238	570.0 -> 512.0	35.9	17.8	53.4

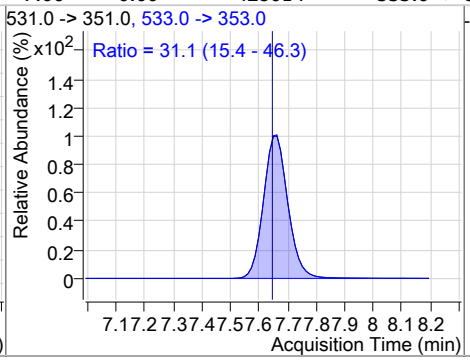


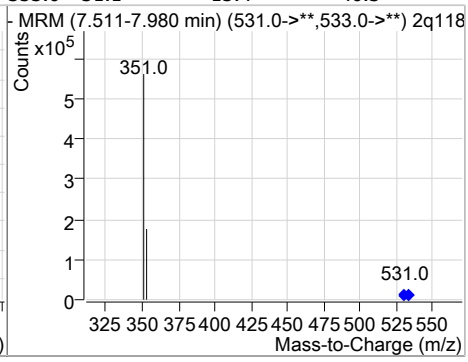




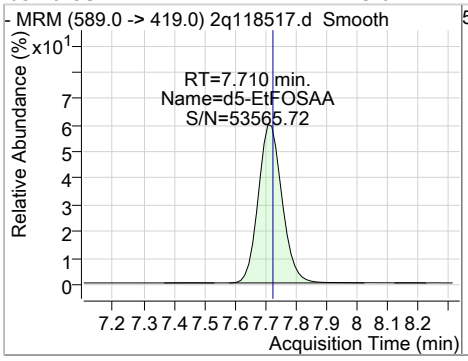
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	100.71	7.66	0.00	428014	533.0 -> 353.0	31.1	15.4	46.3

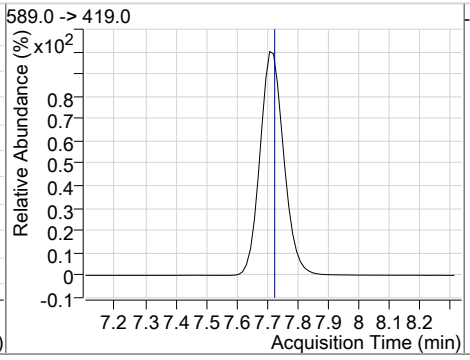


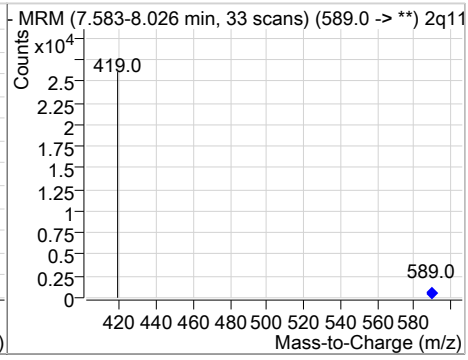




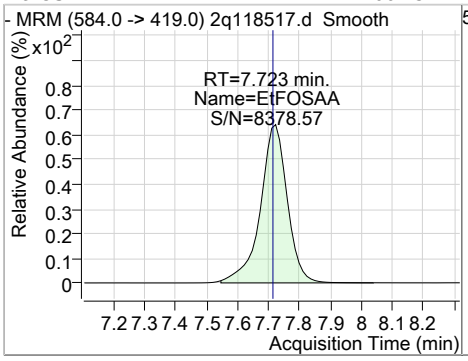
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	9.62	7.71	-0.01	18558				

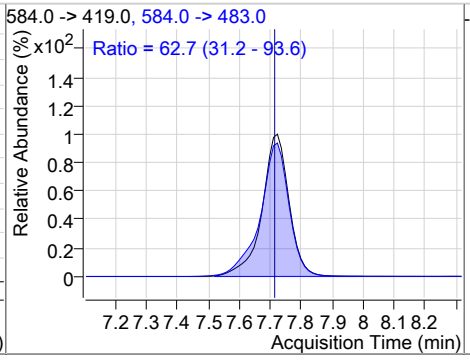


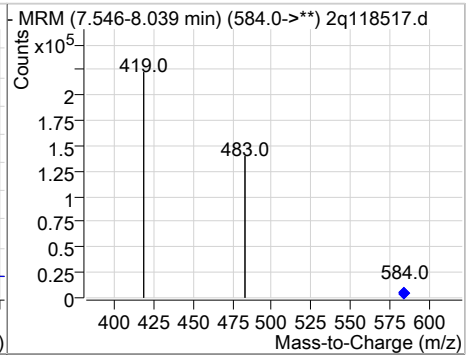




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	100.23	7.72	0.00	166846	584.0 -> 483.0	62.7	31.2	93.6

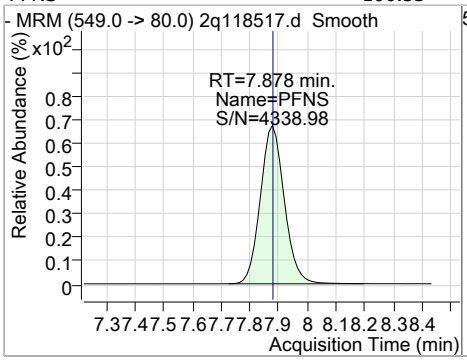


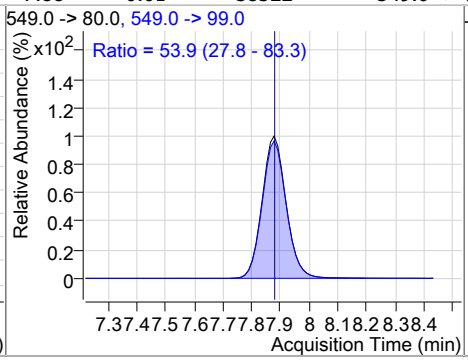


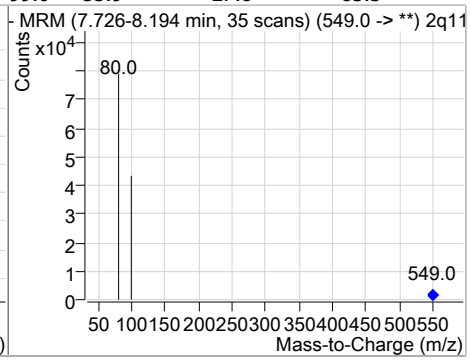


Perfluorinated Compounds by LC/MS/MS

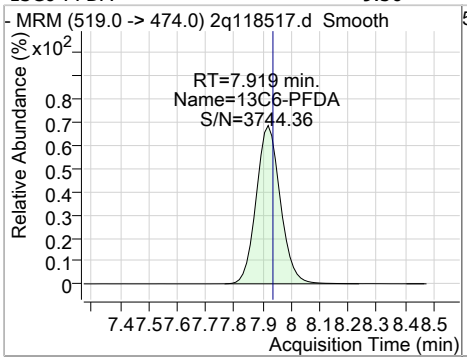
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	100.35	7.88	-0.01	58522	549.0 -> 99.0	53.9	27.8	83.3

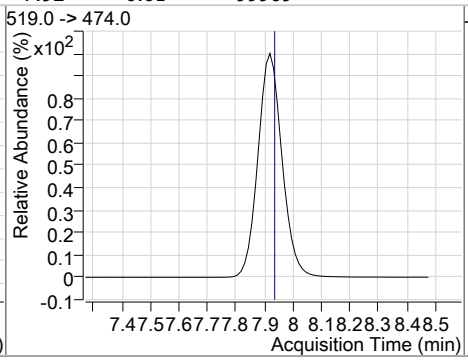


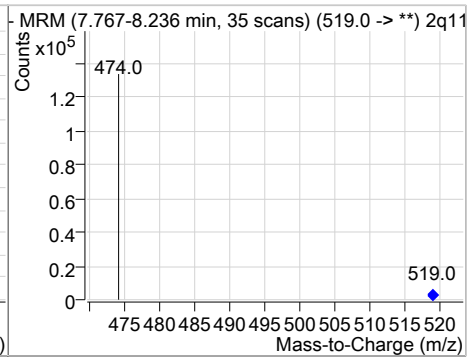




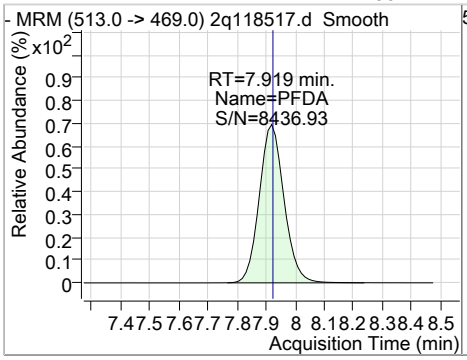
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	9.56	7.92	-0.01	99969				

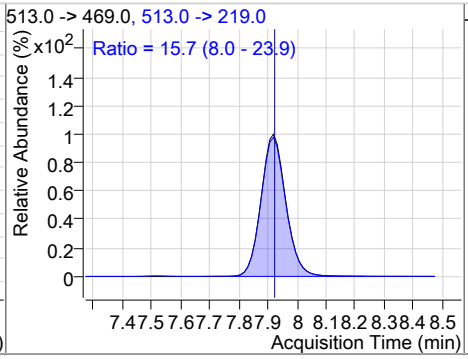


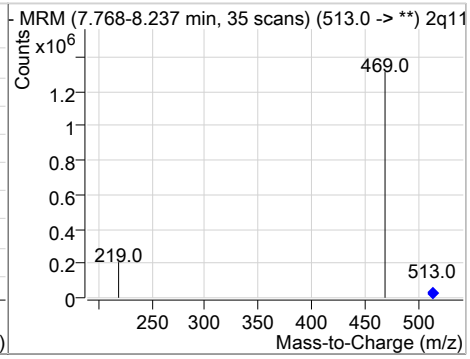




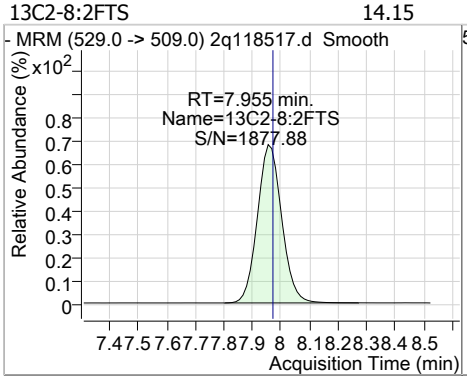
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	100.17	7.92	-0.01	991680	513.0 -> 219.0	15.7	8.0	23.9

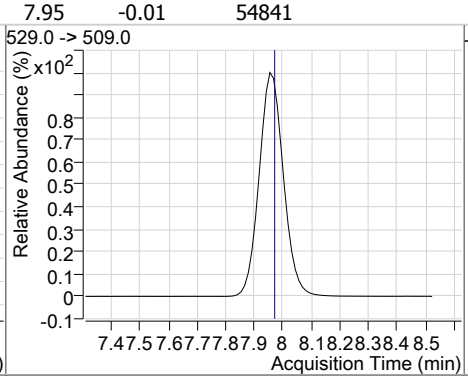


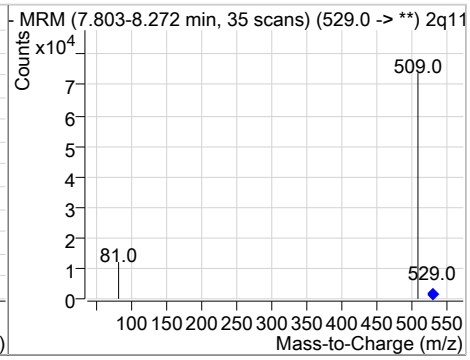




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	14.15	7.95	-0.01	54841				

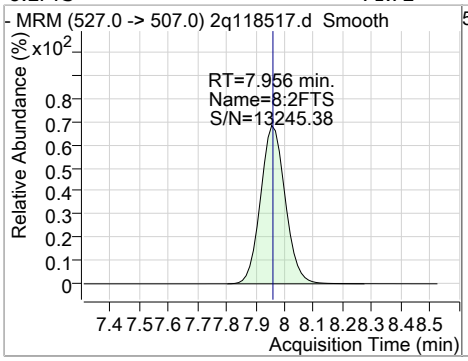


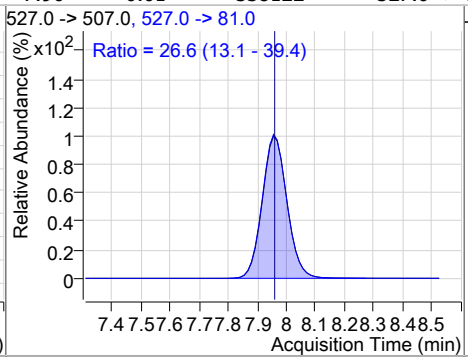


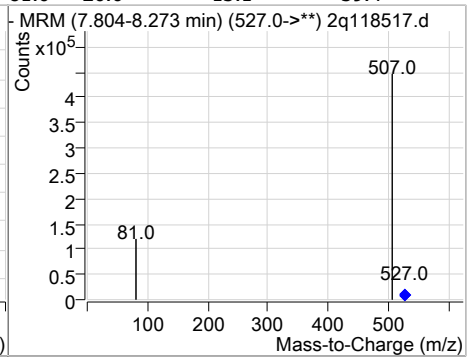


Perfluorinated Compounds by LC/MS/MS

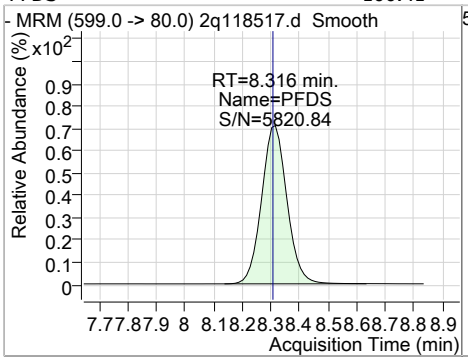
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	71.72	7.96	-0.01	338122	527.0 -> 81.0	26.6	13.1	39.4

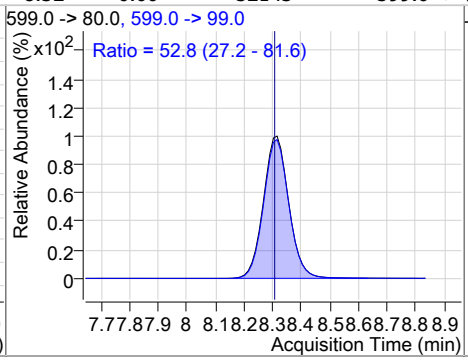


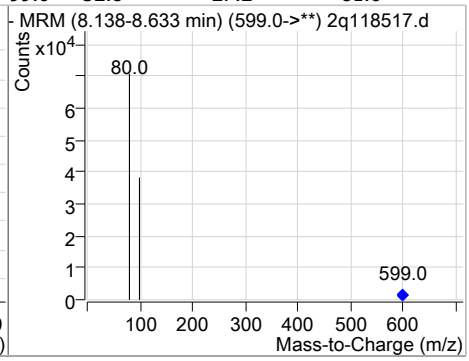




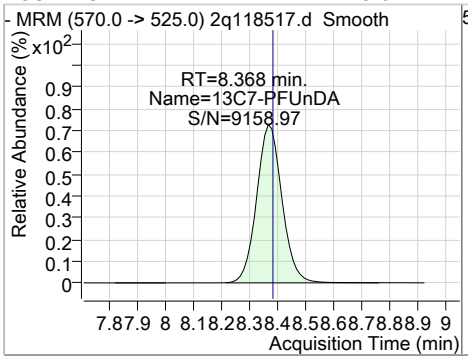
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	100.41	8.32	0.00	52143	599.0 -> 99.0	52.8	27.2	81.6

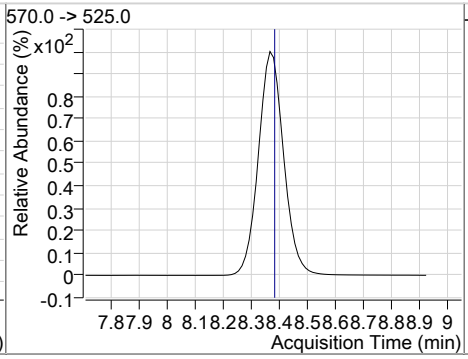


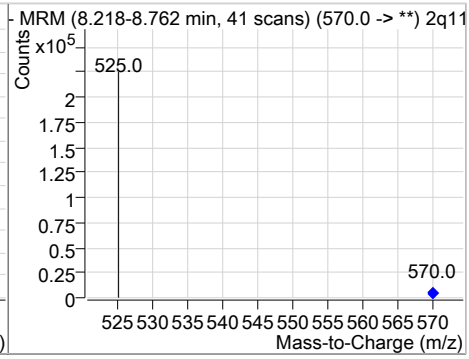




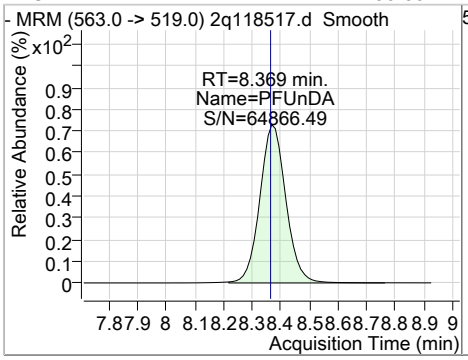
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	9.64	8.37	-0.01	167578				

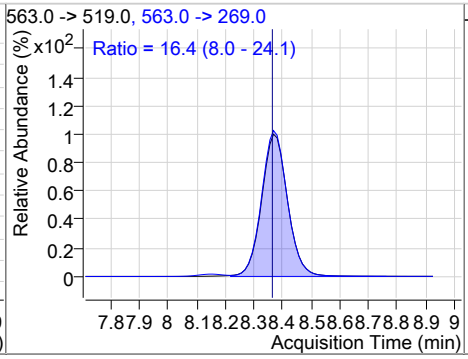


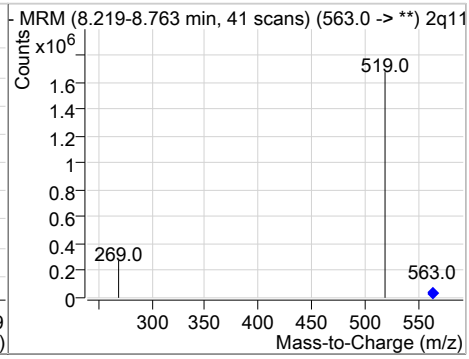




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	100.60	8.37	-0.01	1257772	563.0 -> 269.0	16.4	8.0	24.1

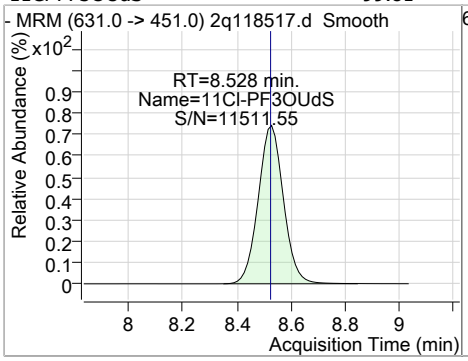


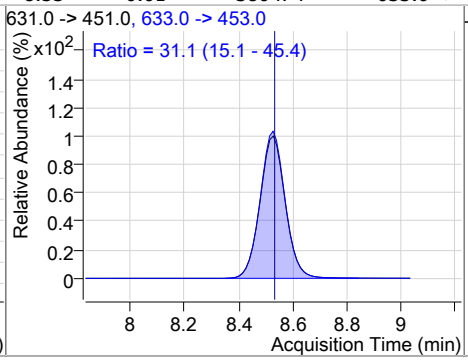


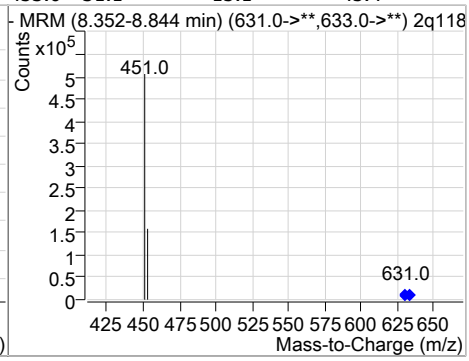


Perfluorinated Compounds by LC/MS/MS

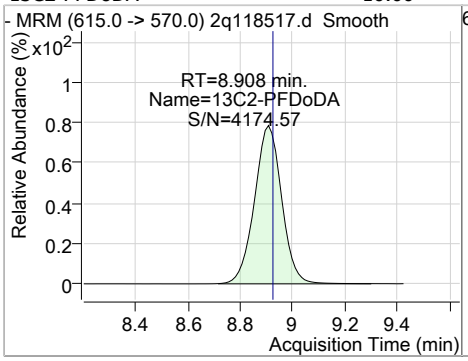
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	99.81	8.53	-0.01	380474	633.0 -> 453.0	31.1	15.1	45.4

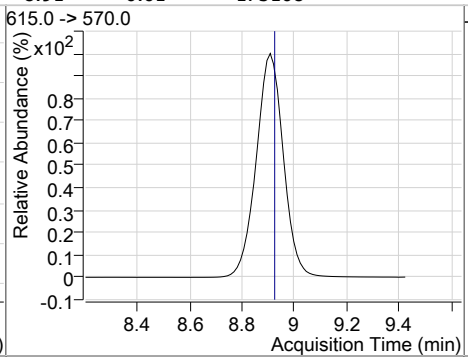


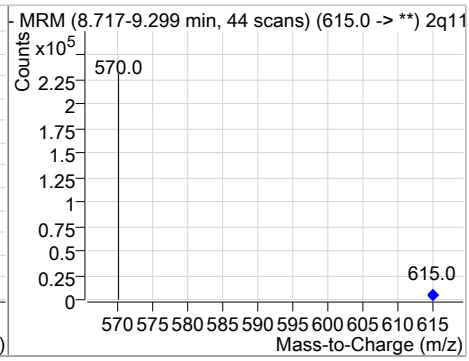




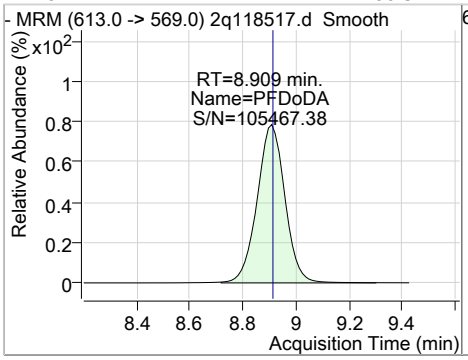
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	10.00	8.91	-0.01	175108				

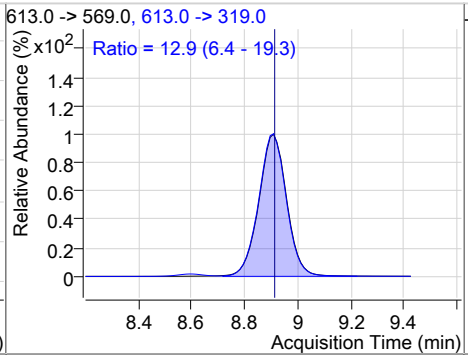


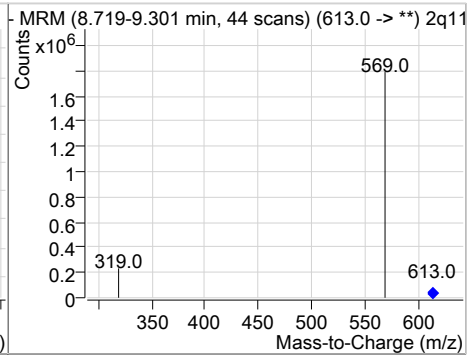




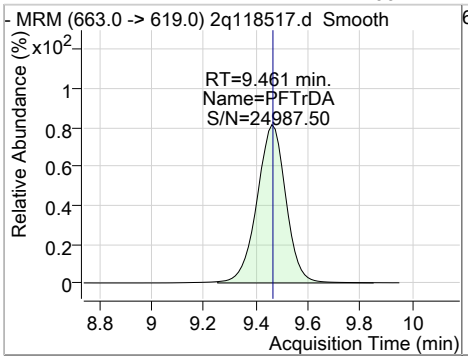
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	100.37	8.91	-0.01	1372423	613.0 -> 319.0	12.9	6.4	19.3

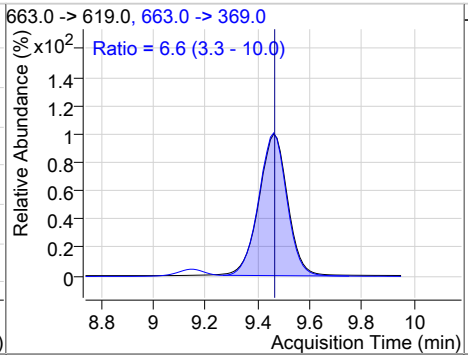


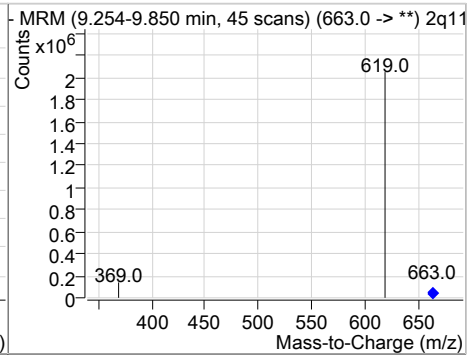




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	100.21	9.46	-0.01	1564102	663.0 -> 369.0	6.6	3.3	10.0

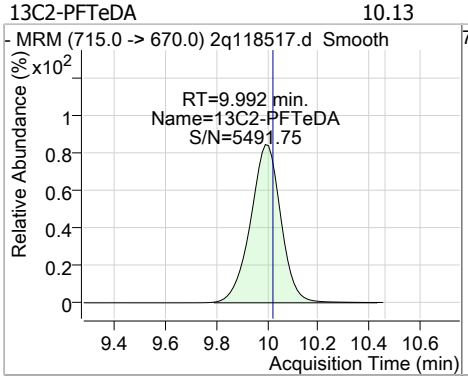


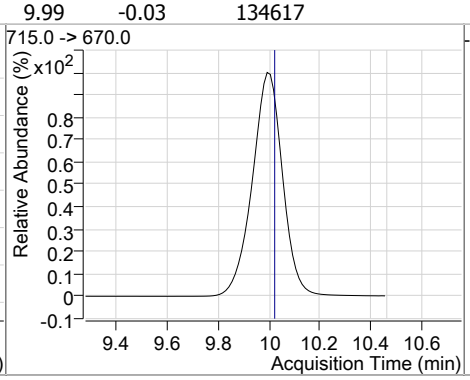


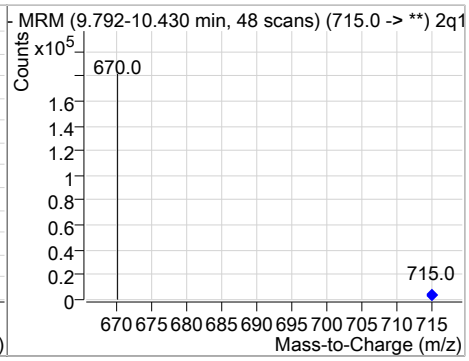


Perfluorinated Compounds by LC/MS/MS

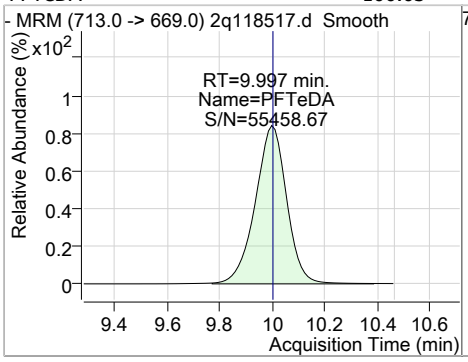
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	10.13	9.99	-0.03	134617				

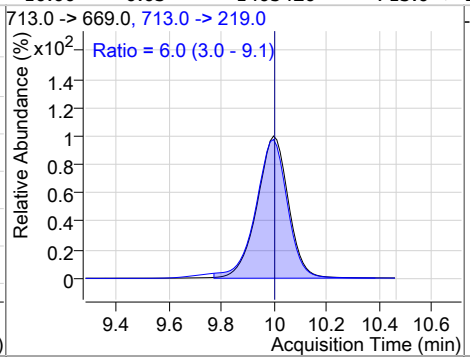


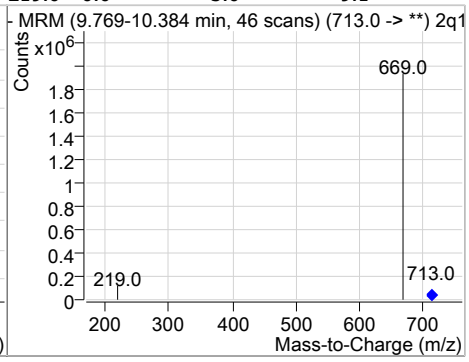




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	100.03	10.00	-0.03	1465426	713.0 -> 219.0	6.0	3.0	9.1







Manual Integration Approval Summary

Sample Number: S2Q1691-IC1691
Lab FileID: 2Q118517.D
Injection Time: 01/02/24 14:30
Method: EPA 537M QSM5.3 B-15
Analyst approved: 01/03/24 15:12 Lindsay Ritner
Supervisor approved: 01/04/24 11:31 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.23	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.41	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Natasha Gumtie 01/04/24 11:31

Perfluorinated Compounds by LC/MS/MS

Data File : 2q118519.d
Operator : lindsayr
Acq. Method : 537_ID.m
Acq. Date-Time : 1/2/2024 3:03:11 PM
Sample Name : icv1691-20
Vial : P1-B1
DA Method File : ID_010224_S2Q1691.quantmethod.xml
Batch Name : s2q1691.batch.bin
Sample Information : op401,S2Q1691,250,,,1.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M5-EtFOSAA	7.710	589.0 -> 419.0	20028	10.00 µg/L	-0.013
M4-PFBA	2.240	217.0 -> 172.0	53335	10.00 µg/L	0.000
M5-PFPeA	4.049	268.0 -> 223.0	82586	10.00 µg/L	-0.013
M5-PFHxA	5.314	318.0 -> 273.0	102851	10.00 µg/L	-0.025
M4-PFHpA	6.182	367.0 -> 322.0	89670	10.00 µg/L	-0.025
M8-PFOA	6.862	421.0 -> 376.0	174345	10.00 µg/L	-0.025
M9-PFNA	7.442	472.0 -> 427.0	136911	10.00 µg/L	-0.013
M6-PFDA	7.919	519.0 -> 474.0	108920	10.00 µg/L	-0.013
M7-PFUnDA	8.381	570.0 -> 525.0	179168	10.00 µg/L	0.000
M2-PFDoDA	8.908	615.0 -> 570.0	183475	10.00 µg/L	-0.013
M2-PFTeDA	10.017	715.0 -> 670.0	139597	10.00 µg/L	0.000
M8-FOSA	7.147	506.0 -> 78.0	21671	10.00 µg/L	-0.013
M3-PFBS	4.317	302.0 -> 99.0	6247	10.00 µg/L	-0.013
M3-PFHxS	6.201	402.0 -> 99.0	5981	10.00 µg/L	-0.042
M8-PFOS	7.413	507.0 -> 99.0	5586	10.00 µg/L	-0.014
M2-4:2FTS	5.209	329.0 -> 309.0	40119	10.00 µg/L	-0.025
M2-6:2FTS	6.860	429.0 -> 409.0	59145	10.00 µg/L	-0.025
M2-8:2FTS	7.955	529.0 -> 509.0	42402	10.00 µg/L	-0.013
M3-MeFOSAA	7.609	573.0 -> 419.0	23991	10.00 µg/L	0.000
M3-HFPO-DA	5.582	287.0 -> 169.0	8837	10.00 µg/L	-0.025
M3-MeFOSA	7.513	515.0 -> 169.0	7987	10.00 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.209	329.0 -> 309.0	40119	10.87 µg/L	-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 108.7%	
13C2-6:2FTS	6.860	429.0 -> 409.0	59145	10.30 µg/L	-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 103.0%	
13C2-8:2FTS	7.955	529.0 -> 509.0	42402	10.94 µg/L	-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 109.4%	
13C2-PFDoDA	8.908	615.0 -> 570.0	183475	10.48 µg/L	-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 104.8%	
13C2-PFTeDA	10.017	715.0 -> 670.0	139597	10.50 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 105.0%	
13C3-PFBS	4.317	302.0 -> 99.0	6247	10.40 µg/L	-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 104.0%	
13C3-PFHxS	6.201	402.0 -> 99.0	5981	9.77 µg/L	-0.042
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 97.7%	
13C4-PFBA	2.240	217.0 -> 172.0	53335	10.33 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 103.3%	
13C4-PFHpA	6.182	367.0 -> 322.0	89670	10.44 µg/L	-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 104.4%	
d5-EtFOSAA	7.710	589.0 -> 419.0	20028	10.38 µg/L	-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 103.8%	
13C5-PFHxA	5.314	318.0 -> 273.0	102851	10.43 µg/L	-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 104.3%	
13C5-PFPeA	4.049	268.0 -> 223.0	82586	10.39 µg/L	-0.013

Perfluorinated Compounds by LC/MS/MS

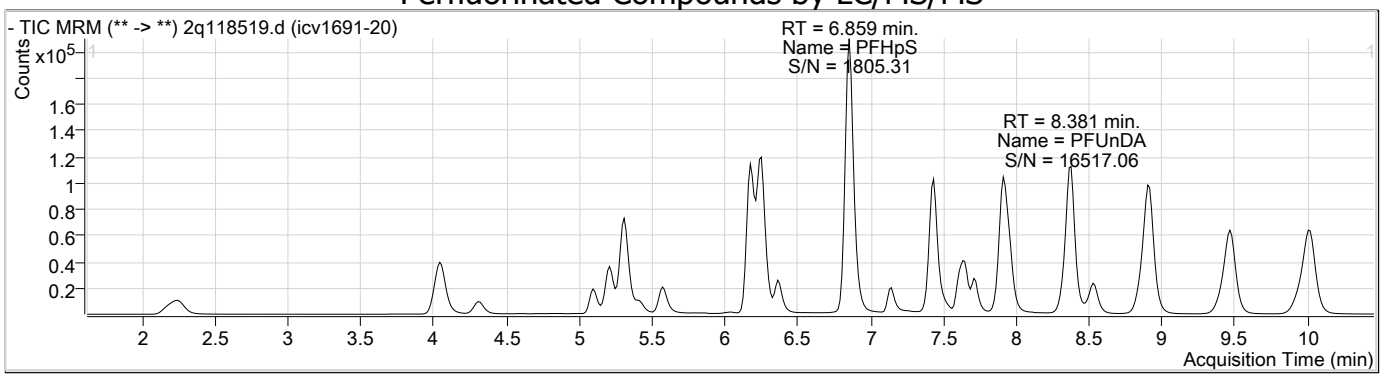
Compound	RT	Transition	Response	Conc. Units		Dev(Min)
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 103.9%		
13C6-PFDA	7.919	519.0 -> 474.0	108920	10.42 µg/L		-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 104.2%		
13C7-PFUnDA	8.381	570.0 -> 525.0	179168	10.31 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 103.1%		
13C8-FOSA	7.147	506.0 -> 78.0	21671	10.55 µg/L		-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 105.5%		
13C8-PFOA	6.862	421.0 -> 376.0	174345	10.30 µg/L		-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 103.0%		
13C8-PFOS	7.413	507.0 -> 99.0	5586	10.00 µg/L		-0.014
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.0%		
13C9-PFNA	7.442	472.0 -> 427.0	136911	10.16 µg/L		-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.6%		
d3-MeFOSAA	7.609	573.0 -> 419.0	23991	10.49 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 104.9%		
13C3-HFPO-DA	5.582	287.0 -> 169.0	8837	10.63 µg/L		-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 106.3%		
d3-MeFOSA	7.513	515.0 -> 169.0	7987	11.12 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 111.2%		
Target Compounds						QValue
4:2FTS	5.212	327.0 -> 307.0	79847	19.59 µg/L		99
		327.0 -> 81.0	30159			
6:2FTS	6.861	427.0 -> 407.0	106215	20.59 µg/L		100
		427.0 -> 81.0	31274			
8:2FTS	7.956	527.0 -> 507.0	75694	20.77 µg/L		98
		527.0 -> 81.0	20544			
EtFOSAA	7.723	584.0 -> 419.0	38867	21.63 µg/L		99
		584.0 -> 483.0	23958			
FOSA	7.148	498.0 -> 78.0	41155	21.65 µg/L		100
		498.0 -> 478.0	1722			
MeFOSAA	7.610	570.0 -> 419.0	41286	20.34 µg/L		99
		570.0 -> 512.0	14528			
PFBA	2.233	213.0 -> 169.0	36864	21.95 µg/L		100
PFBS	4.307	299.0 -> 80.0	30148	19.11 µg/L		99
		299.0 -> 99.0	11311			
PFDA	7.919	513.0 -> 469.0	226598	21.01 µg/L		99
		513.0 -> 219.0	35223			
PFDoDA	8.909	613.0 -> 569.0	337685	23.57 µg/L		100
		613.0 -> 319.0	43175			
PFDS	8.316	599.0 -> 80.0	11350	20.44 µg/L		96
		599.0 -> 99.0	5860			
PFHpA	6.183	363.0 -> 319.0	314785	21.23 µg/L		97
		363.0 -> 169.0	48836			
PFHpS	6.859	449.0 -> 80.0	21258	21.53 µg/L		98
		449.0 -> 99.0	11617			
PFHxA	5.315	313.0 -> 269.0	207822	19.64 µg/L		99
		313.0 -> 119.0	8492			
PFHxS	6.202	399.0 -> 80.0	24013	18.34 µg/L	m	97
		399.0 -> 99.0	12788			
PFNA	7.442	463.0 -> 419.0	219595	19.98 µg/L		100
		463.0 -> 219.0	45018			
PFNS	7.878	549.0 -> 80.0	13088	22.24 µg/L		97
		549.0 -> 99.0	6975			
PFOA	6.863	413.0 -> 369.0	398432	21.39 µg/L		100
		413.0 -> 169.0	72172			
PFOS	7.414	499.0 -> 80.0	19720	22.52 µg/L	m	96

Perfluorinated Compounds by LC/MS/MS

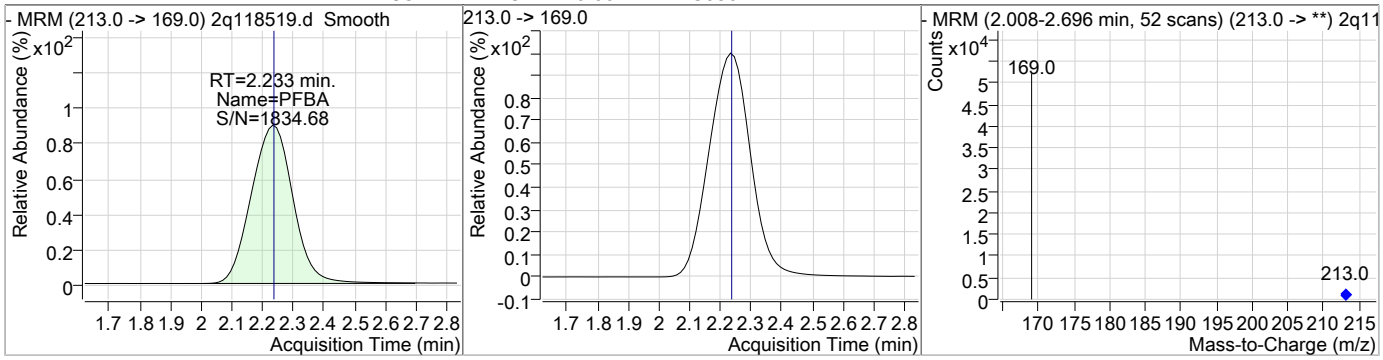
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
		499.0 -> 99.0	10546				
PFPeA	4.052	263.0 -> 219.0	139005	21.35	µg/L		100
PFPeS	5.420	349.0 -> 80.0	21700	19.00	µg/L		99
		349.0 -> 99.0	9141				
PFTeDA	10.009	713.0 -> 669.0	291715	19.20	µg/L		99
		713.0 -> 219.0	17286				
PFTrDA	9.474	663.0 -> 619.0	371293	22.70	µg/L		100
		663.0 -> 369.0	24934				
PFUnDA	8.381	563.0 -> 519.0	291361	21.80	µg/L		100
		563.0 -> 269.0	47510				
11Cl-PF3OUdS	8.528	631.0 -> 451.0	81658	20.44	µg/L		98
		633.0 -> 453.0	25474				
9Cl-PF3ONS	7.650	531.0 -> 351.0	91780	19.82	µg/L		100
		533.0 -> 353.0	28301				
ADONA	6.259	377.0 -> 251.0	357605	19.34	µg/L		99
		377.0 -> 85.0	91353				
HFPO-DA	5.576	329.0 -> 169.0	59152	21.59	µg/L		100
		285.0 -> 169.0	17063				
MeFOSA	7.540	512.0 -> 169.0	0	0.00	µg/L	m	1
		512.0 -> 219.0	0				
4-PFECHS	6.768	461.0 -> 381.0	0	0.00	µg/L	m	1
		461.0 -> 99.0	0				
FBSA	5.103	298.0 -> 78.0	66037	20.37	µg/L		100
		298.0 -> 64.0	6954				
FHxSA	6.383	398.0 -> 78.0	71891	22.44	µg/L		100
		398.0 -> 64.0	7722				

 # = Qualifier out of range, m = manually integrated, + = Area summed

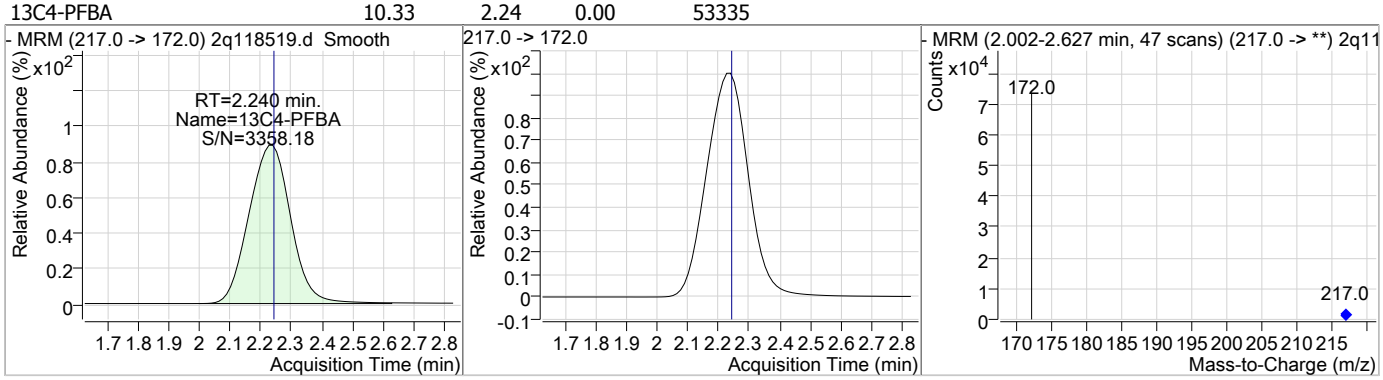
Perfluorinated Compounds by LC/MS/MS



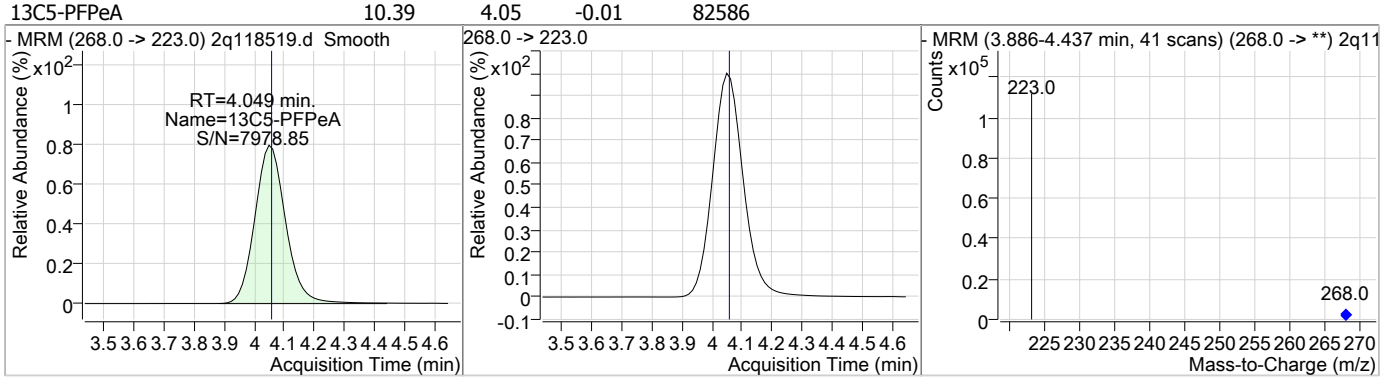
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	21.95	2.23	0.00	36864				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	10.33	2.24	0.00	53335				

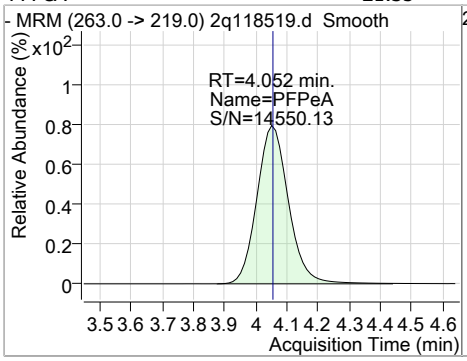


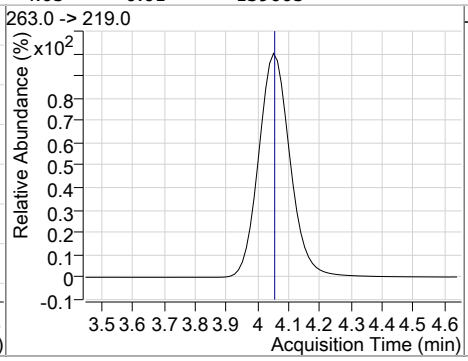
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	10.39	4.05	-0.01	82586				

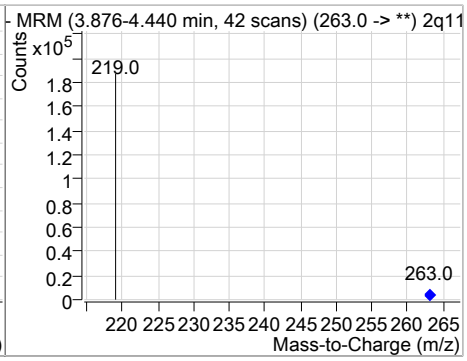


Perfluorinated Compounds by LC/MS/MS

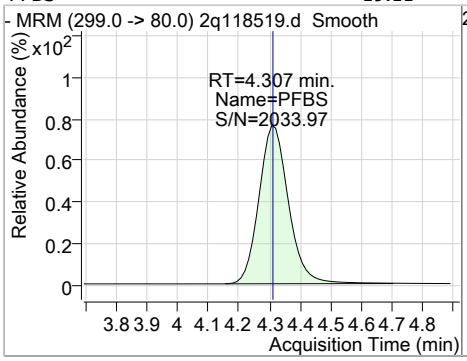
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	21.35	4.05	-0.01	139005				

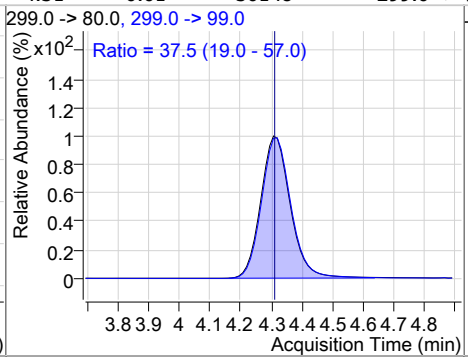


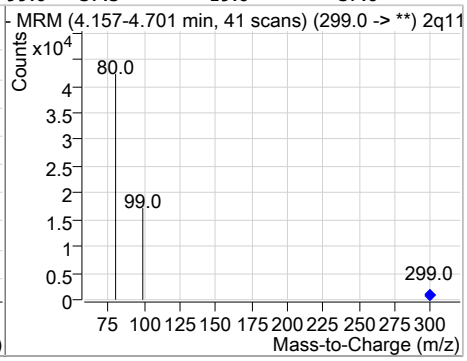




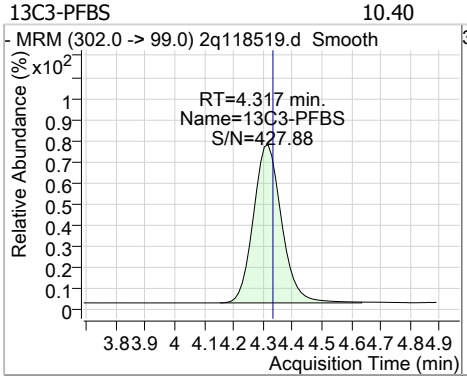
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	19.11	4.31	-0.01	30148	299.0 -> 99.0	37.5	19.0	57.0

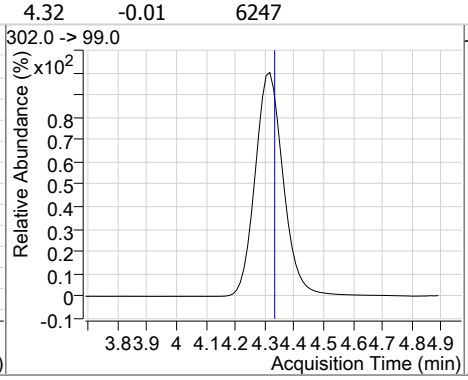


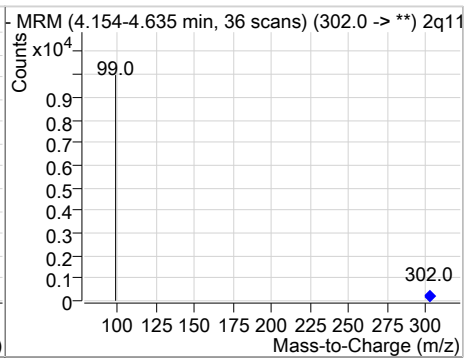




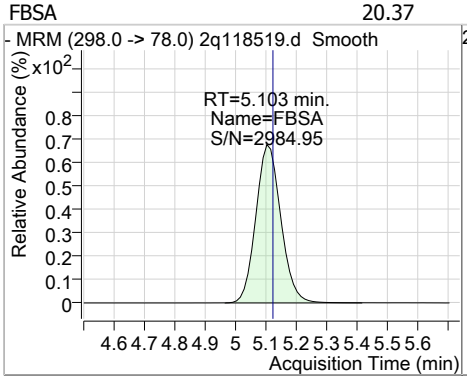
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	10.40	4.32	-0.01	6247				

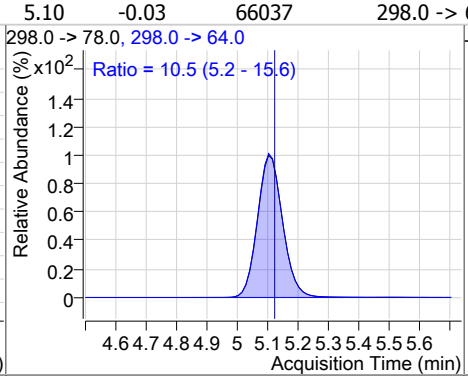


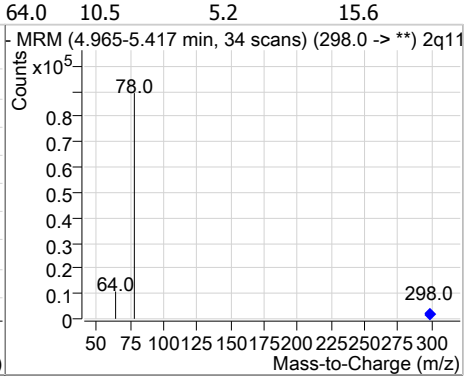




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	20.37	5.10	-0.03	66037	298.0 -> 64.0	10.5	5.2	15.6

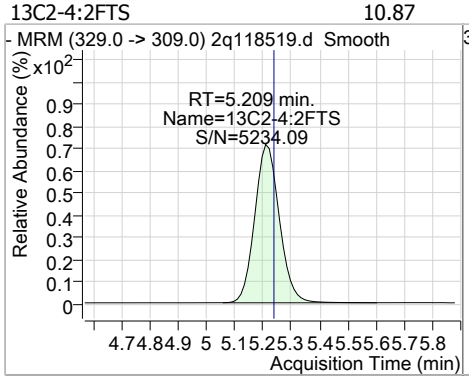


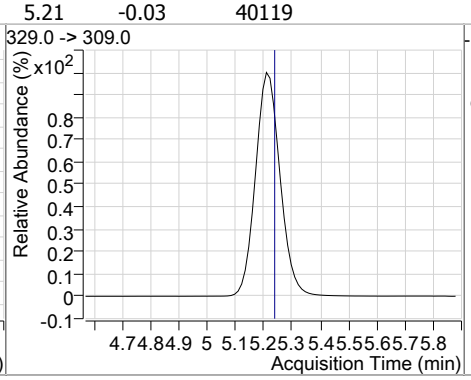


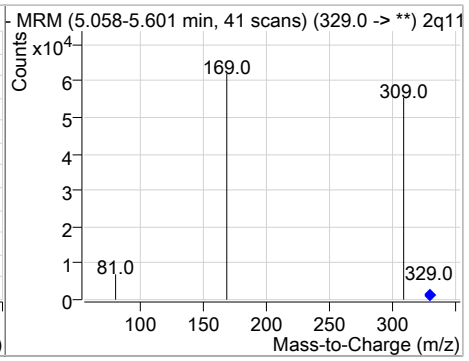


Perfluorinated Compounds by LC/MS/MS

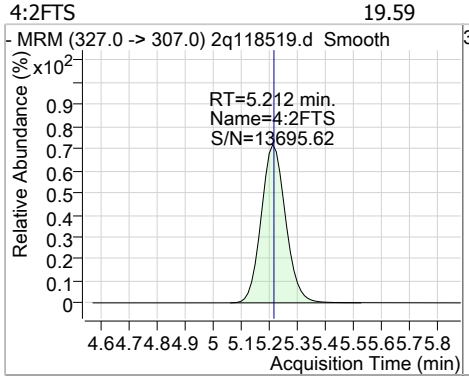
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	10.87	5.21	-0.03	40119				

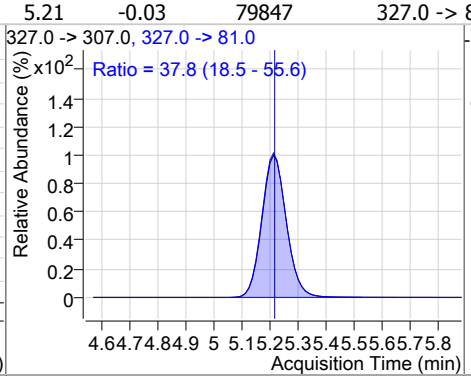


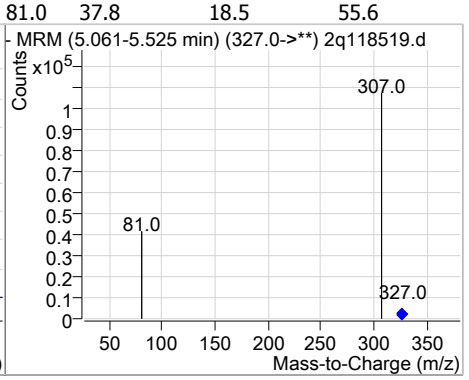




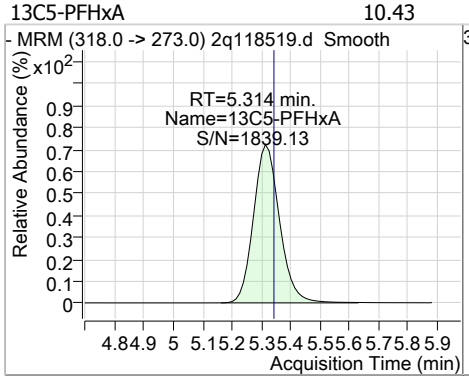
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	19.59	5.21	-0.03	79847	327.0 -> 81.0	37.8	18.5	55.6

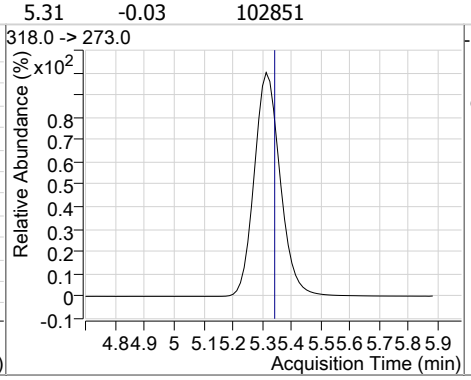


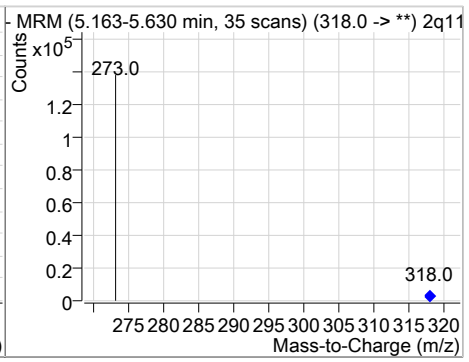




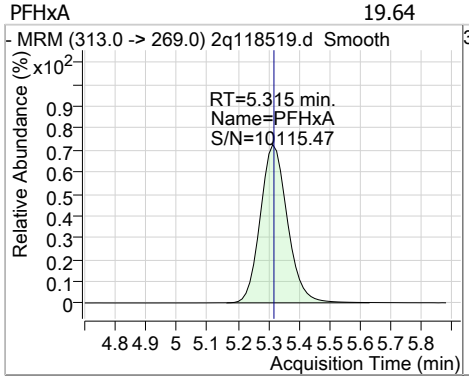
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	10.43	5.31	-0.03	102851				

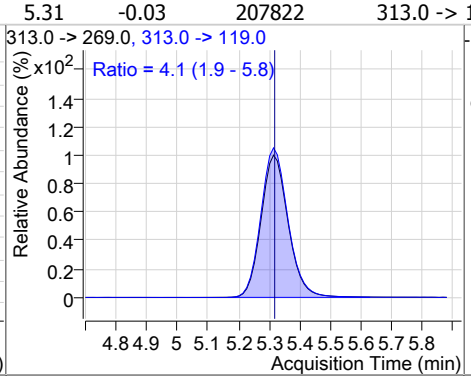


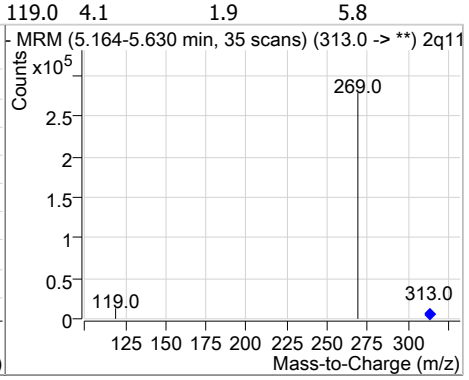




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	19.64	5.31	-0.03	207822	313.0 -> 119.0	4.1	1.9	5.8

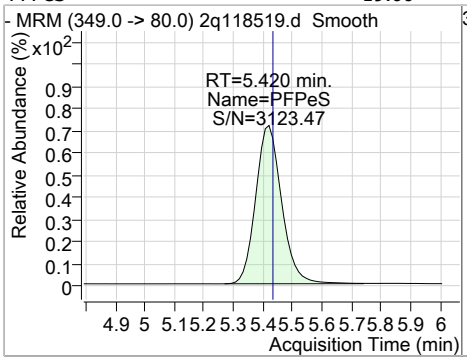


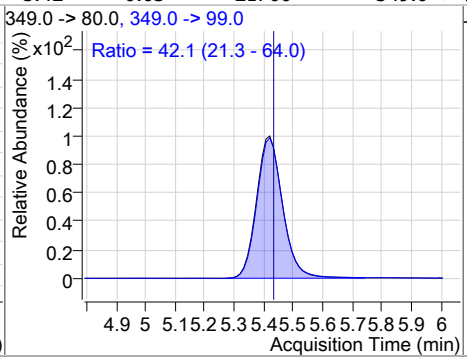


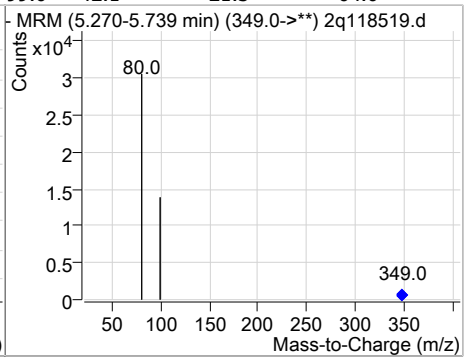


Perfluorinated Compounds by LC/MS/MS

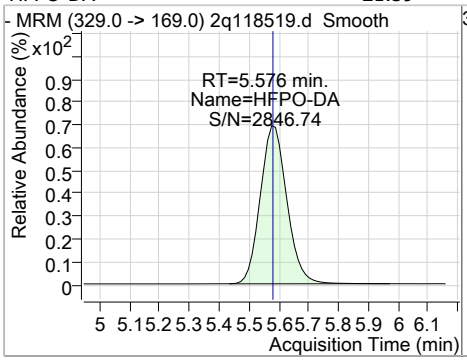
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	19.00	5.42	-0.03	21700	349.0 -> 99.0	42.1	21.3	64.0

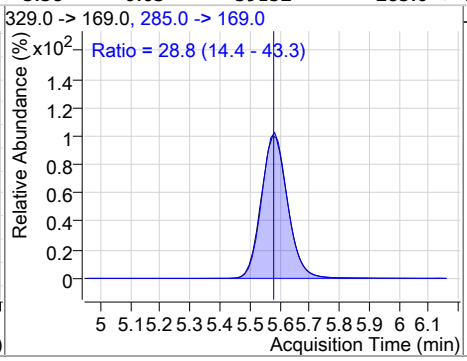


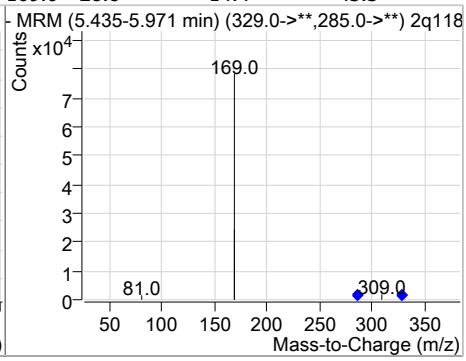




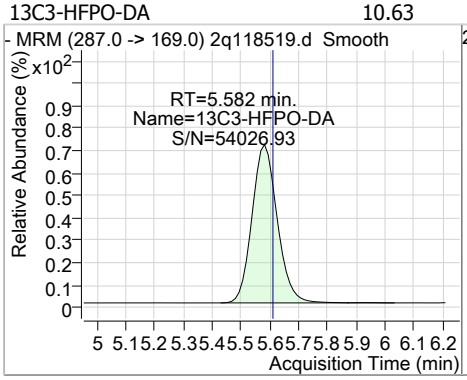
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	21.59	5.58	-0.03	59152	285.0 -> 169.0	28.8	14.4	43.3

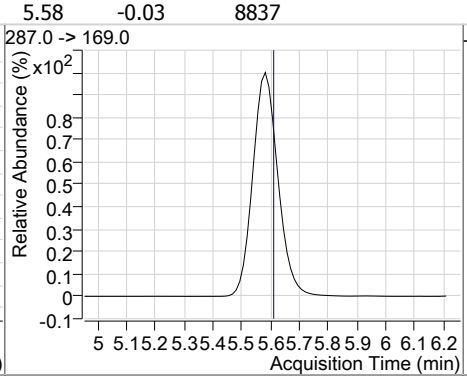


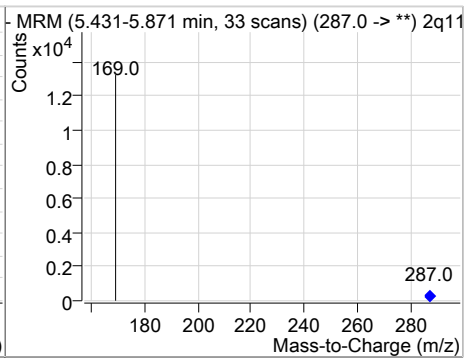




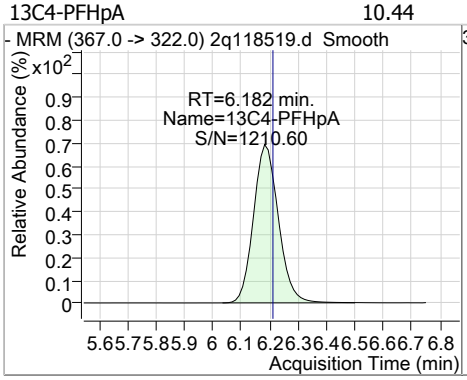
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	10.63	5.58	-0.03	8837				

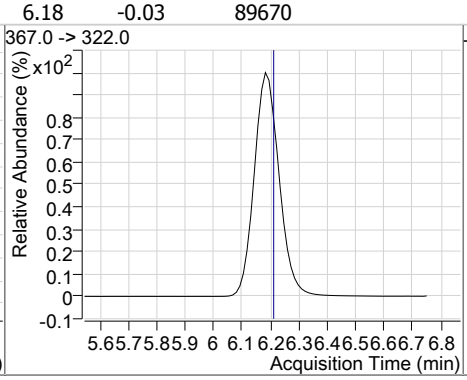


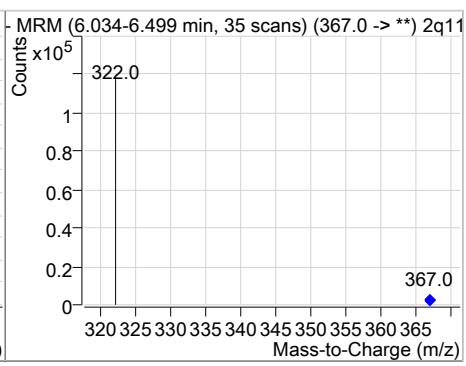




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	10.44	6.18	-0.03	89670				

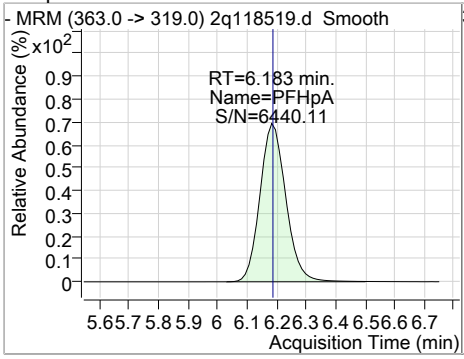


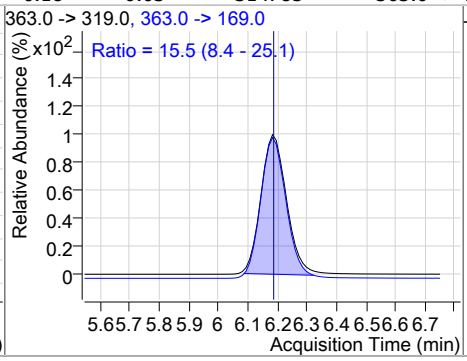


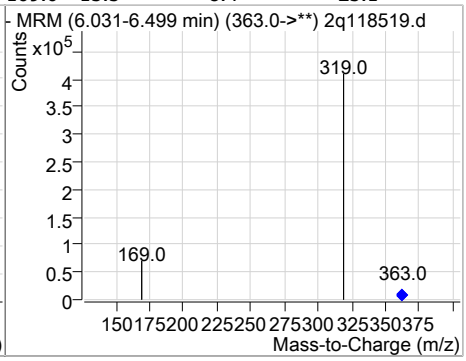


Perfluorinated Compounds by LC/MS/MS

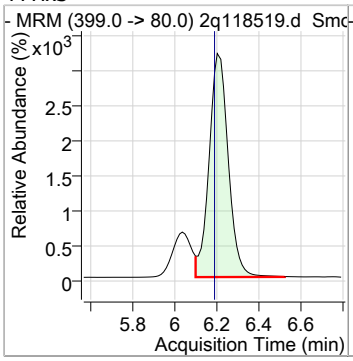
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	21.23	6.18	-0.03	314785	363.0 -> 169.0	15.5	8.4	25.1

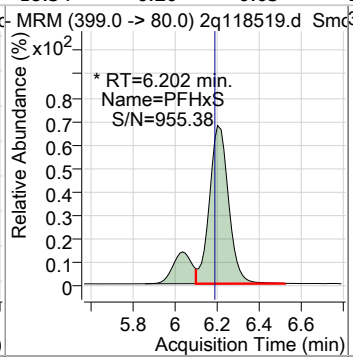


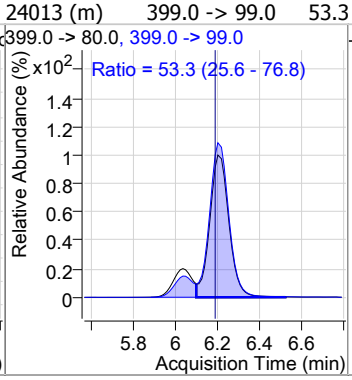


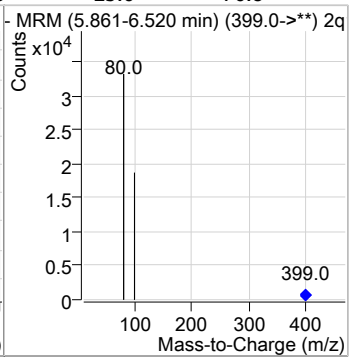


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	18.34	6.20	-0.03	24013 (m)	399.0 -> 99.0	53.3	25.6	76.8

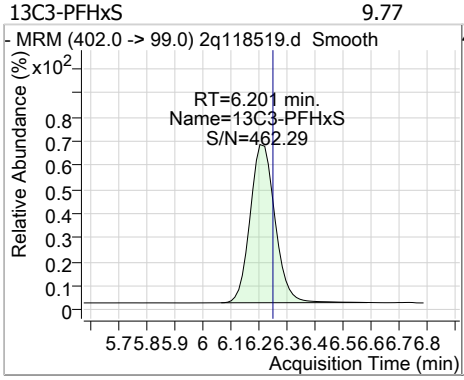


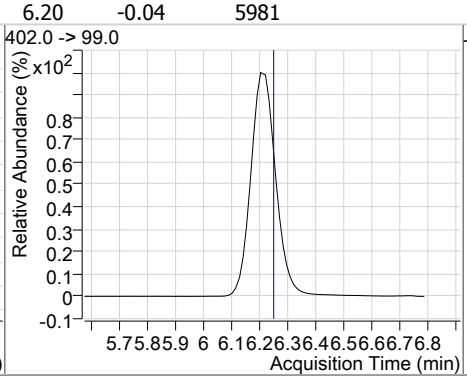


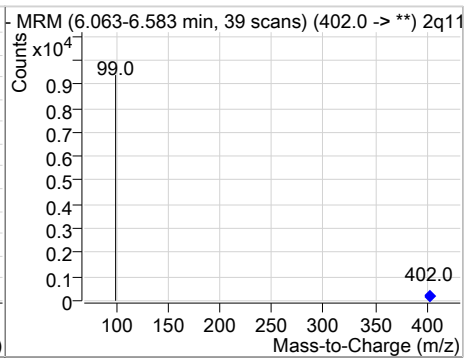




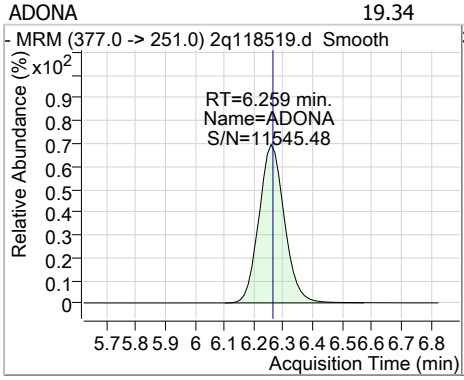
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	9.77	6.20	-0.04	5981				

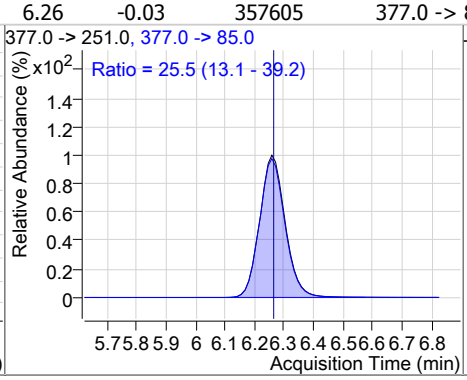


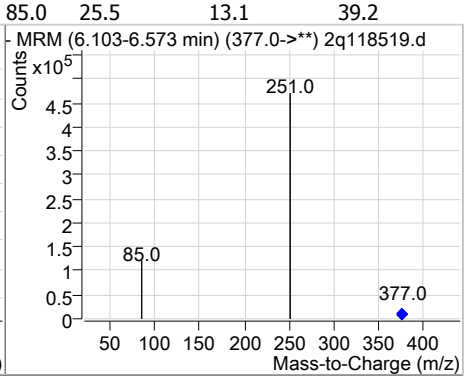




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	19.34	6.26	-0.03	357605	377.0 -> 85.0	25.5	13.1	39.2

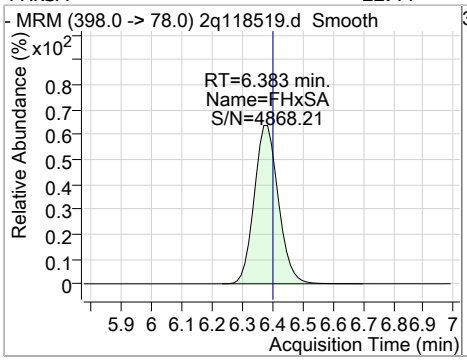


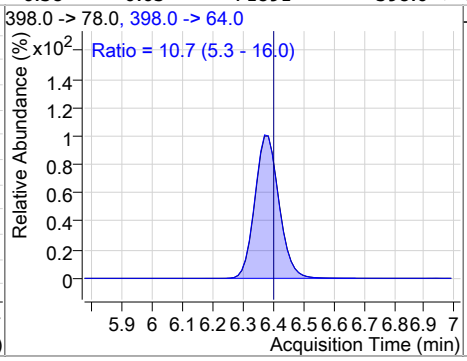


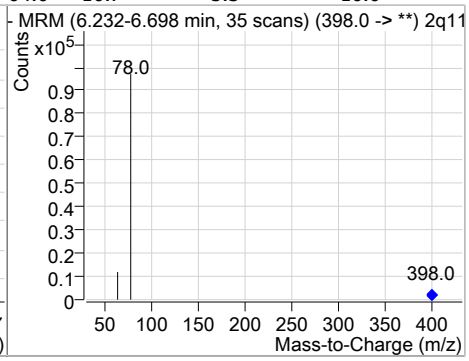


Perfluorinated Compounds by LC/MS/MS

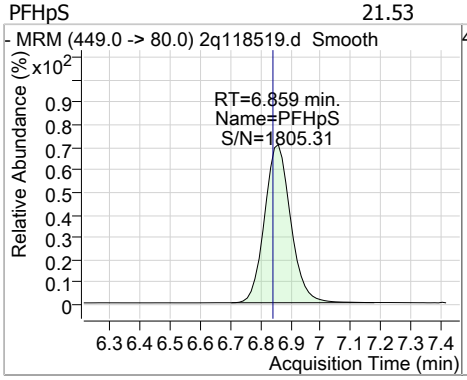
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	22.44	6.38	-0.03	71891	398.0 -> 64.0	10.7	5.3	16.0

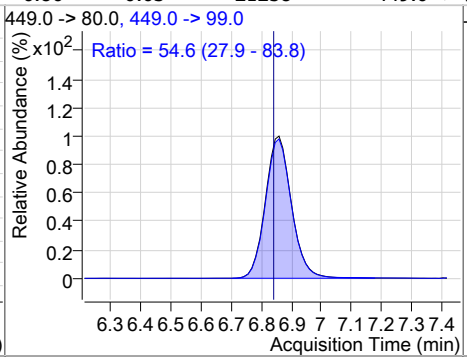


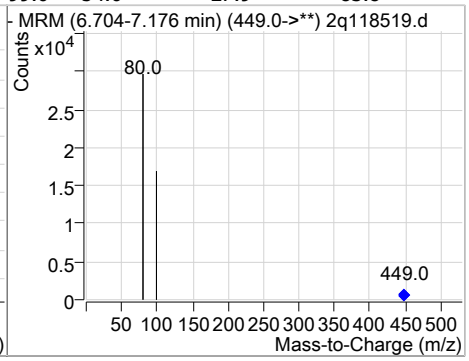




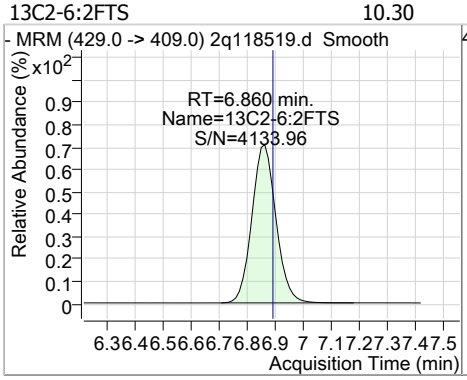
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	21.53	6.86	-0.03	21258	449.0 -> 99.0	54.6	27.9	83.8

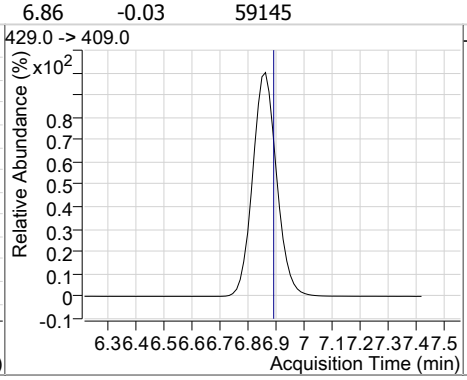


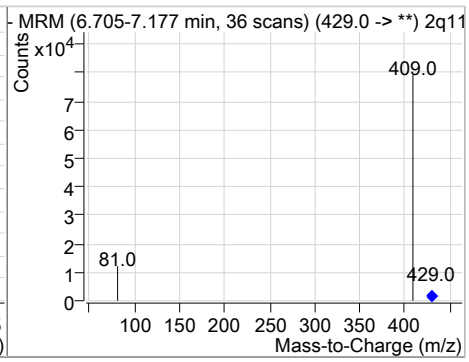




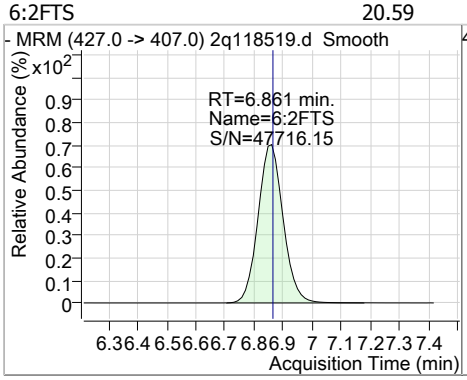
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	10.30	6.86	-0.03	59145				

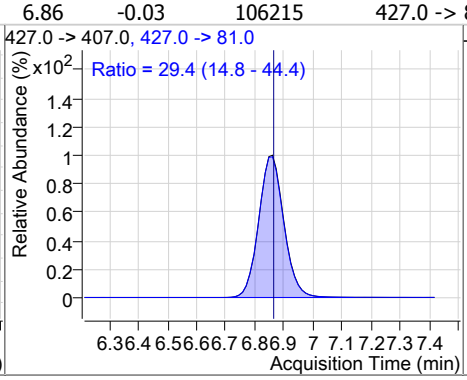


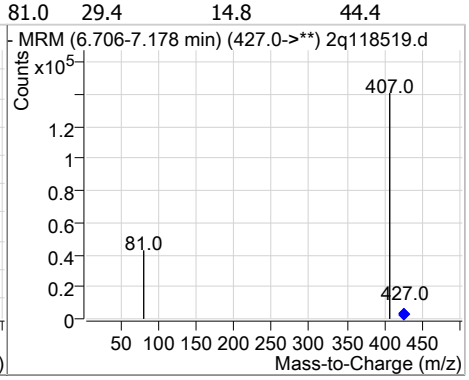




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	20.59	6.86	-0.03	106215	427.0 -> 81.0	29.4	14.8	44.4

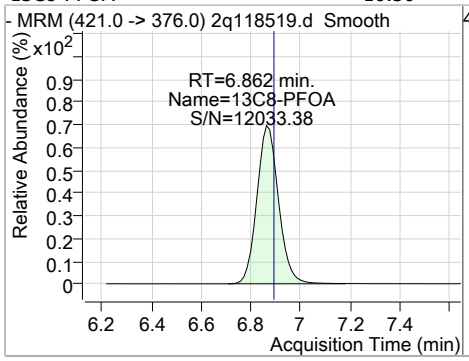


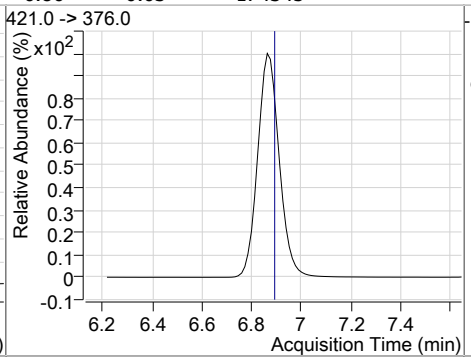


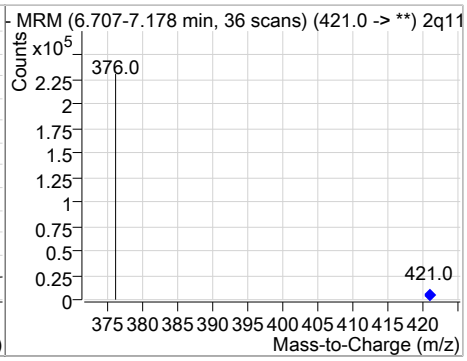


Perfluorinated Compounds by LC/MS/MS

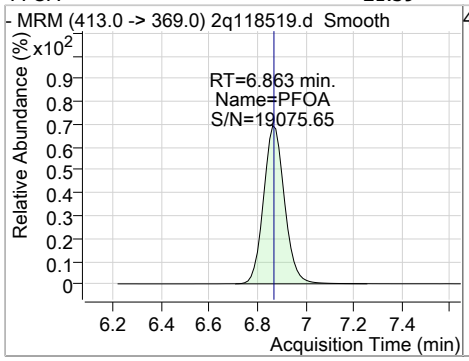
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	10.30	6.86	-0.03	174345				

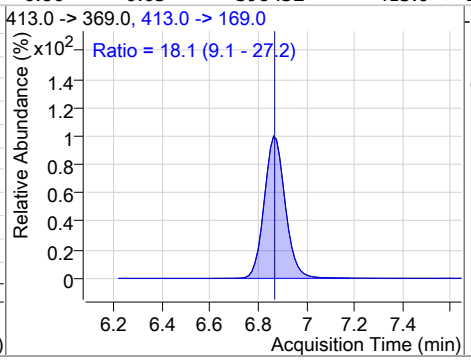


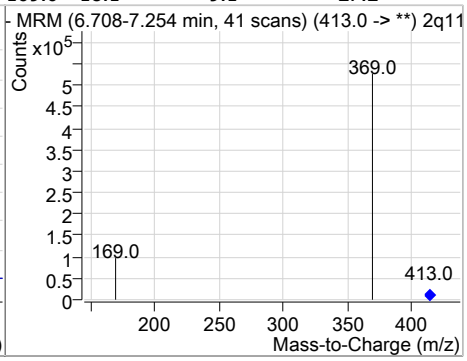




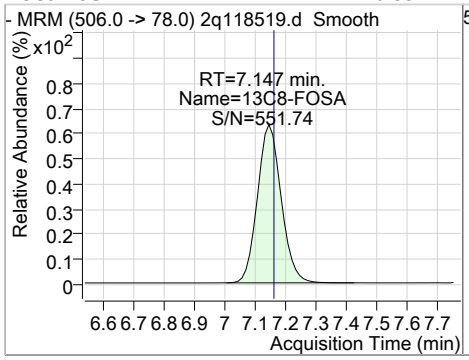
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	21.39	6.86	-0.03	398432	413.0 -> 169.0	18.1	9.1	27.2

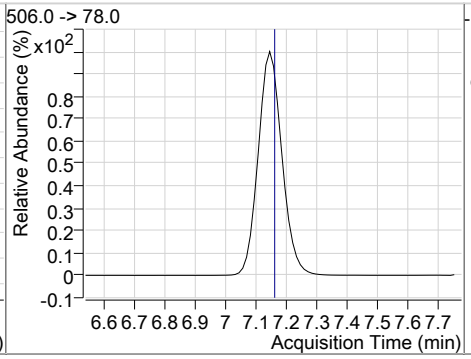


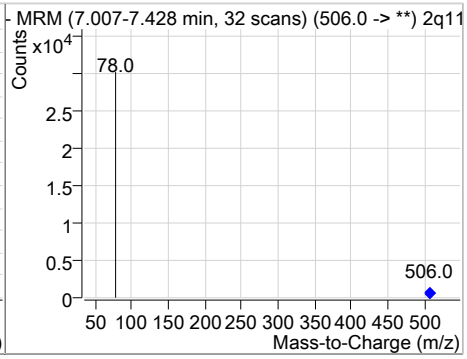




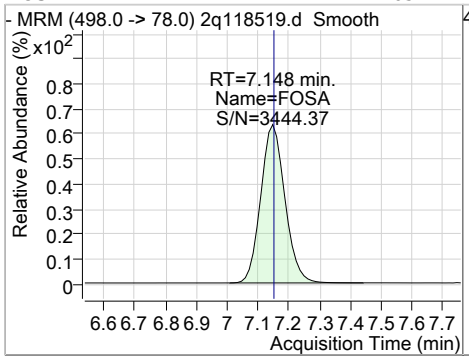
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	10.55	7.15	-0.01	21671				

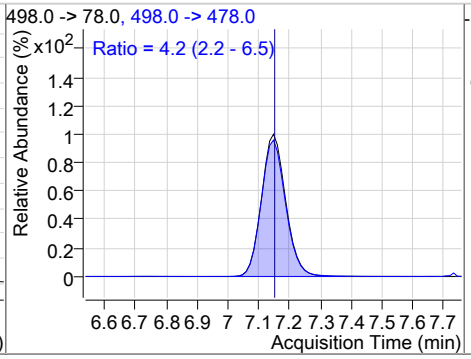


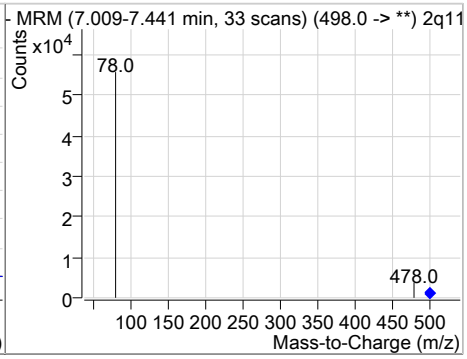




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	21.65	7.15	-0.01	41155	498.0 -> 478.0	4.2	2.2	6.5

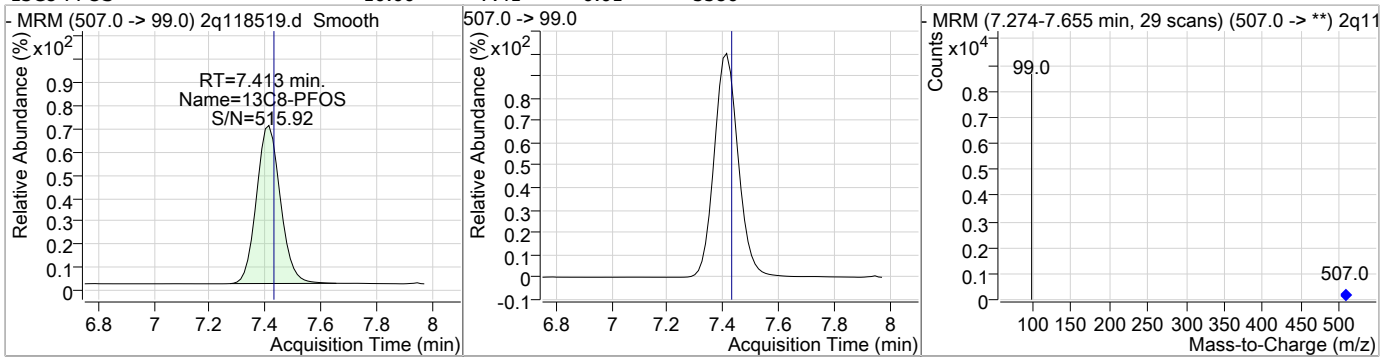




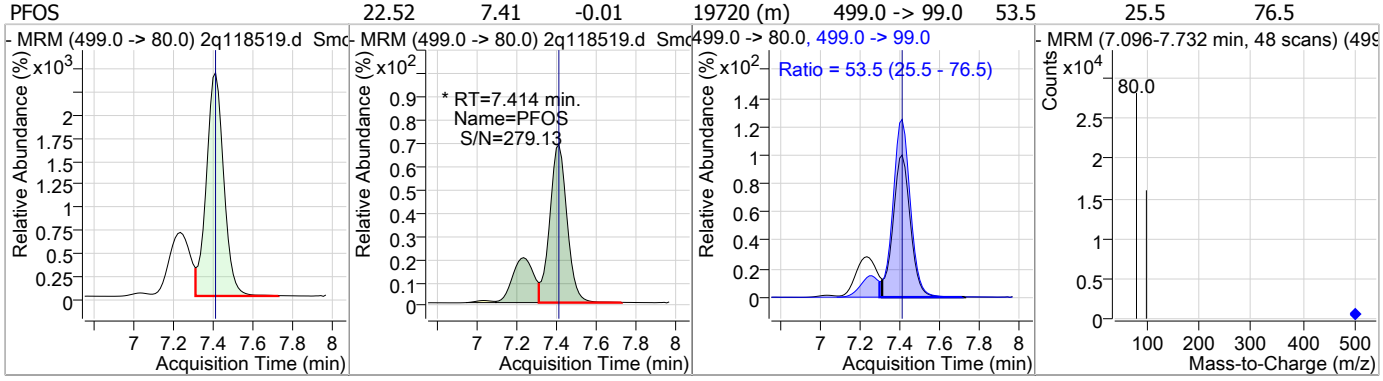


Perfluorinated Compounds by LC/MS/MS

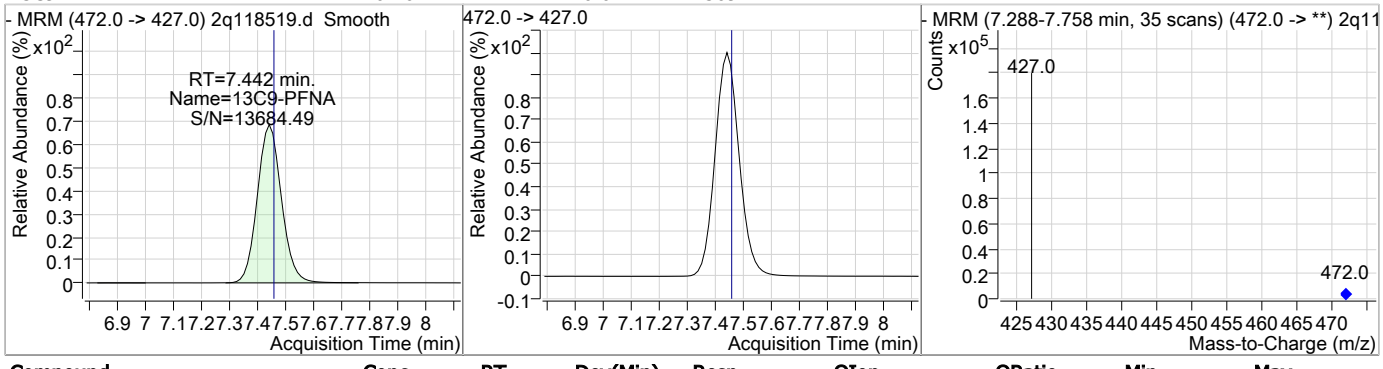
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	10.00	7.41	-0.01	5586				



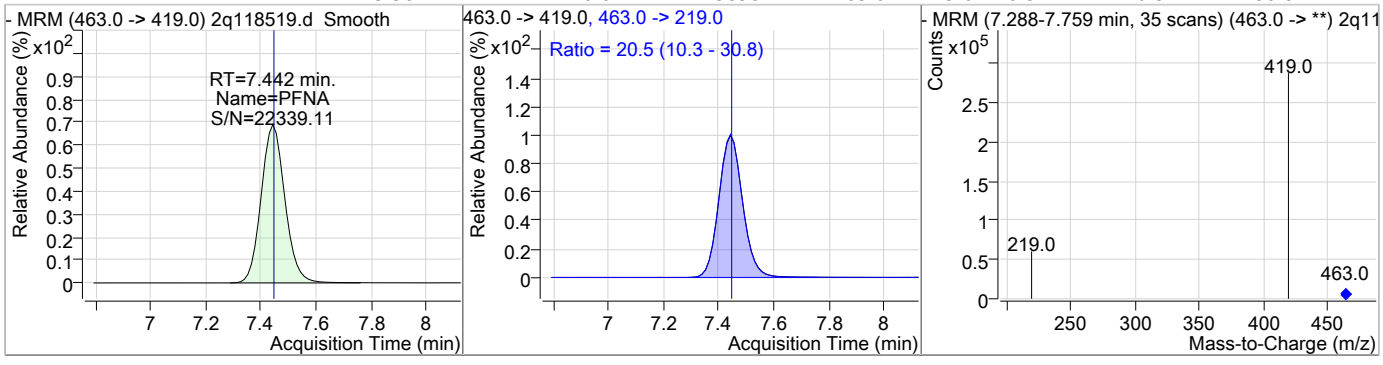
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	22.52	7.41	-0.01	19720 (m)	499.0 -> 99.0	53.5	25.5	76.5



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	10.16	7.44	-0.01	136911				

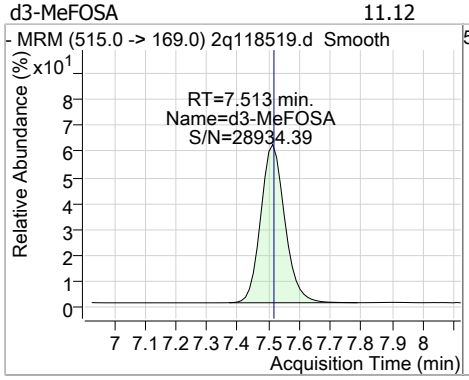


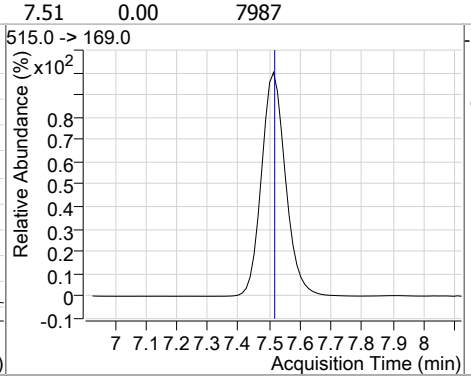
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	19.98	7.44	-0.01	219595	463.0 -> 219.0	20.5	10.3	30.8

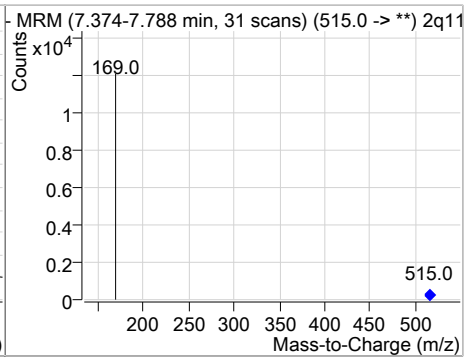


Perfluorinated Compounds by LC/MS/MS

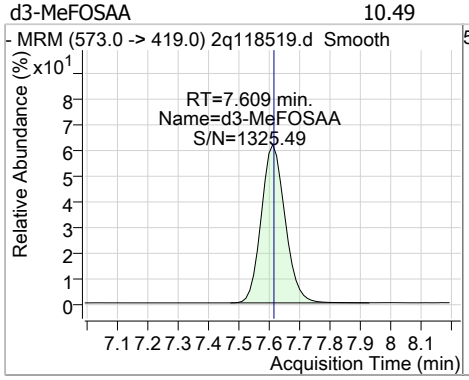
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	11.12	7.51	0.00	7987				

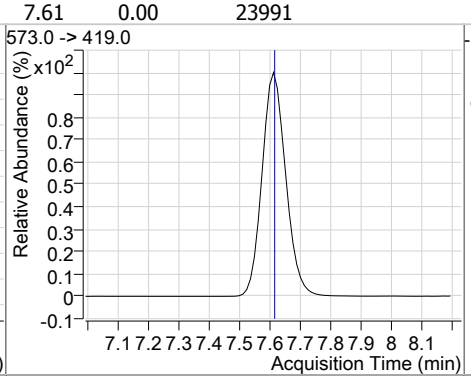


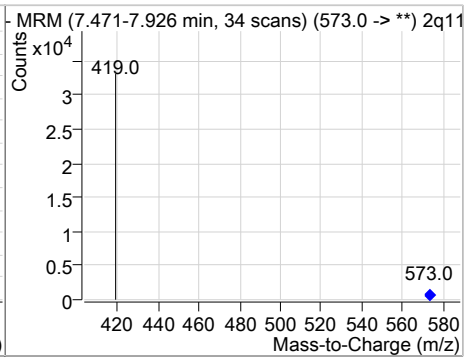




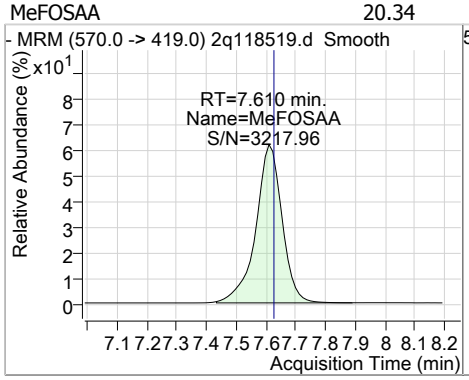
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	10.49	7.61	0.00	23991				

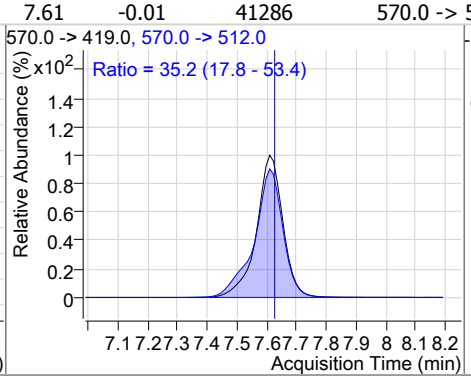


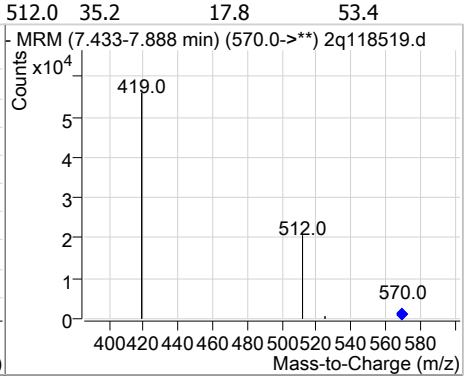




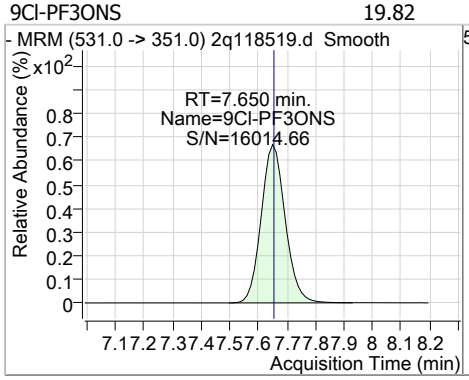
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	20.34	7.61	-0.01	41286	570.0 -> 512.0	35.2	17.8	53.4

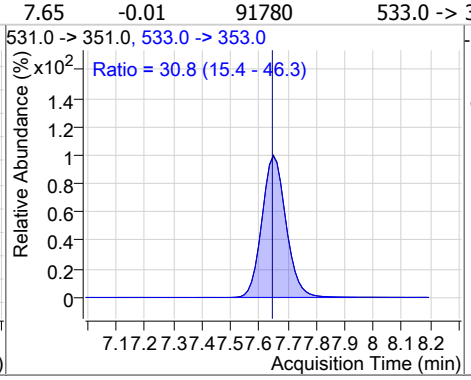


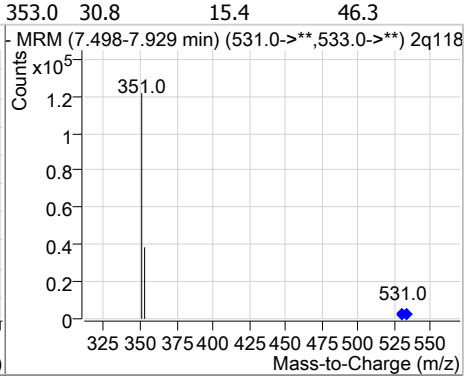




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	19.82	7.65	-0.01	91780	533.0 -> 353.0	30.8	15.4	46.3

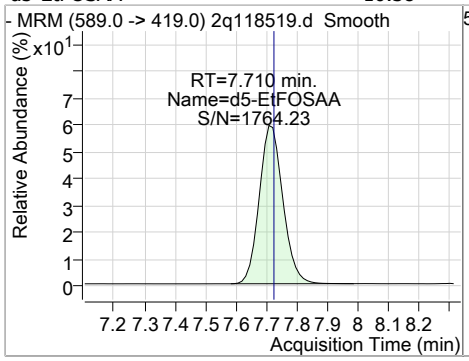


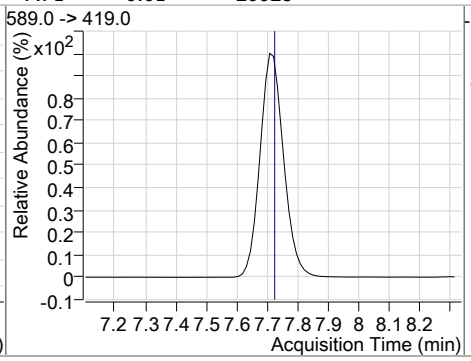


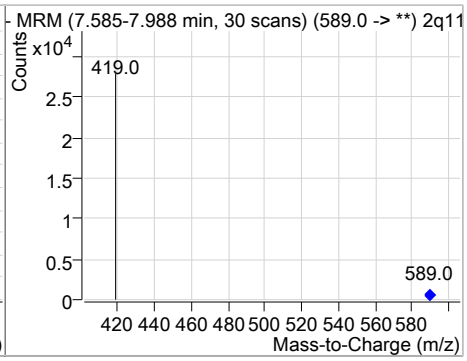


Perfluorinated Compounds by LC/MS/MS

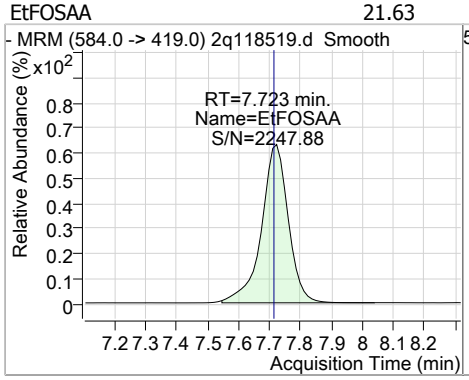
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	10.38	7.71	-0.01	20028				

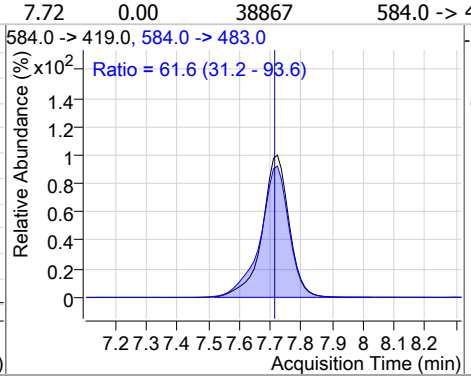


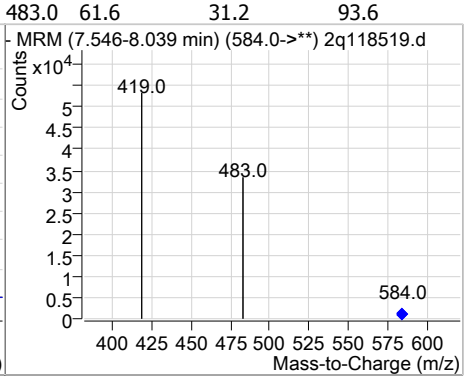




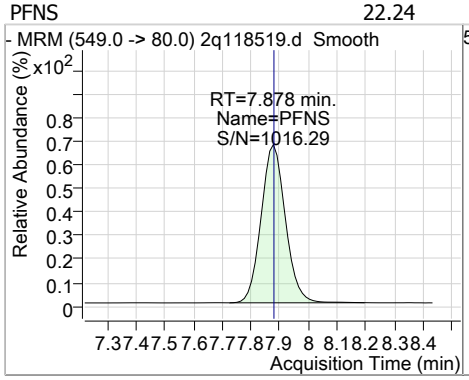
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	21.63	7.72	0.00	38867	584.0 -> 483.0	61.6	31.2	93.6

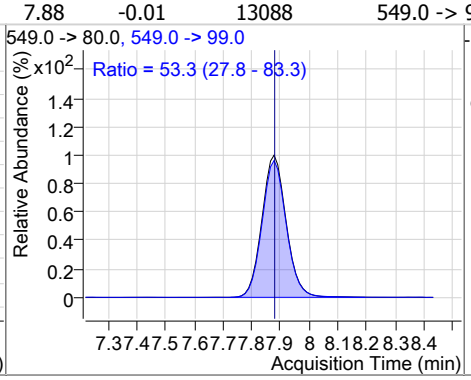


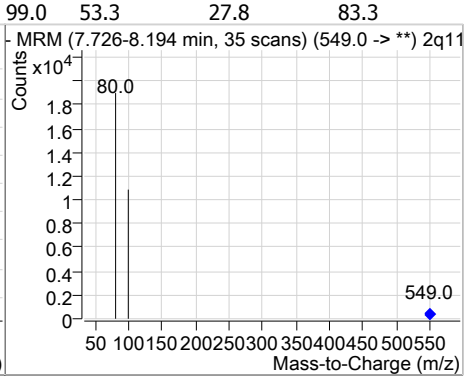




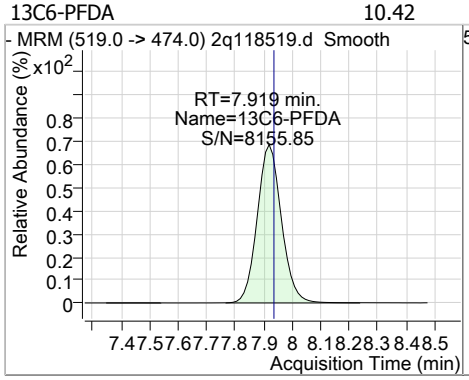
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	22.24	7.88	-0.01	13088	549.0 -> 99.0	53.3	27.8	83.3

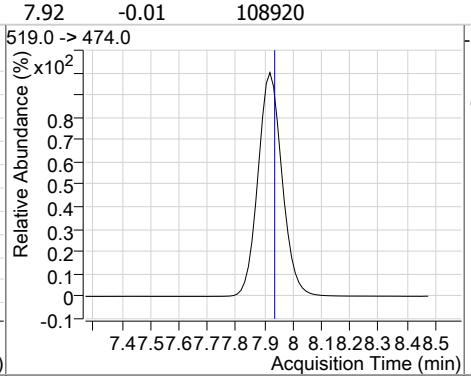


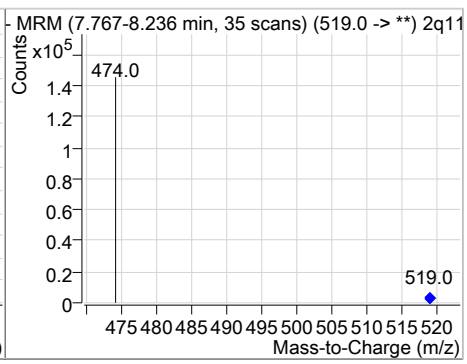




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	10.42	7.92	-0.01	108920				

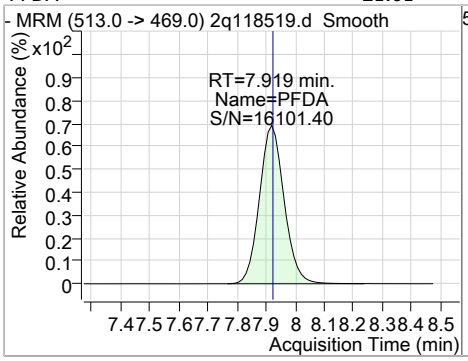


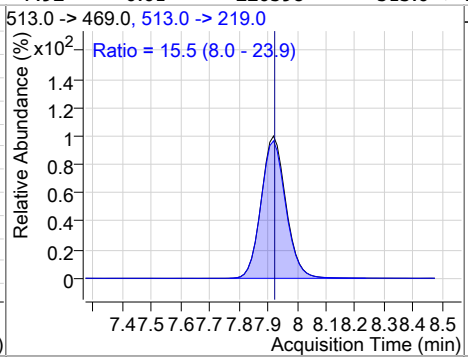


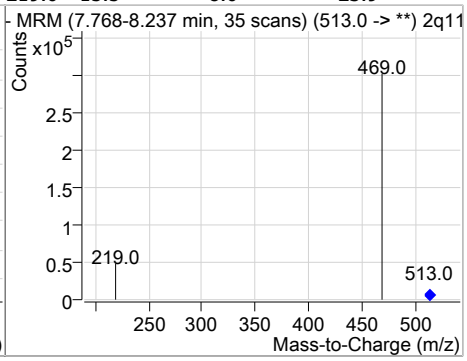


Perfluorinated Compounds by LC/MS/MS

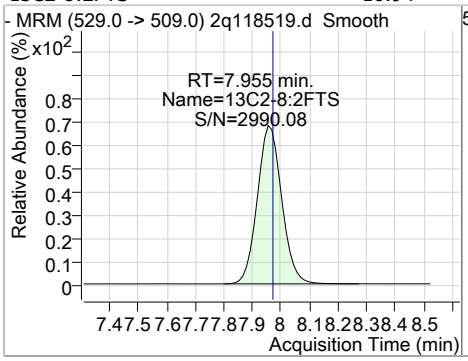
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	21.01	7.92	-0.01	226598	513.0 -> 219.0	15.5	8.0	23.9

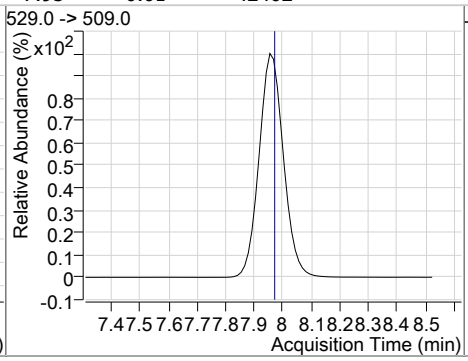


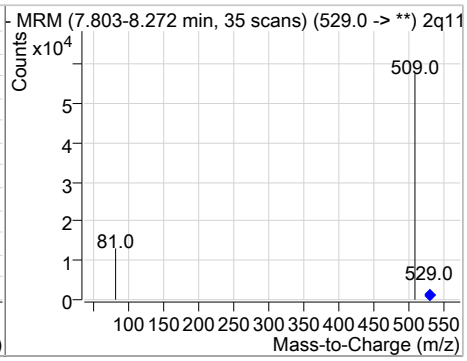




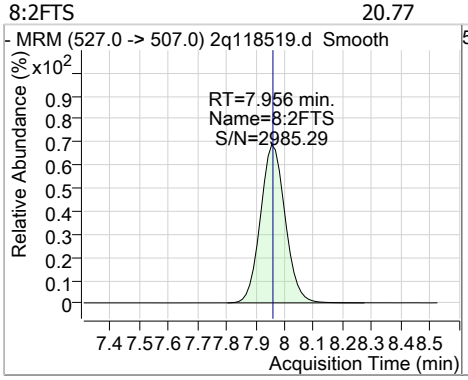
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	10.94	7.95	-0.01	42402				

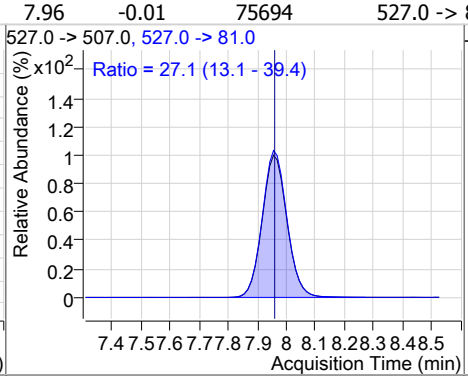


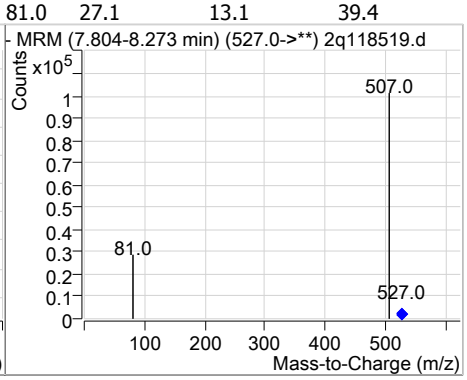




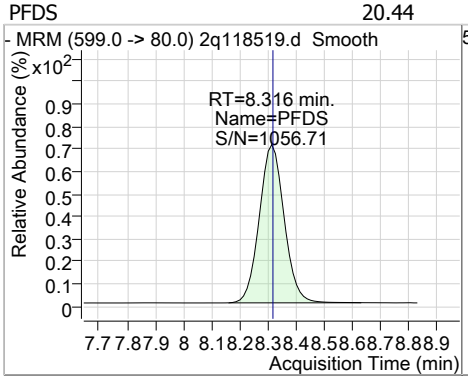
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	20.77	7.96	-0.01	75694	527.0 -> 81.0	27.1	13.1	39.4

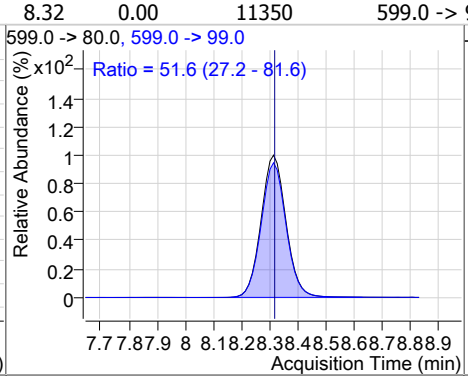


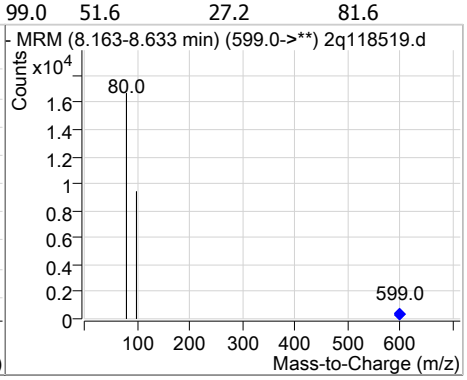




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	20.44	8.32	0.00	11350	599.0 -> 99.0	51.6	27.2	81.6

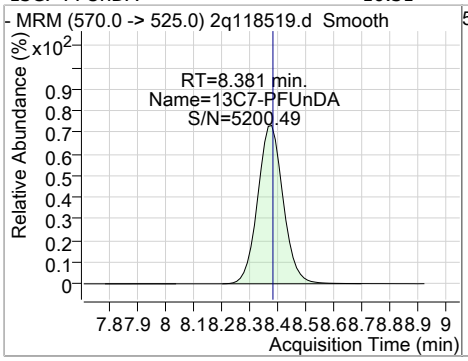


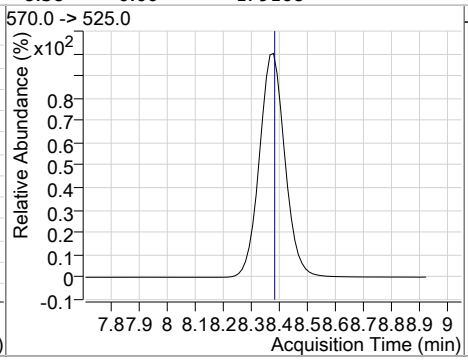


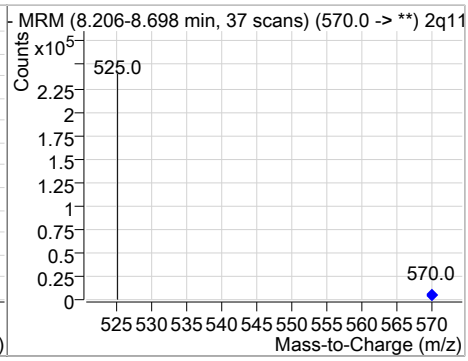


Perfluorinated Compounds by LC/MS/MS

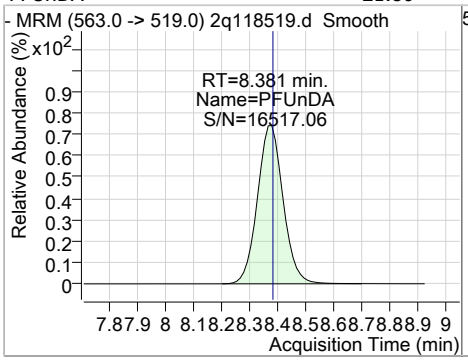
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	10.31	8.38	0.00	179168				

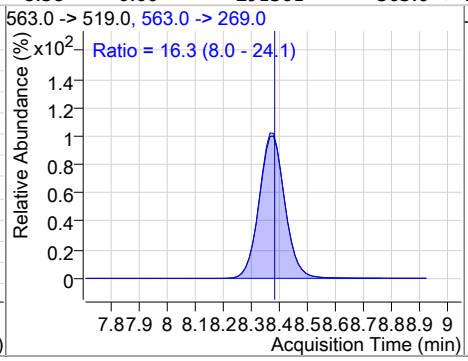


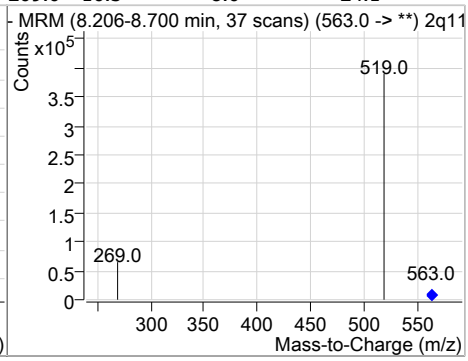




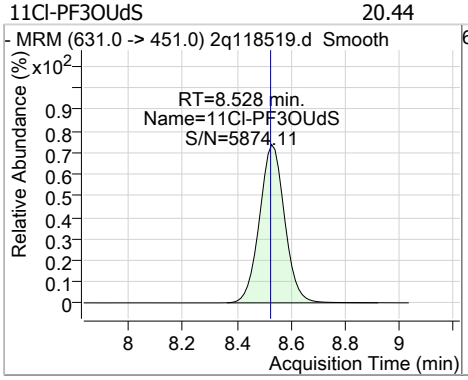
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	21.80	8.38	0.00	291361	563.0 -> 269.0	16.3	8.0	24.1

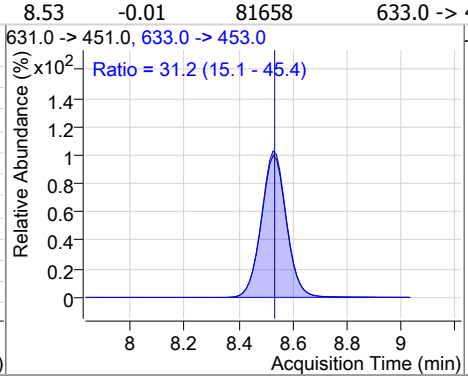


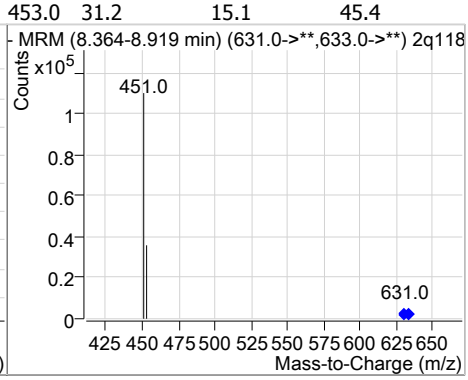




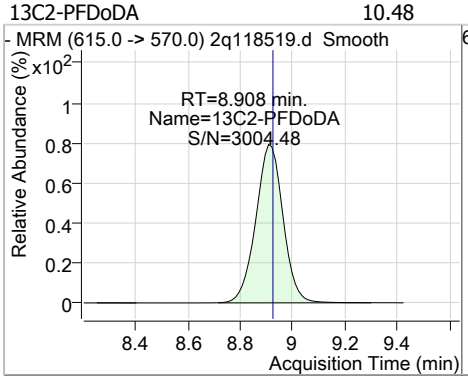
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	20.44	8.53	-0.01	81658	633.0 -> 453.0	31.2	15.1	45.4

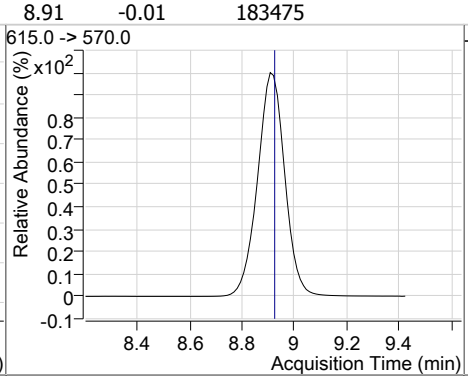


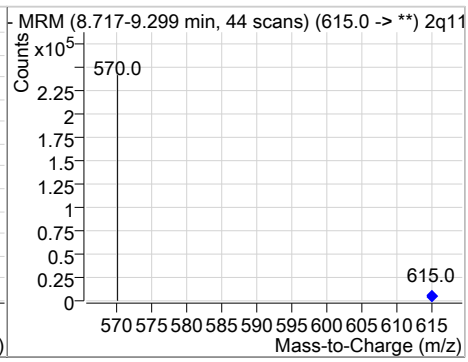




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	10.48	8.91	-0.01	183475				

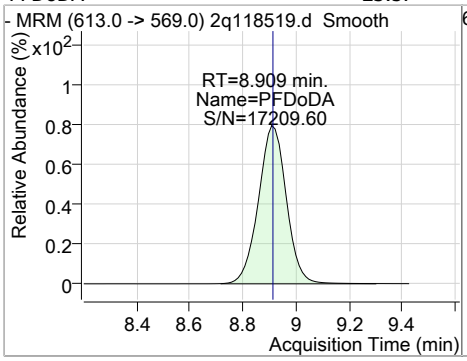


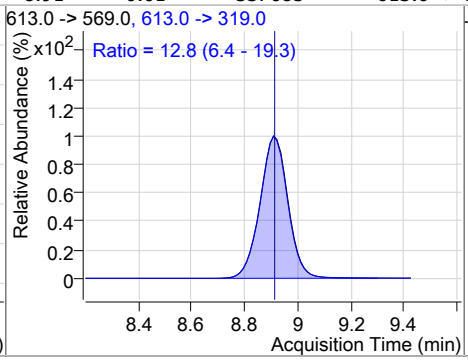


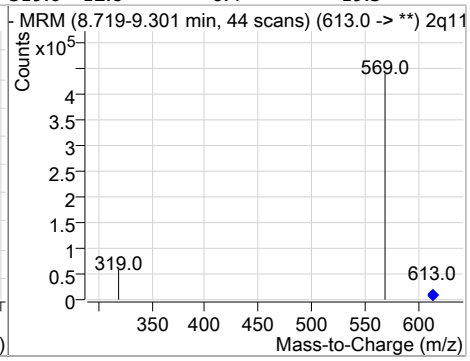


Perfluorinated Compounds by LC/MS/MS

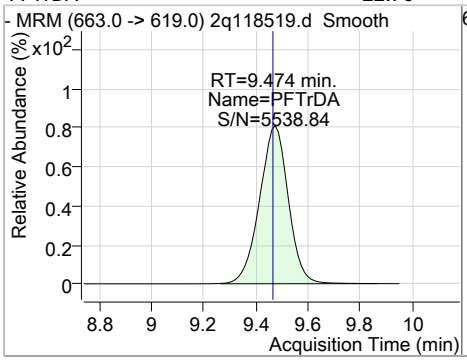
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	23.57	8.91	-0.01	337685	613.0 -> 319.0	12.8	6.4	19.3

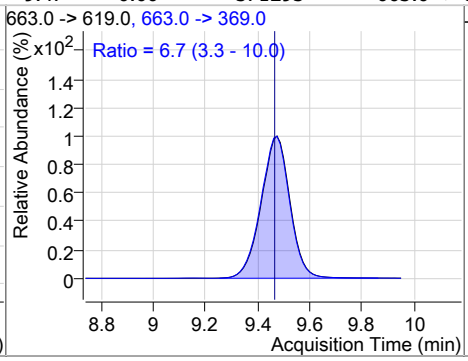


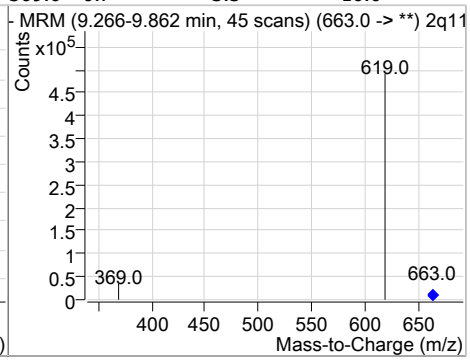




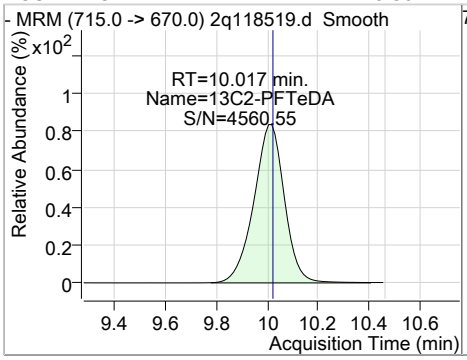
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	22.70	9.47	0.00	371293	663.0 -> 369.0	6.7	3.3	10.0

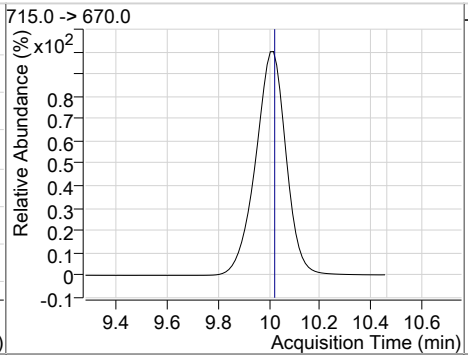


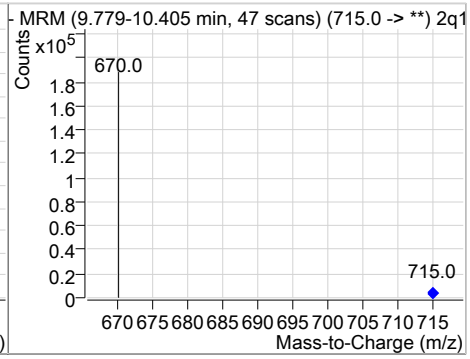




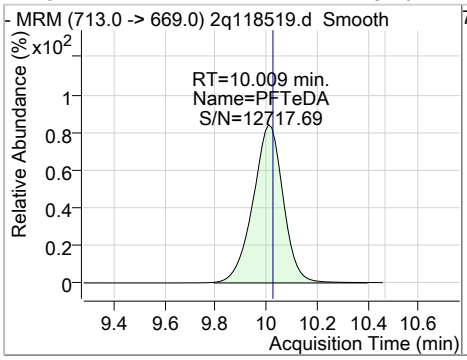
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	10.50	10.02	0.00	139597				

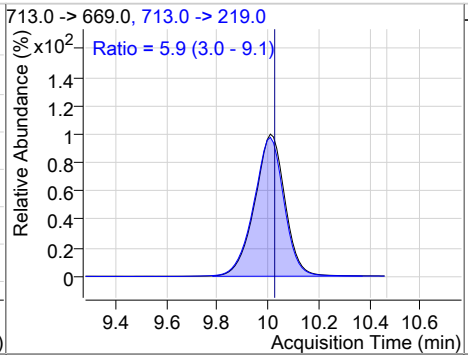


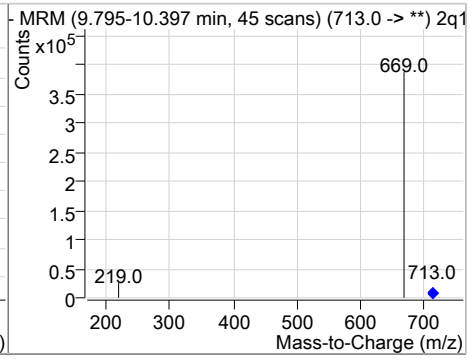




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	19.20	10.01	-0.01	291715	713.0 -> 219.0	5.9	3.0	9.1







Manual Integration Approval Summary

Sample Number: S2Q1691-ICV1691
Lab FileID: 2Q118519.D
Injection Time: 01/02/24 15:03
Method: EPA 537M QSM5.3 B-15
Analyst approved: 01/03/24 15:12 Lindsay Ritner
Supervisor approved: 01/04/24 11:31 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.20	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.41	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Natasha Gumtie 01/04/24 11:31

Perfluorinated Compounds by LC/MS/MS

Data File : 2q118520.d
Operator : lindsayr
Acq. Method : 537_ID.m
Acq. Date-Time : 1/2/2024 3:19:42 PM
Sample Name : icv1691-20
Vial : P1-B2
DA Method File : ID_010224_S2Q1691.quantmethod.xml
Batch Name : s2q1691.batch.bin
Sample Information : op401,S2Q1691,250,,,1.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M5-EtFOSAA	7.710	589.0 -> 419.0	19421	10.00 µg/L	-0.013
M4-PFBA	2.252	217.0 -> 172.0	51660	10.00 µg/L	0.013
M5-PFPeA	4.087	268.0 -> 223.0	79048	10.00 µg/L	0.025
M5-PFHxA	5.351	318.0 -> 273.0	99549	10.00 µg/L	0.013
M4-PFHpA	6.208	367.0 -> 322.0	85530	10.00 µg/L	0.000
M8-PFOA	6.875	421.0 -> 376.0	166661	10.00 µg/L	-0.013
M9-PFNA	7.442	472.0 -> 427.0	130919	10.00 µg/L	-0.013
M6-PFDA	7.919	519.0 -> 474.0	103910	10.00 µg/L	-0.013
M7-PFUnDA	8.368	570.0 -> 525.0	173357	10.00 µg/L	-0.013
M2-PFDoDA	8.908	615.0 -> 570.0	177248	10.00 µg/L	-0.013
M2-PFTeDA	9.992	715.0 -> 670.0	135246	10.00 µg/L	-0.025
M8-FOSA	7.147	506.0 -> 78.0	20445	10.00 µg/L	-0.013
M3-PFBS	4.355	302.0 -> 99.0	6122	10.00 µg/L	0.025
M3-PFHxS	6.231	402.0 -> 99.0	5863	10.00 µg/L	-0.013
M8-PFOS	7.413	507.0 -> 99.0	5311	10.00 µg/L	-0.014
M2-4:2FTS	5.247	329.0 -> 309.0	38785	10.00 µg/L	0.013
M2-6:2FTS	6.872	429.0 -> 409.0	56024	10.00 µg/L	-0.013
M2-8:2FTS	7.955	529.0 -> 509.0	40241	10.00 µg/L	-0.013
M3-MeFOSAA	7.609	573.0 -> 419.0	22520	10.00 µg/L	0.000
M3-HFPO-DA	5.607	287.0 -> 169.0	8511	10.00 µg/L	0.000
M3-MeFOSA	7.513	515.0 -> 169.0	7223	10.00 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.247	329.0 -> 309.0	38785	10.51 µg/L	0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 105.1%	
13C2-6:2FTS	6.872	429.0 -> 409.0	56024	9.76 µg/L	-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 97.6%	
13C2-8:2FTS	7.955	529.0 -> 509.0	40241	10.38 µg/L	-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 103.8%	
13C2-PFDoDA	8.908	615.0 -> 570.0	177248	10.12 µg/L	-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.2%	
13C2-PFTeDA	9.992	715.0 -> 670.0	135246	10.17 µg/L	-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.7%	
13C3-PFBS	4.355	302.0 -> 99.0	6122	10.19 µg/L	0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.9%	
13C3-PFHxS	6.231	402.0 -> 99.0	5863	9.58 µg/L	-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 95.8%	
13C4-PFBA	2.252	217.0 -> 172.0	51660	10.01 µg/L	0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.1%	
13C4-PFHpA	6.208	367.0 -> 322.0	85530	9.96 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.6%	
d5-EtFOSAA	7.710	589.0 -> 419.0	19421	10.07 µg/L	-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.7%	
13C5-PFHxA	5.351	318.0 -> 273.0	99549	10.09 µg/L	0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.9%	
13C5-PFPeA	4.087	268.0 -> 223.0	79048	9.94 µg/L	0.025

Perfluorinated Compounds by LC/MS/MS

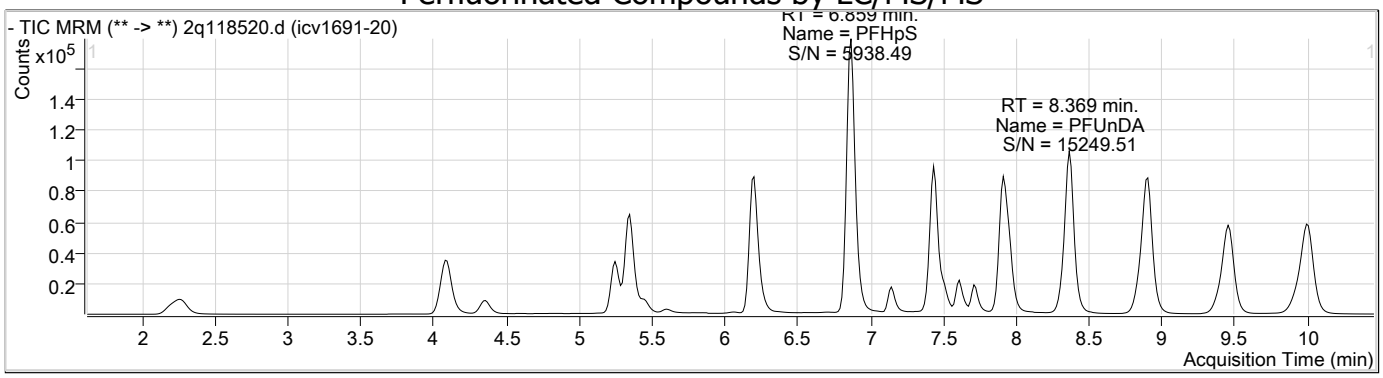
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.4%			
13C6-PFDA	7.919	519.0 -> 474.0	103910	9.94	µg/L		-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.4%			
13C7-PFUnDA	8.368	570.0 -> 525.0	173357	9.97	µg/L		-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.7%			
13C8-FOSA	7.147	506.0 -> 78.0	20445	9.96	µg/L		-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.6%			
13C8-PFOA	6.875	421.0 -> 376.0	166661	9.85	µg/L		-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 98.5%			
13C8-PFOS	7.413	507.0 -> 99.0	5311	9.51	µg/L		-0.014
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 95.1%			
13C9-PFNA	7.442	472.0 -> 427.0	130919	9.72	µg/L		-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 97.2%			
d3-MeFOSAA	7.609	573.0 -> 419.0	22520	9.85	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 98.5%			
13C3-HFPO-DA	5.607	287.0 -> 169.0	8511	10.24	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 102.4%			
d3-MeFOSA	7.513	515.0 -> 169.0	7223	10.06	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.6%			
Target Compounds							QValue
4:2FTS	5.249	327.0 -> 307.0	75041	19.05	µg/L		99
		327.0 -> 81.0	28155				
6:2FTS	6.861	427.0 -> 407.0	92869	19.00	µg/L		99
		427.0 -> 81.0	27022				
8:2FTS	7.956	527.0 -> 507.0	65100	18.82	µg/L		98
		527.0 -> 81.0	17862				
EtFOSAA	7.723	584.0 -> 419.0	29318	16.83	µg/L		100
		584.0 -> 483.0	18342				
FOSA	7.148	498.0 -> 78.0	34392	19.17	µg/L		100
		498.0 -> 478.0	1502				
MeFOSAA	7.610	570.0 -> 419.0	34825	18.28	µg/L		100
		570.0 -> 512.0	12455				
PFBA	2.258	213.0 -> 169.0	31138	19.14	µg/L		100
PFBS	4.357	299.0 -> 80.0	27953	18.08	µg/L		100
		299.0 -> 99.0	10603				
PFDA	7.919	513.0 -> 469.0	187405	18.21	µg/L		99
		513.0 -> 219.0	28902				
PFDoDA	8.897	613.0 -> 569.0	291253	21.04	µg/L		100
		613.0 -> 319.0	37271				
PFDS	8.316	599.0 -> 80.0	10200	18.99	µg/L		99
		599.0 -> 99.0	5620				
PFHpA	6.209	363.0 -> 319.0	237543	16.80	µg/L		99
		363.0 -> 169.0	40553				
PFHpS	6.859	449.0 -> 80.0	18679	19.30	µg/L		99
		449.0 -> 99.0	10352				
PFHxA	5.352	313.0 -> 269.0	178850	17.46	µg/L		100
		313.0 -> 119.0	7077				
PFHxS	6.231	399.0 -> 80.0	24127	18.80	µg/L	m	98
		399.0 -> 99.0	12734				
PFNA	7.442	463.0 -> 419.0	194193	18.47	µg/L		99
		463.0 -> 219.0	40449				
PFNS	7.878	549.0 -> 80.0	0	0.00	µg/L	m	1
		549.0 -> 99.0	0				
PFOA	6.875	413.0 -> 369.0	324535	18.23	µg/L		100
		413.0 -> 169.0	58595				
PFOS	7.414	499.0 -> 80.0	17053	20.49	µg/L		87

Perfluorinated Compounds by LC/MS/MS

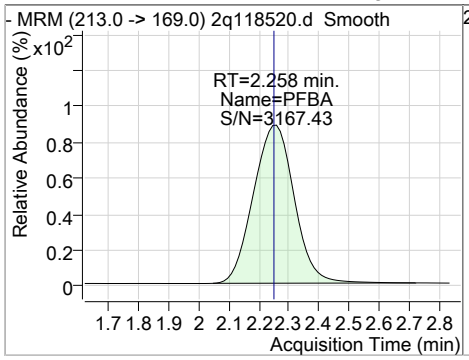
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
		499.0 -> 99.0	10208				
PFPeA	4.089	263.0 -> 219.0	118576	19.03	µg/L		100
PFPeS	5.445	349.0 -> 80.0	20219	18.07	µg/L		100
		349.0 -> 99.0	8639				
PFTeDA	9.997	713.0 -> 669.0	260976	17.73	µg/L		100
		713.0 -> 219.0	16101				
PFTrDA	9.461	663.0 -> 619.0	339019	21.46	µg/L		100
		663.0 -> 369.0	22454				
PFUnDA	8.369	563.0 -> 519.0	261079	20.19	µg/L		99
		563.0 -> 269.0	42699				
11Cl-PF3OUdS	8.528	631.0 -> 451.0	0	0.00	µg/L	m	1
		633.0 -> 453.0	0				
9Cl-PF3ONS	7.650	531.0 -> 351.0	0	0.00	µg/L	m	1
		533.0 -> 353.0	0				
ADONA	6.271	377.0 -> 251.0	0	0.00	µg/L	m	1
		377.0 -> 85.0	0				
HFPO-DA	5.614	329.0 -> 169.0	0	0.00	µg/L	m	1
		285.0 -> 169.0	0				
MeFOSA	7.514	512.0 -> 169.0	13251	20.65	µg/L		98
		512.0 -> 219.0	11452				
4-PFECHS	-	461.0 -> 381.0	-	N.D.			
		461.0 -> 99.0					
FBSA	5.141	298.0 -> 78.0	0	0.00	µg/L	m	1
		298.0 -> 64.0	0				
FHxSA	6.383	398.0 -> 78.0	0	0.00	µg/L	m	1
		398.0 -> 64.0	0				

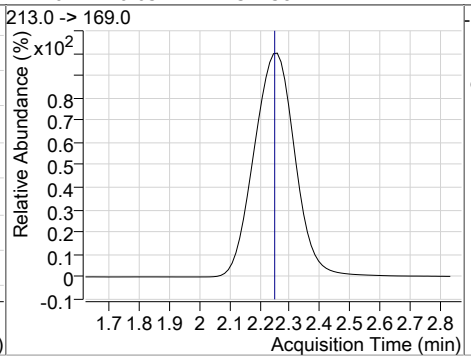
 # = Qualifier out of range, m = manually integrated, + = Area summed

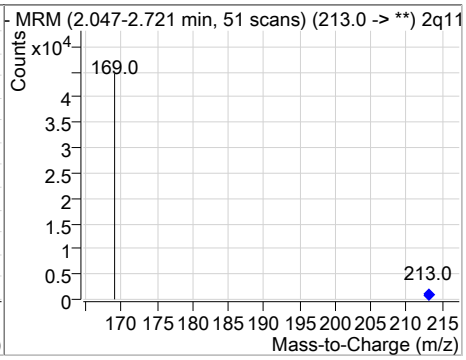
Perfluorinated Compounds by LC/MS/MS



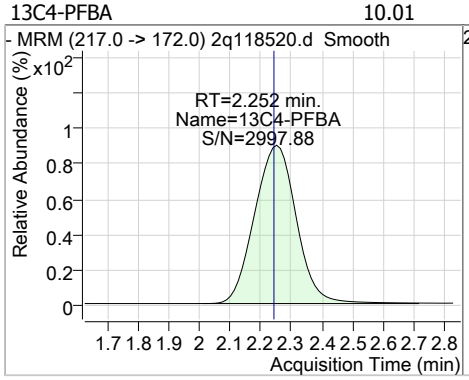
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	19.14	2.26	0.03	31138				

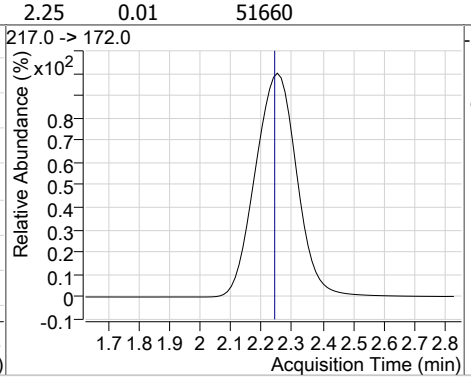


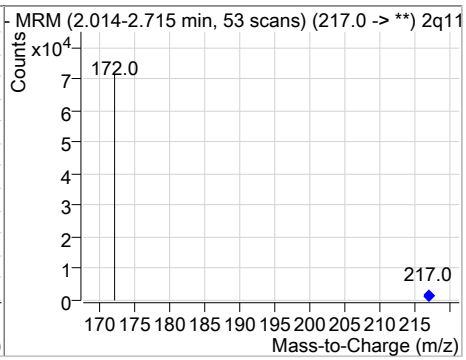




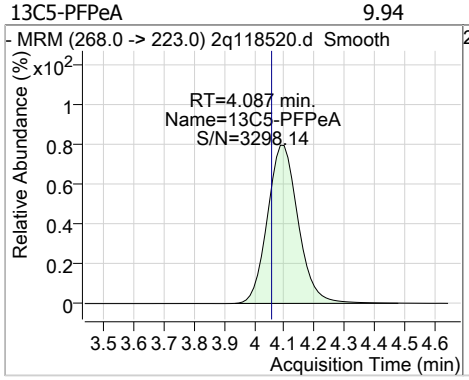
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	10.01	2.25	0.01	51660				

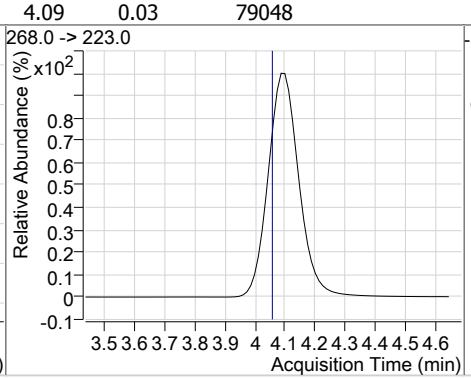


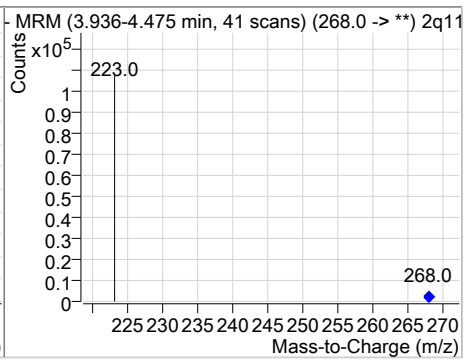




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	9.94	4.09	0.03	79048				

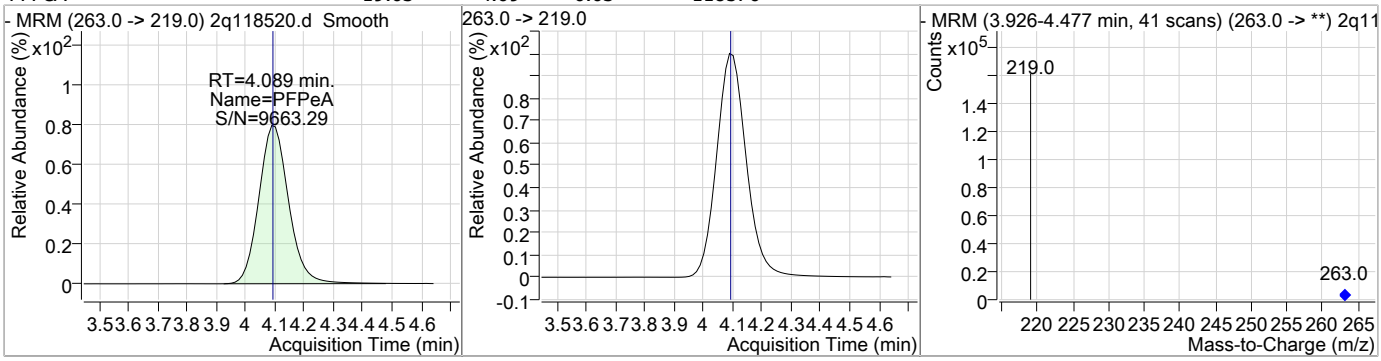




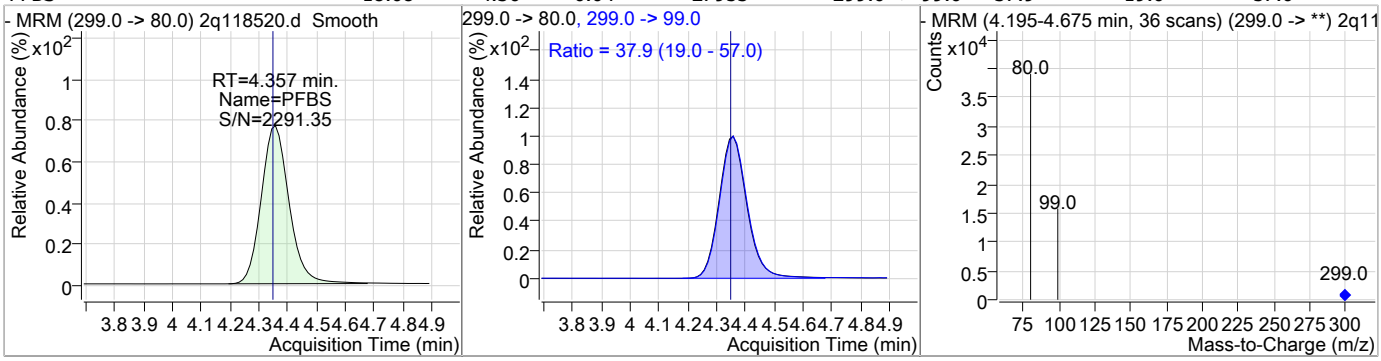


Perfluorinated Compounds by LC/MS/MS

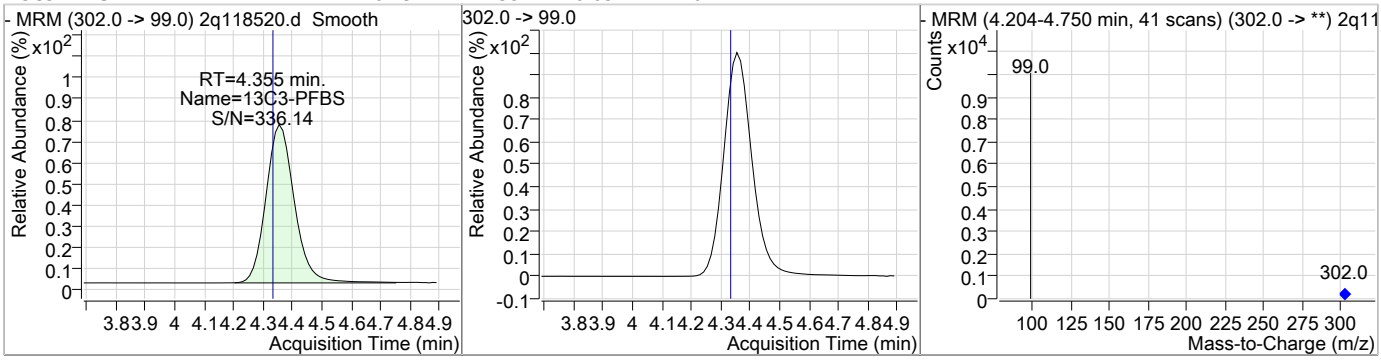
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	19.03	4.09	0.03	118576				



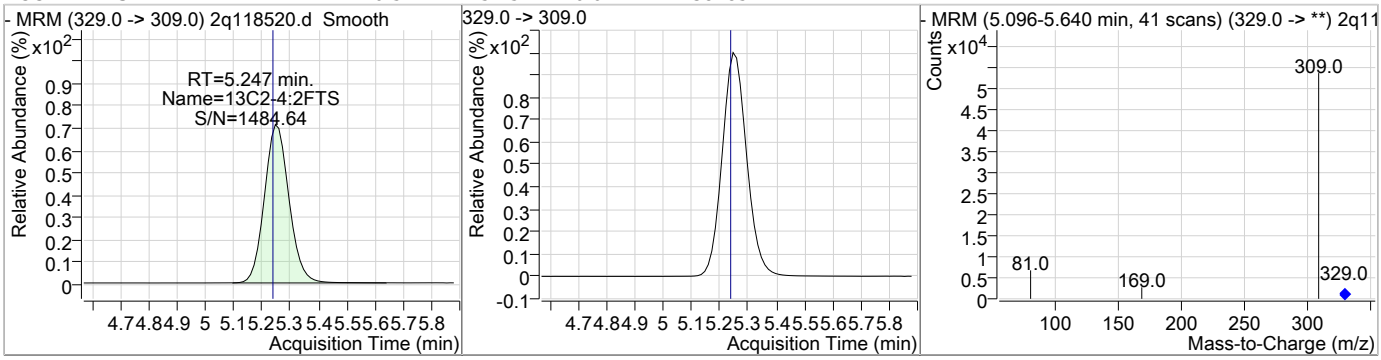
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	18.08	4.36	0.04	27953	299.0 -> 99.0	37.9	19.0	57.0



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	10.19	4.35	0.03	6122				

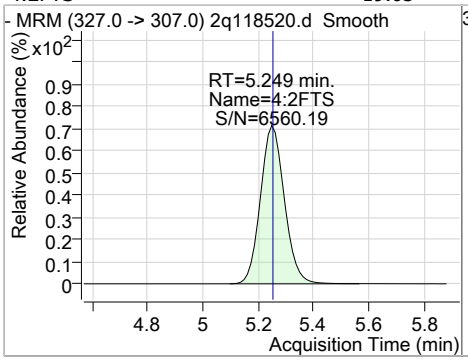


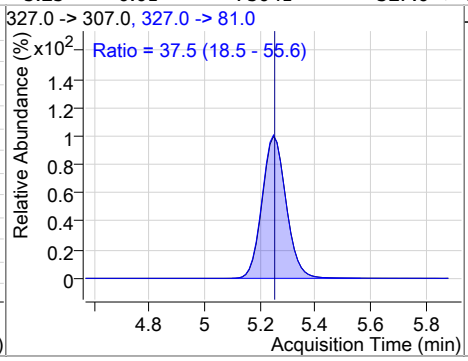
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	10.51	5.25	0.01	38785				

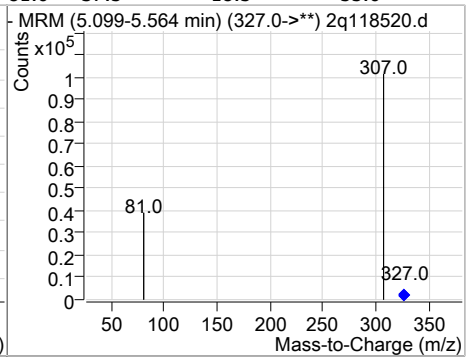


Perfluorinated Compounds by LC/MS/MS

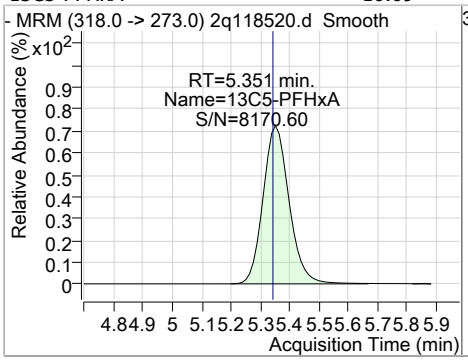
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	19.05	5.25	0.01	75041	327.0 -> 81.0	37.5	18.5	55.6

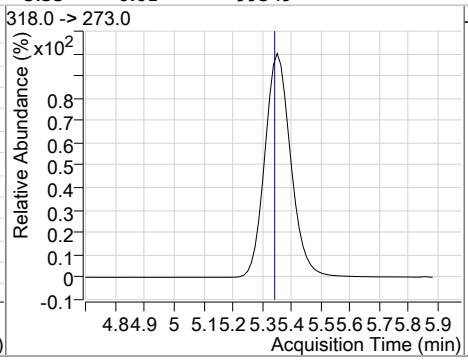


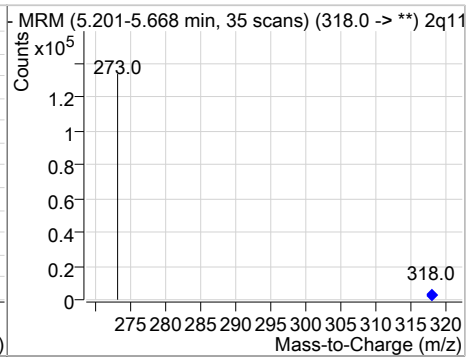




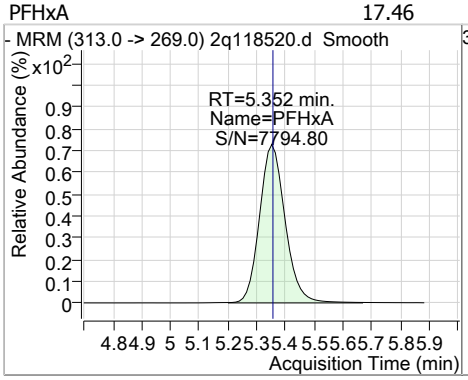
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	10.09	5.35	0.01	99549				

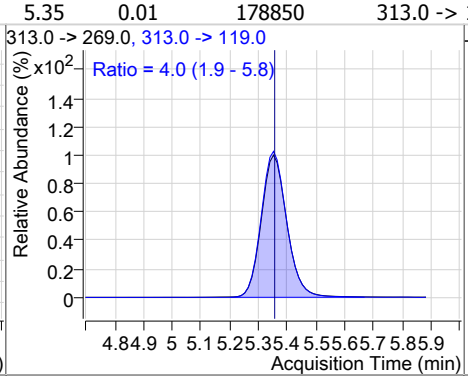


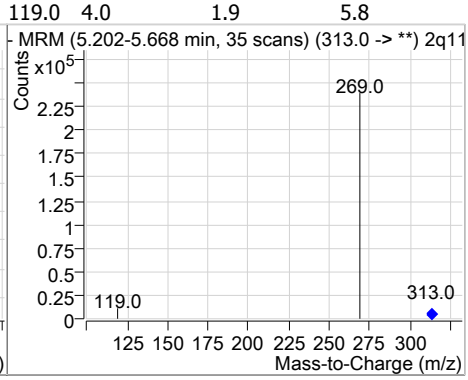




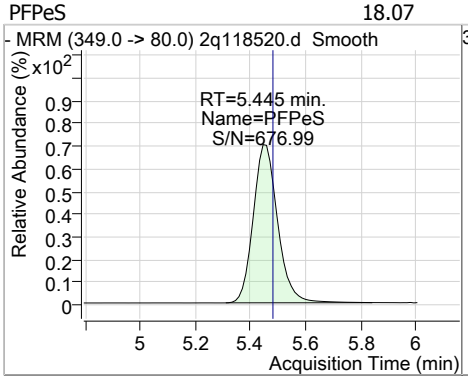
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	17.46	5.35	0.01	178850	313.0 -> 119.0	4.0	1.9	5.8

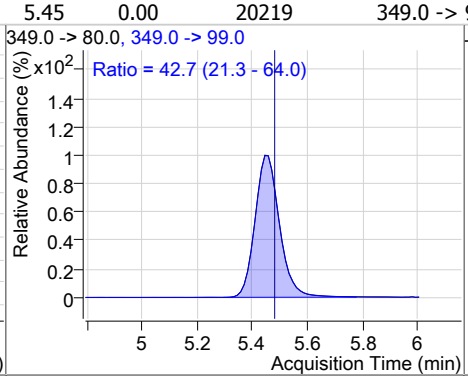


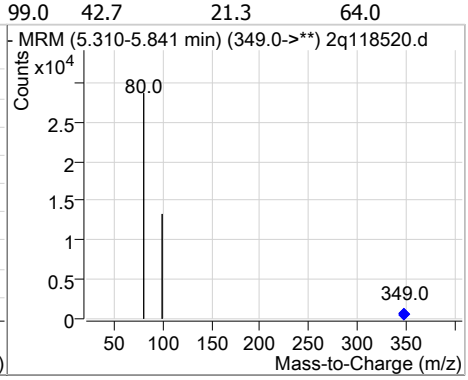




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	18.07	5.45	0.00	20219	349.0 -> 99.0	42.7	21.3	64.0

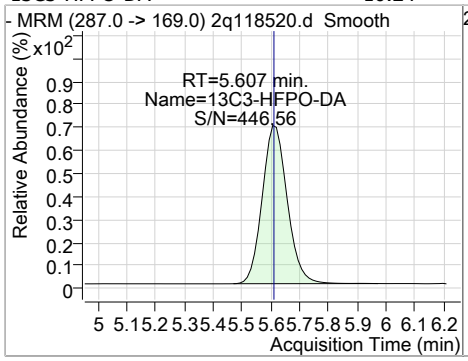


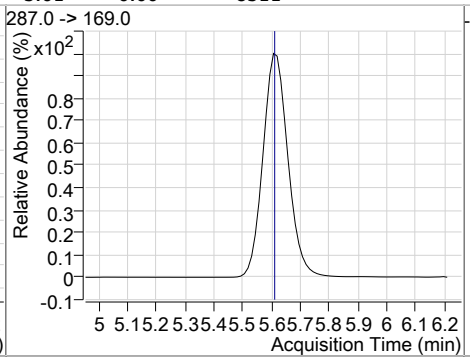


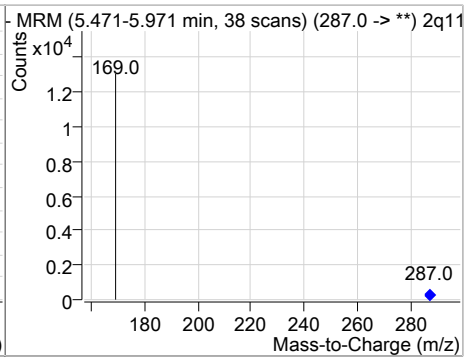


Perfluorinated Compounds by LC/MS/MS

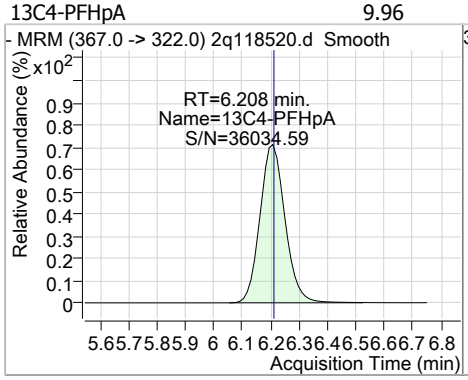
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	10.24	5.61	0.00	8511				

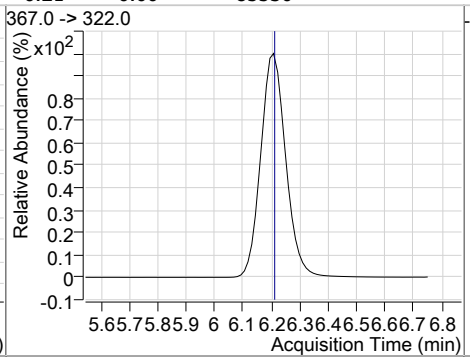


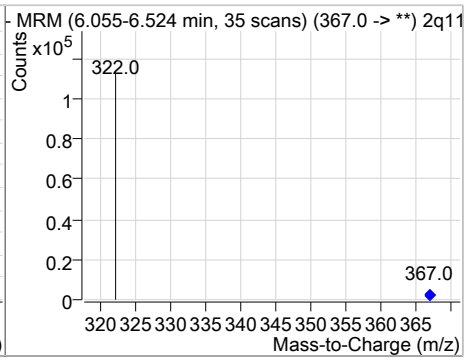




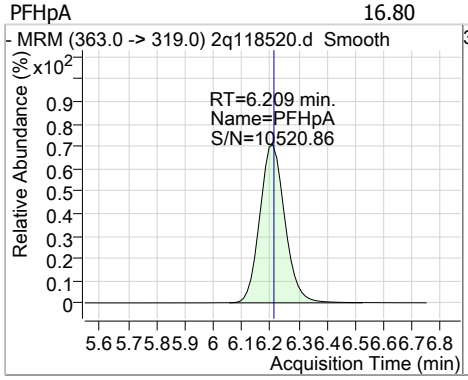
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	9.96	6.21	0.00	85530				

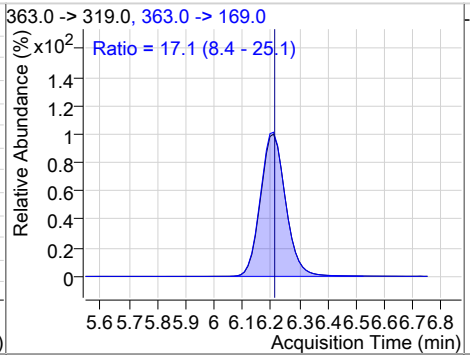


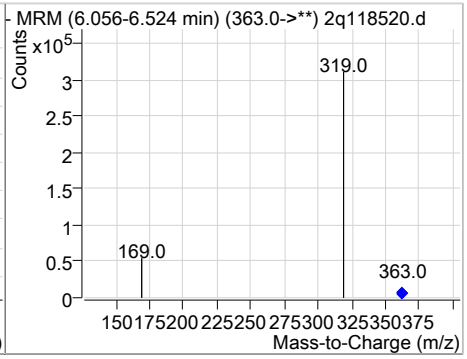




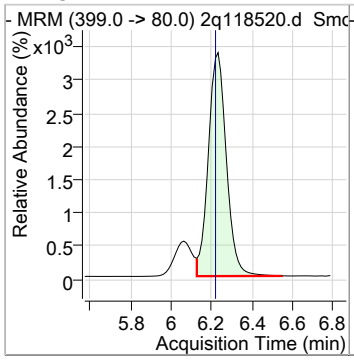
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	16.80	6.21	0.00	237543	363.0 -> 169.0	17.1	8.4	25.1

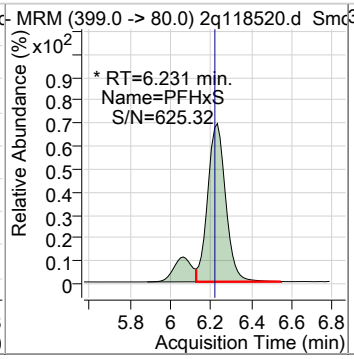


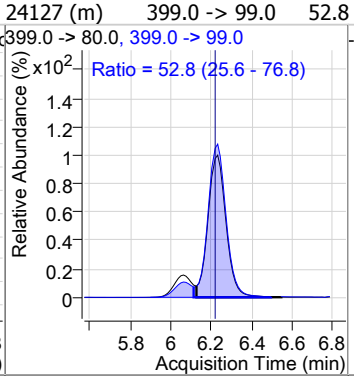


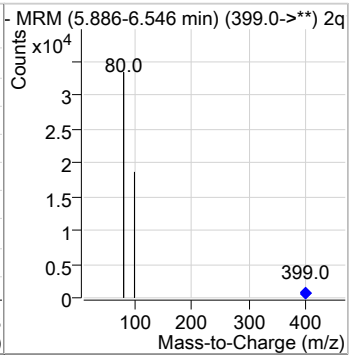


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	18.80	6.23	0.00	24127 (m)	399.0 -> 99.0	52.8	25.6	76.8



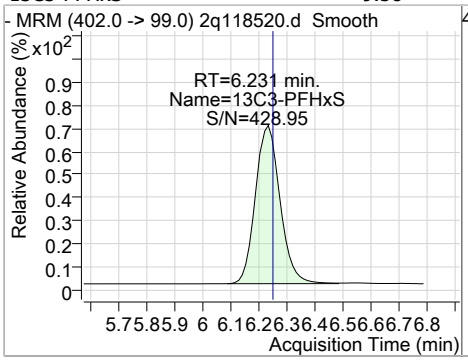


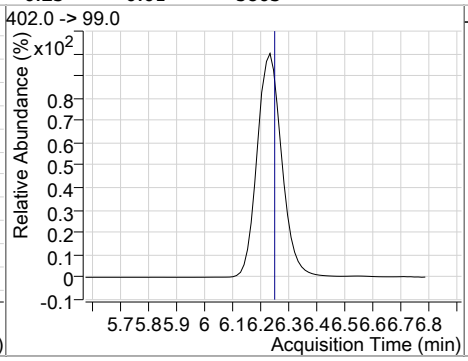


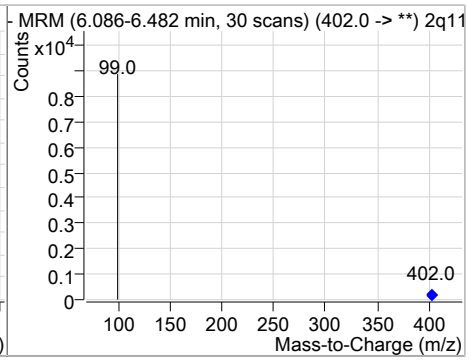


Perfluorinated Compounds by LC/MS/MS

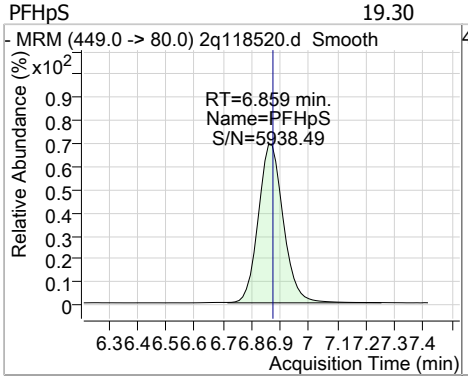
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	9.58	6.23	-0.01	5863				

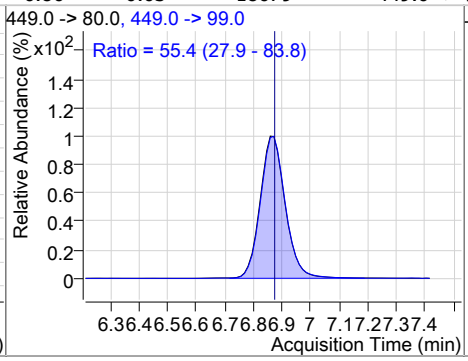


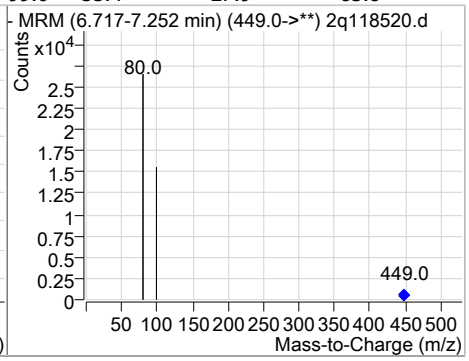




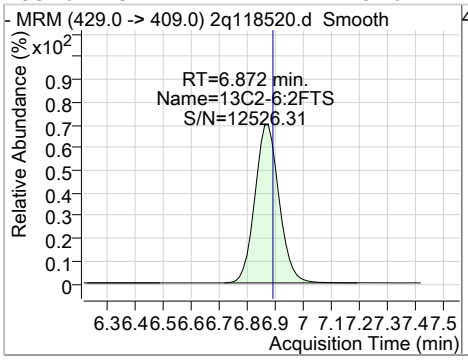
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	19.30	6.86	-0.03	18679	449.0 -> 99.0	55.4	27.9	83.8

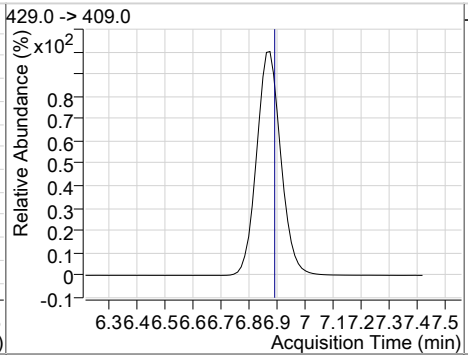


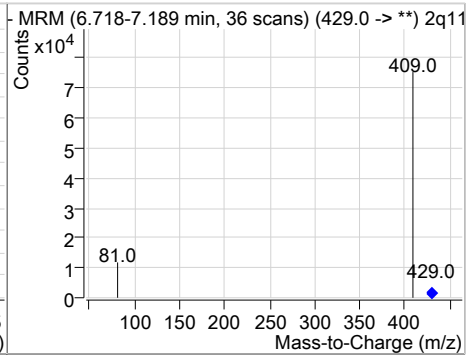




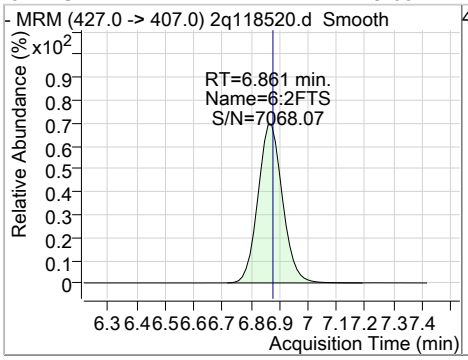
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	9.76	6.87	-0.01	56024				

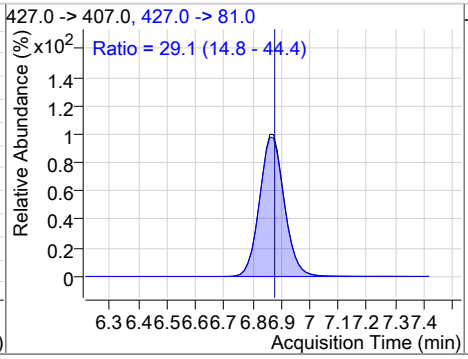


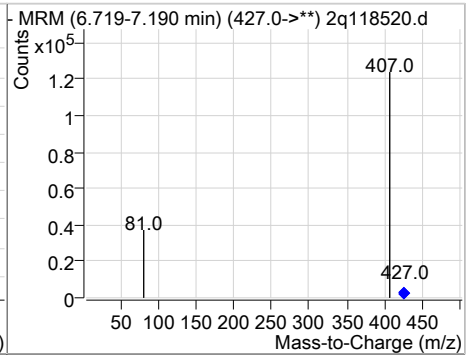




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	19.00	6.86	-0.03	92869	427.0 -> 81.0	29.1	14.8	44.4

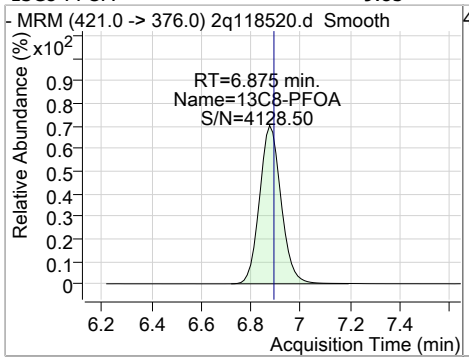


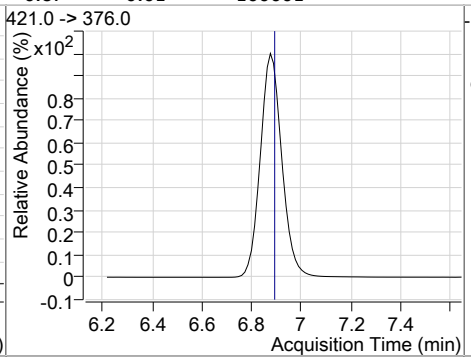


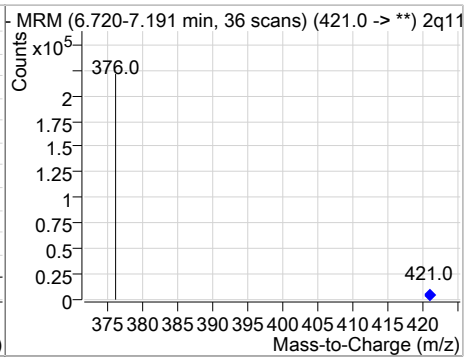


Perfluorinated Compounds by LC/MS/MS

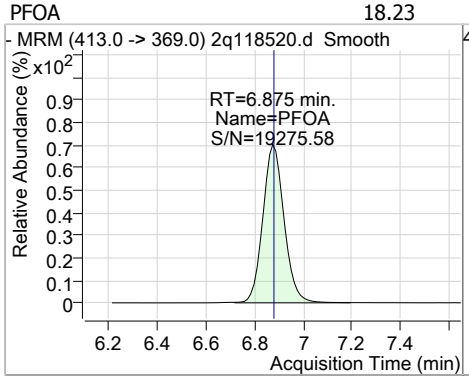
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	9.85	6.87	-0.01	166661				

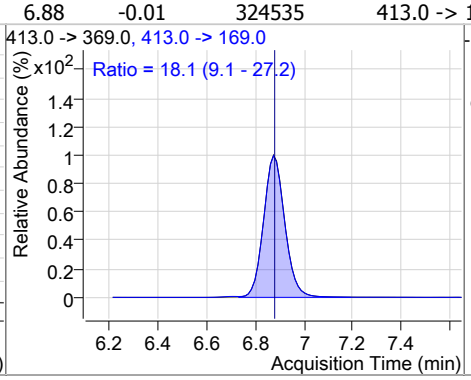


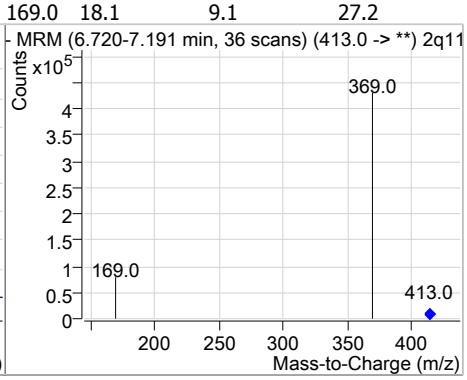




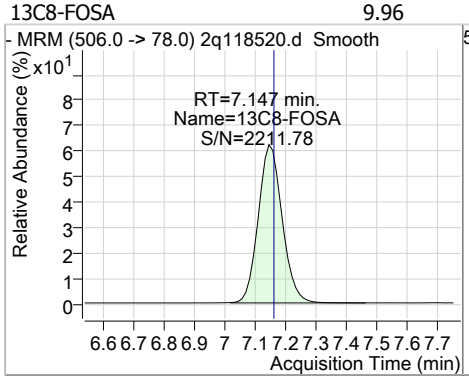
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	18.23	6.88	-0.01	324535	413.0 -> 169.0	18.1	9.1	27.2

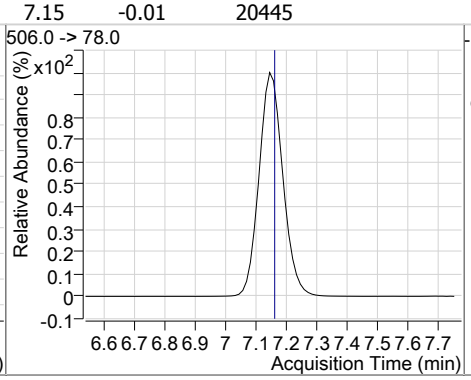


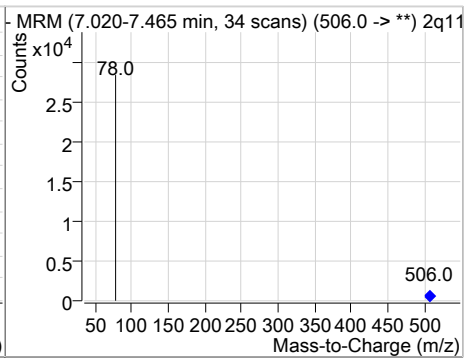




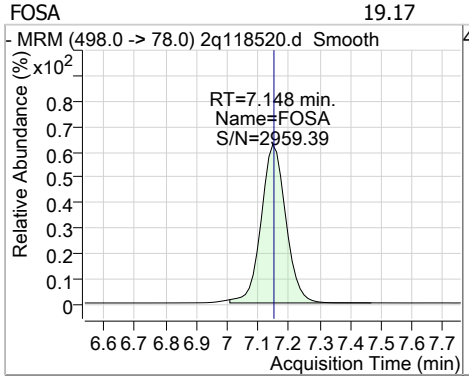
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	9.96	7.15	-0.01	20445				

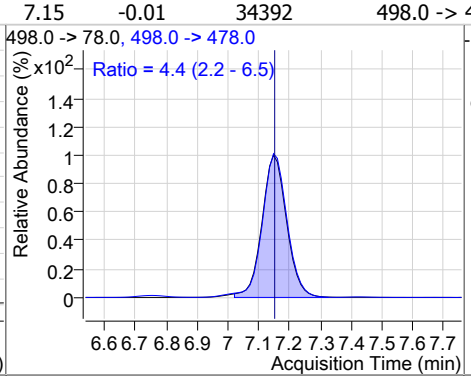


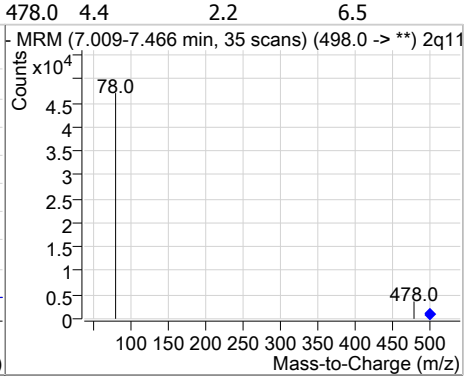




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	19.17	7.15	-0.01	34392	498.0 -> 478.0	4.4	2.2	6.5

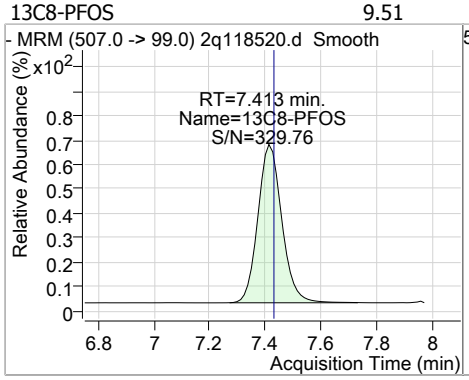


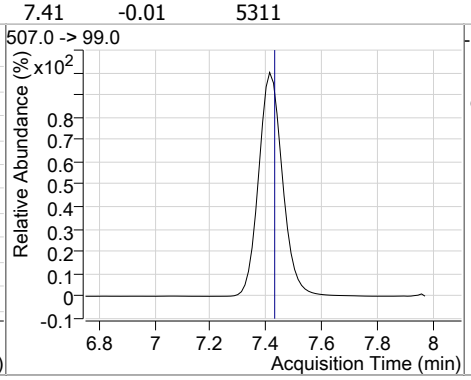


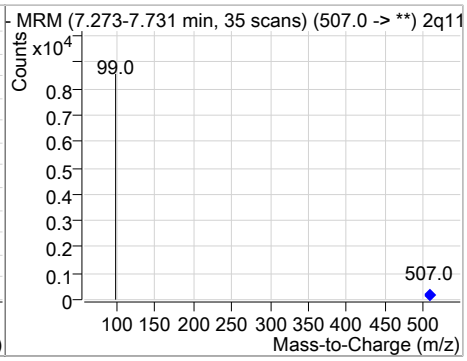


Perfluorinated Compounds by LC/MS/MS

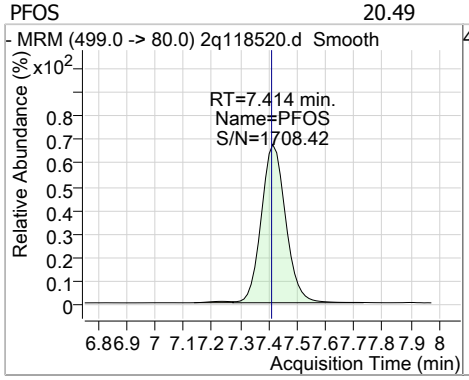
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	9.51	7.41	-0.01	5311				

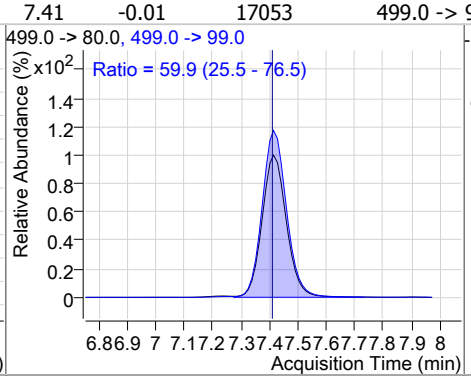


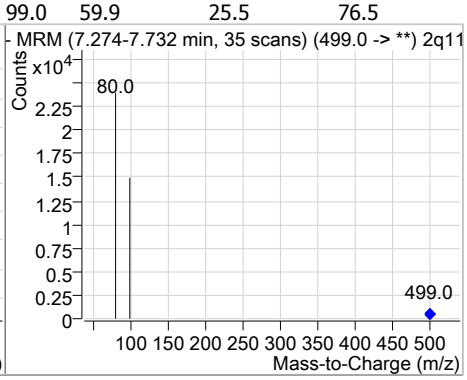




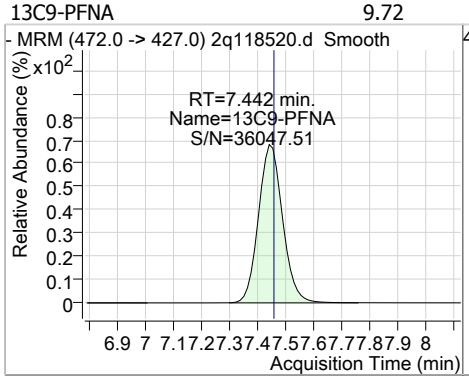
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	20.49	7.41	-0.01	17053	499.0 -> 99.0	59.9	25.5	76.5

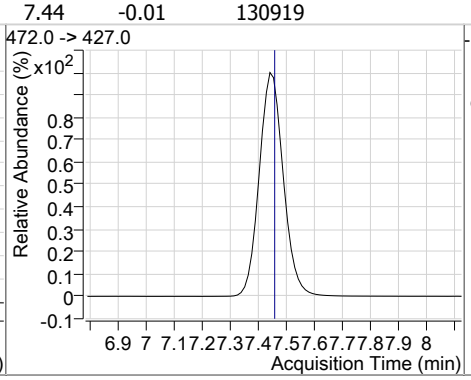


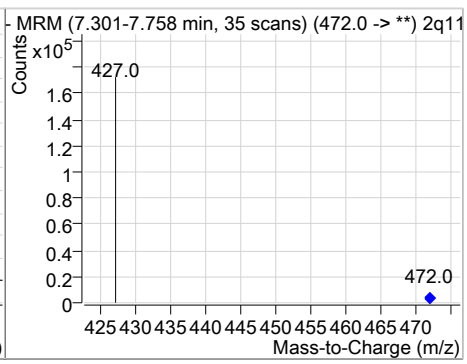




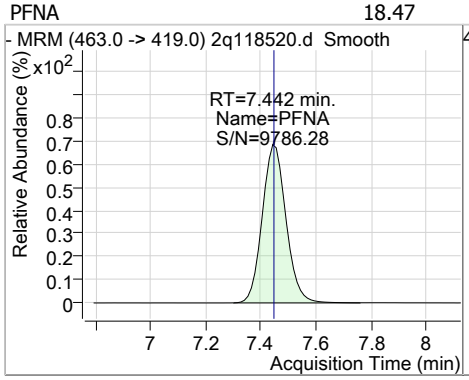
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	9.72	7.44	-0.01	130919				

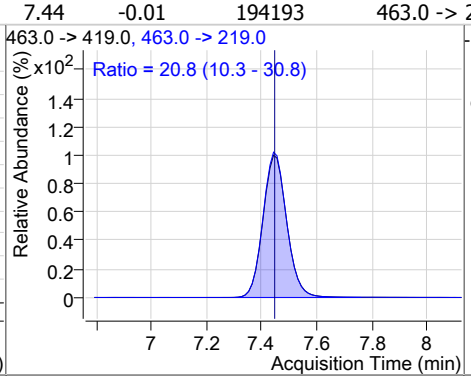


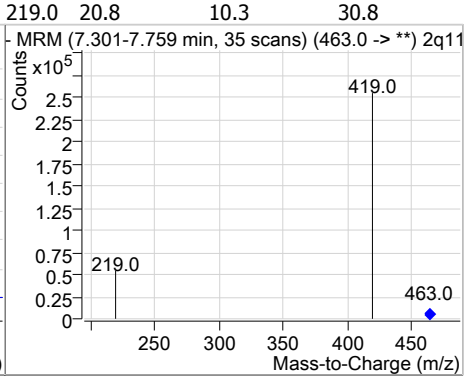




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	18.47	7.44	-0.01	194193	463.0 -> 219.0	20.8	10.3	30.8

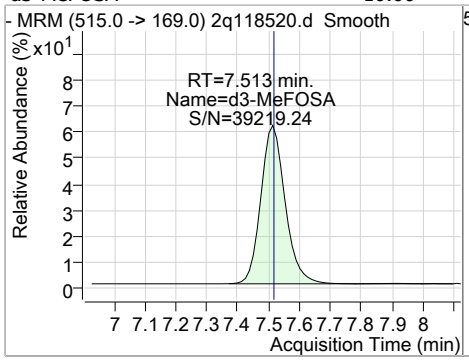


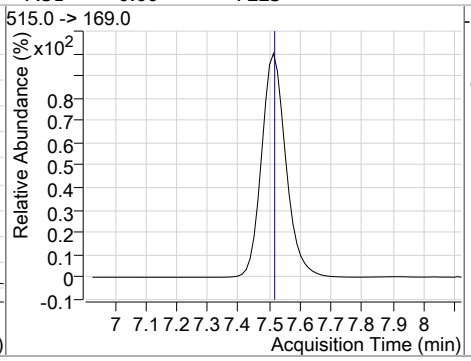


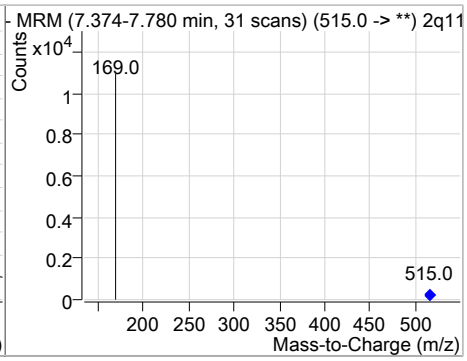


Perfluorinated Compounds by LC/MS/MS

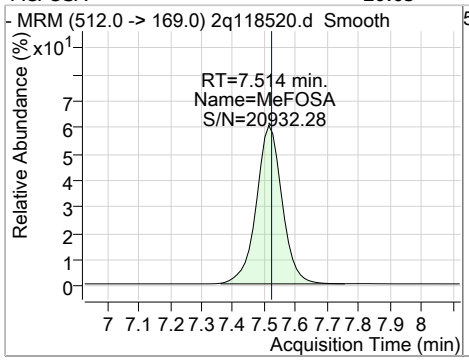
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	10.06	7.51	0.00	7223				

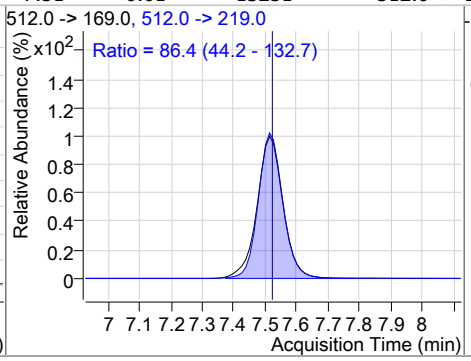


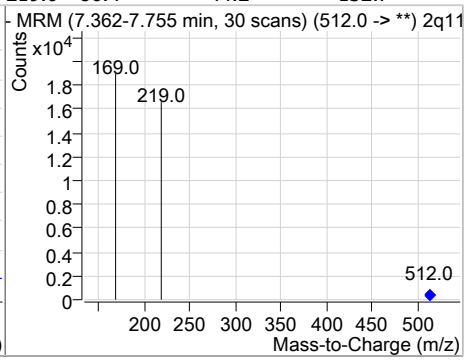




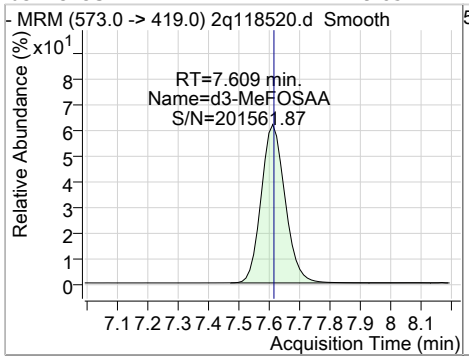
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	20.65	7.51	-0.01	13251	512.0 -> 219.0	86.4	44.2	132.7

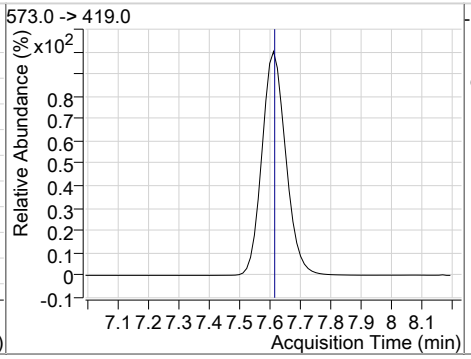


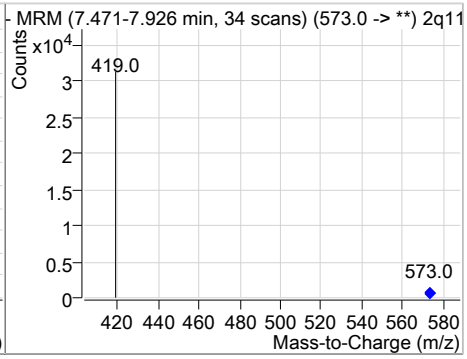




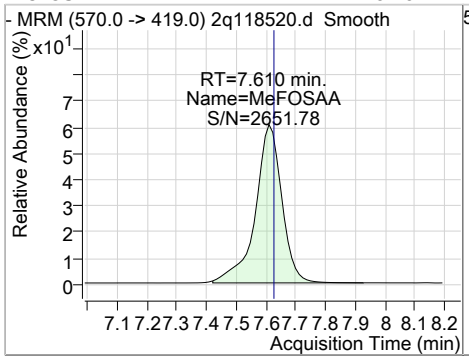
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	9.85	7.61	0.00	22520				

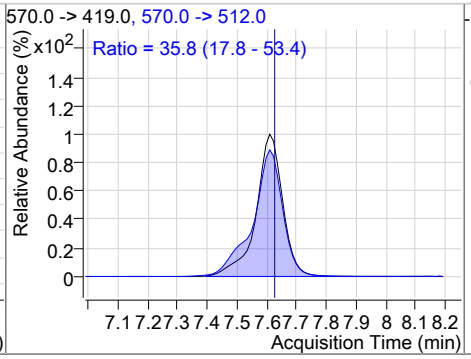


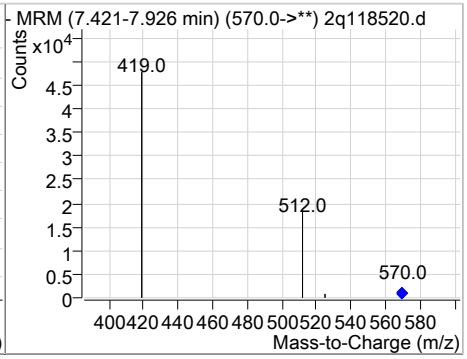




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	18.28	7.61	-0.01	34825	570.0 -> 512.0	35.8	17.8	53.4

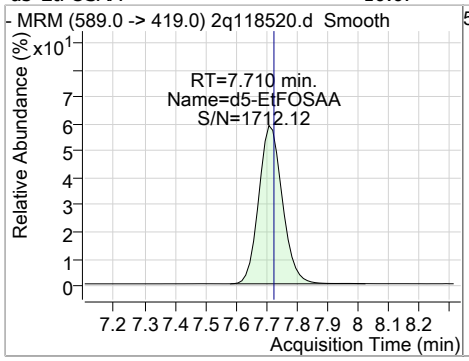


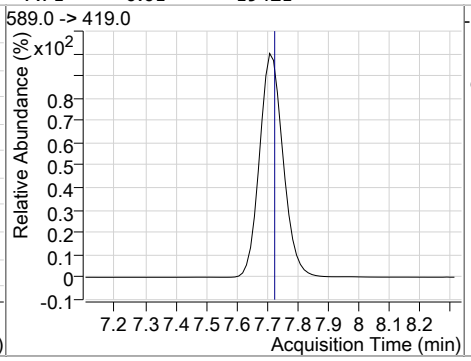


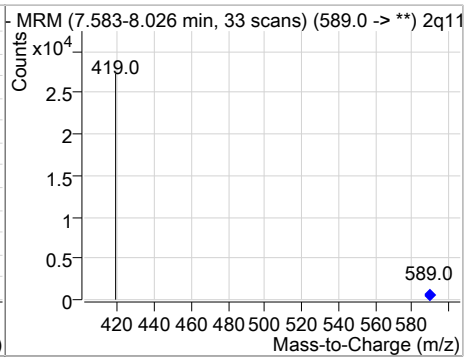


Perfluorinated Compounds by LC/MS/MS

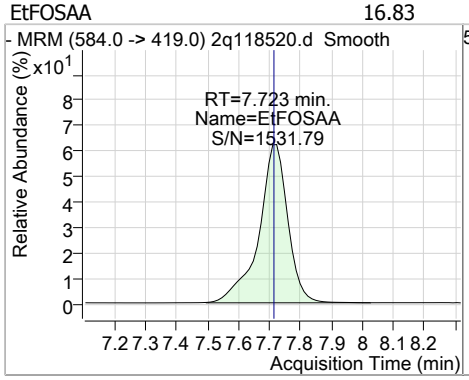
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	10.07	7.71	-0.01	19421				

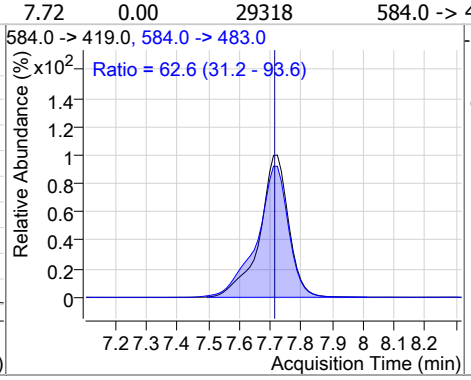


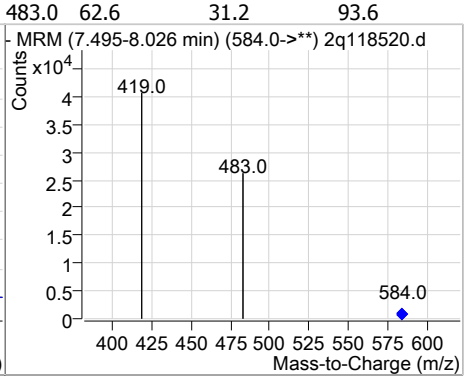




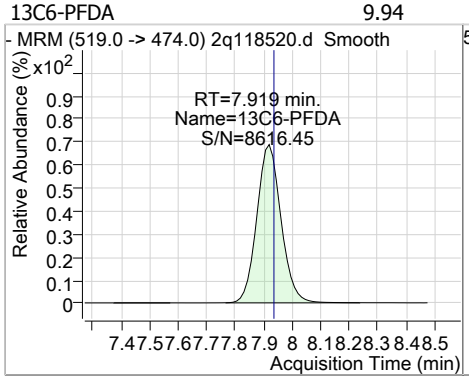
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	16.83	7.72	0.00	29318	584.0 -> 483.0	62.6	31.2	93.6

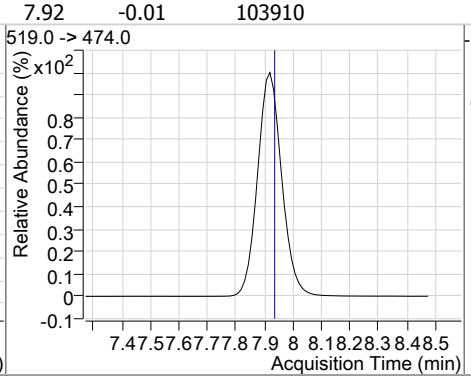


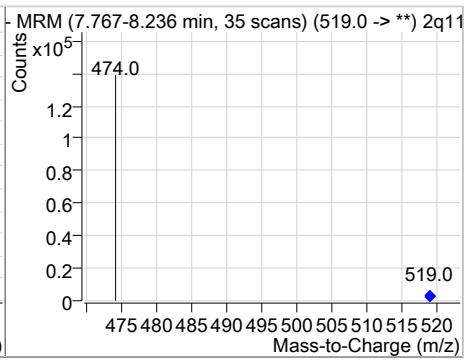




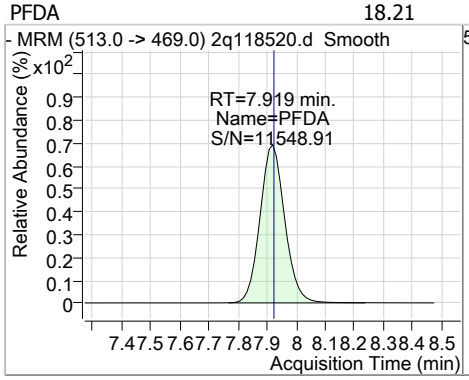
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	9.94	7.92	-0.01	103910				

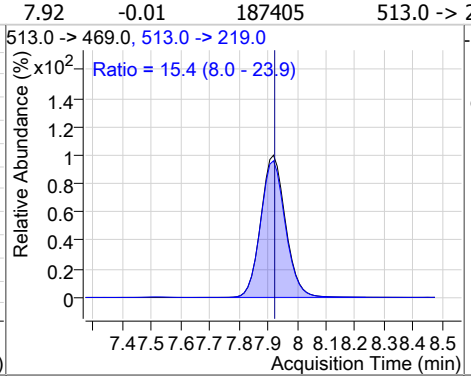


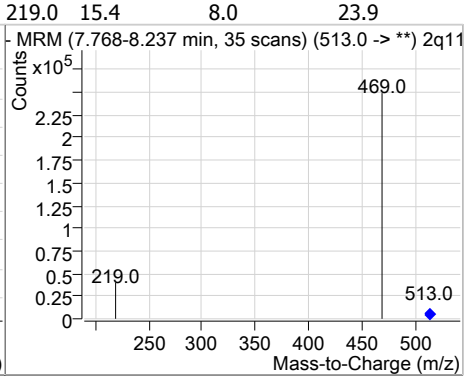




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	18.21	7.92	-0.01	187405	513.0 -> 219.0	15.4	8.0	23.9

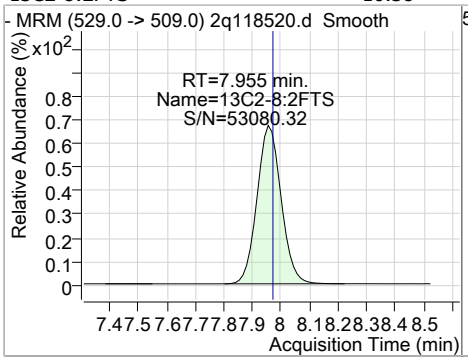


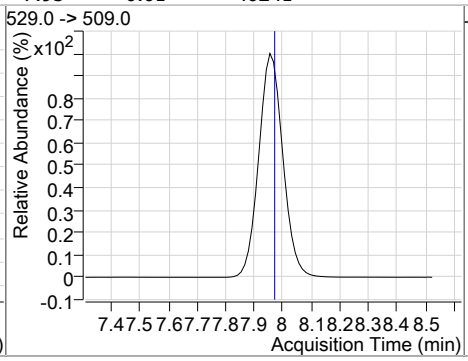


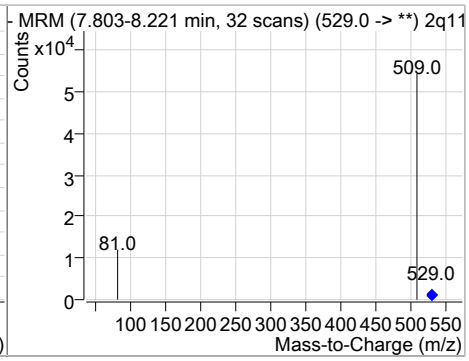


Perfluorinated Compounds by LC/MS/MS

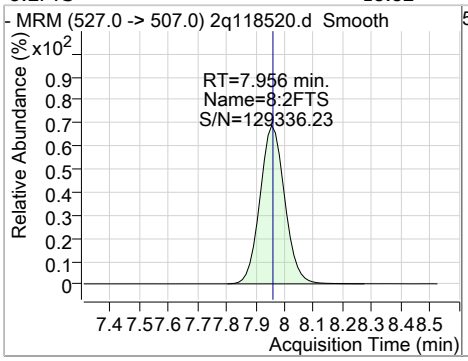
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	10.38	7.95	-0.01	40241				

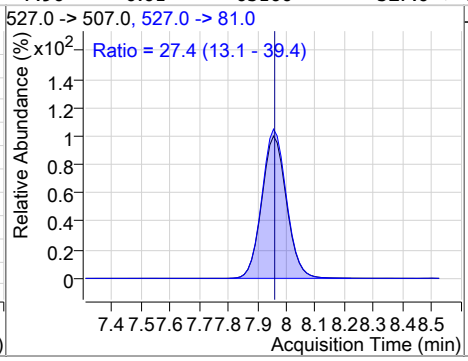


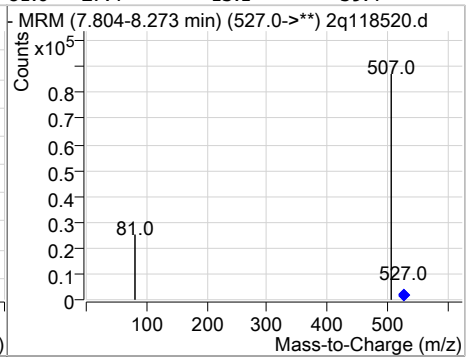




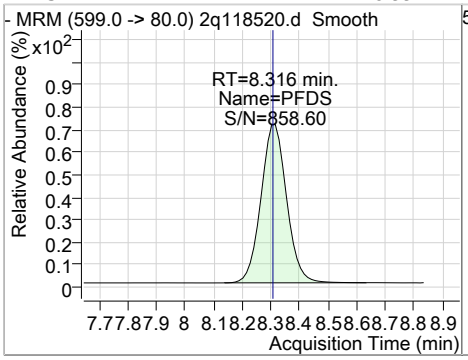
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	18.82	7.96	-0.01	65100	527.0 -> 81.0	27.4	13.1	39.4

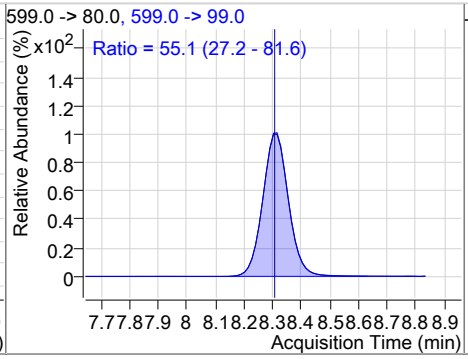


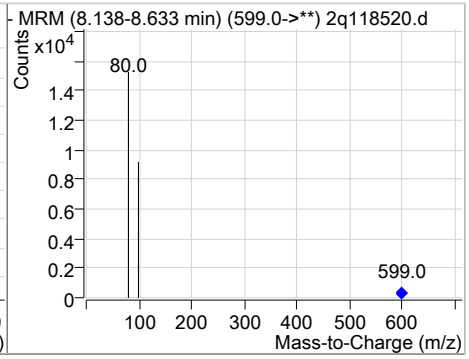




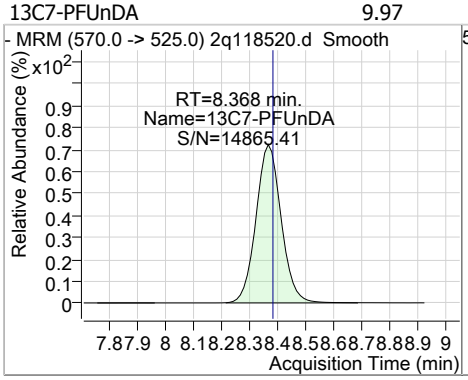
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	18.99	8.32	0.00	10200	599.0 -> 99.0	55.1	27.2	81.6

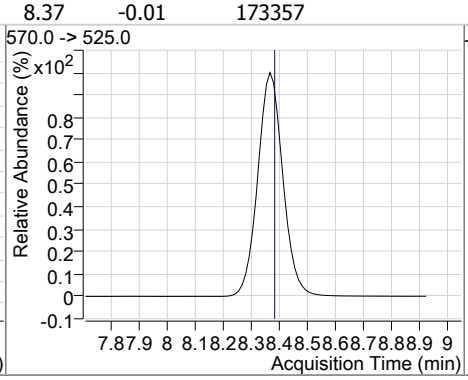


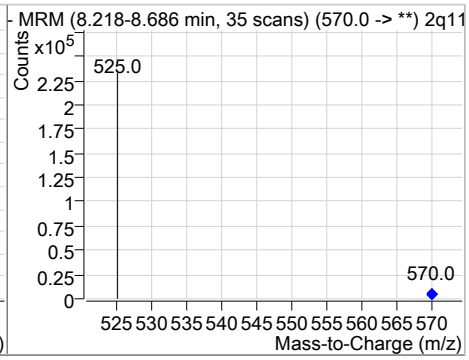




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	9.97	8.37	-0.01	173357				

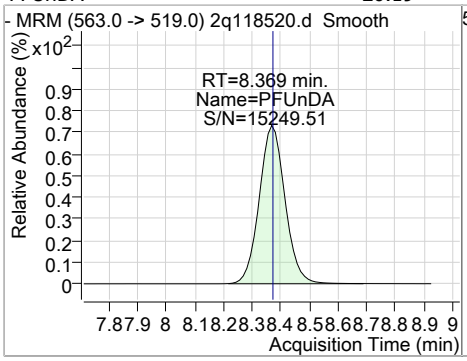


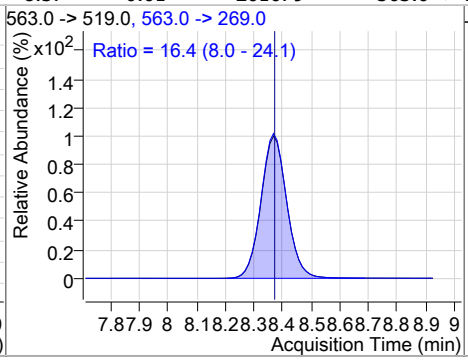


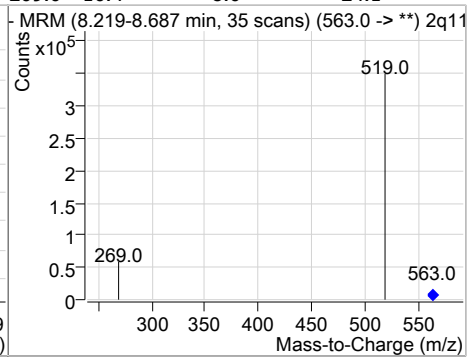


Perfluorinated Compounds by LC/MS/MS

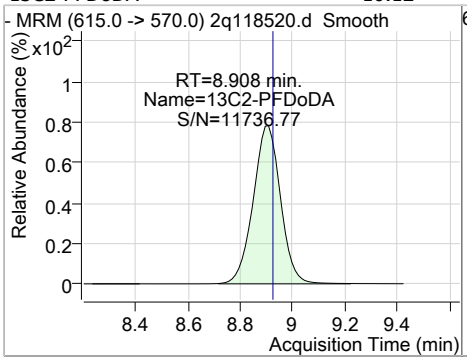
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	20.19	8.37	-0.01	261079	563.0 -> 269.0	16.4	8.0	24.1

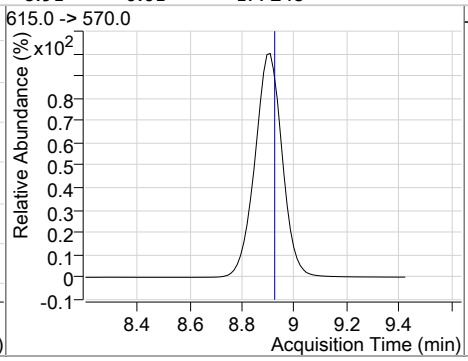


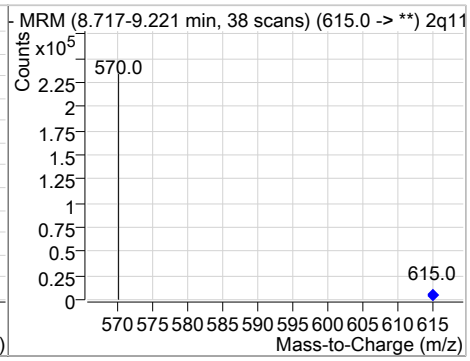




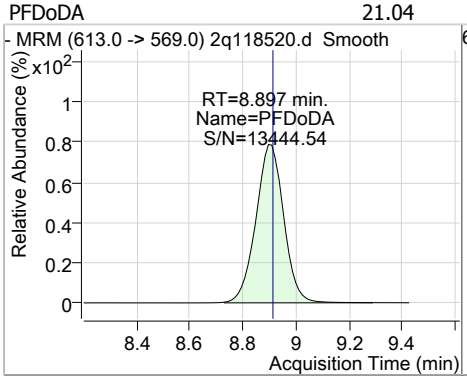
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	10.12	8.91	-0.01	177248				

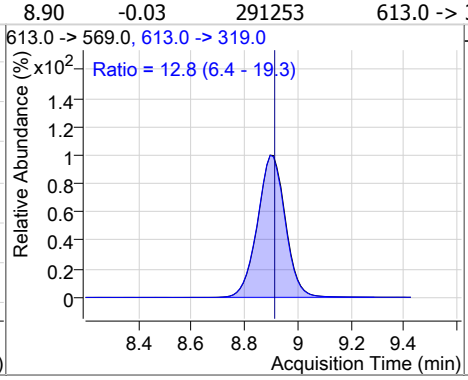


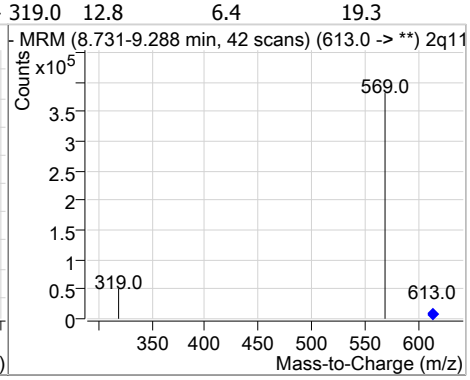




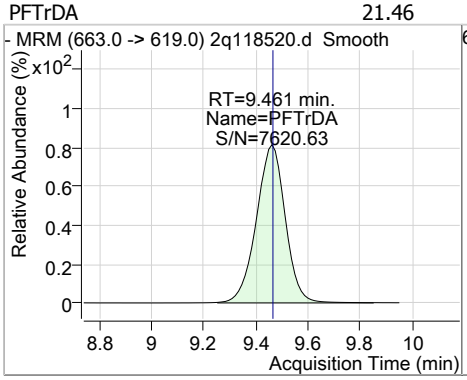
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	21.04	8.90	-0.03	291253	613.0 -> 319.0	12.8	6.4	19.3

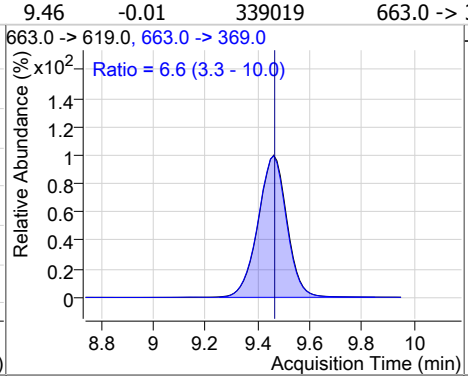


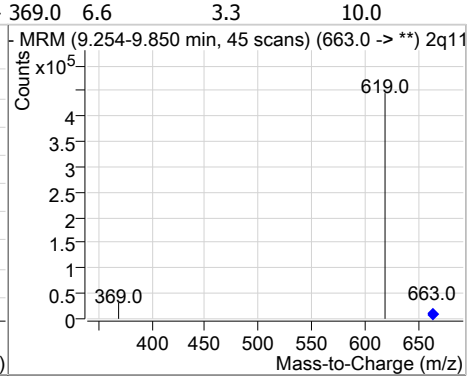




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	21.46	9.46	-0.01	339019	663.0 -> 369.0	6.6	3.3	10.0

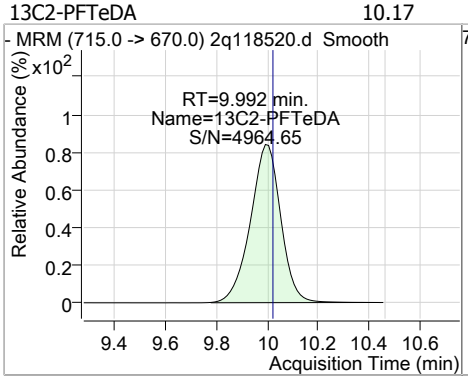


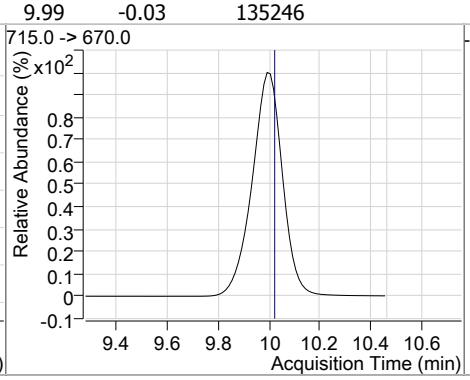


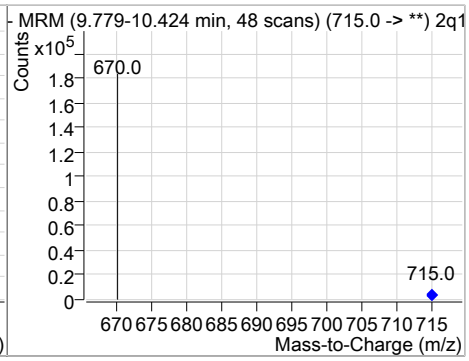


Perfluorinated Compounds by LC/MS/MS

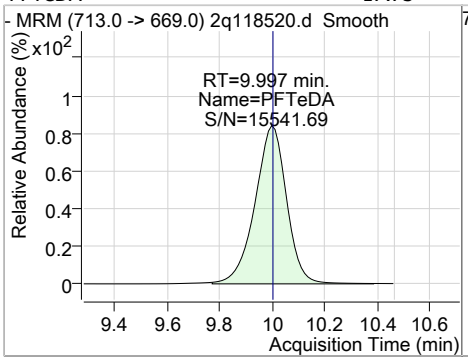
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	10.17	9.99	-0.03	135246				

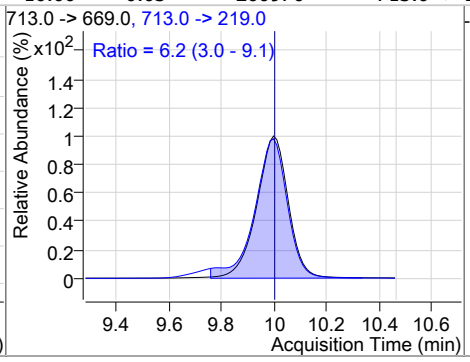


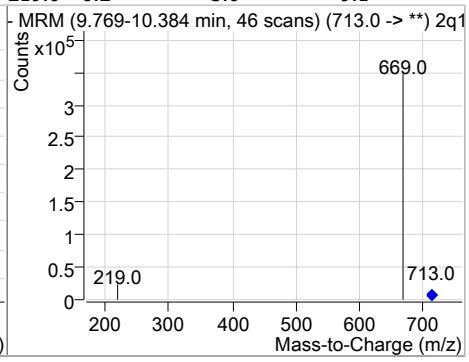




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	17.73	10.00	-0.03	260976	713.0 -> 219.0	6.2	3.0	9.1







Manual Integration Approval Summary

Sample Number: S2Q1691-ICV1691
Lab FileID: 2Q118520.D
Injection Time: 01/02/24 15:19
Method: EPA 537M QSM5.3 B-15
Analyst approved: 01/03/24 15:12 Lindsay Ritner
Supervisor approved: 01/04/24 11:31 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.23	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Natasha Gumtie 01/05/24 17:02

Perfluorinated Compounds by LC/MS/MS

Data File : 2q118602.d
Operator : lindsayr
Acq. Method : 537_ID.m
Acq. Date-Time : 1/4/2024 3:46:05 PM
Sample Name : cc1691-20
Vial : P1-A7
DA Method File : ID_010224_S2Q1691.quantmethod.xml
Batch Name : s2q1693.batch.bin
Sample Information : op401,S2Q1693,250,,,1.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M5-EtFOSAA	7.722	589.0 -> 419.0	22194	10.00	µg/L	0.000
M4-PFBA	2.240	217.0 -> 172.0	56752	10.00	µg/L	0.000
M5-PFPeA	4.049	268.0 -> 223.0	87908	10.00	µg/L	-0.013
M5-PFHxA	5.326	318.0 -> 273.0	109490	10.00	µg/L	-0.013
M4-PFHpA	6.195	367.0 -> 322.0	95891	10.00	µg/L	-0.013
M8-PFOA	6.875	421.0 -> 376.0	187318	10.00	µg/L	-0.013
M9-PFNA	7.455	472.0 -> 427.0	145749	10.00	µg/L	0.000
M6-PFDA	7.931	519.0 -> 474.0	114771	10.00	µg/L	0.000
M7-PFUnDA	8.381	570.0 -> 525.0	192620	10.00	µg/L	0.000
M2-PFDoDA	8.920	615.0 -> 570.0	193320	10.00	µg/L	0.000
M2-PFTeDA	10.017	715.0 -> 670.0	149124	10.00	µg/L	0.000
M8-FOSA	7.147	506.0 -> 78.0	23025	10.00	µg/L	-0.013
M3-PFBS	4.317	302.0 -> 99.0	6447	10.00	µg/L	-0.013
M3-PFHxS	6.218	402.0 -> 99.0	6479	10.00	µg/L	-0.025
M8-PFOS	7.413	507.0 -> 99.0	6131	10.00	µg/L	-0.014
M2-4:2FTS	5.221	329.0 -> 309.0	43008	10.00	µg/L	-0.013
M2-6:2FTS	6.860	429.0 -> 409.0	62057	10.00	µg/L	-0.025
M2-8:2FTS	7.967	529.0 -> 509.0	42947	10.00	µg/L	0.000
M3-MeFOSAA	7.609	573.0 -> 419.0	26739	10.00	µg/L	0.000
M3-HFPO-DA	5.582	287.0 -> 169.0	9237	10.00	µg/L	-0.025
M3-MeFOSA	7.513	515.0 -> 169.0	8139	10.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	5.221	329.0 -> 309.0	43008	11.66	µg/L	-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 116.6%		
13C2-6:2FTS	6.860	429.0 -> 409.0	62057	10.81	µg/L	-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 108.1%		
13C2-8:2FTS	7.967	529.0 -> 509.0	42947	11.08	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 110.8%		
13C2-PFDoDA	8.920	615.0 -> 570.0	193320	11.04	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 110.4%		
13C2-PFTeDA	10.017	715.0 -> 670.0	149124	11.22	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 112.2%		
13C3-PFBS	4.317	302.0 -> 99.0	6447	10.73	µg/L	-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 107.3%		
13C3-PFHxS	6.218	402.0 -> 99.0	6479	10.58	µg/L	-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 105.8%		
13C4-PFBA	2.240	217.0 -> 172.0	56752	10.99	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 109.9%		
13C4-PFHpA	6.195	367.0 -> 322.0	95891	11.16	µg/L	-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 111.6%		
d5-EtFOSAA	7.722	589.0 -> 419.0	22194	11.50	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 115.0%		
13C5-PFHxA	5.326	318.0 -> 273.0	109490	11.10	µg/L	-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 111.0%		
13C5-PFPeA	4.049	268.0 -> 223.0	87908	11.06	µg/L	-0.013

Perfluorinated Compounds by LC/MS/MS

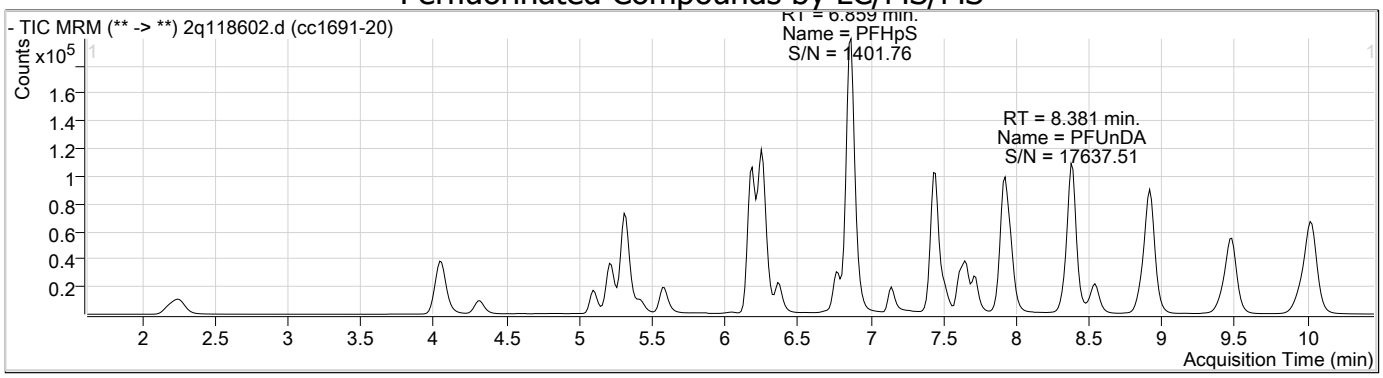
Compound	RT	Transition	Response	Conc. Units		Dev(Min)
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 110.6%		
13C6-PFDA	7.931	519.0 -> 474.0	114771	10.98 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 109.8%		
13C7-PFUnDA	8.381	570.0 -> 525.0	192620	11.08 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 110.8%		
13C8-FOSA	7.147	506.0 -> 78.0	23025	11.21 µg/L		-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 112.1%		
13C8-PFOA	6.875	421.0 -> 376.0	187318	11.07 µg/L		-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 110.7%		
13C8-PFOS	7.413	507.0 -> 99.0	6131	10.98 µg/L		-0.014
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 109.8%		
13C9-PFNA	7.455	472.0 -> 427.0	145749	10.82 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 108.2%		
d3-MeFOSAA	7.609	573.0 -> 419.0	26739	11.69 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 116.9%		
13C3-HFPO-DA	5.582	287.0 -> 169.0	9237	11.11 µg/L		-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 111.1%		
d3-MeFOSA	7.513	515.0 -> 169.0	8139	11.33 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 113.3%		
Target Compounds						QValue
4:2FTS	5.212	327.0 -> 307.0	81382	18.63 µg/L		99
		327.0 -> 81.0	29697			
6:2FTS	6.861	427.0 -> 407.0	106655	19.70 µg/L		100
		427.0 -> 81.0	31769			
8:2FTS	7.968	527.0 -> 507.0	69778	18.90 µg/L		99
		527.0 -> 81.0	18609			
EtFOSAA	7.723	584.0 -> 419.0	37260	18.72 µg/L		99
		584.0 -> 483.0	23530			
FOSA	7.148	498.0 -> 78.0	37019	18.33 µg/L		100
		498.0 -> 478.0	1565			
MeFOSAA	7.610	570.0 -> 419.0	42795	18.92 µg/L		99
		570.0 -> 512.0	15377			
PFBA	2.246	213.0 -> 169.0	33588	18.80 µg/L		100
PFBS	4.319	299.0 -> 80.0	30498	18.73 µg/L		100
		299.0 -> 99.0	11582			
PFDA	7.919	513.0 -> 469.0	209298	18.41 µg/L		99
		513.0 -> 219.0	32711			
PFDoDA	8.922	613.0 -> 569.0	281973	18.68 µg/L		99
		613.0 -> 319.0	35588			
PFDS	8.329	599.0 -> 80.0	11227	18.81 µg/L		99
		599.0 -> 99.0	6030			
PFHpA	6.196	363.0 -> 319.0	283264	17.86 µg/L		99
		363.0 -> 169.0	48995			
PFHpS	6.859	449.0 -> 80.0	20198	18.89 µg/L		100
		449.0 -> 99.0	11340			
PFHxA	5.327	313.0 -> 269.0	205219	18.21 µg/L		100
		313.0 -> 119.0	8037			
PFHxS	6.219	399.0 -> 80.0	26081	18.39 µg/L	m	100
		399.0 -> 99.0	13444			
PFNA	7.455	463.0 -> 419.0	219087	18.72 µg/L		100
		463.0 -> 219.0	44839			
PFNS	7.878	549.0 -> 80.0	12042	18.65 µg/L		98
		549.0 -> 99.0	6907			
PFOA	6.875	413.0 -> 369.0	364591	18.22 µg/L		99
		413.0 -> 169.0	65101			
PFOS	7.414	499.0 -> 80.0	18390	19.14 µg/L	m	99

Perfluorinated Compounds by LC/MS/MS

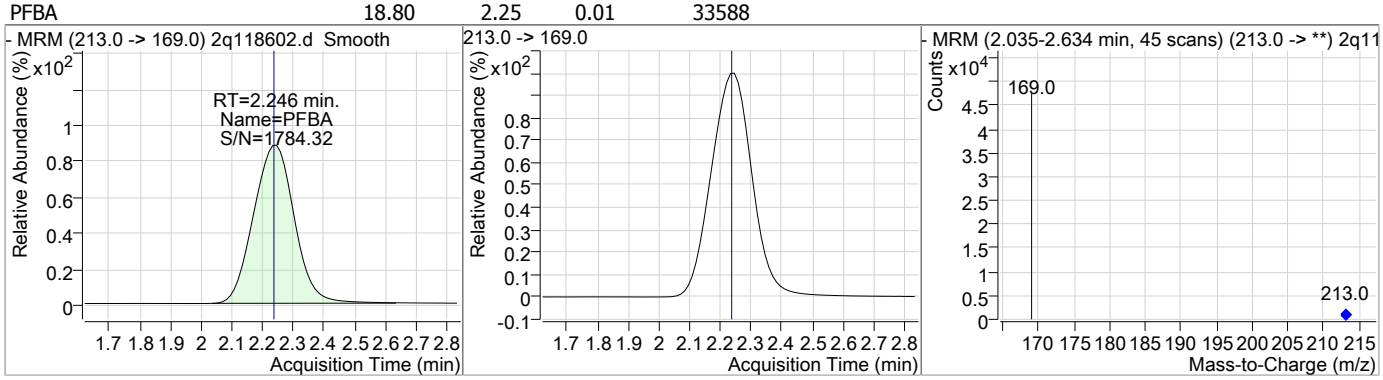
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		499.0 -> 99.0	9309			
PFPeA	4.052	263.0 -> 219.0	125663	18.13	µg/L	100
PFPeS	5.420	349.0 -> 80.0	22497	19.09	µg/L	99
		349.0 -> 99.0	9439			
PFTeDA	10.022	713.0 -> 669.0	302117	18.62	µg/L	100
		713.0 -> 219.0	18514			
PFTrDA	9.474	663.0 -> 619.0	327028	18.98	µg/L	100
		663.0 -> 369.0	21874			
PFUnDA	8.381	563.0 -> 519.0	262290	18.25	µg/L	100
		563.0 -> 269.0	42744			
11Cl-PF3OUdS	8.541	631.0 -> 451.0	77310	18.37	µg/L	99
		633.0 -> 453.0	23687			
9Cl-PF3ONS	7.663	531.0 -> 351.0	88712	18.18	µg/L	99
		533.0 -> 353.0	26923			
ADONA	6.271	377.0 -> 251.0	349045	17.57	µg/L	100
		377.0 -> 85.0	91162			
HFPO-DA	5.589	329.0 -> 169.0	55717	19.46	µg/L	99
		285.0 -> 169.0	15776			
MeFOSA	7.514	512.0 -> 169.0	13061	18.06	µg/L	98
		512.0 -> 219.0	11749			
4-PFECHS	6.768	461.0 -> 381.0	93211	17.52	µg/L	100
		461.0 -> 99.0	32160			
FBSA	5.103	298.0 -> 78.0	58778	17.07	µg/L	99
		298.0 -> 64.0	6329			
FHxSA	6.383	398.0 -> 78.0	61624	18.10	µg/L	100
		398.0 -> 64.0	6677			

 # = Qualifier out of range, m = manually integrated, + = Area summed

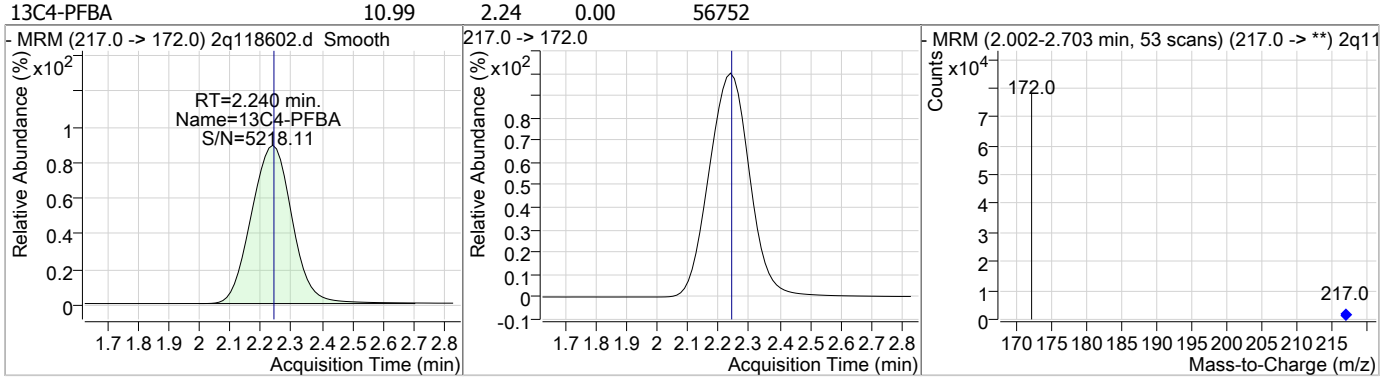
Perfluorinated Compounds by LC/MS/MS



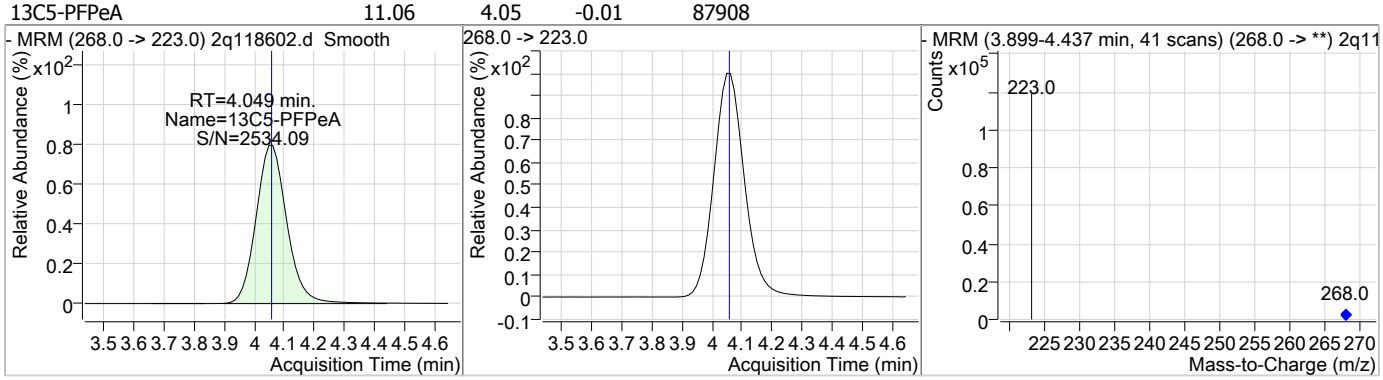
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	18.80	2.25	0.01	33588				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	10.99	2.24	0.00	56752				

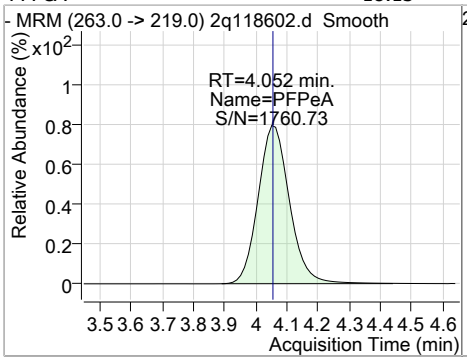


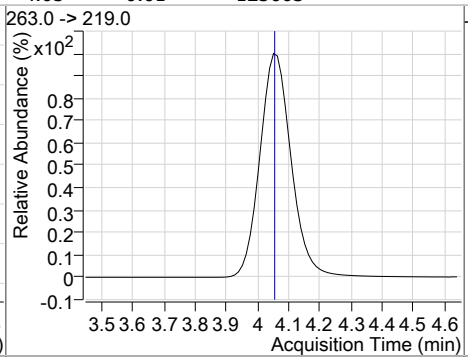
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	11.06	4.05	-0.01	87908				

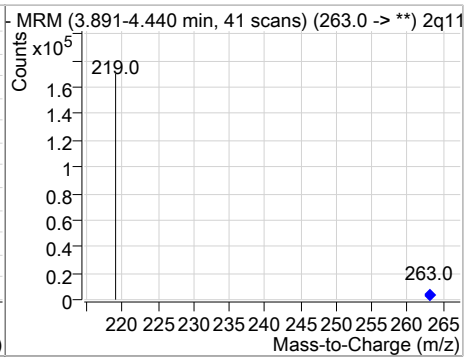


Perfluorinated Compounds by LC/MS/MS

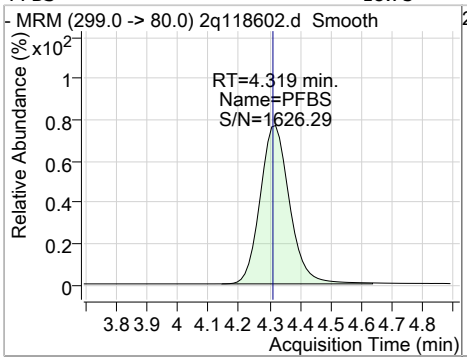
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	18.13	4.05	-0.01	125663				

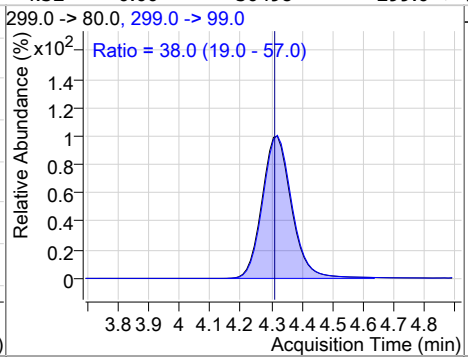


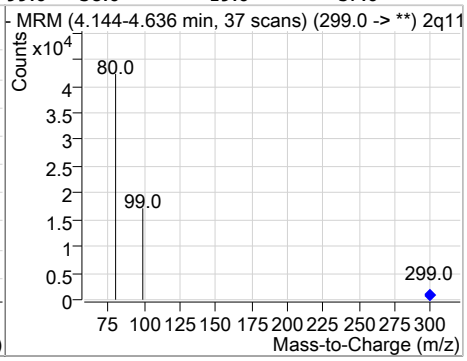




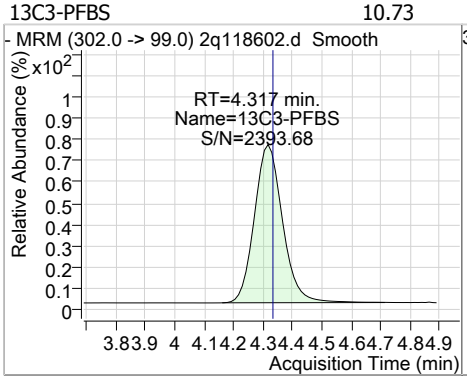
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	18.73	4.32	0.00	30498	299.0 -> 99.0	38.0	19.0	57.0

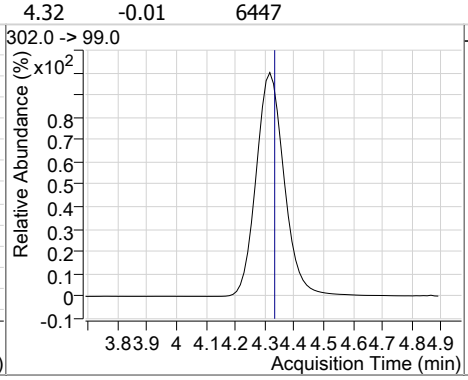


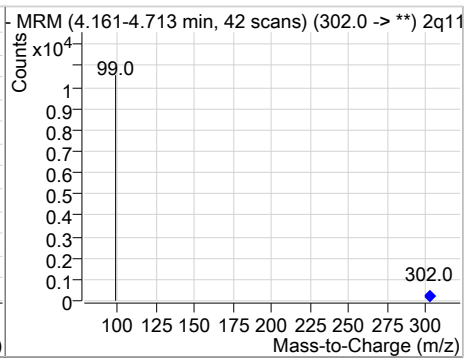




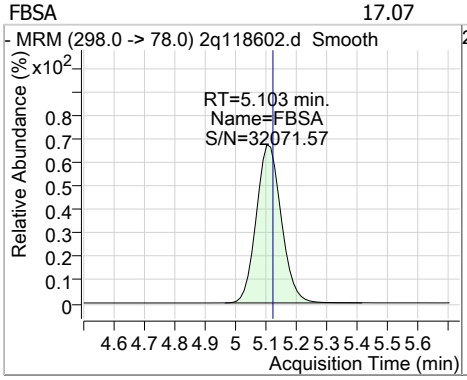
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	10.73	4.32	-0.01	6447				

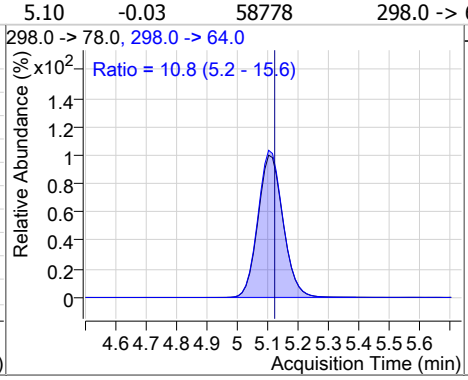


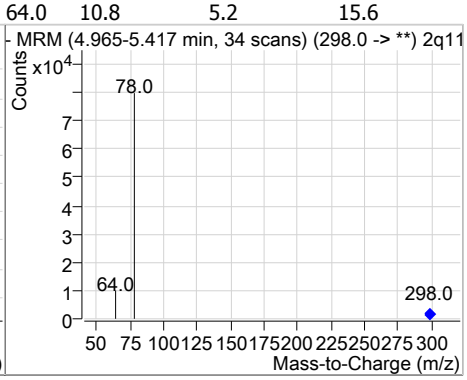




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	17.07	5.10	-0.03	58778	298.0 -> 64.0	10.8	5.2	15.6

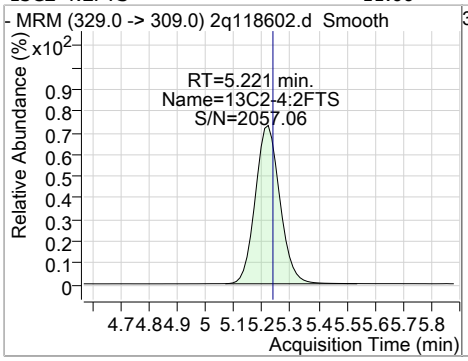


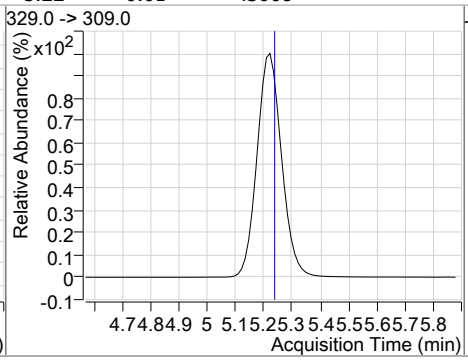


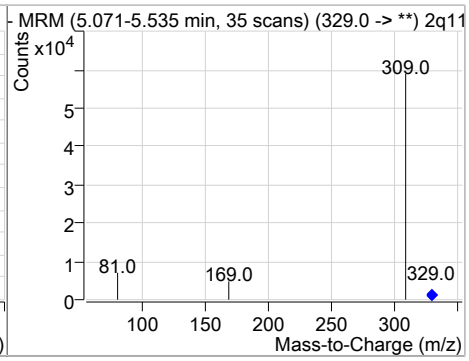


Perfluorinated Compounds by LC/MS/MS

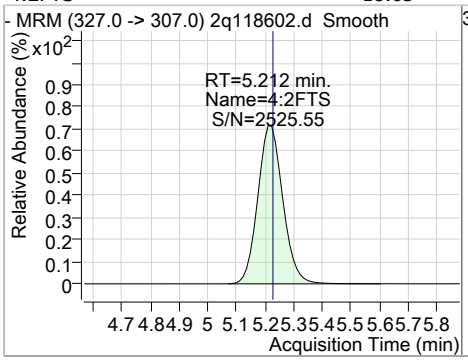
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	11.66	5.22	-0.01	43008				

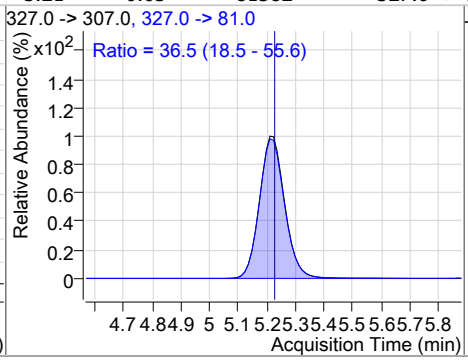


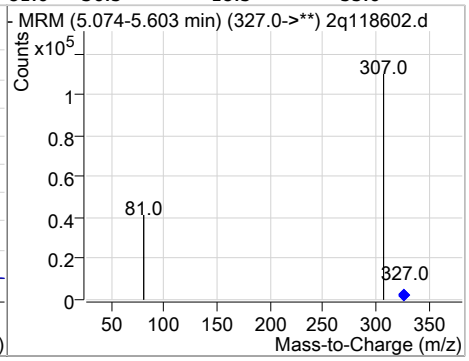




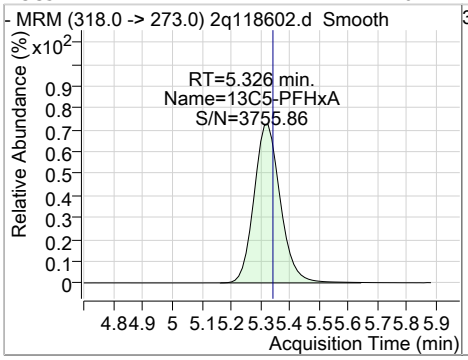
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	18.63	5.21	-0.03	81382	327.0 -> 81.0	36.5	18.5	55.6

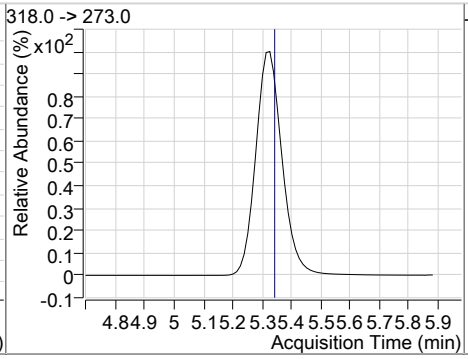


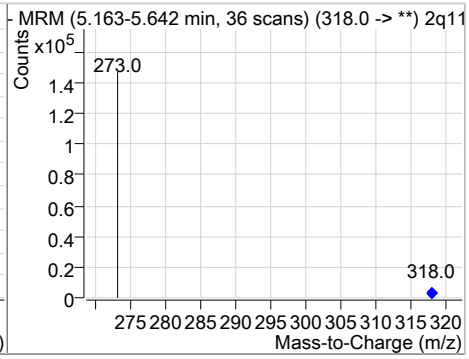




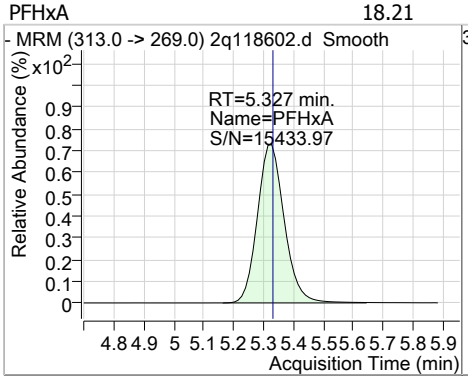
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	11.10	5.33	-0.01	109490				

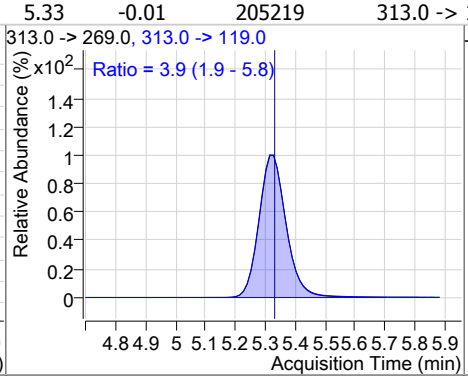


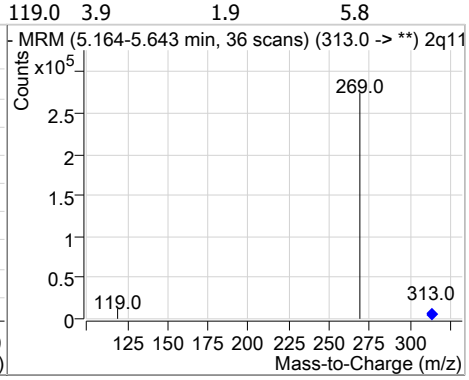




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	18.21	5.33	-0.01	205219	313.0 -> 119.0	3.9	1.9	5.8

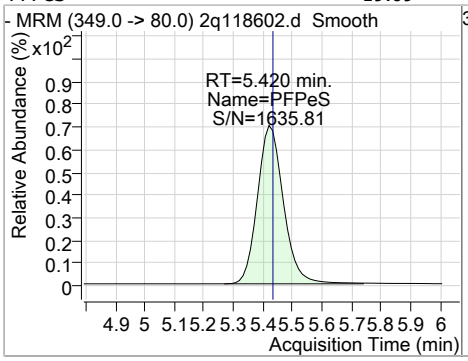


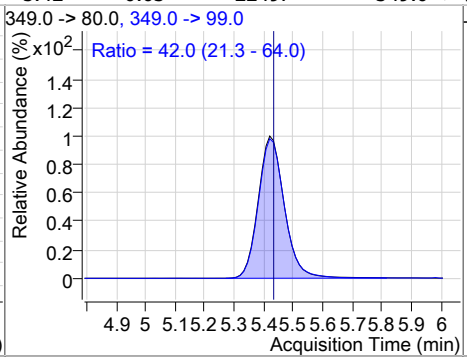


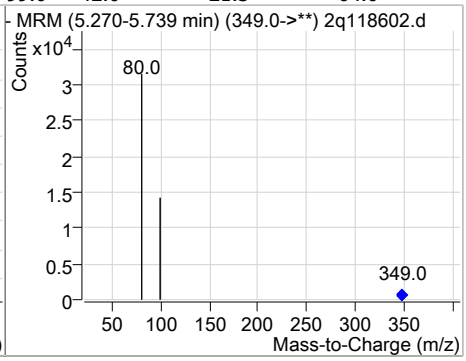


Perfluorinated Compounds by LC/MS/MS

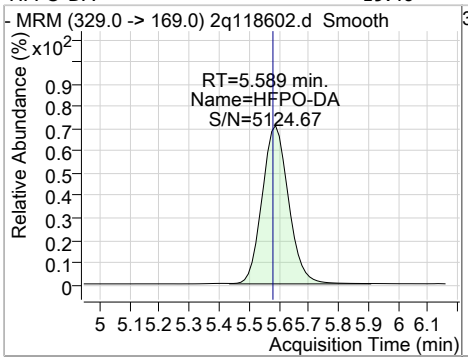
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	19.09	5.42	-0.03	22497	349.0 -> 99.0	42.0	21.3	64.0

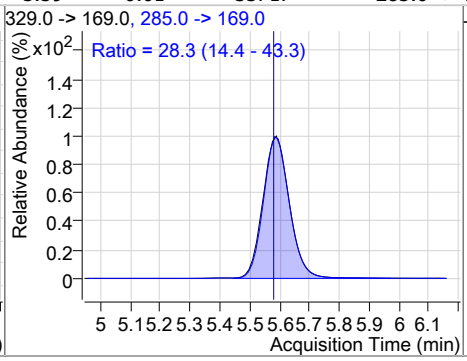


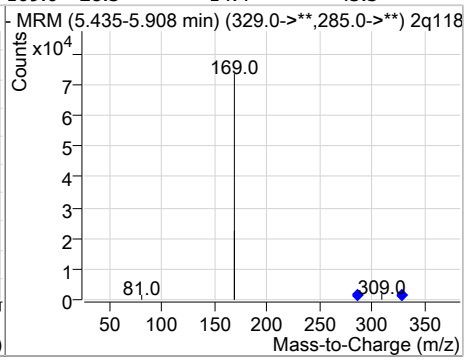




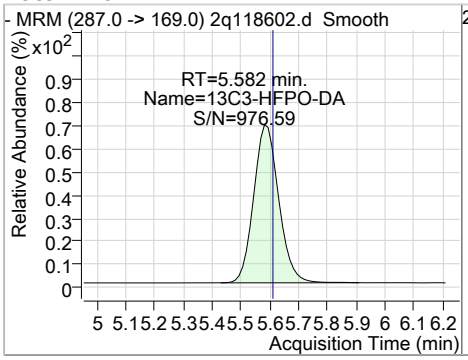
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	19.46	5.59	-0.01	55717	285.0 -> 169.0	28.3	14.4	43.3

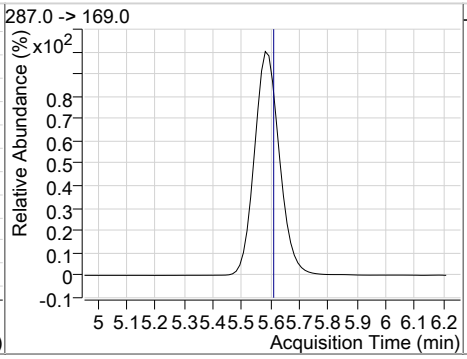


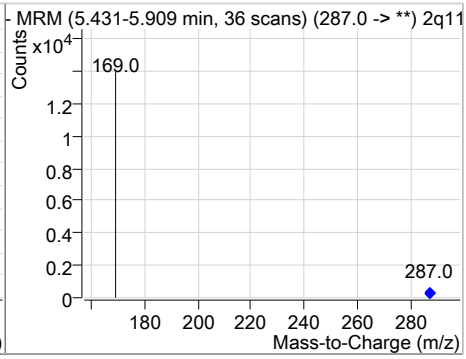




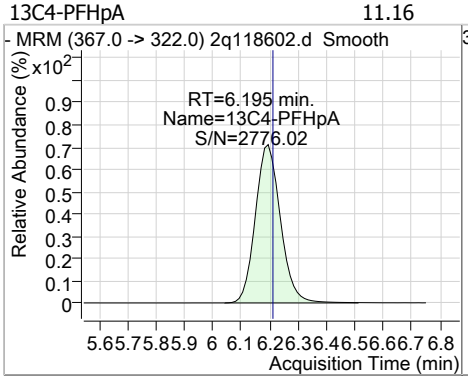
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	11.11	5.58	-0.03	9237				

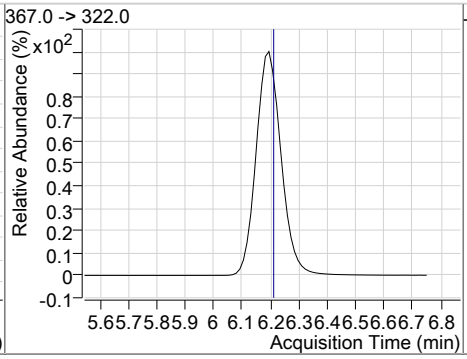


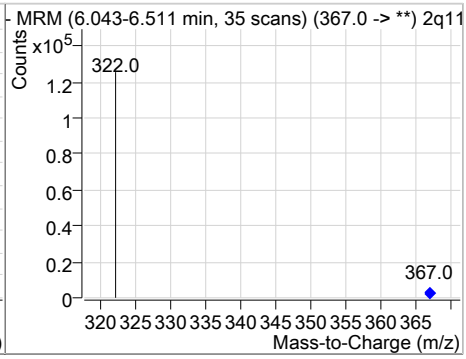




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	11.16	6.20	-0.01	95891				

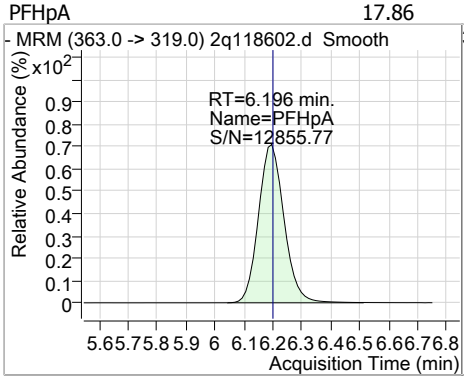


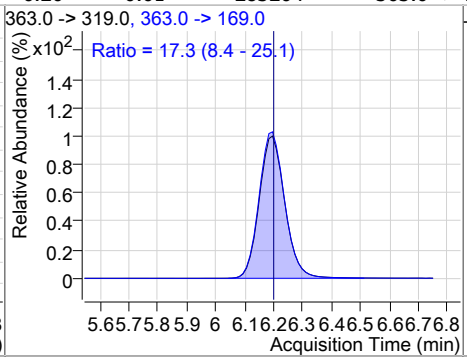


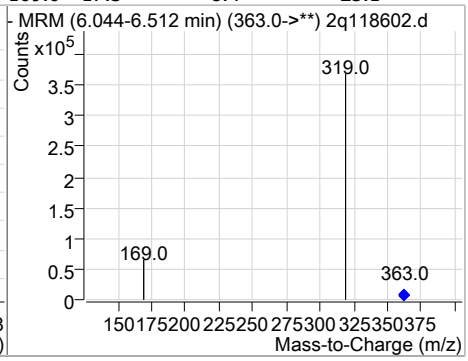


Perfluorinated Compounds by LC/MS/MS

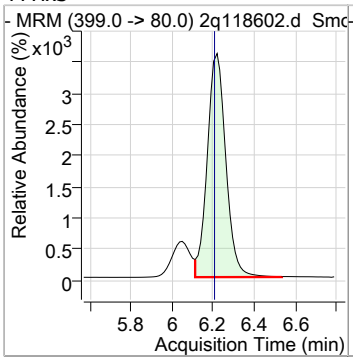
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	17.86	6.20	-0.01	283264	363.0 -> 169.0	17.3	8.4	25.1

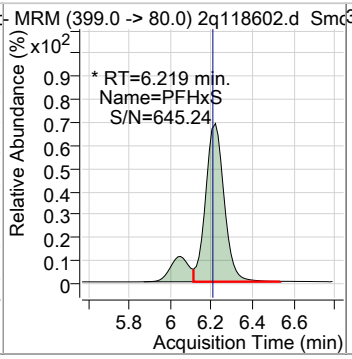


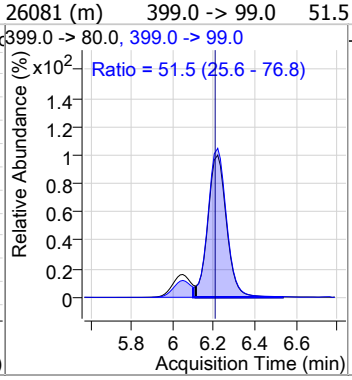


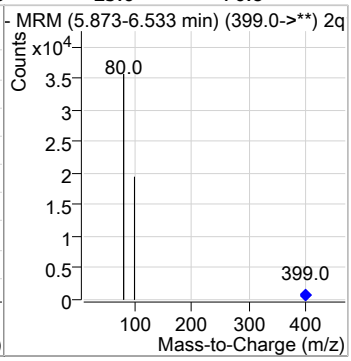


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	18.39	6.22	-0.01	26081 (m)	399.0 -> 99.0	51.5	25.6	76.8

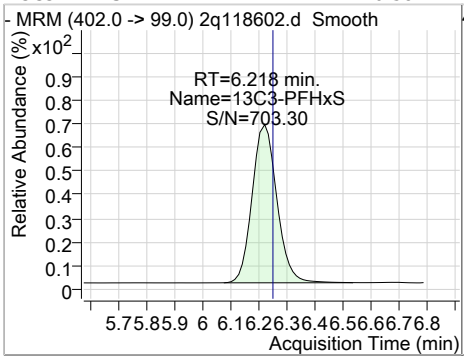


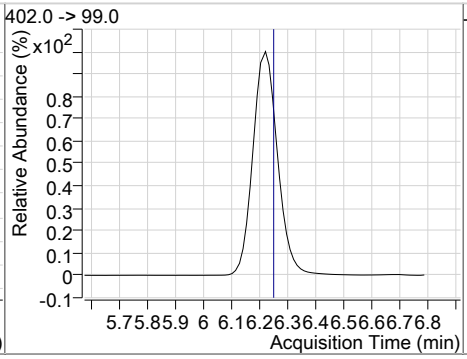


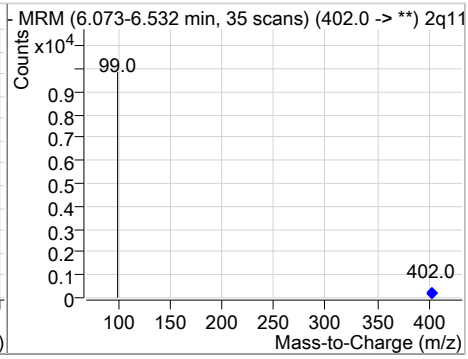




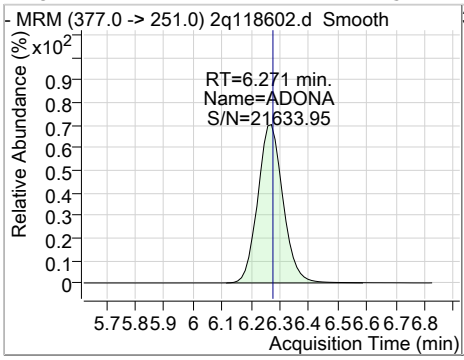
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	10.58	6.22	-0.03	6479				

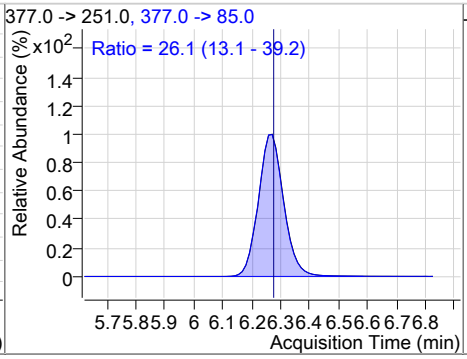


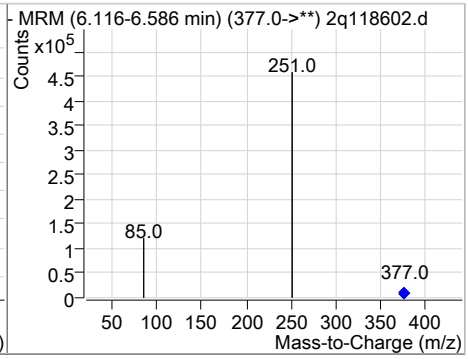




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	17.57	6.27	-0.01	349045	377.0 -> 85.0	26.1	13.1	39.2

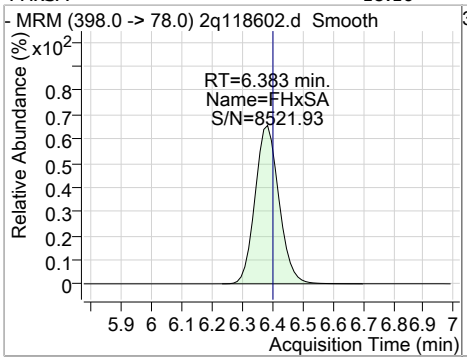


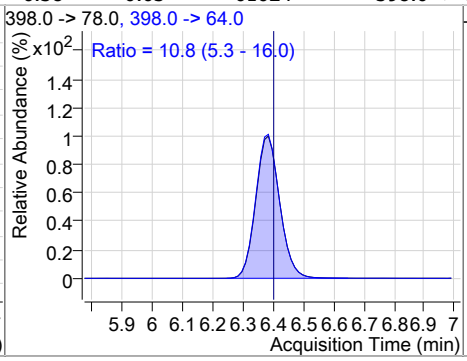


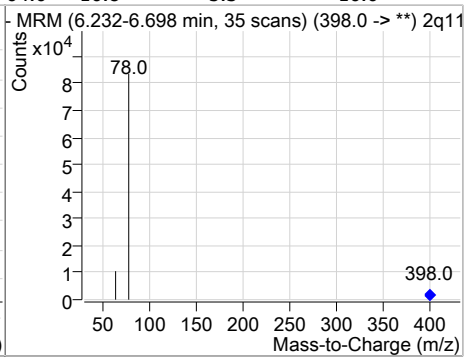


Perfluorinated Compounds by LC/MS/MS

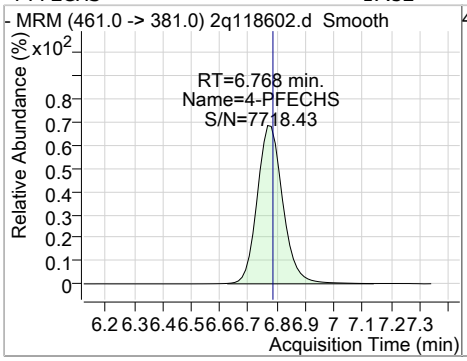
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	18.10	6.38	-0.03	61624	398.0 -> 64.0	10.8	5.3	16.0

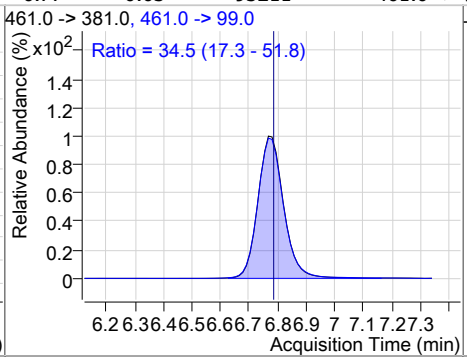


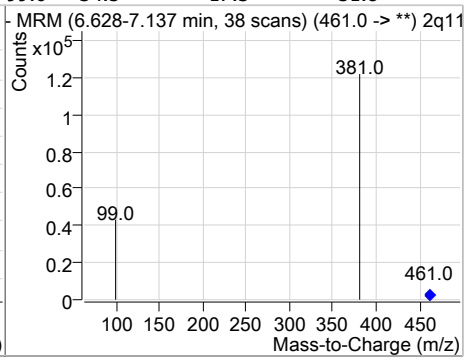




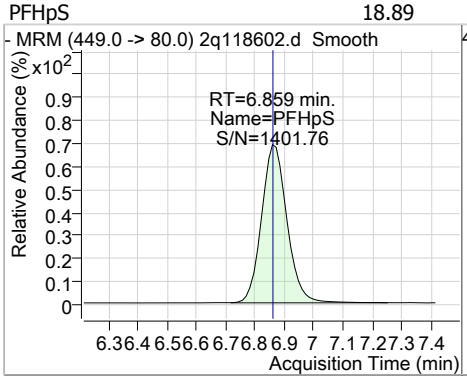
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS	17.52	6.77	-0.03	93211	461.0 -> 99.0	34.5	17.3	51.8

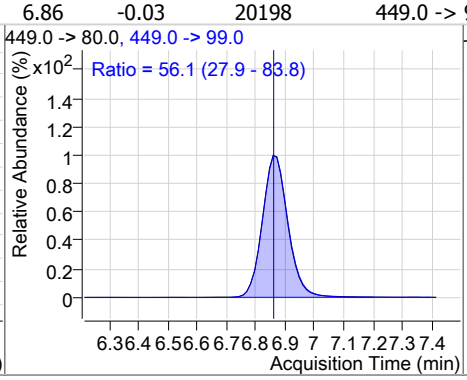


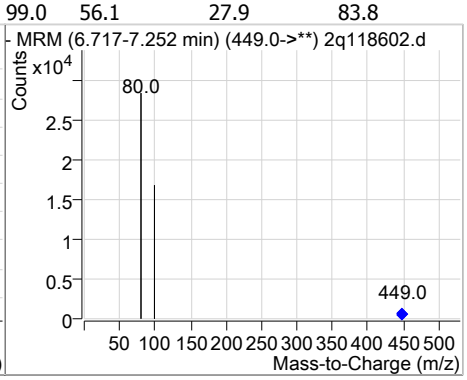




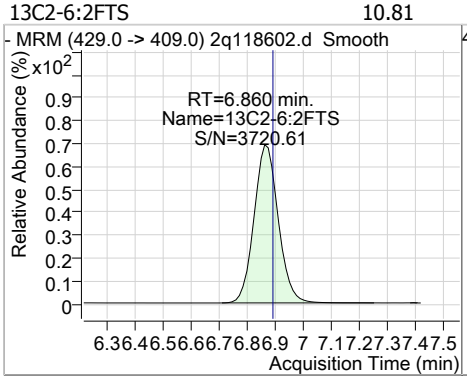
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	18.89	6.86	-0.03	20198	449.0 -> 99.0	56.1	27.9	83.8

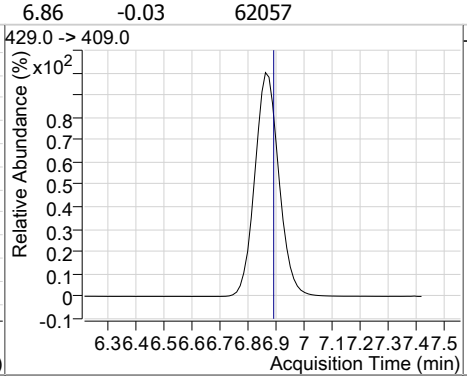


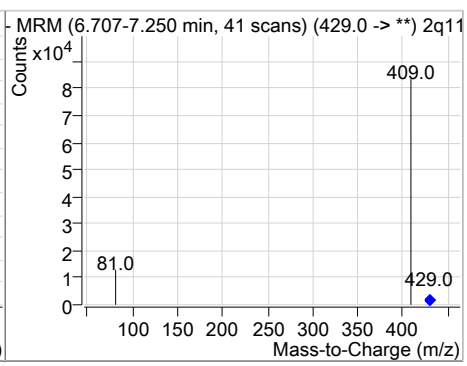




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	10.81	6.86	-0.03	62057				

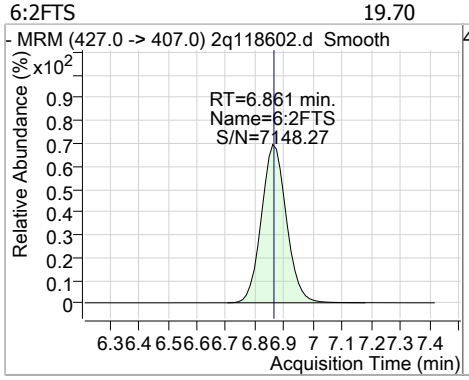


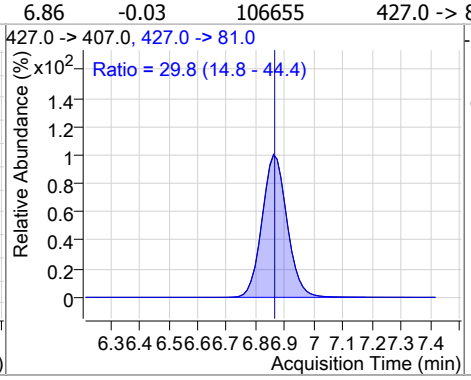


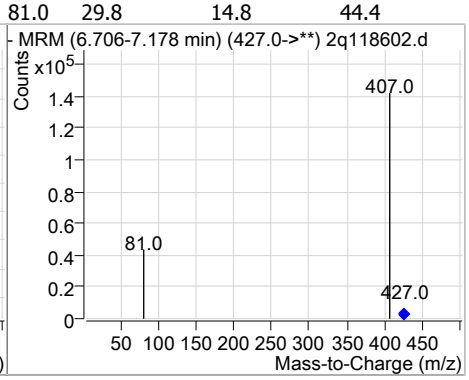


Perfluorinated Compounds by LC/MS/MS

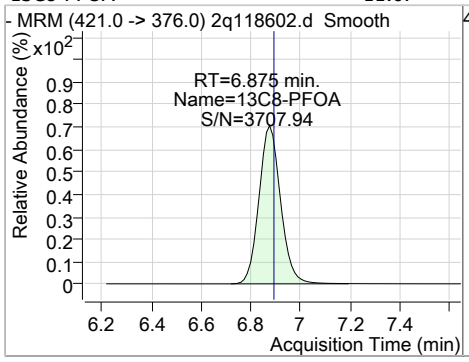
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	19.70	6.86	-0.03	106655	427.0 -> 81.0	29.8	14.8	44.4

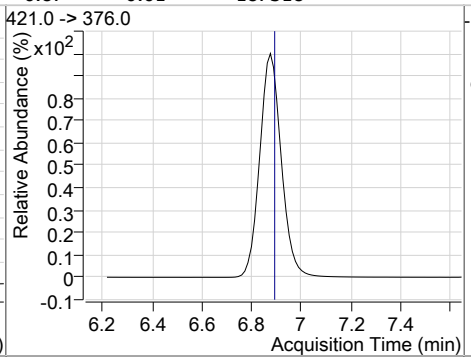


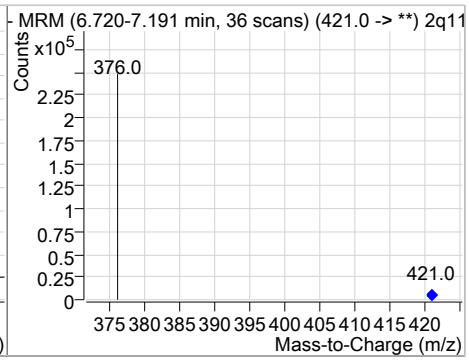




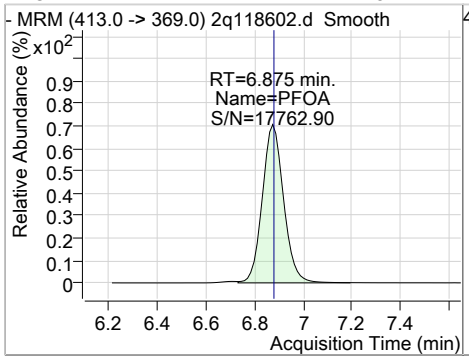
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	11.07	6.87	-0.01	187318				

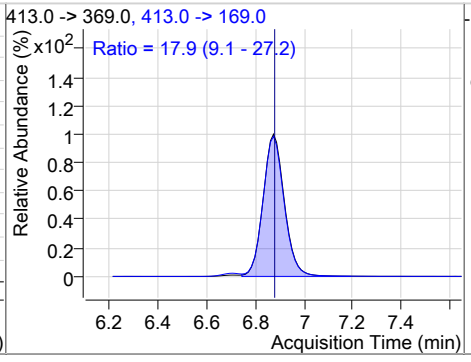


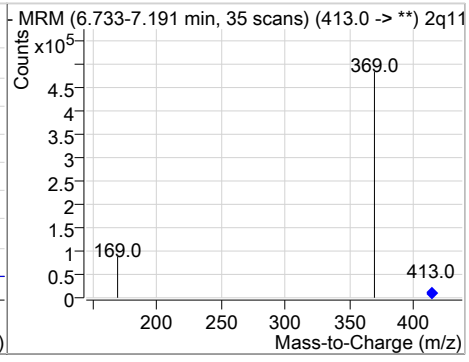




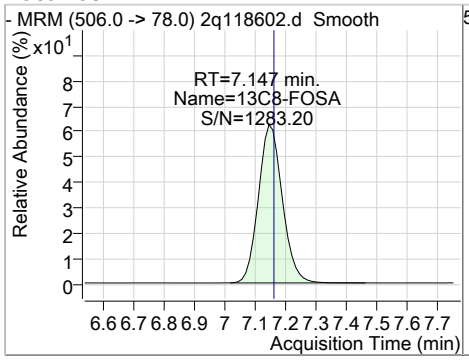
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	18.22	6.88	-0.01	364591	413.0 -> 169.0	17.9	9.1	27.2

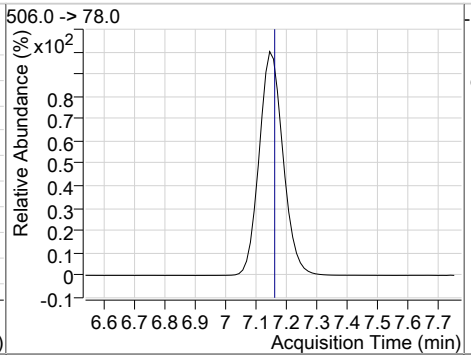


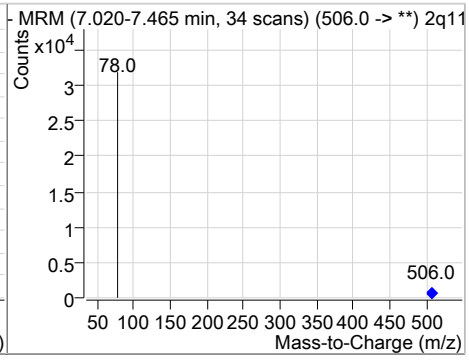




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	11.21	7.15	-0.01	23025				

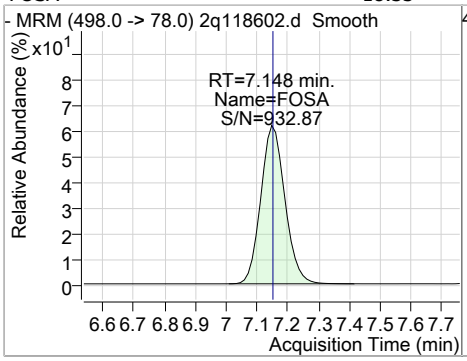


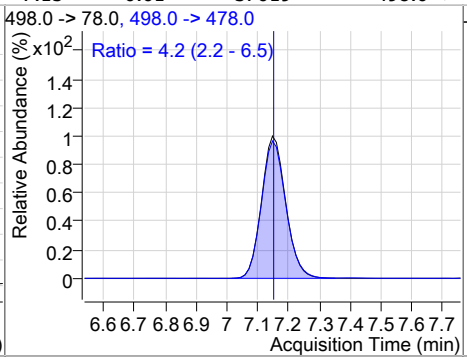


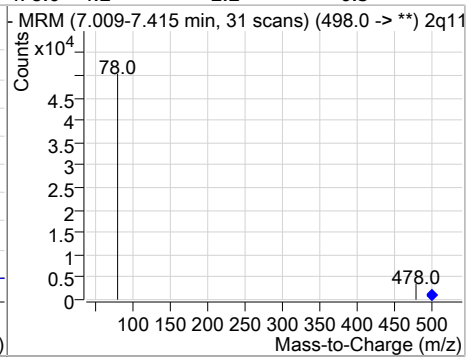


Perfluorinated Compounds by LC/MS/MS

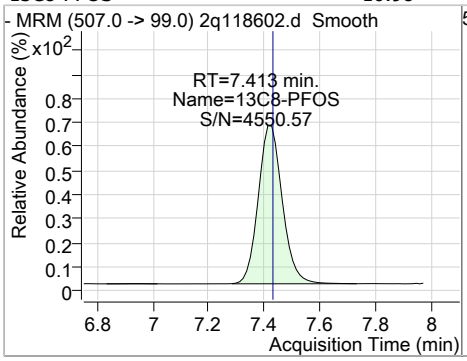
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	18.33	7.15	-0.01	37019	498.0 -> 478.0	4.2	2.2	6.5

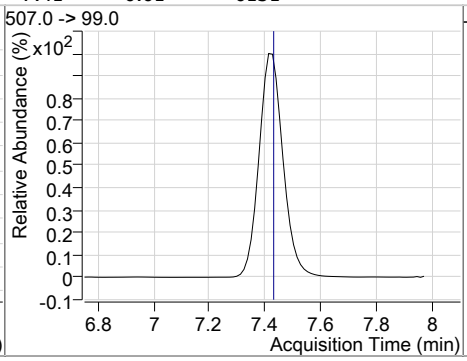


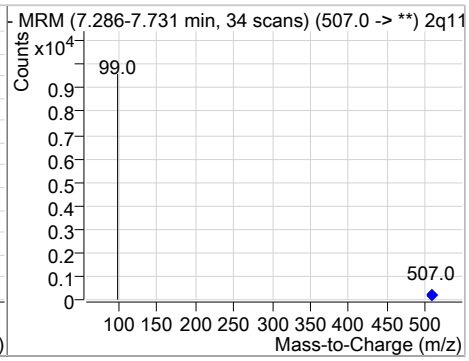




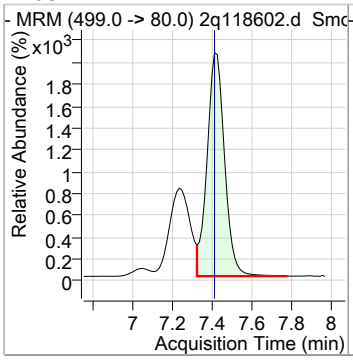
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	10.98	7.41	-0.01	6131				

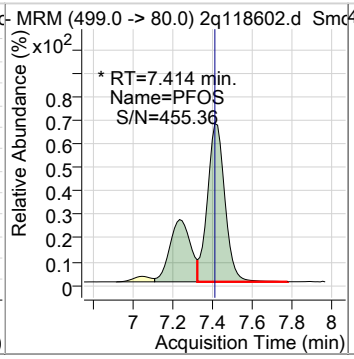


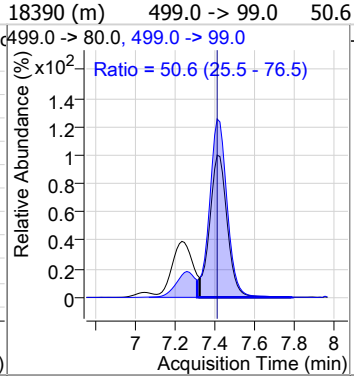


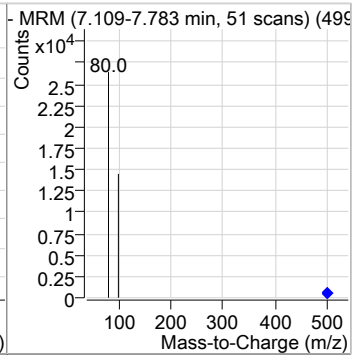


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	19.14	7.41	-0.01	18390 (m)	499.0 -> 99.0	50.6	25.5	76.5

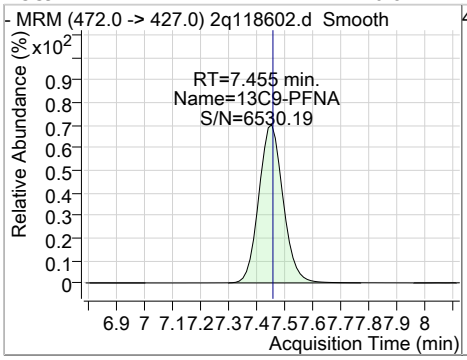


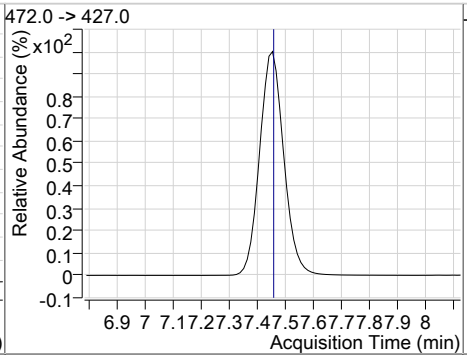


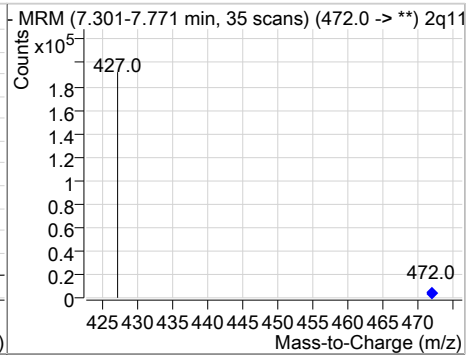




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	10.82	7.45	0.00	145749				

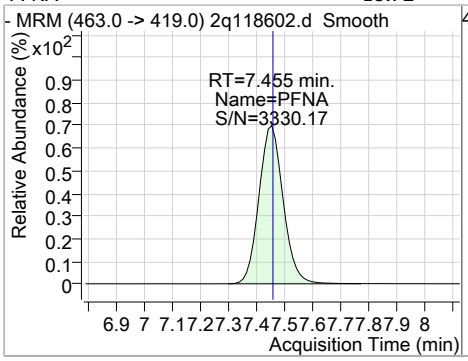


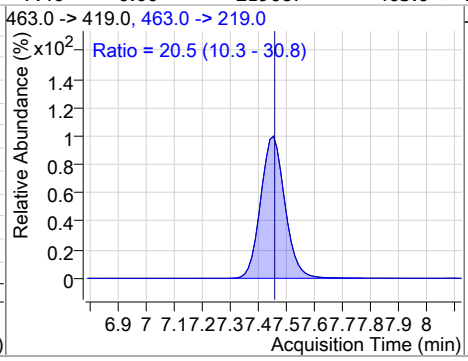


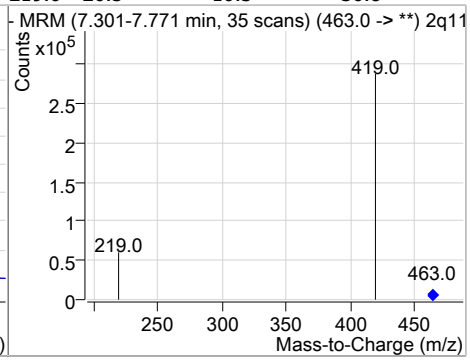


Perfluorinated Compounds by LC/MS/MS

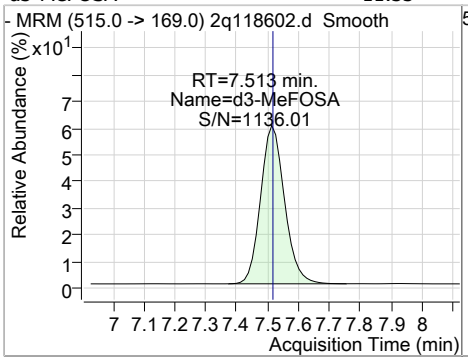
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	18.72	7.46	0.00	219087	463.0 -> 219.0	20.5	10.3	30.8

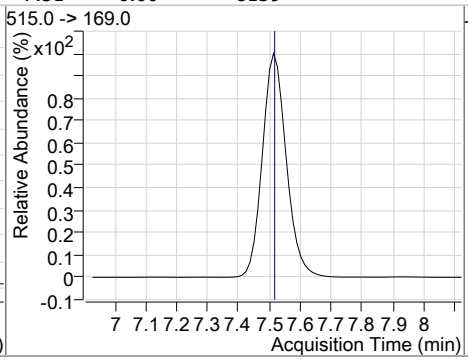


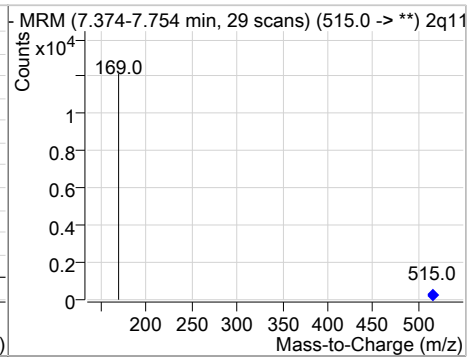




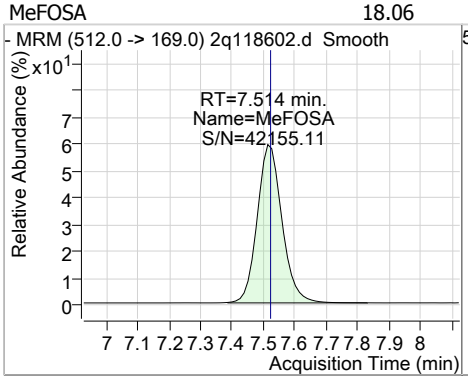
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	11.33	7.51	0.00	8139				

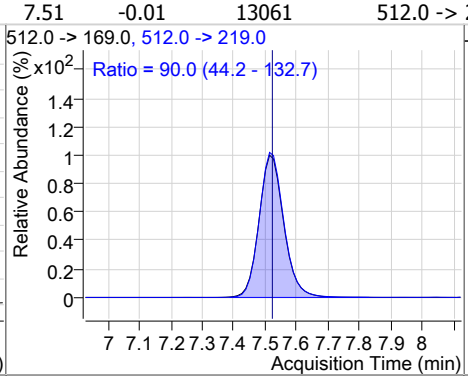


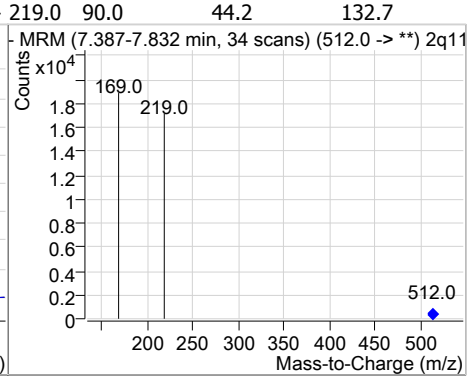




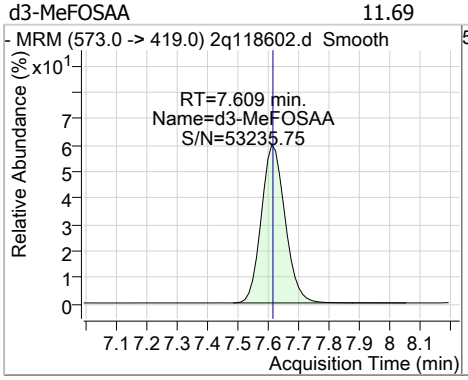
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	18.06	7.51	-0.01	13061	512.0 -> 219.0	90.0	44.2	132.7

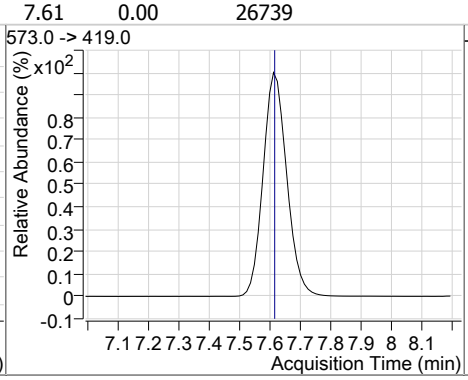


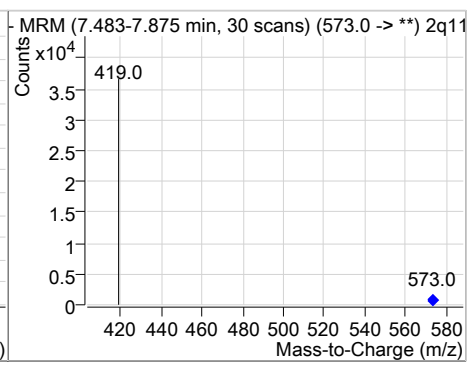




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	11.69	7.61	0.00	26739				

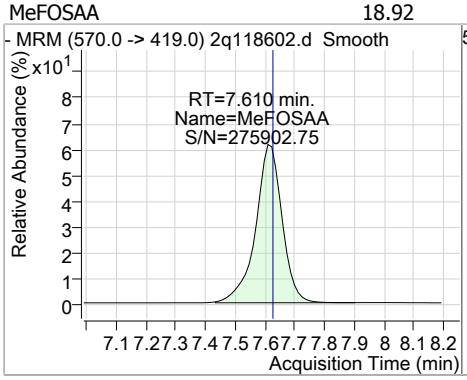


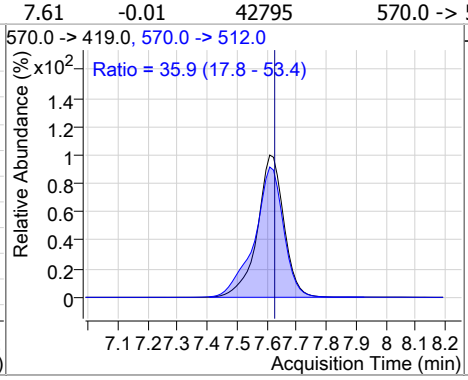


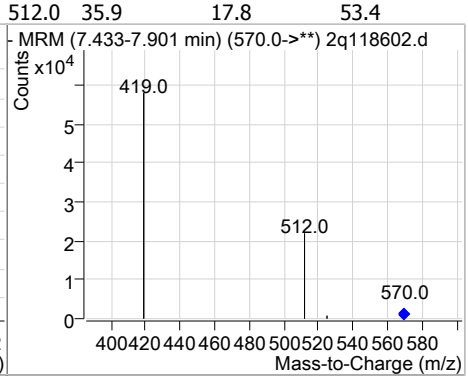


Perfluorinated Compounds by LC/MS/MS

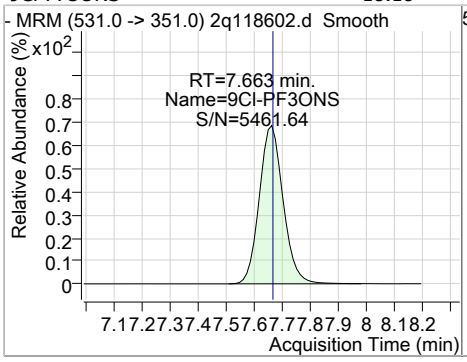
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	18.92	7.61	-0.01	42795	570.0 -> 512.0	35.9	17.8	53.4

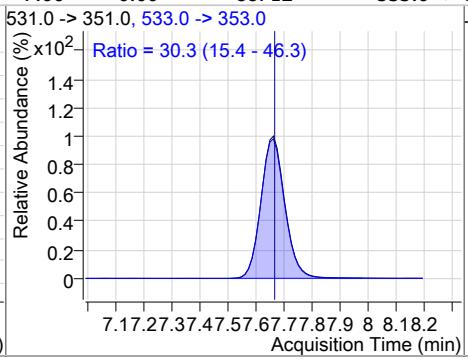


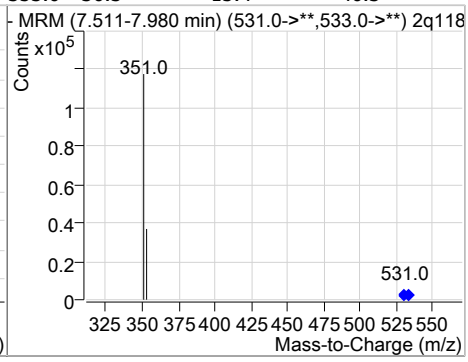




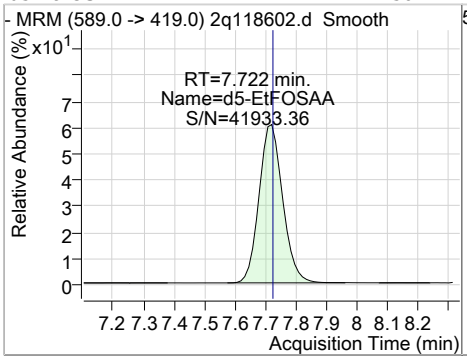
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	18.18	7.66	0.00	88712	533.0 -> 353.0	30.3	15.4	46.3

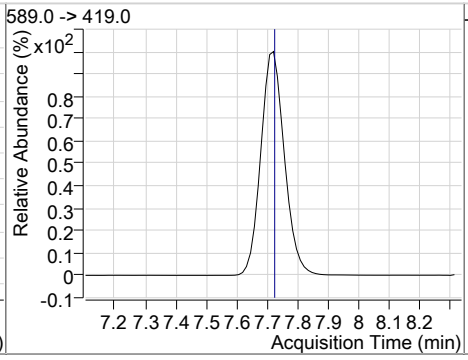


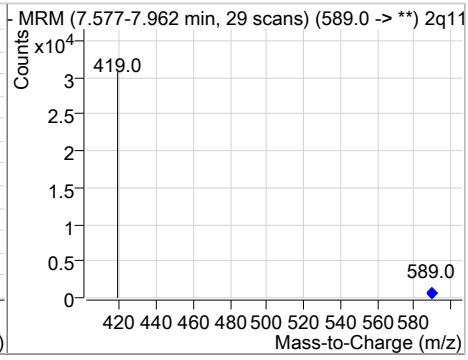




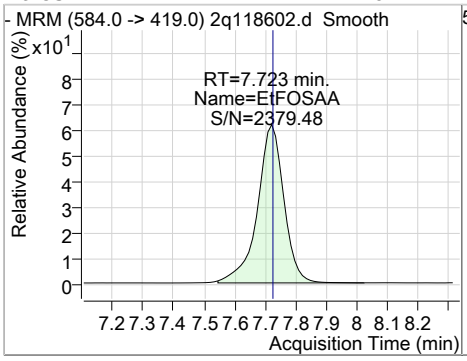
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	11.50	7.72	0.00	22194				

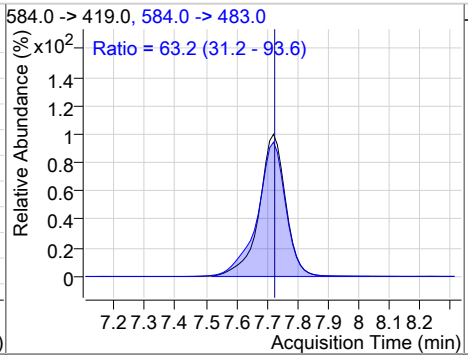


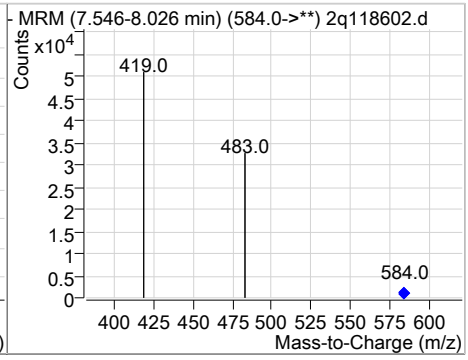




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	18.72	7.72	0.00	37260	584.0 -> 483.0	63.2	31.2	93.6

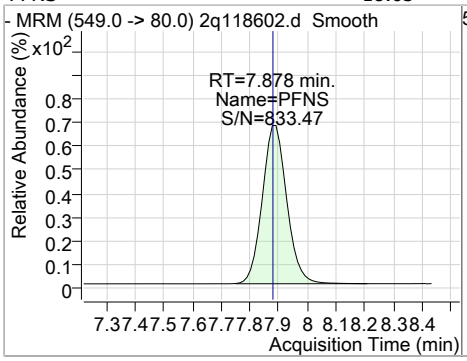


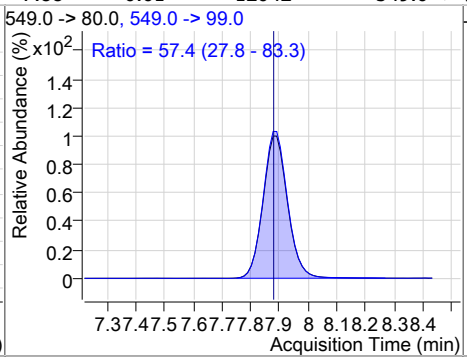


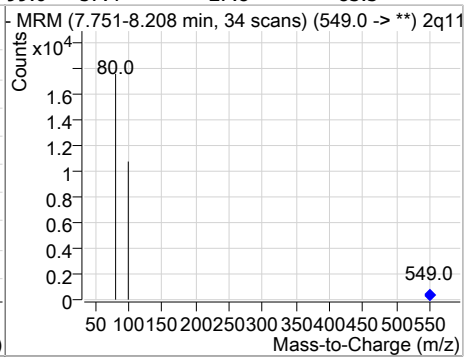


Perfluorinated Compounds by LC/MS/MS

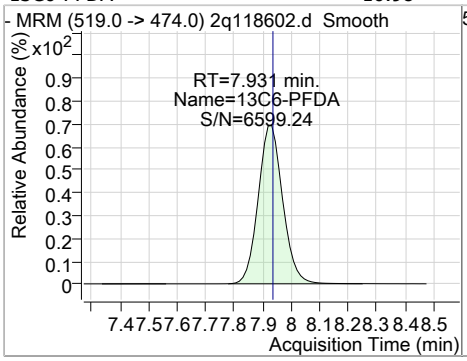
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	18.65	7.88	-0.01	12042	549.0 -> 99.0	57.4	27.8	83.3

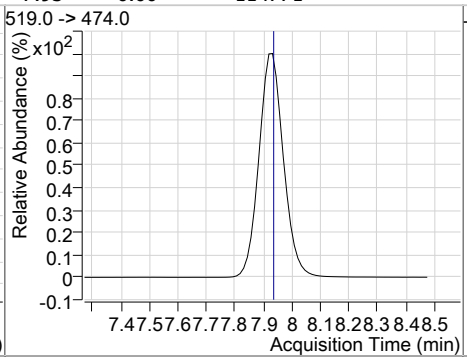


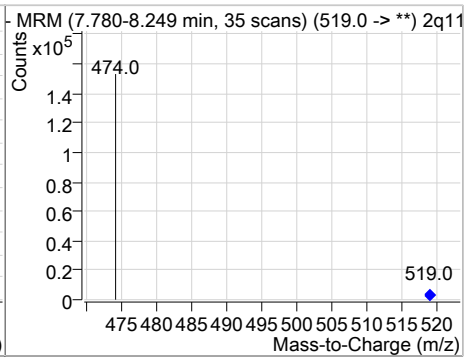




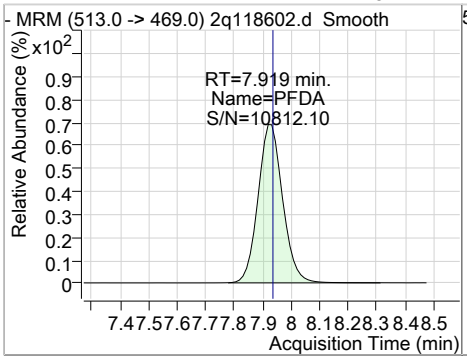
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	10.98	7.93	0.00	114771				

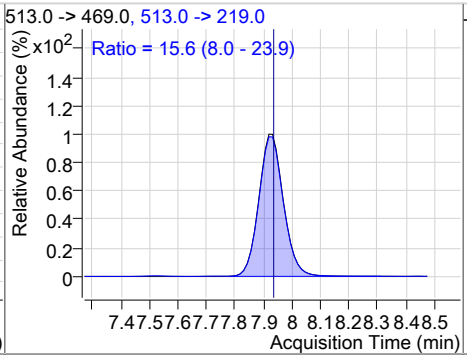


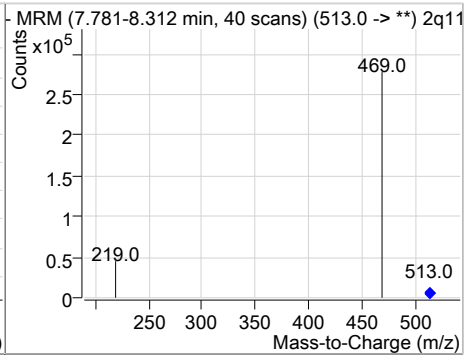




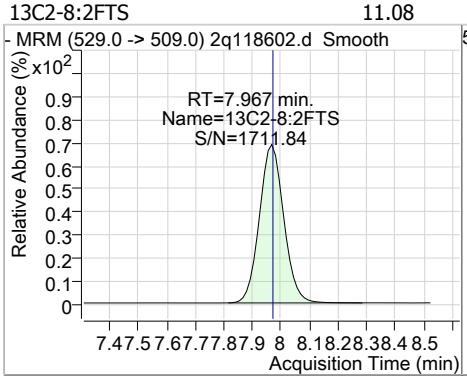
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	18.41	7.92	-0.01	209298	513.0 -> 219.0	15.6	8.0	23.9

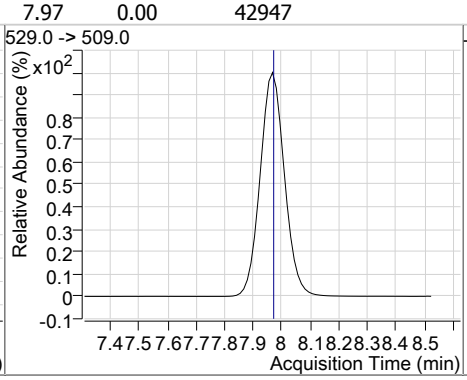


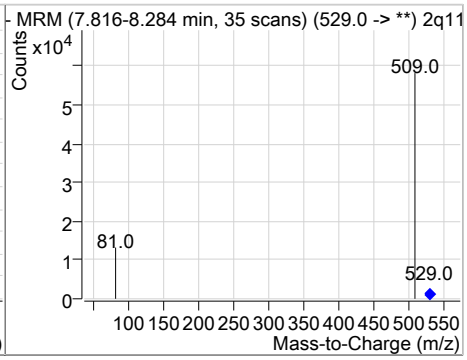




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	11.08	7.97	0.00	42947				

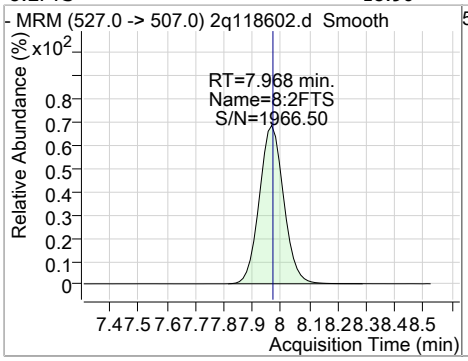


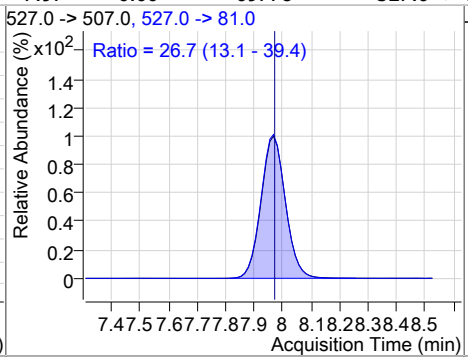


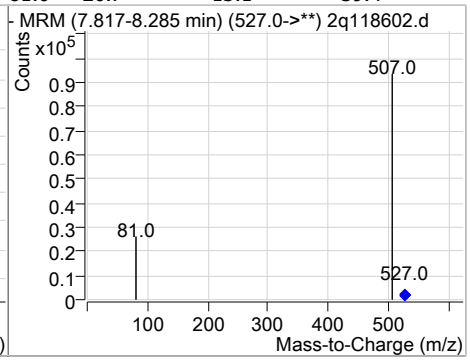


Perfluorinated Compounds by LC/MS/MS

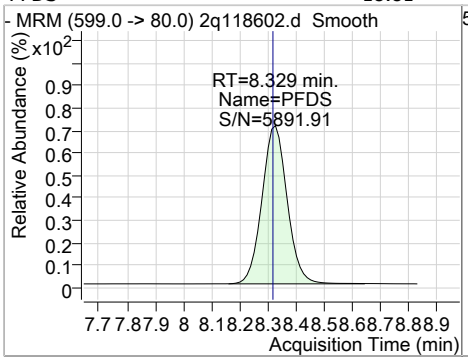
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	18.90	7.97	0.00	69778	527.0 -> 81.0	26.7	13.1	39.4

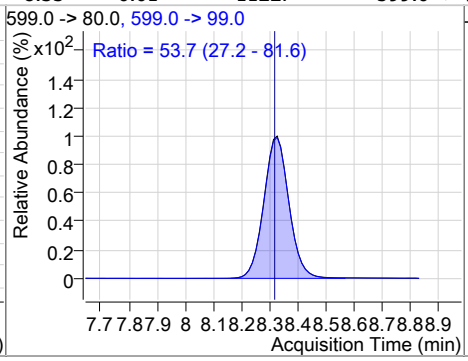


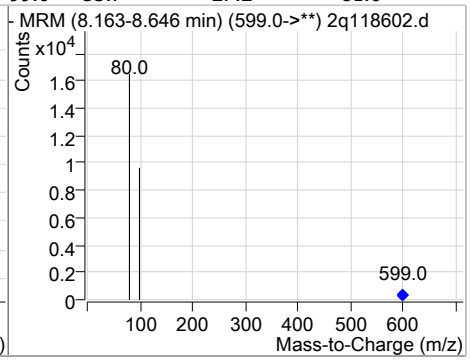




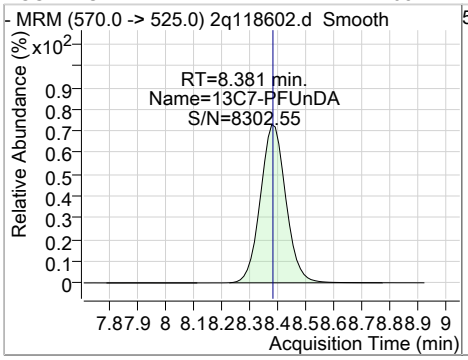
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	18.81	8.33	0.01	11227	599.0 -> 99.0	53.7	27.2	81.6

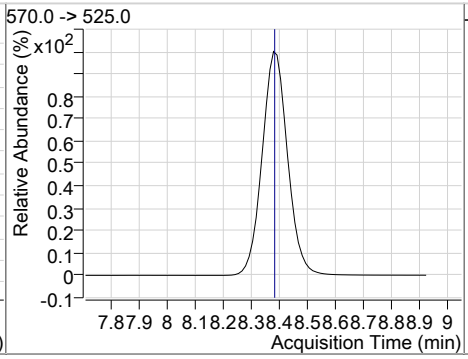


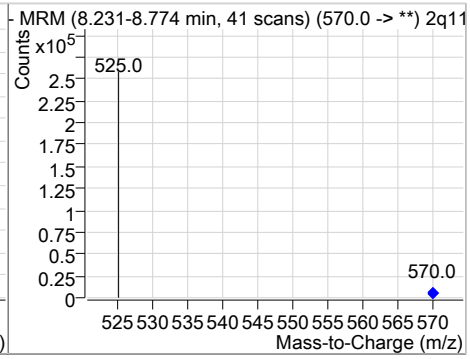




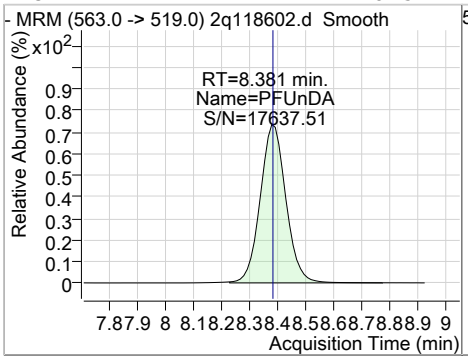
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	11.08	8.38	0.00	192620				

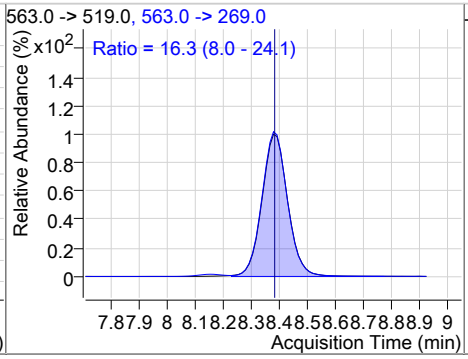


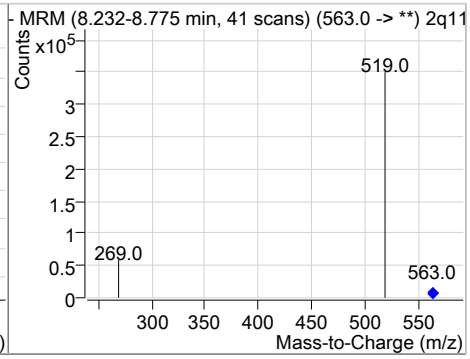




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	18.25	8.38	0.00	262290	563.0 -> 269.0	16.3	8.0	24.1

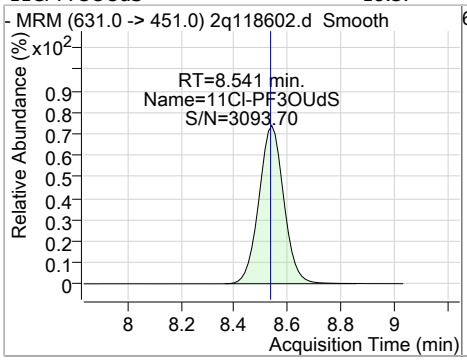


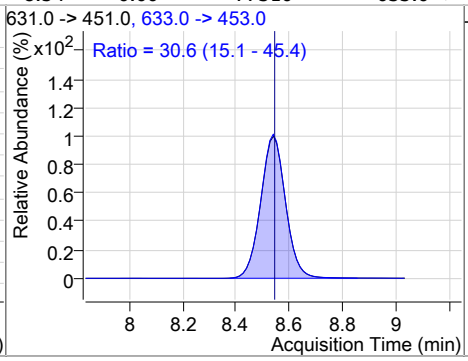


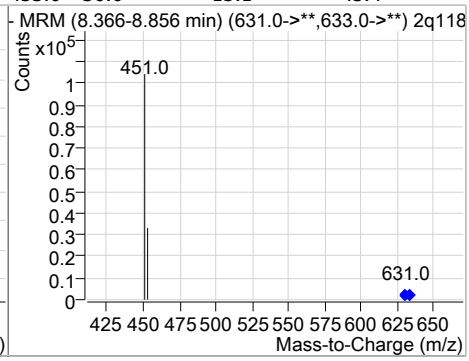


Perfluorinated Compounds by LC/MS/MS

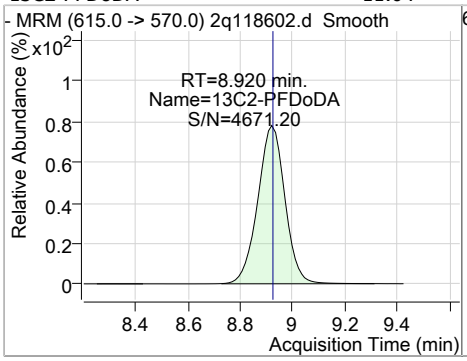
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	18.37	8.54	0.00	77310	633.0 -> 453.0	30.6	15.1	45.4

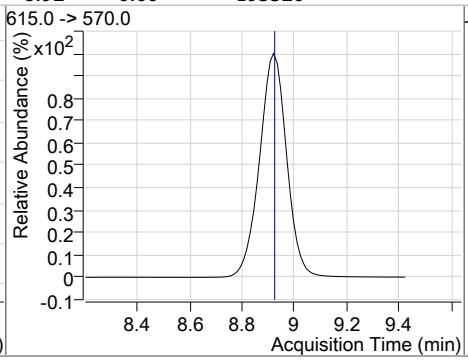


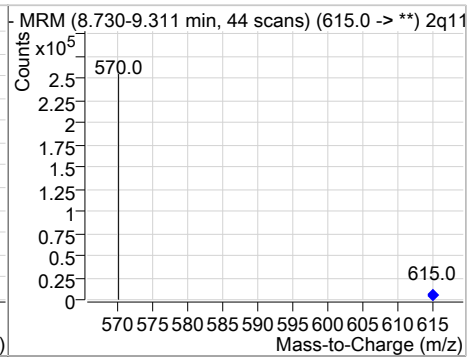




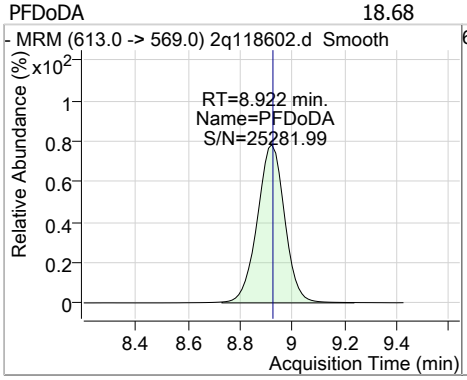
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	11.04	8.92	0.00	193320				

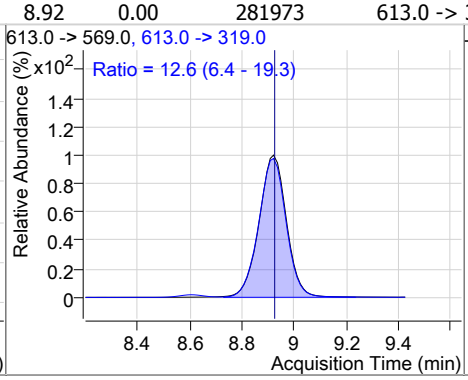


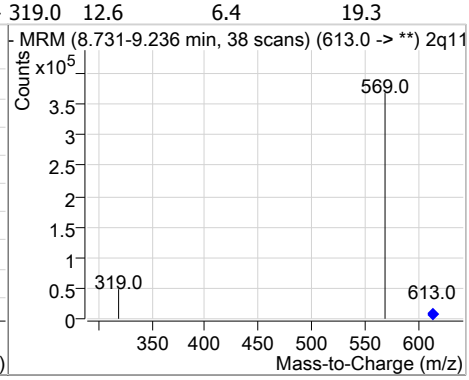




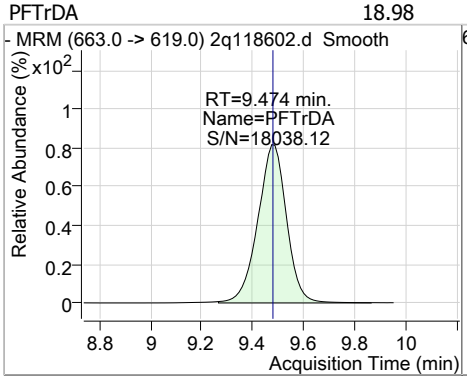
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	18.68	8.92	0.00	281973	613.0 -> 319.0	12.6	6.4	19.3

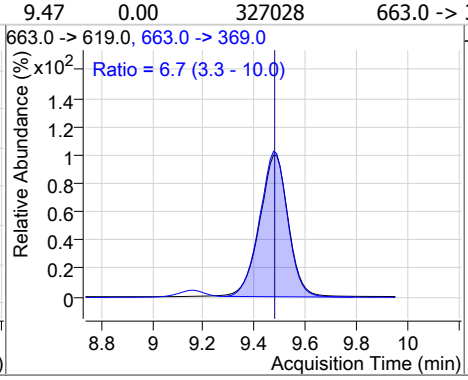


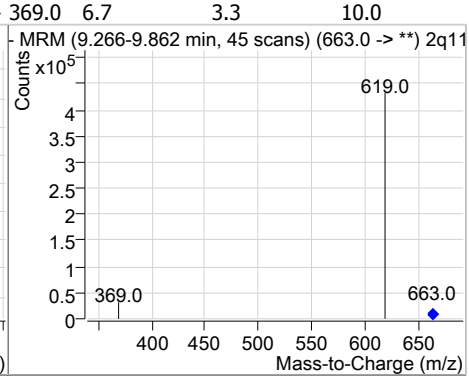




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	18.98	9.47	0.00	327028	663.0 -> 369.0	6.7	3.3	10.0

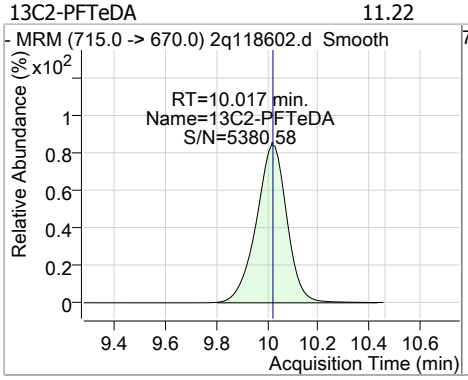


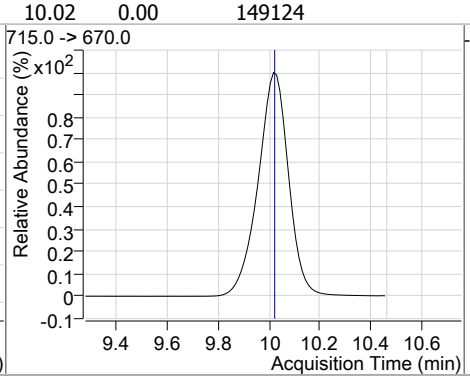


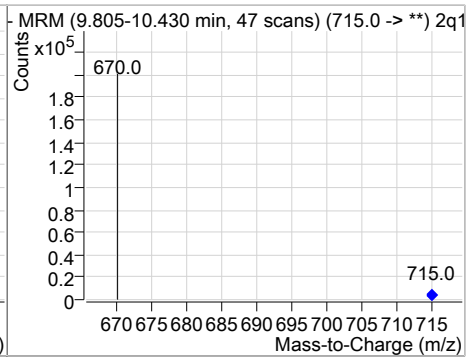


Perfluorinated Compounds by LC/MS/MS

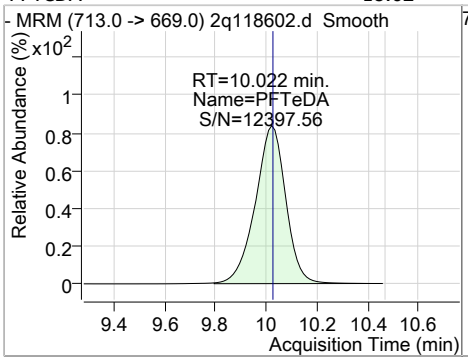
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	11.22	10.02	0.00	149124				

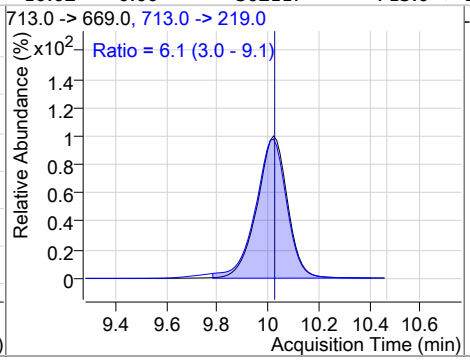


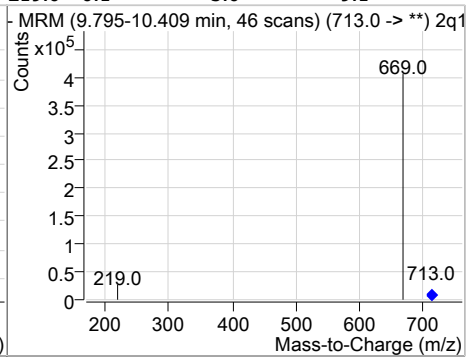




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	18.62	10.02	0.00	302117	713.0 -> 219.0	6.1	3.0	9.1







Manual Integration Approval Summary

Sample Number: S2Q1693-CC1691
Lab FileID: 2Q118602.D
Injection Time: 01/04/24 15:46
Method: EPA 537M QSM5.3 B-15
Analyst approved: 01/05/24 15:53 Lindsay Ritner
Supervisor approved: 01/05/24 17:02 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.22	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.41	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Natasha Gumtie 01/05/24 17:02

Perfluorinated Compounds by LC/MS/MS

Data File : 2q118603.d
Operator : lindsayr
Acq. Method : 537_ID.m
Acq. Date-Time : 1/4/2024 4:02:36 PM
Sample Name : cc1691-1.0LL
Vial : P1-A3
DA Method File : ID_010224_S2Q1691.quantmethod.xml
Batch Name : s2q1693.batch.bin
Sample Information : op401,S2Q1693,250,,,1.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M5-EtFOSAA	7.710	589.0 -> 419.0	21729	10.00	µg/L	-0.013
M4-PFBA	2.240	217.0 -> 172.0	55701	10.00	µg/L	0.000
M5-PFPeA	4.062	268.0 -> 223.0	85279	10.00	µg/L	0.000
M5-PFHxA	5.314	318.0 -> 273.0	105782	10.00	µg/L	-0.025
M4-PFHpA	6.182	367.0 -> 322.0	93555	10.00	µg/L	-0.025
M8-PFOA	6.875	421.0 -> 376.0	184555	10.00	µg/L	-0.013
M9-PFNA	7.442	472.0 -> 427.0	144605	10.00	µg/L	-0.013
M6-PFDA	7.919	519.0 -> 474.0	113907	10.00	µg/L	-0.013
M7-PFUnDA	8.381	570.0 -> 525.0	187890	10.00	µg/L	0.000
M2-PFDoDA	8.920	615.0 -> 570.0	186717	10.00	µg/L	0.000
M2-PFTeDA	10.017	715.0 -> 670.0	145448	10.00	µg/L	0.000
M8-FOSA	7.147	506.0 -> 78.0	23609	10.00	µg/L	-0.013
M3-PFBS	4.317	302.0 -> 99.0	6287	10.00	µg/L	-0.013
M3-PFHxS	6.218	402.0 -> 99.0	6260	10.00	µg/L	-0.025
M8-PFOS	7.413	507.0 -> 99.0	5894	10.00	µg/L	-0.014
M2-4:2FTS	5.221	329.0 -> 309.0	38189	10.00	µg/L	-0.013
M2-6:2FTS	6.860	429.0 -> 409.0	56686	10.00	µg/L	-0.025
M2-8:2FTS	7.967	529.0 -> 509.0	37847	10.00	µg/L	0.000
M3-MeFOSAA	7.609	573.0 -> 419.0	26225	10.00	µg/L	0.000
M3-HFPO-DA	5.582	287.0 -> 169.0	8714	10.00	µg/L	-0.025
M3-MeFOSA	7.513	515.0 -> 169.0	8242	10.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	5.221	329.0 -> 309.0	38189	10.35	µg/L	-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 103.5%		
13C2-6:2FTS	6.860	429.0 -> 409.0	56686	9.87	µg/L	-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 98.7%		
13C2-8:2FTS	7.967	529.0 -> 509.0	37847	9.77	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 97.7%		
13C2-PFDoDA	8.920	615.0 -> 570.0	186717	10.66	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 106.6%		
13C2-PFTeDA	10.017	715.0 -> 670.0	145448	10.94	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 109.4%		
13C3-PFBS	4.317	302.0 -> 99.0	6287	10.46	µg/L	-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 104.6%		
13C3-PFHxS	6.218	402.0 -> 99.0	6260	10.23	µg/L	-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 102.3%		
13C4-PFBA	2.240	217.0 -> 172.0	55701	10.79	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 107.9%		
13C4-PFHpA	6.182	367.0 -> 322.0	93555	10.89	µg/L	-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 108.9%		
d5-EtFOSAA	7.710	589.0 -> 419.0	21729	11.26	µg/L	-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 112.6%		
13C5-PFHxA	5.314	318.0 -> 273.0	105782	10.72	µg/L	-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 107.2%		
13C5-PFPeA	4.062	268.0 -> 223.0	85279	10.73	µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

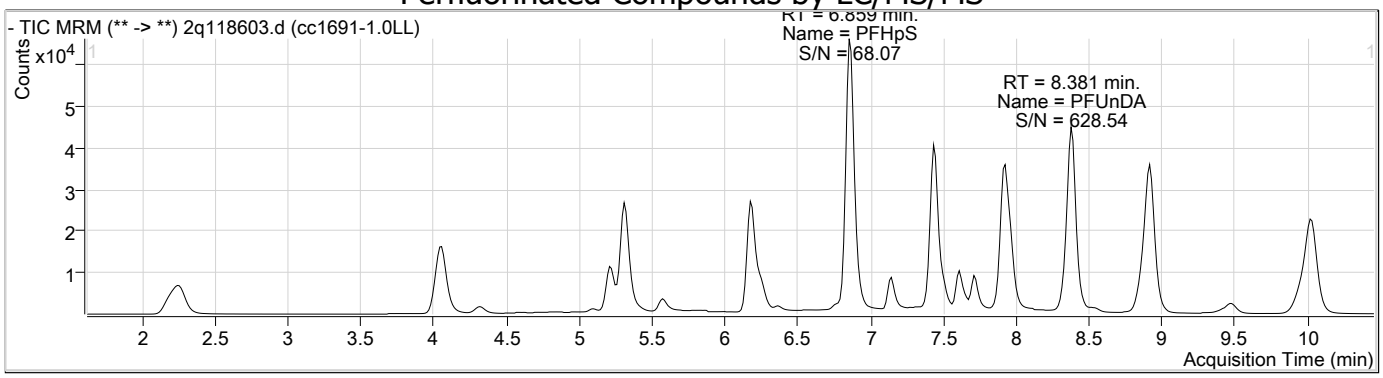
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 107.3%			
13C6-PFDA	7.919	519.0 -> 474.0	113907	10.90	µg/L		-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 109.0%			
13C7-PFUnDA	8.381	570.0 -> 525.0	187890	10.81	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 108.1%			
13C8-FOSA	7.147	506.0 -> 78.0	23609	11.50	µg/L		-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 115.0%			
13C8-PFOA	6.875	421.0 -> 376.0	184555	10.90	µg/L		-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 109.0%			
13C8-PFOS	7.413	507.0 -> 99.0	5894	10.55	µg/L		-0.014
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 105.5%			
13C9-PFNA	7.442	472.0 -> 427.0	144605	10.73	µg/L		-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 107.3%			
d3-MeFOSAA	7.609	573.0 -> 419.0	26225	11.47	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 114.7%			
13C3-HFPO-DA	5.582	287.0 -> 169.0	8714	10.48	µg/L		-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 104.8%			
d3-MeFOSA	7.513	515.0 -> 169.0	8242	11.47	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 114.7%			
Target Compounds							QValue
4:2FTS	5.212	327.0 -> 307.0	3707	0.96	µg/L		94
		327.0 -> 81.0	1514				
6:2FTS	6.861	427.0 -> 407.0	5157	1.04	µg/L		99
		427.0 -> 81.0	1555				
8:2FTS	7.968	527.0 -> 507.0	3011	0.93	µg/L		94
		527.0 -> 81.0	878				
EtFOSAA	7.723	584.0 -> 419.0	1998	1.03	µg/L		95
		584.0 -> 483.0	1167				
FOSA	7.148	498.0 -> 78.0	1796	0.87	µg/L		96
		498.0 -> 478.0	99				
MeFOSAA	7.610	570.0 -> 419.0	2128	0.96	µg/L		100
		570.0 -> 512.0	758				
PFBA	2.246	213.0 -> 169.0	1566	0.89	µg/L		100
PFBS	4.319	299.0 -> 80.0	1427	0.90	µg/L		96
		299.0 -> 99.0	509				
PFDA	7.919	513.0 -> 469.0	9724	0.86	µg/L		99
		513.0 -> 219.0	1609				
PFDoDA	8.922	613.0 -> 569.0	12567	0.86	µg/L		98
		613.0 -> 319.0	1719				
PFDS	8.329	599.0 -> 80.0	513	0.88	µg/L		98
		599.0 -> 99.0	272				
PFHpA	6.183	363.0 -> 319.0	13063	0.84	µg/L		99
		363.0 -> 169.0	2244				
PFHpS	6.859	449.0 -> 80.0	912	0.88	µg/L		99
		449.0 -> 99.0	502				
PFHxA	5.315	313.0 -> 269.0	9069	0.83	µg/L		98
		313.0 -> 119.0	404				
PFHxS	6.202	399.0 -> 80.0	1241	0.91	µg/L	m	96
		399.0 -> 99.0	603				
PFNA	7.442	463.0 -> 419.0	9470	0.82	µg/L		92
		463.0 -> 219.0	2293				
PFNS	7.878	549.0 -> 80.0	525	0.85	µg/L		93
		549.0 -> 99.0	319				
PFOA	6.875	413.0 -> 369.0	16692	0.85	µg/L		97
		413.0 -> 169.0	3240				
PFOS	7.414	499.0 -> 80.0	925	1.00	µg/L	m	94

Perfluorinated Compounds by LC/MS/MS

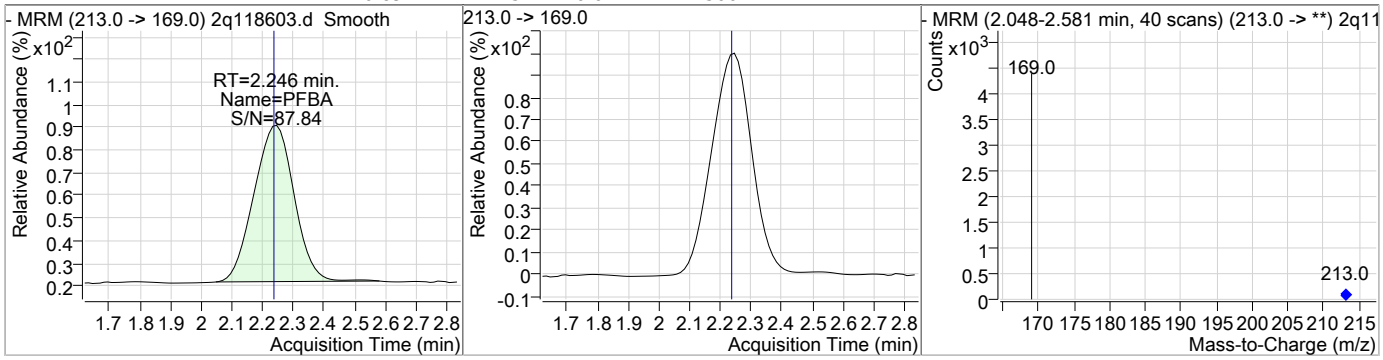
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		499.0 -> 99.0	435			
PFPeA	4.052	263.0 -> 219.0	5835	0.87	µg/L	100
PFPeS	5.420	349.0 -> 80.0	1002	0.87	µg/L	95
		349.0 -> 99.0	461			
PFTeDA	10.022	713.0 -> 669.0	13725	0.87	µg/L	99
		713.0 -> 219.0	885			
PFTrDA	9.474	663.0 -> 619.0	14668	0.88	µg/L	99
		663.0 -> 369.0	1025			
PFUnDA	8.381	563.0 -> 519.0	11733	0.84	µg/L	99
		563.0 -> 269.0	1929			
11Cl-PF3OUdS	8.541	631.0 -> 451.0	3589	0.88	µg/L	96
		633.0 -> 453.0	1156			
9Cl-PF3ONS	7.663	531.0 -> 351.0	3923	0.81	µg/L	94
		533.0 -> 353.0	1333			
ADONA	6.259	377.0 -> 251.0	15768	0.81	µg/L	100
		377.0 -> 85.0	4159			
HFPO-DA	5.589	329.0 -> 169.0	2473	0.92	µg/L	97
		285.0 -> 169.0	754			
MeFOSA	7.514	512.0 -> 169.0	605	0.83	µg/L	90
		512.0 -> 219.0	590			
4-PFECHS	6.768	461.0 -> 381.0	4318	0.82	µg/L	96
		461.0 -> 99.0	1598			
FBSA	5.103	298.0 -> 78.0	2698	0.76	µg/L	96
		298.0 -> 64.0	322			
FHxSA	6.371	398.0 -> 78.0	2855	0.82	µg/L	93
		398.0 -> 64.0	376			

 # = Qualifier out of range, m = manually integrated, + = Area summed

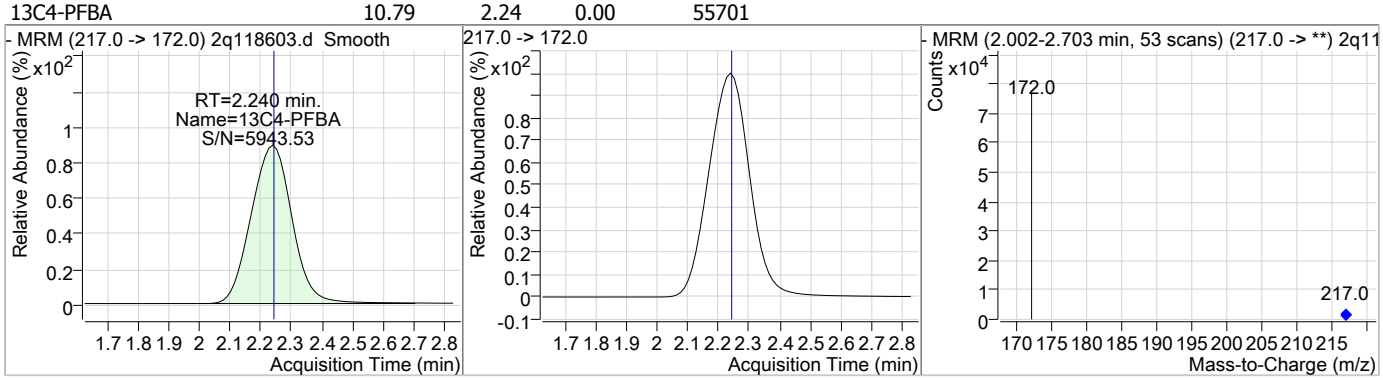
Perfluorinated Compounds by LC/MS/MS



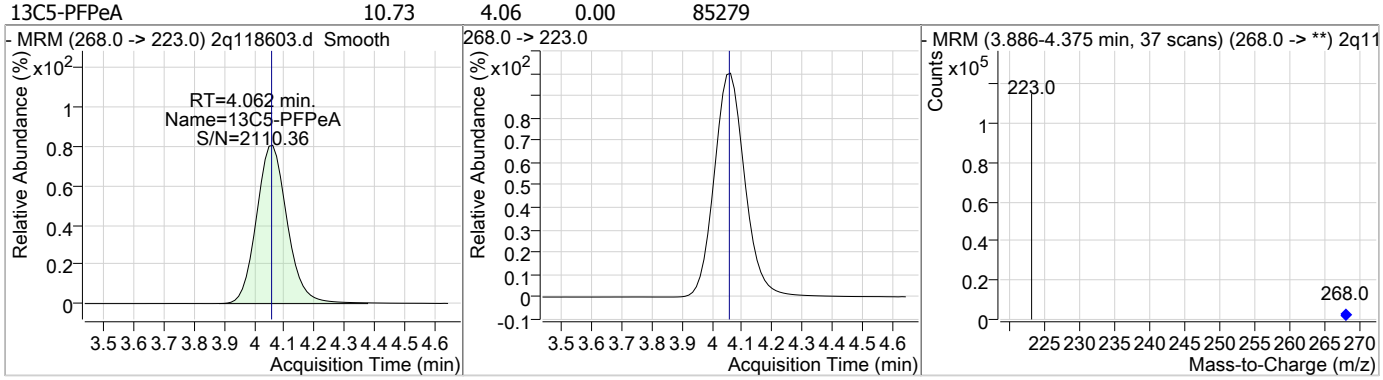
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	0.89	2.25	0.01	1566				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	10.79	2.24	0.00	55701				

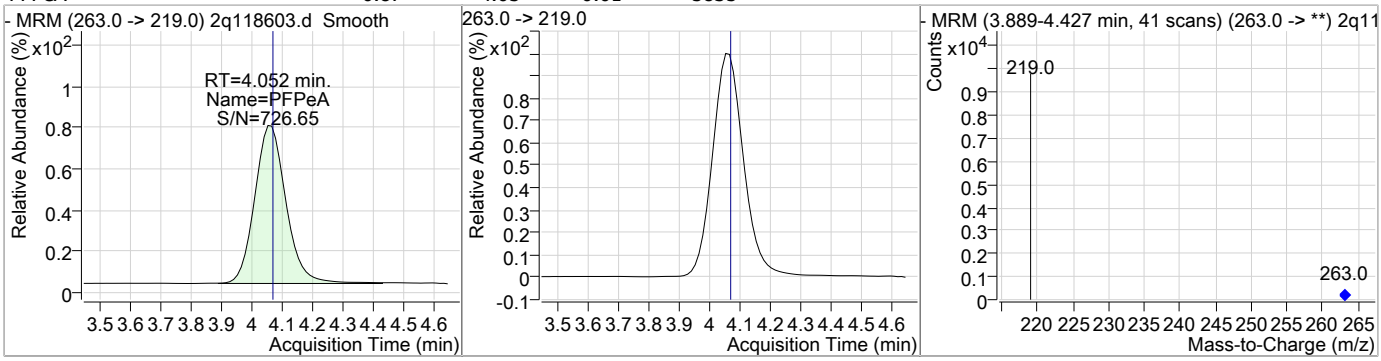


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	10.73	4.06	0.00	85279				

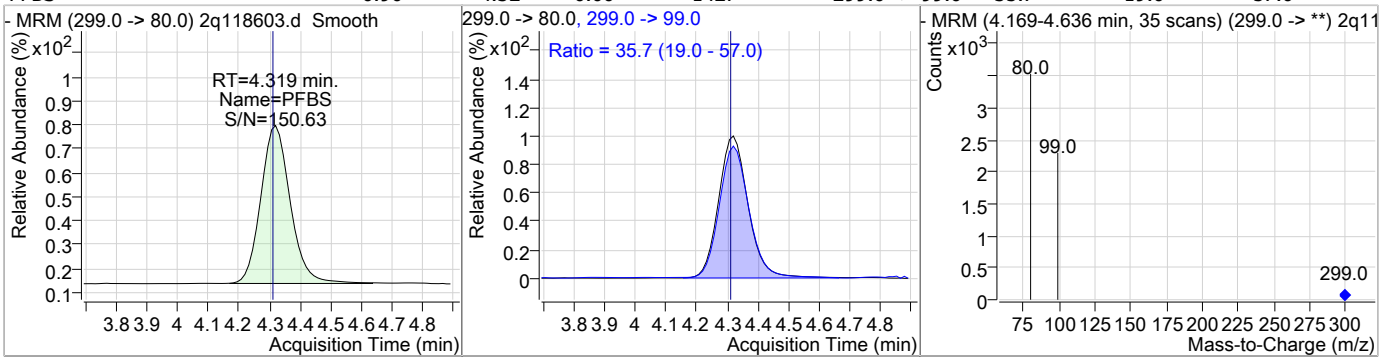


Perfluorinated Compounds by LC/MS/MS

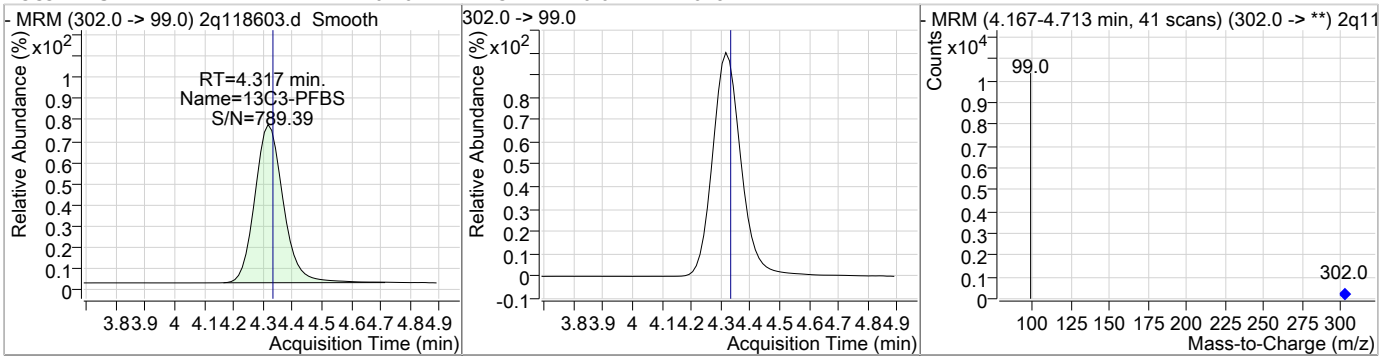
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	0.87	4.05	-0.01	5835				



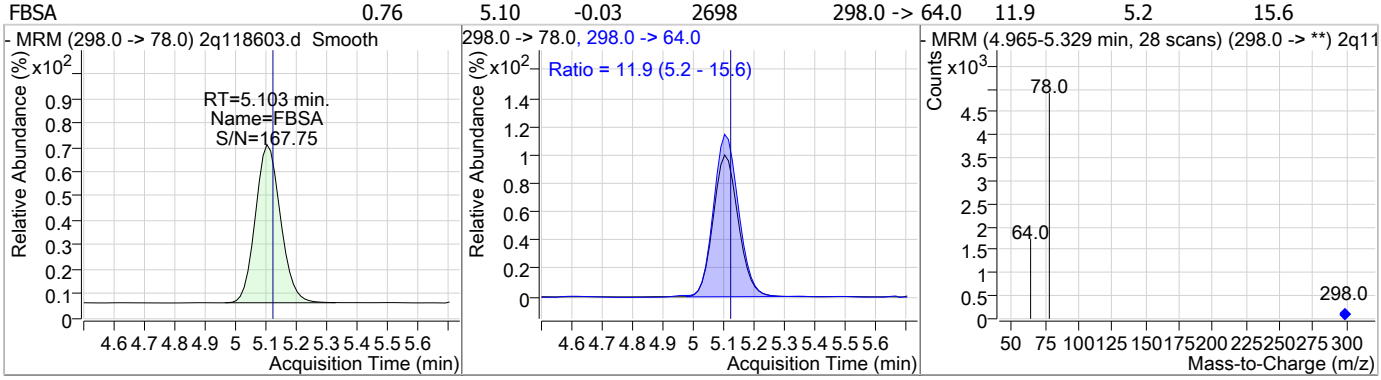
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	0.90	4.32	0.00	1427	299.0 -> 99.0	35.7	19.0	57.0



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	10.46	4.32	-0.01	6287				

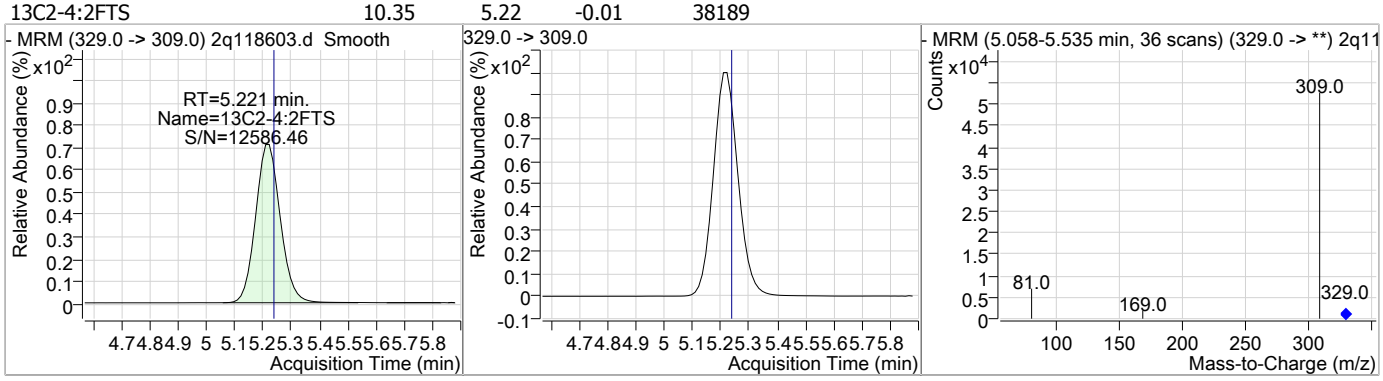


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	0.76	5.10	-0.03	2698	298.0 -> 64.0	11.9	5.2	15.6

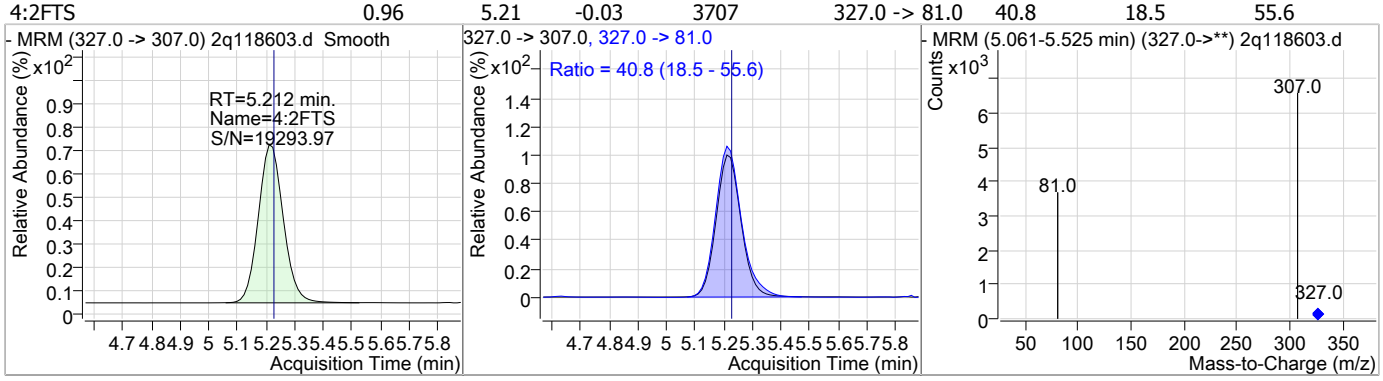


Perfluorinated Compounds by LC/MS/MS

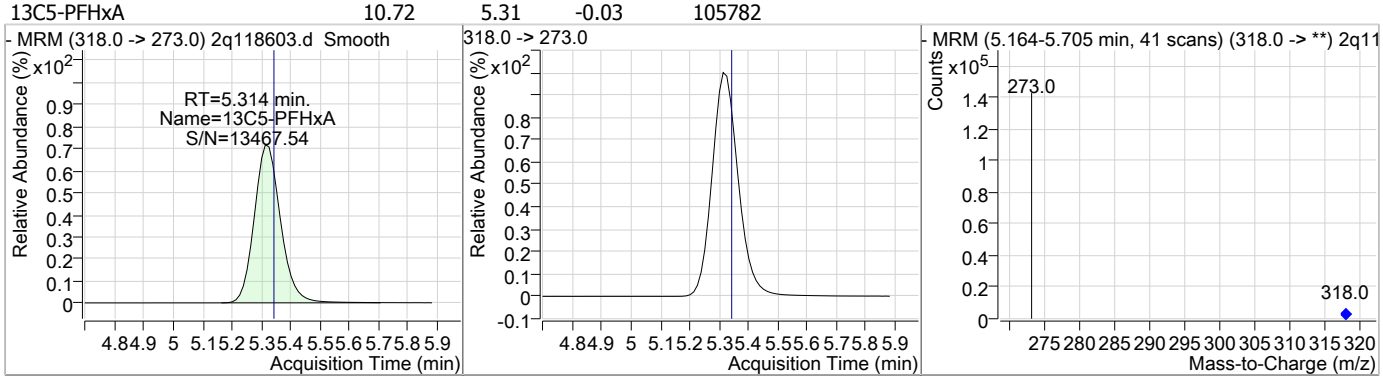
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	10.35	5.22	-0.01	38189				



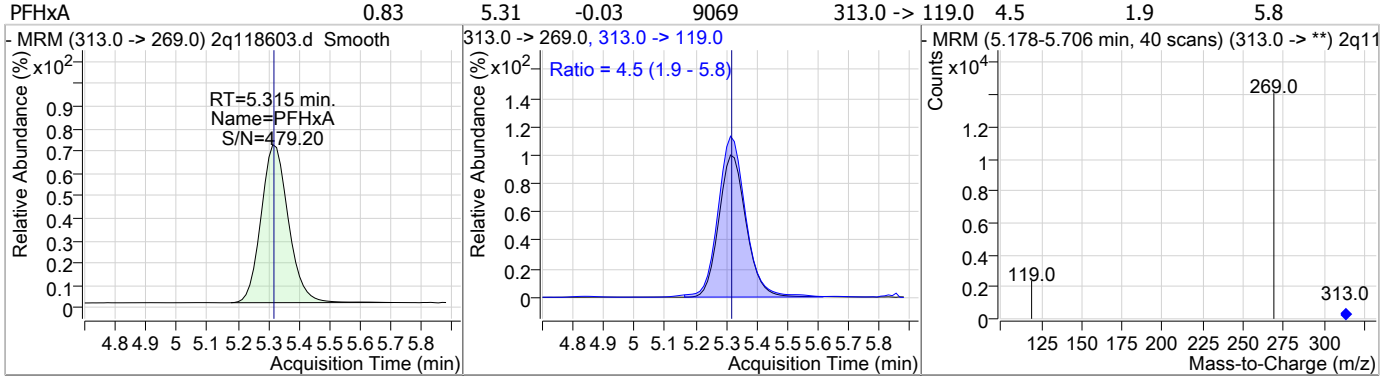
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	0.96	5.21	-0.03	3707	327.0 -> 81.0	40.8	18.5	55.6



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	10.72	5.31	-0.03	105782				

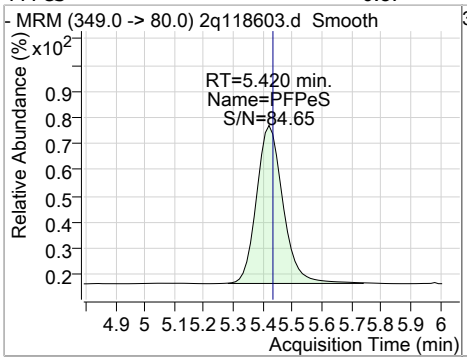


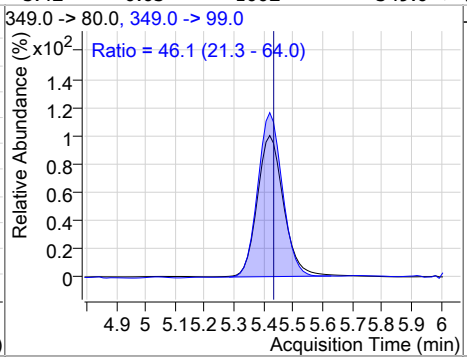
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	0.83	5.31	-0.03	9069	313.0 -> 119.0	4.5	1.9	5.8

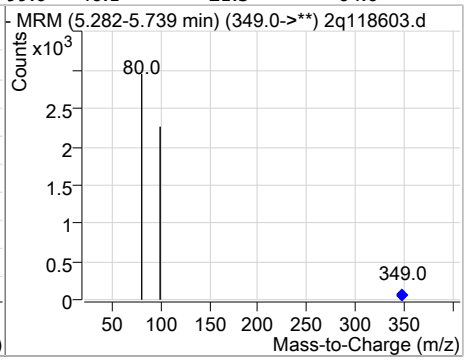


Perfluorinated Compounds by LC/MS/MS

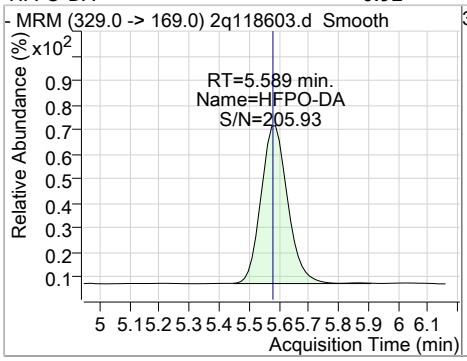
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	0.87	5.42	-0.03	1002	349.0 -> 99.0	46.1	21.3	64.0

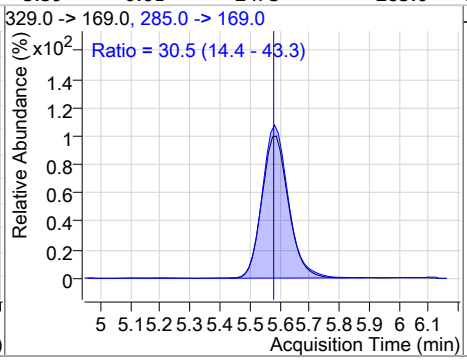


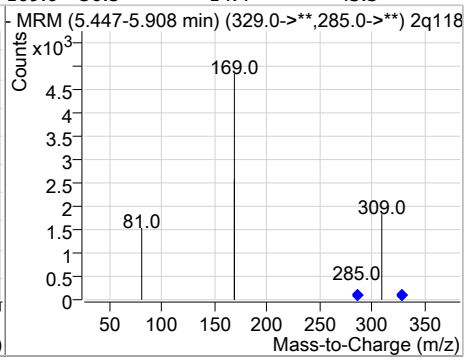




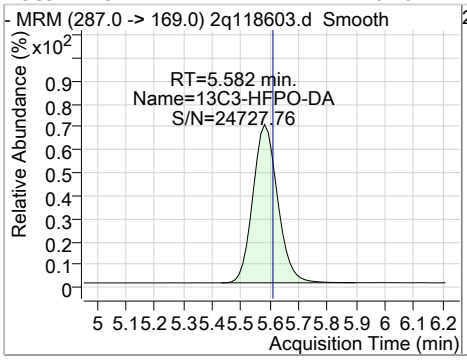
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	0.92	5.59	-0.01	2473	285.0 -> 169.0	30.5	14.4	43.3

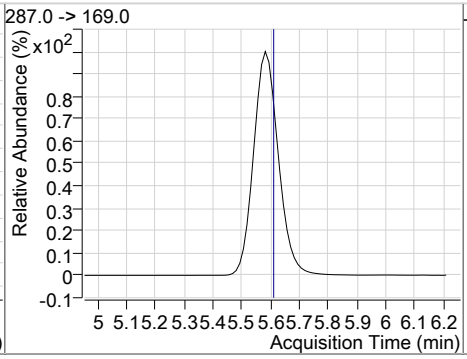


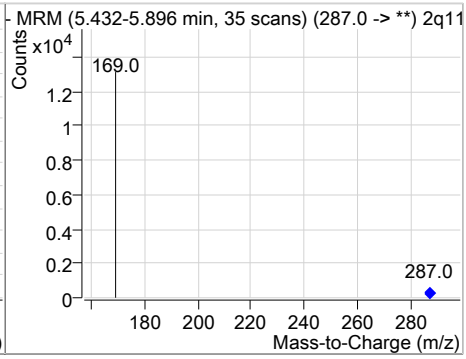




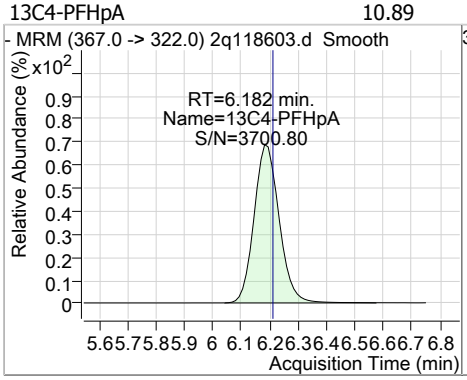
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	10.48	5.58	-0.03	8714				

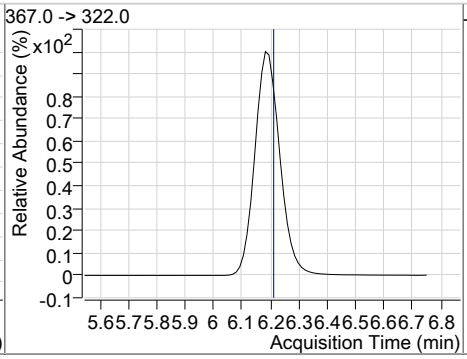


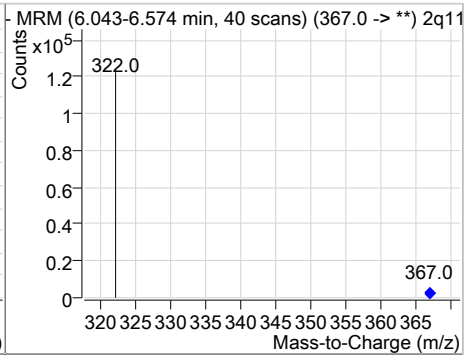




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	10.89	6.18	-0.03	93555				

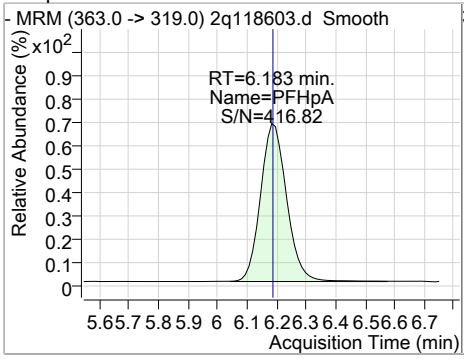


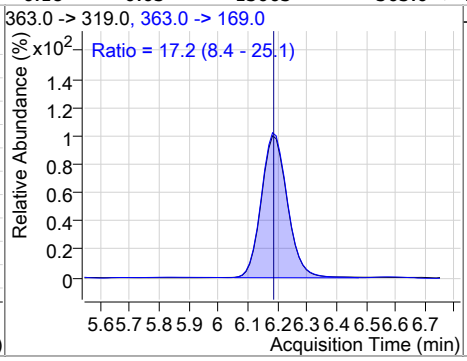


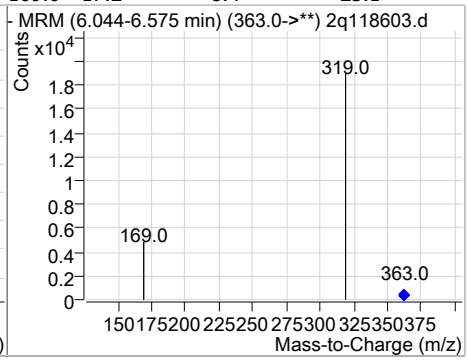


Perfluorinated Compounds by LC/MS/MS

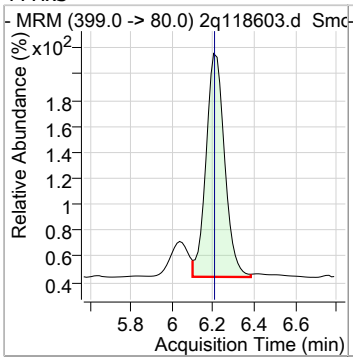
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	0.84	6.18	-0.03	13063	363.0 -> 169.0	17.2	8.4	25.1

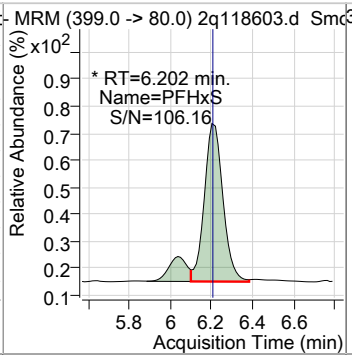


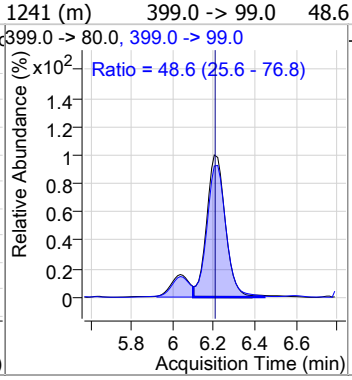


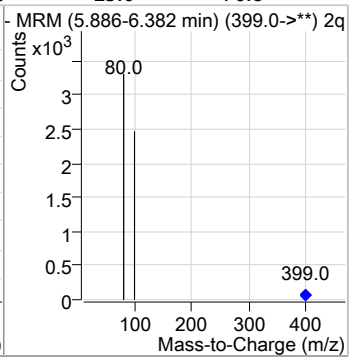


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	0.91	6.20	-0.03	1241 (m)	399.0 -> 99.0	48.6	25.6	76.8

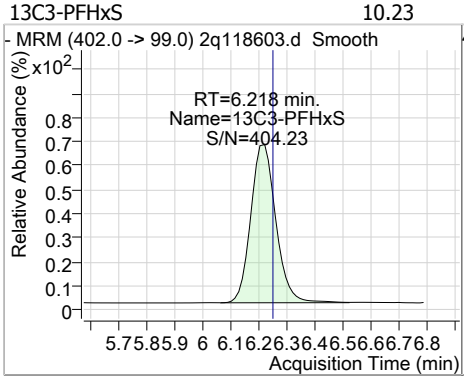


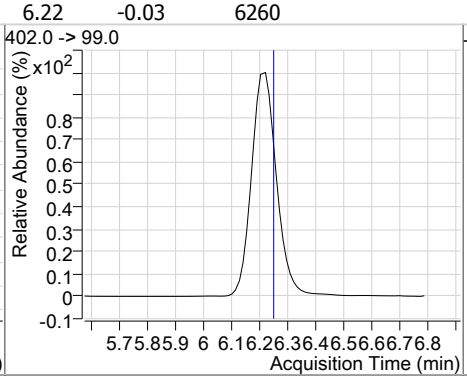


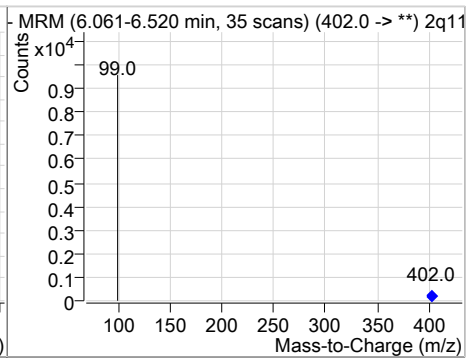




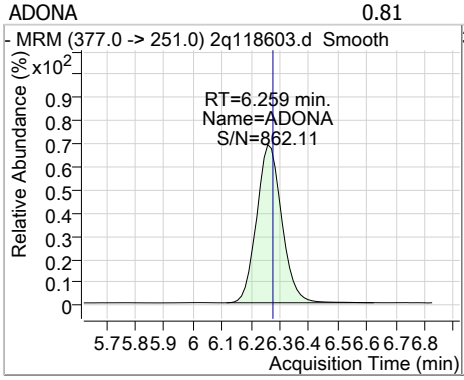
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	10.23	6.22	-0.03	6260				

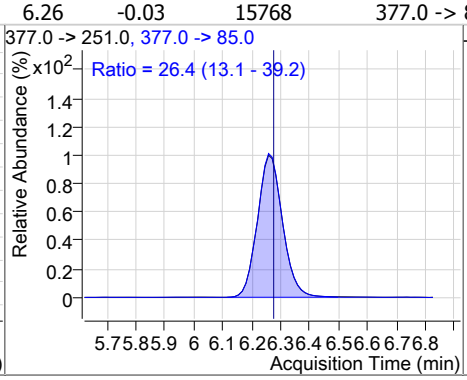


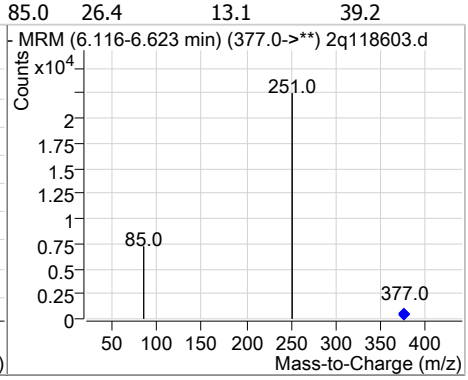




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	0.81	6.26	-0.03	15768	377.0 -> 85.0	26.4	13.1	39.2

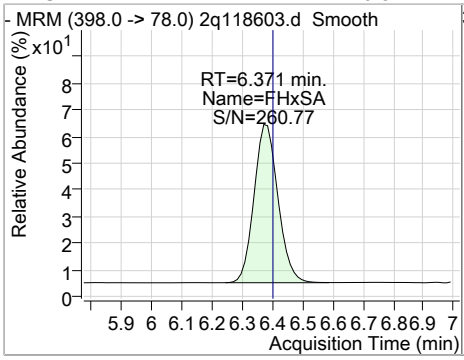


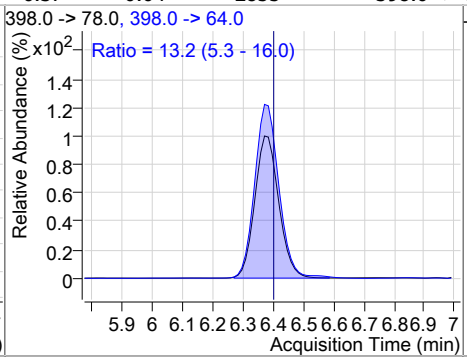


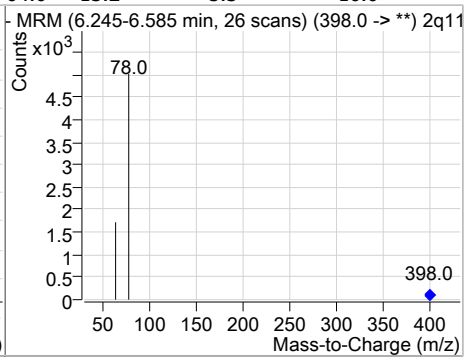


Perfluorinated Compounds by LC/MS/MS

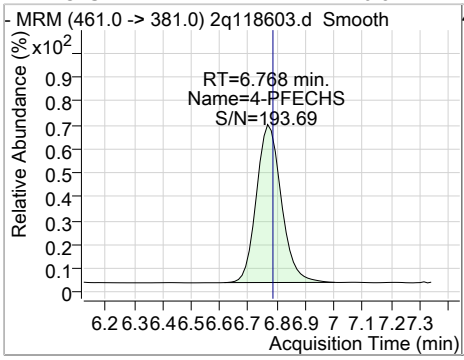
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	0.82	6.37	-0.04	2855	398.0 -> 64.0	13.2	5.3	16.0

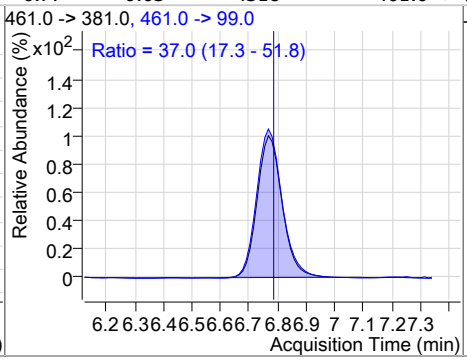


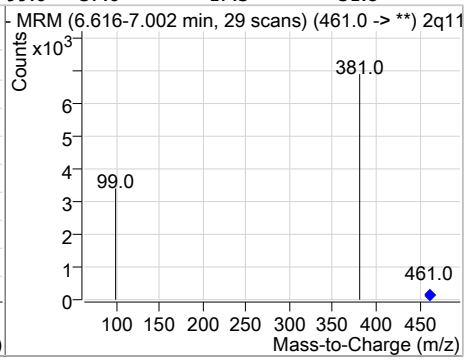




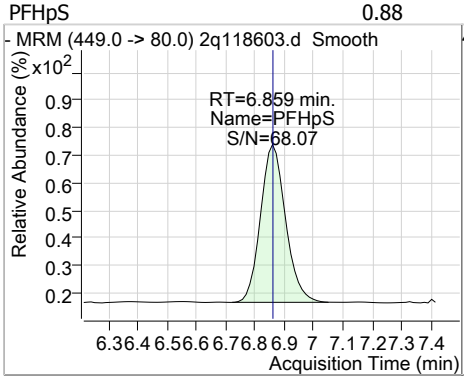
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS	0.82	6.77	-0.03	4318	461.0 -> 99.0	37.0	17.3	51.8

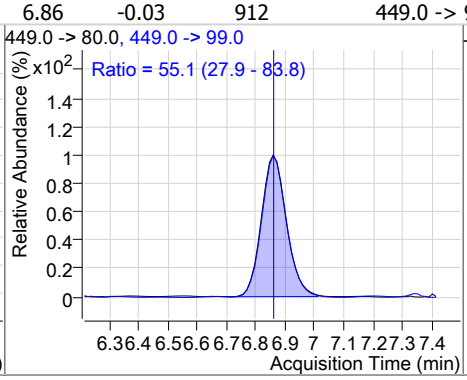


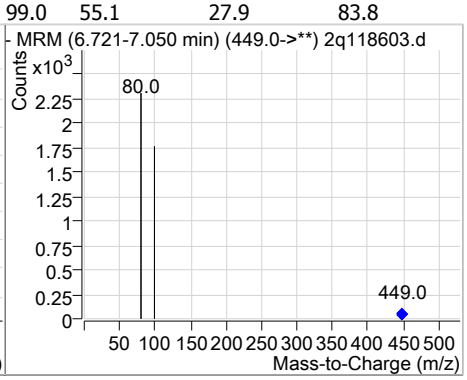




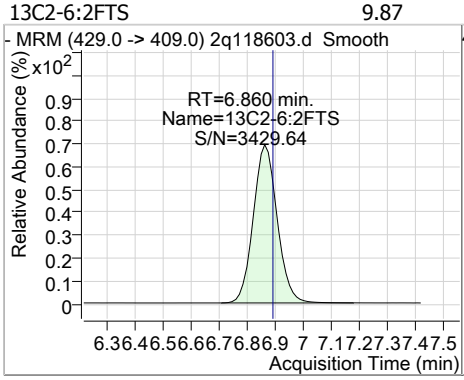
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	0.88	6.86	-0.03	912	449.0 -> 99.0	55.1	27.9	83.8

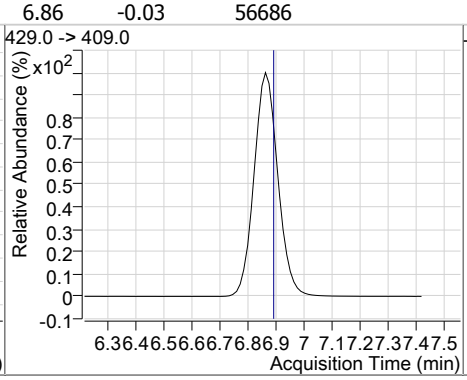


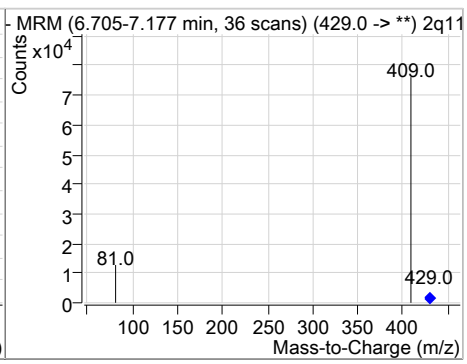




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	9.87	6.86	-0.03	56686				

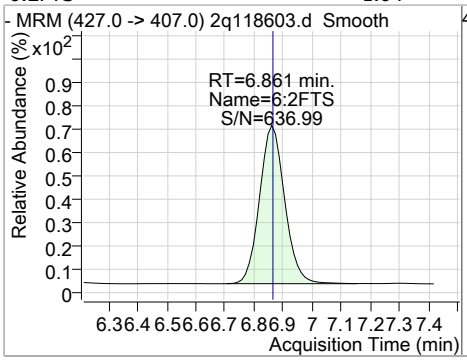


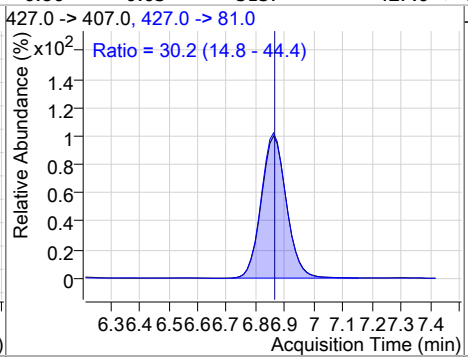


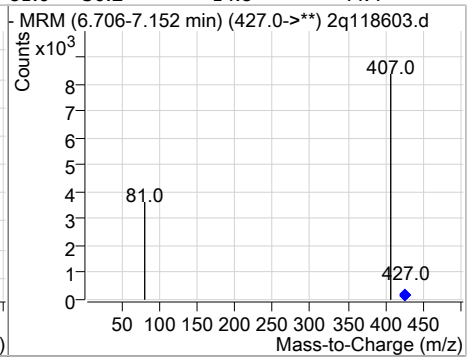


Perfluorinated Compounds by LC/MS/MS

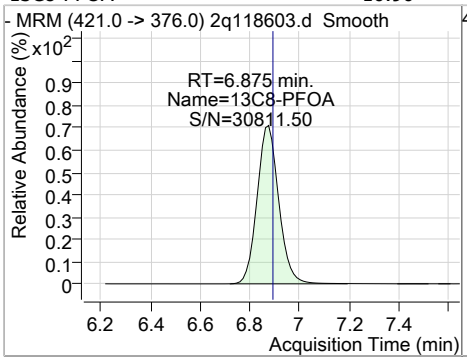
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	1.04	6.86	-0.03	5157	427.0 -> 81.0	30.2	14.8	44.4

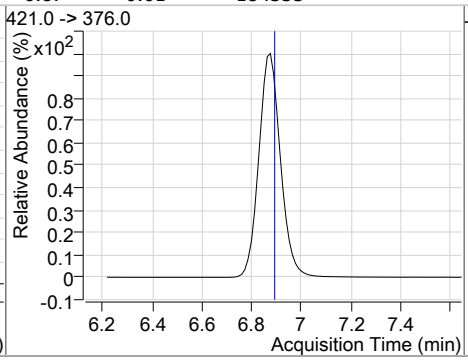


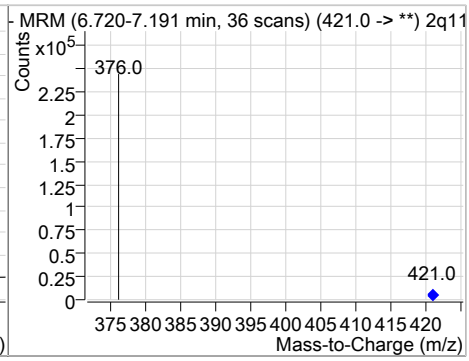




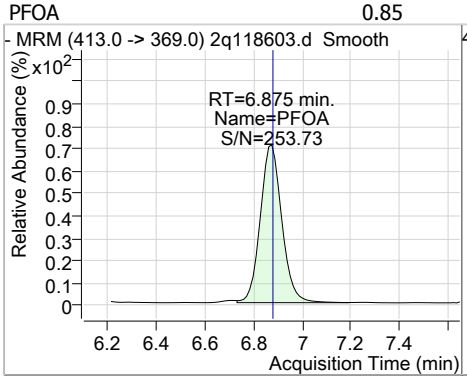
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	10.90	6.87	-0.01	184555				

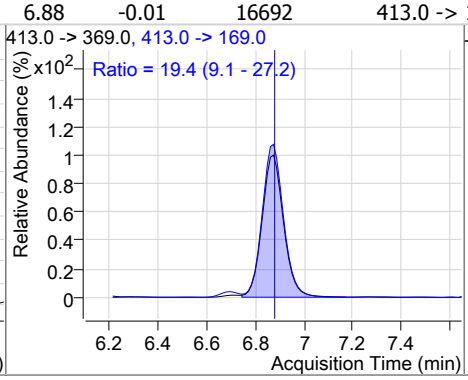


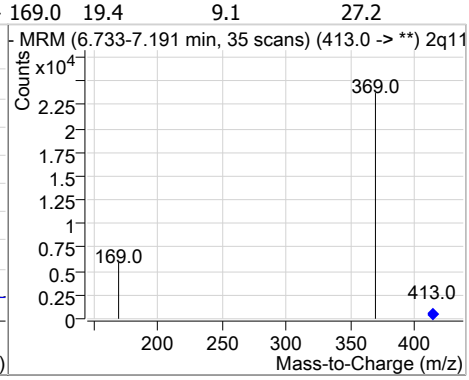




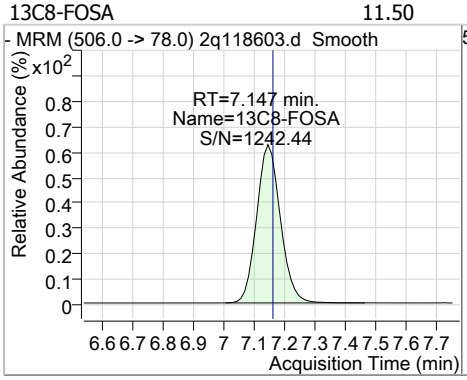
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	0.85	6.88	-0.01	16692	413.0 -> 169.0	19.4	9.1	27.2

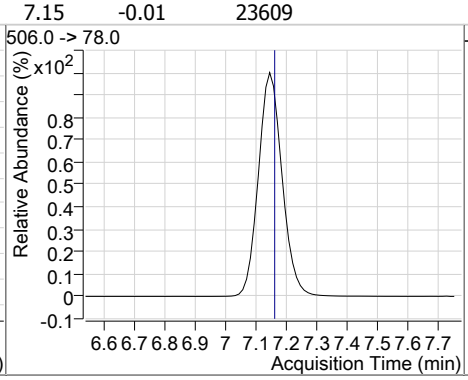


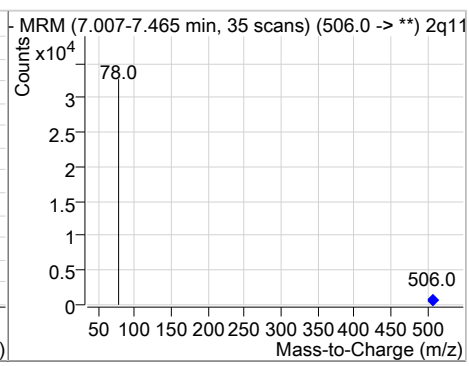




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	11.50	7.15	-0.01	23609				

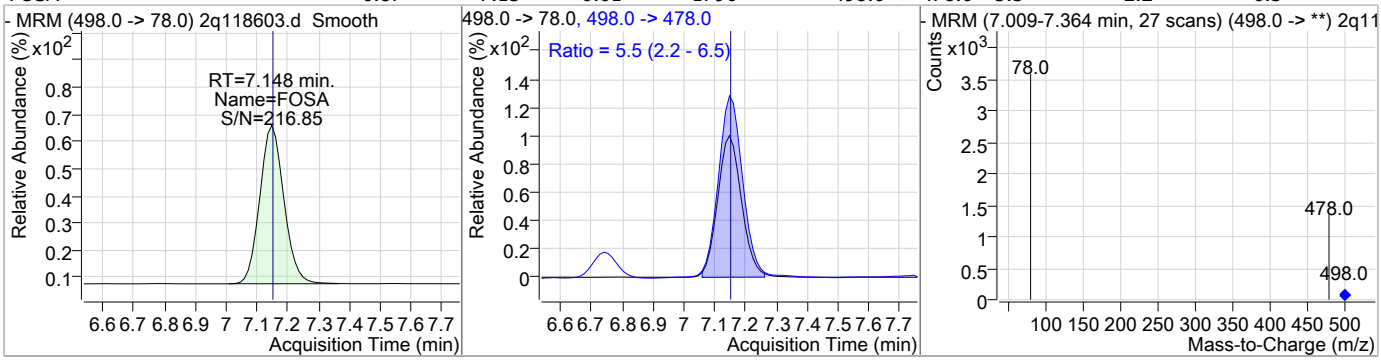




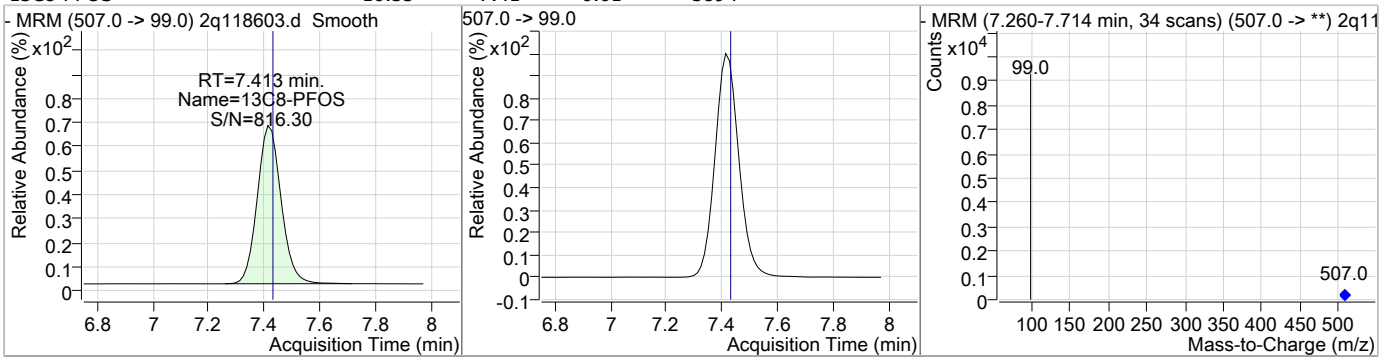


Perfluorinated Compounds by LC/MS/MS

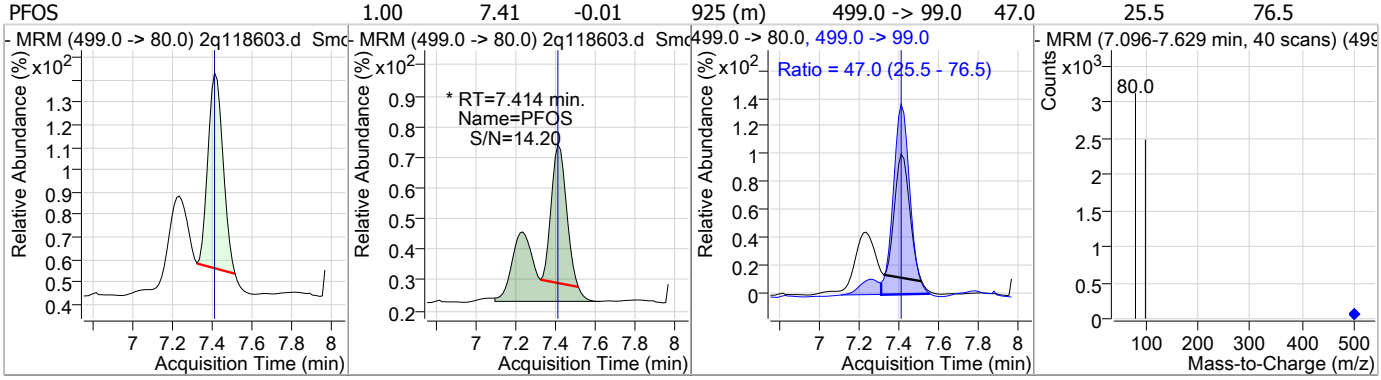
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	0.87	7.15	-0.01	1796	498.0 -> 478.0	5.5	2.2	6.5



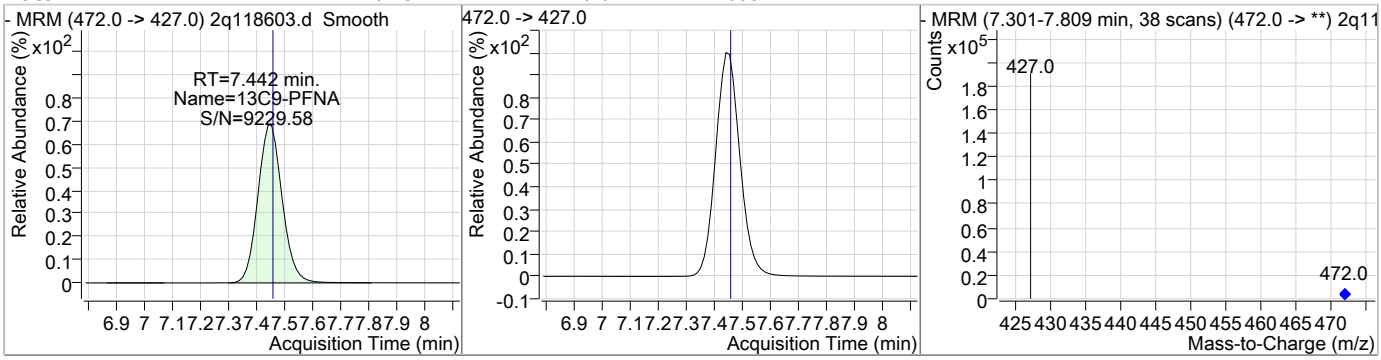
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	10.55	7.41	-0.01	5894				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	1.00	7.41	-0.01	925 (m)	499.0 -> 99.0	47.0	25.5	76.5

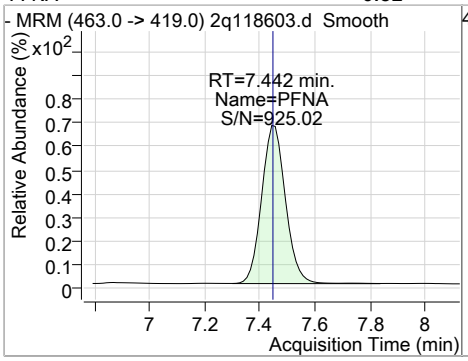


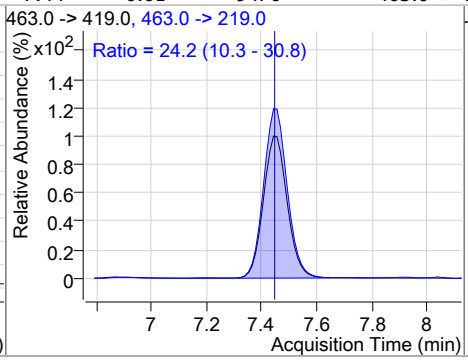
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	10.73	7.44	-0.01	144605				

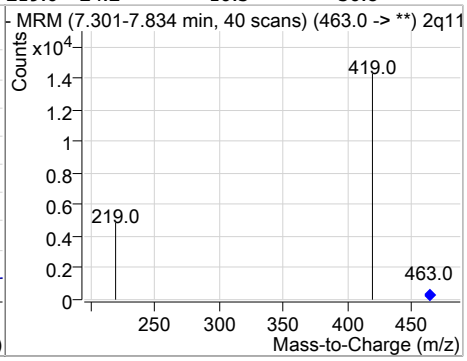


Perfluorinated Compounds by LC/MS/MS

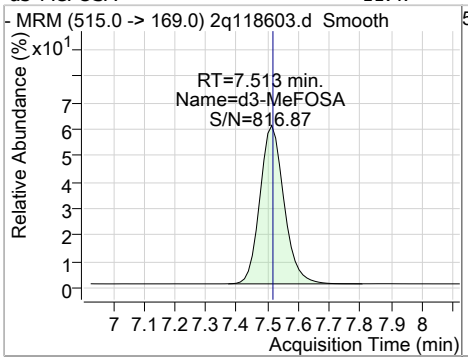
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	0.82	7.44	-0.01	9470	463.0 -> 219.0	24.2	10.3	30.8

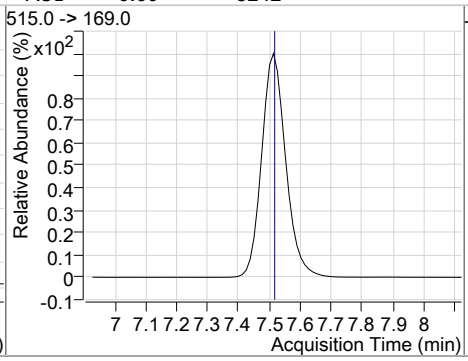


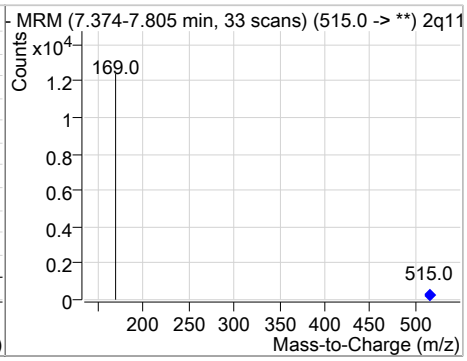




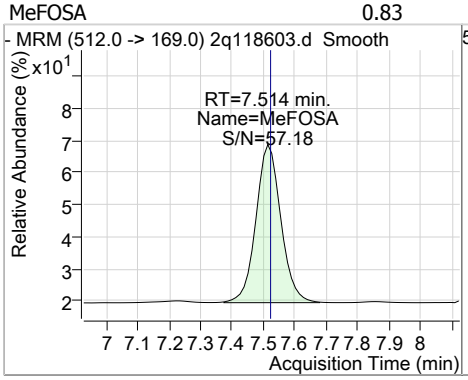
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	11.47	7.51	0.00	8242				

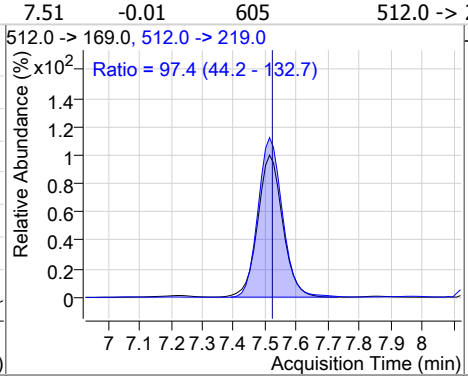


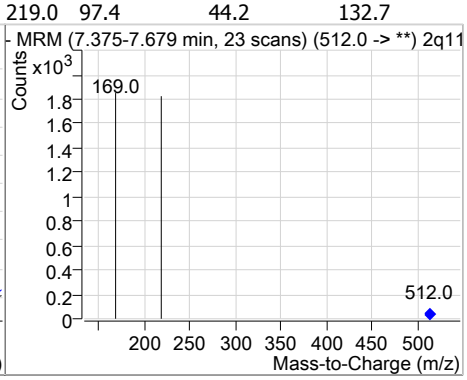




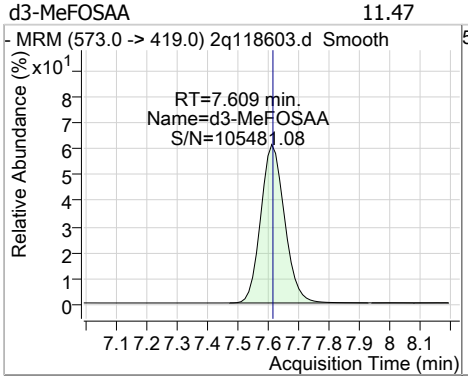
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	0.83	7.51	-0.01	605	512.0 -> 219.0	97.4	44.2	132.7

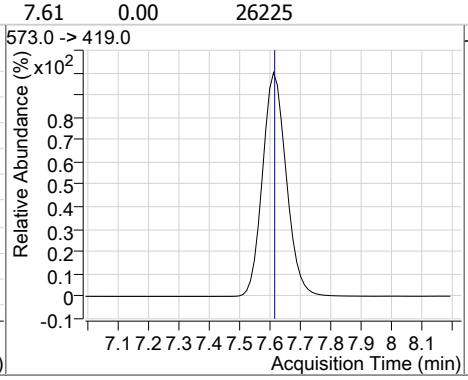


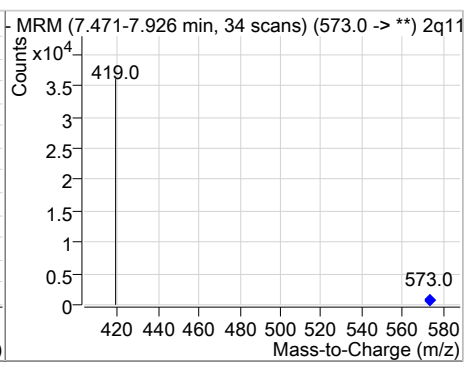




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	11.47	7.61	0.00	26225				

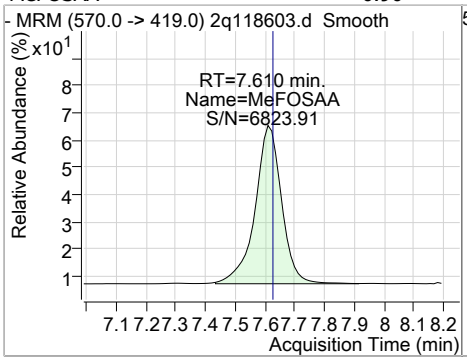


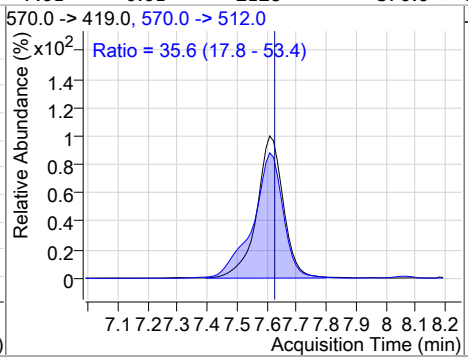


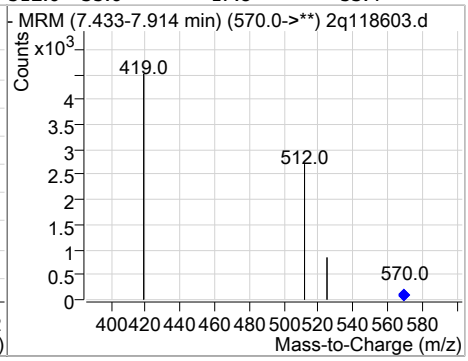


Perfluorinated Compounds by LC/MS/MS

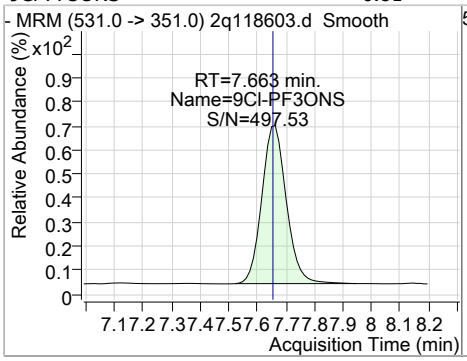
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	0.96	7.61	-0.01	2128	570.0 -> 512.0	35.6	17.8	53.4

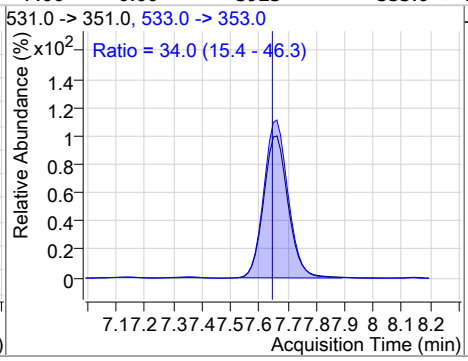


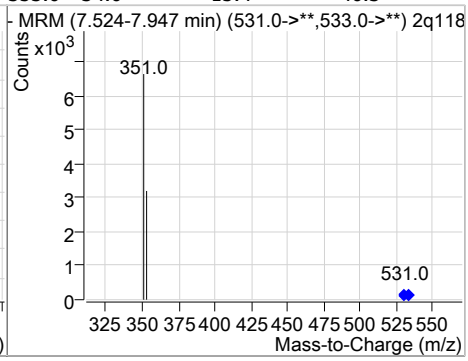




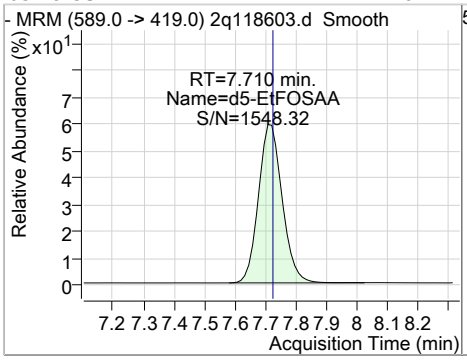
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	0.81	7.66	0.00	3923	533.0 -> 353.0	34.0	15.4	46.3

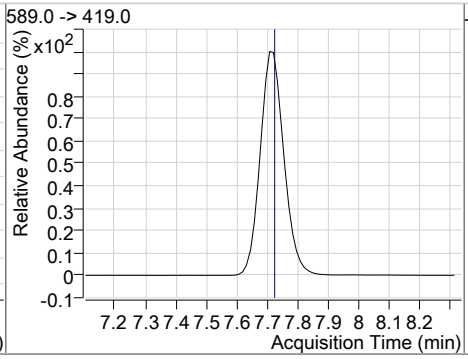


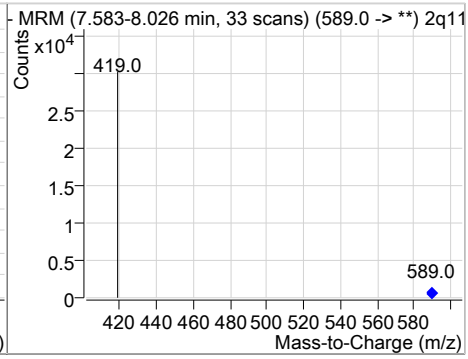




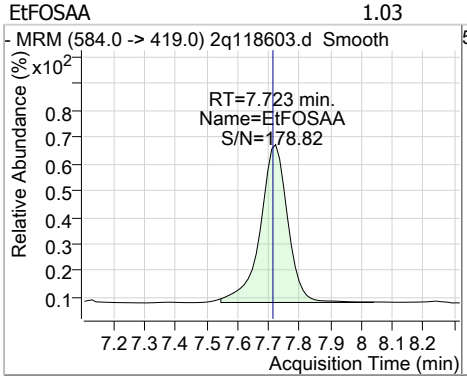
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	11.26	7.71	-0.01	21729				

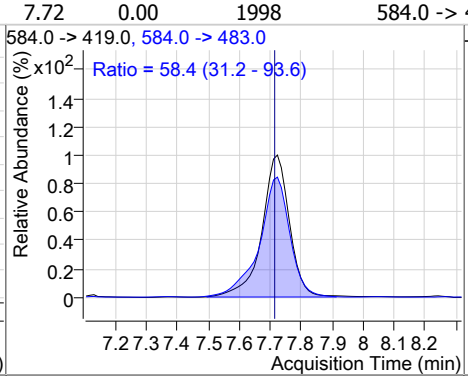


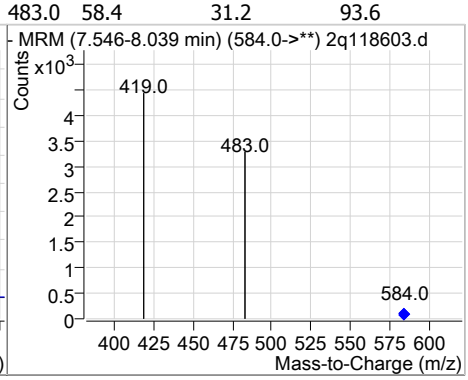




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	1.03	7.72	0.00	1998	584.0 -> 483.0	58.4	31.2	93.6

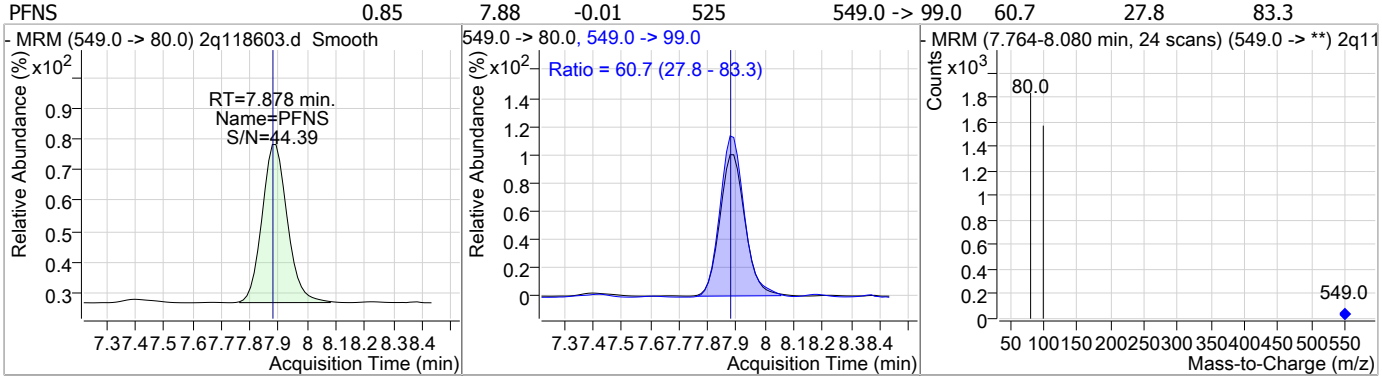




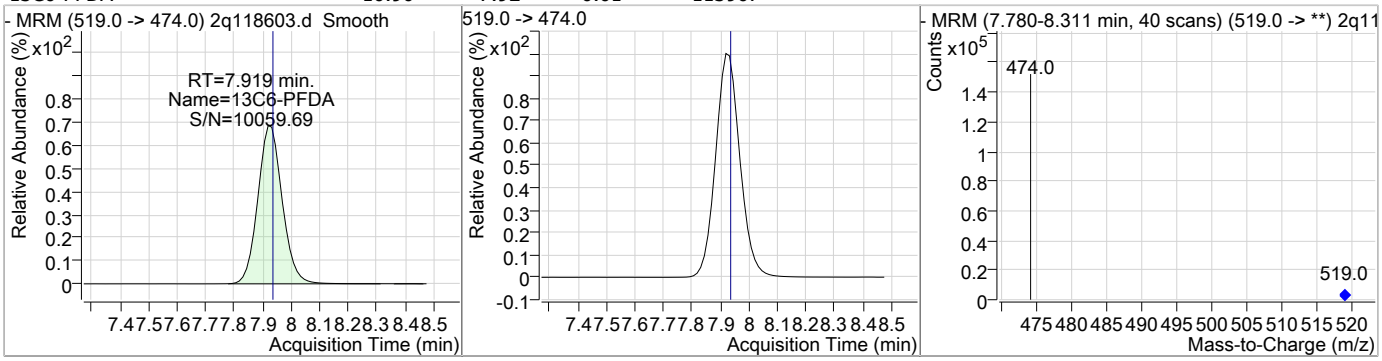


Perfluorinated Compounds by LC/MS/MS

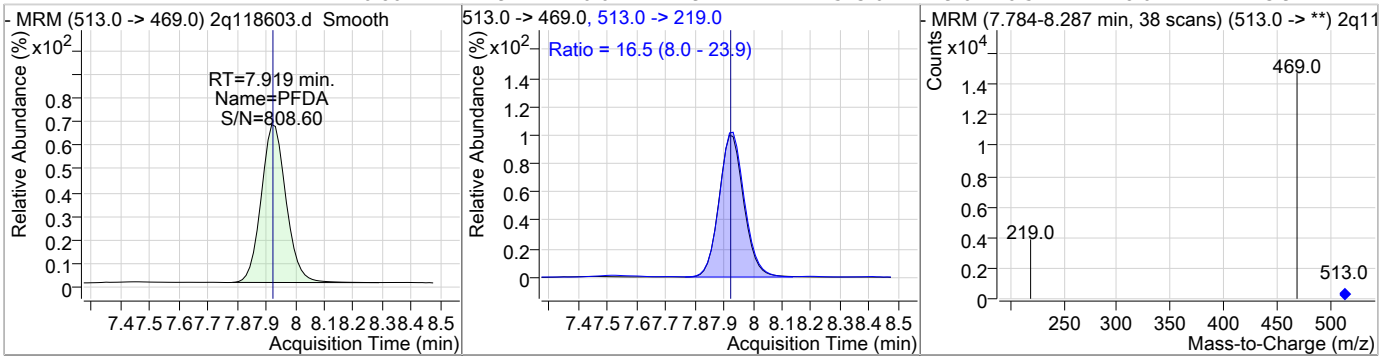
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	0.85	7.88	-0.01	525	549.0 -> 99.0	60.7	27.8	83.3



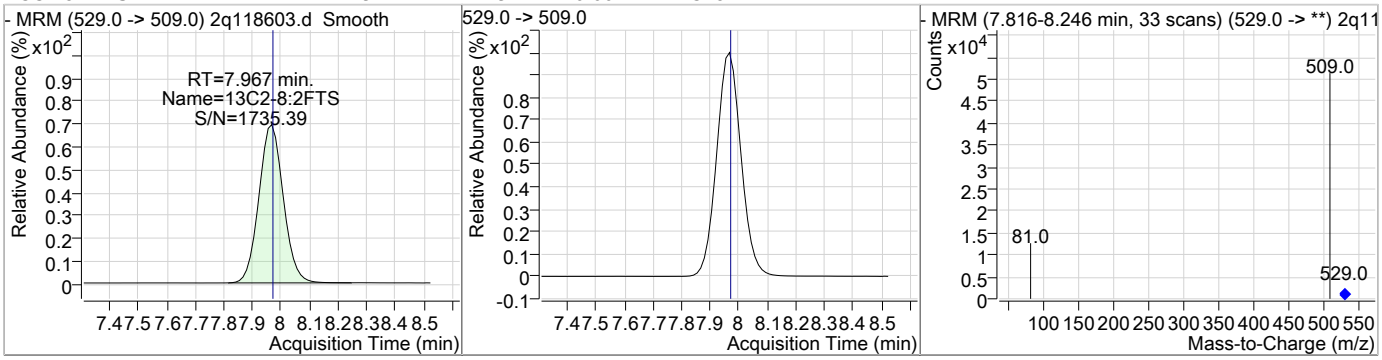
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	10.90	7.92	-0.01	113907				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	0.86	7.92	-0.01	9724	513.0 -> 219.0	16.5	8.0	23.9

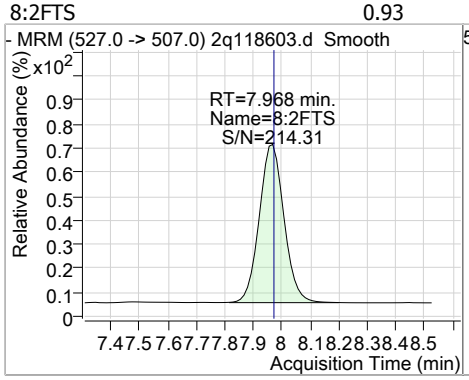


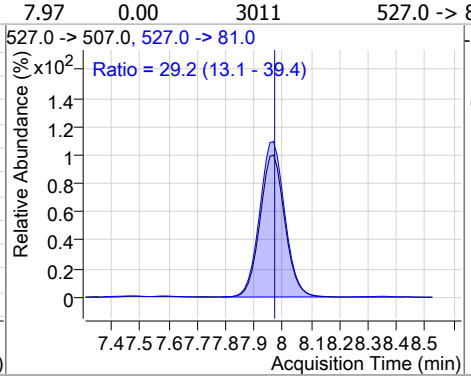
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	9.77	7.97	0.00	37847				

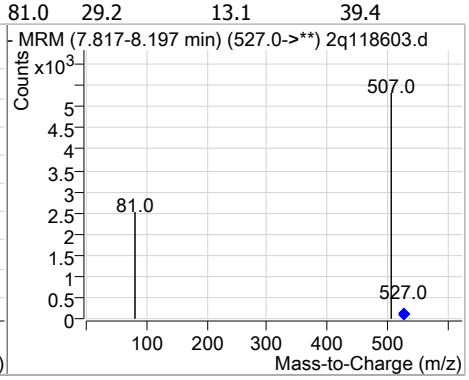


Perfluorinated Compounds by LC/MS/MS

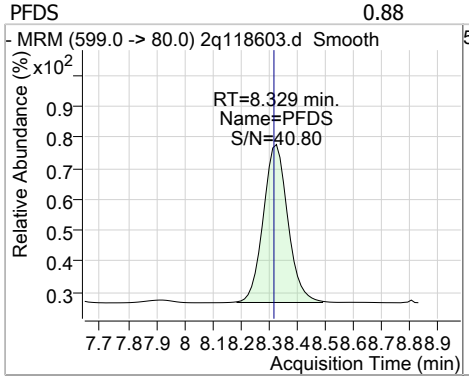
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	0.93	7.97	0.00	3011	527.0 -> 81.0	29.2	13.1	39.4

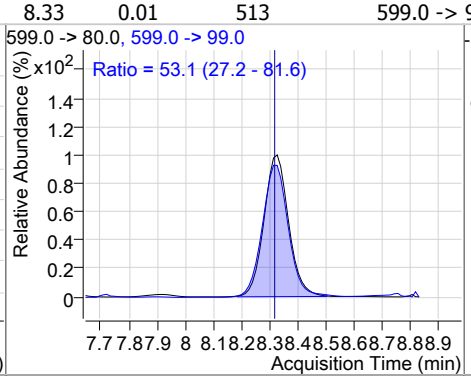


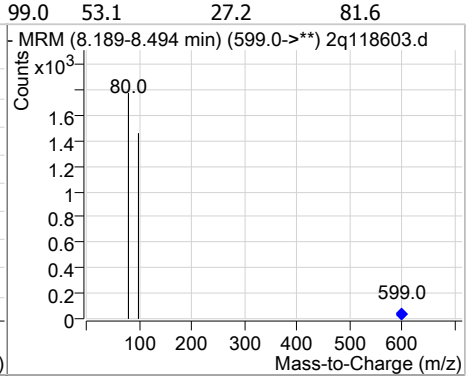




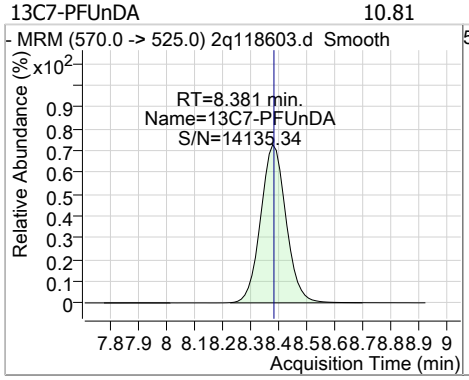
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	0.88	8.33	0.01	513	599.0 -> 99.0	53.1	27.2	81.6

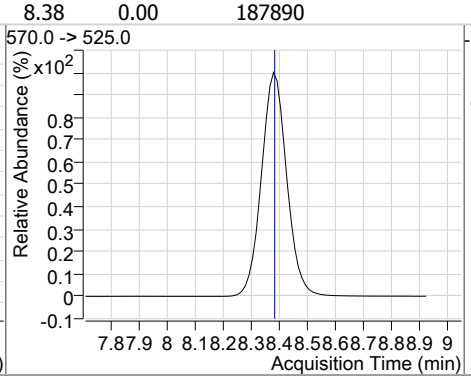


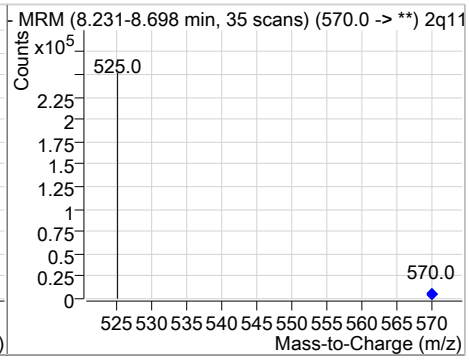




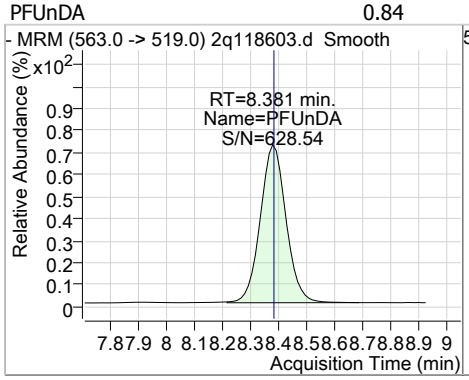
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	10.81	8.38	0.00	187890				

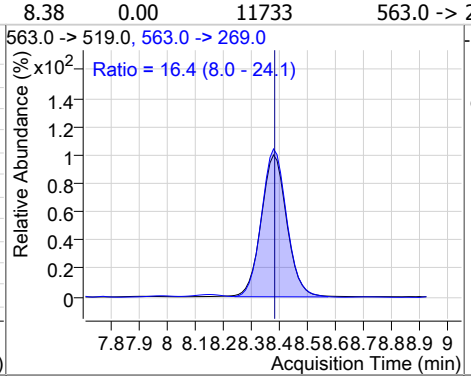


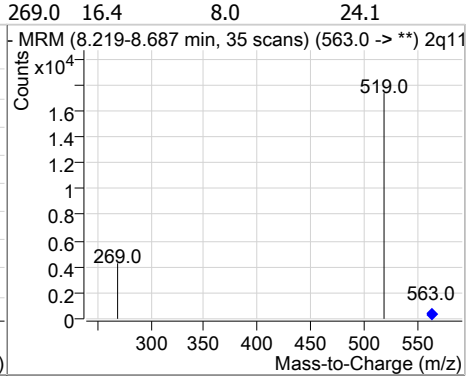




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	0.84	8.38	0.00	11733	563.0 -> 269.0	16.4	8.0	24.1

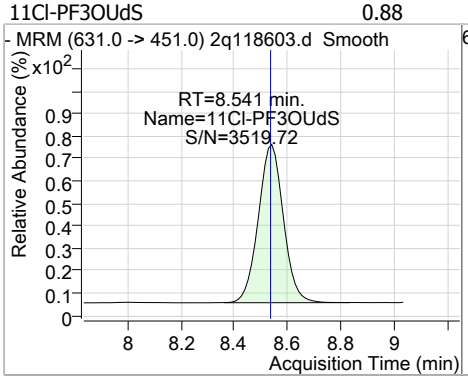


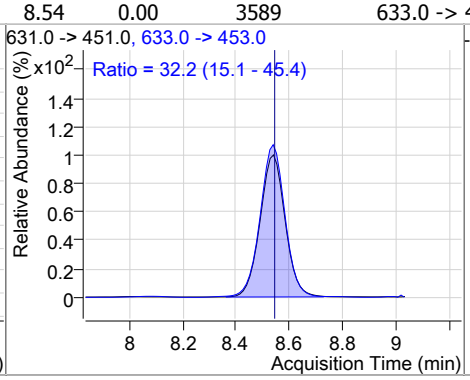


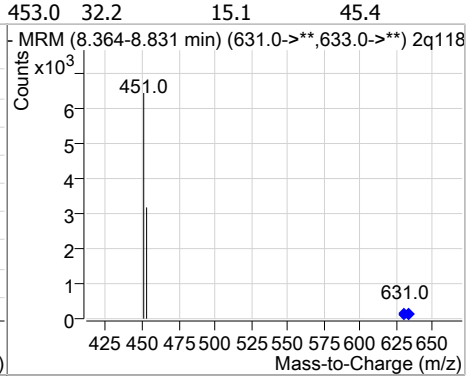


Perfluorinated Compounds by LC/MS/MS

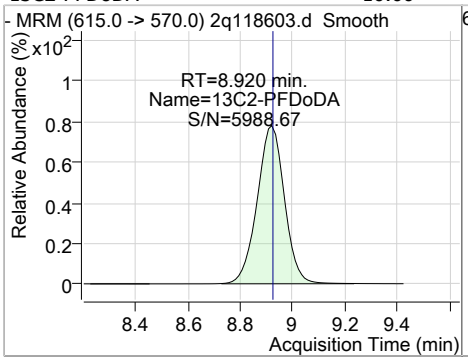
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	0.88	8.54	0.00	3589	633.0 -> 453.0	32.2	15.1	45.4

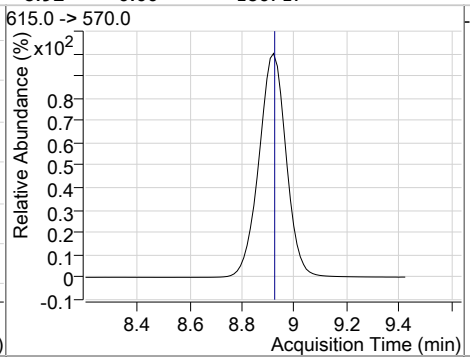


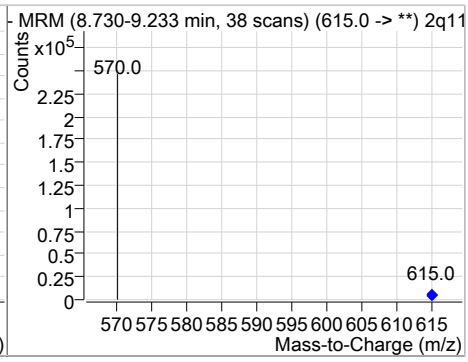




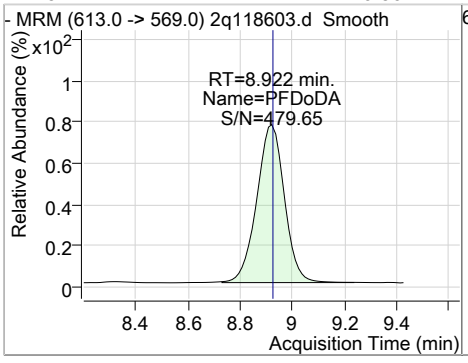
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	10.66	8.92	0.00	186717				

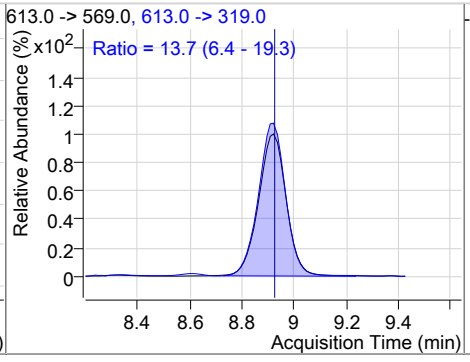


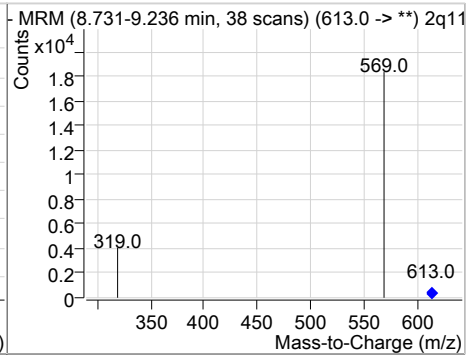




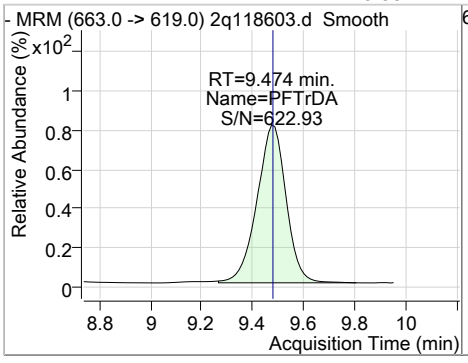
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	0.86	8.92	0.00	12567	613.0 -> 319.0	13.7	6.4	19.3

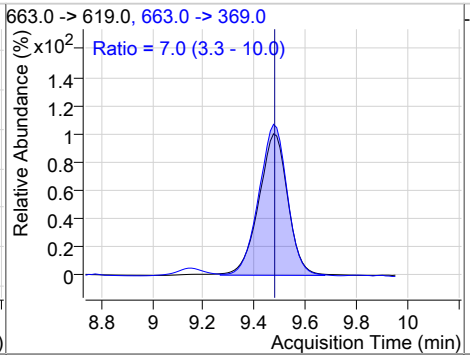


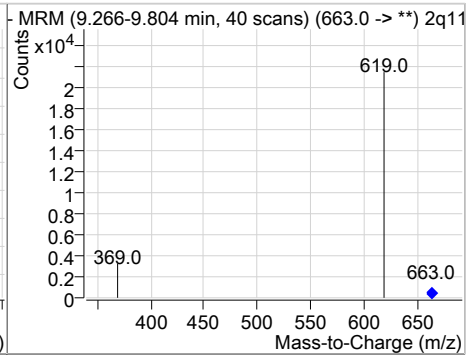




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	0.88	9.47	0.00	14668	663.0 -> 369.0	7.0	3.3	10.0

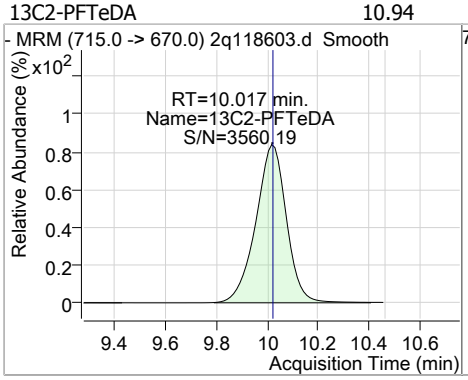


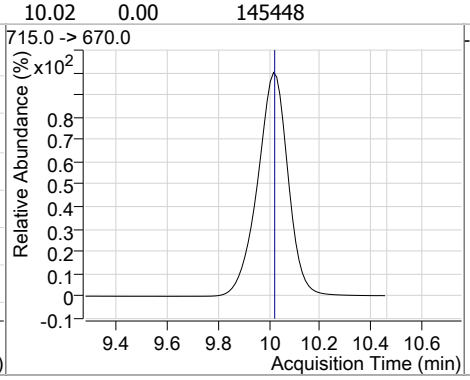


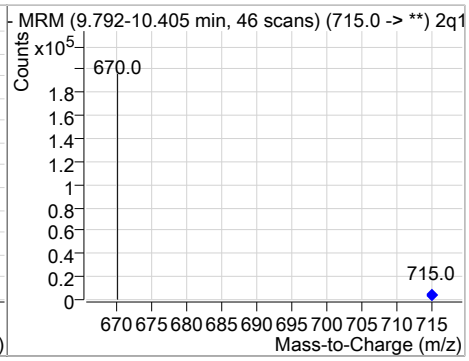


Perfluorinated Compounds by LC/MS/MS

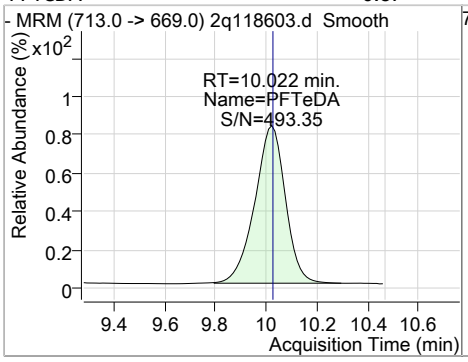
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	10.94	10.02	0.00	145448				

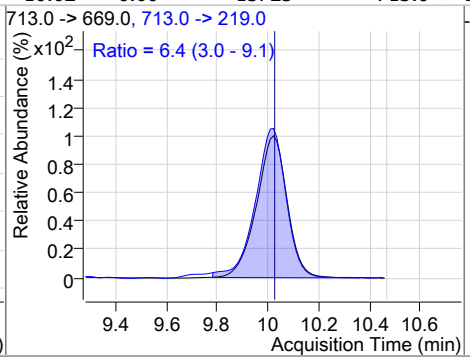


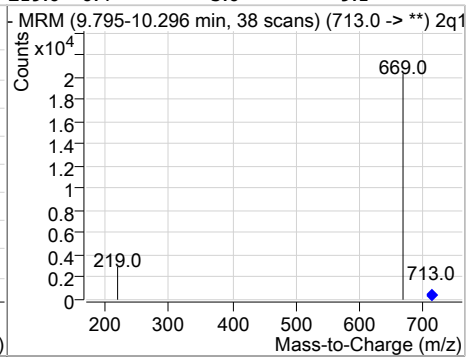




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	0.87	10.02	0.00	13725	713.0 -> 219.0	6.4	3.0	9.1







Manual Integration Approval Summary

Sample Number: S2Q1693-CC1691
Lab FileID: 2Q118603.D
Injection Time: 01/04/24 16:02
Method: EPA 537M QSM5.3 B-15
Analyst approved: 01/05/24 15:53 Lindsay Ritner
Supervisor approved: 01/05/24 17:02 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.20	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.41	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Natasha Gumtie 01/05/24 17:02

Perfluorinated Compounds by LC/MS/MS

Data File : 2q118612.d
Operator : lindsayr
Acq. Method : 537_ID.m
Acq. Date-Time : 1/4/2024 6:31:17 PM
Sample Name : cc1691-20
Vial : P1-A7
DA Method File : ID_010224_S2Q1691.quantmethod.xml
Batch Name : s2q1693.batch.bin
Sample Information : op401,S2Q1693,250,,,1.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M5-EtFOSAA	7.722	589.0 -> 419.0	23215	10.00	µg/L	0.000
M4-PFBA	2.240	217.0 -> 172.0	57536	10.00	µg/L	0.000
M5-PFPeA	4.062	268.0 -> 223.0	88679	10.00	µg/L	0.000
M5-PFHxA	5.326	318.0 -> 273.0	108945	10.00	µg/L	-0.013
M4-PFHpA	6.195	367.0 -> 322.0	95354	10.00	µg/L	-0.013
M8-PFOA	6.875	421.0 -> 376.0	186799	10.00	µg/L	-0.013
M9-PFNA	7.455	472.0 -> 427.0	147623	10.00	µg/L	0.000
M6-PFDA	7.931	519.0 -> 474.0	119980	10.00	µg/L	0.000
M7-PFUnDA	8.381	570.0 -> 525.0	194887	10.00	µg/L	0.000
M2-PFDoDA	8.920	615.0 -> 570.0	196165	10.00	µg/L	0.000
M2-PFTeDA	10.017	715.0 -> 670.0	151378	10.00	µg/L	0.000
M8-FOSA	7.159	506.0 -> 78.0	23915	10.00	µg/L	0.000
M3-PFBS	4.330	302.0 -> 99.0	6407	10.00	µg/L	0.000
M3-PFHxS	6.218	402.0 -> 99.0	6522	10.00	µg/L	-0.025
M8-PFOS	7.427	507.0 -> 99.0	6195	10.00	µg/L	0.000
M2-4:2FTS	5.221	329.0 -> 309.0	43187	10.00	µg/L	-0.013
M2-6:2FTS	6.872	429.0 -> 409.0	62364	10.00	µg/L	-0.013
M2-8:2FTS	7.967	529.0 -> 509.0	43912	10.00	µg/L	0.000
M3-MeFOSAA	7.622	573.0 -> 419.0	27740	10.00	µg/L	0.013
M3-HFPO-DA	5.595	287.0 -> 169.0	8828	10.00	µg/L	-0.013
M3-MeFOSA	7.513	515.0 -> 169.0	8582	10.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	5.221	329.0 -> 309.0	43187	11.71	µg/L	-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 117.1%		
13C2-6:2FTS	6.872	429.0 -> 409.0	62364	10.86	µg/L	-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 108.6%		
13C2-8:2FTS	7.967	529.0 -> 509.0	43912	11.33	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 113.3%		
13C2-PFDoDA	8.920	615.0 -> 570.0	196165	11.20	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 112.0%		
13C2-PFTeDA	10.017	715.0 -> 670.0	151378	11.39	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 113.9%		
13C3-PFBS	4.330	302.0 -> 99.0	6407	10.66	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 106.6%		
13C3-PFHxS	6.218	402.0 -> 99.0	6522	10.65	µg/L	-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 106.5%		
13C4-PFBA	2.240	217.0 -> 172.0	57536	11.14	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 111.4%		
13C4-PFHpA	6.195	367.0 -> 322.0	95354	11.10	µg/L	-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 111.0%		
d5-EtFOSAA	7.722	589.0 -> 419.0	23215	12.03	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 120.3%		
13C5-PFHxA	5.326	318.0 -> 273.0	108945	11.04	µg/L	-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 110.4%		
13C5-PFPeA	4.062	268.0 -> 223.0	88679	11.15	µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

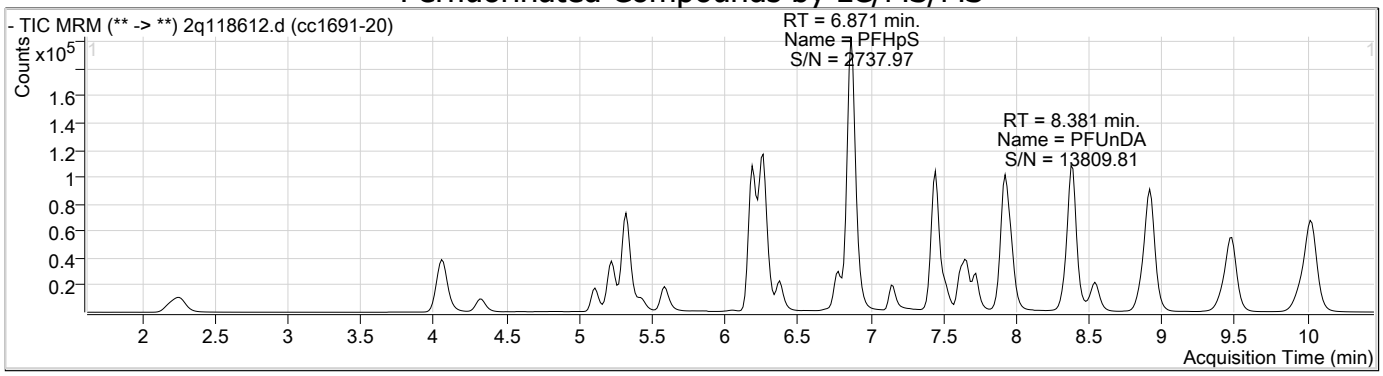
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 111.5%			
13C6-PFDA	7.931	519.0 -> 474.0	119980	11.48	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 114.8%			
13C7-PFUnDA	8.381	570.0 -> 525.0	194887	11.21	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 112.1%			
13C8-FOSA	7.159	506.0 -> 78.0	23915	11.65	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 116.5%			
13C8-PFOA	6.875	421.0 -> 376.0	186799	11.04	µg/L		-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 110.4%			
13C8-PFOS	7.427	507.0 -> 99.0	6195	11.09	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 110.9%			
13C9-PFNA	7.455	472.0 -> 427.0	147623	10.96	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 109.6%			
d3-MeFOSAA	7.622	573.0 -> 419.0	27740	12.13	µg/L		0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 121.3%			
13C3-HFPO-DA	5.595	287.0 -> 169.0	8828	10.62	µg/L		-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 106.2%			
d3-MeFOSA	7.513	515.0 -> 169.0	8582	11.95	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 119.5%			
Target Compounds							QValue
4:2FTS	5.224	327.0 -> 307.0	82545	18.81	µg/L		98
		327.0 -> 81.0	29776				
6:2FTS	6.874	427.0 -> 407.0	106440	19.56	µg/L		100
		427.0 -> 81.0	31638				
8:2FTS	7.968	527.0 -> 507.0	69793	18.49	µg/L		98
		527.0 -> 81.0	19045				
EtFOSAA	7.723	584.0 -> 419.0	39175	18.81	µg/L		97
		584.0 -> 483.0	23614				
FOSA	7.161	498.0 -> 78.0	38849	18.52	µg/L		99
		498.0 -> 478.0	1524				
MeFOSAA	7.622	570.0 -> 419.0	42331	18.04	µg/L		98
		570.0 -> 512.0	15676				
PFBA	2.246	213.0 -> 169.0	33799	18.66	µg/L		100
PFBS	4.319	299.0 -> 80.0	30314	18.73	µg/L		99
		299.0 -> 99.0	11420				
PFDA	7.932	513.0 -> 469.0	208785	17.57	µg/L		99
		513.0 -> 219.0	32817				
PFDoDA	8.922	613.0 -> 569.0	284770	18.59	µg/L		100
		613.0 -> 319.0	36648				
PFDS	8.329	599.0 -> 80.0	11014	18.24	µg/L		100
		599.0 -> 99.0	6022				
PFHpA	6.196	363.0 -> 319.0	285826	18.13	µg/L		99
		363.0 -> 169.0	48644				
PFHpS	6.871	449.0 -> 80.0	20013	18.59	µg/L		96
		449.0 -> 99.0	10661				
PFHxA	5.327	313.0 -> 269.0	202499	18.06	µg/L		100
		313.0 -> 119.0	8195				
PFHxS	6.219	399.0 -> 80.0	25564	17.90	µg/L	m	99
		399.0 -> 99.0	13327				
PFNA	7.455	463.0 -> 419.0	214981	18.14	µg/L		100
		463.0 -> 219.0	44436				
PFNS	7.890	549.0 -> 80.0	12329	18.89	µg/L		100
		549.0 -> 99.0	6871				
PFOA	6.875	413.0 -> 369.0	362537	18.17	µg/L		100
		413.0 -> 169.0	65145				
PFOS	7.428	499.0 -> 80.0	17936	18.47	µg/L	m	99

Perfluorinated Compounds by LC/MS/MS

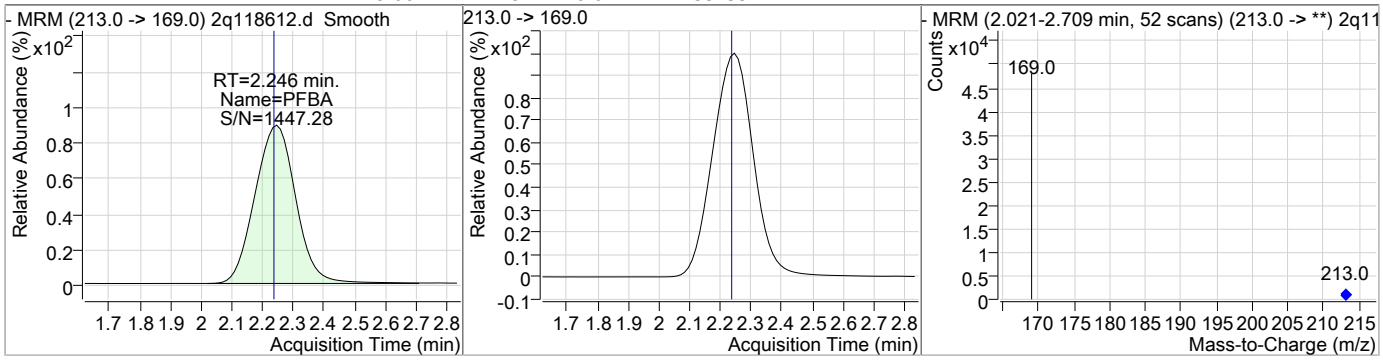
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		499.0 -> 99.0	9075			
PFPeA	4.064	263.0 -> 219.0	126576	18.11	µg/L	100
PFPeS	5.433	349.0 -> 80.0	22288	19.03	µg/L	99
		349.0 -> 99.0	9316			
PFTeDA	10.022	713.0 -> 669.0	308635	18.73	µg/L	100
		713.0 -> 219.0	18940			
PFTrDA	9.474	663.0 -> 619.0	329842	18.86	µg/L	100
		663.0 -> 369.0	22253			
PFUnDA	8.381	563.0 -> 519.0	263551	18.13	µg/L	100
		563.0 -> 269.0	42564			
11Cl-PF3OUdS	8.541	631.0 -> 451.0	77701	18.20	µg/L	99
		633.0 -> 453.0	23877			
9Cl-PF3ONS	7.663	531.0 -> 351.0	88307	17.31	µg/L	99
		533.0 -> 353.0	27945			
ADONA	6.271	377.0 -> 251.0	347298	17.53	µg/L	100
		377.0 -> 85.0	90559			
HFPO-DA	5.589	329.0 -> 169.0	52633	19.23	µg/L	100
		285.0 -> 169.0	15126			
MeFOSA	7.527	512.0 -> 169.0	13888	18.21	µg/L	99
		512.0 -> 219.0	12128			
4-PFECHS	6.780	461.0 -> 381.0	91401	17.22	µg/L	99
		461.0 -> 99.0	31109			
FBSA	5.116	298.0 -> 78.0	60550	16.93	µg/L	100
		298.0 -> 64.0	6319			
FHxSA	6.383	398.0 -> 78.0	62607	17.71	µg/L	100
		398.0 -> 64.0	6745			

 # = Qualifier out of range, m = manually integrated, + = Area summed

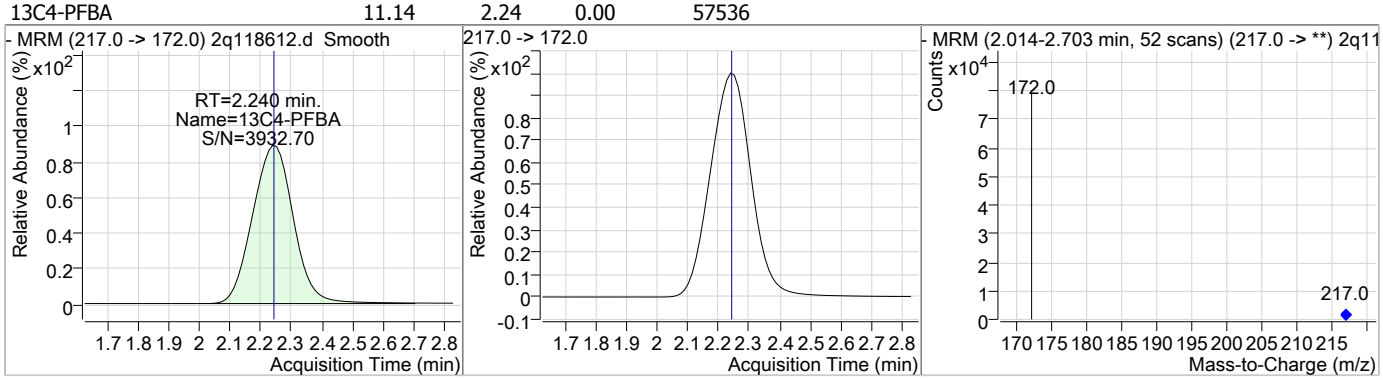
Perfluorinated Compounds by LC/MS/MS



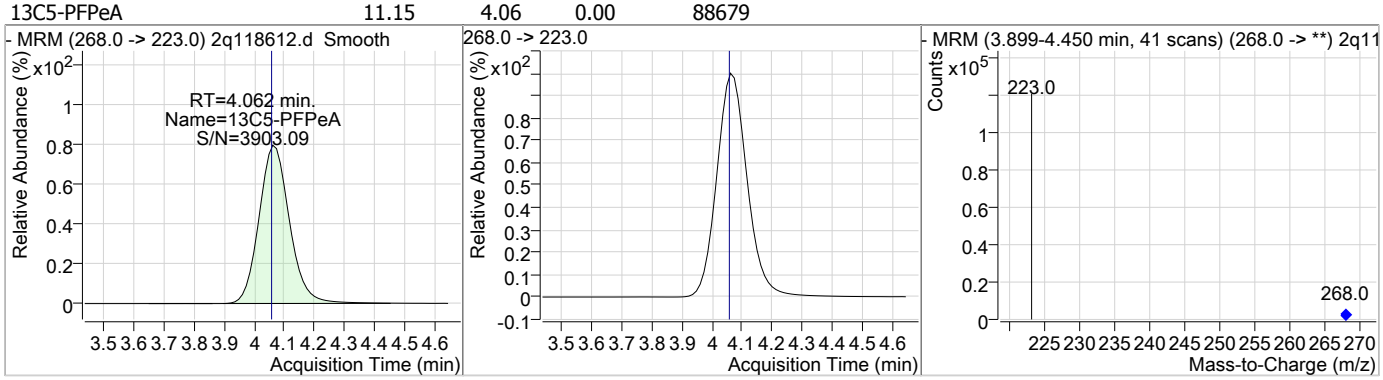
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	18.66	2.25	0.01	33799				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	11.14	2.24	0.00	57536				

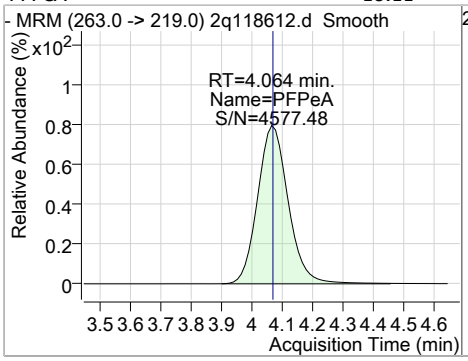


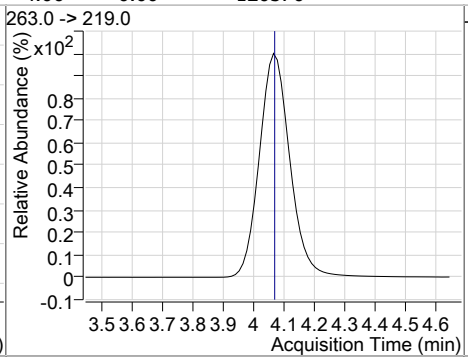
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	11.15	4.06	0.00	88679				

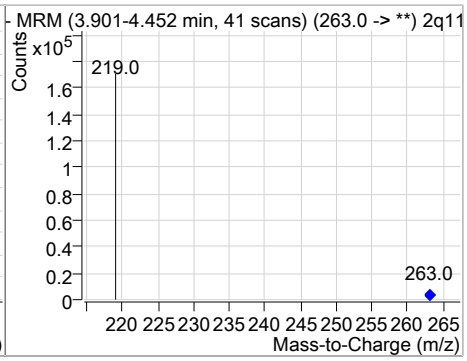


Perfluorinated Compounds by LC/MS/MS

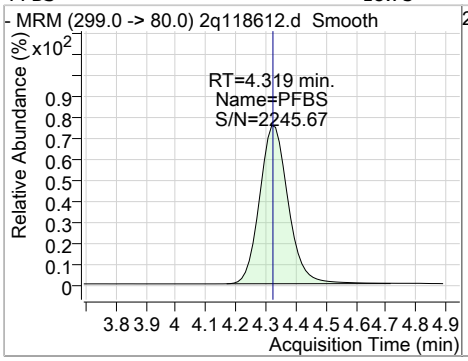
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	18.11	4.06	0.00	126576				

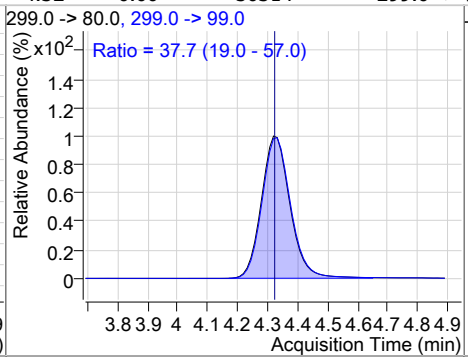


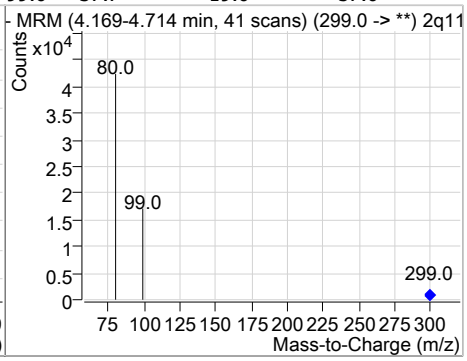




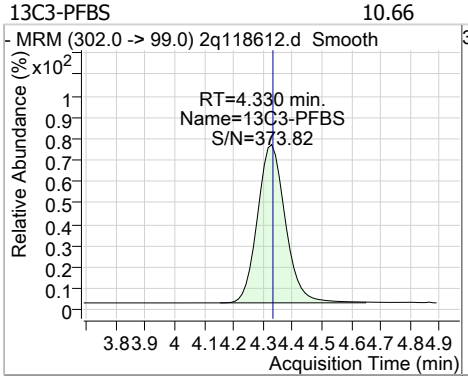
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	18.73	4.32	0.00	30314	299.0 -> 99.0	37.7	19.0	57.0

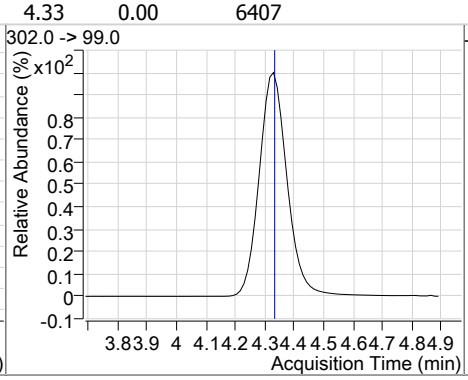


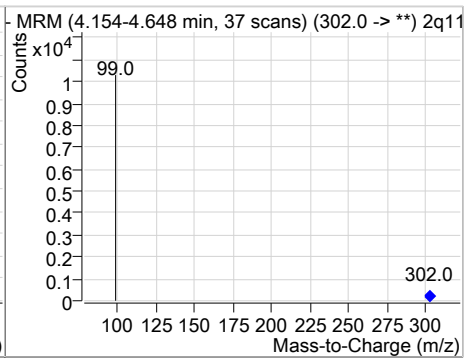




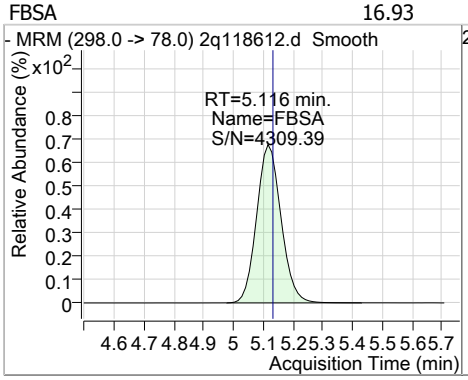
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	10.66	4.33	0.00	6407				

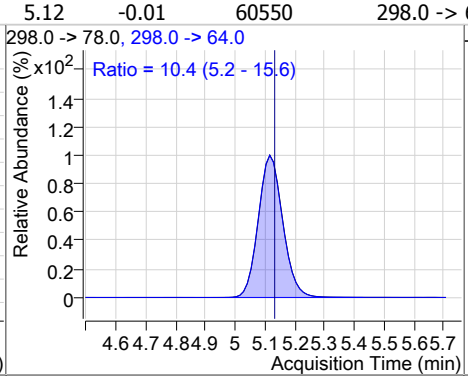


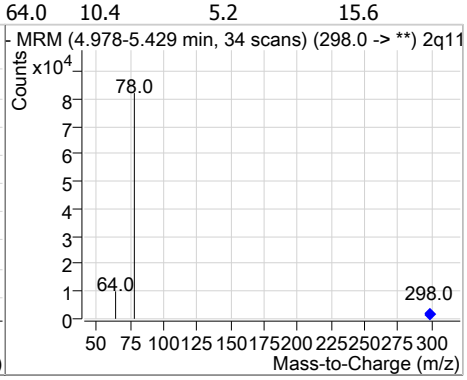




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	16.93	5.12	-0.01	60550	298.0 -> 64.0	10.4	5.2	15.6

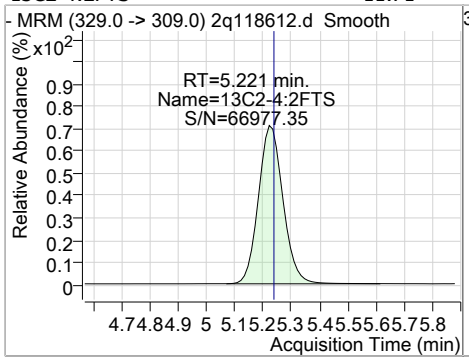


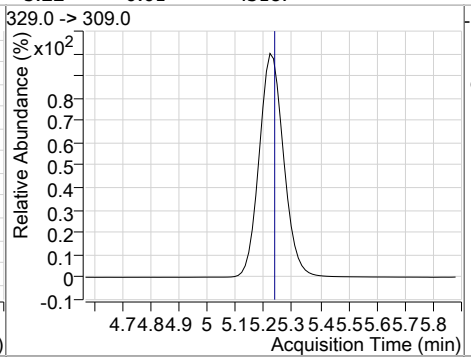


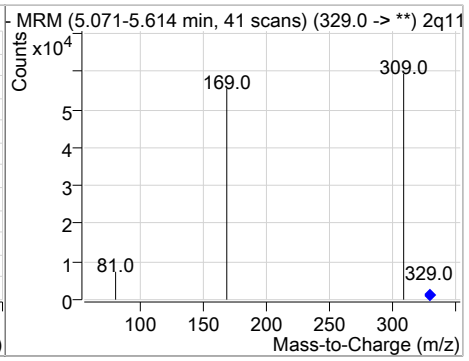


Perfluorinated Compounds by LC/MS/MS

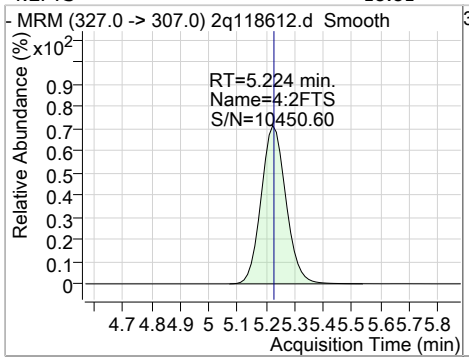
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	11.71	5.22	-0.01	43187				

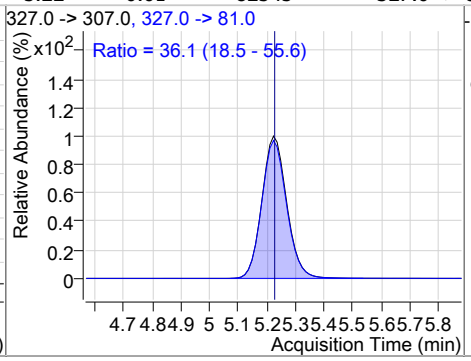


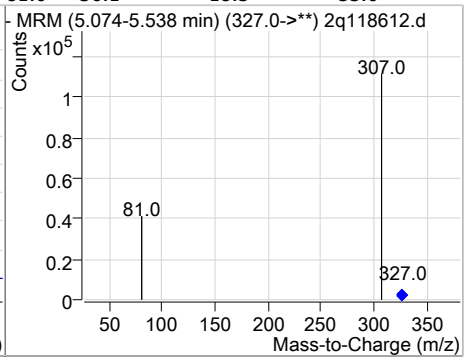




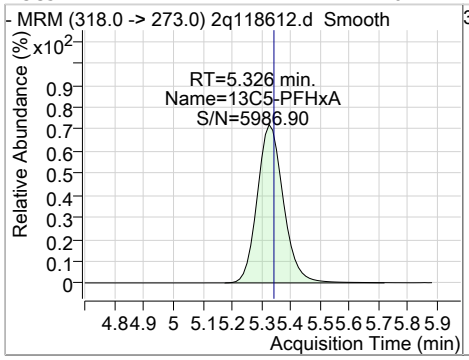
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	18.81	5.22	-0.01	82545	327.0 -> 81.0	36.1	18.5	55.6

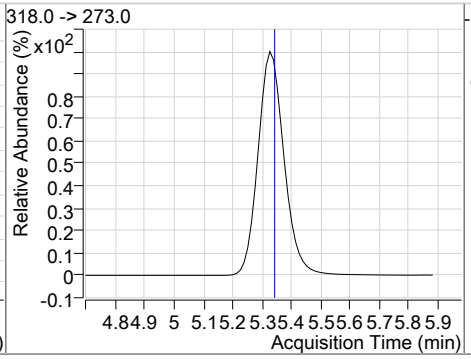


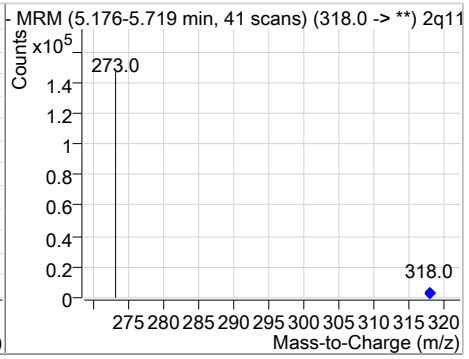




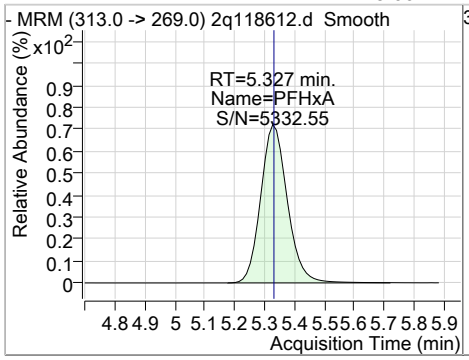
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	11.04	5.33	-0.01	108945				

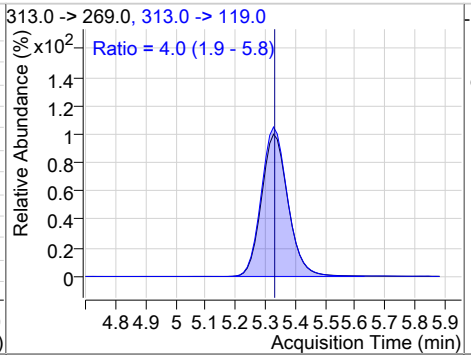


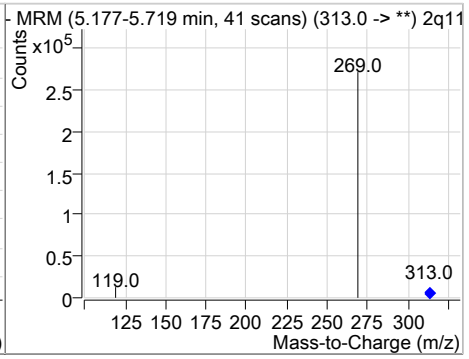




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	18.06	5.33	-0.01	202499	313.0 -> 119.0	4.0	1.9	5.8

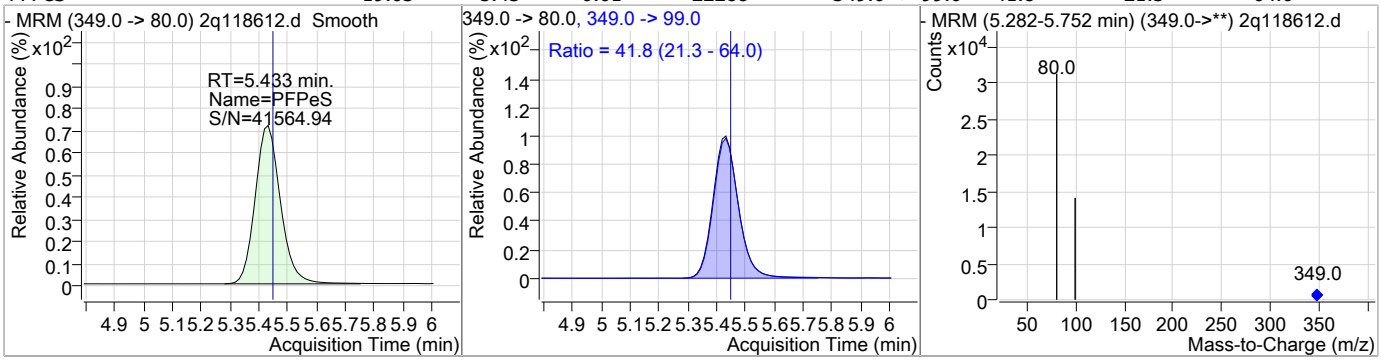




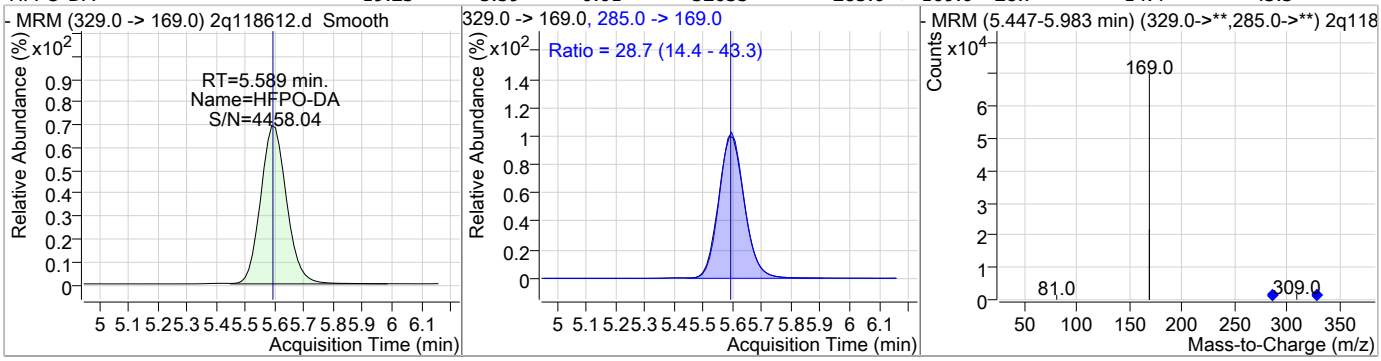


Perfluorinated Compounds by LC/MS/MS

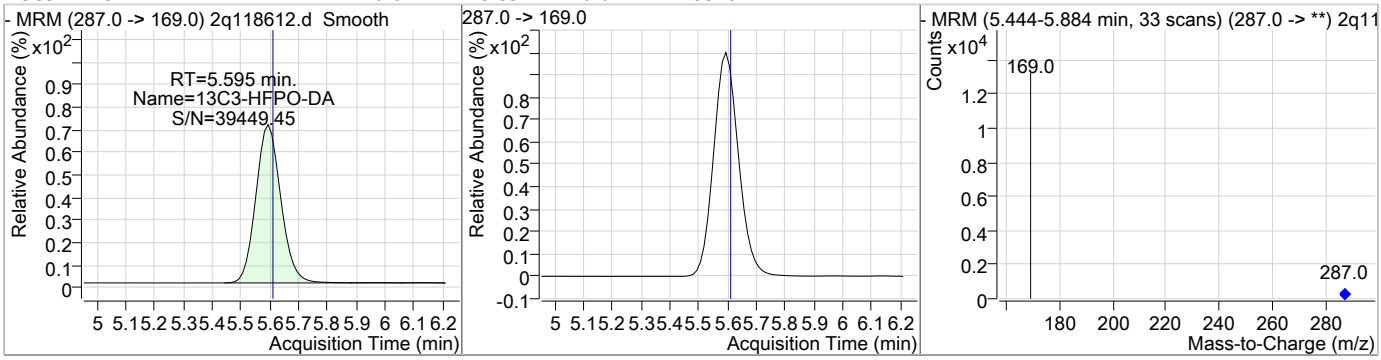
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	19.03	5.43	-0.01	22288	349.0 -> 99.0	41.8	21.3	64.0



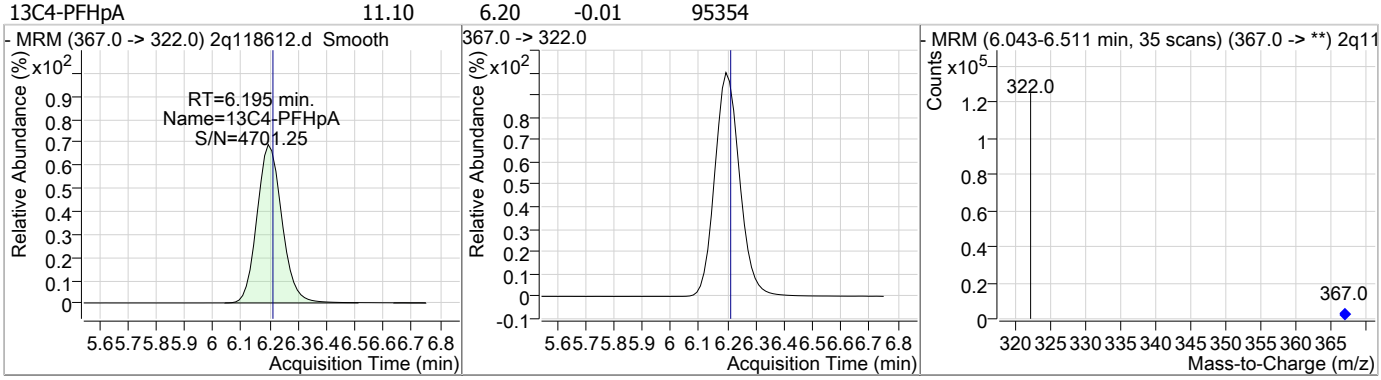
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	19.23	5.59	-0.01	52633	285.0 -> 169.0	28.7	14.4	43.3



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	10.62	5.59	-0.01	8828				

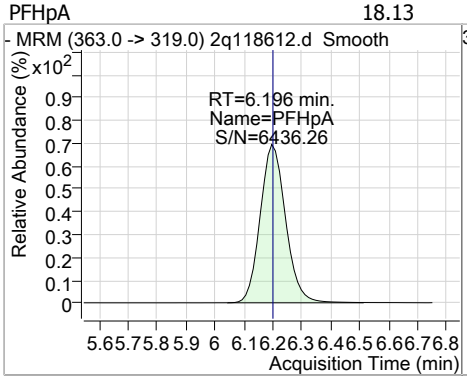


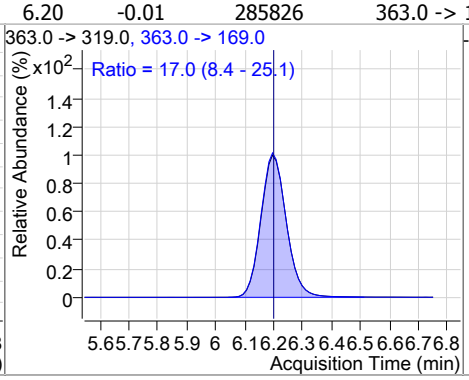
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	11.10	6.20	-0.01	95354				

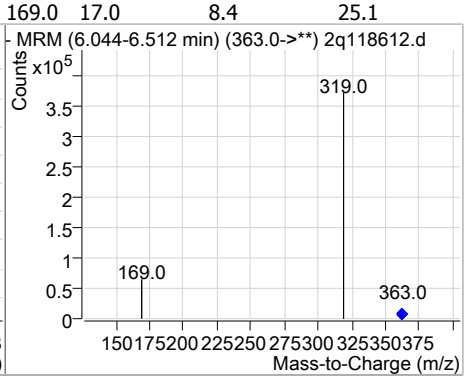


Perfluorinated Compounds by LC/MS/MS

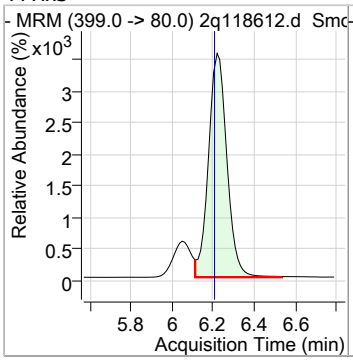
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	18.13	6.20	-0.01	285826	363.0 -> 169.0	17.0	8.4	25.1

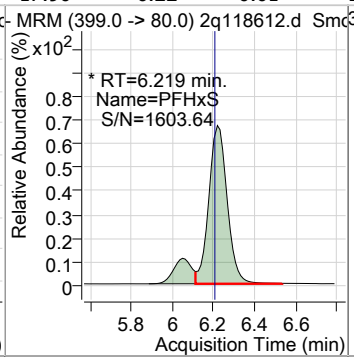


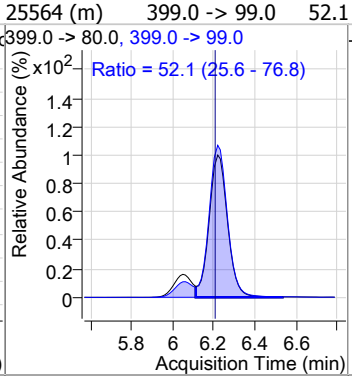


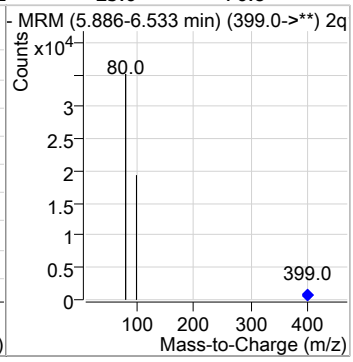


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	17.90	6.22	-0.01	25564 (m)	399.0 -> 99.0	52.1	25.6	76.8

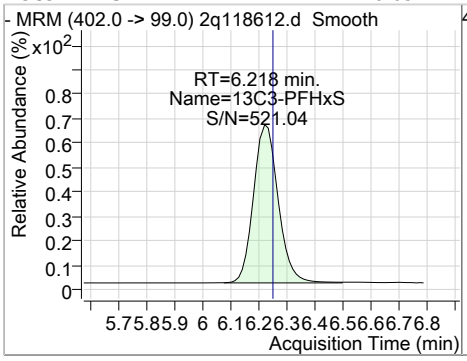


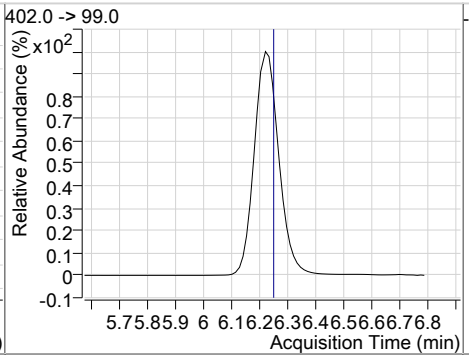


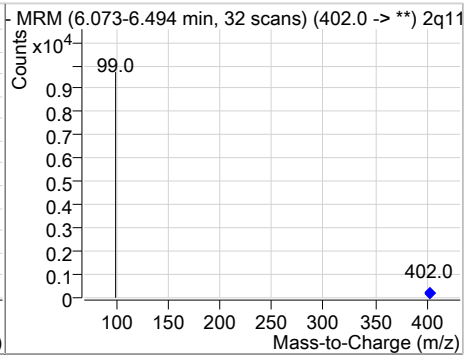




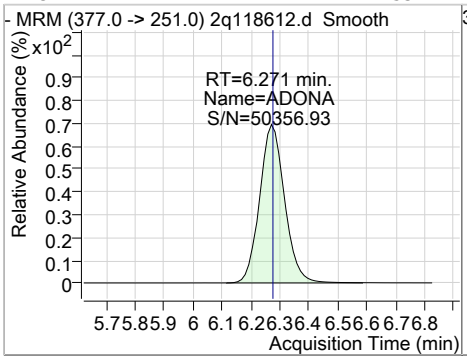
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	10.65	6.22	-0.03	6522				

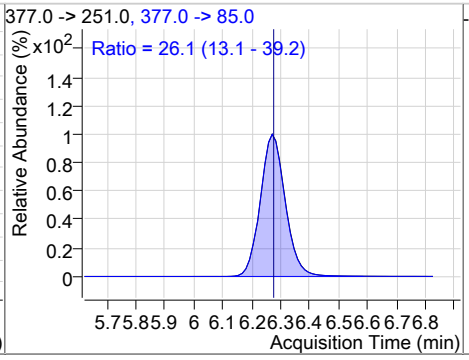


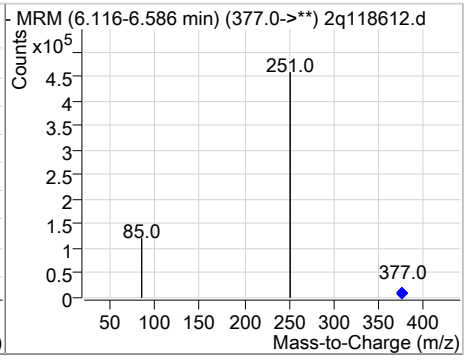




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	17.53	6.27	-0.01	347298	377.0 -> 85.0	26.1	13.1	39.2

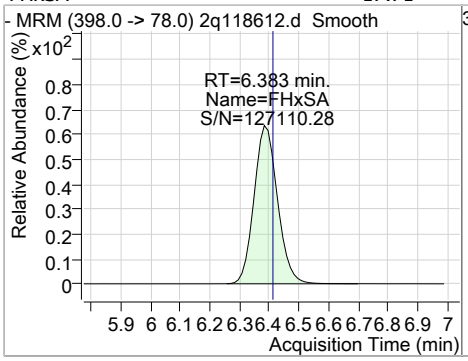


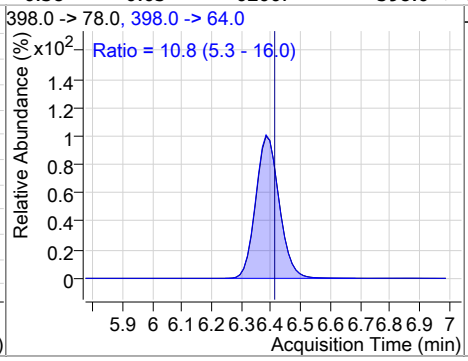


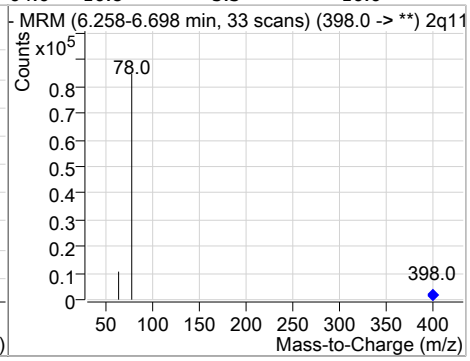


Perfluorinated Compounds by LC/MS/MS

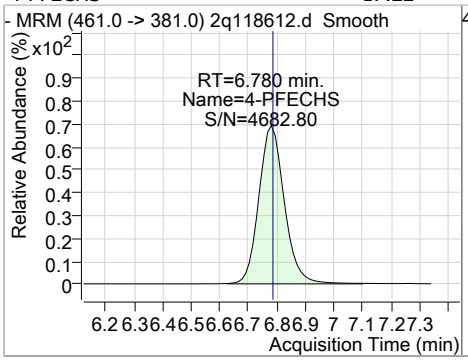
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	17.71	6.38	-0.03	62607	398.0 -> 64.0	10.8	5.3	16.0

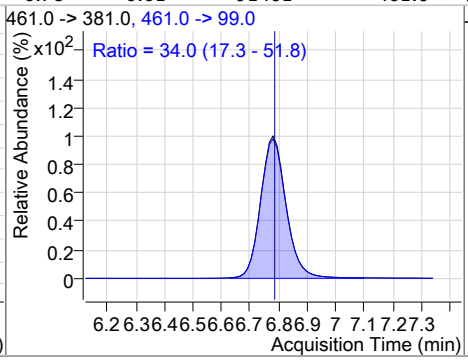


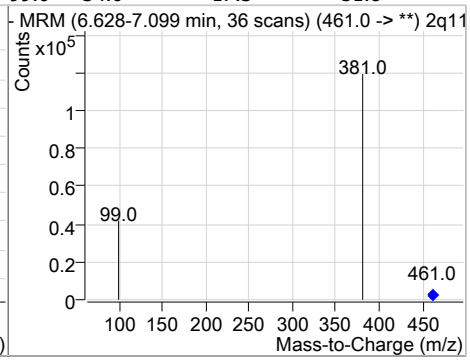




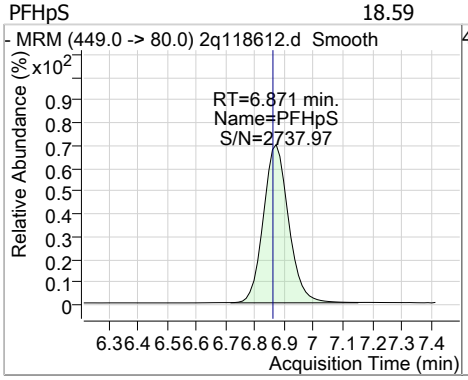
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS	17.22	6.78	-0.01	91401	461.0 -> 99.0	34.0	17.3	51.8

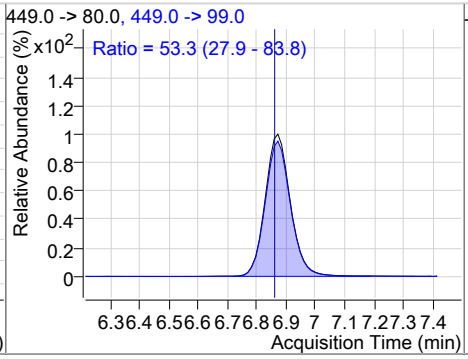


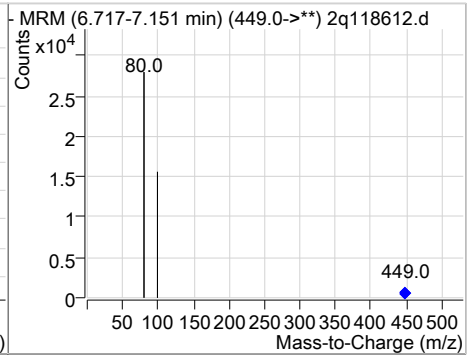




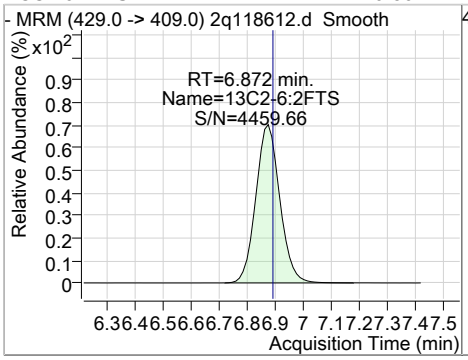
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	18.59	6.87	-0.01	20013	449.0 -> 99.0	53.3	27.9	83.8

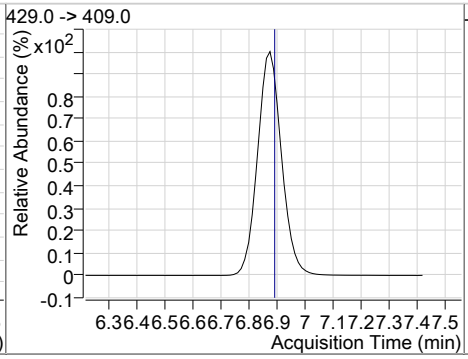


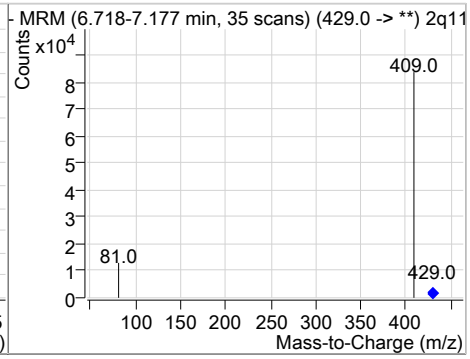




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	10.86	6.87	-0.01	62364				

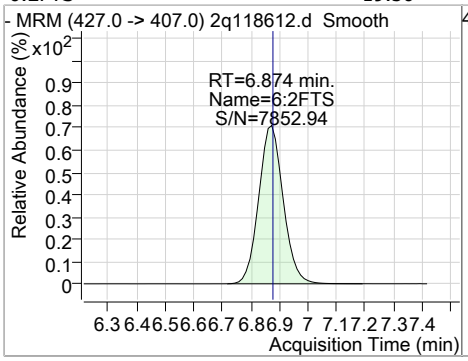


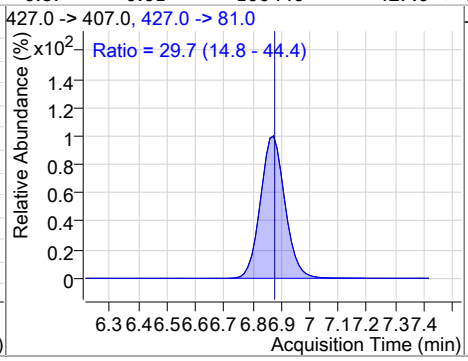


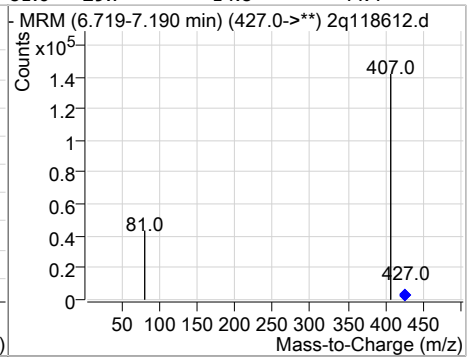


Perfluorinated Compounds by LC/MS/MS

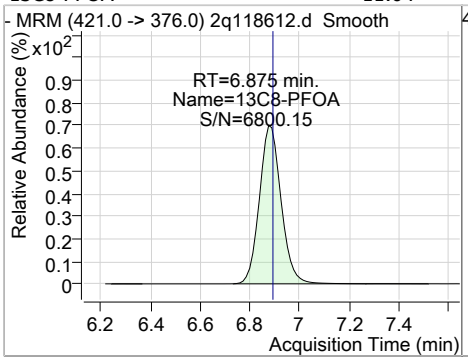
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	19.56	6.87	-0.01	106440	427.0 -> 81.0	29.7	14.8	44.4

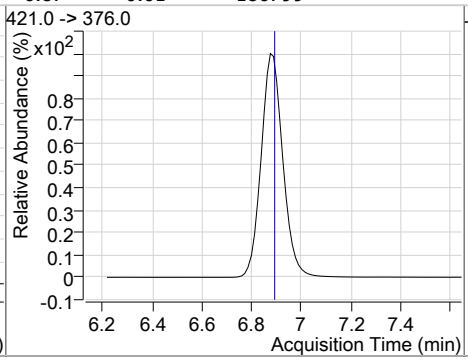


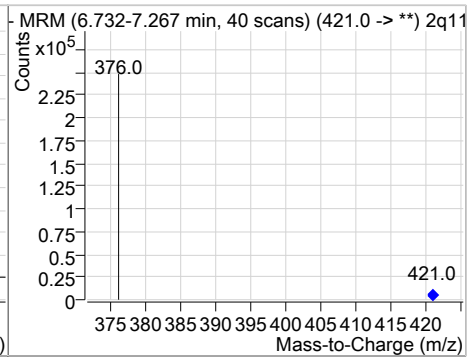




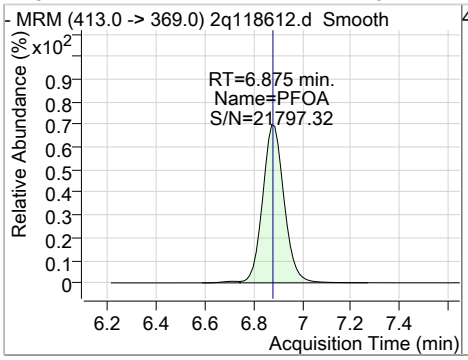
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	11.04	6.87	-0.01	186799				

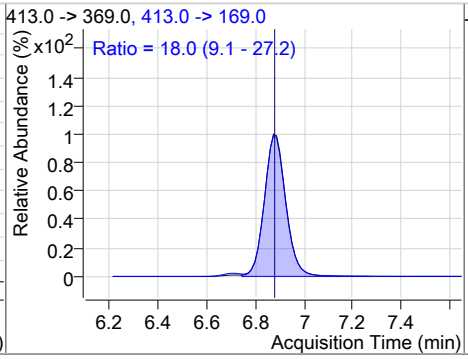


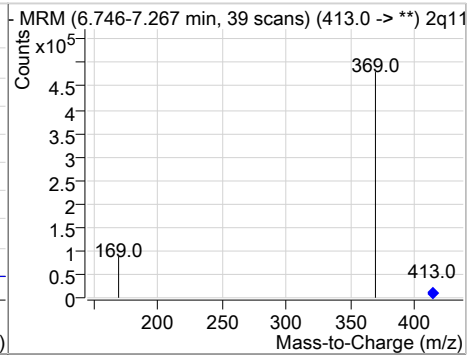




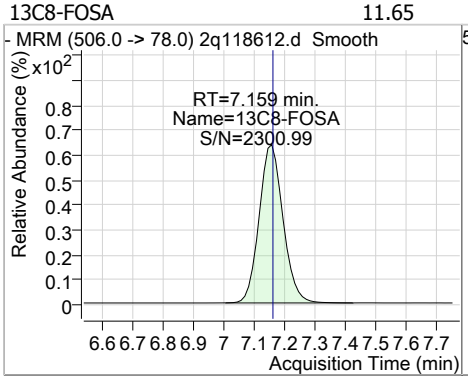
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	18.17	6.88	-0.01	362537	413.0 -> 169.0	18.0	9.1	27.2

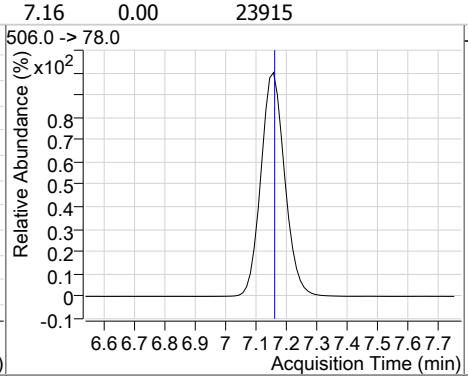


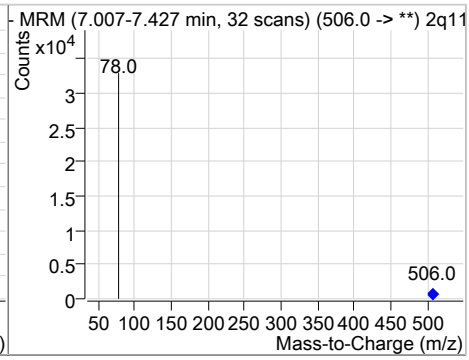




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	11.65	7.16	0.00	23915				

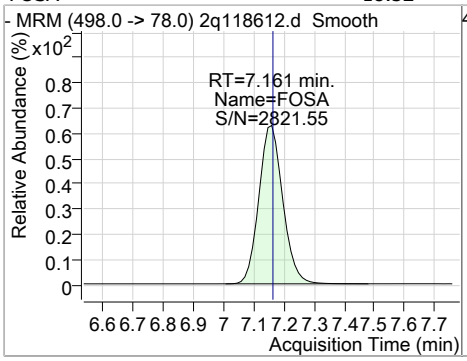


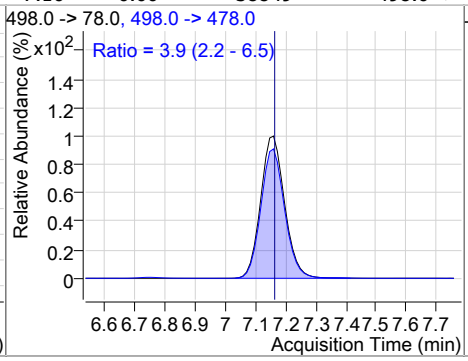


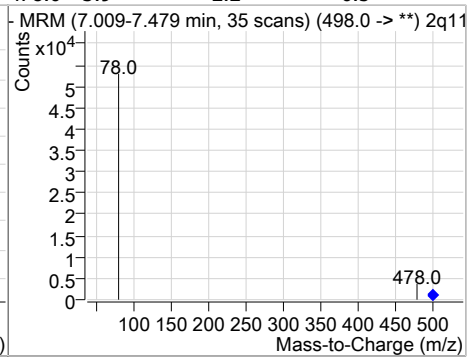


Perfluorinated Compounds by LC/MS/MS

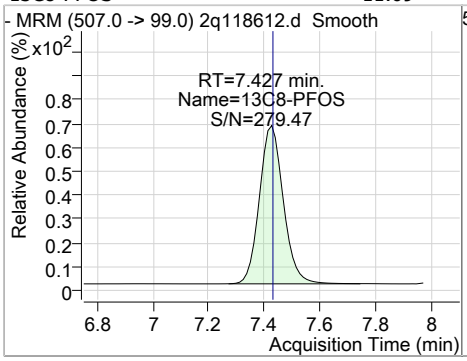
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	18.52	7.16	0.00	38849	498.0 -> 478.0	3.9	2.2	6.5

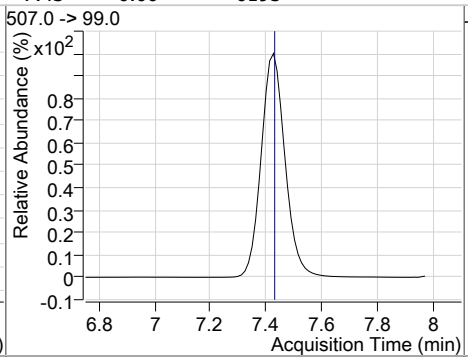


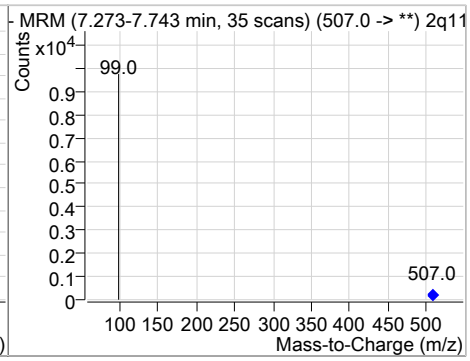




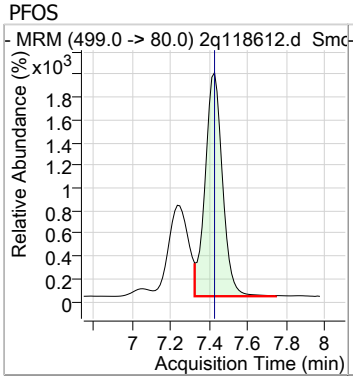
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	11.09	7.43	0.00	6195				

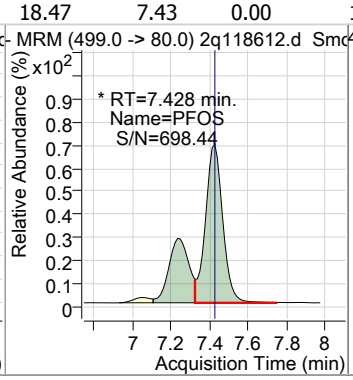


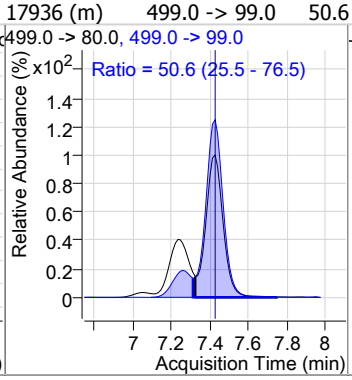


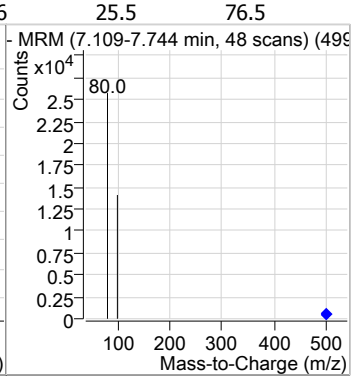


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	18.47	7.43	0.00	17936 (m)	499.0 -> 99.0	50.6	25.5	76.5

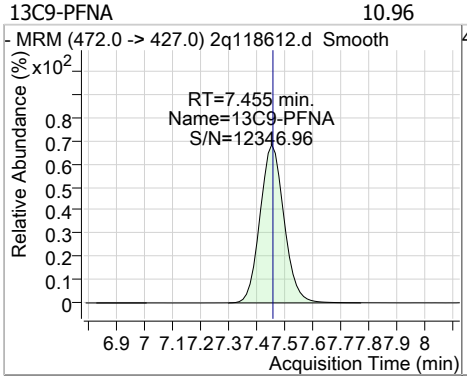


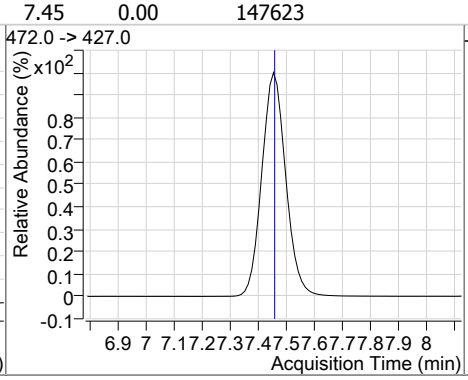


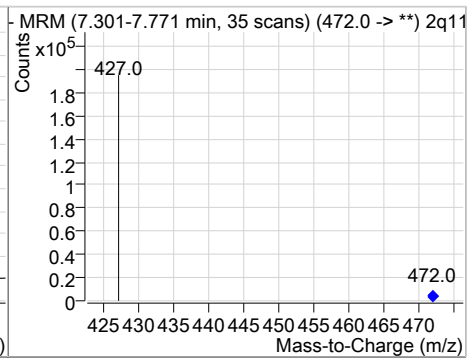




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	10.96	7.45	0.00	147623				

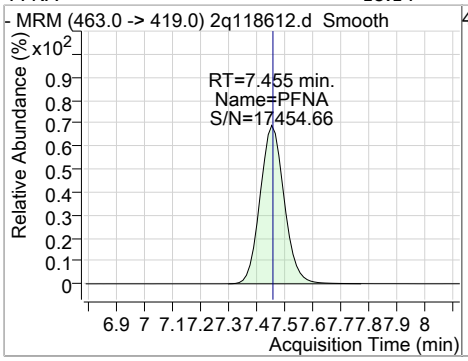


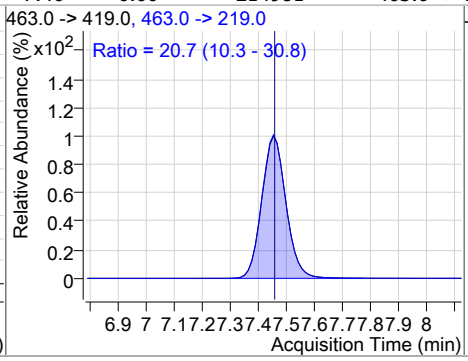


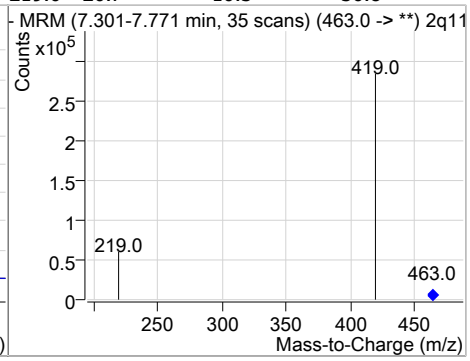


Perfluorinated Compounds by LC/MS/MS

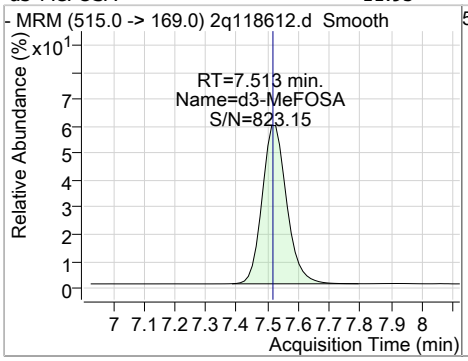
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	18.14	7.46	0.00	214981	463.0 -> 219.0	20.7	10.3	30.8

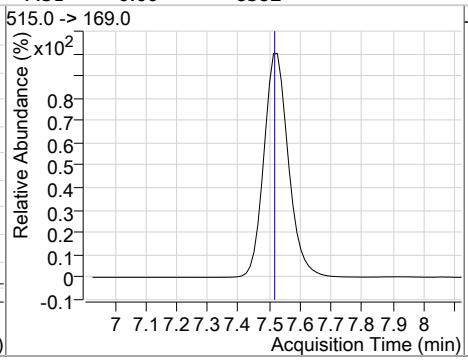


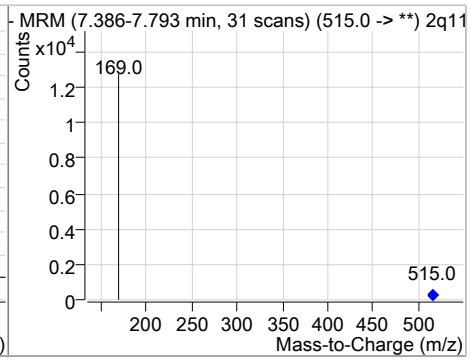




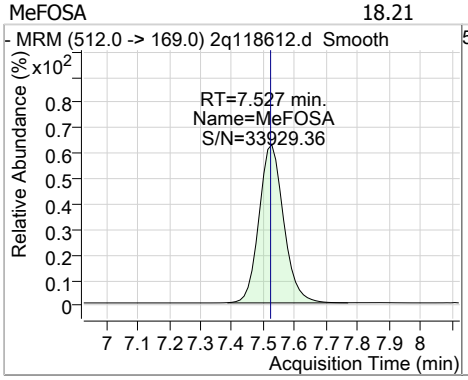
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	11.95	7.51	0.00	8582				

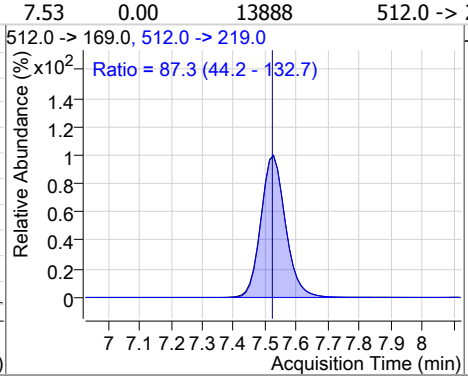


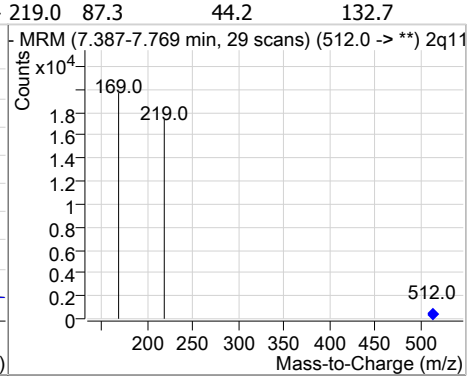




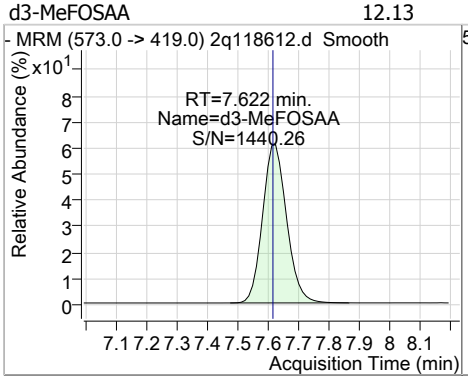
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	18.21	7.53	0.00	13888	512.0 -> 219.0	87.3	44.2	132.7

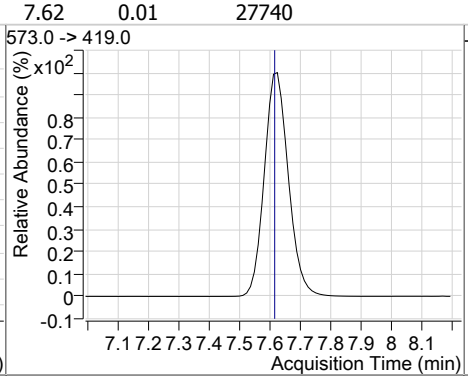


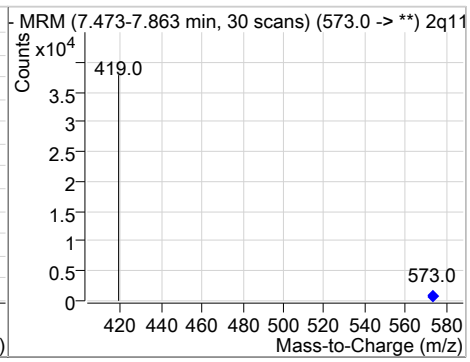




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	12.13	7.62	0.01	27740				

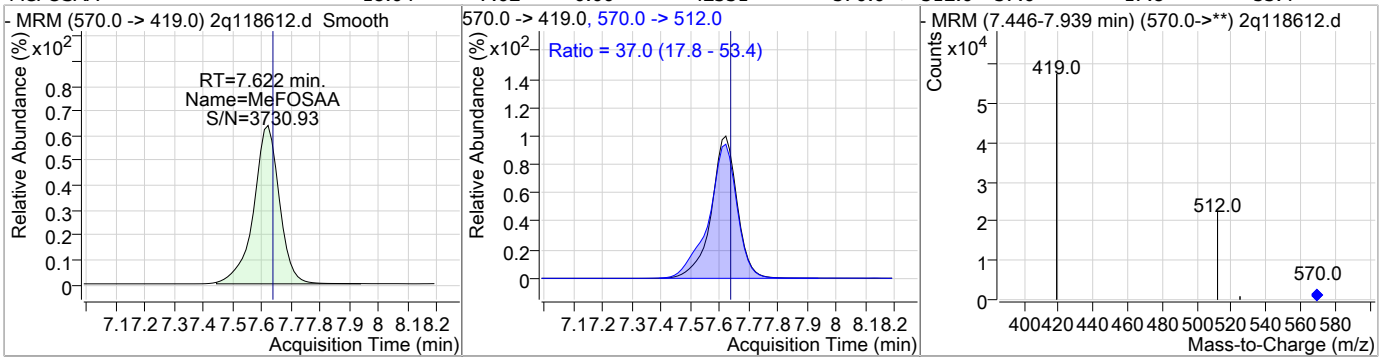




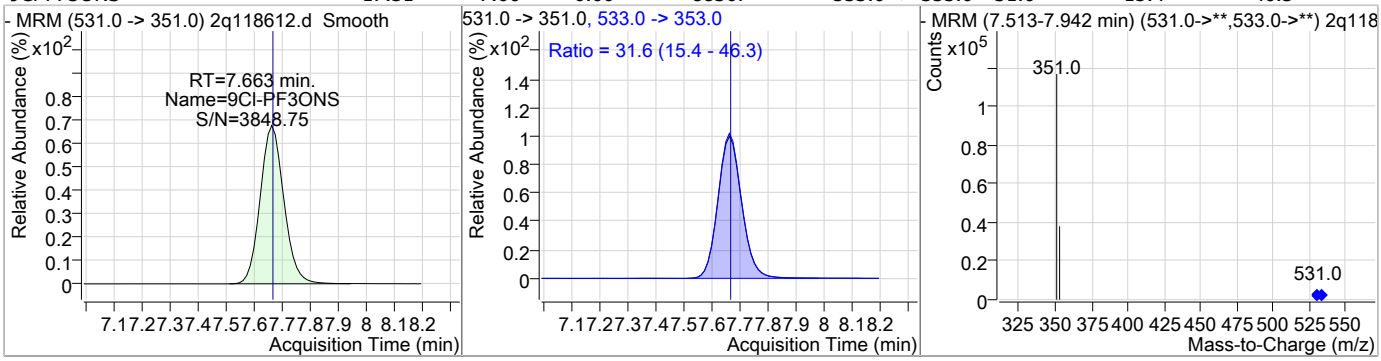


Perfluorinated Compounds by LC/MS/MS

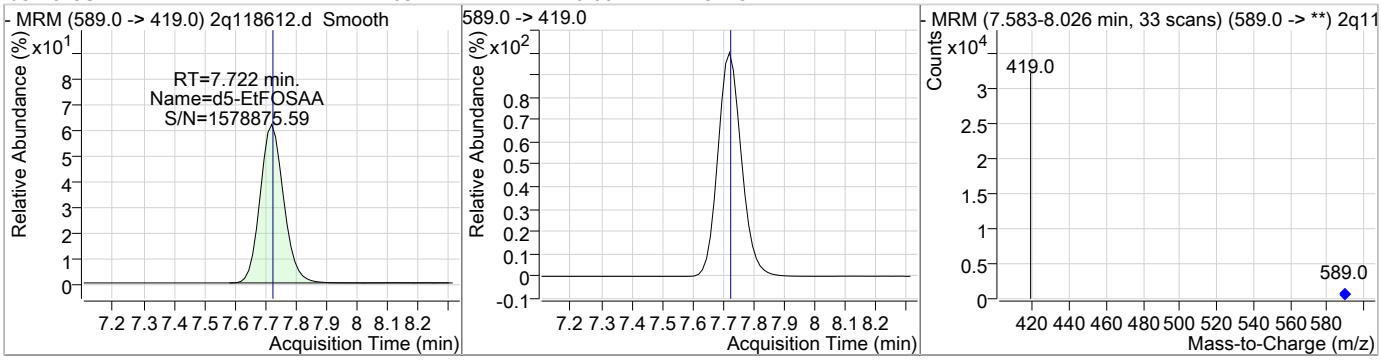
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	18.04	7.62	0.00	42331	570.0 -> 512.0	37.0	17.8	53.4



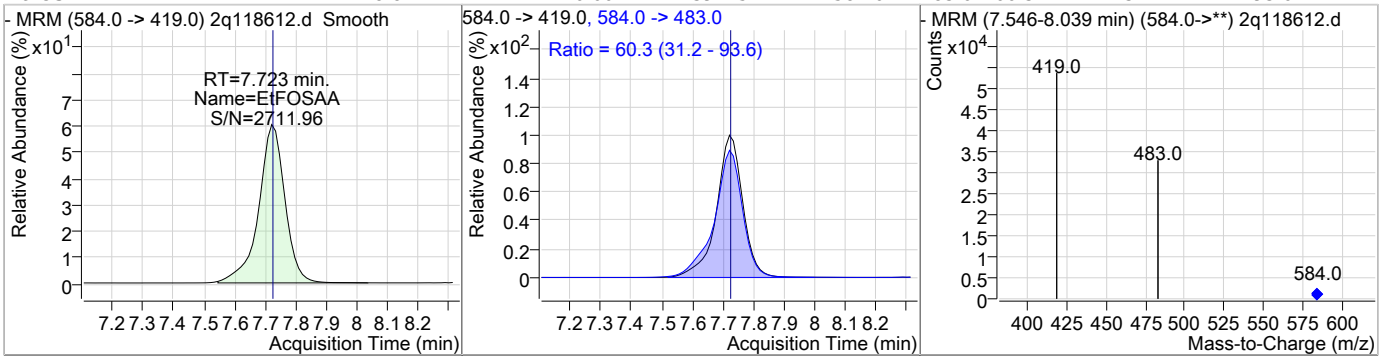
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	17.31	7.66	0.00	88307	533.0 -> 353.0	31.6	15.4	46.3



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	12.03	7.72	0.00	23215				

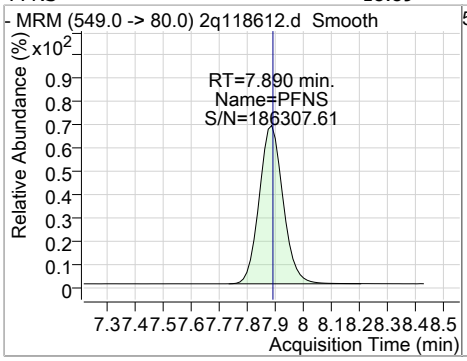


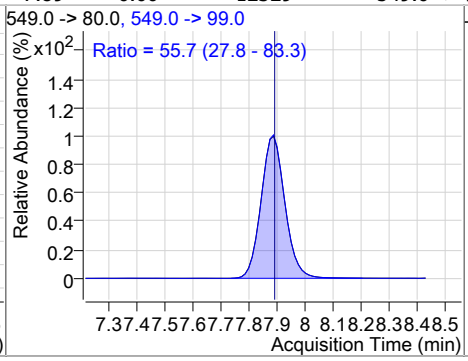
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	18.81	7.72	0.00	39175	584.0 -> 483.0	60.3	31.2	93.6

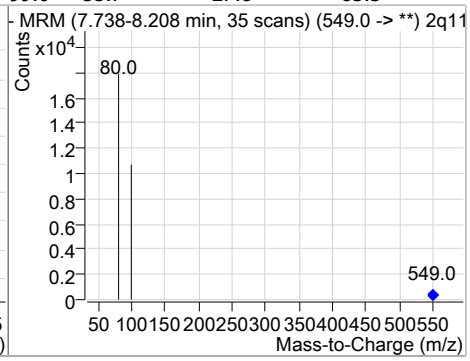


Perfluorinated Compounds by LC/MS/MS

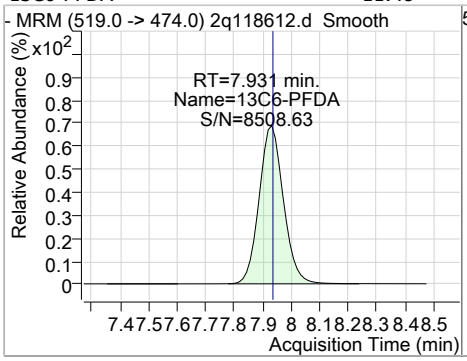
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	18.89	7.89	0.00	12329	549.0 -> 99.0	55.7	27.8	83.3

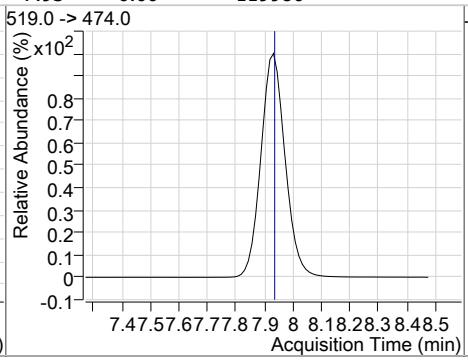


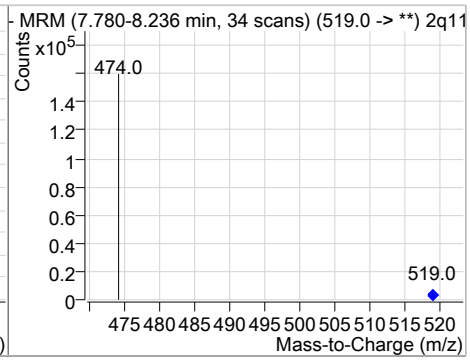




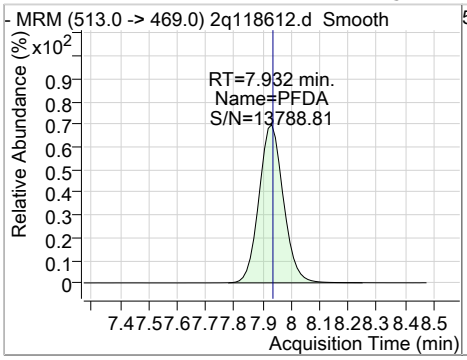
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	11.48	7.93	0.00	119980				

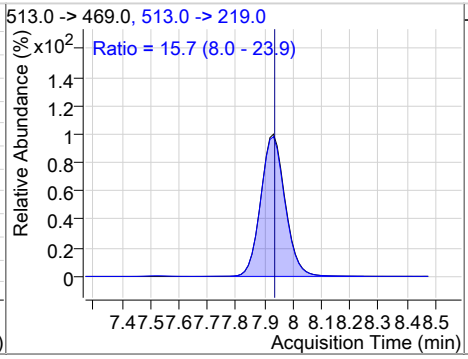


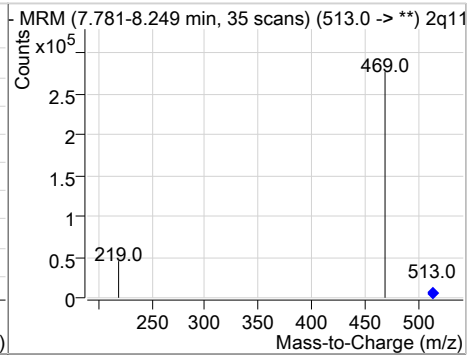




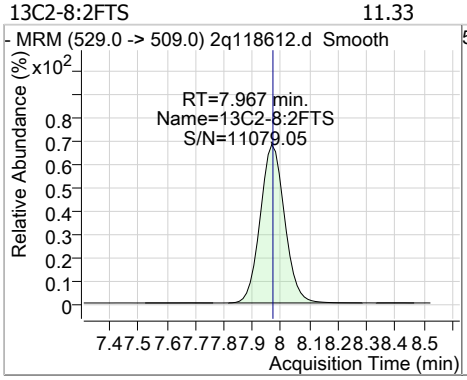
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	17.57	7.93	0.00	208785	513.0 -> 219.0	15.7	8.0	23.9

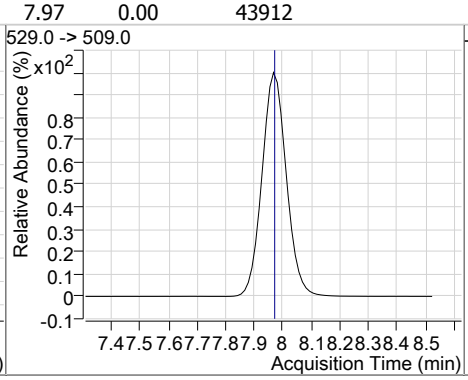


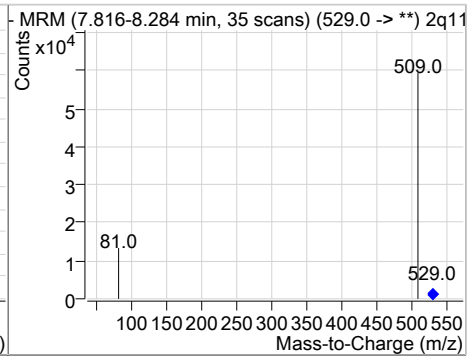




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	11.33	7.97	0.00	43912				

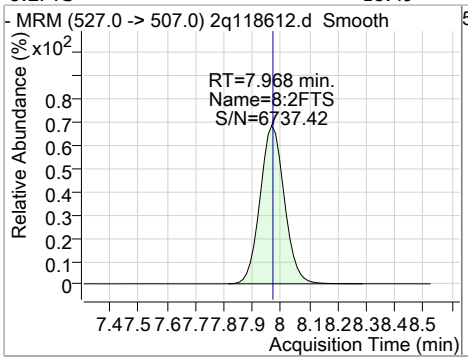


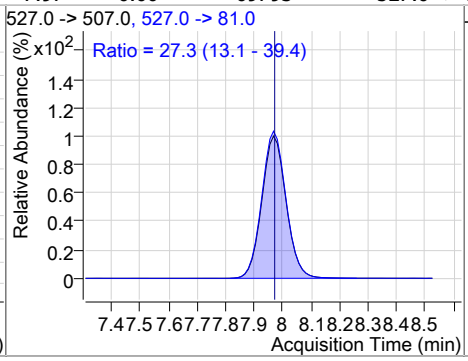


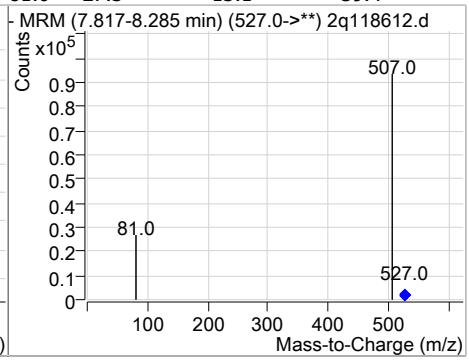


Perfluorinated Compounds by LC/MS/MS

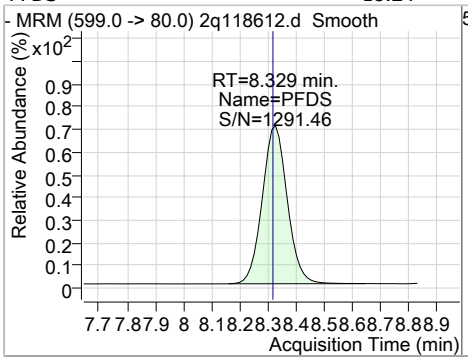
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	18.49	7.97	0.00	69793	527.0 -> 81.0	27.3	13.1	39.4

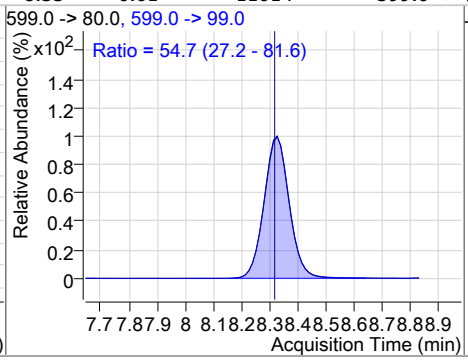


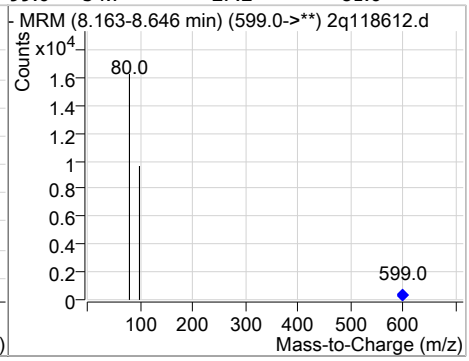




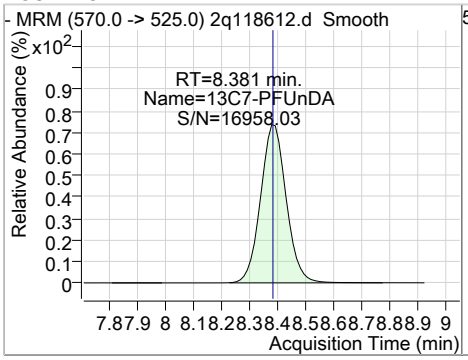
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	18.24	8.33	0.01	11014	599.0 -> 99.0	54.7	27.2	81.6

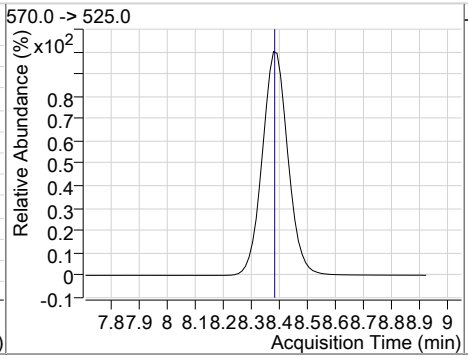


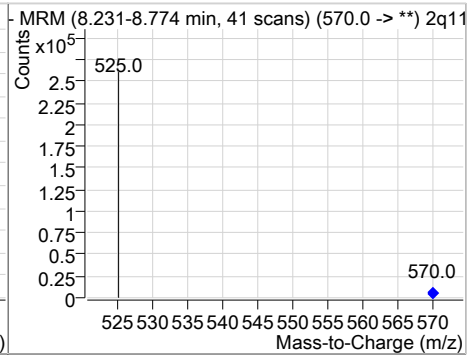




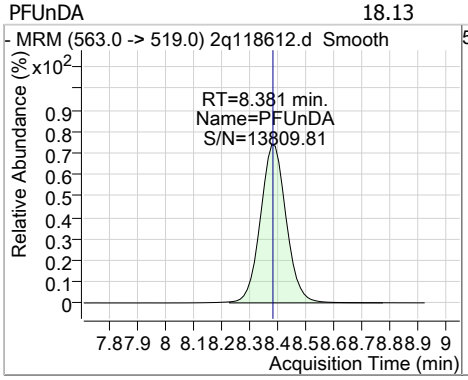
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	11.21	8.38	0.00	194887				

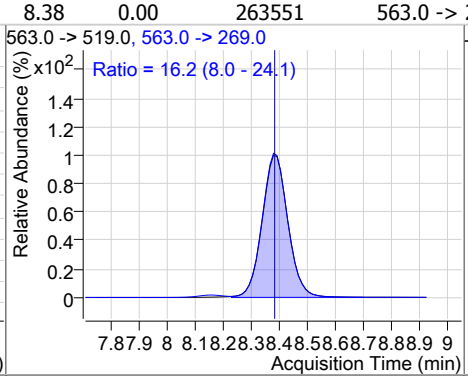


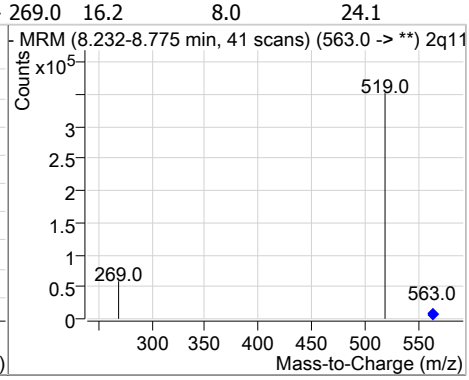




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	18.13	8.38	0.00	263551	563.0 -> 269.0	16.2	8.0	24.1

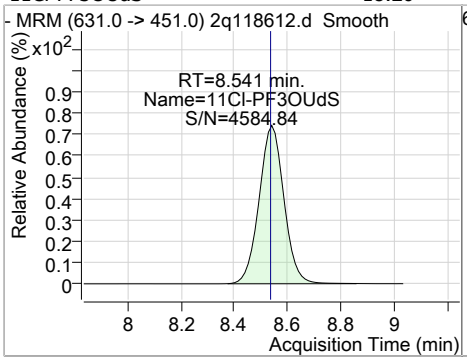


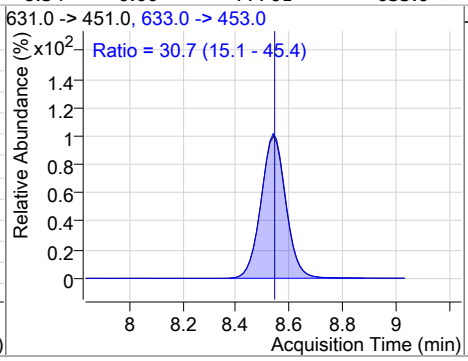


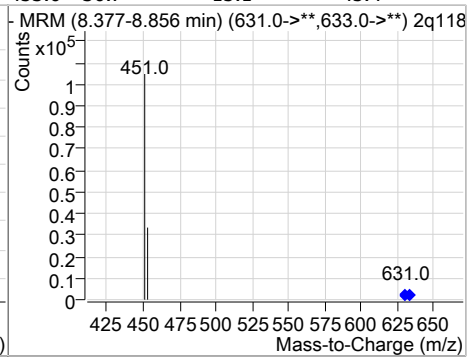


Perfluorinated Compounds by LC/MS/MS

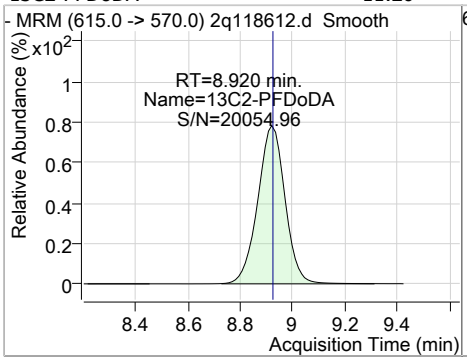
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	18.20	8.54	0.00	77701	633.0 -> 453.0	30.7	15.1	45.4

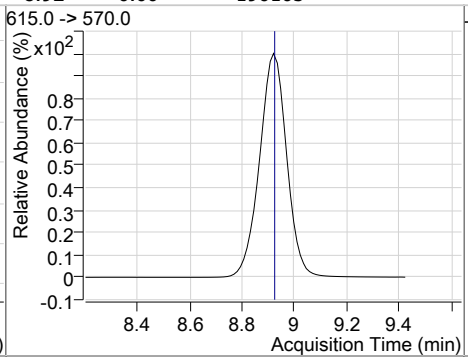


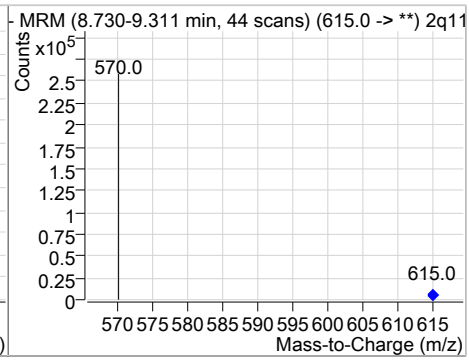




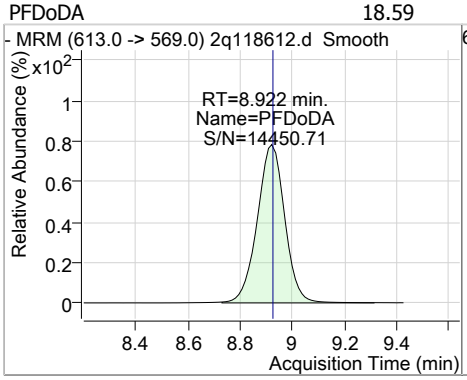
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	11.20	8.92	0.00	196165				

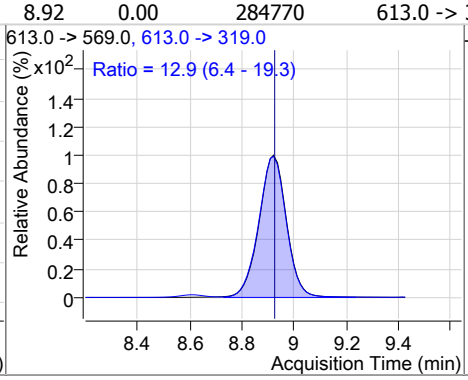


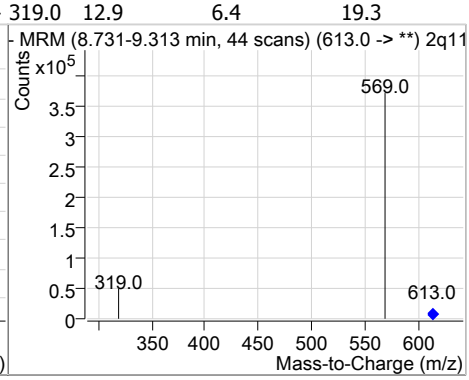




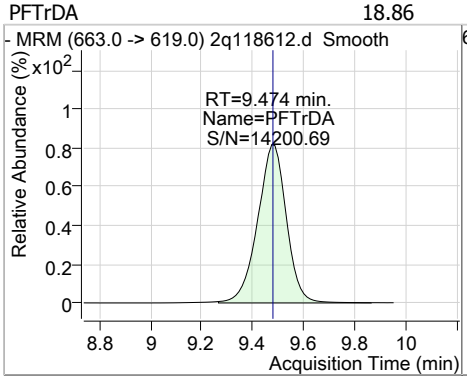
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	18.59	8.92	0.00	284770	613.0 -> 319.0	12.9	6.4	19.3

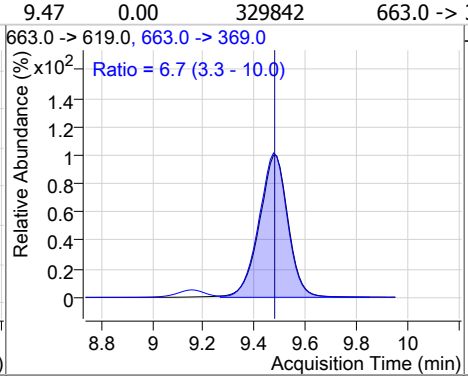


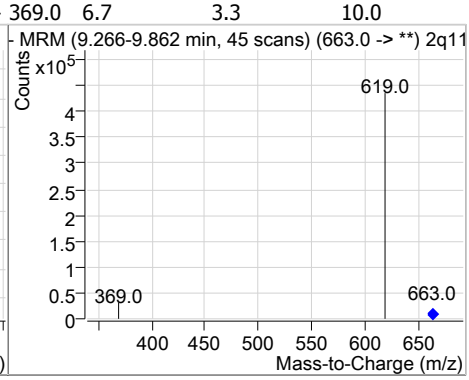




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	18.86	9.47	0.00	329842	663.0 -> 369.0	6.7	3.3	10.0

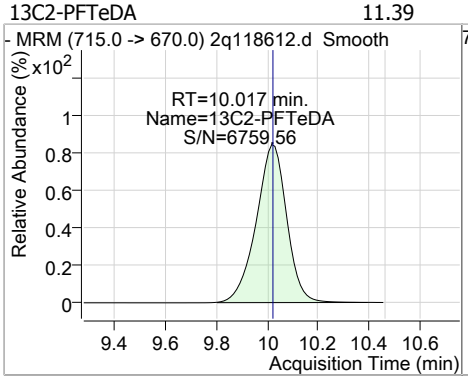


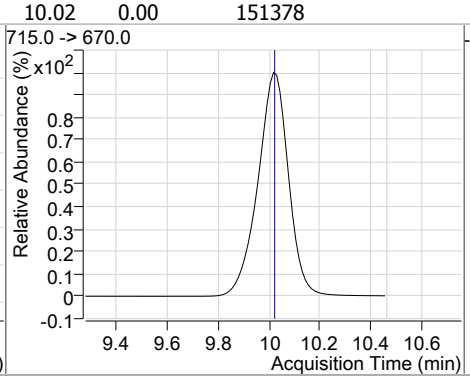


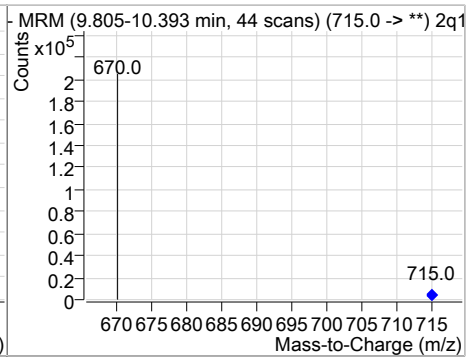


Perfluorinated Compounds by LC/MS/MS

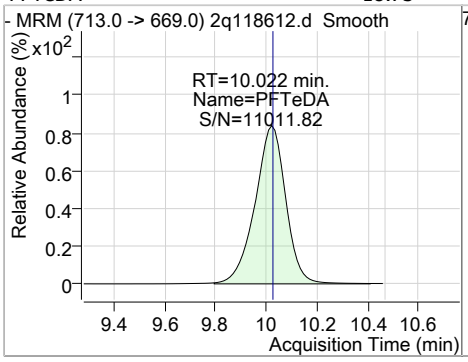
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	11.39	10.02	0.00	151378				

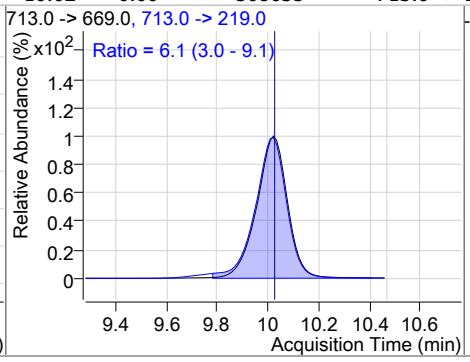


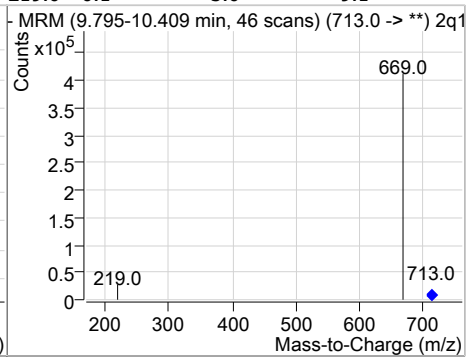




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	18.73	10.02	0.00	308635	713.0 -> 219.0	6.1	3.0	9.1







Manual Integration Approval Summary

Sample Number: S2Q1693-CC1691
Lab FileID: 2Q118612.D
Injection Time: 01/04/24 18:31
Method: EPA 537M QSM5.3 B-15
Analyst approved: 01/05/24 15:53 Lindsay Ritner
Supervisor approved: 01/05/24 17:02 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.22	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.43	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Natasha Gumtie 01/05/24 17:02

Perfluorinated Compounds by LC/MS/MS

Data File : 2q118624.d
Operator : lindsayr
Acq. Method : 537_ID.m
Acq. Date-Time : 1/4/2024 9:49:32 PM
Sample Name : cc1691-20
Vial : P1-A7
DA Method File : ID_010224_S2Q1691.quantmethod.xml
Batch Name : s2q1693.batch.bin
Sample Information : op401,S2Q1693,250,,,1.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M5-EtFOSAA	7.722	589.0 -> 419.0	24086	10.00	µg/L	0.000
M4-PFBA	2.240	217.0 -> 172.0	59240	10.00	µg/L	0.000
M5-PFPeA	4.062	268.0 -> 223.0	91020	10.00	µg/L	0.000
M5-PFHxA	5.326	318.0 -> 273.0	113861	10.00	µg/L	-0.013
M4-PFHpA	6.195	367.0 -> 322.0	97177	10.00	µg/L	-0.013
M8-PFOA	6.887	421.0 -> 376.0	193016	10.00	µg/L	0.000
M9-PFNA	7.455	472.0 -> 427.0	149604	10.00	µg/L	0.000
M6-PFDA	7.931	519.0 -> 474.0	123574	10.00	µg/L	0.000
M7-PFUnDA	8.381	570.0 -> 525.0	200542	10.00	µg/L	0.000
M2-PFDoDA	8.920	615.0 -> 570.0	200443	10.00	µg/L	0.000
M2-PFTeDA	10.017	715.0 -> 670.0	158431	10.00	µg/L	0.000
M8-FOSA	7.159	506.0 -> 78.0	24744	10.00	µg/L	0.000
M3-PFBS	4.330	302.0 -> 99.0	6585	10.00	µg/L	0.000
M3-PFHxS	6.231	402.0 -> 99.0	6811	10.00	µg/L	-0.013
M8-PFOS	7.427	507.0 -> 99.0	6156	10.00	µg/L	0.000
M2-4:2FTS	5.221	329.0 -> 309.0	45293	10.00	µg/L	-0.013
M2-6:2FTS	6.872	429.0 -> 409.0	65279	10.00	µg/L	-0.013
M2-8:2FTS	7.967	529.0 -> 509.0	44865	10.00	µg/L	0.000
M3-MeFOSAA	7.622	573.0 -> 419.0	29406	10.00	µg/L	0.013
M3-HFPO-DA	5.595	287.0 -> 169.0	8935	10.00	µg/L	-0.013
M3-MeFOSA	7.526	515.0 -> 169.0	9115	10.00	µg/L	0.013
System Monitoring Compounds						
13C2-4:2FTS	5.221	329.0 -> 309.0	45293	12.28	µg/L	-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 122.8%		
13C2-6:2FTS	6.872	429.0 -> 409.0	65279	11.37	µg/L	-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 113.7%		
13C2-8:2FTS	7.967	529.0 -> 509.0	44865	11.58	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 115.8%		
13C2-PFDoDA	8.920	615.0 -> 570.0	200443	11.45	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 114.5%		
13C2-PFTeDA	10.017	715.0 -> 670.0	158431	11.92	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 119.2%		
13C3-PFBS	4.330	302.0 -> 99.0	6585	10.96	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 109.6%		
13C3-PFHxS	6.231	402.0 -> 99.0	6811	11.13	µg/L	-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 111.3%		
13C4-PFBA	2.240	217.0 -> 172.0	59240	11.47	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 114.7%		
13C4-PFHpA	6.195	367.0 -> 322.0	97177	11.31	µg/L	-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 113.1%		
d5-EtFOSAA	7.722	589.0 -> 419.0	24086	12.48	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 124.8%		
13C5-PFHxA	5.326	318.0 -> 273.0	113861	11.54	µg/L	-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 115.4%		
13C5-PFPeA	4.062	268.0 -> 223.0	91020	11.45	µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

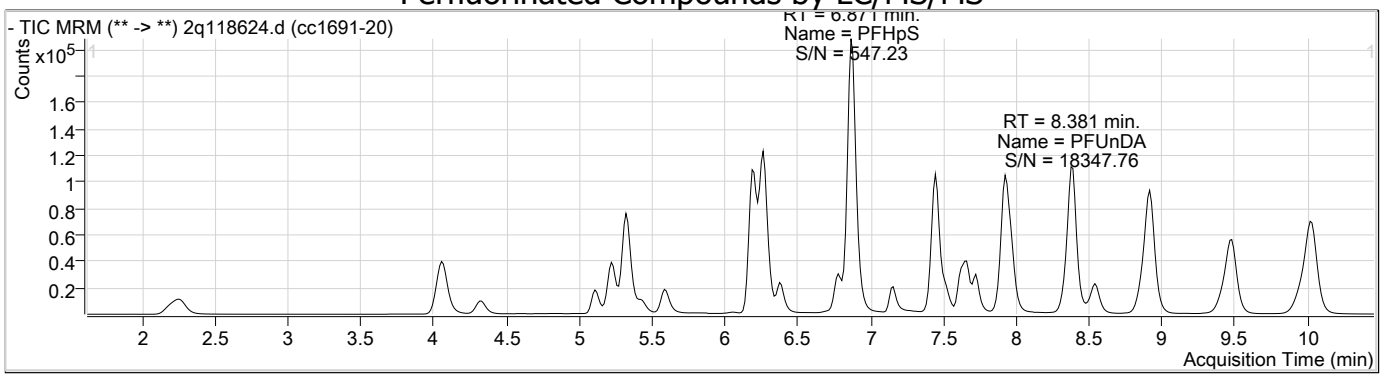
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 114.5%			
13C6-PFDA	7.931	519.0 -> 474.0	123574	11.82	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 118.2%			
13C7-PFUnDA	8.381	570.0 -> 525.0	200542	11.54	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 115.4%			
13C8-FOSA	7.159	506.0 -> 78.0	24744	12.05	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 120.5%			
13C8-PFOA	6.887	421.0 -> 376.0	193016	11.40	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 114.0%			
13C8-PFOS	7.427	507.0 -> 99.0	6156	11.02	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 110.2%			
13C9-PFNA	7.455	472.0 -> 427.0	149604	11.10	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 111.0%			
d3-MeFOSAA	7.622	573.0 -> 419.0	29406	12.86	µg/L		0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 128.6%			
13C3-HFPO-DA	5.595	287.0 -> 169.0	8935	10.75	µg/L		-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 107.5%			
d3-MeFOSA	7.526	515.0 -> 169.0	9115	12.69	µg/L		0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 126.9%			
Target Compounds							QValue
4:2FTS	5.224	327.0 -> 307.0	85749	18.64	µg/L		99
		327.0 -> 81.0	31305				
6:2FTS	6.874	427.0 -> 407.0	109723	19.27	µg/L		100
		427.0 -> 81.0	32539				
8:2FTS	7.968	527.0 -> 507.0	73489	19.05	µg/L		98
		527.0 -> 81.0	20042				
EtFOSAA	7.723	584.0 -> 419.0	40456	18.72	µg/L		99
		584.0 -> 483.0	25402				
FOSA	7.161	498.0 -> 78.0	40181	18.51	µg/L		100
		498.0 -> 478.0	1784				
MeFOSAA	7.622	570.0 -> 419.0	45172	18.16	µg/L		99
		570.0 -> 512.0	15881				
PFBA	2.246	213.0 -> 169.0	35204	18.87	µg/L		100
PFBS	4.319	299.0 -> 80.0	31172	18.74	µg/L		100
		299.0 -> 99.0	11846				
PFDA	7.932	513.0 -> 469.0	214596	17.54	µg/L		100
		513.0 -> 219.0	34735				
PFDoDA	8.922	613.0 -> 569.0	292680	18.70	µg/L		100
		613.0 -> 319.0	37391				
PFDS	8.329	599.0 -> 80.0	11446	18.42	µg/L		98
		599.0 -> 99.0	6066				
PFHpA	6.196	363.0 -> 319.0	294471	18.33	µg/L		100
		363.0 -> 169.0	49523				
PFHpS	6.871	449.0 -> 80.0	20153	17.93	µg/L		100
		449.0 -> 99.0	11282				
PFHxA	5.327	313.0 -> 269.0	209486	17.88	µg/L		100
		313.0 -> 119.0	8432				
PFHxS	6.231	399.0 -> 80.0	26891	18.03	µg/L	m	98
		399.0 -> 99.0	14130				
PFNA	7.455	463.0 -> 419.0	218601	18.20	µg/L		99
		463.0 -> 219.0	45516				
PFNS	7.890	549.0 -> 80.0	12383	19.10	µg/L		99
		549.0 -> 99.0	6984				
PFOA	6.888	413.0 -> 369.0	370628	17.98	µg/L		100
		413.0 -> 169.0	67791				
PFOS	7.428	499.0 -> 80.0	18309	18.98	µg/L	m	99

Perfluorinated Compounds by LC/MS/MS

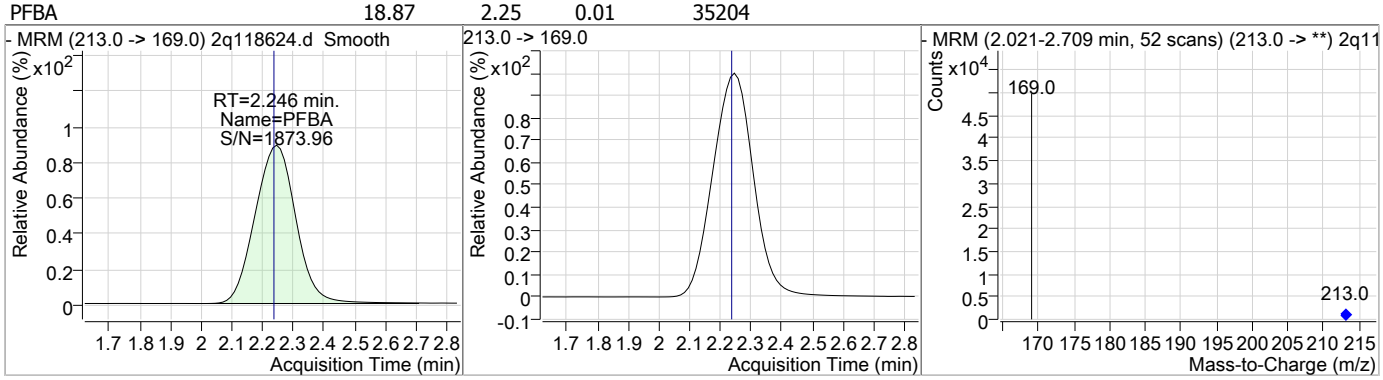
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		499.0 -> 99.0	9262			
PFPeA	4.064	263.0 -> 219.0	130139	18.14	µg/L	100
PFPeS	5.433	349.0 -> 80.0	22717	18.87	µg/L	99
		349.0 -> 99.0	9807			
PFTeDA	10.022	713.0 -> 669.0	318827	18.49	µg/L	100
		713.0 -> 219.0	19439			
PFTrDA	9.474	663.0 -> 619.0	338731	18.96	µg/L	100
		663.0 -> 369.0	22834			
PFUnDA	8.381	563.0 -> 519.0	271198	18.13	µg/L	99
		563.0 -> 269.0	44570			
11Cl-PF3OUdS	8.541	631.0 -> 451.0	80468	18.44	µg/L	100
		633.0 -> 453.0	24564			
9Cl-PF3ONS	7.663	531.0 -> 351.0	91039	17.33	µg/L	100
		533.0 -> 353.0	28319			
ADONA	6.271	377.0 -> 251.0	361123	17.64	µg/L	99
		377.0 -> 85.0	92297			
HFPO-DA	5.601	329.0 -> 169.0	52755	19.05	µg/L	100
		285.0 -> 169.0	15189			
MeFOSA	7.527	512.0 -> 169.0	14211	17.55	µg/L	97
		512.0 -> 219.0	12970			
4-PFECHS	6.780	461.0 -> 381.0	91302	16.65	µg/L	99
		461.0 -> 99.0	31959			
FBSA	5.116	298.0 -> 78.0	62211	16.81	µg/L	99
		298.0 -> 64.0	6592			
FHxSA	6.396	398.0 -> 78.0	65080	17.79	µg/L	99
		398.0 -> 64.0	7177			

 # = Qualifier out of range, m = manually integrated, + = Area summed

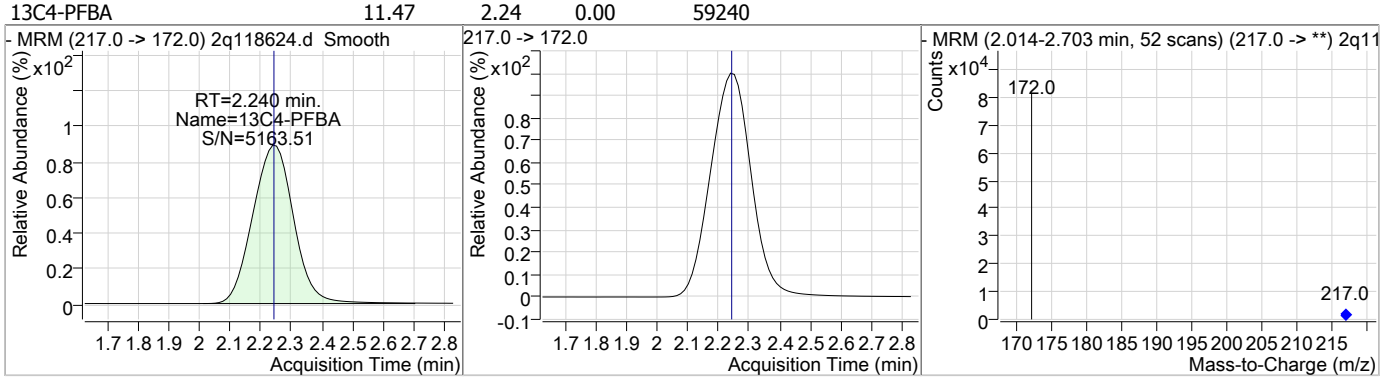
Perfluorinated Compounds by LC/MS/MS



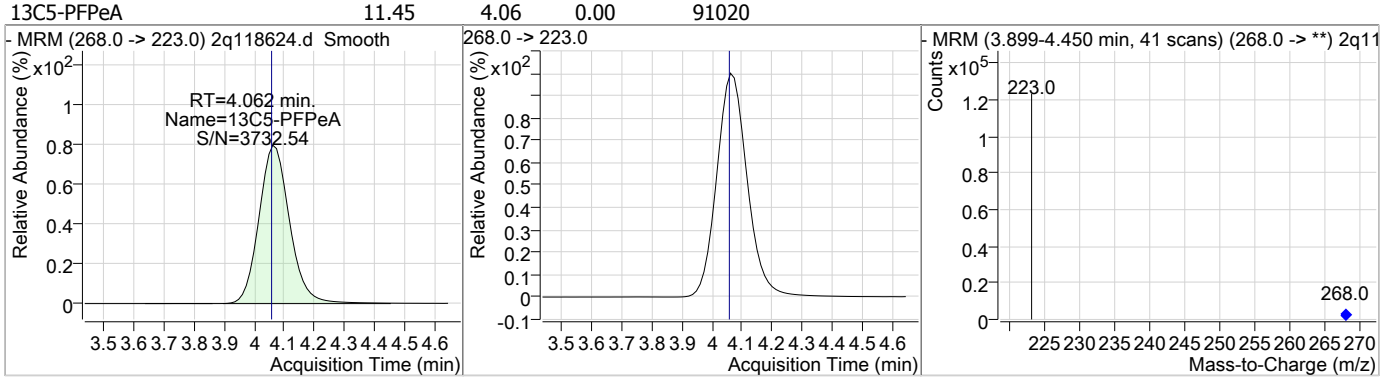
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	18.87	2.25	0.01	35204				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	11.47	2.24	0.00	59240				

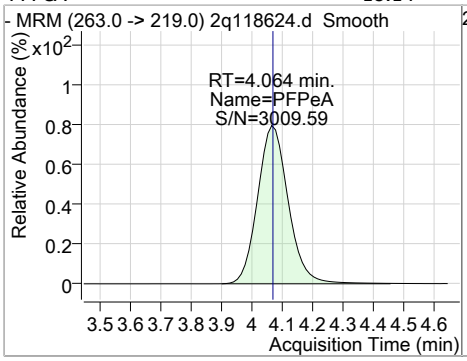


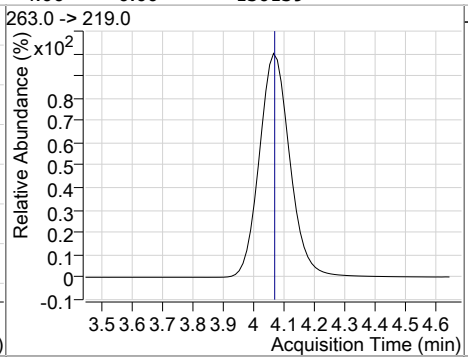
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	11.45	4.06	0.00	91020				

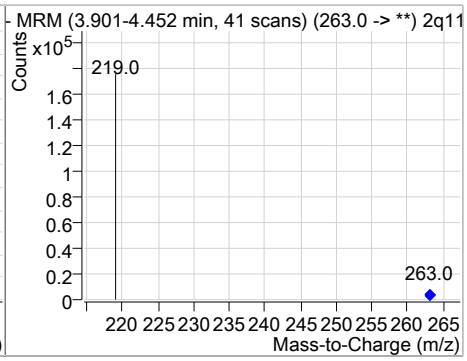


Perfluorinated Compounds by LC/MS/MS

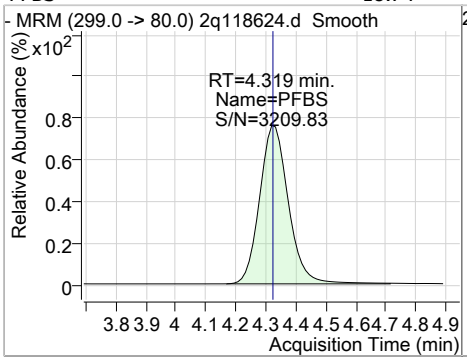
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	18.14	4.06	0.00	130139				

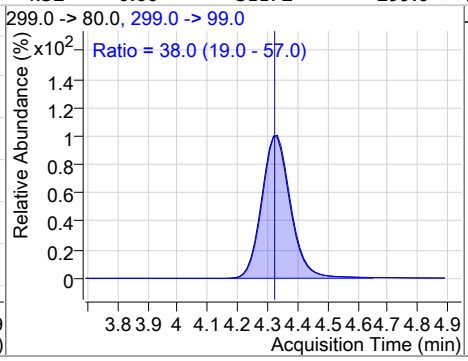


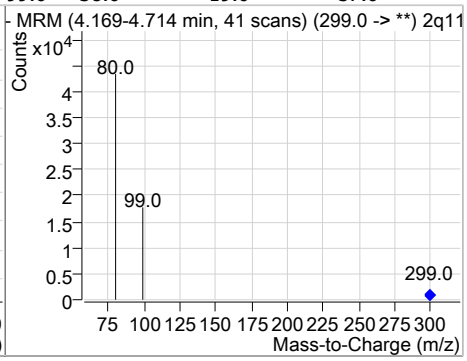




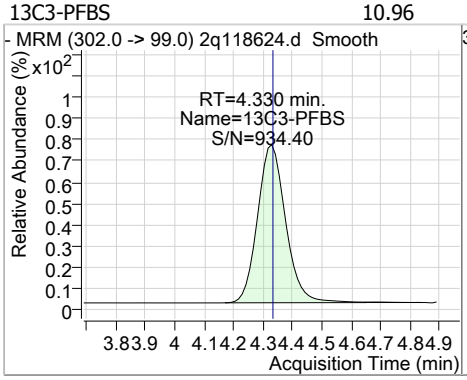
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	18.74	4.32	0.00	31172	299.0 -> 99.0	38.0	19.0	57.0

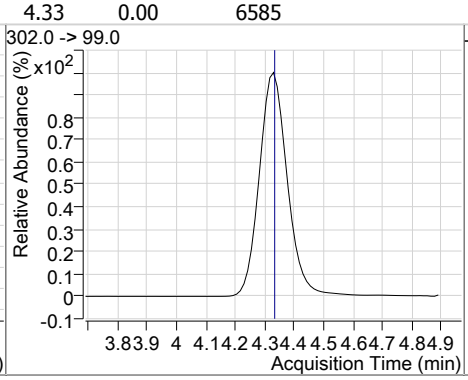


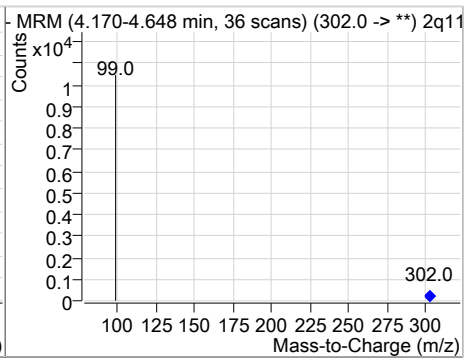




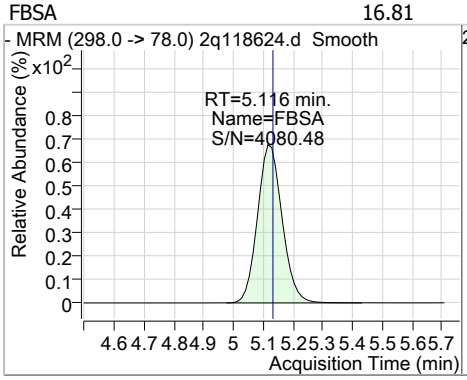
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	10.96	4.33	0.00	6585				

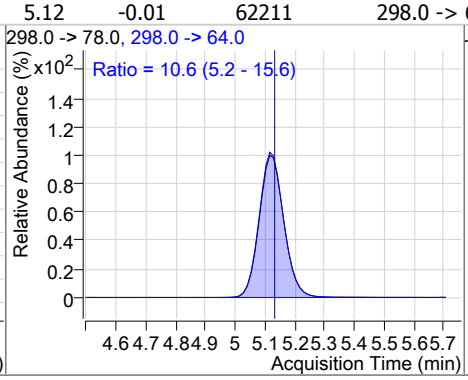


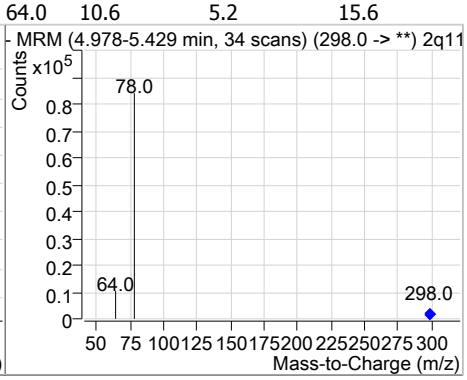




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	16.81	5.12	-0.01	62211	298.0 -> 64.0	10.6	5.2	15.6

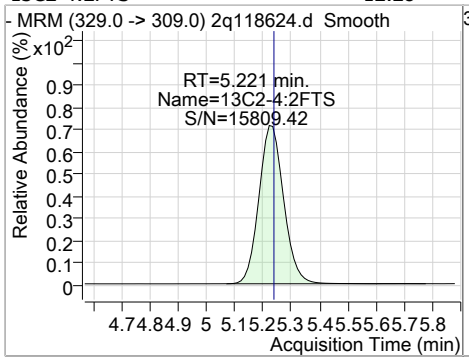


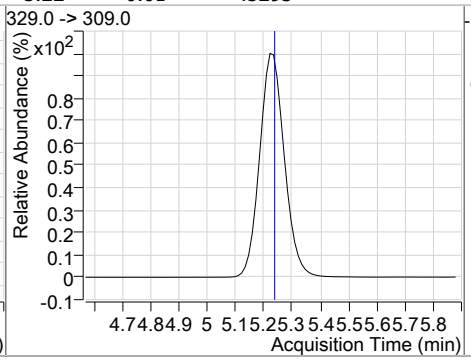


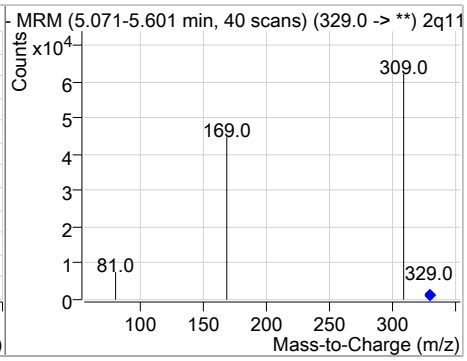


Perfluorinated Compounds by LC/MS/MS

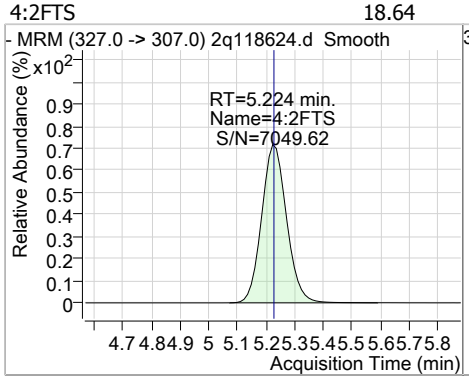
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	12.28	5.22	-0.01	45293				

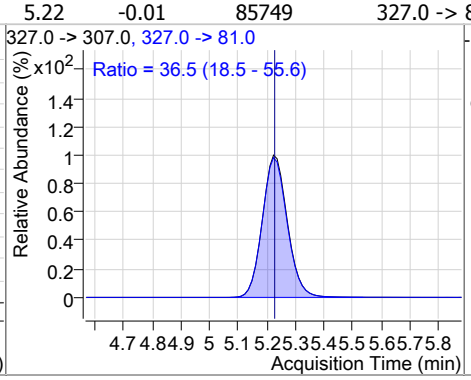


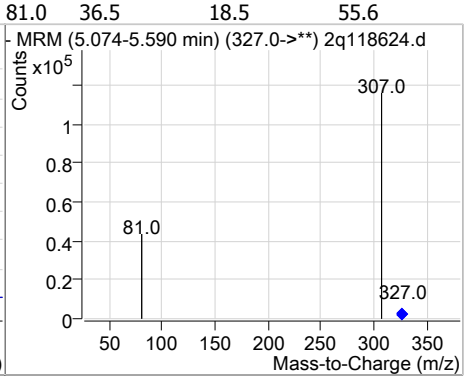




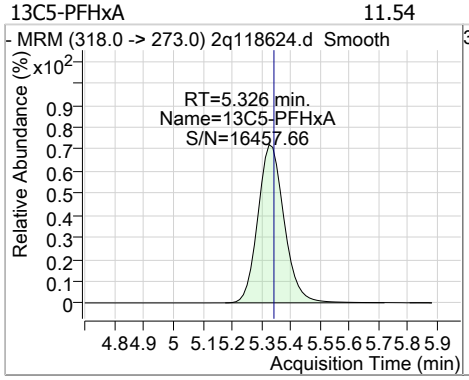
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	18.64	5.22	-0.01	85749	327.0 -> 81.0	36.5	18.5	55.6

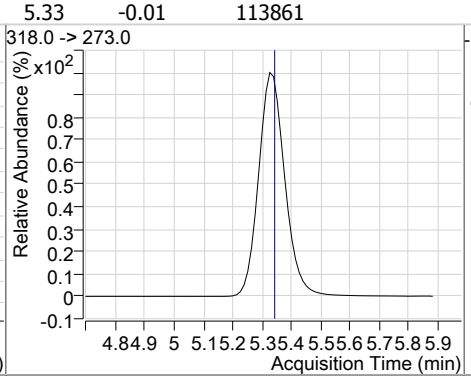


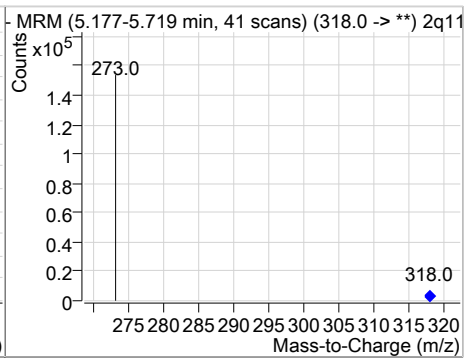




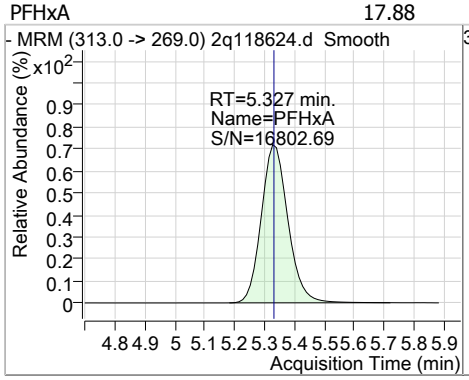
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	11.54	5.33	-0.01	113861				

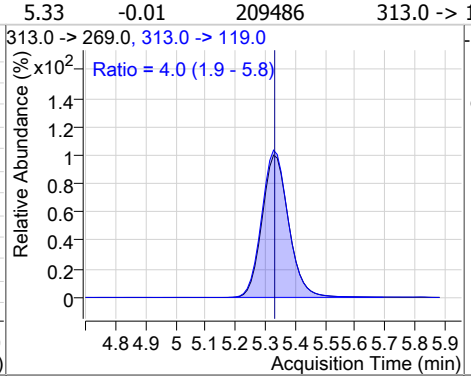


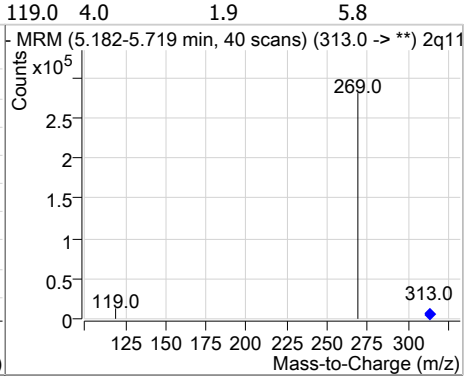




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	17.88	5.33	-0.01	209486	313.0 -> 119.0	4.0	1.9	5.8

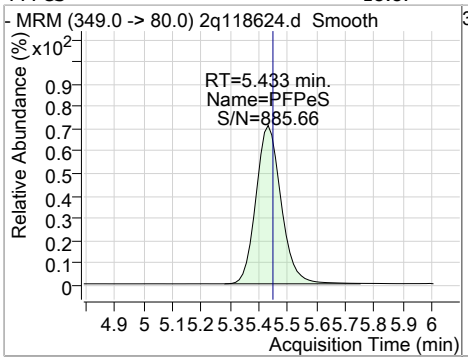


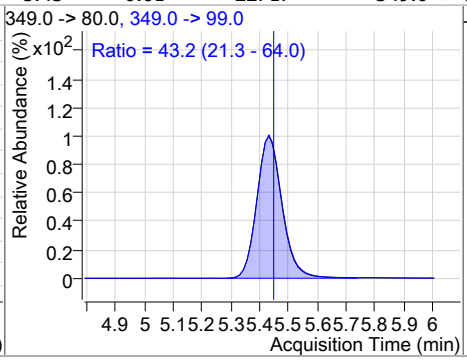


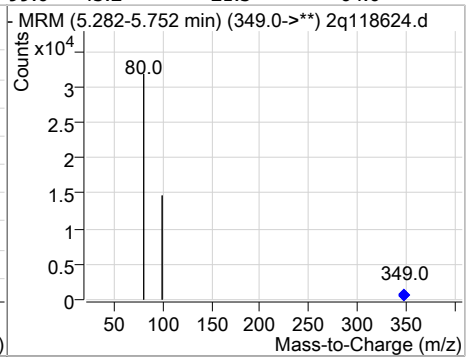


Perfluorinated Compounds by LC/MS/MS

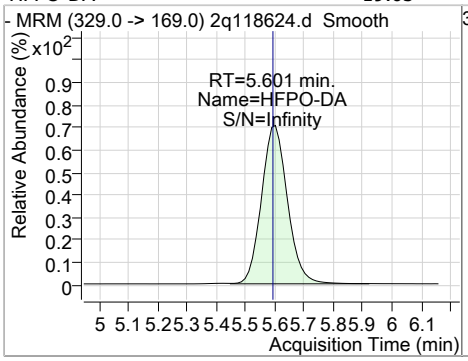
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	18.87	5.43	-0.01	22717	349.0 -> 99.0	43.2	21.3	64.0

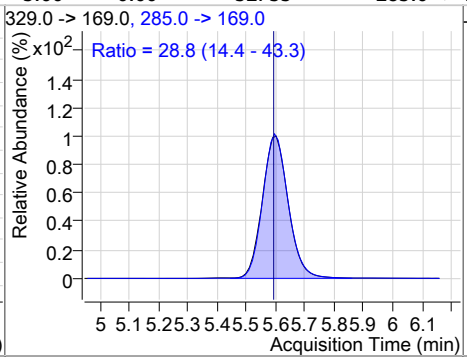


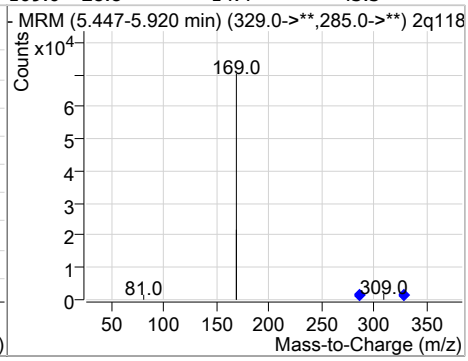




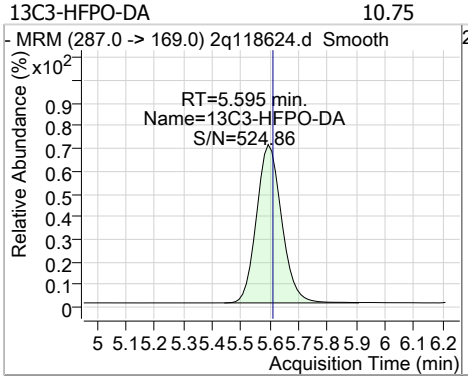
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	19.05	5.60	0.00	52755	285.0 -> 169.0	28.8	14.4	43.3

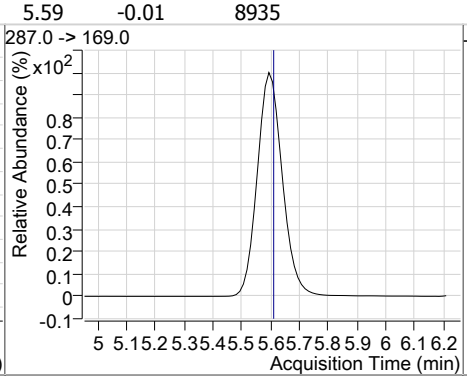


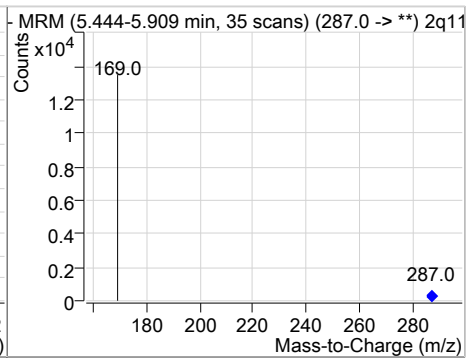




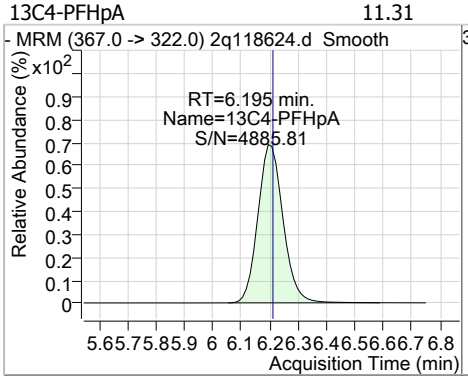
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	10.75	5.59	-0.01	8935				

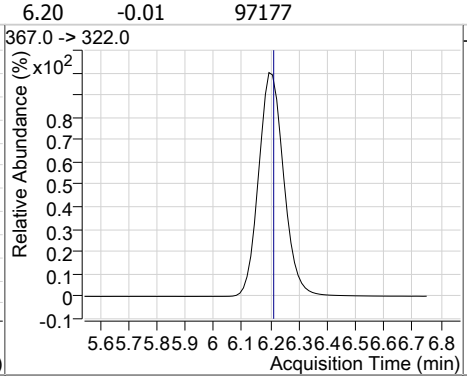


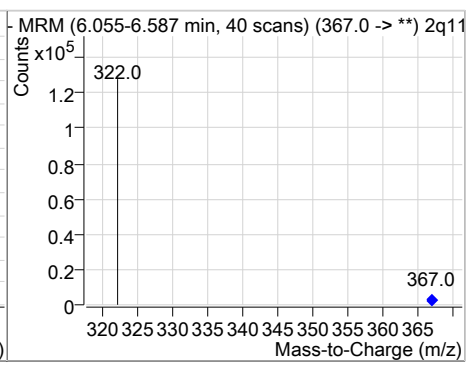




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	11.31	6.20	-0.01	97177				

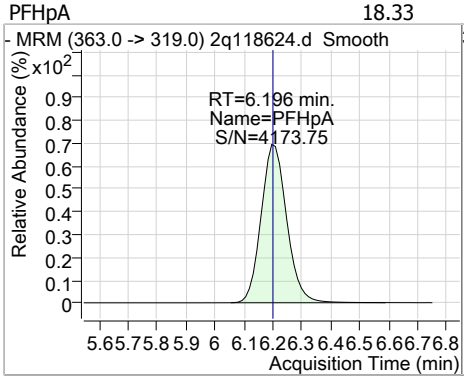


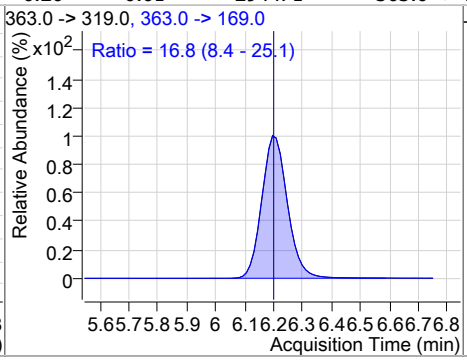


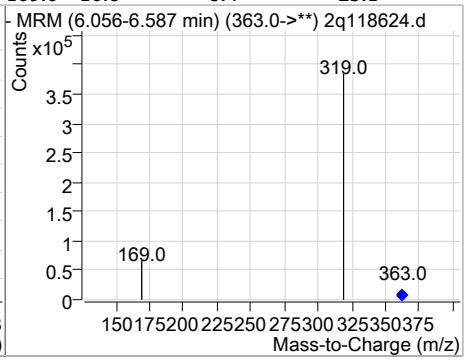


Perfluorinated Compounds by LC/MS/MS

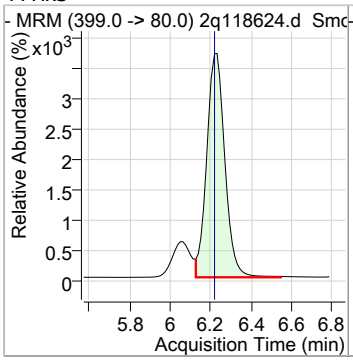
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	18.33	6.20	-0.01	294471	363.0 -> 169.0	16.8	8.4	25.1

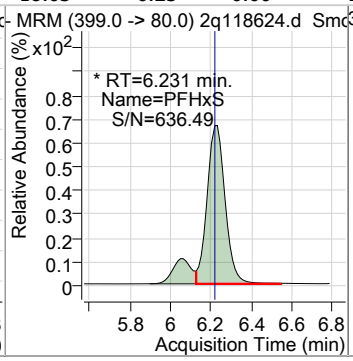


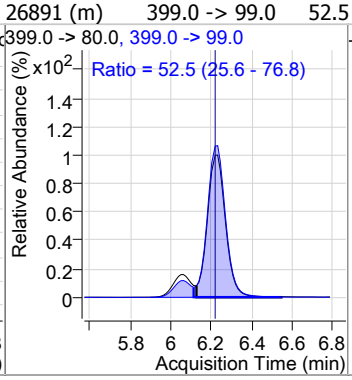


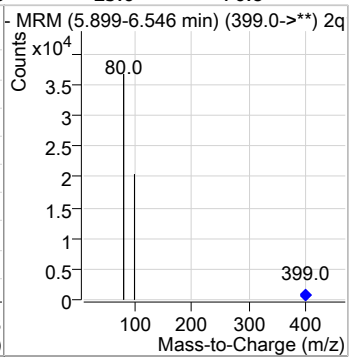


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	18.03	6.23	0.00	26891 (m)	399.0 -> 99.0	52.5	25.6	76.8

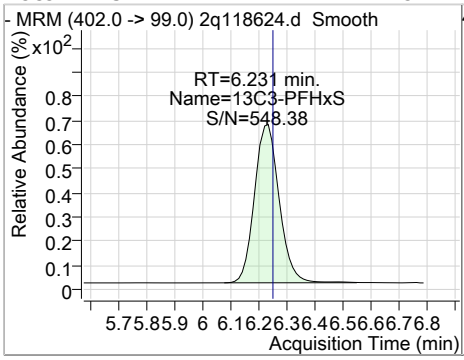


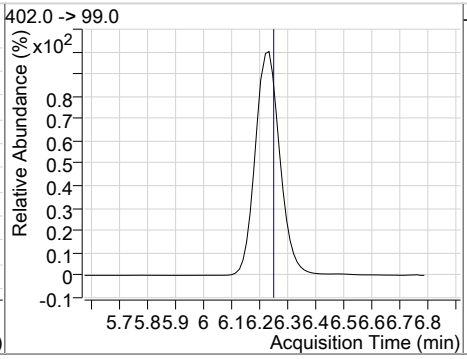


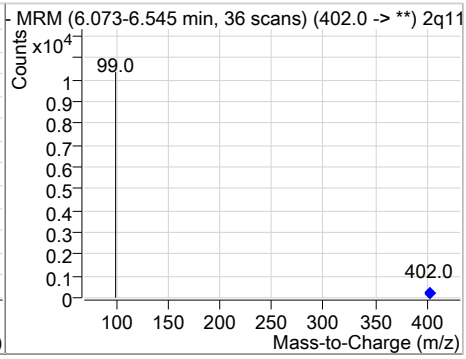




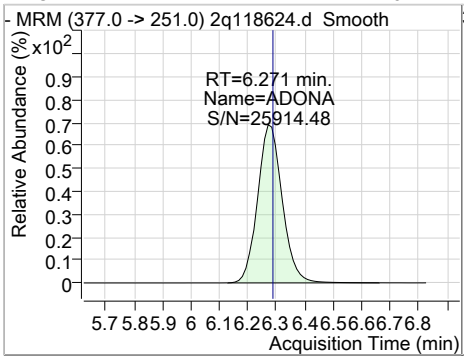
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	11.13	6.23	-0.01	6811				

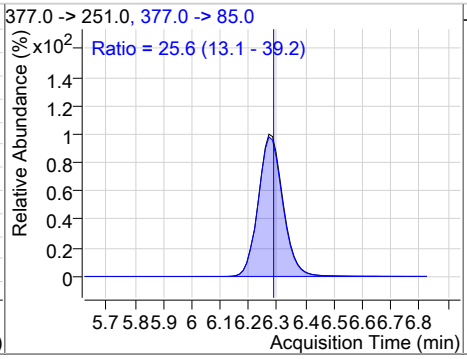


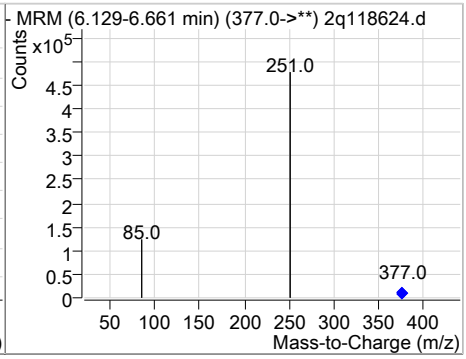




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	17.64	6.27	-0.01	361123	377.0 -> 85.0	25.6	13.1	39.2

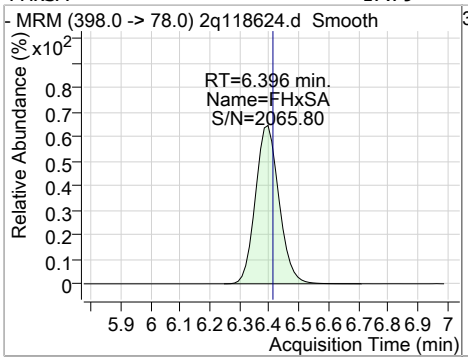


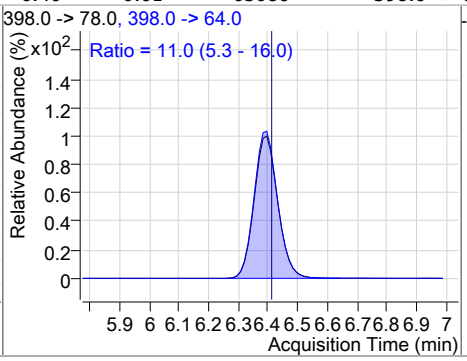


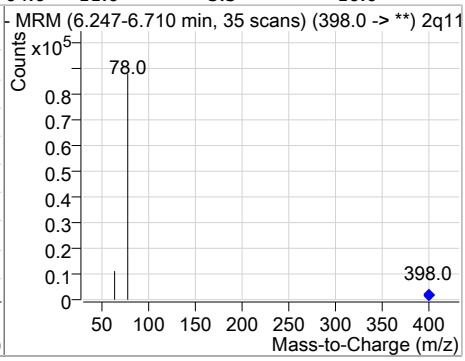


Perfluorinated Compounds by LC/MS/MS

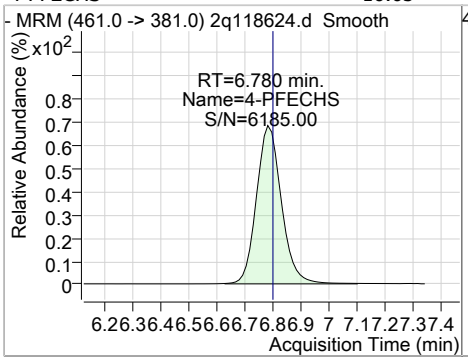
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	17.79	6.40	-0.01	65080	398.0 -> 64.0	11.0	5.3	16.0

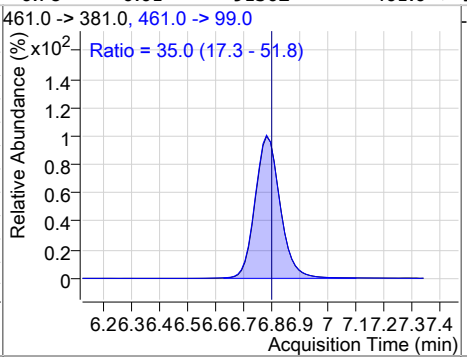


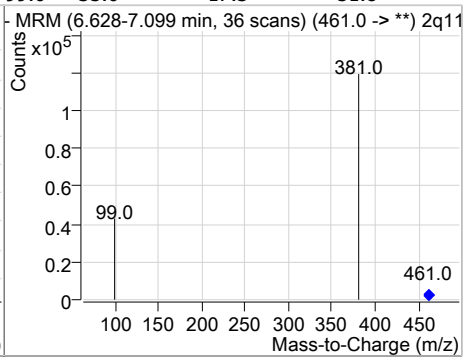




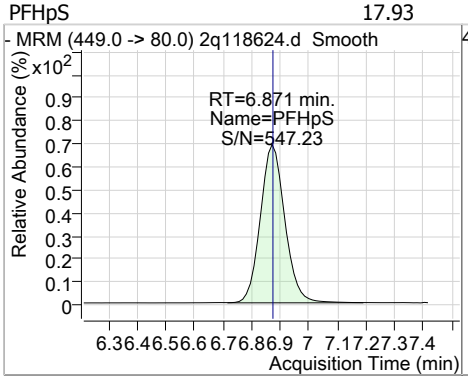
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS	16.65	6.78	-0.01	91302	461.0 -> 99.0	35.0	17.3	51.8

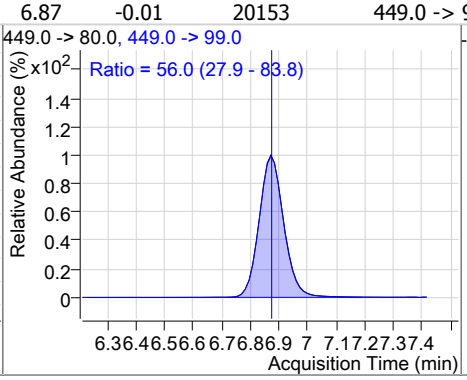


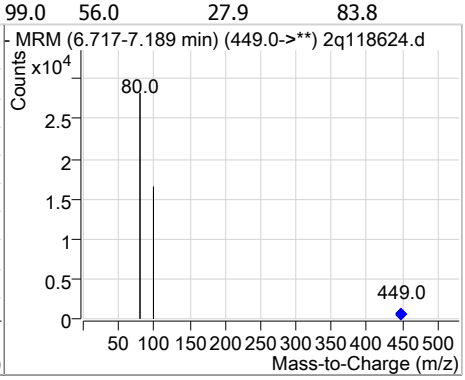




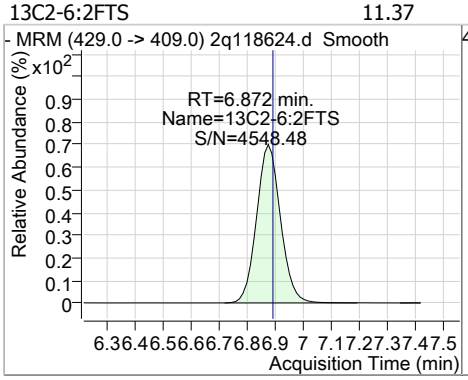
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	17.93	6.87	-0.01	20153	449.0 -> 99.0	56.0	27.9	83.8

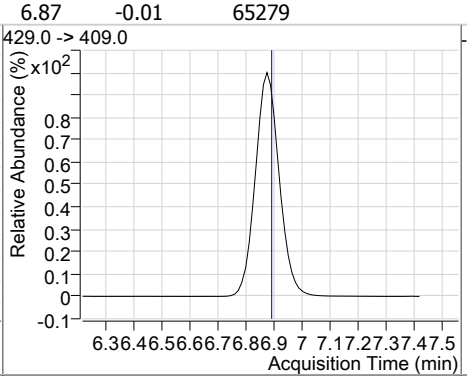


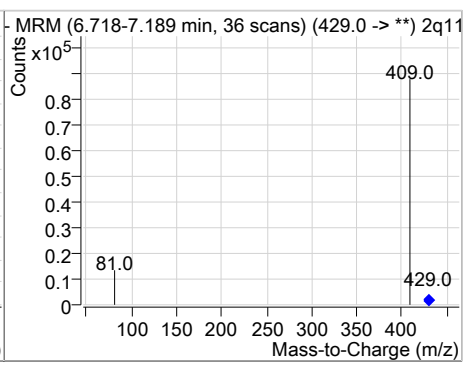




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	11.37	6.87	-0.01	65279				

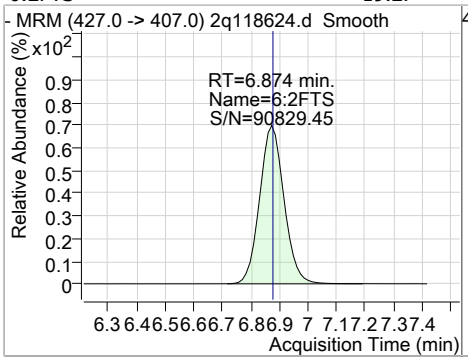


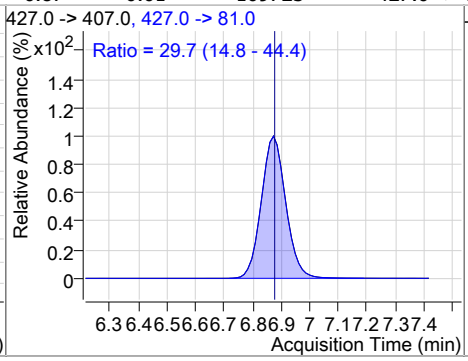


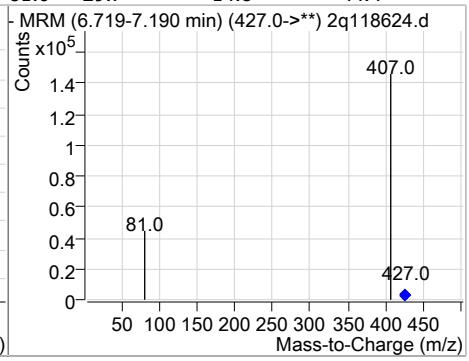


Perfluorinated Compounds by LC/MS/MS

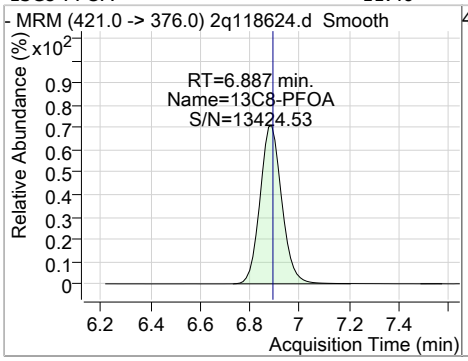
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	19.27	6.87	-0.01	109723	427.0 -> 81.0	29.7	14.8	44.4

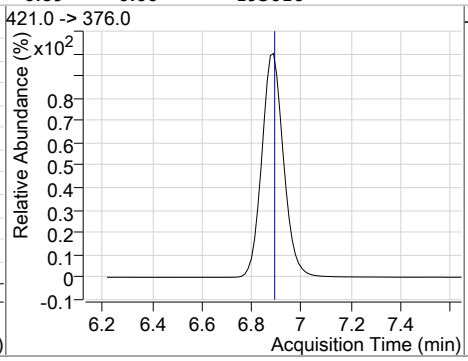


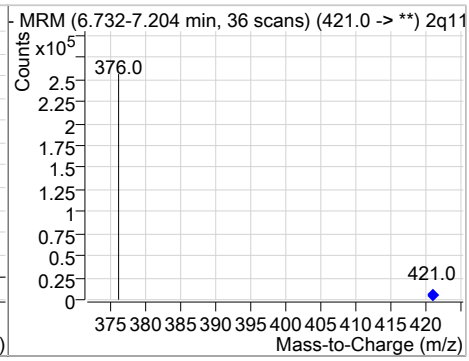




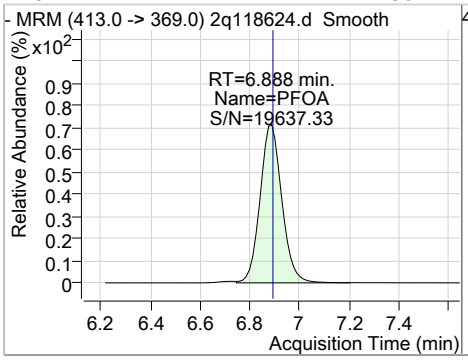
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	11.40	6.89	0.00	193016				

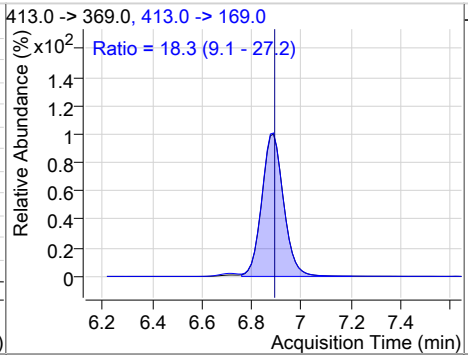


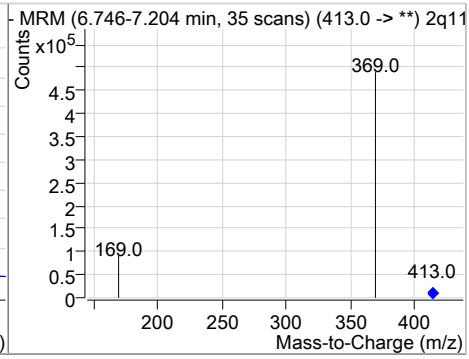




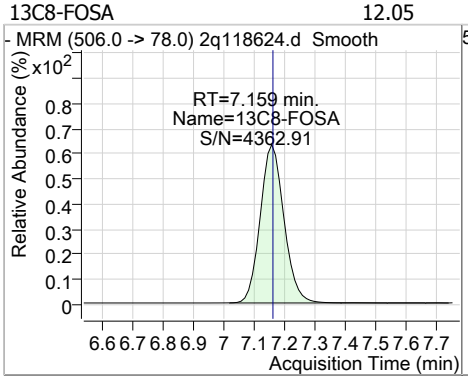
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	17.98	6.89	0.00	370628	413.0 -> 169.0	18.3	9.1	27.2

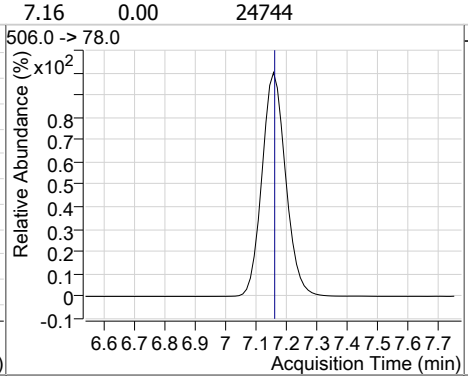


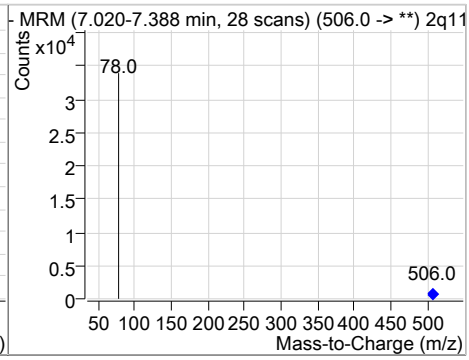




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	12.05	7.16	0.00	24744				

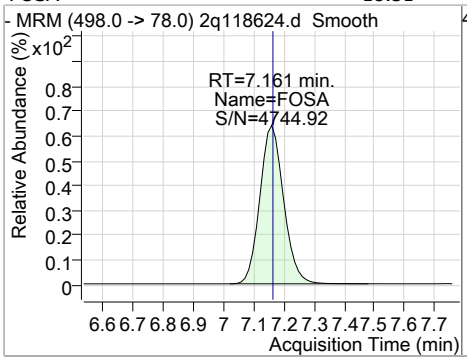


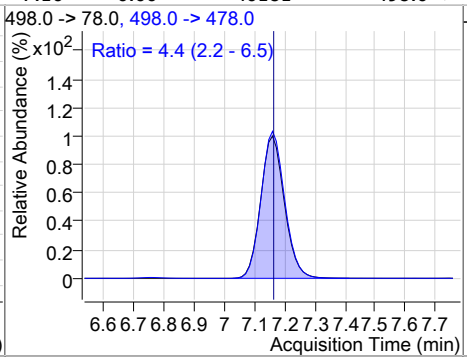


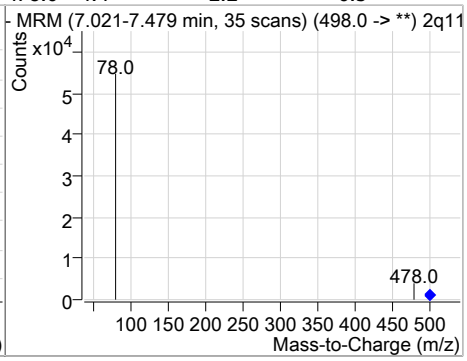


Perfluorinated Compounds by LC/MS/MS

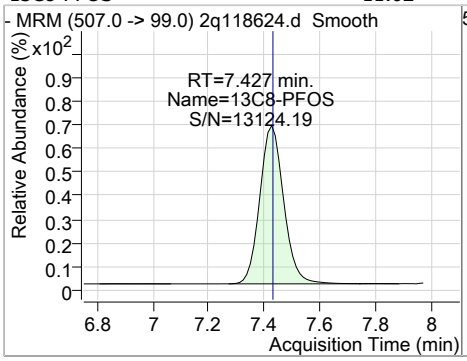
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	18.51	7.16	0.00	40181	498.0 -> 478.0	4.4	2.2	6.5

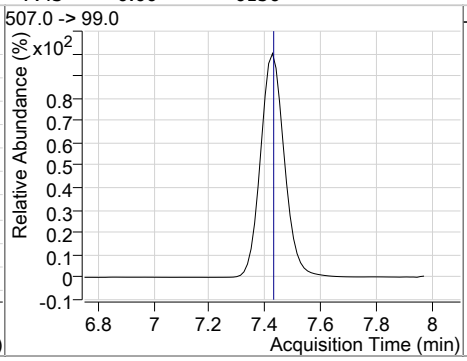


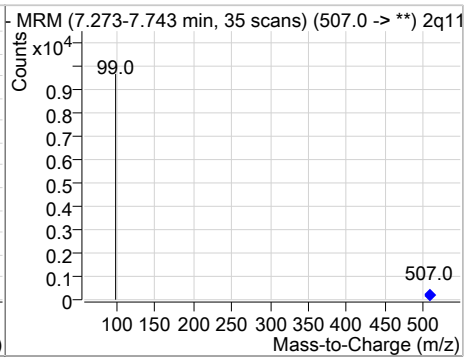




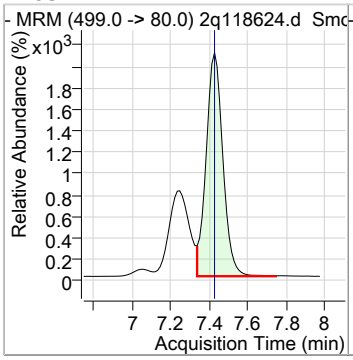
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	11.02	7.43	0.00	6156				

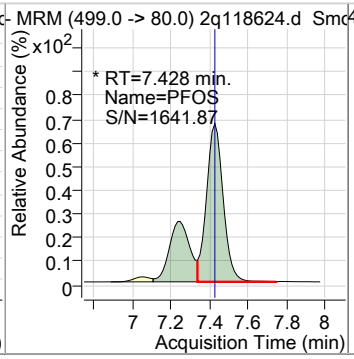


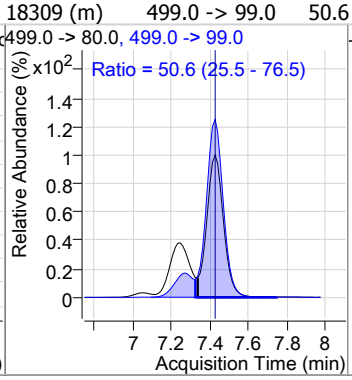


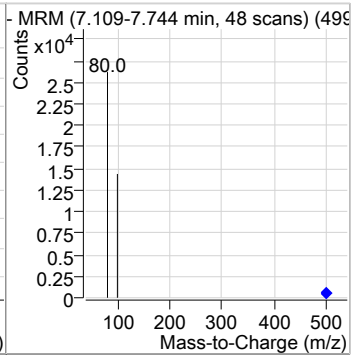


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	18.98	7.43	0.00	18309 (m)	499.0 -> 99.0	50.6	25.5	76.5

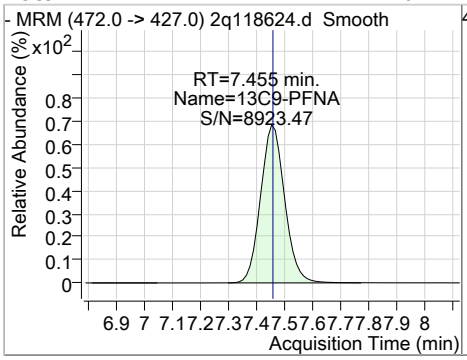


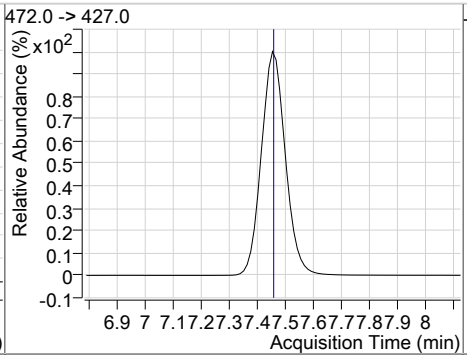


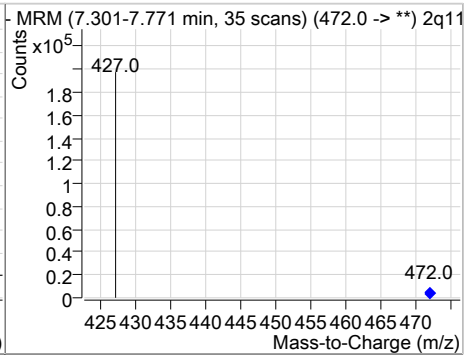




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	11.10	7.45	0.00	149604				

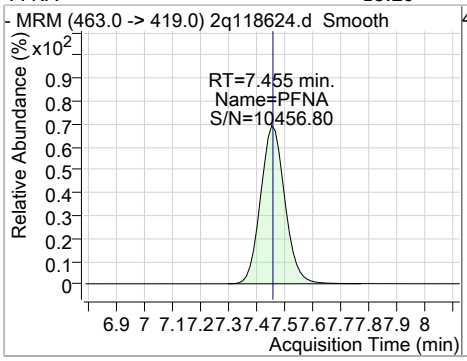


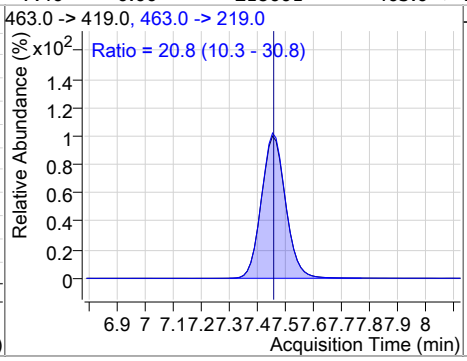


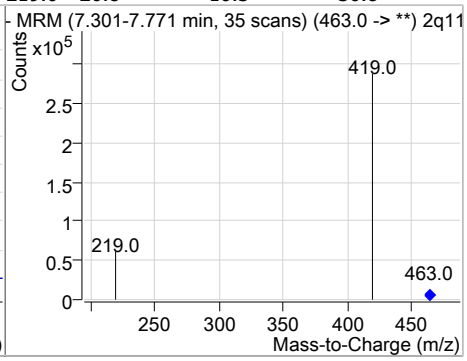


Perfluorinated Compounds by LC/MS/MS

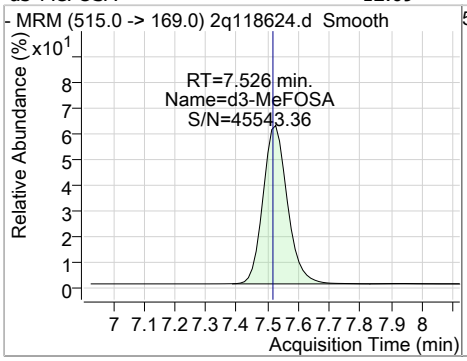
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	18.20	7.46	0.00	218601	463.0 -> 219.0	20.8	10.3	30.8

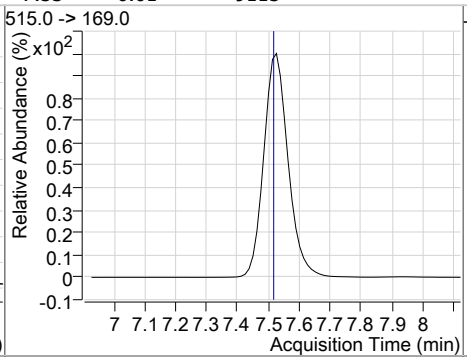


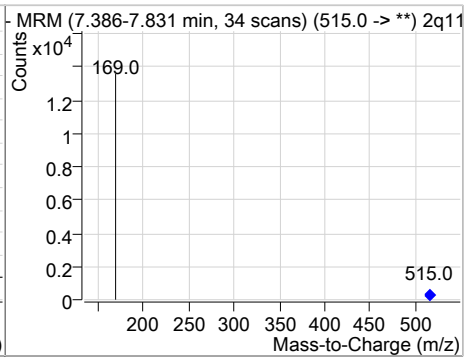




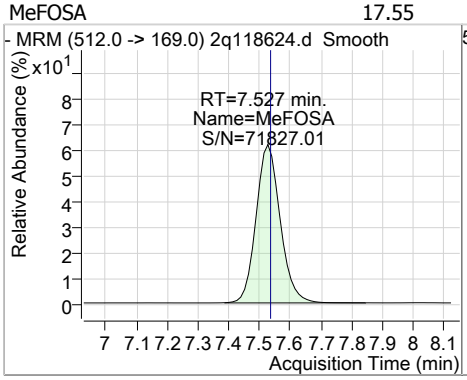
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	12.69	7.53	0.01	9115				

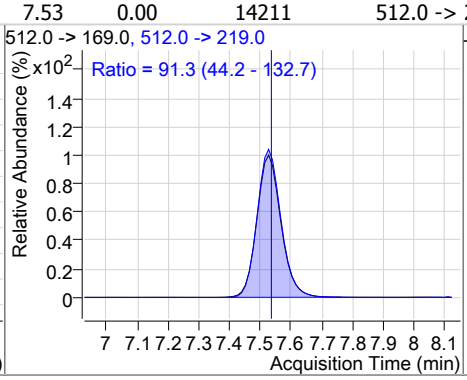


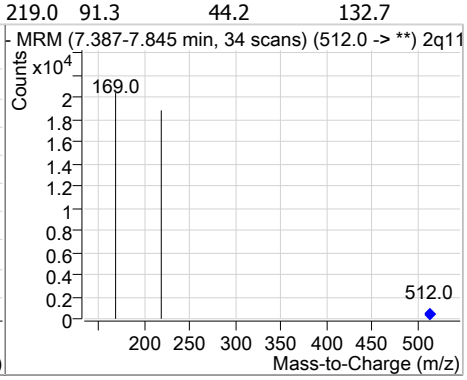




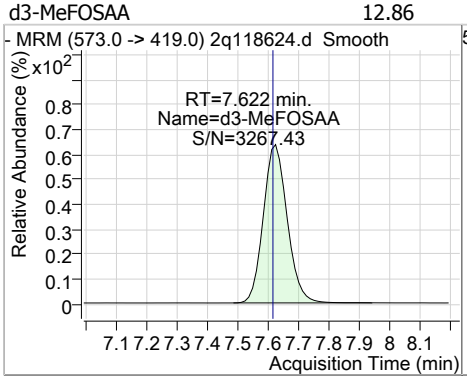
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	17.55	7.53	0.00	14211	512.0 -> 219.0	91.3	44.2	132.7

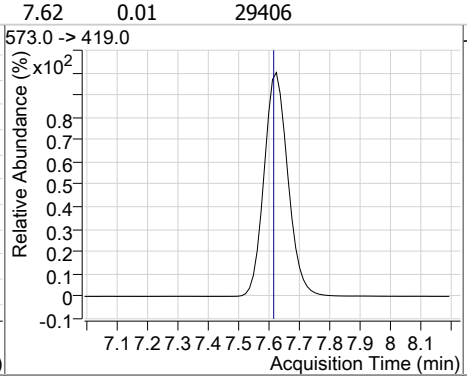


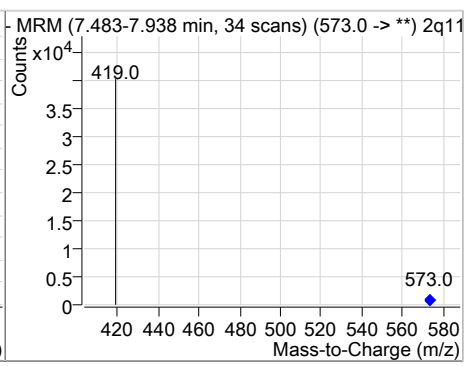




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	12.86	7.62	0.01	29406				

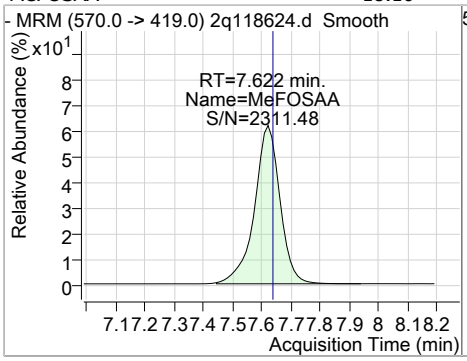


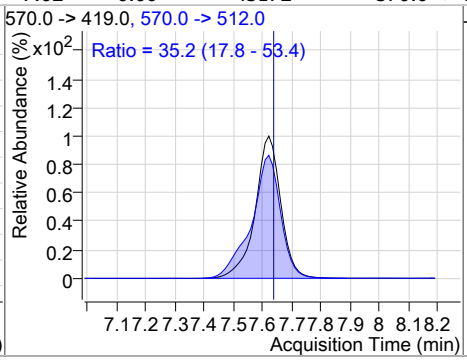


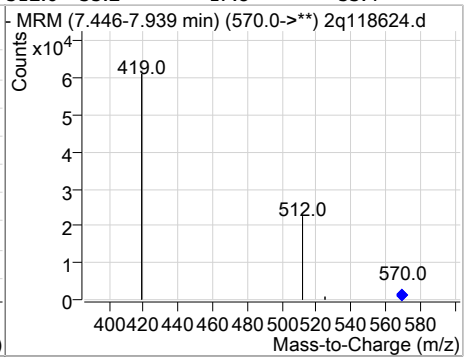


Perfluorinated Compounds by LC/MS/MS

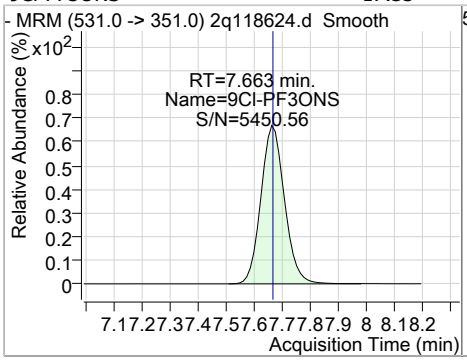
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	18.16	7.62	0.00	45172	570.0 -> 512.0	35.2	17.8	53.4

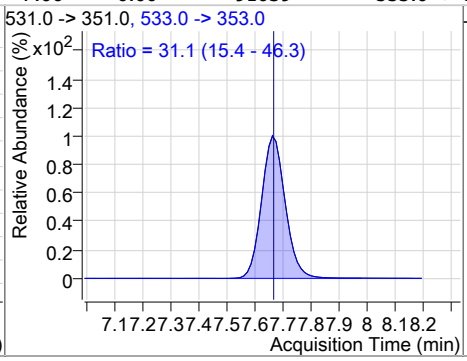


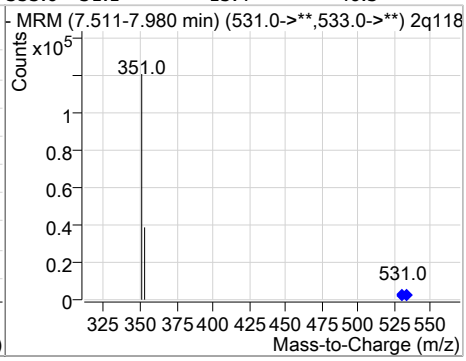




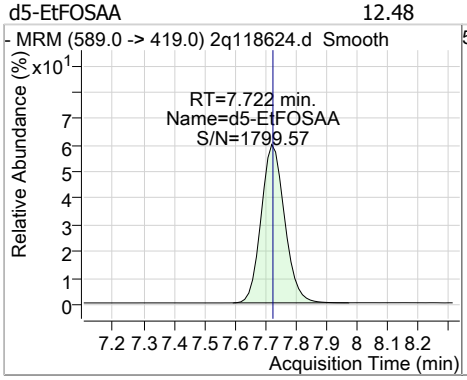
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	17.33	7.66	0.00	91039	533.0 -> 353.0	31.1	15.4	46.3

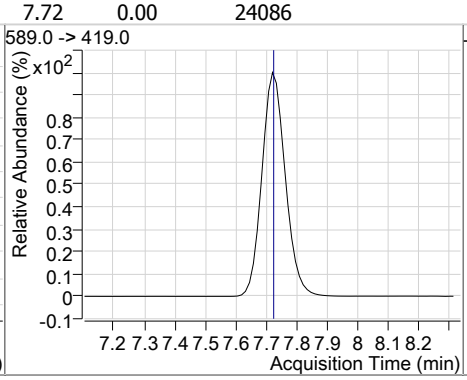


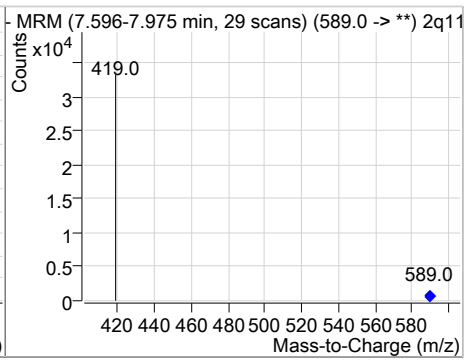




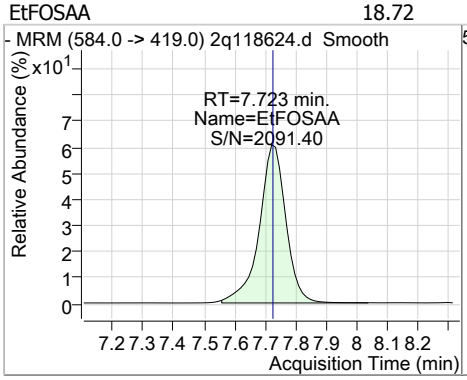
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	12.48	7.72	0.00	24086				

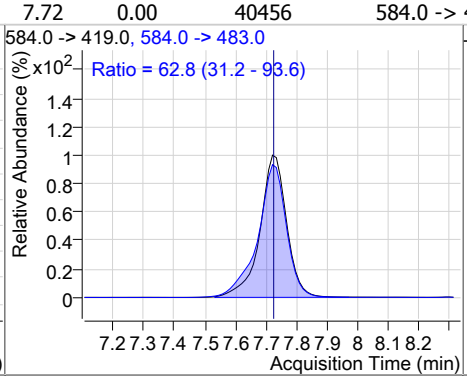


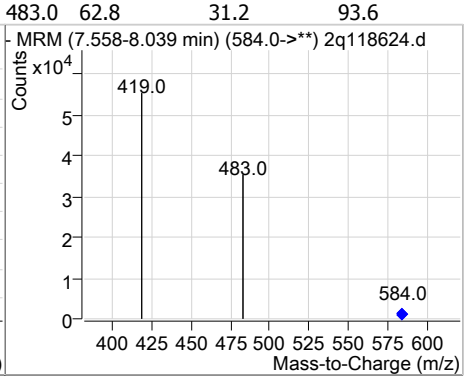




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	18.72	7.72	0.00	40456	584.0 -> 483.0	62.8	31.2	93.6

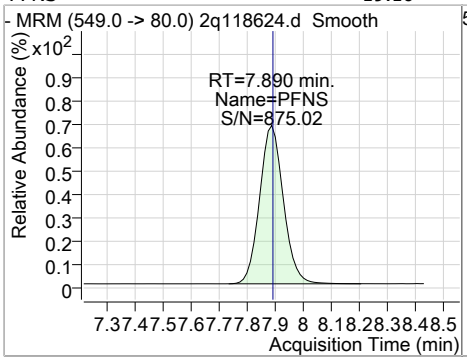


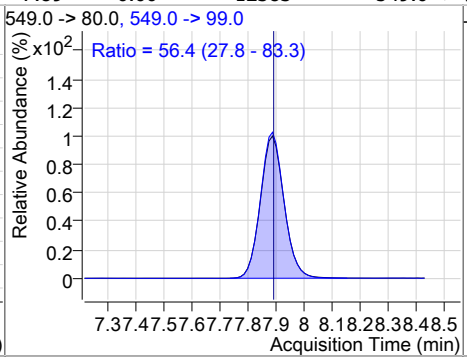


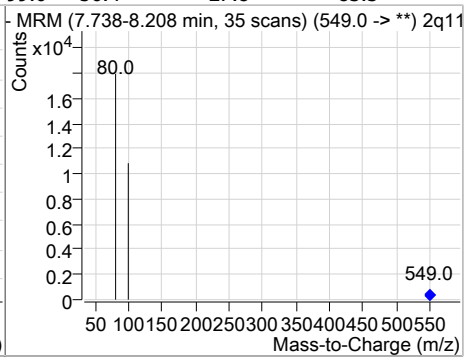


Perfluorinated Compounds by LC/MS/MS

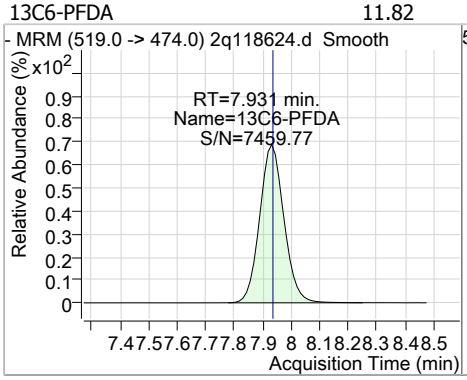
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	19.10	7.89	0.00	12383	549.0 -> 99.0	56.4	27.8	83.3

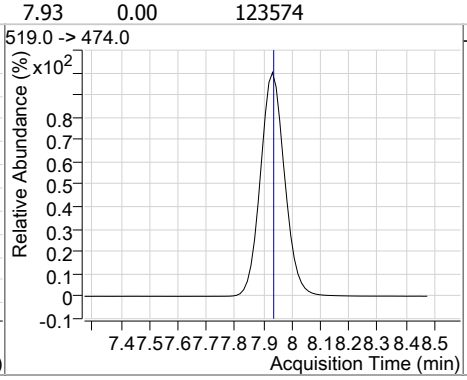


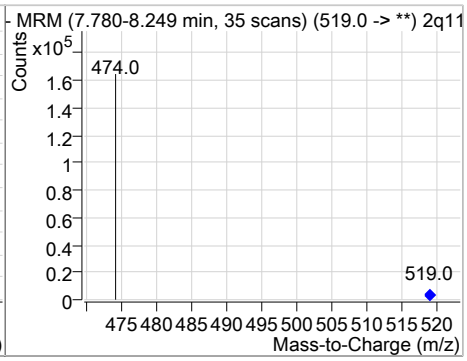




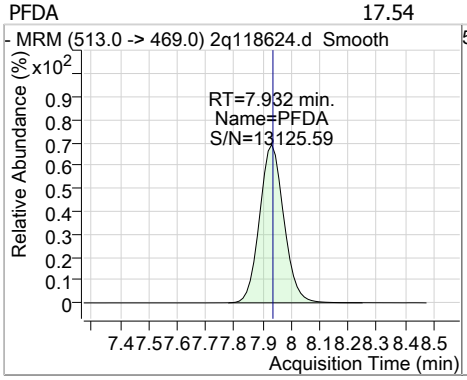
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	11.82	7.93	0.00	123574				

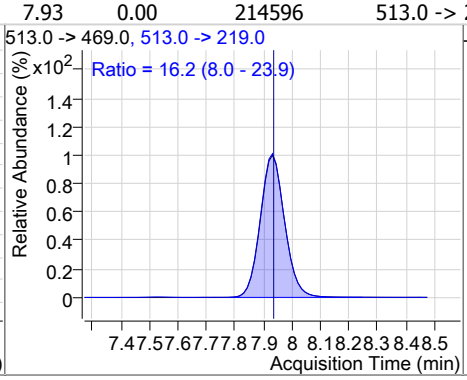


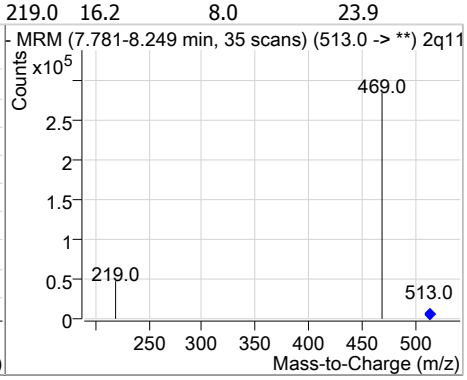




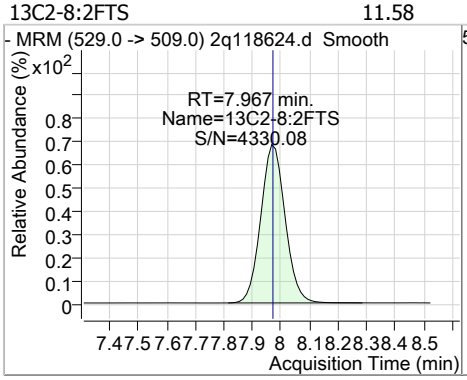
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	17.54	7.93	0.00	214596	513.0 -> 219.0	16.2	8.0	23.9

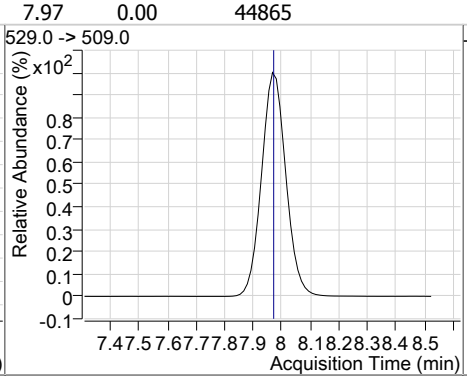


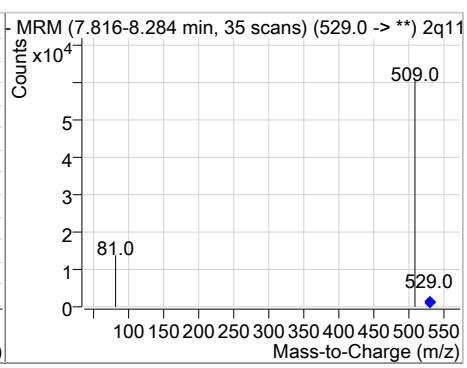




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	11.58	7.97	0.00	44865				

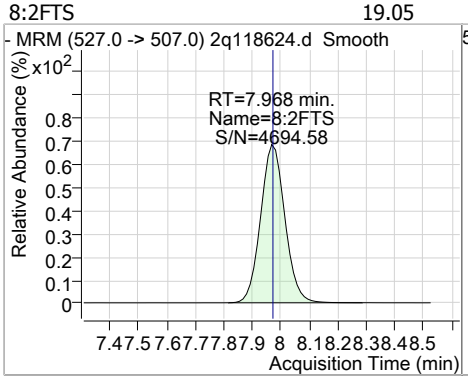


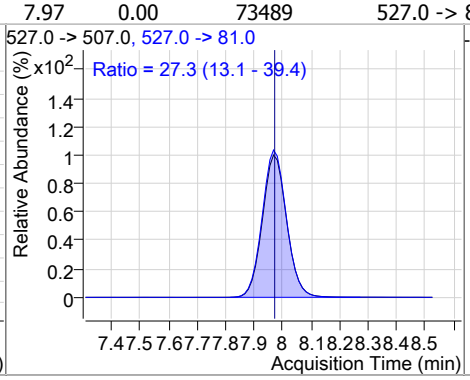


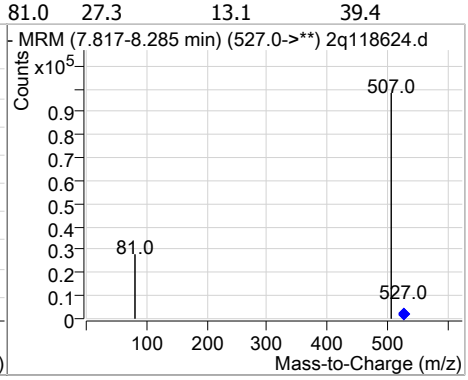


Perfluorinated Compounds by LC/MS/MS

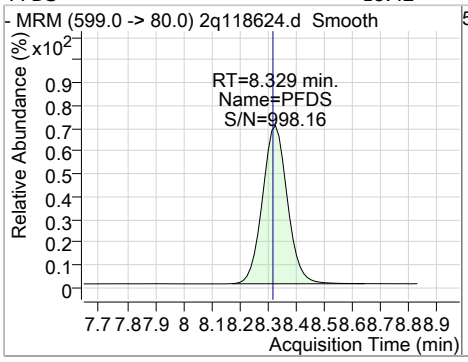
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	19.05	7.97	0.00	73489	527.0 -> 81.0	27.3	13.1	39.4

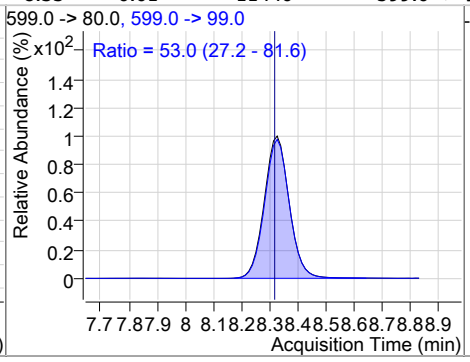


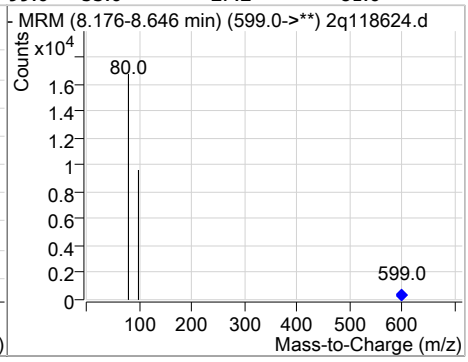




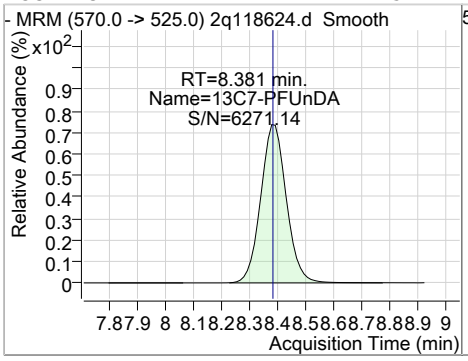
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	18.42	8.33	0.01	11446	599.0 -> 99.0	53.0	27.2	81.6

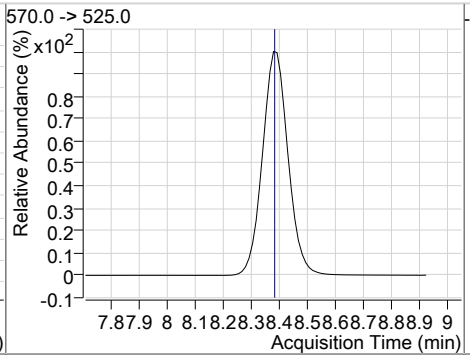


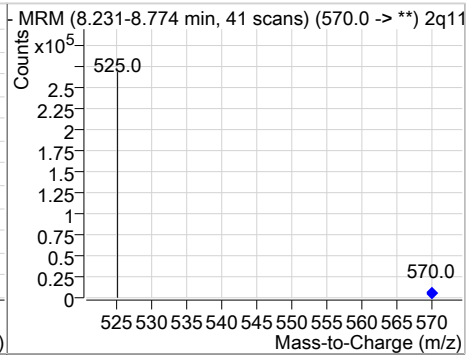




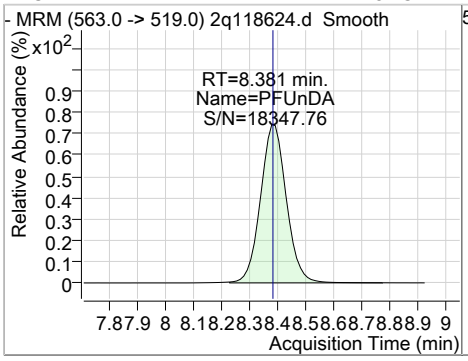
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	11.54	8.38	0.00	200542				

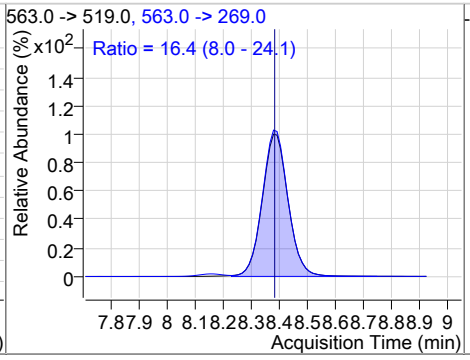


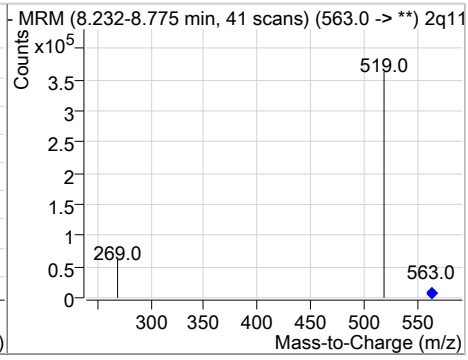




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	18.13	8.38	0.00	271198	563.0 -> 269.0	16.4	8.0	24.1

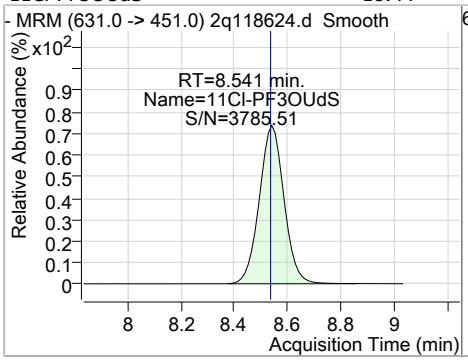


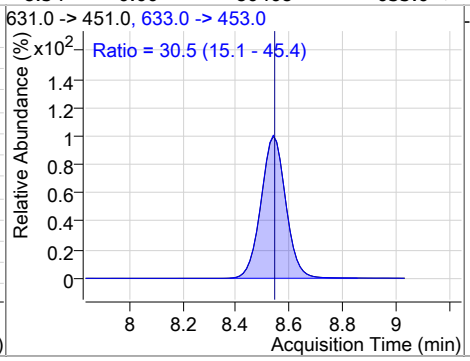


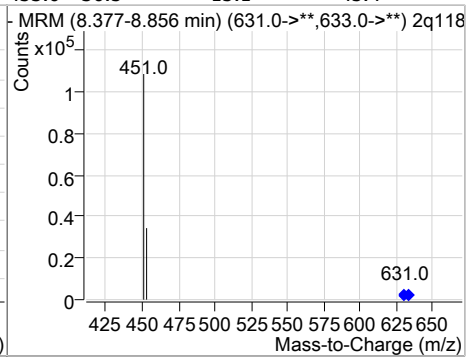


Perfluorinated Compounds by LC/MS/MS

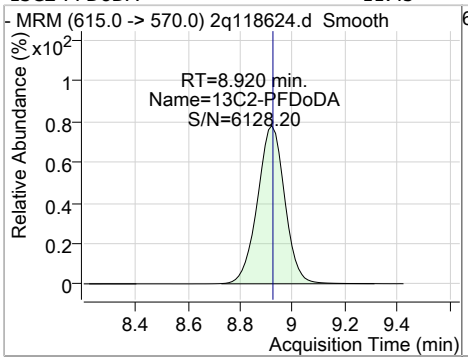
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	18.44	8.54	0.00	80468	633.0 -> 453.0	30.5	15.1	45.4

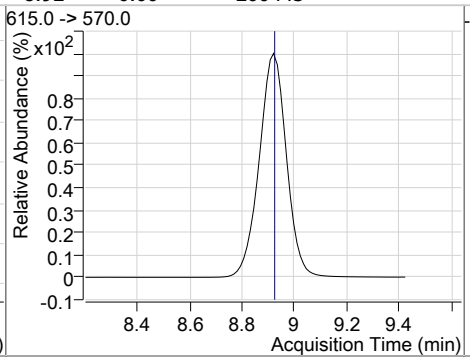


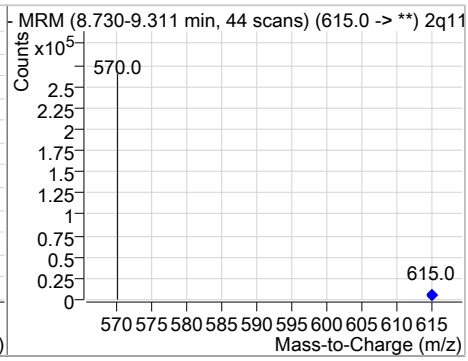




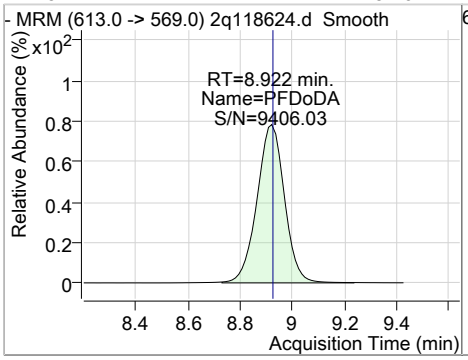
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	11.45	8.92	0.00	200443				

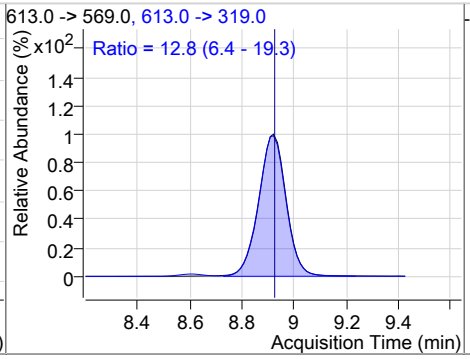


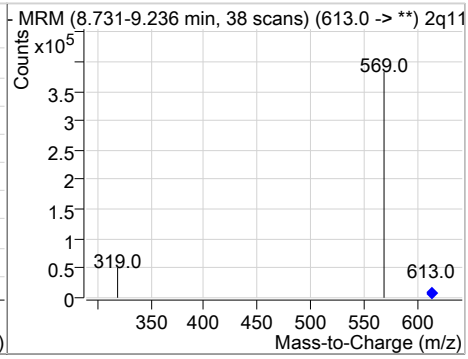




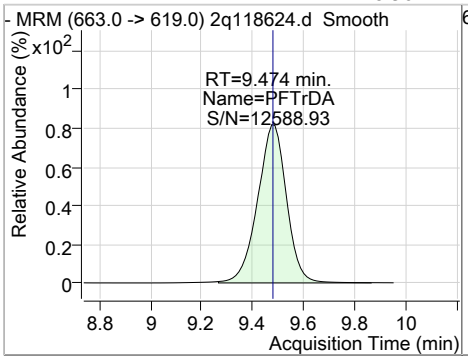
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	18.70	8.92	0.00	292680	613.0 -> 319.0	12.8	6.4	19.3

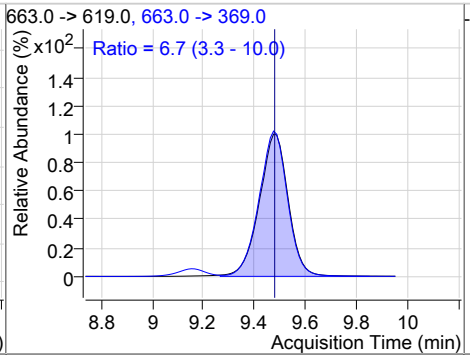


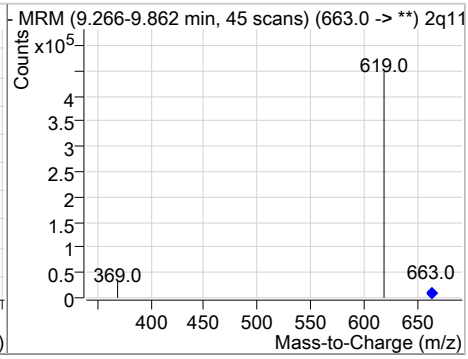




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	18.96	9.47	0.00	338731	663.0 -> 369.0	6.7	3.3	10.0

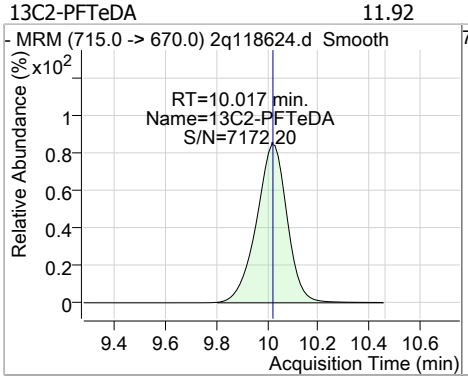


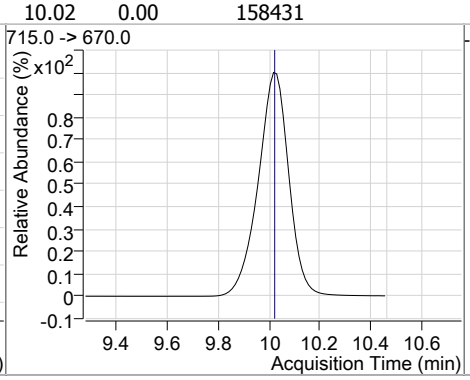


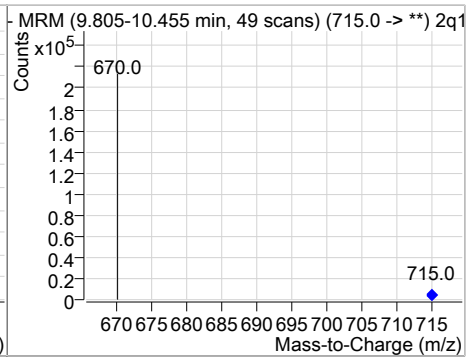


Perfluorinated Compounds by LC/MS/MS

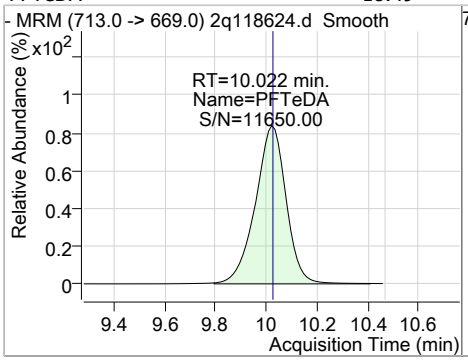
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	11.92	10.02	0.00	158431				

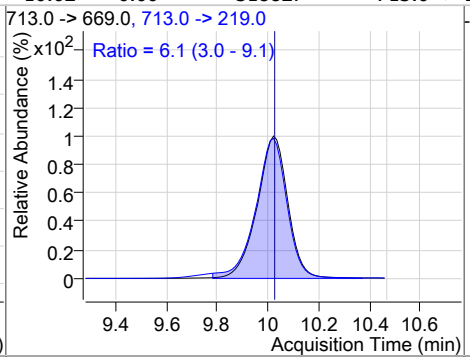


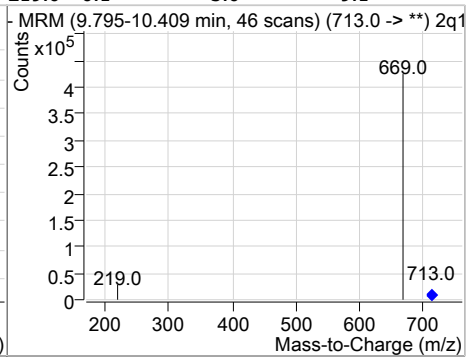




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	18.49	10.02	0.00	318827	713.0 -> 219.0	6.1	3.0	9.1







Manual Integration Approval Summary

Sample Number: S2Q1693-CC1691
Lab FileID: 2Q118624.D
Injection Time: 01/04/24 21:49
Method: EPA 537M QSM5.3 B-15
Analyst approved: 01/05/24 15:53 Lindsay Ritner
Supervisor approved: 01/05/24 17:02 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.23	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.43	Split peak

QQQ Check Tune Report

Agilent | Trusted Answers

Instrument Name	LCMS5Q
MS Model	G6470B
MS Instrument Serial	SG2221G211
Software_Firmware Version	10.1.67, FW: A.00.08.112
Tune Date & Time	27 December 2023 15:02:53
File Path	D:\MassHunter\Tune\QQQ\G6470B\atunes.TUNE.XML
Ion Source	AJS ESI
Ionization Mode	AJS ESI
Tuned Resolution	All
Vacuum Pressure	1.16E+0 [R] (Torr); 3.79E-5 [H] (Torr)

Source Parameters

Parameter	Negative
Gas Temp (°C)	300
Gas Flow (l/min)	8
Nebulizer (psi)	15
Capillary (V)	3500
Nozzle Voltage (V)	1500
Sheath Gas Temp (°C)	250
Sheath Gas Flow (l/min)	7

QQQ Check Tune Report

Agilent | Trusted Answers

Negative Results

Analyzer: MS1 Polarity: Negative Width: Unit

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
112.99	112.99	0.00	Pass	0.70	0.70	0.00	Pass	170201
302.00	301.98	-0.02	Pass	0.70	0.69	-0.01	Pass	112558
601.98	601.91	-0.07	Pass	0.70	0.67	-0.03	Pass	415267
1033.99	1033.89	-0.10	Pass	0.70	0.66	-0.04	Pass	658390
1633.95	1633.77	-0.18	Pass	0.70	0.65	-0.05	Pass	1521871
2233.91	2233.62	-0.29	Pass	0.70	0.65	-0.05	Pass	844747

Analyzer: MS2 Polarity: Negative Width: Unit

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
69.00	69.05	0.05	Pass	0.70	0.67	-0.03	Pass	32666
112.99	112.98	-0.01	Pass	0.70	0.71	0.01	Pass	111517
302.00	301.97	-0.03	Pass	0.70	0.70	0.00	Pass	72165
601.98	601.91	-0.07	Pass	0.70	0.70	0.00	Pass	188926
1033.99	1033.90	-0.09	Pass	0.70	0.70	0.00	Pass	212429
1633.95	1633.80	-0.15	Pass	0.70	0.70	0.00	Pass	442136
2233.91	2233.69	-0.22	Pass	0.70	0.70	0.00	Pass	277007

Analyzer: MS1 Polarity: Negative Width: Wide

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
112.99	113.00	0.01	Pass	1.20	1.29	0.09	Pass	209381
302.00	301.96	-0.04	Pass	1.20	1.55	0.35	Pass	140269
601.98	601.89	-0.09	Pass	1.20	1.57	0.37	Pass	617279
1033.99	1033.86	-0.13	Pass	1.20	1.49	0.29	Pass	1315232
1633.95	1633.75	-0.20	Pass	1.20	1.35	0.15	Pass	3357534
2233.91	2233.59	-0.32	Pass	1.20	1.10	-0.10	Pass	2116930

Analyzer: MS2 Polarity: Negative Width: Wide

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
69.00	69.04	0.04	Pass	1.20	1.13	-0.07	Pass	43160
112.99	112.96	-0.03	Pass	1.20	1.21	0.01	Pass	151630
302.00	301.99	-0.01	Pass	1.20	1.27	0.07	Pass	108110
601.98	601.93	-0.05	Pass	1.20	1.39	0.19	Pass	387952
1033.99	1033.87	-0.12	Pass	1.20	1.35	0.15	Pass	640332
1633.95	1633.73	-0.22	Pass	1.20	1.33	0.13	Pass	1424372
2233.91	2233.63	-0.28	Pass	1.20	1.14	-0.06	Pass	780491

Analyzer: MS1 Polarity: Negative Width: Widest

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
112.99	112.99	0.00	Pass	2.50	2.45	-0.05	Pass	246670
302.00	301.98	-0.02	Pass	2.50	2.71	0.21	Pass	157639
601.98	601.90	-0.08	Pass	2.50	2.78	0.28	Pass	716109
1033.99	1033.84	-0.15	Pass	2.50	2.69	0.19	Pass	2087361
1633.95	1633.73	-0.22	Pass	2.50	2.65	0.15	Pass	6329928
2233.91	2233.55	-0.36	Pass	2.50	2.46	-0.04	Pass	5550272

Analyzer: MS2 Polarity: Negative Width: Widest

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
69.00	69.03	0.03	Pass	2.50	2.40	-0.10	Pass	56819
112.99	112.98	-0.01	Pass	2.50	2.48	-0.02	Pass	205516
302.00	301.98	-0.02	Pass	2.50	2.51	0.01	Pass	143689
601.98	601.96	-0.02	Pass	2.50	2.59	0.09	Pass	628666
1033.99	1033.88	-0.11	Pass	2.50	2.55	0.05	Pass	1327834
1633.95	1633.76	-0.19	Pass	2.50	2.51	0.01	Pass	4099967
2233.91	2233.60	-0.31	Pass	2.50	2.42	-0.08	Pass	3211036

Manual Integrations APPROVED (compounds with "m" flag)
Natasha Gumtie 01/02/24 14:05

Perfluorinated Compounds by LC/MS/MS

Data File : 5Q23908.d
Operator : natashag
Acq. Method : 537_ID.m
Acq. Date-Time : 12/28/2023 2:33:55 PM
Sample Name : ic375-0.5
Vial : P1-A2
DA Method File : ID_122823_S5Q375.quantmethod.xml
Batch Name : s5q375.batch.bin
Sample Information : OP401,S5Q375,250,,,1.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	2.000	217.0 -> 172.0	46145	10.00	µg/L	0.013
M5-PFPeA	3.432	268.0 -> 223.0	78047	10.00	µg/L	0.000
M5-PFHxA	4.565	318.0 -> 273.0	116943	10.00	µg/L	0.012
M4-PFHpA	5.425	367.0 -> 322.0	120690	10.00	µg/L	0.012
M8-PFOA	6.137	421.0 -> 376.0	162778	10.00	µg/L	0.013
M9-PFNA	6.768	472.0 -> 427.0	164429	10.00	µg/L	0.012
M6-PFDA	7.301	519.0 -> 474.0	166387	10.00	µg/L	0.013
M7-PFUnDA	8.084	570.0 -> 525.0	232076	10.00	µg/L	0.025
M2-PFDoDA	9.063	615.0 -> 570.0	208364	10.00	µg/L	0.025
M2-PFTeDA	10.562	715.0 -> 670.0	172264	10.00	µg/L	0.025
M8-FOSA	6.192	506.0 -> 78.0	39789	10.00	µg/L	0.000
M3-PFBS	3.637	302.0 -> 99.0	9513	10.00	µg/L	0.000
M3-PFHxS	5.444	402.0 -> 99.0	11699	10.00	µg/L	0.012
M8-PFOS	6.741	507.0 -> 99.0	15966	10.00	µg/L	0.012
M2-4:2FTS	4.474	329.0 -> 309.0	36889	10.00	µg/L	0.000
M2-6:2FTS	6.136	429.0 -> 409.0	65312	10.00	µg/L	0.000
M2-8:2FTS	7.363	529.0 -> 509.0	63772	10.00	µg/L	0.012
M3-MeFOSAA	6.747	573.0 -> 419.0	30659	10.00	µg/L	0.000
M3-HFPO-DA	4.819	287.0 -> 169.0	6616	10.00	µg/L	0.000
M3-MeFOSA	6.589	515.0 -> 169.0	13916	10.00	µg/L	0.000
M5-EtFOSAA	6.845	589.0 -> 419.0	27008	10.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.474	329.0 -> 309.0	36889	9.17	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 91.7%		
13C2-6:2FTS	6.136	429.0 -> 409.0	65312	9.22	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 92.2%		
13C2-8:2FTS	7.363	529.0 -> 509.0	63772	9.13	µg/L	0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 91.3%		
13C2-PFDoDA	9.063	615.0 -> 570.0	208364	9.99	µg/L	0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.9%		
13C2-PFTeDA	10.562	715.0 -> 670.0	172264	9.71	µg/L	0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 97.1%		
13C3-PFBS	3.637	302.0 -> 99.0	9513	9.80	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 98.0%		
13C3-PFHxS	5.444	402.0 -> 99.0	11699	9.91	µg/L	0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.1%		
13C4-PFBA	2.000	217.0 -> 172.0	46145	9.77	µg/L	0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 97.7%		
13C4-PFHpA	5.425	367.0 -> 322.0	120690	10.03	µg/L	0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.3%		
13C5-PFHxA	4.565	318.0 -> 273.0	116943	9.78	µg/L	0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 97.8%		
13C5-PFPeA	3.432	268.0 -> 223.0	78047	9.90	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.0%		
13C6-PFDA	7.301	519.0 -> 474.0	166387	9.88	µg/L	0.013

Perfluorinated Compounds by LC/MS/MS

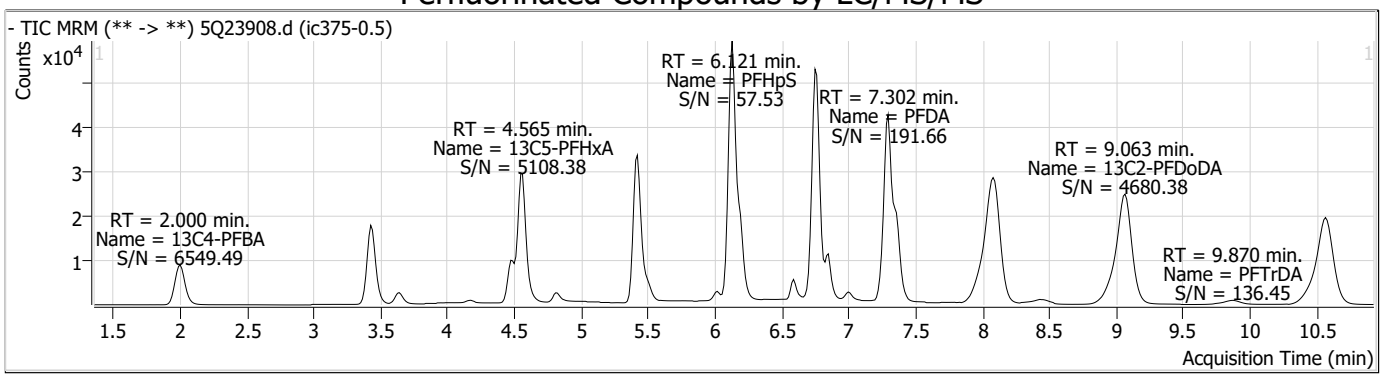
Compound	RT	Transition	Response	Conc. Units		Dev(Min)
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 98.8%		
13C7-PFUnDA	8.084	570.0 -> 525.0	232076	9.96 µg/L		0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.6%		
13C8-FOSA	6.192	506.0 -> 78.0	39789	9.82 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 98.2%		
13C8-PFOA	6.137	421.0 -> 376.0	162778	9.83 µg/L		0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 98.3%		
13C8-PFOS	6.741	507.0 -> 99.0	15966	10.16 µg/L		0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.6%		
13C9-PFNA	6.768	472.0 -> 427.0	164429	9.90 µg/L		0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.0%		
d3-MeFOSAA	6.747	573.0 -> 419.0	30659	10.06 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.6%		
13C3-HFPO-DA	4.819	287.0 -> 169.0	6616	10.25 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 102.5%		
d3-MeFOSA	6.589	515.0 -> 169.0	13916	9.92 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.2%		
d5-EtFOSAA	6.845	589.0 -> 419.0	27008	9.84 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 98.4%		
Target Compounds						QValue
4:2FTS	4.475	327.0 -> 307.0	1825	0.50 µg/L		94
		327.0 -> 81.0	1116			
6:2FTS	6.136	427.0 -> 407.0	2997	0.50 µg/L		99
		427.0 -> 81.0	1240			
8:2FTS	7.364	527.0 -> 507.0	2724	0.49 µg/L		95
		527.0 -> 81.0	1386			
EtFOSAA	6.846	584.0 -> 419.0	1038	0.47 µg/L		98
		584.0 -> 483.0	612			
FOSA	6.194	498.0 -> 78.0	1522	0.42 µg/L		97
		498.0 -> 478.0	66			
MeFOSAA	6.748	570.0 -> 419.0	1092	0.46 µg/L		94
		570.0 -> 512.0	368			
PFBA	1.994	213.0 -> 169.0	1871	0.44 µg/L		100
PFBS	3.640	299.0 -> 80.0	1050	0.45 µg/L		100
		299.0 -> 99.0	463			
PFDA	7.302	513.0 -> 469.0	7141	0.45 µg/L		99
		513.0 -> 219.0	1298			
PFDoDA	9.067	613.0 -> 569.0	7996	0.45 µg/L		99
		613.0 -> 319.0	1340			
PFDS	7.970	599.0 -> 80.0	1309	0.41 µg/L		98
		599.0 -> 99.0	814			
PFHpA	5.426	363.0 -> 319.0	6079	0.44 µg/L		96
		363.0 -> 169.0	1389			
PFHpS	6.121	449.0 -> 80.0	900	0.40 µg/L		94
		449.0 -> 99.0	516			
PFHxA	4.565	313.0 -> 269.0	4836	0.43 µg/L		99
		313.0 -> 119.0	221			
PFHxS	5.446	399.0 -> 80.0	1031	0.48 µg/L	m	95
		399.0 -> 99.0	611			
PFNA	6.769	463.0 -> 419.0	6623	0.44 µg/L		97
		463.0 -> 219.0	1494			
PFNS	7.248	549.0 -> 80.0	750	0.41 µg/L		91
		549.0 -> 99.0	498			
PFOA	6.137	413.0 -> 369.0	6869	0.43 µg/L		98
		413.0 -> 169.0	1786			
PFOS	6.730	499.0 -> 80.0	1088	0.38 µg/L	m	94

Perfluorinated Compounds by LC/MS/MS

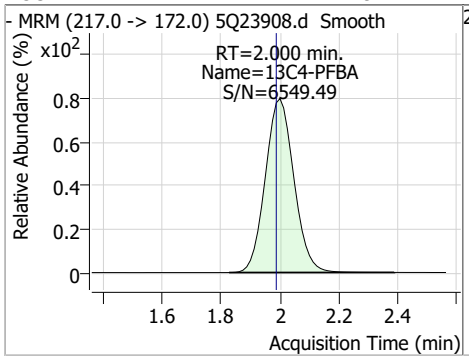
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		499.0 -> 99.0	589			
PFPeA	3.434	263.0 -> 219.0	3436	0.45	µg/L	100
PFPeS	4.648	349.0 -> 80.0	773	0.47	µg/L	95
		349.0 -> 99.0	360			
PFTeDA	10.566	713.0 -> 669.0	7501	0.43	µg/L	98
		713.0 -> 219.0	885			
PFTrDA	9.870	663.0 -> 619.0	7424	0.41	µg/L	98
		663.0 -> 369.0	879			
PFUnDA	8.086	563.0 -> 519.0	9048	0.43	µg/L	99
		563.0 -> 269.0	1640			
11Cl-PF3OUdS	8.440	631.0 -> 451.0	5870	0.43	µg/L	100
		633.0 -> 453.0	1822			
9Cl-PF3ONS	6.999	531.0 -> 351.0	5239	0.43	µg/L	96
		533.0 -> 353.0	1788			
ADONA	5.514	377.0 -> 251.0	8283	0.42	µg/L	98
		377.0 -> 85.0	3025			
HFPO-DA	4.827	329.0 -> 169.0	1280	0.43	µg/L	95
		285.0 -> 169.0	300			
MeFOSA	6.602	512.0 -> 169.0	474	0.39	µg/L	79
		512.0 -> 219.0	304			
4-PFECHS	6.018	461.0 -> 381.0	5977	0.85	µg/L	100
		461.0 -> 99.0	3114			
FBSA	4.170	298.0 -> 78.0	1845	0.47	µg/L	97
		298.0 -> 64.0	188			
FHxSA	5.409	398.0 -> 78.0	2054	0.48	µg/L	96
		398.0 -> 64.0	222			

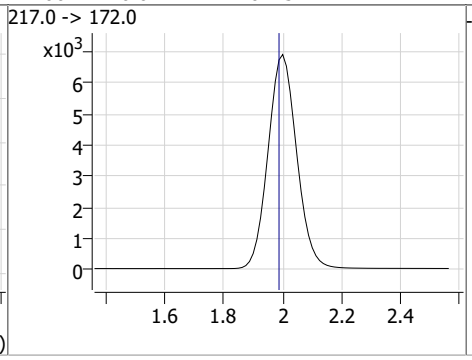
 # = Qualifier out of range, m = manually integrated, + = Area summed

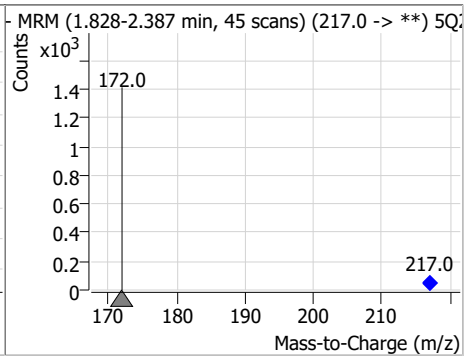
Perfluorinated Compounds by LC/MS/MS



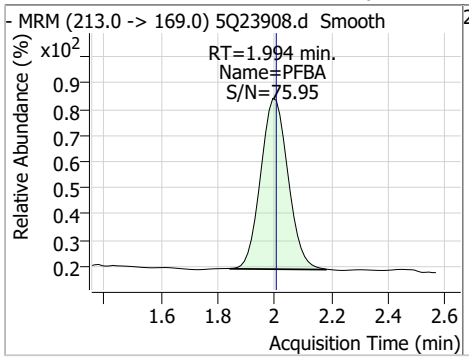
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	9.77	2.00	0.01	46145				

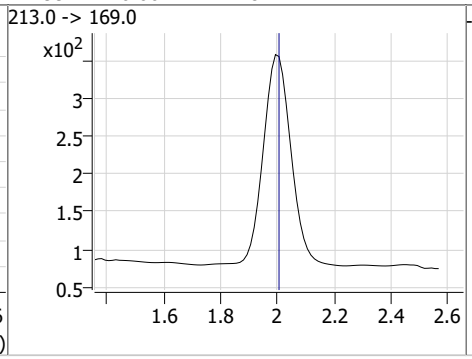


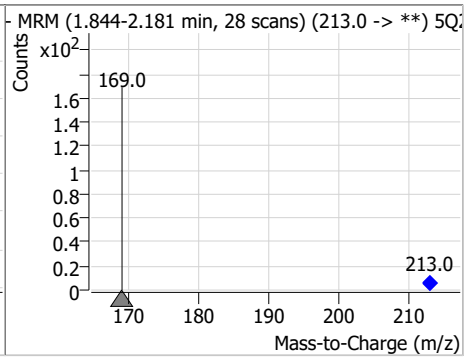




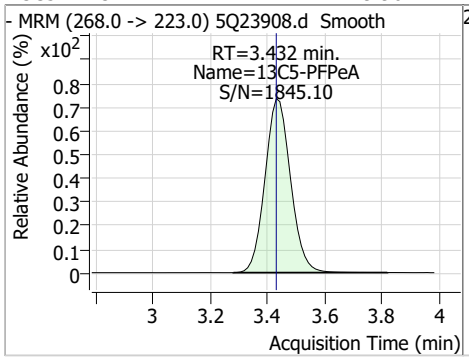
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	0.44	1.99	0.00	1871				

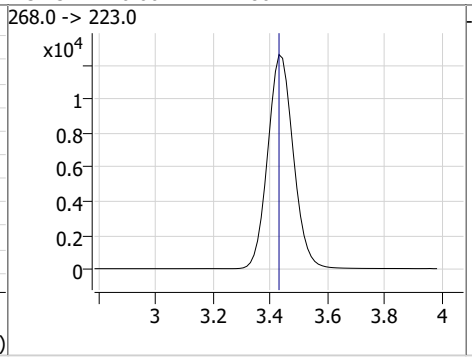


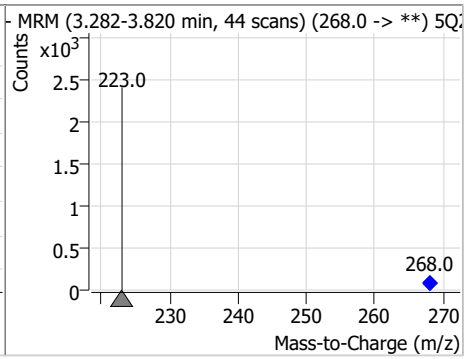




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	9.90	3.43	0.00	78047				

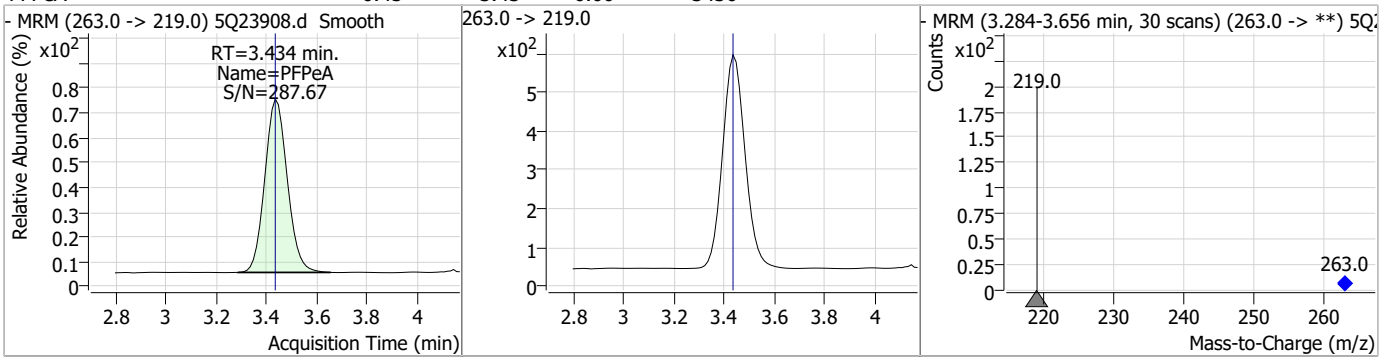




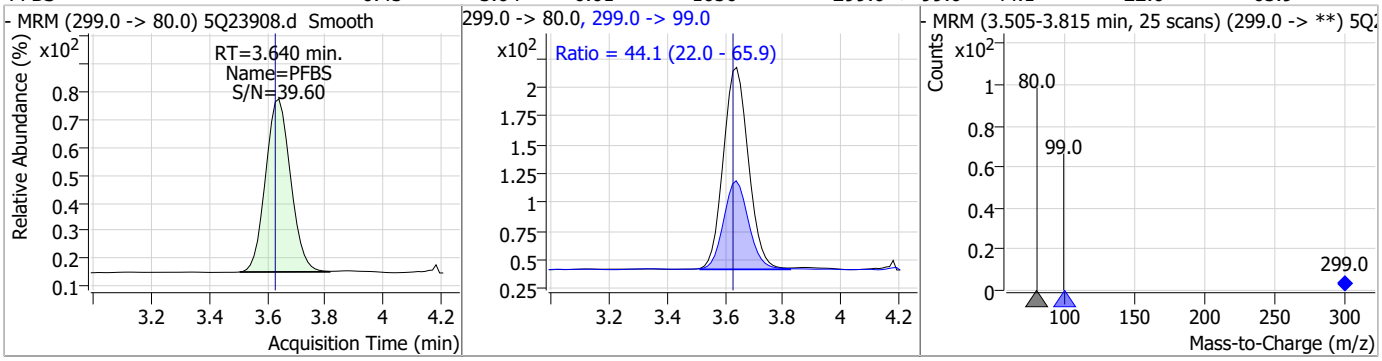


Perfluorinated Compounds by LC/MS/MS

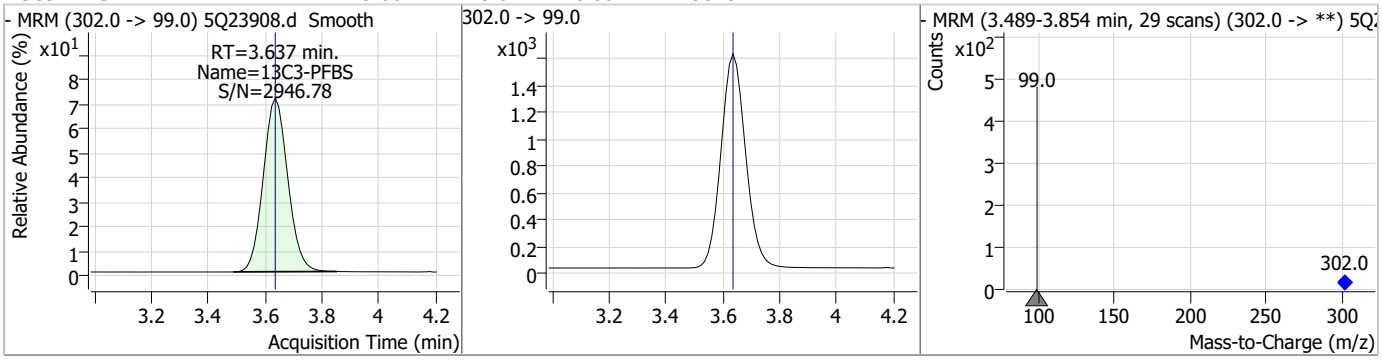
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	0.45	3.43	0.00	3436				



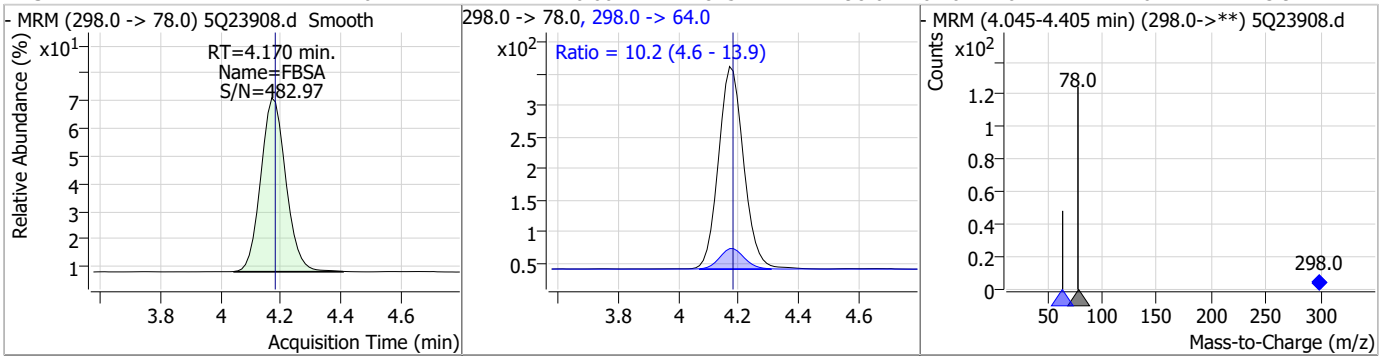
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	0.45	3.64	0.01	1050	299.0 -> 99.0	44.1	22.0	65.9



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	9.80	3.64	0.00	9513				

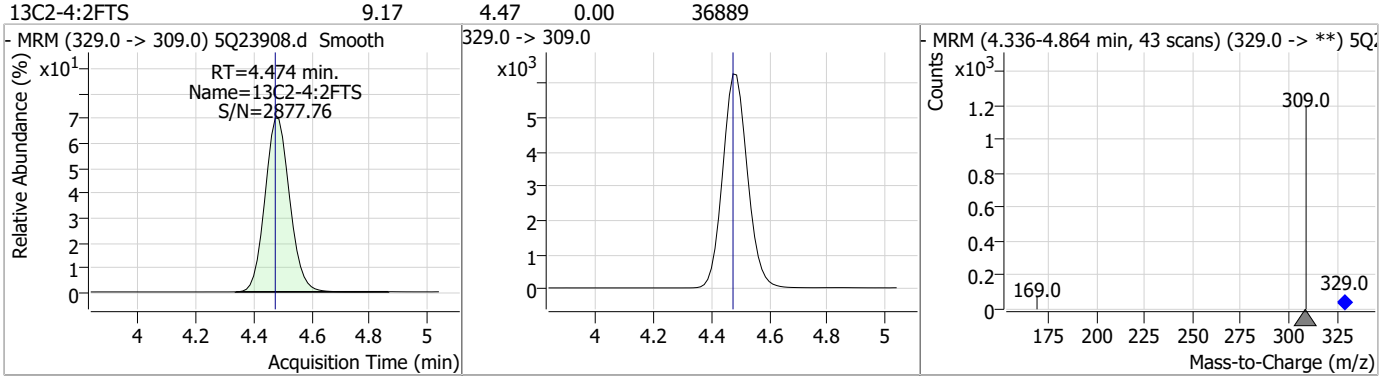


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	0.47	4.17	0.00	1845	298.0 -> 64.0	10.2	4.6	13.9

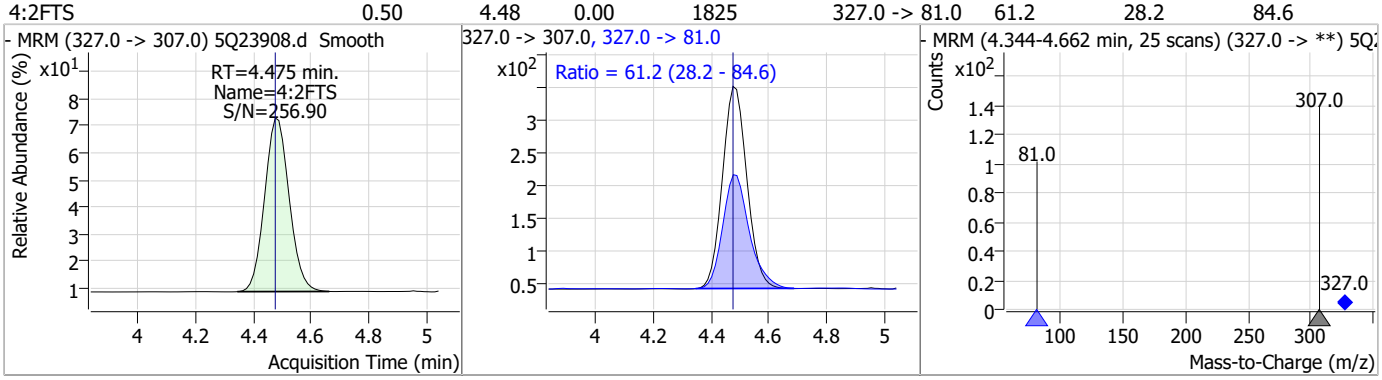


Perfluorinated Compounds by LC/MS/MS

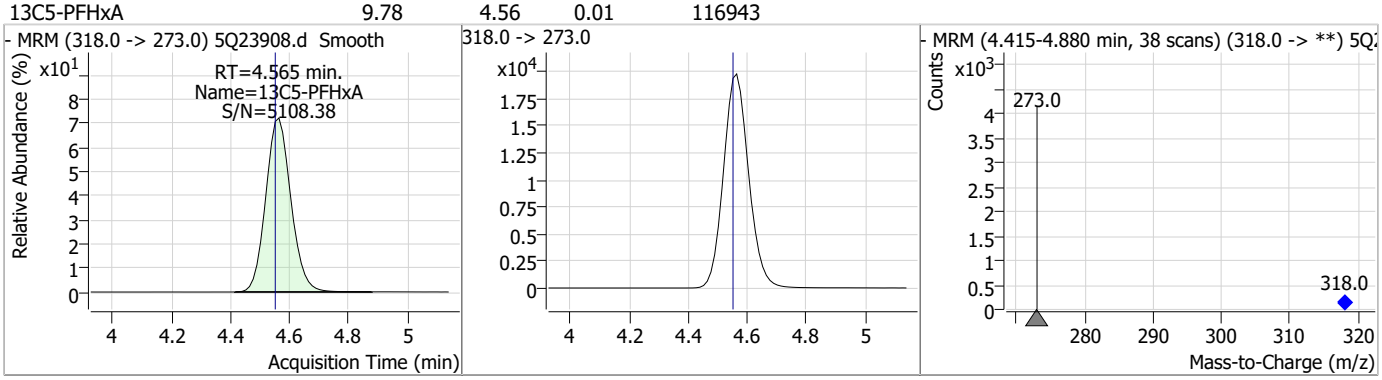
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	9.17	4.47	0.00	36889				



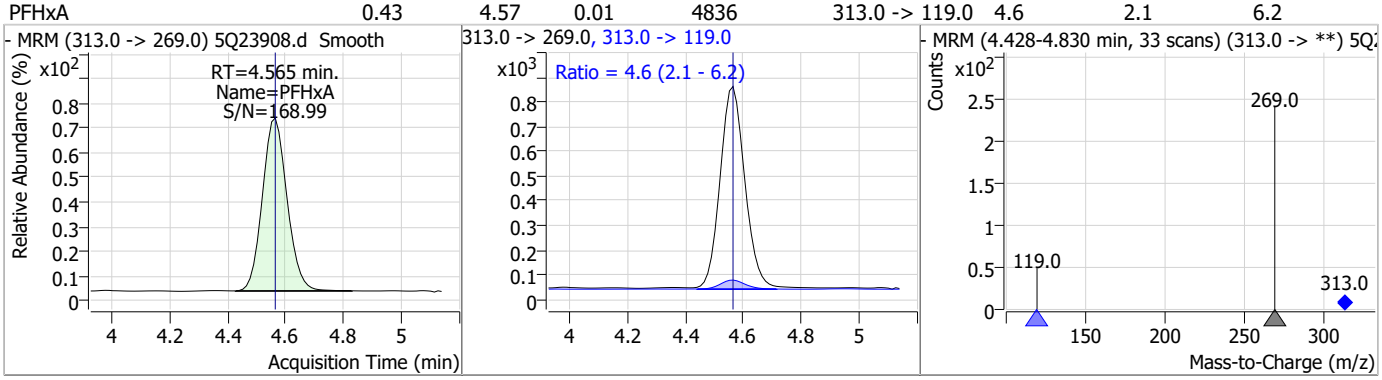
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	0.50	4.48	0.00	1825	327.0 -> 81.0	61.2	28.2	84.6



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	9.78	4.56	0.01	116943				

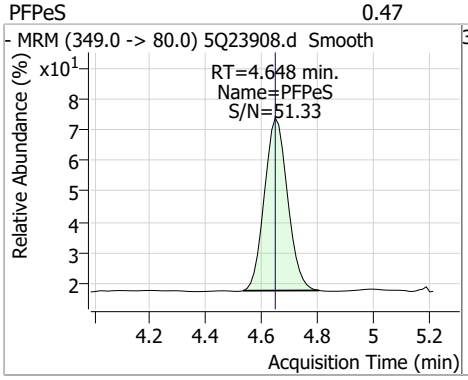


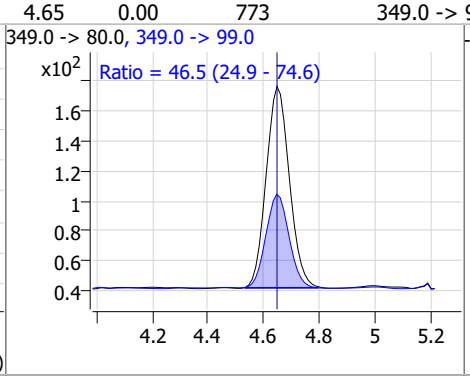
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	0.43	4.57	0.01	4836	313.0 -> 119.0	4.6	2.1	6.2

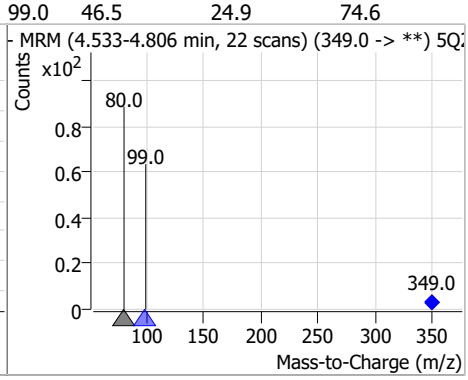


Perfluorinated Compounds by LC/MS/MS

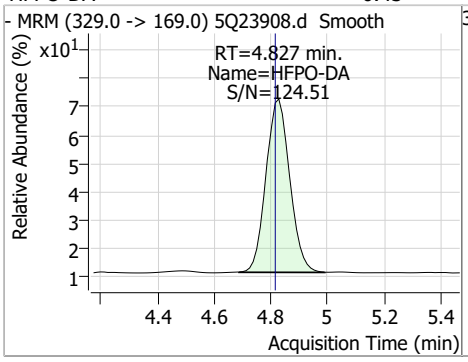
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	0.47	4.65	0.00	773	349.0 -> 99.0	46.5	24.9	74.6

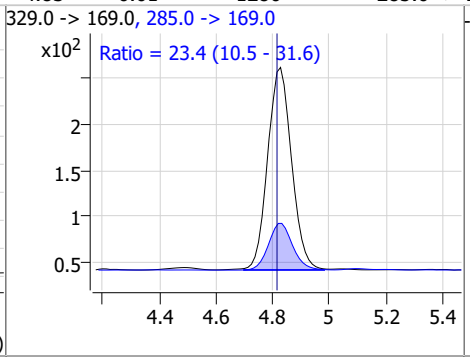


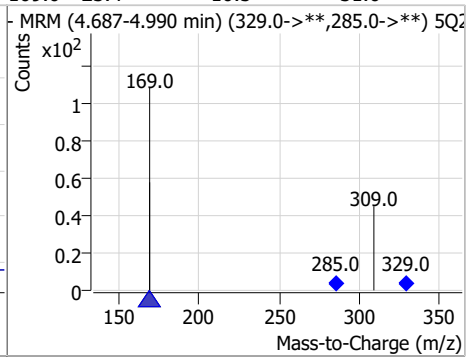




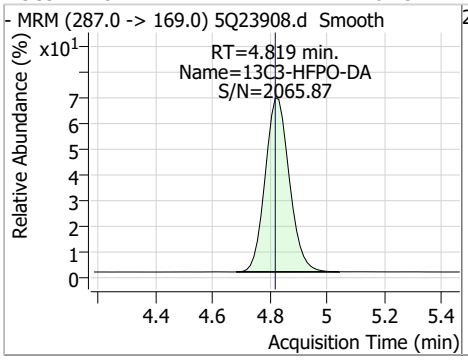
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	0.43	4.83	0.01	1280	285.0 -> 169.0	23.4	10.5	31.6

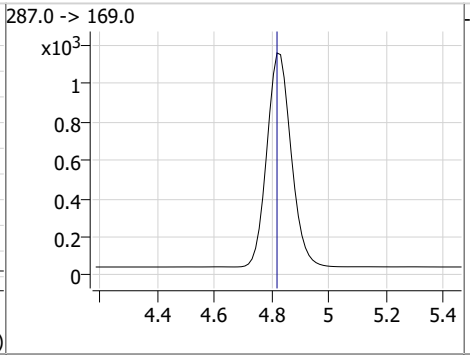


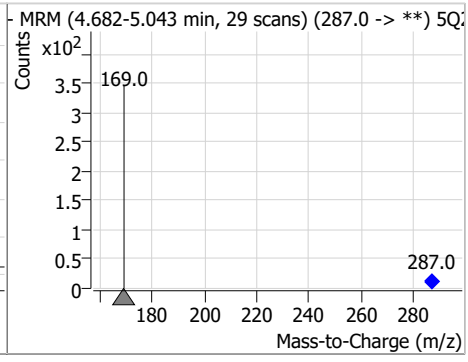




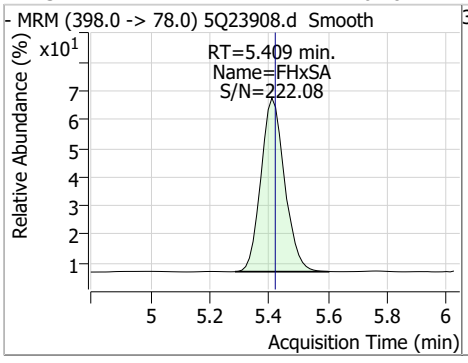
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	10.25	4.82	0.00	6616				

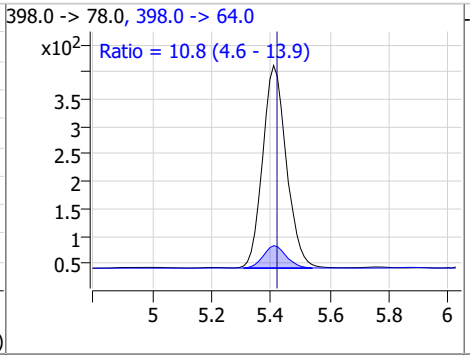


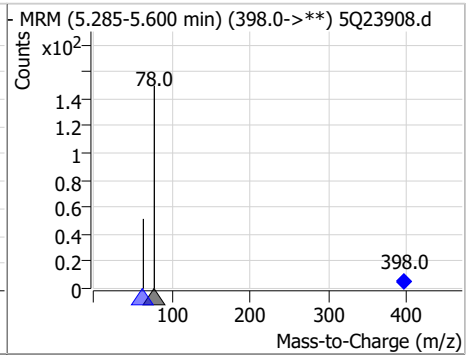




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	0.48	5.41	0.00	2054	398.0 -> 64.0	10.8	4.6	13.9

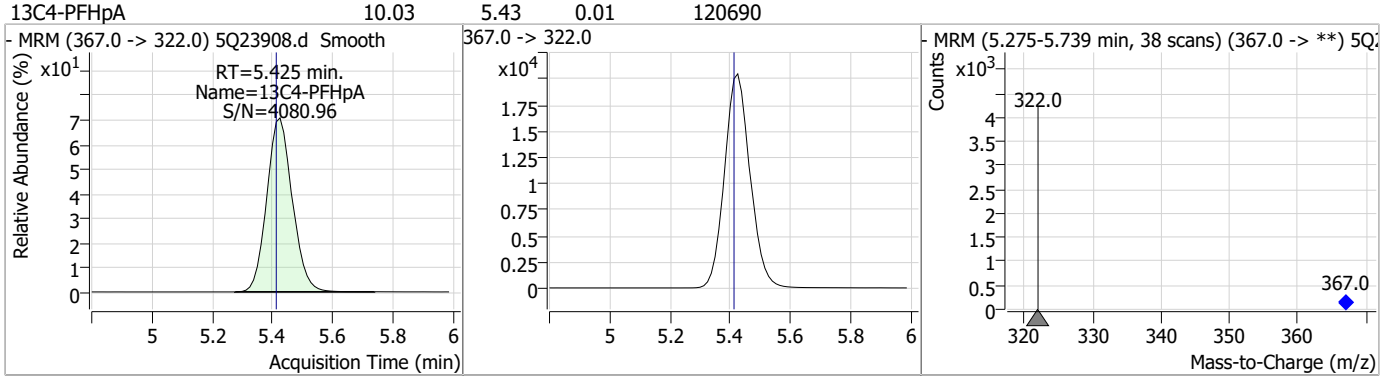




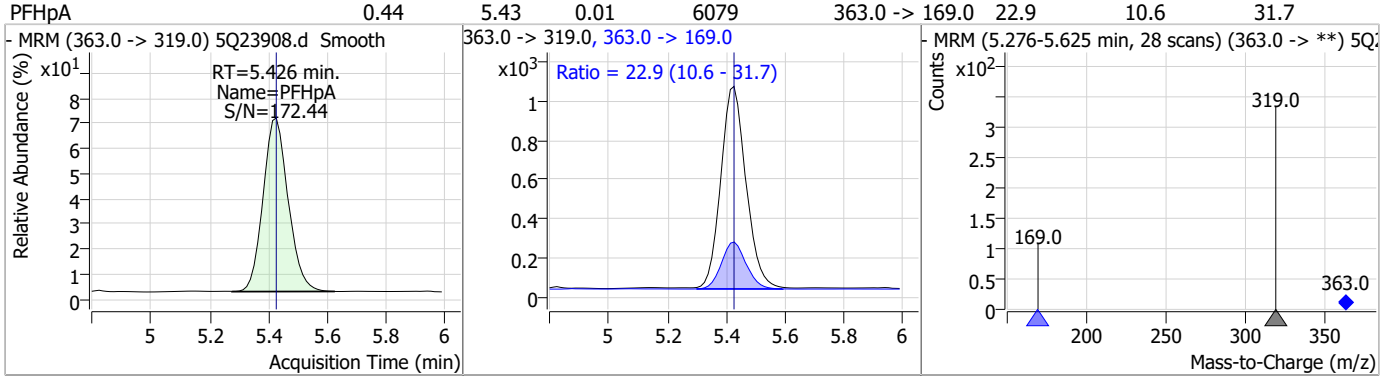


Perfluorinated Compounds by LC/MS/MS

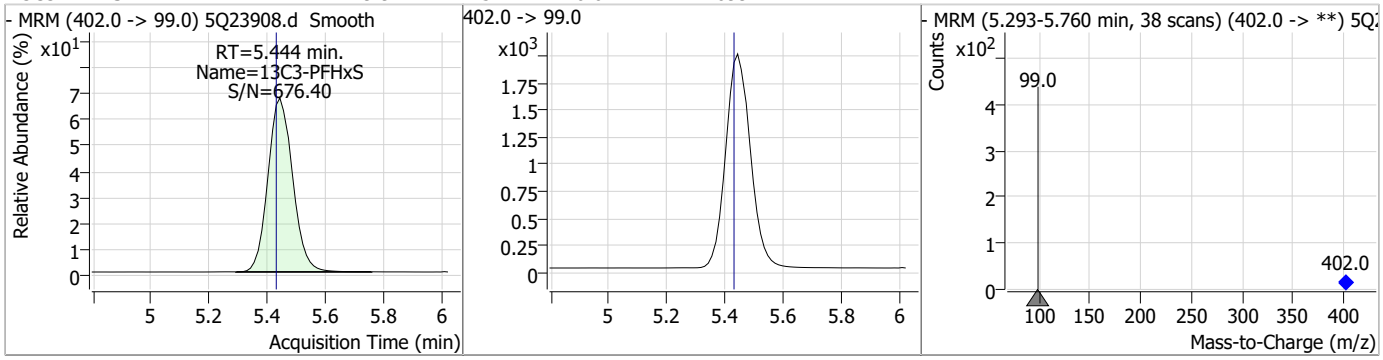
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	10.03	5.43	0.01	120690				



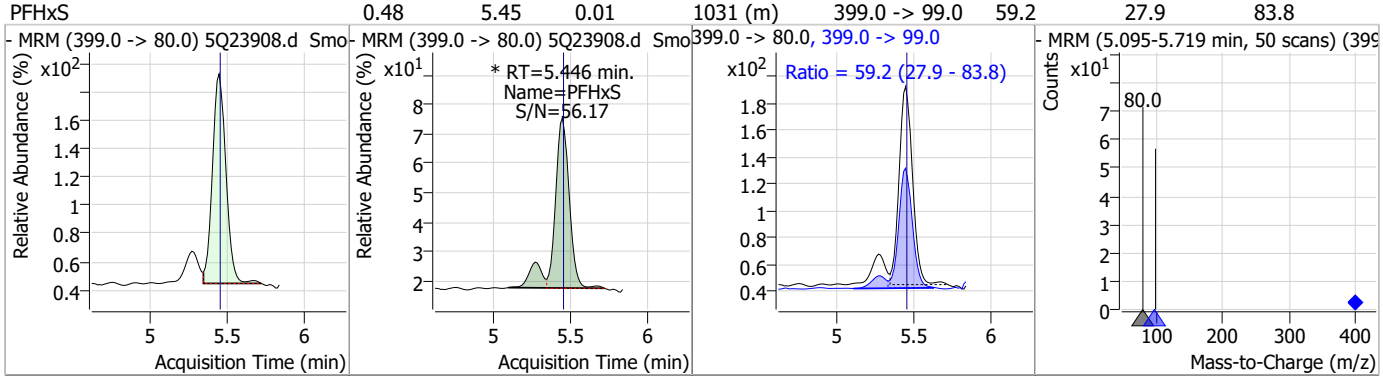
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	0.44	5.43	0.01	6079	363.0 -> 169.0	22.9	10.6	31.7



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	9.91	5.44	0.01	11699				

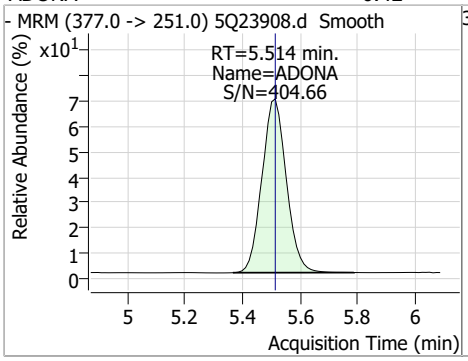


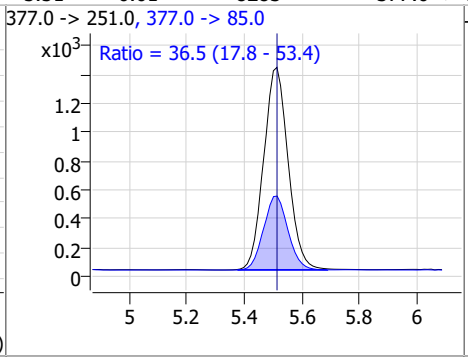
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	0.48	5.45	0.01	1031 (m)	399.0 -> 99.0	59.2	27.9	83.8

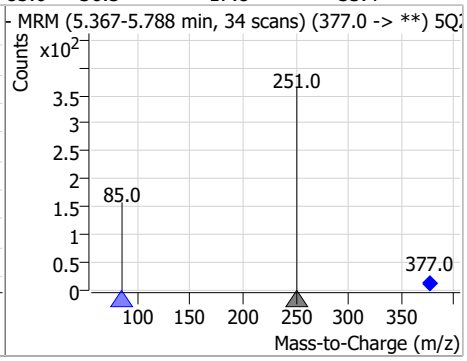


Perfluorinated Compounds by LC/MS/MS

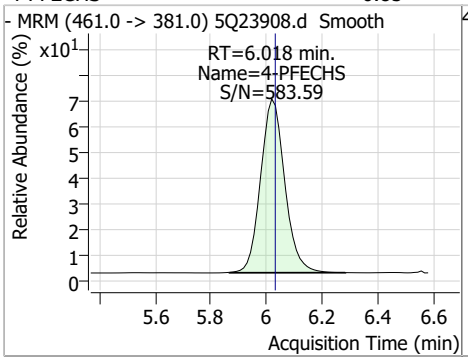
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	0.42	5.51	0.01	8283	377.0 -> 85.0	36.5	17.8	53.4

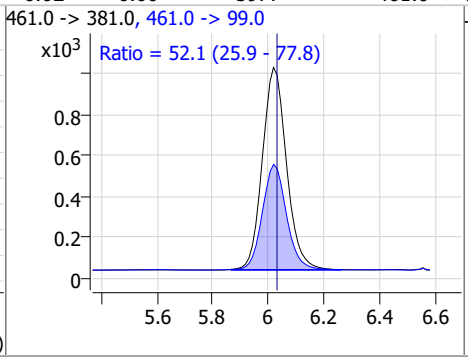


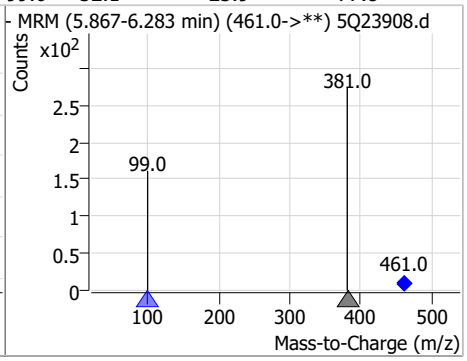




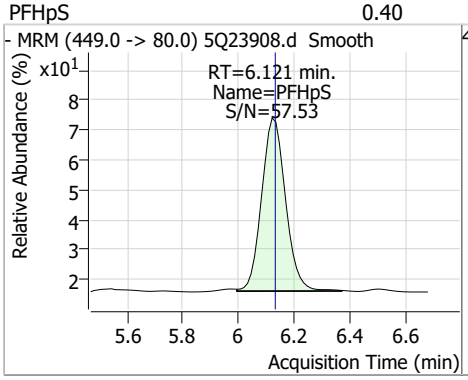
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS	0.85	6.02	0.00	5977	461.0 -> 99.0	52.1	25.9	77.8

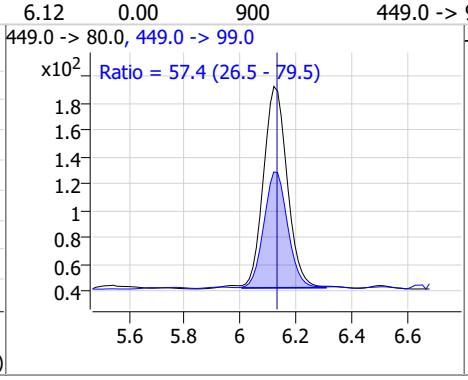


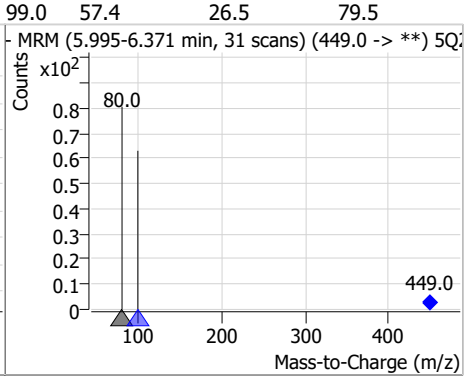




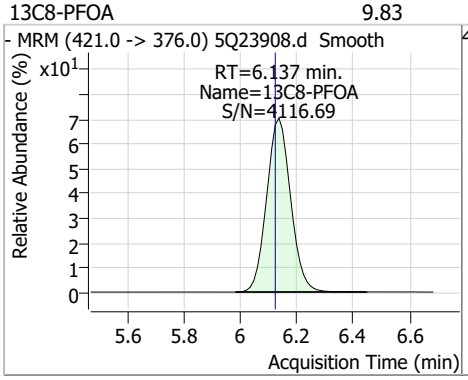
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	0.40	6.12	0.00	900	449.0 -> 99.0	57.4	26.5	79.5

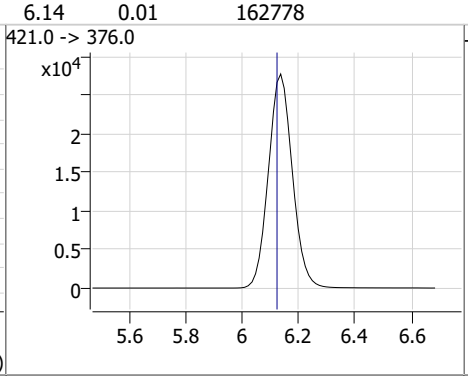


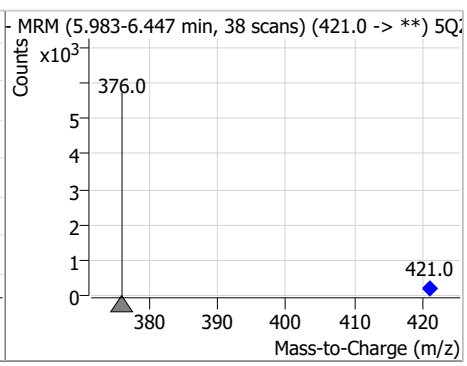




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	9.83	6.14	0.01	162778				

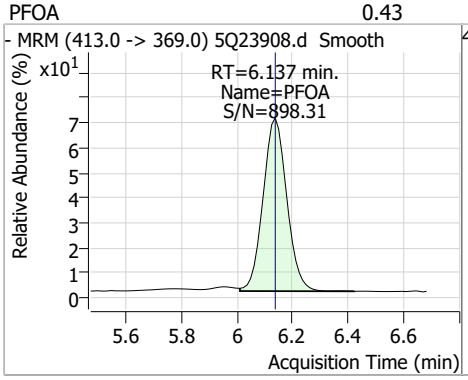


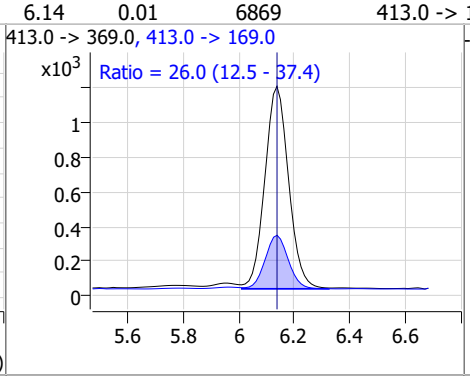


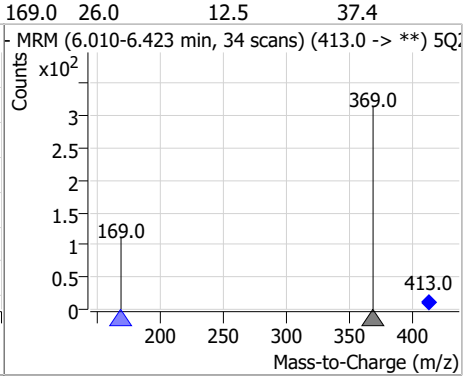


Perfluorinated Compounds by LC/MS/MS

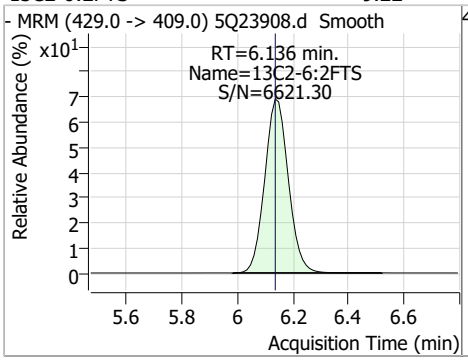
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	0.43	6.14	0.01	6869	413.0 -> 169.0	26.0	12.5	37.4

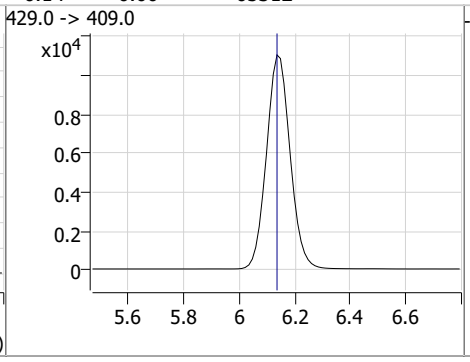


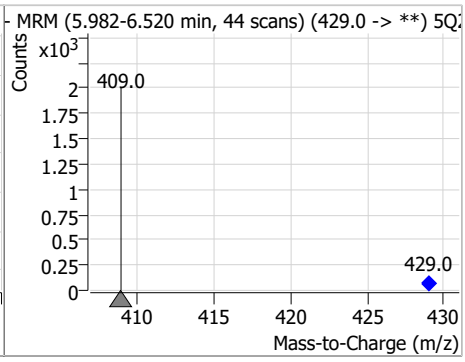




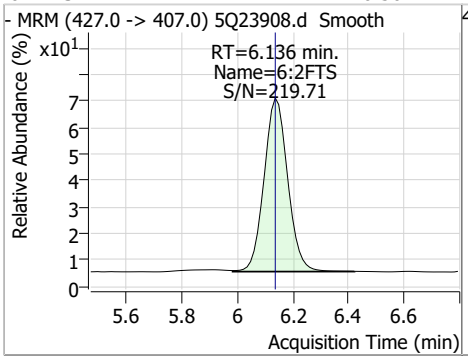
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	9.22	6.14	0.00	65312				

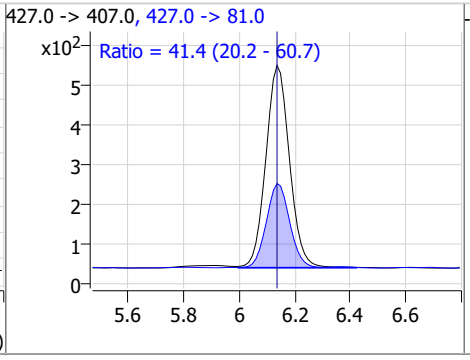


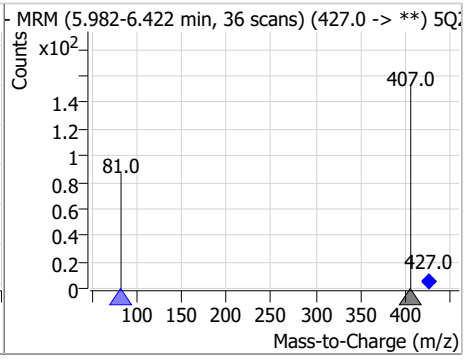




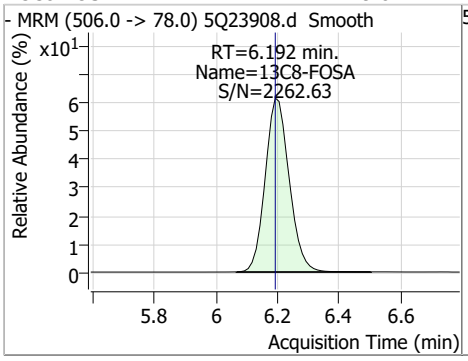
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	0.50	6.14	0.00	2997	427.0 -> 81.0	41.4	20.2	60.7

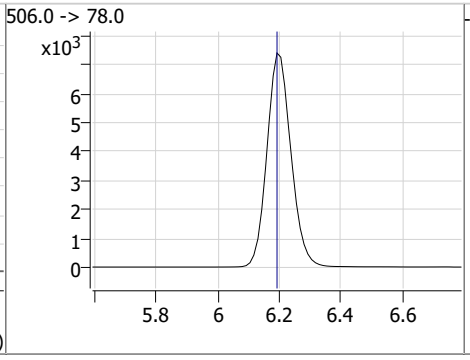


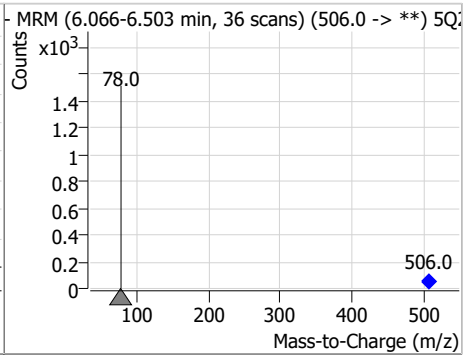




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	9.82	6.19	0.00	39789				

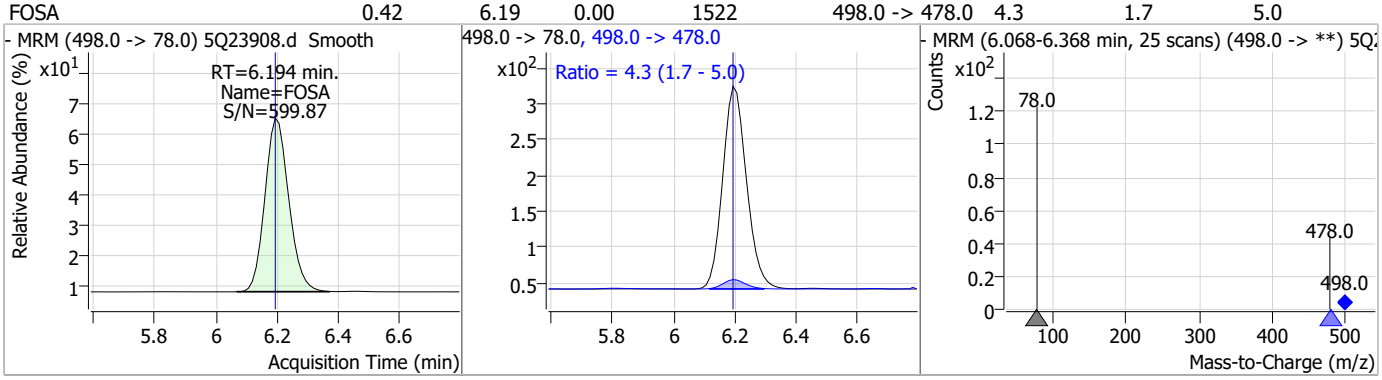




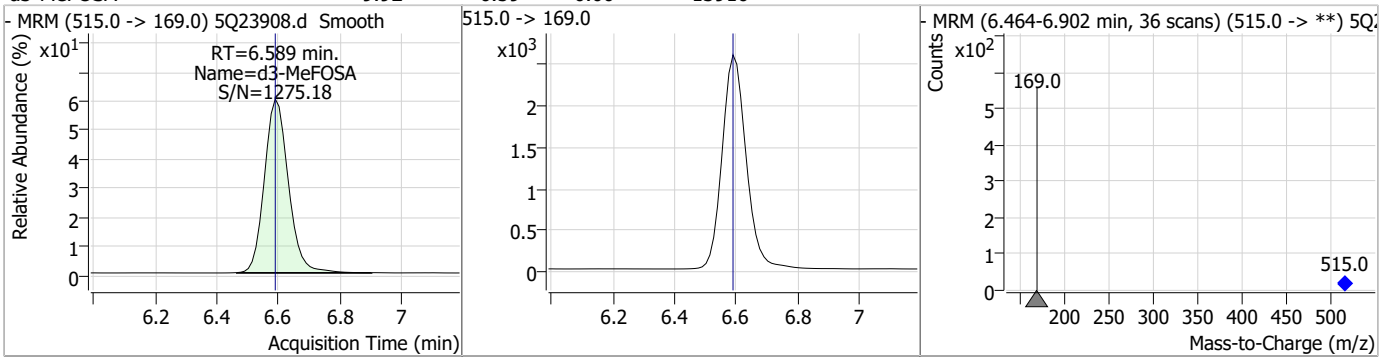


Perfluorinated Compounds by LC/MS/MS

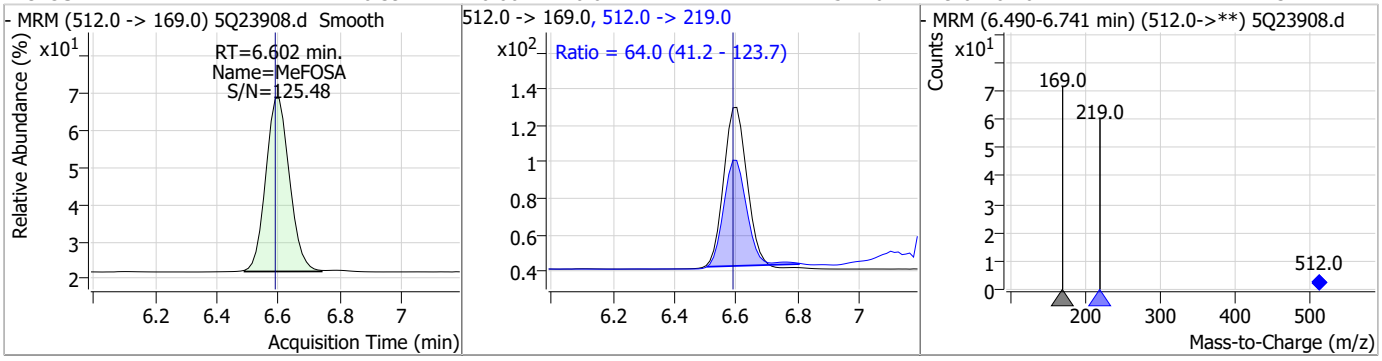
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	0.42	6.19	0.00	1522	498.0 -> 478.0	4.3	1.7	5.0



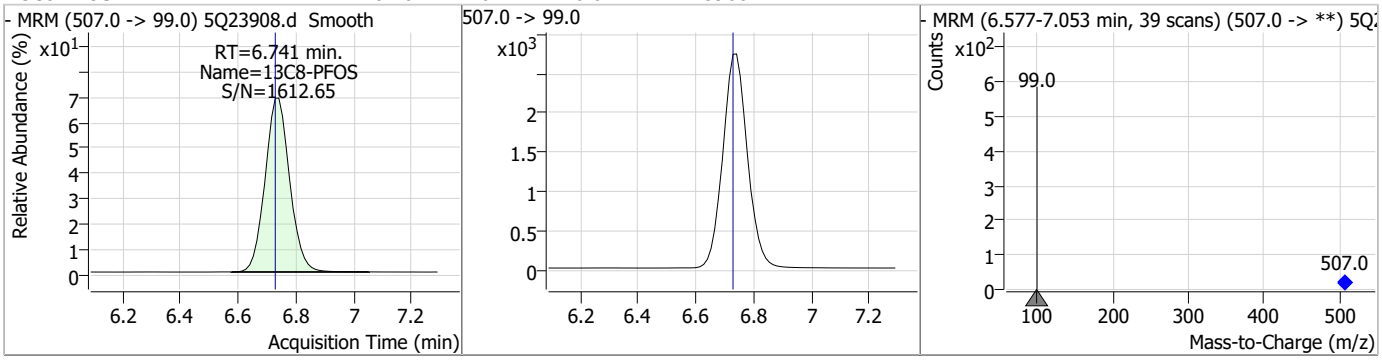
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	9.92	6.59	0.00	13916				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	0.39	6.60	0.01	474	512.0 -> 219.0	64.0	41.2	123.7

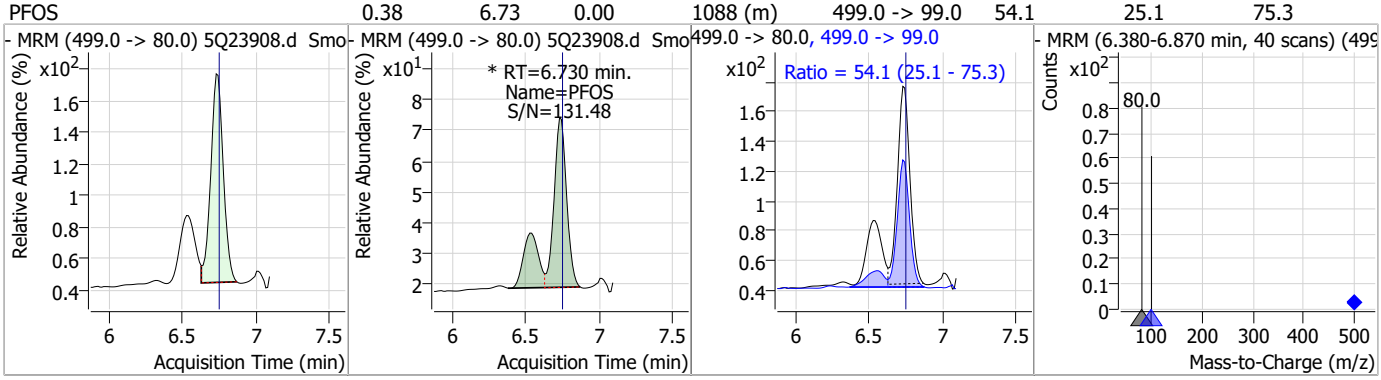


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	10.16	6.74	0.01	15966				

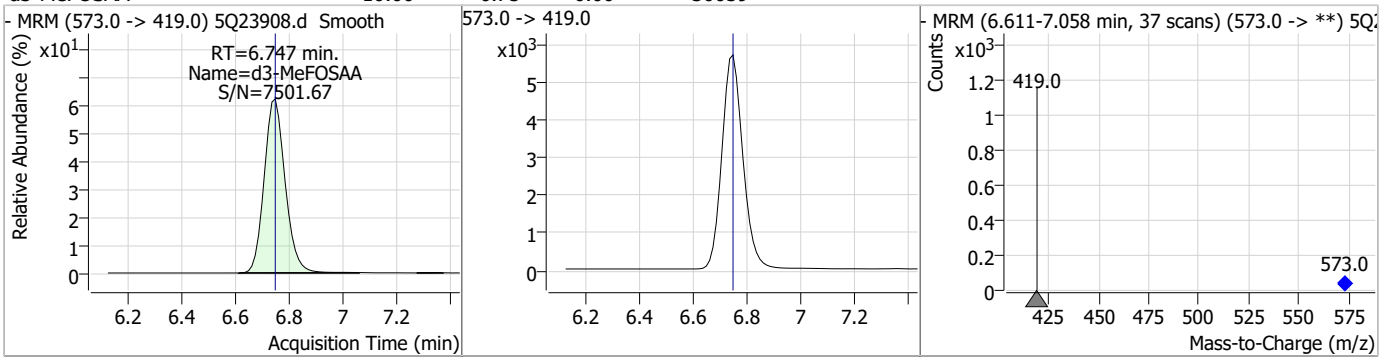


Perfluorinated Compounds by LC/MS/MS

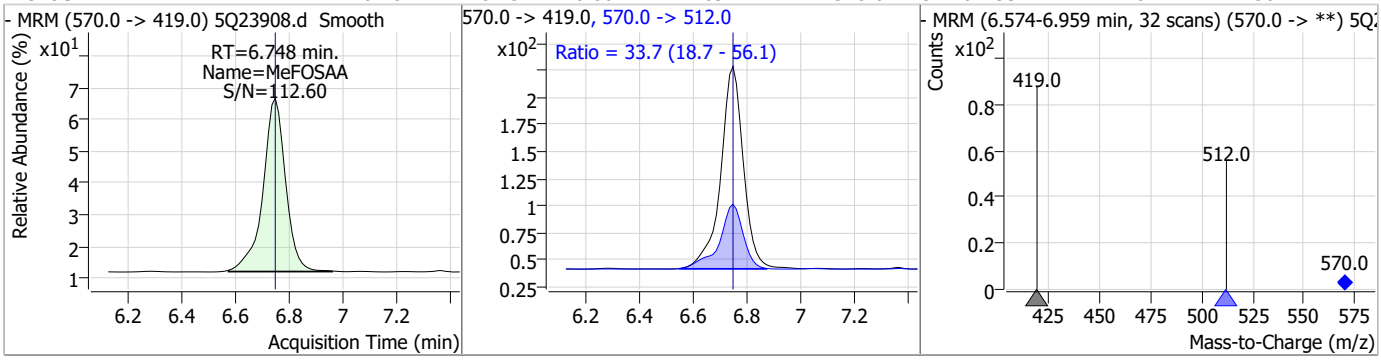
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	0.38	6.73	0.00	1088 (m)	499.0 -> 99.0	54.1	25.1	75.3



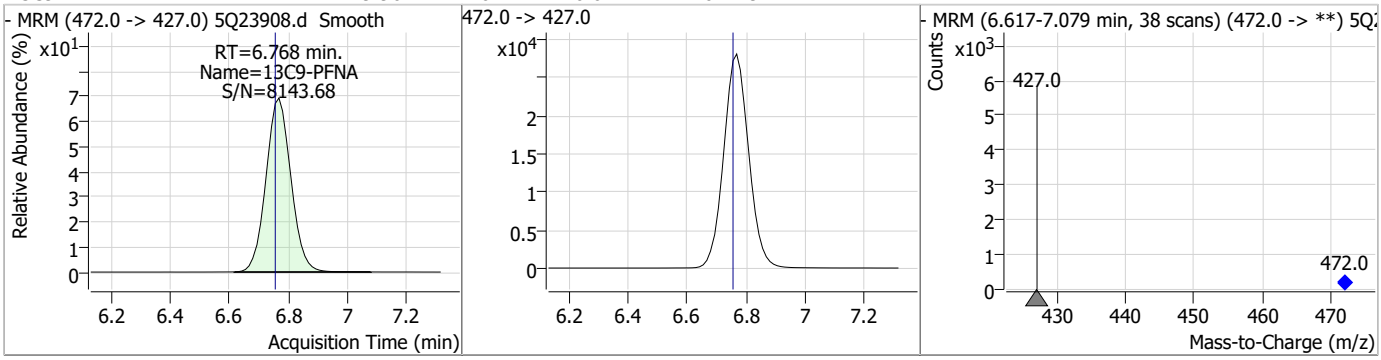
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	10.06	6.75	0.00	30659				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	0.46	6.75	0.00	1092	570.0 -> 512.0	33.7	18.7	56.1

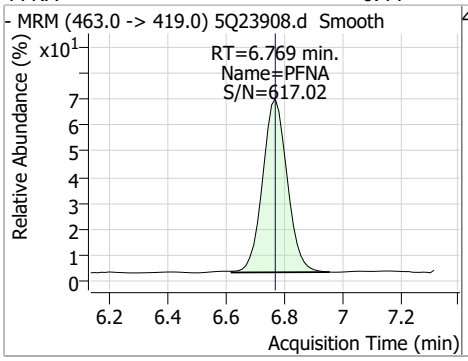


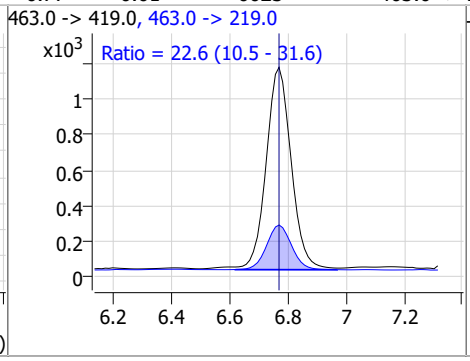
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	9.90	6.77	0.01	164429				

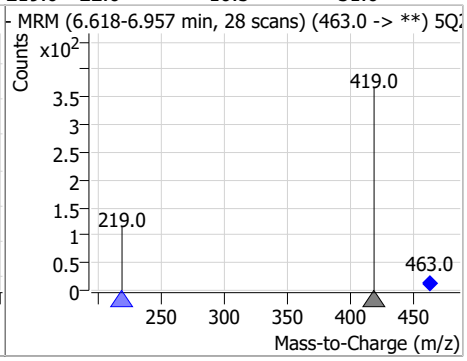


Perfluorinated Compounds by LC/MS/MS

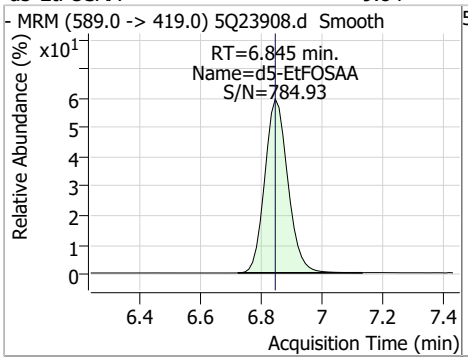
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	0.44	6.77	0.01	6623	463.0 -> 219.0	22.6	10.5	31.6

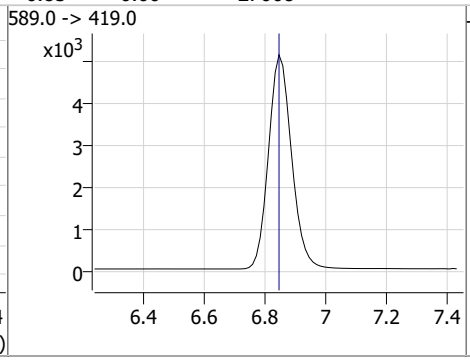


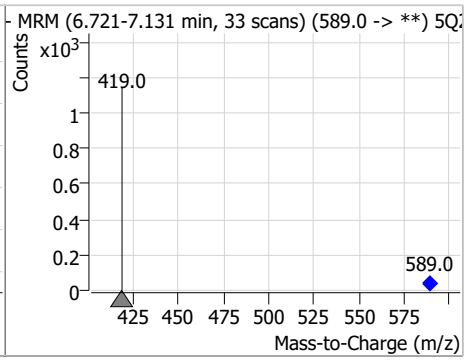




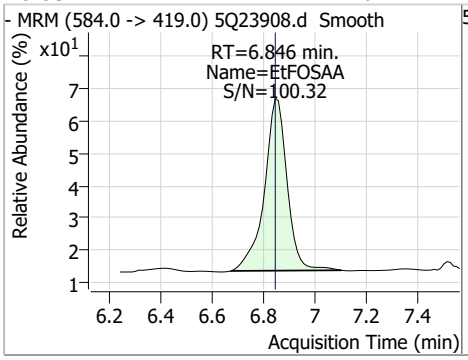
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	9.84	6.85	0.00	27008				

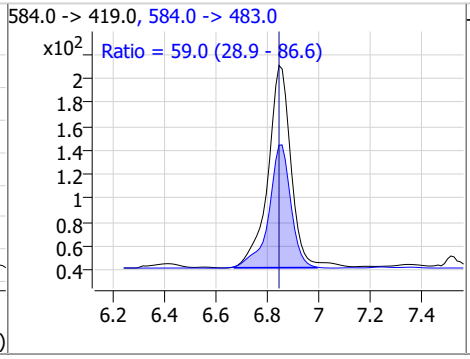


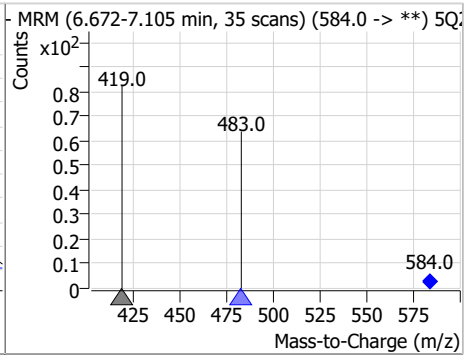




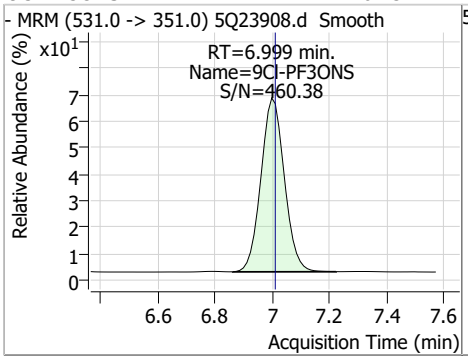
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	0.47	6.85	0.00	1038	584.0 -> 483.0	59.0	28.9	86.6

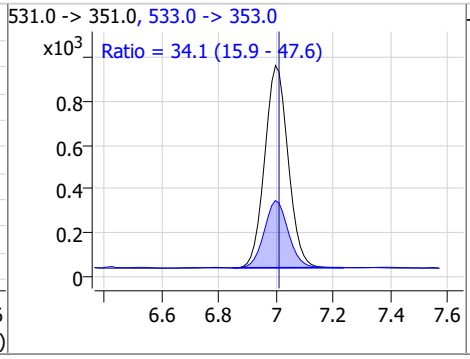


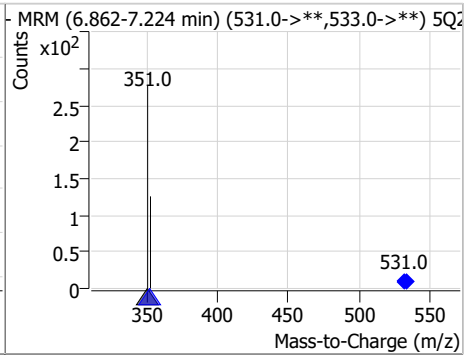




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	0.43	7.00	0.00	5239	533.0 -> 353.0	34.1	15.9	47.6

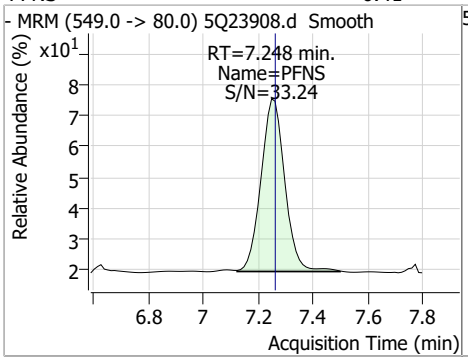


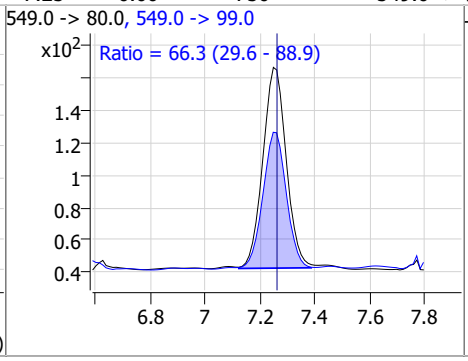


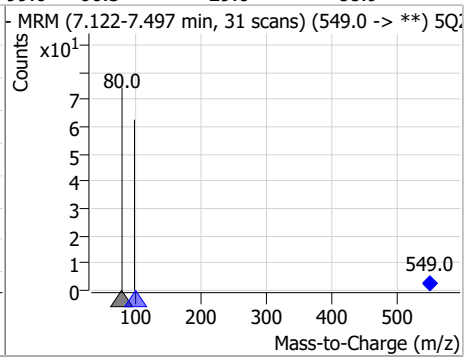


Perfluorinated Compounds by LC/MS/MS

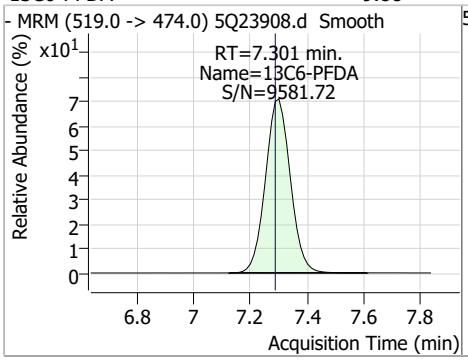
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	0.41	7.25	0.00	750	549.0 -> 99.0	66.3	29.6	88.9

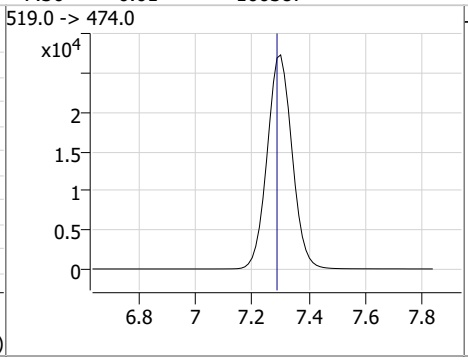


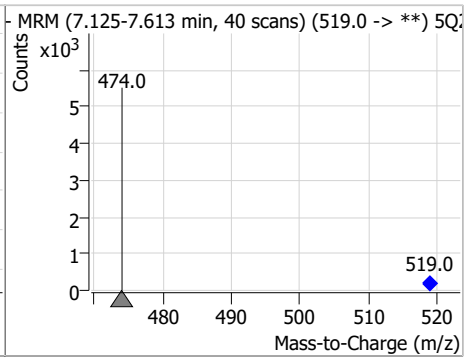




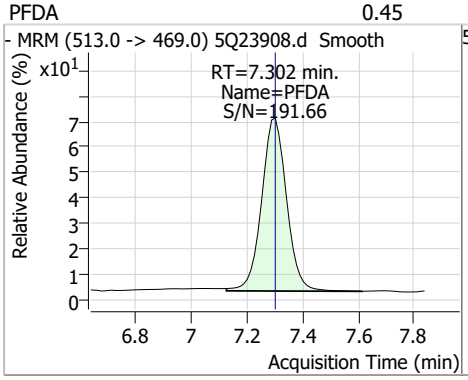
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	9.88	7.30	0.01	166387				

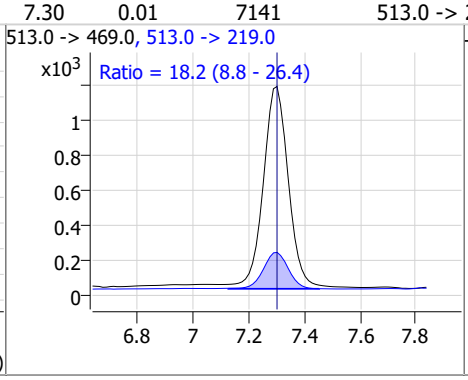


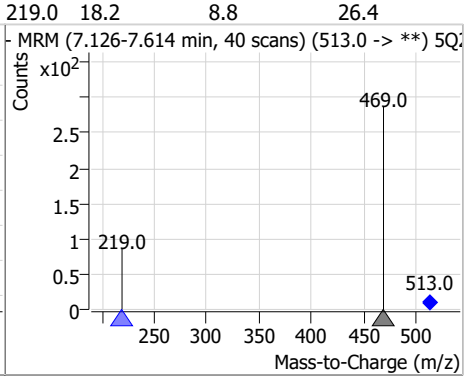




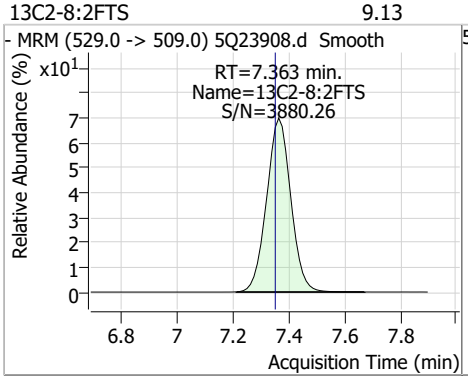
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	0.45	7.30	0.01	7141	513.0 -> 219.0	18.2	8.8	26.4

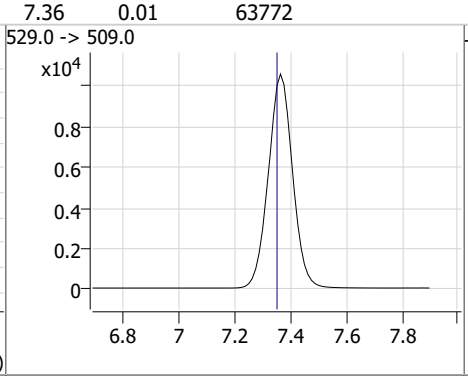


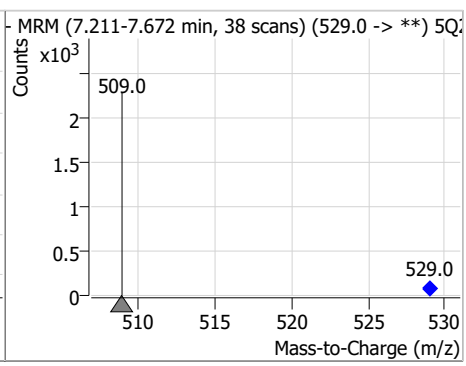




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	9.13	7.36	0.01	63772				

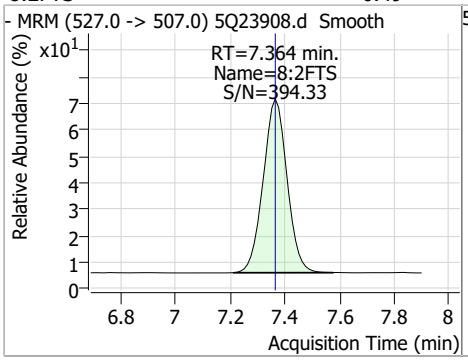


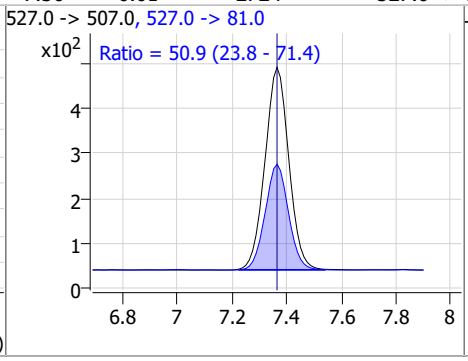


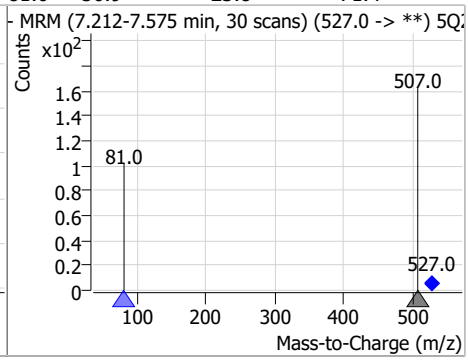


Perfluorinated Compounds by LC/MS/MS

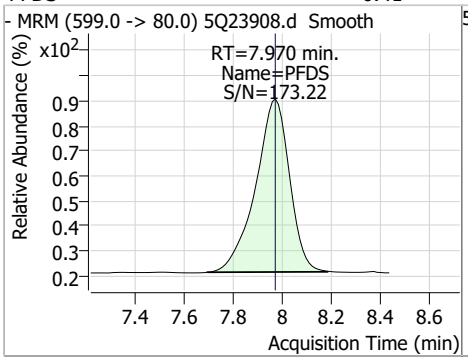
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	0.49	7.36	0.01	2724	527.0 -> 81.0	50.9	23.8	71.4

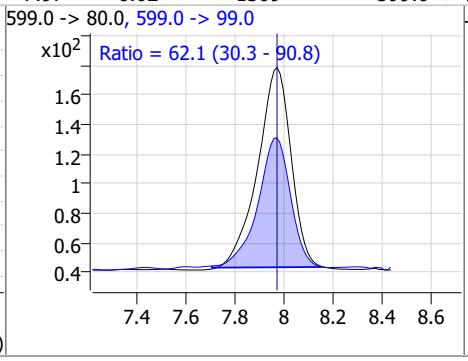


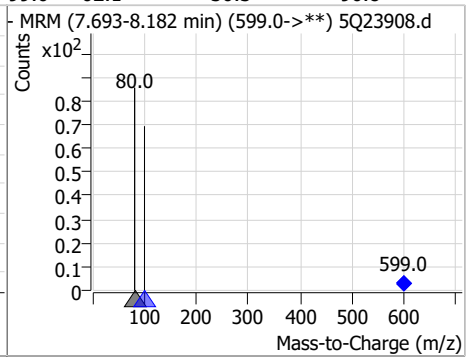




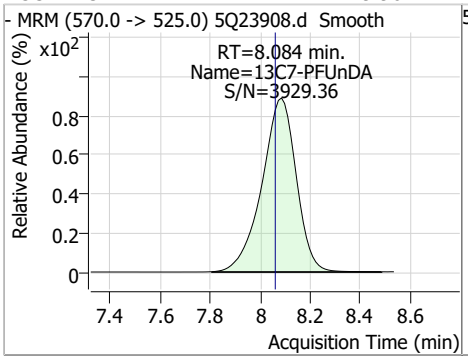
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	0.41	7.97	0.02	1309	599.0 -> 99.0	62.1	30.3	90.8

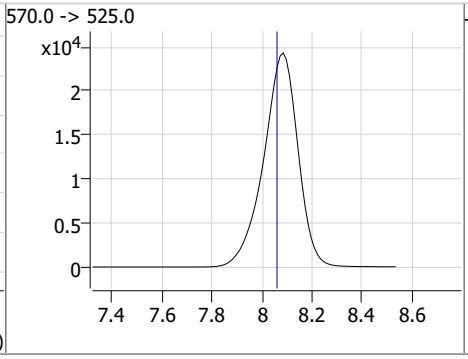


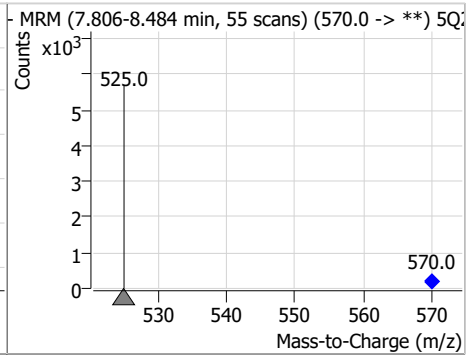




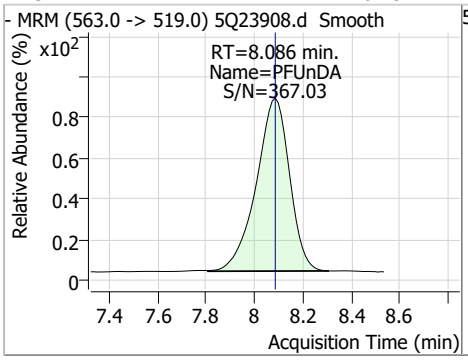
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	9.96	8.08	0.02	232076				

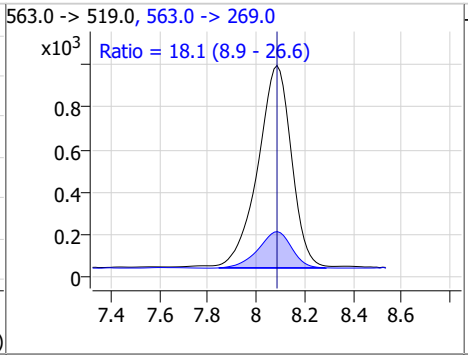


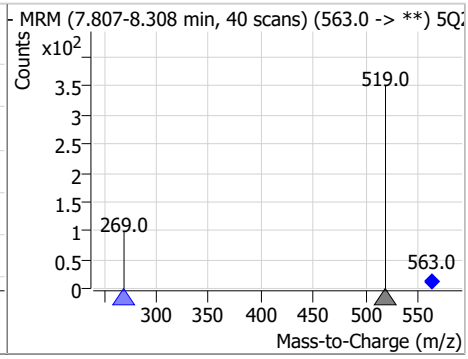




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	0.43	8.09	0.02	9048	563.0 -> 269.0	18.1	8.9	26.6

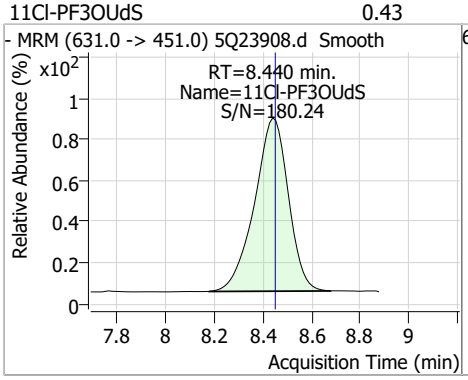


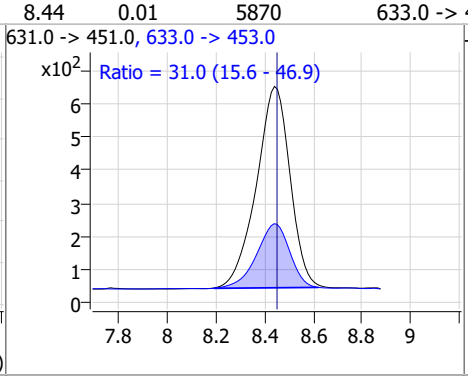


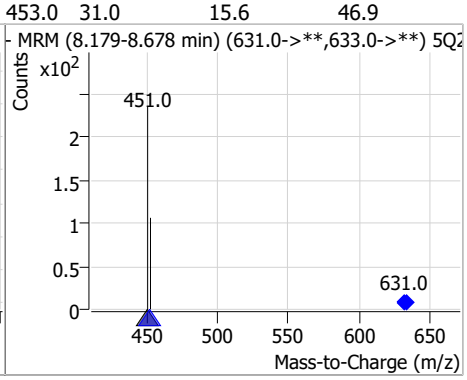


Perfluorinated Compounds by LC/MS/MS

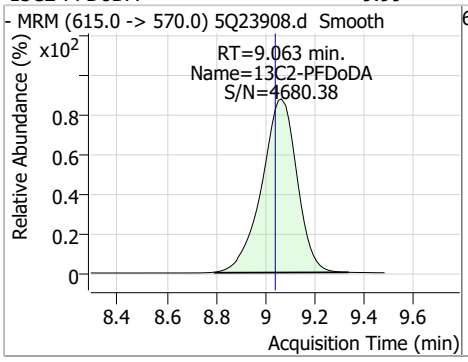
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	0.43	8.44	0.01	5870	633.0 -> 453.0	31.0	15.6	46.9

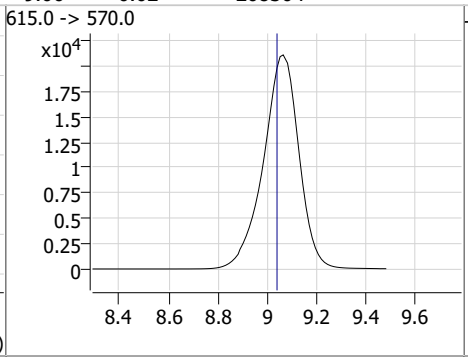


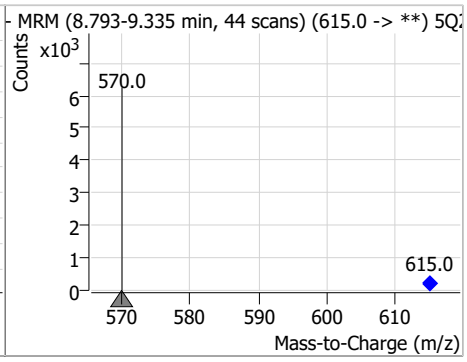




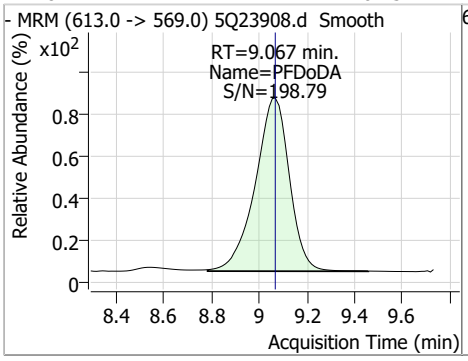
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	9.99	9.06	0.02	208364				

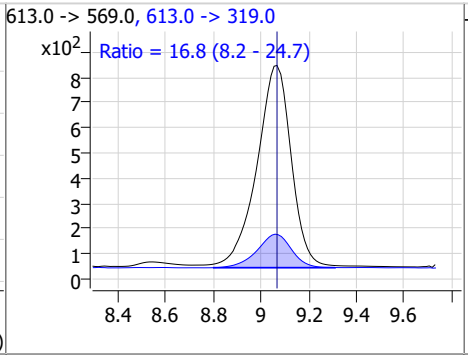


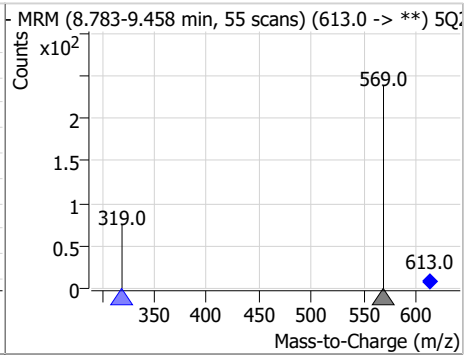




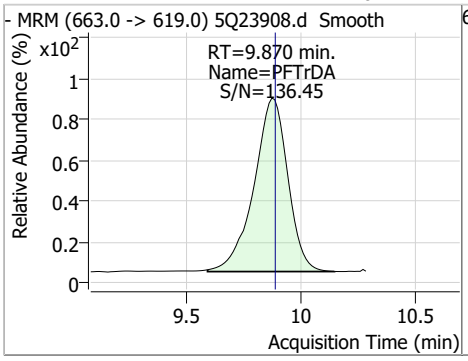
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	0.45	9.07	0.02	7996	613.0 -> 319.0	16.8	8.2	24.7

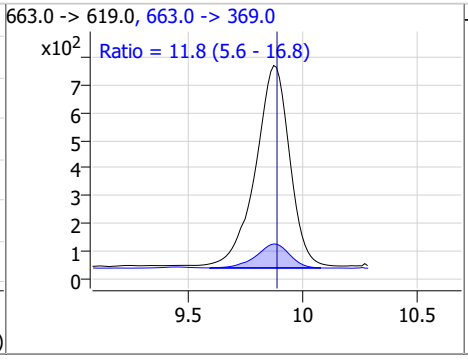


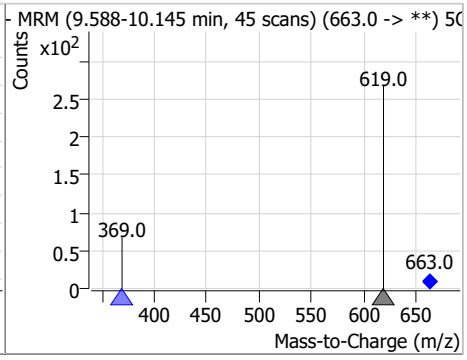




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	0.41	9.87	0.01	7424	663.0 -> 369.0	11.8	5.6	16.8

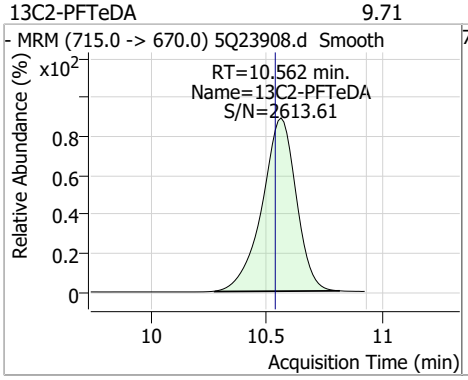


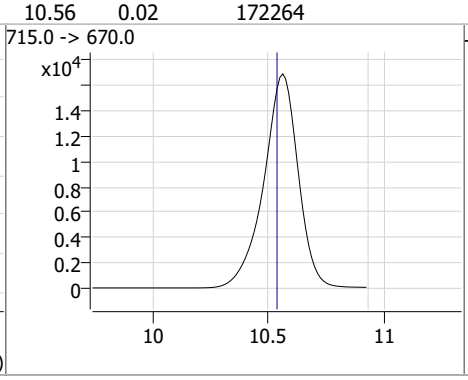


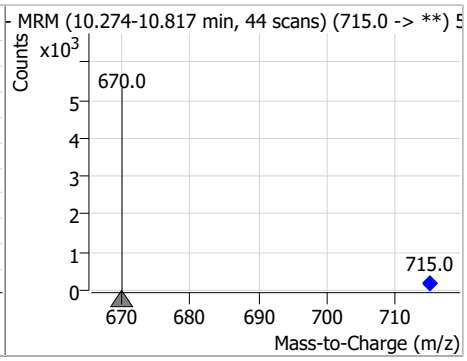


Perfluorinated Compounds by LC/MS/MS

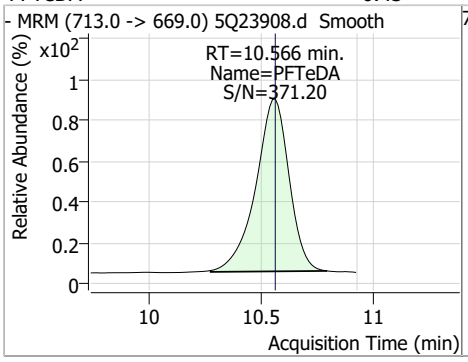
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	9.71	10.56	0.02	172264				

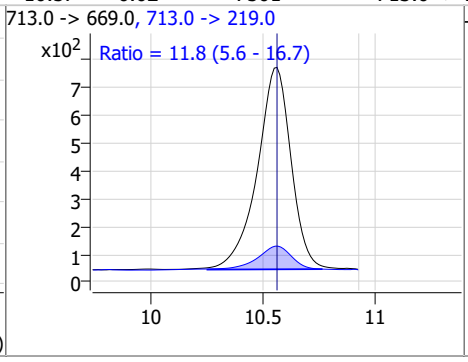


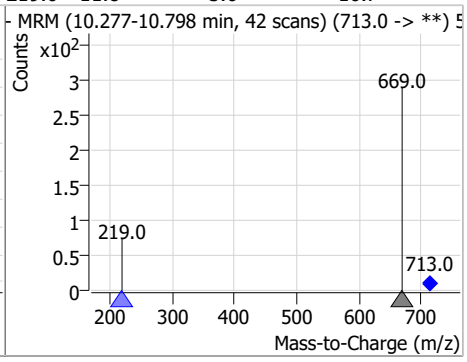




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	0.43	10.57	0.02	7501	713.0 -> 219.0	11.8	5.6	16.7







Manual Integration Approval Summary

Sample Number: S5Q375-IC375
Lab FileID: 5Q23908.D
Injection Time: 12/28/23 14:33

Method: EPA 537M QSM5.3 B-15
Analyst approved: 12/29/23 14:15 Lindsay Ritner
Supervisor approved: 01/02/24 14:05 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.45	Split peak
Perfluorooctanesulfonic acid	1763-23-1		6.73	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Natasha Gumtie 01/02/24 14:05

Perfluorinated Compounds by LC/MS/MS

Data File : 5Q23909.d
Operator : natashag
Acq. Method : 537_ID.m
Acq. Date-Time : 12/28/2023 2:50:26 PM
Sample Name : ic375-1
Vial : P1-A3
DA Method File : ID_122823_S5Q375.quantmethod.xml
Batch Name : s5q375.batch.bin
Sample Information : OP401,S5Q375,250,,,1.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.000	217.0 -> 172.0	48126	10.00 µg/L	0.013
M5-PFPeA	3.432	268.0 -> 223.0	80197	10.00 µg/L	0.000
M5-PFHxA	4.565	318.0 -> 273.0	121538	10.00 µg/L	0.012
M4-PFHpA	5.425	367.0 -> 322.0	122952	10.00 µg/L	0.012
M8-PFOA	6.137	421.0 -> 376.0	167421	10.00 µg/L	0.013
M9-PFNA	6.768	472.0 -> 427.0	171143	10.00 µg/L	0.012
M6-PFDA	7.301	519.0 -> 474.0	174576	10.00 µg/L	0.013
M7-PFUnDA	8.084	570.0 -> 525.0	239630	10.00 µg/L	0.025
M2-PFDoDA	9.051	615.0 -> 570.0	211122	10.00 µg/L	0.012
M2-PFTeDA	10.562	715.0 -> 670.0	178337	10.00 µg/L	0.025
M8-FOSA	6.192	506.0 -> 78.0	42814	10.00 µg/L	0.000
M3-PFBS	3.637	302.0 -> 99.0	9868	10.00 µg/L	0.000
M3-PFHxS	5.444	402.0 -> 99.0	11812	10.00 µg/L	0.012
M8-PFOS	6.729	507.0 -> 99.0	15694	10.00 µg/L	0.000
M2-4:2FTS	4.474	329.0 -> 309.0	38194	10.00 µg/L	0.000
M2-6:2FTS	6.136	429.0 -> 409.0	67182	10.00 µg/L	0.000
M2-8:2FTS	7.363	529.0 -> 509.0	66635	10.00 µg/L	0.012
M3-MeFOSAA	6.747	573.0 -> 419.0	30596	10.00 µg/L	0.000
M3-HFPO-DA	4.819	287.0 -> 169.0	6485	10.00 µg/L	0.000
M3-MeFOSA	6.589	515.0 -> 169.0	14077	10.00 µg/L	0.000
M5-EtFOSAA	6.845	589.0 -> 419.0	28164	10.00 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	4.474	329.0 -> 309.0	38194	9.50 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 95.0%	
13C2-6:2FTS	6.136	429.0 -> 409.0	67182	9.48 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 94.8%	
13C2-8:2FTS	7.363	529.0 -> 509.0	66635	9.54 µg/L	0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 95.4%	
13C2-PFDoDA	9.051	615.0 -> 570.0	211122	10.13 µg/L	0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.3%	
13C2-PFTeDA	10.562	715.0 -> 670.0	178337	10.05 µg/L	0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.5%	
13C3-PFBS	3.637	302.0 -> 99.0	9868	10.16 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.6%	
13C3-PFHxS	5.444	402.0 -> 99.0	11812	10.01 µg/L	0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.1%	
13C4-PFBA	2.000	217.0 -> 172.0	48126	10.19 µg/L	0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.9%	
13C4-PFHpA	5.425	367.0 -> 322.0	122952	10.22 µg/L	0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 102.2%	
13C5-PFHxA	4.565	318.0 -> 273.0	121538	10.17 µg/L	0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.7%	
13C5-PFPeA	3.432	268.0 -> 223.0	80197	10.17 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.7%	
13C6-PFDA	7.301	519.0 -> 474.0	174576	10.37 µg/L	0.013

Perfluorinated Compounds by LC/MS/MS

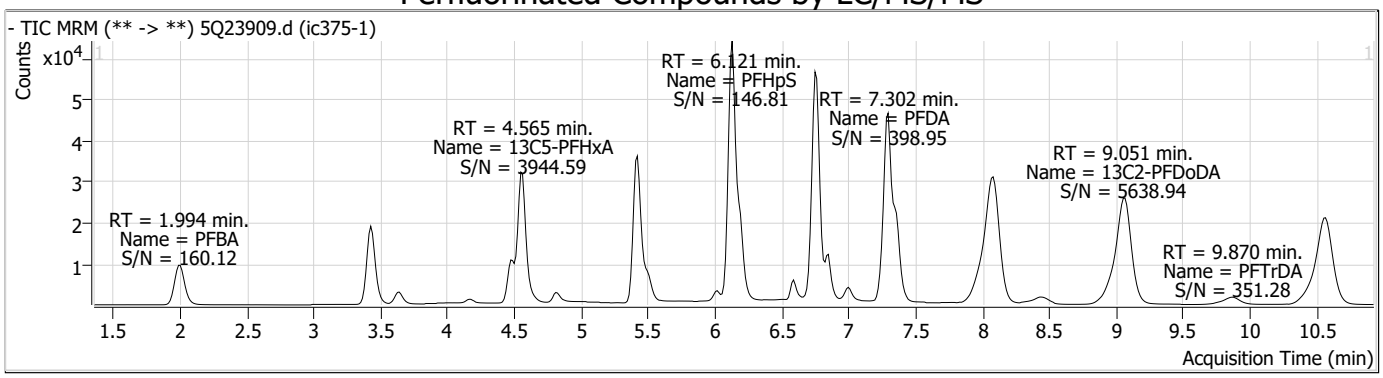
Compound	RT	Transition	Response	Conc. Units		Dev(Min)
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 103.7%		
13C7-PFUnDA	8.084	570.0 -> 525.0	239630	10.28 µg/L		0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 102.8%		
13C8-FOSA	6.192	506.0 -> 78.0	42814	10.56 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 105.6%		
13C8-PFOA	6.137	421.0 -> 376.0	167421	10.11 µg/L		0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.1%		
13C8-PFOS	6.729	507.0 -> 99.0	15694	9.99 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.9%		
13C9-PFNA	6.768	472.0 -> 427.0	171143	10.31 µg/L		0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 103.1%		
d3-MeFOSAA	6.747	573.0 -> 419.0	30596	10.03 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.3%		
13C3-HFPO-DA	4.819	287.0 -> 169.0	6485	10.04 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.4%		
d3-MeFOSA	6.589	515.0 -> 169.0	14077	10.04 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.4%		
d5-EtFOSAA	6.845	589.0 -> 419.0	28164	10.26 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 102.6%		
Target Compounds						QValue
4:2FTS	4.475	327.0 -> 307.0	3263	0.87 µg/L		89
		327.0 -> 81.0	2115			
6:2FTS	6.136	427.0 -> 407.0	5839	0.95 µg/L		96
		427.0 -> 81.0	2501			
8:2FTS	7.364	527.0 -> 507.0	5276	0.91 µg/L		97
		527.0 -> 81.0	2615			
EtFOSAA	6.846	584.0 -> 419.0	1761	0.77 µg/L		88
		584.0 -> 483.0	1171			
FOSA	6.194	498.0 -> 78.0	2906	0.74 µg/L		99
		498.0 -> 478.0	108			
MeFOSAA	6.748	570.0 -> 419.0	2016	0.84 µg/L		93
		570.0 -> 512.0	669			
PFBA	1.994	213.0 -> 169.0	3627	0.81 µg/L		100
PFBS	3.640	299.0 -> 80.0	1947	0.80 µg/L		99
		299.0 -> 99.0	871			
PFDA	7.302	513.0 -> 469.0	13681	0.82 µg/L		100
		513.0 -> 219.0	2433			
PFDoDA	9.055	613.0 -> 569.0	15104	0.83 µg/L		99
		613.0 -> 319.0	2571			
PFDS	7.970	599.0 -> 80.0	2664	0.81 µg/L		98
		599.0 -> 99.0	1573			
PFHpA	5.426	363.0 -> 319.0	11065	0.78 µg/L		98
		363.0 -> 169.0	2440			
PFHpS	6.121	449.0 -> 80.0	1867	0.85 µg/L		94
		449.0 -> 99.0	1072			
PFHxA	4.565	313.0 -> 269.0	9489	0.81 µg/L		99
		313.0 -> 119.0	412			
PFHxS	5.446	399.0 -> 80.0	1734	0.79 µg/L	m	95
		399.0 -> 99.0	1033			
PFNA	6.769	463.0 -> 419.0	12750	0.81 µg/L		99
		463.0 -> 219.0	2635			
PFNS	7.248	549.0 -> 80.0	1491	0.82 µg/L		95
		549.0 -> 99.0	826			
PFOA	6.137	413.0 -> 369.0	12809	0.78 µg/L		95
		413.0 -> 169.0	3479			
PFOS	6.730	499.0 -> 80.0	2184	0.78 µg/L	m	91

Perfluorinated Compounds by LC/MS/MS

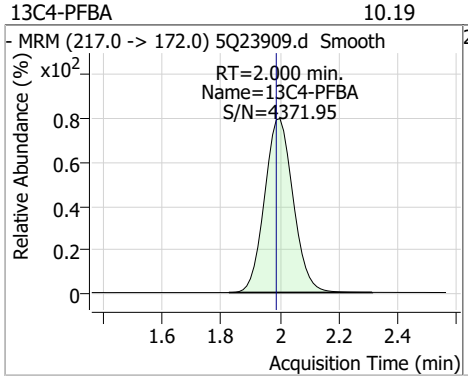
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		499.0 -> 99.0	1229			
PFPeA	3.434	263.0 -> 219.0	6189	0.80	µg/L	100
PFPeS	4.648	349.0 -> 80.0	1434	0.83	µg/L	97
		349.0 -> 99.0	740			
PFTeDA	10.554	713.0 -> 669.0	14912	0.83	µg/L	99
		713.0 -> 219.0	1739			
PFTrDA	9.870	663.0 -> 619.0	14255	0.79	µg/L	98
		663.0 -> 369.0	1684			
PFUnDA	8.073	563.0 -> 519.0	17708	0.82	µg/L	100
		563.0 -> 269.0	3135			
11Cl-PF3OUdS	8.440	631.0 -> 451.0	10350	0.74	µg/L	100
		633.0 -> 453.0	3252			
9Cl-PF3ONS	6.999	531.0 -> 351.0	9421	0.73	µg/L	98
		533.0 -> 353.0	3084			
ADONA	5.514	377.0 -> 251.0	15085	0.76	µg/L	99
		377.0 -> 85.0	5447			
HFPO-DA	4.827	329.0 -> 169.0	2310	0.78	µg/L	99
		285.0 -> 169.0	481			
MeFOSA	6.602	512.0 -> 169.0	959	0.79	µg/L	96
		512.0 -> 219.0	824			
4-PFECHS	6.018	461.0 -> 381.0	6976	0.96	µg/L	97
		461.0 -> 99.0	3747			
FBSA	4.170	298.0 -> 78.0	3136	0.77	µg/L	97
		298.0 -> 64.0	321			
FHxSA	5.409	398.0 -> 78.0	3442	0.78	µg/L	100
		398.0 -> 64.0	324			

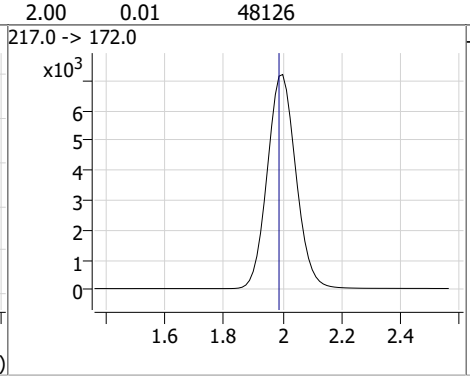
 # = Qualifier out of range, m = manually integrated, + = Area summed

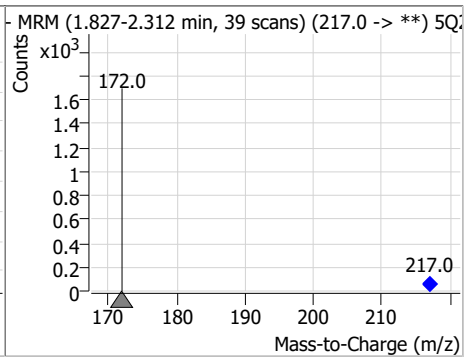
Perfluorinated Compounds by LC/MS/MS



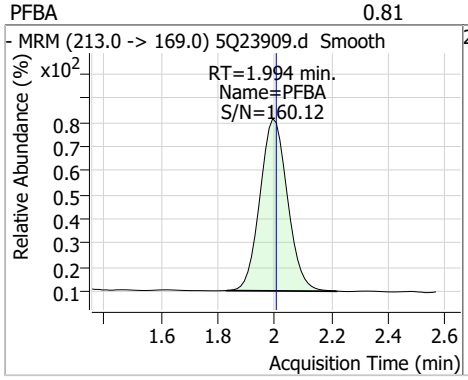
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	10.19	2.00	0.01	48126				

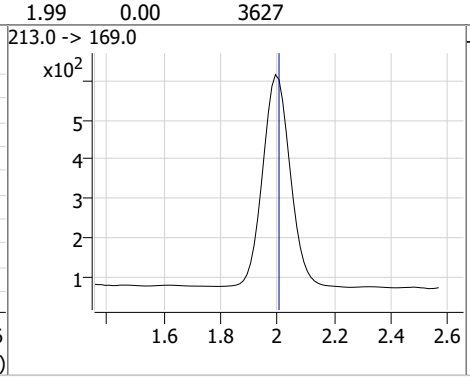


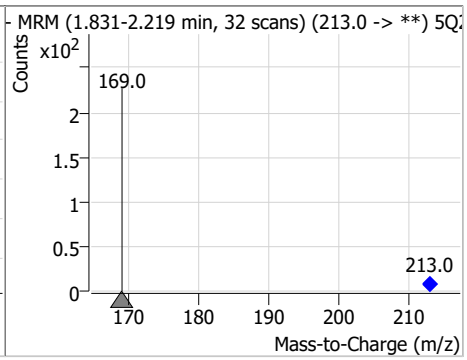




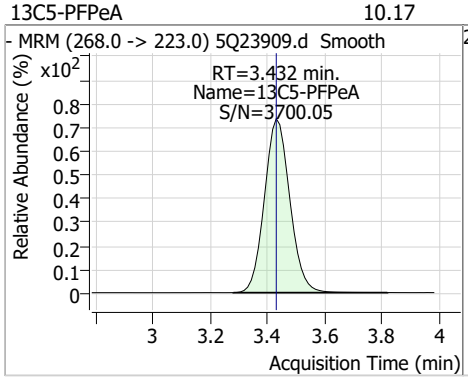
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	0.81	1.99	0.00	3627				

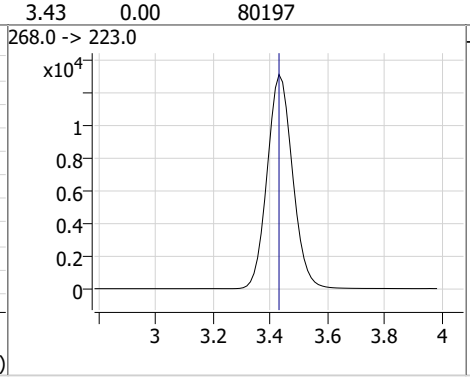


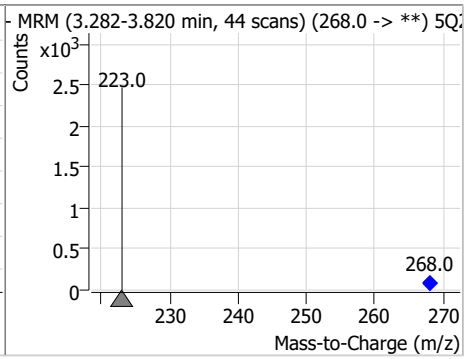




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	10.17	3.43	0.00	80197				

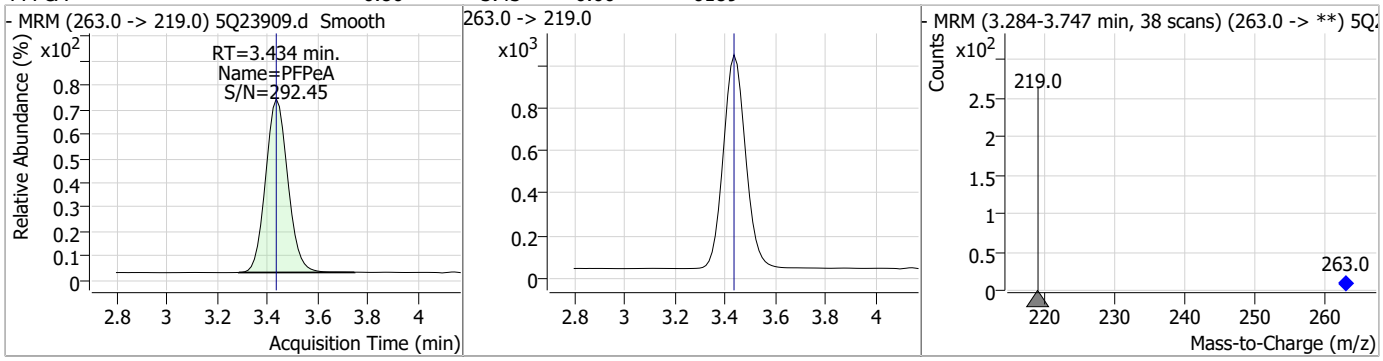




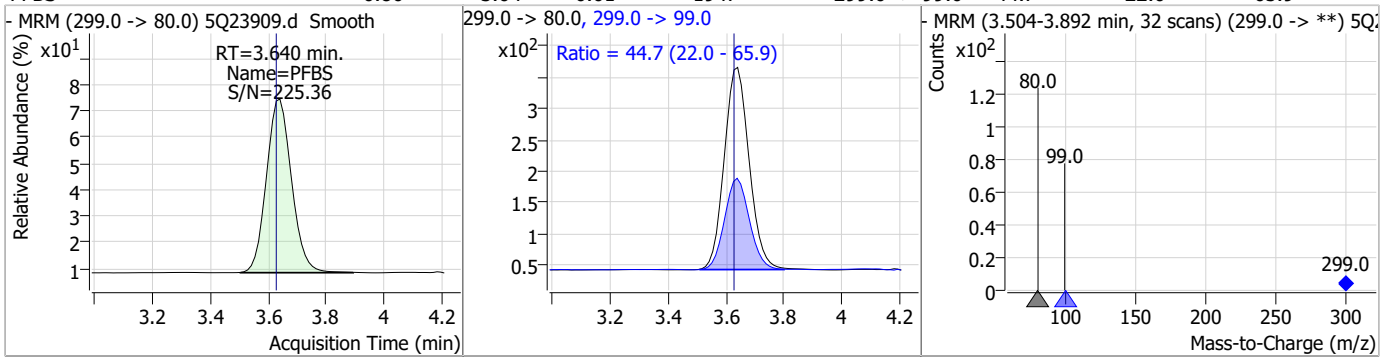


Perfluorinated Compounds by LC/MS/MS

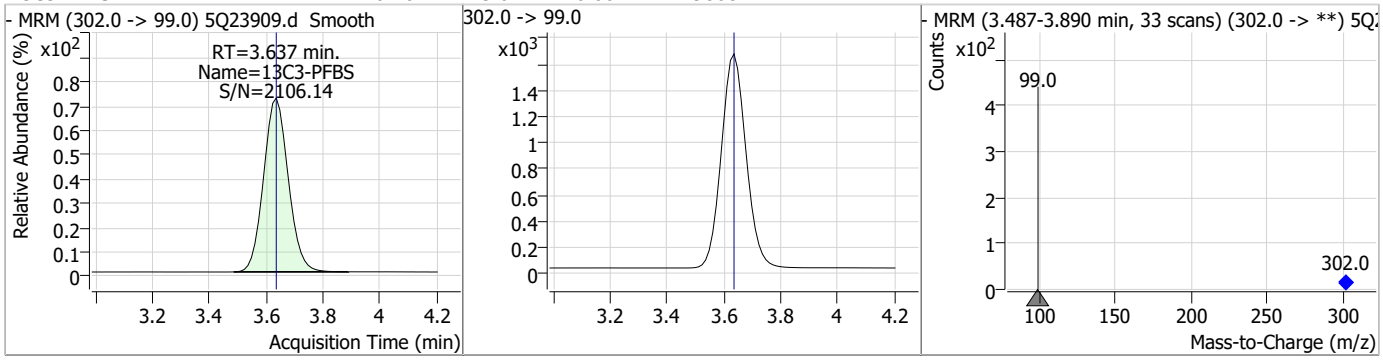
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	0.80	3.43	0.00	6189				



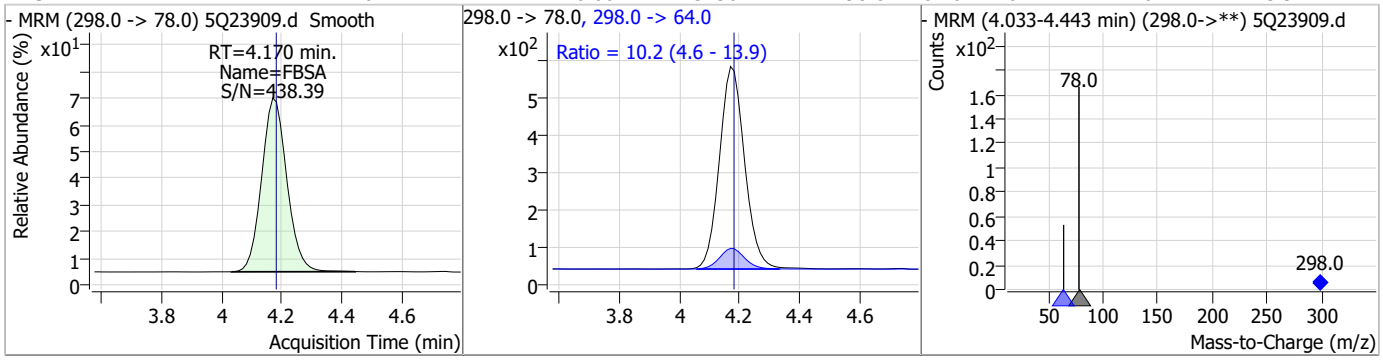
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	0.80	3.64	0.01	1947	299.0 -> 99.0	44.7	22.0	65.9



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	10.16	3.64	0.00	9868				

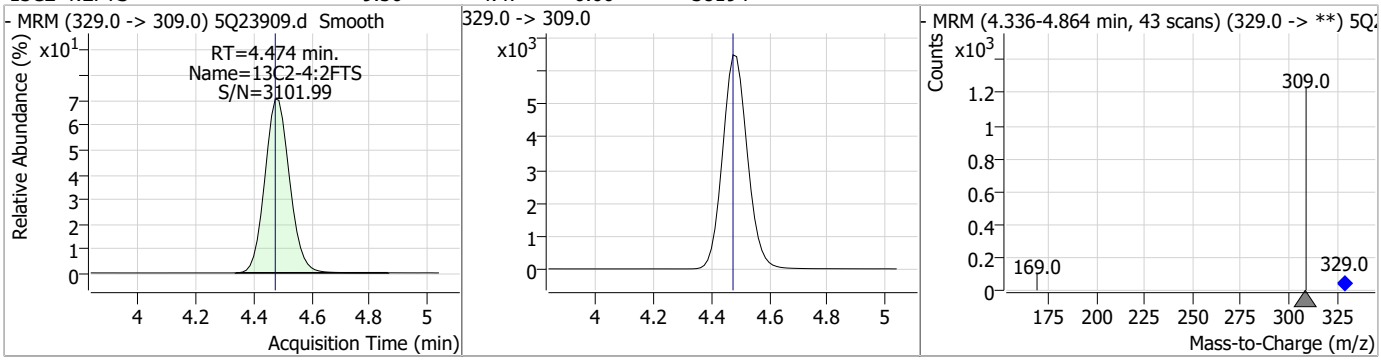


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	0.77	4.17	0.00	3136	298.0 -> 64.0	10.2	4.6	13.9

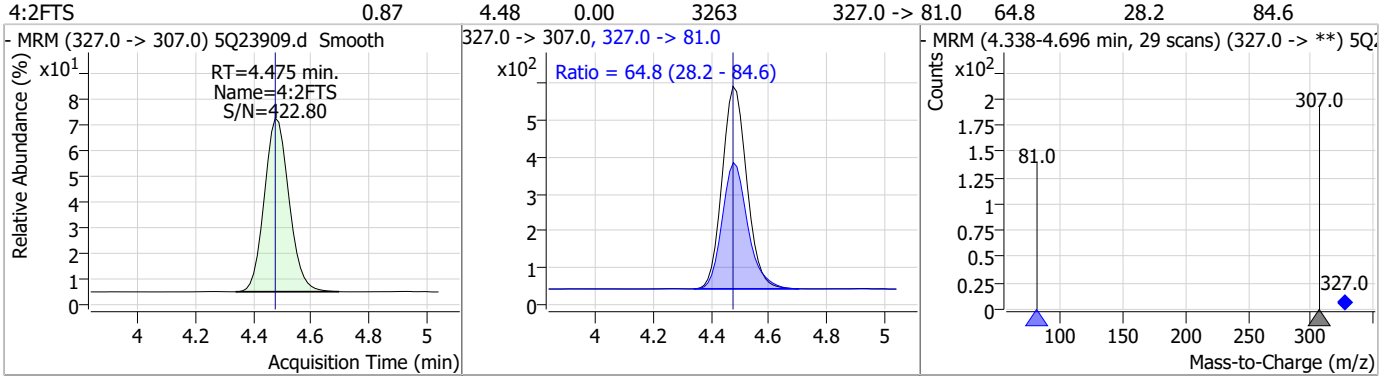


Perfluorinated Compounds by LC/MS/MS

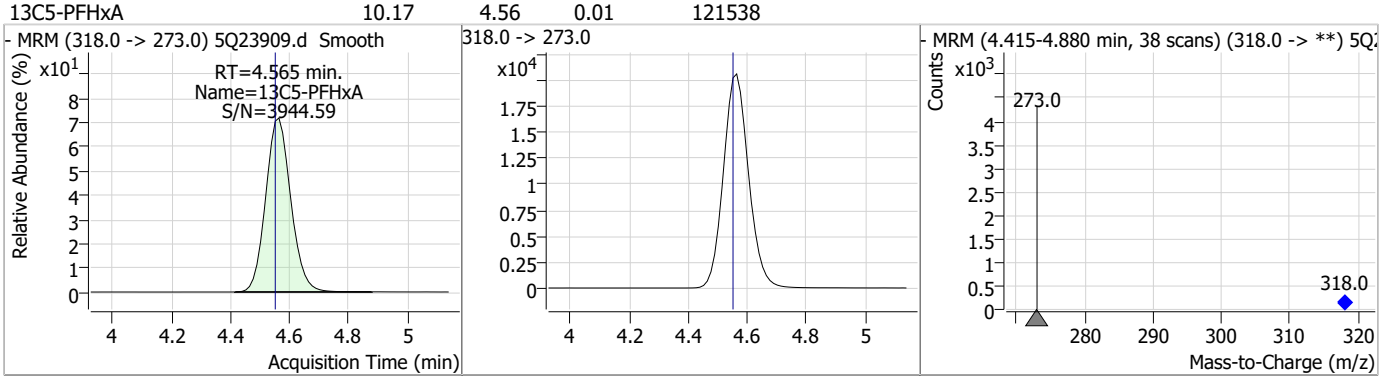
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	9.50	4.47	0.00	38194				



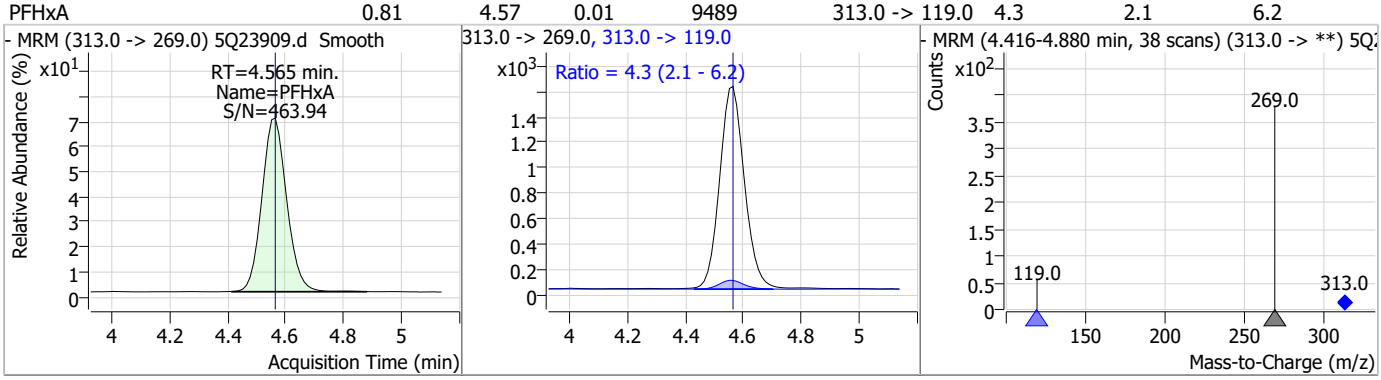
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	0.87	4.48	0.00	3263	327.0 -> 81.0	64.8	28.2	84.6



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	10.17	4.56	0.01	121538				

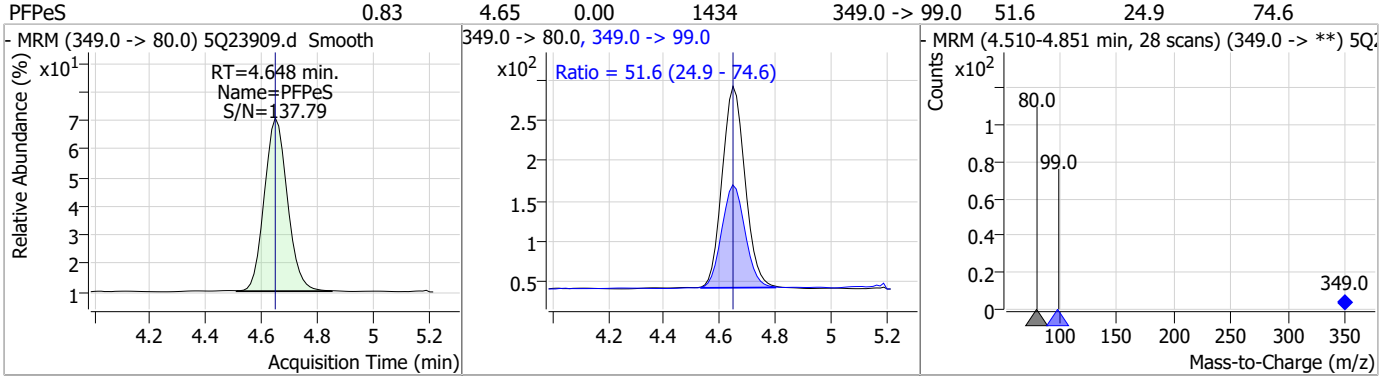


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	0.81	4.57	0.01	9489	313.0 -> 119.0	4.3	2.1	6.2

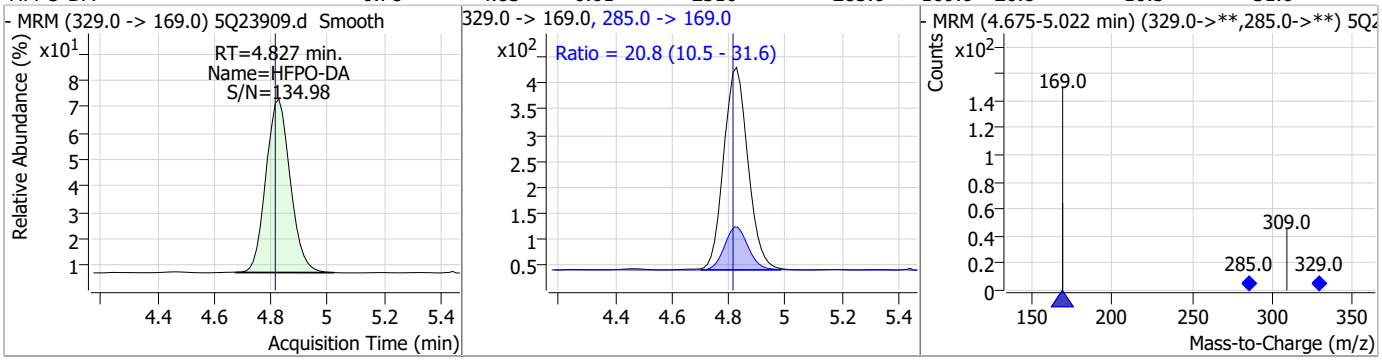


Perfluorinated Compounds by LC/MS/MS

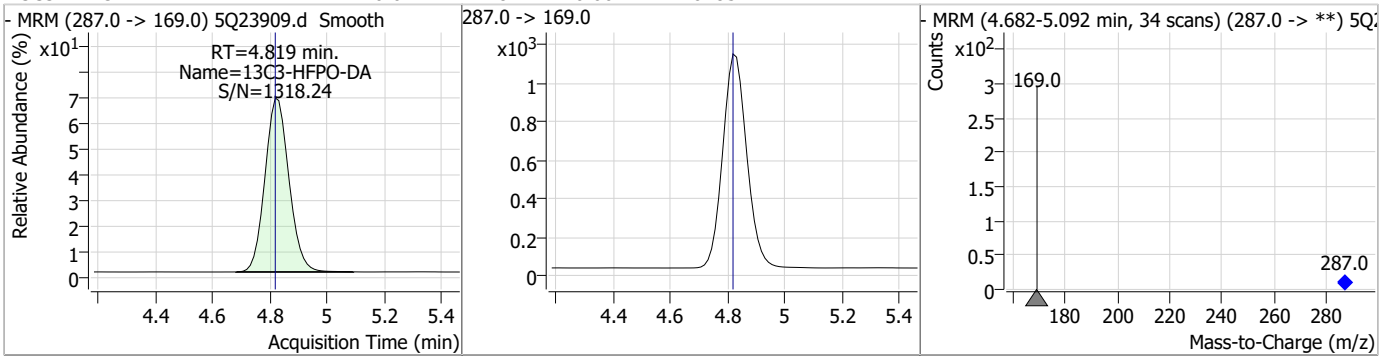
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	0.83	4.65	0.00	1434	349.0 -> 99.0	51.6	24.9	74.6



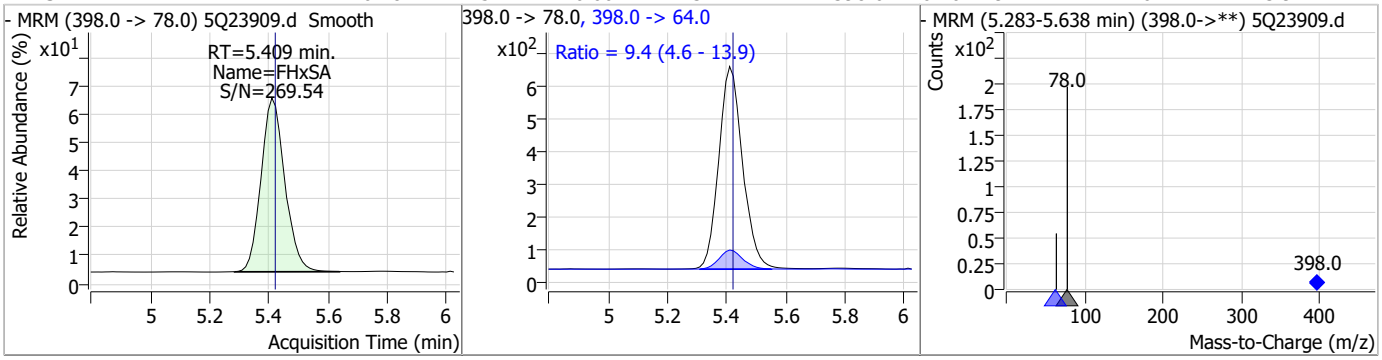
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	0.78	4.83	0.01	2310	285.0 -> 169.0	20.8	10.5	31.6



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	10.04	4.82	0.00	6485				

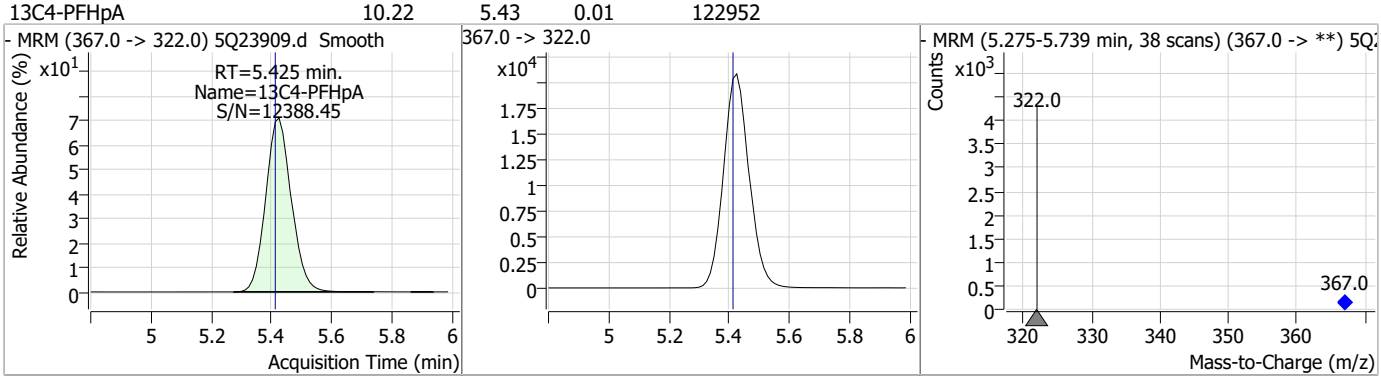


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	0.78	5.41	0.00	3442	398.0 -> 64.0	9.4	4.6	13.9

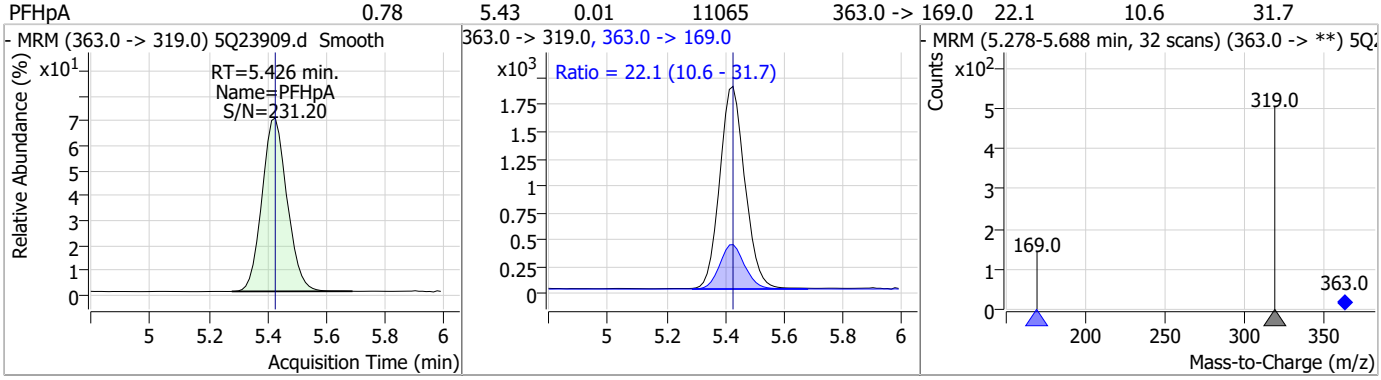


Perfluorinated Compounds by LC/MS/MS

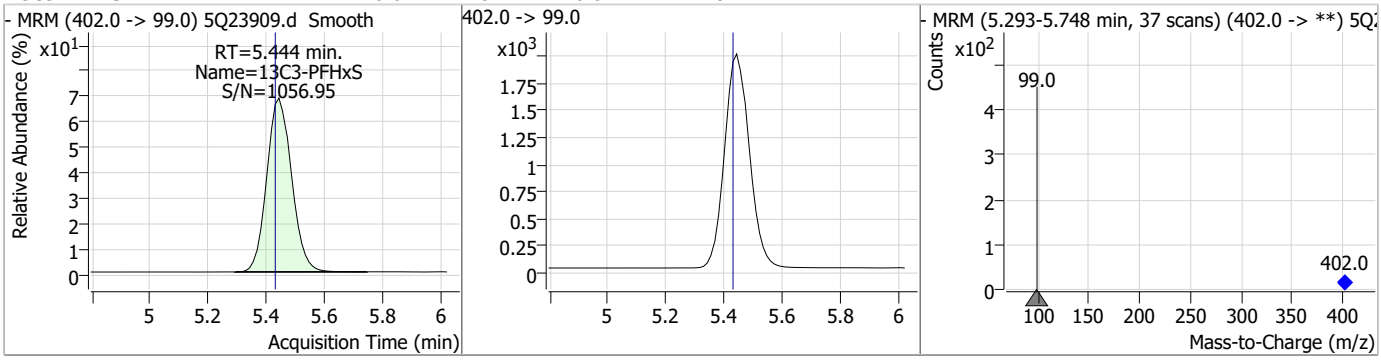
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	10.22	5.43	0.01	122952				



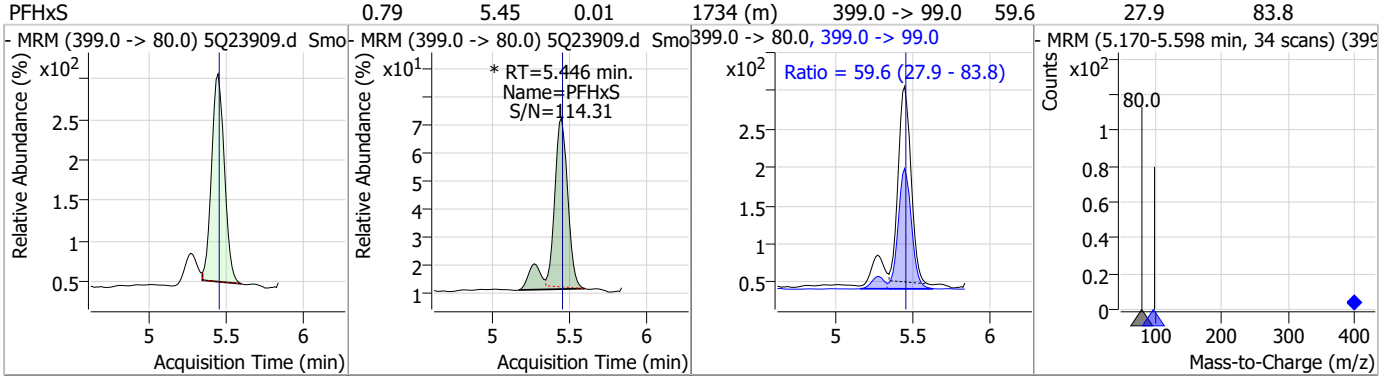
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	0.78	5.43	0.01	11065	363.0 -> 169.0	22.1	10.6	31.7



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	10.01	5.44	0.01	11812				

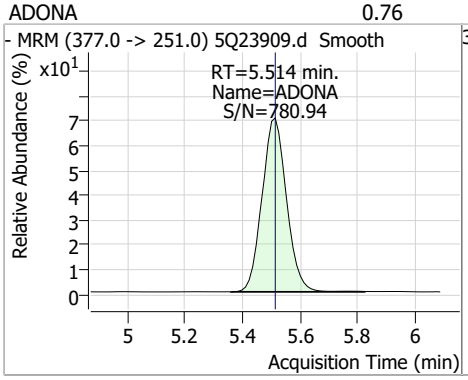


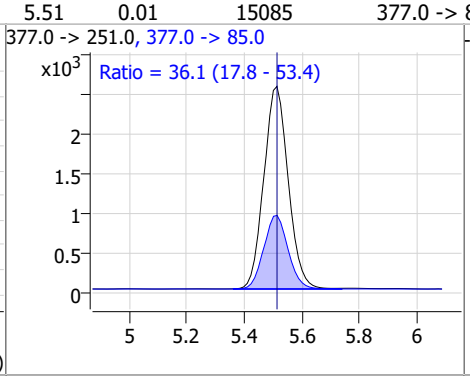
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	0.79	5.45	0.01	1734 (m)	399.0 -> 99.0	59.6	27.9	83.8

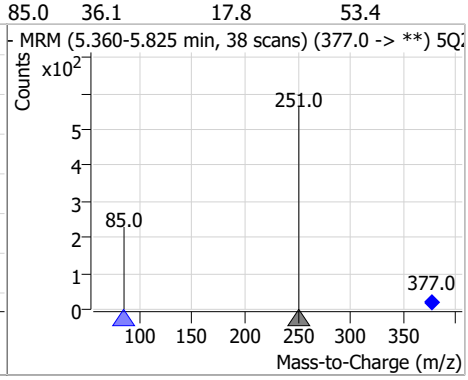


Perfluorinated Compounds by LC/MS/MS

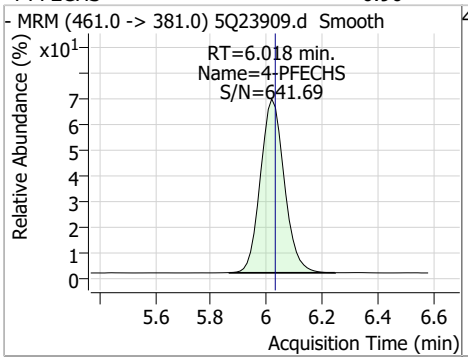
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	0.76	5.51	0.01	15085	377.0 -> 85.0	36.1	17.8	53.4

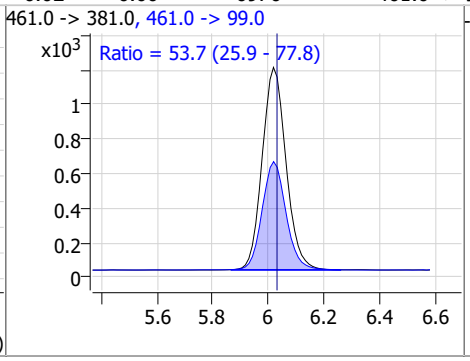


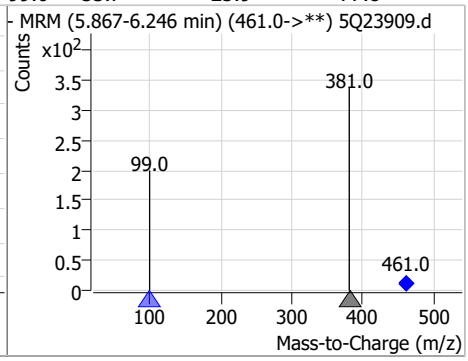




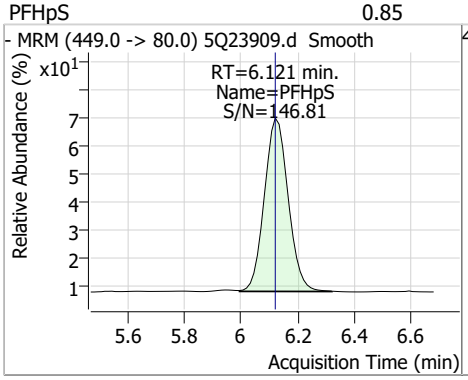
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS	0.96	6.02	0.00	6976	461.0 -> 99.0	53.7	25.9	77.8

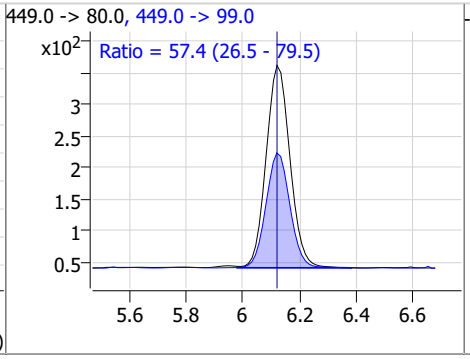


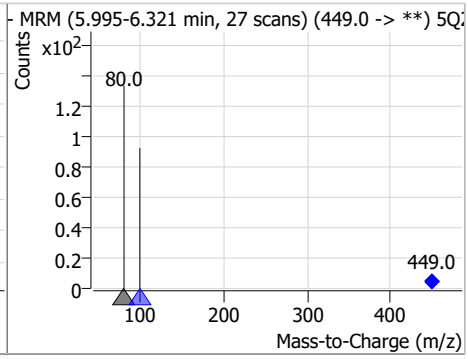




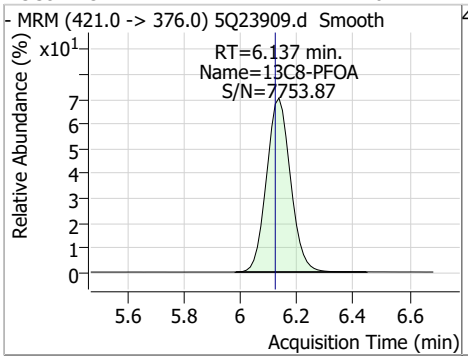
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	0.85	6.12	0.00	1867	449.0 -> 99.0	57.4	26.5	79.5

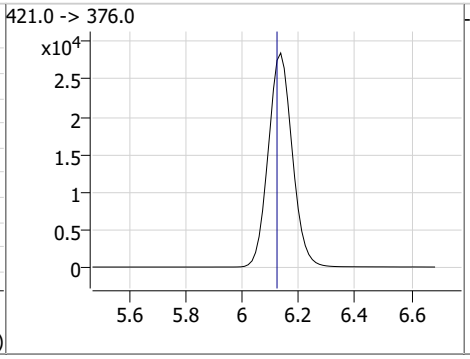


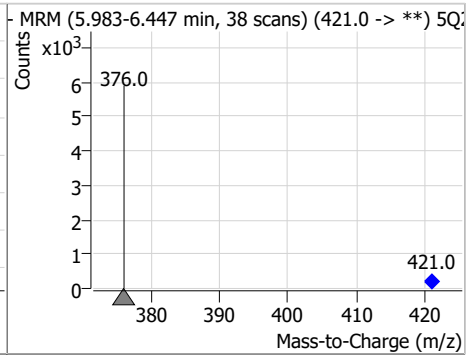




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	10.11	6.14	0.01	167421				

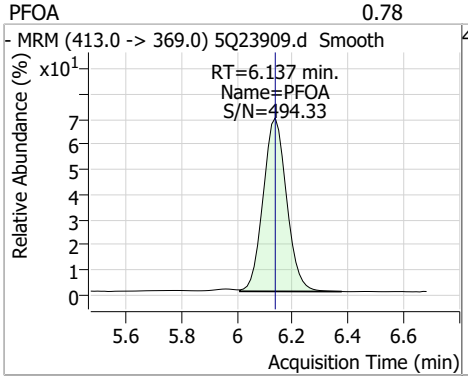


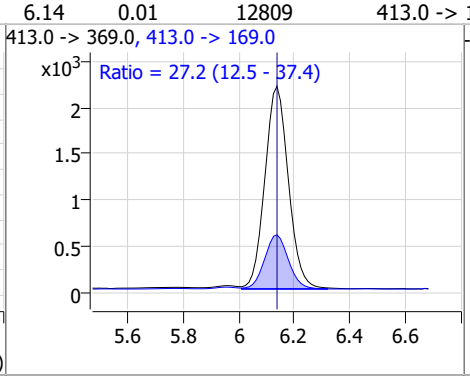


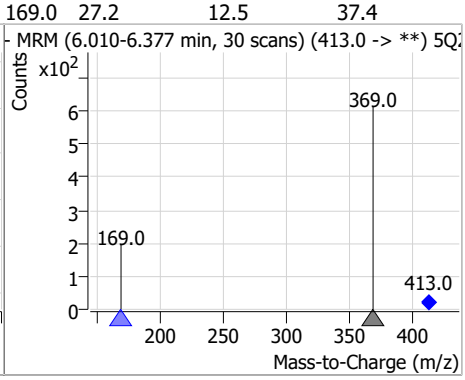


Perfluorinated Compounds by LC/MS/MS

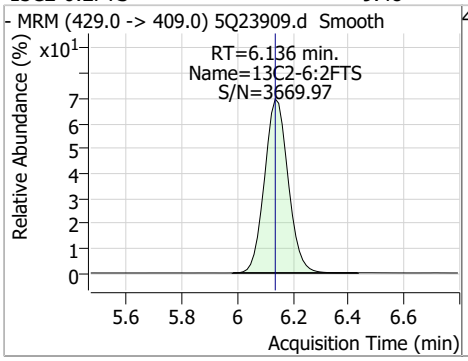
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	0.78	6.14	0.01	12809	413.0 -> 169.0	27.2	12.5	37.4

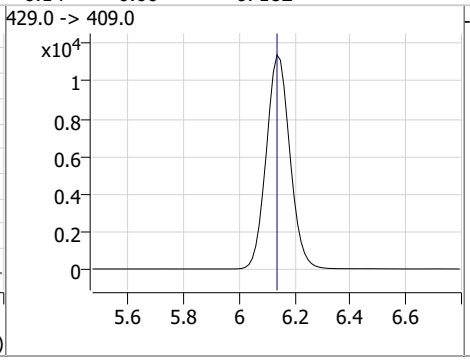


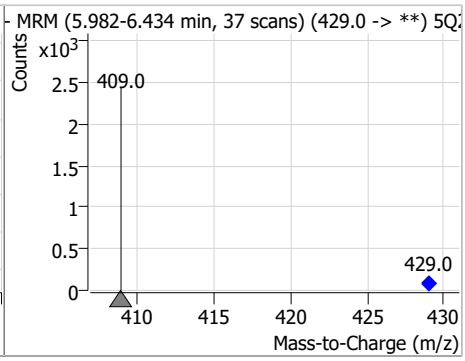




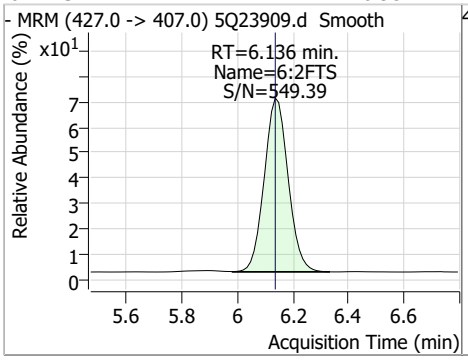
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	9.48	6.14	0.00	67182				

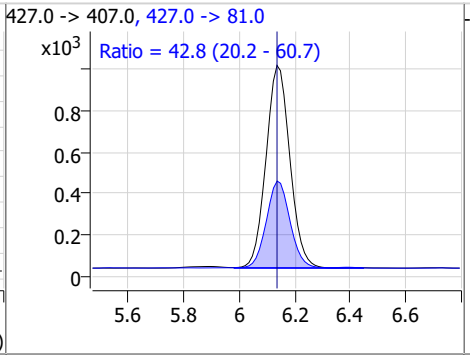


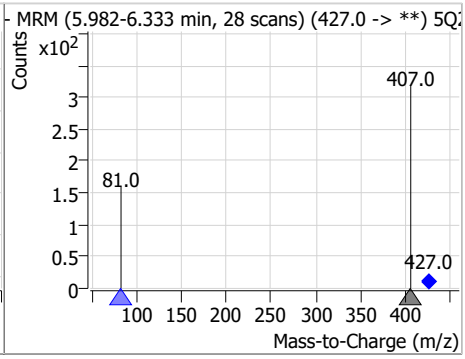




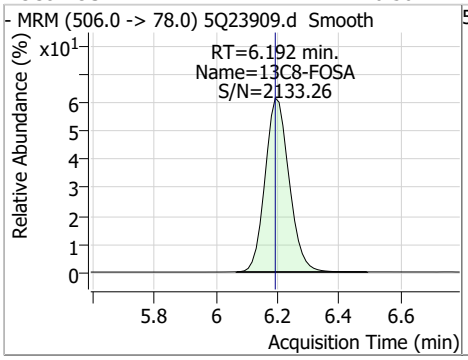
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	0.95	6.14	0.00	5839	427.0 -> 81.0	42.8	20.2	60.7

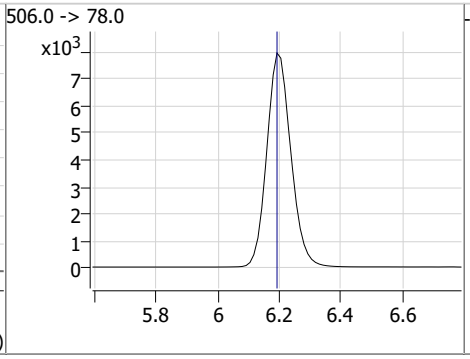


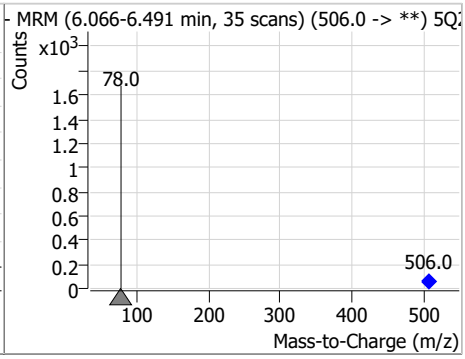




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	10.56	6.19	0.00	42814				

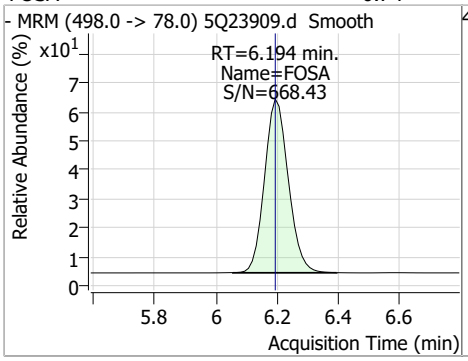


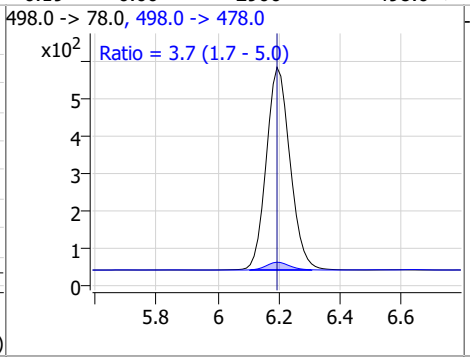


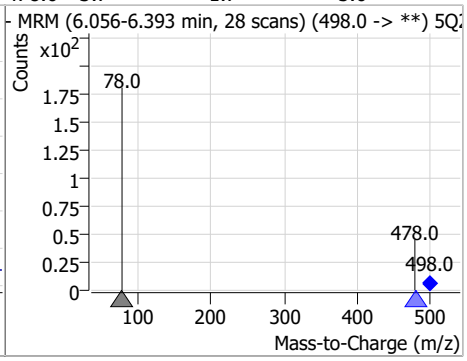


Perfluorinated Compounds by LC/MS/MS

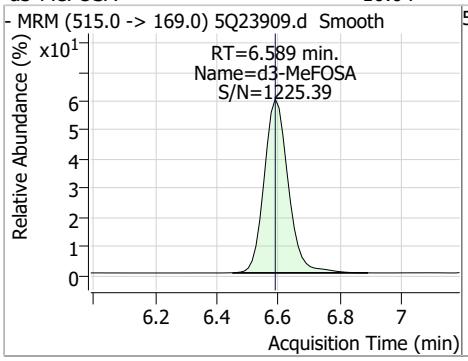
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	0.74	6.19	0.00	2906	498.0 -> 478.0	3.7	1.7	5.0

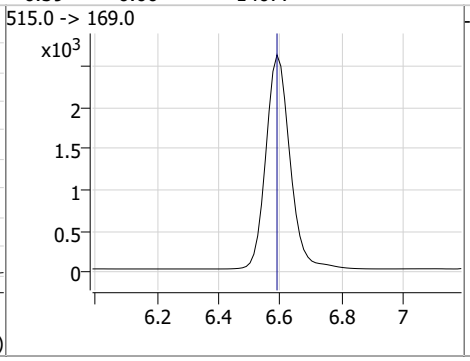


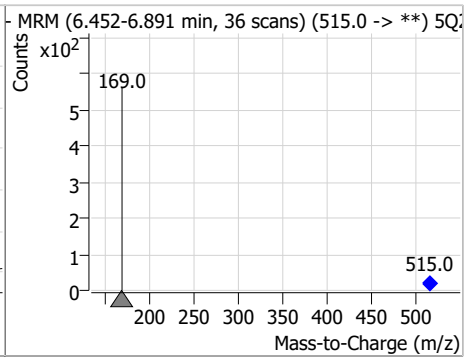




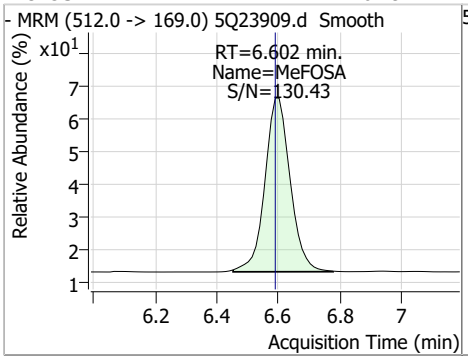
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	10.04	6.59	0.00	14077				

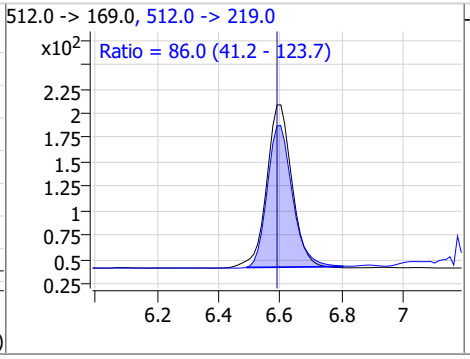


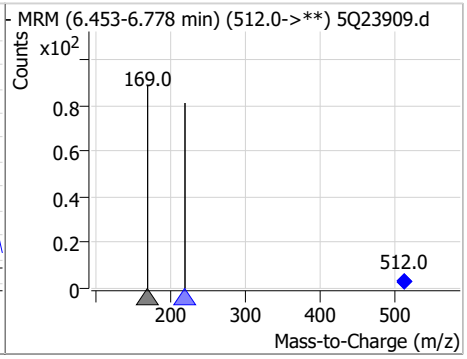




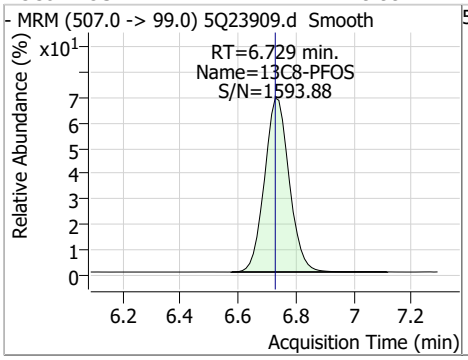
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	0.79	6.60	0.01	959	512.0 -> 219.0	86.0	41.2	123.7

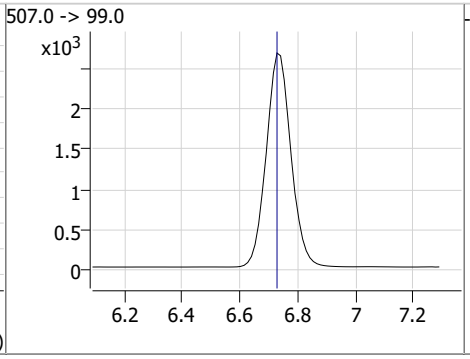


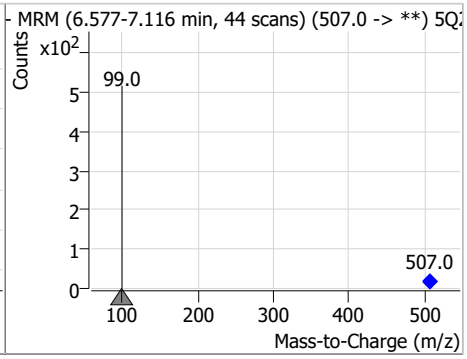




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	9.99	6.73	0.00	15694				

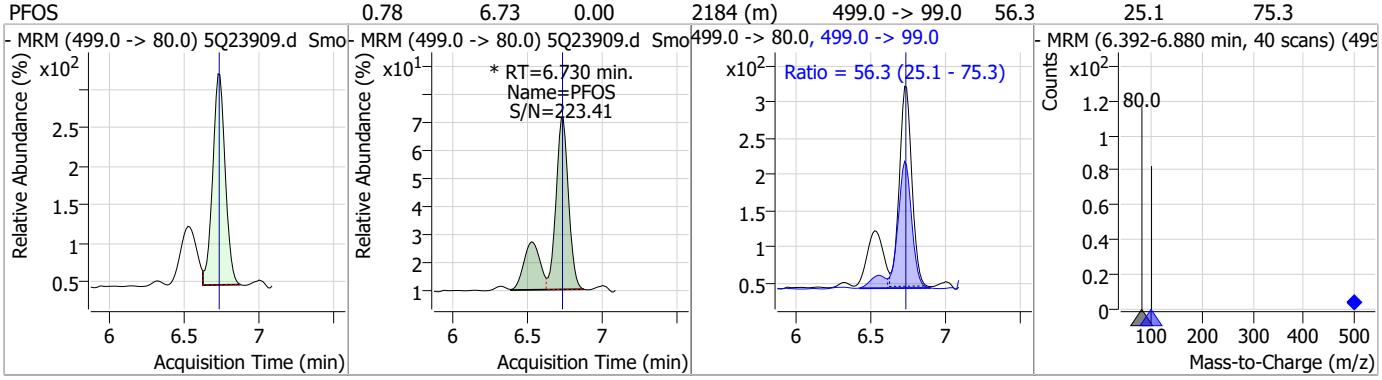




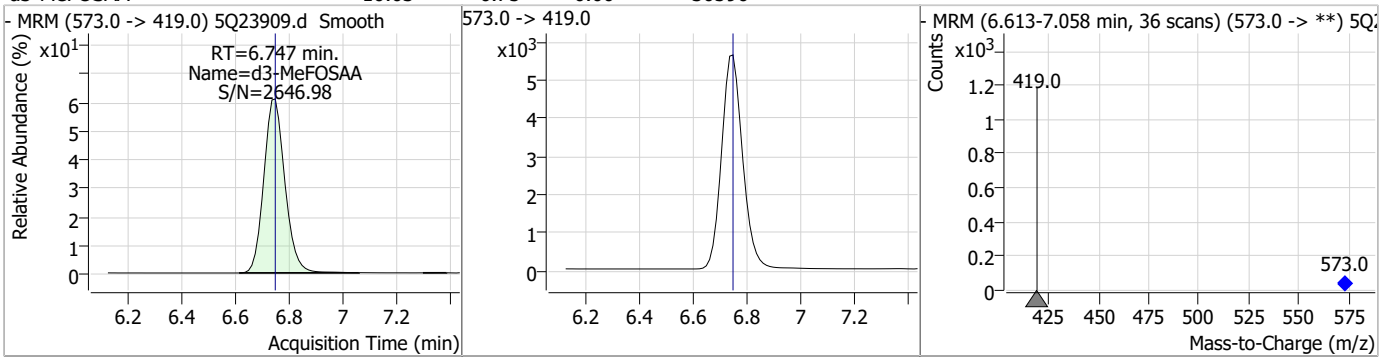


Perfluorinated Compounds by LC/MS/MS

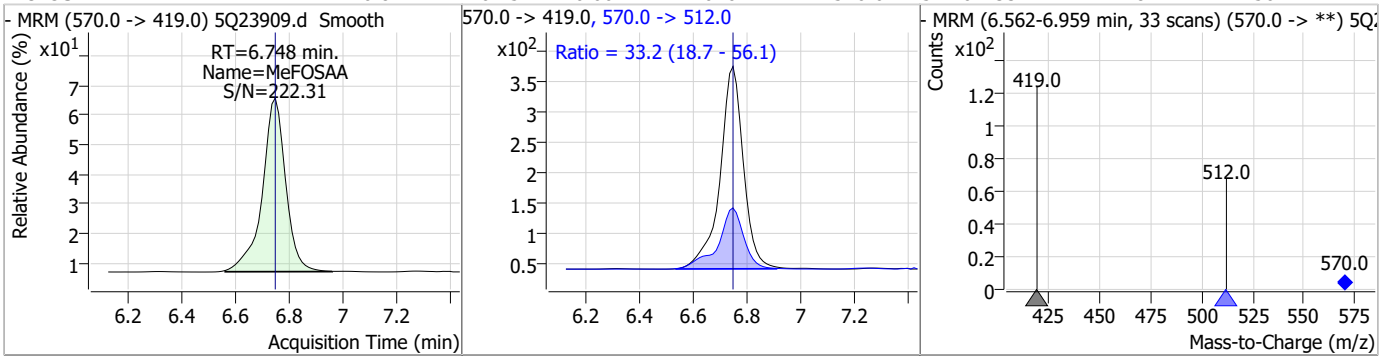
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	0.78	6.73	0.00	2184 (m)	499.0 -> 99.0	56.3	25.1	75.3



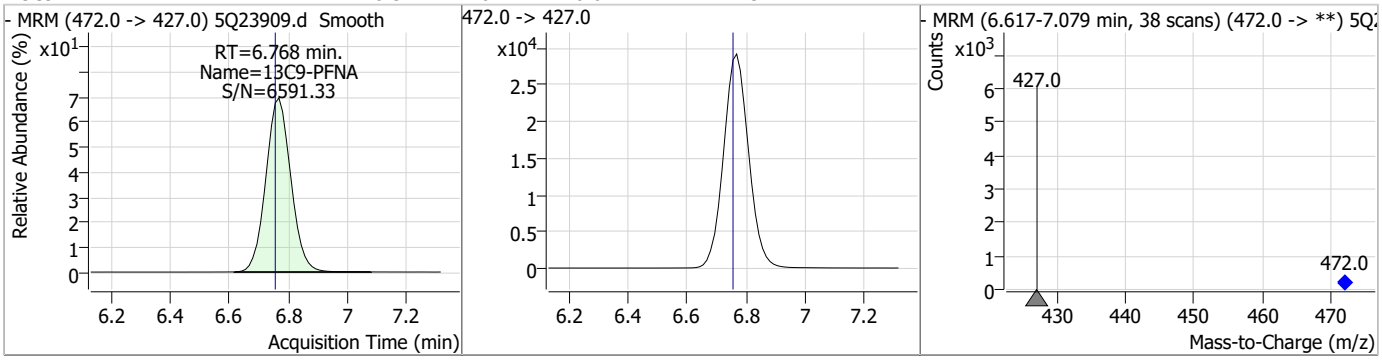
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	10.03	6.75	0.00	30596				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	0.84	6.75	0.00	2016	570.0 -> 512.0	33.2	18.7	56.1

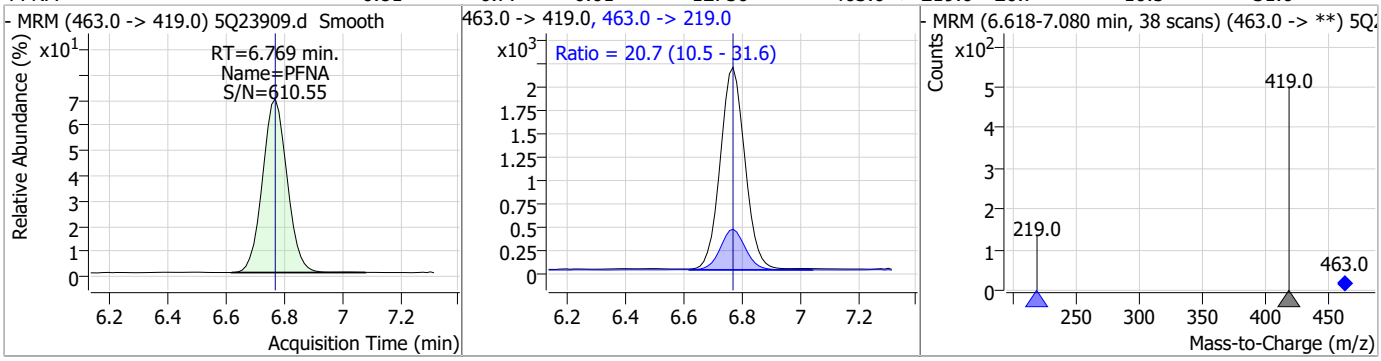


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	10.31	6.77	0.01	171143				

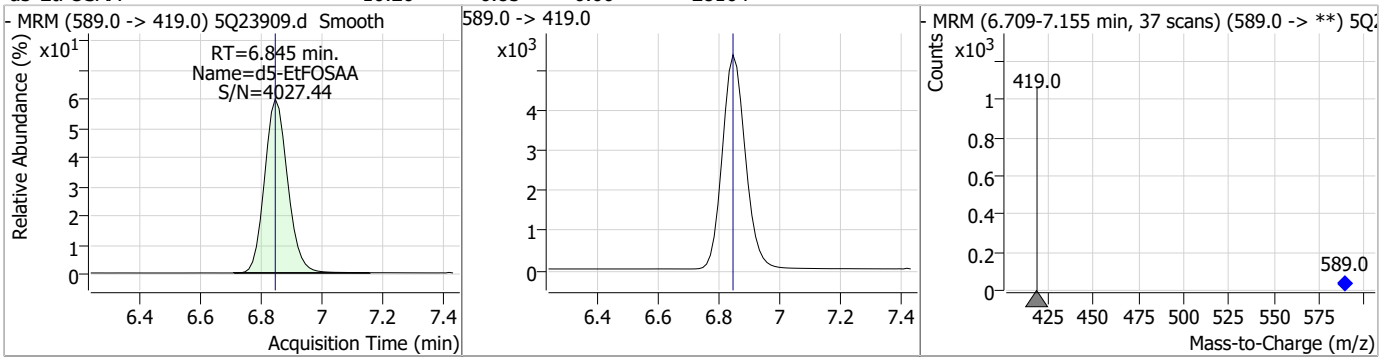


Perfluorinated Compounds by LC/MS/MS

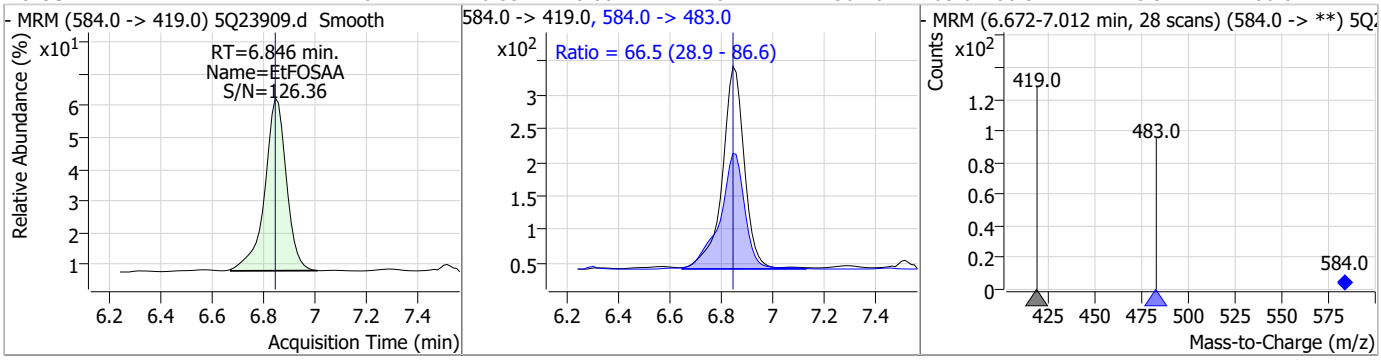
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	0.81	6.77	0.01	12750	463.0 -> 219.0	20.7	10.5	31.6



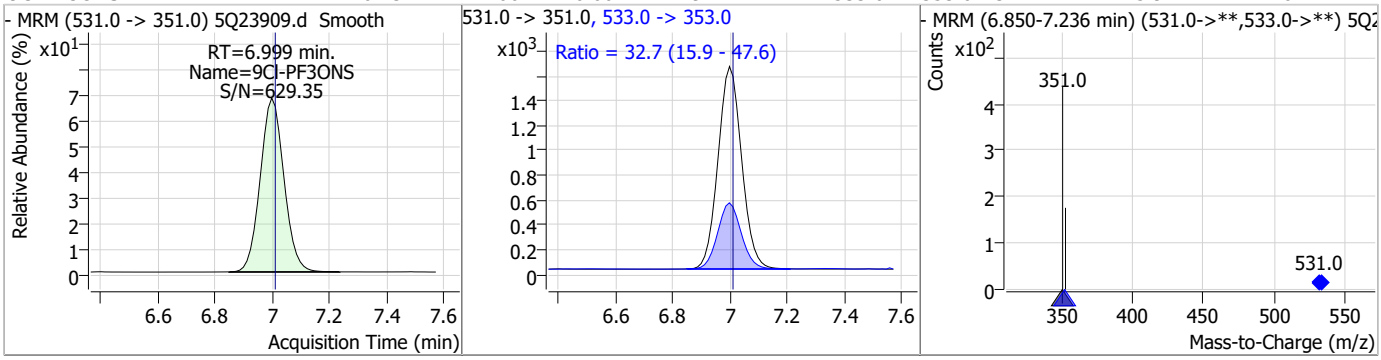
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	10.26	6.85	0.00	28164				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	0.77	6.85	0.00	1761	584.0 -> 483.0	66.5	28.9	86.6

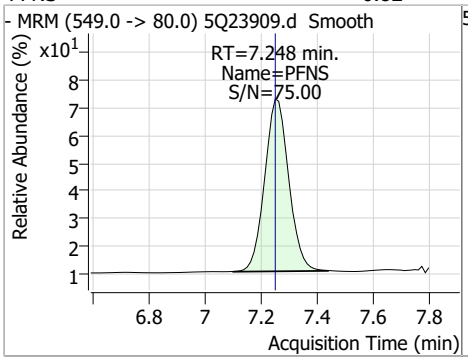


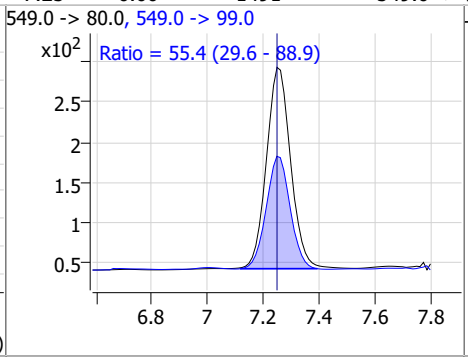
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	0.73	7.00	0.00	9421	533.0 -> 353.0	32.7	15.9	47.6

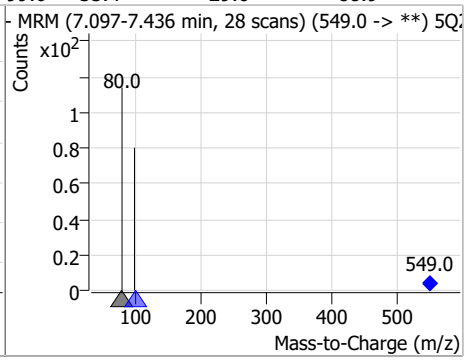


Perfluorinated Compounds by LC/MS/MS

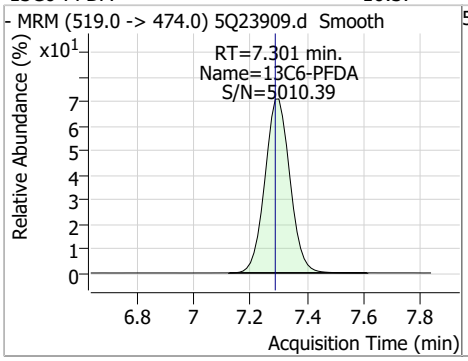
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	0.82	7.25	0.00	1491	549.0 -> 99.0	55.4	29.6	88.9

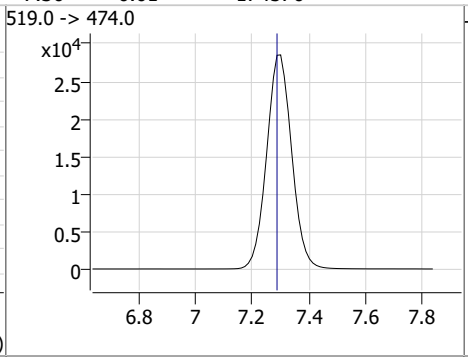


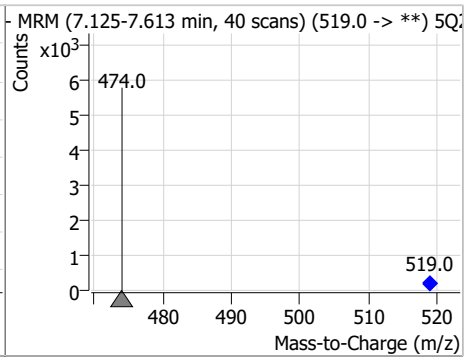




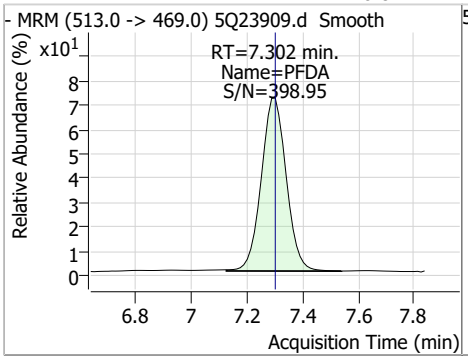
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	10.37	7.30	0.01	174576				

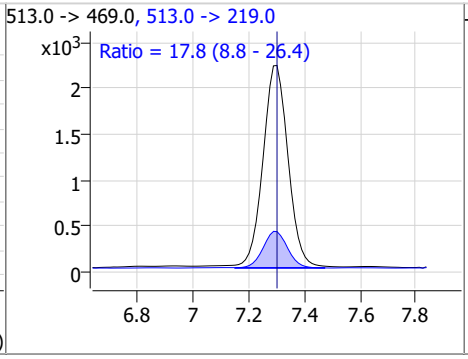


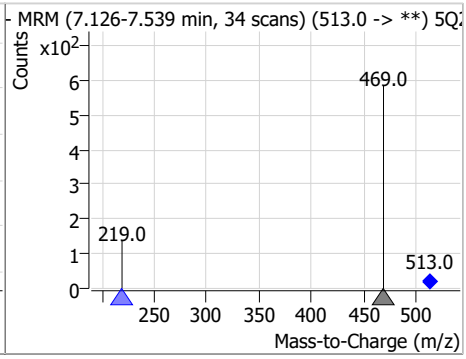




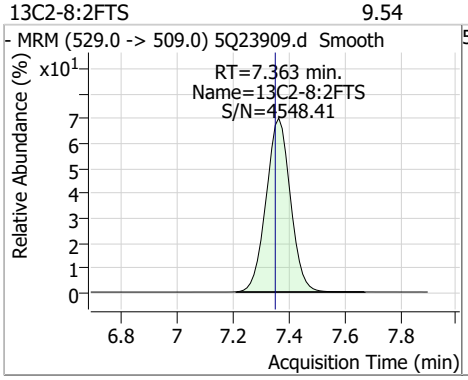
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	0.82	7.30	0.01	13681	513.0 -> 219.0	17.8	8.8	26.4

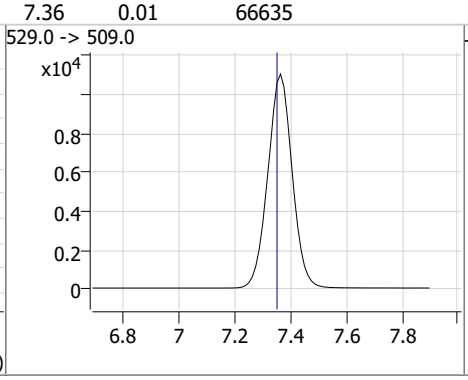


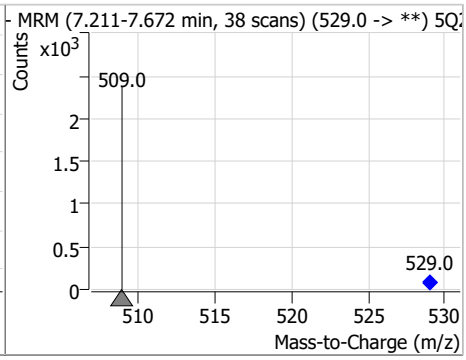




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	9.54	7.36	0.01	66635				

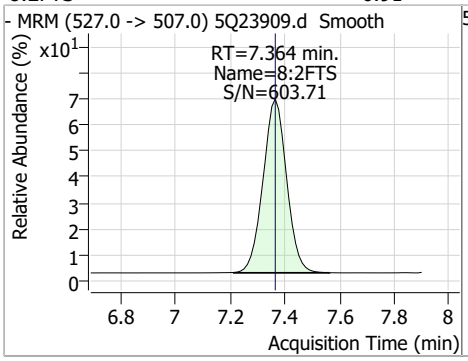


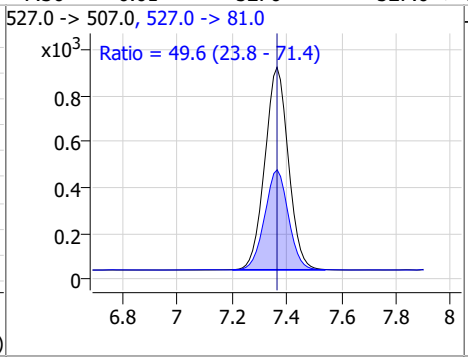


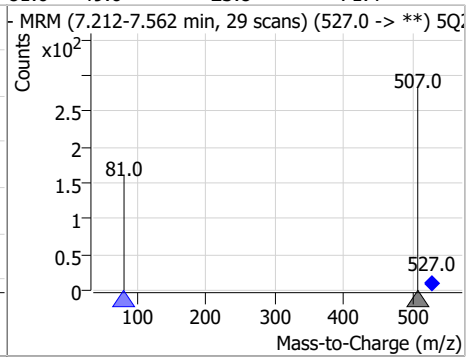


Perfluorinated Compounds by LC/MS/MS

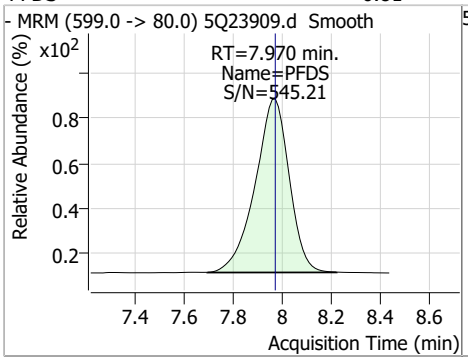
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	0.91	7.36	0.01	5276	527.0 -> 81.0	49.6	23.8	71.4

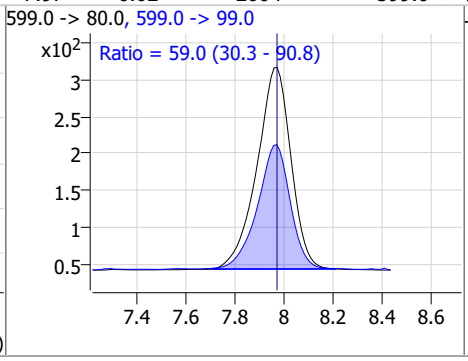


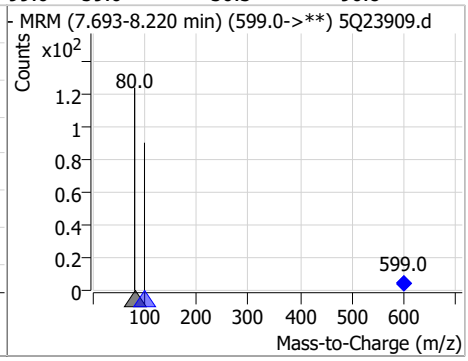




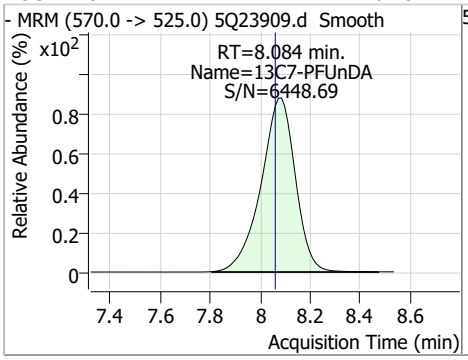
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	0.81	7.97	0.02	2664	599.0 -> 99.0	59.0	30.3	90.8

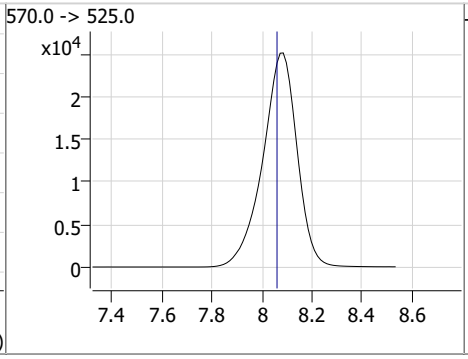


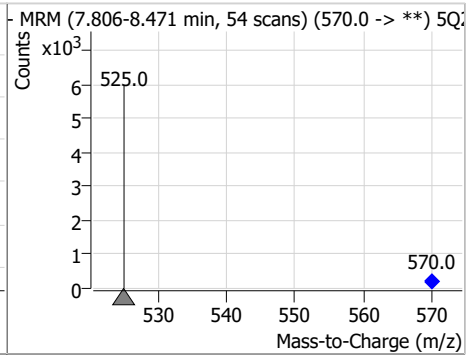




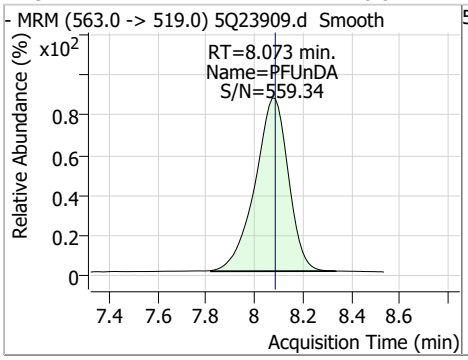
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	10.28	8.08	0.02	239630				

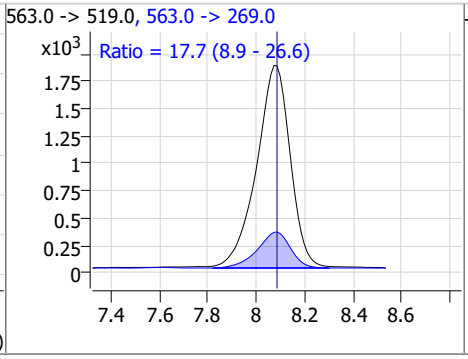


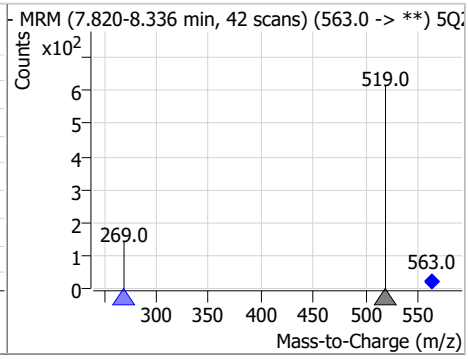




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	0.82	8.07	0.01	17708	563.0 -> 269.0	17.7	8.9	26.6

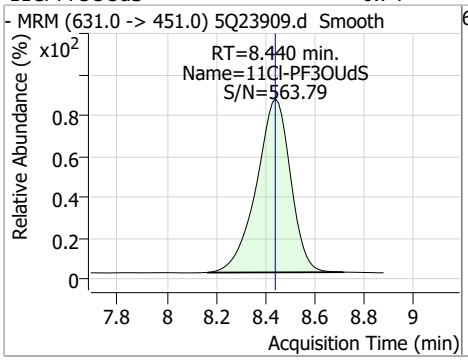


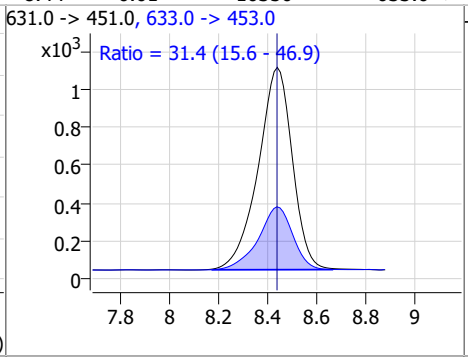


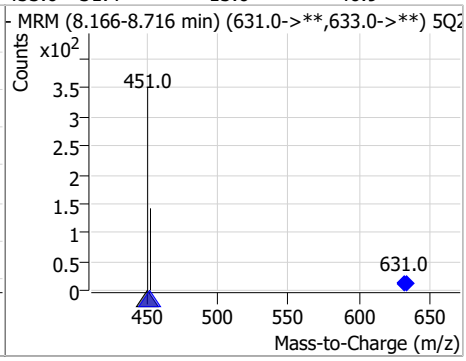


Perfluorinated Compounds by LC/MS/MS

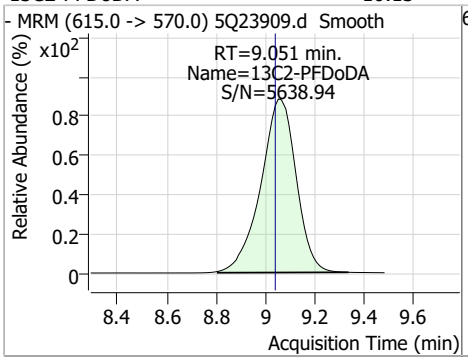
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	0.74	8.44	0.01	10350	633.0 -> 453.0	31.4	15.6	46.9

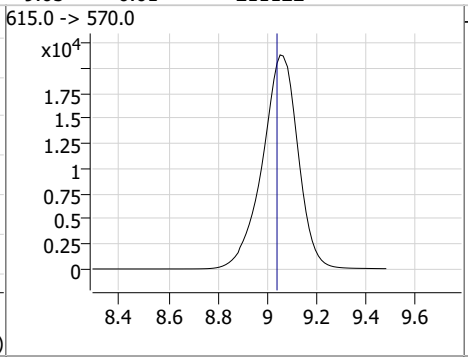


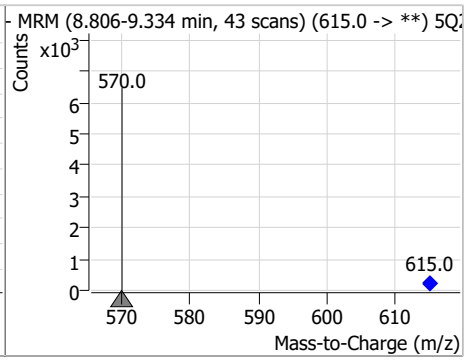




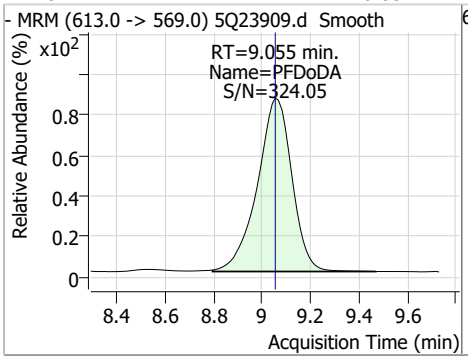
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	10.13	9.05	0.01	211122				

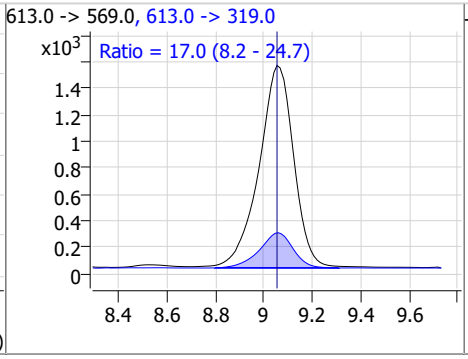


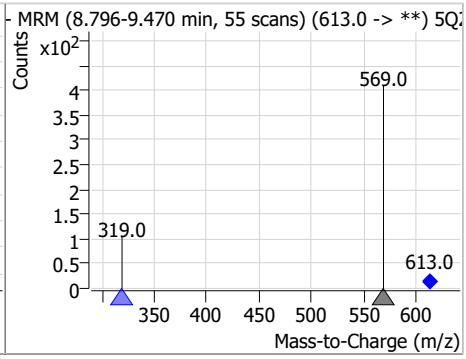




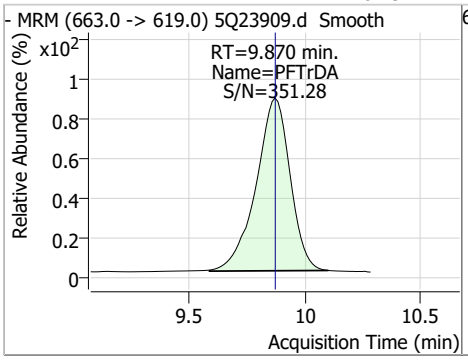
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	0.83	9.05	0.01	15104	613.0 -> 319.0	17.0	8.2	24.7

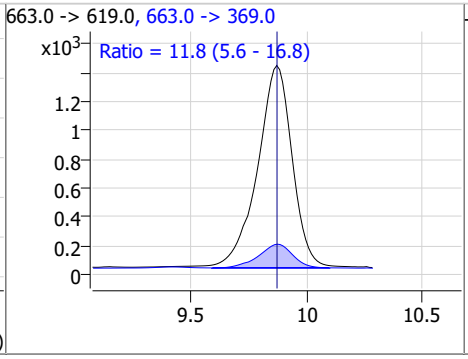


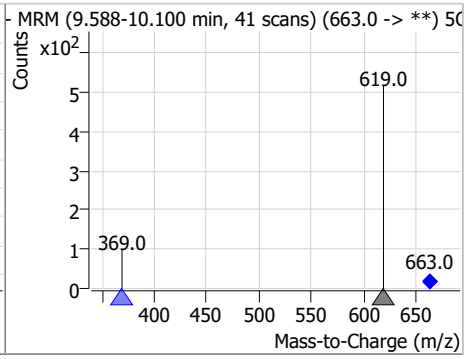




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	0.79	9.87	0.01	14255	663.0 -> 369.0	11.8	5.6	16.8

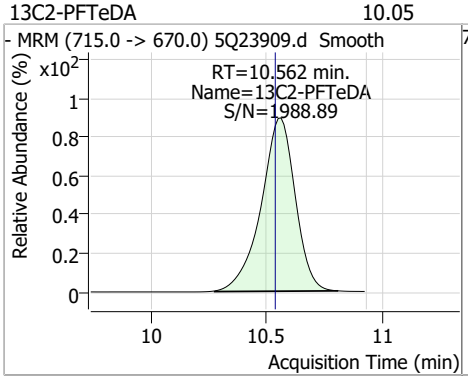


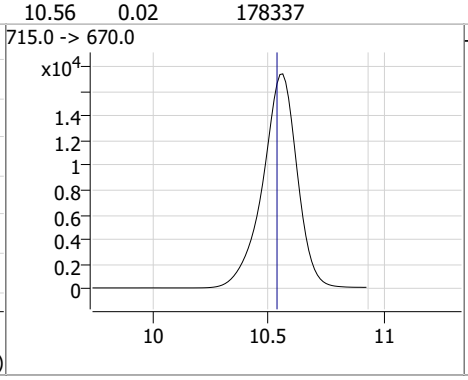


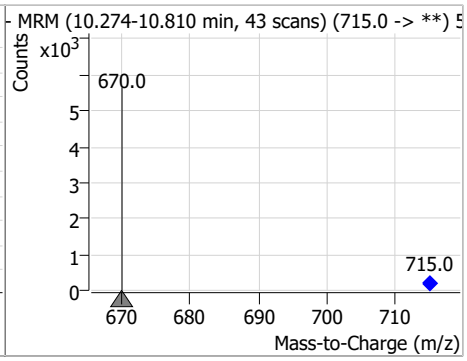


Perfluorinated Compounds by LC/MS/MS

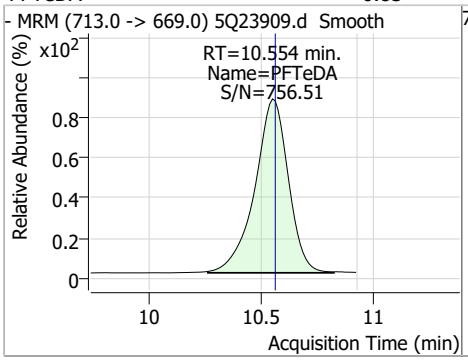
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	10.05	10.56	0.02	178337				

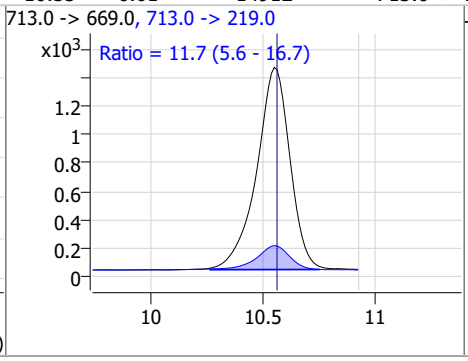


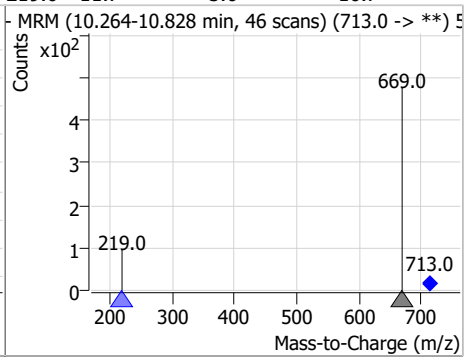




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	0.83	10.55	0.01	14912	713.0 -> 219.0	11.7	5.6	16.7







Manual Integration Approval Summary

Sample Number: S5Q375-IC375
Lab FileID: 5Q23909.D
Injection Time: 12/28/23 14:50

Method: EPA 537M QSM5.3 B-15
Analyst approved: 12/29/23 14:15 Lindsay Ritner
Supervisor approved: 01/02/24 14:05 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.45	Split peak
Perfluorooctanesulfonic acid	1763-23-1		6.73	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Natasha Gumtie 01/02/24 14:05

Perfluorinated Compounds by LC/MS/MS

Data File : 5Q23910.d
Operator : natashag
Acq. Method : 537_ID.m
Acq. Date-Time : 12/28/2023 3:06:59 PM
Sample Name : ic375-2
Vial : P1-A4
DA Method File : ID_122823_S5Q375.quantmethod.xml
Batch Name : s5q375.batch.bin
Sample Information : OP401,S5Q375,250,,,1.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	2.000	217.0 -> 172.0	47200	10.00	µg/L	0.013
M5-PFPeA	3.432	268.0 -> 223.0	76881	10.00	µg/L	0.000
M5-PFHxA	4.565	318.0 -> 273.0	119039	10.00	µg/L	0.012
M4-PFHpA	5.425	367.0 -> 322.0	119994	10.00	µg/L	0.012
M8-PFOA	6.137	421.0 -> 376.0	164054	10.00	µg/L	0.013
M9-PFNA	6.768	472.0 -> 427.0	164712	10.00	µg/L	0.012
M6-PFDA	7.288	519.0 -> 474.0	170493	10.00	µg/L	0.000
M7-PFUnDA	8.072	570.0 -> 525.0	235571	10.00	µg/L	0.012
M2-PFDoDA	9.051	615.0 -> 570.0	210174	10.00	µg/L	0.012
M2-PFTeDA	10.549	715.0 -> 670.0	174121	10.00	µg/L	0.012
M8-FOSA	6.192	506.0 -> 78.0	41349	10.00	µg/L	0.000
M3-PFBS	3.637	302.0 -> 99.0	9617	10.00	µg/L	0.000
M3-PFHxS	5.444	402.0 -> 99.0	11763	10.00	µg/L	0.012
M8-PFOS	6.729	507.0 -> 99.0	15599	10.00	µg/L	0.000
M2-4:2FTS	4.474	329.0 -> 309.0	37686	10.00	µg/L	0.000
M2-6:2FTS	6.136	429.0 -> 409.0	65765	10.00	µg/L	0.000
M2-8:2FTS	7.363	529.0 -> 509.0	65503	10.00	µg/L	0.012
M3-MeFOSAA	6.747	573.0 -> 419.0	31545	10.00	µg/L	0.000
M3-HFPO-DA	4.819	287.0 -> 169.0	6300	10.00	µg/L	0.000
M3-MeFOSA	6.589	515.0 -> 169.0	13789	10.00	µg/L	0.000
M5-EtFOSAA	6.845	589.0 -> 419.0	27423	10.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.474	329.0 -> 309.0	37686	9.37	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 93.7%		
13C2-6:2FTS	6.136	429.0 -> 409.0	65765	9.28	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 92.8%		
13C2-8:2FTS	7.363	529.0 -> 509.0	65503	9.38	µg/L	0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 93.8%		
13C2-PFDoDA	9.051	615.0 -> 570.0	210174	10.08	µg/L	0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.8%		
13C2-PFTeDA	10.549	715.0 -> 670.0	174121	9.81	µg/L	0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 98.1%		
13C3-PFBS	3.637	302.0 -> 99.0	9617	9.91	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.1%		
13C3-PFHxS	5.444	402.0 -> 99.0	11763	9.97	µg/L	0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.7%		
13C4-PFBA	2.000	217.0 -> 172.0	47200	9.99	µg/L	0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.9%		
13C4-PFHpA	5.425	367.0 -> 322.0	119994	9.98	µg/L	0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.8%		
13C5-PFHxA	4.565	318.0 -> 273.0	119039	9.96	µg/L	0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.6%		
13C5-PFPeA	3.432	268.0 -> 223.0	76881	9.75	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 97.5%		
13C6-PFDA	7.288	519.0 -> 474.0	170493	10.13	µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

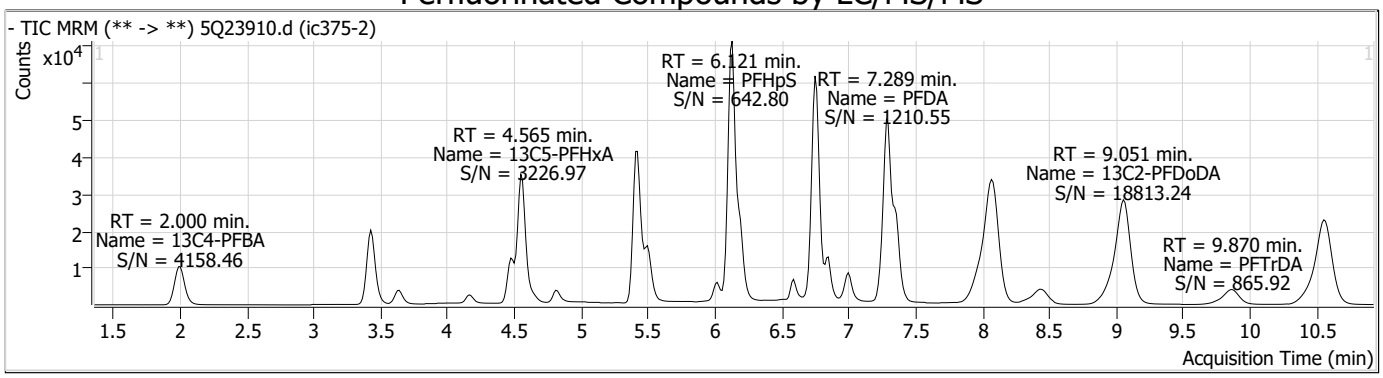
Compound	RT	Transition	Response	Conc. Units		Dev(Min)
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.3%		
13C7-PFUnDA	8.072	570.0 -> 525.0	235571	10.11 µg/L		0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.1%		
13C8-FOSA	6.192	506.0 -> 78.0	41349	10.20 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 102.0%		
13C8-PFOA	6.137	421.0 -> 376.0	164054	9.91 µg/L		0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.1%		
13C8-PFOS	6.729	507.0 -> 99.0	15599	9.92 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.2%		
13C9-PFNA	6.768	472.0 -> 427.0	164712	9.92 µg/L		0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.2%		
d3-MeFOSAA	6.747	573.0 -> 419.0	31545	10.35 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 103.5%		
13C3-HFPO-DA	4.819	287.0 -> 169.0	6300	9.76 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 97.6%		
d3-MeFOSA	6.589	515.0 -> 169.0	13789	9.83 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 98.3%		
d5-EtFOSAA	6.845	589.0 -> 419.0	27423	9.99 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.9%		
Target Compounds						QValue
4:2FTS	4.475	327.0 -> 307.0	8102	2.18 µg/L		98
		327.0 -> 81.0	4676			
6:2FTS	6.136	427.0 -> 407.0	12832	2.13 µg/L		98
		427.0 -> 81.0	5375			
8:2FTS	7.364	527.0 -> 507.0	12616	2.20 µg/L		98
		527.0 -> 81.0	6133			
EtFOSAA	6.846	584.0 -> 419.0	4174	1.87 µg/L		92
		584.0 -> 483.0	2668			
FOSA	6.194	498.0 -> 78.0	7117	1.88 µg/L		98
		498.0 -> 478.0	272			
MeFOSAA	6.748	570.0 -> 419.0	4298	1.75 µg/L		97
		570.0 -> 512.0	1691			
PFBA	1.994	213.0 -> 169.0	8478	1.94 µg/L		100
PFBS	3.640	299.0 -> 80.0	4696	1.97 µg/L		99
		299.0 -> 99.0	2088			
PFDA	7.289	513.0 -> 469.0	30391	1.88 µg/L		99
		513.0 -> 219.0	5476			
PFDoDA	9.055	613.0 -> 569.0	34139	1.89 µg/L		99
		613.0 -> 319.0	5790			
PFDS	7.957	599.0 -> 80.0	6080	1.89 µg/L		99
		599.0 -> 99.0	3710			
PFHpA	5.426	363.0 -> 319.0	27203	1.98 µg/L		98
		363.0 -> 169.0	5502			
PFHpS	6.121	449.0 -> 80.0	4149	1.90 µg/L		97
		449.0 -> 99.0	2280			
PFHxA	4.565	313.0 -> 269.0	21638	1.88 µg/L		99
		313.0 -> 119.0	973			
PFHxS	5.446	399.0 -> 80.0	4215	1.93 µg/L	m	99
		399.0 -> 99.0	2378			
PFNA	6.769	463.0 -> 419.0	28946	1.92 µg/L		99
		463.0 -> 219.0	6233			
PFNS	7.248	549.0 -> 80.0	3431	1.90 µg/L		95
		549.0 -> 99.0	2149			
PFOA	6.137	413.0 -> 369.0	30944	1.92 µg/L		98
		413.0 -> 169.0	7970			
PFOS	6.730	499.0 -> 80.0	5331	1.93 µg/L	m	96

Perfluorinated Compounds by LC/MS/MS

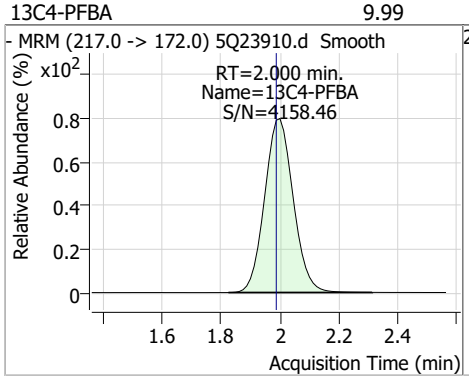
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		499.0 -> 99.0	2543			
PFPeA	3.434	263.0 -> 219.0	14525	1.95	µg/L	100
PFPeS	4.648	349.0 -> 80.0	3351	2.00	µg/L	98
		349.0 -> 99.0	1712			
PFTeDA	10.554	713.0 -> 669.0	34233	1.94	µg/L	99
		713.0 -> 219.0	3917			
PFTrDA	9.870	663.0 -> 619.0	33038	1.83	µg/L	99
		663.0 -> 369.0	3772			
PFUnDA	8.073	563.0 -> 519.0	39766	1.87	µg/L	99
		563.0 -> 269.0	7260			
11Cl-PF3OUdS	8.427	631.0 -> 451.0	25957	1.87	µg/L	100
		633.0 -> 453.0	8087			
9Cl-PF3ONS	6.999	531.0 -> 351.0	22624	1.80	µg/L	96
		533.0 -> 353.0	7705			
ADONA	5.514	377.0 -> 251.0	37388	1.90	µg/L	98
		377.0 -> 85.0	13811			
HFPO-DA	4.827	329.0 -> 169.0	5604	1.96	µg/L	98
		285.0 -> 169.0	1234			
MeFOSA	6.590	512.0 -> 169.0	2394	2.01	µg/L	97
		512.0 -> 219.0	2030			
4-PFECHS	6.018	461.0 -> 381.0	13961	1.96	µg/L	98
		461.0 -> 99.0	7420			
FBSA	4.170	298.0 -> 78.0	8031	2.02	µg/L	99
		298.0 -> 64.0	761			
FHxSA	5.409	398.0 -> 78.0	8629	2.00	µg/L	98
		398.0 -> 64.0	851			

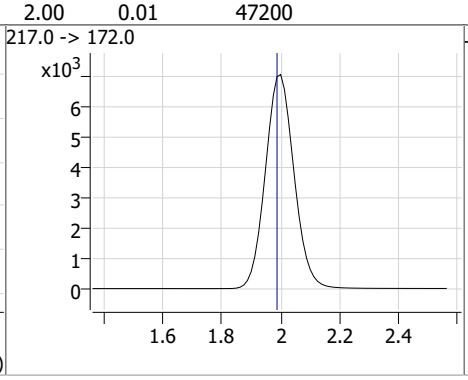
 # = Qualifier out of range, m = manually integrated, + = Area summed

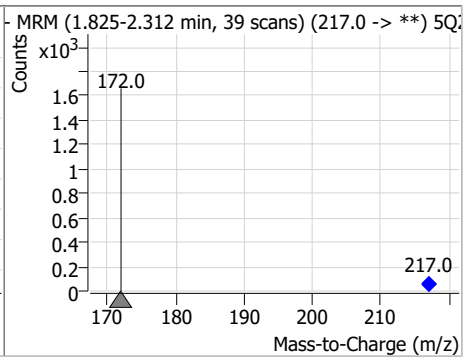
Perfluorinated Compounds by LC/MS/MS



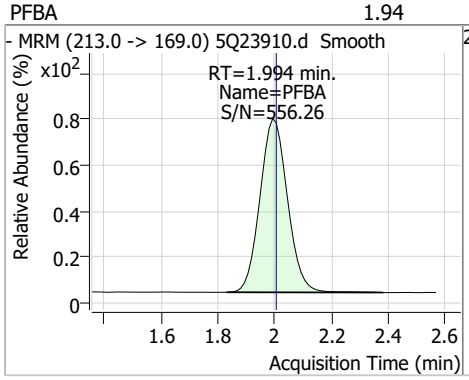
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	9.99	2.00	0.01	47200				

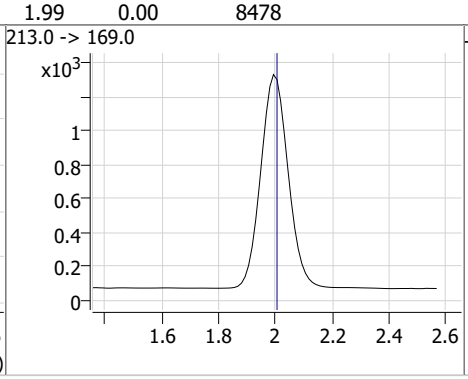


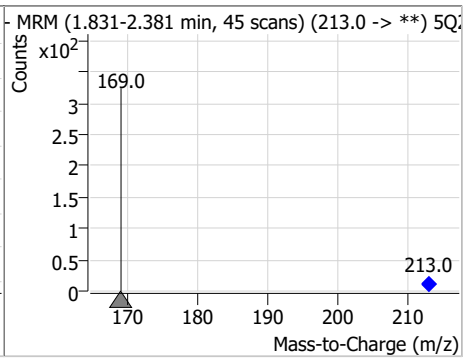




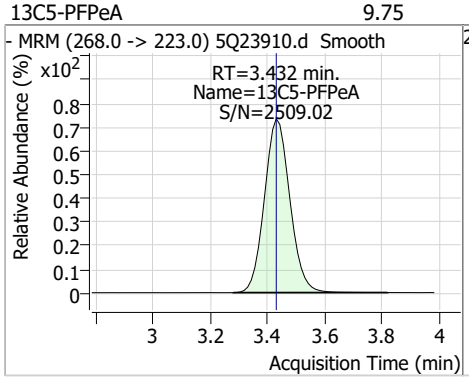
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	1.94	1.99	0.00	8478				

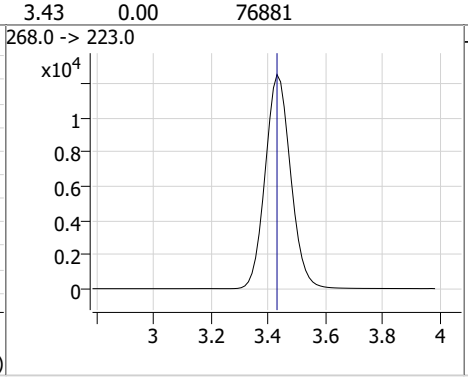


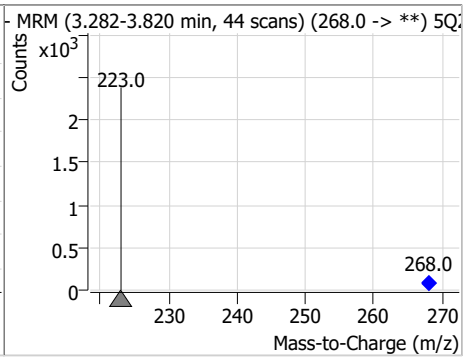




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	9.75	3.43	0.00	76881				

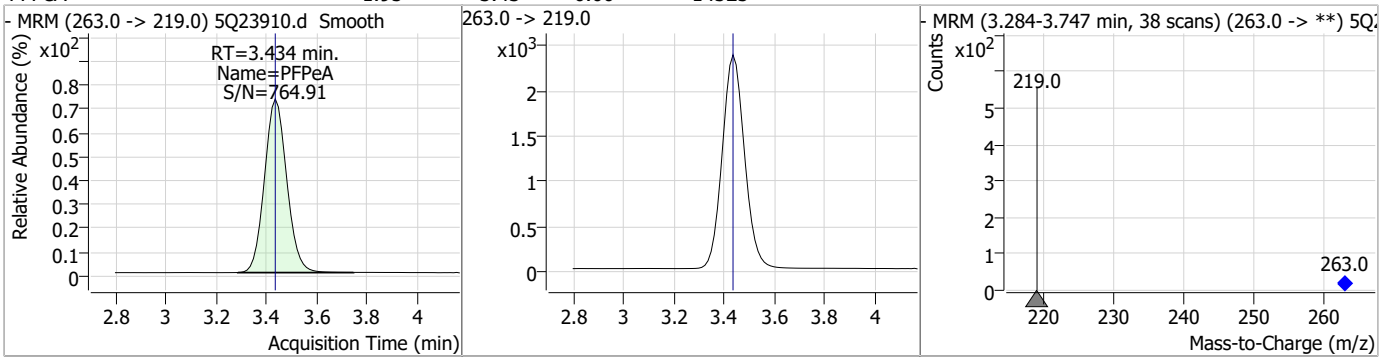




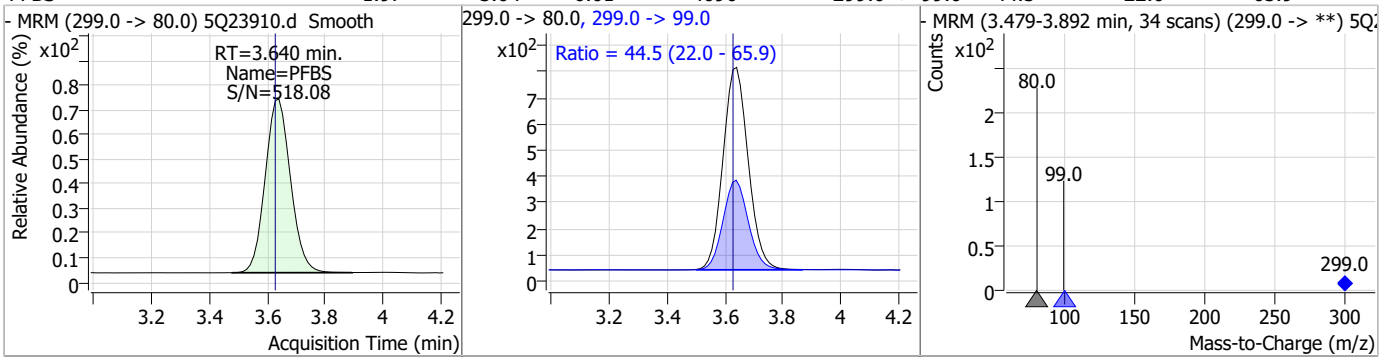


Perfluorinated Compounds by LC/MS/MS

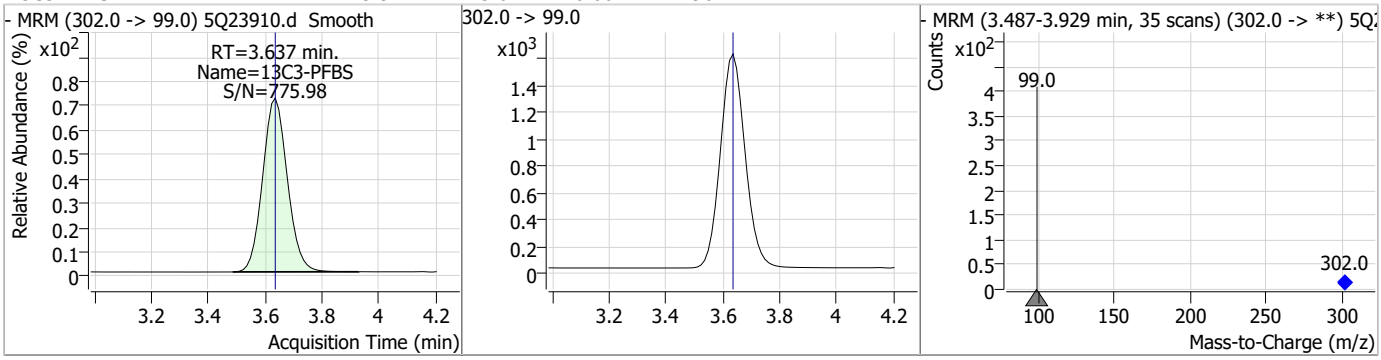
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	1.95	3.43	0.00	14525				



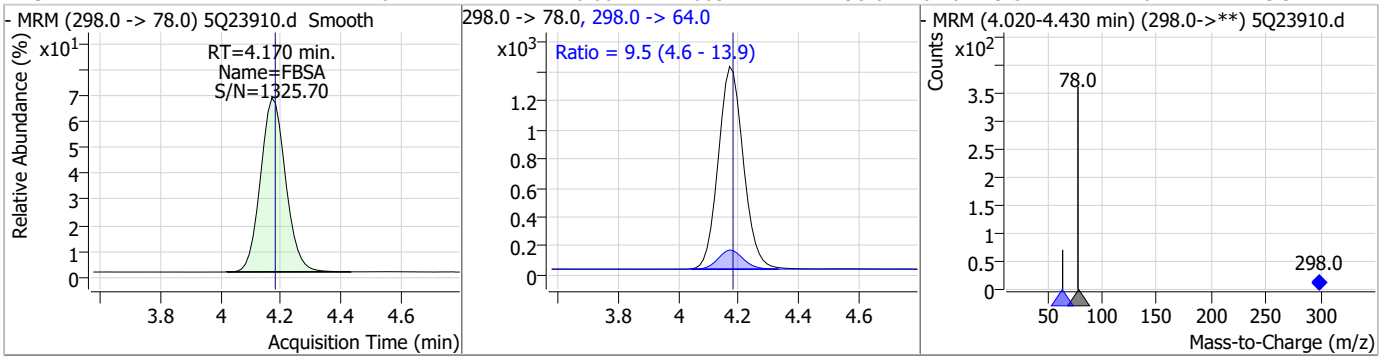
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	1.97	3.64	0.01	4696	299.0 -> 99.0	44.5	22.0	65.9



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	9.91	3.64	0.00	9617				

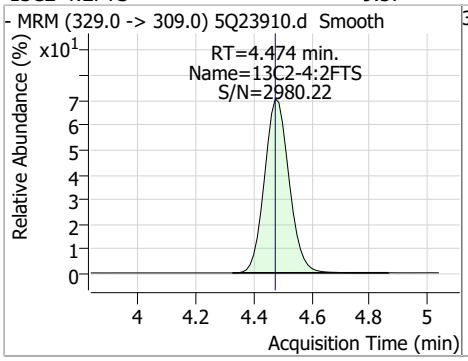


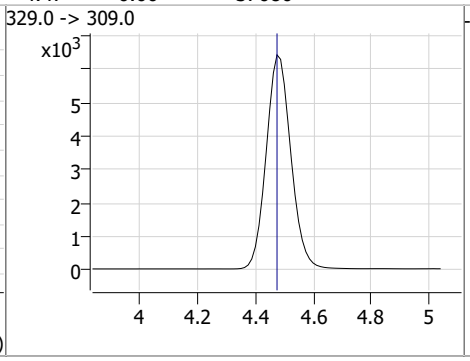
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	2.02	4.17	0.00	8031	298.0 -> 64.0	9.5	4.6	13.9

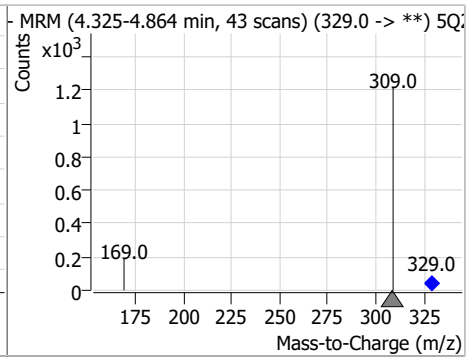


Perfluorinated Compounds by LC/MS/MS

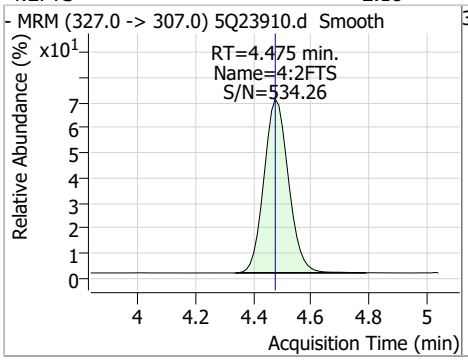
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	9.37	4.47	0.00	37686				

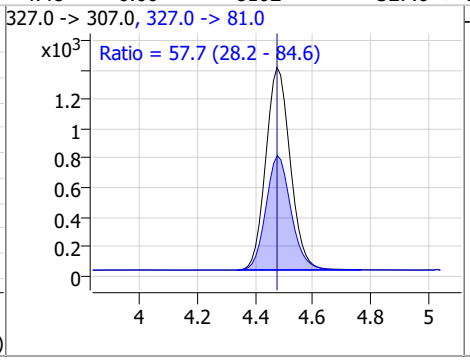


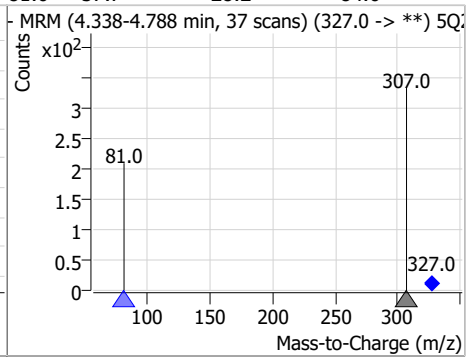




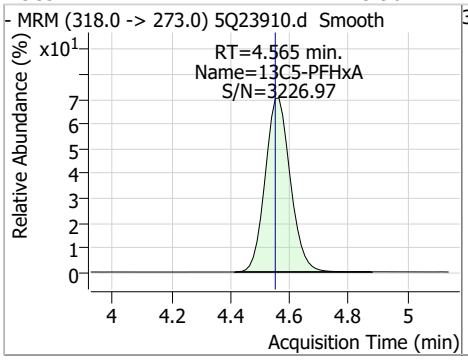
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	2.18	4.48	0.00	8102	327.0 -> 81.0	57.7	28.2	84.6

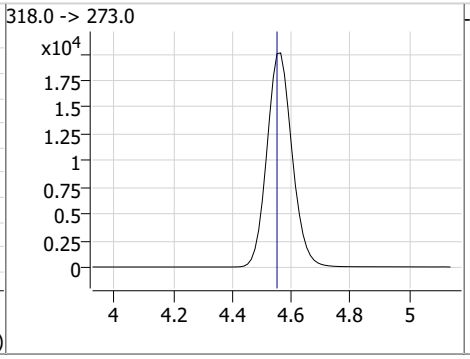


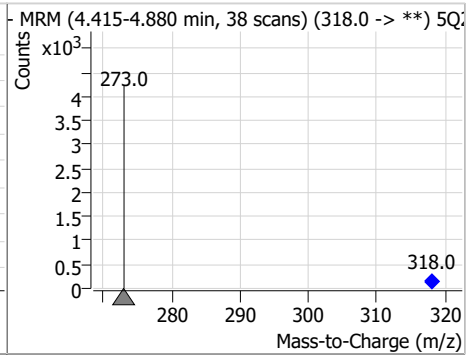




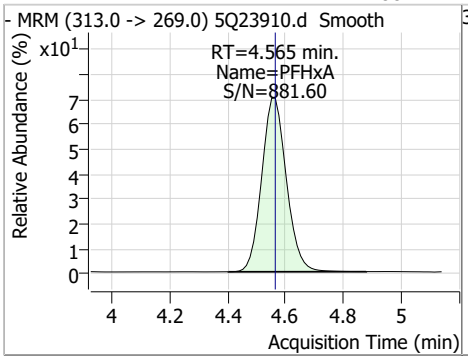
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	9.96	4.56	0.01	119039				

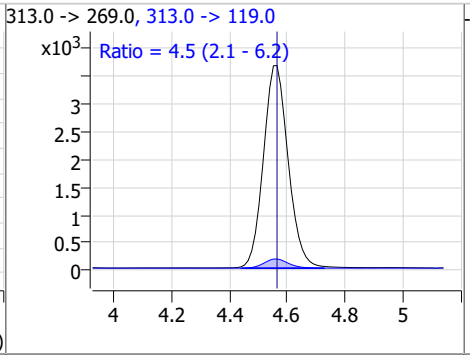


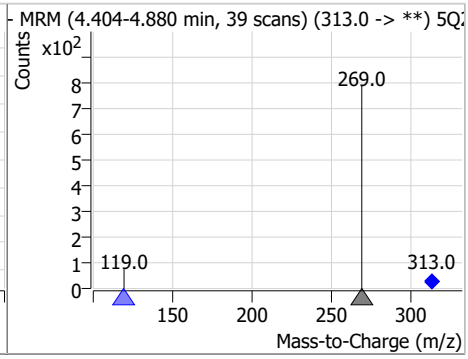




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	1.88	4.57	0.01	21638	313.0 -> 119.0	4.5	2.1	6.2

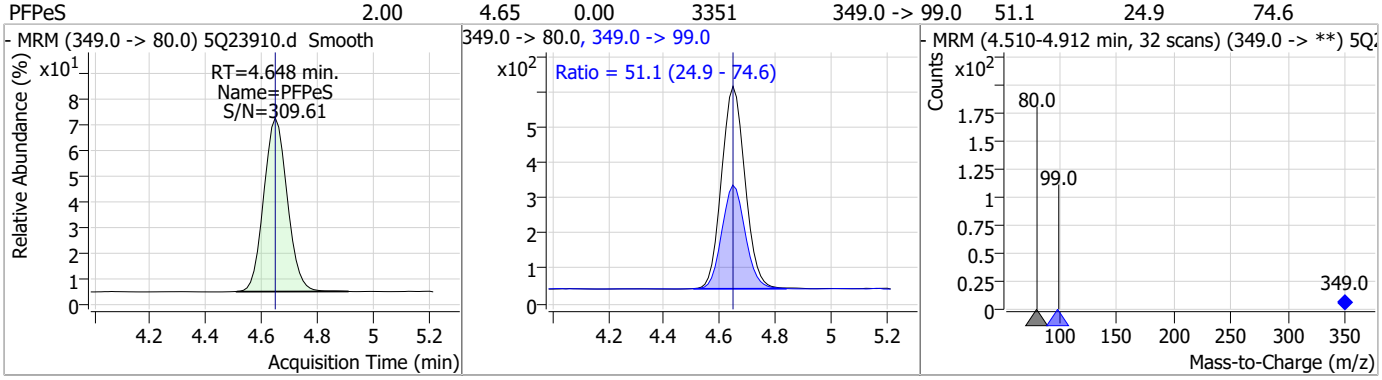




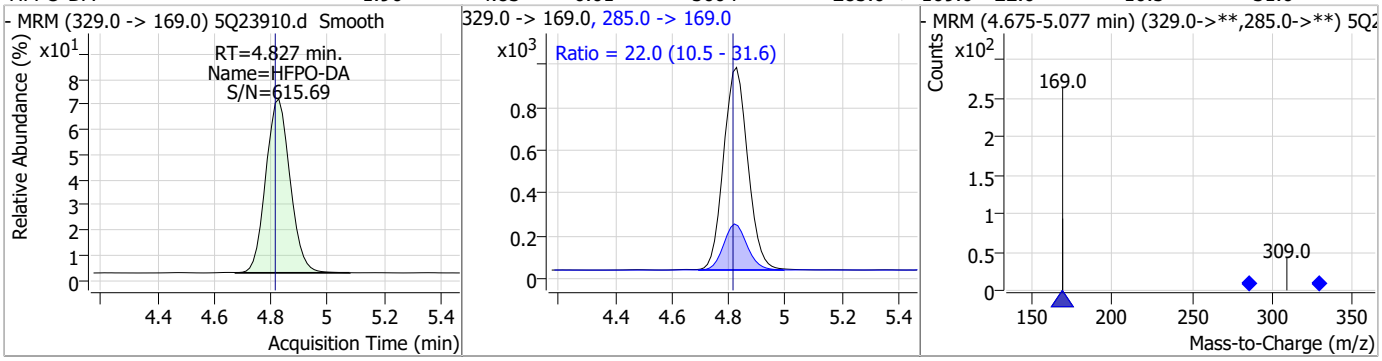


Perfluorinated Compounds by LC/MS/MS

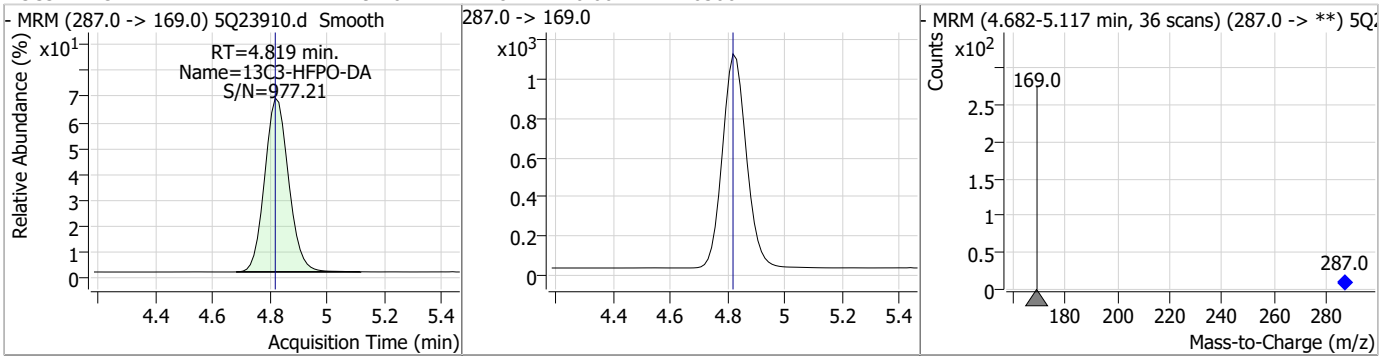
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	2.00	4.65	0.00	3351	349.0 -> 99.0	51.1	24.9	74.6



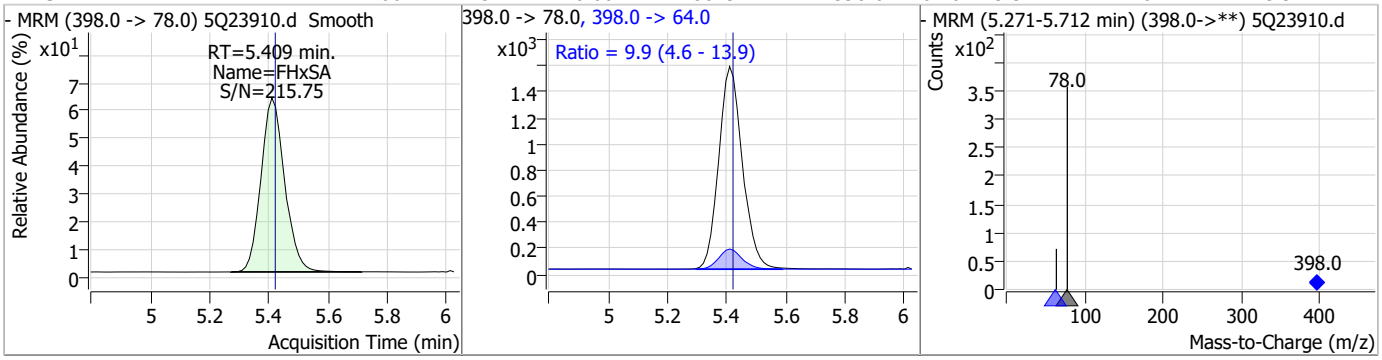
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	1.96	4.83	0.01	5604	285.0 -> 169.0	22.0	10.5	31.6



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	9.76	4.82	0.00	6300				

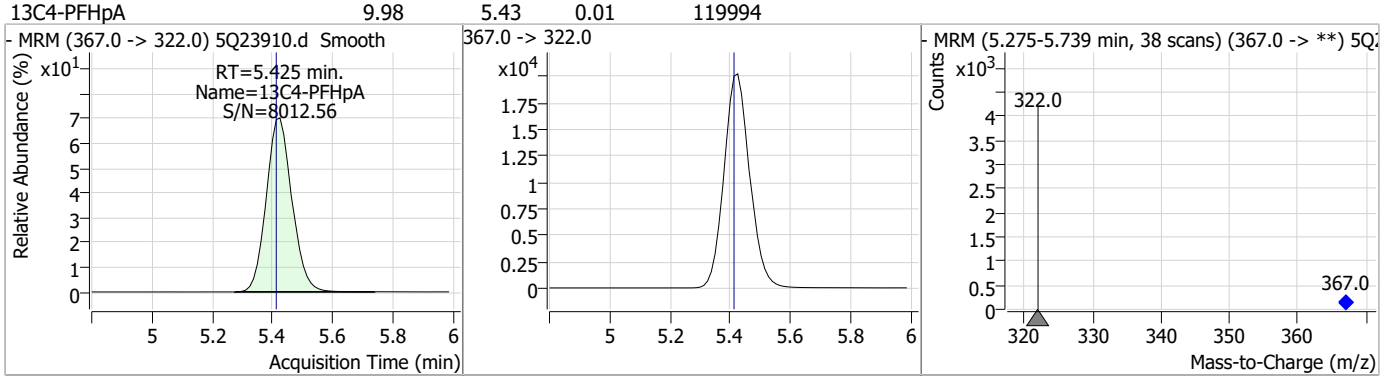


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	2.00	5.41	0.00	8629	398.0 -> 64.0	9.9	4.6	13.9

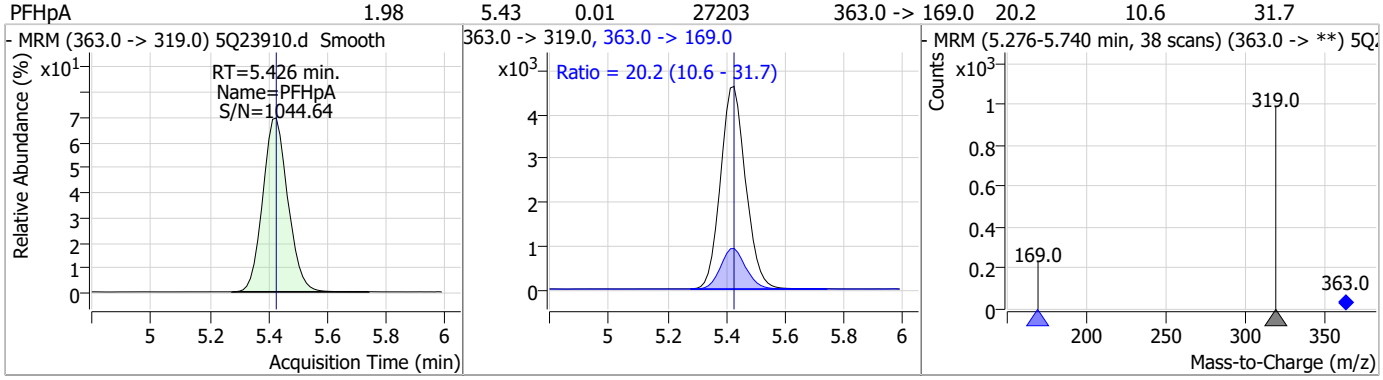


Perfluorinated Compounds by LC/MS/MS

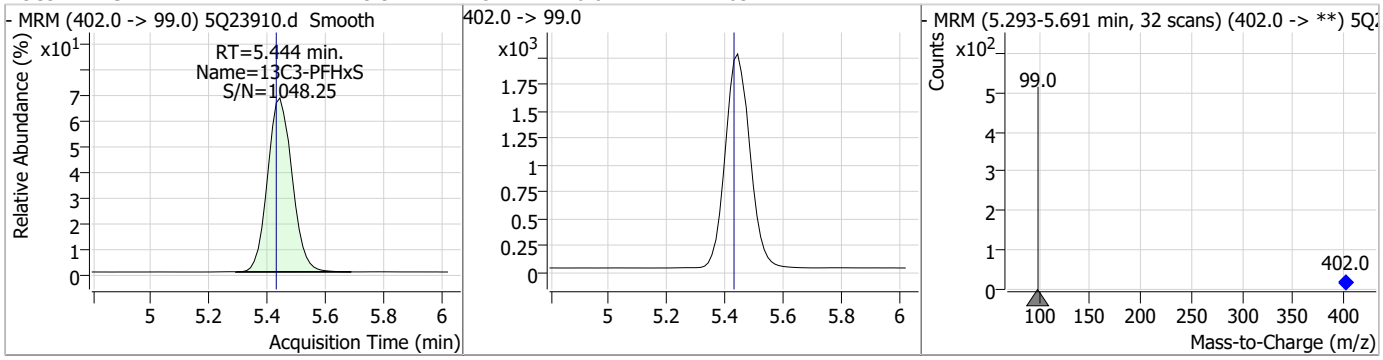
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	9.98	5.43	0.01	119994				



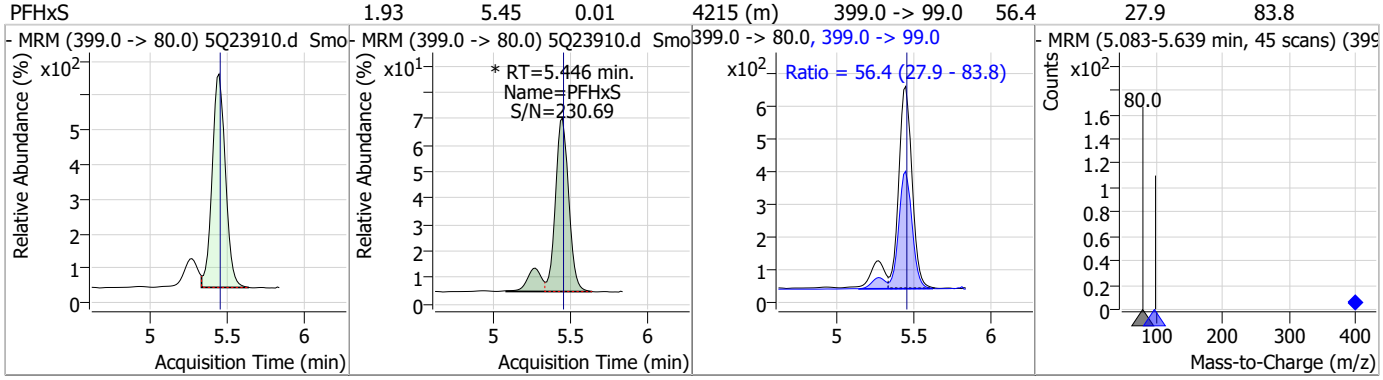
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	1.98	5.43	0.01	27203	363.0 -> 169.0	20.2	10.6	31.7



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	9.97	5.44	0.01	11763				

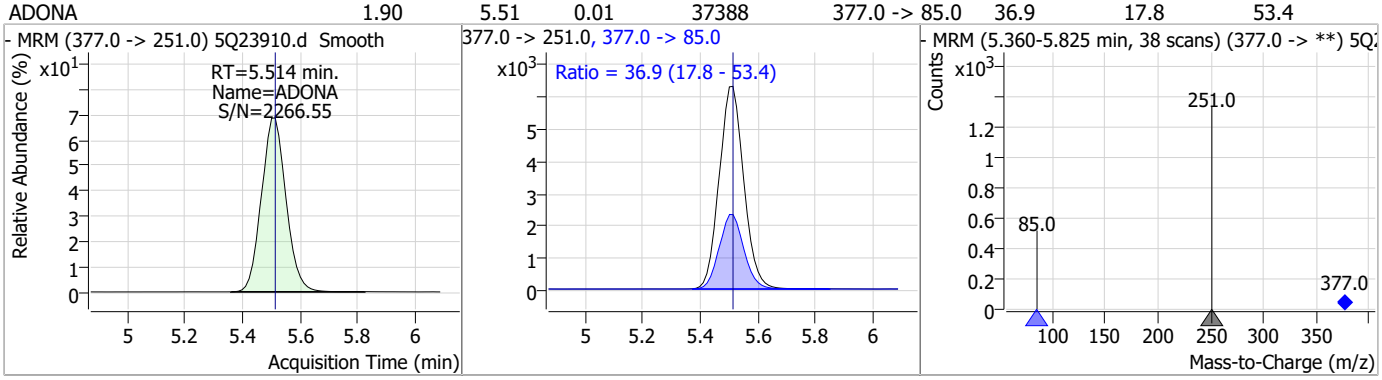


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	1.93	5.45	0.01	4215 (m)	399.0 -> 99.0	56.4	27.9	83.8

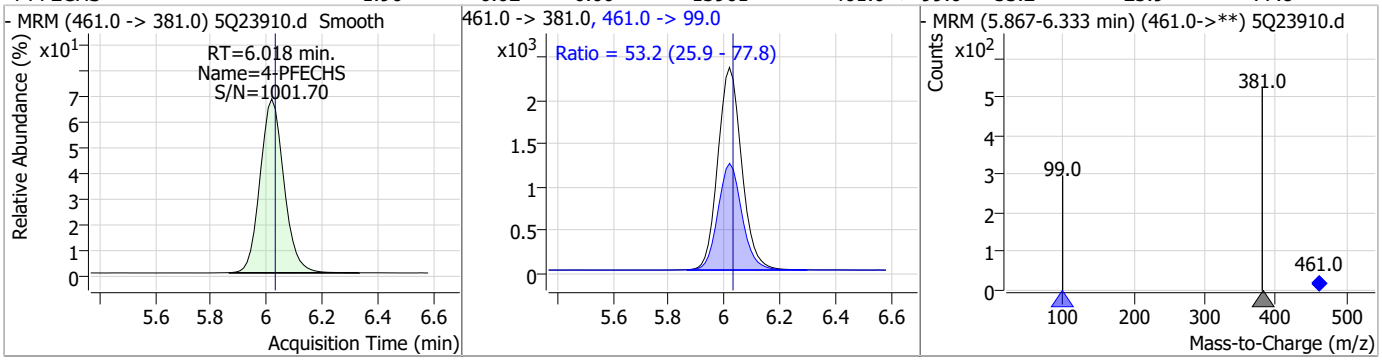


Perfluorinated Compounds by LC/MS/MS

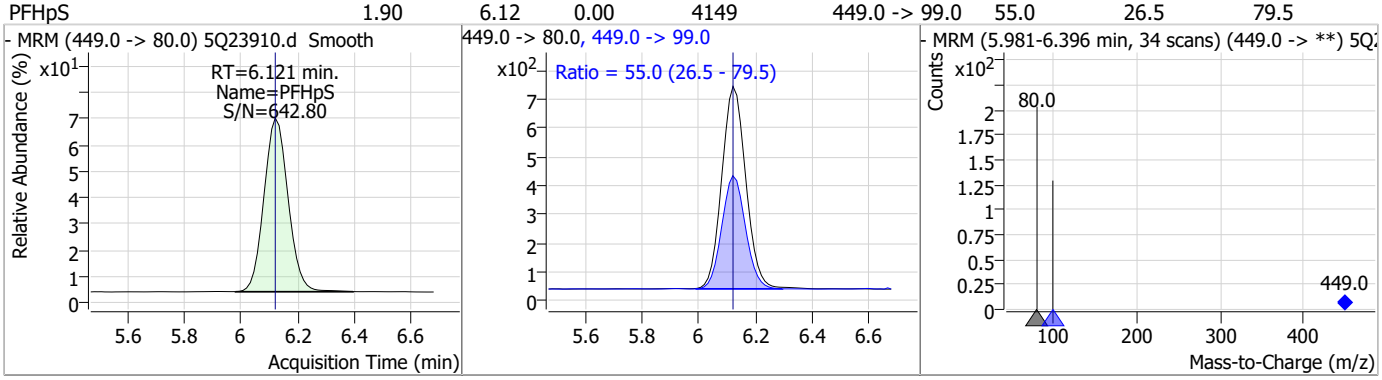
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	1.90	5.51	0.01	37388	377.0 -> 85.0	36.9	17.8	53.4



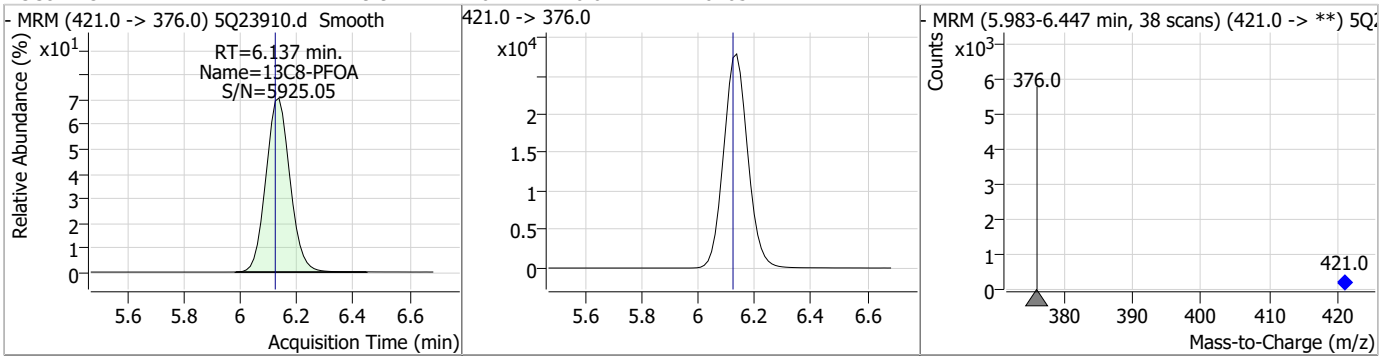
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS	1.96	6.02	0.00	13961	461.0 -> 99.0	53.2	25.9	77.8



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	1.90	6.12	0.00	4149	449.0 -> 99.0	55.0	26.5	79.5

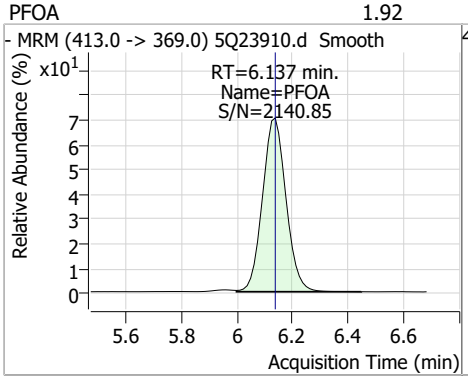


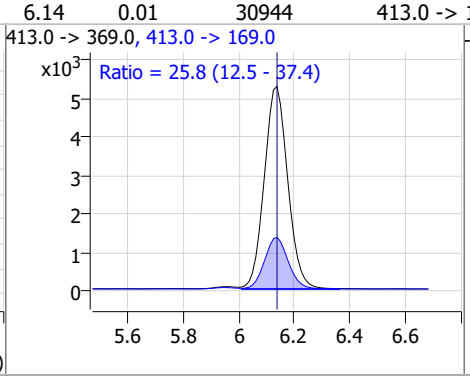
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	9.91	6.14	0.01	164054				

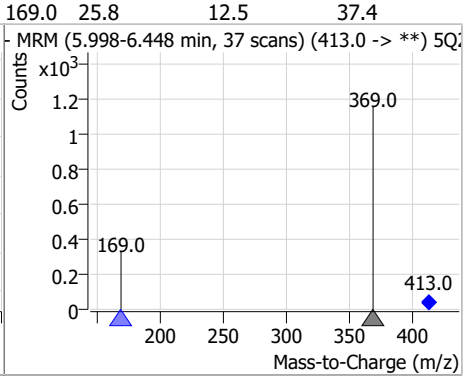


Perfluorinated Compounds by LC/MS/MS

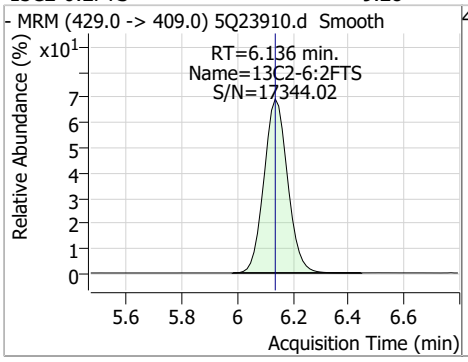
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	1.92	6.14	0.01	30944	413.0 -> 169.0	25.8	12.5	37.4

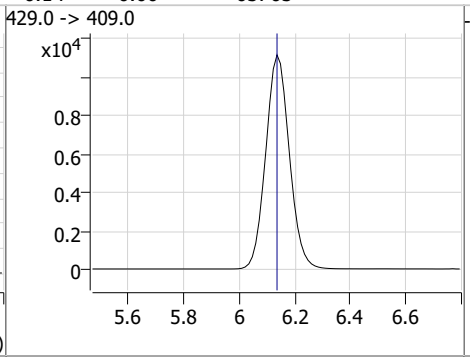


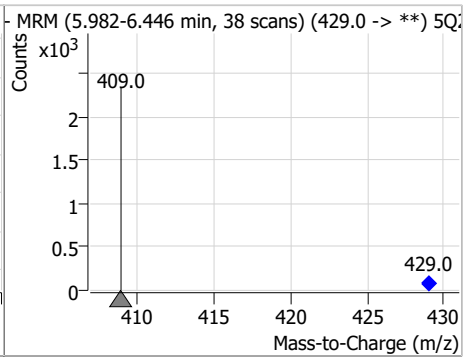




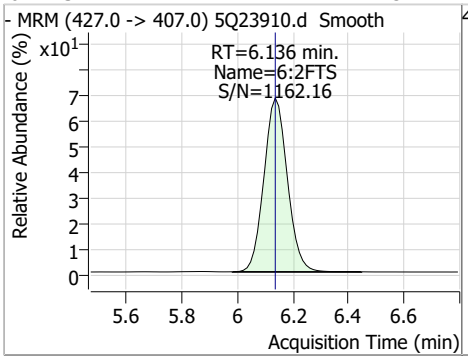
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	9.28	6.14	0.00	65765				

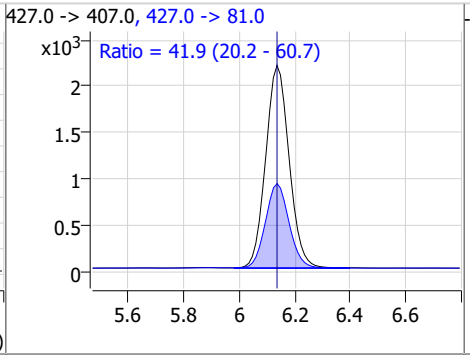


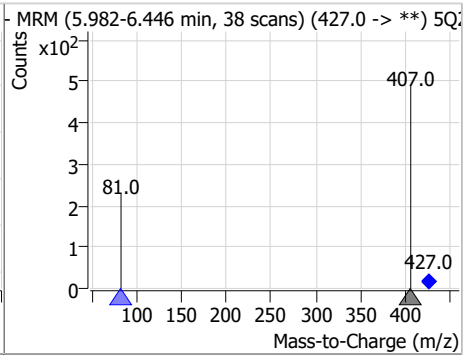




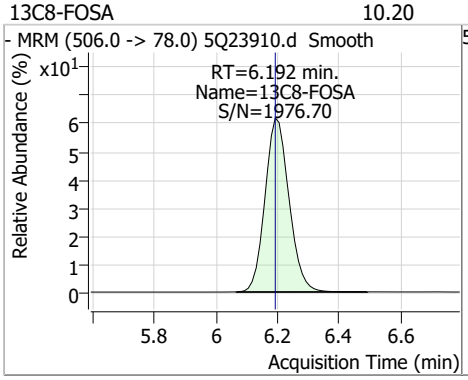
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	2.13	6.14	0.00	12832	427.0 -> 81.0	41.9	20.2	60.7

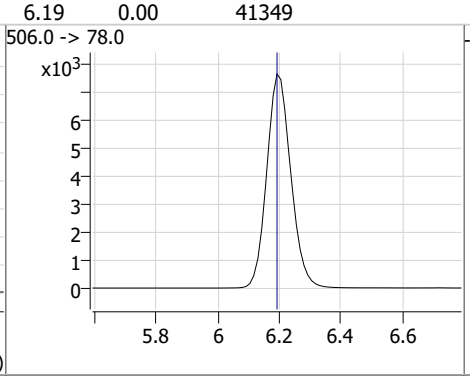


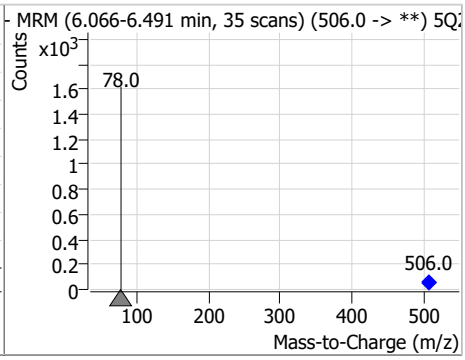




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	10.20	6.19	0.00	41349				

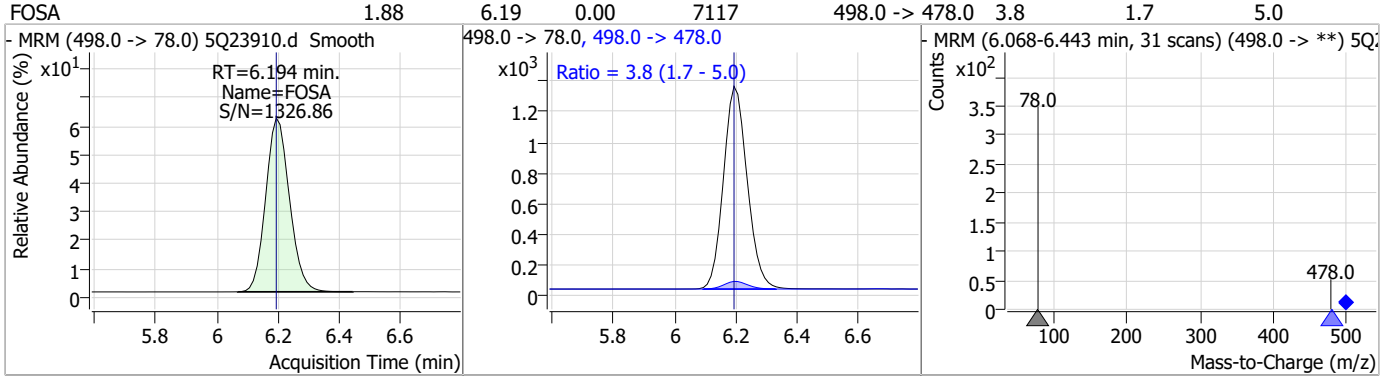




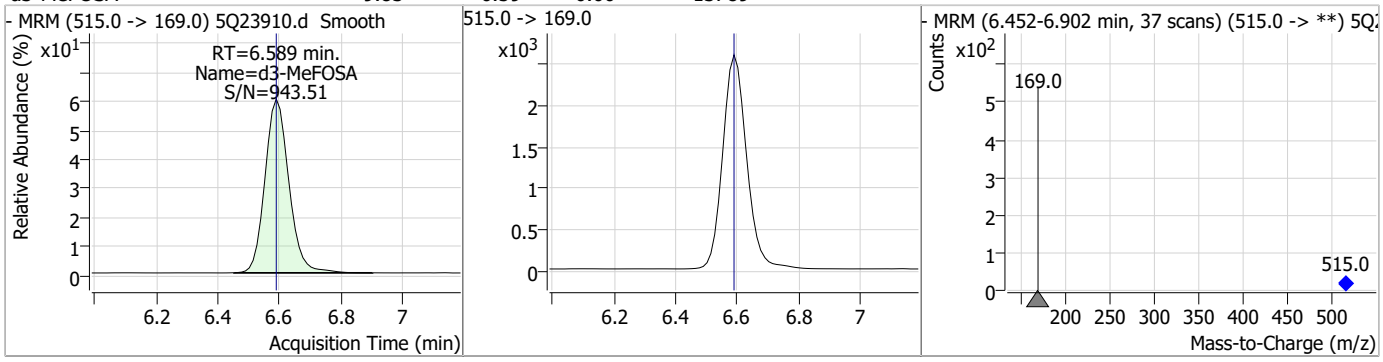


Perfluorinated Compounds by LC/MS/MS

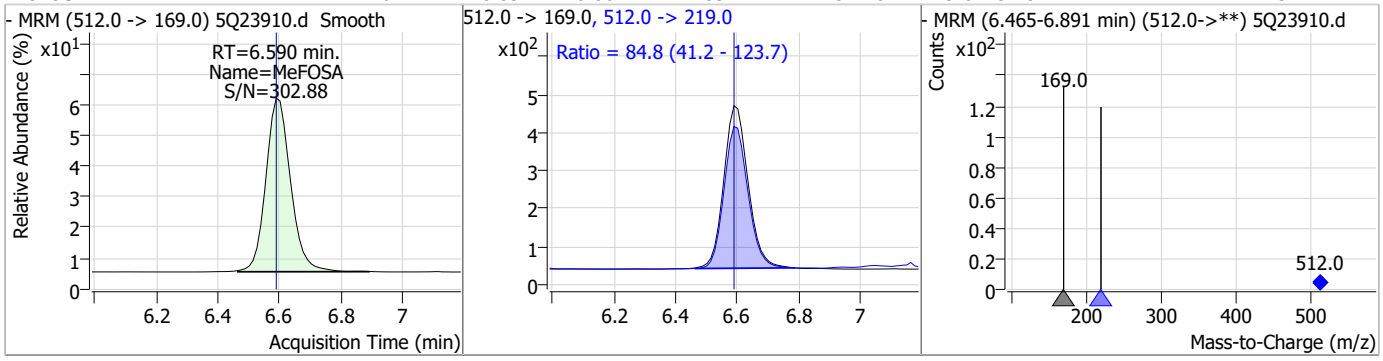
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	1.88	6.19	0.00	7117	498.0 -> 478.0	3.8	1.7	5.0



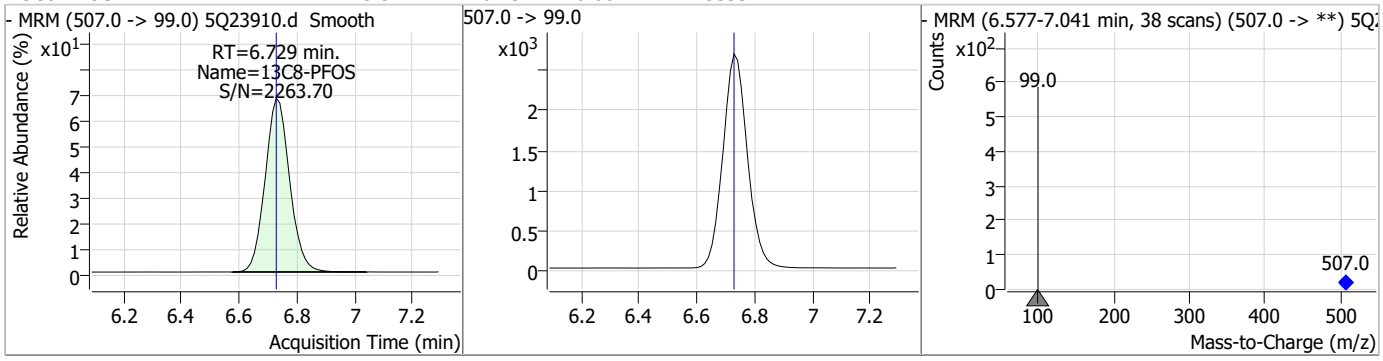
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	9.83	6.59	0.00	13789				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	2.01	6.59	0.00	2394	512.0 -> 219.0	84.8	41.2	123.7

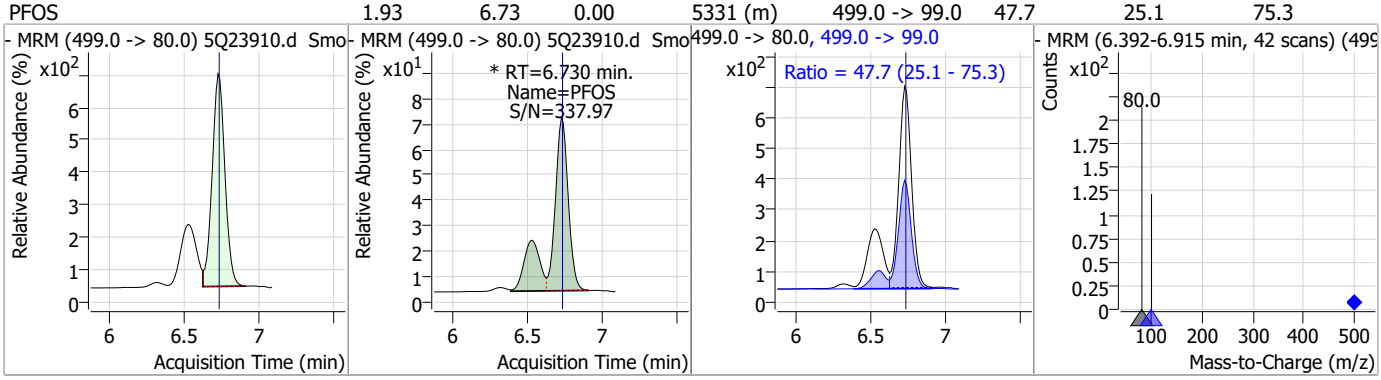


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	9.92	6.73	0.00	15599				

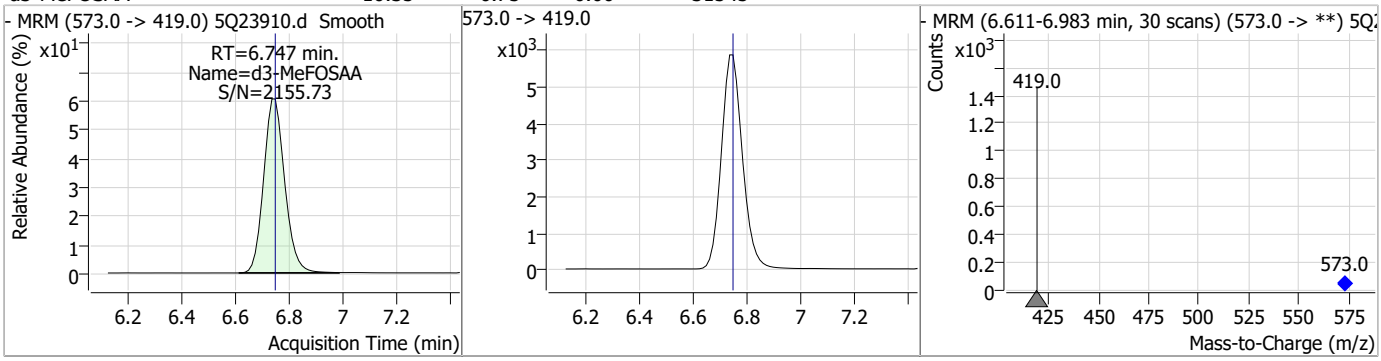


Perfluorinated Compounds by LC/MS/MS

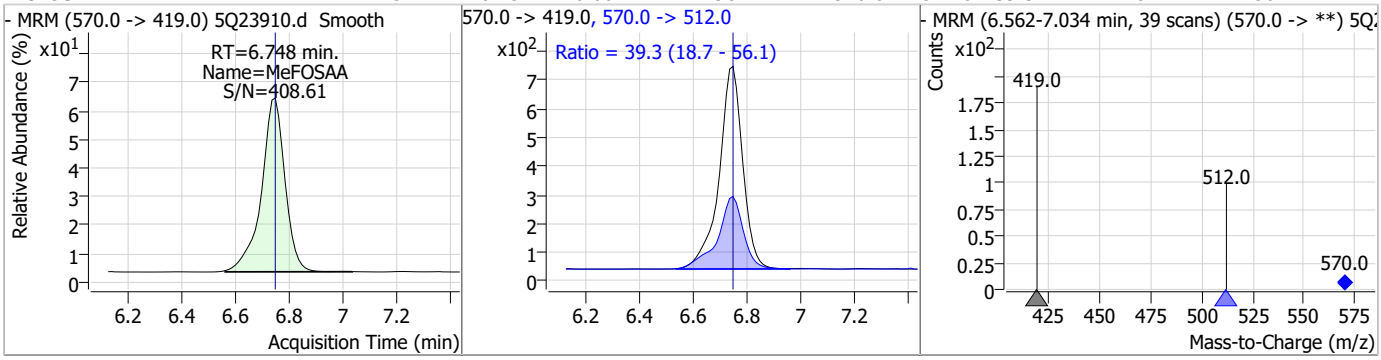
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	1.93	6.73	0.00	5331 (m)	499.0 -> 99.0	47.7	25.1	75.3



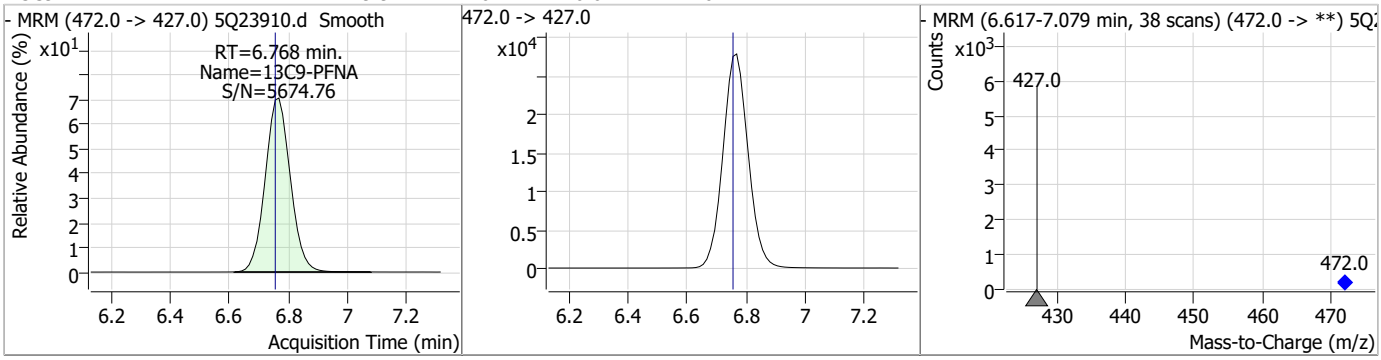
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	10.35	6.75	0.00	31545				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	1.75	6.75	0.00	4298	570.0 -> 512.0	39.3	18.7	56.1

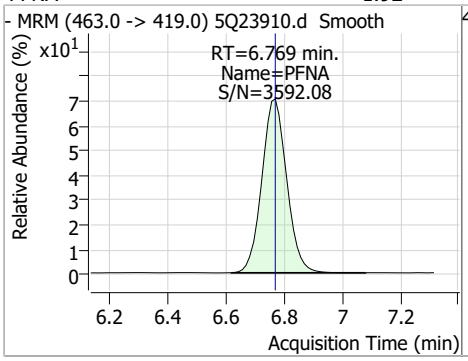


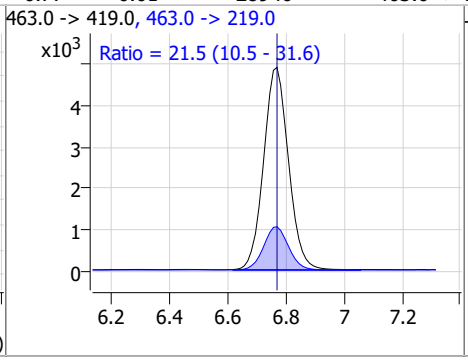
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	9.92	6.77	0.01	164712				

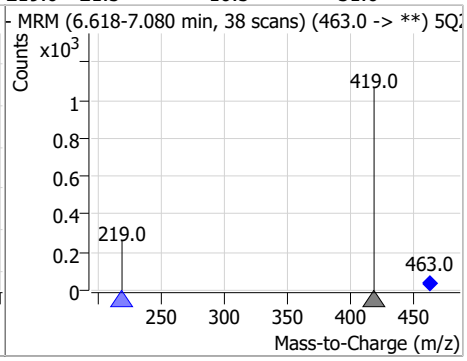


Perfluorinated Compounds by LC/MS/MS

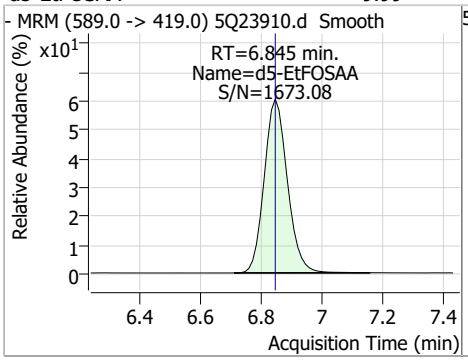
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	1.92	6.77	0.01	28946	463.0 -> 219.0	21.5	10.5	31.6

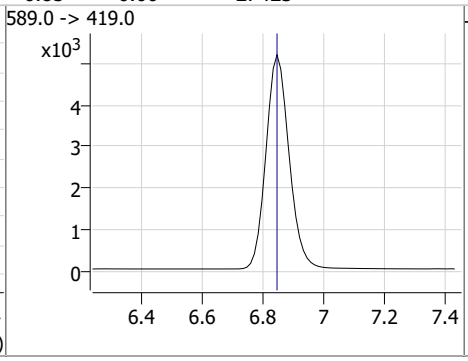


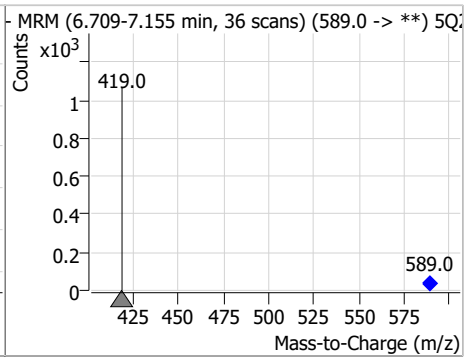




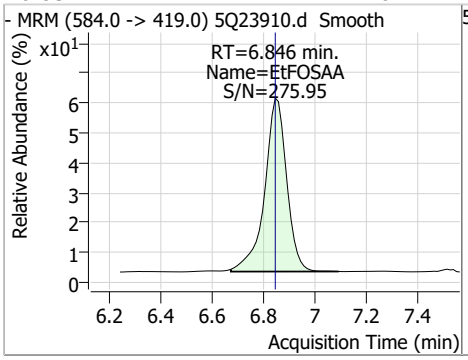
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	9.99	6.85	0.00	27423				

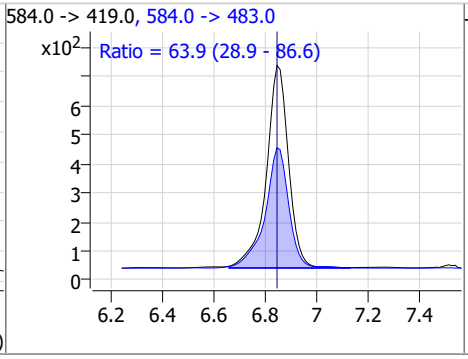


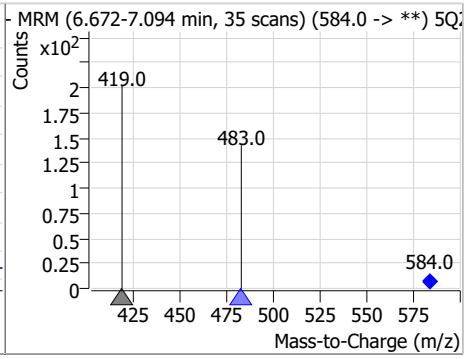




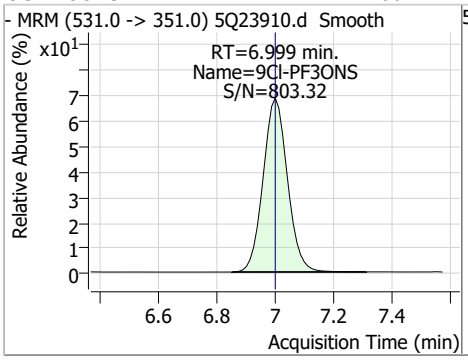
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	1.87	6.85	0.00	4174	584.0 -> 483.0	63.9	28.9	86.6

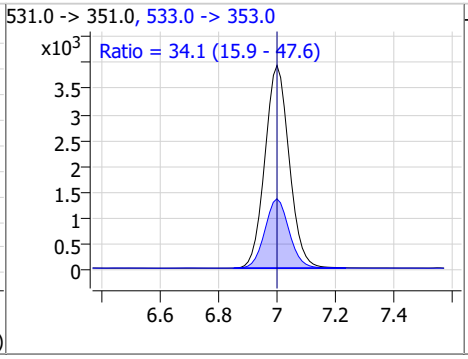


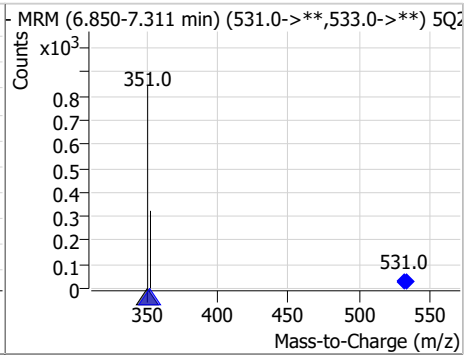




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	1.80	7.00	0.00	22624	533.0 -> 353.0	34.1	15.9	47.6

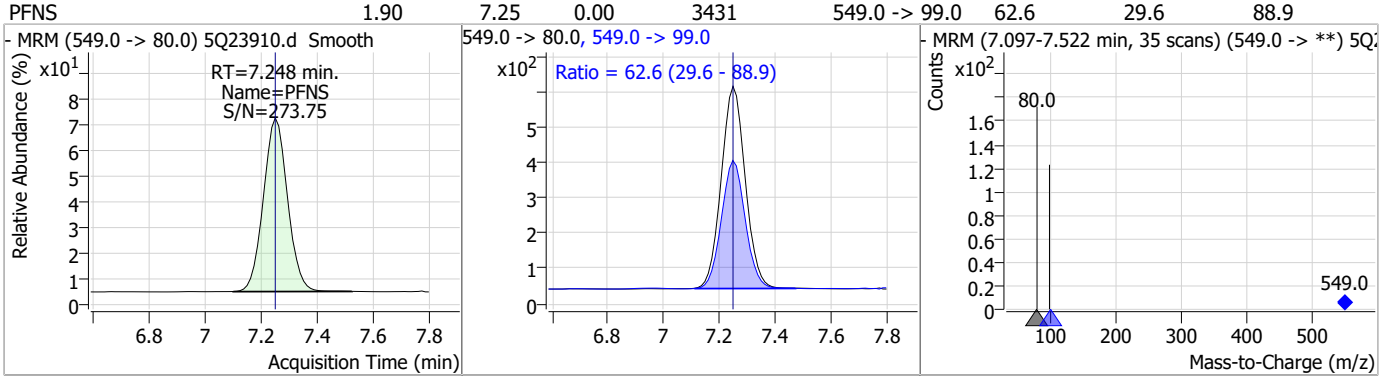




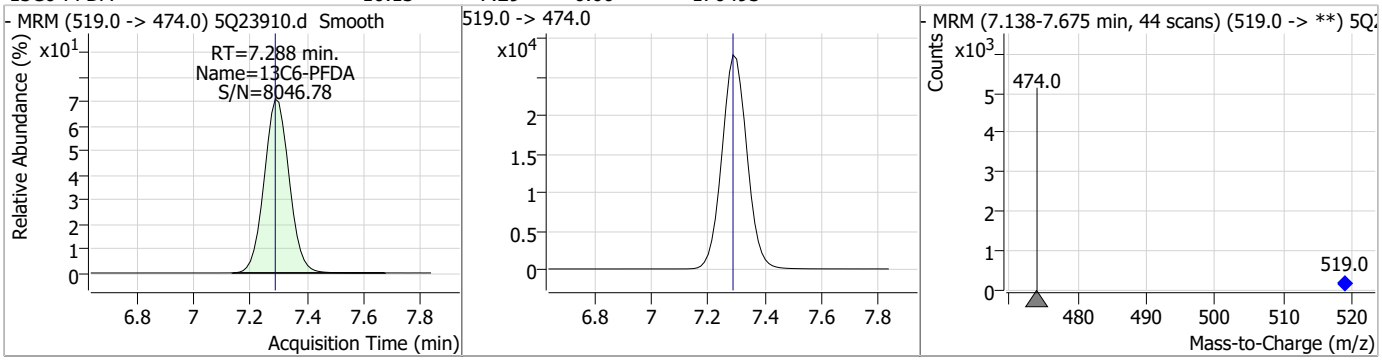


Perfluorinated Compounds by LC/MS/MS

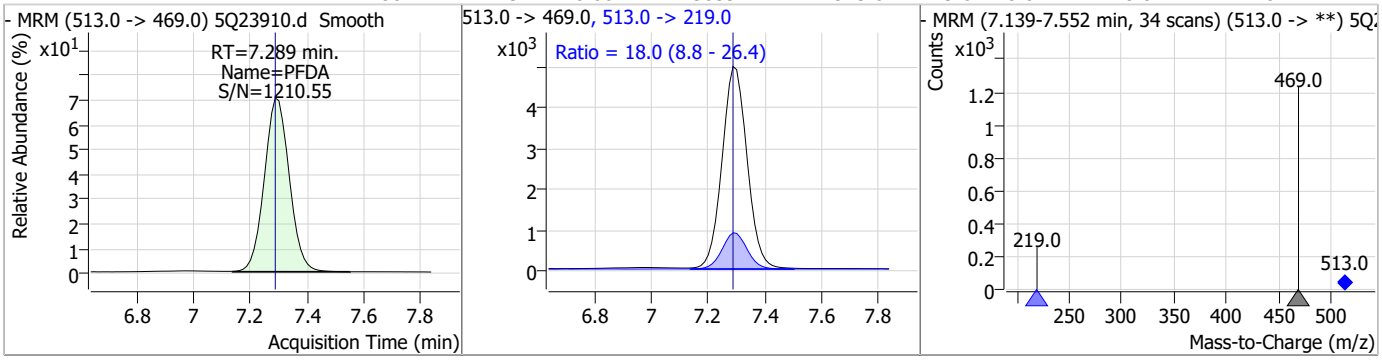
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	1.90	7.25	0.00	3431	549.0 -> 99.0	62.6	29.6	88.9



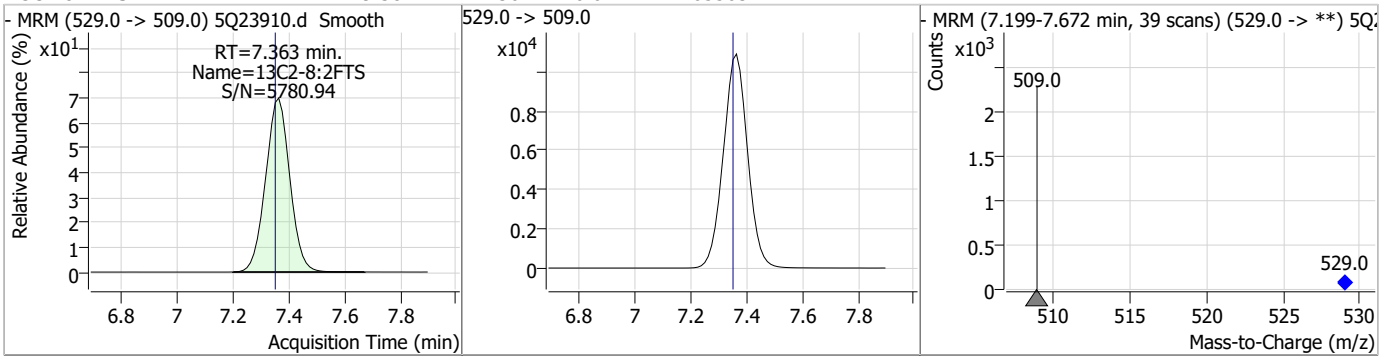
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	10.13	7.29	0.00	170493				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	1.88	7.29	0.00	30391	513.0 -> 219.0	18.0	8.8	26.4

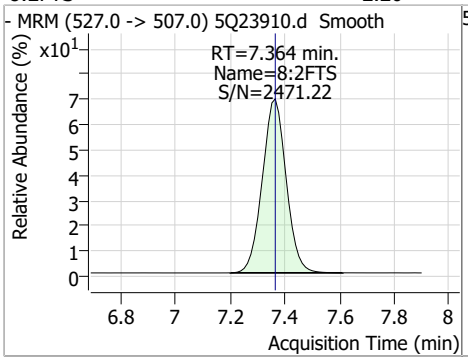


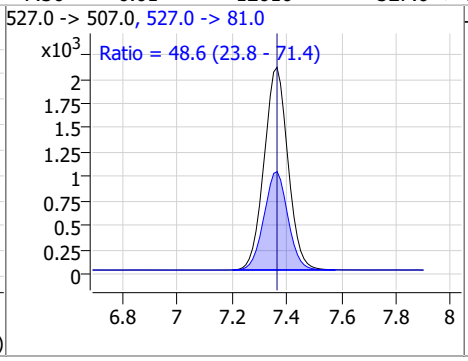
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	9.38	7.36	0.01	65503				

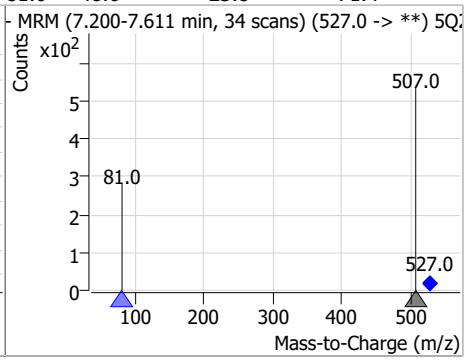


Perfluorinated Compounds by LC/MS/MS

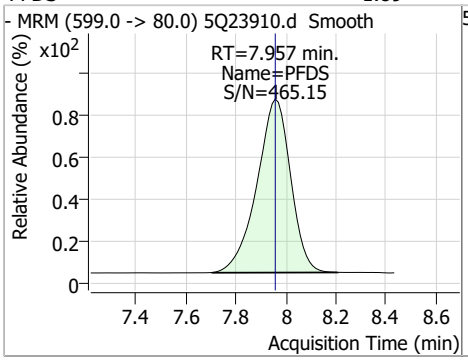
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	2.20	7.36	0.01	12616	527.0 -> 81.0	48.6	23.8	71.4

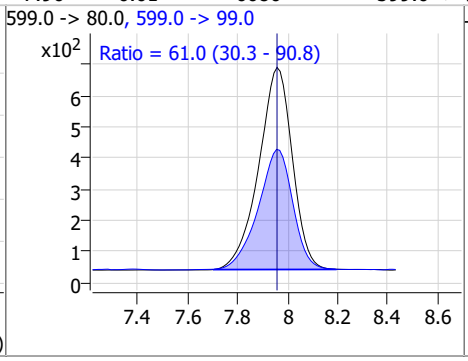


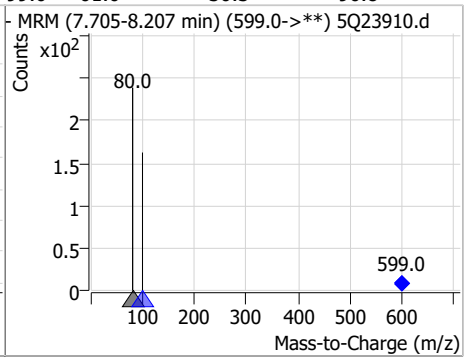




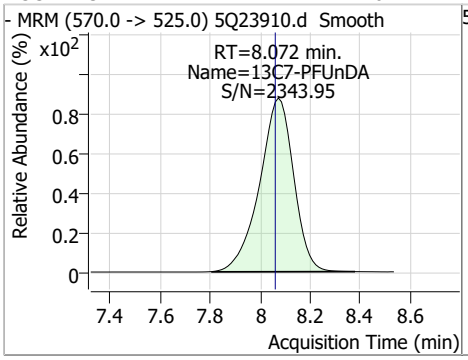
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	1.89	7.96	0.01	6080	599.0 -> 99.0	61.0	30.3	90.8

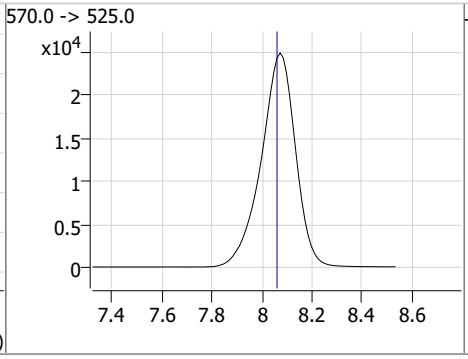


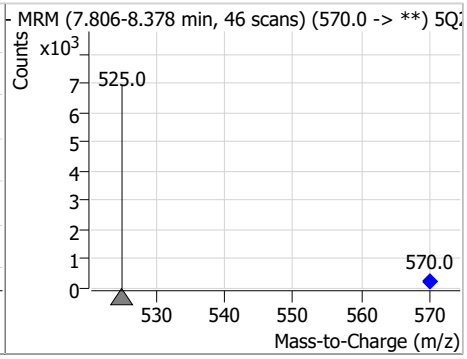




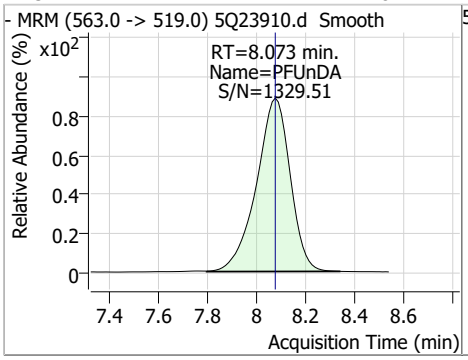
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	10.11	8.07	0.01	235571				

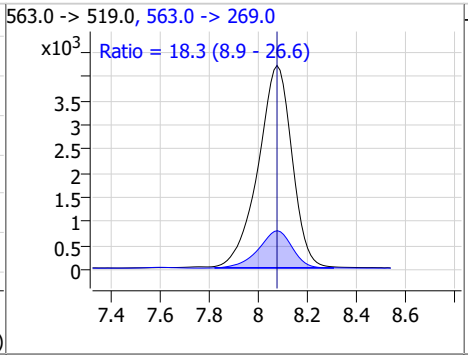


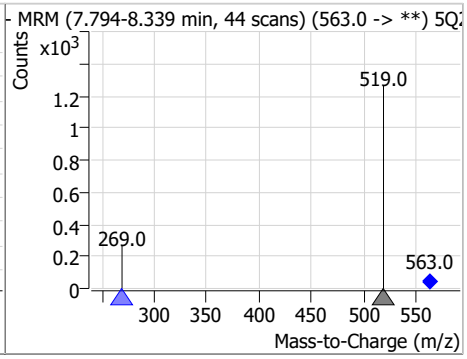




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	1.87	8.07	0.01	39766	563.0 -> 269.0	18.3	8.9	26.6

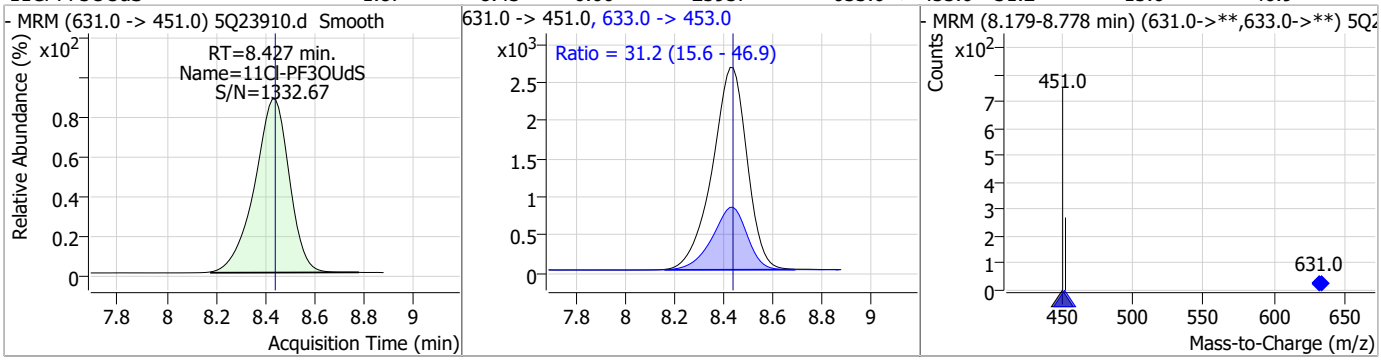




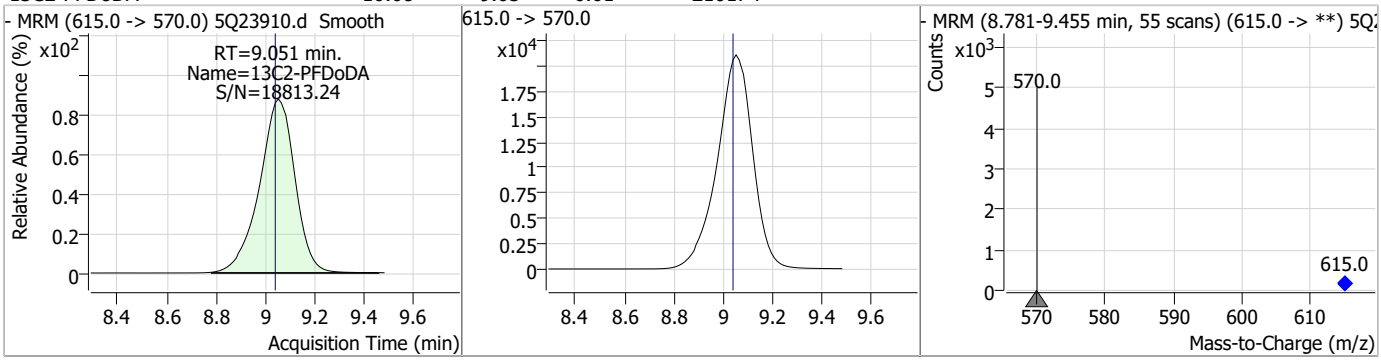


Perfluorinated Compounds by LC/MS/MS

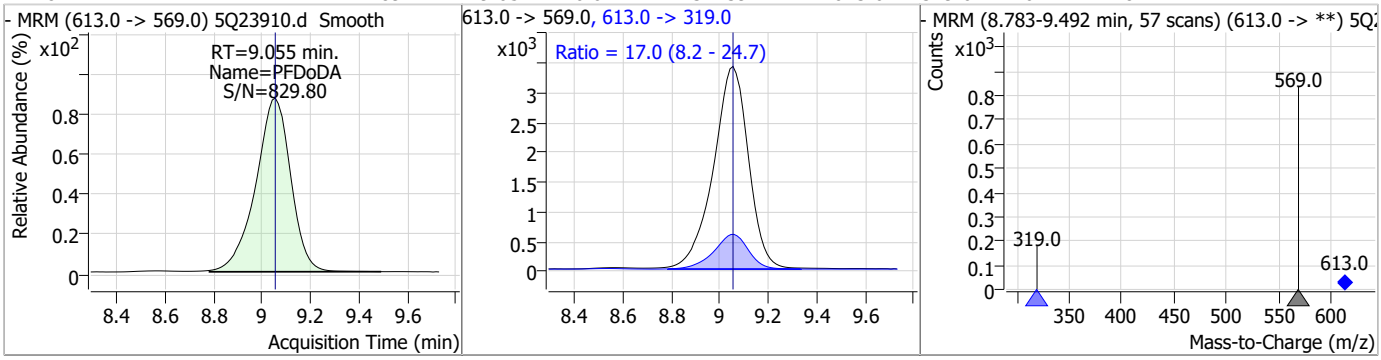
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	1.87	8.43	0.00	25957	633.0 -> 453.0	31.2	15.6	46.9



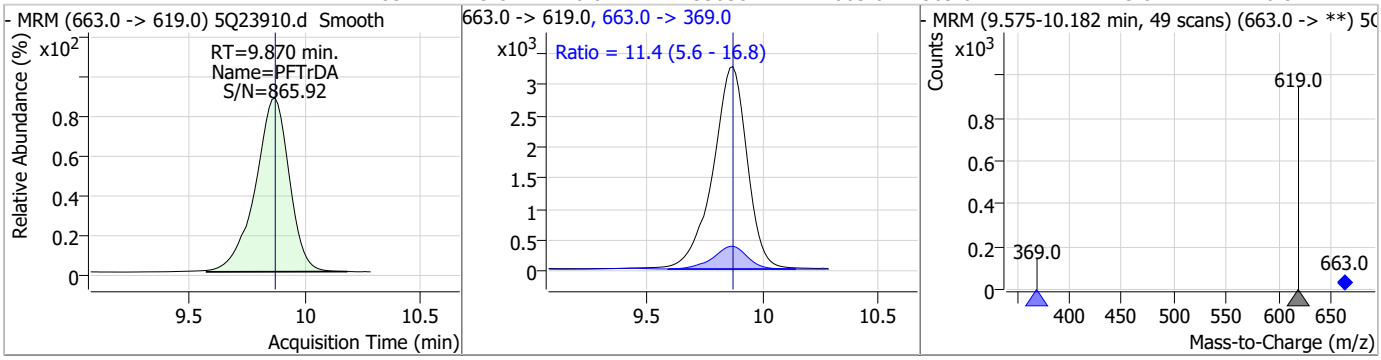
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	10.08	9.05	0.01	210174				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	1.89	9.05	0.01	34139	613.0 -> 319.0	17.0	8.2	24.7

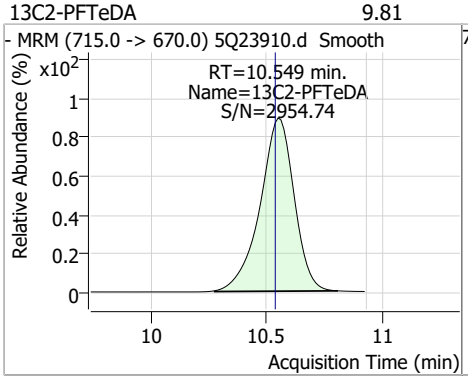


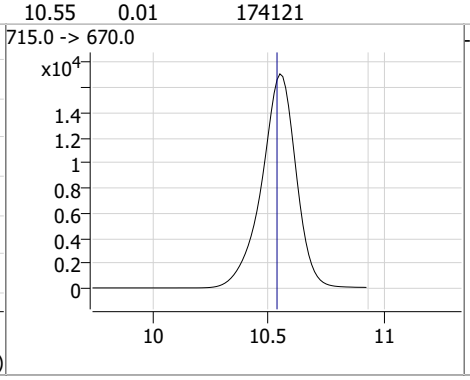
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	1.83	9.87	0.01	33038	663.0 -> 369.0	11.4	5.6	16.8

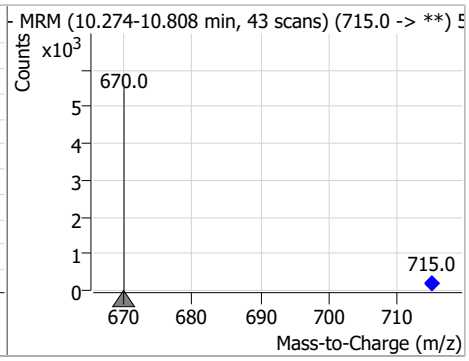


Perfluorinated Compounds by LC/MS/MS

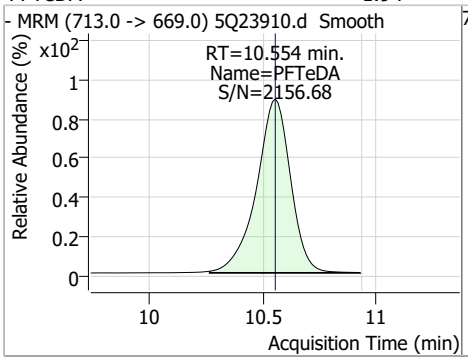
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	9.81	10.55	0.01	174121				

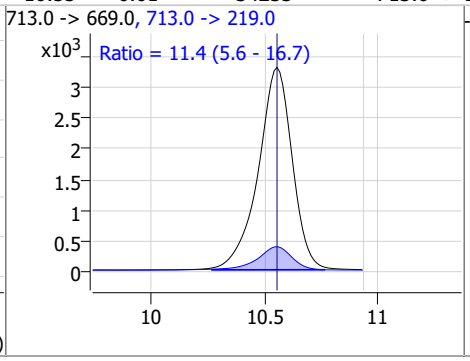


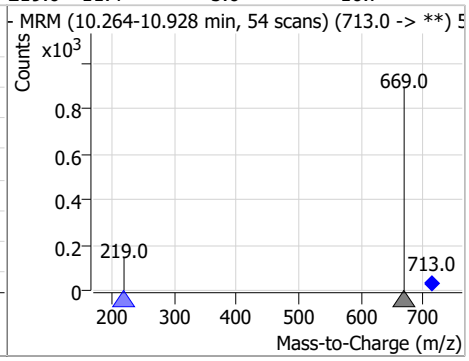




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	1.94	10.55	0.01	34233	713.0 -> 219.0	11.4	5.6	16.7







9.6.19

6

Manual Integration Approval Summary

Sample Number: S5Q375-IC375
Lab FileID: 5Q23910.D
Injection Time: 12/28/23 15:06
Method: EPA 537M QSM5.3 B-15
Analyst approved: 12/29/23 14:15 Lindsay Ritner
Supervisor approved: 01/02/24 14:05 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.45	Split peak
Perfluorooctanesulfonic acid	1763-23-1		6.73	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Natasha Gumtie 01/02/24 14:05

Perfluorinated Compounds by LC/MS/MS

Data File : 5Q23911.d
Operator : natashag
Acq. Method : 537_ID.m
Acq. Date-Time : 12/28/2023 3:23:31 PM
Sample Name : ic375-5
Vial : P1-A5
DA Method File : ID_122823_S5Q375.quantmethod.xml
Batch Name : s5q375.batch.bin
Sample Information : OP401,S5Q375,250,,,1.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.987	217.0 -> 172.0	47318	10.00	µg/L	0.000
M5-PFPeA	3.432	268.0 -> 223.0	79082	10.00	µg/L	0.000
M5-PFHxA	4.552	318.0 -> 273.0	122527	10.00	µg/L	0.000
M4-PFHpA	5.413	367.0 -> 322.0	122447	10.00	µg/L	0.000
M8-PFOA	6.137	421.0 -> 376.0	164351	10.00	µg/L	0.013
M9-PFNA	6.768	472.0 -> 427.0	166872	10.00	µg/L	0.012
M6-PFDA	7.288	519.0 -> 474.0	170006	10.00	µg/L	0.000
M7-PFUnDA	8.072	570.0 -> 525.0	236230	10.00	µg/L	0.012
M2-PFDoDA	9.051	615.0 -> 570.0	209065	10.00	µg/L	0.012
M2-PFTeDA	10.549	715.0 -> 670.0	178477	10.00	µg/L	0.012
M8-FOSA	6.192	506.0 -> 78.0	41917	10.00	µg/L	0.000
M3-PFBS	3.637	302.0 -> 99.0	9661	10.00	µg/L	0.000
M3-PFHxS	5.444	402.0 -> 99.0	11952	10.00	µg/L	0.012
M8-PFOS	6.729	507.0 -> 99.0	15612	10.00	µg/L	0.000
M2-4:2FTS	4.474	329.0 -> 309.0	38460	10.00	µg/L	0.000
M2-6:2FTS	6.136	429.0 -> 409.0	67617	10.00	µg/L	0.000
M2-8:2FTS	7.363	529.0 -> 509.0	68493	10.00	µg/L	0.012
M3-MeFOSAA	6.735	573.0 -> 419.0	31335	10.00	µg/L	-0.012
M3-HFPO-DA	4.819	287.0 -> 169.0	6337	10.00	µg/L	0.000
M3-MeFOSA	6.589	515.0 -> 169.0	14544	10.00	µg/L	0.000
M5-EtFOSAA	6.845	589.0 -> 419.0	27653	10.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.474	329.0 -> 309.0	38460	9.56	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 95.6%		
13C2-6:2FTS	6.136	429.0 -> 409.0	67617	9.54	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 95.4%		
13C2-8:2FTS	7.363	529.0 -> 509.0	68493	9.81	µg/L	0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 98.1%		
13C2-PFDoDA	9.051	615.0 -> 570.0	209065	10.03	µg/L	0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.3%		
13C2-PFTeDA	10.549	715.0 -> 670.0	178477	10.06	µg/L	0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.6%		
13C3-PFBS	3.637	302.0 -> 99.0	9661	9.95	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.5%		
13C3-PFHxS	5.444	402.0 -> 99.0	11952	10.13	µg/L	0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.3%		
13C4-PFBA	1.987	217.0 -> 172.0	47318	10.01	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.1%		
13C4-PFHpA	5.413	367.0 -> 322.0	122447	10.18	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.8%		
13C5-PFHxA	4.552	318.0 -> 273.0	122527	10.25	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 102.5%		
13C5-PFPeA	3.432	268.0 -> 223.0	79082	10.03	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.3%		
13C6-PFDA	7.288	519.0 -> 474.0	170006	10.10	µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

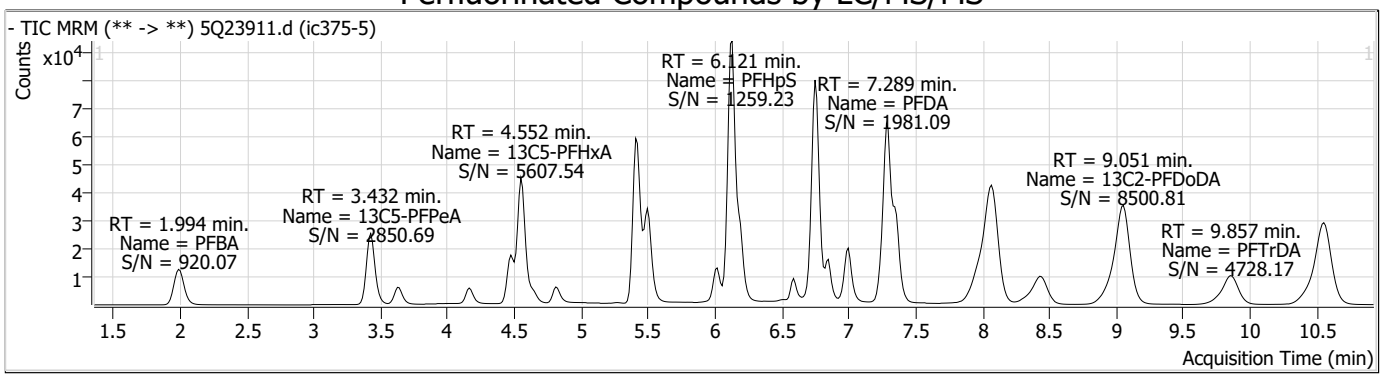
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.0%			
13C7-PFUnDA	8.072	570.0 -> 525.0	236230	10.14	µg/L		0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.4%			
13C8-FOSA	6.192	506.0 -> 78.0	41917	10.34	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 103.4%			
13C8-PFOA	6.137	421.0 -> 376.0	164351	9.93	µg/L		0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.3%			
13C8-PFOS	6.729	507.0 -> 99.0	15612	9.93	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.3%			
13C9-PFNA	6.768	472.0 -> 427.0	166872	10.05	µg/L		0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.5%			
d3-MeFOSAA	6.735	573.0 -> 419.0	31335	10.28	µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 102.8%			
13C3-HFPO-DA	4.819	287.0 -> 169.0	6337	9.81	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 98.1%			
d3-MeFOSA	6.589	515.0 -> 169.0	14544	10.37	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 103.7%			
d5-EtFOSAA	6.845	589.0 -> 419.0	27653	10.08	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.8%			
Target Compounds							QValue
4:2FTS	4.475	327.0 -> 307.0	20635	5.45	µg/L		100
		327.0 -> 81.0	11714				
6:2FTS	6.136	427.0 -> 407.0	33259	5.38	µg/L		98
		427.0 -> 81.0	13813				
8:2FTS	7.364	527.0 -> 507.0	31770	5.31	µg/L		99
		527.0 -> 81.0	15283				
EtFOSAA	6.846	584.0 -> 419.0	10945	4.85	µg/L		94
		584.0 -> 483.0	6770				
FOSA	6.194	498.0 -> 78.0	18384	4.78	µg/L		100
		498.0 -> 478.0	625				
MeFOSAA	6.748	570.0 -> 419.0	11153	4.56	µg/L		99
		570.0 -> 512.0	4220				
PFBA	1.994	213.0 -> 169.0	20856	4.76	µg/L		100
PFBS	3.628	299.0 -> 80.0	11674	4.88	µg/L		99
		299.0 -> 99.0	5055				
PFDA	7.289	513.0 -> 469.0	76174	4.72	µg/L		100
		513.0 -> 219.0	13534				
PFDoDA	9.042	613.0 -> 569.0	84651	4.72	µg/L		99
		613.0 -> 319.0	14221				
PFDS	7.957	599.0 -> 80.0	14825	4.60	µg/L		99
		599.0 -> 99.0	9137				
PFHpA	5.413	363.0 -> 319.0	65625	4.67	µg/L		99
		363.0 -> 169.0	14194				
PFHpS	6.121	449.0 -> 80.0	10609	4.87	µg/L		100
		449.0 -> 99.0	5656				
PFHxA	4.553	313.0 -> 269.0	55237	4.66	µg/L		99
		313.0 -> 119.0	2390				
PFHxS	5.446	399.0 -> 80.0	10382	4.68	µg/L	m	98
		399.0 -> 99.0	5983				
PFNA	6.769	463.0 -> 419.0	74093	4.85	µg/L		99
		463.0 -> 219.0	15224				
PFNS	7.248	549.0 -> 80.0	8952	4.96	µg/L		97
		549.0 -> 99.0	5494				
PFOA	6.137	413.0 -> 369.0	78298	4.86	µg/L		98
		413.0 -> 169.0	20169				
PFOS	6.730	499.0 -> 80.0	13275	4.80	µg/L	m	97

Perfluorinated Compounds by LC/MS/MS

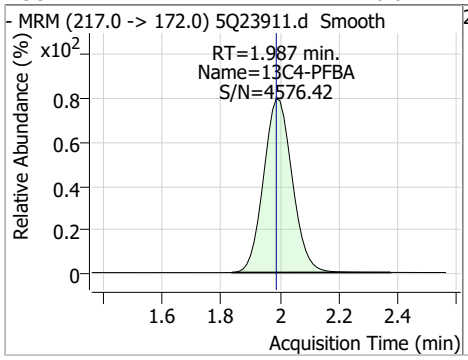
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		499.0 -> 99.0	6428			
PFPeA	3.434	263.0 -> 219.0	36431	4.75	µg/L	100
PFPeS	4.648	349.0 -> 80.0	8132	4.83	µg/L	98
		349.0 -> 99.0	4187			
PFTeDA	10.554	713.0 -> 669.0	84180	4.67	µg/L	98
		713.0 -> 219.0	9930			
PFTrDA	9.857	663.0 -> 619.0	83813	4.66	µg/L	98
		663.0 -> 369.0	8794			
PFUnDA	8.073	563.0 -> 519.0	100428	4.71	µg/L	100
		563.0 -> 269.0	17840			
11Cl-PF3OUdS	8.427	631.0 -> 451.0	64673	4.68	µg/L	100
		633.0 -> 453.0	20201			
9Cl-PF3ONS	6.999	531.0 -> 351.0	58139	4.63	µg/L	99
		533.0 -> 353.0	18266			
ADONA	5.502	377.0 -> 251.0	90264	4.51	µg/L	100
		377.0 -> 85.0	32388			
HFPO-DA	4.828	329.0 -> 169.0	13882	4.82	µg/L	99
		285.0 -> 169.0	3006			
MeFOSA	6.590	512.0 -> 169.0	5948	4.73	µg/L	100
		512.0 -> 219.0	4917			
4-PFECHS	6.018	461.0 -> 381.0	33349	4.67	µg/L	99
		461.0 -> 99.0	17558			
FBSA	4.170	298.0 -> 78.0	19984	4.88	µg/L	99
		298.0 -> 64.0	1916			
FHxSA	5.409	398.0 -> 78.0	21336	4.95	µg/L	98
		398.0 -> 64.0	2155			

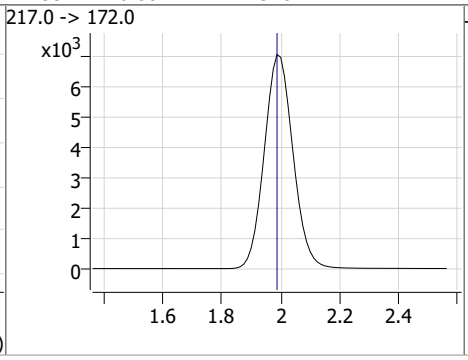
 # = Qualifier out of range, m = manually integrated, + = Area summed

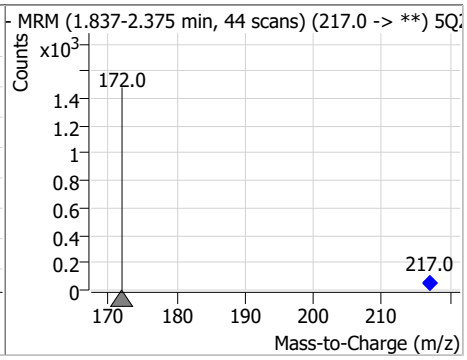
Perfluorinated Compounds by LC/MS/MS



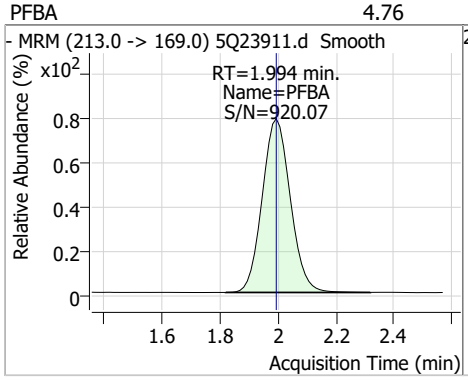
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	10.01	1.99	0.00	47318				

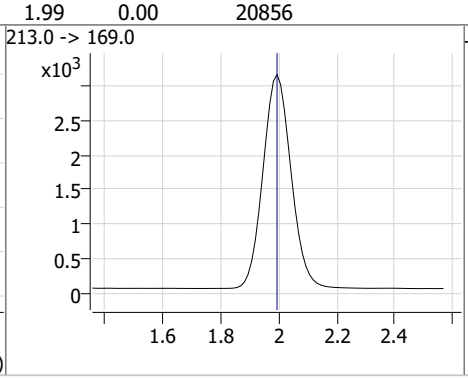


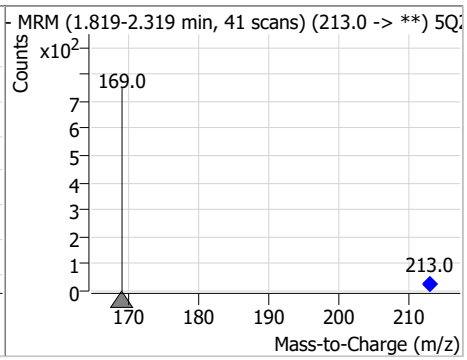




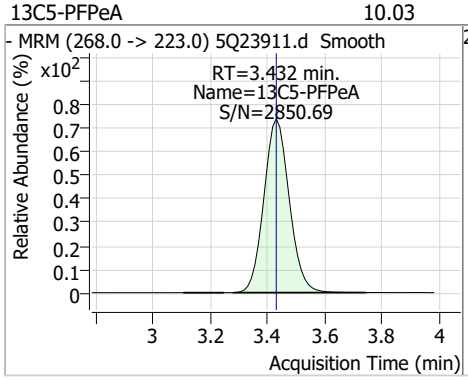
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	4.76	1.99	0.00	20856				

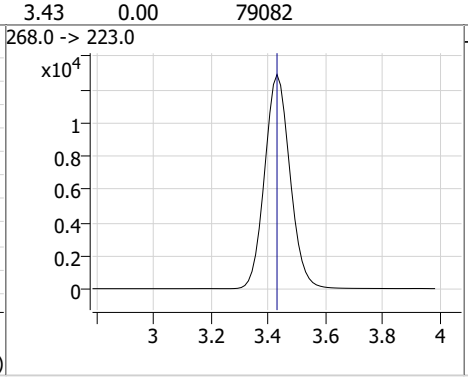


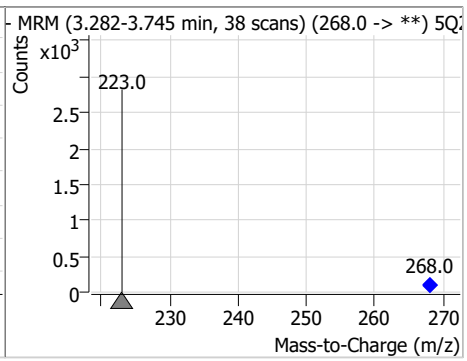




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	10.03	3.43	0.00	79082				

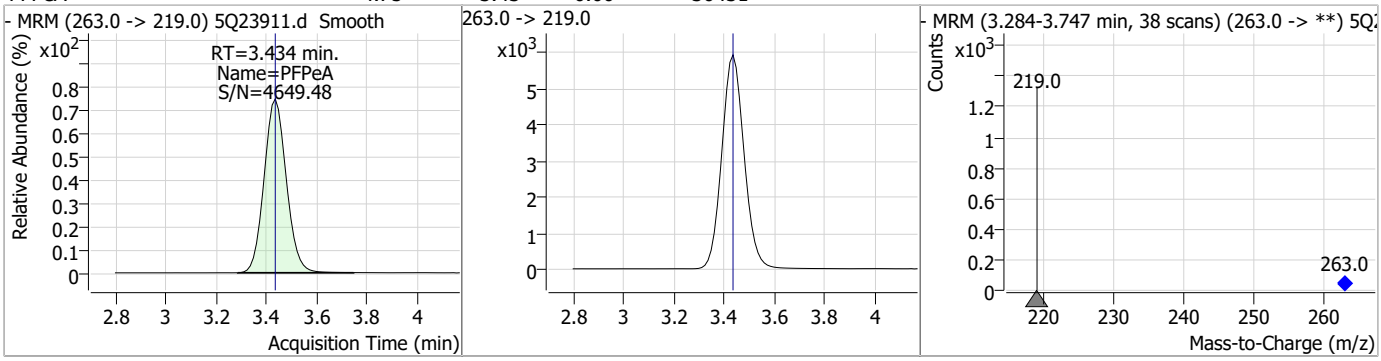




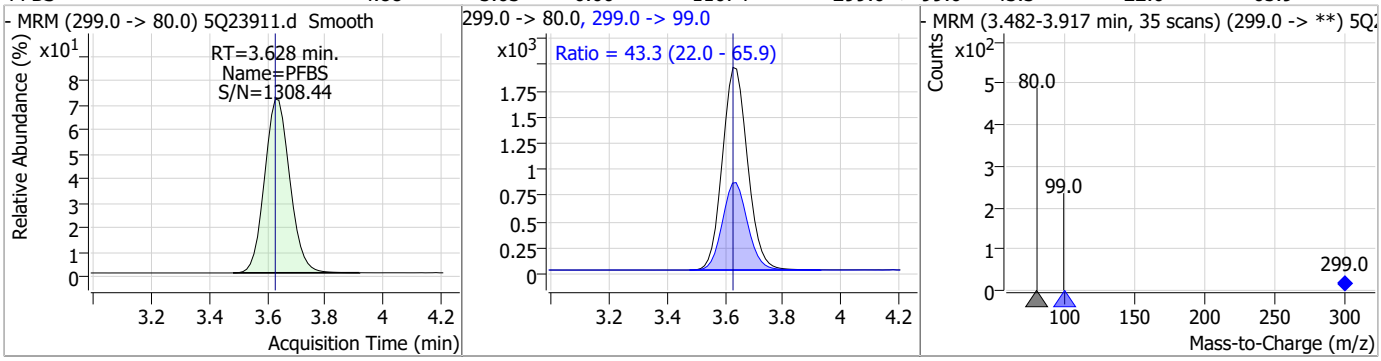


Perfluorinated Compounds by LC/MS/MS

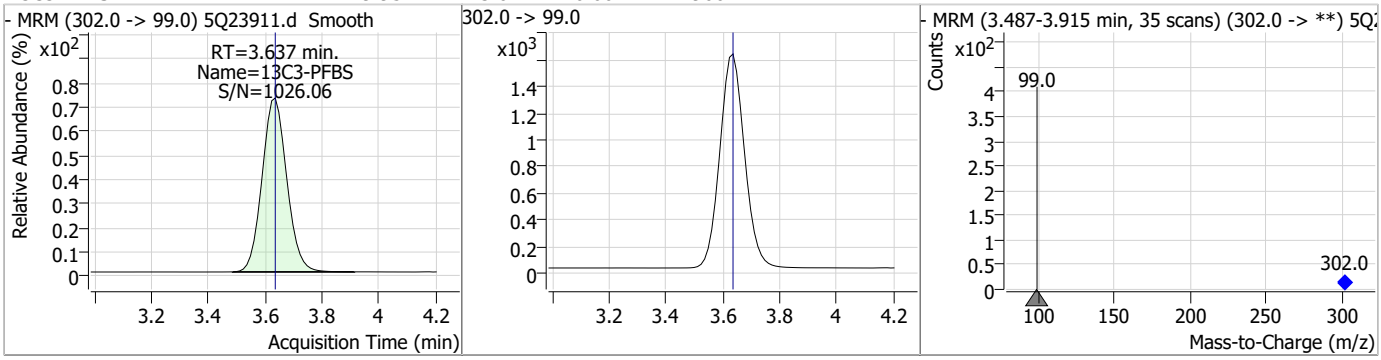
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	4.75	3.43	0.00	36431				



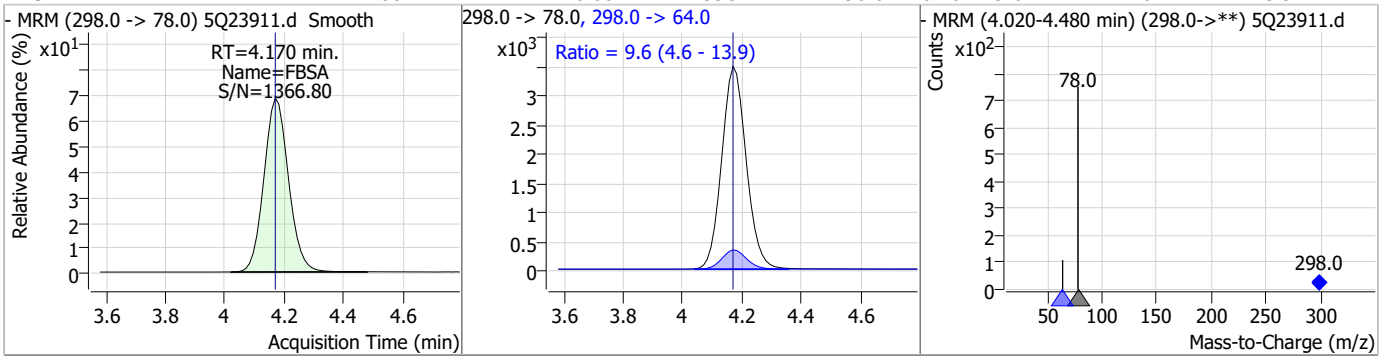
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	4.88	3.63	0.00	11674	299.0 -> 99.0	43.3	22.0	65.9



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	9.95	3.64	0.00	9661				

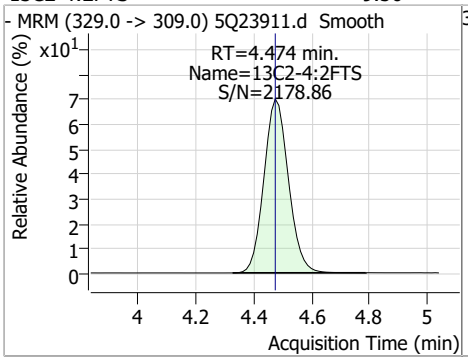


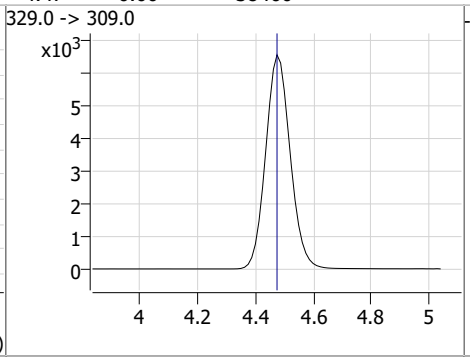
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	4.88	4.17	0.00	19984	298.0 -> 64.0	9.6	4.6	13.9

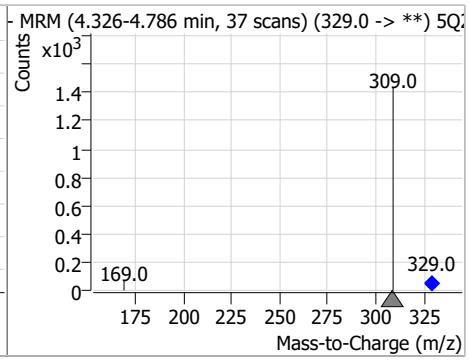


Perfluorinated Compounds by LC/MS/MS

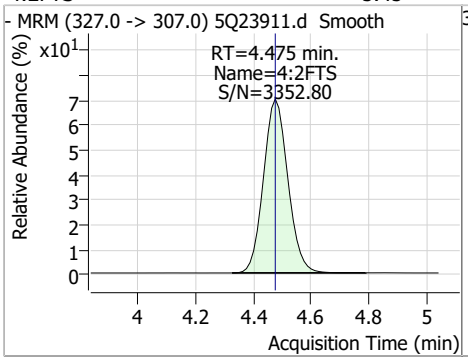
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	9.56	4.47	0.00	38460				

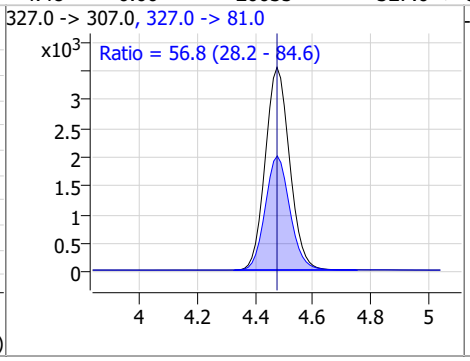


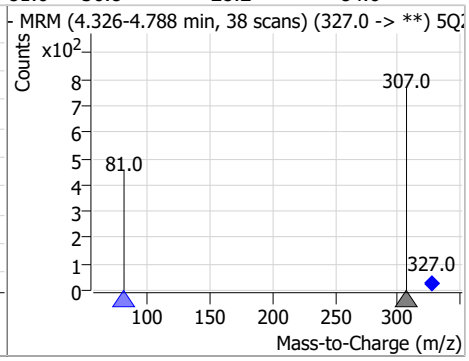




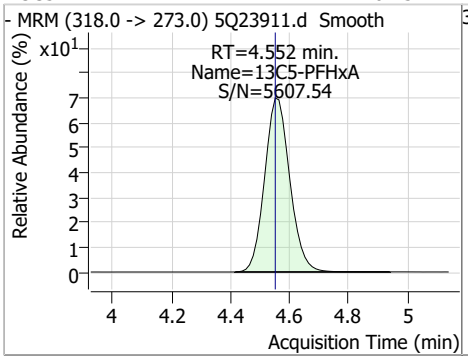
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	5.45	4.48	0.00	20635	327.0 -> 81.0	56.8	28.2	84.6

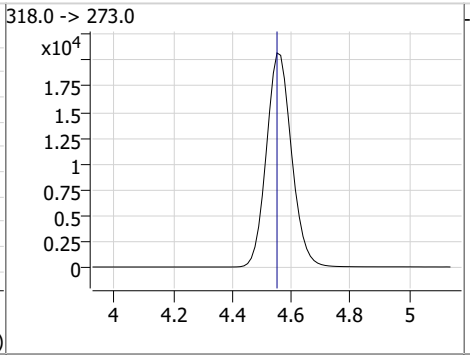


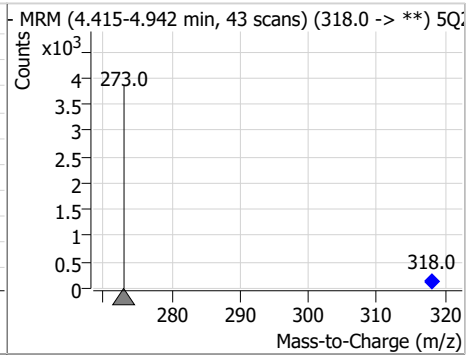




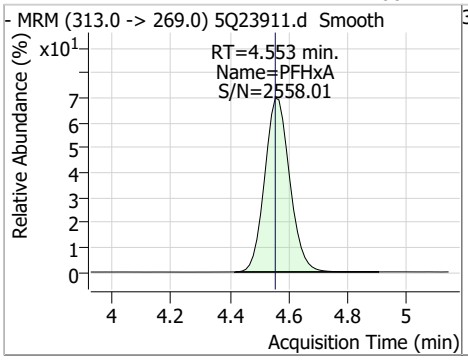
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	10.25	4.55	0.00	122527				

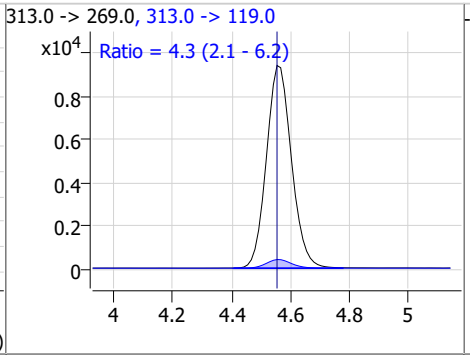


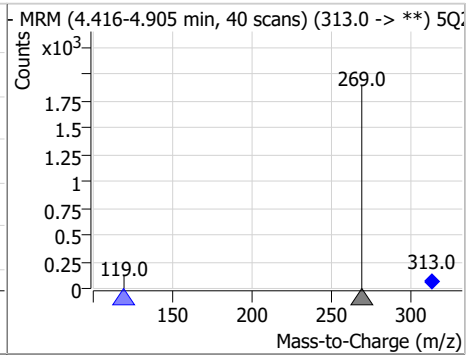




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	4.66	4.55	0.00	55237	313.0 -> 119.0	4.3	2.1	6.2

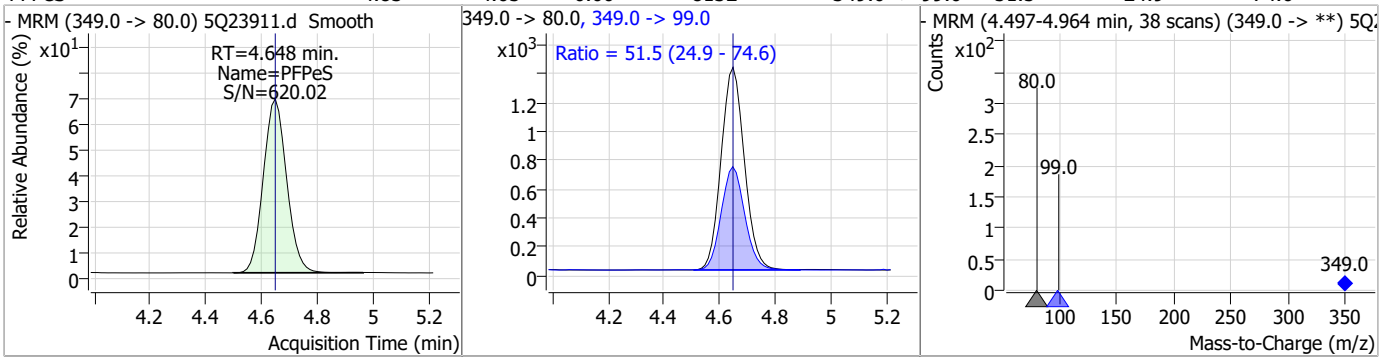




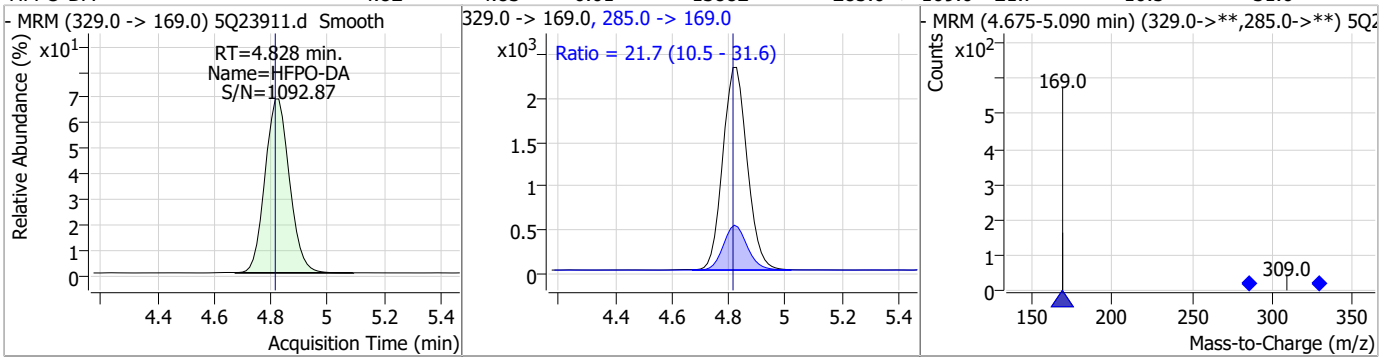


Perfluorinated Compounds by LC/MS/MS

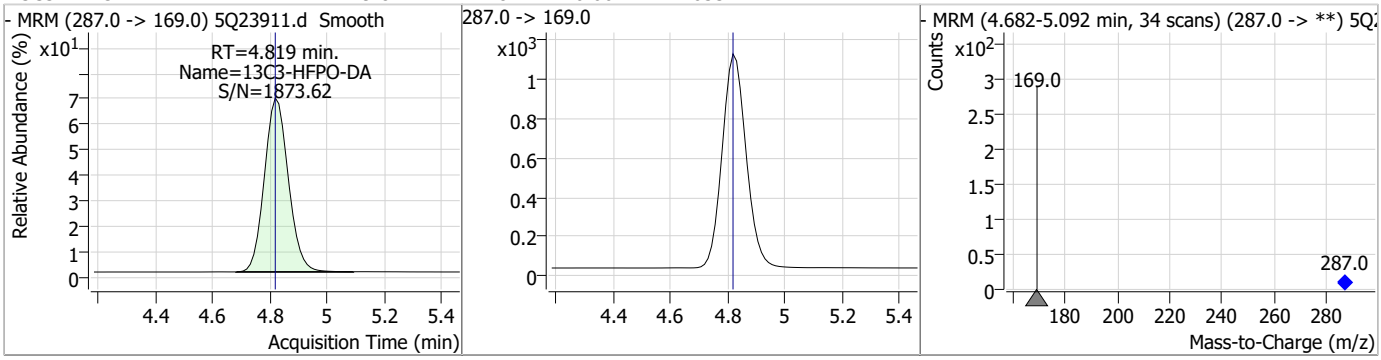
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	4.83	4.65	0.00	8132	349.0 -> 99.0	51.5	24.9	74.6



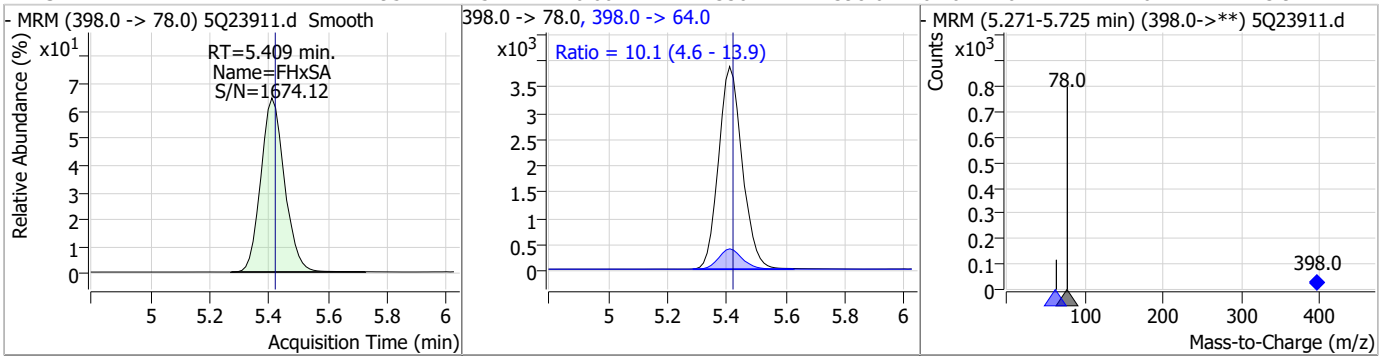
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	4.82	4.83	0.01	13882	285.0 -> 169.0	21.7	10.5	31.6



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	9.81	4.82	0.00	6337				

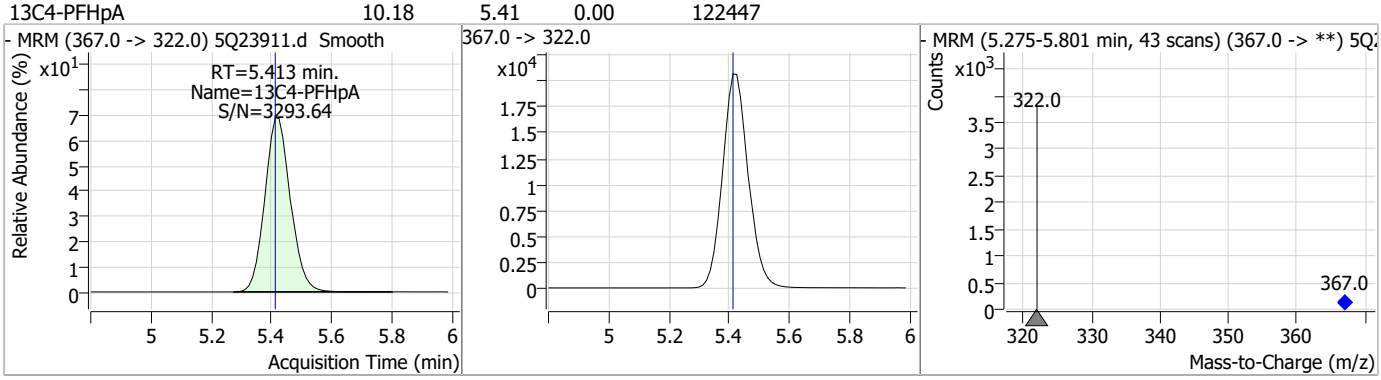


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	4.95	5.41	0.00	21336	398.0 -> 64.0	10.1	4.6	13.9

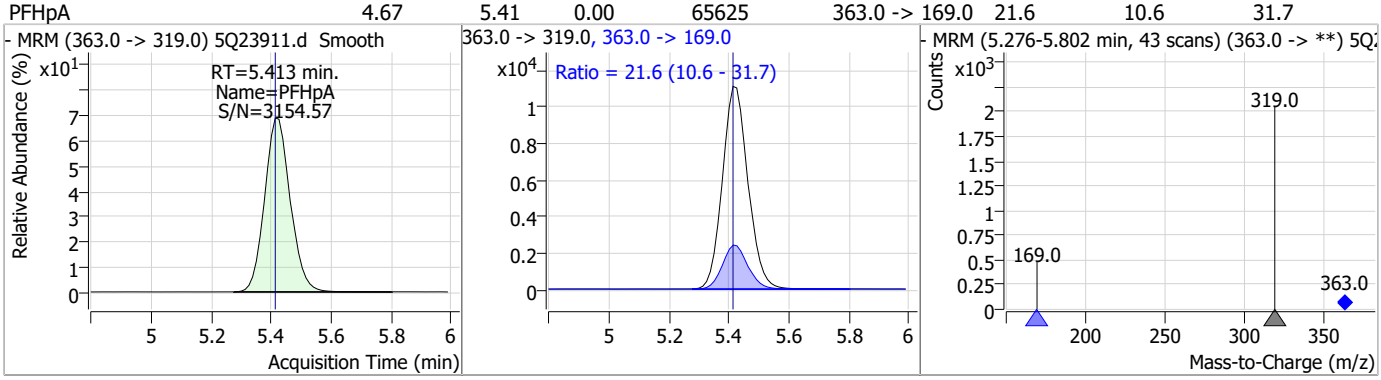


Perfluorinated Compounds by LC/MS/MS

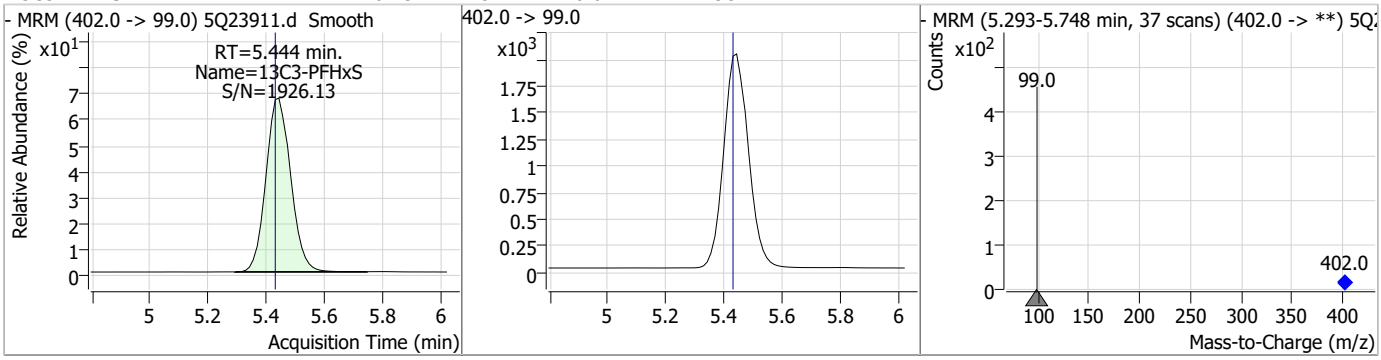
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	10.18	5.41	0.00	122447				



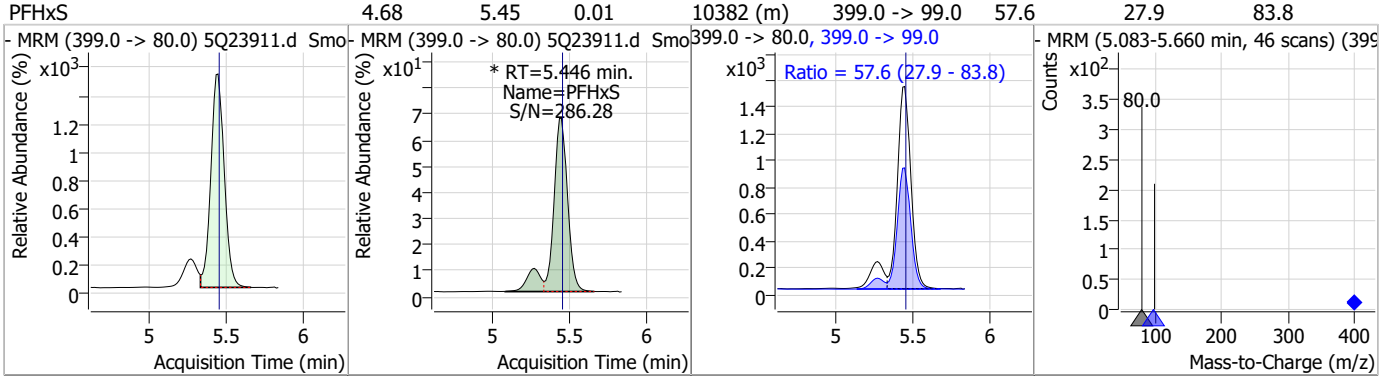
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	4.67	5.41	0.00	65625	363.0 -> 169.0	21.6	10.6	31.7



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	10.13	5.44	0.01	11952				

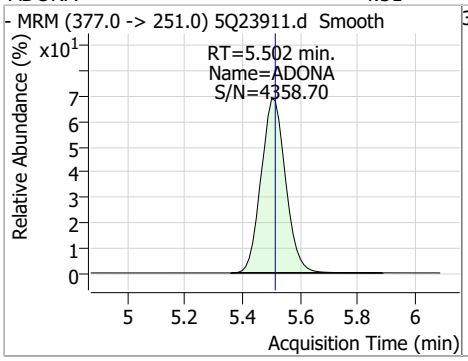


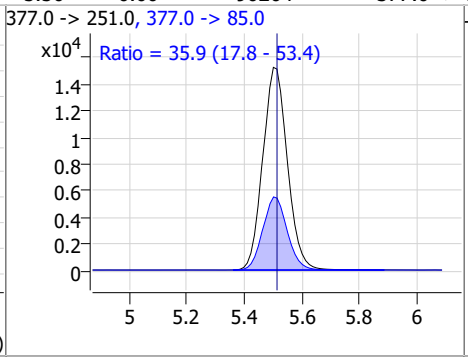
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	4.68	5.45	0.01	10382 (m)	399.0 -> 99.0	57.6	27.9	83.8

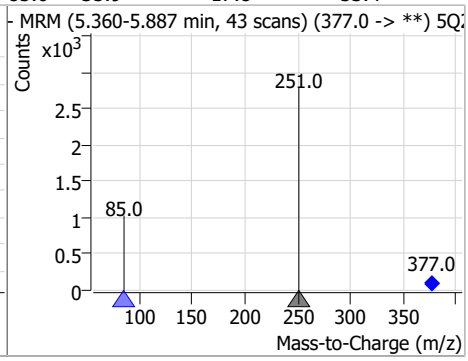


Perfluorinated Compounds by LC/MS/MS

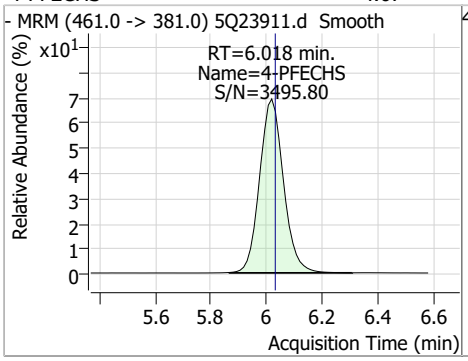
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	4.51	5.50	0.00	90264	377.0 -> 85.0	35.9	17.8	53.4

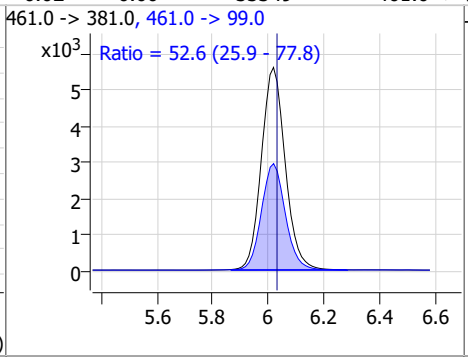


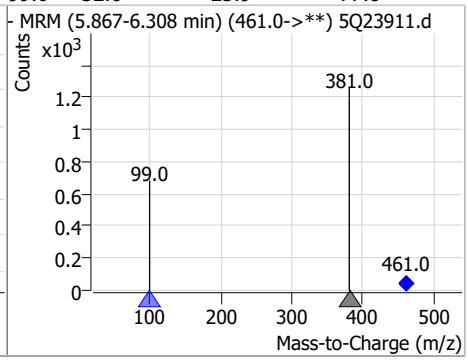




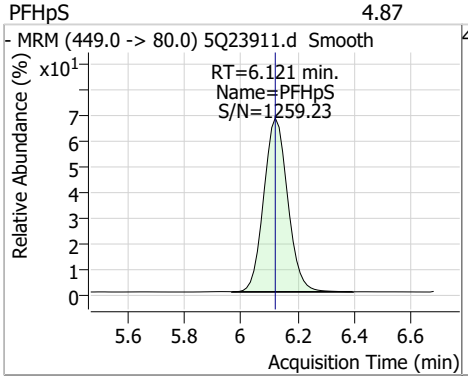
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS	4.67	6.02	0.00	33349	461.0 -> 99.0	52.6	25.9	77.8

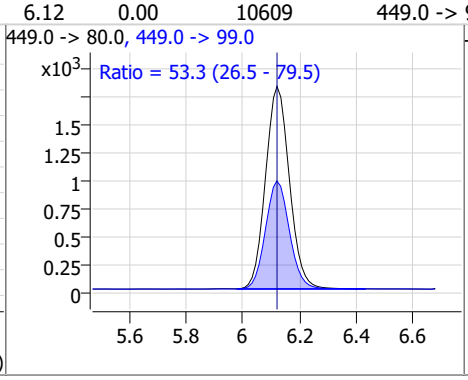


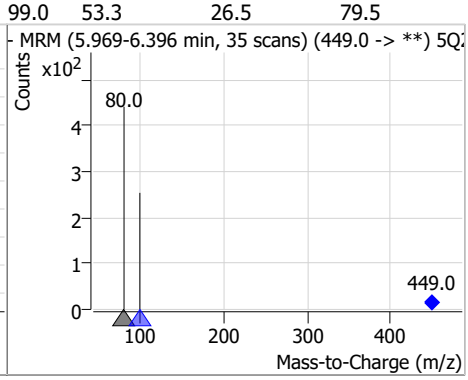




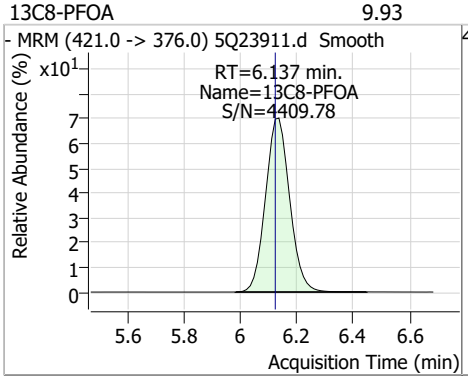
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	4.87	6.12	0.00	10609	449.0 -> 99.0	53.3	26.5	79.5

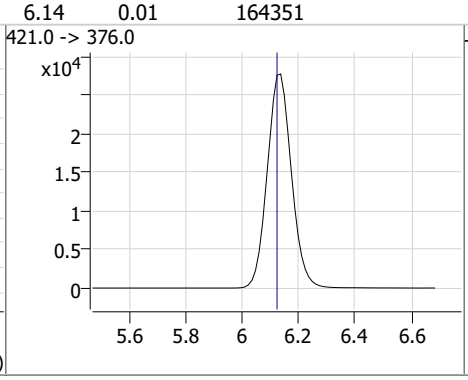


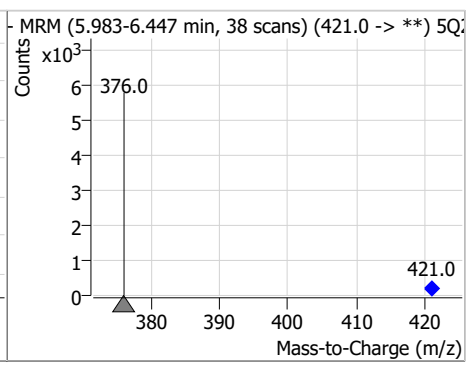




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	9.93	6.14	0.01	164351				

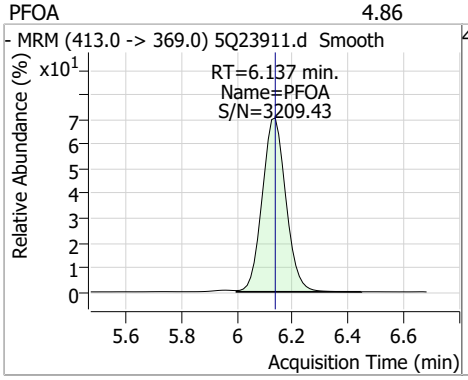


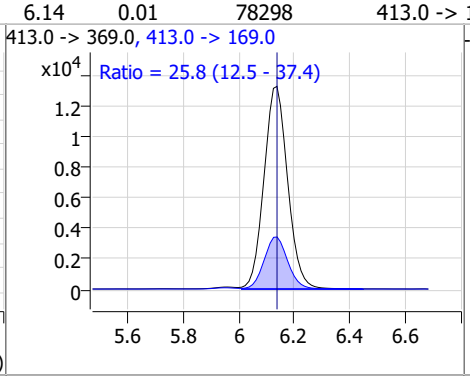


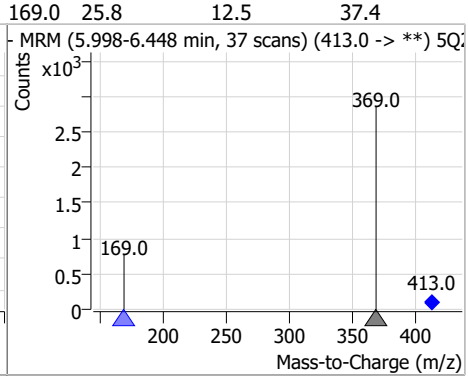


Perfluorinated Compounds by LC/MS/MS

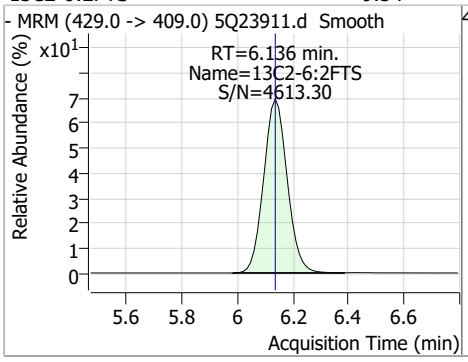
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	4.86	6.14	0.01	78298	413.0 -> 169.0	25.8	12.5	37.4

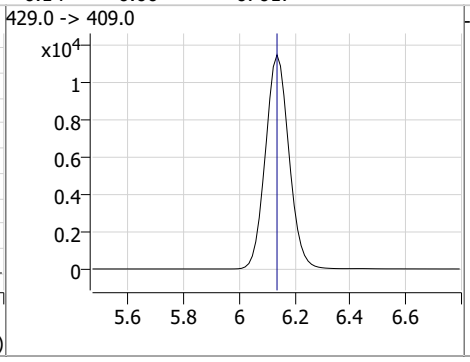


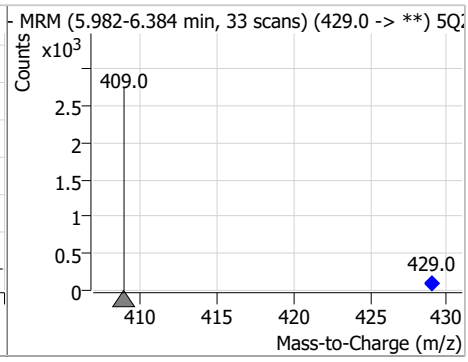




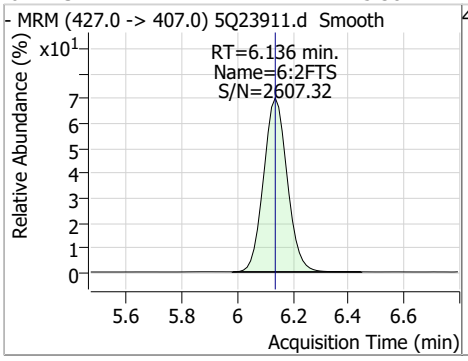
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	9.54	6.14	0.00	67617				

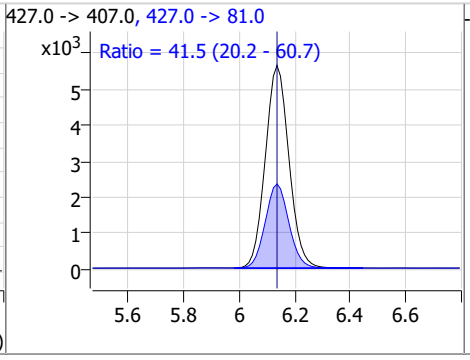


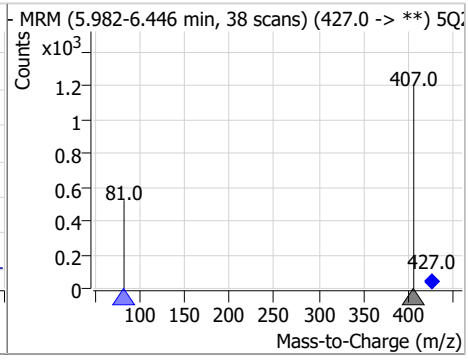




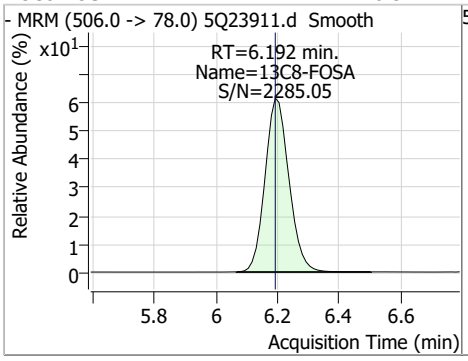
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	5.38	6.14	0.00	33259	427.0 -> 81.0	41.5	20.2	60.7

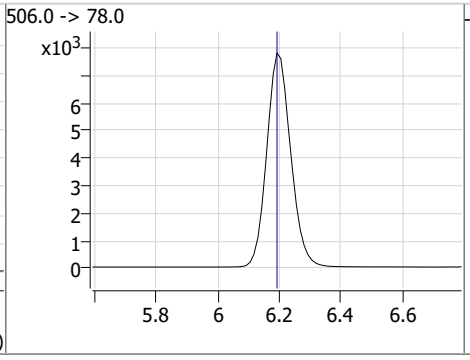


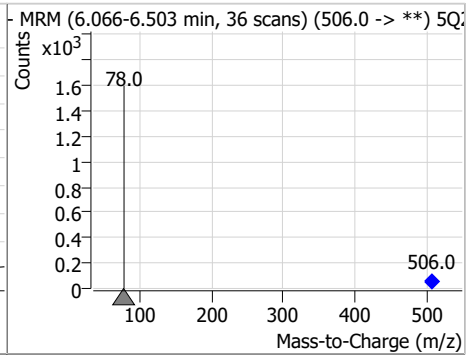




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	10.34	6.19	0.00	41917				

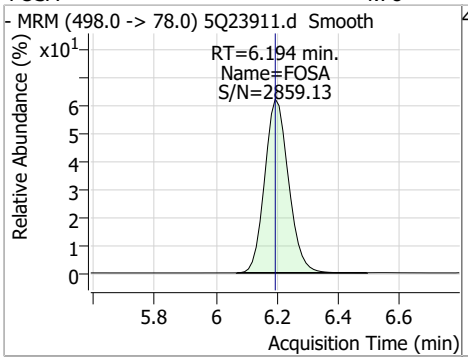


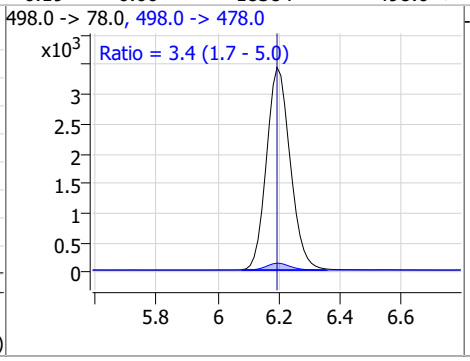


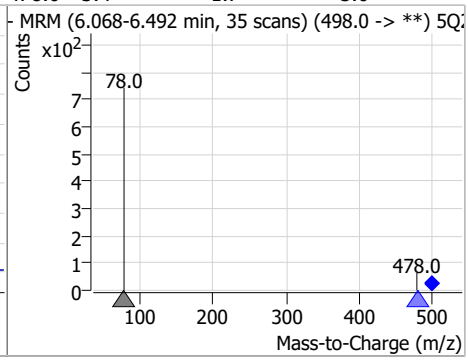


Perfluorinated Compounds by LC/MS/MS

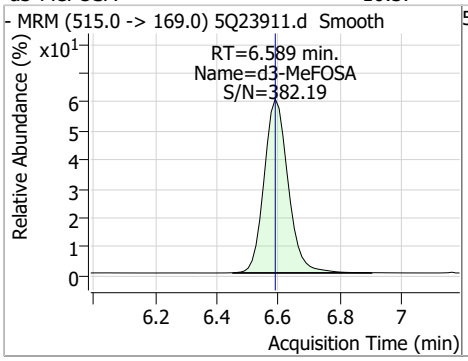
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	4.78	6.19	0.00	18384	498.0 -> 478.0	3.4	1.7	5.0

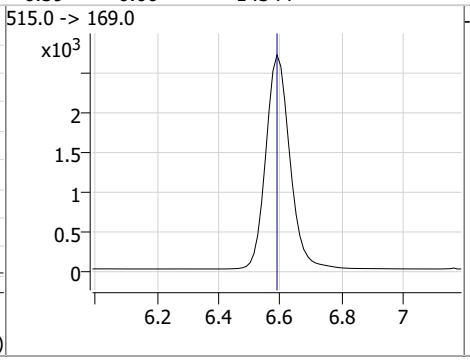


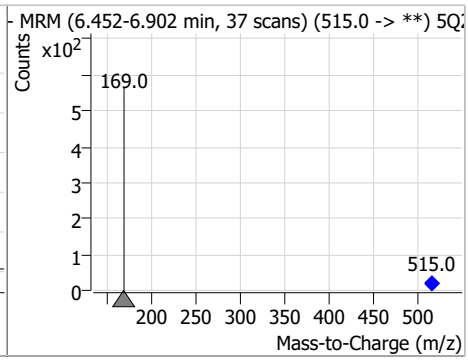




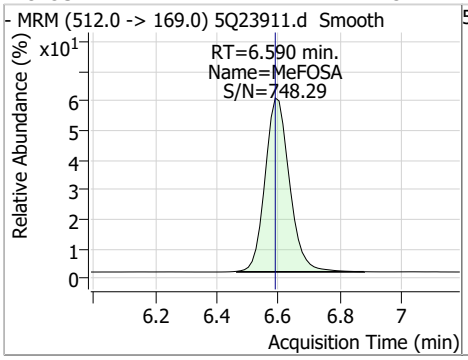
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	10.37	6.59	0.00	14544				

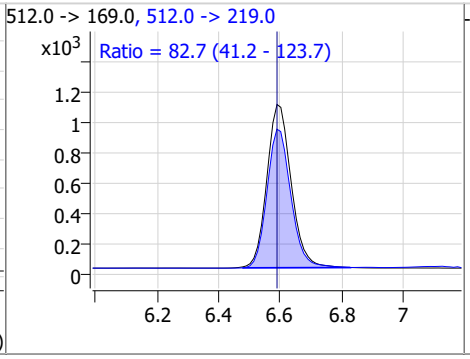


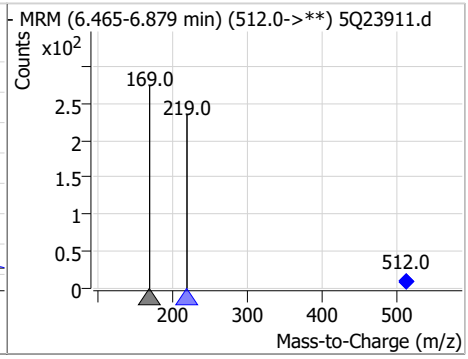




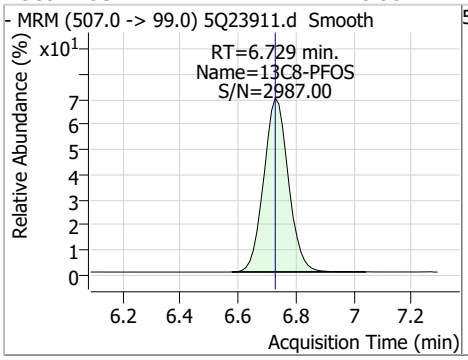
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	4.73	6.59	0.00	5948	512.0 -> 219.0	82.7	41.2	123.7

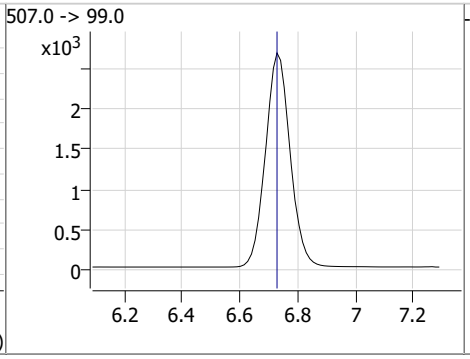


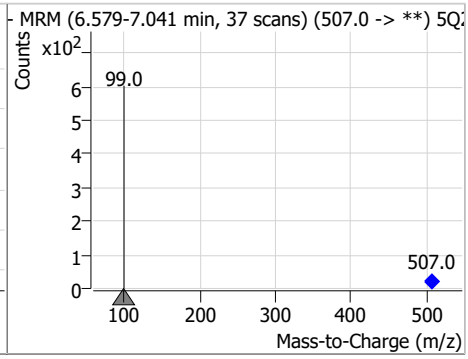




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	9.93	6.73	0.00	15612				

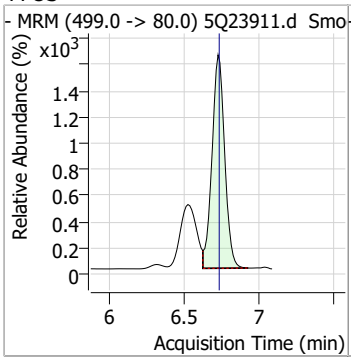


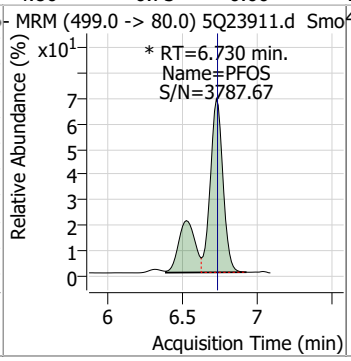


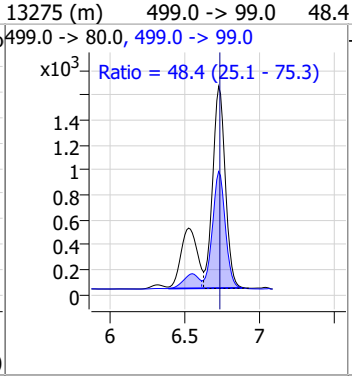


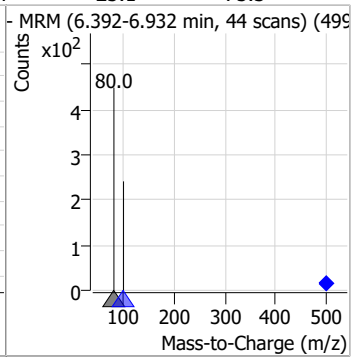
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	4.80	6.73	0.00	13275 (m)	499.0 -> 99.0	48.4	25.1	75.3

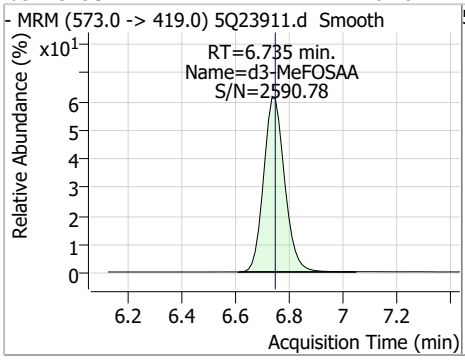


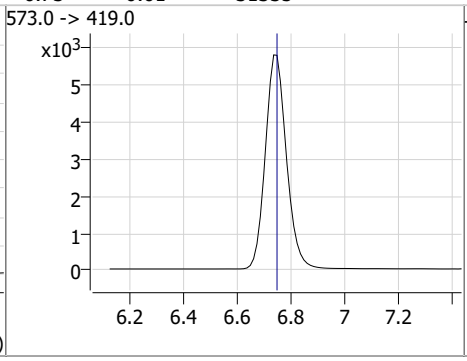


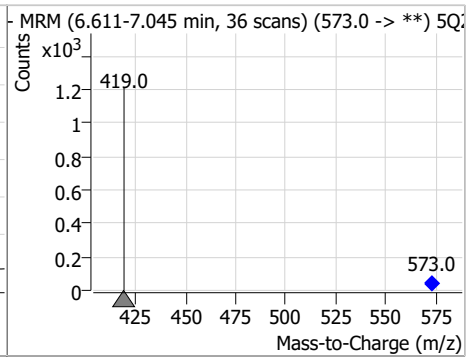




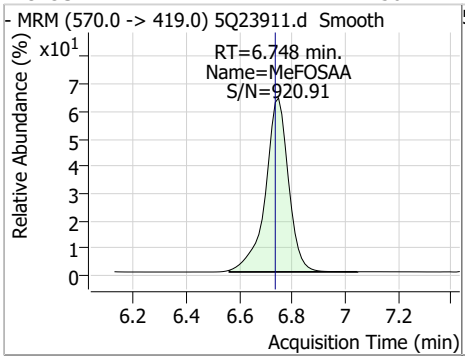
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	10.28	6.73	-0.01	31335				

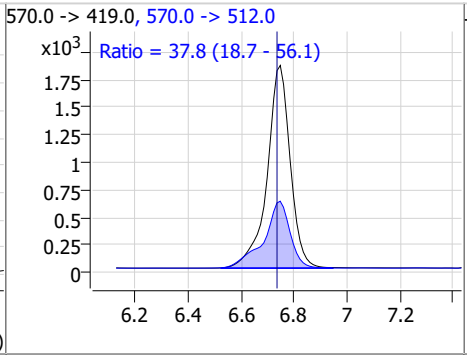


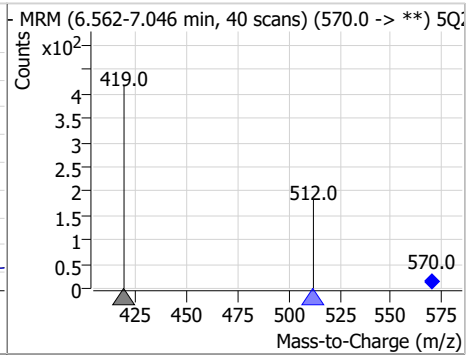




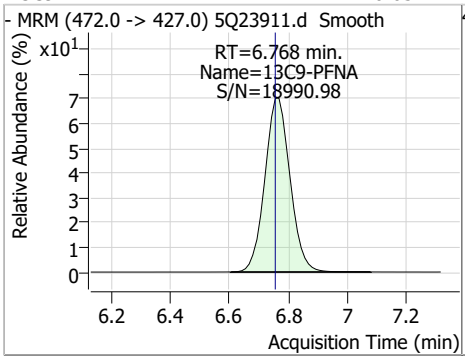
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	4.56	6.75	0.00	11153	570.0 -> 512.0	37.8	18.7	56.1

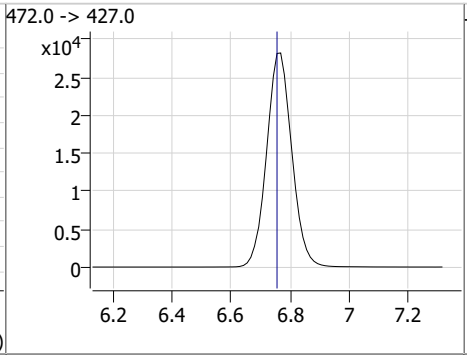


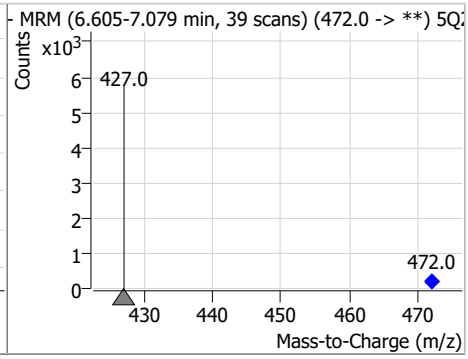




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	10.05	6.77	0.01	166872				

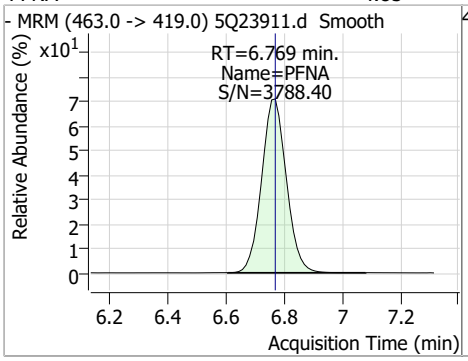


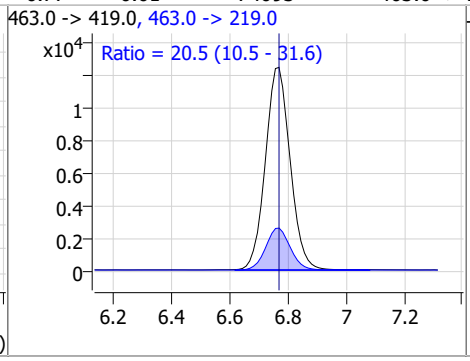


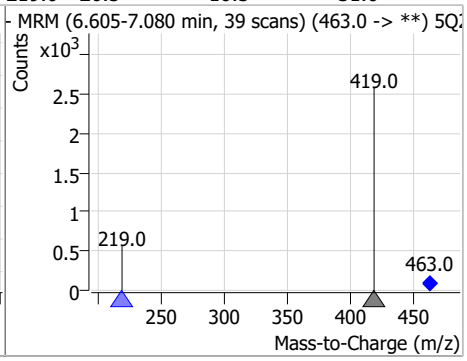


Perfluorinated Compounds by LC/MS/MS

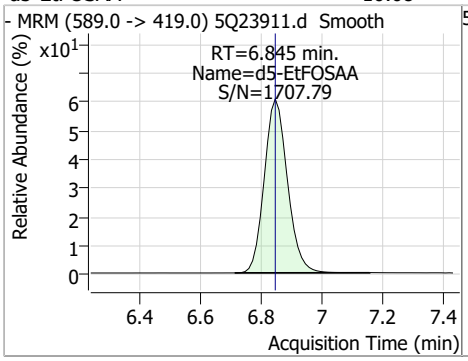
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	4.85	6.77	0.01	74093	463.0 -> 219.0	20.5	10.5	31.6

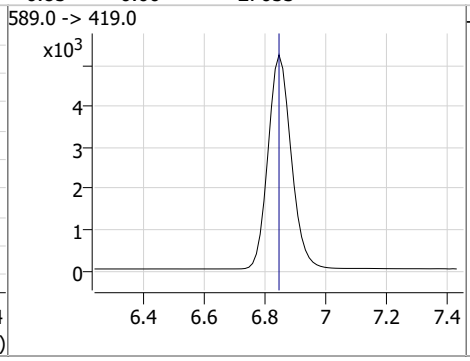


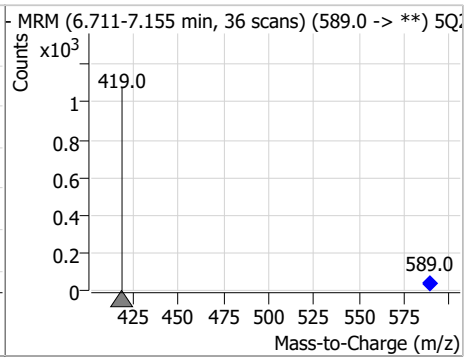




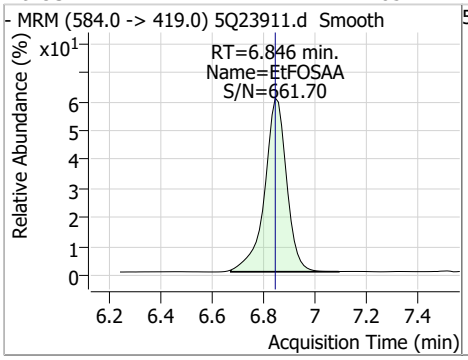
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	10.08	6.85	0.00	27653				

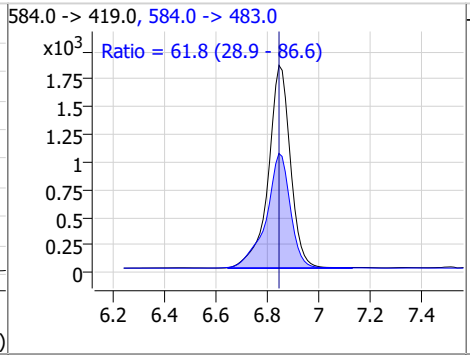


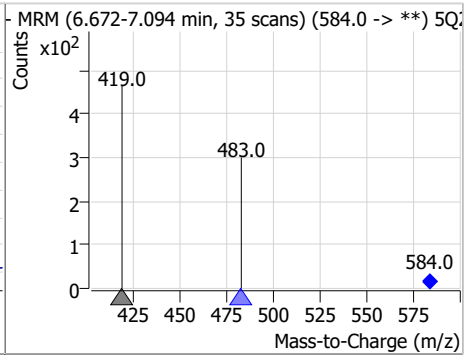




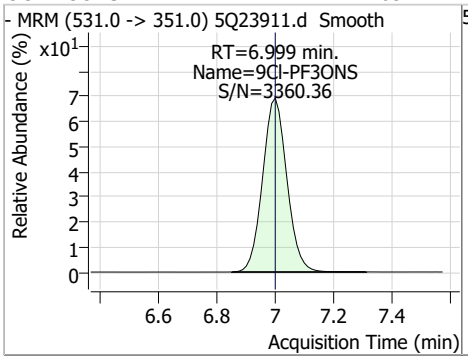
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	4.85	6.85	0.00	10945	584.0 -> 483.0	61.8	28.9	86.6

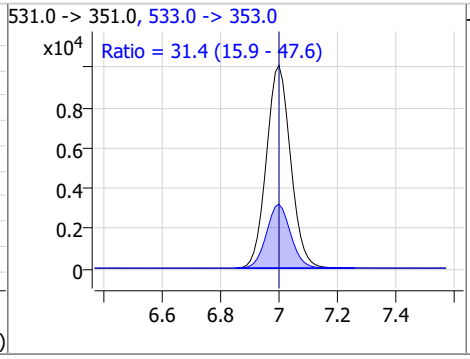


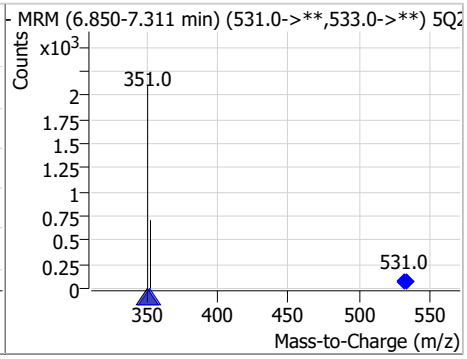




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	4.63	7.00	0.00	58139	533.0 -> 353.0	31.4	15.9	47.6

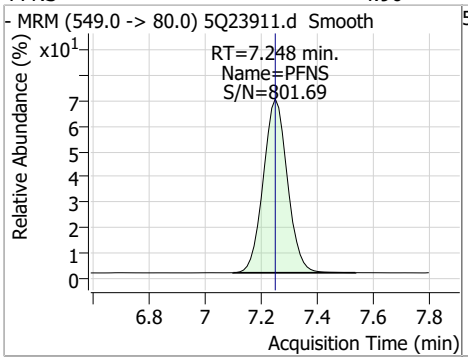


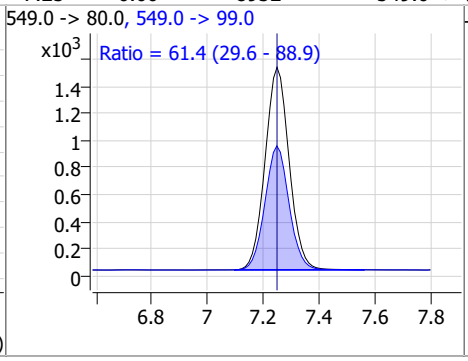


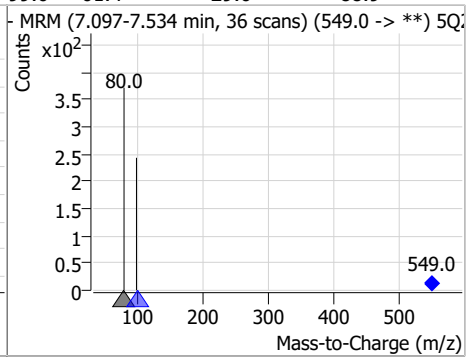


Perfluorinated Compounds by LC/MS/MS

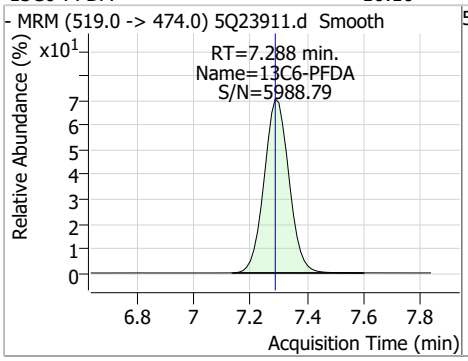
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	4.96	7.25	0.00	8952	549.0 -> 99.0	61.4	29.6	88.9

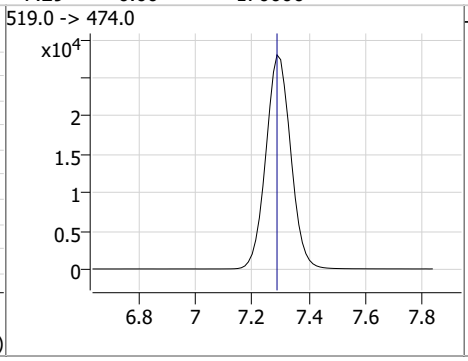


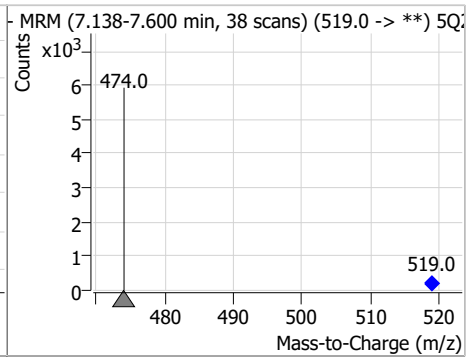




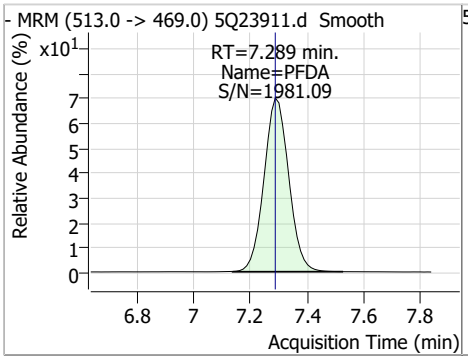
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	10.10	7.29	0.00	170006				

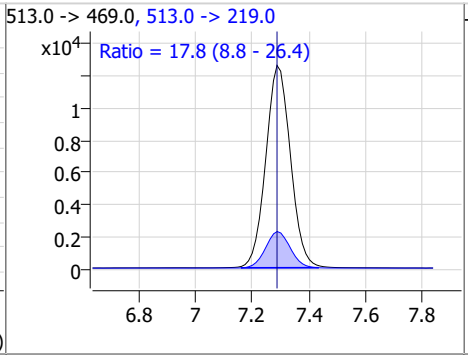


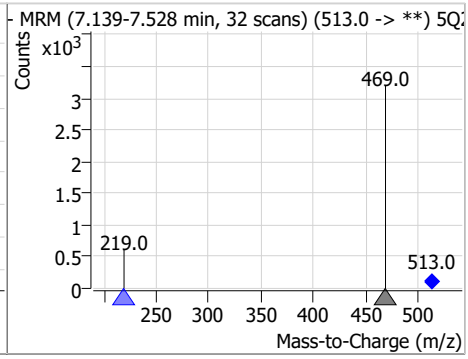




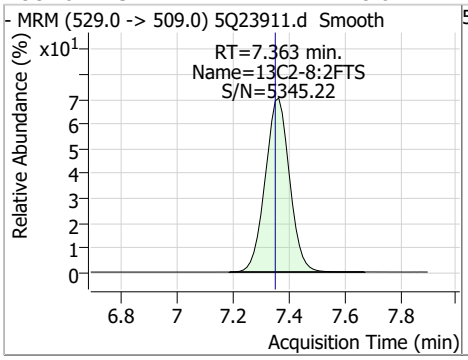
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	4.72	7.29	0.00	76174	513.0 -> 219.0	17.8	8.8	26.4

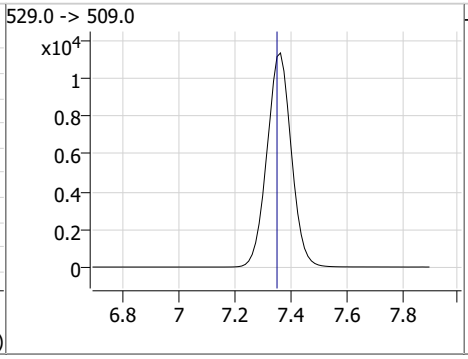


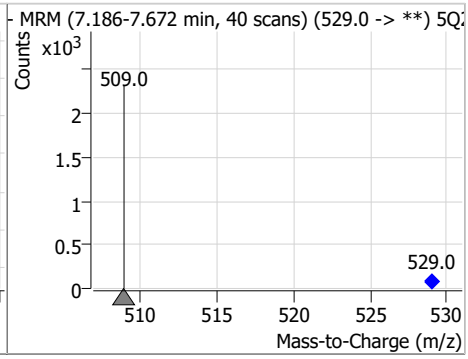




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	9.81	7.36	0.01	68493				

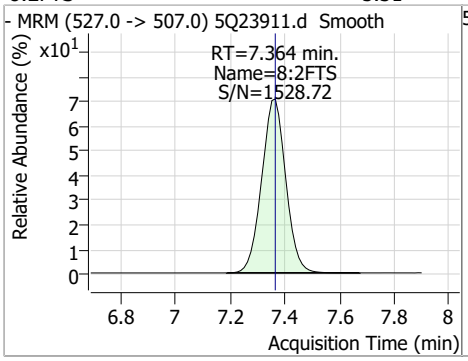


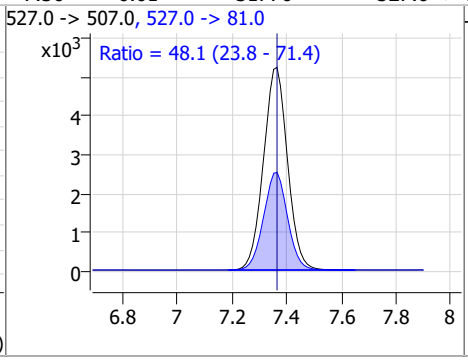


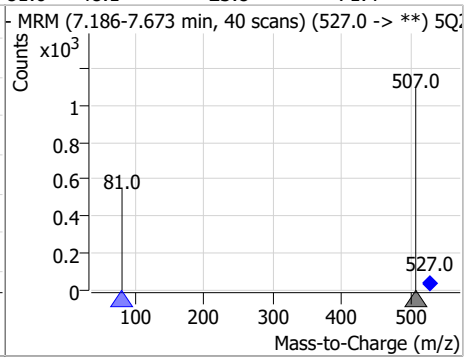


Perfluorinated Compounds by LC/MS/MS

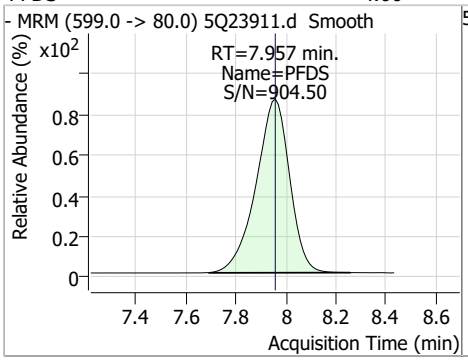
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	5.31	7.36	0.01	31770	527.0 -> 81.0	48.1	23.8	71.4

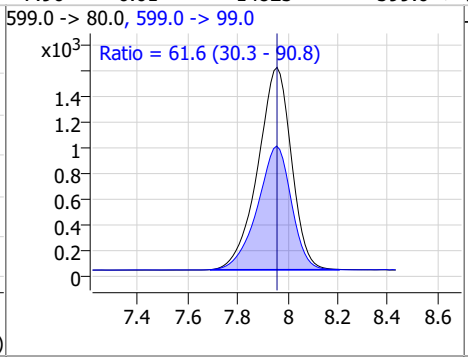


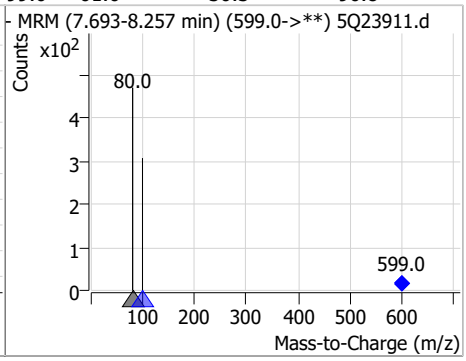




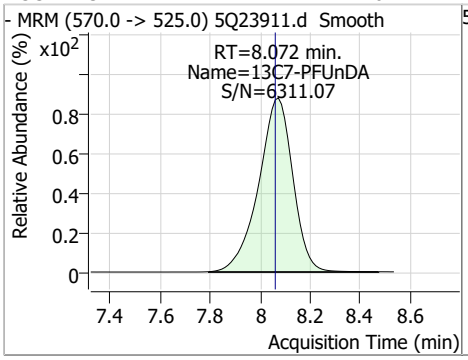
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	4.60	7.96	0.01	14825	599.0 -> 99.0	61.6	30.3	90.8

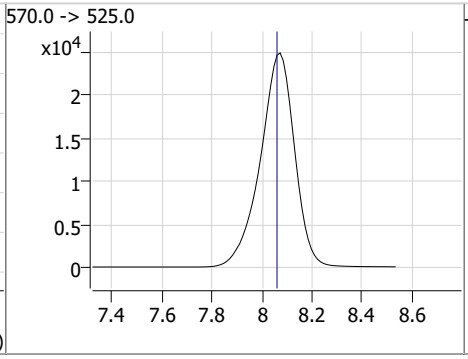


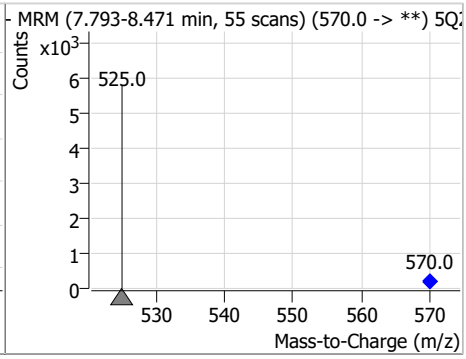




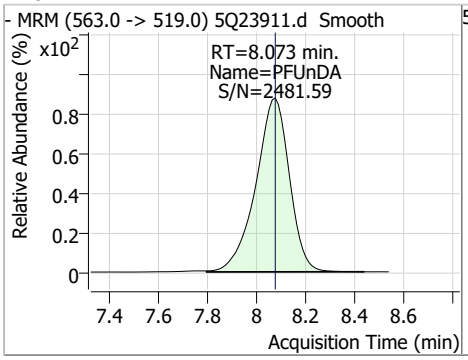
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	10.14	8.07	0.01	236230				

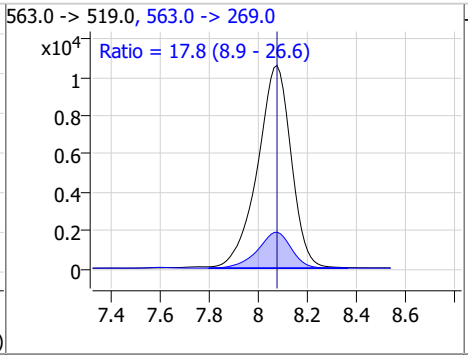


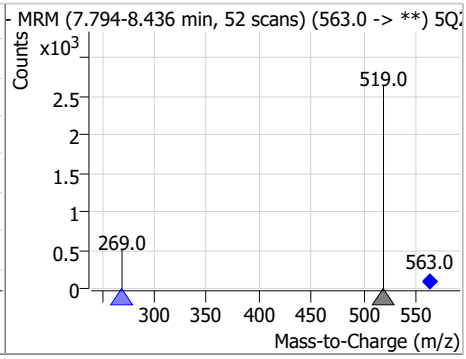




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	4.71	8.07	0.01	100428	563.0 -> 269.0	17.8	8.9	26.6

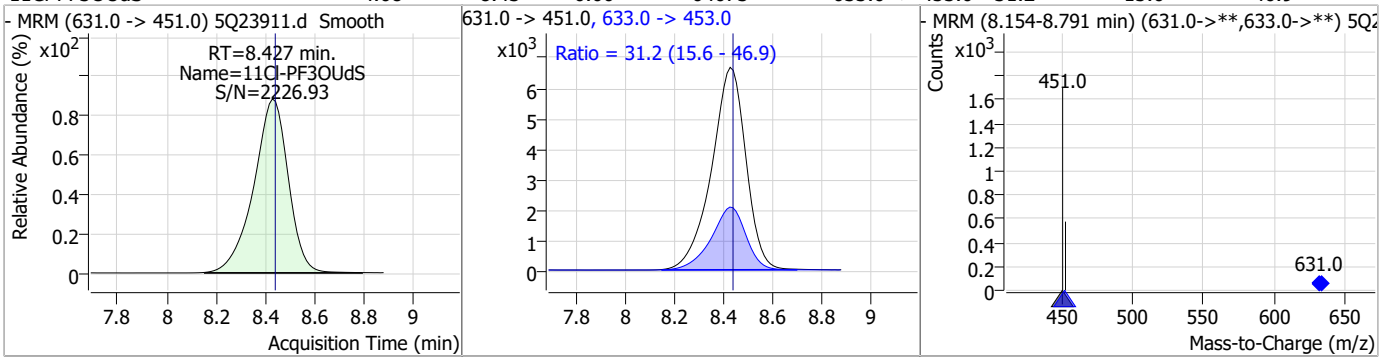




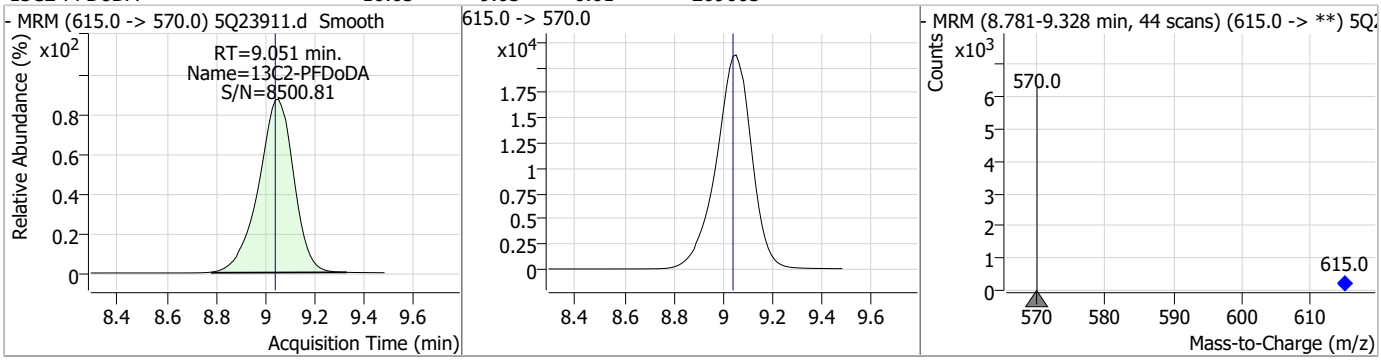


Perfluorinated Compounds by LC/MS/MS

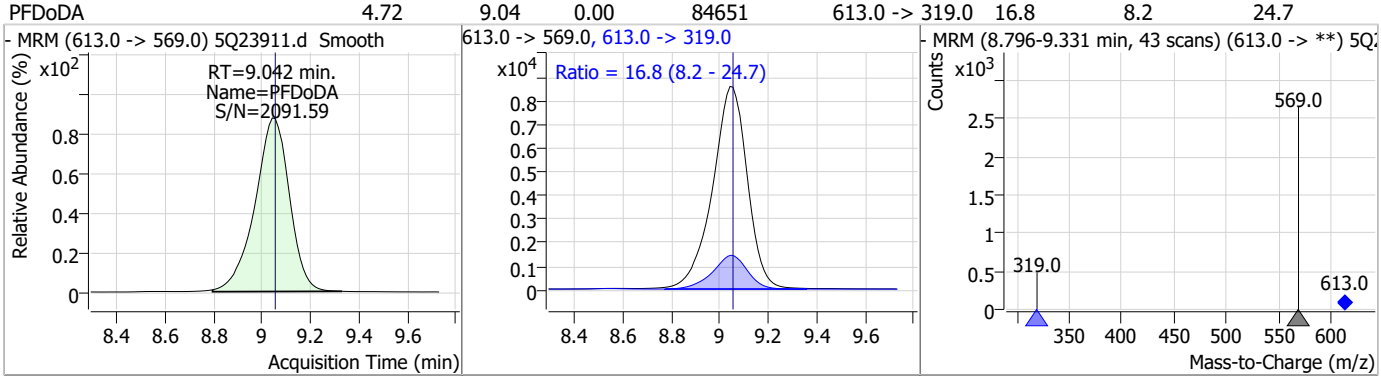
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	4.68	8.43	0.00	64673	633.0 -> 453.0	31.2	15.6	46.9



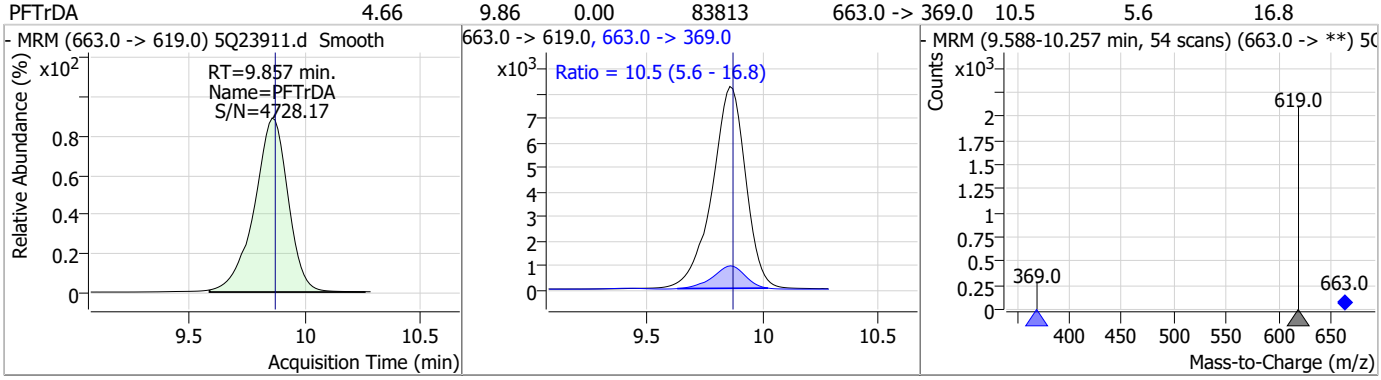
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	10.03	9.05	0.01	209065				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	4.72	9.04	0.00	84651	613.0 -> 319.0	16.8	8.2	24.7

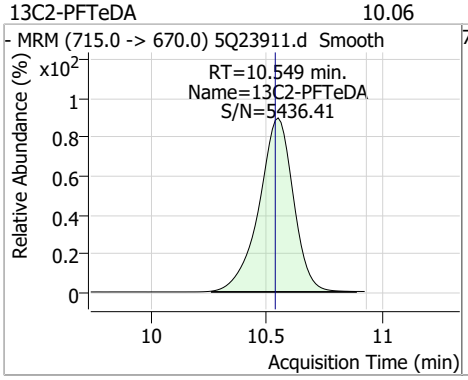


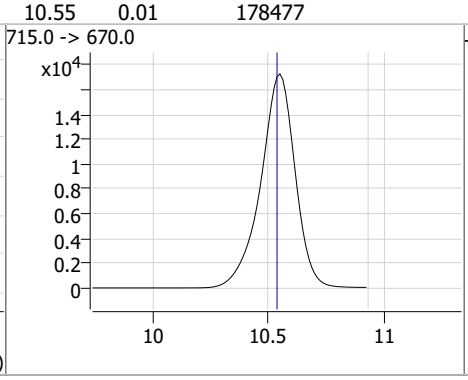
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	4.66	9.86	0.00	83813	663.0 -> 369.0	10.5	5.6	16.8

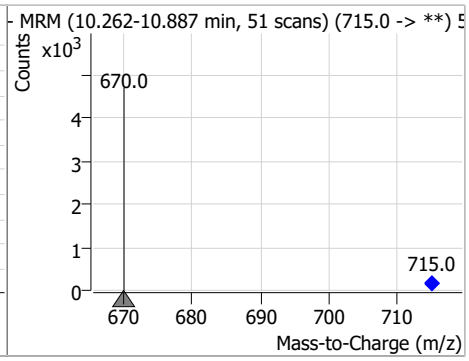


Perfluorinated Compounds by LC/MS/MS

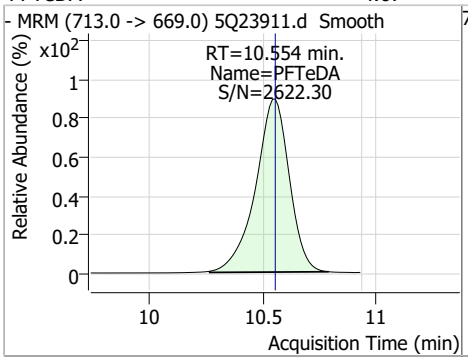
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	10.06	10.55	0.01	178477				

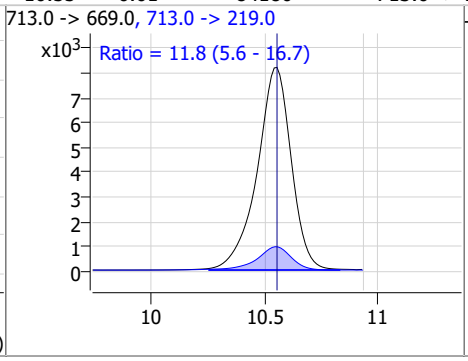


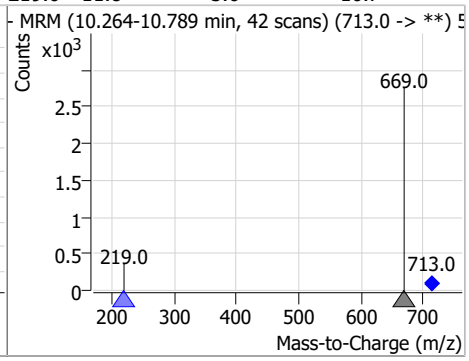




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	4.67	10.55	0.01	84180	713.0 -> 219.0	11.8	5.6	16.7







9.6.20

9

Manual Integration Approval Summary

Sample Number: S5Q375-IC375
Lab FileID: 5Q23911.D
Injection Time: 12/28/23 15:23
Method: EPA 537M QSM5.3 B-15
Analyst approved: 12/29/23 14:15 Lindsay Ritner
Supervisor approved: 01/02/24 14:05 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.45	Split peak
Perfluorooctanesulfonic acid	1763-23-1		6.73	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Natasha Gumtie 01/02/24 14:05

Perfluorinated Compounds by LC/MS/MS

Data File : 5Q23912.d
Operator : natashag
Acq. Method : 537_ID.m
Acq. Date-Time : 12/28/2023 3:40:03 PM
Sample Name : ic375-10
Vial : P1-A6
DA Method File : ID_122823_S5Q375.quantmethod.xml
Batch Name : s5q375.batch.bin
Sample Information : OP401,S5Q375,250,,,1.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.987	217.0 -> 172.0	47680	10.00	µg/L	0.000
M5-PFPeA	3.432	268.0 -> 223.0	77864	10.00	µg/L	0.000
M5-PFHxA	4.552	318.0 -> 273.0	118955	10.00	µg/L	0.000
M4-PFHpA	5.413	367.0 -> 322.0	121756	10.00	µg/L	0.000
M8-PFOA	6.124	421.0 -> 376.0	169541	10.00	µg/L	0.000
M9-PFNA	6.756	472.0 -> 427.0	172768	10.00	µg/L	0.000
M6-PFDA	7.288	519.0 -> 474.0	171791	10.00	µg/L	0.000
M7-PFUnDA	8.072	570.0 -> 525.0	235615	10.00	µg/L	0.012
M2-PFDoDA	9.038	615.0 -> 570.0	210788	10.00	µg/L	0.000
M2-PFTeDA	10.549	715.0 -> 670.0	181596	10.00	µg/L	0.012
M8-FOSA	6.192	506.0 -> 78.0	42192	10.00	µg/L	0.000
M3-PFBS	3.637	302.0 -> 99.0	9887	10.00	µg/L	0.000
M3-PFHxS	5.444	402.0 -> 99.0	12005	10.00	µg/L	0.012
M8-PFOS	6.729	507.0 -> 99.0	16616	10.00	µg/L	0.000
M2-4:2FTS	4.474	329.0 -> 309.0	40511	10.00	µg/L	0.000
M2-6:2FTS	6.136	429.0 -> 409.0	71619	10.00	µg/L	0.000
M2-8:2FTS	7.363	529.0 -> 509.0	70863	10.00	µg/L	0.012
M3-MeFOSAA	6.735	573.0 -> 419.0	31711	10.00	µg/L	-0.012
M3-HFPO-DA	4.819	287.0 -> 169.0	6829	10.00	µg/L	0.000
M3-MeFOSA	6.589	515.0 -> 169.0	15160	10.00	µg/L	0.000
M5-EtFOSAA	6.845	589.0 -> 419.0	27764	10.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.474	329.0 -> 309.0	40511	10.07	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.7%		
13C2-6:2FTS	6.136	429.0 -> 409.0	71619	10.11	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.1%		
13C2-8:2FTS	7.363	529.0 -> 509.0	70863	10.15	µg/L	0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.5%		
13C2-PFDoDA	9.038	615.0 -> 570.0	210788	10.11	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.1%		
13C2-PFTeDA	10.549	715.0 -> 670.0	181596	10.23	µg/L	0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 102.3%		
13C3-PFBS	3.637	302.0 -> 99.0	9887	10.18	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.8%		
13C3-PFHxS	5.444	402.0 -> 99.0	12005	10.17	µg/L	0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.7%		
13C4-PFBA	1.987	217.0 -> 172.0	47680	10.09	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.9%		
13C4-PFHpA	5.413	367.0 -> 322.0	121756	10.12	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.2%		
13C5-PFHxA	4.552	318.0 -> 273.0	118955	9.95	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.5%		
13C5-PFPeA	3.432	268.0 -> 223.0	77864	9.88	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 98.8%		
13C6-PFDA	7.288	519.0 -> 474.0	171791	10.20	µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

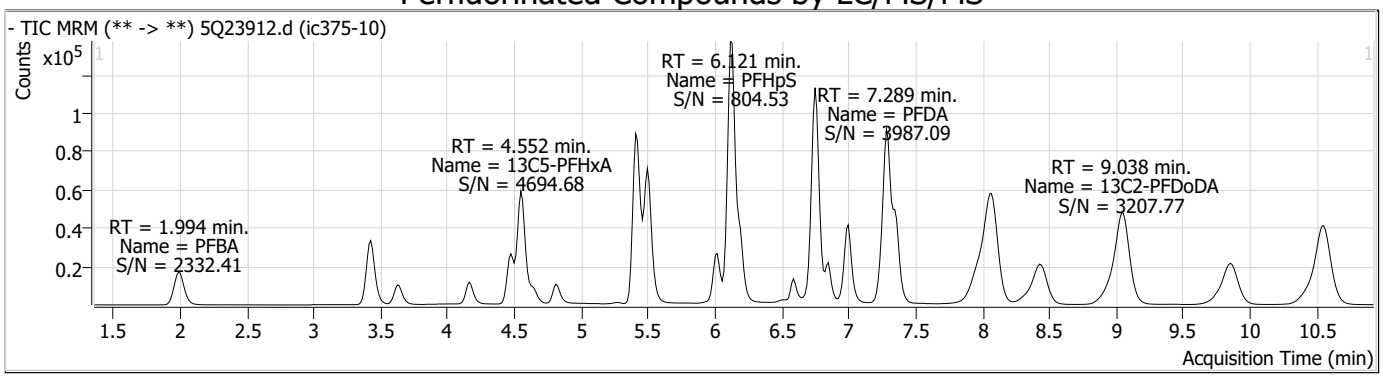
Compound	RT	Transition	Response	Conc. Units		Dev(Min)
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 102.0%		
13C7-PFUnDA	8.072	570.0 -> 525.0	235615	10.11 µg/L		0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.1%		
13C8-FOSA	6.192	506.0 -> 78.0	42192	10.41 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 104.1%		
13C8-PFOA	6.124	421.0 -> 376.0	169541	10.24 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 102.4%		
13C8-PFOS	6.729	507.0 -> 99.0	16616	10.57 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 105.7%		
13C9-PFNA	6.756	472.0 -> 427.0	172768	10.40 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 104.0%		
d3-MeFOSAA	6.735	573.0 -> 419.0	31711	10.40 µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 104.0%		
13C3-HFPO-DA	4.819	287.0 -> 169.0	6829	10.58 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 105.8%		
d3-MeFOSA	6.589	515.0 -> 169.0	15160	10.81 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 108.1%		
d5-EtFOSAA	6.845	589.0 -> 419.0	27764	10.12 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.2%		
Target Compounds						QValue
4:2FTS	4.475	327.0 -> 307.0	42898	10.75 µg/L		100
		327.0 -> 81.0	24290			
6:2FTS	6.136	427.0 -> 407.0	69757	10.64 µg/L		100
		427.0 -> 81.0	28354			
8:2FTS	7.364	527.0 -> 507.0	65949	10.65 µg/L		99
		527.0 -> 81.0	31065			
EtFOSAA	6.846	584.0 -> 419.0	22328	9.86 µg/L		96
		584.0 -> 483.0	13624			
FOSA	6.194	498.0 -> 78.0	39223	10.13 µg/L		99
		498.0 -> 478.0	1204			
MeFOSAA	6.748	570.0 -> 419.0	24362	9.84 µg/L		100
		570.0 -> 512.0	9094			
PFBA	1.994	213.0 -> 169.0	43437	9.83 µg/L		100
PFBS	3.628	299.0 -> 80.0	24162	9.87 µg/L		100
		299.0 -> 99.0	10662			
PFDA	7.289	513.0 -> 469.0	162519	9.96 µg/L		100
		513.0 -> 219.0	28803			
PFDoDA	9.042	613.0 -> 569.0	179871	9.94 µg/L		100
		613.0 -> 319.0	29674			
PFDS	7.957	599.0 -> 80.0	30827	9.58 µg/L		99
		599.0 -> 99.0	18858			
PFHpA	5.413	363.0 -> 319.0	139145	9.96 µg/L		100
		363.0 -> 169.0	29038			
PFHpS	6.121	449.0 -> 80.0	22110	9.53 µg/L		98
		449.0 -> 99.0	12037			
PFHxA	4.553	313.0 -> 269.0	114048	9.91 µg/L		99
		313.0 -> 119.0	4448			
PFHxS	5.433	399.0 -> 80.0	22116	9.93 µg/L	m	100
		399.0 -> 99.0	12397			
PFNA	6.756	463.0 -> 419.0	155718	9.84 µg/L		100
		463.0 -> 219.0	33008			
PFNS	7.248	549.0 -> 80.0	18827	9.80 µg/L		100
		549.0 -> 99.0	11181			
PFOA	6.137	413.0 -> 369.0	163994	9.86 µg/L		99
		413.0 -> 169.0	41416			
PFOS	6.730	499.0 -> 80.0	27813	9.44 µg/L	m	98

Perfluorinated Compounds by LC/MS/MS

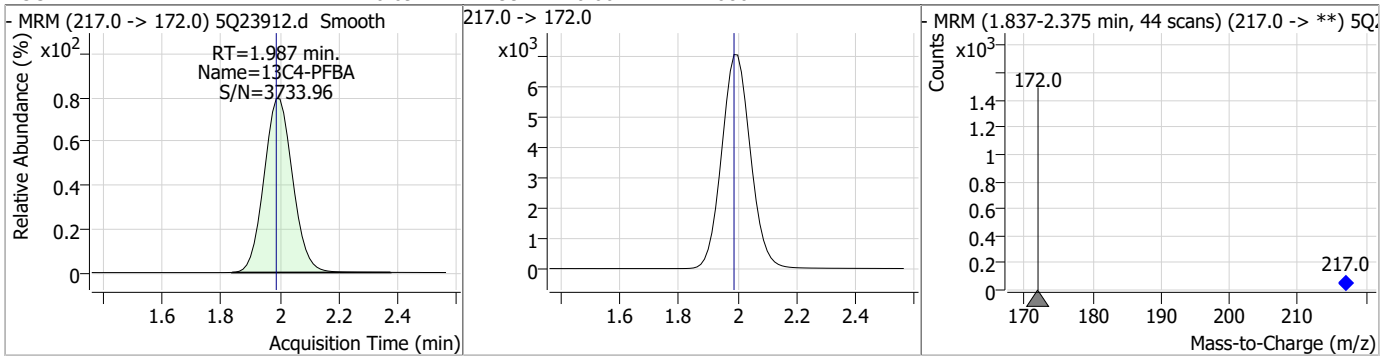
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		499.0 -> 99.0	13665			
PFPeA	3.434	263.0 -> 219.0	75001	9.93	µg/L	100
PFPeS	4.648	349.0 -> 80.0	16939	9.83	µg/L	97
		349.0 -> 99.0	8730			
PFTeDA	10.541	713.0 -> 669.0	182705	9.95	µg/L	99
		713.0 -> 219.0	21053			
PFTrDA	9.857	663.0 -> 619.0	175987	9.72	µg/L	99
		663.0 -> 369.0	20279			
PFUnDA	8.061	563.0 -> 519.0	212334	9.99	µg/L	100
		563.0 -> 269.0	37430			
11Cl-PF3OUdS	8.427	631.0 -> 451.0	135469	9.72	µg/L	100
		633.0 -> 453.0	42547			
9Cl-PF3ONS	6.999	531.0 -> 351.0	123922	9.76	µg/L	100
		533.0 -> 353.0	38998			
ADONA	5.502	377.0 -> 251.0	195243	9.71	µg/L	100
		377.0 -> 85.0	69819			
HFPO-DA	4.827	329.0 -> 169.0	28330	9.12	µg/L	99
		285.0 -> 169.0	6101			
MeFOSA	6.590	512.0 -> 169.0	12625	9.63	µg/L	100
		512.0 -> 219.0	10389			
4-PFECHS	6.018	461.0 -> 381.0	71471	9.71	µg/L	100
		461.0 -> 99.0	37099			
FBSA	4.170	298.0 -> 78.0	41380	10.40	µg/L	100
		298.0 -> 64.0	3808			
FHxSA	5.409	398.0 -> 78.0	44182	10.02	µg/L	100
		398.0 -> 64.0	4122			

 # = Qualifier out of range, m = manually integrated, + = Area summed

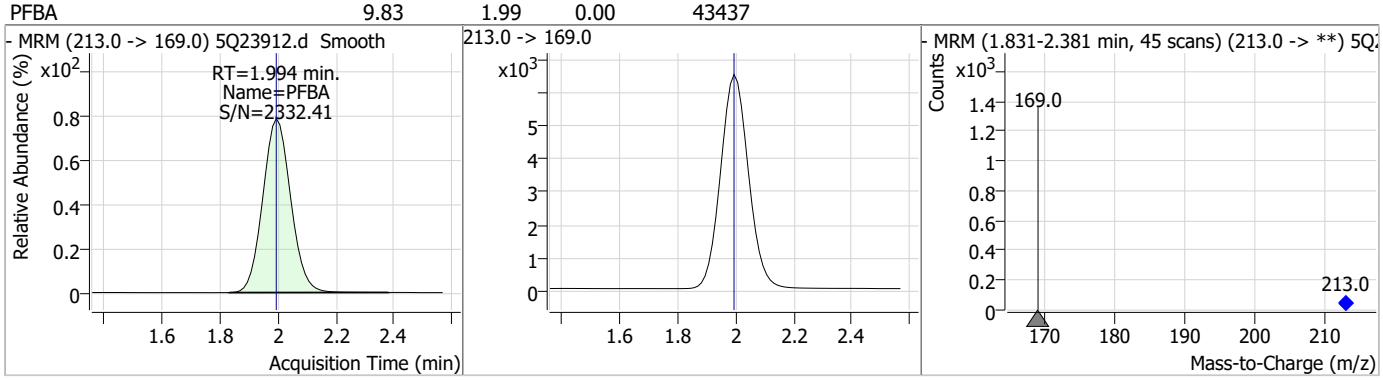
Perfluorinated Compounds by LC/MS/MS



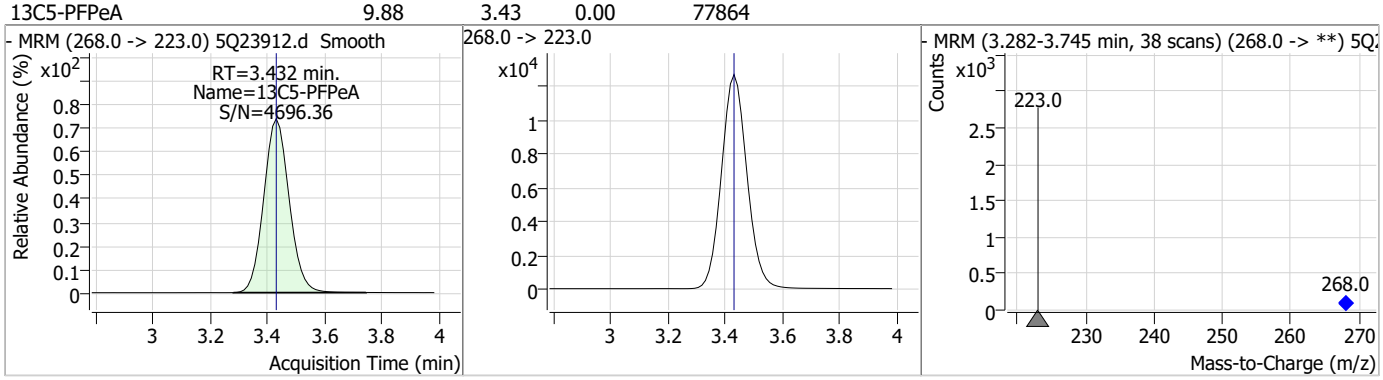
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	10.09	1.99	0.00	47680				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	9.83	1.99	0.00	43437				

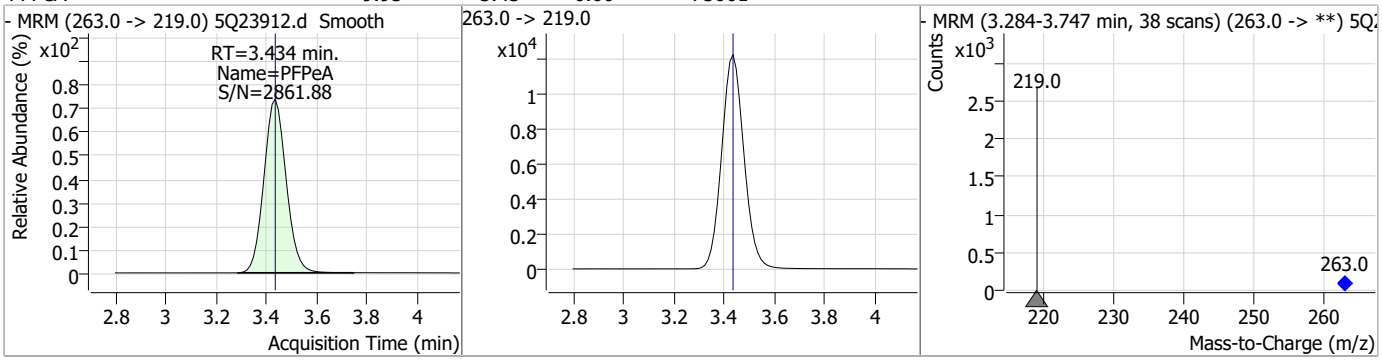


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	9.88	3.43	0.00	77864				

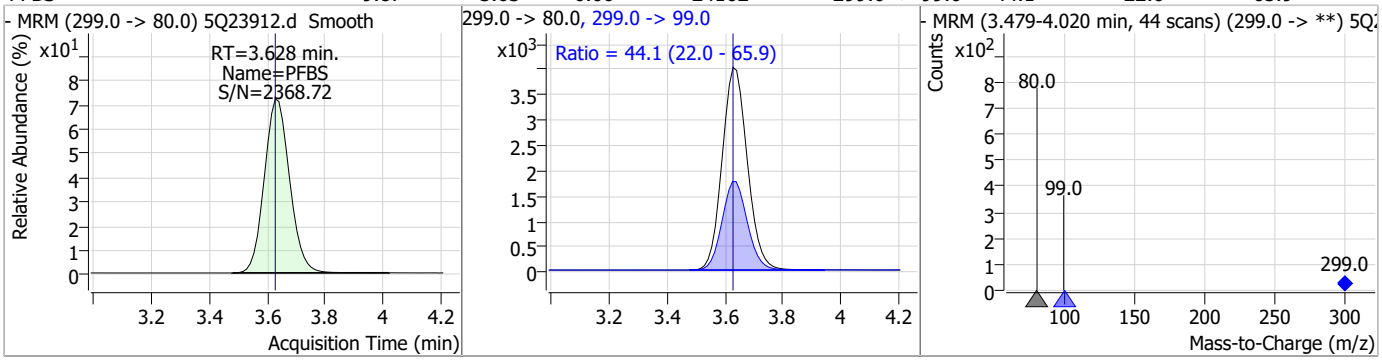


Perfluorinated Compounds by LC/MS/MS

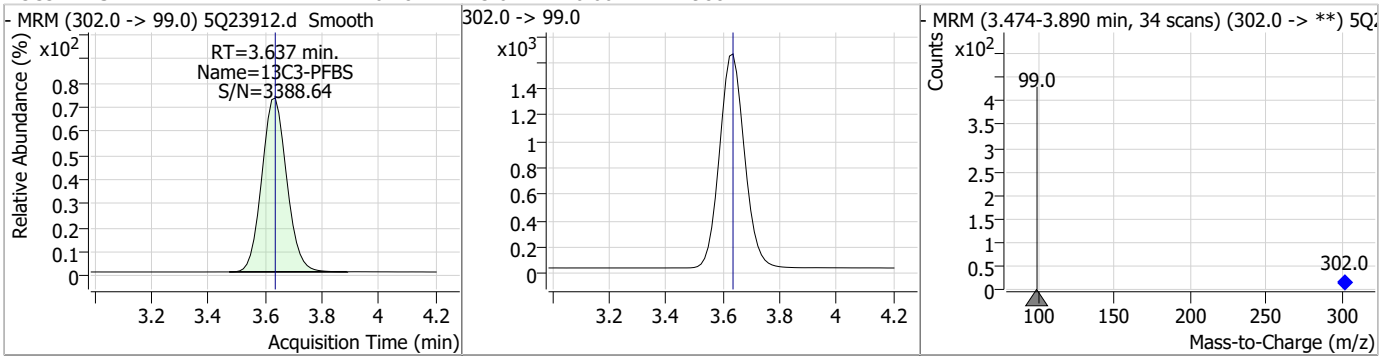
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	9.93	3.43	0.00	75001				



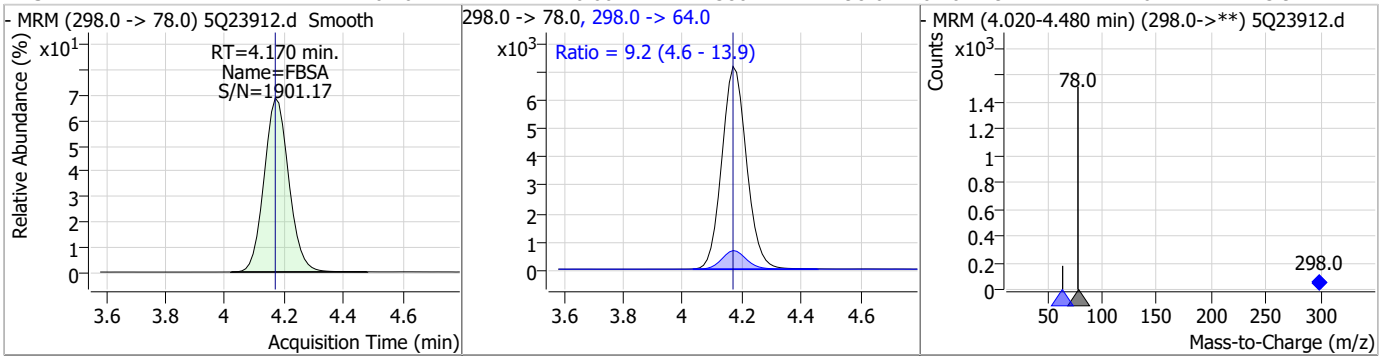
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	9.87	3.63	0.00	24162	299.0 -> 99.0	44.1	22.0	65.9



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	10.18	3.64	0.00	9887				

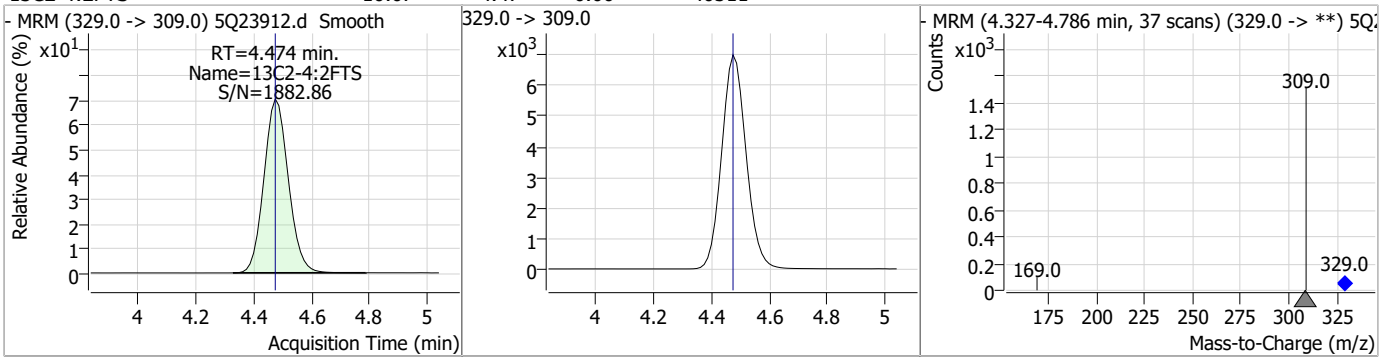


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	10.40	4.17	0.00	41380	298.0 -> 64.0	9.2	4.6	13.9

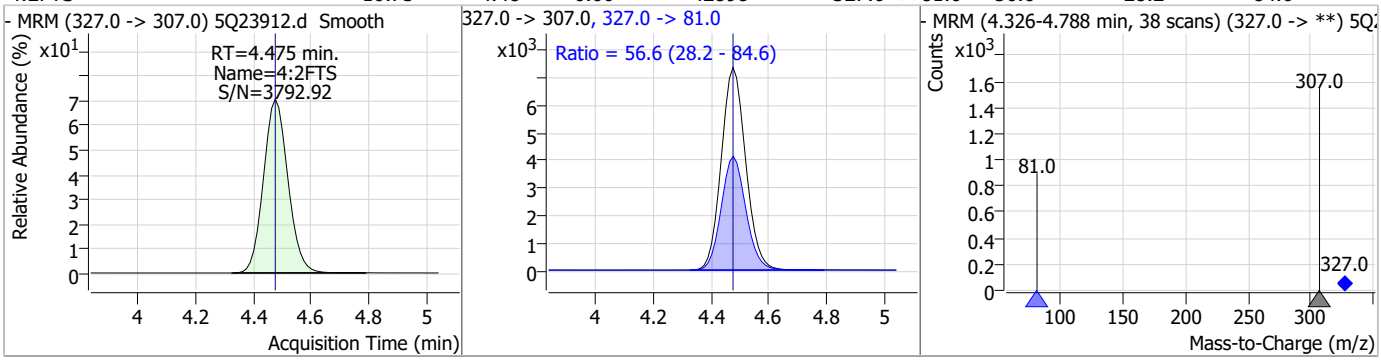


Perfluorinated Compounds by LC/MS/MS

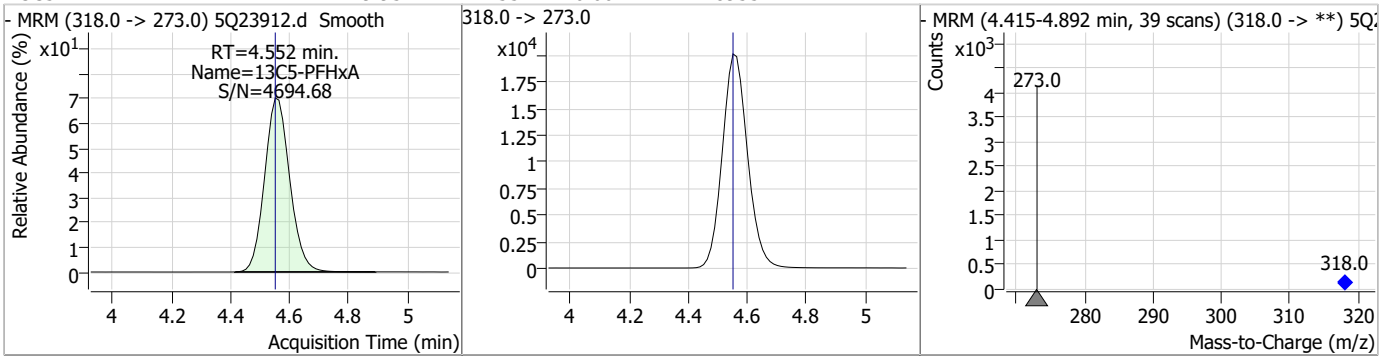
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	10.07	4.47	0.00	40511				



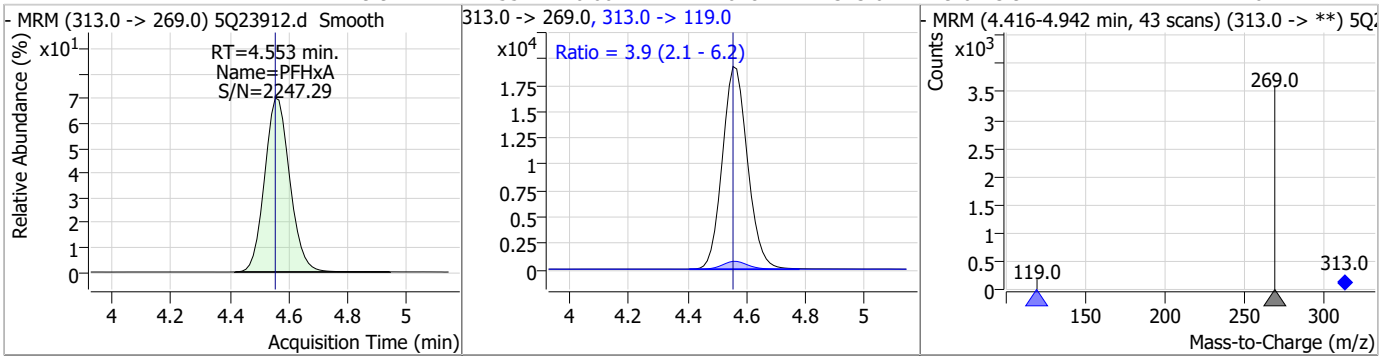
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	10.75	4.48	0.00	42898	327.0 -> 81.0	56.6	28.2	84.6



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	9.95	4.55	0.00	118955				

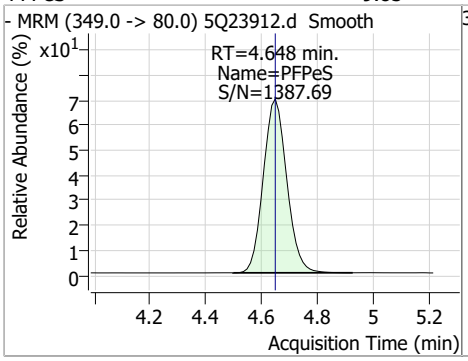


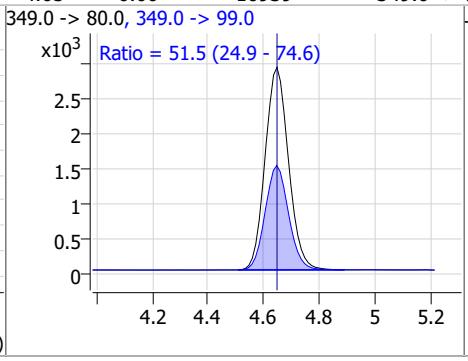
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	9.91	4.55	0.00	114048	313.0 -> 119.0	3.9	2.1	6.2

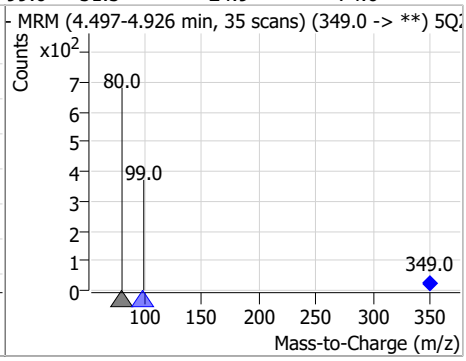


Perfluorinated Compounds by LC/MS/MS

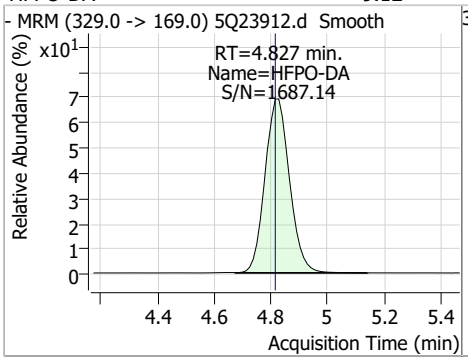
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	9.83	4.65	0.00	16939	349.0 -> 99.0	51.5	24.9	74.6

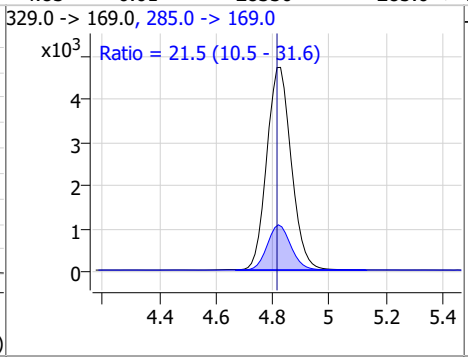


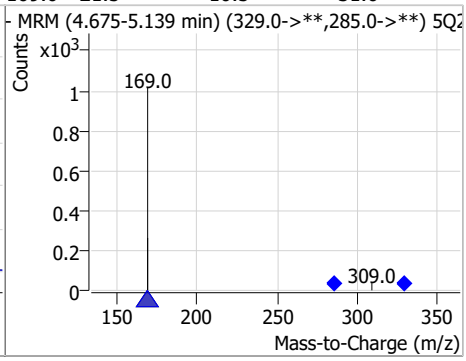




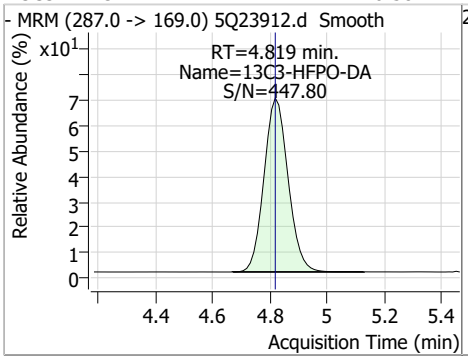
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	9.12	4.83	0.01	28330	285.0 -> 169.0	21.5	10.5	31.6

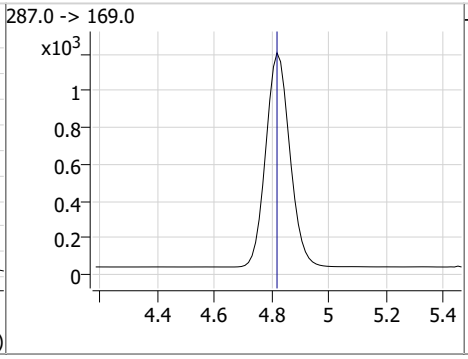


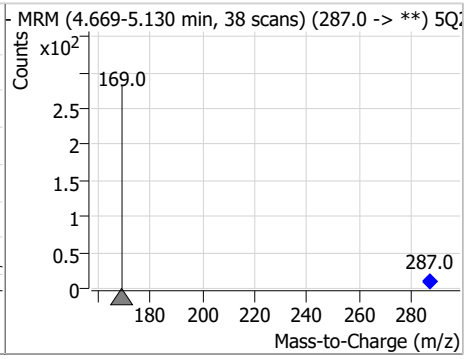




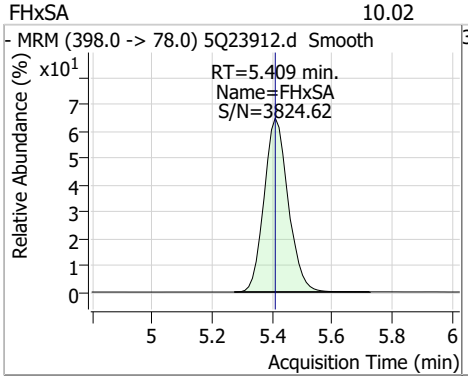
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	10.58	4.82	0.00	6829				

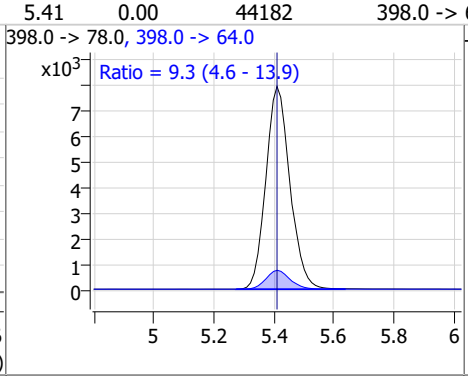


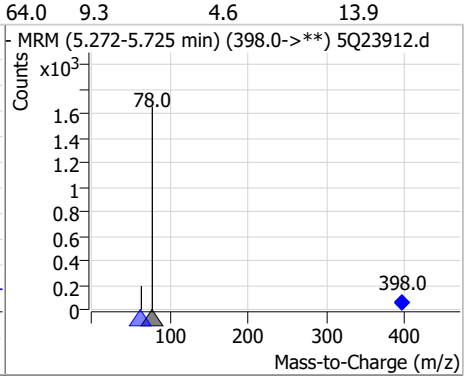




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	10.02	5.41	0.00	44182	398.0 -> 64.0	9.3	4.6	13.9

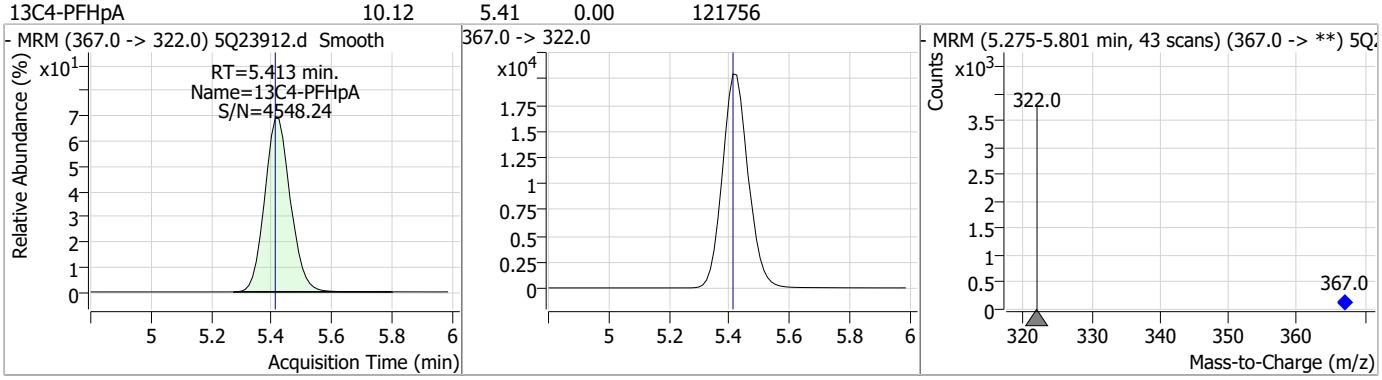




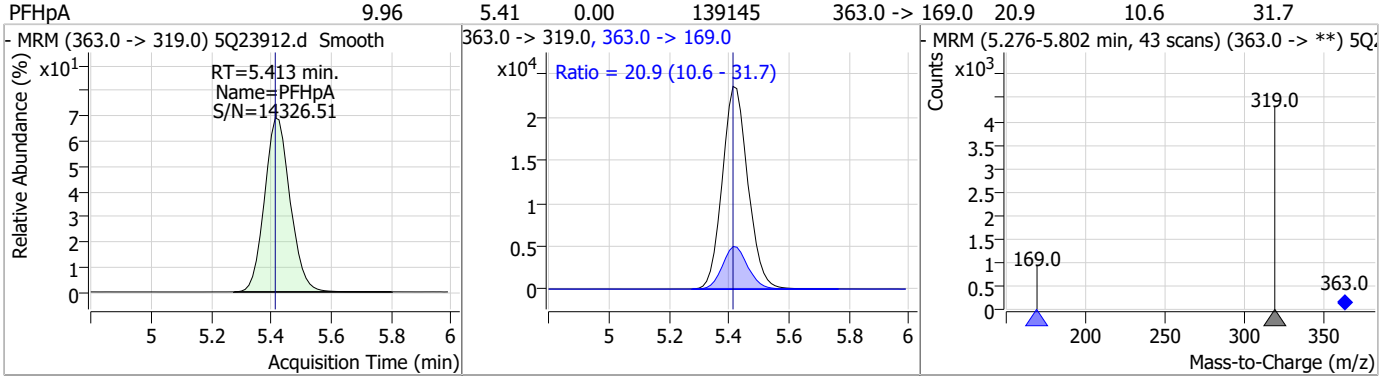


Perfluorinated Compounds by LC/MS/MS

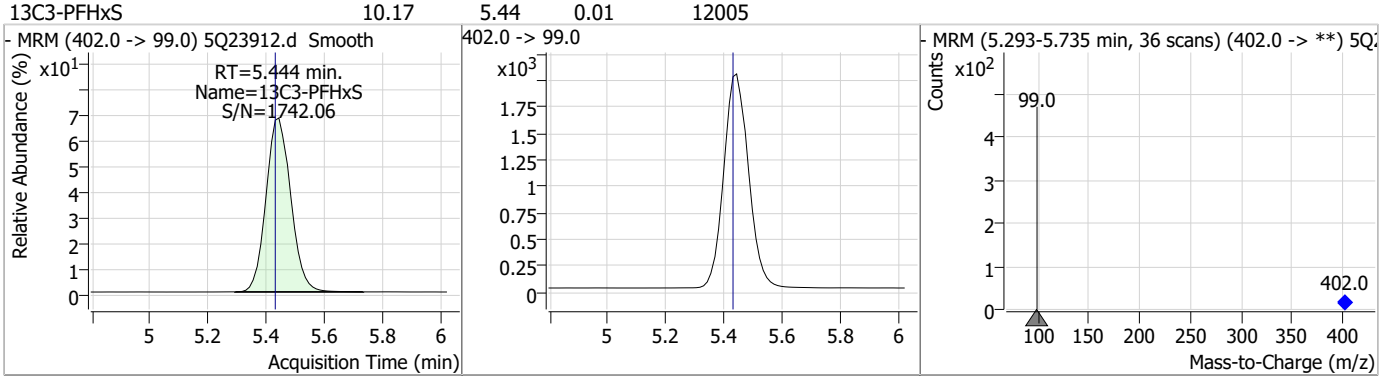
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	10.12	5.41	0.00	121756				



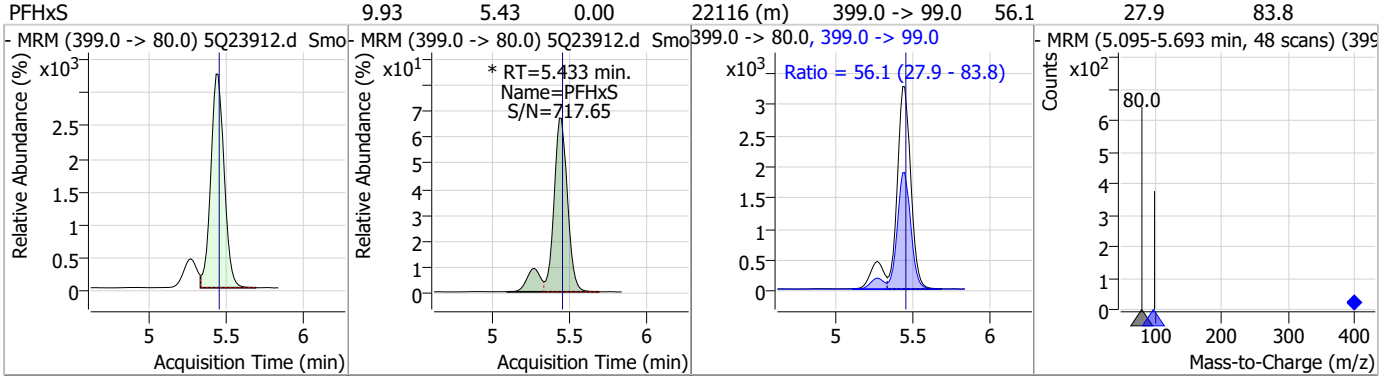
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	9.96	5.41	0.00	139145	363.0 -> 169.0	20.9	10.6	31.7



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	10.17	5.44	0.01	12005				

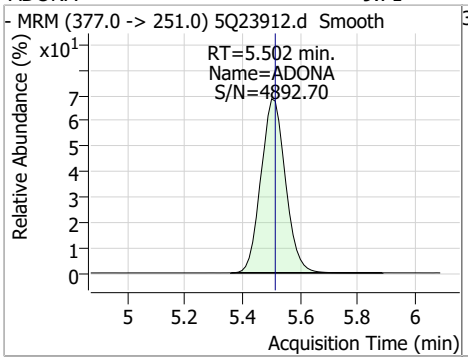


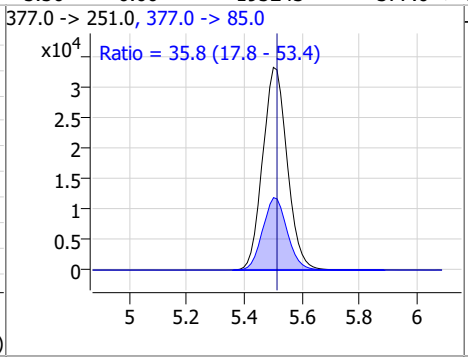
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	9.93	5.43	0.00	22116 (m)	399.0 -> 99.0	56.1	27.9	83.8

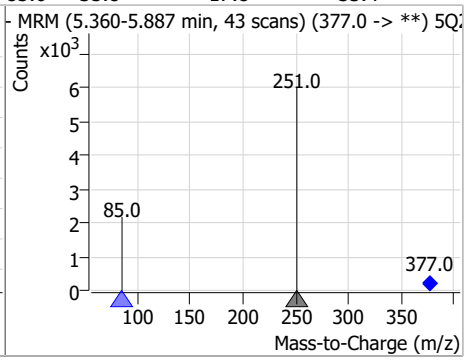


Perfluorinated Compounds by LC/MS/MS

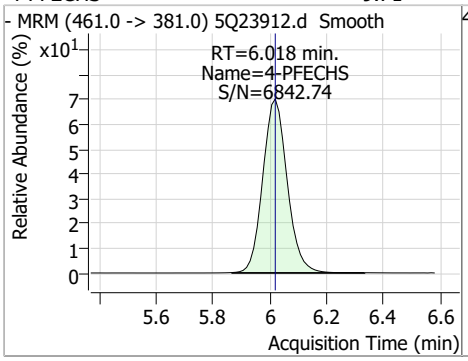
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	9.71	5.50	0.00	195243	377.0 -> 85.0	35.8	17.8	53.4

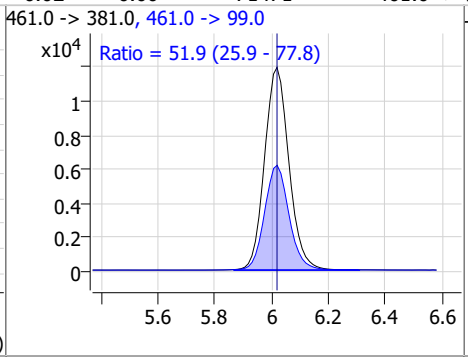


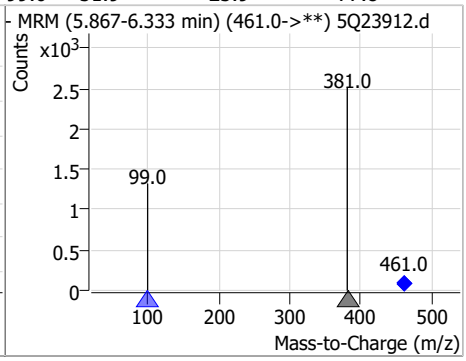




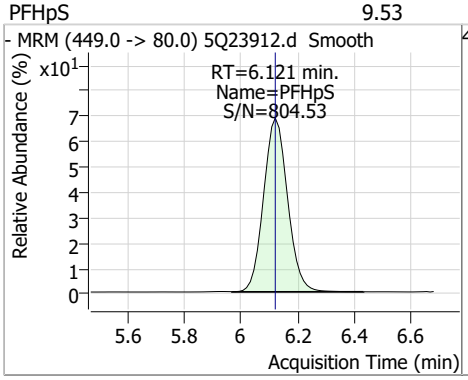
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS	9.71	6.02	0.00	71471	461.0 -> 99.0	51.9	25.9	77.8

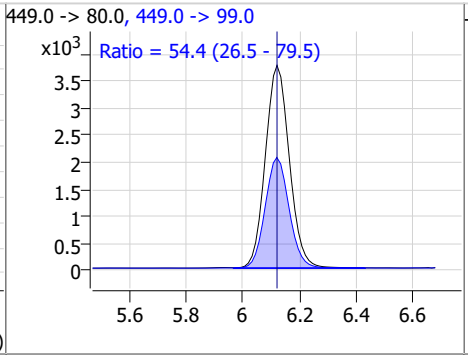


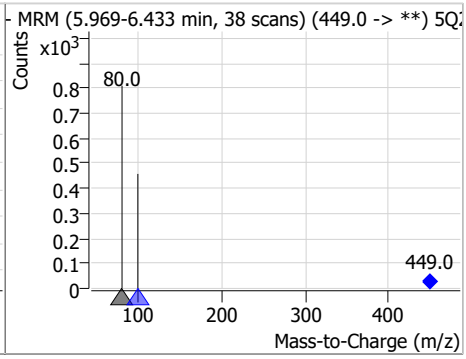




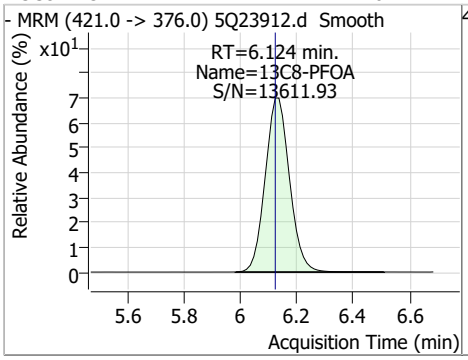
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	9.53	6.12	0.00	22110	449.0 -> 99.0	54.4	26.5	79.5

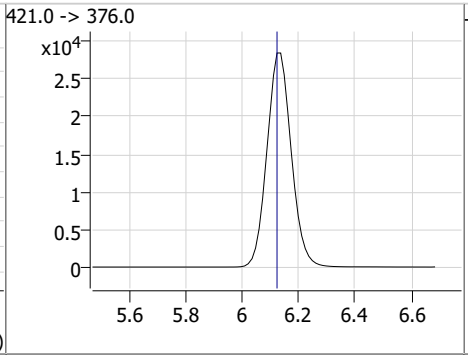


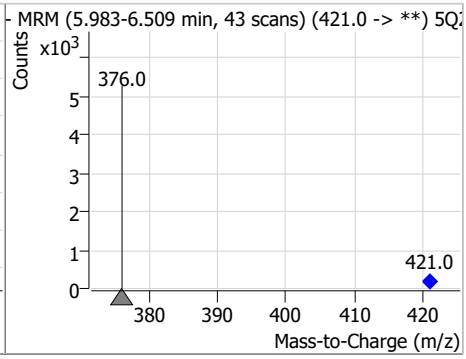




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	10.24	6.12	0.00	169541				

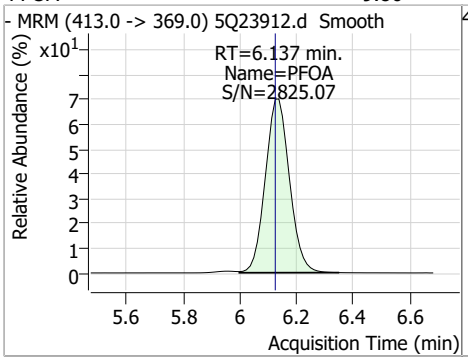


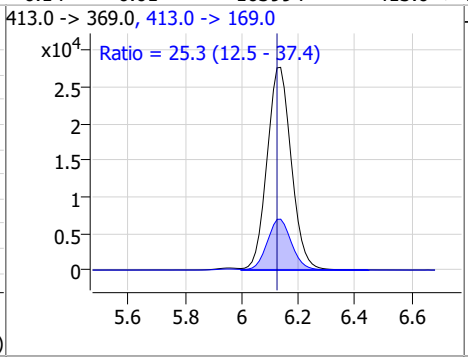


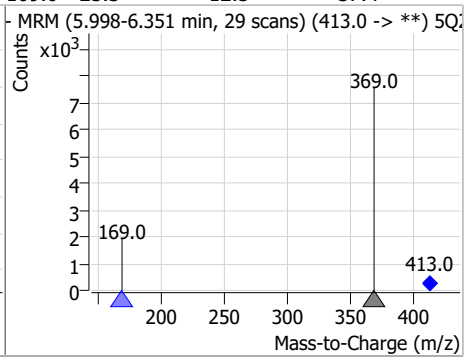


Perfluorinated Compounds by LC/MS/MS

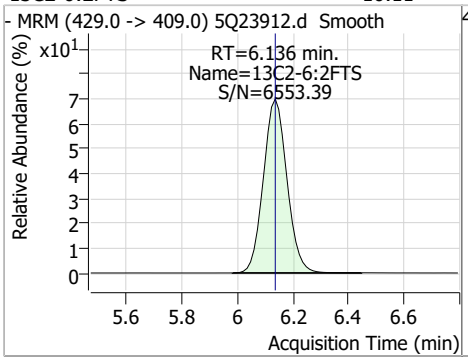
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	9.86	6.14	0.01	163994	413.0 -> 169.0	25.3	12.5	37.4

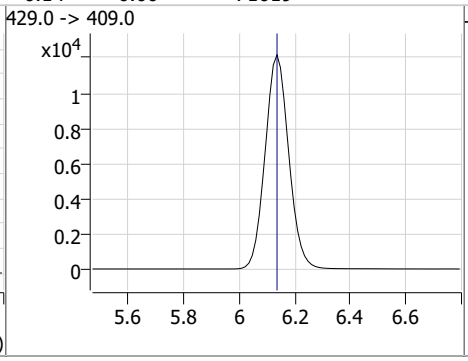


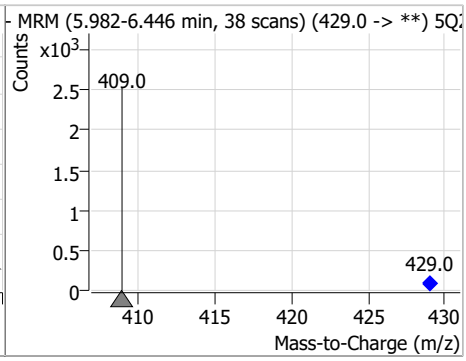




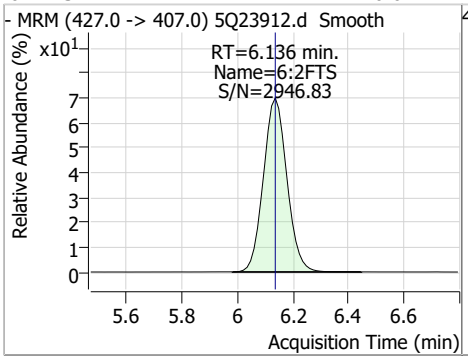
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	10.11	6.14	0.00	71619				

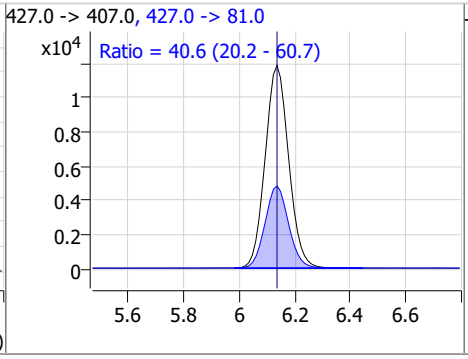


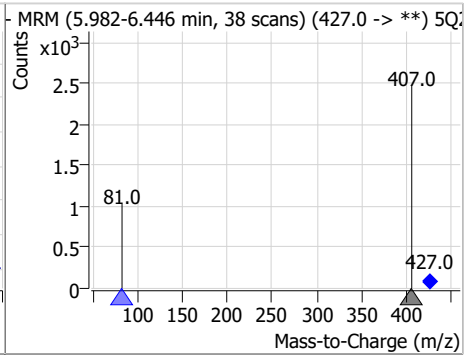




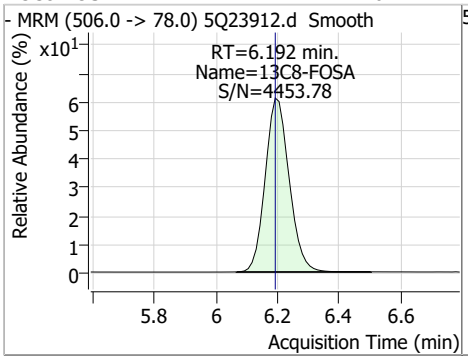
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	10.64	6.14	0.00	69757	427.0 -> 81.0	40.6	20.2	60.7

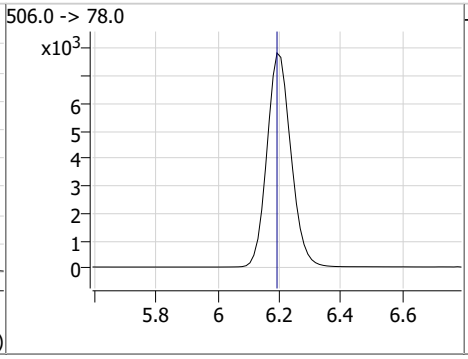


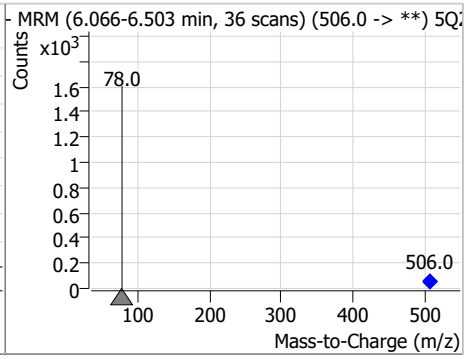




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	10.41	6.19	0.00	42192				

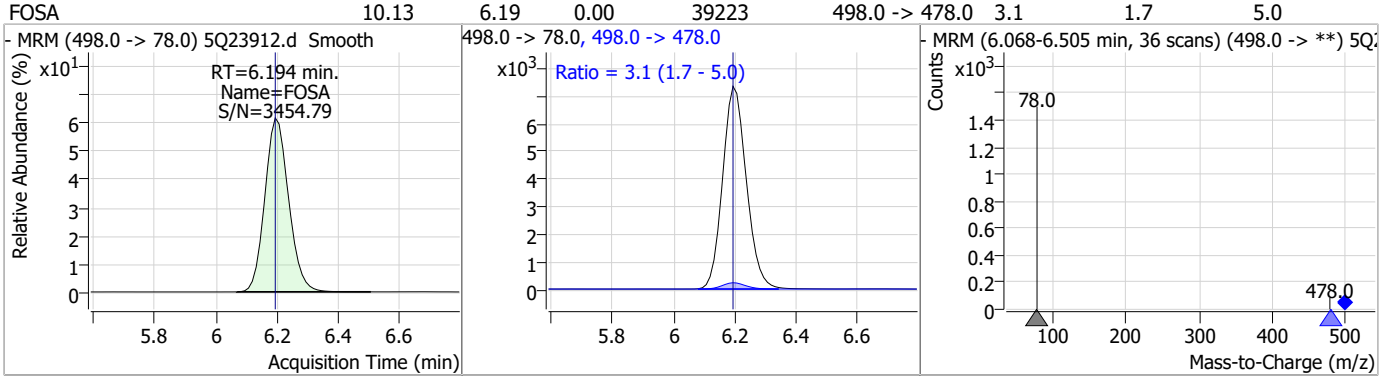




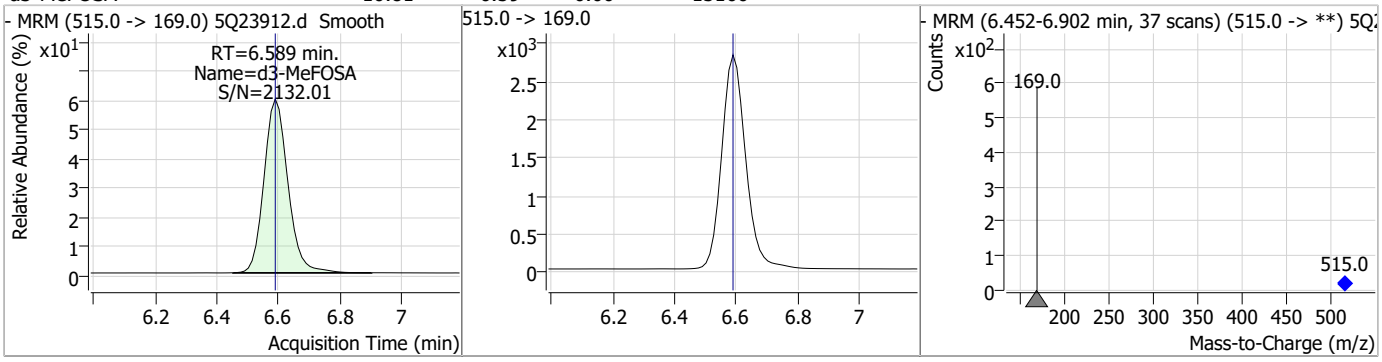


Perfluorinated Compounds by LC/MS/MS

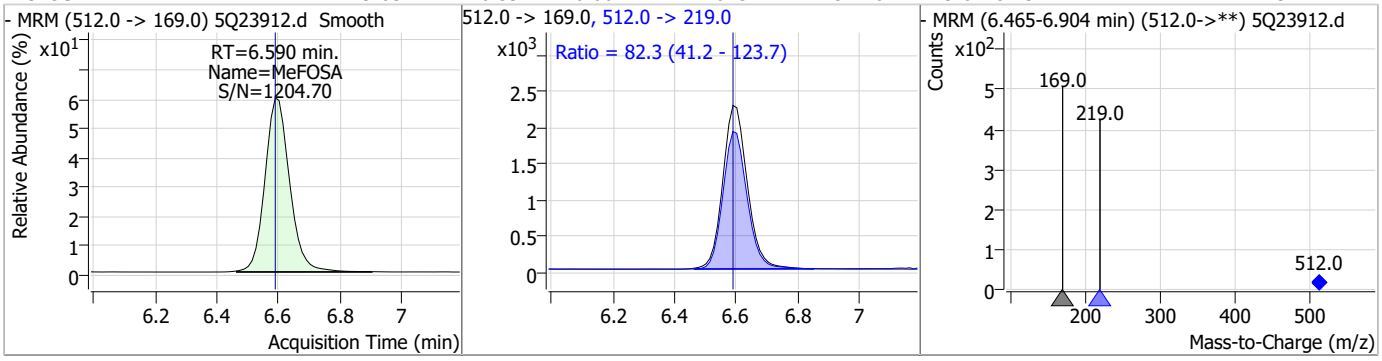
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	10.13	6.19	0.00	39223	498.0 -> 478.0	3.1	1.7	5.0



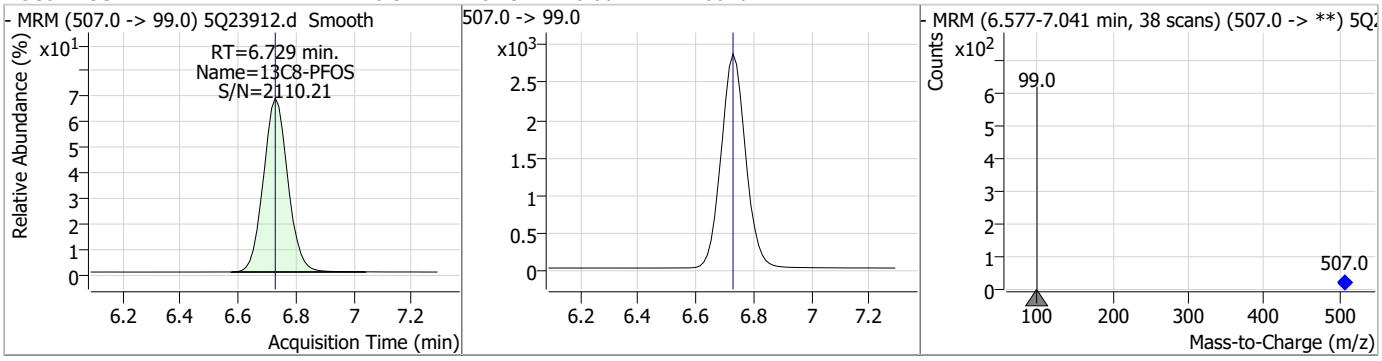
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	10.81	6.59	0.00	15160				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	9.63	6.59	0.00	12625	512.0 -> 219.0	82.3	41.2	123.7

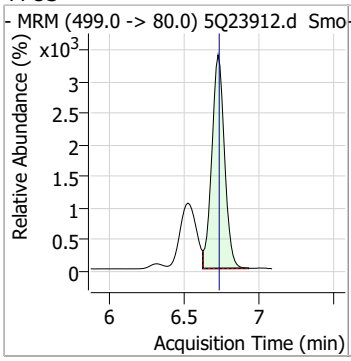


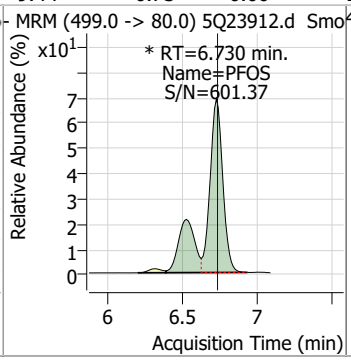
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	10.57	6.73	0.00	16616				

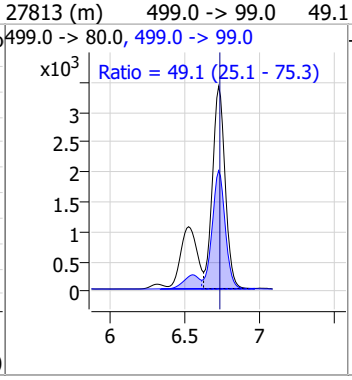


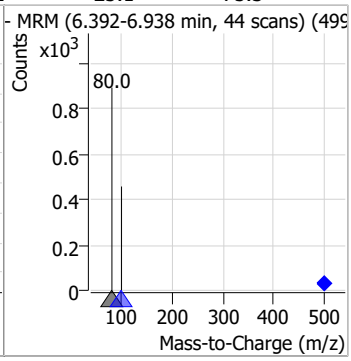
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	9.44	6.73	0.00	27813 (m)	499.0 -> 99.0	49.1	25.1	75.3

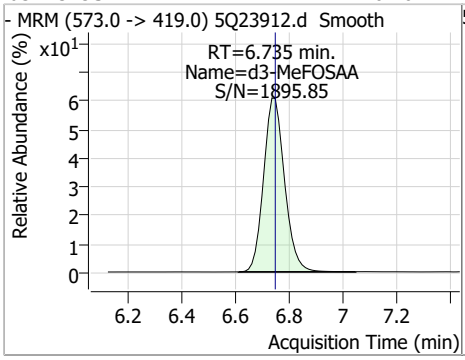


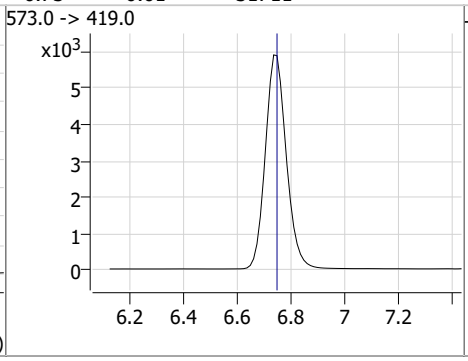


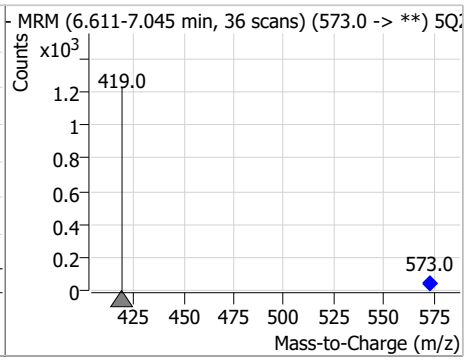




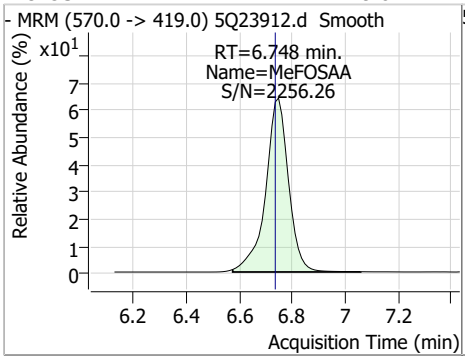
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	10.40	6.73	-0.01	31711				

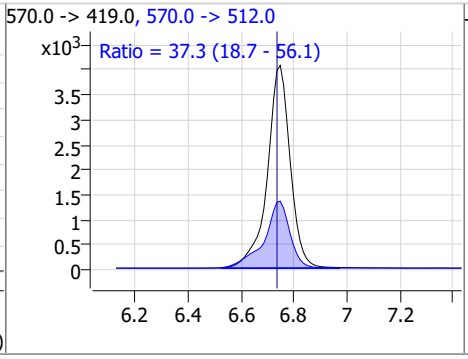


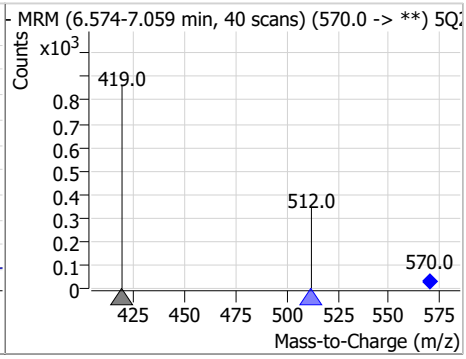




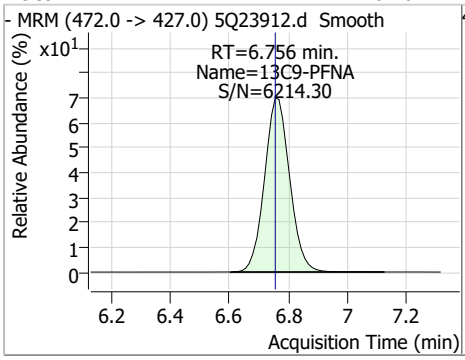
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	9.84	6.75	0.00	24362	570.0 -> 512.0	37.3	18.7	56.1

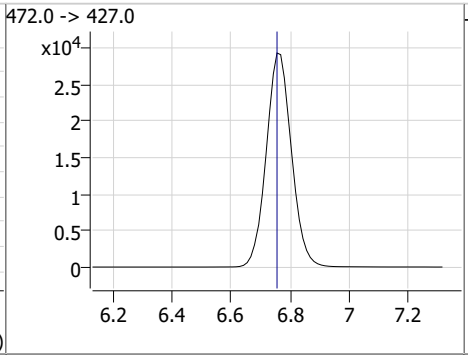


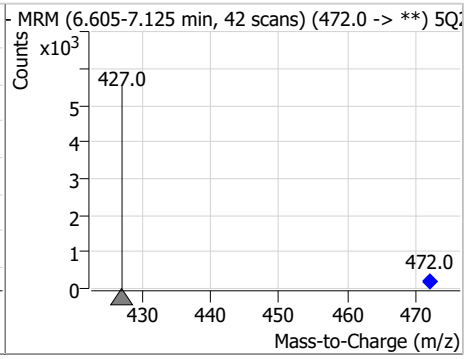




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	10.40	6.76	0.00	172768				

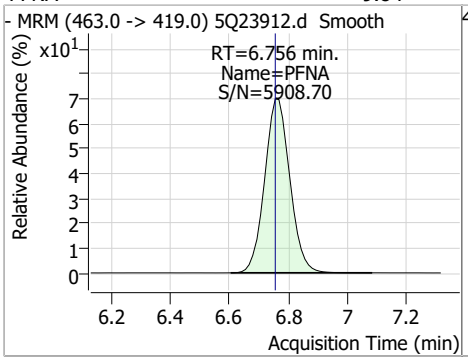


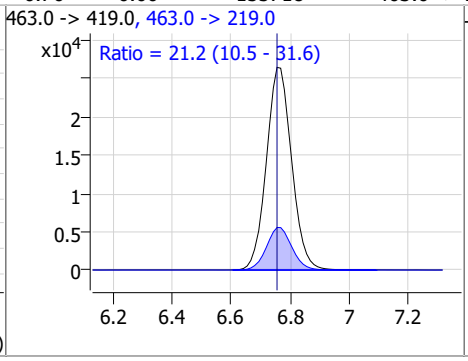


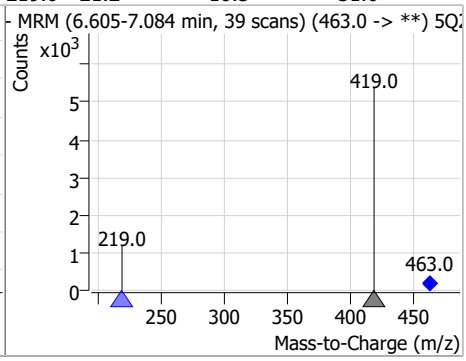


Perfluorinated Compounds by LC/MS/MS

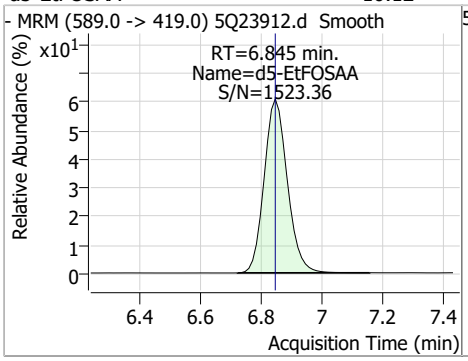
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	9.84	6.76	0.00	155718	463.0 -> 219.0	21.2	10.5	31.6

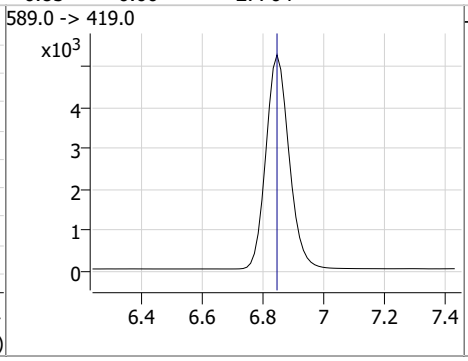


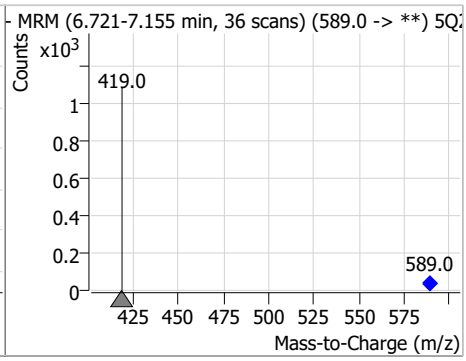




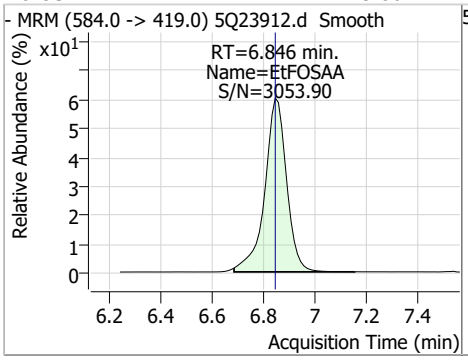
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	10.12	6.85	0.00	27764				

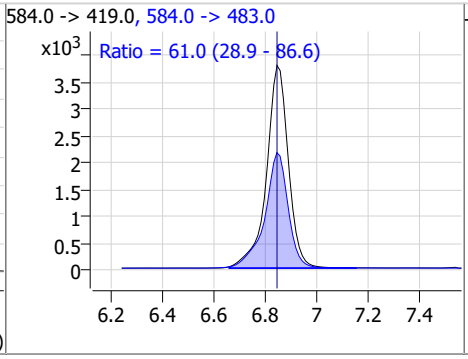


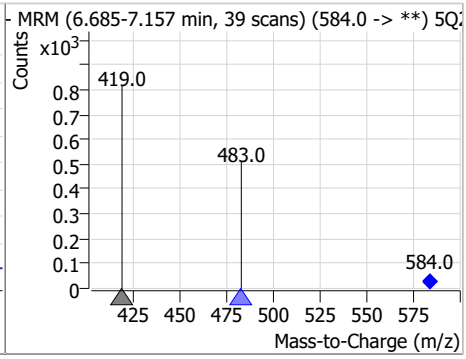




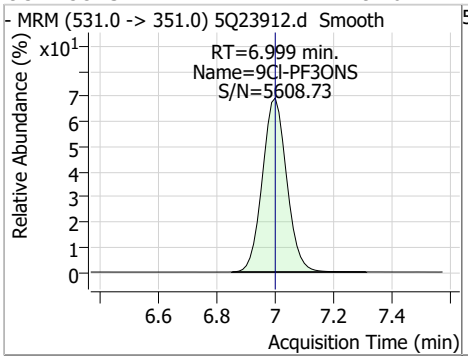
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	9.86	6.85	0.00	22328	584.0 -> 483.0	61.0	28.9	86.6

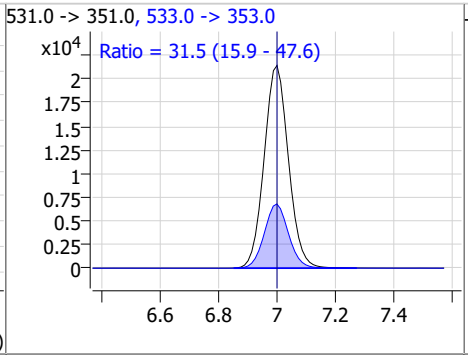


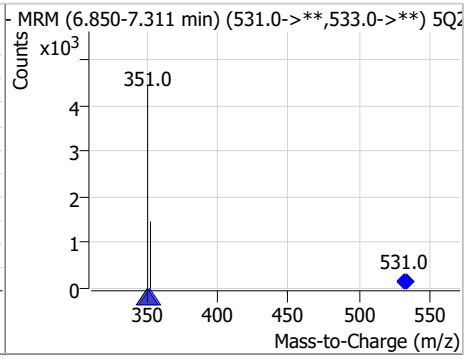




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	9.76	7.00	0.00	123922	533.0 -> 353.0	31.5	15.9	47.6

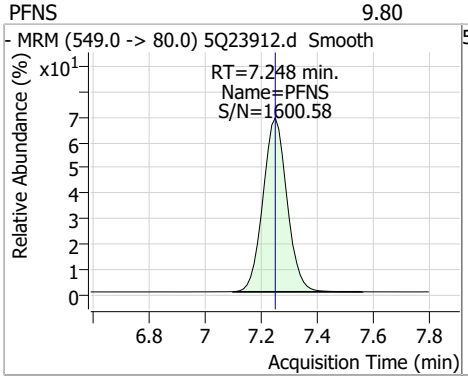


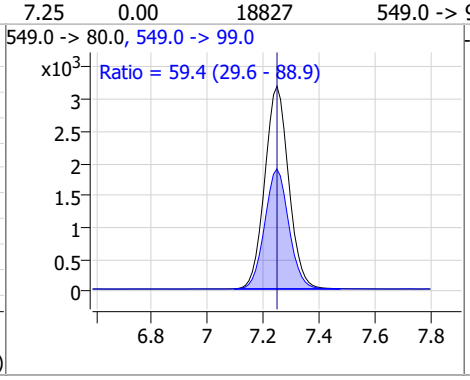


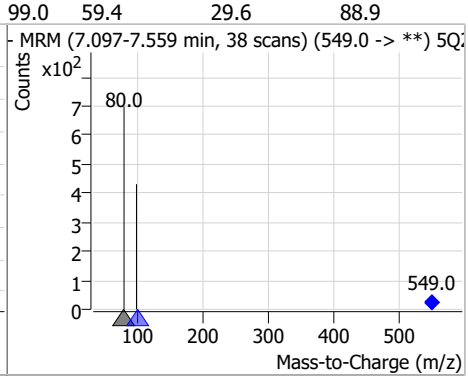


Perfluorinated Compounds by LC/MS/MS

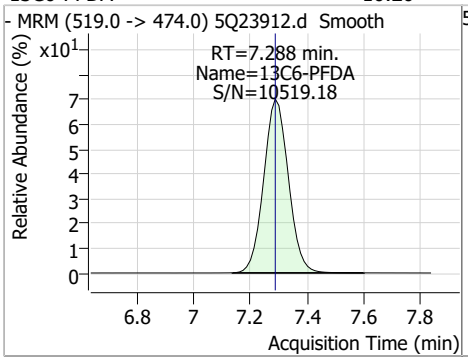
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	9.80	7.25	0.00	18827	549.0 -> 99.0	59.4	29.6	88.9

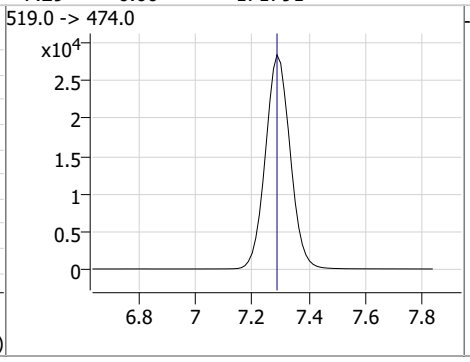


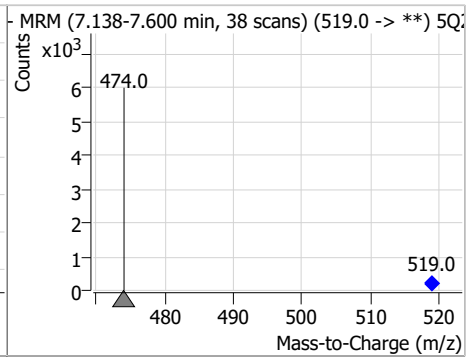




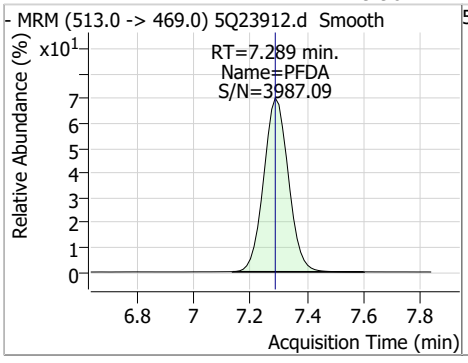
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	10.20	7.29	0.00	171791				

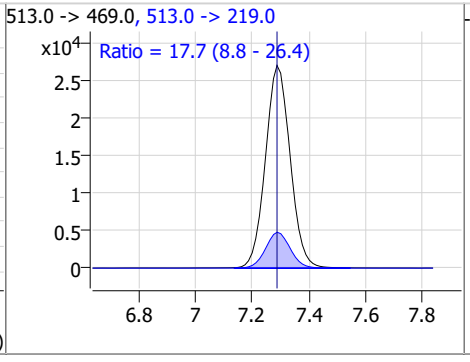


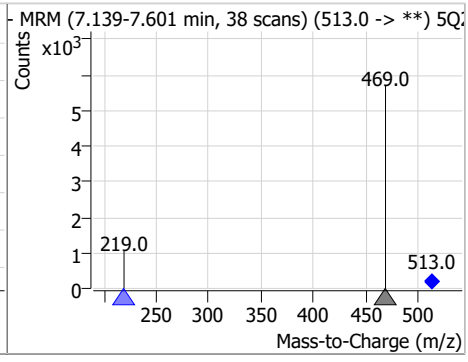




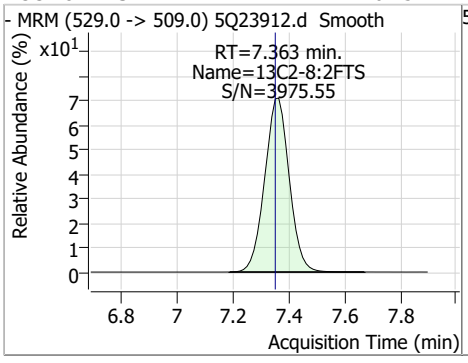
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	9.96	7.29	0.00	162519	513.0 -> 219.0	17.7	8.8	26.4

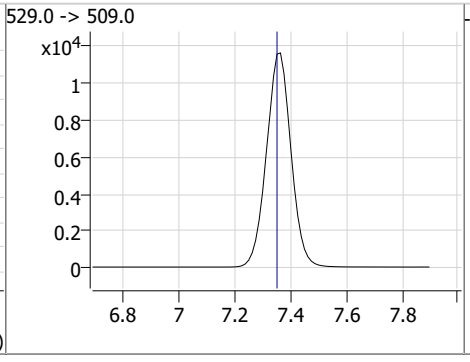


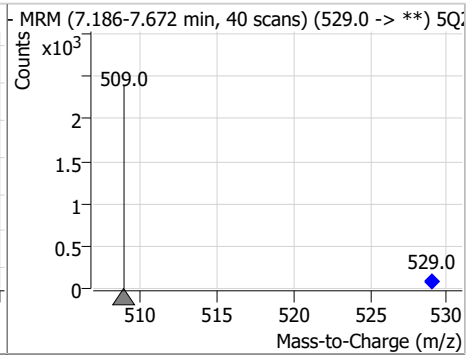




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	10.15	7.36	0.01	70863				

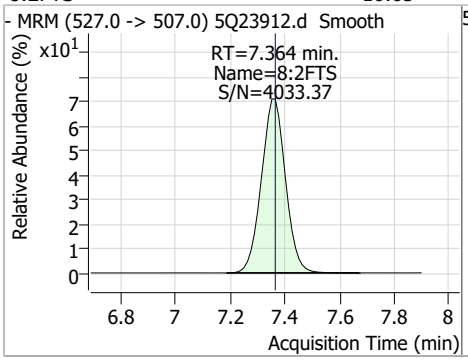


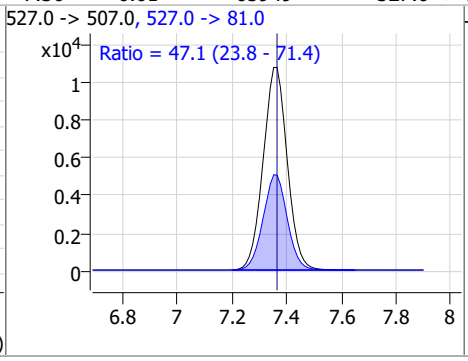


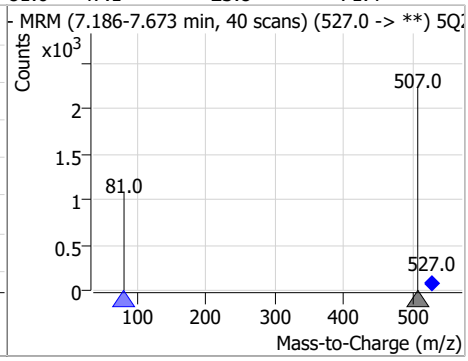


Perfluorinated Compounds by LC/MS/MS

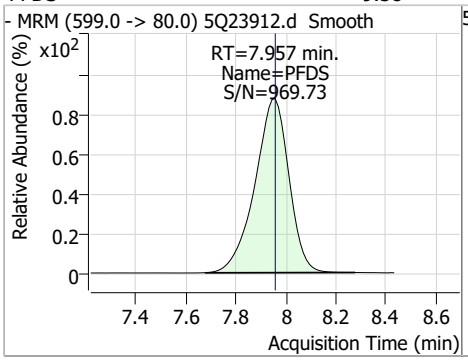
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	10.65	7.36	0.01	65949	527.0 -> 81.0	47.1	23.8	71.4

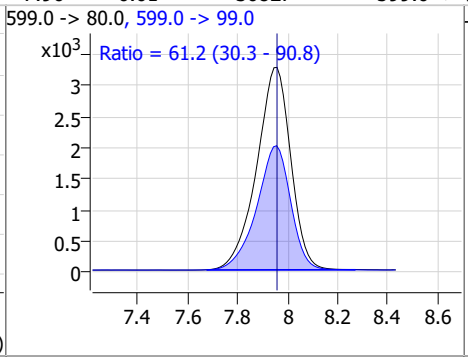


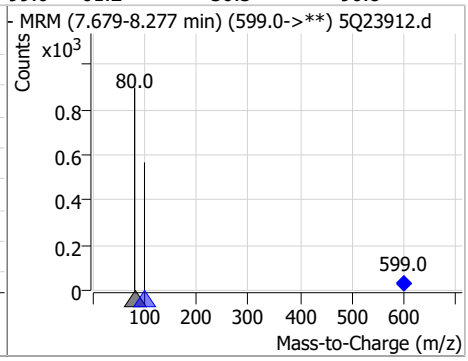




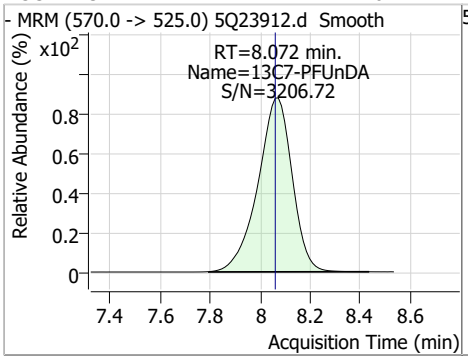
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	9.58	7.96	0.01	30827	599.0 -> 99.0	61.2	30.3	90.8

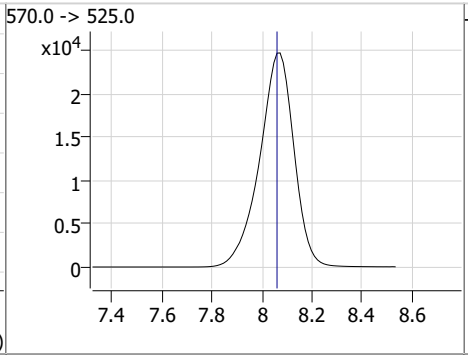


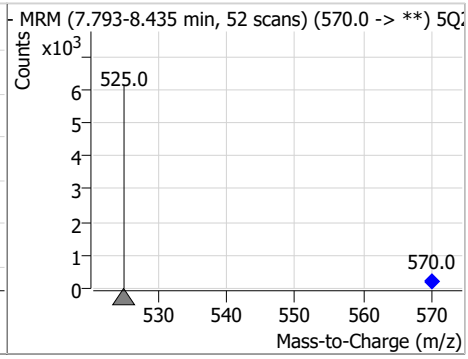




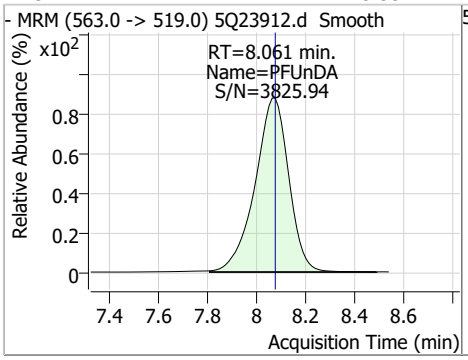
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	10.11	8.07	0.01	235615				

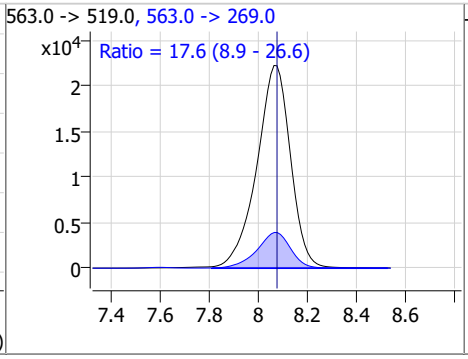


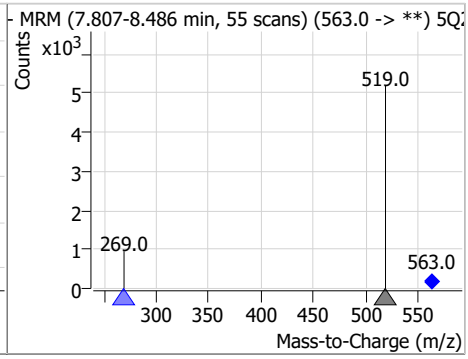




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	9.99	8.06	0.00	212334	563.0 -> 269.0	17.6	8.9	26.6

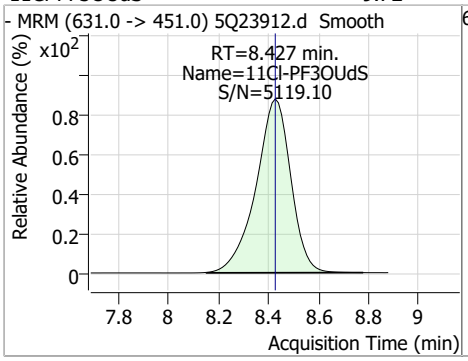


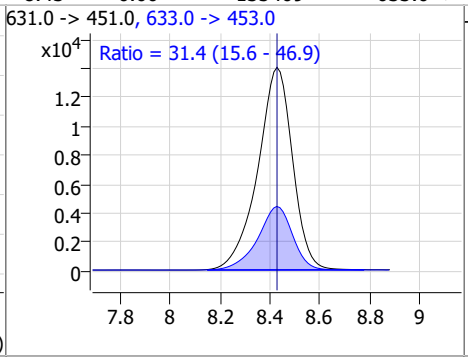


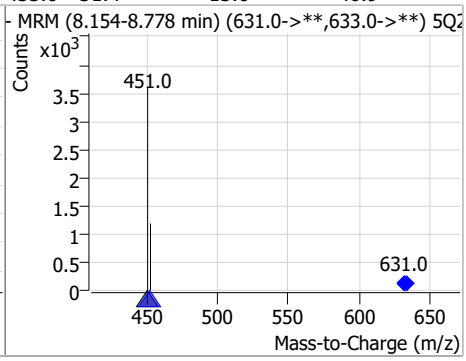


Perfluorinated Compounds by LC/MS/MS

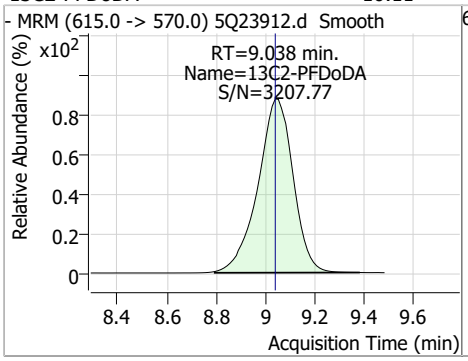
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	9.72	8.43	0.00	135469	633.0 -> 453.0	31.4	15.6	46.9

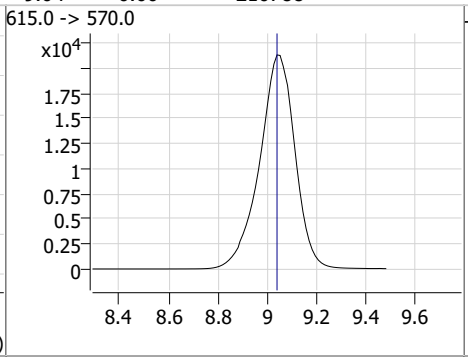


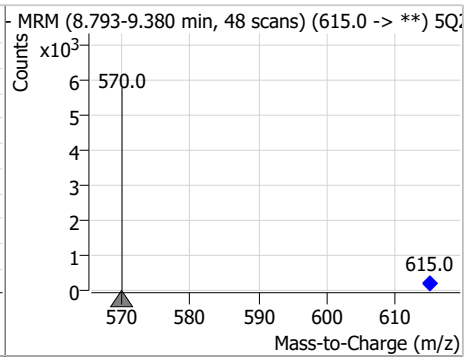




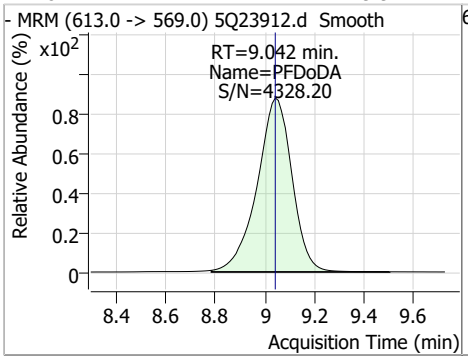
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	10.11	9.04	0.00	210788				

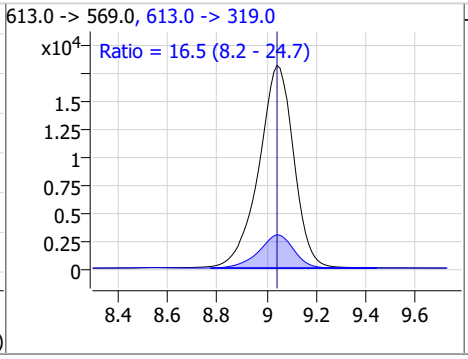


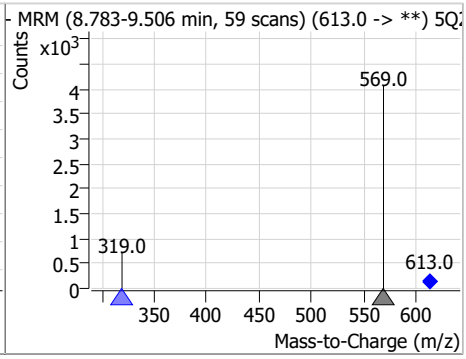




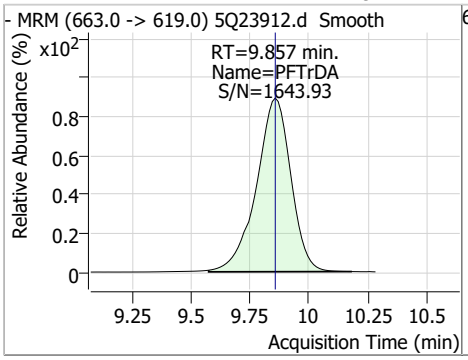
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	9.94	9.04	0.00	179871	613.0 -> 319.0	16.5	8.2	24.7

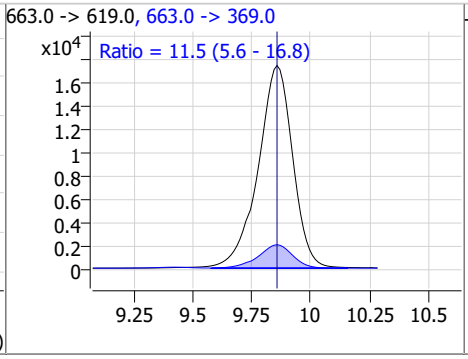


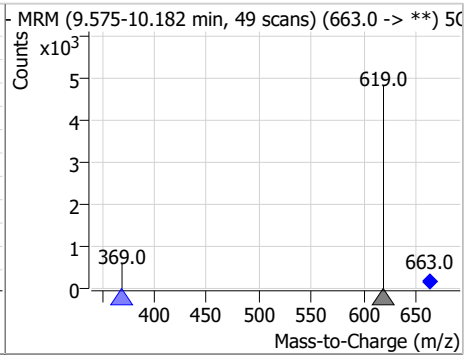




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	9.72	9.86	0.00	175987	663.0 -> 369.0	11.5	5.6	16.8

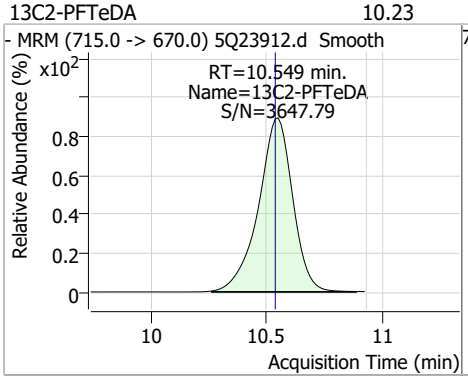


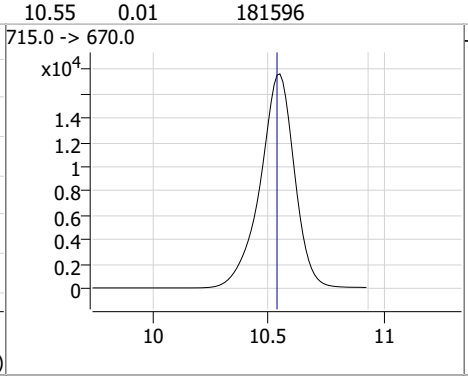


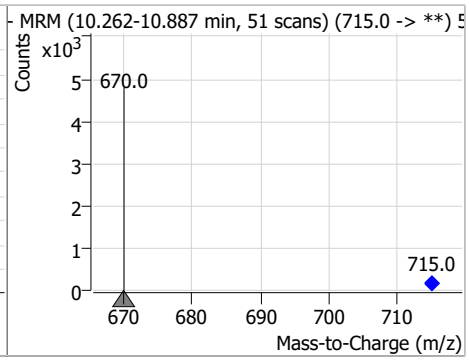


Perfluorinated Compounds by LC/MS/MS

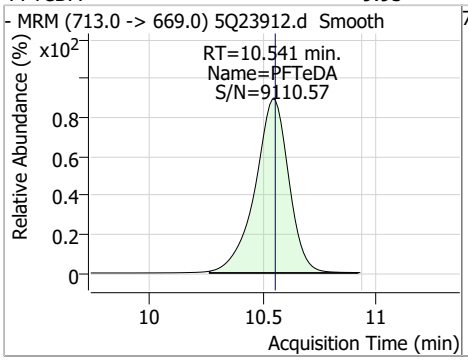
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	10.23	10.55	0.01	181596				

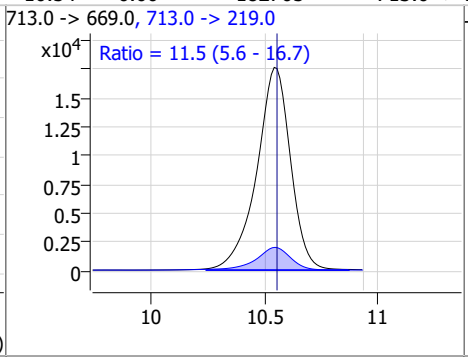


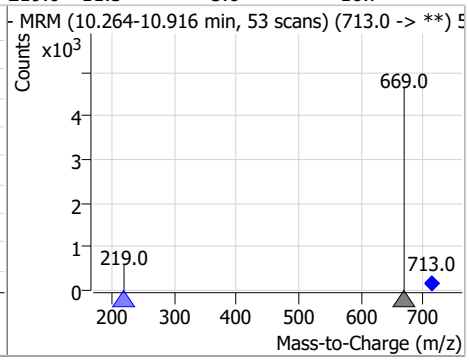




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	9.95	10.54	0.00	182705	713.0 -> 219.0	11.5	5.6	16.7







9.6.21

9

Manual Integration Approval Summary

Sample Number: S5Q375-IC375
Lab FileID: 5Q23912.D
Injection Time: 12/28/23 15:40
Method: EPA 537M QSM5.3 B-15
Analyst approved: 12/29/23 14:15 Lindsay Ritner
Supervisor approved: 01/02/24 14:05 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.43	Split peak
Perfluorooctanesulfonic acid	1763-23-1		6.73	Split peak

5Q23913.D

Manual Integrations APPROVED (compounds with "m" flag)

Natasha Gumtie 01/02/24 14:05

Perfluorinated Compounds by LC/MS/MS

Data File	:	5Q23913.d
Operator	:	natashag
Acq. Method	:	537_ID.m
Acq. Date-Time	:	12/28/2023 3:56:35 PM
Sample Name	:	icc375-20
Vial	:	P1-A7
DA Method File	:	ID_122823_S5Q375.quantmethod.xml
Batch Name	:	s5q375.batch.bin
Sample Information	:	OP401,S5Q375,250,,,1.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	1.987	217.0 -> 172.0	47878	10.00 µg/L	0.000
M5-PFPeA	3.432	268.0 -> 223.0	80572	10.00 µg/L	0.000
M5-PFHxA	4.552	318.0 -> 273.0	120915	10.00 µg/L	0.000
M4-PFHpA	5.413	367.0 -> 322.0	121173	10.00 µg/L	0.000
M8-PFOA	6.124	421.0 -> 376.0	170204	10.00 µg/L	0.000
M9-PFNA	6.756	472.0 -> 427.0	167431	10.00 µg/L	0.000
M6-PFDA	7.288	519.0 -> 474.0	172643	10.00 µg/L	0.000
M7-PFUnDA	8.059	570.0 -> 525.0	239413	10.00 µg/L	0.000
M2-PFDoDA	9.038	615.0 -> 570.0	213249	10.00 µg/L	0.000
M2-PFTeDA	10.537	715.0 -> 670.0	182354	10.00 µg/L	0.000
M8-FOSA	6.192	506.0 -> 78.0	42209	10.00 µg/L	0.000
M3-PFBS	3.637	302.0 -> 99.0	9807	10.00 µg/L	0.000
M3-PFHxS	5.432	402.0 -> 99.0	11999	10.00 µg/L	0.000
M8-PFOS	6.729	507.0 -> 99.0	15776	10.00 µg/L	0.000
M2-4:2FTS	4.474	329.0 -> 309.0	42109	10.00 µg/L	0.000
M2-6:2FTS	6.136	429.0 -> 409.0	75933	10.00 µg/L	0.000
M2-8:2FTS	7.351	529.0 -> 509.0	72082	10.00 µg/L	0.000
M3-MeFOSAA	6.747	573.0 -> 419.0	30798	10.00 µg/L	0.000
M3-HFPO-DA	4.819	287.0 -> 169.0	6321	10.00 µg/L	0.000
M3-MeFOSA	6.589	515.0 -> 169.0	13977	10.00 µg/L	0.000
M5-EtFOSAA	6.845	589.0 -> 419.0	28741	10.00 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	4.474	329.0 -> 309.0	42109	10.47 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 104.7%	
13C2-6:2FTS	6.136	429.0 -> 409.0	75933	10.71 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 107.1%	
13C2-8:2FTS	7.351	529.0 -> 509.0	72082	10.32 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 103.2%	
13C2-PFDoDA	9.038	615.0 -> 570.0	213249	10.23 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 102.3%	
13C2-PFTeDA	10.537	715.0 -> 670.0	182354	10.28 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 102.8%	
13C3-PFBS	3.637	302.0 -> 99.0	9807	10.10 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.0%	
13C3-PFHxS	5.432	402.0 -> 99.0	11999	10.17 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.7%	
13C4-PFBA	1.987	217.0 -> 172.0	47878	10.13 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.3%	
13C4-PFHpA	5.413	367.0 -> 322.0	121173	10.08 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.8%	
13C5-PFHxA	4.552	318.0 -> 273.0	120915	10.12 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.2%	
13C5-PFPeA	3.432	268.0 -> 223.0	80572	10.22 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 102.2%	
13C6-PFDA	7.288	519.0 -> 474.0	172643	10.25 µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

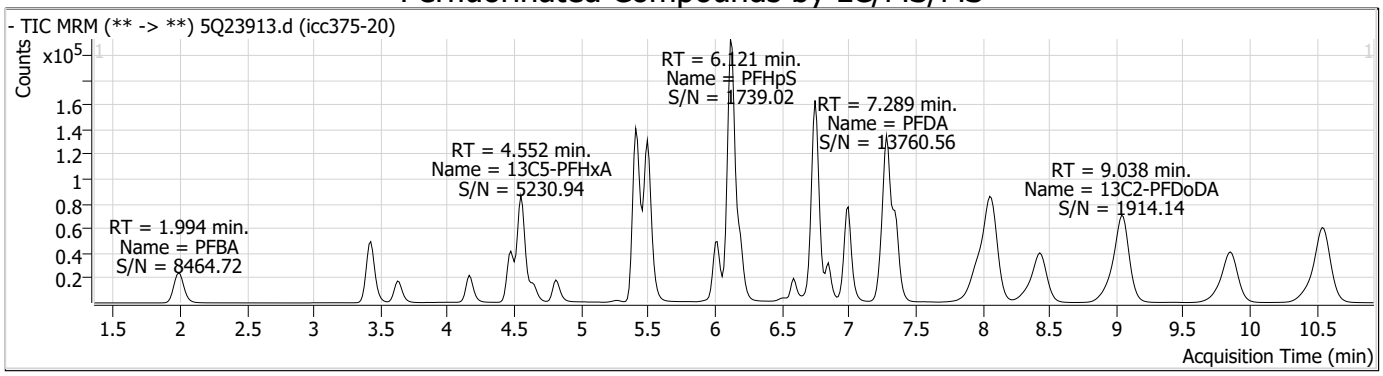
Compound	RT	Transition	Response	Conc. Units		Dev(Min)
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 102.5%		
13C7-PFUnDA	8.059	570.0 -> 525.0	239413	10.27 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 102.7%		
13C8-FOSA	6.192	506.0 -> 78.0	42209	10.42 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 104.2%		
13C8-PFOA	6.124	421.0 -> 376.0	170204	10.28 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 102.8%		
13C8-PFOS	6.729	507.0 -> 99.0	15776	10.04 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.4%		
13C9-PFNA	6.756	472.0 -> 427.0	167431	10.08 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.8%		
d3-MeFOSAA	6.747	573.0 -> 419.0	30798	10.10 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.0%		
13C3-HFPO-DA	4.819	287.0 -> 169.0	6321	9.79 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 97.9%		
d3-MeFOSA	6.589	515.0 -> 169.0	13977	9.97 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.7%		
d5-EtFOSAA	6.845	589.0 -> 419.0	28741	10.47 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 104.7%		
Target Compounds						QValue
4:2FTS	4.475	327.0 -> 307.0	81335	19.61 µg/L		100
		327.0 -> 81.0	45872			
6:2FTS	6.136	427.0 -> 407.0	131303	18.90 µg/L		100
		427.0 -> 81.0	53171			
8:2FTS	7.351	527.0 -> 507.0	124313	19.74 µg/L		100
		527.0 -> 81.0	59190			
EtFOSAA	6.846	584.0 -> 419.0	43954	18.74 µg/L		100
		584.0 -> 483.0	25368			
FOSA	6.194	498.0 -> 78.0	70930	18.32 µg/L		100
		498.0 -> 478.0	2368			
MeFOSAA	6.748	570.0 -> 419.0	45614	18.98 µg/L		100
		570.0 -> 512.0	17055			
PFBA	1.994	213.0 -> 169.0	82273	18.55 µg/L		100
PFBS	3.628	299.0 -> 80.0	45876	18.90 µg/L		100
		299.0 -> 99.0	20153			
PFDA	7.289	513.0 -> 469.0	306234	18.67 µg/L		100
		513.0 -> 219.0	53946			
PFDoDA	9.042	613.0 -> 569.0	344421	18.82 µg/L		100
		613.0 -> 319.0	56650			
PFDS	7.945	599.0 -> 80.0	58812	17.99 µg/L		100
		599.0 -> 99.0	35588			
PFHpA	5.413	363.0 -> 319.0	262163	18.86 µg/L		100
		363.0 -> 169.0	55363			
PFHpS	6.121	449.0 -> 80.0	41229	18.72 µg/L		100
		449.0 -> 99.0	21862			
PFHxA	4.553	313.0 -> 269.0	215735	18.44 µg/L		100
		313.0 -> 119.0	8919			
PFHxS	5.433	399.0 -> 80.0	41400	18.60 µg/L	m	100
		399.0 -> 99.0	23126			
PFNA	6.756	463.0 -> 419.0	289904	18.91 µg/L		100
		463.0 -> 219.0	61164			
PFNS	7.248	549.0 -> 80.0	35663	19.56 µg/L		100
		549.0 -> 99.0	21128			
PFOA	6.125	413.0 -> 369.0	314938	18.86 µg/L		100
		413.0 -> 169.0	78477			
PFOS	6.730	499.0 -> 80.0	51617	18.45 µg/L	m	100

Perfluorinated Compounds by LC/MS/MS

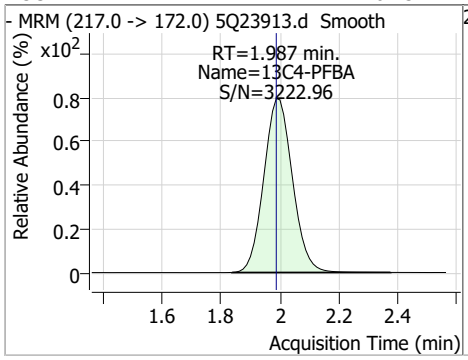
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		499.0 -> 99.0	25897			
PFPeA	3.434	263.0 -> 219.0	145507	18.62	µg/L	100
PFPeS	4.648	349.0 -> 80.0	31960	18.71	µg/L	100
		349.0 -> 99.0	15902			
PFTeDA	10.541	713.0 -> 669.0	340218	18.45	µg/L	100
		713.0 -> 219.0	37879			
PFTrDA	9.857	663.0 -> 619.0	335767	18.32	µg/L	100
		663.0 -> 369.0	37517			
PFUnDA	8.061	563.0 -> 519.0	400200	18.53	µg/L	100
		563.0 -> 269.0	71037			
11Cl-PF3OUdS	8.427	631.0 -> 451.0	256985	18.22	µg/L	100
		633.0 -> 453.0	80328			
9Cl-PF3ONS	6.999	531.0 -> 351.0	233582	18.31	µg/L	100
		533.0 -> 353.0	74061			
ADONA	5.502	377.0 -> 251.0	368224	18.31	µg/L	100
		377.0 -> 85.0	131201			
HFPO-DA	4.815	329.0 -> 169.0	54749	19.04	µg/L	100
		285.0 -> 169.0	11539			
MeFOSA	6.590	512.0 -> 169.0	23130	19.13	µg/L	100
		512.0 -> 219.0	19078			
4-PFECHS	6.018	461.0 -> 381.0	134445	18.19	µg/L	100
		461.0 -> 99.0	69708			
FBSA	4.170	298.0 -> 78.0	79215	19.59	µg/L	100
		298.0 -> 64.0	7316			
FHxSA	5.409	398.0 -> 78.0	81847	18.72	µg/L	100
		398.0 -> 64.0	7588			

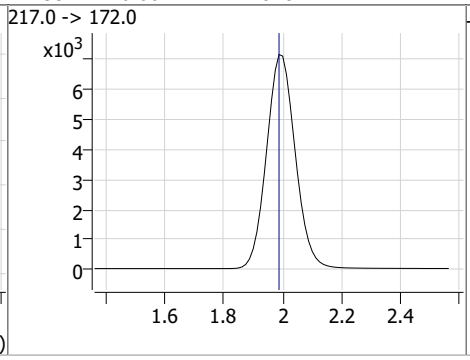
 # = Qualifier out of range, m = manually integrated, + = Area summed

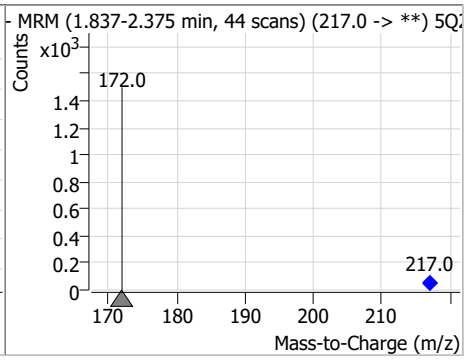
Perfluorinated Compounds by LC/MS/MS



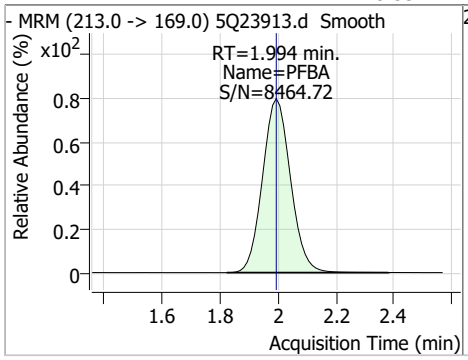
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	10.13	1.99	0.00	47878				

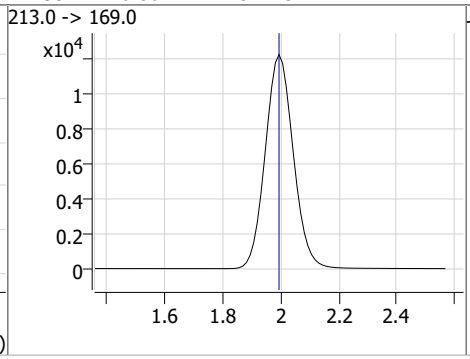


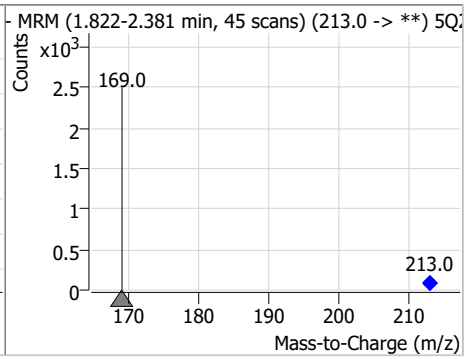




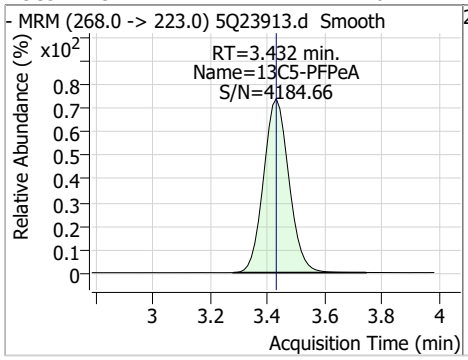
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	18.55	1.99	0.00	82273				

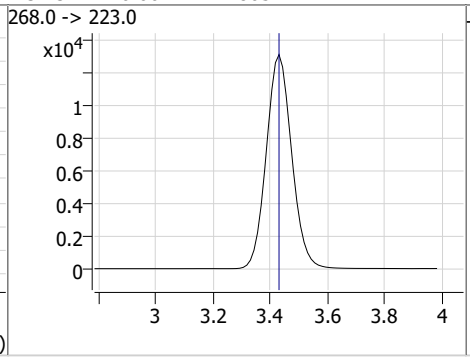


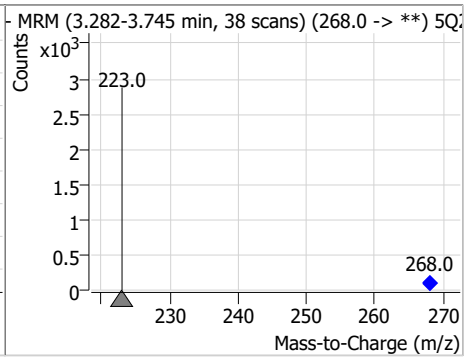




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	10.22	3.43	0.00	80572				





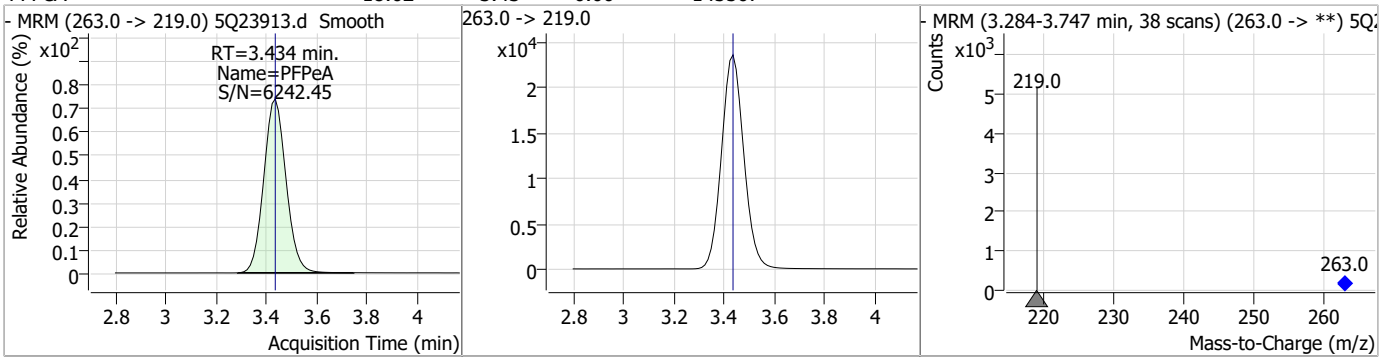


9.6.22

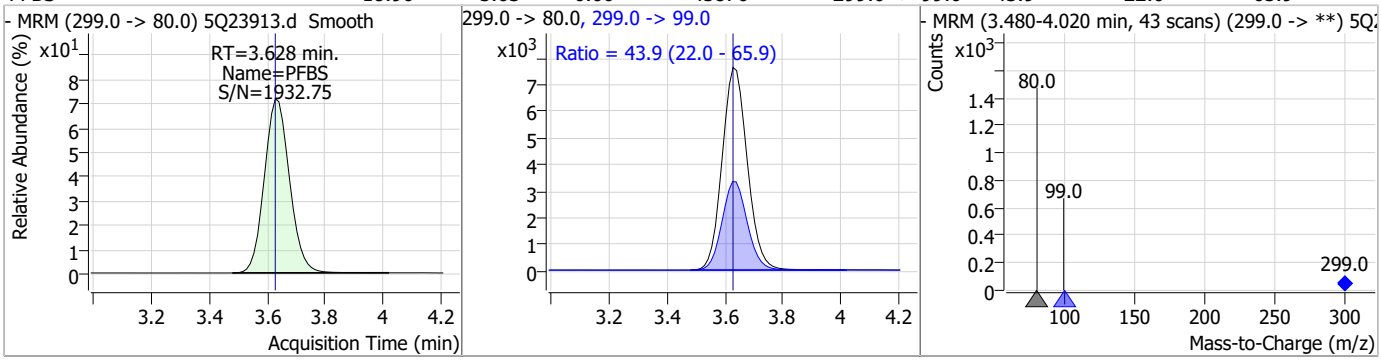
9

Perfluorinated Compounds by LC/MS/MS

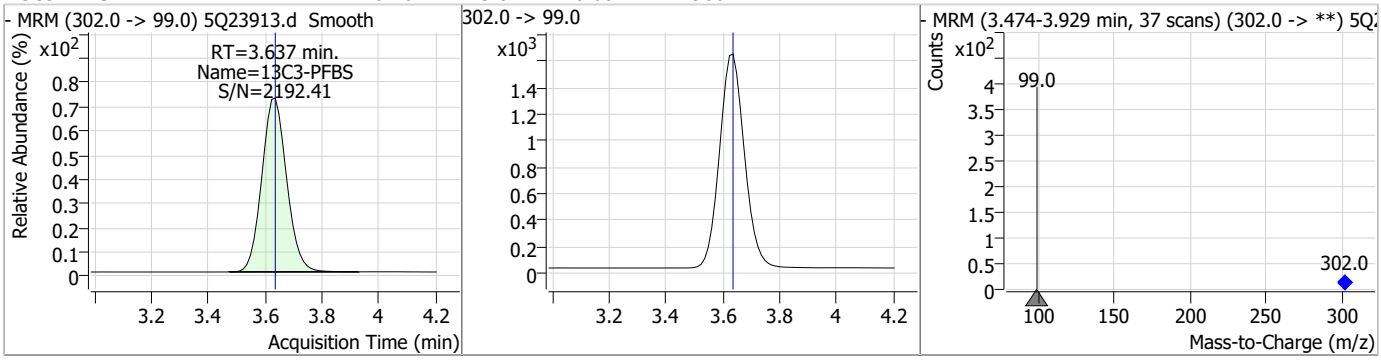
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	18.62	3.43	0.00	145507				



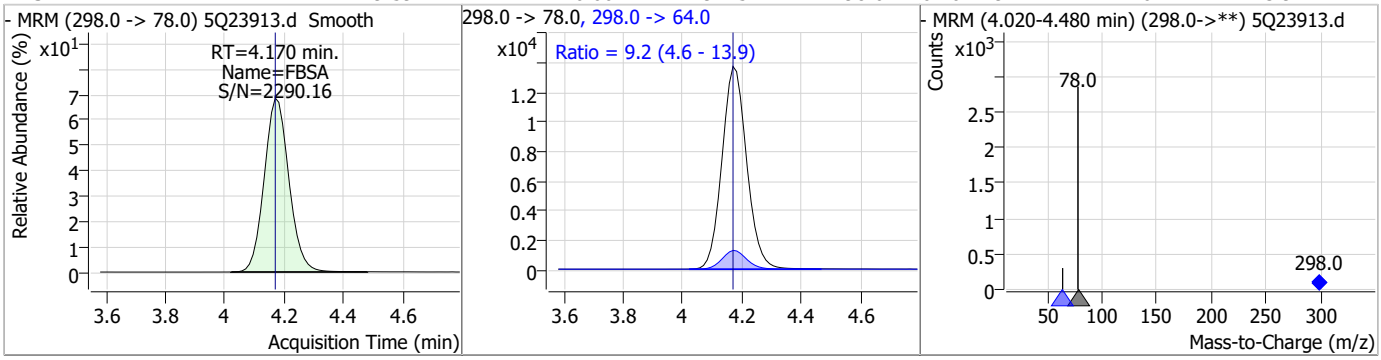
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	18.90	3.63	0.00	45876	299.0 -> 99.0	43.9	22.0	65.9



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	10.10	3.64	0.00	9807				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	19.59	4.17	0.00	79215	298.0 -> 64.0	9.2	4.6	13.9

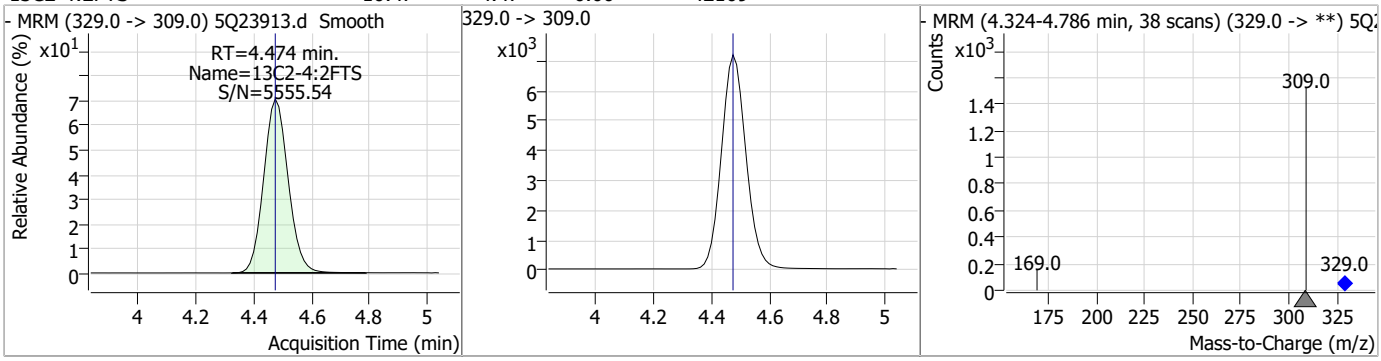


9.6.22

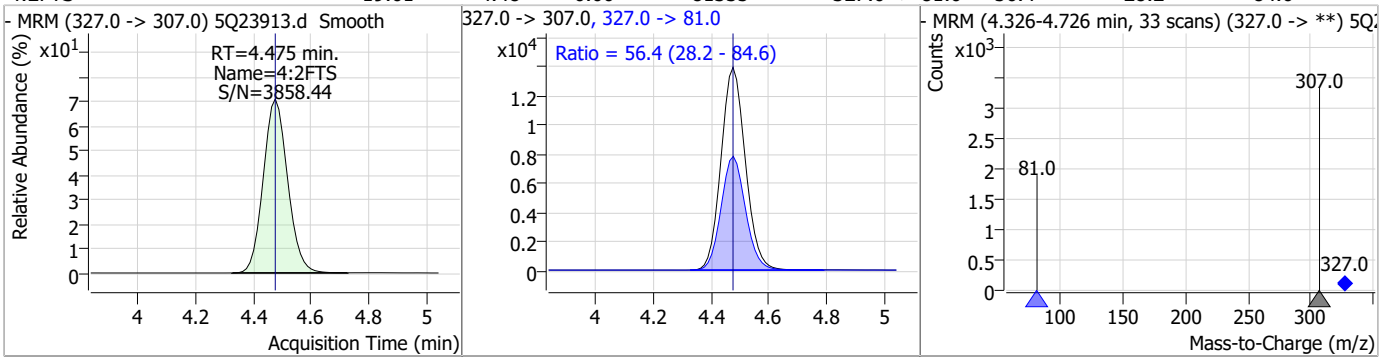
9

Perfluorinated Compounds by LC/MS/MS

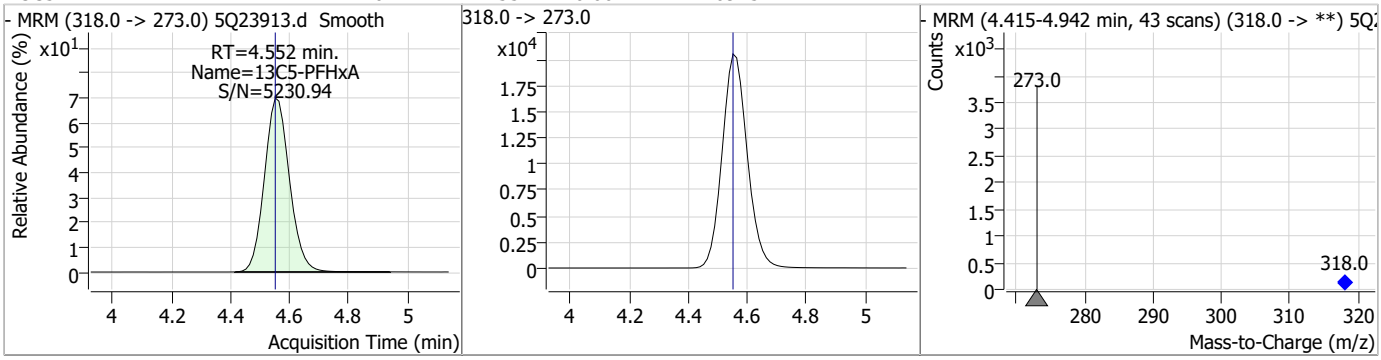
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	10.47	4.47	0.00	42109				



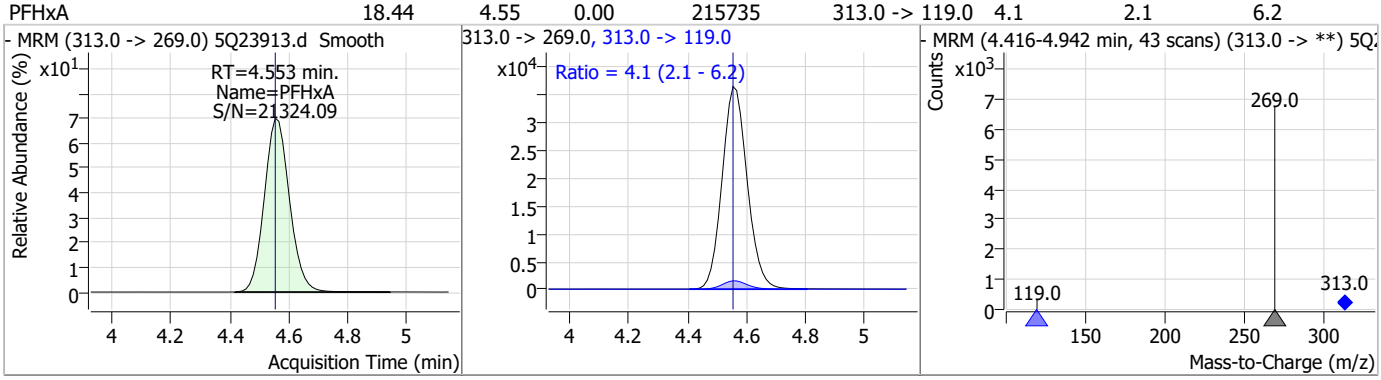
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	19.61	4.48	0.00	81335	327.0 -> 81.0	56.4	28.2	84.6



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	10.12	4.55	0.00	120915				

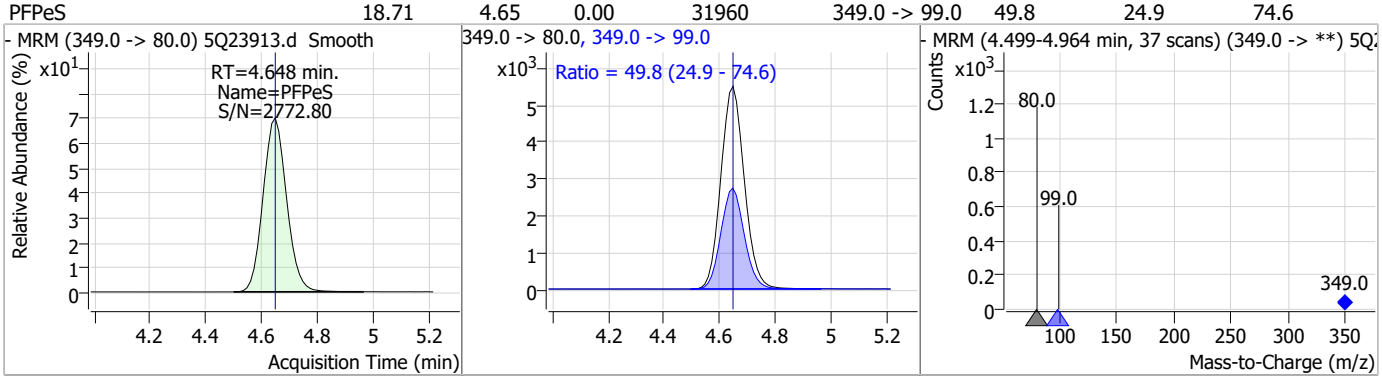


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	18.44	4.55	0.00	215735	313.0 -> 119.0	4.1	2.1	6.2

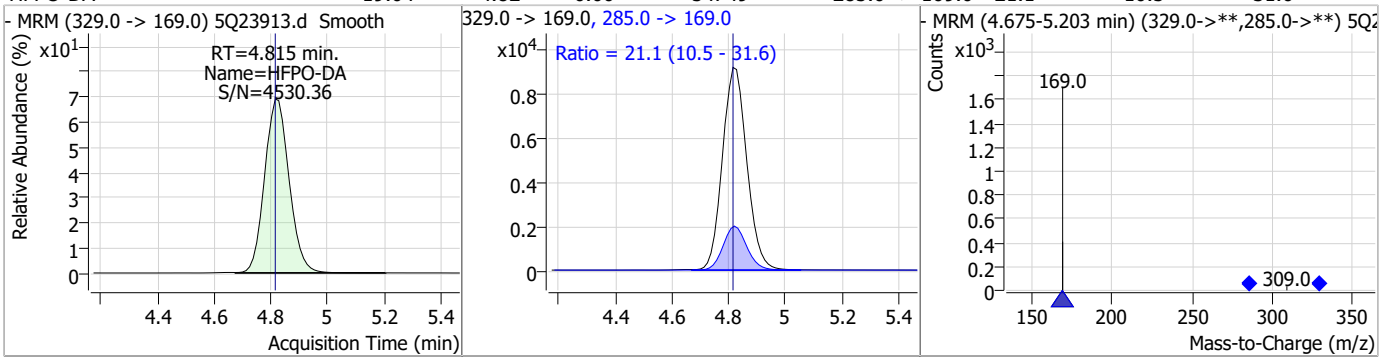


Perfluorinated Compounds by LC/MS/MS

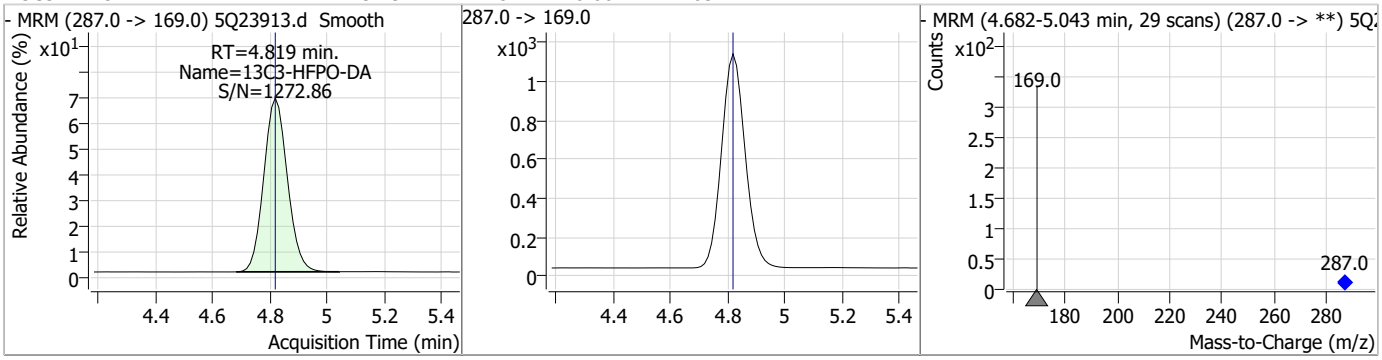
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	18.71	4.65	0.00	31960	349.0 -> 99.0	49.8	24.9	74.6



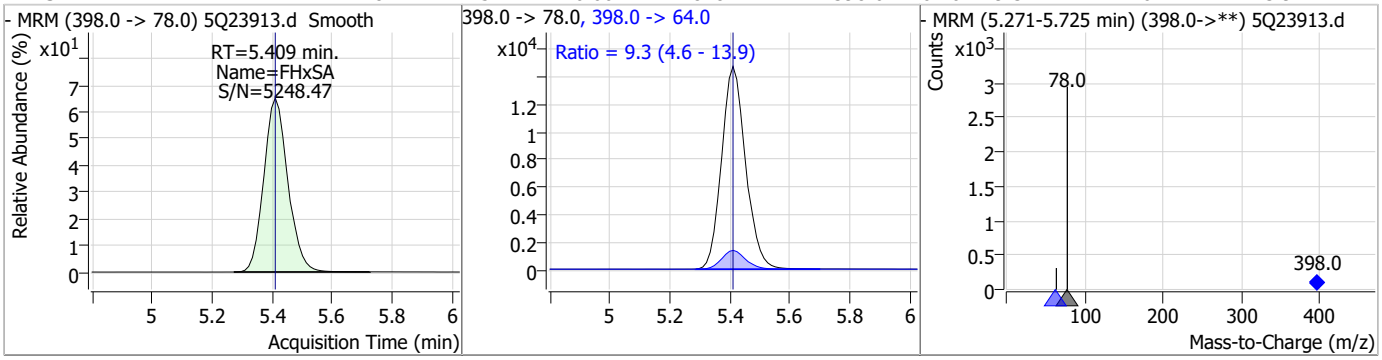
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	19.04	4.82	0.00	54749	285.0 -> 169.0	21.1	10.5	31.6



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	9.79	4.82	0.00	6321				

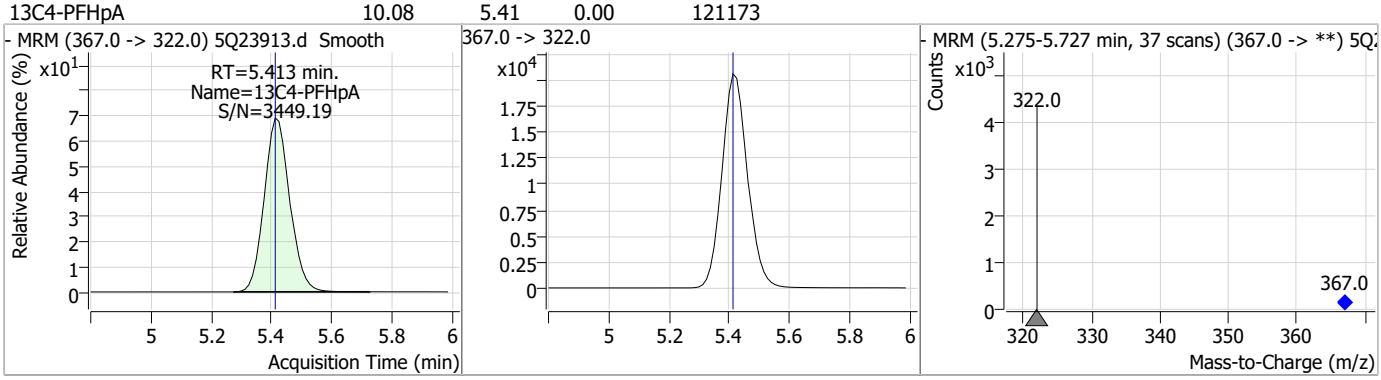


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	18.72	5.41	0.00	81847	398.0 -> 64.0	9.3	4.6	13.9

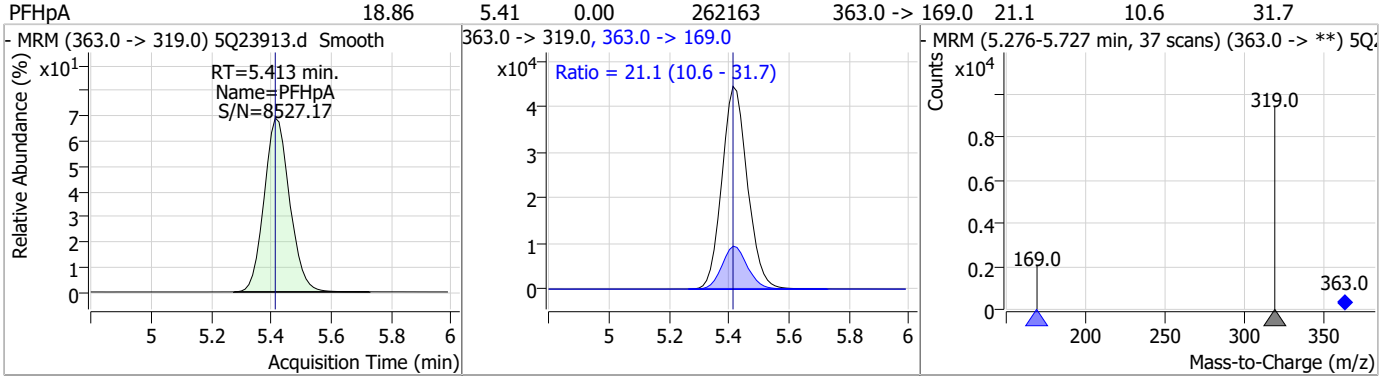


Perfluorinated Compounds by LC/MS/MS

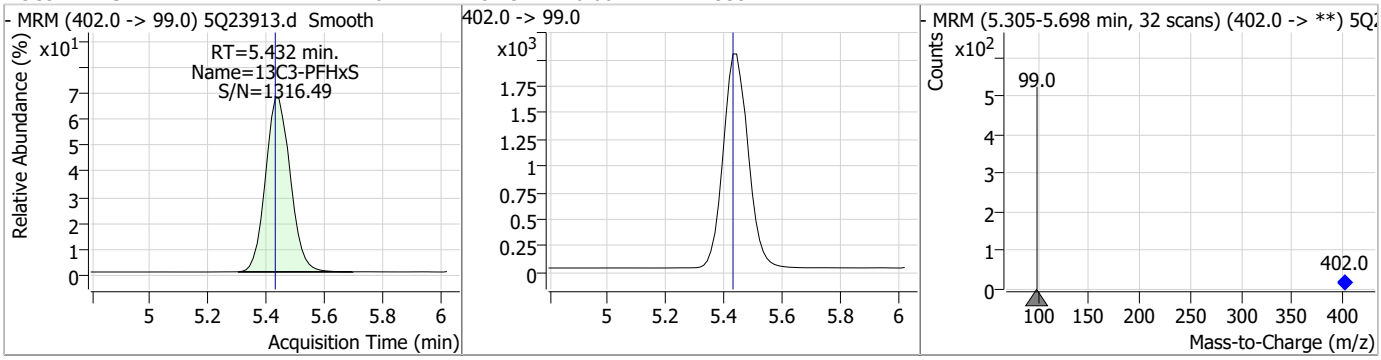
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	10.08	5.41	0.00	121173				



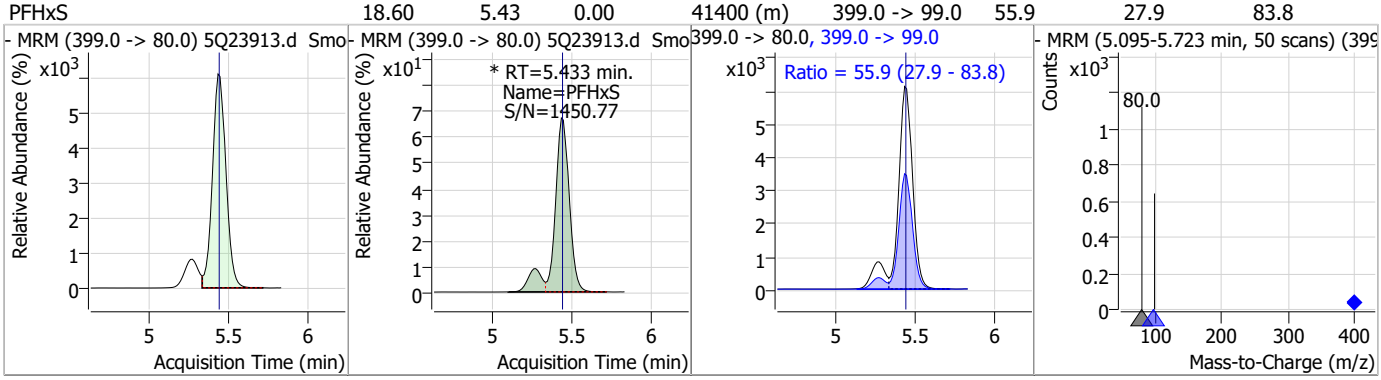
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	18.86	5.41	0.00	262163	363.0 -> 169.0	21.1	10.6	31.7



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	10.17	5.43	0.00	11999				

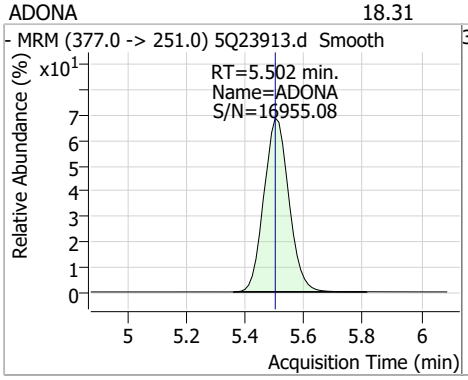


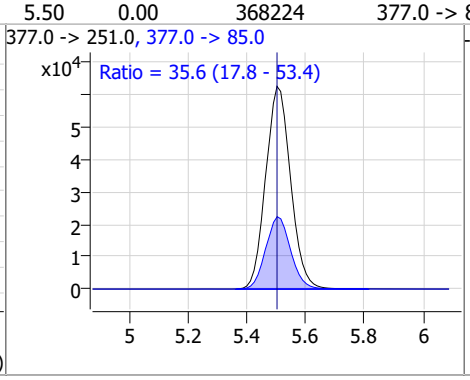
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	18.60	5.43	0.00	41400 (m)	399.0 -> 99.0	55.9	27.9	83.8

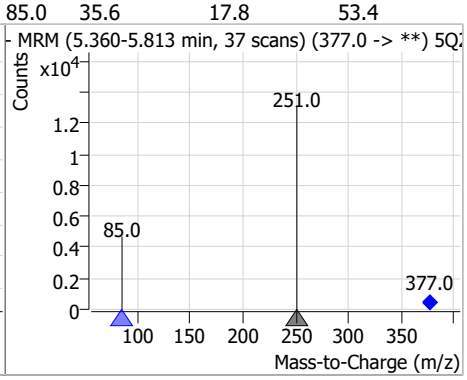


Perfluorinated Compounds by LC/MS/MS

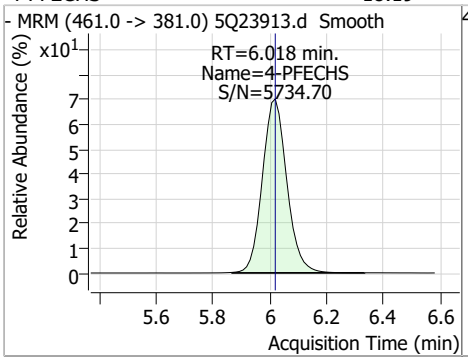
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	18.31	5.50	0.00	368224	377.0 -> 85.0	35.6	17.8	53.4

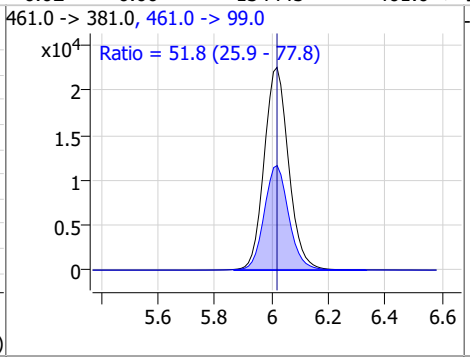


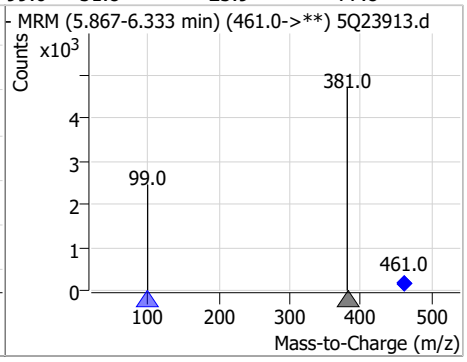




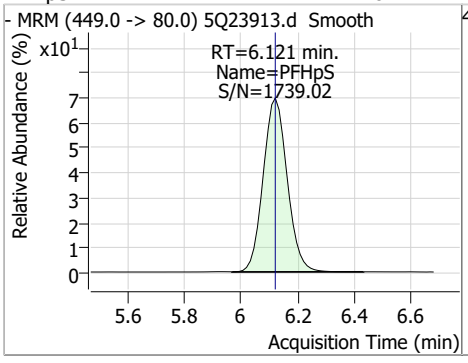
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS	18.19	6.02	0.00	134445	461.0 -> 99.0	51.8	25.9	77.8

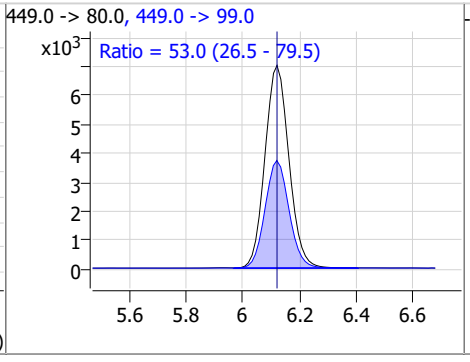


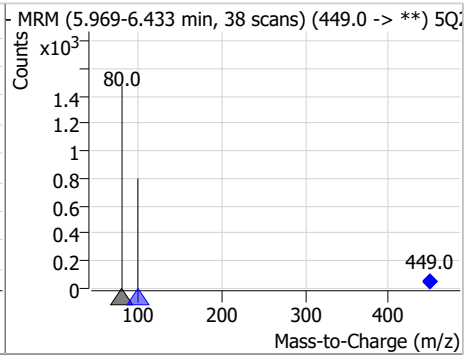




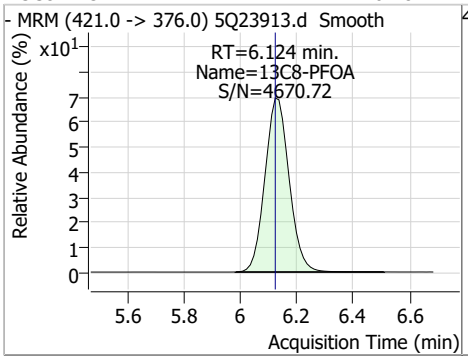
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	18.72	6.12	0.00	41229	449.0 -> 99.0	53.0	26.5	79.5

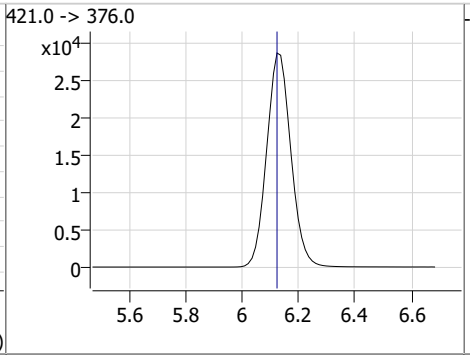


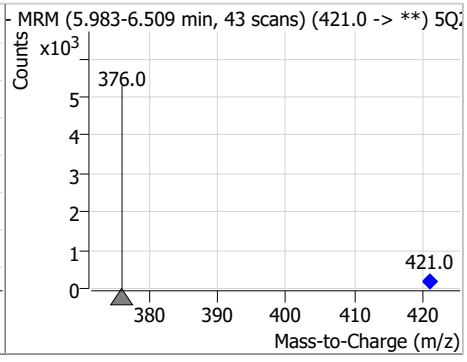




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	10.28	6.12	0.00	170204				

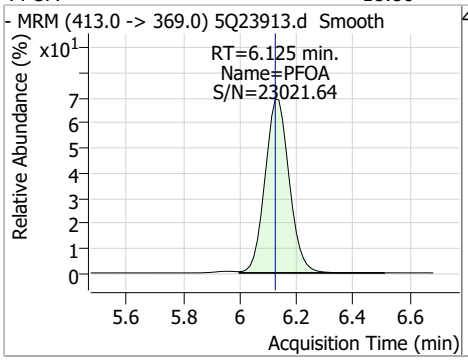


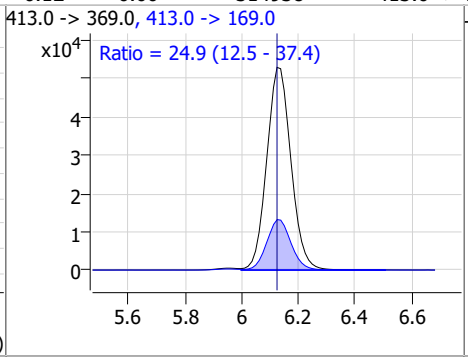


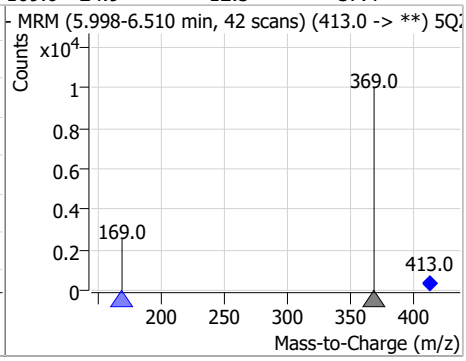


Perfluorinated Compounds by LC/MS/MS

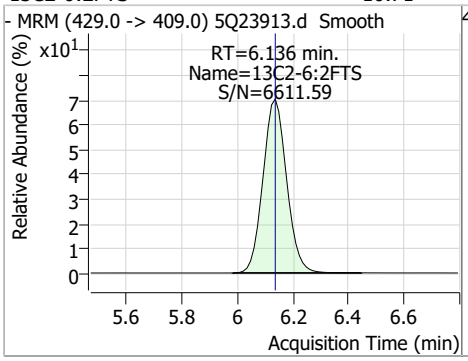
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	18.86	6.12	0.00	314938	413.0 -> 169.0	24.9	12.5	37.4

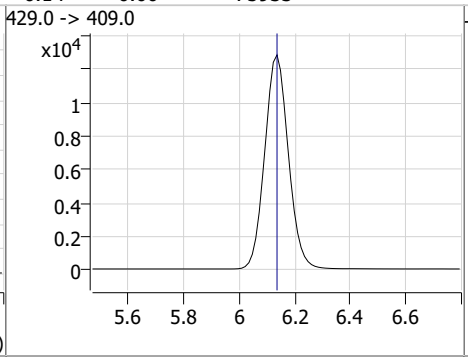


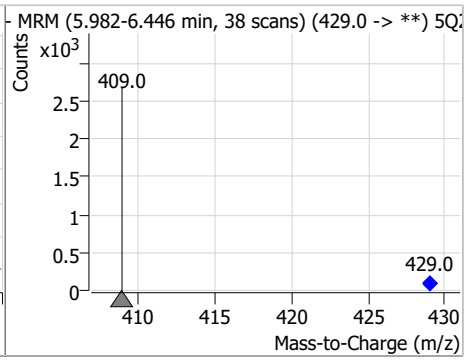




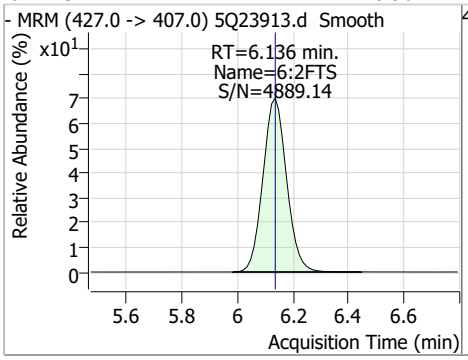
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	10.71	6.14	0.00	75933				

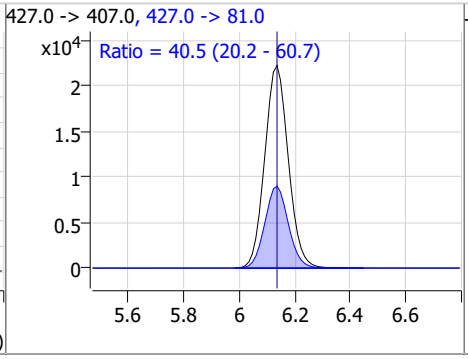


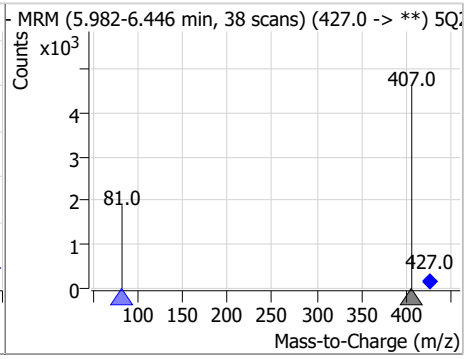




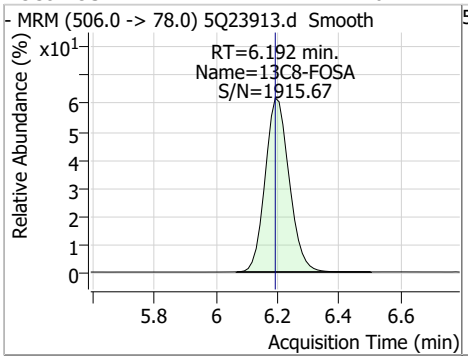
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	18.90	6.14	0.00	131303	427.0 -> 81.0	40.5	20.2	60.7

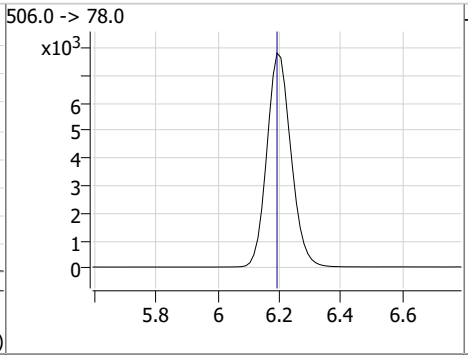


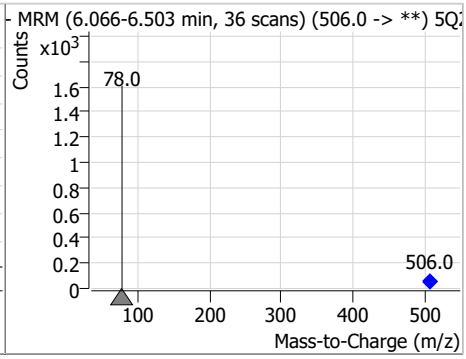




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	10.42	6.19	0.00	42209				

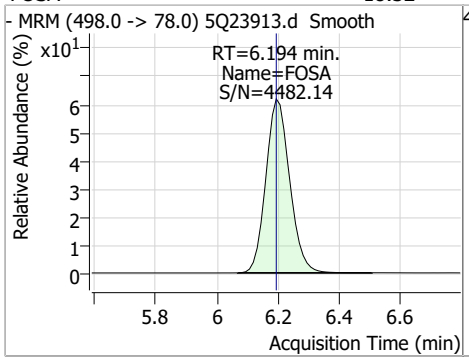


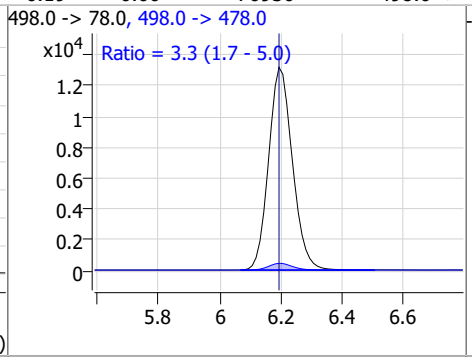


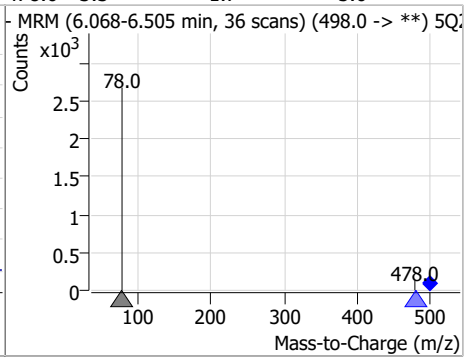


Perfluorinated Compounds by LC/MS/MS

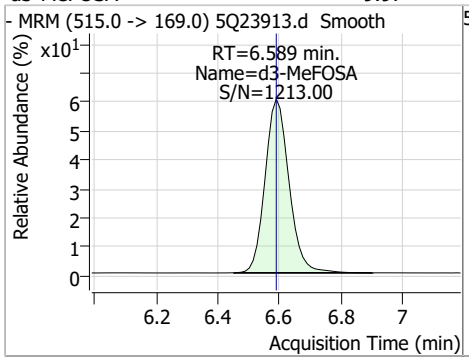
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	18.32	6.19	0.00	70930	498.0 -> 478.0	3.3	1.7	5.0

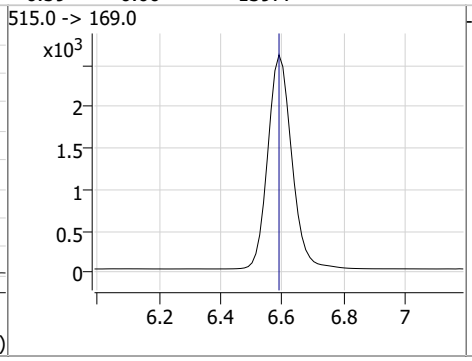


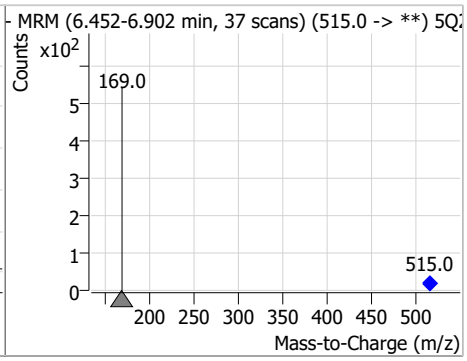




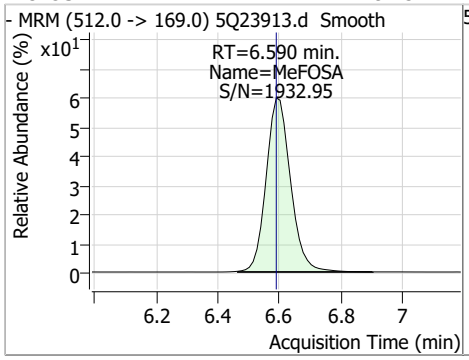
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	9.97	6.59	0.00	13977				

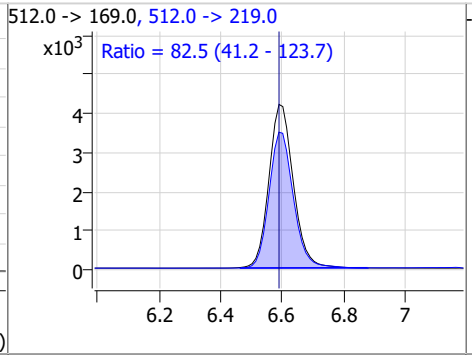


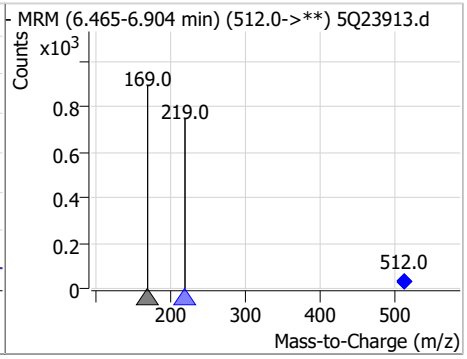




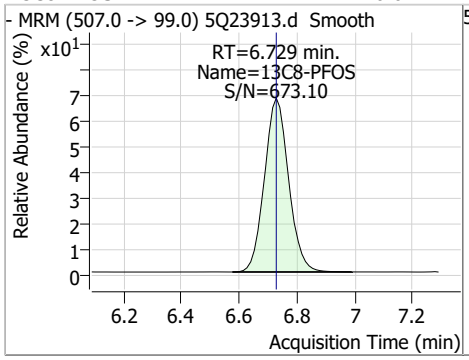
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	19.13	6.59	0.00	23130	512.0 -> 219.0	82.5	41.2	123.7

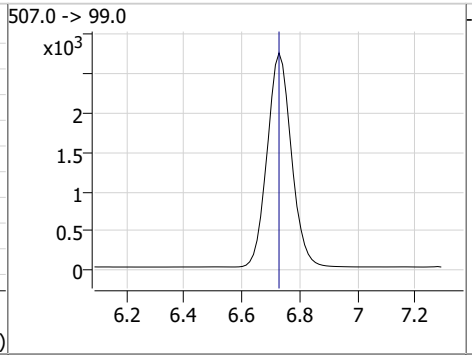


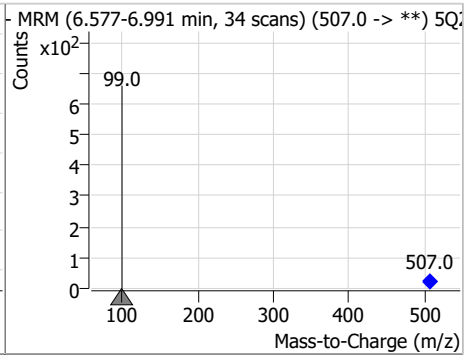




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	10.04	6.73	0.00	15776				

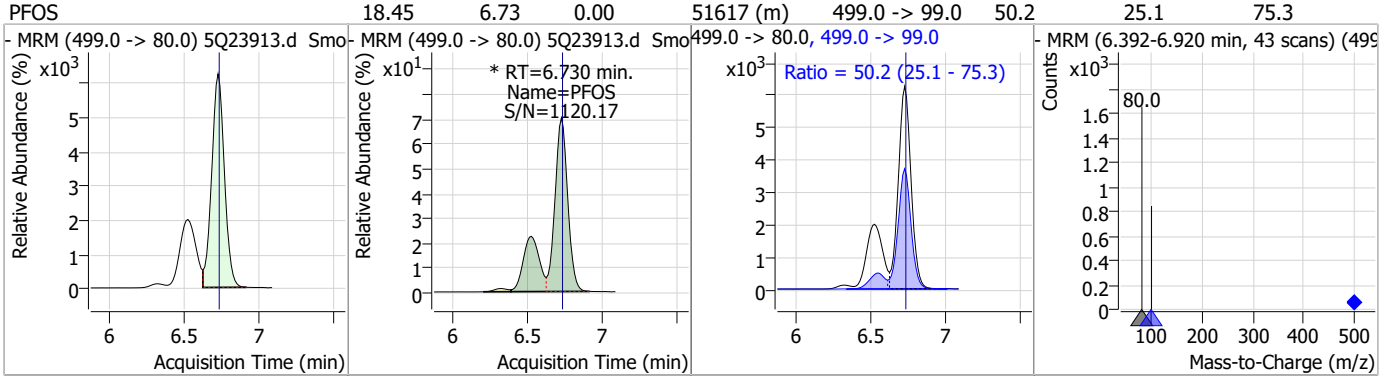




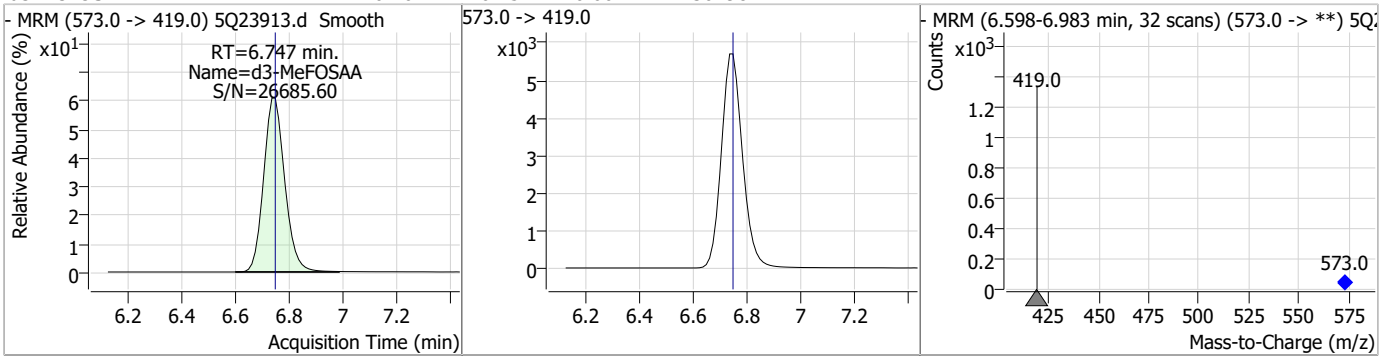


Perfluorinated Compounds by LC/MS/MS

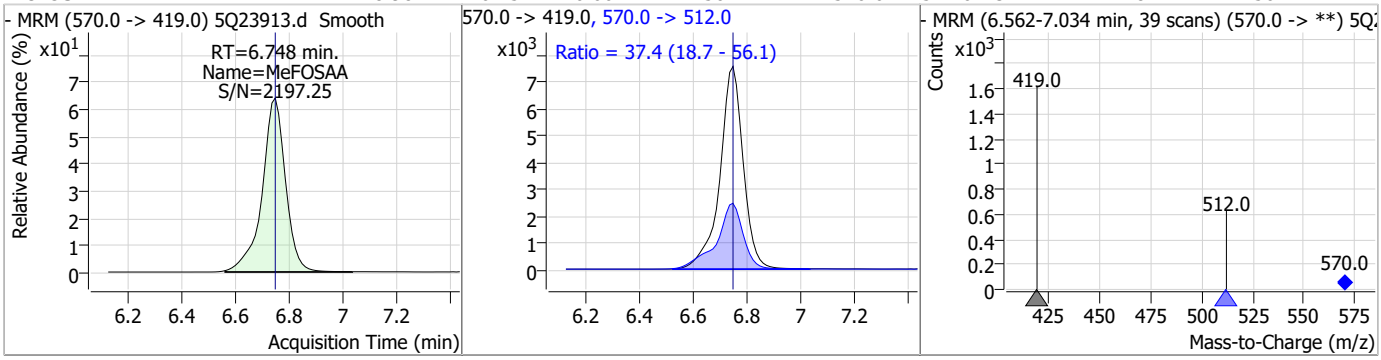
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	18.45	6.73	0.00	51617 (m)	499.0 -> 99.0	50.2	25.1	75.3



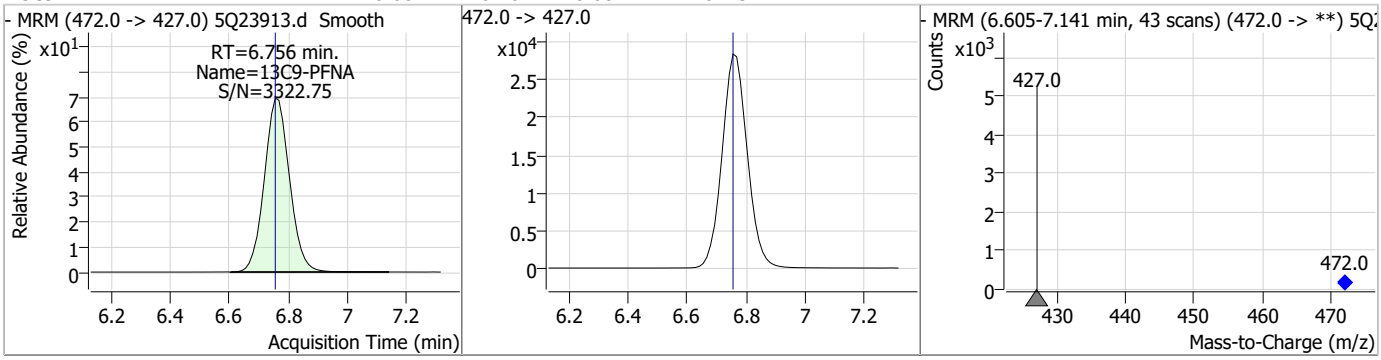
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	10.10	6.75	0.00	30798				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	18.98	6.75	0.00	45614	570.0 -> 512.0	37.4	18.7	56.1

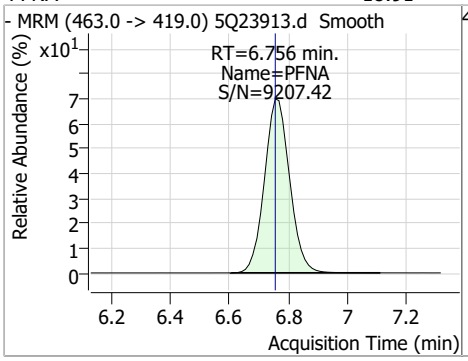


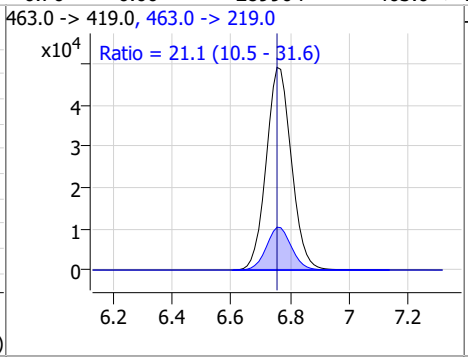
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	10.08	6.76	0.00	167431				

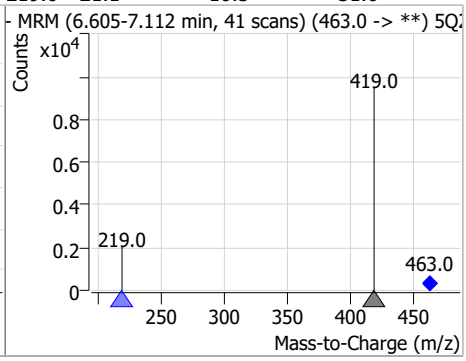


Perfluorinated Compounds by LC/MS/MS

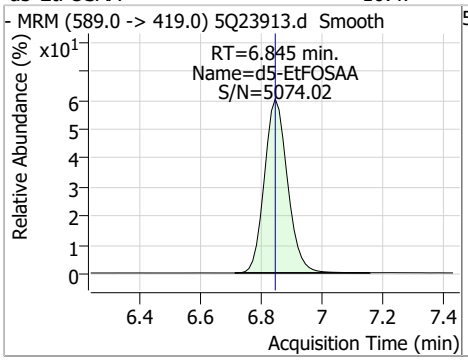
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	18.91	6.76	0.00	289904	463.0 -> 219.0	21.1	10.5	31.6

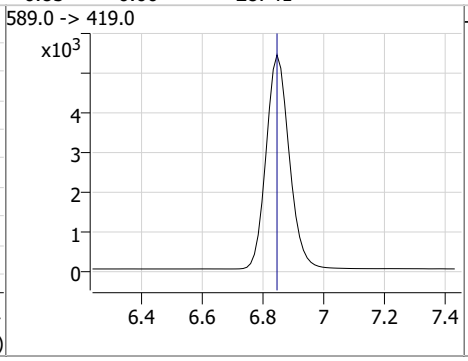


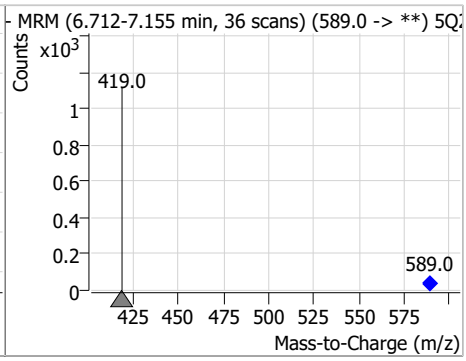




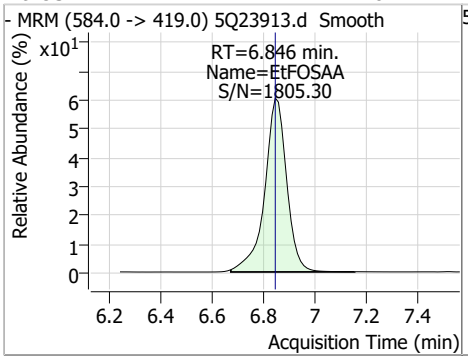
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	10.47	6.85	0.00	28741				

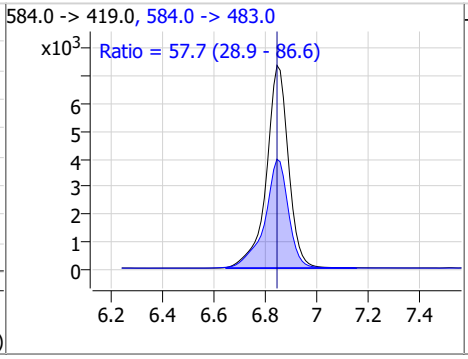


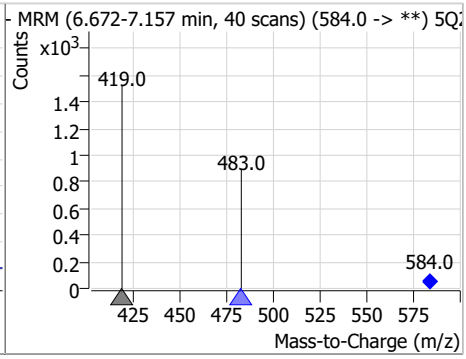




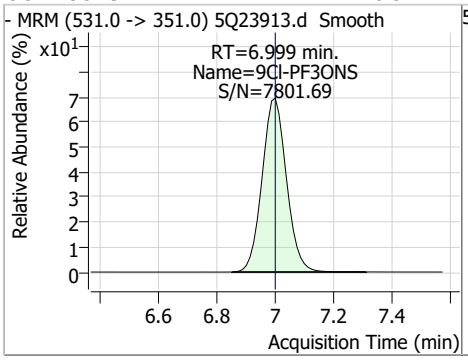
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	18.74	6.85	0.00	43954	584.0 -> 483.0	57.7	28.9	86.6

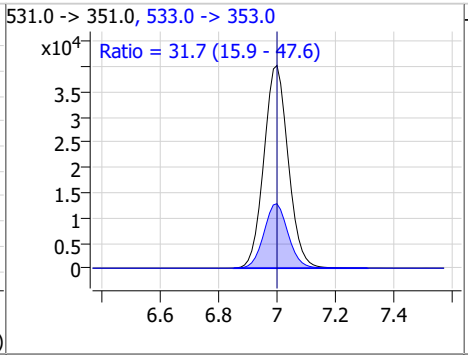


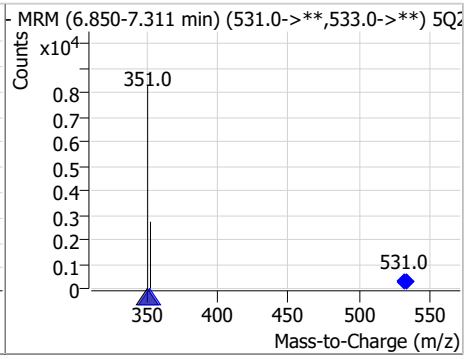




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	18.31	7.00	0.00	233582	533.0 -> 353.0	31.7	15.9	47.6





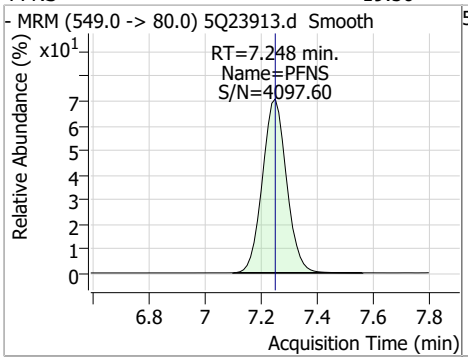


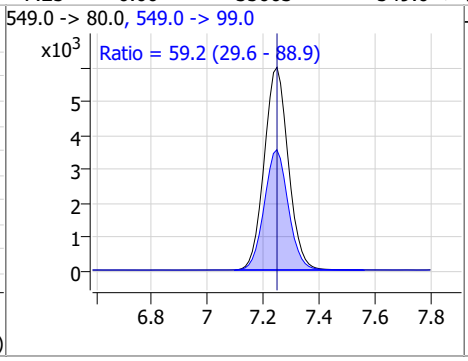
9.6.22

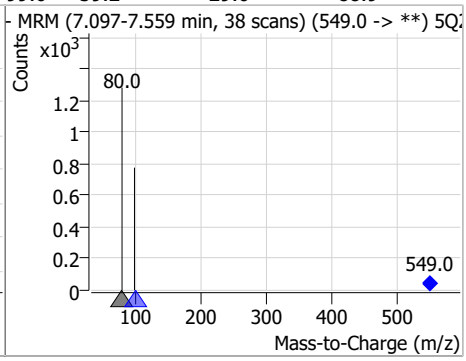
9

Perfluorinated Compounds by LC/MS/MS

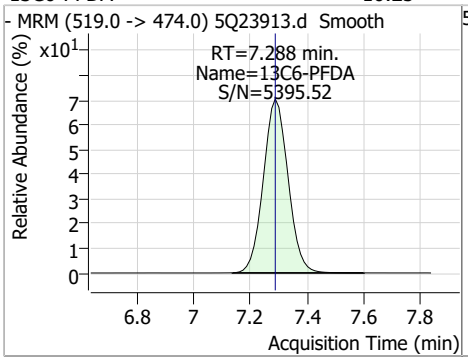
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	19.56	7.25	0.00	35663	549.0 -> 99.0	59.2	29.6	88.9

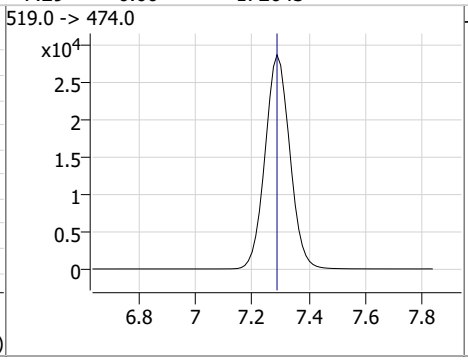


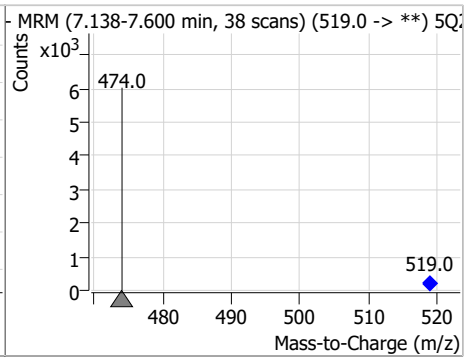




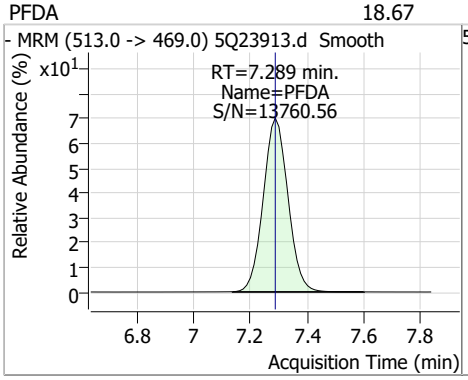
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	10.25	7.29	0.00	172643				

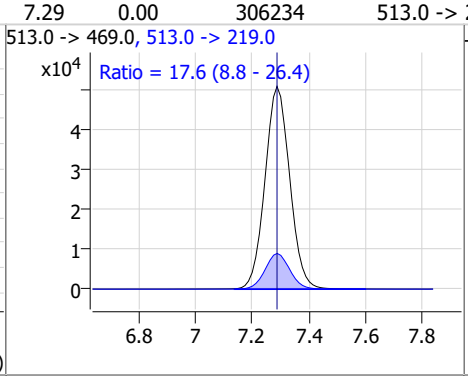


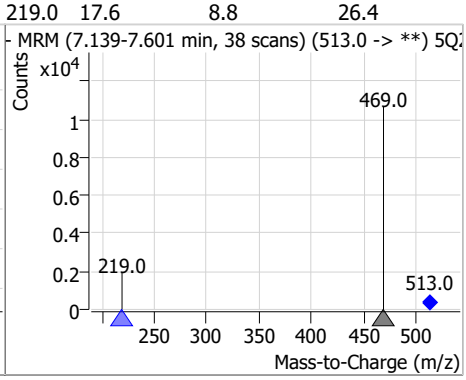




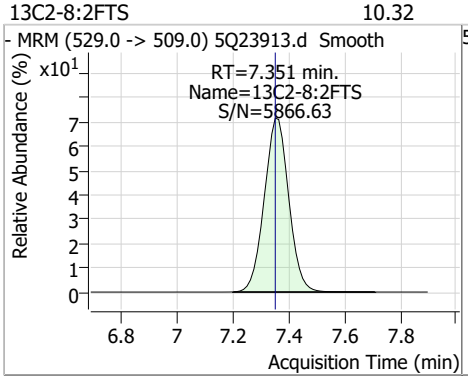
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	18.67	7.29	0.00	306234	513.0 -> 219.0	17.6	8.8	26.4

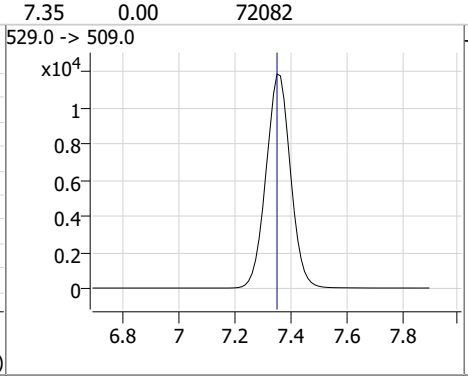


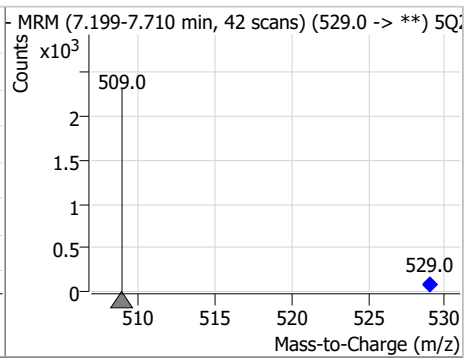




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	10.32	7.35	0.00	72082				

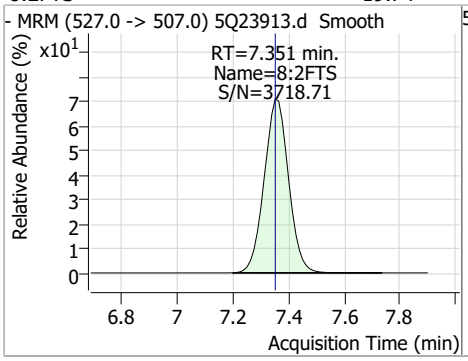


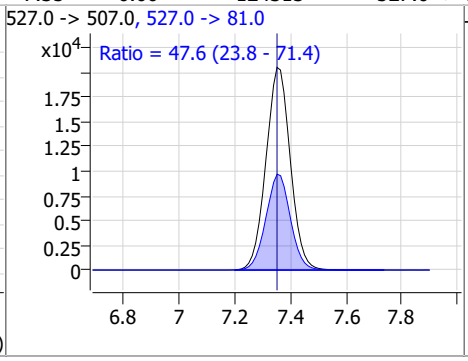


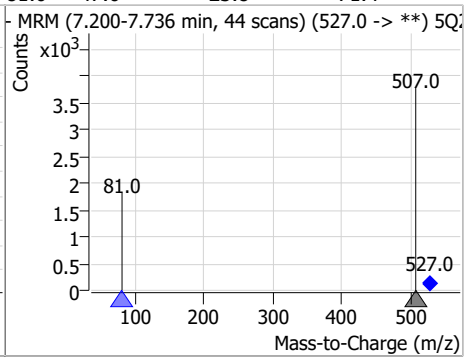


Perfluorinated Compounds by LC/MS/MS

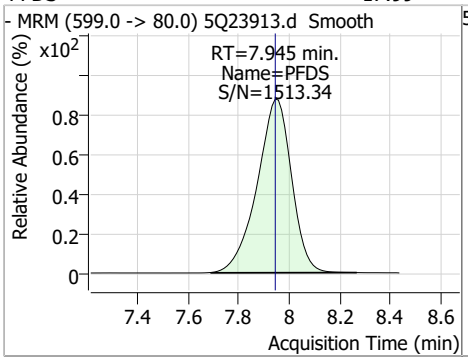
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	19.74	7.35	0.00	124313	527.0 -> 81.0	47.6	23.8	71.4

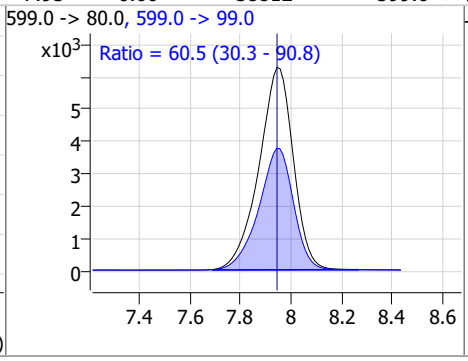


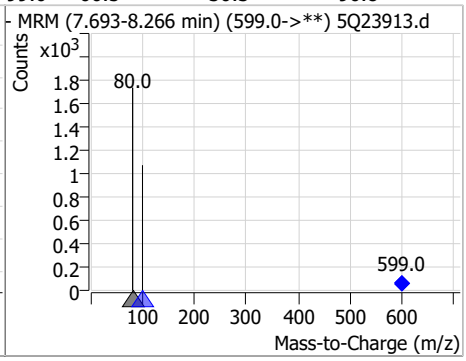




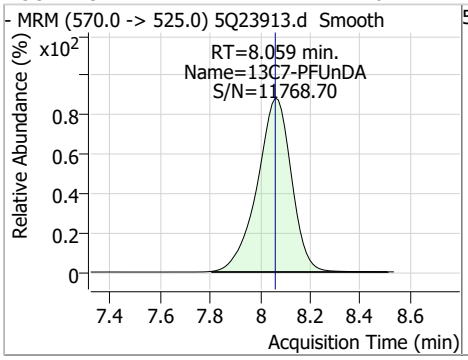
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	17.99	7.95	0.00	58812	599.0 -> 99.0	60.5	30.3	90.8

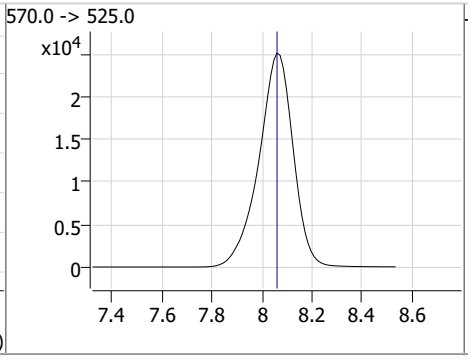


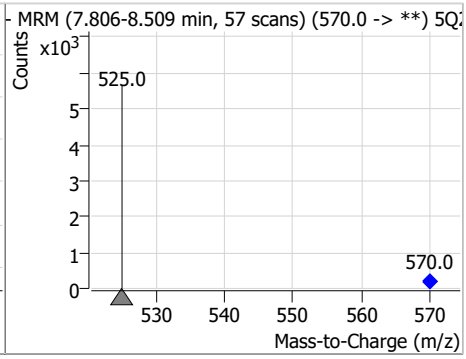




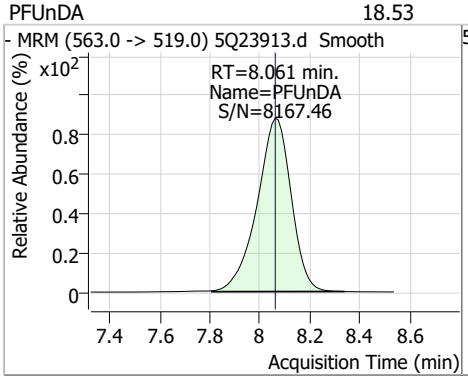
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	10.27	8.06	0.00	239413				

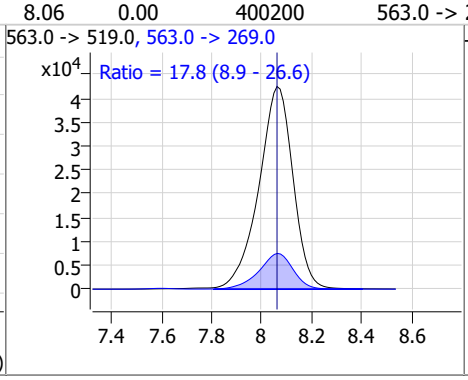


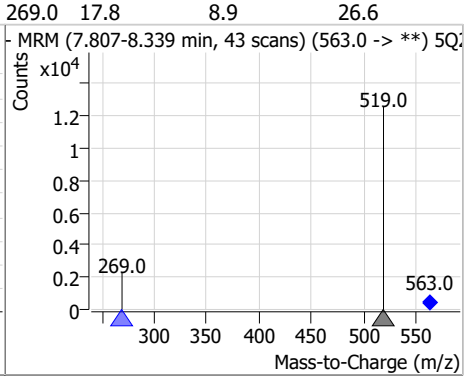




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	18.53	8.06	0.00	400200	563.0 -> 269.0	17.8	8.9	26.6

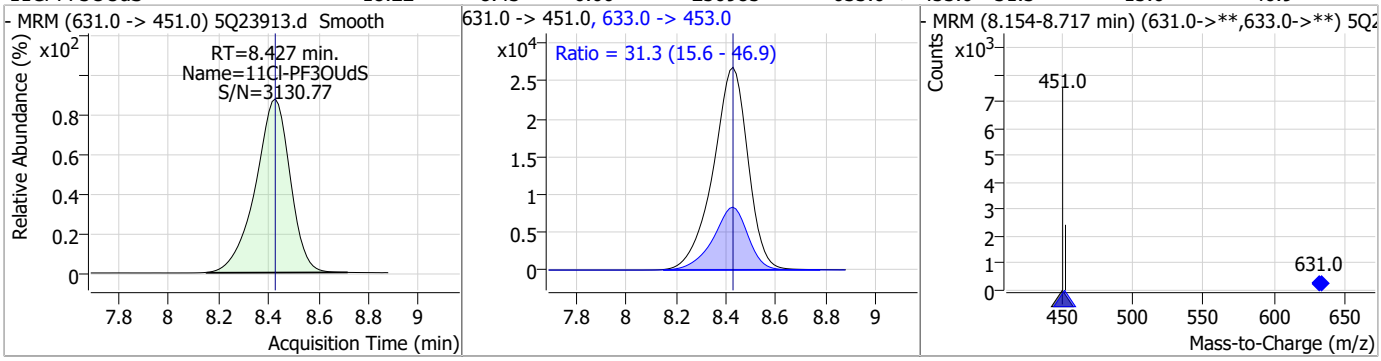




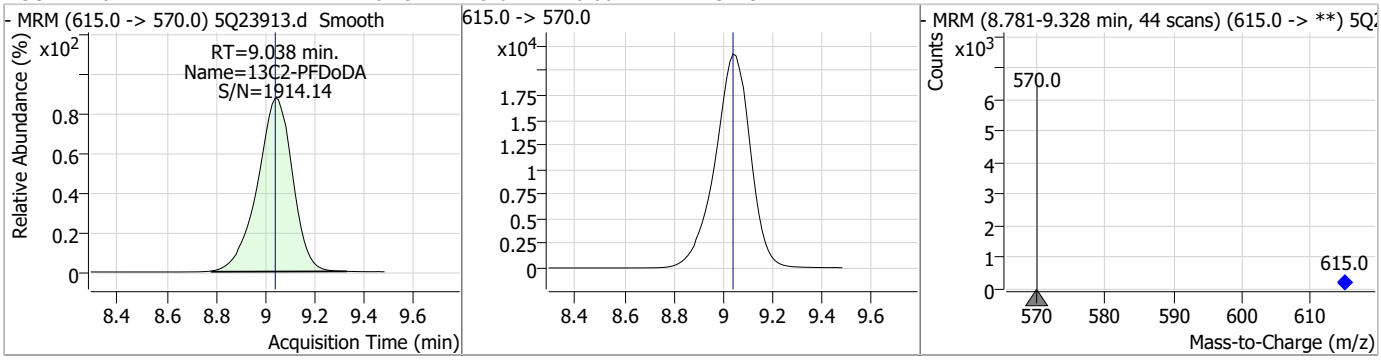


Perfluorinated Compounds by LC/MS/MS

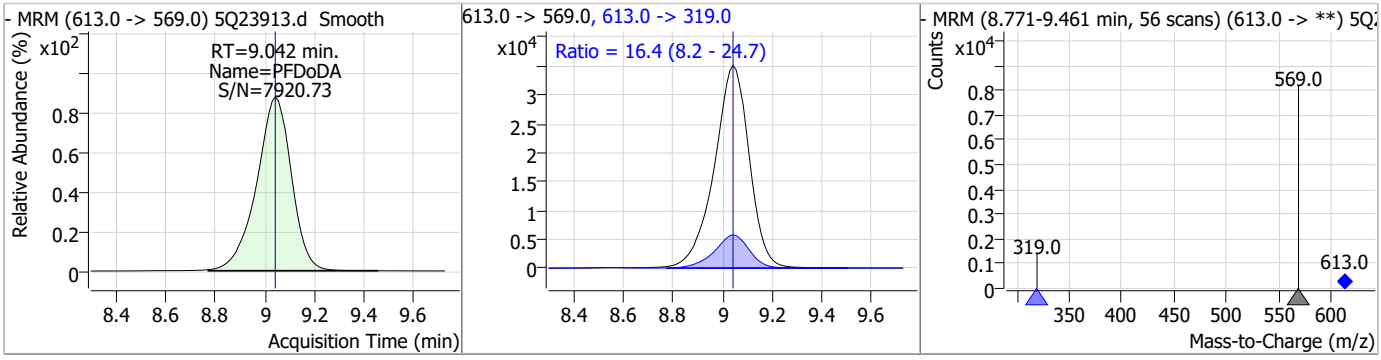
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	18.22	8.43	0.00	256985	633.0 -> 453.0	31.3	15.6	46.9



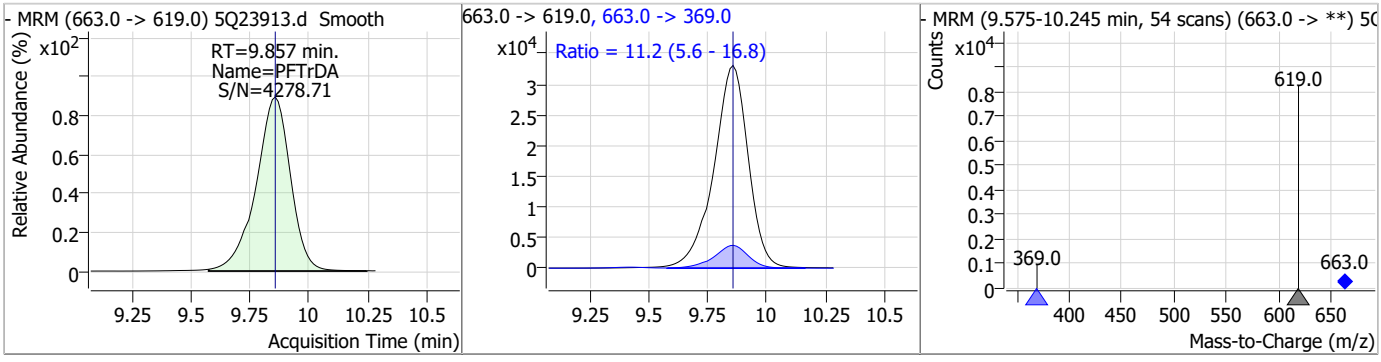
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	10.23	9.04	0.00	213249				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	18.82	9.04	0.00	344421	613.0 -> 319.0	16.4	8.2	24.7

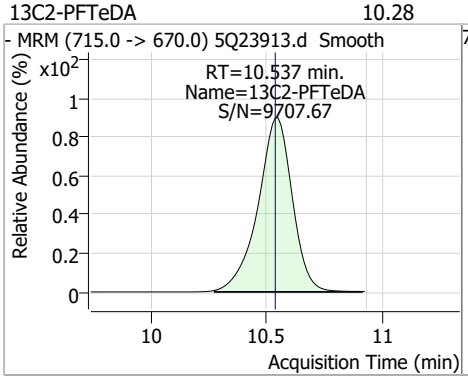


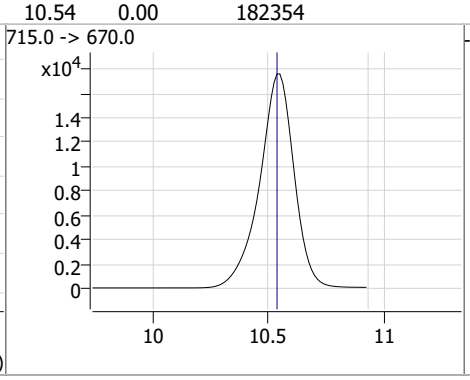
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	18.32	9.86	0.00	335767	663.0 -> 369.0	11.2	5.6	16.8

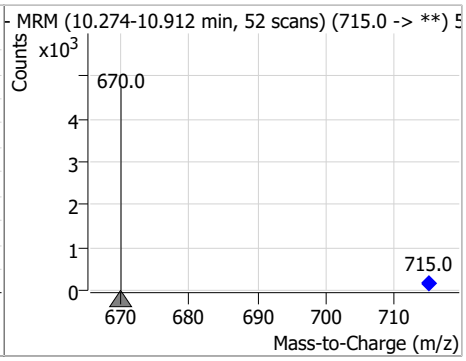


Perfluorinated Compounds by LC/MS/MS

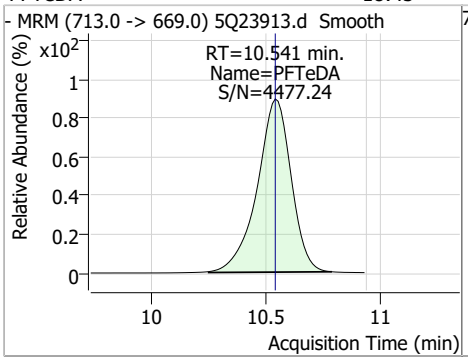
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	10.28	10.54	0.00	182354				

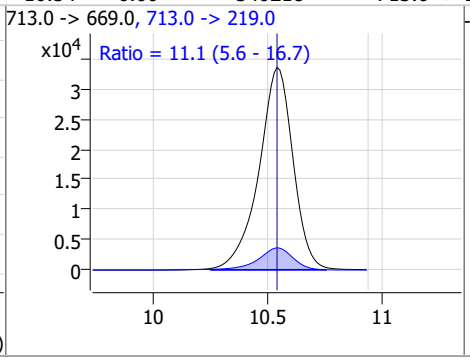


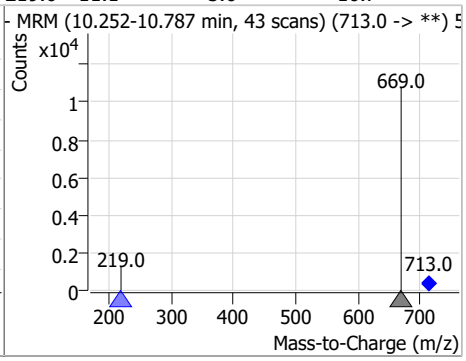




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	18.45	10.54	0.00	340218	713.0 -> 219.0	11.1	5.6	16.7







9.6.22

9

Manual Integration Approval Summary

Sample Number: S5Q375-ICC375
Lab FileID: 5Q23913.D
Injection Time: 12/28/23 15:56
Method: EPA 537M QSM5.3 B-15
Analyst approved: 12/29/23 14:15 Lindsay Ritner
Supervisor approved: 01/02/24 14:05 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.43	Split peak
Perfluorooctanesulfonic acid	1763-23-1		6.73	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Natasha Gumtie 01/02/24 14:05

Perfluorinated Compounds by LC/MS/MS

Data File	:	5Q23914.d
Operator	:	natashag
Acq. Method	:	537_ID.m
Acq. Date-Time	:	12/28/2023 4:13:07 PM
Sample Name	:	ic375-50
Vial	:	P1-A8
DA Method File	:	ID_122823_S5Q375.quantmethod.xml
Batch Name	:	s5q375.batch.bin
Sample Information	:	OP401,S5Q375,250,,,1.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.987	217.0 -> 172.0	46847	10.00	µg/L	0.000
M5-PFPeA	3.432	268.0 -> 223.0	78071	10.00	µg/L	0.000
M5-PFHxA	4.552	318.0 -> 273.0	118121	10.00	µg/L	0.000
M4-PFHpA	5.413	367.0 -> 322.0	118274	10.00	µg/L	0.000
M8-PFOA	6.124	421.0 -> 376.0	164078	10.00	µg/L	0.000
M9-PFNA	6.756	472.0 -> 427.0	162237	10.00	µg/L	0.000
M6-PFDA	7.288	519.0 -> 474.0	163207	10.00	µg/L	0.000
M7-PFUnDA	8.059	570.0 -> 525.0	226797	10.00	µg/L	0.000
M2-PFDoDA	9.038	615.0 -> 570.0	204470	10.00	µg/L	0.000
M2-PFTeDA	10.537	715.0 -> 670.0	177867	10.00	µg/L	0.000
M8-FOSA	6.192	506.0 -> 78.0	38363	10.00	µg/L	0.000
M3-PFBS	3.637	302.0 -> 99.0	9702	10.00	µg/L	0.000
M3-PFHxS	5.432	402.0 -> 99.0	11607	10.00	µg/L	0.000
M8-PFOS	6.729	507.0 -> 99.0	15443	10.00	µg/L	0.000
M2-4:2FTS	4.474	329.0 -> 309.0	47640	10.00	µg/L	0.000
M2-6:2FTS	6.136	429.0 -> 409.0	82668	10.00	µg/L	0.000
M2-8:2FTS	7.351	529.0 -> 509.0	81454	10.00	µg/L	0.000
M3-MeFOSAA	6.735	573.0 -> 419.0	29446	10.00	µg/L	-0.012
M3-HFPO-DA	4.819	287.0 -> 169.0	6387	10.00	µg/L	0.000
M3-MeFOSA	6.589	515.0 -> 169.0	13616	10.00	µg/L	0.000
M5-EtFOSAA	6.845	589.0 -> 419.0	26744	10.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.474	329.0 -> 309.0	47640	11.85	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 118.5%		
13C2-6:2FTS	6.136	429.0 -> 409.0	82668	11.66	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 116.6%		
13C2-8:2FTS	7.351	529.0 -> 509.0	81454	11.66	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 116.6%		
13C2-PFDoDA	9.038	615.0 -> 570.0	204470	9.81	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 98.1%		
13C2-PFTeDA	10.537	715.0 -> 670.0	177867	10.02	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.2%		
13C3-PFBS	3.637	302.0 -> 99.0	9702	9.99	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.9%		
13C3-PFHxS	5.432	402.0 -> 99.0	11607	9.84	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 98.4%		
13C4-PFBA	1.987	217.0 -> 172.0	46847	9.92	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.2%		
13C4-PFHpA	5.413	367.0 -> 322.0	118274	9.83	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 98.3%		
13C5-PFHxA	4.552	318.0 -> 273.0	118121	9.88	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 98.8%		
13C5-PFPeA	3.432	268.0 -> 223.0	78071	9.90	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.0%		
13C6-PFDA	7.288	519.0 -> 474.0	163207	9.69	µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 96.9%			
13C7-PFUnDA	8.059	570.0 -> 525.0	226797	9.73	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 97.3%			
13C8-FOSA	6.192	506.0 -> 78.0	38363	9.47	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 94.7%			
13C8-PFOA	6.124	421.0 -> 376.0	164078	9.91	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.1%			
13C8-PFOS	6.729	507.0 -> 99.0	15443	9.83	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 98.3%			
13C9-PFNA	6.756	472.0 -> 427.0	162237	9.77	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 97.7%			
d3-MeFOSAA	6.735	573.0 -> 419.0	29446	9.66	µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 96.6%			
13C3-HFPO-DA	4.819	287.0 -> 169.0	6387	9.89	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 98.9%			
d3-MeFOSA	6.589	515.0 -> 169.0	13616	9.71	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 97.1%			
d5-EtFOSAA	6.845	589.0 -> 419.0	26744	9.74	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 97.4%			
Target Compounds							QValue
4:2FTS	4.475	327.0 -> 307.0	209030	44.55	µg/L		99
		327.0 -> 81.0	118829				
6:2FTS	6.136	427.0 -> 407.0	338954	44.81	µg/L		100
		427.0 -> 81.0	137701				
8:2FTS	7.351	527.0 -> 507.0	319973	44.96	µg/L		99
		527.0 -> 81.0	150153				
EtFOSAA	6.846	584.0 -> 419.0	107947	49.47	µg/L		96
		584.0 -> 483.0	65722				
FOSA	6.194	498.0 -> 78.0	176067	50.02	µg/L		100
		498.0 -> 478.0	6004				
MeFOSAA	6.748	570.0 -> 419.0	114123	49.66	µg/L		99
		570.0 -> 512.0	41938				
PFBA	1.994	213.0 -> 169.0	215485	49.66	µg/L		100
PFBS	3.628	299.0 -> 80.0	119626	49.81	µg/L		100
		299.0 -> 99.0	52309				
PFDA	7.289	513.0 -> 469.0	767413	49.49	µg/L		99
		513.0 -> 219.0	137221				
PFDoDA	9.042	613.0 -> 569.0	879132	50.09	µg/L		100
		613.0 -> 319.0	145732				
PFDS	7.945	599.0 -> 80.0	152396	49.22	µg/L		100
		599.0 -> 99.0	92762				
PFHpA	5.413	363.0 -> 319.0	680340	50.15	µg/L		100
		363.0 -> 169.0	143298				
PFHpS	6.121	449.0 -> 80.0	108545	50.34	µg/L		100
		449.0 -> 99.0	57642				
PFHxA	4.553	313.0 -> 269.0	562777	49.24	µg/L		100
		313.0 -> 119.0	23495				
PFHxS	5.433	399.0 -> 80.0	107282	49.82	µg/L	m	98
		399.0 -> 99.0	61366				
PFNA	6.756	463.0 -> 419.0	741189	49.89	µg/L		100
		463.0 -> 219.0	157207				
PFNS	7.248	549.0 -> 80.0	89097	49.92	µg/L		100
		549.0 -> 99.0	52950				
PFOA	6.125	413.0 -> 369.0	808292	50.22	µg/L		99
		413.0 -> 169.0	204673				
PFOS	6.730	499.0 -> 80.0	134342	49.06	µg/L	m	98

Perfluorinated Compounds by LC/MS/MS

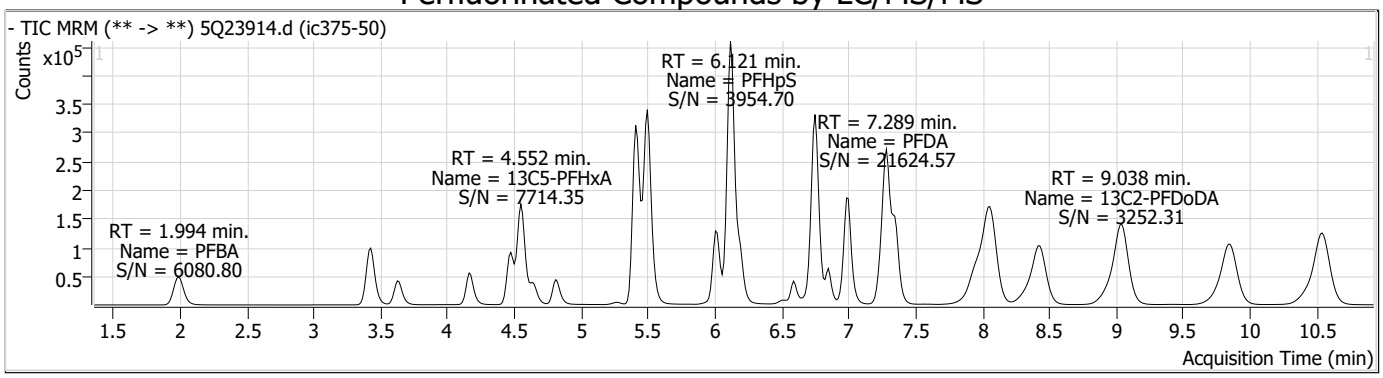
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		499.0 -> 99.0	65669			
PFPeA	3.434	263.0 -> 219.0	379010	50.06	µg/L	100
PFPeS	4.648	349.0 -> 80.0	83198	49.22	µg/L	98
		349.0 -> 99.0	42679			
PFTeDA	10.541	713.0 -> 669.0	887752	49.37	µg/L	99
		713.0 -> 219.0	102425			
PFTrDA	9.845	663.0 -> 619.0	875613	49.83	µg/L	100
		663.0 -> 369.0	97418			
PFUnDA	8.061	563.0 -> 519.0	1026069	50.15	µg/L	99
		563.0 -> 269.0	180092			
11Cl-PF3OUdS	8.415	631.0 -> 451.0	665039	49.17	µg/L	100
		633.0 -> 453.0	209018			
9Cl-PF3ONS	6.999	531.0 -> 351.0	578101	47.95	µg/L	100
		533.0 -> 353.0	183823			
ADONA	5.502	377.0 -> 251.0	969317	49.83	µg/L	100
		377.0 -> 85.0	344406			
HFPO-DA	4.815	329.0 -> 169.0	141969	48.86	µg/L	99
		285.0 -> 169.0	29199			
MeFOSA	6.590	512.0 -> 169.0	58573	49.73	µg/L	99
		512.0 -> 219.0	48595			
4-PFECHS	6.018	461.0 -> 381.0	353695	49.65	µg/L	100
		461.0 -> 99.0	182976			
FBSA	4.170	298.0 -> 78.0	201942	51.11	µg/L	100
		298.0 -> 64.0	18917			
FHxSA	5.409	398.0 -> 78.0	204264	50.92	µg/L	99
		398.0 -> 64.0	19487			

 # = Qualifier out of range, m = manually integrated, + = Area summed

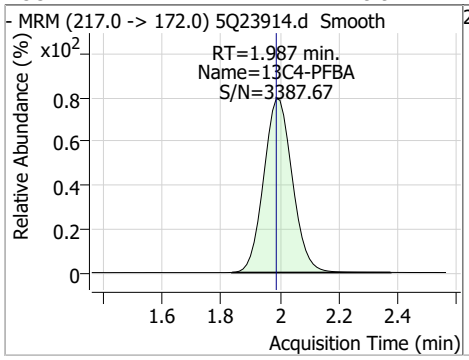
9.6.23

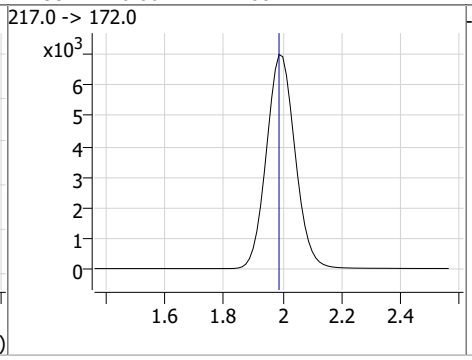
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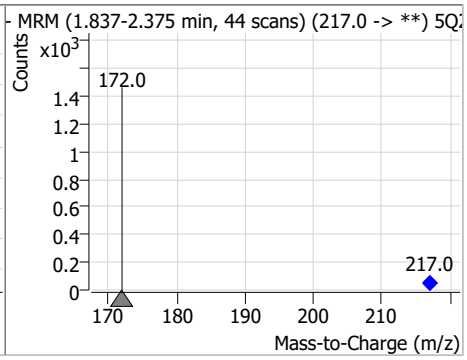
Perfluorinated Compounds by LC/MS/MS



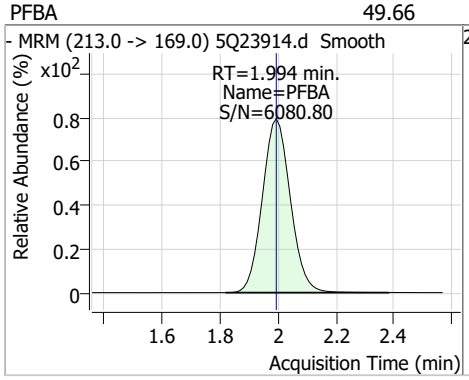
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	9.92	1.99	0.00	46847				

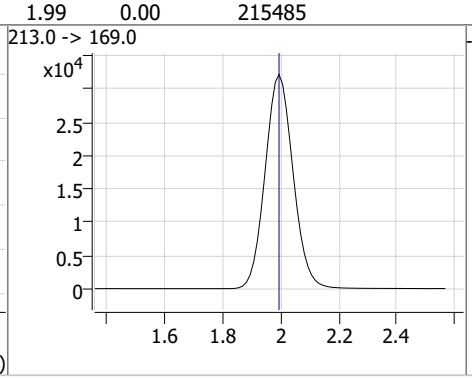


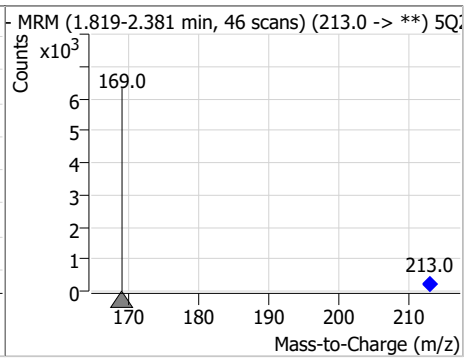




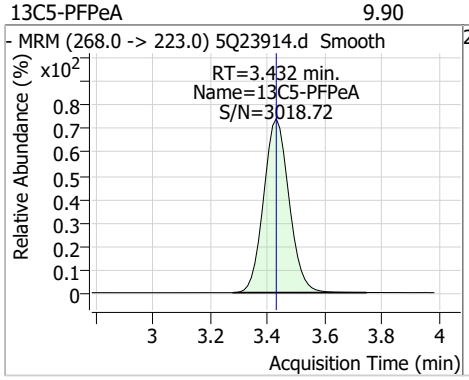
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	49.66	1.99	0.00	215485				

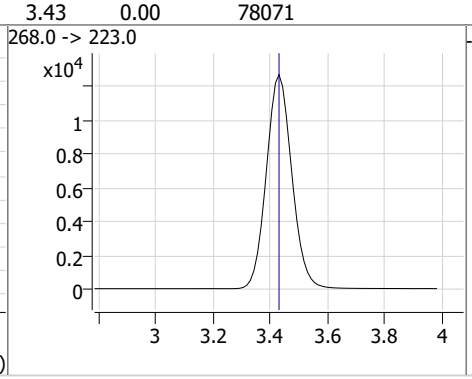


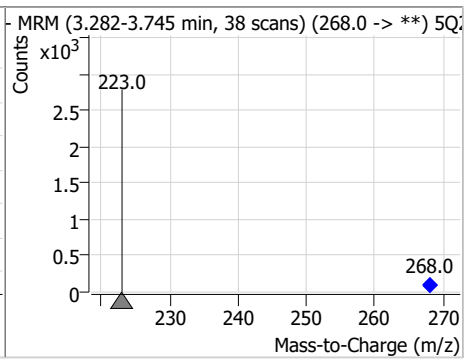




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	9.90	3.43	0.00	78071				





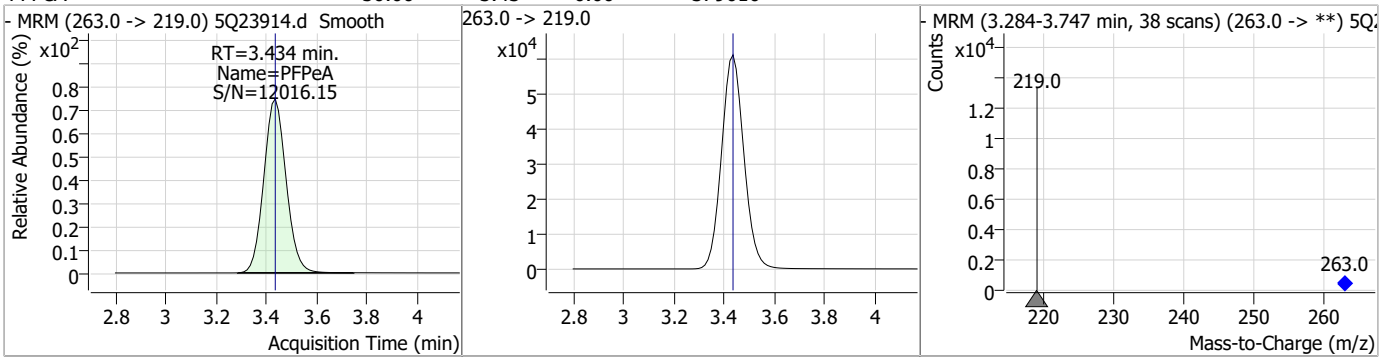


9.6.23

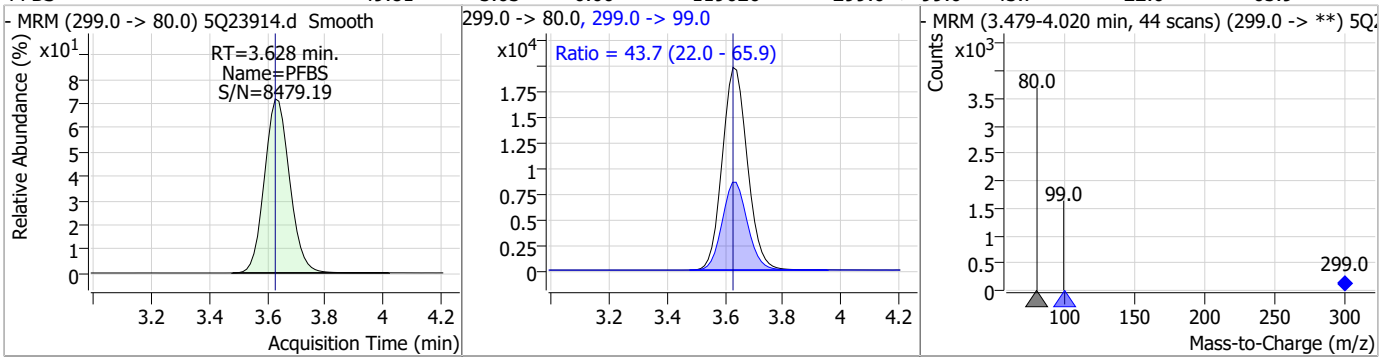
9

Perfluorinated Compounds by LC/MS/MS

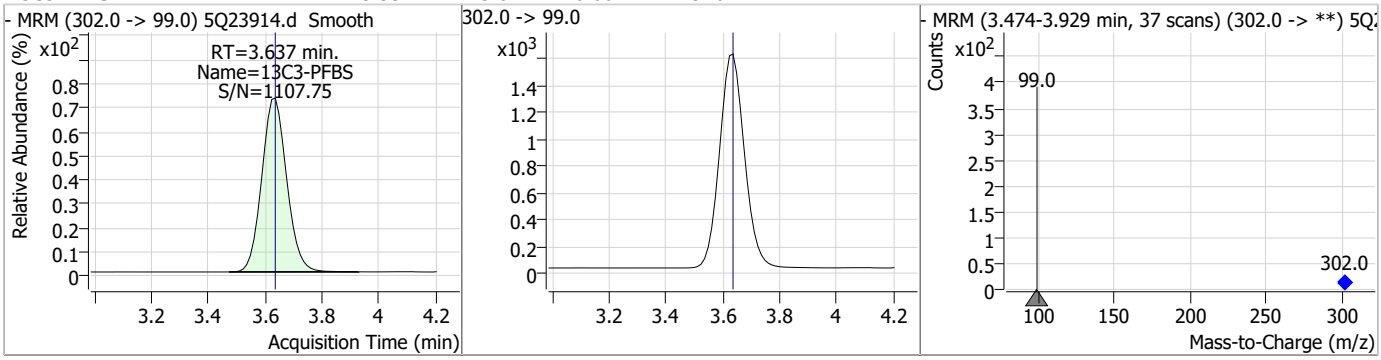
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	50.06	3.43	0.00	379010				



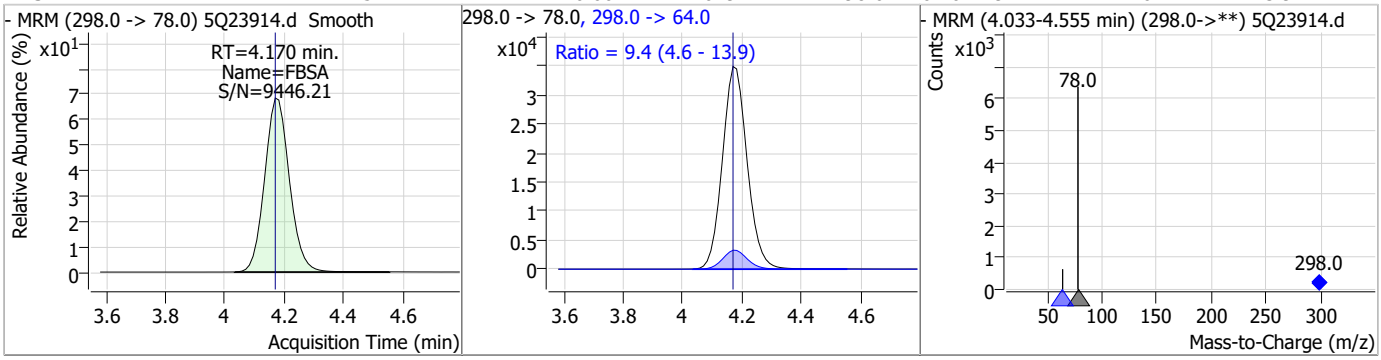
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	49.81	3.63	0.00	119626	299.0 -> 99.0	43.7	22.0	65.9



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	9.99	3.64	0.00	9702				

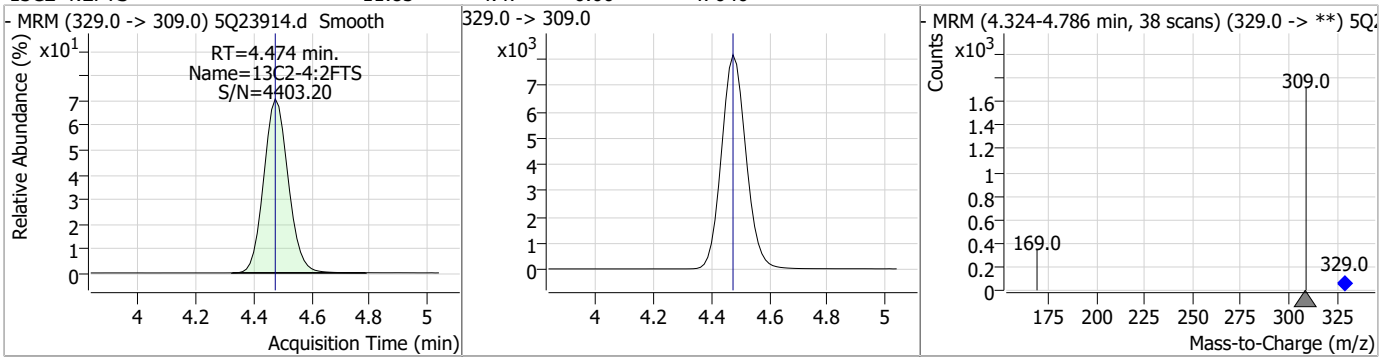


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	51.11	4.17	0.00	201942	298.0 -> 64.0	9.4	4.6	13.9

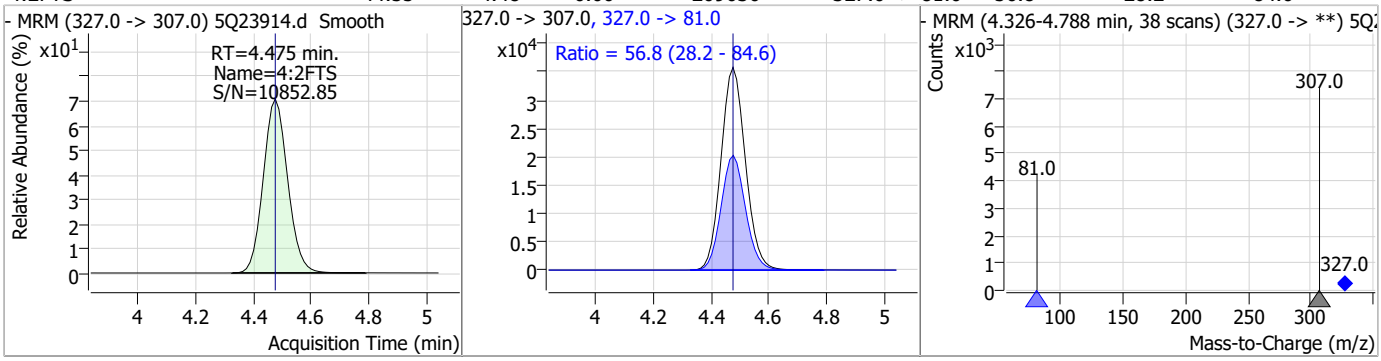


Perfluorinated Compounds by LC/MS/MS

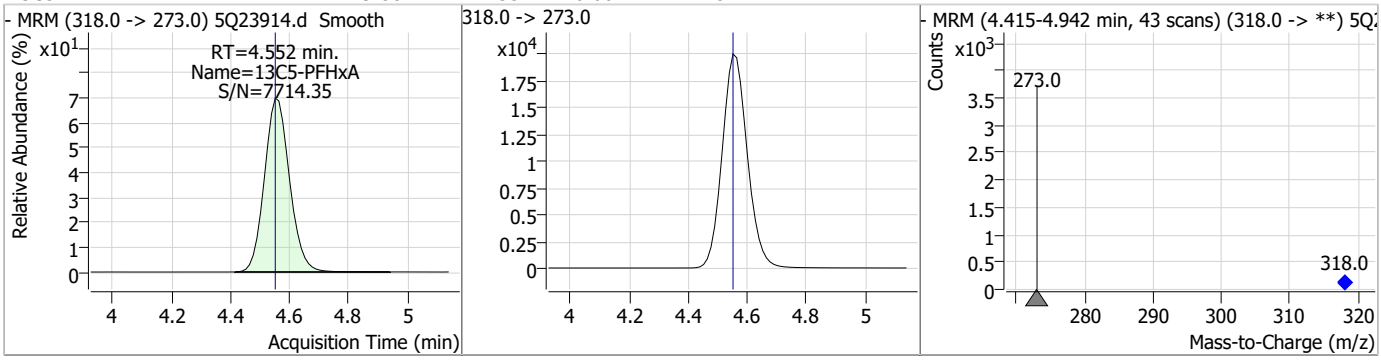
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	11.85	4.47	0.00	47640				



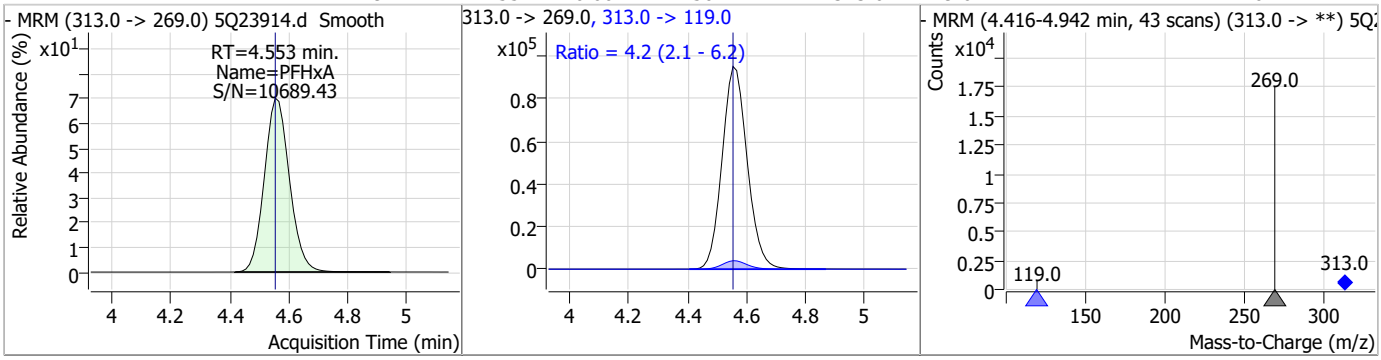
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	44.55	4.48	0.00	209030	327.0 -> 81.0	56.8	28.2	84.6



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	9.88	4.55	0.00	118121				

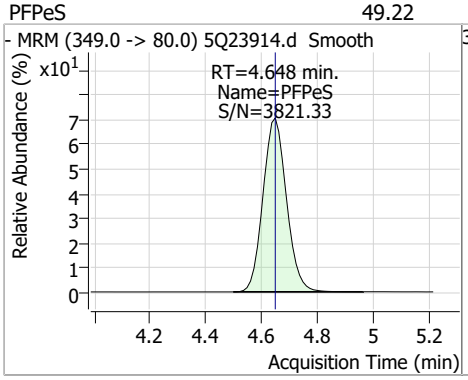


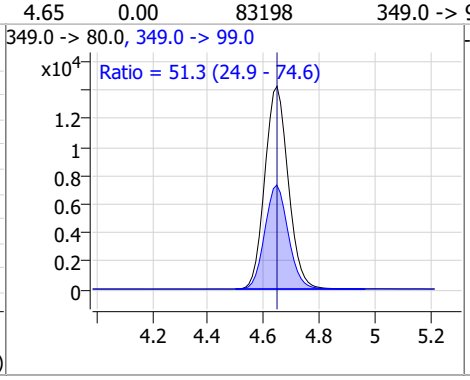
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	49.24	4.55	0.00	562777	313.0 -> 119.0	4.2	2.1	6.2

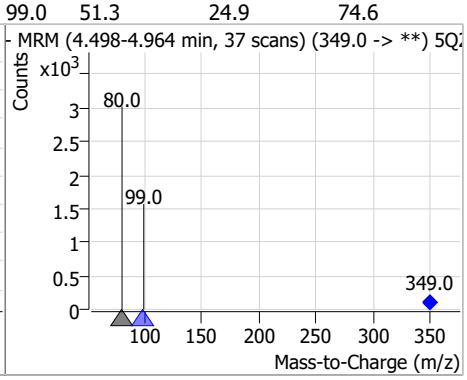


Perfluorinated Compounds by LC/MS/MS

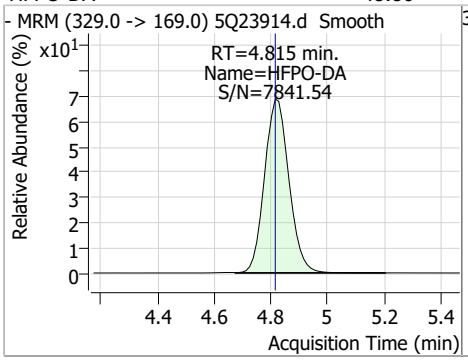
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	49.22	4.65	0.00	83198	349.0 -> 99.0	51.3	24.9	74.6

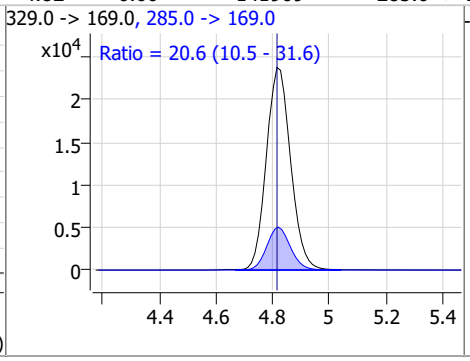


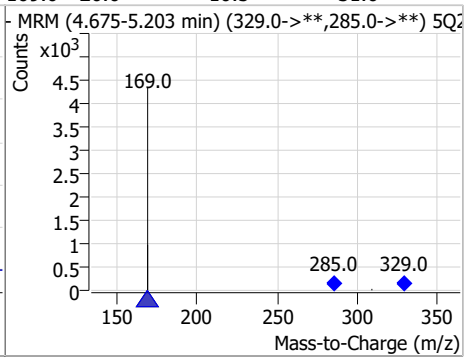




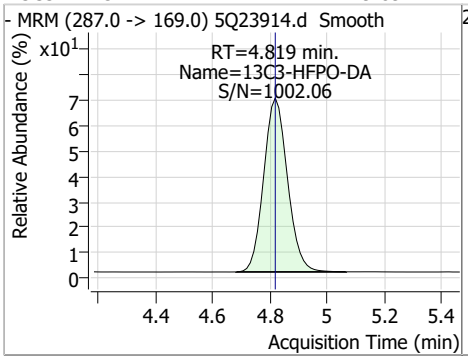
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	48.86	4.82	0.00	141969	285.0 -> 169.0	20.6	10.5	31.6

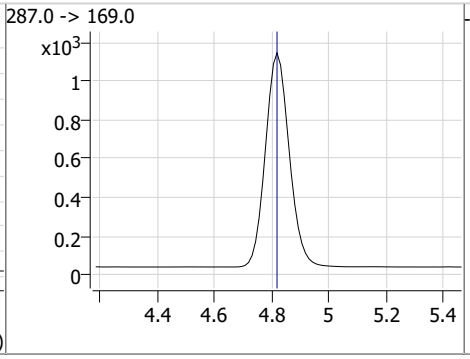


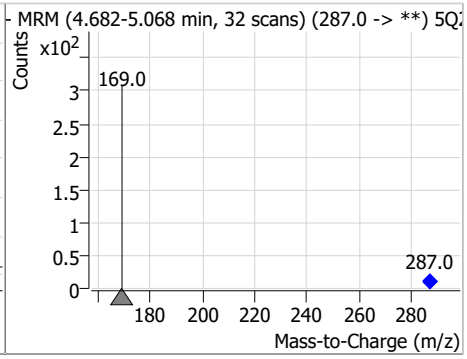




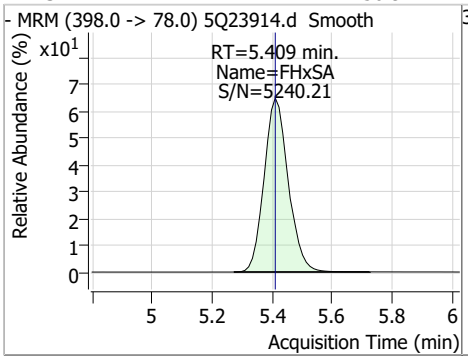
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	9.89	4.82	0.00	6387				

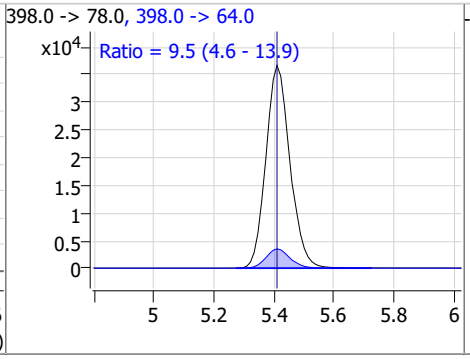


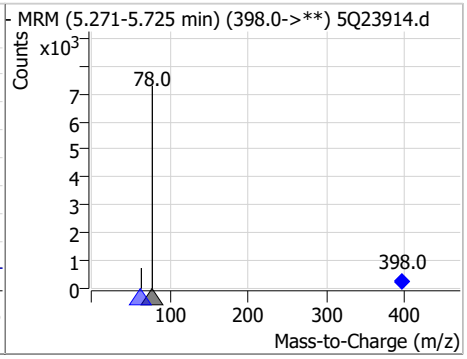




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	50.92	5.41	0.00	204264	398.0 -> 64.0	9.5	4.6	13.9

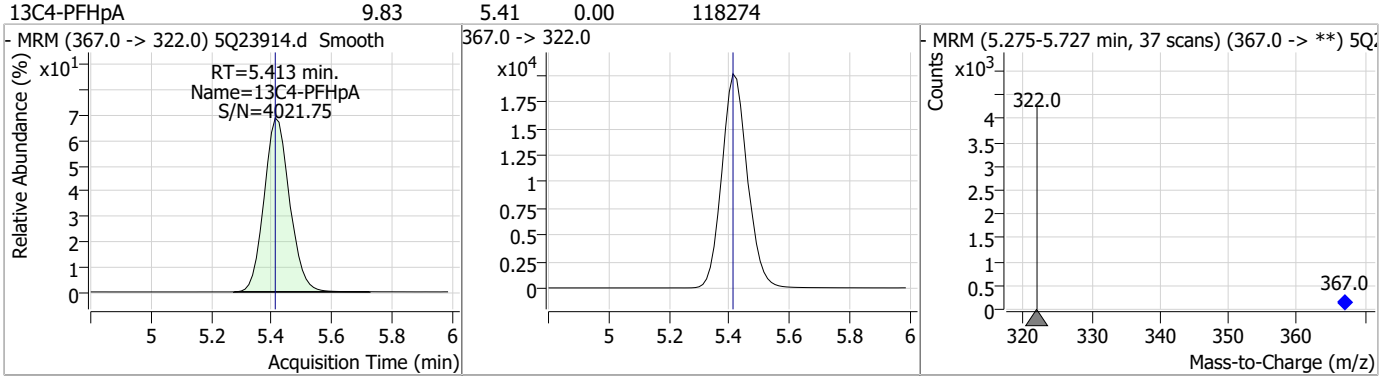




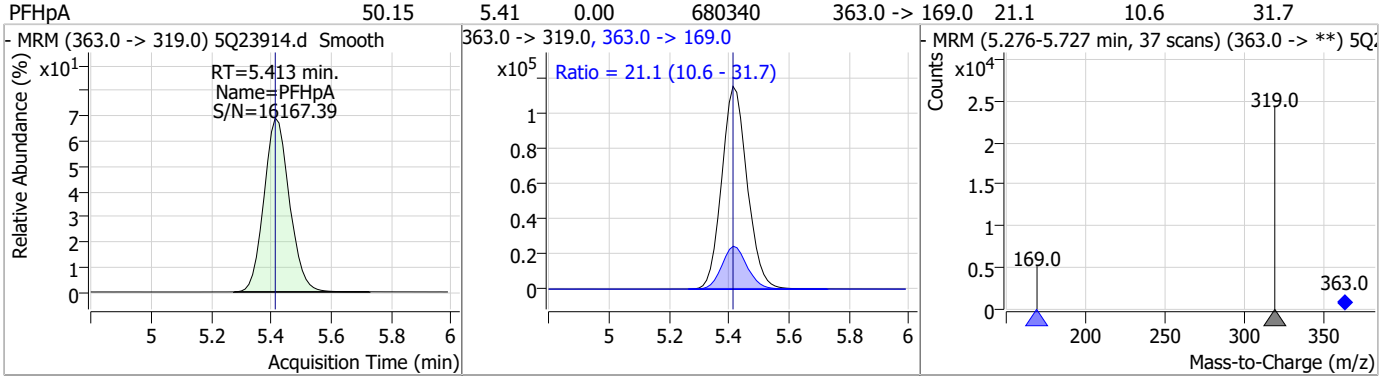


Perfluorinated Compounds by LC/MS/MS

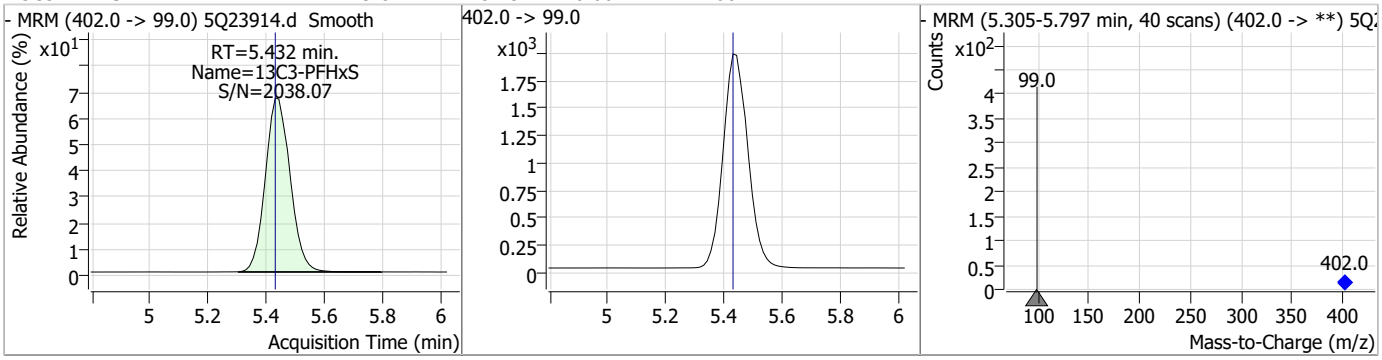
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	9.83	5.41	0.00	118274				



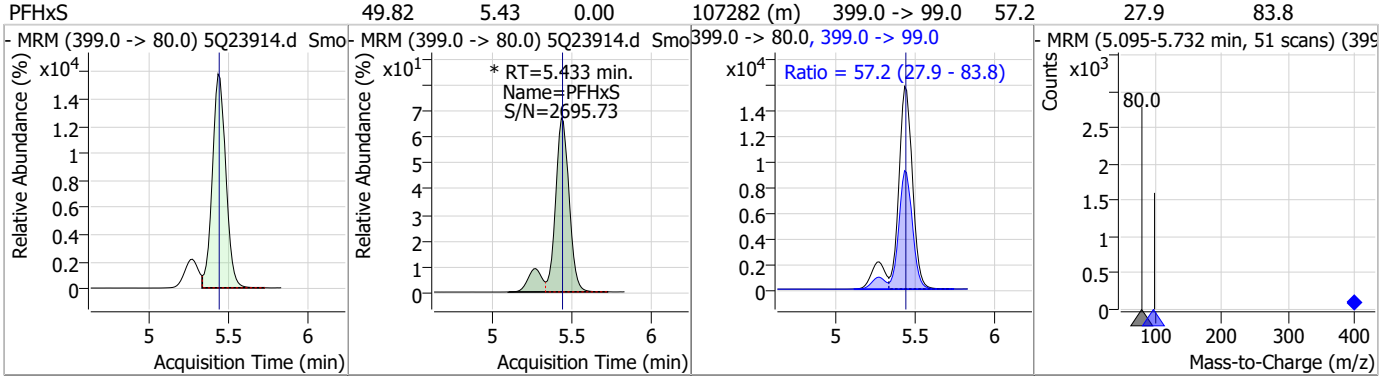
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	50.15	5.41	0.00	680340	363.0 -> 169.0	21.1	10.6	31.7



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	9.84	5.43	0.00	11607				

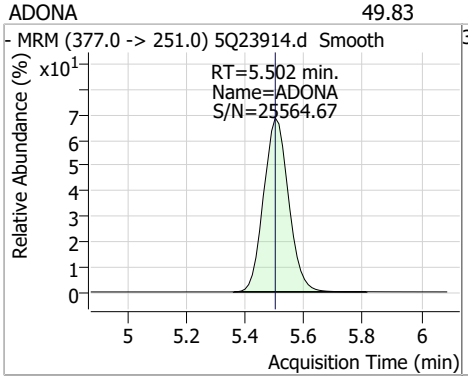


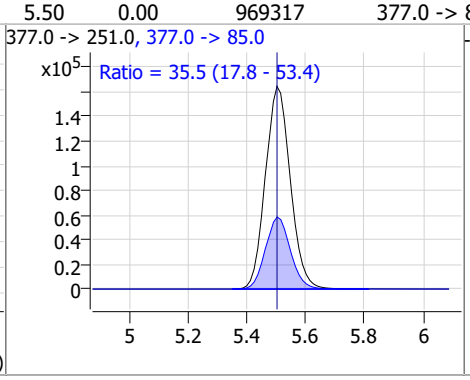
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	49.82	5.43	0.00	107282 (m)	399.0 -> 99.0	57.2	27.9	83.8

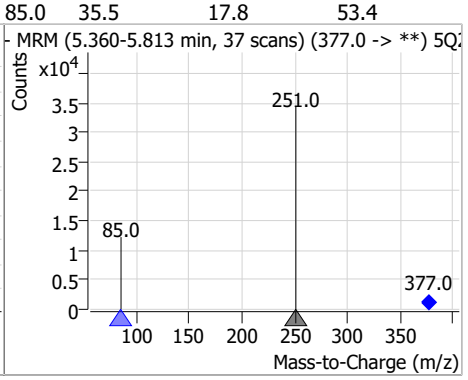


Perfluorinated Compounds by LC/MS/MS

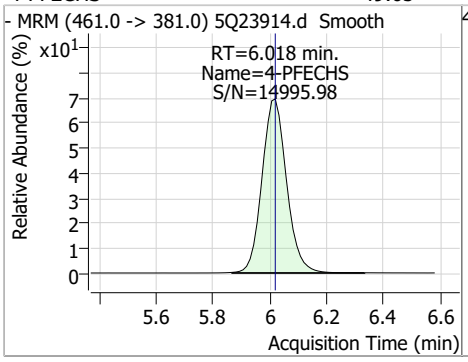
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	49.83	5.50	0.00	969317	377.0 -> 85.0	35.5	17.8	53.4

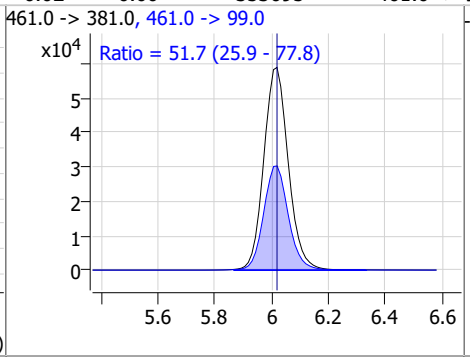


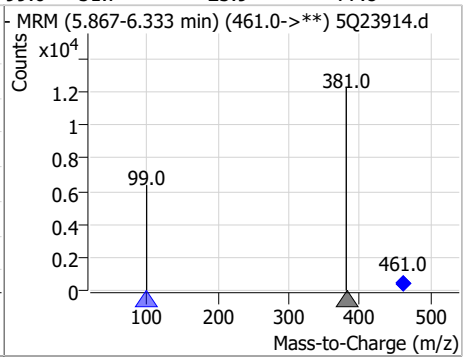




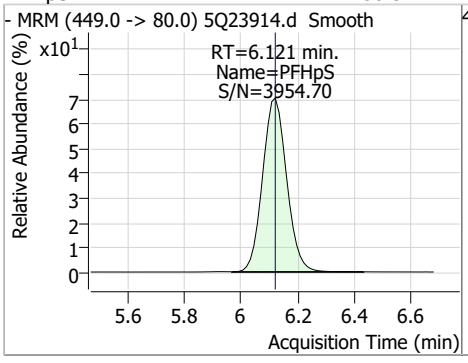
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS	49.65	6.02	0.00	353695	461.0 -> 99.0	51.7	25.9	77.8

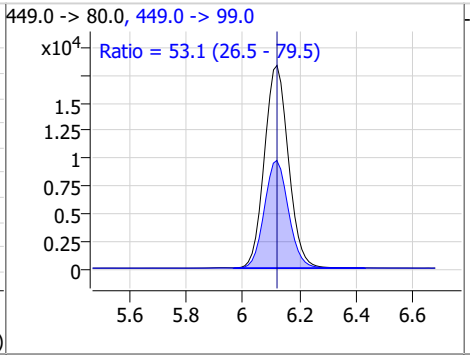


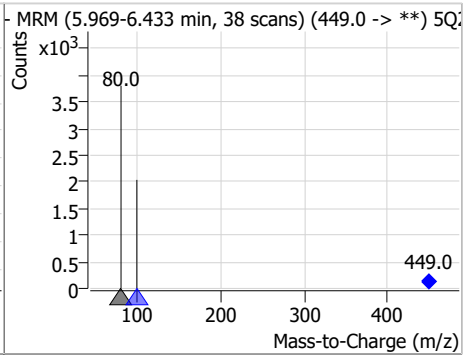




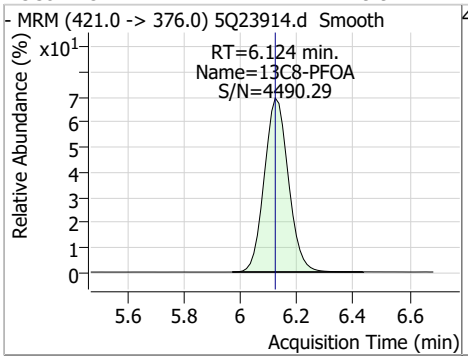
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	50.34	6.12	0.00	108545	449.0 -> 99.0	53.1	26.5	79.5

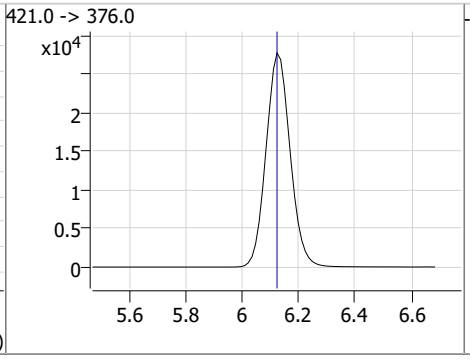


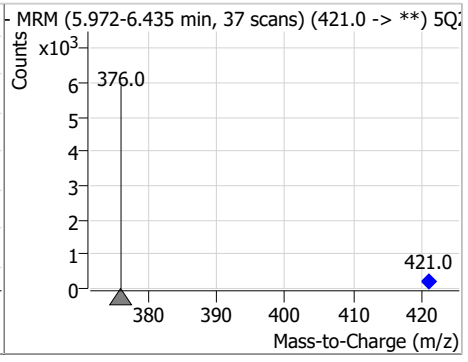




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	9.91	6.12	0.00	164078				

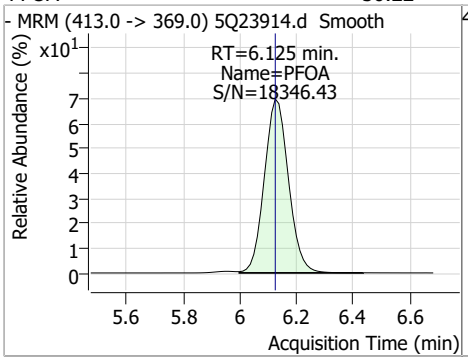


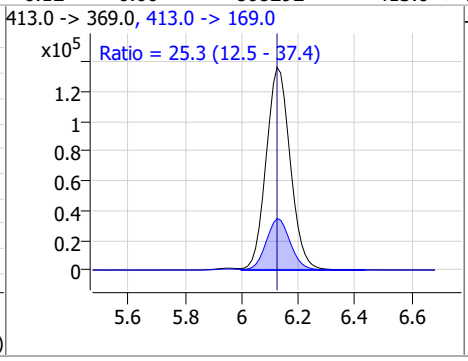


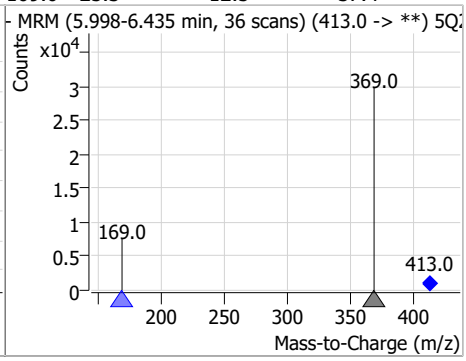


Perfluorinated Compounds by LC/MS/MS

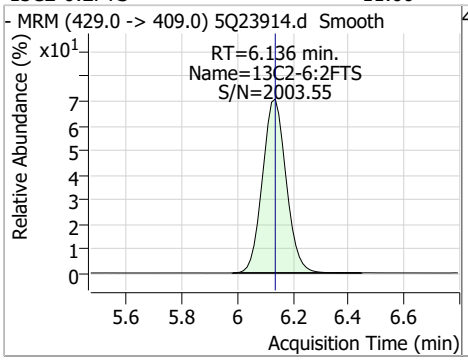
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	50.22	6.12	0.00	808292	413.0 -> 169.0	25.3	12.5	37.4

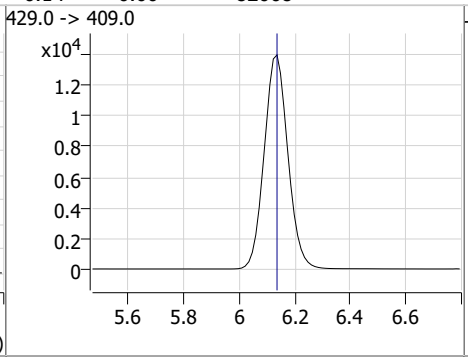


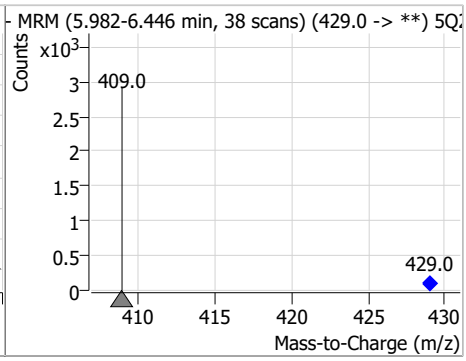




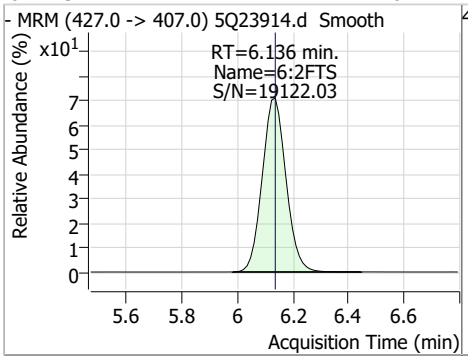
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	11.66	6.14	0.00	82668				

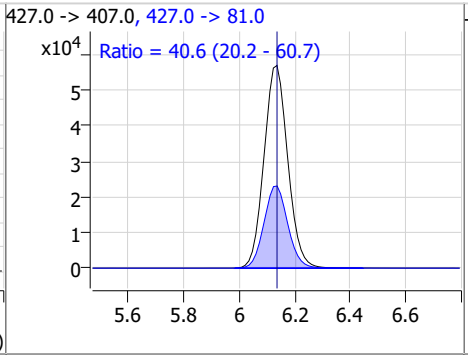


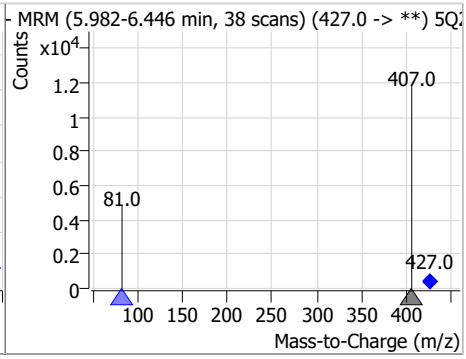




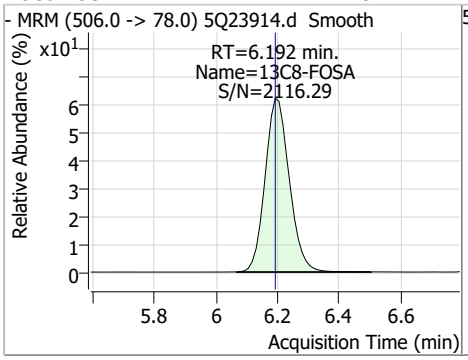
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	44.81	6.14	0.00	338954	427.0 -> 81.0	40.6	20.2	60.7

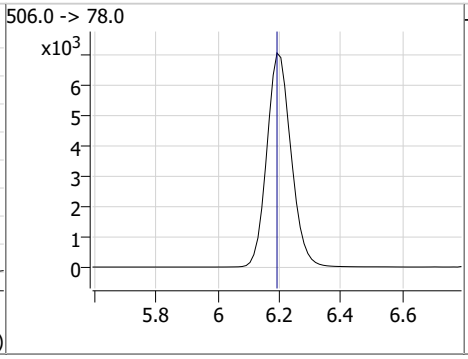


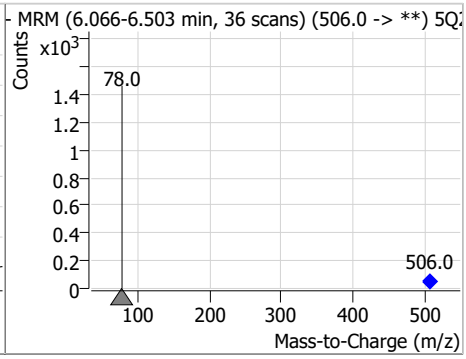




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	9.47	6.19	0.00	38363				

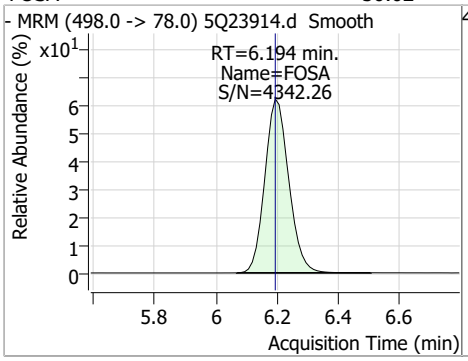


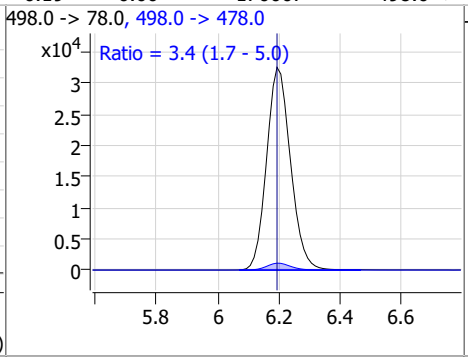


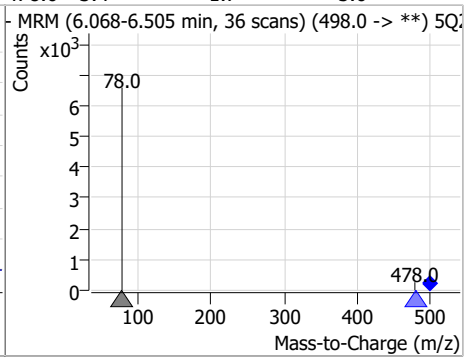


Perfluorinated Compounds by LC/MS/MS

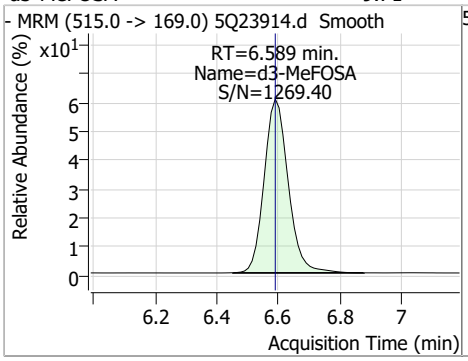
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	50.02	6.19	0.00	176067	498.0 -> 478.0	3.4	1.7	5.0

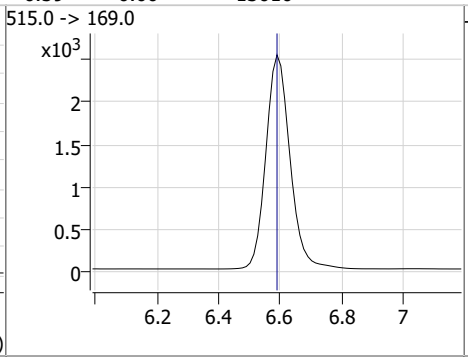


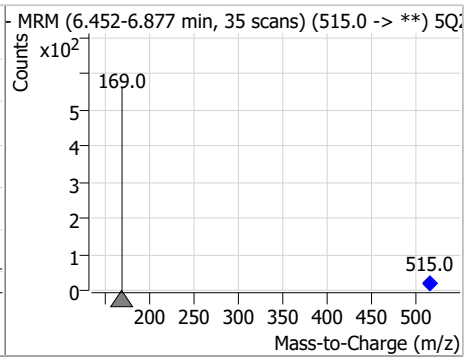




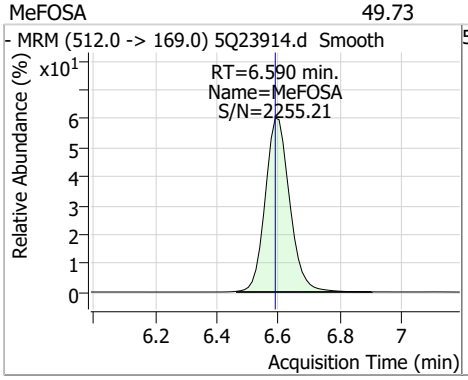
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	9.71	6.59	0.00	13616				

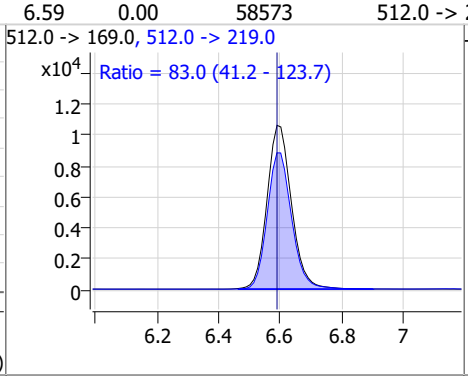


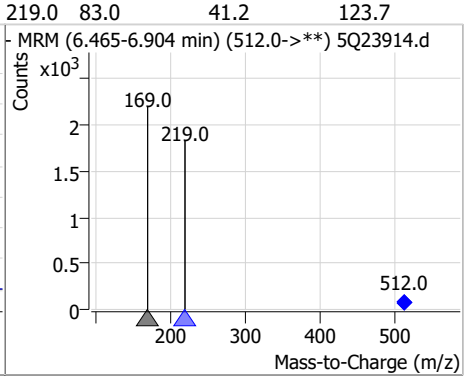




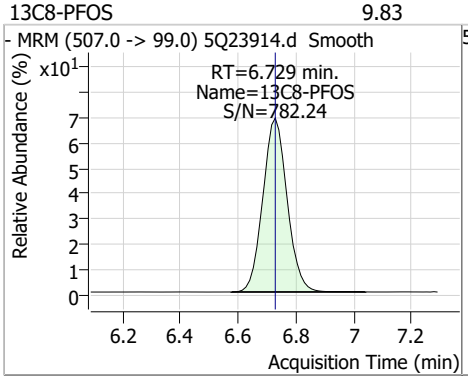
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	49.73	6.59	0.00	58573	512.0 -> 219.0	83.0	41.2	123.7

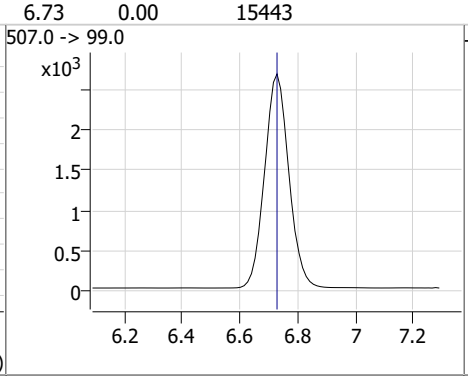


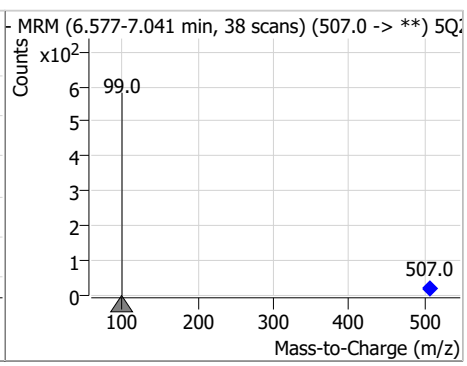




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	9.83	6.73	0.00	15443				

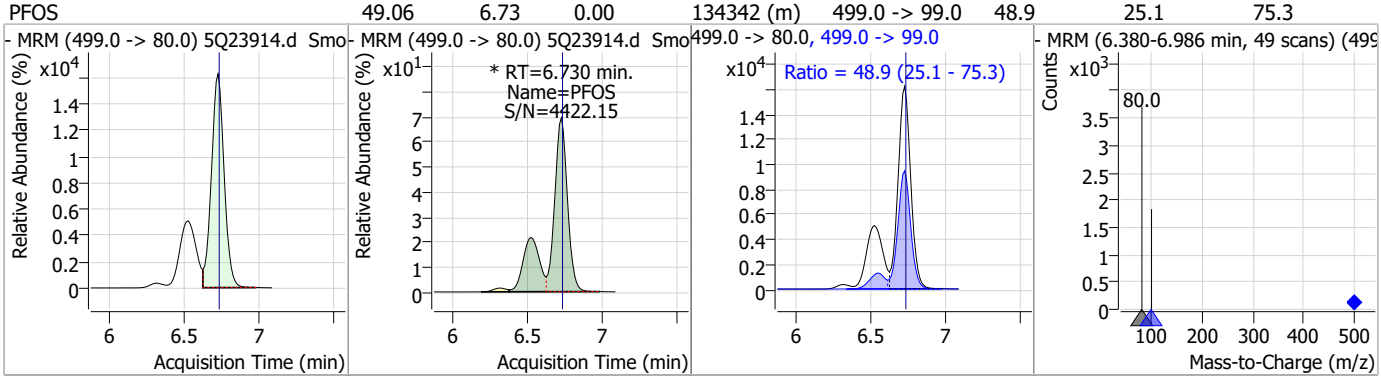




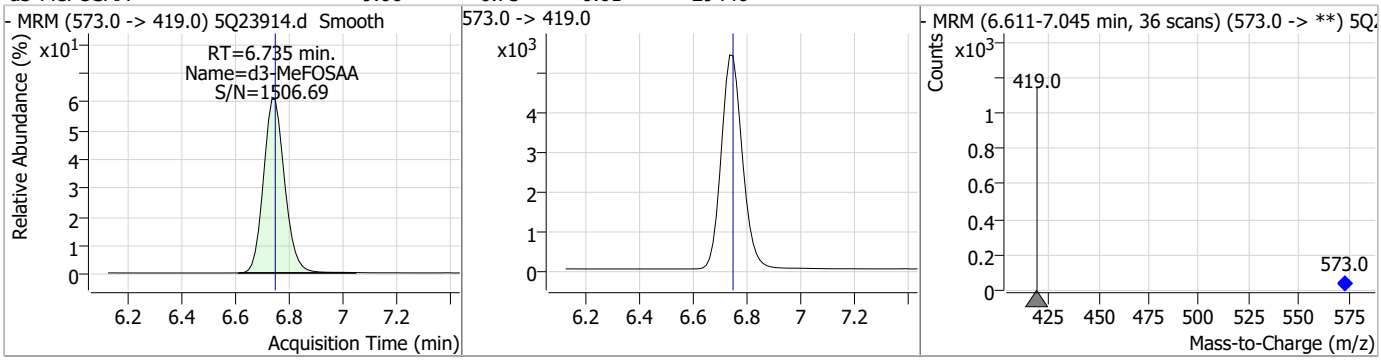


Perfluorinated Compounds by LC/MS/MS

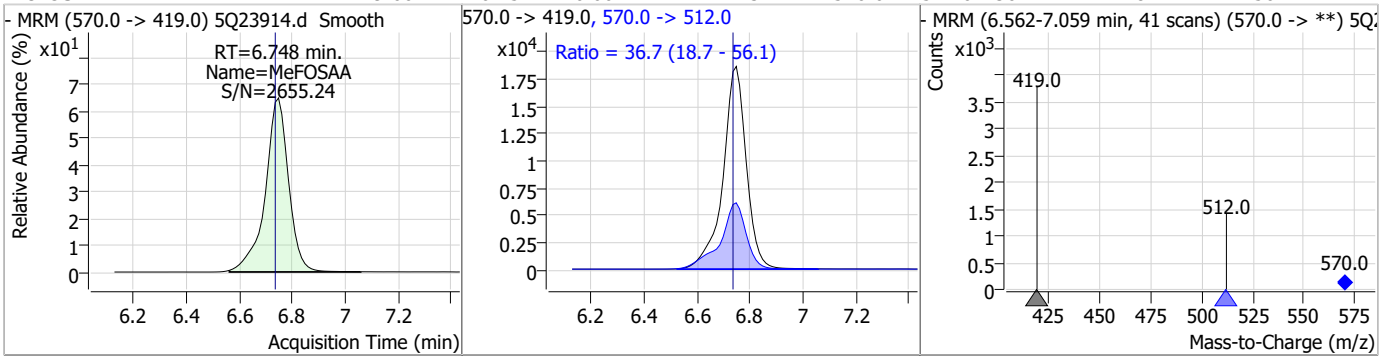
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	49.06	6.73	0.00	134342 (m)	499.0 -> 99.0	48.9	25.1	75.3



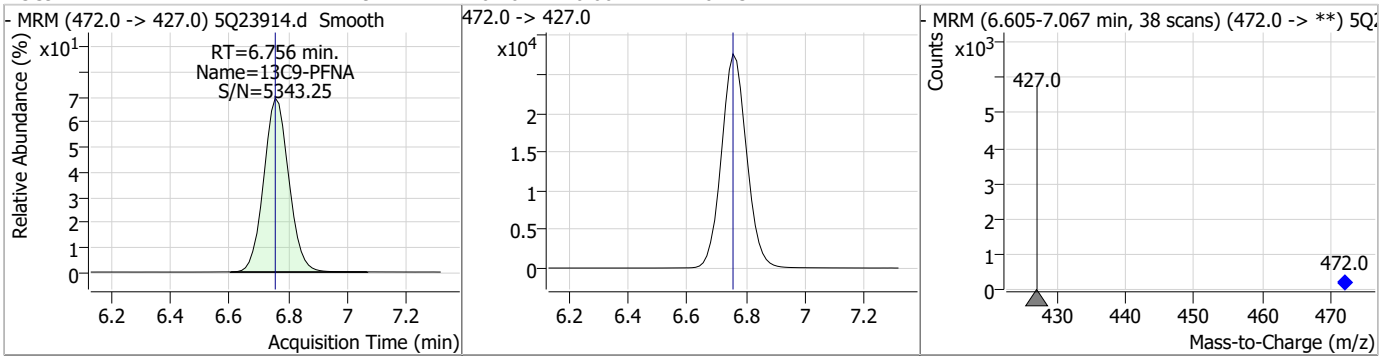
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	9.66	6.73	-0.01	29446				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	49.66	6.75	0.00	114123	570.0 -> 512.0	36.7	18.7	56.1

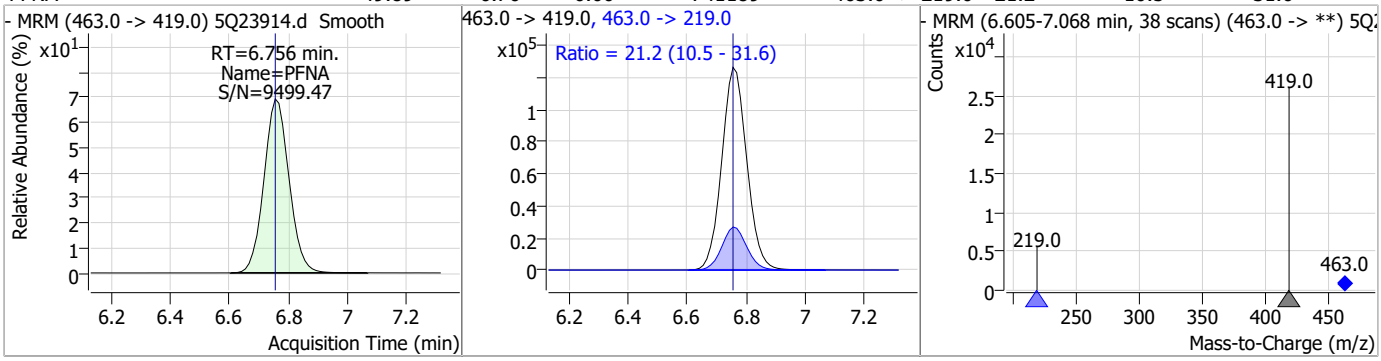


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	9.77	6.76	0.00	162237				

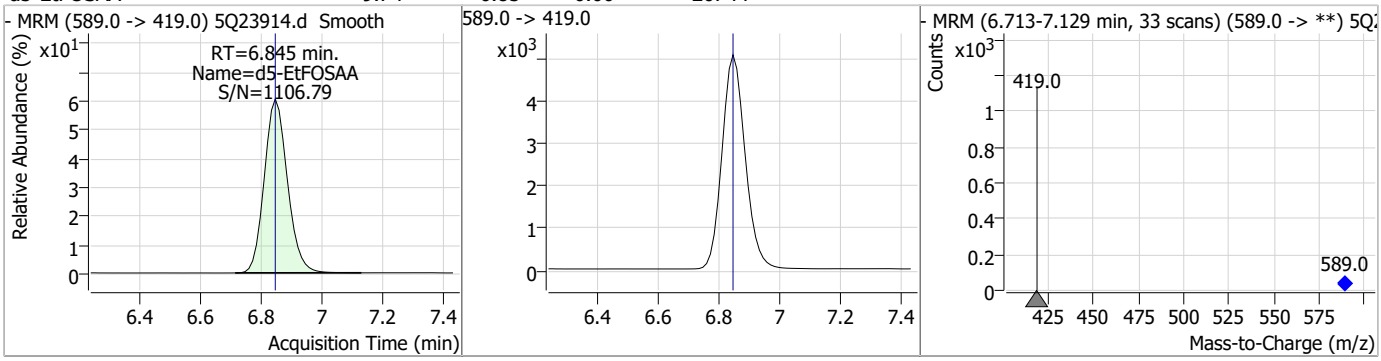


Perfluorinated Compounds by LC/MS/MS

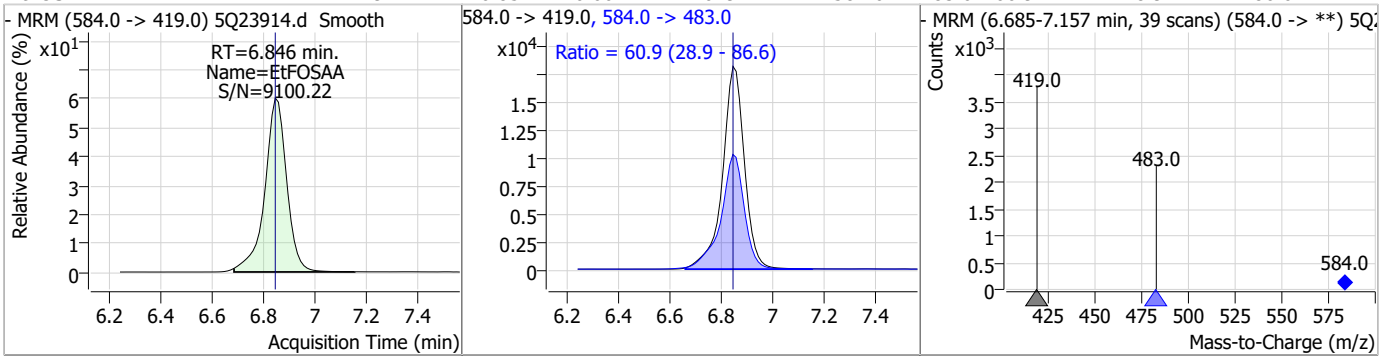
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	49.89	6.76	0.00	741189	463.0 -> 219.0	21.2	10.5	31.6



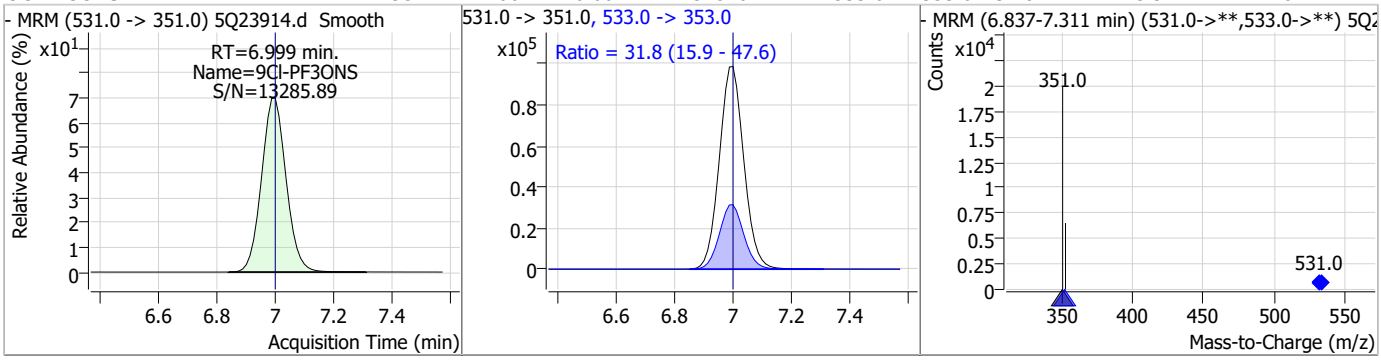
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	9.74	6.85	0.00	26744				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	49.47	6.85	0.00	107947	584.0 -> 483.0	60.9	28.9	86.6

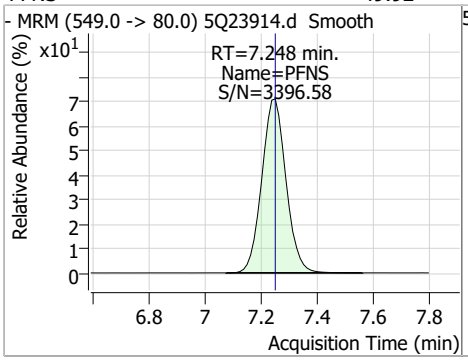


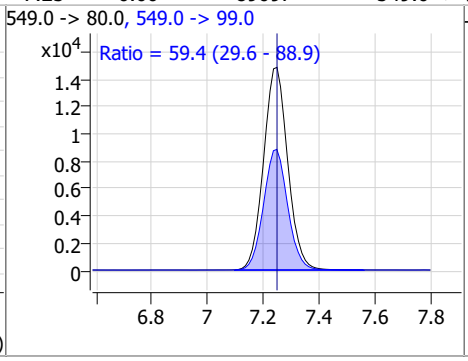
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	47.95	7.00	0.00	578101	533.0 -> 353.0	31.8	15.9	47.6

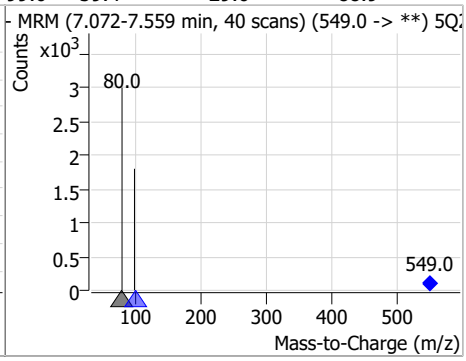


Perfluorinated Compounds by LC/MS/MS

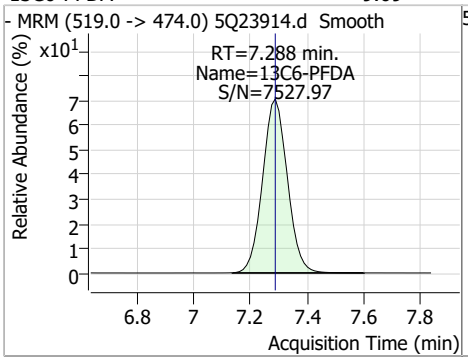
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	49.92	7.25	0.00	89097	549.0 -> 99.0	59.4	29.6	88.9

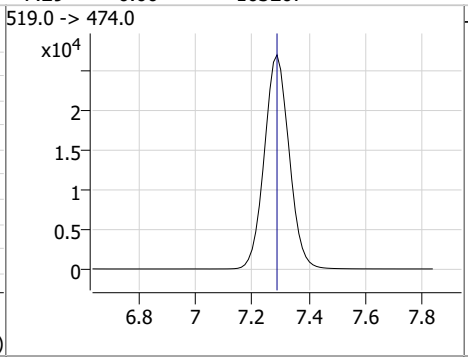


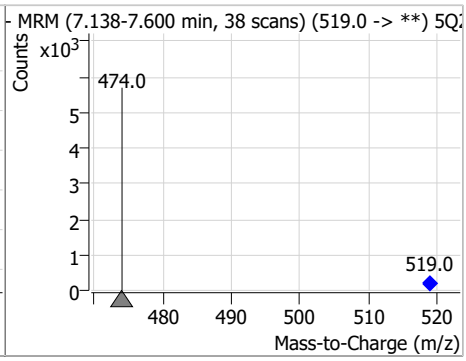




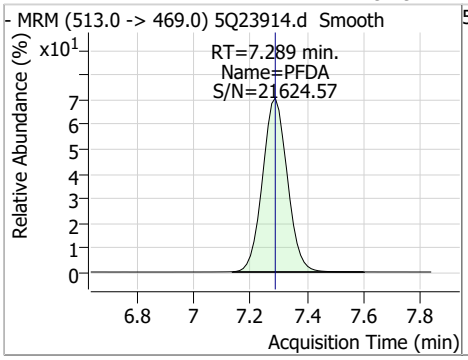
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	9.69	7.29	0.00	163207				

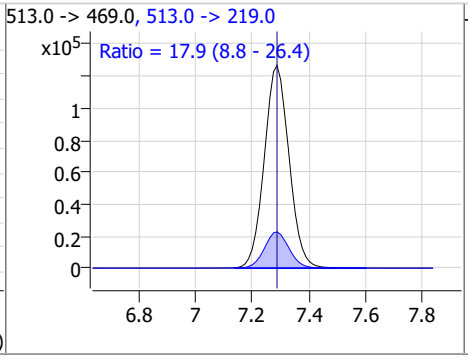


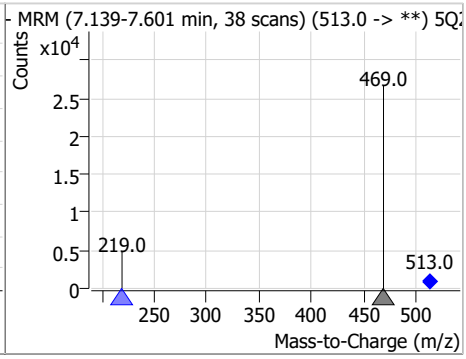




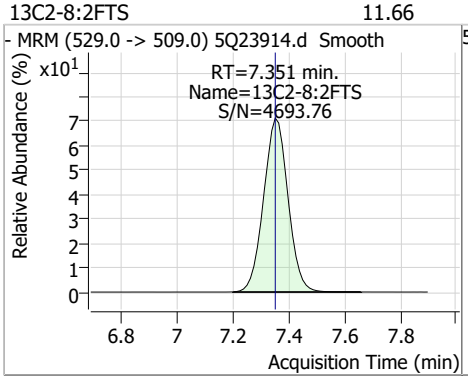
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	49.49	7.29	0.00	767413	513.0 -> 219.0	17.9	8.8	26.4

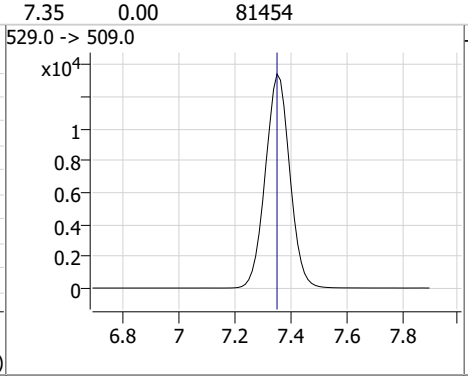


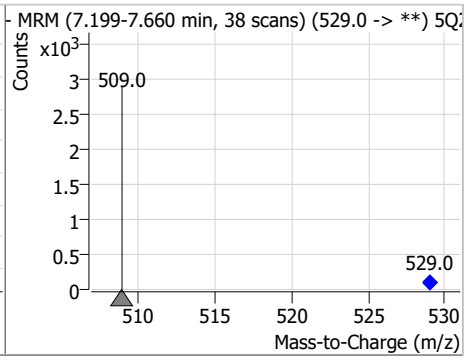




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	11.66	7.35	0.00	81454				

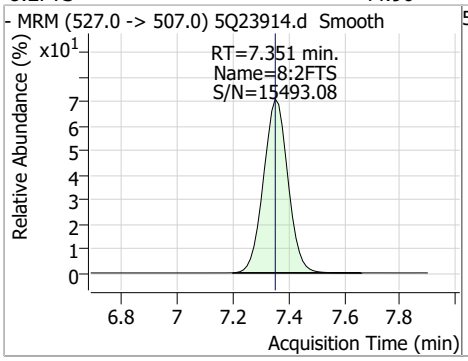


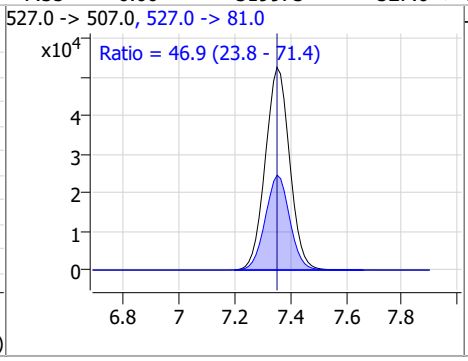


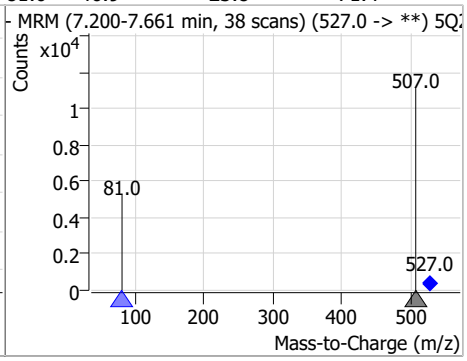


Perfluorinated Compounds by LC/MS/MS

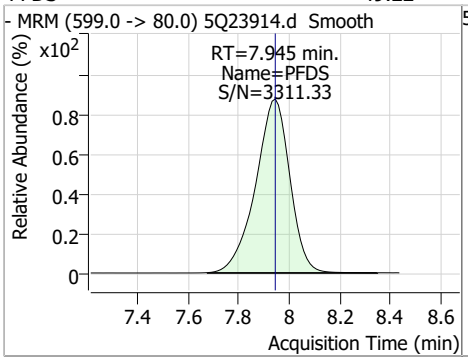
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	44.96	7.35	0.00	319973	527.0 -> 81.0	46.9	23.8	71.4

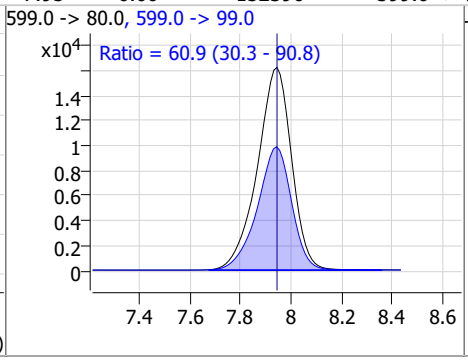


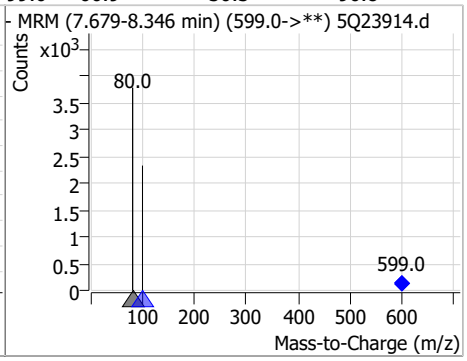




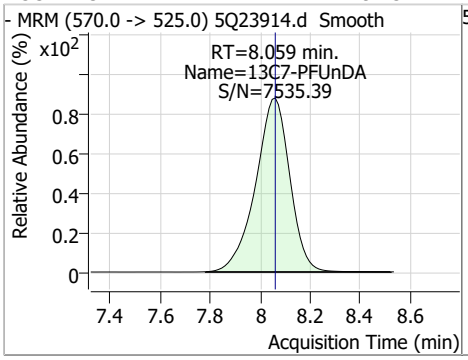
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	49.22	7.95	0.00	152396	599.0 -> 99.0	60.9	30.3	90.8

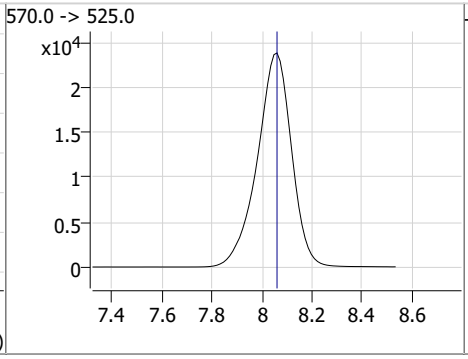


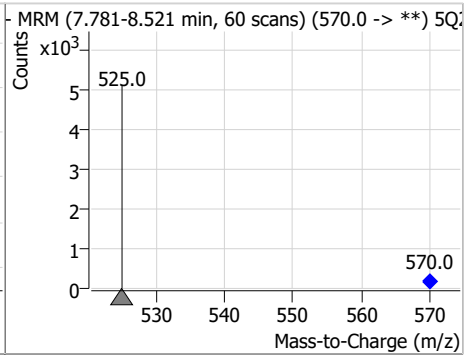




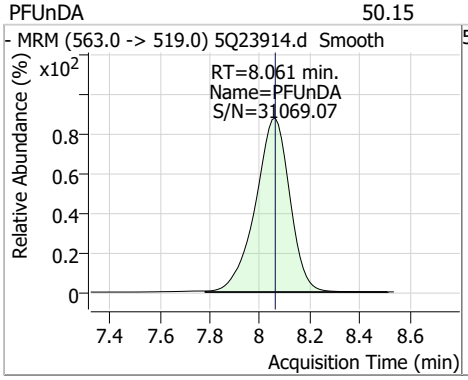
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	9.73	8.06	0.00	226797				

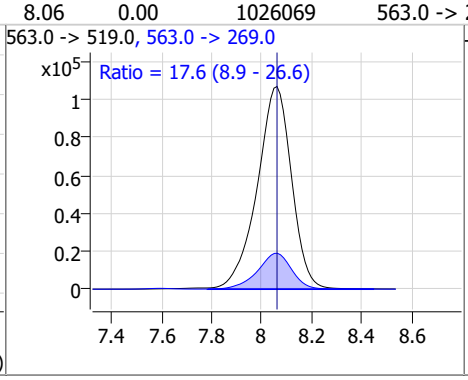


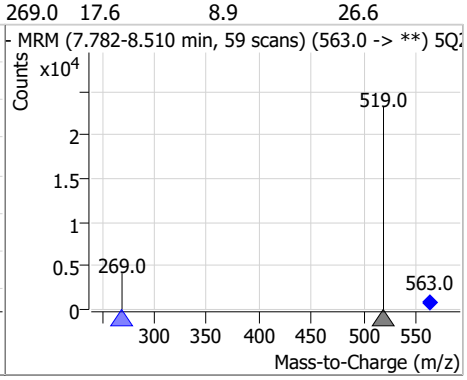




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	50.15	8.06	0.00	1026069	563.0 -> 269.0	17.6	8.9	26.6

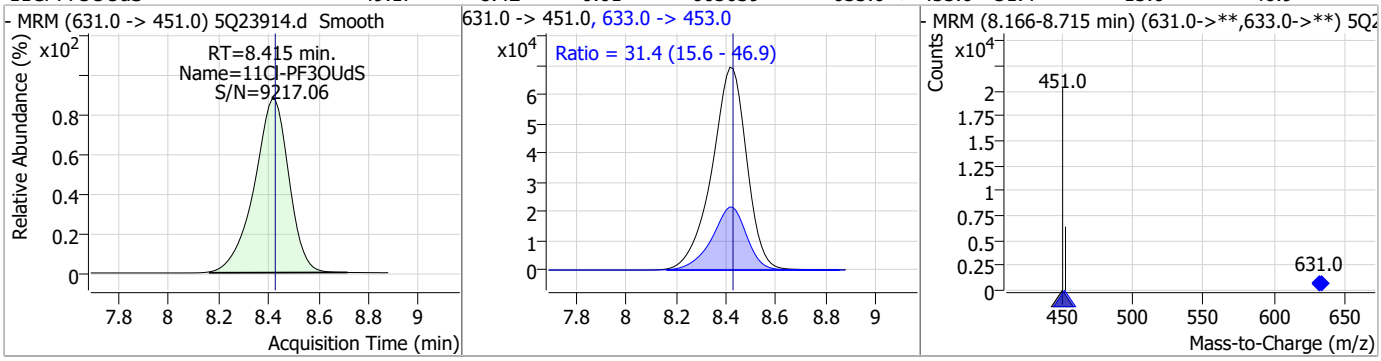




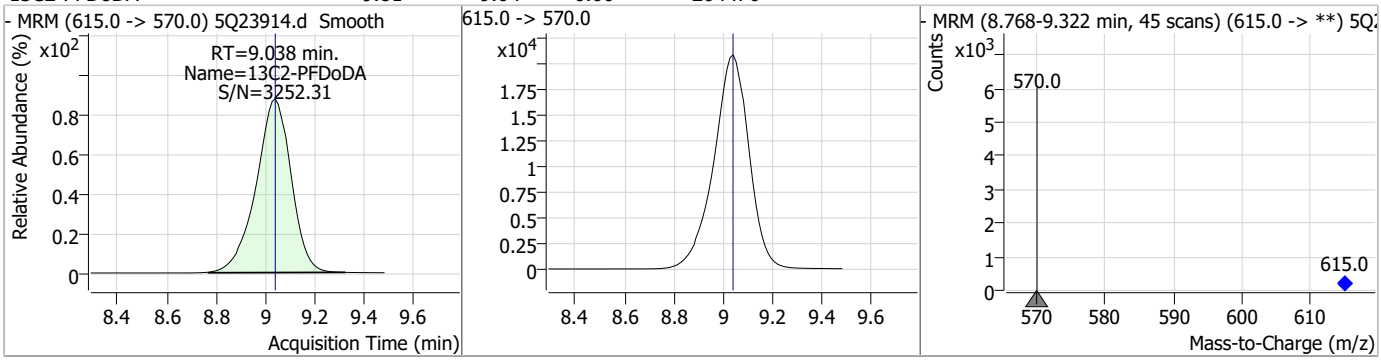


Perfluorinated Compounds by LC/MS/MS

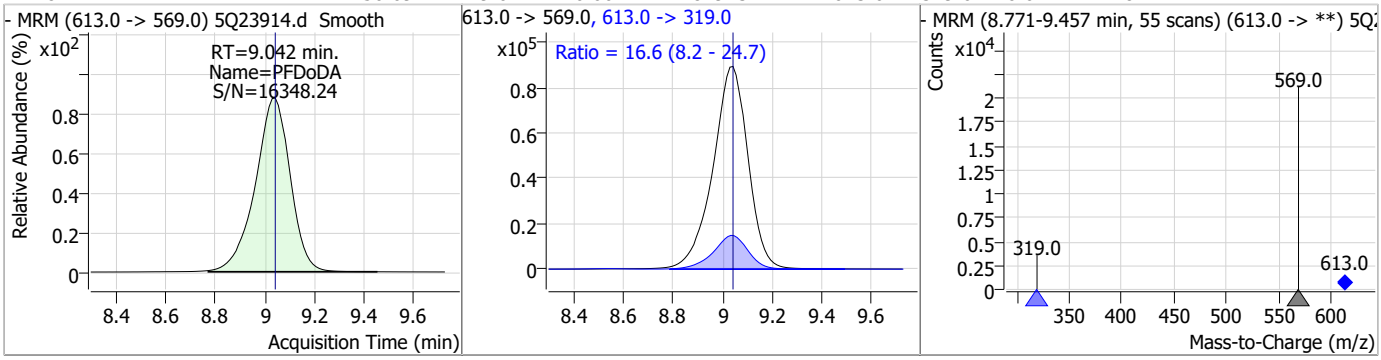
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	49.17	8.42	-0.01	665039	633.0 -> 453.0	31.4	15.6	46.9



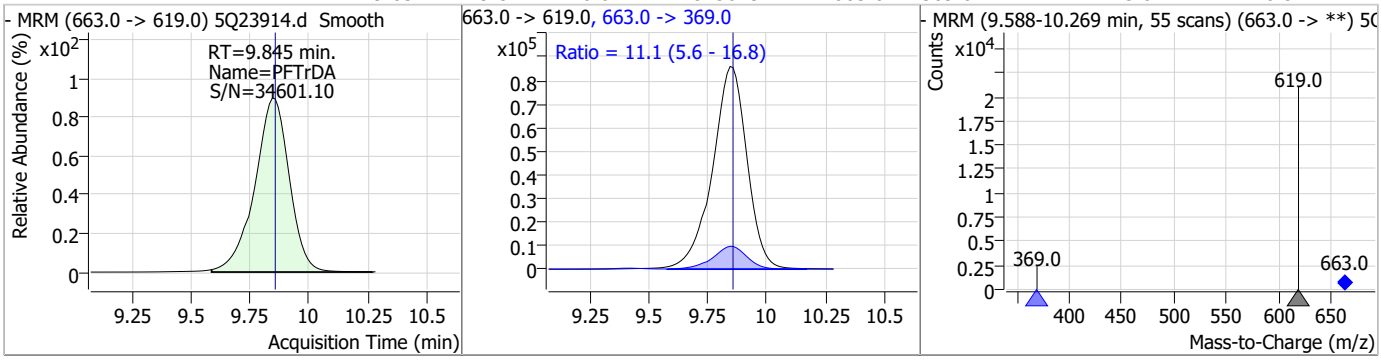
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	9.81	9.04	0.00	204470				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	50.09	9.04	0.00	879132	613.0 -> 319.0	16.6	8.2	24.7

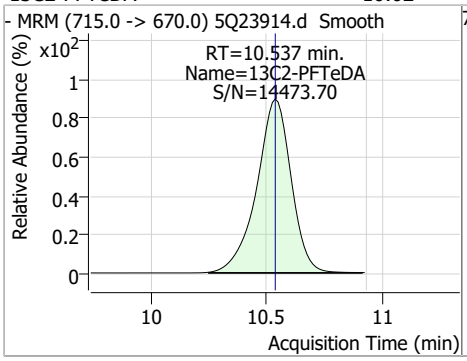


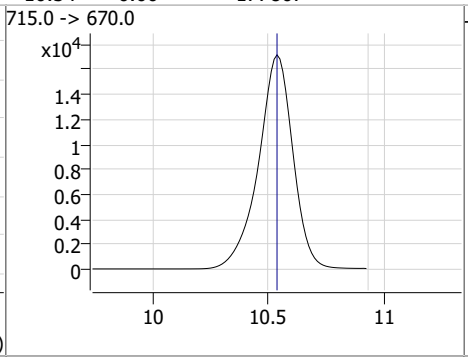
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	49.83	9.84	-0.01	875613	663.0 -> 369.0	11.1	5.6	16.8

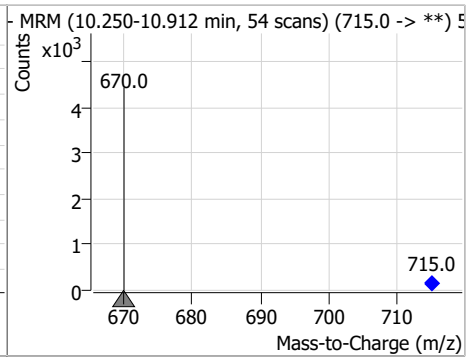


Perfluorinated Compounds by LC/MS/MS

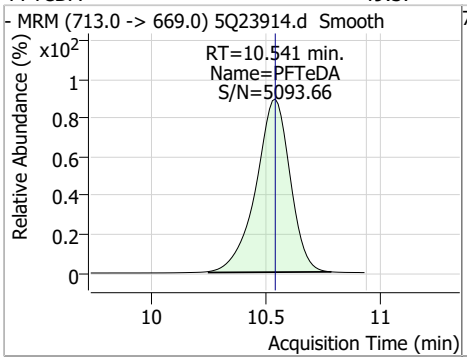
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	10.02	10.54	0.00	177867				

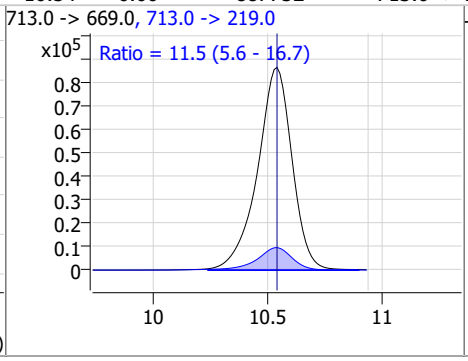


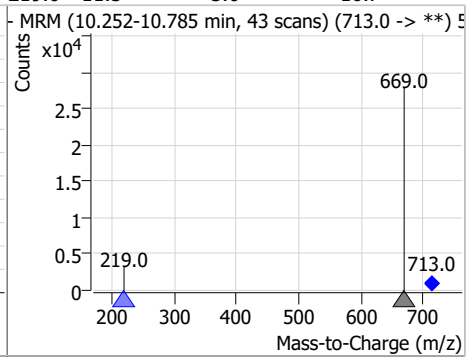




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	49.37	10.54	0.00	887752	713.0 -> 219.0	11.5	5.6	16.7







9.6.23

9

Manual Integration Approval Summary

Sample Number: S5Q375-IC375
Lab FileID: 5Q23914.D
Injection Time: 12/28/23 16:13
Method: EPA 537M QSM5.3 B-15
Analyst approved: 12/29/23 14:15 Lindsay Ritner
Supervisor approved: 01/02/24 14:05 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.43	Split peak
Perfluorooctanesulfonic acid	1763-23-1		6.73	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Natasha Gumtie
01/02/24 14:05

Perfluorinated Compounds by LC/MS/MS

Data File : 5Q23915.d
Operator : natashag
Acq. Method : 537_ID.m
Acq. Date-Time : 12/28/2023 4:29:42 PM
Sample Name : ic375-100
Vial : P1-A9
DA Method File : ID_122823_S5Q375.quantmethod.xml
Batch Name : s5q375.batch.bin
Sample Information : OP401,S5Q375,250,,,1.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	1.987	217.0 -> 172.0	46784	10.00 µg/L	0.000
M5-PFPeA	3.432	268.0 -> 223.0	79947	10.00 µg/L	0.000
M5-PFHxA	4.552	318.0 -> 273.0	118081	10.00 µg/L	0.000
M4-PFHpA	5.413	367.0 -> 322.0	114879	10.00 µg/L	0.000
M8-PFOA	6.124	421.0 -> 376.0	161982	10.00 µg/L	0.000
M9-PFNA	6.756	472.0 -> 427.0	158807	10.00 µg/L	0.000
M6-PFDA	7.276	519.0 -> 474.0	157848	10.00 µg/L	-0.012
M7-PFUnDA	8.047	570.0 -> 525.0	219235	10.00 µg/L	-0.013
M2-PFDoDA	9.026	615.0 -> 570.0	200740	10.00 µg/L	-0.013
M2-PFTeDA	10.537	715.0 -> 670.0	174434	10.00 µg/L	0.000
M8-FOSA	6.192	506.0 -> 78.0	35572	10.00 µg/L	0.000
M3-PFBS	3.624	302.0 -> 99.0	9614	10.00 µg/L	-0.012
M3-PFHxS	5.432	402.0 -> 99.0	11574	10.00 µg/L	0.000
M8-PFOS	6.729	507.0 -> 99.0	15032	10.00 µg/L	0.000
M2-4:2FTS	4.474	329.0 -> 309.0	59673	10.00 µg/L	0.000
M2-6:2FTS	6.122	429.0 -> 409.0	96553	10.00 µg/L	-0.013
M2-8:2FTS	7.351	529.0 -> 509.0	93481	10.00 µg/L	0.000
M3-MeFOSAA	6.735	573.0 -> 419.0	27834	10.00 µg/L	-0.012
M3-HFPO-DA	4.819	287.0 -> 169.0	6383	10.00 µg/L	0.000
M3-MeFOSA	6.589	515.0 -> 169.0	13097	10.00 µg/L	0.000
M5-EtFOSAA	6.845	589.0 -> 419.0	26069	10.00 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	4.474	329.0 -> 309.0	59673	14.84 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 148.4%	
13C2-6:2FTS	6.122	429.0 -> 409.0	96553	13.62 µg/L	-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 136.2%	
13C2-8:2FTS	7.351	529.0 -> 509.0	93481	13.39 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 133.9%	
13C2-PFDoDA	9.026	615.0 -> 570.0	200740	9.63 µg/L	-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 96.3%	
13C2-PFTeDA	10.537	715.0 -> 670.0	174434	9.83 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 98.3%	
13C3-PFBS	3.624	302.0 -> 99.0	9614	9.90 µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.0%	
13C3-PFHxS	5.432	402.0 -> 99.0	11574	9.81 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 98.1%	
13C4-PFBA	1.987	217.0 -> 172.0	46784	9.90 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.0%	
13C4-PFHpA	5.413	367.0 -> 322.0	114879	9.55 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 95.5%	
13C5-PFHxA	4.552	318.0 -> 273.0	118081	9.88 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 98.8%	
13C5-PFPeA	3.432	268.0 -> 223.0	79947	10.14 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.4%	
13C6-PFDA	7.276	519.0 -> 474.0	157848	9.38 µg/L	-0.012

Perfluorinated Compounds by LC/MS/MS

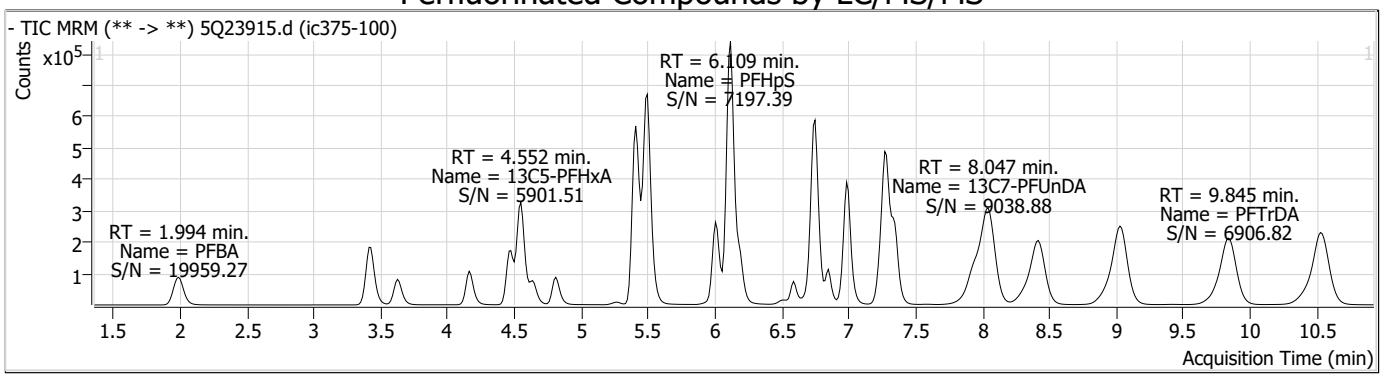
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 93.8%			
13C7-PFUnDA	8.047	570.0 -> 525.0	219235	9.41	µg/L		-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 94.1%			
13C8-FOSA	6.192	506.0 -> 78.0	35572	8.78	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 87.8%			
13C8-PFOA	6.124	421.0 -> 376.0	161982	9.78	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 97.8%			
13C8-PFOS	6.729	507.0 -> 99.0	15032	9.56	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 95.6%			
13C9-PFNA	6.756	472.0 -> 427.0	158807	9.56	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 95.6%			
d3-MeFOSAA	6.735	573.0 -> 419.0	27834	9.13	µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 91.3%			
13C3-HFPO-DA	4.819	287.0 -> 169.0	6383	9.88	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 98.8%			
d3-MeFOSA	6.589	515.0 -> 169.0	13097	9.34	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 93.4%			
d5-EtFOSAA	6.845	589.0 -> 419.0	26069	9.50	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 95.0%			
Target Compounds							QValue
4:2FTS	4.475	327.0 -> 307.0	427639	72.76	µg/L		100
		327.0 -> 81.0	240650				
6:2FTS	6.123	427.0 -> 407.0	664541	75.22	µg/L		99
		427.0 -> 81.0	266268				
8:2FTS	7.351	527.0 -> 507.0	602659	73.79	µg/L		100
		527.0 -> 81.0	286753				
EtFOSAA	6.846	584.0 -> 419.0	213854	100.54	µg/L		95
		584.0 -> 483.0	130970				
FOSA	6.194	498.0 -> 78.0	327448	100.33	µg/L		100
		498.0 -> 478.0	10380				
MeFOSAA	6.748	570.0 -> 419.0	218140	100.42	µg/L		100
		570.0 -> 512.0	81221				
PFBA	1.994	213.0 -> 169.0	435515	100.49	µg/L		100
PFBS	3.628	299.0 -> 80.0	238791	100.34	µg/L		100
		299.0 -> 99.0	104728				
PFDA	7.276	513.0 -> 469.0	1507710	100.54	µg/L		100
		513.0 -> 219.0	265825				
PFDoDA	9.030	613.0 -> 569.0	1726864	100.22	µg/L		100
		613.0 -> 319.0	286534				
PFDS	7.933	599.0 -> 80.0	301894	100.86	µg/L		99
		599.0 -> 99.0	184594				
PFHpA	5.413	363.0 -> 319.0	1319903	100.17	µg/L		99
		363.0 -> 169.0	283041				
PFHpS	6.109	449.0 -> 80.0	210208	100.15	µg/L		99
		449.0 -> 99.0	113199				
PFHxA	4.553	313.0 -> 269.0	1150672	100.72	µg/L		100
		313.0 -> 119.0	47322				
PFHxS	5.433	399.0 -> 80.0	215587	100.40	µg/L	m	100
		399.0 -> 99.0	121194				
PFNA	6.756	463.0 -> 419.0	1458481	100.30	µg/L		99
		463.0 -> 219.0	311646				
PFNS	7.235	549.0 -> 80.0	174005	100.15	µg/L		99
		549.0 -> 99.0	102004				
PFOA	6.125	413.0 -> 369.0	1591330	100.14	µg/L		99
		413.0 -> 169.0	404915				
PFOS	6.730	499.0 -> 80.0	268796	100.85	µg/L	m	97

Perfluorinated Compounds by LC/MS/MS

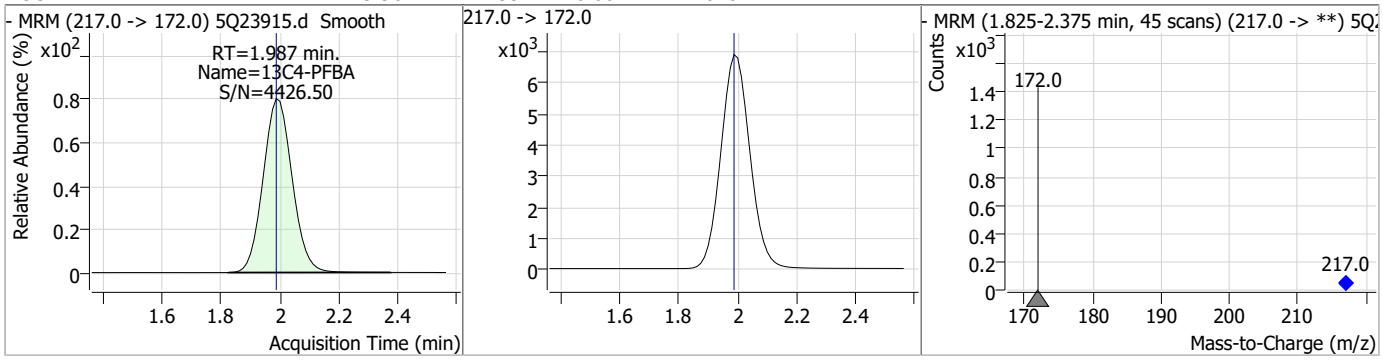
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		499.0 -> 99.0	128671			
PFPeA	3.434	263.0 -> 219.0	777348	100.27	µg/L	100
PFPeS	4.648	349.0 -> 80.0	168635	100.68	µg/L	98
		349.0 -> 99.0	86329			
PFTeDA	10.529	713.0 -> 669.0	1774928	100.65	µg/L	99
		713.0 -> 219.0	204980			
PFTrDA	9.845	663.0 -> 619.0	1733220	100.47	µg/L	100
		663.0 -> 369.0	197296			
PFUnDA	8.048	563.0 -> 519.0	1982613	100.24	µg/L	99
		563.0 -> 269.0	358925			
11Cl-PF3OUdS	8.415	631.0 -> 451.0	1338636	100.82	µg/L	100
		633.0 -> 453.0	417449			
9Cl-PF3ONS	6.986	531.0 -> 351.0	1182599	101.41	µg/L	100
		533.0 -> 353.0	371799			
ADONA	5.502	377.0 -> 251.0	1948877	100.48	µg/L	99
		377.0 -> 85.0	707027			
HFPO-DA	4.815	329.0 -> 169.0	292862	100.86	µg/L	98
		285.0 -> 169.0	59688			
MeFOSA	6.590	512.0 -> 169.0	113701	100.36	µg/L	98
		512.0 -> 219.0	91369			
4-PFECHS	6.006	461.0 -> 381.0	707400	100.58	µg/L	99
		461.0 -> 99.0	369735			
FBSA	4.170	298.0 -> 78.0	392959	99.49	µg/L	99
		298.0 -> 64.0	36927			
FHxSA	5.409	398.0 -> 78.0	365003	99.79	µg/L	99
		398.0 -> 64.0	34856			

 # = Qualifier out of range, m = manually integrated, + = Area summed

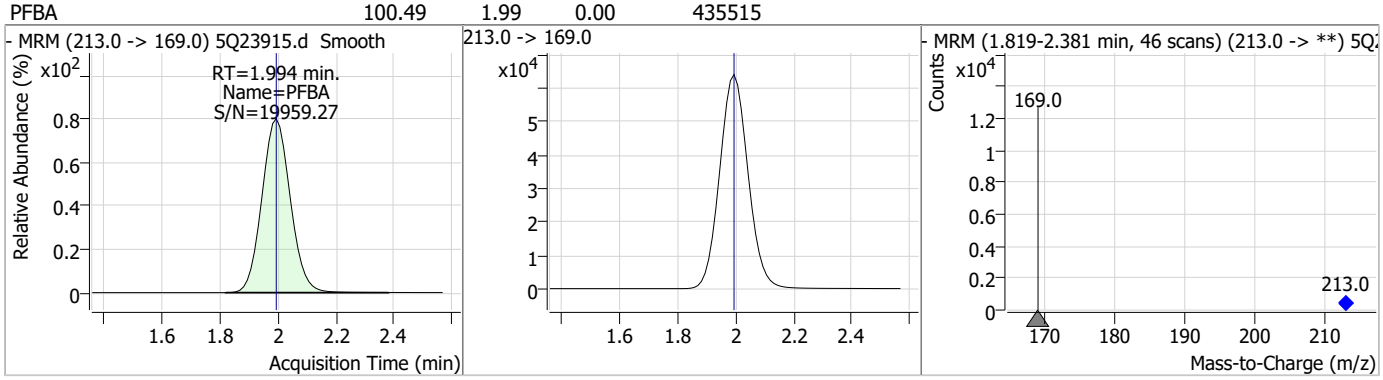
Perfluorinated Compounds by LC/MS/MS



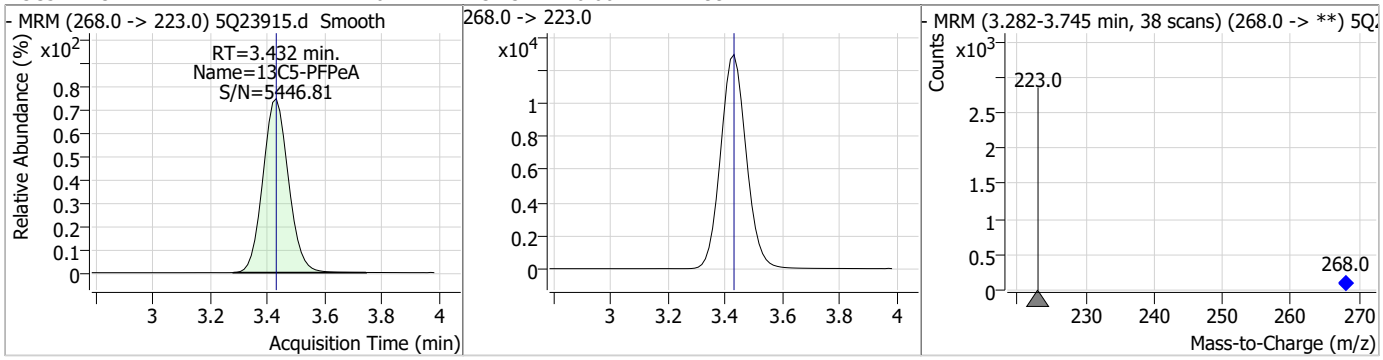
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	9.90	1.99	0.00	46784				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	100.49	1.99	0.00	435515				

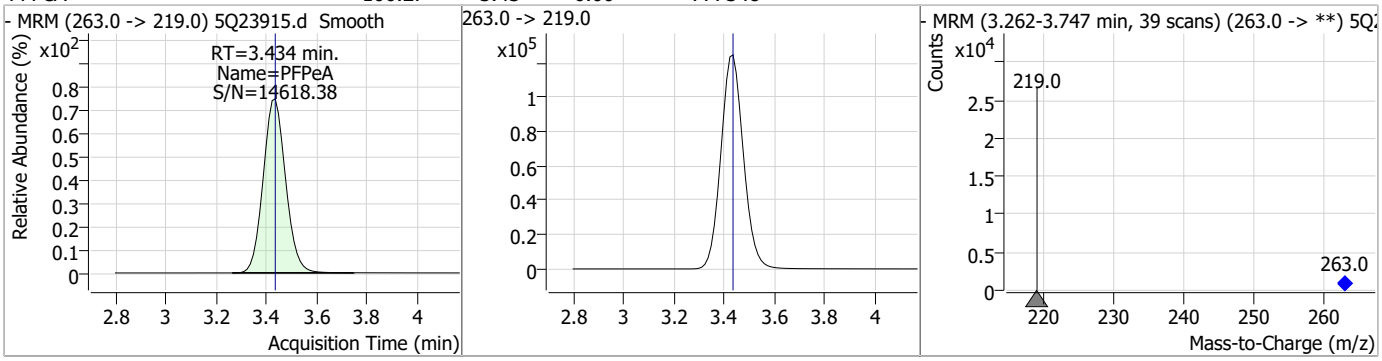


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	10.14	3.43	0.00	79947				

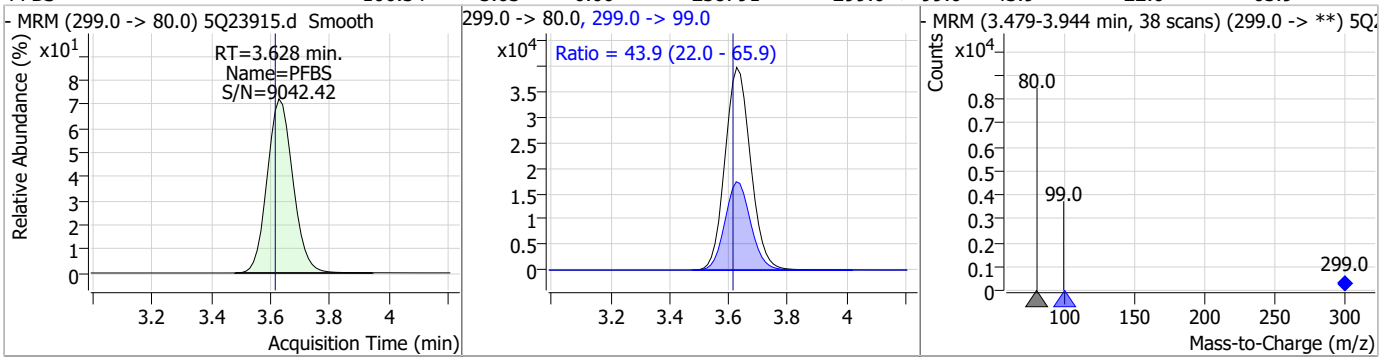


Perfluorinated Compounds by LC/MS/MS

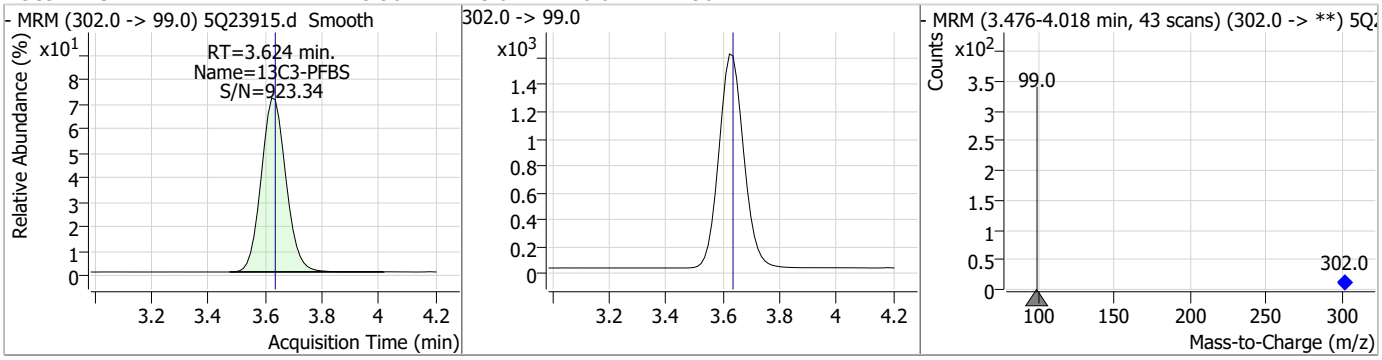
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	100.27	3.43	0.00	777348				



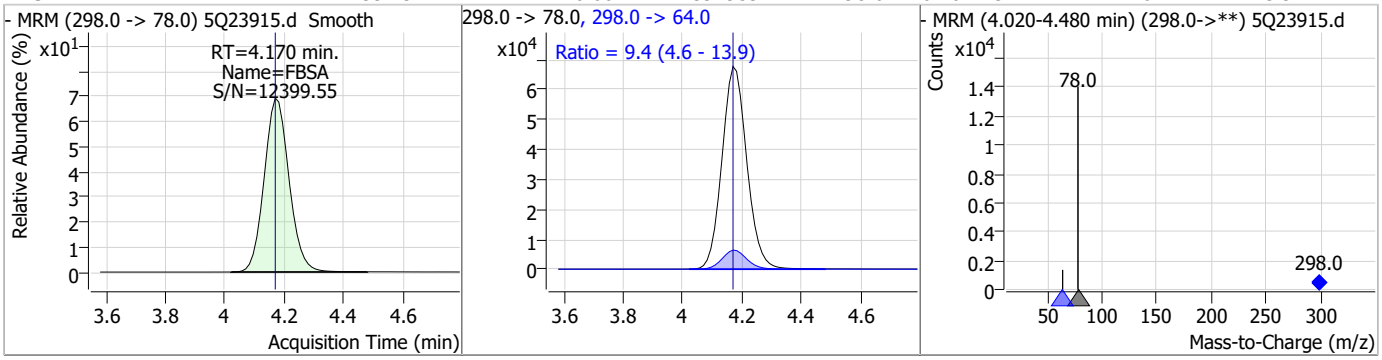
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	100.34	3.63	0.00	238791	299.0 -> 99.0	43.9	22.0	65.9



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	9.90	3.62	-0.01	9614				

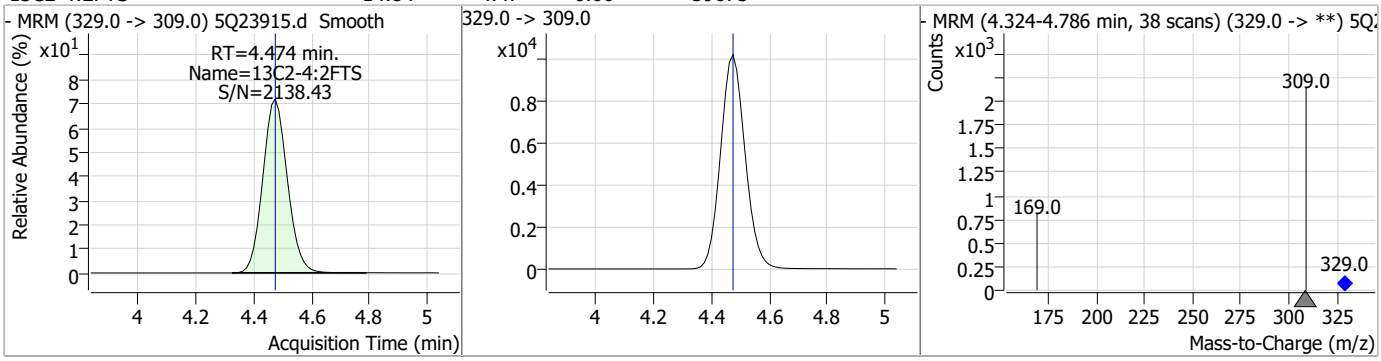


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	99.49	4.17	0.00	392959	298.0 -> 64.0	9.4	4.6	13.9

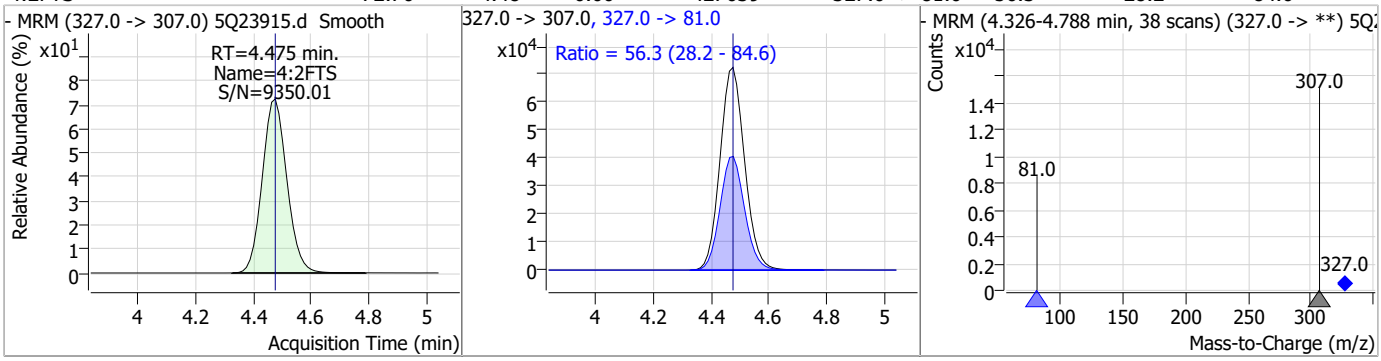


Perfluorinated Compounds by LC/MS/MS

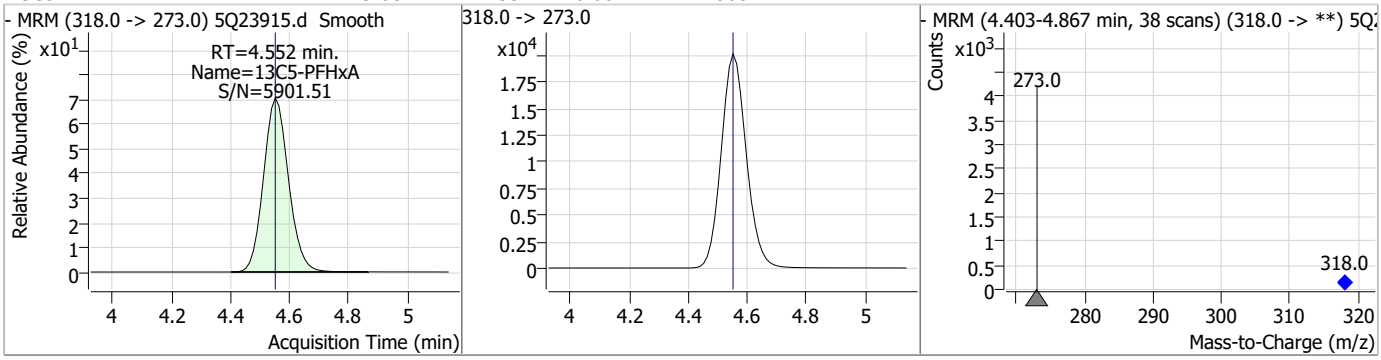
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	14.84	4.47	0.00	59673				



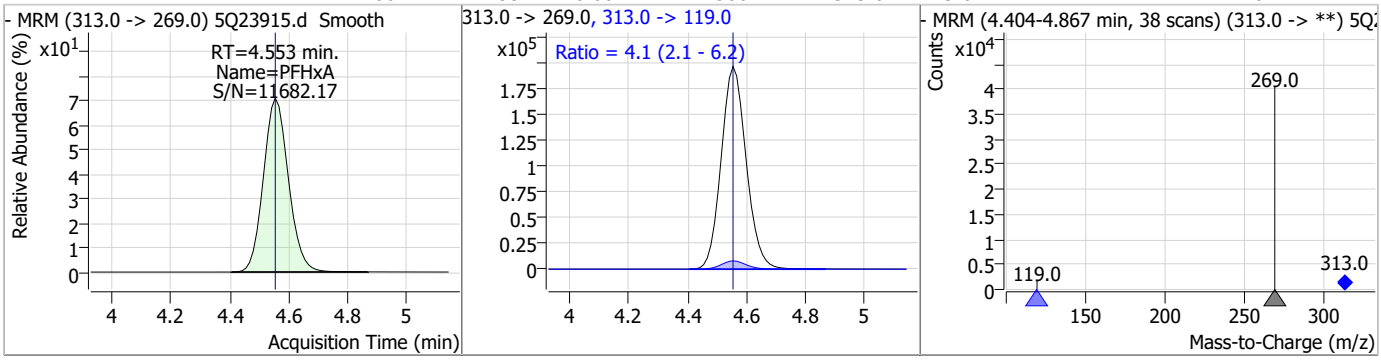
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	72.76	4.48	0.00	427639	327.0 -> 81.0	56.3	28.2	84.6



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	9.88	4.55	0.00	118081				

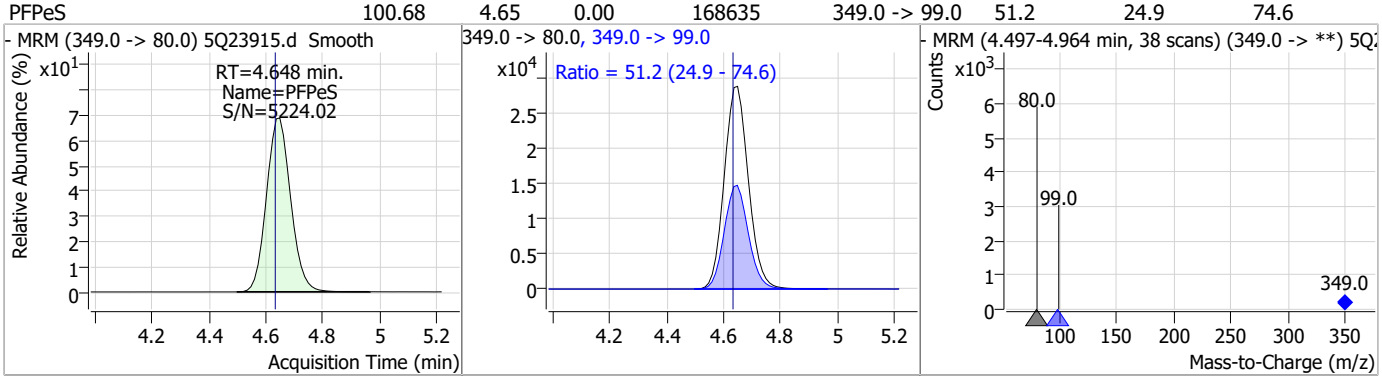


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	100.72	4.55	0.00	1150672	313.0 -> 119.0	4.1	2.1	6.2

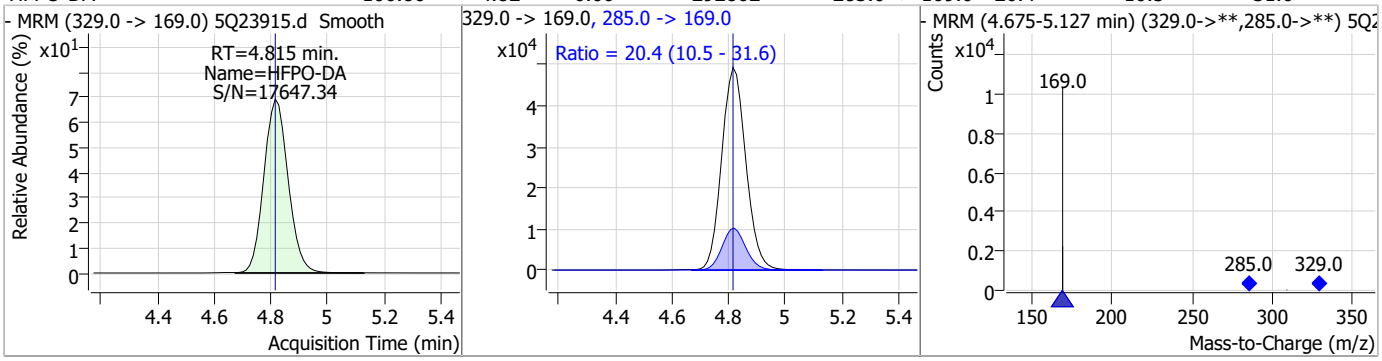


Perfluorinated Compounds by LC/MS/MS

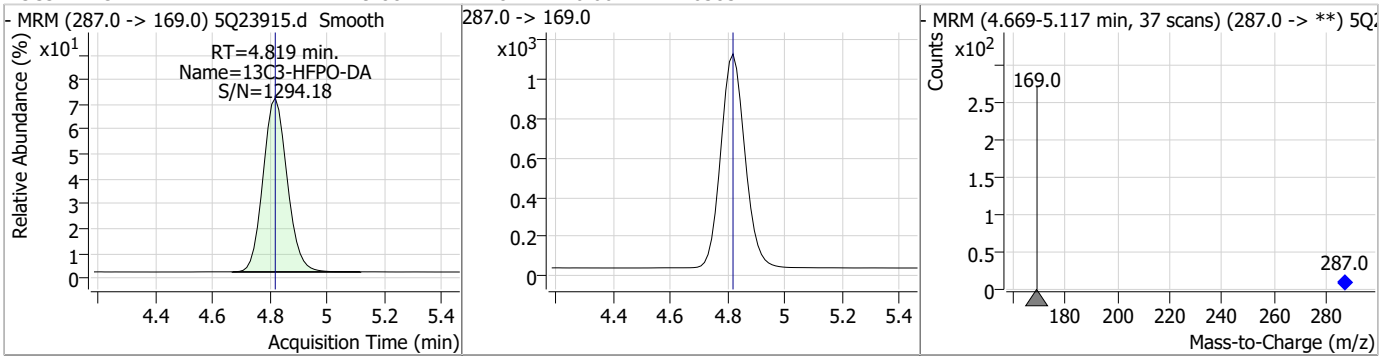
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	100.68	4.65	0.00	168635	349.0 -> 99.0	51.2	24.9	74.6



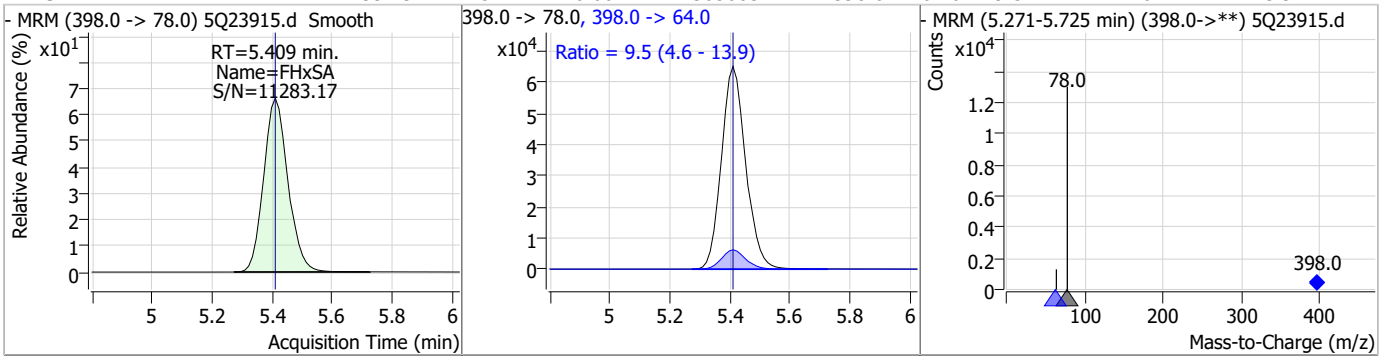
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	100.86	4.82	0.00	292862	285.0 -> 169.0	20.4	10.5	31.6



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	9.88	4.82	0.00	6383				

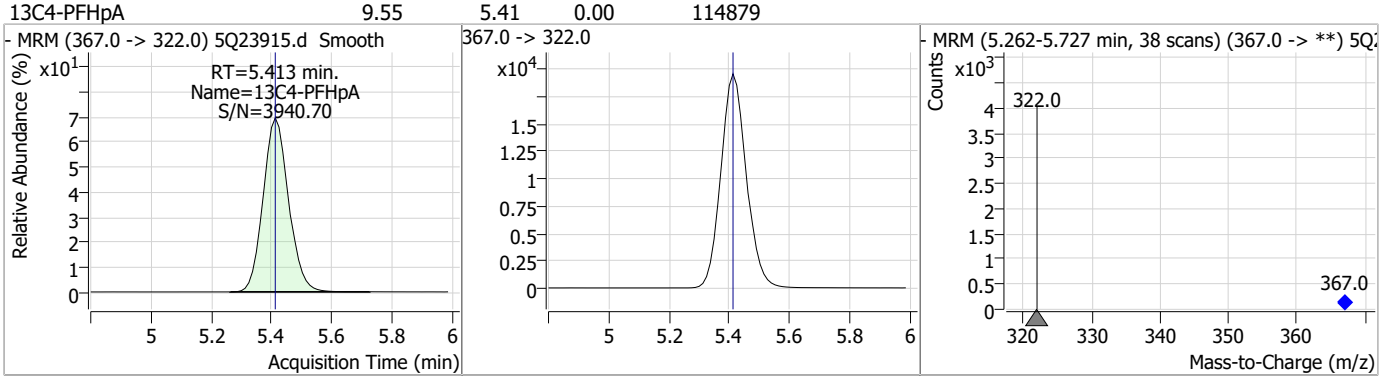


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	99.79	5.41	0.00	365003	398.0 -> 64.0	9.5	4.6	13.9

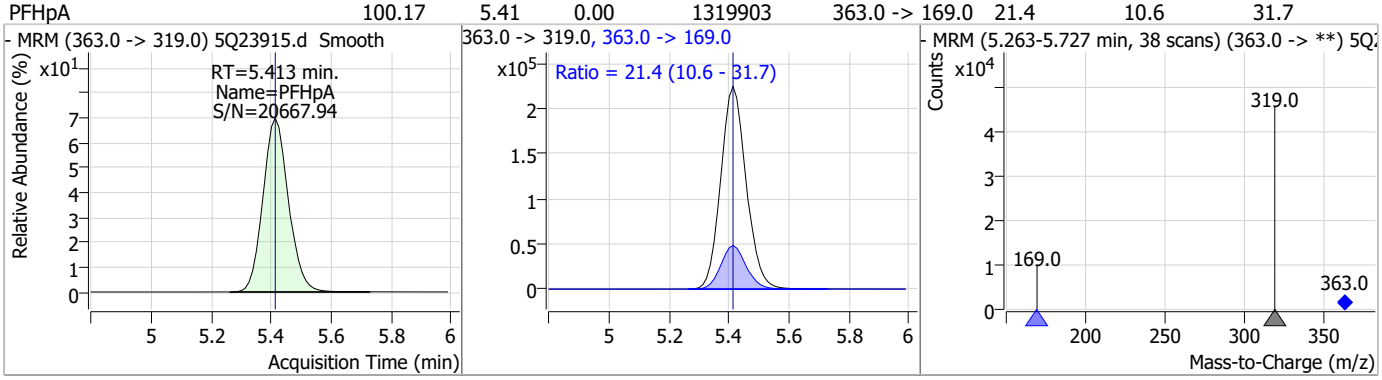


Perfluorinated Compounds by LC/MS/MS

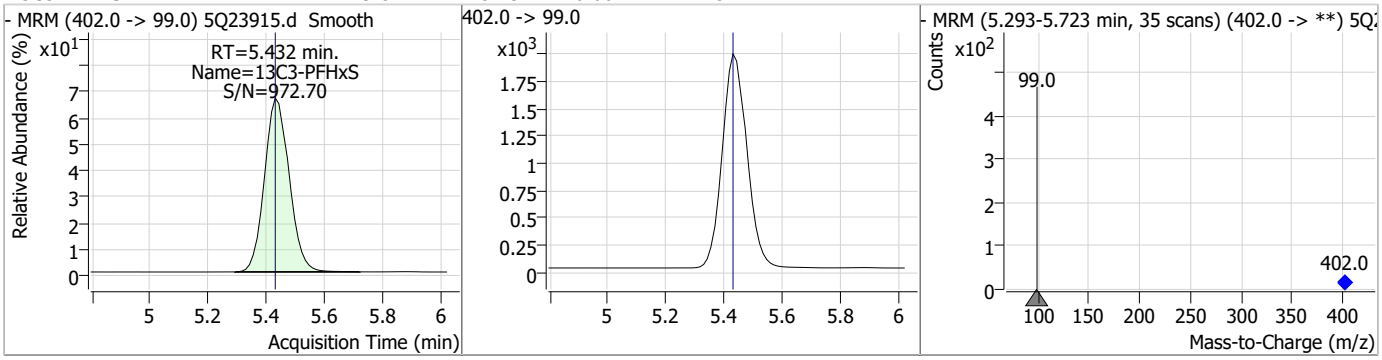
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	9.55	5.41	0.00	114879				



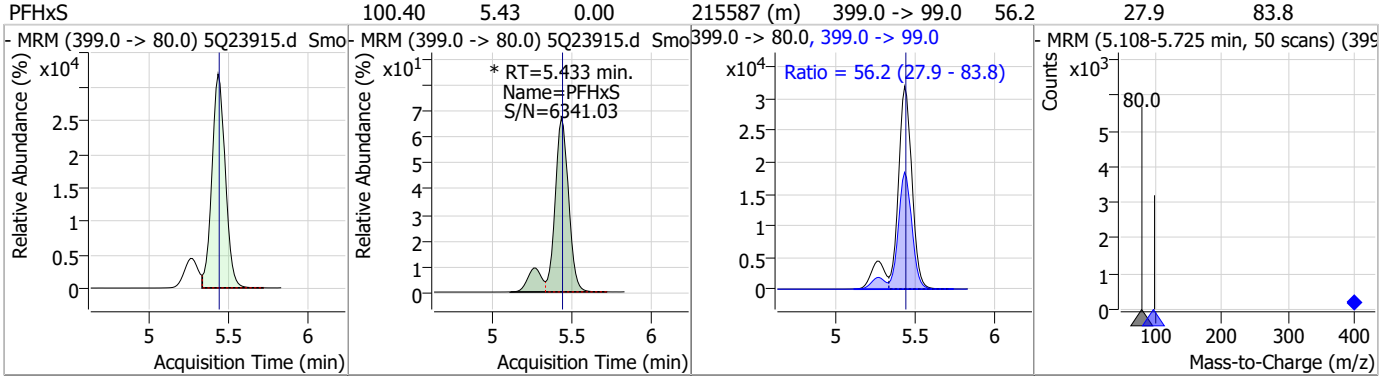
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	100.17	5.41	0.00	1319903	363.0 -> 169.0	21.4	10.6	31.7



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	9.81	5.43	0.00	11574				

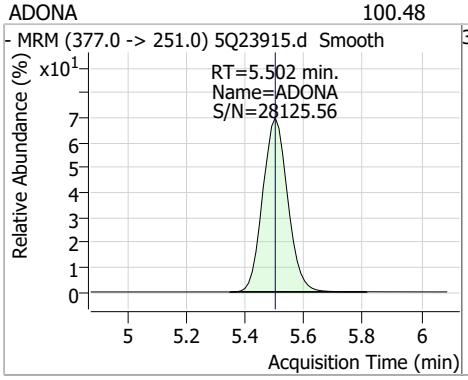


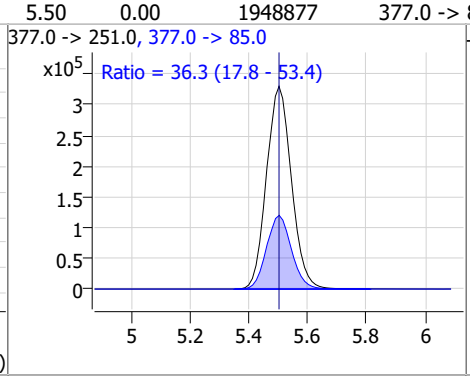
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	100.40	5.43	0.00	215587 (m)	399.0 -> 99.0	56.2	27.9	83.8

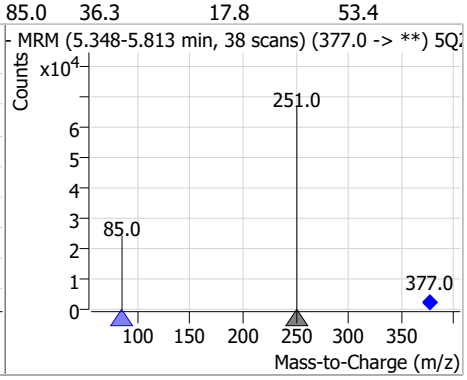


Perfluorinated Compounds by LC/MS/MS

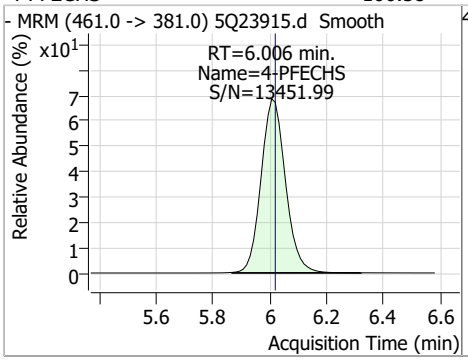
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	100.48	5.50	0.00	1948877	377.0 -> 85.0	36.3	17.8	53.4

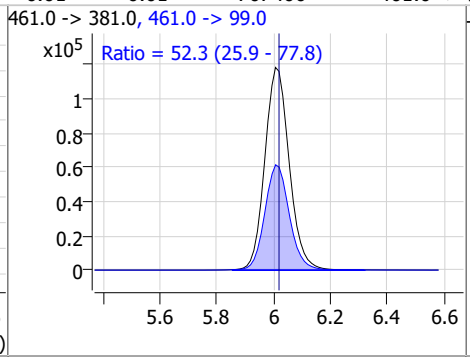


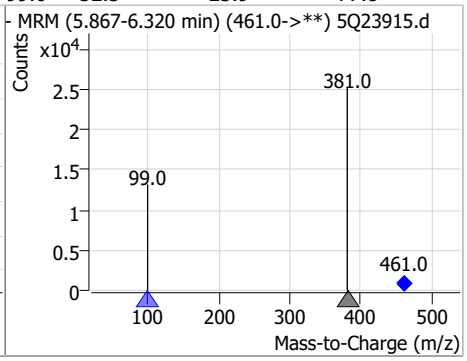




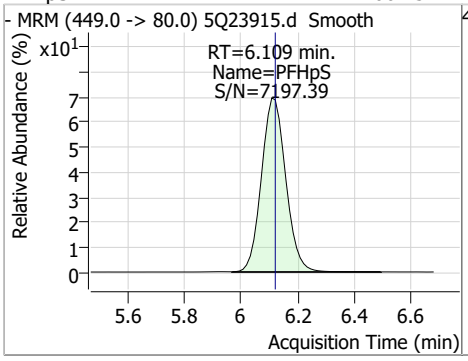
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS	100.58	6.01	-0.01	707400	461.0 -> 99.0	52.3	25.9	77.8

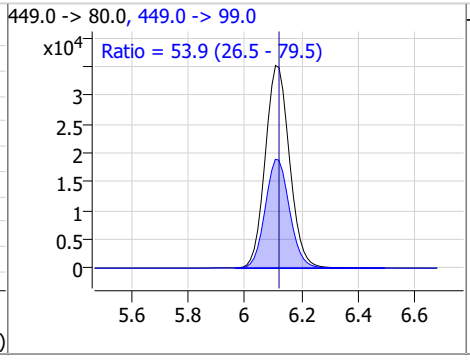


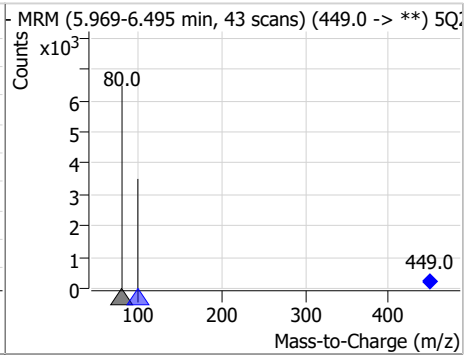




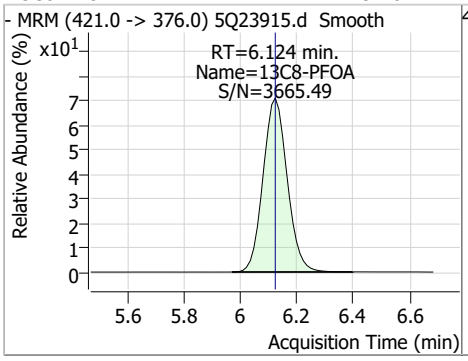
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	100.15	6.11	-0.01	210208	449.0 -> 99.0	53.9	26.5	79.5

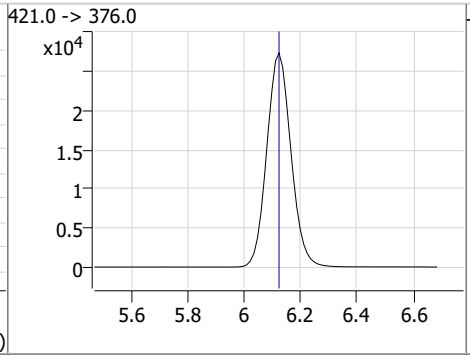


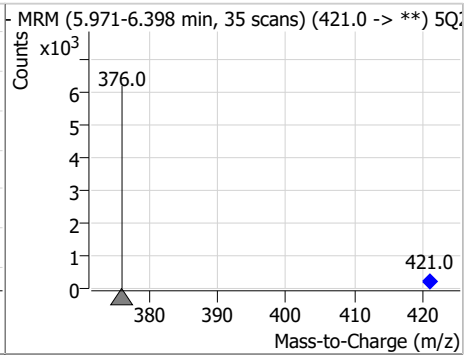




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	9.78	6.12	0.00	161982				

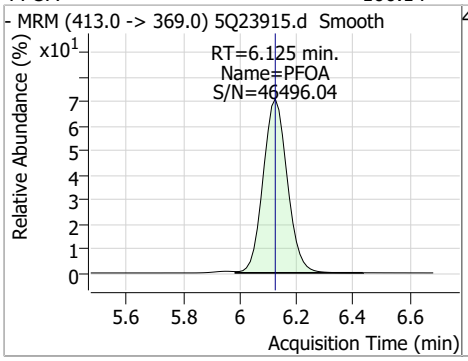


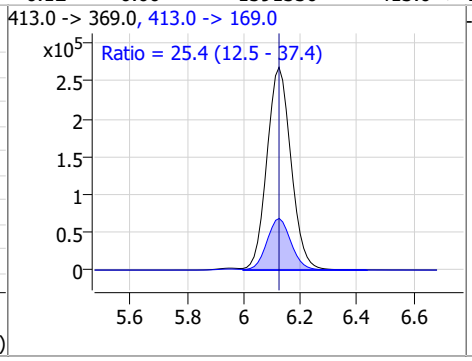


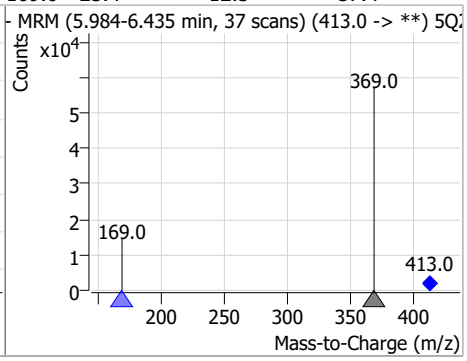


Perfluorinated Compounds by LC/MS/MS

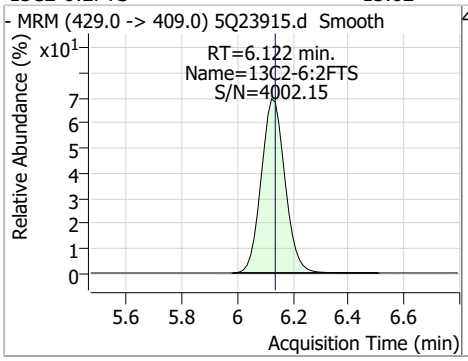
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	100.14	6.12	0.00	1591330	413.0 -> 169.0	25.4	12.5	37.4

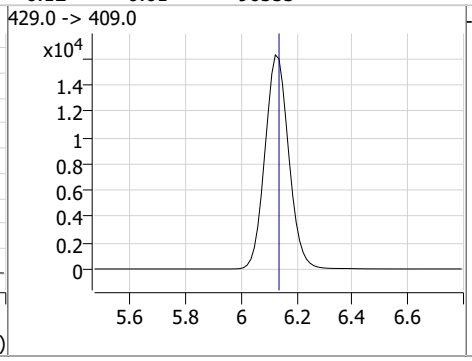


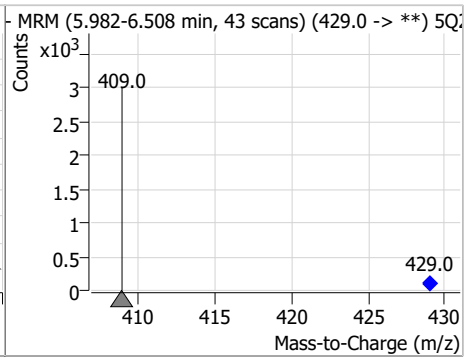




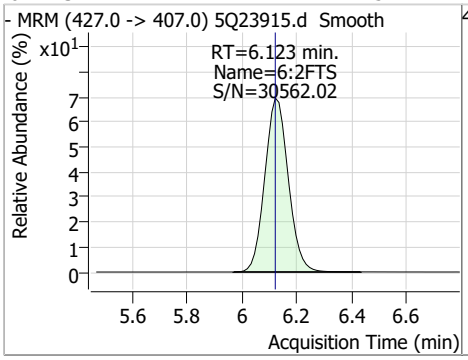
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	13.62	6.12	-0.01	96553				

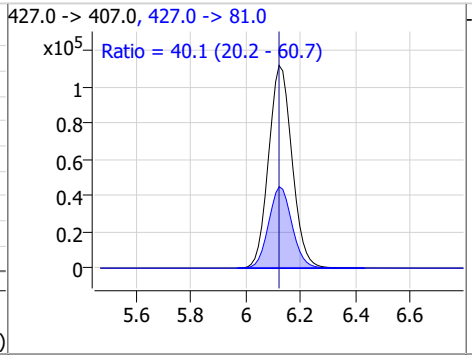


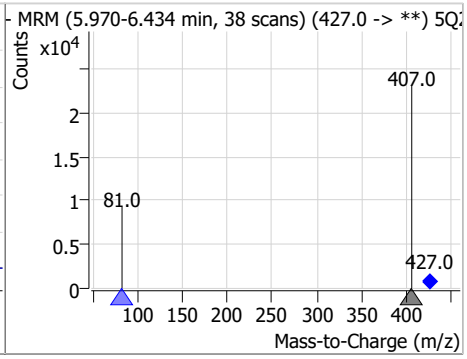




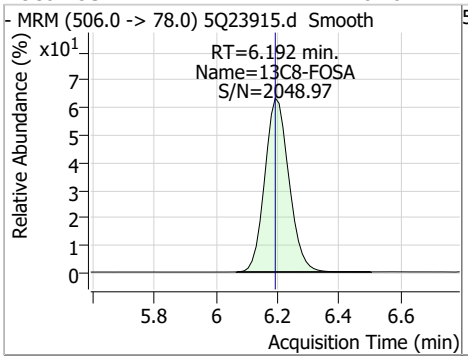
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	75.22	6.12	-0.01	664541	427.0 -> 81.0	40.1	20.2	60.7

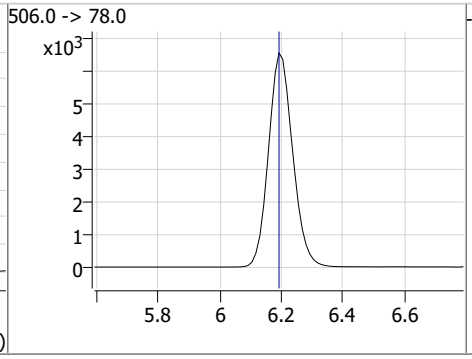


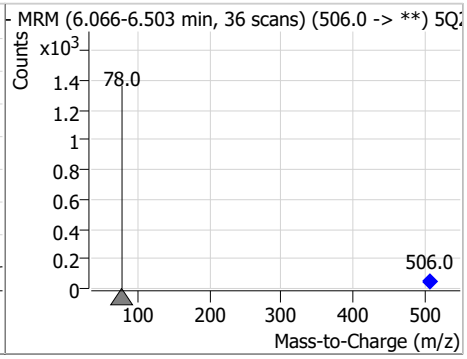




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	8.78	6.19	0.00	35572				

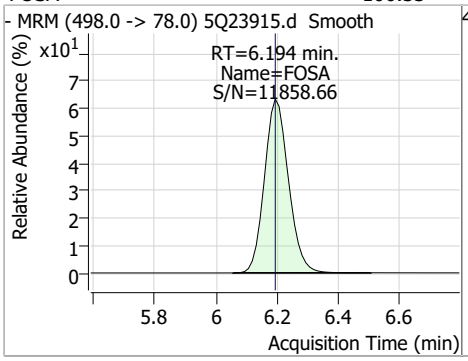


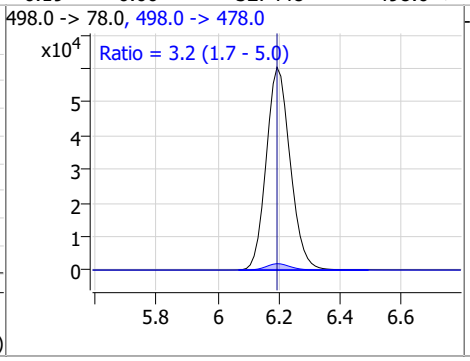


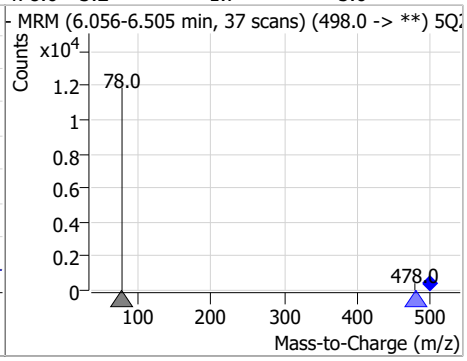


Perfluorinated Compounds by LC/MS/MS

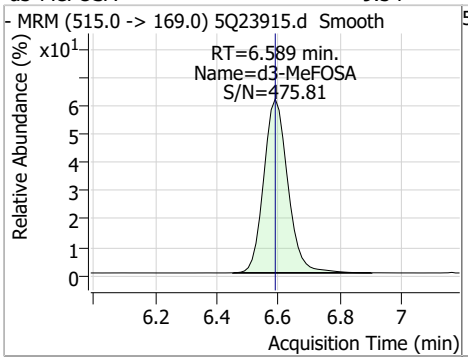
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	100.33	6.19	0.00	327448	498.0 -> 478.0	3.2	1.7	5.0

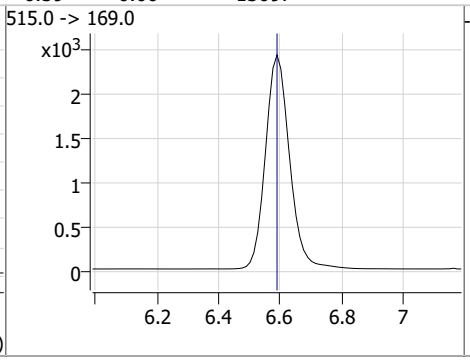


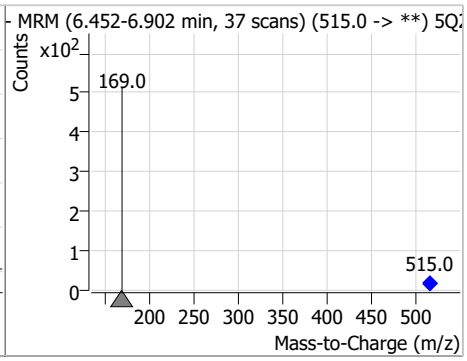




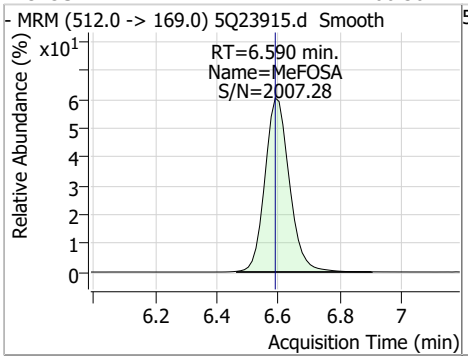
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	9.34	6.59	0.00	13097				

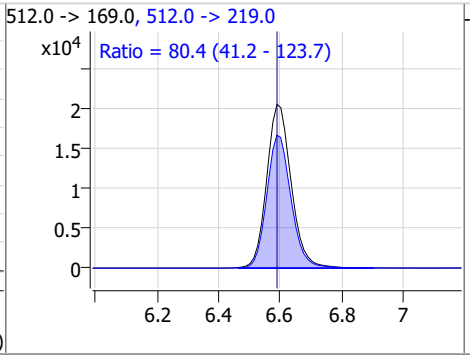


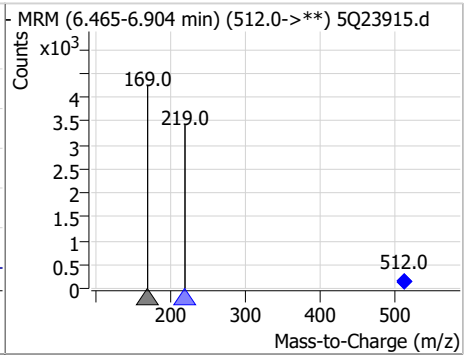




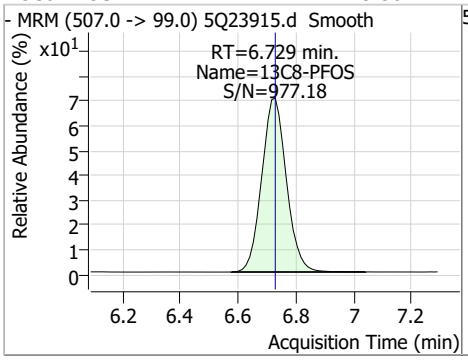
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	100.36	6.59	0.00	113701	512.0 -> 219.0	80.4	41.2	123.7

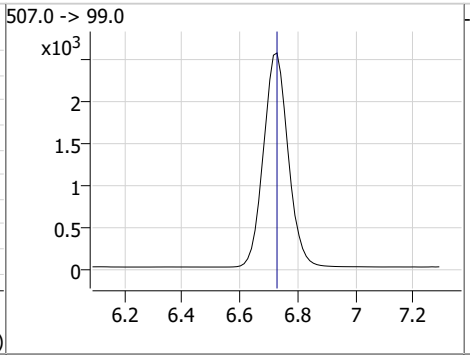


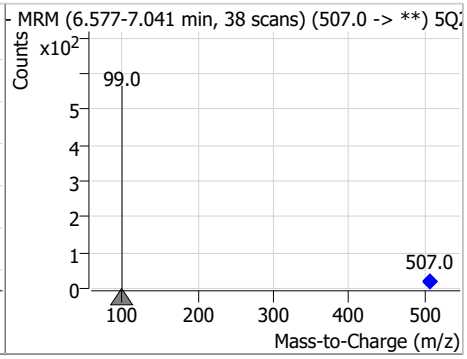




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	9.56	6.73	0.00	15032				

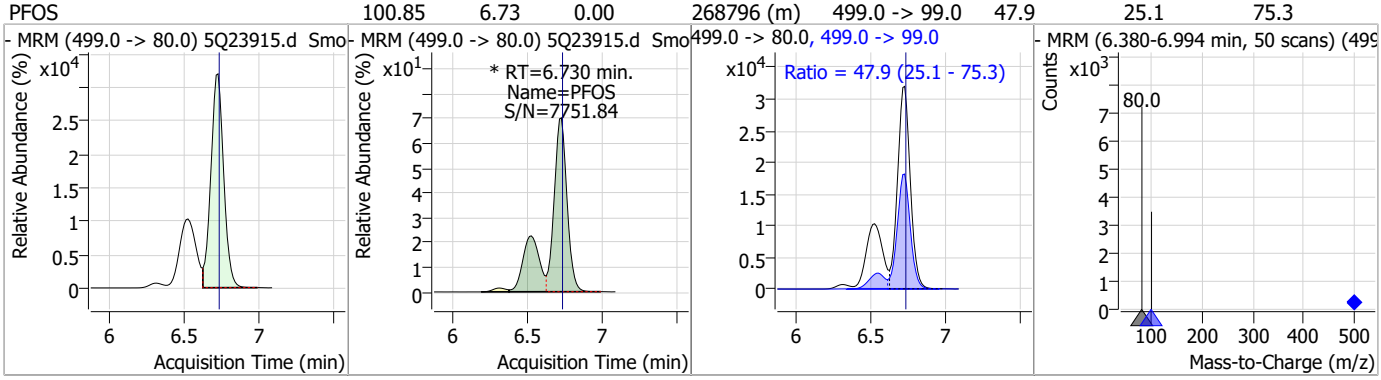




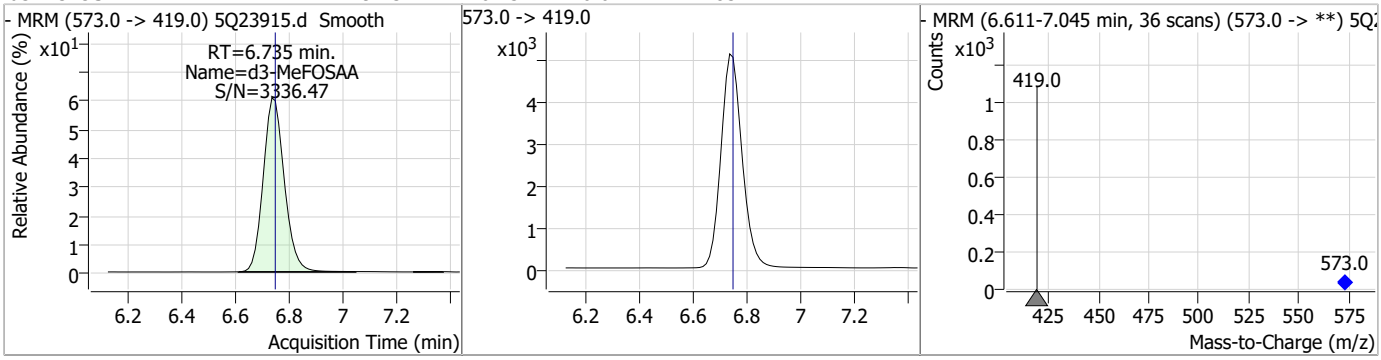


Perfluorinated Compounds by LC/MS/MS

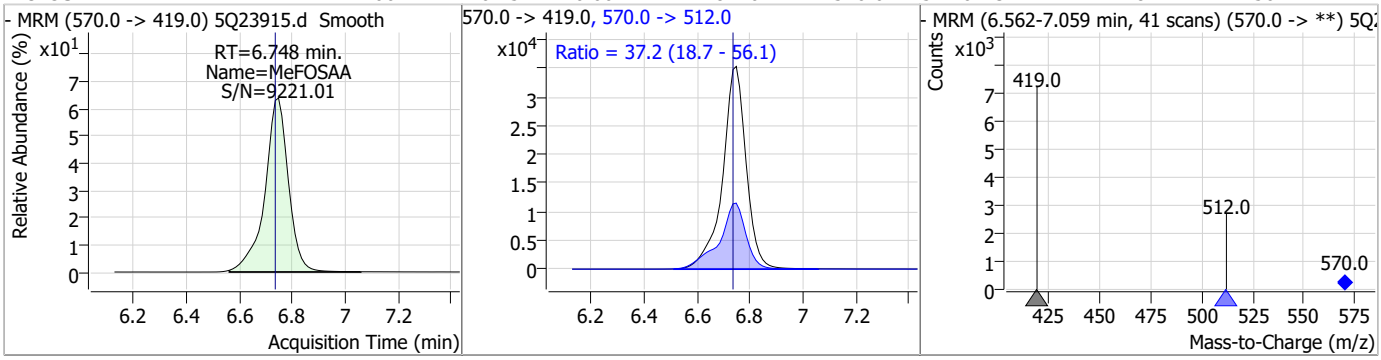
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	100.85	6.73	0.00	268796 (m)	499.0 -> 99.0	47.9	25.1	75.3



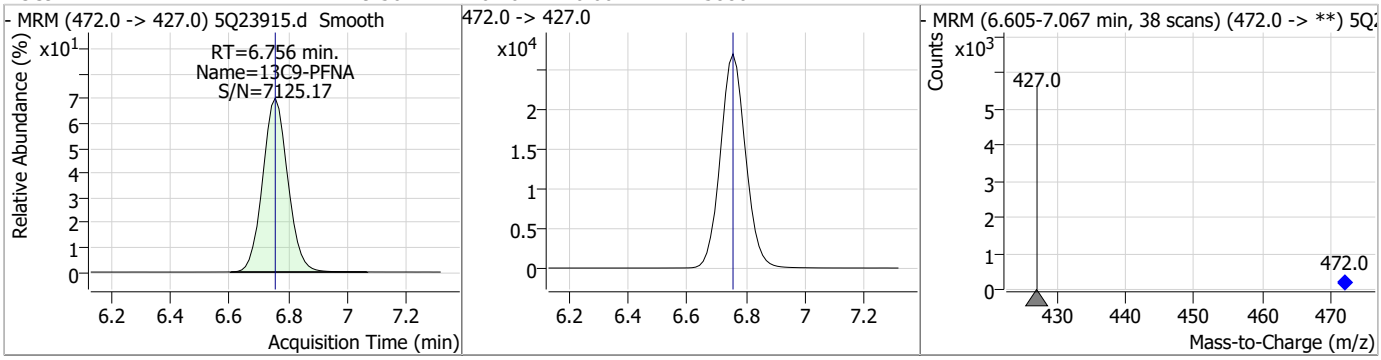
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	9.13	6.73	-0.01	27834				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	100.42	6.75	0.00	218140	570.0 -> 512.0	37.2	18.7	56.1

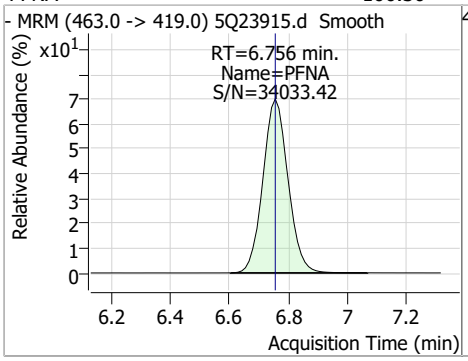


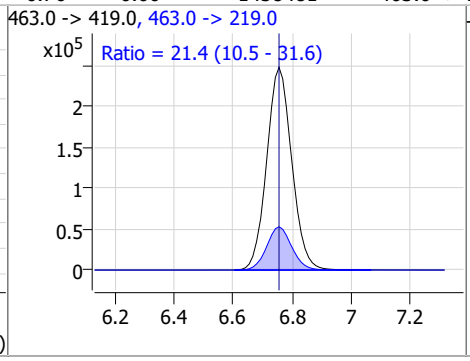
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	9.56	6.76	0.00	158807				

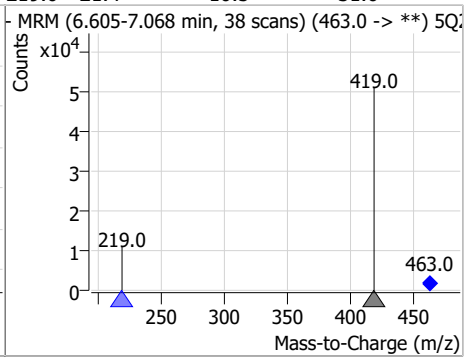


Perfluorinated Compounds by LC/MS/MS

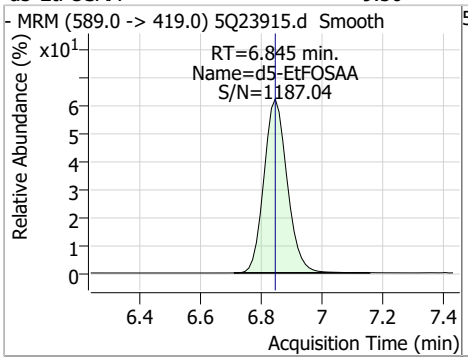
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	100.30	6.76	0.00	1458481	463.0 -> 219.0	21.4	10.5	31.6

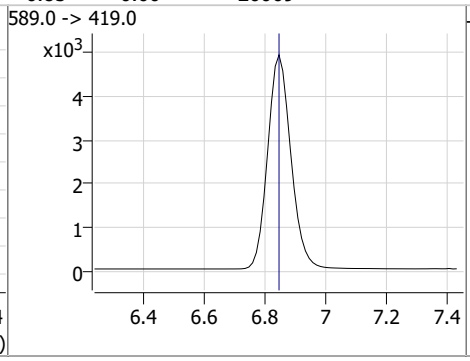


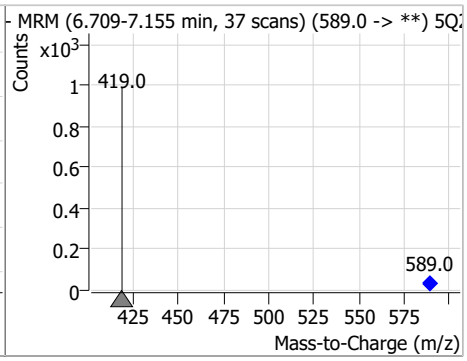




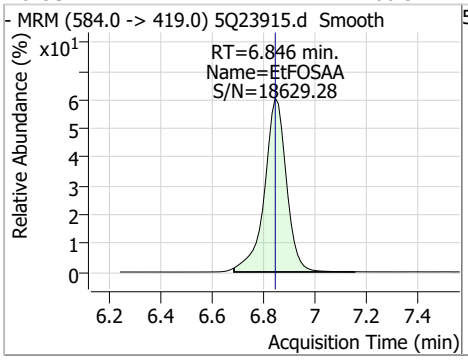
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	9.50	6.85	0.00	26069				

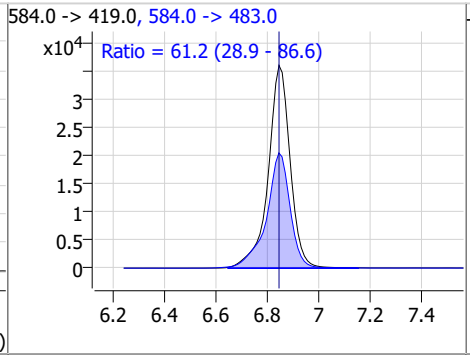


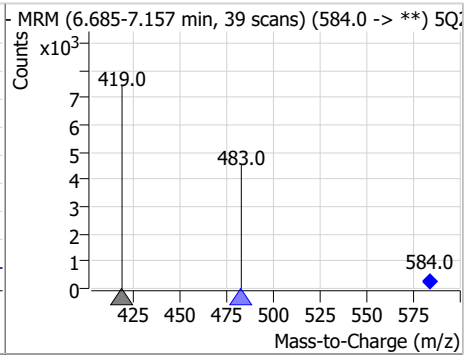




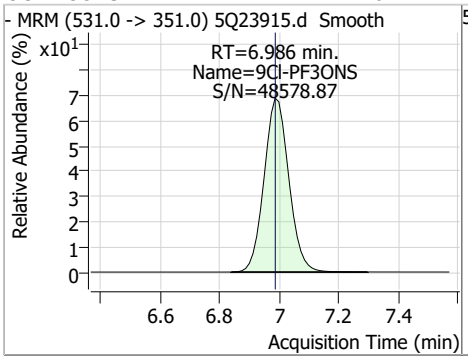
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	100.54	6.85	0.00	213854	584.0 -> 483.0	61.2	28.9	86.6

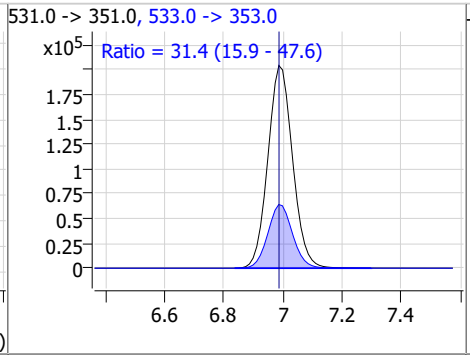


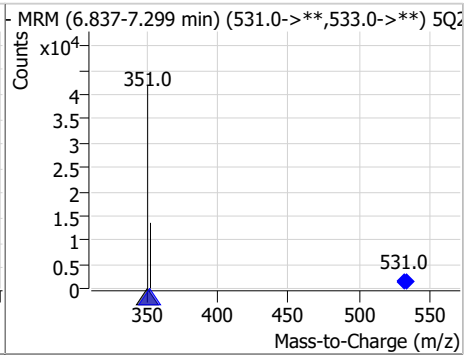




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	101.41	6.99	-0.01	1182599	533.0 -> 353.0	31.4	15.9	47.6

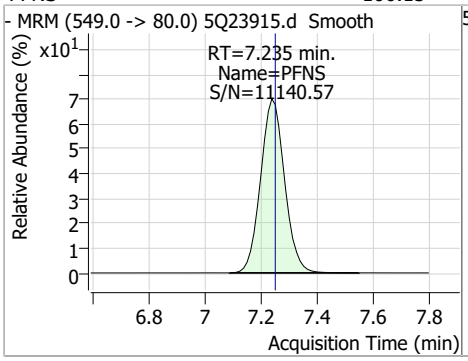


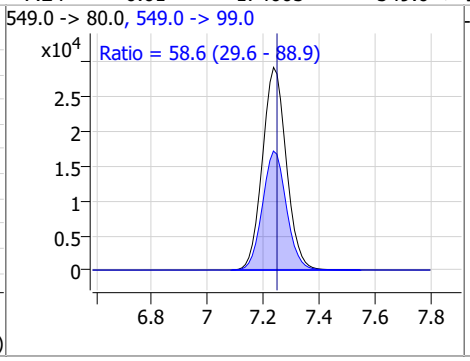


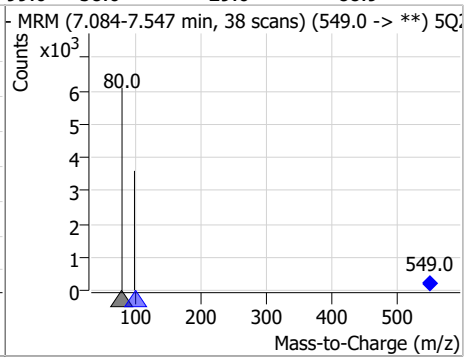


Perfluorinated Compounds by LC/MS/MS

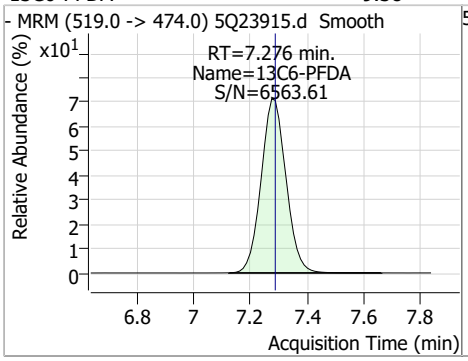
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	100.15	7.24	-0.01	174005	549.0 -> 99.0	58.6	29.6	88.9

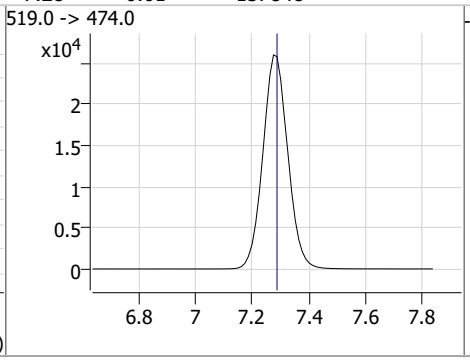


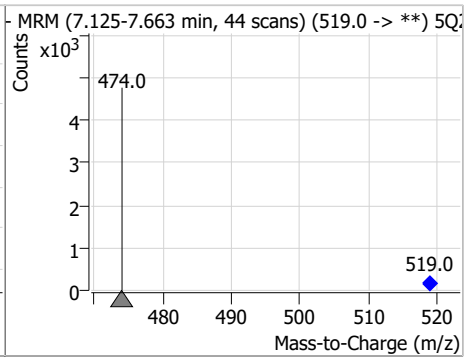




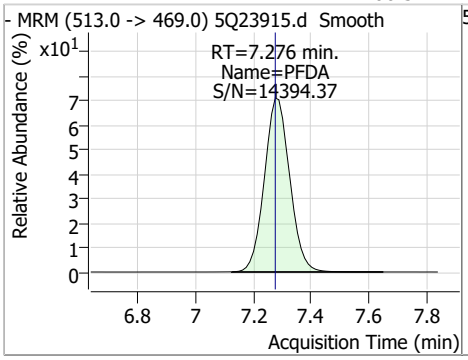
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	9.38	7.28	-0.01	157848				

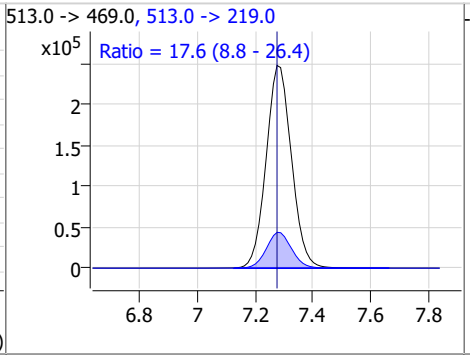


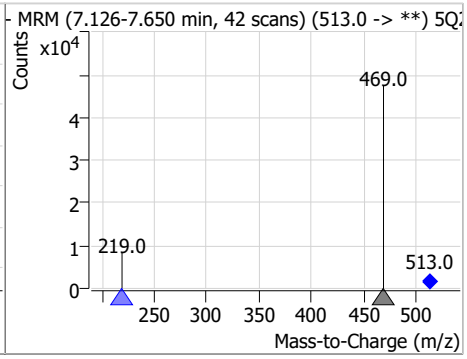




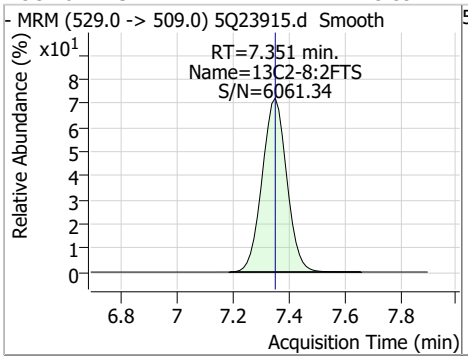
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	100.54	7.28	-0.01	1507710	513.0 -> 219.0	17.6	8.8	26.4

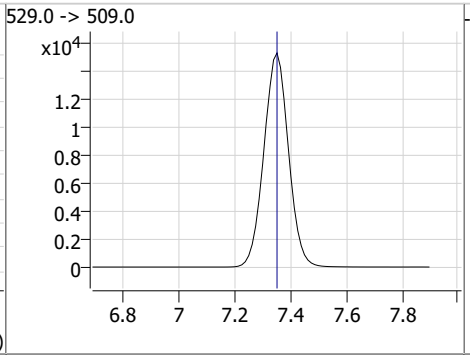


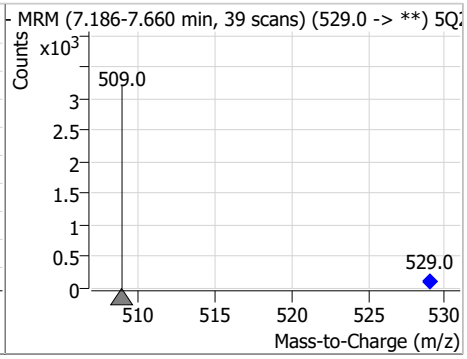




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	13.39	7.35	0.00	93481				

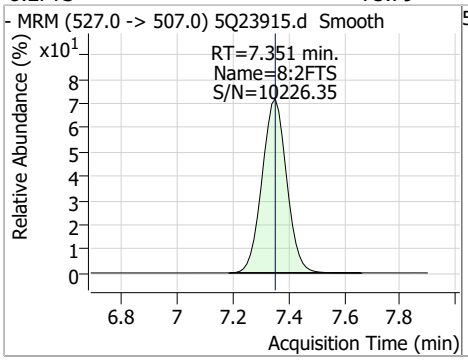


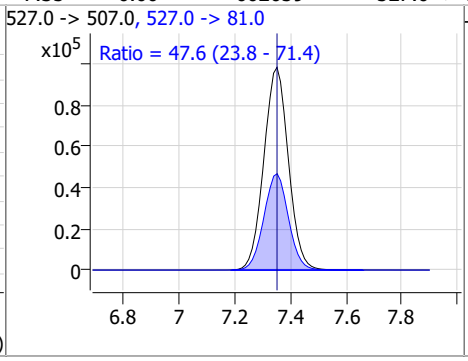


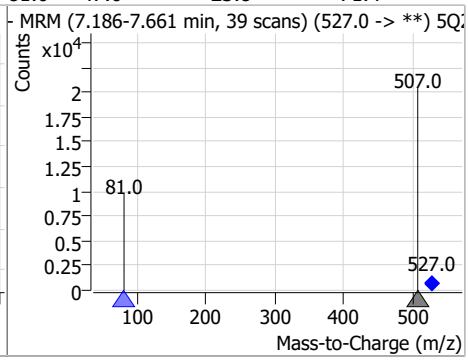


Perfluorinated Compounds by LC/MS/MS

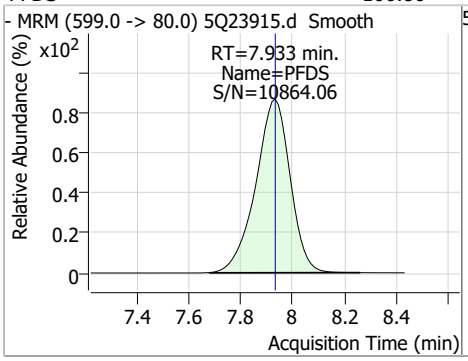
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	73.79	7.35	0.00	602659	527.0 -> 81.0	47.6	23.8	71.4

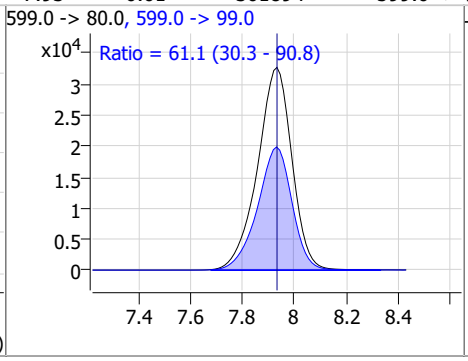


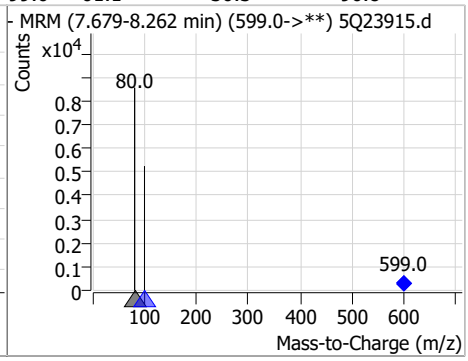




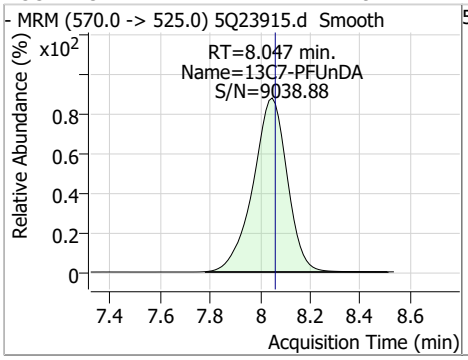
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	100.86	7.93	-0.01	301894	599.0 -> 99.0	61.1	30.3	90.8

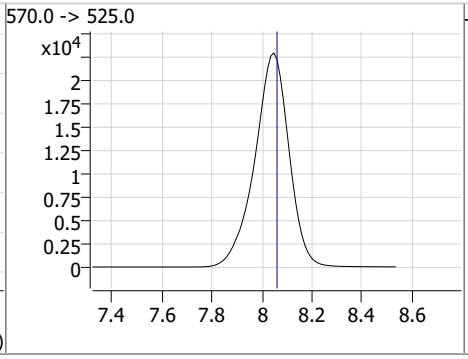


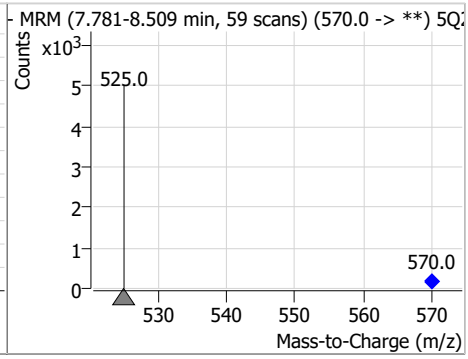




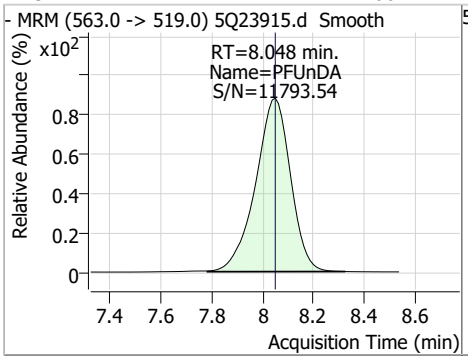
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	9.41	8.05	-0.01	219235				

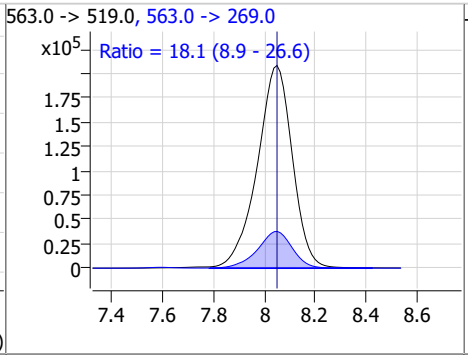


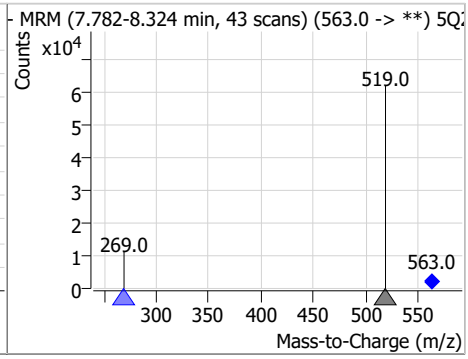




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	100.24	8.05	-0.01	1982613	563.0 -> 269.0	18.1	8.9	26.6

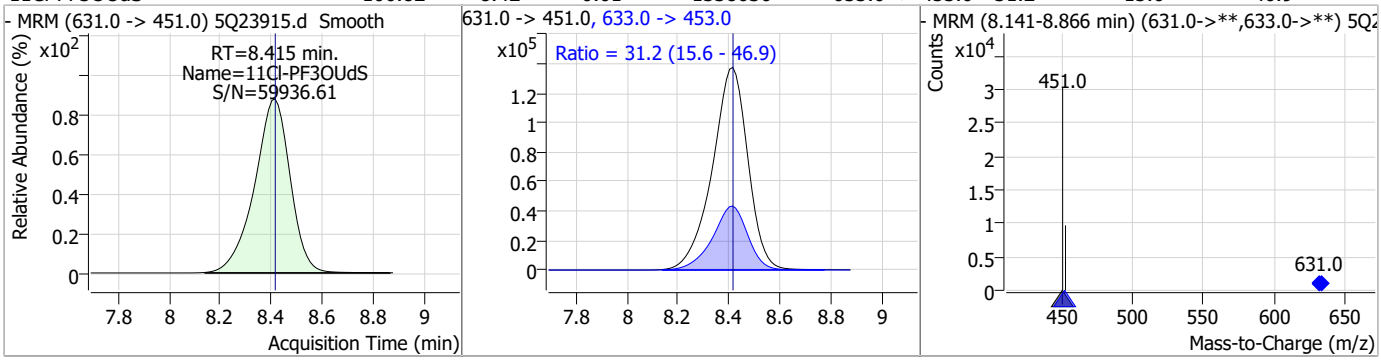




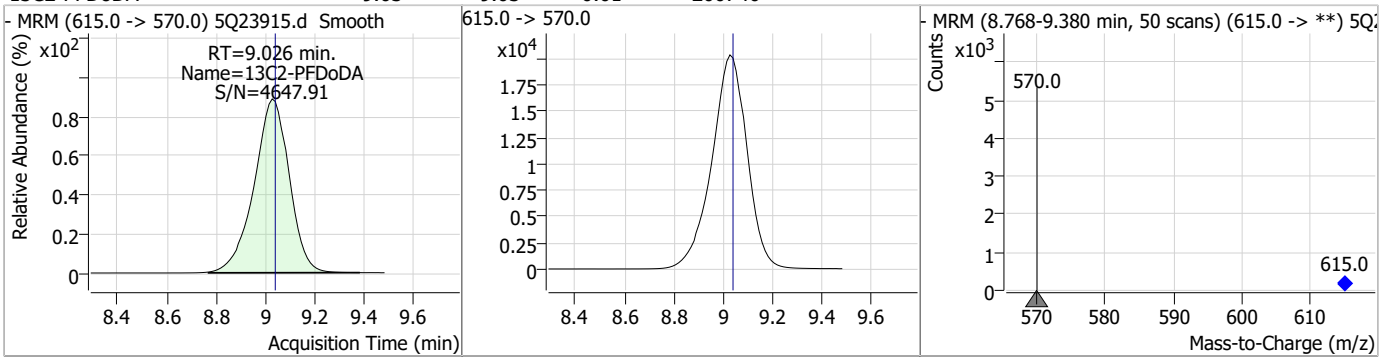


Perfluorinated Compounds by LC/MS/MS

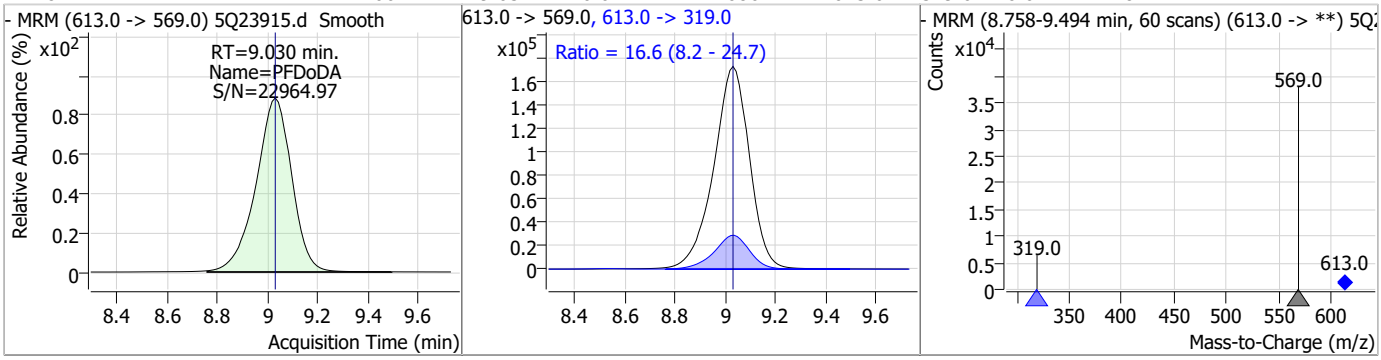
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	100.82	8.42	-0.01	1338636	633.0 -> 453.0	31.2	15.6	46.9



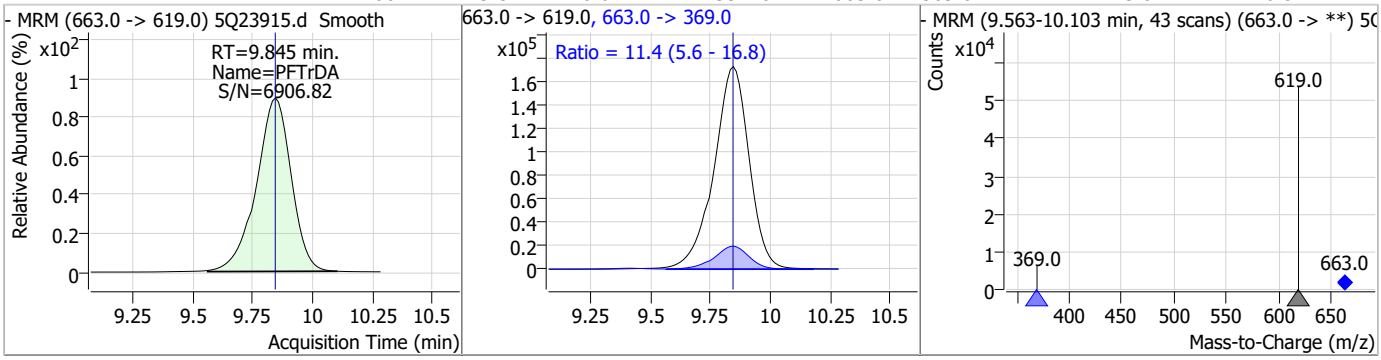
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	9.63	9.03	-0.01	200740				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	100.22	9.03	-0.01	1726864	613.0 -> 319.0	16.6	8.2	24.7

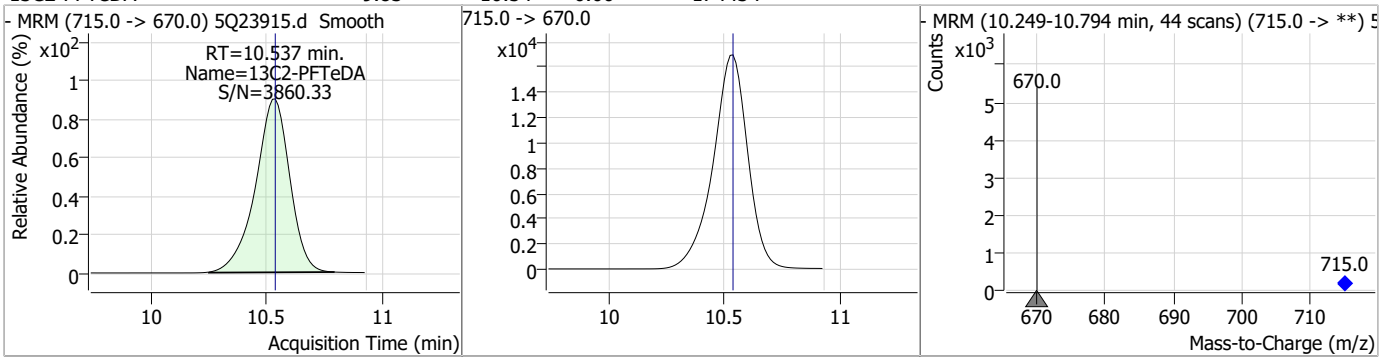


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	100.47	9.84	-0.01	1733220	663.0 -> 369.0	11.4	5.6	16.8

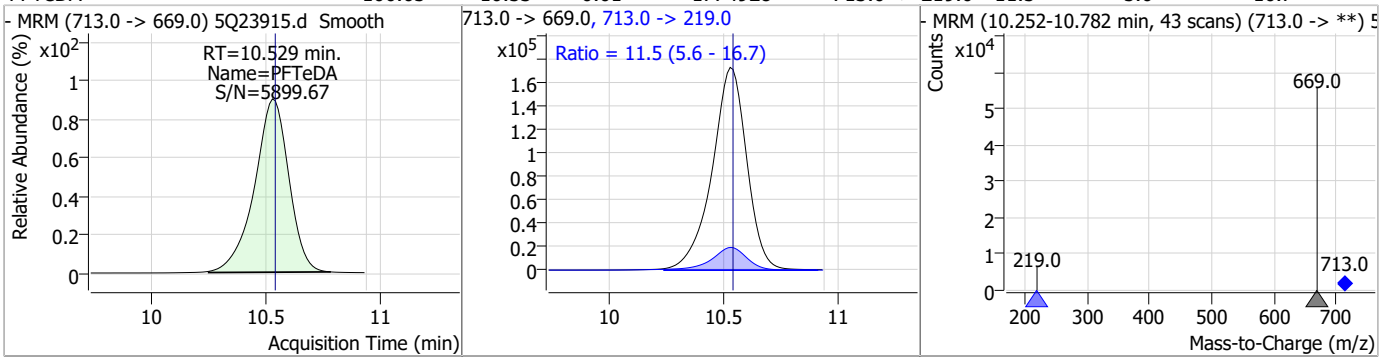


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	9.83	10.54	0.00	174434				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	100.65	10.53	-0.01	1774928	713.0 -> 219.0	11.5	5.6	16.7



9.6.24

9

Manual Integration Approval Summary

Sample Number: S5Q375-IC375
Lab FileID: 5Q23915.D
Injection Time: 12/28/23 16:29
Method: EPA 537M QSM5.3 B-15
Analyst approved: 12/29/23 14:15 Lindsay Ritner
Supervisor approved: 01/02/24 14:05 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.43	Split peak
Perfluorooctanesulfonic acid	1763-23-1		6.73	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Natasha Gumtie 01/02/24 14:05

Perfluorinated Compounds by LC/MS/MS

Data File : 5Q23917.d
Operator : natashag
Acq. Method : 537_ID.m
Acq. Date-Time : 12/28/2023 5:02:47 PM
Sample Name : icv375-20
Vial : P1-B1
DA Method File : ID_122823_S5Q375.quantmethod.xml
Batch Name : s5q375.batch.bin
Sample Information : OP401,S5Q375,250,,,1.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	1.987	217.0 -> 172.0	48452	10.00 µg/L	0.000
M5-PFPeA	3.432	268.0 -> 223.0	80530	10.00 µg/L	0.000
M5-PFHxA	4.552	318.0 -> 273.0	125215	10.00 µg/L	0.000
M4-PFHpA	5.413	367.0 -> 322.0	123588	10.00 µg/L	0.000
M8-PFOA	6.124	421.0 -> 376.0	169956	10.00 µg/L	0.000
M9-PFNA	6.756	472.0 -> 427.0	172067	10.00 µg/L	0.000
M6-PFDA	7.288	519.0 -> 474.0	179120	10.00 µg/L	0.000
M7-PFUnDA	8.059	570.0 -> 525.0	241176	10.00 µg/L	0.000
M2-PFDoDA	9.038	615.0 -> 570.0	217177	10.00 µg/L	0.000
M2-PFTeDA	10.537	715.0 -> 670.0	182337	10.00 µg/L	0.000
M8-FOSA	6.192	506.0 -> 78.0	42665	10.00 µg/L	0.000
M3-PFBS	3.624	302.0 -> 99.0	9800	10.00 µg/L	-0.012
M3-PFHxS	5.432	402.0 -> 99.0	12420	10.00 µg/L	0.000
M8-PFOS	6.729	507.0 -> 99.0	16098	10.00 µg/L	0.000
M2-4:2FTS	4.474	329.0 -> 309.0	43239	10.00 µg/L	0.000
M2-6:2FTS	6.136	429.0 -> 409.0	75792	10.00 µg/L	0.000
M2-8:2FTS	7.351	529.0 -> 509.0	74912	10.00 µg/L	0.000
M3-MeFOSAA	6.735	573.0 -> 419.0	32103	10.00 µg/L	-0.012
M3-HFPO-DA	4.819	287.0 -> 169.0	6263	10.00 µg/L	0.000
M3-MeFOSA	6.589	515.0 -> 169.0	15749	10.00 µg/L	0.000
M5-EtFOSAA	6.845	589.0 -> 419.0	29648	10.00 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	4.474	329.0 -> 309.0	43239	10.75 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 107.5%	
13C2-6:2FTS	6.136	429.0 -> 409.0	75792	10.69 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 106.9%	
13C2-8:2FTS	7.351	529.0 -> 509.0	74912	10.73 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 107.3%	
13C2-PFDoDA	9.038	615.0 -> 570.0	217177	10.42 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 104.2%	
13C2-PFTeDA	10.537	715.0 -> 670.0	182337	10.28 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 102.8%	
13C3-PFBS	3.624	302.0 -> 99.0	9800	10.09 µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.9%	
13C3-PFHxS	5.432	402.0 -> 99.0	12420	10.52 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 105.2%	
13C4-PFBA	1.987	217.0 -> 172.0	48452	10.25 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 102.5%	
13C4-PFHpA	5.413	367.0 -> 322.0	123588	10.28 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 102.8%	
13C5-PFHxA	4.552	318.0 -> 273.0	125215	10.48 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 104.8%	
13C5-PFPeA	3.432	268.0 -> 223.0	80530	10.22 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 102.2%	
13C6-PFDA	7.288	519.0 -> 474.0	179120	10.64 µg/L	0.000

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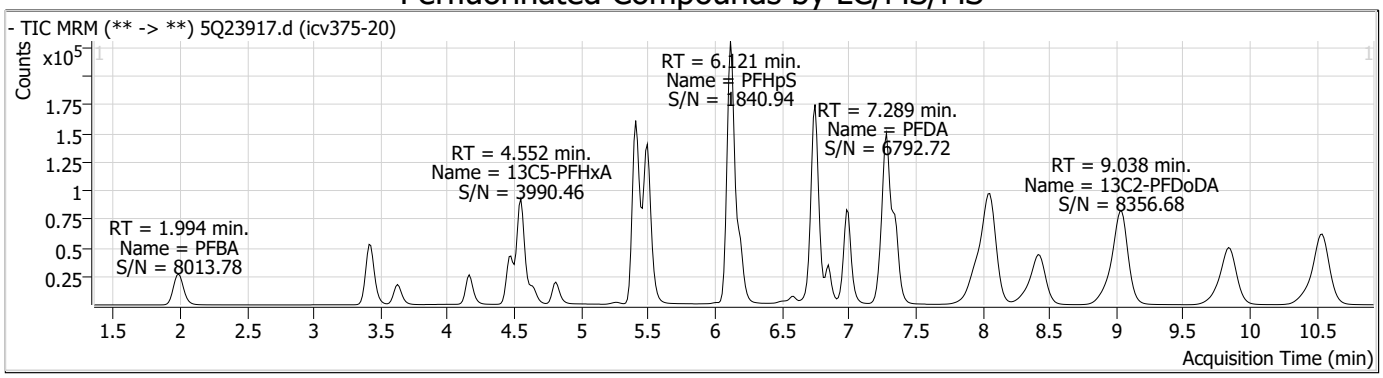
Compound	RT	Transition	Response	Conc. Units		Dev(Min)
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 106.4%		
13C7-PFUnDA	8.059	570.0 -> 525.0	241176	10.35 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 103.5%		
13C8-FOSA	6.192	506.0 -> 78.0	42665	10.53 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 105.3%		
13C8-PFOA	6.124	421.0 -> 376.0	169956	10.27 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 102.7%		
13C8-PFOS	6.729	507.0 -> 99.0	16098	10.24 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 102.4%		
13C9-PFNA	6.756	472.0 -> 427.0	172067	10.36 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 103.6%		
d3-MeFOSAA	6.735	573.0 -> 419.0	32103	10.53 µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 105.3%		
13C3-HFPO-DA	4.819	287.0 -> 169.0	6263	9.70 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 97.0%		
d3-MeFOSA	6.589	515.0 -> 169.0	15749	11.23 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 112.3%		
d5-EtFOSAA	6.845	589.0 -> 419.0	29648	10.80 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 108.0%		
Target Compounds						QValue
4:2FTS	4.475	327.0 -> 307.0	85567	20.09 µg/L		99
		327.0 -> 81.0	48729			
6:2FTS	6.136	427.0 -> 407.0	136391	19.67 µg/L		99
		427.0 -> 81.0	54708			
8:2FTS	7.351	527.0 -> 507.0	136817	20.91 µg/L		100
		527.0 -> 81.0	64931			
EtFOSAA	6.846	584.0 -> 419.0	49165	20.32 µg/L		96
		584.0 -> 483.0	29773			
FOSA	6.194	498.0 -> 78.0	84938	21.70 µg/L		100
		498.0 -> 478.0	2860			
MeFOSAA	6.748	570.0 -> 419.0	51194	20.43 µg/L		98
		570.0 -> 512.0	18466			
PFBA	1.994	213.0 -> 169.0	96779	21.56 µg/L		100
PFBS	3.628	299.0 -> 80.0	45992	18.96 µg/L		99
		299.0 -> 99.0	20410			
PFDA	7.289	513.0 -> 469.0	349076	20.51 µg/L		100
		513.0 -> 219.0	61710			
PFDoDA	9.030	613.0 -> 569.0	435188	23.34 µg/L		100
		613.0 -> 319.0	72165			
PFDS	7.945	599.0 -> 80.0	63251	19.21 µg/L		99
		599.0 -> 99.0	38635			
PFHpA	5.413	363.0 -> 319.0	304980	21.52 µg/L		99
		363.0 -> 169.0	63584			
PFHpS	6.121	449.0 -> 80.0	45577	20.28 µg/L		99
		449.0 -> 99.0	24354			
PFHxA	4.553	313.0 -> 269.0	234971	19.40 µg/L		100
		313.0 -> 119.0	9752			
PFHxS	5.433	399.0 -> 80.0	41785	18.13 µg/L	m	99
		399.0 -> 99.0	23759			
PFNA	6.756	463.0 -> 419.0	310960	19.74 µg/L		100
		463.0 -> 219.0	65730			
PFNS	7.248	549.0 -> 80.0	39467	21.21 µg/L		100
		549.0 -> 99.0	23265			
PFOA	6.125	413.0 -> 369.0	358867	21.52 µg/L		100
		413.0 -> 169.0	89082			
PFOS	6.730	499.0 -> 80.0	59741	20.93 µg/L	m	99

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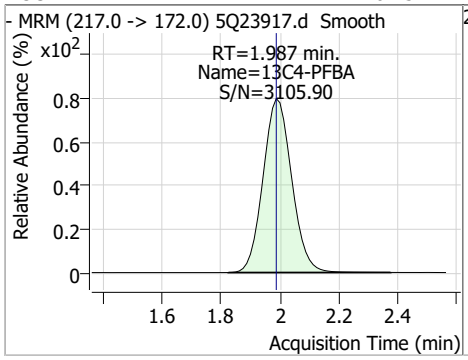
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
		499.0 -> 99.0	30339				
PFPeA	3.422	263.0 -> 219.0	165506	21.19	µg/L		100
PFPeS	4.648	349.0 -> 80.0	32388	18.97	µg/L		98
		349.0 -> 99.0	16608				
PFTeDA	10.529	713.0 -> 669.0	352770	19.14	µg/L		99
		713.0 -> 219.0	39966				
PFTrDA	9.845	663.0 -> 619.0	403910	21.64	µg/L		99
		663.0 -> 369.0	46017				
PFUnDA	8.048	563.0 -> 519.0	480599	22.09	µg/L		100
		563.0 -> 269.0	84657				
11Cl-PF3OUdS	8.415	631.0 -> 451.0	284233	19.79	µg/L		100
		633.0 -> 453.0	89023				
9Cl-PF3ONS	6.986	531.0 -> 351.0	251851	19.03	µg/L		100
		533.0 -> 353.0	79503				
ADONA	5.502	377.0 -> 251.0	394957	18.98	µg/L		100
		377.0 -> 85.0	141152				
HFPO-DA	4.815	329.0 -> 169.0	60004	21.06	µg/L		100
		285.0 -> 169.0	12529				
MeFOSA	6.741	512.0 -> 169.0	0		µg/L	m	1
		512.0 -> 219.0	0				
4-PFECHS	6.018	461.0 -> 381.0	0		µg/L	m	1
		461.0 -> 99.0	0				
FBSA	4.170	298.0 -> 78.0	93499	22.32	µg/L		100
		298.0 -> 64.0	8699				
FHxSA	5.409	398.0 -> 78.0	102816	23.73	µg/L		100
		398.0 -> 64.0	9727				

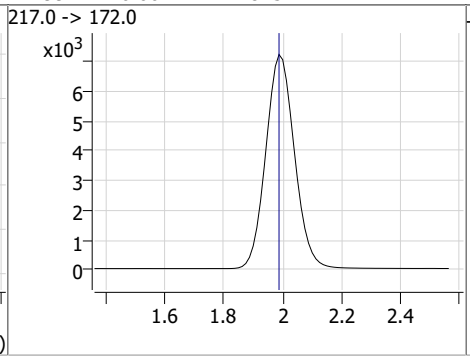
 # = Qualifier out of range, m = manually integrated, + = Area summed

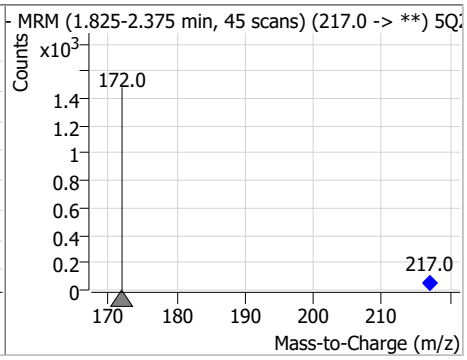
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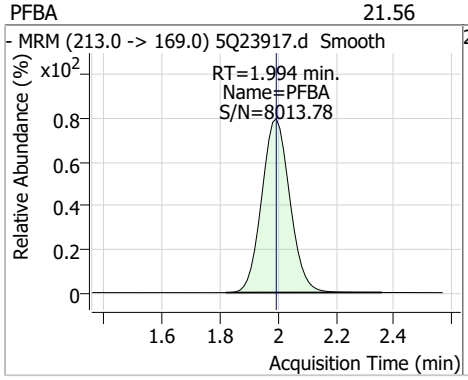
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	10.25	1.99	0.00	48452				

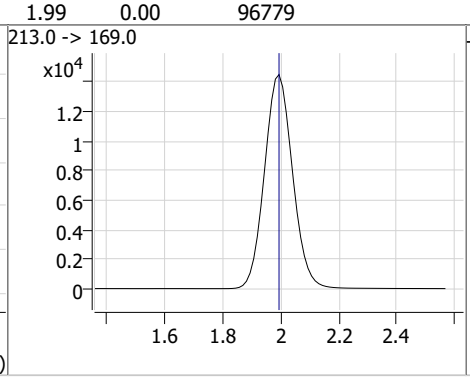


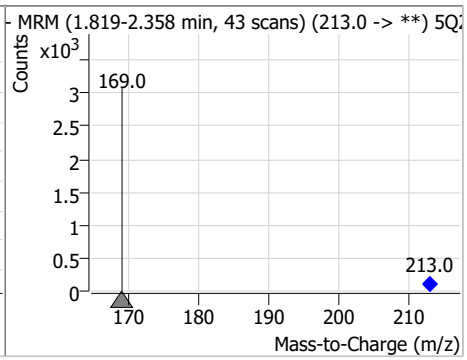




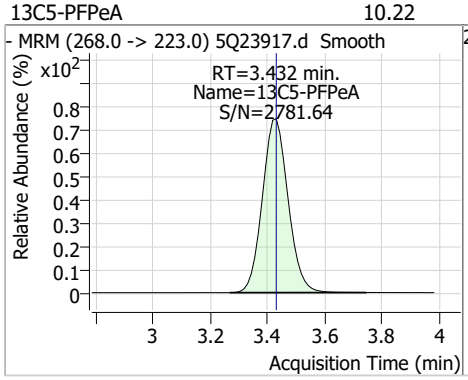
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	21.56	1.99	0.00	96779				

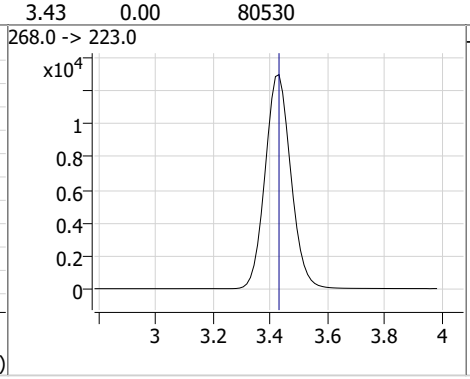


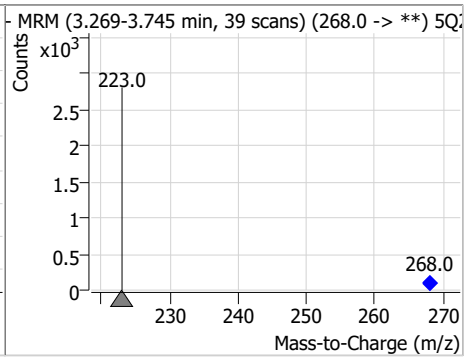




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	10.22	3.43	0.00	80530				

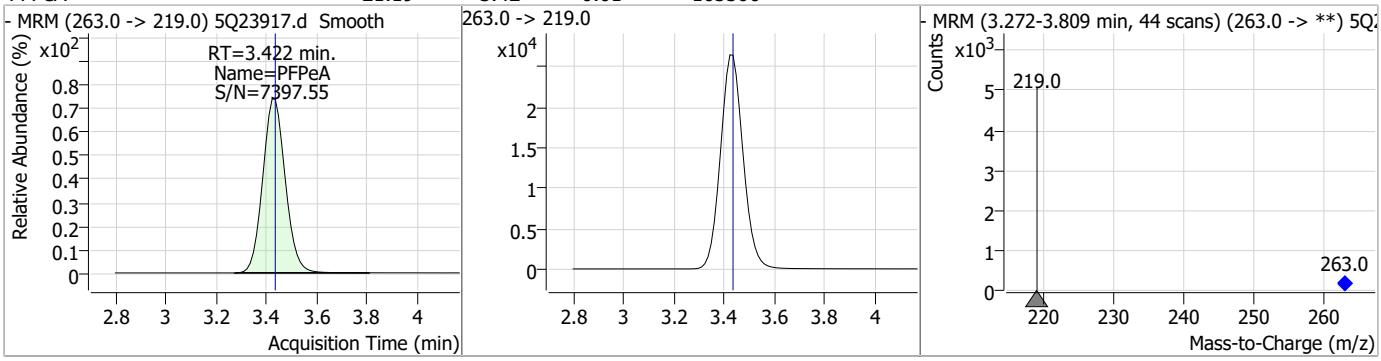




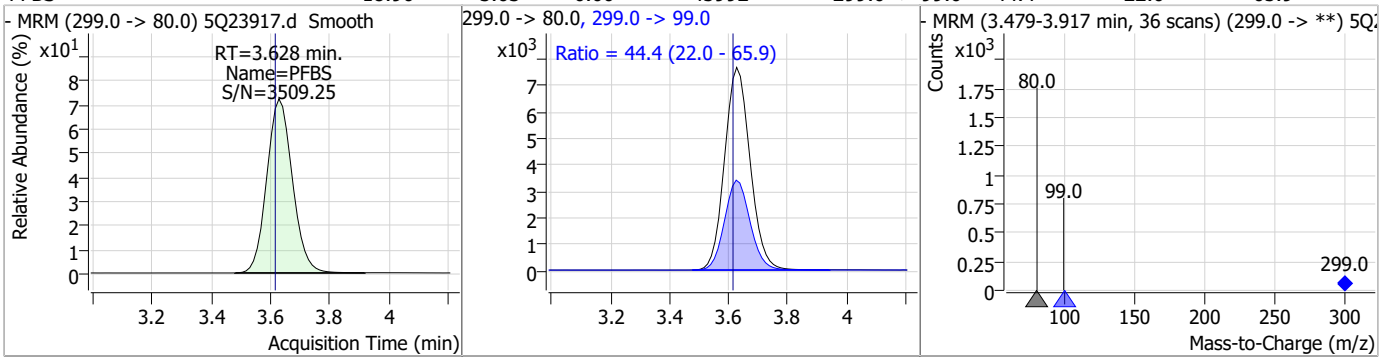


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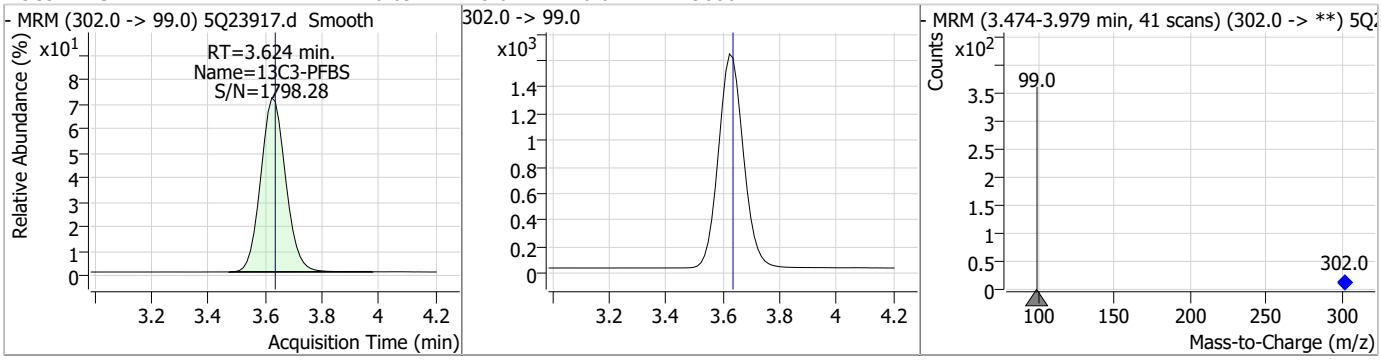
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	21.19	3.42	-0.01	165506				



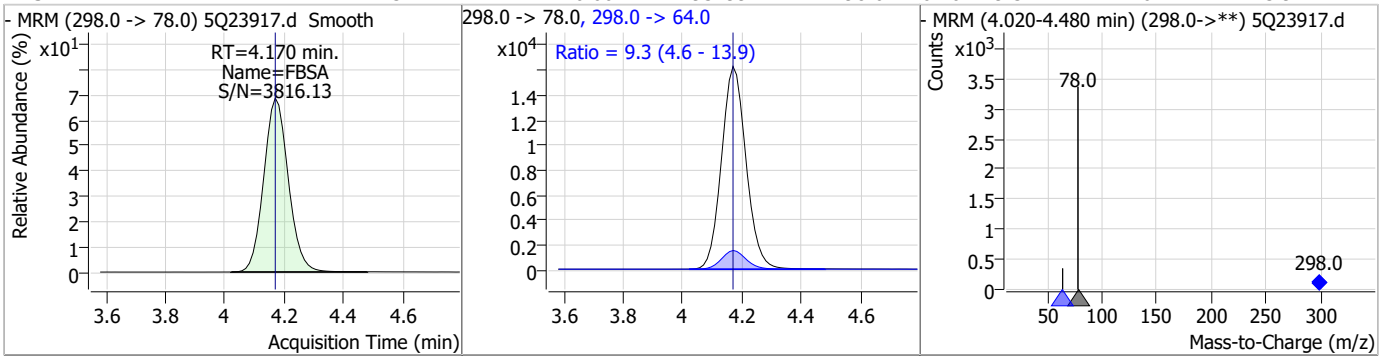
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	18.96	3.63	0.00	45992	299.0 -> 99.0	44.4	22.0	65.9



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	10.09	3.62	-0.01	9800				

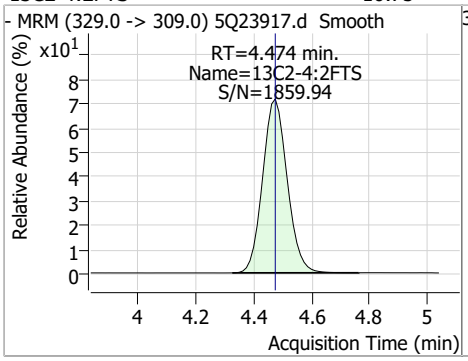


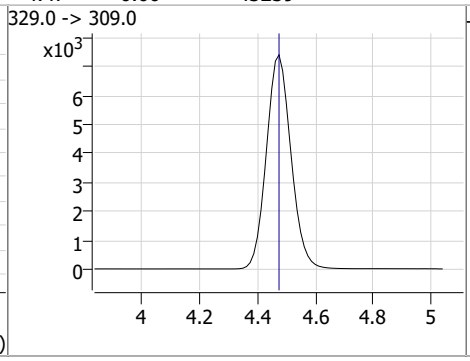
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	22.32	4.17	0.00	93499	298.0 -> 64.0	9.3	4.6	13.9

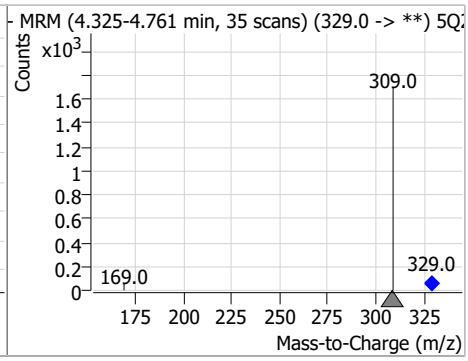


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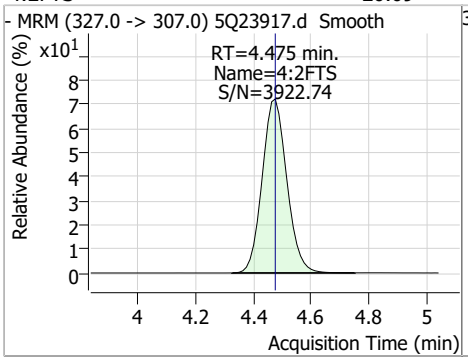
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	10.75	4.47	0.00	43239				

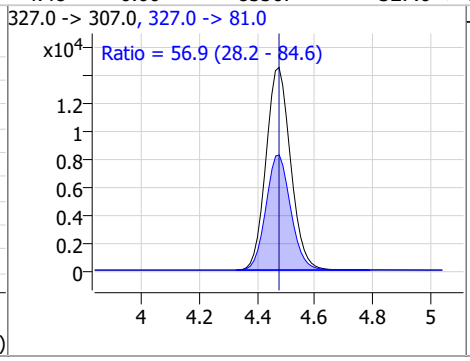


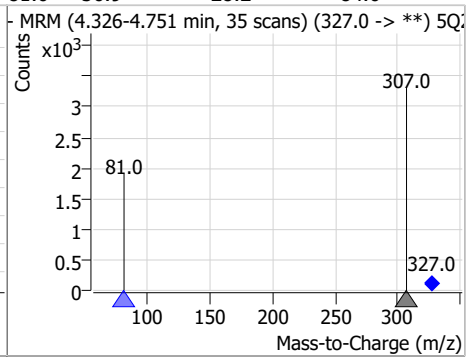




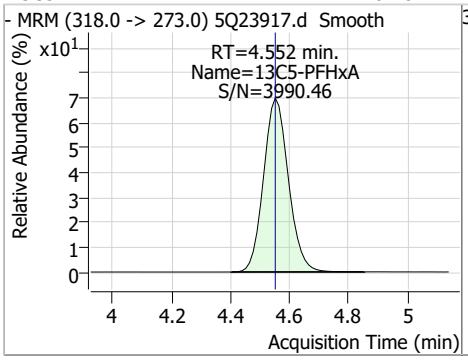
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	20.09	4.48	0.00	85567	327.0 -> 81.0	56.9	28.2	84.6

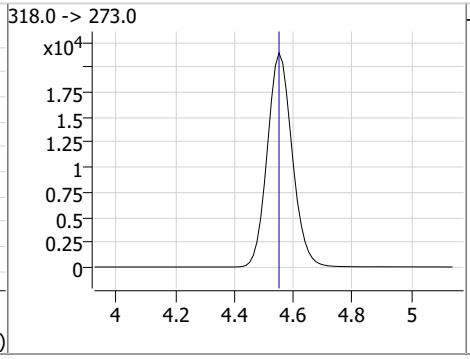


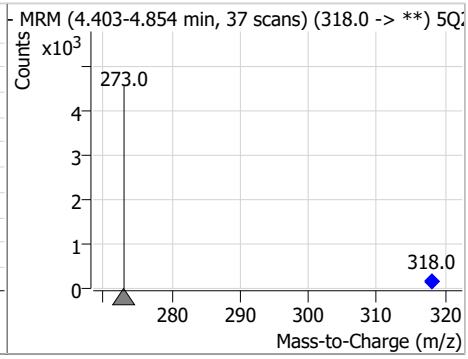




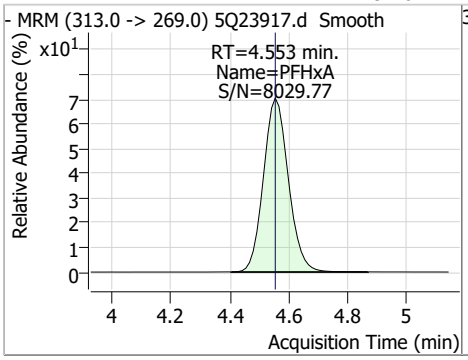
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	10.48	4.55	0.00	125215				

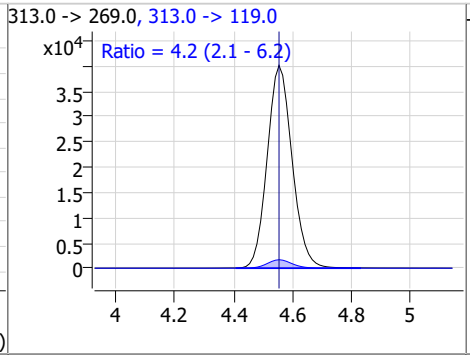


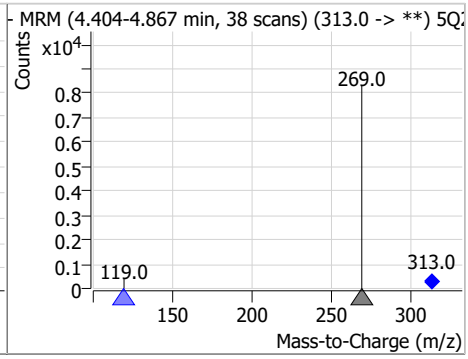




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	19.40	4.55	0.00	234971	313.0 -> 119.0	4.2	2.1	6.2

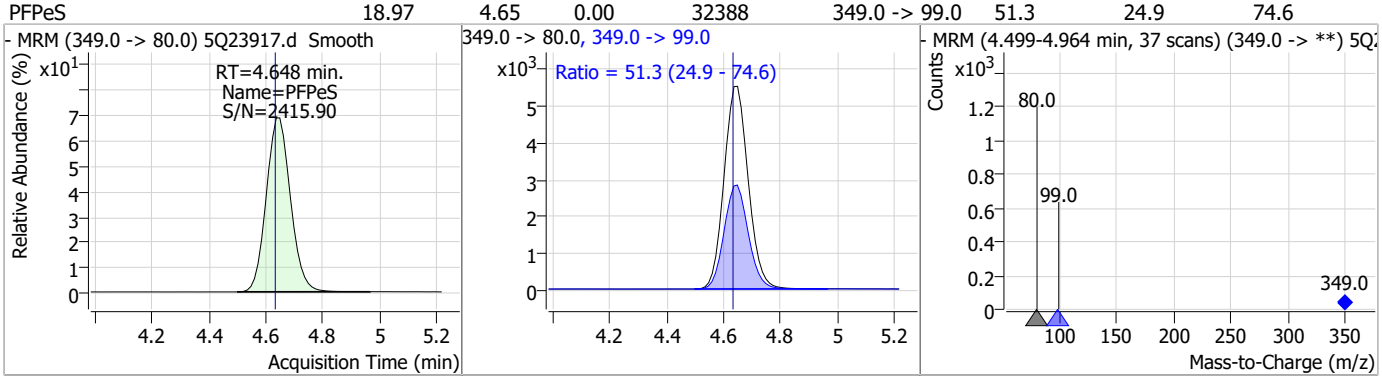




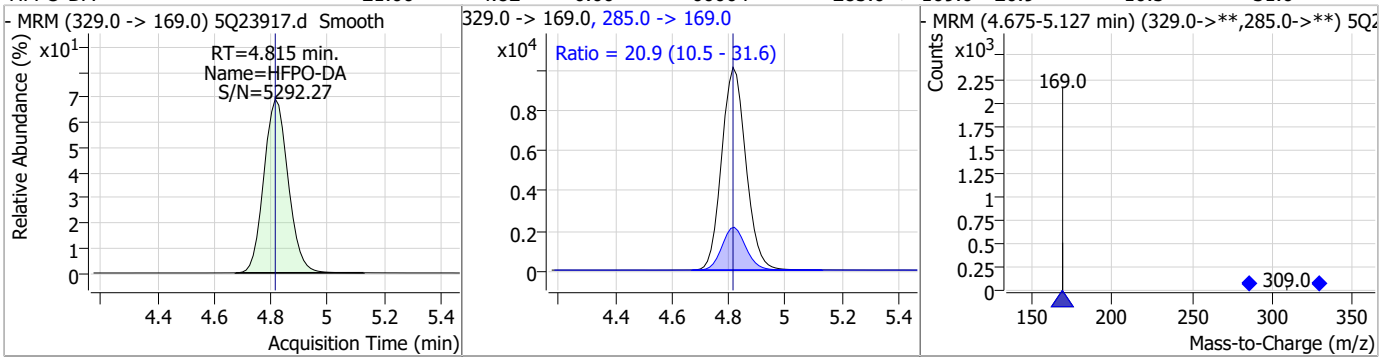


Perfluorinated Compounds by LC/MS/MS

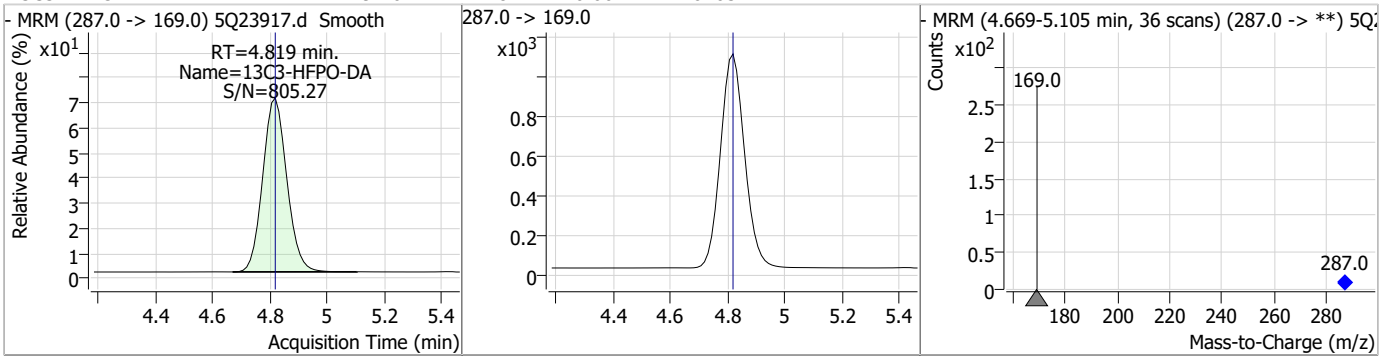
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	18.97	4.65	0.00	32388	349.0 -> 99.0	51.3	24.9	74.6



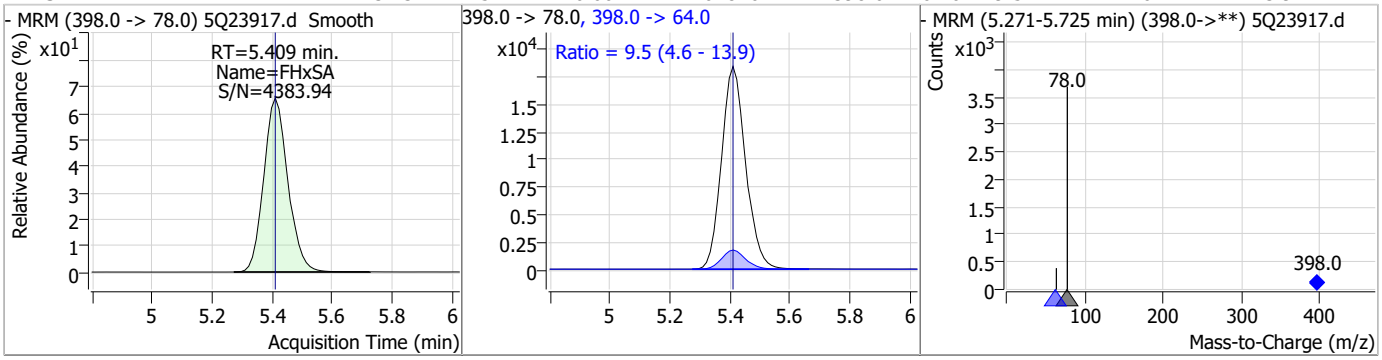
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	21.06	4.82	0.00	60004	285.0 -> 169.0	20.9	10.5	31.6



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	9.70	4.82	0.00	6263				

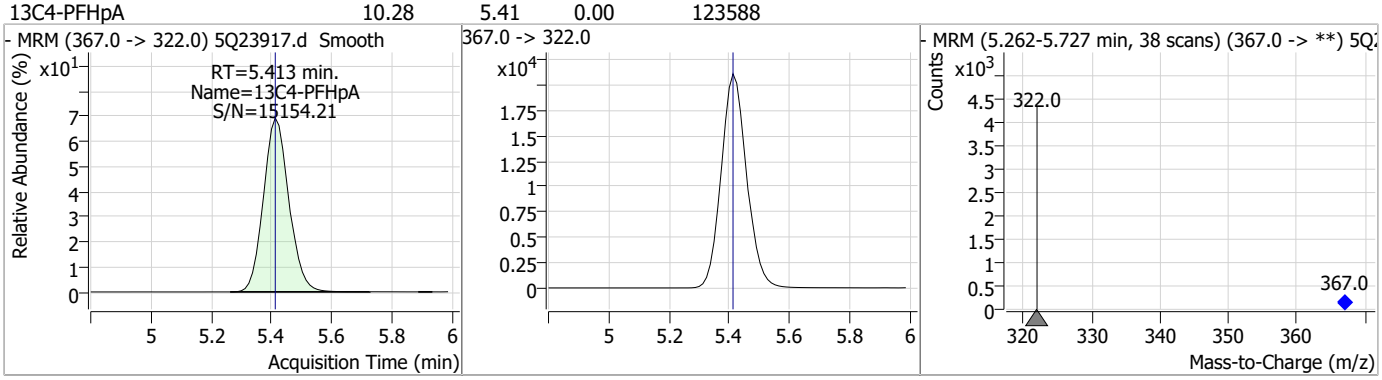


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	23.73	5.41	0.00	102816	398.0 -> 64.0	9.5	4.6	13.9

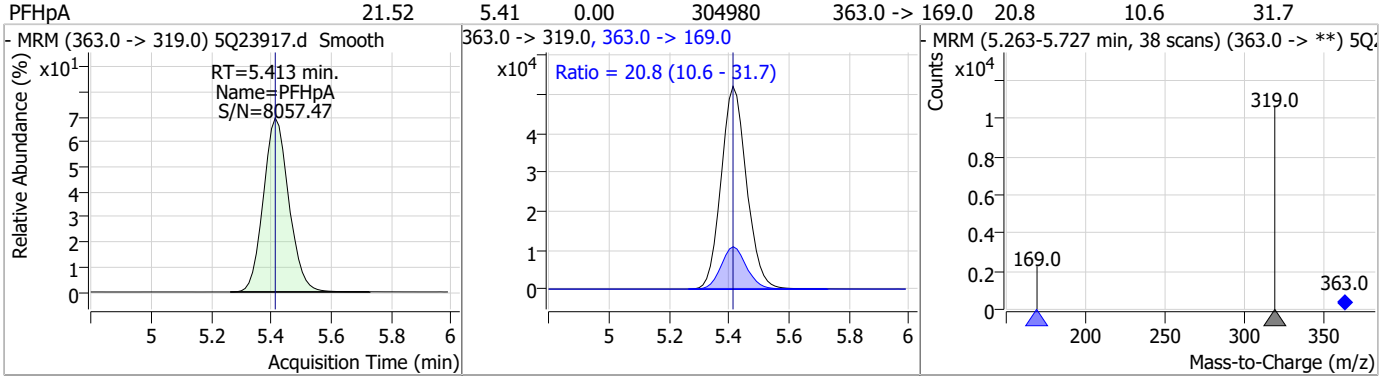


Perfluorinated Compounds by LC/MS/MS

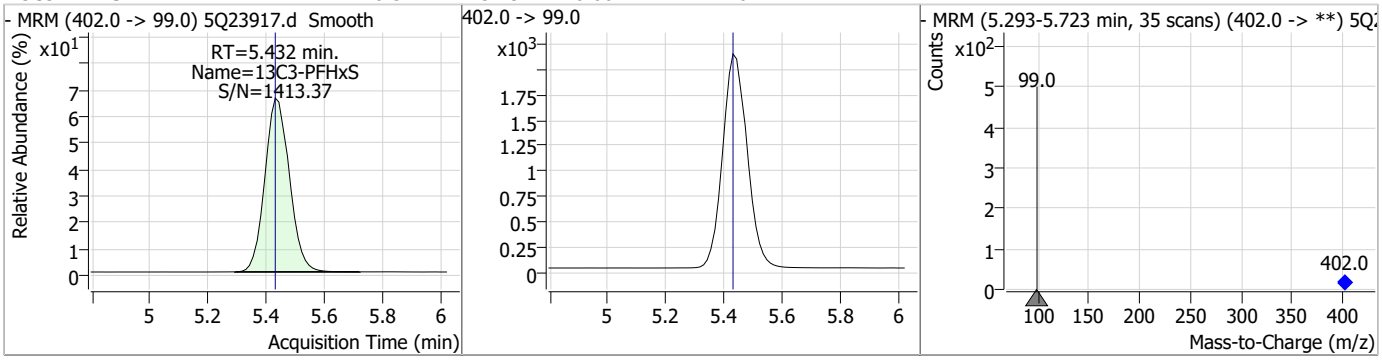
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	10.28	5.41	0.00	123588				



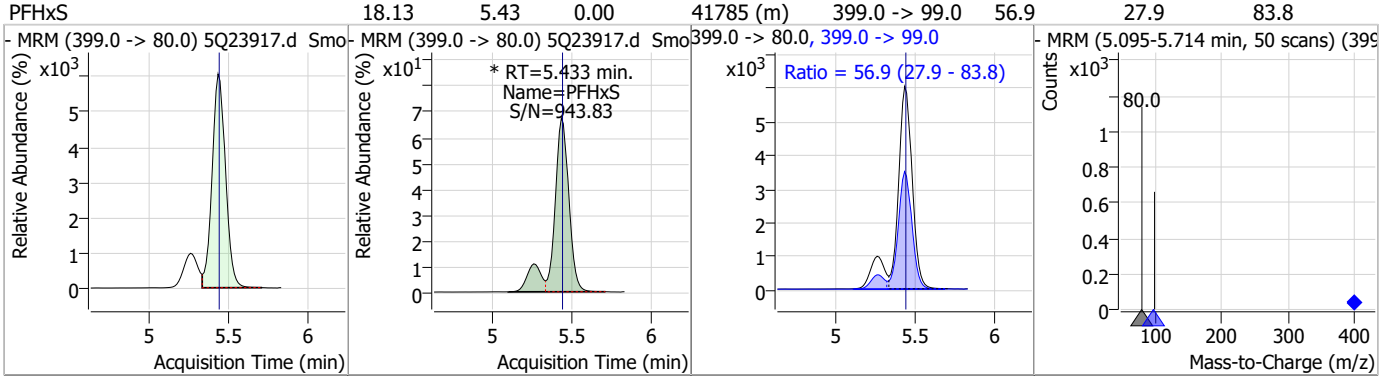
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	21.52	5.41	0.00	304980	363.0 -> 169.0	20.8	10.6	31.7



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	10.52	5.43	0.00	12420				

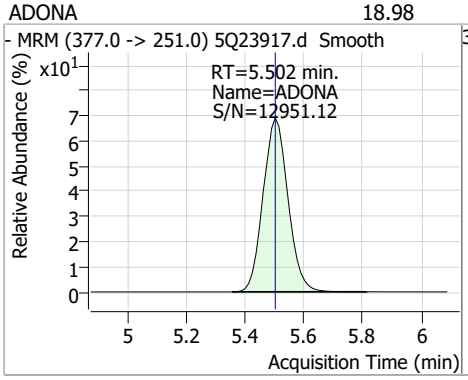


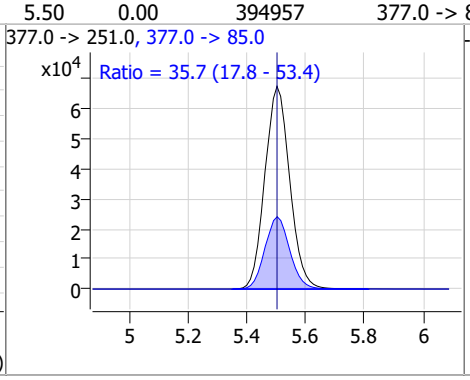
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	18.13	5.43	0.00	41785 (m)	399.0 -> 99.0	56.9	27.9	83.8

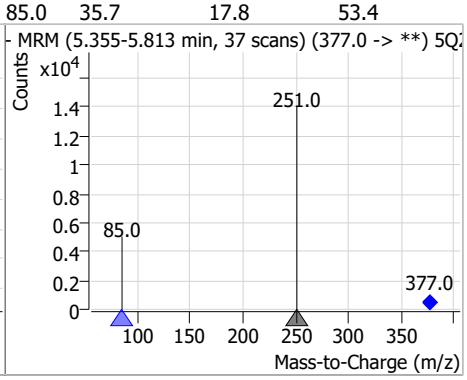


Perfluorinated Compounds by LC/MS/MS

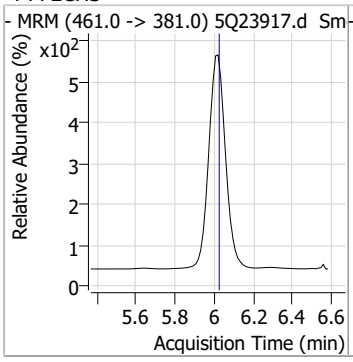
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	18.98	5.50	0.00	394957	377.0 -> 85.0	35.7	17.8	53.4

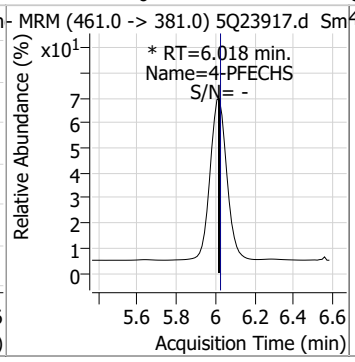


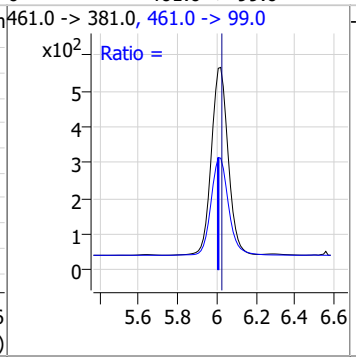


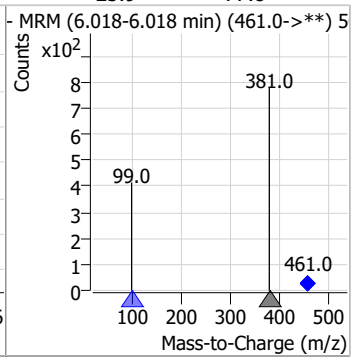


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS		0		0	461.0 -> 99.0		25.9	77.8

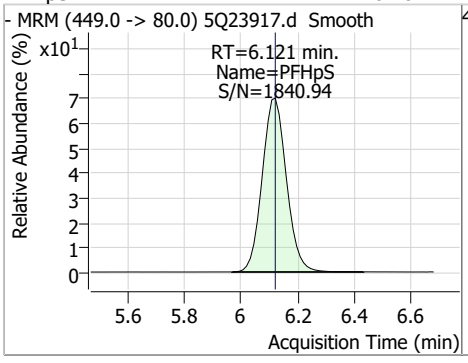


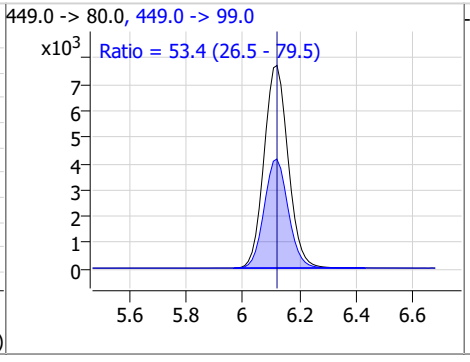


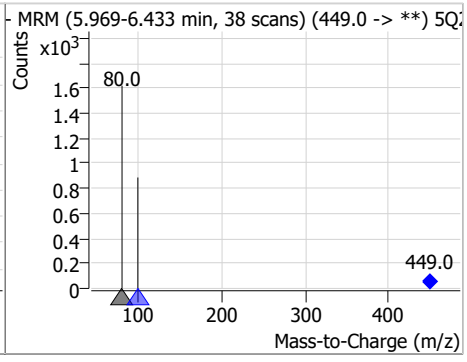




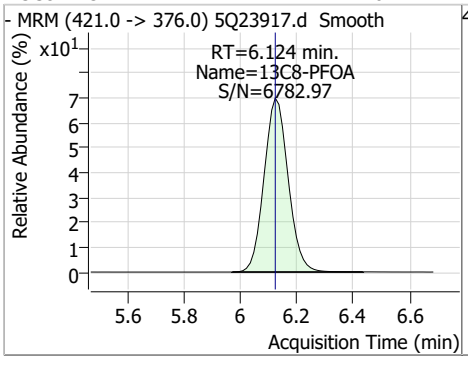
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	20.28	6.12	0.00	45577	449.0 -> 99.0	53.4	26.5	79.5

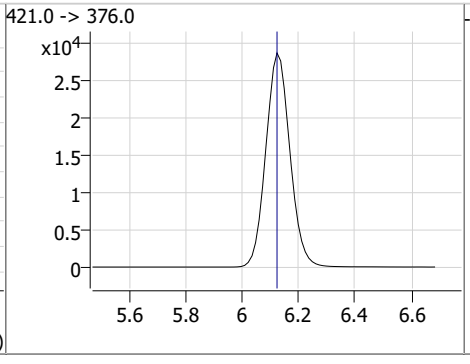


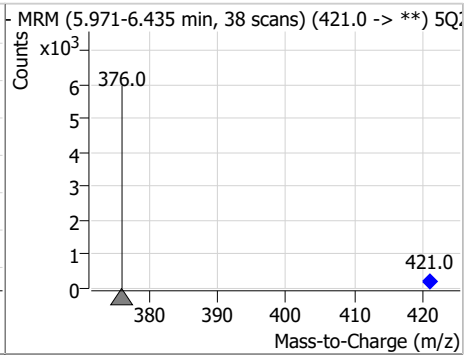




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	10.27	6.12	0.00	169956				

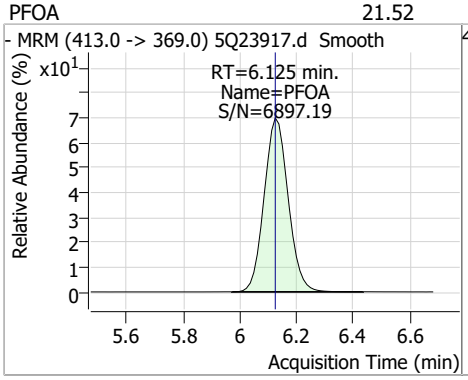


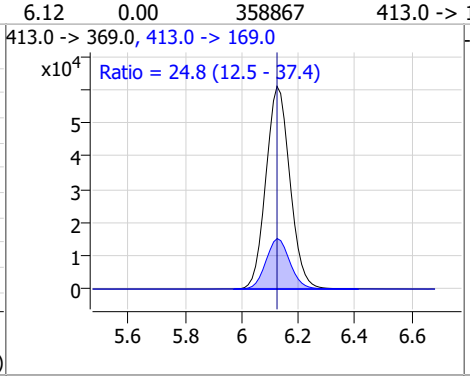


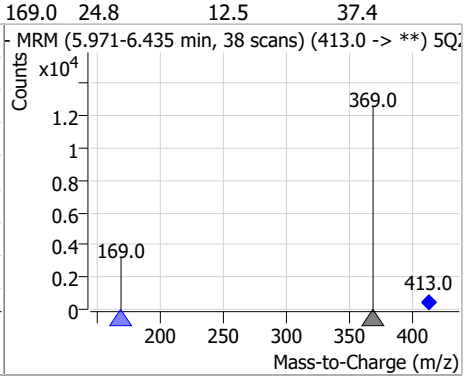


Perfluorinated Compounds by LC/MS/MS

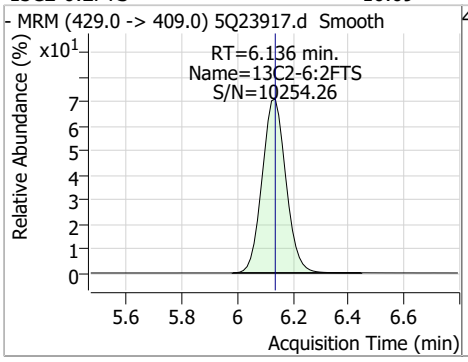
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	21.52	6.12	0.00	358867	413.0 -> 169.0	24.8	12.5	37.4

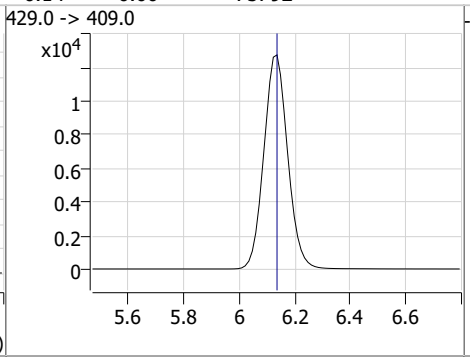


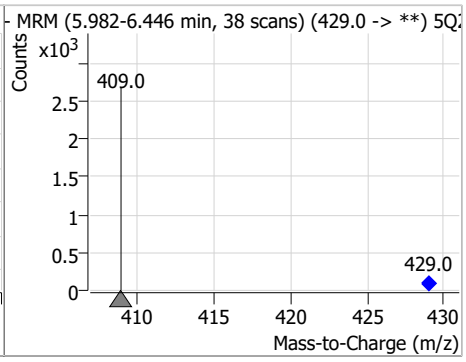




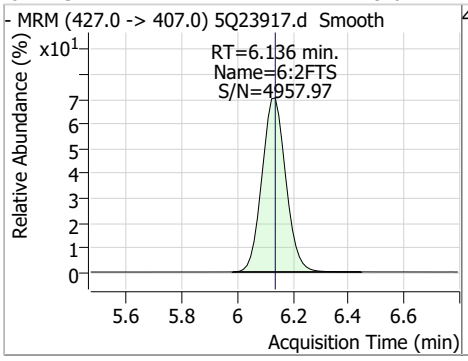
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	10.69	6.14	0.00	75792				

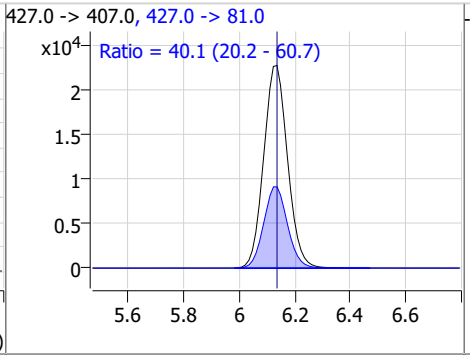


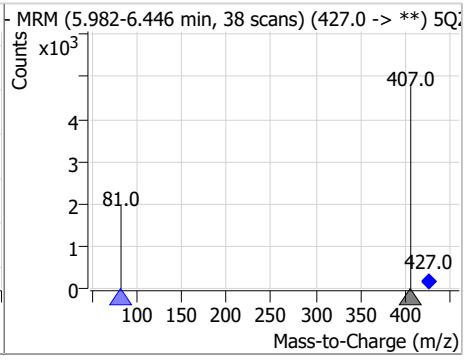




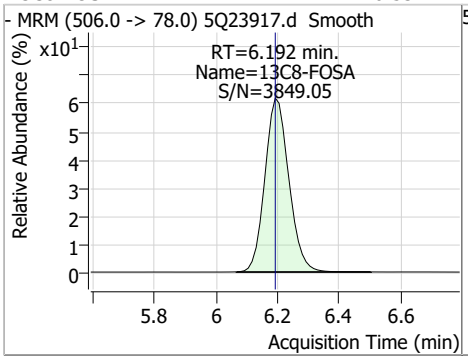
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	19.67	6.14	0.00	136391	427.0 -> 81.0	40.1	20.2	60.7

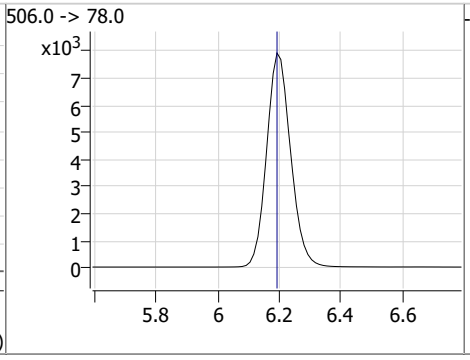


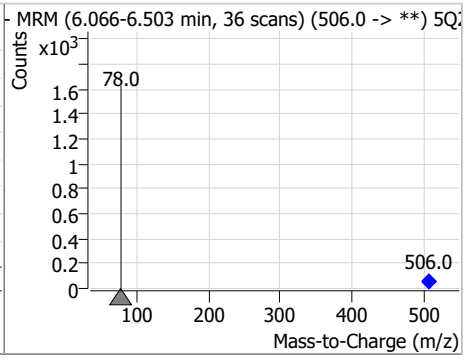




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	10.53	6.19	0.00	42665				

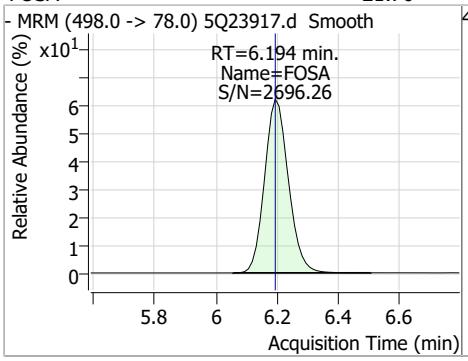


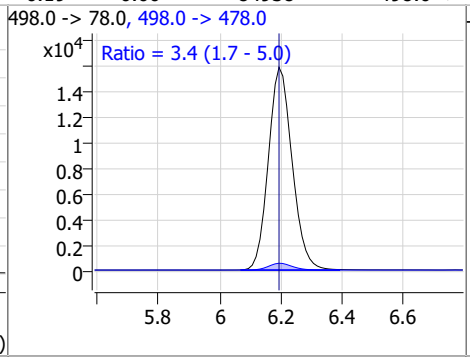


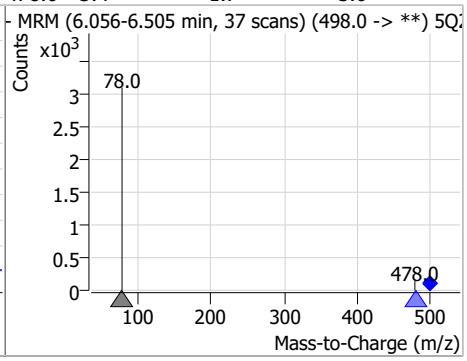


Perfluorinated Compounds by LC/MS/MS

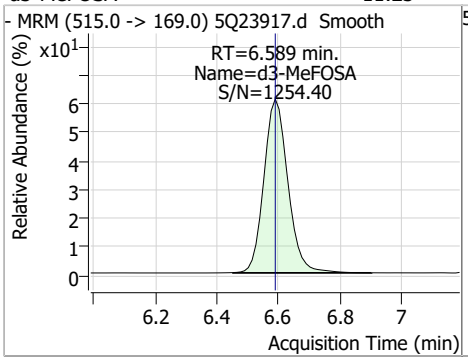
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	21.70	6.19	0.00	84938	498.0 -> 478.0	3.4	1.7	5.0

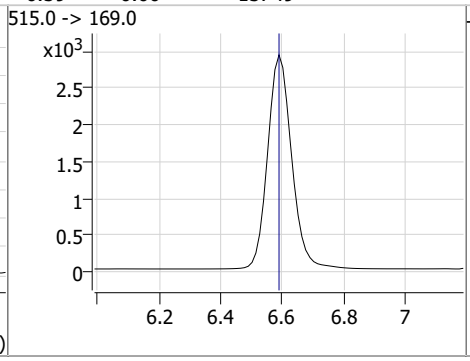


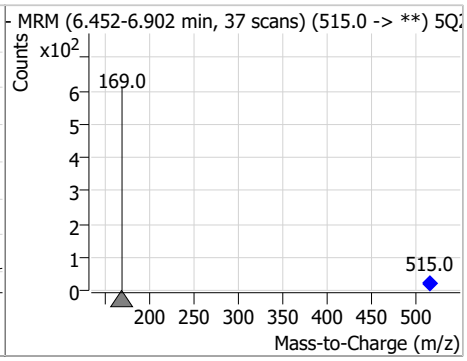




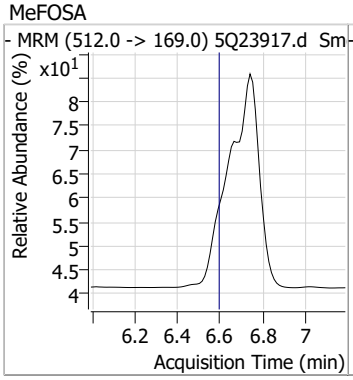
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	11.23	6.59	0.00	15749				

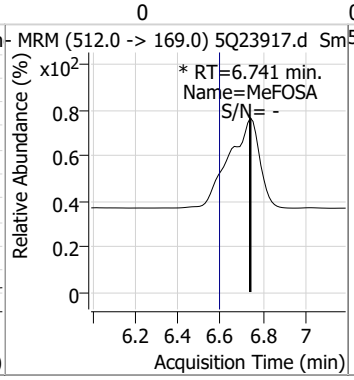


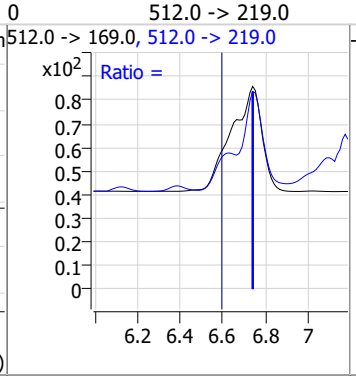


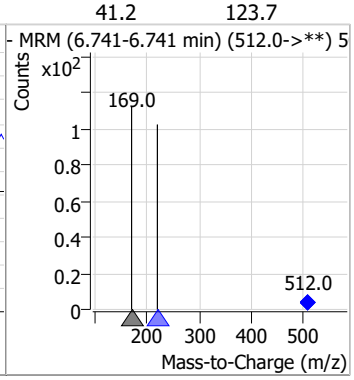


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA		0		0	512.0 -> 219.0		41.2	123.7

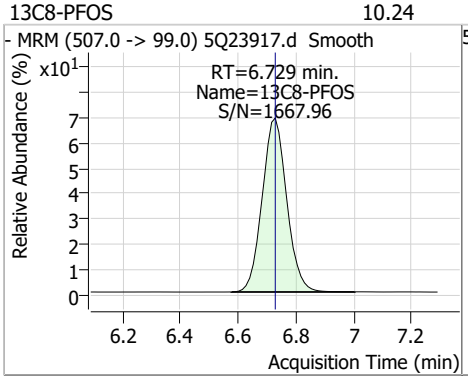


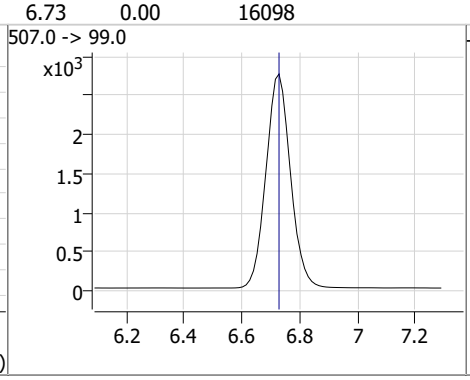


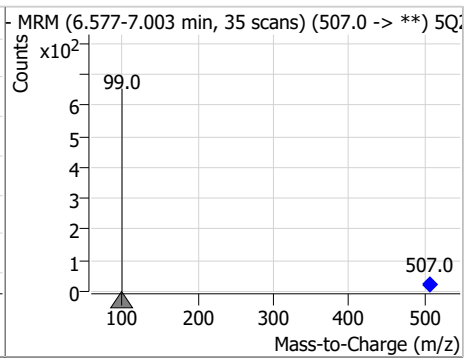




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	10.24	6.73	0.00	16098				

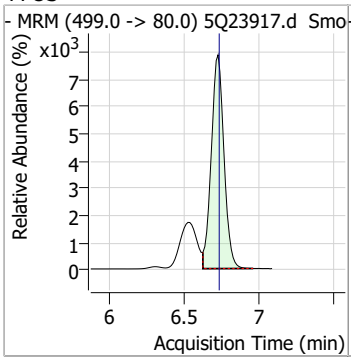


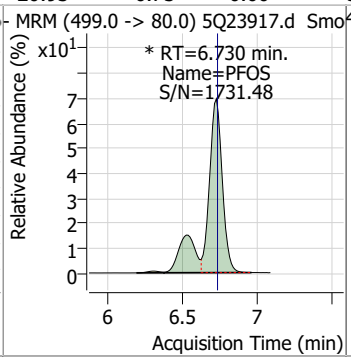


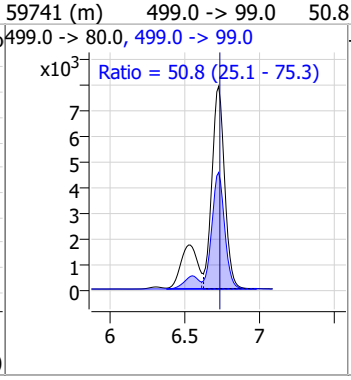


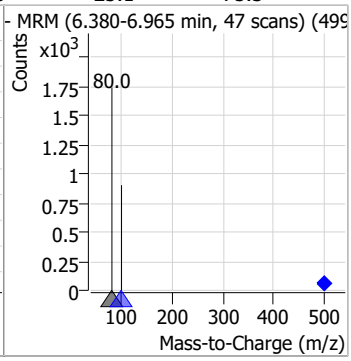
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	20.93	6.73	0.00	59741 (m)	499.0 -> 99.0	50.8	25.1	75.3

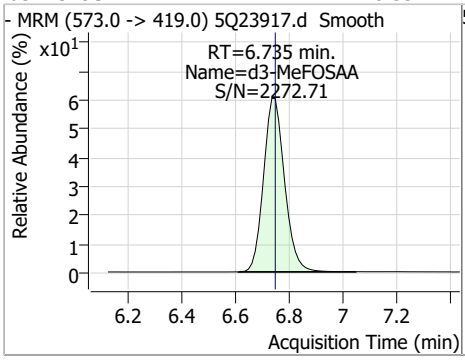


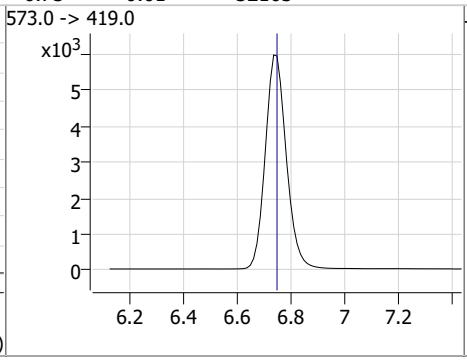


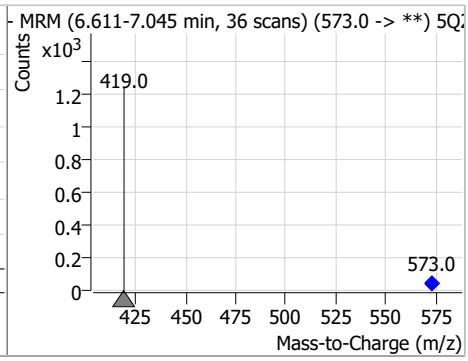




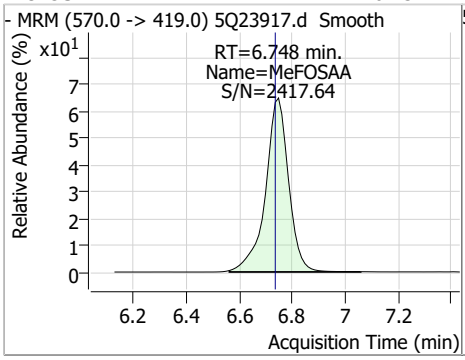
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	10.53	6.73	-0.01	32103				

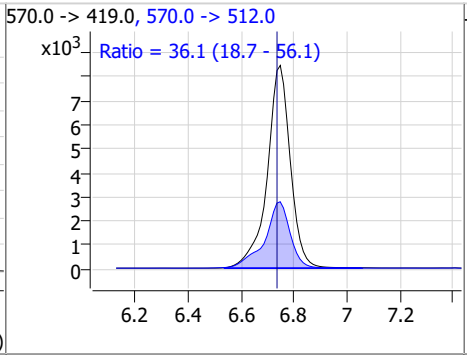


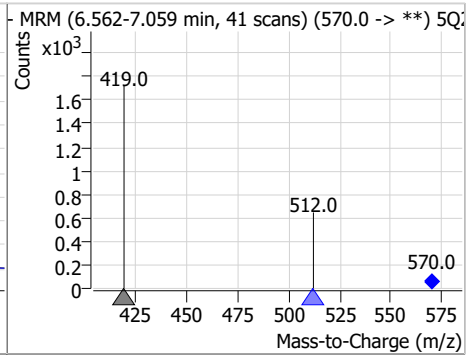




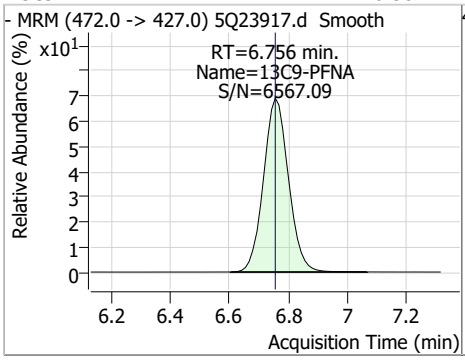
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	20.43	6.75	0.00	51194	570.0 -> 512.0	36.1	18.7	56.1

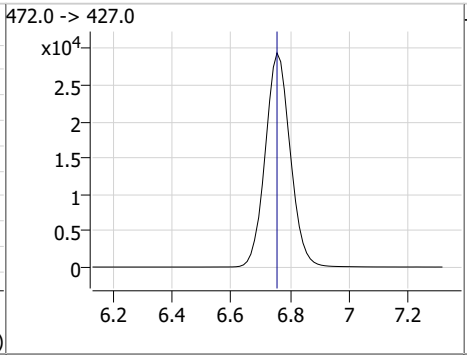


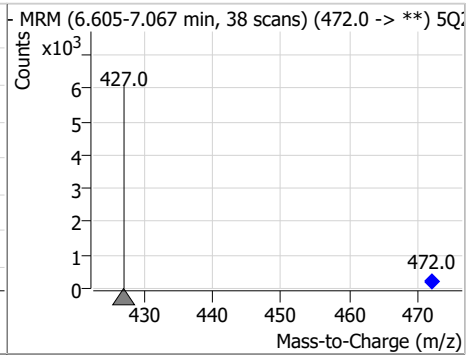




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	10.36	6.76	0.00	172067				

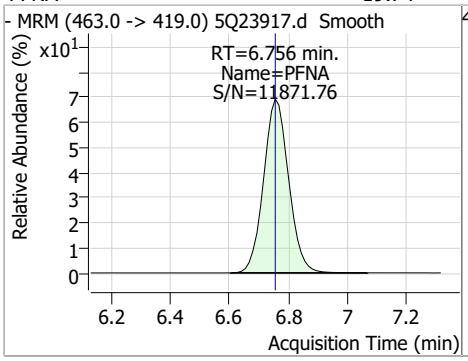


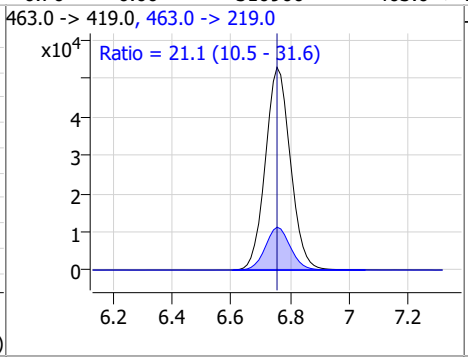


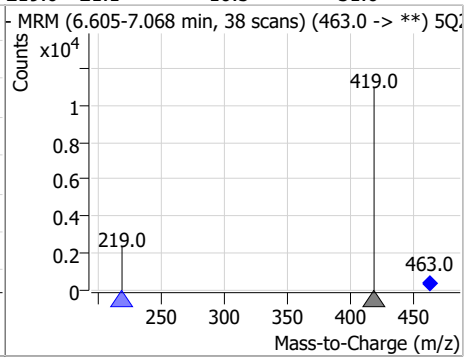


Perfluorinated Compounds by LC/MS/MS

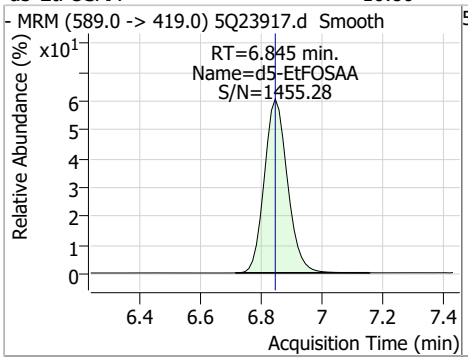
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	19.74	6.76	0.00	310960	463.0 -> 219.0	21.1	10.5	31.6

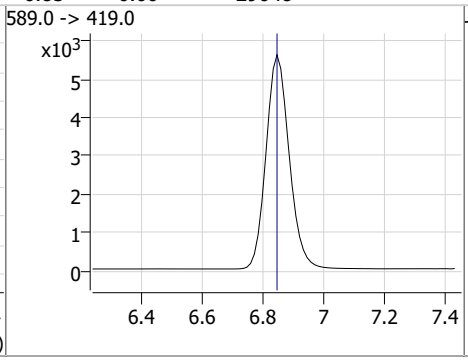


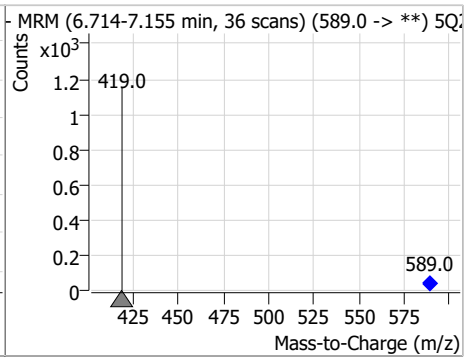




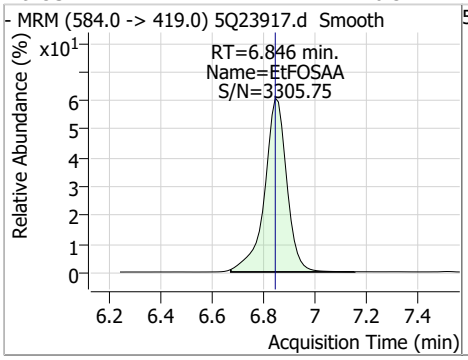
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	10.80	6.85	0.00	29648				

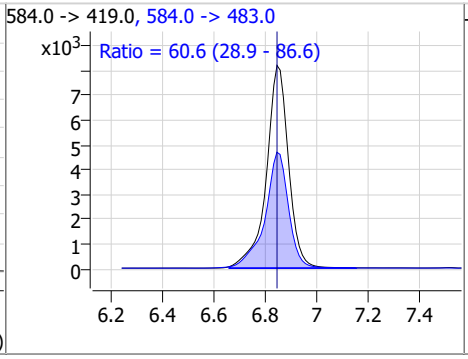


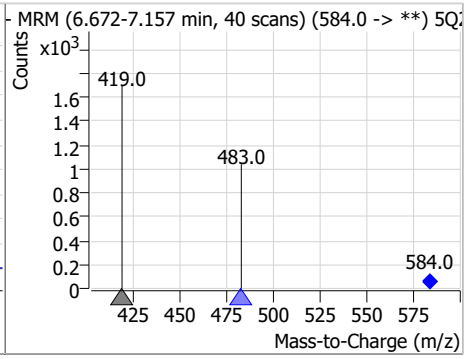




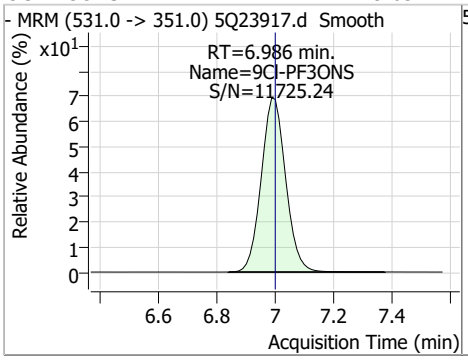
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	20.32	6.85	0.00	49165	584.0 -> 483.0	60.6	28.9	86.6

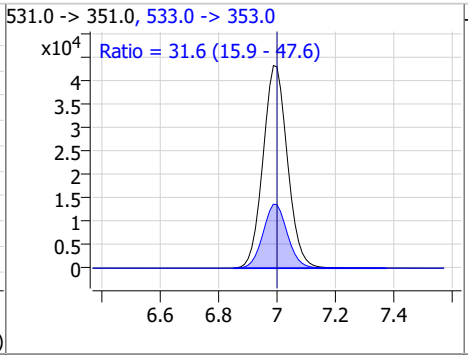


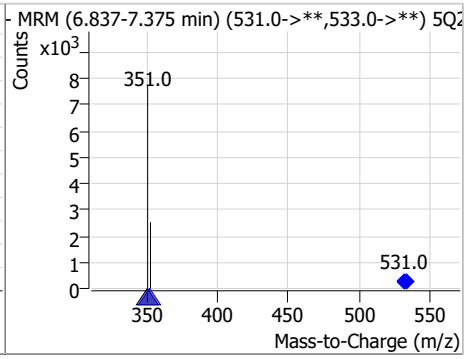




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	19.03	6.99	-0.01	251851	533.0 -> 353.0	31.6	15.9	47.6

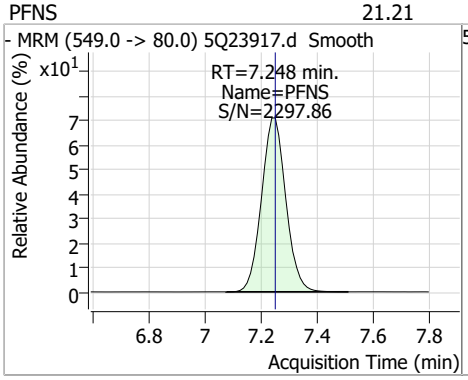


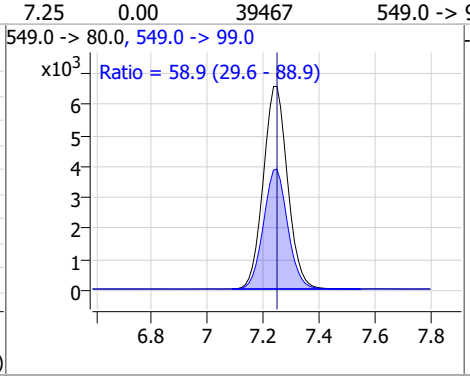


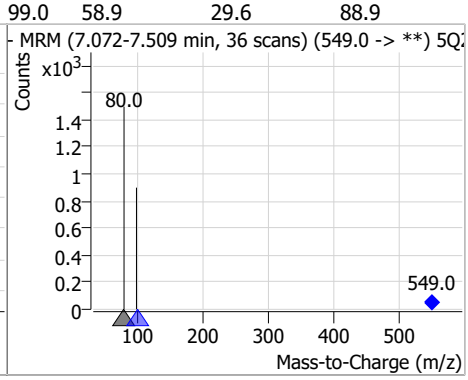


Perfluorinated Compounds by LC/MS/MS

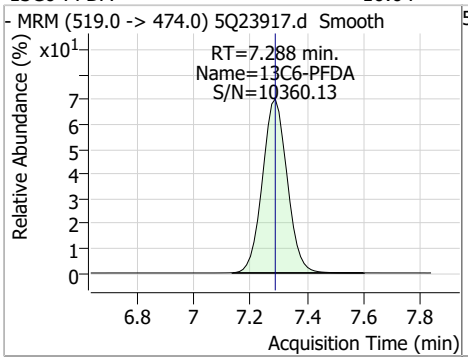
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	21.21	7.25	0.00	39467	549.0 -> 99.0	58.9	29.6	88.9

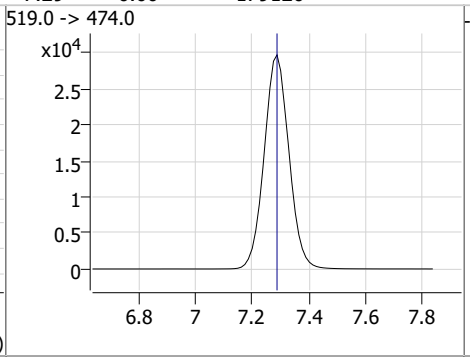


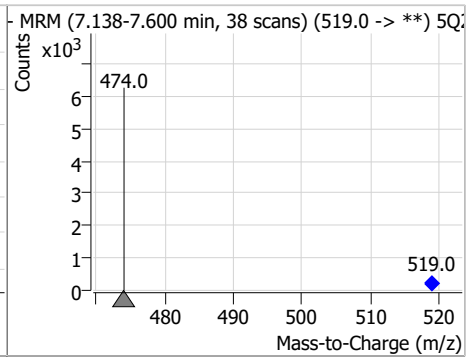




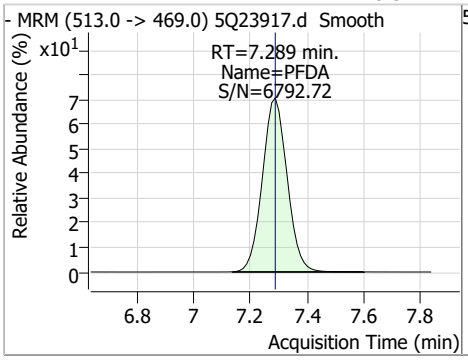
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	10.64	7.29	0.00	179120				

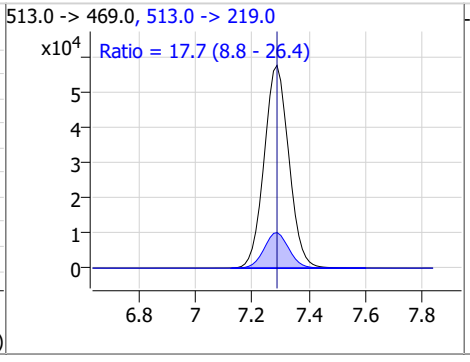


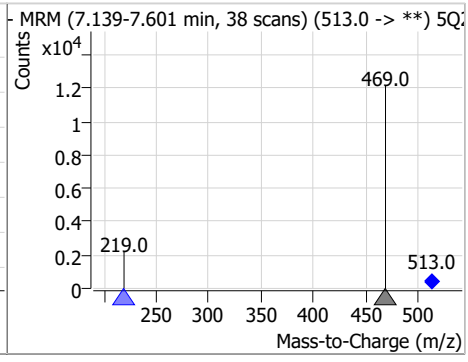




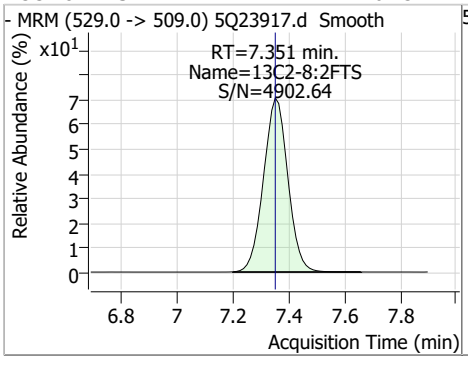
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	20.51	7.29	0.00	349076	513.0 -> 219.0	17.7	8.8	26.4

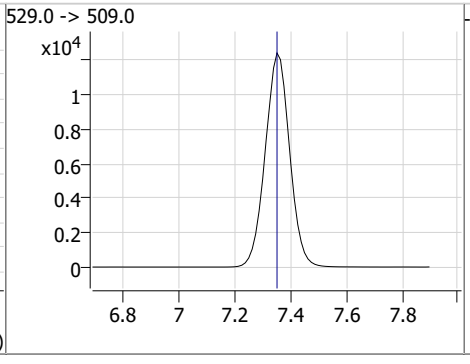


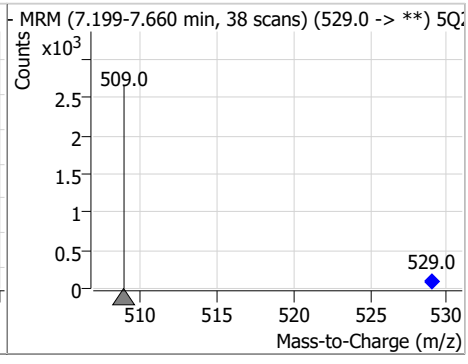




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	10.73	7.35	0.00	74912				

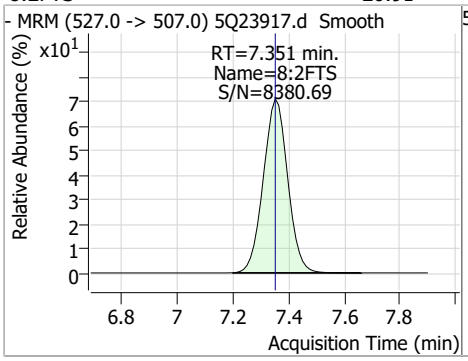


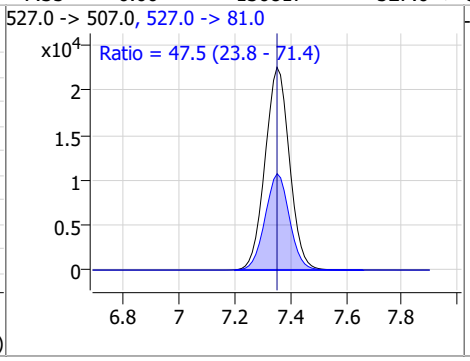


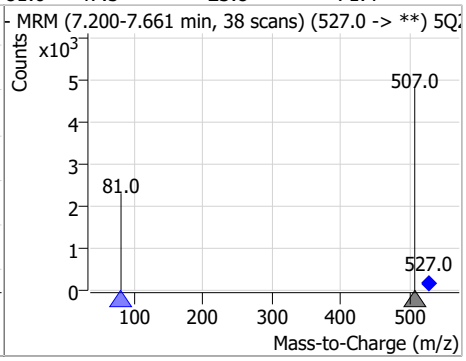


Perfluorinated Compounds by LC/MS/MS

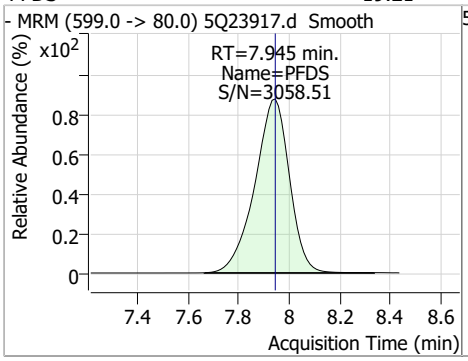
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	20.91	7.35	0.00	136817	527.0 -> 81.0	47.5	23.8	71.4

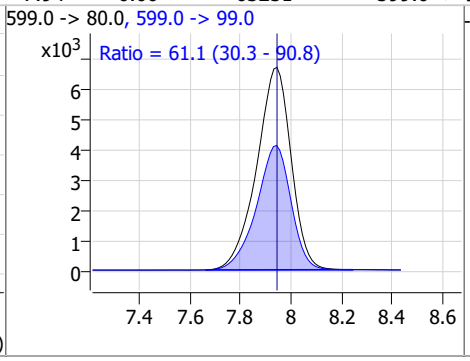


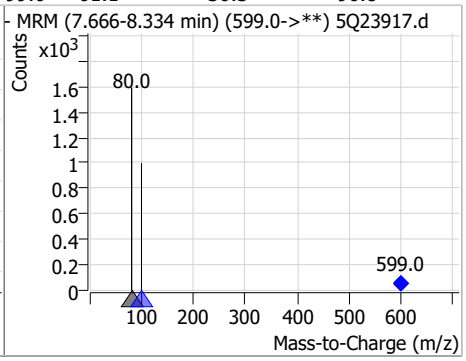




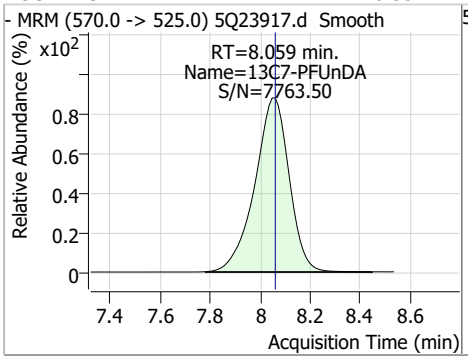
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	19.21	7.94	0.00	63251	599.0 -> 99.0	61.1	30.3	90.8

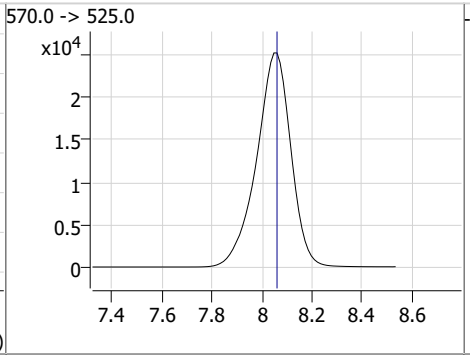


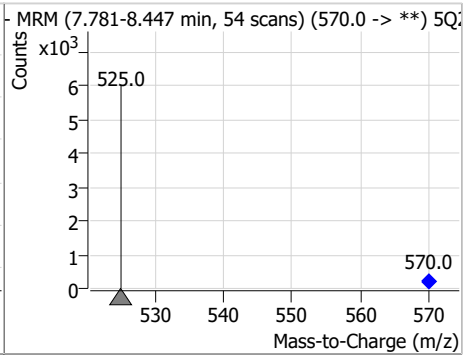




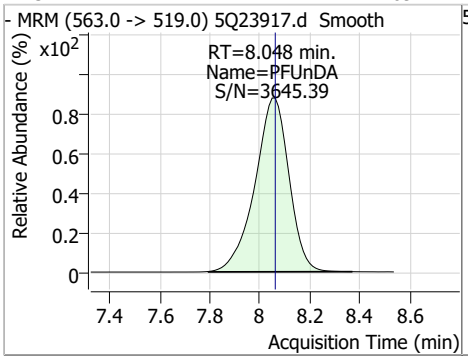
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	10.35	8.06	0.00	241176				

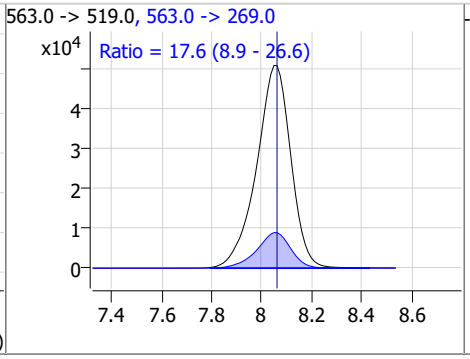


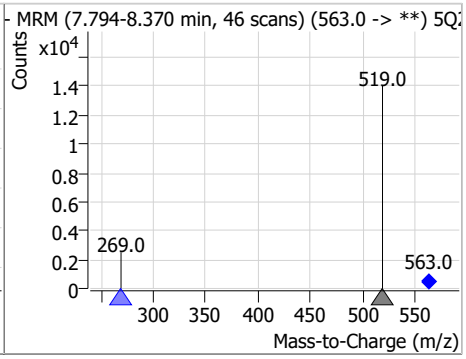




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	22.09	8.05	-0.01	480599	563.0 -> 269.0	17.6	8.9	26.6

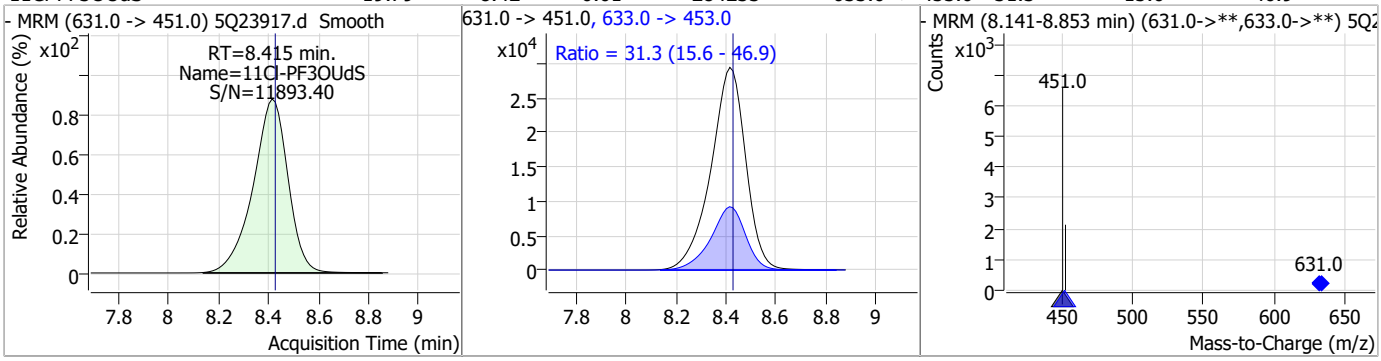




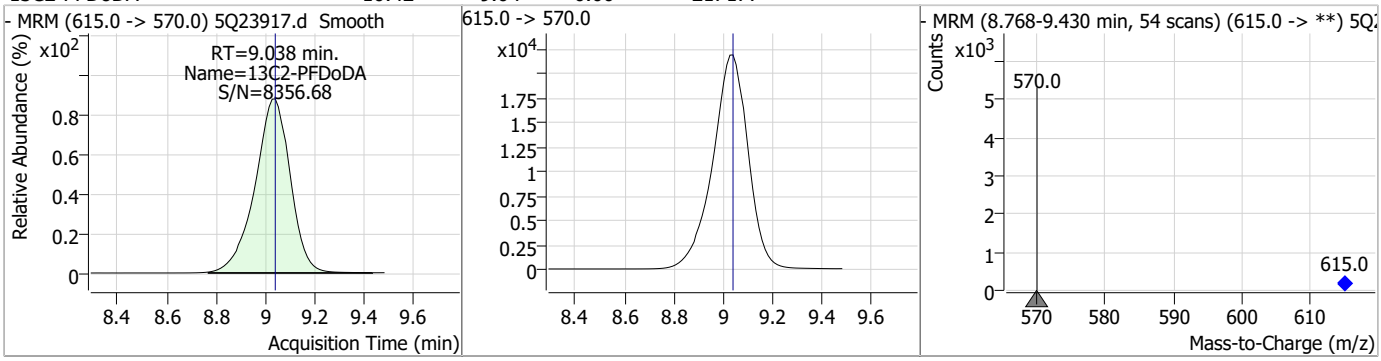


Perfluorinated Compounds by LC/MS/MS

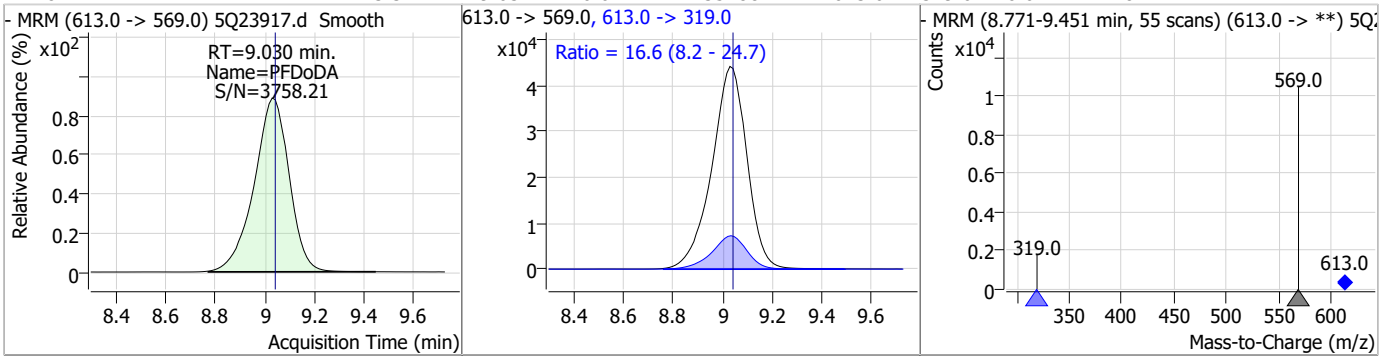
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	19.79	8.42	-0.01	284233	633.0 -> 453.0	31.3	15.6	46.9



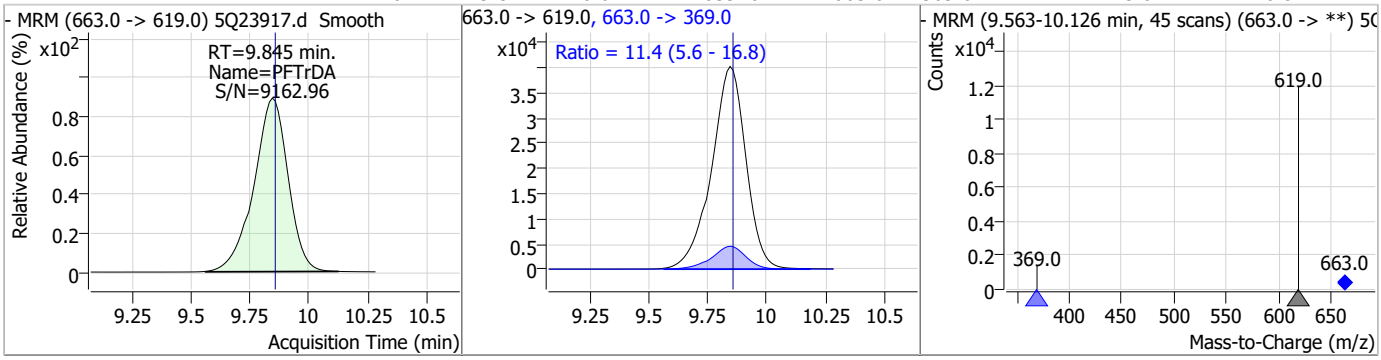
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	10.42	9.04	0.00	217177				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	23.34	9.03	-0.01	435188	613.0 -> 319.0	16.6	8.2	24.7

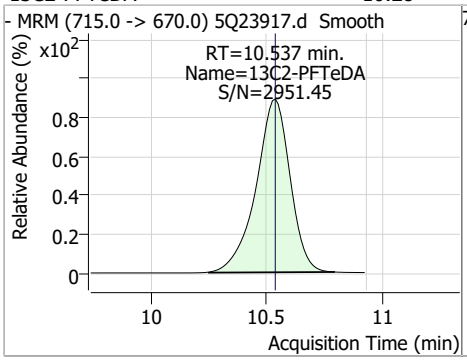


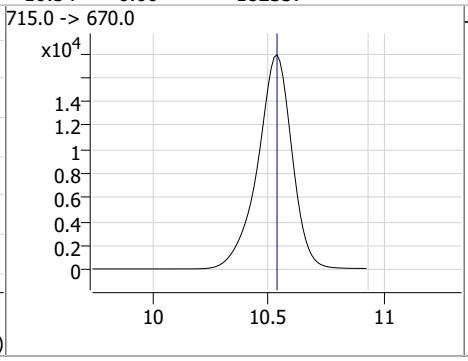
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	21.64	9.84	-0.01	403910	663.0 -> 369.0	11.4	5.6	16.8

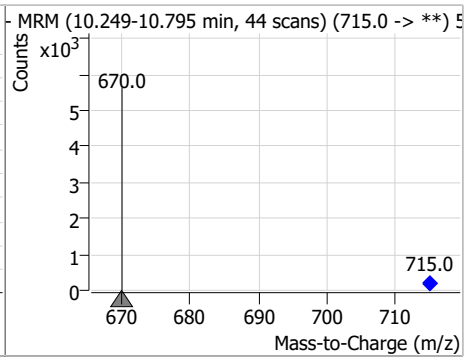


Perfluorinated Compounds by LC/MS/MS

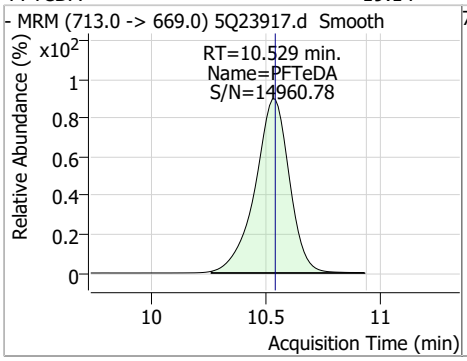
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	10.28	10.54	0.00	182337				

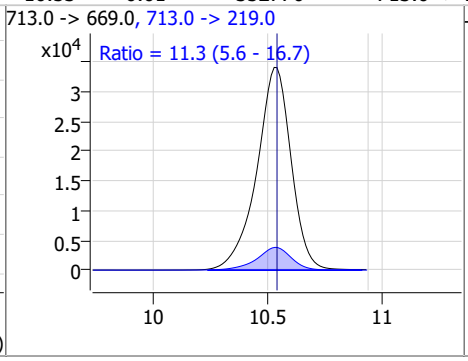


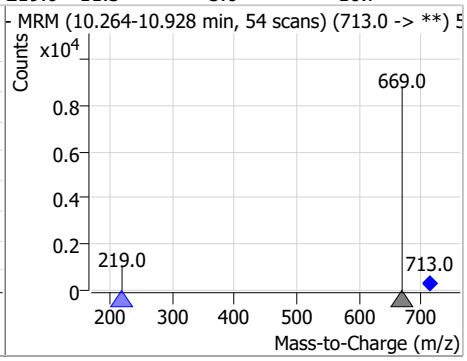




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	19.14	10.53	-0.01	352770	713.0 -> 219.0	11.3	5.6	16.7







9.6.25

9

Manual Integration Approval Summary

Sample Number: S5Q375-ICV375
Lab FileID: 5Q23917.D
Injection Time: 12/28/23 17:02
Method: EPA 537M QSM5.3 B-15
Analyst approved: 12/29/23 14:15 Lindsay Ritner
Supervisor approved: 01/02/24 14:05 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.43	Split peak
Perfluorooctanesulfonic acid	1763-23-1		6.73	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Natasha Gumtie 01/02/24 14:05

Perfluorinated Compounds by LC/MS/MS

Data File : 5Q23918.d
Operator : natashag
Acq. Method : 537_ID.m
Acq. Date-Time : 12/28/2023 5:19:18 PM
Sample Name : icv375-20
Vial : P1-B2
DA Method File : ID_122823_S5Q375.quantmethod.xml
Batch Name : s5q375.batch.bin
Sample Information : OP401,S5Q375,250,,,1.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	1.987	217.0 -> 172.0	48985	10.00 µg/L	0.000
M5-PFPeA	3.432	268.0 -> 223.0	81611	10.00 µg/L	0.000
M5-PFHxA	4.552	318.0 -> 273.0	123091	10.00 µg/L	0.000
M4-PFHpA	5.413	367.0 -> 322.0	122957	10.00 µg/L	0.000
M8-PFOA	6.124	421.0 -> 376.0	174121	10.00 µg/L	0.000
M9-PFNA	6.756	472.0 -> 427.0	172036	10.00 µg/L	0.000
M6-PFDA	7.288	519.0 -> 474.0	177973	10.00 µg/L	0.000
M7-PFUnDA	8.047	570.0 -> 525.0	242712	10.00 µg/L	-0.013
M2-PFDoDA	9.026	615.0 -> 570.0	214615	10.00 µg/L	-0.013
M2-PFTeDA	10.537	715.0 -> 670.0	182544	10.00 µg/L	0.000
M8-FOSA	6.192	506.0 -> 78.0	43698	10.00 µg/L	0.000
M3-PFBS	3.624	302.0 -> 99.0	9855	10.00 µg/L	-0.012
M3-PFHxS	5.432	402.0 -> 99.0	11947	10.00 µg/L	0.000
M8-PFOS	6.729	507.0 -> 99.0	16517	10.00 µg/L	0.000
M2-4:2FTS	4.474	329.0 -> 309.0	42888	10.00 µg/L	0.000
M2-6:2FTS	6.136	429.0 -> 409.0	76033	10.00 µg/L	0.000
M2-8:2FTS	7.351	529.0 -> 509.0	74807	10.00 µg/L	0.000
M3-MeFOSAA	6.735	573.0 -> 419.0	30874	10.00 µg/L	-0.012
M3-HFPO-DA	4.819	287.0 -> 169.0	6411	10.00 µg/L	0.000
M3-MeFOSA	6.589	515.0 -> 169.0	14672	10.00 µg/L	0.000
M5-EtFOSAA	6.845	589.0 -> 419.0	29520	10.00 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	4.474	329.0 -> 309.0	42888	10.67 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 106.7%	
13C2-6:2FTS	6.136	429.0 -> 409.0	76033	10.73 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 107.3%	
13C2-8:2FTS	7.351	529.0 -> 509.0	74807	10.71 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 107.1%	
13C2-PFDoDA	9.026	615.0 -> 570.0	214615	10.29 µg/L	-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 102.9%	
13C2-PFTeDA	10.537	715.0 -> 670.0	182544	10.29 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 102.9%	
13C3-PFBS	3.624	302.0 -> 99.0	9855	10.15 µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.5%	
13C3-PFHxS	5.432	402.0 -> 99.0	11947	10.12 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.2%	
13C4-PFBA	1.987	217.0 -> 172.0	48985	10.37 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 103.7%	
13C4-PFHpA	5.413	367.0 -> 322.0	122957	10.22 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 102.2%	
13C5-PFHxA	4.552	318.0 -> 273.0	123091	10.30 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 103.0%	
13C5-PFPeA	3.432	268.0 -> 223.0	81611	10.35 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 103.5%	
13C6-PFDA	7.288	519.0 -> 474.0	177973	10.57 µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 105.7%			
13C7-PFUnDA	8.047	570.0 -> 525.0	242712	10.41	µg/L		-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 104.1%			
13C8-FOSA	6.192	506.0 -> 78.0	43698	10.78	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 107.8%			
13C8-PFOA	6.124	421.0 -> 376.0	174121	10.52	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 105.2%			
13C8-PFOS	6.729	507.0 -> 99.0	16517	10.51	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 105.1%			
13C9-PFNA	6.756	472.0 -> 427.0	172036	10.36	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 103.6%			
d3-MeFOSAA	6.735	573.0 -> 419.0	30874	10.13	µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.3%			
13C3-HFPO-DA	4.819	287.0 -> 169.0	6411	9.93	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.3%			
d3-MeFOSA	6.589	515.0 -> 169.0	14672	10.46	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 104.6%			
d5-EtFOSAA	6.845	589.0 -> 419.0	29520	10.76	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 107.6%			
Target Compounds							QValue
4:2FTS	4.475	327.0 -> 307.0	82460	19.52	µg/L		100
		327.0 -> 81.0	46359				
6:2FTS	6.136	427.0 -> 407.0	127489	18.33	µg/L		100
		427.0 -> 81.0	51555				
8:2FTS	7.351	527.0 -> 507.0	126388	19.34	µg/L		99
		527.0 -> 81.0	61124				
EtFOSAA	6.846	584.0 -> 419.0	39010	16.20	µg/L		96
		584.0 -> 483.0	23780				
FOSA	6.194	498.0 -> 78.0	74399	18.56	µg/L		100
		498.0 -> 478.0	2390				
MeFOSAA	6.748	570.0 -> 419.0	42559	17.66	µg/L		98
		570.0 -> 512.0	15447				
PFBA	1.994	213.0 -> 169.0	85759	18.90	µg/L		100
PFBS	3.628	299.0 -> 80.0	45023	18.46	µg/L		100
		299.0 -> 99.0	19842				
PFDA	7.289	513.0 -> 469.0	301430	17.83	µg/L		99
		513.0 -> 219.0	54347				
PFDoDA	9.030	613.0 -> 569.0	387734	21.05	µg/L		100
		613.0 -> 319.0	64284				
PFDS	7.945	599.0 -> 80.0	59538	17.97	µg/L		100
		599.0 -> 99.0	36111				
PFHpA	5.413	363.0 -> 319.0	239507	16.98	µg/L		100
		363.0 -> 169.0	50183				
PFHpS	6.121	449.0 -> 80.0	42573	18.46	µg/L		97
		449.0 -> 99.0	23320				
PFHxA	4.553	313.0 -> 269.0	207850	17.45	µg/L		100
		313.0 -> 119.0	8520				
PFHxS	5.433	399.0 -> 80.0	41252	18.61	µg/L	m	99
		399.0 -> 99.0	23225				
PFNA	6.756	463.0 -> 419.0	289301	18.37	µg/L		100
		463.0 -> 219.0	61252				
PFNS	7.248	549.0 -> 80.0	0		µg/L	m	1
		549.0 -> 99.0	0				
PFOA	6.125	413.0 -> 369.0	315659	18.48	µg/L		100
		413.0 -> 169.0	78050				
PFOS	6.730	499.0 -> 80.0	54125	18.48	µg/L		89

Perfluorinated Compounds by LC/MS/MS

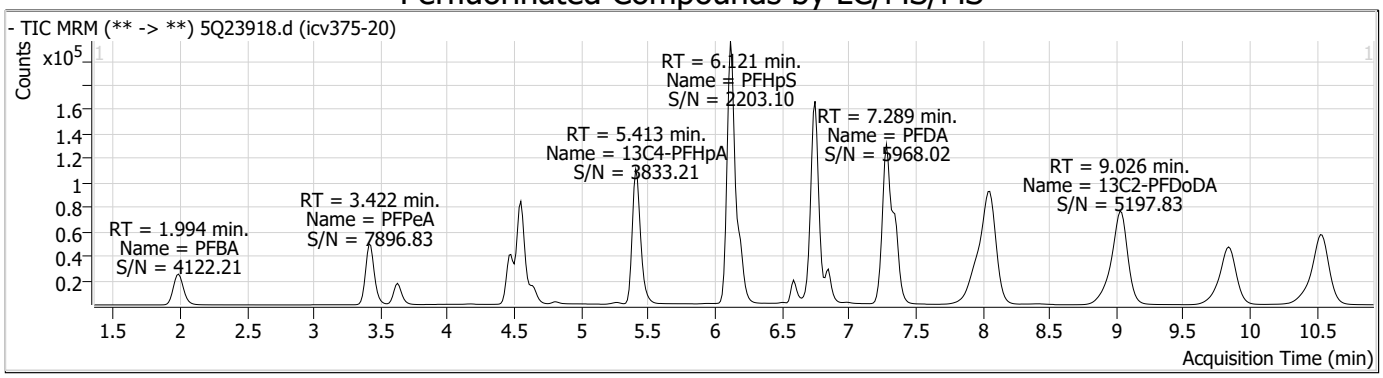
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
		499.0 -> 99.0	31453				
PFPeA	3.422	263.0 -> 219.0	148142	18.72	µg/L		100
PFPeS	4.648	349.0 -> 80.0	31387	18.28	µg/L		98
		349.0 -> 99.0	16003				
PFTeDA	10.529	713.0 -> 669.0	315858	17.12	µg/L		99
		713.0 -> 219.0	36191				
PFTrDA	9.845	663.0 -> 619.0	384566	20.85	µg/L		100
		663.0 -> 369.0	43049				
PFUnDA	8.048	563.0 -> 519.0	450916	20.59	µg/L		99
		563.0 -> 269.0	78834				
11Cl-PF3OUdS	8.415	631.0 -> 451.0	0		µg/L	m	1
		633.0 -> 453.0	0				
9Cl-PF3ONS	6.986	531.0 -> 351.0	0		µg/L	m	1
		533.0 -> 353.0	0				
ADONA	5.502	377.0 -> 251.0	0		µg/L	m	1
		377.0 -> 85.0	0				
HFPO-DA	4.815	329.0 -> 169.0	0		µg/L	m	1
		285.0 -> 169.0	0				
MeFOSA	6.590	512.0 -> 169.0	25992	20.48	µg/L		98
		512.0 -> 219.0	20887				
4-PFECHS	-	461.0 -> 381.0	-	N.D.			
		461.0 -> 99.0					
FBSA	4.170	298.0 -> 78.0	0		µg/L	m	1
		298.0 -> 64.0	0				
FHxSA	5.409	398.0 -> 78.0	0		µg/L	m	1
		398.0 -> 64.0	0				

 # = Qualifier out of range, m = manually integrated, + = Area summed

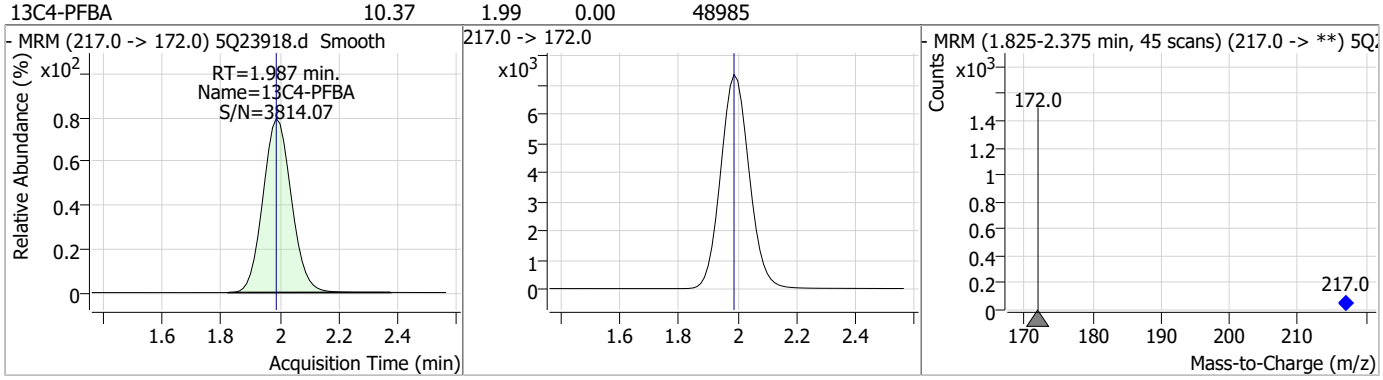
9.6.26

9

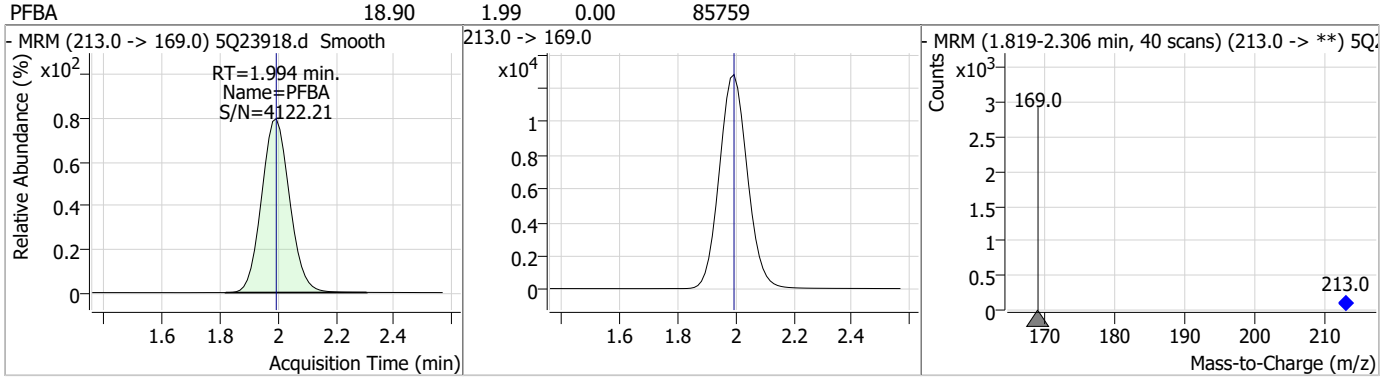
Perfluorinated Compounds by LC/MS/MS



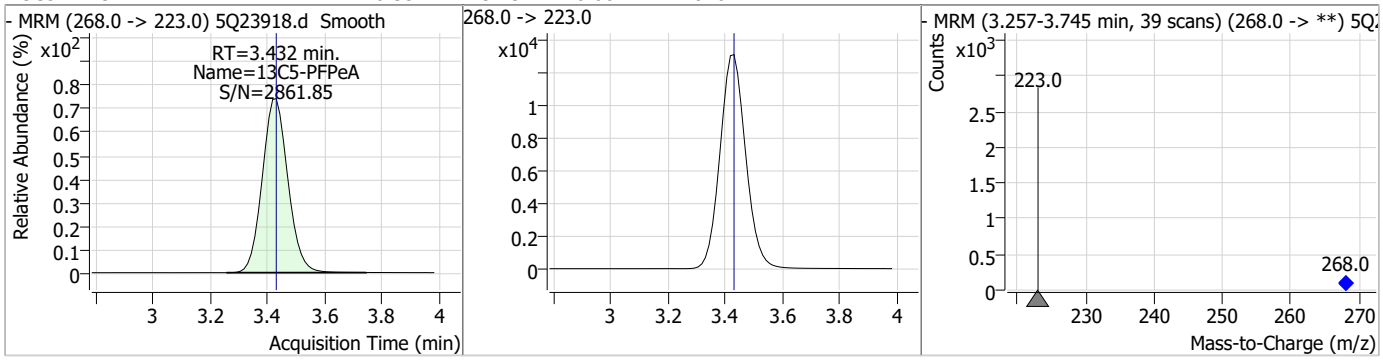
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	10.37	1.99	0.00	48985				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	18.90	1.99	0.00	85759				

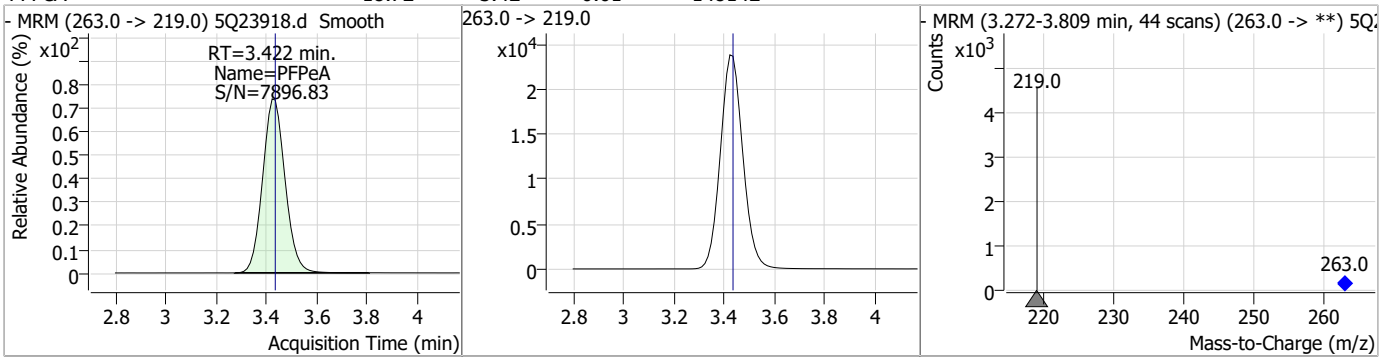


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	10.35	3.43	0.00	81611				

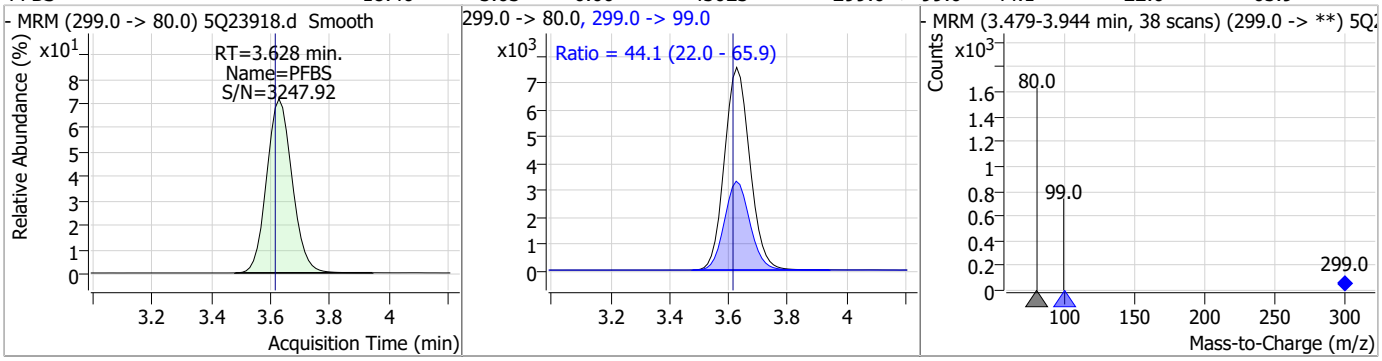


Perfluorinated Compounds by LC/MS/MS

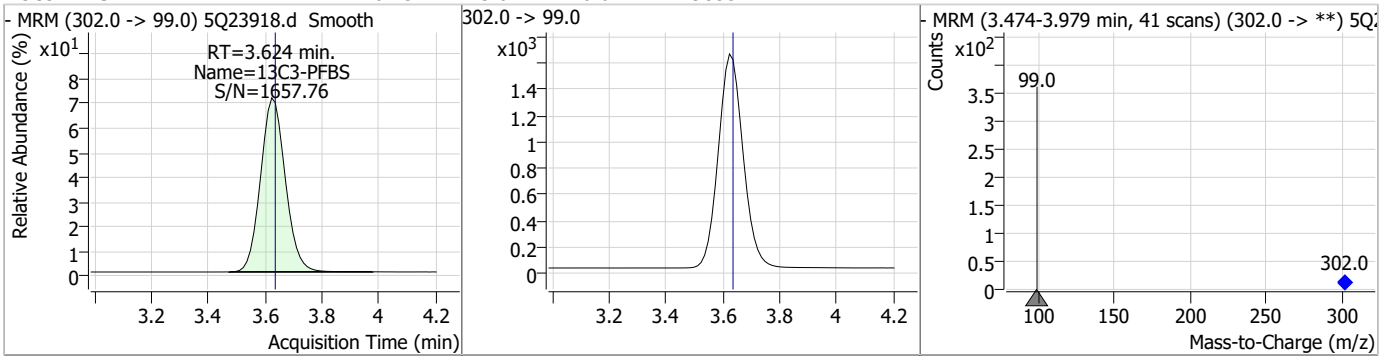
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	18.72	3.42	-0.01	148142				



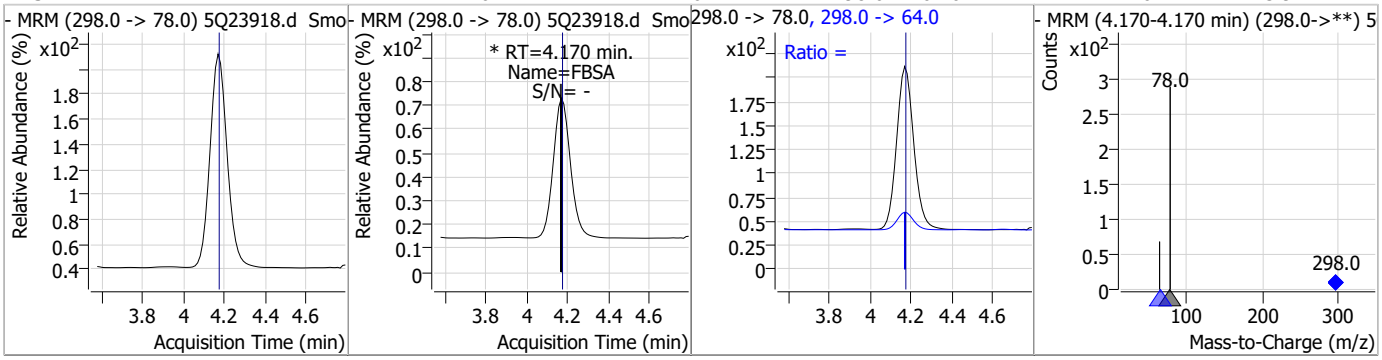
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	18.46	3.63	0.00	45023	299.0 -> 99.0	44.1	22.0	65.9



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	10.15	3.62	-0.01	9855				

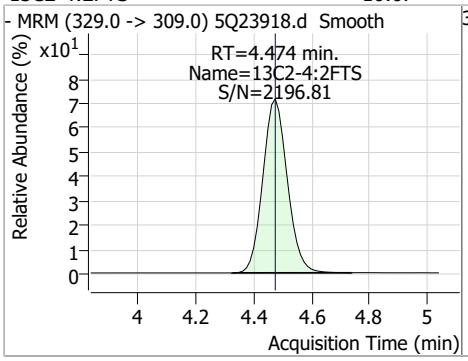


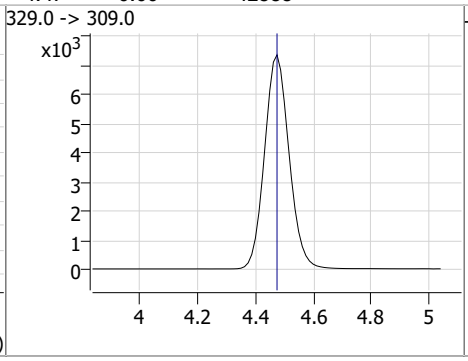
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA		0		0	298.0 -> 64.0		4.6	13.9

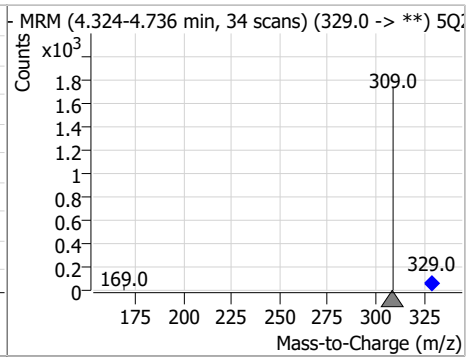


Perfluorinated Compounds by LC/MS/MS

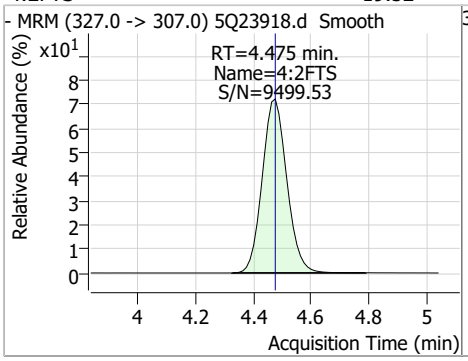
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	10.67	4.47	0.00	42888				

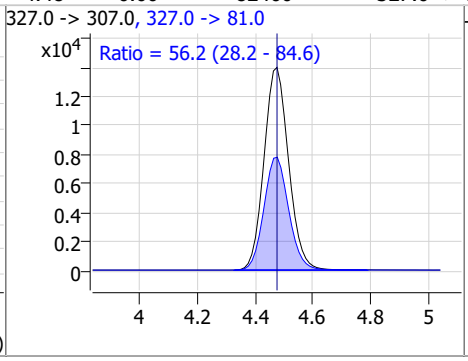


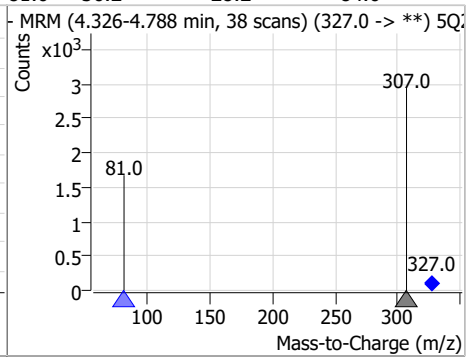




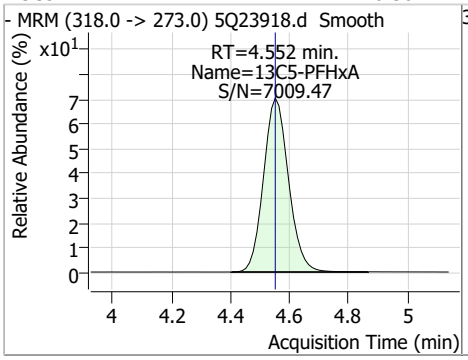
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	19.52	4.48	0.00	82460	327.0 -> 81.0	56.2	28.2	84.6

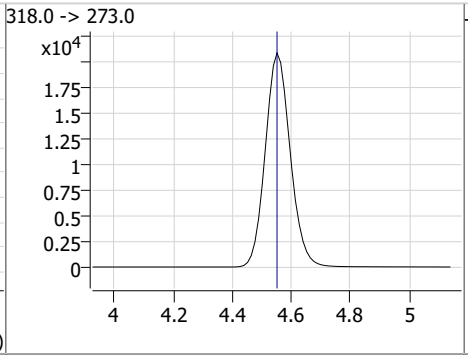


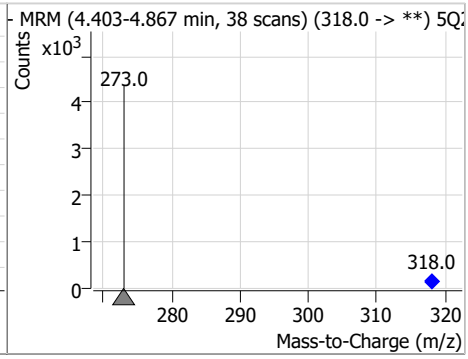




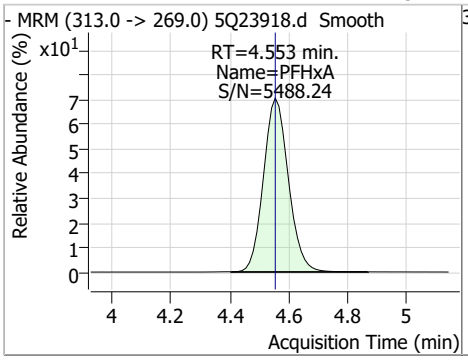
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	10.30	4.55	0.00	123091				

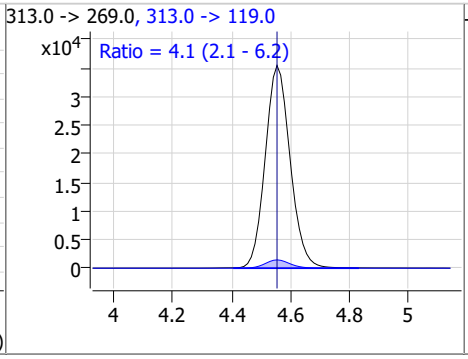


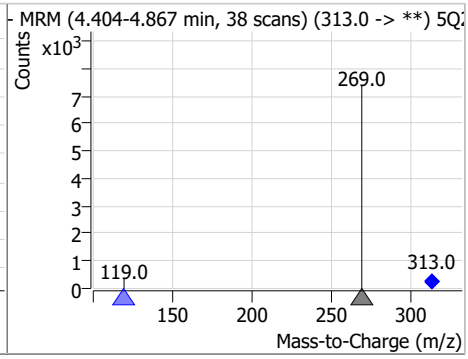




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	17.45	4.55	0.00	207850	313.0 -> 119.0	4.1	2.1	6.2

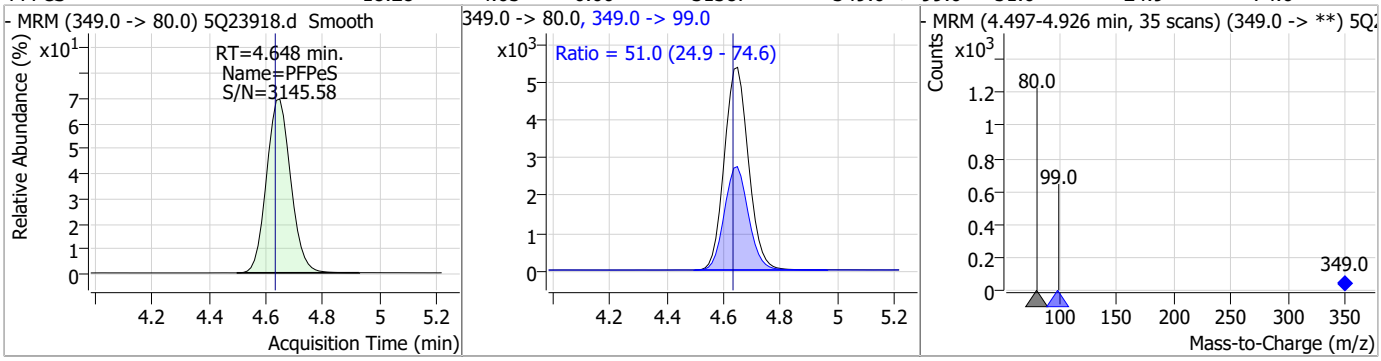




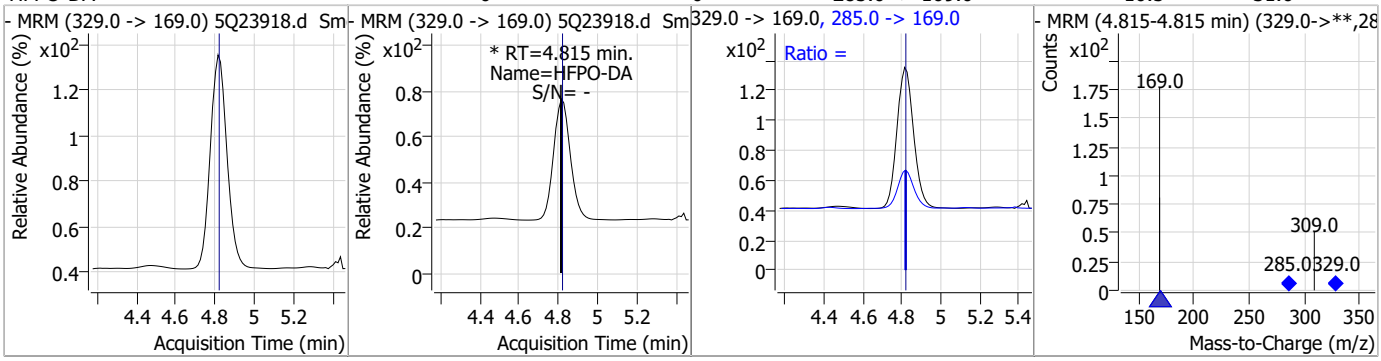


Perfluorinated Compounds by LC/MS/MS

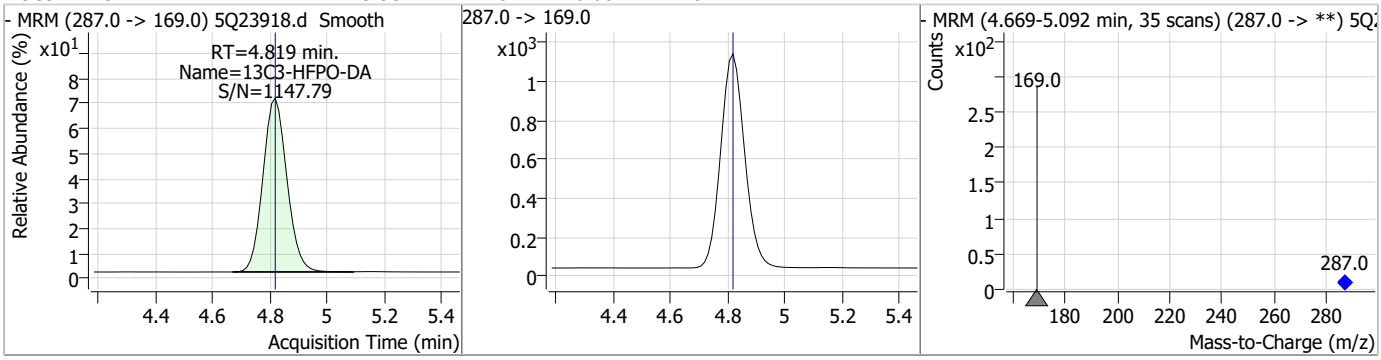
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	18.28	4.65	0.00	31387	349.0 -> 99.0	51.0	24.9	74.6



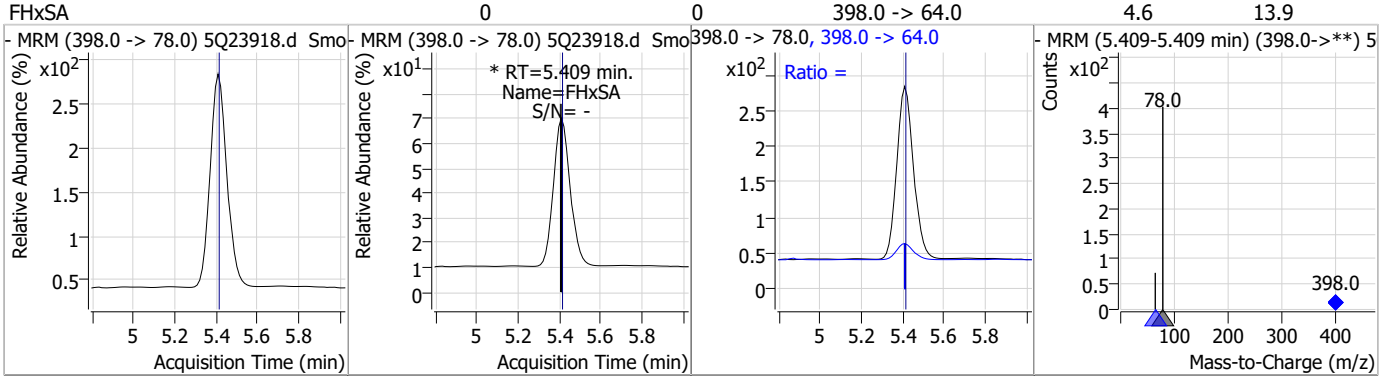
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA		0		0	285.0 -> 169.0		10.5	31.6



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	9.93	4.82	0.00	6411				

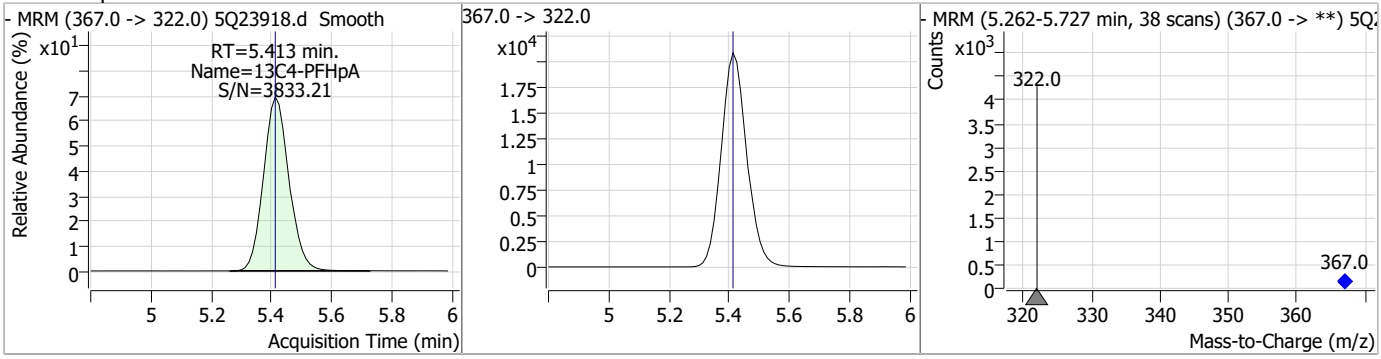


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA		0		0	398.0 -> 64.0		4.6	13.9

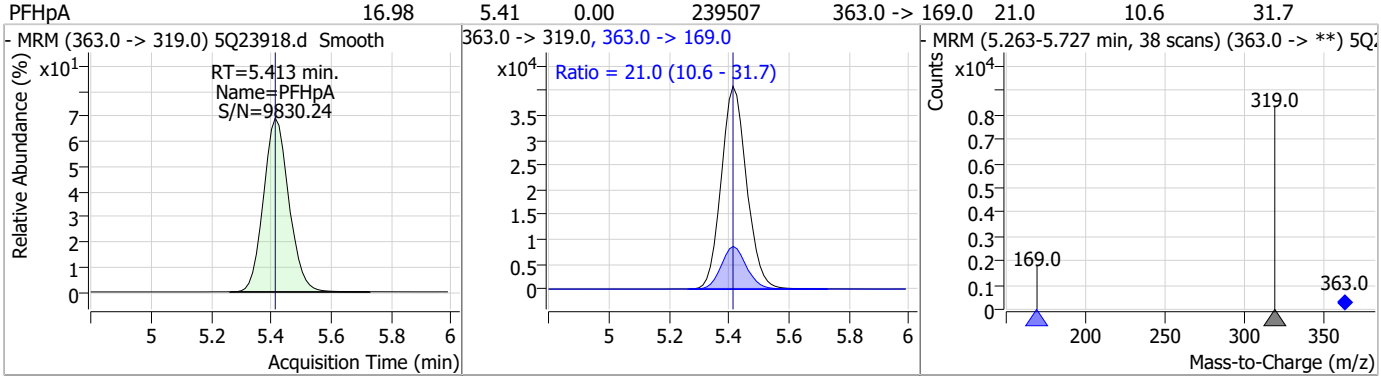


Perfluorinated Compounds by LC/MS/MS

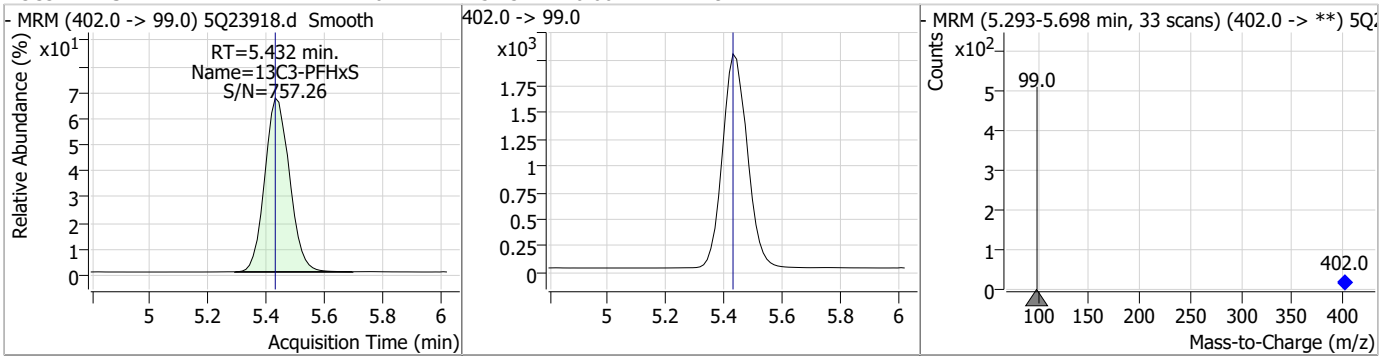
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	10.22	5.41	0.00	122957				



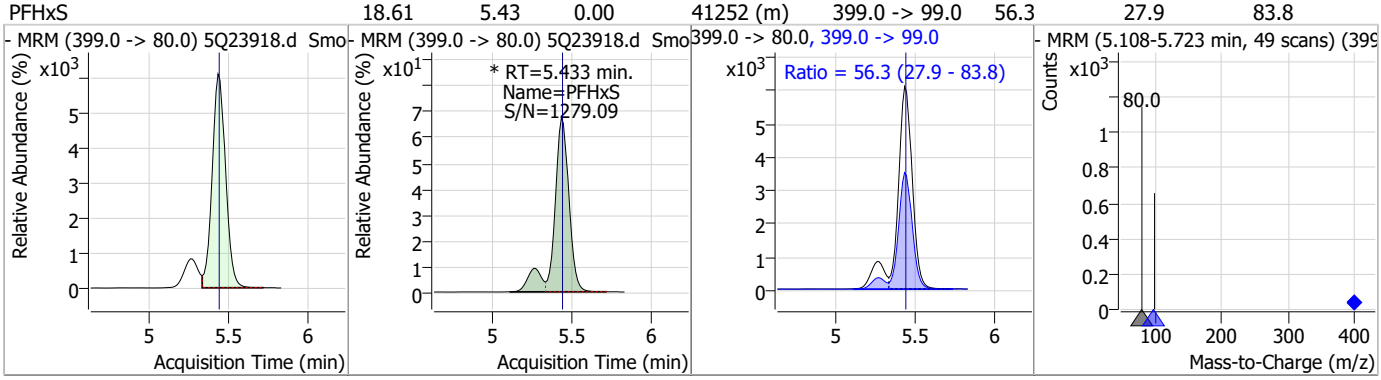
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	16.98	5.41	0.00	239507	363.0 -> 169.0	21.0	10.6	31.7



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	10.12	5.43	0.00	11947				

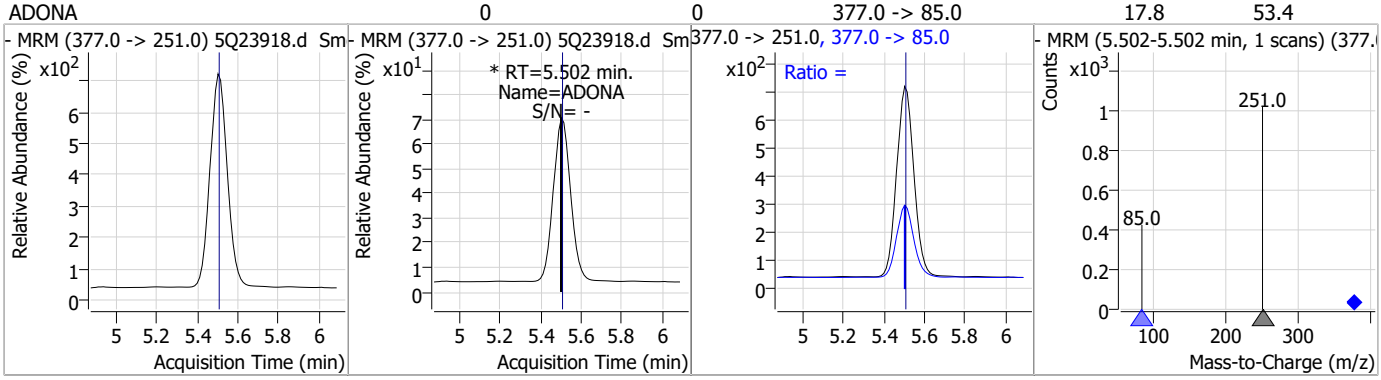


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	18.61	5.43	0.00	41252 (m)	399.0 -> 99.0	56.3	27.9	83.8

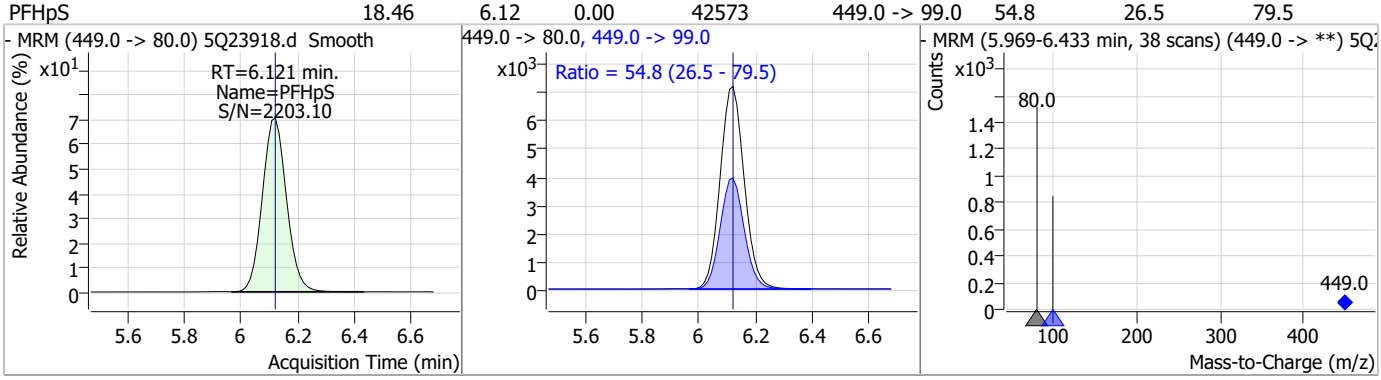


Perfluorinated Compounds by LC/MS/MS

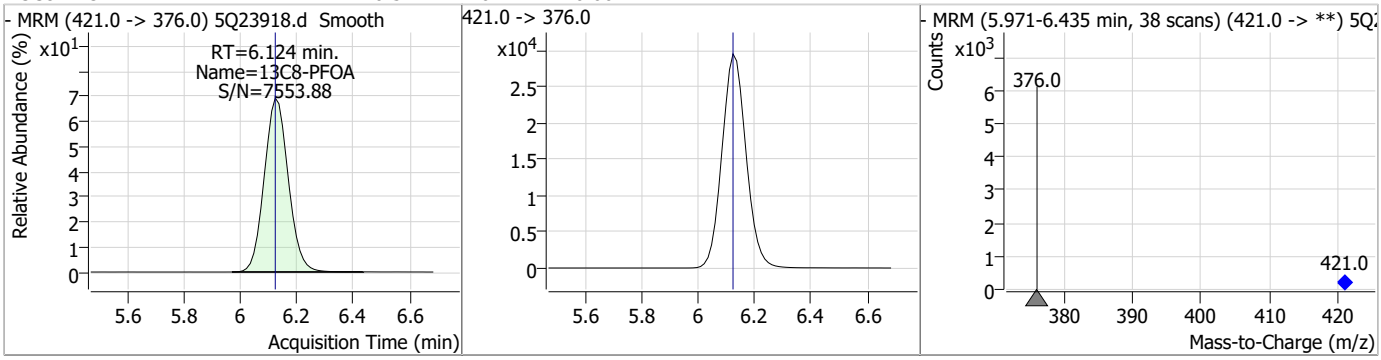
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA		0		0	377.0 -> 85.0		17.8	53.4



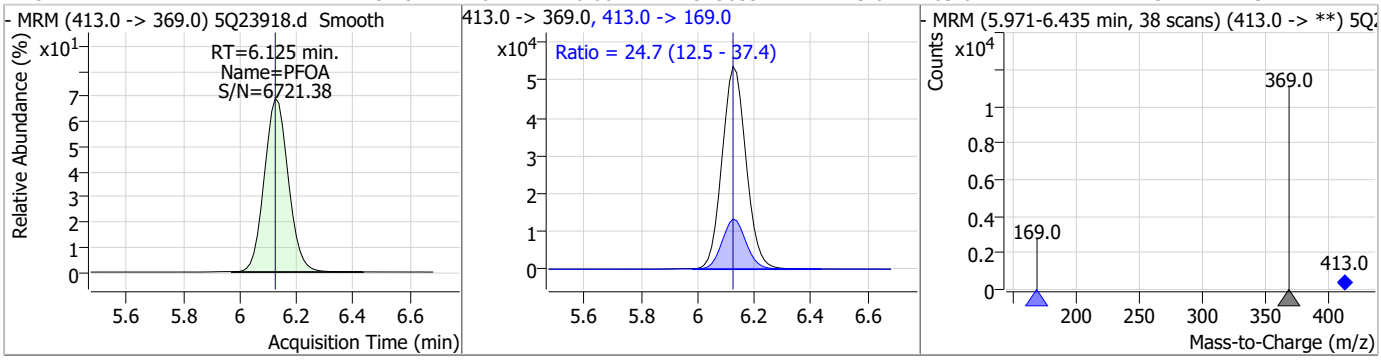
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	18.46	6.12	0.00	42573	449.0 -> 99.0	54.8	26.5	79.5



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	10.52	6.12	0.00	174121				

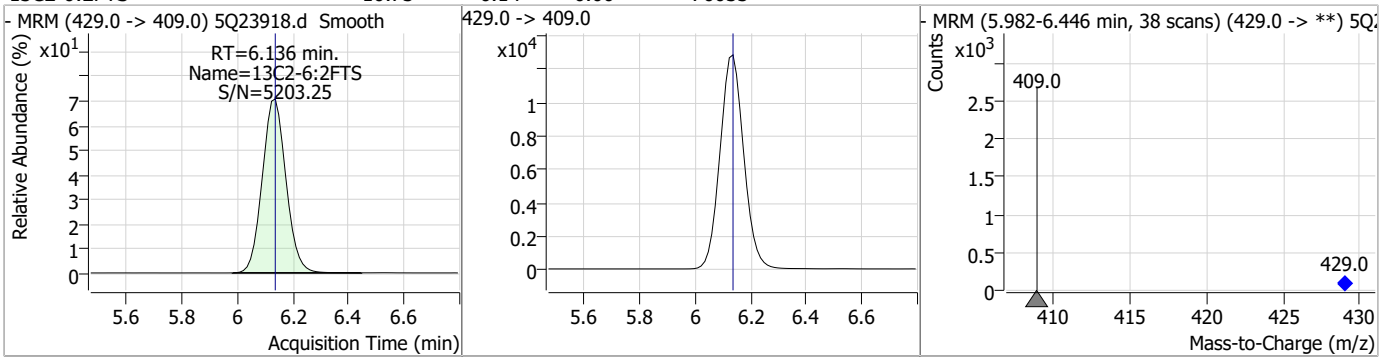


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	18.48	6.12	0.00	315659	413.0 -> 169.0	24.7	12.5	37.4

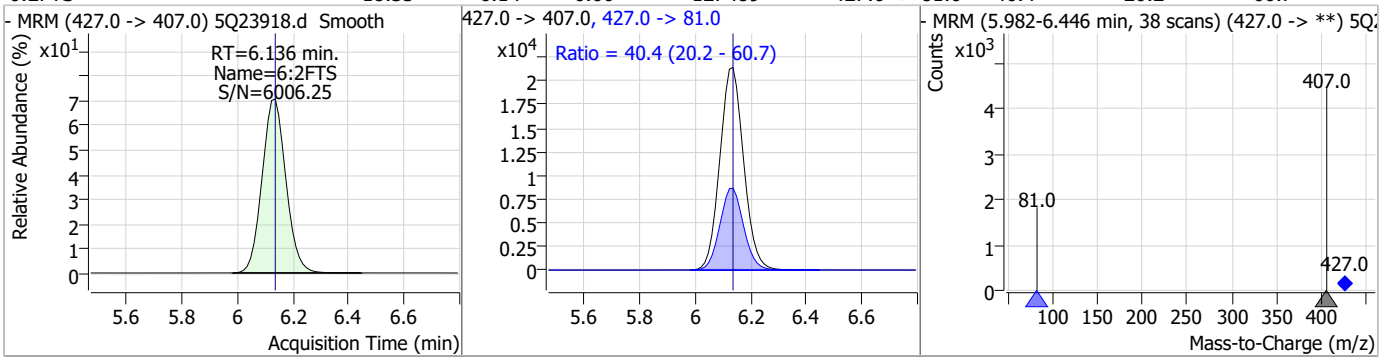


Perfluorinated Compounds by LC/MS/MS

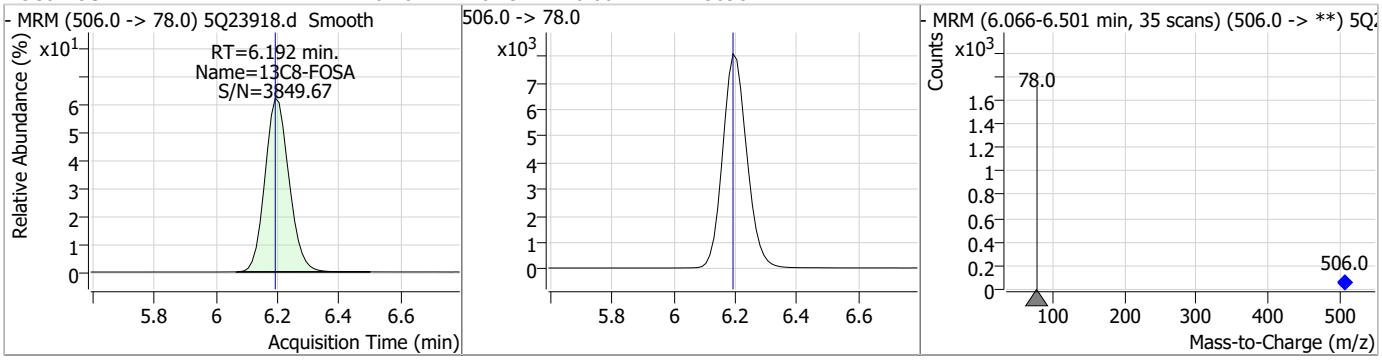
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	10.73	6.14	0.00	76033				



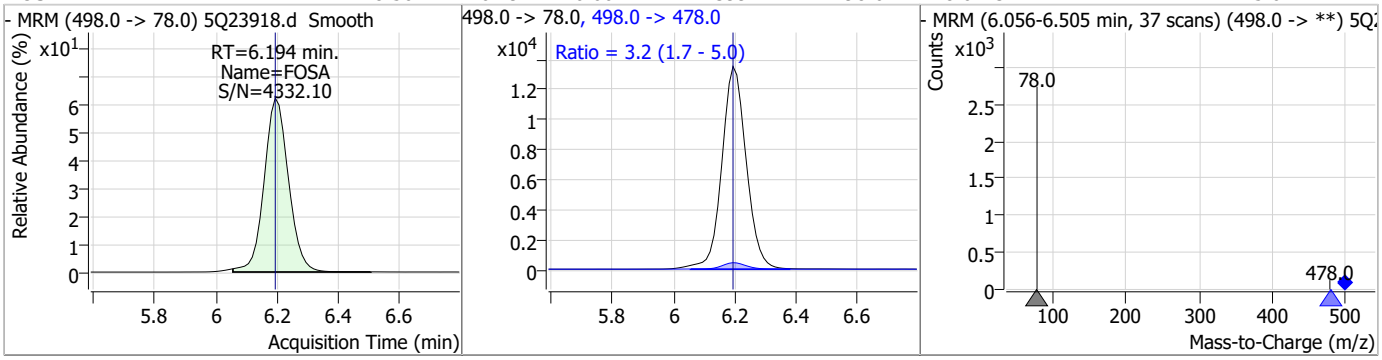
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	18.33	6.14	0.00	127489	427.0 -> 81.0	40.4	20.2	60.7



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	10.78	6.19	0.00	43698				

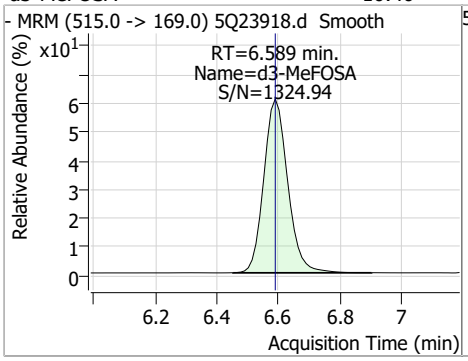


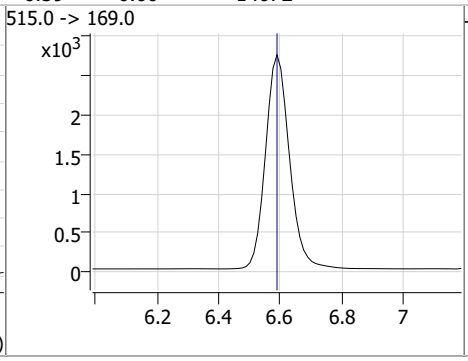
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	18.56	6.19	0.00	74399	498.0 -> 478.0	3.2	1.7	5.0

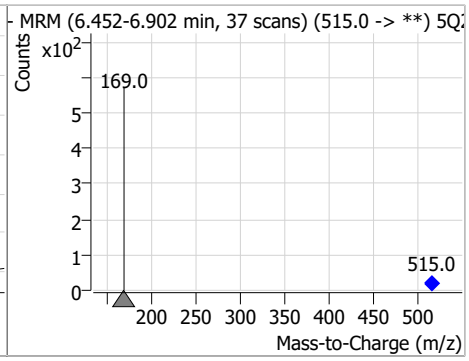


Perfluorinated Compounds by LC/MS/MS

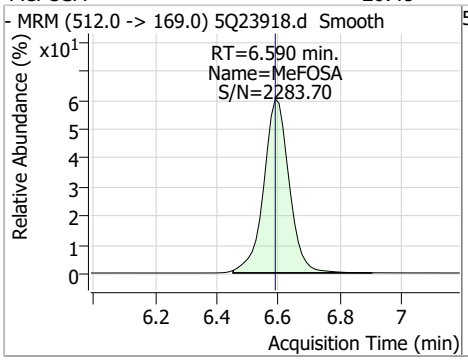
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	10.46	6.59	0.00	14672				

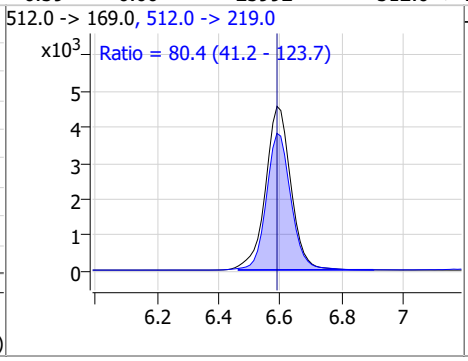


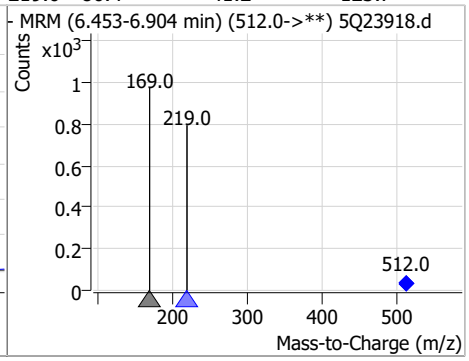




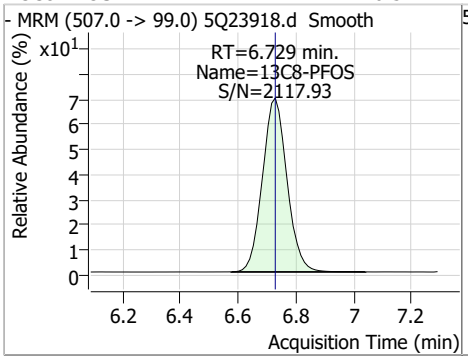
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	20.48	6.59	0.00	25992	512.0 -> 219.0	80.4	41.2	123.7

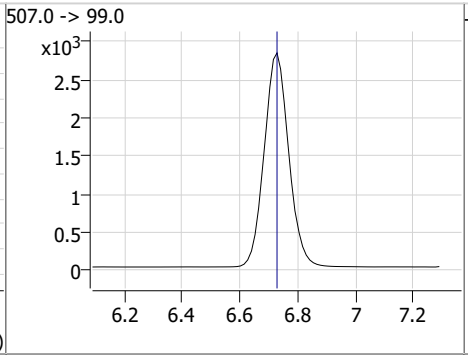


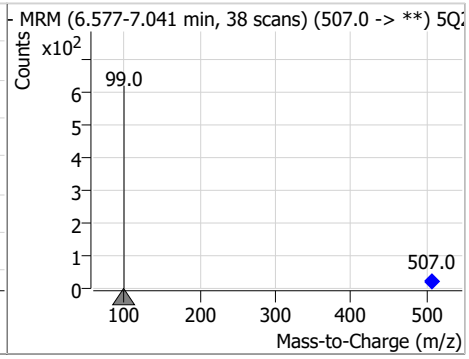




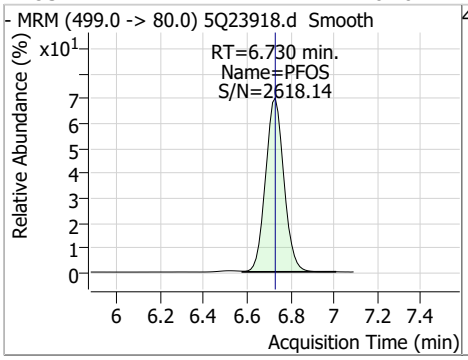
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	10.51	6.73	0.00	16517				

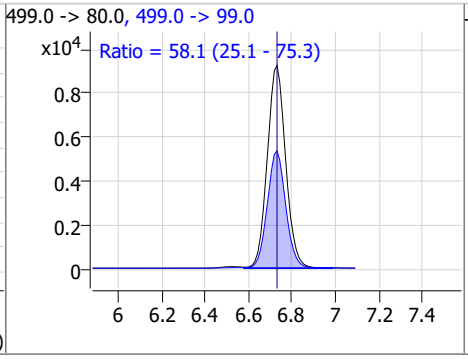


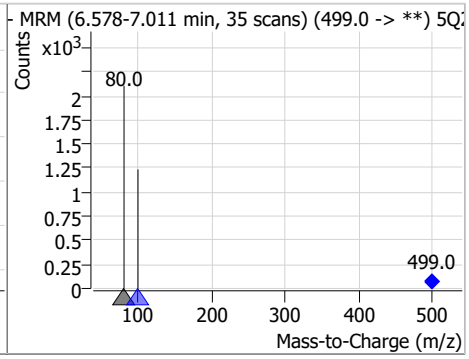




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	18.48	6.73	0.00	54125	499.0 -> 99.0	58.1	25.1	75.3

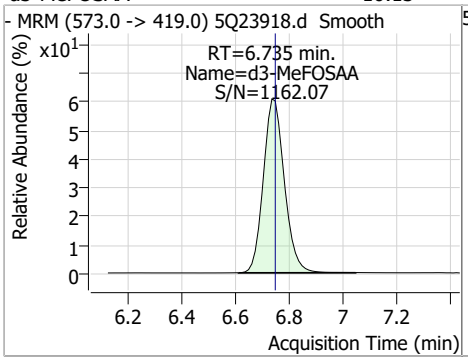


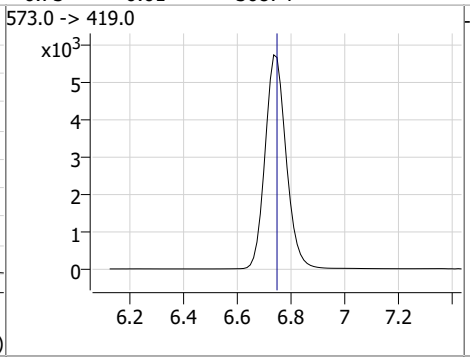


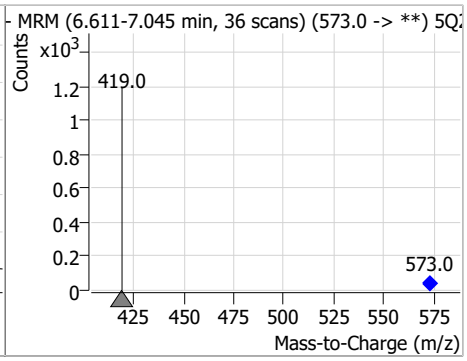


Perfluorinated Compounds by LC/MS/MS

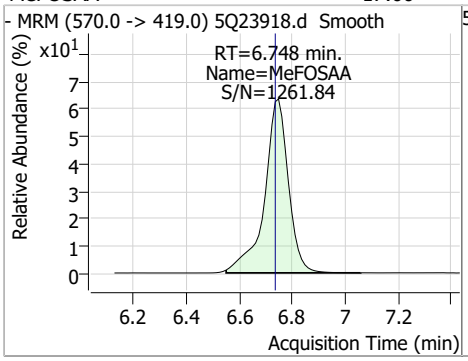
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	10.13	6.73	-0.01	30874				

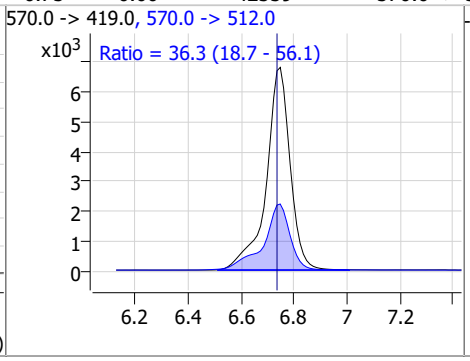


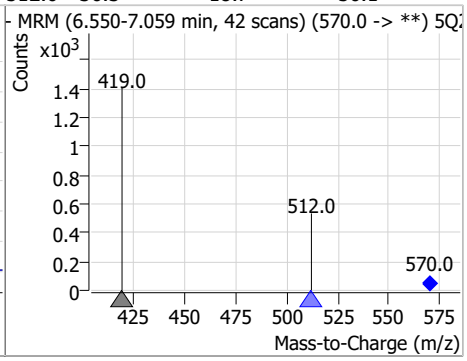




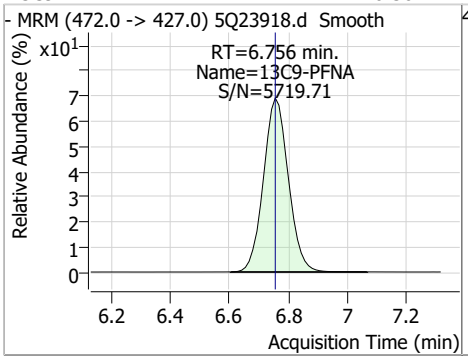
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	17.66	6.75	0.00	42559	570.0 -> 512.0	36.3	18.7	56.1

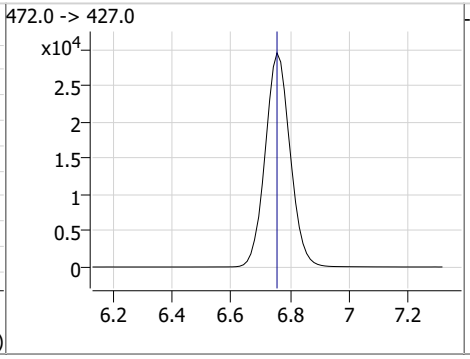


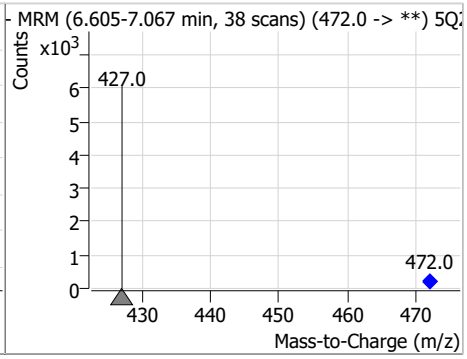




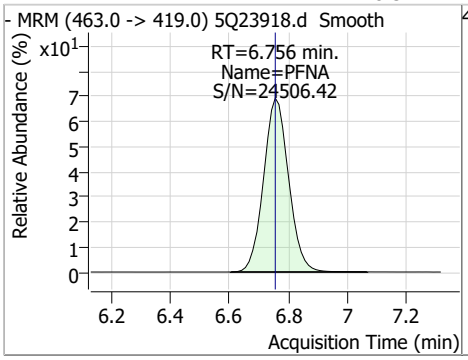
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	10.36	6.76	0.00	172036				

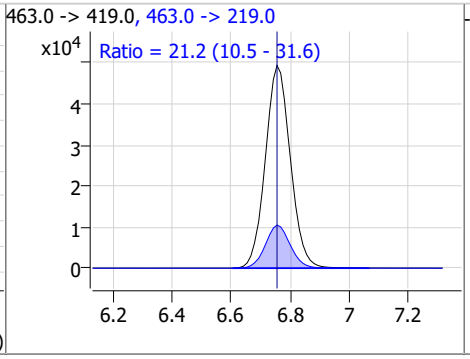


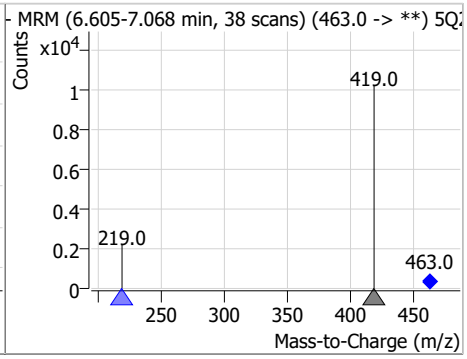




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	18.37	6.76	0.00	289301	463.0 -> 219.0	21.2	10.5	31.6

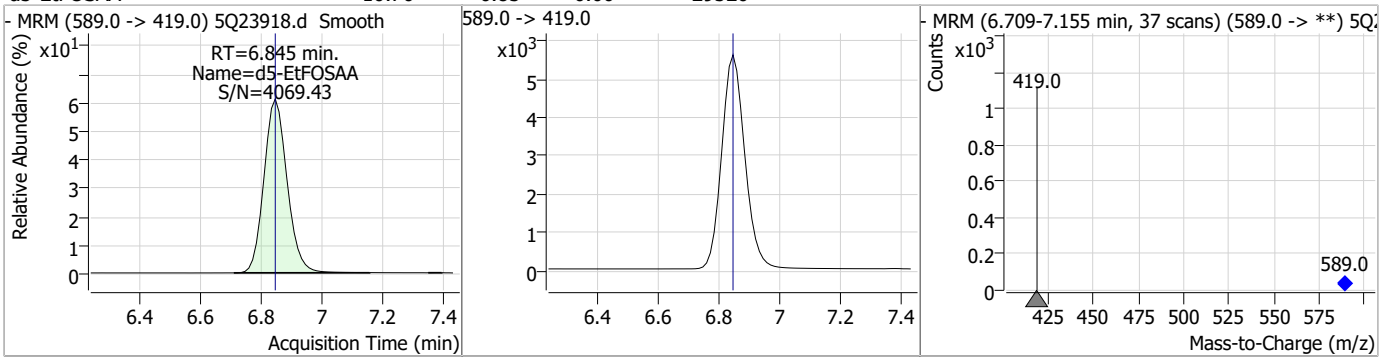




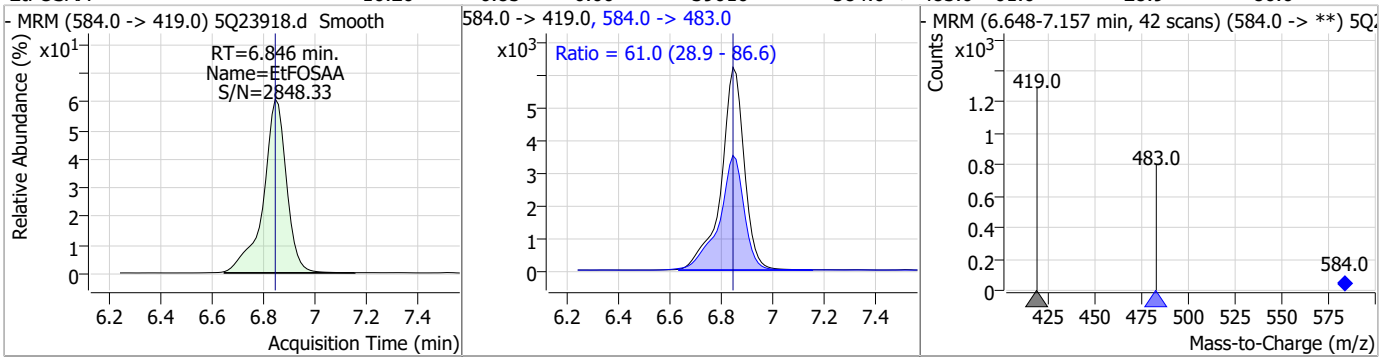


Perfluorinated Compounds by LC/MS/MS

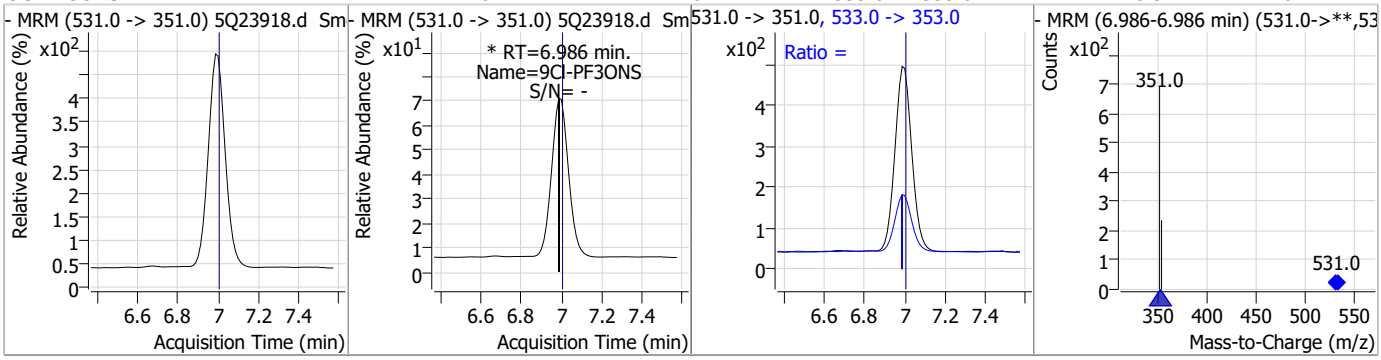
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	10.76	6.85	0.00	29520				



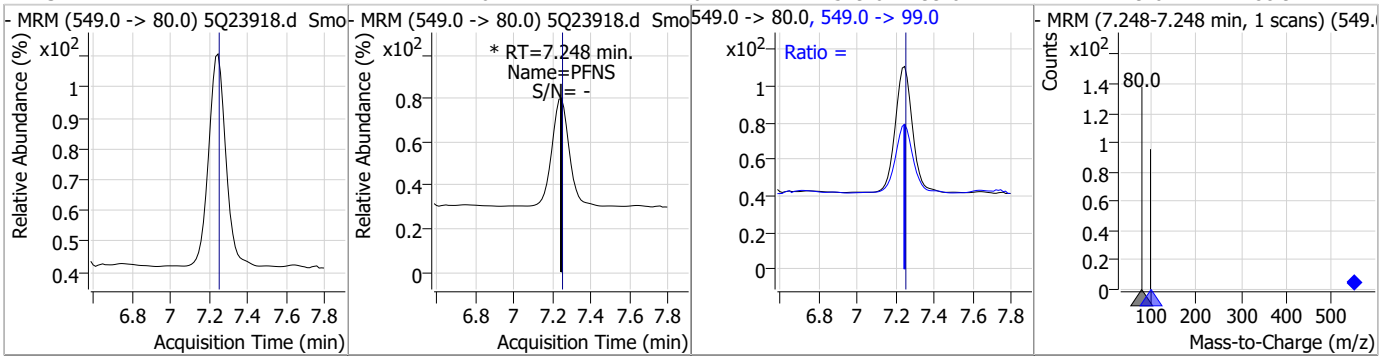
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	16.20	6.85	0.00	39010	584.0 -> 483.0	61.0	28.9	86.6



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS		0		0	533.0 -> 353.0		15.9	47.6

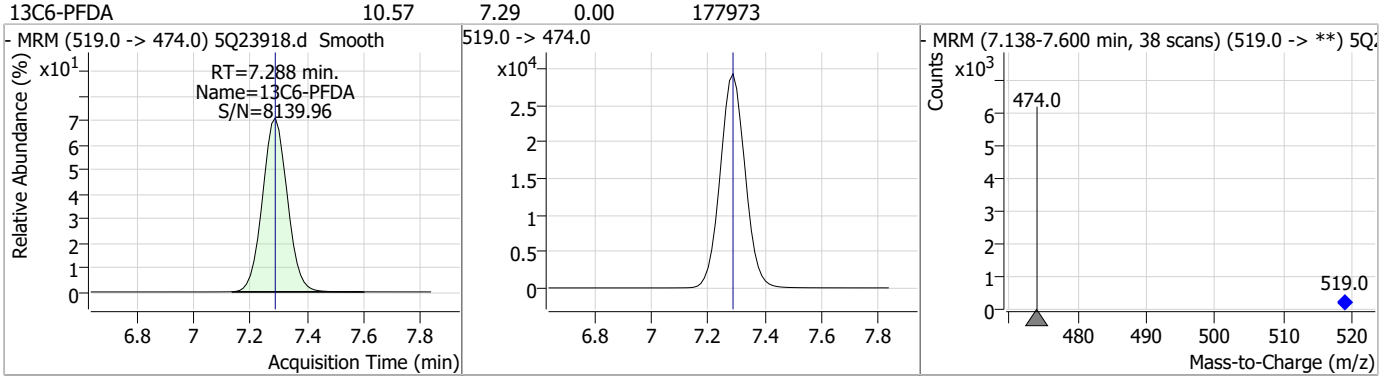


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS		0		0	549.0 -> 99.0		29.6	88.9

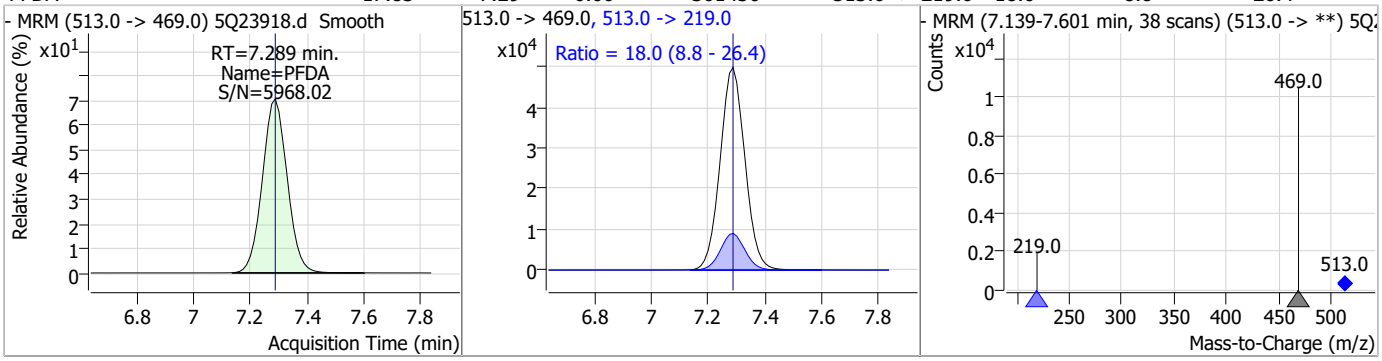


Perfluorinated Compounds by LC/MS/MS

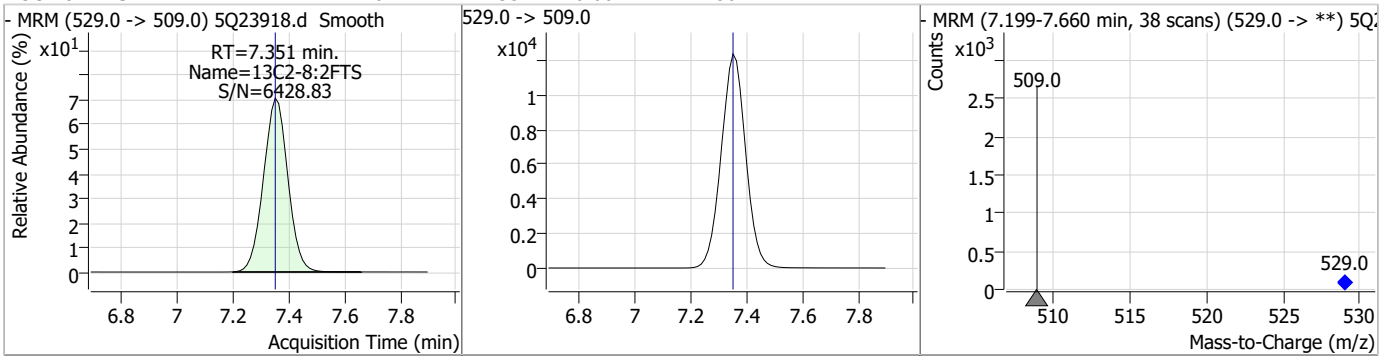
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	10.57	7.29	0.00	177973				



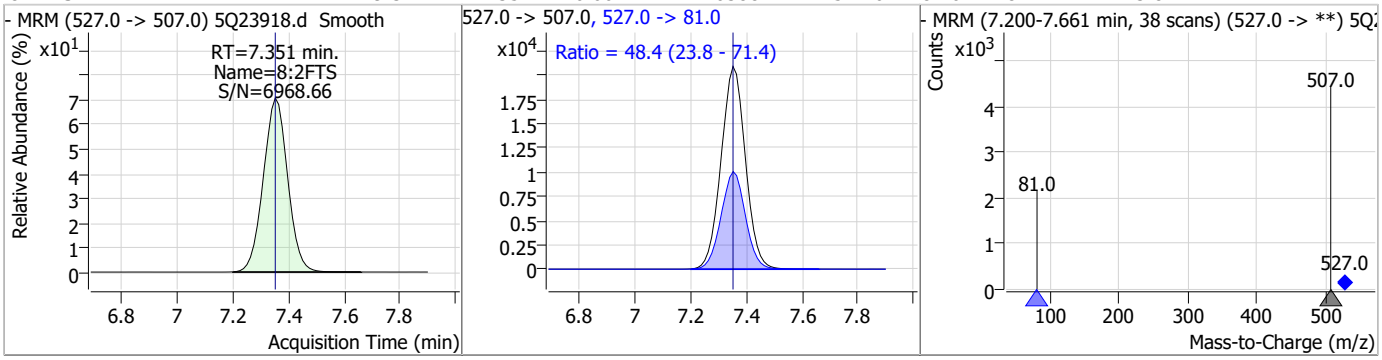
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	17.83	7.29	0.00	301430	513.0 -> 219.0	18.0	8.8	26.4



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	10.71	7.35	0.00	74807				

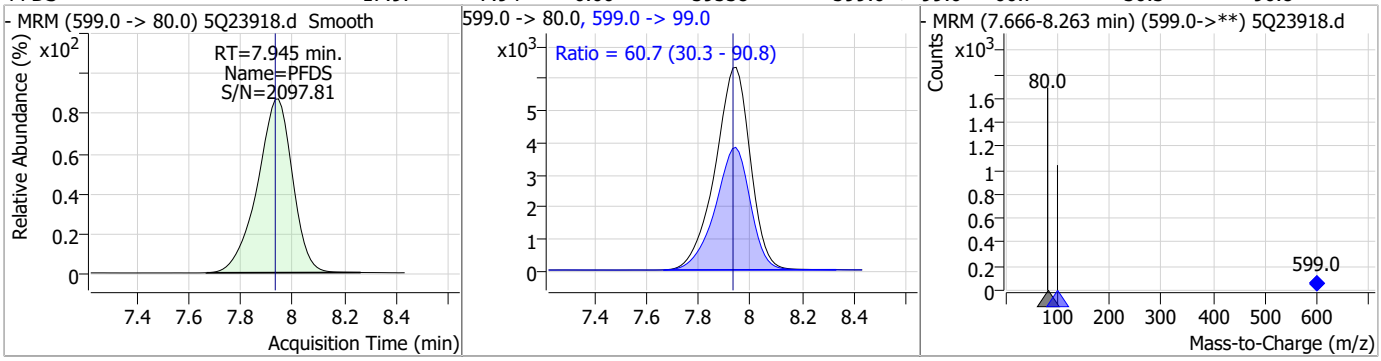


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	19.34	7.35	0.00	126388	527.0 -> 81.0	48.4	23.8	71.4

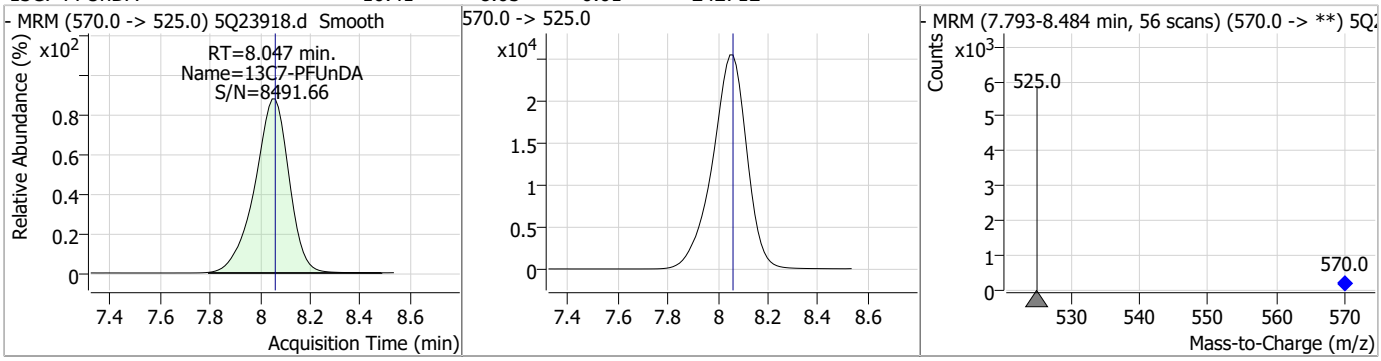


Perfluorinated Compounds by LC/MS/MS

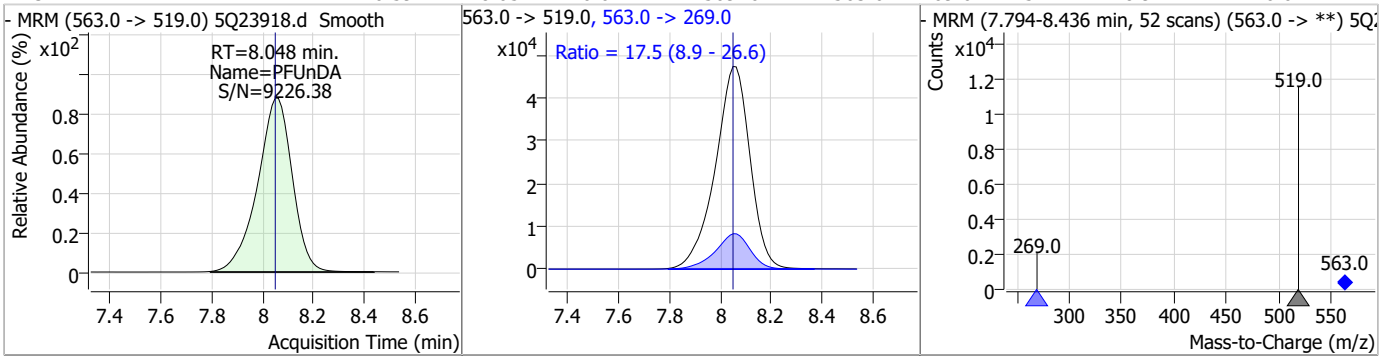
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	17.97	7.94	0.00	59538	599.0 -> 99.0	60.7	30.3	90.8



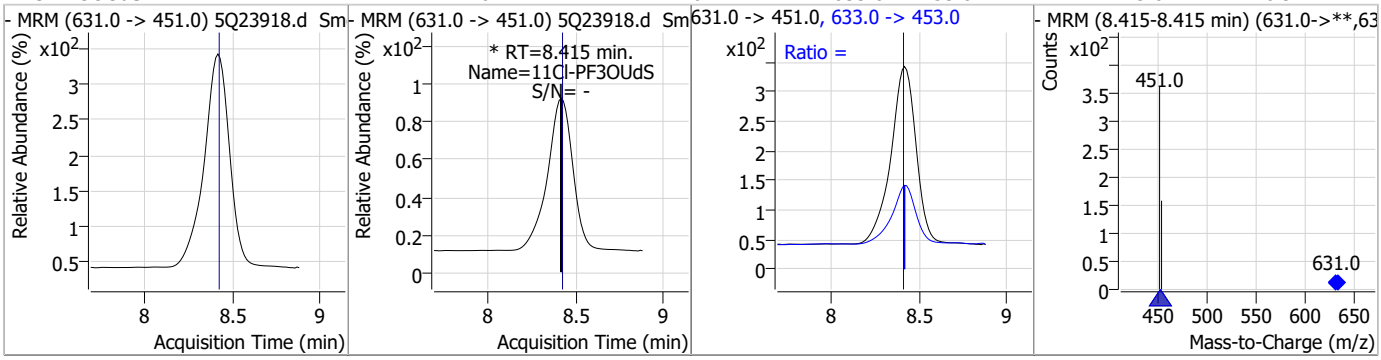
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	10.41	8.05	-0.01	242712				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	20.59	8.05	-0.01	450916	563.0 -> 269.0	17.5	8.9	26.6

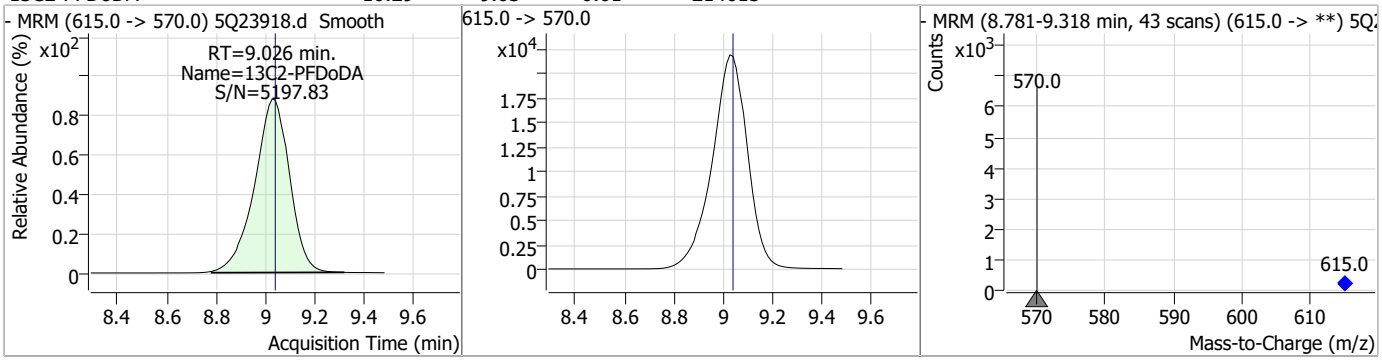


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS		0		0	633.0 -> 453.0		15.6	46.9

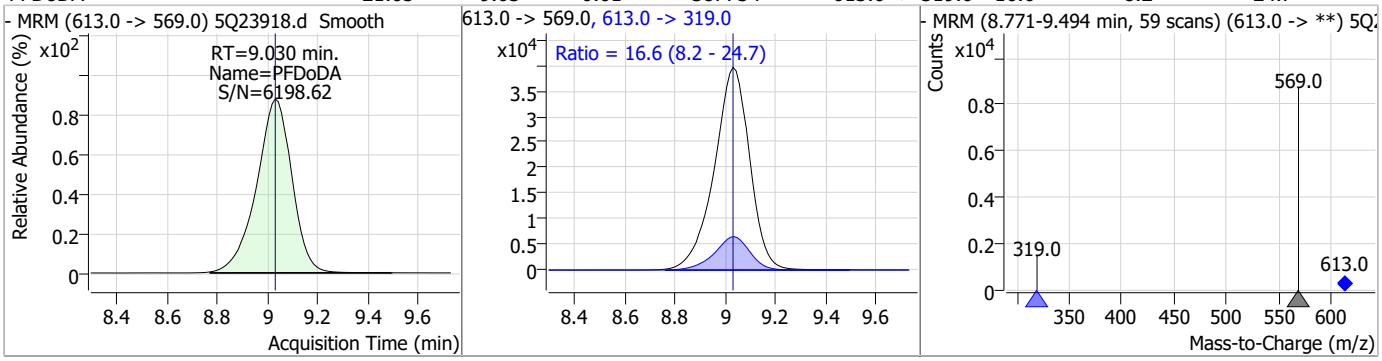


Perfluorinated Compounds by LC/MS/MS

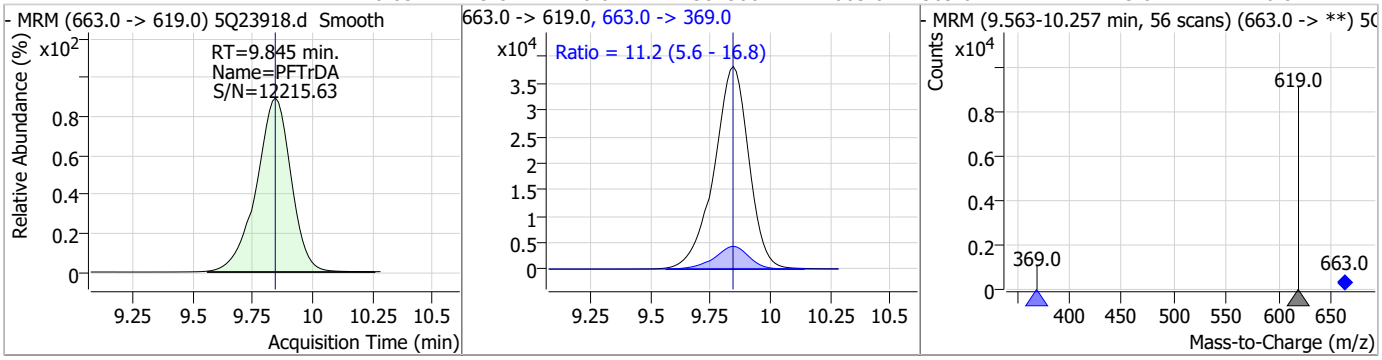
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	10.29	9.03	-0.01	214615				



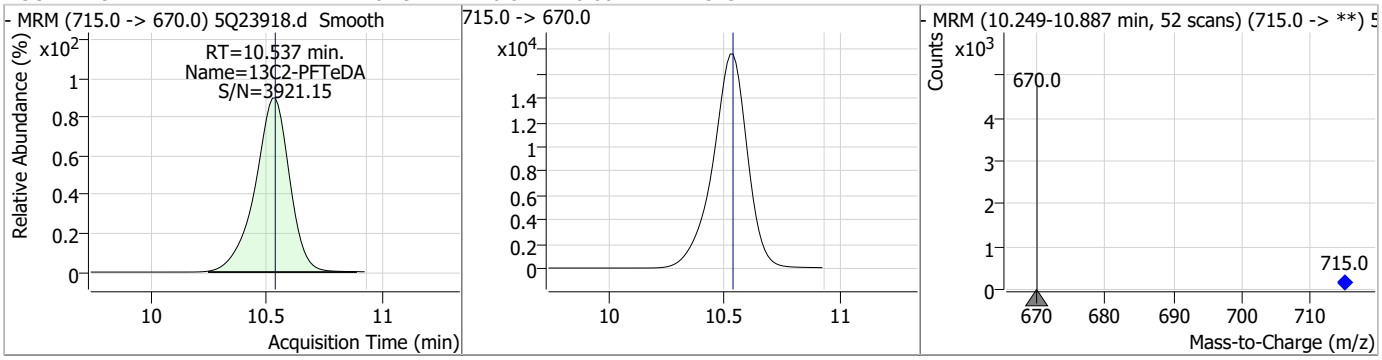
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	21.05	9.03	-0.01	387734	613.0 -> 319.0	16.6	8.2	24.7



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	20.85	9.84	-0.01	384566	663.0 -> 369.0	11.2	5.6	16.8

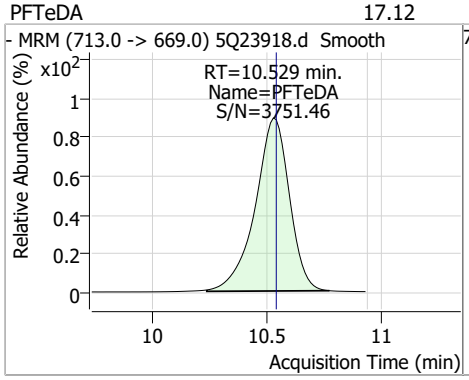


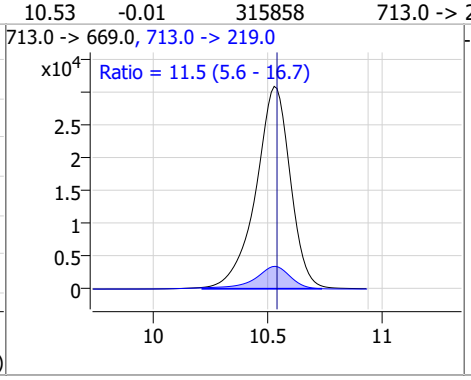
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	10.29	10.54	0.00	182544				

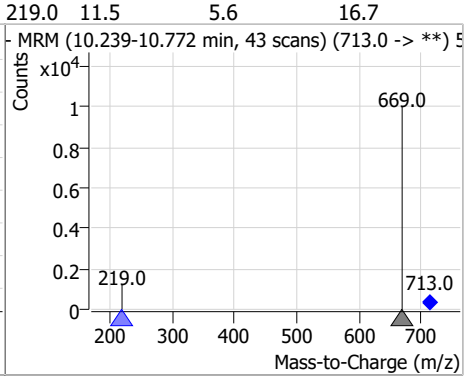


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	17.12	10.53	-0.01	315858	713.0 -> 219.0	11.5	5.6	16.7







Manual Integration Approval Summary

Sample Number: S5Q375-ICV375
Lab FileID: 5Q23918.D
Injection Time: 12/28/23 17:19

Method: EPA 537M QSM5.3 B-15
Analyst approved: 12/29/23 14:15 Lindsay Ritner
Supervisor approved: 01/02/24 14:05 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.43	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Natasha Gumtie 01/02/24 14:05

Perfluorinated Compounds by LC/MS/MS

Data File : 5Q23920.d
Operator : natashag
Acq. Method : 537_ID.m
Acq. Date-Time : 12/28/2023 5:52:23 PM
Sample Name : cc375-20
Vial : P1-A7
DA Method File : ID_122823_S5Q375.quantmethod.xml
Batch Name : s5q375.batch.bin
Sample Information : OP401,S5Q375,250,,,1.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.987	217.0 -> 172.0	48278	10.00	µg/L	0.000
M5-PFPeA	3.432	268.0 -> 223.0	80225	10.00	µg/L	0.000
M5-PFHxA	4.552	318.0 -> 273.0	120057	10.00	µg/L	0.000
M4-PFHpA	5.413	367.0 -> 322.0	120418	10.00	µg/L	0.000
M8-PFOA	6.124	421.0 -> 376.0	169148	10.00	µg/L	0.000
M9-PFNA	6.756	472.0 -> 427.0	172743	10.00	µg/L	0.000
M6-PFDA	7.288	519.0 -> 474.0	176552	10.00	µg/L	0.000
M7-PFUnDA	8.047	570.0 -> 525.0	238769	10.00	µg/L	-0.012
M2-PFDoDA	9.026	615.0 -> 570.0	212968	10.00	µg/L	-0.012
M2-PFTeDA	10.524	715.0 -> 670.0	183504	10.00	µg/L	-0.012
M8-FOSA	6.192	506.0 -> 78.0	43556	10.00	µg/L	0.000
M3-PFBS	3.624	302.0 -> 99.0	9648	10.00	µg/L	-0.012
M3-PFHxS	5.432	402.0 -> 99.0	12235	10.00	µg/L	0.000
M8-PFOS	6.729	507.0 -> 99.0	16389	10.00	µg/L	0.000
M2-4:2FTS	4.474	329.0 -> 309.0	41842	10.00	µg/L	0.000
M2-6:2FTS	6.136	429.0 -> 409.0	74768	10.00	µg/L	0.000
M2-8:2FTS	7.351	529.0 -> 509.0	74607	10.00	µg/L	0.000
M3-MeFOSAA	6.735	573.0 -> 419.0	32296	10.00	µg/L	-0.012
M3-HFPO-DA	4.819	287.0 -> 169.0	6702	10.00	µg/L	0.000
M3-MeFOSA	6.589	515.0 -> 169.0	15020	10.00	µg/L	0.000
M5-EtFOSAA	6.845	589.0 -> 419.0	29275	10.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.474	329.0 -> 309.0	41842	10.41	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 104.1%		
13C2-6:2FTS	6.136	429.0 -> 409.0	74768	10.55	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 105.5%		
13C2-8:2FTS	7.351	529.0 -> 509.0	74607	10.68	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 106.8%		
13C2-PFDoDA	9.026	615.0 -> 570.0	212968	10.21	µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 102.1%		
13C2-PFTeDA	10.524	715.0 -> 670.0	183504	10.34	µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 103.4%		
13C3-PFBS	3.624	302.0 -> 99.0	9648	9.94	µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.4%		
13C3-PFHxS	5.432	402.0 -> 99.0	12235	10.37	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 103.7%		
13C4-PFBA	1.987	217.0 -> 172.0	48278	10.22	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 102.2%		
13C4-PFHpA	5.413	367.0 -> 322.0	120418	10.01	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.1%		
13C5-PFHxA	4.552	318.0 -> 273.0	120057	10.05	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.5%		
13C5-PFPeA	3.432	268.0 -> 223.0	80225	10.18	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.8%		
13C6-PFDA	7.288	519.0 -> 474.0	176552	10.49	µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

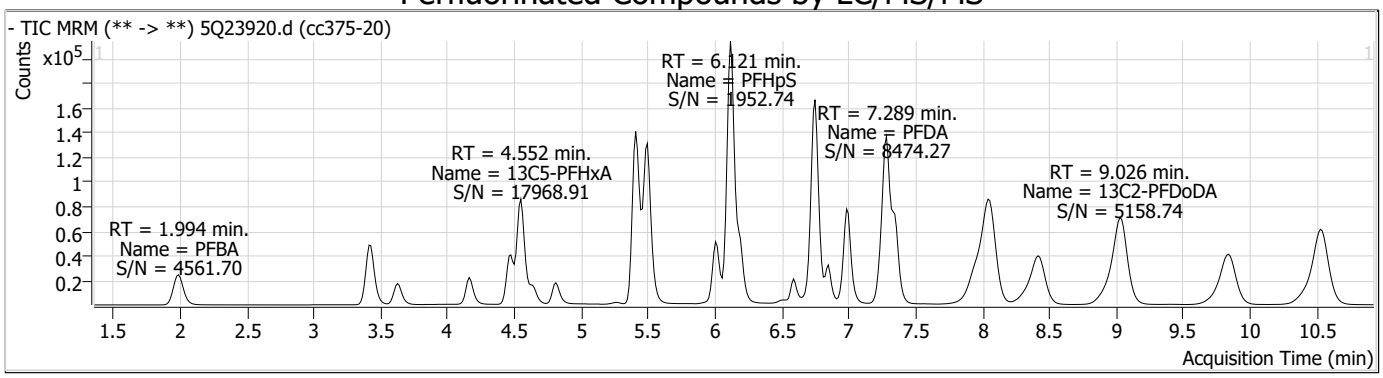
Compound	RT	Transition	Response	Conc. Units		Dev(Min)
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 104.9%		
13C7-PFUnDA	8.047	570.0 -> 525.0	238769	10.24 µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 102.4%		
13C8-FOSA	6.192	506.0 -> 78.0	43556	10.75 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 107.5%		
13C8-PFOA	6.124	421.0 -> 376.0	169148	10.22 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 102.2%		
13C8-PFOS	6.729	507.0 -> 99.0	16389	10.43 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 104.3%		
13C9-PFNA	6.756	472.0 -> 427.0	172743	10.40 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 104.0%		
d3-MeFOSAA	6.735	573.0 -> 419.0	32296	10.59 µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 105.9%		
13C3-HFPO-DA	4.819	287.0 -> 169.0	6702	10.38 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 103.8%		
d3-MeFOSA	6.589	515.0 -> 169.0	15020	10.71 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 107.1%		
d5-EtFOSAA	6.845	589.0 -> 419.0	29275	10.67 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 106.7%		
Target Compounds						QValue
4:2FTS	4.475	327.0 -> 307.0	80540	19.54 µg/L		100
		327.0 -> 81.0	45300			
6:2FTS	6.136	427.0 -> 407.0	133412	19.50 µg/L		100
		427.0 -> 81.0	53622			
8:2FTS	7.351	527.0 -> 507.0	125652	19.28 µg/L		99
		527.0 -> 81.0	60715			
EtFOSAA	6.846	584.0 -> 419.0	43938	18.40 µg/L		94
		584.0 -> 483.0	27415			
FOSA	6.194	498.0 -> 78.0	74937	18.75 µg/L		99
		498.0 -> 478.0	2262			
MeFOSAA	6.748	570.0 -> 419.0	47387	18.80 µg/L		100
		570.0 -> 512.0	17591			
PFBA	1.994	213.0 -> 169.0	82222	18.39 µg/L		100
PFBS	3.628	299.0 -> 80.0	45129	18.89 µg/L		99
		299.0 -> 99.0	19559			
PFDA	7.289	513.0 -> 469.0	309899	18.48 µg/L		99
		513.0 -> 219.0	55453			
PFDoDA	9.030	613.0 -> 569.0	343761	18.80 µg/L		100
		613.0 -> 319.0	56855			
PFDS	7.933	599.0 -> 80.0	58355	17.90 µg/L		99
		599.0 -> 99.0	35795			
PFHpA	5.413	363.0 -> 319.0	258604	18.72 µg/L		100
		363.0 -> 169.0	55101			
PFHpS	6.121	449.0 -> 80.0	40641	17.76 µg/L		98
		449.0 -> 99.0	22213			
PFHxA	4.553	313.0 -> 269.0	214490	18.47 µg/L		100
		313.0 -> 119.0	8896			
PFHxS	5.433	399.0 -> 80.0	41294	18.19 µg/L	m	99
		399.0 -> 99.0	23280			
PFNA	6.756	463.0 -> 419.0	296385	18.74 µg/L		99
		463.0 -> 219.0	61734			
PFNS	7.235	549.0 -> 80.0	34675	18.31 µg/L		99
		549.0 -> 99.0	20372			
PFOA	6.125	413.0 -> 369.0	311697	18.78 µg/L		100
		413.0 -> 169.0	78105			
PFOS	6.730	499.0 -> 80.0	52758	18.15 µg/L	m	98

Perfluorinated Compounds by LC/MS/MS

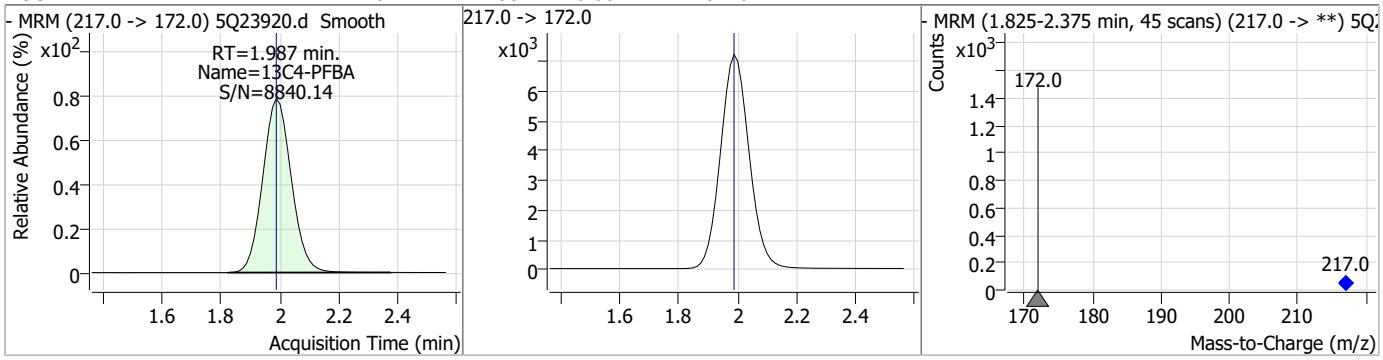
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		499.0 -> 99.0	25686			
PFPeA	3.434	263.0 -> 219.0	145901	18.75	µg/L	100
PFPeS	4.648	349.0 -> 80.0	31656	18.83	µg/L	97
		349.0 -> 99.0	16323			
PFTeDA	10.529	713.0 -> 669.0	347410	18.73	µg/L	99
		713.0 -> 219.0	40104			
PFTrDA	9.845	663.0 -> 619.0	334660	18.29	µg/L	100
		663.0 -> 369.0	37520			
PFUnDA	8.048	563.0 -> 519.0	398553	18.50	µg/L	100
		563.0 -> 269.0	70470			
11Cl-PF3OUdS	8.415	631.0 -> 451.0	256935	18.24	µg/L	100
		633.0 -> 453.0	80365			
9Cl-PF3ONS	6.986	531.0 -> 351.0	235046	18.02	µg/L	100
		533.0 -> 353.0	74193			
ADONA	5.502	377.0 -> 251.0	370187	18.06	µg/L	100
		377.0 -> 85.0	132722			
HFPO-DA	4.815	329.0 -> 169.0	53204	17.45	µg/L	99
		285.0 -> 169.0	11371			
MeFOSA	6.590	512.0 -> 169.0	25220	19.41	µg/L	100
		512.0 -> 219.0	20750			
4-PFECHS	6.006	461.0 -> 381.0	135634	18.47	µg/L	99
		461.0 -> 99.0	71089			
FBSA	4.170	298.0 -> 78.0	78832	19.63	µg/L	99
		298.0 -> 64.0	7535			
FHxSA	5.409	398.0 -> 78.0	83324	19.19	µg/L	99
		398.0 -> 64.0	7587			

 # = Qualifier out of range, m = manually integrated, + = Area summed

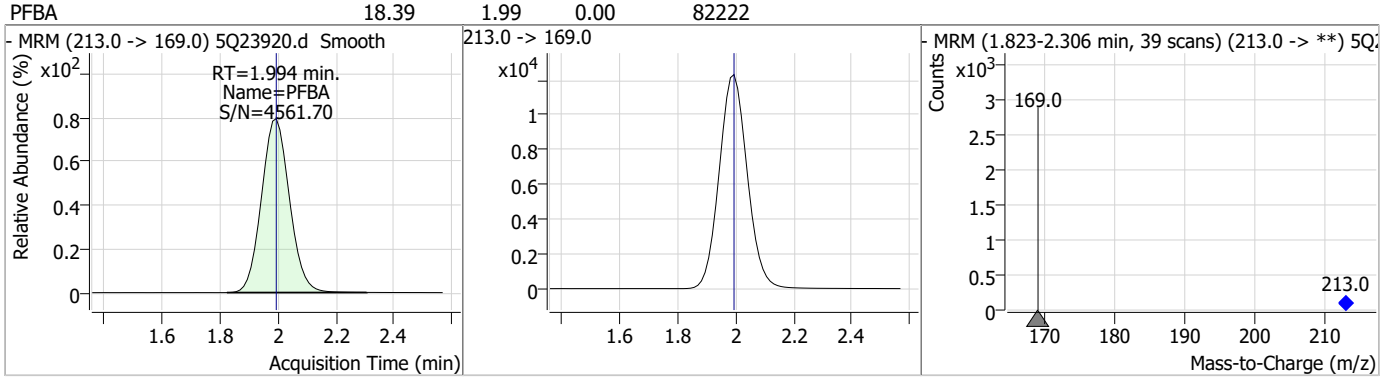
Perfluorinated Compounds by LC/MS/MS



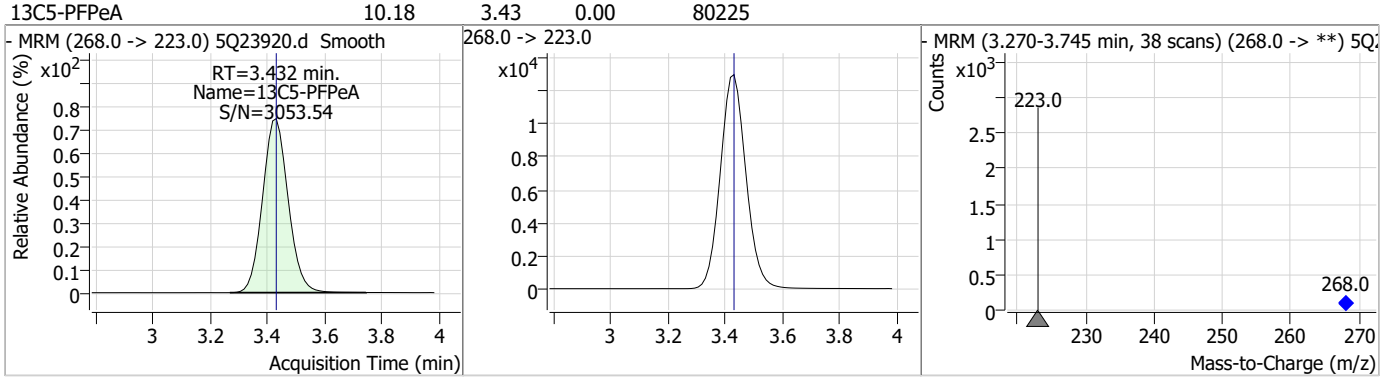
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	10.22	1.99	0.00	48278				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	18.39	1.99	0.00	82222				

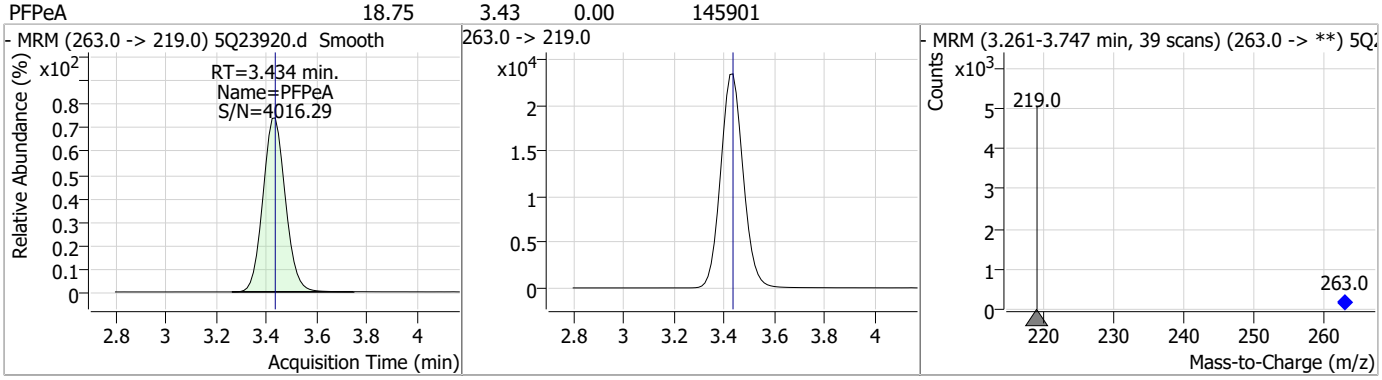


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	10.18	3.43	0.00	80225				

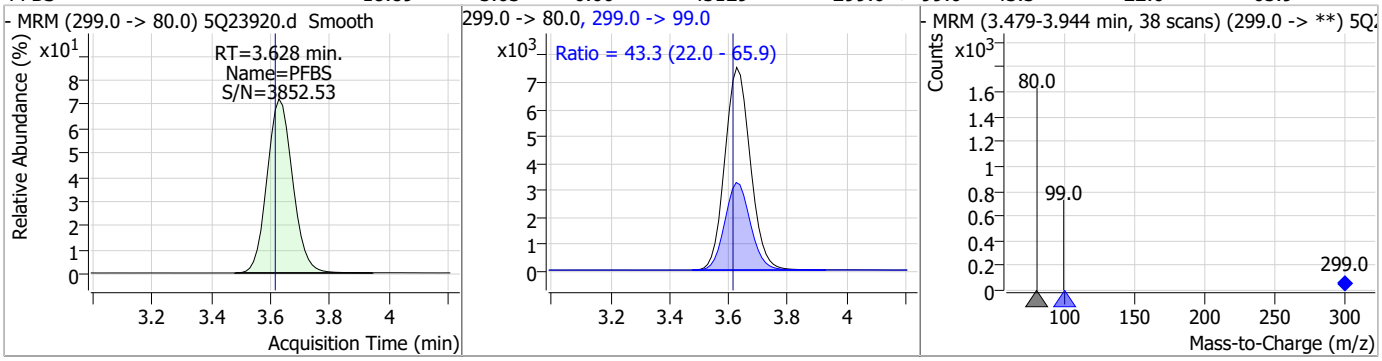


Perfluorinated Compounds by LC/MS/MS

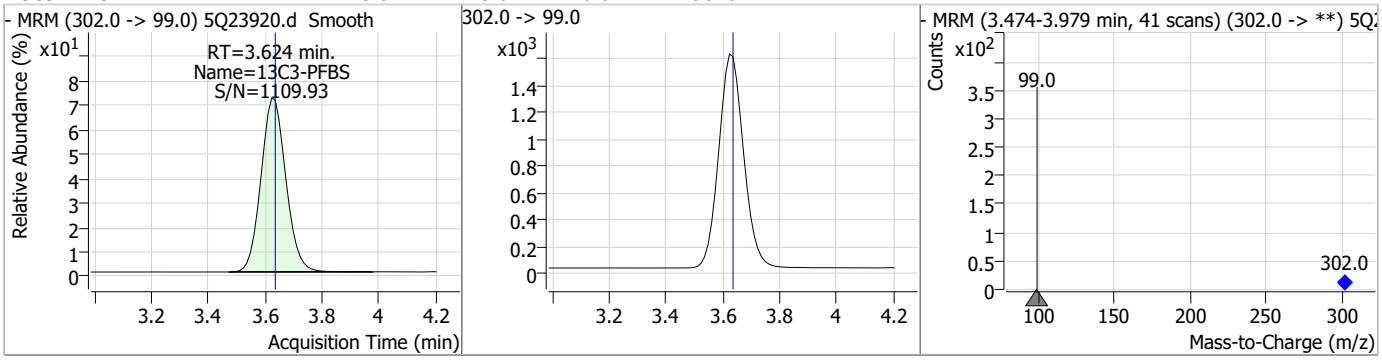
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	18.75	3.43	0.00	145901				



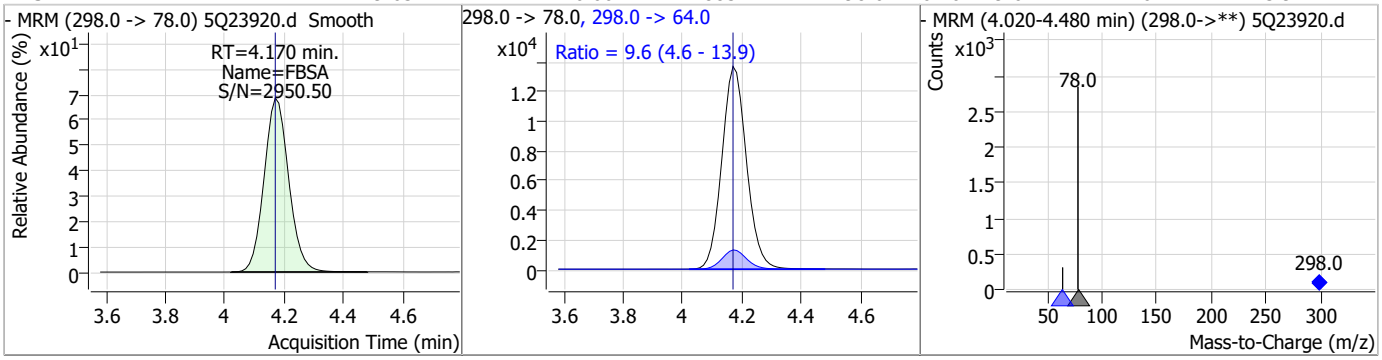
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	18.89	3.63	0.00	45129	299.0 -> 99.0	43.3	22.0	65.9



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	9.94	3.62	-0.01	9648				

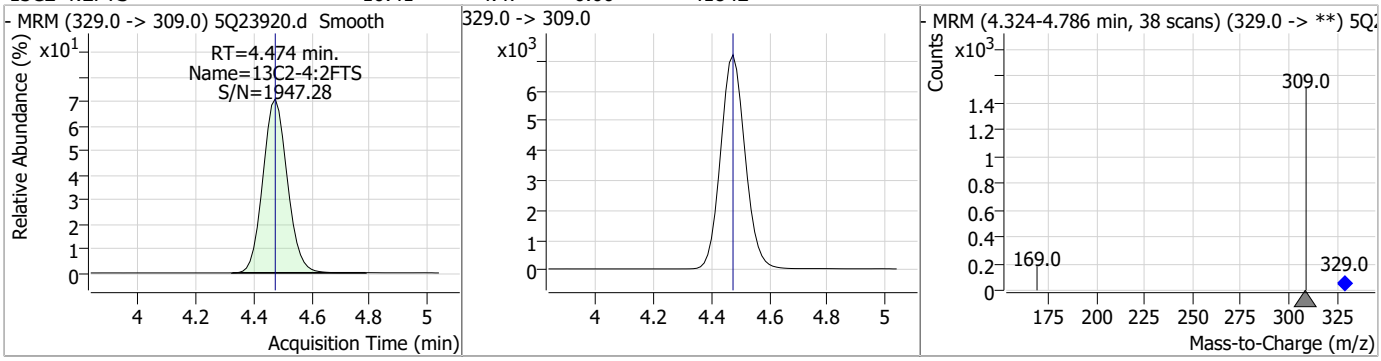


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	19.63	4.17	0.00	78832	298.0 -> 64.0	9.6	4.6	13.9

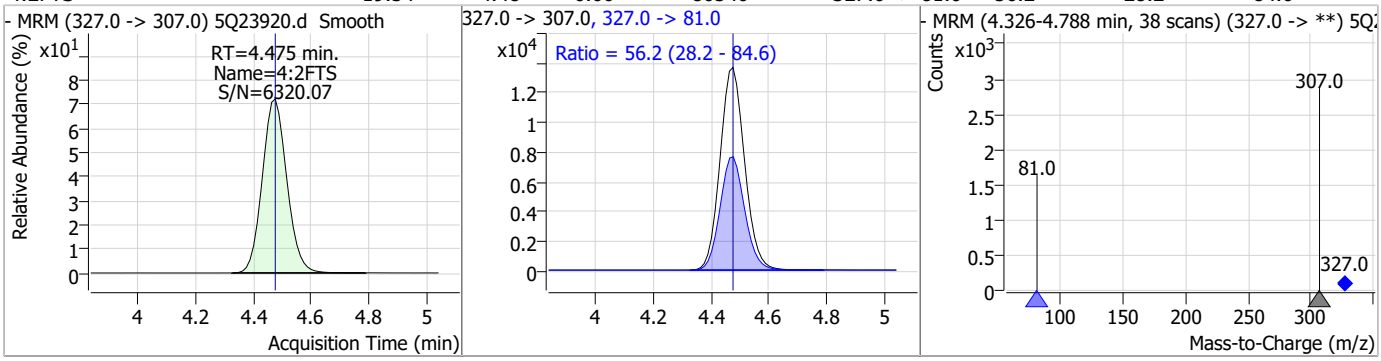


Perfluorinated Compounds by LC/MS/MS

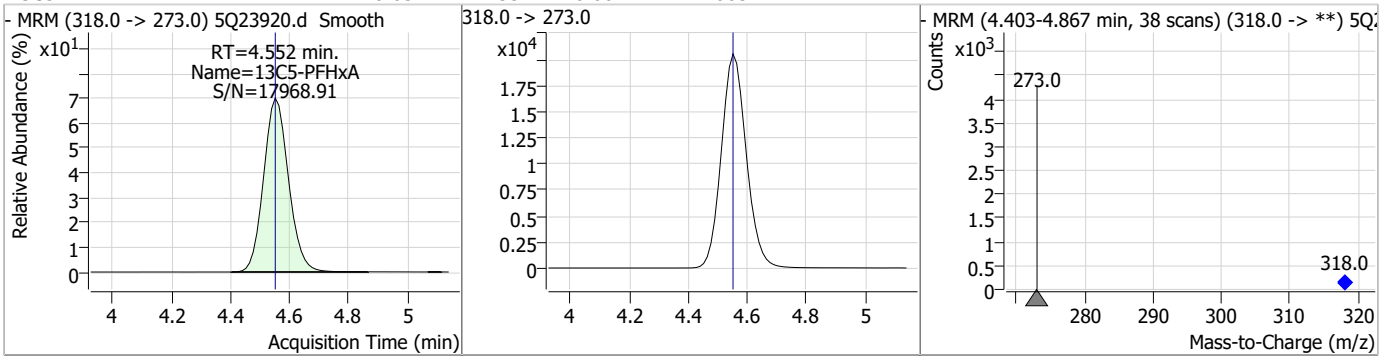
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	10.41	4.47	0.00	41842				



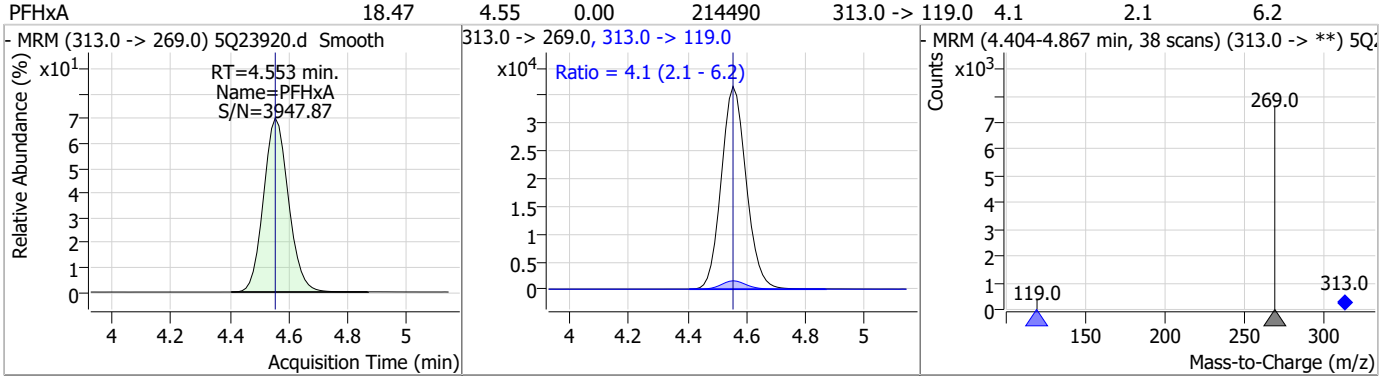
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	19.54	4.48	0.00	80540	327.0 -> 81.0	56.2	28.2	84.6



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	10.05	4.55	0.00	120057				

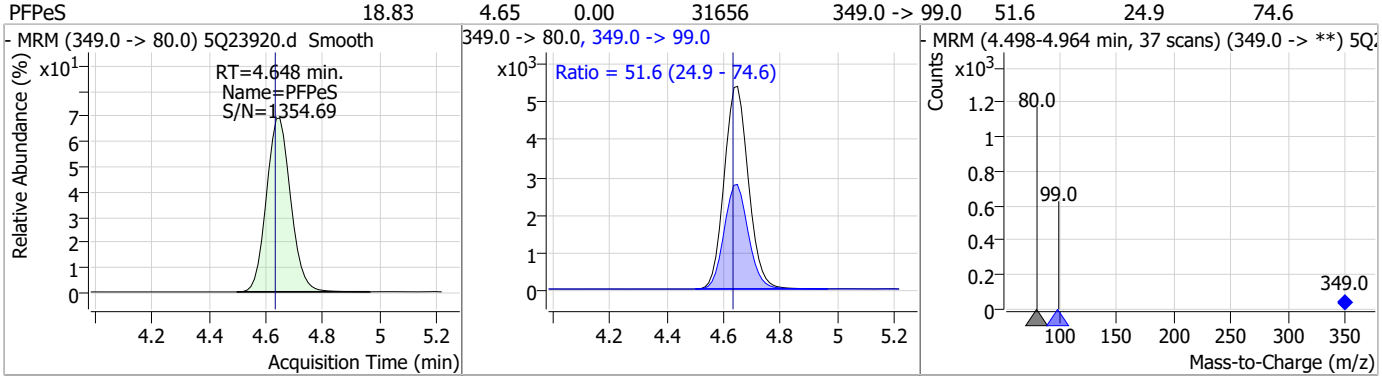


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	18.47	4.55	0.00	214490	313.0 -> 119.0	4.1	2.1	6.2

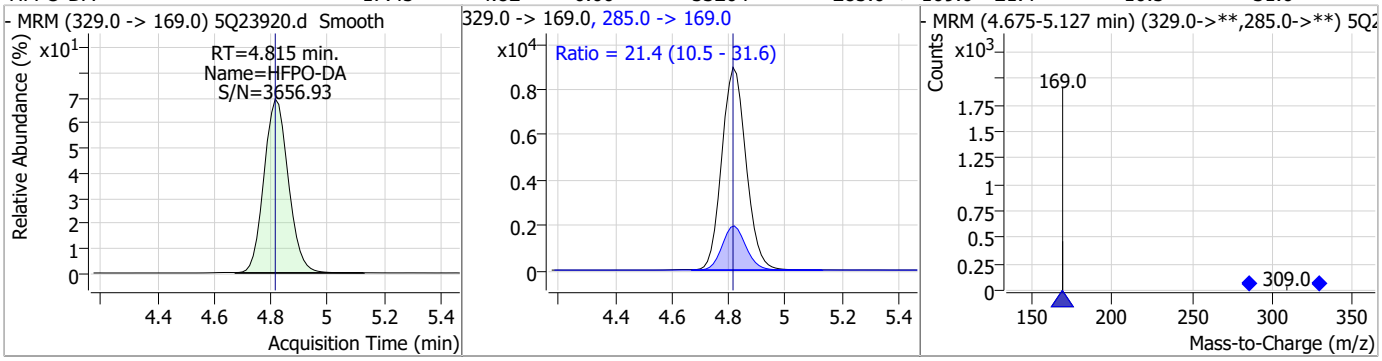


Perfluorinated Compounds by LC/MS/MS

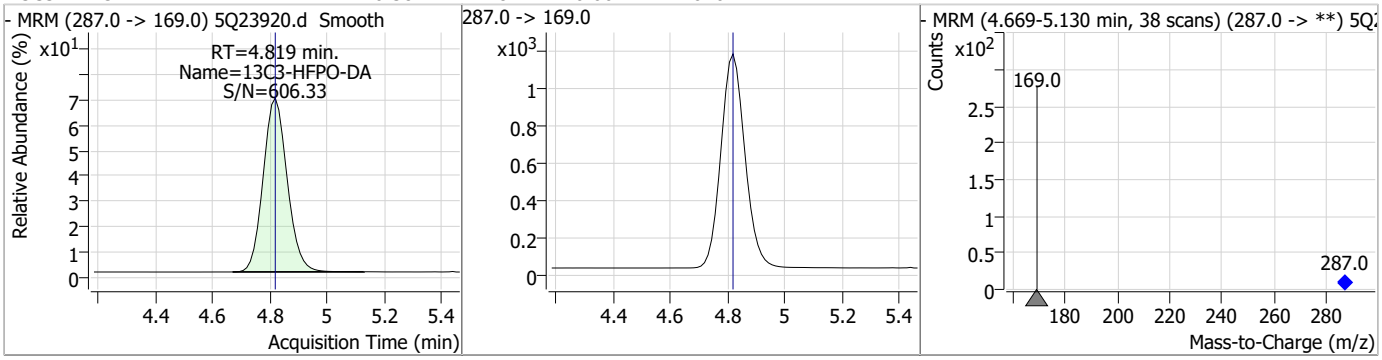
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	18.83	4.65	0.00	31656	349.0 -> 99.0	51.6	24.9	74.6



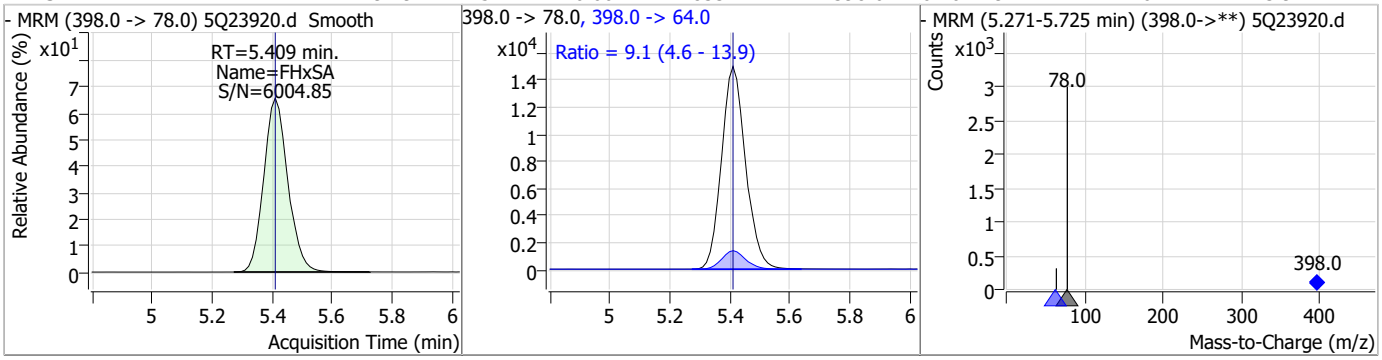
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	17.45	4.82	0.00	53204	285.0 -> 169.0	21.4	10.5	31.6



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	10.38	4.82	0.00	6702				

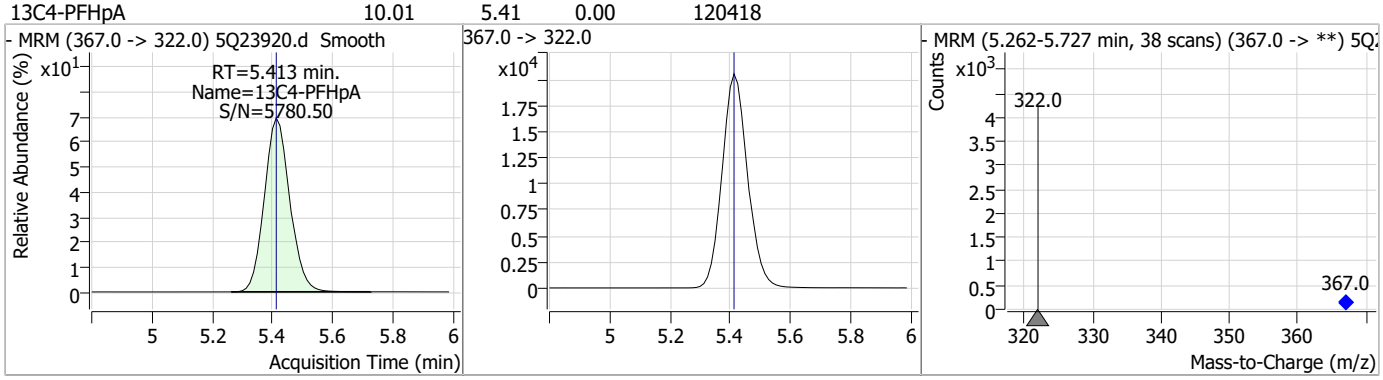


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	19.19	5.41	0.00	83324	398.0 -> 64.0	9.1	4.6	13.9

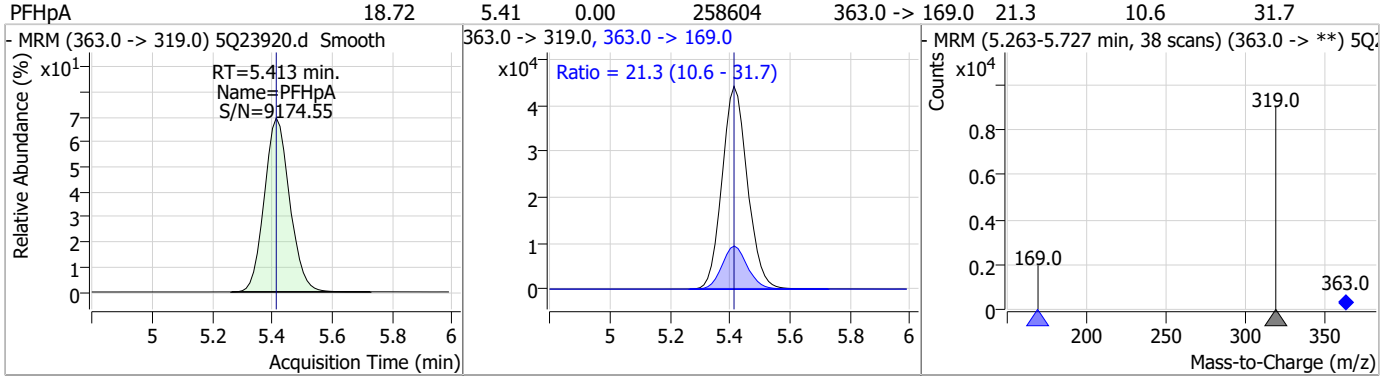


Perfluorinated Compounds by LC/MS/MS

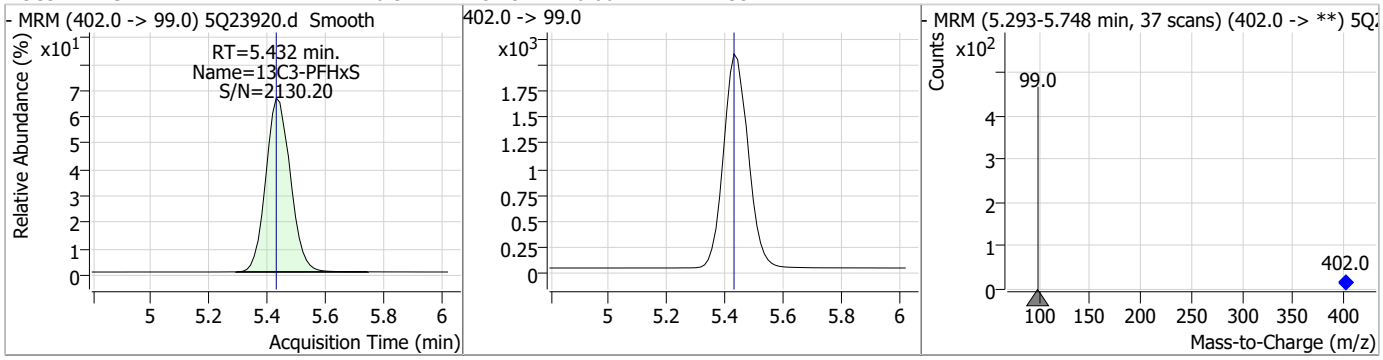
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	10.01	5.41	0.00	120418				



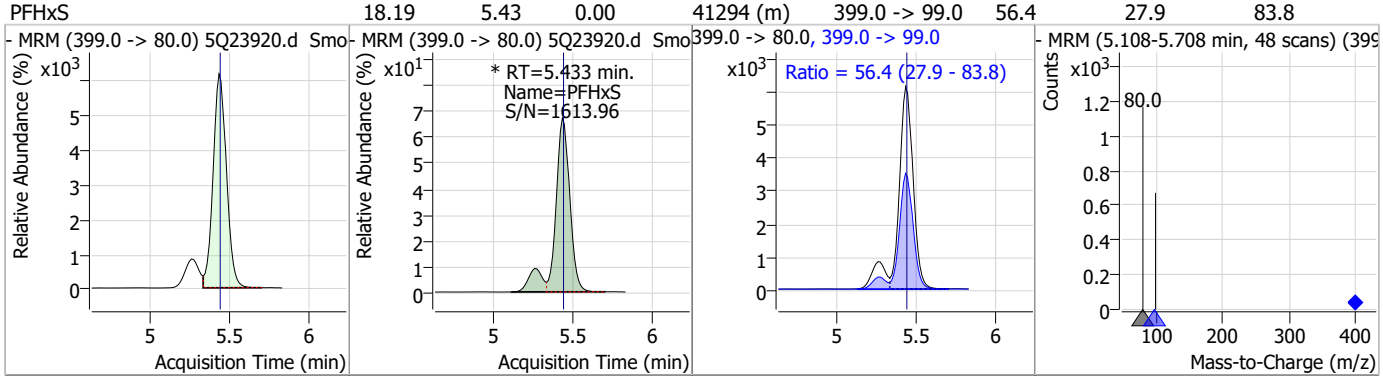
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	18.72	5.41	0.00	258604	363.0 -> 169.0	21.3	10.6	31.7



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	10.37	5.43	0.00	12235				

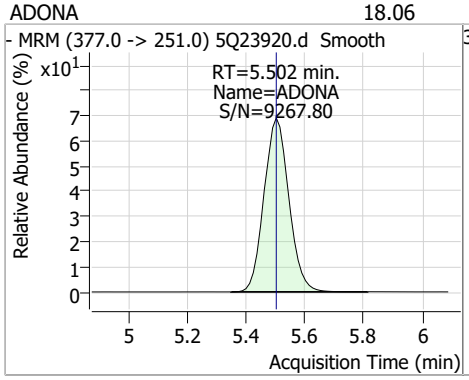


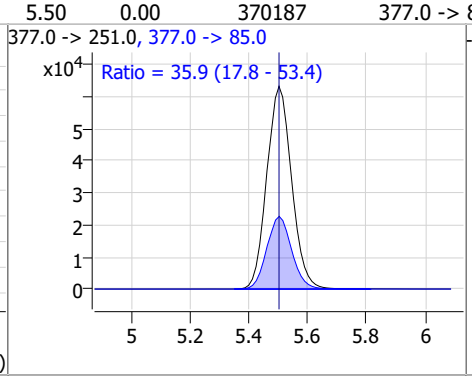
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	18.19	5.43	0.00	41294 (m)	399.0 -> 99.0	56.4	27.9	83.8

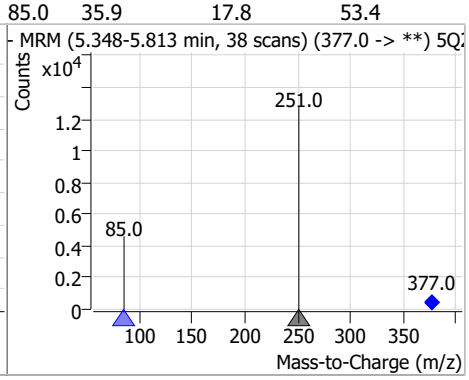


Perfluorinated Compounds by LC/MS/MS

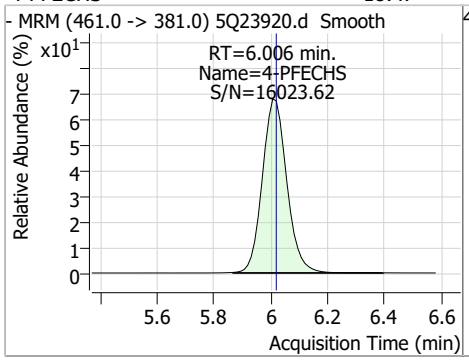
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	18.06	5.50	0.00	370187	377.0 -> 85.0	35.9	17.8	53.4

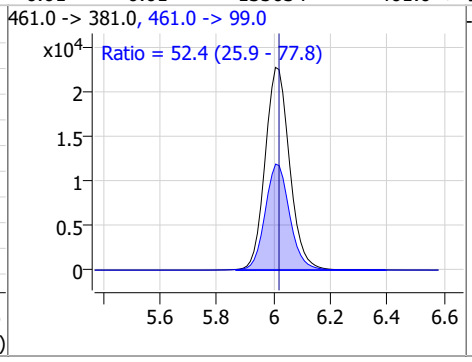


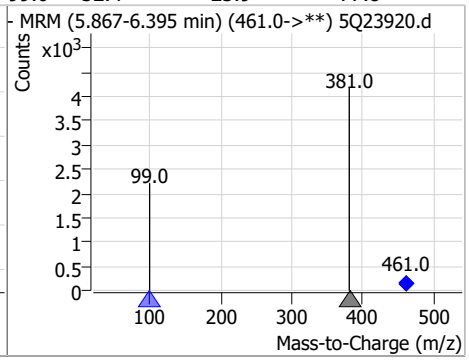




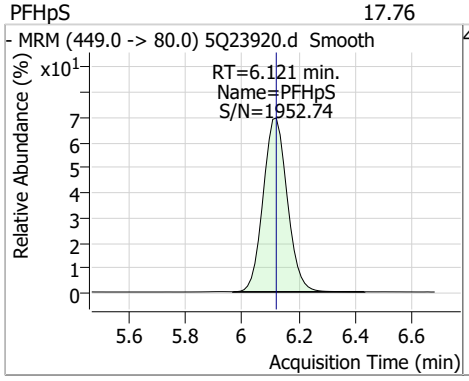
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS	18.47	6.01	-0.01	135634	461.0 -> 99.0	52.4	25.9	77.8

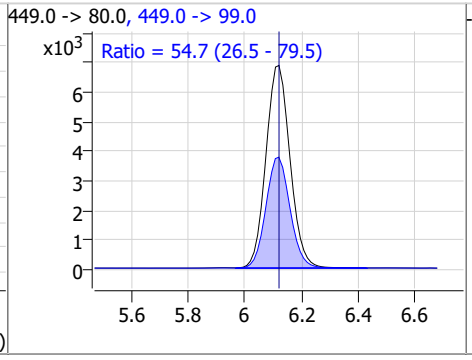


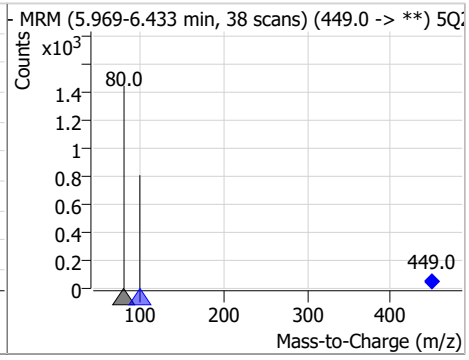




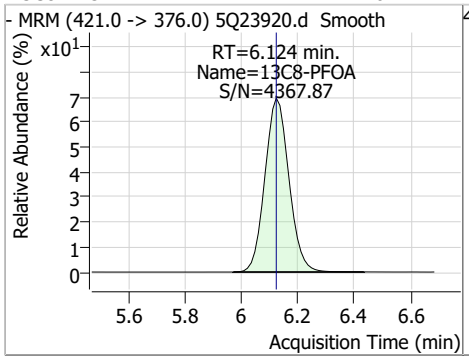
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	17.76	6.12	0.00	40641	449.0 -> 99.0	54.7	26.5	79.5

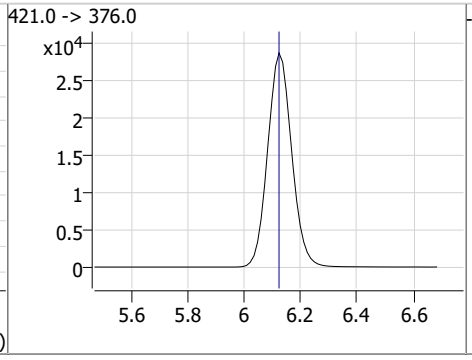


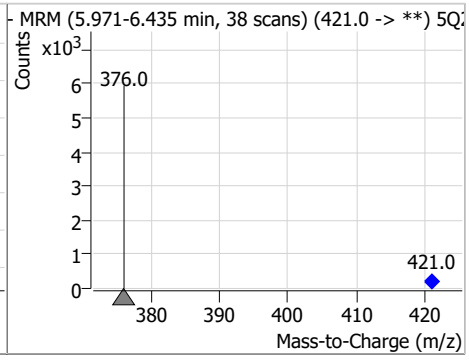




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	10.22	6.12	0.00	169148				

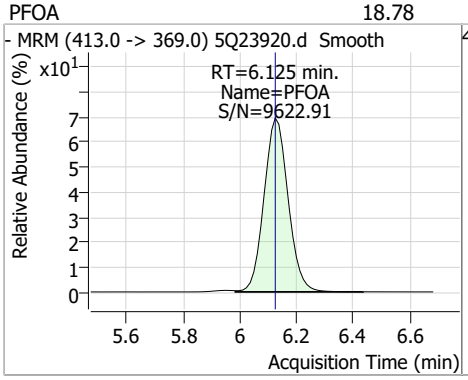


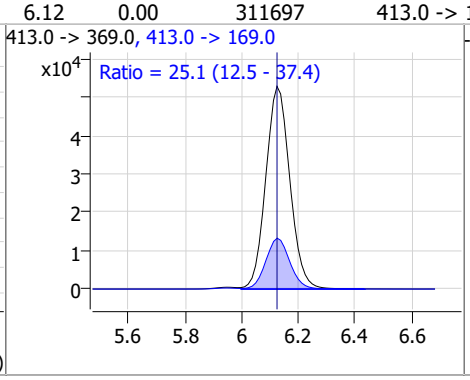


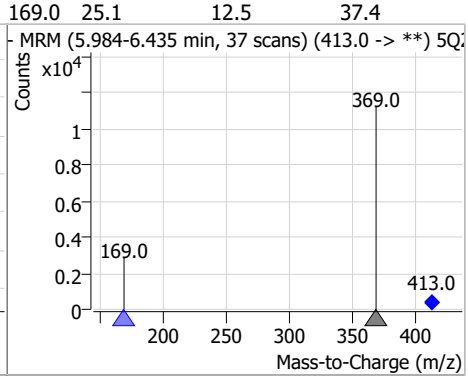


Perfluorinated Compounds by LC/MS/MS

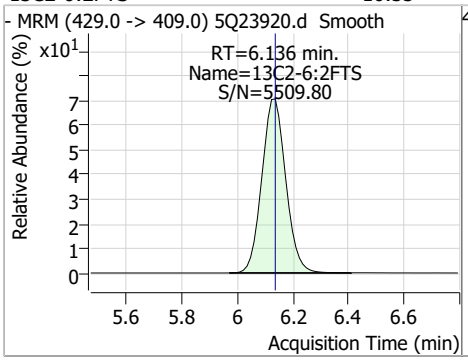
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	18.78	6.12	0.00	311697	413.0 -> 169.0	25.1	12.5	37.4

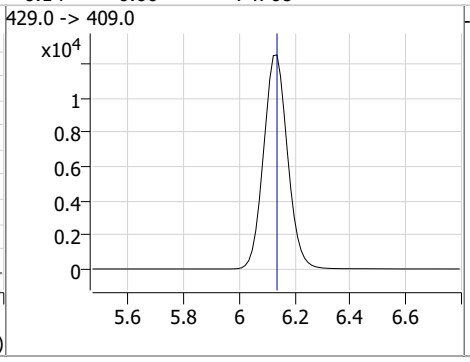


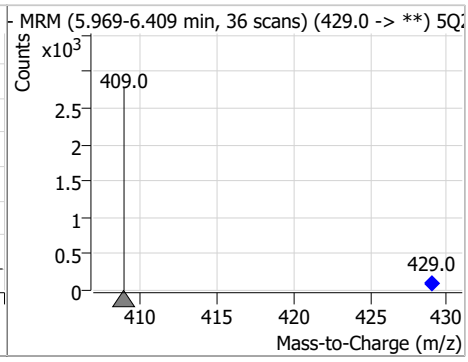




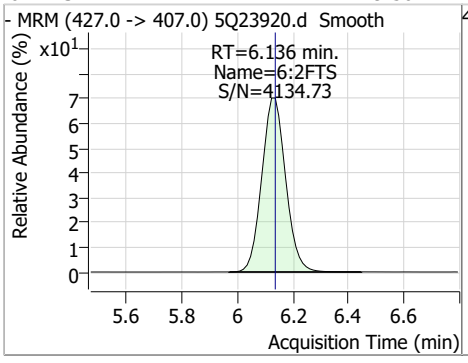
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	10.55	6.14	0.00	74768				

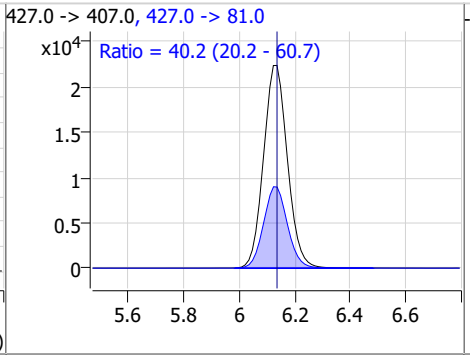


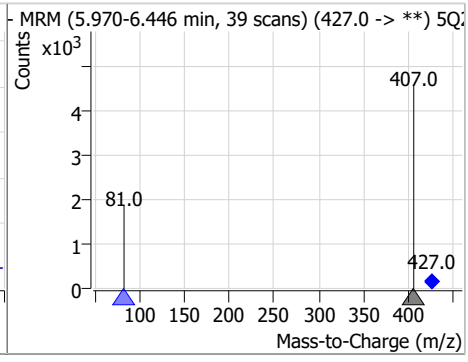




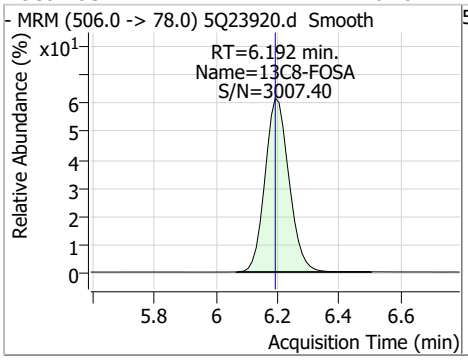
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	19.50	6.14	0.00	133412	427.0 -> 81.0	40.2	20.2	60.7

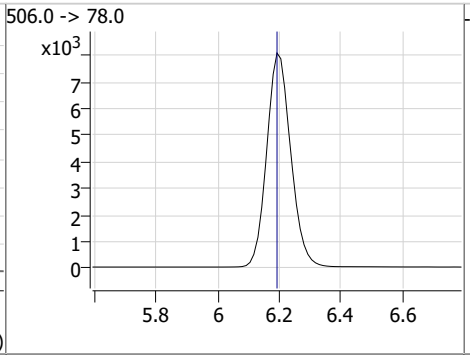


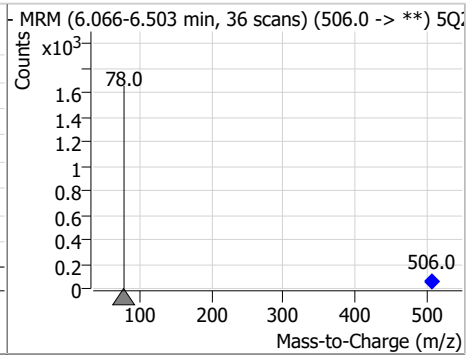




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	10.75	6.19	0.00	43556				

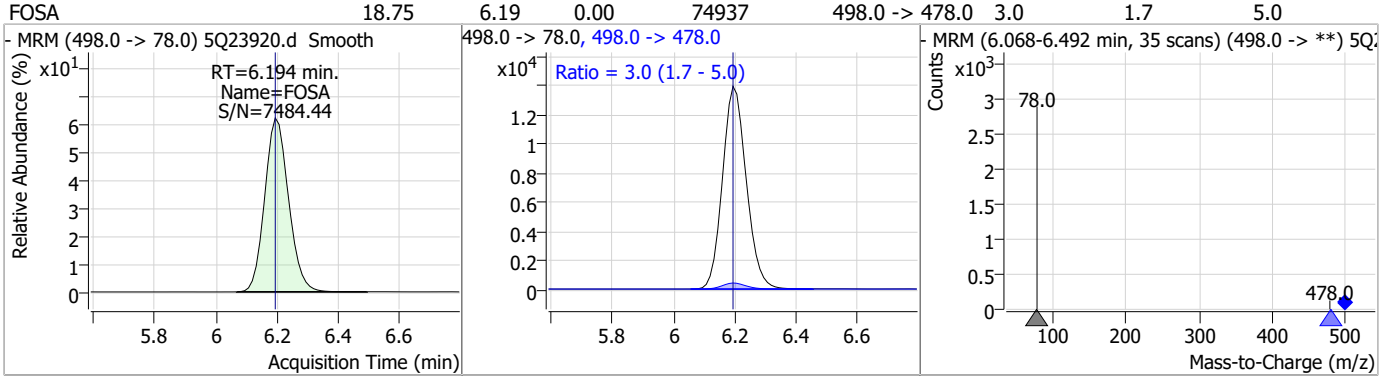




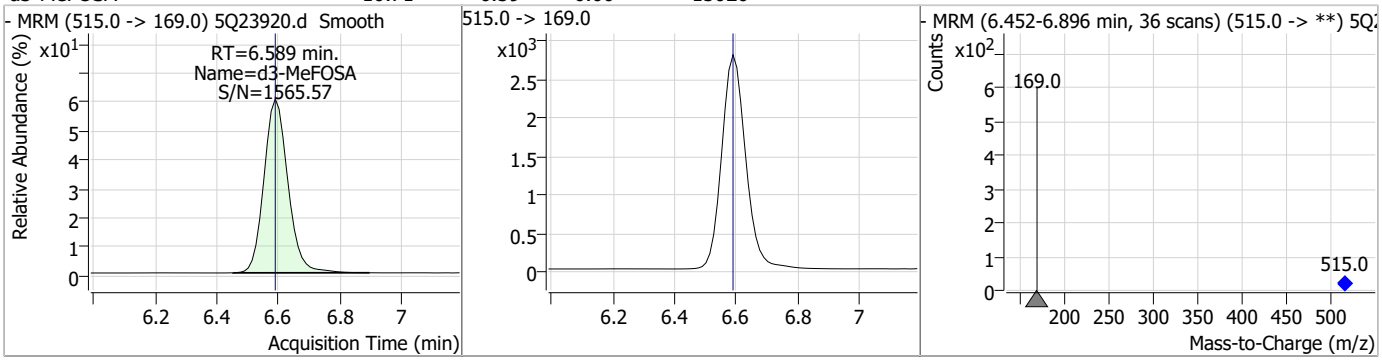


Perfluorinated Compounds by LC/MS/MS

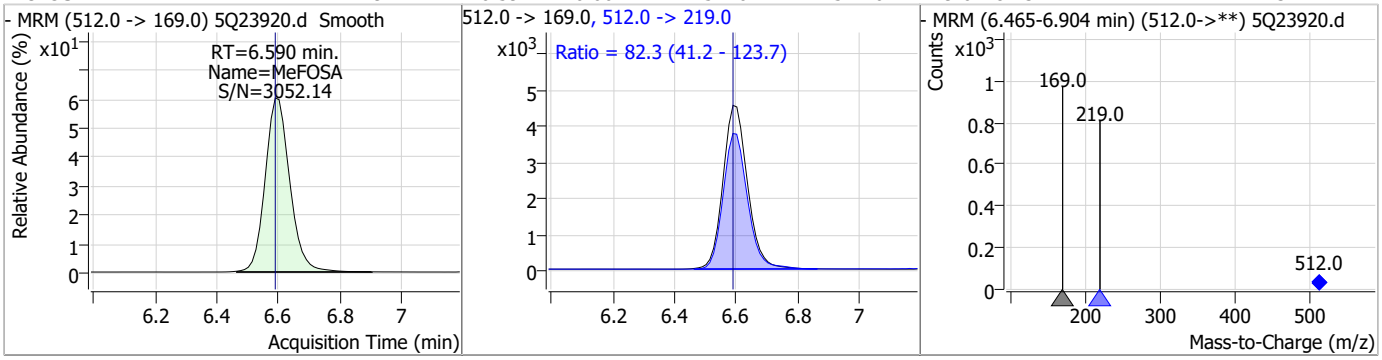
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	18.75	6.19	0.00	74937	498.0 -> 478.0	3.0	1.7	5.0



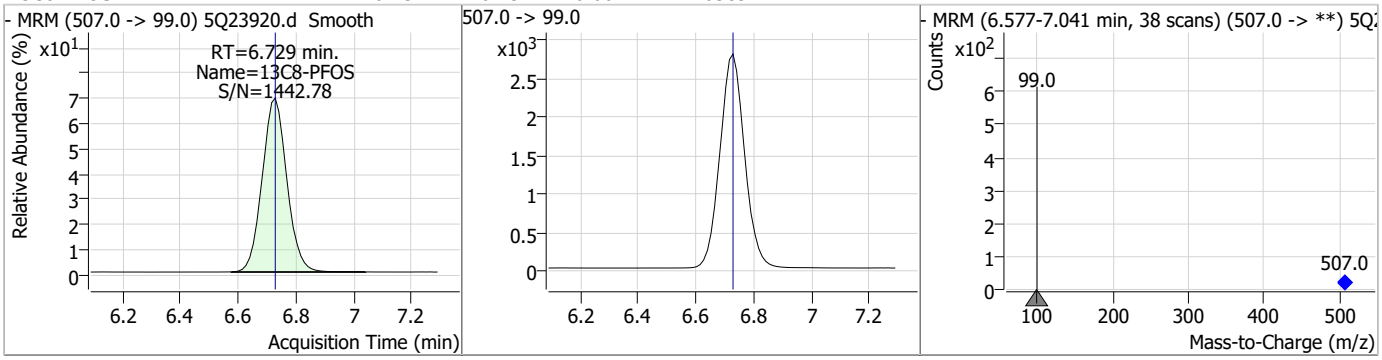
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	10.71	6.59	0.00	15020				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	19.41	6.59	0.00	25220	512.0 -> 219.0	82.3	41.2	123.7

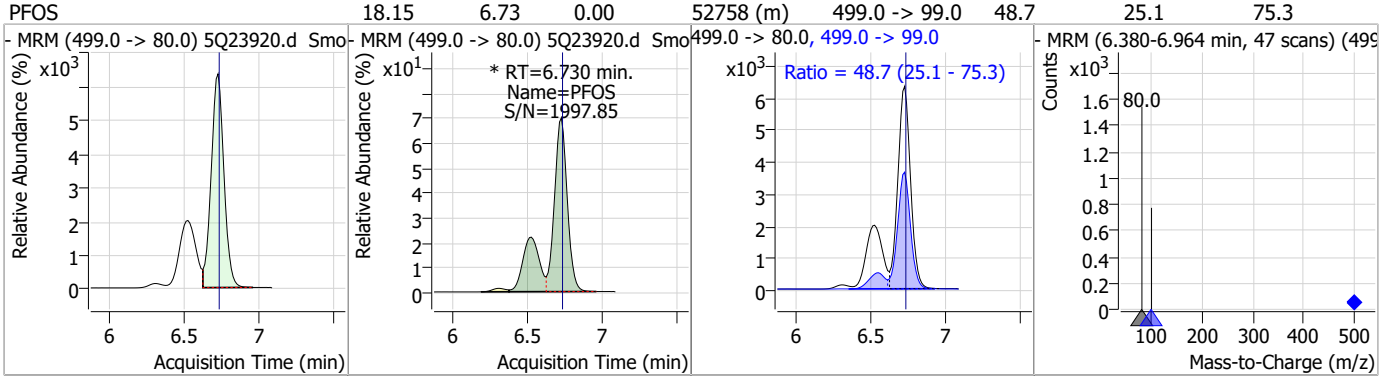


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	10.43	6.73	0.00	16389				

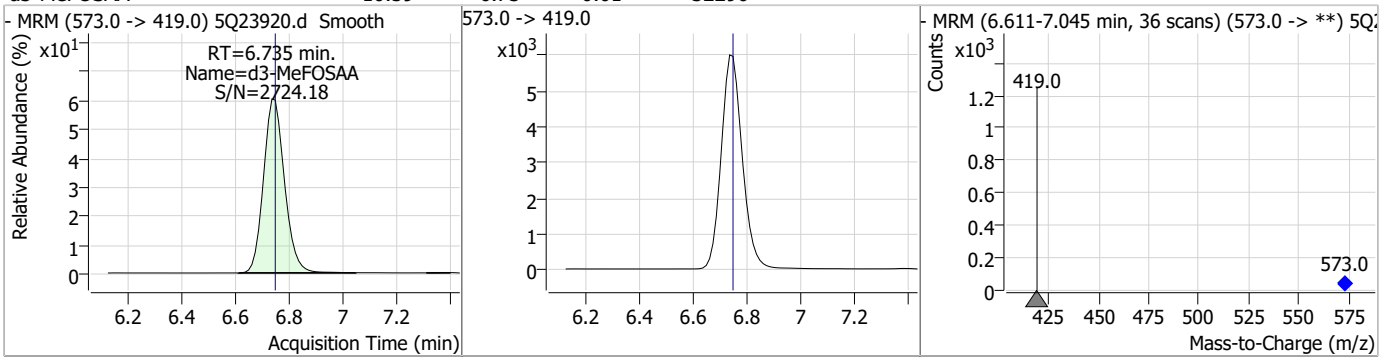


Perfluorinated Compounds by LC/MS/MS

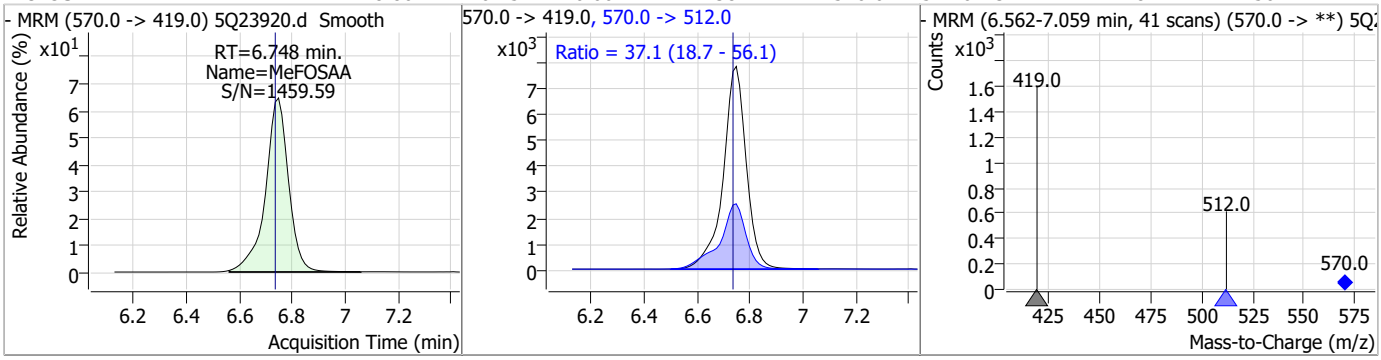
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	18.15	6.73	0.00	52758 (m)	499.0 -> 99.0	48.7	25.1	75.3



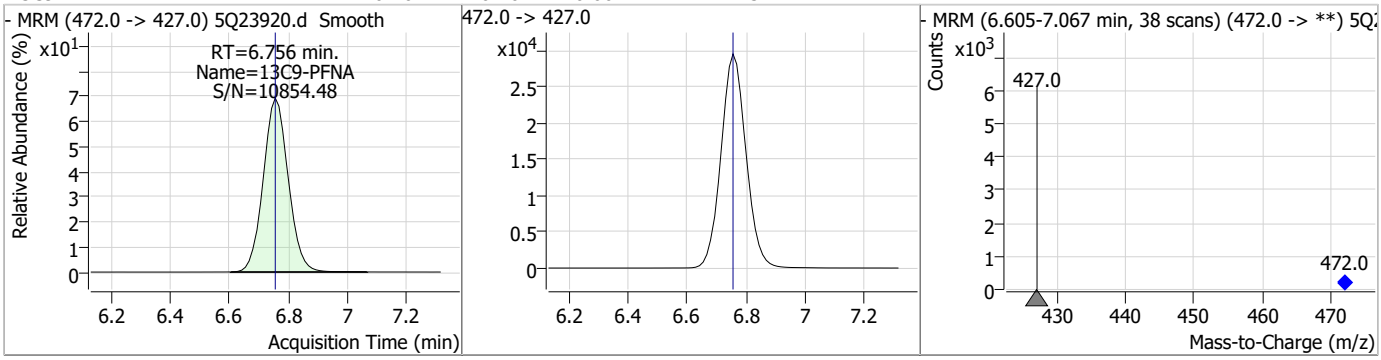
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	10.59	6.73	-0.01	32296				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	18.80	6.75	0.00	47387	570.0 -> 512.0	37.1	18.7	56.1

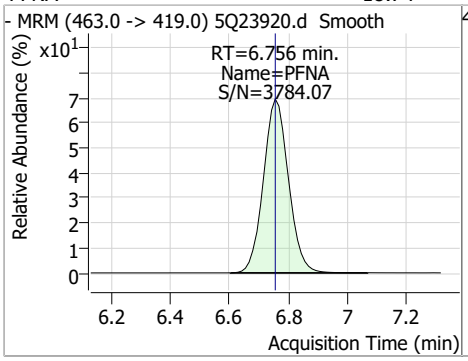


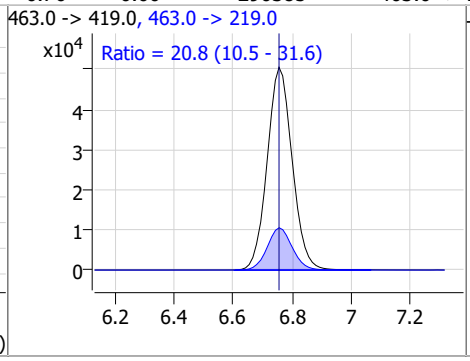
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	10.40	6.76	0.00	172743				

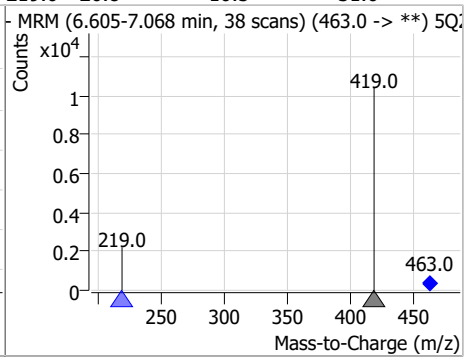


Perfluorinated Compounds by LC/MS/MS

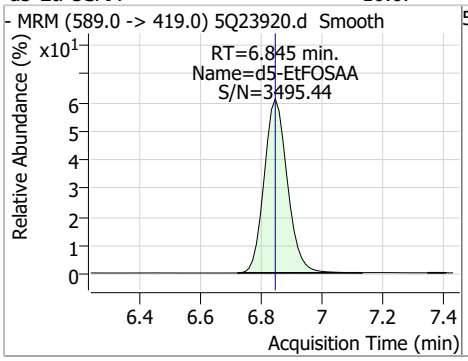
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	18.74	6.76	0.00	296385	463.0 -> 219.0	20.8	10.5	31.6

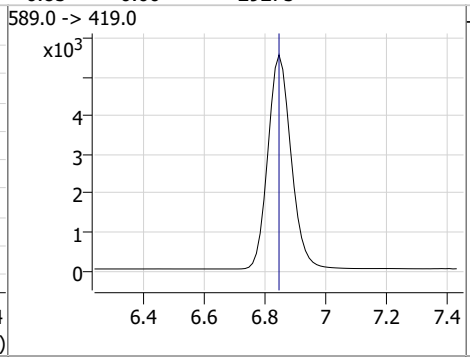


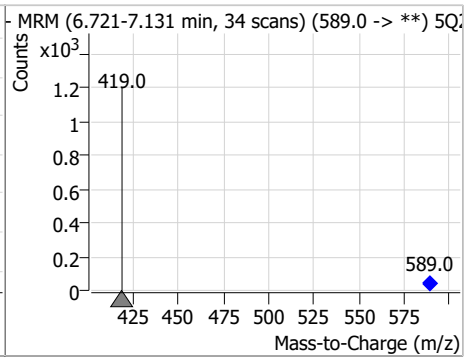




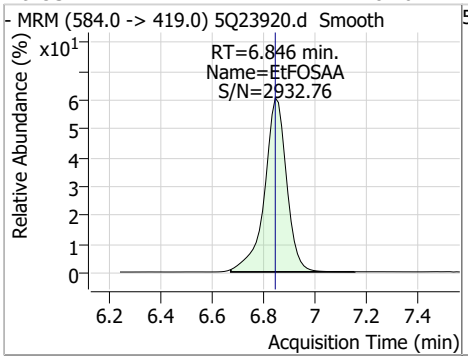
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	10.67	6.85	0.00	29275				

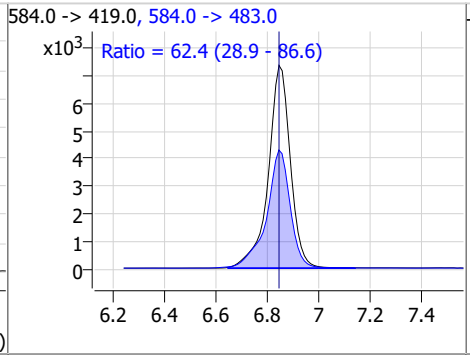


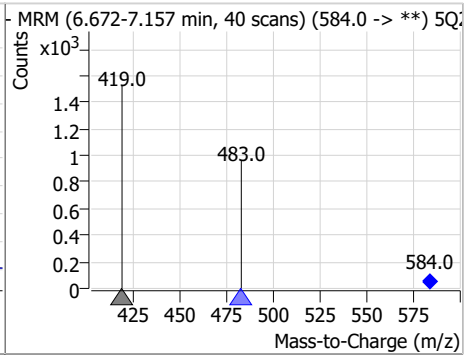




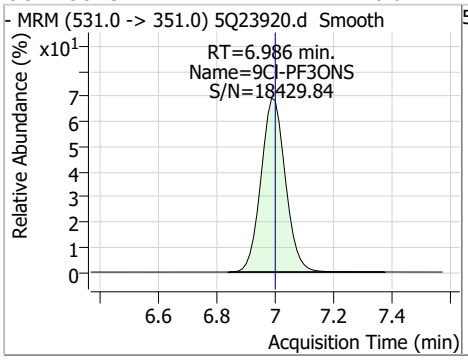
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	18.40	6.85	0.00	43938	584.0 -> 483.0	62.4	28.9	86.6

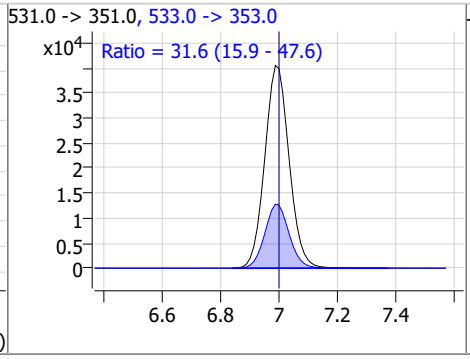


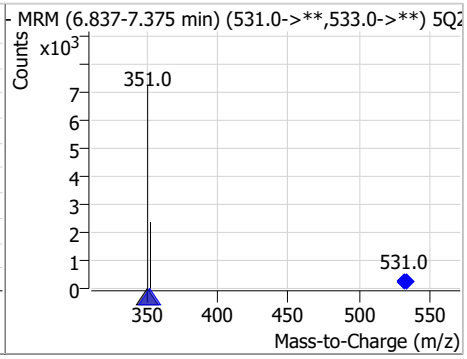




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	18.02	6.99	-0.01	235046	533.0 -> 353.0	31.6	15.9	47.6

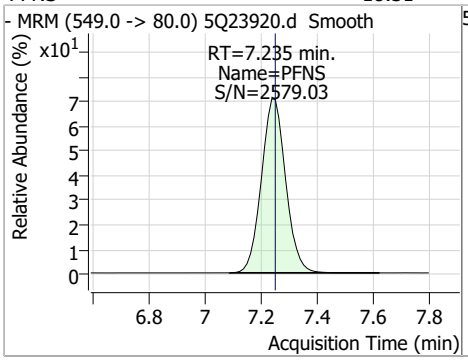


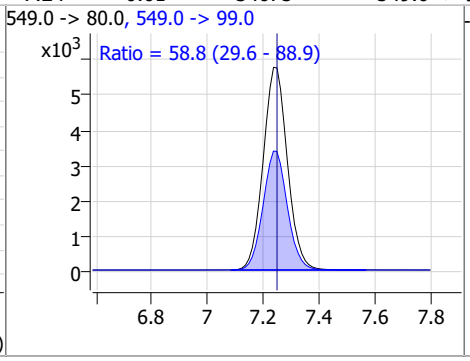


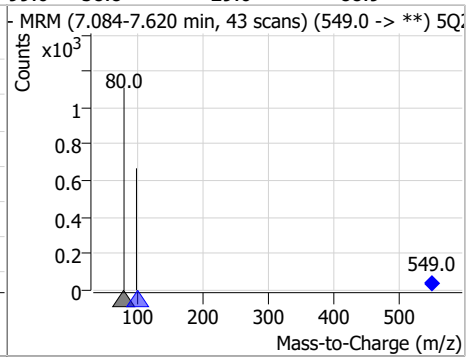


Perfluorinated Compounds by LC/MS/MS

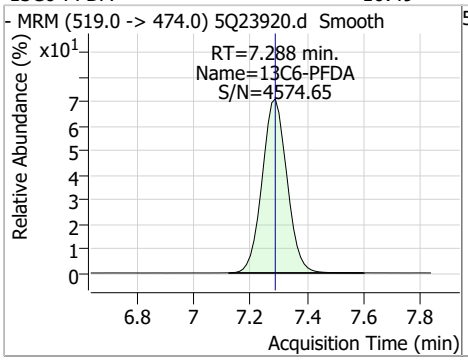
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	18.31	7.24	-0.01	34675	549.0 -> 99.0	58.8	29.6	88.9

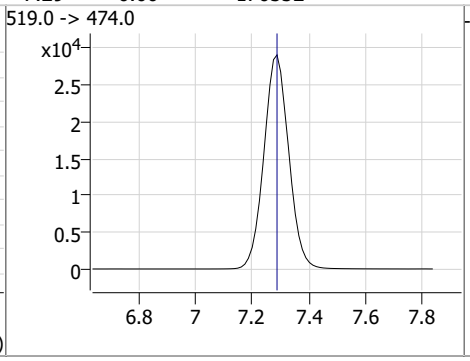


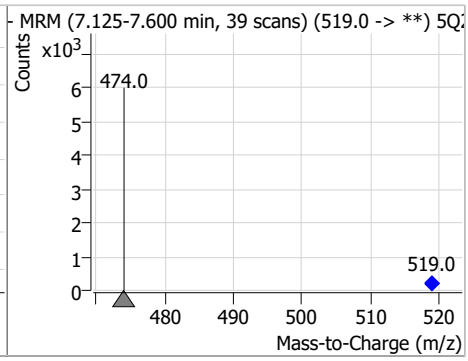




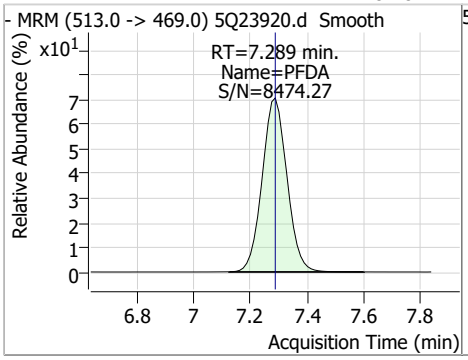
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	10.49	7.29	0.00	176552				

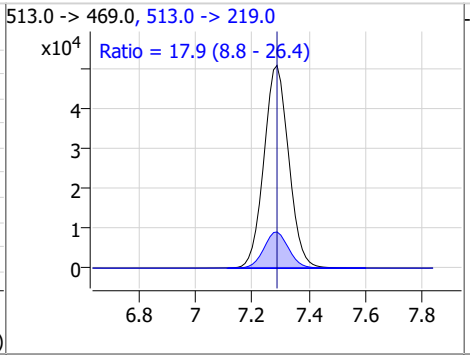


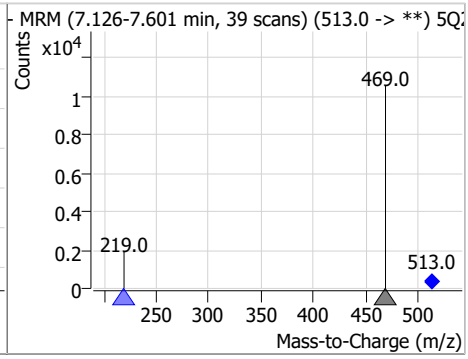




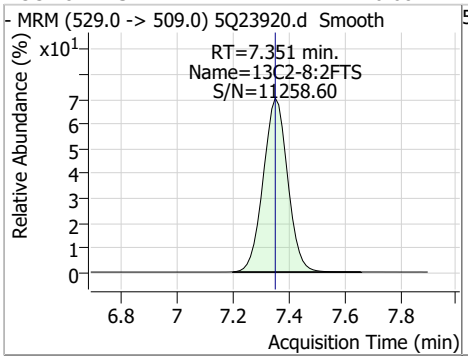
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	18.48	7.29	0.00	309899	513.0 -> 219.0	17.9	8.8	26.4

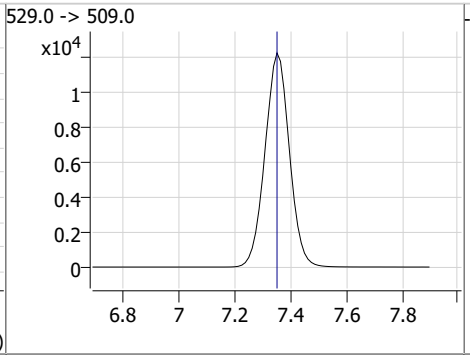


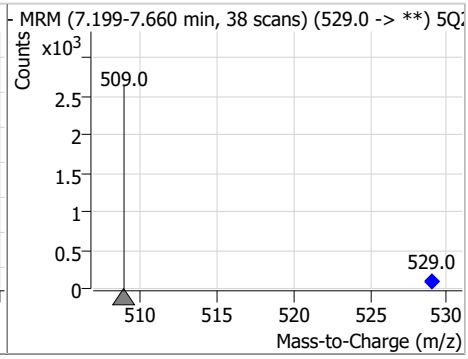




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	10.68	7.35	0.00	74607				

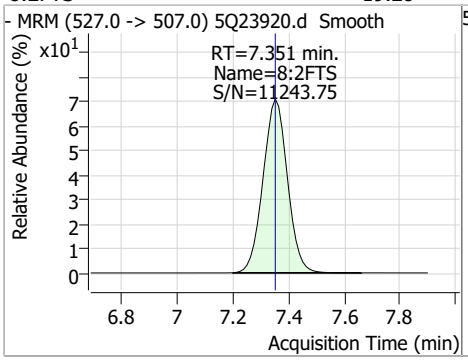


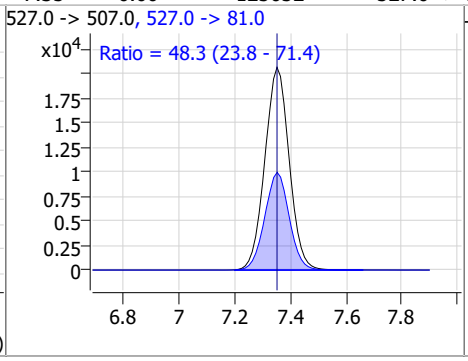


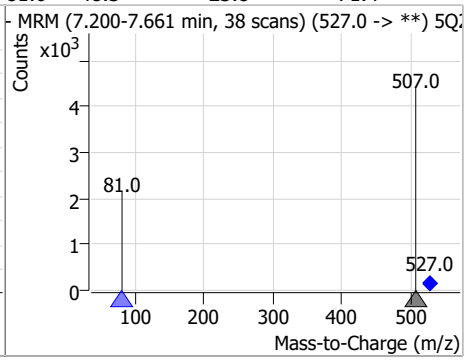


Perfluorinated Compounds by LC/MS/MS

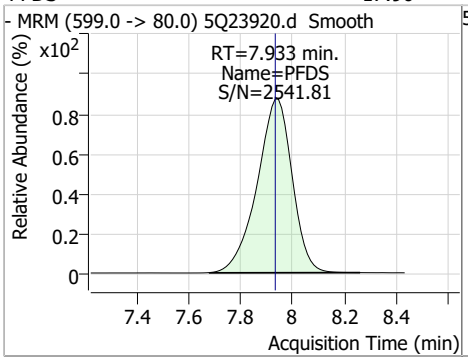
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	19.28	7.35	0.00	125652	527.0 -> 81.0	48.3	23.8	71.4

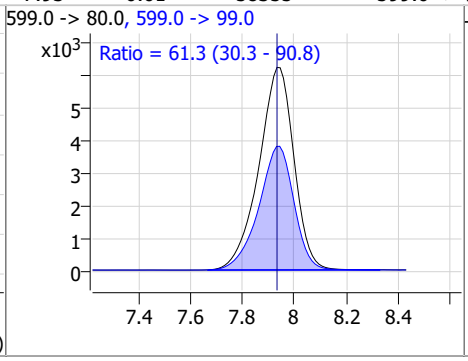


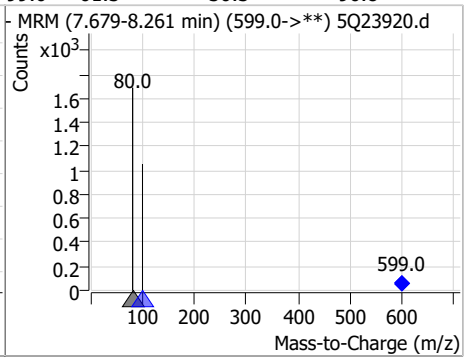




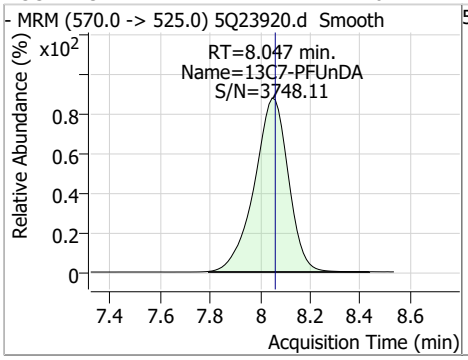
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	17.90	7.93	-0.01	58355	599.0 -> 99.0	61.3	30.3	90.8

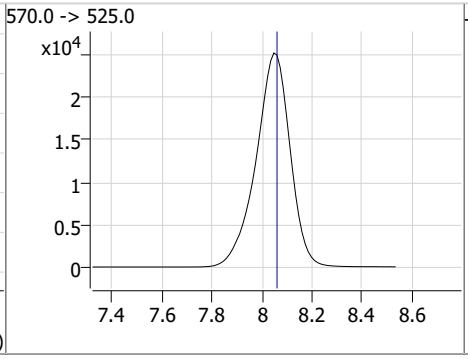


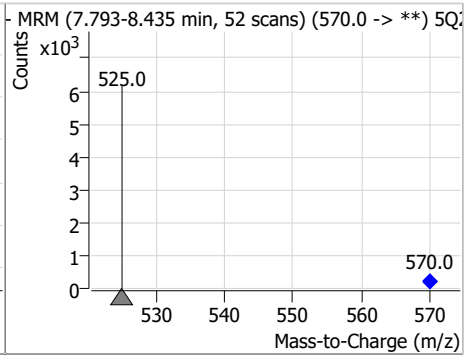




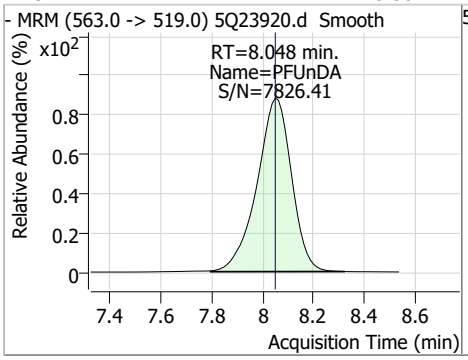
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	10.24	8.05	-0.01	238769				

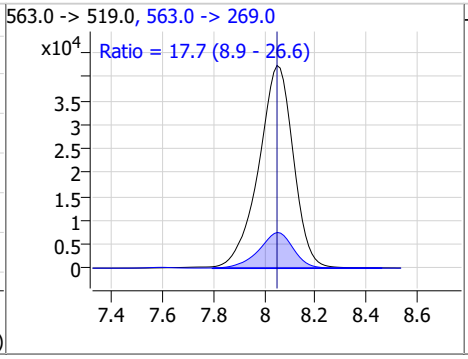


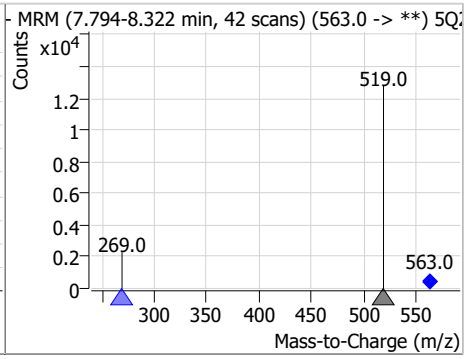




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	18.50	8.05	-0.01	398553	563.0 -> 269.0	17.7	8.9	26.6

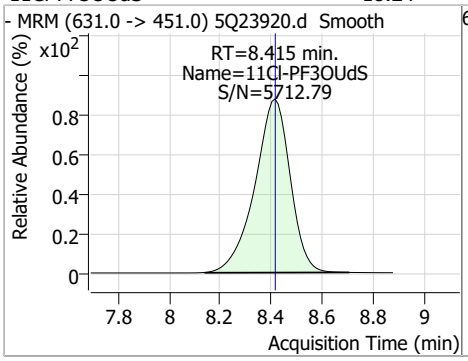


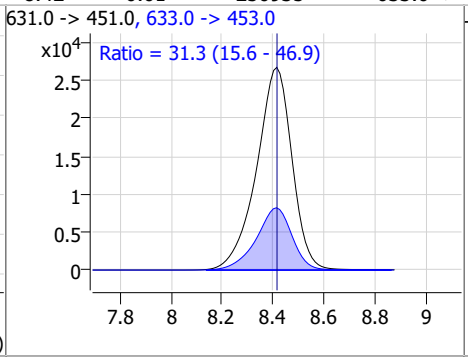


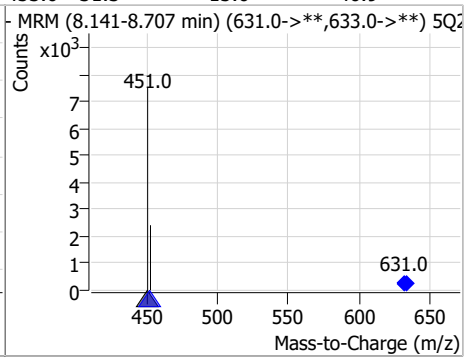


Perfluorinated Compounds by LC/MS/MS

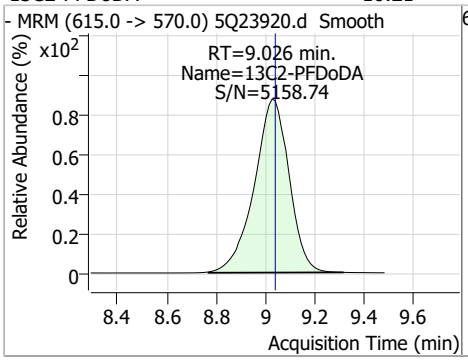
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	18.24	8.42	-0.01	256935	633.0 -> 453.0	31.3	15.6	46.9

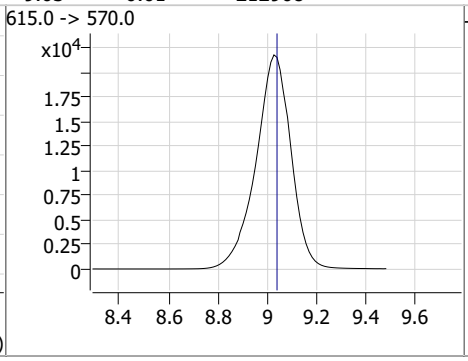


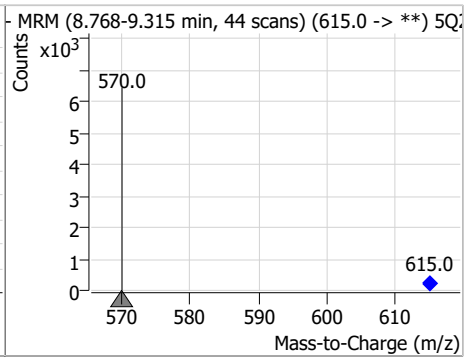




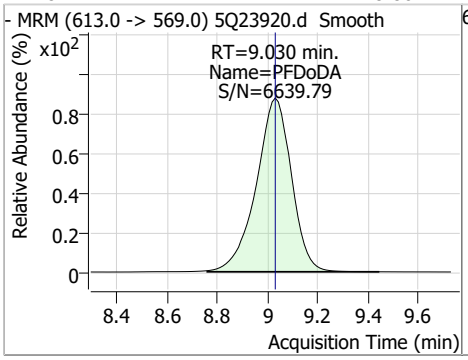
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	10.21	9.03	-0.01	212968				

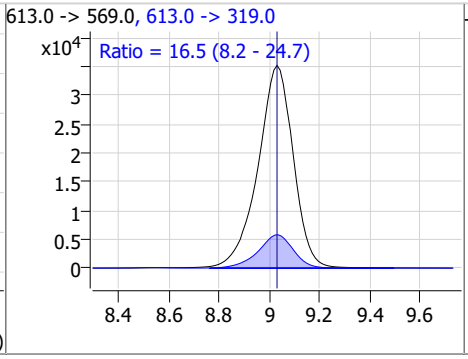


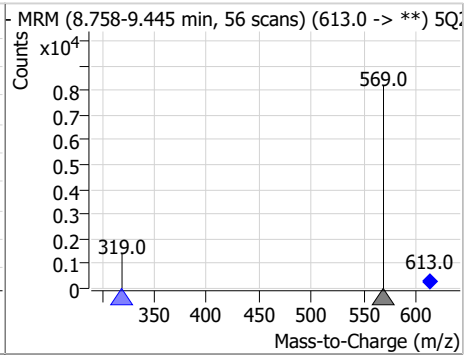




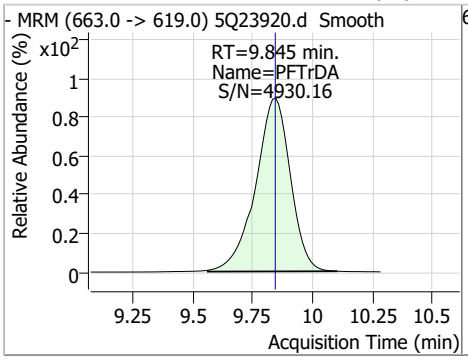
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	18.80	9.03	-0.01	343761	613.0 -> 319.0	16.5	8.2	24.7

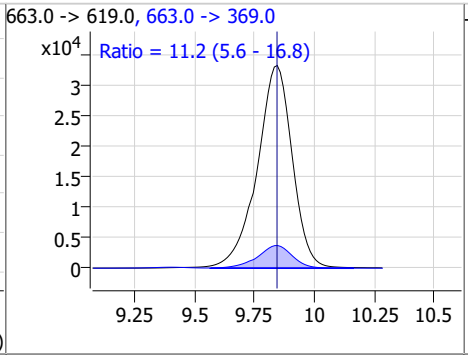


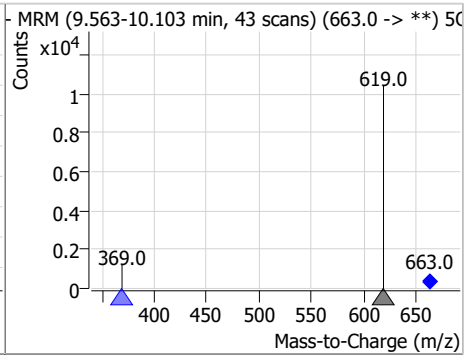




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	18.29	9.84	-0.01	334660	663.0 -> 369.0	11.2	5.6	16.8

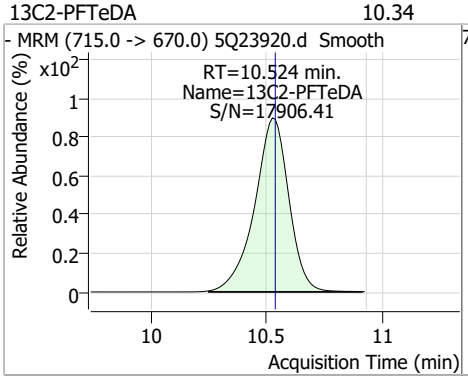


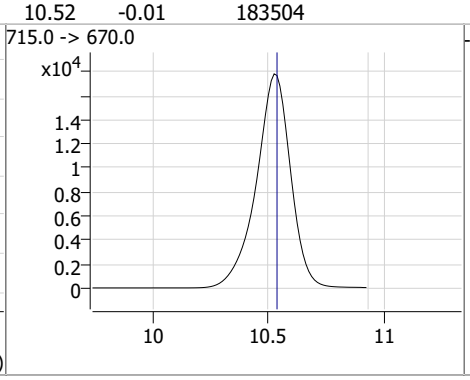


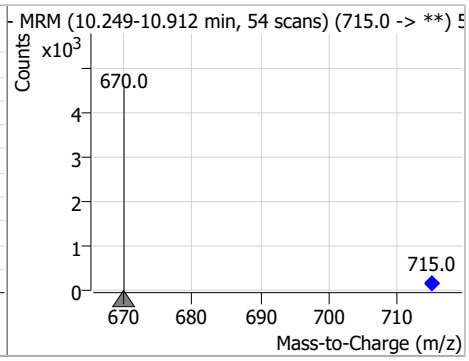


Perfluorinated Compounds by LC/MS/MS

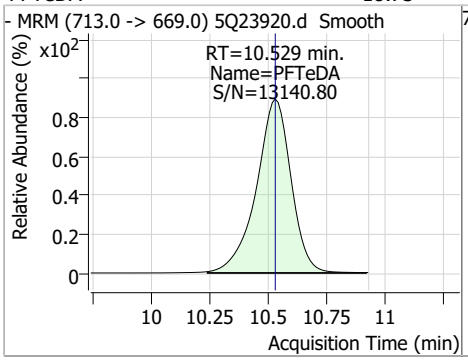
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	10.34	10.52	-0.01	183504				

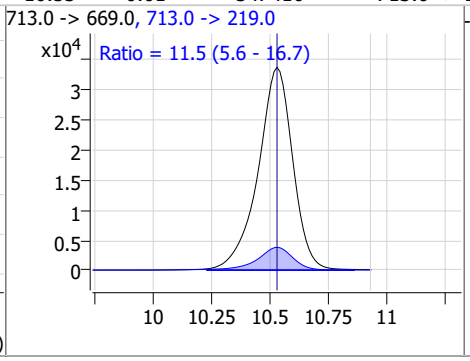


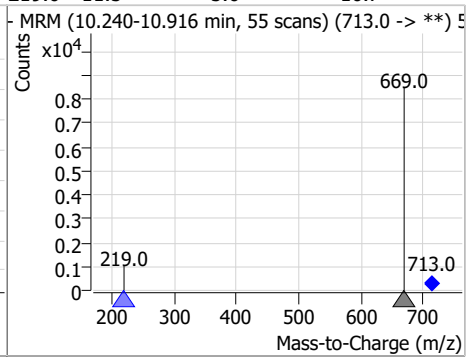




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	18.73	10.53	-0.01	347410	713.0 -> 219.0	11.5	5.6	16.7







Manual Integration Approval Summary

Sample Number: S5Q375-CC375
Lab FileID: 5Q23920.D
Injection Time: 12/28/23 17:52
Method: EPA 537M QSM5.3 B-15
Analyst approved: 12/29/23 14:15 Lindsay Ritner
Supervisor approved: 01/02/24 14:05 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.43	Split peak
Perfluorooctanesulfonic acid	1763-23-1		6.73	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Natasha Gumtie 01/02/24 14:05

Perfluorinated Compounds by LC/MS/MS

Data File : 5Q23921.d
Operator : natashag
Acq. Method : 537_ID.m
Acq. Date-Time : 12/28/2023 6:08:55 PM
Sample Name : cc375-1.0LL
Vial : P1-A3
DA Method File : ID_122823_S5Q375.quantmethod.xml
Batch Name : s5q375.batch.bin
Sample Information : OP401,S5Q375,250,,,1.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.987	217.0 -> 172.0	47976	10.00	µg/L	0.000
M5-PFPeA	3.432	268.0 -> 223.0	80156	10.00	µg/L	0.000
M5-PFHxA	4.552	318.0 -> 273.0	122601	10.00	µg/L	0.000
M4-PFHpA	5.413	367.0 -> 322.0	124608	10.00	µg/L	0.000
M8-PFOA	6.124	421.0 -> 376.0	170890	10.00	µg/L	0.000
M9-PFNA	6.756	472.0 -> 427.0	174178	10.00	µg/L	0.000
M6-PFDA	7.288	519.0 -> 474.0	181166	10.00	µg/L	0.000
M7-PFUnDA	8.047	570.0 -> 525.0	242140	10.00	µg/L	-0.012
M2-PFDoDA	9.026	615.0 -> 570.0	215778	10.00	µg/L	-0.013
M2-PFTeDA	10.524	715.0 -> 670.0	181945	10.00	µg/L	-0.013
M8-FOSA	6.192	506.0 -> 78.0	45511	10.00	µg/L	0.000
M3-PFBS	3.624	302.0 -> 99.0	9922	10.00	µg/L	-0.012
M3-PFHxS	5.432	402.0 -> 99.0	12160	10.00	µg/L	0.000
M8-PFOS	6.729	507.0 -> 99.0	16367	10.00	µg/L	0.000
M2-4:2FTS	4.474	329.0 -> 309.0	39052	10.00	µg/L	0.000
M2-6:2FTS	6.136	429.0 -> 409.0	68752	10.00	µg/L	0.000
M2-8:2FTS	7.351	529.0 -> 509.0	69579	10.00	µg/L	0.000
M3-MeFOSAA	6.735	573.0 -> 419.0	33117	10.00	µg/L	-0.012
M3-HFPO-DA	4.819	287.0 -> 169.0	6474	10.00	µg/L	0.000
M3-MeFOSA	6.589	515.0 -> 169.0	15234	10.00	µg/L	0.000
M5-EtFOSAA	6.845	589.0 -> 419.0	29359	10.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.474	329.0 -> 309.0	39052	9.71	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 97.1%		
13C2-6:2FTS	6.136	429.0 -> 409.0	68752	9.70	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 97.0%		
13C2-8:2FTS	7.351	529.0 -> 509.0	69579	9.96	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.6%		
13C2-PFDoDA	9.026	615.0 -> 570.0	215778	10.35	µg/L	-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 103.5%		
13C2-PFTeDA	10.524	715.0 -> 670.0	181945	10.25	µg/L	-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 102.5%		
13C3-PFBS	3.624	302.0 -> 99.0	9922	10.22	µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 102.2%		
13C3-PFHxS	5.432	402.0 -> 99.0	12160	10.30	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 103.0%		
13C4-PFBA	1.987	217.0 -> 172.0	47976	10.15	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.5%		
13C4-PFHpA	5.413	367.0 -> 322.0	124608	10.36	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 103.6%		
13C5-PFHxA	4.552	318.0 -> 273.0	122601	10.26	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 102.6%		
13C5-PFPeA	3.432	268.0 -> 223.0	80156	10.17	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.7%		
13C6-PFDA	7.288	519.0 -> 474.0	181166	10.76	µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

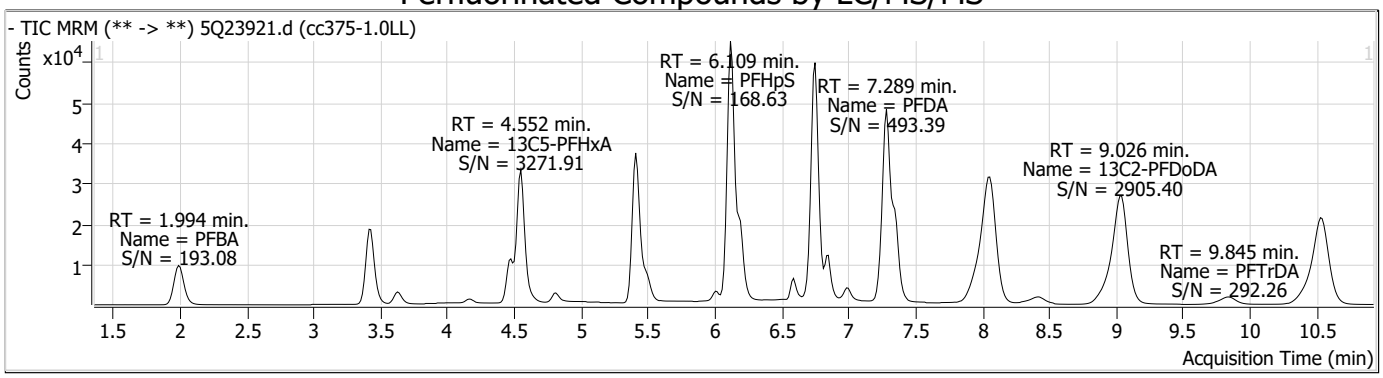
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 107.6%			
13C7-PFUnDA	8.047	570.0 -> 525.0	242140	10.39	µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 103.9%			
13C8-FOSA	6.192	506.0 -> 78.0	45511	11.23	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 112.3%			
13C8-PFOA	6.124	421.0 -> 376.0	170890	10.32	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 103.2%			
13C8-PFOS	6.729	507.0 -> 99.0	16367	10.41	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 104.1%			
13C9-PFNA	6.756	472.0 -> 427.0	174178	10.49	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 104.9%			
d3-MeFOSAA	6.735	573.0 -> 419.0	33117	10.86	µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 108.6%			
13C3-HFPO-DA	4.819	287.0 -> 169.0	6474	10.03	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.3%			
d3-MeFOSA	6.589	515.0 -> 169.0	15234	10.86	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 108.6%			
d5-EtFOSAA	6.845	589.0 -> 419.0	29359	10.70	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 107.0%			
Target Compounds							QValue
4:2FTS	4.475	327.0 -> 307.0	3649	0.95	µg/L		99
		327.0 -> 81.0	2076				
6:2FTS	6.136	427.0 -> 407.0	5653	0.90	µg/L		100
		427.0 -> 81.0	2285				
8:2FTS	7.351	527.0 -> 507.0	5690	0.94	µg/L		99
		527.0 -> 81.0	2688				
EtFOSAA	6.846	584.0 -> 419.0	2210	0.92	µg/L		88
		584.0 -> 483.0	1472				
FOSA	6.194	498.0 -> 78.0	3229	0.77	µg/L		99
		498.0 -> 478.0	96				
MeFOSAA	6.748	570.0 -> 419.0	2335	0.90	µg/L		93
		570.0 -> 512.0	975				
PFBA	1.994	213.0 -> 169.0	3567	0.80	µg/L		100
PFBS	3.628	299.0 -> 80.0	1983	0.81	µg/L		96
		299.0 -> 99.0	916				
PFDA	7.289	513.0 -> 469.0	13654	0.79	µg/L		99
		513.0 -> 219.0	2344				
PFDoDA	9.030	613.0 -> 569.0	15808	0.85	µg/L		99
		613.0 -> 319.0	2634				
PFDS	7.933	599.0 -> 80.0	2735	0.83	µg/L		94
		599.0 -> 99.0	1525				
PFHpA	5.413	363.0 -> 319.0	11410	0.80	µg/L		98
		363.0 -> 169.0	2506				
PFHpS	6.109	449.0 -> 80.0	1907	0.83	µg/L		97
		449.0 -> 99.0	1052				
PFHxA	4.553	313.0 -> 269.0	9200	0.78	µg/L		99
		313.0 -> 119.0	419				
PFHxS	5.433	399.0 -> 80.0	1795	0.80	µg/L	m	97
		399.0 -> 99.0	1044				
PFNA	6.756	463.0 -> 419.0	13010	0.82	µg/L		100
		463.0 -> 219.0	2757				
PFNS	7.248	549.0 -> 80.0	1507	0.80	µg/L		99
		549.0 -> 99.0	905				
PFOA	6.125	413.0 -> 369.0	13397	0.80	µg/L		99
		413.0 -> 169.0	3374				
PFOS	6.730	499.0 -> 80.0	2325	0.80	µg/L	m	100

Perfluorinated Compounds by LC/MS/MS

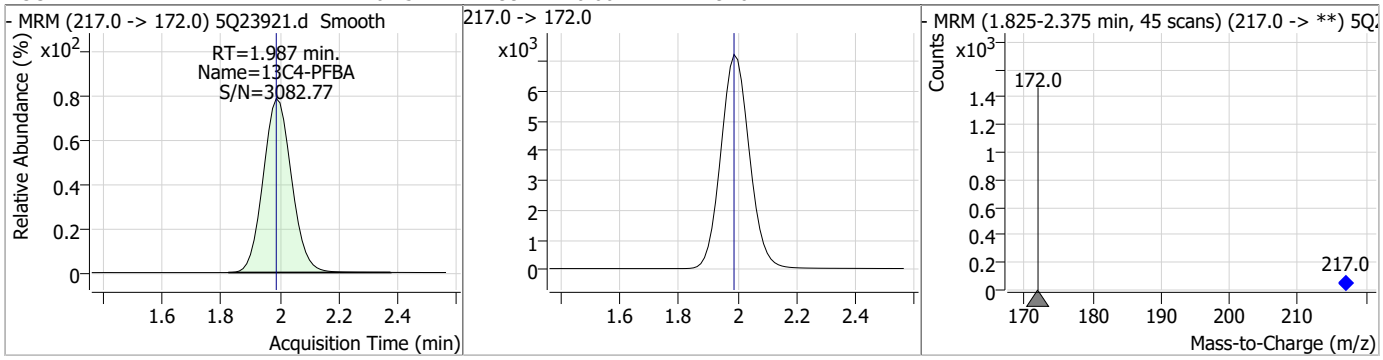
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		499.0 -> 99.0	1175			
PFPeA	3.422	263.0 -> 219.0	6306	0.81	µg/L	100
PFPeS	4.648	349.0 -> 80.0	1300	0.75	µg/L	87
		349.0 -> 99.0	763			
PFTeDA	10.529	713.0 -> 669.0	15363	0.84	µg/L	99
		713.0 -> 219.0	1765			
PFTrDA	9.845	663.0 -> 619.0	14886	0.80	µg/L	99
		663.0 -> 369.0	1709			
PFUnDA	8.048	563.0 -> 519.0	17884	0.82	µg/L	99
		563.0 -> 269.0	3248			
11Cl-PF3OUdS	8.415	631.0 -> 451.0	10349	0.73	µg/L	99
		633.0 -> 453.0	3277			
9Cl-PF3ONS	6.986	531.0 -> 351.0	9729	0.73	µg/L	96
		533.0 -> 353.0	2865			
ADONA	5.502	377.0 -> 251.0	15036	0.74	µg/L	99
		377.0 -> 85.0	5454			
HFPO-DA	4.815	329.0 -> 169.0	2140	0.73	µg/L	100
		285.0 -> 169.0	455			
MeFOSA	6.590	512.0 -> 169.0	1114	0.85	µg/L	84
		512.0 -> 219.0	761			
4-PFECHS	6.006	461.0 -> 381.0	6784	0.91	µg/L	99
		461.0 -> 99.0	3453			
FBSA	4.170	298.0 -> 78.0	3314	0.81	µg/L	98
		298.0 -> 64.0	329			
FHxSA	5.409	398.0 -> 78.0	3624	0.80	µg/L	96
		398.0 -> 64.0	290			

 # = Qualifier out of range, m = manually integrated, + = Area summed

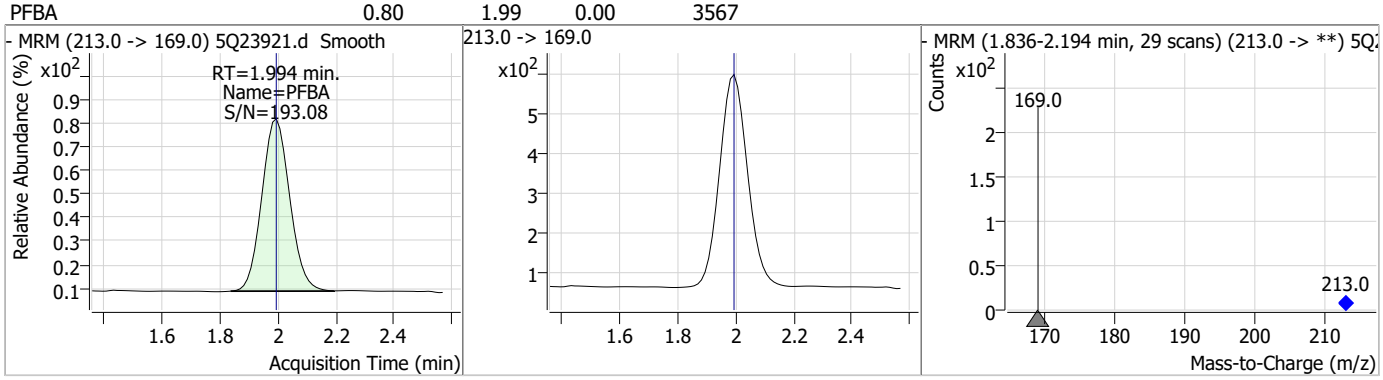
Perfluorinated Compounds by LC/MS/MS



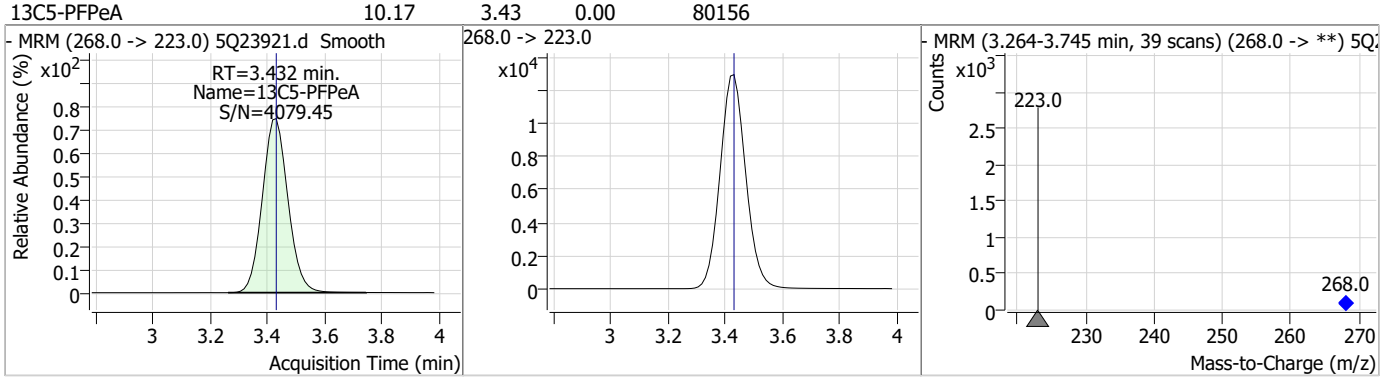
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	10.15	1.99	0.00	47976				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	0.80	1.99	0.00	3567				

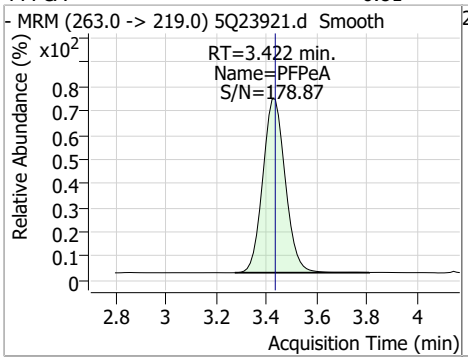


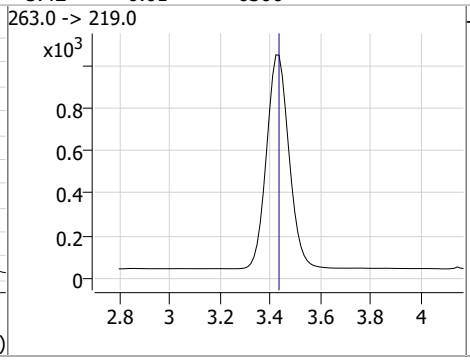
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	10.17	3.43	0.00	80156				

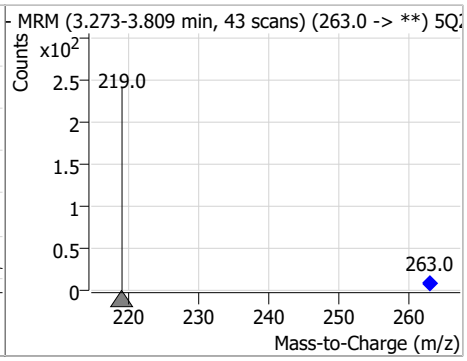


Perfluorinated Compounds by LC/MS/MS

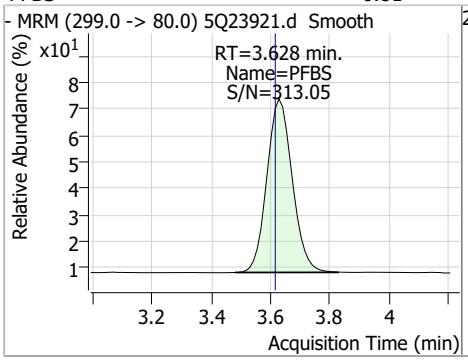
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	0.81	3.42	-0.01	6306				

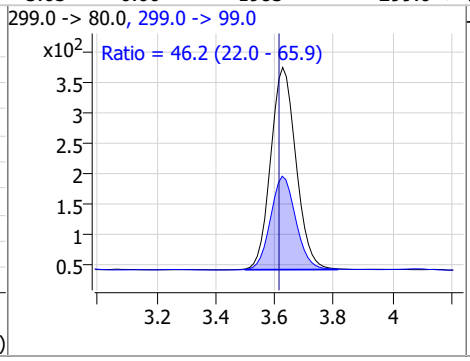


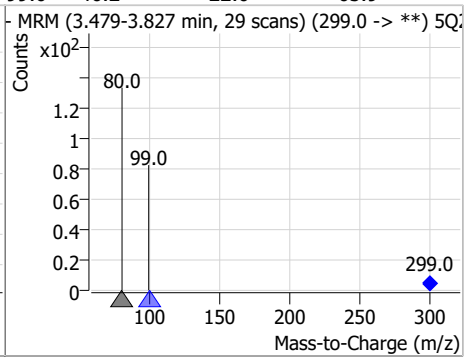




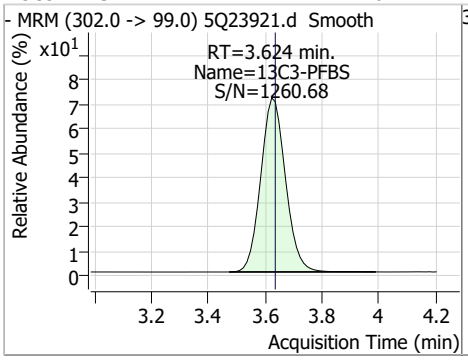
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	0.81	3.63	0.00	1983	299.0 -> 99.0	46.2	22.0	65.9

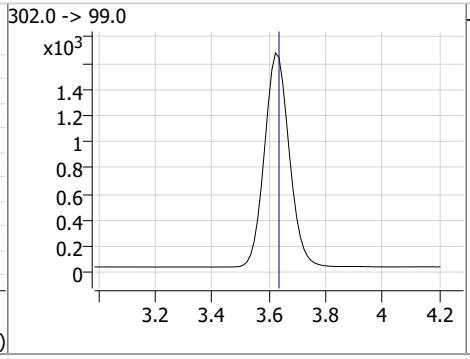


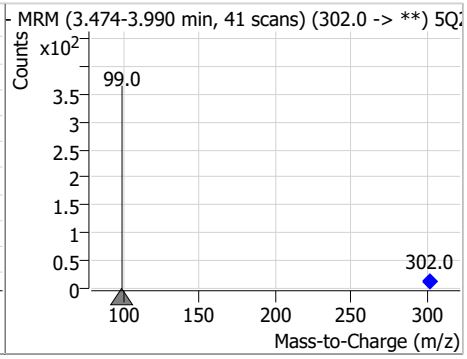




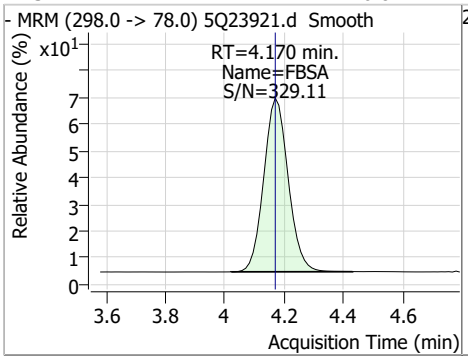
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	10.22	3.62	-0.01	9922				

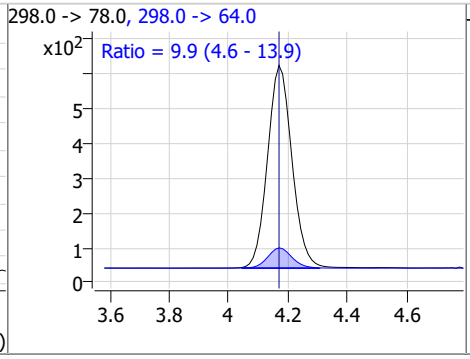


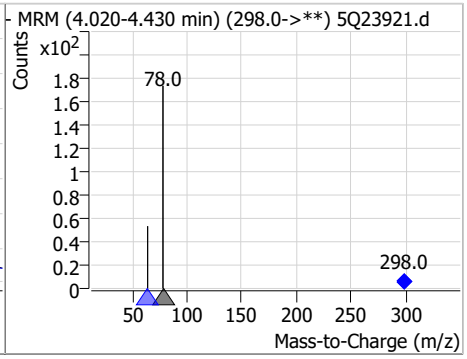




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	0.81	4.17	0.00	3314	298.0 -> 64.0	9.9	4.6	13.9

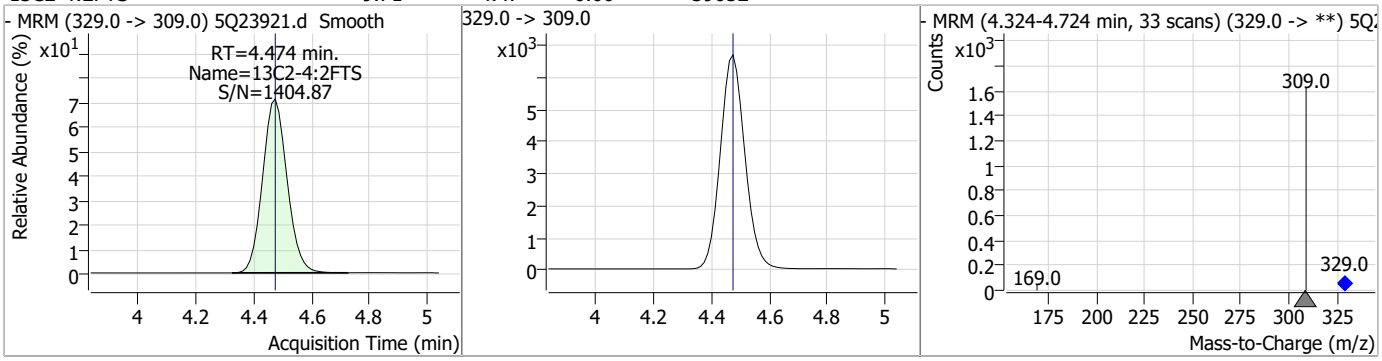




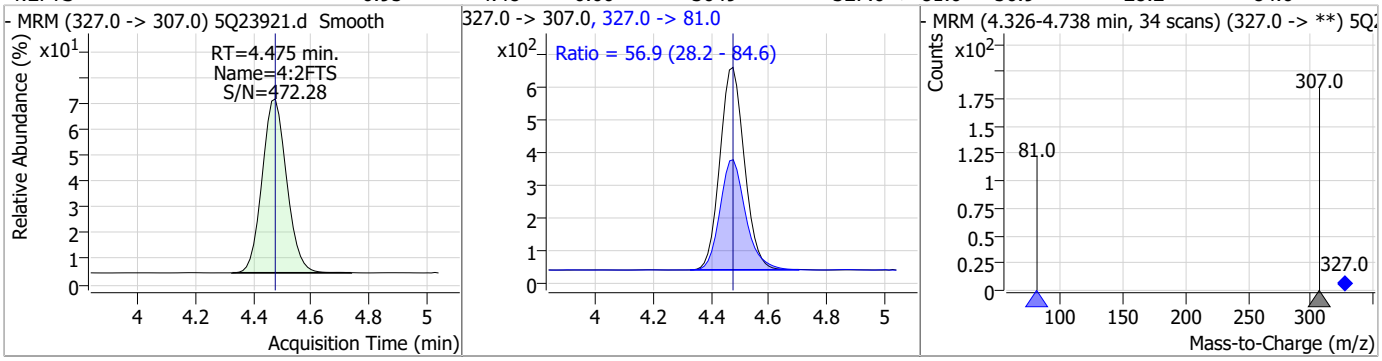


Perfluorinated Compounds by LC/MS/MS

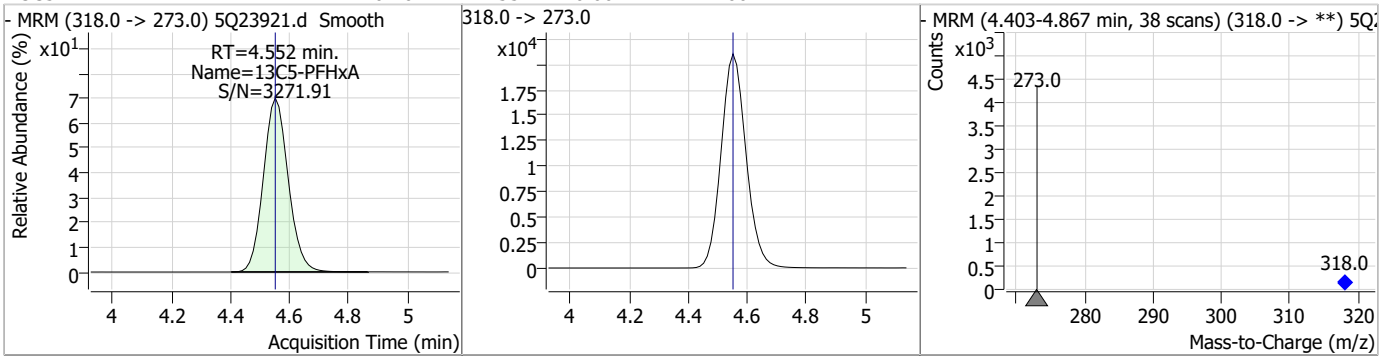
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	9.71	4.47	0.00	39052				



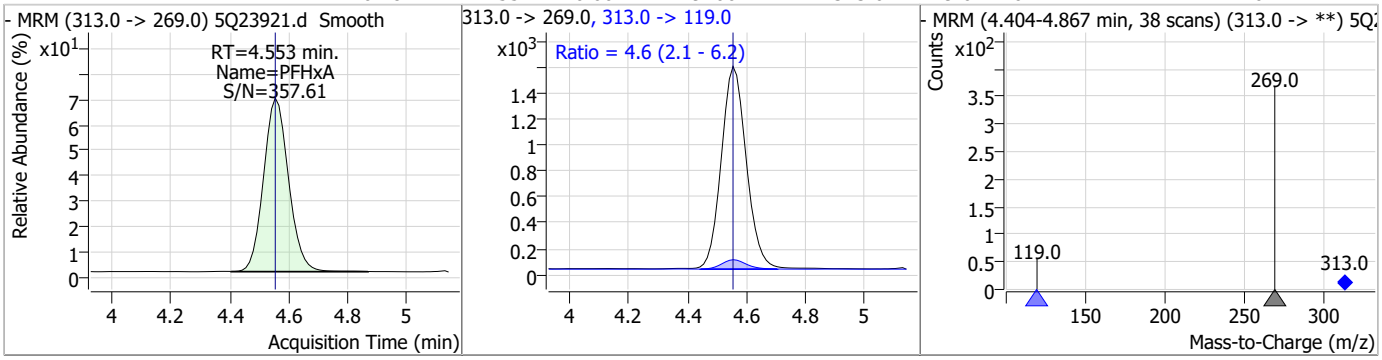
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	0.95	4.48	0.00	3649	327.0 -> 81.0	56.9	28.2	84.6



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	10.26	4.55	0.00	122601				

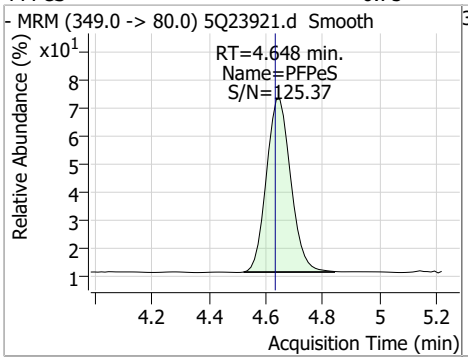


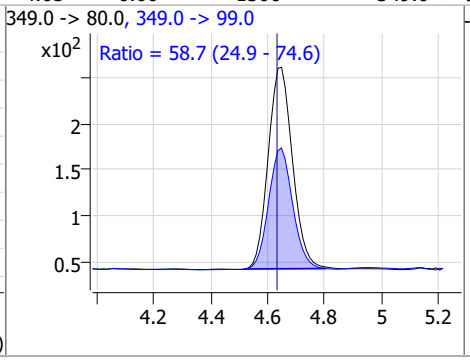
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	0.78	4.55	0.00	9200	313.0 -> 119.0	4.6	2.1	6.2

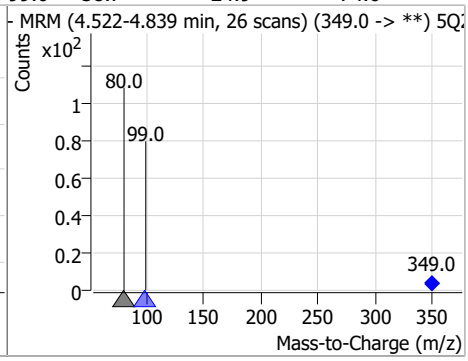


Perfluorinated Compounds by LC/MS/MS

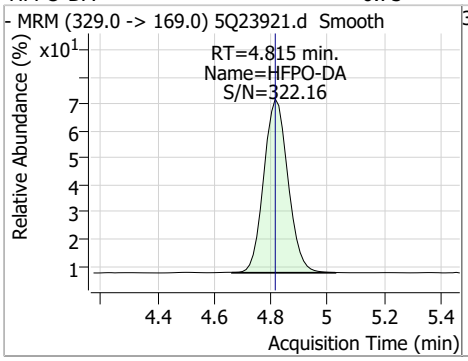
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	0.75	4.65	0.00	1300	349.0 -> 99.0	58.7	24.9	74.6

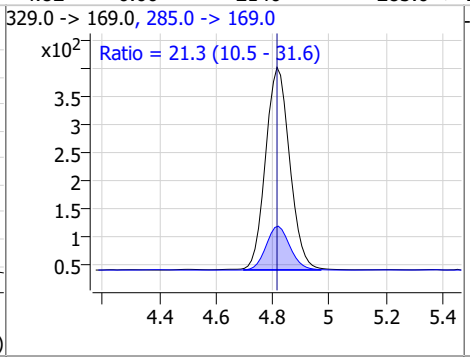


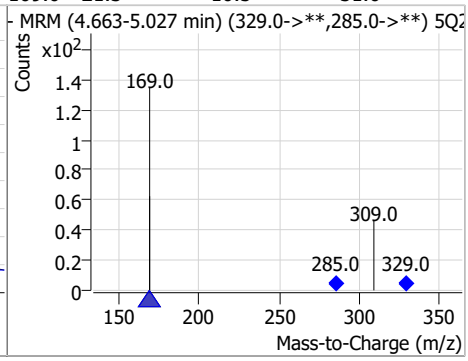




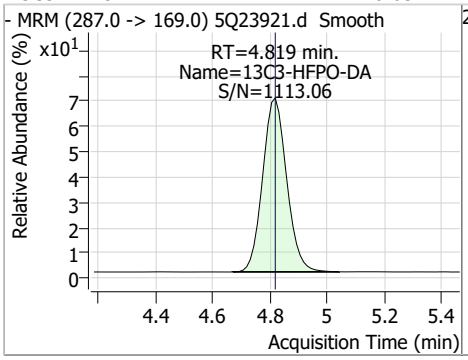
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	0.73	4.82	0.00	2140	285.0 -> 169.0	21.3	10.5	31.6

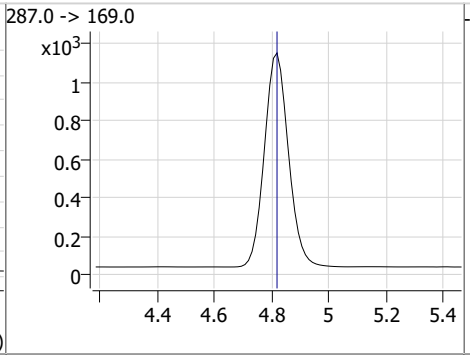


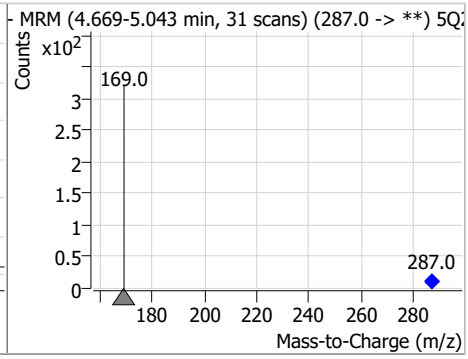




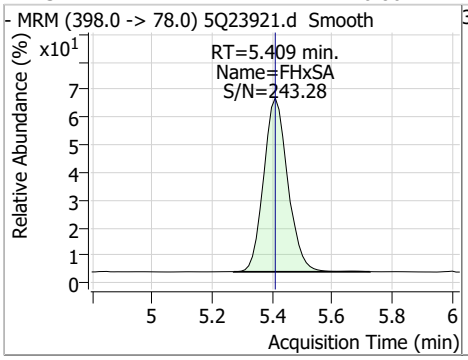
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	10.03	4.82	0.00	6474				

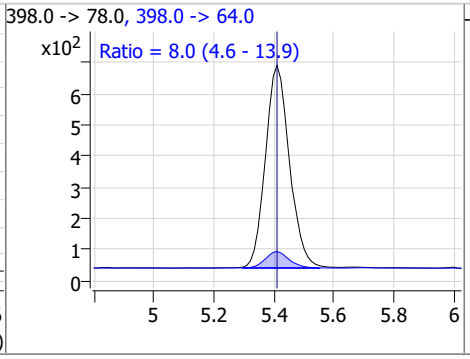


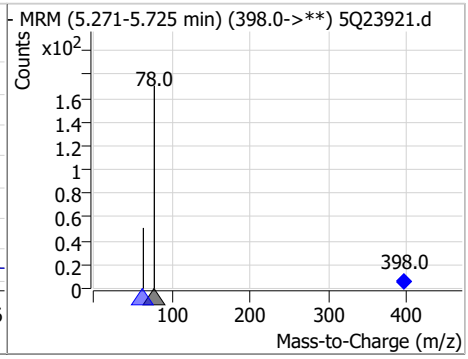




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	0.80	5.41	0.00	3624	398.0 -> 64.0	8.0	4.6	13.9

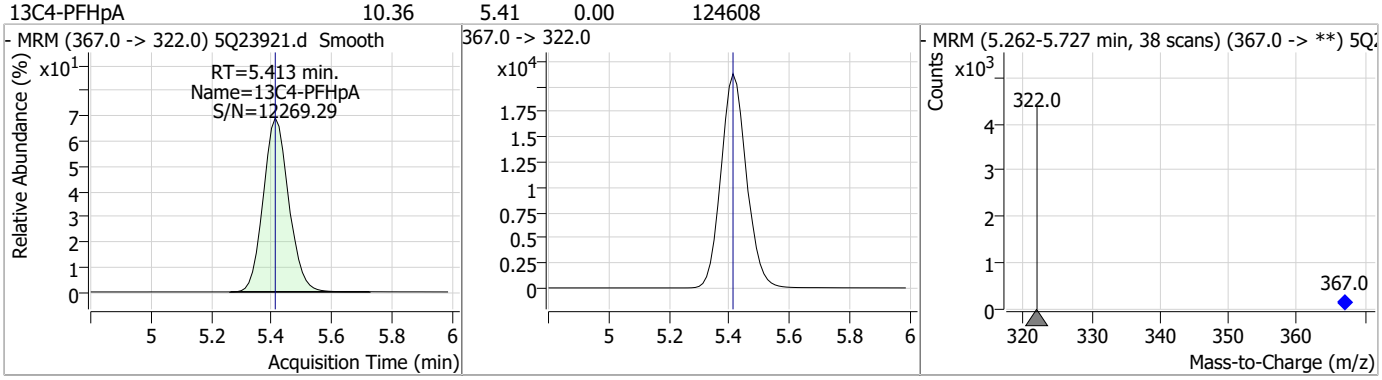




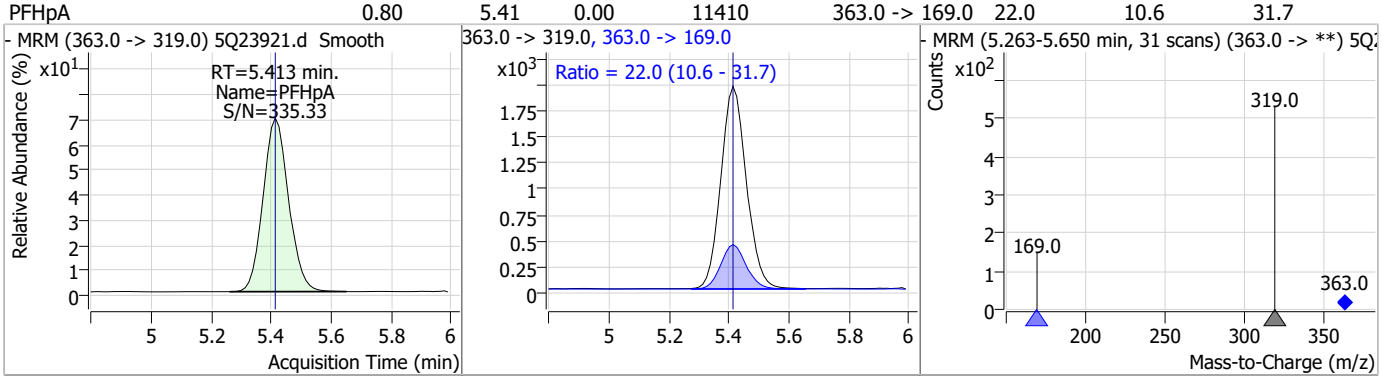


Perfluorinated Compounds by LC/MS/MS

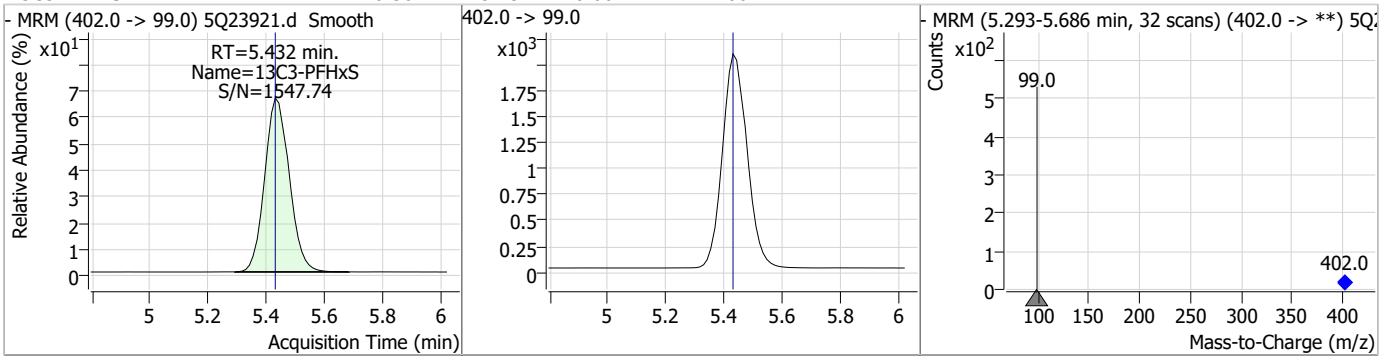
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	10.36	5.41	0.00	124608				



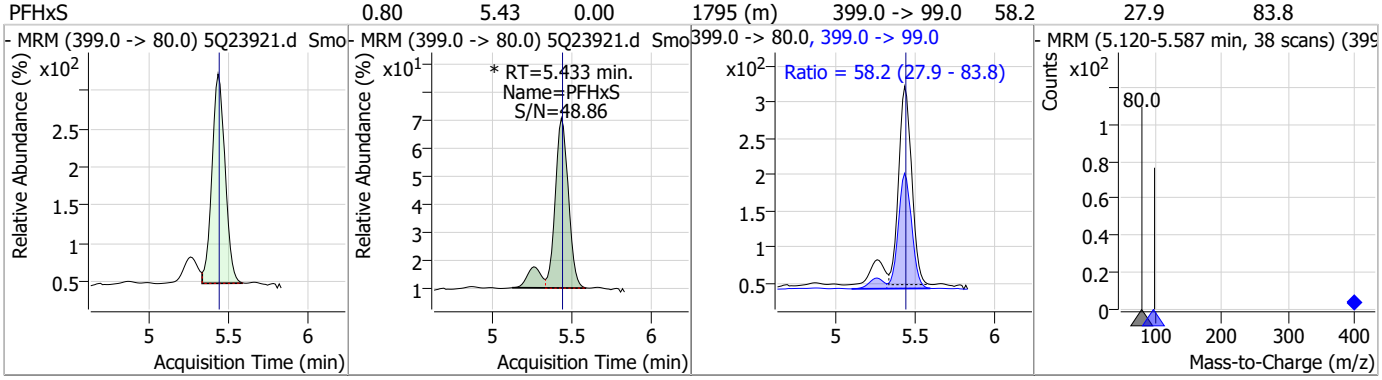
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	0.80	5.41	0.00	11410	363.0 -> 169.0	22.0	10.6	31.7



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	10.30	5.43	0.00	12160				

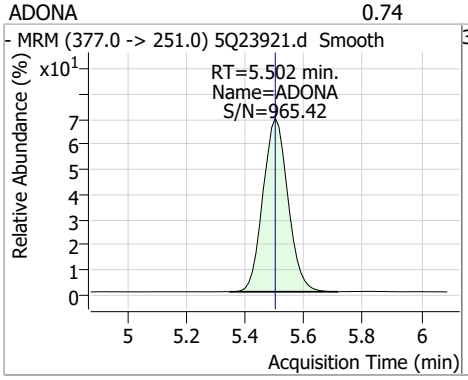


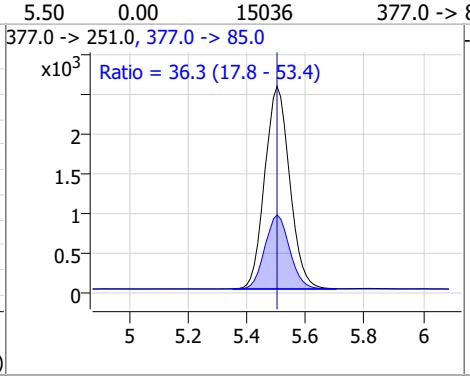
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	0.80	5.43	0.00	1795 (m)	399.0 -> 99.0	58.2	27.9	83.8

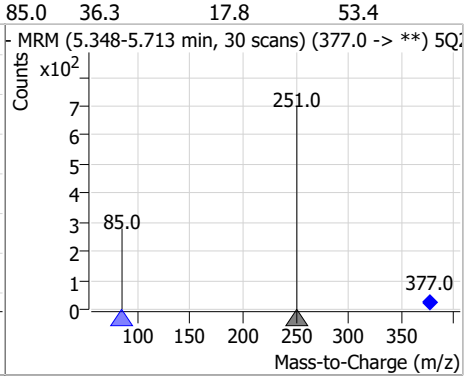


Perfluorinated Compounds by LC/MS/MS

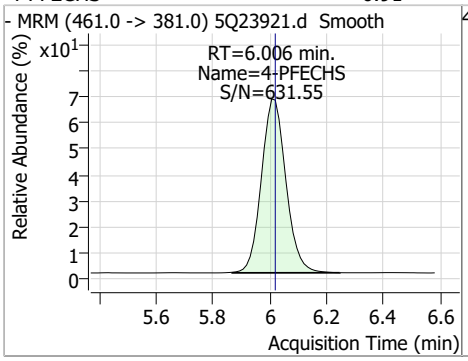
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	0.74	5.50	0.00	15036	377.0 -> 85.0	36.3	17.8	53.4

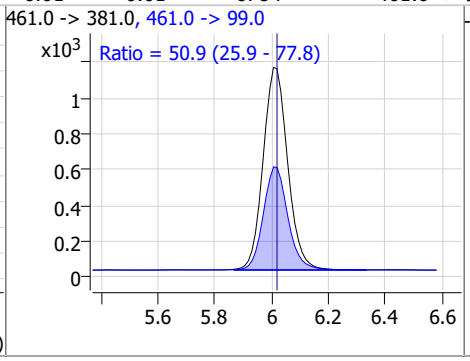


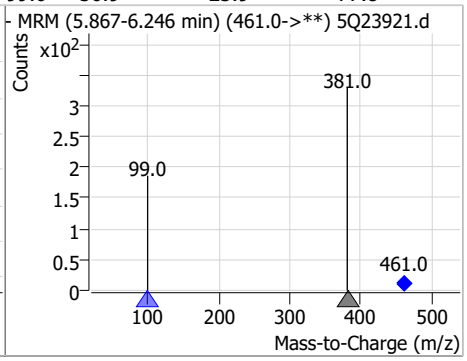




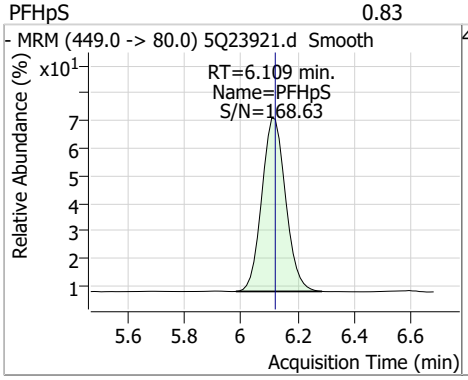
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS	0.91	6.01	-0.01	6784	461.0 -> 99.0	50.9	25.9	77.8

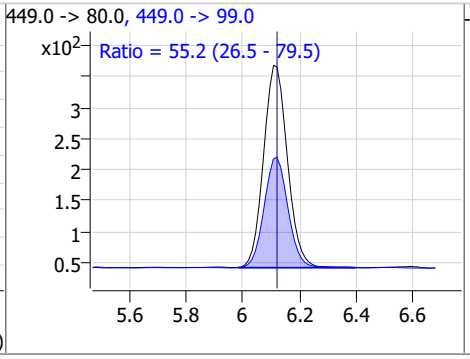


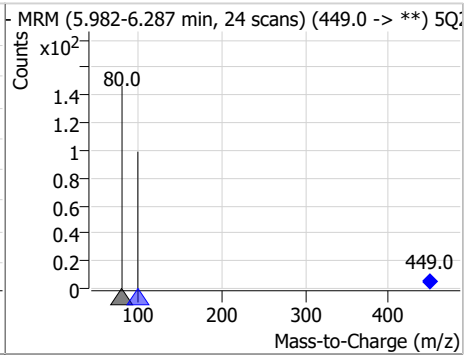




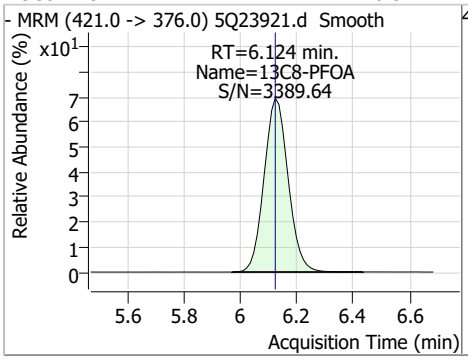
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	0.83	6.11	-0.01	1907	449.0 -> 99.0	55.2	26.5	79.5

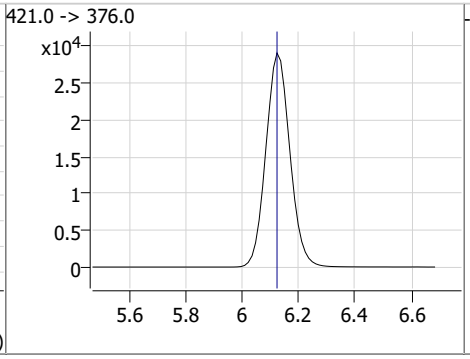


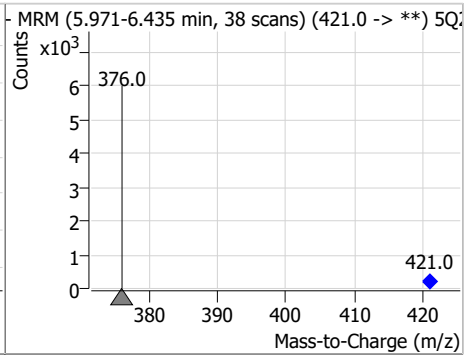




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	10.32	6.12	0.00	170890				

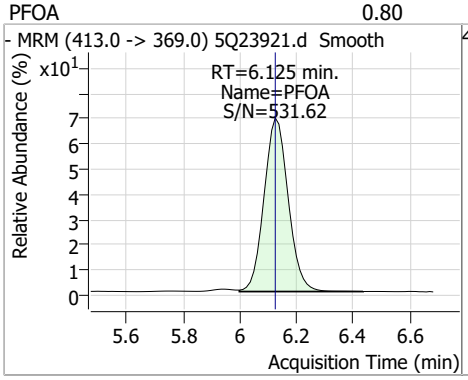


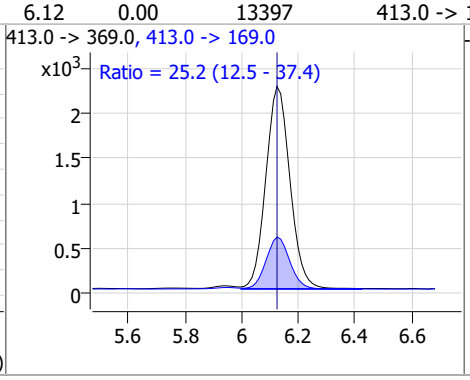


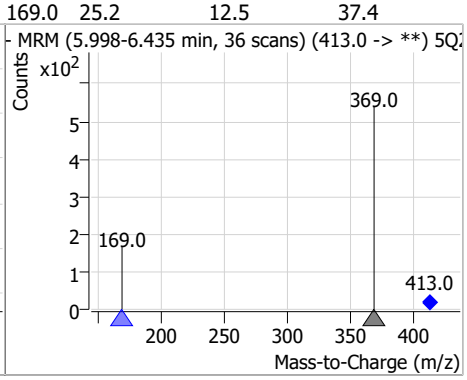


Perfluorinated Compounds by LC/MS/MS

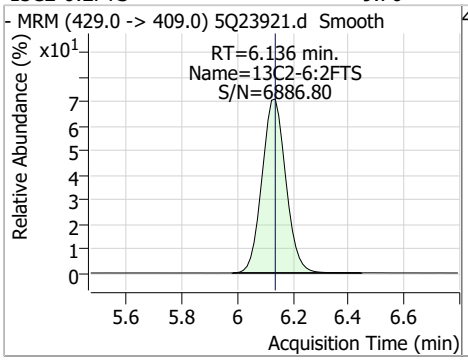
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	0.80	6.12	0.00	13397	413.0 -> 169.0	25.2	12.5	37.4

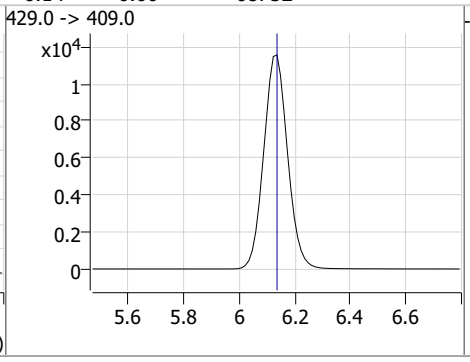


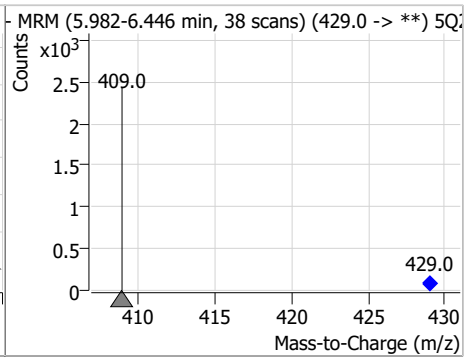




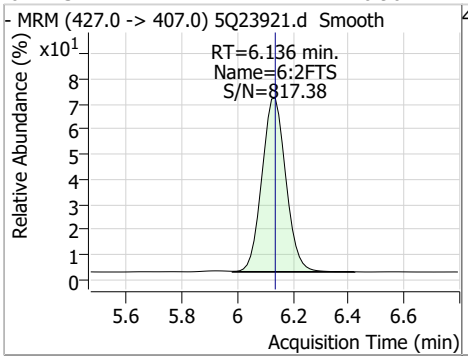
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	9.70	6.14	0.00	68752				

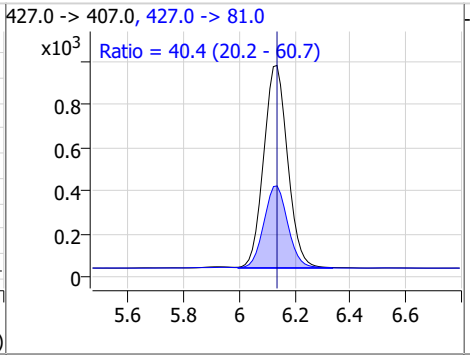


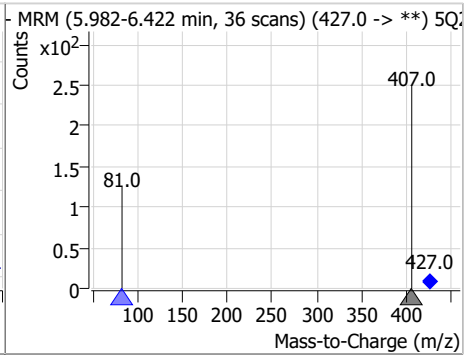




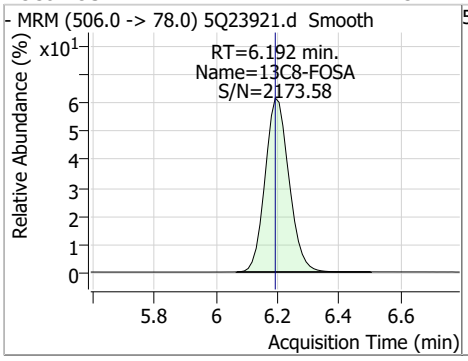
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	0.90	6.14	0.00	5653	427.0 -> 81.0	40.4	20.2	60.7

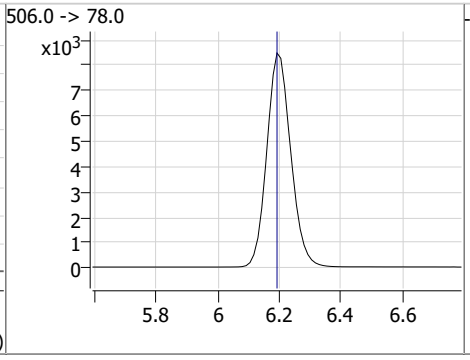


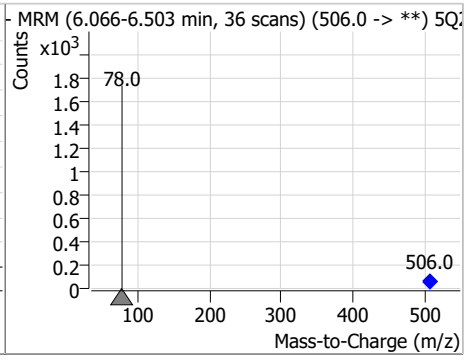




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	11.23	6.19	0.00	45511				

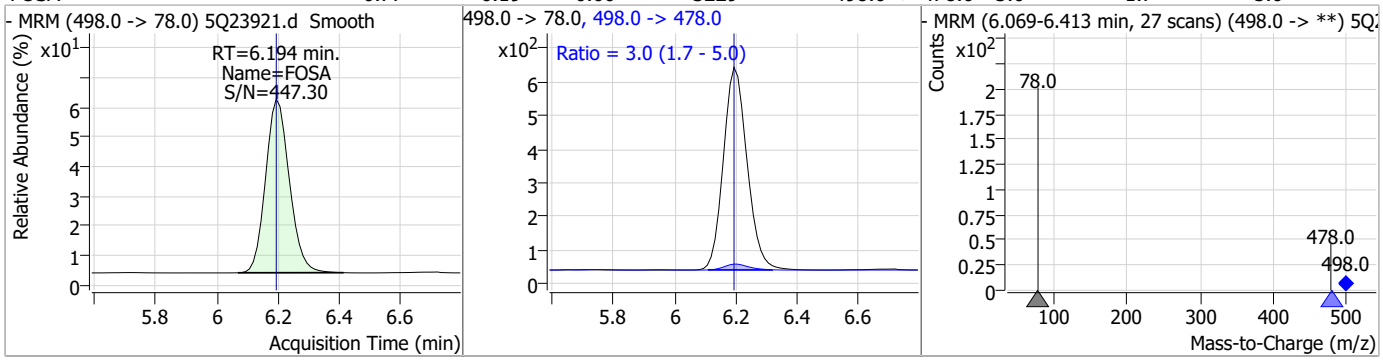




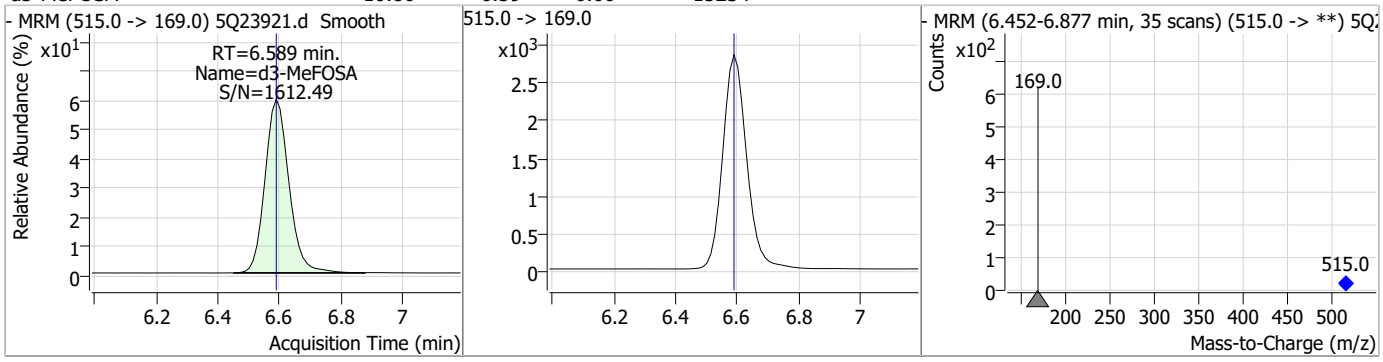


Perfluorinated Compounds by LC/MS/MS

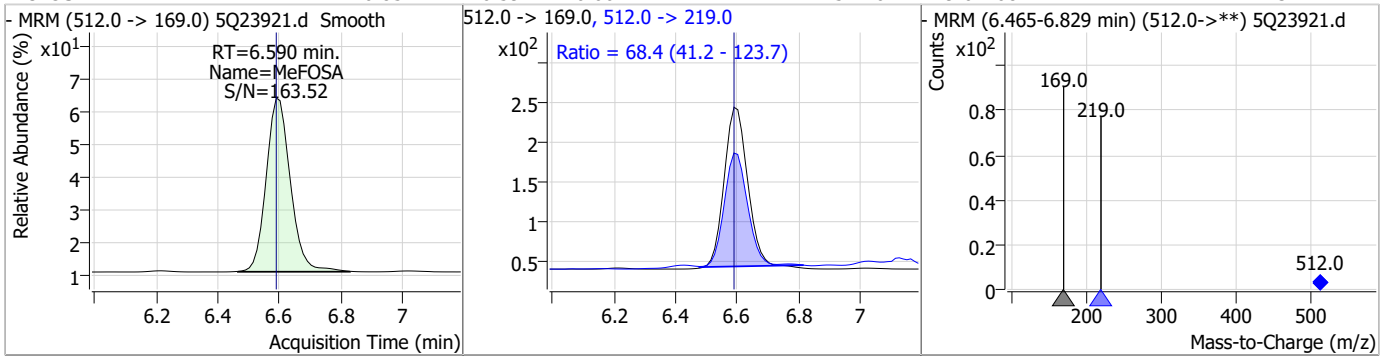
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	0.77	6.19	0.00	3229	498.0 -> 478.0	3.0	1.7	5.0



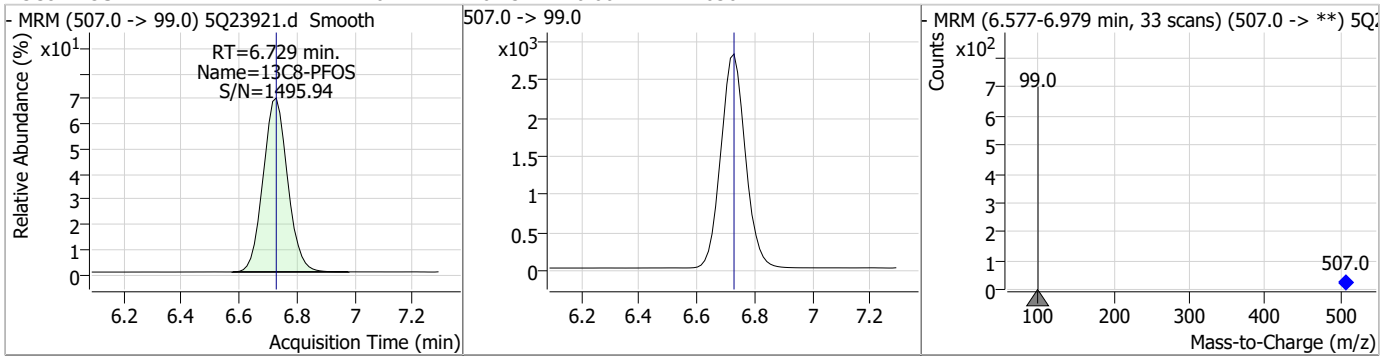
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	10.86	6.59	0.00	15234				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	0.85	6.59	0.00	1114	512.0 -> 219.0	68.4	41.2	123.7

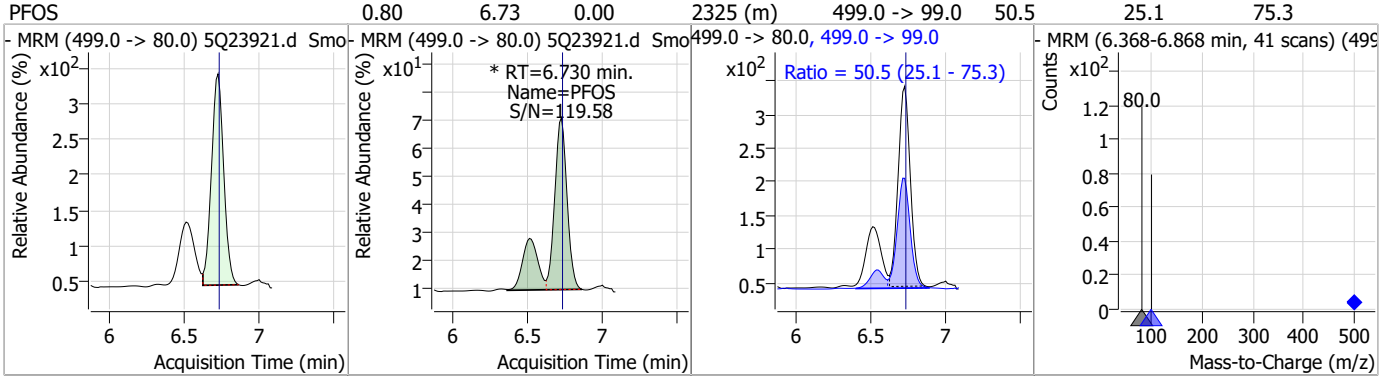


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	10.41	6.73	0.00	16367				

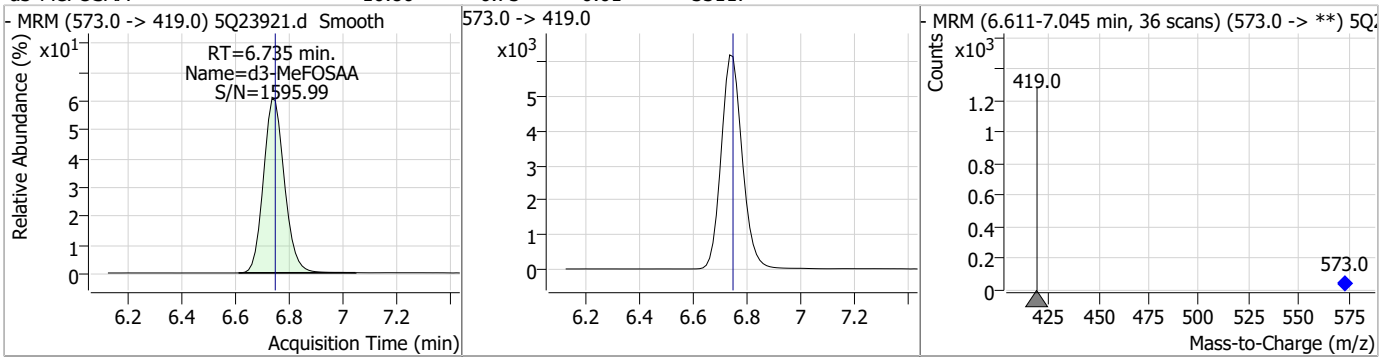


Perfluorinated Compounds by LC/MS/MS

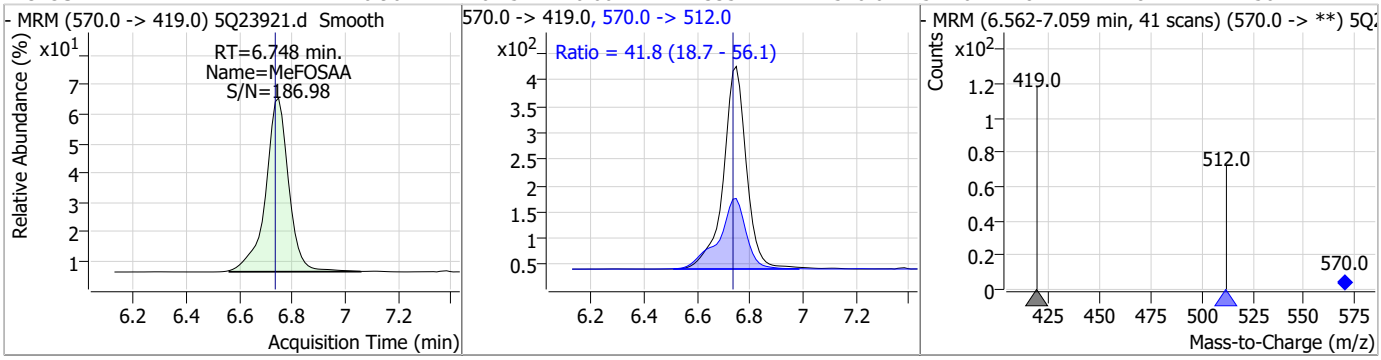
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	0.80	6.73	0.00	2325 (m)	499.0 -> 99.0	50.5	25.1	75.3



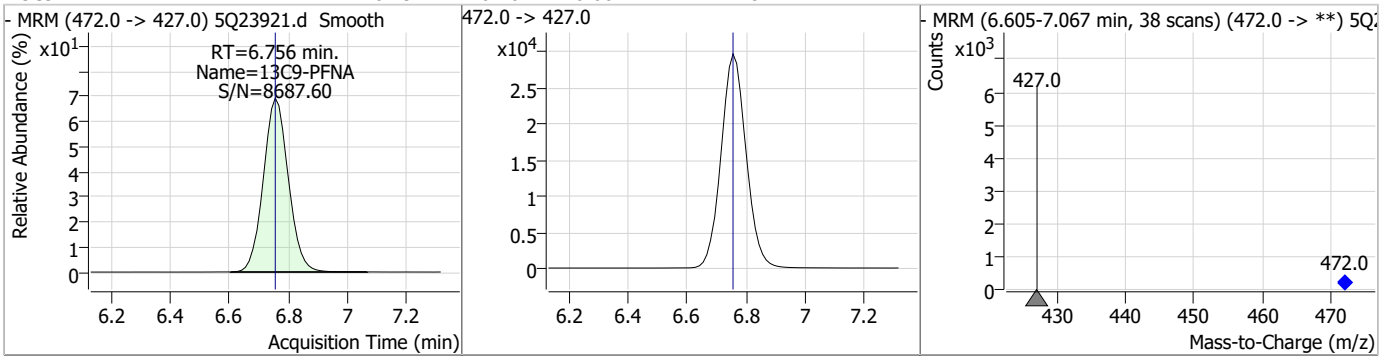
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	10.86	6.73	-0.01	33117				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	0.90	6.75	0.00	2335	570.0 -> 512.0	41.8	18.7	56.1

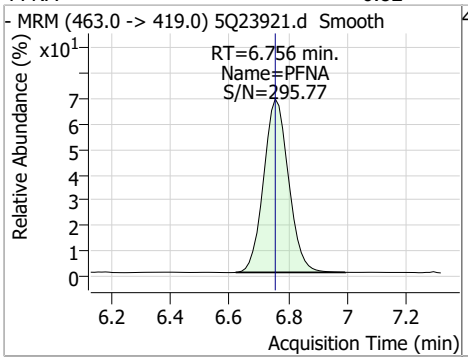


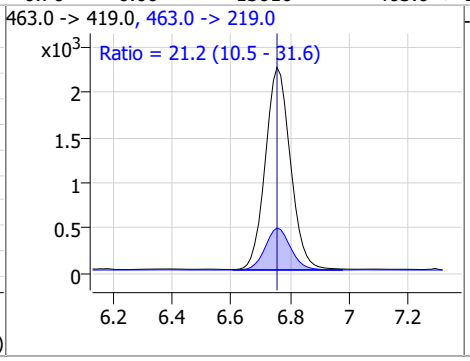
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	10.49	6.76	0.00	174178				

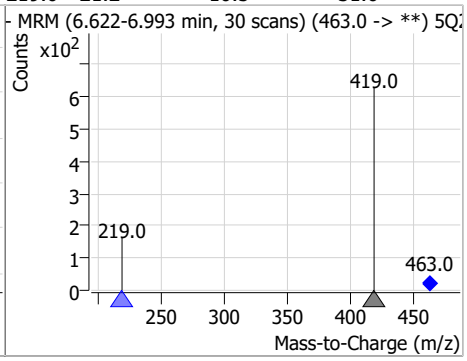


Perfluorinated Compounds by LC/MS/MS

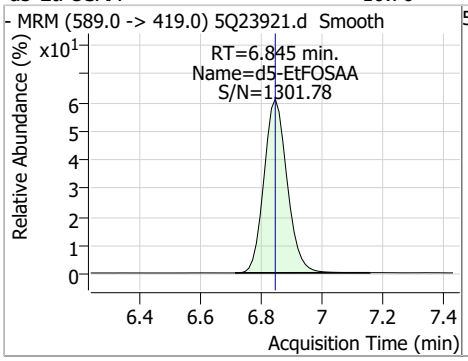
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	0.82	6.76	0.00	13010	463.0 -> 219.0	21.2	10.5	31.6

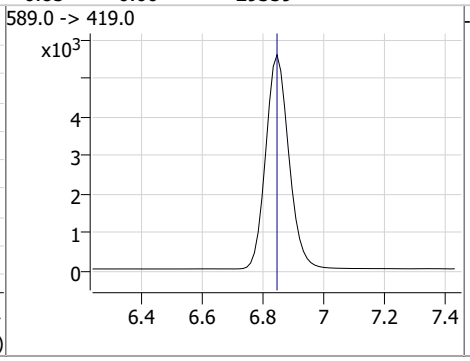


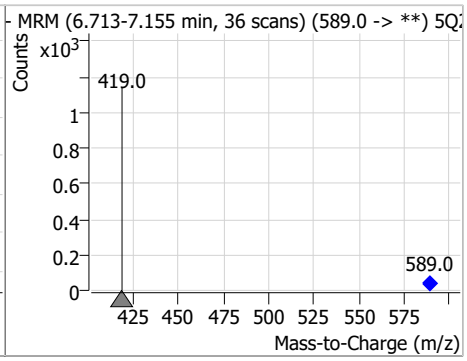




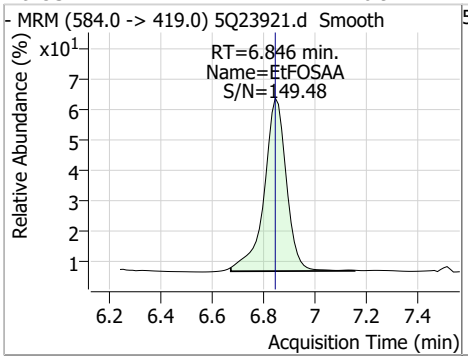
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	10.70	6.85	0.00	29359				

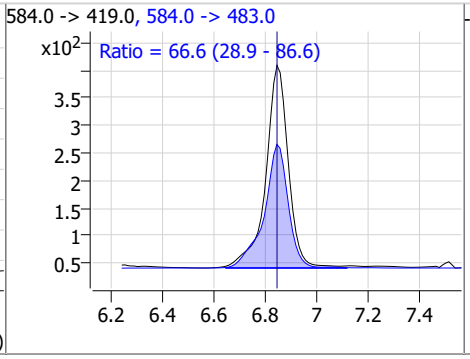


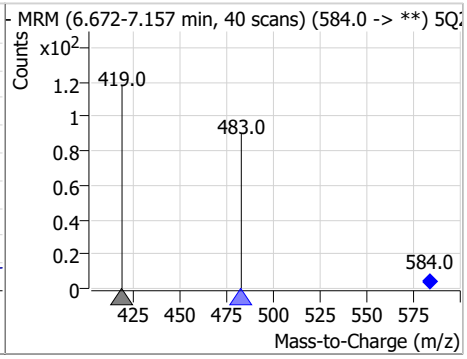




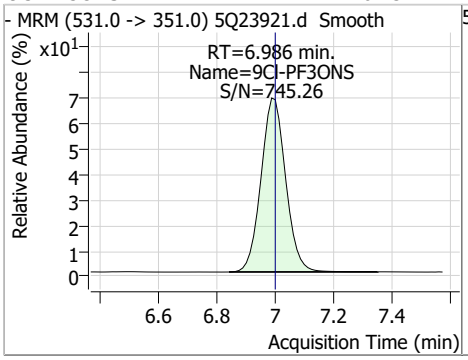
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	0.92	6.85	0.00	2210	584.0 -> 483.0	66.6	28.9	86.6

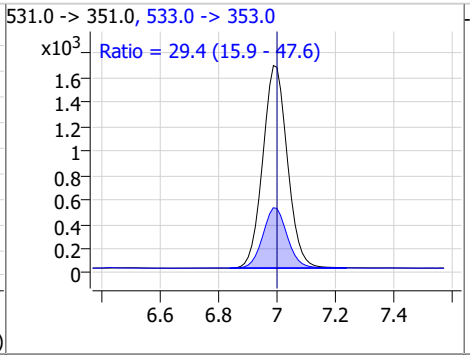


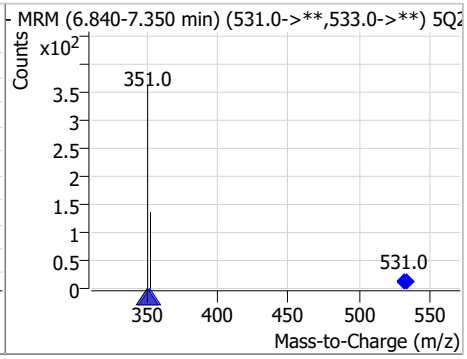




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	0.73	6.99	-0.01	9729	533.0 -> 353.0	29.4	15.9	47.6

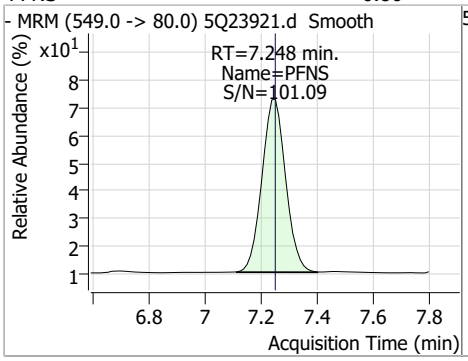


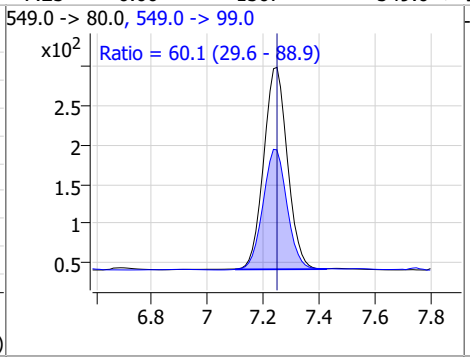


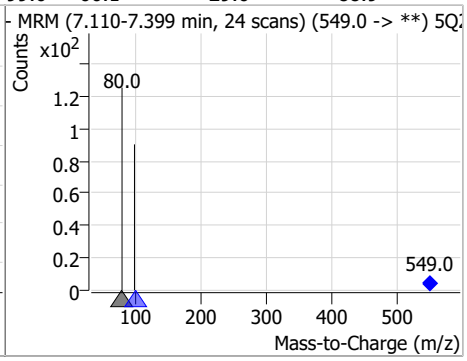


Perfluorinated Compounds by LC/MS/MS

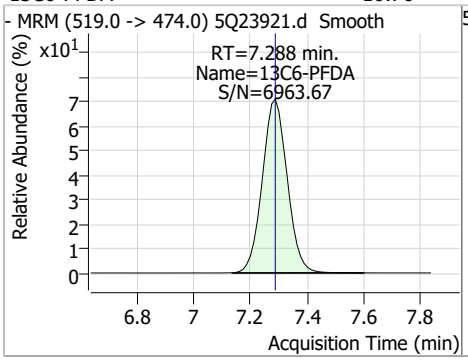
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	0.80	7.25	0.00	1507	549.0 -> 99.0	60.1	29.6	88.9

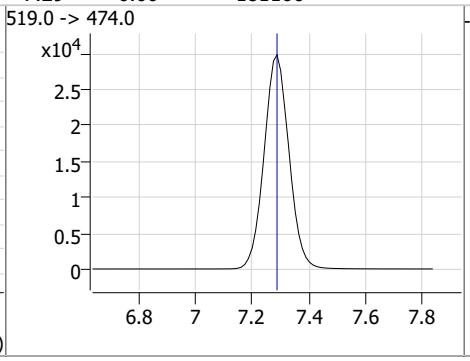


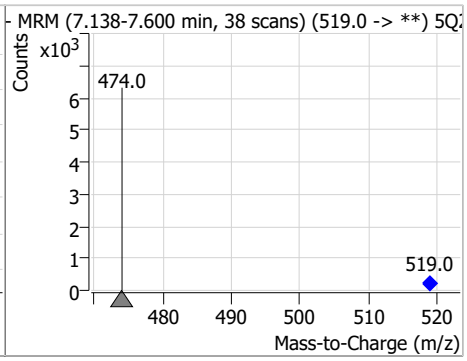




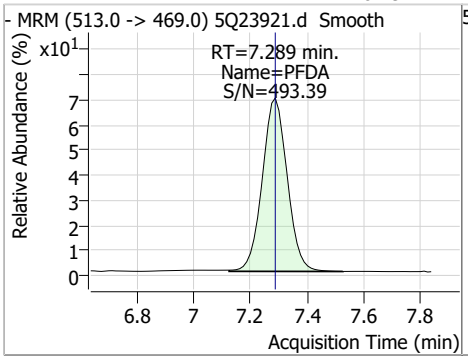
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	10.76	7.29	0.00	181166				

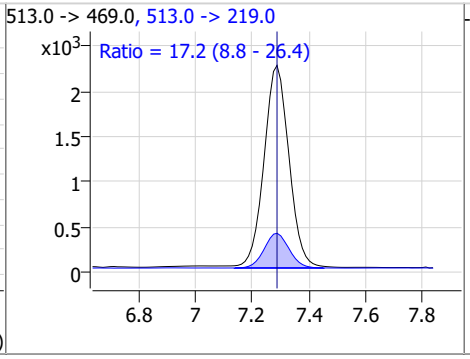


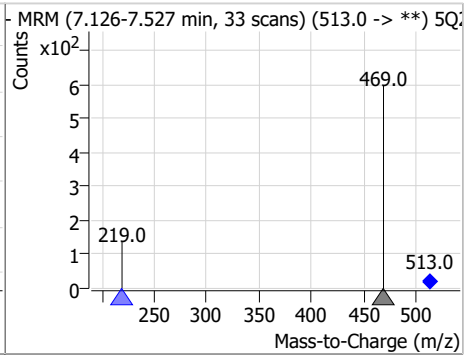




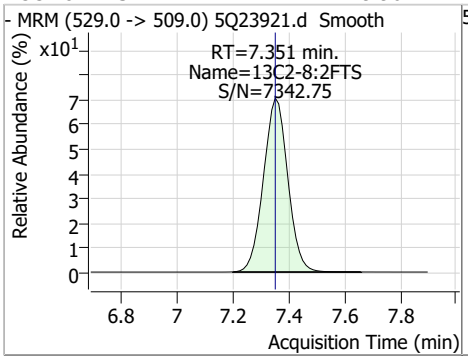
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	0.79	7.29	0.00	13654	513.0 -> 219.0	17.2	8.8	26.4

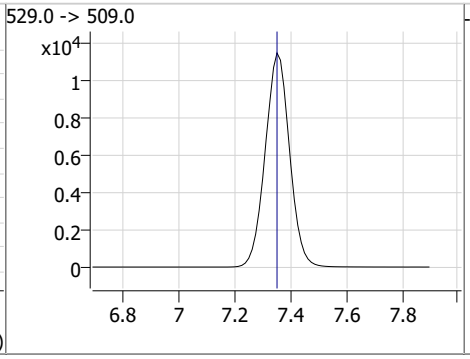


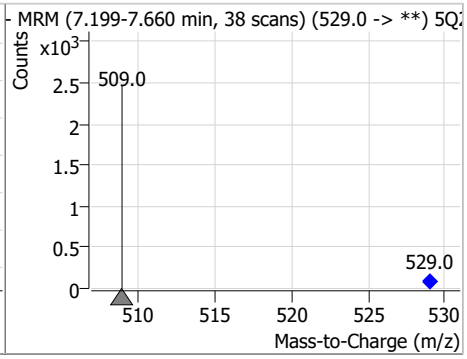




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	9.96	7.35	0.00	69579				

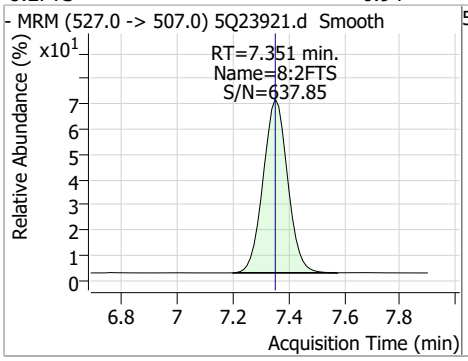


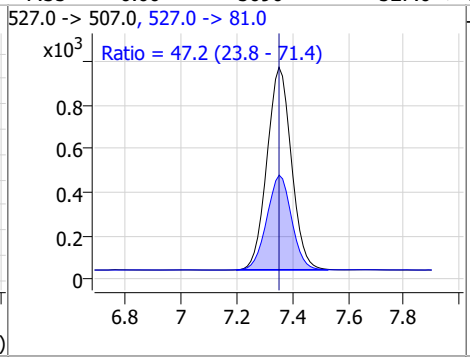


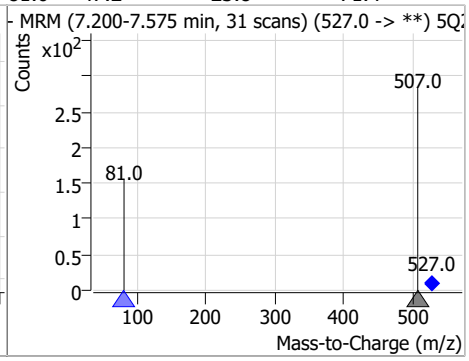


Perfluorinated Compounds by LC/MS/MS

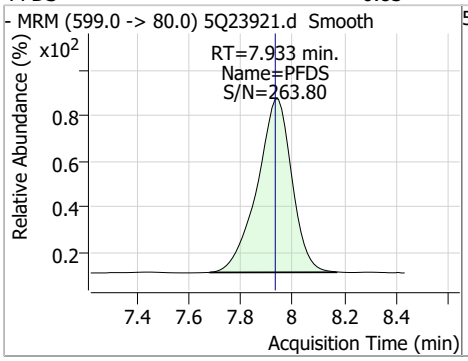
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	0.94	7.35	0.00	5690	527.0 -> 81.0	47.2	23.8	71.4

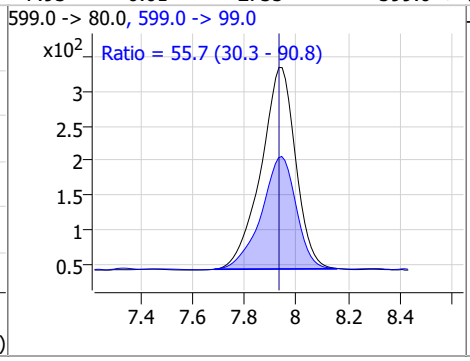


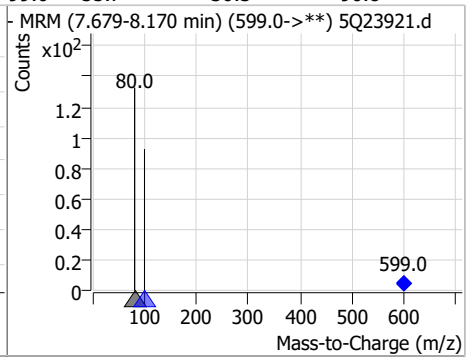




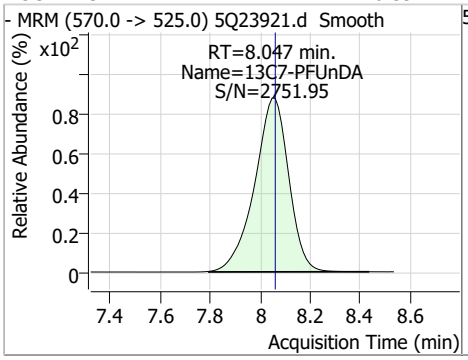
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	0.83	7.93	-0.01	2735	599.0 -> 99.0	55.7	30.3	90.8

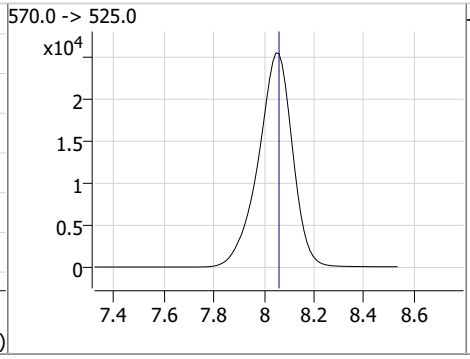


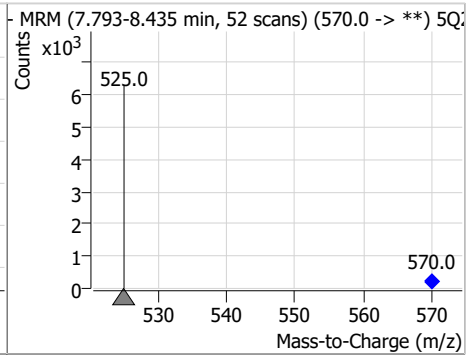




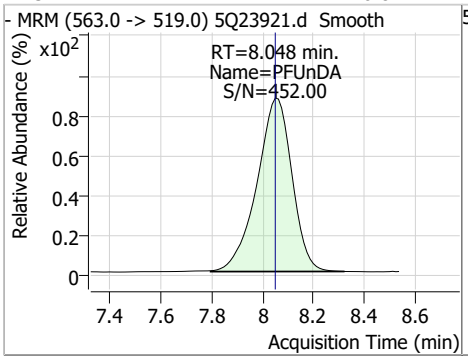
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	10.39	8.05	-0.01	242140				

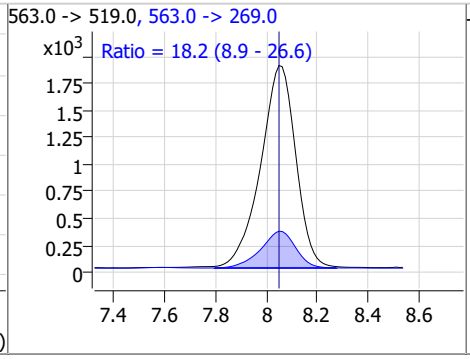


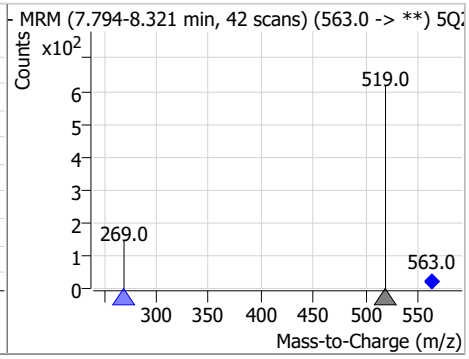




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	0.82	8.05	-0.01	17884	563.0 -> 269.0	18.2	8.9	26.6

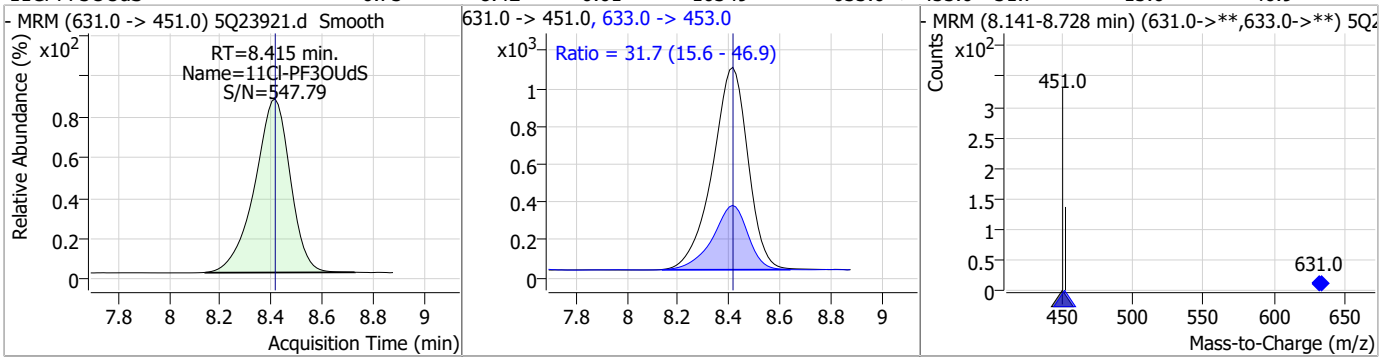




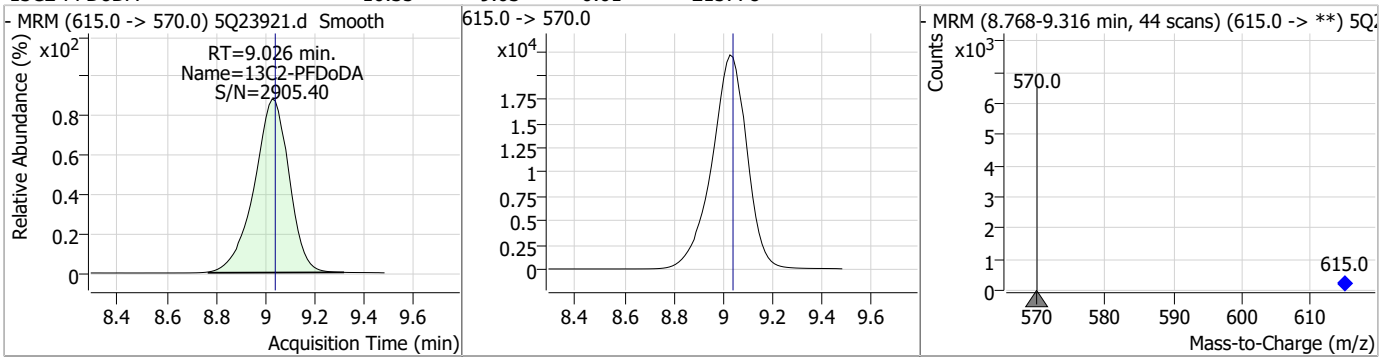


Perfluorinated Compounds by LC/MS/MS

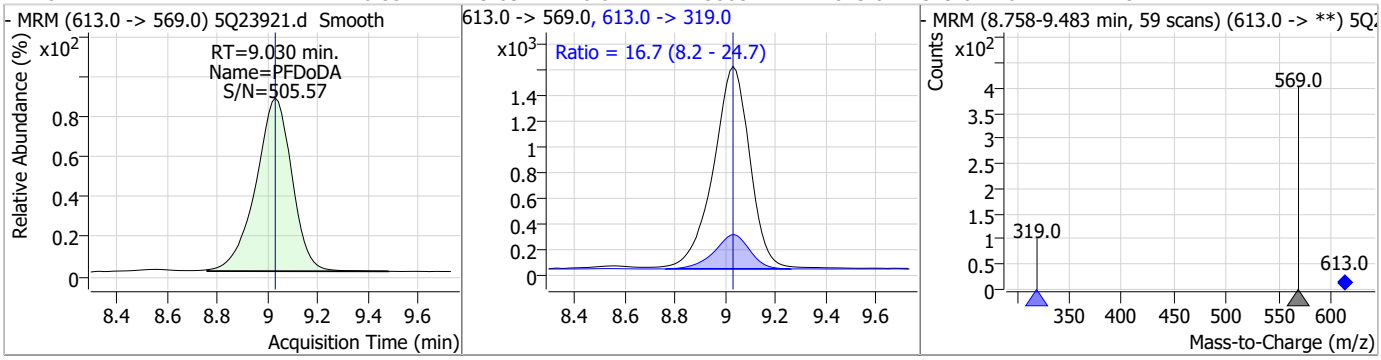
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	0.73	8.42	-0.01	10349	633.0 -> 453.0	31.7	15.6	46.9



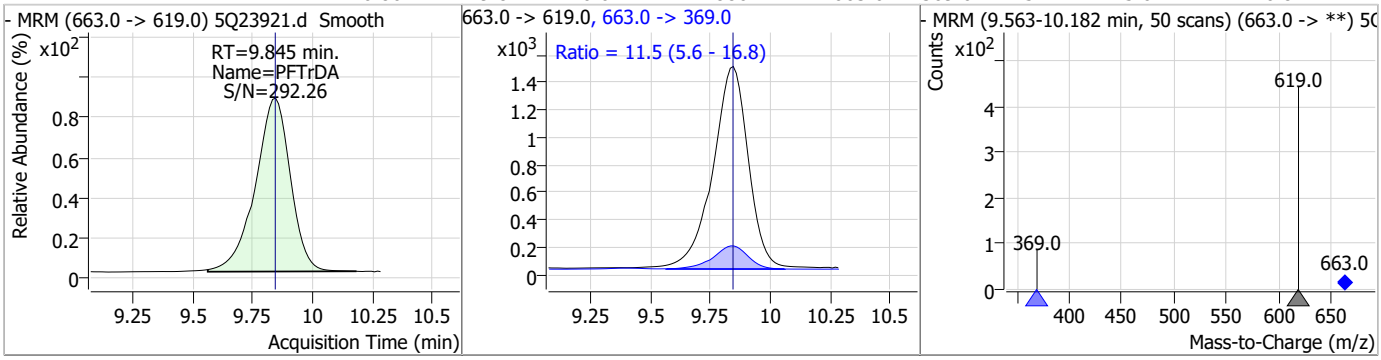
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	10.35	9.03	-0.01	215778				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	0.85	9.03	-0.01	15808	613.0 -> 319.0	16.7	8.2	24.7

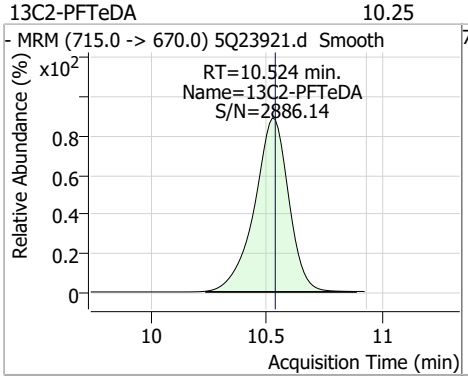


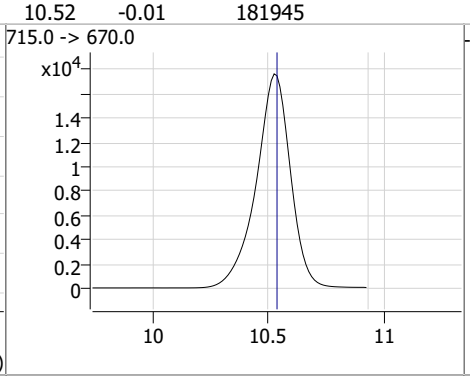
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	0.80	9.84	-0.01	14886	663.0 -> 369.0	11.5	5.6	16.8

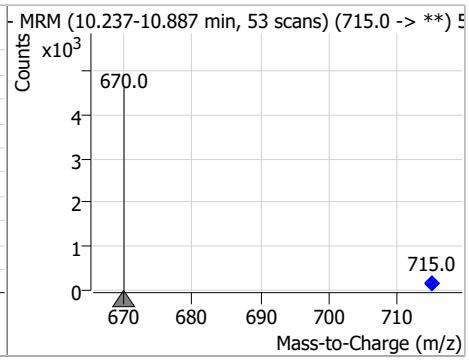


Perfluorinated Compounds by LC/MS/MS

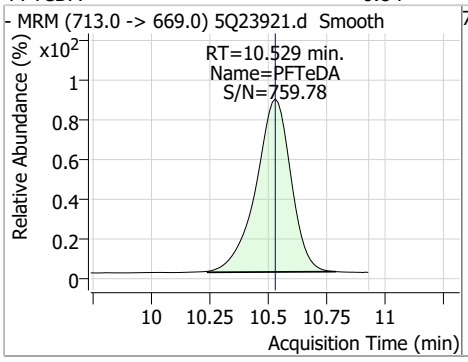
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	10.25	10.52	-0.01	181945				

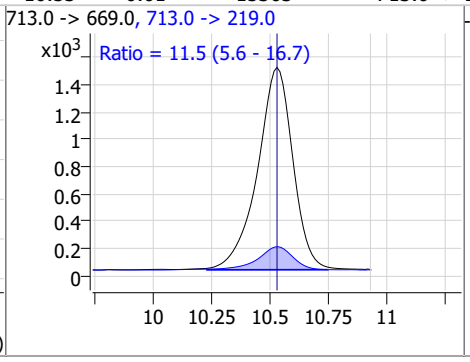


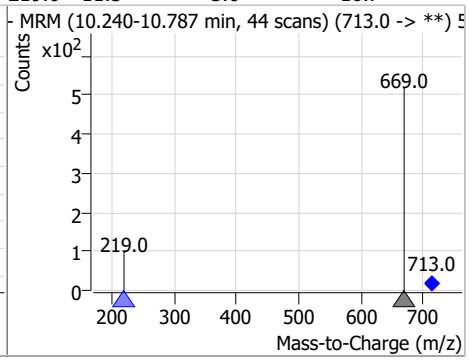




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	0.84	10.53	-0.01	15363	713.0 -> 219.0	11.5	5.6	16.7







9.6.28

9

Manual Integration Approval Summary

Sample Number: S5Q375-CC375
Lab FileID: 5Q23921.D
Injection Time: 12/28/23 18:08
Method: EPA 537M QSM5.3 B-15
Analyst approved: 12/29/23 14:15 Lindsay Ritner
Supervisor approved: 01/02/24 14:05 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.43	Split peak
Perfluorooctanesulfonic acid	1763-23-1		6.73	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Natasha Gumtie 01/02/24 14:05

Perfluorinated Compounds by LC/MS/MS

Data File : 5Q23942.d
Operator : natashag
Acq. Method : 537_ID.m
Acq. Date-Time : 12/28/2023 11:56:18 PM
Sample Name : cc375-20
Vial : P1-A7
DA Method File : ID_122823_S5Q375.quantmethod.xml
Batch Name : s5q375.batch.bin
Sample Information : OP401,S5Q375,250,,,1.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	1.987	217.0 -> 172.0	51943	10.00 µg/L	0.000
M5-PFPeA	3.419	268.0 -> 223.0	84339	10.00 µg/L	-0.012
M5-PFHxA	4.552	318.0 -> 273.0	129710	10.00 µg/L	0.000
M4-PFHpA	5.413	367.0 -> 322.0	124514	10.00 µg/L	0.000
M8-PFOA	6.124	421.0 -> 376.0	175172	10.00 µg/L	0.000
M9-PFNA	6.756	472.0 -> 427.0	177066	10.00 µg/L	0.000
M6-PFDA	7.276	519.0 -> 474.0	178018	10.00 µg/L	-0.012
M7-PFUnDA	8.034	570.0 -> 525.0	246915	10.00 µg/L	-0.025
M2-PFDoDA	9.013	615.0 -> 570.0	220604	10.00 µg/L	-0.025
M2-PFTeDA	10.524	715.0 -> 670.0	185917	10.00 µg/L	-0.013
M8-FOSA	6.192	506.0 -> 78.0	45876	10.00 µg/L	0.000
M3-PFBS	3.624	302.0 -> 99.0	10377	10.00 µg/L	-0.012
M3-PFHxS	5.432	402.0 -> 99.0	12286	10.00 µg/L	0.000
M8-PFOS	6.716	507.0 -> 99.0	16467	10.00 µg/L	-0.012
M2-4:2FTS	4.461	329.0 -> 309.0	45041	10.00 µg/L	-0.012
M2-6:2FTS	6.122	429.0 -> 409.0	77776	10.00 µg/L	-0.013
M2-8:2FTS	7.351	529.0 -> 509.0	74758	10.00 µg/L	0.000
M3-MeFOSAA	6.735	573.0 -> 419.0	34152	10.00 µg/L	-0.012
M3-HFPO-DA	4.807	287.0 -> 169.0	6460	10.00 µg/L	-0.012
M3-MeFOSA	6.589	515.0 -> 169.0	16100	10.00 µg/L	0.000
M5-EtFOSAA	6.845	589.0 -> 419.0	30857	10.00 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	4.461	329.0 -> 309.0	45041	11.20 µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 112.0%	
13C2-6:2FTS	6.122	429.0 -> 409.0	77776	10.97 µg/L	-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 109.7%	
13C2-8:2FTS	7.351	529.0 -> 509.0	74758	10.71 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 107.1%	
13C2-PFDoDA	9.013	615.0 -> 570.0	220604	10.58 µg/L	-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 105.8%	
13C2-PFTeDA	10.524	715.0 -> 670.0	185917	10.48 µg/L	-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 104.8%	
13C3-PFBS	3.624	302.0 -> 99.0	10377	10.69 µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 106.9%	
13C3-PFHxS	5.432	402.0 -> 99.0	12286	10.41 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 104.1%	
13C4-PFBA	1.987	217.0 -> 172.0	51943	10.99 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 109.9%	
13C4-PFHpA	5.413	367.0 -> 322.0	124514	10.35 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 103.5%	
13C5-PFHxA	4.552	318.0 -> 273.0	129710	10.85 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 108.5%	
13C5-PFPeA	3.419	268.0 -> 223.0	84339	10.70 µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 107.0%	
13C6-PFDA	7.276	519.0 -> 474.0	178018	10.57 µg/L	-0.012

Perfluorinated Compounds by LC/MS/MS

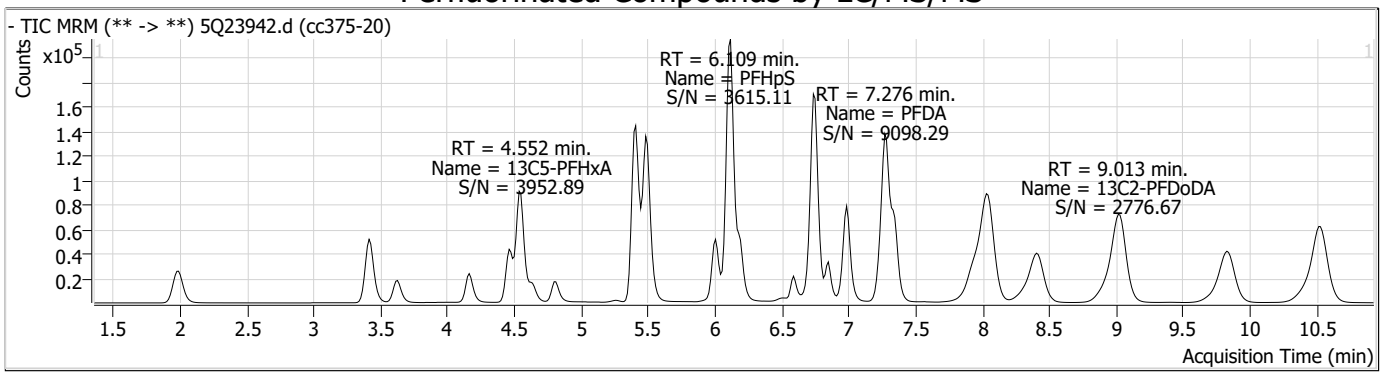
Compound	RT	Transition	Response	Conc. Units		Dev(Min)
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 105.7%		
13C7-PFUnDA	8.034	570.0 -> 525.0	246915	10.59 µg/L		-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 105.9%		
13C8-FOSA	6.192	506.0 -> 78.0	45876	11.32 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 113.2%		
13C8-PFOA	6.124	421.0 -> 376.0	175172	10.58 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 105.8%		
13C8-PFOS	6.716	507.0 -> 99.0	16467	10.48 µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 104.8%		
13C9-PFNA	6.756	472.0 -> 427.0	177066	10.66 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 106.6%		
d3-MeFOSAA	6.735	573.0 -> 419.0	34152	11.20 µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 112.0%		
13C3-HFPO-DA	4.807	287.0 -> 169.0	6460	10.00 µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.0%		
d3-MeFOSA	6.589	515.0 -> 169.0	16100	11.48 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 114.8%		
d5-EtFOSAA	6.845	589.0 -> 419.0	30857	11.24 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 112.4%		
Target Compounds						QValue
4:2FTS	4.463	327.0 -> 307.0	84876	19.13 µg/L		100
		327.0 -> 81.0	47927			
6:2FTS	6.123	427.0 -> 407.0	135329	19.02 µg/L		100
		427.0 -> 81.0	54809			
8:2FTS	7.351	527.0 -> 507.0	127019	19.45 µg/L		100
		527.0 -> 81.0	60167			
EtFOSAA	6.846	584.0 -> 419.0	47142	18.72 µg/L		98
		584.0 -> 483.0	27772			
FOSA	6.194	498.0 -> 78.0	77241	18.35 µg/L		99
		498.0 -> 478.0	2729			
MeFOSAA	6.748	570.0 -> 419.0	49486	18.57 µg/L		100
		570.0 -> 512.0	18373			
PFBA	1.981	213.0 -> 169.0	88859	18.47 µg/L		100
PFBS	3.628	299.0 -> 80.0	47614	18.53 µg/L		100
		299.0 -> 99.0	21012			
PFDA	7.276	513.0 -> 469.0	315706	18.67 µg/L		99
		513.0 -> 219.0	56453			
PFDoDA	9.017	613.0 -> 569.0	356375	18.82 µg/L		100
		613.0 -> 319.0	58254			
PFDS	7.920	599.0 -> 80.0	59463	17.64 µg/L		99
		599.0 -> 99.0	36645			
PFHpA	5.413	363.0 -> 319.0	269426	18.87 µg/L		100
		363.0 -> 169.0	57116			
PFHpS	6.109	449.0 -> 80.0	41589	18.09 µg/L		98
		449.0 -> 99.0	22713			
PFHxA	4.553	313.0 -> 269.0	229949	18.32 µg/L		100
		313.0 -> 119.0	9441			
PFHxS	5.433	399.0 -> 80.0	42586	18.68 µg/L	m	99
		399.0 -> 99.0	24174			
PFNA	6.756	463.0 -> 419.0	309415	19.08 µg/L		99
		463.0 -> 219.0	63985			
PFNS	7.235	549.0 -> 80.0	35669	18.74 µg/L		99
		549.0 -> 99.0	20966			
PFOA	6.125	413.0 -> 369.0	316429	18.41 µg/L		100
		413.0 -> 169.0	78203			
PFOS	6.718	499.0 -> 80.0	53219	18.23 µg/L	m	98

Perfluorinated Compounds by LC/MS/MS

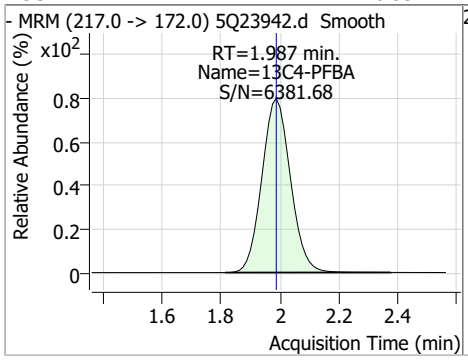
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		499.0 -> 99.0	25975			
PFPeA	3.422	263.0 -> 219.0	153552	18.77	µg/L	100
PFPeS	4.636	349.0 -> 80.0	32314	17.87	µg/L	95
		349.0 -> 99.0	17251			
PFTeDA	10.516	713.0 -> 669.0	357005	18.99	µg/L	99
		713.0 -> 219.0	41045			
PFTrDA	9.832	663.0 -> 619.0	343141	18.10	µg/L	100
		663.0 -> 369.0	38697			
PFUnDA	8.036	563.0 -> 519.0	416601	18.70	µg/L	99
		563.0 -> 269.0	72859			
11Cl-PF3OUdS	8.403	631.0 -> 451.0	262930	18.02	µg/L	100
		633.0 -> 453.0	82398			
9Cl-PF3ONS	6.986	531.0 -> 351.0	234327	17.82	µg/L	99
		533.0 -> 353.0	75665			
ADONA	5.502	377.0 -> 251.0	382539	18.58	µg/L	100
		377.0 -> 85.0	135718			
HFPO-DA	4.815	329.0 -> 169.0	52200	17.76	µg/L	99
		285.0 -> 169.0	11257			
MeFOSA	6.590	512.0 -> 169.0	26233	18.84	µg/L	97
		512.0 -> 219.0	20987			
4-PFECHS	6.006	461.0 -> 381.0	137688	18.10	µg/L	99
		461.0 -> 99.0	71806			
FBSA	4.170	298.0 -> 78.0	84591	19.50	µg/L	100
		298.0 -> 64.0	7715			
FHxSA	5.409	398.0 -> 78.0	86749	19.30	µg/L	99
		398.0 -> 64.0	8395			

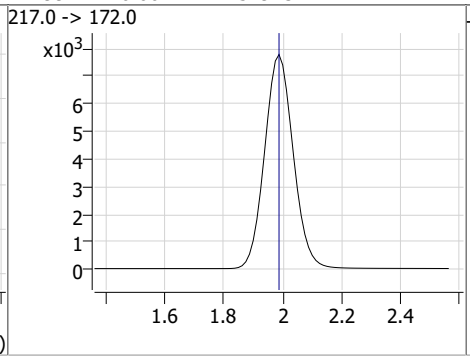
 # = Qualifier out of range, m = manually integrated, + = Area summed

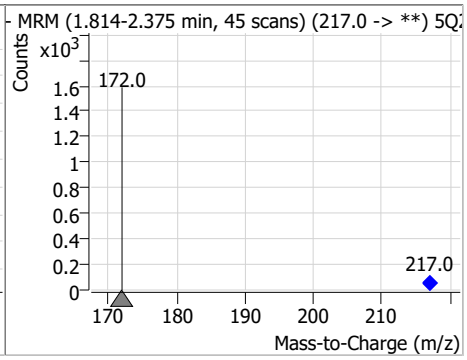
Perfluorinated Compounds by LC/MS/MS



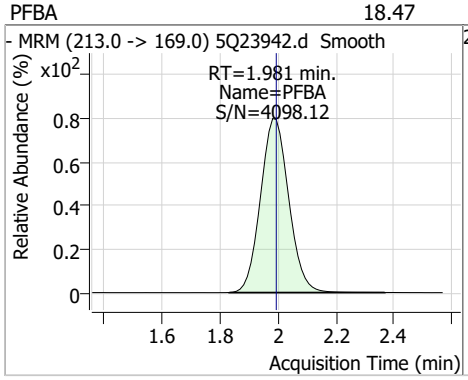
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	10.99	1.99	0.00	51943				

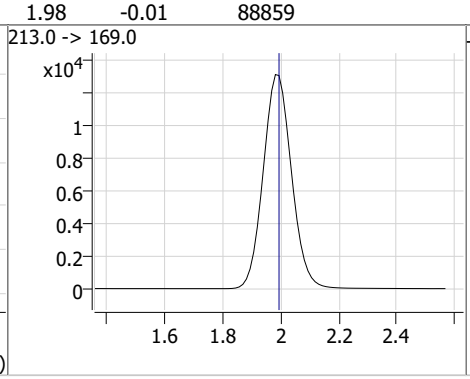


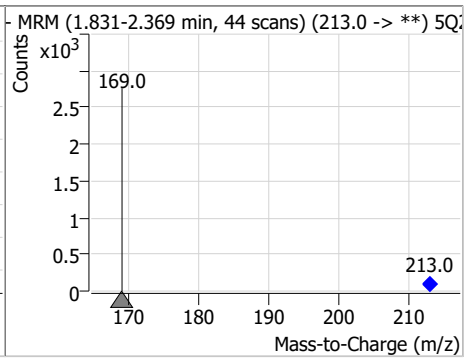




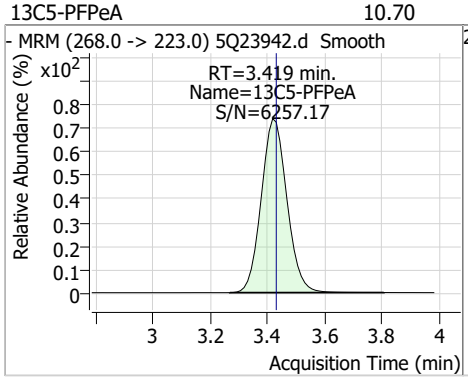
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	18.47	1.98	-0.01	88859				

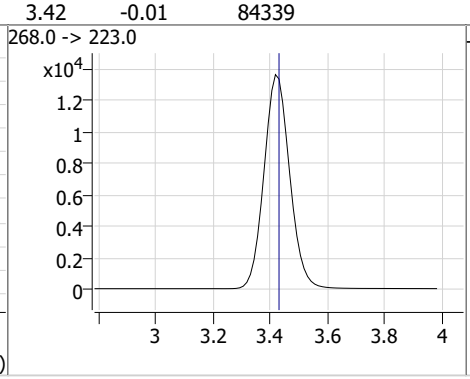


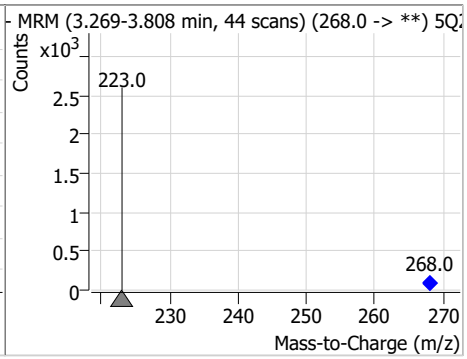




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	10.70	3.42	-0.01	84339				

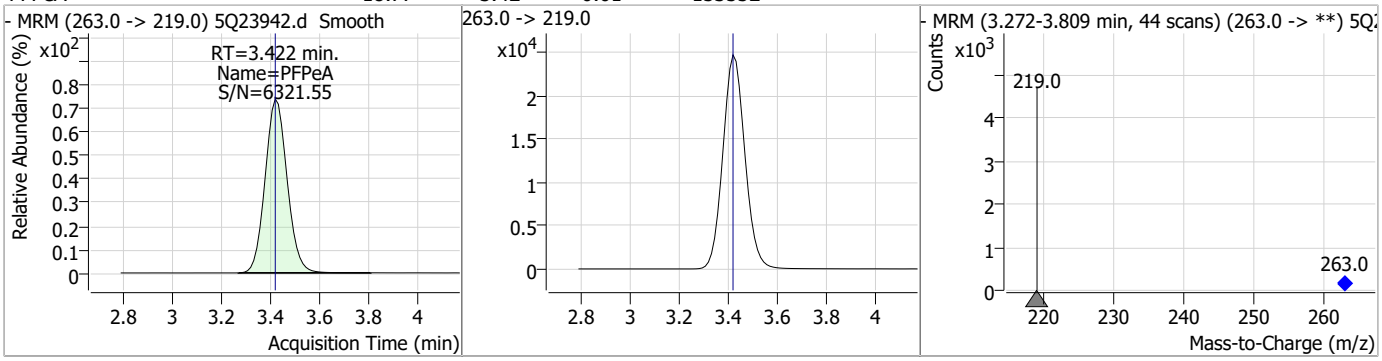




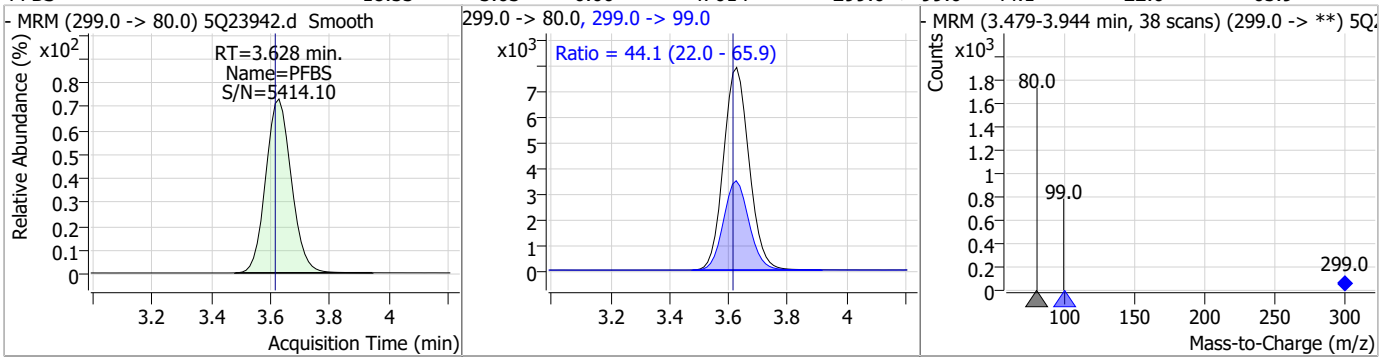


Perfluorinated Compounds by LC/MS/MS

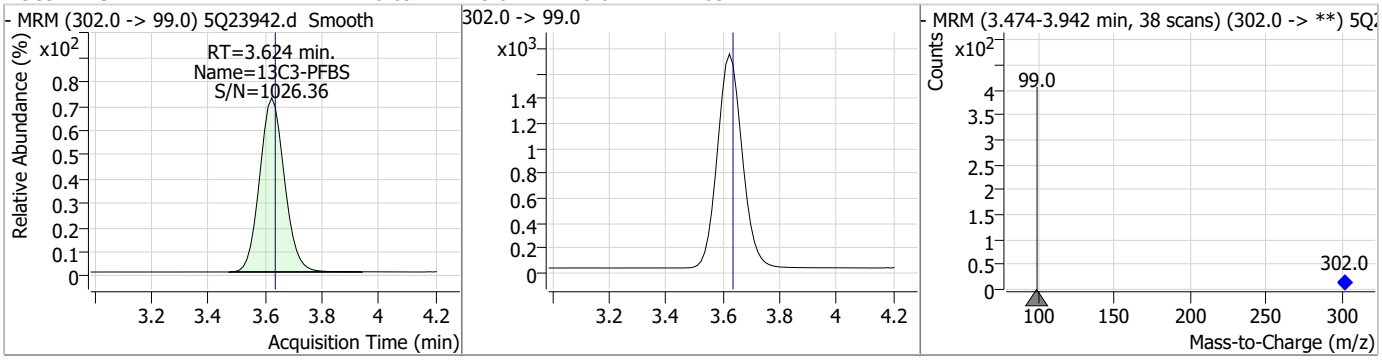
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	18.77	3.42	-0.01	153552				



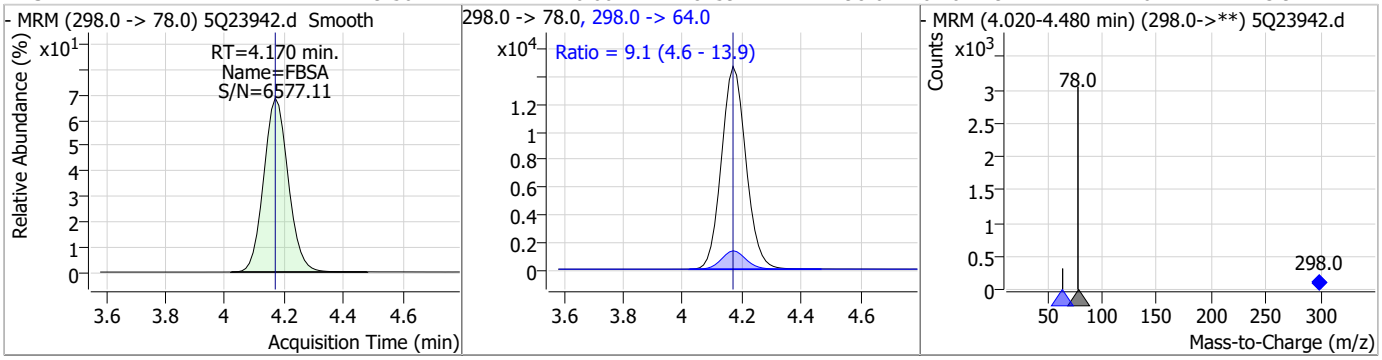
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	18.53	3.63	0.00	47614	299.0 -> 99.0	44.1	22.0	65.9



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	10.69	3.62	-0.01	10377				

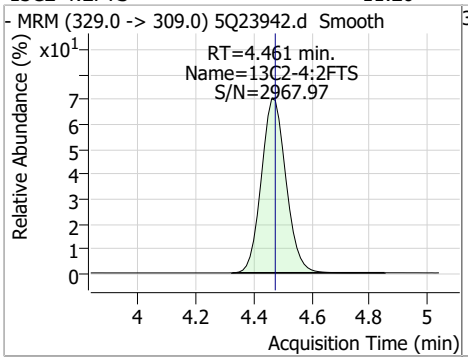


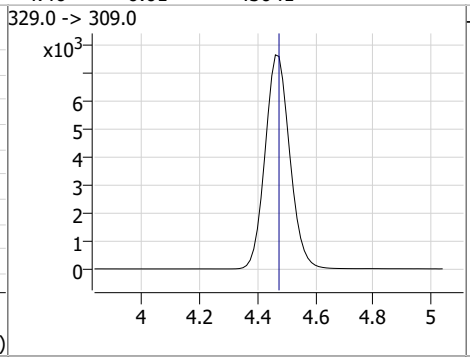
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	19.50	4.17	0.00	84591	298.0 -> 64.0	9.1	4.6	13.9

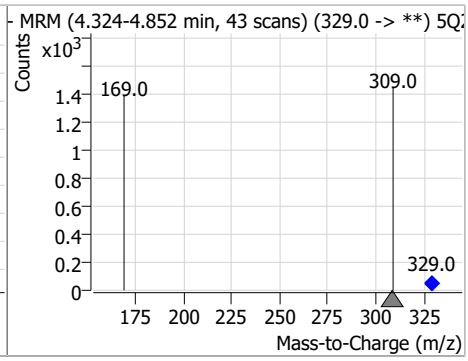


Perfluorinated Compounds by LC/MS/MS

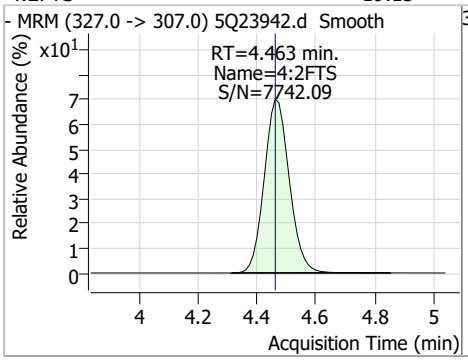
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	11.20	4.46	-0.01	45041				

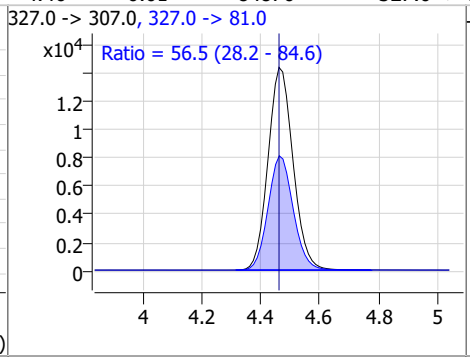


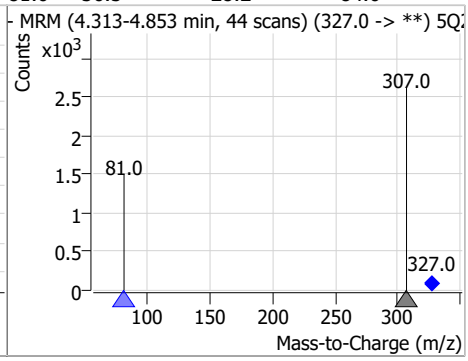




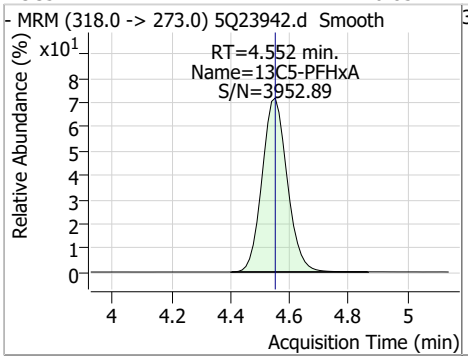
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	19.13	4.46	-0.01	84876	327.0 -> 81.0	56.5	28.2	84.6

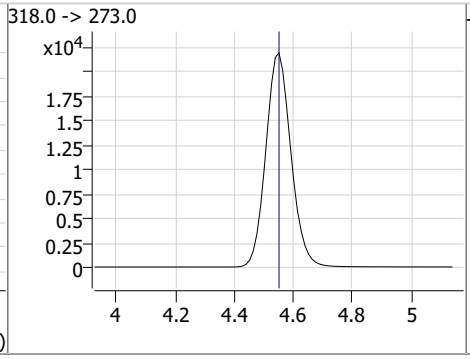


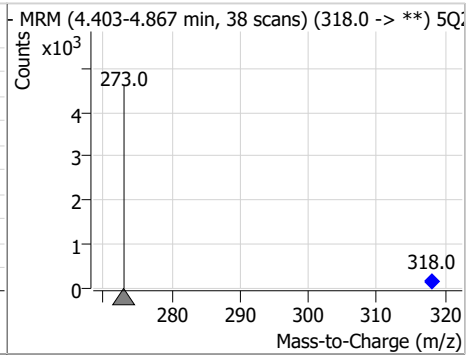




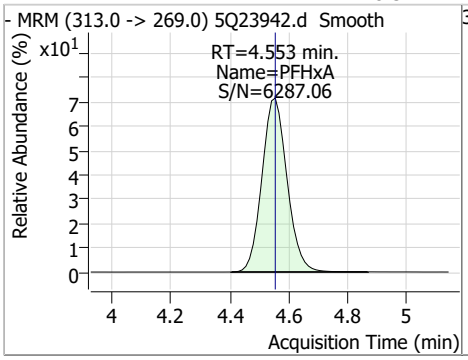
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	10.85	4.55	0.00	129710				

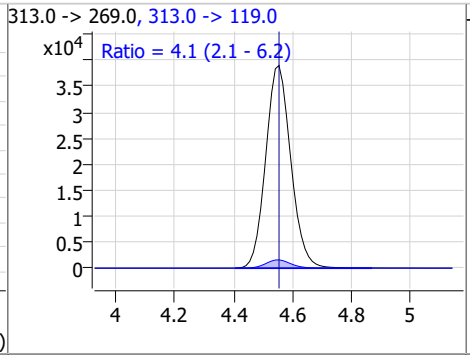


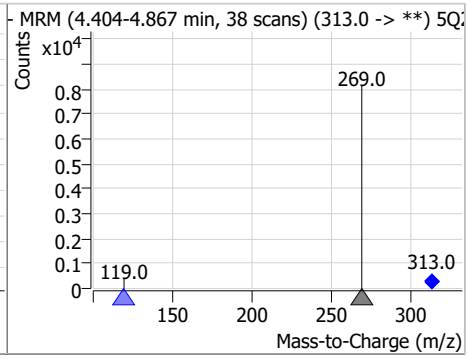




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	18.32	4.55	0.00	229949	313.0 -> 119.0	4.1	2.1	6.2

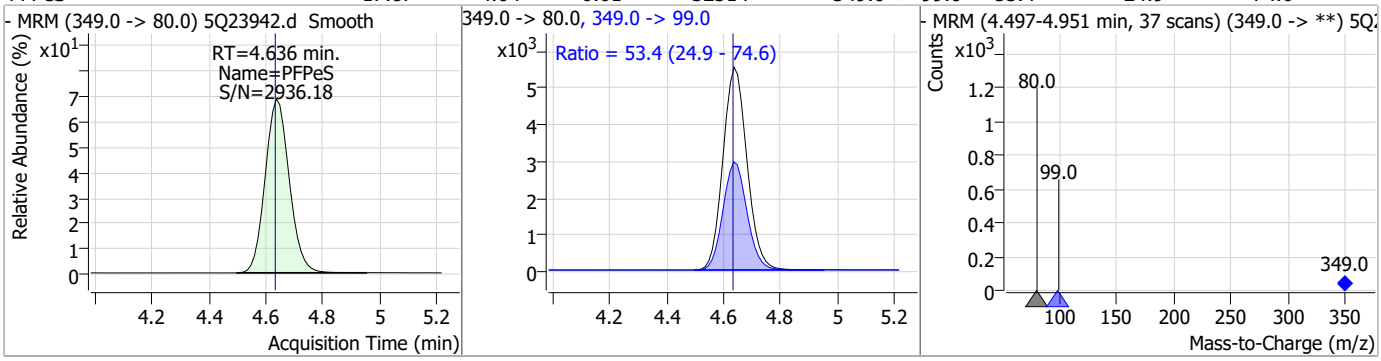




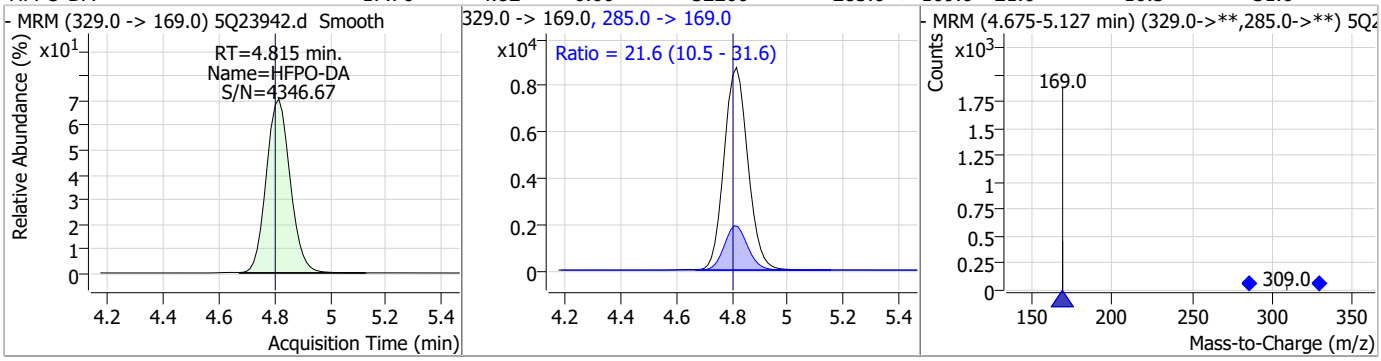


Perfluorinated Compounds by LC/MS/MS

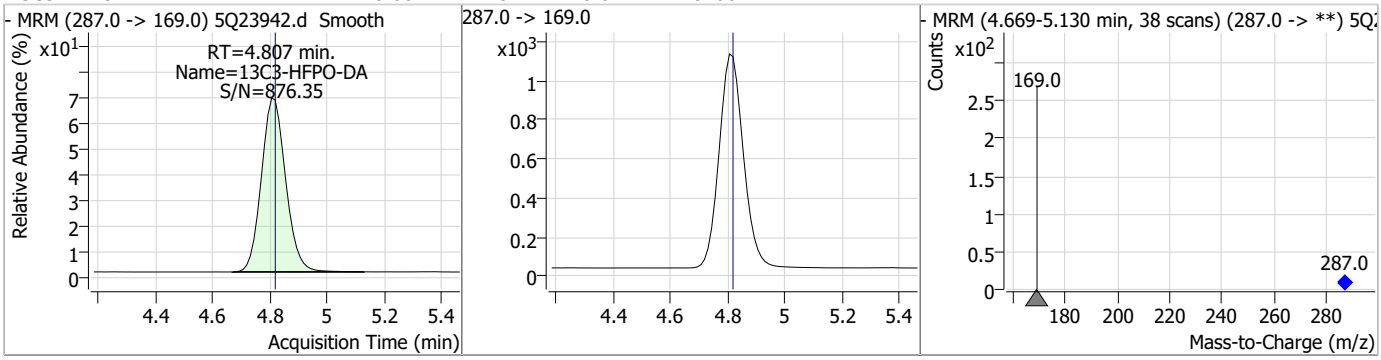
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	17.87	4.64	-0.01	32314	349.0 -> 99.0	53.4	24.9	74.6



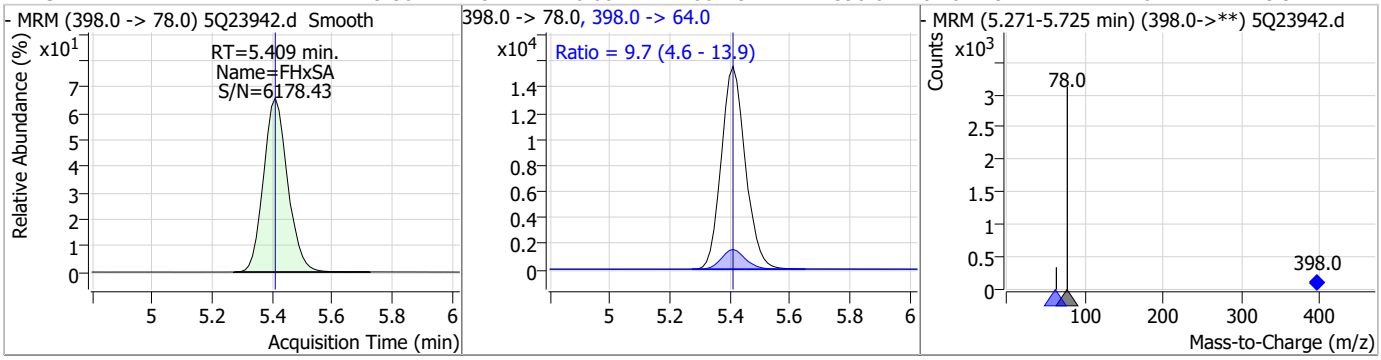
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	17.76	4.82	0.00	52200	285.0 -> 169.0	21.6	10.5	31.6



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	10.00	4.81	-0.01	6460				

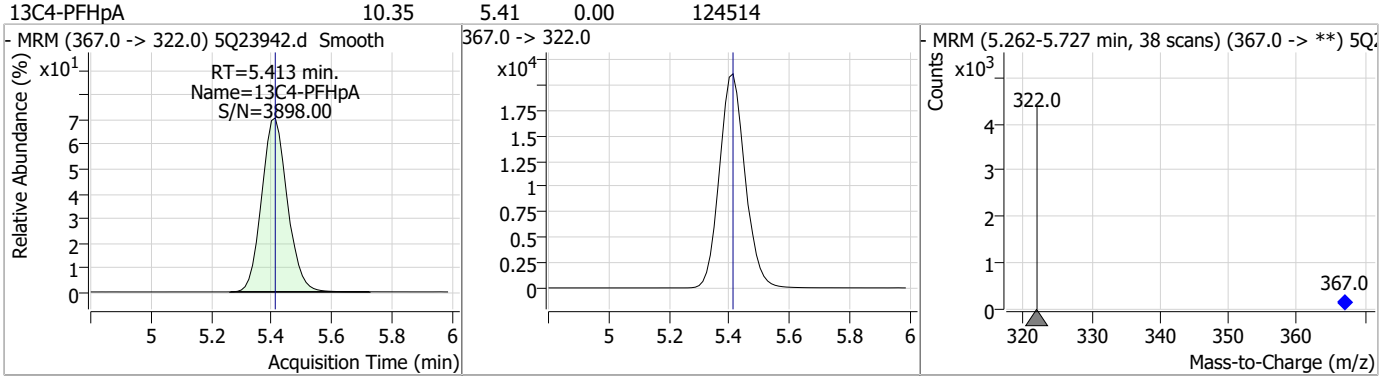


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	19.30	5.41	0.00	86749	398.0 -> 64.0	9.7	4.6	13.9

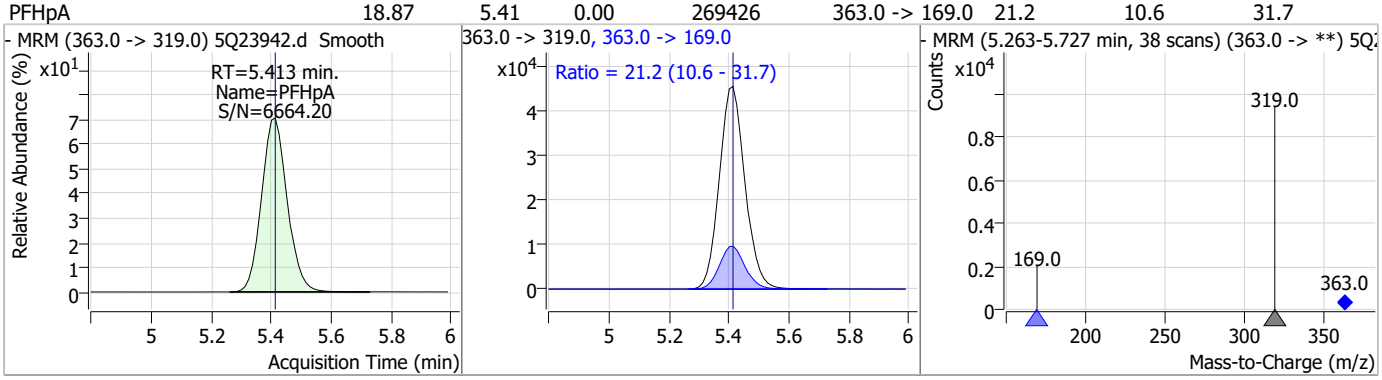


Perfluorinated Compounds by LC/MS/MS

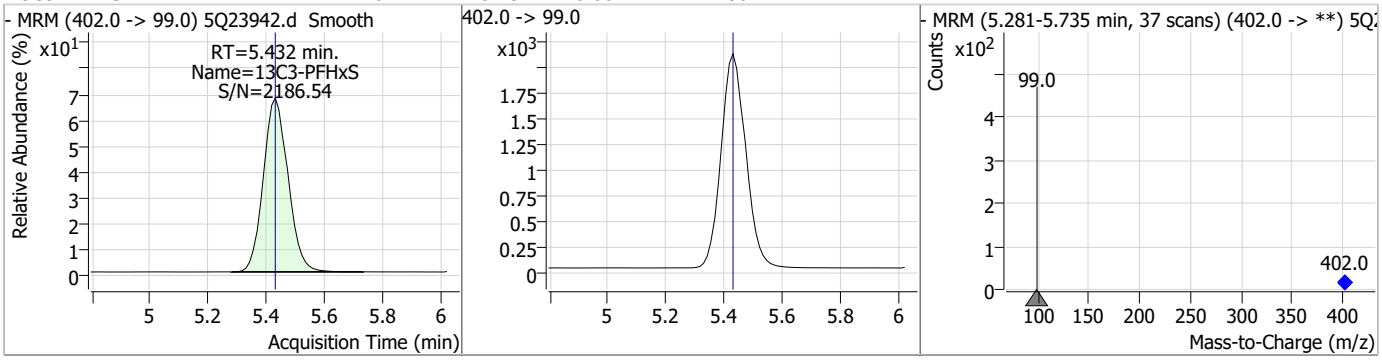
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	10.35	5.41	0.00	124514				



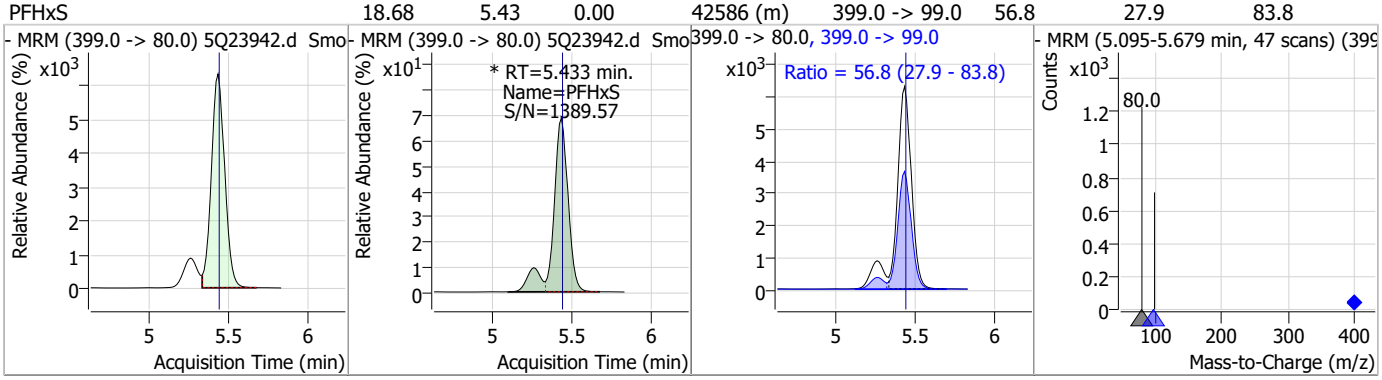
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	18.87	5.41	0.00	269426	363.0 -> 169.0	21.2	10.6	31.7



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	10.41	5.43	0.00	12286				

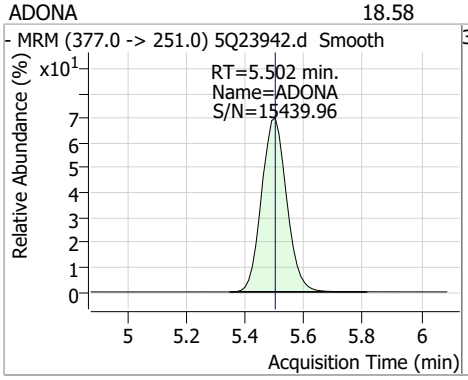


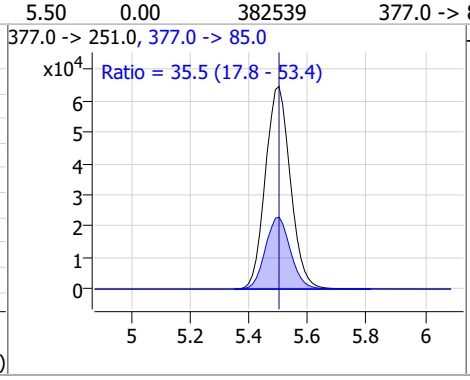
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	18.68	5.43	0.00	42586 (m)	399.0 -> 99.0	56.8	27.9	83.8

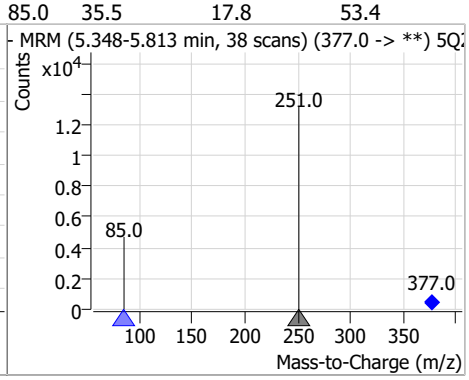


Perfluorinated Compounds by LC/MS/MS

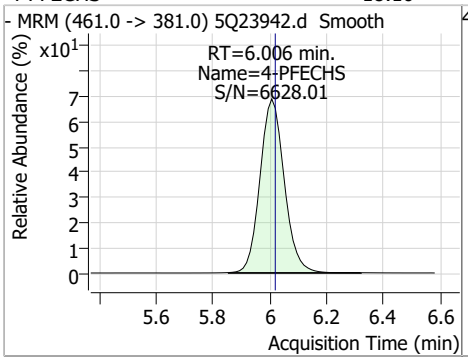
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	18.58	5.50	0.00	382539	377.0 -> 85.0	35.5	17.8	53.4

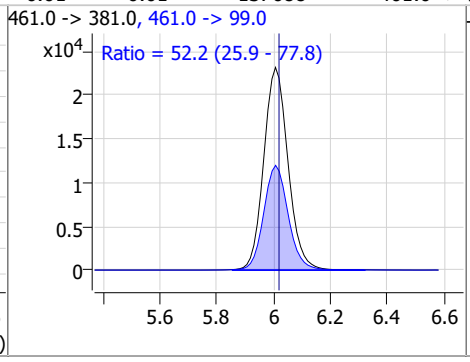


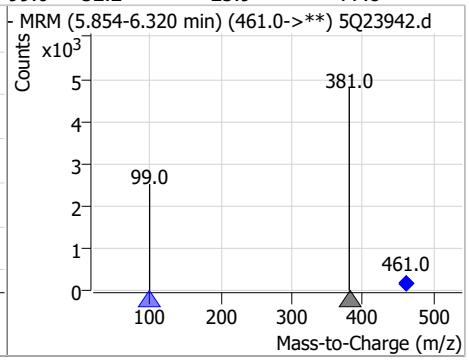




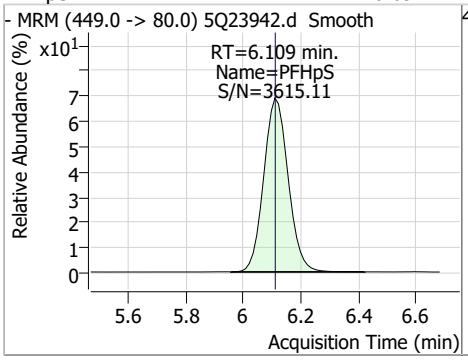
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS	18.10	6.01	-0.01	137688	461.0 -> 99.0	52.2	25.9	77.8

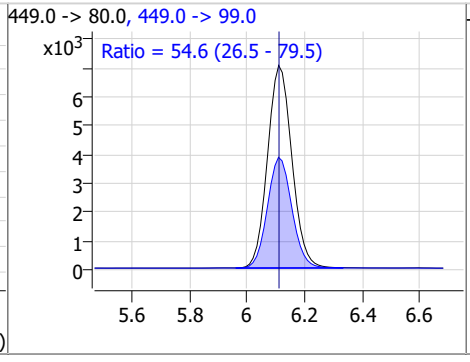


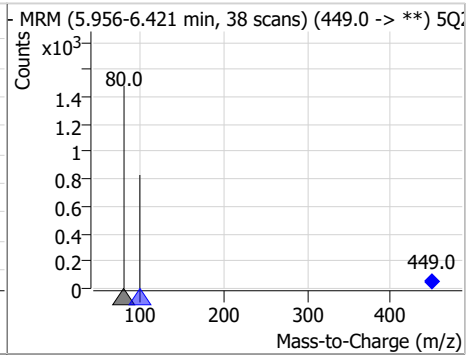




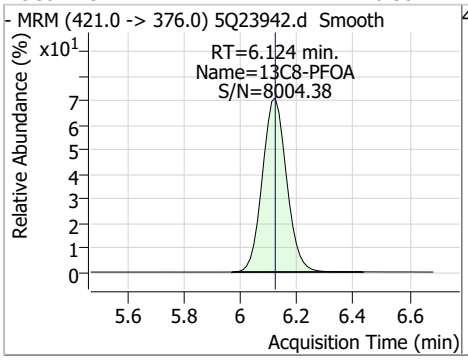
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	18.09	6.11	-0.01	41589	449.0 -> 99.0	54.6	26.5	79.5

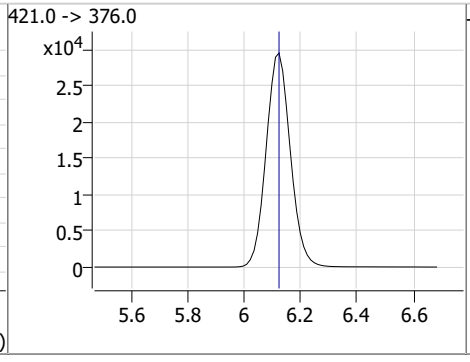


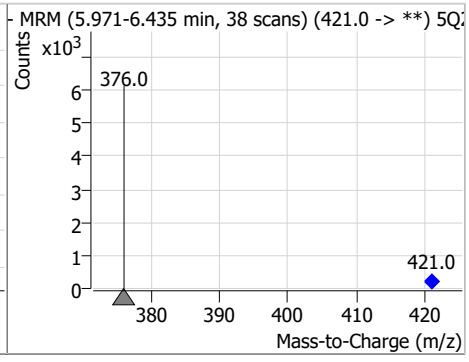




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	10.58	6.12	0.00	175172				

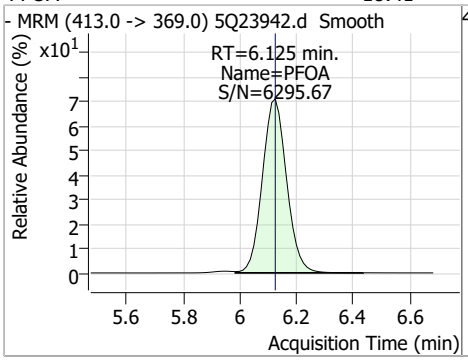


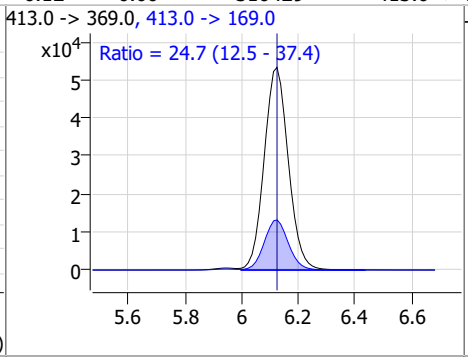


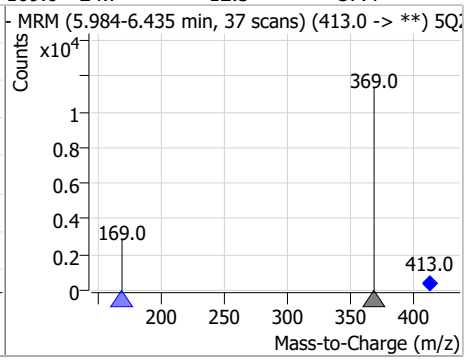


Perfluorinated Compounds by LC/MS/MS

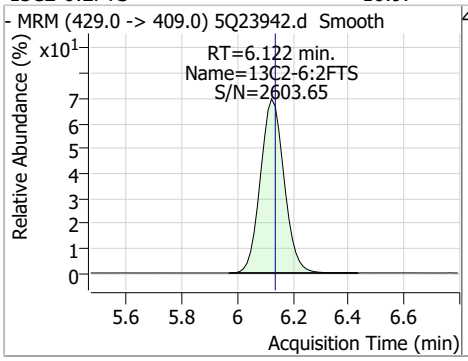
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	18.41	6.12	0.00	316429	413.0 -> 169.0	24.7	12.5	37.4

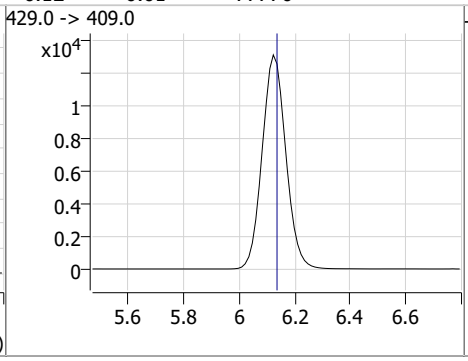


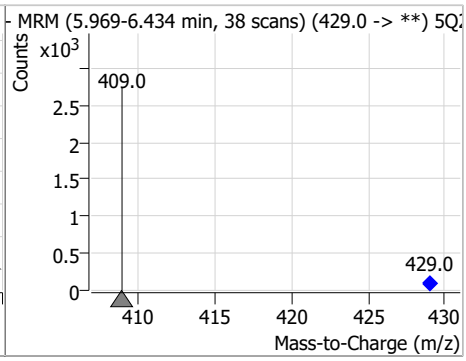




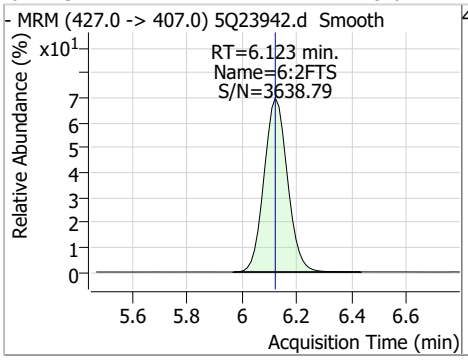
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	10.97	6.12	-0.01	77776				

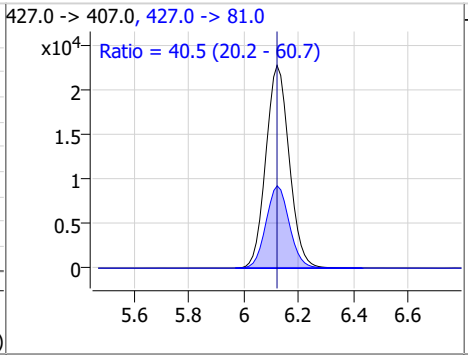


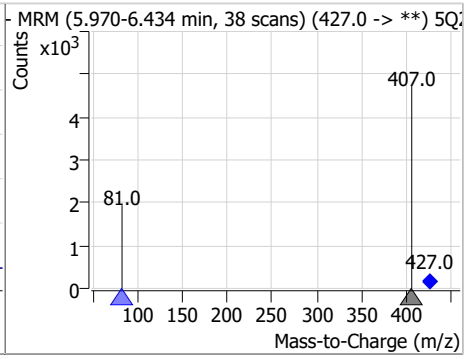




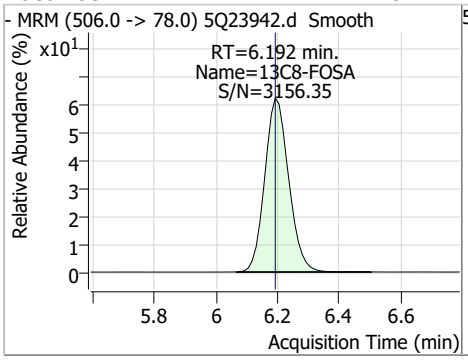
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	19.02	6.12	-0.01	135329	427.0 -> 81.0	40.5	20.2	60.7

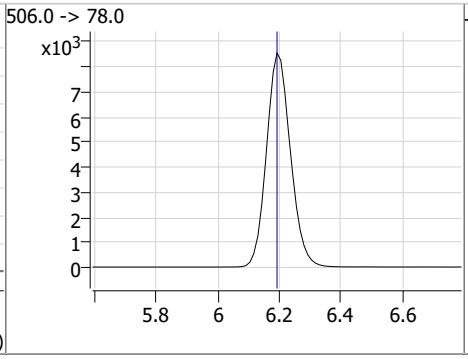


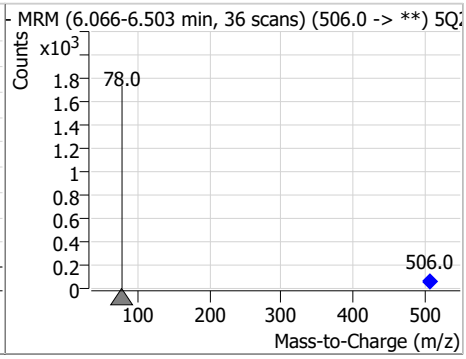




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	11.32	6.19	0.00	45876				

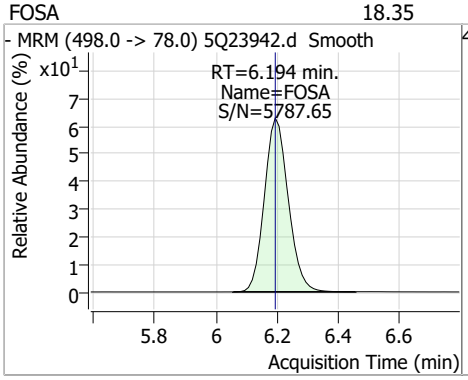


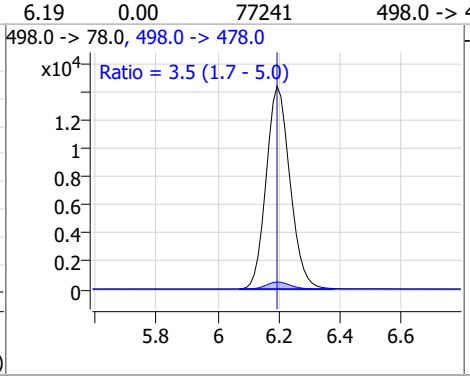


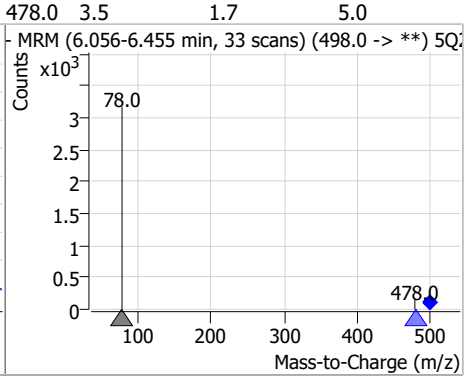


Perfluorinated Compounds by LC/MS/MS

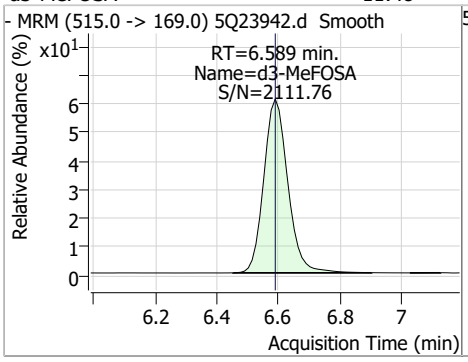
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	18.35	6.19	0.00	77241	498.0 -> 478.0	3.5	1.7	5.0

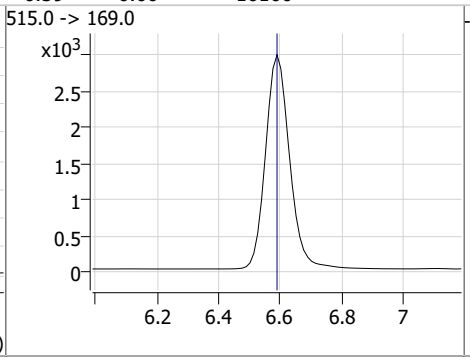


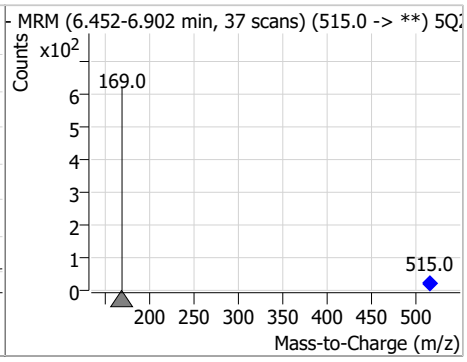




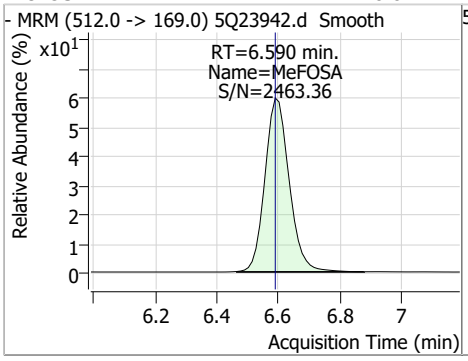
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	11.48	6.59	0.00	16100				

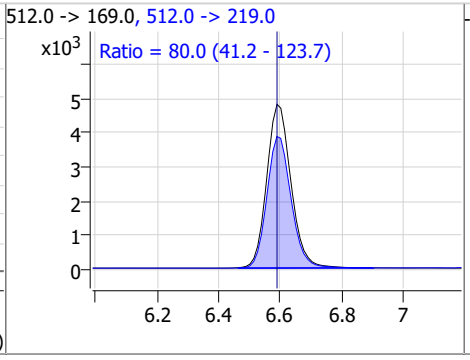


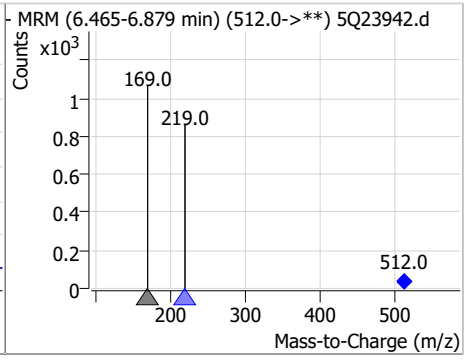




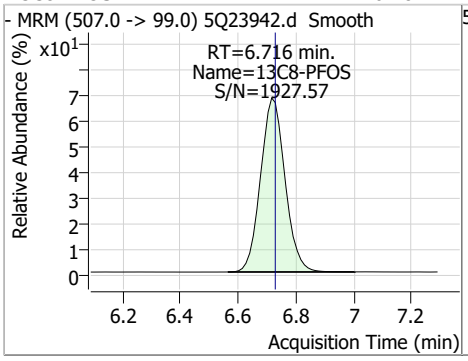
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	18.84	6.59	0.00	26233	512.0 -> 219.0	80.0	41.2	123.7

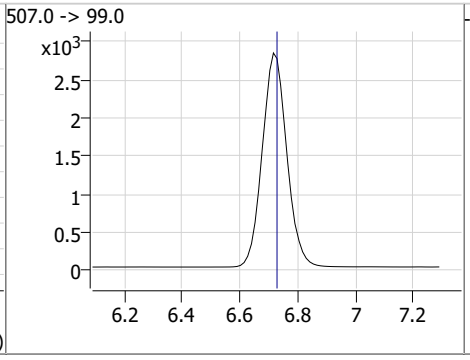


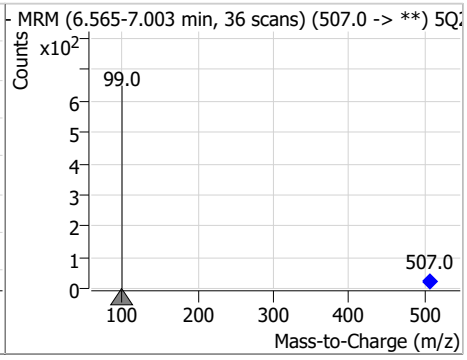




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	10.48	6.72	-0.01	16467				

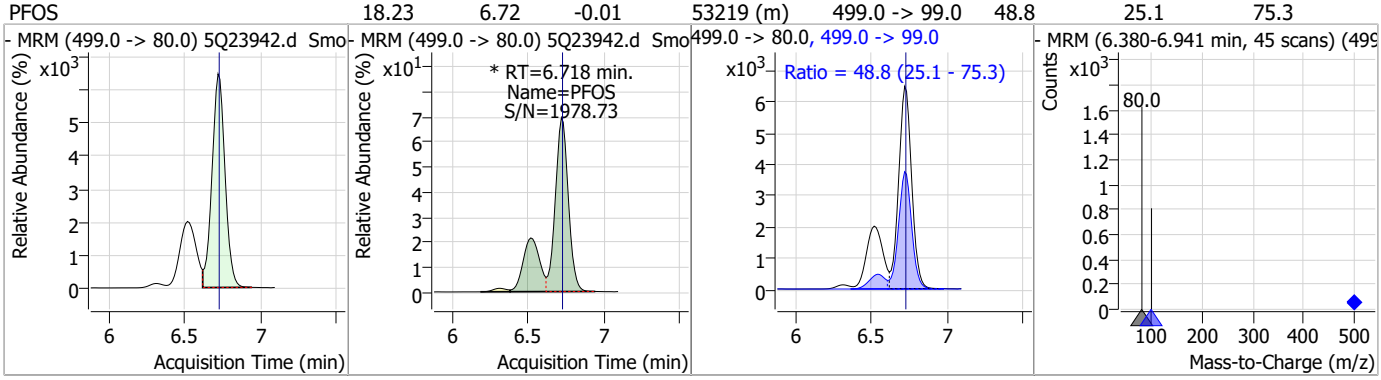




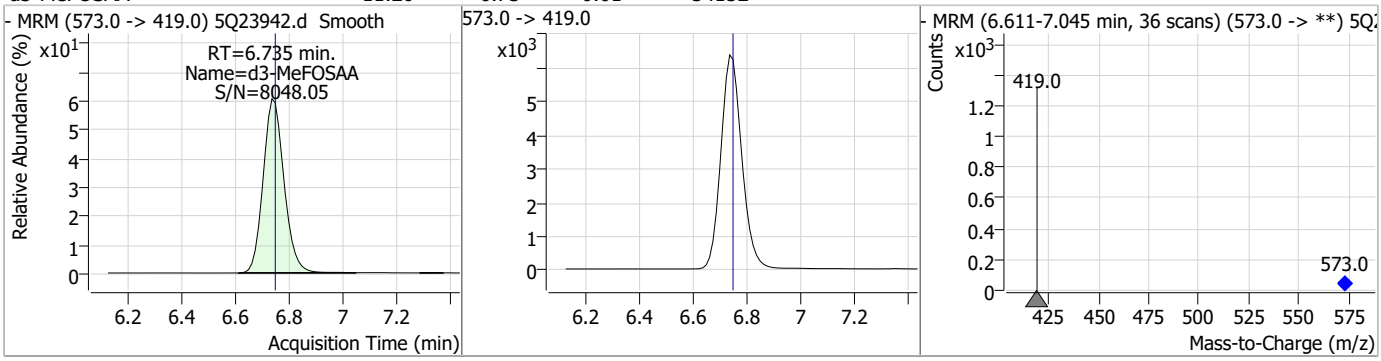


Perfluorinated Compounds by LC/MS/MS

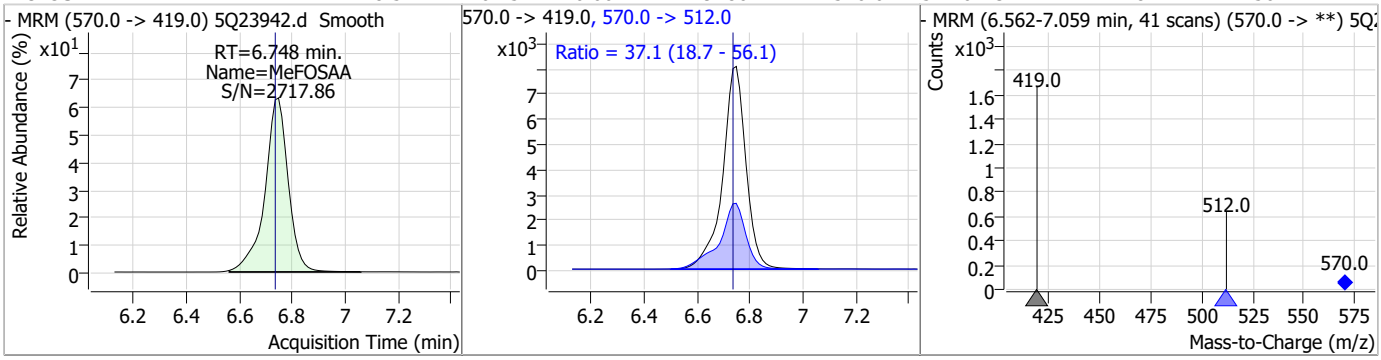
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	18.23	6.72	-0.01	53219 (m)	499.0 -> 99.0	48.8	25.1	75.3



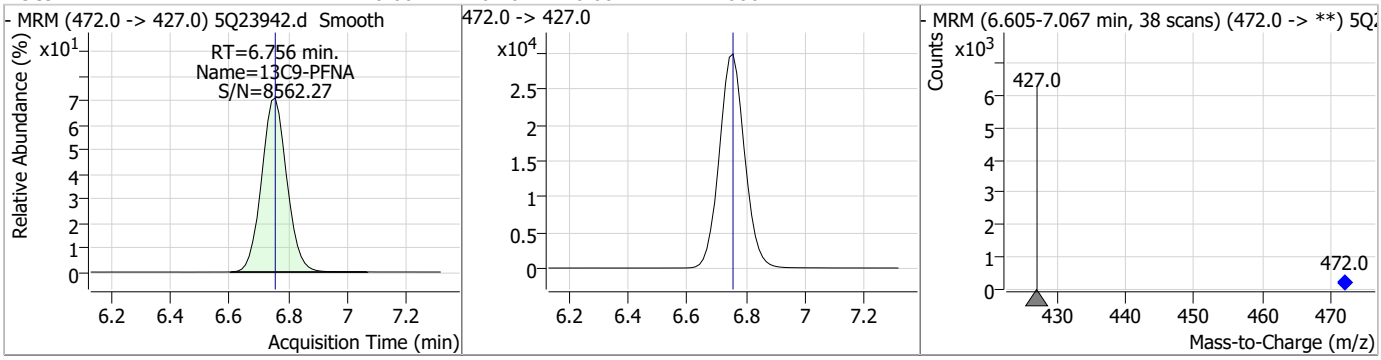
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	11.20	6.73	-0.01	34152				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	18.57	6.75	0.00	49486	570.0 -> 512.0	37.1	18.7	56.1

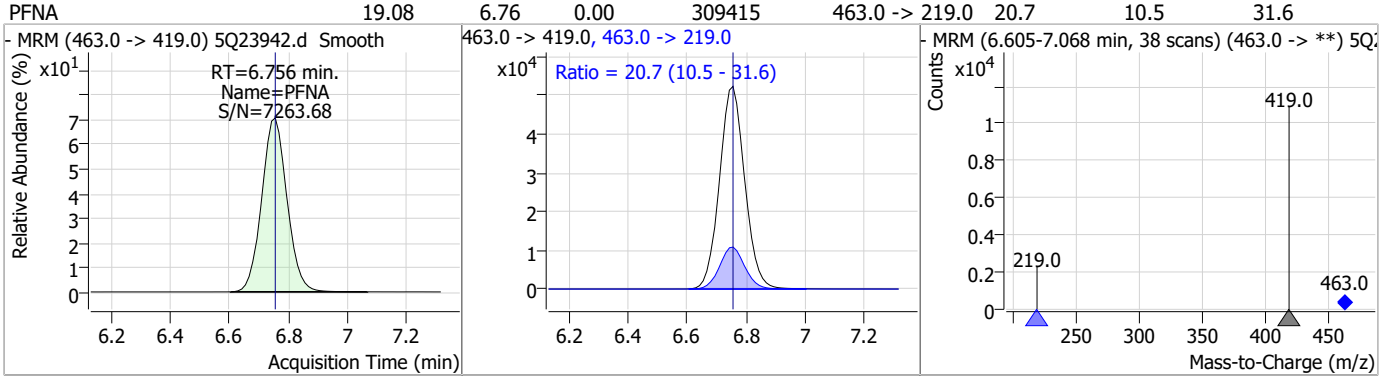


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	10.66	6.76	0.00	177066				

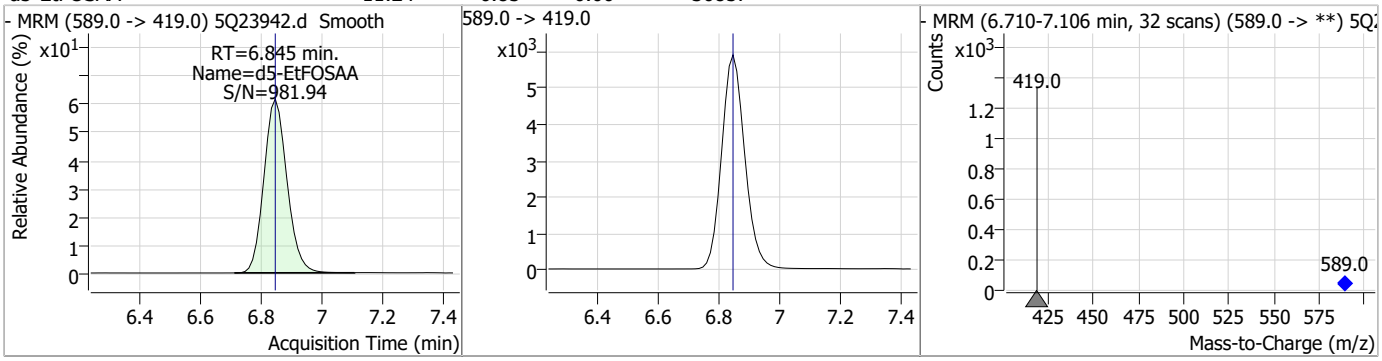


Perfluorinated Compounds by LC/MS/MS

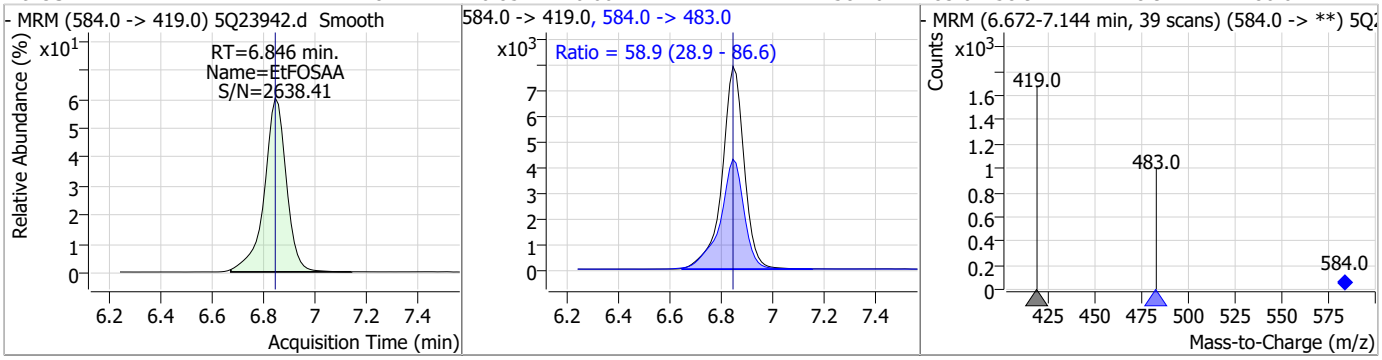
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	19.08	6.76	0.00	309415	463.0 -> 219.0	20.7	10.5	31.6



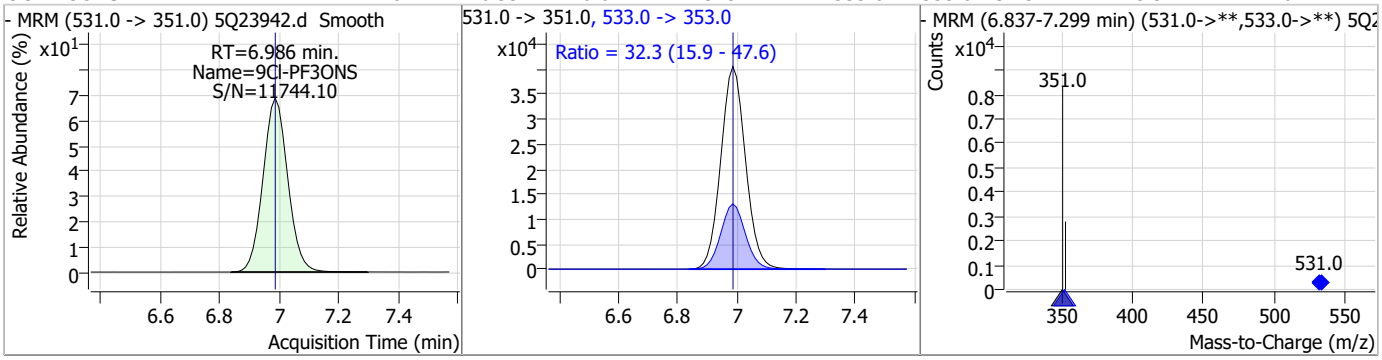
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	11.24	6.85	0.00	30857				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	18.72	6.85	0.00	47142	584.0 -> 483.0	58.9	28.9	86.6

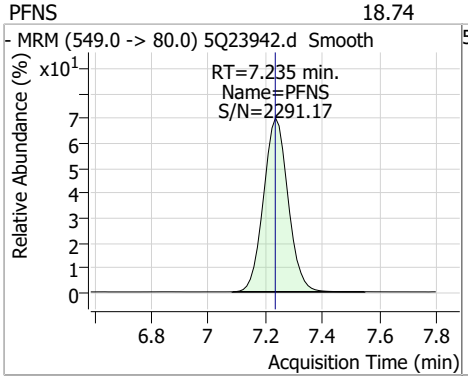


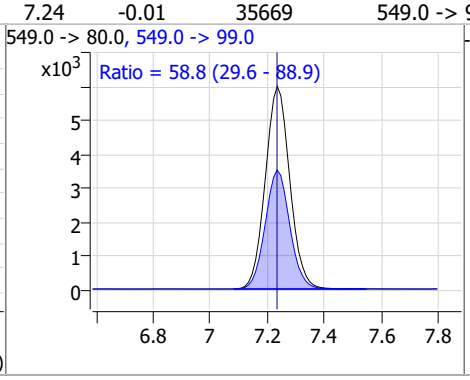
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	17.82	6.99	-0.01	234327	533.0 -> 353.0	32.3	15.9	47.6

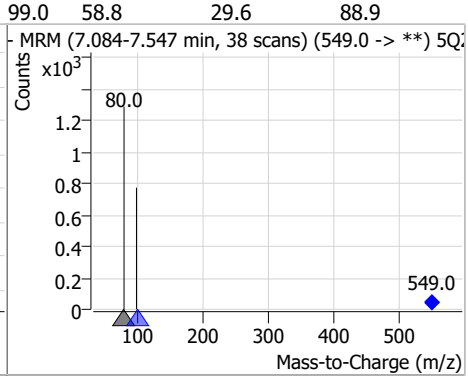


Perfluorinated Compounds by LC/MS/MS

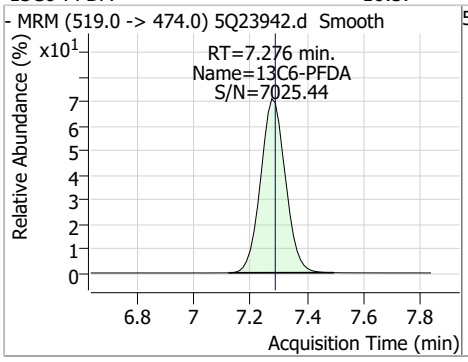
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	18.74	7.24	-0.01	35669	549.0 -> 99.0	58.8	29.6	88.9

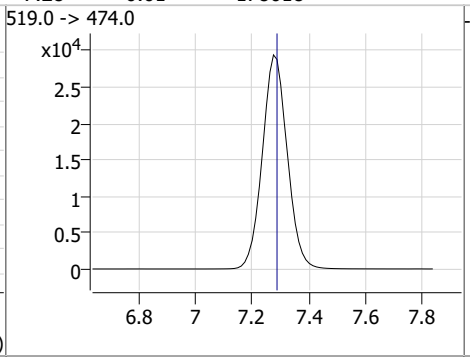


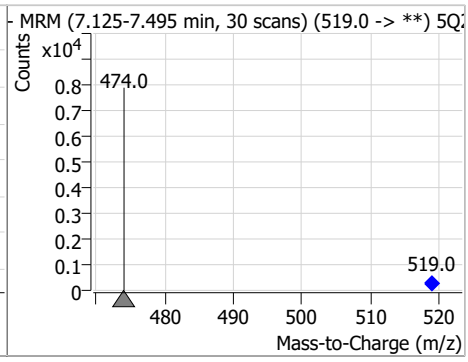




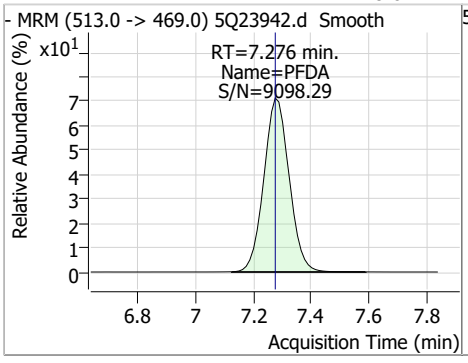
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	10.57	7.28	-0.01	178018				

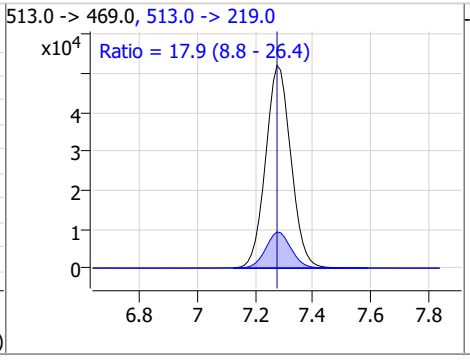


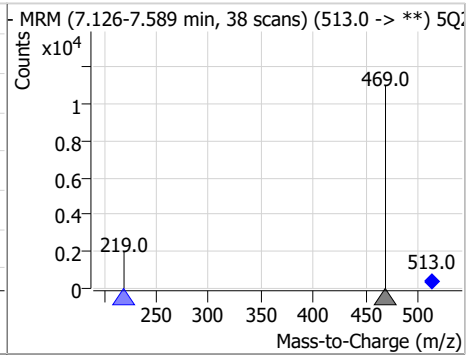




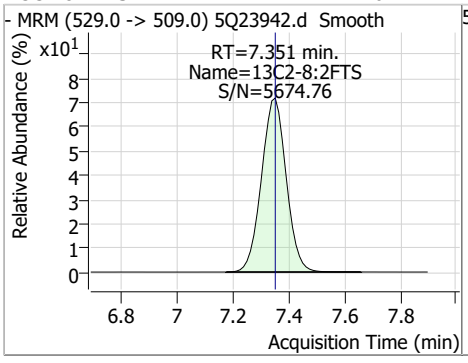
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	18.67	7.28	-0.01	315706	513.0 -> 219.0	17.9	8.8	26.4

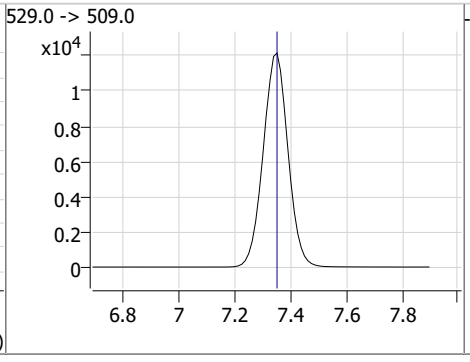


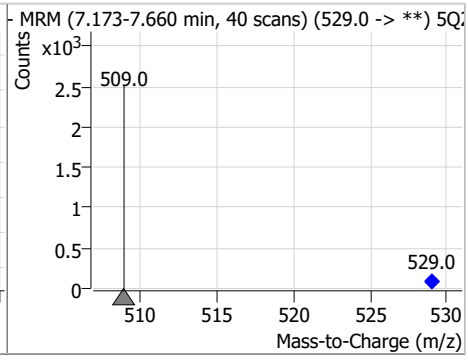




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	10.71	7.35	0.00	74758				

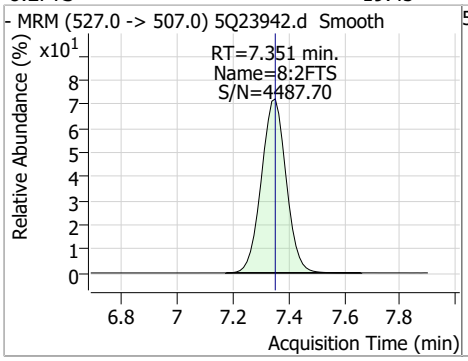


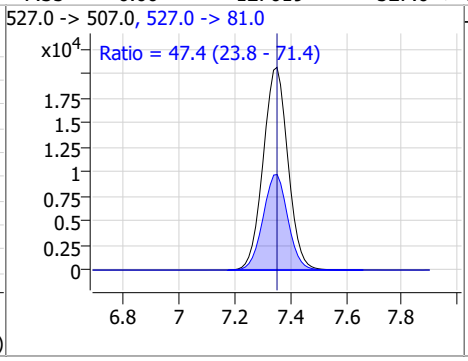


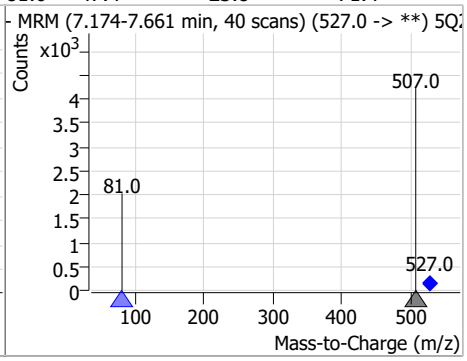


Perfluorinated Compounds by LC/MS/MS

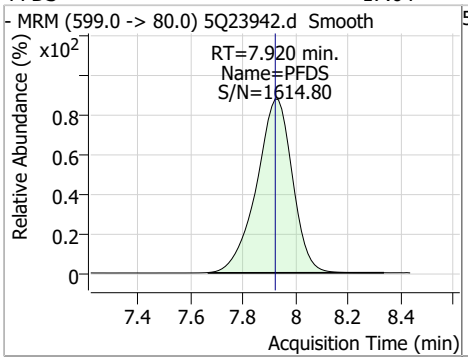
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	19.45	7.35	0.00	127019	527.0 -> 81.0	47.4	23.8	71.4

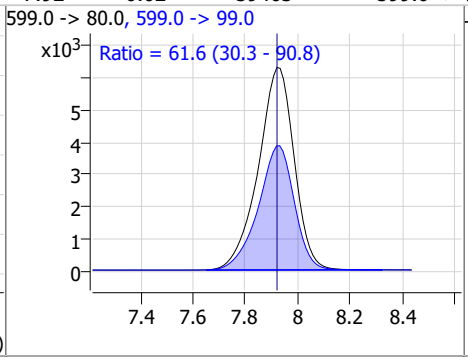


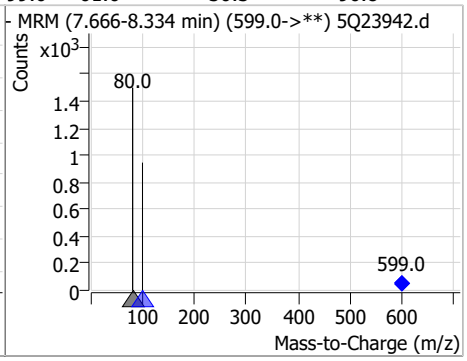




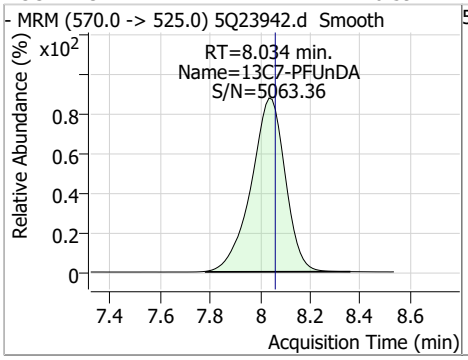
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	17.64	7.92	-0.02	59463	599.0 -> 99.0	61.6	30.3	90.8

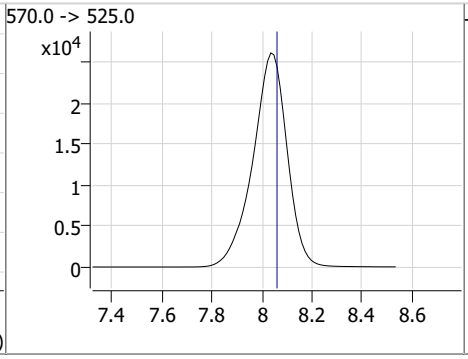


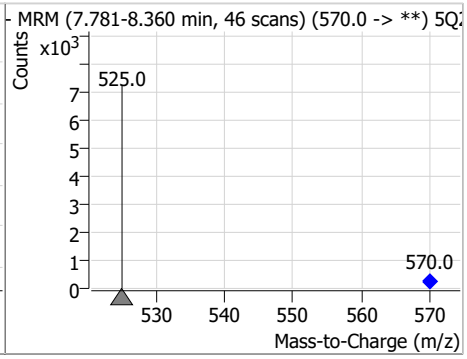




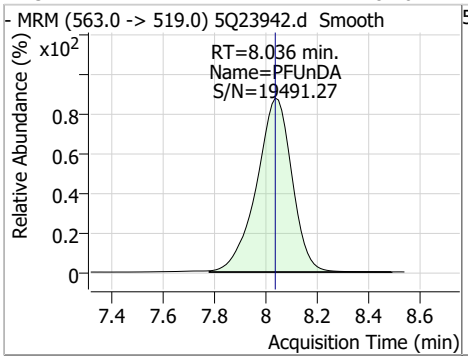
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	10.59	8.03	-0.02	246915				

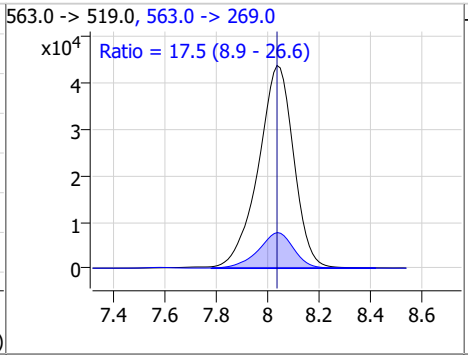


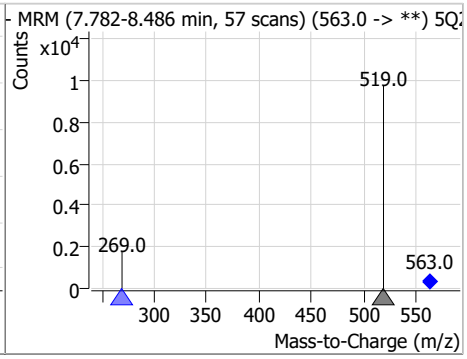




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	18.70	8.04	-0.02	416601	563.0 -> 269.0	17.5	8.9	26.6

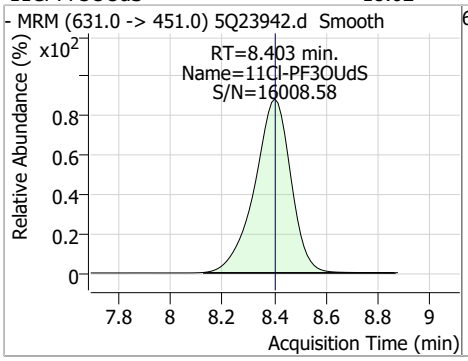


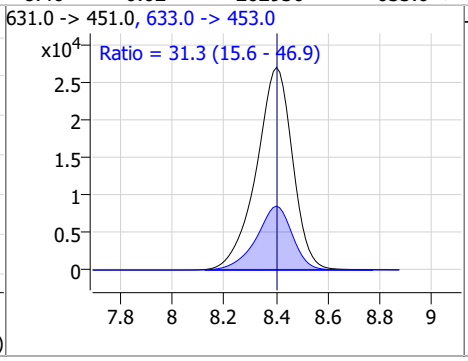


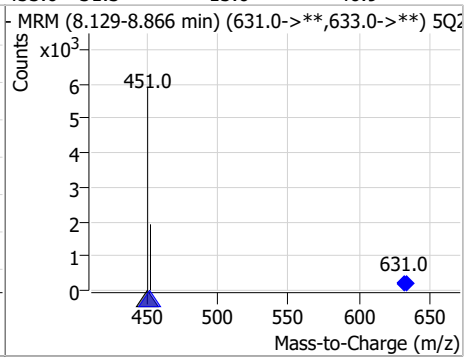


Perfluorinated Compounds by LC/MS/MS

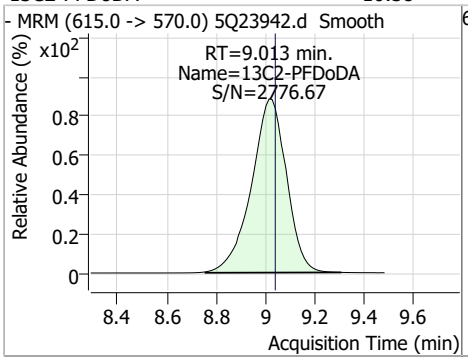
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	18.02	8.40	-0.02	262930	633.0 -> 453.0	31.3	15.6	46.9

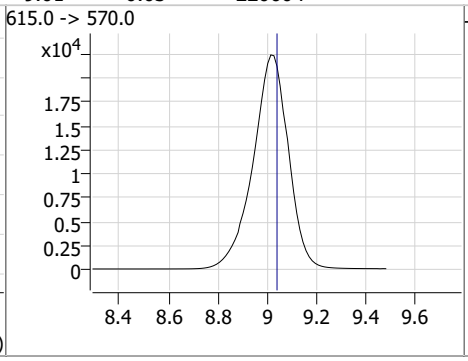


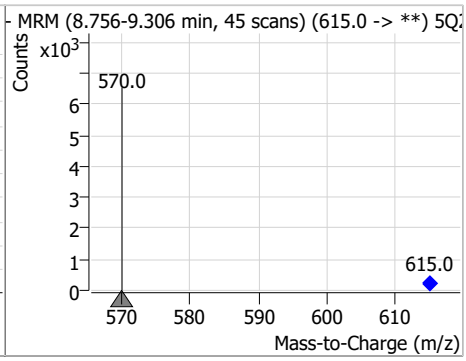




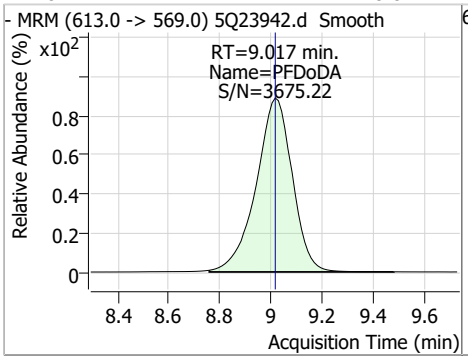
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	10.58	9.01	-0.03	220604				

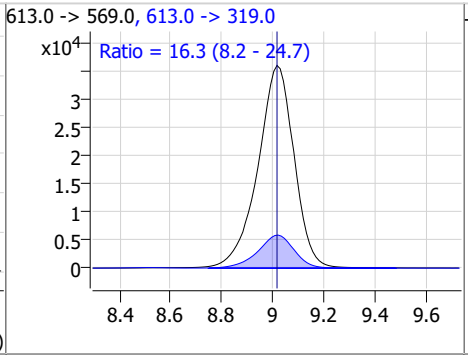


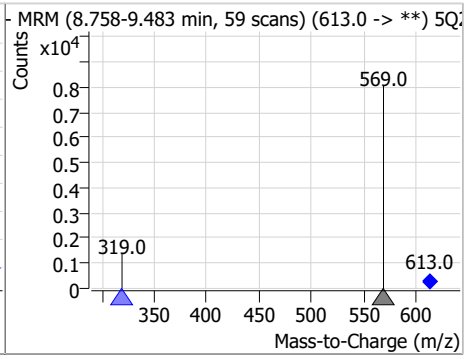




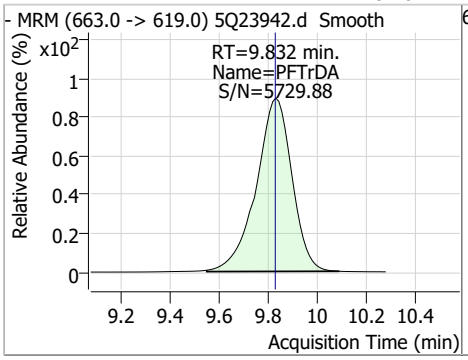
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	18.82	9.02	-0.03	356375	613.0 -> 319.0	16.3	8.2	24.7

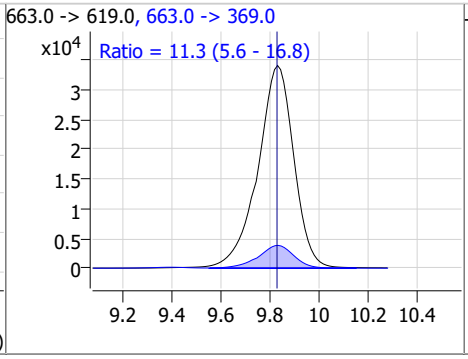


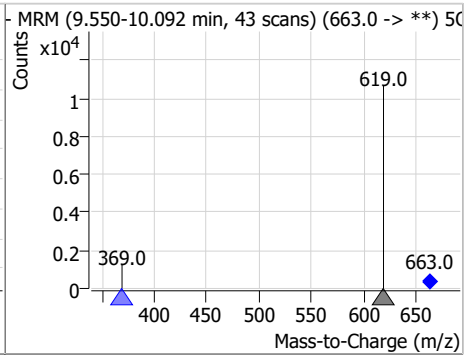




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	18.10	9.83	-0.03	343141	663.0 -> 369.0	11.3	5.6	16.8

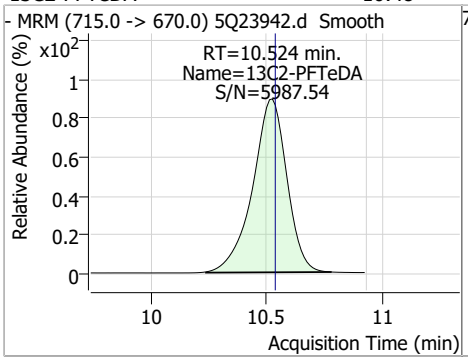


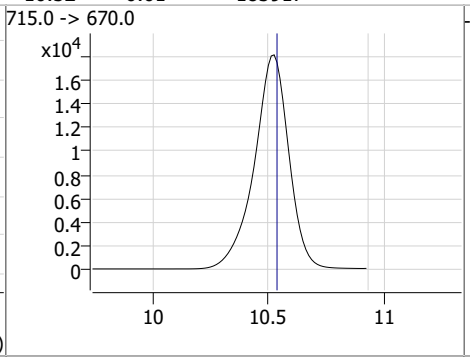


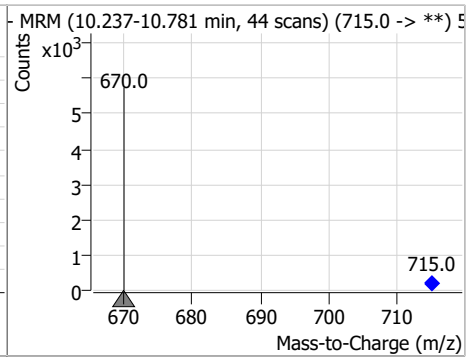


Perfluorinated Compounds by LC/MS/MS

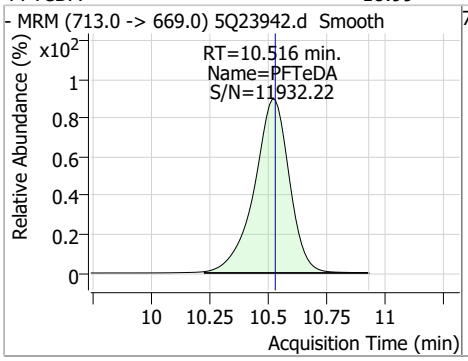
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	10.48	10.52	-0.01	185917				

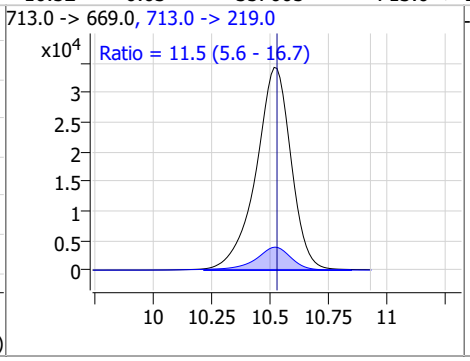


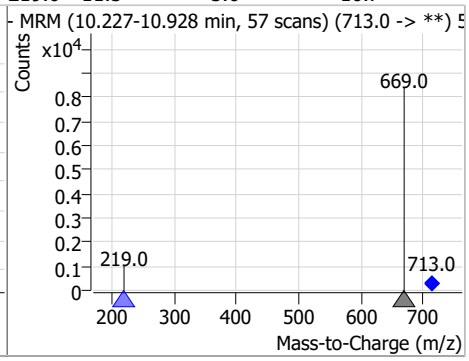




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	18.99	10.52	-0.03	357005	713.0 -> 219.0	11.5	5.6	16.7







Manual Integration Approval Summary

Sample Number: S5Q375-CC375
Lab FileID: 5Q23942.D
Injection Time: 12/28/23 23:56
Method: EPA 537M QSM5.3 B-15
Analyst approved: 12/29/23 14:15 Lindsay Ritner
Supervisor approved: 01/02/24 14:05 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.43	Split peak
Perfluorooctanesulfonic acid	1763-23-1		6.72	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Natasha Gumtie 01/02/24 14:05

Perfluorinated Compounds by LC/MS/MS

Data File : 5Q23943.d
Operator : natashag
Acq. Method : 537_ID.m
Acq. Date-Time : 12/29/2023 12:12:50 AM
Sample Name : cc375-1.0LL
Vial : P1-A3
DA Method File : ID_122823_S5Q375.quantmethod.xml
Batch Name : s5q375.batch.bin
Sample Information : OP401,S5Q375,250,,,1.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	1.987	217.0 -> 172.0	52907	10.00 µg/L	0.000
M5-PFPeA	3.419	268.0 -> 223.0	88019	10.00 µg/L	-0.012
M5-PFHxA	4.552	318.0 -> 273.0	128681	10.00 µg/L	0.000
M4-PFHpA	5.413	367.0 -> 322.0	132493	10.00 µg/L	0.000
M8-PFOA	6.124	421.0 -> 376.0	183974	10.00 µg/L	0.000
M9-PFNA	6.756	472.0 -> 427.0	185880	10.00 µg/L	0.000
M6-PFDA	7.276	519.0 -> 474.0	190675	10.00 µg/L	-0.012
M7-PFUnDA	8.034	570.0 -> 525.0	258394	10.00 µg/L	-0.025
M2-PFDoDA	9.026	615.0 -> 570.0	229441	10.00 µg/L	-0.013
M2-PFTeDA	10.524	715.0 -> 670.0	189359	10.00 µg/L	-0.013
M8-FOSA	6.192	506.0 -> 78.0	49040	10.00 µg/L	0.000
M3-PFBS	3.624	302.0 -> 99.0	10555	10.00 µg/L	-0.012
M3-PFHxS	5.432	402.0 -> 99.0	13212	10.00 µg/L	0.000
M8-PFOS	6.716	507.0 -> 99.0	17126	10.00 µg/L	-0.012
M2-4:2FTS	4.461	329.0 -> 309.0	41039	10.00 µg/L	-0.012
M2-6:2FTS	6.122	429.0 -> 409.0	74062	10.00 µg/L	-0.013
M2-8:2FTS	7.351	529.0 -> 509.0	72024	10.00 µg/L	0.000
M3-MeFOSAA	6.735	573.0 -> 419.0	35484	10.00 µg/L	-0.012
M3-HFPO-DA	4.807	287.0 -> 169.0	6732	10.00 µg/L	-0.012
M3-MeFOSA	6.589	515.0 -> 169.0	16373	10.00 µg/L	0.000
M5-EtFOSAA	6.845	589.0 -> 419.0	32195	10.00 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	4.461	329.0 -> 309.0	41039	10.21 µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 102.1%	
13C2-6:2FTS	6.122	429.0 -> 409.0	74062	10.45 µg/L	-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 104.5%	
13C2-8:2FTS	7.351	529.0 -> 509.0	72024	10.31 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 103.1%	
13C2-PFDoDA	9.026	615.0 -> 570.0	229441	11.00 µg/L	-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 110.0%	
13C2-PFTeDA	10.524	715.0 -> 670.0	189359	10.67 µg/L	-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 106.7%	
13C3-PFBS	3.624	302.0 -> 99.0	10555	10.87 µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 108.7%	
13C3-PFHxS	5.432	402.0 -> 99.0	13212	11.20 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 112.0%	
13C4-PFBA	1.987	217.0 -> 172.0	52907	11.20 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 112.0%	
13C4-PFHpA	5.413	367.0 -> 322.0	132493	11.02 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 110.2%	
13C5-PFHxA	4.552	318.0 -> 273.0	128681	10.77 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 107.7%	
13C5-PFPeA	3.419	268.0 -> 223.0	88019	11.17 µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 111.7%	
13C6-PFDA	7.276	519.0 -> 474.0	190675	11.32 µg/L	-0.012

Perfluorinated Compounds by LC/MS/MS

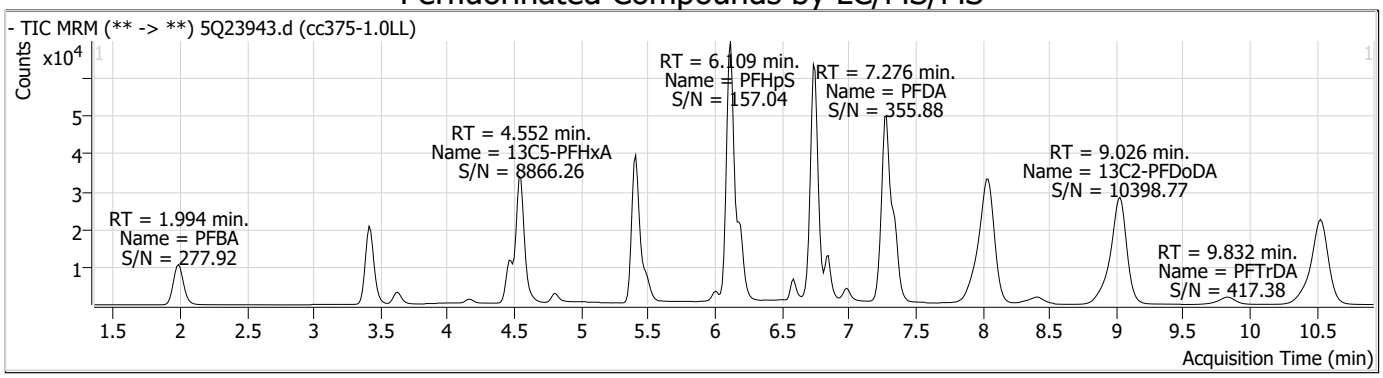
Compound	RT	Transition	Response	Conc. Units		Dev(Min)
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 113.2%		
13C7-PFUnDA	8.034	570.0 -> 525.0	258394	11.09 µg/L		-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 110.9%		
13C8-FOSA	6.192	506.0 -> 78.0	49040	12.10 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 121.0%		
13C8-PFOA	6.124	421.0 -> 376.0	183974	11.11 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 111.1%		
13C8-PFOS	6.716	507.0 -> 99.0	17126	10.90 µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 109.0%		
13C9-PFNA	6.756	472.0 -> 427.0	185880	11.19 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 111.9%		
d3-MeFOSAA	6.735	573.0 -> 419.0	35484	11.64 µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 116.4%		
13C3-HFPO-DA	4.807	287.0 -> 169.0	6732	10.43 µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 104.3%		
d3-MeFOSA	6.589	515.0 -> 169.0	16373	11.68 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 116.8%		
d5-EtFOSAA	6.845	589.0 -> 419.0	32195	11.73 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 117.3%		
Target Compounds						QValue
4:2FTS	4.463	327.0 -> 307.0	3761	0.93 µg/L		96
		327.0 -> 81.0	2223			
6:2FTS	6.123	427.0 -> 407.0	6332	0.93 µg/L		99
		427.0 -> 81.0	2540			
8:2FTS	7.351	527.0 -> 507.0	5863	0.93 µg/L		100
		527.0 -> 81.0	2783			
EtFOSAA	6.846	584.0 -> 419.0	2462	0.94 µg/L		96
		584.0 -> 483.0	1488			
FOSA	6.194	498.0 -> 78.0	3860	0.86 µg/L		98
		498.0 -> 478.0	97			
MeFOSAA	6.748	570.0 -> 419.0	2520	0.91 µg/L		97
		570.0 -> 512.0	897			
PFBA	1.994	213.0 -> 169.0	3865	0.79 µg/L		100
PFBS	3.628	299.0 -> 80.0	2185	0.84 µg/L		97
		299.0 -> 99.0	922			
PFDA	7.276	513.0 -> 469.0	14597	0.81 µg/L		100
		513.0 -> 219.0	2568			
PFDoDA	9.017	613.0 -> 569.0	16246	0.82 µg/L		99
		613.0 -> 319.0	2720			
PFDS	7.933	599.0 -> 80.0	2823	0.80 µg/L		99
		599.0 -> 99.0	1727			
PFHpA	5.413	363.0 -> 319.0	12037	0.79 µg/L		99
		363.0 -> 169.0	2489			
PFHpS	6.109	449.0 -> 80.0	1990	0.83 µg/L		94
		449.0 -> 99.0	1135			
PFHxA	4.553	313.0 -> 269.0	9771	0.78 µg/L		100
		313.0 -> 119.0	406			
PFHxS	5.433	399.0 -> 80.0	2006	0.82 µg/L	m	96
		399.0 -> 99.0	1067			
PFNA	6.756	463.0 -> 419.0	14760	0.87 µg/L		95
		463.0 -> 219.0	2799			
PFNS	7.235	549.0 -> 80.0	1601	0.81 µg/L		97
		549.0 -> 99.0	910			
PFOA	6.125	413.0 -> 369.0	14106	0.78 µg/L		96
		413.0 -> 169.0	3792			
PFOS	6.718	499.0 -> 80.0	2448	0.81 µg/L	m	92

Perfluorinated Compounds by LC/MS/MS

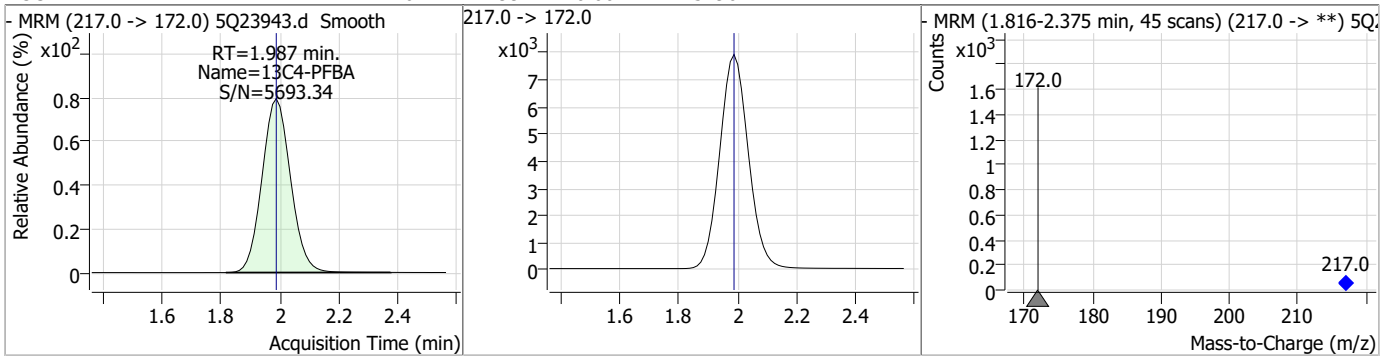
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		499.0 -> 99.0	1368			
PFPeA	3.422	263.0 -> 219.0	6787	0.80	µg/L	100
PFPeS	4.636	349.0 -> 80.0	1455	0.79	µg/L	90
		349.0 -> 99.0	821			
PFTeDA	10.529	713.0 -> 669.0	16052	0.84	µg/L	98
		713.0 -> 219.0	1893			
PFTrDA	9.832	663.0 -> 619.0	15491	0.79	µg/L	99
		663.0 -> 369.0	1779			
PFUnDA	8.048	563.0 -> 519.0	18971	0.81	µg/L	99
		563.0 -> 269.0	3474			
11Cl-PF3OUdS	8.403	631.0 -> 451.0	10965	0.72	µg/L	99
		633.0 -> 453.0	3521			
9Cl-PF3ONS	6.986	531.0 -> 351.0	9883	0.70	µg/L	99
		533.0 -> 353.0	3197			
ADONA	5.502	377.0 -> 251.0	15902	0.72	µg/L	99
		377.0 -> 85.0	5783			
HFPO-DA	4.815	329.0 -> 169.0	2233	0.73	µg/L	100
		285.0 -> 169.0	470			
MeFOSA	6.590	512.0 -> 169.0	1116	0.79	µg/L	95
		512.0 -> 219.0	969			
4-PFECHS	6.006	461.0 -> 381.0	7454	0.93	µg/L	98
		461.0 -> 99.0	3771			
FBSA	4.170	298.0 -> 78.0	3534	0.82	µg/L	94
		298.0 -> 64.0	405			
FHxSA	5.409	398.0 -> 78.0	3884	0.80	µg/L	98
		398.0 -> 64.0	338			

 # = Qualifier out of range, m = manually integrated, + = Area summed

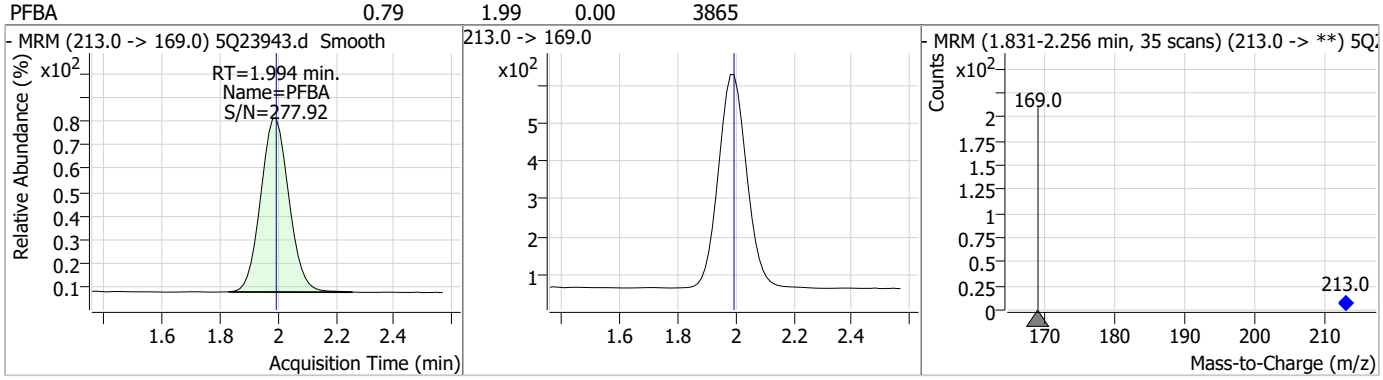
Perfluorinated Compounds by LC/MS/MS



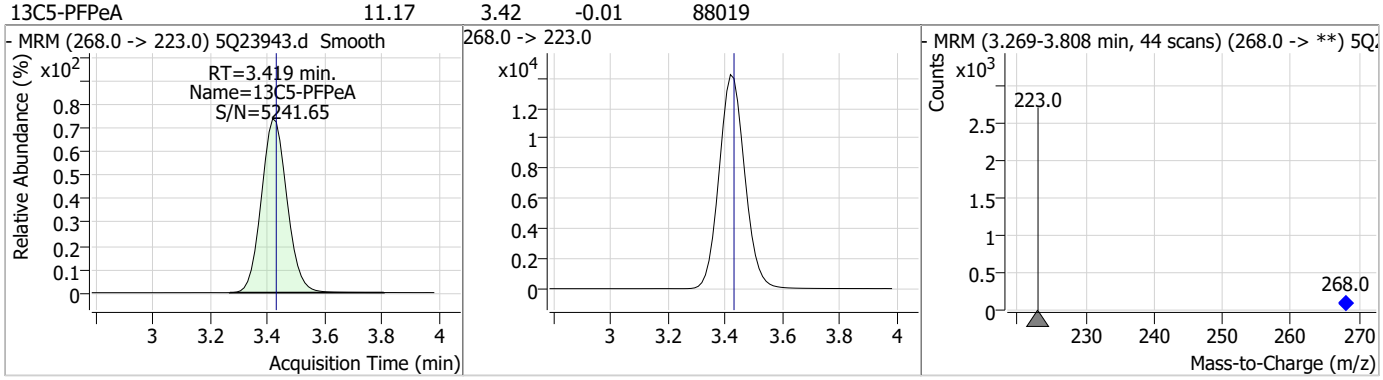
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	11.20	1.99	0.00	52907				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	0.79	1.99	0.00	3865				

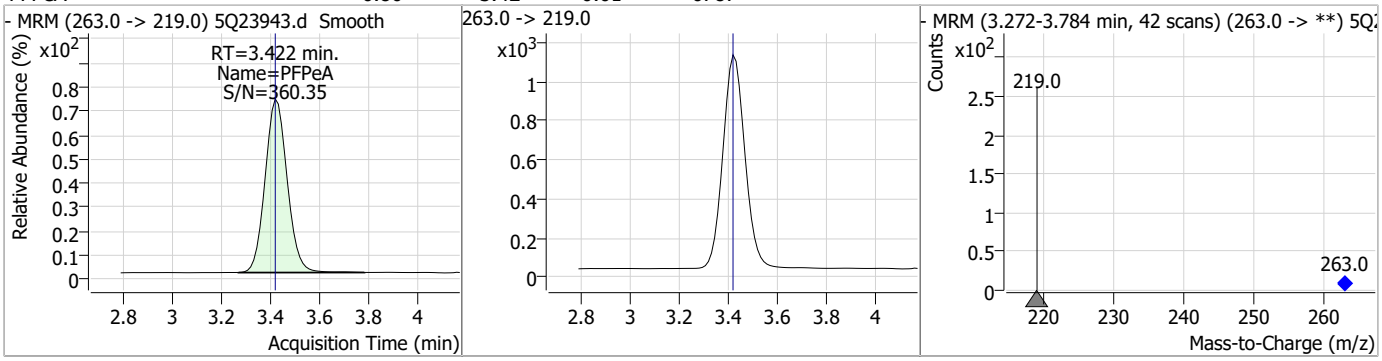


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	11.17	3.42	-0.01	88019				

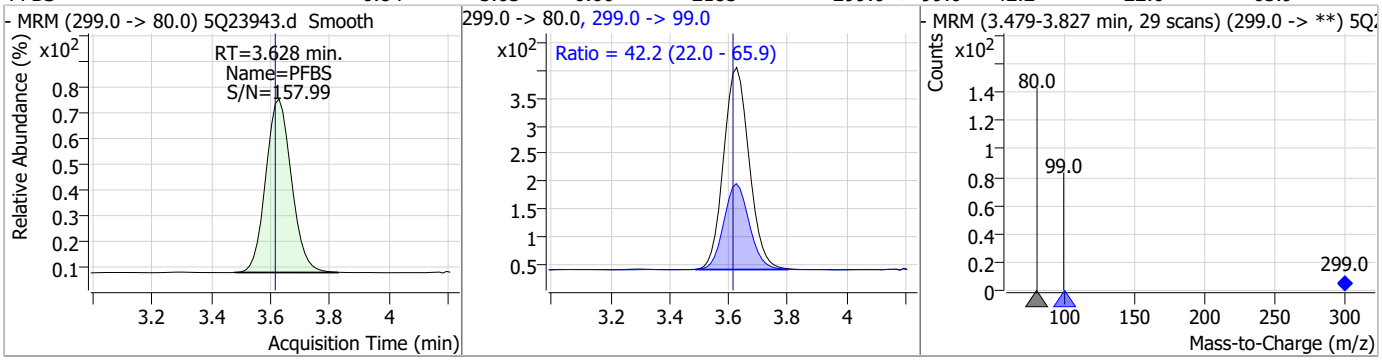


Perfluorinated Compounds by LC/MS/MS

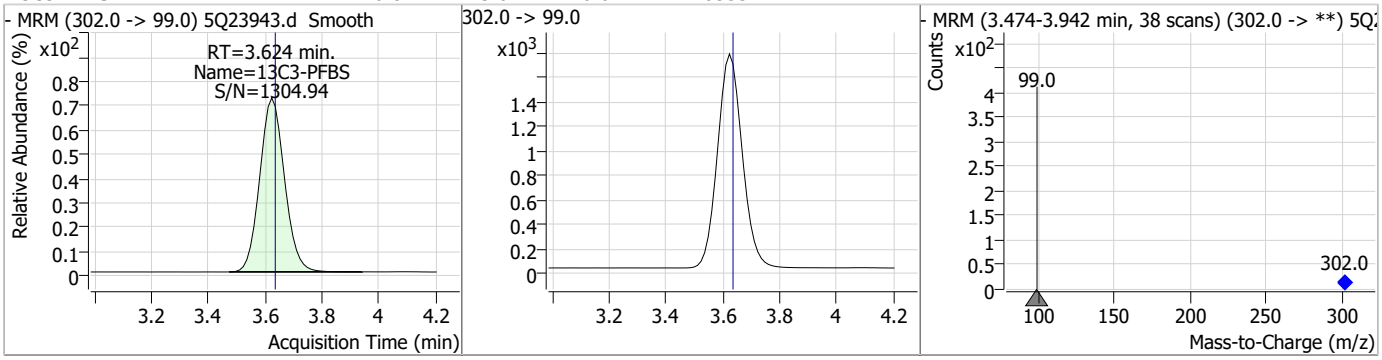
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	0.80	3.42	-0.01	6787				



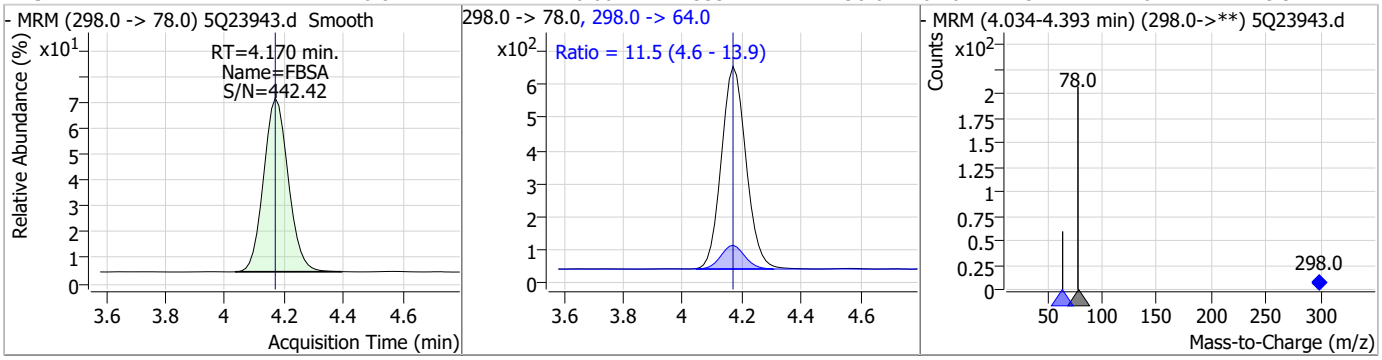
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	0.84	3.63	0.00	2185	299.0 -> 99.0	42.2	22.0	65.9



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	10.87	3.62	-0.01	10555				

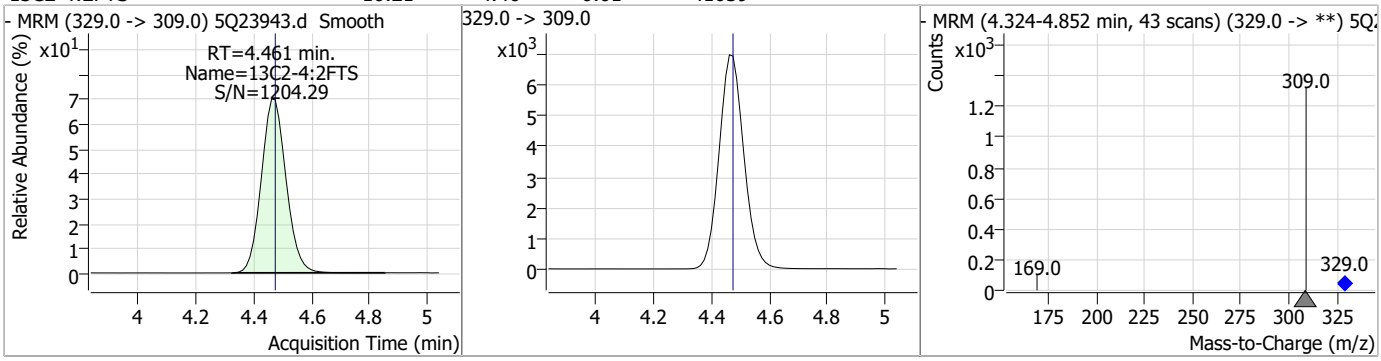


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	0.82	4.17	0.00	3534	298.0 -> 64.0	11.5	4.6	13.9

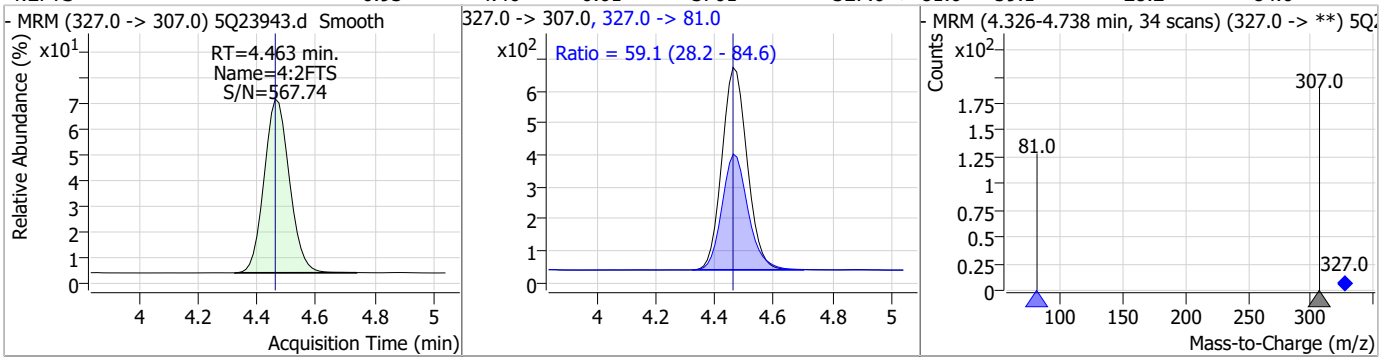


Perfluorinated Compounds by LC/MS/MS

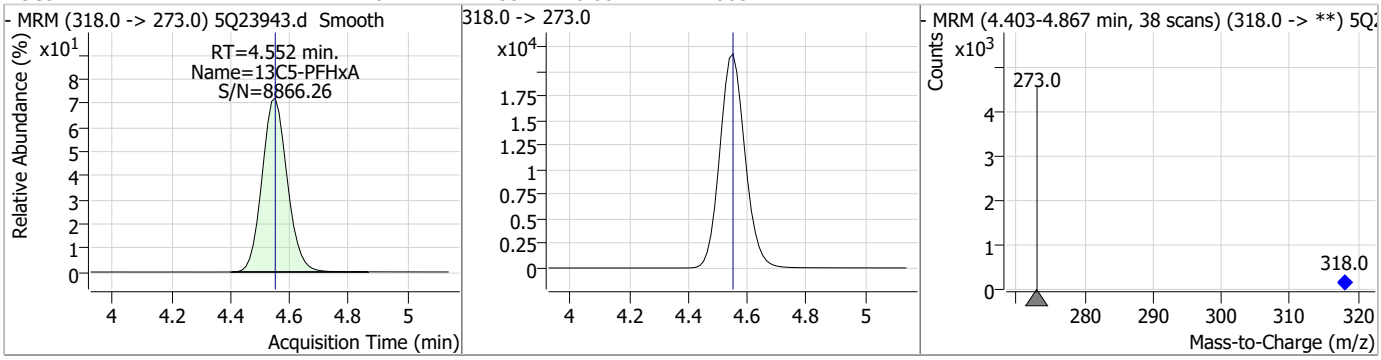
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	10.21	4.46	-0.01	41039				



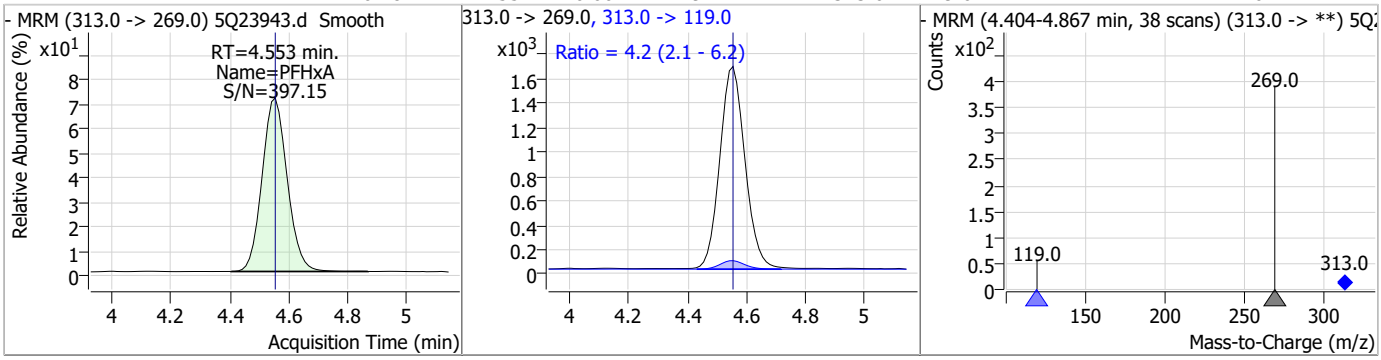
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	0.93	4.46	-0.01	3761	327.0 -> 81.0	59.1	28.2	84.6



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	10.77	4.55	0.00	128681				

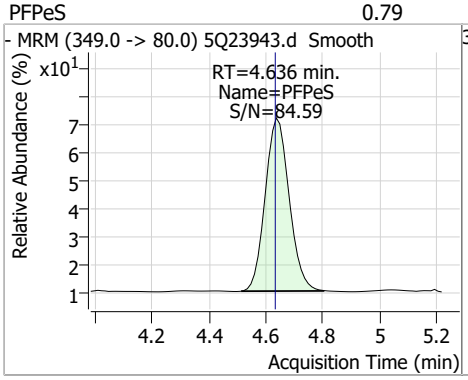


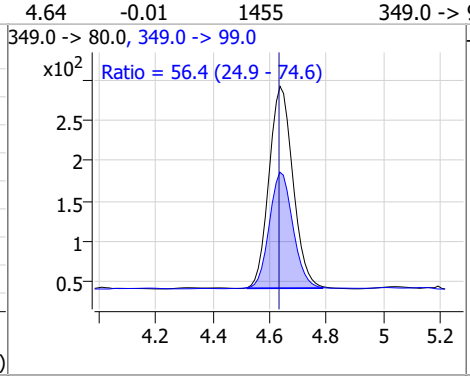
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	0.78	4.55	0.00	9771	313.0 -> 119.0	4.2	2.1	6.2

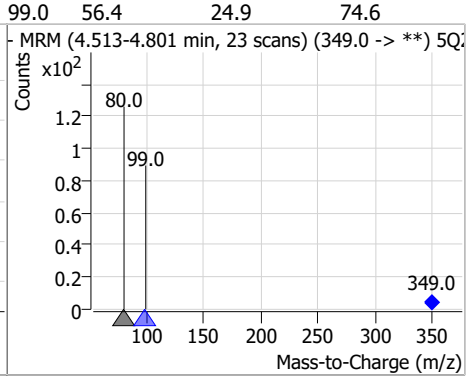


Perfluorinated Compounds by LC/MS/MS

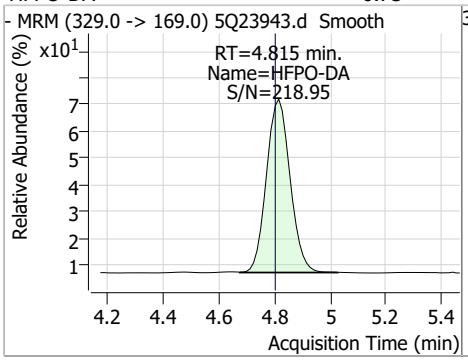
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	0.79	4.64	-0.01	1455	349.0 -> 99.0	56.4	24.9	74.6

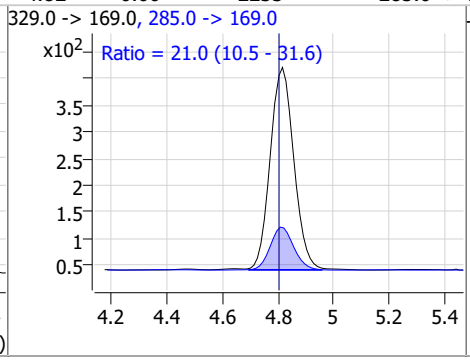


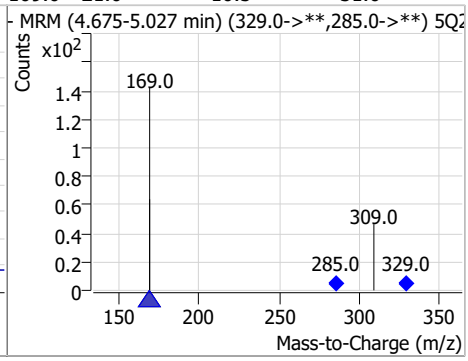




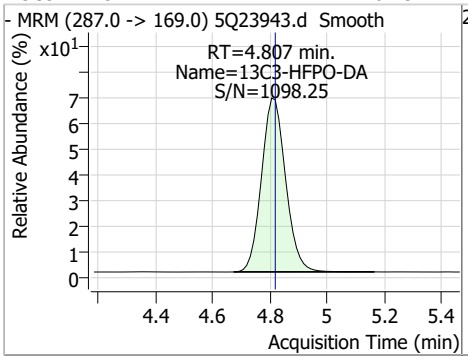
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	0.73	4.82	0.00	2233	285.0 -> 169.0	21.0	10.5	31.6

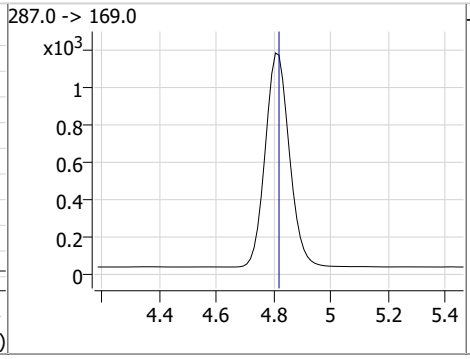


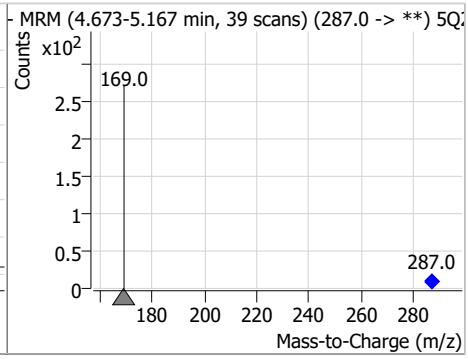




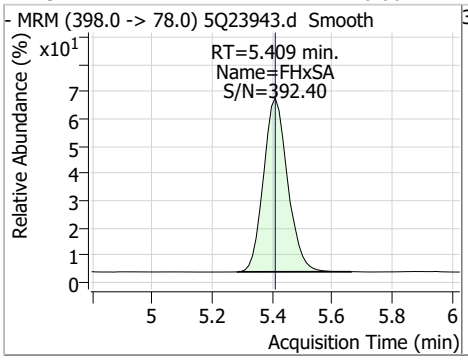
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	10.43	4.81	-0.01	6732				

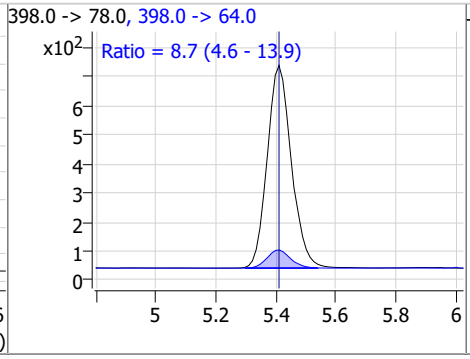


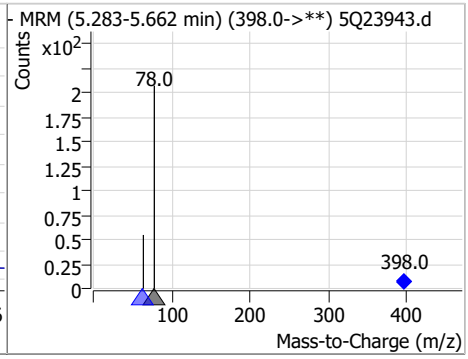




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	0.80	5.41	0.00	3884	398.0 -> 64.0	8.7	4.6	13.9

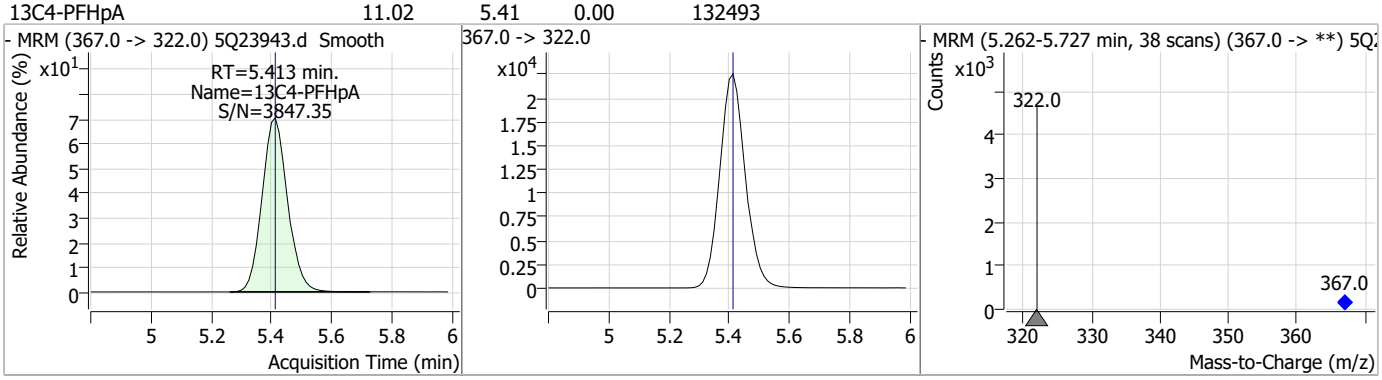




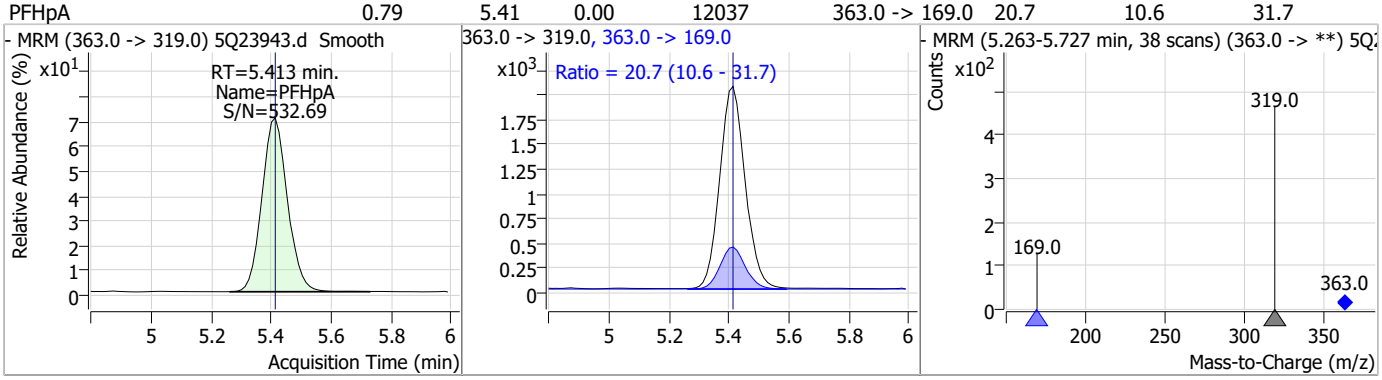


Perfluorinated Compounds by LC/MS/MS

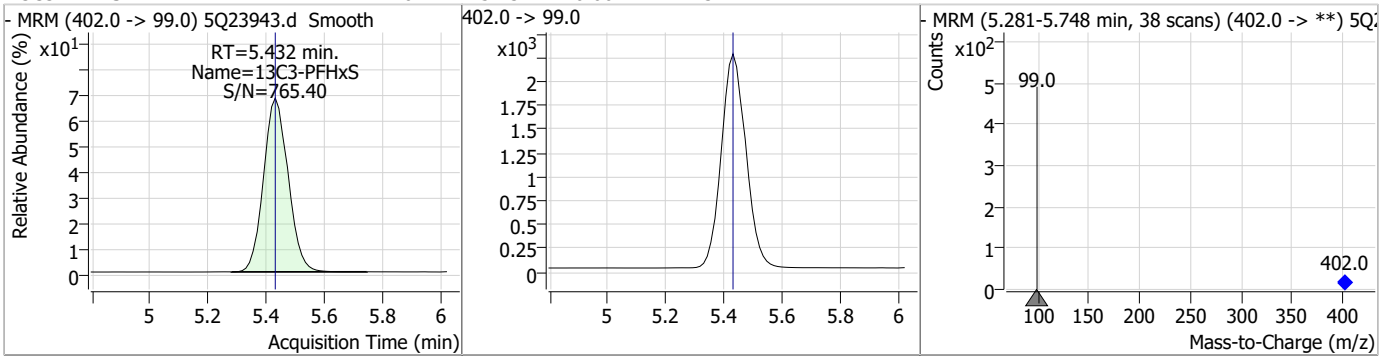
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	11.02	5.41	0.00	132493				



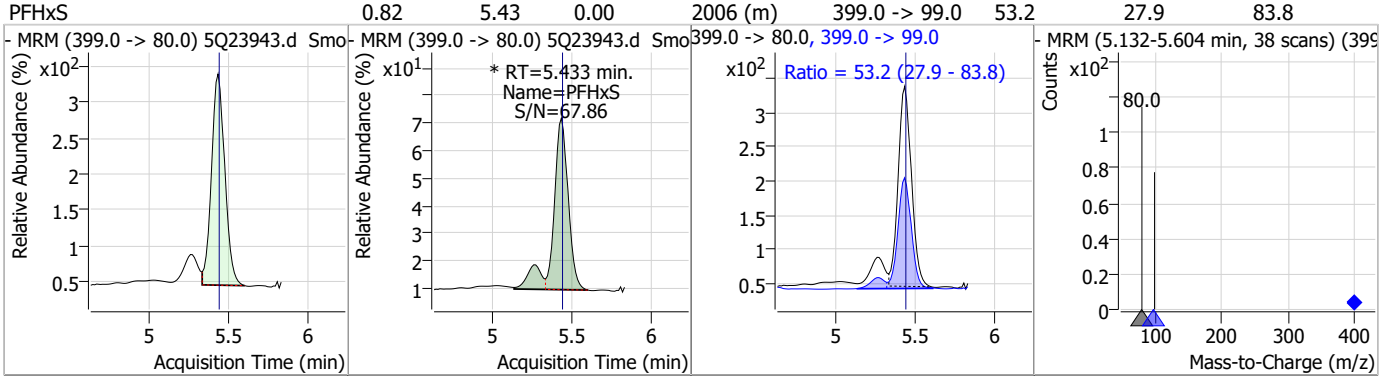
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	0.79	5.41	0.00	12037	363.0 -> 169.0	20.7	10.6	31.7



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	11.20	5.43	0.00	13212				

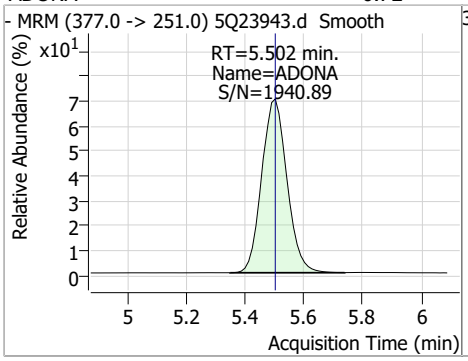


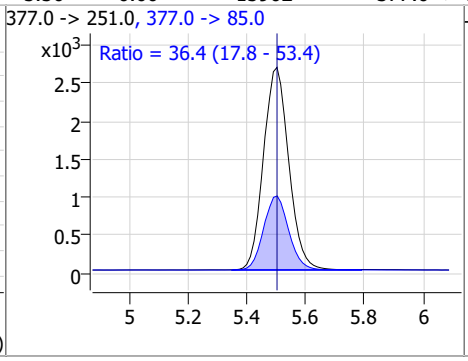
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	0.82	5.43	0.00	2006 (m)	399.0 -> 99.0	53.2	27.9	83.8

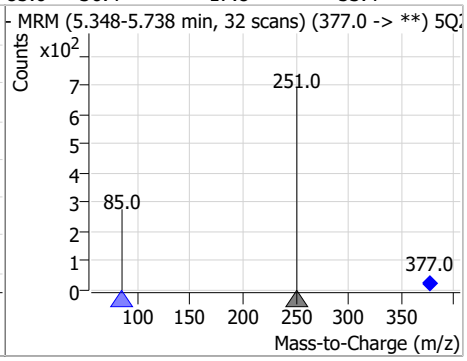


Perfluorinated Compounds by LC/MS/MS

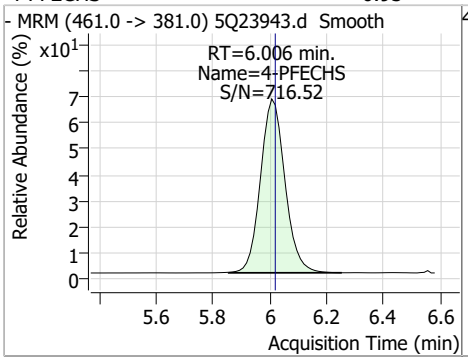
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	0.72	5.50	0.00	15902	377.0 -> 85.0	36.4	17.8	53.4

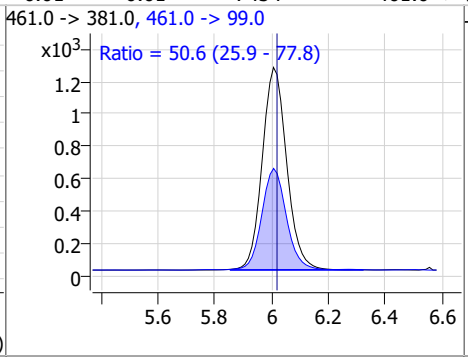


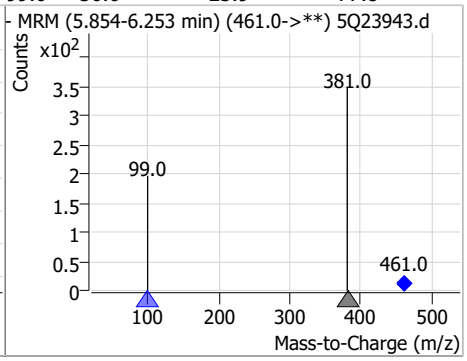




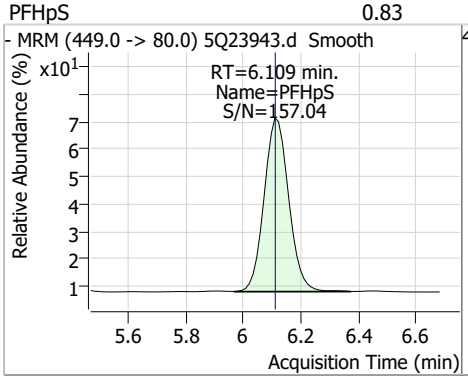
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS	0.93	6.01	-0.01	7454	461.0 -> 99.0	50.6	25.9	77.8

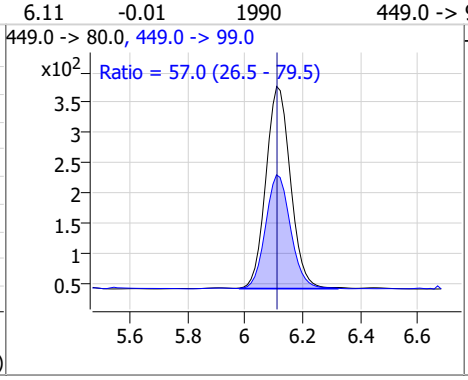


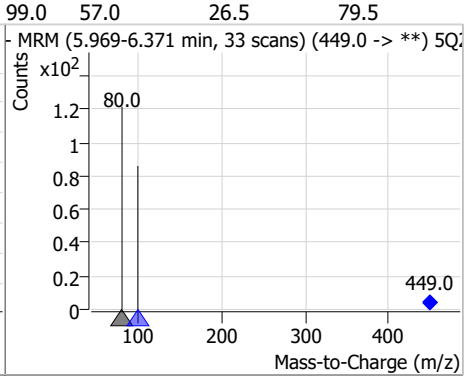




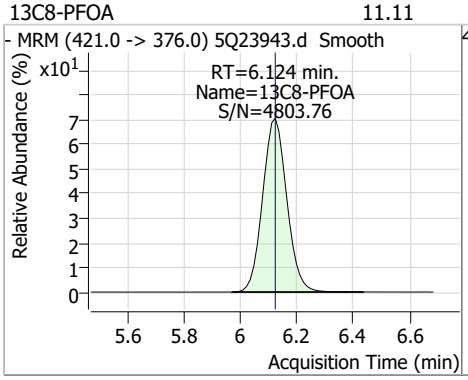
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	0.83	6.11	-0.01	1990	449.0 -> 99.0	57.0	26.5	79.5

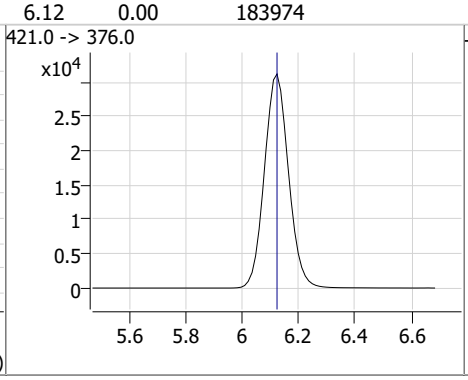


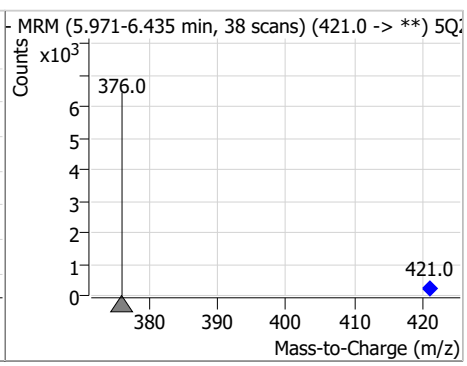




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	11.11	6.12	0.00	183974				

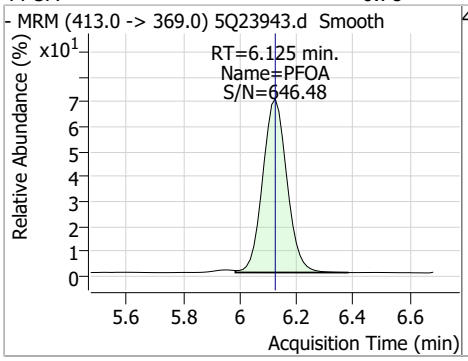


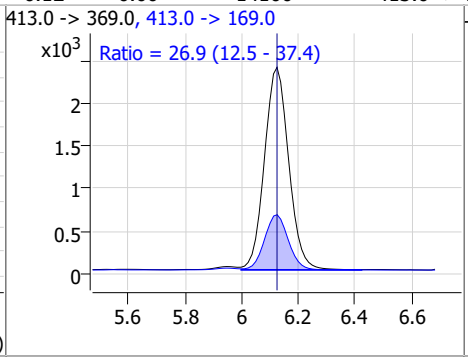


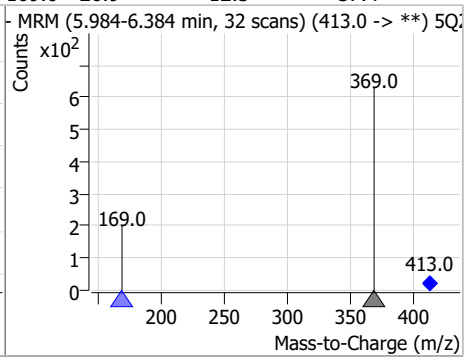


Perfluorinated Compounds by LC/MS/MS

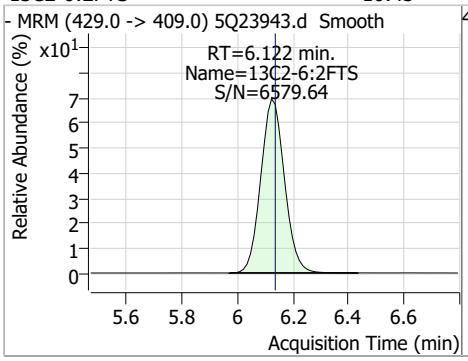
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	0.78	6.12	0.00	14106	413.0 -> 169.0	26.9	12.5	37.4

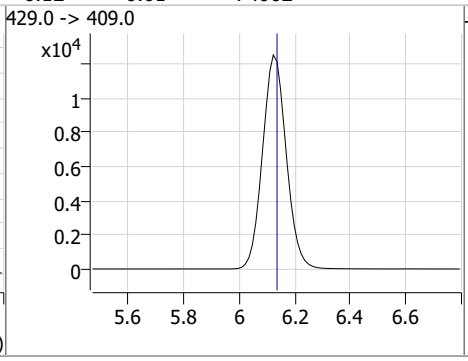


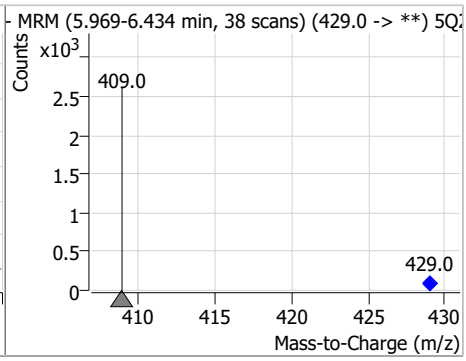




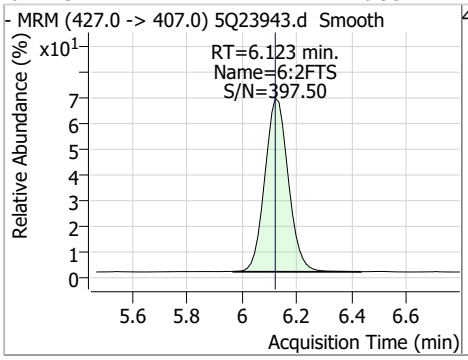
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	10.45	6.12	-0.01	74062				

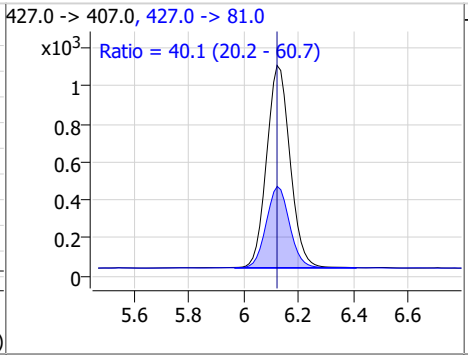


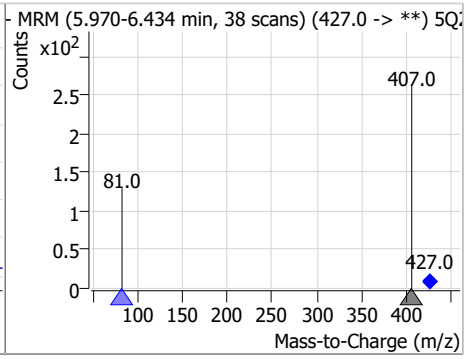




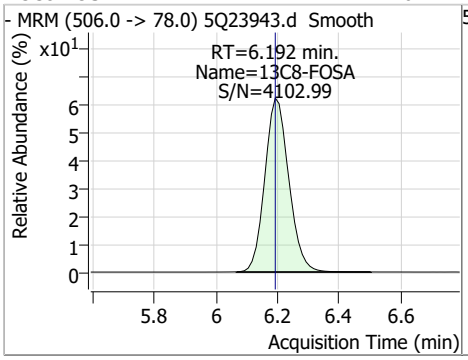
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	0.93	6.12	-0.01	6332	427.0 -> 81.0	40.1	20.2	60.7

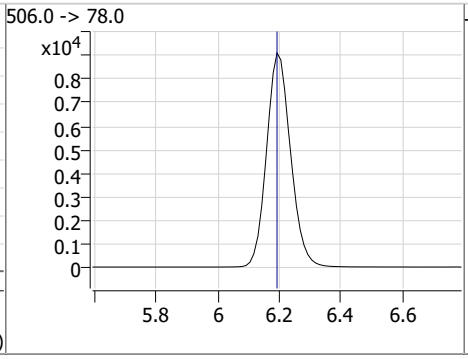


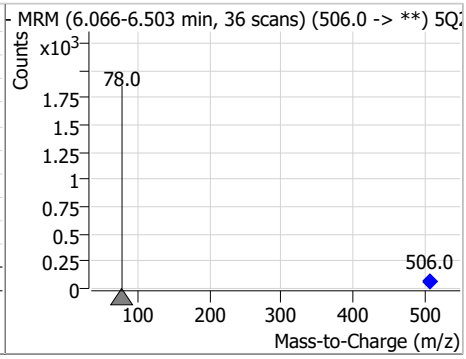




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	12.10	6.19	0.00	49040				

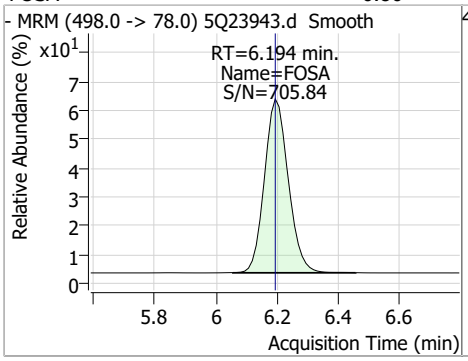


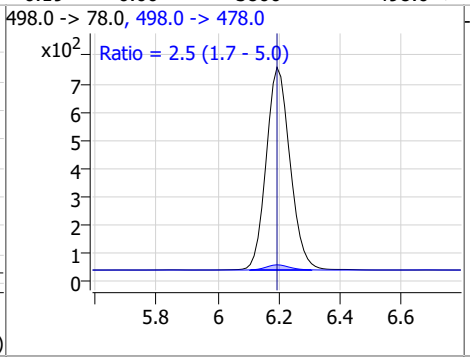


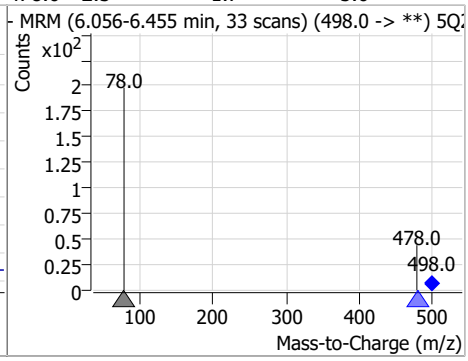


Perfluorinated Compounds by LC/MS/MS

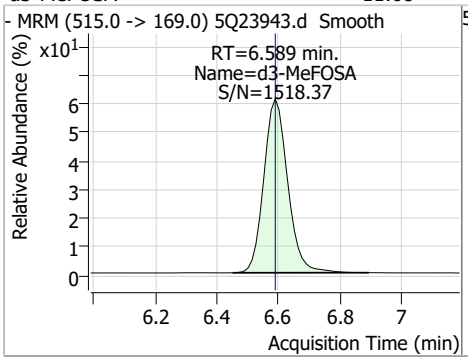
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	0.86	6.19	0.00	3860	498.0 -> 478.0	2.5	1.7	5.0

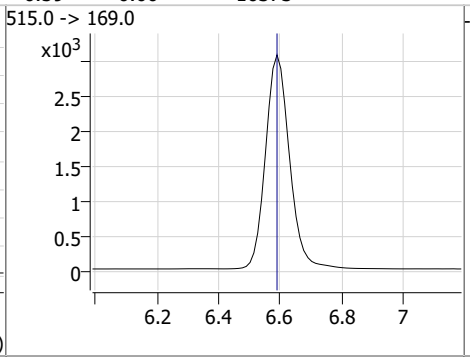


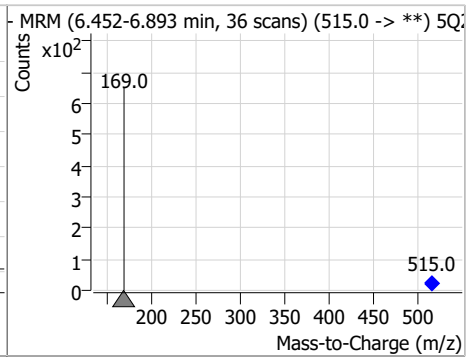




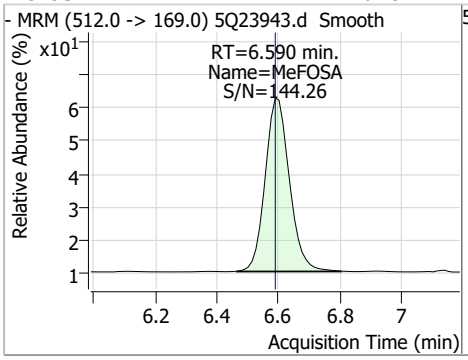
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	11.68	6.59	0.00	16373				

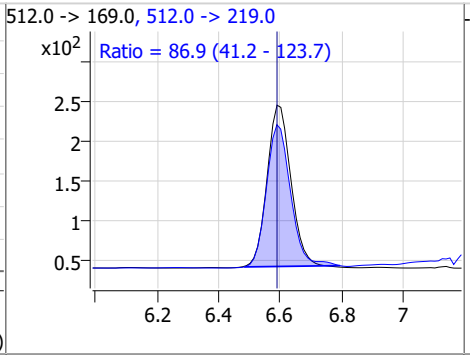


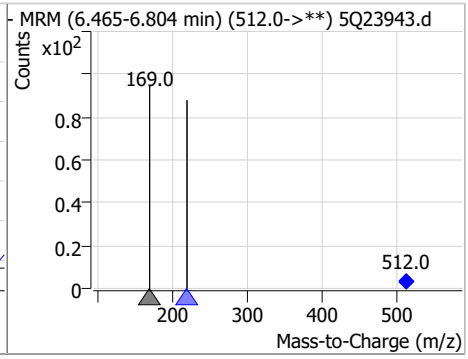




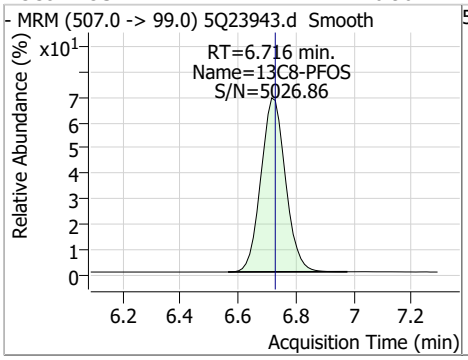
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	0.79	6.59	0.00	1116	512.0 -> 219.0	86.9	41.2	123.7

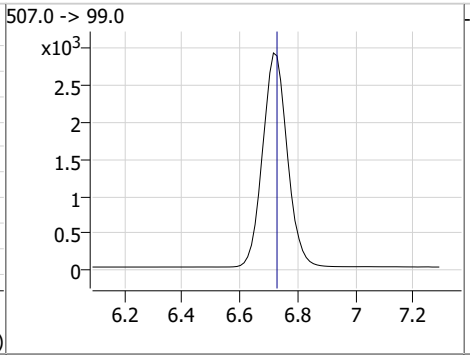


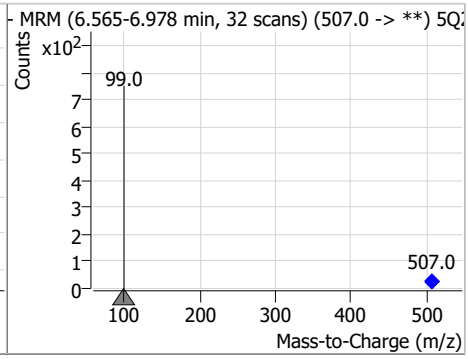




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	10.90	6.72	-0.01	17126				

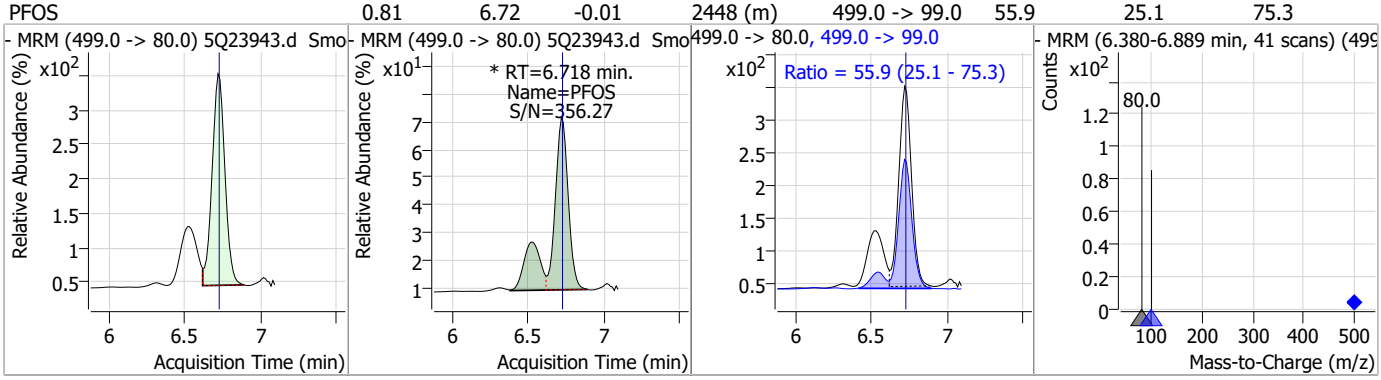




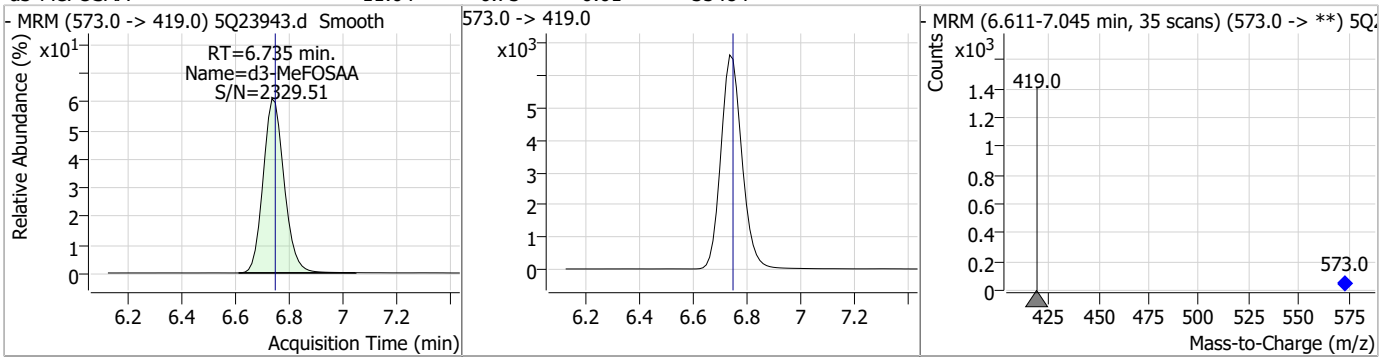


Perfluorinated Compounds by LC/MS/MS

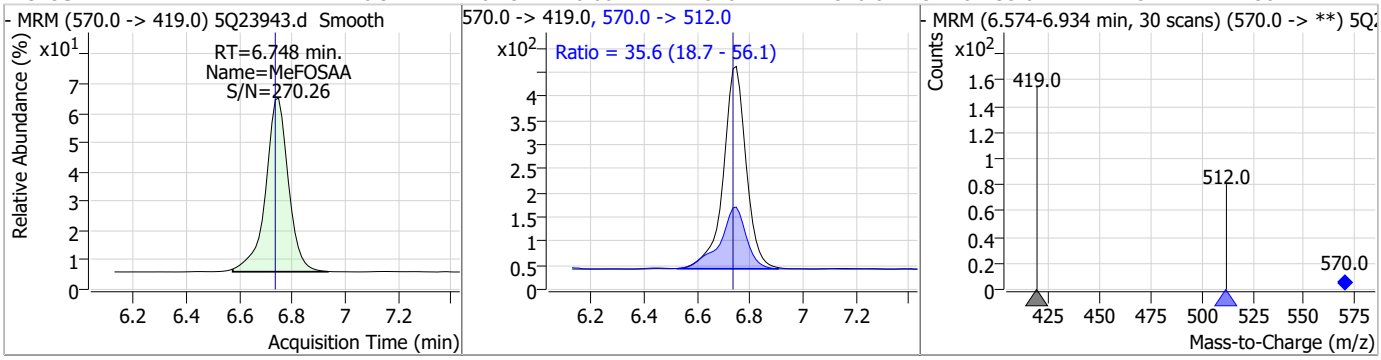
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	0.81	6.72	-0.01	2448 (m)	499.0 -> 99.0	55.9	25.1	75.3



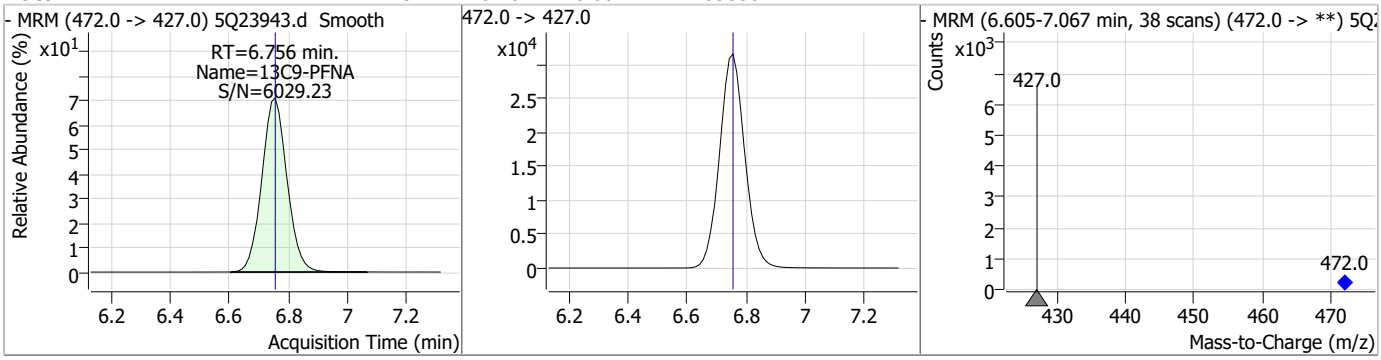
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	11.64	6.73	-0.01	35484				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	0.91	6.75	0.00	2520	570.0 -> 512.0	35.6	18.7	56.1

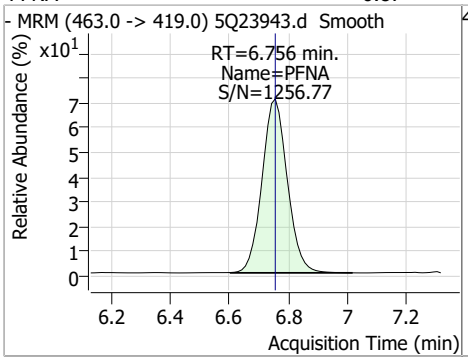


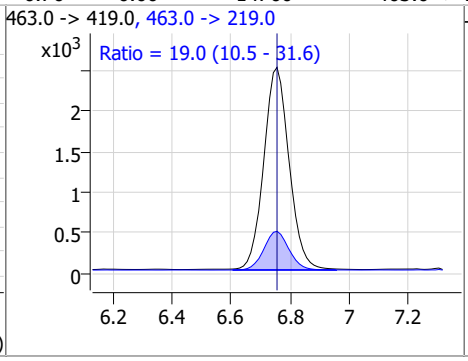
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	11.19	6.76	0.00	185880				

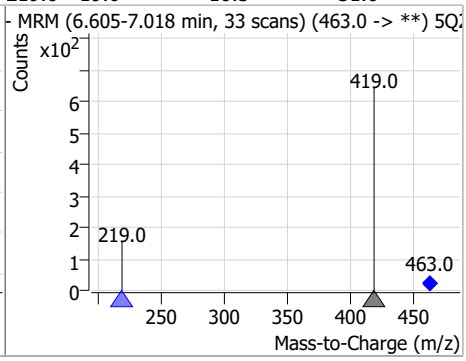


Perfluorinated Compounds by LC/MS/MS

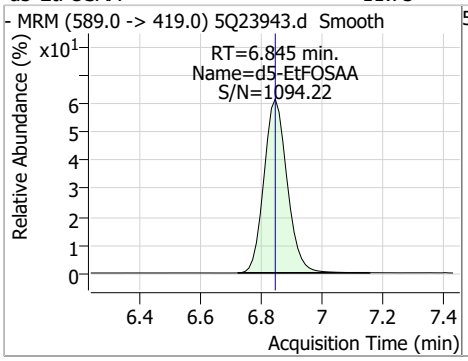
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	0.87	6.76	0.00	14760	463.0 -> 219.0	19.0	10.5	31.6

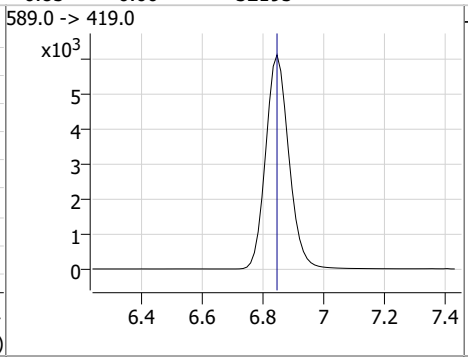


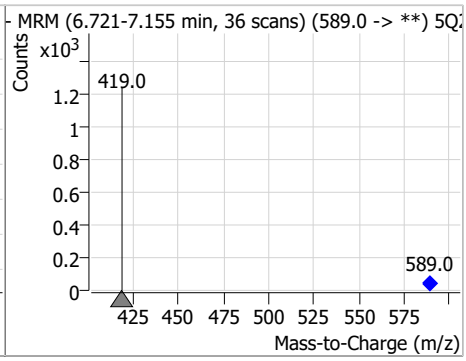




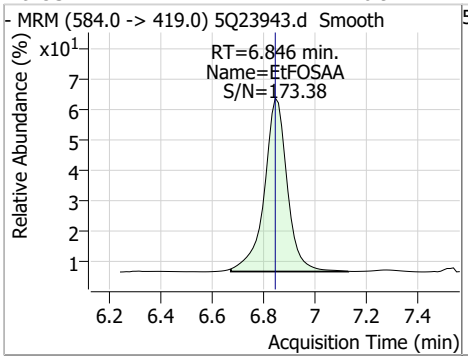
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	11.73	6.85	0.00	32195				

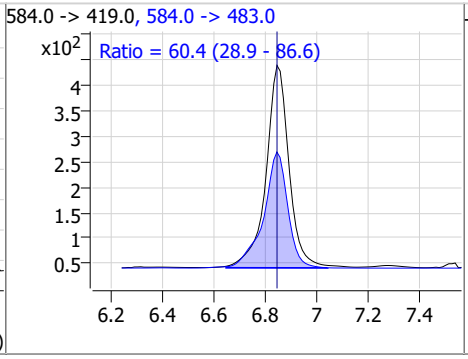


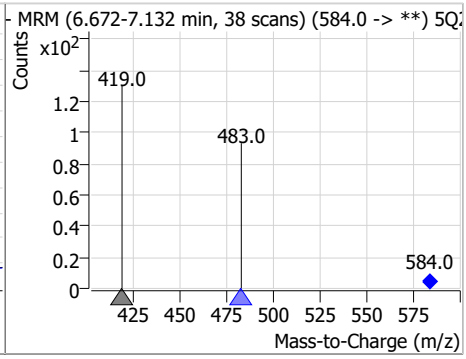




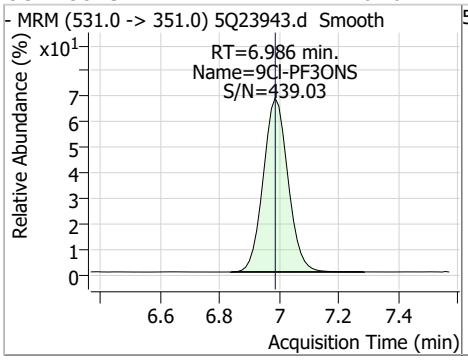
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	0.94	6.85	0.00	2462	584.0 -> 483.0	60.4	28.9	86.6

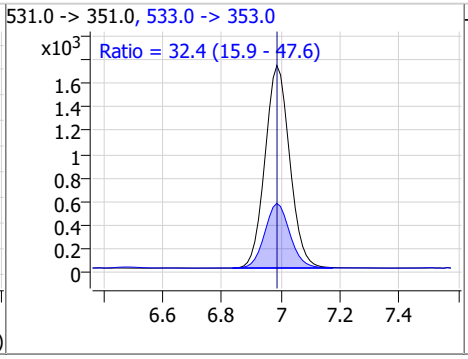


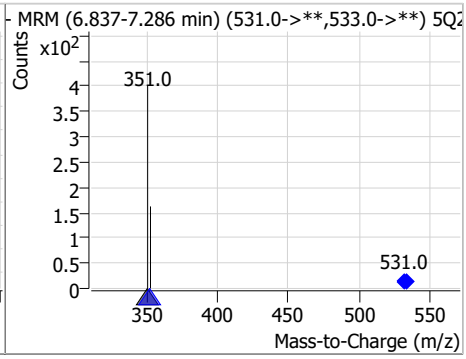




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	0.70	6.99	-0.01	9883	533.0 -> 353.0	32.4	15.9	47.6

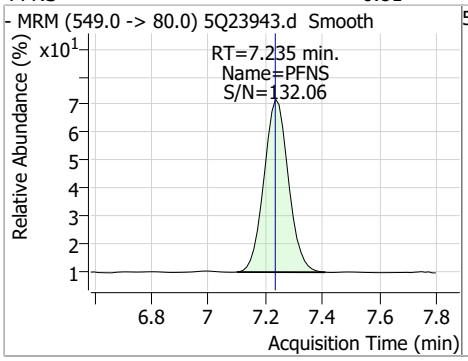


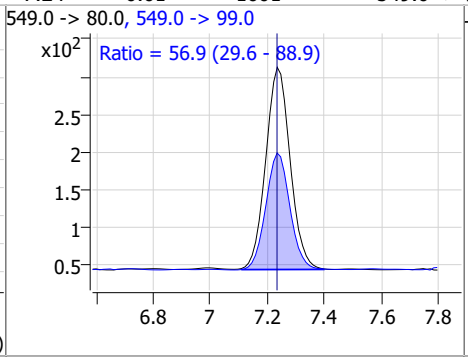


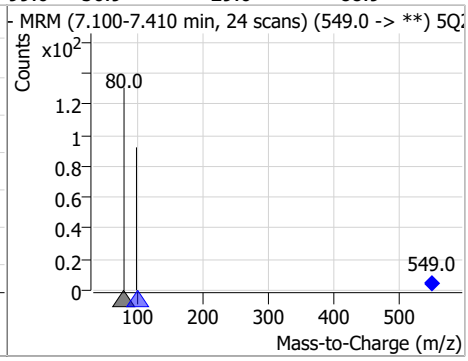


Perfluorinated Compounds by LC/MS/MS

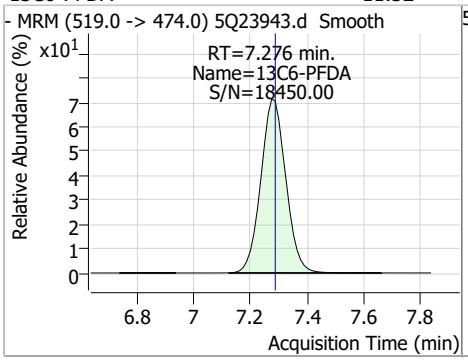
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	0.81	7.24	-0.01	1601	549.0 -> 99.0	56.9	29.6	88.9

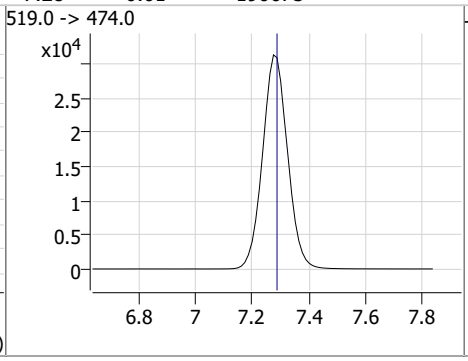


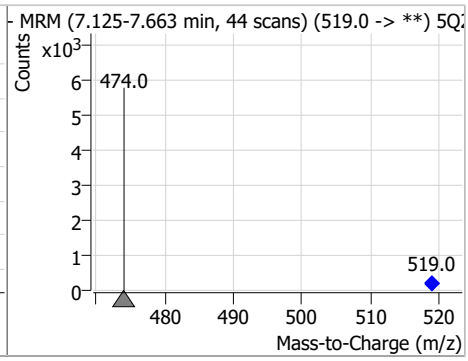




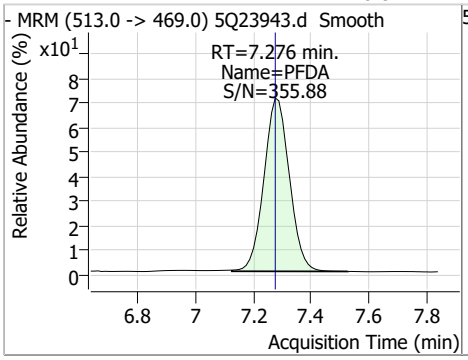
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	11.32	7.28	-0.01	190675				

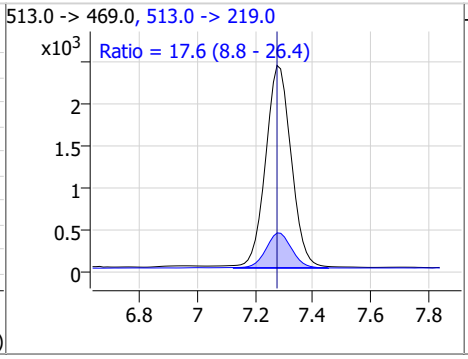


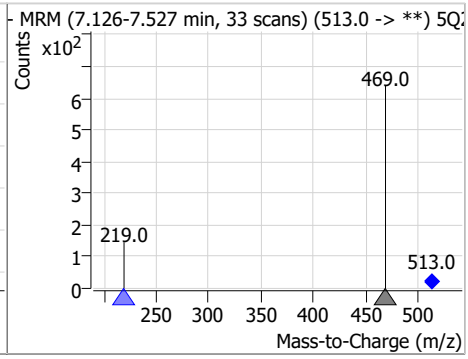




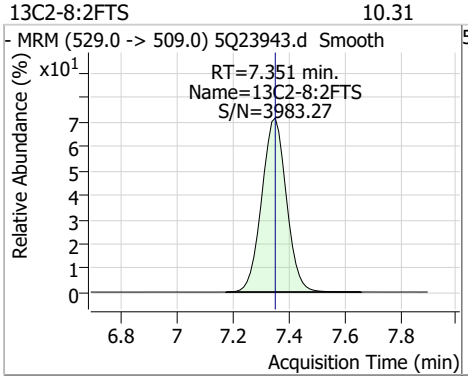
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	0.81	7.28	-0.01	14597	513.0 -> 219.0	17.6	8.8	26.4

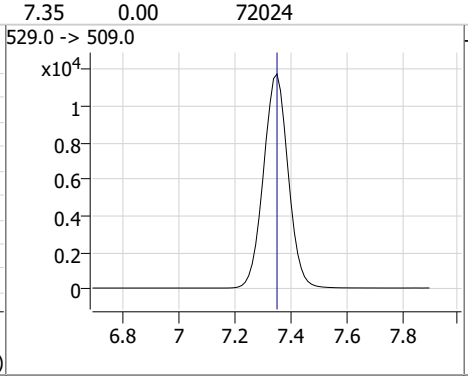


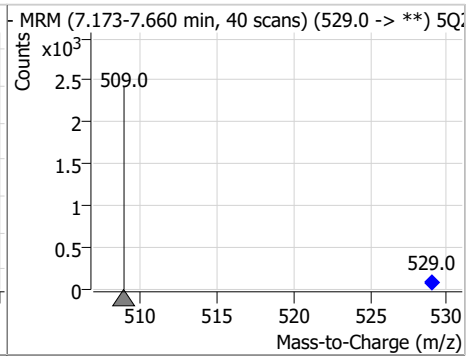




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	10.31	7.35	0.00	72024				

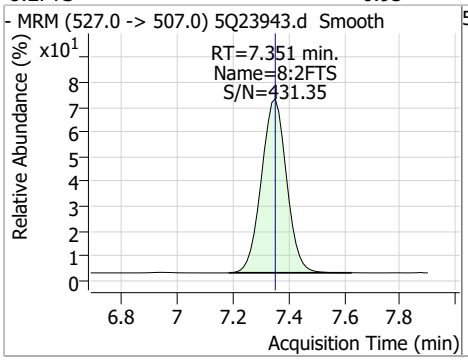


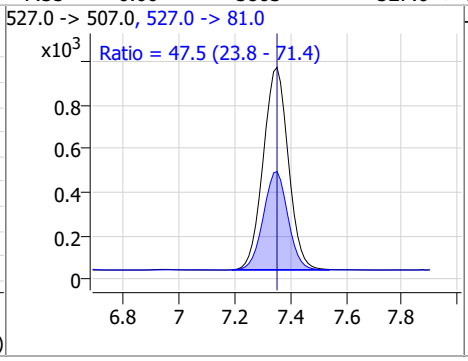


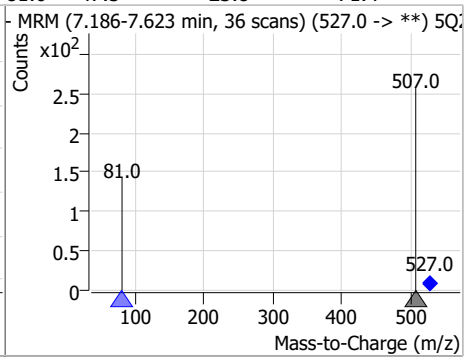


Perfluorinated Compounds by LC/MS/MS

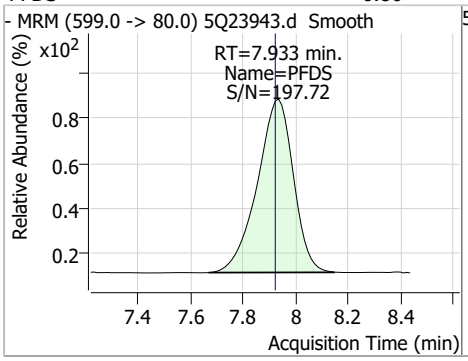
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	0.93	7.35	0.00	5863	527.0 -> 81.0	47.5	23.8	71.4

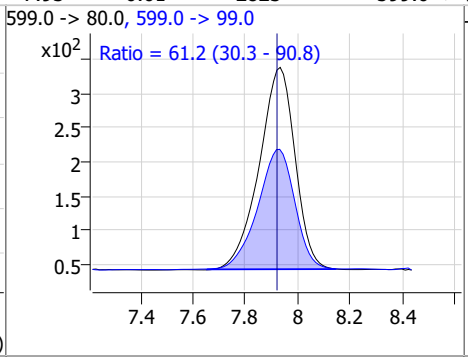


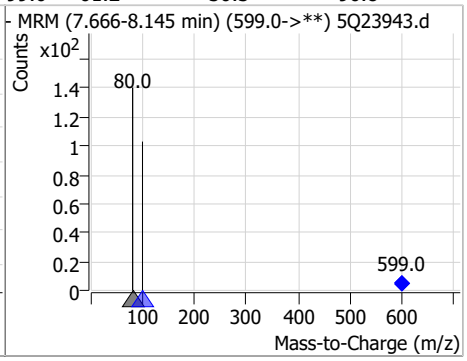




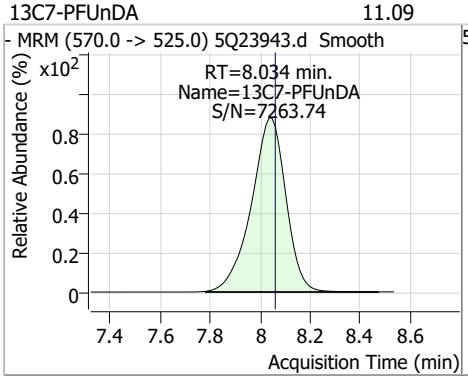
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	0.80	7.93	-0.01	2823	599.0 -> 99.0	61.2	30.3	90.8

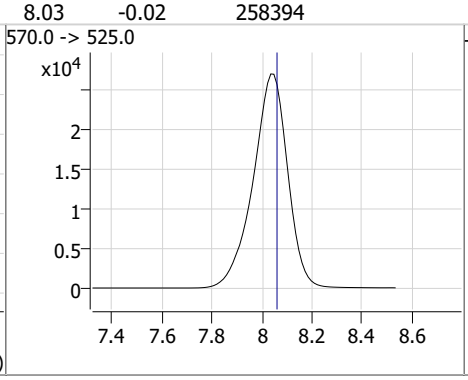


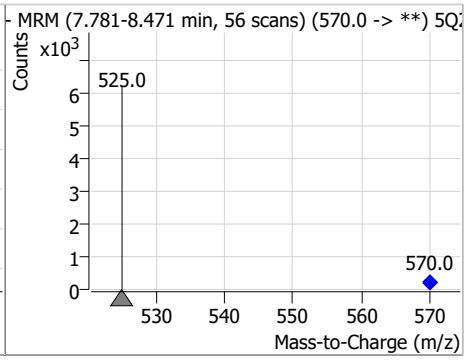




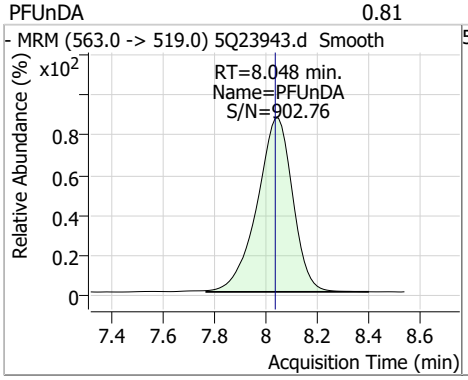
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	11.09	8.03	-0.02	258394				

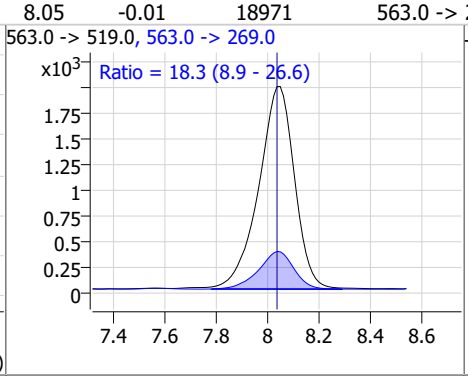


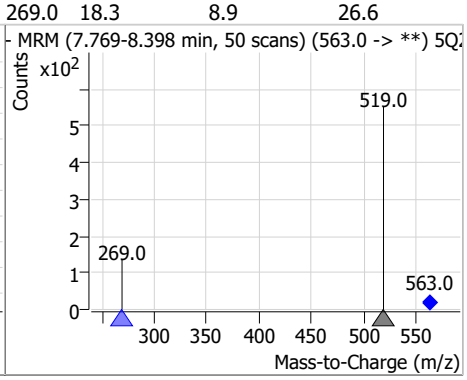




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	0.81	8.05	-0.01	18971	563.0 -> 269.0	18.3	8.9	26.6

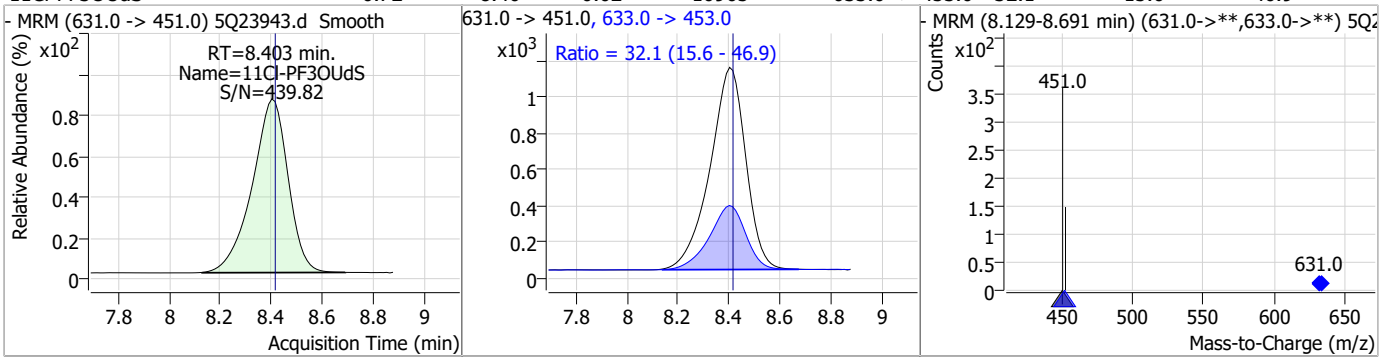




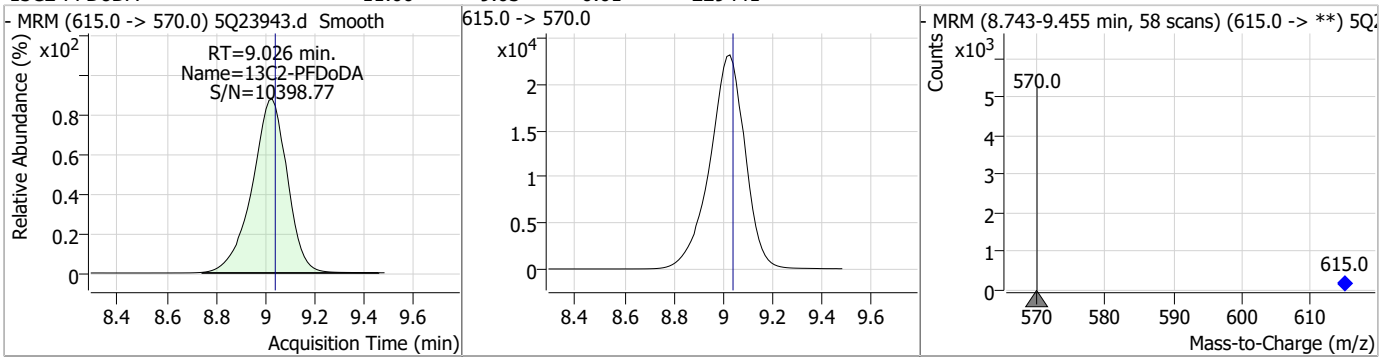


Perfluorinated Compounds by LC/MS/MS

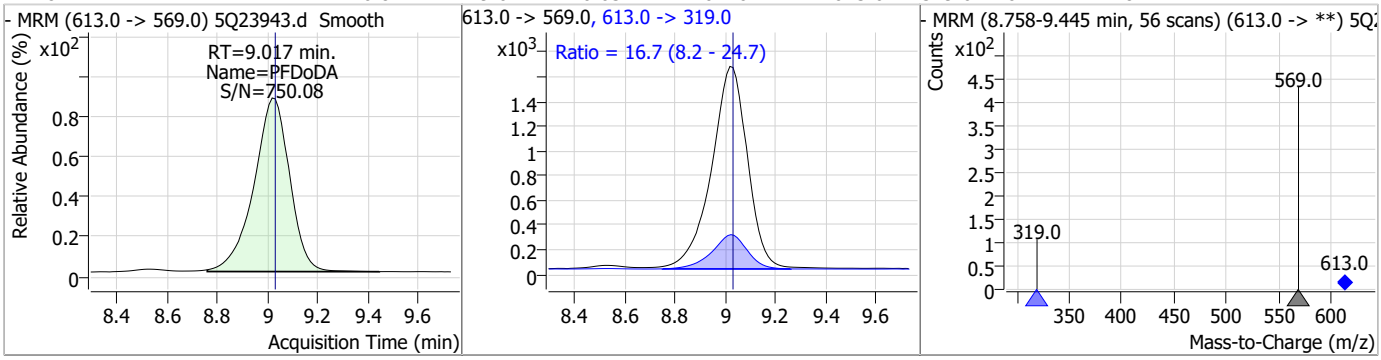
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	0.72	8.40	-0.02	10965	633.0 -> 453.0	32.1	15.6	46.9



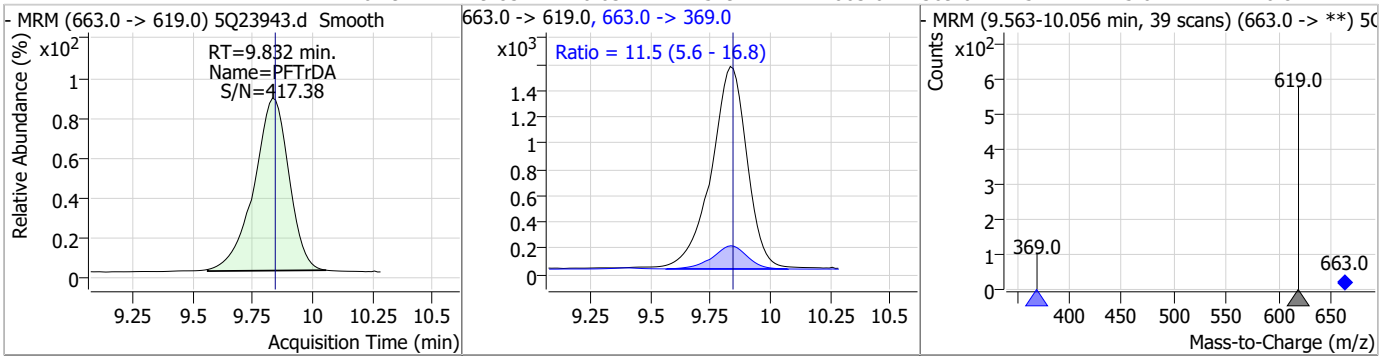
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	11.00	9.03	-0.01	229441				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	0.82	9.02	-0.03	16246	613.0 -> 319.0	16.7	8.2	24.7

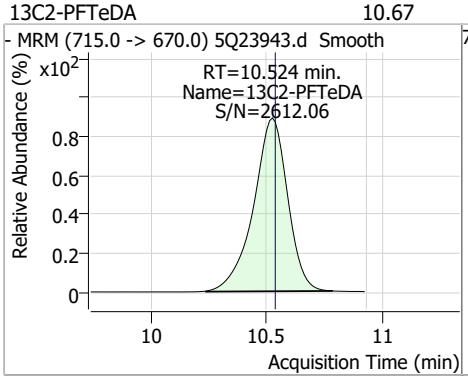


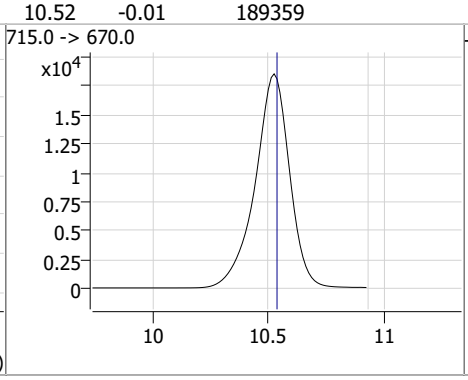
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	0.79	9.83	-0.03	15491	663.0 -> 369.0	11.5	5.6	16.8

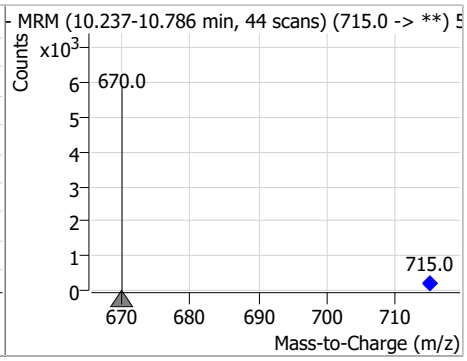


Perfluorinated Compounds by LC/MS/MS

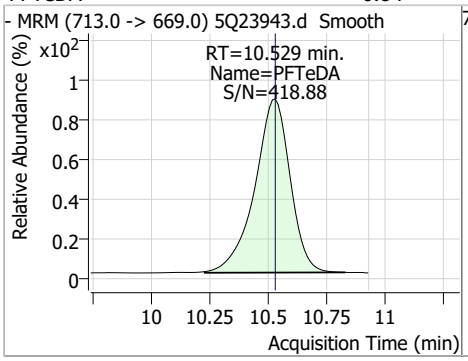
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	10.67	10.52	-0.01	189359				

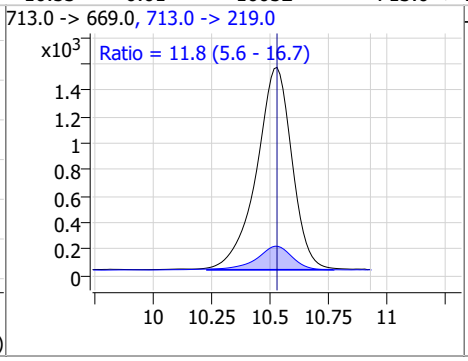


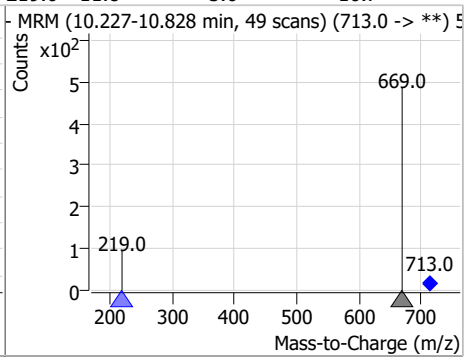




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	0.84	10.53	-0.01	16052	713.0 -> 219.0	11.8	5.6	16.7







9.6.30

6

Manual Integration Approval Summary

Sample Number: S5Q375-CC375
Lab FileID: 5Q23943.D
Injection Time: 12/29/23 00:12

Method: EPA 537M QSM5.3 B-15
Analyst approved: 12/29/23 14:15 Lindsay Ritner
Supervisor approved: 01/02/24 14:05 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.43	Split peak
Perfluorooctanesulfonic acid	1763-23-1		6.72	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Natasha Gumtie 01/02/24 14:05

Perfluorinated Compounds by LC/MS/MS

Data File : 5Q23954.d
Operator : natashag
Acq. Method : 537_ID.m
Acq. Date-Time : 12/29/2023 3:14:48 AM
Sample Name : cc375-20
Vial : P1-A7
DA Method File : ID_122823_S5Q375.quantmethod.xml
Batch Name : s5q375.batch.bin
Sample Information : OP401,S5Q375,250,,,1.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	1.987	217.0 -> 172.0	57340	10.00 µg/L	0.000
M5-PFPeA	3.419	268.0 -> 223.0	93975	10.00 µg/L	-0.012
M5-PFHxA	4.552	318.0 -> 273.0	140378	10.00 µg/L	0.000
M4-PFHpA	5.413	367.0 -> 322.0	140953	10.00 µg/L	0.000
M8-PFOA	6.124	421.0 -> 376.0	197616	10.00 µg/L	0.000
M9-PFNA	6.756	472.0 -> 427.0	196803	10.00 µg/L	0.000
M6-PFDA	7.276	519.0 -> 474.0	200970	10.00 µg/L	-0.012
M7-PFUnDA	8.034	570.0 -> 525.0	274995	10.00 µg/L	-0.025
M2-PFDoDA	9.026	615.0 -> 570.0	246542	10.00 µg/L	-0.013
M2-PFTeDA	10.524	715.0 -> 670.0	207108	10.00 µg/L	-0.012
M8-FOSA	6.192	506.0 -> 78.0	51184	10.00 µg/L	0.000
M3-PFBS	3.624	302.0 -> 99.0	11330	10.00 µg/L	-0.012
M3-PFHxS	5.432	402.0 -> 99.0	14095	10.00 µg/L	0.000
M8-PFOS	6.716	507.0 -> 99.0	18497	10.00 µg/L	-0.012
M2-4:2FTS	4.461	329.0 -> 309.0	49094	10.00 µg/L	-0.012
M2-6:2FTS	6.122	429.0 -> 409.0	86975	10.00 µg/L	-0.013
M2-8:2FTS	7.351	529.0 -> 509.0	81568	10.00 µg/L	0.000
M3-MeFOSAA	6.735	573.0 -> 419.0	38407	10.00 µg/L	-0.012
M3-HFPO-DA	4.807	287.0 -> 169.0	6950	10.00 µg/L	-0.012
M3-MeFOSA	6.589	515.0 -> 169.0	17250	10.00 µg/L	0.000
M5-EtFOSAA	6.845	589.0 -> 419.0	34080	10.00 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	4.461	329.0 -> 309.0	49094	12.21 µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 122.1%	
13C2-6:2FTS	6.122	429.0 -> 409.0	86975	12.27 µg/L	-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 122.7%	
13C2-8:2FTS	7.351	529.0 -> 509.0	81568	11.68 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 116.8%	
13C2-PFDoDA	9.026	615.0 -> 570.0	246542	11.82 µg/L	-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 118.2%	
13C2-PFTeDA	10.524	715.0 -> 670.0	207108	11.67 µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 116.7%	
13C3-PFBS	3.624	302.0 -> 99.0	11330	11.67 µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 116.7%	
13C3-PFHxS	5.432	402.0 -> 99.0	14095	11.94 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 119.4%	
13C4-PFBA	1.987	217.0 -> 172.0	57340	12.14 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 121.4%	
13C4-PFHpA	5.413	367.0 -> 322.0	140953	11.72 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 117.2%	
13C5-PFHxA	4.552	318.0 -> 273.0	140378	11.75 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 117.5%	
13C5-PFPeA	3.419	268.0 -> 223.0	93975	11.92 µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 119.2%	
13C6-PFDA	7.276	519.0 -> 474.0	200970	11.94 µg/L	-0.012

Perfluorinated Compounds by LC/MS/MS

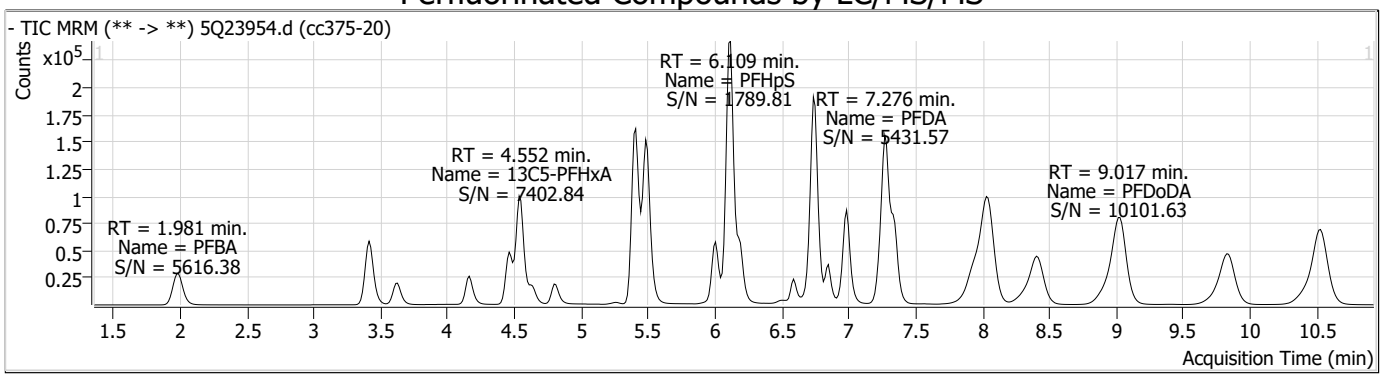
Compound	RT	Transition	Response	Conc. Units		Dev(Min)
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 119.4%		
13C7-PFUnDA	8.034	570.0 -> 525.0	274995	11.80 µg/L		-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 118.0%		
13C8-FOSA	6.192	506.0 -> 78.0	51184	12.63 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 126.3%		
13C8-PFOA	6.124	421.0 -> 376.0	197616	11.94 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 119.4%		
13C8-PFOS	6.716	507.0 -> 99.0	18497	11.77 µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 117.7%		
13C9-PFNA	6.756	472.0 -> 427.0	196803	11.85 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 118.5%		
d3-MeFOSAA	6.735	573.0 -> 419.0	38407	12.60 µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 126.0%		
13C3-HFPO-DA	4.807	287.0 -> 169.0	6950	10.76 µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 107.6%		
d3-MeFOSA	6.589	515.0 -> 169.0	17250	12.30 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 123.0%		
d5-EtFOSAA	6.845	589.0 -> 419.0	34080	12.42 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 124.2%		
Target Compounds						QValue
4:2FTS	4.463	327.0 -> 307.0	94059	19.45 µg/L		99
		327.0 -> 81.0	52704			
6:2FTS	6.123	427.0 -> 407.0	153181	19.25 µg/L		100
		427.0 -> 81.0	61663			
8:2FTS	7.351	527.0 -> 507.0	140886	19.77 µg/L		99
		527.0 -> 81.0	65797			
EtFOSAA	6.846	584.0 -> 419.0	52902	19.03 µg/L		98
		584.0 -> 483.0	31157			
FOSA	6.194	498.0 -> 78.0	86702	18.46 µg/L		100
		498.0 -> 478.0	2982			
MeFOSAA	6.748	570.0 -> 419.0	55762	18.60 µg/L		100
		570.0 -> 512.0	20789			
PFBA	1.981	213.0 -> 169.0	97880	18.43 µg/L		100
PFBS	3.628	299.0 -> 80.0	52662	18.78 µg/L		100
		299.0 -> 99.0	22988			
PFDA	7.276	513.0 -> 469.0	353209	18.50 µg/L		100
		513.0 -> 219.0	62530			
PFDoDA	9.017	613.0 -> 569.0	395340	18.68 µg/L		100
		613.0 -> 319.0	64442			
PFDS	7.920	599.0 -> 80.0	65160	17.36 µg/L		99
		599.0 -> 99.0	39836			
PFHpA	5.413	363.0 -> 319.0	297684	18.41 µg/L		99
		363.0 -> 169.0	63683			
PFHpS	6.109	449.0 -> 80.0	46563	18.03 µg/L		99
		449.0 -> 99.0	24973			
PFHxA	4.553	313.0 -> 269.0	250666	18.46 µg/L		100
		313.0 -> 119.0	10259			
PFHxS	5.433	399.0 -> 80.0	47561	18.19 µg/L	m	99
		399.0 -> 99.0	27076			
PFNA	6.756	463.0 -> 419.0	336918	18.70 µg/L		100
		463.0 -> 219.0	71137			
PFNS	7.235	549.0 -> 80.0	38982	18.23 µg/L		99
		549.0 -> 99.0	22739			
PFOA	6.125	413.0 -> 369.0	358423	18.49 µg/L		100
		413.0 -> 169.0	89118			
PFOS	6.718	499.0 -> 80.0	58826	17.94 µg/L	m	98

Perfluorinated Compounds by LC/MS/MS

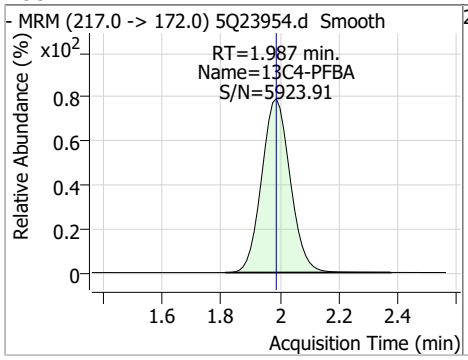
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		499.0 -> 99.0	28819			
PFPeA	3.422	263.0 -> 219.0	170507	18.71	µg/L	100
PFPeS	4.636	349.0 -> 80.0	35814	18.14	µg/L	96
		349.0 -> 99.0	18905			
PFTeDA	10.529	713.0 -> 669.0	386674	18.47	µg/L	99
		713.0 -> 219.0	44821			
PFTrDA	9.832	663.0 -> 619.0	385630	18.20	µg/L	100
		663.0 -> 369.0	42555			
PFUnDA	8.036	563.0 -> 519.0	462446	18.64	µg/L	100
		563.0 -> 269.0	81666			
11Cl-PF3OUdS	8.403	631.0 -> 451.0	287587	17.64	µg/L	99
		633.0 -> 453.0	88613			
9Cl-PF3ONS	6.986	531.0 -> 351.0	257784	17.36	µg/L	100
		533.0 -> 353.0	81746			
ADONA	5.502	377.0 -> 251.0	424236	17.96	µg/L	100
		377.0 -> 85.0	150334			
HFPO-DA	4.815	329.0 -> 169.0	56625	17.91	µg/L	98
		285.0 -> 169.0	12427			
MeFOSA	6.590	512.0 -> 169.0	28686	19.22	µg/L	99
		512.0 -> 219.0	23396			
4-PFECHS	6.006	461.0 -> 381.0	152585	17.78	µg/L	99
		461.0 -> 99.0	79622			
FBSA	4.170	298.0 -> 78.0	93464	19.91	µg/L	100
		298.0 -> 64.0	8677			
FHxSA	5.409	398.0 -> 78.0	96910	19.11	µg/L	100
		398.0 -> 64.0	9115			

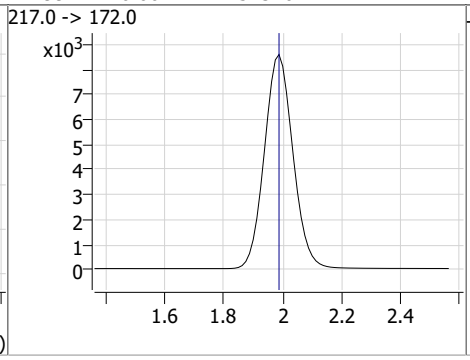
 # = Qualifier out of range, m = manually integrated, + = Area summed

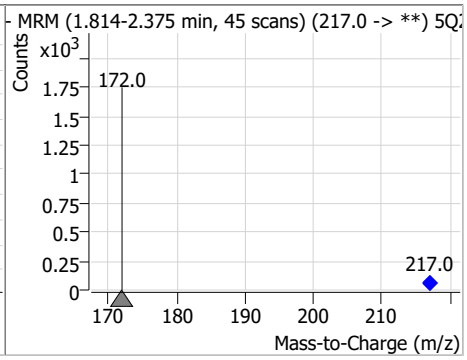
Perfluorinated Compounds by LC/MS/MS



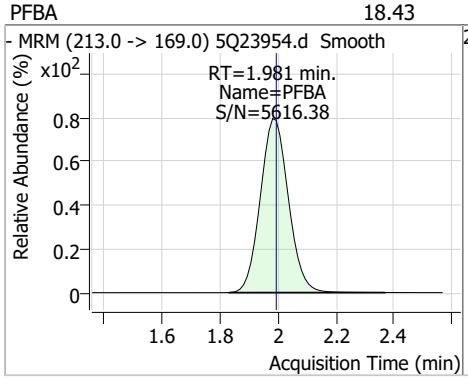
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	12.14	1.99	0.00	57340				

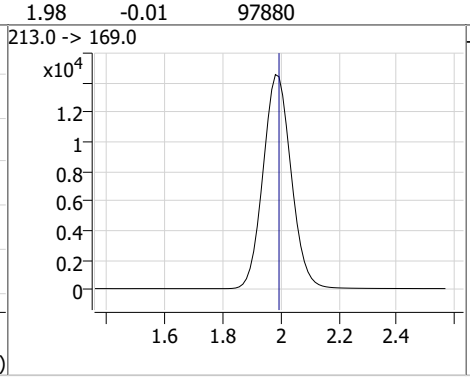


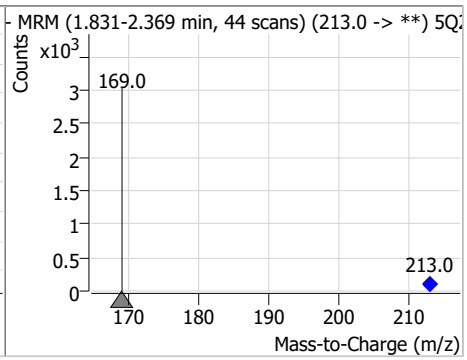




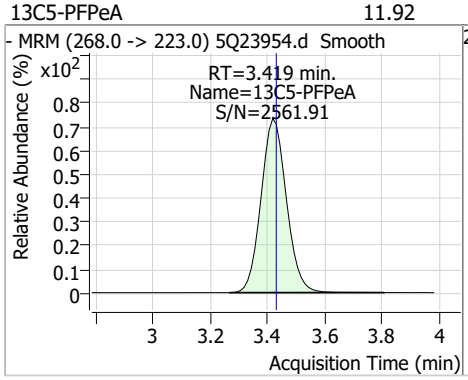
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	18.43	1.98	-0.01	97880				

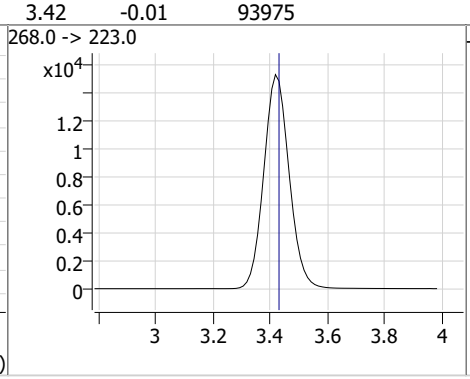


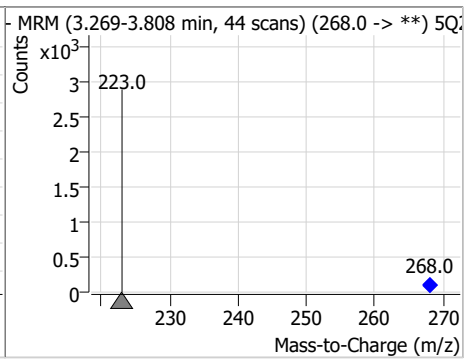




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	11.92	3.42	-0.01	93975				

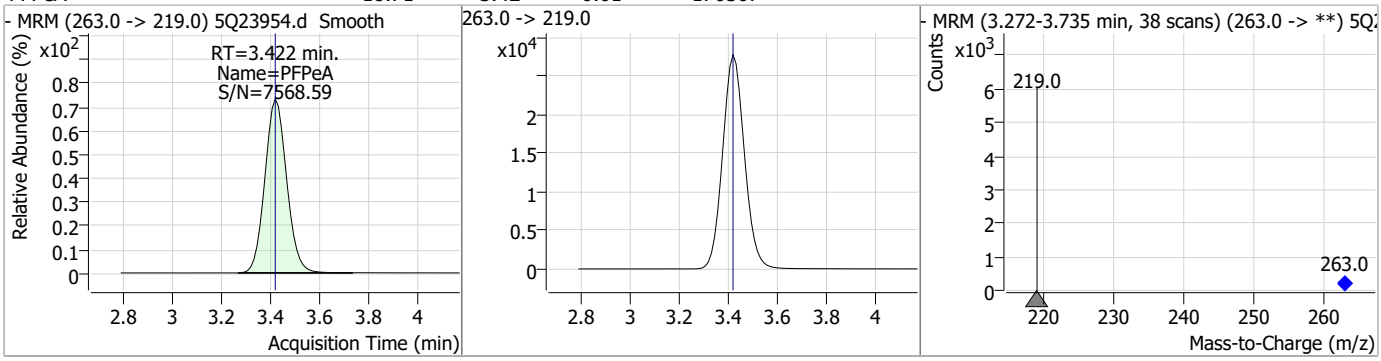




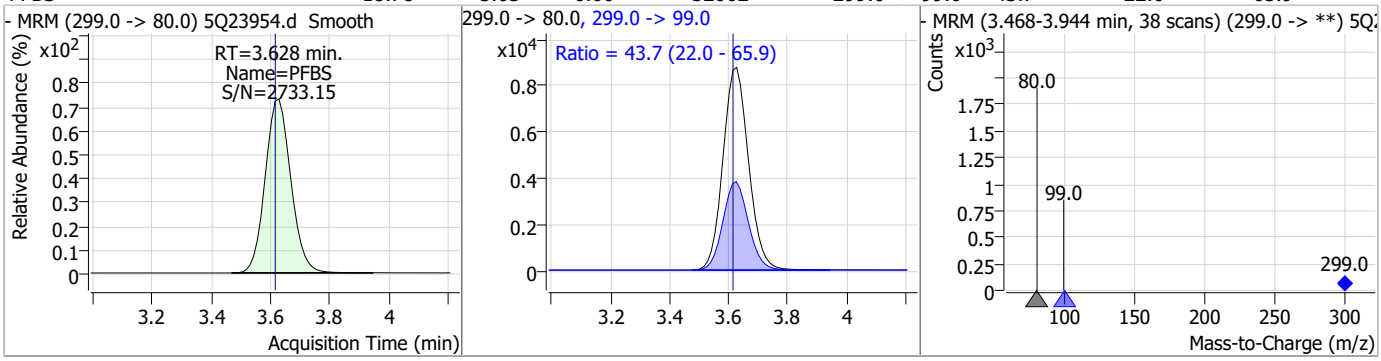


Perfluorinated Compounds by LC/MS/MS

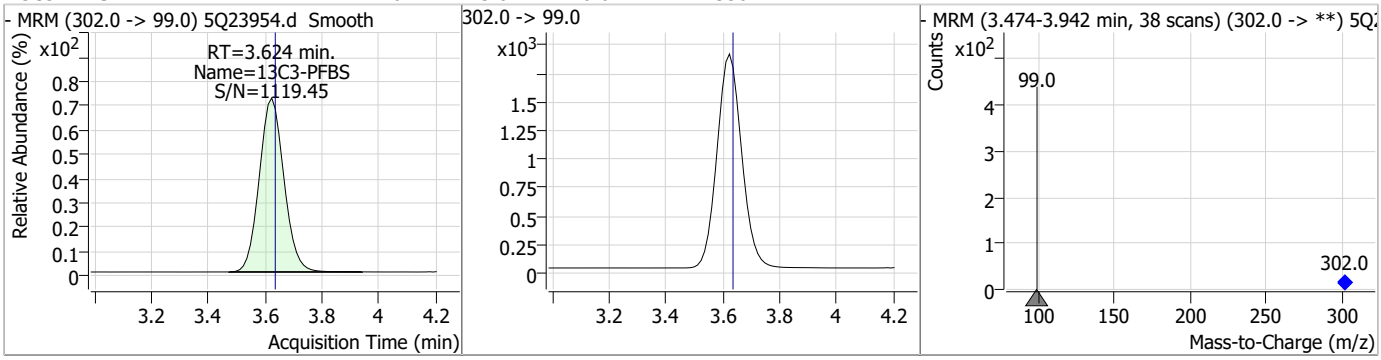
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	18.71	3.42	-0.01	170507				



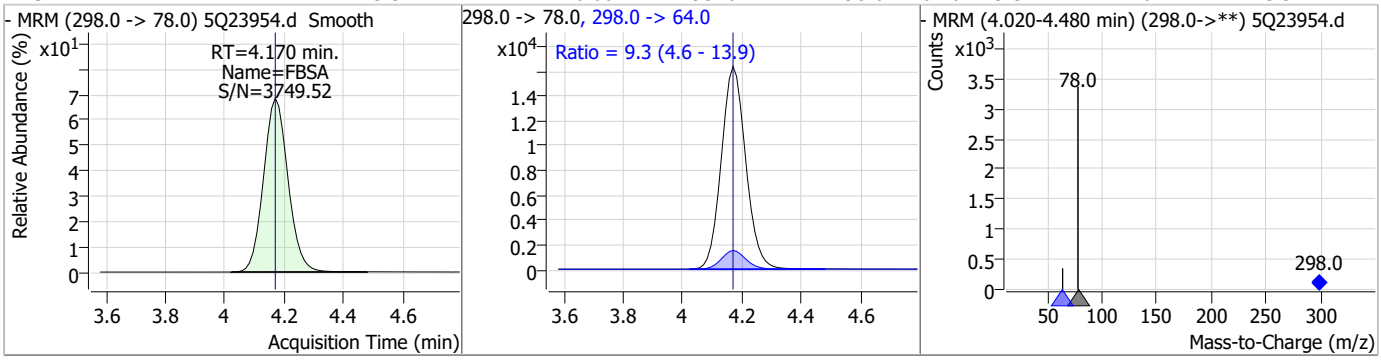
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	18.78	3.63	0.00	52662	299.0 -> 99.0	43.7	22.0	65.9



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	11.67	3.62	-0.01	11330				

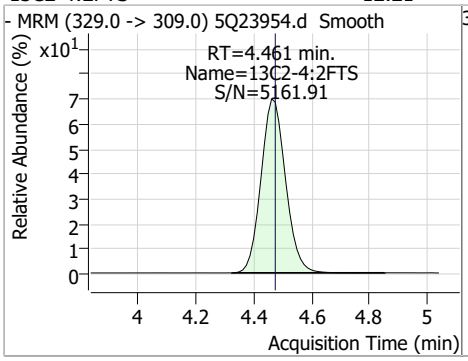


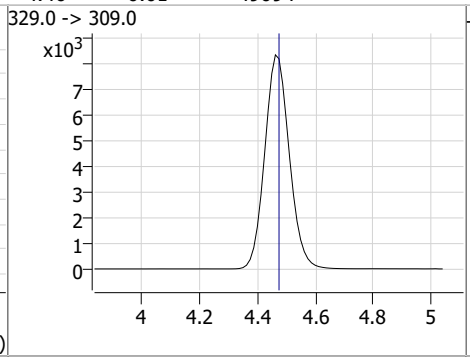
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	19.91	4.17	0.00	93464	298.0 -> 64.0	9.3	4.6	13.9

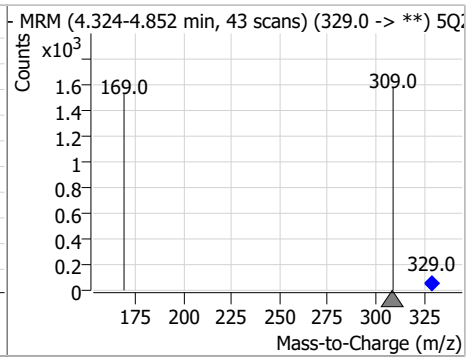


Perfluorinated Compounds by LC/MS/MS

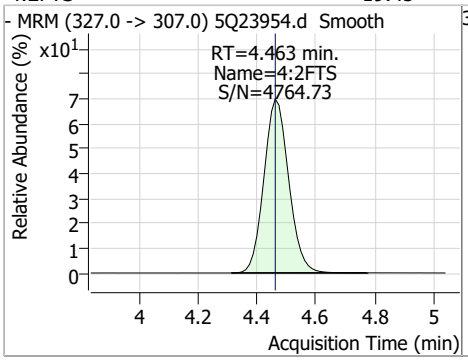
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	12.21	4.46	-0.01	49094				

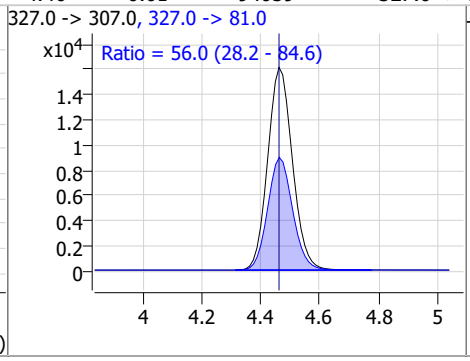


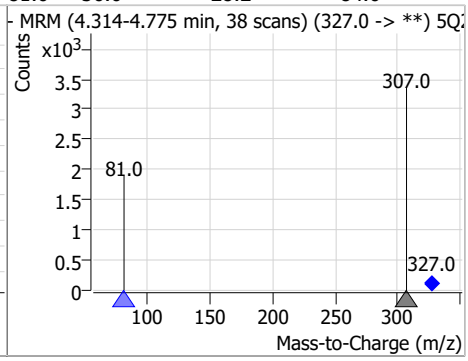




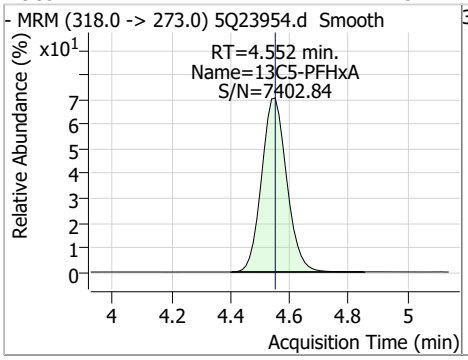
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	19.45	4.46	-0.01	94059	327.0 -> 81.0	56.0	28.2	84.6

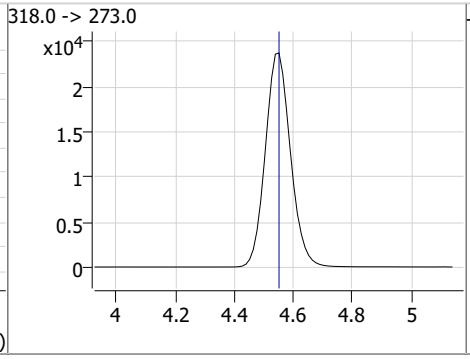


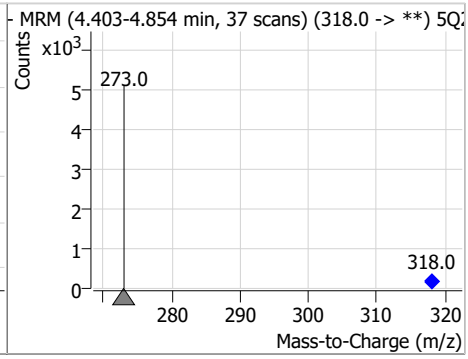




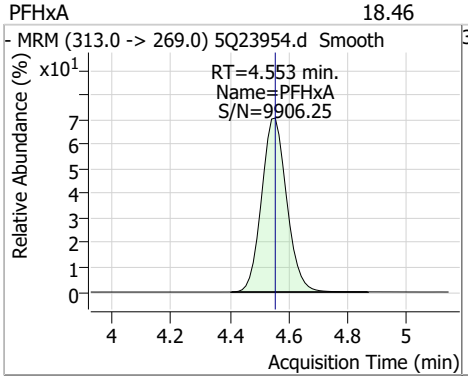
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	11.75	4.55	0.00	140378				

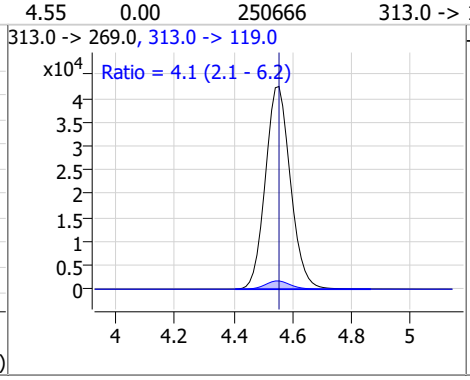


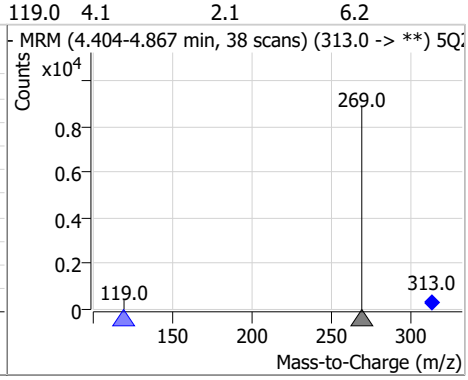




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	18.46	4.55	0.00	250666	313.0 -> 119.0	4.1	2.1	6.2

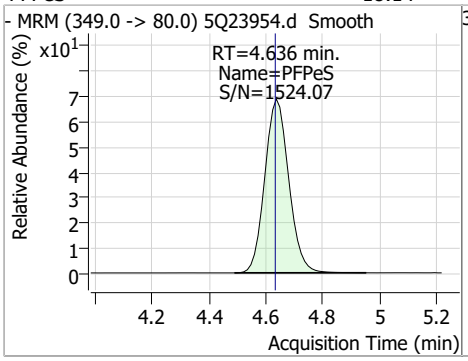


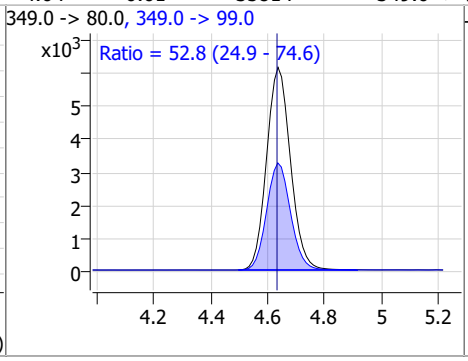


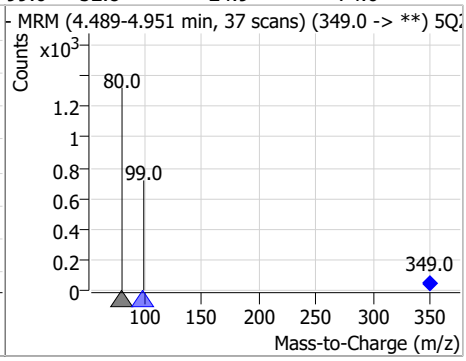


Perfluorinated Compounds by LC/MS/MS

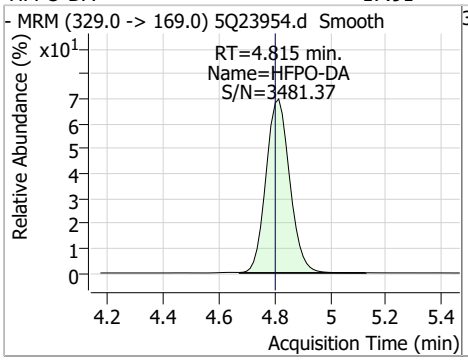
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	18.14	4.64	-0.01	35814	349.0 -> 99.0	52.8	24.9	74.6

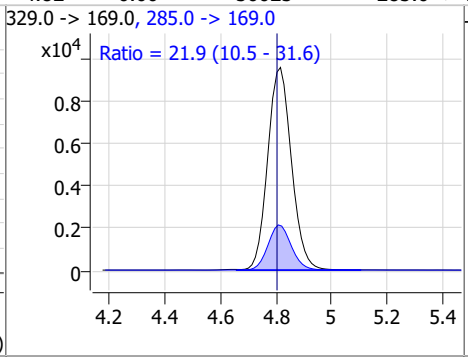


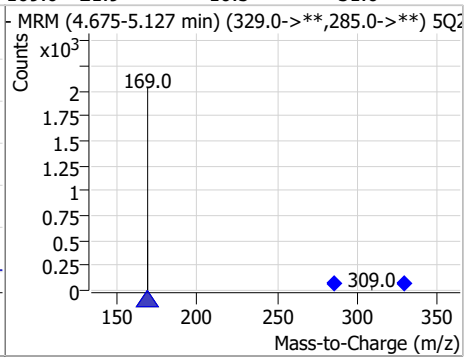




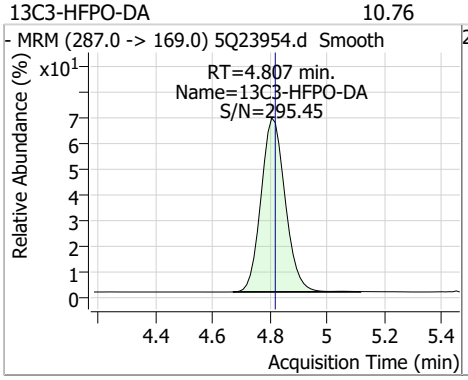
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	17.91	4.82	0.00	56625	285.0 -> 169.0	21.9	10.5	31.6

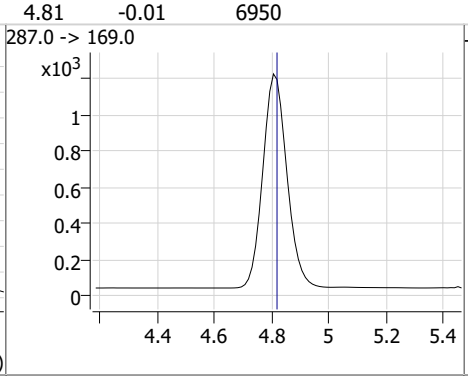


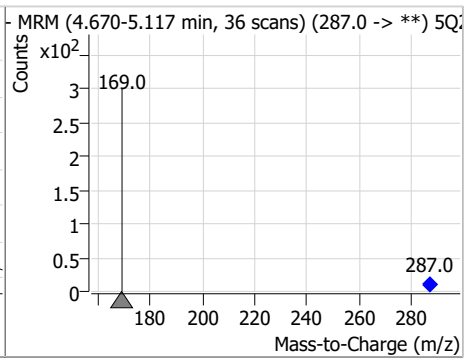




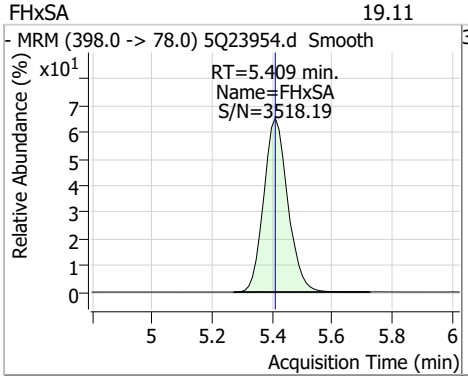
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	10.76	4.81	-0.01	6950				

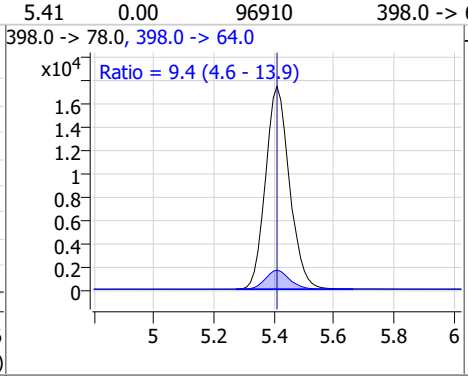


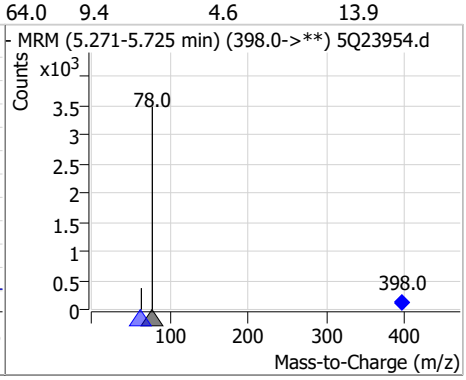




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	19.11	5.41	0.00	96910	398.0 -> 64.0	9.4	4.6	13.9

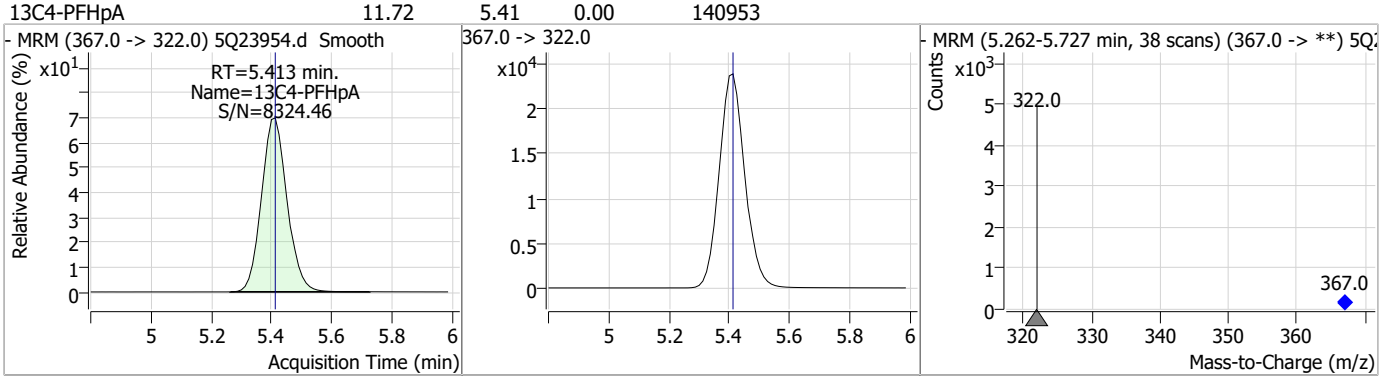




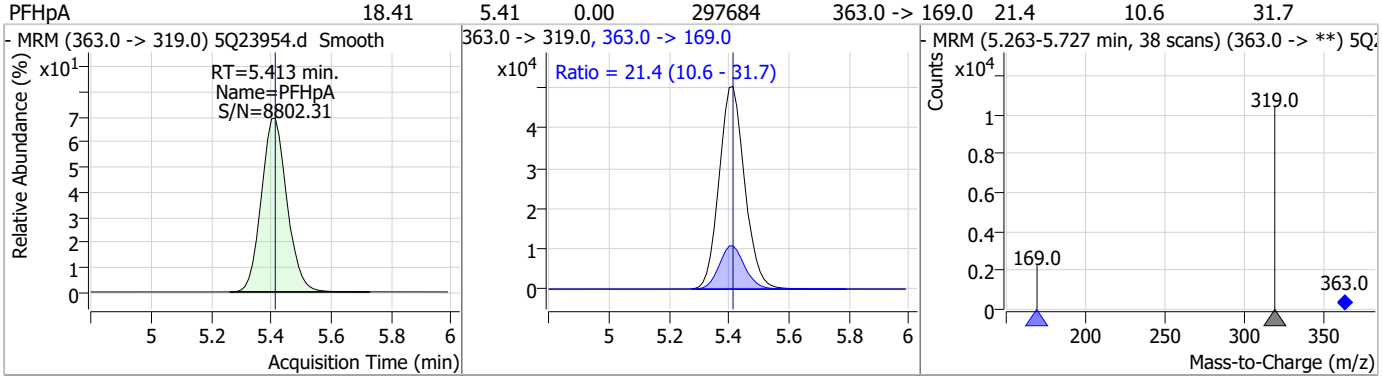


Perfluorinated Compounds by LC/MS/MS

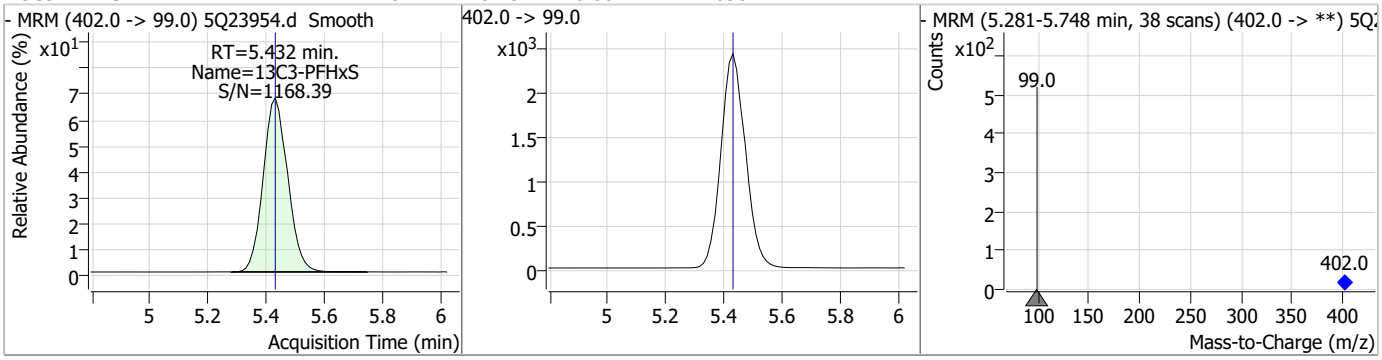
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	11.72	5.41	0.00	140953				



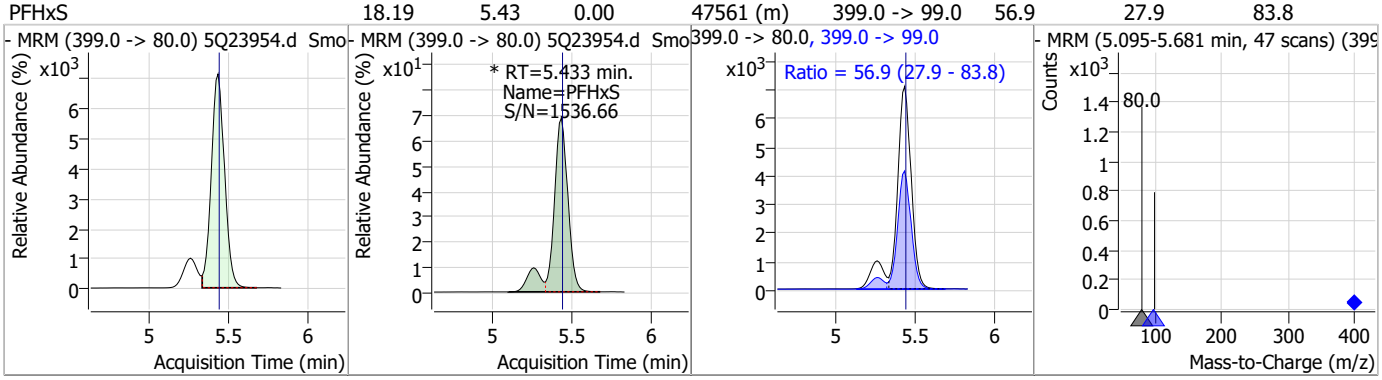
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	18.41	5.41	0.00	297684	363.0 -> 169.0	21.4	10.6	31.7



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	11.94	5.43	0.00	14095				

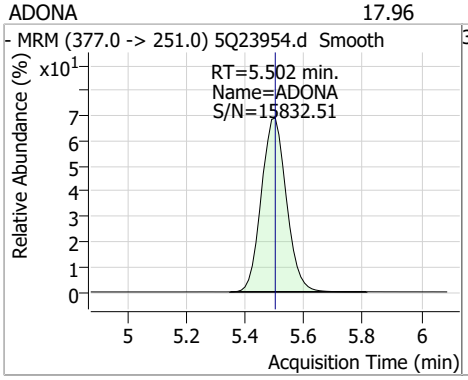


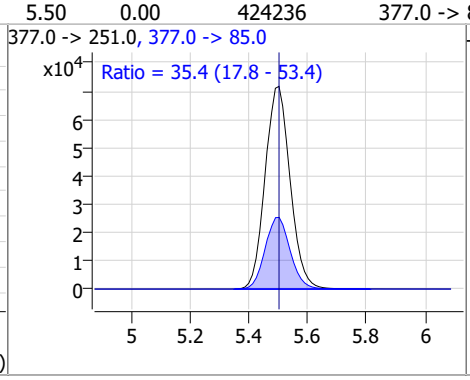
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	18.19	5.43	0.00	47561 (m)	399.0 -> 99.0	56.9	27.9	83.8

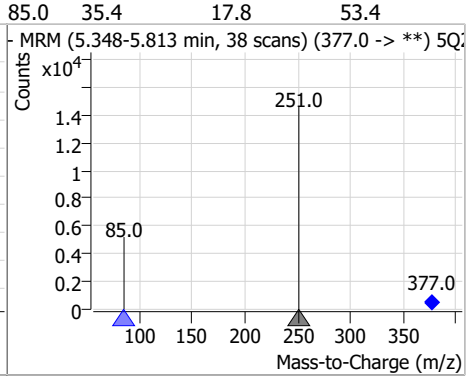


Perfluorinated Compounds by LC/MS/MS

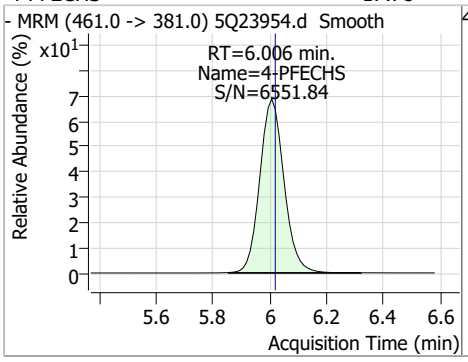
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	17.96	5.50	0.00	424236	377.0 -> 85.0	35.4	17.8	53.4

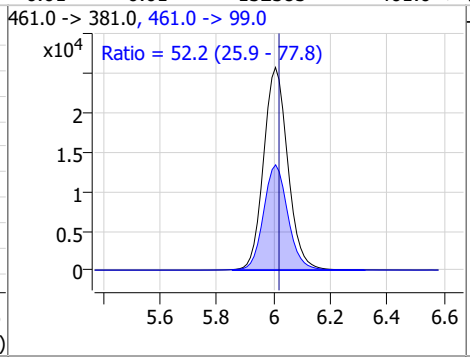


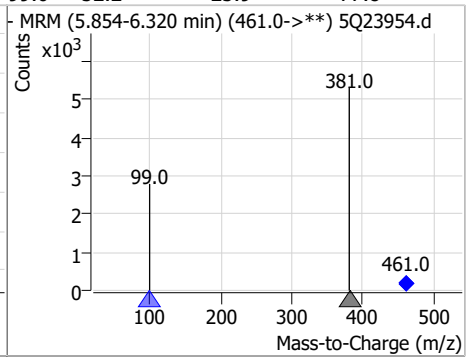




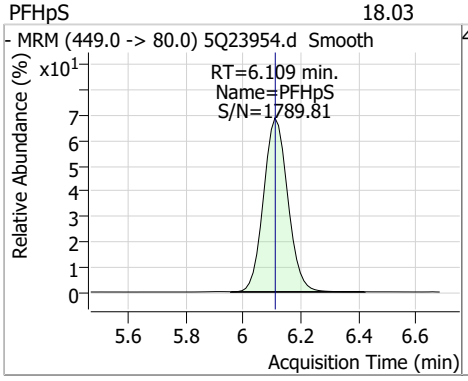
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS	17.78	6.01	-0.01	152585	461.0 -> 99.0	52.2	25.9	77.8

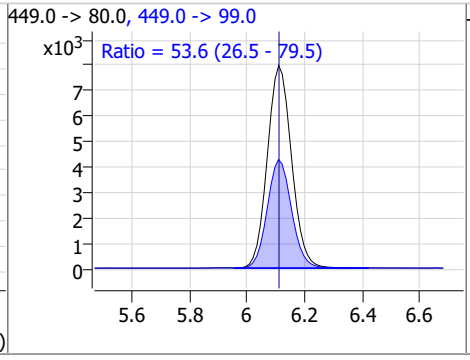


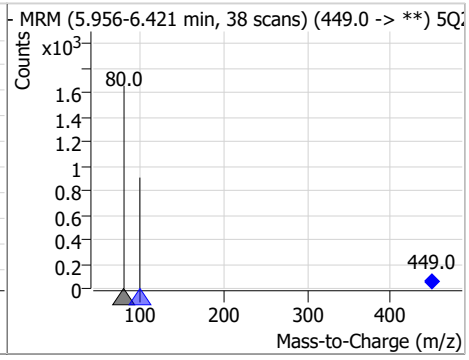




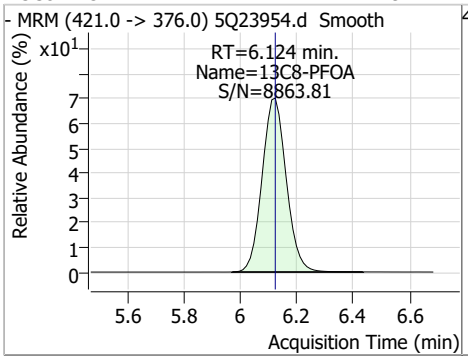
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	18.03	6.11	-0.01	46563	449.0 -> 99.0	53.6	26.5	79.5

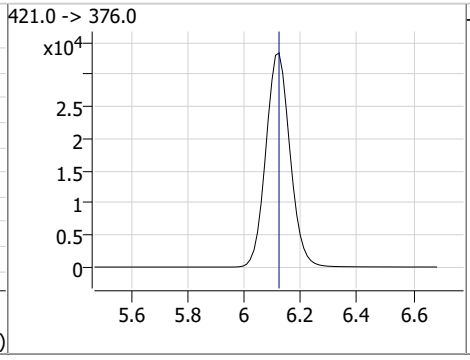


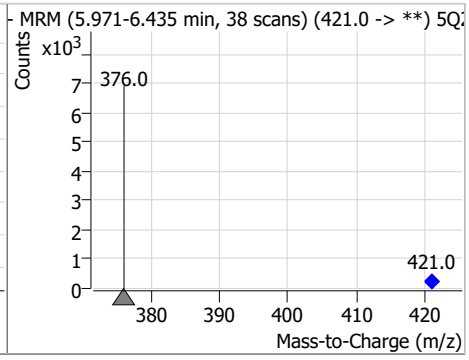




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	11.94	6.12	0.00	197616				

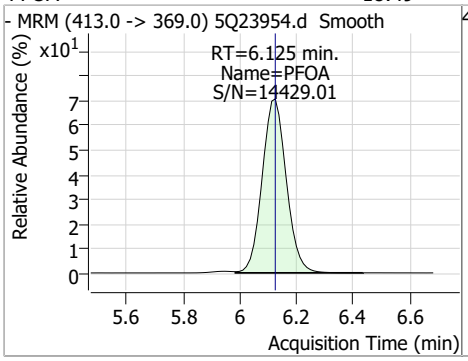


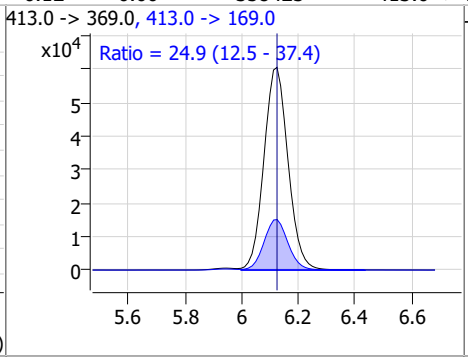


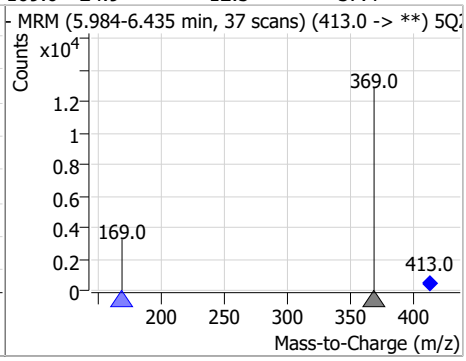


Perfluorinated Compounds by LC/MS/MS

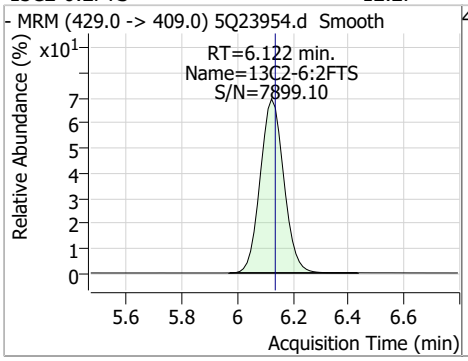
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	18.49	6.12	0.00	358423	413.0 -> 169.0	24.9	12.5	37.4

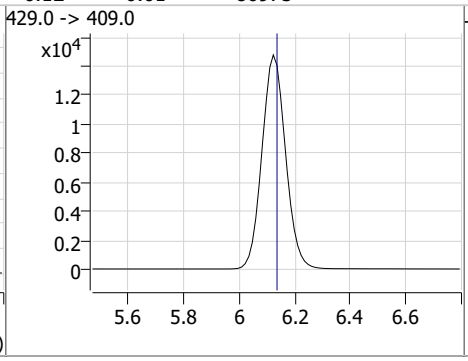


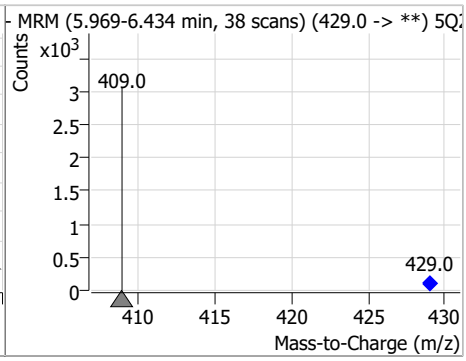




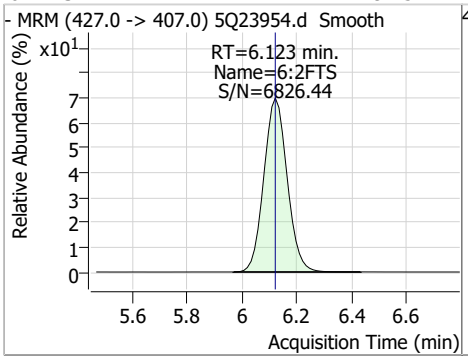
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	12.27	6.12	-0.01	86975				

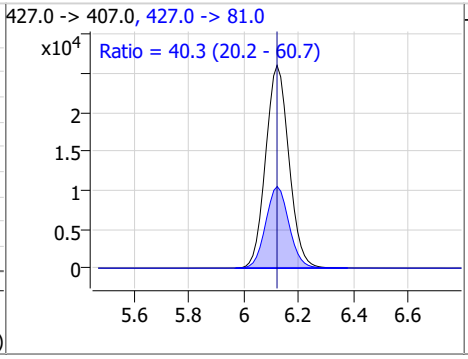


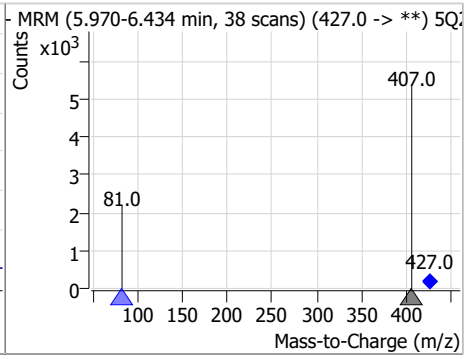




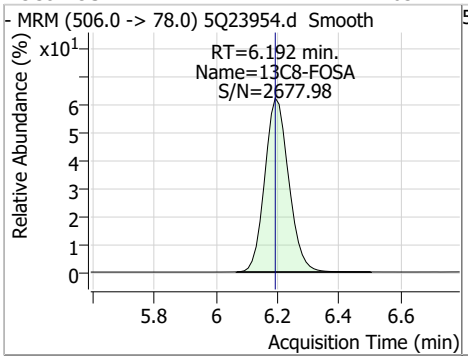
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	19.25	6.12	-0.01	153181	427.0 -> 81.0	40.3	20.2	60.7

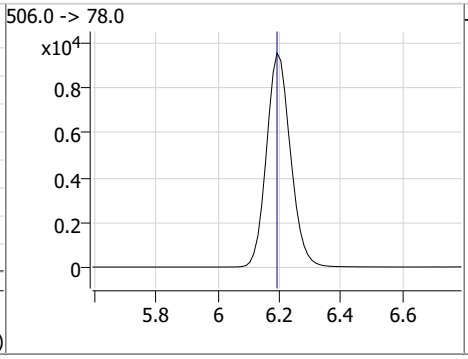


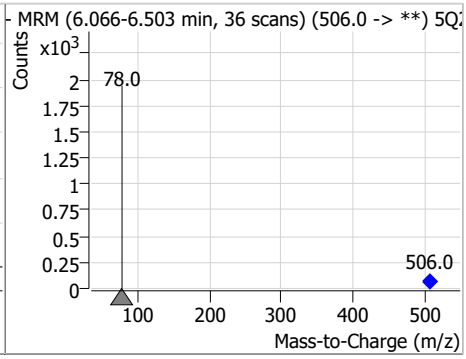




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	12.63	6.19	0.00	51184				

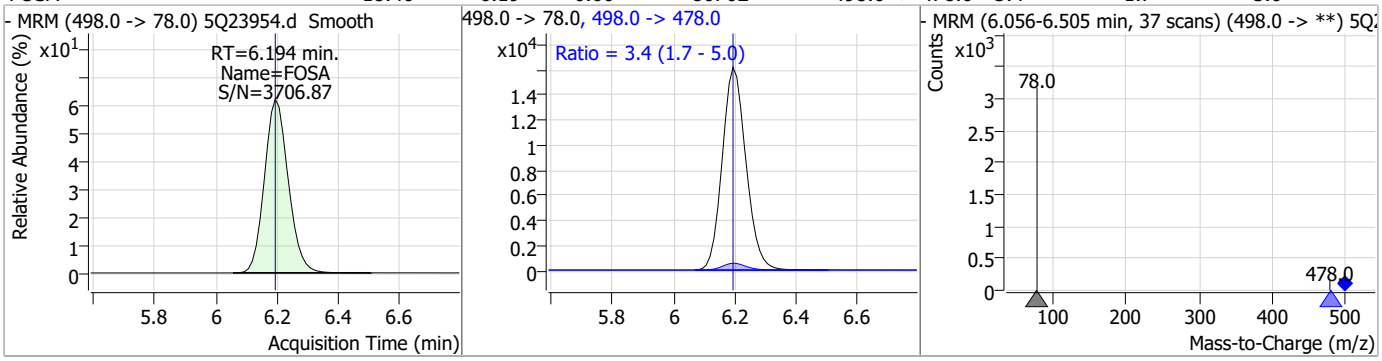




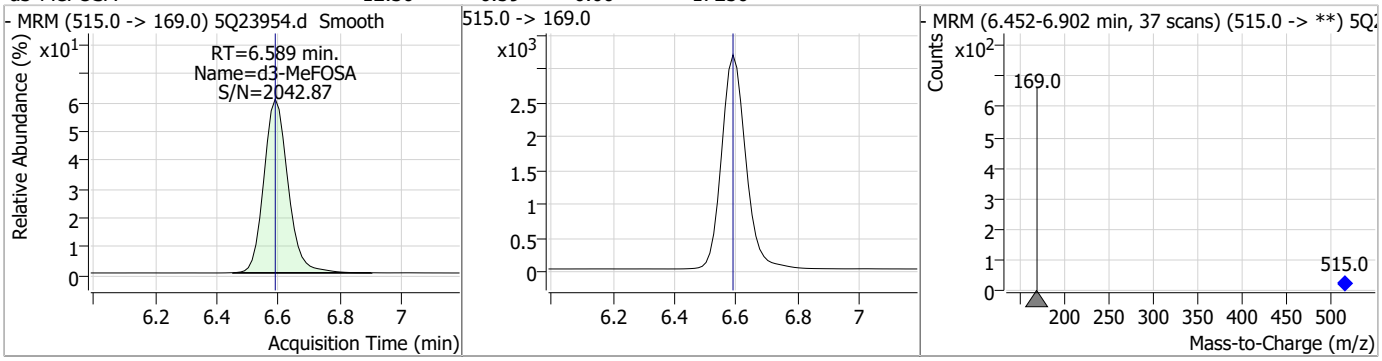


Perfluorinated Compounds by LC/MS/MS

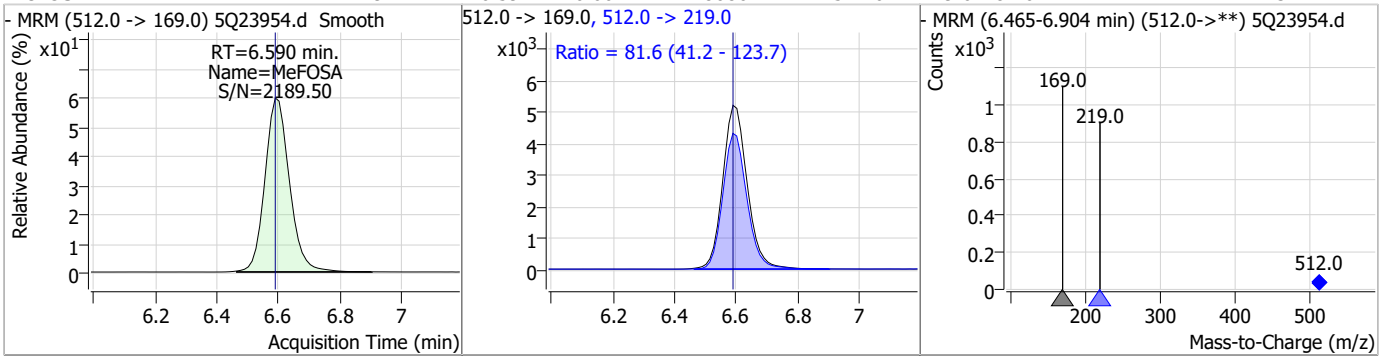
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	18.46	6.19	0.00	86702	498.0 -> 478.0	3.4	1.7	5.0



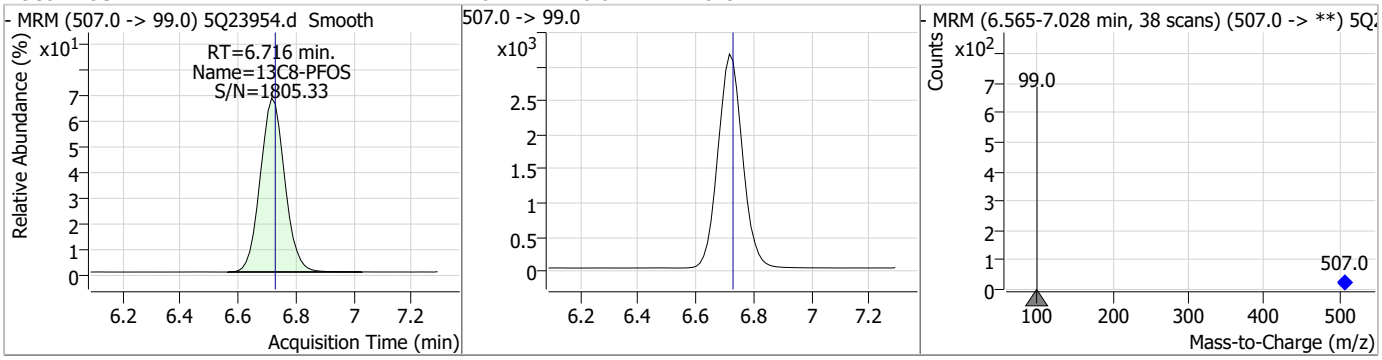
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	12.30	6.59	0.00	17250				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	19.22	6.59	0.00	28686	512.0 -> 219.0	81.6	41.2	123.7

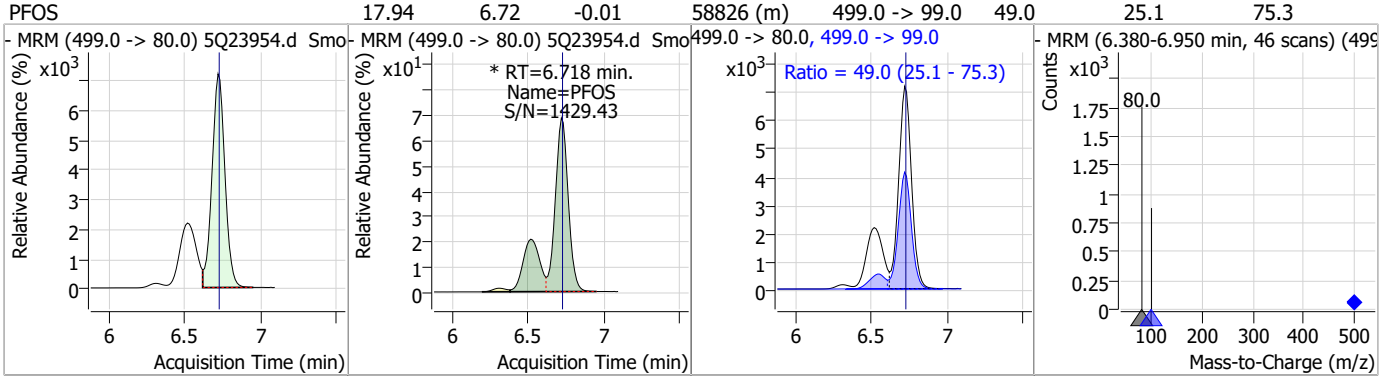


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	11.77	6.72	-0.01	18497				

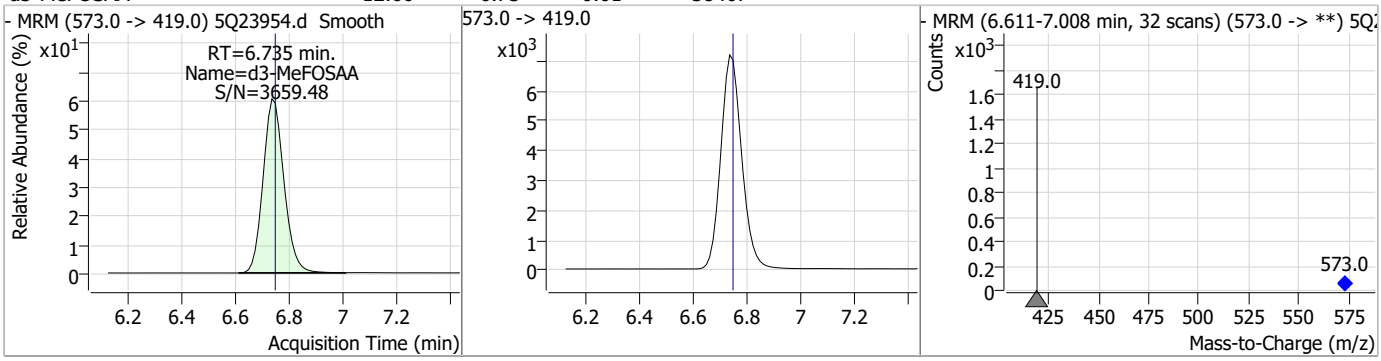


Perfluorinated Compounds by LC/MS/MS

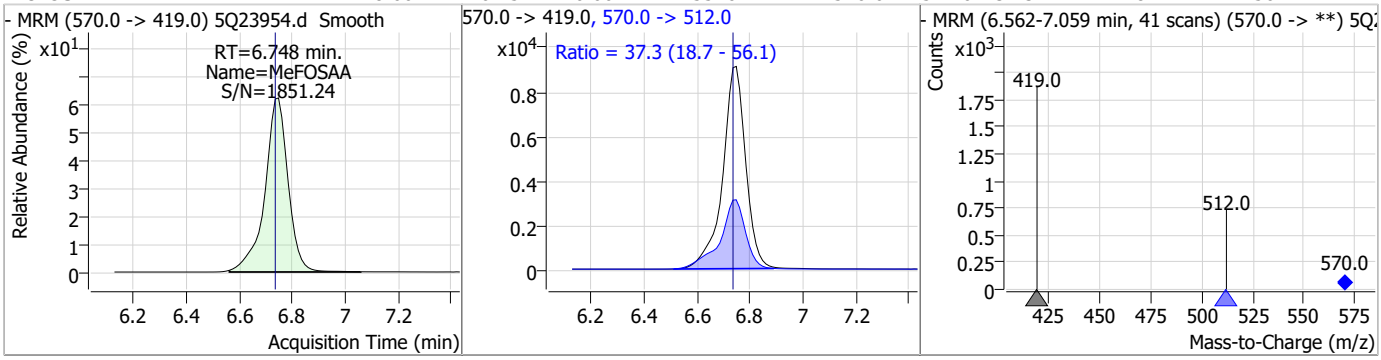
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	17.94	6.72	-0.01	58826 (m)	499.0 -> 99.0	49.0	25.1	75.3



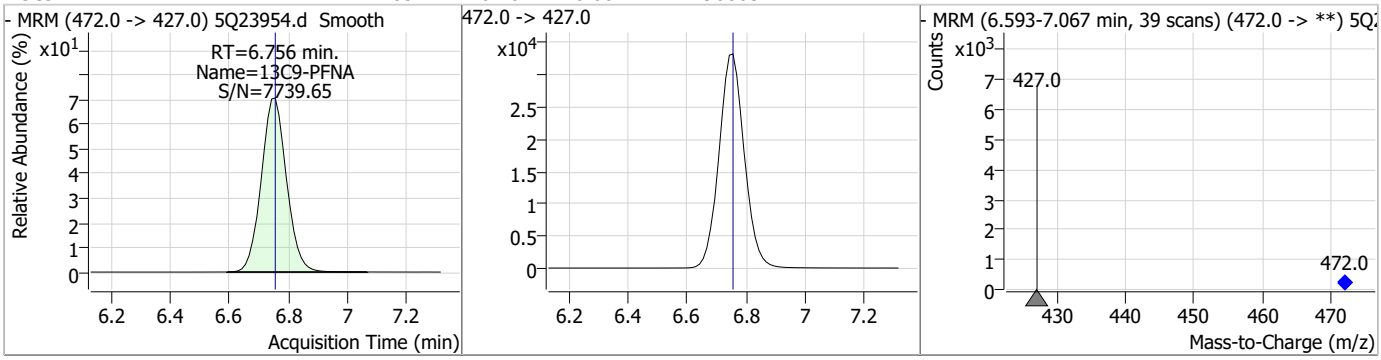
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	12.60	6.73	-0.01	38407				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	18.60	6.75	0.00	55762	570.0 -> 512.0	37.3	18.7	56.1

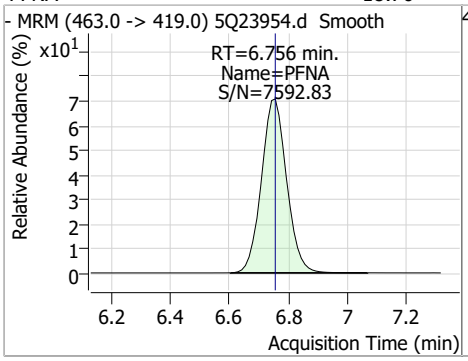


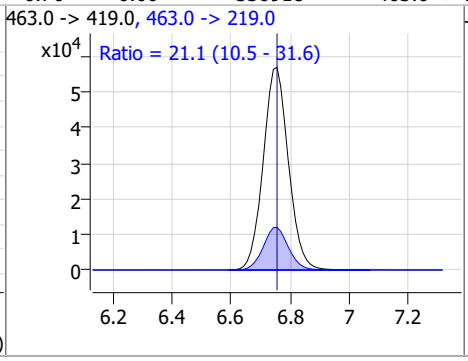
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	11.85	6.76	0.00	196803				

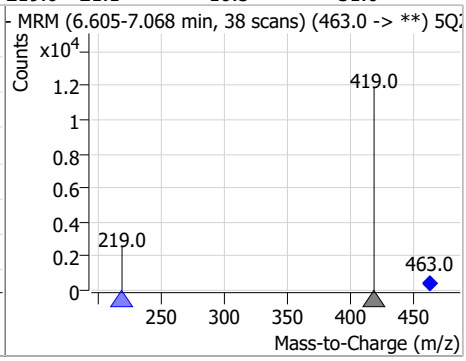


Perfluorinated Compounds by LC/MS/MS

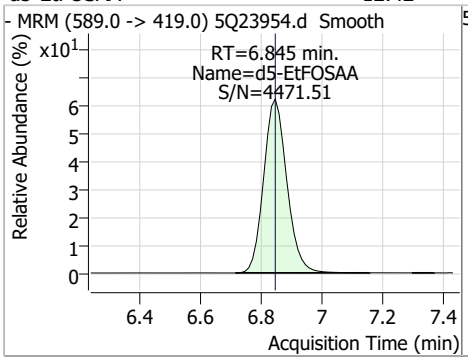
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	18.70	6.76	0.00	336918	463.0 -> 219.0	21.1	10.5	31.6

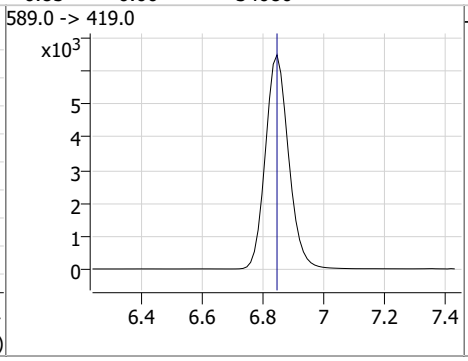


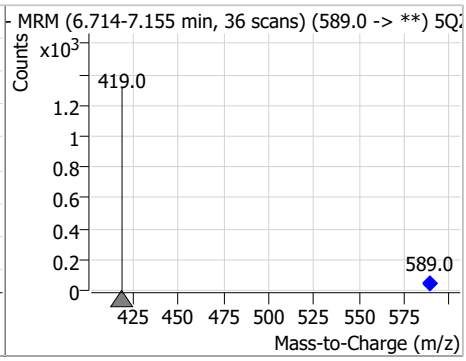




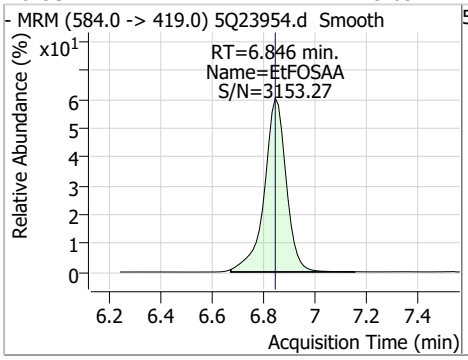
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	12.42	6.85	0.00	34080				

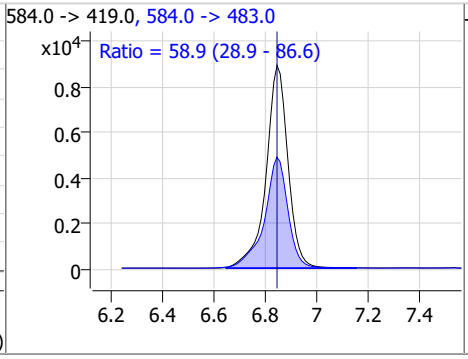


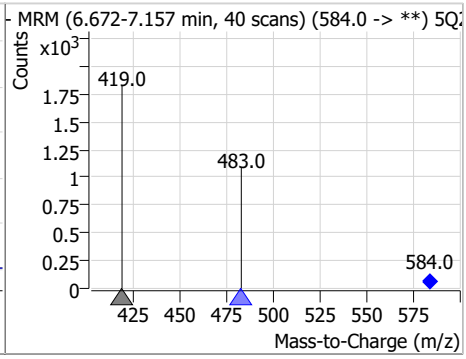




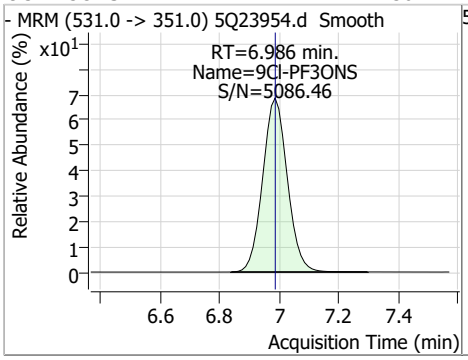
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	19.03	6.85	0.00	52902	584.0 -> 483.0	58.9	28.9	86.6

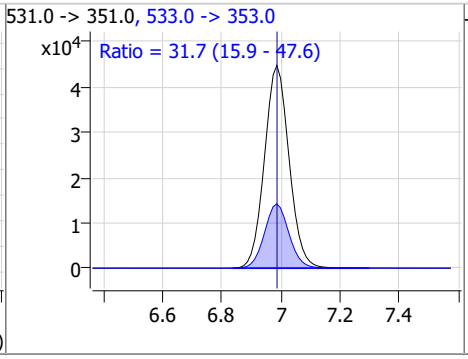


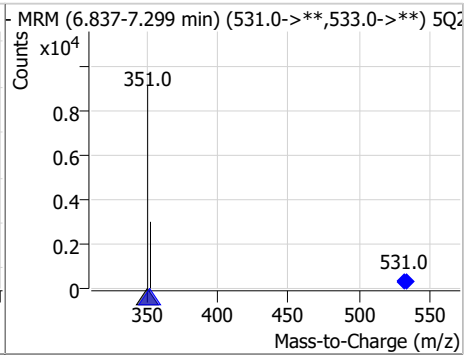




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	17.36	6.99	-0.01	257784	533.0 -> 353.0	31.7	15.9	47.6

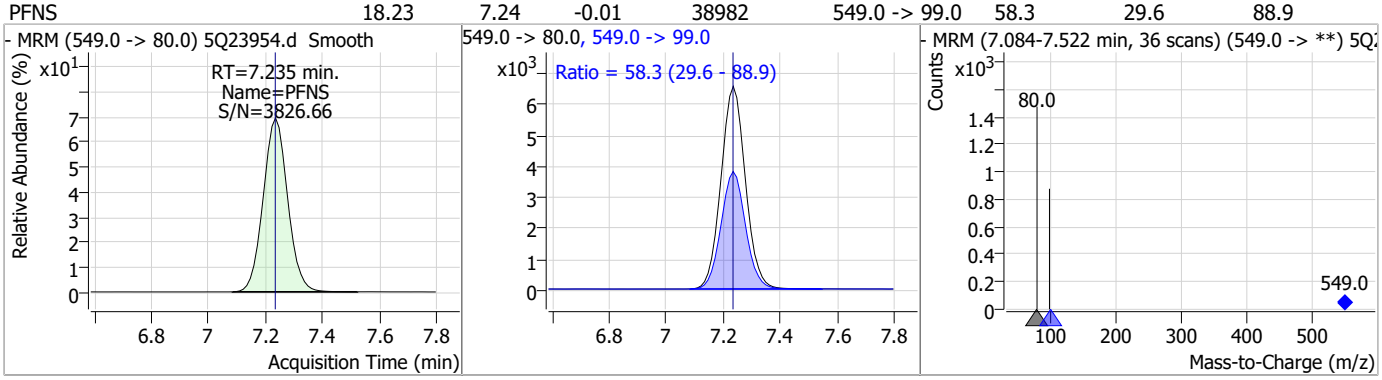




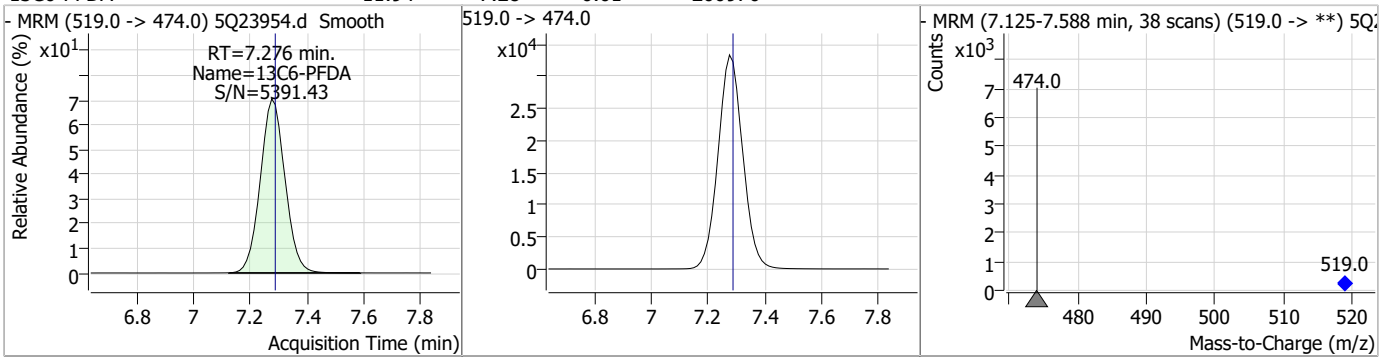


Perfluorinated Compounds by LC/MS/MS

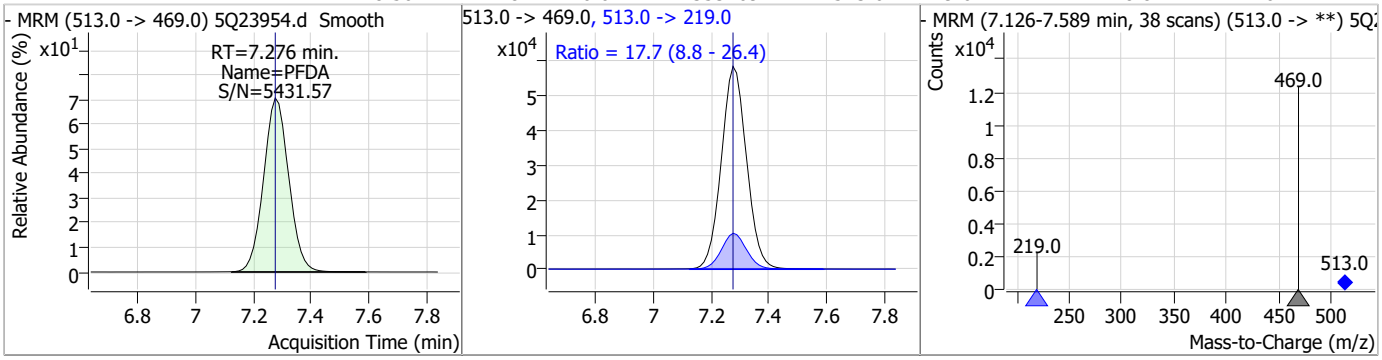
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	18.23	7.24	-0.01	38982	549.0 -> 99.0	58.3	29.6	88.9



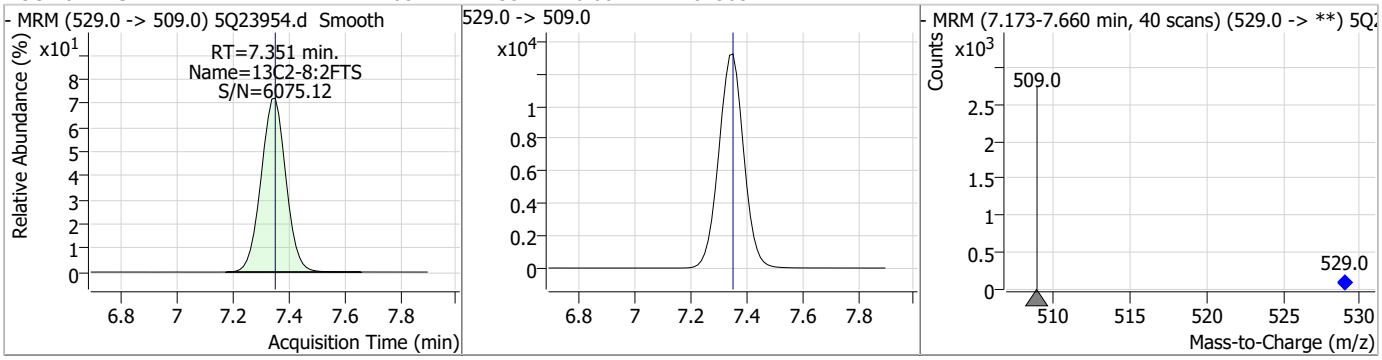
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	11.94	7.28	-0.01	200970				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	18.50	7.28	-0.01	353209	513.0 -> 219.0	17.7	8.8	26.4

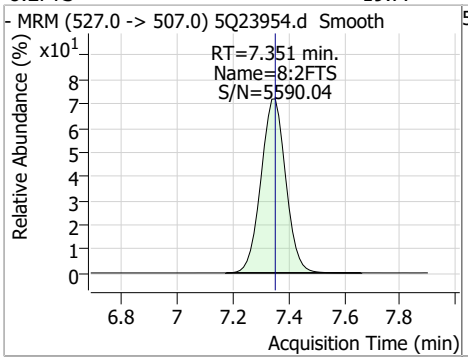


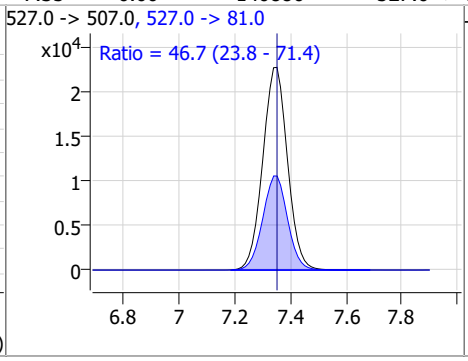
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	11.68	7.35	0.00	81568				

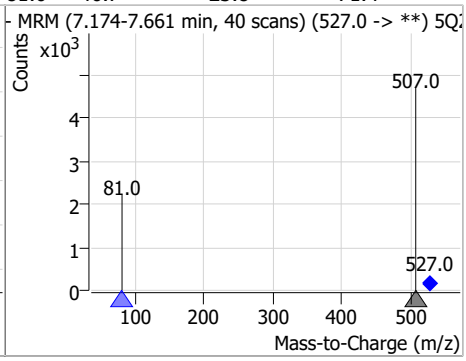


Perfluorinated Compounds by LC/MS/MS

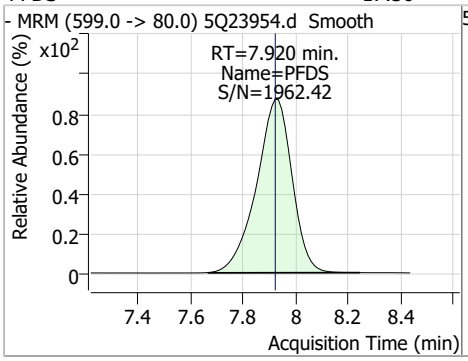
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	19.77	7.35	0.00	140886	527.0 -> 81.0	46.7	23.8	71.4

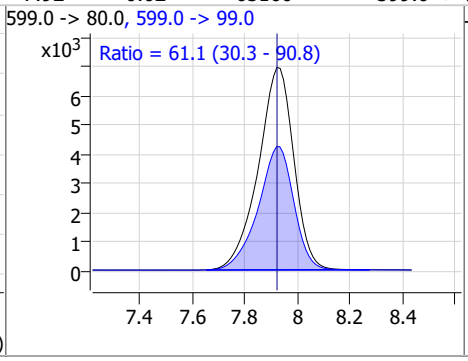


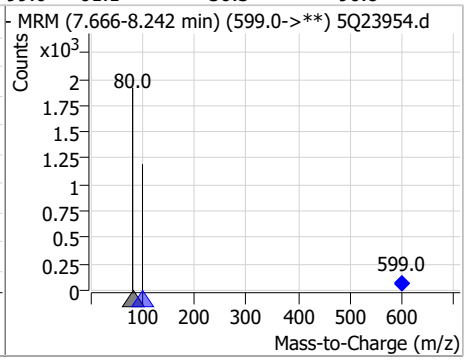




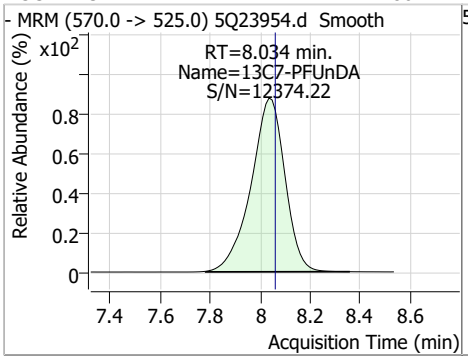
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	17.36	7.92	-0.02	65160	599.0 -> 99.0	61.1	30.3	90.8

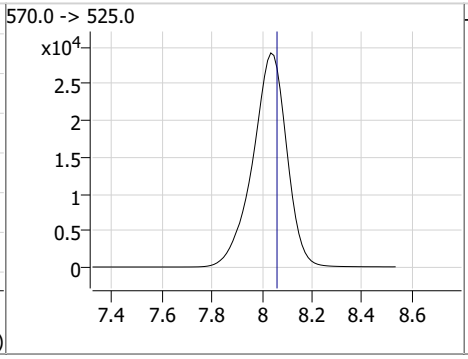


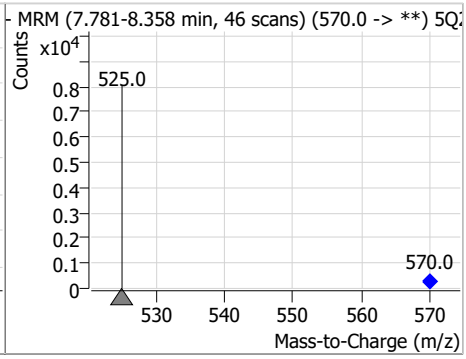




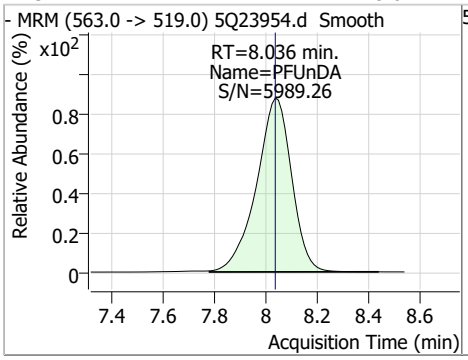
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	11.80	8.03	-0.02	274995				

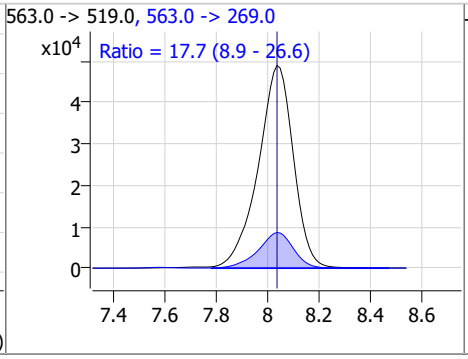


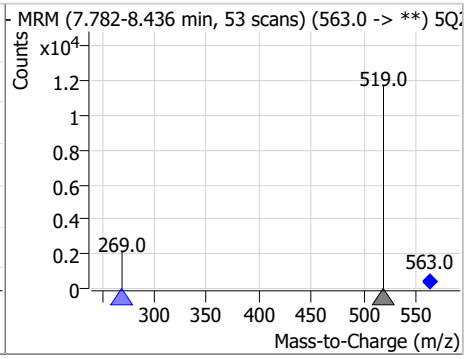




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	18.64	8.04	-0.02	462446	563.0 -> 269.0	17.7	8.9	26.6

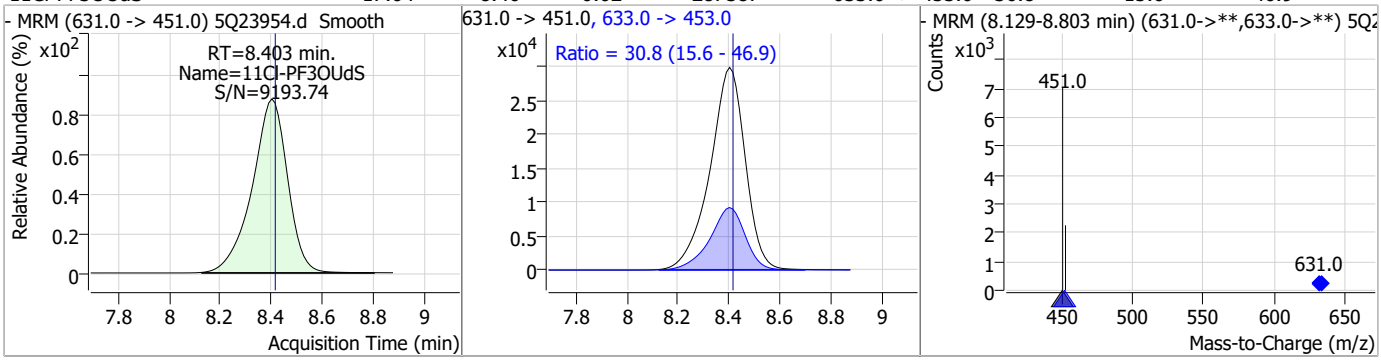




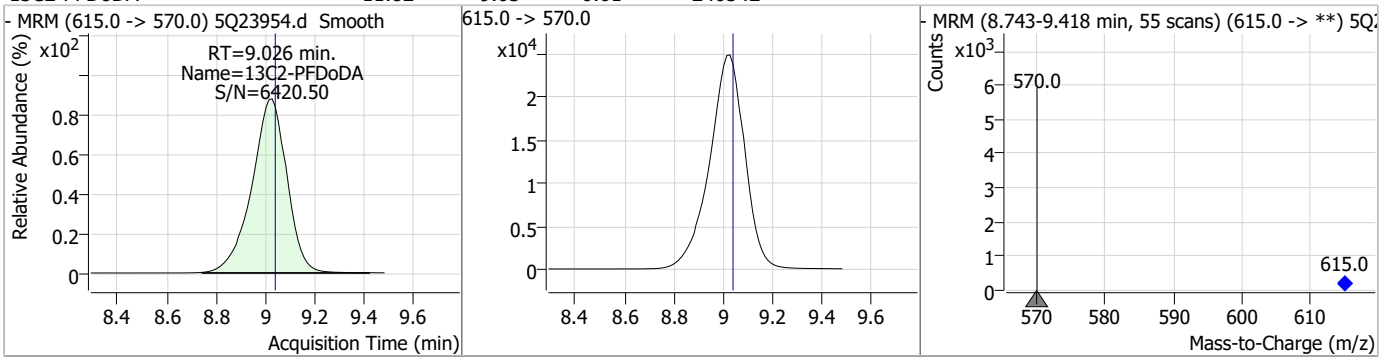


Perfluorinated Compounds by LC/MS/MS

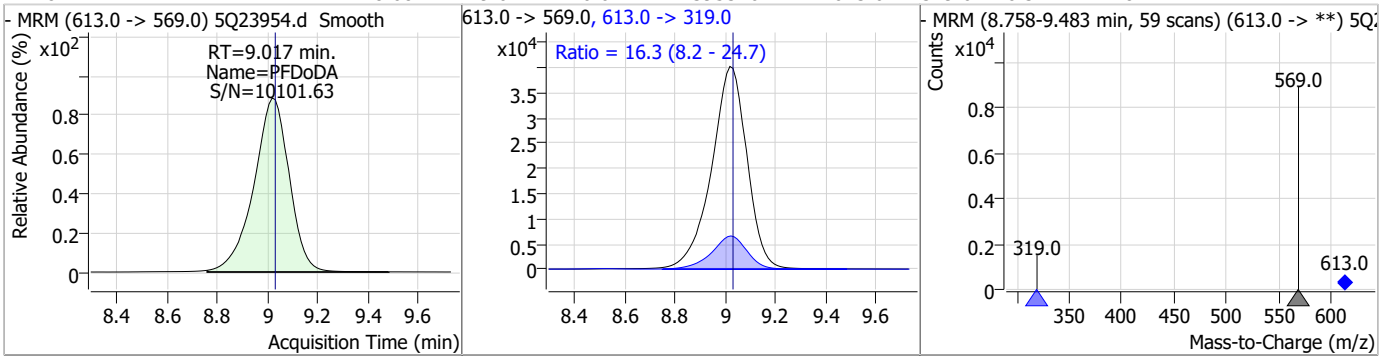
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	17.64	8.40	-0.02	287587	633.0 -> 453.0	30.8	15.6	46.9



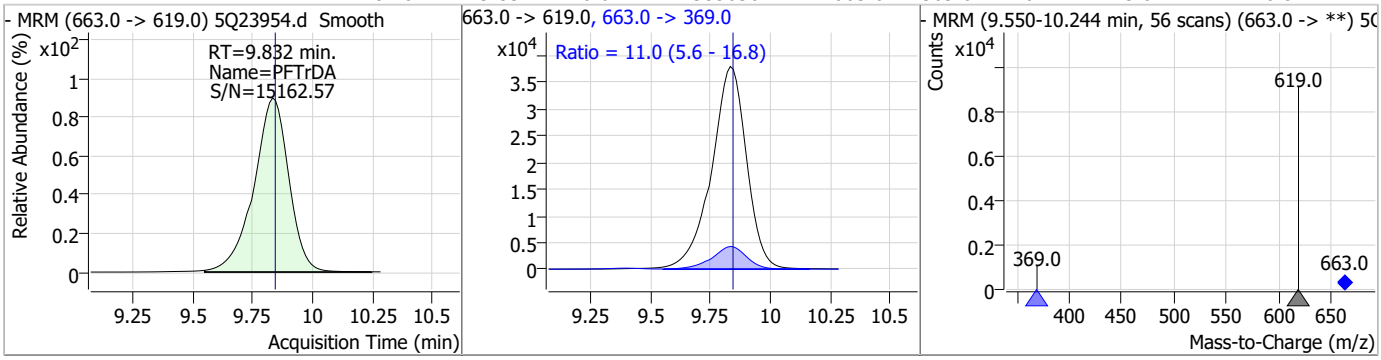
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	11.82	9.03	-0.01	246542				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	18.68	9.02	-0.02	395340	613.0 -> 319.0	16.3	8.2	24.7

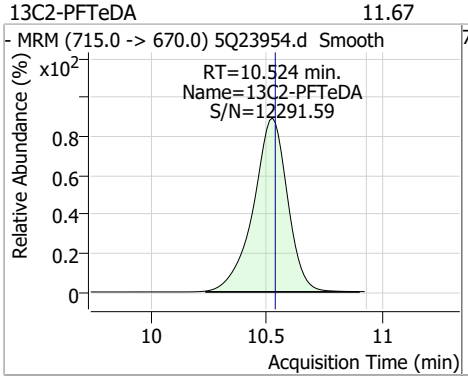


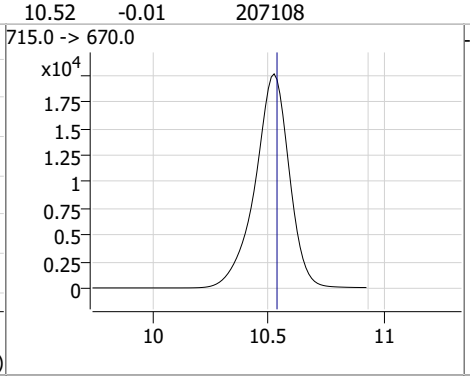
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	18.20	9.83	-0.02	385630	663.0 -> 369.0	11.0	5.6	16.8

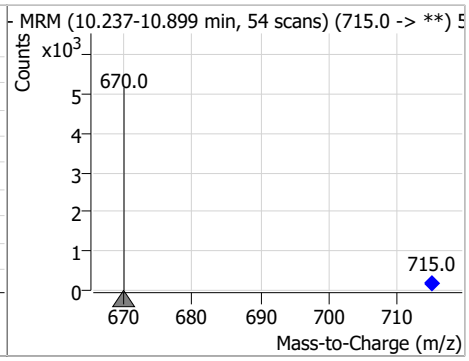


Perfluorinated Compounds by LC/MS/MS

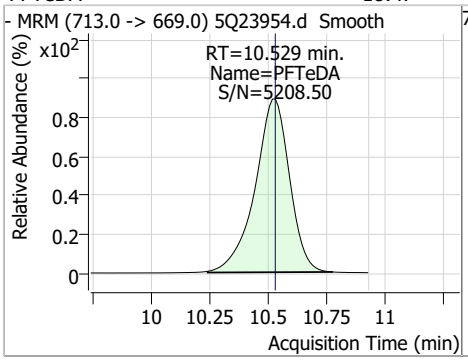
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	11.67	10.52	-0.01	207108				

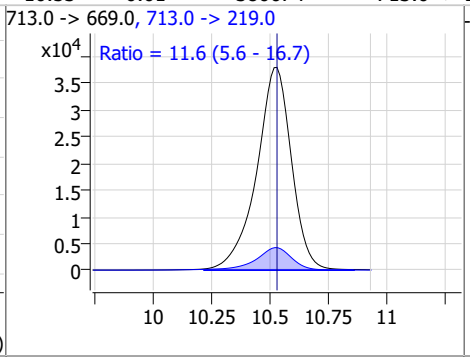


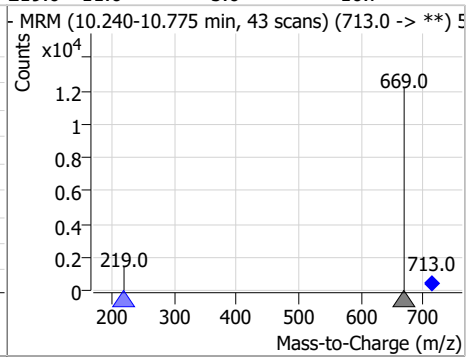




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	18.47	10.53	-0.01	386674	713.0 -> 219.0	11.6	5.6	16.7







Manual Integration Approval Summary

Sample Number: S5Q375-CC375
Lab FileID: 5Q23954.D
Injection Time: 12/29/23 03:14
Method: EPA 537M QSM5.3 B-15
Analyst approved: 12/29/23 14:15 Lindsay Ritner
Supervisor approved: 01/02/24 14:05 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.43	Split peak
Perfluorooctanesulfonic acid	1763-23-1		6.72	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Natasha Gumtie 01/02/24 14:05

Perfluorinated Compounds by LC/MS/MS

Data File : 5Q23966.d
Operator : natashag
Acq. Method : 537_ID.m
Acq. Date-Time : 12/29/2023 6:33:31 AM
Sample Name : cc375-20
Vial : P1-A7
DA Method File : ID_122823_S5Q375.quantmethod.xml
Batch Name : s5q375.batch.bin
Sample Information : OP401,S5Q375,250,,,1.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.987	217.0 -> 172.0	58891	10.00	µg/L	0.000
M5-PFPeA	3.419	268.0 -> 223.0	96685	10.00	µg/L	-0.012
M5-PFHxA	4.552	318.0 -> 273.0	144982	10.00	µg/L	0.000
M4-PFHpA	5.413	367.0 -> 322.0	143641	10.00	µg/L	0.000
M8-PFOA	6.112	421.0 -> 376.0	199533	10.00	µg/L	-0.012
M9-PFNA	6.744	472.0 -> 427.0	199943	10.00	µg/L	-0.012
M6-PFDA	7.276	519.0 -> 474.0	204251	10.00	µg/L	-0.012
M7-PFUnDA	8.034	570.0 -> 525.0	281851	10.00	µg/L	-0.025
M2-PFDoDA	9.013	615.0 -> 570.0	251813	10.00	µg/L	-0.025
M2-PFTeDA	10.512	715.0 -> 670.0	209736	10.00	µg/L	-0.025
M8-FOSA	6.192	506.0 -> 78.0	51584	10.00	µg/L	0.000
M3-PFBS	3.624	302.0 -> 99.0	11632	10.00	µg/L	-0.012
M3-PFHxS	5.432	402.0 -> 99.0	14186	10.00	µg/L	0.000
M8-PFOS	6.716	507.0 -> 99.0	18642	10.00	µg/L	-0.012
M2-4:2FTS	4.461	329.0 -> 309.0	49664	10.00	µg/L	-0.012
M2-6:2FTS	6.122	429.0 -> 409.0	89403	10.00	µg/L	-0.013
M2-8:2FTS	7.338	529.0 -> 509.0	83132	10.00	µg/L	-0.012
M3-MeFOSAA	6.735	573.0 -> 419.0	39061	10.00	µg/L	-0.012
M3-HFPO-DA	4.807	287.0 -> 169.0	7298	10.00	µg/L	-0.012
M3-MeFOSA	6.589	515.0 -> 169.0	17551	10.00	µg/L	0.000
M5-EtFOSAA	6.845	589.0 -> 419.0	34833	10.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.461	329.0 -> 309.0	49664	12.35	µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 123.5%		
13C2-6:2FTS	6.122	429.0 -> 409.0	89403	12.61	µg/L	-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 126.1%		
13C2-8:2FTS	7.338	529.0 -> 509.0	83132	11.91	µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 119.1%		
13C2-PFDoDA	9.013	615.0 -> 570.0	251813	12.08	µg/L	-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 120.8%		
13C2-PFTeDA	10.512	715.0 -> 670.0	209736	11.82	µg/L	-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 118.2%		
13C3-PFBS	3.624	302.0 -> 99.0	11632	11.98	µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 119.8%		
13C3-PFHxS	5.432	402.0 -> 99.0	14186	12.02	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 120.2%		
13C4-PFBA	1.987	217.0 -> 172.0	58891	12.46	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 124.6%		
13C4-PFHpA	5.413	367.0 -> 322.0	143641	11.94	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 119.4%		
13C5-PFHxA	4.552	318.0 -> 273.0	144982	12.13	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 121.3%		
13C5-PFPeA	3.419	268.0 -> 223.0	96685	12.26	µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 122.6%		
13C6-PFDA	7.276	519.0 -> 474.0	204251	12.13	µg/L	-0.012

Perfluorinated Compounds by LC/MS/MS

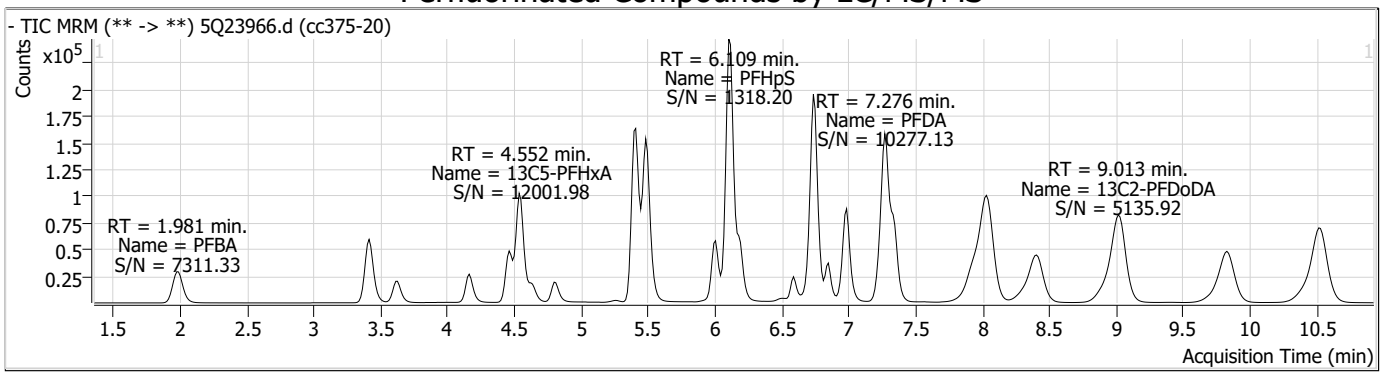
Compound	RT	Transition	Response	Conc. Units		Dev(Min)
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 121.3%		
13C7-PFUnDA	8.034	570.0 -> 525.0	281851	12.09 µg/L		-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 120.9%		
13C8-FOSA	6.192	506.0 -> 78.0	51584	12.73 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 127.3%		
13C8-PFOA	6.112	421.0 -> 376.0	199533	12.05 µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 120.5%		
13C8-PFOS	6.716	507.0 -> 99.0	18642	11.86 µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 118.6%		
13C9-PFNA	6.744	472.0 -> 427.0	199943	12.04 µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 120.4%		
d3-MeFOSAA	6.735	573.0 -> 419.0	39061	12.81 µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 128.1%		
13C3-HFPO-DA	4.807	287.0 -> 169.0	7298	11.30 µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 113.0%		
d3-MeFOSA	6.589	515.0 -> 169.0	17551	12.52 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 125.2%		
d5-EtFOSAA	6.845	589.0 -> 419.0	34833	12.69 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 126.9%		
Target Compounds						QValue
4:2FTS	4.463	327.0 -> 307.0	95639	19.55 µg/L		100
		327.0 -> 81.0	54000			
6:2FTS	6.123	427.0 -> 407.0	156769	19.16 µg/L		100
		427.0 -> 81.0	63586			
8:2FTS	7.339	527.0 -> 507.0	140136	19.30 µg/L		100
		527.0 -> 81.0	67135			
EtFOSAA	6.846	584.0 -> 419.0	52981	18.64 µg/L		95
		584.0 -> 483.0	32518			
FOSA	6.194	498.0 -> 78.0	89013	18.81 µg/L		99
		498.0 -> 478.0	3093			
MeFOSAA	6.748	570.0 -> 419.0	56578	18.56 µg/L		99
		570.0 -> 512.0	20910			
PFBA	1.981	213.0 -> 169.0	100108	18.35 µg/L		100
PFBS	3.628	299.0 -> 80.0	53953	18.74 µg/L		100
		299.0 -> 99.0	23672			
PFDA	7.276	513.0 -> 469.0	361127	18.61 µg/L		100
		513.0 -> 219.0	63133			
PFDoDA	9.017	613.0 -> 569.0	405502	18.76 µg/L		99
		613.0 -> 319.0	65613			
PFDS	7.920	599.0 -> 80.0	66155	17.19 µg/L		99
		599.0 -> 99.0	40685			
PFHpA	5.401	363.0 -> 319.0	304283	18.47 µg/L		99
		363.0 -> 169.0	64927			
PFHpS	6.109	449.0 -> 80.0	47739	18.34 µg/L		99
		449.0 -> 99.0	25800			
PFHxA	4.553	313.0 -> 269.0	257768	18.38 µg/L		100
		313.0 -> 119.0	10461			
PFHxS	5.433	399.0 -> 80.0	48554	18.45 µg/L	m	99
		399.0 -> 99.0	27609			
PFNA	6.744	463.0 -> 419.0	345128	18.85 µg/L		100
		463.0 -> 219.0	72845			
PFNS	7.235	549.0 -> 80.0	39527	18.35 µg/L		100
		549.0 -> 99.0	23260			
PFOA	6.112	413.0 -> 369.0	364993	18.65 µg/L		100
		413.0 -> 169.0	91629			
PFOS	6.718	499.0 -> 80.0	59502	18.00 µg/L	m	98

Perfluorinated Compounds by LC/MS/MS

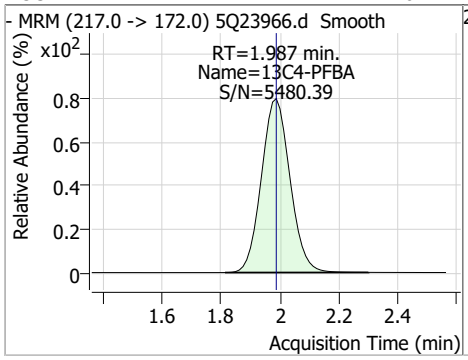
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		499.0 -> 99.0	28960			
PFPeA	3.422	263.0 -> 219.0	175138	18.68	µg/L	100
PFPeS	4.636	349.0 -> 80.0	36591	18.05	µg/L	96
		349.0 -> 99.0	19264			
PFTeDA	10.516	713.0 -> 669.0	398213	18.78	µg/L	100
		713.0 -> 219.0	44503			
PFTrDA	9.832	663.0 -> 619.0	389852	18.02	µg/L	100
		663.0 -> 369.0	43612			
PFUnDA	8.036	563.0 -> 519.0	469699	18.47	µg/L	100
		563.0 -> 269.0	82971			
11Cl-PF3OUdS	8.403	631.0 -> 451.0	292064	17.54	µg/L	100
		633.0 -> 453.0	91265			
9Cl-PF3ONS	6.986	531.0 -> 351.0	266009	17.63	µg/L	99
		533.0 -> 353.0	83020			
ADONA	5.502	377.0 -> 251.0	428937	18.04	µg/L	100
		377.0 -> 85.0	153556			
HFPO-DA	4.815	329.0 -> 169.0	57757	17.40	µg/L	99
		285.0 -> 169.0	12534			
MeFOSA	6.590	512.0 -> 169.0	30232	19.91	µg/L	98
		512.0 -> 219.0	24470			
4-PFECHS	6.006	461.0 -> 381.0	155762	17.98	µg/L	99
		461.0 -> 99.0	81245			
FBSA	4.170	298.0 -> 78.0	96024	19.80	µg/L	100
		298.0 -> 64.0	8894			
FHxSA	5.409	398.0 -> 78.0	100147	19.57	µg/L	100
		398.0 -> 64.0	9406			

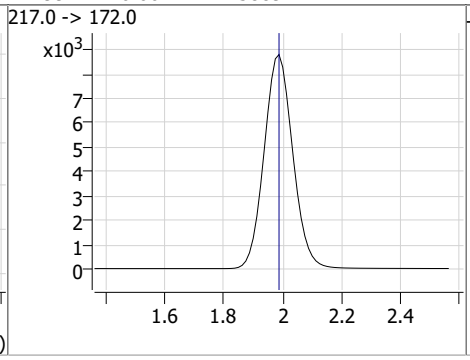
 # = Qualifier out of range, m = manually integrated, + = Area summed

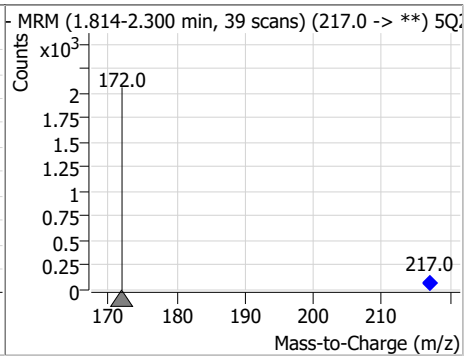
Perfluorinated Compounds by LC/MS/MS



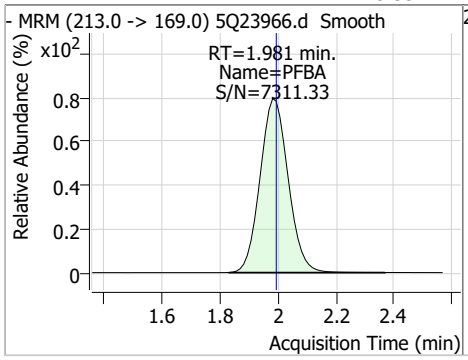
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	12.46	1.99	0.00	58891				

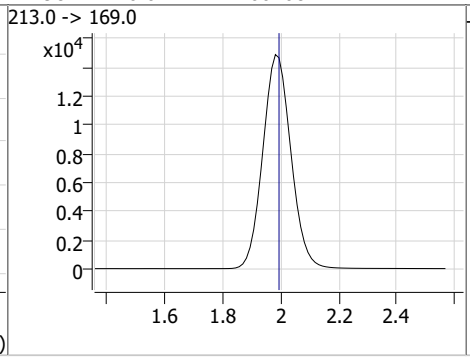


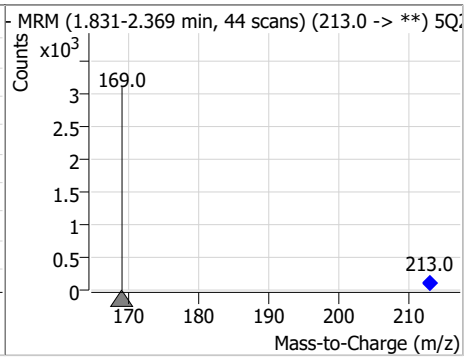




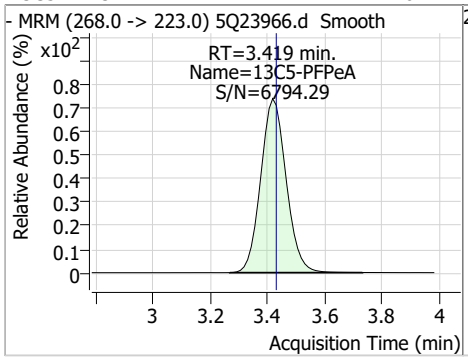
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	18.35	1.98	-0.01	100108				

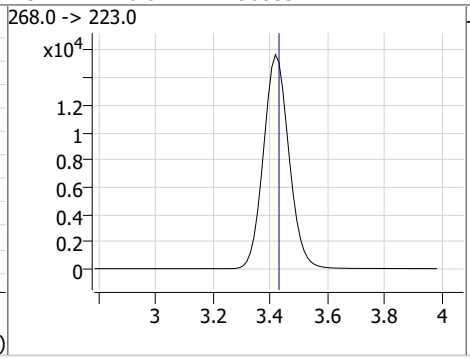


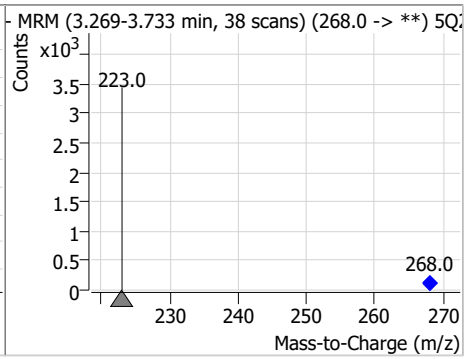




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	12.26	3.42	-0.01	96685				

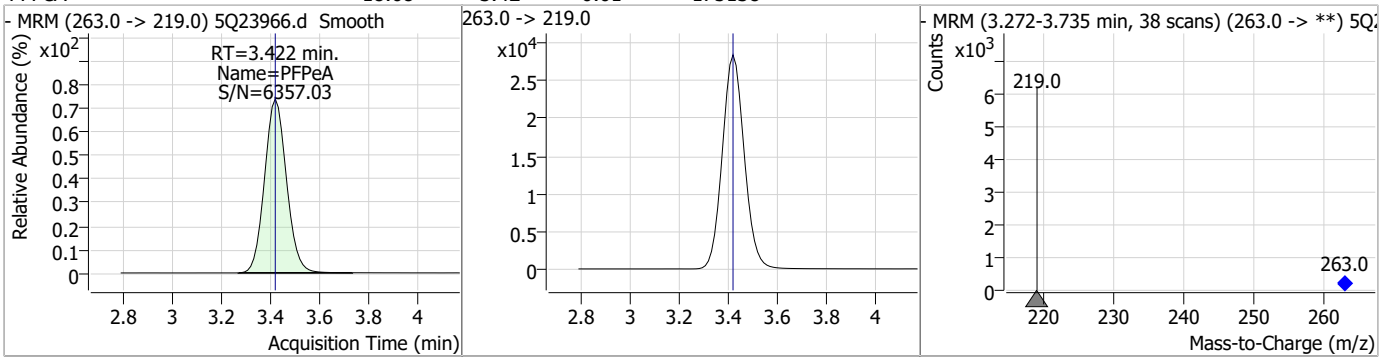




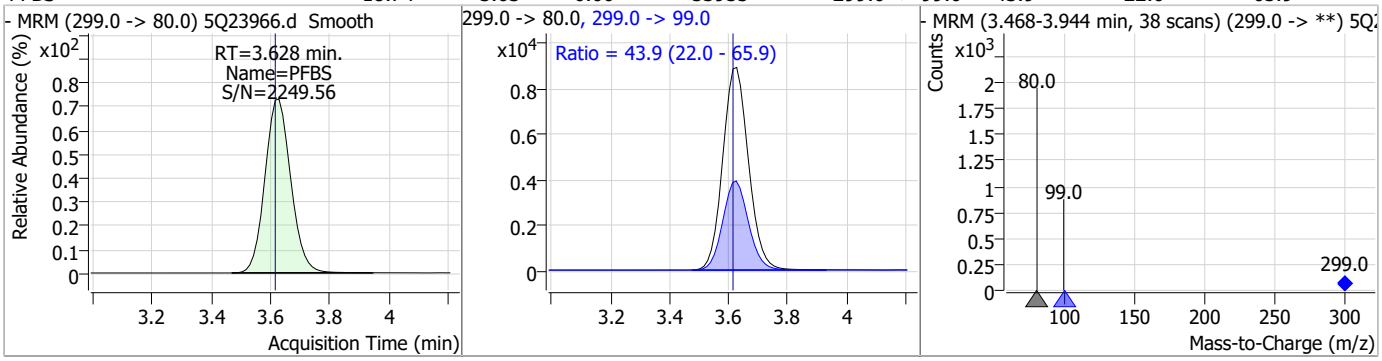


Perfluorinated Compounds by LC/MS/MS

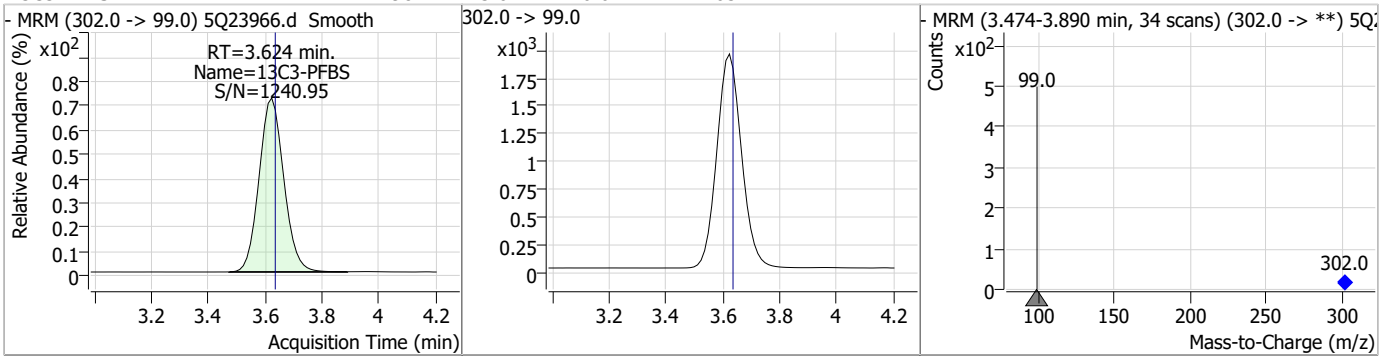
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	18.68	3.42	-0.01	175138				



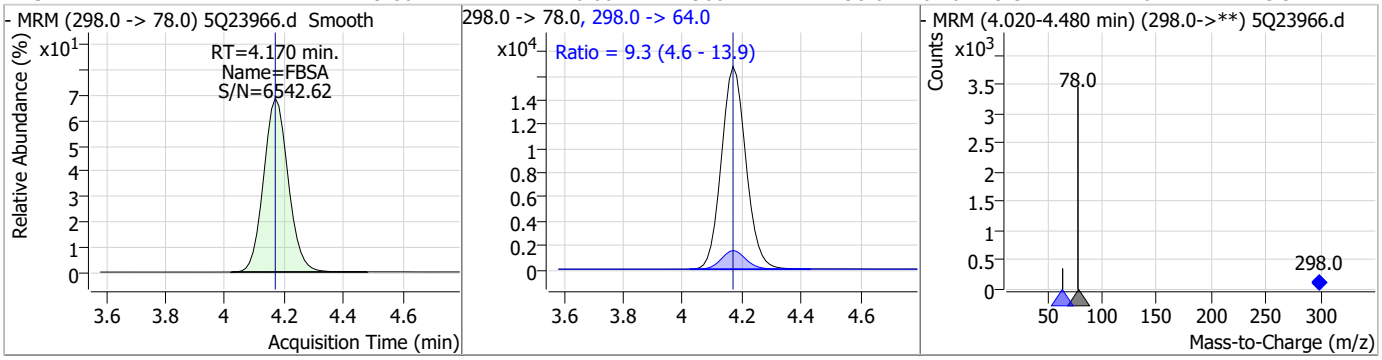
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	18.74	3.63	0.00	53953	299.0 -> 99.0	43.9	22.0	65.9



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	11.98	3.62	-0.01	11632				

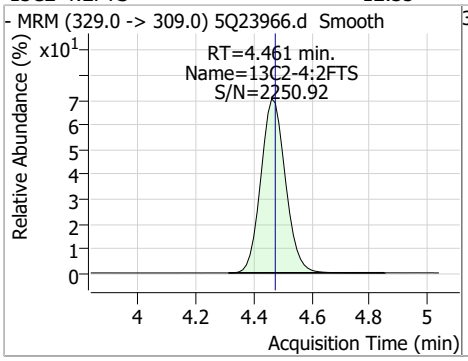


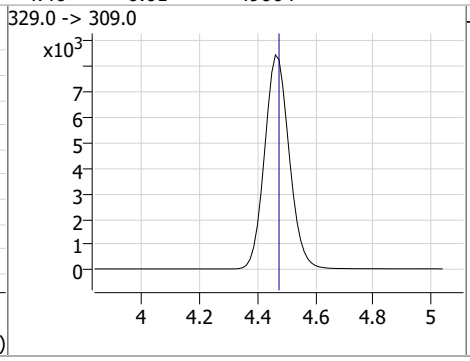
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	19.80	4.17	0.00	96024	298.0 -> 64.0	9.3	4.6	13.9

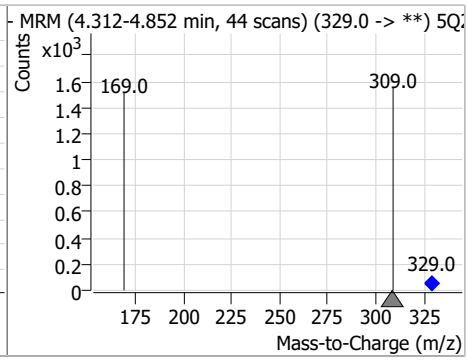


Perfluorinated Compounds by LC/MS/MS

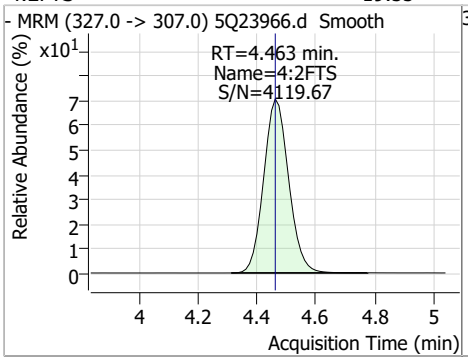
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	12.35	4.46	-0.01	49664				

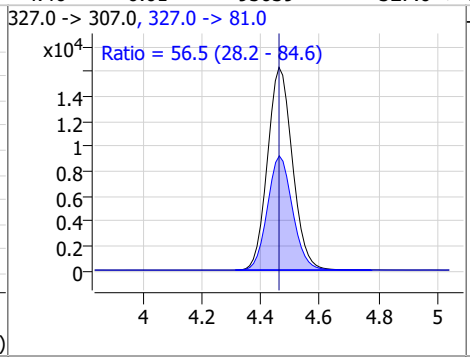


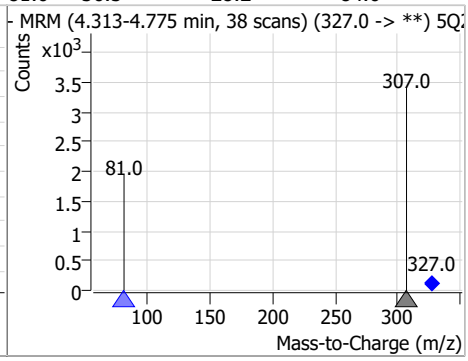




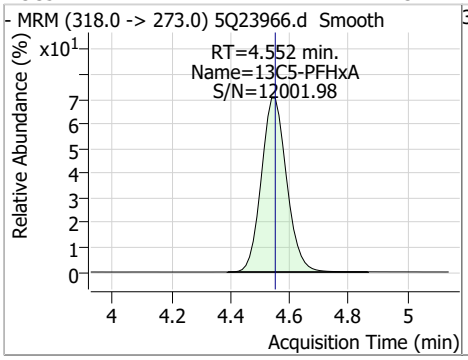
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	19.55	4.46	-0.01	95639	327.0 -> 81.0	56.5	28.2	84.6

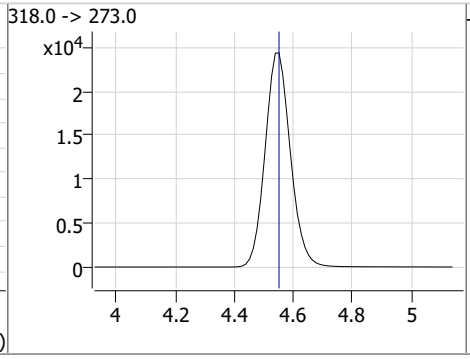


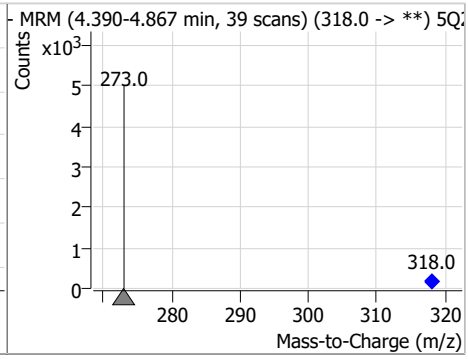




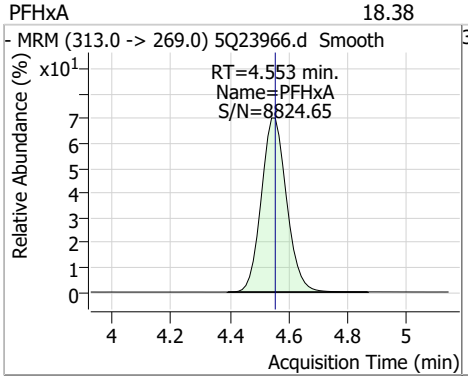
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	12.13	4.55	0.00	144982				

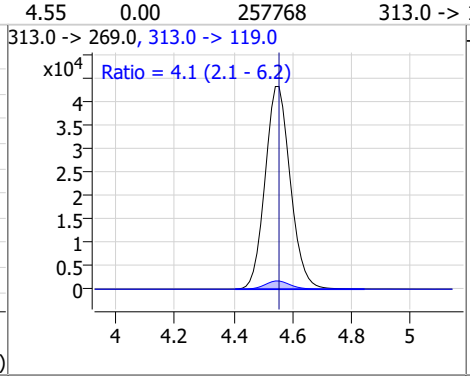


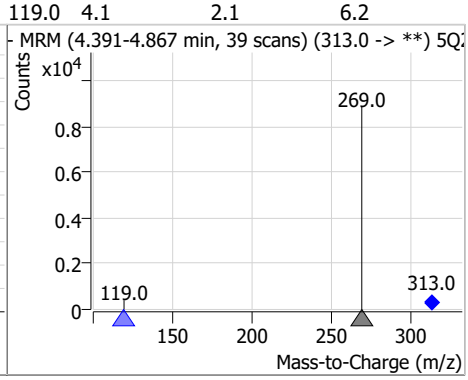




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	18.38	4.55	0.00	257768	313.0 -> 119.0	4.1	2.1	6.2

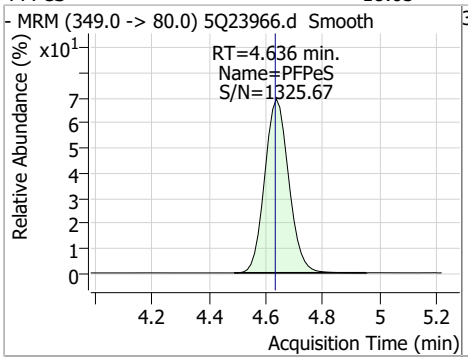


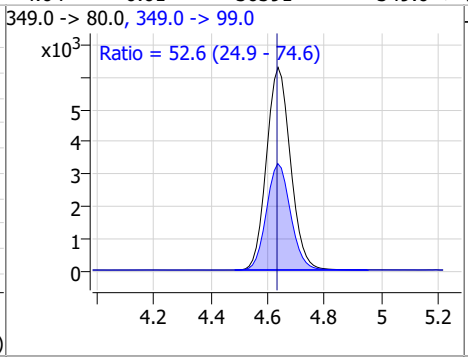


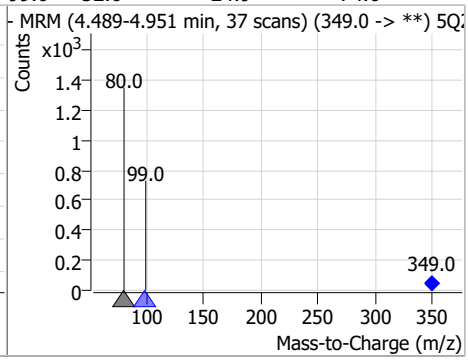


Perfluorinated Compounds by LC/MS/MS

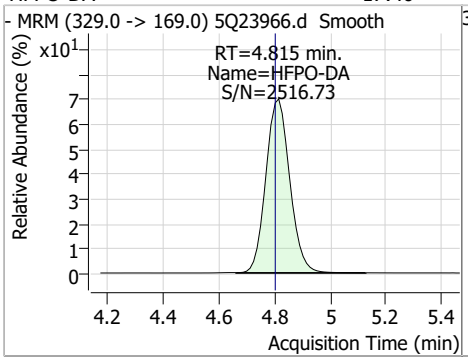
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	18.05	4.64	-0.01	36591	349.0 -> 99.0	52.6	24.9	74.6

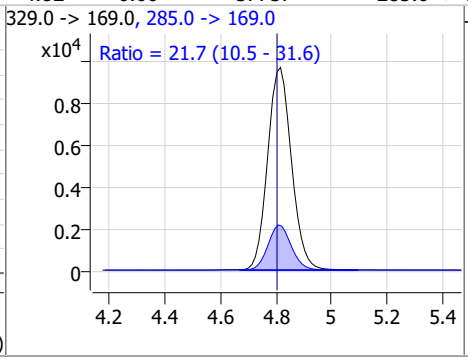


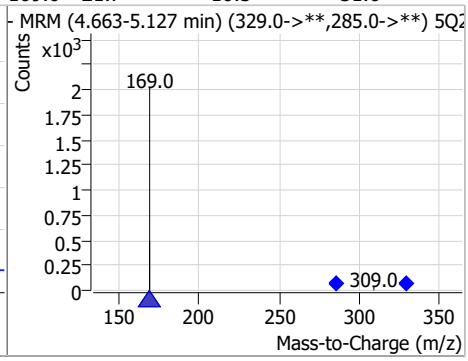




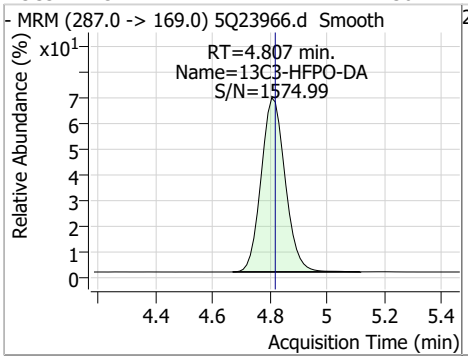
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	17.40	4.82	0.00	57757	285.0 -> 169.0	21.7	10.5	31.6

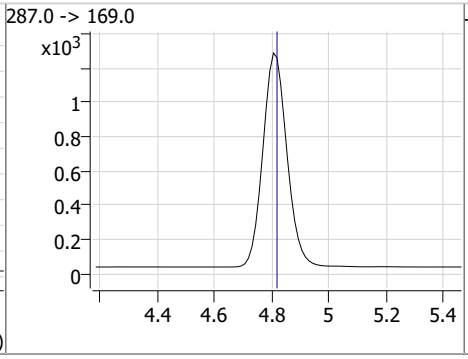


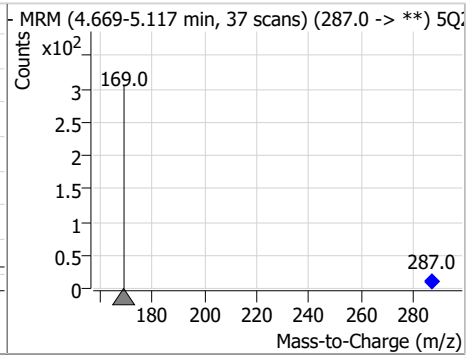




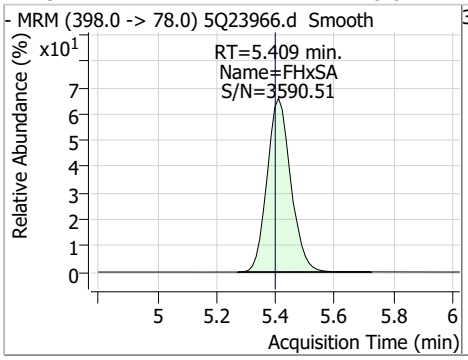
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	11.30	4.81	-0.01	7298				

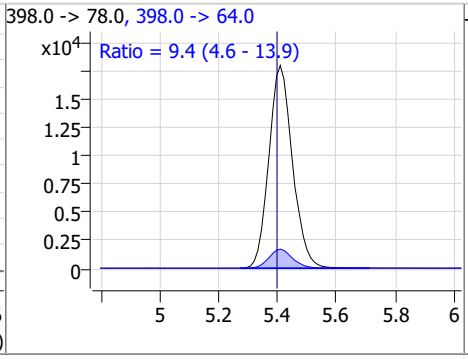


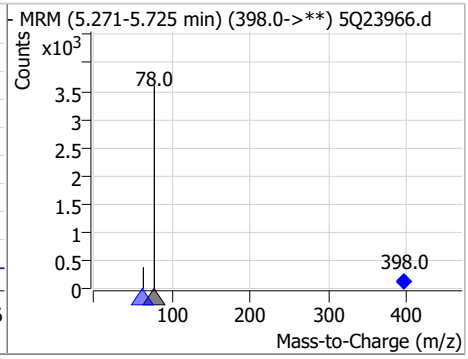




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	19.57	5.41	0.00	100147	398.0 -> 64.0	9.4	4.6	13.9

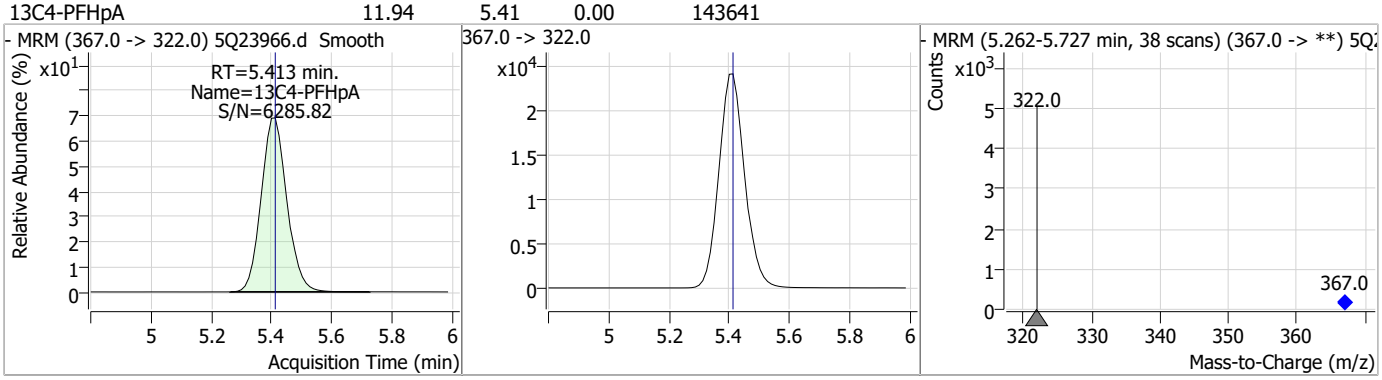




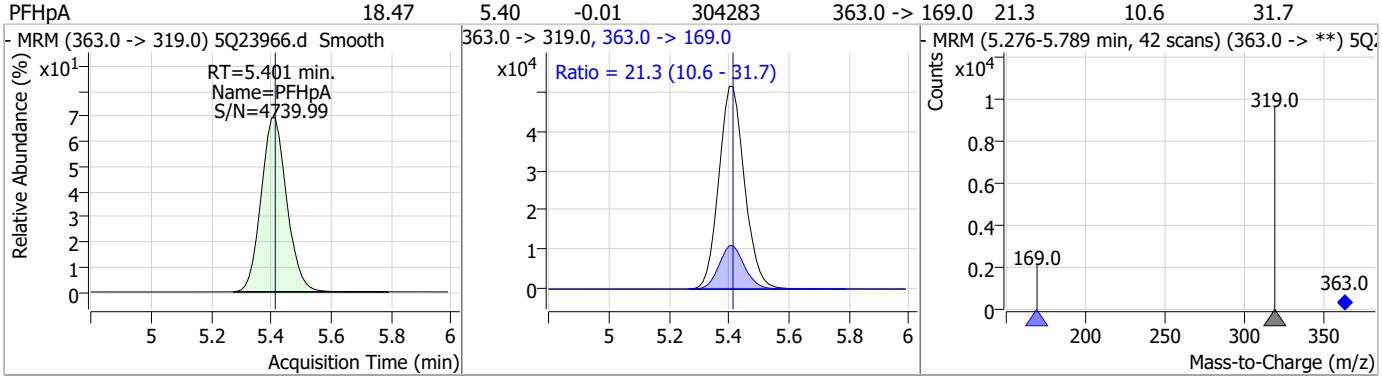


Perfluorinated Compounds by LC/MS/MS

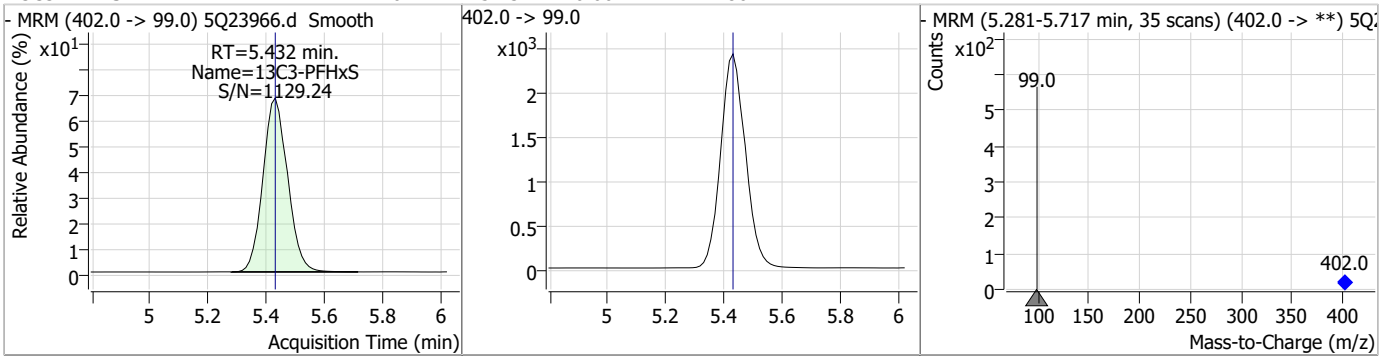
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	11.94	5.41	0.00	143641				



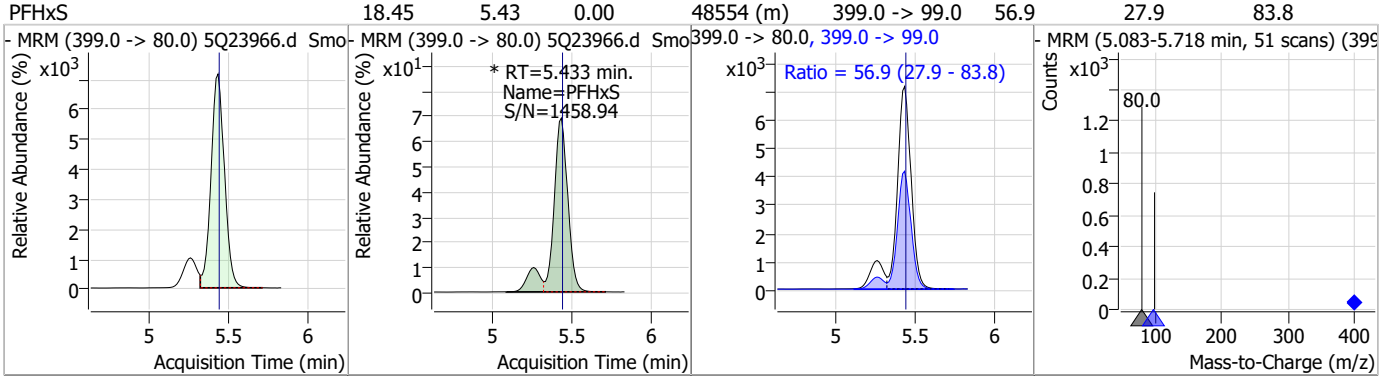
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	18.47	5.40	-0.01	304283	363.0 -> 169.0	21.3	10.6	31.7



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	12.02	5.43	0.00	14186				

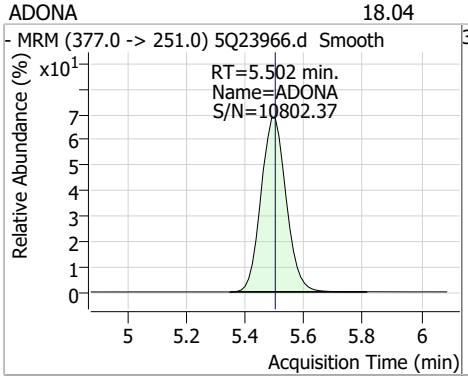


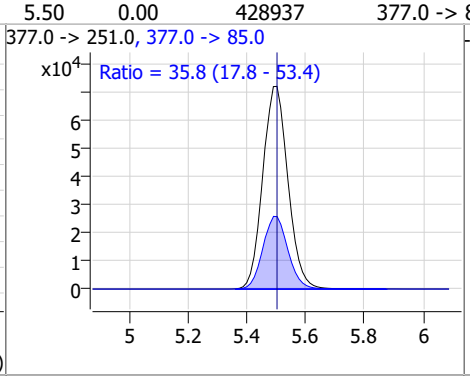
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	18.45	5.43	0.00	48554 (m)	399.0 -> 99.0	56.9	27.9	83.8

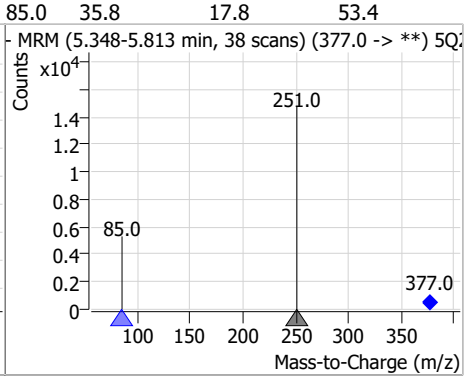


Perfluorinated Compounds by LC/MS/MS

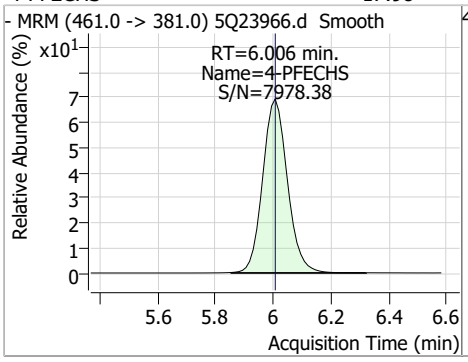
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	18.04	5.50	0.00	428937	377.0 -> 85.0	35.8	17.8	53.4

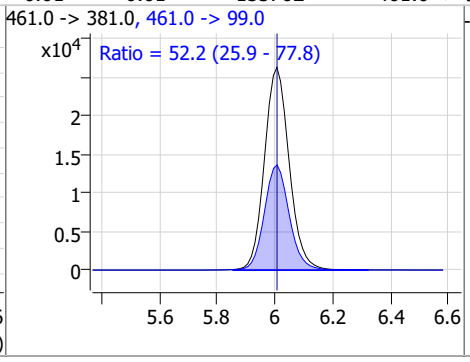


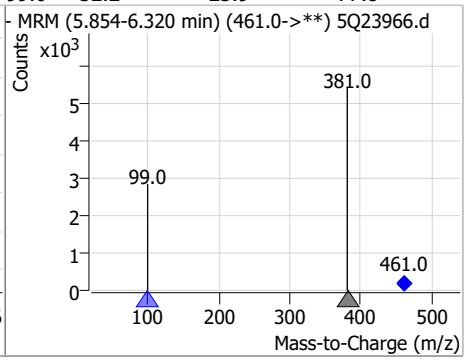




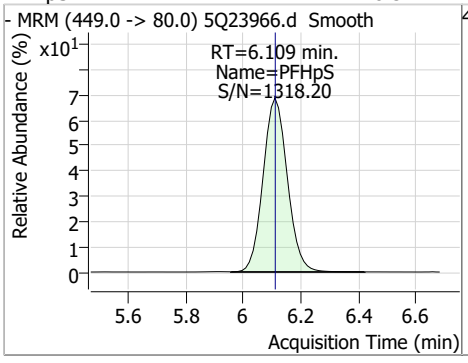
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS	17.98	6.01	-0.01	155762	461.0 -> 99.0	52.2	25.9	77.8

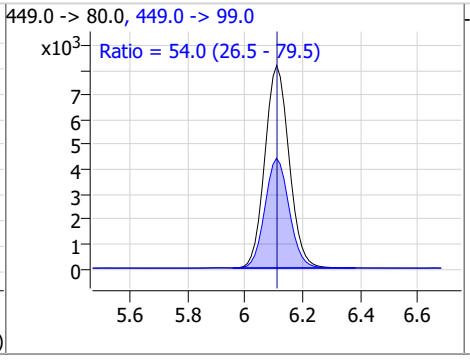


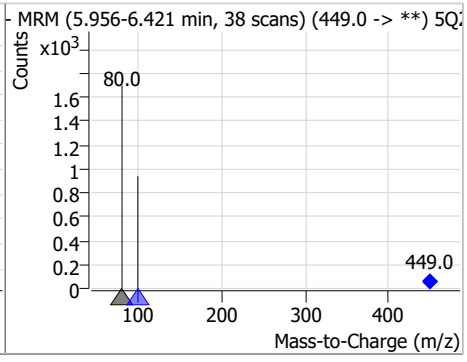




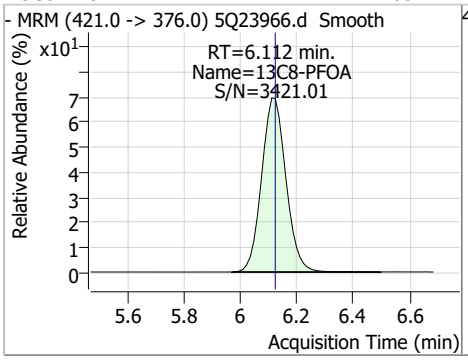
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	18.34	6.11	-0.01	47739	449.0 -> 99.0	54.0	26.5	79.5

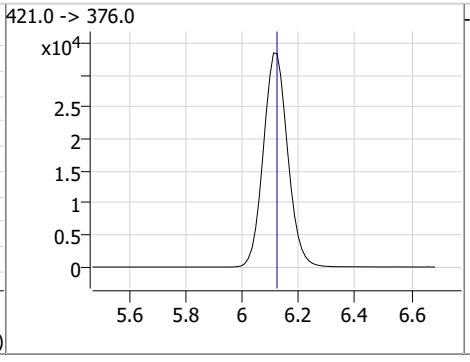


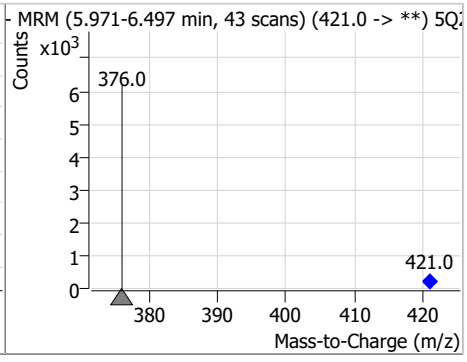




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	12.05	6.11	-0.01	199533				

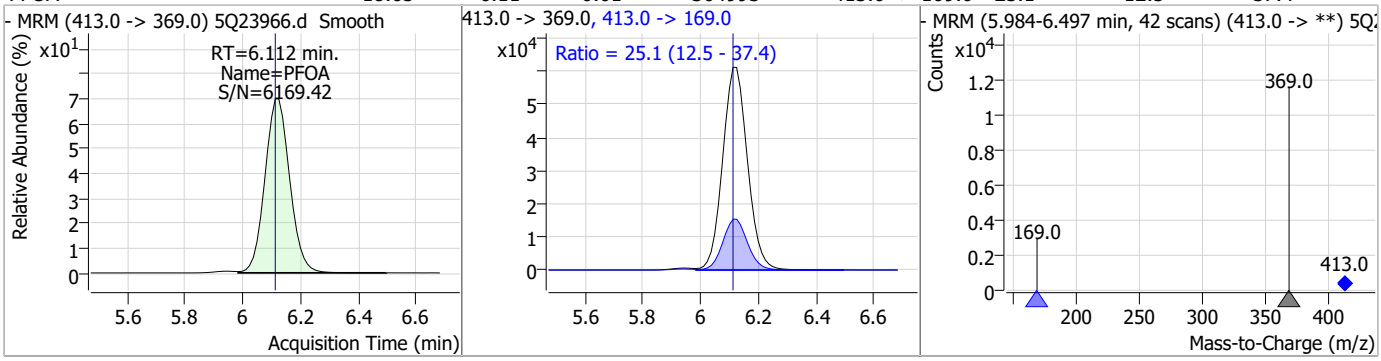




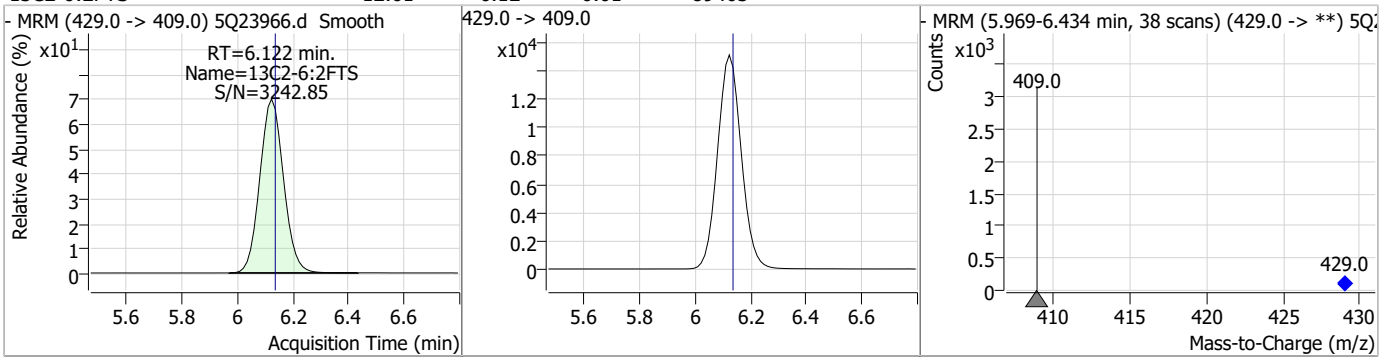


Perfluorinated Compounds by LC/MS/MS

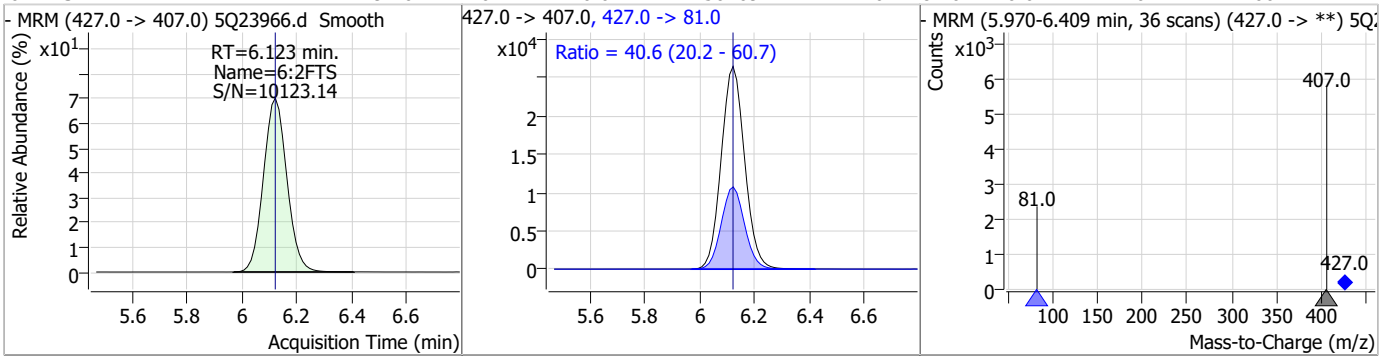
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	18.65	6.11	-0.01	364993	413.0 -> 169.0	25.1	12.5	37.4



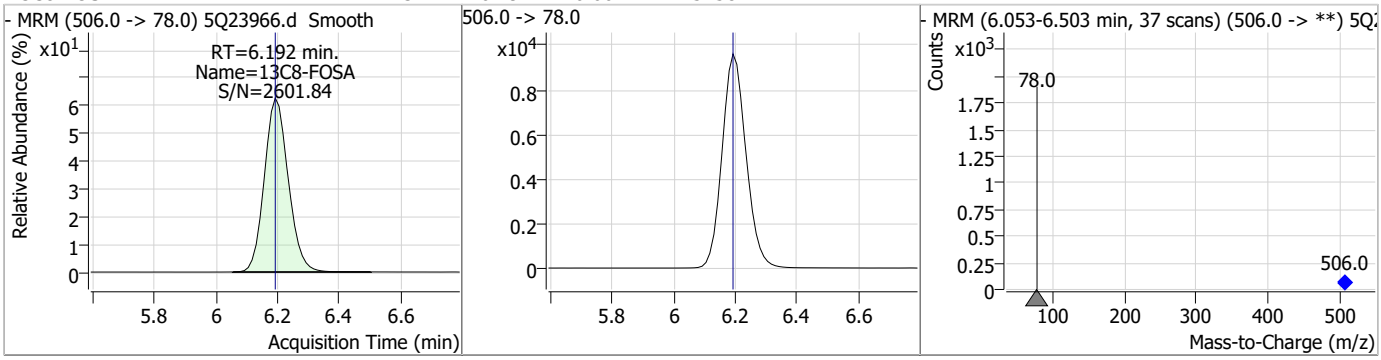
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	12.61	6.12	-0.01	89403				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	19.16	6.12	-0.01	156769	427.0 -> 81.0	40.6	20.2	60.7

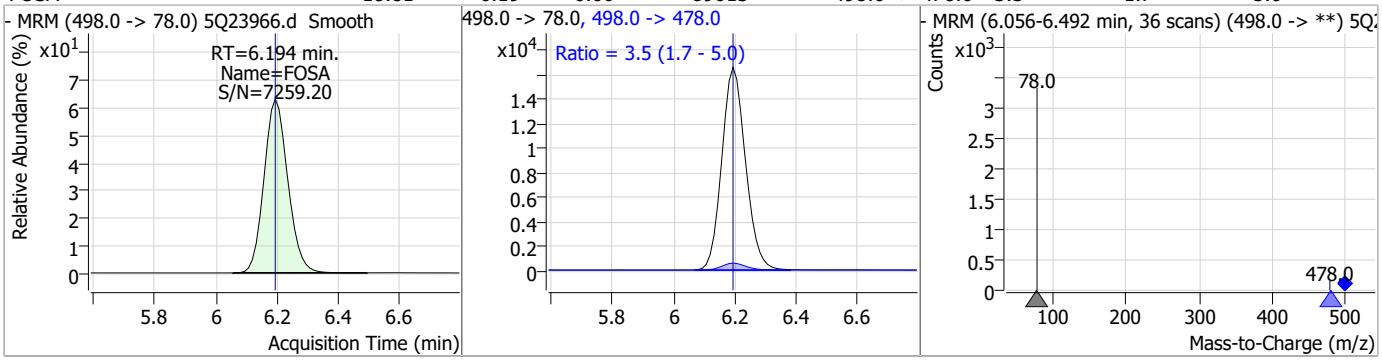


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	12.73	6.19	0.00	51584				

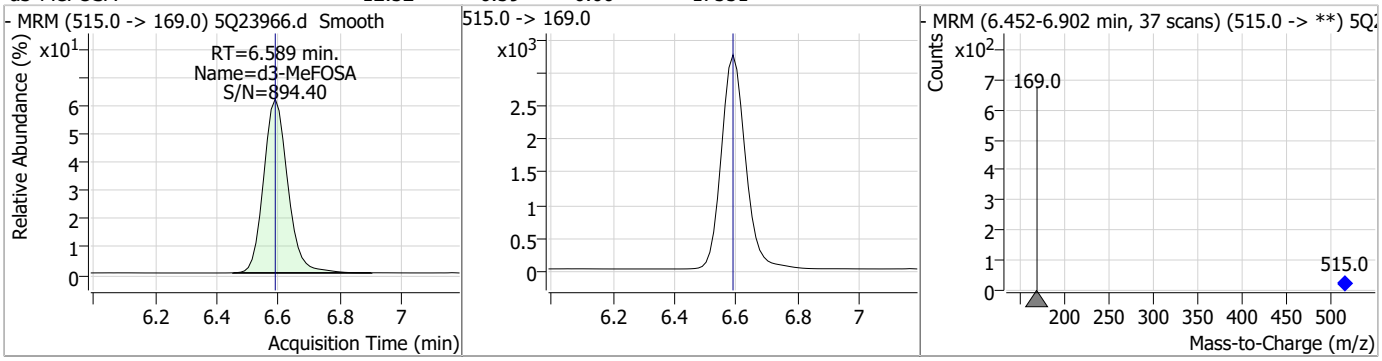


Perfluorinated Compounds by LC/MS/MS

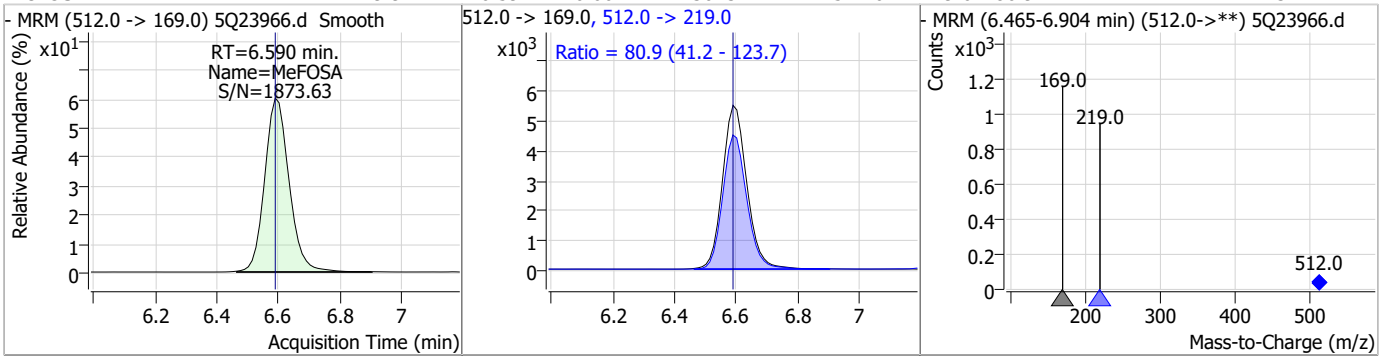
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	18.81	6.19	0.00	89013	498.0 -> 478.0	3.5	1.7	5.0



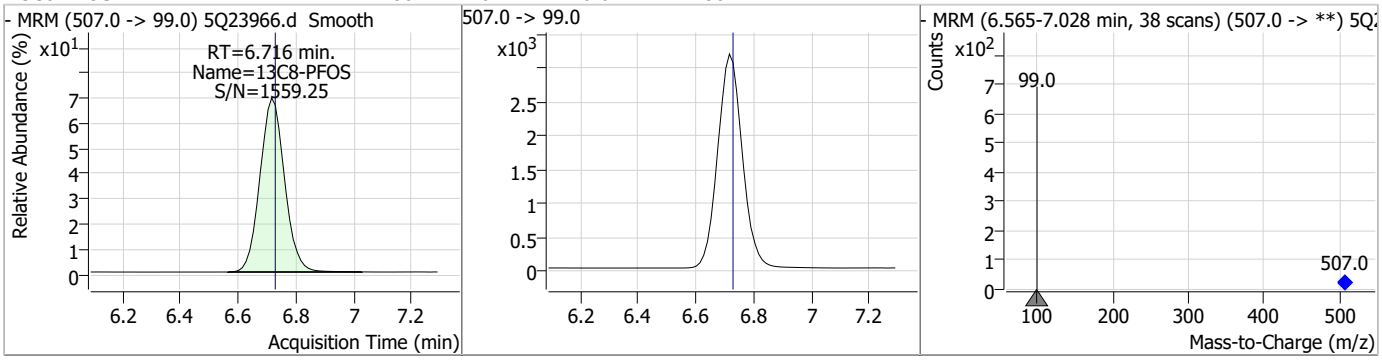
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	12.52	6.59	0.00	17551				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	19.91	6.59	0.00	30232	512.0 -> 219.0	80.9	41.2	123.7

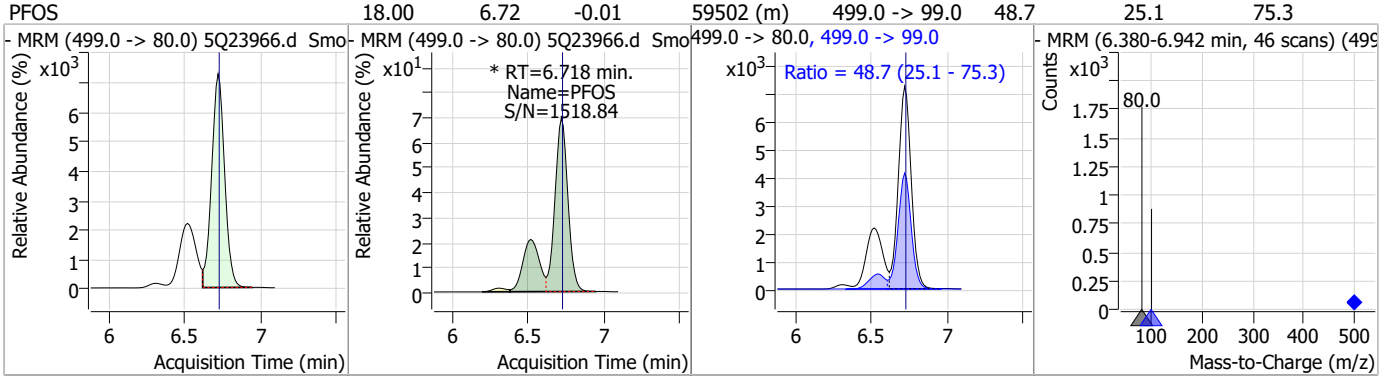


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	11.86	6.72	-0.01	18642				

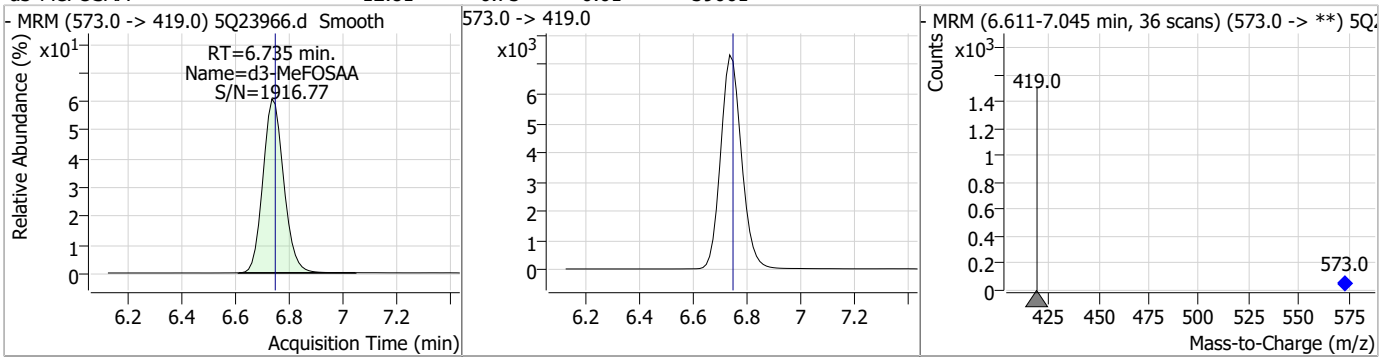


Perfluorinated Compounds by LC/MS/MS

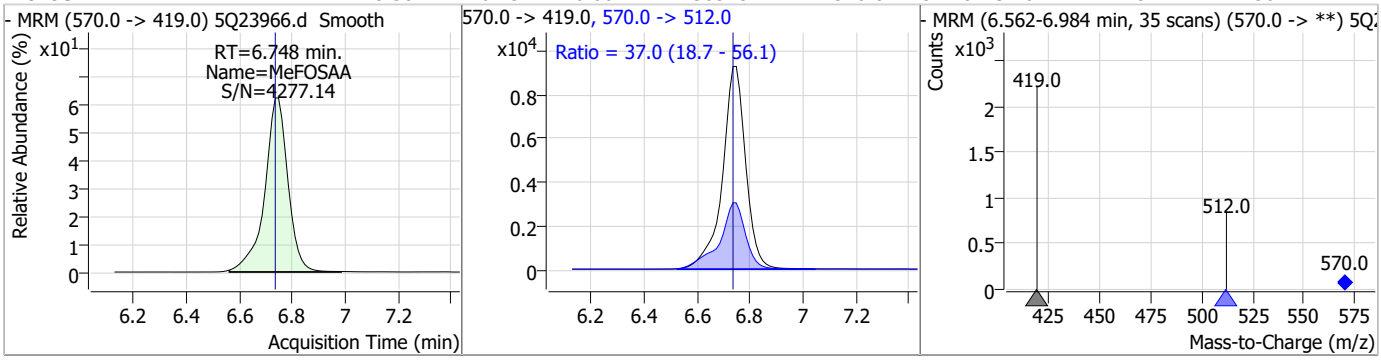
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	18.00	6.72	-0.01	59502 (m)	499.0 -> 99.0	48.7	25.1	75.3



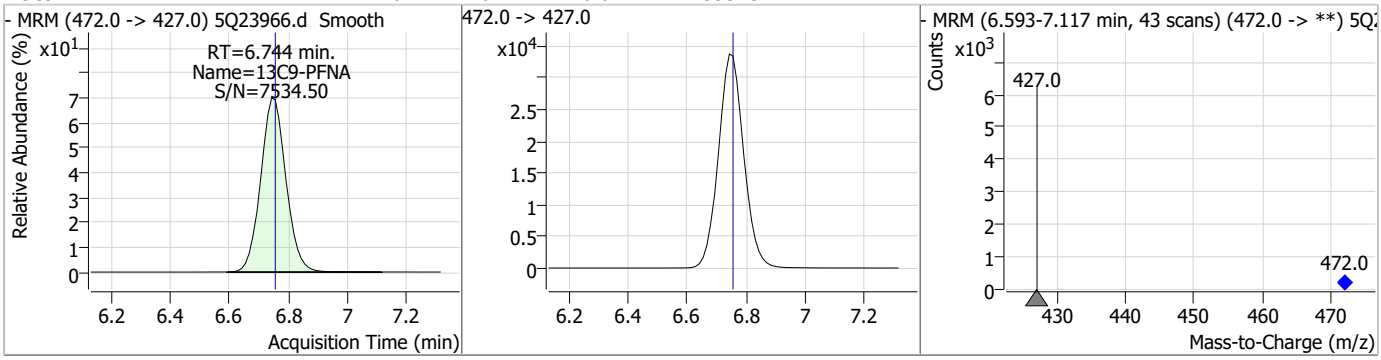
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	12.81	6.73	-0.01	39061				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	18.56	6.75	0.00	56578	570.0 -> 512.0	37.0	18.7	56.1

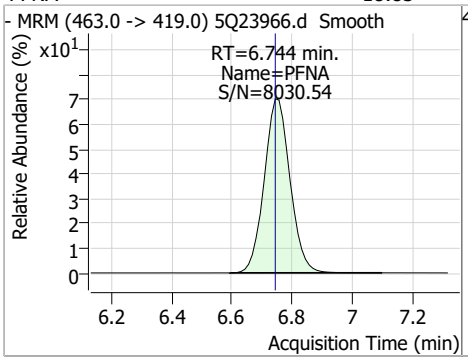


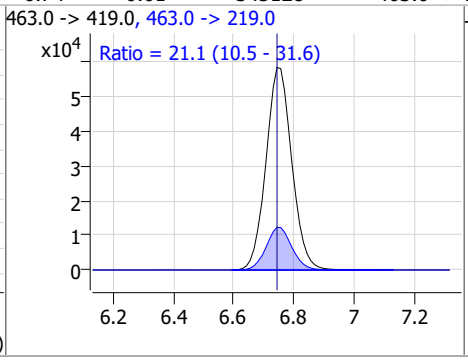
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	12.04	6.74	-0.01	199943				

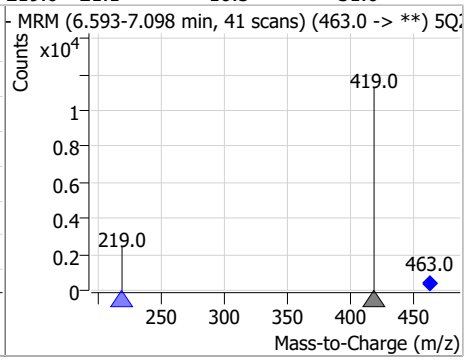


Perfluorinated Compounds by LC/MS/MS

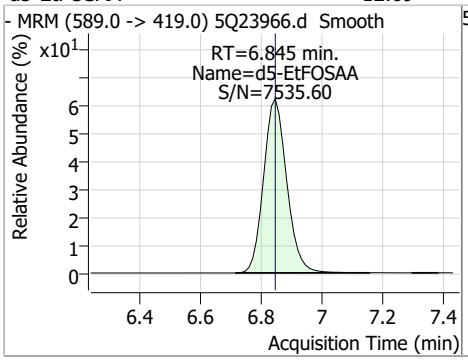
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	18.85	6.74	-0.01	345128	463.0 -> 219.0	21.1	10.5	31.6

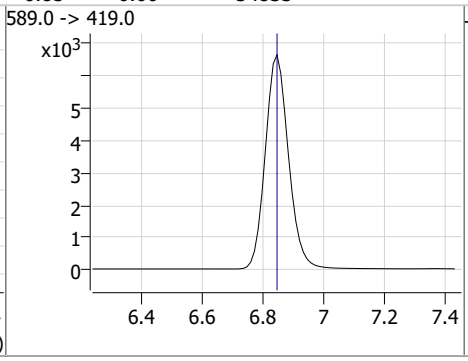


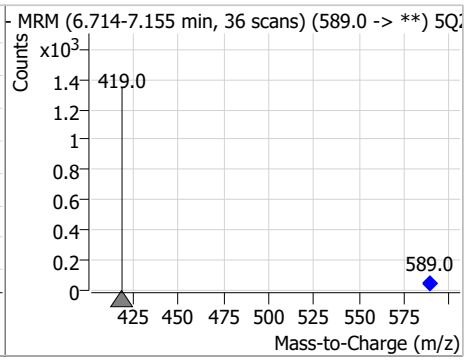




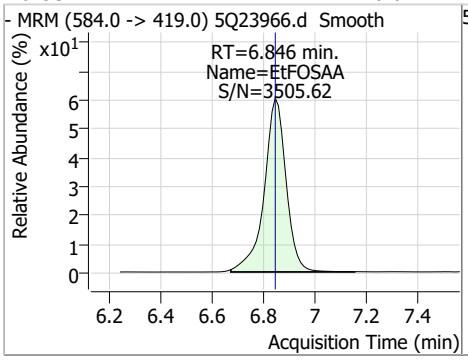
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	12.69	6.85	0.00	34833				

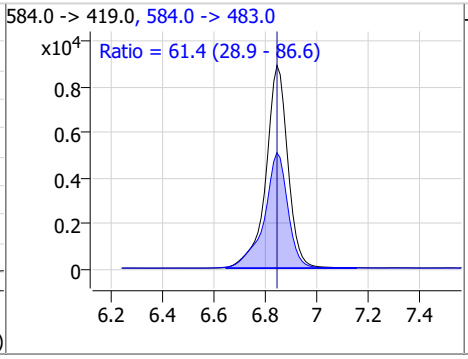


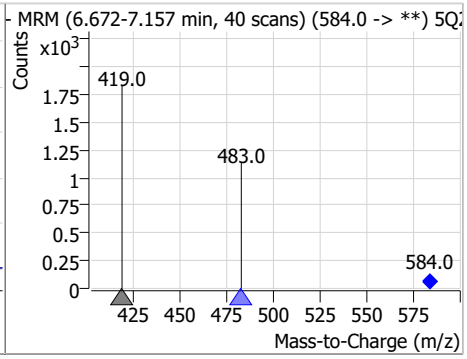




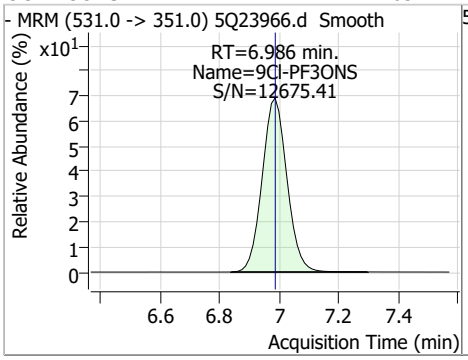
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	18.64	6.85	0.00	52981	584.0 -> 483.0	61.4	28.9	86.6

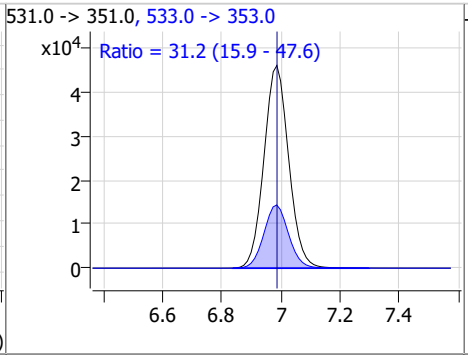


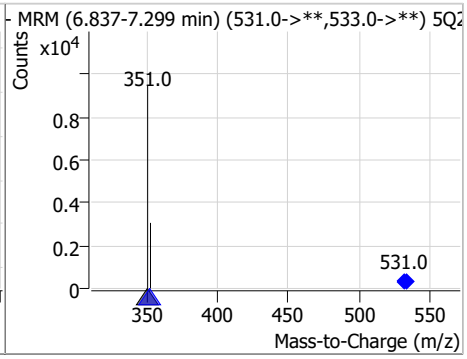




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	17.63	6.99	-0.01	266009	533.0 -> 353.0	31.2	15.9	47.6

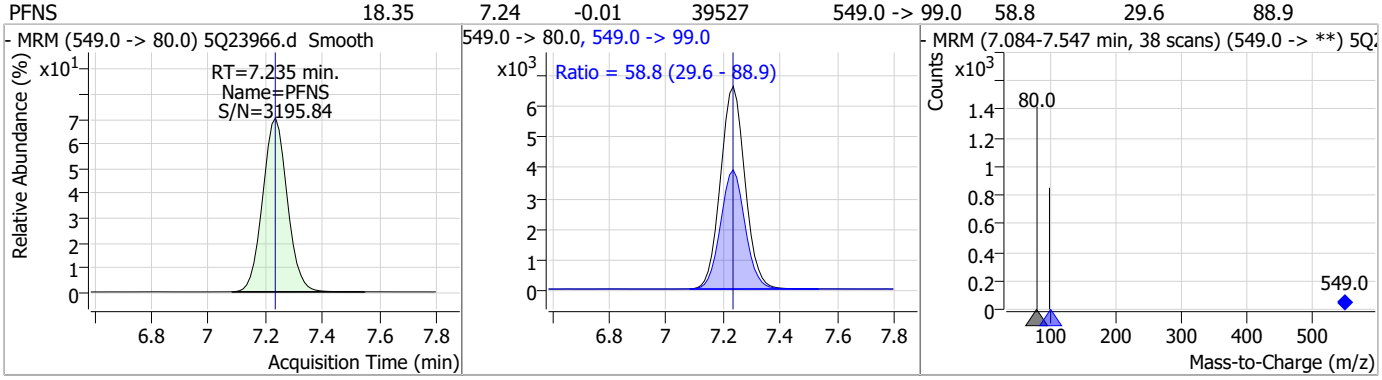




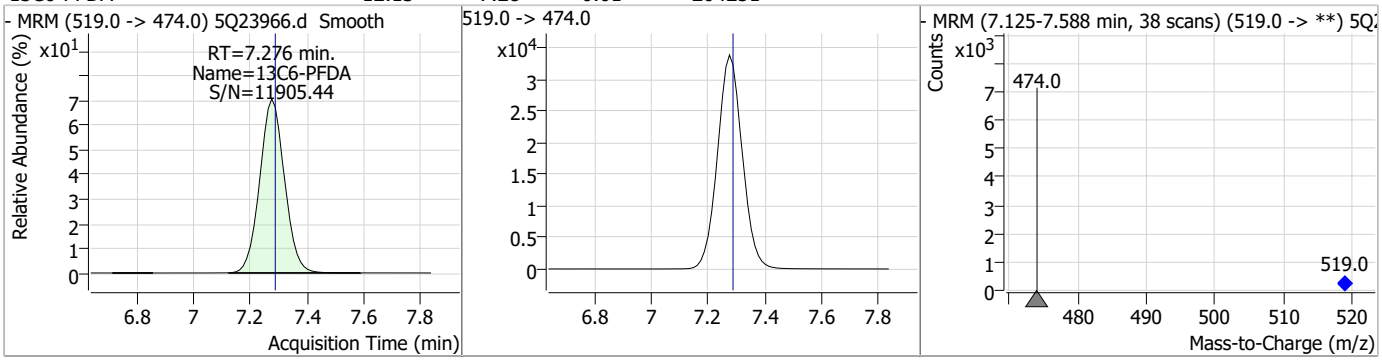


Perfluorinated Compounds by LC/MS/MS

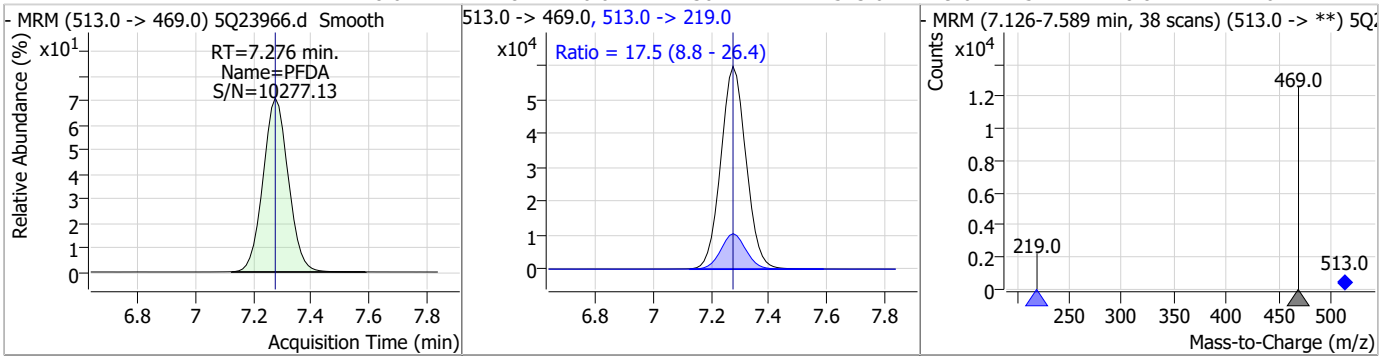
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	18.35	7.24	-0.01	39527	549.0 -> 99.0	58.8	29.6	88.9



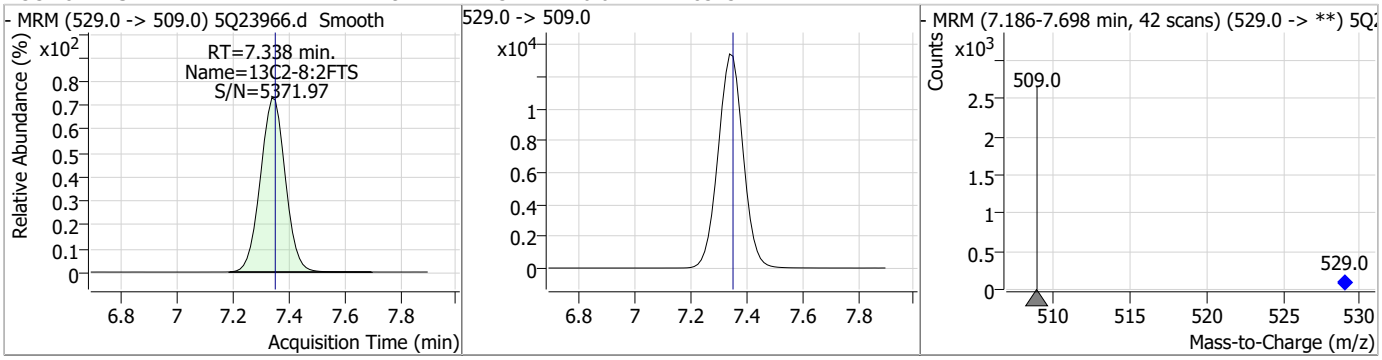
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	12.13	7.28	-0.01	204251				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	18.61	7.28	-0.01	361127	513.0 -> 219.0	17.5	8.8	26.4

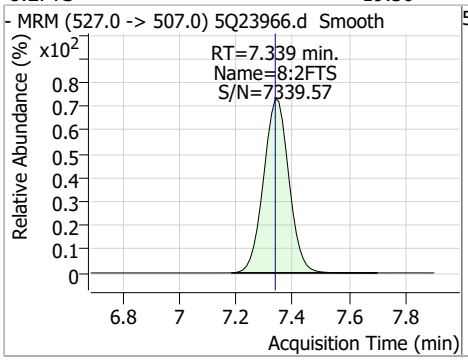


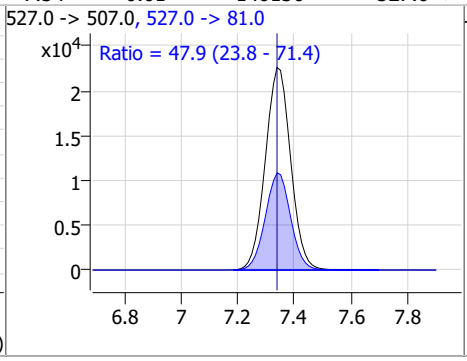
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	11.91	7.34	-0.01	83132				

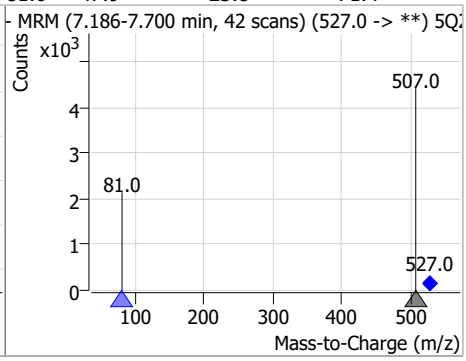


Perfluorinated Compounds by LC/MS/MS

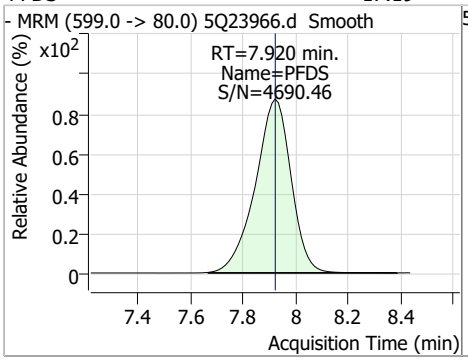
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	19.30	7.34	-0.01	140136	527.0 -> 81.0	47.9	23.8	71.4

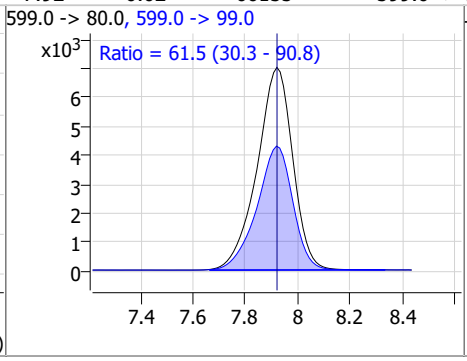


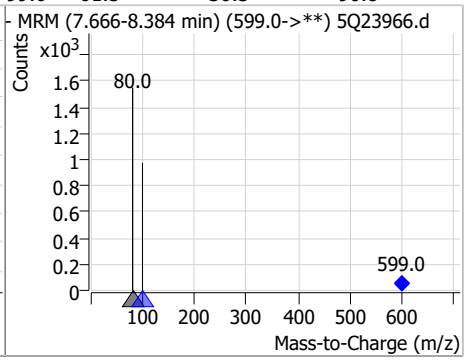




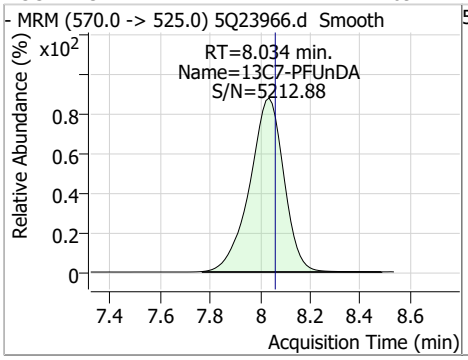
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	17.19	7.92	-0.02	66155	599.0 -> 99.0	61.5	30.3	90.8

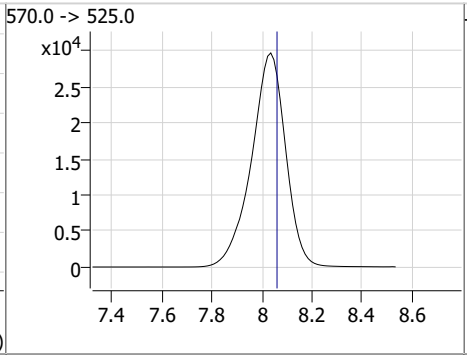


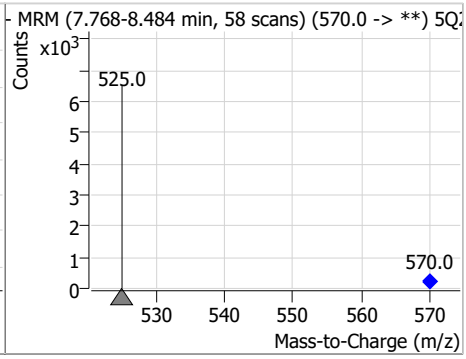




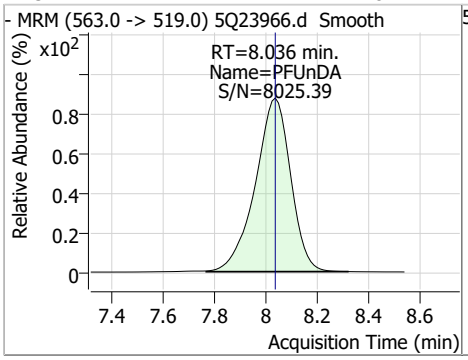
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	12.09	8.03	-0.02	281851				

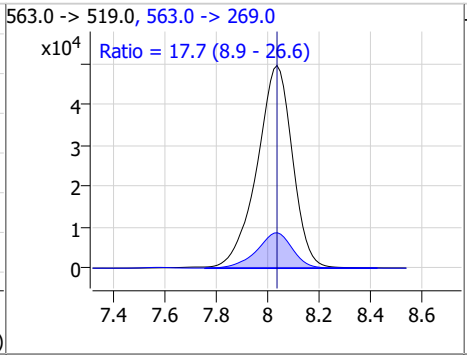


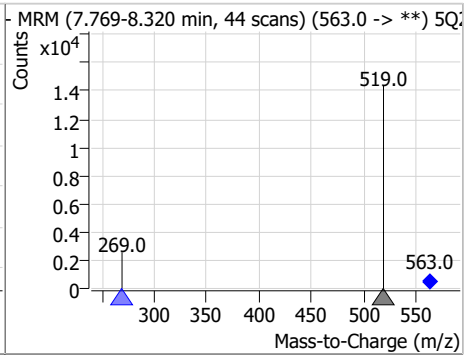




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	18.47	8.04	-0.02	469699	563.0 -> 269.0	17.7	8.9	26.6

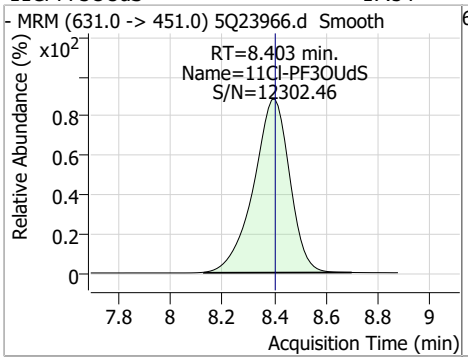


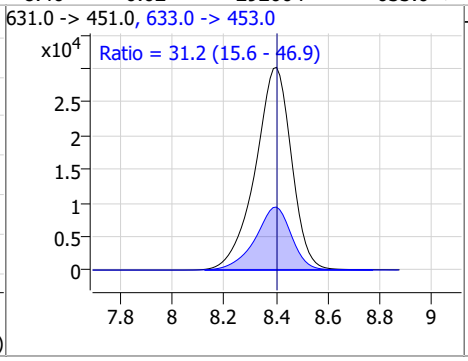


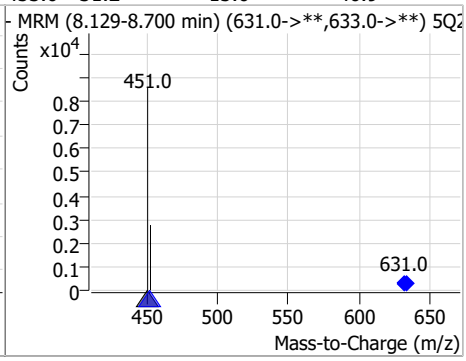


Perfluorinated Compounds by LC/MS/MS

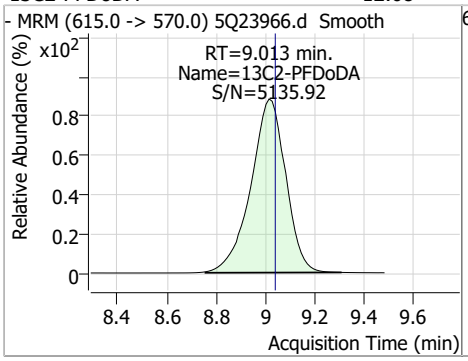
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	17.54	8.40	-0.02	292064	633.0 -> 453.0	31.2	15.6	46.9

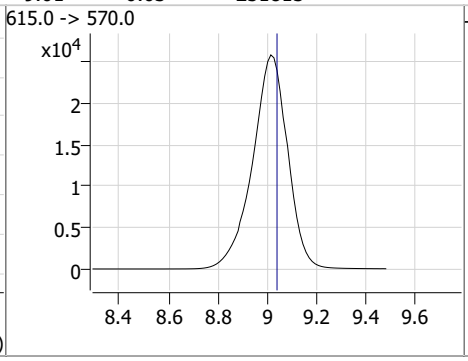


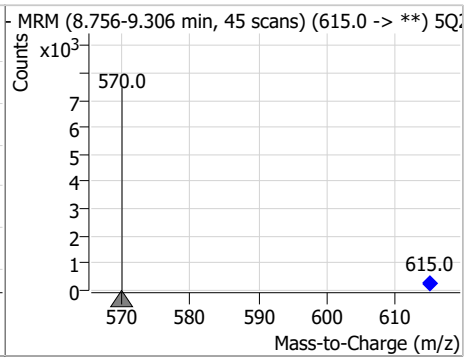




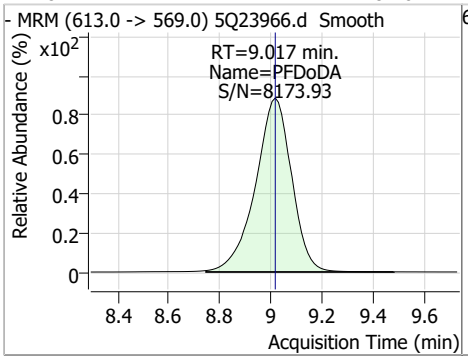
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	12.08	9.01	-0.03	251813				

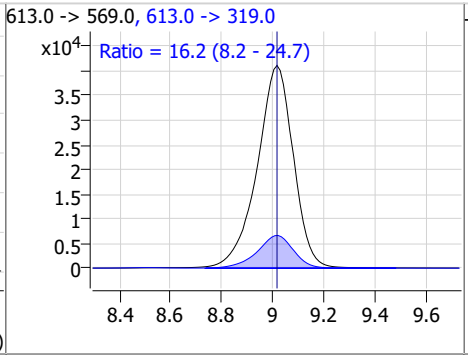


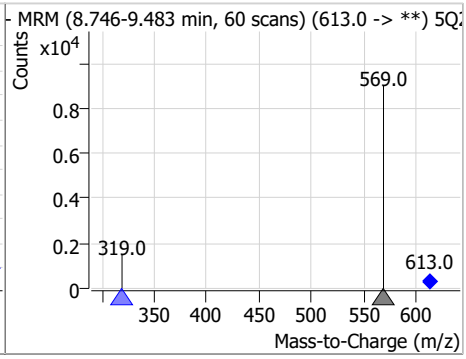




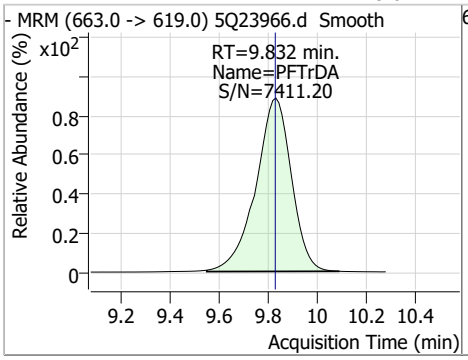
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	18.76	9.02	-0.03	405502	613.0 -> 319.0	16.2	8.2	24.7

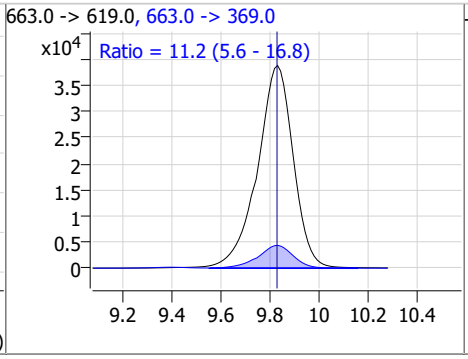


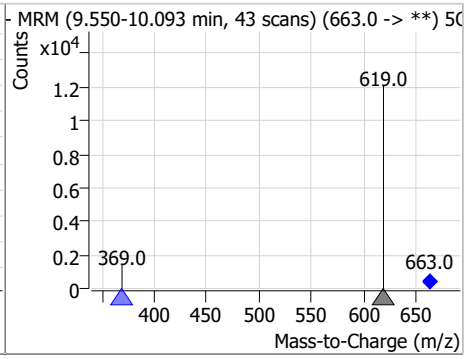




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	18.02	9.83	-0.03	389852	663.0 -> 369.0	11.2	5.6	16.8

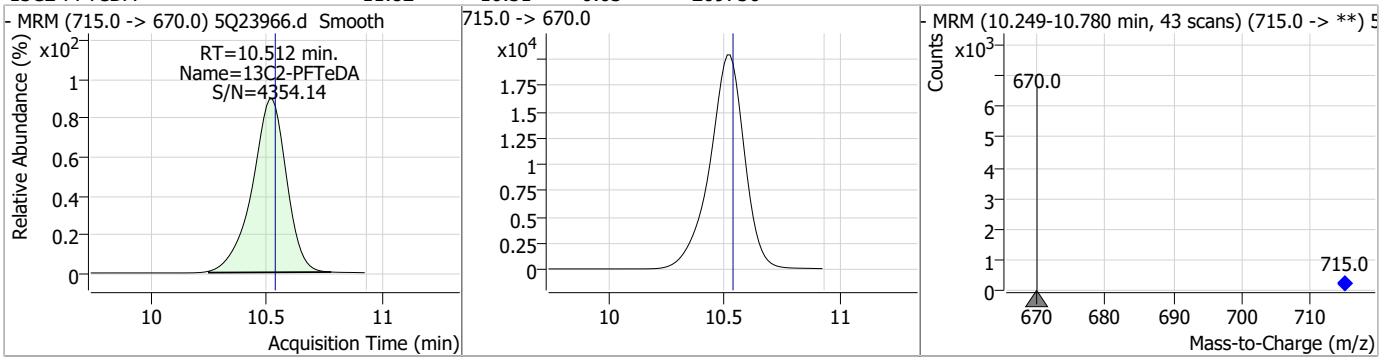




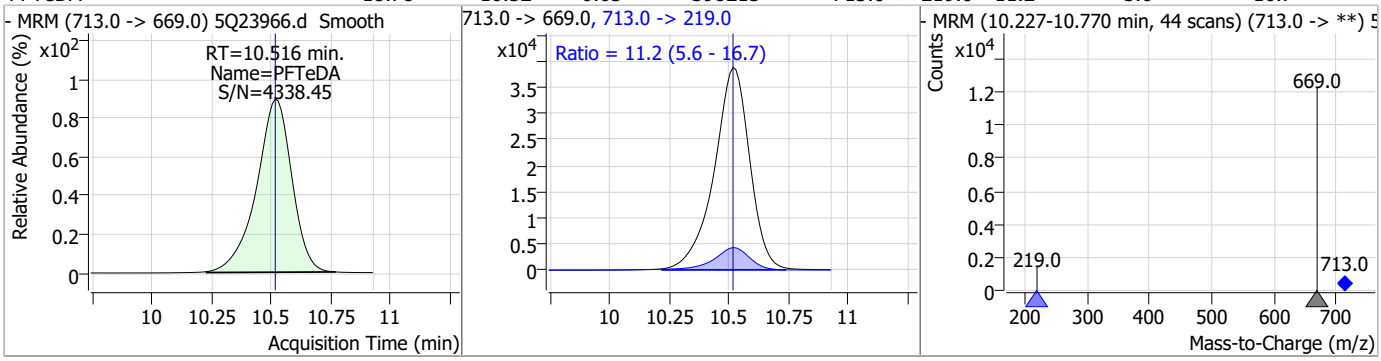


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	11.82	10.51	-0.03	209736				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	18.78	10.52	-0.03	398213	713.0 -> 219.0	11.2	5.6	16.7



9.6.32

9

Manual Integration Approval Summary

Sample Number: S5Q375-CC375
Lab FileID: 5Q23966.D
Injection Time: 12/29/23 06:33
Method: EPA 537M QSM5.3 B-15
Analyst approved: 12/29/23 14:15 Lindsay Ritner
Supervisor approved: 01/02/24 14:05 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.43	Split peak
Perfluorooctanesulfonic acid	1763-23-1		6.72	Split peak

QQQ Check Tune Report

Agilent | Trusted Answers

Instrument Name	LCMS5Q
MS Model	G6470B
MS Instrument Serial	SG2221G211
Software_Firmware Version	10.1.67, FW: A.00.08.112
Tune Date & Time	02 January 2024 14:49:07
File Path	D:\MassHunter\Tune\QQQ\G6470B\atunes.TUNE.XML
Ion Source	AJS ESI
Ionization Mode	AJS ESI
Tuned Resolution	All
Vacuum Pressure	1.16E+0 [R] (Torr); 3.79E-5 [H] (Torr)

Source Parameters

Parameter	Negative
Gas Temp (°C)	300
Gas Flow (l/min)	8
Nebulizer (psi)	15
Capillary (V)	3500
Nozzle Voltage (V)	1500
Sheath Gas Temp (°C)	250
Sheath Gas Flow (l/min)	7

QQQ Check Tune Report

Agilent | Trusted Answers

Negative Results

Analyzer: MS1 Polarity: Negative Width: Unit

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
112.99	112.99	0.00	Pass	0.70	0.70	0.00	Pass	108515
302.00	301.98	-0.02	Pass	0.70	0.68	-0.02	Pass	79671
601.98	601.91	-0.07	Pass	0.70	0.68	-0.02	Pass	357303
1033.99	1033.89	-0.10	Pass	0.70	0.67	-0.03	Pass	562976
1633.95	1633.77	-0.18	Pass	0.70	0.65	-0.05	Pass	1329933
2233.91	2233.61	-0.30	Pass	0.70	0.64	-0.06	Pass	752294

Analyzer: MS2 Polarity: Negative Width: Unit

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
69.00	69.05	0.05	Pass	0.70	0.67	-0.03	Pass	20838
112.99	112.96	-0.03	Pass	0.70	0.74	0.04	Pass	67813
302.00	301.98	-0.02	Pass	0.70	0.71	0.01	Pass	46260
601.98	601.91	-0.07	Pass	0.70	0.70	0.00	Pass	152151
1033.99	1033.90	-0.09	Pass	0.70	0.71	0.01	Pass	181662
1633.95	1633.80	-0.15	Pass	0.70	0.70	0.00	Pass	398403
2233.91	2233.69	-0.22	Pass	0.70	0.71	0.01	Pass	250353

Analyzer: MS1 Polarity: Negative Width: Wide

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
112.99	113.00	0.01	Pass	1.20	1.29	0.09	Pass	141451
302.00	301.98	-0.02	Pass	1.20	1.53	0.33	Pass	104635
601.98	601.89	-0.09	Pass	1.20	1.58	0.38	Pass	545839
1033.99	1033.86	-0.13	Pass	1.20	1.48	0.28	Pass	1149210
1633.95	1633.73	-0.22	Pass	1.20	1.34	0.14	Pass	3017792
2233.91	2233.59	-0.32	Pass	1.20	1.10	-0.10	Pass	1942941

Analyzer: MS2 Polarity: Negative Width: Wide

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
69.00	69.05	0.05	Pass	1.20	1.13	-0.07	Pass	27606
112.99	112.97	-0.02	Pass	1.20	1.21	0.01	Pass	90411
302.00	301.99	-0.01	Pass	1.20	1.30	0.10	Pass	68145
601.98	601.93	-0.05	Pass	1.20	1.38	0.18	Pass	319453
1033.99	1033.87	-0.12	Pass	1.20	1.37	0.17	Pass	542798
1633.95	1633.74	-0.21	Pass	1.20	1.32	0.12	Pass	1267848
2233.91	2233.65	-0.26	Pass	1.20	1.15	-0.05	Pass	699751

Analyzer: MS1 Polarity: Negative Width: Widest

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
112.99	112.99	0.00	Pass	2.50	2.45	-0.05	Pass	154798
302.00	301.99	-0.01	Pass	2.50	2.74	0.24	Pass	113379
601.98	601.91	-0.07	Pass	2.50	2.78	0.28	Pass	635698
1033.99	1033.84	-0.15	Pass	2.50	2.68	0.18	Pass	1773940
1633.95	1633.72	-0.23	Pass	2.50	2.60	0.10	Pass	5759571
2233.91	2233.57	-0.34	Pass	2.50	2.43	-0.07	Pass	5125983

Analyzer: MS2 Polarity: Negative Width: Widest

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
69.00	69.02	0.02	Pass	2.50	2.37	-0.13	Pass	35787
112.99	112.99	0.00	Pass	2.50	2.46	-0.04	Pass	127724
302.00	301.98	-0.02	Pass	2.50	2.57	0.07	Pass	96476
601.98	601.94	-0.04	Pass	2.50	2.60	0.10	Pass	513906
1033.99	1033.88	-0.11	Pass	2.50	2.56	0.06	Pass	1124337
1633.95	1633.75	-0.20	Pass	2.50	2.52	0.02	Pass	3633080
2233.91	2233.61	-0.30	Pass	2.50	2.38	-0.12	Pass	2961692

Manual Integrations APPROVED (compounds with "m" flag)
Natasha Gumtie 01/04/24 12:54

Perfluorinated Compounds by LC/MS/MS

Data File : 5Q24026.d
Operator : lindsayr
Acq. Method : 537_ID.m
Acq. Date-Time : 1/2/2024 5:05:42 PM
Sample Name : ic377-0.5
Vial : P1-A2
DA Method File : ID_010224_S5Q377.quantmethod.xml
Batch Name : s5q377.batch.bin
Sample Information : OP401,S5Q377,250,,,1.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.987	217.0 -> 172.0	43965	10.00	µg/L	0.000
M5-PFPeA	3.432	268.0 -> 223.0	71246	10.00	µg/L	0.000
M5-PFHxA	4.552	318.0 -> 273.0	113516	10.00	µg/L	-0.012
M4-PFHpA	5.425	367.0 -> 322.0	118416	10.00	µg/L	0.000
M8-PFOA	6.137	421.0 -> 376.0	162264	10.00	µg/L	-0.012
M9-PFNA	6.768	472.0 -> 427.0	166111	10.00	µg/L	-0.012
M6-PFDA	7.301	519.0 -> 474.0	172682	10.00	µg/L	-0.012
M7-PFUnDA	8.109	570.0 -> 525.0	243399	10.00	µg/L	-0.025
M2-PFDoDA	9.081	615.0 -> 570.0	222819	10.00	µg/L	-0.037
M2-PFTeDA	10.587	715.0 -> 670.0	189244	10.00	µg/L	-0.025
M8-FOSA	6.192	506.0 -> 78.0	39303	10.00	µg/L	-0.012
M3-PFBS	3.624	302.0 -> 99.0	9379	10.00	µg/L	-0.012
M3-PFHxS	5.444	402.0 -> 99.0	11401	10.00	µg/L	0.000
M8-PFOS	6.741	507.0 -> 99.0	15796	10.00	µg/L	-0.012
M2-4:2FTS	4.474	329.0 -> 309.0	35743	10.00	µg/L	-0.012
M2-6:2FTS	6.135	429.0 -> 409.0	69395	10.00	µg/L	-0.012
M2-8:2FTS	7.376	529.0 -> 509.0	67263	10.00	µg/L	0.000
M3-MeFOSAA	6.747	573.0 -> 419.0	34178	10.00	µg/L	0.000
M3-HFPO-DA	4.819	287.0 -> 169.0	6185	10.00	µg/L	-0.012
M3-MeFOSA	6.589	515.0 -> 169.0	12200	10.00	µg/L	0.000
M5-EtFOSAA	6.845	589.0 -> 419.0	29989	10.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.474	329.0 -> 309.0	35743	9.15	µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 91.5%		
13C2-6:2FTS	6.135	429.0 -> 409.0	69395	9.44	µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 94.4%		
13C2-8:2FTS	7.376	529.0 -> 509.0	67263	9.51	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 95.1%		
13C2-PFDoDA	9.081	615.0 -> 570.0	222819	9.86	µg/L	-0.037
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 98.6%		
13C2-PFTeDA	10.587	715.0 -> 670.0	189244	9.85	µg/L	-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 98.5%		
13C3-PFBS	3.624	302.0 -> 99.0	9379	10.17	µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.7%		
13C3-PFHxS	5.444	402.0 -> 99.0	11401	10.09	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.9%		
13C4-PFBA	1.987	217.0 -> 172.0	43965	9.97	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.7%		
13C4-PFHpA	5.425	367.0 -> 322.0	118416	10.02	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.2%		
13C5-PFHxA	4.552	318.0 -> 273.0	113516	9.89	µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 98.9%		
13C5-PFPeA	3.432	268.0 -> 223.0	71246	9.59	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 95.9%		
13C6-PFDA	7.301	519.0 -> 474.0	172682	9.98	µg/L	-0.012

Perfluorinated Compounds by LC/MS/MS

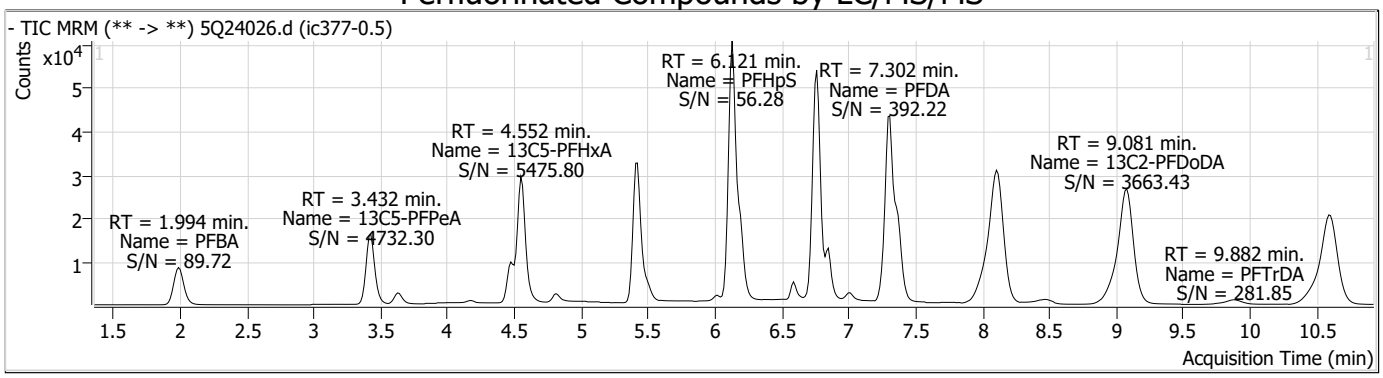
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.8%			
13C7-PFUnDA	8.109	570.0 -> 525.0	243399	9.97	µg/L		-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.7%			
13C8-FOSA	6.192	506.0 -> 78.0	39303	9.61	µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 96.1%			
13C8-PFOA	6.137	421.0 -> 376.0	162264	9.80	µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 98.0%			
13C8-PFOS	6.741	507.0 -> 99.0	15796	10.03	µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.3%			
13C9-PFNA	6.768	472.0 -> 427.0	166111	10.02	µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.2%			
d3-MeFOSAA	6.747	573.0 -> 419.0	34178	10.16	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.6%			
13C3-HFPO-DA	4.819	287.0 -> 169.0	6185	10.36	µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 103.6%			
d3-MeFOSA	6.589	515.0 -> 169.0	12200	8.76	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 87.6%			
d5-EtFOSAA	6.845	589.0 -> 419.0	29989	9.84	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 98.4%			
Target Compounds							QValue
4:2FTS	4.475	327.0 -> 307.0	1778	0.52	µg/L		87
		327.0 -> 81.0	1164				
6:2FTS	6.136	427.0 -> 407.0	3166	0.54	µg/L		98
		427.0 -> 81.0	1230				
8:2FTS	7.376	527.0 -> 507.0	3041	0.54	µg/L		96
		527.0 -> 81.0	1505				
EtFOSAA	6.859	584.0 -> 419.0	1210	0.53	µg/L		94
		584.0 -> 483.0	680				
FOSA	6.194	498.0 -> 78.0	1545	0.45	µg/L		99
		498.0 -> 478.0	47				
MeFOSAA	6.748	570.0 -> 419.0	1110	0.44	µg/L		93
		570.0 -> 512.0	447				
PFBA	1.994	213.0 -> 169.0	1952	0.49	µg/L		100
PFBS	3.628	299.0 -> 80.0	1138	0.49	µg/L		99
		299.0 -> 99.0	497				
PFDA	7.302	513.0 -> 469.0	7526	0.47	µg/L		98
		513.0 -> 219.0	1374				
PFDoDA	9.067	613.0 -> 569.0	8830	0.48	µg/L		98
		613.0 -> 319.0	1488				
PFDS	7.995	599.0 -> 80.0	1443	0.48	µg/L		96
		599.0 -> 99.0	911				
PFHpA	5.413	363.0 -> 319.0	5986	0.46	µg/L		99
		363.0 -> 169.0	1249				
PFHpS	6.121	449.0 -> 80.0	959	0.46	µg/L		96
		449.0 -> 99.0	547				
PFHxA	4.553	313.0 -> 269.0	4934	0.47	µg/L		99
		313.0 -> 119.0	214				
PFHxS	5.446	399.0 -> 80.0	1050	0.51	µg/L	m	93
		399.0 -> 99.0	636				
PFNA	6.769	463.0 -> 419.0	7399	0.49	µg/L		99
		463.0 -> 219.0	1520				
PFNS	7.260	549.0 -> 80.0	917	0.50	µg/L		98
		549.0 -> 99.0	512				
PFOA	6.137	413.0 -> 369.0	7570	0.49	µg/L		98
		413.0 -> 169.0	1780				
PFOS	6.742	499.0 -> 80.0	1274	0.48	µg/L	m	89

Perfluorinated Compounds by LC/MS/MS

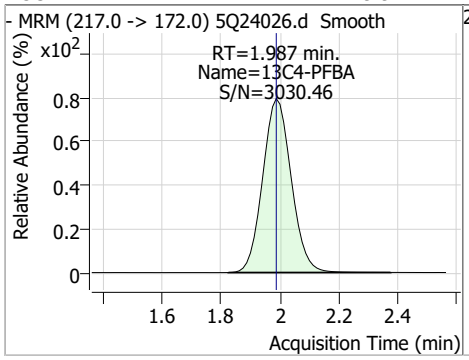
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		499.0 -> 99.0	730			
PFPeA	3.434	263.0 -> 219.0	3304	0.49	µg/L	100
PFPeS	4.648	349.0 -> 80.0	702	0.44	µg/L	97
		349.0 -> 99.0	349			
PFTeDA	10.591	713.0 -> 669.0	8708	0.48	µg/L	100
		713.0 -> 219.0	973			
PFTrDA	9.882	663.0 -> 619.0	8478	0.46	µg/L	100
		663.0 -> 369.0	942			
PFUnDA	8.111	563.0 -> 519.0	9801	0.46	µg/L	97
		563.0 -> 269.0	1811			
11Cl-PF3OUdS	8.465	631.0 -> 451.0	6140	0.47	µg/L	98
		633.0 -> 453.0	1983			
9Cl-PF3ONS	7.011	531.0 -> 351.0	5312	0.44	µg/L	98
		533.0 -> 353.0	1606			
ADONA	5.502	377.0 -> 251.0	8242	0.44	µg/L	98
		377.0 -> 85.0	2869			
HFPO-DA	4.827	329.0 -> 169.0	1110	0.44	µg/L	97
		285.0 -> 169.0	259			
MeFOSA	6.602	512.0 -> 169.0	395	0.38	µg/L	81
		512.0 -> 219.0	399			
4-PFECHS	6.018	461.0 -> 381.0	3677	0.54	µg/L	96
		461.0 -> 99.0	1993			
FBSA	4.182	298.0 -> 78.0	1654	0.44	µg/L	99
		298.0 -> 64.0	152			
FHxSA	5.409	398.0 -> 78.0	1920	0.52	µg/L	100
		398.0 -> 64.0	173			

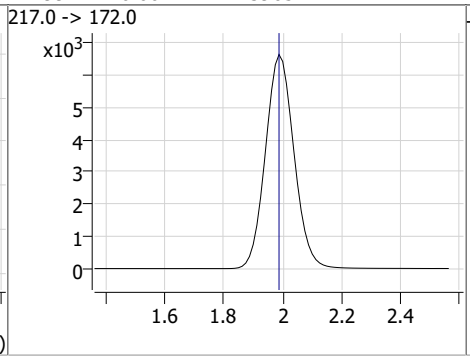
 # = Qualifier out of range, m = manually integrated, + = Area summed

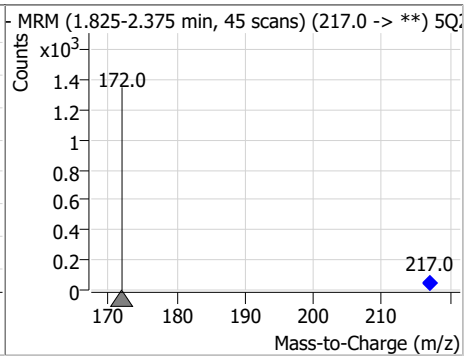
Perfluorinated Compounds by LC/MS/MS



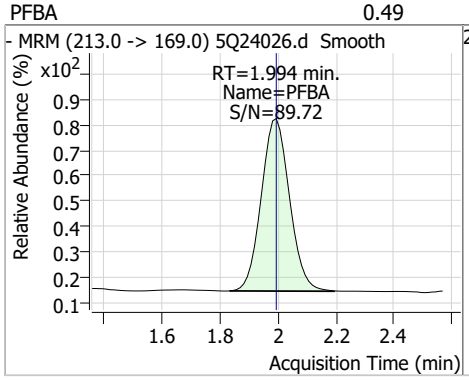
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	9.97	1.99	0.00	43965				

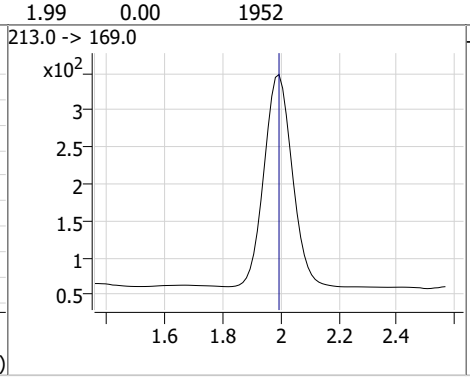


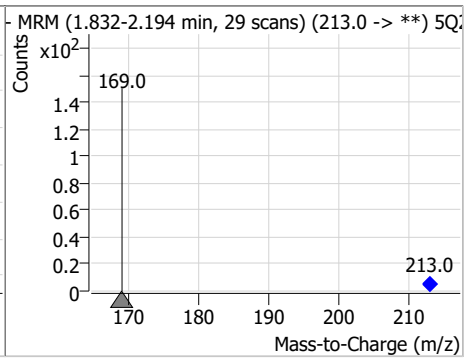




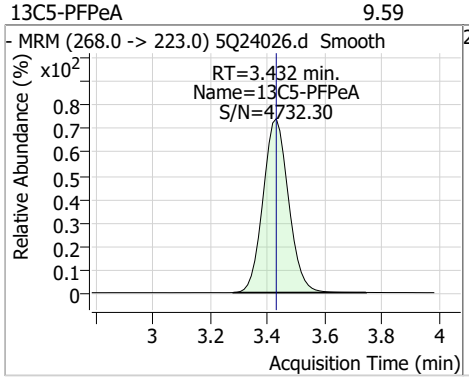
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	0.49	1.99	0.00	1952				

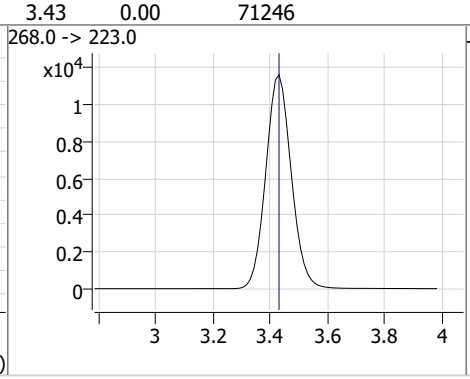


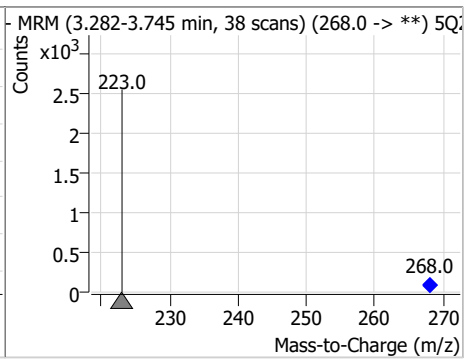




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	9.59	3.43	0.00	71246				

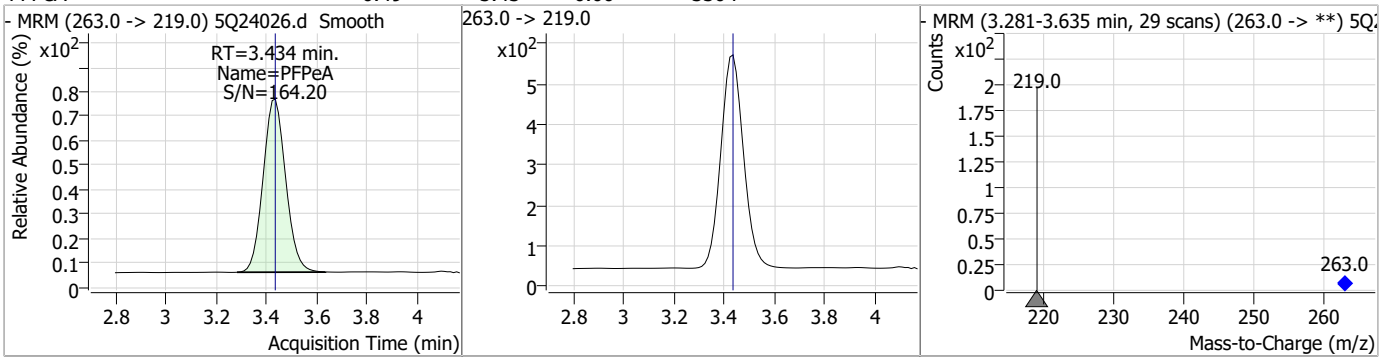




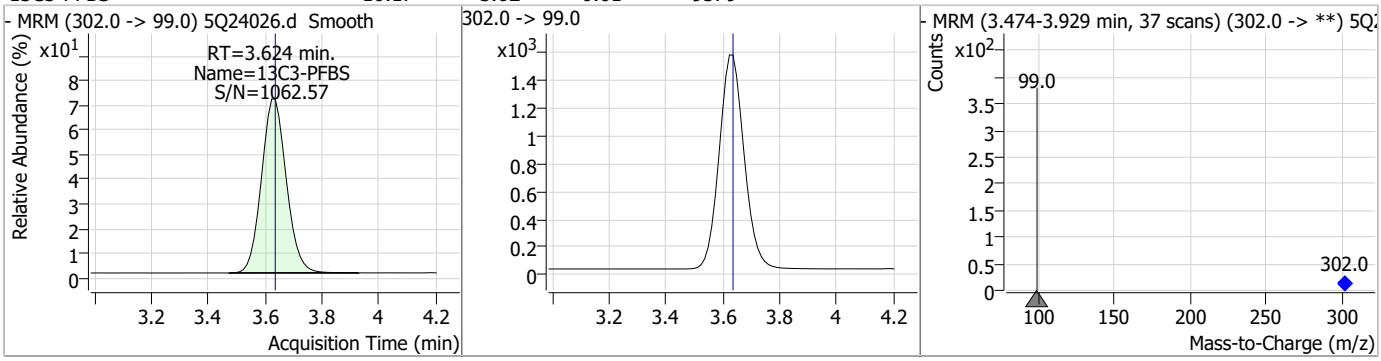


Perfluorinated Compounds by LC/MS/MS

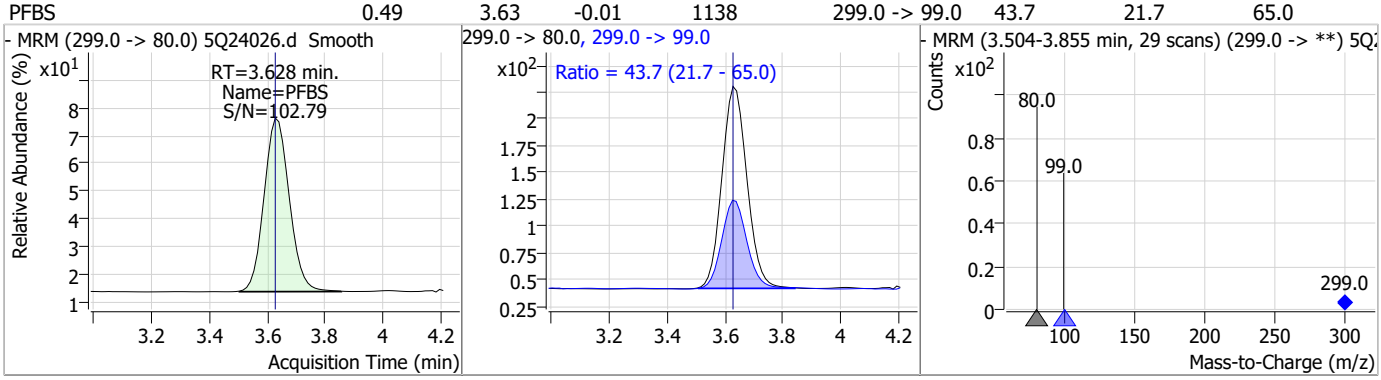
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	0.49	3.43	0.00	3304				



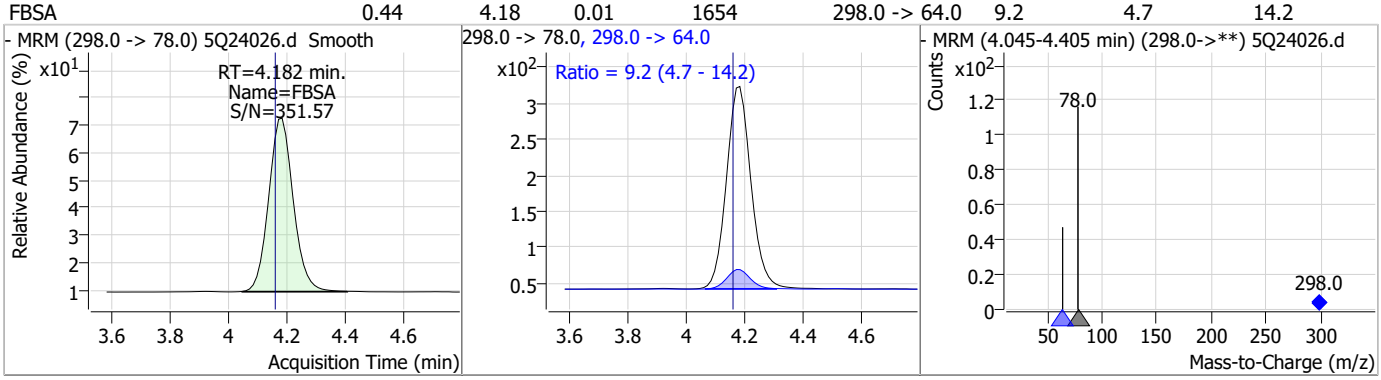
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	10.17	3.62	-0.01	9379				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	0.49	3.63	-0.01	1138	299.0 -> 99.0	43.7	21.7	65.0

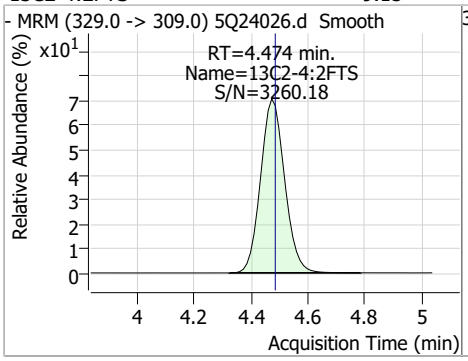


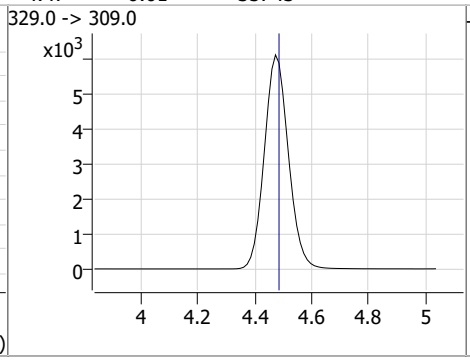
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	0.44	4.18	0.01	1654	298.0 -> 64.0	9.2	4.7	14.2

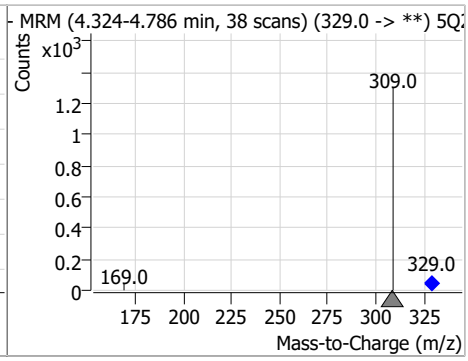


Perfluorinated Compounds by LC/MS/MS

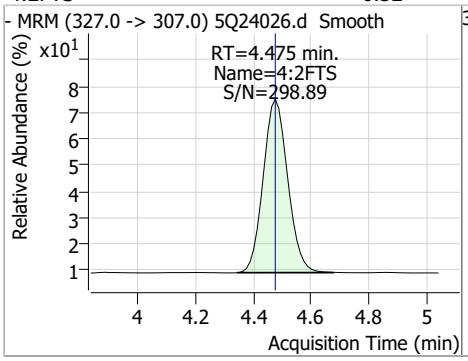
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	9.15	4.47	-0.01	35743				

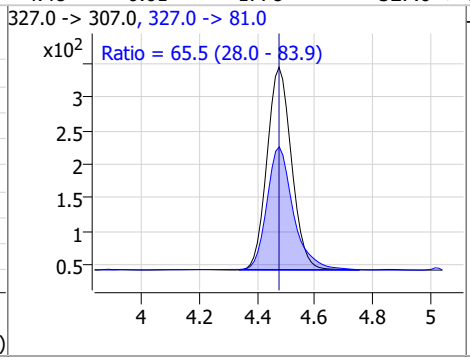


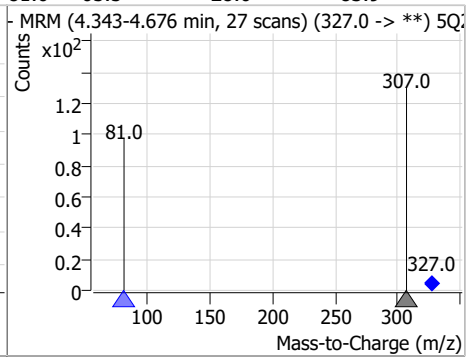




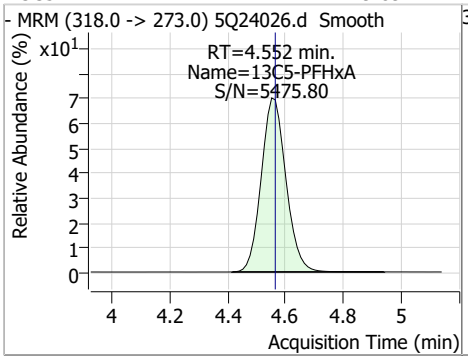
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	0.52	4.48	-0.01	1778	327.0 -> 81.0	65.5	28.0	83.9

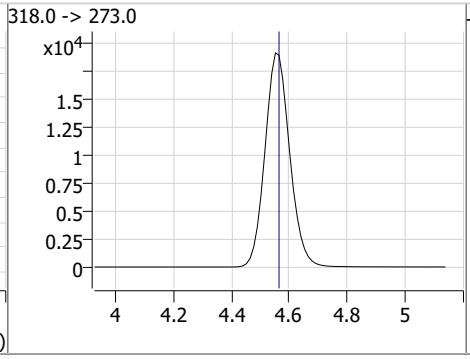


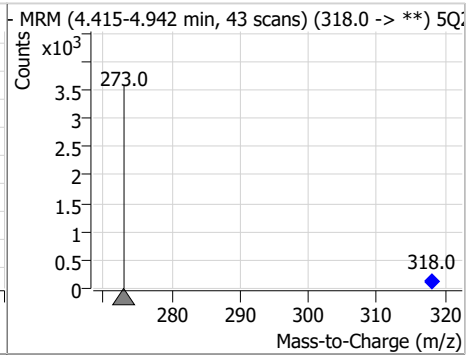




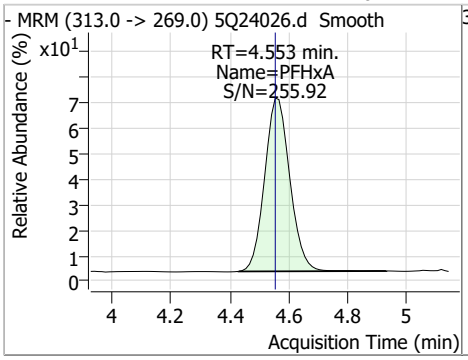
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	9.89	4.55	-0.01	113516				

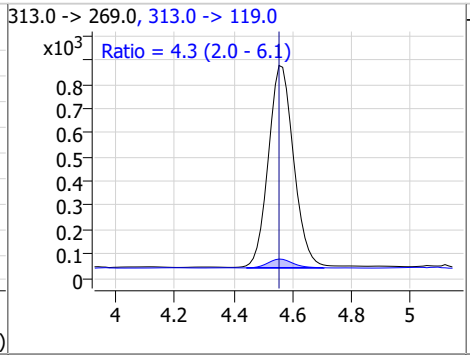


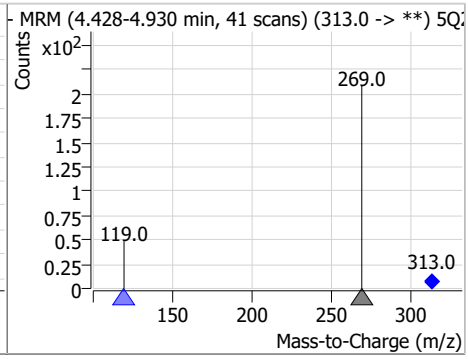




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	0.47	4.55	-0.01	4934	313.0 -> 119.0	4.3	2.0	6.1

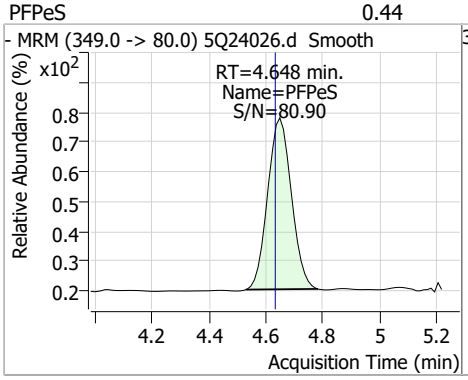


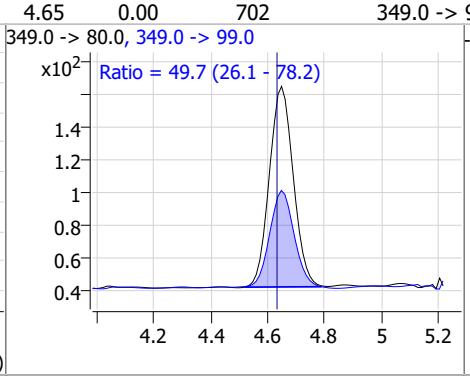


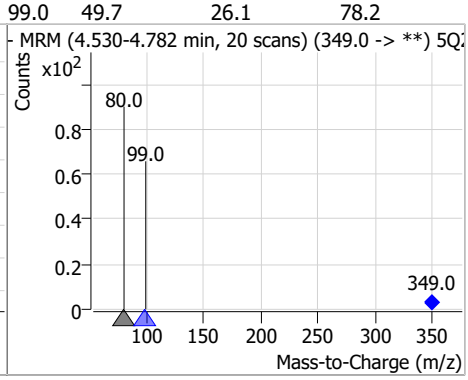


Perfluorinated Compounds by LC/MS/MS

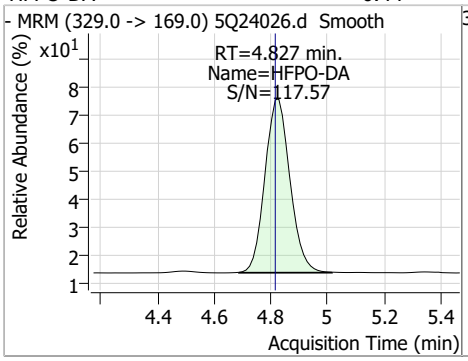
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	0.44	4.65	0.00	702	349.0 -> 99.0	49.7	26.1	78.2

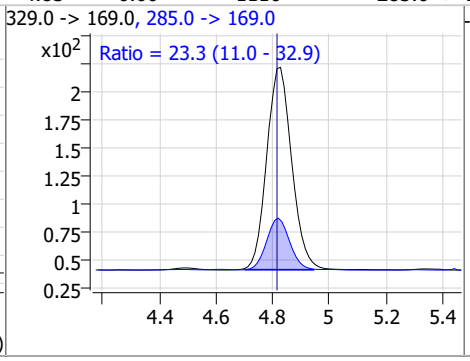


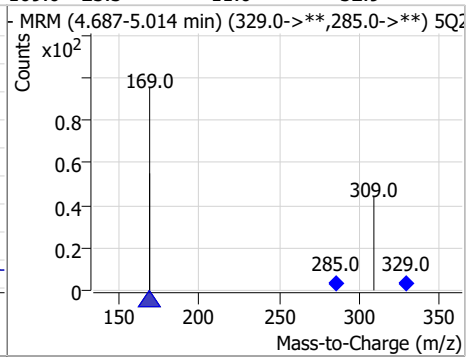




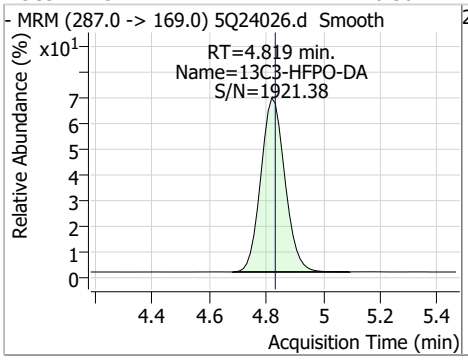
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	0.44	4.83	0.00	1110	285.0 -> 169.0	23.3	11.0	32.9

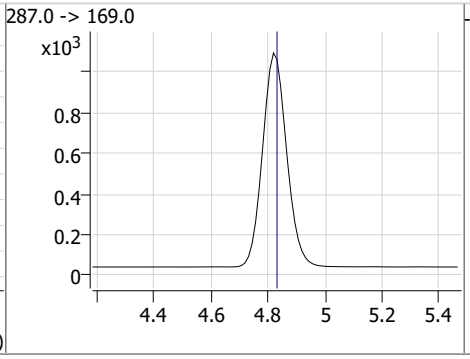


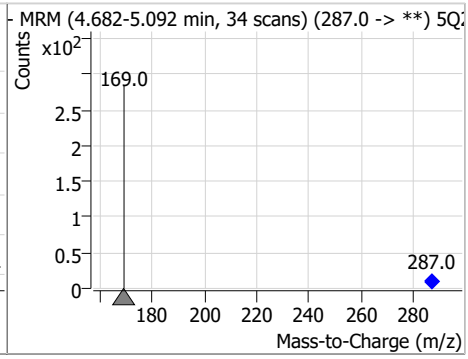




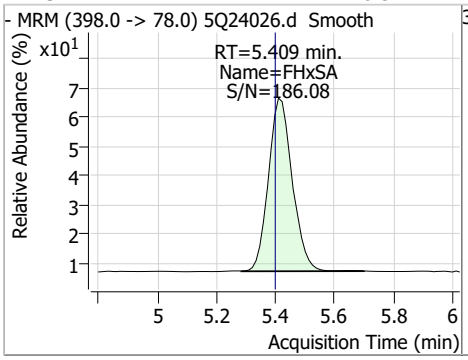
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	10.36	4.82	-0.01	6185				

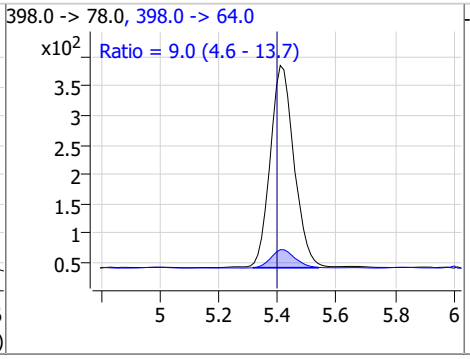


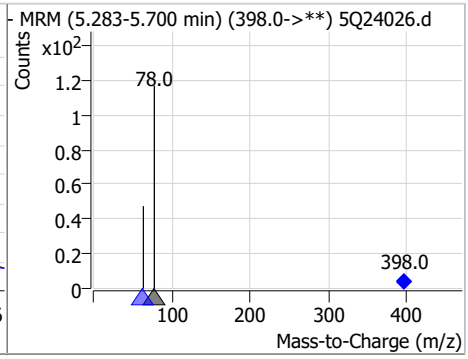




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	0.52	5.41	0.00	1920	398.0 -> 64.0	9.0	4.6	13.7

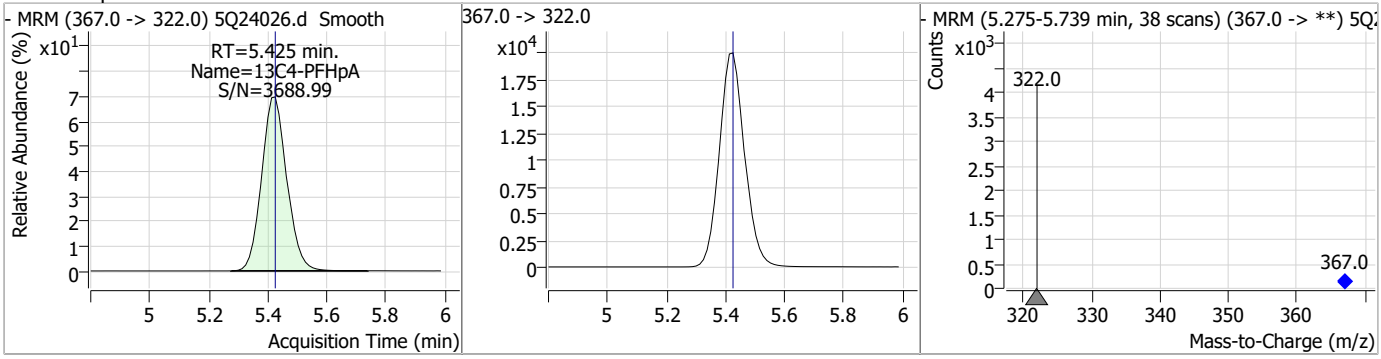




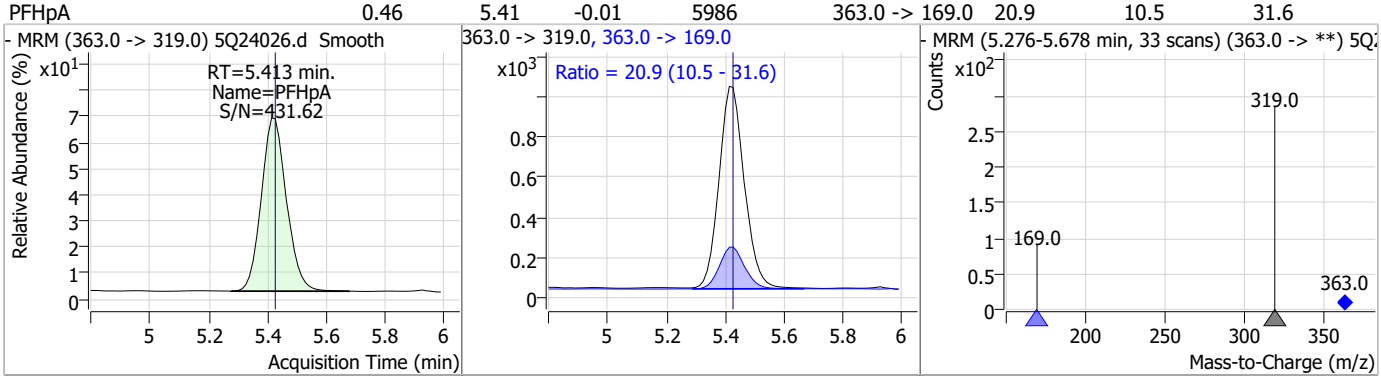


Perfluorinated Compounds by LC/MS/MS

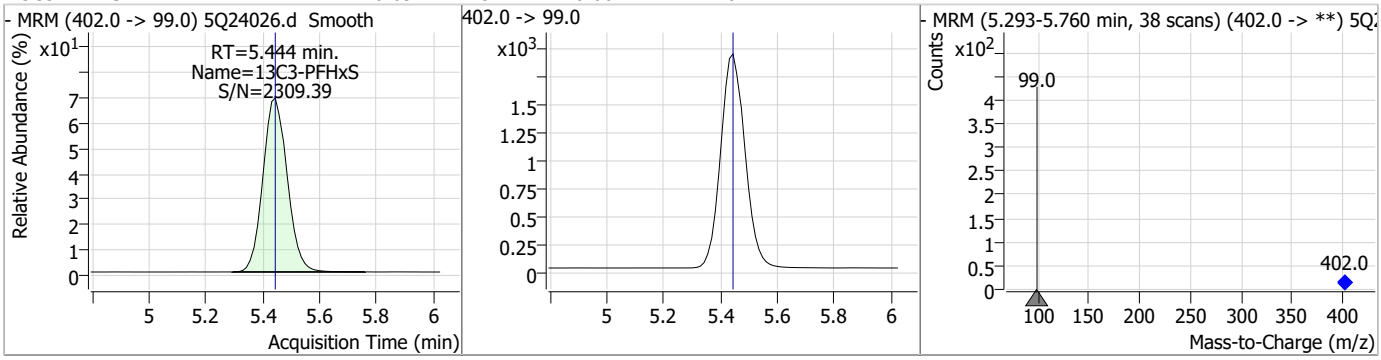
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	10.02	5.43	0.00	118416				



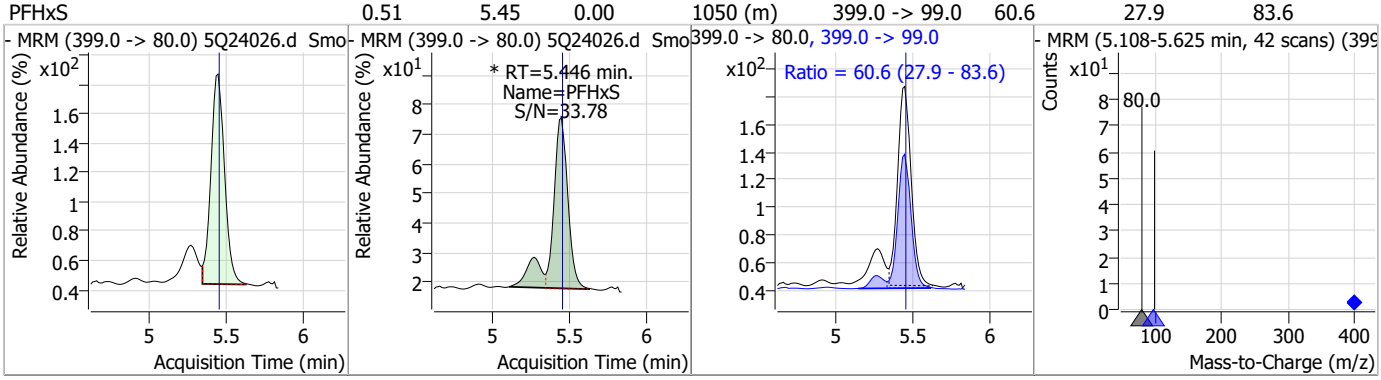
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	0.46	5.41	-0.01	5986	363.0 -> 169.0	20.9	10.5	31.6



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	10.09	5.44	0.00	11401				

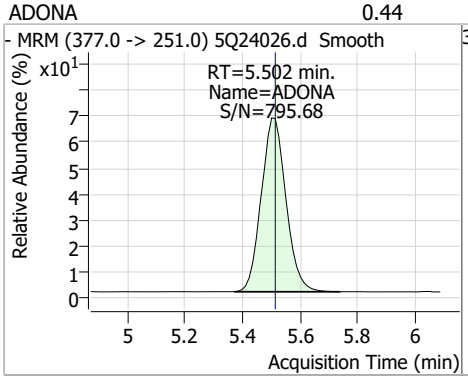


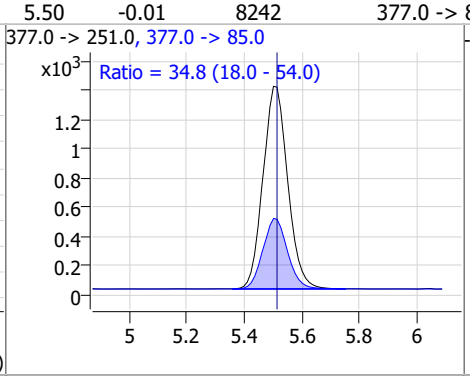
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	0.51	5.45	0.00	1050 (m)	399.0 -> 99.0	60.6	27.9	83.6

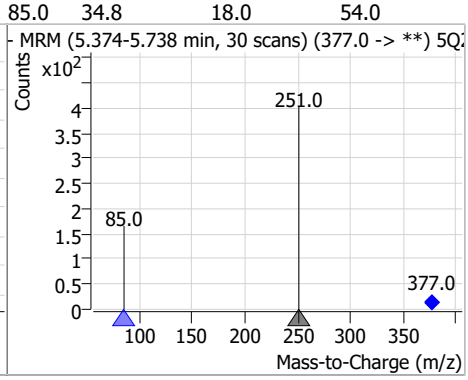


Perfluorinated Compounds by LC/MS/MS

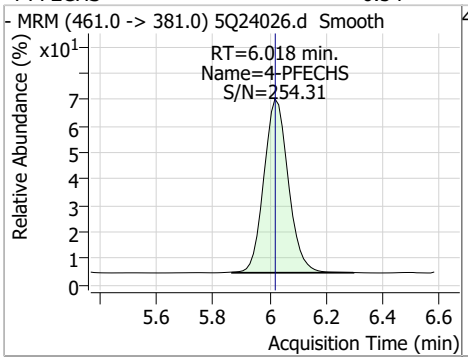
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	0.44	5.50	-0.01	8242	377.0 -> 85.0	34.8	18.0	54.0

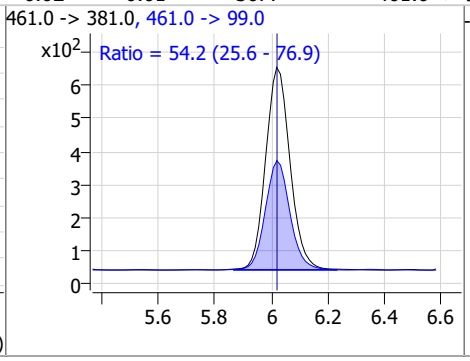


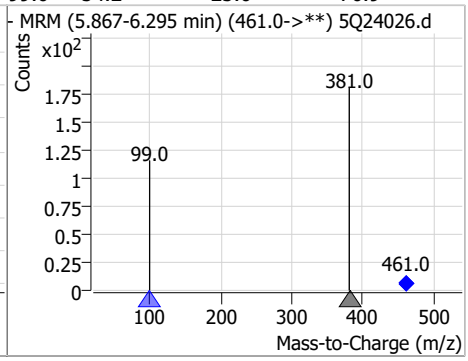




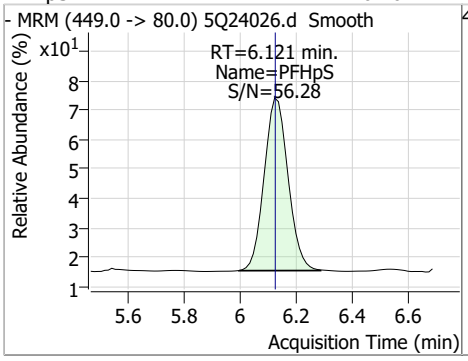
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS	0.54	6.02	-0.01	3677	461.0 -> 99.0	54.2	25.6	76.9

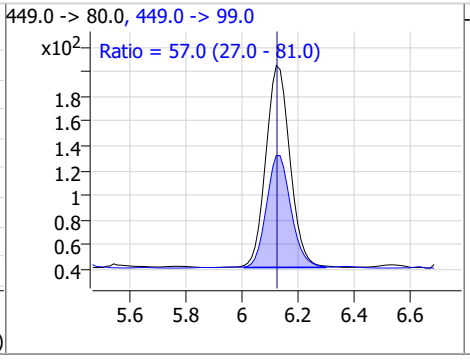


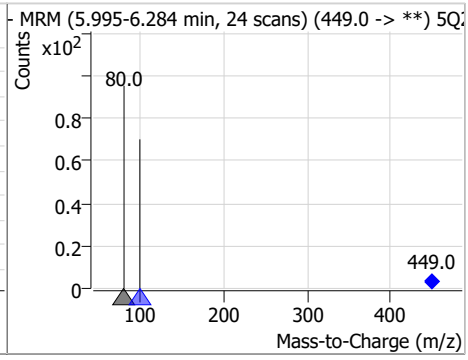




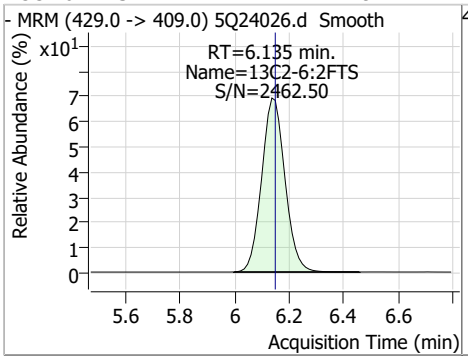
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	0.46	6.12	-0.01	959	449.0 -> 99.0	57.0	27.0	81.0

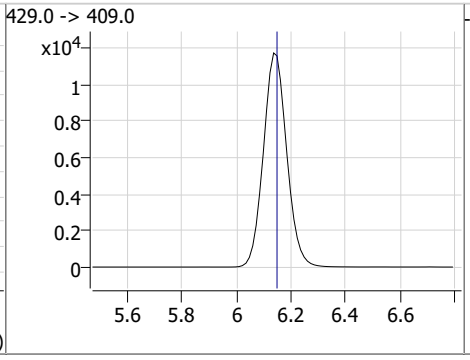


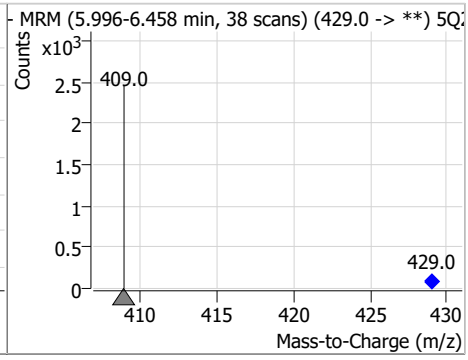




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	9.44	6.14	-0.01	69395				

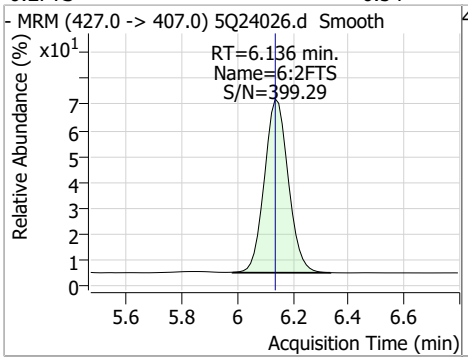


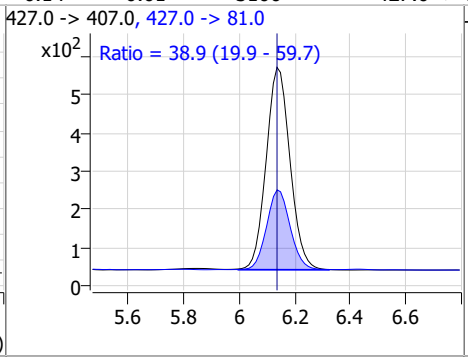


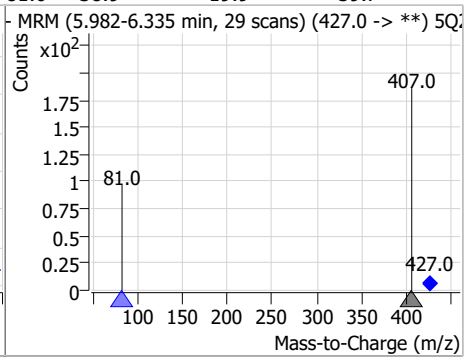


Perfluorinated Compounds by LC/MS/MS

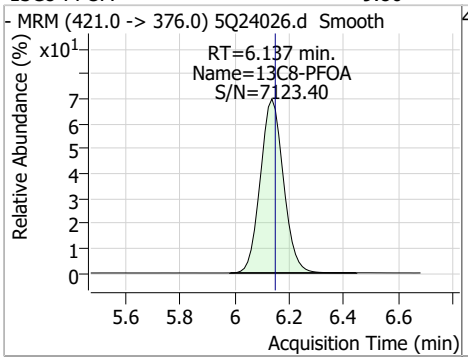
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	0.54	6.14	-0.01	3166	427.0 -> 81.0	38.9	19.9	59.7

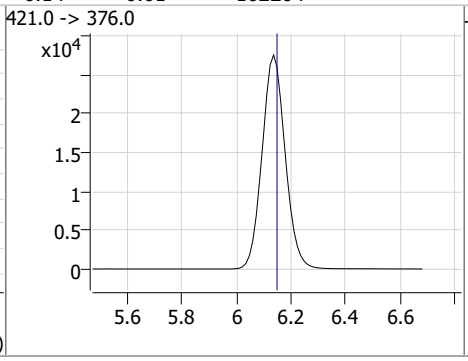


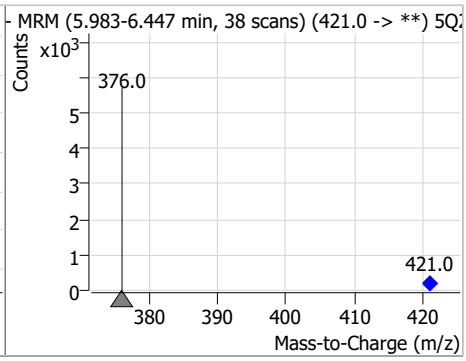




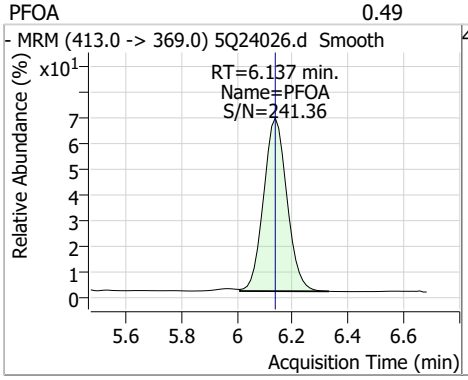
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	9.80	6.14	-0.01	162264				

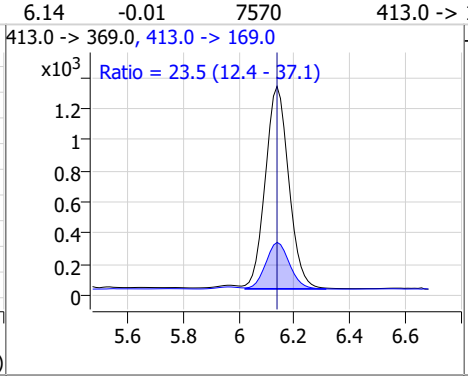


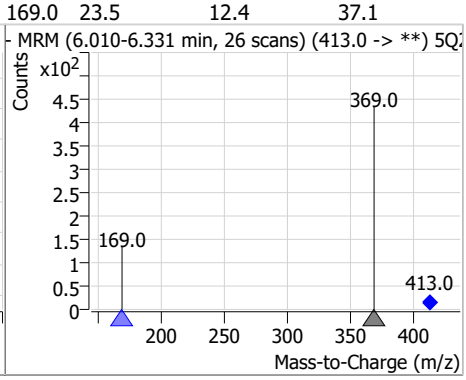




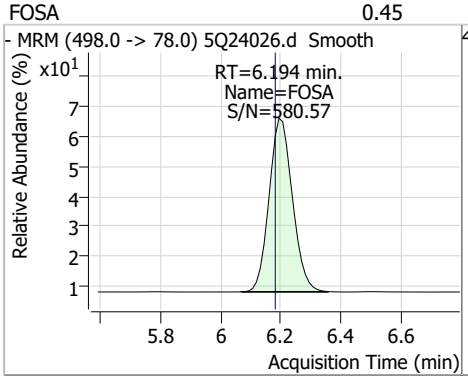
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	0.49	6.14	-0.01	7570	413.0 -> 169.0	23.5	12.4	37.1

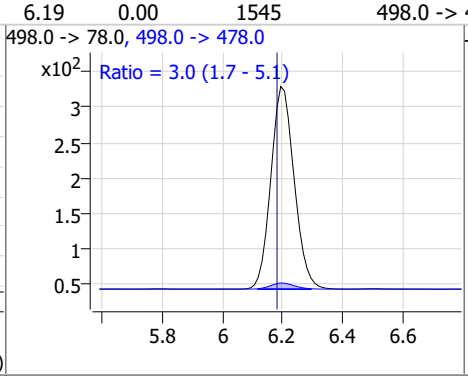


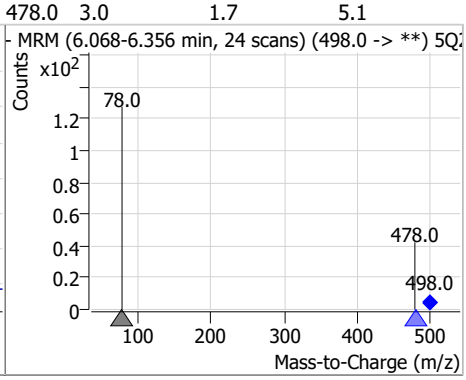




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	0.45	6.19	0.00	1545	498.0 -> 478.0	3.0	1.7	5.1

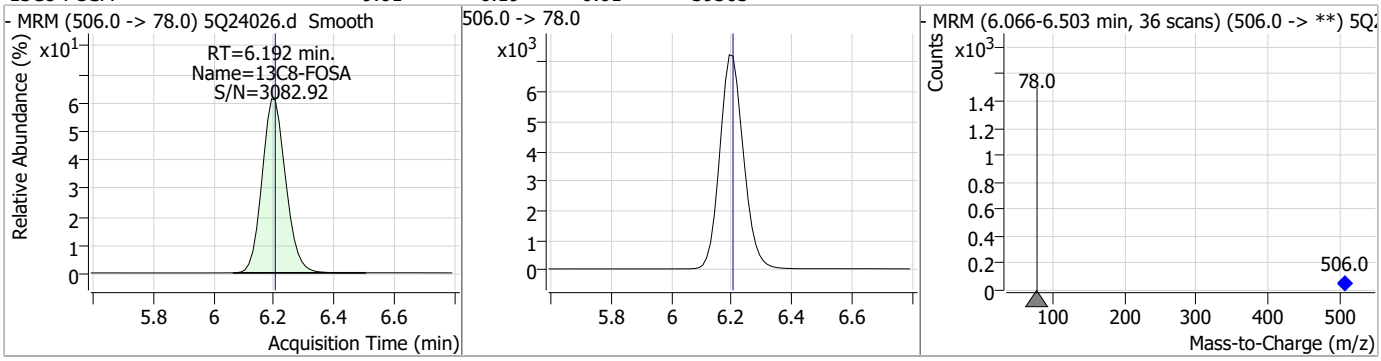




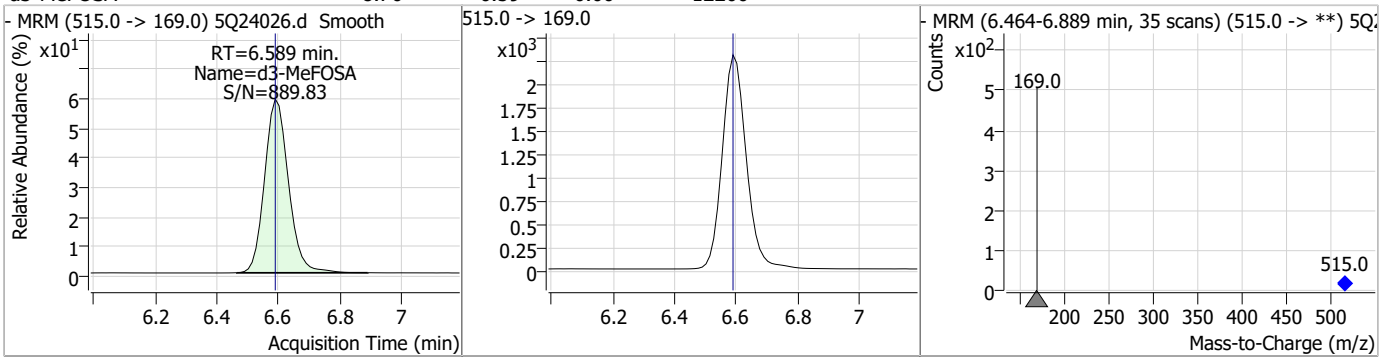


Perfluorinated Compounds by LC/MS/MS

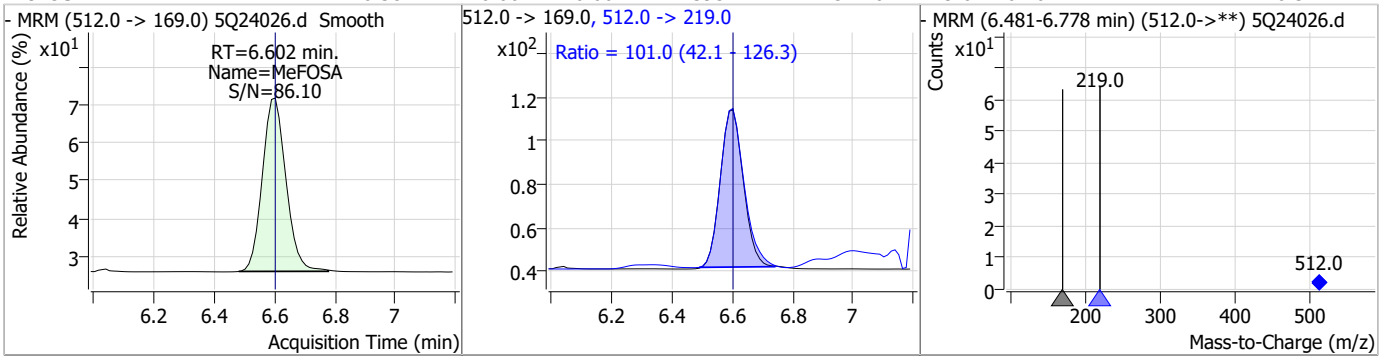
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	9.61	6.19	-0.01	39303				



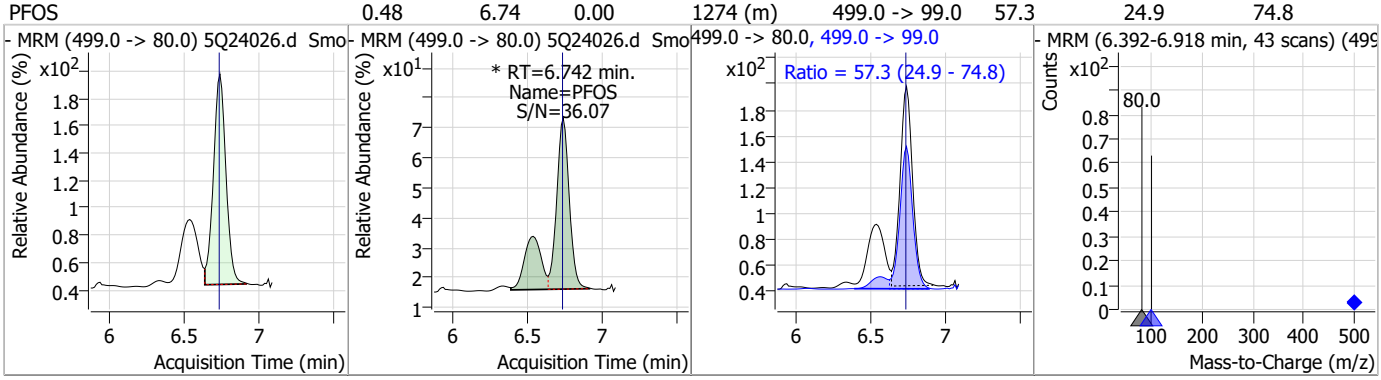
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	8.76	6.59	0.00	12200				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	0.38	6.60	0.00	395	512.0 -> 219.0	101.0	42.1	126.3

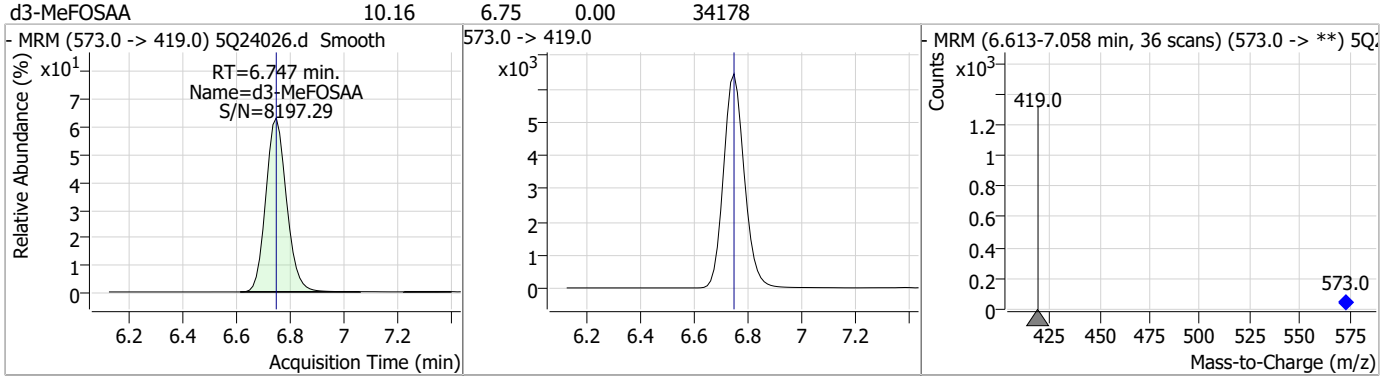


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	0.48	6.74	0.00	1274 (m)	499.0 -> 99.0	57.3	24.9	74.8

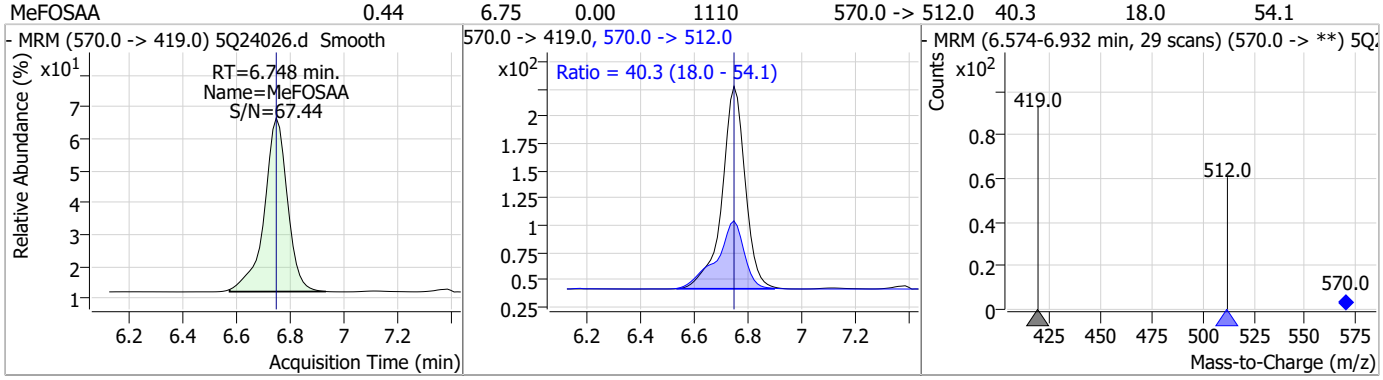


Perfluorinated Compounds by LC/MS/MS

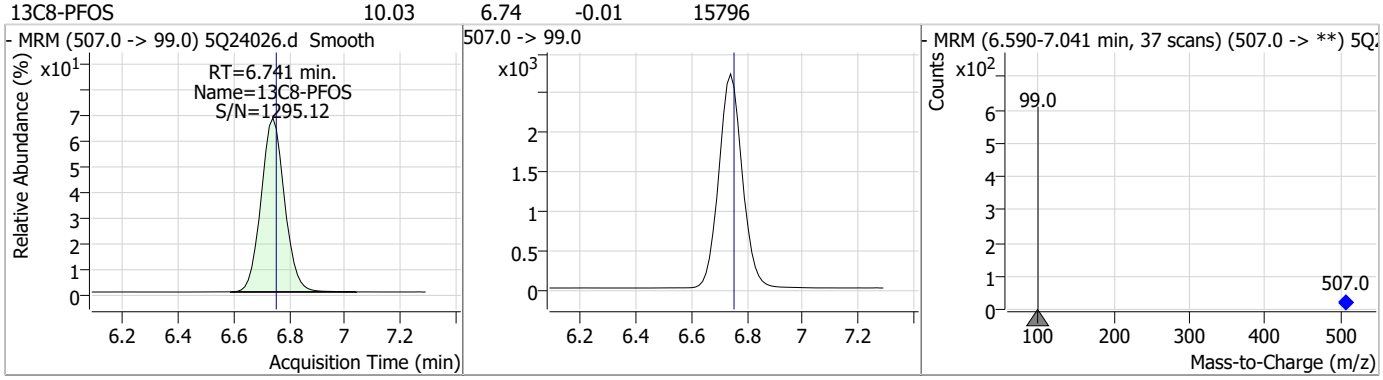
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	10.16	6.75	0.00	34178				



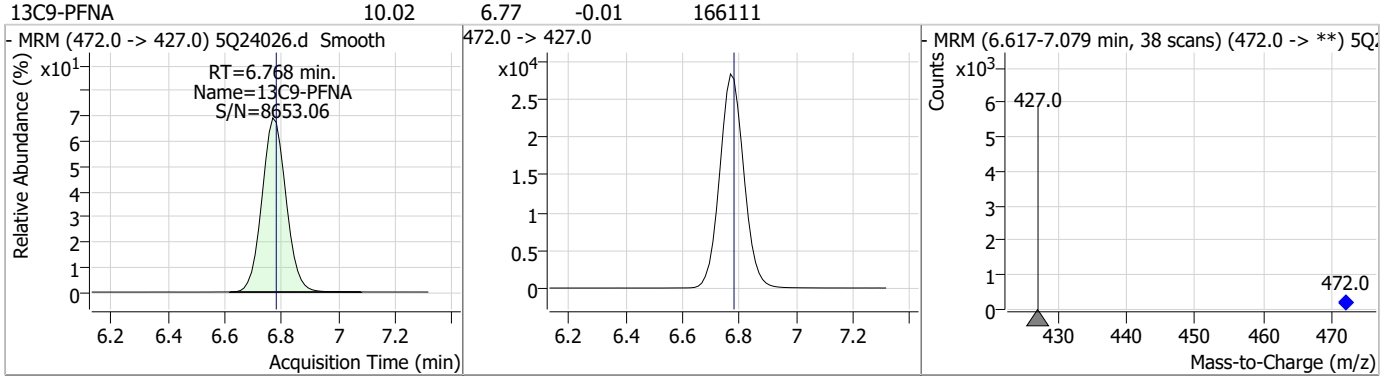
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	0.44	6.75	0.00	1110	570.0 -> 512.0	40.3	18.0	54.1



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	10.03	6.74	-0.01	15796				

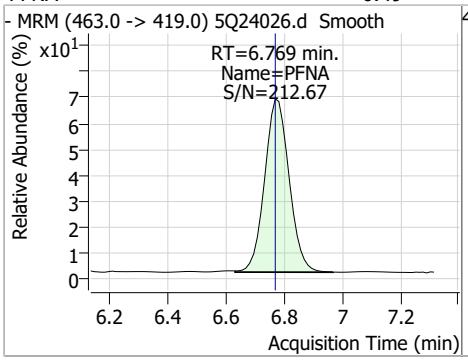


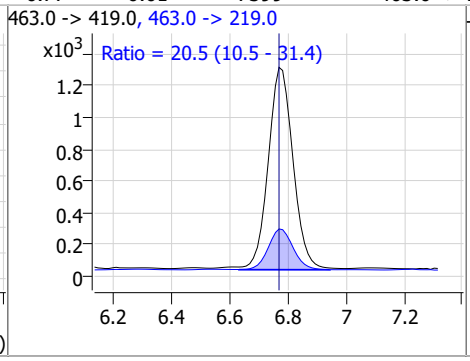
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	10.02	6.77	-0.01	166111				

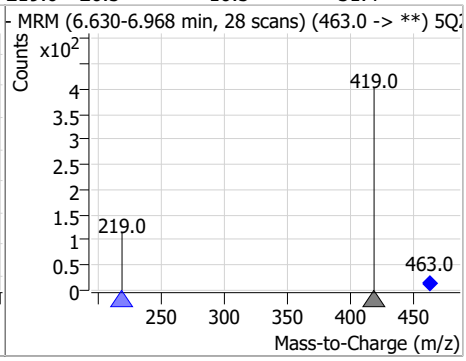


Perfluorinated Compounds by LC/MS/MS

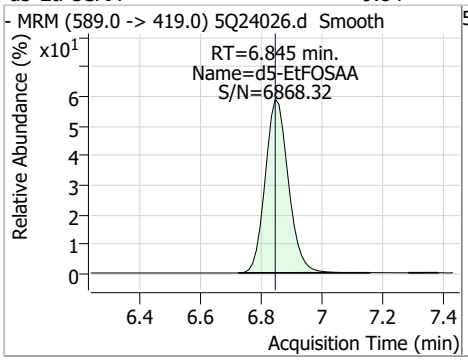
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	0.49	6.77	-0.01	7399	463.0 -> 219.0	20.5	10.5	31.4

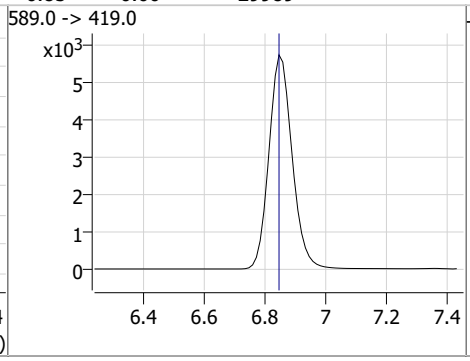


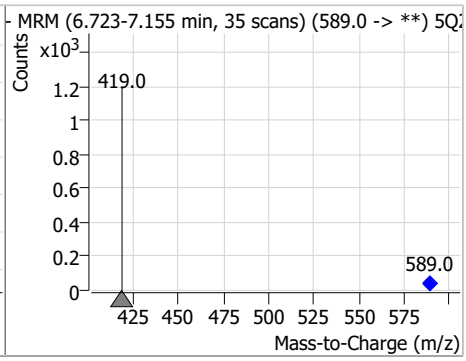




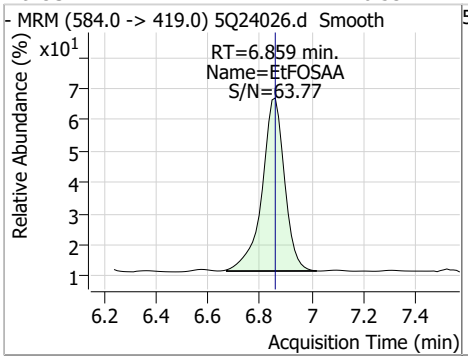
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	9.84	6.85	0.00	29989				

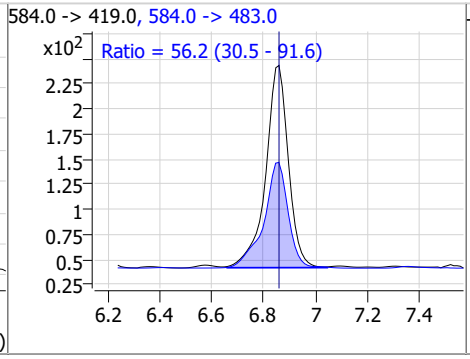


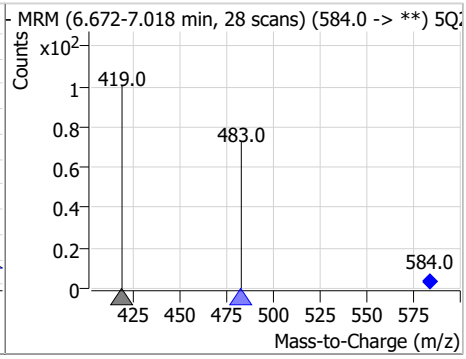




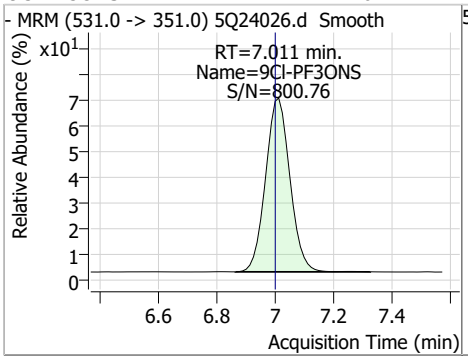
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	0.53	6.86	0.00	1210	584.0 -> 483.0	56.2	30.5	91.6

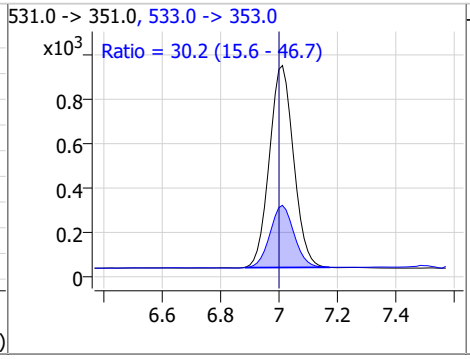


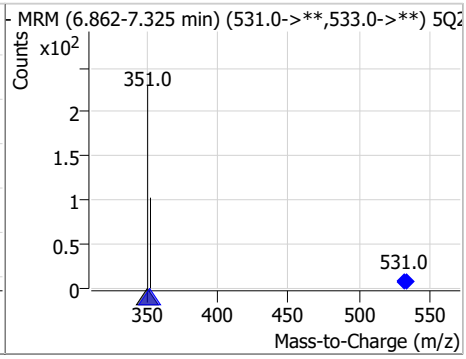




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	0.44	7.01	0.00	5312	533.0 -> 353.0	30.2	15.6	46.7

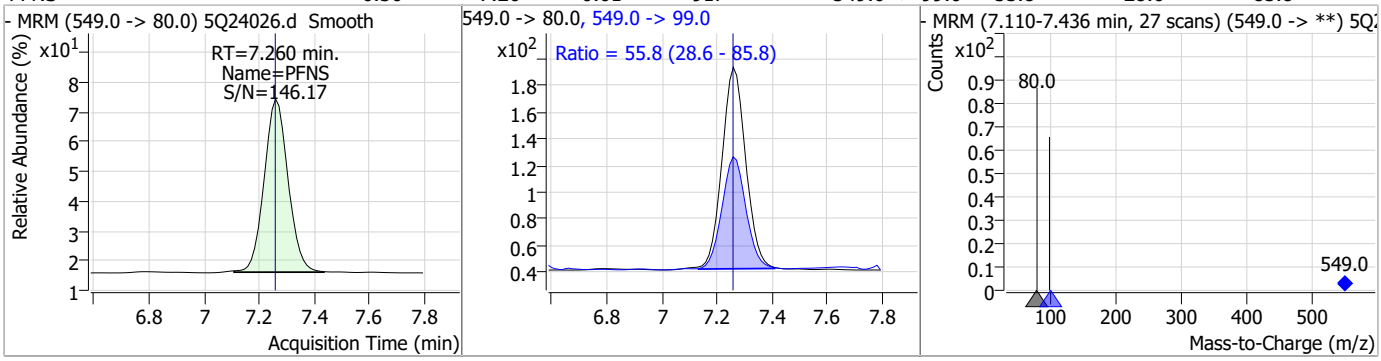




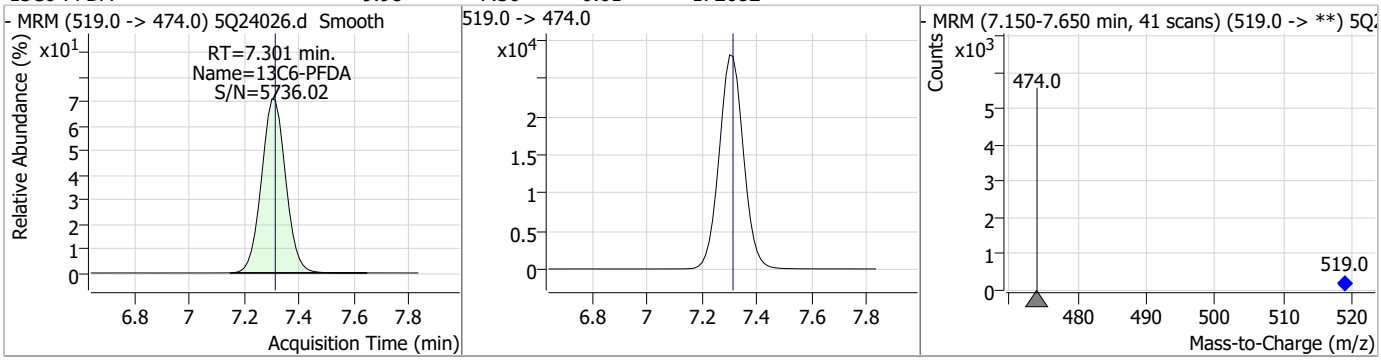


Perfluorinated Compounds by LC/MS/MS

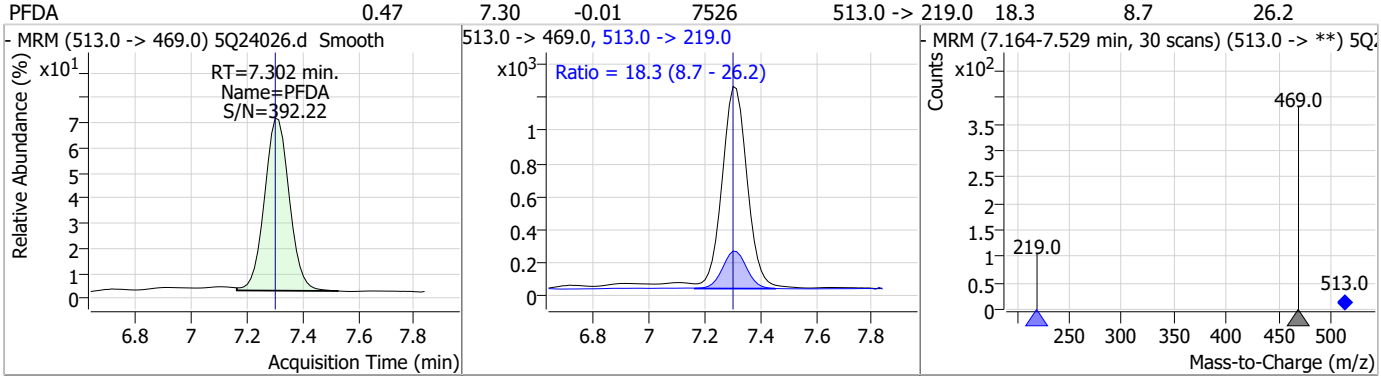
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	0.50	7.26	-0.01	917	549.0 -> 99.0	55.8	28.6	85.8



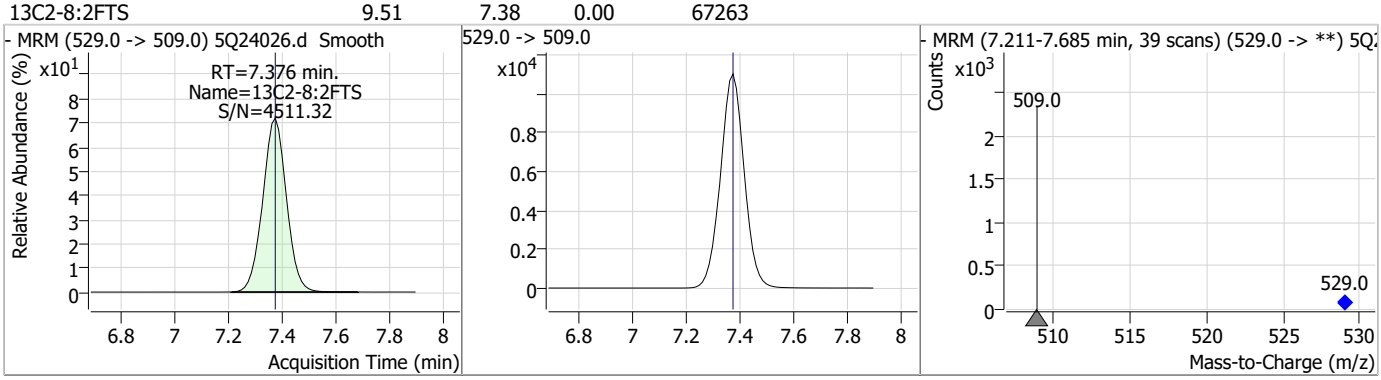
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	9.98	7.30	-0.01	172682				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	0.47	7.30	-0.01	7526	513.0 -> 219.0	18.3	8.7	26.2

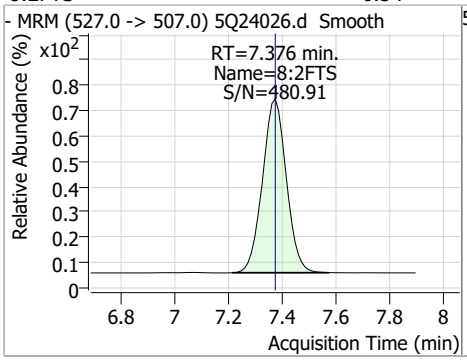


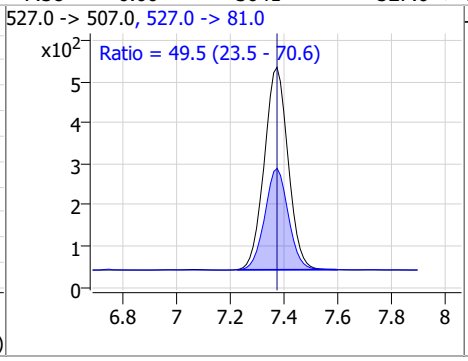
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	9.51	7.38	0.00	67263				

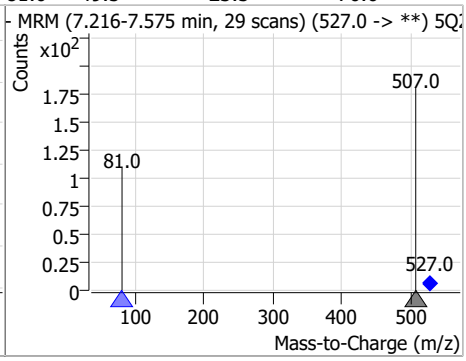


Perfluorinated Compounds by LC/MS/MS

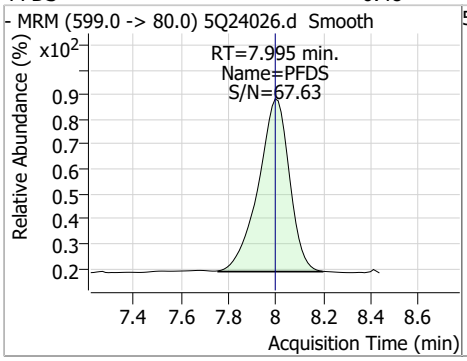
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	0.54	7.38	0.00	3041	527.0 -> 81.0	49.5	23.5	70.6

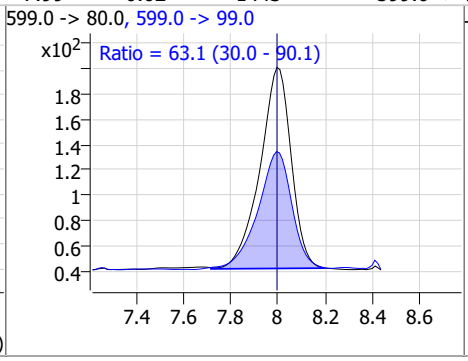


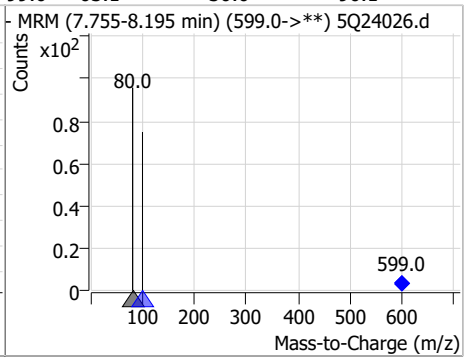




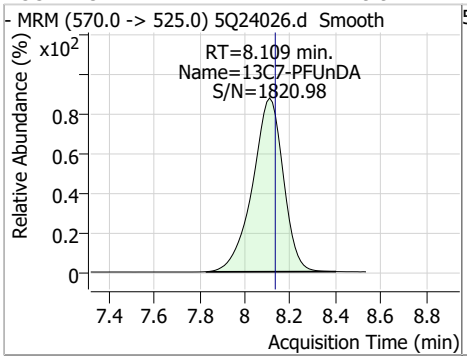
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	0.48	7.99	-0.02	1443	599.0 -> 99.0	63.1	30.0	90.1

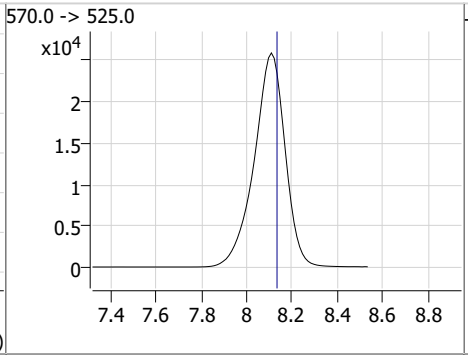


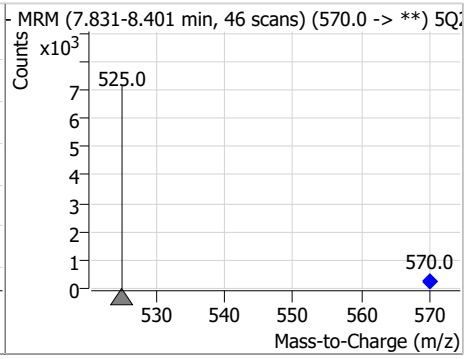




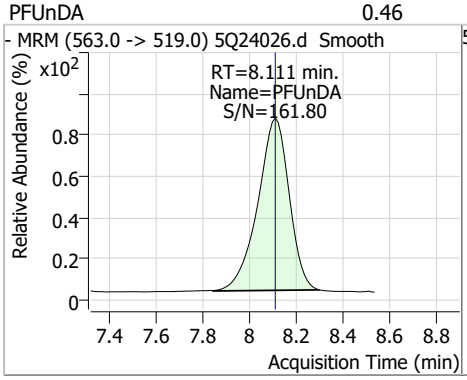
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	9.97	8.11	-0.02	243399				

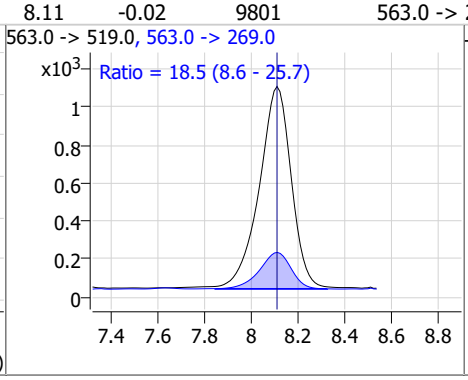


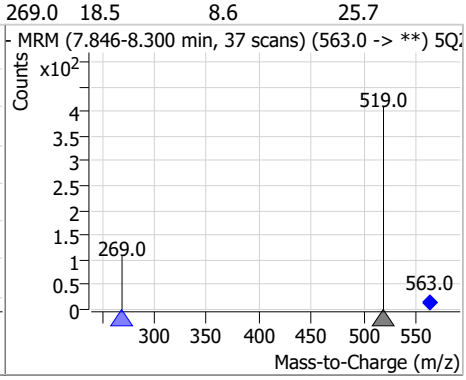




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	0.46	8.11	-0.02	9801	563.0 -> 269.0	18.5	8.6	25.7

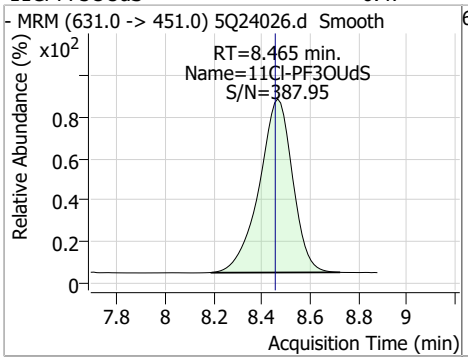


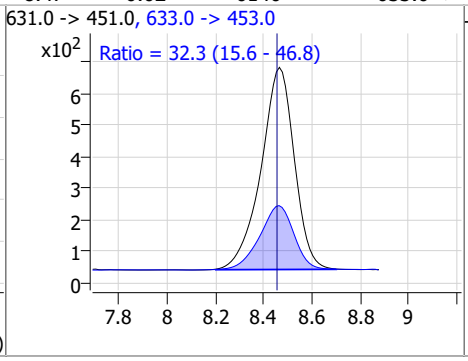


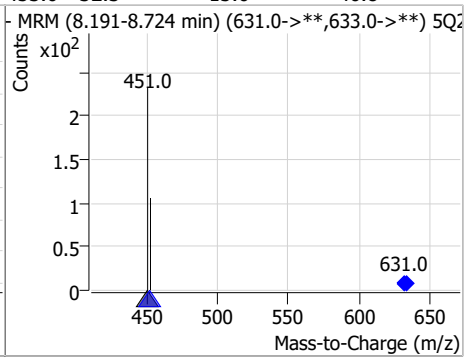


Perfluorinated Compounds by LC/MS/MS

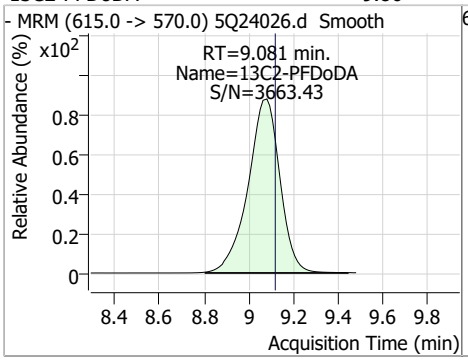
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	0.47	8.47	-0.02	6140	633.0 -> 453.0	32.3	15.6	46.8

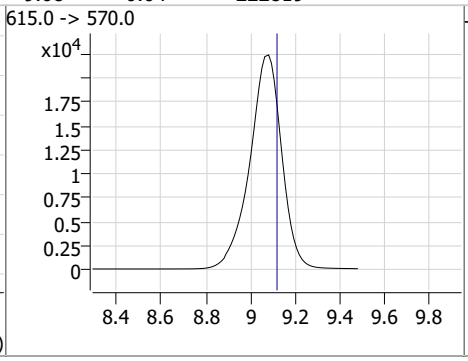


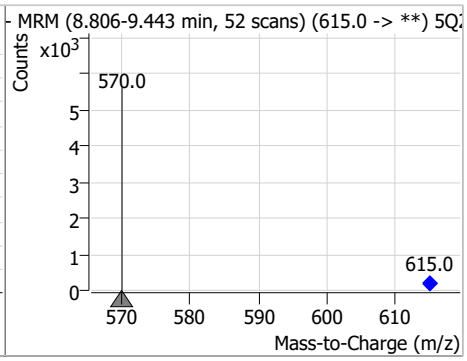




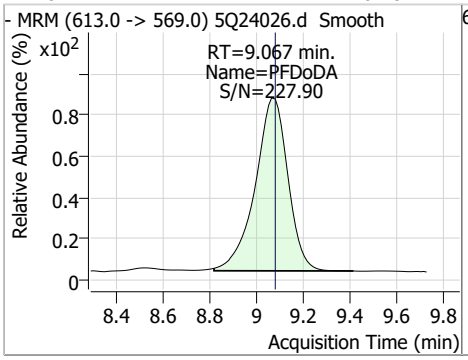
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	9.86	9.08	-0.04	222819				

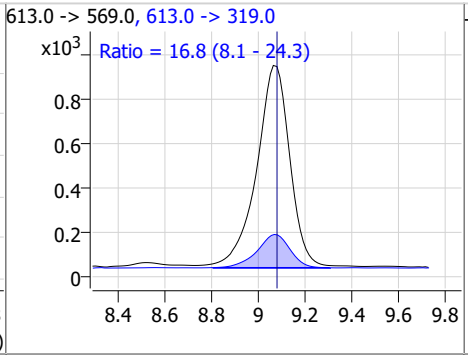


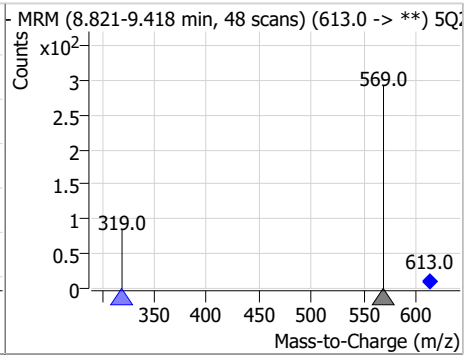




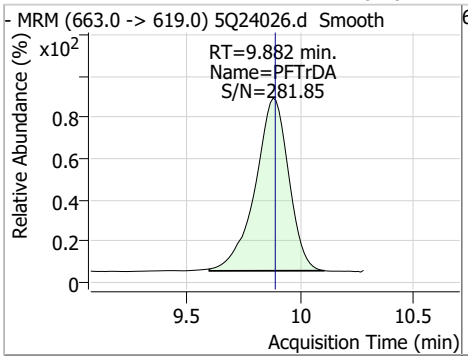
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	0.48	9.07	-0.05	8830	613.0 -> 319.0	16.8	8.1	24.3

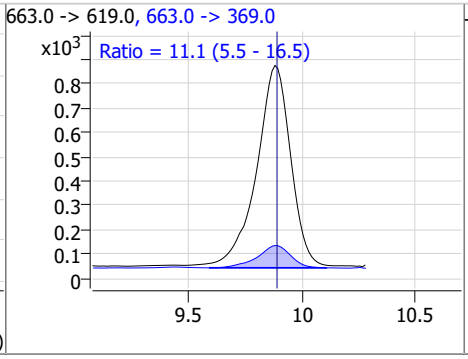


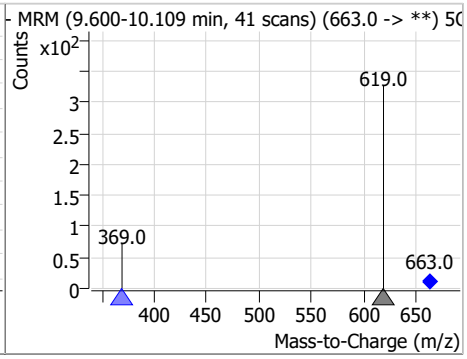




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	0.46	9.88	-0.05	8478	663.0 -> 369.0	11.1	5.5	16.5

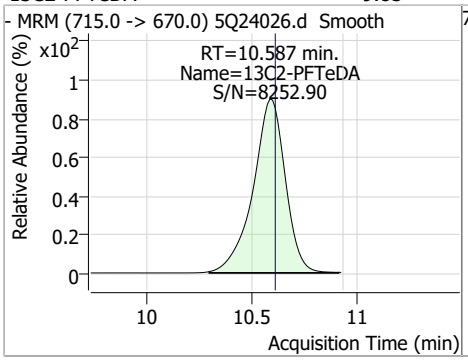


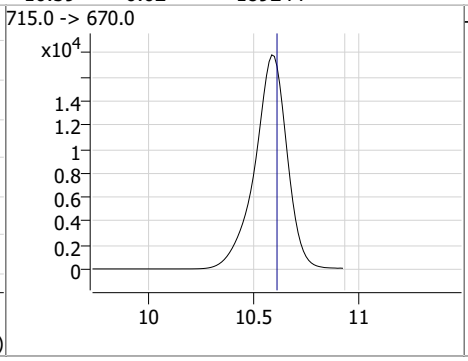


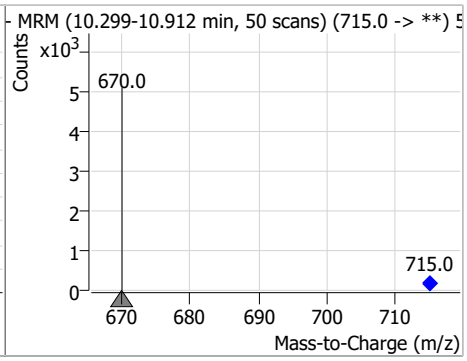


Perfluorinated Compounds by LC/MS/MS

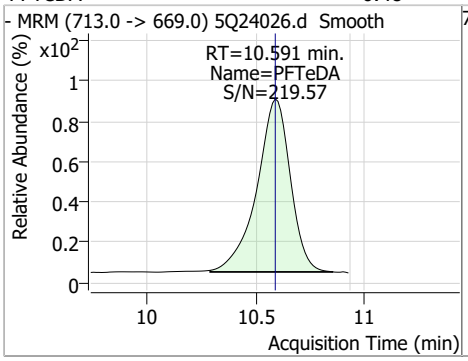
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	9.85	10.59	-0.02	189244				

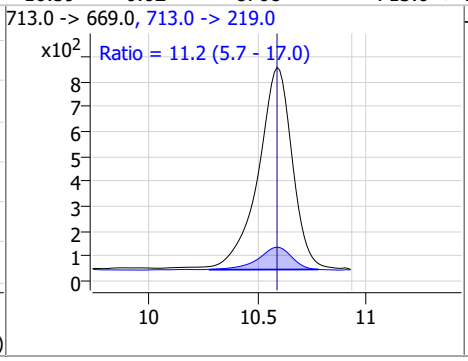


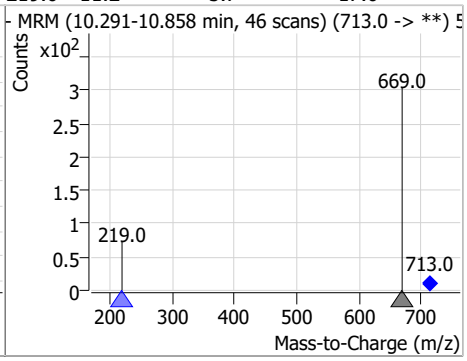




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	0.48	10.59	-0.02	8708	713.0 -> 219.0	11.2	5.7	17.0







9.6.34

9

Manual Integration Approval Summary

Sample Number: S5Q377-IC377
Lab FileID: 5Q24026.D
Injection Time: 01/02/24 17:05
Method: EPA 537M QSM5.3 B-15
Analyst approved: 01/03/24 16:03 Lindsay Ritner
Supervisor approved: 01/04/24 12:54 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.45	Split peak
Perfluorooctanesulfonic acid	1763-23-1		6.74	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Natasha Gumtie 01/04/24 12:54

Perfluorinated Compounds by LC/MS/MS

Data File : 5Q24027.d
Operator : lindsayr
Acq. Method : 537_ID.m
Acq. Date-Time : 1/2/2024 5:22:13 PM
Sample Name : ic377-1
Vial : P1-A3
DA Method File : ID_010224_S5Q377.quantmethod.xml
Batch Name : s5q377.batch.bin
Sample Information : OP401,S5Q377,250,,,1.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	2.000	217.0 -> 172.0	45984	10.00	µg/L	0.013
M5-PFPeA	3.432	268.0 -> 223.0	79142	10.00	µg/L	0.000
M5-PFHxA	4.565	318.0 -> 273.0	120094	10.00	µg/L	0.000
M4-PFHpA	5.425	367.0 -> 322.0	124941	10.00	µg/L	0.000
M8-PFOA	6.149	421.0 -> 376.0	174289	10.00	µg/L	0.000
M9-PFNA	6.781	472.0 -> 427.0	175344	10.00	µg/L	0.000
M6-PFDA	7.314	519.0 -> 474.0	184598	10.00	µg/L	0.000
M7-PFUnDA	8.134	570.0 -> 525.0	258664	10.00	µg/L	0.000
M2-PFDoDA	9.118	615.0 -> 570.0	240201	10.00	µg/L	0.000
M2-PFTeDA	10.624	715.0 -> 670.0	201115	10.00	µg/L	0.012
M8-FOSA	6.204	506.0 -> 78.0	43606	10.00	µg/L	0.000
M3-PFBS	3.637	302.0 -> 99.0	9579	10.00	µg/L	0.000
M3-PFHxS	5.444	402.0 -> 99.0	11945	10.00	µg/L	0.000
M8-PFOS	6.753	507.0 -> 99.0	16794	10.00	µg/L	0.000
M2-4:2FTS	4.486	329.0 -> 309.0	38150	10.00	µg/L	0.000
M2-6:2FTS	6.148	429.0 -> 409.0	68747	10.00	µg/L	0.000
M2-8:2FTS	7.388	529.0 -> 509.0	68694	10.00	µg/L	0.012
M3-MeFOSAA	6.747	573.0 -> 419.0	35868	10.00	µg/L	0.000
M3-HFPO-DA	4.831	287.0 -> 169.0	6465	10.00	µg/L	0.000
M3-MeFOSA	6.589	515.0 -> 169.0	14713	10.00	µg/L	0.000
M5-EtFOSAA	6.845	589.0 -> 419.0	32231	10.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.486	329.0 -> 309.0	38150	9.76	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 97.6%		
13C2-6:2FTS	6.148	429.0 -> 409.0	68747	9.35	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 93.5%		
13C2-8:2FTS	7.388	529.0 -> 509.0	68694	9.71	µg/L	0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 97.1%		
13C2-PFDoDA	9.118	615.0 -> 570.0	240201	10.63	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 106.3%		
13C2-PFTeDA	10.624	715.0 -> 670.0	201115	10.46	µg/L	0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 104.6%		
13C3-PFBS	3.637	302.0 -> 99.0	9579	10.38	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 103.8%		
13C3-PFHxS	5.444	402.0 -> 99.0	11945	10.57	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 105.7%		
13C4-PFBA	2.000	217.0 -> 172.0	45984	10.42	µg/L	0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 104.2%		
13C4-PFHpA	5.425	367.0 -> 322.0	124941	10.57	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 105.7%		
13C5-PFHxA	4.565	318.0 -> 273.0	120094	10.46	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 104.6%		
13C5-PFPeA	3.432	268.0 -> 223.0	79142	10.65	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 106.5%		
13C6-PFDA	7.314	519.0 -> 474.0	184598	10.66	µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

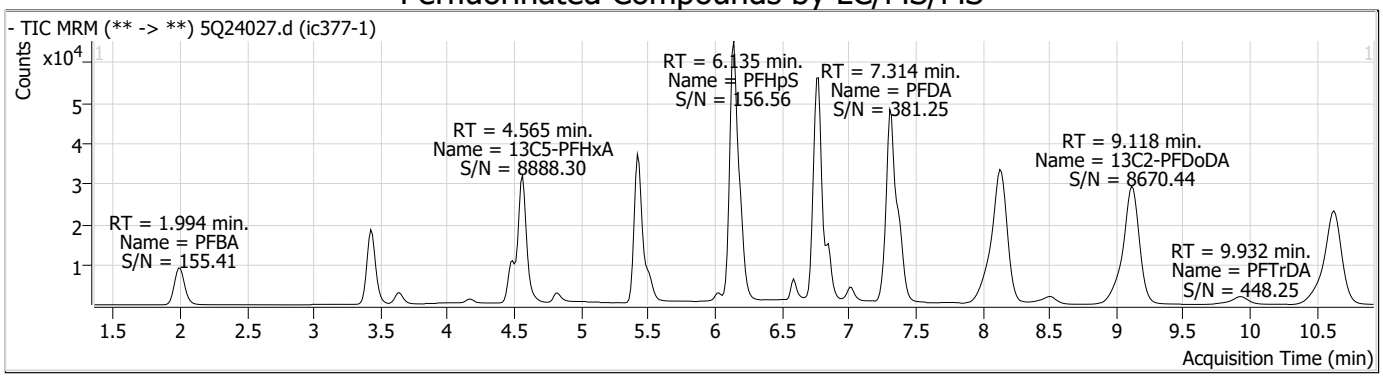
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 106.6%			
13C7-PFUnDA	8.134	570.0 -> 525.0	258664	10.60	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 106.0%			
13C8-FOSA	6.204	506.0 -> 78.0	43606	10.66	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 106.6%			
13C8-PFOA	6.149	421.0 -> 376.0	174289	10.53	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 105.3%			
13C8-PFOS	6.753	507.0 -> 99.0	16794	10.66	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 106.6%			
13C9-PFNA	6.781	472.0 -> 427.0	175344	10.58	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 105.8%			
d3-MeFOSAA	6.747	573.0 -> 419.0	35868	10.66	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 106.6%			
13C3-HFPO-DA	4.831	287.0 -> 169.0	6465	10.83	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 108.3%			
d3-MeFOSA	6.589	515.0 -> 169.0	14713	10.56	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 105.6%			
d5-EtFOSAA	6.845	589.0 -> 419.0	32231	10.58	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 105.8%			
Target Compounds							QValue
4:2FTS	4.488	327.0 -> 307.0	3268	0.90	µg/L		94
		327.0 -> 81.0	1980				
6:2FTS	6.148	427.0 -> 407.0	5682	0.98	µg/L		94
		427.0 -> 81.0	2480				
8:2FTS	7.389	527.0 -> 507.0	5537	0.96	µg/L		97
		527.0 -> 81.0	2720				
EtFOSAA	6.859	584.0 -> 419.0	2194	0.89	µg/L		87
		584.0 -> 483.0	1129				
FOSA	6.194	498.0 -> 78.0	3271	0.85	µg/L		97
		498.0 -> 478.0	75				
MeFOSAA	6.748	570.0 -> 419.0	2440	0.91	µg/L		97
		570.0 -> 512.0	841				
PFBA	1.994	213.0 -> 169.0	3360	0.81	µg/L		100
PFBS	3.640	299.0 -> 80.0	1869	0.80	µg/L		95
		299.0 -> 99.0	875				
PFDA	7.314	513.0 -> 469.0	14507	0.85	µg/L		100
		513.0 -> 219.0	2558				
PFDoDA	9.121	613.0 -> 569.0	16676	0.84	µg/L		99
		613.0 -> 319.0	2805				
PFDS	8.020	599.0 -> 80.0	2643	0.83	µg/L		98
		599.0 -> 99.0	1625				
PFHpA	5.426	363.0 -> 319.0	11523	0.84	µg/L		99
		363.0 -> 169.0	2465				
PFHpS	6.135	449.0 -> 80.0	1899	0.86	µg/L		98
		449.0 -> 99.0	1002				
PFHxA	4.565	313.0 -> 269.0	9205	0.82	µg/L		100
		313.0 -> 119.0	383				
PFHxS	5.446	399.0 -> 80.0	1842	0.86	µg/L	m	97
		399.0 -> 99.0	986				
PFNA	6.781	463.0 -> 419.0	12847	0.81	µg/L		98
		463.0 -> 219.0	2810				
PFNS	7.272	549.0 -> 80.0	1747	0.90	µg/L		97
		549.0 -> 99.0	1033				
PFOA	6.150	413.0 -> 369.0	13300	0.80	µg/L		98
		413.0 -> 169.0	3401				
PFOS	6.755	499.0 -> 80.0	2358	0.84	µg/L	m	100

Perfluorinated Compounds by LC/MS/MS

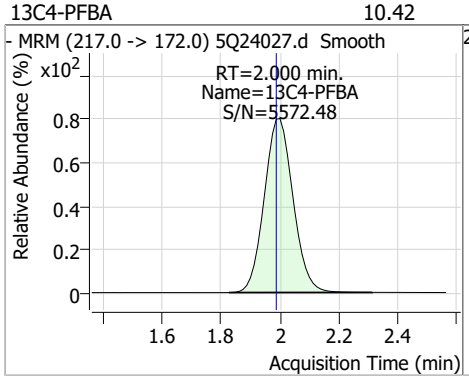
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		499.0 -> 99.0	1171			
PFPeA	3.434	263.0 -> 219.0	5885	0.79	µg/L	100
PFPeS	4.648	349.0 -> 80.0	1360	0.83	µg/L	97
		349.0 -> 99.0	734			
PFTeDA	10.628	713.0 -> 669.0	16668	0.86	µg/L	98
		713.0 -> 219.0	2002			
PFTrDA	9.932	663.0 -> 619.0	15751	0.79	µg/L	98
		663.0 -> 369.0	1835			
PFUnDA	8.136	563.0 -> 519.0	18439	0.82	µg/L	97
		563.0 -> 269.0	3416			
11Cl-PF3OUdS	8.503	631.0 -> 451.0	11435	0.81	µg/L	99
		633.0 -> 453.0	3610			
9Cl-PF3ONS	7.011	531.0 -> 351.0	10260	0.80	µg/L	100
		533.0 -> 353.0	3221			
ADONA	5.514	377.0 -> 251.0	15577	0.79	µg/L	98
		377.0 -> 85.0	5796			
HFPO-DA	4.827	329.0 -> 169.0	2171	0.83	µg/L	98
		285.0 -> 169.0	454			
MeFOSA	6.602	512.0 -> 169.0	979	0.78	µg/L	98
		512.0 -> 219.0	838			
4-PFECHS	6.032	461.0 -> 381.0	5857	0.79	µg/L	96
		461.0 -> 99.0	3162			
FBSA	4.170	298.0 -> 78.0	3359	0.85	µg/L	99
		298.0 -> 64.0	331			
FHxSA	5.409	398.0 -> 78.0	3679	0.93	µg/L	93
		398.0 -> 64.0	432			

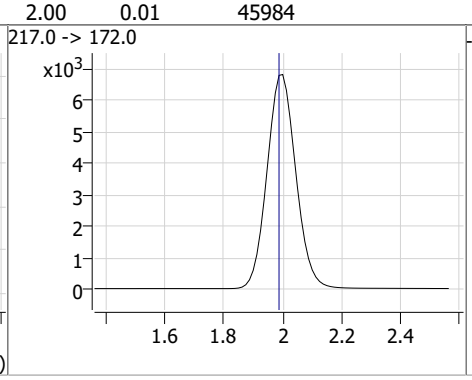
 # = Qualifier out of range, m = manually integrated, + = Area summed

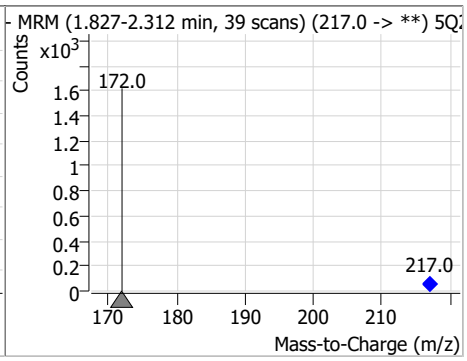
Perfluorinated Compounds by LC/MS/MS



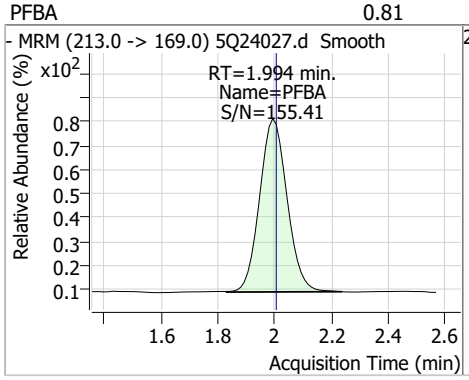
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	10.42	2.00	0.01	45984				

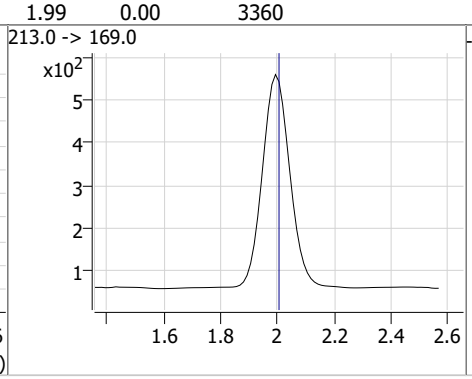


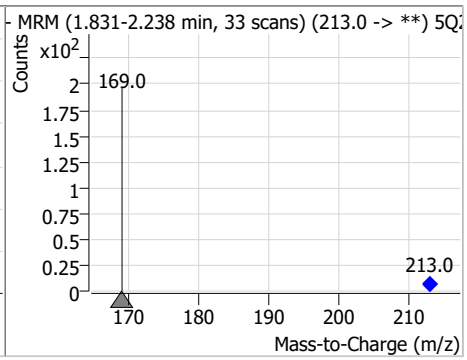




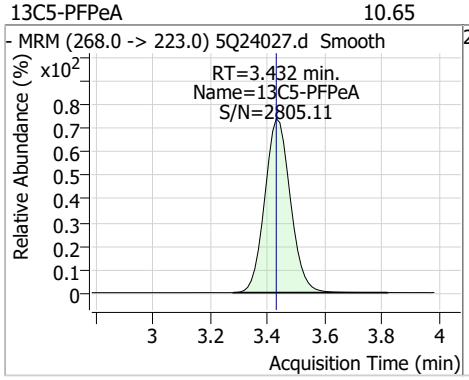
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	0.81	1.99	0.00	3360				

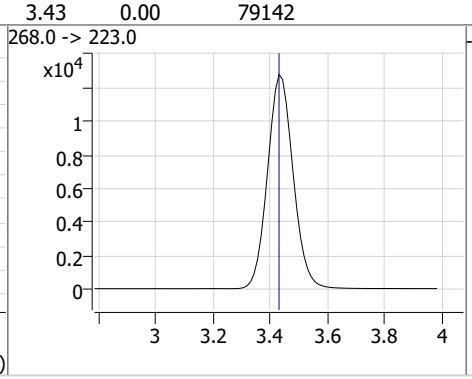


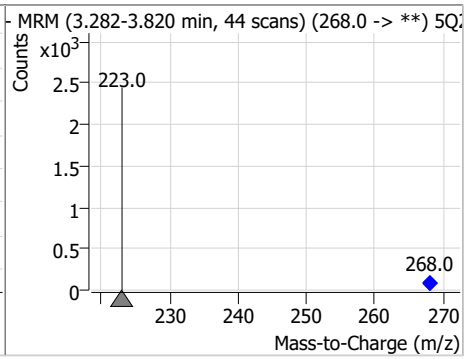




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	10.65	3.43	0.00	79142				

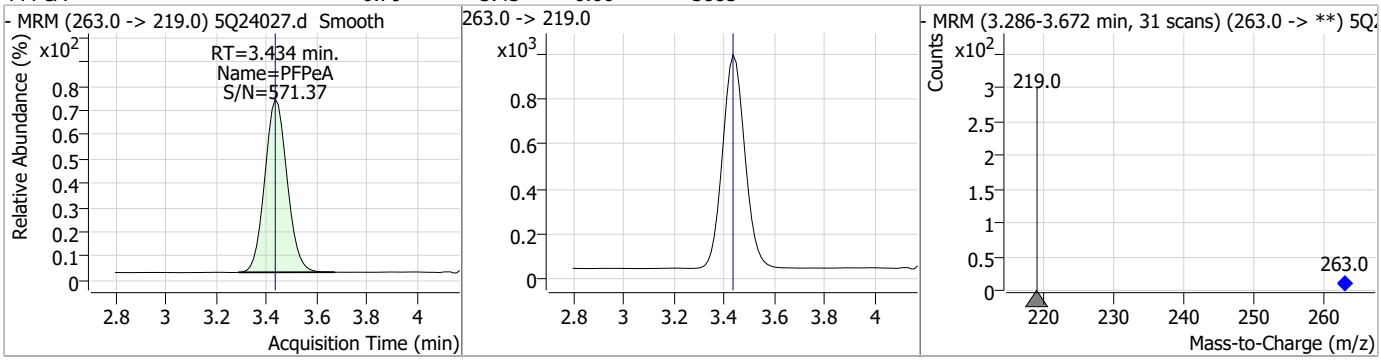




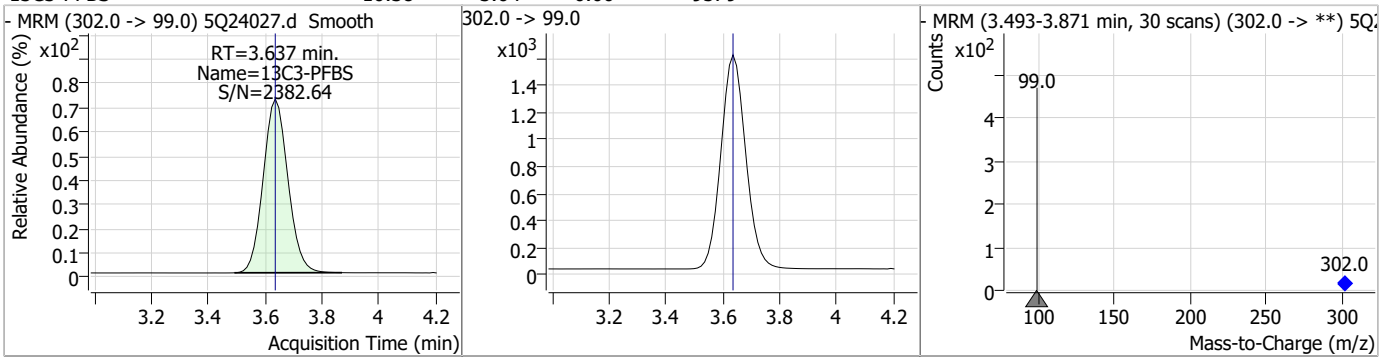


Perfluorinated Compounds by LC/MS/MS

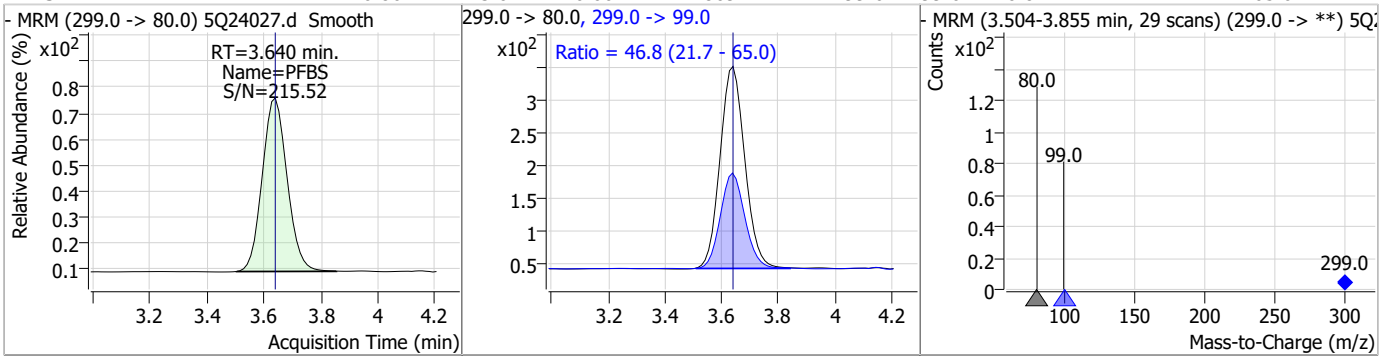
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	0.79	3.43	0.00	5885				



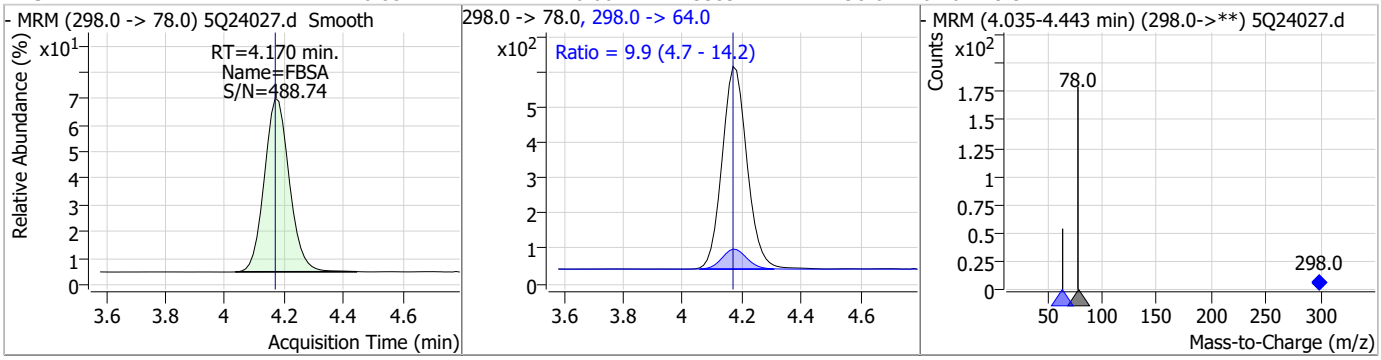
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	10.38	3.64	0.00	9579				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	0.80	3.64	0.00	1869	299.0 -> 99.0	46.8	21.7	65.0

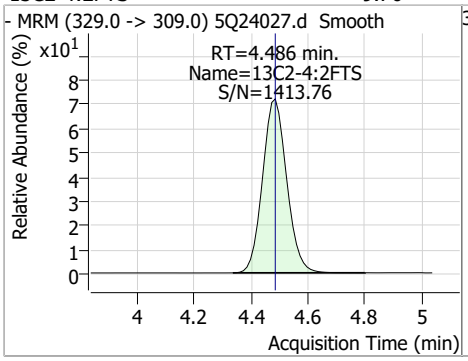


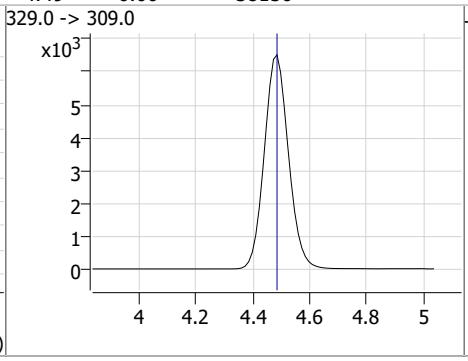
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	0.85	4.17	0.00	3359	298.0 -> 64.0	9.9	4.7	14.2

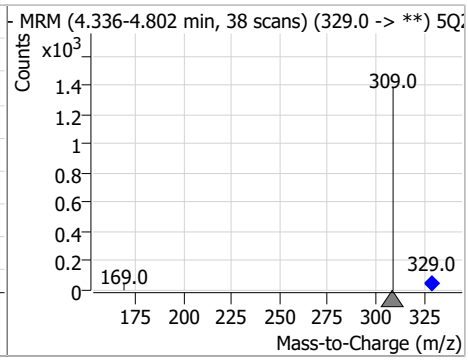


Perfluorinated Compounds by LC/MS/MS

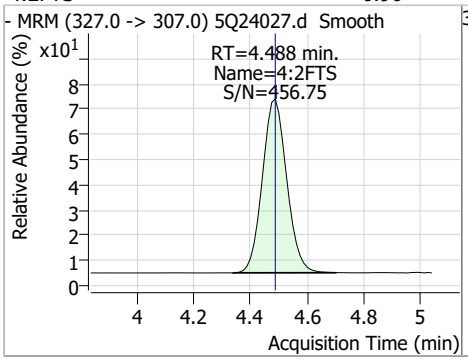
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	9.76	4.49	0.00	38150				

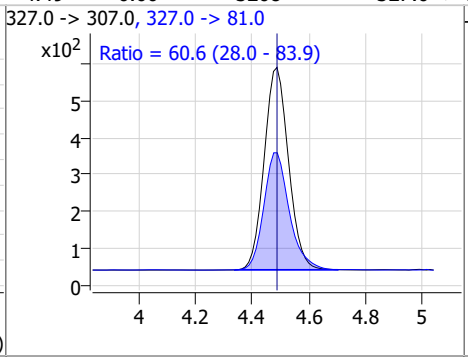


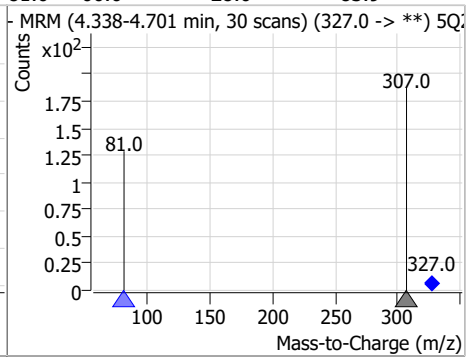




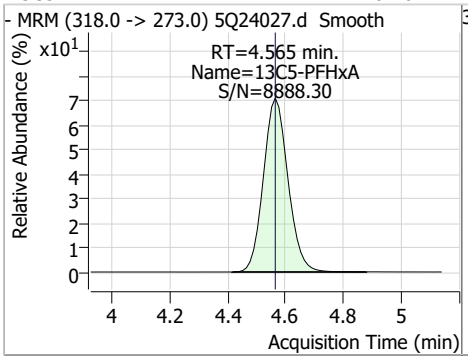
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	0.90	4.49	0.00	3268	327.0 -> 81.0	60.6	28.0	83.9

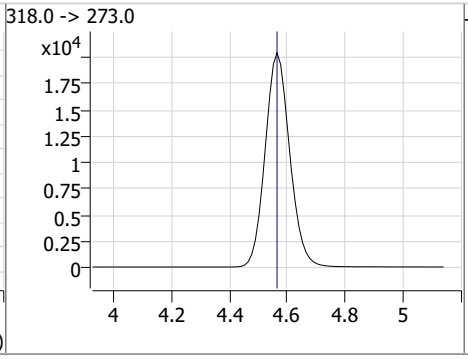


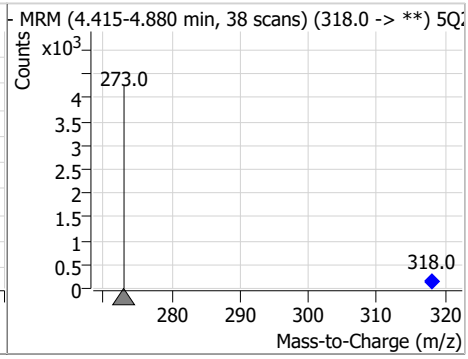




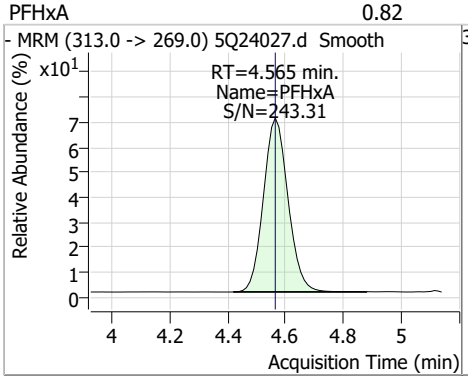
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	10.46	4.56	0.00	120094				

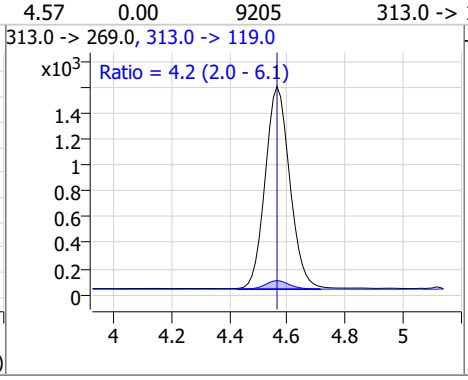


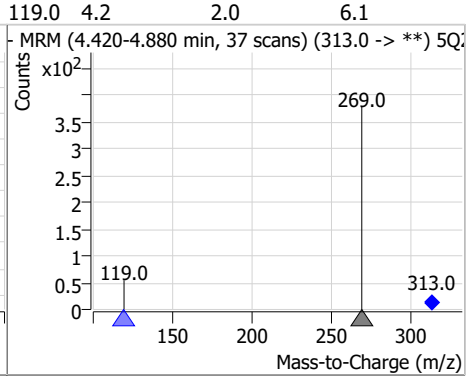




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	0.82	4.57	0.00	9205	313.0 -> 119.0	4.2	2.0	6.1

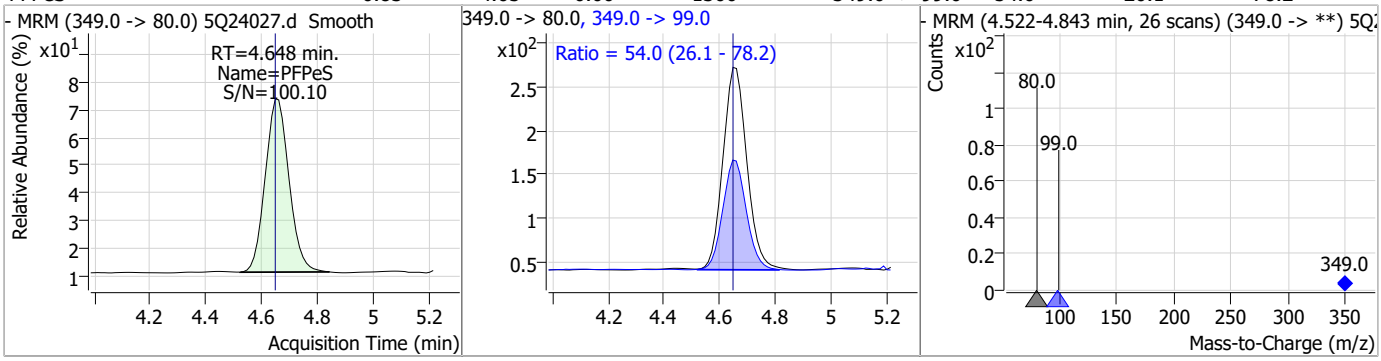




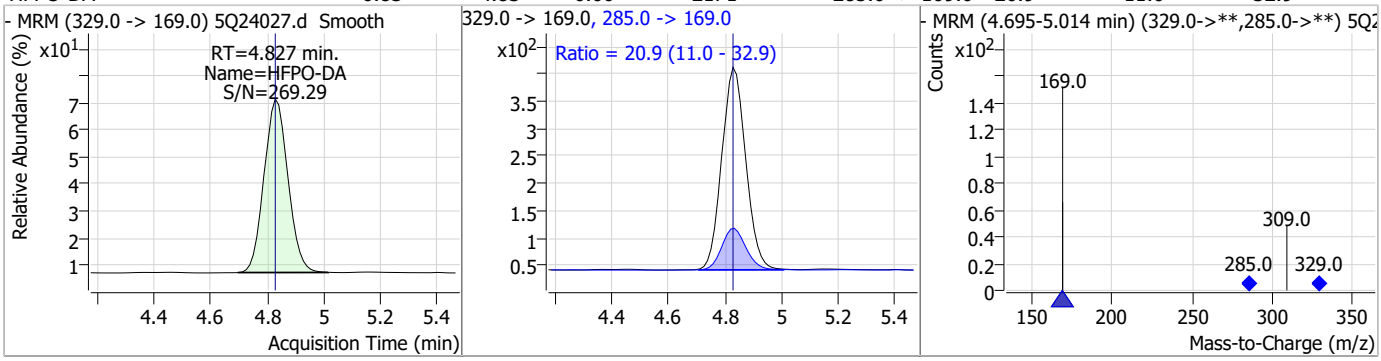


Perfluorinated Compounds by LC/MS/MS

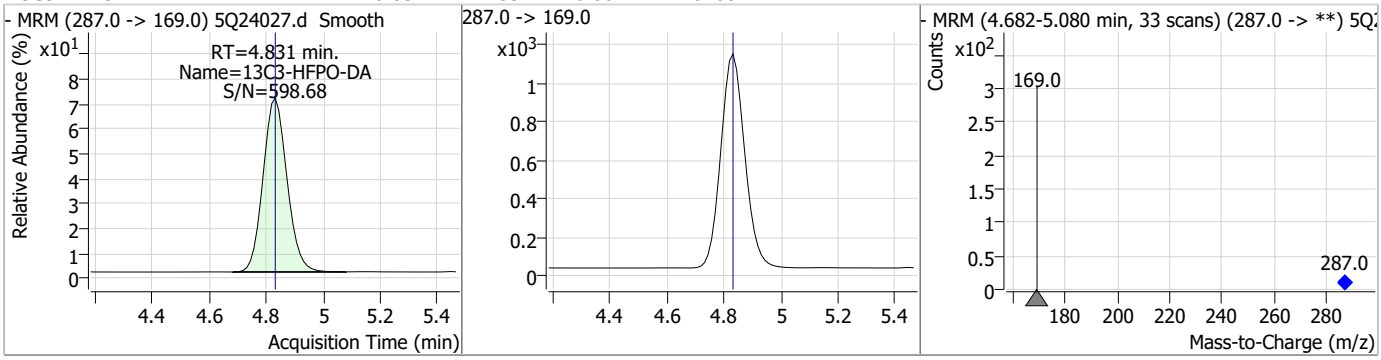
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	0.83	4.65	0.00	1360	349.0 -> 99.0	54.0	26.1	78.2



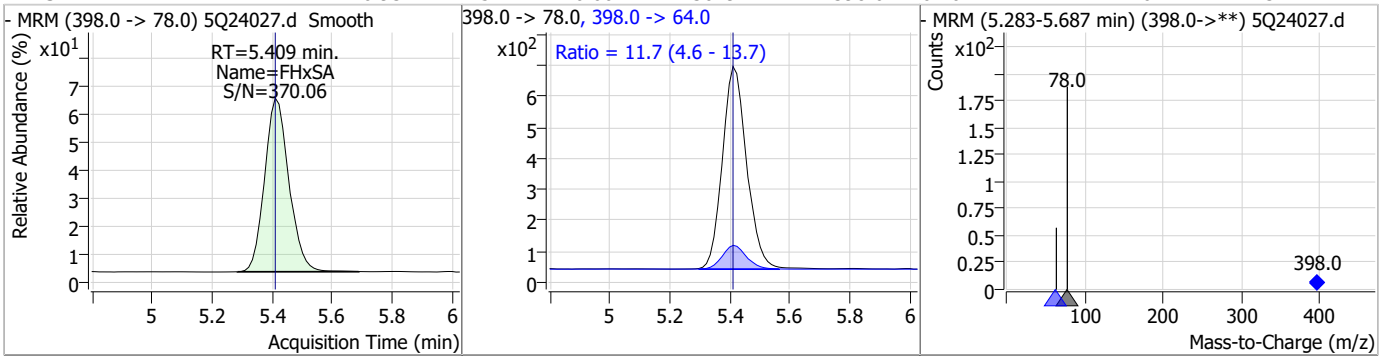
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	0.83	4.83	0.00	2171	285.0 -> 169.0	20.9	11.0	32.9



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	10.83	4.83	0.00	6465				

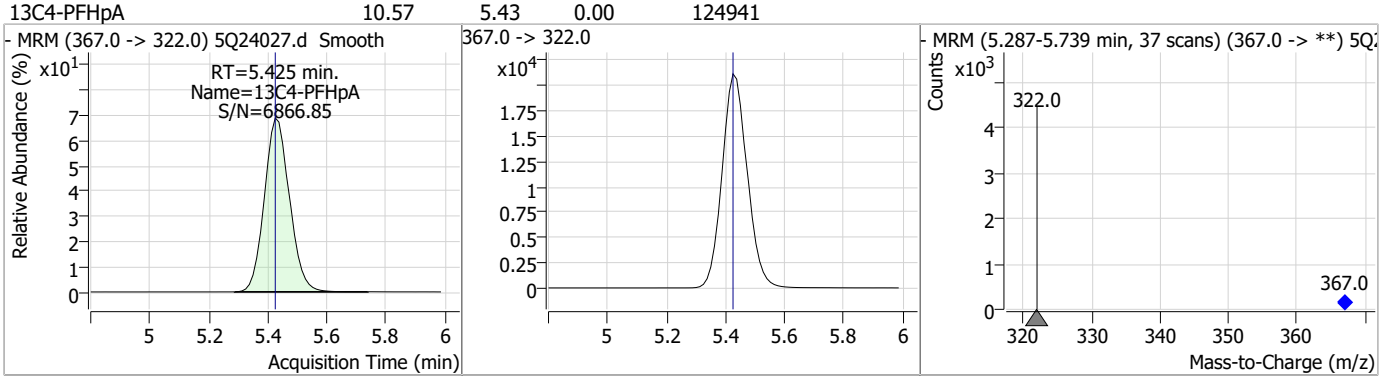


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	0.93	5.41	0.00	3679	398.0 -> 64.0	11.7	4.6	13.7

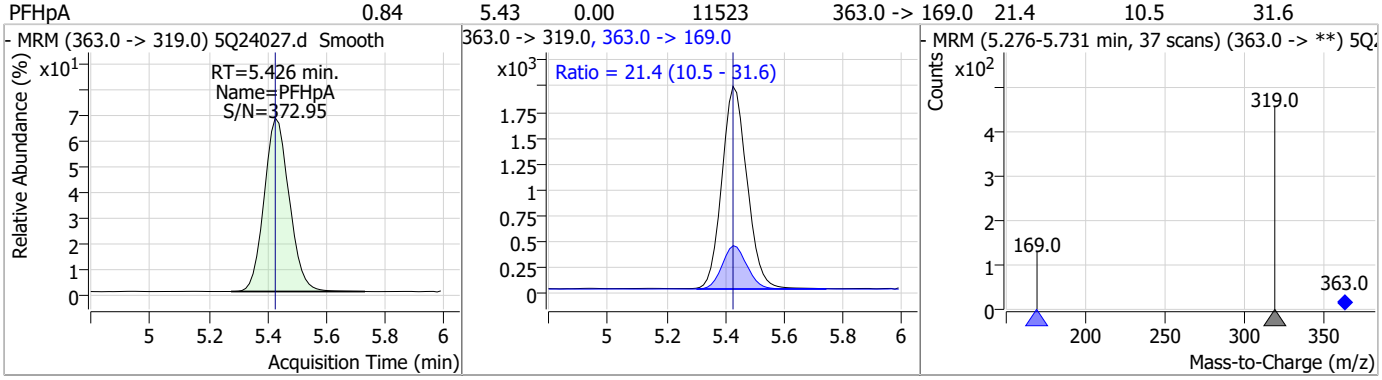


Perfluorinated Compounds by LC/MS/MS

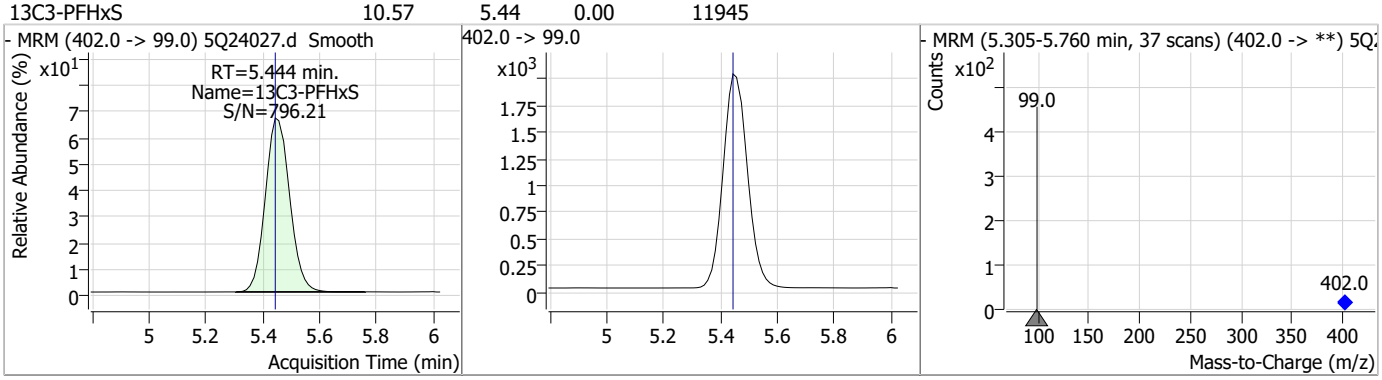
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	10.57	5.43	0.00	124941				



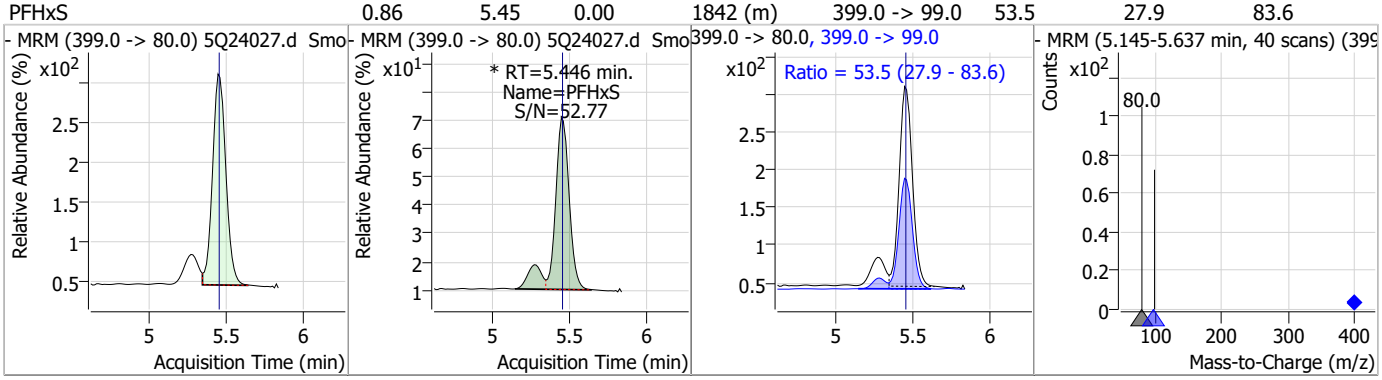
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	0.84	5.43	0.00	11523	363.0 -> 169.0	21.4	10.5	31.6



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	10.57	5.44	0.00	11945				

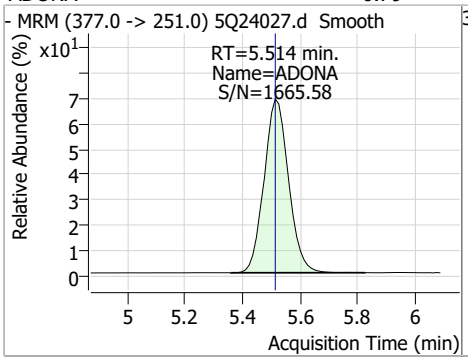


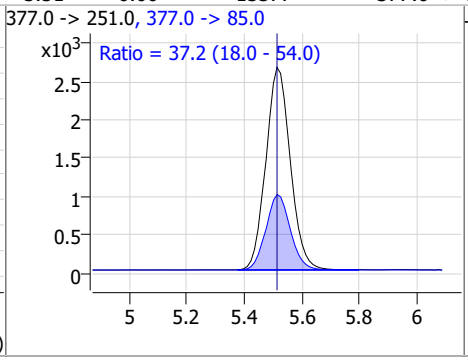
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	0.86	5.45	0.00	1842 (m)	399.0 -> 99.0	53.5	27.9	83.6

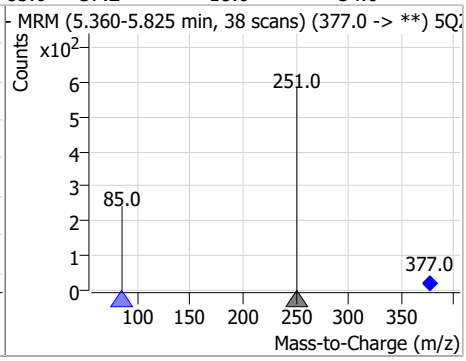


Perfluorinated Compounds by LC/MS/MS

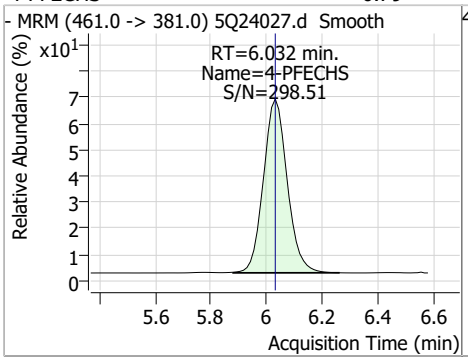
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	0.79	5.51	0.00	15577	377.0 -> 85.0	37.2	18.0	54.0

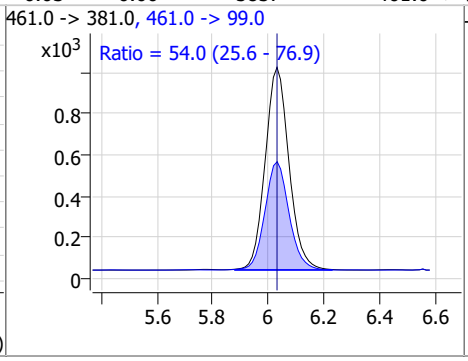


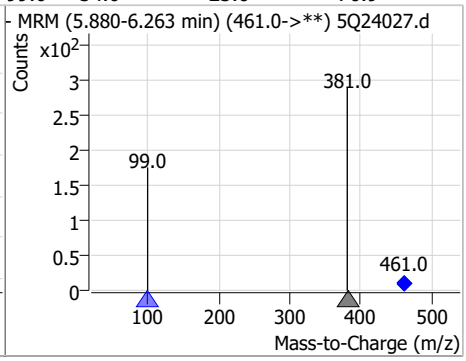




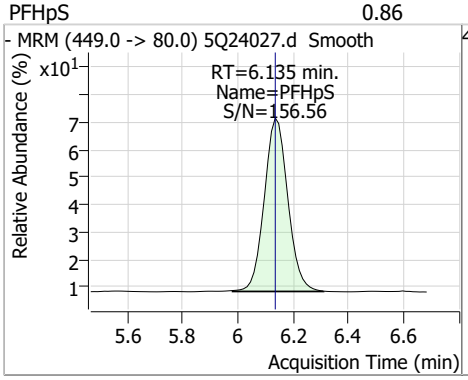
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS	0.79	6.03	0.00	5857	461.0 -> 99.0	54.0	25.6	76.9

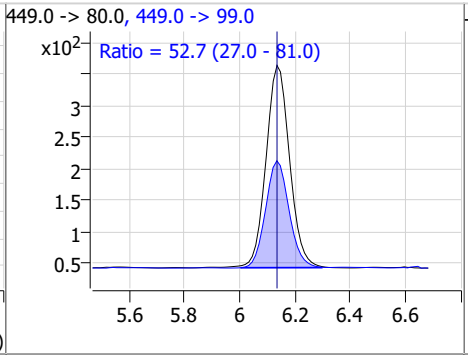


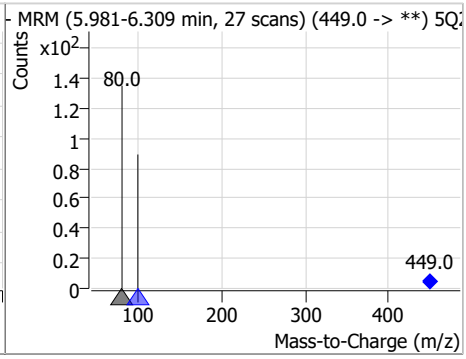




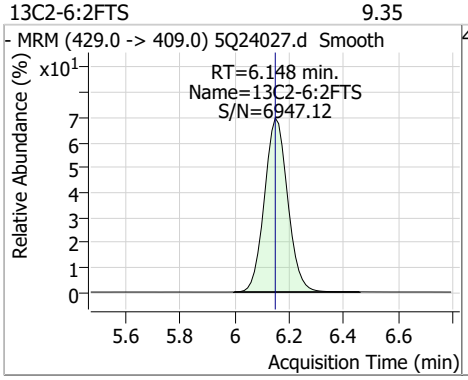
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	0.86	6.14	0.00	1899	449.0 -> 99.0	52.7	27.0	81.0

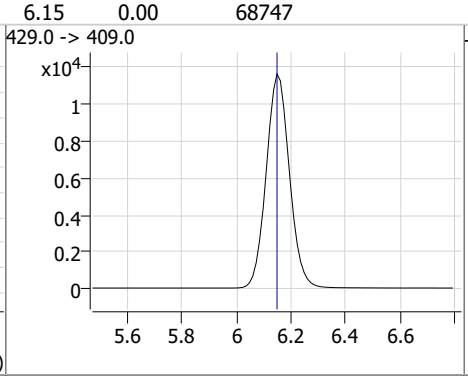


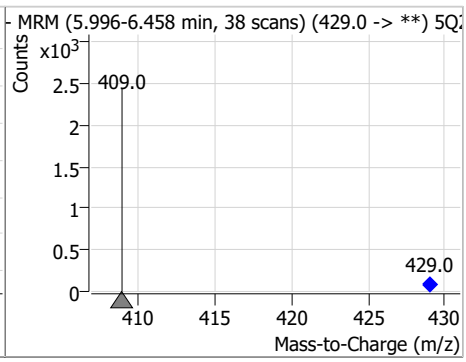




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	9.35	6.15	0.00	68747				

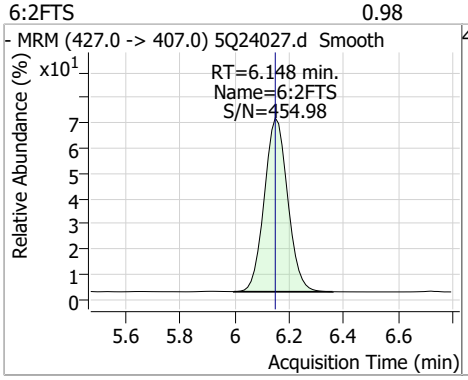


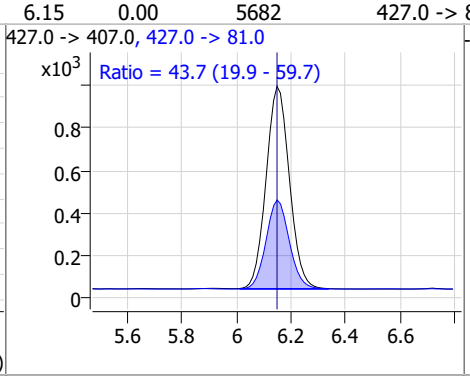


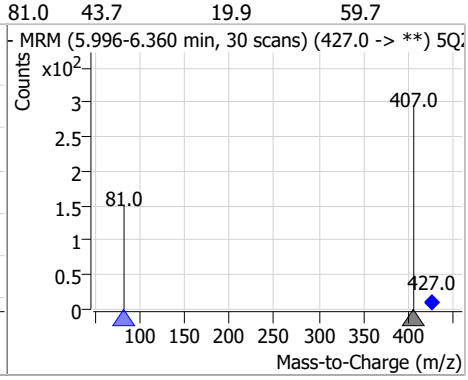


Perfluorinated Compounds by LC/MS/MS

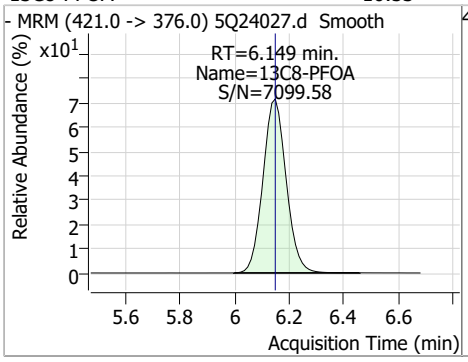
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	0.98	6.15	0.00	5682	427.0 -> 81.0	43.7	19.9	59.7

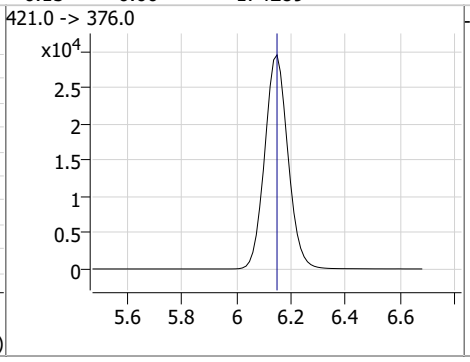


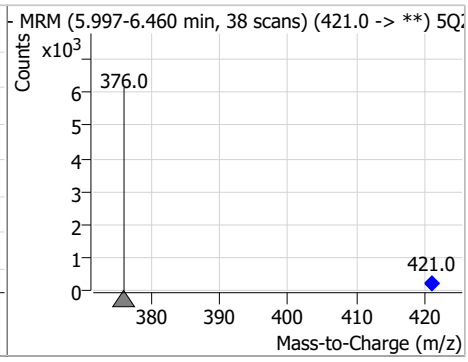




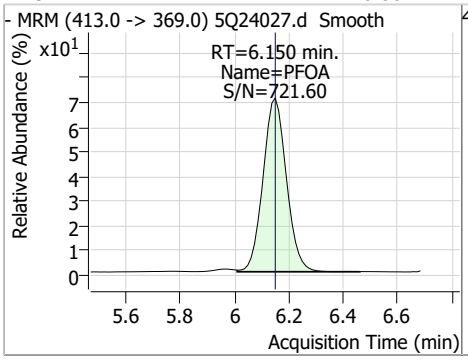
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	10.53	6.15	0.00	174289				

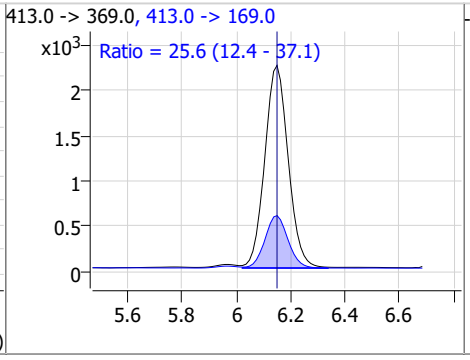


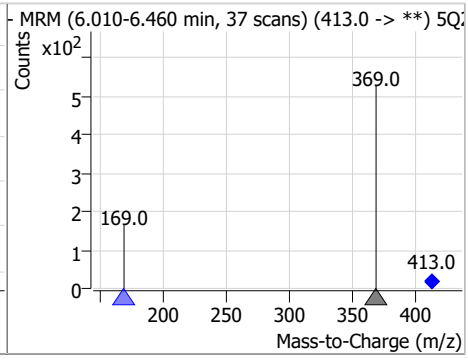




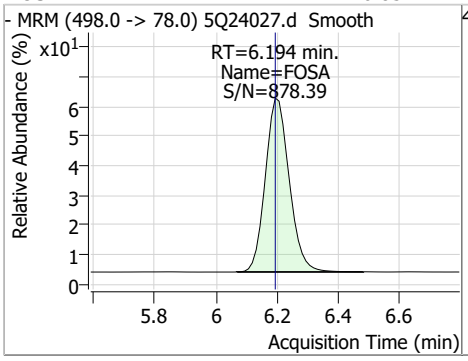
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	0.80	6.15	0.00	13300	413.0 -> 169.0	25.6	12.4	37.1

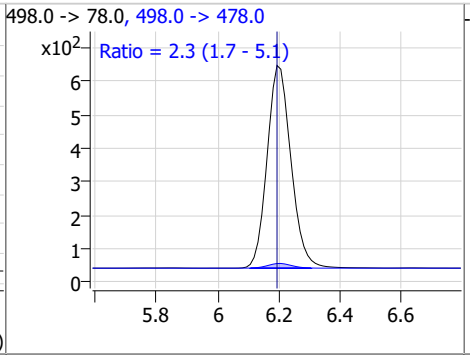


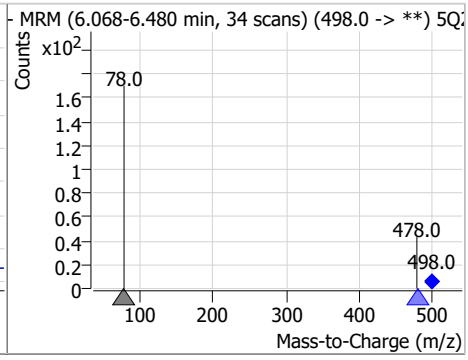




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	0.85	6.19	0.00	3271	498.0 -> 478.0	2.3	1.7	5.1

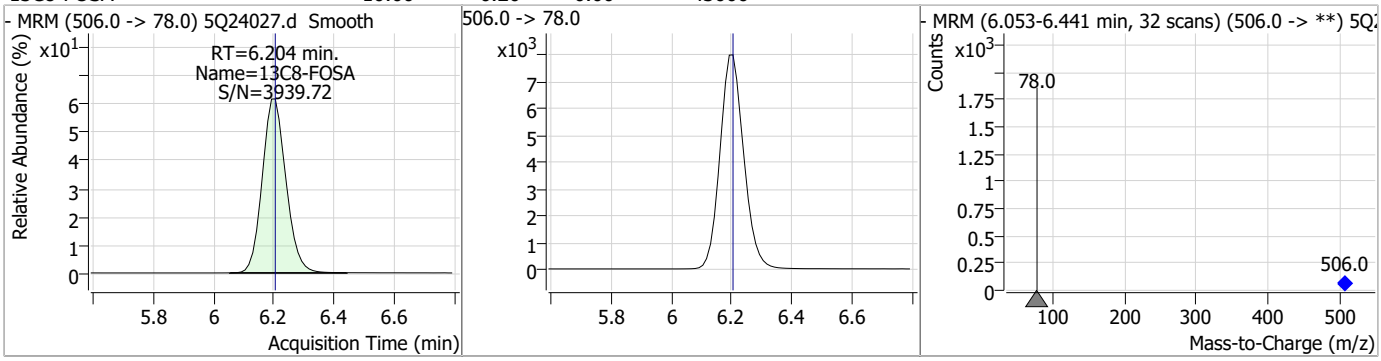




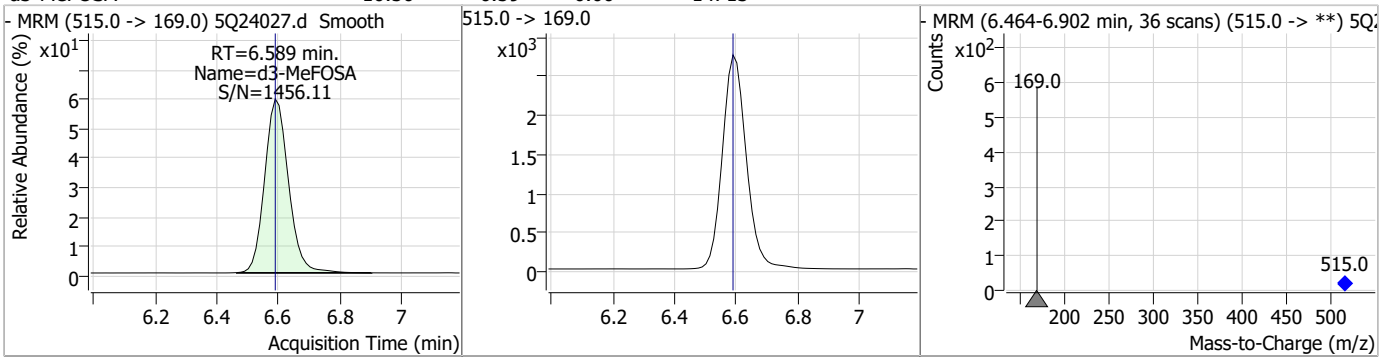


Perfluorinated Compounds by LC/MS/MS

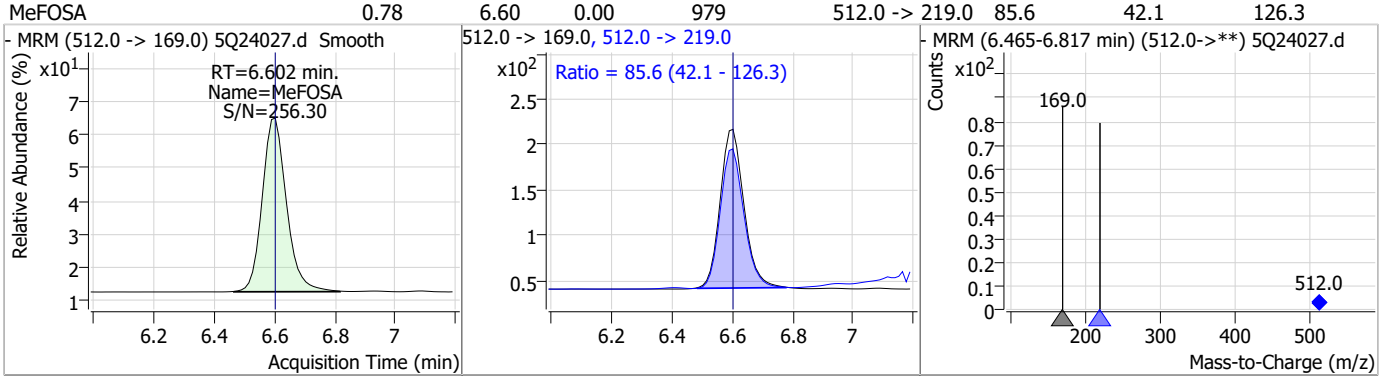
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	10.66	6.20	0.00	43606				



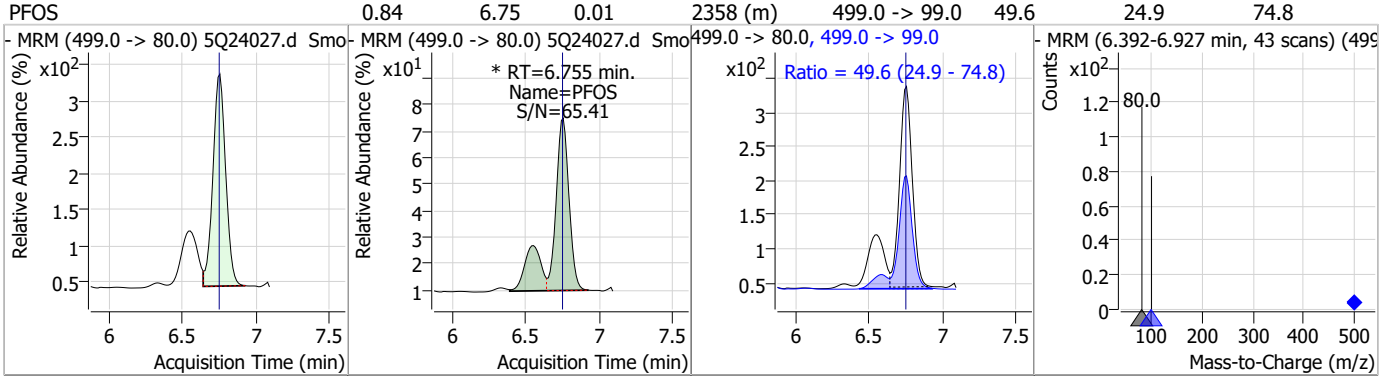
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	10.56	6.59	0.00	14713				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	0.78	6.60	0.00	979	512.0 -> 219.0	85.6	42.1	126.3

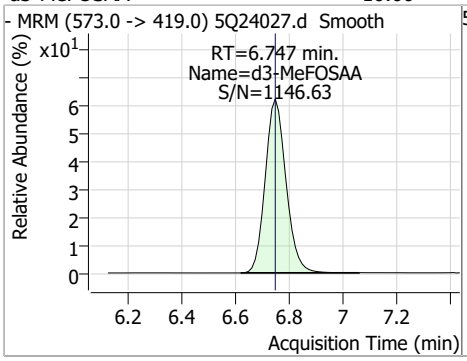


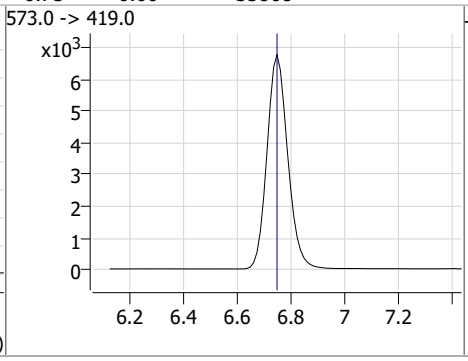
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	0.84	6.75	0.01	2358 (m)	499.0 -> 99.0	49.6	24.9	74.8

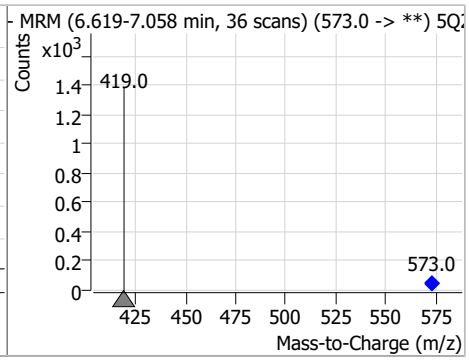


Perfluorinated Compounds by LC/MS/MS

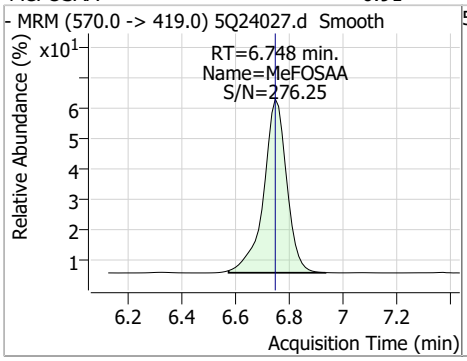
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	10.66	6.75	0.00	35868				

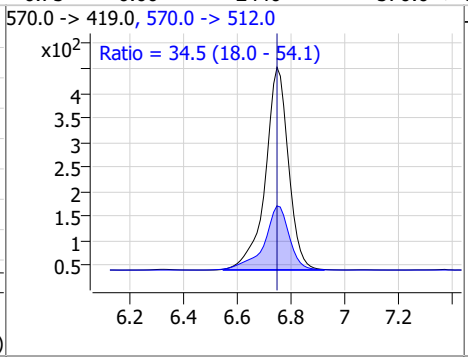


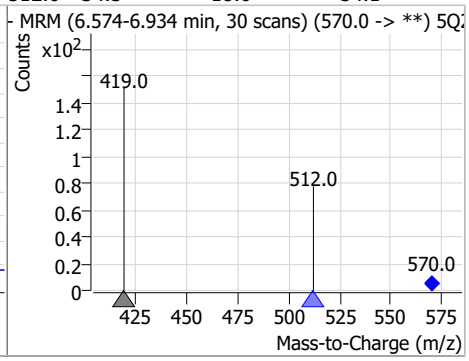




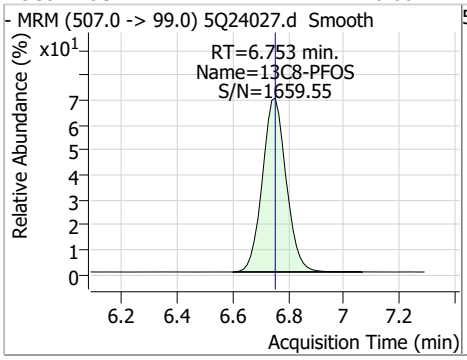
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	0.91	6.75	0.00	2440	570.0 -> 512.0	34.5	18.0	54.1

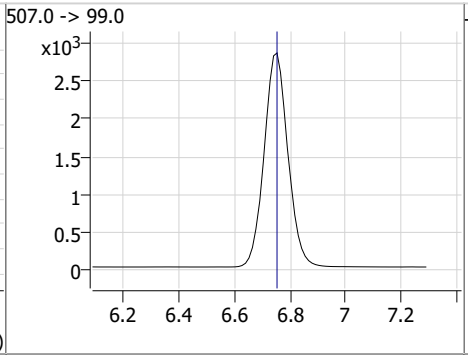


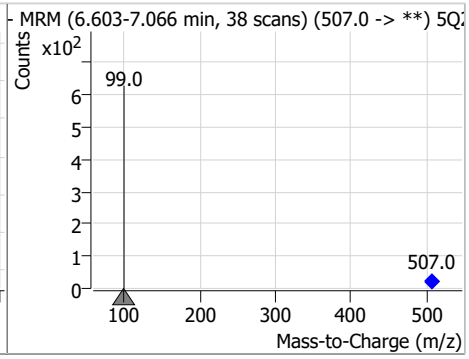




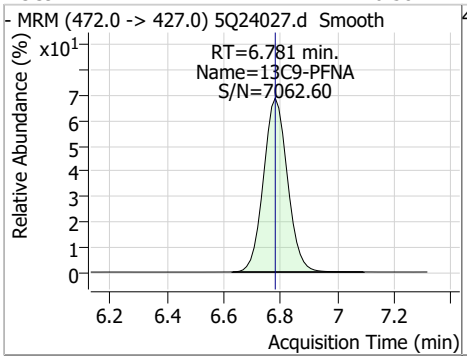
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	10.66	6.75	0.00	16794				

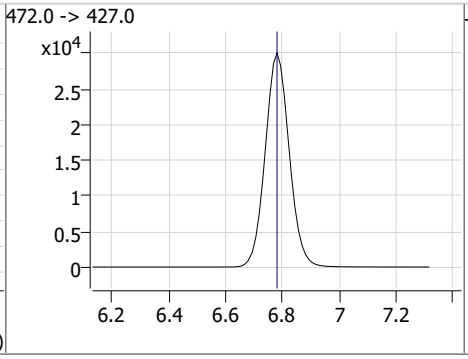


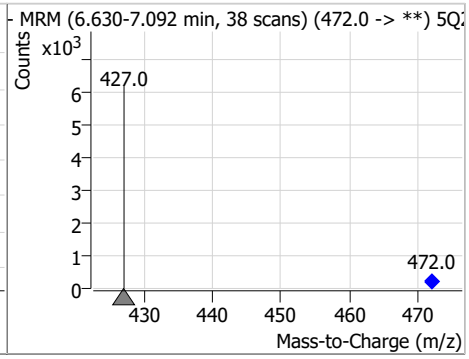




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	10.58	6.78	0.00	175344				

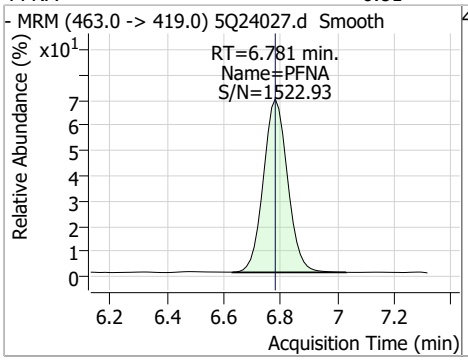


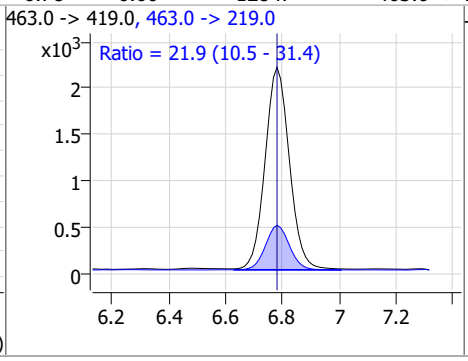


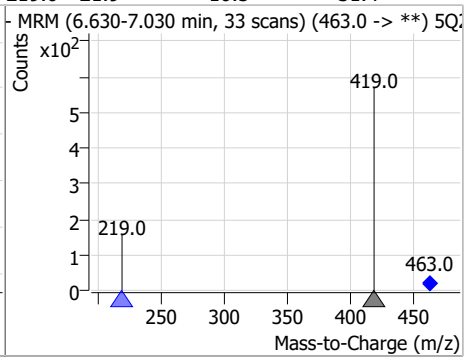


Perfluorinated Compounds by LC/MS/MS

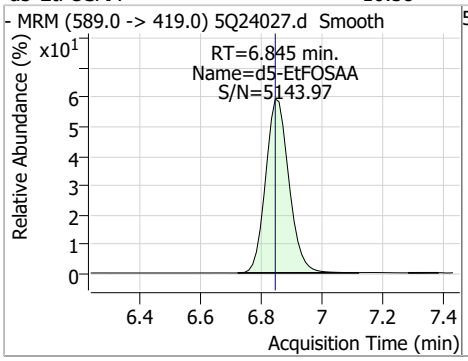
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	0.81	6.78	0.00	12847	463.0 -> 219.0	21.9	10.5	31.4

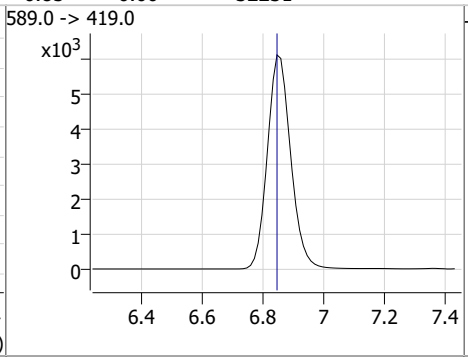


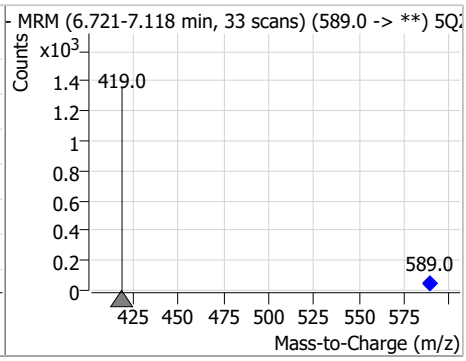




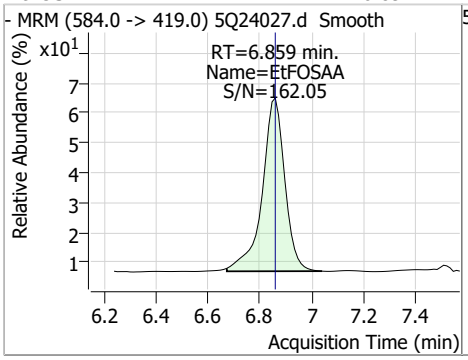
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	10.58	6.85	0.00	32231				

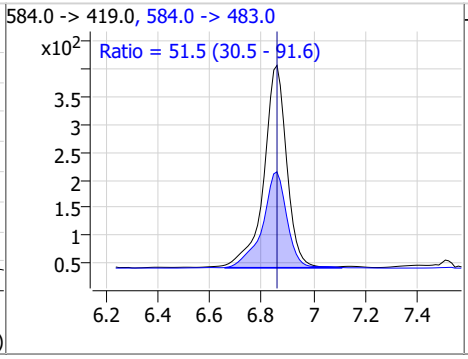


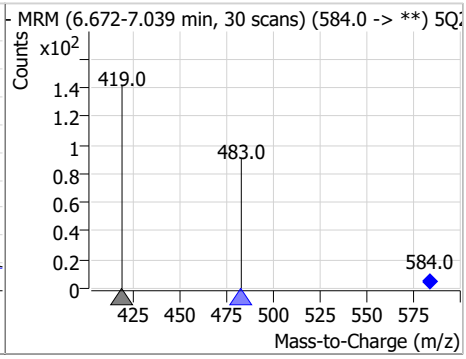




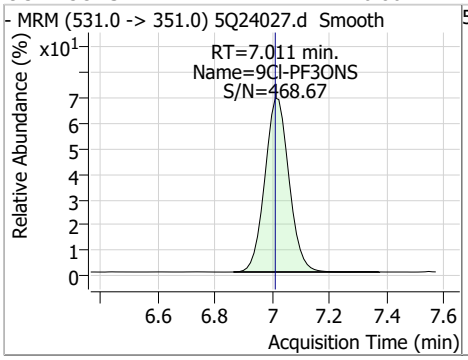
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	0.89	6.86	0.00	2194	584.0 -> 483.0	51.5	30.5	91.6

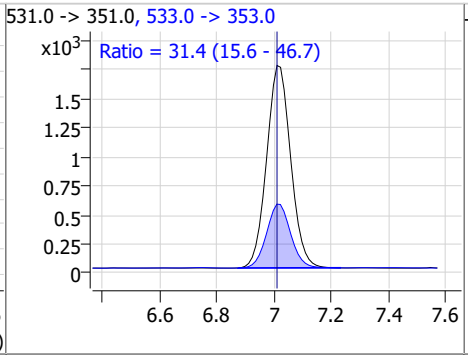


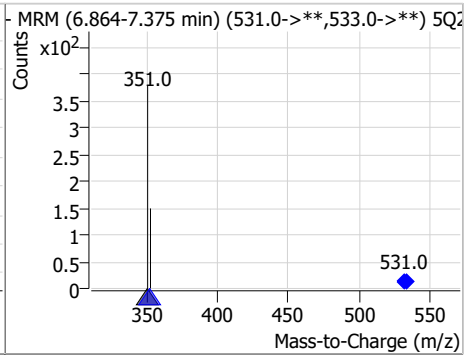




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	0.80	7.01	0.00	10260	533.0 -> 353.0	31.4	15.6	46.7

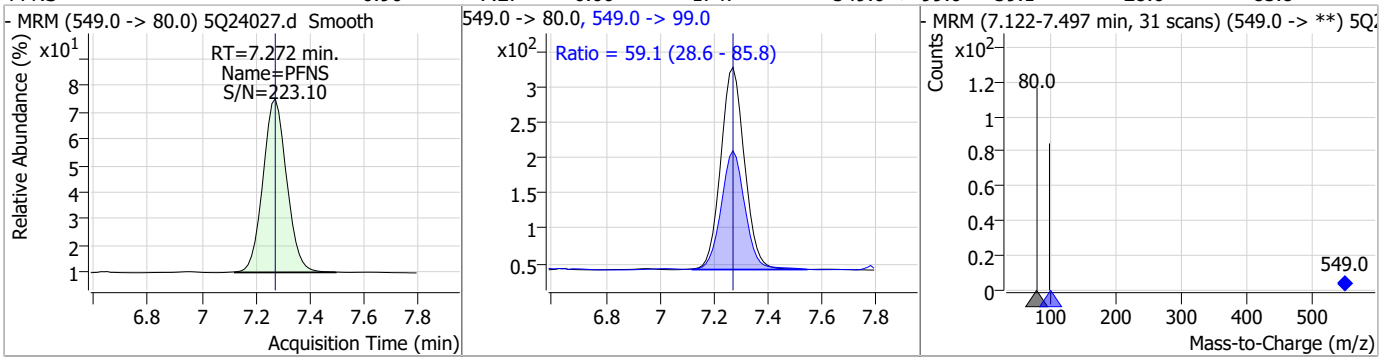




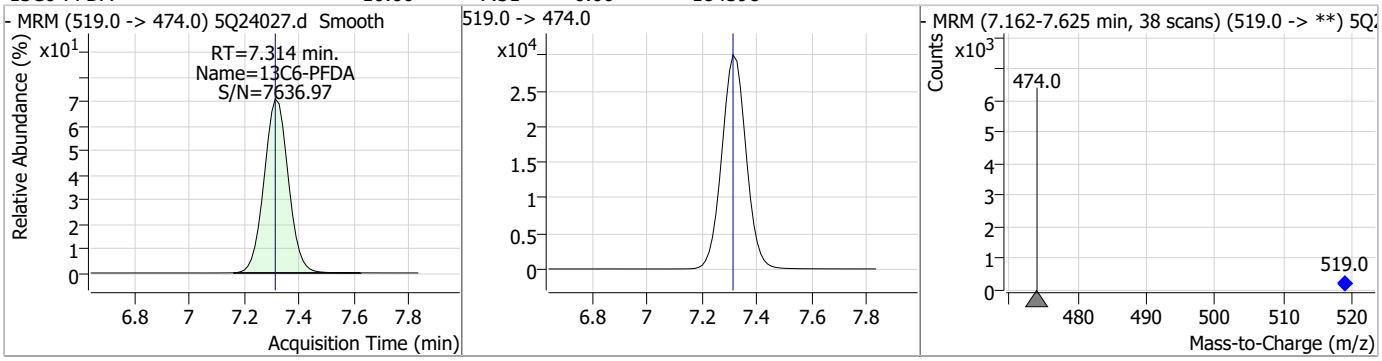


Perfluorinated Compounds by LC/MS/MS

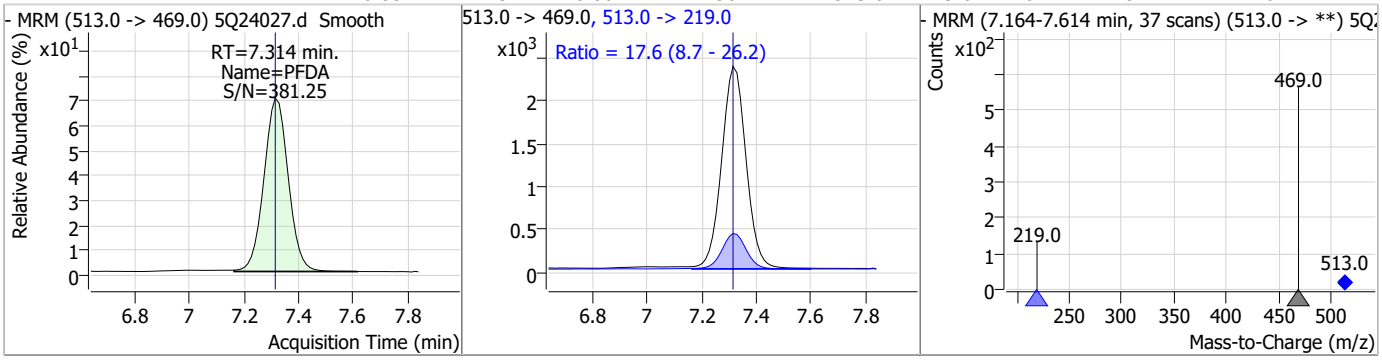
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	0.90	7.27	0.00	1747	549.0 -> 99.0	59.1	28.6	85.8



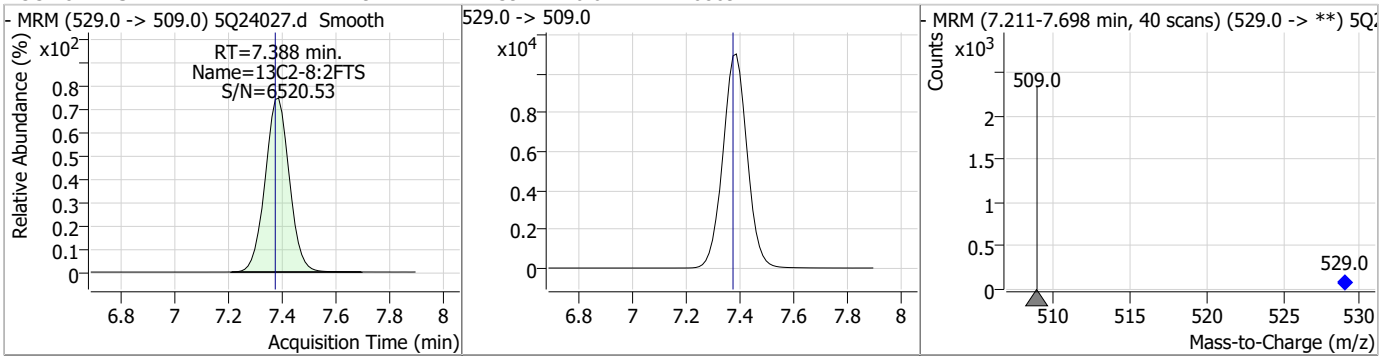
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	10.66	7.31	0.00	184598				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	0.85	7.31	0.00	14507	513.0 -> 219.0	17.6	8.7	26.2

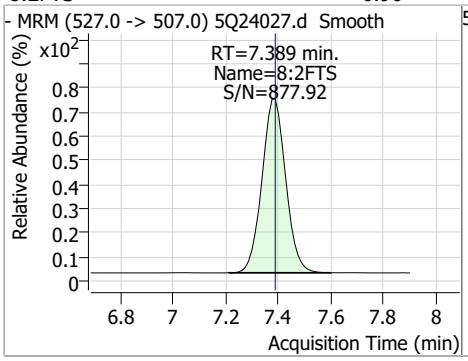


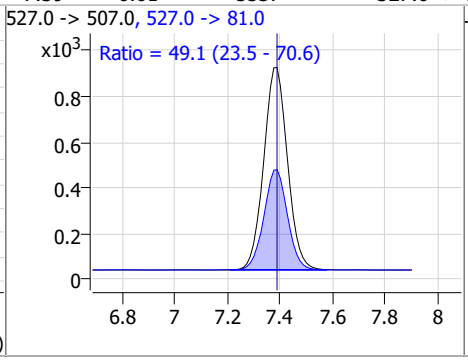
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	9.71	7.39	0.01	68694				

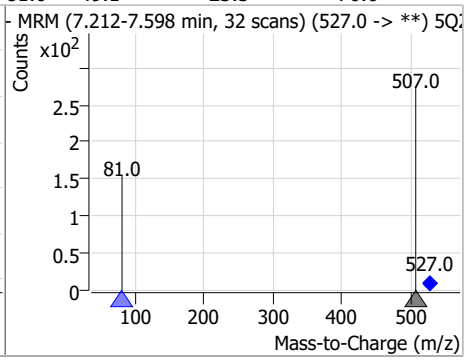


Perfluorinated Compounds by LC/MS/MS

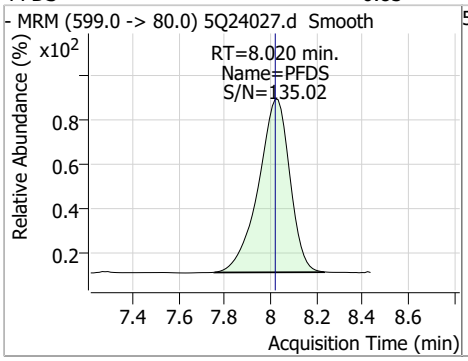
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	0.96	7.39	0.01	5537	527.0 -> 81.0	49.1	23.5	70.6

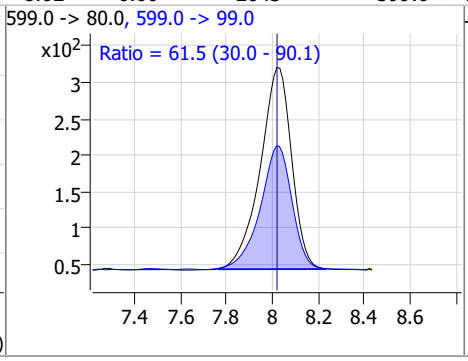


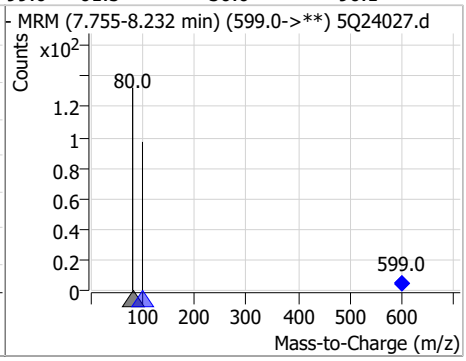




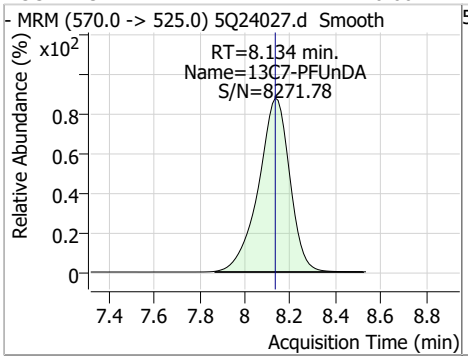
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	0.83	8.02	0.00	2643	599.0 -> 99.0	61.5	30.0	90.1

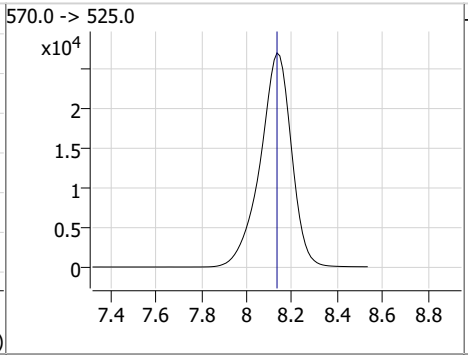


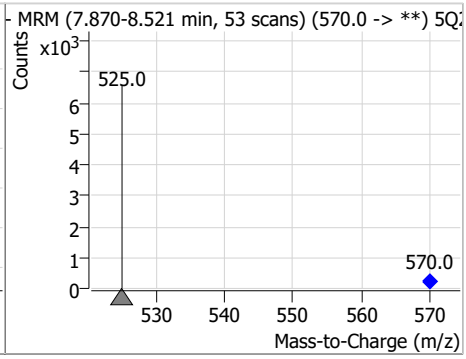




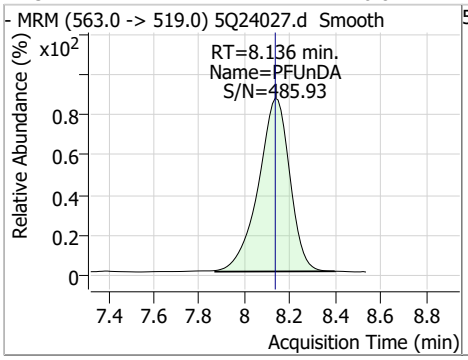
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	10.60	8.13	0.00	258664				

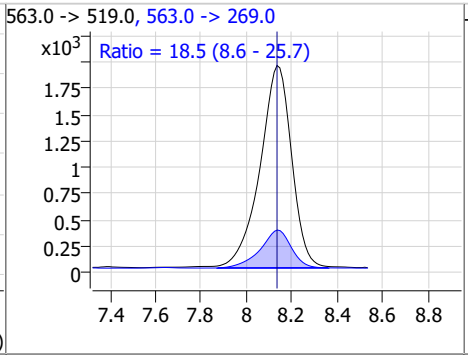


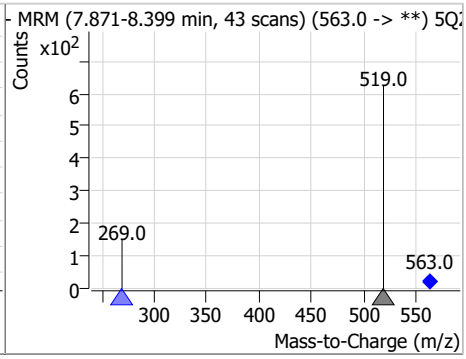




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	0.82	8.14	0.00	18439	563.0 -> 269.0	18.5	8.6	25.7

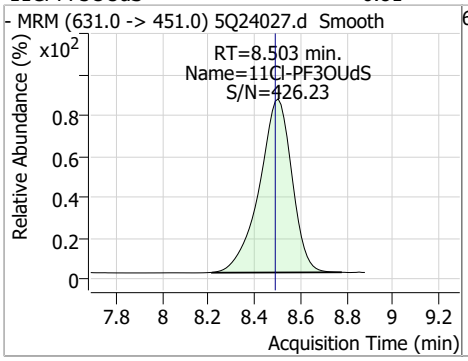


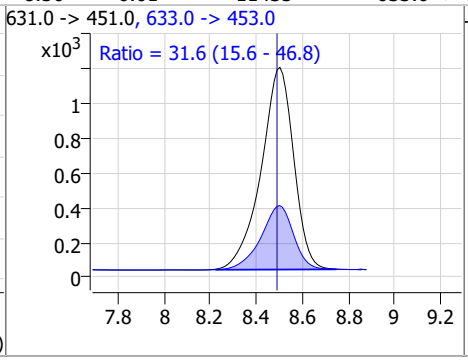


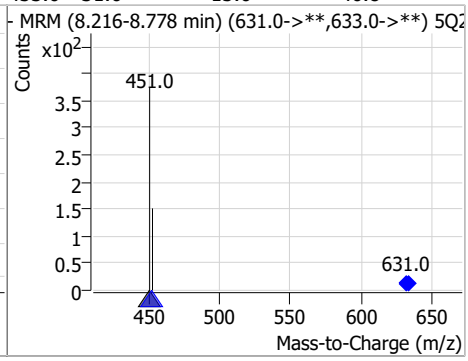


Perfluorinated Compounds by LC/MS/MS

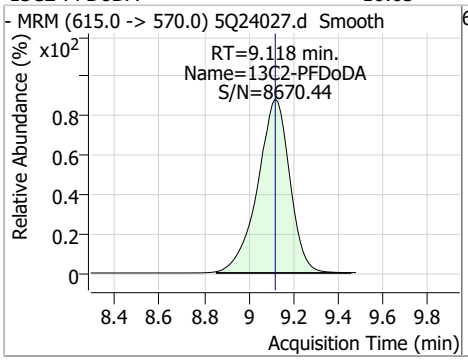
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	0.81	8.50	0.01	11435	633.0 -> 453.0	31.6	15.6	46.8

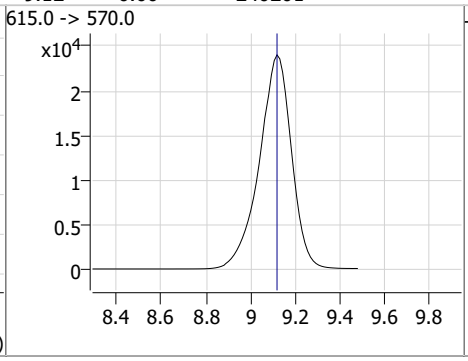


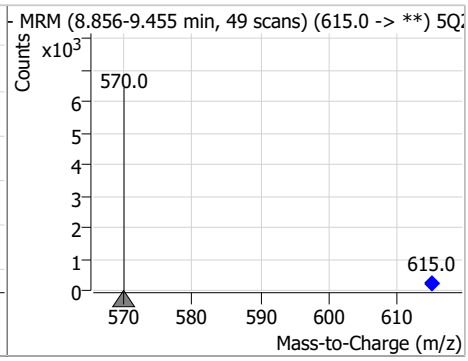




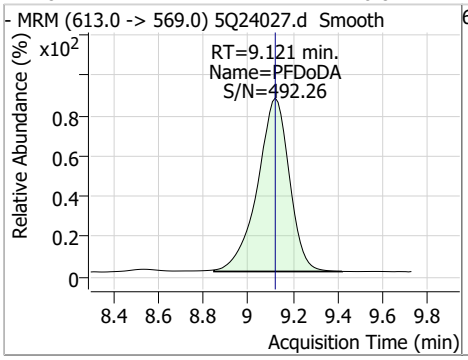
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	10.63	9.12	0.00	240201				

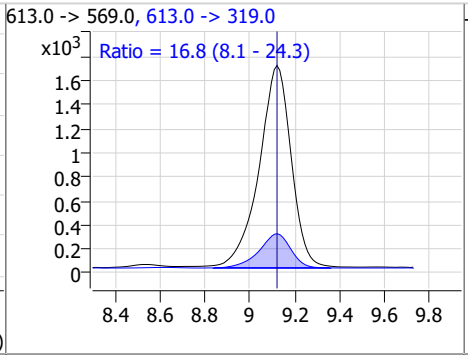


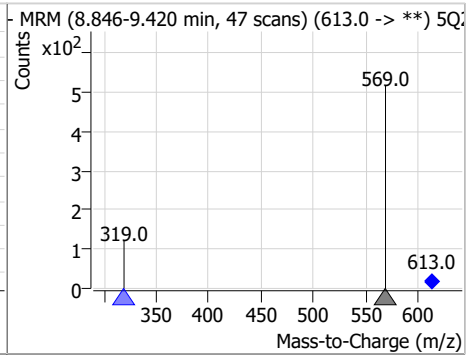




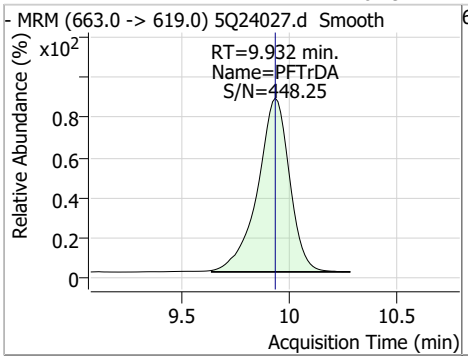
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	0.84	9.12	0.00	16676	613.0 -> 319.0	16.8	8.1	24.3

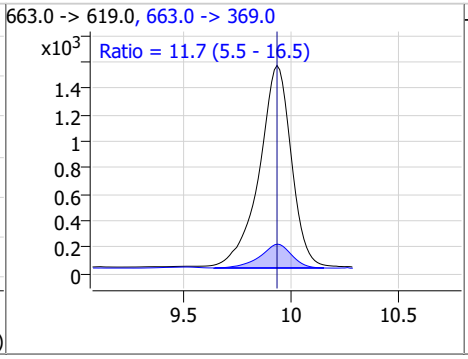


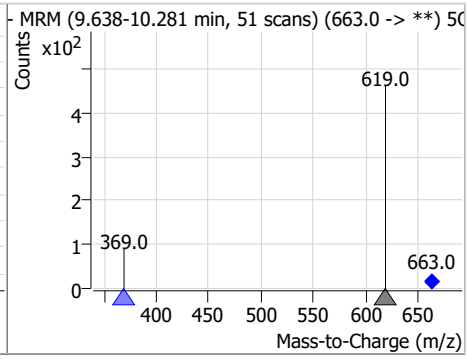




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	0.79	9.93	0.00	15751	663.0 -> 369.0	11.7	5.5	16.5

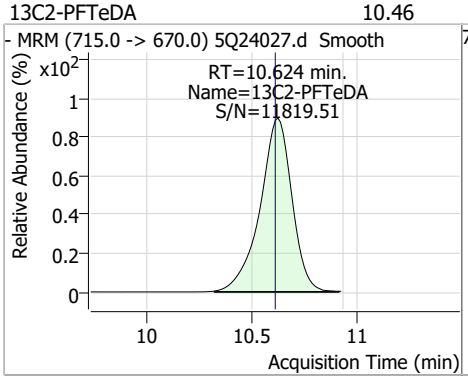


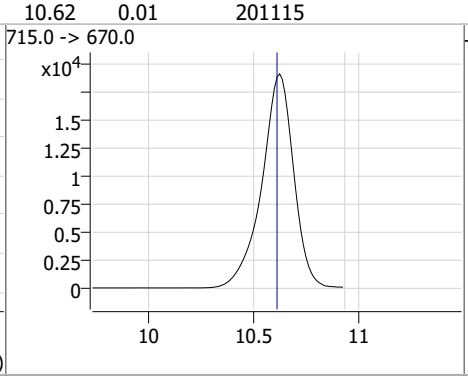


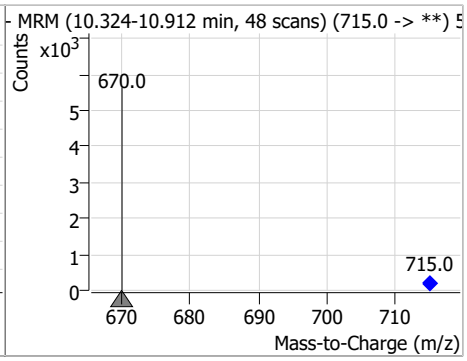


Perfluorinated Compounds by LC/MS/MS

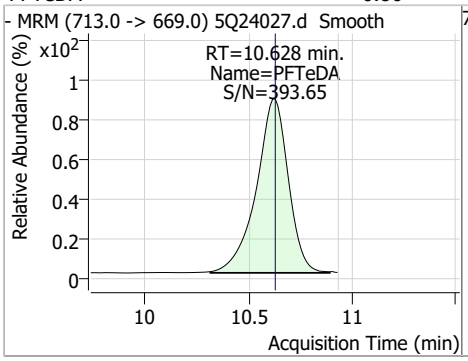
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	10.46	10.62	0.01	201115				

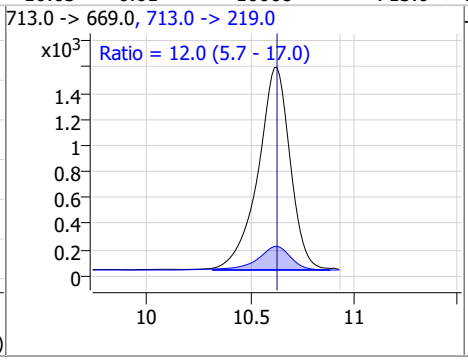


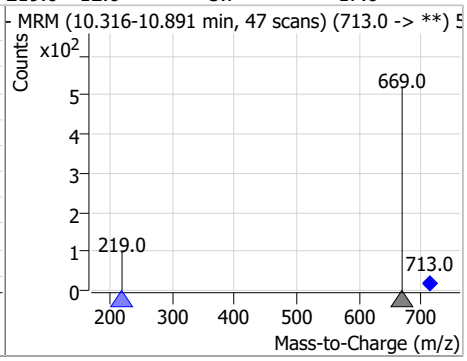




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	0.86	10.63	0.01	16668	713.0 -> 219.0	12.0	5.7	17.0







Manual Integration Approval Summary

Sample Number:	S5Q377-IC377	**Method:**	EPA 537M QSM5.3 B-15
Lab FileID:	5Q24027.D	**Analyst approved:**	01/03/24 16:03 Lindsay Ritner
Injection Time:	01/02/24 17:22	**Supervisor approved:**	01/04/24 12:54 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.45	Split peak
Perfluorooctanesulfonic acid	1763-23-1		6.75	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Natasha Gumtie 01/04/24 12:54

Perfluorinated Compounds by LC/MS/MS

Data File : 5Q24028.d
Operator : lindsayr
Acq. Method : 537_ID.m
Acq. Date-Time : 1/2/2024 5:38:45 PM
Sample Name : ic377-2
Vial : P1-A4
DA Method File : ID_010224_S5Q377.quantmethod.xml
Batch Name : s5q377.batch.bin
Sample Information : OP401,S5Q377,250,,,1.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	2.000	217.0 -> 172.0	44677	10.00	µg/L	0.013
M5-PFPeA	3.432	268.0 -> 223.0	75271	10.00	µg/L	0.000
M5-PFHxA	4.565	318.0 -> 273.0	116383	10.00	µg/L	0.000
M4-PFHpA	5.425	367.0 -> 322.0	119684	10.00	µg/L	0.000
M8-PFOA	6.149	421.0 -> 376.0	168261	10.00	µg/L	0.000
M9-PFNA	6.781	472.0 -> 427.0	170182	10.00	µg/L	0.000
M6-PFDA	7.313	519.0 -> 474.0	179482	10.00	µg/L	0.000
M7-PFUnDA	8.146	570.0 -> 525.0	249966	10.00	µg/L	0.012
M2-PFDoDA	9.131	615.0 -> 570.0	230302	10.00	µg/L	0.012
M2-PFTeDA	10.624	715.0 -> 670.0	192805	10.00	µg/L	0.012
M8-FOSA	6.192	506.0 -> 78.0	43335	10.00	µg/L	-0.012
M3-PFBS	3.637	302.0 -> 99.0	9363	10.00	µg/L	0.000
M3-PFHxS	5.457	402.0 -> 99.0	11630	10.00	µg/L	0.012
M8-PFOS	6.753	507.0 -> 99.0	16576	10.00	µg/L	0.000
M2-4:2FTS	4.486	329.0 -> 309.0	36866	10.00	µg/L	0.000
M2-6:2FTS	6.148	429.0 -> 409.0	67883	10.00	µg/L	0.000
M2-8:2FTS	7.388	529.0 -> 509.0	66449	10.00	µg/L	0.012
M3-MeFOSAA	6.747	573.0 -> 419.0	35073	10.00	µg/L	0.000
M3-HFPO-DA	4.831	287.0 -> 169.0	5936	10.00	µg/L	0.000
M3-MeFOSA	6.589	515.0 -> 169.0	14316	10.00	µg/L	0.000
M5-EtFOSAA	6.845	589.0 -> 419.0	30148	10.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.486	329.0 -> 309.0	36866	9.43	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 94.3%		
13C2-6:2FTS	6.148	429.0 -> 409.0	67883	9.23	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 92.3%		
13C2-8:2FTS	7.388	529.0 -> 509.0	66449	9.39	µg/L	0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 93.9%		
13C2-PFDoDA	9.131	615.0 -> 570.0	230302	10.19	µg/L	0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.9%		
13C2-PFTeDA	10.624	715.0 -> 670.0	192805	10.03	µg/L	0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.3%		
13C3-PFBS	3.637	302.0 -> 99.0	9363	10.15	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.5%		
13C3-PFHxS	5.457	402.0 -> 99.0	11630	10.29	µg/L	0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 102.9%		
13C4-PFBA	2.000	217.0 -> 172.0	44677	10.13	µg/L	0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.3%		
13C4-PFHpA	5.425	367.0 -> 322.0	119684	10.13	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.3%		
13C5-PFHxA	4.565	318.0 -> 273.0	116383	10.14	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.4%		
13C5-PFPeA	3.432	268.0 -> 223.0	75271	10.13	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.3%		
13C6-PFDA	7.313	519.0 -> 474.0	179482	10.37	µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

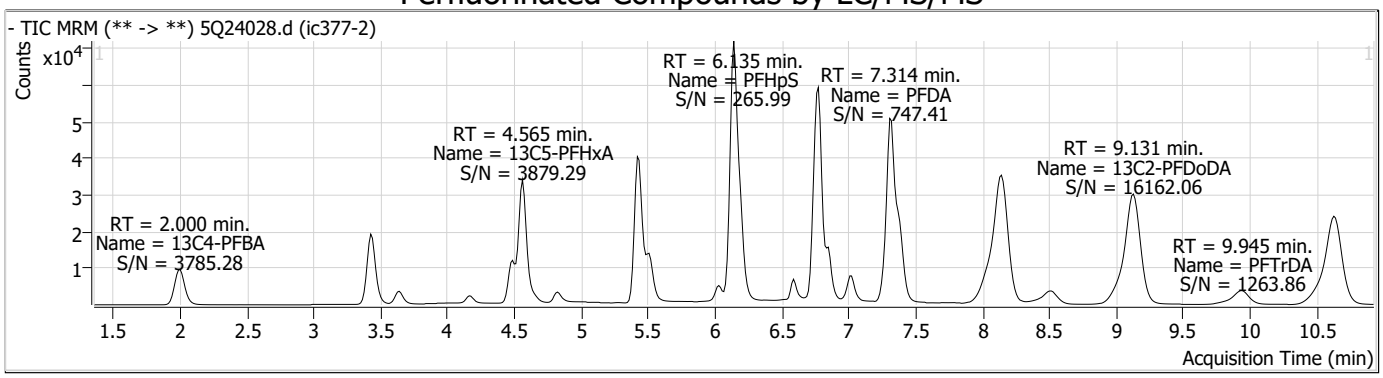
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 103.7%			
13C7-PFUnDA	8.146	570.0 -> 525.0	249966	10.24	µg/L		0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 102.4%			
13C8-FOSA	6.192	506.0 -> 78.0	43335	10.60	µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 106.0%			
13C8-PFOA	6.149	421.0 -> 376.0	168261	10.17	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.7%			
13C8-PFOS	6.753	507.0 -> 99.0	16576	10.53	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 105.3%			
13C9-PFNA	6.781	472.0 -> 427.0	170182	10.27	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 102.7%			
d3-MeFOSAA	6.747	573.0 -> 419.0	35073	10.43	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 104.3%			
13C3-HFPO-DA	4.831	287.0 -> 169.0	5936	9.94	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.4%			
d3-MeFOSA	6.589	515.0 -> 169.0	14316	10.28	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 102.8%			
d5-EtFOSAA	6.845	589.0 -> 419.0	30148	9.89	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 98.9%			
Target Compounds							QValue
4:2FTS	4.488	327.0 -> 307.0	7237	2.06	µg/L		98
		327.0 -> 81.0	4132				
6:2FTS	6.148	427.0 -> 407.0	11568	2.01	µg/L		97
		427.0 -> 81.0	4826				
8:2FTS	7.389	527.0 -> 507.0	10734	1.92	µg/L		93
		527.0 -> 81.0	5526				
EtFOSAA	6.859	584.0 -> 419.0	4039	1.75	µg/L		100
		584.0 -> 483.0	2479				
FOSA	6.194	498.0 -> 78.0	6883	1.80	µg/L		99
		498.0 -> 478.0	261				
MeFOSAA	6.748	570.0 -> 419.0	4512	1.73	µg/L		99
		570.0 -> 512.0	1594				
PFBA	1.994	213.0 -> 169.0	7034	1.75	µg/L		100
PFBS	3.640	299.0 -> 80.0	4081	1.78	µg/L		98
		299.0 -> 99.0	1702				
PFDA	7.314	513.0 -> 469.0	28511	1.73	µg/L		97
		513.0 -> 219.0	5343				
PFDoDA	9.133	613.0 -> 569.0	33435	1.76	µg/L		99
		613.0 -> 319.0	5542				
PFDS	8.032	599.0 -> 80.0	5482	1.78	µg/L		99
		599.0 -> 99.0	3317				
PFHpA	5.426	363.0 -> 319.0	23829	1.81	µg/L		99
		363.0 -> 169.0	5125				
PFHpS	6.135	449.0 -> 80.0	3769	1.72	µg/L		98
		449.0 -> 99.0	1983				
PFHxA	4.565	313.0 -> 269.0	19360	1.79	µg/L		100
		313.0 -> 119.0	781				
PFHxS	5.446	399.0 -> 80.0	3595	1.72	µg/L	m	97
		399.0 -> 99.0	2081				
PFNA	6.781	463.0 -> 419.0	26975	1.75	µg/L		99
		463.0 -> 219.0	5495				
PFNS	7.272	549.0 -> 80.0	3453	1.81	µg/L		98
		549.0 -> 99.0	2028				
PFOA	6.150	413.0 -> 369.0	28416	1.77	µg/L		100
		413.0 -> 169.0	7038				
PFOS	6.755	499.0 -> 80.0	4832	1.73	µg/L	m	99

Perfluorinated Compounds by LC/MS/MS

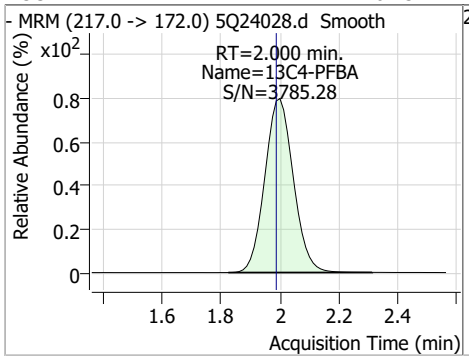
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		499.0 -> 99.0	2368			
PFPeA	3.434	263.0 -> 219.0	12346	1.74	µg/L	100
PFPeS	4.661	349.0 -> 80.0	2856	1.79	µg/L	95
		349.0 -> 99.0	1594			
PFTeDA	10.628	713.0 -> 669.0	32972	1.77	µg/L	100
		713.0 -> 219.0	3669			
PFTrDA	9.945	663.0 -> 619.0	31471	1.65	µg/L	99
		663.0 -> 369.0	3541			
PFUnDA	8.148	563.0 -> 519.0	37869	1.75	µg/L	98
		563.0 -> 269.0	6773			
11Cl-PF3OUdS	8.503	631.0 -> 451.0	23261	1.71	µg/L	99
		633.0 -> 453.0	7403			
9Cl-PF3ONS	7.023	531.0 -> 351.0	21372	1.72	µg/L	99
		533.0 -> 353.0	6843			
ADONA	5.514	377.0 -> 251.0	32665	1.71	µg/L	99
		377.0 -> 85.0	11872			
HFPO-DA	4.827	329.0 -> 169.0	4402	1.82	µg/L	99
		285.0 -> 169.0	940			
MeFOSA	6.590	512.0 -> 169.0	2184	1.79	µg/L	89
		512.0 -> 219.0	1623			
4-PFECHS	6.032	461.0 -> 381.0	12522	1.76	µg/L	98
		461.0 -> 99.0	6247			
FBSA	4.170	298.0 -> 78.0	7167	1.86	µg/L	99
		298.0 -> 64.0	650			
FHxSA	5.409	398.0 -> 78.0	7916	2.08	µg/L	99
		398.0 -> 64.0	698			

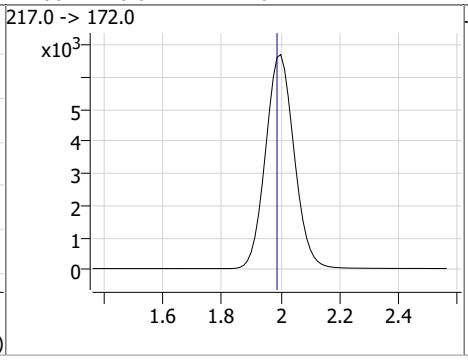
 # = Qualifier out of range, m = manually integrated, + = Area summed

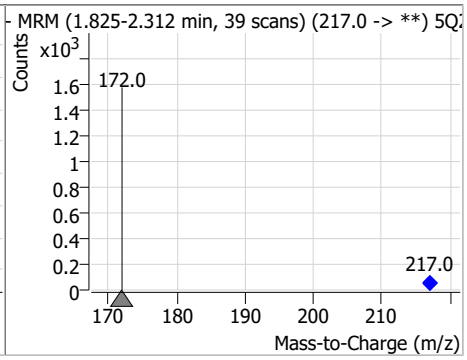
Perfluorinated Compounds by LC/MS/MS



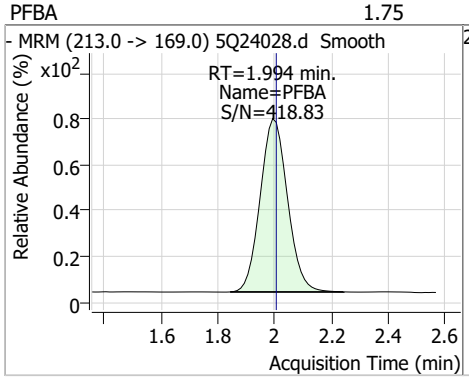
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	10.13	2.00	0.01	44677				

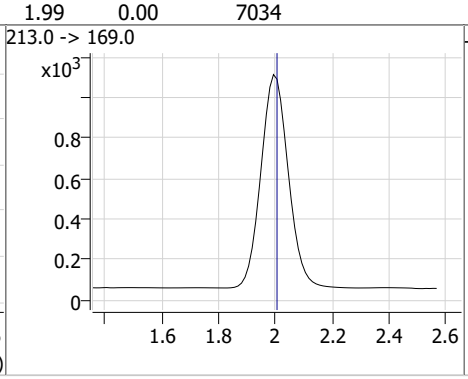


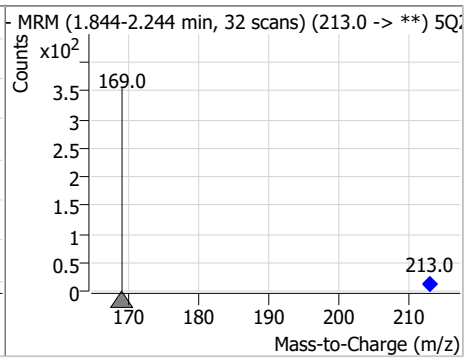




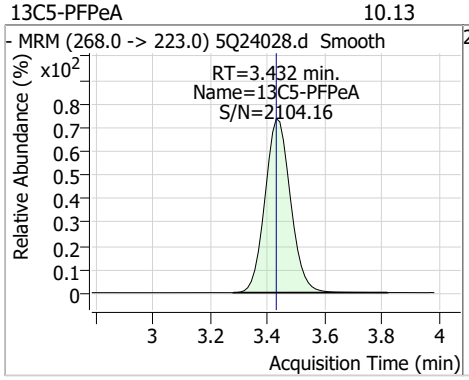
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	1.75	1.99	0.00	7034				

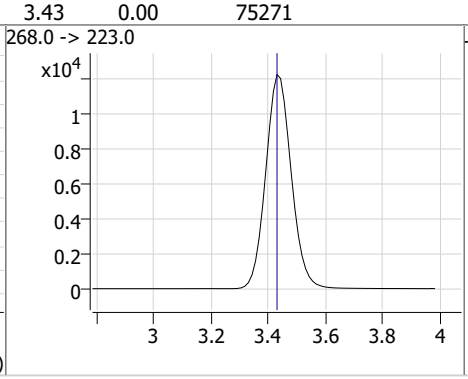


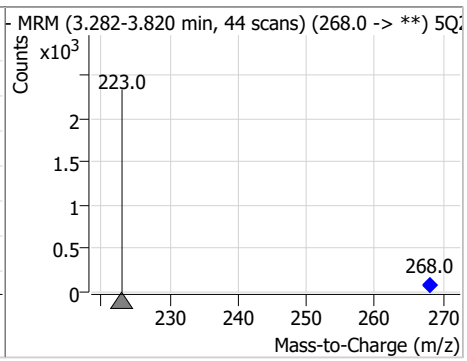




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	10.13	3.43	0.00	75271				

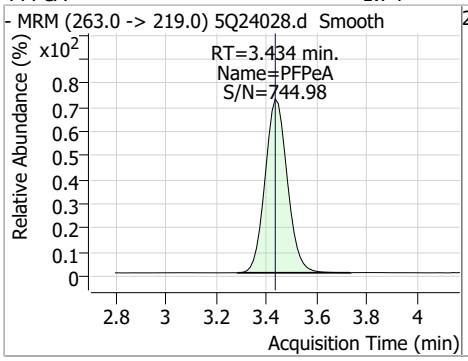


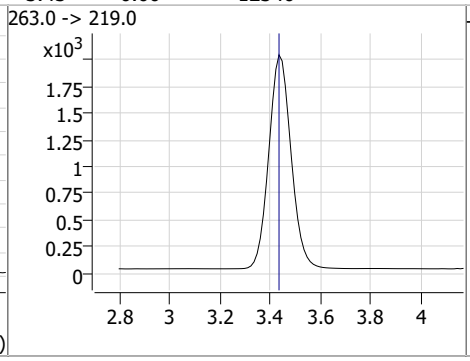


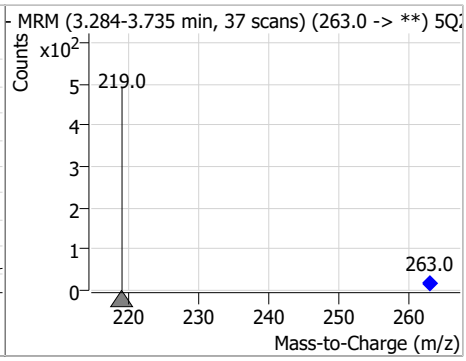


Perfluorinated Compounds by LC/MS/MS

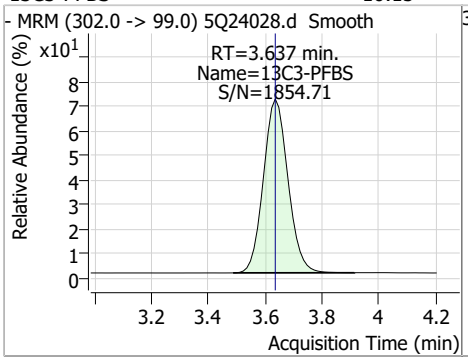
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	1.74	3.43	0.00	12346				

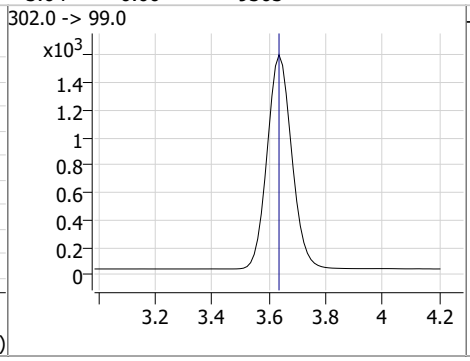


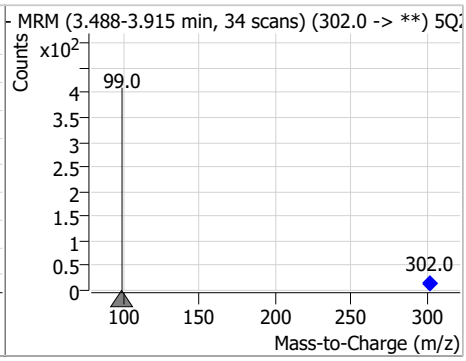




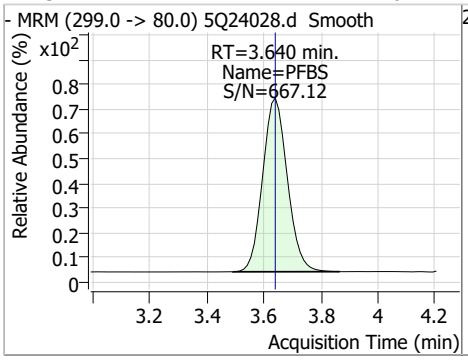
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	10.15	3.64	0.00	9363				

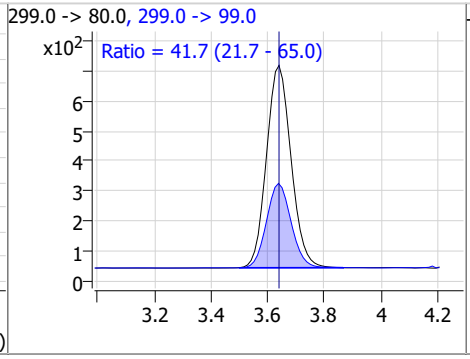


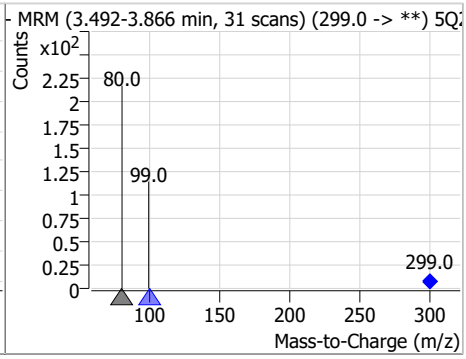




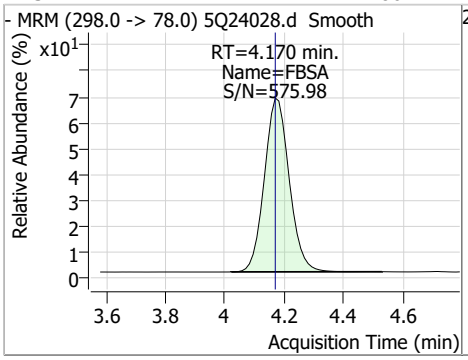
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	1.78	3.64	0.00	4081	299.0 -> 99.0	41.7	21.7	65.0

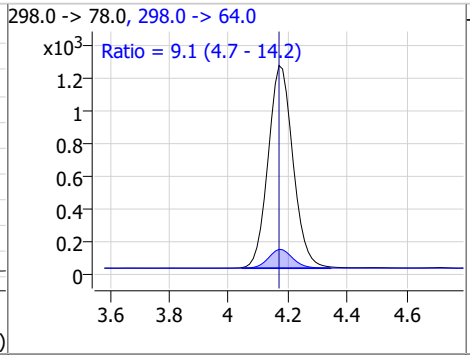


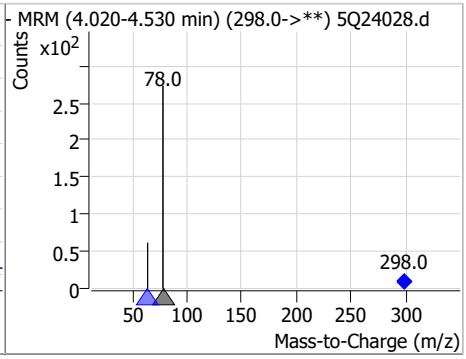




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	1.86	4.17	0.00	7167	298.0 -> 64.0	9.1	4.7	14.2

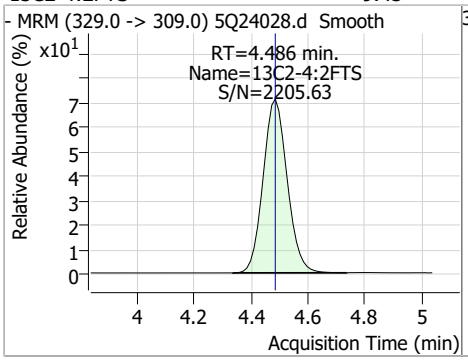


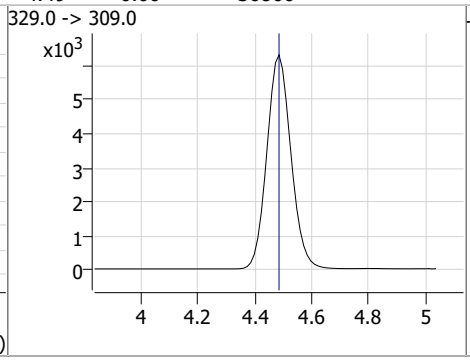


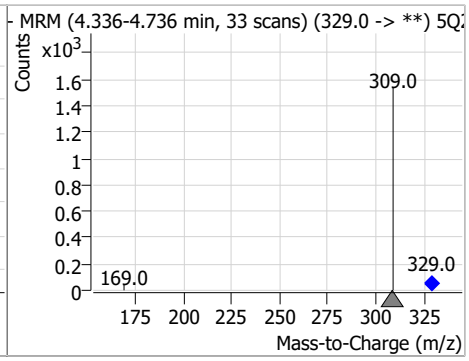


Perfluorinated Compounds by LC/MS/MS

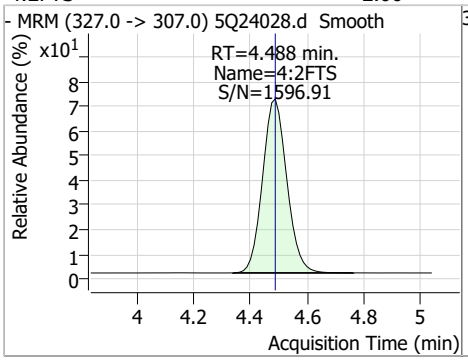
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	9.43	4.49	0.00	36866				

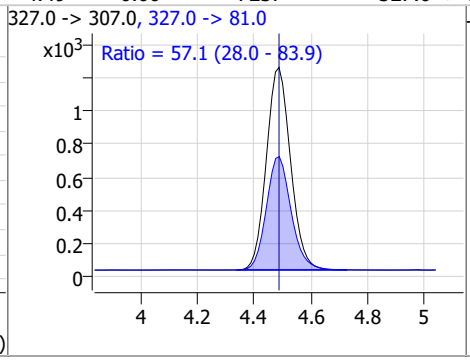


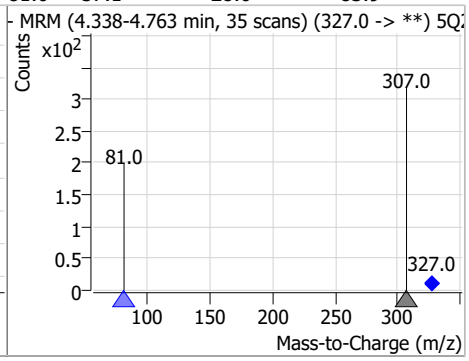




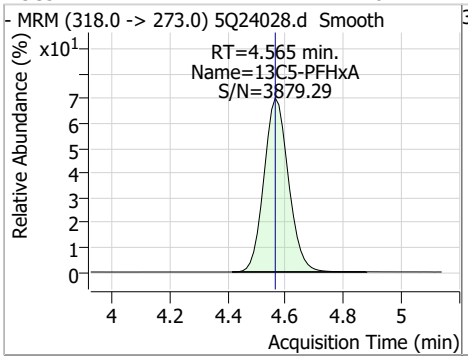
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	2.06	4.49	0.00	7237	327.0 -> 81.0	57.1	28.0	83.9

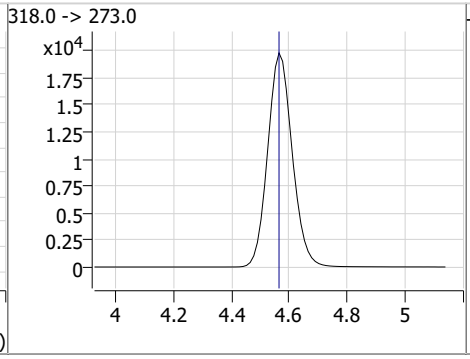


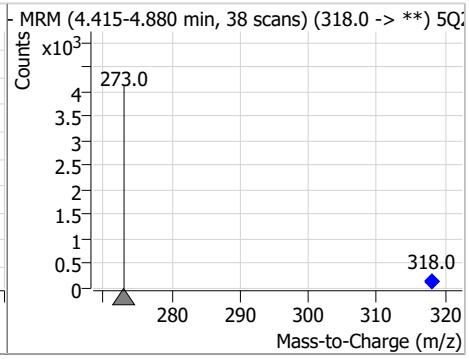




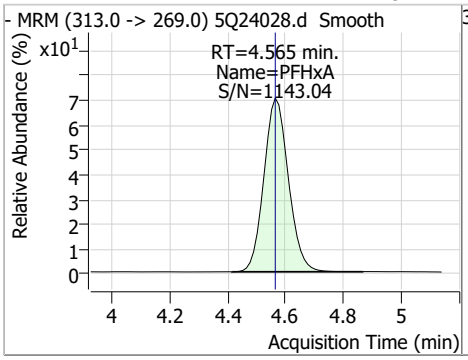
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	10.14	4.56	0.00	116383				

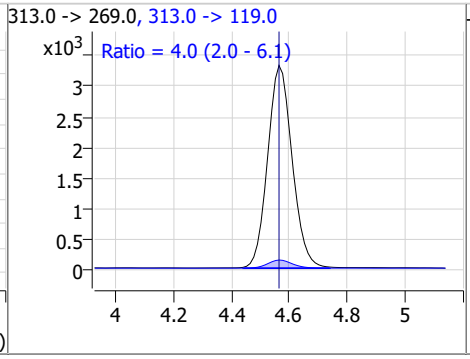


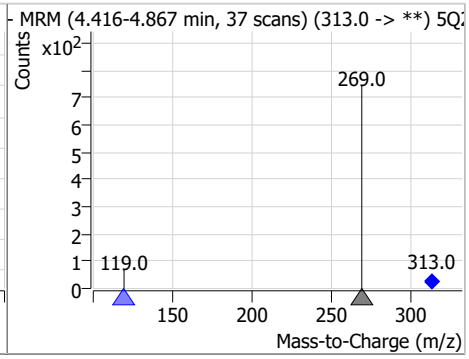




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	1.79	4.57	0.00	19360	313.0 -> 119.0	4.0	2.0	6.1

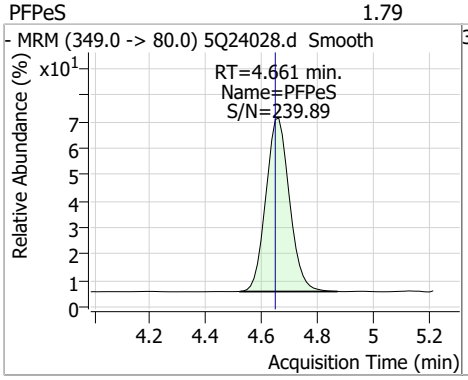


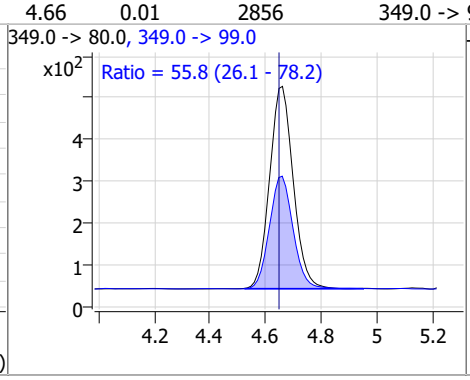


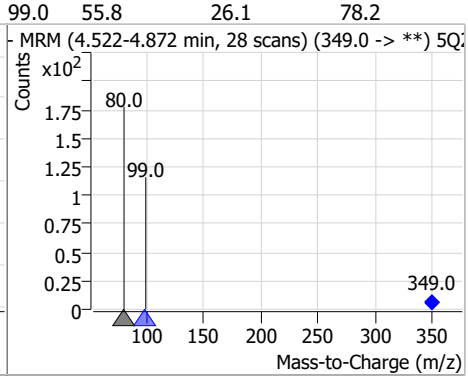


Perfluorinated Compounds by LC/MS/MS

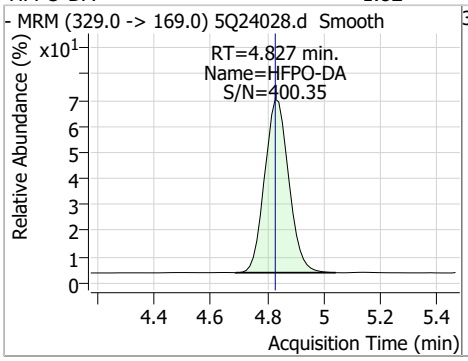
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	1.79	4.66	0.01	2856	349.0 -> 99.0	55.8	26.1	78.2

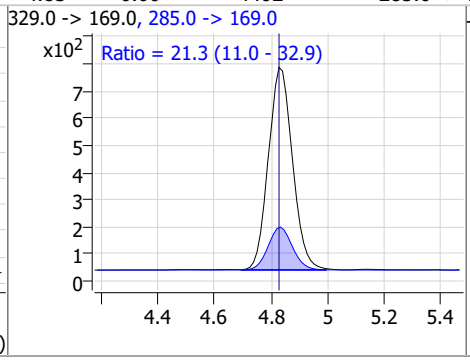


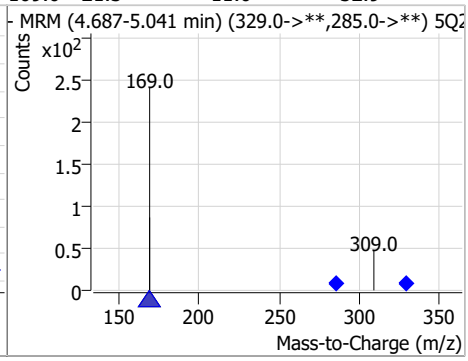




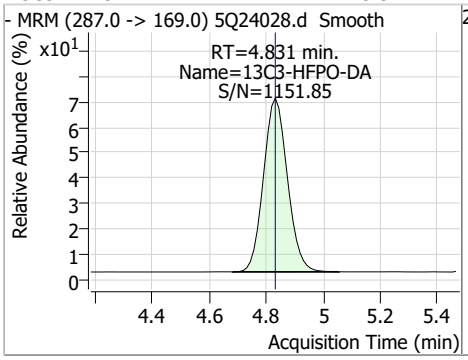
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	1.82	4.83	0.00	4402	285.0 -> 169.0	21.3	11.0	32.9

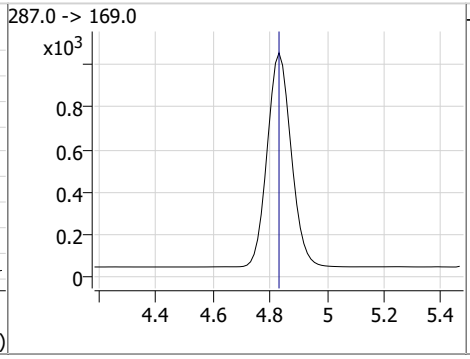


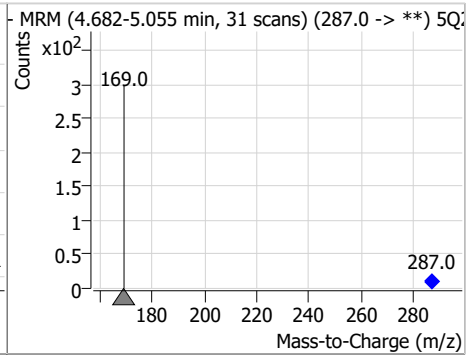




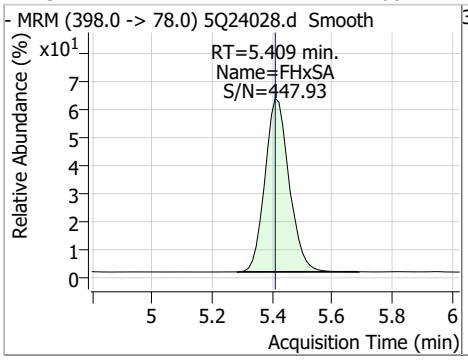
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	9.94	4.83	0.00	5936				

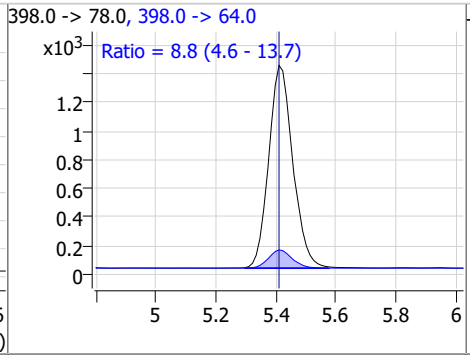


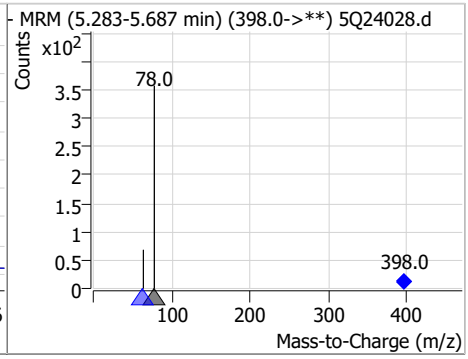




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	2.08	5.41	0.00	7916	398.0 -> 64.0	8.8	4.6	13.7

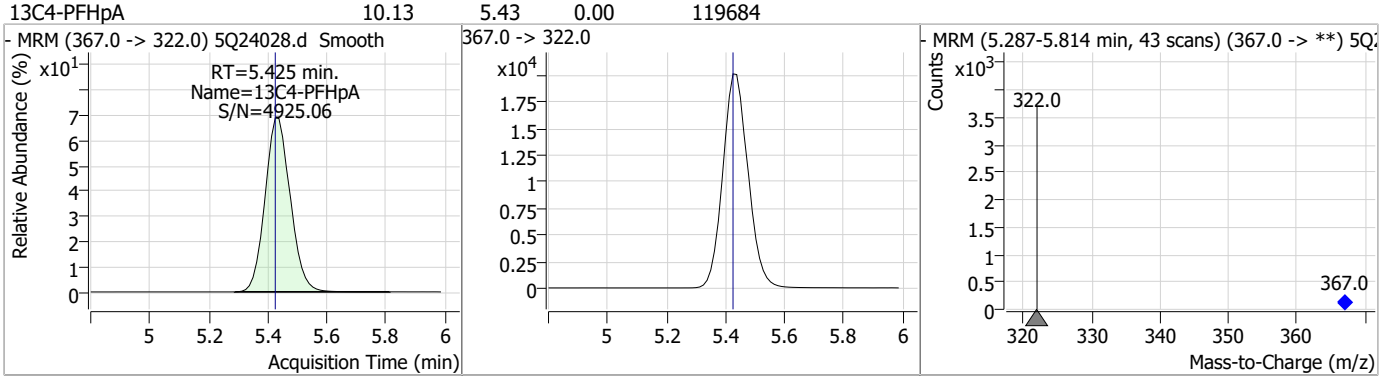




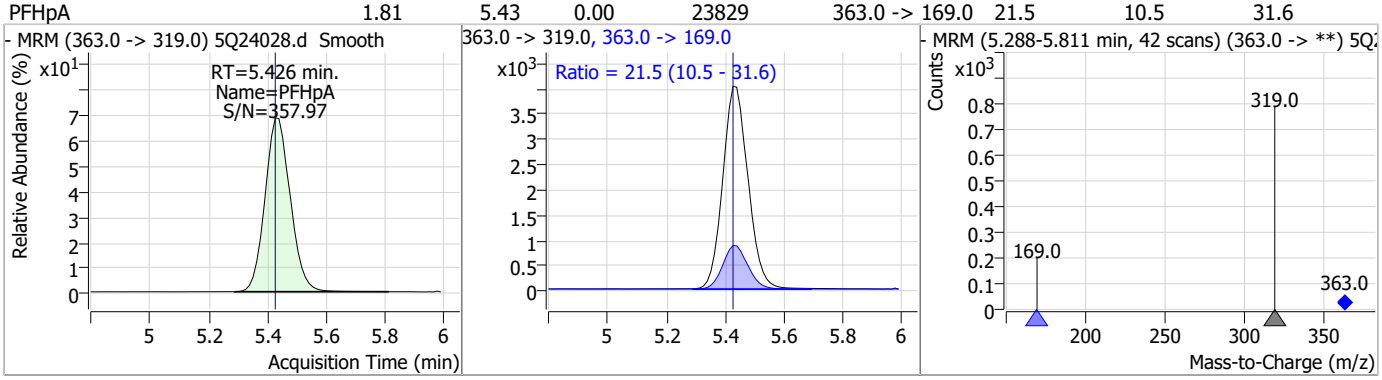


Perfluorinated Compounds by LC/MS/MS

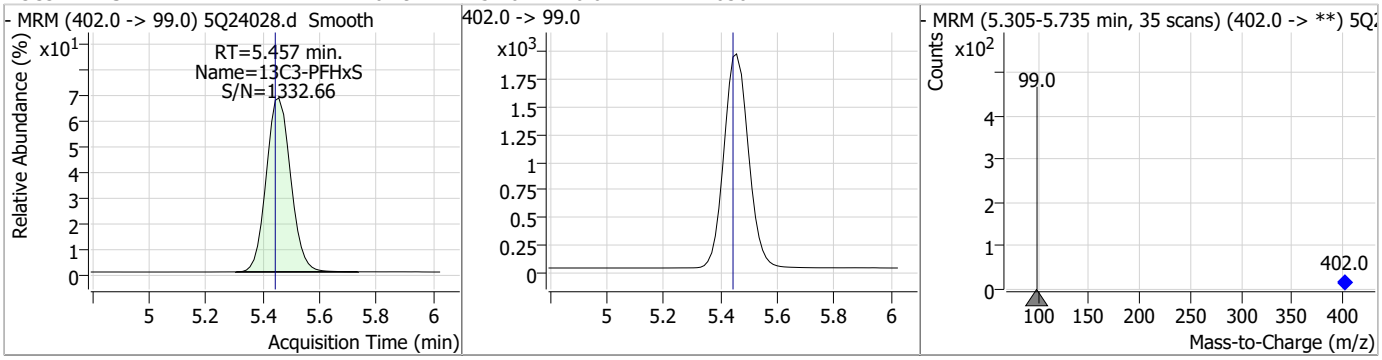
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	10.13	5.43	0.00	119684				



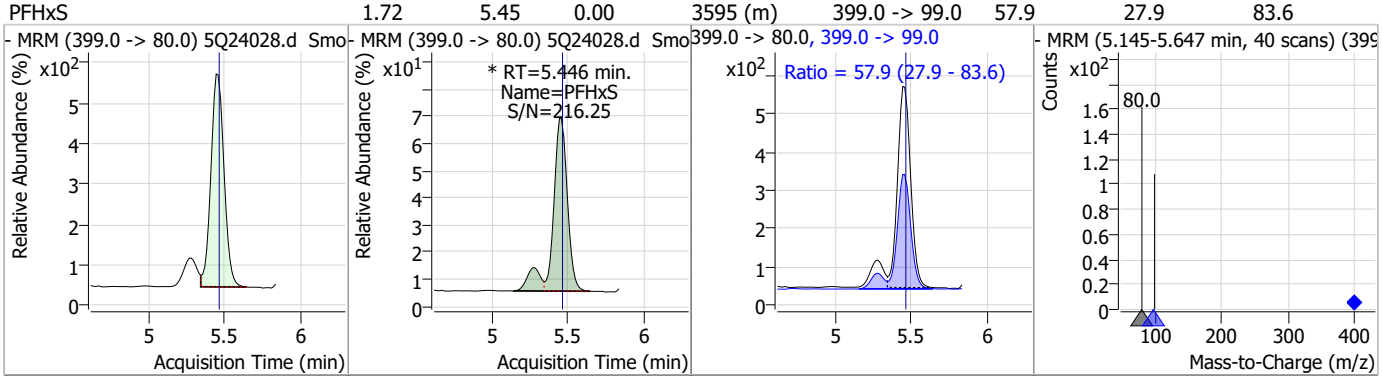
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	1.81	5.43	0.00	23829	363.0 -> 169.0	21.5	10.5	31.6



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	10.29	5.46	0.01	11630				

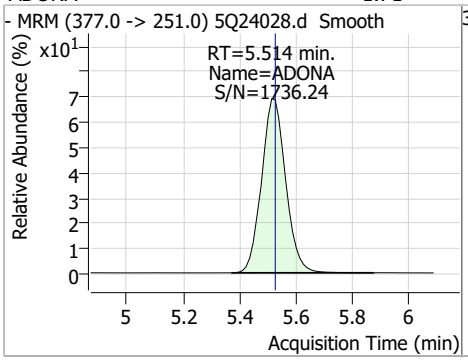


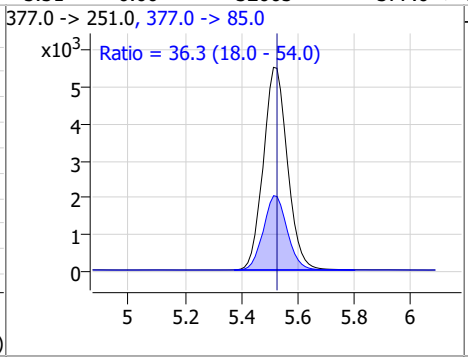
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	1.72	5.45	0.00	3595 (m)	399.0 -> 99.0	57.9	27.9	83.6

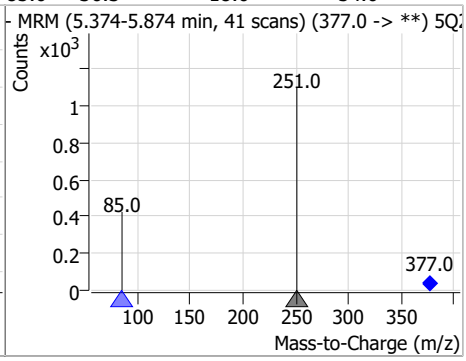


Perfluorinated Compounds by LC/MS/MS

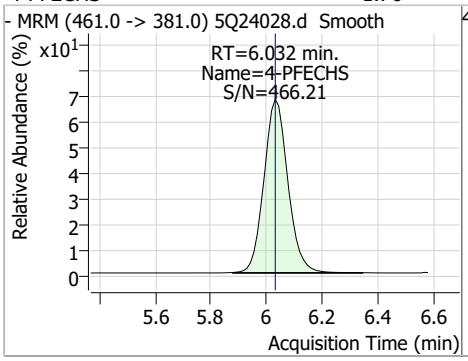
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	1.71	5.51	0.00	32665	377.0 -> 85.0	36.3	18.0	54.0

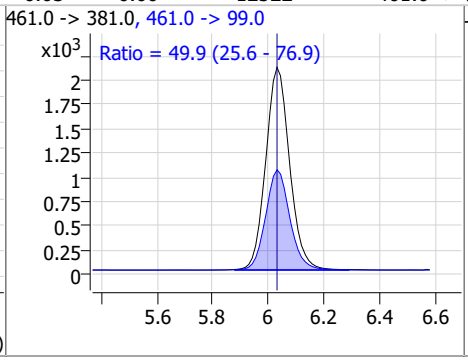


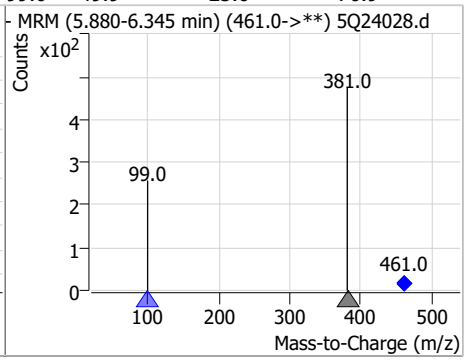




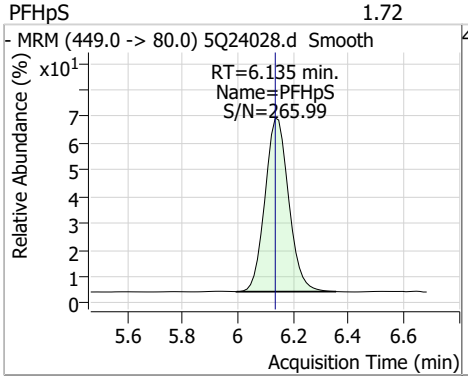
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS	1.76	6.03	0.00	12522	461.0 -> 99.0	49.9	25.6	76.9

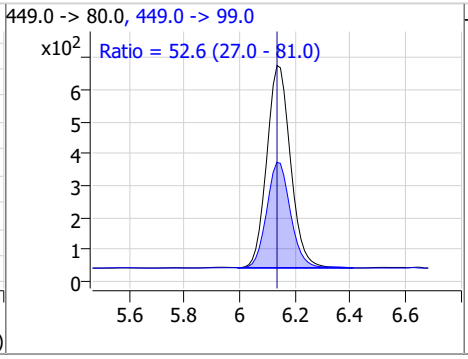


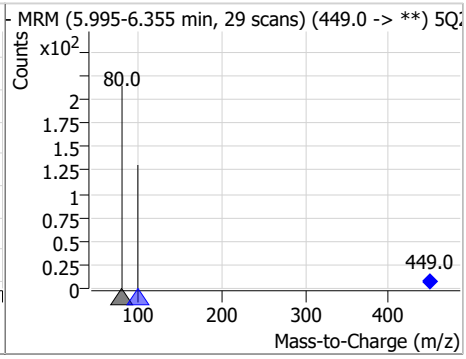




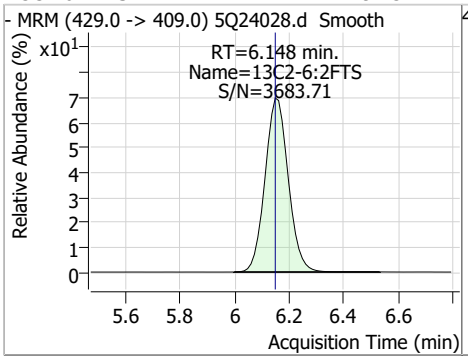
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	1.72	6.14	0.00	3769	449.0 -> 99.0	52.6	27.0	81.0

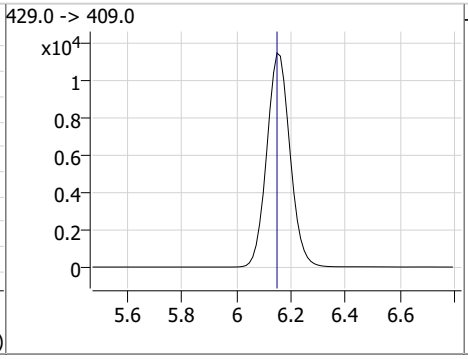


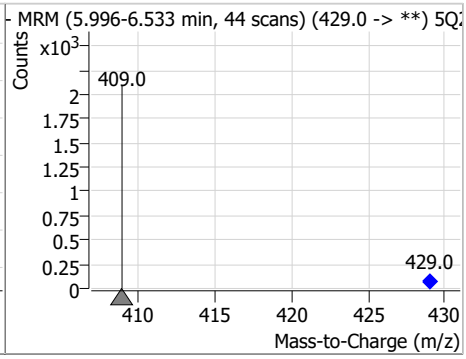




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	9.23	6.15	0.00	67883				

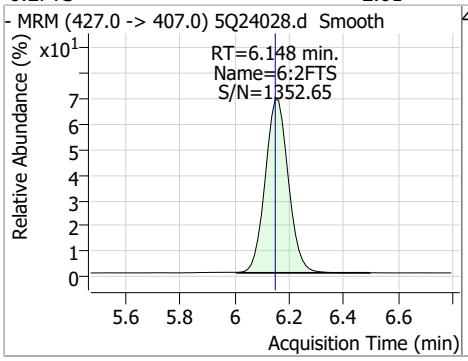


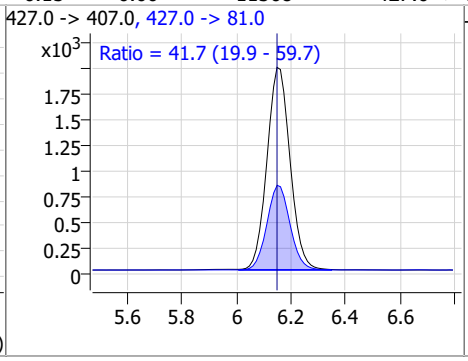


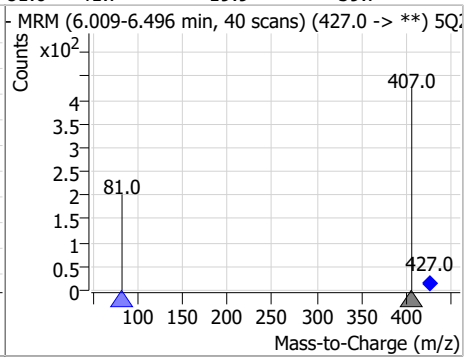


Perfluorinated Compounds by LC/MS/MS

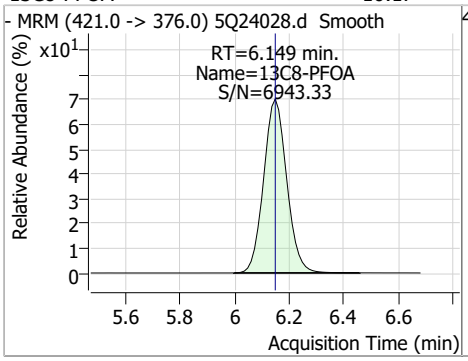
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	2.01	6.15	0.00	11568	427.0 -> 81.0	41.7	19.9	59.7

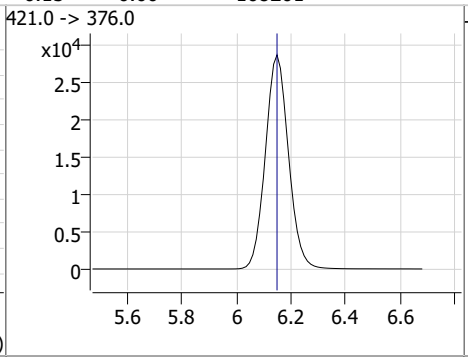


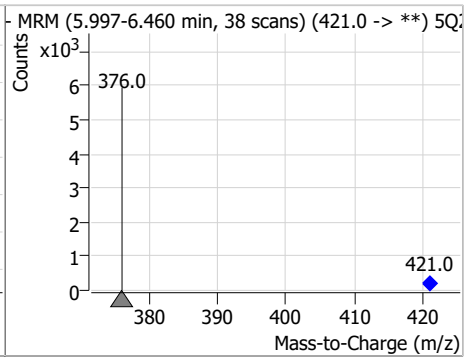




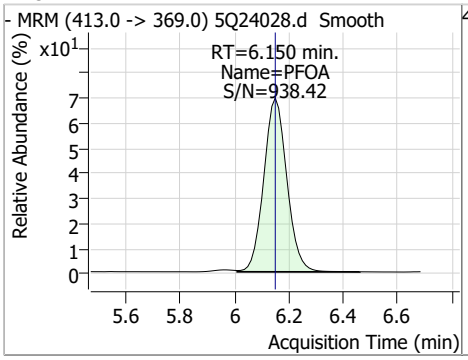
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	10.17	6.15	0.00	168261				

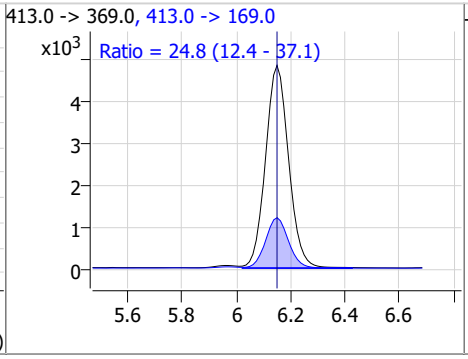


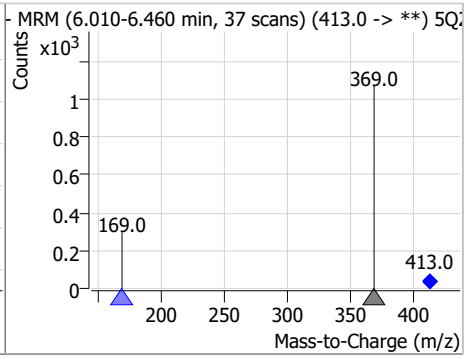




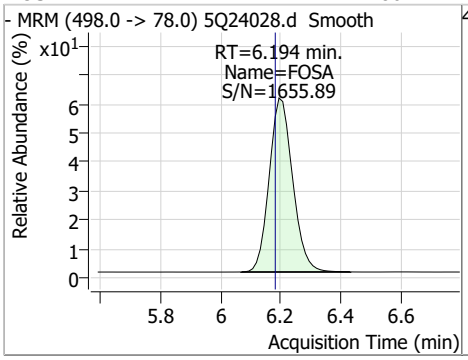
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	1.77	6.15	0.00	28416	413.0 -> 169.0	24.8	12.4	37.1

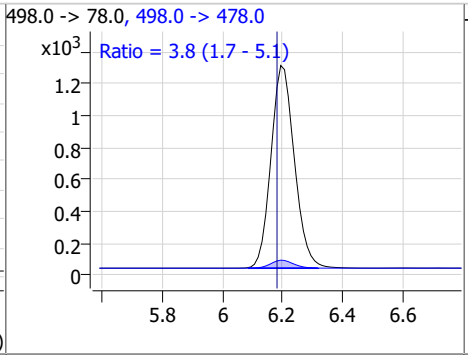


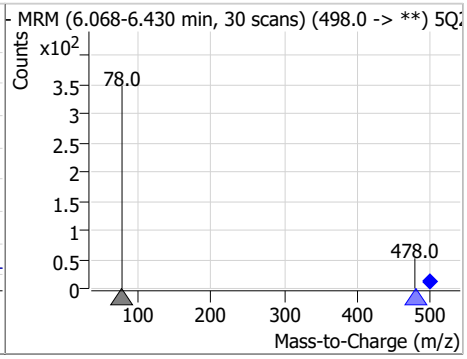




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	1.80	6.19	0.00	6883	498.0 -> 478.0	3.8	1.7	5.1

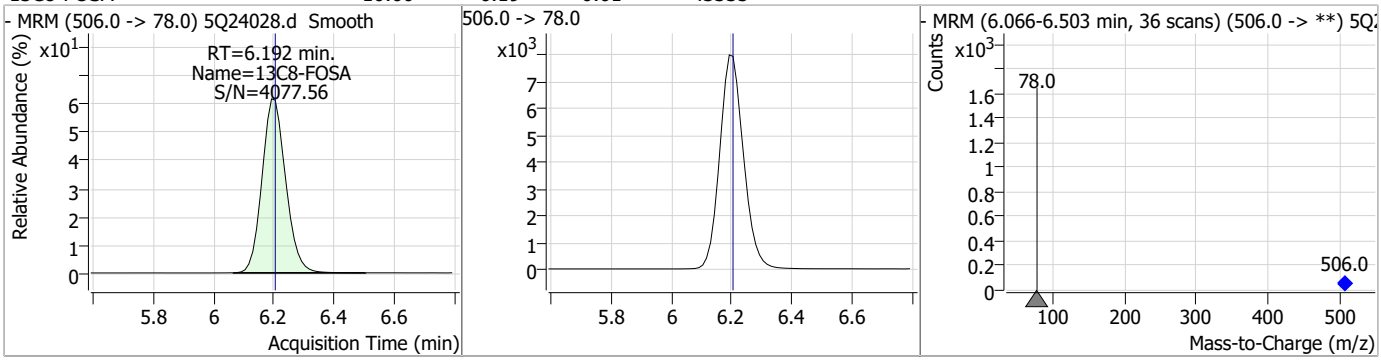




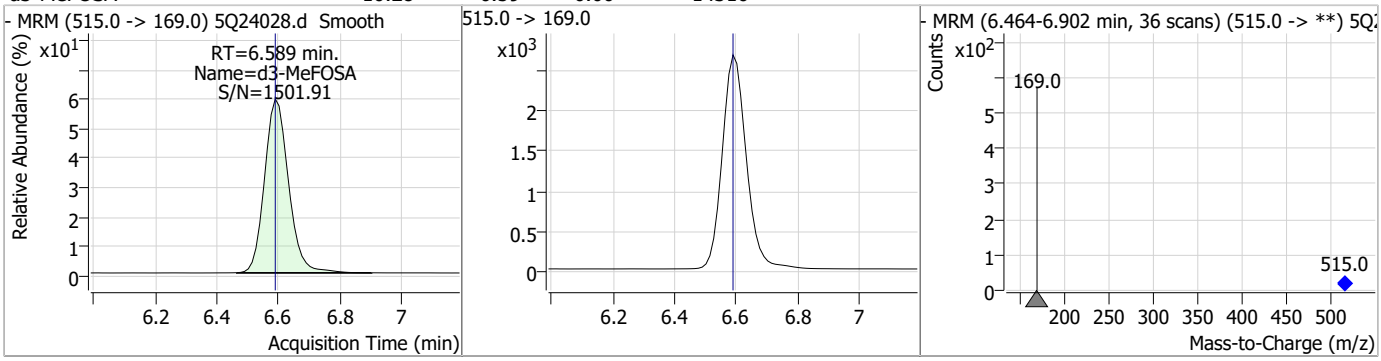


Perfluorinated Compounds by LC/MS/MS

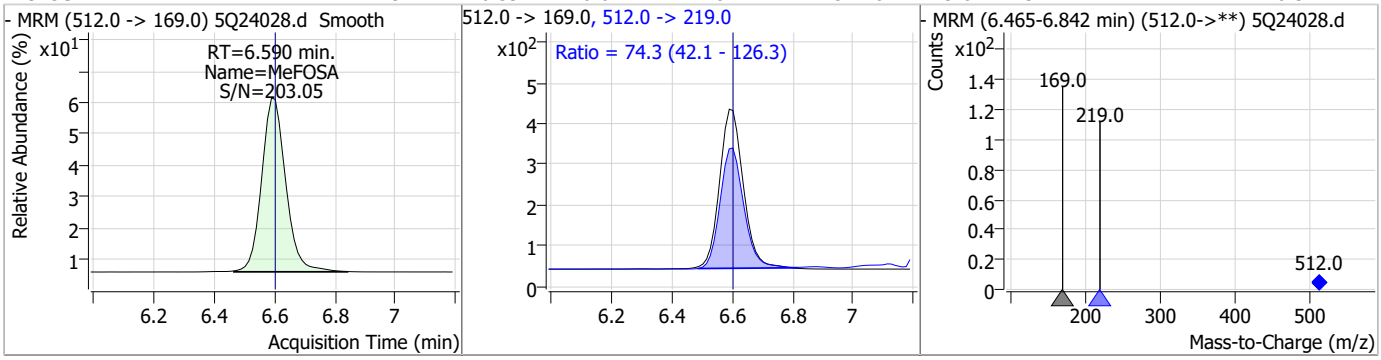
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	10.60	6.19	-0.01	43335				



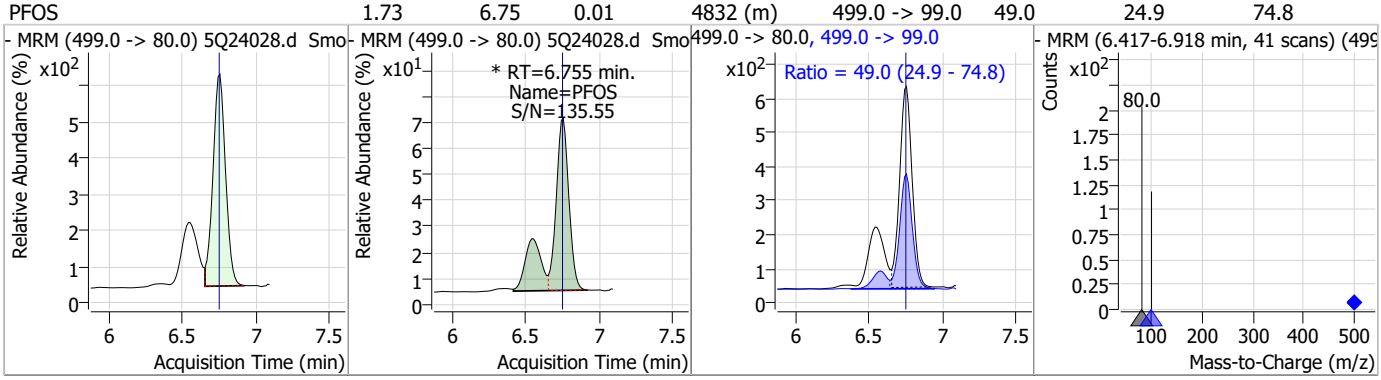
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	10.28	6.59	0.00	14316				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	1.79	6.59	-0.01	2184	512.0 -> 219.0	74.3	42.1	126.3

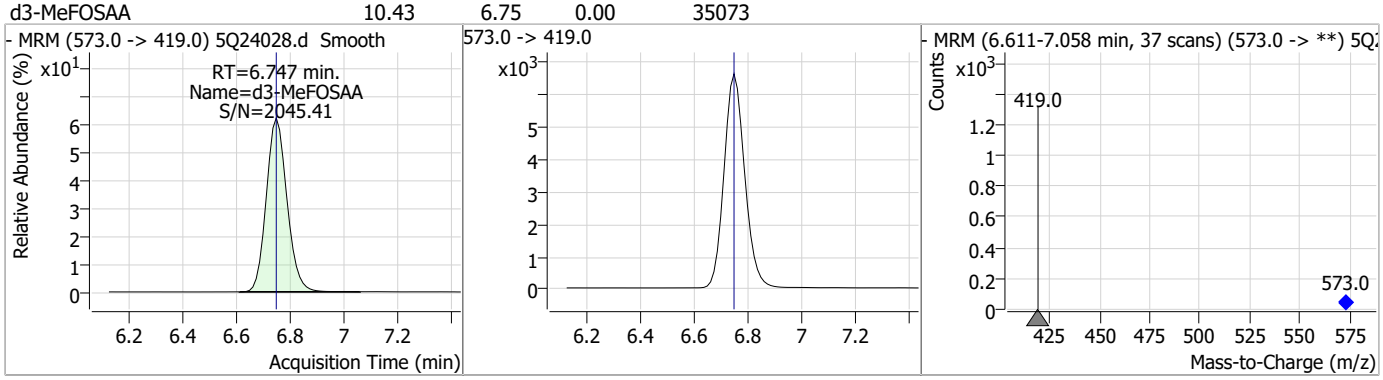


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	1.73	6.75	0.01	4832 (m)	499.0 -> 99.0	49.0	24.9	74.8

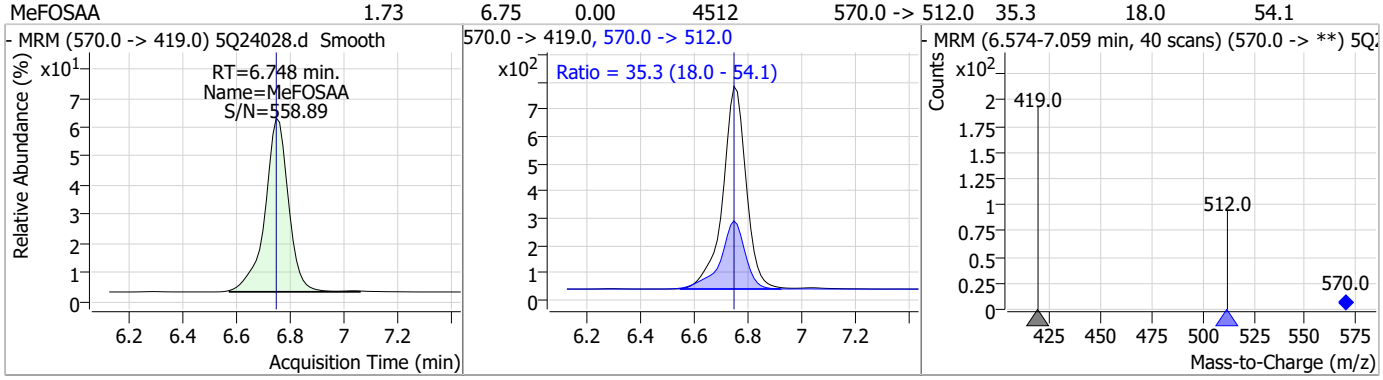


Perfluorinated Compounds by LC/MS/MS

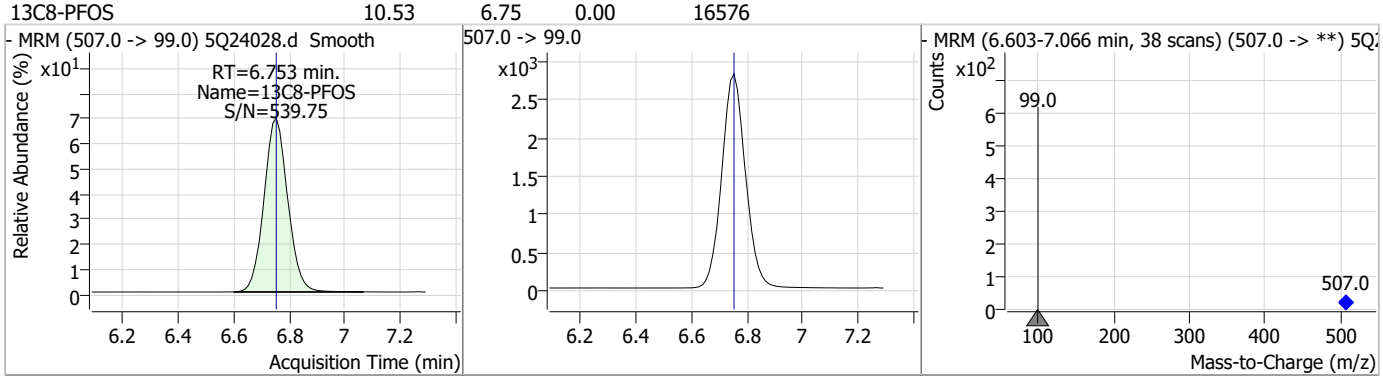
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	10.43	6.75	0.00	35073				



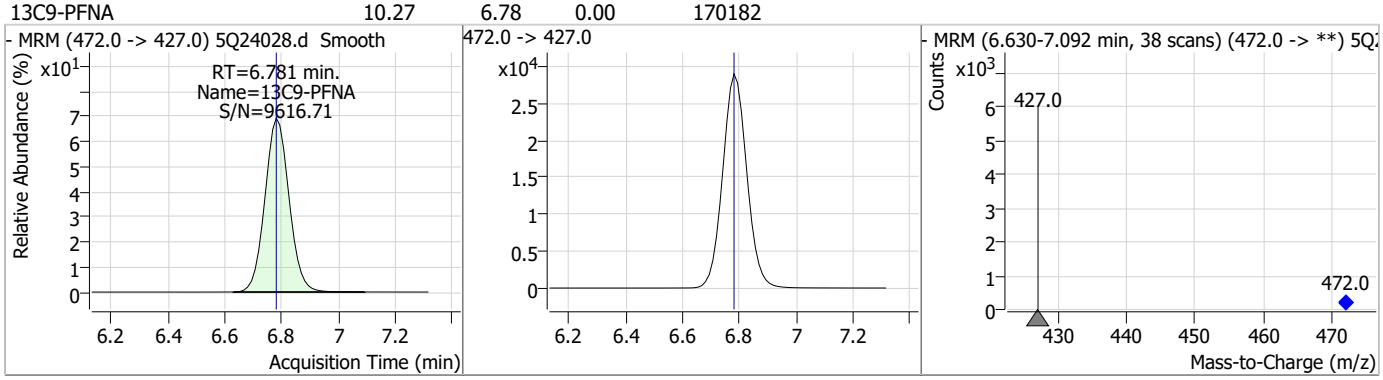
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	1.73	6.75	0.00	4512	570.0 -> 512.0	35.3	18.0	54.1



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	10.53	6.75	0.00	16576				

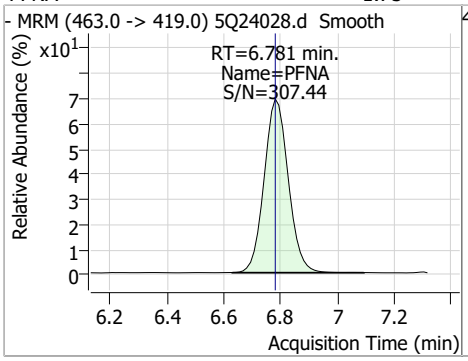


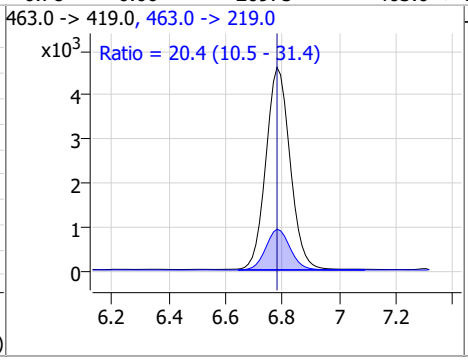
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	10.27	6.78	0.00	170182				

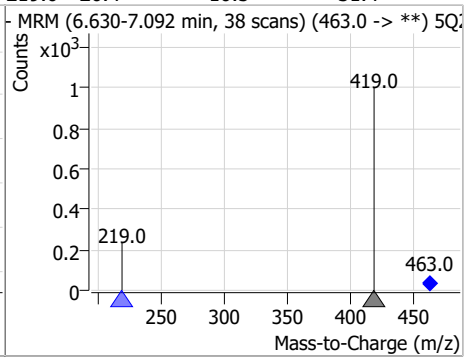


Perfluorinated Compounds by LC/MS/MS

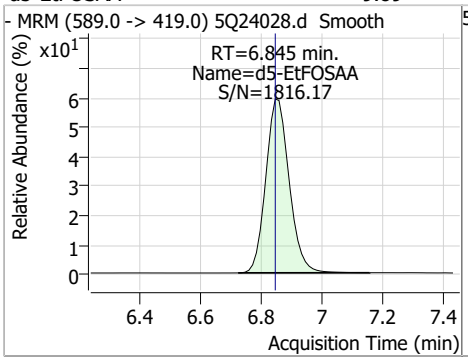
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	1.75	6.78	0.00	26975	463.0 -> 219.0	20.4	10.5	31.4

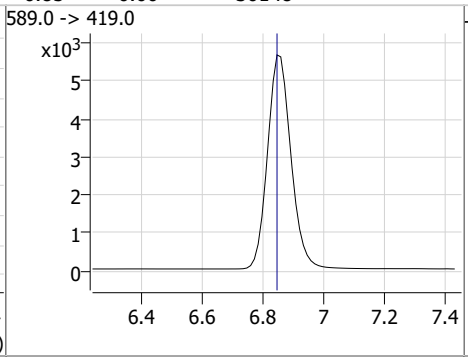


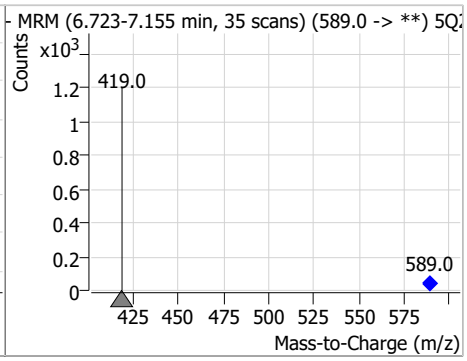




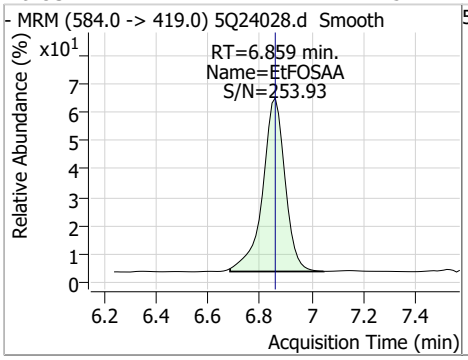
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	9.89	6.85	0.00	30148				

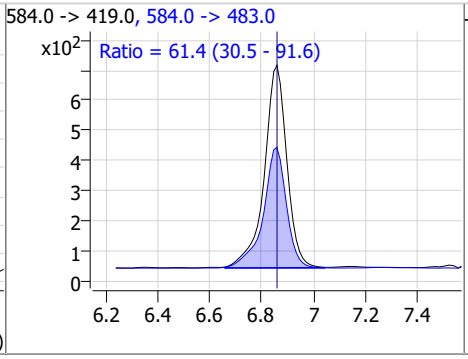


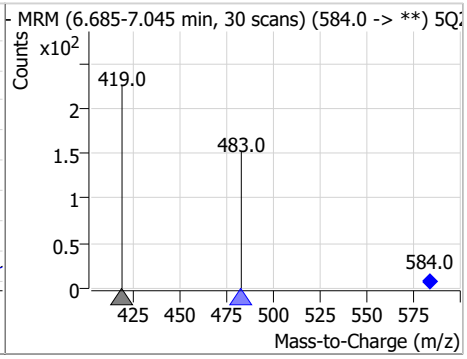




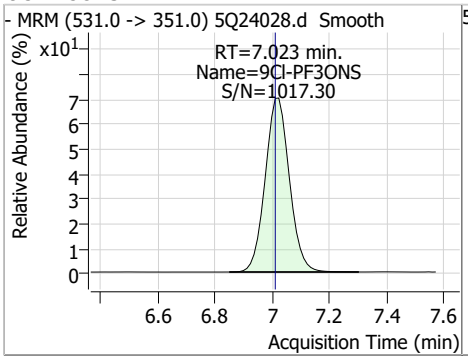
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	1.75	6.86	0.00	4039	584.0 -> 483.0	61.4	30.5	91.6

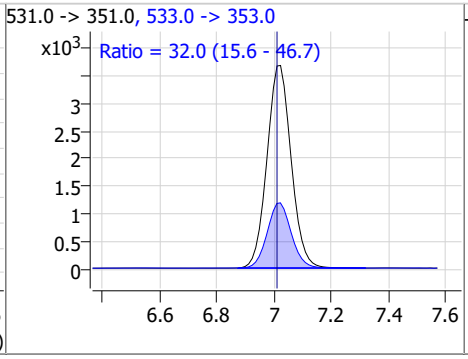


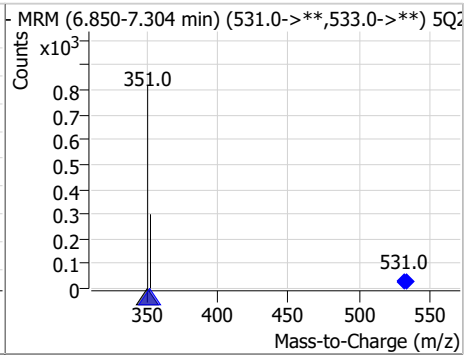




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	1.72	7.02	0.01	21372	533.0 -> 353.0	32.0	15.6	46.7

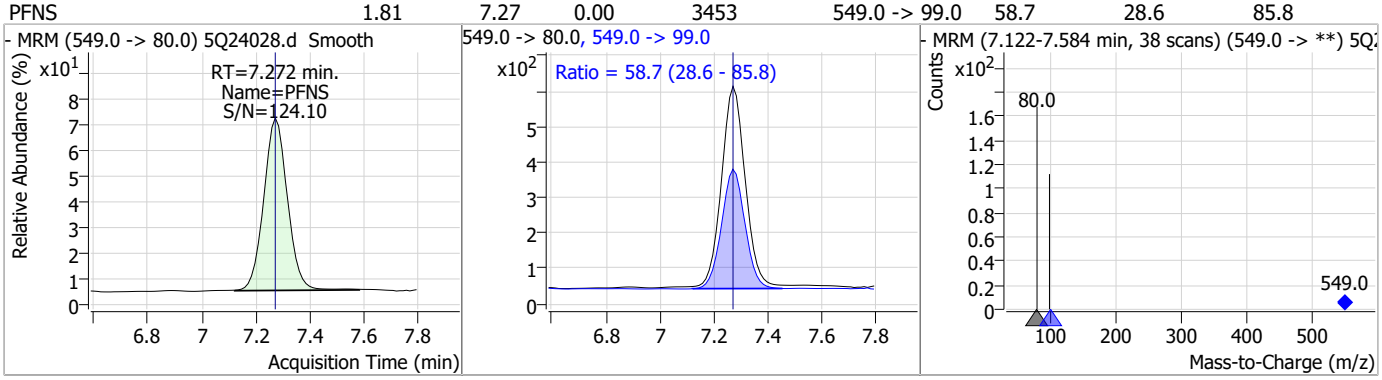




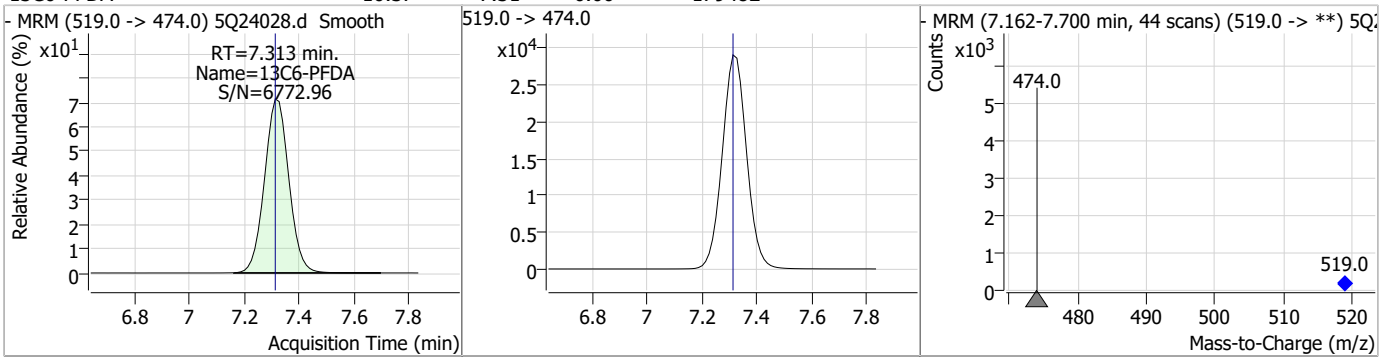


Perfluorinated Compounds by LC/MS/MS

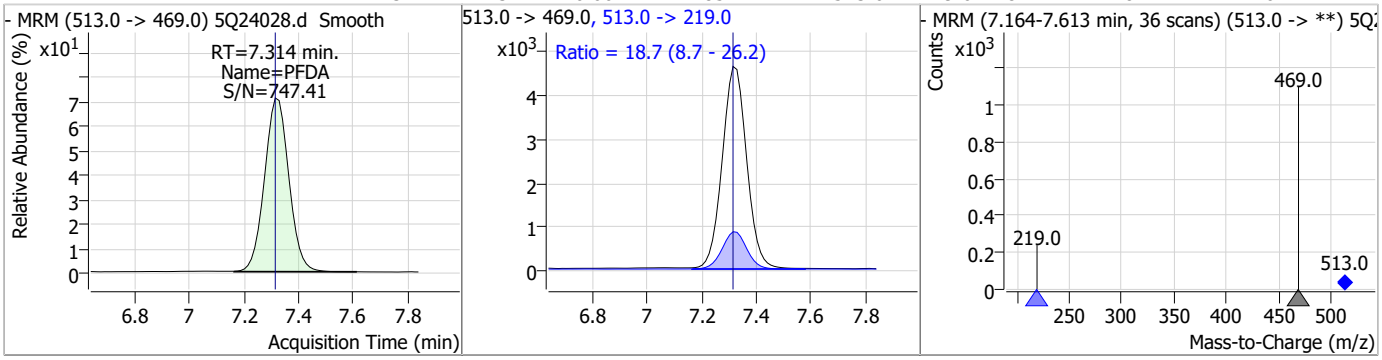
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	1.81	7.27	0.00	3453	549.0 -> 99.0	58.7	28.6	85.8



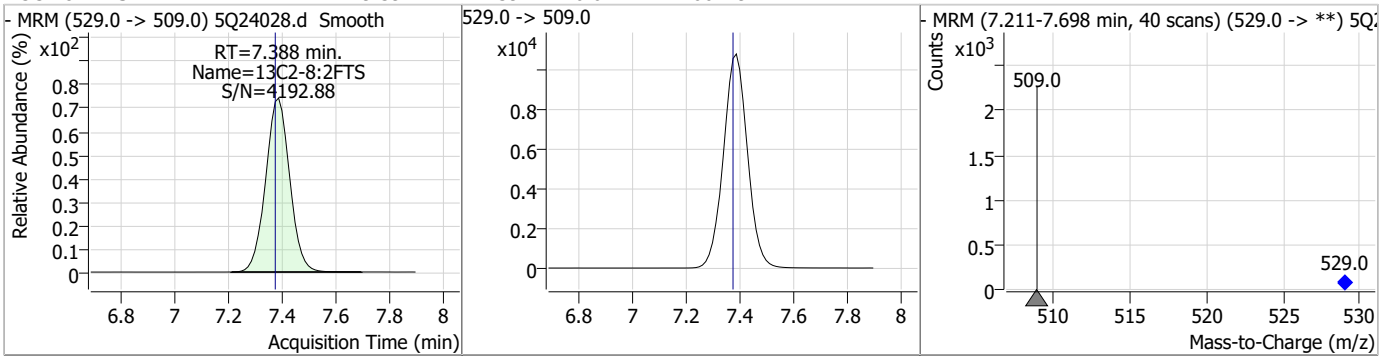
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	10.37	7.31	0.00	179482				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	1.73	7.31	0.00	28511	513.0 -> 219.0	18.7	8.7	26.2

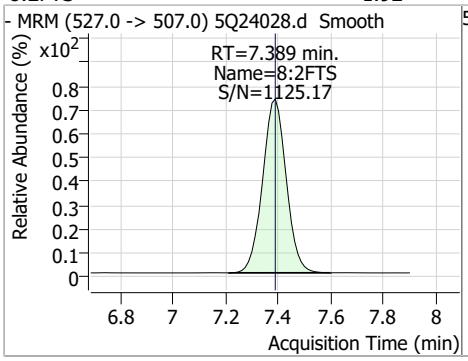


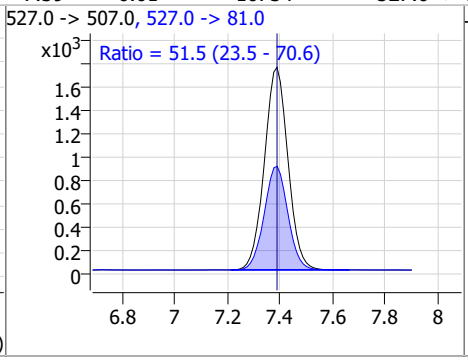
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	9.39	7.39	0.01	66449				

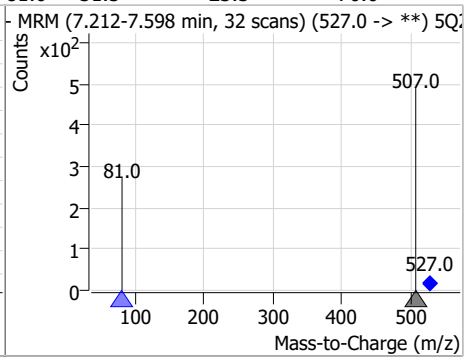


Perfluorinated Compounds by LC/MS/MS

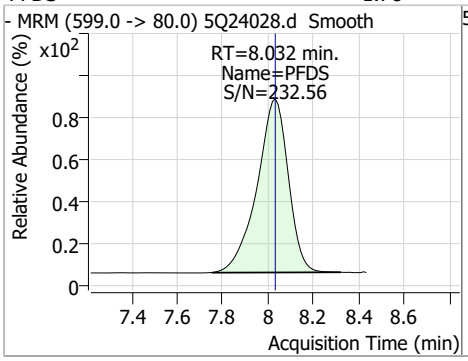
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	1.92	7.39	0.01	10734	527.0 -> 81.0	51.5	23.5	70.6

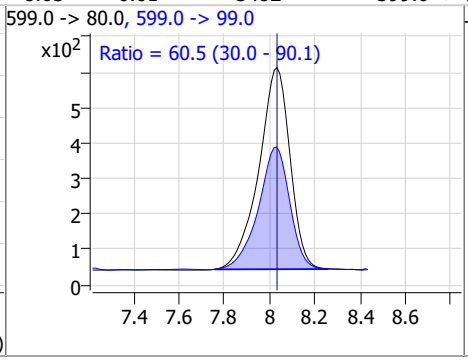


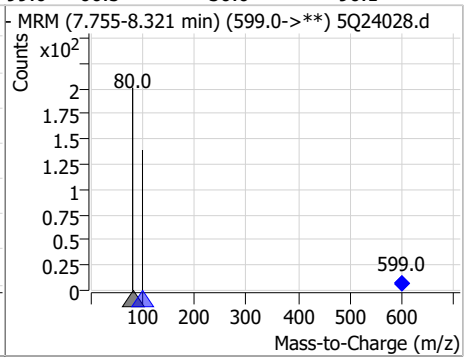




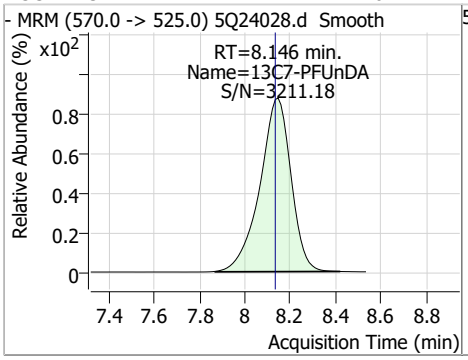
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	1.78	8.03	0.01	5482	599.0 -> 99.0	60.5	30.0	90.1

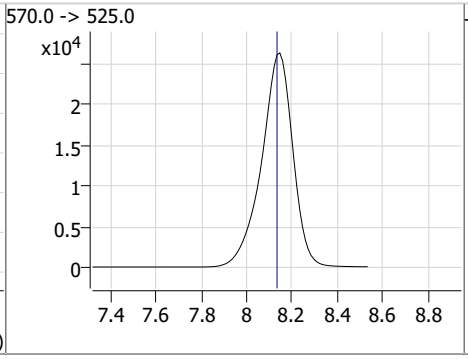


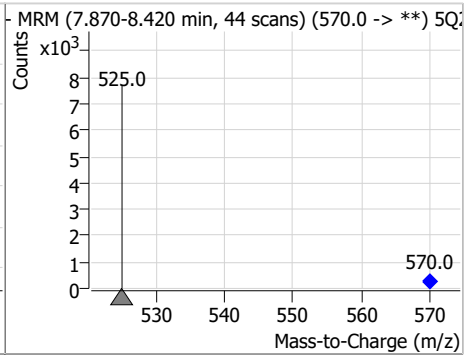




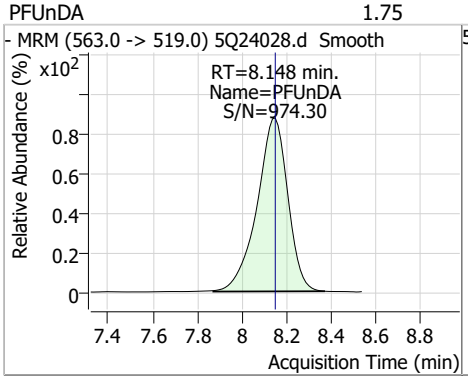
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	10.24	8.15	0.01	249966				

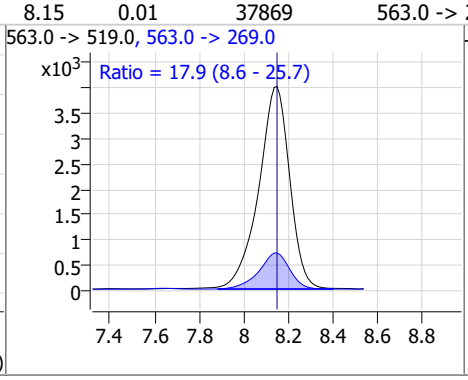


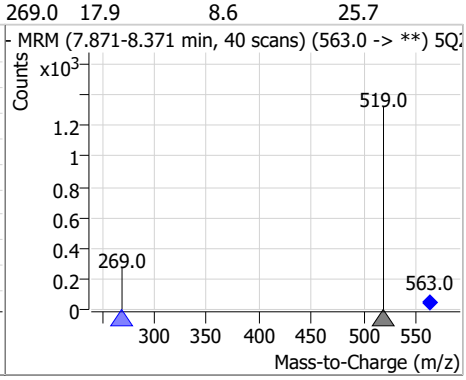




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	1.75	8.15	0.01	37869	563.0 -> 269.0	17.9	8.6	25.7

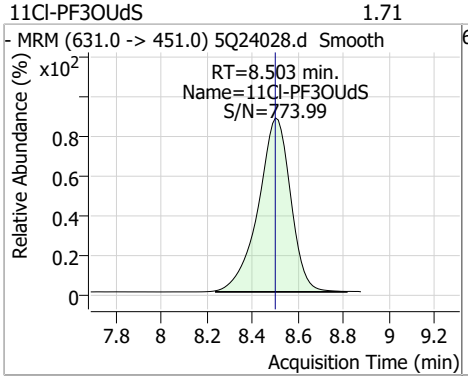


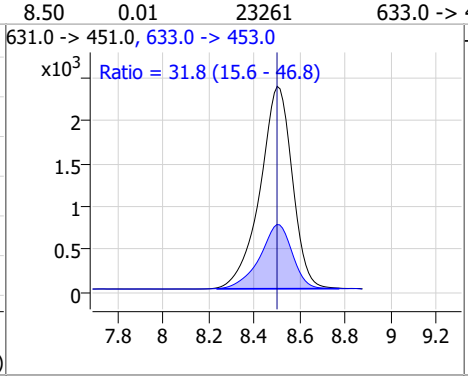


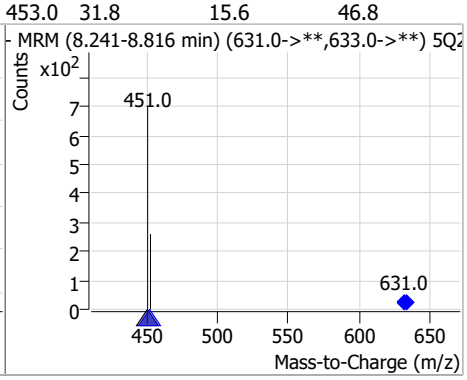


Perfluorinated Compounds by LC/MS/MS

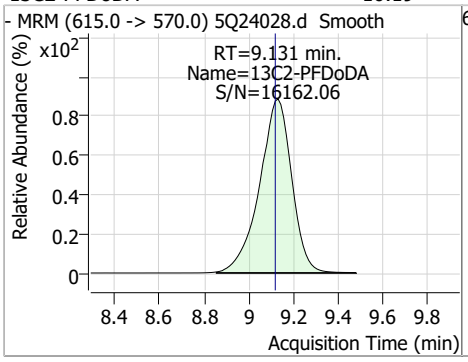
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	1.71	8.50	0.01	23261	633.0 -> 453.0	31.8	15.6	46.8

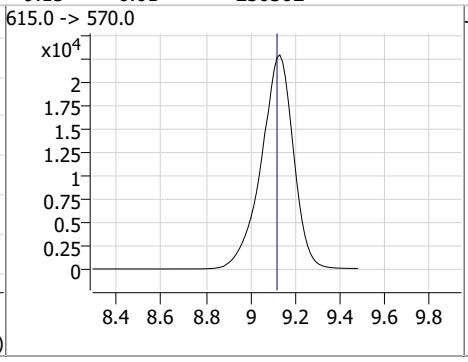


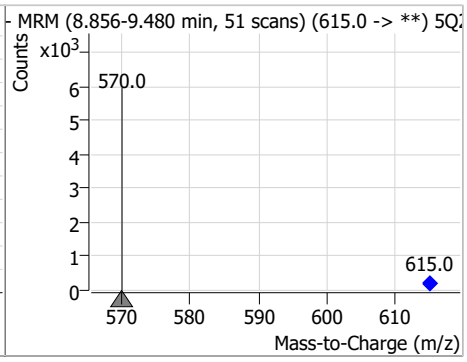




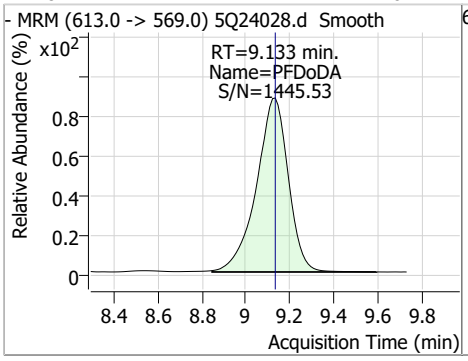
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	10.19	9.13	0.01	230302				

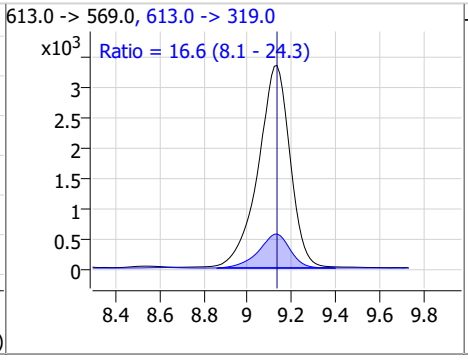


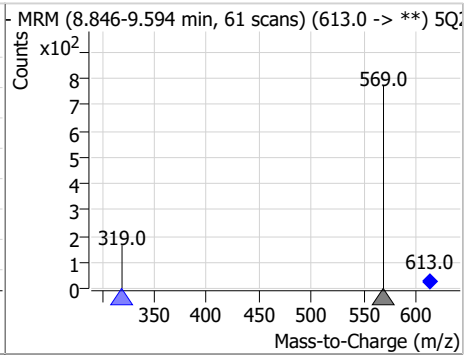




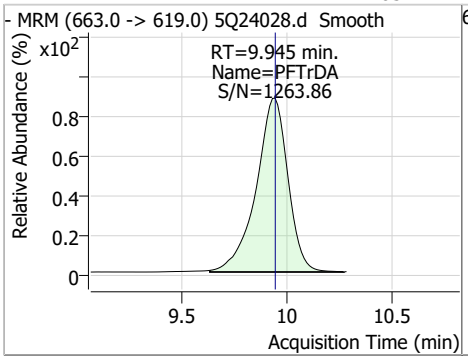
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	1.76	9.13	0.01	33435	613.0 -> 319.0	16.6	8.1	24.3

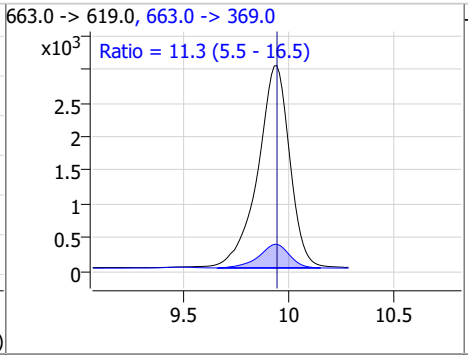


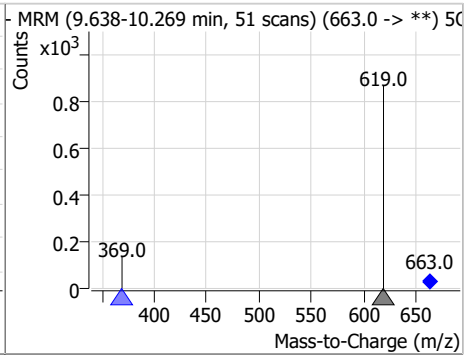




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	1.65	9.94	0.01	31471	663.0 -> 369.0	11.3	5.5	16.5

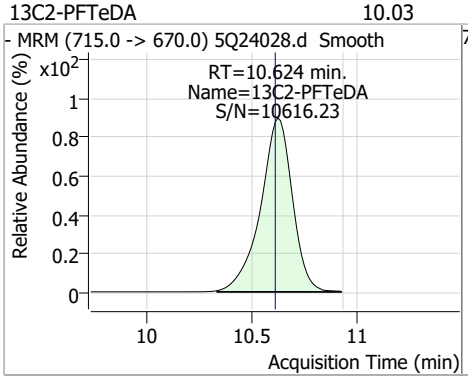


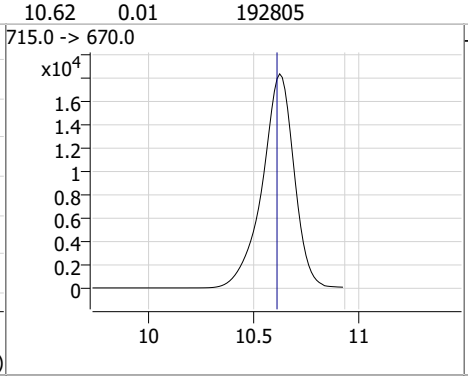


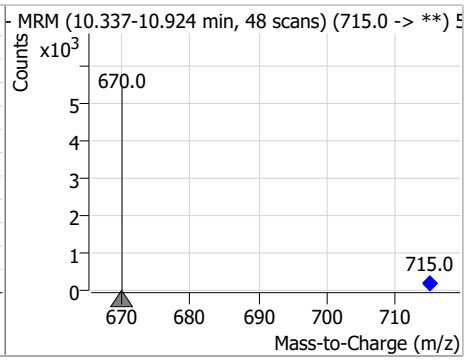


Perfluorinated Compounds by LC/MS/MS

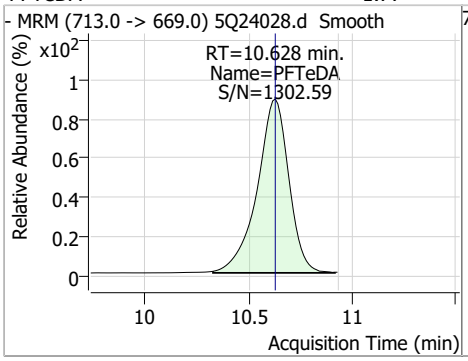
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	10.03	10.62	0.01	192805				

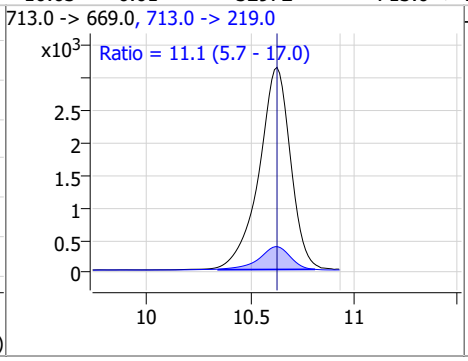


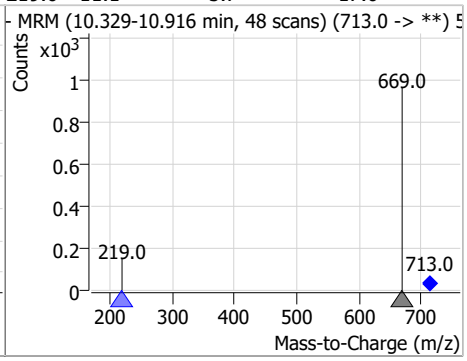




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	1.77	10.63	0.01	32972	713.0 -> 219.0	11.1	5.7	17.0







Manual Integration Approval Summary

Sample Number: S5Q377-IC377
Lab FileID: 5Q24028.D
Injection Time: 01/02/24 17:38
Method: EPA 537M QSM5.3 B-15
Analyst approved: 01/03/24 16:03 Lindsay Ritner
Supervisor approved: 01/04/24 12:54 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.45	Split peak
Perfluorooctanesulfonic acid	1763-23-1		6.75	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Natasha Gumtie 01/04/24 12:54

Perfluorinated Compounds by LC/MS/MS

Data File : 5Q24029.d
Operator : lindsayr
Acq. Method : 537_ID.m
Acq. Date-Time : 1/2/2024 5:55:17 PM
Sample Name : ic377-5
Vial : P1-A5
DA Method File : ID_010224_S5Q377.quantmethod.xml
Batch Name : s5q377.batch.bin
Sample Information : OP401,S5Q377,250,,,1.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	2.000	217.0 -> 172.0	44888	10.00	µg/L	0.013
M5-PFPeA	3.432	268.0 -> 223.0	76829	10.00	µg/L	0.000
M5-PFHxA	4.565	318.0 -> 273.0	120330	10.00	µg/L	0.000
M4-PFHpA	5.425	367.0 -> 322.0	123914	10.00	µg/L	0.000
M8-PFOA	6.149	421.0 -> 376.0	170657	10.00	µg/L	0.000
M9-PFNA	6.781	472.0 -> 427.0	171469	10.00	µg/L	0.000
M6-PFDA	7.314	519.0 -> 474.0	180875	10.00	µg/L	0.000
M7-PFUnDA	8.134	570.0 -> 525.0	253647	10.00	µg/L	0.000
M2-PFDoDA	9.118	615.0 -> 570.0	231901	10.00	µg/L	0.000
M2-PFTeDA	10.624	715.0 -> 670.0	197227	10.00	µg/L	0.012
M8-FOSA	6.192	506.0 -> 78.0	43549	10.00	µg/L	-0.012
M3-PFBS	3.637	302.0 -> 99.0	9541	10.00	µg/L	0.000
M3-PFHxS	5.444	402.0 -> 99.0	11581	10.00	µg/L	0.000
M8-PFOS	6.753	507.0 -> 99.0	16045	10.00	µg/L	0.000
M2-4:2FTS	4.486	329.0 -> 309.0	38859	10.00	µg/L	0.000
M2-6:2FTS	6.148	429.0 -> 409.0	68819	10.00	µg/L	0.000
M2-8:2FTS	7.388	529.0 -> 509.0	68844	10.00	µg/L	0.012
M3-MeFOSAA	6.747	573.0 -> 419.0	35051	10.00	µg/L	0.000
M3-HFPO-DA	4.831	287.0 -> 169.0	6228	10.00	µg/L	0.000
M3-MeFOSA	6.589	515.0 -> 169.0	15285	10.00	µg/L	0.000
M5-EtFOSAA	6.845	589.0 -> 419.0	31744	10.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.486	329.0 -> 309.0	38859	9.94	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.4%		
13C2-6:2FTS	6.148	429.0 -> 409.0	68819	9.36	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 93.6%		
13C2-8:2FTS	7.388	529.0 -> 509.0	68844	9.73	µg/L	0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 97.3%		
13C2-PFDoDA	9.118	615.0 -> 570.0	231901	10.26	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 102.6%		
13C2-PFTeDA	10.624	715.0 -> 670.0	197227	10.26	µg/L	0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 102.6%		
13C3-PFBS	3.637	302.0 -> 99.0	9541	10.34	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 103.4%		
13C3-PFHxS	5.444	402.0 -> 99.0	11581	10.25	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 102.5%		
13C4-PFBA	2.000	217.0 -> 172.0	44888	10.18	µg/L	0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.8%		
13C4-PFHpA	5.425	367.0 -> 322.0	123914	10.49	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 104.9%		
13C5-PFHxA	4.565	318.0 -> 273.0	120330	10.48	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 104.8%		
13C5-PFPeA	3.432	268.0 -> 223.0	76829	10.34	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 103.4%		
13C6-PFDA	7.314	519.0 -> 474.0	180875	10.45	µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

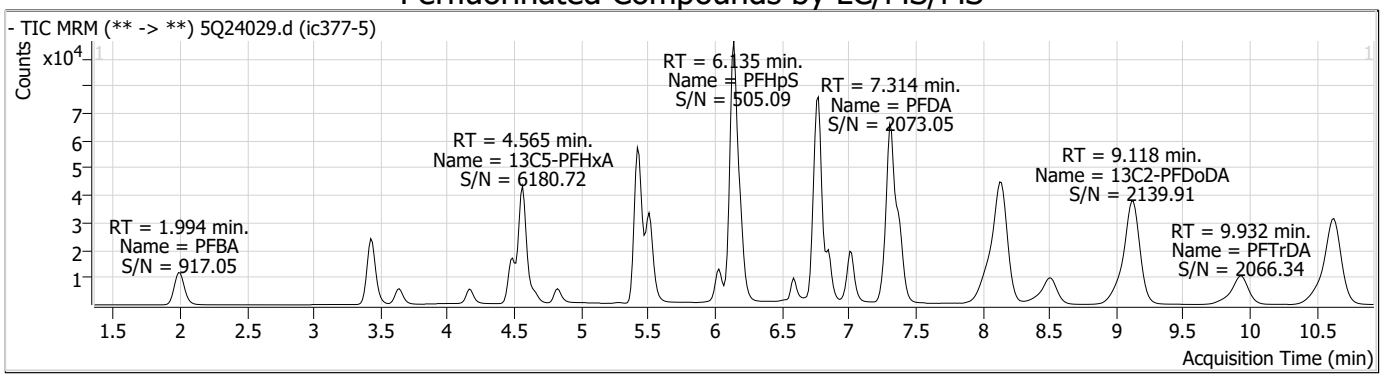
Compound	RT	Transition	Response	Conc. Units		Dev(Min)
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 104.5%		
13C7-PFUnDA	8.134	570.0 -> 525.0	253647	10.39 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 103.9%		
13C8-FOSA	6.192	506.0 -> 78.0	43549	10.65 µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 106.5%		
13C8-PFOA	6.149	421.0 -> 376.0	170657	10.31 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 103.1%		
13C8-PFOS	6.753	507.0 -> 99.0	16045	10.19 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.9%		
13C9-PFNA	6.781	472.0 -> 427.0	171469	10.35 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 103.5%		
d3-MeFOSAA	6.747	573.0 -> 419.0	35051	10.42 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 104.2%		
13C3-HFPO-DA	4.831	287.0 -> 169.0	6228	10.43 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 104.3%		
d3-MeFOSA	6.589	515.0 -> 169.0	15285	10.97 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 109.7%		
d5-EtFOSAA	6.845	589.0 -> 419.0	31744	10.42 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 104.2%		
Target Compounds						QValue
4:2FTS	4.488	327.0 -> 307.0	19122	5.17 µg/L		99
		327.0 -> 81.0	10773			
6:2FTS	6.148	427.0 -> 407.0	32238	5.53 µg/L		99
		427.0 -> 81.0	12686			
8:2FTS	7.389	527.0 -> 507.0	30079	5.20 µg/L		97
		527.0 -> 81.0	14854			
EtFOSAA	6.859	584.0 -> 419.0	11230	4.62 µg/L		96
		584.0 -> 483.0	7165			
FOSA	6.194	498.0 -> 78.0	18354	4.77 µg/L		99
		498.0 -> 478.0	656			
MeFOSAA	6.748	570.0 -> 419.0	11789	4.51 µg/L		97
		570.0 -> 512.0	4456			
PFBA	1.994	213.0 -> 169.0	18729	4.65 µg/L		100
PFBS	3.640	299.0 -> 80.0	10648	4.55 µg/L		98
		299.0 -> 99.0	4763			
PFDA	7.314	513.0 -> 469.0	77113	4.64 µg/L		100
		513.0 -> 219.0	13371			
PFDoDA	9.121	613.0 -> 569.0	89986	4.71 µg/L		99
		613.0 -> 319.0	14791			
PFDS	8.020	599.0 -> 80.0	14480	4.63 µg/L		98
		599.0 -> 99.0	8853			
PFHpA	5.426	363.0 -> 319.0	63177	4.63 µg/L		99
		363.0 -> 169.0	13586			
PFHpS	6.135	449.0 -> 80.0	9847	4.64 µg/L		100
		449.0 -> 99.0	5309			
PFHxA	4.565	313.0 -> 269.0	51565	4.60 µg/L		100
		313.0 -> 119.0	2125			
PFHxS	5.446	399.0 -> 80.0	9854	4.75 µg/L	m	99
		399.0 -> 99.0	5561			
PFNA	6.781	463.0 -> 419.0	71753	4.61 µg/L		98
		463.0 -> 219.0	14560			
PFNS	7.272	549.0 -> 80.0	9017	4.89 µg/L		97
		549.0 -> 99.0	5373			
PFOA	6.150	413.0 -> 369.0	76420	4.69 µg/L		100
		413.0 -> 169.0	18879			
PFOS	6.755	499.0 -> 80.0	13074	4.85 µg/L	m	98

Perfluorinated Compounds by LC/MS/MS

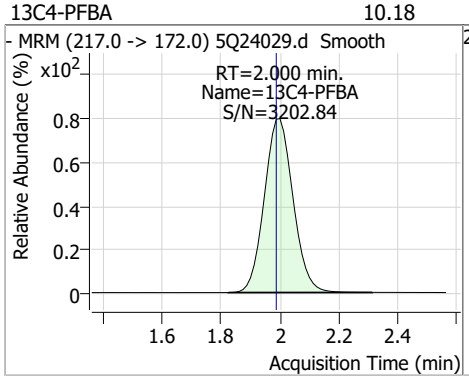
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		499.0 -> 99.0	6315			
PFPeA	3.434	263.0 -> 219.0	33750	4.66	µg/L	100
PFPeS	4.661	349.0 -> 80.0	7836	4.82	µg/L	99
		349.0 -> 99.0	4035			
PFTeDA	10.616	713.0 -> 669.0	90733	4.77	µg/L	99
		713.0 -> 219.0	9824			
PFTrDA	9.932	663.0 -> 619.0	87209	4.55	µg/L	100
		663.0 -> 369.0	9663			
PFUnDA	8.136	563.0 -> 519.0	102253	4.65	µg/L	98
		563.0 -> 269.0	18155			
11Cl-PF3OUdS	8.503	631.0 -> 451.0	63024	4.60	µg/L	100
		633.0 -> 453.0	19491			
9Cl-PF3ONS	7.011	531.0 -> 351.0	57316	4.58	µg/L	98
		533.0 -> 353.0	17378			
ADONA	5.514	377.0 -> 251.0	88667	4.65	µg/L	99
		377.0 -> 85.0	32228			
HFPO-DA	4.827	329.0 -> 169.0	12096	4.78	µg/L	99
		285.0 -> 169.0	2736			
MeFOSA	6.602	512.0 -> 169.0	5967	4.57	µg/L	98
		512.0 -> 219.0	4896			
4-PFECHS	6.032	461.0 -> 381.0	33330	4.61	µg/L	99
		461.0 -> 99.0	17242			
FBSA	4.170	298.0 -> 78.0	19337	4.86	µg/L	99
		298.0 -> 64.0	1739			
FHxSA	5.409	398.0 -> 78.0	20399	5.27	µg/L	97
		398.0 -> 64.0	2060			

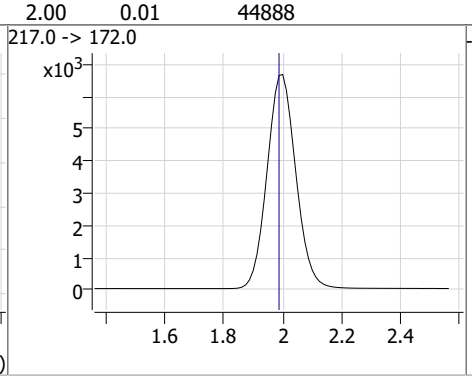
 # = Qualifier out of range, m = manually integrated, + = Area summed

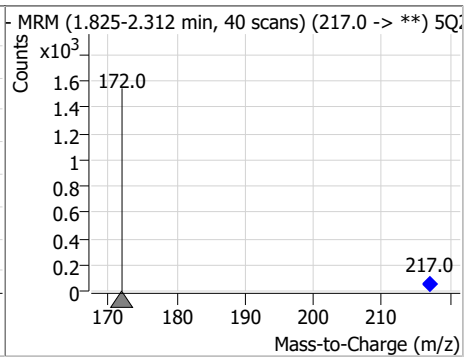
Perfluorinated Compounds by LC/MS/MS



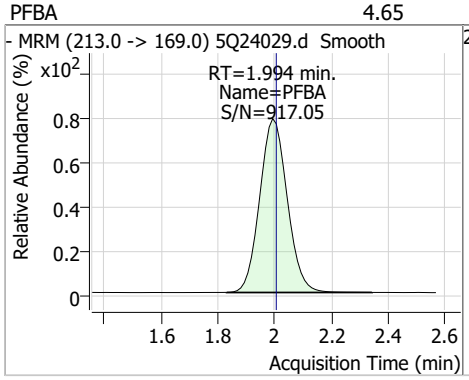
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	10.18	2.00	0.01	44888				

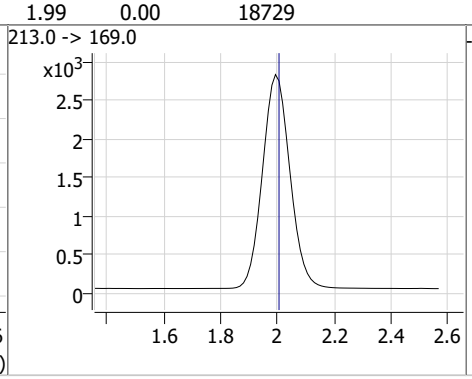


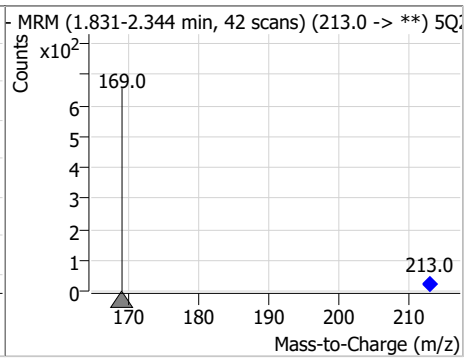




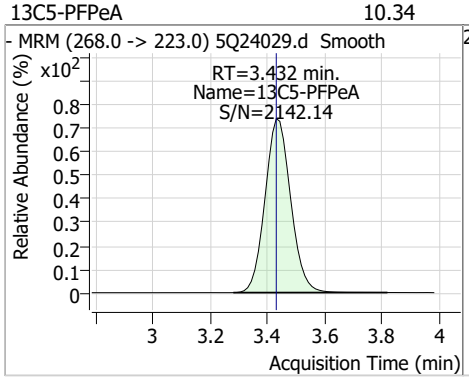
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	4.65	1.99	0.00	18729				

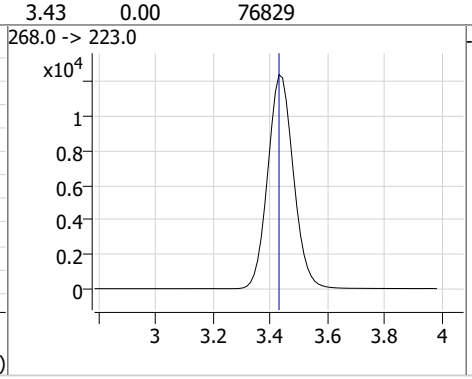


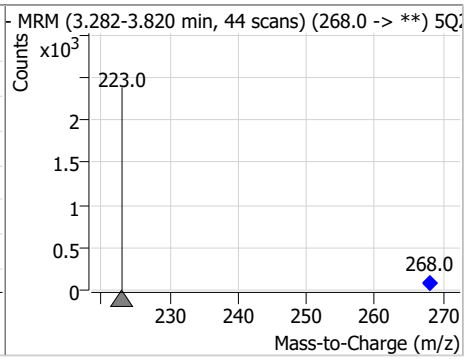




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	10.34	3.43	0.00	76829				

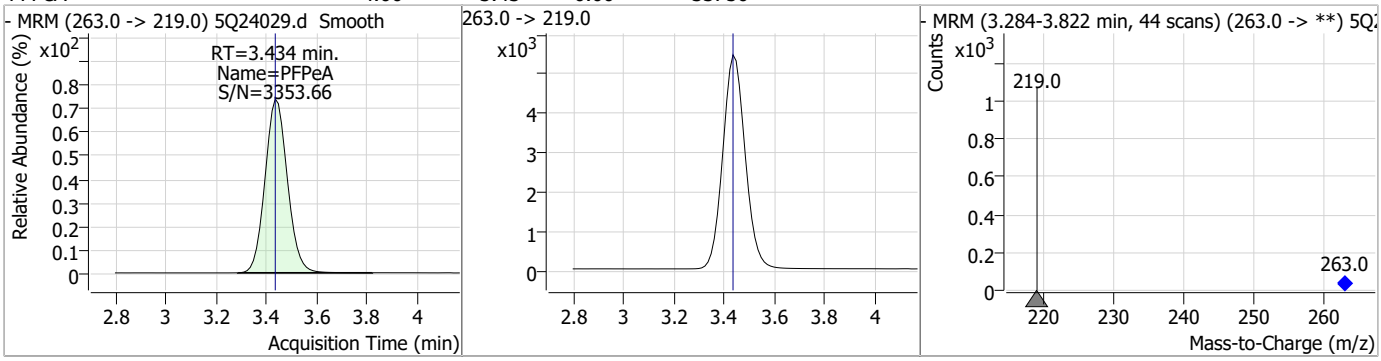




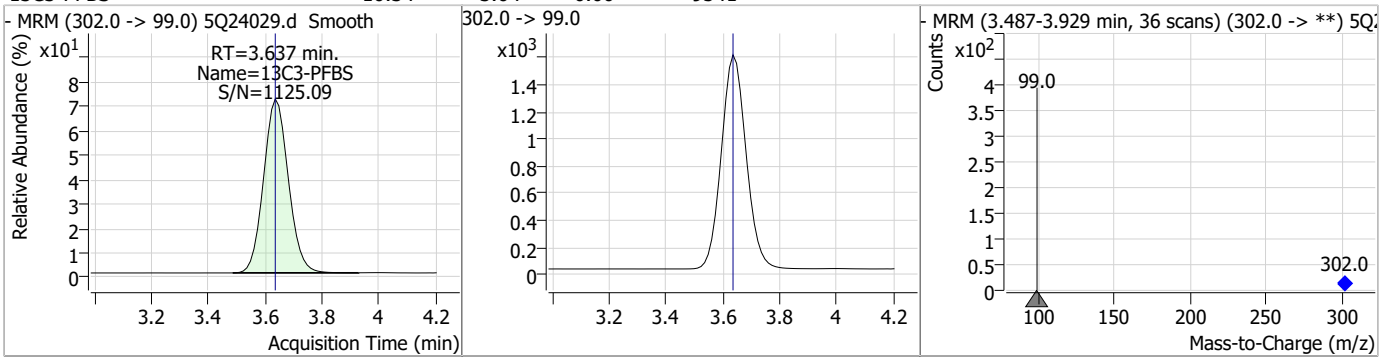


Perfluorinated Compounds by LC/MS/MS

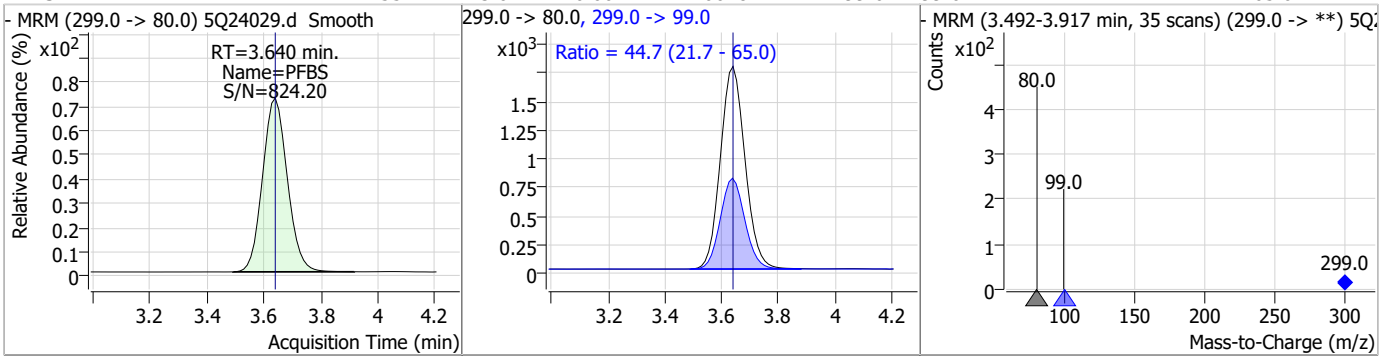
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	4.66	3.43	0.00	33750				



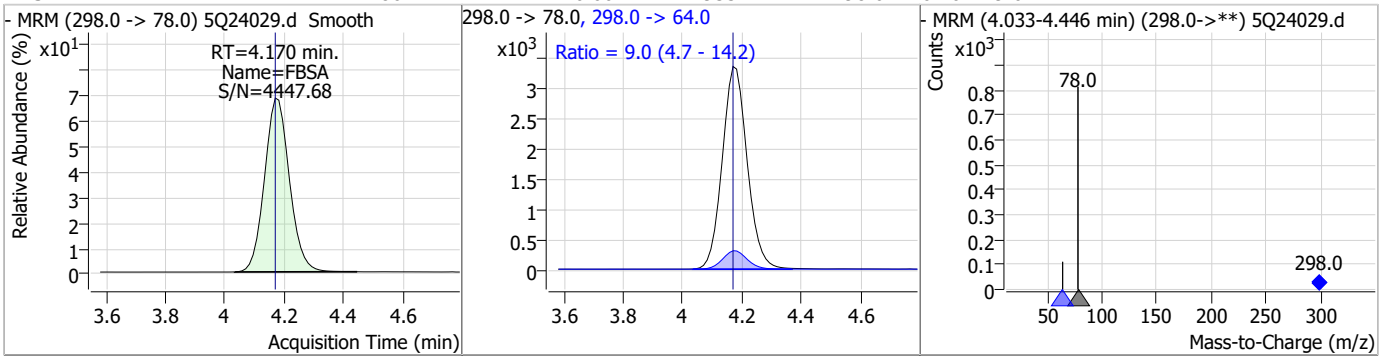
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	10.34	3.64	0.00	9541				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	4.55	3.64	0.00	10648	299.0 -> 99.0	44.7	21.7	65.0

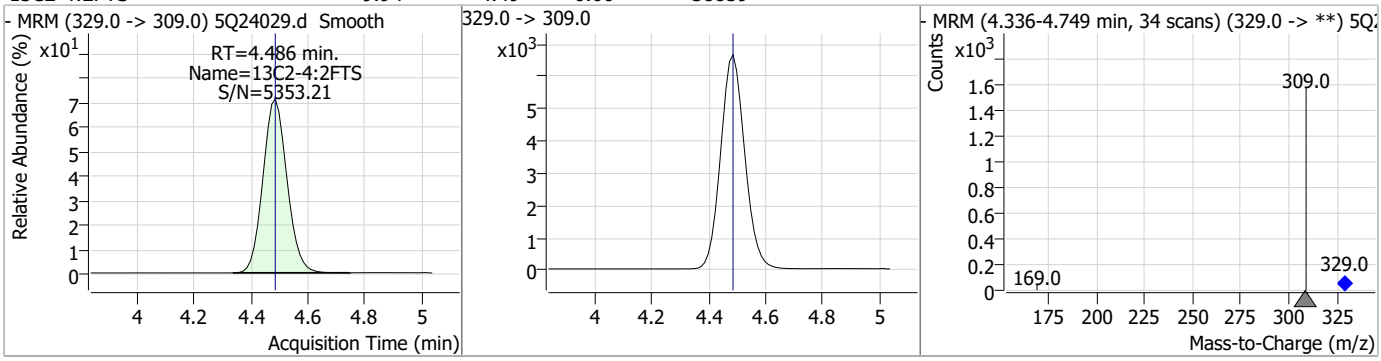


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	4.86	4.17	0.00	19337	298.0 -> 64.0	9.0	4.7	14.2

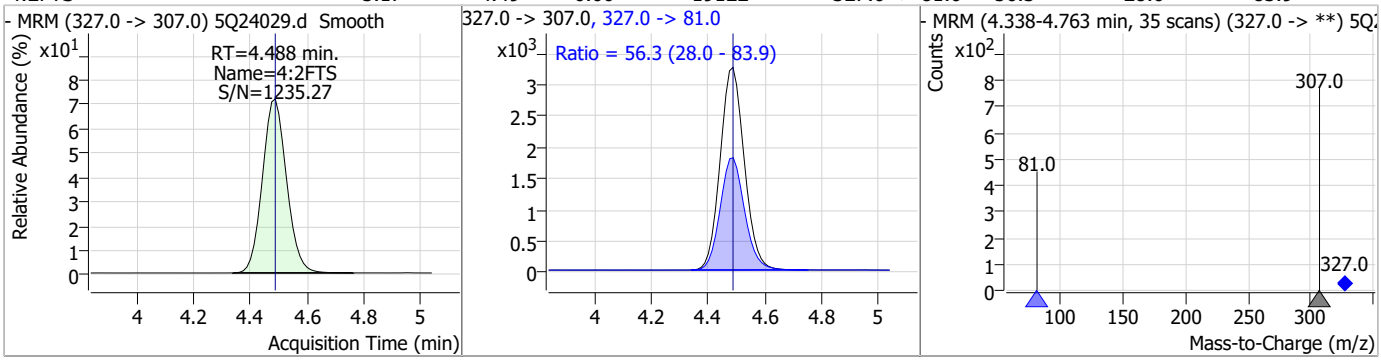


Perfluorinated Compounds by LC/MS/MS

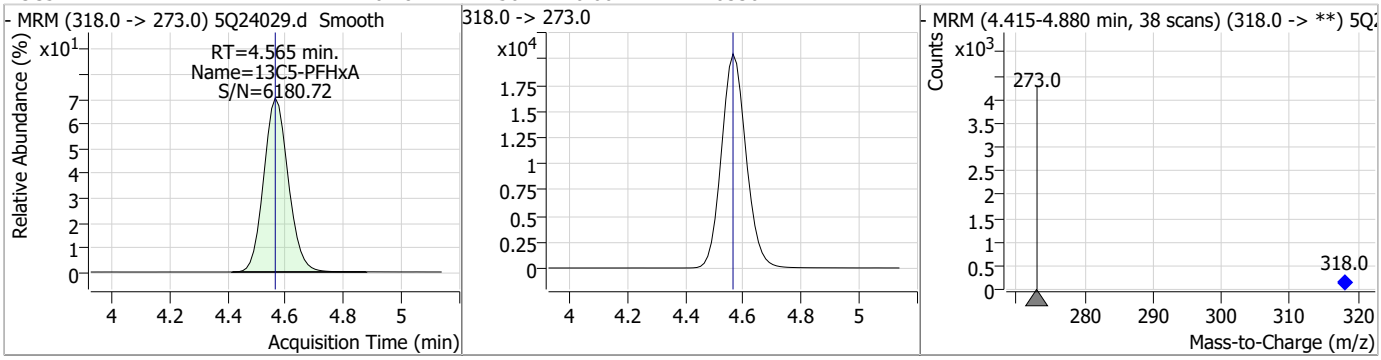
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	9.94	4.49	0.00	38859				



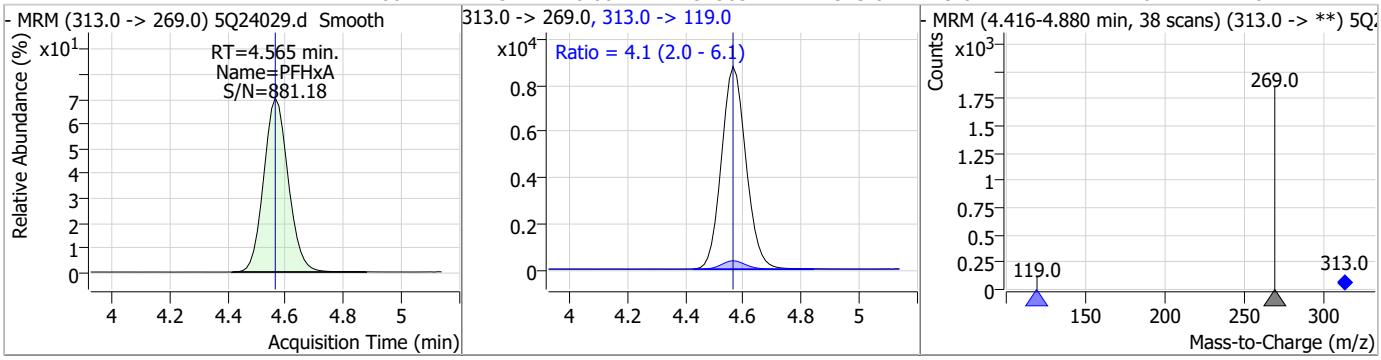
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	5.17	4.49	0.00	19122	327.0 -> 81.0	56.3	28.0	83.9



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	10.48	4.56	0.00	120330				

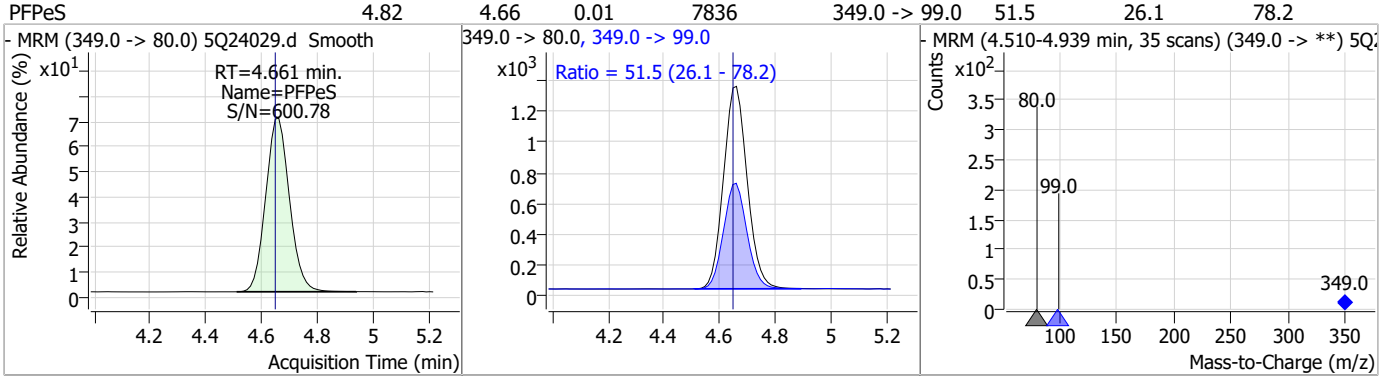


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	4.60	4.57	0.00	51565	313.0 -> 119.0	4.1	2.0	6.1

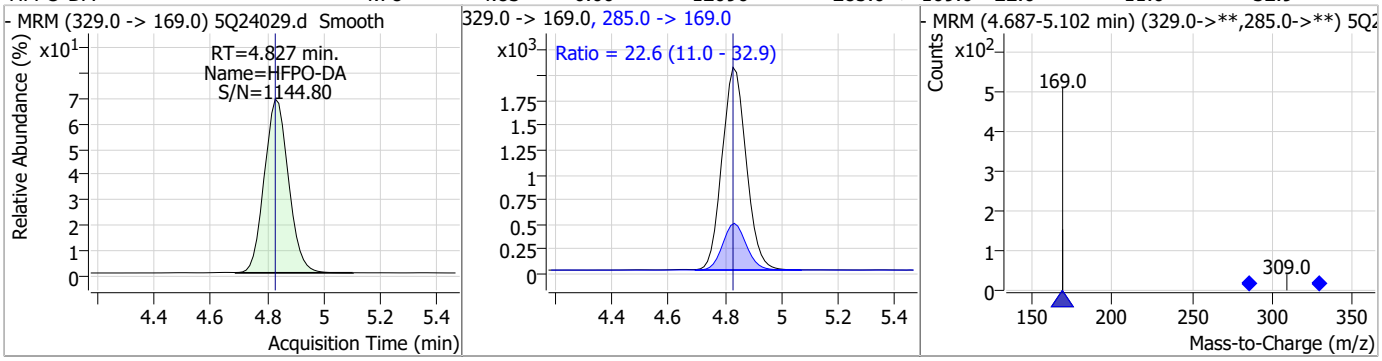


Perfluorinated Compounds by LC/MS/MS

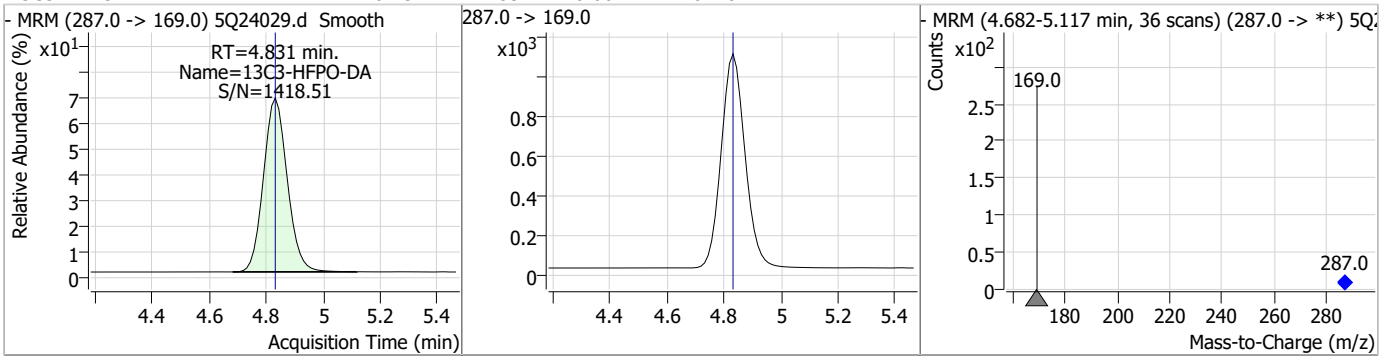
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	4.82	4.66	0.01	7836	349.0 -> 99.0	51.5	26.1	78.2



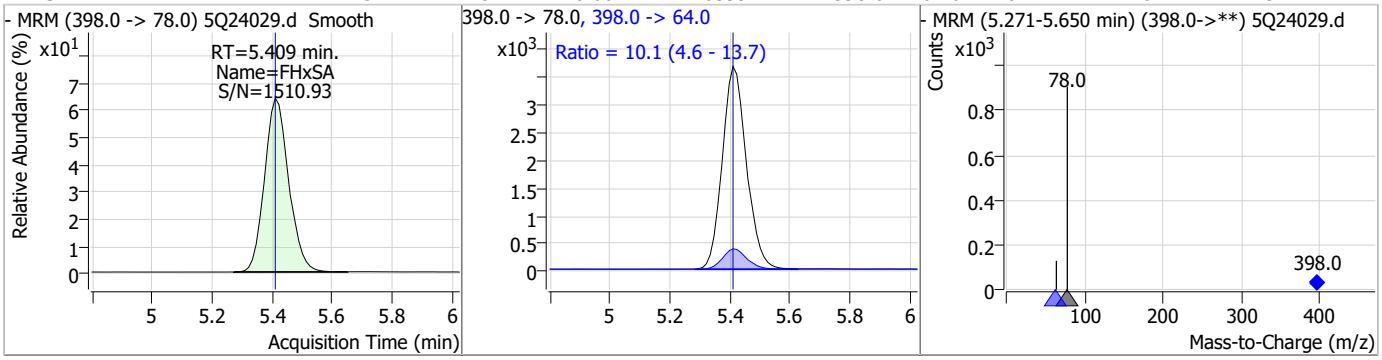
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	4.78	4.83	0.00	12096	285.0 -> 169.0	22.6	11.0	32.9



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	10.43	4.83	0.00	6228				

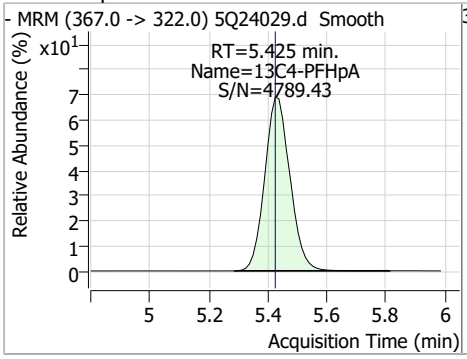


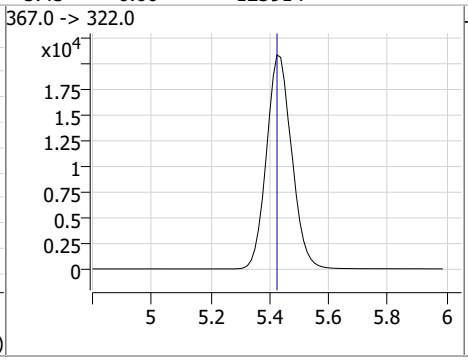
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	5.27	5.41	0.00	20399	398.0 -> 64.0	10.1	4.6	13.7

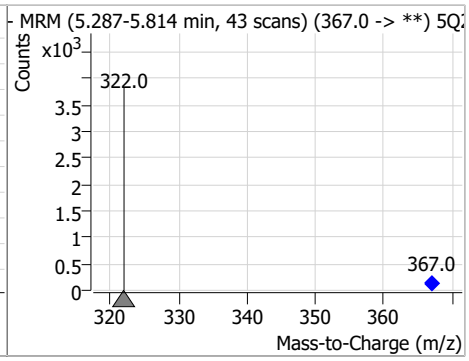


Perfluorinated Compounds by LC/MS/MS

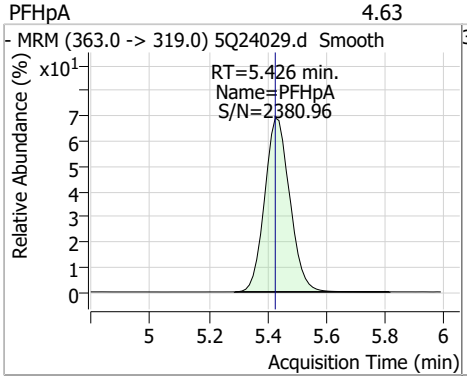
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	10.49	5.43	0.00	123914				

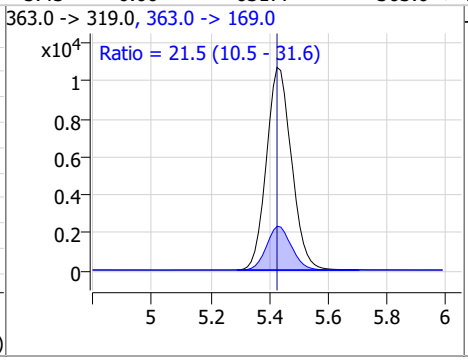


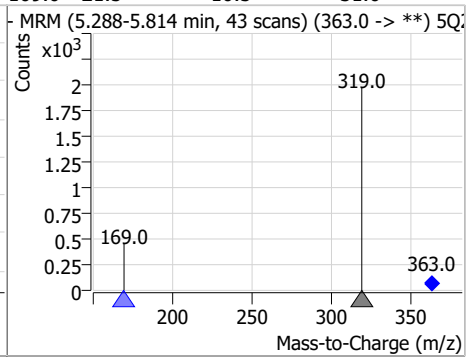




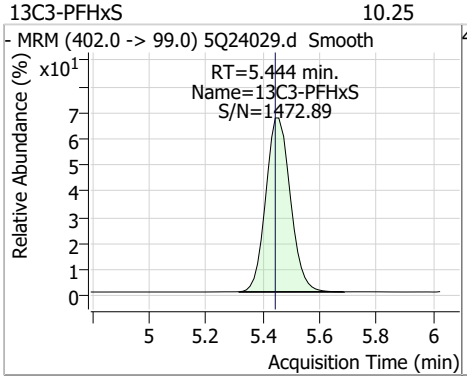
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	4.63	5.43	0.00	63177	363.0 -> 169.0	21.5	10.5	31.6

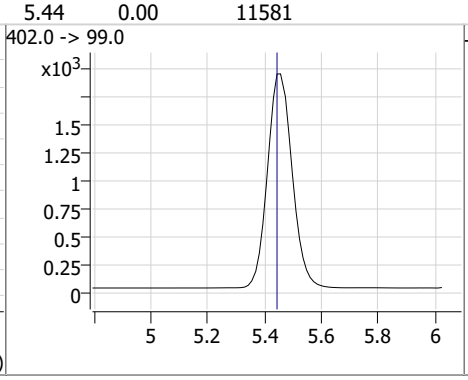


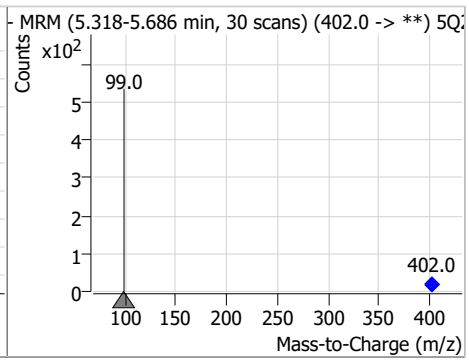




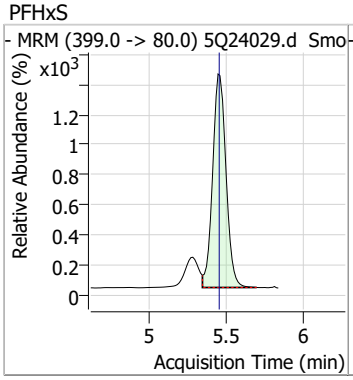
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	10.25	5.44	0.00	11581				

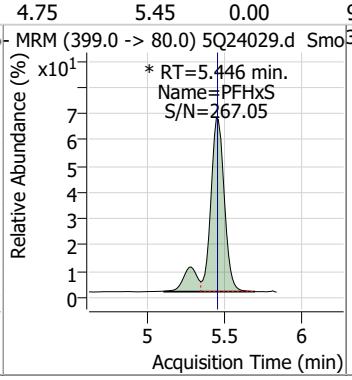


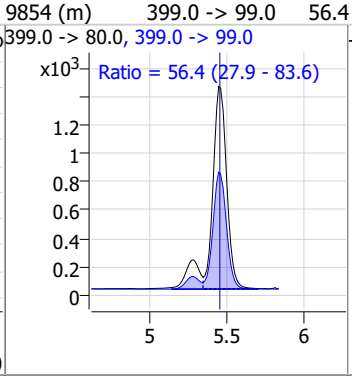


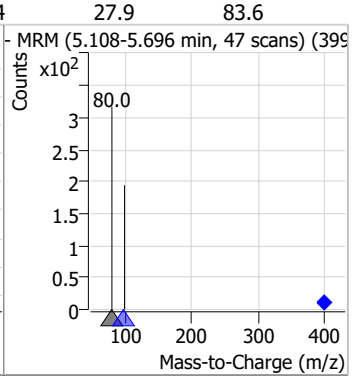


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	4.75	5.45	0.00	9854 (m)	399.0 -> 99.0	56.4	27.9	83.6



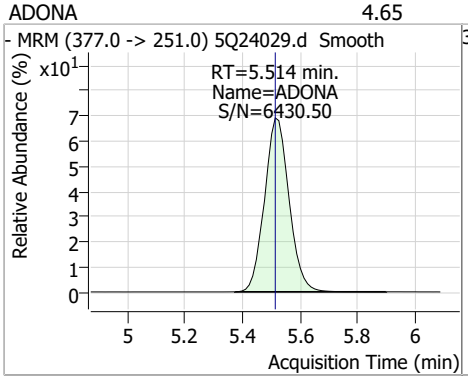


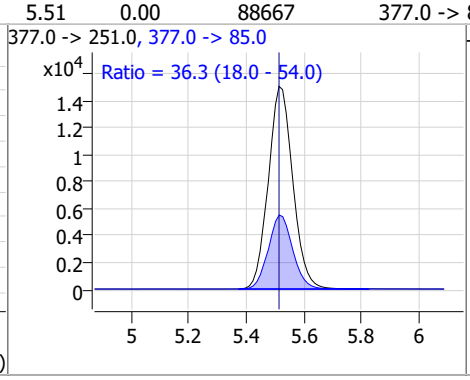


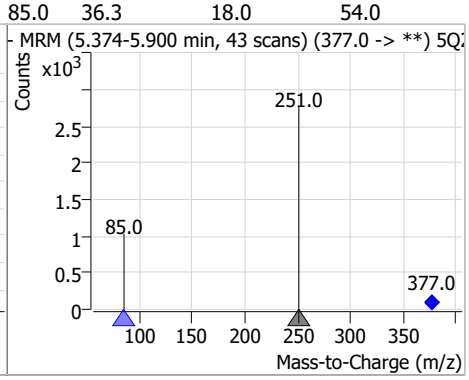


Perfluorinated Compounds by LC/MS/MS

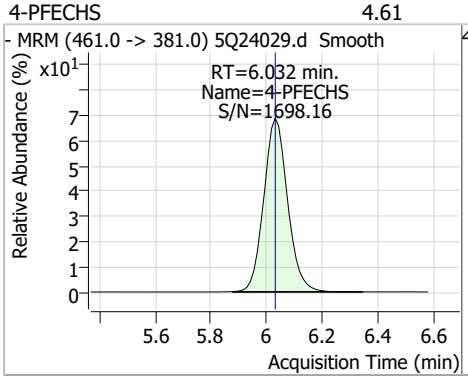
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	4.65	5.51	0.00	88667	377.0 -> 85.0	36.3	18.0	54.0

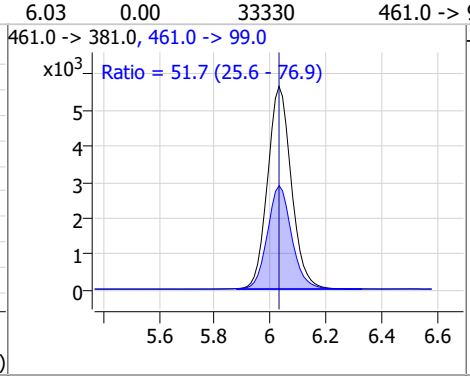


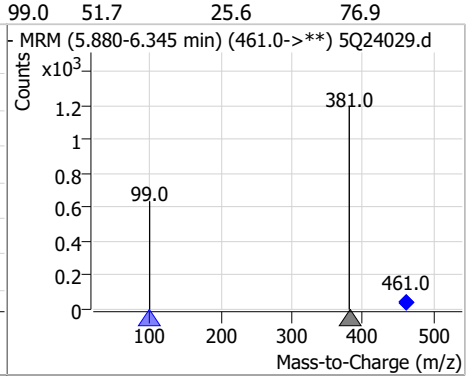




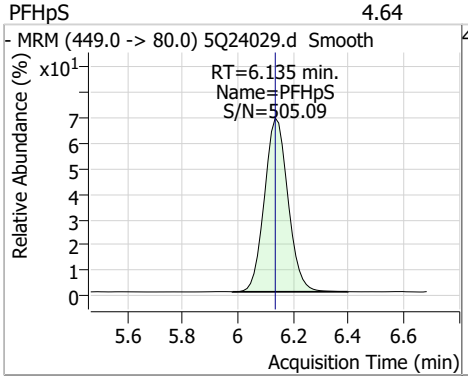
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS	4.61	6.03	0.00	33330	461.0 -> 99.0	51.7	25.6	76.9

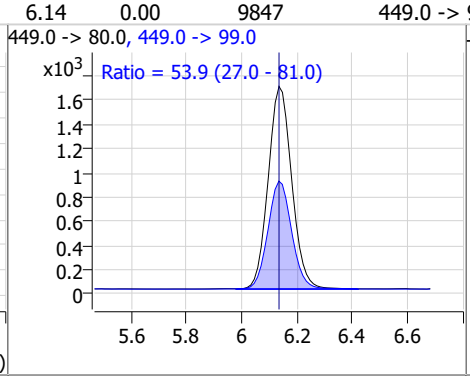


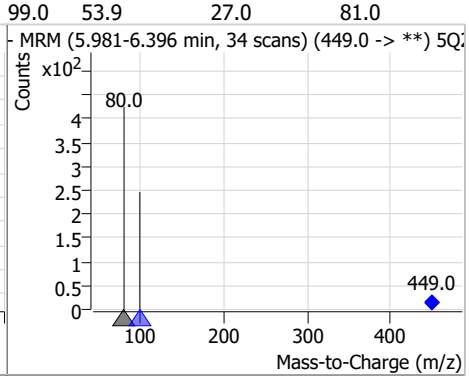




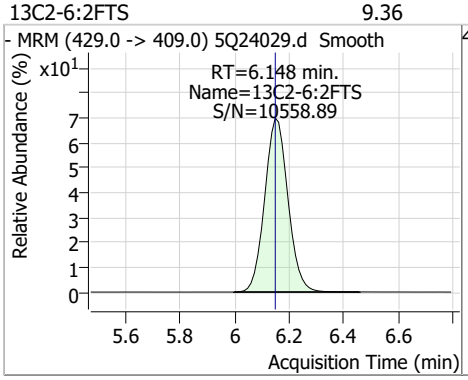
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	4.64	6.14	0.00	9847	449.0 -> 99.0	53.9	27.0	81.0

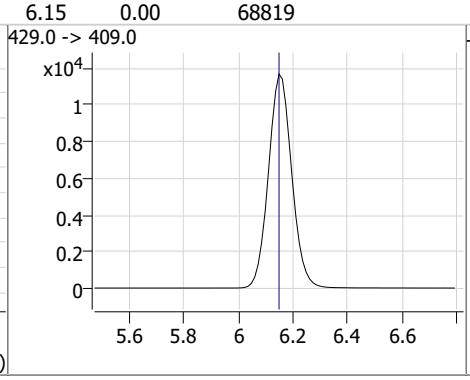


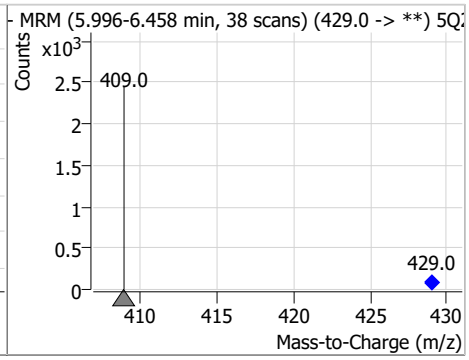




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	9.36	6.15	0.00	68819				

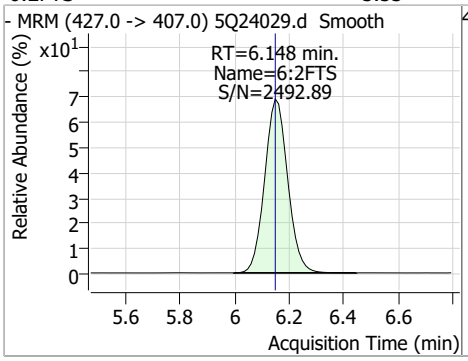


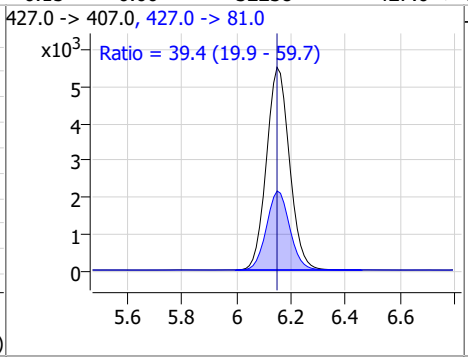


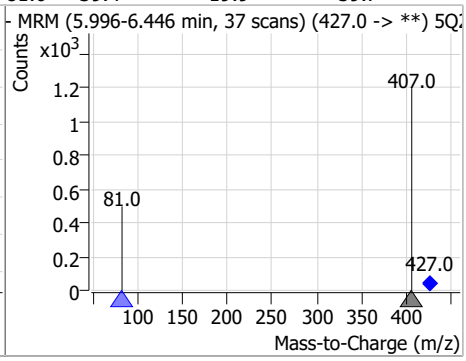


Perfluorinated Compounds by LC/MS/MS

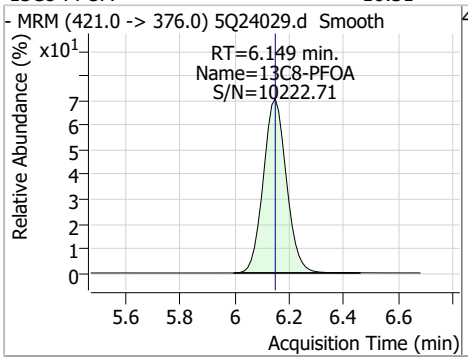
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	5.53	6.15	0.00	32238	427.0 -> 81.0	39.4	19.9	59.7

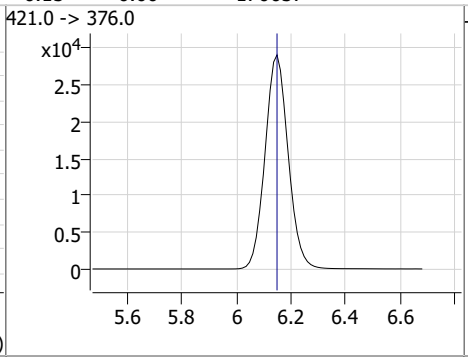


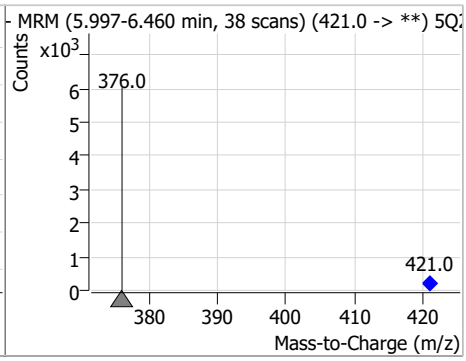




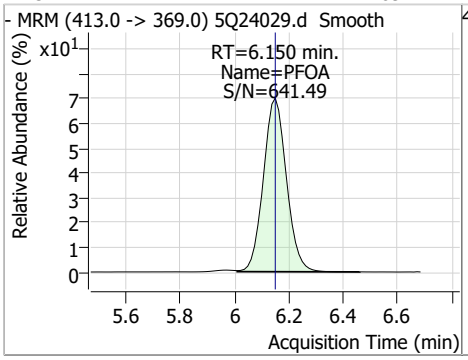
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	10.31	6.15	0.00	170657				

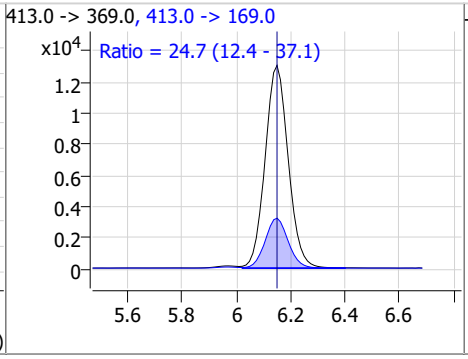


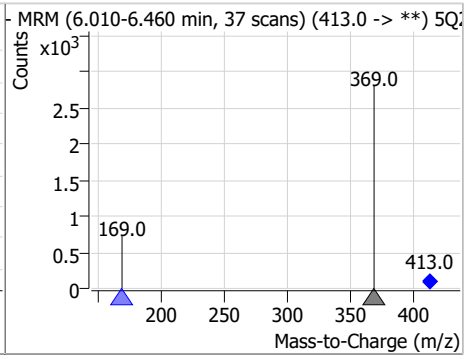




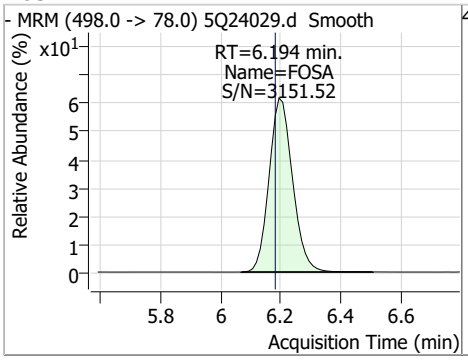
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	4.69	6.15	0.00	76420	413.0 -> 169.0	24.7	12.4	37.1

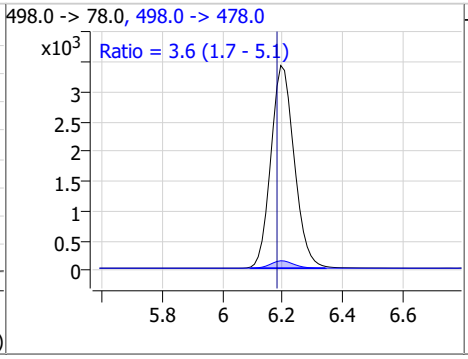


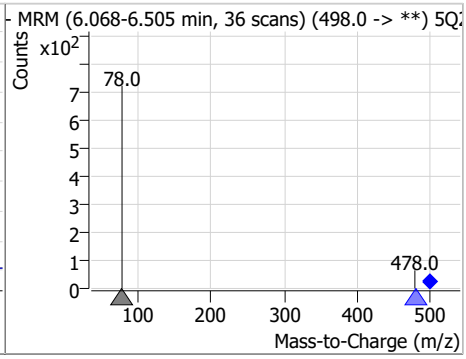




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	4.77	6.19	0.00	18354	498.0 -> 478.0	3.6	1.7	5.1

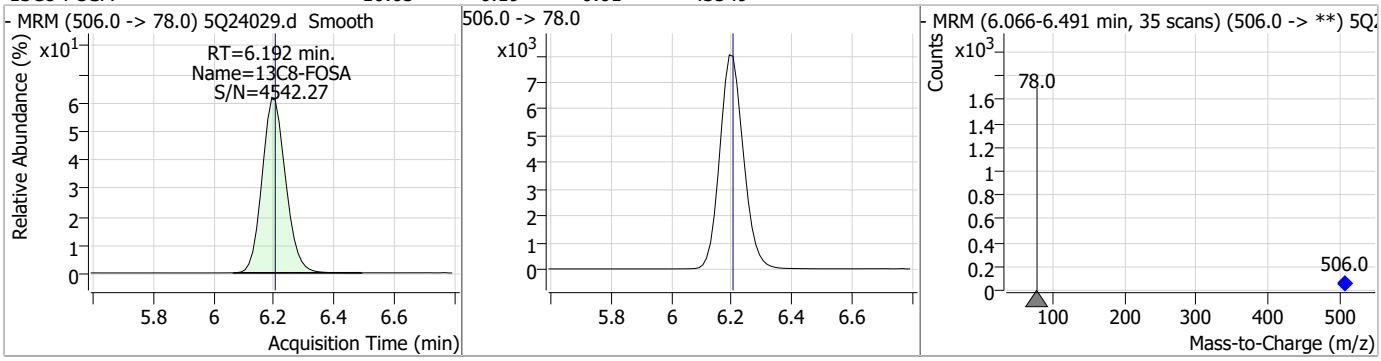




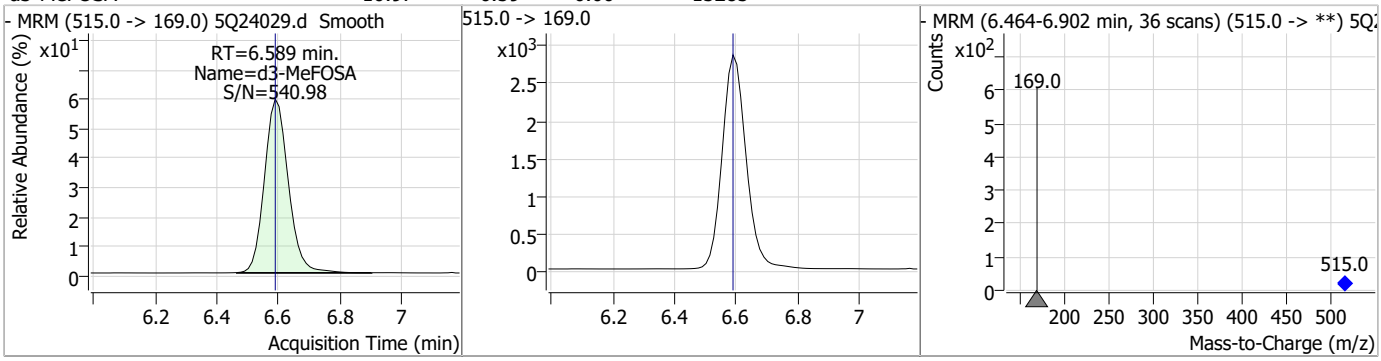


Perfluorinated Compounds by LC/MS/MS

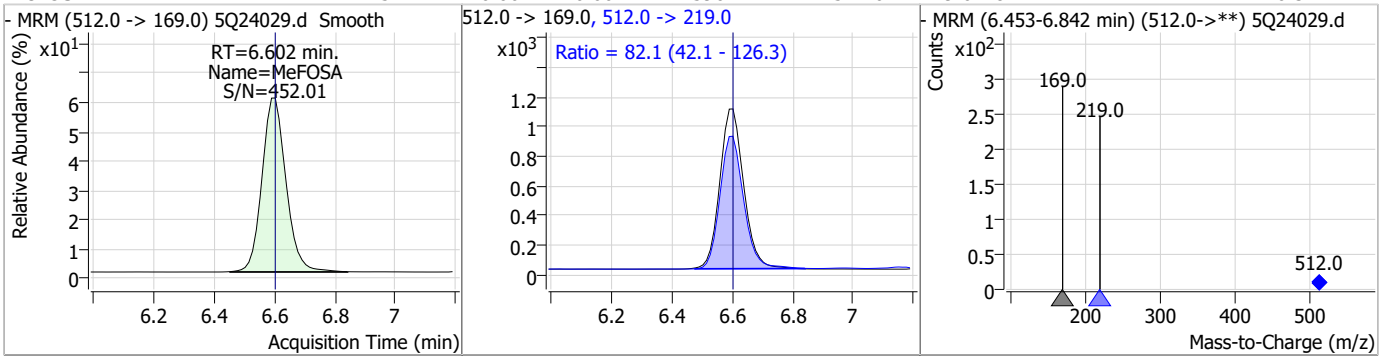
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	10.65	6.19	-0.01	43549				



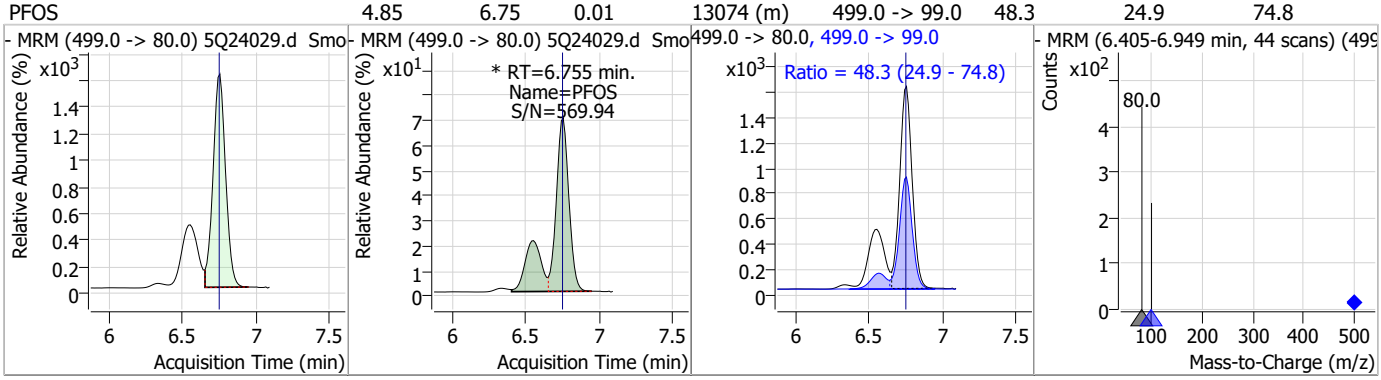
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	10.97	6.59	0.00	15285				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	4.57	6.60	0.00	5967	512.0 -> 219.0	82.1	42.1	126.3

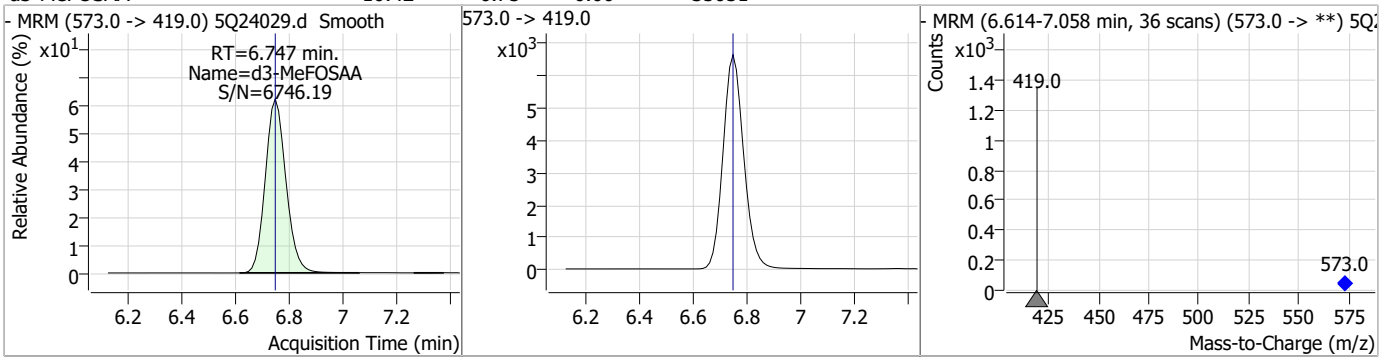


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	4.85	6.75	0.01	13074 (m)	499.0 -> 99.0	48.3	24.9	74.8

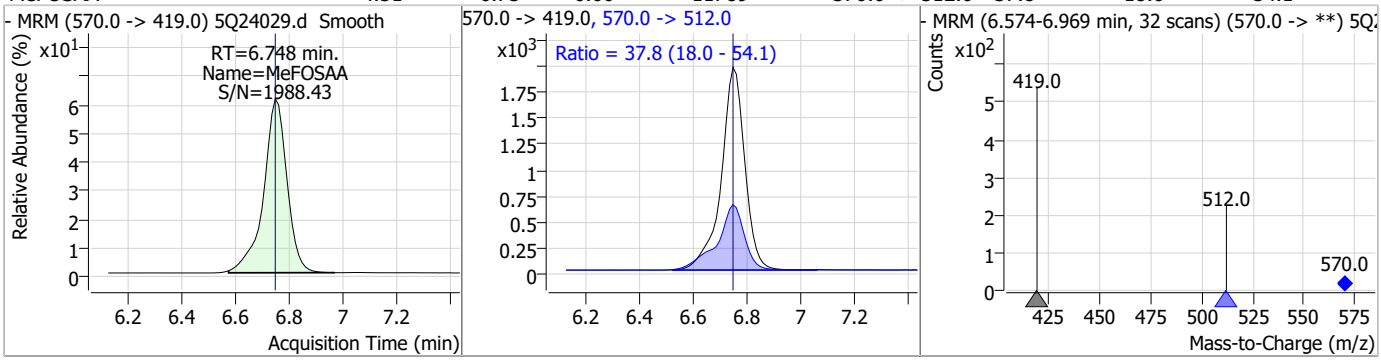


Perfluorinated Compounds by LC/MS/MS

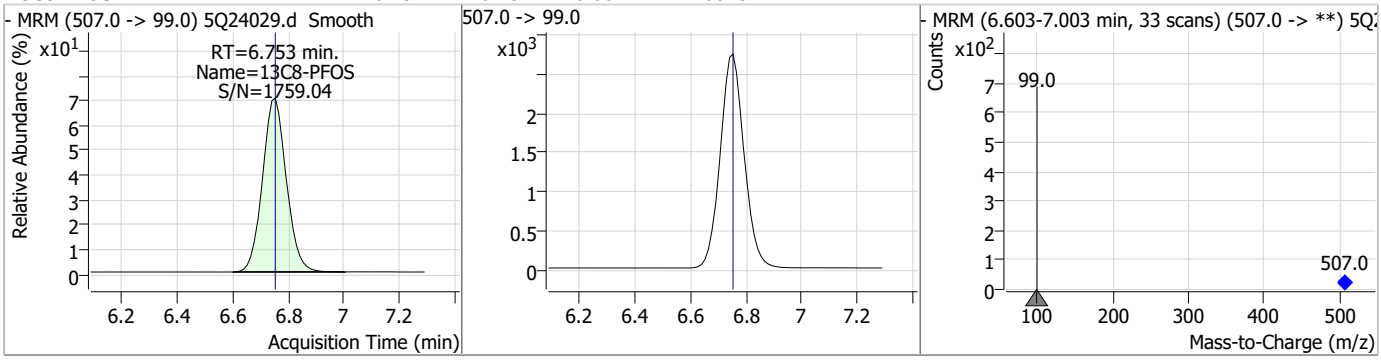
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	10.42	6.75	0.00	35051				



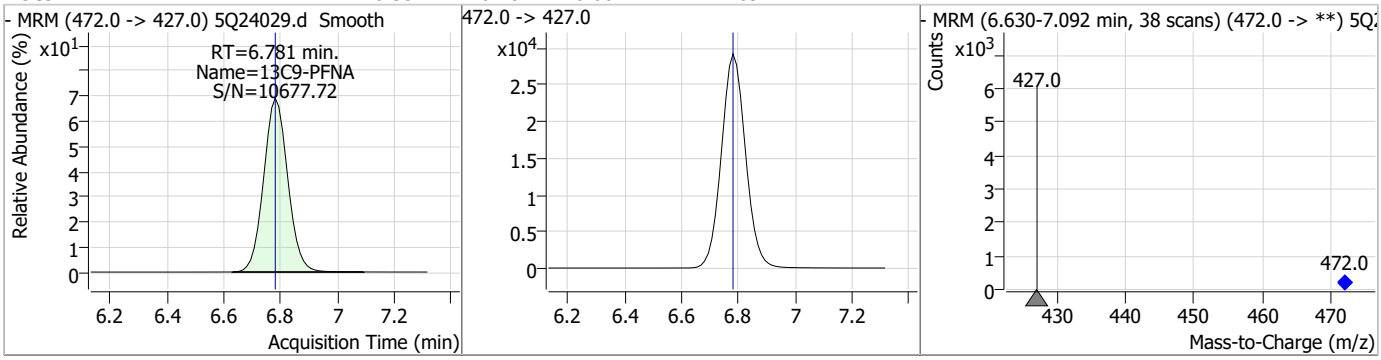
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	4.51	6.75	0.00	11789	570.0 -> 512.0	37.8	18.0	54.1



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	10.19	6.75	0.00	16045				

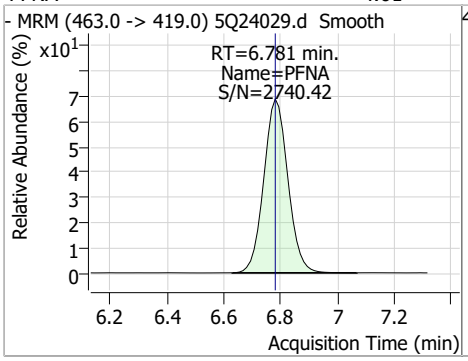


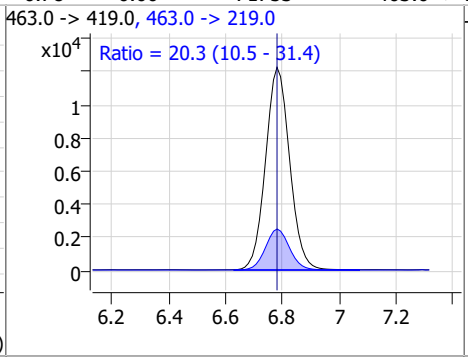
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	10.35	6.78	0.00	171469				

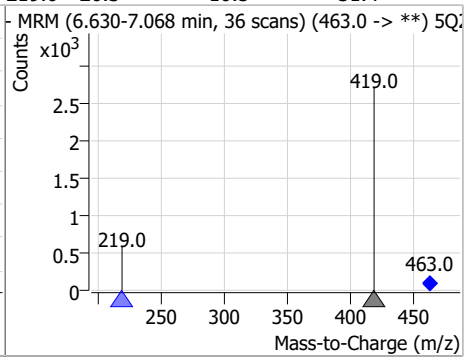


Perfluorinated Compounds by LC/MS/MS

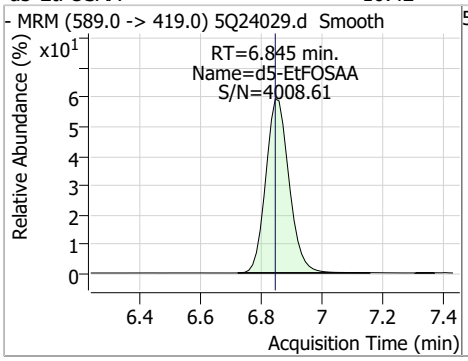
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	4.61	6.78	0.00	71753	463.0 -> 219.0	20.3	10.5	31.4

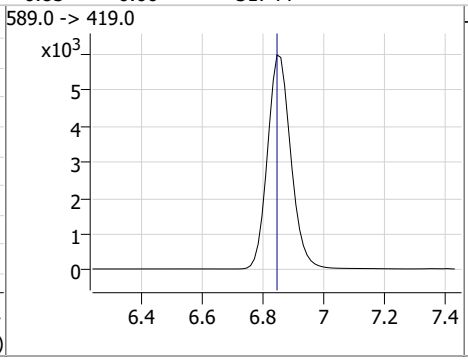


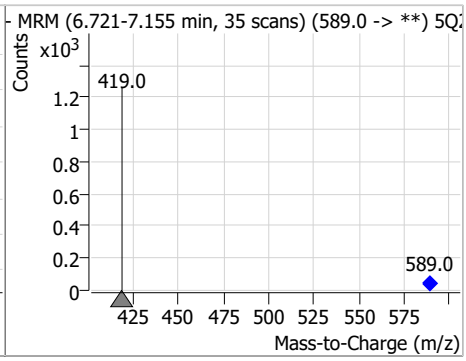




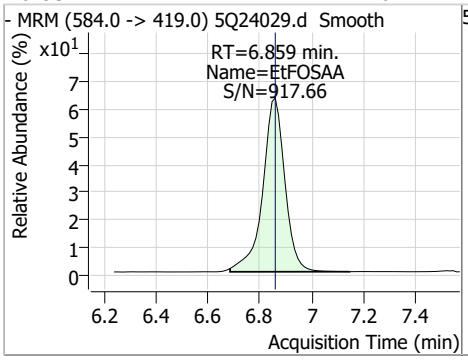
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	10.42	6.85	0.00	31744				

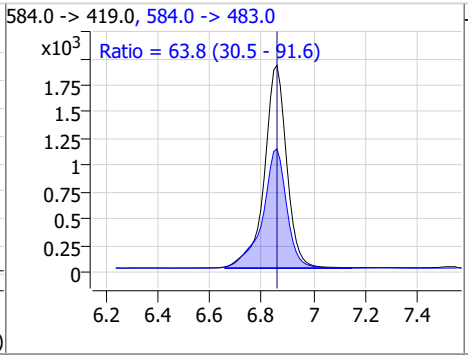


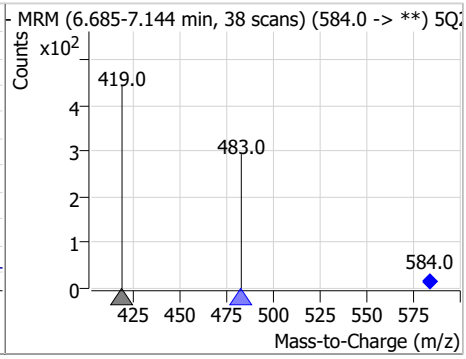




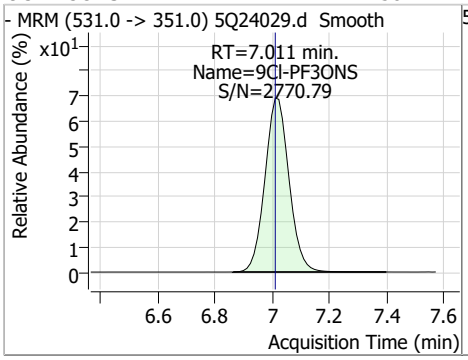
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	4.62	6.86	0.00	11230	584.0 -> 483.0	63.8	30.5	91.6

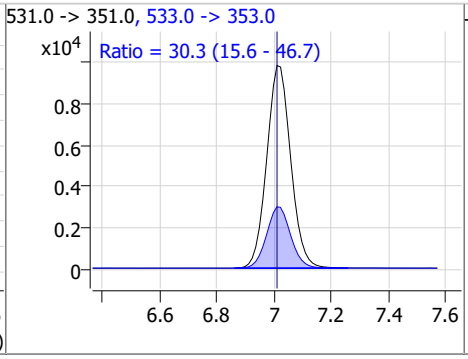


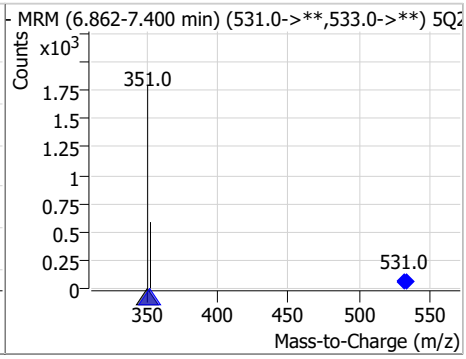




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	4.58	7.01	0.00	57316	533.0 -> 353.0	30.3	15.6	46.7

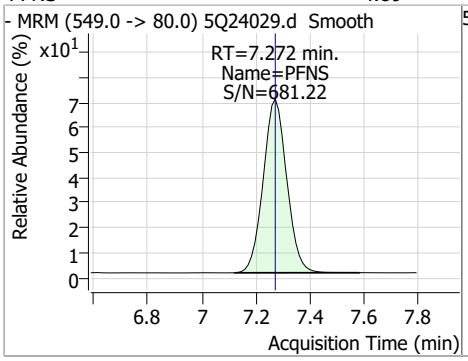


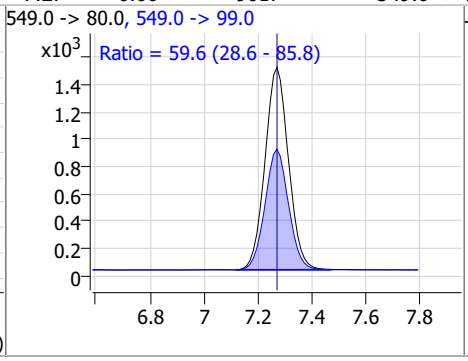


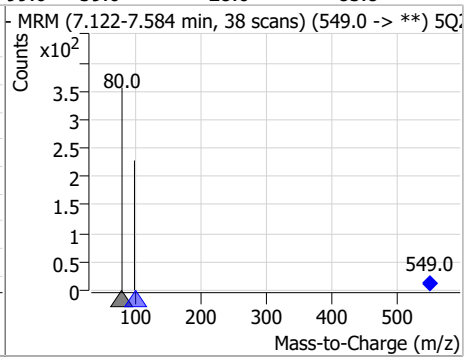


Perfluorinated Compounds by LC/MS/MS

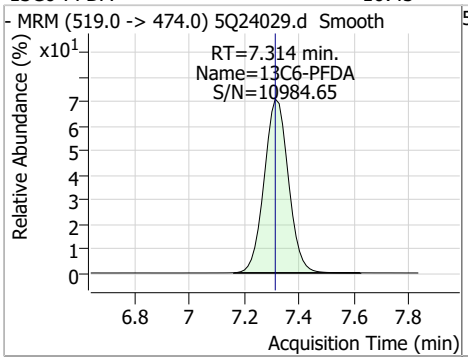
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	4.89	7.27	0.00	9017	549.0 -> 99.0	59.6	28.6	85.8

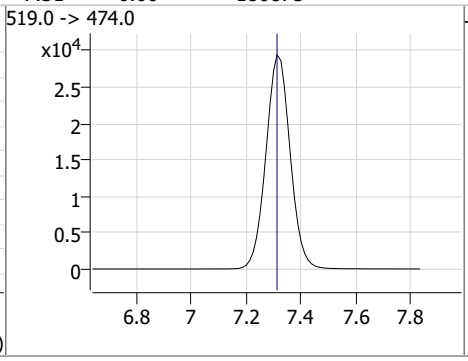


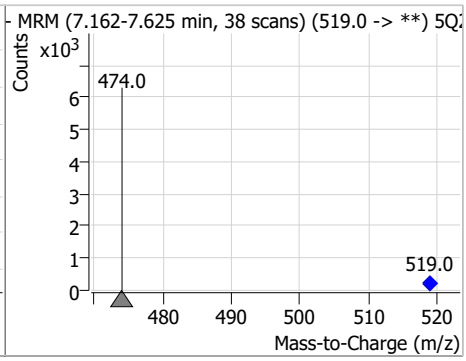




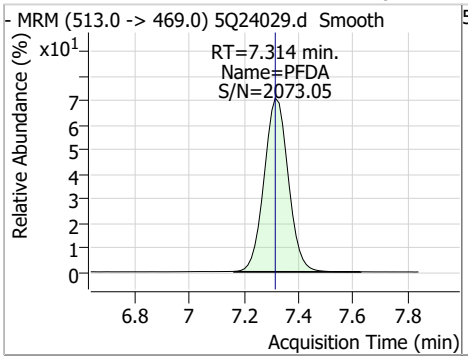
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	10.45	7.31	0.00	180875				

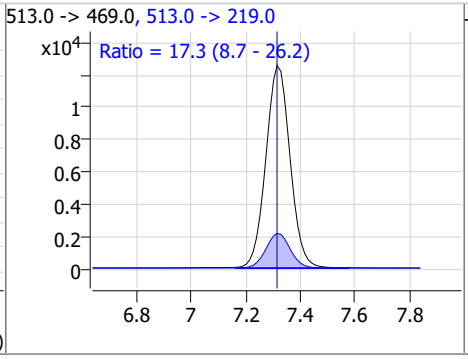


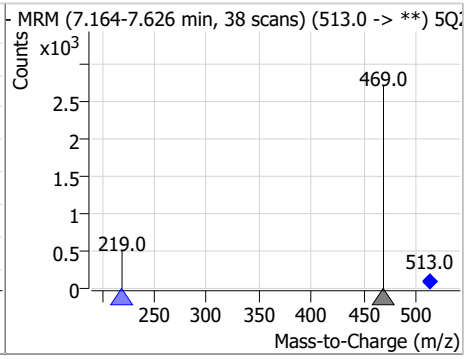




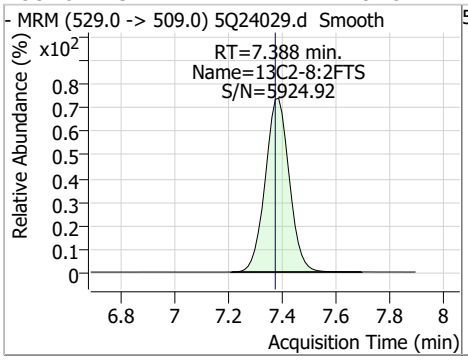
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	4.64	7.31	0.00	77113	513.0 -> 219.0	17.3	8.7	26.2

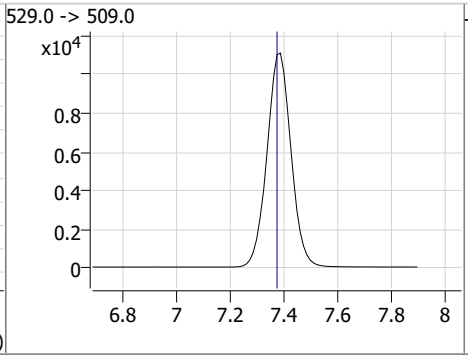


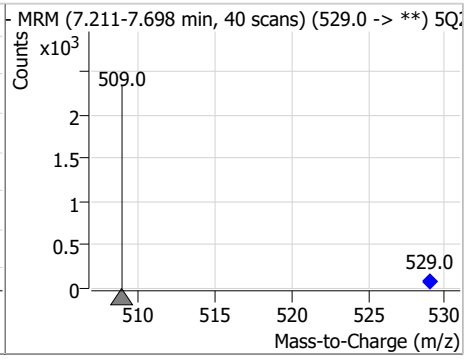




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	9.73	7.39	0.01	68844				

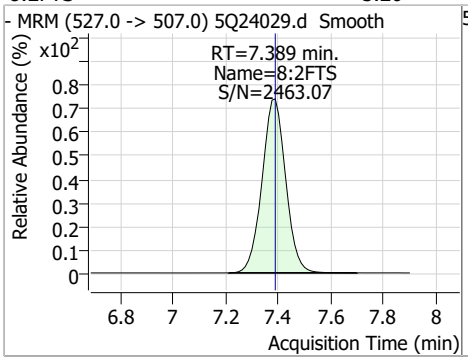


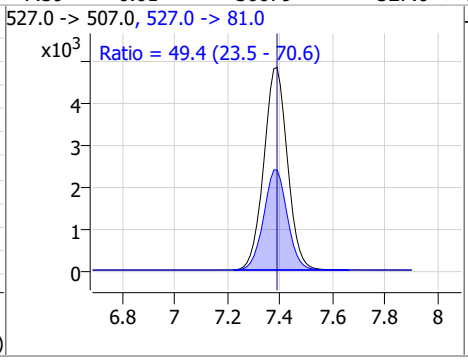


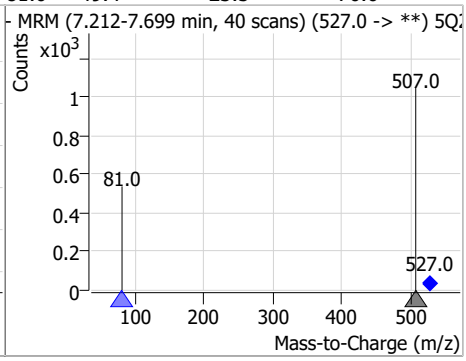


Perfluorinated Compounds by LC/MS/MS

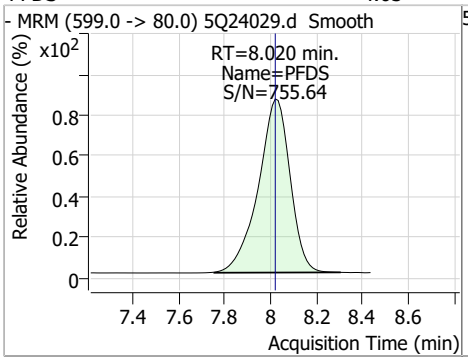
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	5.20	7.39	0.01	30079	527.0 -> 81.0	49.4	23.5	70.6

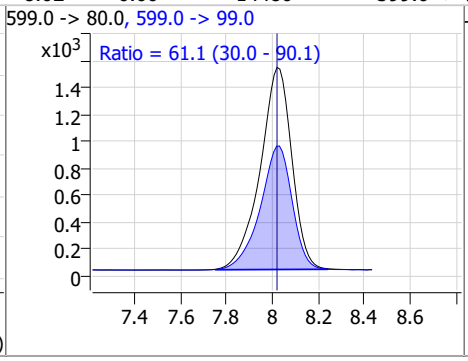


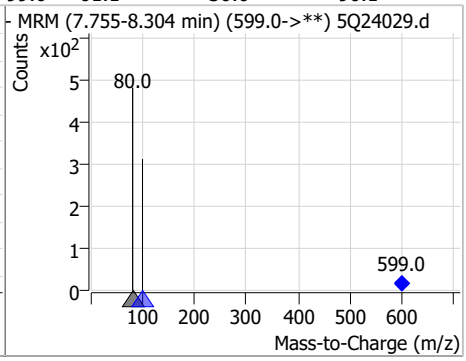




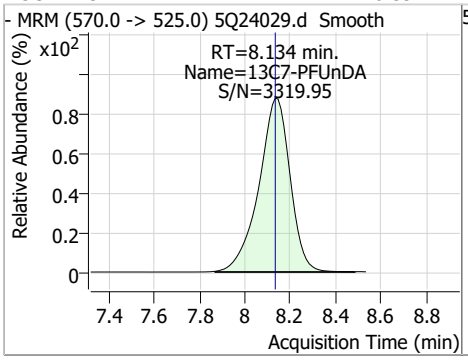
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	4.63	8.02	0.00	14480	599.0 -> 99.0	61.1	30.0	90.1

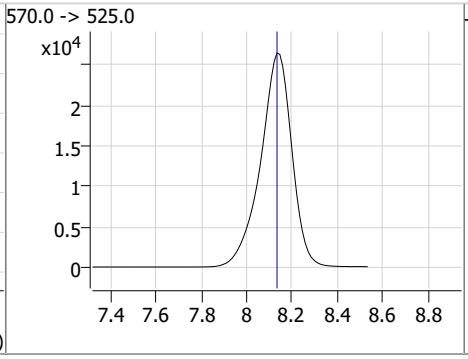


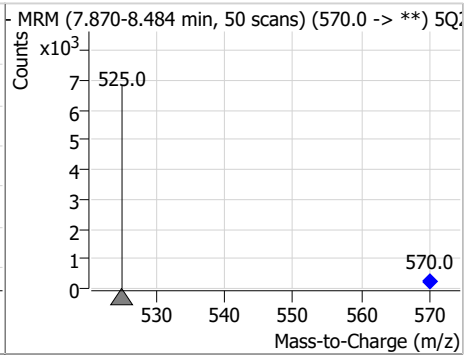




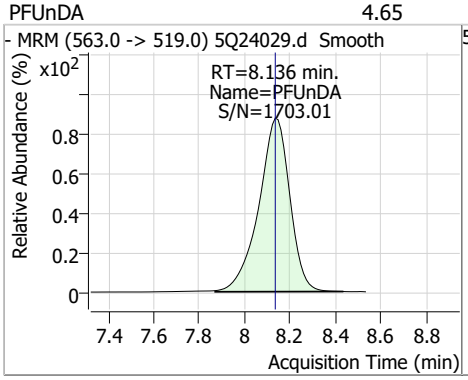
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	10.39	8.13	0.00	253647				

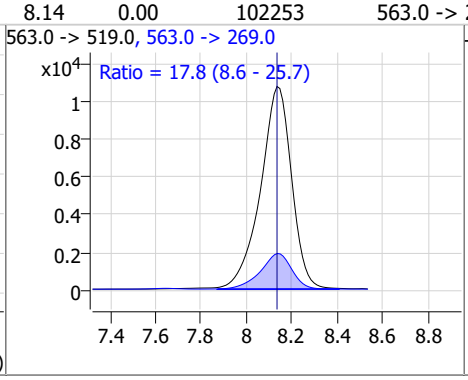


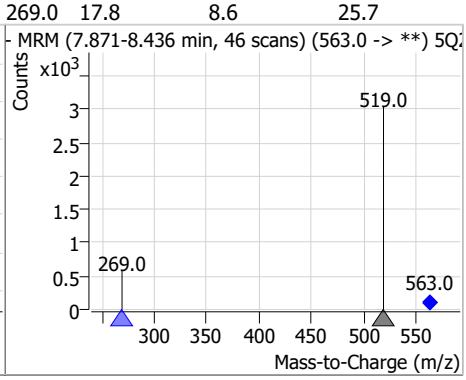




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	4.65	8.14	0.00	102253	563.0 -> 269.0	17.8	8.6	25.7

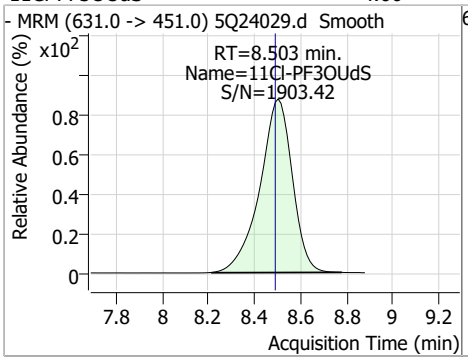


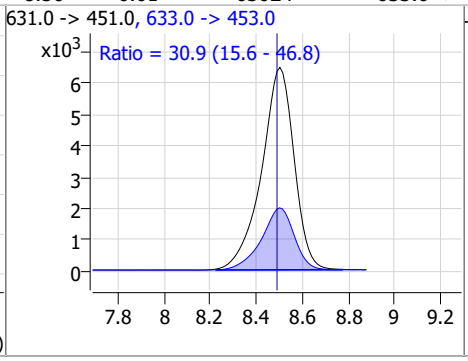


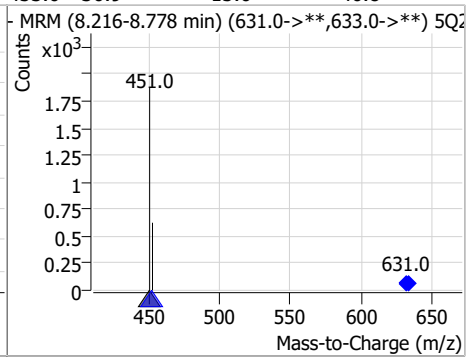


Perfluorinated Compounds by LC/MS/MS

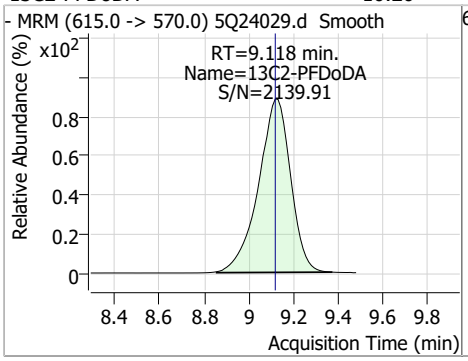
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	4.60	8.50	0.01	63024	633.0 -> 453.0	30.9	15.6	46.8

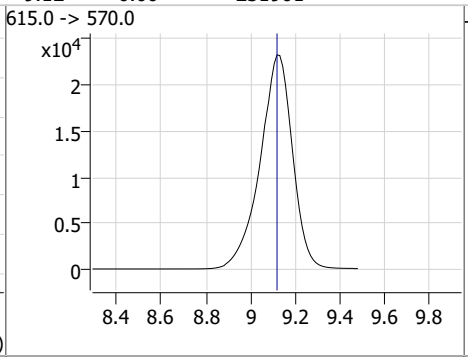


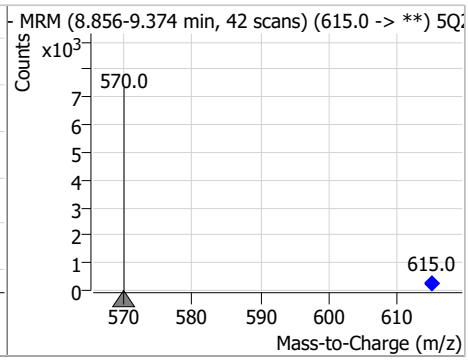




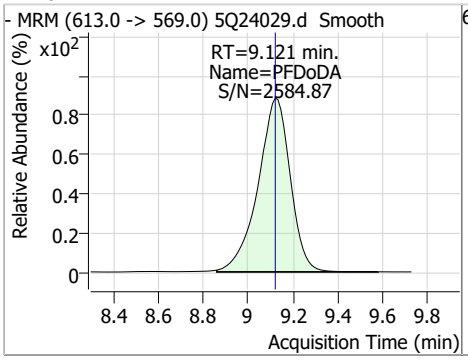
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	10.26	9.12	0.00	231901				

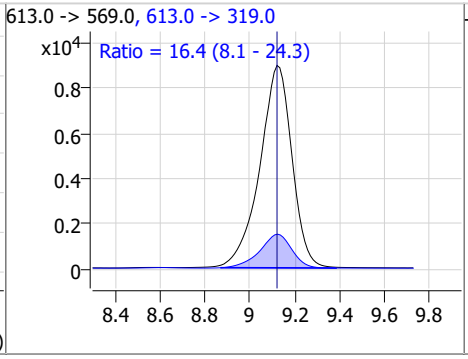


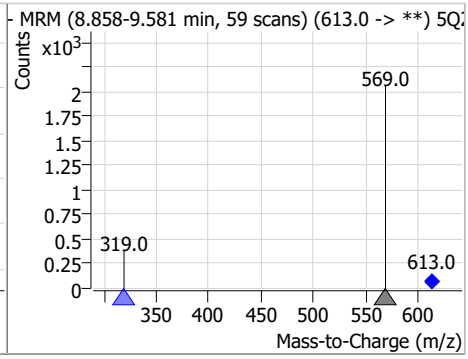




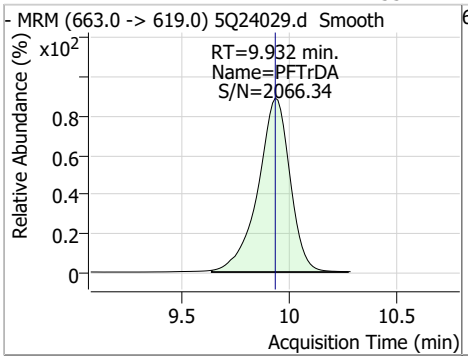
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	4.71	9.12	0.00	89986	613.0 -> 319.0	16.4	8.1	24.3

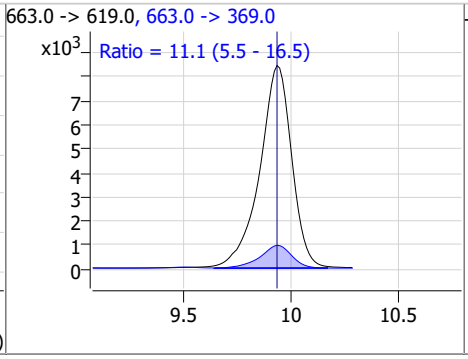


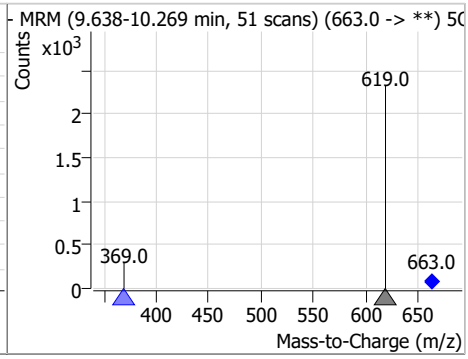




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	4.55	9.93	0.00	87209	663.0 -> 369.0	11.1	5.5	16.5

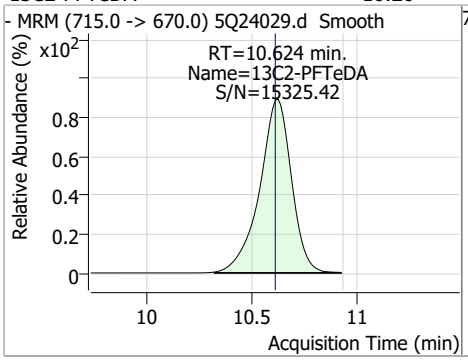


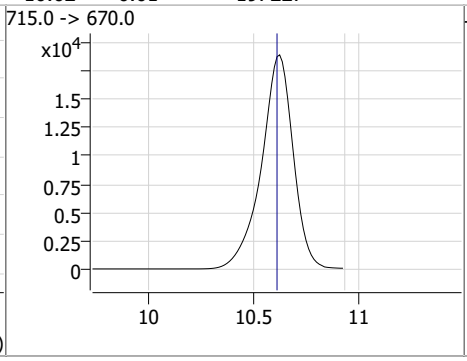


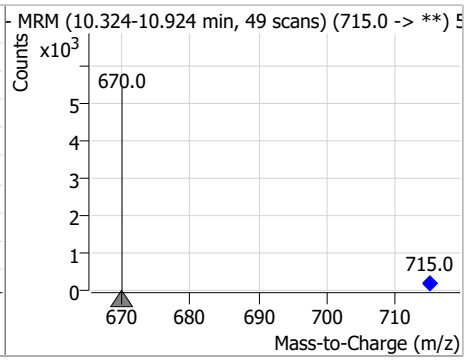


Perfluorinated Compounds by LC/MS/MS

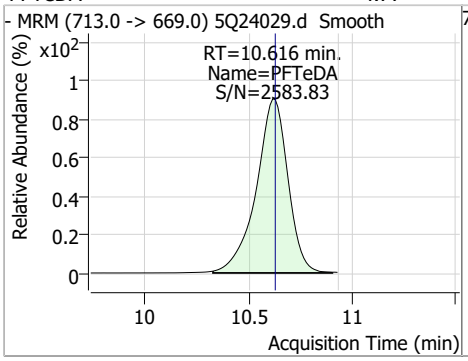
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	10.26	10.62	0.01	197227				

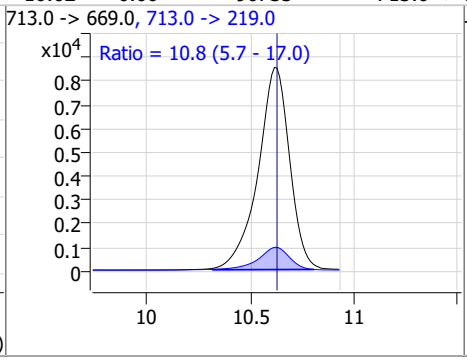


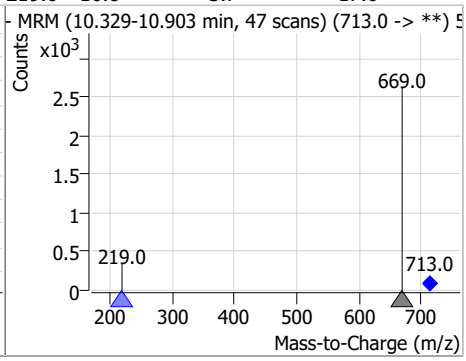




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	4.77	10.62	0.00	90733	713.0 -> 219.0	10.8	5.7	17.0







9.6.37

9

Manual Integration Approval Summary

Sample Number: S5Q377-IC377
Lab FileID: 5Q24029.D
Injection Time: 01/02/24 17:55
Method: EPA 537M QSM5.3 B-15
Analyst approved: 01/03/24 16:03 Lindsay Ritner
Supervisor approved: 01/04/24 12:54 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.45	Split peak
Perfluorooctanesulfonic acid	1763-23-1		6.75	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Natasha Gumtie 01/04/24 12:54

Perfluorinated Compounds by LC/MS/MS

Data File : 5Q24030.d
Operator : lindsayr
Acq. Method : 537_ID.m
Acq. Date-Time : 1/2/2024 6:11:49 PM
Sample Name : ic377-10
Vial : P1-A6
DA Method File : ID_010224_S5Q377.quantmethod.xml
Batch Name : s5q377.batch.bin
Sample Information : OP401,S5Q377,250,,,1.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	2.000	217.0 -> 172.0	44740	10.00	µg/L	0.013
M5-PFPeA	3.432	268.0 -> 223.0	75760	10.00	µg/L	0.000
M5-PFHxA	4.565	318.0 -> 273.0	117326	10.00	µg/L	0.000
M4-PFHpA	5.425	367.0 -> 322.0	121629	10.00	µg/L	0.000
M8-PFOA	6.149	421.0 -> 376.0	170960	10.00	µg/L	0.000
M9-PFNA	6.781	472.0 -> 427.0	171566	10.00	µg/L	0.000
M6-PFDA	7.313	519.0 -> 474.0	179204	10.00	µg/L	0.000
M7-PFUnDA	8.134	570.0 -> 525.0	251424	10.00	µg/L	0.000
M2-PFDoDA	9.118	615.0 -> 570.0	234343	10.00	µg/L	0.000
M2-PFTeDA	10.612	715.0 -> 670.0	197832	10.00	µg/L	0.000
M8-FOSA	6.192	506.0 -> 78.0	43399	10.00	µg/L	-0.012
M3-PFBS	3.637	302.0 -> 99.0	9427	10.00	µg/L	0.000
M3-PFHxS	5.457	402.0 -> 99.0	11382	10.00	µg/L	0.012
M8-PFOS	6.753	507.0 -> 99.0	16198	10.00	µg/L	0.000
M2-4:2FTS	4.486	329.0 -> 309.0	39045	10.00	µg/L	0.000
M2-6:2FTS	6.148	429.0 -> 409.0	72143	10.00	µg/L	0.000
M2-8:2FTS	7.376	529.0 -> 509.0	71808	10.00	µg/L	0.000
M3-MeFOSAA	6.747	573.0 -> 419.0	34696	10.00	µg/L	0.000
M3-HFPO-DA	4.831	287.0 -> 169.0	5961	10.00	µg/L	0.000
M3-MeFOSA	6.589	515.0 -> 169.0	15106	10.00	µg/L	0.000
M5-EtFOSAA	6.845	589.0 -> 419.0	31530	10.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.486	329.0 -> 309.0	39045	9.99	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.9%		
13C2-6:2FTS	6.148	429.0 -> 409.0	72143	9.81	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 98.1%		
13C2-8:2FTS	7.376	529.0 -> 509.0	71808	10.15	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.5%		
13C2-PFDoDA	9.118	615.0 -> 570.0	234343	10.37	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 103.7%		
13C2-PFTeDA	10.612	715.0 -> 670.0	197832	10.29	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 102.9%		
13C3-PFBS	3.637	302.0 -> 99.0	9427	10.22	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 102.2%		
13C3-PFHxS	5.457	402.0 -> 99.0	11382	10.07	µg/L	0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.7%		
13C4-PFBA	2.000	217.0 -> 172.0	44740	10.14	µg/L	0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.4%		
13C4-PFHpA	5.425	367.0 -> 322.0	121629	10.29	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 102.9%		
13C5-PFHxA	4.565	318.0 -> 273.0	117326	10.22	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 102.2%		
13C5-PFPeA	3.432	268.0 -> 223.0	75760	10.20	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 102.0%		
13C6-PFDA	7.313	519.0 -> 474.0	179204	10.35	µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

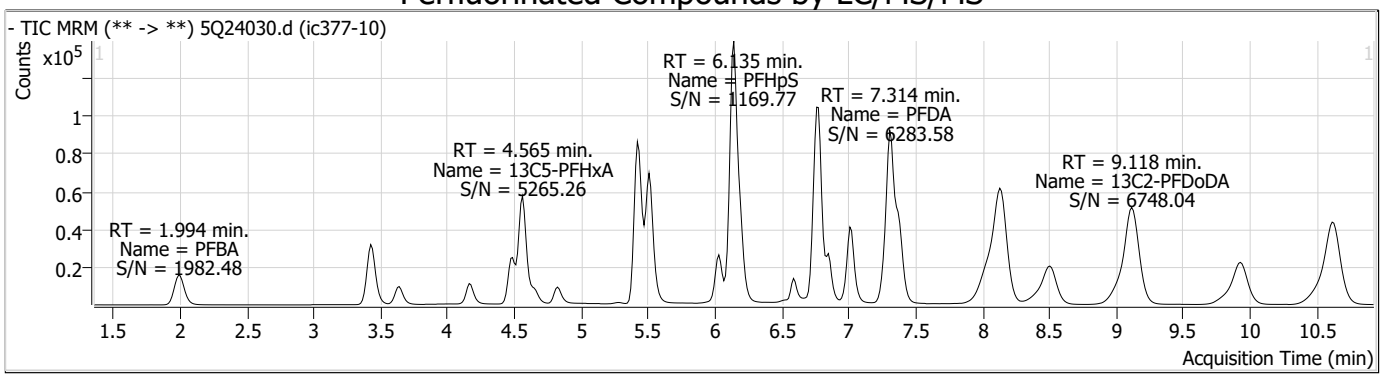
Compound	RT	Transition	Response	Conc. Units		Dev(Min)
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 103.5%		
13C7-PFUnDA	8.134	570.0 -> 525.0	251424	10.30 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 103.0%		
13C8-FOSA	6.192	506.0 -> 78.0	43399	10.61 µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 106.1%		
13C8-PFOA	6.149	421.0 -> 376.0	170960	10.33 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 103.3%		
13C8-PFOS	6.753	507.0 -> 99.0	16198	10.29 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 102.9%		
13C9-PFNA	6.781	472.0 -> 427.0	171566	10.35 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 103.5%		
d3-MeFOSAA	6.747	573.0 -> 419.0	34696	10.32 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 103.2%		
13C3-HFPO-DA	4.831	287.0 -> 169.0	5961	9.98 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.8%		
d3-MeFOSA	6.589	515.0 -> 169.0	15106	10.85 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 108.5%		
d5-EtFOSAA	6.845	589.0 -> 419.0	31530	10.35 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 103.5%		
Target Compounds						QValue
4:2FTS	4.488	327.0 -> 307.0	41083	11.06 µg/L		100
		327.0 -> 81.0	23067			
6:2FTS	6.148	427.0 -> 407.0	67935	11.11 µg/L		99
		427.0 -> 81.0	27545			
8:2FTS	7.376	527.0 -> 507.0	65901	10.93 µg/L		100
		527.0 -> 81.0	31171			
EtFOSAA	6.859	584.0 -> 419.0	25266	10.47 µg/L		99
		584.0 -> 483.0	15158			
FOSA	6.194	498.0 -> 78.0	38794	10.12 µg/L		100
		498.0 -> 478.0	1261			
MeFOSAA	6.748	570.0 -> 419.0	26122	10.10 µg/L		99
		570.0 -> 512.0	9538			
PFBA	1.994	213.0 -> 169.0	39658	9.87 µg/L		100
PFBS	3.640	299.0 -> 80.0	22167	9.59 µg/L		98
		299.0 -> 99.0	9953			
PFDA	7.314	513.0 -> 469.0	166423	10.10 µg/L		99
		513.0 -> 219.0	28081			
PFDoDA	9.121	613.0 -> 569.0	191461	9.92 µg/L		100
		613.0 -> 319.0	30950			
PFDS	8.020	599.0 -> 80.0	30773	9.92 µg/L		99
		599.0 -> 99.0	18615			
PFHpA	5.426	363.0 -> 319.0	135100	10.10 µg/L		100
		363.0 -> 169.0	28640			
PFHpS	6.135	449.0 -> 80.0	21498	10.04 µg/L		100
		449.0 -> 99.0	11532			
PFHxA	4.565	313.0 -> 269.0	108825	9.96 µg/L		100
		313.0 -> 119.0	4514			
PFHxS	5.446	399.0 -> 80.0	20731	10.16 µg/L	m	100
		399.0 -> 99.0	11479			
PFNA	6.781	463.0 -> 419.0	152320	9.79 µg/L		99
		463.0 -> 219.0	31561			
PFNS	7.272	549.0 -> 80.0	18787	10.08 µg/L		99
		549.0 -> 99.0	10824			
PFOA	6.150	413.0 -> 369.0	164031	10.05 µg/L		99
		413.0 -> 169.0	39532			
PFOS	6.755	499.0 -> 80.0	26995	9.92 µg/L	m	99

Perfluorinated Compounds by LC/MS/MS

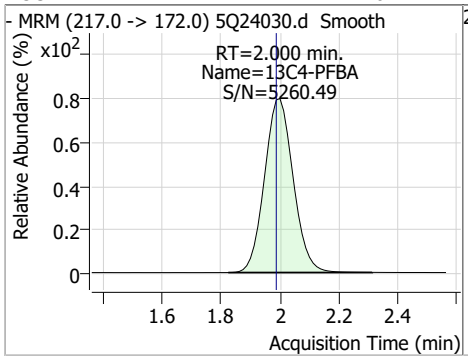
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		499.0 -> 99.0	13369			
PFPeA	3.434	263.0 -> 219.0	70453	9.86	µg/L	100
PFPeS	4.661	349.0 -> 80.0	15989	9.96	µg/L	98
		349.0 -> 99.0	8094			
PFTeDA	10.616	713.0 -> 669.0	193086	10.11	µg/L	100
		713.0 -> 219.0	21799			
PFTrDA	9.932	663.0 -> 619.0	179611	9.28	µg/L	99
		663.0 -> 369.0	20666			
PFUnDA	8.136	563.0 -> 519.0	219881	10.09	µg/L	99
		563.0 -> 269.0	36803			
11Cl-PF3OUdS	8.503	631.0 -> 451.0	134378	9.71	µg/L	100
		633.0 -> 453.0	42095			
9Cl-PF3ONS	7.011	531.0 -> 351.0	122137	9.86	µg/L	99
		533.0 -> 353.0	38876			
ADONA	5.514	377.0 -> 251.0	191449	10.22	µg/L	100
		377.0 -> 85.0	68584			
HFPO-DA	4.827	329.0 -> 169.0	24652	10.17	µg/L	99
		285.0 -> 169.0	5317			
MeFOSA	6.602	512.0 -> 169.0	12720	9.86	µg/L	97
		512.0 -> 219.0	10307			
4-PFECHS	6.032	461.0 -> 381.0	70115	9.69	µg/L	100
		461.0 -> 99.0	35806			
FBSA	4.170	298.0 -> 78.0	39699	10.23	µg/L	99
		298.0 -> 64.0	3856			
FHxSA	5.409	398.0 -> 78.0	43750	11.29	µg/L	99
		398.0 -> 64.0	4199			

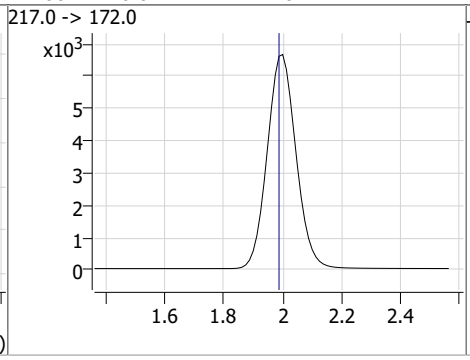
 # = Qualifier out of range, m = manually integrated, + = Area summed

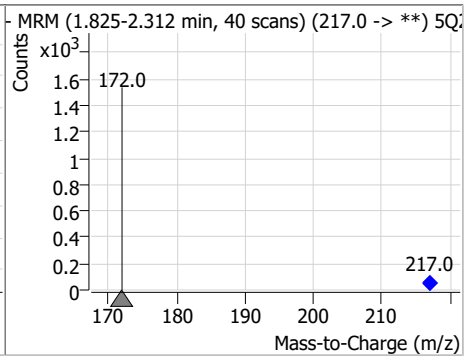
Perfluorinated Compounds by LC/MS/MS



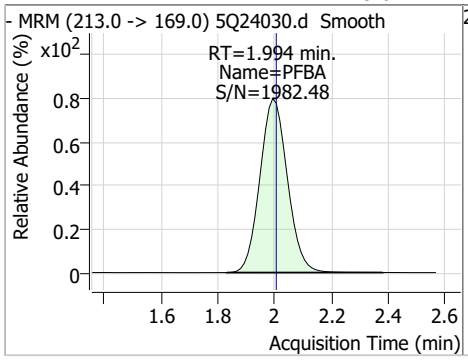
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	10.14	2.00	0.01	44740				

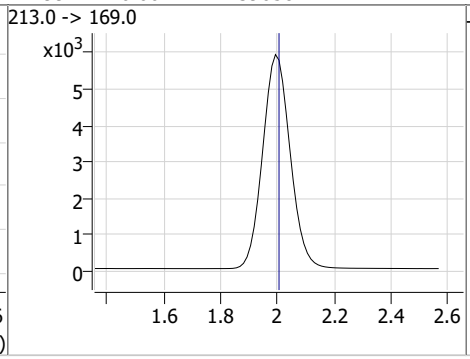


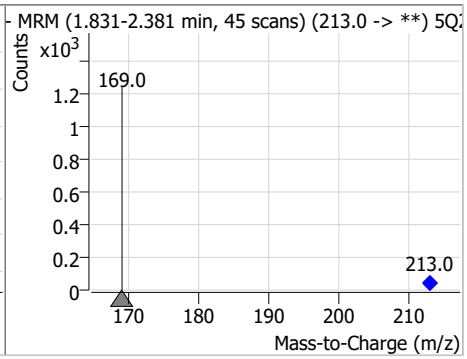




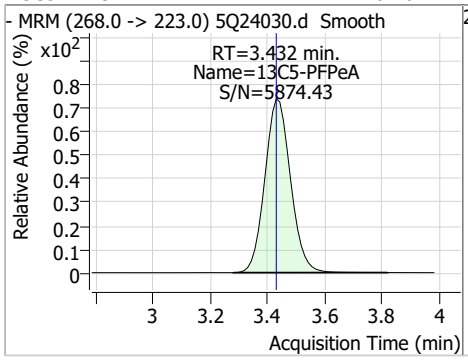
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	9.87	1.99	0.00	39658				

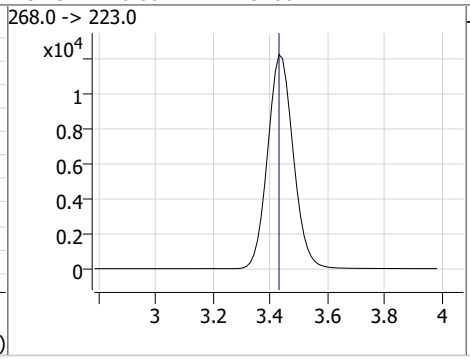


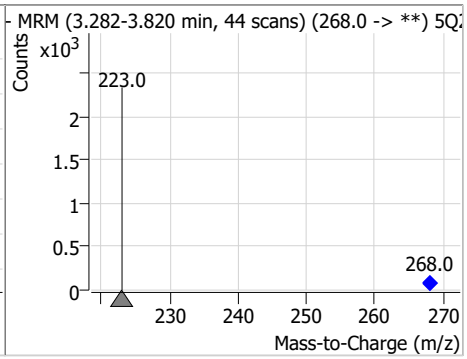




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	10.20	3.43	0.00	75760				

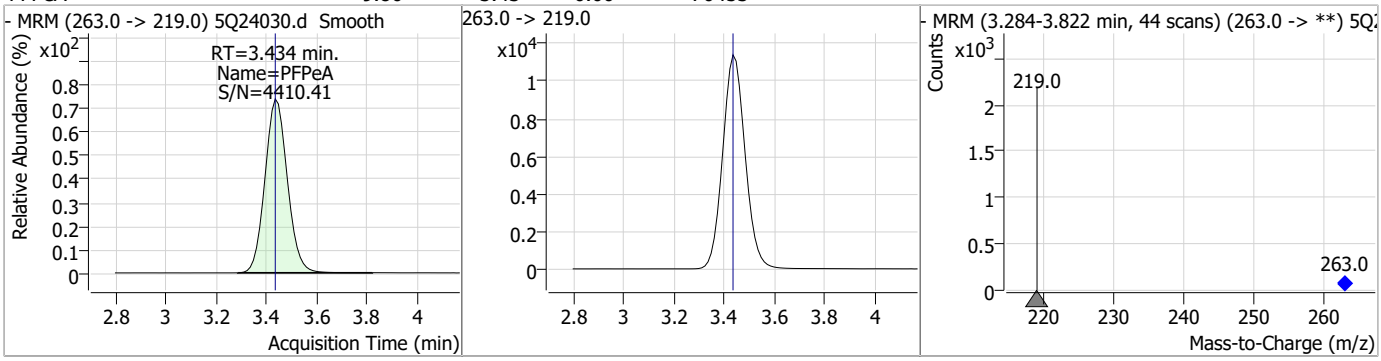




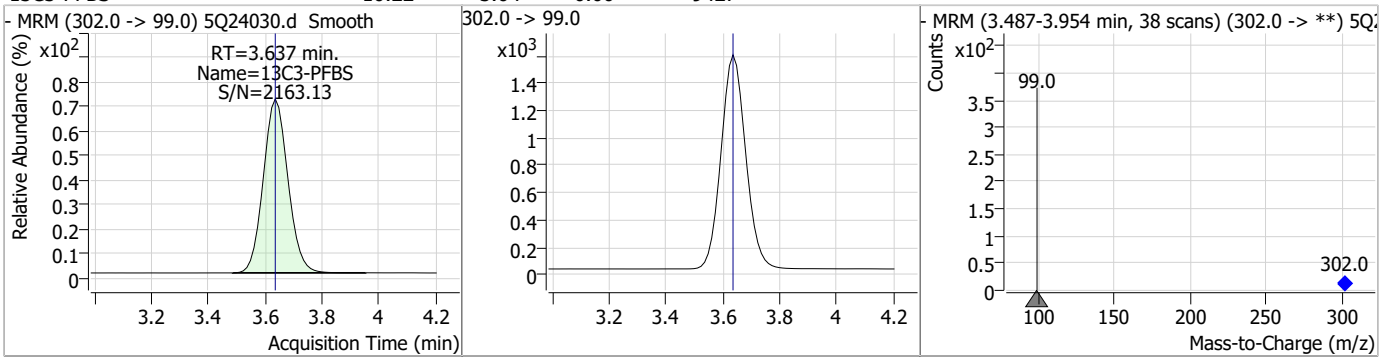


Perfluorinated Compounds by LC/MS/MS

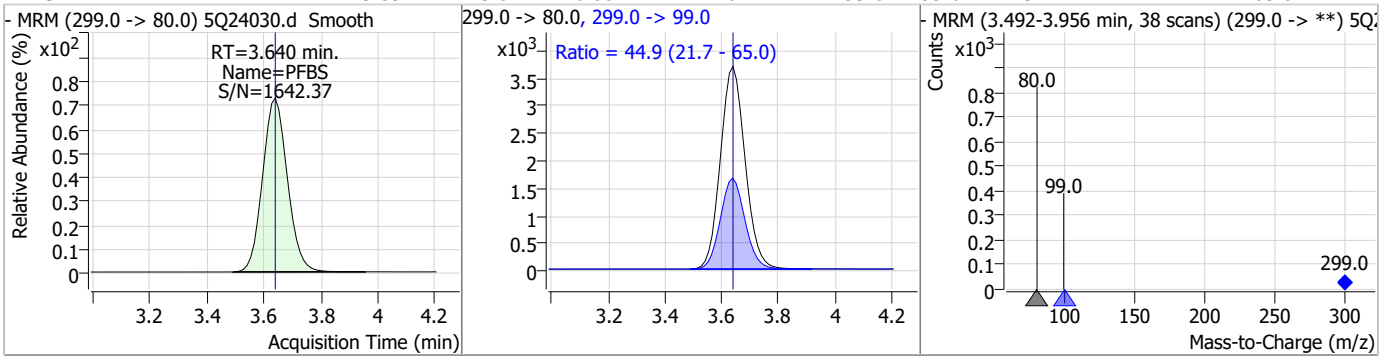
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	9.86	3.43	0.00	70453				



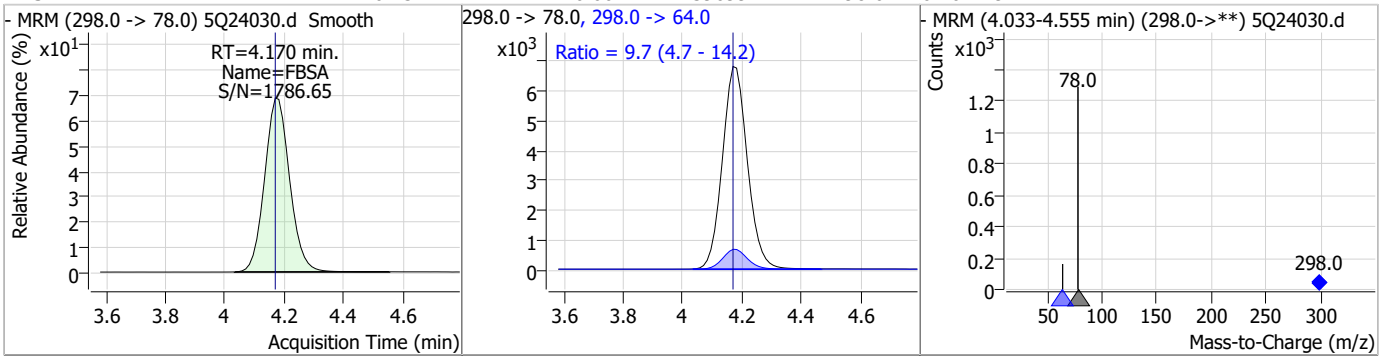
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	10.22	3.64	0.00	9427				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	9.59	3.64	0.00	22167	299.0 -> 99.0	44.9	21.7	65.0

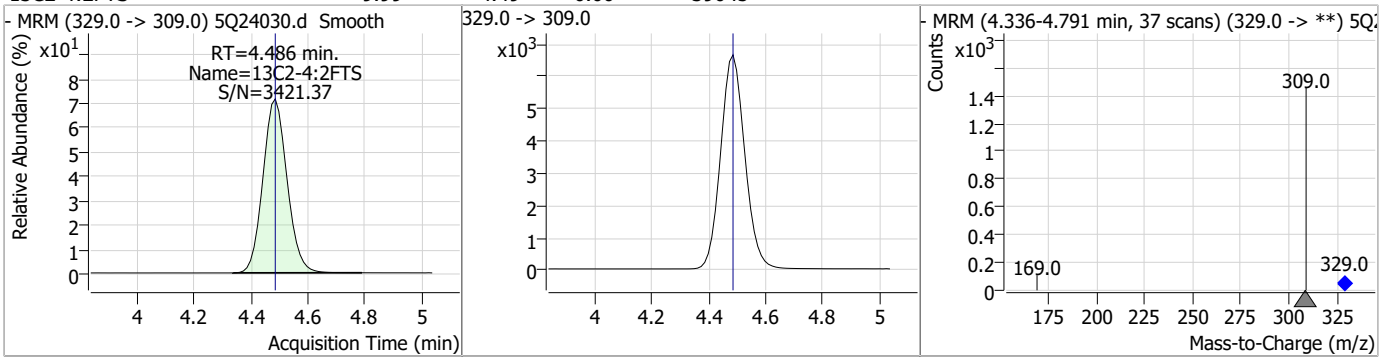


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	10.23	4.17	0.00	39699	298.0 -> 64.0	9.7	4.7	14.2

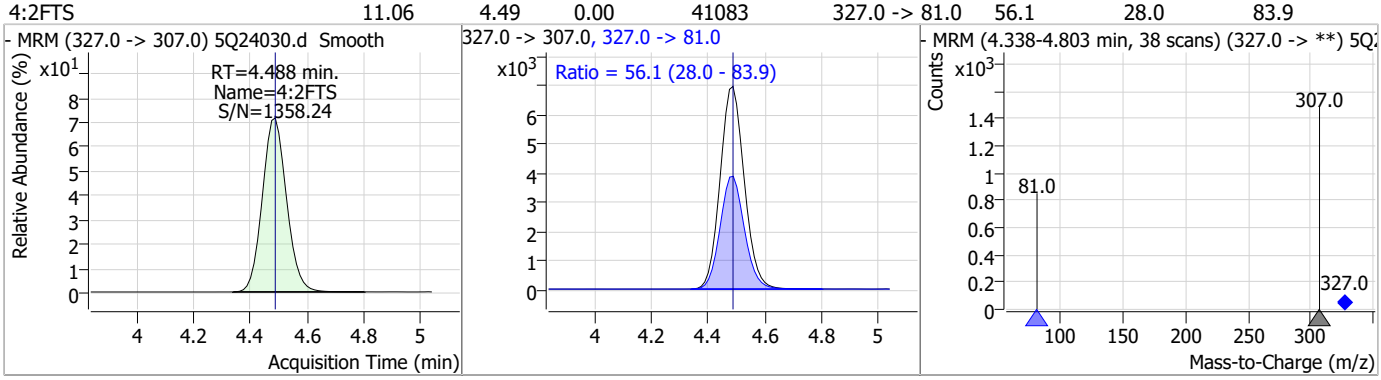


Perfluorinated Compounds by LC/MS/MS

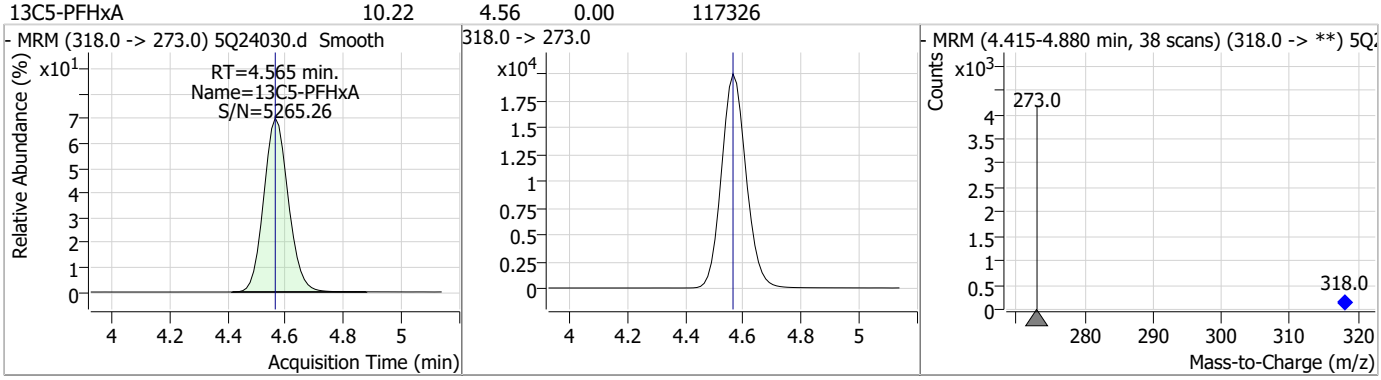
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	9.99	4.49	0.00	39045				



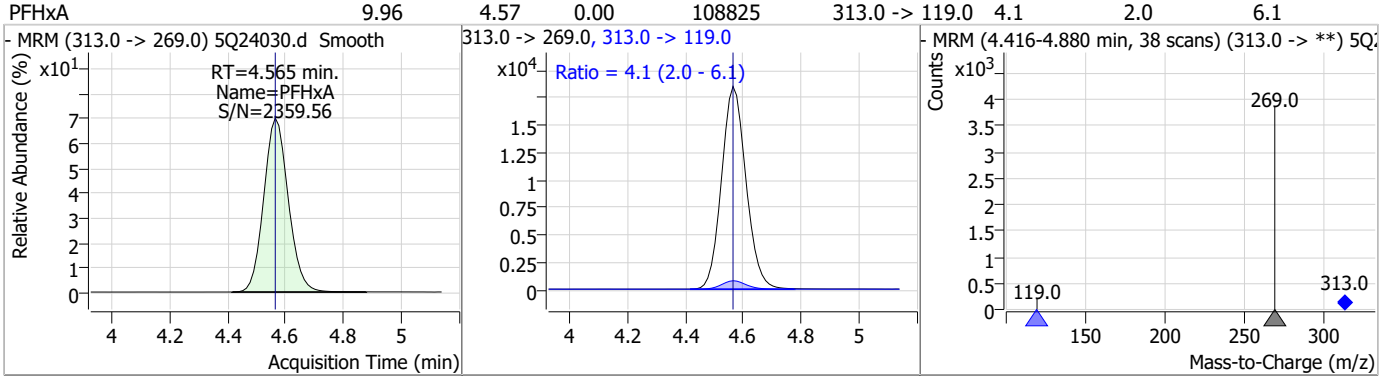
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	11.06	4.49	0.00	41083	327.0 -> 81.0	56.1	28.0	83.9



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	10.22	4.56	0.00	117326				

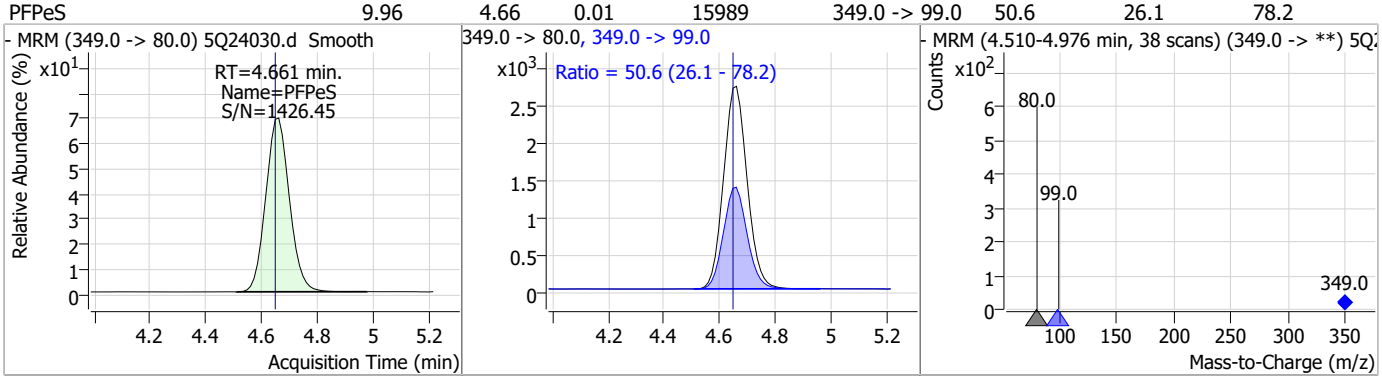


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	9.96	4.57	0.00	108825	313.0 -> 119.0	4.1	2.0	6.1

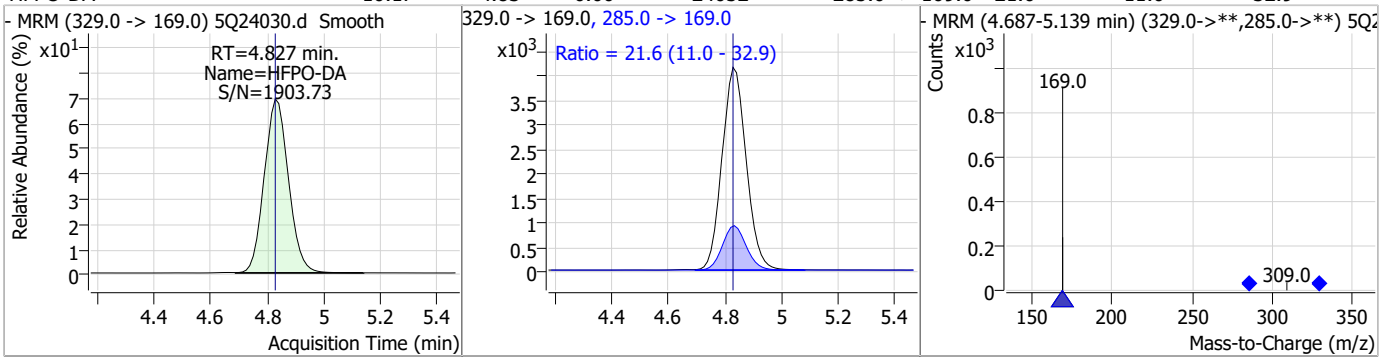


Perfluorinated Compounds by LC/MS/MS

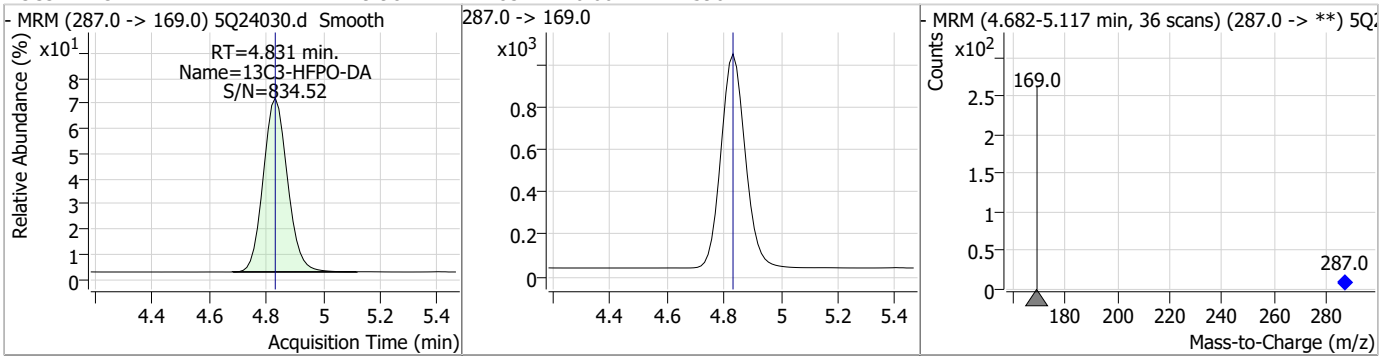
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	9.96	4.66	0.01	15989	349.0 -> 99.0	50.6	26.1	78.2



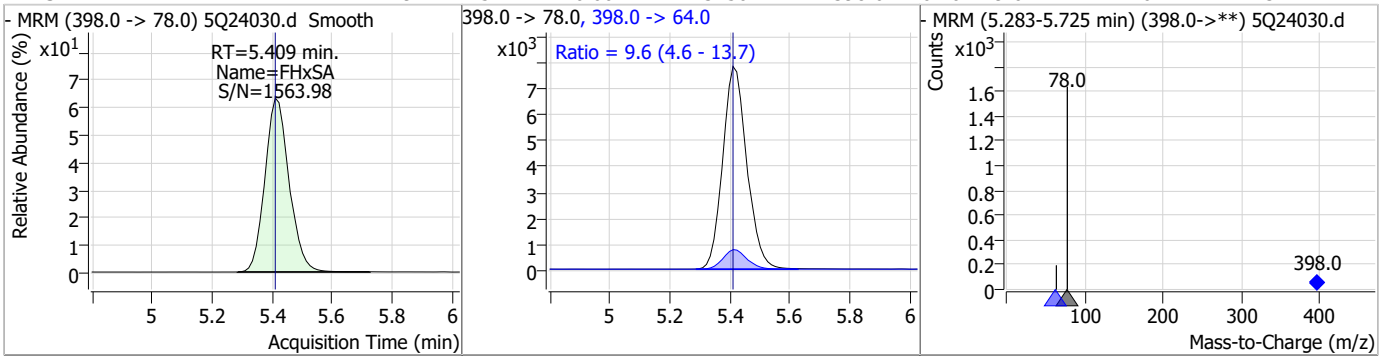
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	10.17	4.83	0.00	24652	285.0 -> 169.0	21.6	11.0	32.9



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	9.98	4.83	0.00	5961				

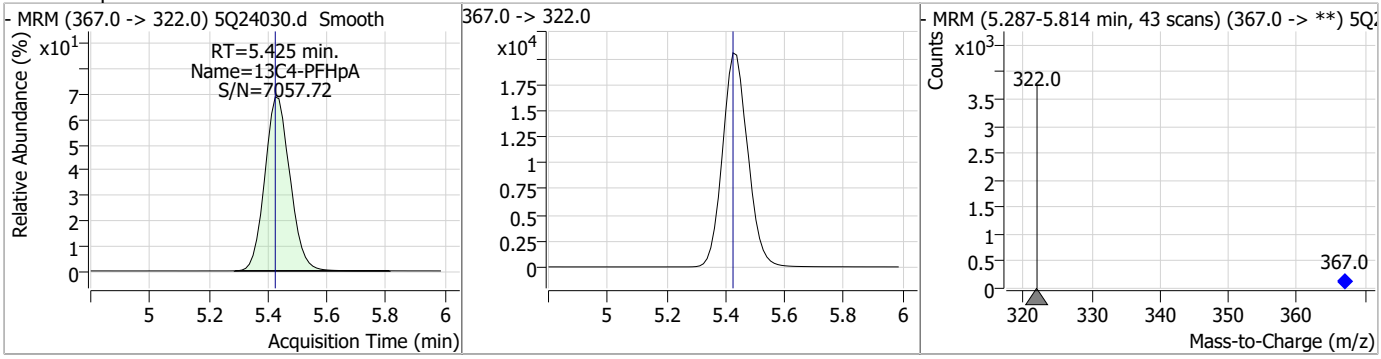


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	11.29	5.41	0.00	43750	398.0 -> 64.0	9.6	4.6	13.7

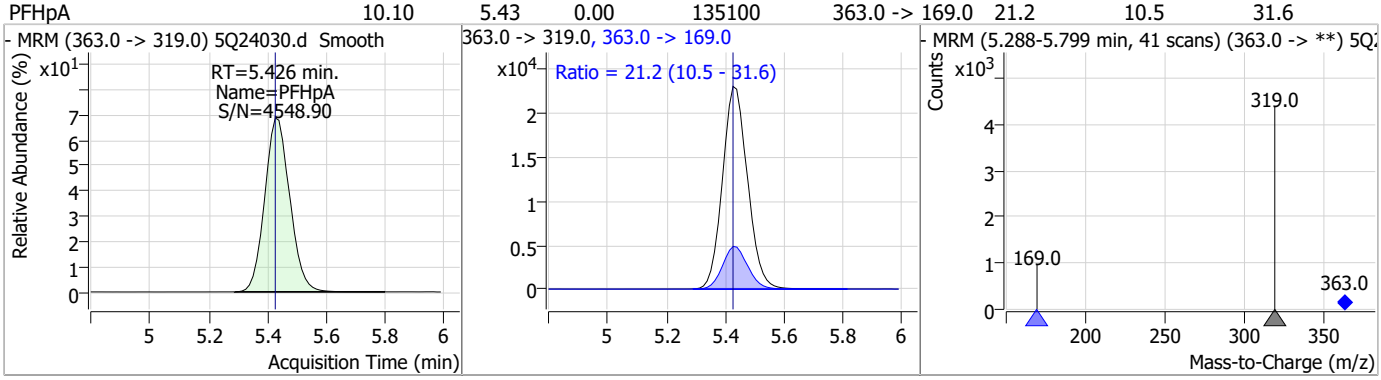


Perfluorinated Compounds by LC/MS/MS

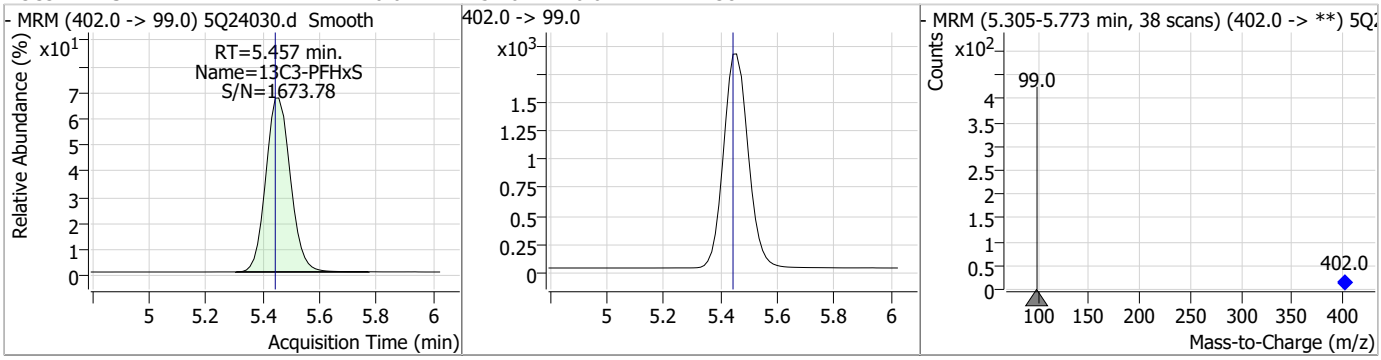
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	10.29	5.43	0.00	121629				



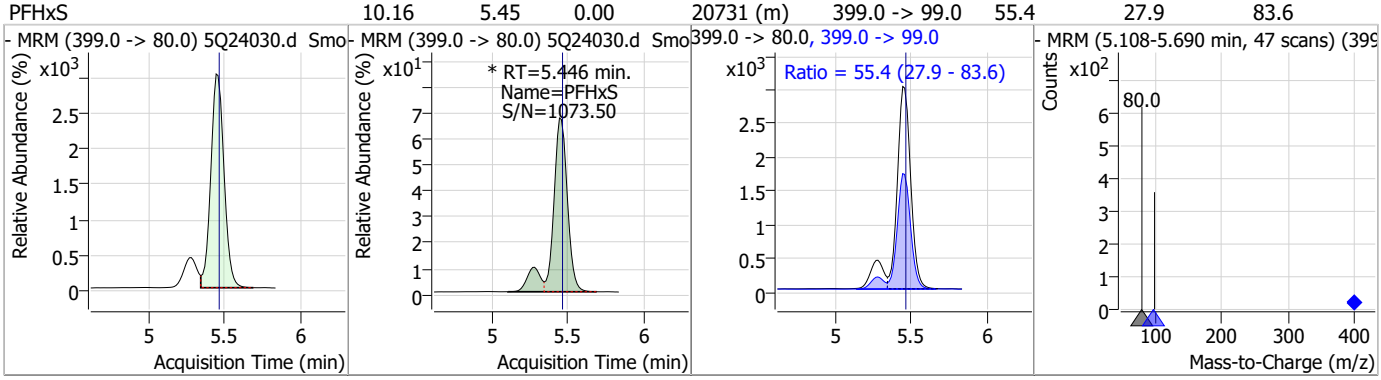
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	10.10	5.43	0.00	135100	363.0 -> 169.0	21.2	10.5	31.6



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	10.07	5.46	0.01	11382				

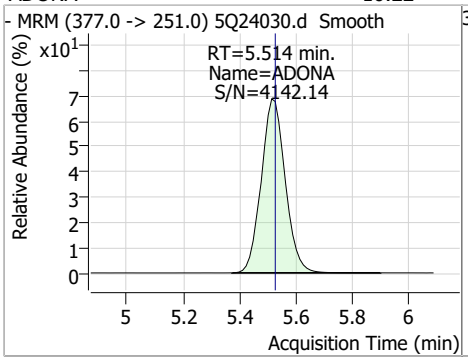


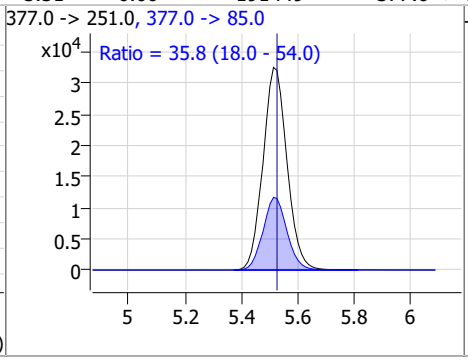
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	10.16	5.45	0.00	20731 (m)	399.0 -> 99.0	55.4	27.9	83.6

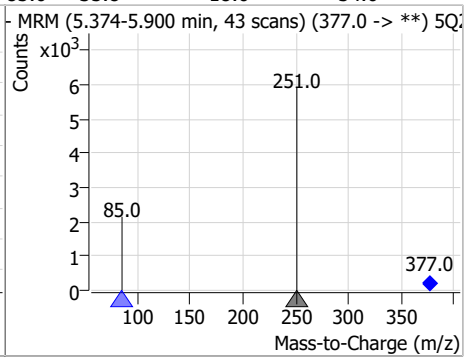


Perfluorinated Compounds by LC/MS/MS

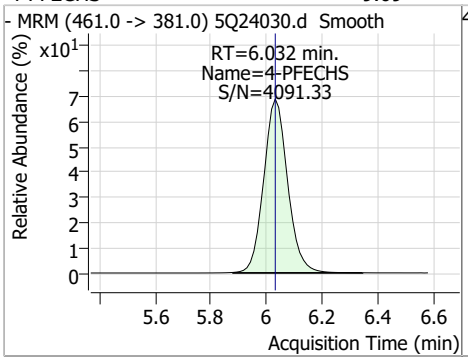
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	10.22	5.51	0.00	191449	377.0 -> 85.0	35.8	18.0	54.0

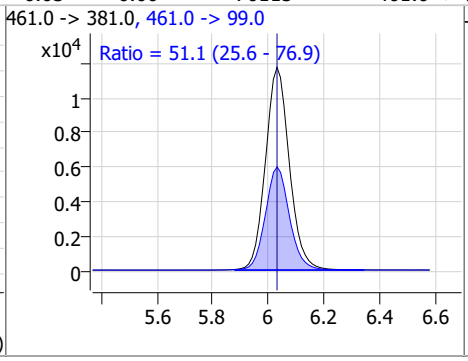


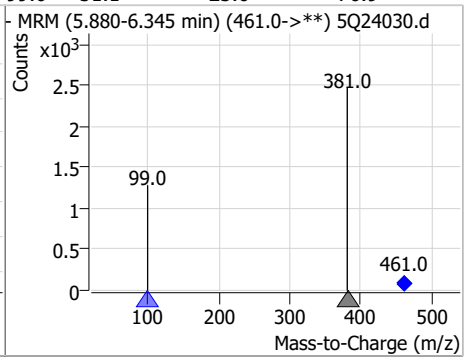




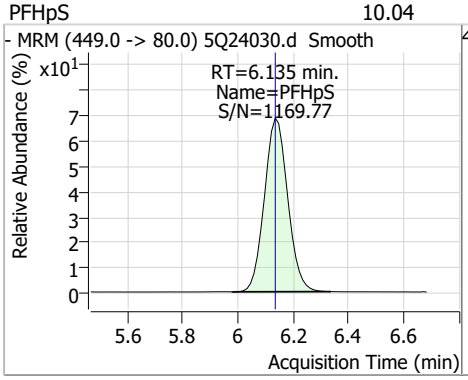
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS	9.69	6.03	0.00	70115	461.0 -> 99.0	51.1	25.6	76.9

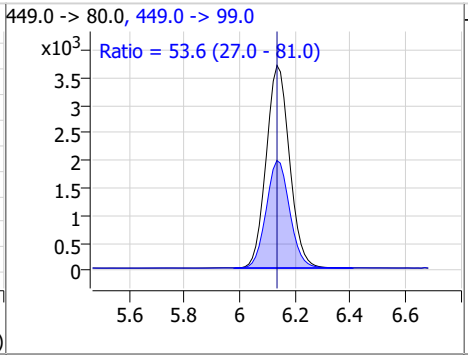


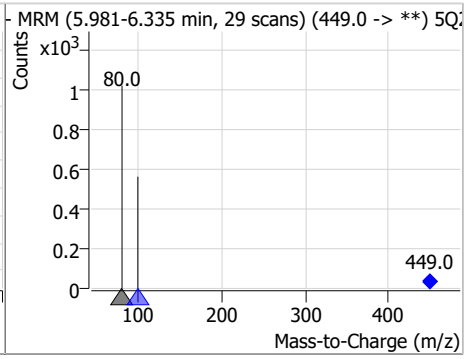




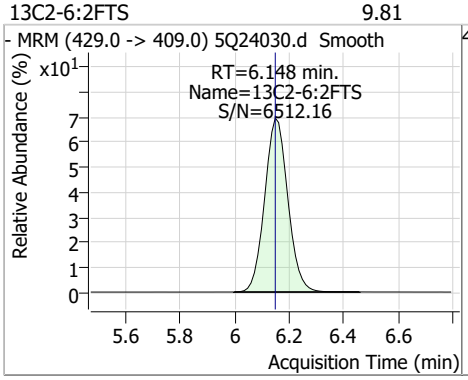
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	10.04	6.14	0.00	21498	449.0 -> 99.0	53.6	27.0	81.0

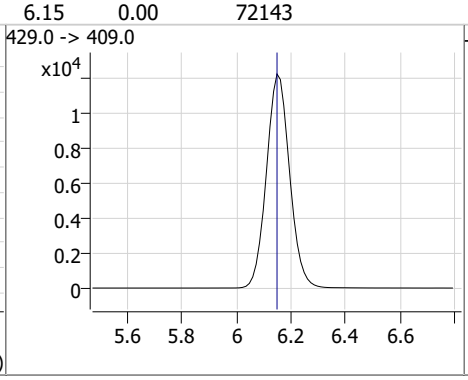


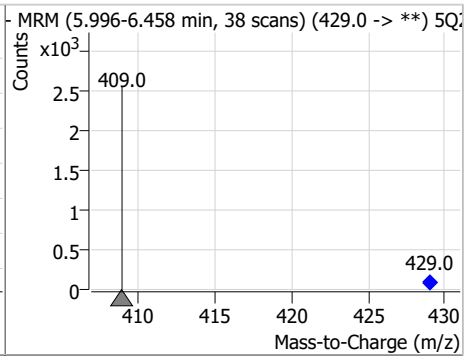




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	9.81	6.15	0.00	72143				

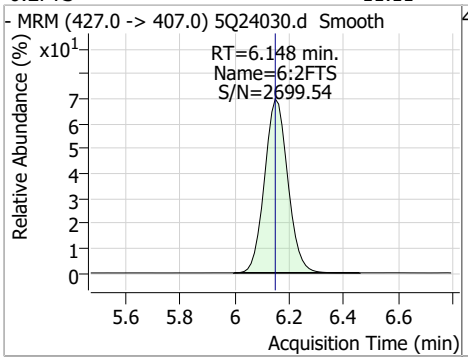


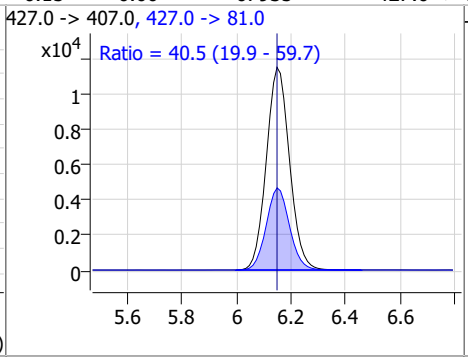


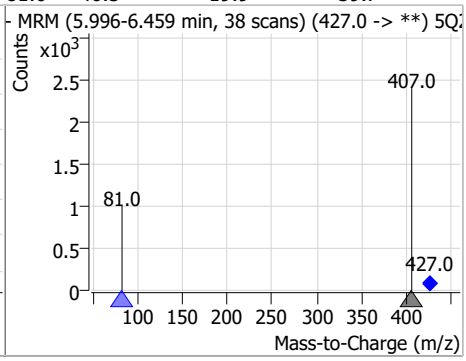


Perfluorinated Compounds by LC/MS/MS

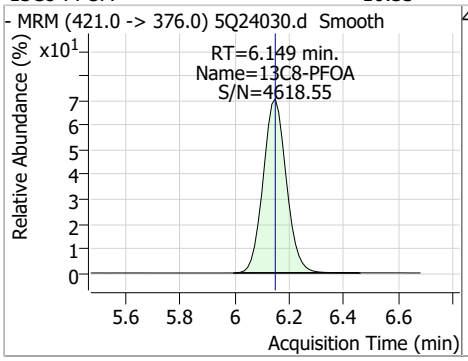
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	11.11	6.15	0.00	67935	427.0 -> 81.0	40.5	19.9	59.7

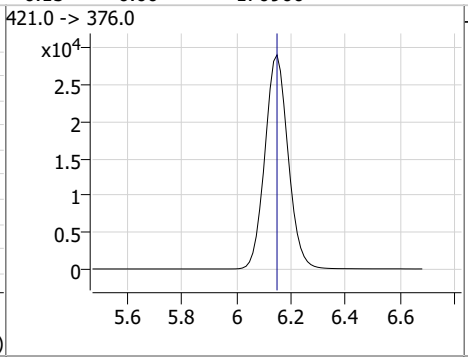


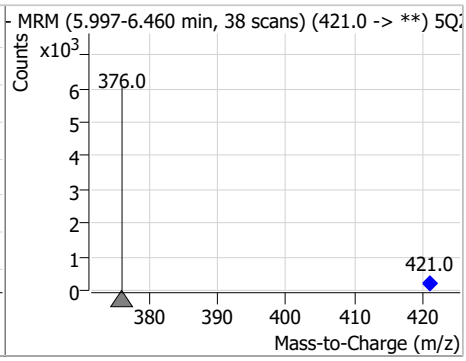




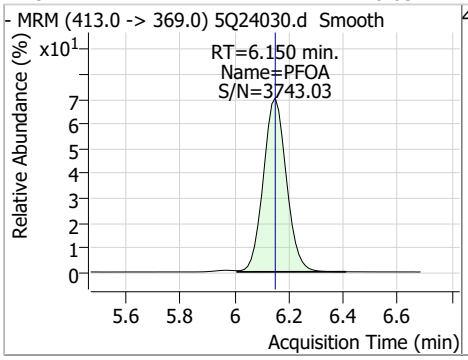
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	10.33	6.15	0.00	170960				

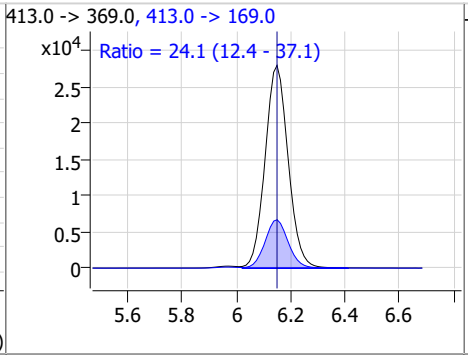


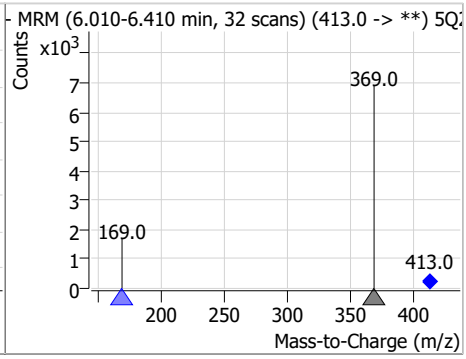




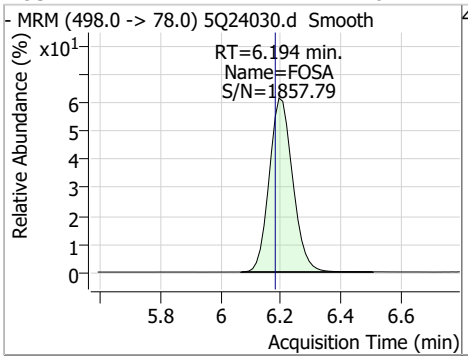
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	10.05	6.15	0.00	164031	413.0 -> 169.0	24.1	12.4	37.1

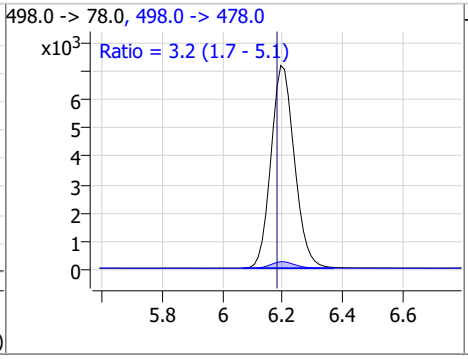


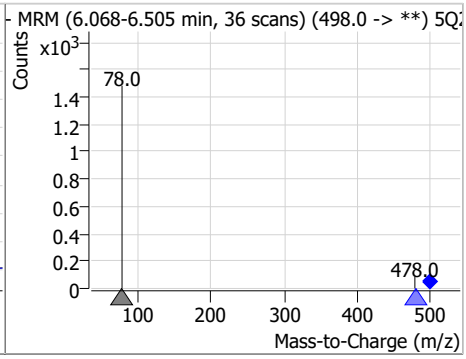




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	10.12	6.19	0.00	38794	498.0 -> 478.0	3.2	1.7	5.1

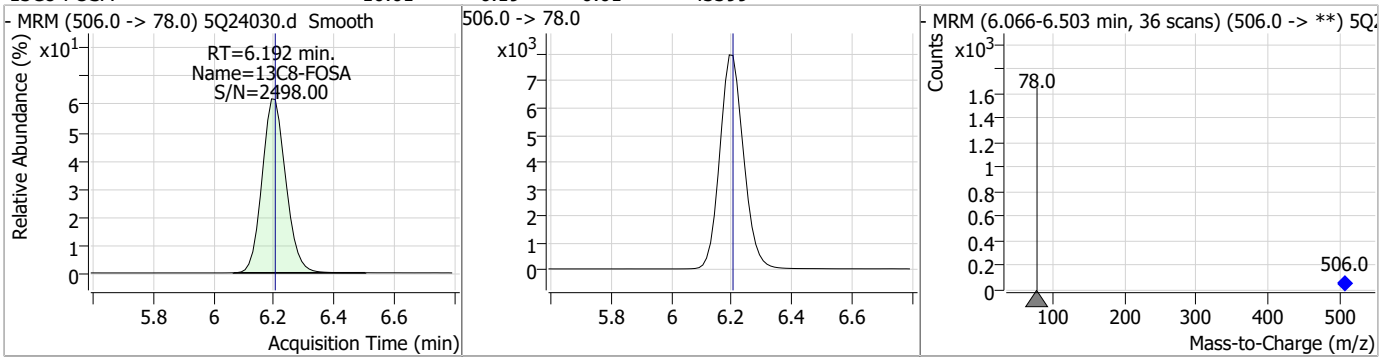




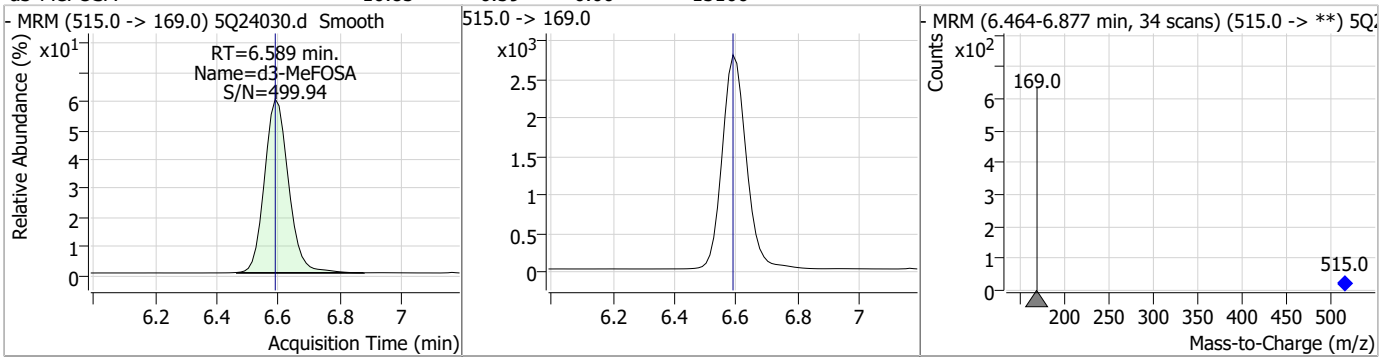


Perfluorinated Compounds by LC/MS/MS

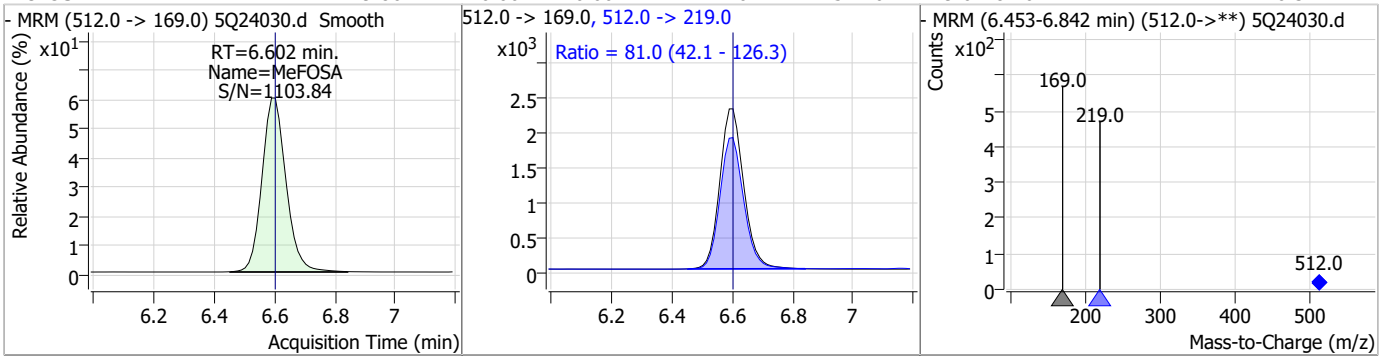
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	10.61	6.19	-0.01	43399				



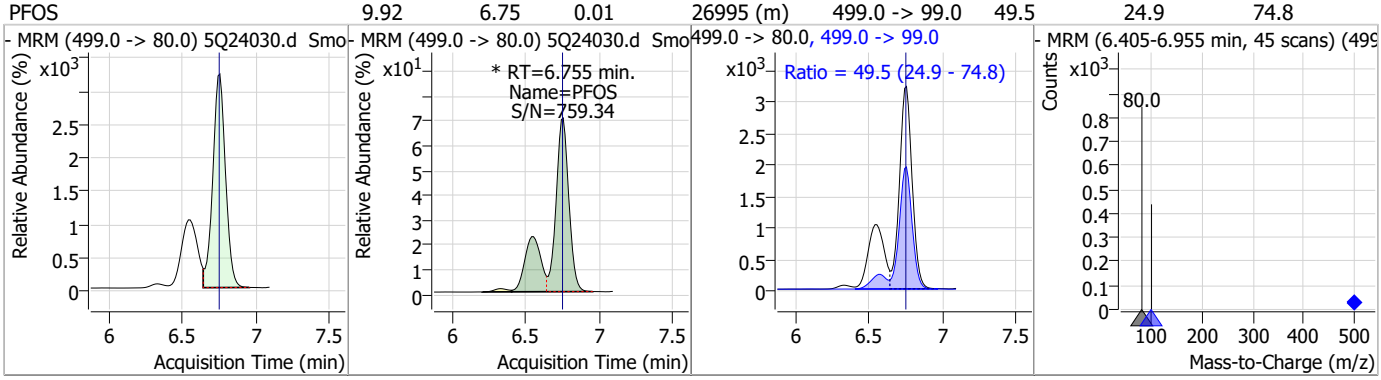
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	10.85	6.59	0.00	15106				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	9.86	6.60	0.00	12720	512.0 -> 219.0	81.0	42.1	126.3

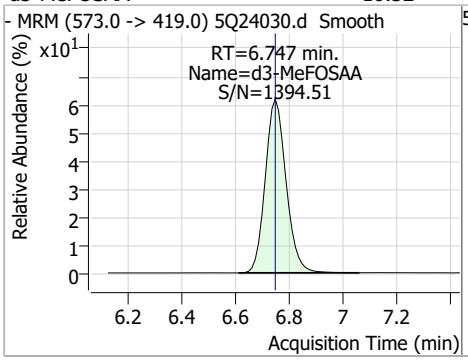


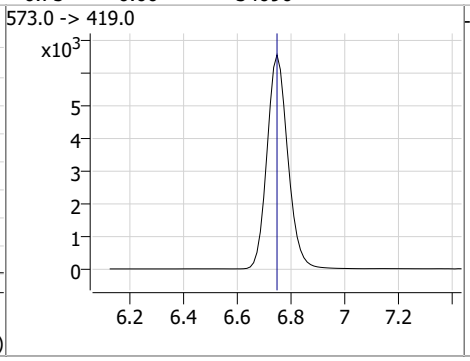
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	9.92	6.75	0.01	26995 (m)	499.0 -> 99.0	49.5	24.9	74.8

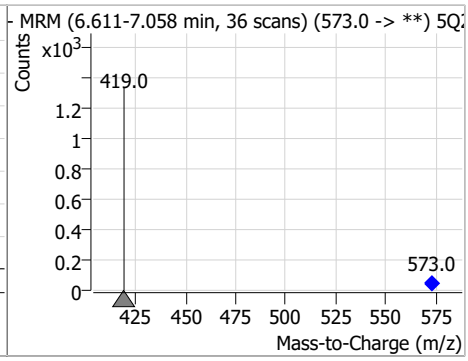


Perfluorinated Compounds by LC/MS/MS

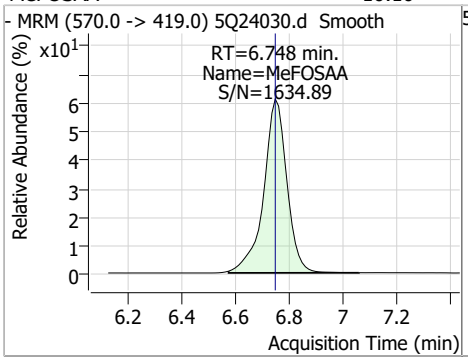
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	10.32	6.75	0.00	34696				

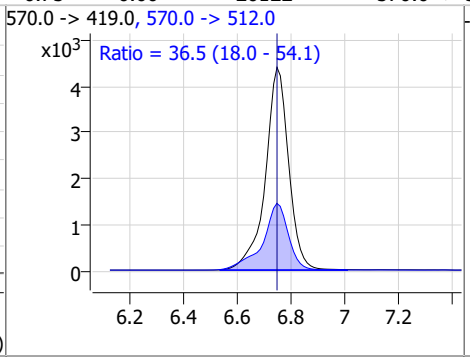


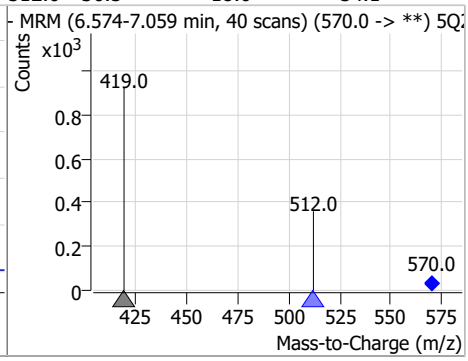




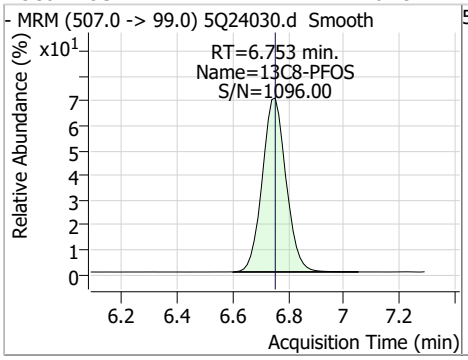
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	10.10	6.75	0.00	26122	570.0 -> 512.0	36.5	18.0	54.1

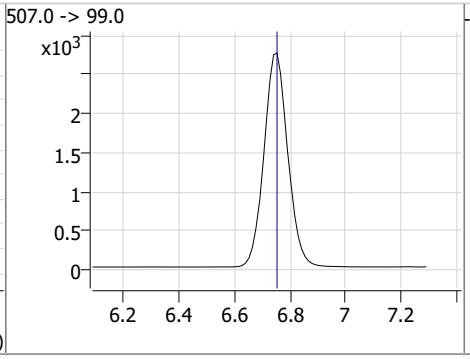


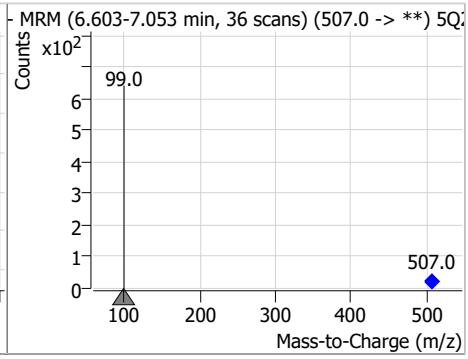




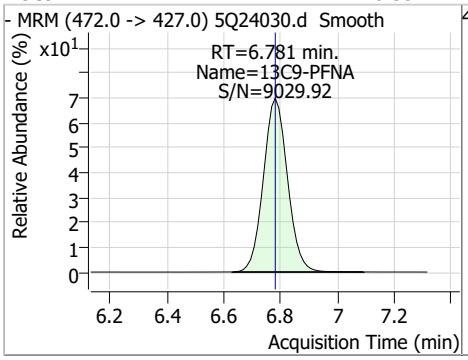
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	10.29	6.75	0.00	16198				

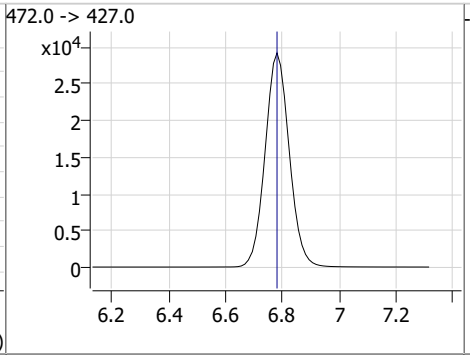


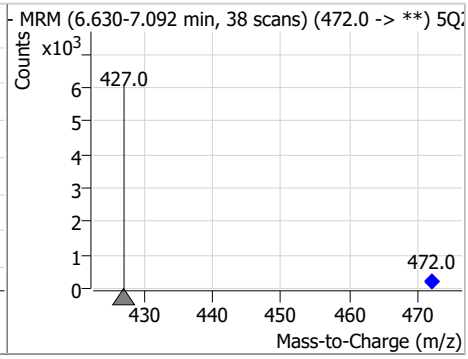




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	10.35	6.78	0.00	171566				

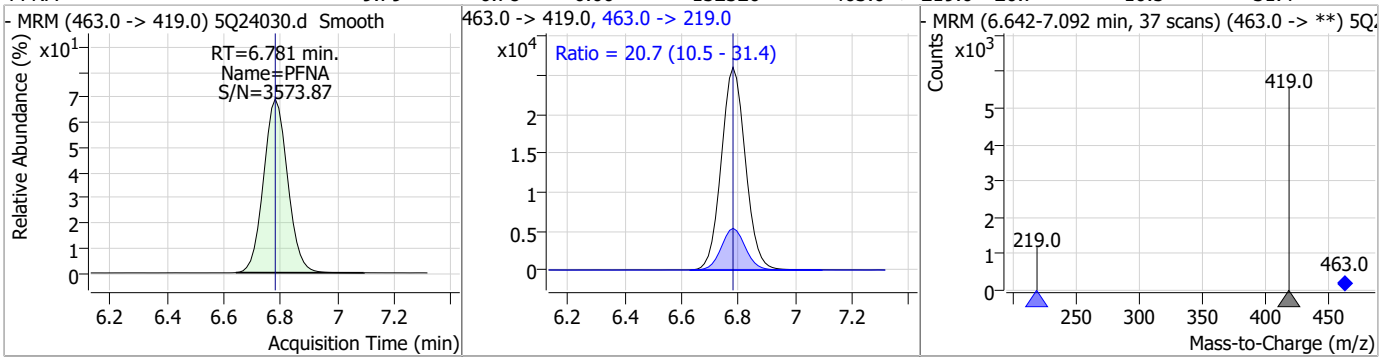




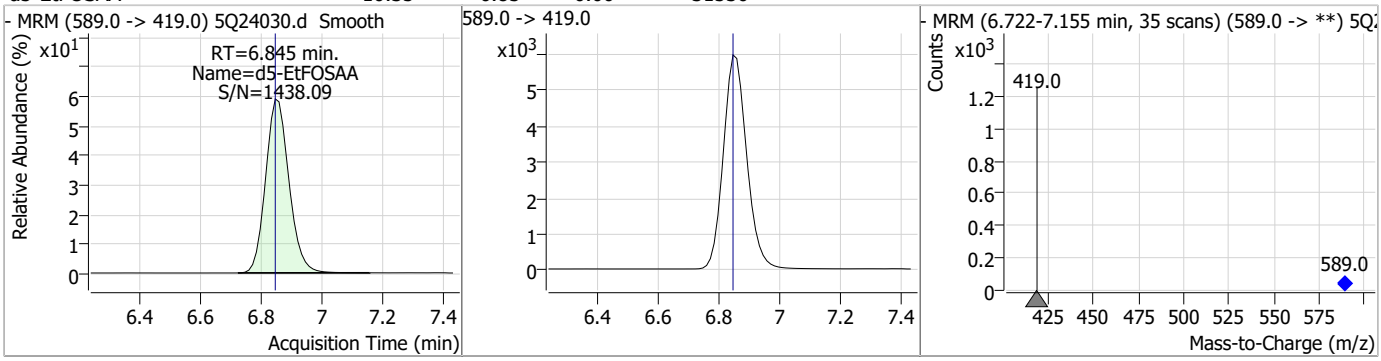


Perfluorinated Compounds by LC/MS/MS

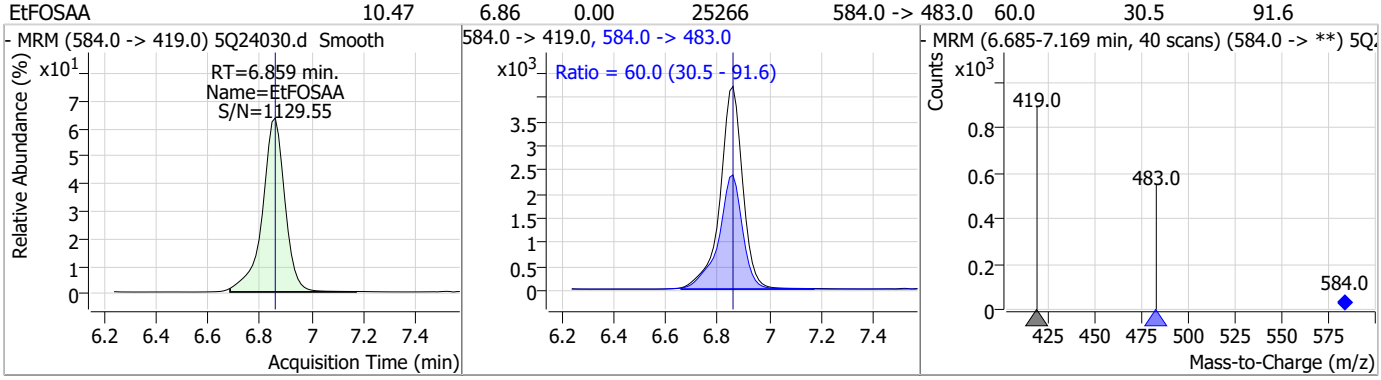
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	9.79	6.78	0.00	152320	463.0 -> 219.0	20.7	10.5	31.4



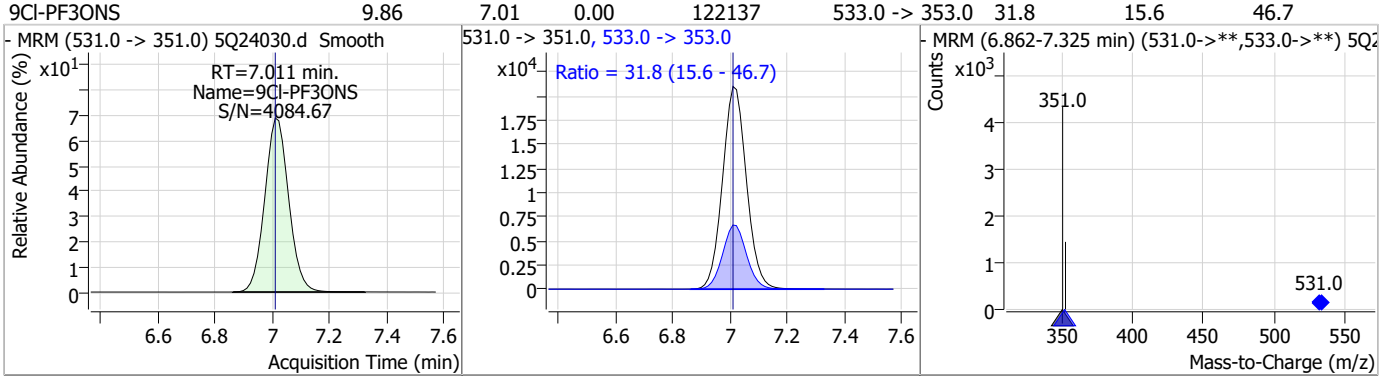
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	10.35	6.85	0.00	31530				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	10.47	6.86	0.00	25266	584.0 -> 483.0	60.0	30.5	91.6

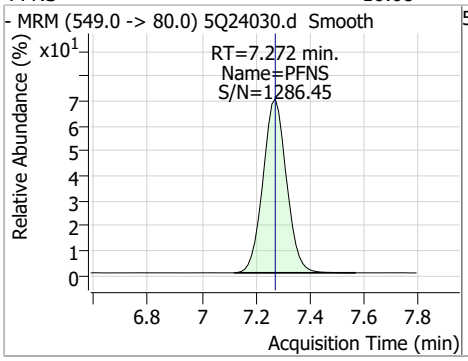


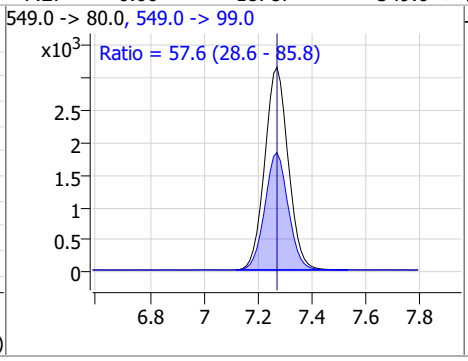
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	9.86	7.01	0.00	122137	533.0 -> 353.0	31.8	15.6	46.7

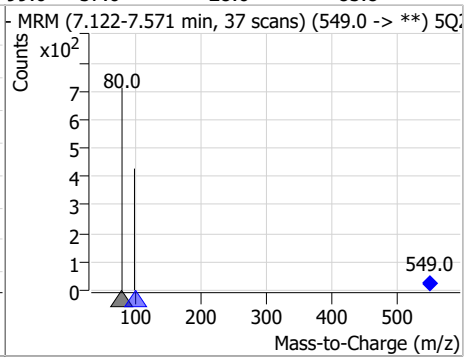


Perfluorinated Compounds by LC/MS/MS

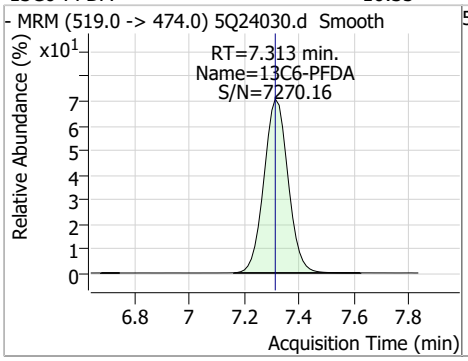
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	10.08	7.27	0.00	18787	549.0 -> 99.0	57.6	28.6	85.8

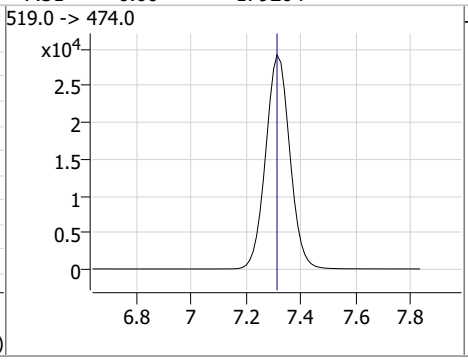


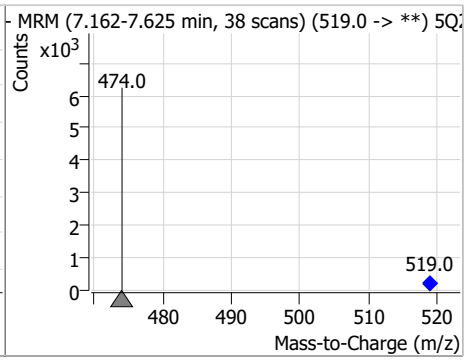




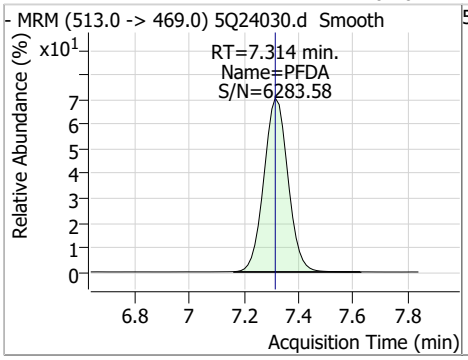
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	10.35	7.31	0.00	179204				

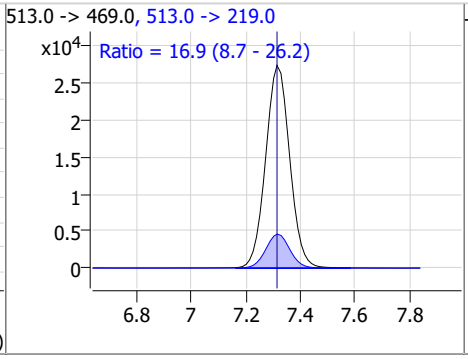


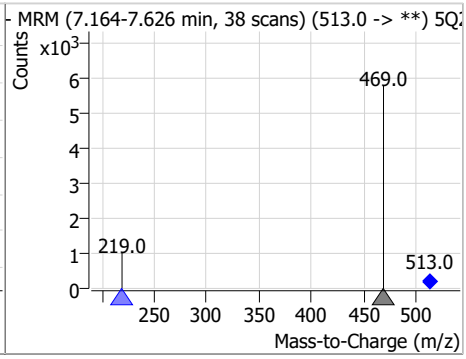




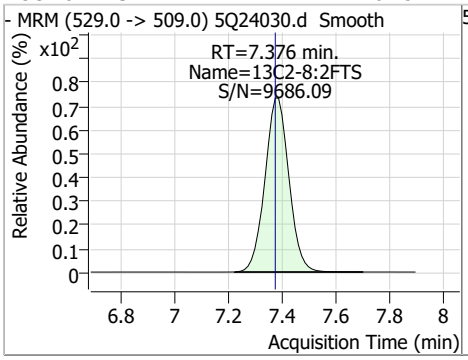
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	10.10	7.31	0.00	166423	513.0 -> 219.0	16.9	8.7	26.2

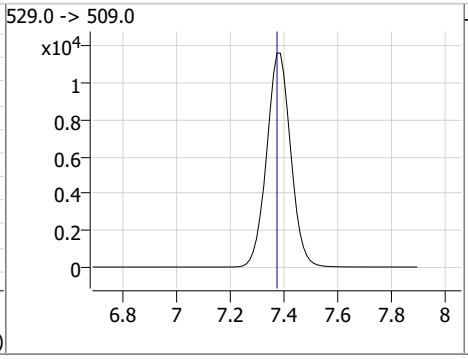


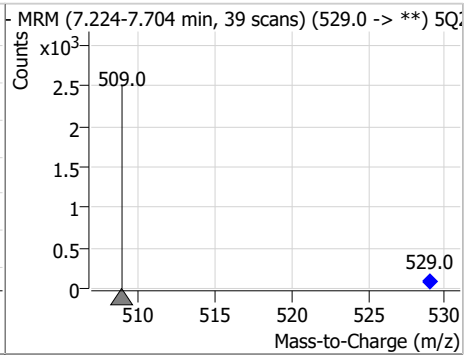




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	10.15	7.38	0.00	71808				

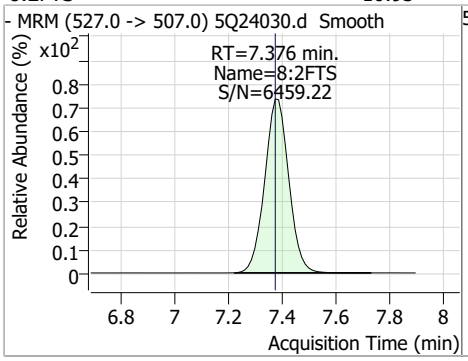


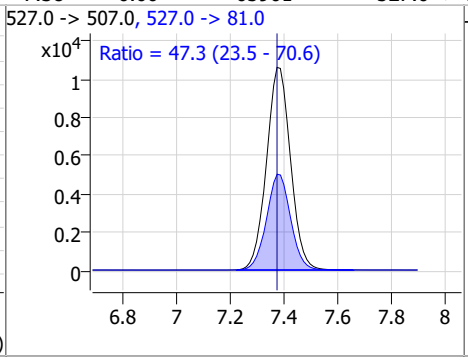


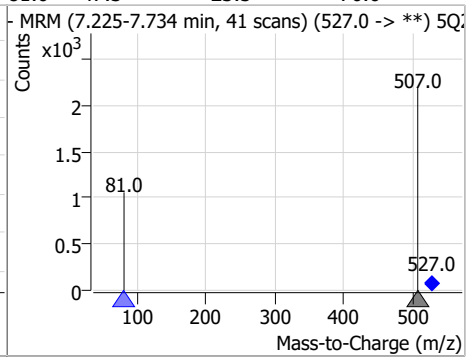


Perfluorinated Compounds by LC/MS/MS

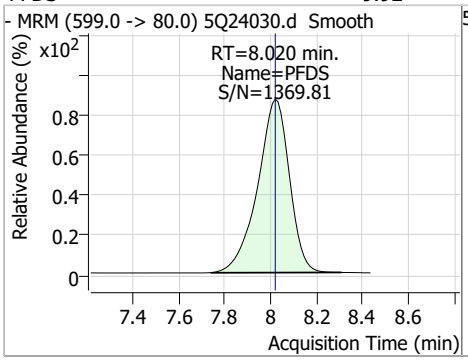
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	10.93	7.38	0.00	65901	527.0 -> 81.0	47.3	23.5	70.6

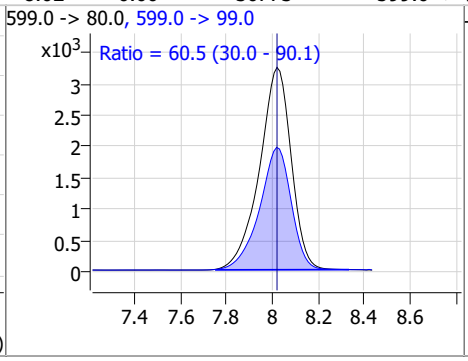


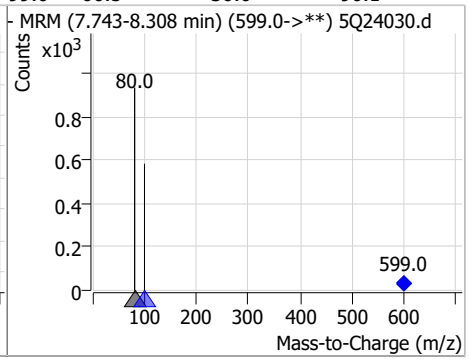




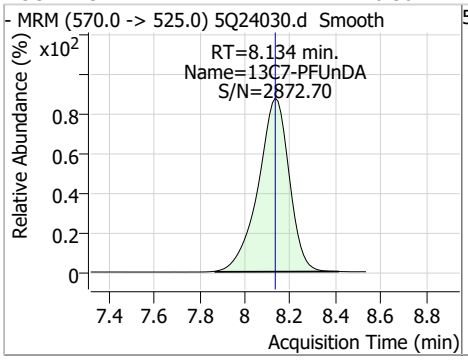
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	9.92	8.02	0.00	30773	599.0 -> 99.0	60.5	30.0	90.1

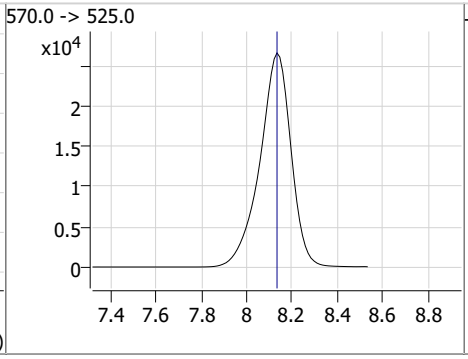


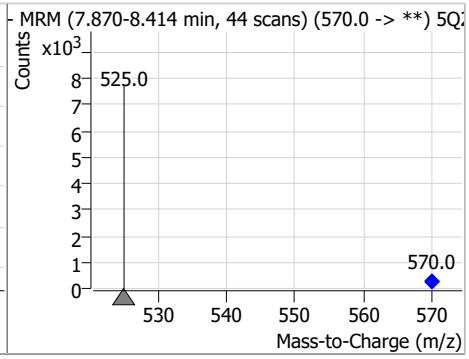




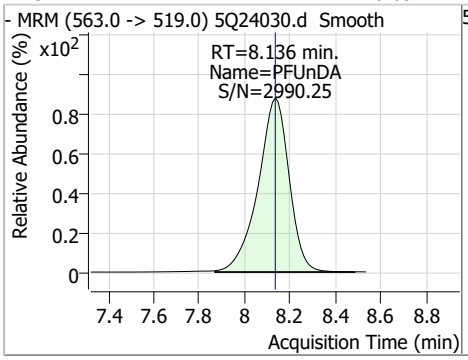
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	10.30	8.13	0.00	251424				

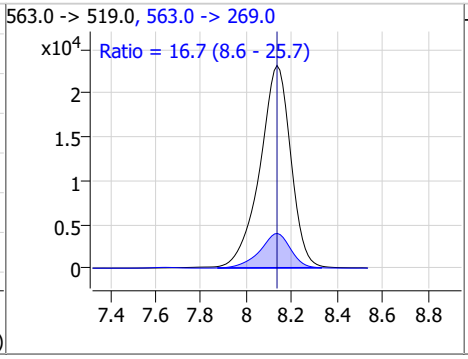


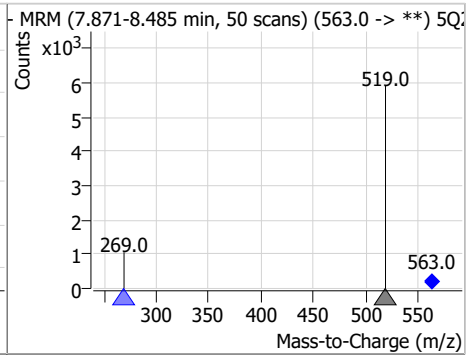




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	10.09	8.14	0.00	219881	563.0 -> 269.0	16.7	8.6	25.7

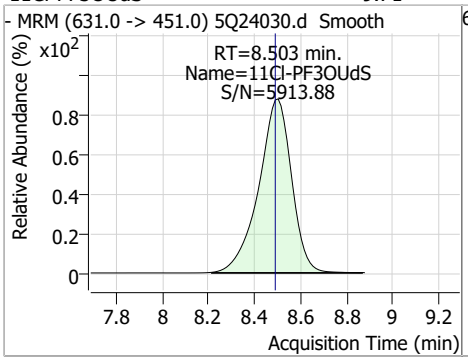


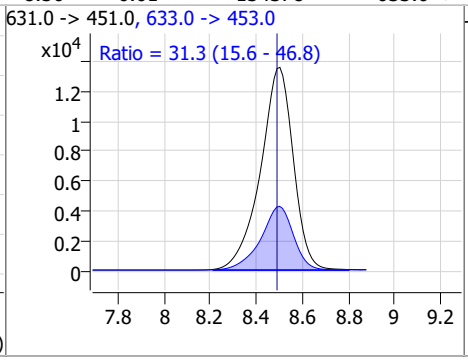


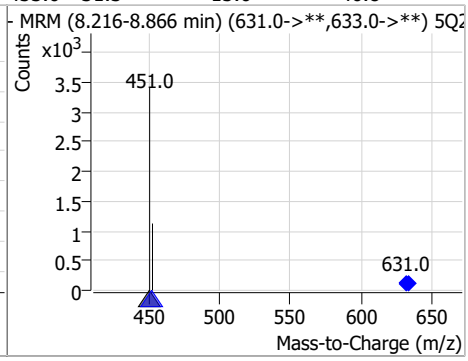


Perfluorinated Compounds by LC/MS/MS

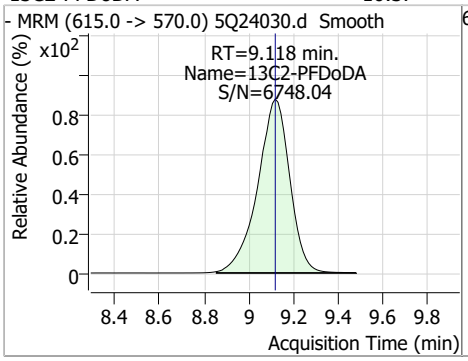
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	9.71	8.50	0.01	134378	633.0 -> 453.0	31.3	15.6	46.8

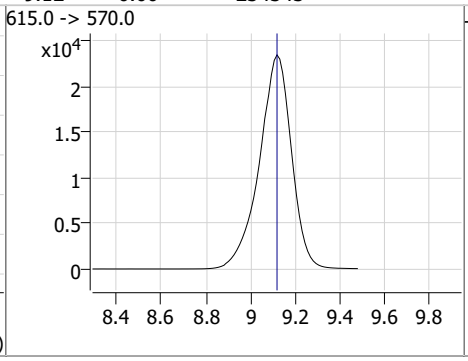


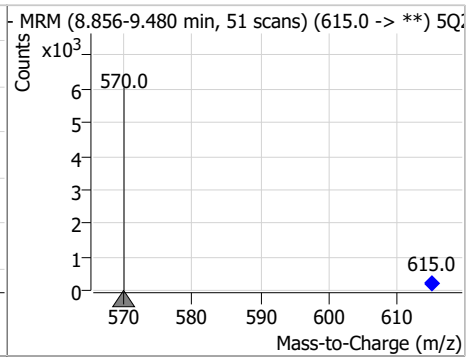




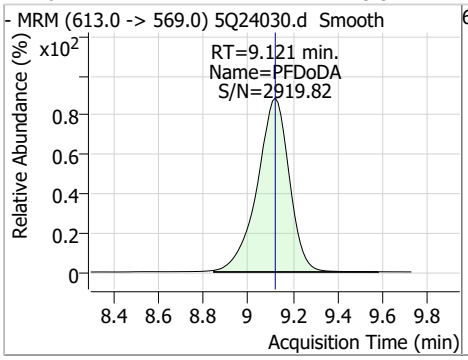
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	10.37	9.12	0.00	234343				

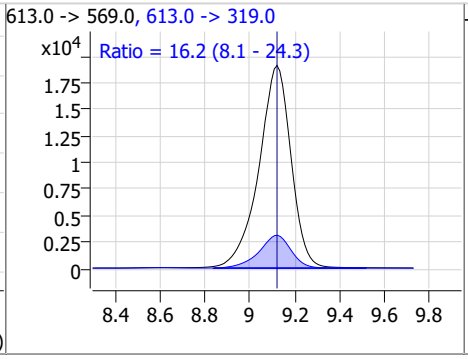


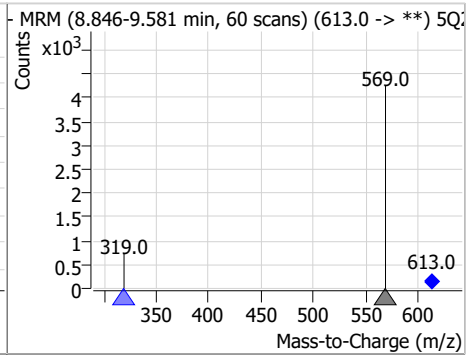




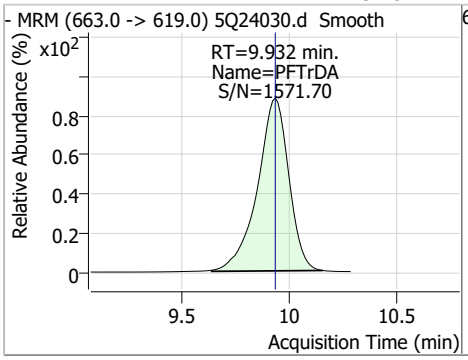
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	9.92	9.12	0.00	191461	613.0 -> 319.0	16.2	8.1	24.3

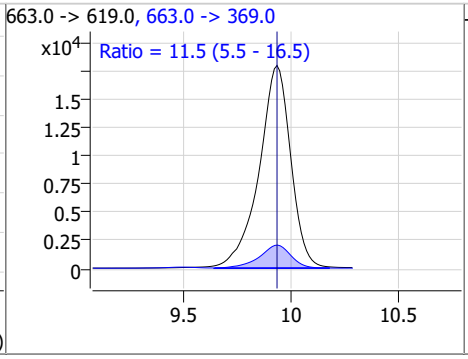


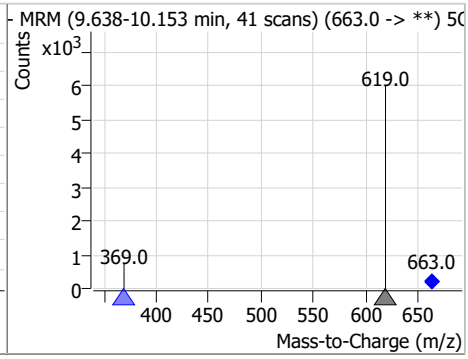




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	9.28	9.93	0.00	179611	663.0 -> 369.0	11.5	5.5	16.5

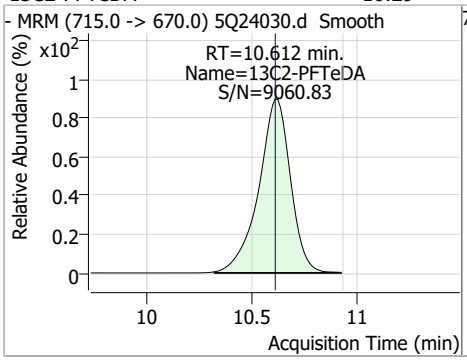


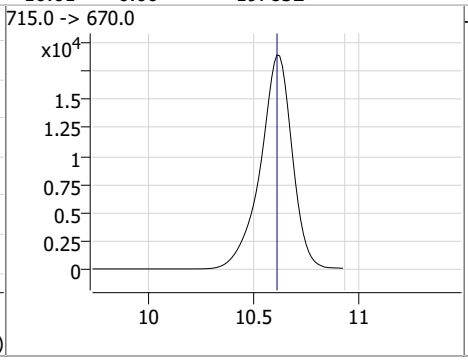


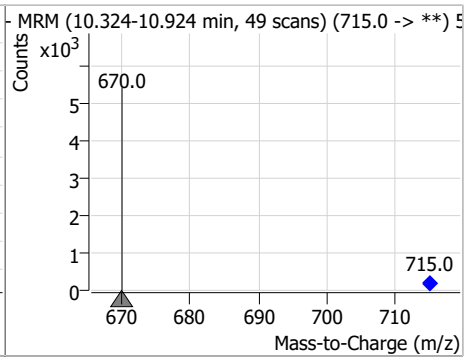


Perfluorinated Compounds by LC/MS/MS

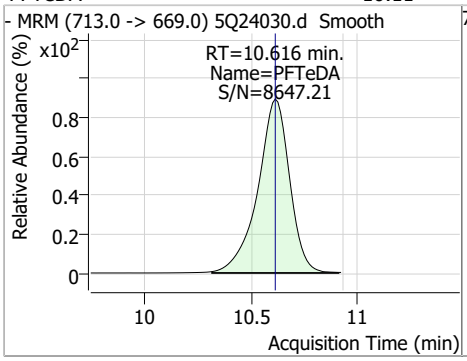
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	10.29	10.61	0.00	197832				

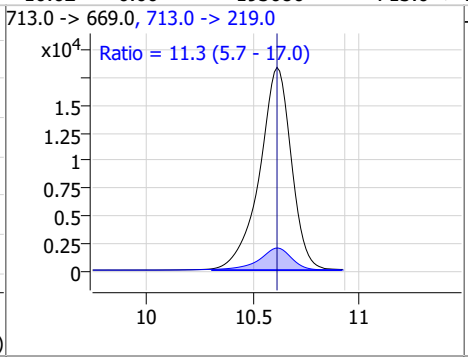


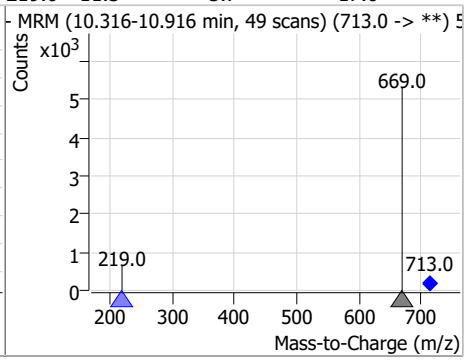




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	10.11	10.62	0.00	193086	713.0 -> 219.0	11.3	5.7	17.0







9.6.38

6

Manual Integration Approval Summary

Sample Number: S5Q377-IC377
Lab FileID: 5Q24030.D
Injection Time: 01/02/24 18:11
Method: EPA 537M QSM5.3 B-15
Analyst approved: 01/03/24 16:03 Lindsay Ritner
Supervisor approved: 01/04/24 12:54 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.45	Split peak
Perfluorooctanesulfonic acid	1763-23-1		6.75	Split peak

5Q24031.D

Manual Integrations APPROVED (compounds with "m" flag)

Natasha Gumtie 01/04/24 12:54

Perfluorinated Compounds by LC/MS/MS

Data File	:	5Q24031.d
Operator	:	lindsayr
Acq. Method	:	537_ID.m
Acq. Date-Time	:	1/2/2024 6:28:21 PM
Sample Name	:	icc377-20
Vial	:	P1-A7
DA Method File	:	ID_010224_S5Q377.quantmethod.xml
Batch Name	:	s5q377.batch.bin
Sample Information	:	OP401,S5Q377,250,,,1.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	1.987	217.0 -> 172.0	43323	10.00 µg/L	0.000
M5-PFPeA	3.432	268.0 -> 223.0	72191	10.00 µg/L	0.000
M5-PFHxA	4.565	318.0 -> 273.0	112831	10.00 µg/L	0.000
M4-PFHpA	5.425	367.0 -> 322.0	115542	10.00 µg/L	0.000
M8-PFOA	6.149	421.0 -> 376.0	165324	10.00 µg/L	0.000
M9-PFNA	6.781	472.0 -> 427.0	164974	10.00 µg/L	0.000
M6-PFDA	7.313	519.0 -> 474.0	171265	10.00 µg/L	0.000
M7-PFUnDA	8.134	570.0 -> 525.0	240554	10.00 µg/L	0.000
M2-PFDoDA	9.118	615.0 -> 570.0	219715	10.00 µg/L	0.000
M2-PFTeDA	10.612	715.0 -> 670.0	188022	10.00 µg/L	0.000
M8-FOSA	6.204	506.0 -> 78.0	41625	10.00 µg/L	0.000
M3-PFBS	3.637	302.0 -> 99.0	8917	10.00 µg/L	0.000
M3-PFHxS	5.444	402.0 -> 99.0	11075	10.00 µg/L	0.000
M8-PFOS	6.753	507.0 -> 99.0	15747	10.00 µg/L	0.000
M2-4:2FTS	4.486	329.0 -> 309.0	39619	10.00 µg/L	0.000
M2-6:2FTS	6.148	429.0 -> 409.0	72418	10.00 µg/L	0.000
M2-8:2FTS	7.376	529.0 -> 509.0	71787	10.00 µg/L	0.000
M3-MeFOSAA	6.747	573.0 -> 419.0	33789	10.00 µg/L	0.000
M3-HFPO-DA	4.831	287.0 -> 169.0	5849	10.00 µg/L	0.000
M3-MeFOSA	6.589	515.0 -> 169.0	14520	10.00 µg/L	0.000
M5-EtFOSAA	6.845	589.0 -> 419.0	29885	10.00 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	4.486	329.0 -> 309.0	39619	10.14 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.4%	
13C2-6:2FTS	6.148	429.0 -> 409.0	72418	9.85 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 98.5%	
13C2-8:2FTS	7.376	529.0 -> 509.0	71787	10.15 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.5%	
13C2-PFDoDA	9.118	615.0 -> 570.0	219715	9.72 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 97.2%	
13C2-PFTeDA	10.612	715.0 -> 670.0	188022	9.78 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 97.8%	
13C3-PFBS	3.637	302.0 -> 99.0	8917	9.67 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 96.7%	
13C3-PFHxS	5.444	402.0 -> 99.0	11075	9.80 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 98.0%	
13C4-PFBA	1.987	217.0 -> 172.0	43323	9.82 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 98.2%	
13C4-PFHpA	5.425	367.0 -> 322.0	115542	9.78 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 97.8%	
13C5-PFHxA	4.565	318.0 -> 273.0	112831	9.83 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 98.3%	
13C5-PFPeA	3.432	268.0 -> 223.0	72191	9.72 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 97.2%	
13C6-PFDA	7.313	519.0 -> 474.0	171265	9.89 µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 98.9%			
13C7-PFUnDA	8.134	570.0 -> 525.0	240554	9.85	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 98.5%			
13C8-FOSA	6.204	506.0 -> 78.0	41625	10.18	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.8%			
13C8-PFOA	6.149	421.0 -> 376.0	165324	9.99	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.9%			
13C8-PFOS	6.753	507.0 -> 99.0	15747	10.00	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.0%			
13C9-PFNA	6.781	472.0 -> 427.0	164974	9.95	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.5%			
d3-MeFOSAA	6.747	573.0 -> 419.0	33789	10.05	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.5%			
13C3-HFPO-DA	4.831	287.0 -> 169.0	5849	9.79	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 97.9%			
d3-MeFOSA	6.589	515.0 -> 169.0	14520	10.42	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 104.2%			
d5-EtFOSAA	6.845	589.0 -> 419.0	29885	9.81	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 98.1%			
Target Compounds							QValue
4:2FTS	4.488	327.0 -> 307.0	74090	19.66	µg/L		100
		327.0 -> 81.0	41444				
6:2FTS	6.148	427.0 -> 407.0	122384	19.94	µg/L		100
		427.0 -> 81.0	48671				
8:2FTS	7.376	527.0 -> 507.0	115468	19.15	µg/L		100
		527.0 -> 81.0	54367				
EtFOSAA	6.859	584.0 -> 419.0	43235	18.91	µg/L		100
		584.0 -> 483.0	26402				
FOSA	6.194	498.0 -> 78.0	69209	18.82	µg/L		100
		498.0 -> 478.0	2337				
MeFOSAA	6.748	570.0 -> 419.0	47163	18.72	µg/L		100
		570.0 -> 512.0	17007				
PFBA	1.994	213.0 -> 169.0	72007	18.51	µg/L		100
PFBS	3.640	299.0 -> 80.0	40370	18.47	µg/L		100
		299.0 -> 99.0	17480				
PFDA	7.314	513.0 -> 469.0	291931	18.53	µg/L		100
		513.0 -> 219.0	50967				
PFDoDA	9.121	613.0 -> 569.0	342803	18.95	µg/L		100
		613.0 -> 319.0	55479				
PFDS	8.020	599.0 -> 80.0	55270	18.63	µg/L		100
		599.0 -> 99.0	33180				
PFHpA	5.426	363.0 -> 319.0	241504	19.00	µg/L		100
		363.0 -> 169.0	50840				
PFHpS	6.135	449.0 -> 80.0	37428	17.98	µg/L		100
		449.0 -> 99.0	20207				
PFHxA	4.565	313.0 -> 269.0	197031	18.74	µg/L		100
		313.0 -> 119.0	8059				
PFHxS	5.446	399.0 -> 80.0	37266	18.77	µg/L	m	100
		399.0 -> 99.0	20772				
PFNA	6.781	463.0 -> 419.0	272590	18.21	µg/L		100
		463.0 -> 219.0	57117				
PFNS	7.272	549.0 -> 80.0	33085	18.26	µg/L		100
		549.0 -> 99.0	18930				
PFOA	6.150	413.0 -> 369.0	293002	18.56	µg/L		100
		413.0 -> 169.0	72517				
PFOS	6.742	499.0 -> 80.0	47647	18.01	µg/L	m	100

Perfluorinated Compounds by LC/MS/MS

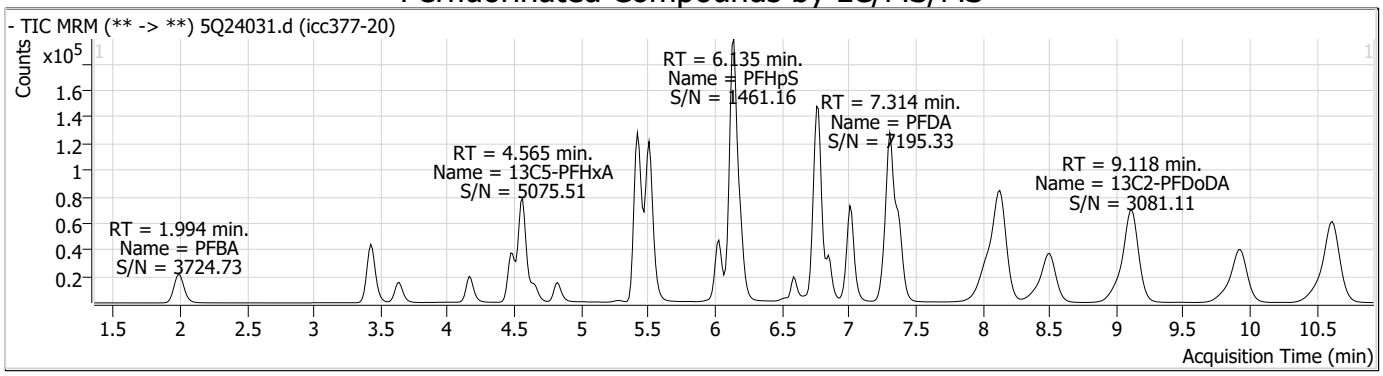
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		499.0 -> 99.0	23762			
PFPeA	3.434	263.0 -> 219.0	128475	18.88	µg/L	100
PFPeS	4.648	349.0 -> 80.0	28725	18.92	µg/L	100
		349.0 -> 99.0	14978			
PFTeDA	10.616	713.0 -> 669.0	347461	19.15	µg/L	100
		713.0 -> 219.0	39303			
PFTrDA	9.932	663.0 -> 619.0	332971	18.34	µg/L	100
		663.0 -> 369.0	36583			
PFUnDA	8.136	563.0 -> 519.0	394050	18.89	µg/L	100
		563.0 -> 269.0	67416			
11Cl-PF3OUdS	8.490	631.0 -> 451.0	240219	18.51	µg/L	100
		633.0 -> 453.0	74982			
9Cl-PF3ONS	7.011	531.0 -> 351.0	220550	18.63	µg/L	100
		533.0 -> 353.0	68707			
ADONA	5.514	377.0 -> 251.0	340814	18.69	µg/L	100
		377.0 -> 85.0	122732			
HFPO-DA	4.827	329.0 -> 169.0	44520	18.73	µg/L	100
		285.0 -> 169.0	9774			
MeFOSA	6.602	512.0 -> 169.0	21748	17.54	µg/L	100
		512.0 -> 219.0	18314			
4-PFECHS	6.032	461.0 -> 381.0	126919	18.13	µg/L	100
		461.0 -> 99.0	65035			
FBSA	4.170	298.0 -> 78.0	71076	19.05	µg/L	100
		298.0 -> 64.0	6726			
FHxSA	5.409	398.0 -> 78.0	76870	20.51	µg/L	100
		398.0 -> 64.0	7015			

 # = Qualifier out of range, m = manually integrated, + = Area summed

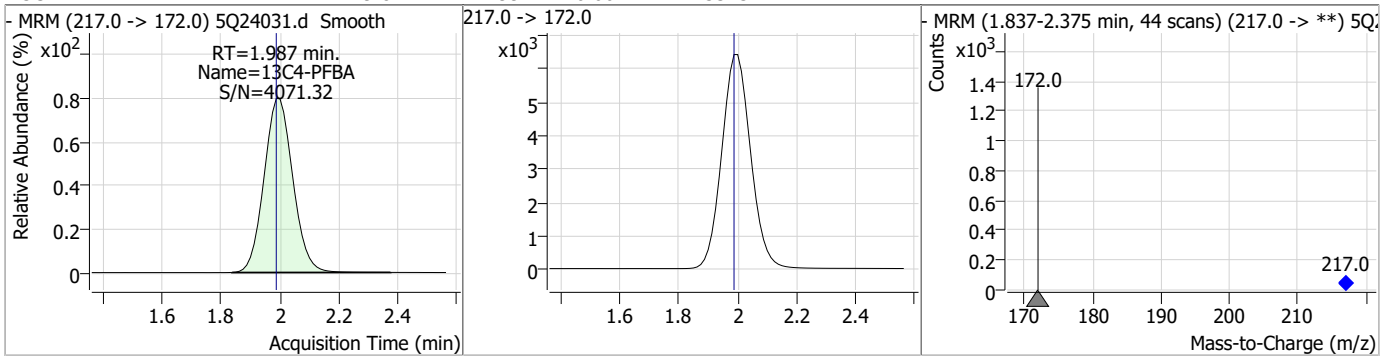
9.6.39

6

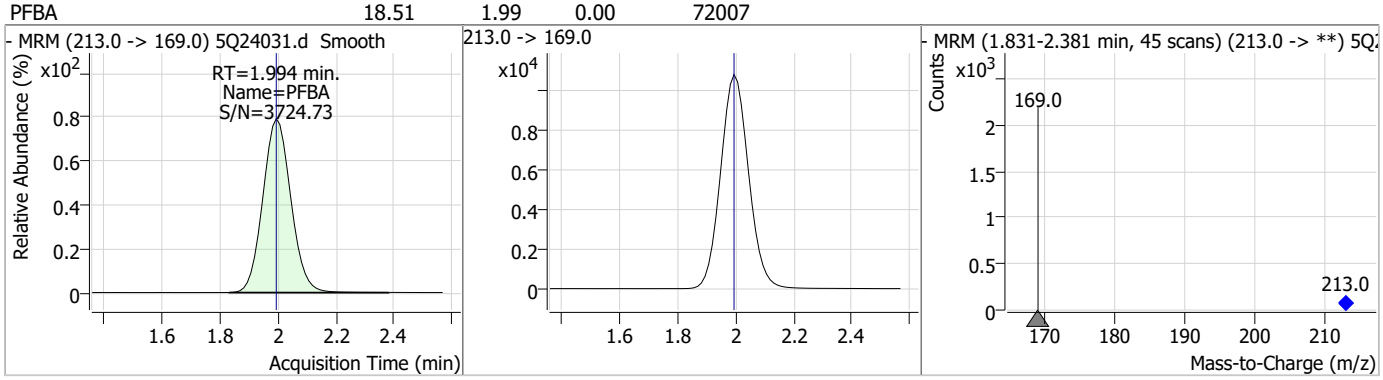
Perfluorinated Compounds by LC/MS/MS



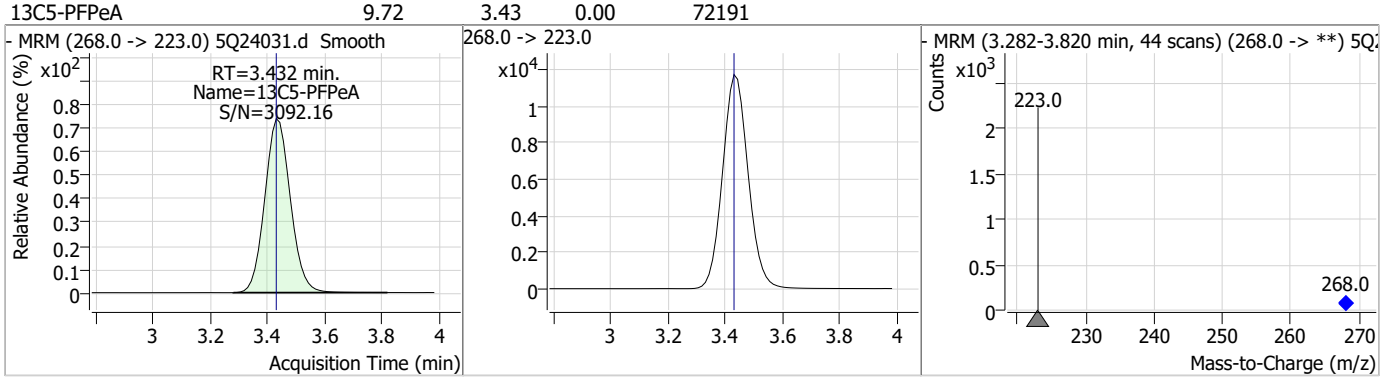
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	9.82	1.99	0.00	43323				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	18.51	1.99	0.00	72007				

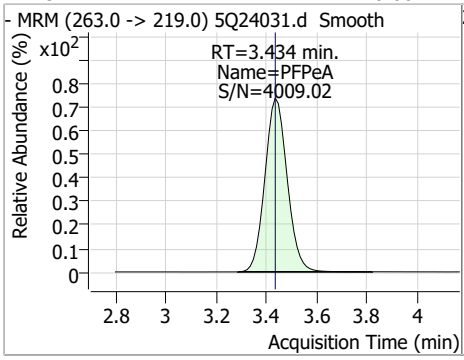


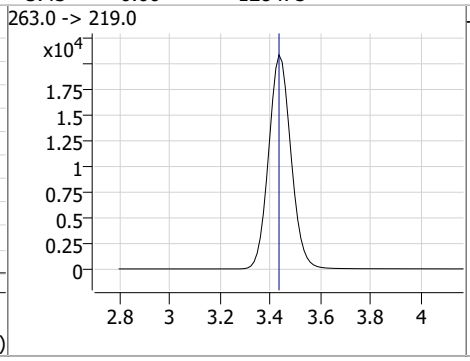
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	9.72	3.43	0.00	72191				

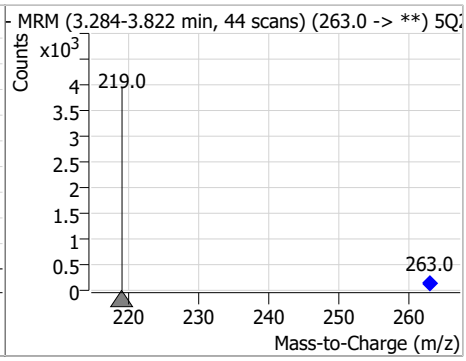


Perfluorinated Compounds by LC/MS/MS

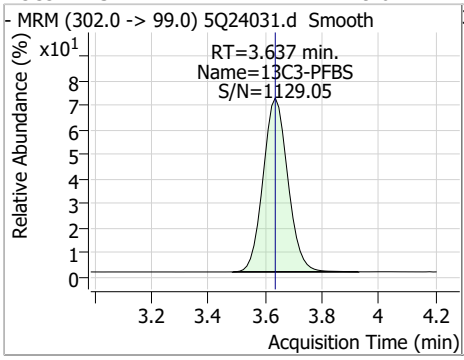
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	18.88	3.43	0.00	128475				

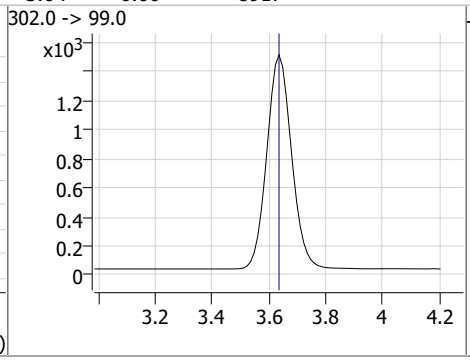


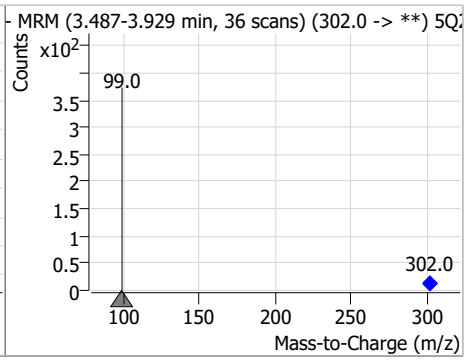




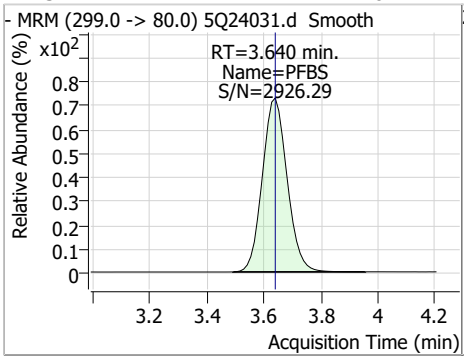
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	9.67	3.64	0.00	8917				

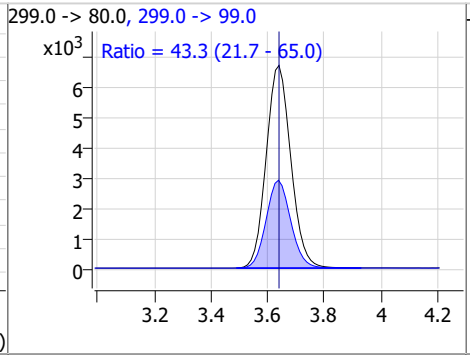


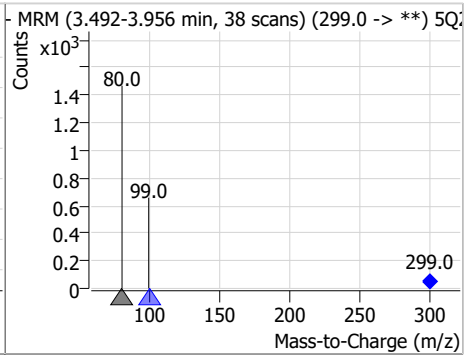




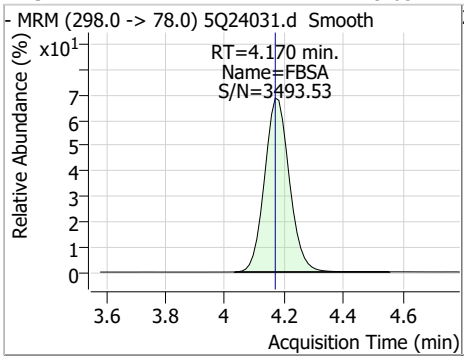
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	18.47	3.64	0.00	40370	299.0 -> 99.0	43.3	21.7	65.0

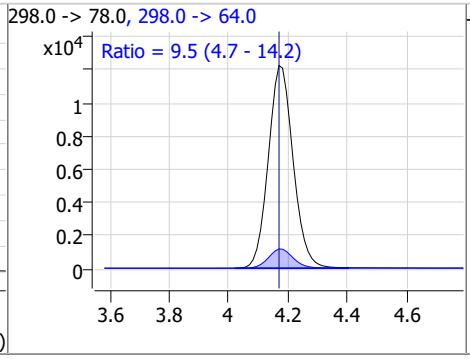


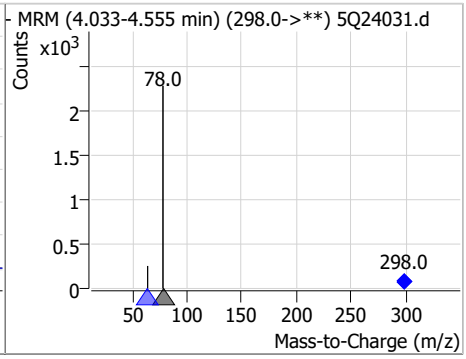




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	19.05	4.17	0.00	71076	298.0 -> 64.0	9.5	4.7	14.2

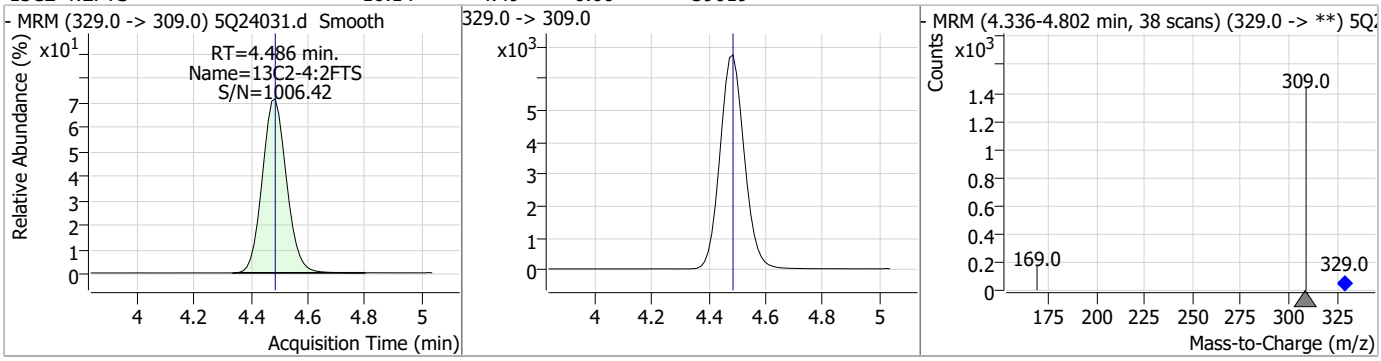




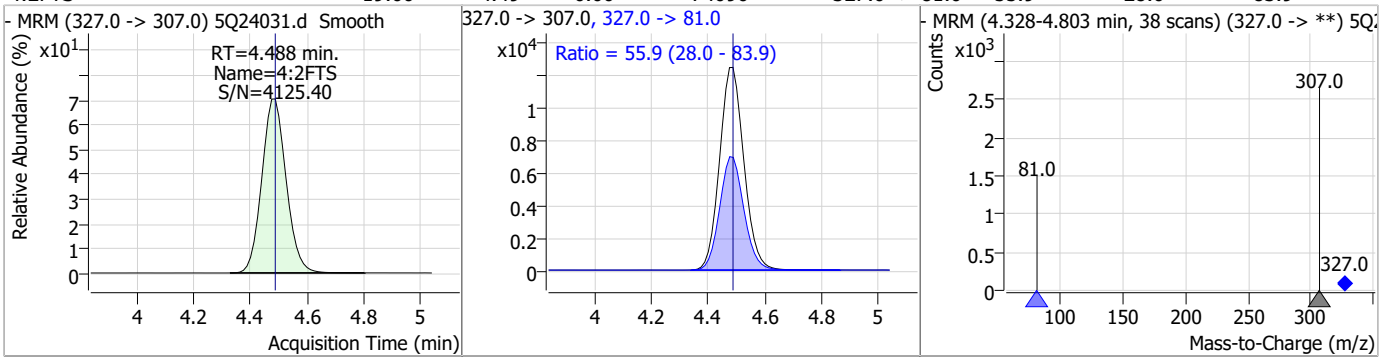


Perfluorinated Compounds by LC/MS/MS

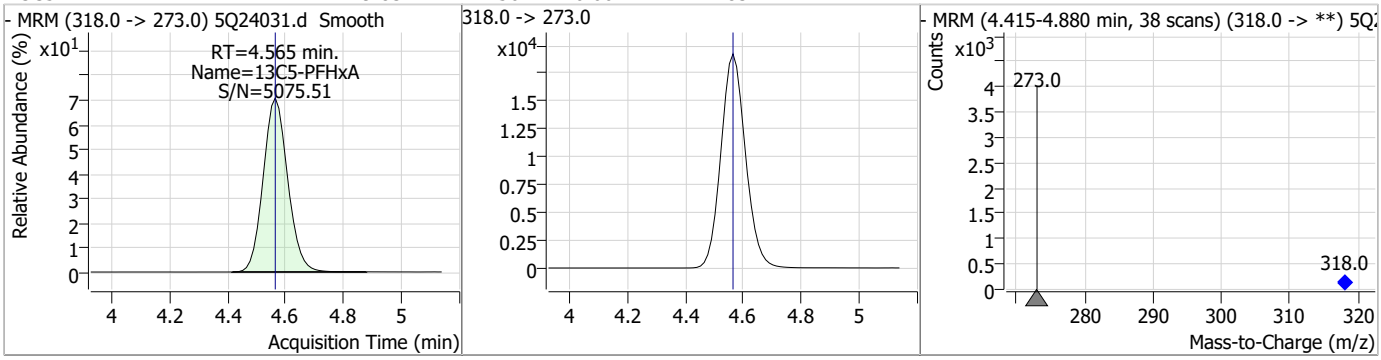
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	10.14	4.49	0.00	39619				



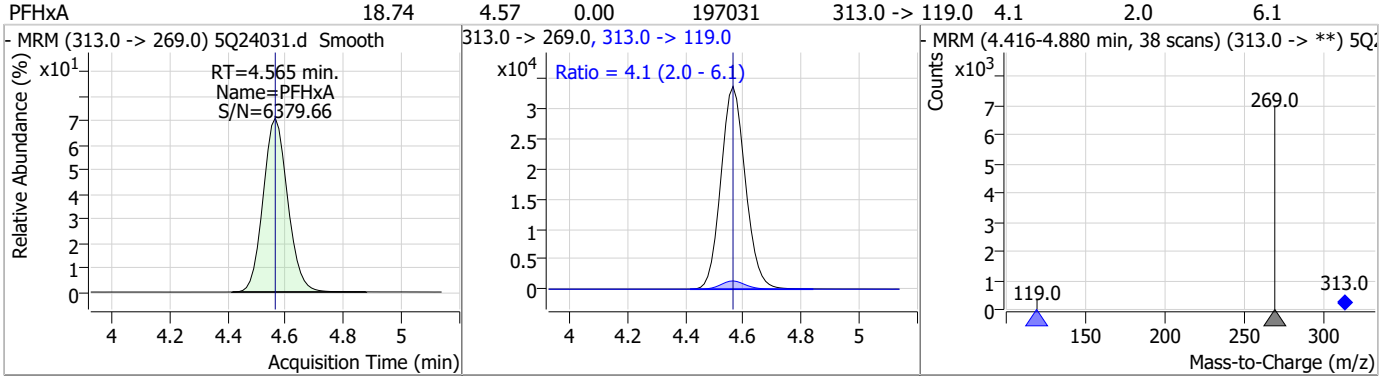
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	19.66	4.49	0.00	74090	327.0 -> 81.0	55.9	28.0	83.9



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	9.83	4.56	0.00	112831				

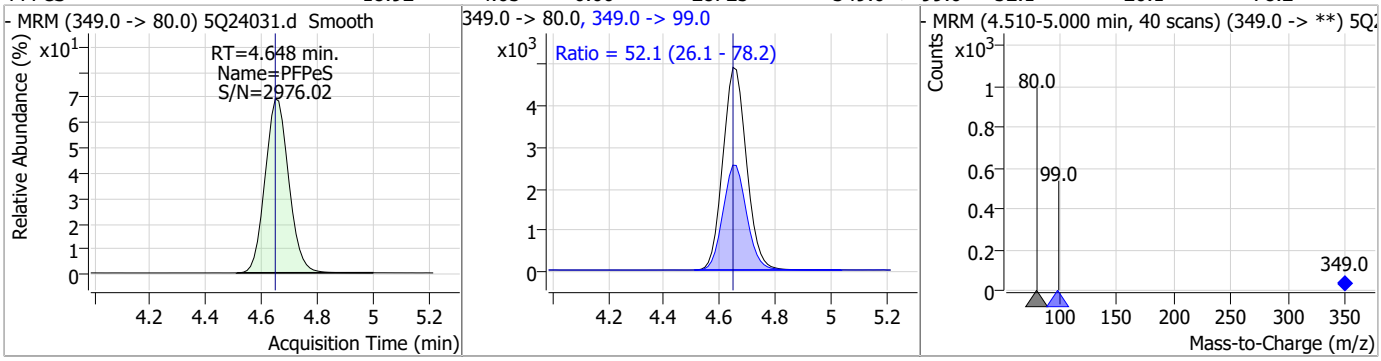


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	18.74	4.57	0.00	197031	313.0 -> 119.0	4.1	2.0	6.1

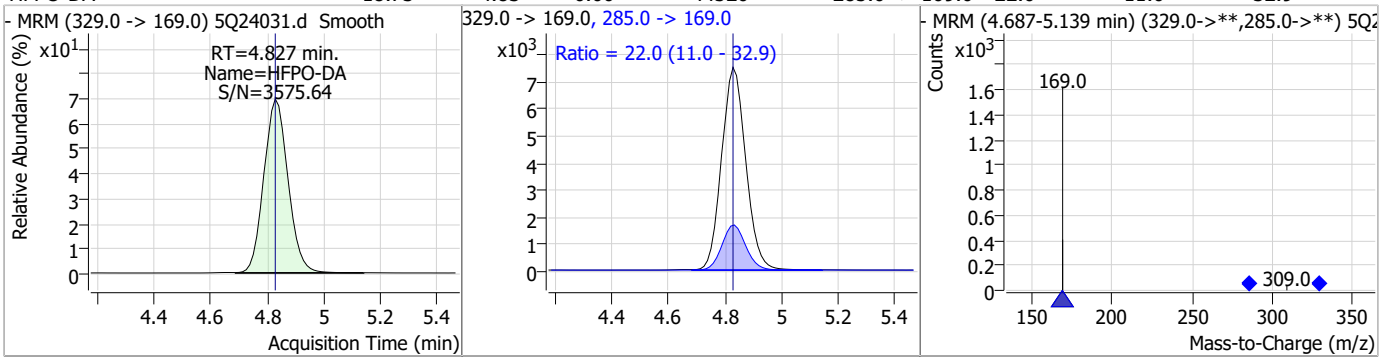


Perfluorinated Compounds by LC/MS/MS

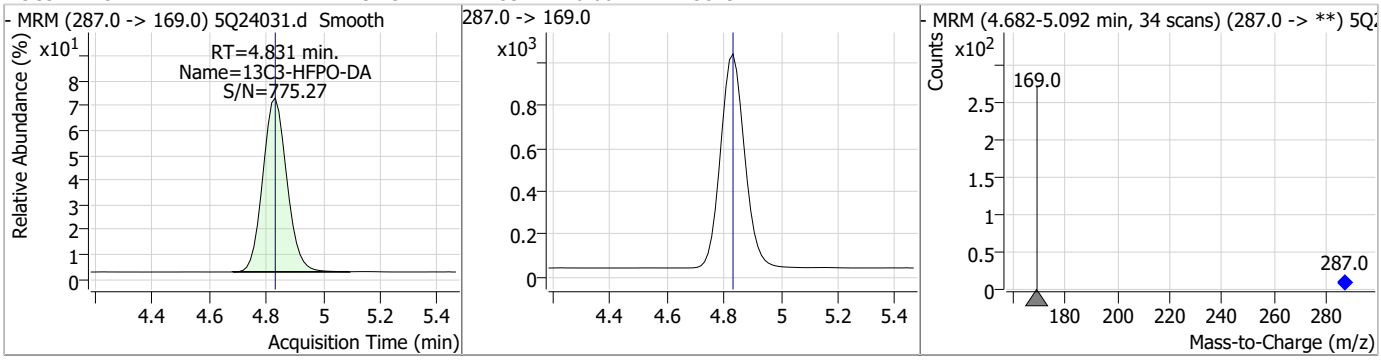
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	18.92	4.65	0.00	28725	349.0 -> 99.0	52.1	26.1	78.2



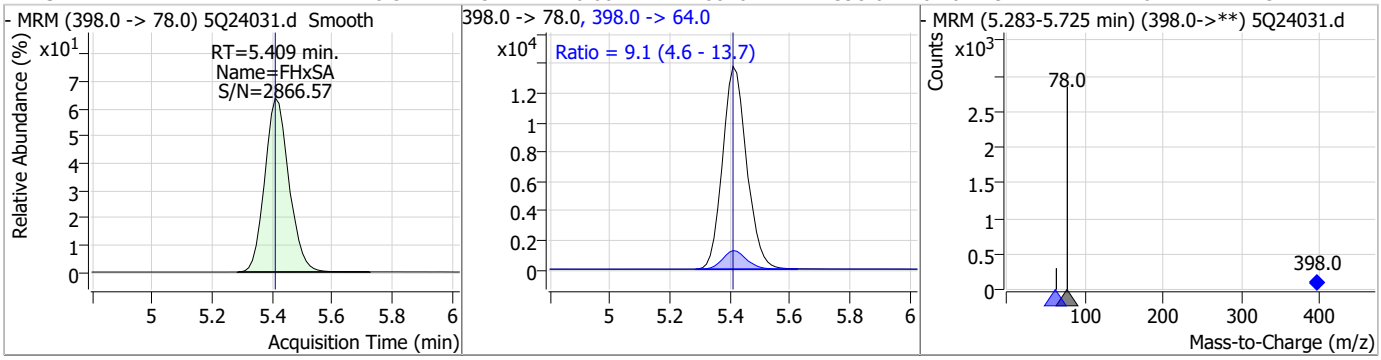
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	18.73	4.83	0.00	44520	285.0 -> 169.0	22.0	11.0	32.9



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	9.79	4.83	0.00	5849				

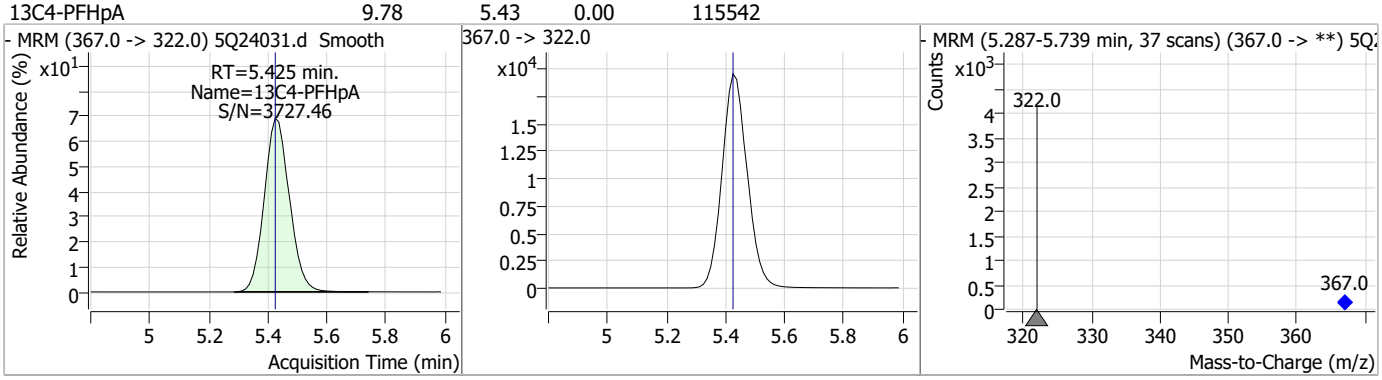


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	20.51	5.41	0.00	76870	398.0 -> 64.0	9.1	4.6	13.7

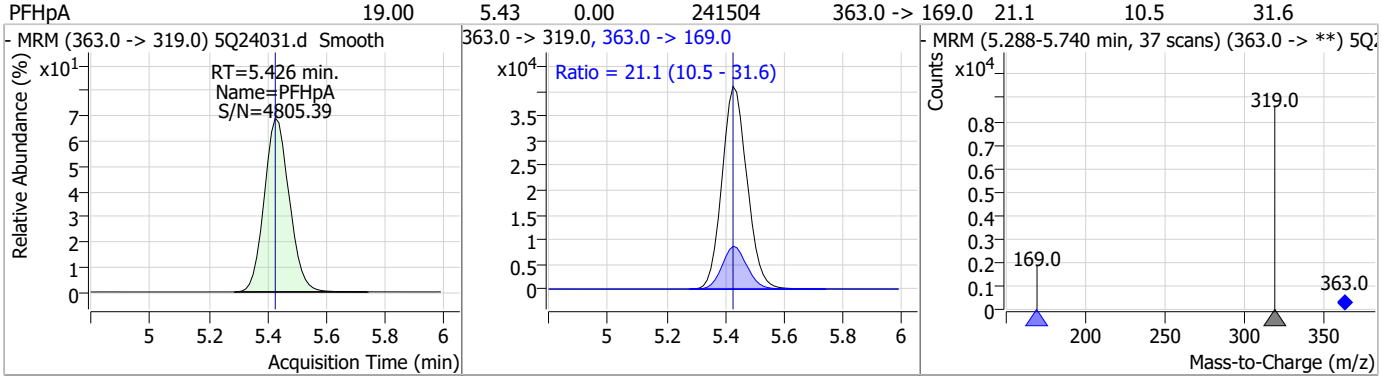


Perfluorinated Compounds by LC/MS/MS

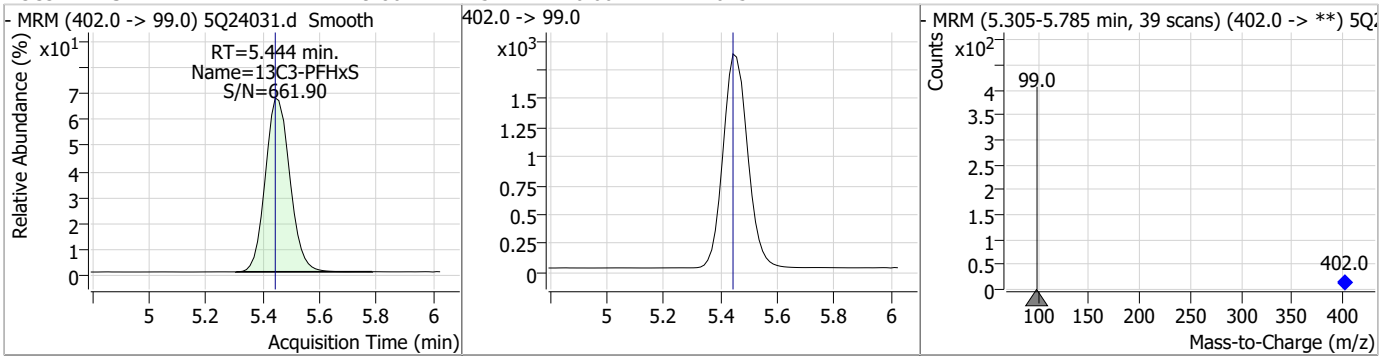
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	9.78	5.43	0.00	115542				



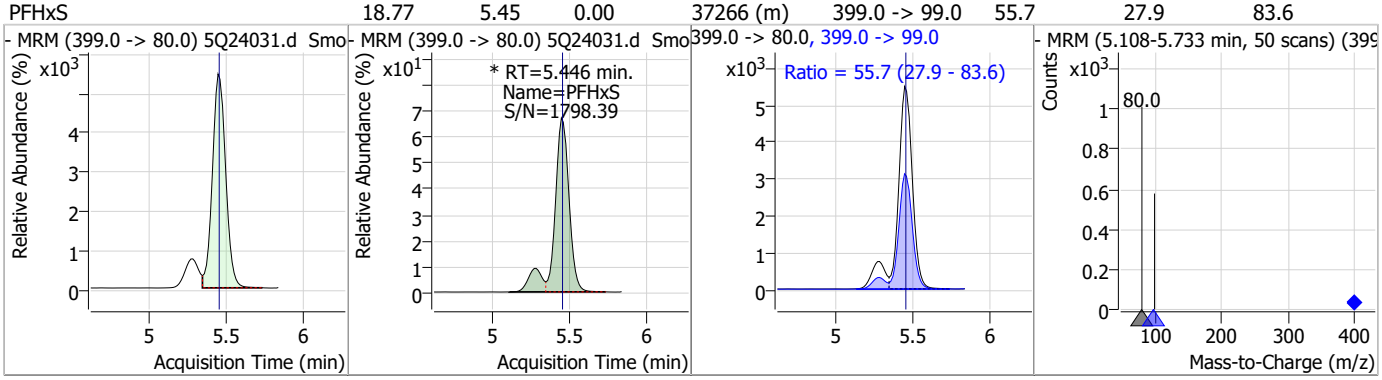
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	19.00	5.43	0.00	241504	363.0 -> 169.0	21.1	10.5	31.6



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	9.80	5.44	0.00	11075				

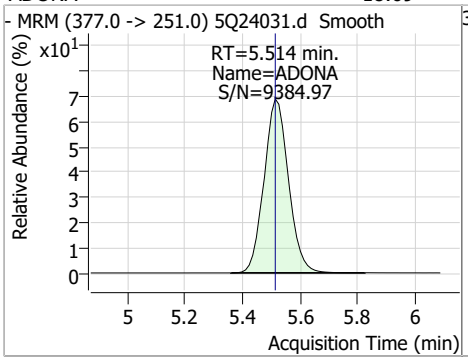


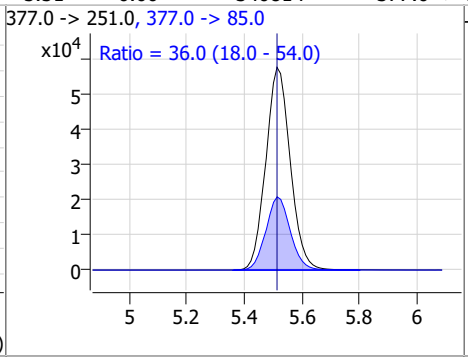
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	18.77	5.45	0.00	37266 (m)	399.0 -> 99.0	55.7	27.9	83.6

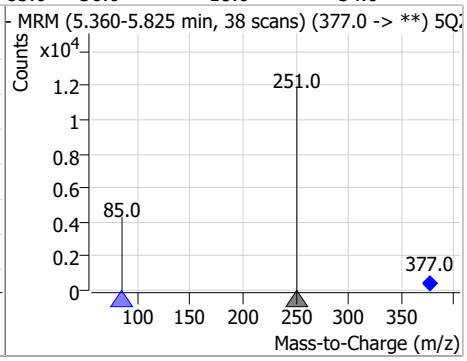


Perfluorinated Compounds by LC/MS/MS

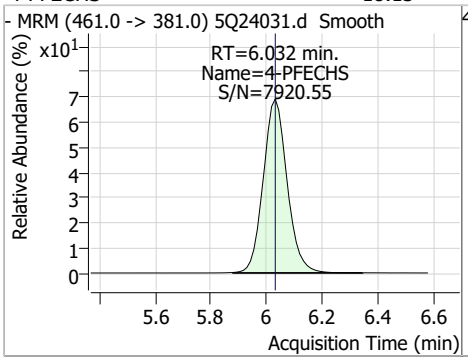
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	18.69	5.51	0.00	340814	377.0 -> 85.0	36.0	18.0	54.0

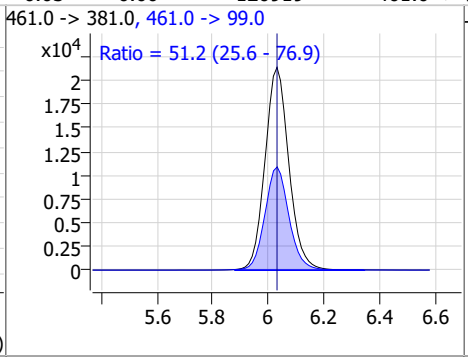


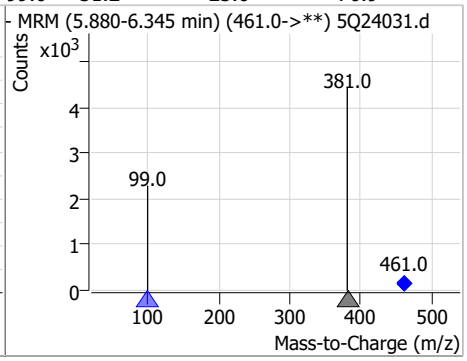




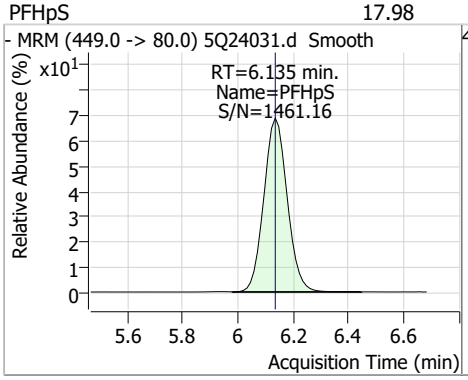
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS	18.13	6.03	0.00	126919	461.0 -> 99.0	51.2	25.6	76.9

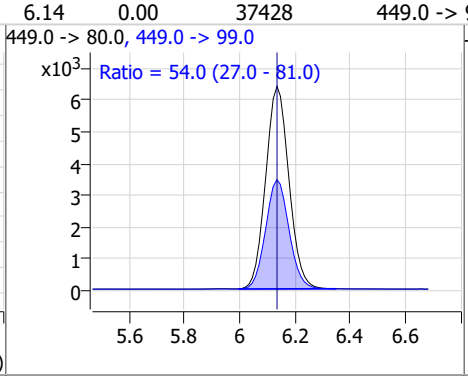


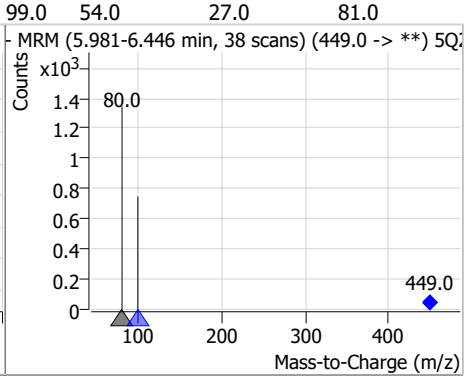




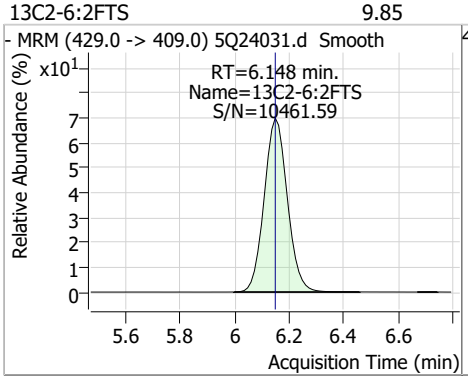
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	17.98	6.14	0.00	37428	449.0 -> 99.0	54.0	27.0	81.0

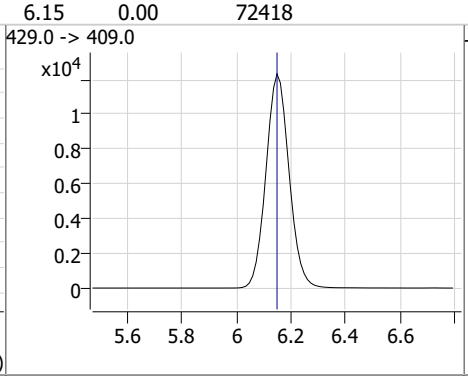


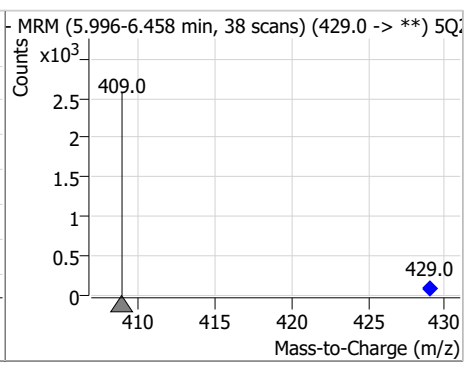




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	9.85	6.15	0.00	72418				

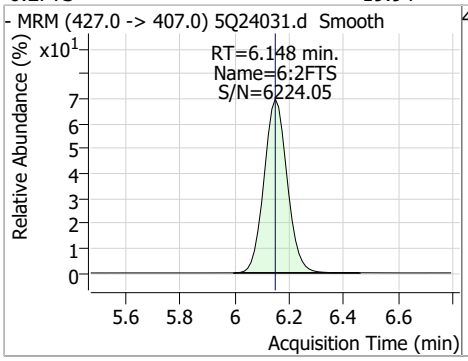


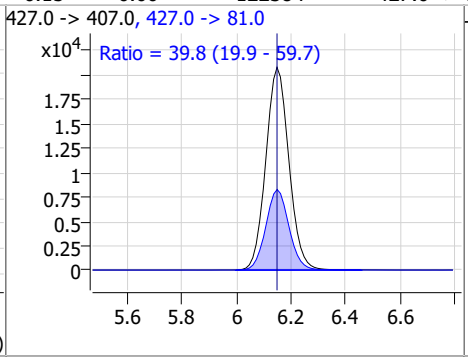


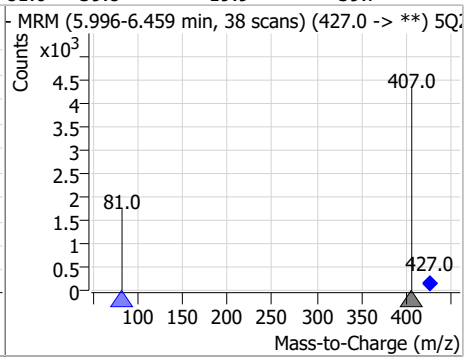


Perfluorinated Compounds by LC/MS/MS

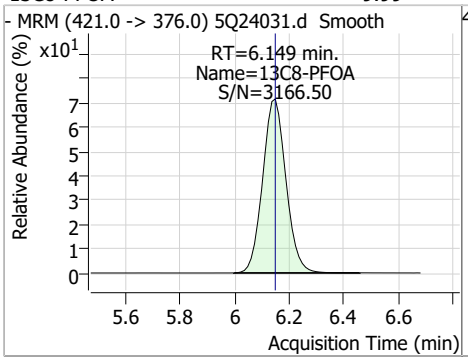
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	19.94	6.15	0.00	122384	427.0 -> 81.0	39.8	19.9	59.7

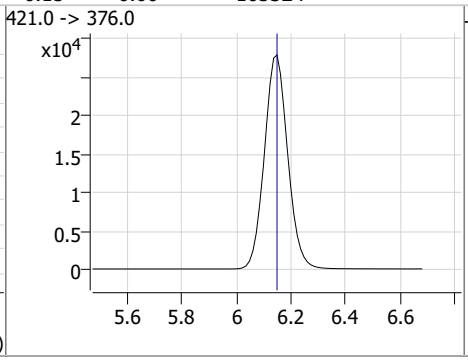


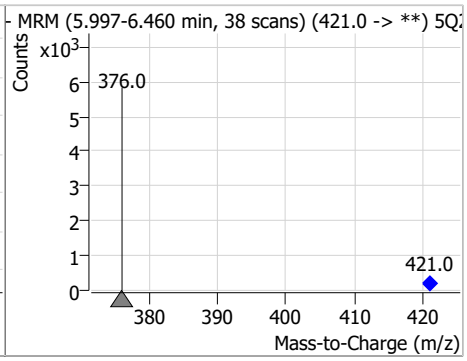




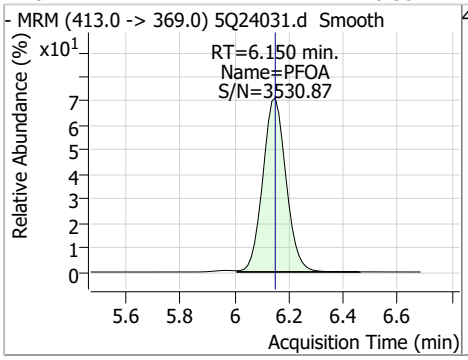
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	9.99	6.15	0.00	165324				

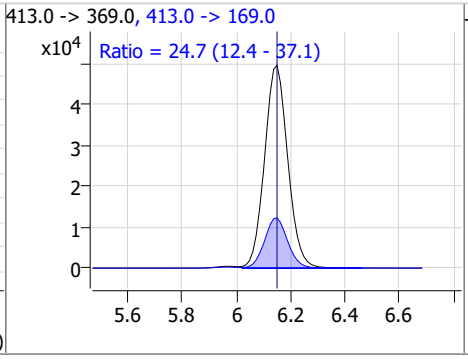


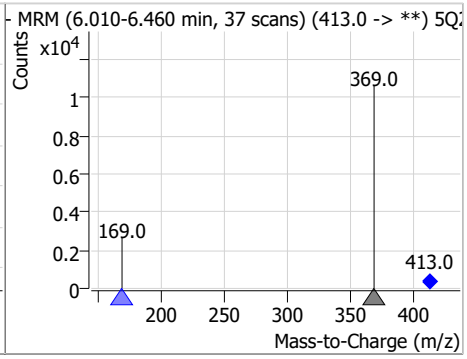




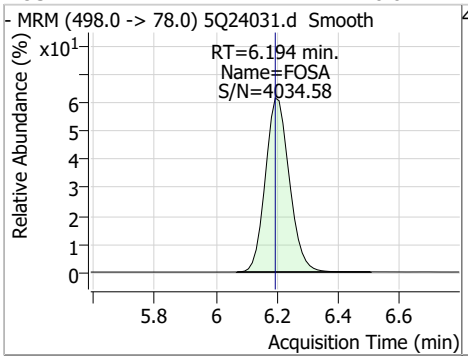
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	18.56	6.15	0.00	293002	413.0 -> 169.0	24.7	12.4	37.1

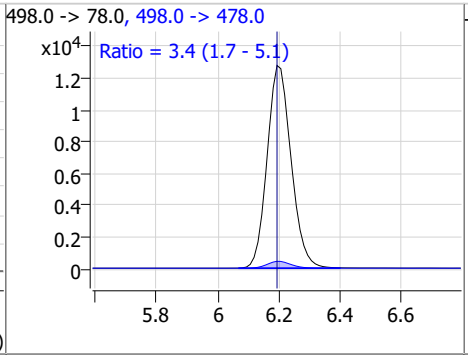


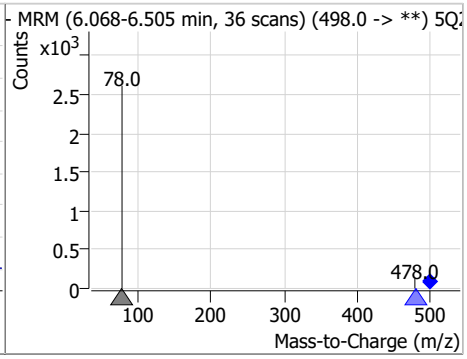




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	18.82	6.19	0.00	69209	498.0 -> 478.0	3.4	1.7	5.1

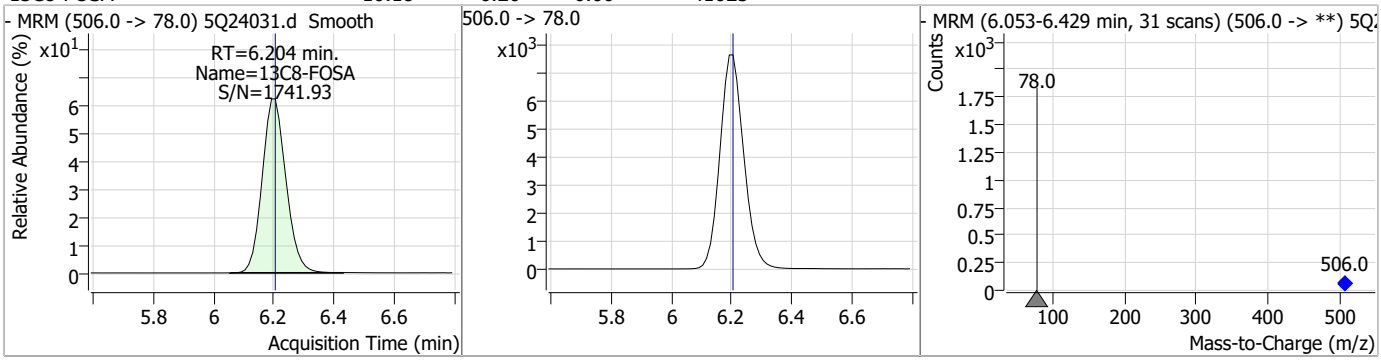




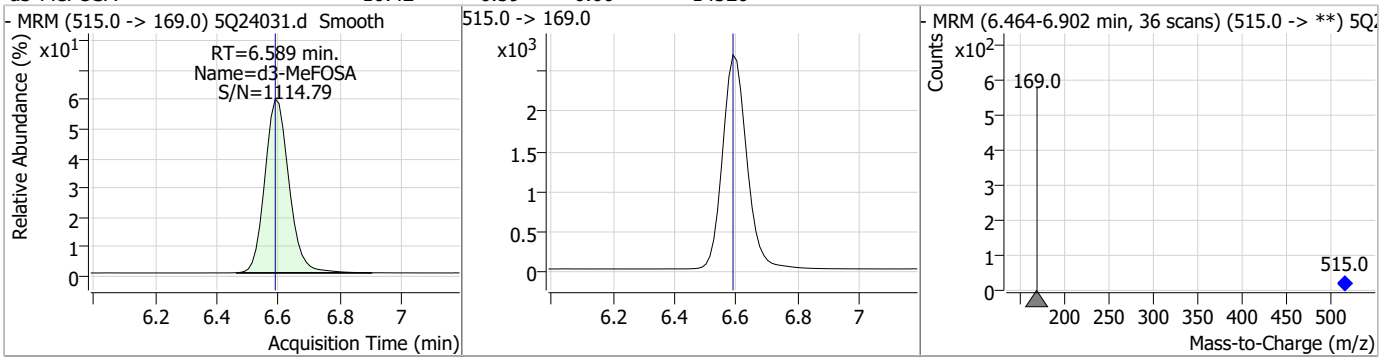


Perfluorinated Compounds by LC/MS/MS

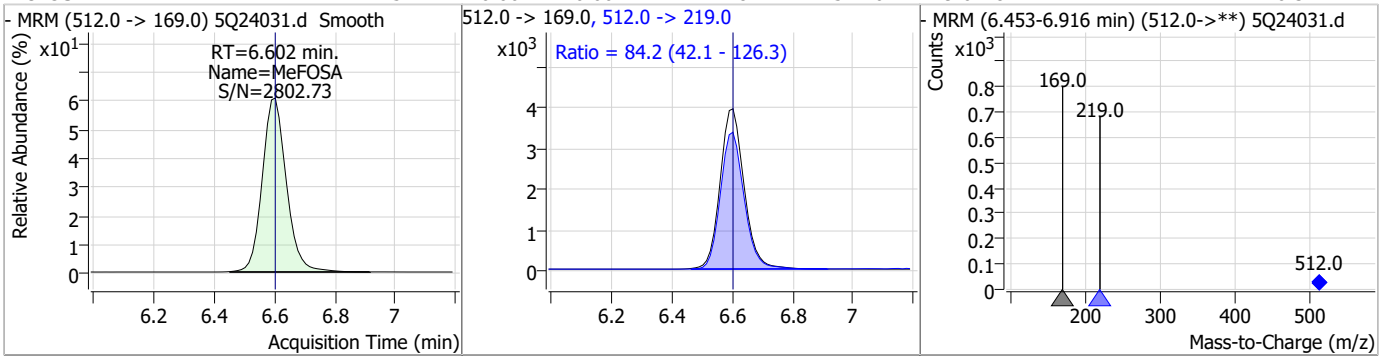
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	10.18	6.20	0.00	41625				



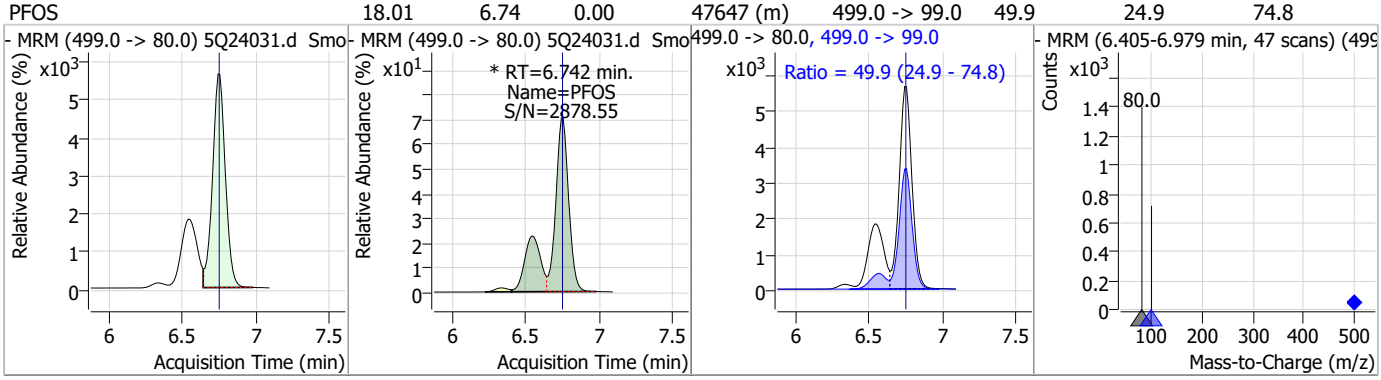
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	10.42	6.59	0.00	14520				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	17.54	6.60	0.00	21748	512.0 -> 219.0	84.2	42.1	126.3

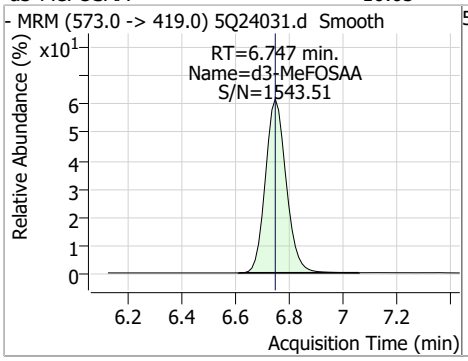


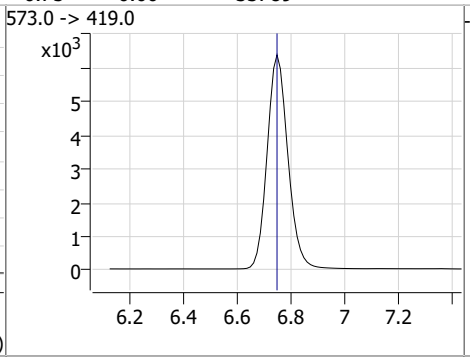
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	18.01	6.74	0.00	47647 (m)	499.0 -> 99.0	49.9	24.9	74.8

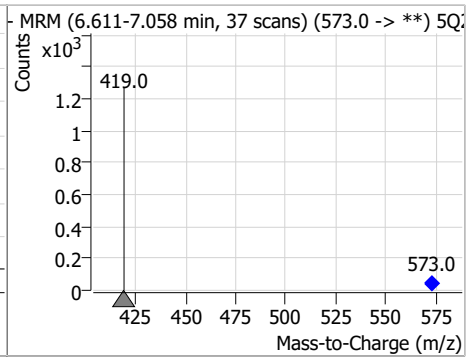


Perfluorinated Compounds by LC/MS/MS

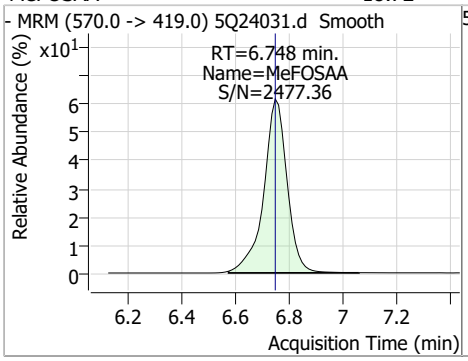
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	10.05	6.75	0.00	33789				

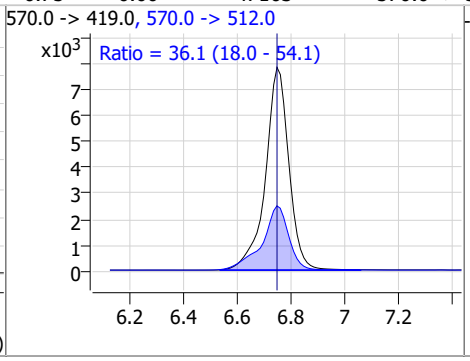


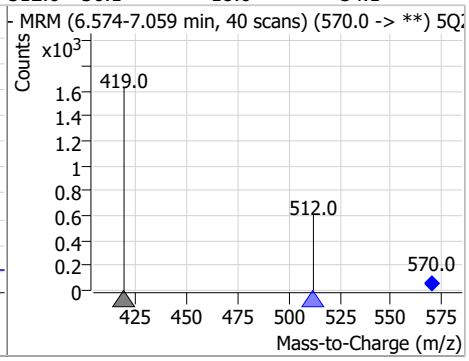




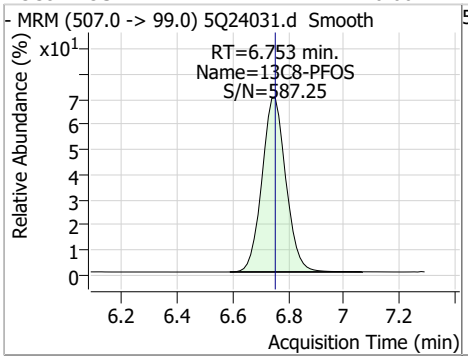
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	18.72	6.75	0.00	47163	570.0 -> 512.0	36.1	18.0	54.1

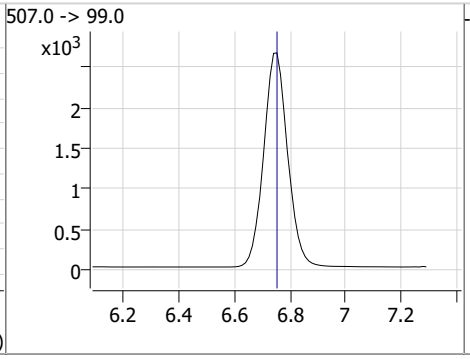


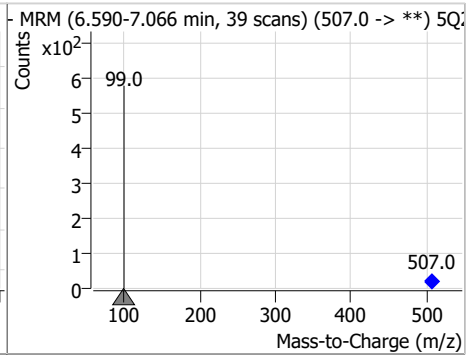




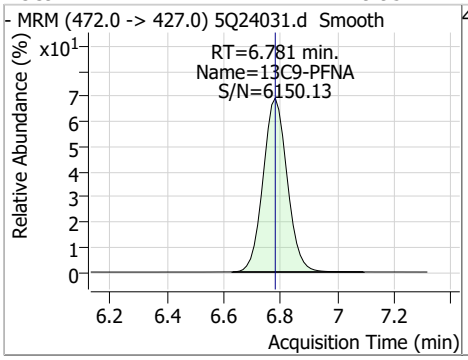
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	10.00	6.75	0.00	15747				

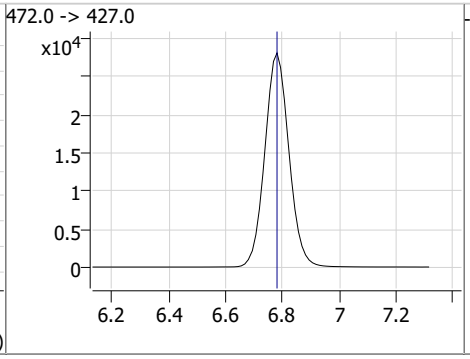


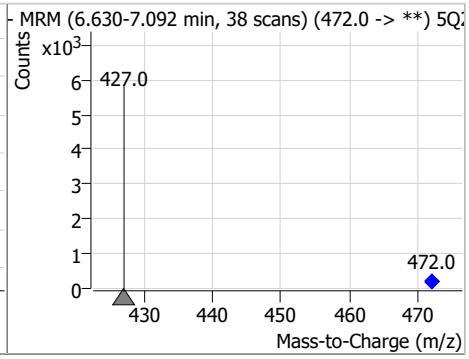




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	9.95	6.78	0.00	164974				

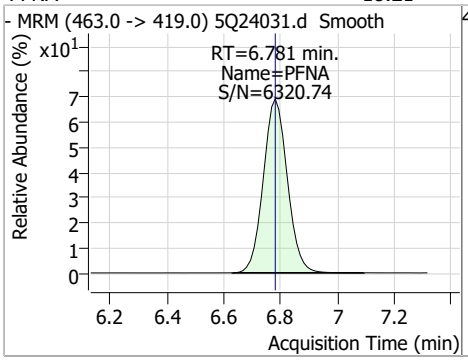


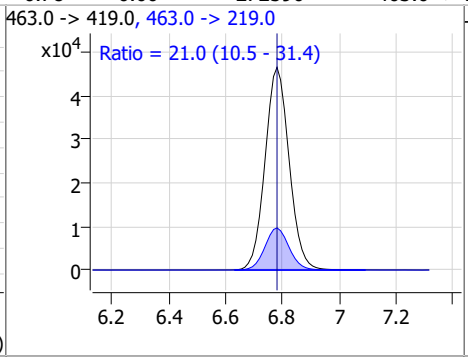


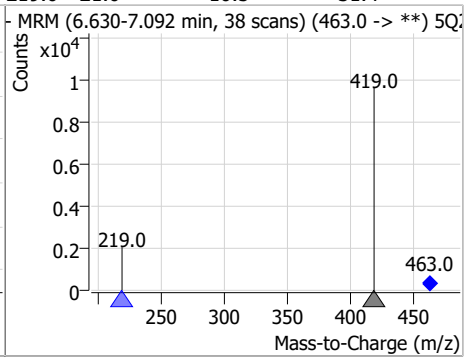


Perfluorinated Compounds by LC/MS/MS

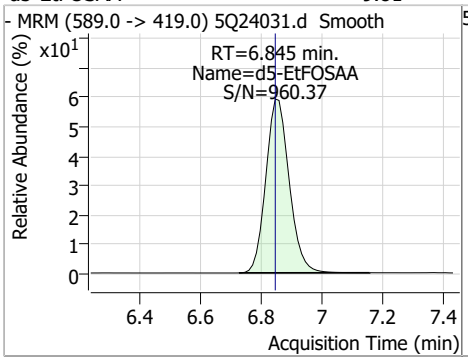
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	18.21	6.78	0.00	272590	463.0 -> 219.0	21.0	10.5	31.4

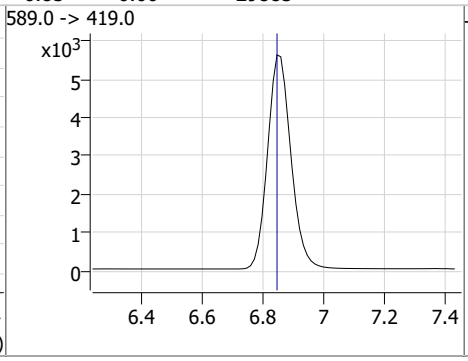


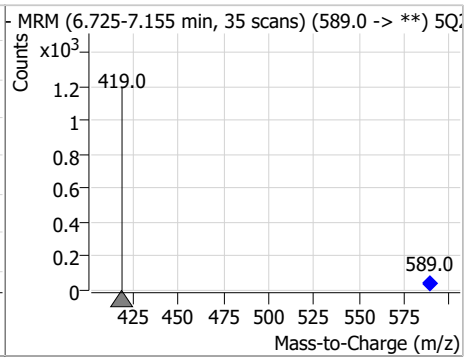




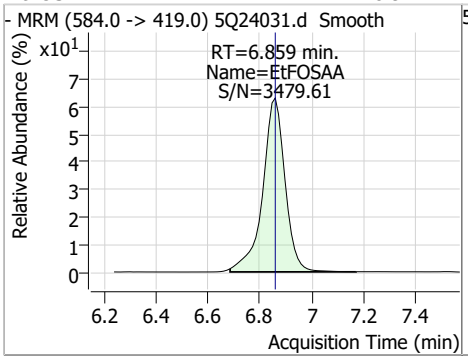
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	9.81	6.85	0.00	29885				

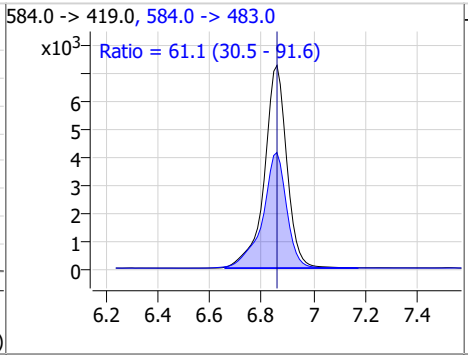


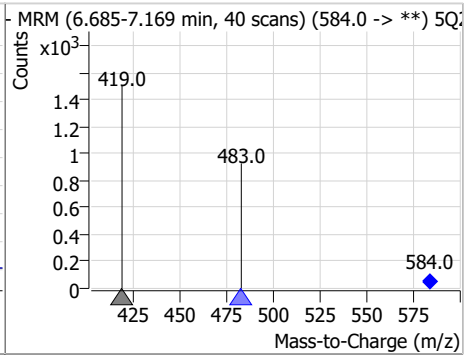




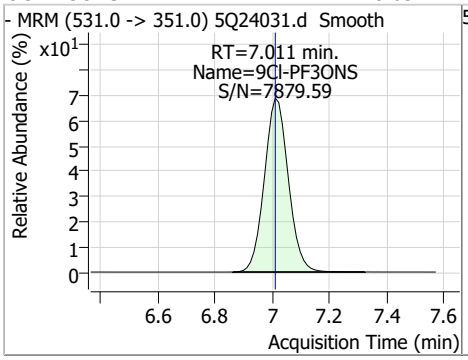
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	18.91	6.86	0.00	43235	584.0 -> 483.0	61.1	30.5	91.6

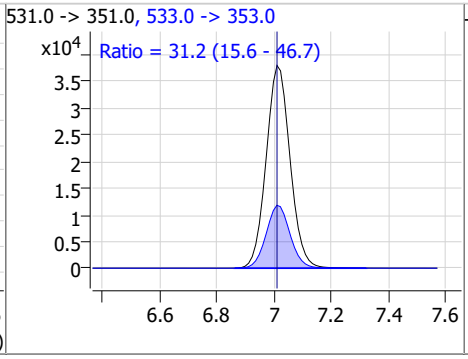


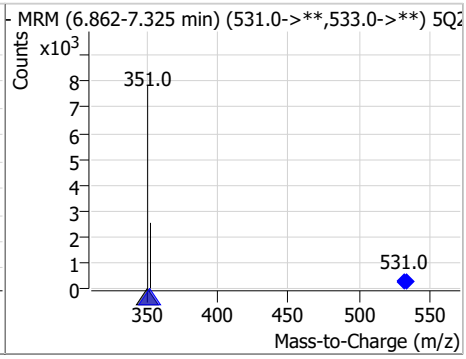




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	18.63	7.01	0.00	220550	533.0 -> 353.0	31.2	15.6	46.7

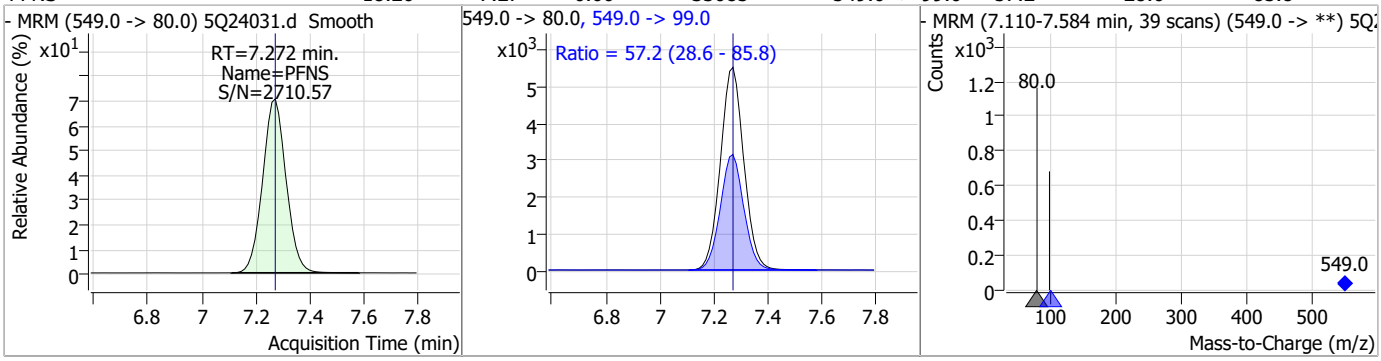




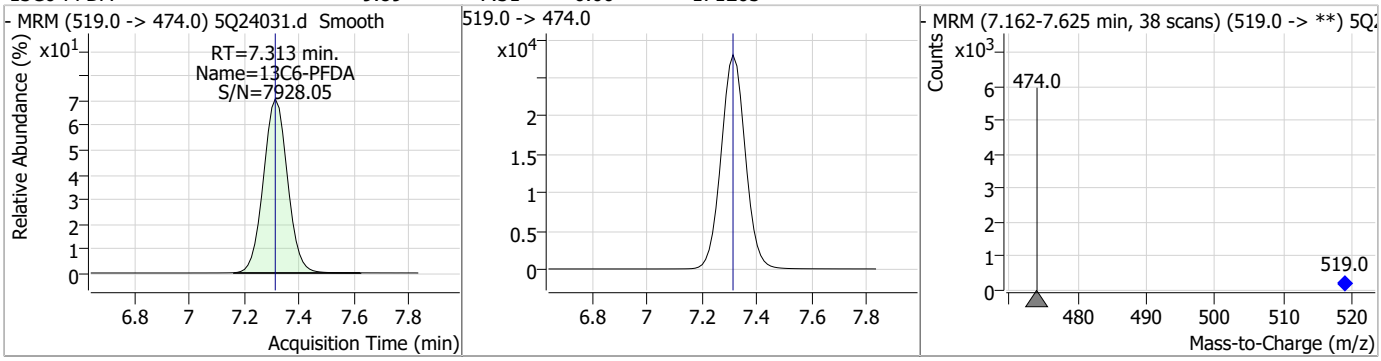


Perfluorinated Compounds by LC/MS/MS

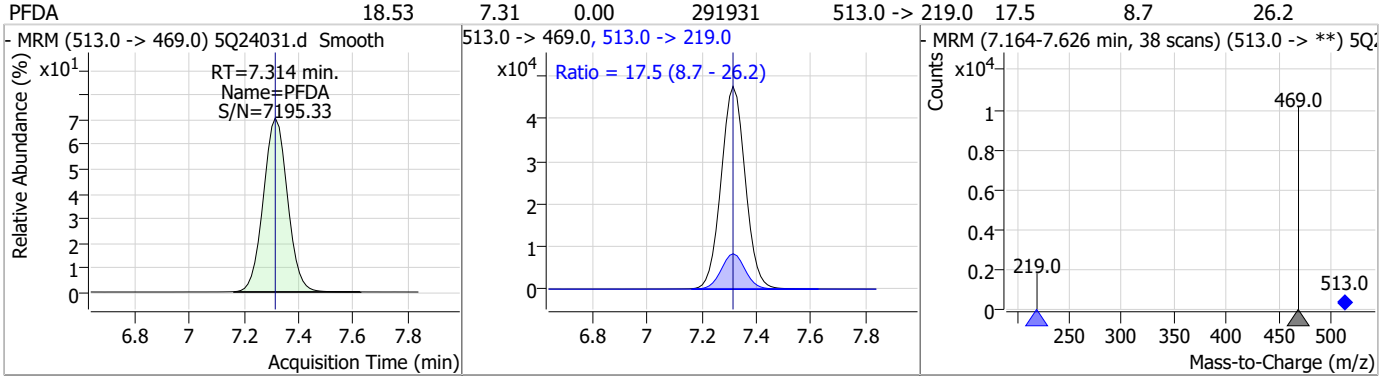
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	18.26	7.27	0.00	33085	549.0 -> 99.0	57.2	28.6	85.8



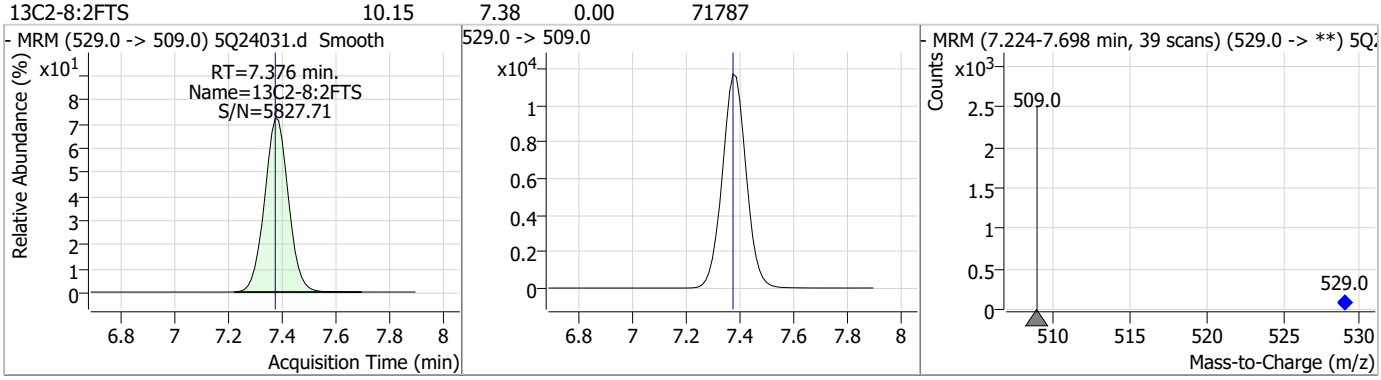
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	9.89	7.31	0.00	171265				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	18.53	7.31	0.00	291931	513.0 -> 219.0	17.5	8.7	26.2

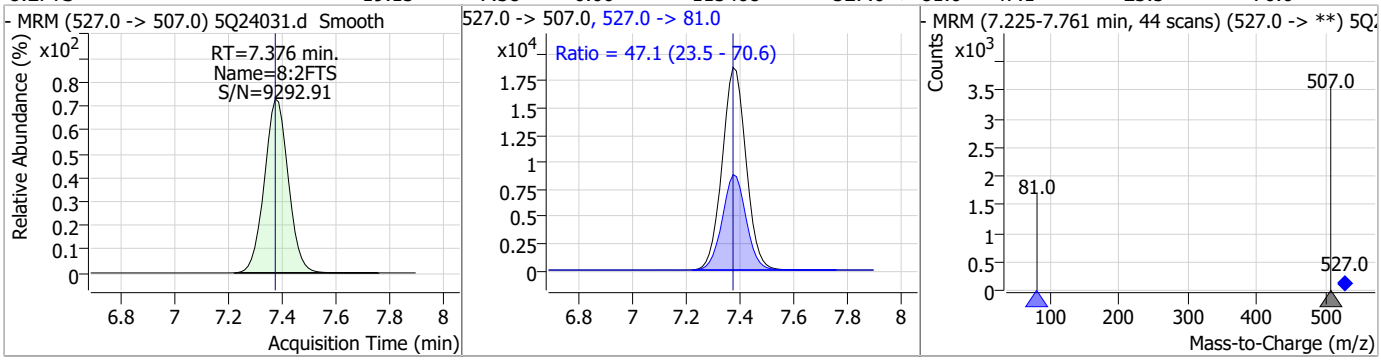


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	10.15	7.38	0.00	71787				

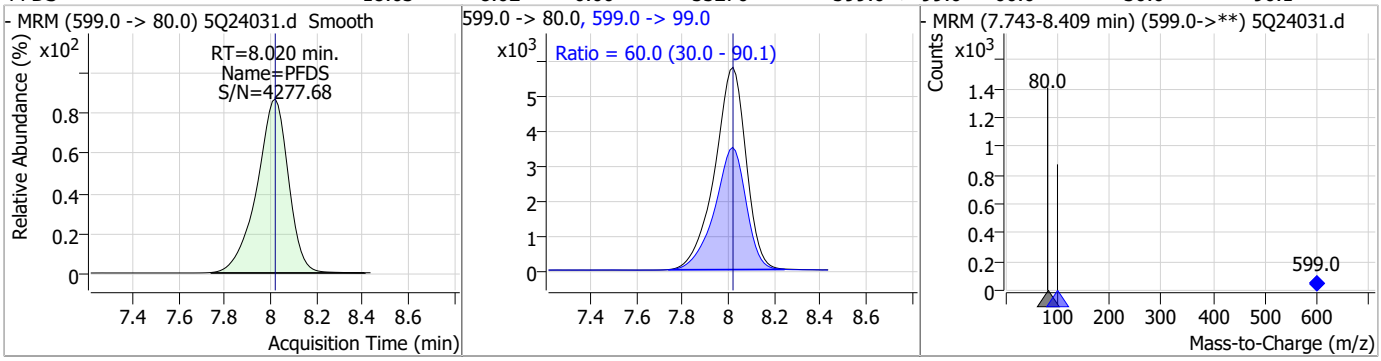


Perfluorinated Compounds by LC/MS/MS

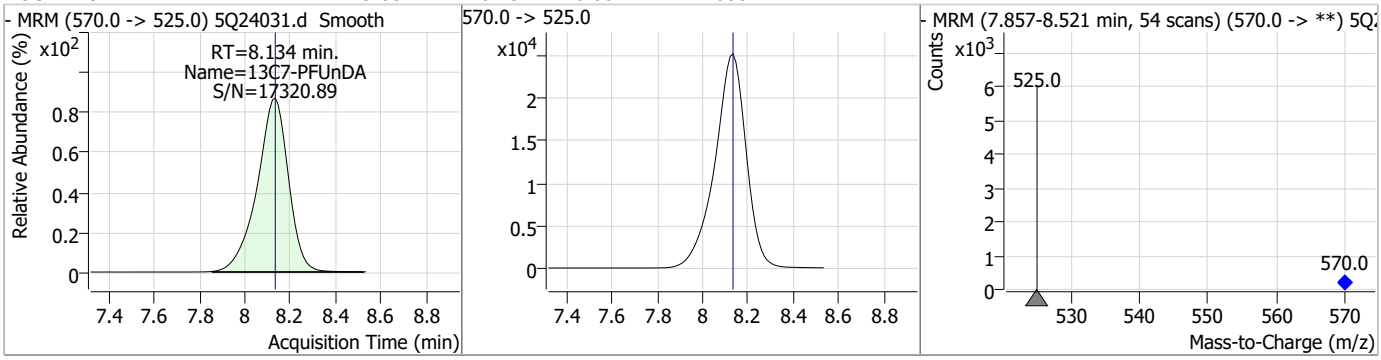
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	19.15	7.38	0.00	115468	527.0 -> 81.0	47.1	23.5	70.6



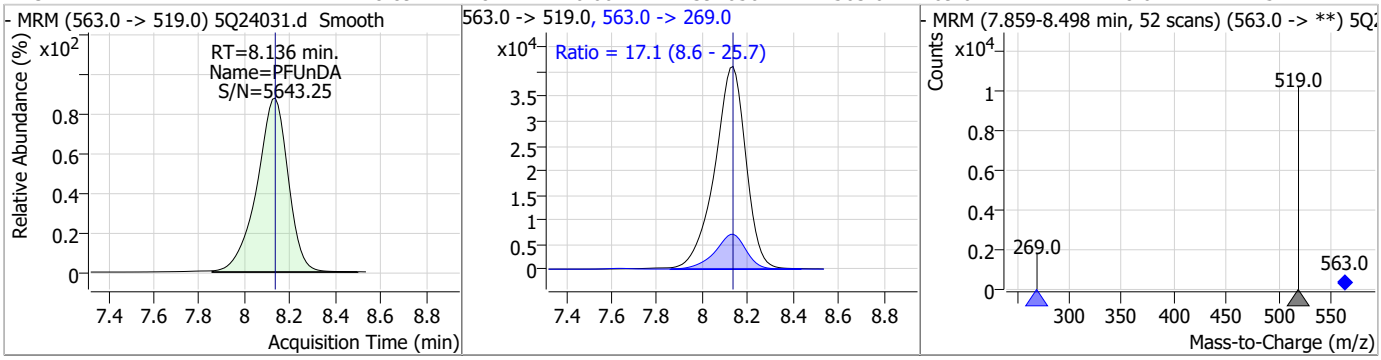
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	18.63	8.02	0.00	55270	599.0 -> 99.0	60.0	30.0	90.1



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	9.85	8.13	0.00	240554				

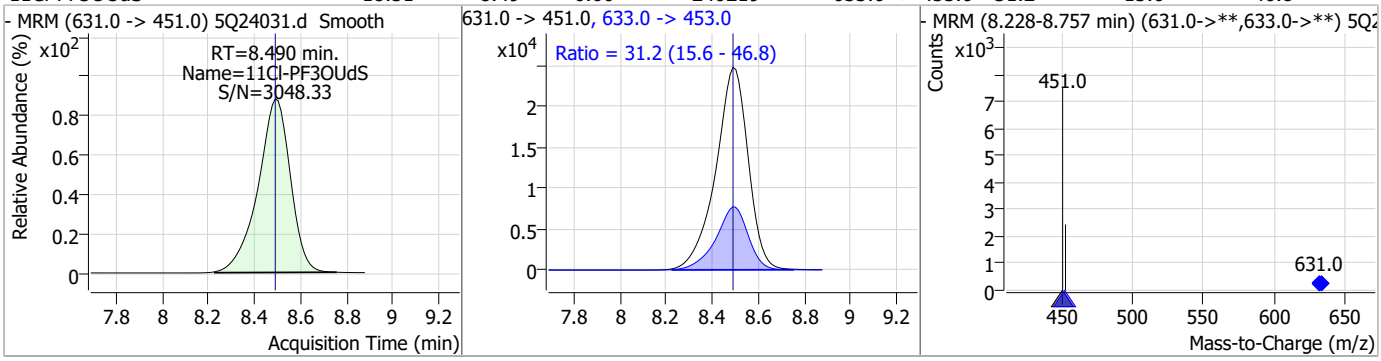


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	18.89	8.14	0.00	394050	563.0 -> 269.0	17.1	8.6	25.7

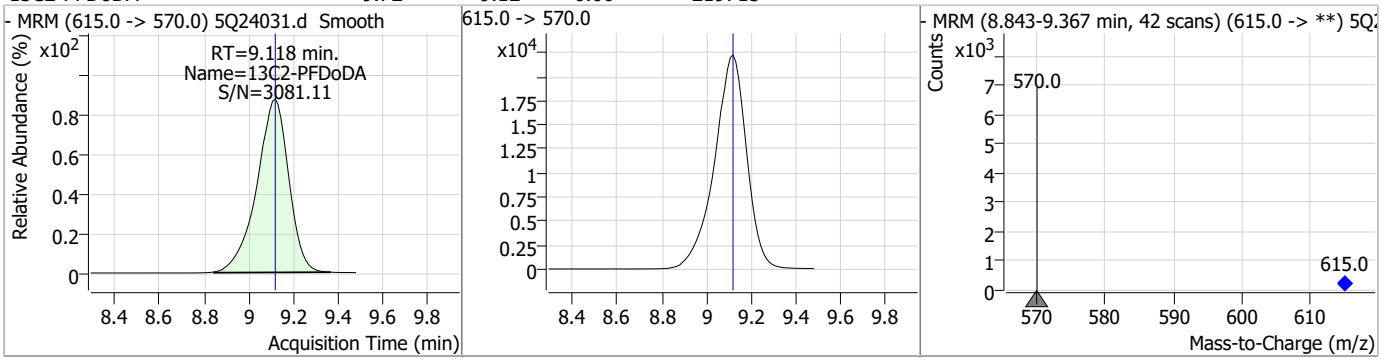


Perfluorinated Compounds by LC/MS/MS

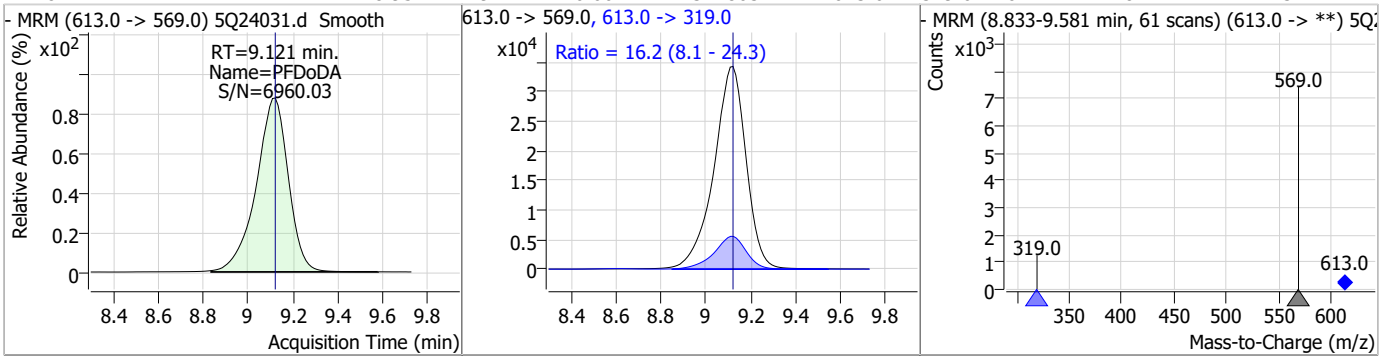
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	18.51	8.49	0.00	240219	633.0 -> 453.0	31.2	15.6	46.8



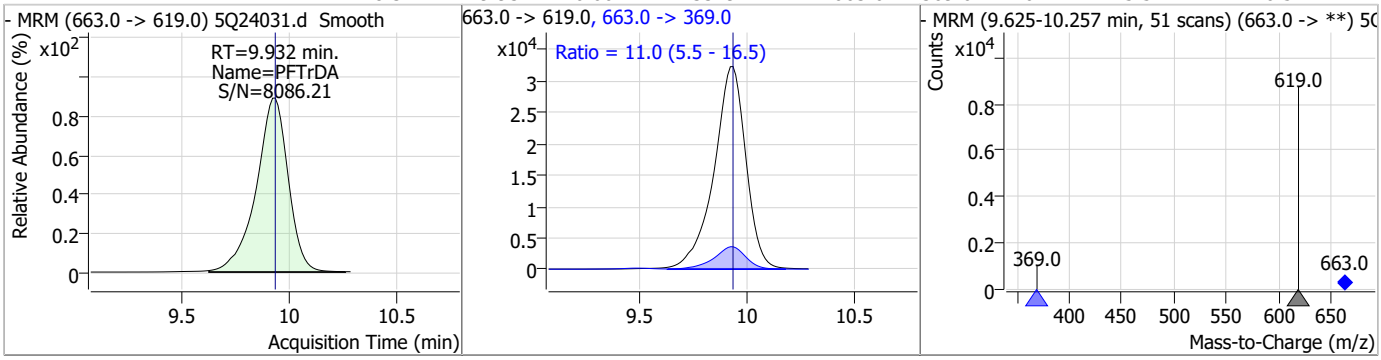
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	9.72	9.12	0.00	219715				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	18.95	9.12	0.00	342803	613.0 -> 319.0	16.2	8.1	24.3

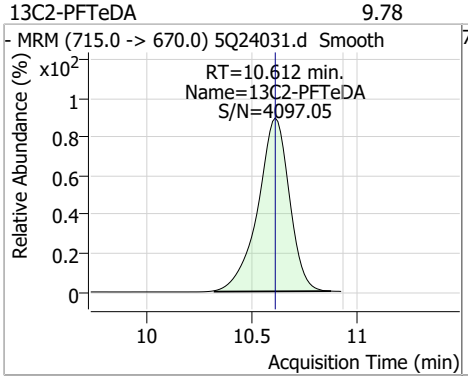


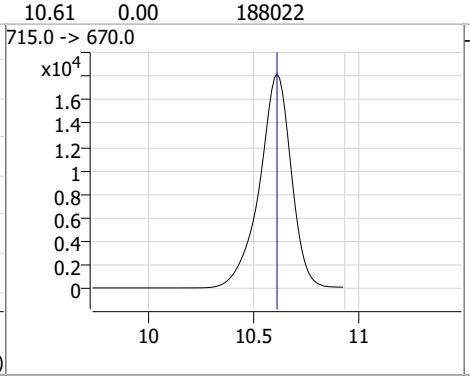
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	18.34	9.93	0.00	332971	663.0 -> 369.0	11.0	5.5	16.5

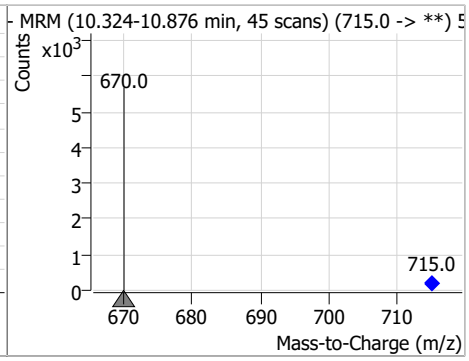


Perfluorinated Compounds by LC/MS/MS

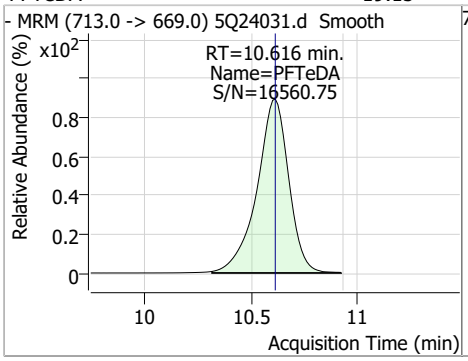
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	9.78	10.61	0.00	188022				

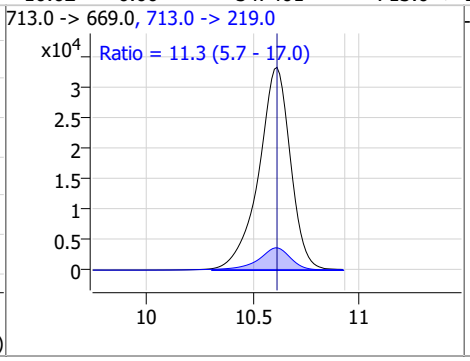


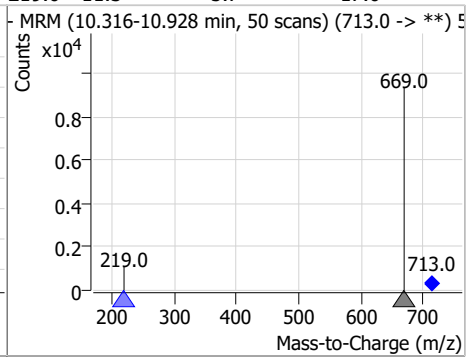




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	19.15	10.62	0.00	347461	713.0 -> 219.0	11.3	5.7	17.0







9.6.39

6

Manual Integration Approval Summary

Sample Number: S5Q377-ICC377
Lab FileID: 5Q24031.D
Injection Time: 01/02/24 18:28
Method: EPA 537M QSM5.3 B-15
Analyst approved: 01/03/24 16:03 Lindsay Ritner
Supervisor approved: 01/04/24 12:54 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.45	Split peak
Perfluorooctanesulfonic acid	1763-23-1		6.74	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Natasha Gumtie 01/04/24 12:54

Perfluorinated Compounds by LC/MS/MS

Data File : 5Q24032.d
Operator : lindsayr
Acq. Method : 537_ID.m
Acq. Date-Time : 1/2/2024 6:44:53 PM
Sample Name : ic377-50
Vial : P1-A8
DA Method File : ID_010224_S5Q377.quantmethod.xml
Batch Name : s5q377.batch.bin
Sample Information : OP401,S5Q377,250,,,1.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.987	217.0 -> 172.0	42161	10.00	µg/L	0.000
M5-PFPeA	3.432	268.0 -> 223.0	70887	10.00	µg/L	0.000
M5-PFHxA	4.565	318.0 -> 273.0	110802	10.00	µg/L	0.000
M4-PFHpA	5.425	367.0 -> 322.0	113265	10.00	µg/L	0.000
M8-PFOA	6.137	421.0 -> 376.0	160904	10.00	µg/L	-0.012
M9-PFNA	6.781	472.0 -> 427.0	156909	10.00	µg/L	0.000
M6-PFDA	7.314	519.0 -> 474.0	159639	10.00	µg/L	0.000
M7-PFUnDA	8.121	570.0 -> 525.0	230204	10.00	µg/L	-0.012
M2-PFDoDA	9.106	615.0 -> 570.0	216807	10.00	µg/L	-0.012
M2-PFTeDA	10.599	715.0 -> 670.0	187303	10.00	µg/L	-0.012
M8-FOSA	6.192	506.0 -> 78.0	38430	10.00	µg/L	-0.012
M3-PFBS	3.637	302.0 -> 99.0	8803	10.00	µg/L	0.000
M3-PFHxS	5.444	402.0 -> 99.0	10692	10.00	µg/L	0.000
M8-PFOS	6.741	507.0 -> 99.0	14557	10.00	µg/L	-0.012
M2-4:2FTS	4.486	329.0 -> 309.0	45305	10.00	µg/L	0.000
M2-6:2FTS	6.148	429.0 -> 409.0	79625	10.00	µg/L	0.000
M2-8:2FTS	7.376	529.0 -> 509.0	80392	10.00	µg/L	0.000
M3-MeFOSAA	6.747	573.0 -> 419.0	31416	10.00	µg/L	0.000
M3-HFPO-DA	4.831	287.0 -> 169.0	5583	10.00	µg/L	0.000
M3-MeFOSA	6.589	515.0 -> 169.0	13423	10.00	µg/L	0.000
M5-EtFOSAA	6.845	589.0 -> 419.0	29081	10.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.486	329.0 -> 309.0	45305	11.59	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 115.9%		
13C2-6:2FTS	6.148	429.0 -> 409.0	79625	10.83	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 108.3%		
13C2-8:2FTS	7.376	529.0 -> 509.0	80392	11.36	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 113.6%		
13C2-PFDoDA	9.106	615.0 -> 570.0	216807	9.59	µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 95.9%		
13C2-PFTeDA	10.599	715.0 -> 670.0	187303	9.75	µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 97.5%		
13C3-PFBS	3.637	302.0 -> 99.0	8803	9.54	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 95.4%		
13C3-PFHxS	5.444	402.0 -> 99.0	10692	9.46	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 94.6%		
13C4-PFBA	1.987	217.0 -> 172.0	42161	9.56	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 95.6%		
13C4-PFHpA	5.425	367.0 -> 322.0	113265	9.59	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 95.9%		
13C5-PFHxA	4.565	318.0 -> 273.0	110802	9.65	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 96.5%		
13C5-PFPeA	3.432	268.0 -> 223.0	70887	9.54	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 95.4%		
13C6-PFDA	7.314	519.0 -> 474.0	159639	9.22	µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

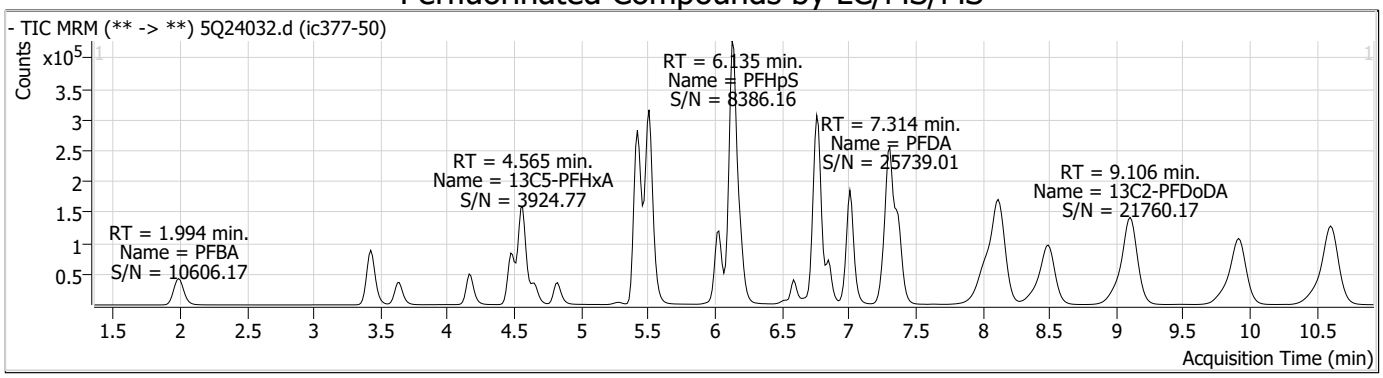
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 92.2%			
13C7-PFUnDA	8.121	570.0 -> 525.0	230204	9.43	µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 94.3%			
13C8-FOSA	6.192	506.0 -> 78.0	38430	9.40	µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 94.0%			
13C8-PFOA	6.137	421.0 -> 376.0	160904	9.72	µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 97.2%			
13C8-PFOS	6.741	507.0 -> 99.0	14557	9.24	µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 92.4%			
13C9-PFNA	6.781	472.0 -> 427.0	156909	9.47	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 94.7%			
d3-MeFOSAA	6.747	573.0 -> 419.0	31416	9.34	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 93.4%			
13C3-HFPO-DA	4.831	287.0 -> 169.0	5583	9.35	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 93.5%			
d3-MeFOSA	6.589	515.0 -> 169.0	13423	9.64	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 96.4%			
d5-EtFOSAA	6.845	589.0 -> 419.0	29081	9.54	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 95.4%			
Target Compounds							QValue
4:2FTS	4.475	327.0 -> 307.0	193721	44.95	µg/L		100
		327.0 -> 81.0	108690				
6:2FTS	6.148	427.0 -> 407.0	318399	47.19	µg/L		99
		427.0 -> 81.0	127731				
8:2FTS	7.376	527.0 -> 507.0	307454	45.54	µg/L		100
		527.0 -> 81.0	143959				
EtFOSAA	6.859	584.0 -> 419.0	114762	51.57	µg/L		100
		584.0 -> 483.0	69950				
FOSA	6.194	498.0 -> 78.0	167759	49.42	µg/L		100
		498.0 -> 478.0	5829				
MeFOSAA	6.748	570.0 -> 419.0	118128	50.44	µg/L		97
		570.0 -> 512.0	44385				
PFBA	1.994	213.0 -> 169.0	187939	49.63	µg/L		100
PFBS	3.640	299.0 -> 80.0	105577	48.93	µg/L		99
		299.0 -> 99.0	46224				
PFDA	7.314	513.0 -> 469.0	740624	50.44	µg/L		100
		513.0 -> 219.0	130751				
PFDoDA	9.108	613.0 -> 569.0	901181	50.49	µg/L		100
		613.0 -> 319.0	145777				
PFDS	8.007	599.0 -> 80.0	142974	50.36	µg/L		99
		599.0 -> 99.0	87147				
PFHpA	5.426	363.0 -> 319.0	624985	50.15	µg/L		100
		363.0 -> 169.0	132035				
PFHpS	6.135	449.0 -> 80.0	100784	52.37	µg/L		100
		449.0 -> 99.0	54278				
PFHxA	4.565	313.0 -> 269.0	518805	50.25	µg/L		100
		313.0 -> 119.0	21404				
PFHxS	5.446	399.0 -> 80.0	97395	50.81	µg/L	m	99
		399.0 -> 99.0	54815				
PFNA	6.781	463.0 -> 419.0	707116	49.67	µg/L		100
		463.0 -> 219.0	149879				
PFNS	7.260	549.0 -> 80.0	84420	50.41	µg/L		96
		549.0 -> 99.0	50657				
PFOA	6.137	413.0 -> 369.0	763558	49.70	µg/L		99
		413.0 -> 169.0	192490				
PFOS	6.742	499.0 -> 80.0	124672	50.97	µg/L	m	98

Perfluorinated Compounds by LC/MS/MS

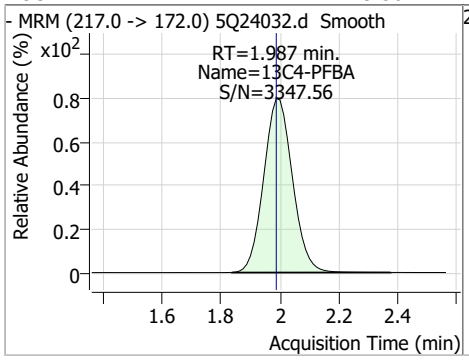
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		499.0 -> 99.0	60429			
PFPeA	3.434	263.0 -> 219.0	334214	50.01	µg/L	100
PFPeS	4.648	349.0 -> 80.0	76208	50.85	µg/L	99
		349.0 -> 99.0	39350			
PFTeDA	10.603	713.0 -> 669.0	922300	51.02	µg/L	100
		713.0 -> 219.0	103603			
PFTrDA	9.920	663.0 -> 619.0	891825	49.78	µg/L	100
		663.0 -> 369.0	99021			
PFUnDA	8.123	563.0 -> 519.0	996072	49.90	µg/L	99
		563.0 -> 269.0	174603			
11Cl-PF3OUdS	8.490	631.0 -> 451.0	632729	49.40	µg/L	99
		633.0 -> 453.0	199825			
9Cl-PF3ONS	7.011	531.0 -> 351.0	558337	50.59	µg/L	98
		533.0 -> 353.0	180070			
ADONA	5.514	377.0 -> 251.0	904004	51.35	µg/L	100
		377.0 -> 85.0	323835			
HFPO-DA	4.827	329.0 -> 169.0	115215	50.76	µg/L	99
		285.0 -> 169.0	25727			
MeFOSA	6.590	512.0 -> 169.0	54973	47.96	µg/L	96
		512.0 -> 219.0	44333			
4-PFECHS	6.032	461.0 -> 381.0	329570	48.38	µg/L	99
		461.0 -> 99.0	170545			
FBSA	4.170	298.0 -> 78.0	181902	49.65	µg/L	100
		298.0 -> 64.0	17414			
FHxSA	5.409	398.0 -> 78.0	190583	52.24	µg/L	98
		398.0 -> 64.0	18541			

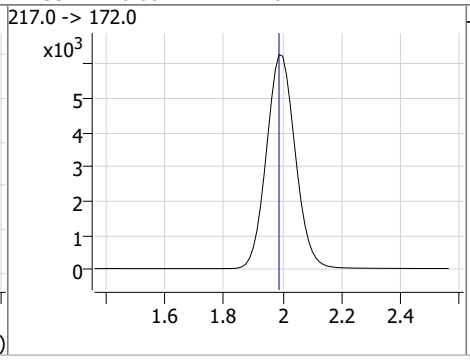
 # = Qualifier out of range, m = manually integrated, + = Area summed

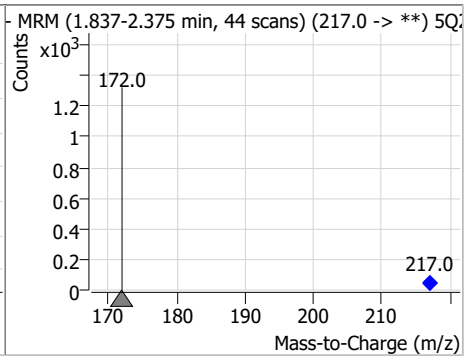
Perfluorinated Compounds by LC/MS/MS



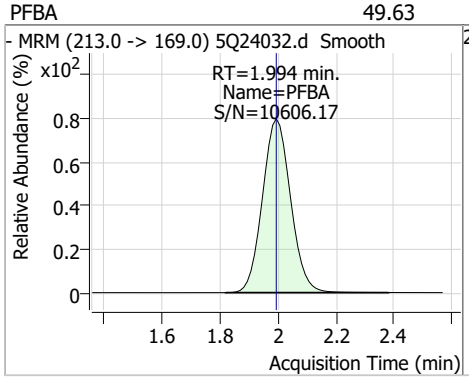
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	9.56	1.99	0.00	42161				

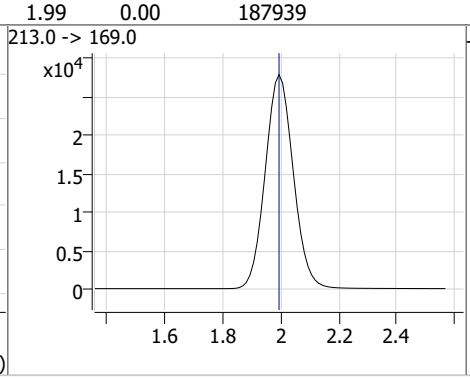


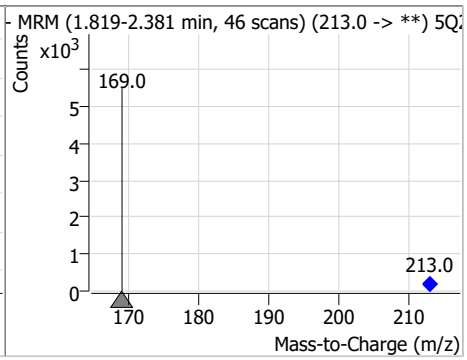




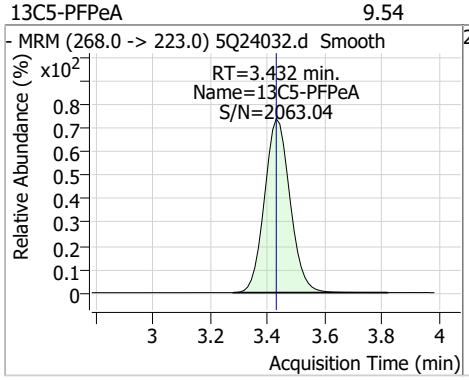
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	49.63	1.99	0.00	187939				

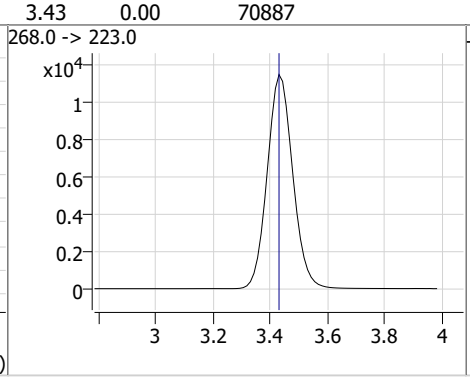


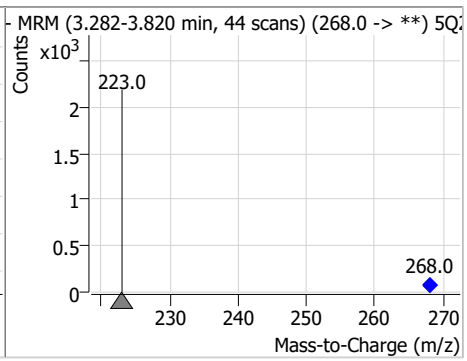




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	9.54	3.43	0.00	70887				

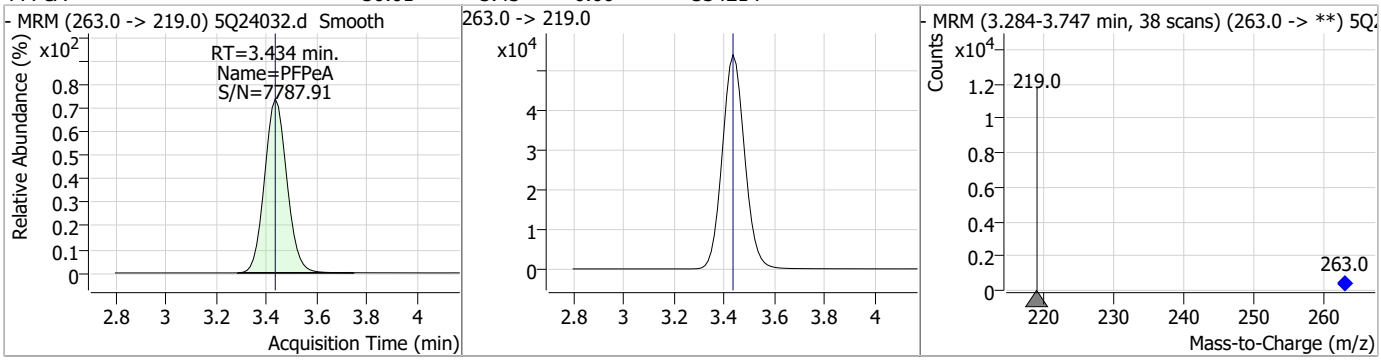




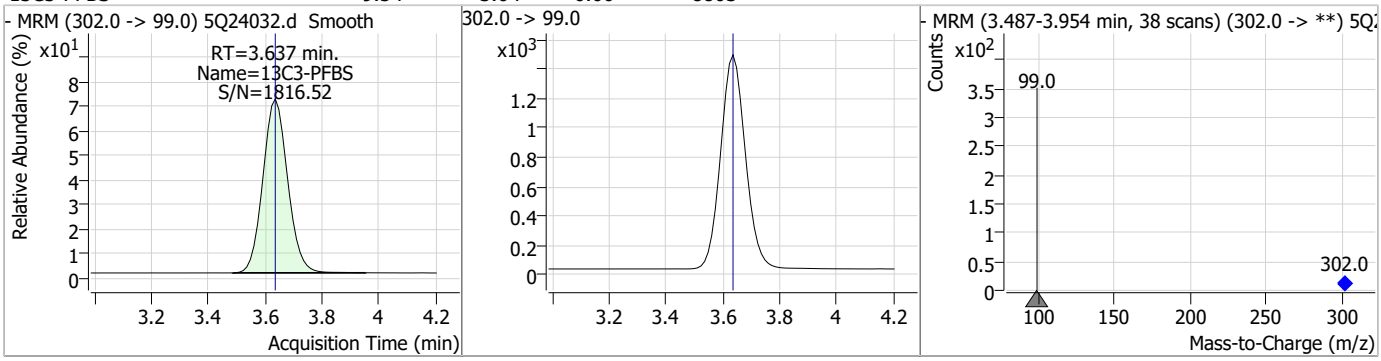


Perfluorinated Compounds by LC/MS/MS

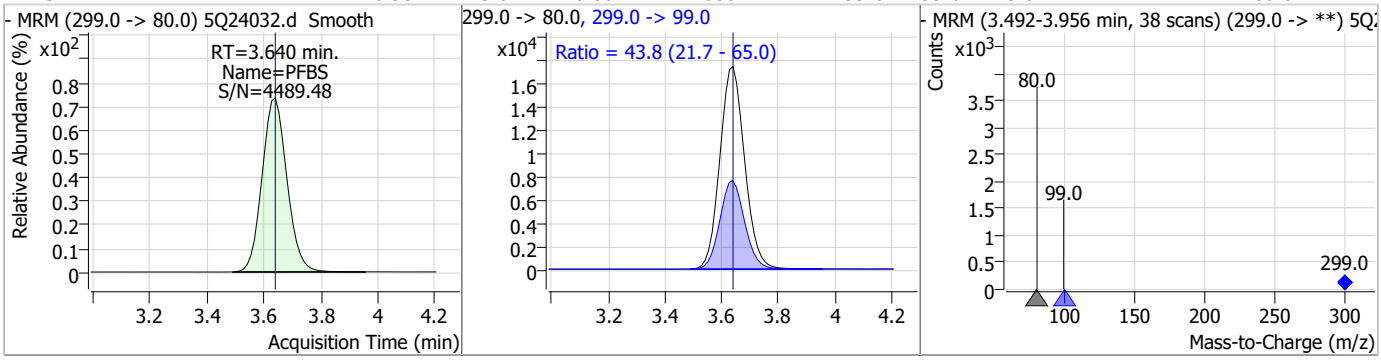
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	50.01	3.43	0.00	334214				



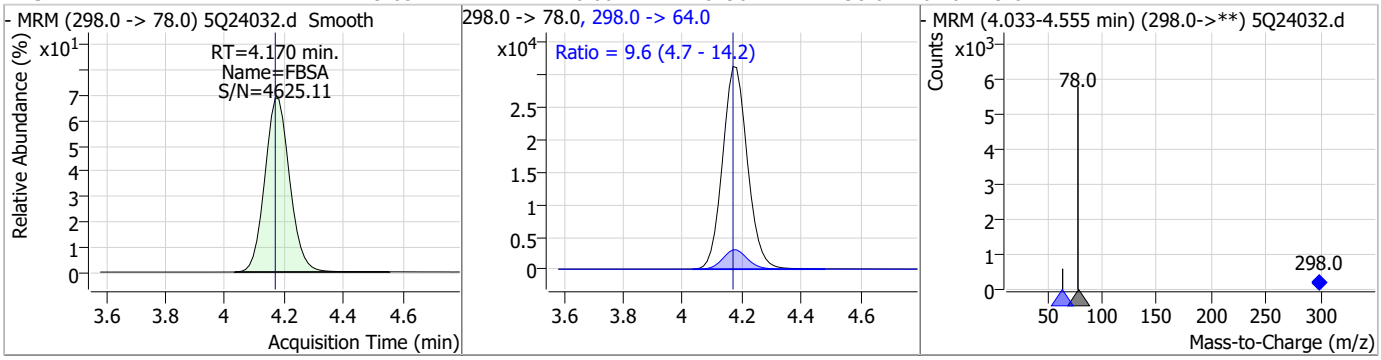
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	9.54	3.64	0.00	8803				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	48.93	3.64	0.00	105577	299.0 -> 99.0	43.8	21.7	65.0

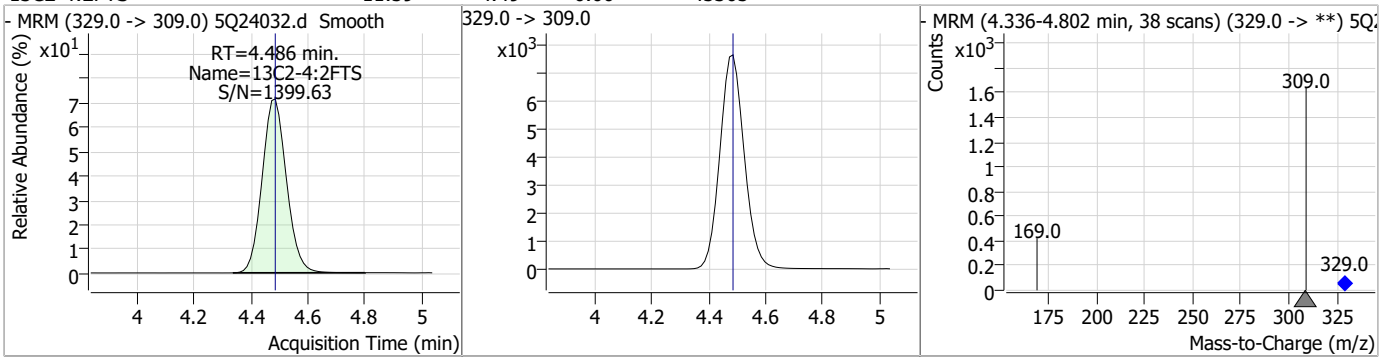


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	49.65	4.17	0.00	181902	298.0 -> 64.0	9.6	4.7	14.2

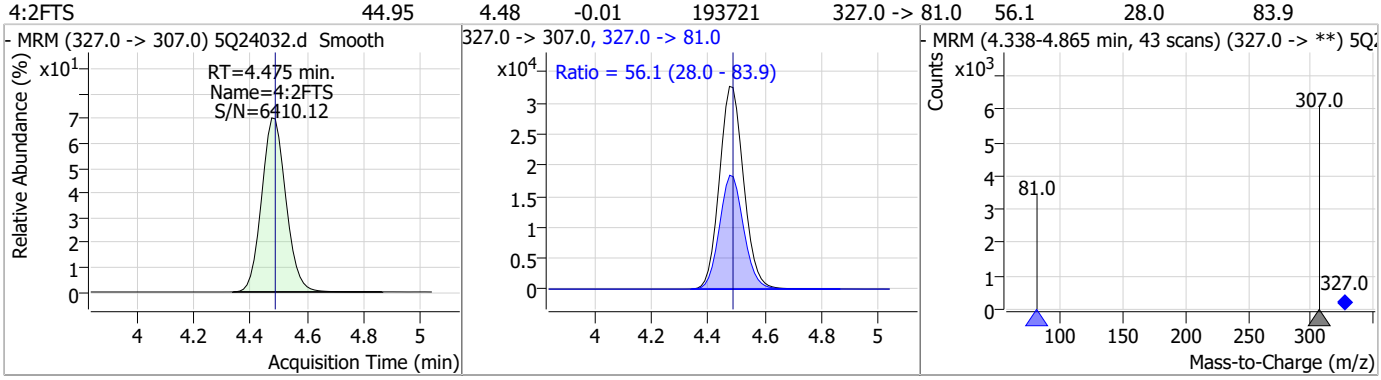


Perfluorinated Compounds by LC/MS/MS

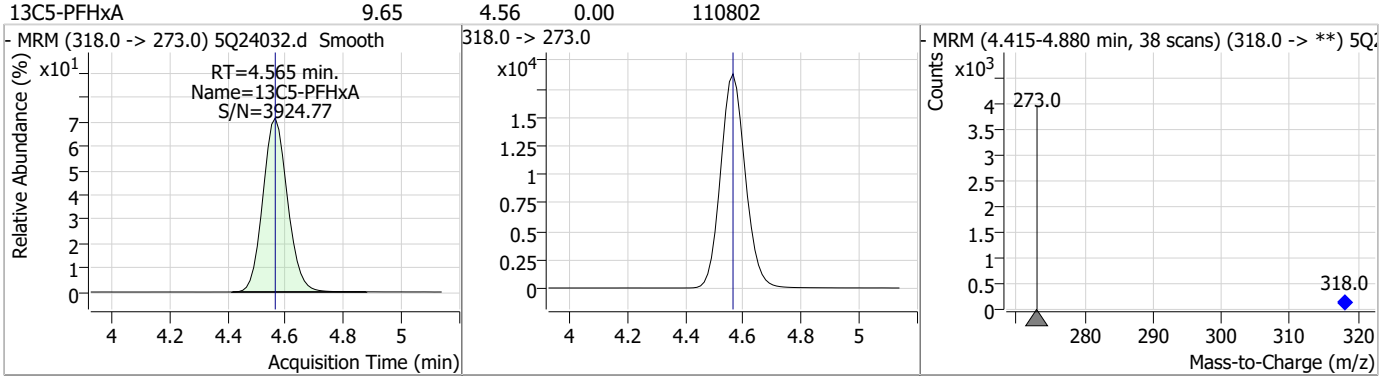
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	11.59	4.49	0.00	45305				



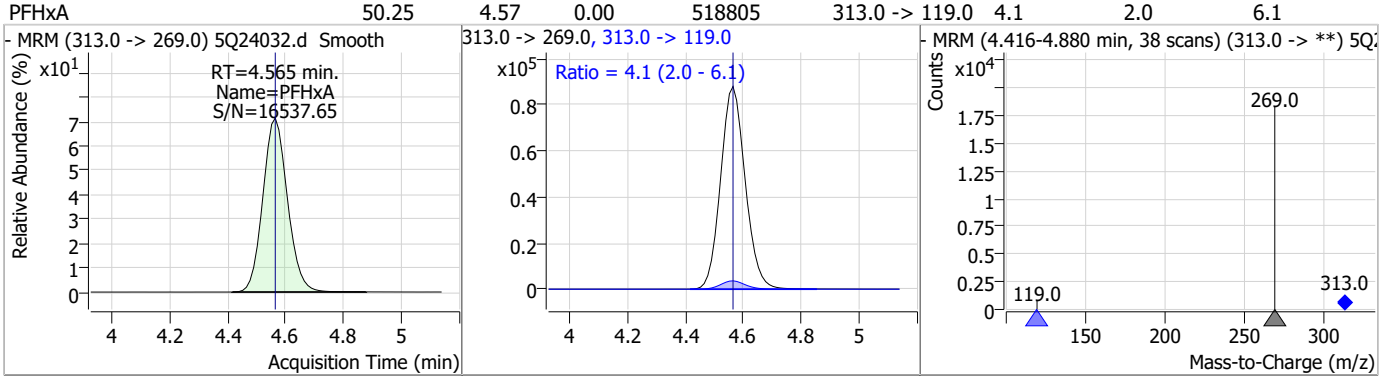
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	44.95	4.48	-0.01	193721	327.0 -> 81.0	56.1	28.0	83.9



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	9.65	4.56	0.00	110802				

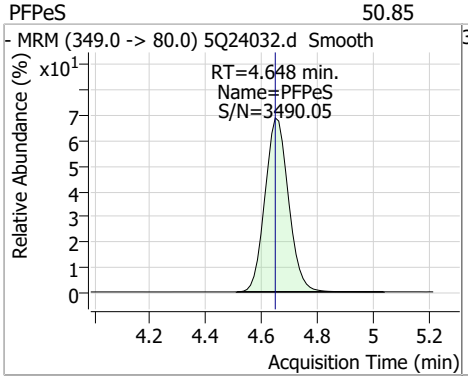


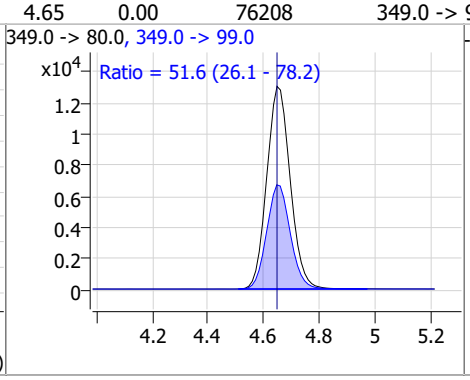
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	50.25	4.57	0.00	518805	313.0 -> 119.0	4.1	2.0	6.1

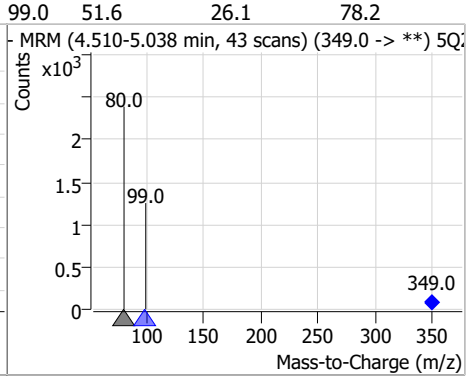


Perfluorinated Compounds by LC/MS/MS

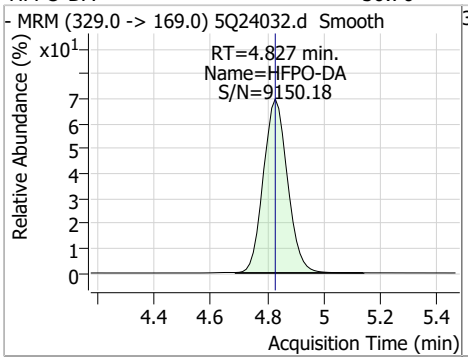
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	50.85	4.65	0.00	76208	349.0 -> 99.0	51.6	26.1	78.2

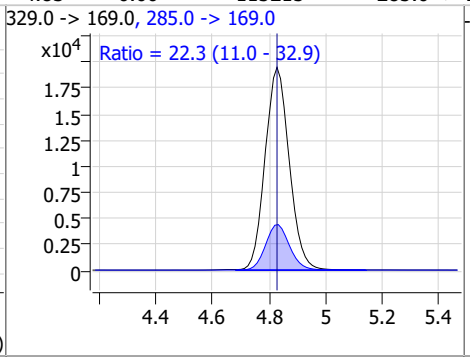


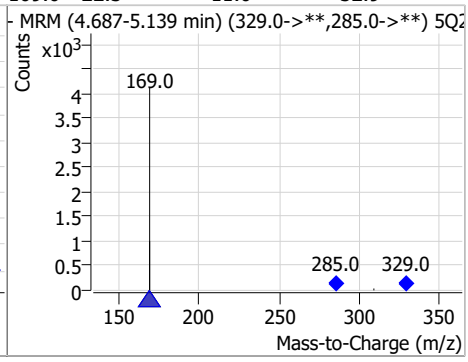




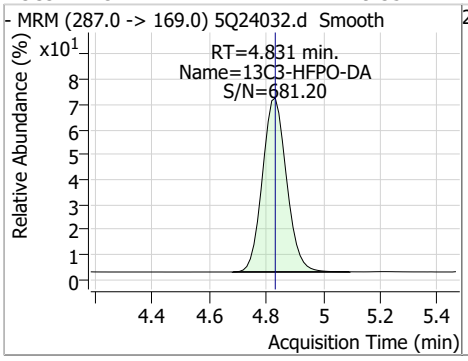
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	50.76	4.83	0.00	115215	285.0 -> 169.0	22.3	11.0	32.9

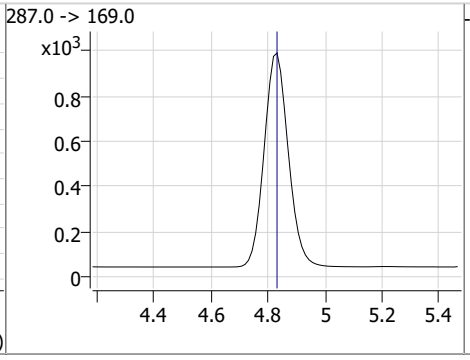


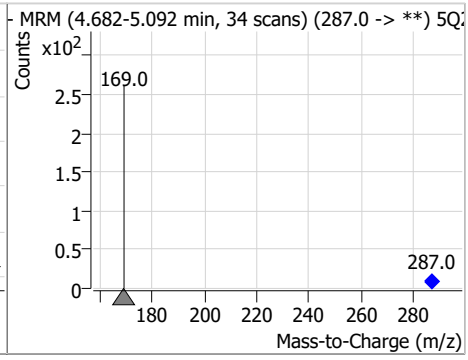




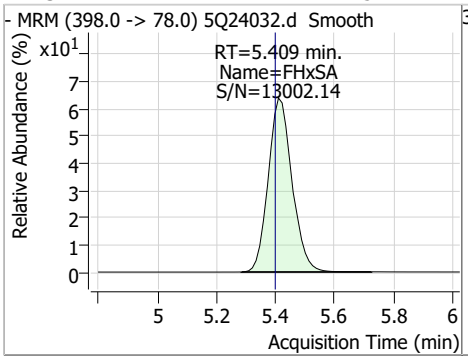
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	9.35	4.83	0.00	5583				

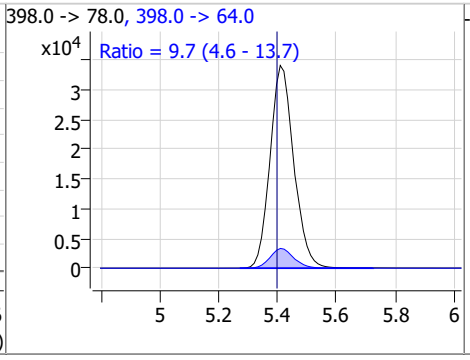


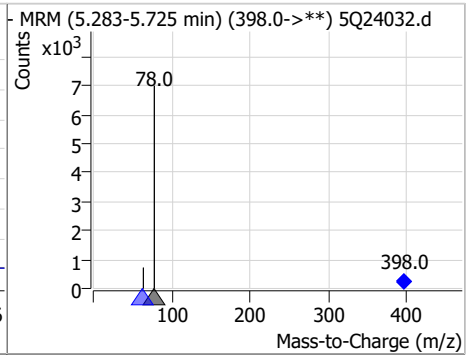




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	52.24	5.41	0.00	190583	398.0 -> 64.0	9.7	4.6	13.7

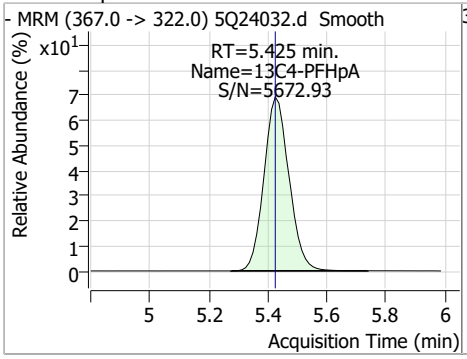


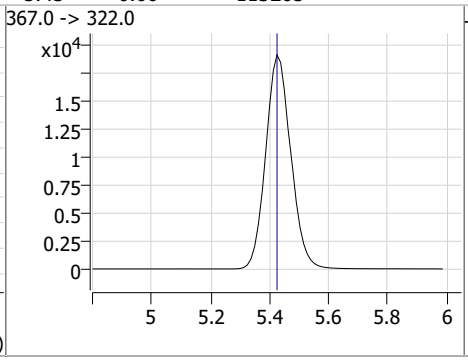


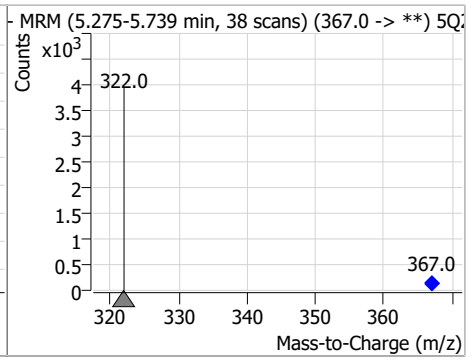


Perfluorinated Compounds by LC/MS/MS

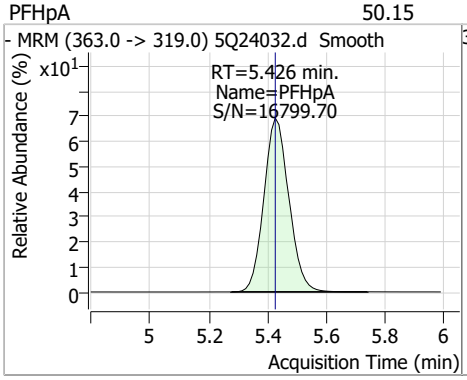
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	9.59	5.43	0.00	113265				

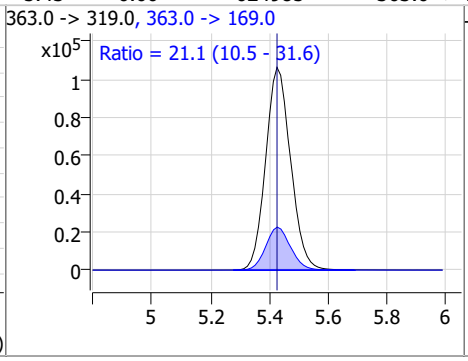


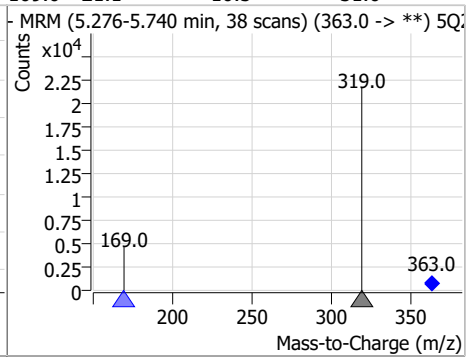




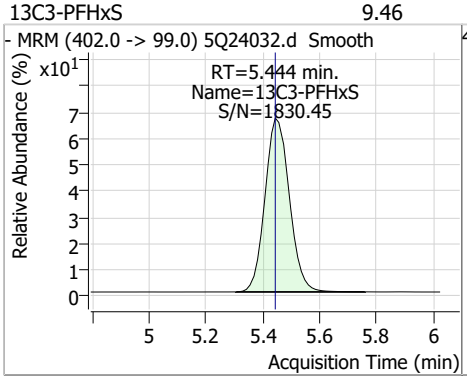
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	50.15	5.43	0.00	624985	363.0 -> 169.0	21.1	10.5	31.6

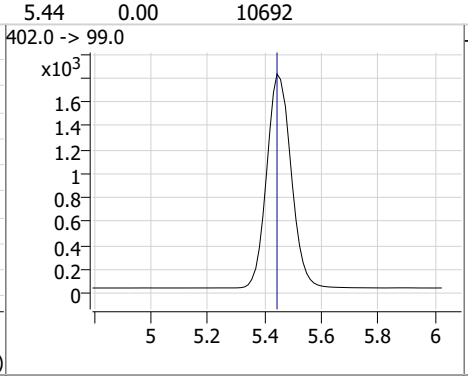


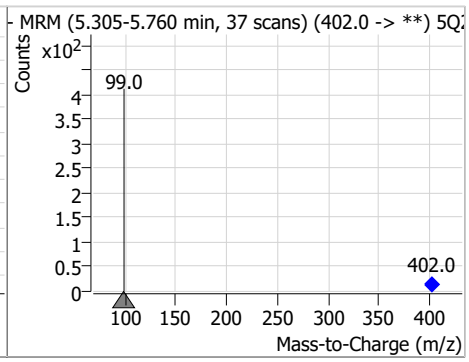




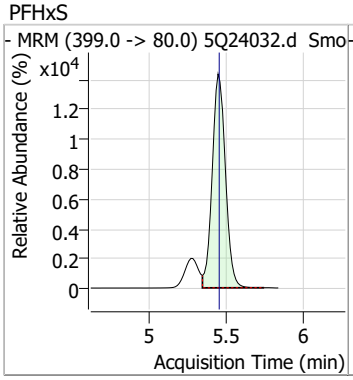
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	9.46	5.44	0.00	10692				

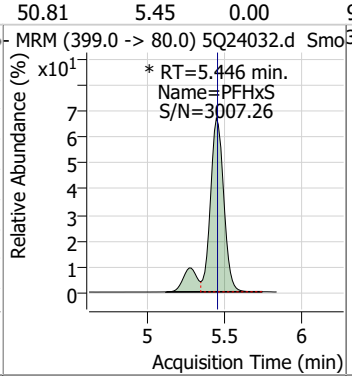


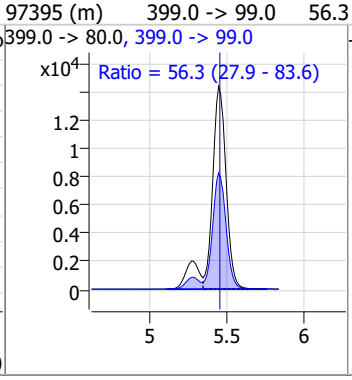


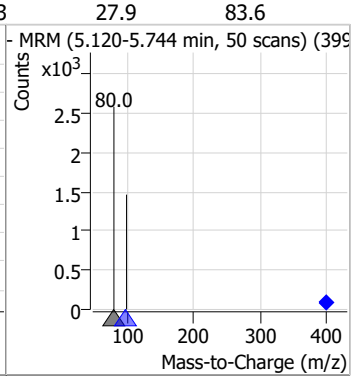


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	50.81	5.45	0.00	97395 (m)	399.0 -> 99.0	56.3	27.9	83.6







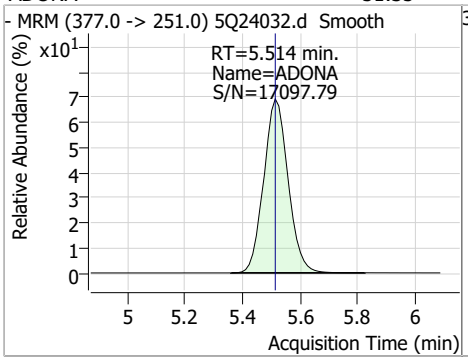


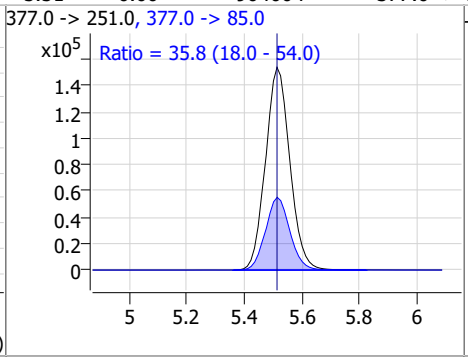
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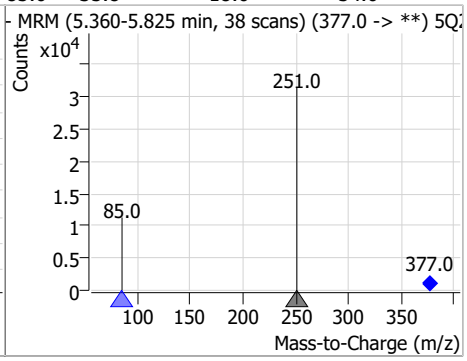
9

Perfluorinated Compounds by LC/MS/MS

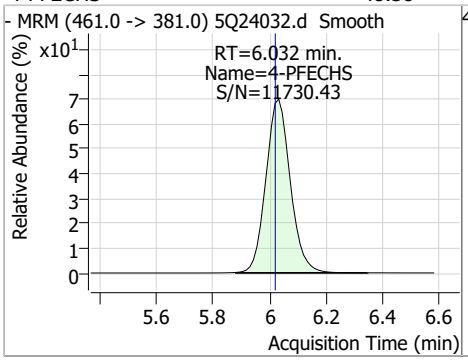
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	51.35	5.51	0.00	904004	377.0 -> 85.0	35.8	18.0	54.0

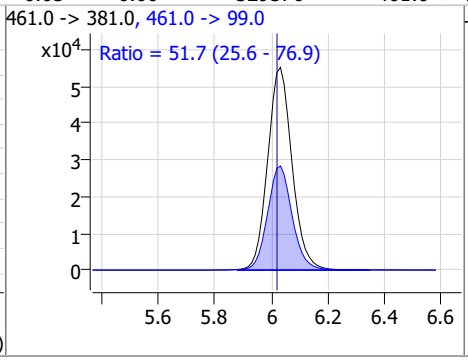


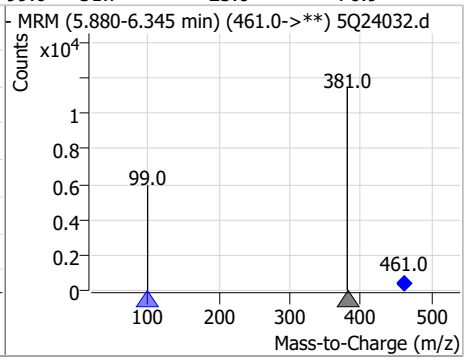




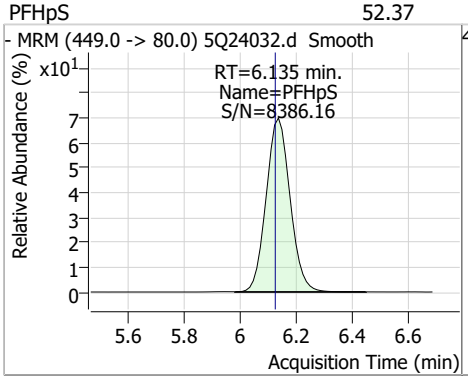
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS	48.38	6.03	0.00	329570	461.0 -> 99.0	51.7	25.6	76.9

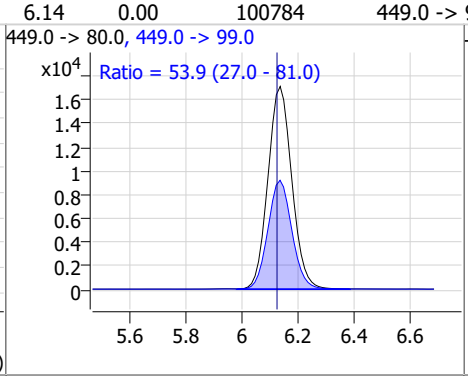


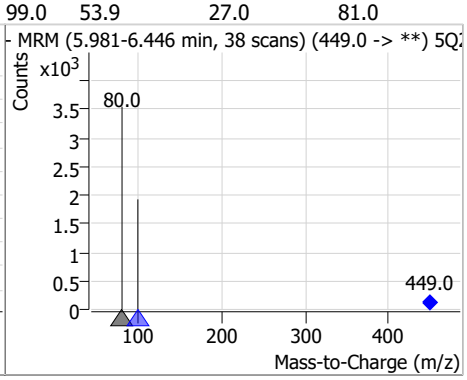




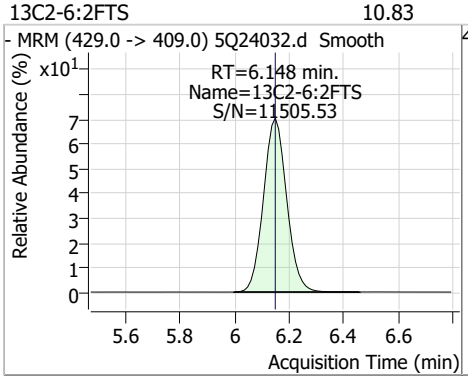
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	52.37	6.14	0.00	100784	449.0 -> 99.0	53.9	27.0	81.0

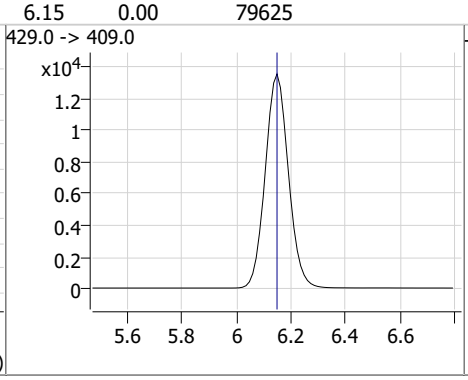


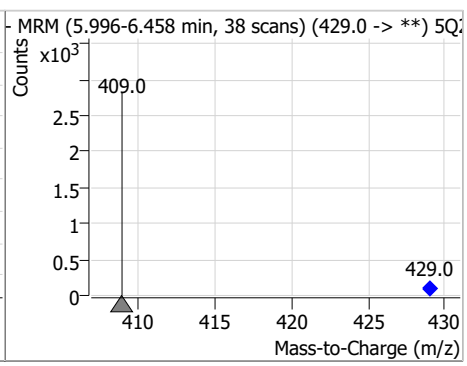




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	10.83	6.15	0.00	79625				

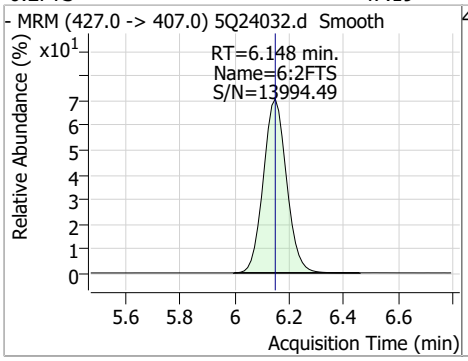


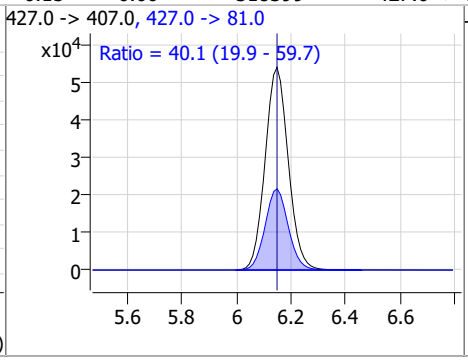


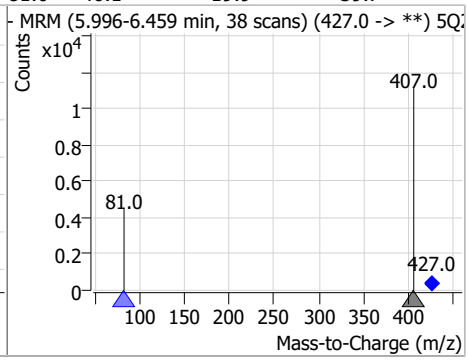


Perfluorinated Compounds by LC/MS/MS

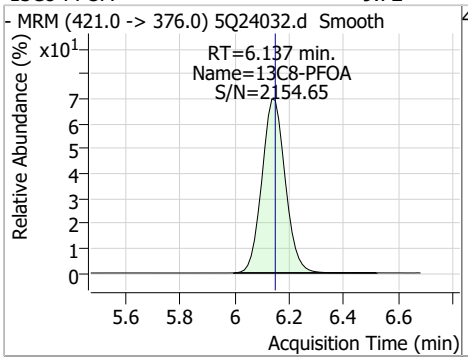
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	47.19	6.15	0.00	318399	427.0 -> 81.0	40.1	19.9	59.7

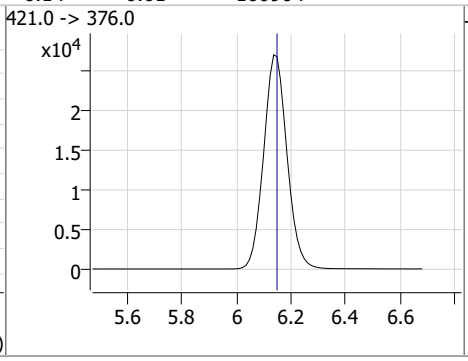


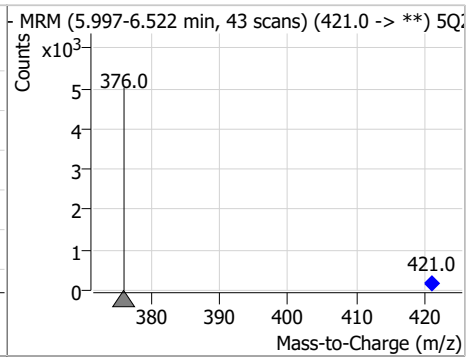




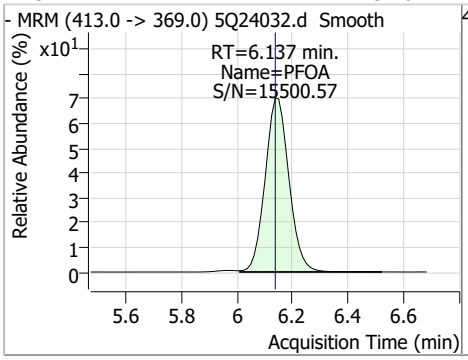
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	9.72	6.14	-0.01	160904				

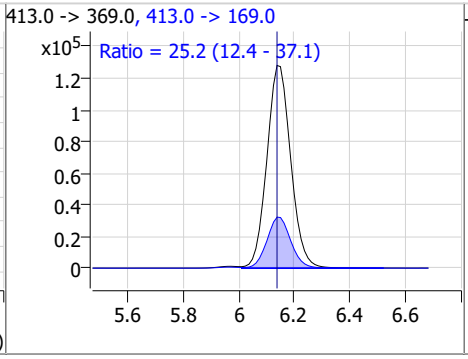


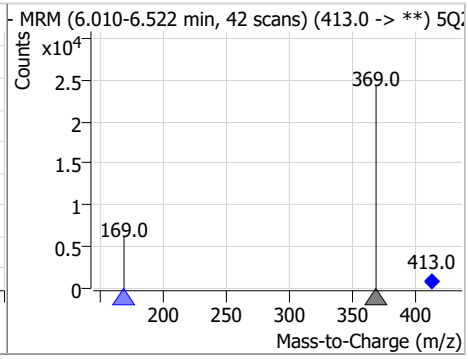




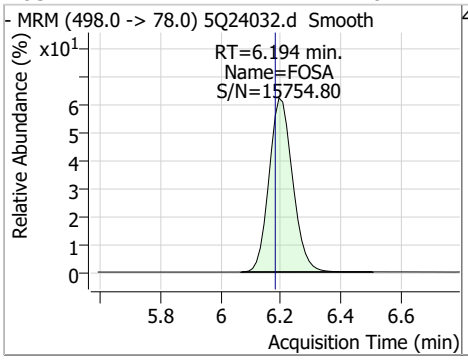
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	49.70	6.14	-0.01	763558	413.0 -> 169.0	25.2	12.4	37.1

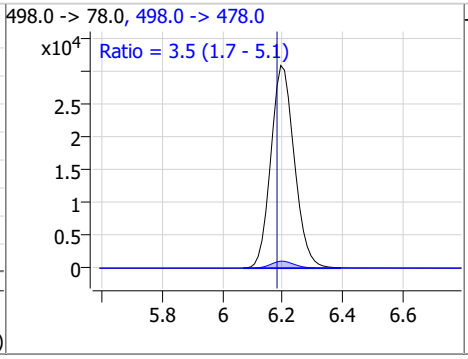


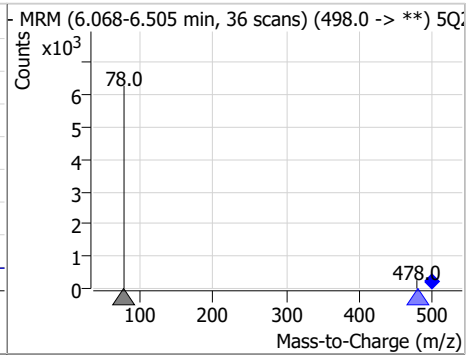




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	49.42	6.19	0.00	167759	498.0 -> 478.0	3.5	1.7	5.1

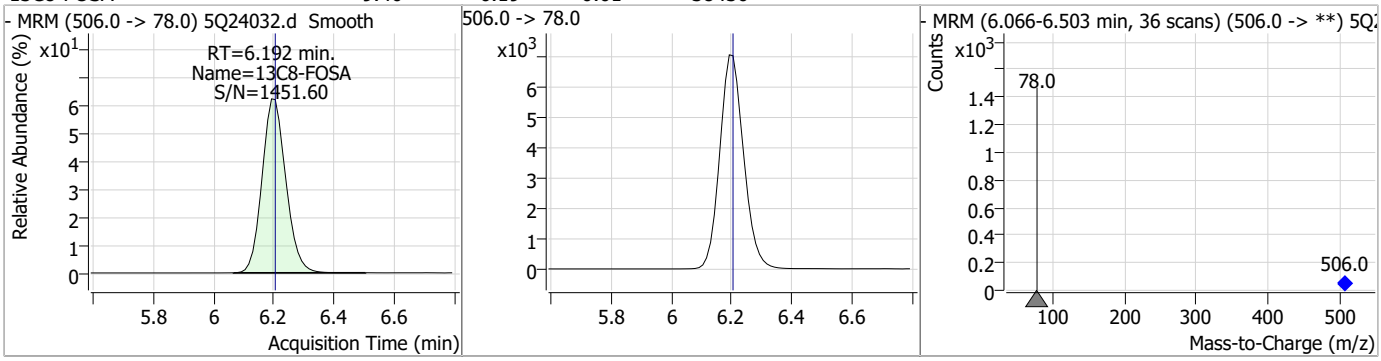




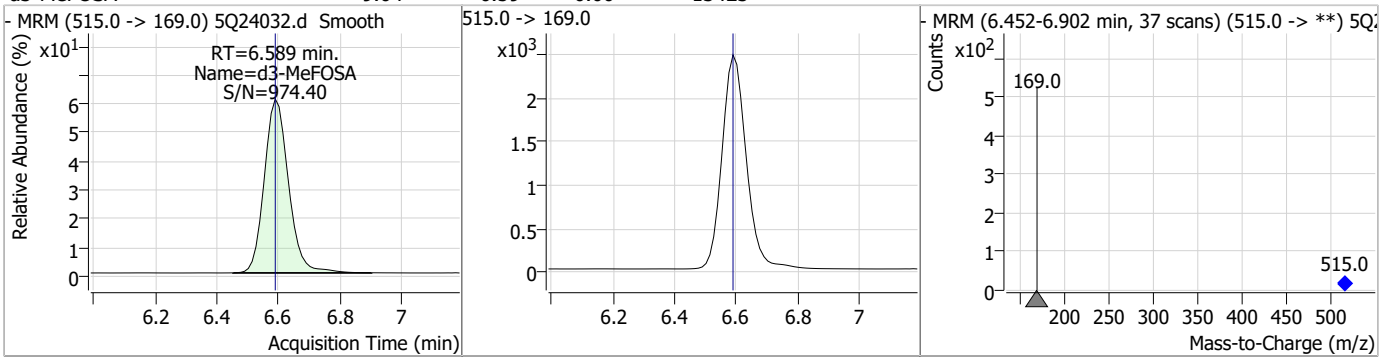


Perfluorinated Compounds by LC/MS/MS

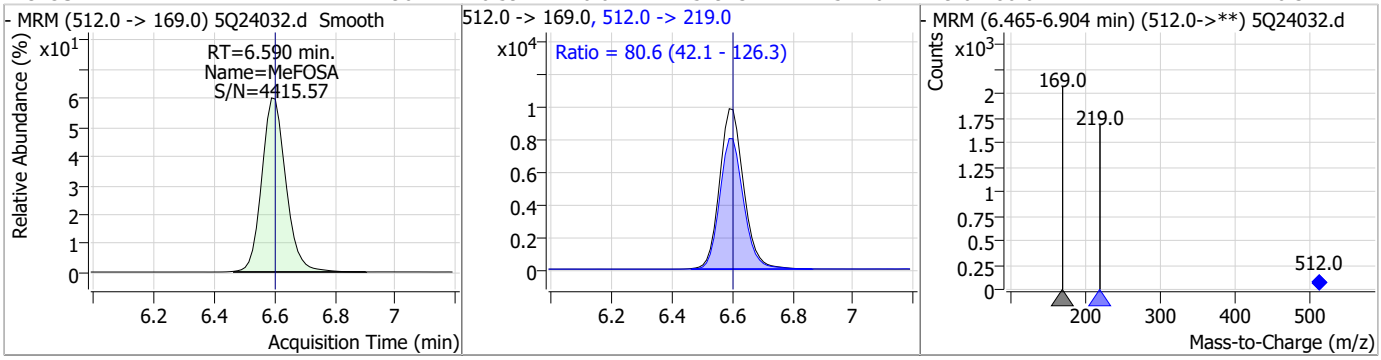
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	9.40	6.19	-0.01	38430				



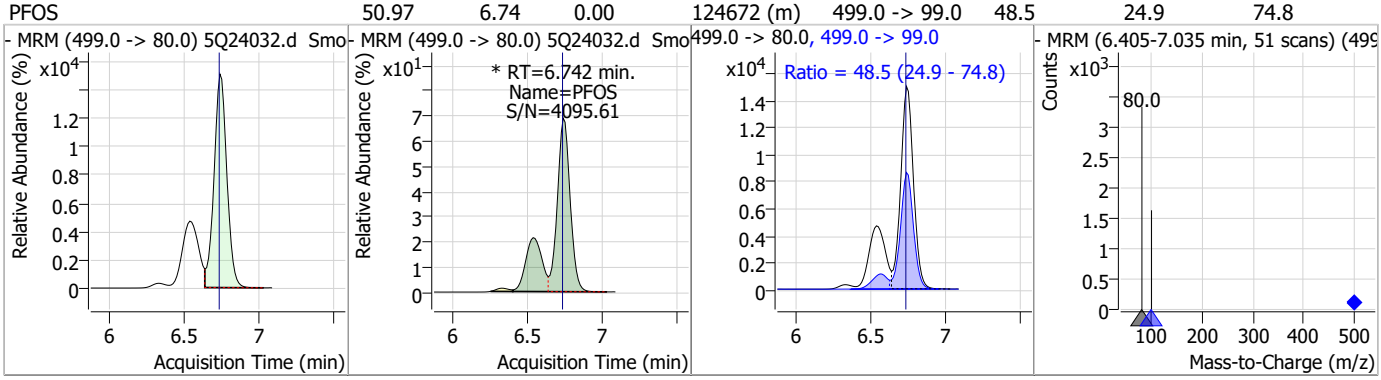
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	9.64	6.59	0.00	13423				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	47.96	6.59	-0.01	54973	512.0 -> 219.0	80.6	42.1	126.3

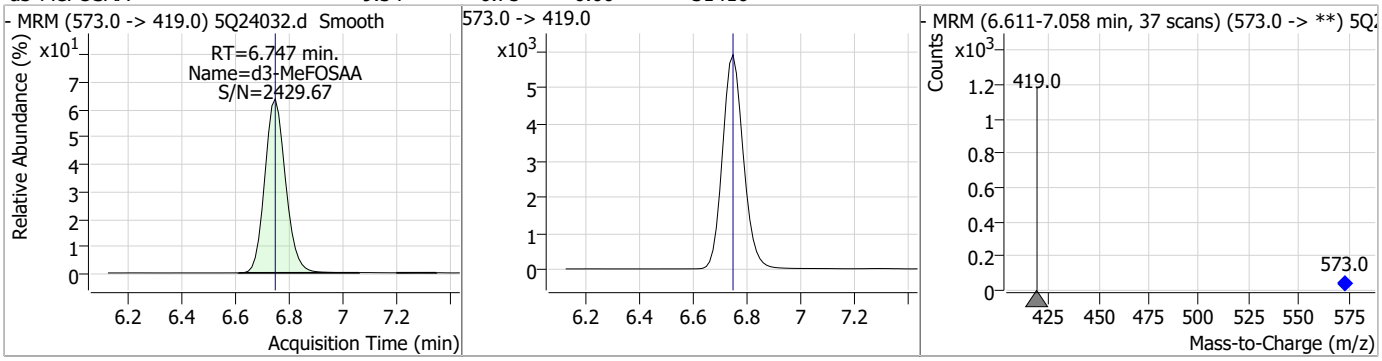


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	50.97	6.74	0.00	124672 (m)	499.0 -> 99.0	48.5	24.9	74.8

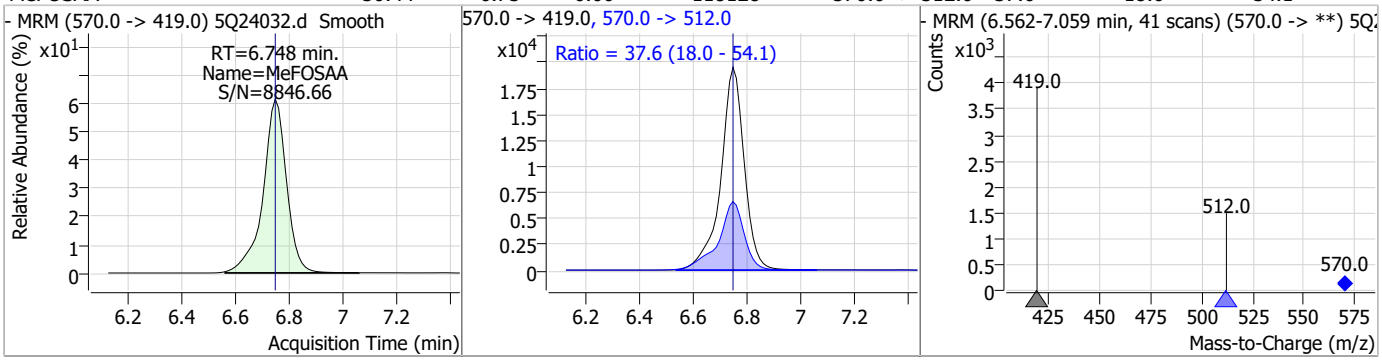


Perfluorinated Compounds by LC/MS/MS

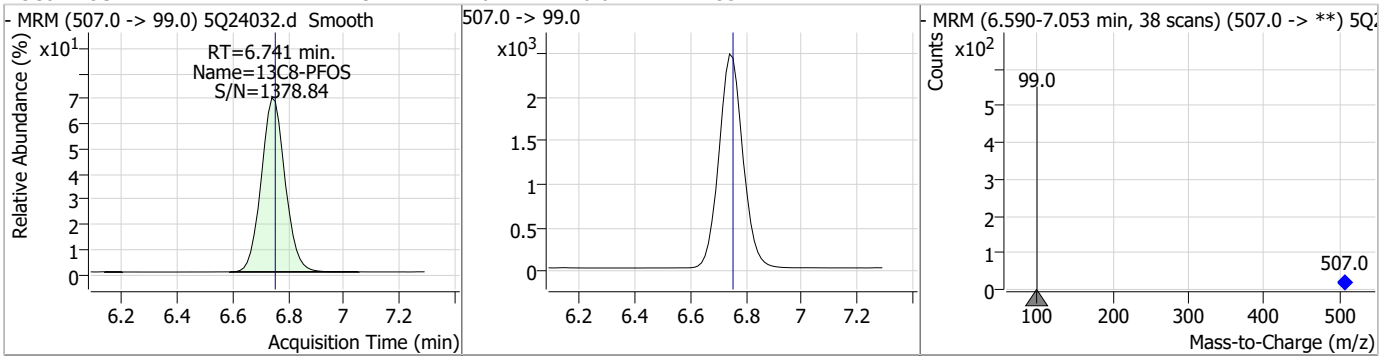
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	9.34	6.75	0.00	31416				



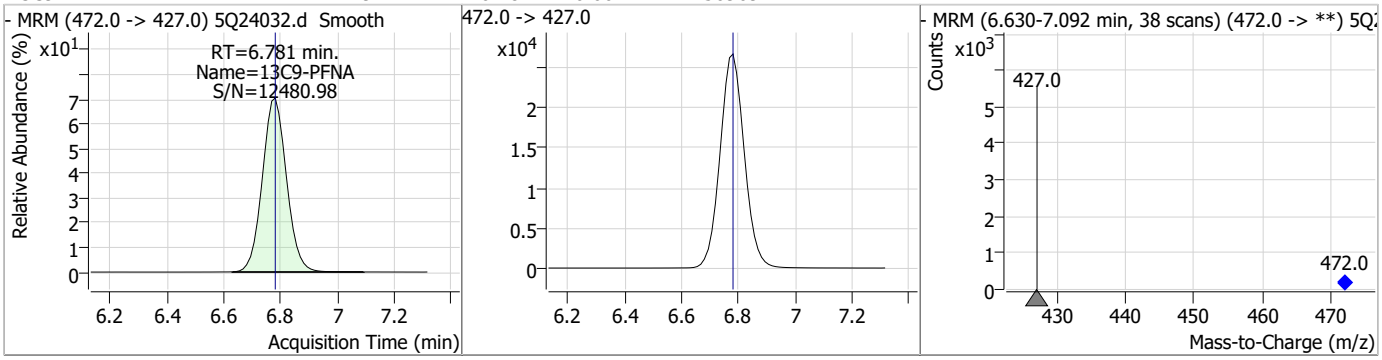
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	50.44	6.75	0.00	118128	570.0 -> 512.0	37.6	18.0	54.1



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	9.24	6.74	-0.01	14557				

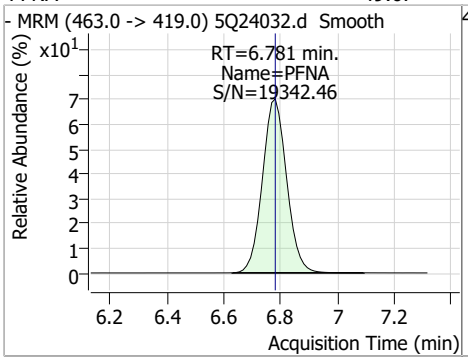


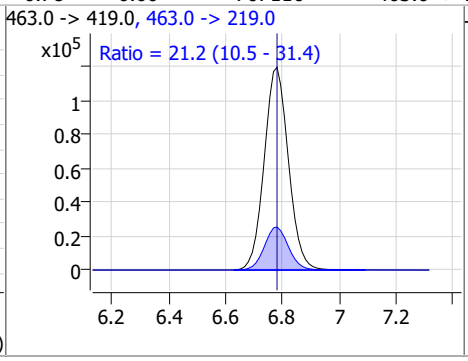
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	9.47	6.78	0.00	156909				

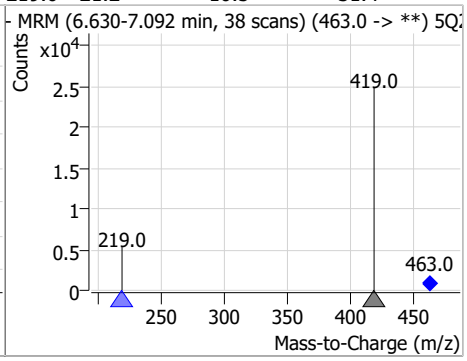


Perfluorinated Compounds by LC/MS/MS

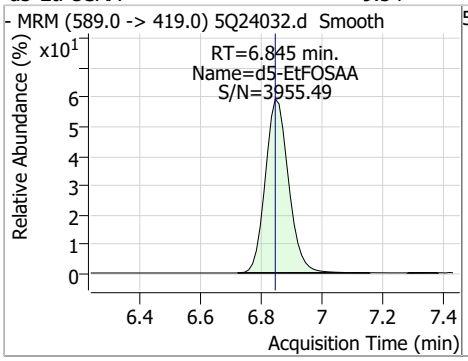
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	49.67	6.78	0.00	707116	463.0 -> 219.0	21.2	10.5	31.4

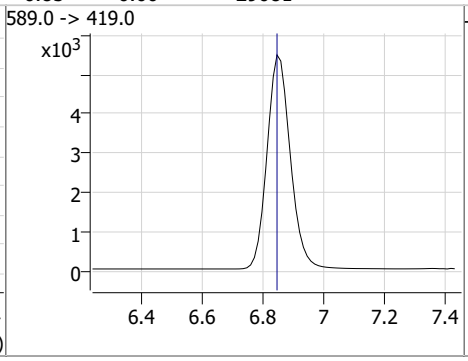


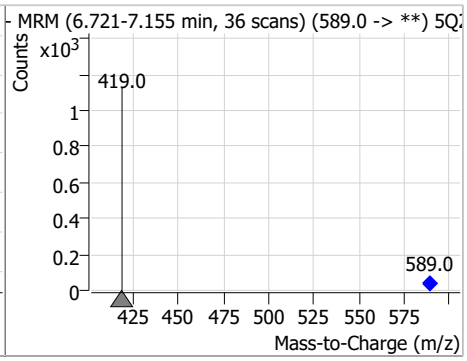




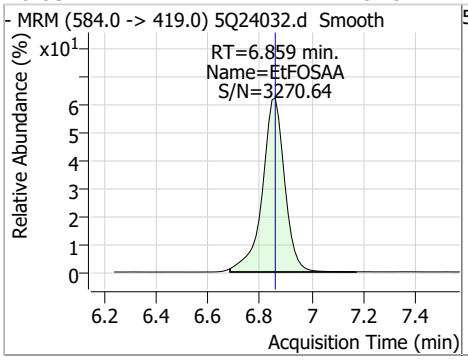
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	9.54	6.85	0.00	29081				

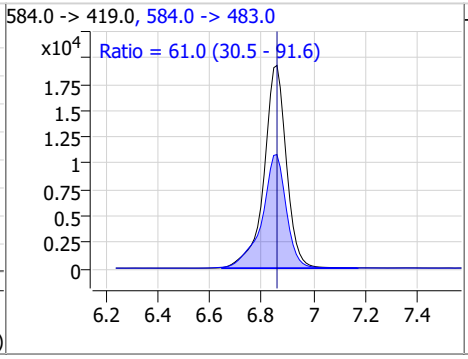


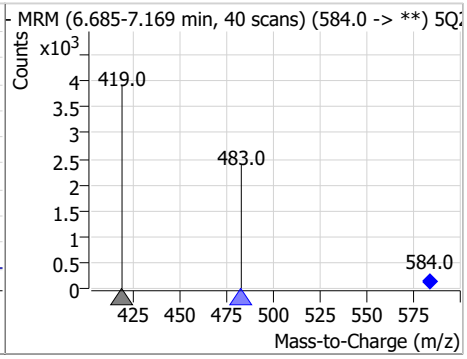




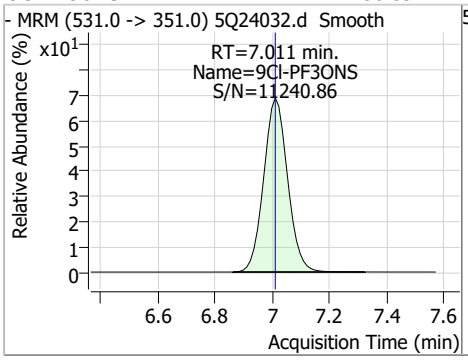
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	51.57	6.86	0.00	114762	584.0 -> 483.0	61.0	30.5	91.6

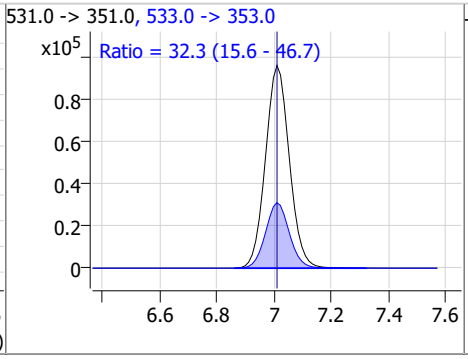


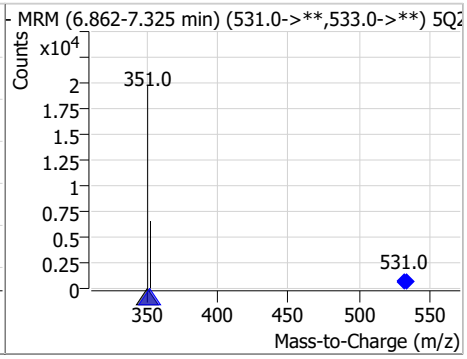




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	50.59	7.01	0.00	558337	533.0 -> 353.0	32.3	15.6	46.7

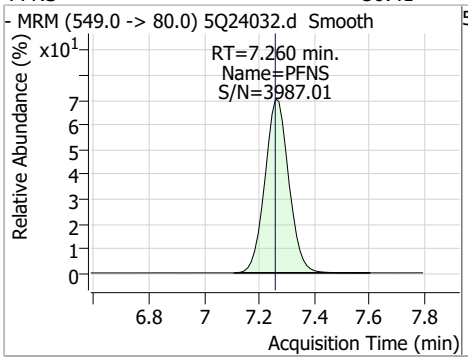


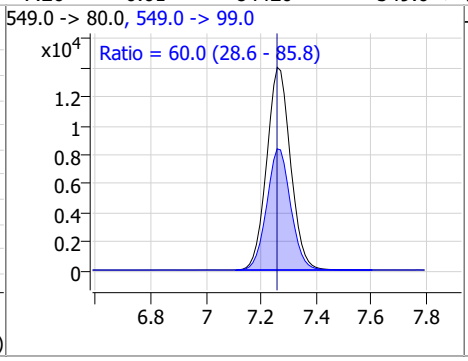


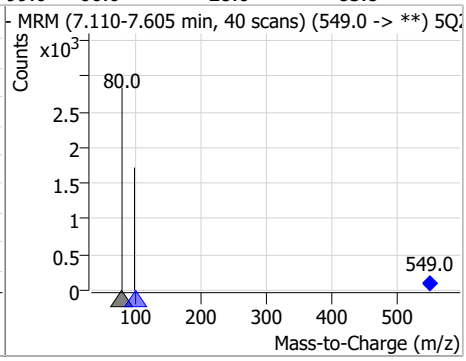


Perfluorinated Compounds by LC/MS/MS

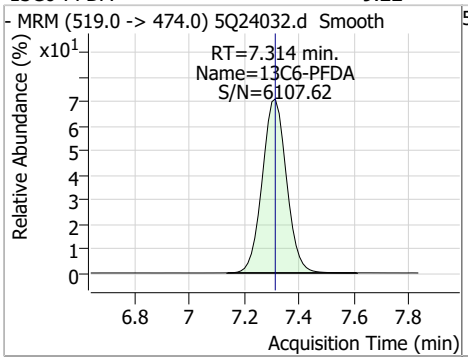
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	50.41	7.26	-0.01	84420	549.0 -> 99.0	60.0	28.6	85.8

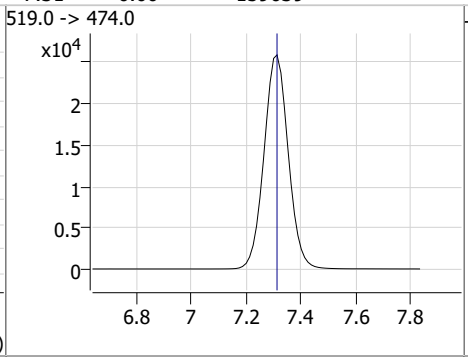


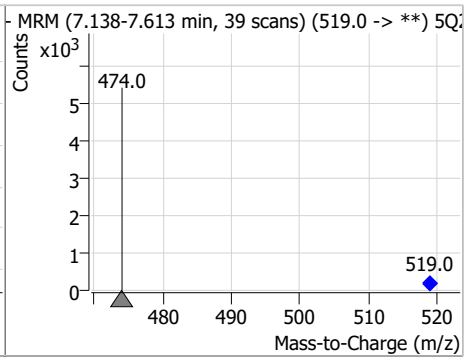




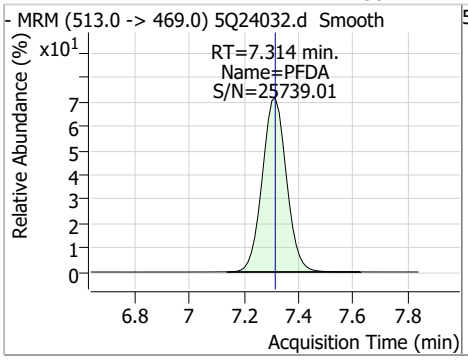
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	9.22	7.31	0.00	159639				

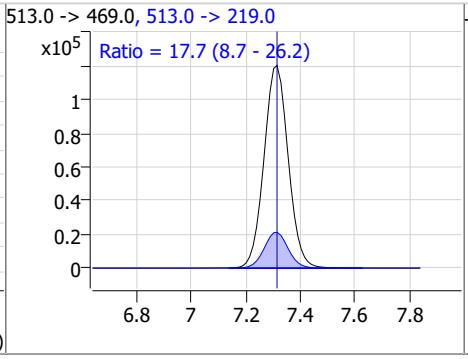


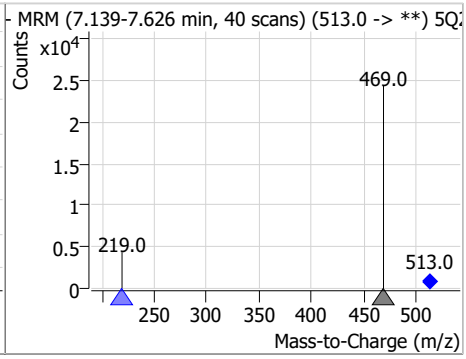




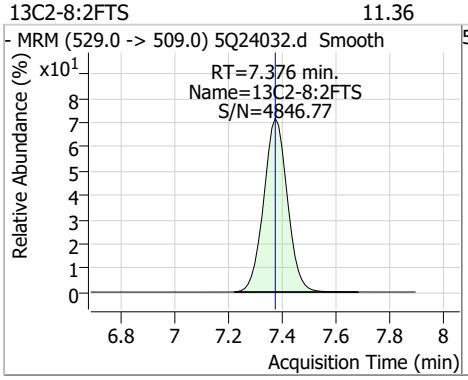
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	50.44	7.31	0.00	740624	513.0 -> 219.0	17.7	8.7	26.2

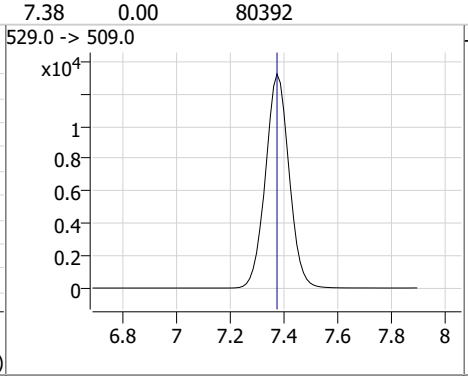


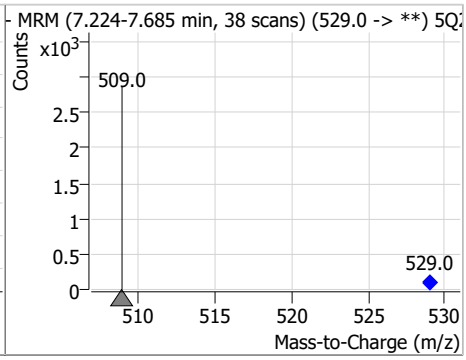




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	11.36	7.38	0.00	80392				

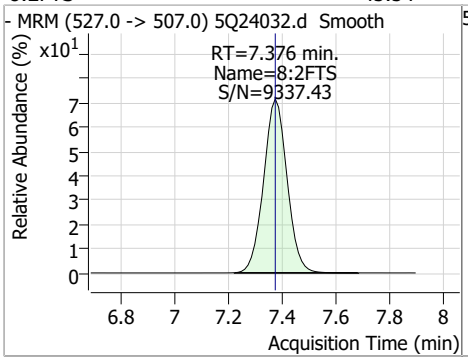


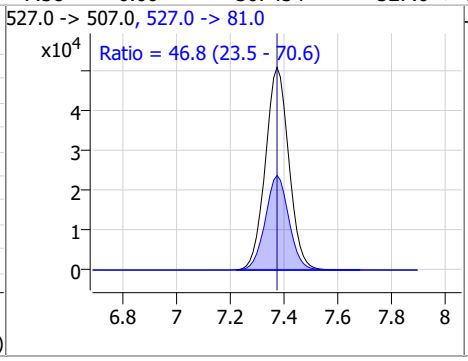


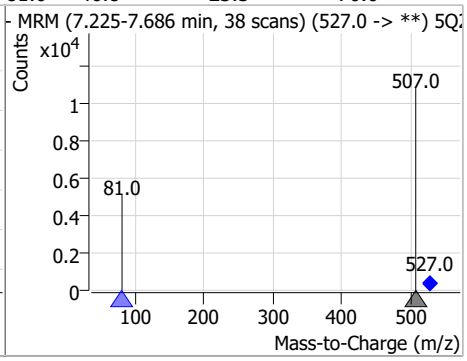


Perfluorinated Compounds by LC/MS/MS

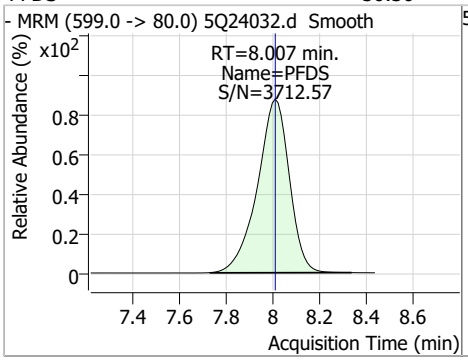
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	45.54	7.38	0.00	307454	527.0 -> 81.0	46.8	23.5	70.6

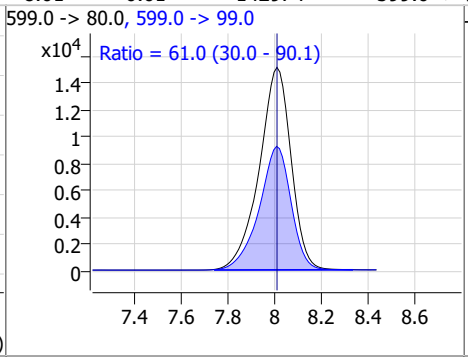


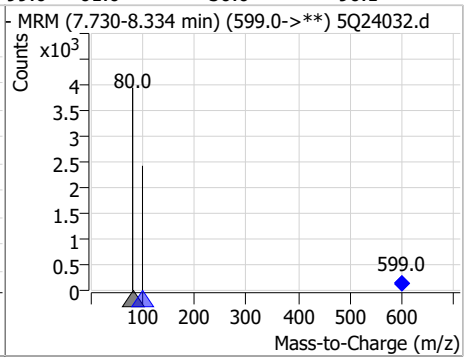




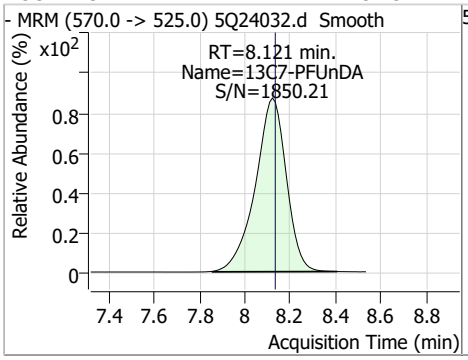
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	50.36	8.01	-0.01	142974	599.0 -> 99.0	61.0	30.0	90.1

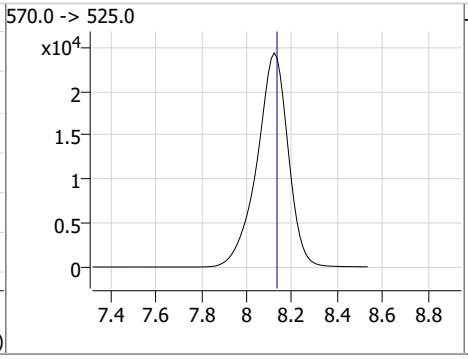


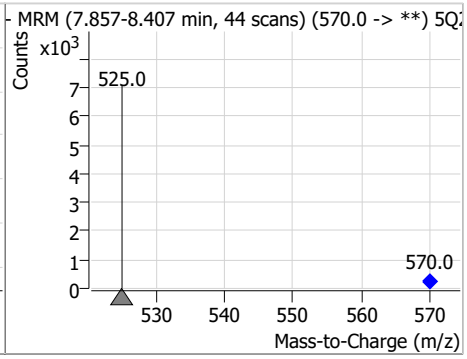




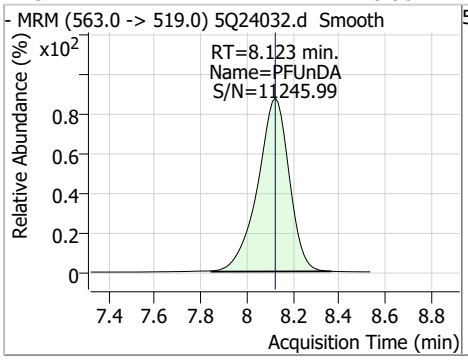
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	9.43	8.12	-0.01	230204				

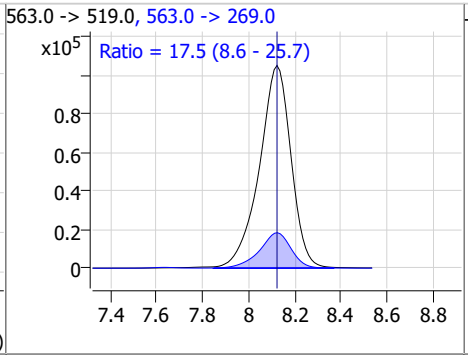


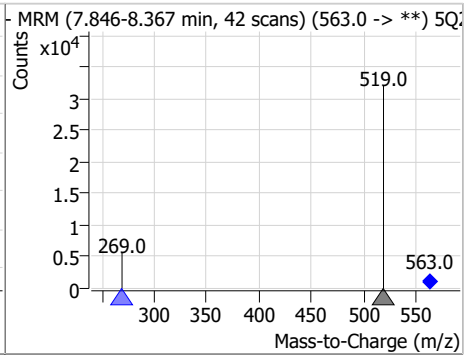




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	49.90	8.12	-0.01	996072	563.0 -> 269.0	17.5	8.6	25.7

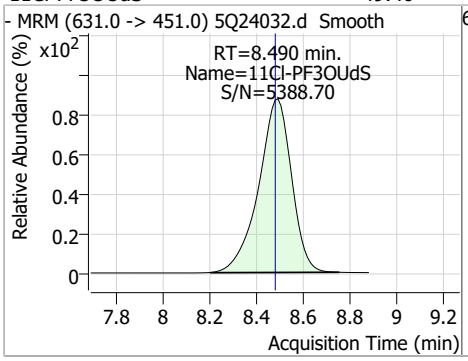


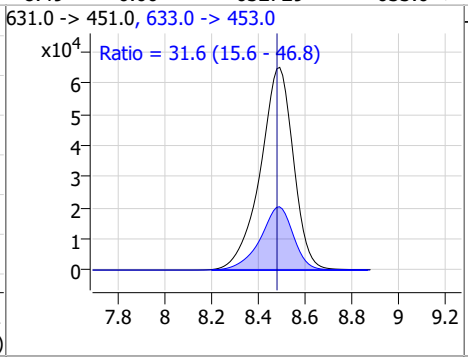


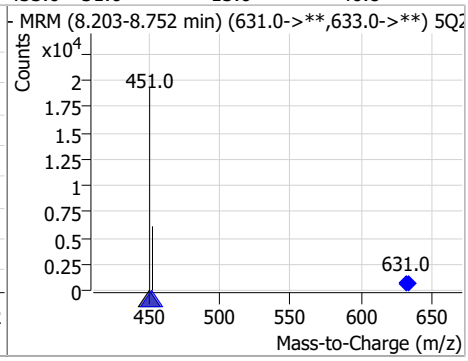


Perfluorinated Compounds by LC/MS/MS

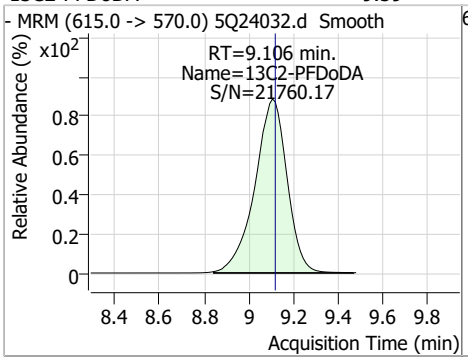
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	49.40	8.49	0.00	632729	633.0 -> 453.0	31.6	15.6	46.8

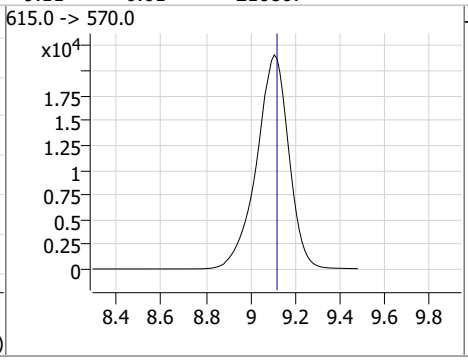


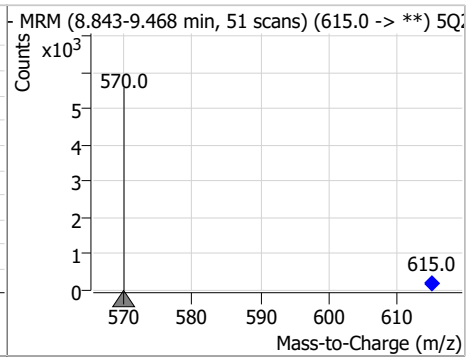




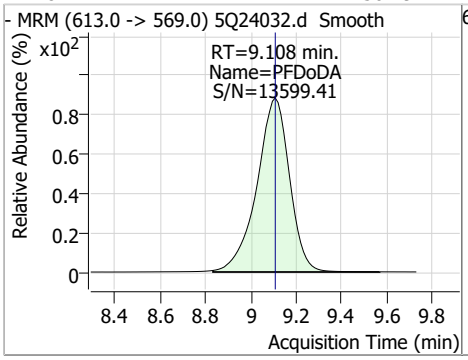
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	9.59	9.11	-0.01	216807				

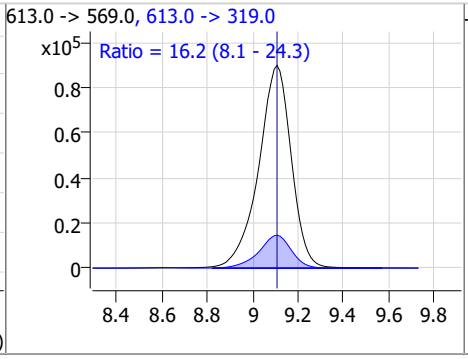


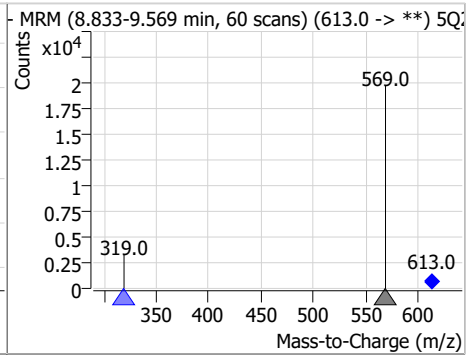




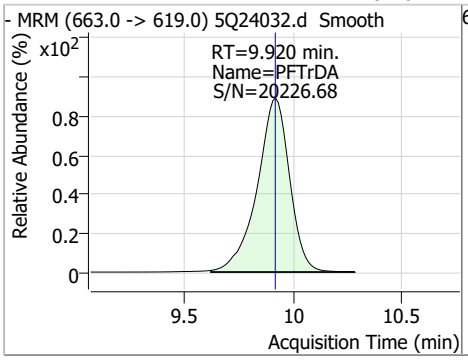
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	50.49	9.11	-0.01	901181	613.0 -> 319.0	16.2	8.1	24.3

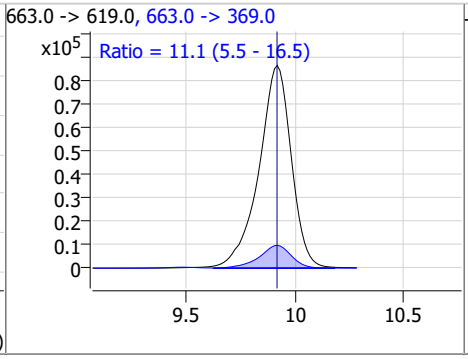


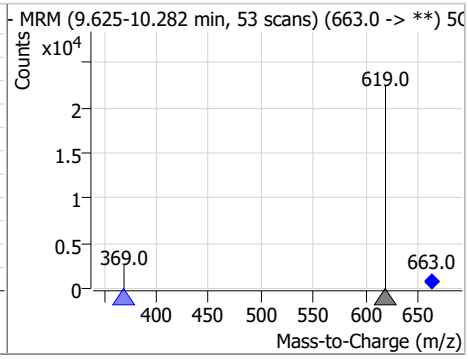




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	49.78	9.92	-0.01	891825	663.0 -> 369.0	11.1	5.5	16.5

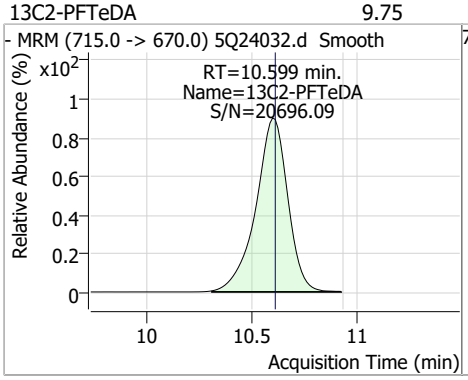


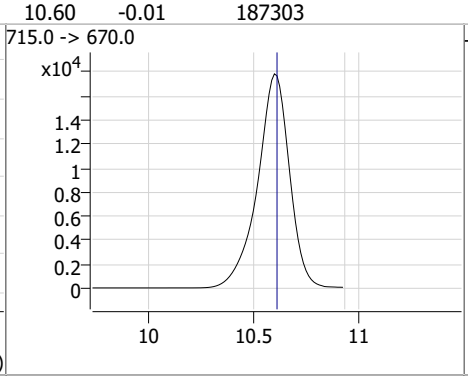


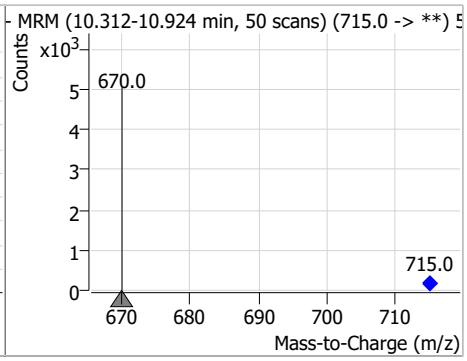


Perfluorinated Compounds by LC/MS/MS

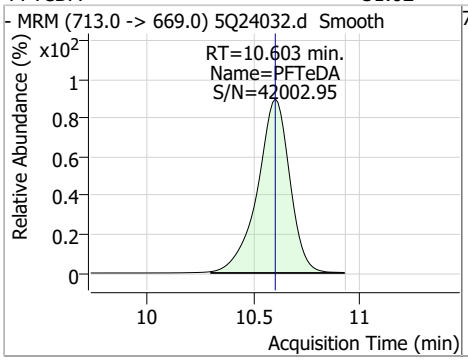
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	9.75	10.60	-0.01	187303				

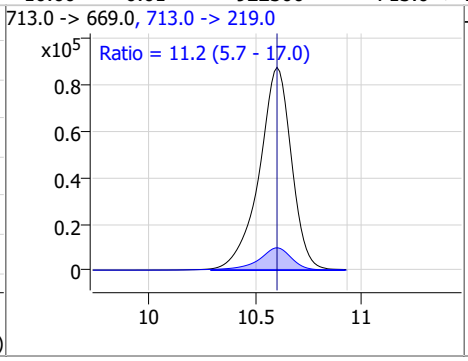


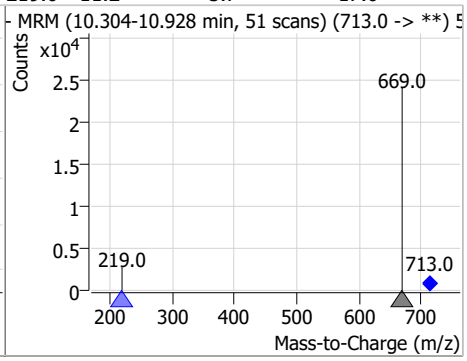




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	51.02	10.60	-0.01	922300	713.0 -> 219.0	11.2	5.7	17.0







9.6.40

9

Manual Integration Approval Summary

Sample Number: S5Q377-IC377
Lab FileID: 5Q24032.D
Injection Time: 01/02/24 18:44
Method: EPA 537M QSM5.3 B-15
Analyst approved: 01/03/24 16:03 Lindsay Ritner
Supervisor approved: 01/04/24 12:54 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.45	Split peak
Perfluorooctanesulfonic acid	1763-23-1		6.74	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Natasha Gumtie 01/04/24 12:54

Perfluorinated Compounds by LC/MS/MS

Data File : 5Q24033.d
Operator : lindsayr
Acq. Method : 537_ID.m
Acq. Date-Time : 1/2/2024 7:01:27 PM
Sample Name : ic377-100
Vial : P1-A9
DA Method File : ID_010224_S5Q377.quantmethod.xml
Batch Name : s5q377.batch.bin
Sample Information : OP401,S5Q377,250,,,1.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.987	217.0 -> 172.0	43151	10.00	µg/L	0.000
M5-PFPeA	3.432	268.0 -> 223.0	73135	10.00	µg/L	0.000
M5-PFHxA	4.565	318.0 -> 273.0	107156	10.00	µg/L	0.000
M4-PFHpA	5.425	367.0 -> 322.0	107940	10.00	µg/L	0.000
M8-PFOA	6.137	421.0 -> 376.0	151274	10.00	µg/L	-0.012
M9-PFNA	6.768	472.0 -> 427.0	149437	10.00	µg/L	-0.012
M6-PFDA	7.301	519.0 -> 474.0	157092	10.00	µg/L	-0.012
M7-PFUnDA	8.109	570.0 -> 525.0	224893	10.00	µg/L	-0.025
M2-PFDoDA	9.106	615.0 -> 570.0	211983	10.00	µg/L	-0.012
M2-PFTeDA	10.599	715.0 -> 670.0	183892	10.00	µg/L	-0.012
M8-FOSA	6.192	506.0 -> 78.0	33857	10.00	µg/L	-0.012
M3-PFBS	3.637	302.0 -> 99.0	8793	10.00	µg/L	0.000
M3-PFHxS	5.444	402.0 -> 99.0	10698	10.00	µg/L	0.000
M8-PFOS	6.741	507.0 -> 99.0	14274	10.00	µg/L	-0.012
M2-4:2FTS	4.474	329.0 -> 309.0	53644	10.00	µg/L	-0.012
M2-6:2FTS	6.148	429.0 -> 409.0	89338	10.00	µg/L	0.000
M2-8:2FTS	7.376	529.0 -> 509.0	95447	10.00	µg/L	0.000
M3-MeFOSAA	6.747	573.0 -> 419.0	28997	10.00	µg/L	0.000
M3-HFPO-DA	4.819	287.0 -> 169.0	5567	10.00	µg/L	-0.012
M3-MeFOSA	6.589	515.0 -> 169.0	11866	10.00	µg/L	0.000
M5-EtFOSAA	6.845	589.0 -> 419.0	29206	10.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.474	329.0 -> 309.0	53644	13.73	µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 137.3%		
13C2-6:2FTS	6.148	429.0 -> 409.0	89338	12.15	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 121.5%		
13C2-8:2FTS	7.376	529.0 -> 509.0	95447	13.49	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 134.9%		
13C2-PFDoDA	9.106	615.0 -> 570.0	211983	9.38	µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 93.8%		
13C2-PFTeDA	10.599	715.0 -> 670.0	183892	9.57	µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 95.7%		
13C3-PFBS	3.637	302.0 -> 99.0	8793	9.53	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 95.3%		
13C3-PFHxS	5.444	402.0 -> 99.0	10698	9.47	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 94.7%		
13C4-PFBA	1.987	217.0 -> 172.0	43151	9.78	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 97.8%		
13C4-PFHpA	5.425	367.0 -> 322.0	107940	9.13	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 91.3%		
13C5-PFHxA	4.565	318.0 -> 273.0	107156	9.33	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 93.3%		
13C5-PFPeA	3.432	268.0 -> 223.0	73135	9.84	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 98.4%		
13C6-PFDA	7.301	519.0 -> 474.0	157092	9.07	µg/L	-0.012

Perfluorinated Compounds by LC/MS/MS

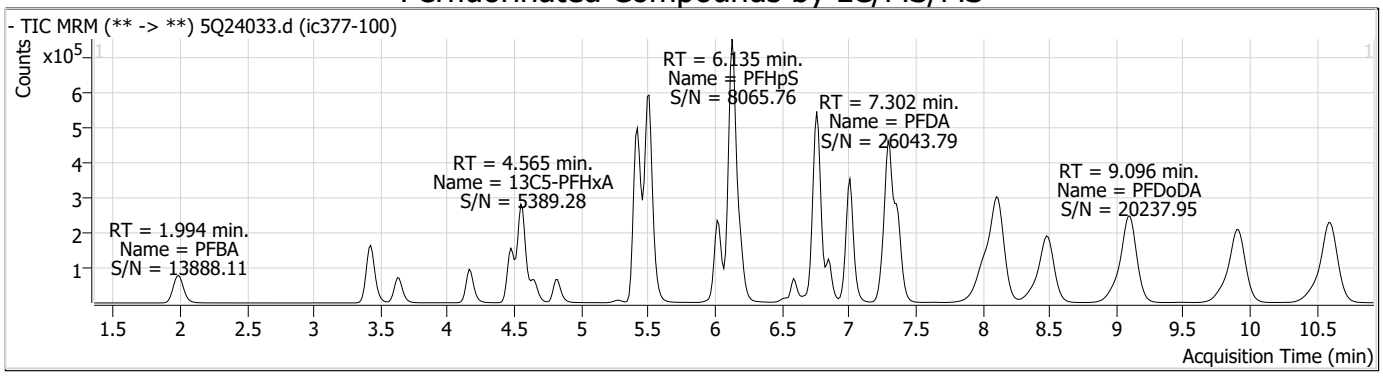
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 90.7%			
13C7-PFUnDA	8.109	570.0 -> 525.0	224893	9.21	µg/L		-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 92.1%			
13C8-FOSA	6.192	506.0 -> 78.0	33857	8.28	µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 82.8%			
13C8-PFOA	6.137	421.0 -> 376.0	151274	9.14	µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 91.4%			
13C8-PFOS	6.741	507.0 -> 99.0	14274	9.06	µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 90.6%			
13C9-PFNA	6.768	472.0 -> 427.0	149437	9.02	µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 90.2%			
d3-MeFOSAA	6.747	573.0 -> 419.0	28997	8.62	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 86.2%			
13C3-HFPO-DA	4.819	287.0 -> 169.0	5567	9.32	µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 93.2%			
d3-MeFOSA	6.589	515.0 -> 169.0	11866	8.52	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 85.2%			
d5-EtFOSAA	6.845	589.0 -> 419.0	29206	9.58	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 95.8%			
Target Compounds							QValue
4:2FTS	4.475	327.0 -> 307.0	379590	74.38	µg/L		100
		327.0 -> 81.0	212331				
6:2FTS	6.148	427.0 -> 407.0	593455	78.40	µg/L		99
		427.0 -> 81.0	234210				
8:2FTS	7.376	527.0 -> 507.0	600798	74.95	µg/L		100
		527.0 -> 81.0	284215				
EtFOSAA	6.859	584.0 -> 419.0	222171	99.41	µg/L		99
		584.0 -> 483.0	134541				
FOSA	6.194	498.0 -> 78.0	300667	100.53	µg/L		100
		498.0 -> 478.0	10134				
MeFOSAA	6.748	570.0 -> 419.0	216269	100.05	µg/L		98
		570.0 -> 512.0	80386				
PFBA	1.994	213.0 -> 169.0	389549	100.52	µg/L		100
PFBS	3.628	299.0 -> 80.0	217498	100.91	µg/L		100
		299.0 -> 99.0	94134				
PFDA	7.302	513.0 -> 469.0	1446177	100.09	µg/L		100
		513.0 -> 219.0	254767				
PFDoDA	9.096	613.0 -> 569.0	1744893	99.99	µg/L		100
		613.0 -> 319.0	285889				
PFDS	7.995	599.0 -> 80.0	277693	100.13	µg/L		98
		599.0 -> 99.0	170692				
PFHpA	5.426	363.0 -> 319.0	1189332	100.14	µg/L		100
		363.0 -> 169.0	251613				
PFHpS	6.135	449.0 -> 80.0	187250	99.24	µg/L		99
		449.0 -> 99.0	102375				
PFHxA	4.565	313.0 -> 269.0	999945	100.16	µg/L		100
		313.0 -> 119.0	40740				
PFHxS	5.446	399.0 -> 80.0	191520	99.85	µg/L	m	100
		399.0 -> 99.0	107369				
PFNA	6.769	463.0 -> 419.0	1363608	100.57	µg/L		100
		463.0 -> 219.0	285838				
PFNS	7.260	549.0 -> 80.0	164445	100.14	µg/L		96
		549.0 -> 99.0	98791				
PFOA	6.137	413.0 -> 369.0	1450826	100.45	µg/L		99
		413.0 -> 169.0	364593				
PFOS	6.742	499.0 -> 80.0	239677	99.94	µg/L	m	97

Perfluorinated Compounds by LC/MS/MS

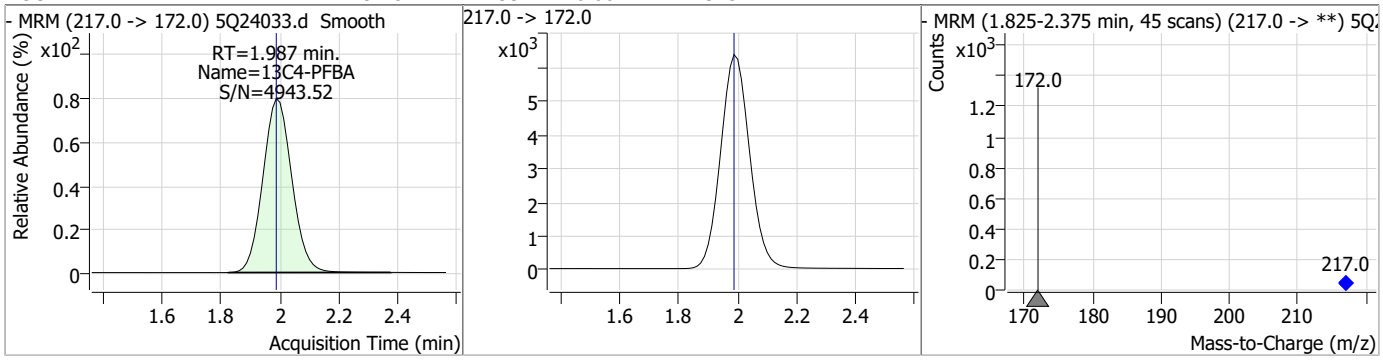
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		499.0 -> 99.0	115336			
PFPeA	3.434	263.0 -> 219.0	691320	100.26	µg/L	100
PFPeS	4.648	349.0 -> 80.0	149416	99.81	µg/L	99
		349.0 -> 99.0	76822			
PFTeDA	10.591	713.0 -> 669.0	1769020	99.67	µg/L	100
		713.0 -> 219.0	196544			
PFTrDA	9.907	663.0 -> 619.0	1761114	100.54	µg/L	100
		663.0 -> 369.0	196063			
PFUnDA	8.111	563.0 -> 519.0	1955564	100.29	µg/L	99
		563.0 -> 269.0	343776			
11Cl-PF3OUdS	8.478	631.0 -> 451.0	1260504	100.66	µg/L	99
		633.0 -> 453.0	388952			
9Cl-PF3ONS	7.011	531.0 -> 351.0	1086328	100.02	µg/L	99
		533.0 -> 353.0	342577			
ADONA	5.514	377.0 -> 251.0	1754227	99.59	µg/L	100
		377.0 -> 85.0	631545			
HFPO-DA	4.827	329.0 -> 169.0	226003	99.87	µg/L	100
		285.0 -> 169.0	49888			
MeFOSA	6.602	512.0 -> 169.0	102900	101.55	µg/L	95
		512.0 -> 219.0	82182			
4-PFECHS	6.018	461.0 -> 381.0	648441	101.24	µg/L	100
		461.0 -> 99.0	333669			
FBSA	4.170	298.0 -> 78.0	355581	100.35	µg/L	100
		298.0 -> 64.0	33312			
FHxSA	5.409	398.0 -> 78.0	338268	98.63	µg/L	99
		398.0 -> 64.0	32334			

 # = Qualifier out of range, m = manually integrated, + = Area summed

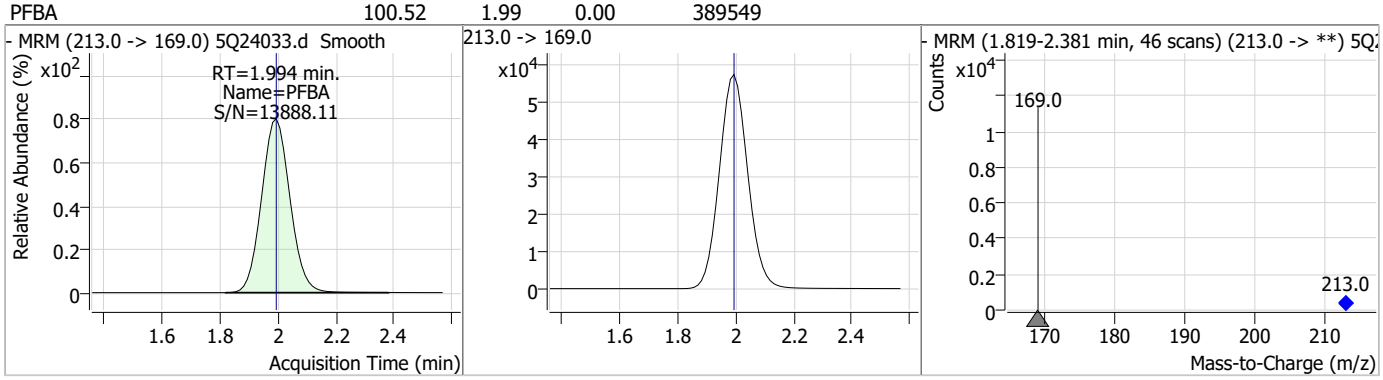
Perfluorinated Compounds by LC/MS/MS



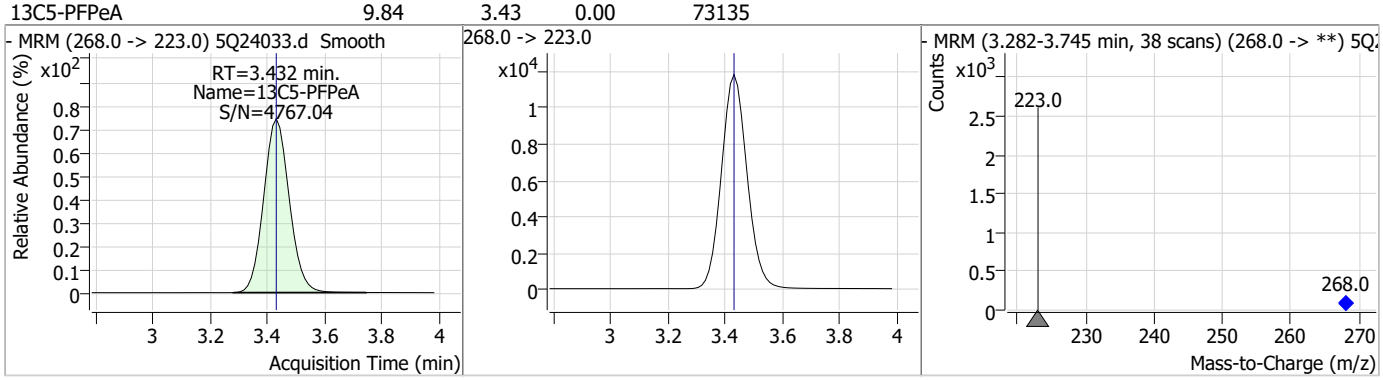
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	9.78	1.99	0.00	43151				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	100.52	1.99	0.00	389549				

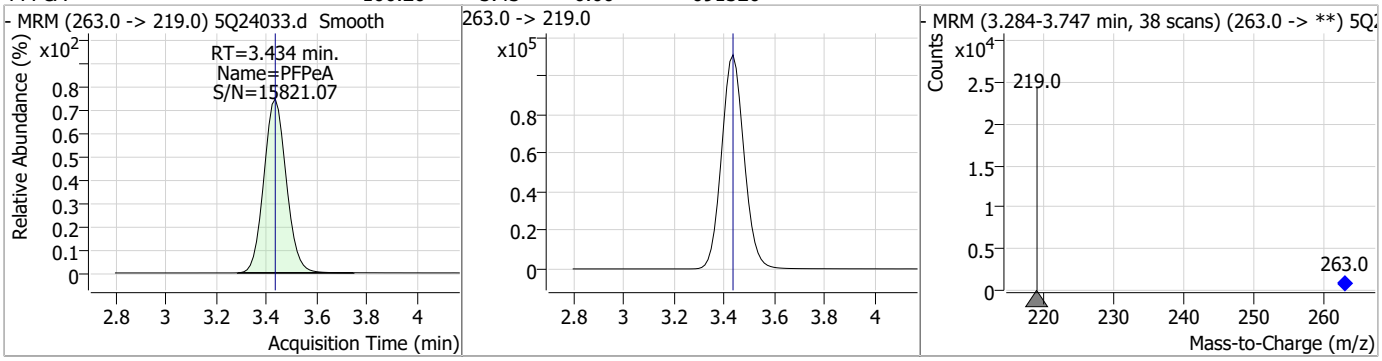


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	9.84	3.43	0.00	73135				

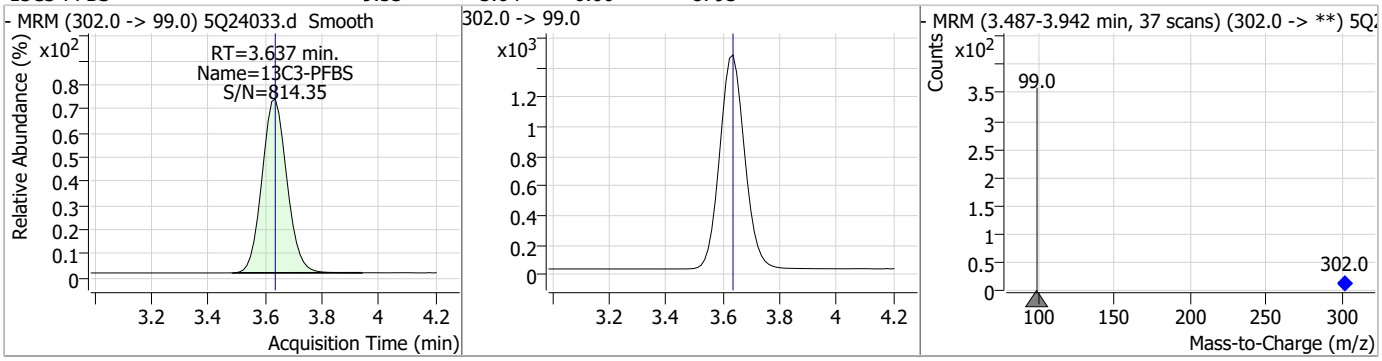


Perfluorinated Compounds by LC/MS/MS

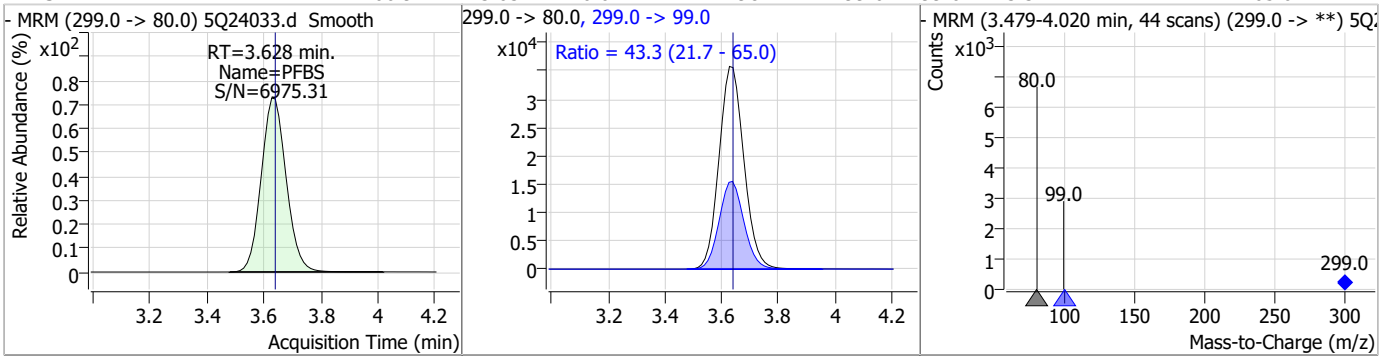
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	100.26	3.43	0.00	691320				



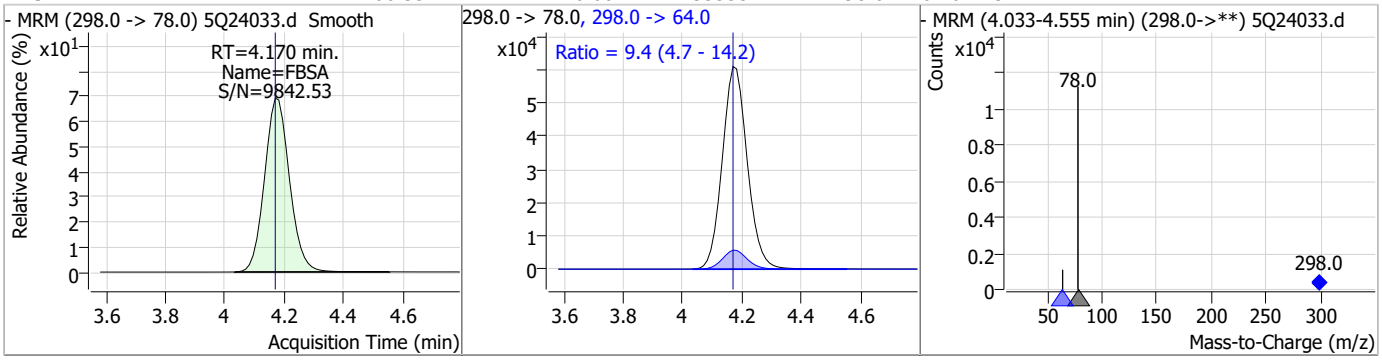
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	9.53	3.64	0.00	8793				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	100.91	3.63	-0.01	217498	299.0 -> 99.0	43.3	21.7	65.0

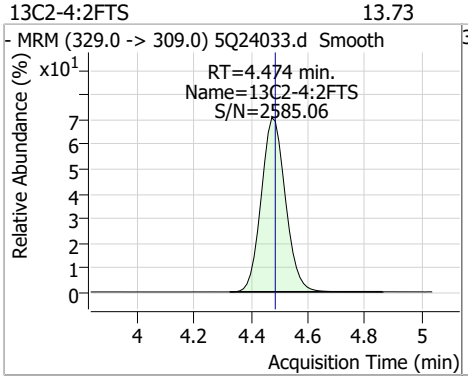


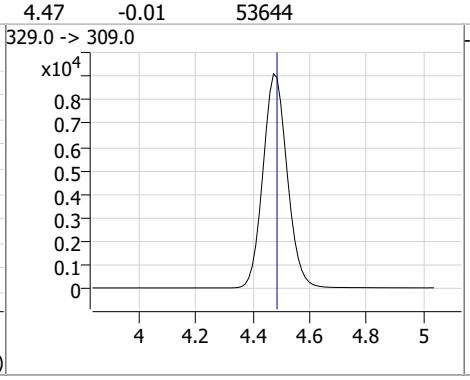
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	100.35	4.17	0.00	355581	298.0 -> 64.0	9.4	4.7	14.2

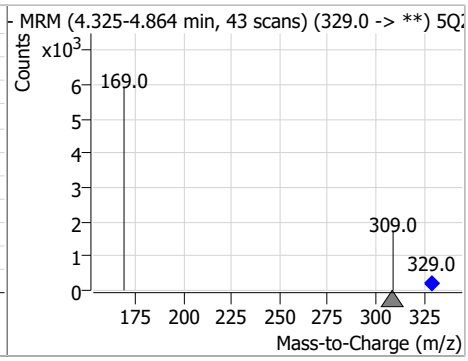


Perfluorinated Compounds by LC/MS/MS

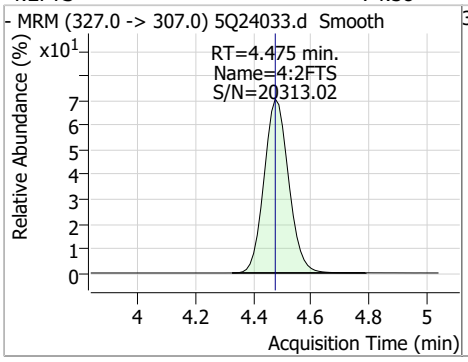
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	13.73	4.47	-0.01	53644				

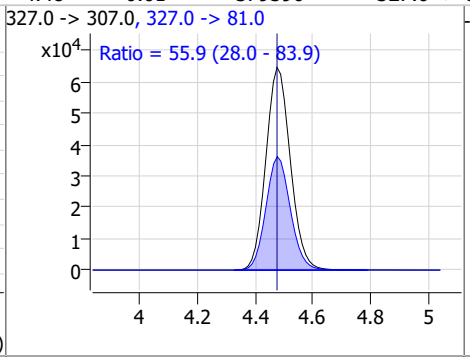


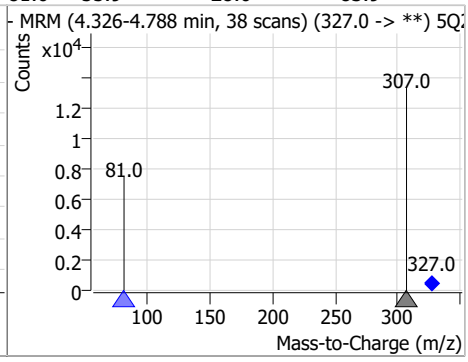




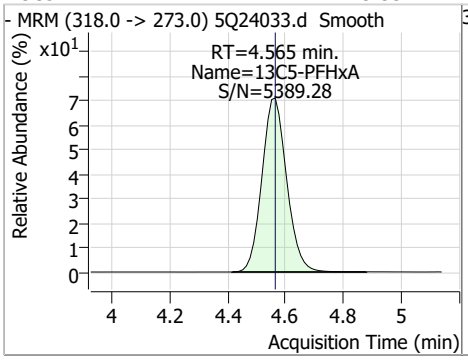
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	74.38	4.48	-0.01	379590	327.0 -> 81.0	55.9	28.0	83.9

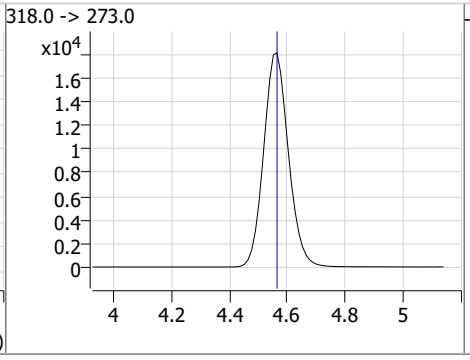


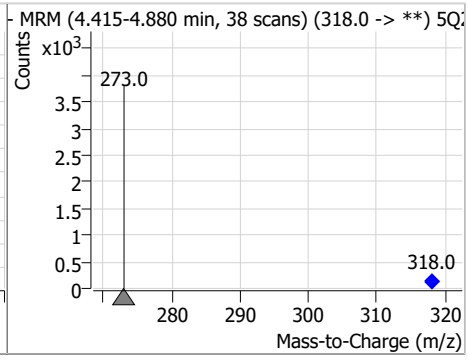




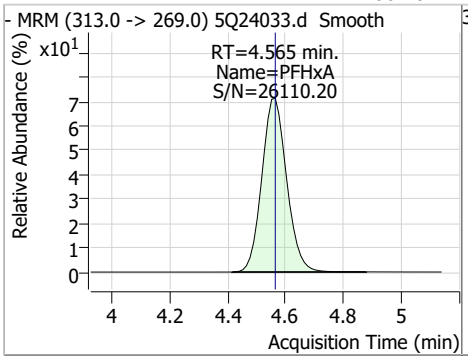
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	9.33	4.56	0.00	107156				

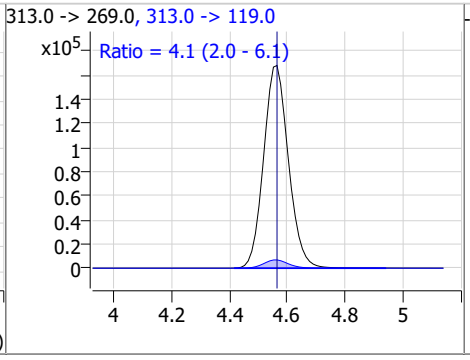


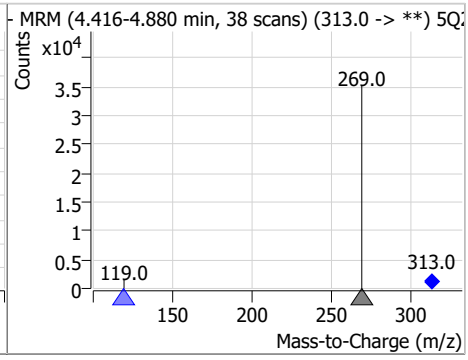




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	100.16	4.57	0.00	999945	313.0 -> 119.0	4.1	2.0	6.1

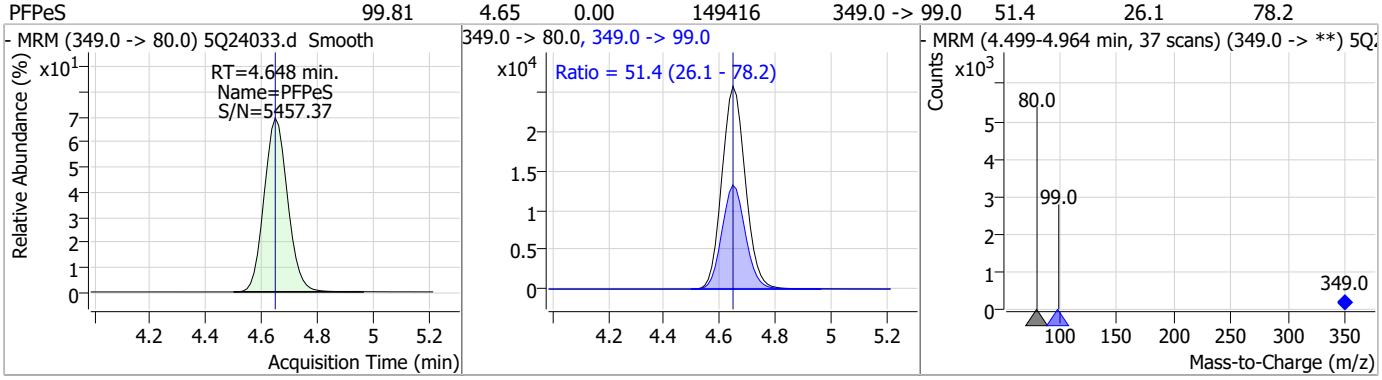




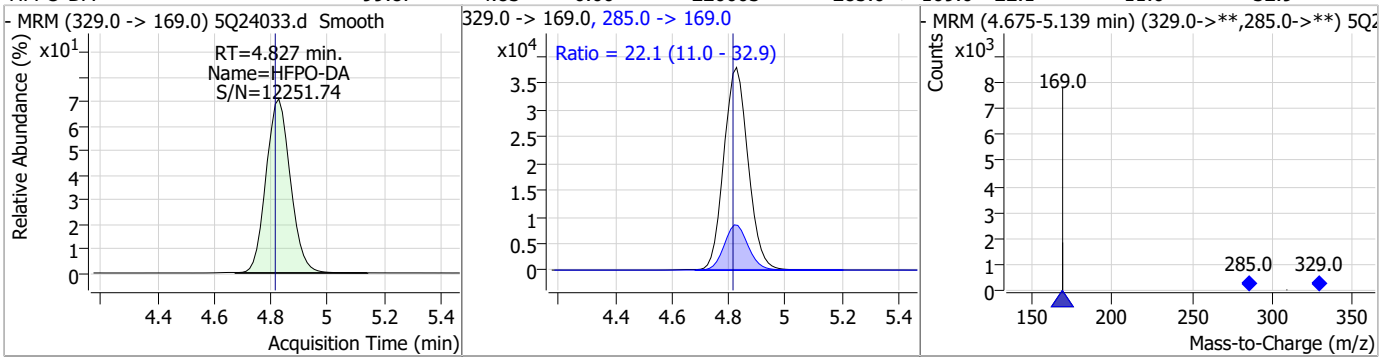


Perfluorinated Compounds by LC/MS/MS

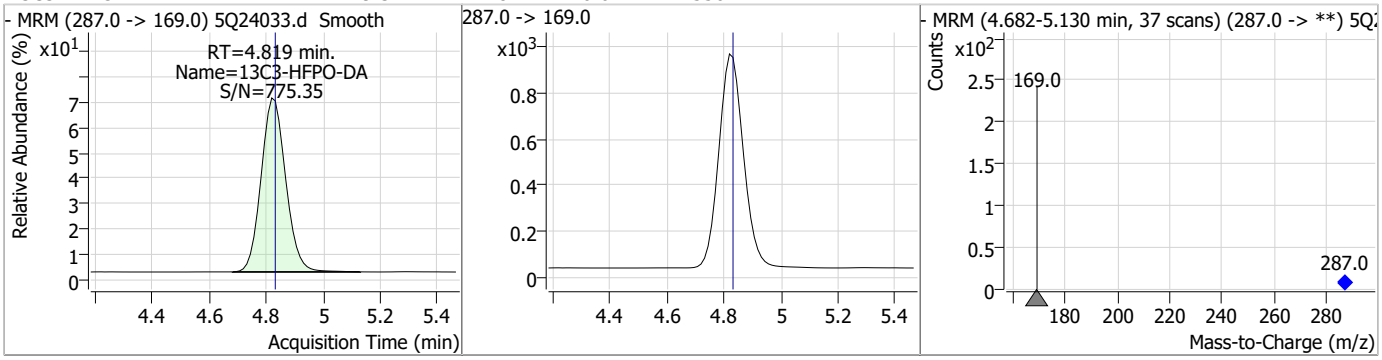
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	99.81	4.65	0.00	149416	349.0 -> 99.0	51.4	26.1	78.2



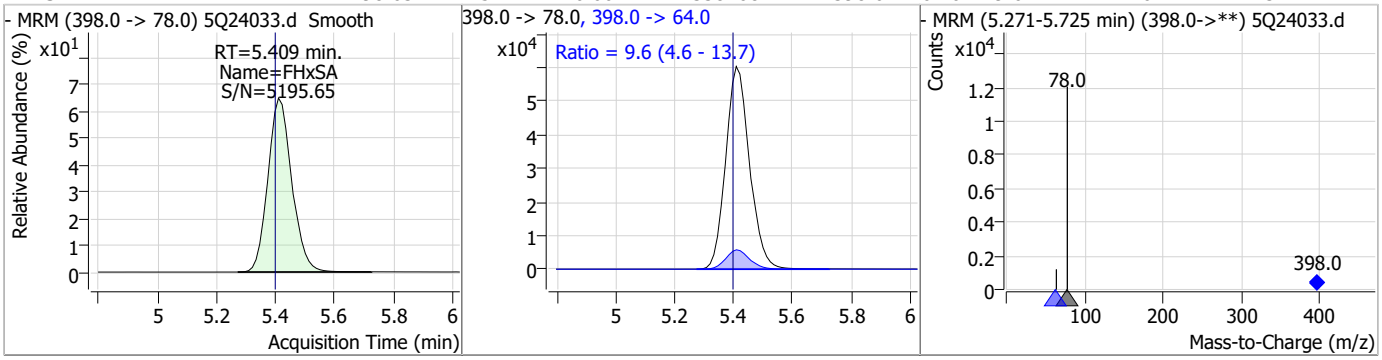
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	99.87	4.83	0.00	226003	285.0 -> 169.0	22.1	11.0	32.9



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	9.32	4.82	-0.01	5567				

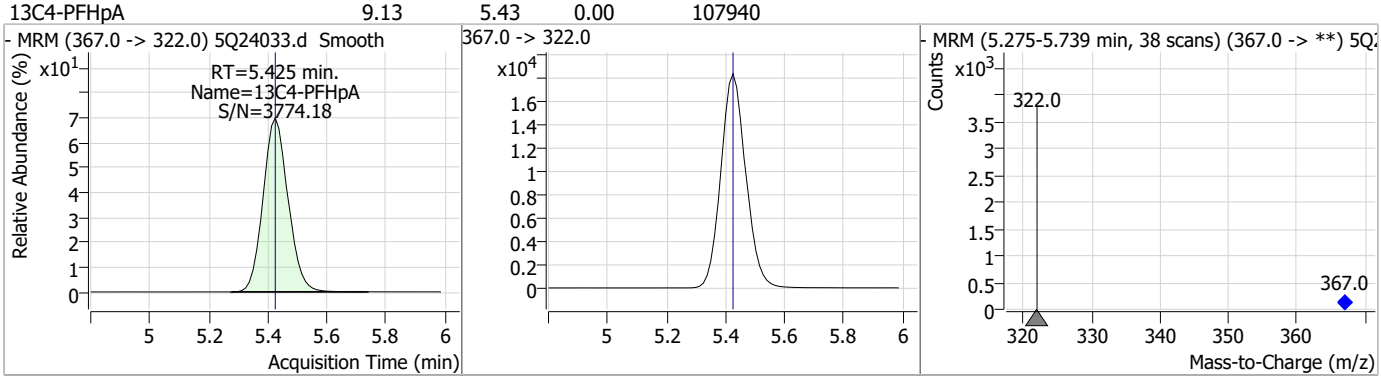


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	98.63	5.41	0.00	338268	398.0 -> 64.0	9.6	4.6	13.7

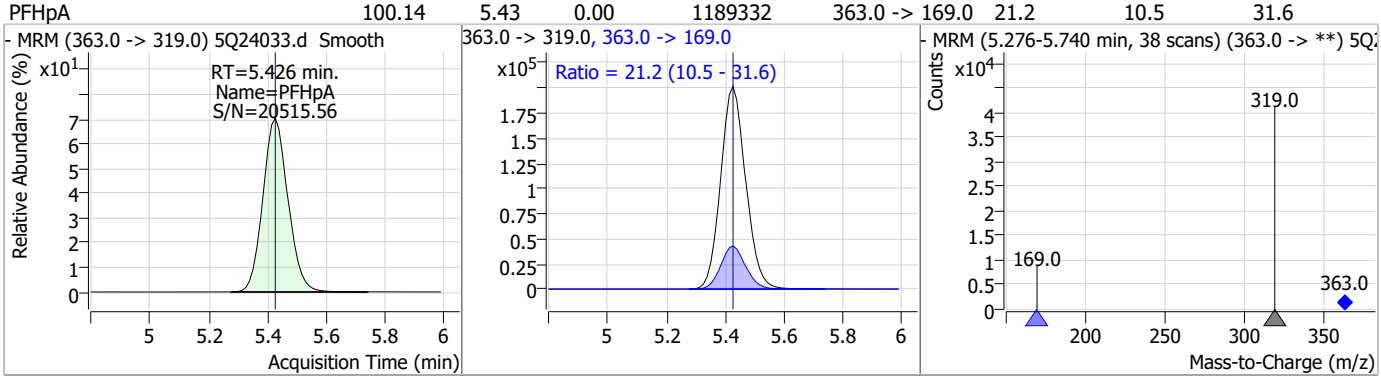


Perfluorinated Compounds by LC/MS/MS

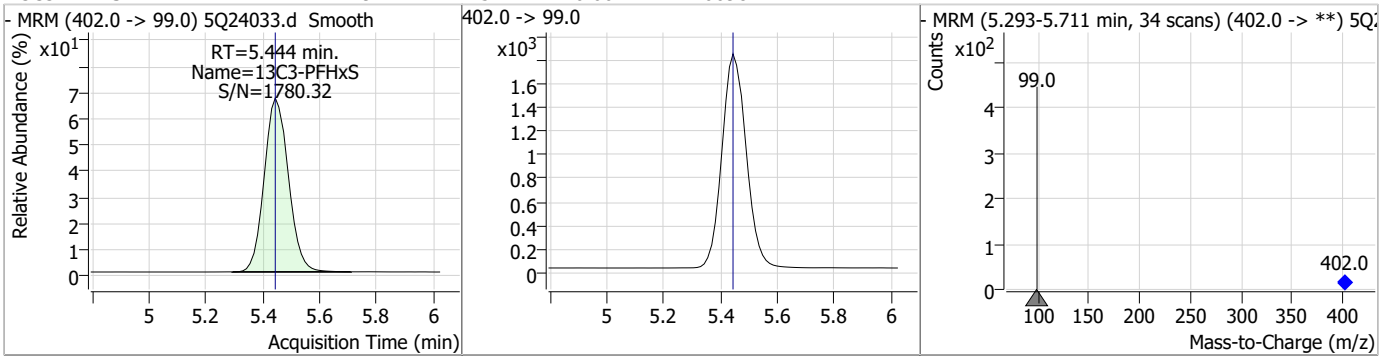
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	9.13	5.43	0.00	107940				



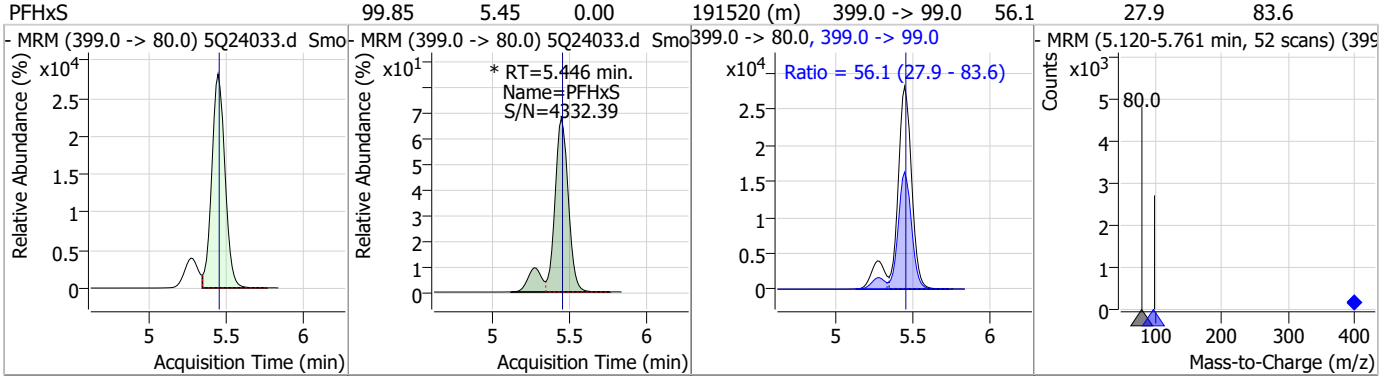
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	100.14	5.43	0.00	1189332	363.0 -> 169.0	21.2	10.5	31.6



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	9.47	5.44	0.00	10698				

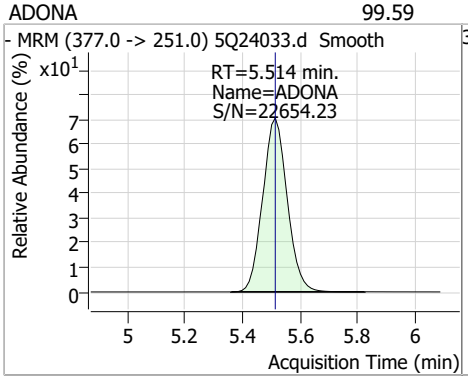


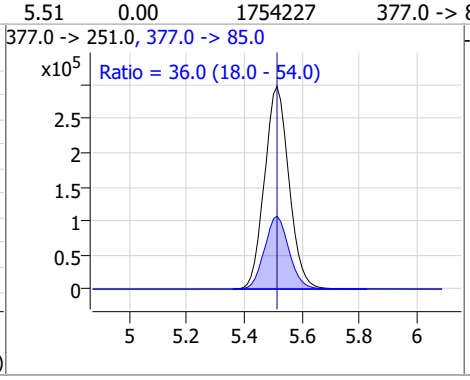
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	99.85	5.45	0.00	191520 (m)	399.0 -> 99.0	56.1	27.9	83.6

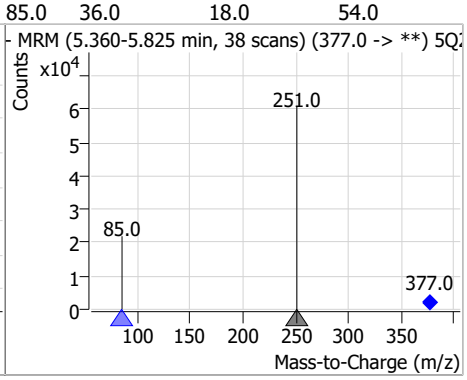


Perfluorinated Compounds by LC/MS/MS

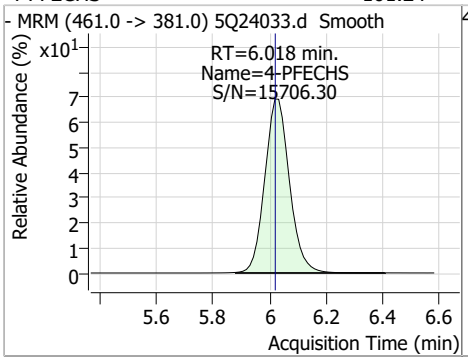
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	99.59	5.51	0.00	1754227	377.0 -> 85.0	36.0	18.0	54.0

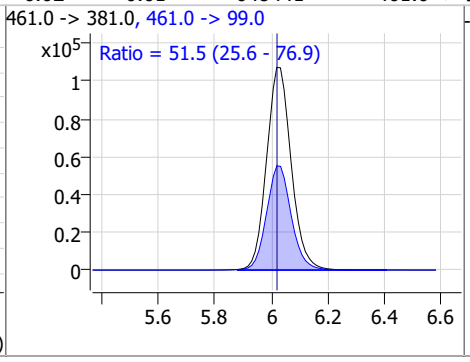


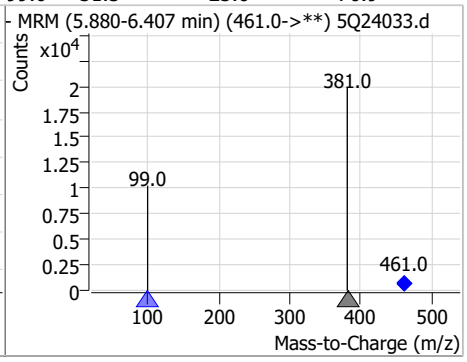




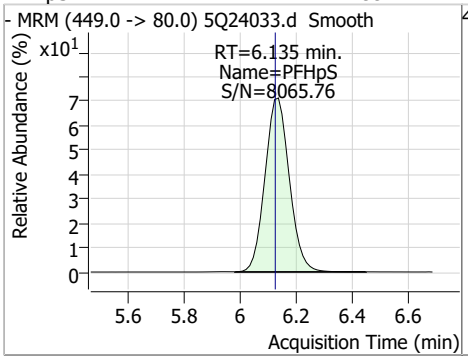
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS	101.24	6.02	-0.01	648441	461.0 -> 99.0	51.5	25.6	76.9

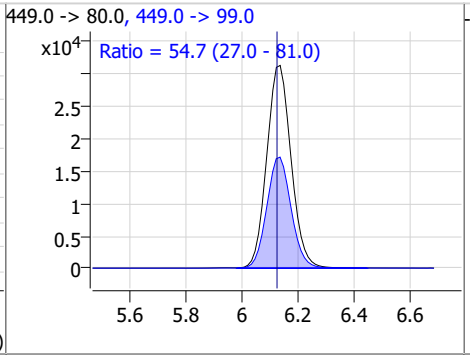


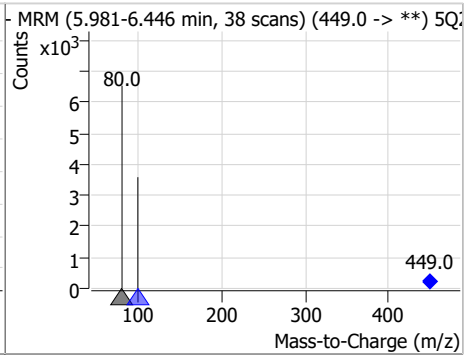




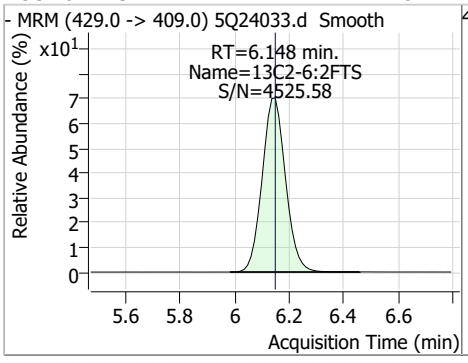
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	99.24	6.14	0.00	187250	449.0 -> 99.0	54.7	27.0	81.0

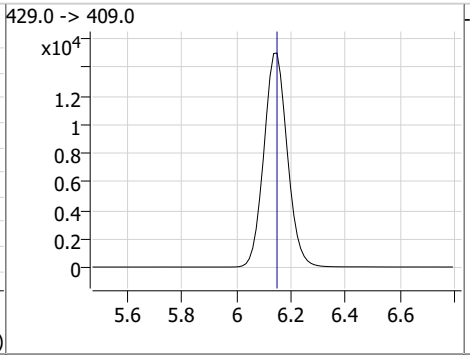


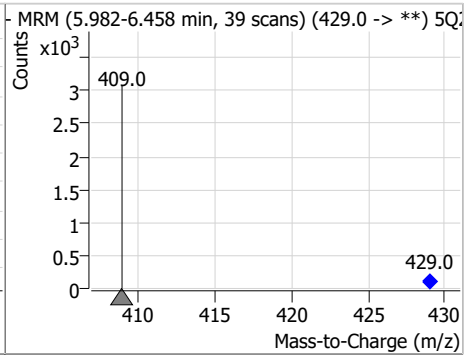




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	12.15	6.15	0.00	89338				

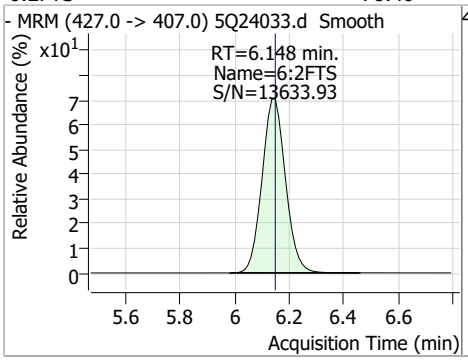


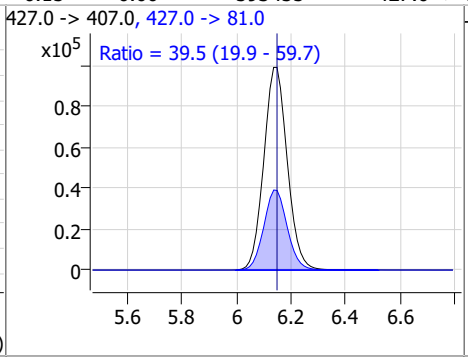


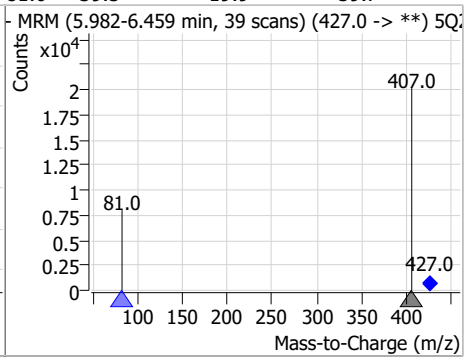


Perfluorinated Compounds by LC/MS/MS

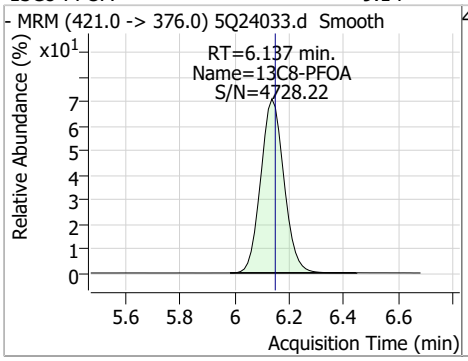
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	78.40	6.15	0.00	593455	427.0 -> 81.0	39.5	19.9	59.7

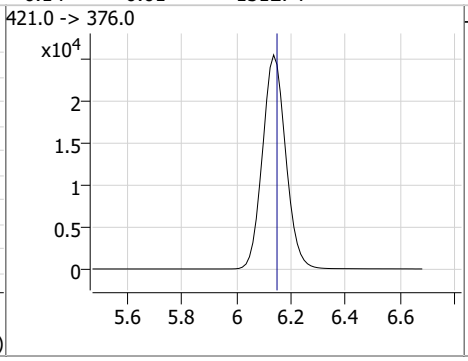


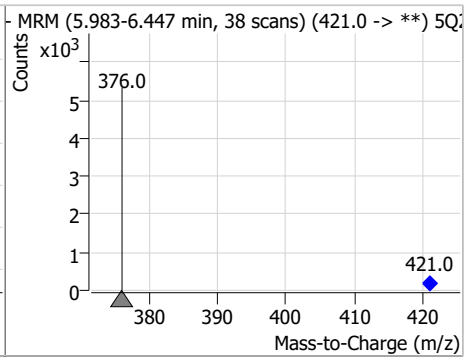




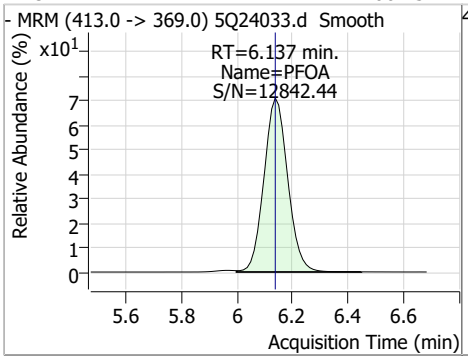
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	9.14	6.14	-0.01	151274				

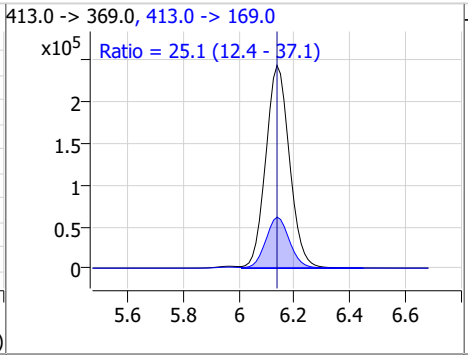


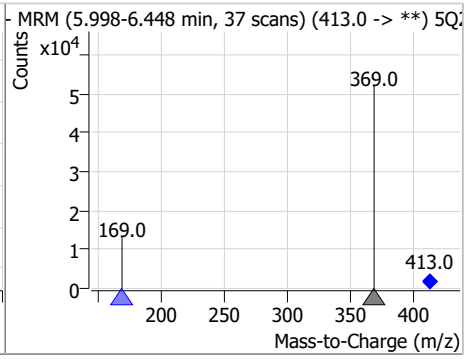




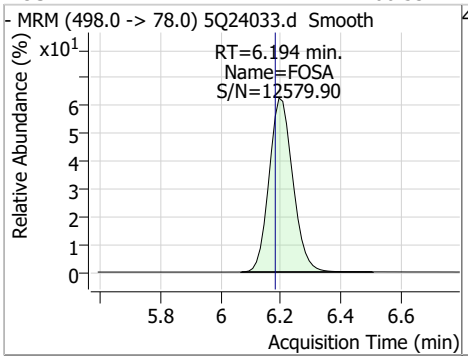
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	100.45	6.14	-0.01	1450826	413.0 -> 169.0	25.1	12.4	37.1

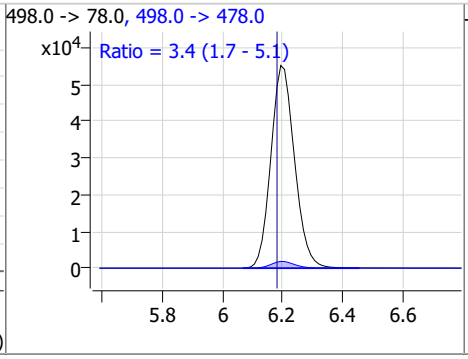


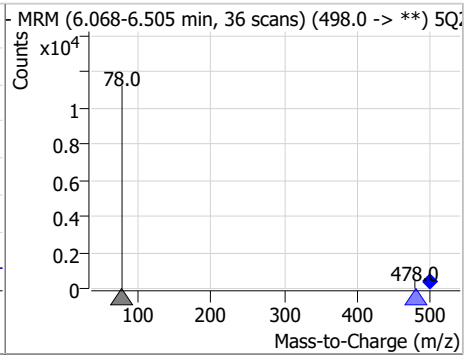




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	100.53	6.19	0.00	300667	498.0 -> 478.0	3.4	1.7	5.1

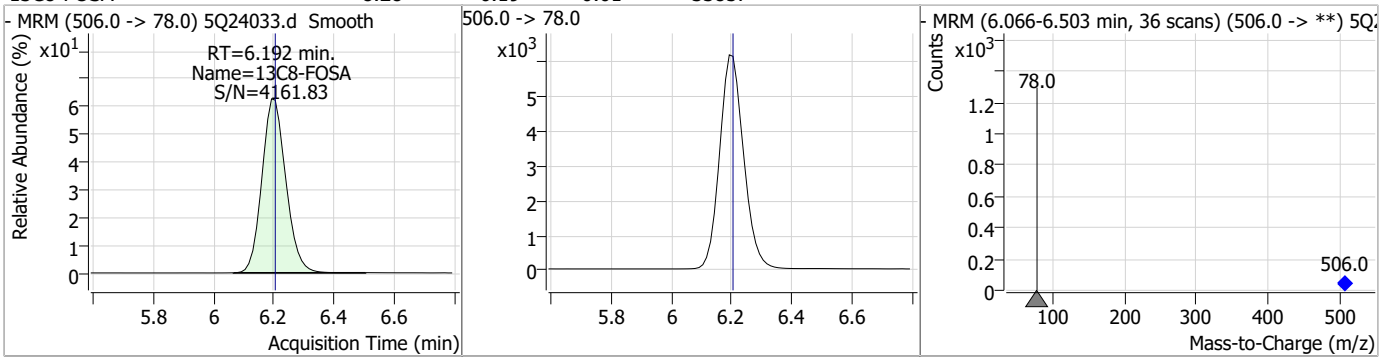




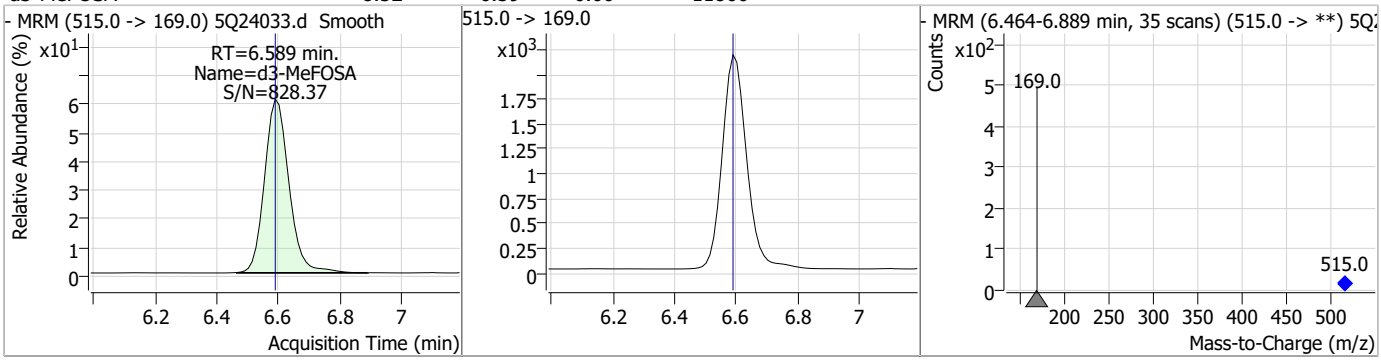


Perfluorinated Compounds by LC/MS/MS

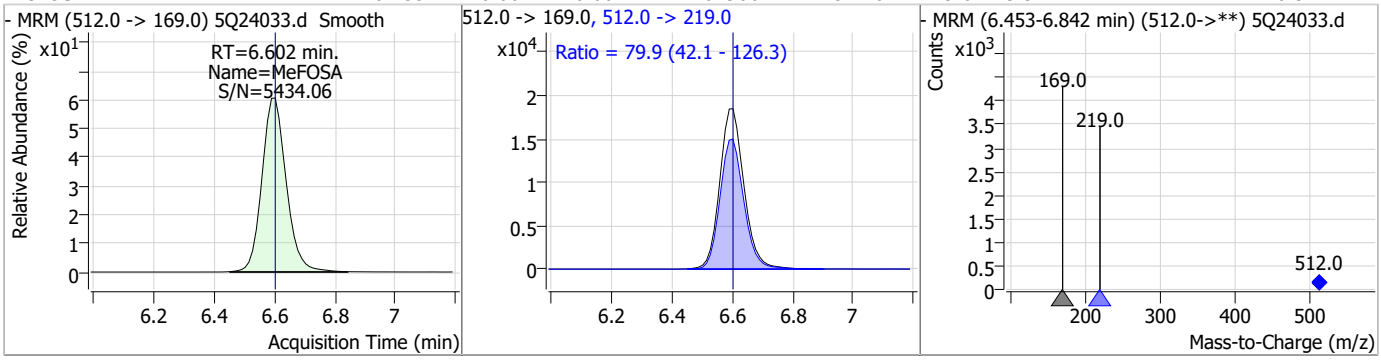
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	8.28	6.19	-0.01	33857				



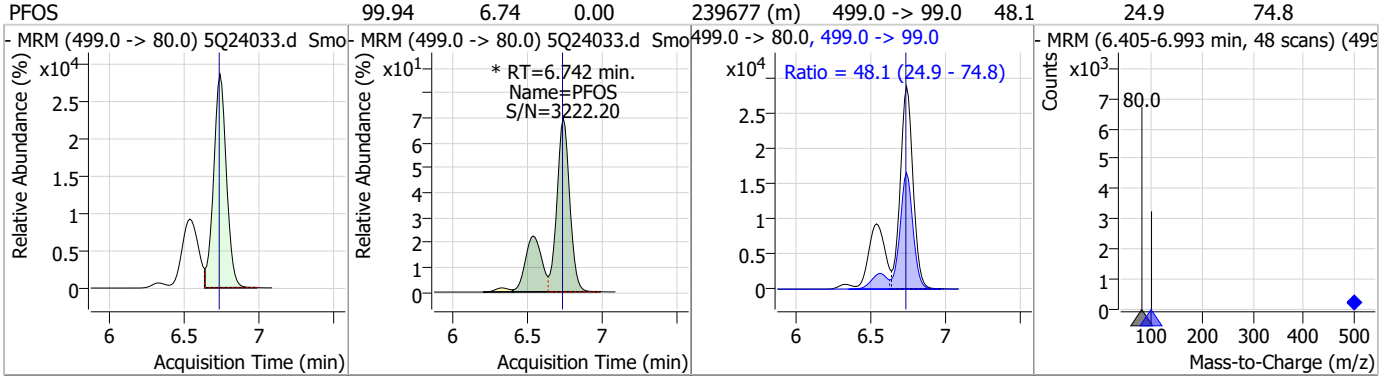
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	8.52	6.59	0.00	11866				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	101.55	6.60	0.00	102900	512.0 -> 219.0	79.9	42.1	126.3

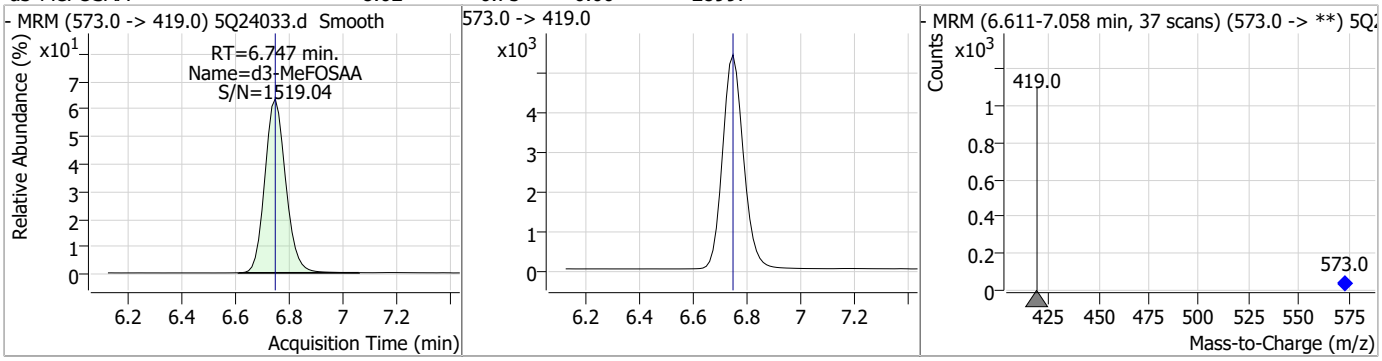


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	99.94	6.74	0.00	239677 (m)	499.0 -> 99.0	48.1	24.9	74.8

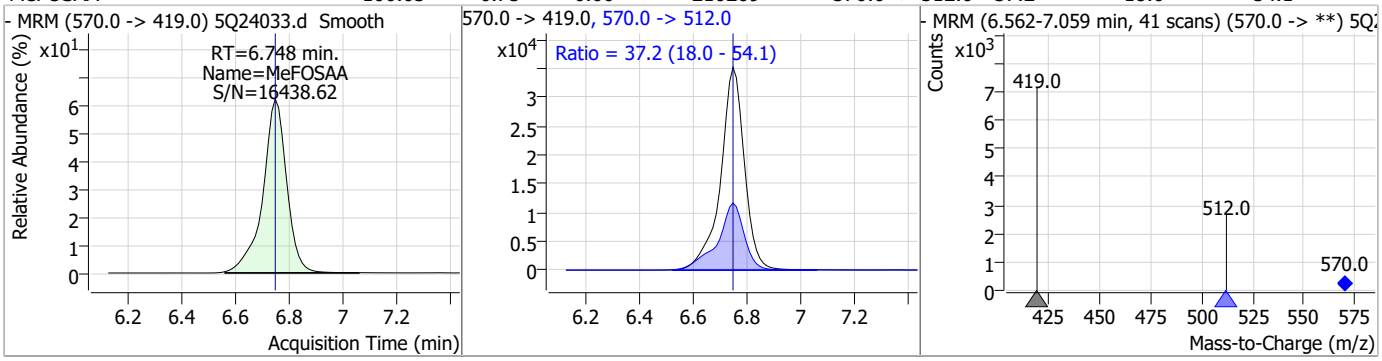


Perfluorinated Compounds by LC/MS/MS

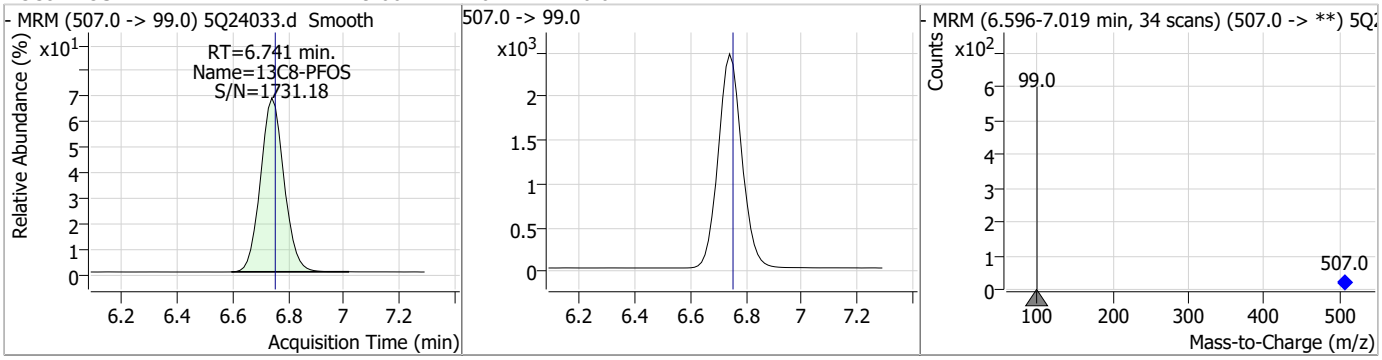
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	8.62	6.75	0.00	28997				



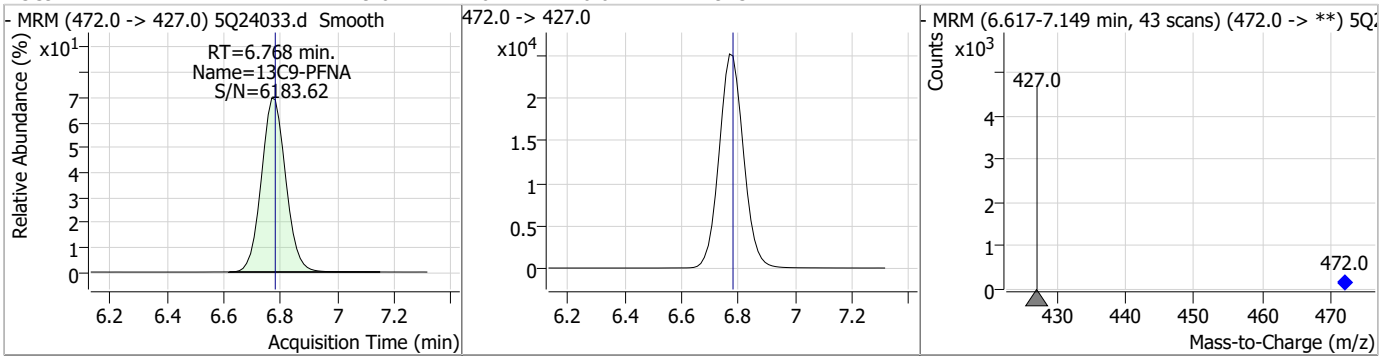
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	100.05	6.75	0.00	216269	570.0 -> 512.0	37.2	18.0	54.1



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	9.06	6.74	-0.01	14274				

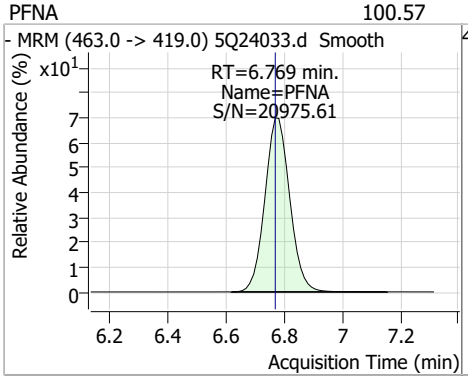


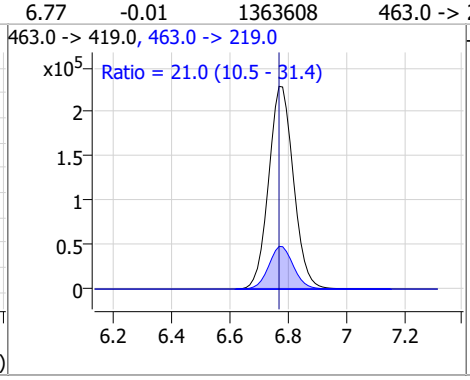
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	9.02	6.77	-0.01	149437				

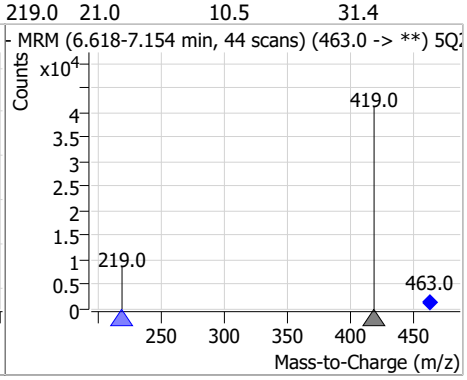


Perfluorinated Compounds by LC/MS/MS

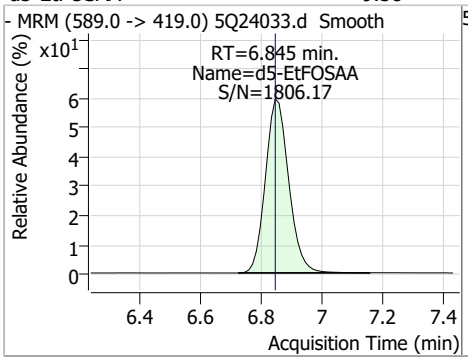
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	100.57	6.77	-0.01	1363608	463.0 -> 219.0	21.0	10.5	31.4

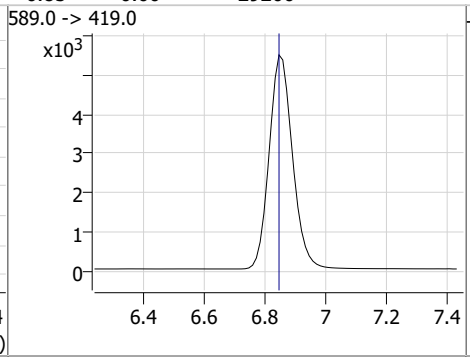


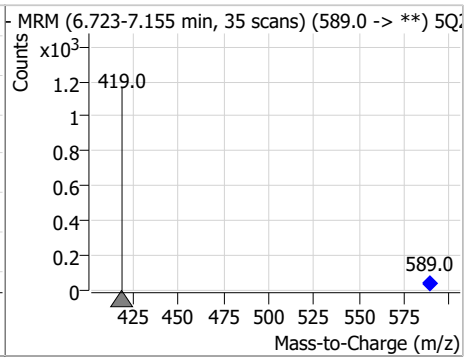




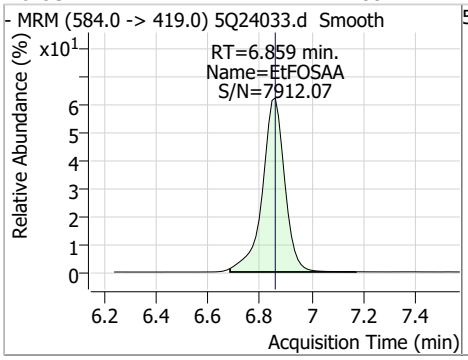
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	9.58	6.85	0.00	29206				

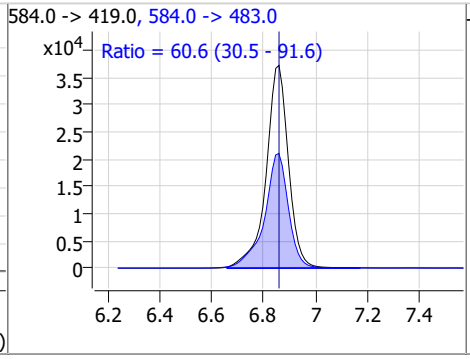


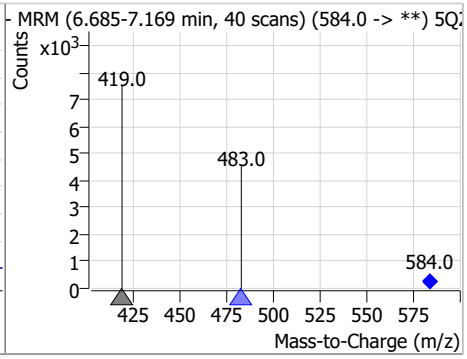




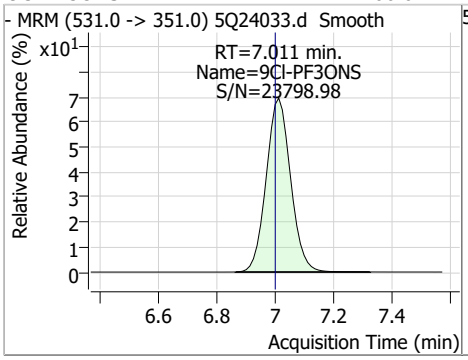
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	99.41	6.86	0.00	222171	584.0 -> 483.0	60.6	30.5	91.6

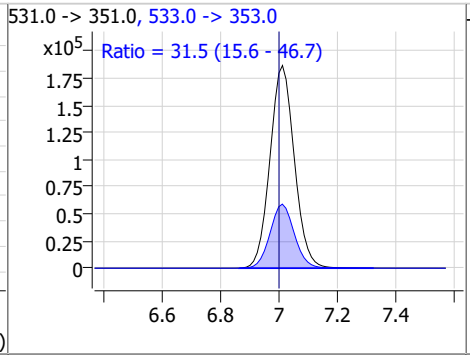


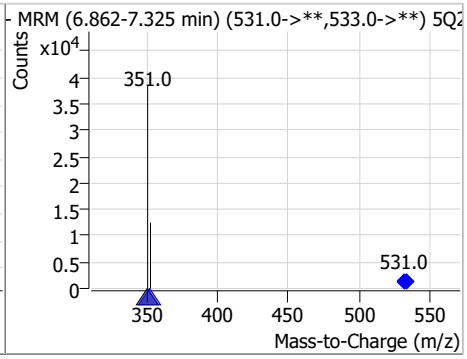




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	100.02	7.01	0.00	1086328	533.0 -> 353.0	31.5	15.6	46.7

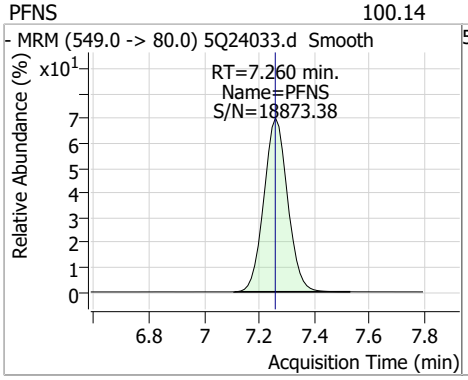


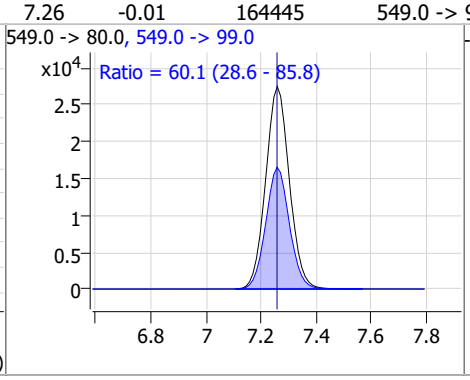


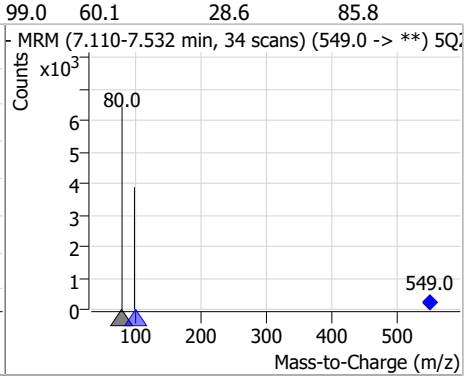


Perfluorinated Compounds by LC/MS/MS

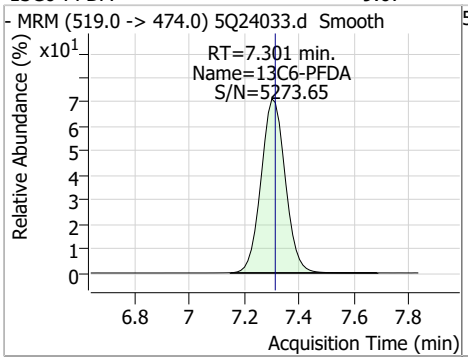
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	100.14	7.26	-0.01	164445	549.0 -> 99.0	60.1	28.6	85.8

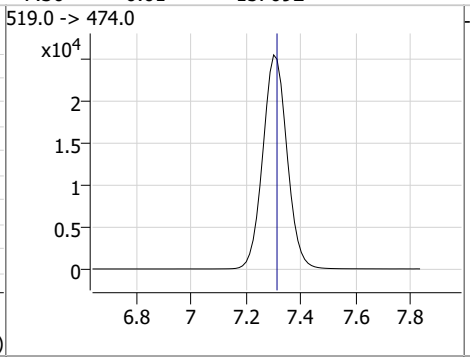


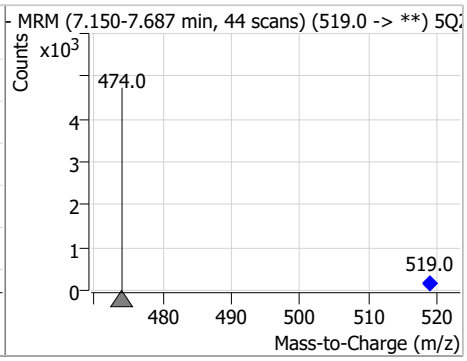




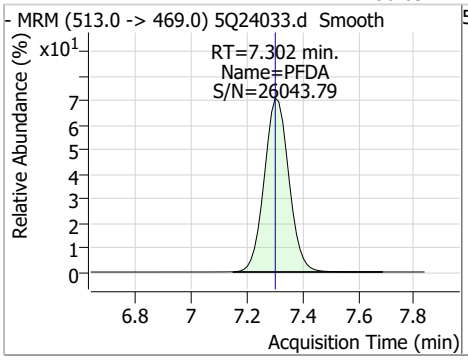
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	9.07	7.30	-0.01	157092				

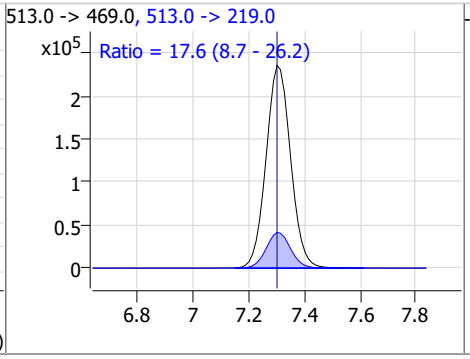


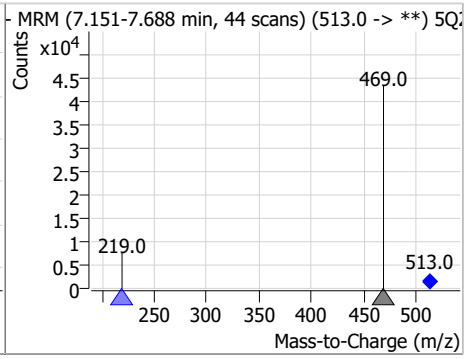




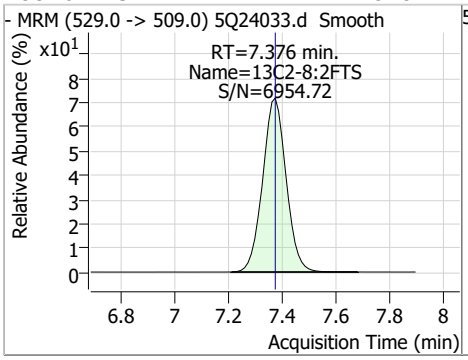
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	100.09	7.30	-0.01	1446177	513.0 -> 219.0	17.6	8.7	26.2

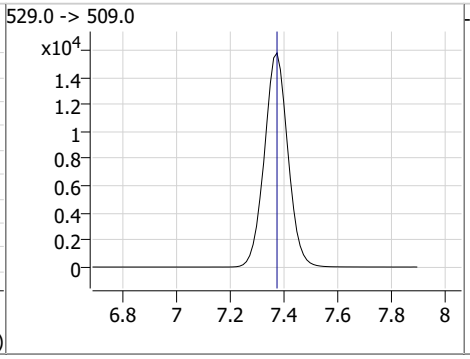


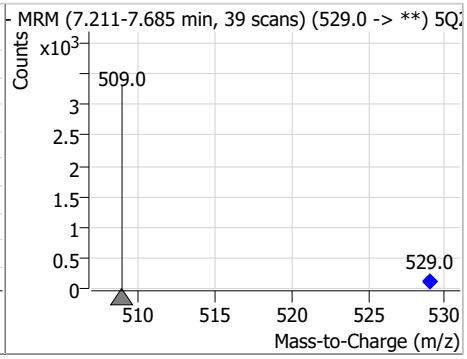




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	13.49	7.38	0.00	95447				

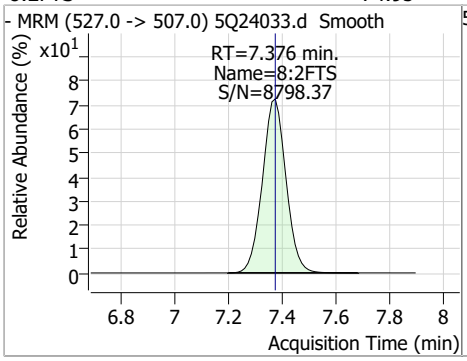


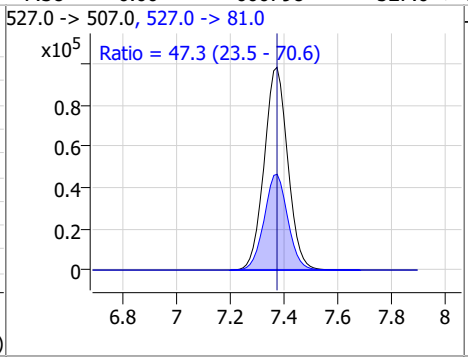


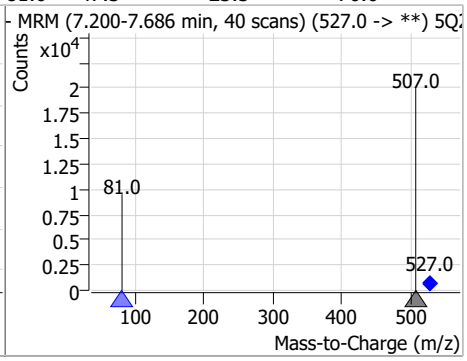


Perfluorinated Compounds by LC/MS/MS

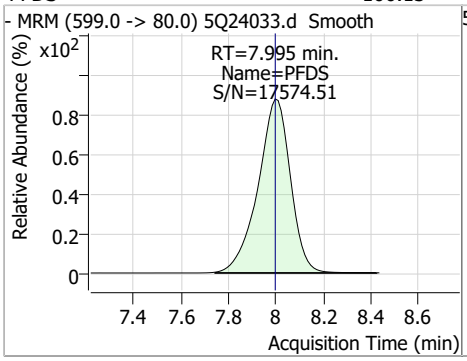
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	74.95	7.38	0.00	600798	527.0 -> 81.0	47.3	23.5	70.6

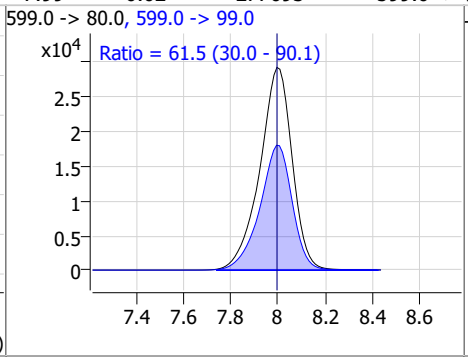


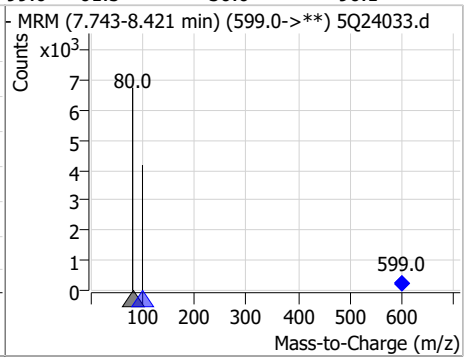




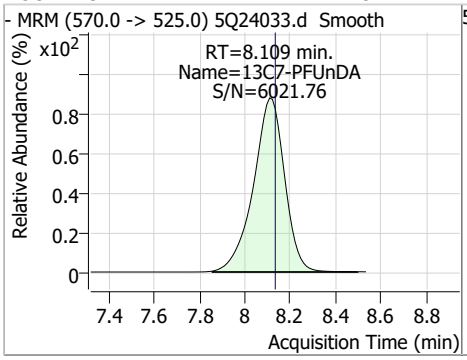
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	100.13	7.99	-0.02	277693	599.0 -> 99.0	61.5	30.0	90.1

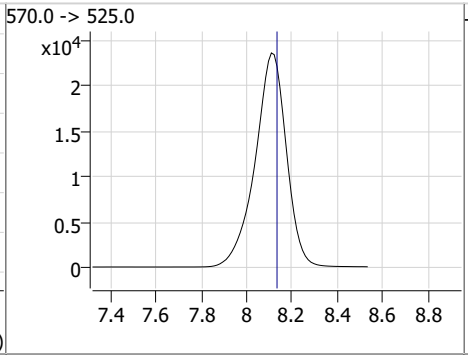


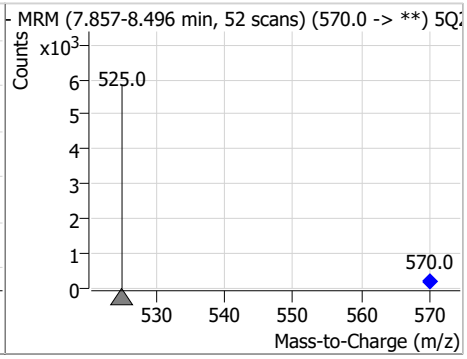




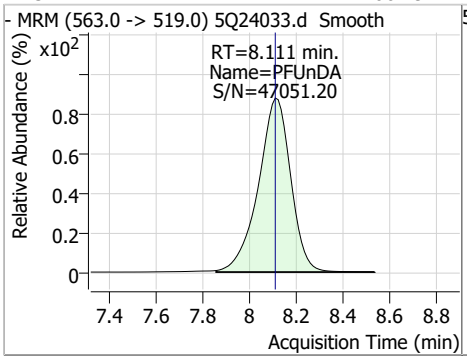
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	9.21	8.11	-0.02	224893				

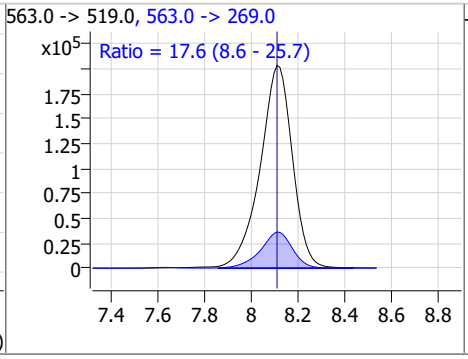


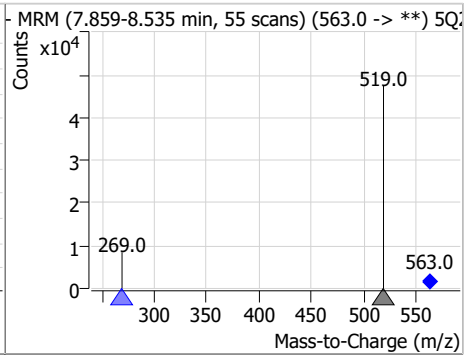




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	100.29	8.11	-0.02	1955564	563.0 -> 269.0	17.6	8.6	25.7

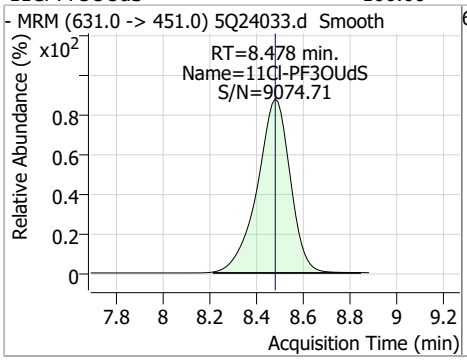


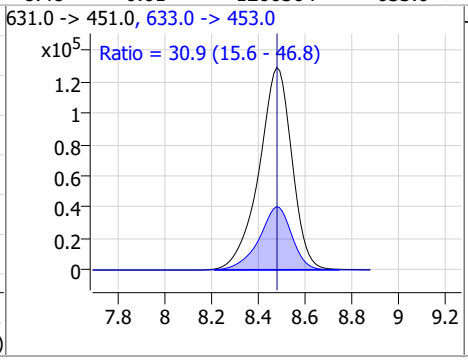


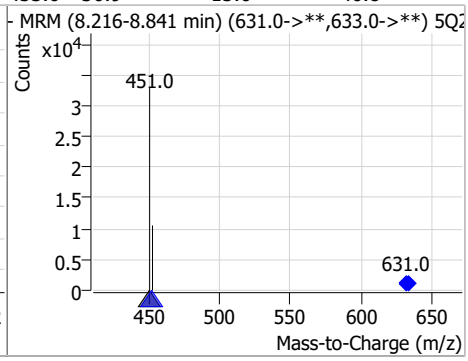


Perfluorinated Compounds by LC/MS/MS

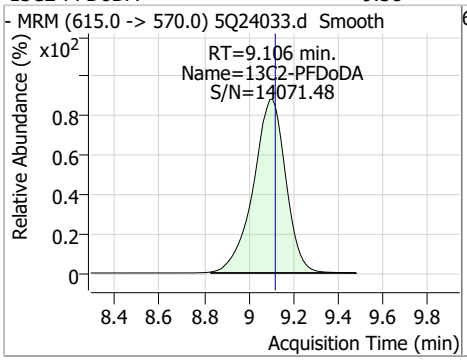
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	100.66	8.48	-0.01	1260504	633.0 -> 453.0	30.9	15.6	46.8

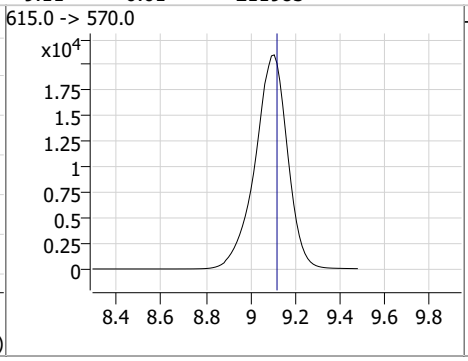


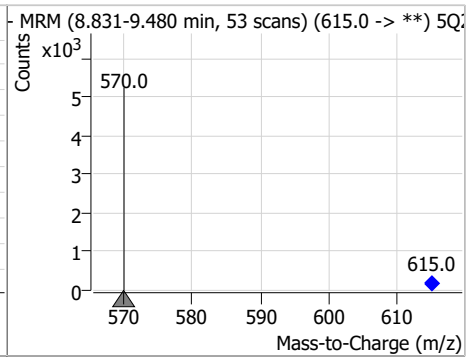




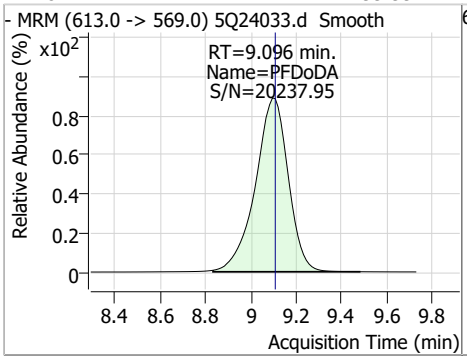
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	9.38	9.11	-0.01	211983				

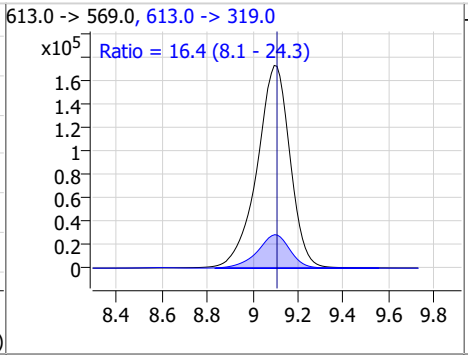


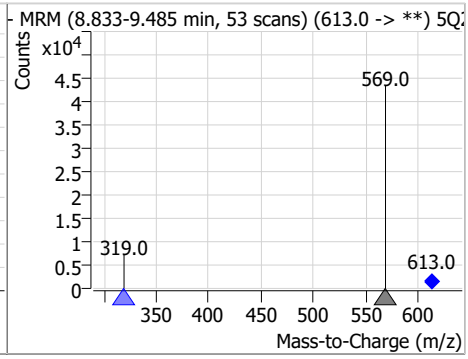




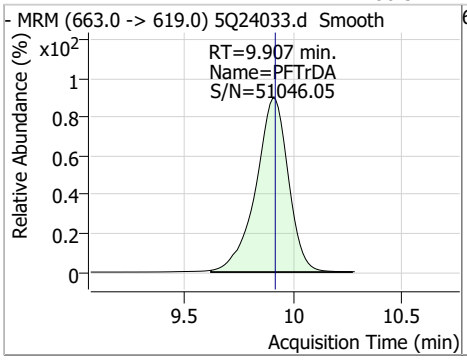
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	99.99	9.10	-0.02	1744893	613.0 -> 319.0	16.4	8.1	24.3

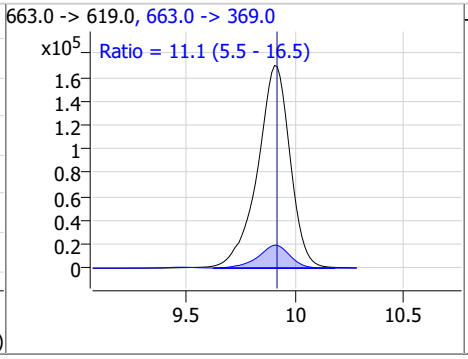


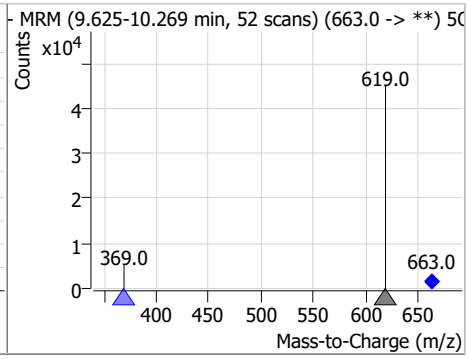




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	100.54	9.91	-0.02	1761114	663.0 -> 369.0	11.1	5.5	16.5

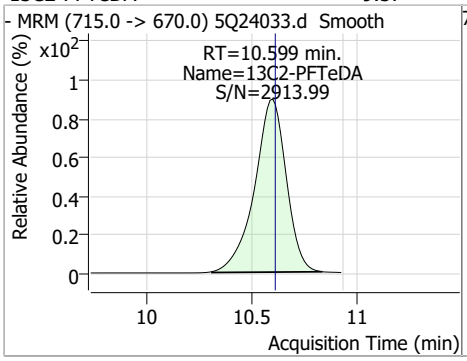


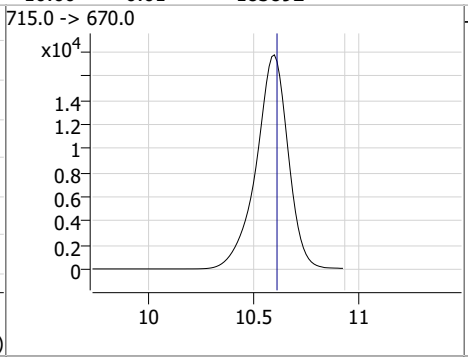


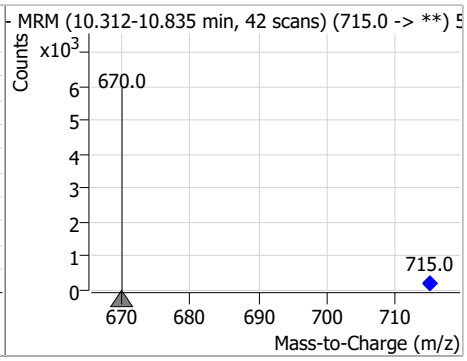


Perfluorinated Compounds by LC/MS/MS

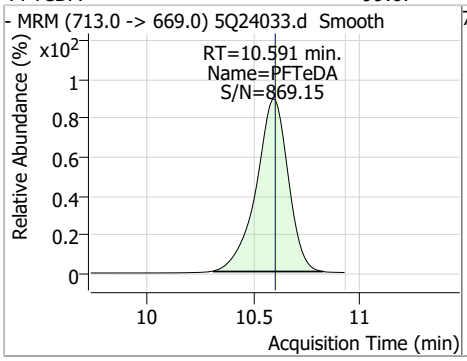
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	9.57	10.60	-0.01	183892				

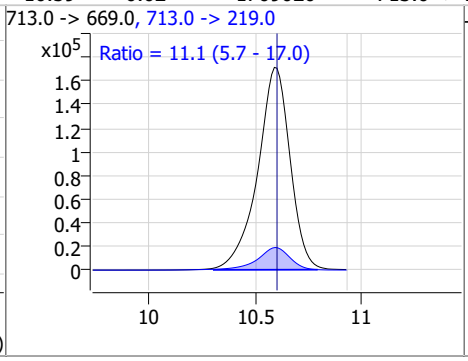


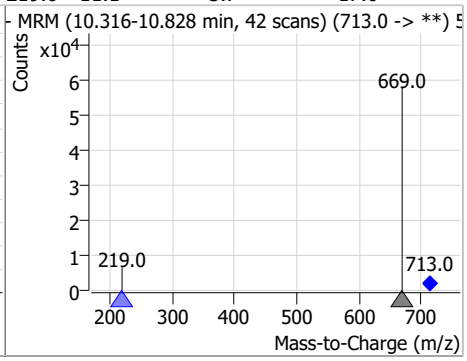




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	99.67	10.59	-0.02	1769020	713.0 -> 219.0	11.1	5.7	17.0







Manual Integration Approval Summary

Sample Number: S5Q377-IC377
Lab FileID: 5Q24033.D
Injection Time: 01/02/24 19:01
Method: EPA 537M QSM5.3 B-15
Analyst approved: 01/03/24 16:03 Lindsay Ritner
Supervisor approved: 01/04/24 12:54 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.45	Split peak
Perfluorooctanesulfonic acid	1763-23-1		6.74	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Natasha Gumtie 01/04/24 12:54

Perfluorinated Compounds by LC/MS/MS

Data File : 5Q24035.d
Operator : lindsayr
Acq. Method : 537_ID.m
Acq. Date-Time : 1/2/2024 7:34:34 PM
Sample Name : icv377-20
Vial : P1-B1
DA Method File : ID_010224_S5Q377.quantmethod.xml
Batch Name : s5q377.batch.bin
Sample Information : OP401,S5Q377,250,,,1.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.987	217.0 -> 172.0	40149	10.00	µg/L	0.000
M5-PFPeA	3.432	268.0 -> 223.0	68501	10.00	µg/L	0.000
M5-PFHxA	4.565	318.0 -> 273.0	106902	10.00	µg/L	0.000
M4-PFHpA	5.425	367.0 -> 322.0	110911	10.00	µg/L	0.000
M8-PFOA	6.137	421.0 -> 376.0	156931	10.00	µg/L	-0.012
M9-PFNA	6.768	472.0 -> 427.0	159648	10.00	µg/L	-0.012
M6-PFDA	7.313	519.0 -> 474.0	165035	10.00	µg/L	0.000
M7-PFUnDA	8.121	570.0 -> 525.0	228064	10.00	µg/L	-0.012
M2-PFDoDA	9.093	615.0 -> 570.0	212228	10.00	µg/L	-0.025
M2-PFTeDA	10.587	715.0 -> 670.0	183081	10.00	µg/L	-0.025
M8-FOSA	6.192	506.0 -> 78.0	40512	10.00	µg/L	-0.012
M3-PFBS	3.637	302.0 -> 99.0	8406	10.00	µg/L	0.000
M3-PFHxS	5.444	402.0 -> 99.0	10835	10.00	µg/L	0.000
M8-PFOS	6.741	507.0 -> 99.0	14775	10.00	µg/L	-0.012
M2-4:2FTS	4.474	329.0 -> 309.0	37552	10.00	µg/L	-0.012
M2-6:2FTS	6.148	429.0 -> 409.0	68840	10.00	µg/L	0.000
M2-8:2FTS	7.376	529.0 -> 509.0	70321	10.00	µg/L	0.000
M3-MeFOSAA	6.747	573.0 -> 419.0	32362	10.00	µg/L	0.000
M3-HFPO-DA	4.819	287.0 -> 169.0	5397	10.00	µg/L	-0.012
M3-MeFOSA	6.589	515.0 -> 169.0	14376	10.00	µg/L	0.000
M5-EtFOSAA	6.845	589.0 -> 419.0	28908	10.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.474	329.0 -> 309.0	37552	9.61	µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 96.1%		
13C2-6:2FTS	6.148	429.0 -> 409.0	68840	9.36	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 93.6%		
13C2-8:2FTS	7.376	529.0 -> 509.0	70321	9.94	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.4%		
13C2-PFDoDA	9.093	615.0 -> 570.0	212228	9.39	µg/L	-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 93.9%		
13C2-PFTeDA	10.587	715.0 -> 670.0	183081	9.53	µg/L	-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 95.3%		
13C3-PFBS	3.637	302.0 -> 99.0	8406	9.11	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 91.1%		
13C3-PFHxS	5.444	402.0 -> 99.0	10835	9.59	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 95.9%		
13C4-PFBA	1.987	217.0 -> 172.0	40149	9.10	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 91.0%		
13C4-PFHpA	5.425	367.0 -> 322.0	110911	9.39	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 93.9%		
13C5-PFHxA	4.565	318.0 -> 273.0	106902	9.31	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 93.1%		
13C5-PFPeA	3.432	268.0 -> 223.0	68501	9.22	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 92.2%		
13C6-PFDA	7.313	519.0 -> 474.0	165035	9.53	µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

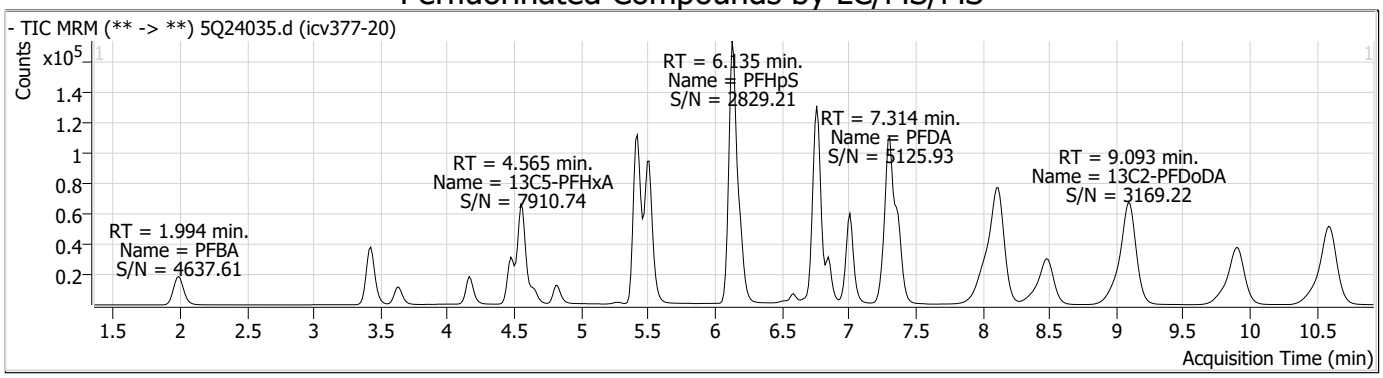
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 95.3%			
13C7-PFUnDA	8.121	570.0 -> 525.0	228064	9.34	µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 93.4%			
13C8-FOSA	6.192	506.0 -> 78.0	40512	9.91	µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.1%			
13C8-PFOA	6.137	421.0 -> 376.0	156931	9.48	µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 94.8%			
13C8-PFOS	6.741	507.0 -> 99.0	14775	9.38	µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 93.8%			
13C9-PFNA	6.768	472.0 -> 427.0	159648	9.63	µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 96.3%			
d3-MeFOSAA	6.747	573.0 -> 419.0	32362	9.62	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 96.2%			
13C3-HFPO-DA	4.819	287.0 -> 169.0	5397	9.04	µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 90.4%			
d3-MeFOSA	6.589	515.0 -> 169.0	14376	10.32	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 103.2%			
d5-EtFOSAA	6.845	589.0 -> 419.0	28908	9.49	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 94.9%			
Target Compounds							QValue
4:2FTS	4.475	327.0 -> 307.0	56873	15.92	µg/L		100
		327.0 -> 81.0	31997				
6:2FTS	6.148	427.0 -> 407.0	101210	17.35	µg/L		99
		427.0 -> 81.0	39874				
8:2FTS	7.376	527.0 -> 507.0	98430	16.67	µg/L		99
		527.0 -> 81.0	45844				
EtFOSAA	6.859	584.0 -> 419.0	37981	17.17	µg/L		99
		584.0 -> 483.0	22965				
FOSA	6.194	498.0 -> 78.0	59402	16.60	µg/L		100
		498.0 -> 478.0	2096				
MeFOSAA	6.748	570.0 -> 419.0	39549	16.39	µg/L		100
		570.0 -> 512.0	14223				
PFBA	1.994	213.0 -> 169.0	60137	16.68	µg/L		100
PFBS	3.628	299.0 -> 80.0	29629	14.38	µg/L		100
		299.0 -> 99.0	12751				
PFDA	7.314	513.0 -> 469.0	241368	15.90	µg/L		100
		513.0 -> 219.0	42168				
PFDoDA	9.096	613.0 -> 569.0	327051	18.72	µg/L		100
		613.0 -> 319.0	53014				
PFDS	8.007	599.0 -> 80.0	43718	15.54	µg/L		98
		599.0 -> 99.0	27001				
PFHpA	5.426	363.0 -> 319.0	202141	16.56	µg/L		100
		363.0 -> 169.0	42247				
PFHpS	6.135	449.0 -> 80.0	30668	15.70	µg/L		99
		449.0 -> 99.0	16813				
PFHxA	4.565	313.0 -> 269.0	152461	15.31	µg/L		100
		313.0 -> 119.0	6133				
PFHxS	5.446	399.0 -> 80.0	0		µg/L	m	1
		399.0 -> 99.0	0				
PFNA	6.781	463.0 -> 419.0	214707	14.82	µg/L		99
		463.0 -> 219.0	44445				
PFNS	7.260	549.0 -> 80.0	27186	15.99	µg/L		98
		549.0 -> 99.0	15895				
PFOA	6.137	413.0 -> 369.0	243331	16.24	µg/L		100
		413.0 -> 169.0	60483				
PFOS	6.742	499.0 -> 80.0	40786	16.43	µg/L	m	99

Perfluorinated Compounds by LC/MS/MS

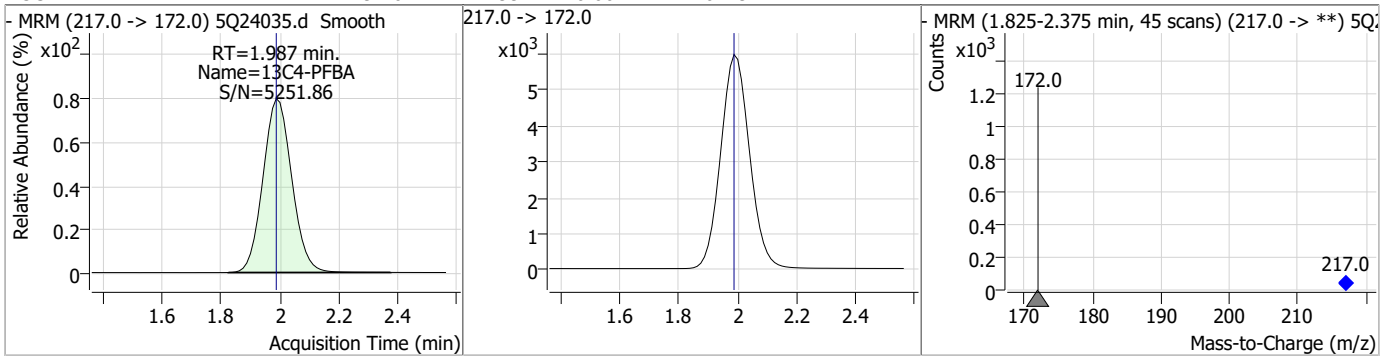
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
		499.0 -> 99.0	20499				
PFPeA	3.434	263.0 -> 219.0	106091	16.43	µg/L		100
PFPeS	4.648	349.0 -> 80.0	21261	14.86	µg/L		99
		349.0 -> 99.0	10856				
PFTeDA	10.591	713.0 -> 669.0	271366	15.36	µg/L		99
		713.0 -> 219.0	29676				
PFTrDA	9.907	663.0 -> 619.0	305778	17.44	µg/L		99
		663.0 -> 369.0	34506				
PFUnDA	8.111	563.0 -> 519.0	345043	17.45	µg/L		99
		563.0 -> 269.0	60220				
11Cl-PF3OUdS	8.478	631.0 -> 451.0	194675	15.53	µg/L		99
		633.0 -> 453.0	61289				
9Cl-PF3ONS	7.011	531.0 -> 351.0	179028	15.69	µg/L		99
		533.0 -> 353.0	56352				
ADONA	5.514	377.0 -> 251.0	269263	15.09	µg/L		100
		377.0 -> 85.0	96639				
HFPO-DA	4.827	329.0 -> 169.0	36938	16.84	µg/L		100
		285.0 -> 169.0	8127				
MeFOSA	6.741	512.0 -> 169.0	0		µg/L	m	1
		512.0 -> 219.0	0				
4-PFECHS	-	461.0 -> 381.0	-	N.D.			
		461.0 -> 99.0					
FBSA	4.170	298.0 -> 78.0	65989	18.67	µg/L		100
		298.0 -> 64.0	6288				
FHxSA	5.409	398.0 -> 78.0	72631	20.41	µg/L		99
		398.0 -> 64.0	6858				

 # = Qualifier out of range, m = manually integrated, + = Area summed

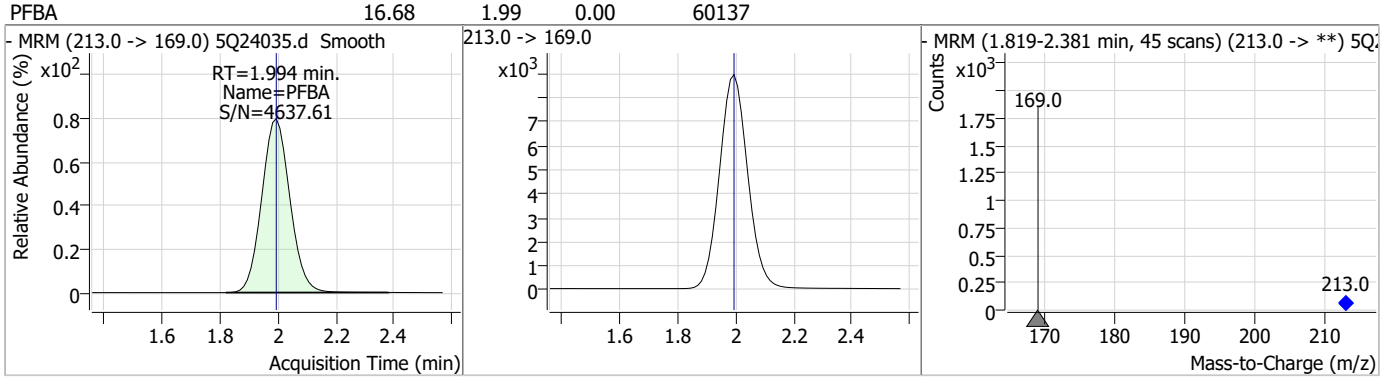
Perfluorinated Compounds by LC/MS/MS



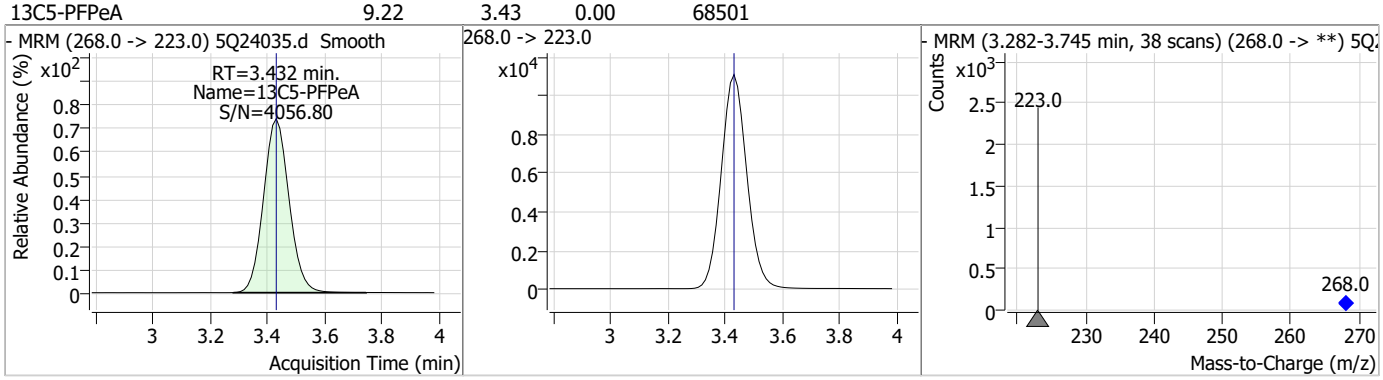
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	9.10	1.99	0.00	40149				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	16.68	1.99	0.00	60137				

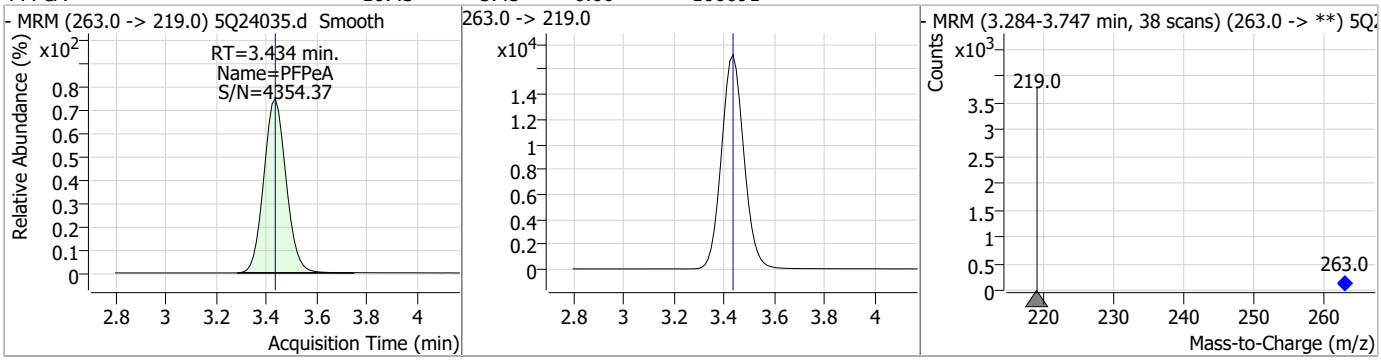


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	9.22	3.43	0.00	68501				

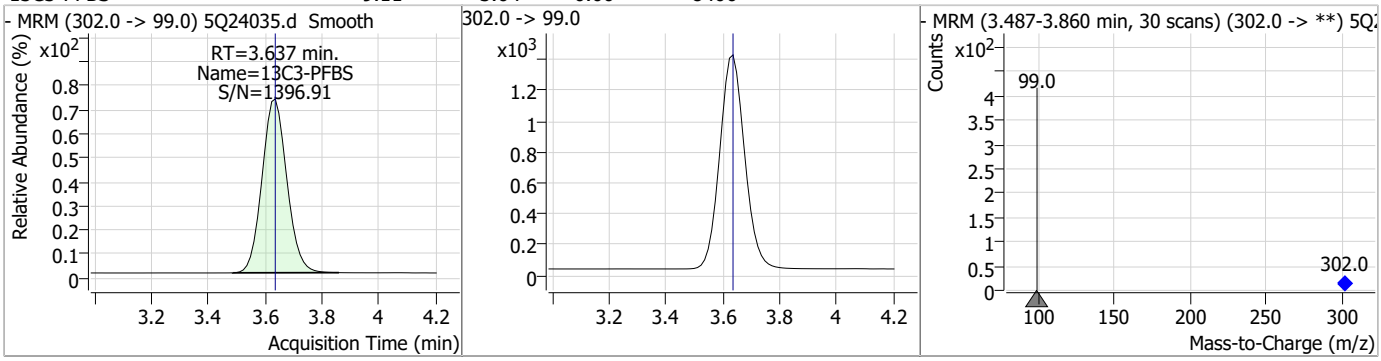


Perfluorinated Compounds by LC/MS/MS

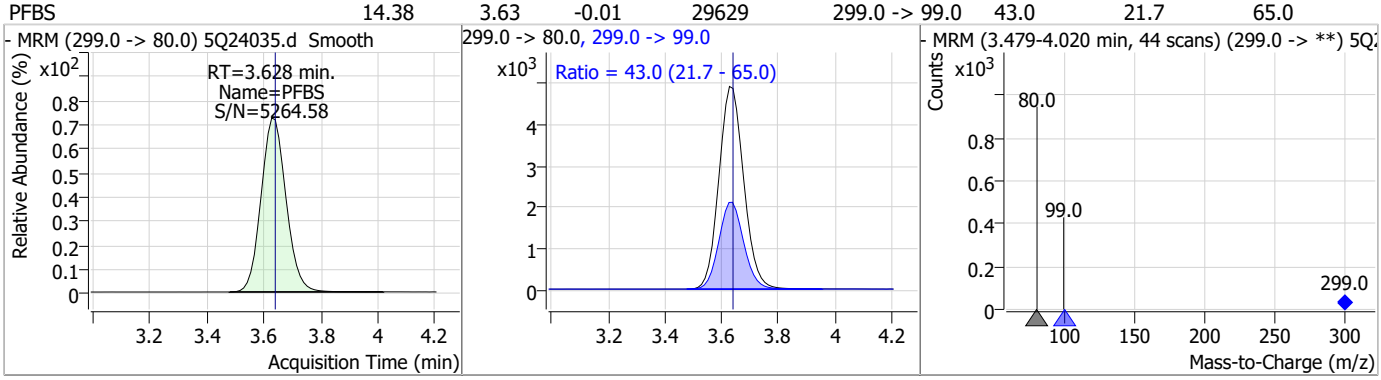
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	16.43	3.43	0.00	106091				



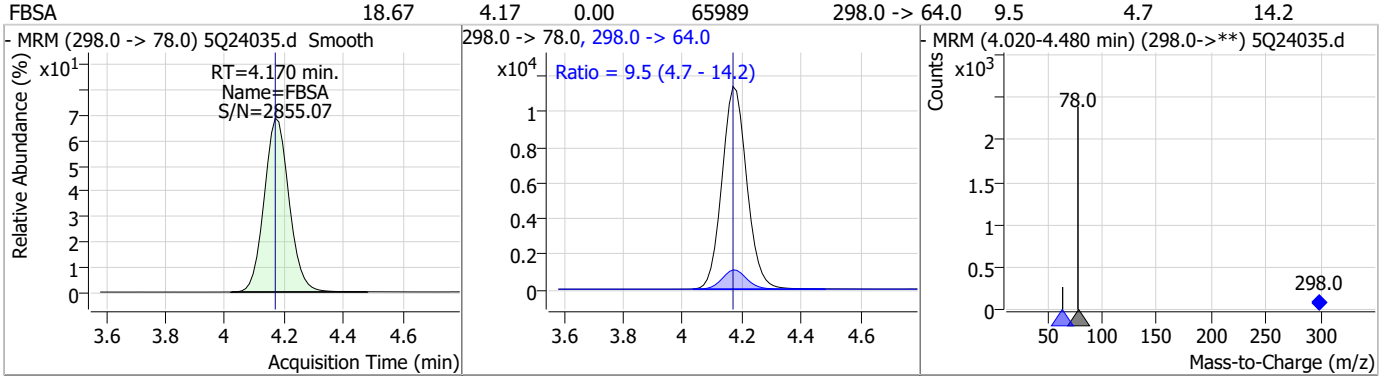
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	9.11	3.64	0.00	8406				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	14.38	3.63	-0.01	29629	299.0 -> 99.0	43.0	21.7	65.0

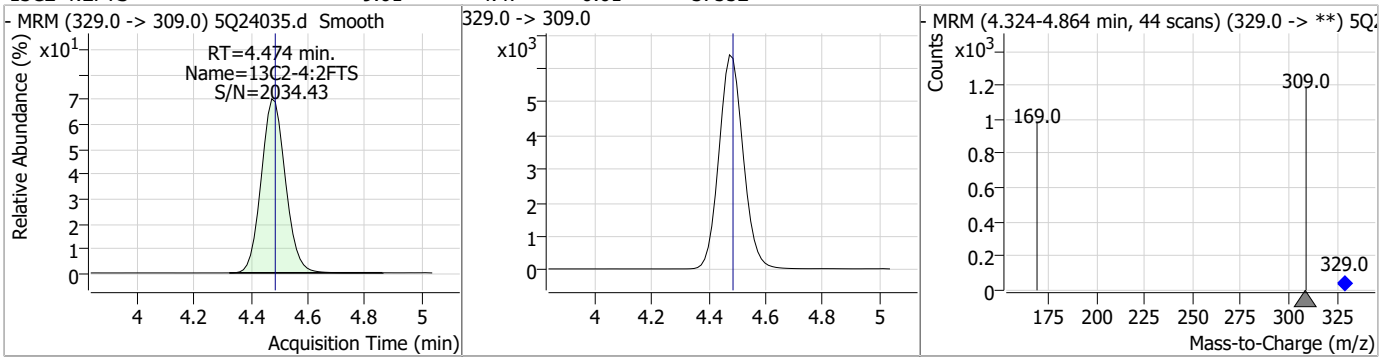


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	18.67	4.17	0.00	65989	298.0 -> 64.0	9.5	4.7	14.2

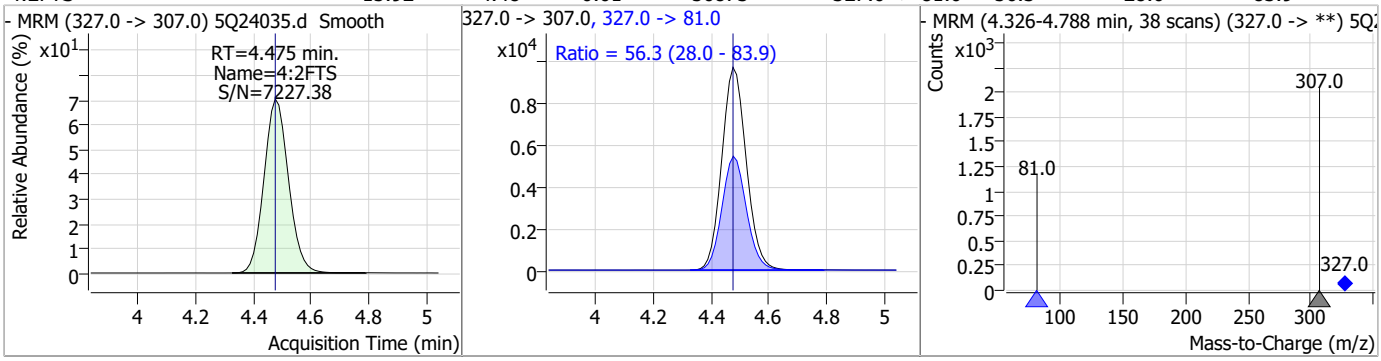


Perfluorinated Compounds by LC/MS/MS

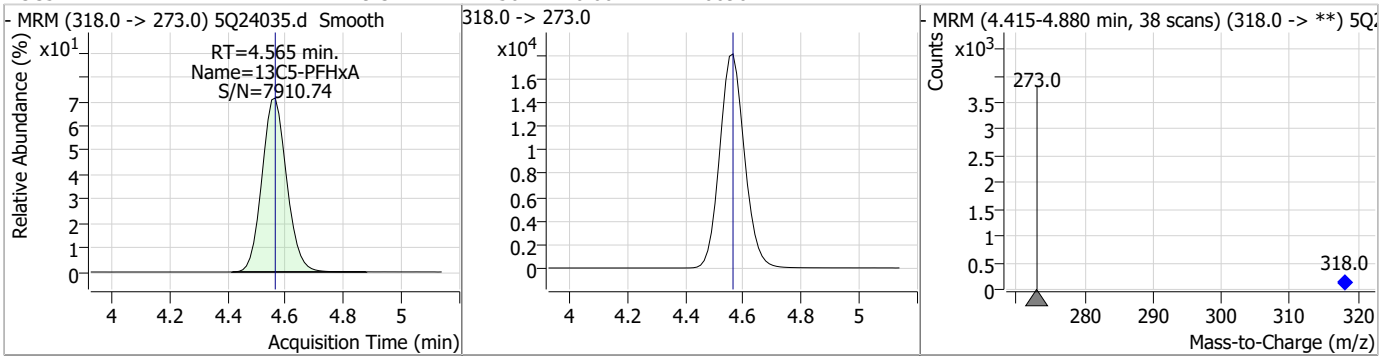
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	9.61	4.47	-0.01	37552				



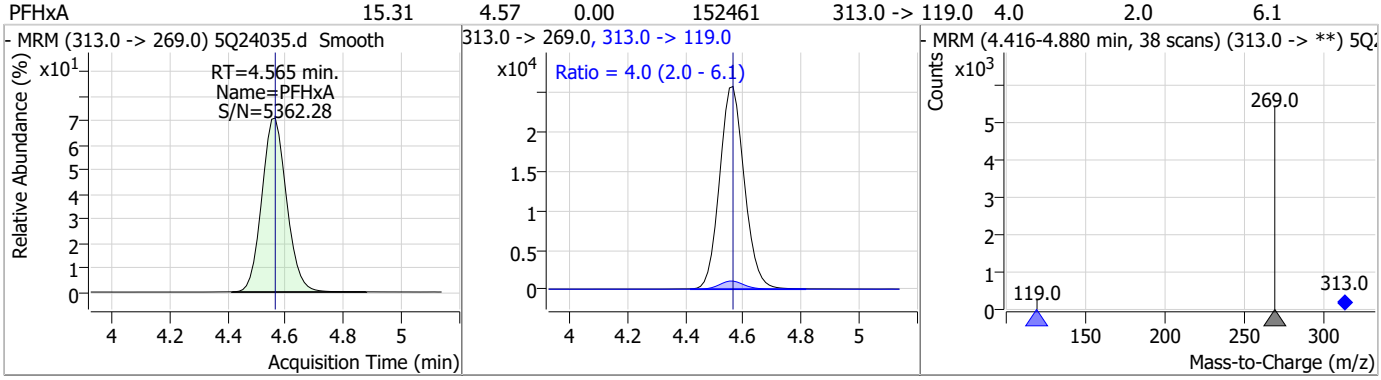
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	15.92	4.48	-0.01	56873	327.0 -> 81.0	56.3	28.0	83.9



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	9.31	4.56	0.00	106902				

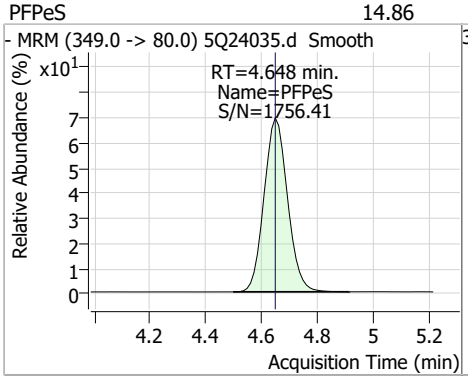


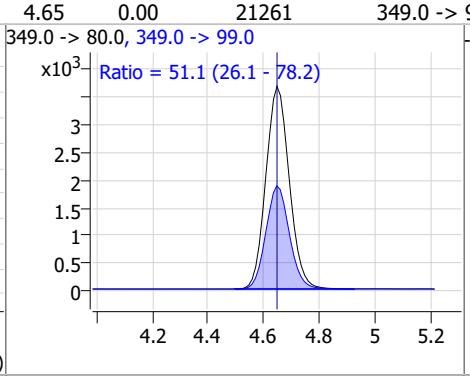
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	15.31	4.57	0.00	152461	313.0 -> 119.0	4.0	2.0	6.1

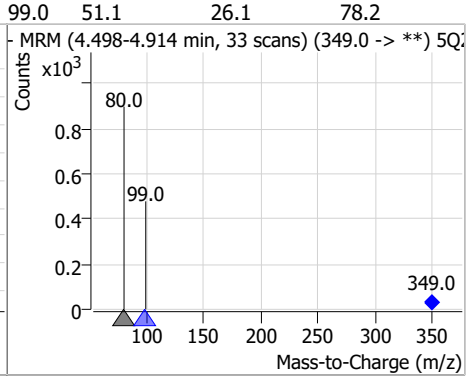


Perfluorinated Compounds by LC/MS/MS

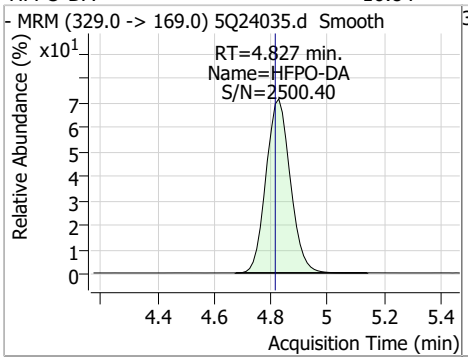
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	14.86	4.65	0.00	21261	349.0 -> 99.0	51.1	26.1	78.2

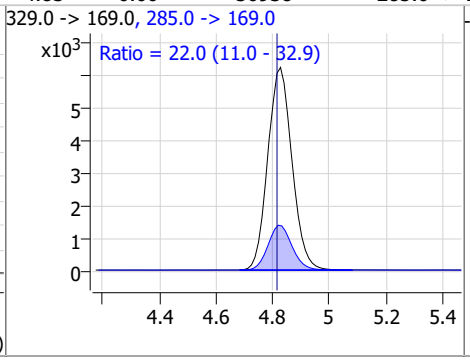


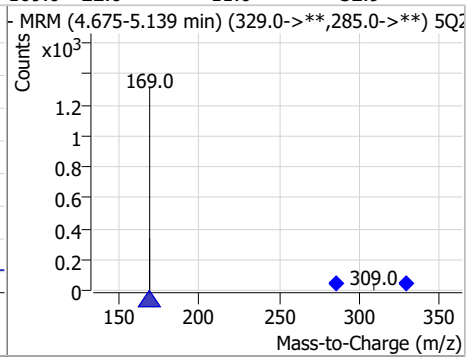




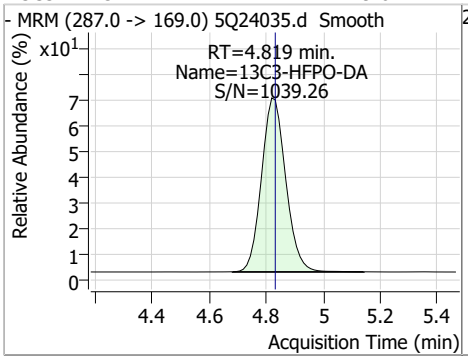
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	16.84	4.83	0.00	36938	285.0 -> 169.0	22.0	11.0	32.9

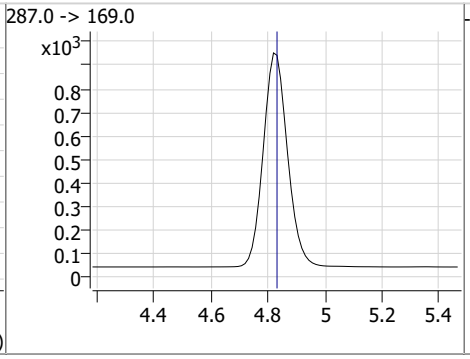


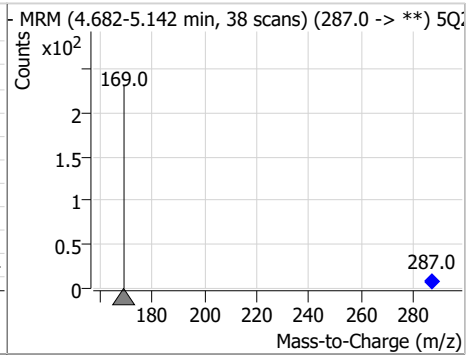




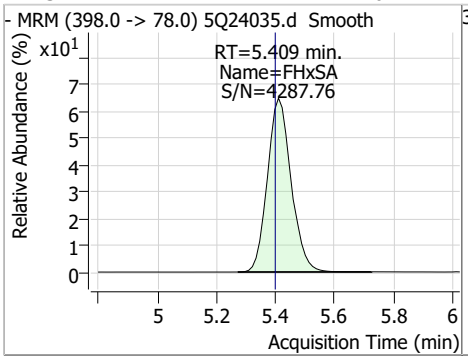
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	9.04	4.82	-0.01	5397				

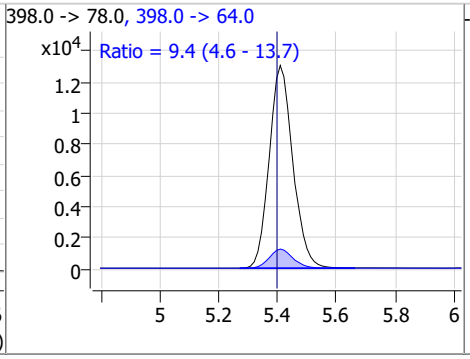


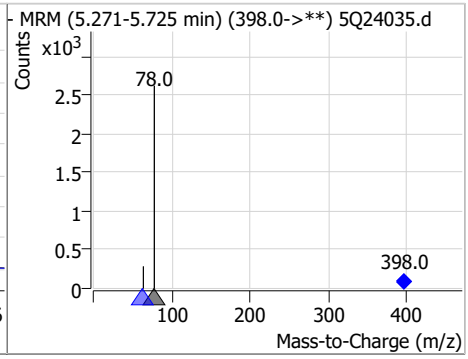




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	20.41	5.41	0.00	72631	398.0 -> 64.0	9.4	4.6	13.7

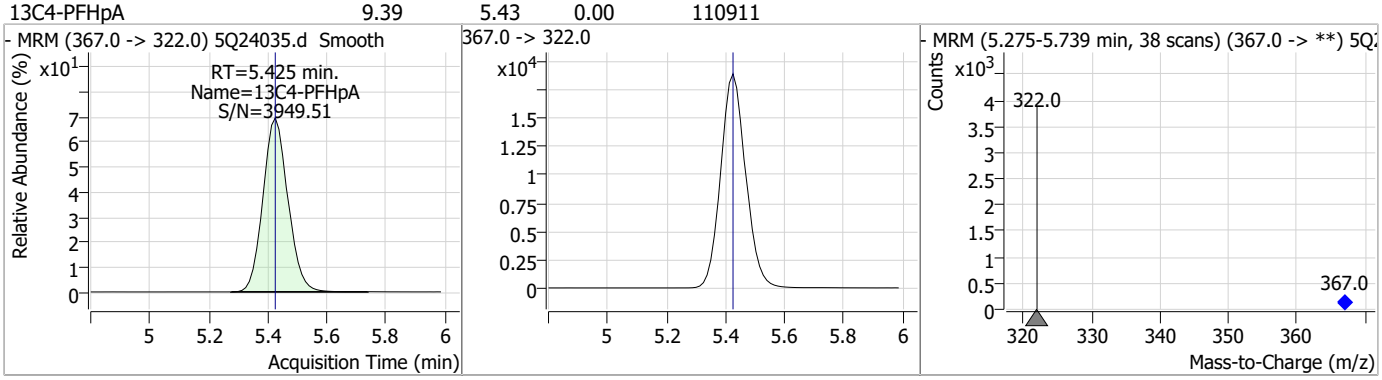




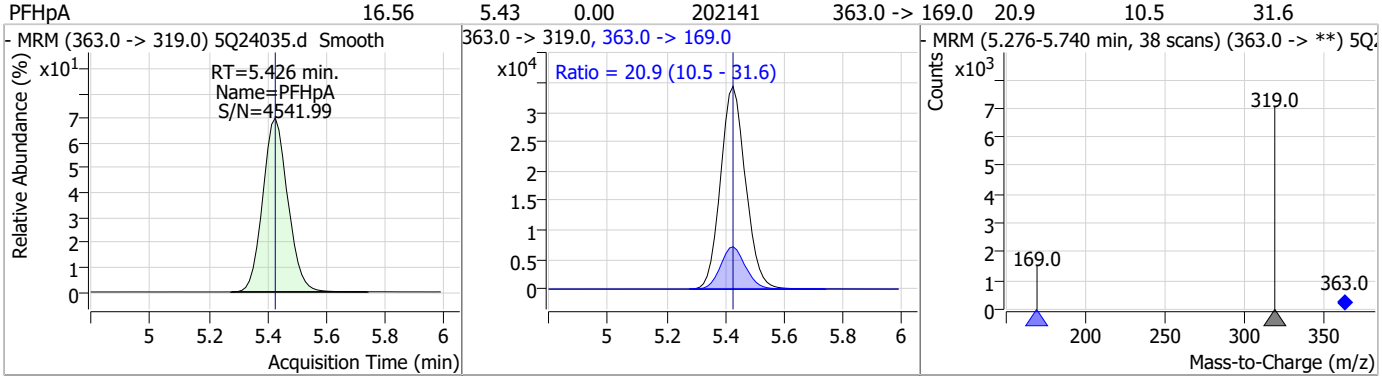


Perfluorinated Compounds by LC/MS/MS

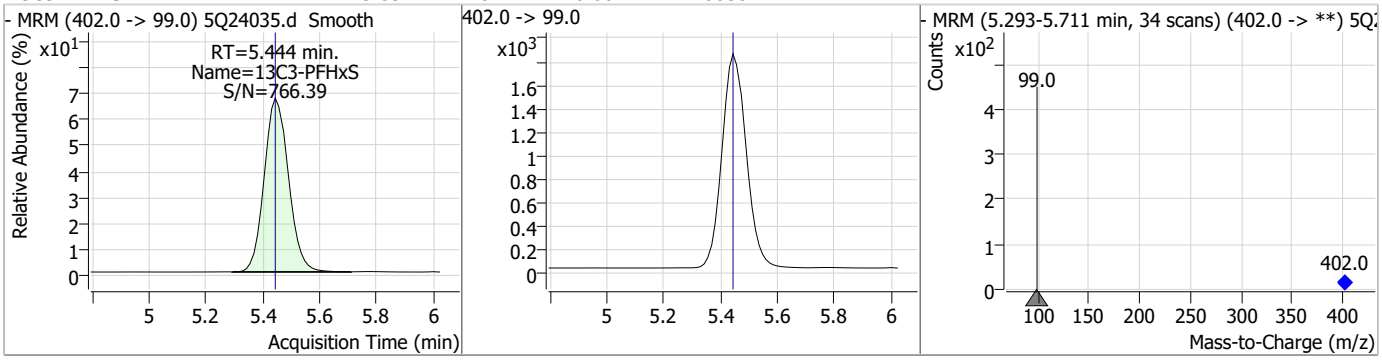
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	9.39	5.43	0.00	110911				



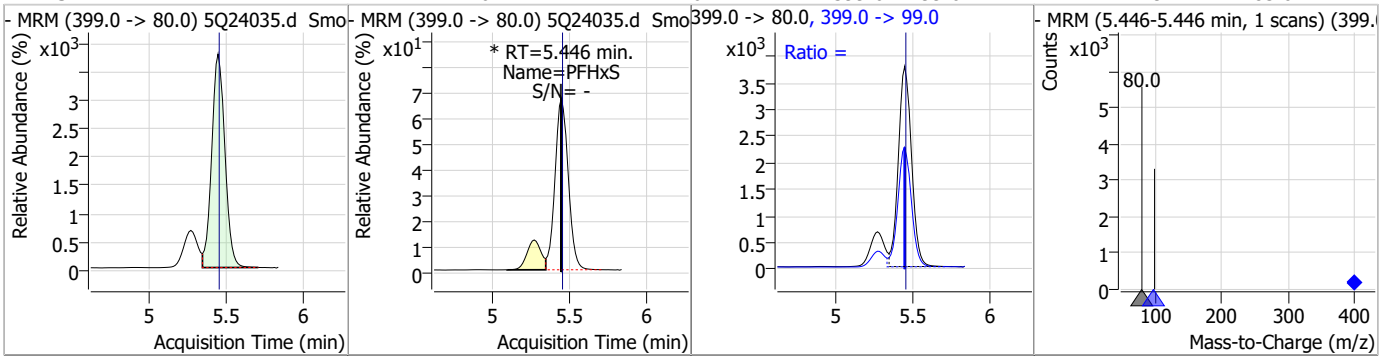
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	16.56	5.43	0.00	202141	363.0 -> 169.0	20.9	10.5	31.6



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	9.59	5.44	0.00	10835				

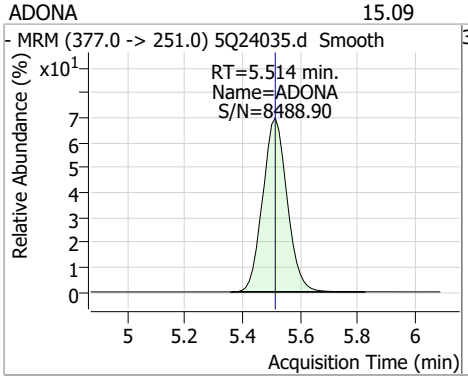


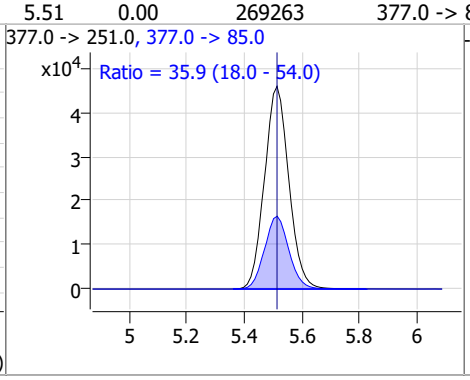
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS		0		0	399.0 -> 99.0		27.9	83.6

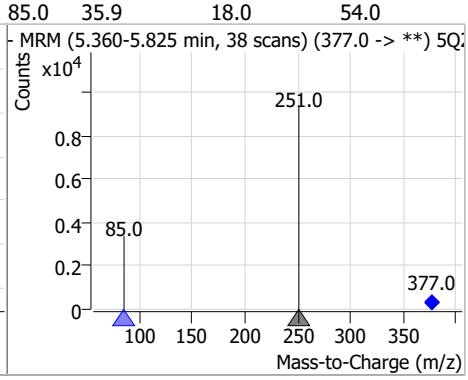


Perfluorinated Compounds by LC/MS/MS

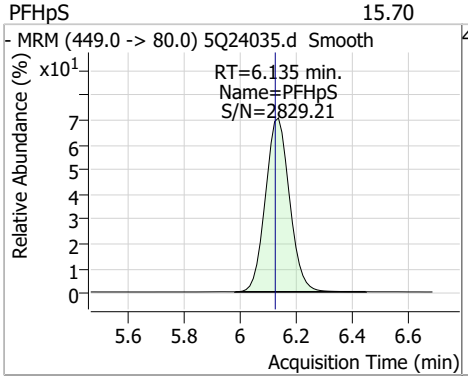
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	15.09	5.51	0.00	269263	377.0 -> 85.0	35.9	18.0	54.0

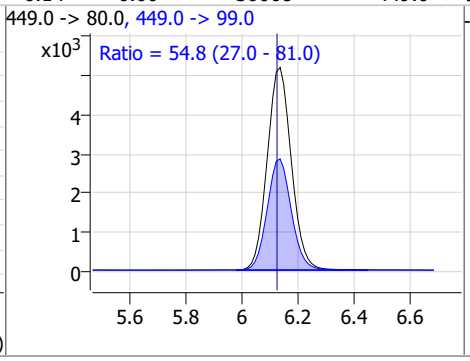


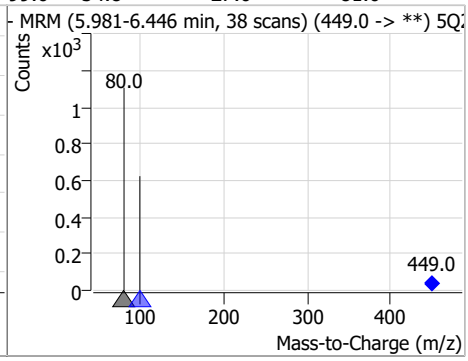




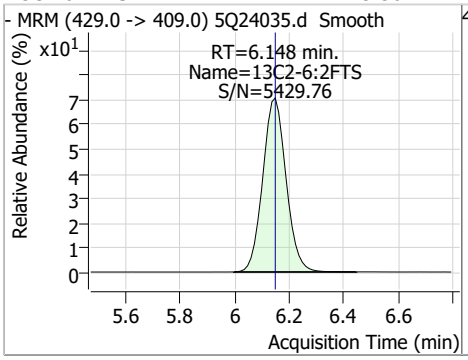
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	15.70	6.14	0.00	30668	449.0 -> 99.0	54.8	27.0	81.0

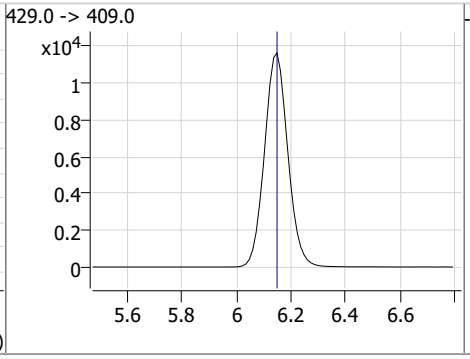


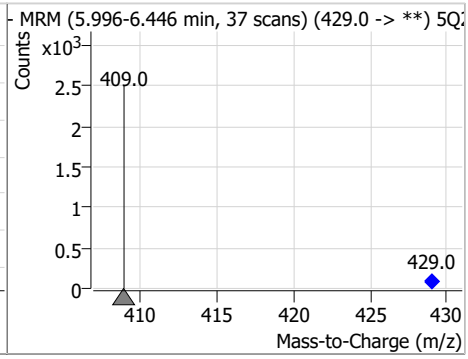




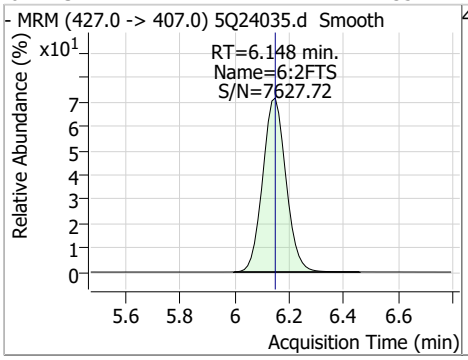
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	9.36	6.15	0.00	68840				

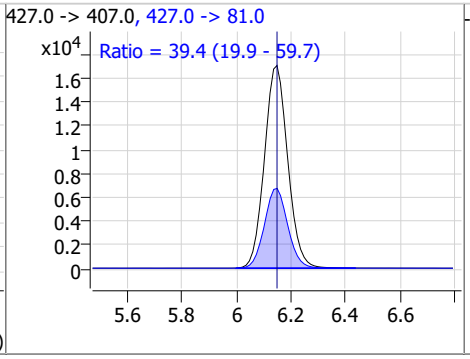


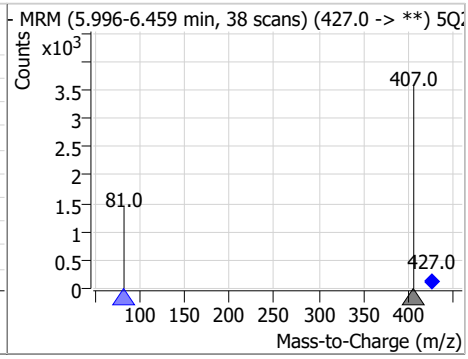




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	17.35	6.15	0.00	101210	427.0 -> 81.0	39.4	19.9	59.7

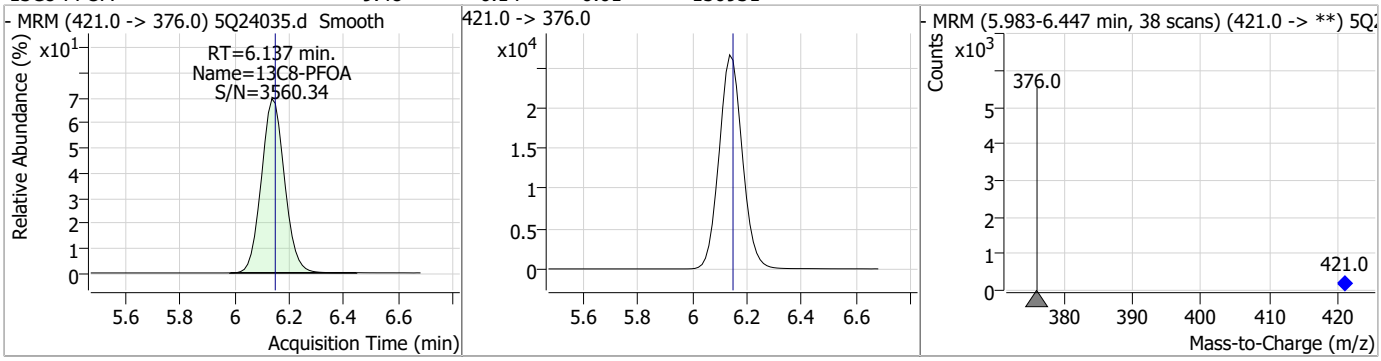




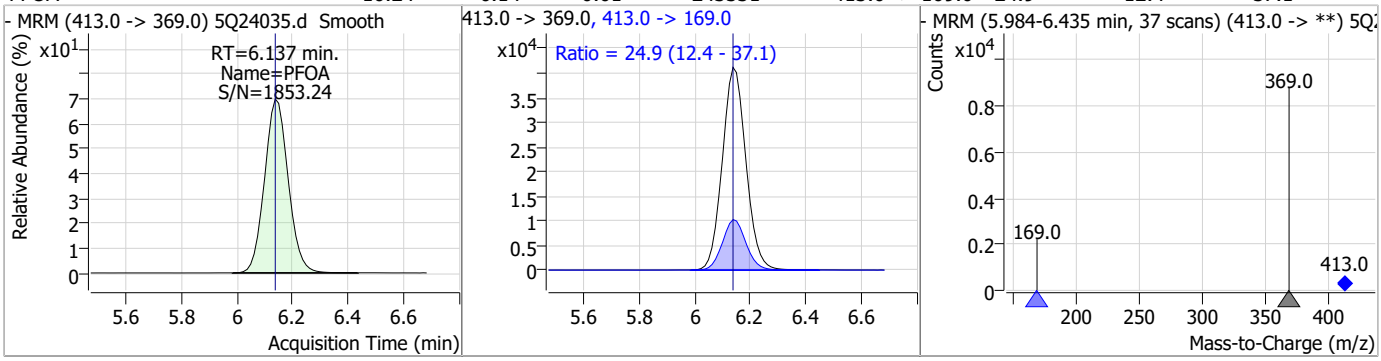


Perfluorinated Compounds by LC/MS/MS

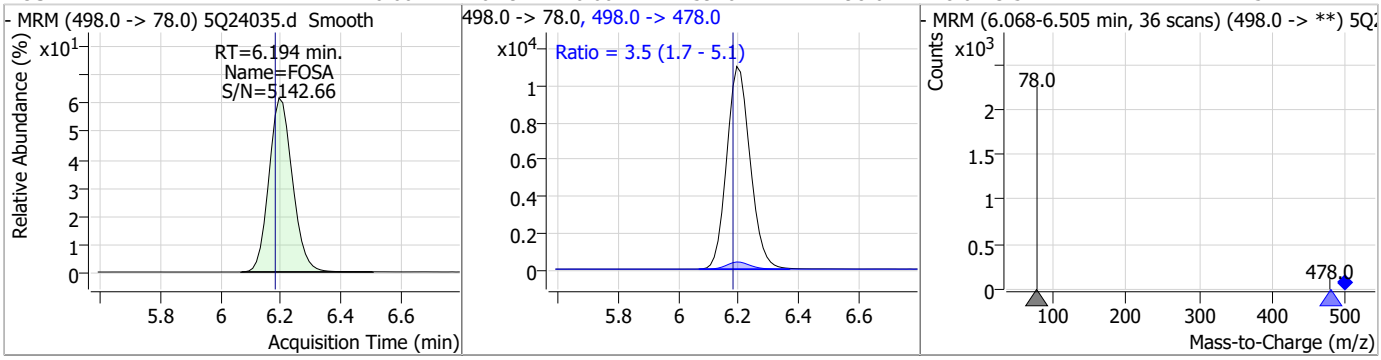
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	9.48	6.14	-0.01	156931				



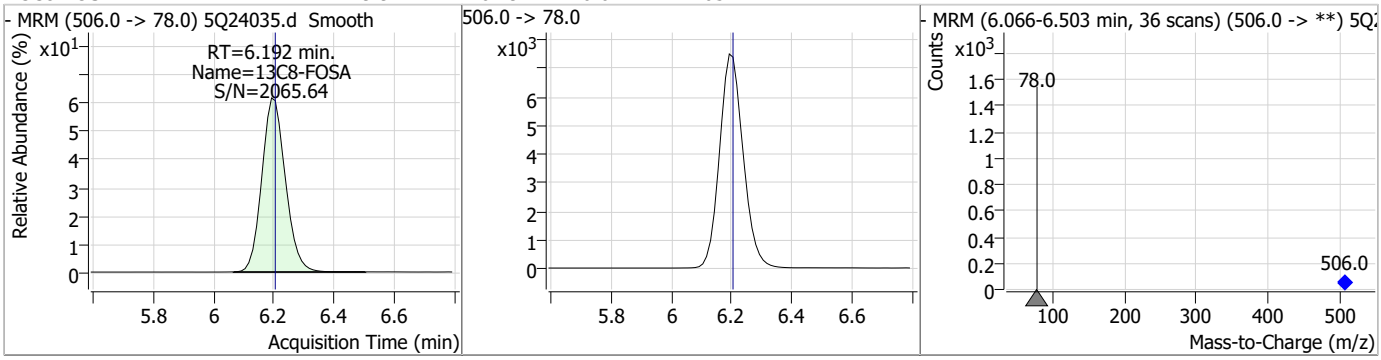
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	16.24	6.14	-0.01	243331	413.0 -> 169.0	24.9	12.4	37.1



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	16.60	6.19	0.00	59402	498.0 -> 478.0	3.5	1.7	5.1

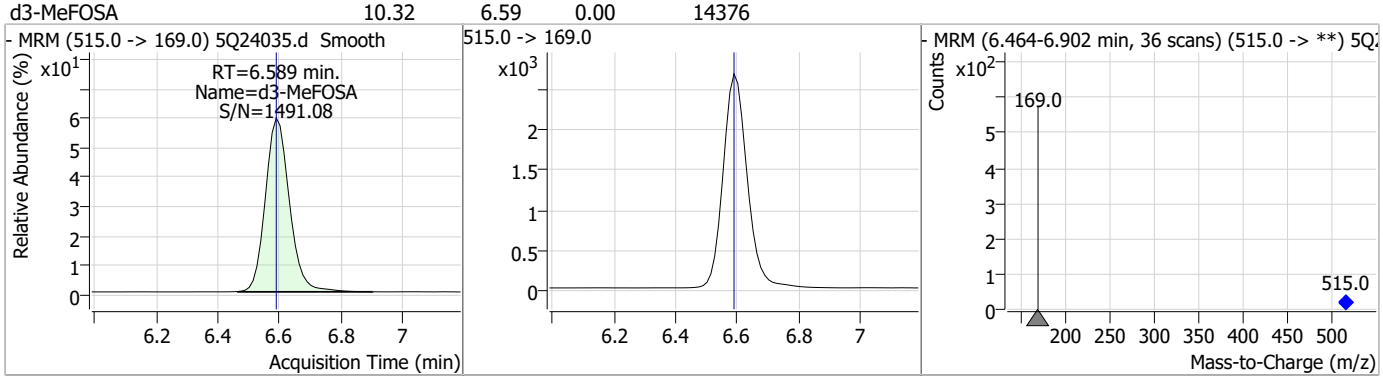


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	9.91	6.19	-0.01	40512				

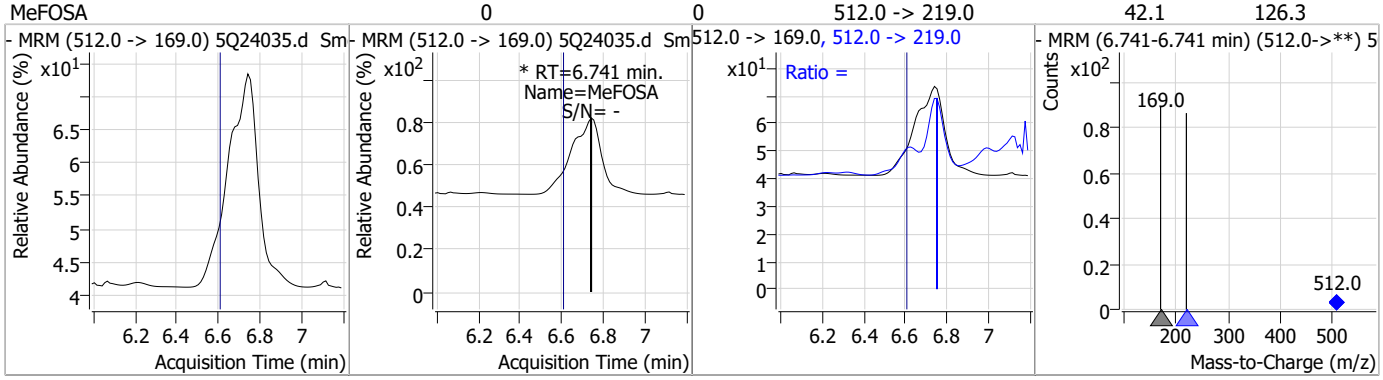


Perfluorinated Compounds by LC/MS/MS

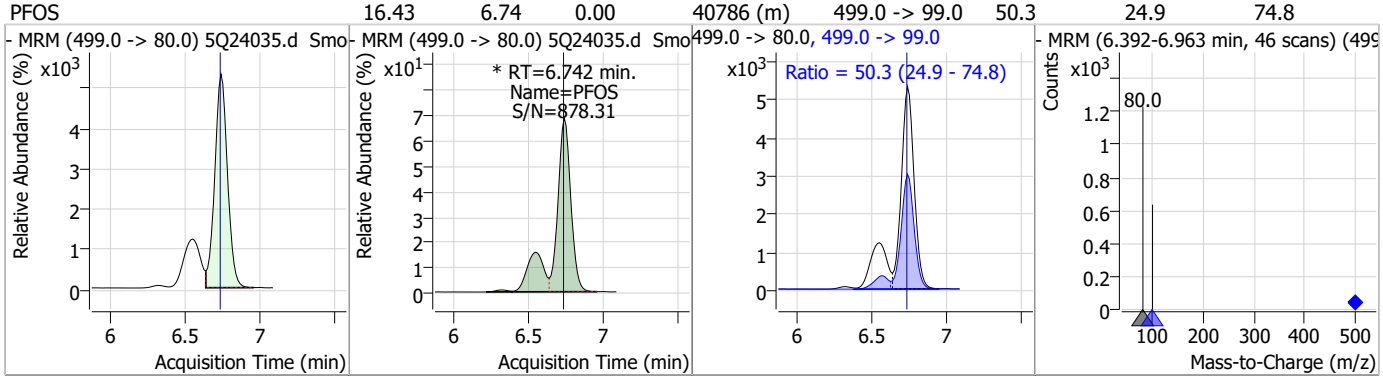
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	10.32	6.59	0.00	14376				



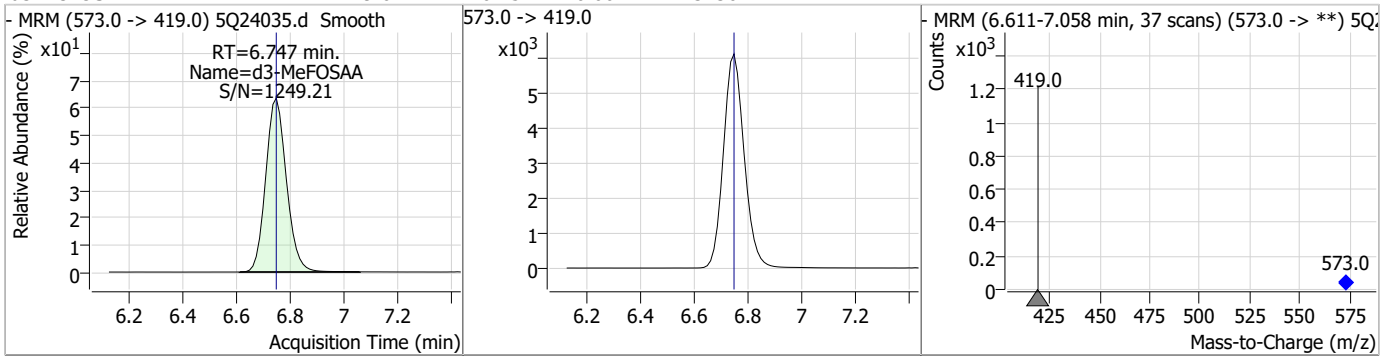
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA		0		0	512.0 -> 219.0		42.1	126.3



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	16.43	6.74	0.00	40786 (m)	499.0 -> 99.0	50.3	24.9	74.8

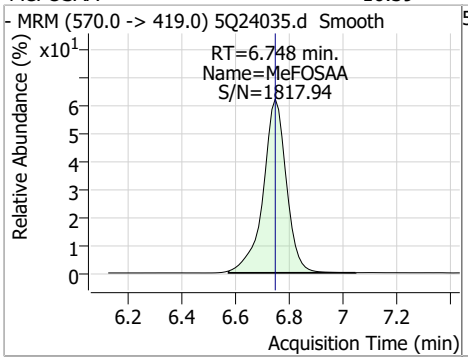


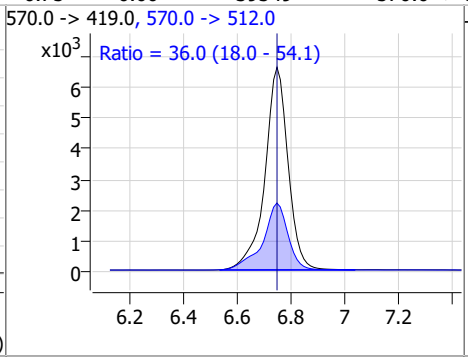
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	9.62	6.75	0.00	32362				

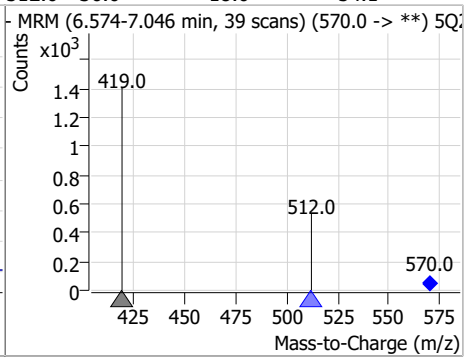


Perfluorinated Compounds by LC/MS/MS

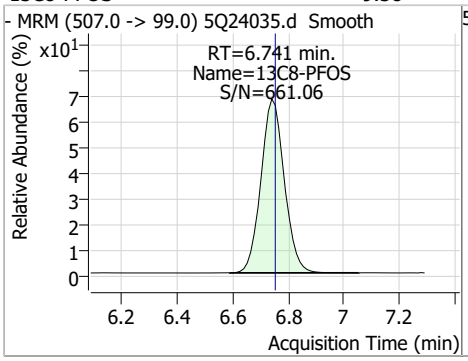
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	16.39	6.75	0.00	39549	570.0 -> 512.0	36.0	18.0	54.1

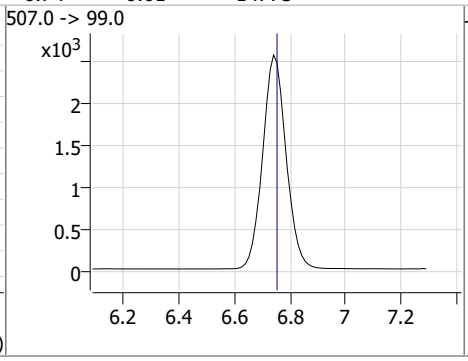


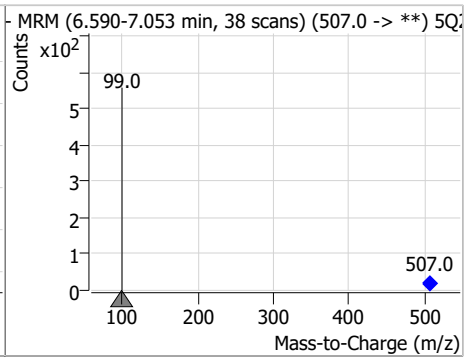




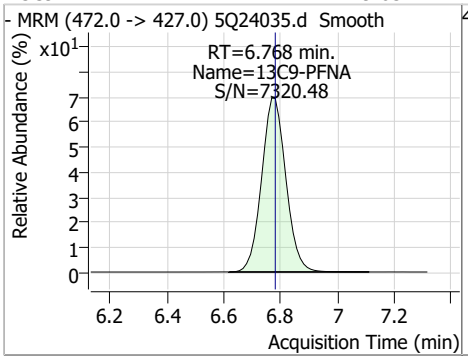
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	9.38	6.74	-0.01	14775				

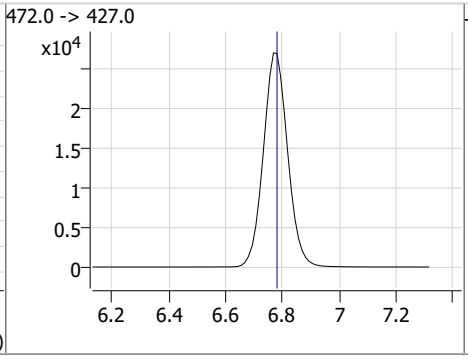


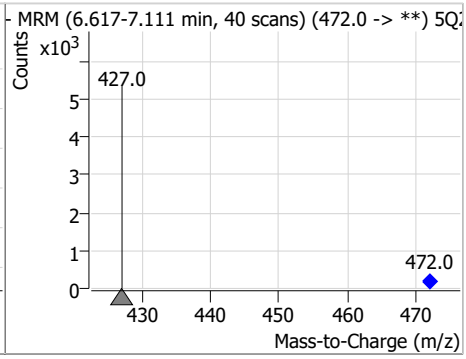




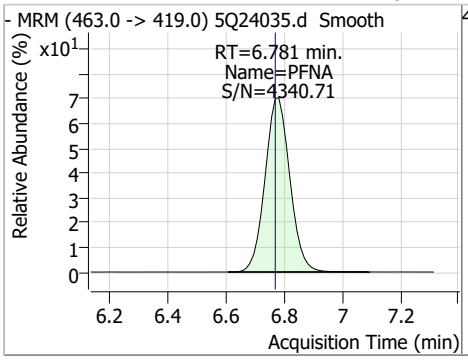
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	9.63	6.77	-0.01	159648				

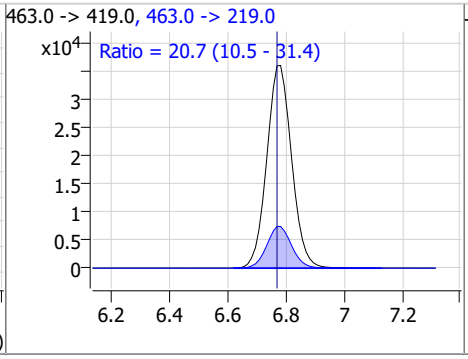


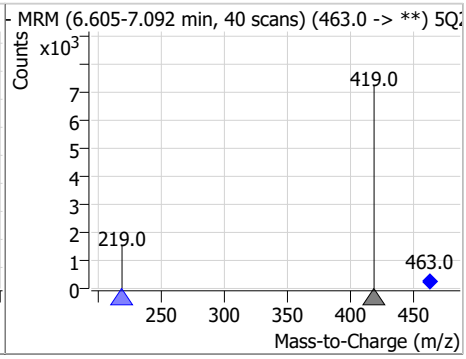




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	14.82	6.78	0.00	214707	463.0 -> 219.0	20.7	10.5	31.4

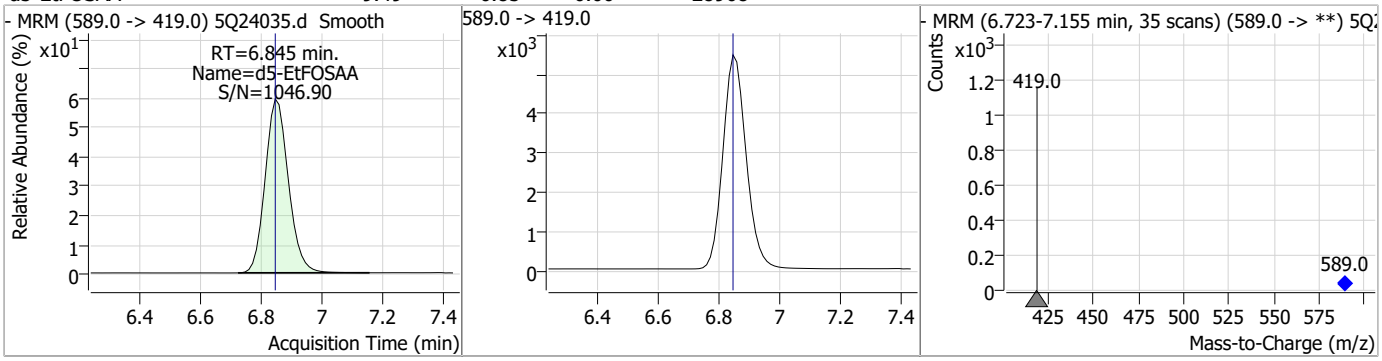




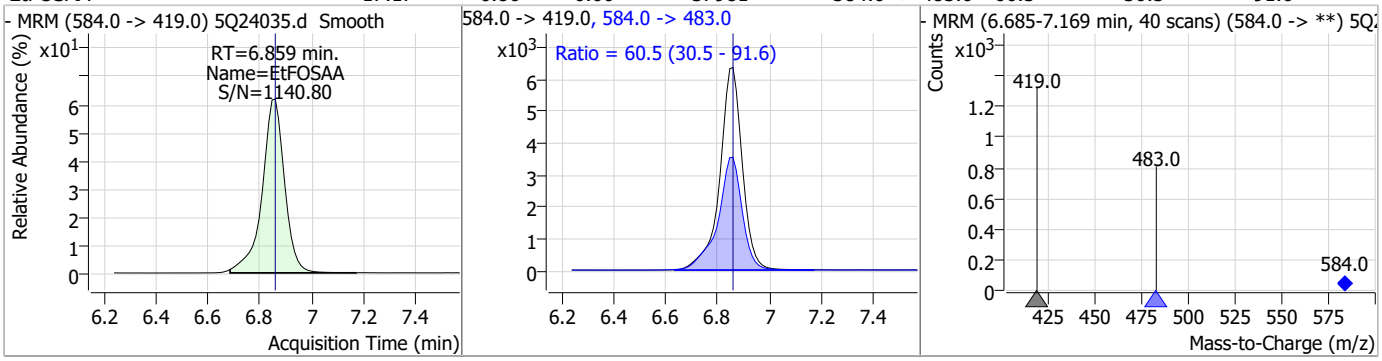


Perfluorinated Compounds by LC/MS/MS

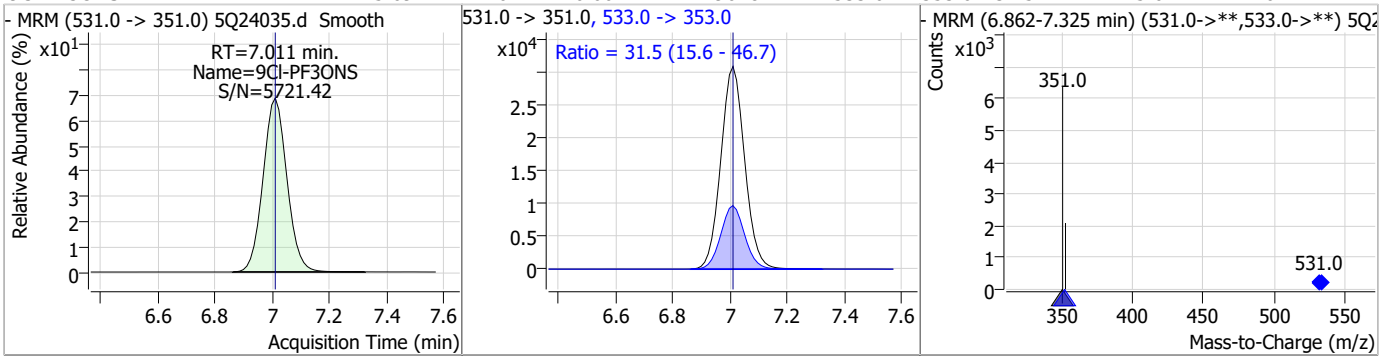
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	9.49	6.85	0.00	28908				



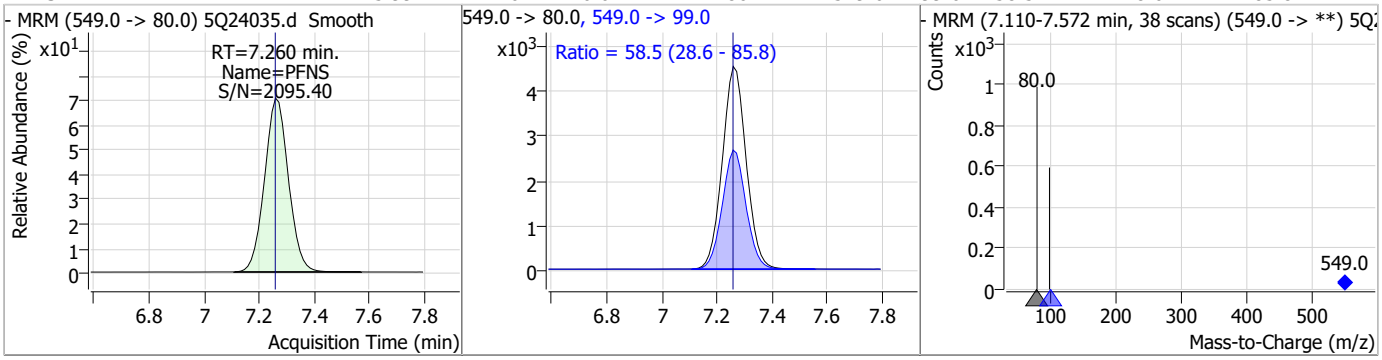
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	17.17	6.86	0.00	37981	584.0 -> 483.0	60.5	30.5	91.6



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	15.69	7.01	0.00	179028	533.0 -> 353.0	31.5	15.6	46.7

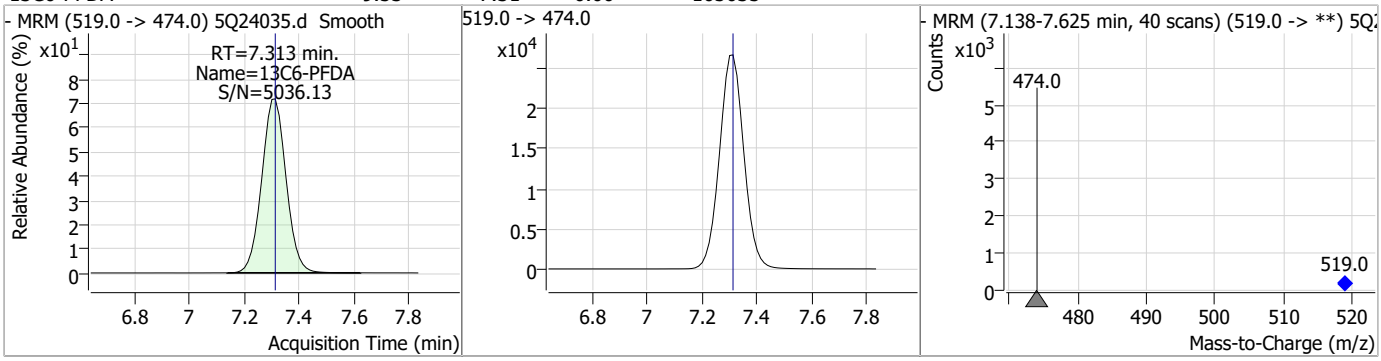


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	15.99	7.26	-0.01	27186	549.0 -> 99.0	58.5	28.6	85.8

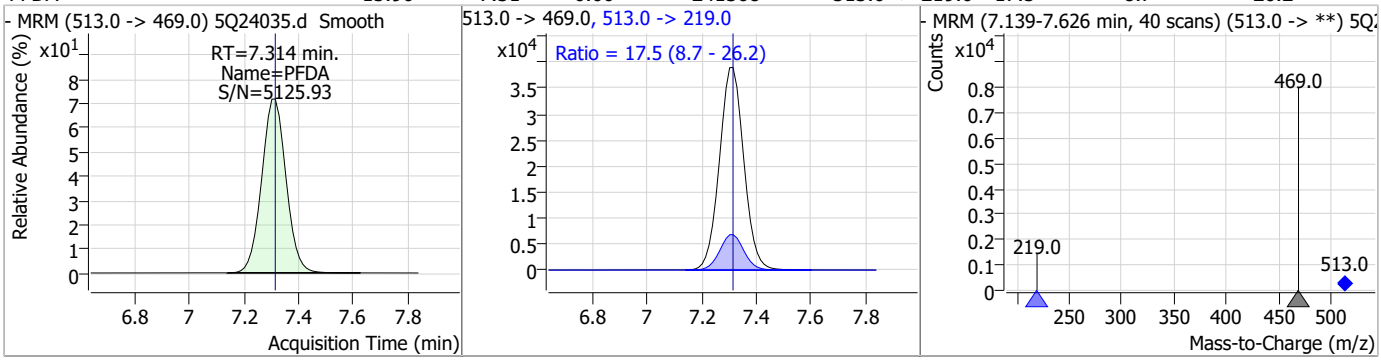


Perfluorinated Compounds by LC/MS/MS

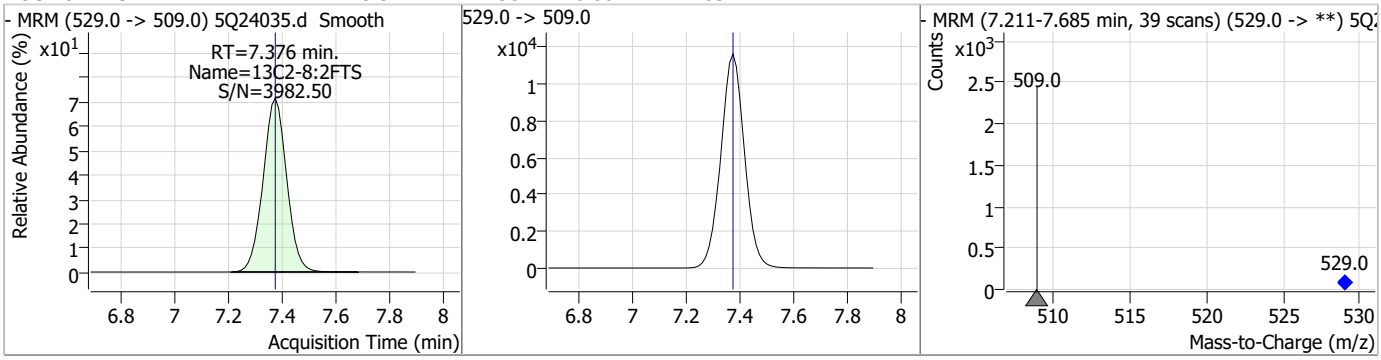
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	9.53	7.31	0.00	165035				



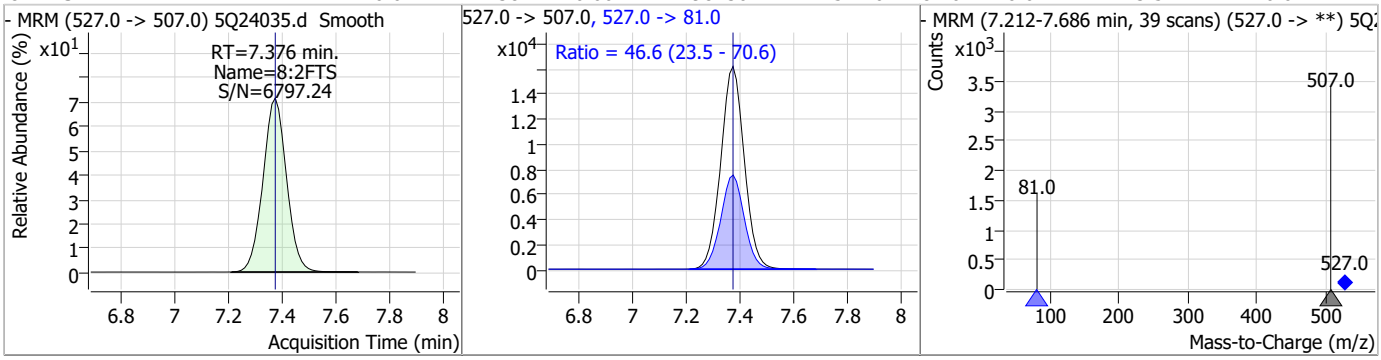
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	15.90	7.31	0.00	241368	513.0 -> 219.0	17.5	8.7	26.2



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	9.94	7.38	0.00	70321				

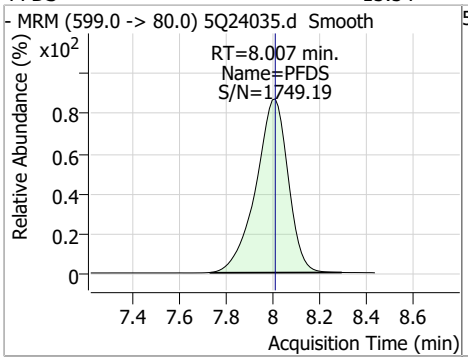


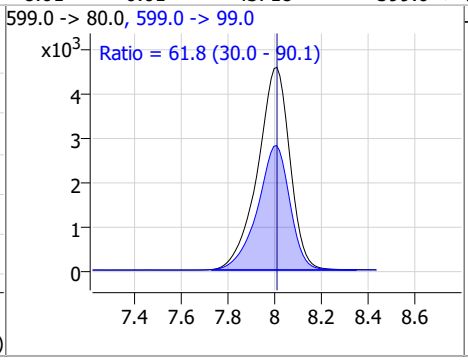
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	16.67	7.38	0.00	98430	527.0 -> 81.0	46.6	23.5	70.6

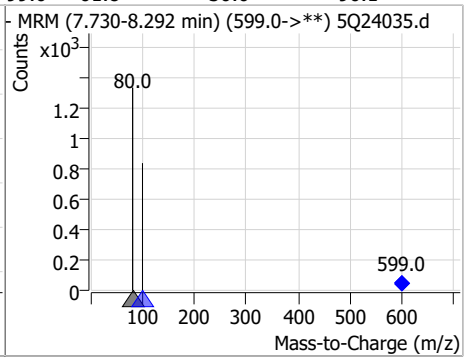


Perfluorinated Compounds by LC/MS/MS

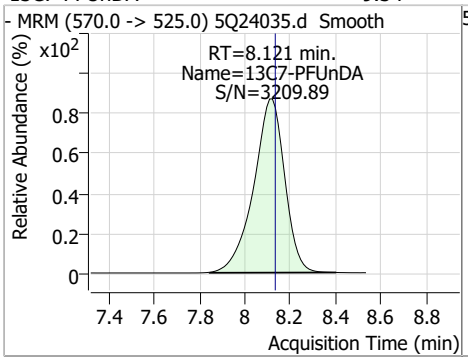
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	15.54	8.01	-0.01	43718	599.0 -> 99.0	61.8	30.0	90.1

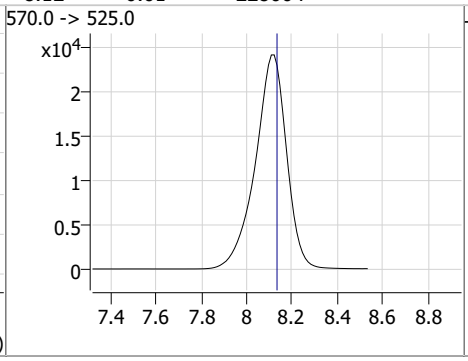


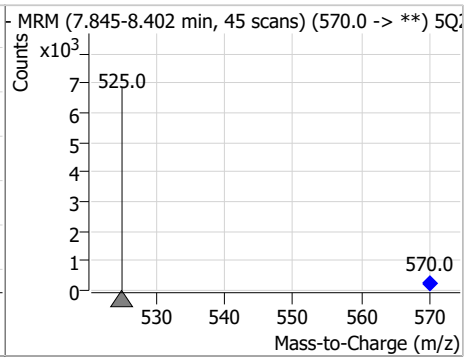




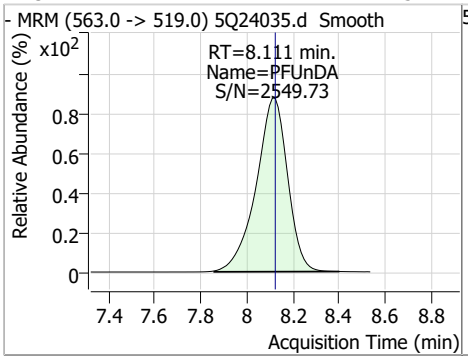
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	9.34	8.12	-0.01	228064				

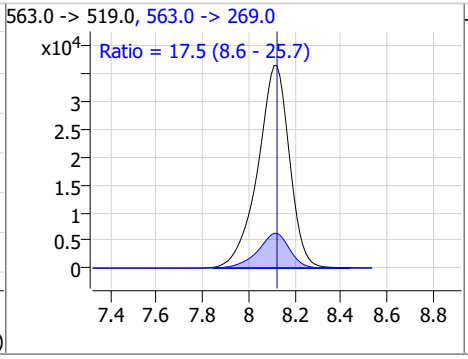


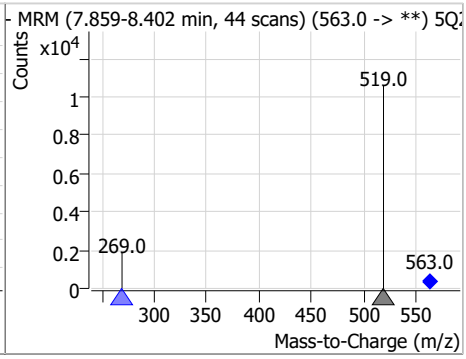




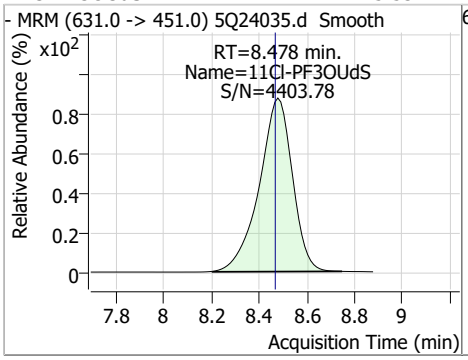
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	17.45	8.11	-0.02	345043	563.0 -> 269.0	17.5	8.6	25.7

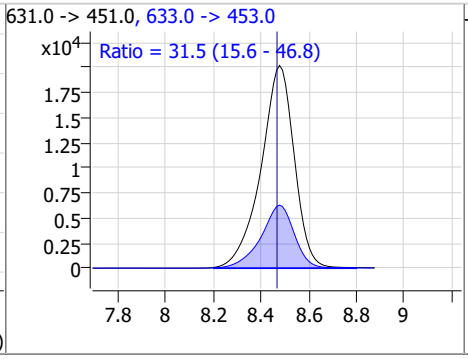


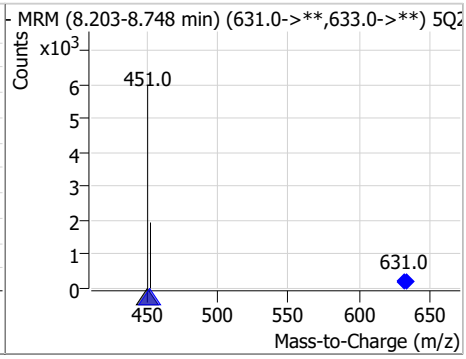




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	15.53	8.48	-0.01	194675	633.0 -> 453.0	31.5	15.6	46.8

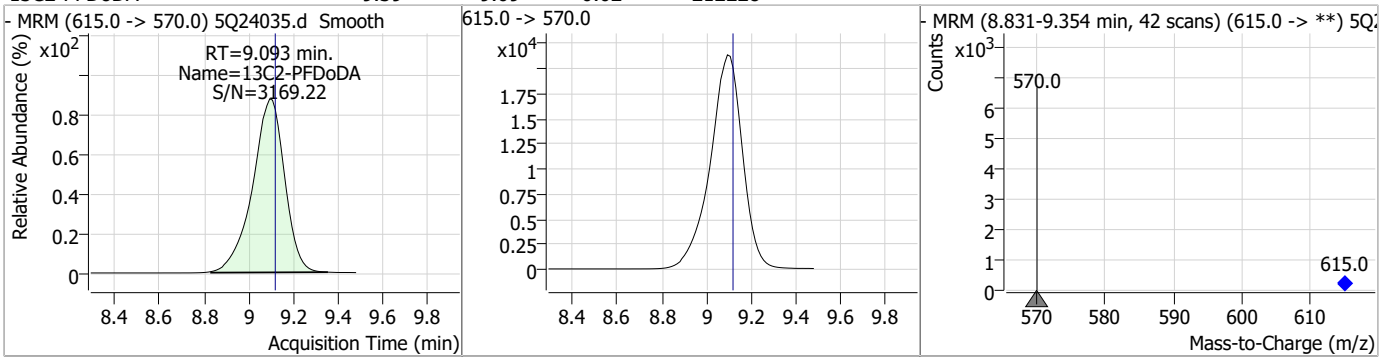




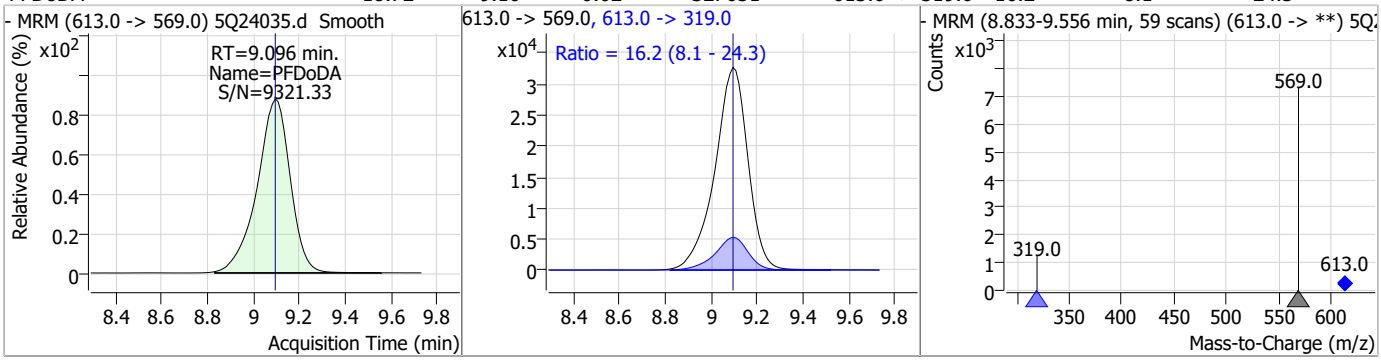


Perfluorinated Compounds by LC/MS/MS

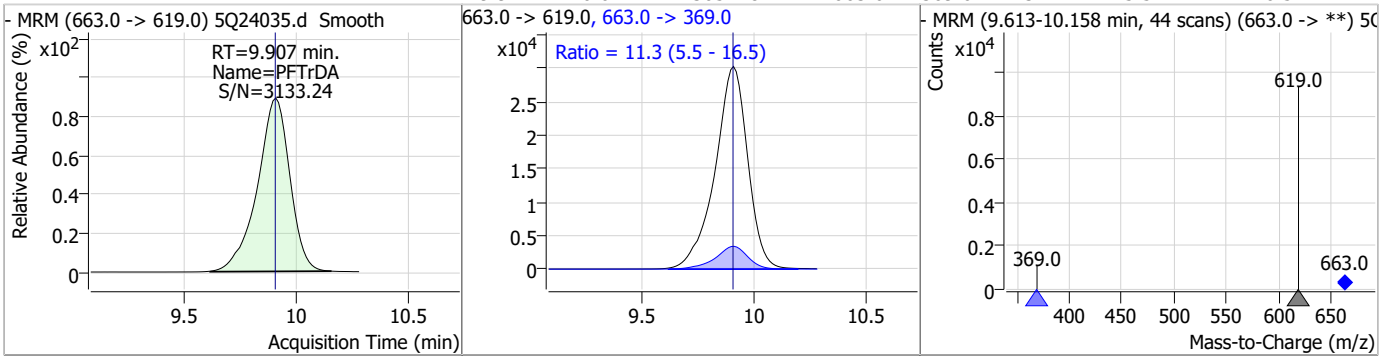
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	9.39	9.09	-0.02	212228				



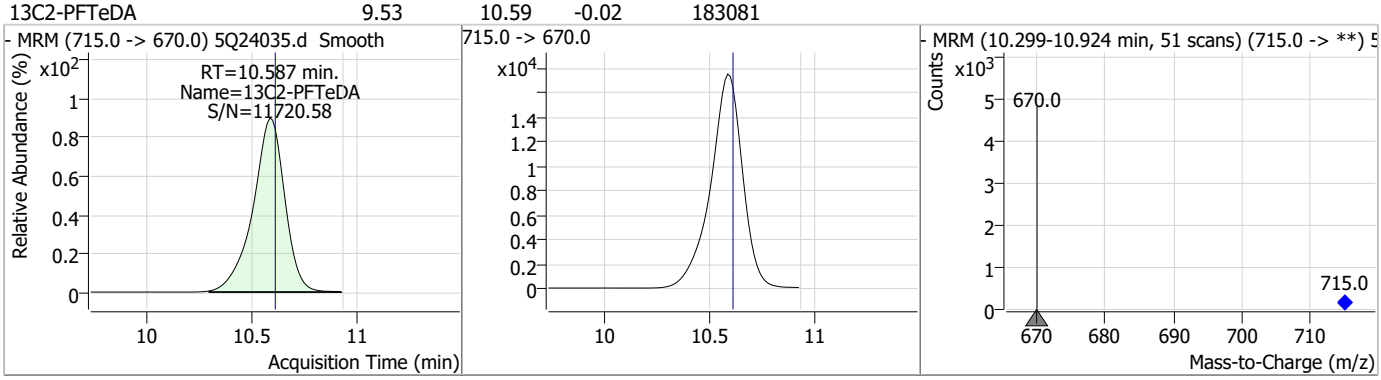
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	18.72	9.10	-0.02	327051	613.0 -> 319.0	16.2	8.1	24.3



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	17.44	9.91	-0.02	305778	663.0 -> 369.0	11.3	5.5	16.5

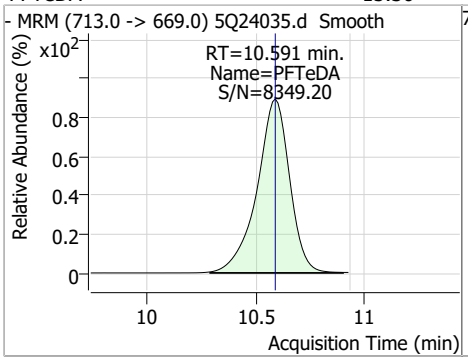


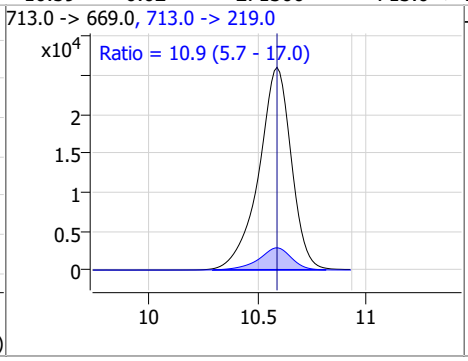
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	9.53	10.59	-0.02	183081				

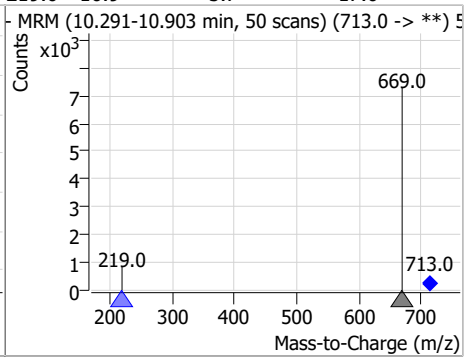


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	15.36	10.59	-0.02	271366	713.0 -> 219.0	10.9	5.7	17.0







Manual Integration Approval Summary

Sample Number: S5Q377-ICV377
Lab FileID: 5Q24035.D
Injection Time: 01/02/24 19:34
Method: EPA 537M QSM5.3 B-15
Analyst approved: 01/03/24 16:03 Lindsay Ritner
Supervisor approved: 01/04/24 12:54 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorooctanesulfonic acid	1763-23-1		6.74	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Natasha Gumtie 01/04/24 12:54

Perfluorinated Compounds by LC/MS/MS

Data File : 5Q24036.d
Operator : lindsayr
Acq. Method : 537_ID.m
Acq. Date-Time : 1/2/2024 7:51:06 PM
Sample Name : icv377-20
Vial : P1-B2
DA Method File : ID_010224_S5Q377.quantmethod.xml
Batch Name : s5q377.batch.bin
Sample Information : OP401,S5Q377,250,,,1.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.987	217.0 -> 172.0	38622	10.00	µg/L	0.000
M5-PFPeA	3.432	268.0 -> 223.0	65437	10.00	µg/L	0.000
M5-PFHxA	4.565	318.0 -> 273.0	101702	10.00	µg/L	0.000
M4-PFHpA	5.425	367.0 -> 322.0	105442	10.00	µg/L	0.000
M8-PFOA	6.137	421.0 -> 376.0	149033	10.00	µg/L	-0.012
M9-PFNA	6.768	472.0 -> 427.0	153628	10.00	µg/L	-0.012
M6-PFDA	7.301	519.0 -> 474.0	160753	10.00	µg/L	-0.012
M7-PFUnDA	8.109	570.0 -> 525.0	221491	10.00	µg/L	-0.025
M2-PFDoDA	9.093	615.0 -> 570.0	205394	10.00	µg/L	-0.025
M2-PFTeDA	10.587	715.0 -> 670.0	177807	10.00	µg/L	-0.025
M8-FOSA	6.192	506.0 -> 78.0	39328	10.00	µg/L	-0.012
M3-PFBS	3.637	302.0 -> 99.0	8002	10.00	µg/L	0.000
M3-PFHxS	5.444	402.0 -> 99.0	10403	10.00	µg/L	0.000
M8-PFOS	6.741	507.0 -> 99.0	14396	10.00	µg/L	-0.012
M2-4:2FTS	4.474	329.0 -> 309.0	35948	10.00	µg/L	-0.012
M2-6:2FTS	6.148	429.0 -> 409.0	64652	10.00	µg/L	0.000
M2-8:2FTS	7.376	529.0 -> 509.0	68277	10.00	µg/L	0.000
M3-MeFOSAA	6.747	573.0 -> 419.0	31349	10.00	µg/L	0.000
M3-HFPO-DA	4.819	287.0 -> 169.0	5290	10.00	µg/L	-0.012
M3-MeFOSA	6.589	515.0 -> 169.0	13020	10.00	µg/L	0.000
M5-EtFOSAA	6.845	589.0 -> 419.0	29051	10.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.474	329.0 -> 309.0	35948	9.20	µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 92.0%		
13C2-6:2FTS	6.148	429.0 -> 409.0	64652	8.79	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 87.9%		
13C2-8:2FTS	7.376	529.0 -> 509.0	68277	9.65	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 96.5%		
13C2-PFDoDA	9.093	615.0 -> 570.0	205394	9.09	µg/L	-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 90.9%		
13C2-PFTeDA	10.587	715.0 -> 670.0	177807	9.25	µg/L	-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 92.5%		
13C3-PFBS	3.637	302.0 -> 99.0	8002	8.67	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 86.7%		
13C3-PFHxS	5.444	402.0 -> 99.0	10403	9.21	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 92.1%		
13C4-PFBA	1.987	217.0 -> 172.0	38622	8.76	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 87.6%		
13C4-PFHpA	5.425	367.0 -> 322.0	105442	8.92	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 89.2%		
13C5-PFHxA	4.565	318.0 -> 273.0	101702	8.86	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 88.6%		
13C5-PFPeA	3.432	268.0 -> 223.0	65437	8.81	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 88.1%		
13C6-PFDA	7.301	519.0 -> 474.0	160753	9.29	µg/L	-0.012

Perfluorinated Compounds by LC/MS/MS

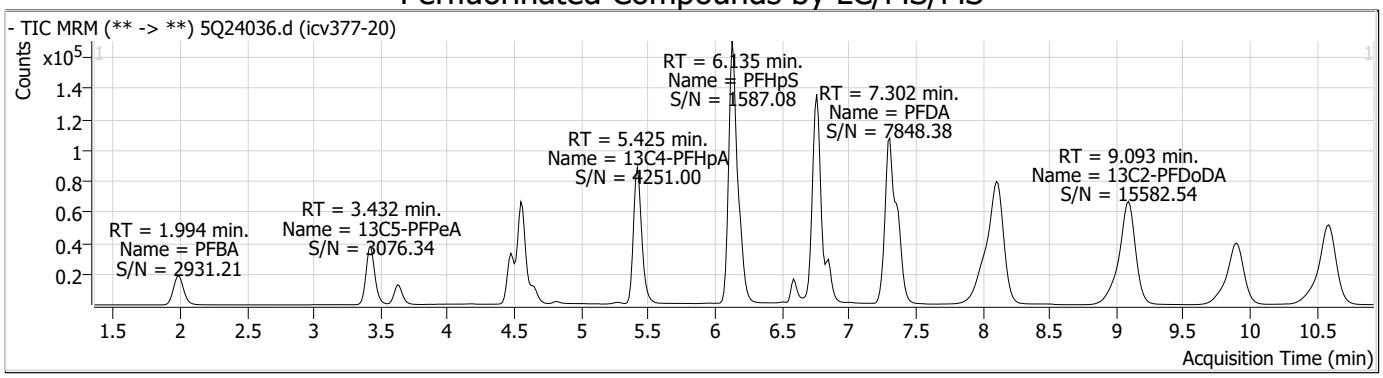
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 92.9%			
13C7-PFUnDA	8.109	570.0 -> 525.0	221491	9.07	µg/L		-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 90.7%			
13C8-FOSA	6.192	506.0 -> 78.0	39328	9.62	µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 96.2%			
13C8-PFOA	6.137	421.0 -> 376.0	149033	9.01	µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 90.1%			
13C8-PFOS	6.741	507.0 -> 99.0	14396	9.14	µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 91.4%			
13C9-PFNA	6.768	472.0 -> 427.0	153628	9.27	µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 92.7%			
d3-MeFOSAA	6.747	573.0 -> 419.0	31349	9.32	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 93.2%			
13C3-HFPO-DA	4.819	287.0 -> 169.0	5290	8.86	µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 88.6%			
d3-MeFOSA	6.589	515.0 -> 169.0	13020	9.35	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 93.5%			
d5-EtFOSAA	6.845	589.0 -> 419.0	29051	9.53	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 95.3%			
Target Compounds							QValue
4:2FTS	4.475	327.0 -> 307.0	63093	18.45	µg/L		99
		327.0 -> 81.0	35512				
6:2FTS	6.148	427.0 -> 407.0	98853	18.04	µg/L		100
		427.0 -> 81.0	39274				
8:2FTS	7.376	527.0 -> 507.0	106331	18.54	µg/L		99
		527.0 -> 81.0	49343				
EtFOSAA	6.846	584.0 -> 419.0	34455	15.50	µg/L		99
		584.0 -> 483.0	21441				
FOSA	6.194	498.0 -> 78.0	59804	17.21	µg/L		100
		498.0 -> 478.0	1995				
MeFOSAA	6.748	570.0 -> 419.0	37738	16.15	µg/L		99
		570.0 -> 512.0	13919				
PFBA	1.994	213.0 -> 169.0	62024	17.88	µg/L		100
PFBS	3.628	299.0 -> 80.0	33326	16.99	µg/L		99
		299.0 -> 99.0	14557				
PFDA	7.302	513.0 -> 469.0	246353	16.66	µg/L		100
		513.0 -> 219.0	43220				
PFDoDA	9.096	613.0 -> 569.0	330877	19.57	µg/L		100
		613.0 -> 319.0	53652				
PFDS	7.995	599.0 -> 80.0	47444	17.37	µg/L		97
		599.0 -> 99.0	29436				
PFHpA	5.426	363.0 -> 319.0	186326	16.06	µg/L		100
		363.0 -> 169.0	39242				
PFHpS	6.135	449.0 -> 80.0	33066	17.38	µg/L		99
		449.0 -> 99.0	18139				
PFHxA	4.565	313.0 -> 269.0	158546	16.73	µg/L		100
		313.0 -> 119.0	6449				
PFHxS	5.446	399.0 -> 80.0	31163	16.71	µg/L	m	98
		399.0 -> 99.0	17865				
PFNA	6.769	463.0 -> 419.0	232770	16.70	µg/L		99
		463.0 -> 219.0	48280				
PFNS	-	549.0 -> 80.0	-	N.D.			
		549.0 -> 99.0					
PFOA	6.137	413.0 -> 369.0	243589	17.12	µg/L		100
		413.0 -> 169.0	60108				
PFOS	6.742	499.0 -> 80.0	43386	17.94	µg/L		89

Perfluorinated Compounds by LC/MS/MS

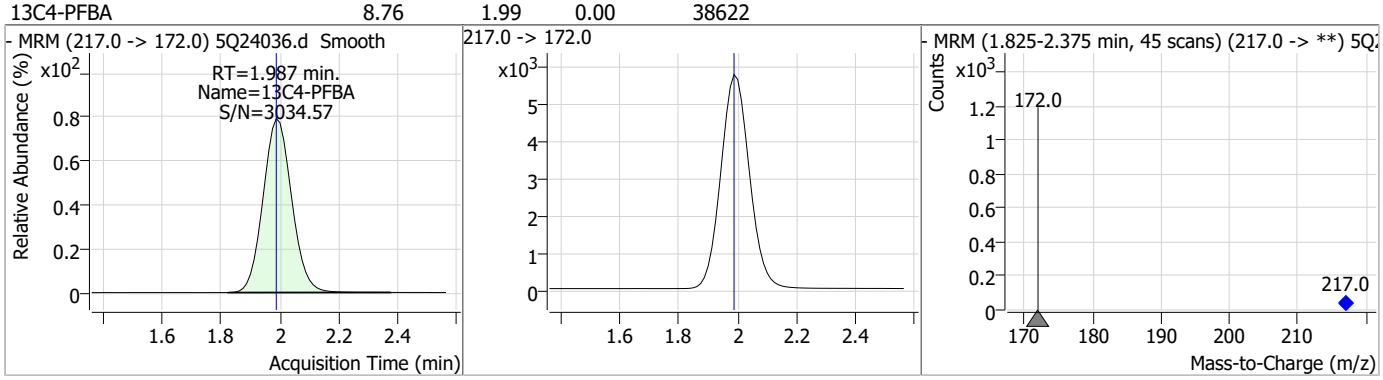
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
		499.0 -> 99.0	25039				
PFPeA	3.434	263.0 -> 219.0	108522	17.59	µg/L		100
PFPeS	4.648	349.0 -> 80.0	23946	17.58	µg/L		100
		349.0 -> 99.0	12501				
PFTeDA	10.591	713.0 -> 669.0	280072	16.32	µg/L		99
		713.0 -> 219.0	30802				
PFTrDA	9.907	663.0 -> 619.0	324206	19.10	µg/L		99
		663.0 -> 369.0	36457				
PFUnDA	8.111	563.0 -> 519.0	372193	19.38	µg/L		100
		563.0 -> 269.0	63740				
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.			
		633.0 -> 453.0					
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.			
		533.0 -> 353.0					
ADONA	-	377.0 -> 251.0	-	N.D.			
		377.0 -> 85.0					
HFPO-DA	-	329.0 -> 169.0	-	N.D.			
		285.0 -> 169.0					
MeFOSA	6.590	512.0 -> 169.0	20871	18.77	µg/L		97
		512.0 -> 219.0	17046				
4-PFECHS	-	461.0 -> 381.0	-	N.D.			
		461.0 -> 99.0					
FBSA	4.170	298.0 -> 78.0	0		µg/L	m	1
		298.0 -> 64.0	0				
FHxSA	5.409	398.0 -> 78.0	0		µg/L	m	1
		398.0 -> 64.0	0				

 # = Qualifier out of range, m = manually integrated, + = Area summed

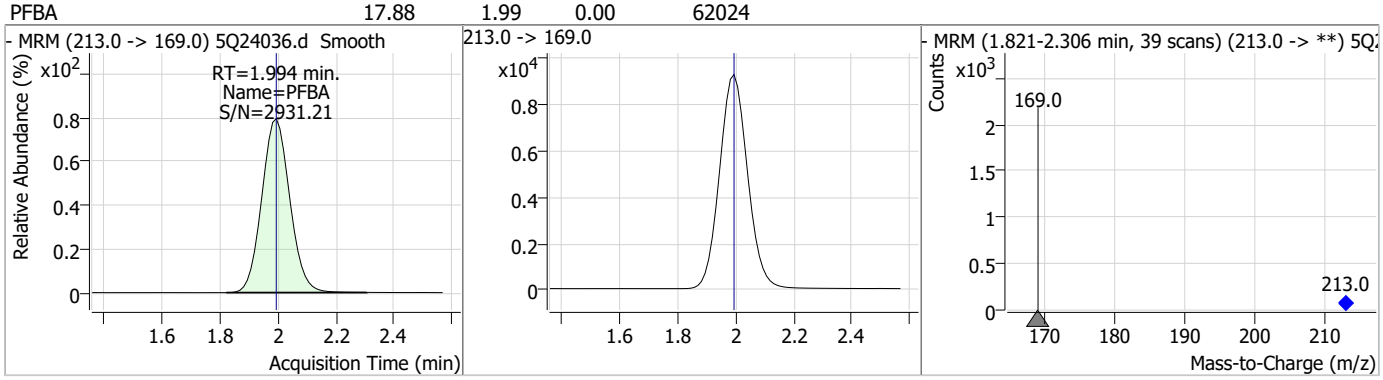
Perfluorinated Compounds by LC/MS/MS



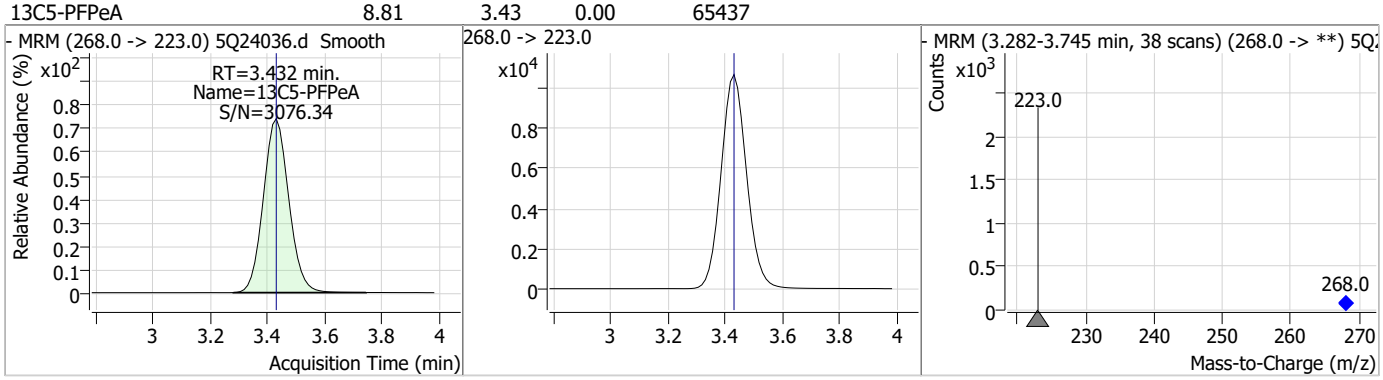
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	8.76	1.99	0.00	38622				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	17.88	1.99	0.00	62024				

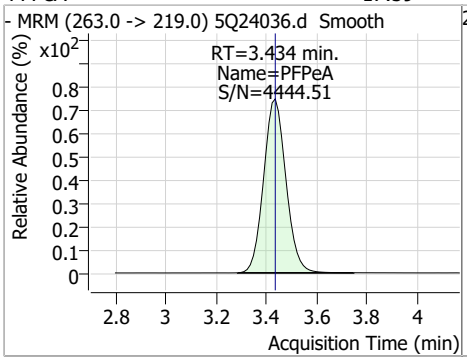


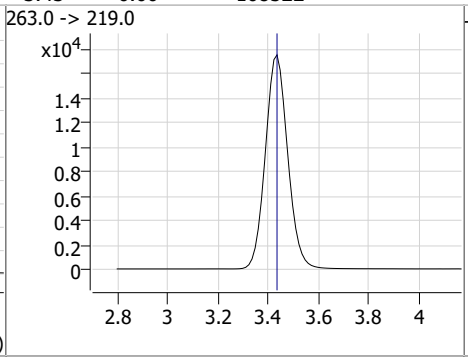
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	8.81	3.43	0.00	65437				

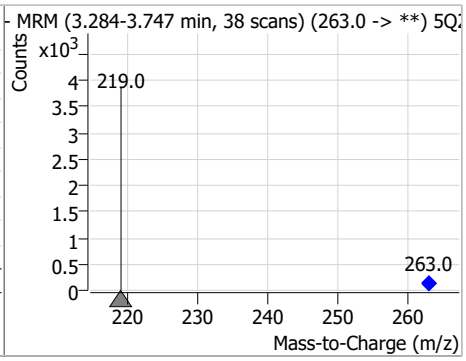


Perfluorinated Compounds by LC/MS/MS

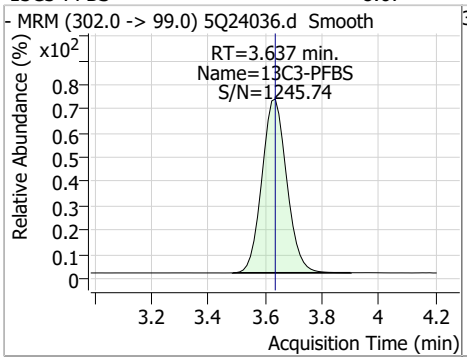
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	17.59	3.43	0.00	108522				

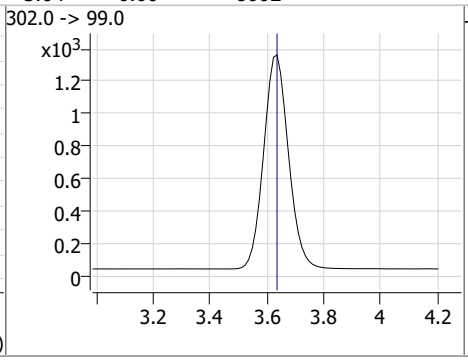


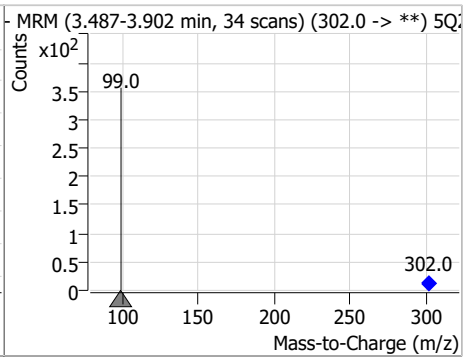




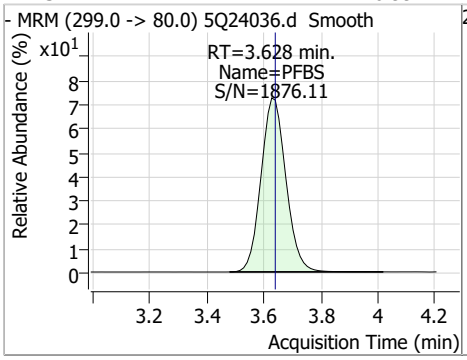
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	8.67	3.64	0.00	8002				

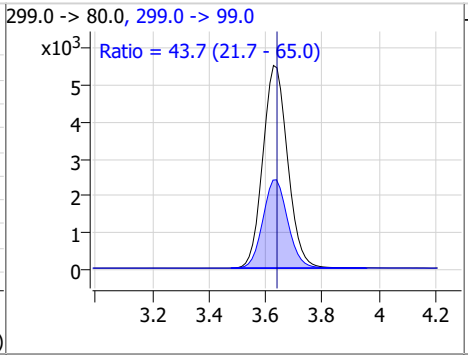


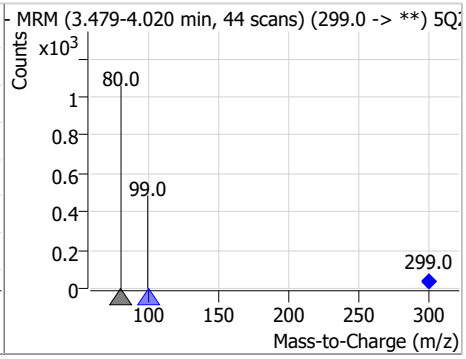




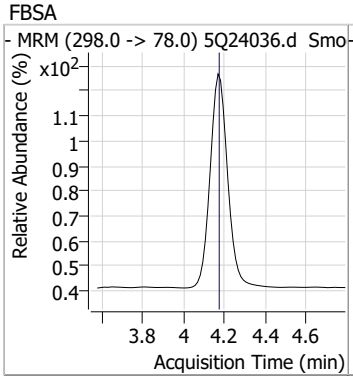
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	16.99	3.63	-0.01	33326	299.0 -> 99.0	43.7	21.7	65.0

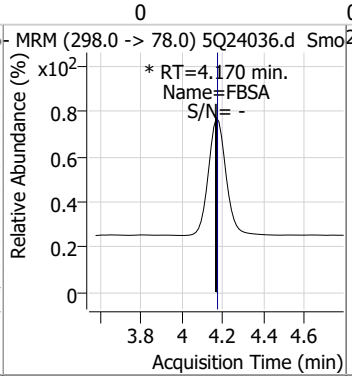


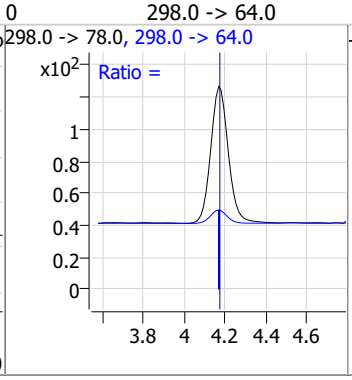


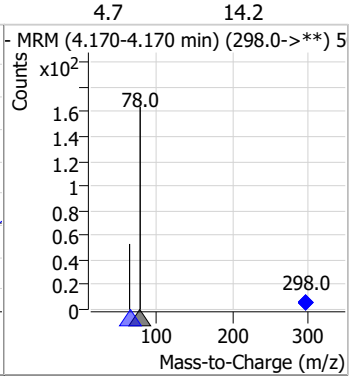


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA		0		0	298.0 -> 64.0		4.7	14.2



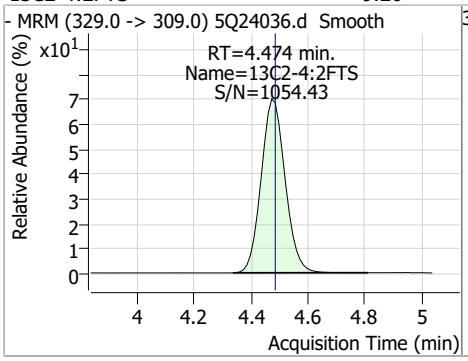


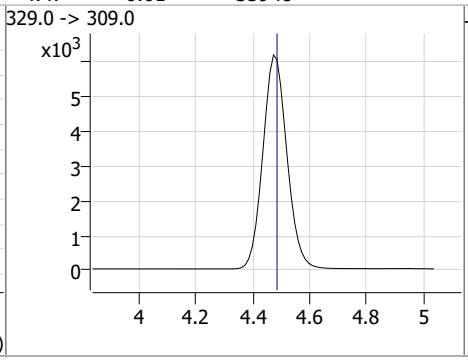


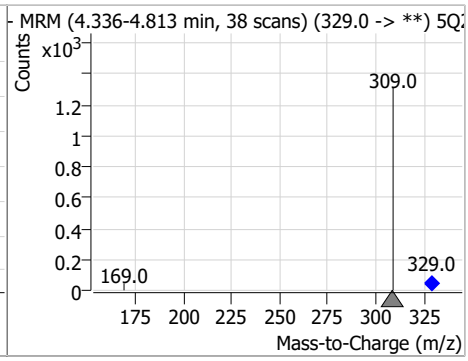


Perfluorinated Compounds by LC/MS/MS

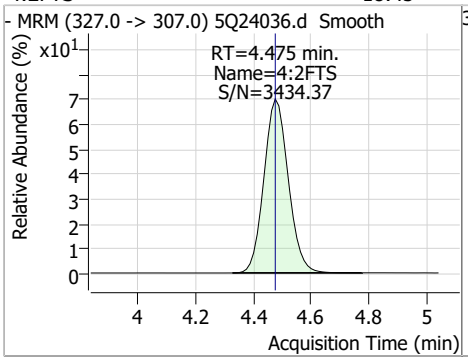
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	9.20	4.47	-0.01	35948				

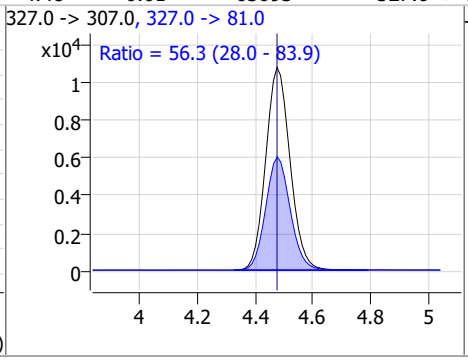


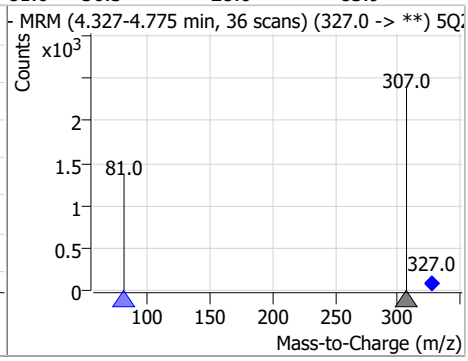




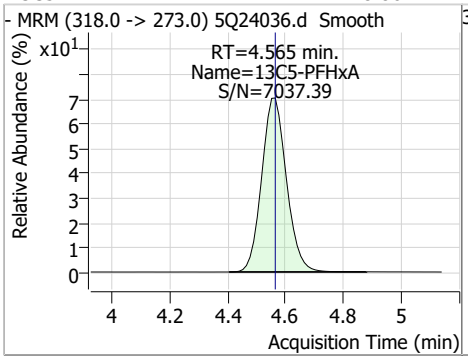
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	18.45	4.48	-0.01	63093	327.0 -> 81.0	56.3	28.0	83.9

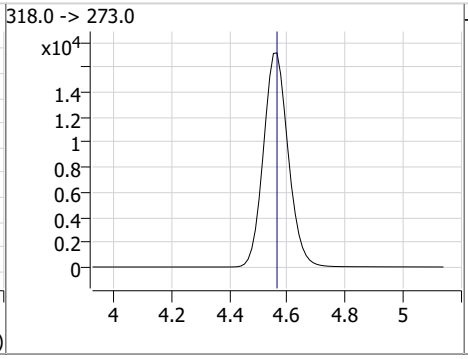


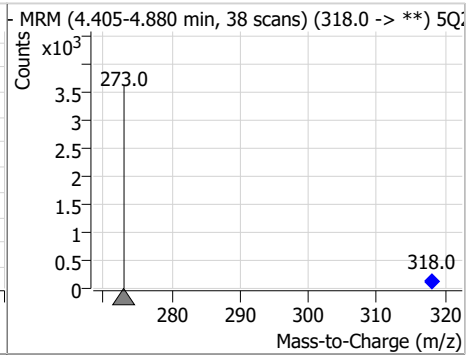




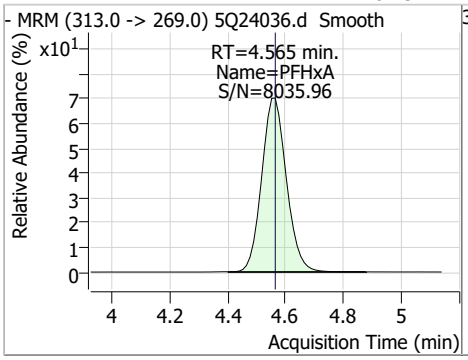
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	8.86	4.56	0.00	101702				

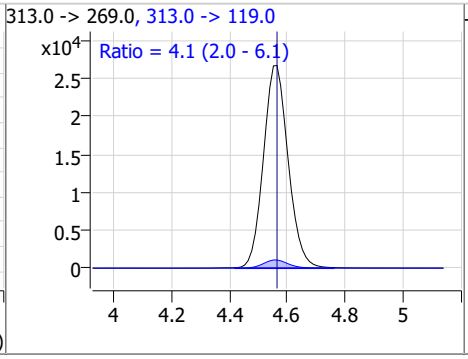


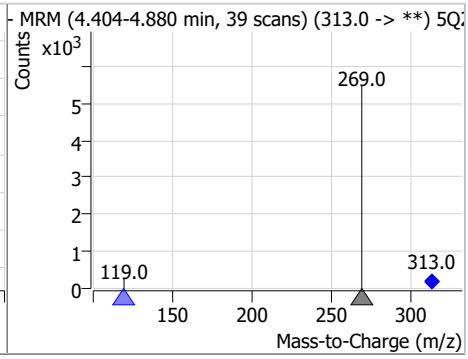




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	16.73	4.57	0.00	158546	313.0 -> 119.0	4.1	2.0	6.1

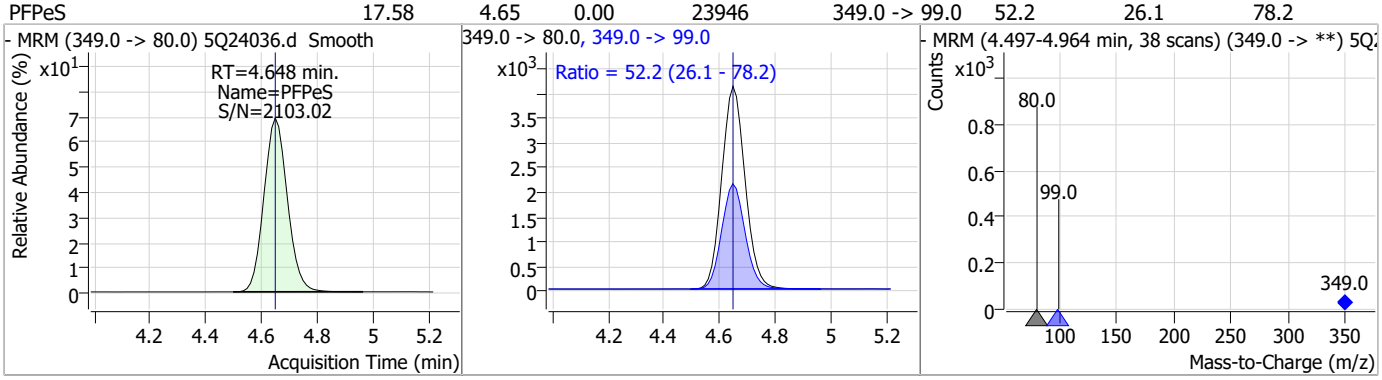




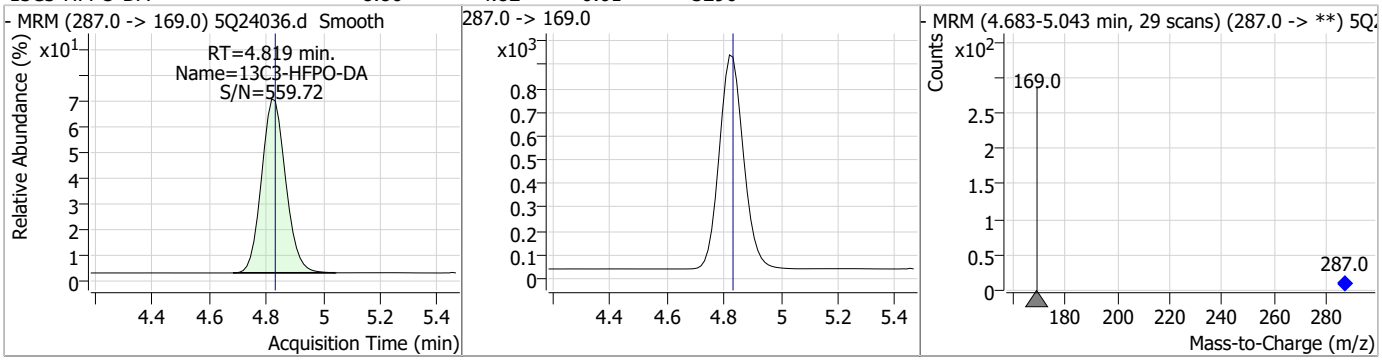


Perfluorinated Compounds by LC/MS/MS

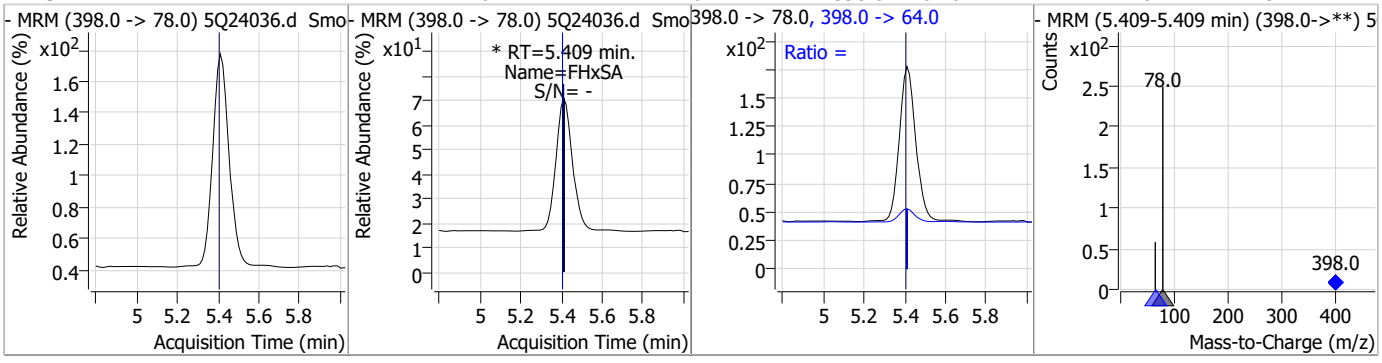
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	17.58	4.65	0.00	23946	349.0 -> 99.0	52.2	26.1	78.2



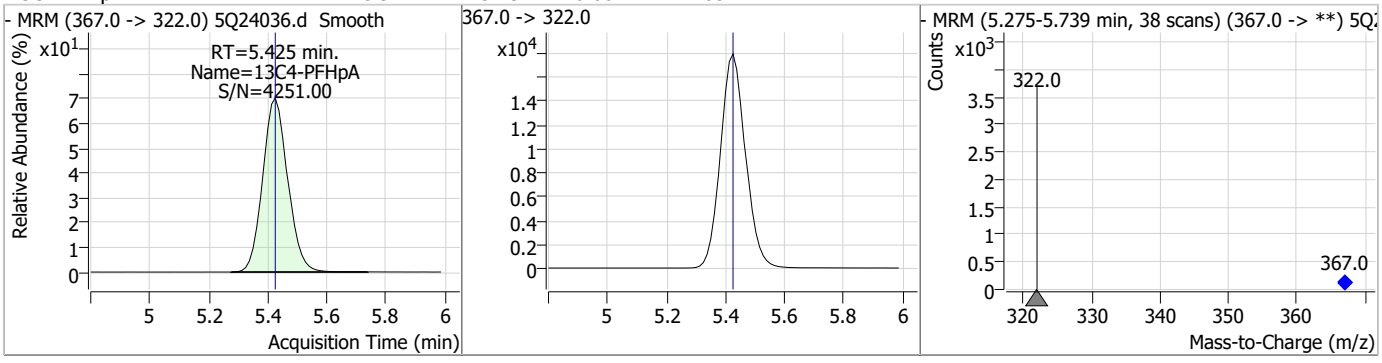
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	8.86	4.82	-0.01	5290				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA		0		0	398.0 -> 64.0		4.6	13.7

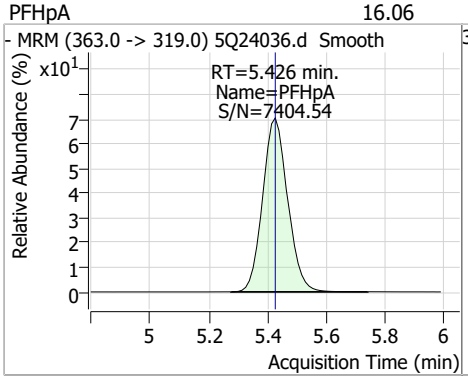


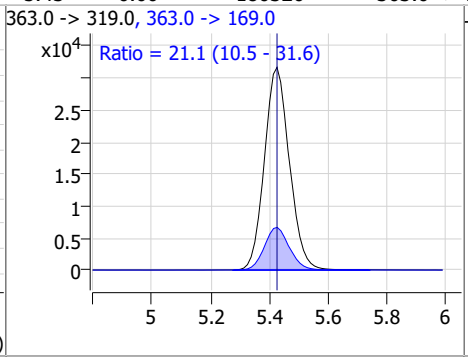
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	8.92	5.43	0.00	105442				

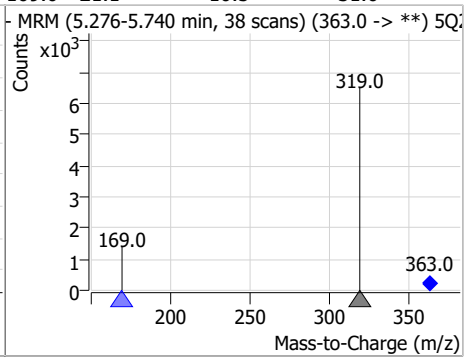


Perfluorinated Compounds by LC/MS/MS

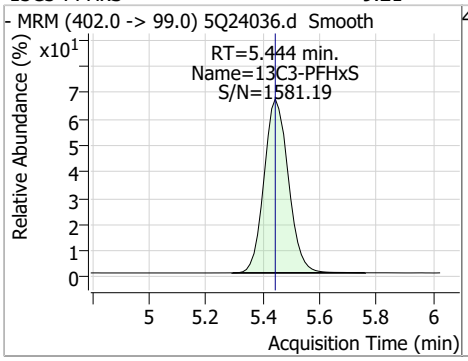
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	16.06	5.43	0.00	186326	363.0 -> 169.0	21.1	10.5	31.6

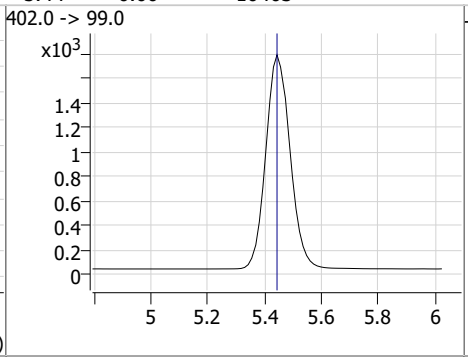


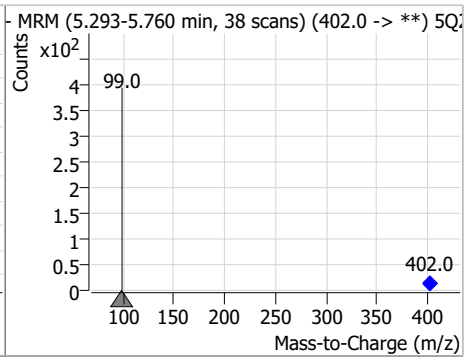




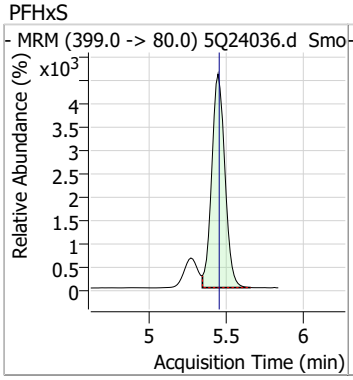
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	9.21	5.44	0.00	10403				

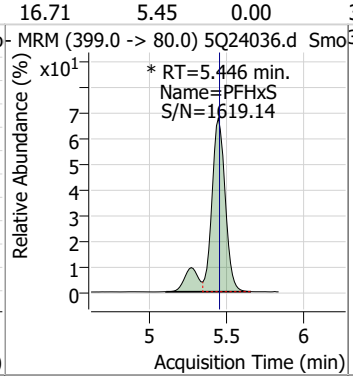


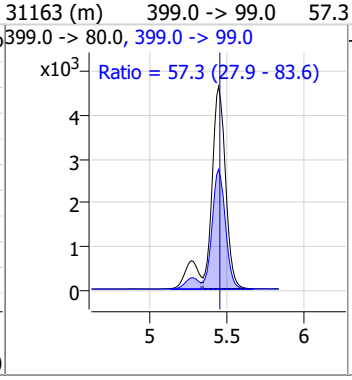


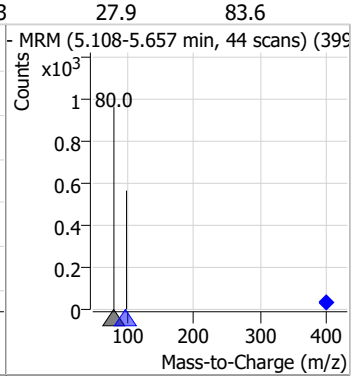


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	16.71	5.45	0.00	31163 (m)	399.0 -> 99.0	57.3	27.9	83.6

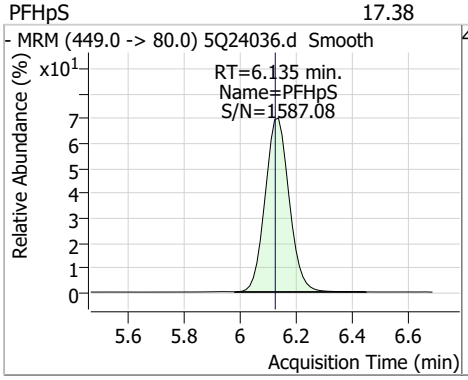


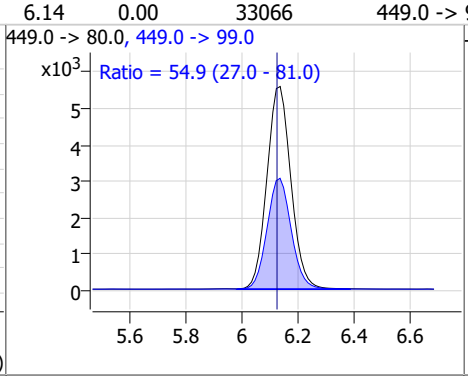


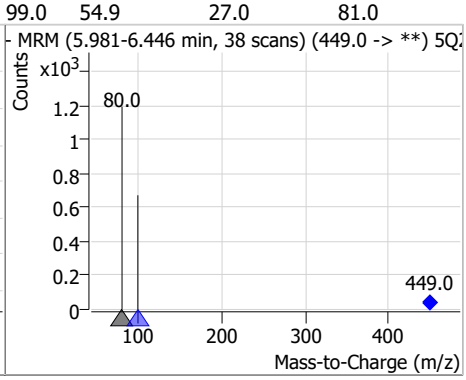




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	17.38	6.14	0.00	33066	449.0 -> 99.0	54.9	27.0	81.0

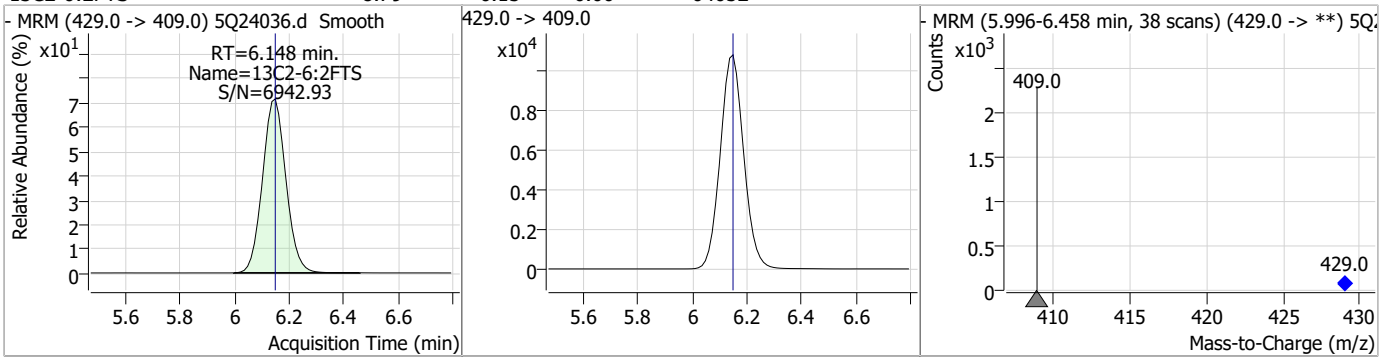




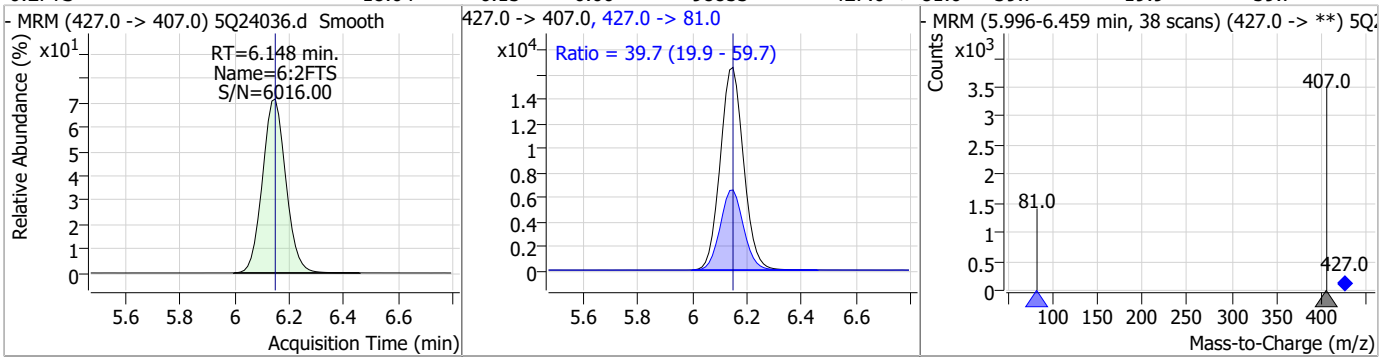


Perfluorinated Compounds by LC/MS/MS

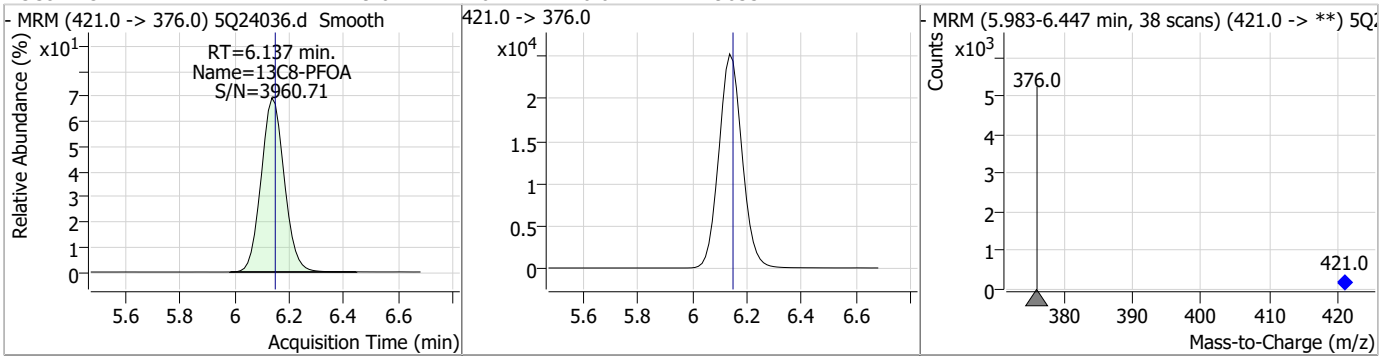
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	8.79	6.15	0.00	64652				



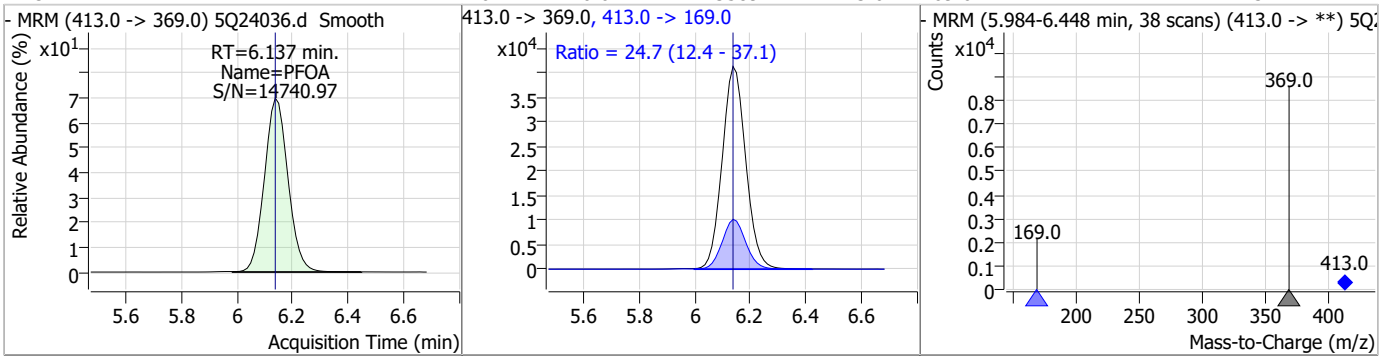
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	18.04	6.15	0.00	98853	427.0 -> 81.0	39.7	19.9	59.7



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	9.01	6.14	-0.01	149033				

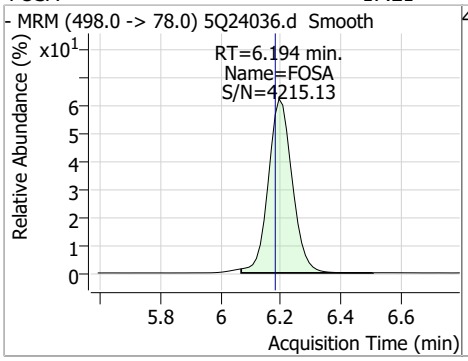


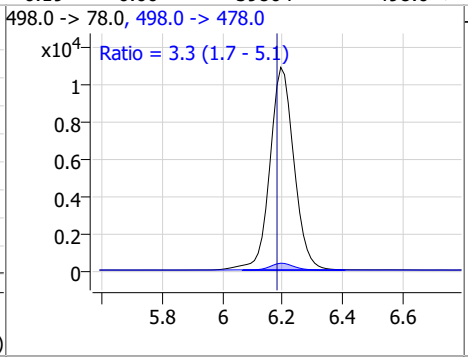
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	17.12	6.14	-0.01	243589	413.0 -> 169.0	24.7	12.4	37.1

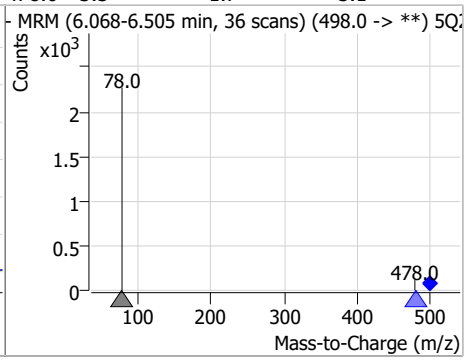


Perfluorinated Compounds by LC/MS/MS

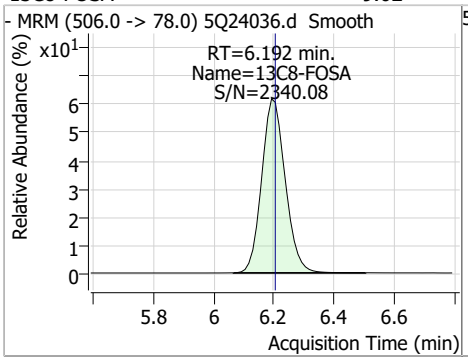
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	17.21	6.19	0.00	59804	498.0 -> 478.0	3.3	1.7	5.1

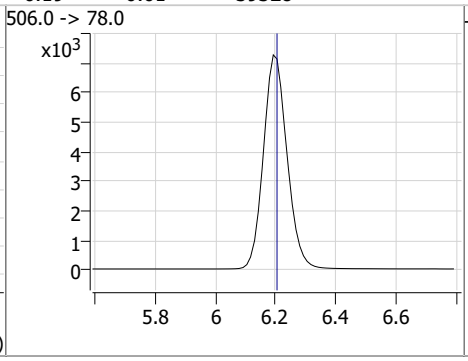


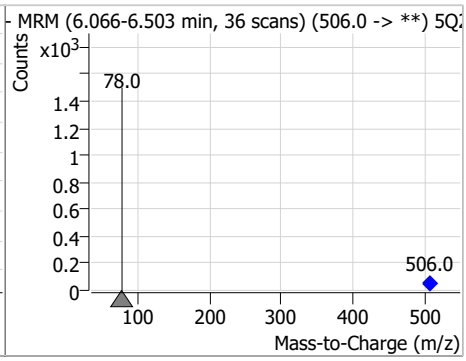




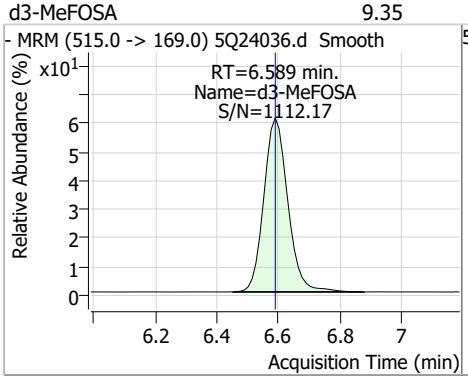
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	9.62	6.19	-0.01	39328				

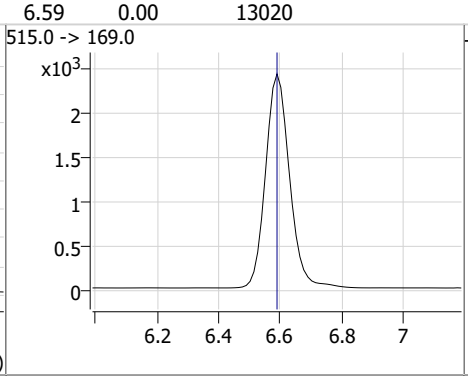


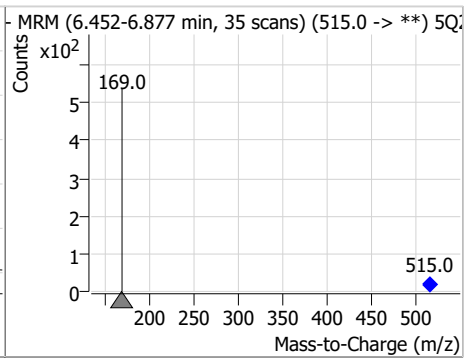




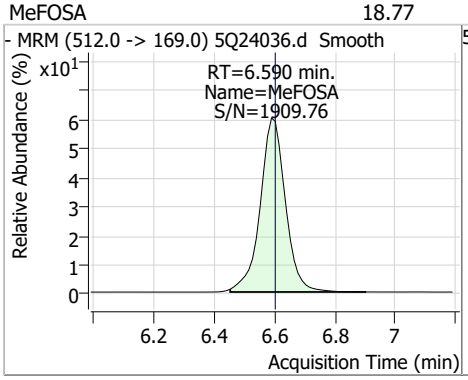
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	9.35	6.59	0.00	13020				

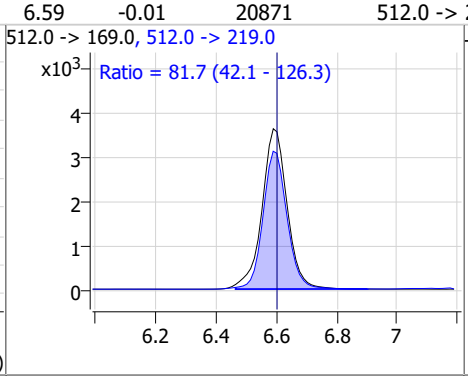


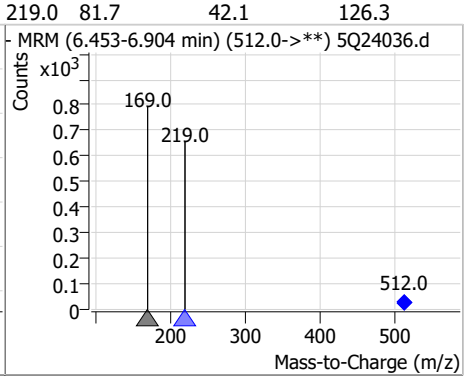




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	18.77	6.59	-0.01	20871	512.0 -> 219.0	81.7	42.1	126.3

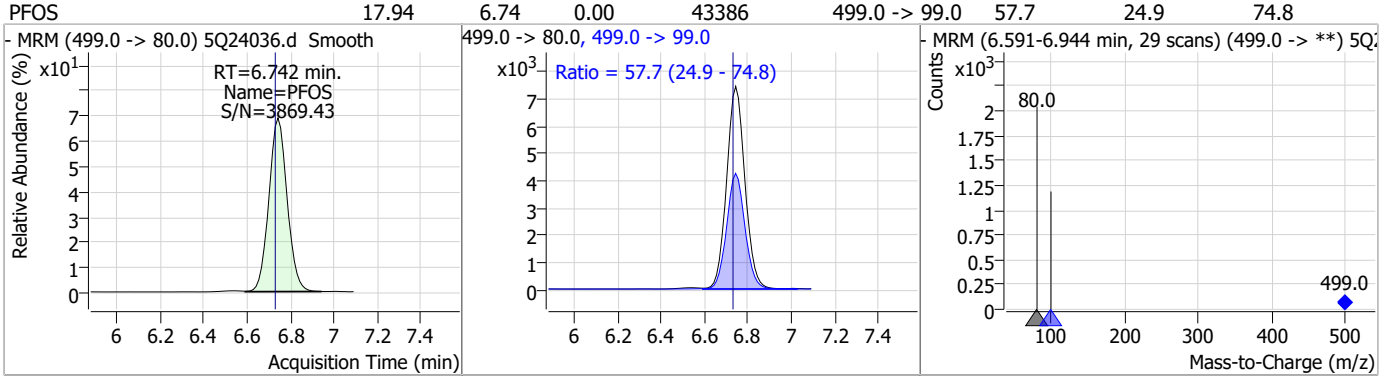




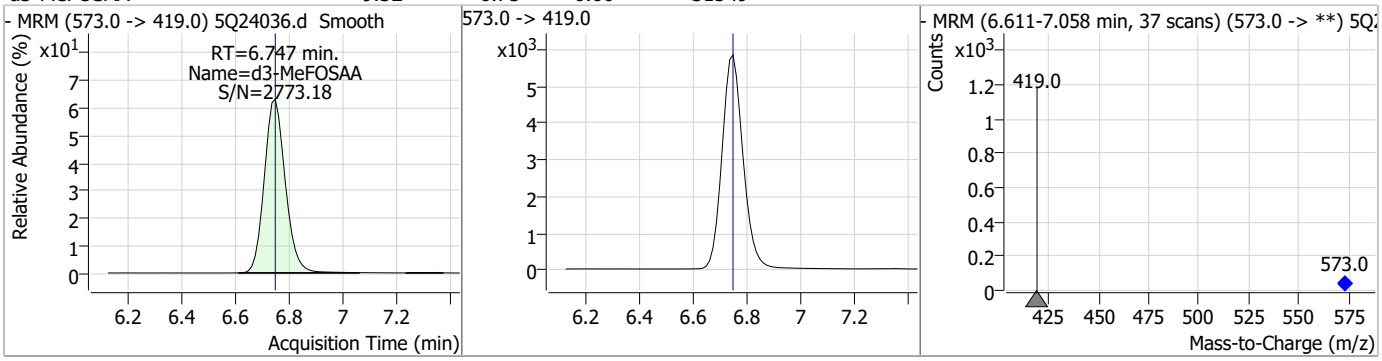


Perfluorinated Compounds by LC/MS/MS

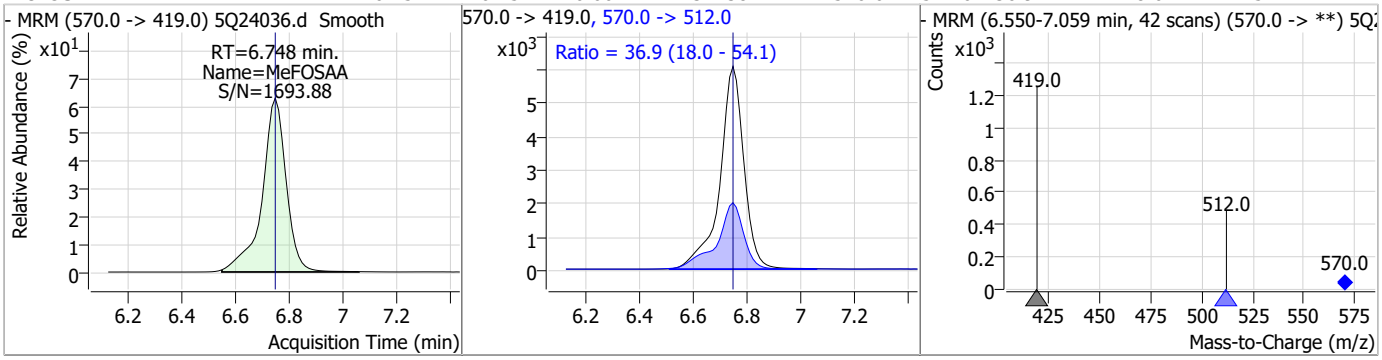
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	17.94	6.74	0.00	43386	499.0 -> 99.0	57.7	24.9	74.8



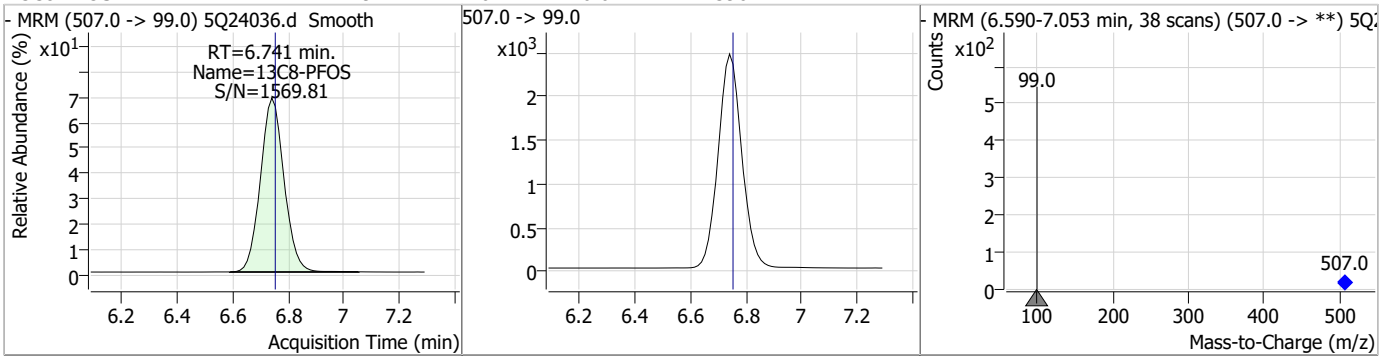
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	9.32	6.75	0.00	31349				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	16.15	6.75	0.00	37738	570.0 -> 512.0	36.9	18.0	54.1

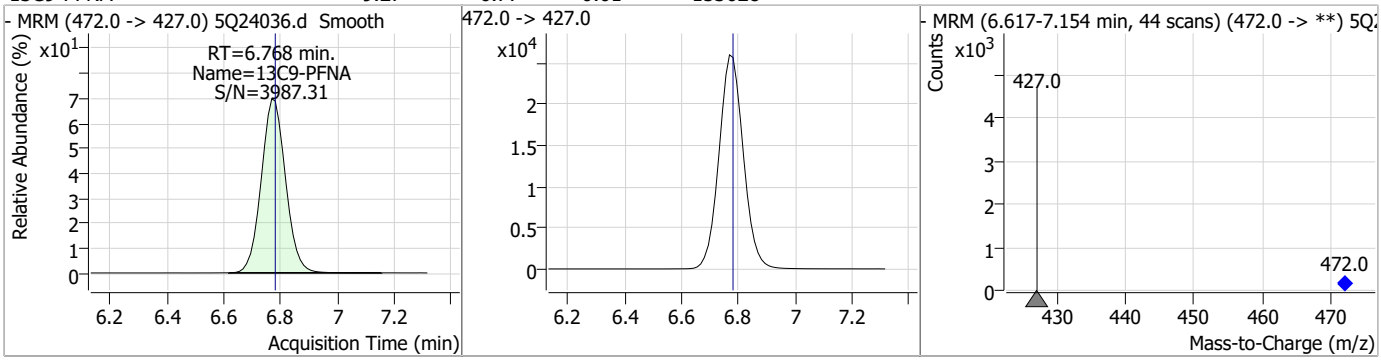


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	9.14	6.74	-0.01	14396				

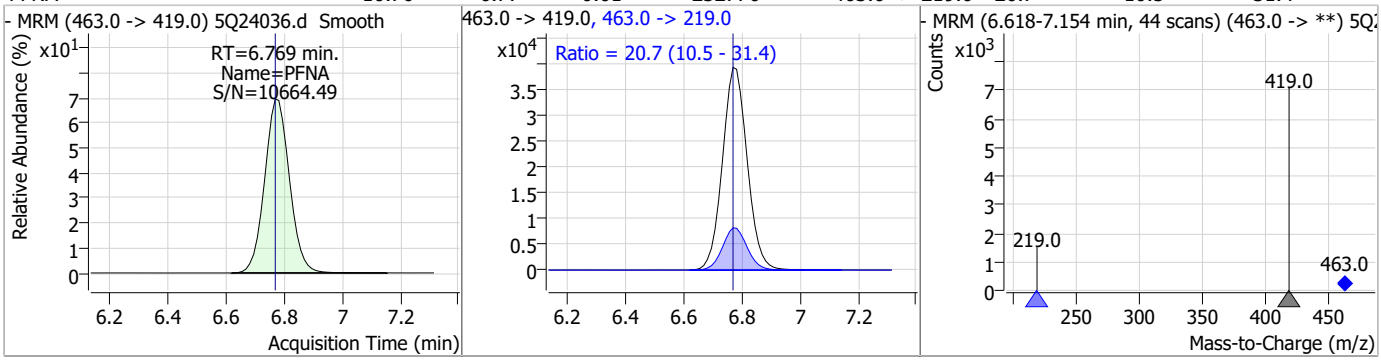


Perfluorinated Compounds by LC/MS/MS

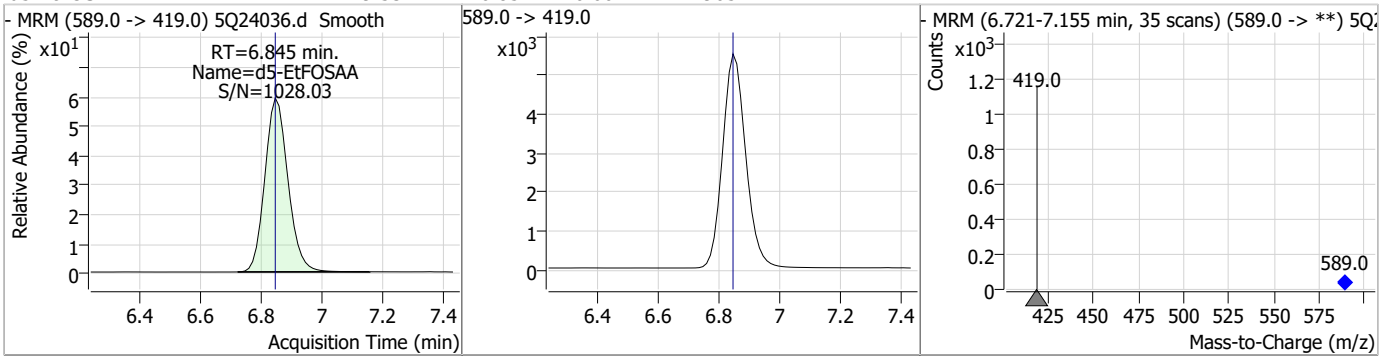
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	9.27	6.77	-0.01	153628				



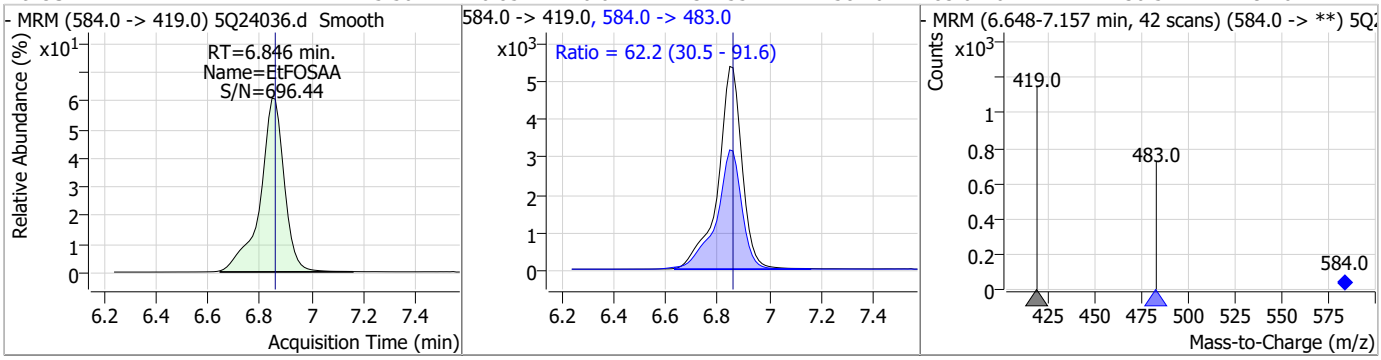
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	16.70	6.77	-0.01	232770	463.0 -> 219.0	20.7	10.5	31.4



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	9.53	6.85	0.00	29051				

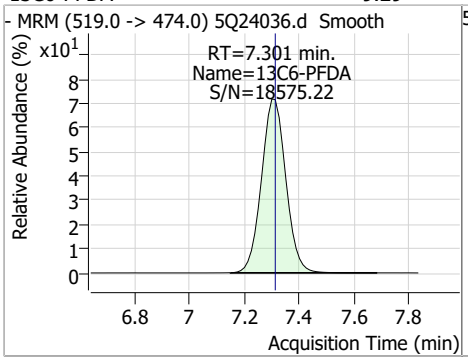


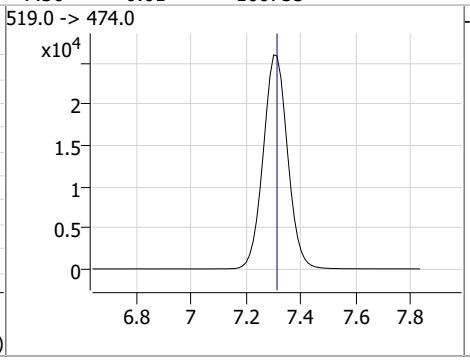
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	15.50	6.85	-0.01	34455	584.0 -> 483.0	62.2	30.5	91.6

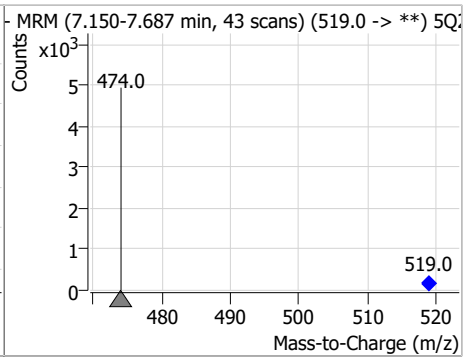


Perfluorinated Compounds by LC/MS/MS

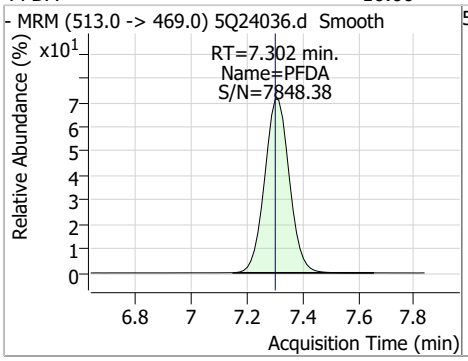
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	9.29	7.30	-0.01	160753				

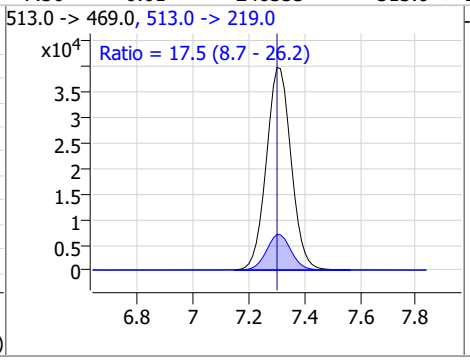


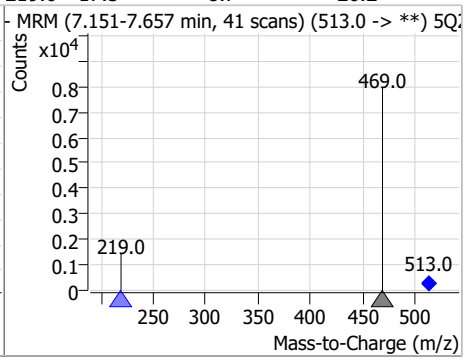




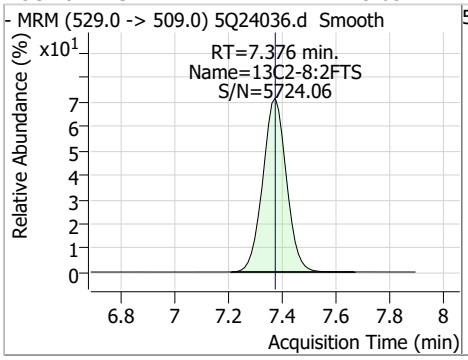
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	16.66	7.30	-0.01	246353	513.0 -> 219.0	17.5	8.7	26.2

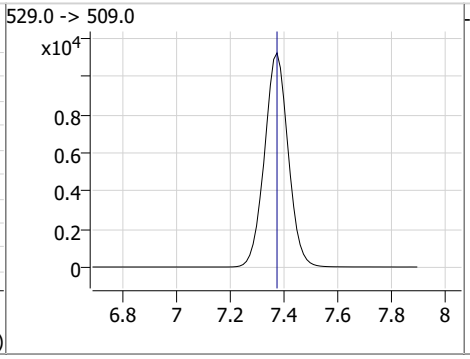


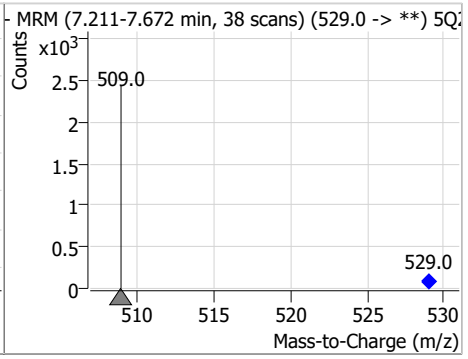




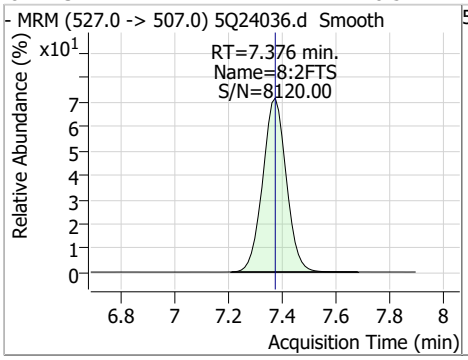
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	9.65	7.38	0.00	68277				

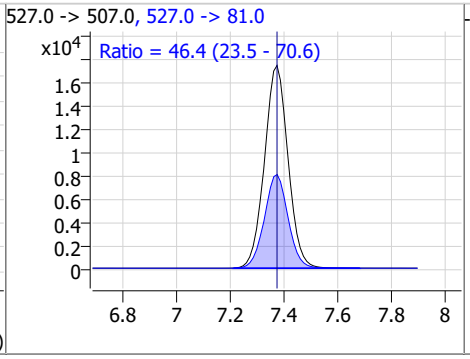


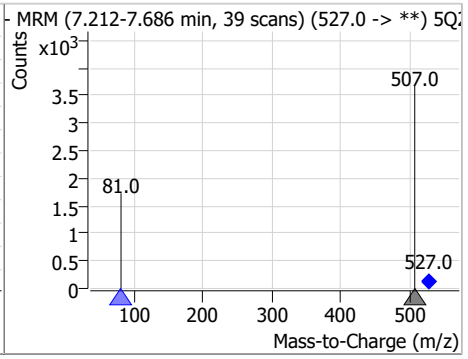




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	18.54	7.38	0.00	106331	527.0 -> 81.0	46.4	23.5	70.6

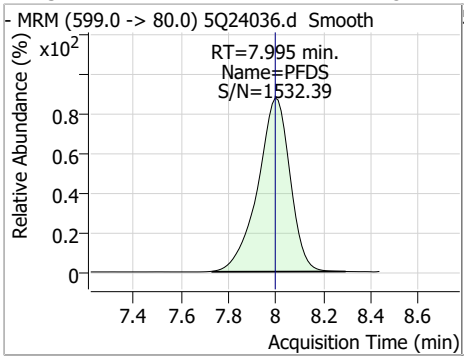


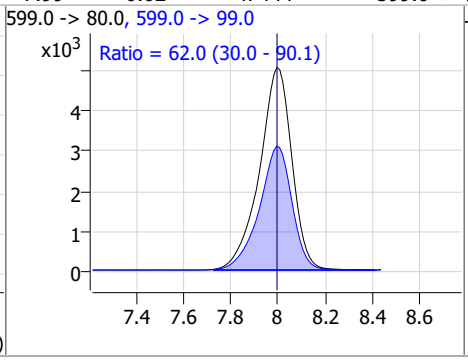


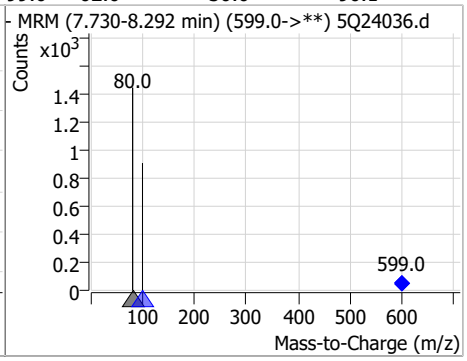


Perfluorinated Compounds by LC/MS/MS

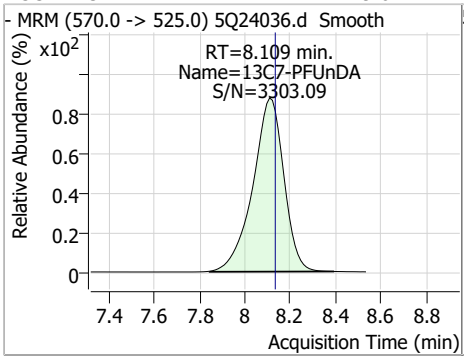
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	17.37	7.99	-0.02	47444	599.0 -> 99.0	62.0	30.0	90.1

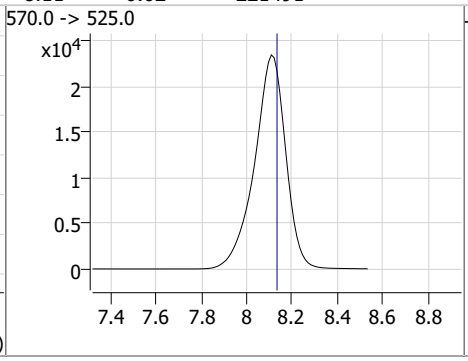


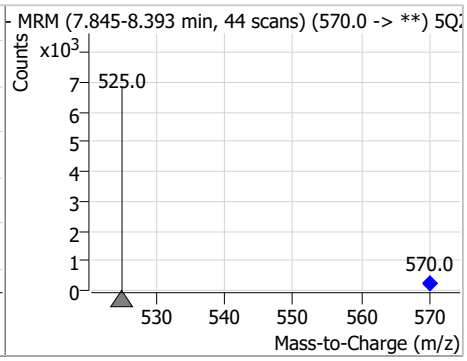




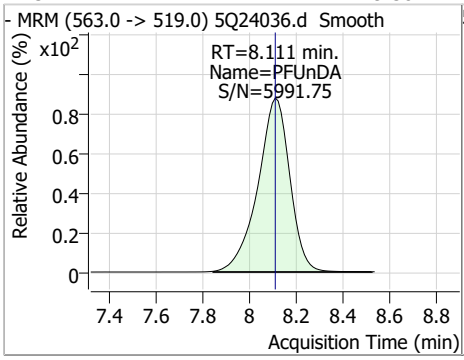
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	9.07	8.11	-0.02	221491				

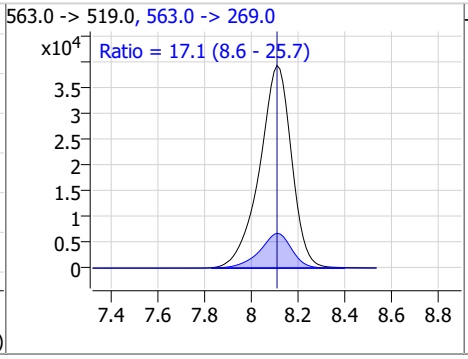


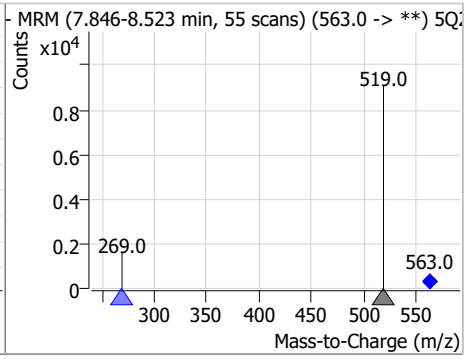




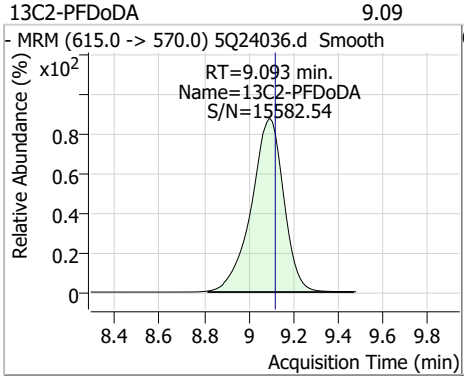
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	19.38	8.11	-0.02	372193	563.0 -> 269.0	17.1	8.6	25.7

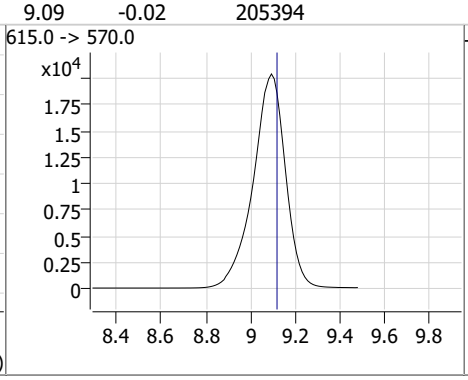


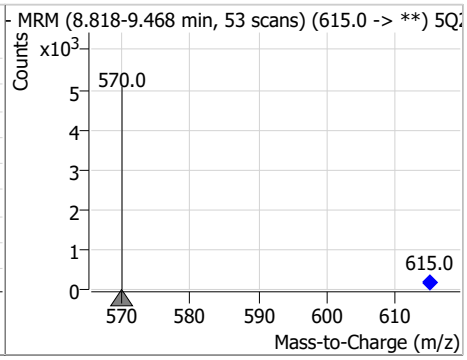




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	9.09	9.09	-0.02	205394				

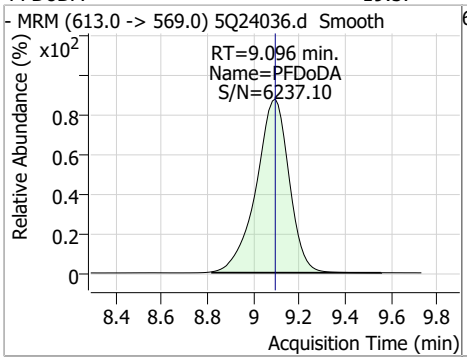


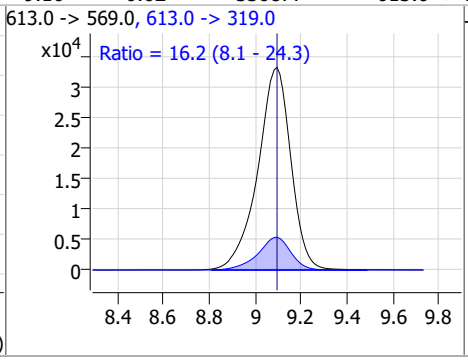


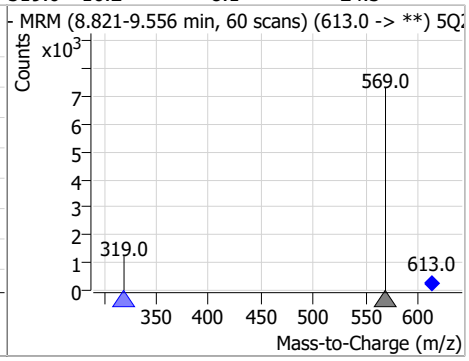


Perfluorinated Compounds by LC/MS/MS

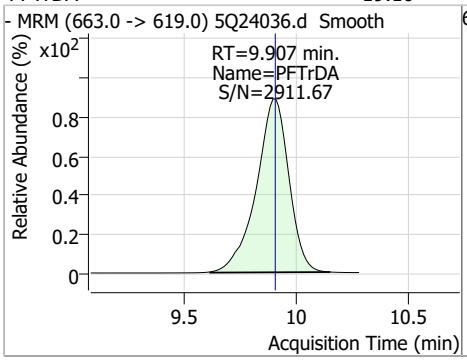
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	19.57	9.10	-0.02	330877	613.0 -> 319.0	16.2	8.1	24.3

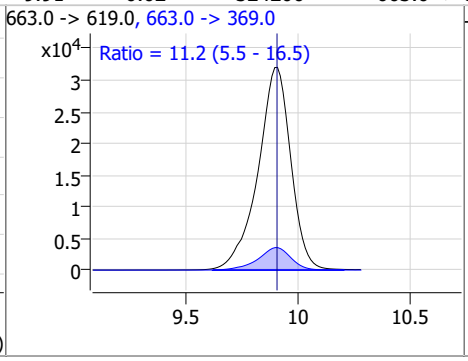


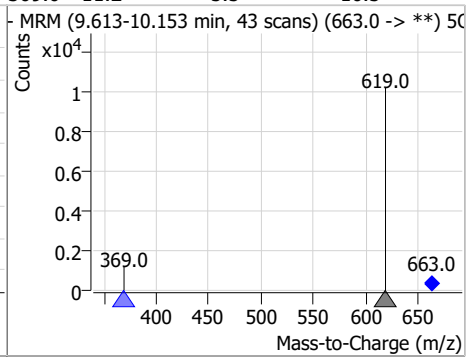




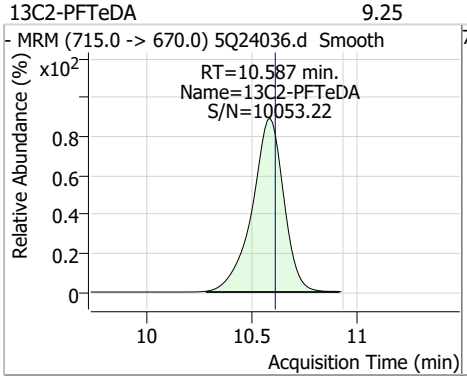
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	19.10	9.91	-0.02	324206	663.0 -> 369.0	11.2	5.5	16.5

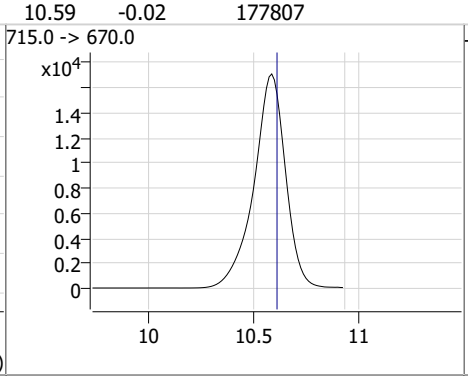


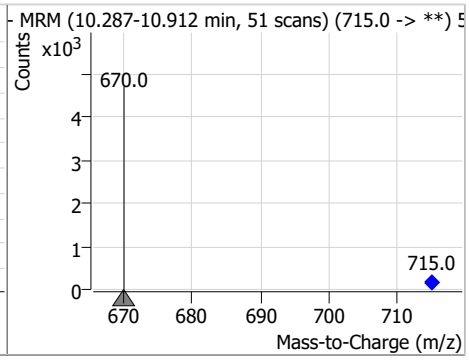




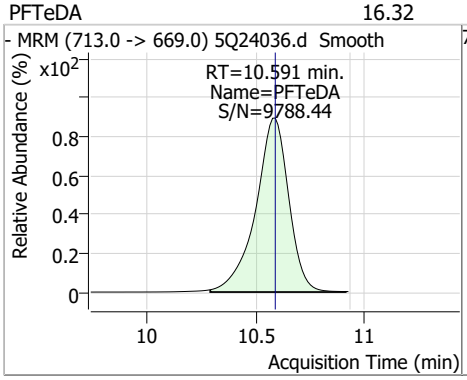
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	9.25	10.59	-0.02	177807				

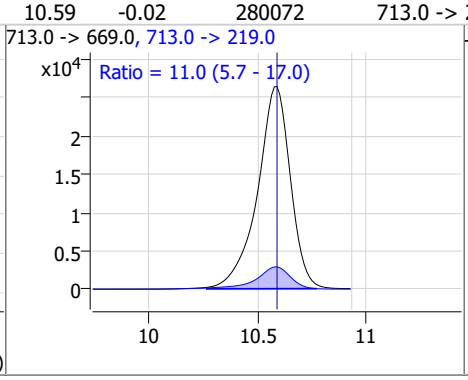


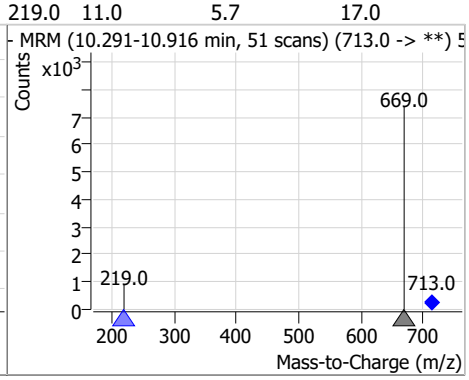




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	16.32	10.59	-0.02	280072	713.0 -> 219.0	11.0	5.7	17.0







Manual Integration Approval Summary

Sample Number: S5Q377-ICV377
Lab FileID: 5Q24036.D
Injection Time: 01/02/24 19:51
Method: EPA 537M QSM5.3 B-15
Analyst approved: 01/03/24 16:03 Lindsay Ritner
Supervisor approved: 01/04/24 12:54 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.45	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Natasha Gumtie 01/04/24 12:54

Perfluorinated Compounds by LC/MS/MS

Data File : 5Q24038.d
Operator : lindsayr
Acq. Method : 537_ID.m
Acq. Date-Time : 1/2/2024 8:24:09 PM
Sample Name : cc377-20
Vial : P1-A7
DA Method File : ID_010224_S5Q377.quantmethod.xml
Batch Name : s5q377.batch.bin
Sample Information : OP401,S5Q377,250,,,1.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.987	217.0 -> 172.0	37911	10.00	µg/L	0.000
M5-PFPeA	3.432	268.0 -> 223.0	64141	10.00	µg/L	0.000
M5-PFHxA	4.552	318.0 -> 273.0	101020	10.00	µg/L	-0.012
M4-PFHpA	5.425	367.0 -> 322.0	104500	10.00	µg/L	0.000
M8-PFOA	6.137	421.0 -> 376.0	149286	10.00	µg/L	-0.012
M9-PFNA	6.768	472.0 -> 427.0	152501	10.00	µg/L	-0.012
M6-PFDA	7.301	519.0 -> 474.0	156859	10.00	µg/L	-0.012
M7-PFUnDA	8.109	570.0 -> 525.0	219479	10.00	µg/L	-0.025
M2-PFDoDA	9.093	615.0 -> 570.0	203268	10.00	µg/L	-0.025
M2-PFTeDA	10.587	715.0 -> 670.0	178146	10.00	µg/L	-0.025
M8-FOSA	6.192	506.0 -> 78.0	39476	10.00	µg/L	-0.012
M3-PFBS	3.624	302.0 -> 99.0	7849	10.00	µg/L	-0.012
M3-PFHxS	5.444	402.0 -> 99.0	10369	10.00	µg/L	0.000
M8-PFOS	6.741	507.0 -> 99.0	13652	10.00	µg/L	-0.012
M2-4:2FTS	4.474	329.0 -> 309.0	36368	10.00	µg/L	-0.012
M2-6:2FTS	6.135	429.0 -> 409.0	67049	10.00	µg/L	-0.012
M2-8:2FTS	7.376	529.0 -> 509.0	67904	10.00	µg/L	0.000
M3-MeFOSAA	6.747	573.0 -> 419.0	31811	10.00	µg/L	0.000
M3-HFPO-DA	4.819	287.0 -> 169.0	5064	10.00	µg/L	-0.012
M3-MeFOSA	6.589	515.0 -> 169.0	13607	10.00	µg/L	0.000
M5-EtFOSAA	6.845	589.0 -> 419.0	29372	10.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.474	329.0 -> 309.0	36368	9.31	µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 93.1%		
13C2-6:2FTS	6.135	429.0 -> 409.0	67049	9.12	µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 91.2%		
13C2-8:2FTS	7.376	529.0 -> 509.0	67904	9.60	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 96.0%		
13C2-PFDoDA	9.093	615.0 -> 570.0	203268	8.99	µg/L	-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 89.9%		
13C2-PFTeDA	10.587	715.0 -> 670.0	178146	9.27	µg/L	-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 92.7%		
13C3-PFBS	3.624	302.0 -> 99.0	7849	8.51	µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 85.1%		
13C3-PFHxS	5.444	402.0 -> 99.0	10369	9.18	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 91.8%		
13C4-PFBA	1.987	217.0 -> 172.0	37911	8.59	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 85.9%		
13C4-PFHpA	5.425	367.0 -> 322.0	104500	8.84	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 88.4%		
13C5-PFHxA	4.552	318.0 -> 273.0	101020	8.80	µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 88.0%		
13C5-PFPeA	3.432	268.0 -> 223.0	64141	8.63	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 86.3%		
13C6-PFDA	7.301	519.0 -> 474.0	156859	9.06	µg/L	-0.012

Perfluorinated Compounds by LC/MS/MS

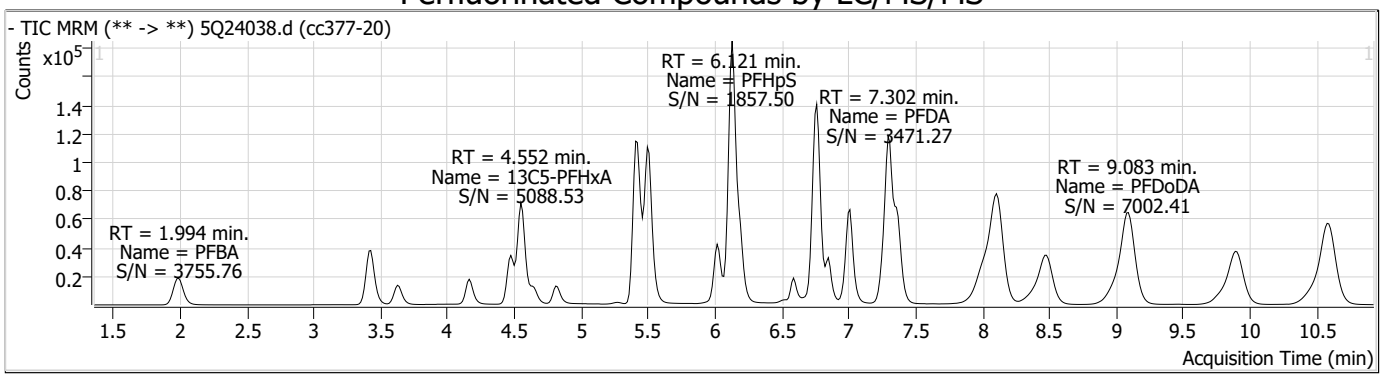
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 90.6%			
13C7-PFUnDA	8.109	570.0 -> 525.0	219479	8.99	µg/L		-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 89.9%			
13C8-FOSA	6.192	506.0 -> 78.0	39476	9.65	µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 96.5%			
13C8-PFOA	6.137	421.0 -> 376.0	149286	9.02	µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 90.2%			
13C8-PFOS	6.741	507.0 -> 99.0	13652	8.67	µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 86.7%			
13C9-PFNA	6.768	472.0 -> 427.0	152501	9.20	µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 92.0%			
d3-MeFOSAA	6.747	573.0 -> 419.0	31811	9.46	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 94.6%			
13C3-HFPO-DA	4.819	287.0 -> 169.0	5064	8.48	µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 84.8%			
d3-MeFOSA	6.589	515.0 -> 169.0	13607	9.77	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 97.7%			
d5-EtFOSAA	6.845	589.0 -> 419.0	29372	9.64	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 96.4%			
Target Compounds							QValue
4:2FTS	4.475	327.0 -> 307.0	65762	19.01	µg/L		98
		327.0 -> 81.0	37885				
6:2FTS	6.136	427.0 -> 407.0	112556	19.81	µg/L		99
		427.0 -> 81.0	44204				
8:2FTS	7.376	527.0 -> 507.0	112276	19.69	µg/L		99
		527.0 -> 81.0	52363				
EtFOSAA	6.846	584.0 -> 419.0	40729	18.12	µg/L		98
		584.0 -> 483.0	25372				
FOSA	6.194	498.0 -> 78.0	64526	18.50	µg/L		100
		498.0 -> 478.0	2287				
MeFOSAA	6.748	570.0 -> 419.0	44436	18.74	µg/L		97
		570.0 -> 512.0	16712				
PFBA	1.994	213.0 -> 169.0	62876	18.47	µg/L		100
PFBS	3.628	299.0 -> 80.0	35642	18.53	µg/L		100
		299.0 -> 99.0	15462				
PFDA	7.302	513.0 -> 469.0	270115	18.72	µg/L		100
		513.0 -> 219.0	47041				
PFDoDA	9.083	613.0 -> 569.0	316778	18.93	µg/L		100
		613.0 -> 319.0	51486				
PFDS	7.995	599.0 -> 80.0	50462	18.64	µg/L		99
		599.0 -> 99.0	30830				
PFHpA	5.426	363.0 -> 319.0	217428	18.91	µg/L		99
		363.0 -> 169.0	45247				
PFHpS	6.121	449.0 -> 80.0	35203	19.51	µg/L		100
		449.0 -> 99.0	18887				
PFHxA	4.553	313.0 -> 269.0	175765	18.67	µg/L		100
		313.0 -> 119.0	7155				
PFHxS	5.446	399.0 -> 80.0	34230	18.41	µg/L	m	99
		399.0 -> 99.0	19378				
PFNA	6.769	463.0 -> 419.0	250925	18.13	µg/L		100
		463.0 -> 219.0	52547				
PFNS	7.260	549.0 -> 80.0	31119	19.81	µg/L		98
		549.0 -> 99.0	18264				
PFOA	6.137	413.0 -> 369.0	265642	18.64	µg/L		100
		413.0 -> 169.0	66248				
PFOS	6.742	499.0 -> 80.0	44542	19.42	µg/L	m	99

Perfluorinated Compounds by LC/MS/MS

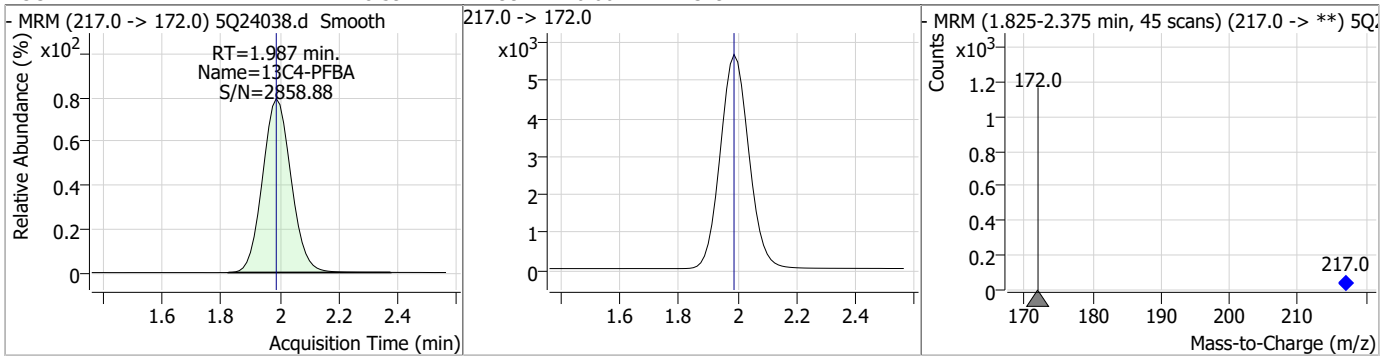
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		499.0 -> 99.0	21894			
PFPeA	3.434	263.0 -> 219.0	112908	18.67	µg/L	100
PFPeS	4.648	349.0 -> 80.0	25719	19.25	µg/L	99
		349.0 -> 99.0	13229			
PFTeDA	10.578	713.0 -> 669.0	326205	18.97	µg/L	99
		713.0 -> 219.0	35439			
PFTrDA	9.895	663.0 -> 619.0	305244	18.17	µg/L	99
		663.0 -> 369.0	34274			
PFUnDA	8.111	563.0 -> 519.0	359347	18.88	µg/L	100
		563.0 -> 269.0	61675			
11Cl-PF3OUdS	8.465	631.0 -> 451.0	223460	18.61	µg/L	100
		633.0 -> 453.0	70131			
9Cl-PF3ONS	7.011	531.0 -> 351.0	202095	18.64	µg/L	99
		533.0 -> 353.0	64477			
ADONA	5.514	377.0 -> 251.0	314073	18.40	µg/L	99
		377.0 -> 85.0	111671			
HFPO-DA	4.827	329.0 -> 169.0	38290	18.60	µg/L	100
		285.0 -> 169.0	8416			
MeFOSA	6.590	512.0 -> 169.0	21497	18.50	µg/L	94
		512.0 -> 219.0	16853			
4-PFECHS	6.018	461.0 -> 381.0	113390	17.94	µg/L	100
		461.0 -> 99.0	58268			
FBSA	4.170	298.0 -> 78.0	63668	19.06	µg/L	99
		298.0 -> 64.0	5791			
FHxSA	5.409	398.0 -> 78.0	70057	20.70	µg/L	99
		398.0 -> 64.0	6721			

 # = Qualifier out of range, m = manually integrated, + = Area summed

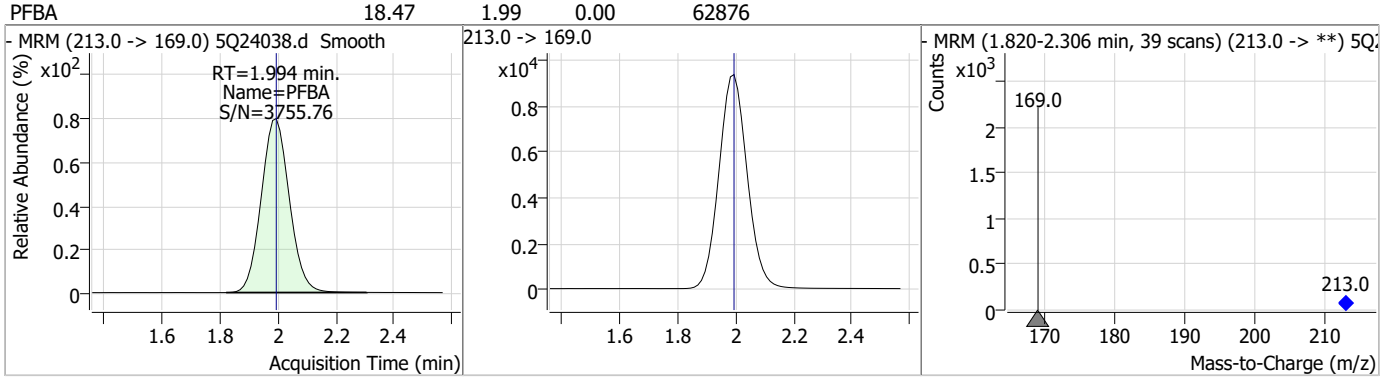
Perfluorinated Compounds by LC/MS/MS



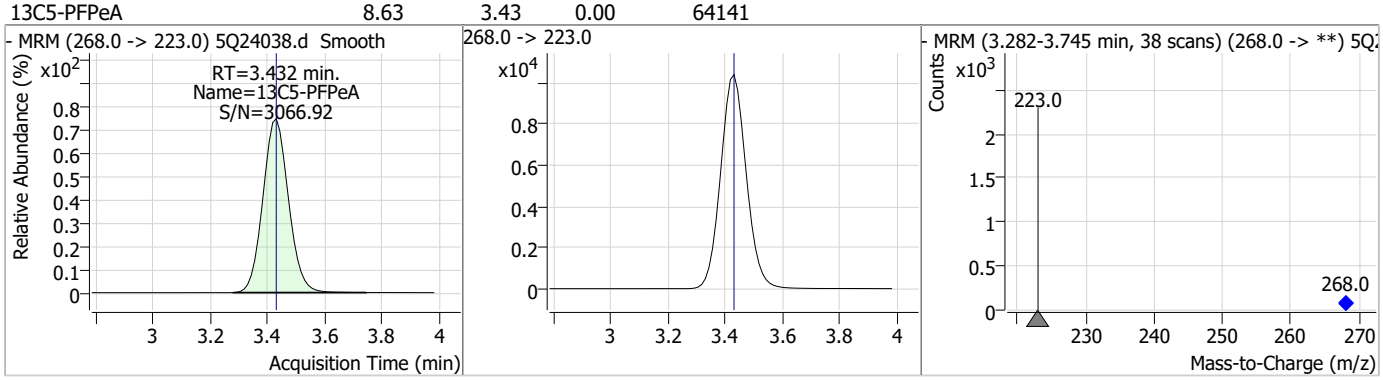
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	8.59	1.99	0.00	37911				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	18.47	1.99	0.00	62876				

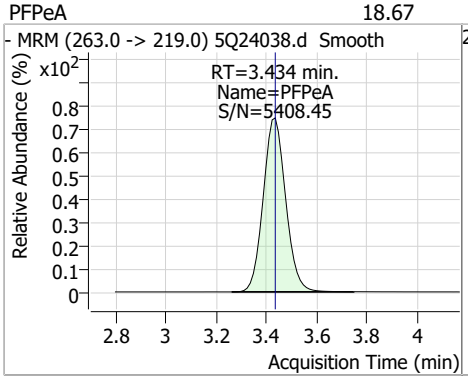


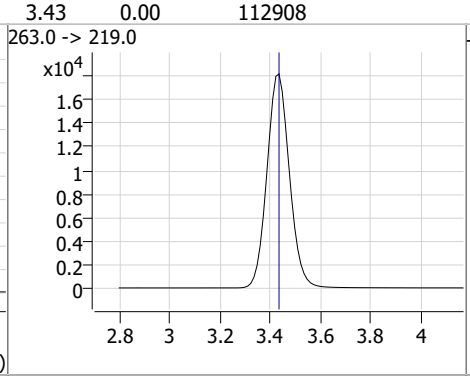
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	8.63	3.43	0.00	64141				

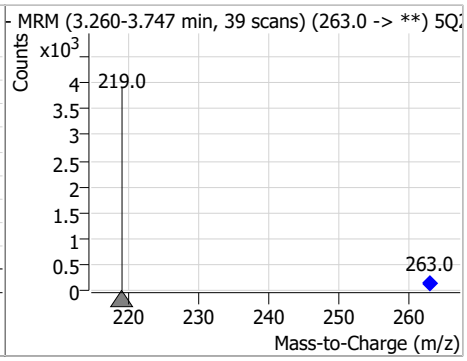


Perfluorinated Compounds by LC/MS/MS

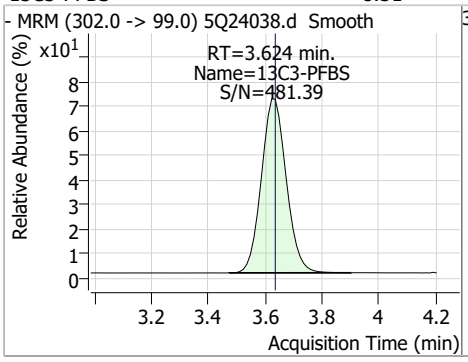
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	18.67	3.43	0.00	112908				

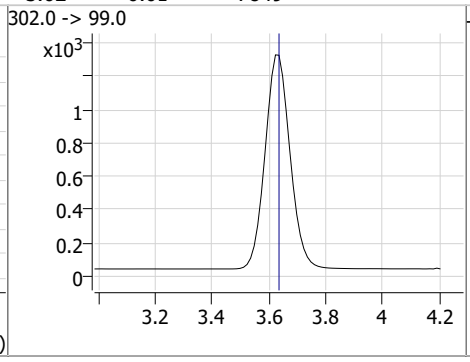


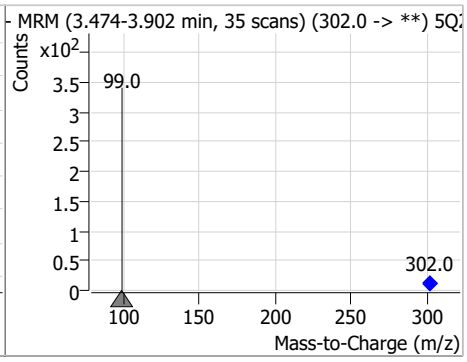




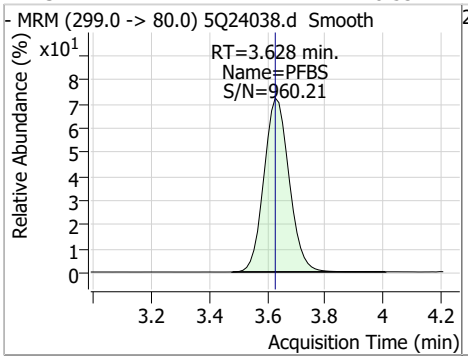
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	8.51	3.62	-0.01	7849				

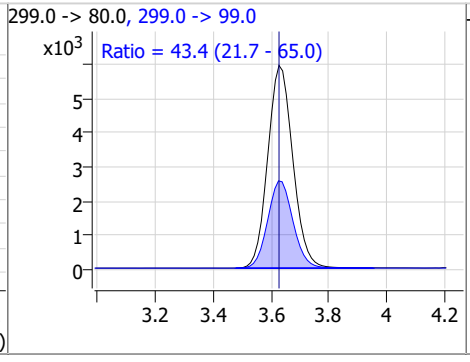


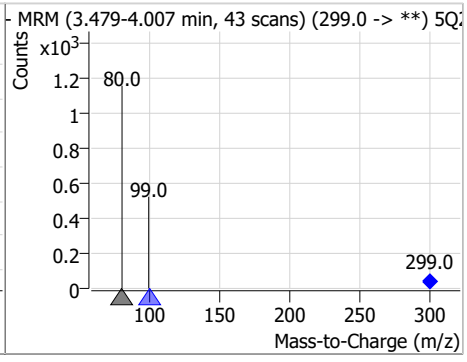




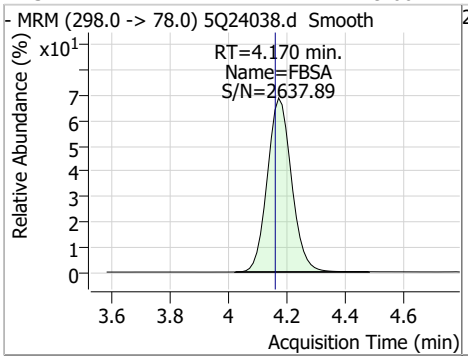
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	18.53	3.63	-0.01	35642	299.0 -> 99.0	43.4	21.7	65.0

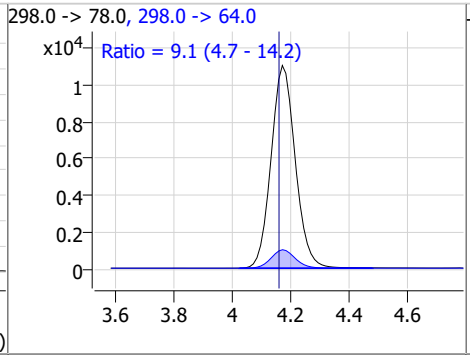


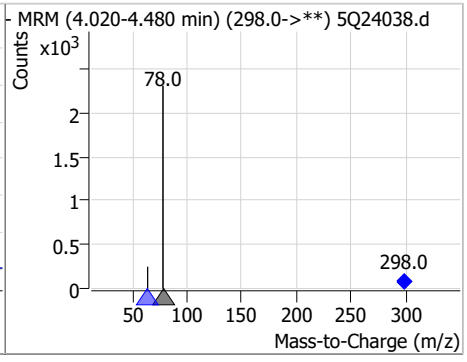




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	19.06	4.17	0.00	63668	298.0 -> 64.0	9.1	4.7	14.2

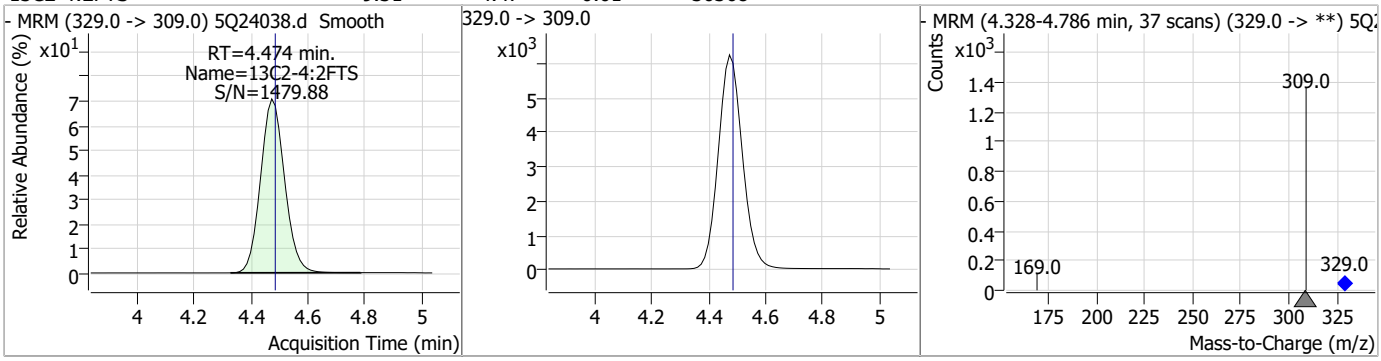




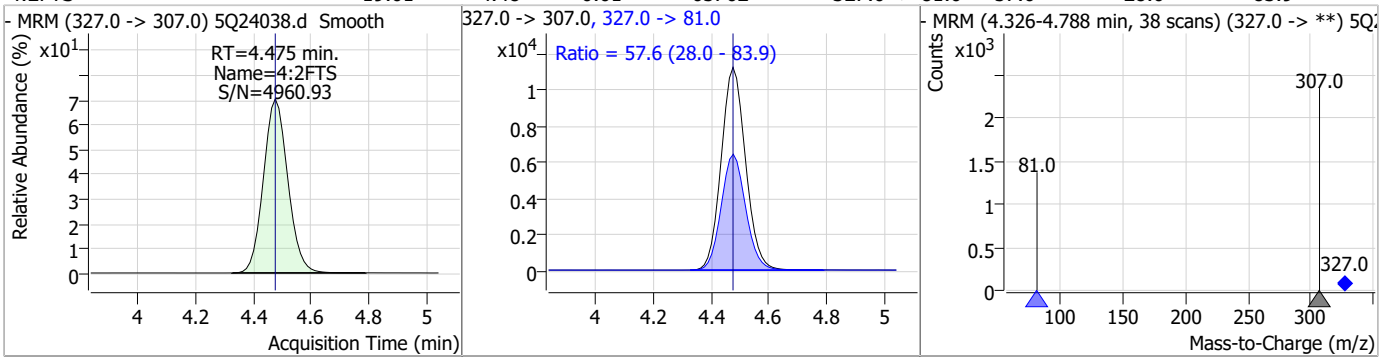


Perfluorinated Compounds by LC/MS/MS

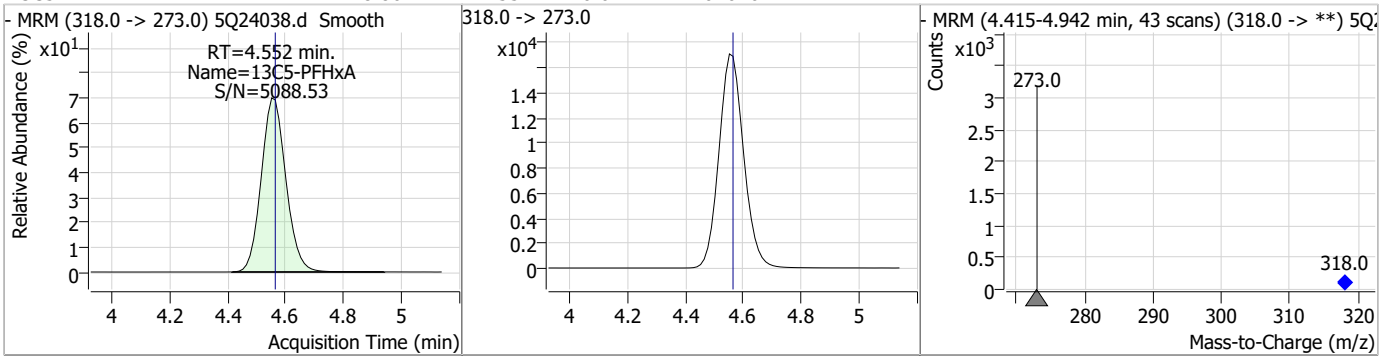
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	9.31	4.47	-0.01	36368				



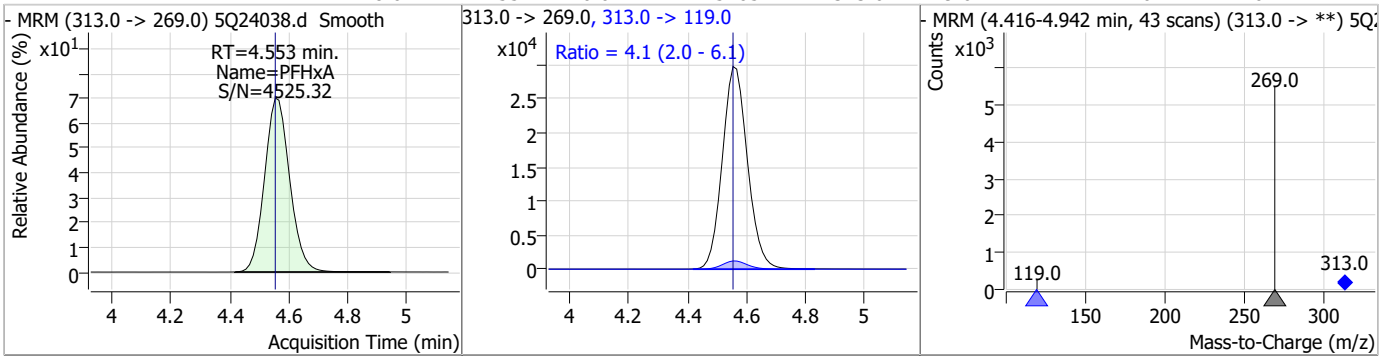
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	19.01	4.48	-0.01	65762	327.0 -> 81.0	57.6	28.0	83.9



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	8.80	4.55	-0.01	101020				

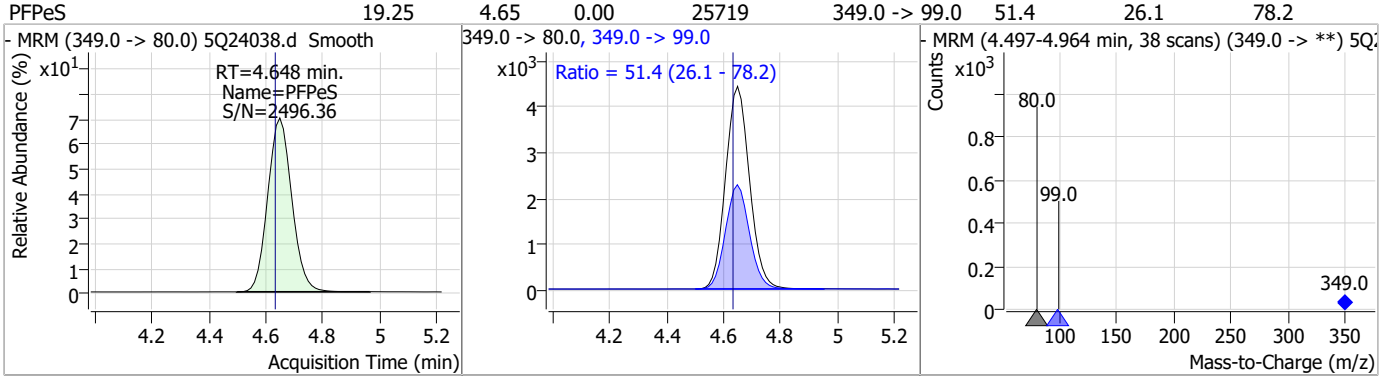


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	18.67	4.55	-0.01	175765	313.0 -> 119.0	4.1	2.0	6.1

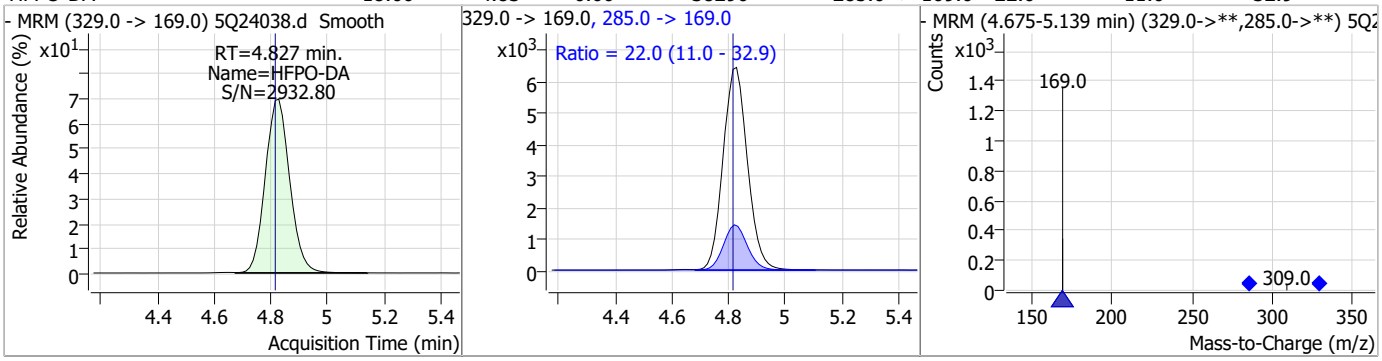


Perfluorinated Compounds by LC/MS/MS

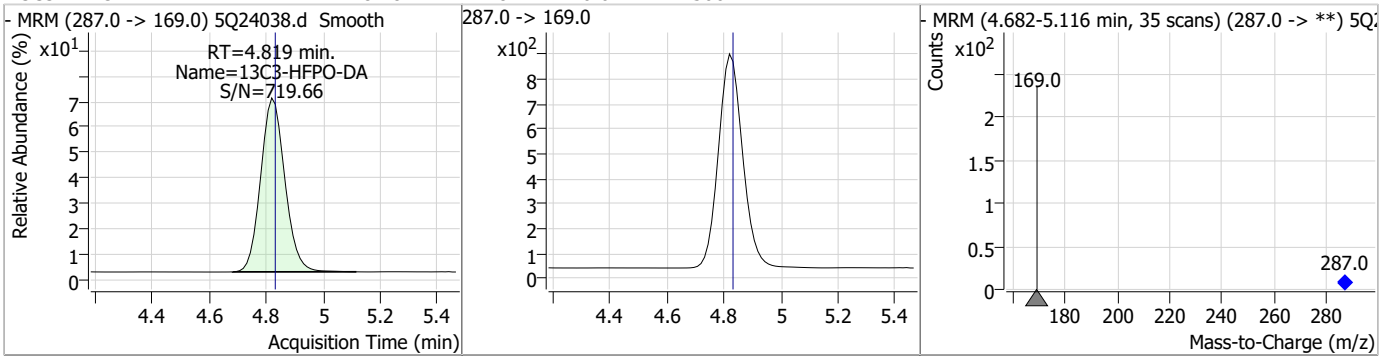
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	19.25	4.65	0.00	25719	349.0 -> 99.0	51.4	26.1	78.2



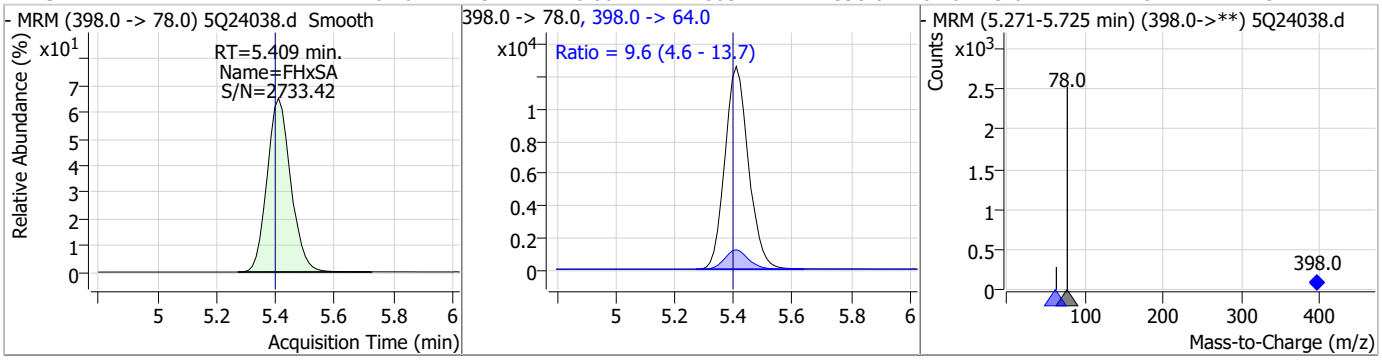
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	18.60	4.83	0.00	38290	285.0 -> 169.0	22.0	11.0	32.9



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	8.48	4.82	-0.01	5064				

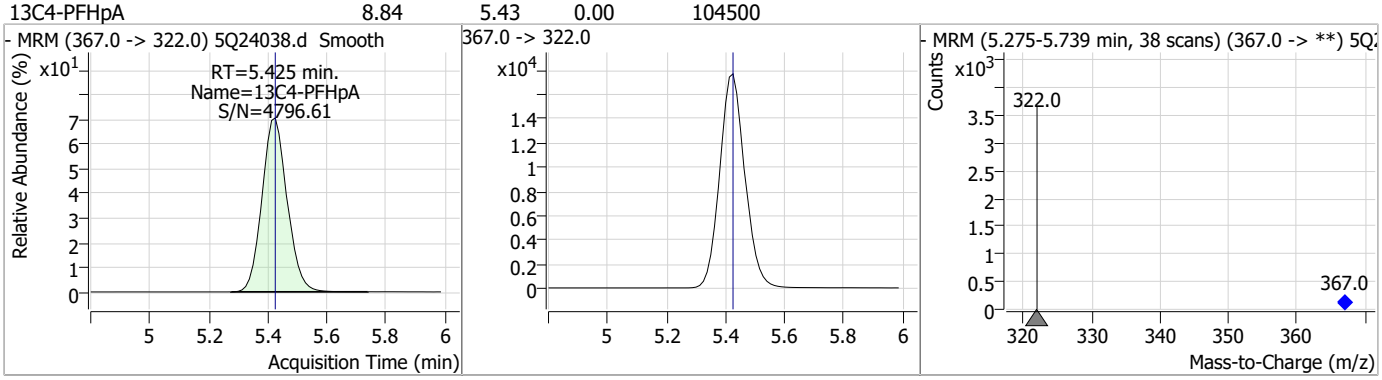


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	20.70	5.41	0.00	70057	398.0 -> 64.0	9.6	4.6	13.7

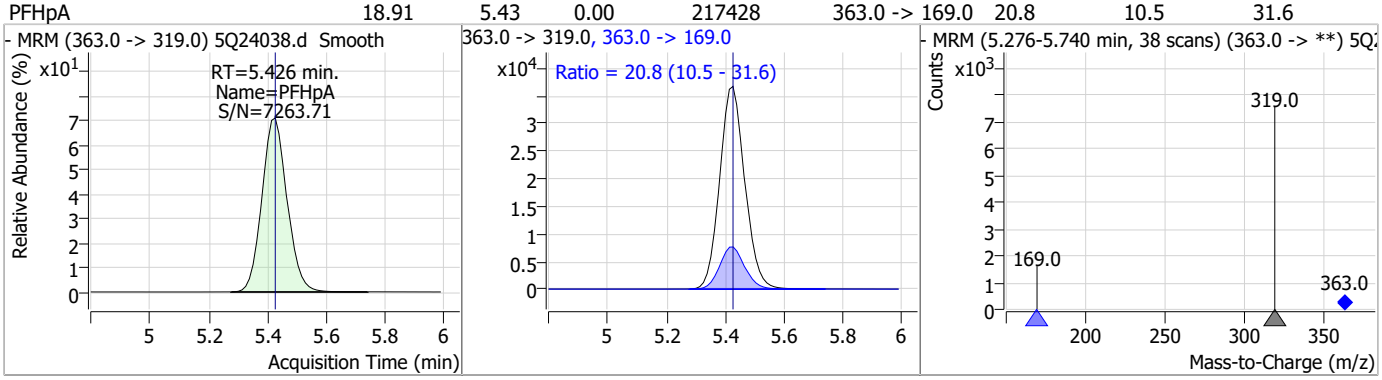


Perfluorinated Compounds by LC/MS/MS

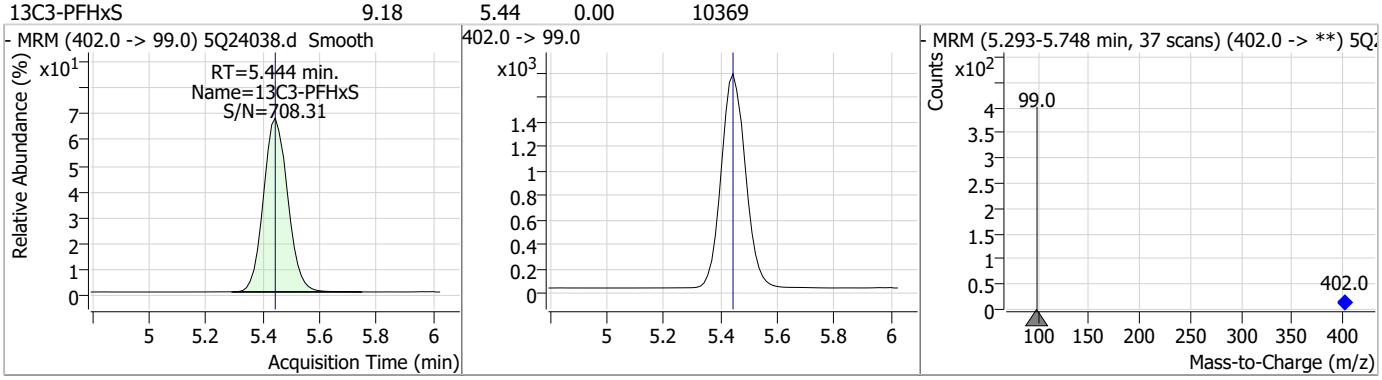
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	8.84	5.43	0.00	104500				



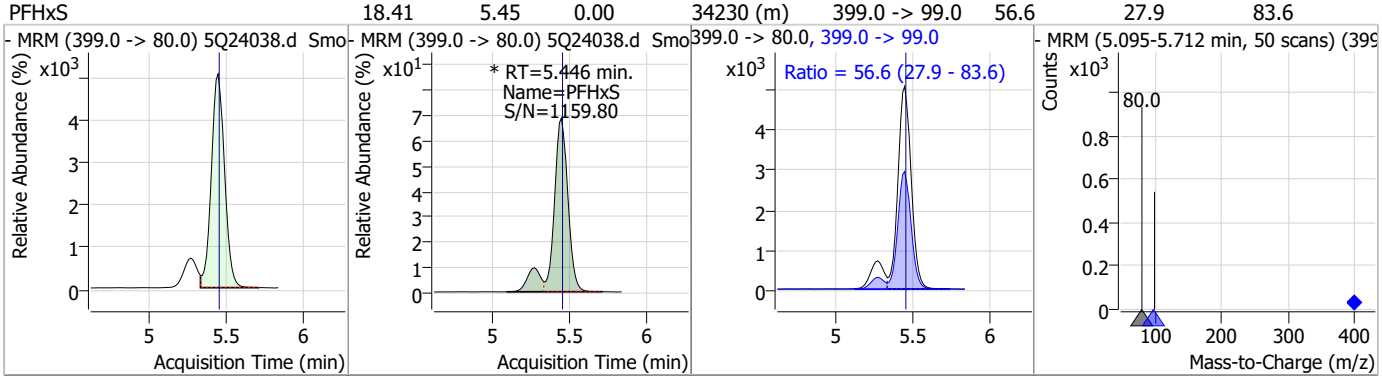
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	18.91	5.43	0.00	217428	363.0 -> 169.0	20.8	10.5	31.6



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	9.18	5.44	0.00	10369				

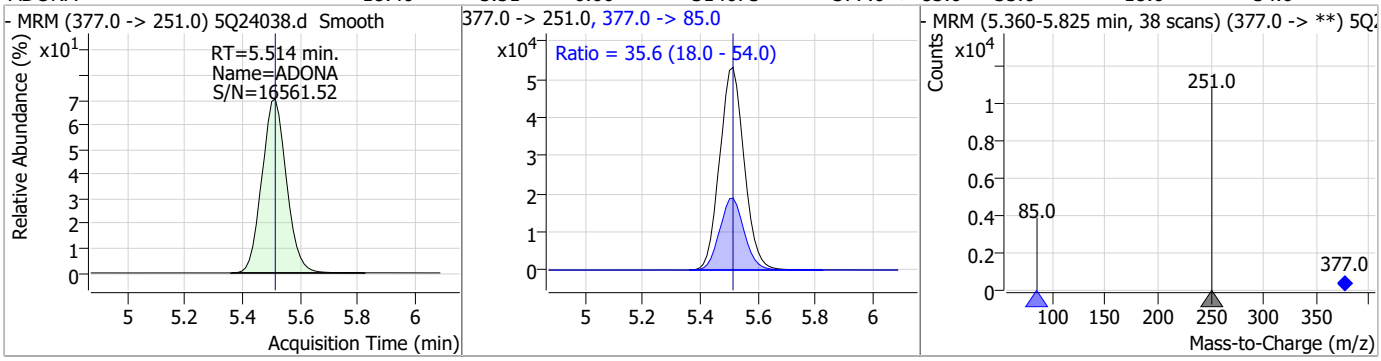


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	18.41	5.45	0.00	34230 (m)	399.0 -> 99.0	56.6	27.9	83.6

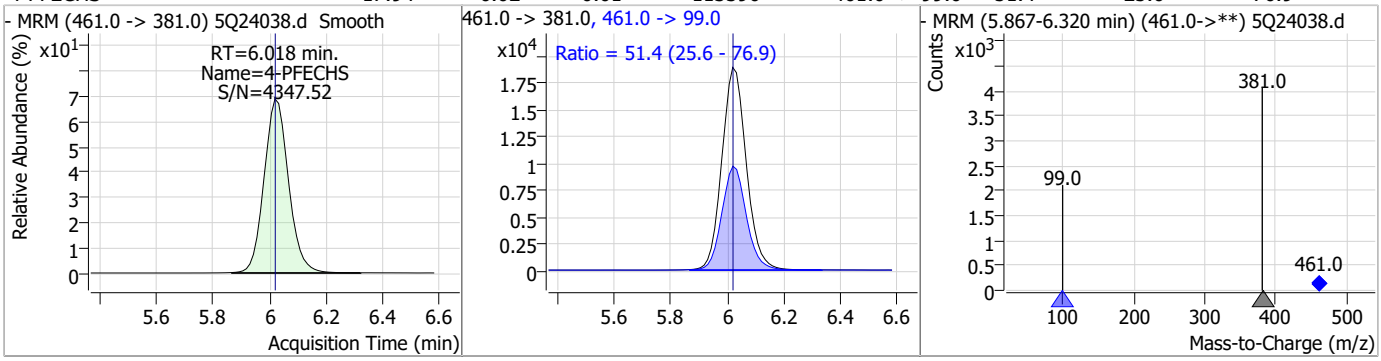


Perfluorinated Compounds by LC/MS/MS

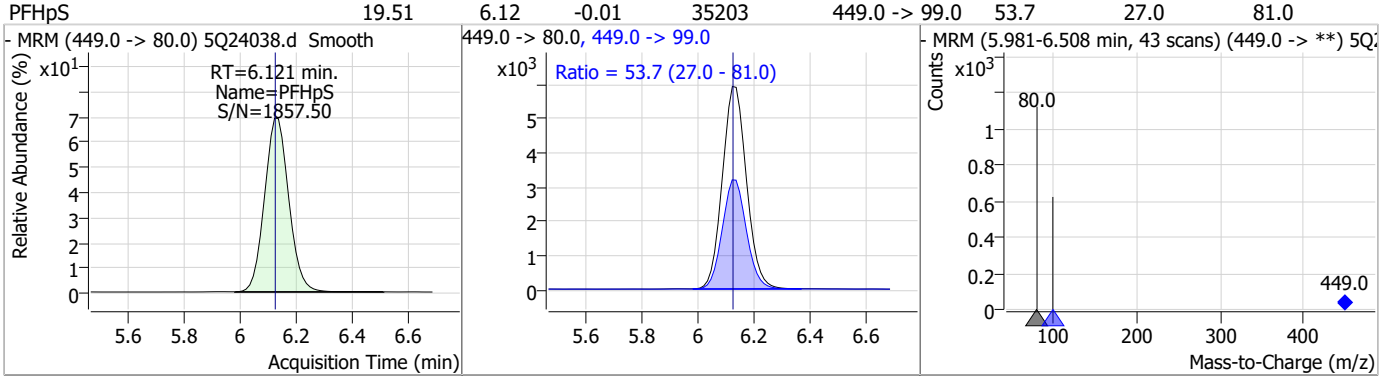
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	18.40	5.51	0.00	314073	377.0 -> 85.0	35.6	18.0	54.0



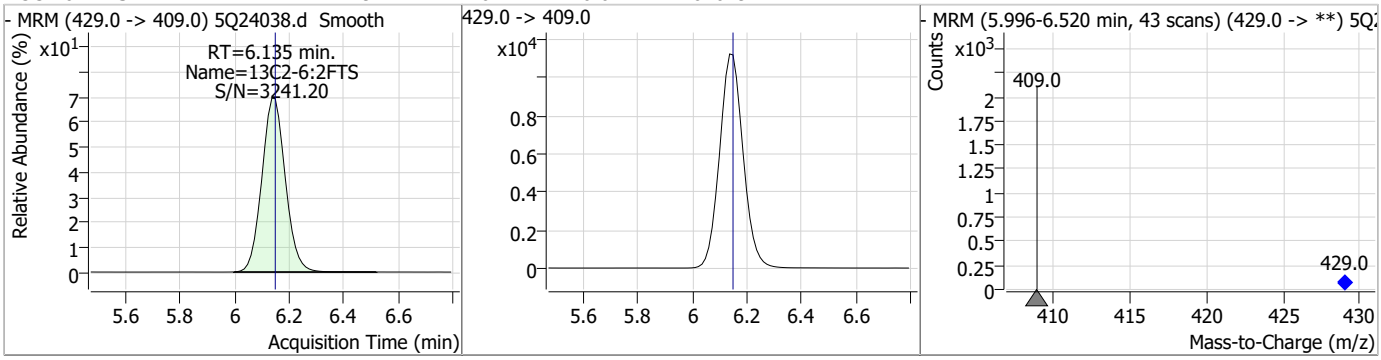
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS	17.94	6.02	-0.01	113390	461.0 -> 99.0	51.4	25.6	76.9



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	19.51	6.12	-0.01	35203	449.0 -> 99.0	53.7	27.0	81.0

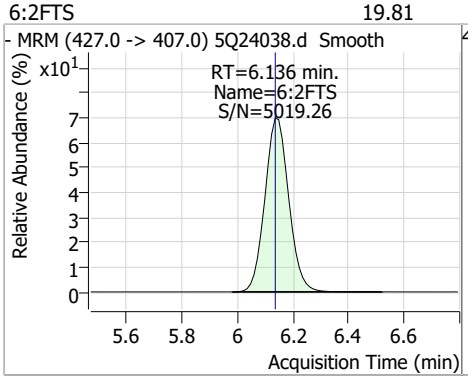


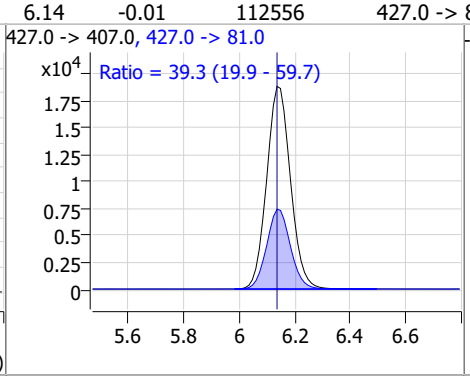
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	9.12	6.14	-0.01	67049				

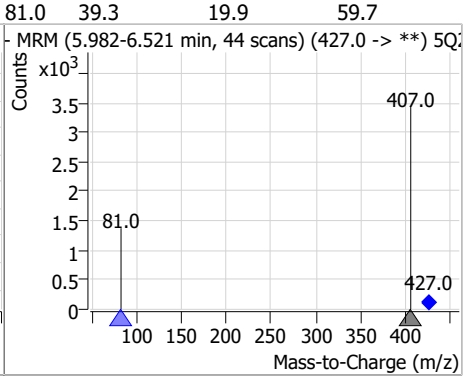


Perfluorinated Compounds by LC/MS/MS

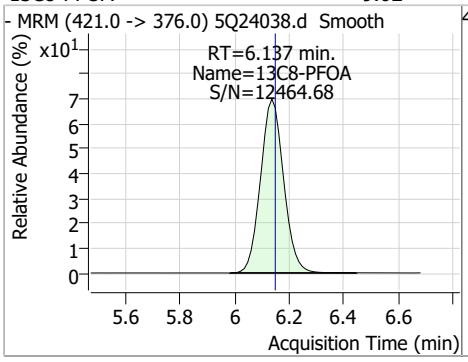
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	19.81	6.14	-0.01	112556	427.0 -> 81.0	39.3	19.9	59.7

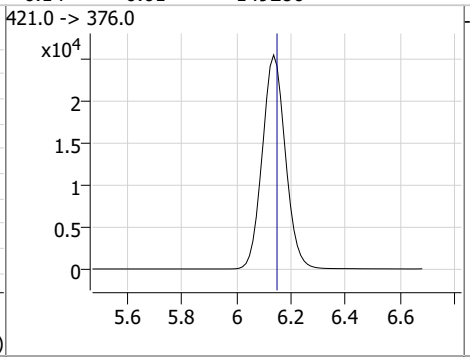


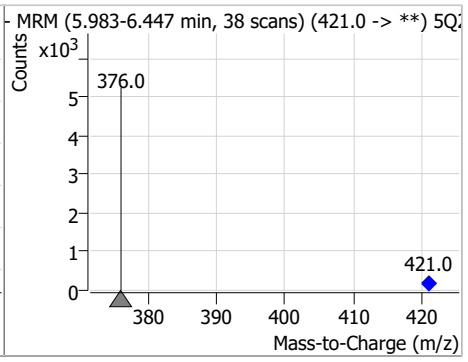




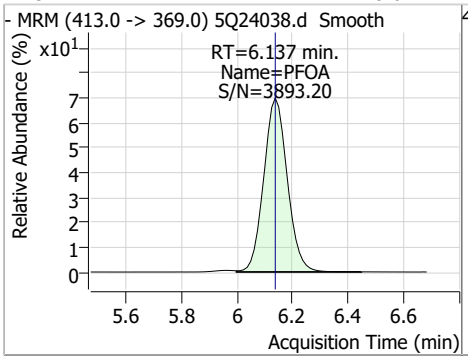
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	9.02	6.14	-0.01	149286				

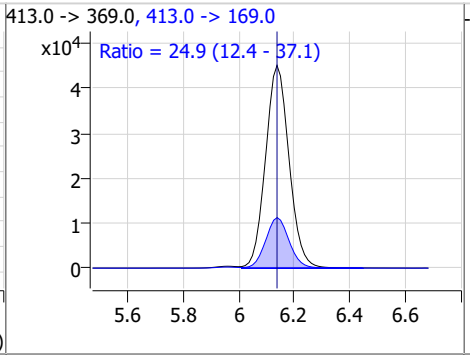


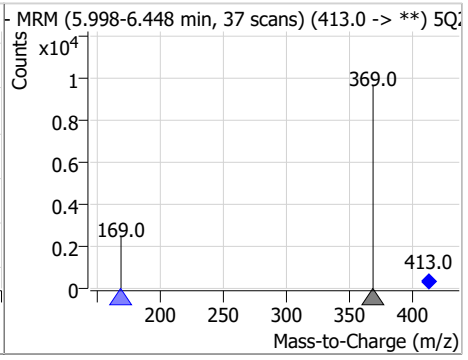




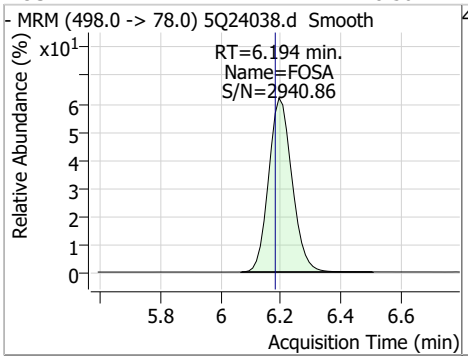
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	18.64	6.14	-0.01	265642	413.0 -> 169.0	24.9	12.4	37.1

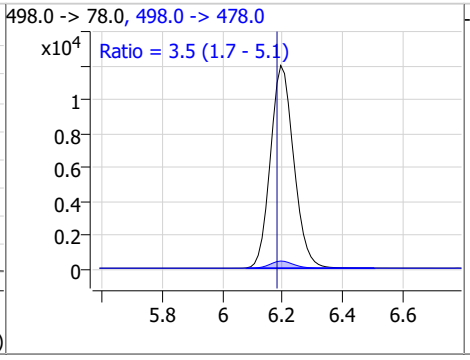


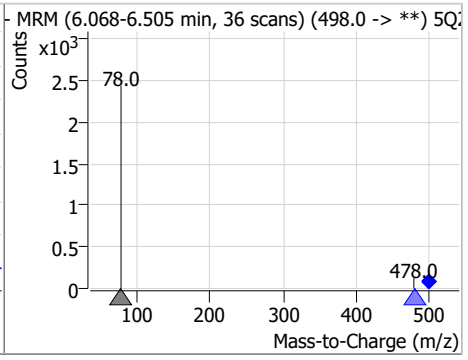




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	18.50	6.19	0.00	64526	498.0 -> 478.0	3.5	1.7	5.1

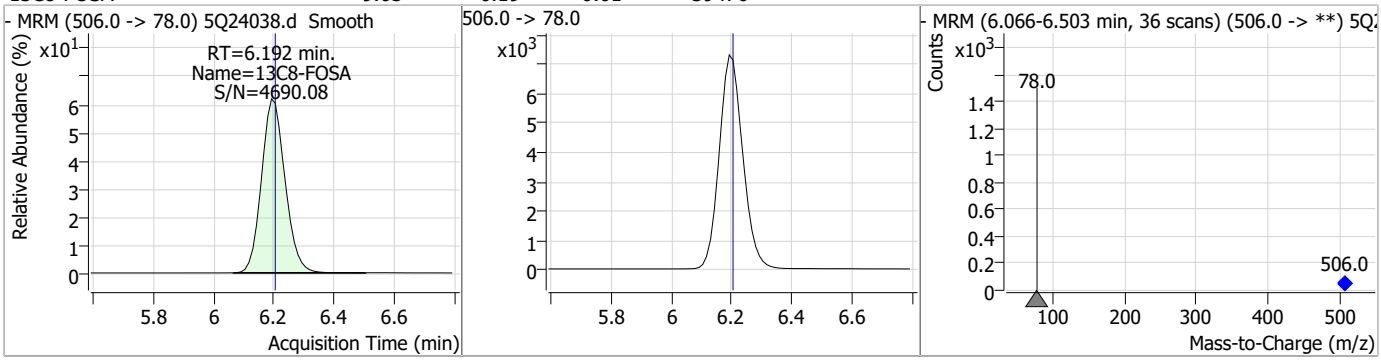




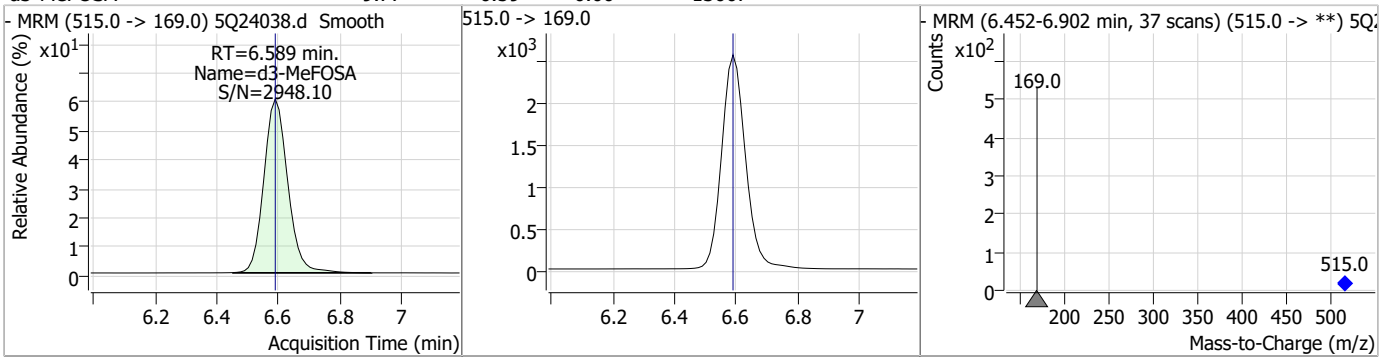


Perfluorinated Compounds by LC/MS/MS

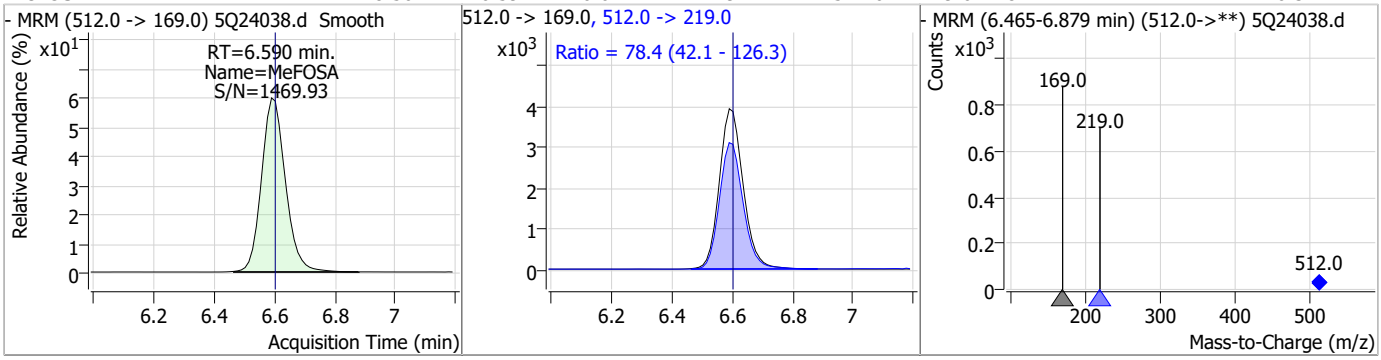
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	9.65	6.19	-0.01	39476				



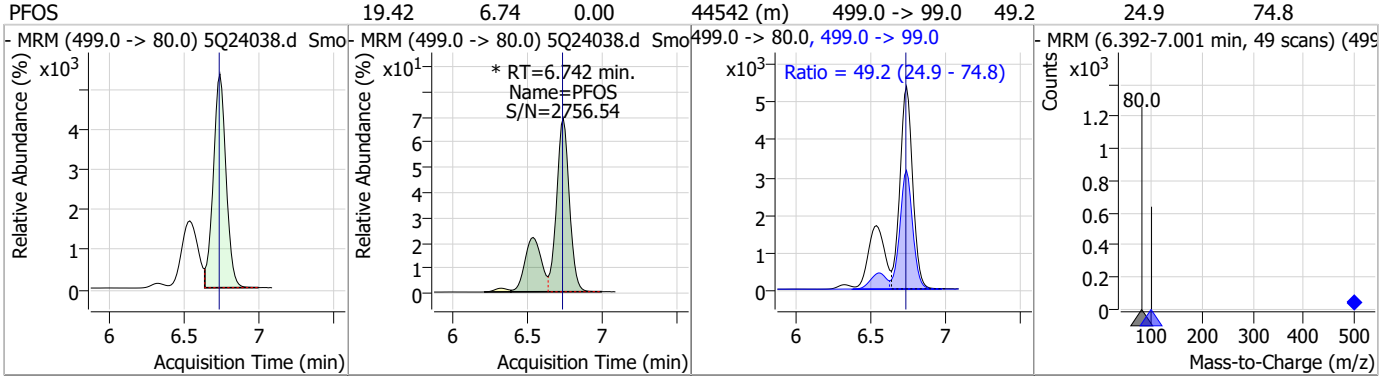
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	9.77	6.59	0.00	13607				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	18.50	6.59	-0.01	21497	512.0 -> 219.0	78.4	42.1	126.3

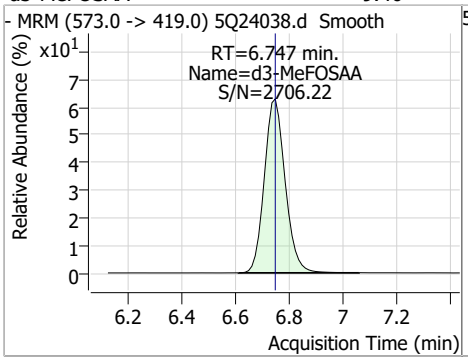


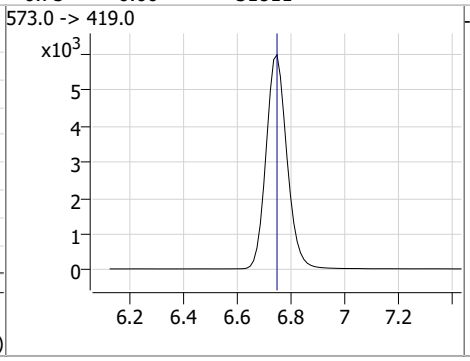
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	19.42	6.74	0.00	44542 (m)	499.0 -> 99.0	49.2	24.9	74.8

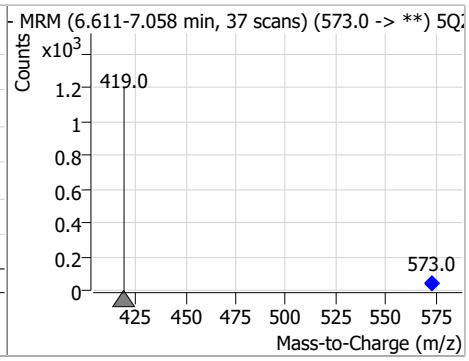


Perfluorinated Compounds by LC/MS/MS

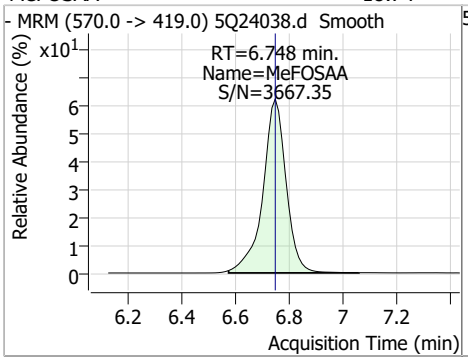
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	9.46	6.75	0.00	31811				

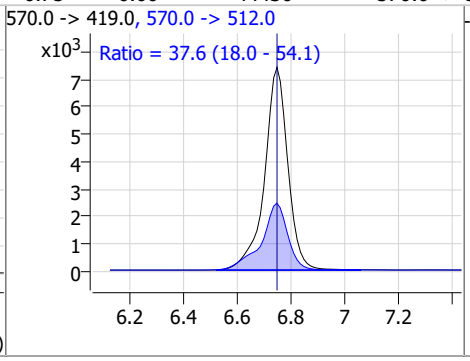


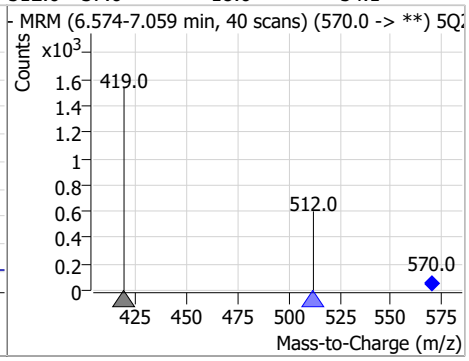




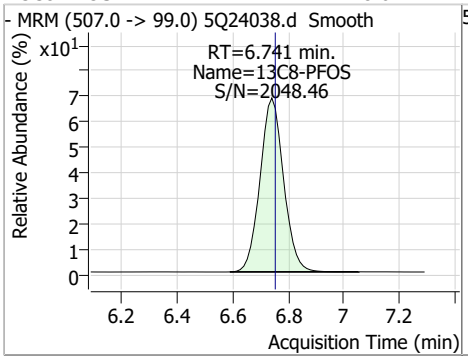
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	18.74	6.75	0.00	44436	570.0 -> 512.0	37.6	18.0	54.1

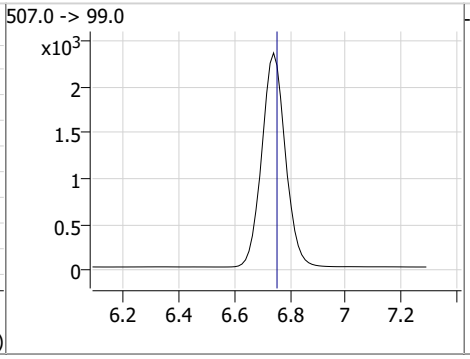


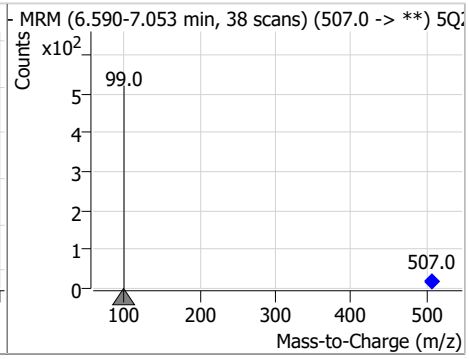




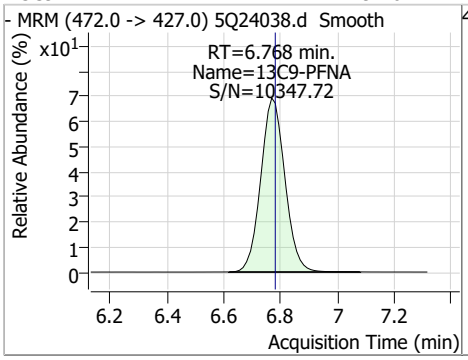
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	8.67	6.74	-0.01	13652				

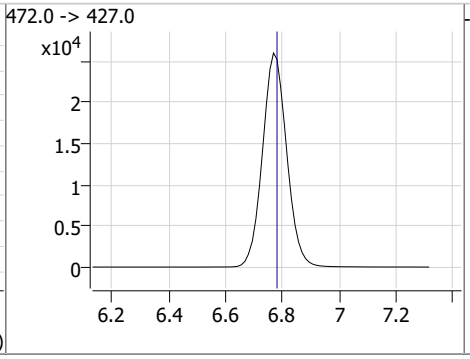


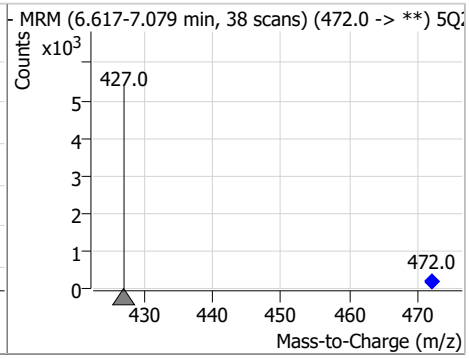




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	9.20	6.77	-0.01	152501				

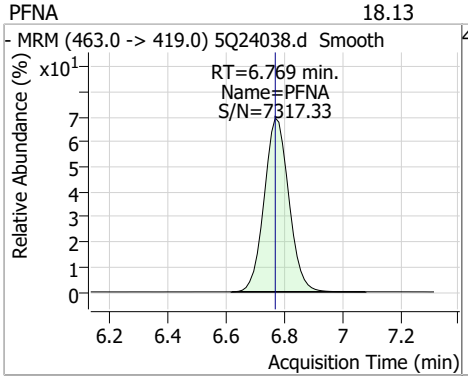


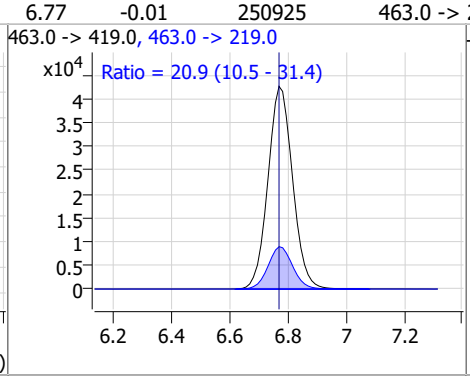


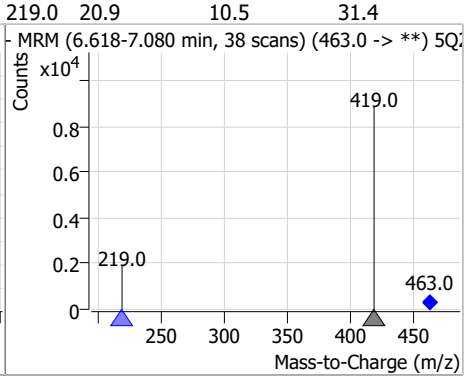


Perfluorinated Compounds by LC/MS/MS

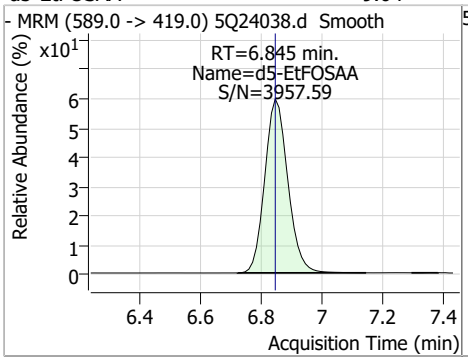
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	18.13	6.77	-0.01	250925	463.0 -> 219.0	20.9	10.5	31.4

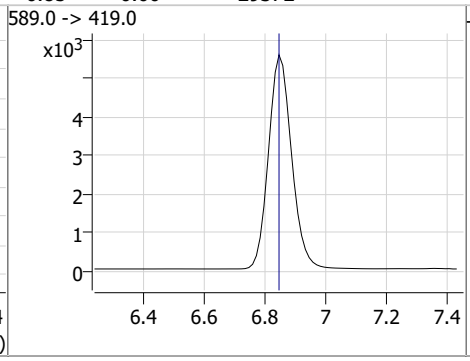


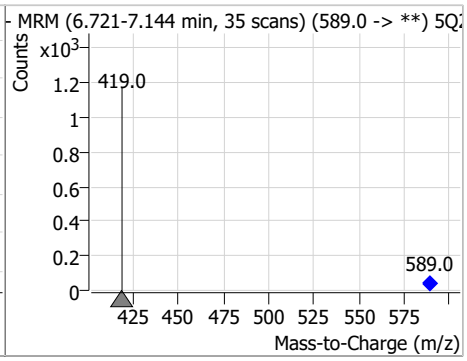




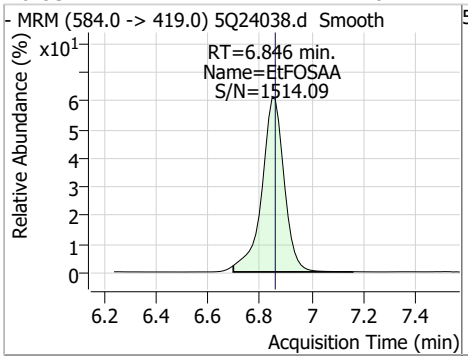
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	9.64	6.85	0.00	29372				

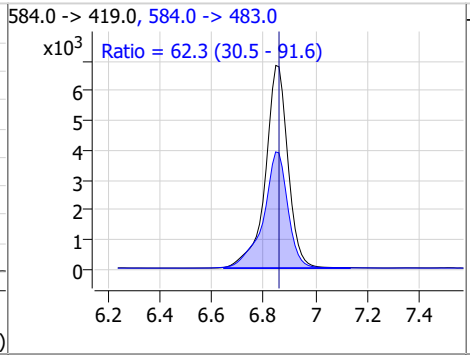


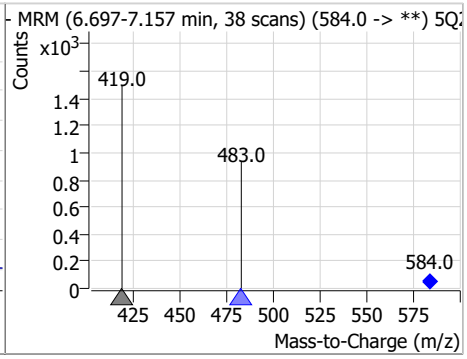




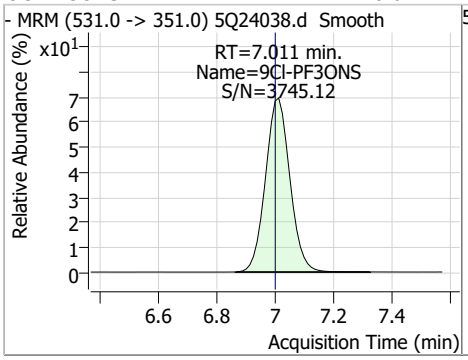
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	18.12	6.85	-0.01	40729	584.0 -> 483.0	62.3	30.5	91.6

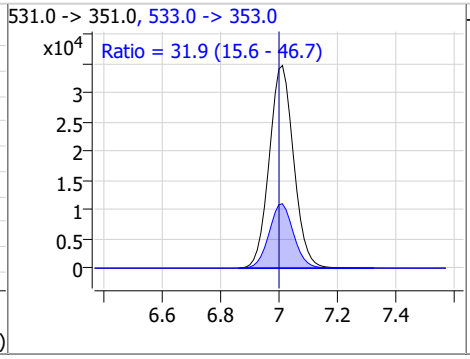


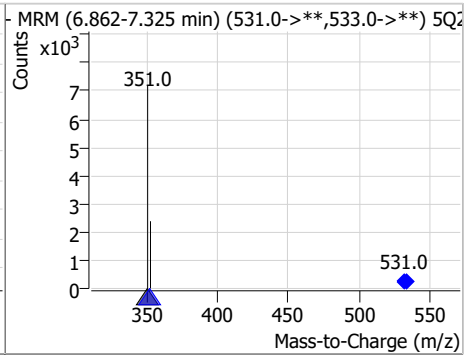




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	18.64	7.01	0.00	202095	533.0 -> 353.0	31.9	15.6	46.7

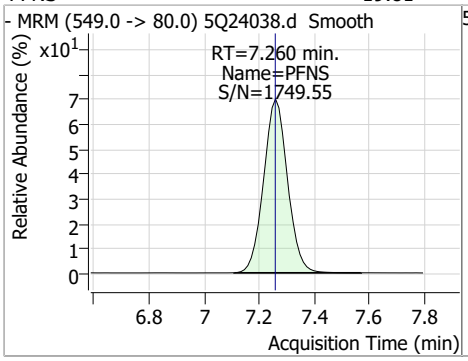


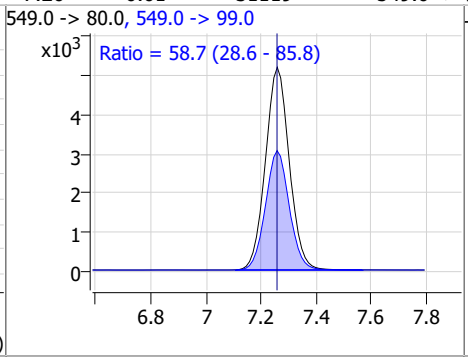


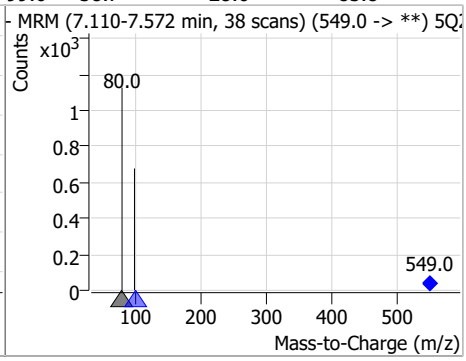


Perfluorinated Compounds by LC/MS/MS

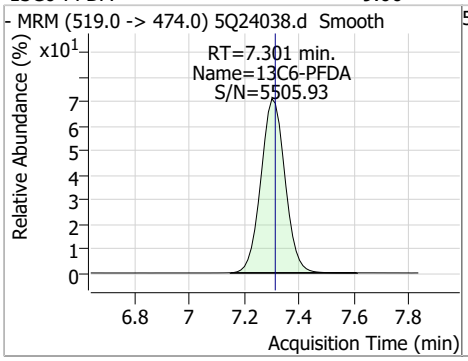
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	19.81	7.26	-0.01	31119	549.0 -> 99.0	58.7	28.6	85.8

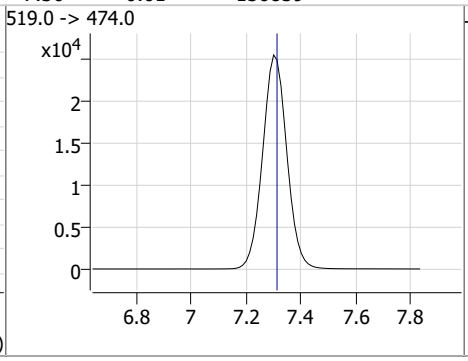


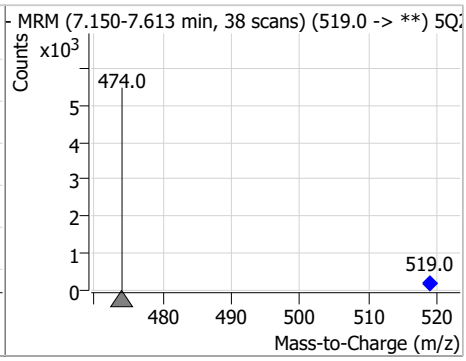




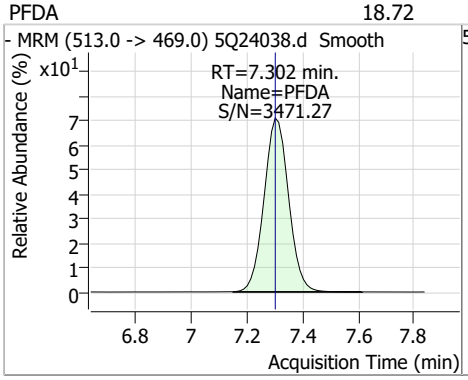
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	9.06	7.30	-0.01	156859				

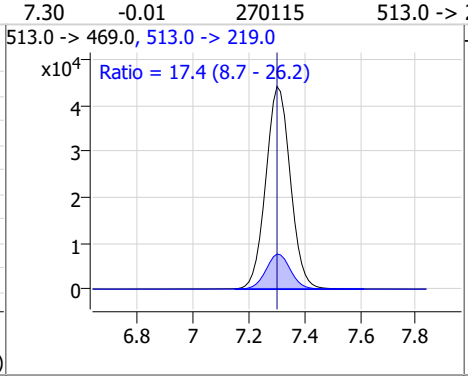


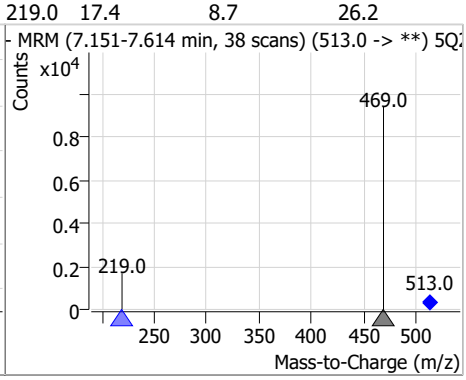




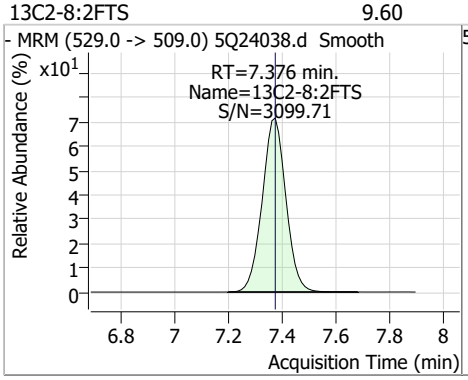
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	18.72	7.30	-0.01	270115	513.0 -> 219.0	17.4	8.7	26.2

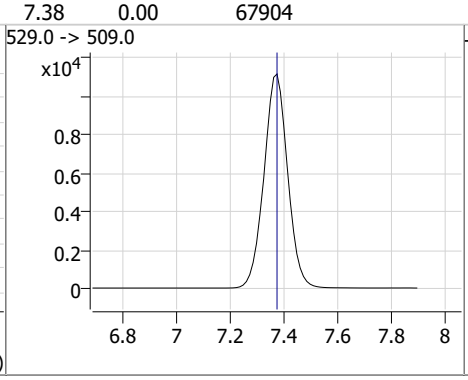


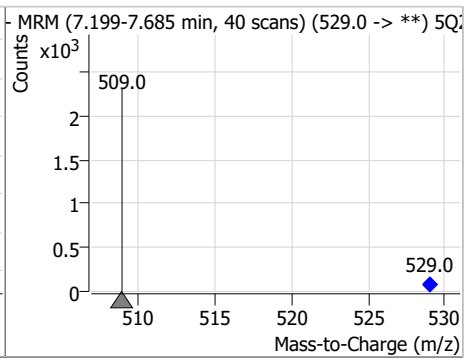




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	9.60	7.38	0.00	67904				

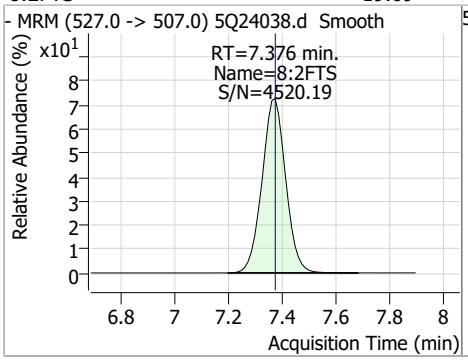


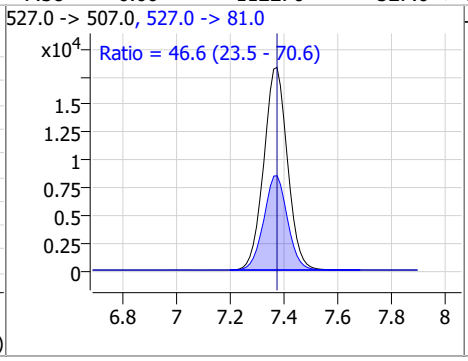


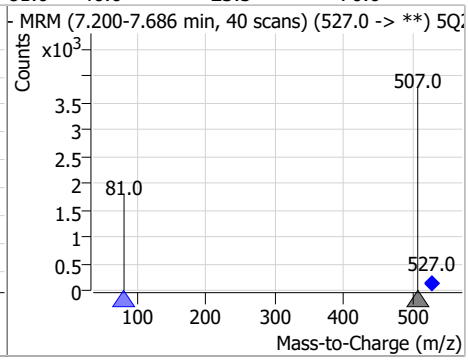


Perfluorinated Compounds by LC/MS/MS

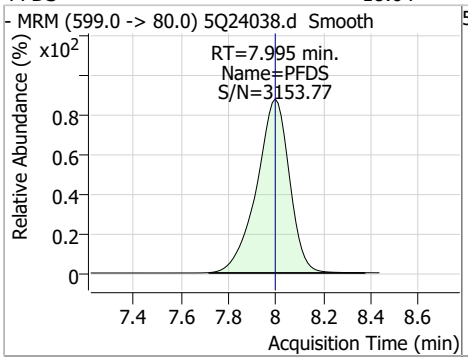
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	19.69	7.38	0.00	112276	527.0 -> 81.0	46.6	23.5	70.6

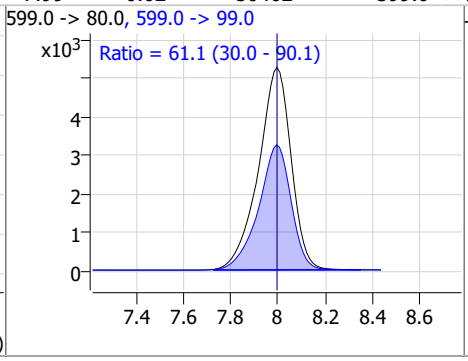


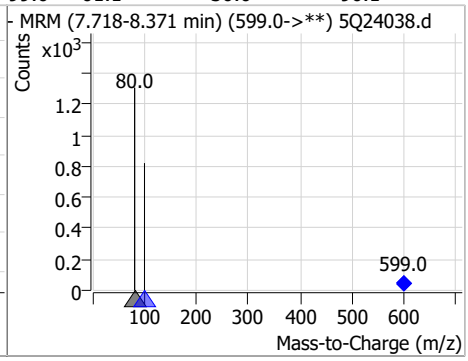




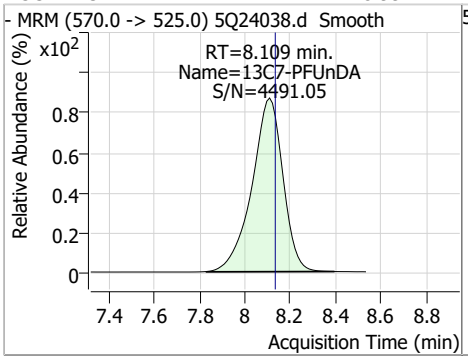
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	18.64	7.99	-0.02	50462	599.0 -> 99.0	61.1	30.0	90.1

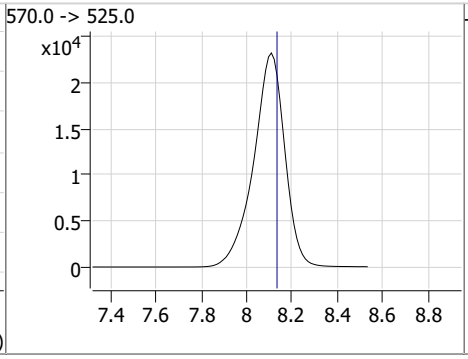


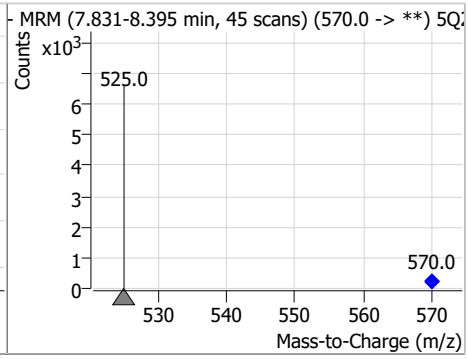




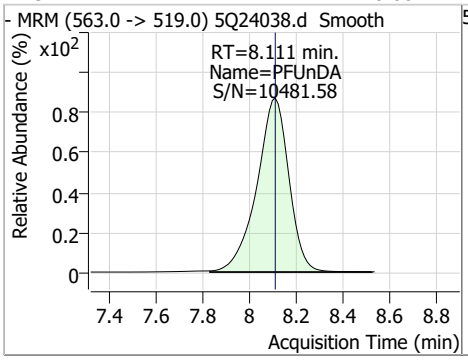
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	8.99	8.11	-0.02	219479				

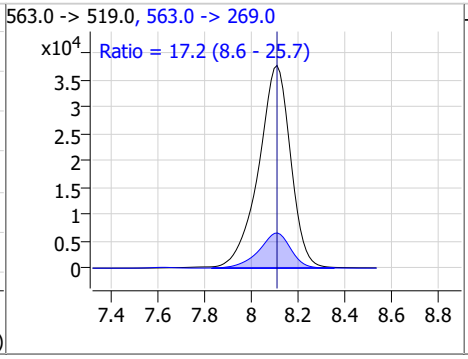


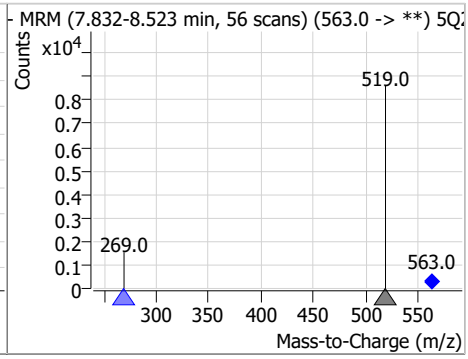




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	18.88	8.11	-0.02	359347	563.0 -> 269.0	17.2	8.6	25.7

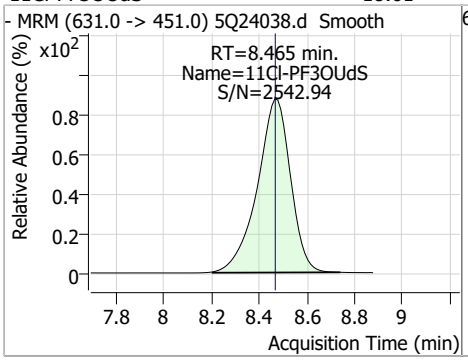


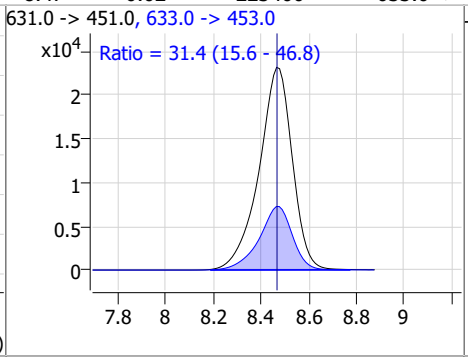


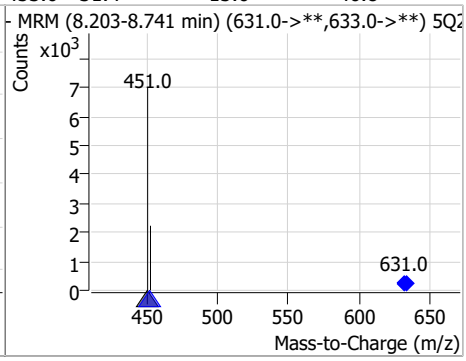


Perfluorinated Compounds by LC/MS/MS

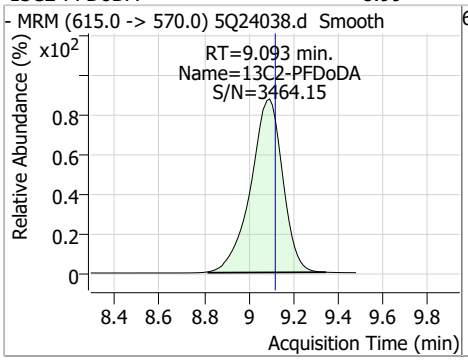
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	18.61	8.47	-0.02	223460	633.0 -> 453.0	31.4	15.6	46.8

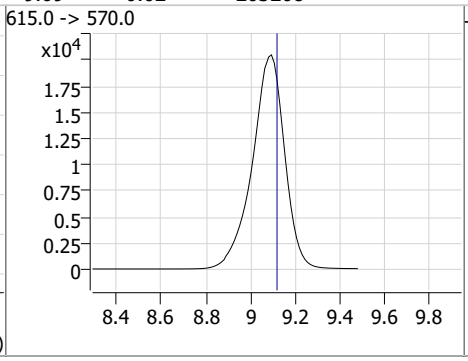


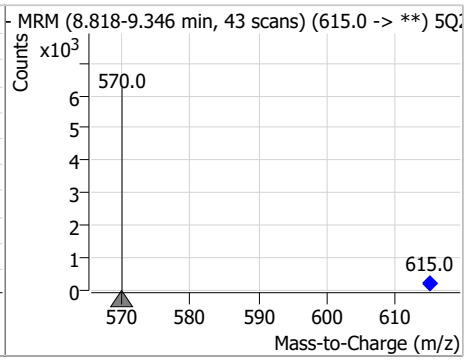




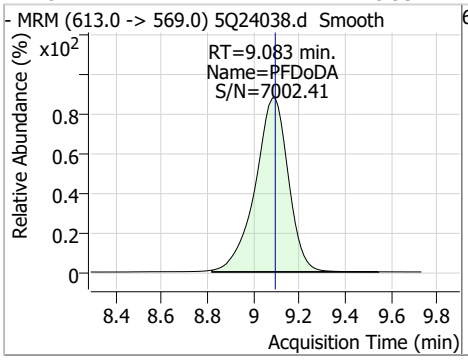
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	8.99	9.09	-0.02	203268				

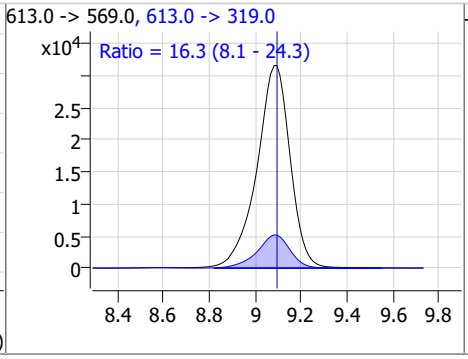


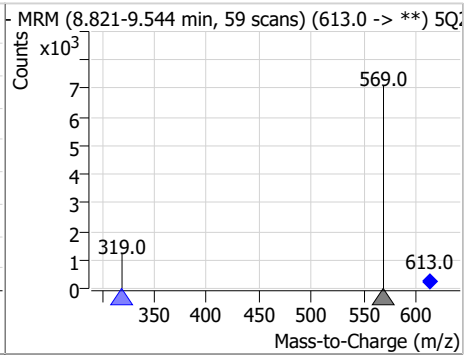




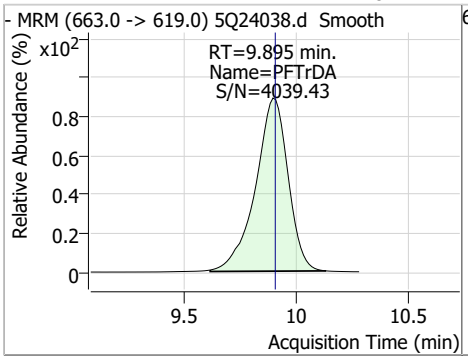
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	18.93	9.08	-0.04	316778	613.0 -> 319.0	16.3	8.1	24.3

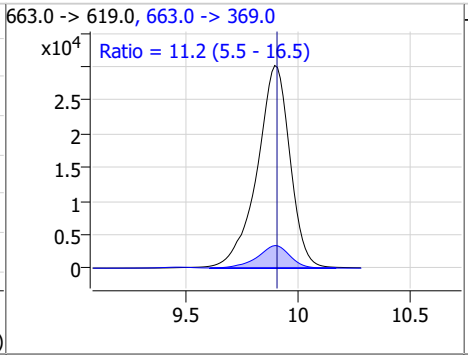


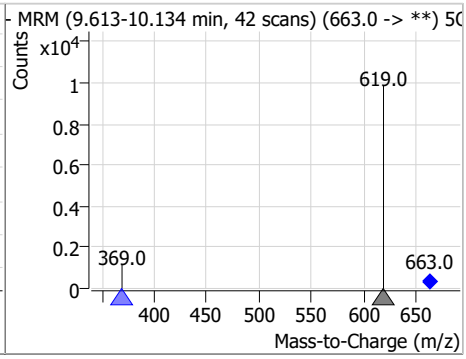




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	18.17	9.89	-0.04	305244	663.0 -> 369.0	11.2	5.5	16.5

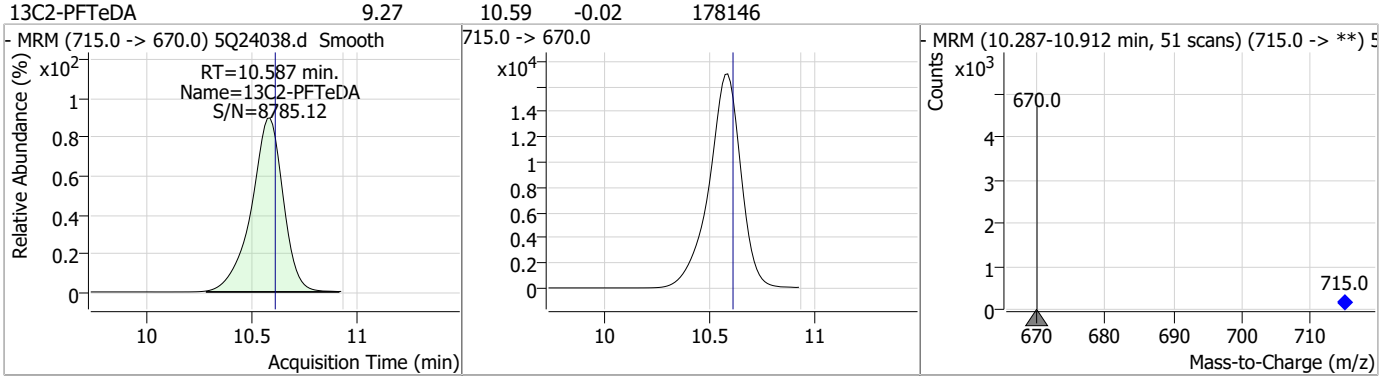




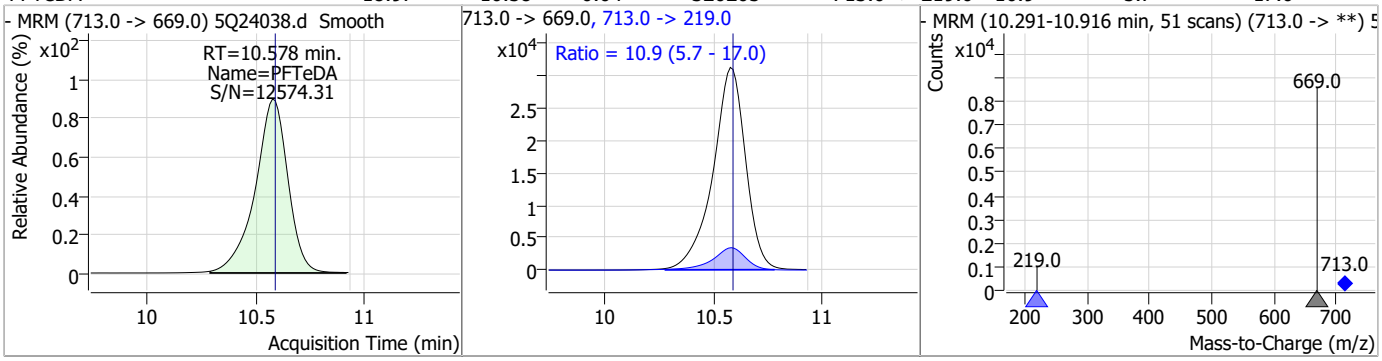


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	9.27	10.59	-0.02	178146				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	18.97	10.58	-0.04	326205	713.0 -> 219.0	10.9	5.7	17.0



Manual Integration Approval Summary

Sample Number: S5Q377-CC377
Lab FileID: 5Q24038.D
Injection Time: 01/02/24 20:24
Method: EPA 537M QSM5.3 B-15
Analyst approved: 01/03/24 16:03 Lindsay Ritner
Supervisor approved: 01/04/24 12:54 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.45	Split peak
Perfluorooctanesulfonic acid	1763-23-1		6.74	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Natasha Gumtie 01/04/24 12:54

Perfluorinated Compounds by LC/MS/MS

Data File : 5Q24039.d
Operator : lindsayr
Acq. Method : 537_ID.m
Acq. Date-Time : 1/2/2024 8:40:41 PM
Sample Name : cc377-1.0LL
Vial : P1-A3
DA Method File : ID_010224_S5Q377.quantmethod.xml
Batch Name : s5q377.batch.bin
Sample Information : OP401,S5Q377,250,,,1.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.987	217.0 -> 172.0	38824	10.00	µg/L	0.000
M5-PFPeA	3.432	268.0 -> 223.0	66342	10.00	µg/L	0.000
M5-PFHxA	4.552	318.0 -> 273.0	103149	10.00	µg/L	-0.012
M4-PFHpA	5.425	367.0 -> 322.0	108752	10.00	µg/L	0.000
M8-PFOA	6.137	421.0 -> 376.0	154081	10.00	µg/L	-0.012
M9-PFNA	6.768	472.0 -> 427.0	159808	10.00	µg/L	-0.012
M6-PFDA	7.301	519.0 -> 474.0	165736	10.00	µg/L	-0.012
M7-PFUnDA	8.109	570.0 -> 525.0	229248	10.00	µg/L	-0.025
M2-PFDoDA	9.093	615.0 -> 570.0	209928	10.00	µg/L	-0.025
M2-PFTeDA	10.587	715.0 -> 670.0	181547	10.00	µg/L	-0.025
M8-FOSA	6.192	506.0 -> 78.0	42154	10.00	µg/L	-0.012
M3-PFBS	3.624	302.0 -> 99.0	8249	10.00	µg/L	-0.012
M3-PFHxS	5.444	402.0 -> 99.0	10500	10.00	µg/L	0.000
M8-PFOS	6.741	507.0 -> 99.0	14638	10.00	µg/L	-0.012
M2-4:2FTS	4.474	329.0 -> 309.0	33721	10.00	µg/L	-0.012
M2-6:2FTS	6.135	429.0 -> 409.0	61359	10.00	µg/L	-0.012
M2-8:2FTS	7.376	529.0 -> 509.0	65056	10.00	µg/L	0.000
M3-MeFOSAA	6.747	573.0 -> 419.0	33324	10.00	µg/L	0.000
M3-HFPO-DA	4.819	287.0 -> 169.0	5226	10.00	µg/L	-0.012
M3-MeFOSA	6.589	515.0 -> 169.0	13918	10.00	µg/L	0.000
M5-EtFOSAA	6.845	589.0 -> 419.0	30372	10.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.474	329.0 -> 309.0	33721	8.63	µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 86.3%		
13C2-6:2FTS	6.135	429.0 -> 409.0	61359	8.34	µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 83.4%		
13C2-8:2FTS	7.376	529.0 -> 509.0	65056	9.20	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 92.0%		
13C2-PFDoDA	9.093	615.0 -> 570.0	209928	9.29	µg/L	-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 92.9%		
13C2-PFTeDA	10.587	715.0 -> 670.0	181547	9.45	µg/L	-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 94.5%		
13C3-PFBS	3.624	302.0 -> 99.0	8249	8.94	µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 89.4%		
13C3-PFHxS	5.444	402.0 -> 99.0	10500	9.29	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 92.9%		
13C4-PFBA	1.987	217.0 -> 172.0	38824	8.80	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 88.0%		
13C4-PFHpA	5.425	367.0 -> 322.0	108752	9.20	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 92.0%		
13C5-PFHxA	4.552	318.0 -> 273.0	103149	8.98	µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 89.8%		
13C5-PFPeA	3.432	268.0 -> 223.0	66342	8.93	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 89.3%		
13C6-PFDA	7.301	519.0 -> 474.0	165736	9.57	µg/L	-0.012

Perfluorinated Compounds by LC/MS/MS

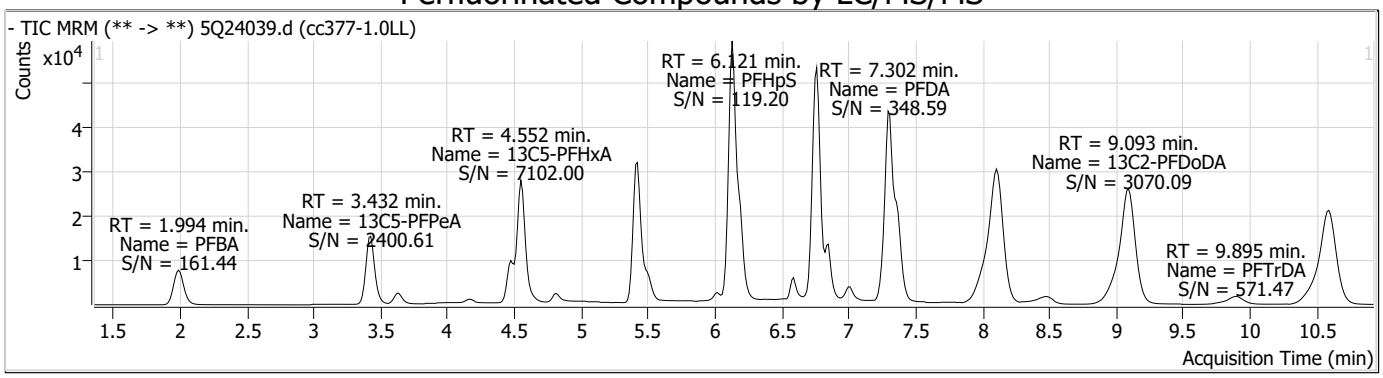
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 95.7%			
13C7-PFUnDA	8.109	570.0 -> 525.0	229248	9.39	µg/L		-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 93.9%			
13C8-FOSA	6.192	506.0 -> 78.0	42154	10.31	µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 103.1%			
13C8-PFOA	6.137	421.0 -> 376.0	154081	9.31	µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 93.1%			
13C8-PFOS	6.741	507.0 -> 99.0	14638	9.30	µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 93.0%			
13C9-PFNA	6.768	472.0 -> 427.0	159808	9.64	µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 96.4%			
d3-MeFOSAA	6.747	573.0 -> 419.0	33324	9.91	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.1%			
13C3-HFPO-DA	4.819	287.0 -> 169.0	5226	8.75	µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 87.5%			
d3-MeFOSA	6.589	515.0 -> 169.0	13918	9.99	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.9%			
d5-EtFOSAA	6.845	589.0 -> 419.0	30372	9.97	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.7%			
Target Compounds							QValue
4:2FTS	4.475	327.0 -> 307.0	3046	0.95	µg/L		95
		327.0 -> 81.0	1824				
6:2FTS	6.136	427.0 -> 407.0	5107	0.98	µg/L		96
		427.0 -> 81.0	2151				
8:2FTS	7.376	527.0 -> 507.0	5355	0.98	µg/L		97
		527.0 -> 81.0	2420				
EtFOSAA	6.846	584.0 -> 419.0	2403	1.03	µg/L		99
		584.0 -> 483.0	1447				
FOSA	6.194	498.0 -> 78.0	3049	0.82	µg/L		100
		498.0 -> 478.0	105				
MeFOSAA	6.748	570.0 -> 419.0	2232	0.90	µg/L		97
		570.0 -> 512.0	839				
PFBA	1.994	213.0 -> 169.0	2811	0.81	µg/L		100
PFBS	3.628	299.0 -> 80.0	1566	0.77	µg/L		94
		299.0 -> 99.0	738				
PFDA	7.302	513.0 -> 469.0	12654	0.83	µg/L		98
		513.0 -> 219.0	2325				
PFDoDA	9.096	613.0 -> 569.0	14950	0.87	µg/L		99
		613.0 -> 319.0	2516				
PFDS	7.995	599.0 -> 80.0	2381	0.84	µg/L		98
		599.0 -> 99.0	1473				
PFHpA	5.426	363.0 -> 319.0	9664	0.81	µg/L		99
		363.0 -> 169.0	2101				
PFHpS	6.121	449.0 -> 80.0	1413	0.73	µg/L		87
		449.0 -> 99.0	893				
PFHxA	4.553	313.0 -> 269.0	7807	0.81	µg/L		100
		313.0 -> 119.0	318				
PFHxS	5.446	399.0 -> 80.0	1665	0.88	µg/L	m	97
		399.0 -> 99.0	890				
PFNA	6.769	463.0 -> 419.0	11620	0.80	µg/L		99
		463.0 -> 219.0	2392				
PFNS	7.260	549.0 -> 80.0	1471	0.87	µg/L		94
		549.0 -> 99.0	909				
PFOA	6.137	413.0 -> 369.0	11938	0.81	µg/L		97
		413.0 -> 169.0	3100				
PFOS	6.742	499.0 -> 80.0	2020	0.82	µg/L	m	98

Perfluorinated Compounds by LC/MS/MS

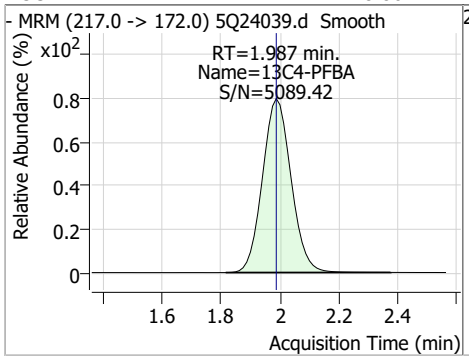
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		499.0 -> 99.0	1034			
PFPeA	3.434	263.0 -> 219.0	5040	0.81	µg/L	100
PFPeS	4.648	349.0 -> 80.0	1266	0.90	µg/L	94
		349.0 -> 99.0	611			
PFTeDA	10.579	713.0 -> 669.0	15173	0.87	µg/L	99
		713.0 -> 219.0	1656			
PFTrDA	9.895	663.0 -> 619.0	14462	0.83	µg/L	99
		663.0 -> 369.0	1624			
PFUnDA	8.111	563.0 -> 519.0	16708	0.84	µg/L	97
		563.0 -> 269.0	3048			
11Cl-PF3OUdS	8.465	631.0 -> 451.0	10300	0.83	µg/L	98
		633.0 -> 453.0	3301			
9Cl-PF3ONS	7.011	531.0 -> 351.0	9124	0.80	µg/L	99
		533.0 -> 353.0	2896			
ADONA	5.514	377.0 -> 251.0	13665	0.79	µg/L	98
		377.0 -> 85.0	5120			
HFPO-DA	4.815	329.0 -> 169.0	1778	0.84	µg/L	98
		285.0 -> 169.0	405			
MeFOSA	6.590	512.0 -> 169.0	857	0.72	µg/L	85
		512.0 -> 219.0	842			
4-PFECHS	6.018	461.0 -> 381.0	5245	0.80	µg/L	100
		461.0 -> 99.0	2692			
FBSA	4.170	298.0 -> 78.0	2784	0.82	µg/L	99
		298.0 -> 64.0	257			
FHxSA	5.409	398.0 -> 78.0	3239	0.93	µg/L	100
		398.0 -> 64.0	299			

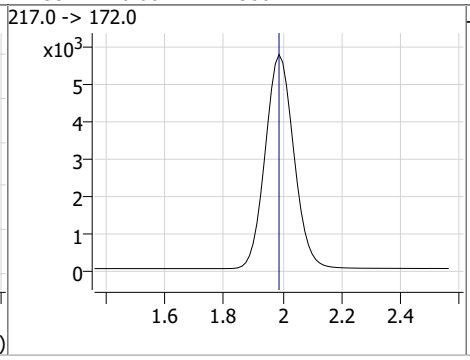
 # = Qualifier out of range, m = manually integrated, + = Area summed

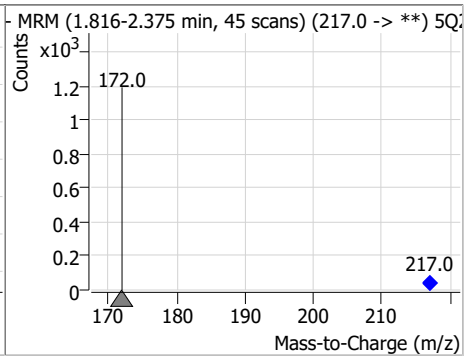
Perfluorinated Compounds by LC/MS/MS



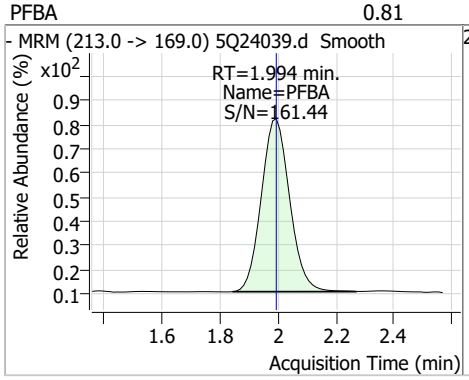
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	8.80	1.99	0.00	38824				

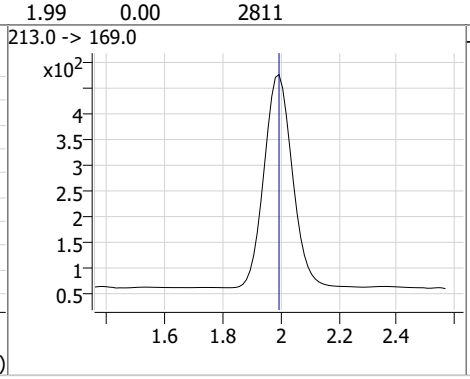


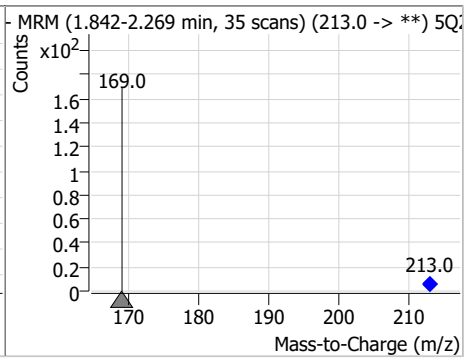




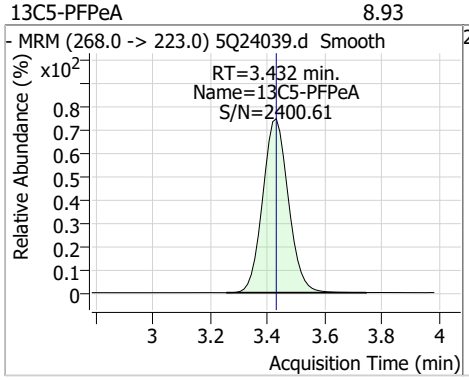
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	0.81	1.99	0.00	2811				

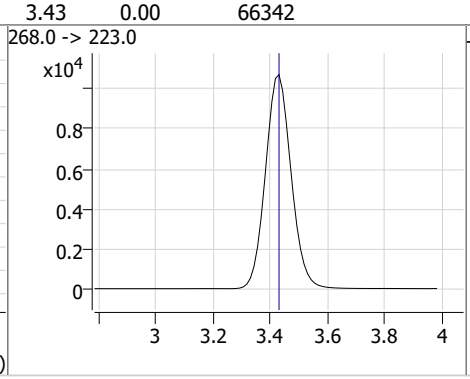


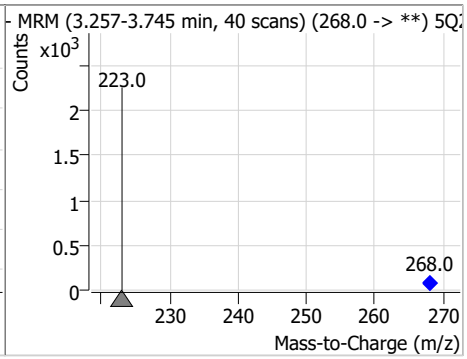




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	8.93	3.43	0.00	66342				

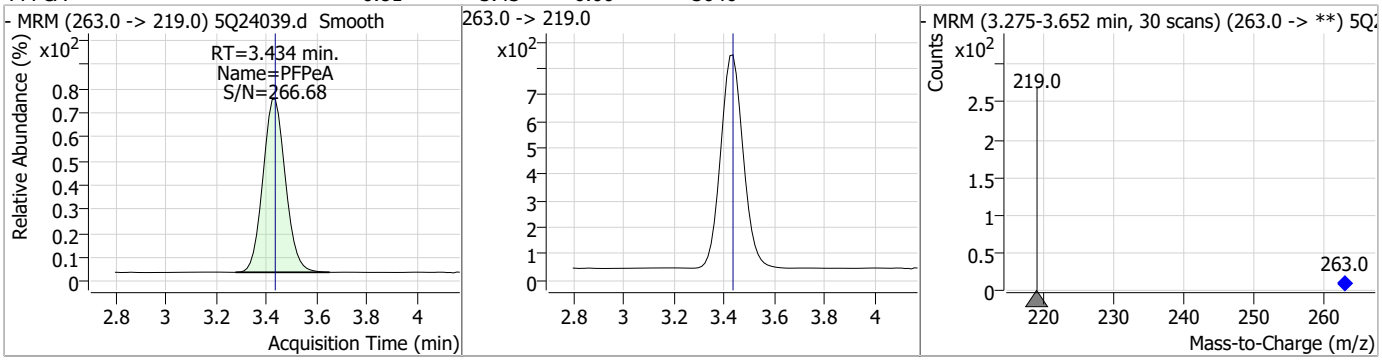




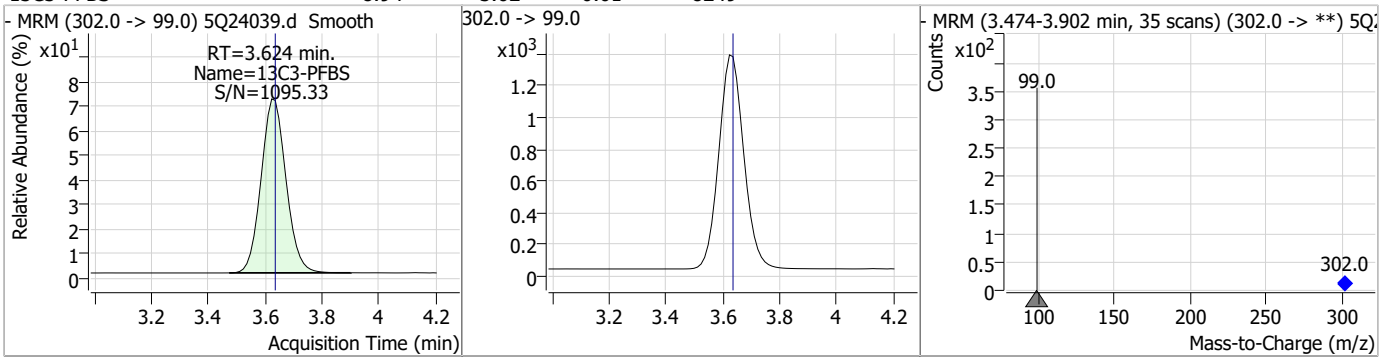


Perfluorinated Compounds by LC/MS/MS

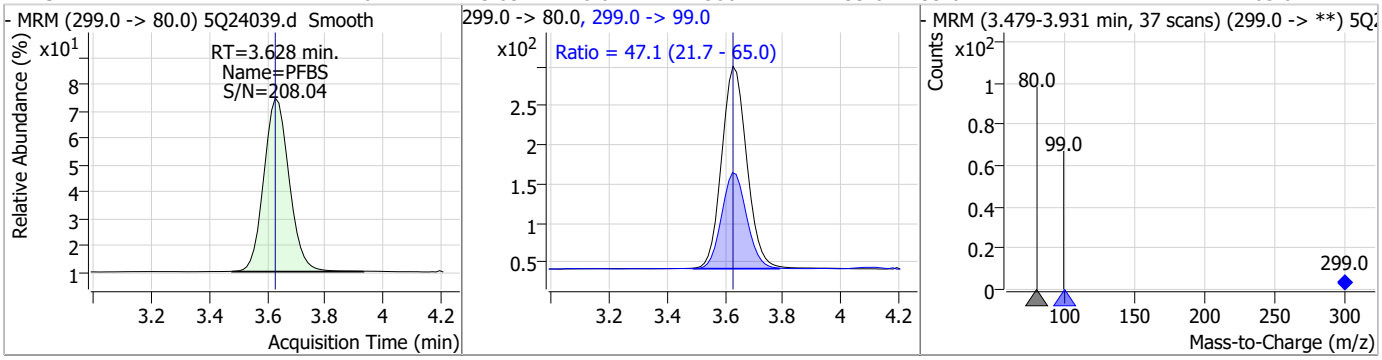
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	0.81	3.43	0.00	5040				



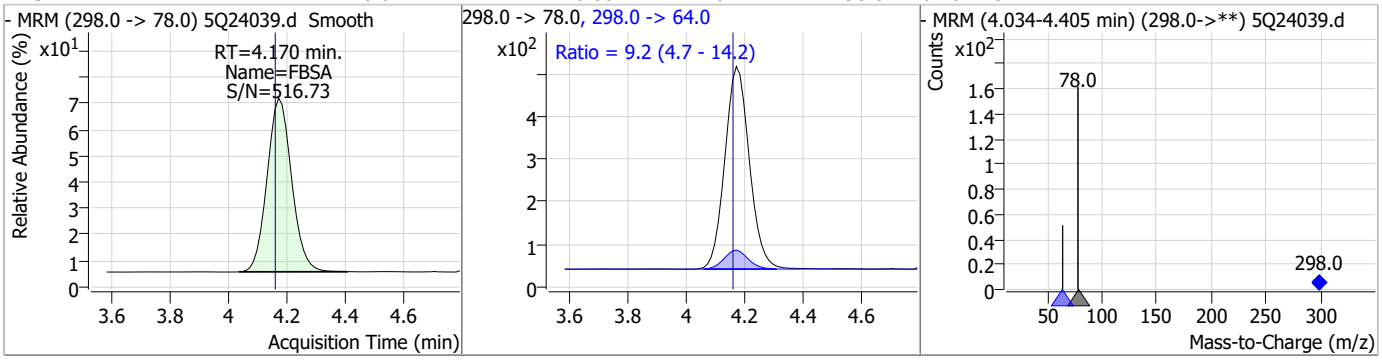
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	8.94	3.62	-0.01	8249				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	0.77	3.63	-0.01	1566	299.0 -> 99.0	47.1	21.7	65.0

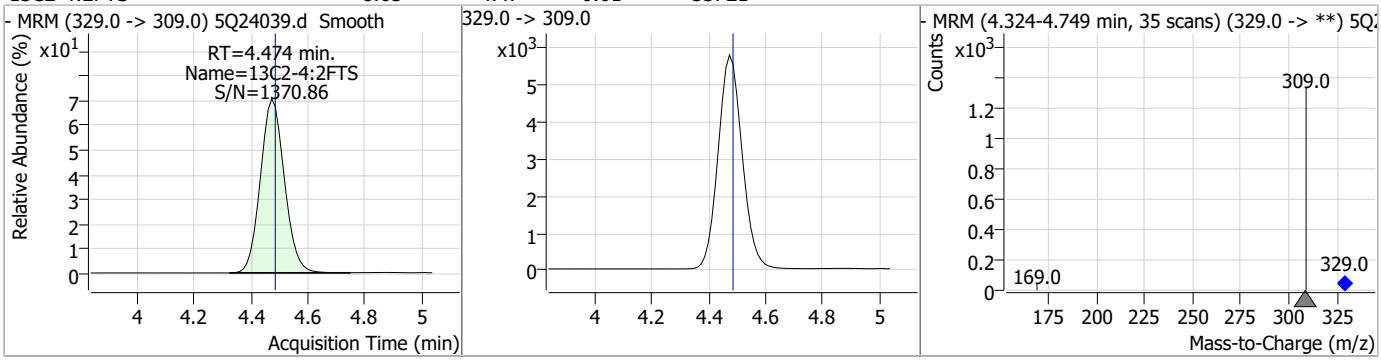


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	0.82	4.17	0.00	2784	298.0 -> 64.0	9.2	4.7	14.2

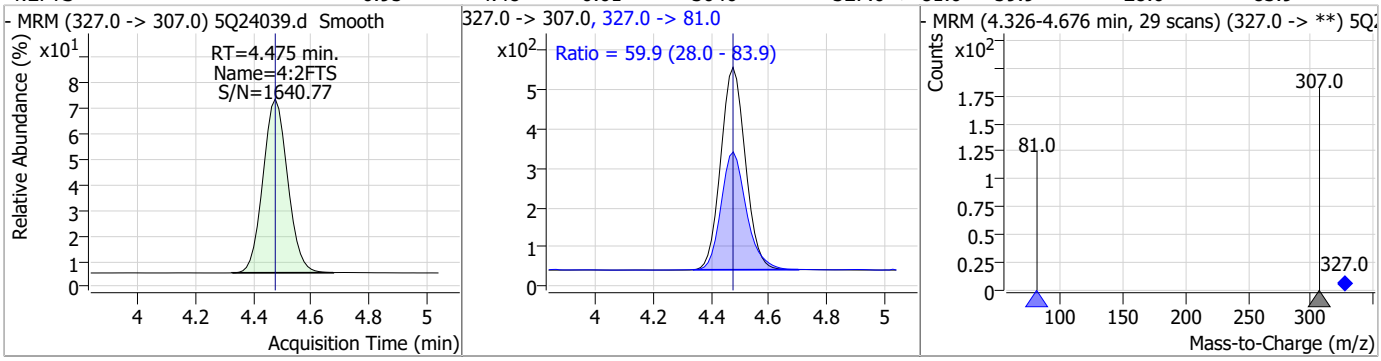


Perfluorinated Compounds by LC/MS/MS

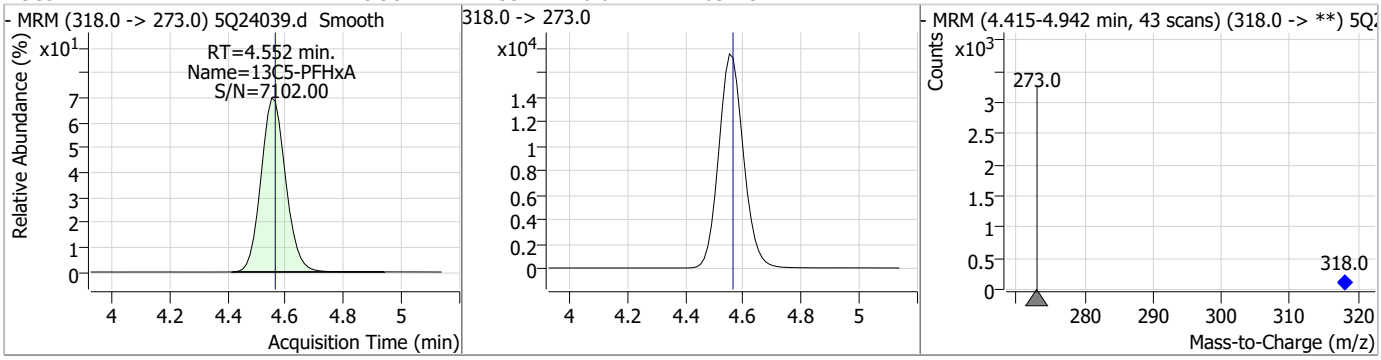
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	8.63	4.47	-0.01	33721				



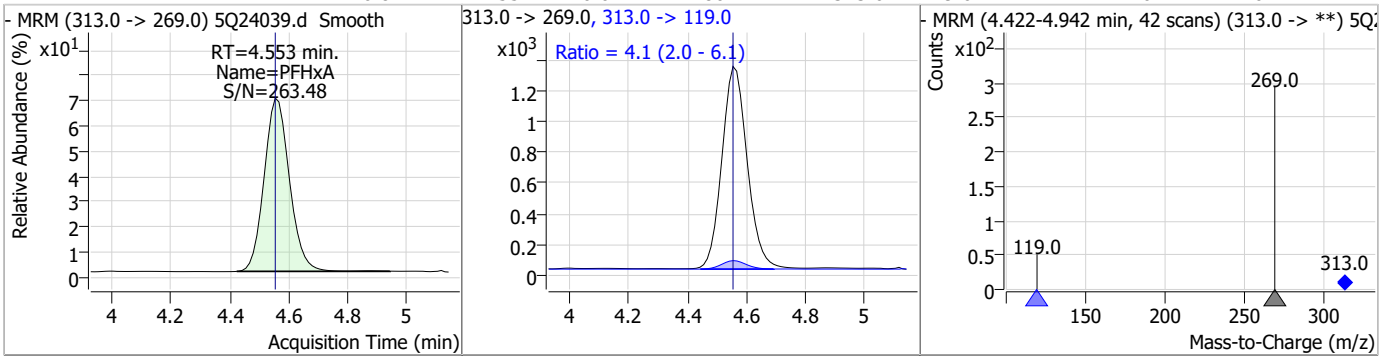
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	0.95	4.48	-0.01	3046	327.0 -> 81.0	59.9	28.0	83.9



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	8.98	4.55	-0.01	103149				

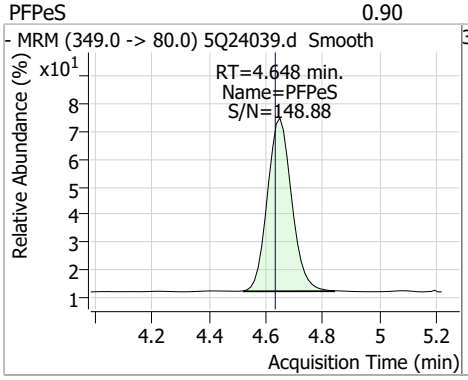


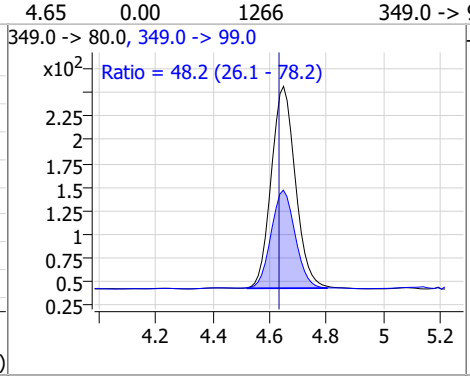
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	0.81	4.55	-0.01	7807	313.0 -> 119.0	4.1	2.0	6.1

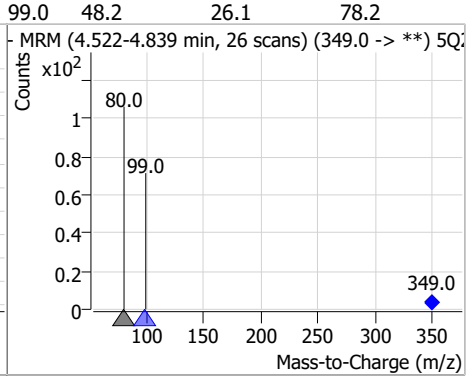


Perfluorinated Compounds by LC/MS/MS

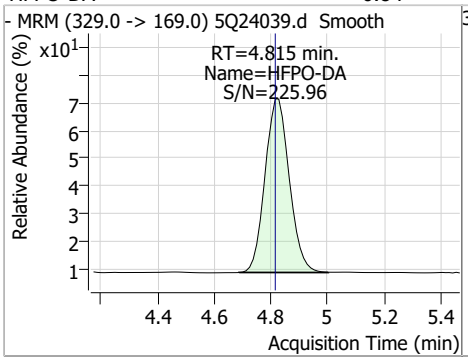
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	0.90	4.65	0.00	1266	349.0 -> 99.0	48.2	26.1	78.2

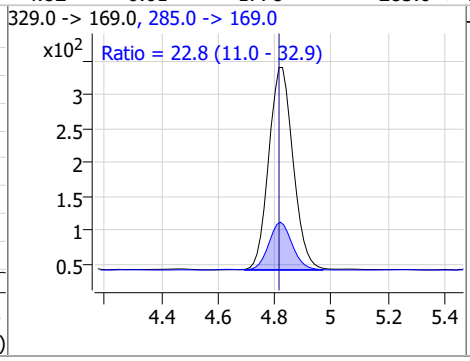


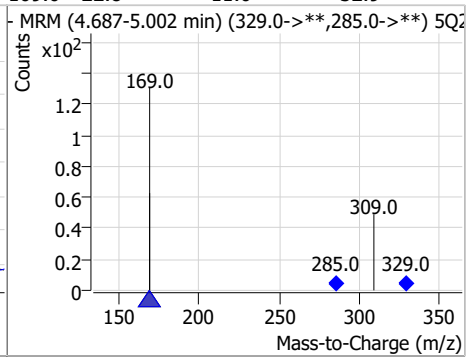




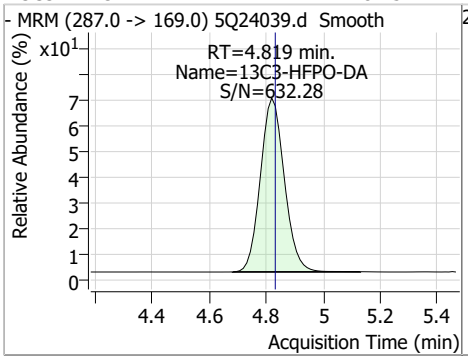
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	0.84	4.82	-0.01	1778	285.0 -> 169.0	22.8	11.0	32.9

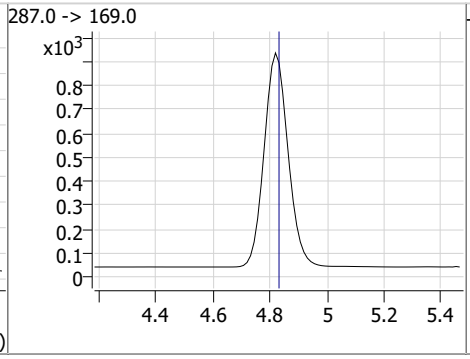


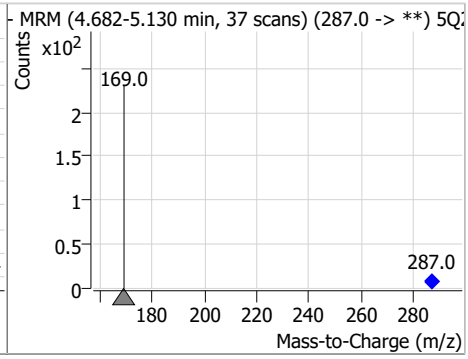




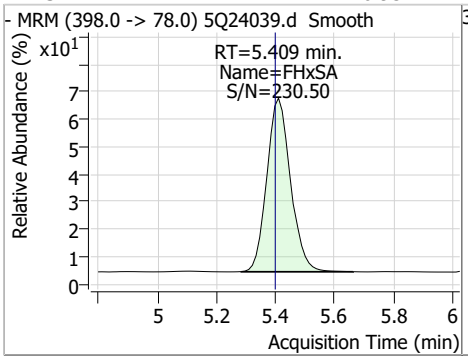
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	8.75	4.82	-0.01	5226				

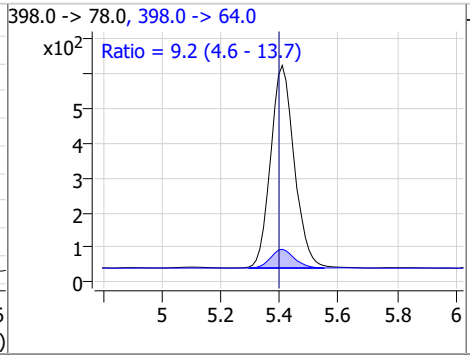


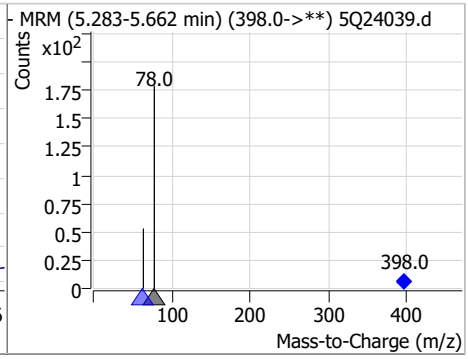




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	0.93	5.41	0.00	3239	398.0 -> 64.0	9.2	4.6	13.7

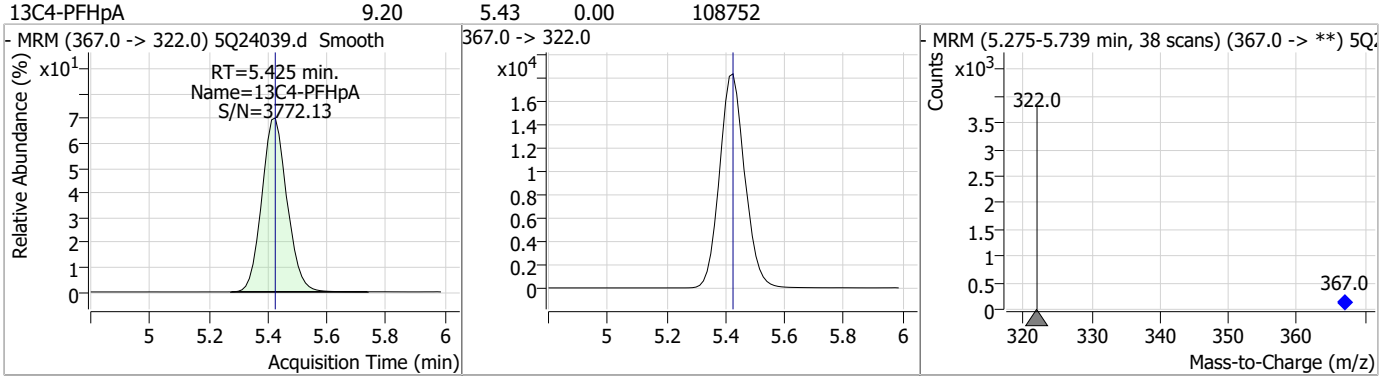




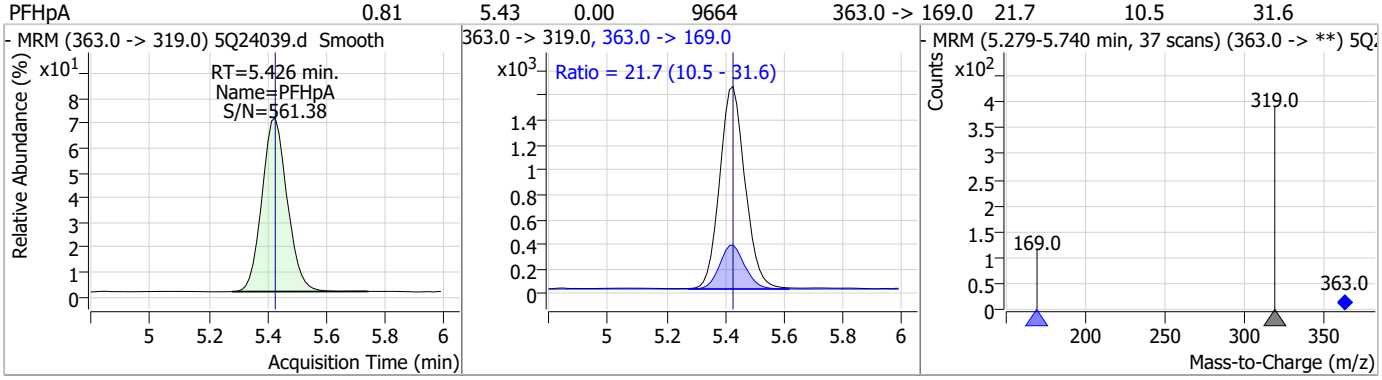


Perfluorinated Compounds by LC/MS/MS

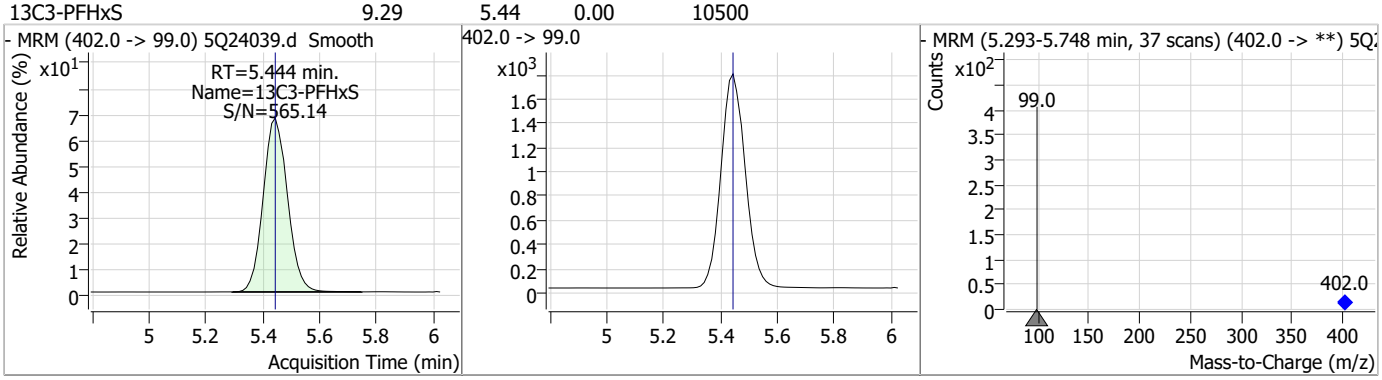
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	9.20	5.43	0.00	108752				



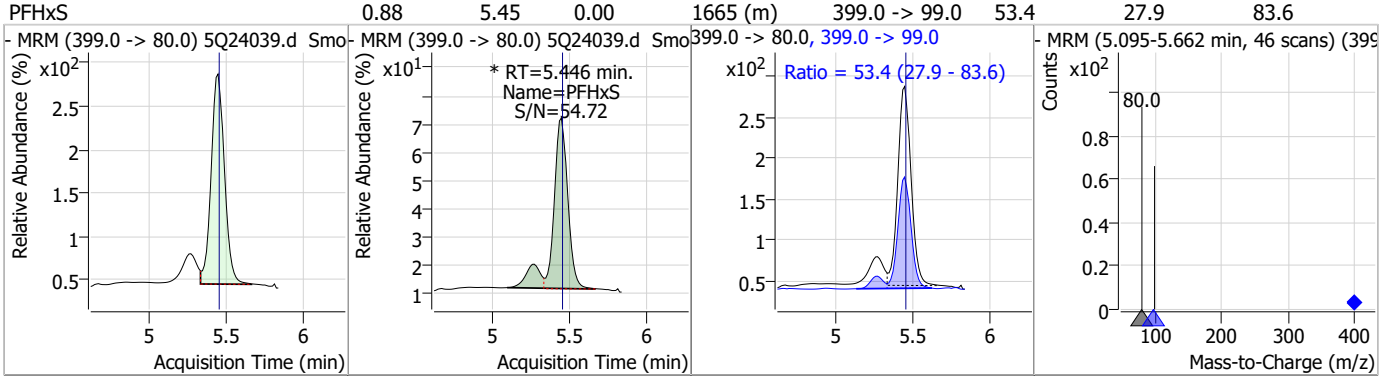
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	0.81	5.43	0.00	9664	363.0 -> 169.0	21.7	10.5	31.6



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	9.29	5.44	0.00	10500				

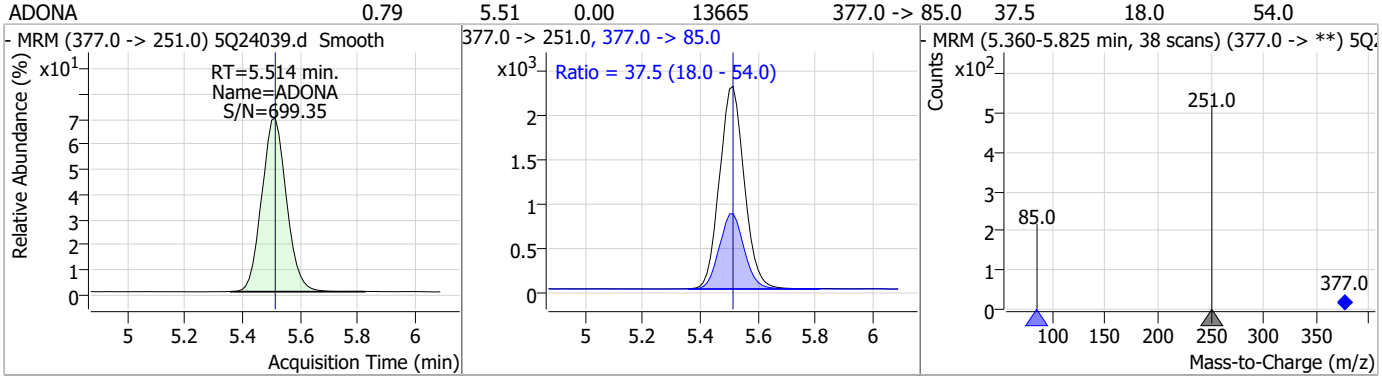


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	0.88	5.45	0.00	1665 (m)	399.0 -> 99.0	53.4	27.9	83.6

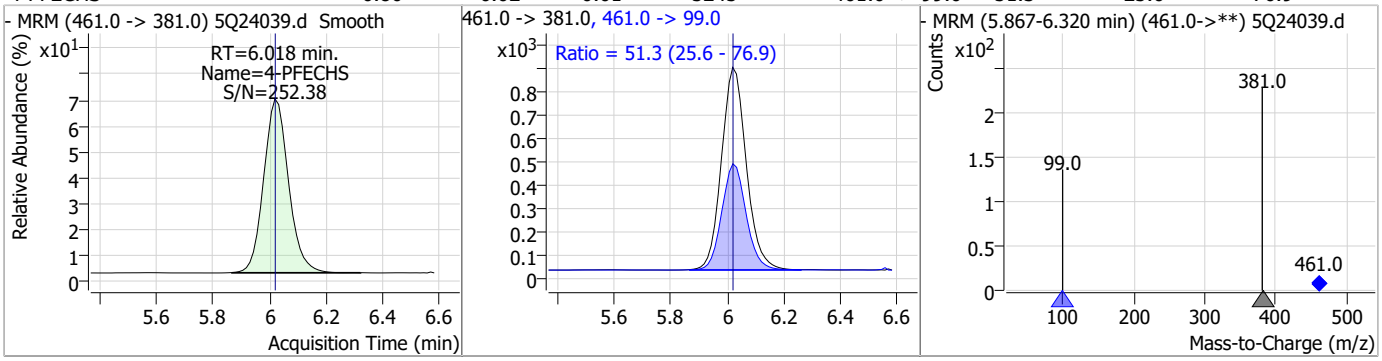


Perfluorinated Compounds by LC/MS/MS

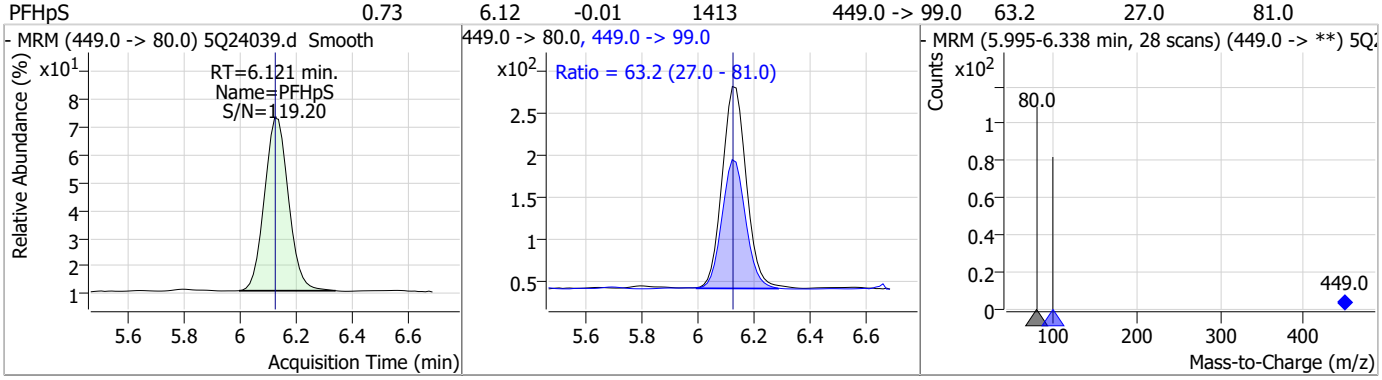
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	0.79	5.51	0.00	13665	377.0 -> 85.0	37.5	18.0	54.0



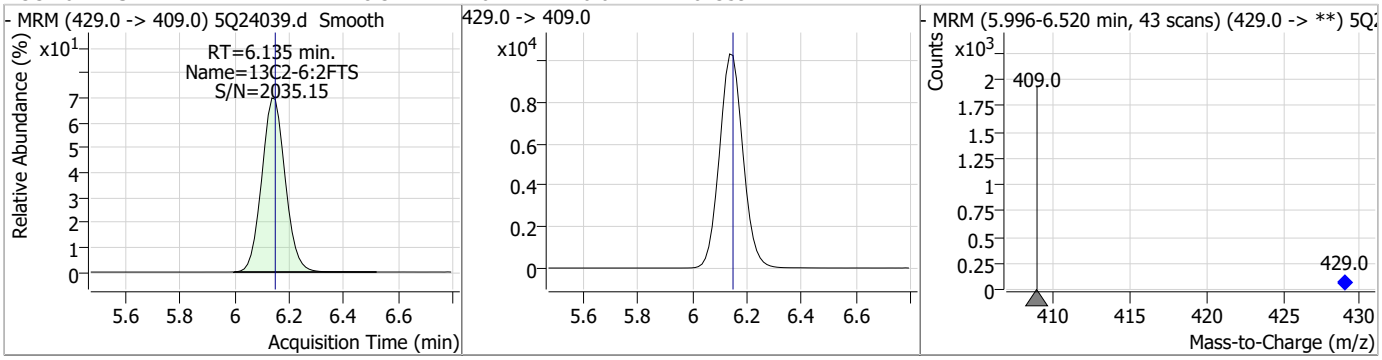
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS	0.80	6.02	-0.01	5245	461.0 -> 99.0	51.3	25.6	76.9



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	0.73	6.12	-0.01	1413	449.0 -> 99.0	63.2	27.0	81.0

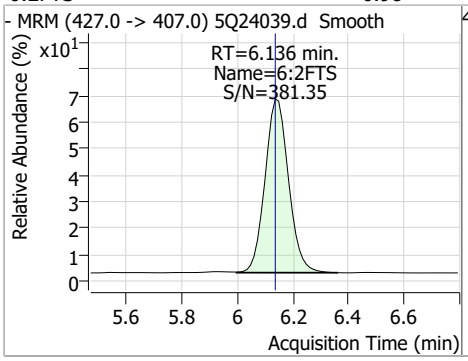


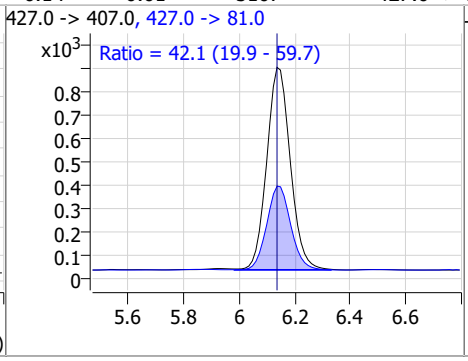
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	8.34	6.14	-0.01	61359				

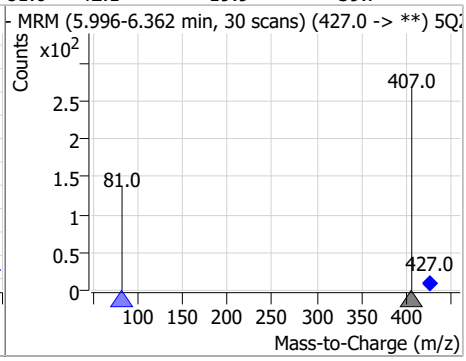


Perfluorinated Compounds by LC/MS/MS

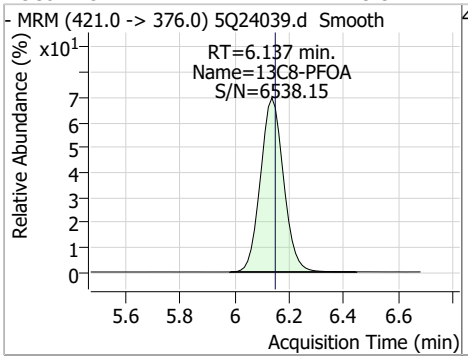
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	0.98	6.14	-0.01	5107	427.0 -> 81.0	42.1	19.9	59.7

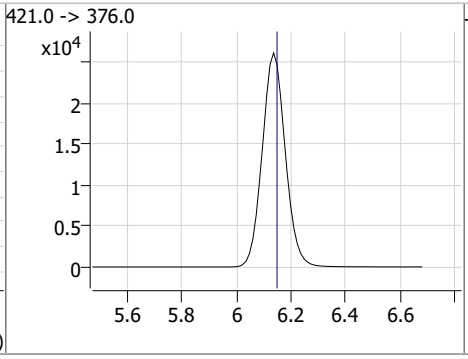


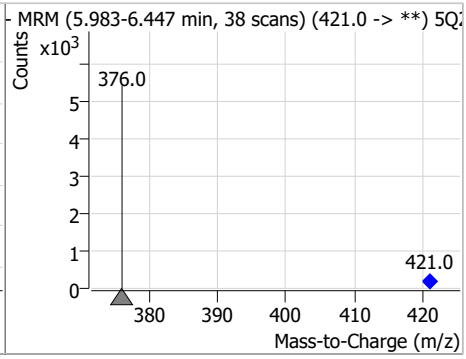




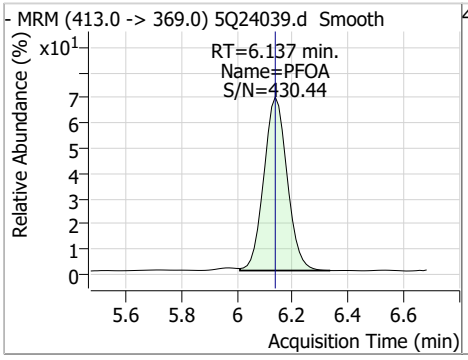
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	9.31	6.14	-0.01	154081				

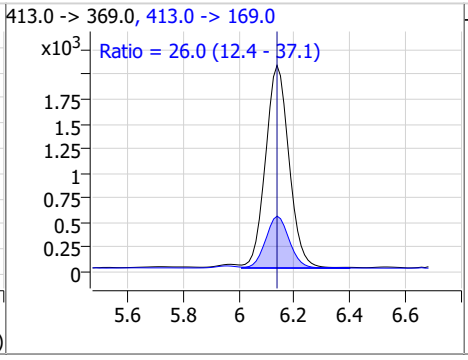


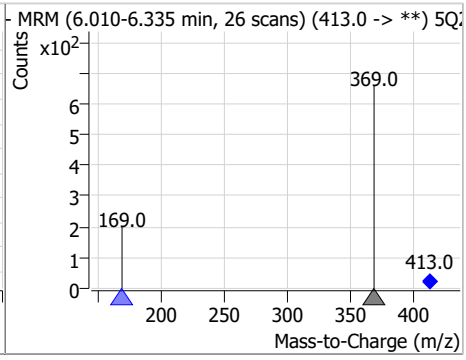




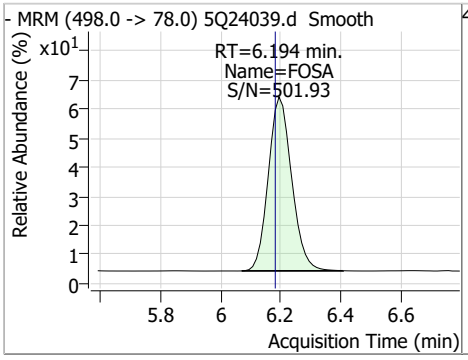
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	0.81	6.14	-0.01	11938	413.0 -> 169.0	26.0	12.4	37.1

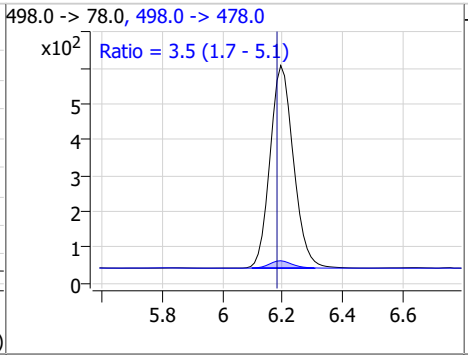


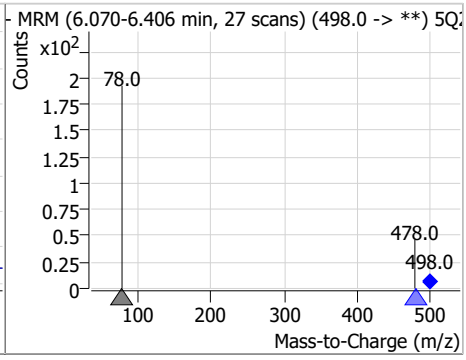




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	0.82	6.19	0.00	3049	498.0 -> 478.0	3.5	1.7	5.1

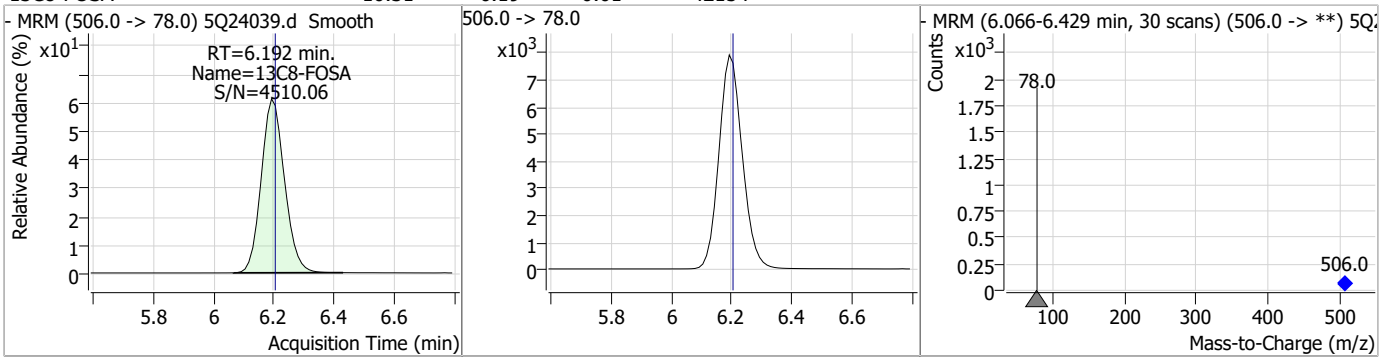




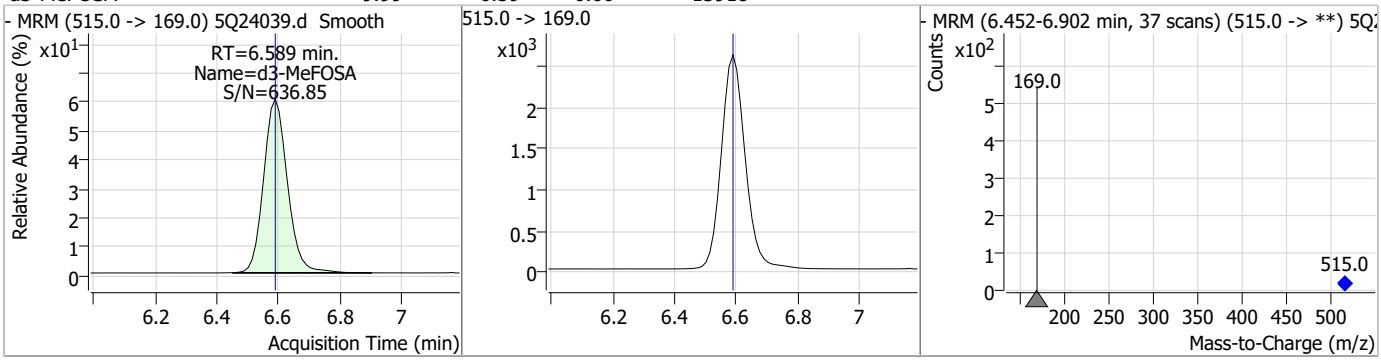


Perfluorinated Compounds by LC/MS/MS

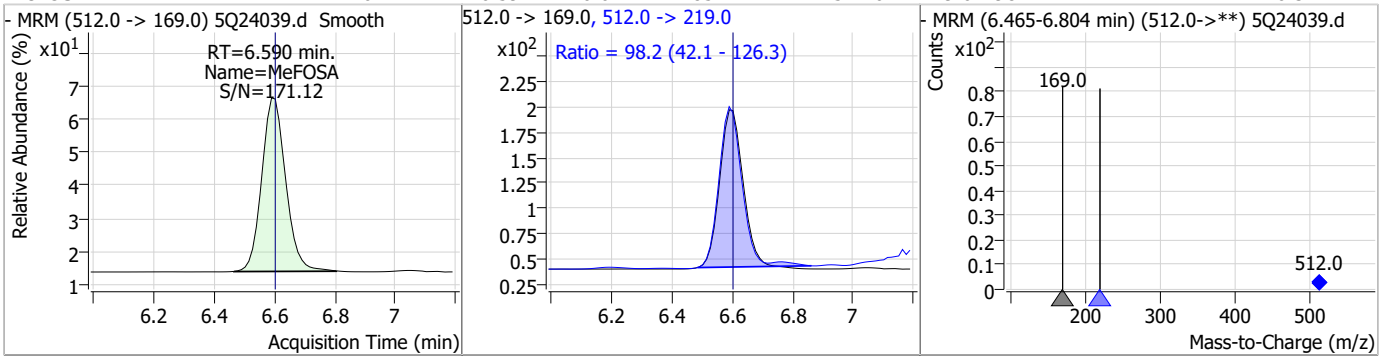
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	10.31	6.19	-0.01	42154				



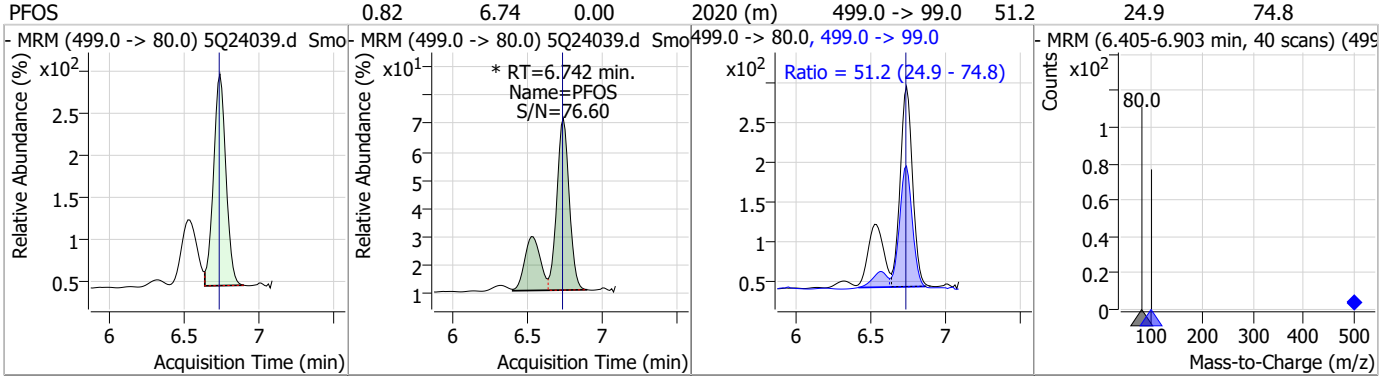
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	9.99	6.59	0.00	13918				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	0.72	6.59	-0.01	857	512.0 -> 219.0	98.2	42.1	126.3

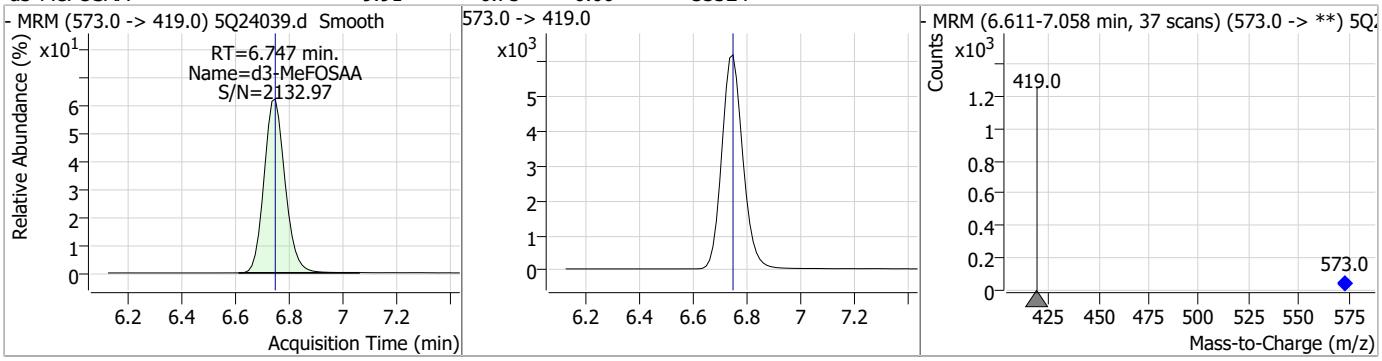


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	0.82	6.74	0.00	2020 (m)	499.0 -> 99.0	51.2	24.9	74.8

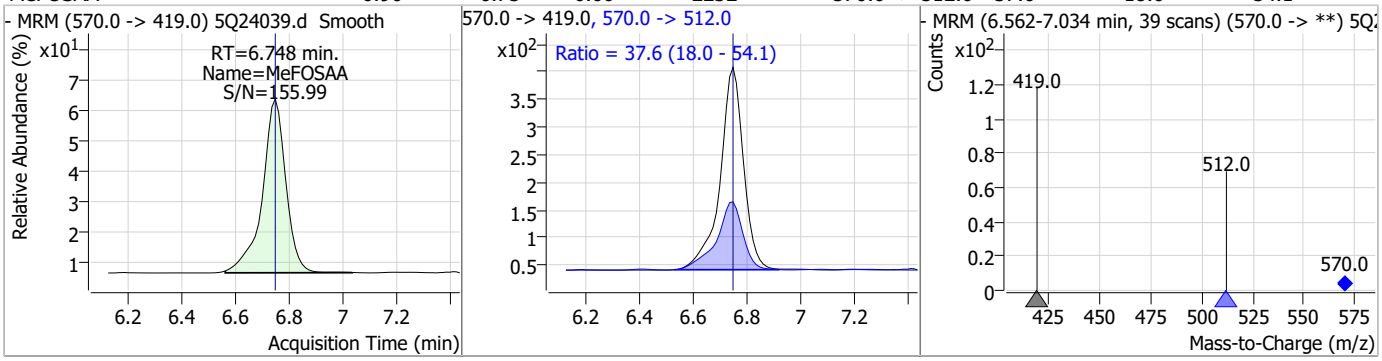


Perfluorinated Compounds by LC/MS/MS

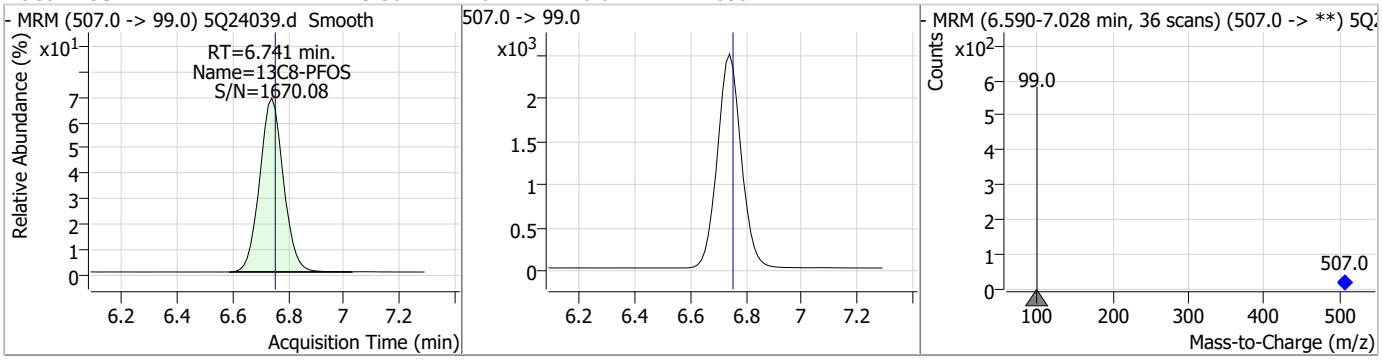
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	9.91	6.75	0.00	33324				



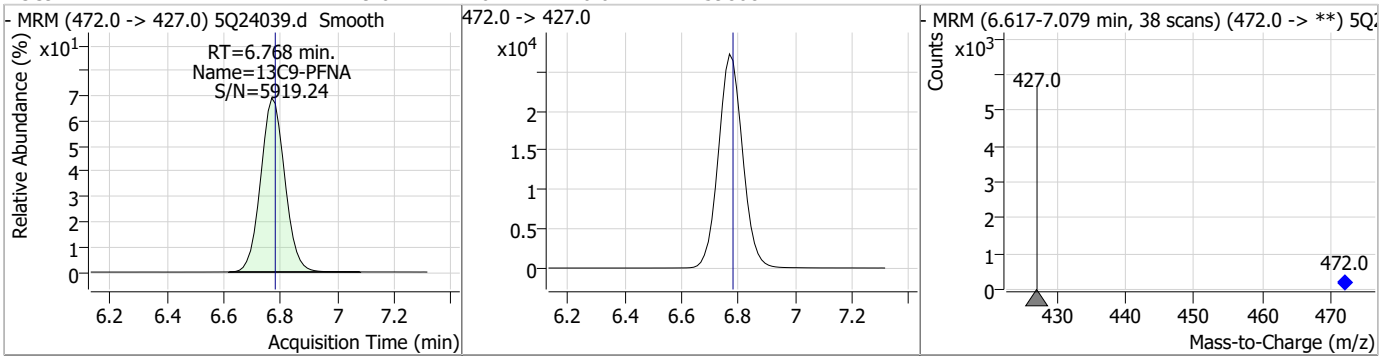
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	0.90	6.75	0.00	2232	570.0 -> 512.0	37.6	18.0	54.1



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	9.30	6.74	-0.01	14638				

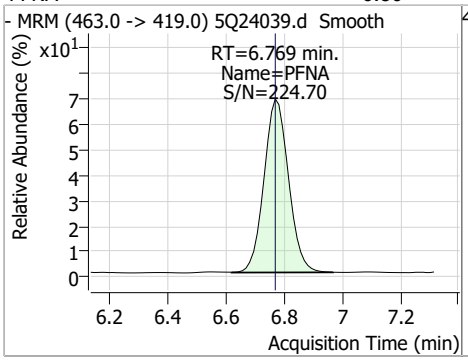


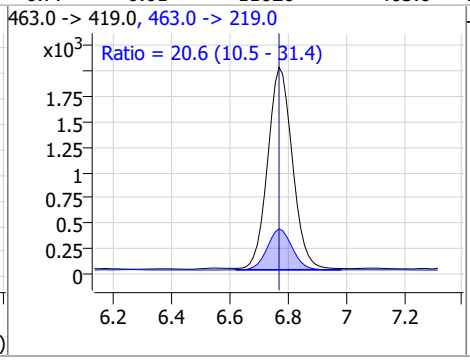
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	9.64	6.77	-0.01	159808				

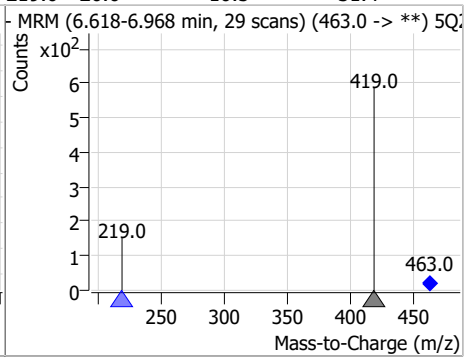


Perfluorinated Compounds by LC/MS/MS

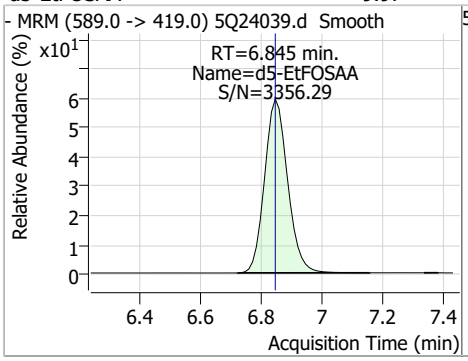
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	0.80	6.77	-0.01	11620	463.0 -> 219.0	20.6	10.5	31.4

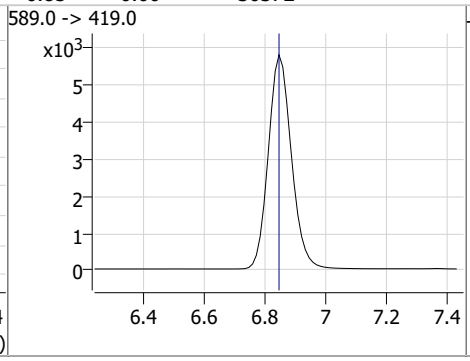


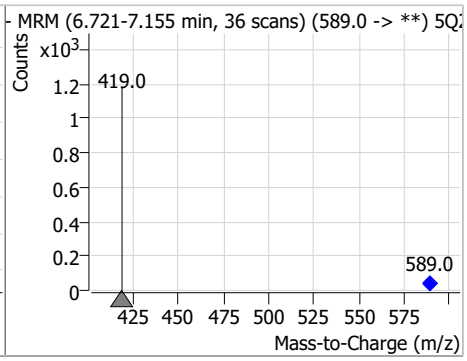




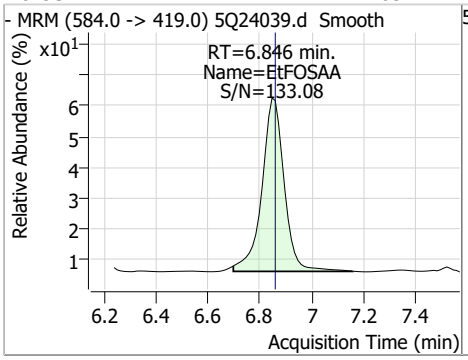
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	9.97	6.85	0.00	30372				

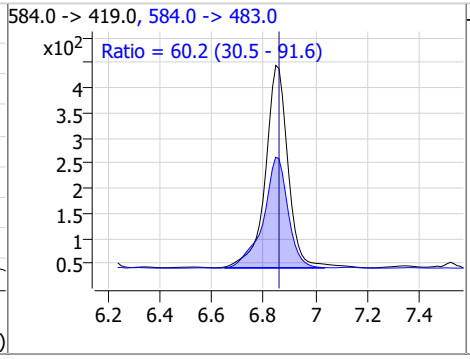


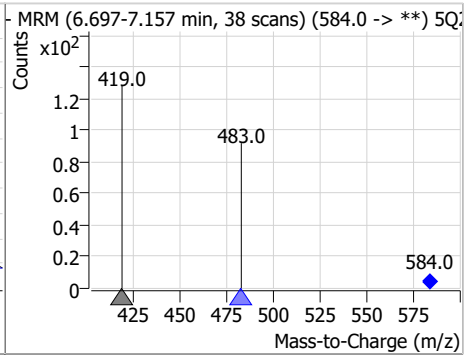




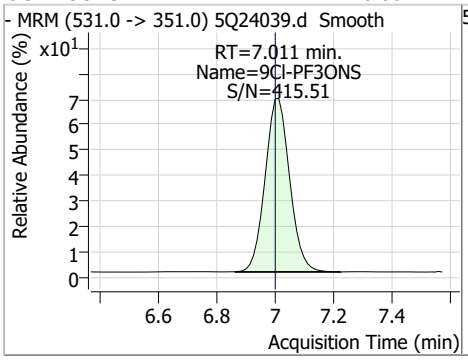
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	1.03	6.85	-0.01	2403	584.0 -> 483.0	60.2	30.5	91.6

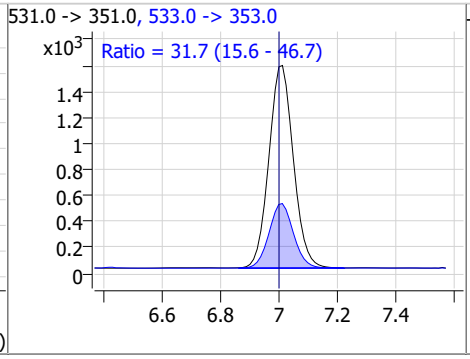


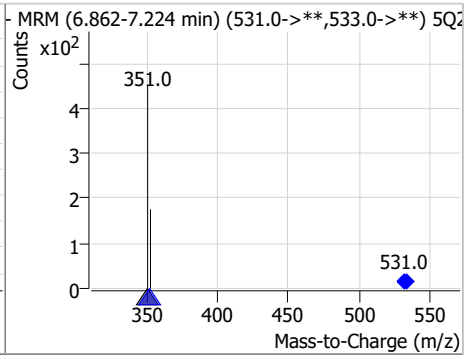




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	0.80	7.01	0.00	9124	533.0 -> 353.0	31.7	15.6	46.7

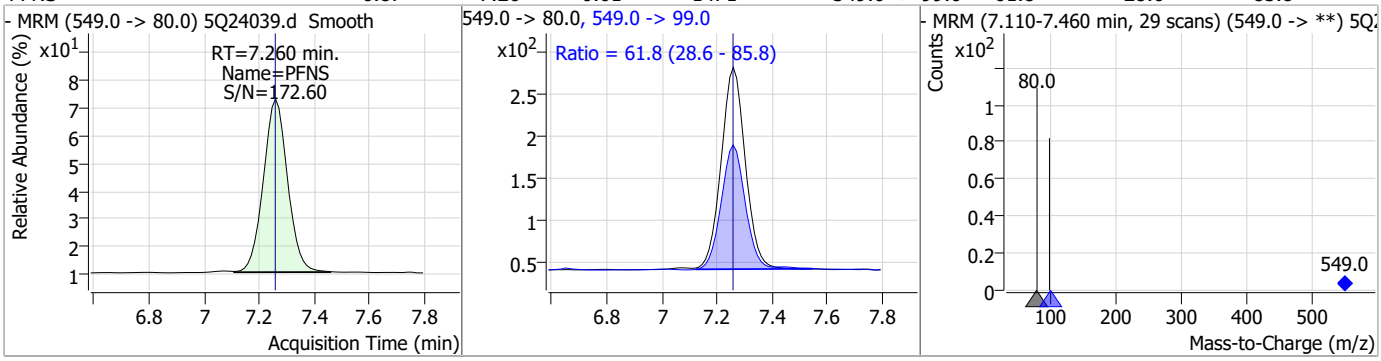




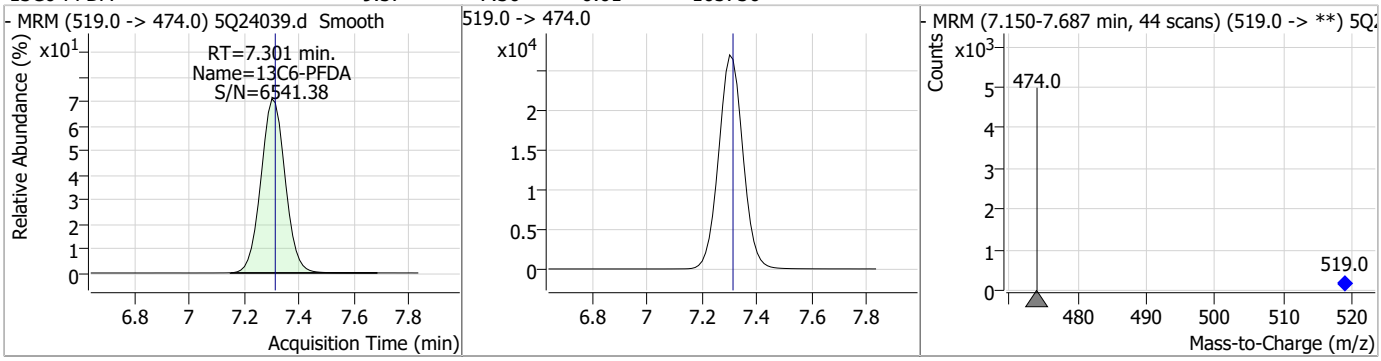


Perfluorinated Compounds by LC/MS/MS

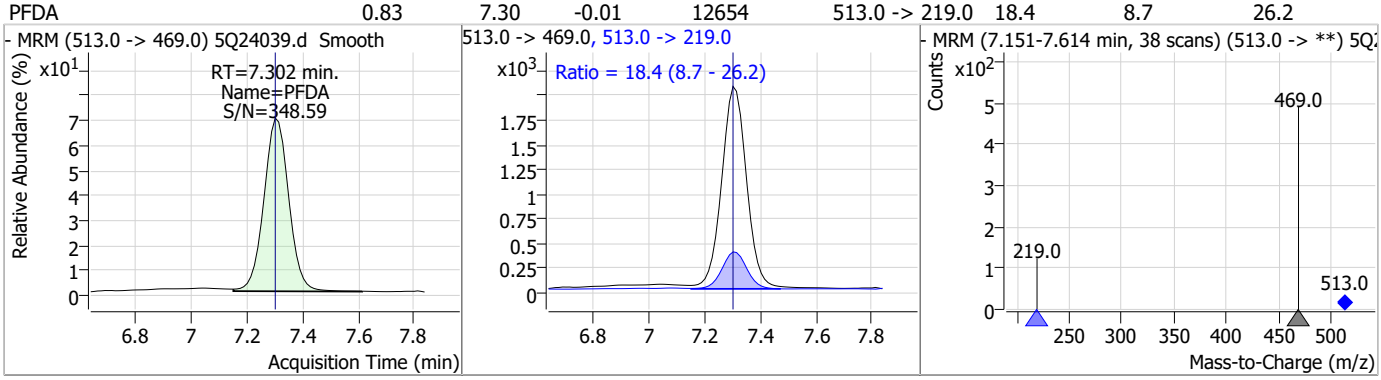
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	0.87	7.26	-0.01	1471	549.0 -> 99.0	61.8	28.6	85.8



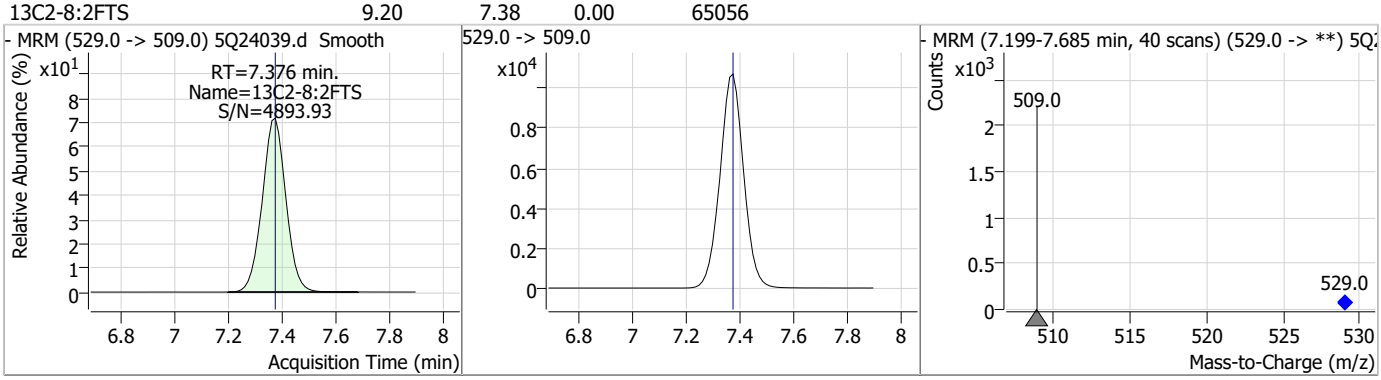
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	9.57	7.30	-0.01	165736				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	0.83	7.30	-0.01	12654	513.0 -> 219.0	18.4	8.7	26.2

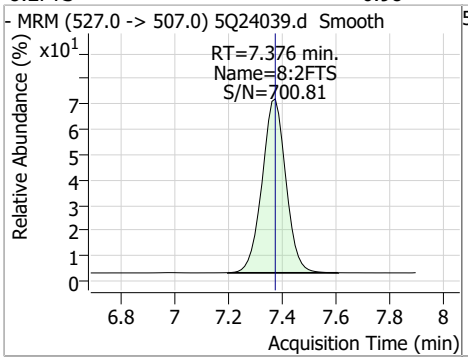


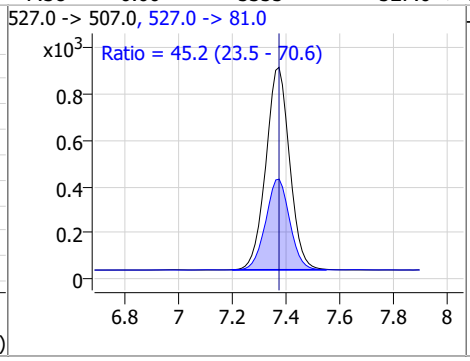
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	9.20	7.38	0.00	65056				

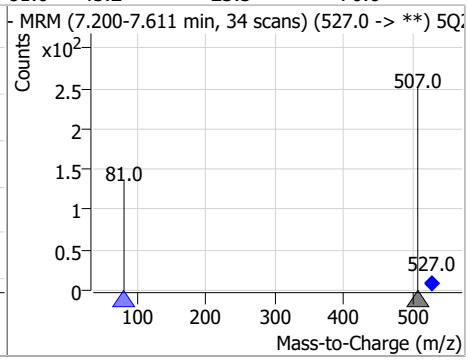


Perfluorinated Compounds by LC/MS/MS

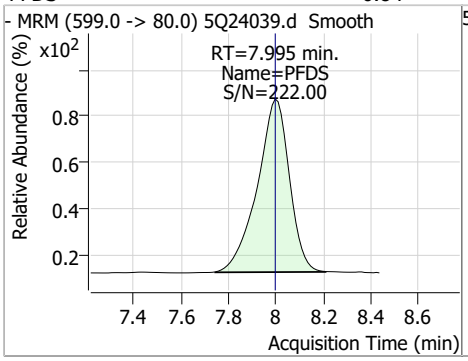
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	0.98	7.38	0.00	5355	527.0 -> 81.0	45.2	23.5	70.6

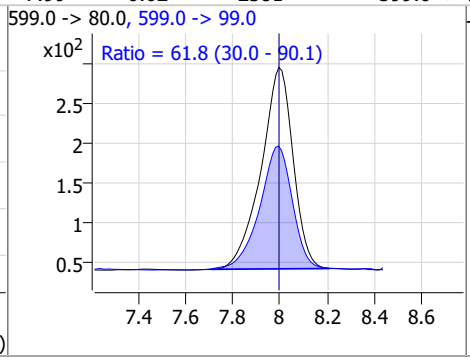


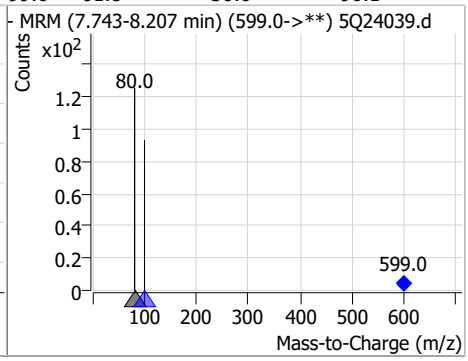




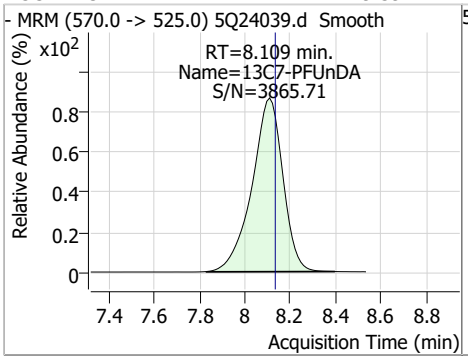
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	0.84	7.99	-0.02	2381	599.0 -> 99.0	61.8	30.0	90.1

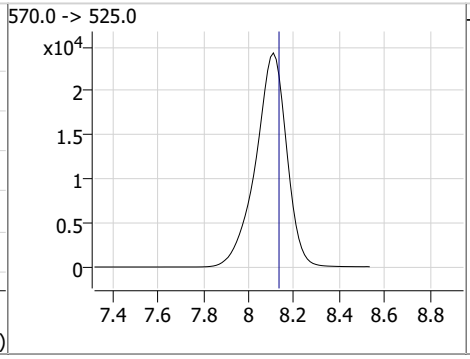


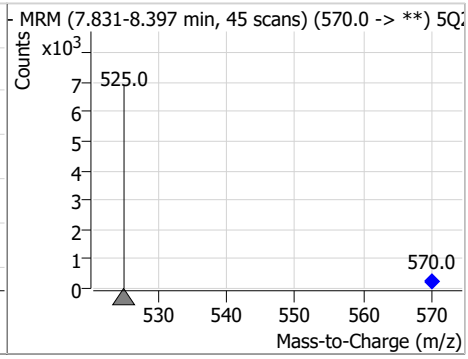




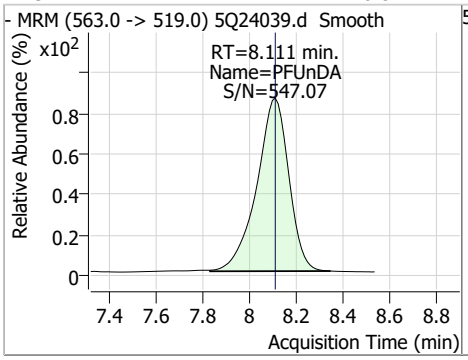
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	9.39	8.11	-0.02	229248				

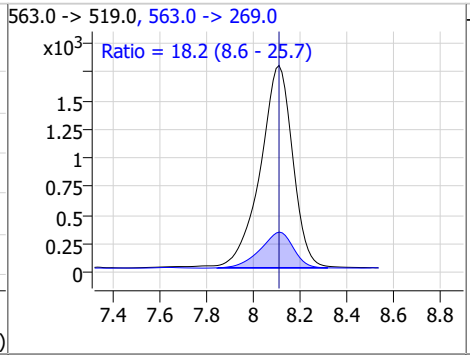


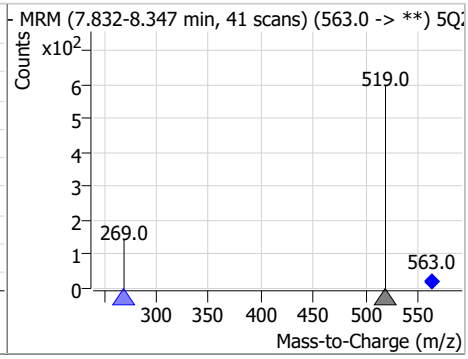




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	0.84	8.11	-0.02	16708	563.0 -> 269.0	18.2	8.6	25.7

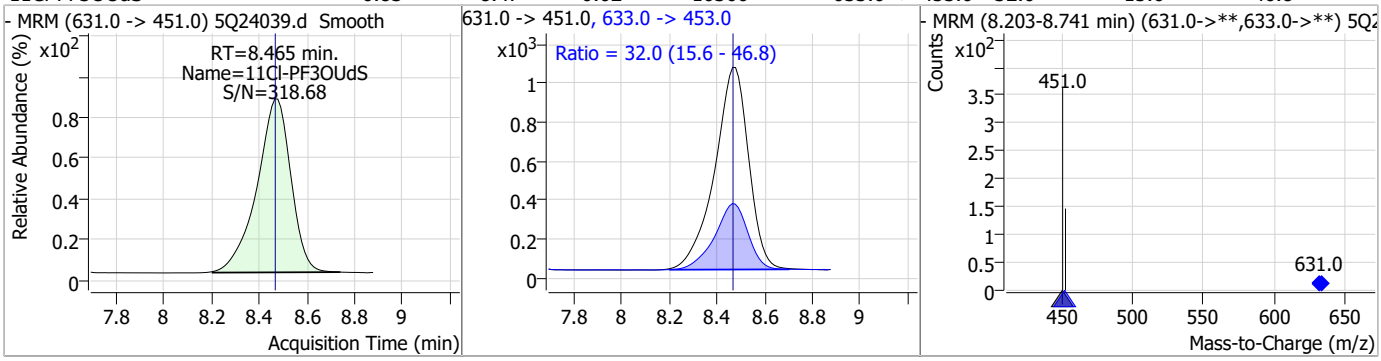




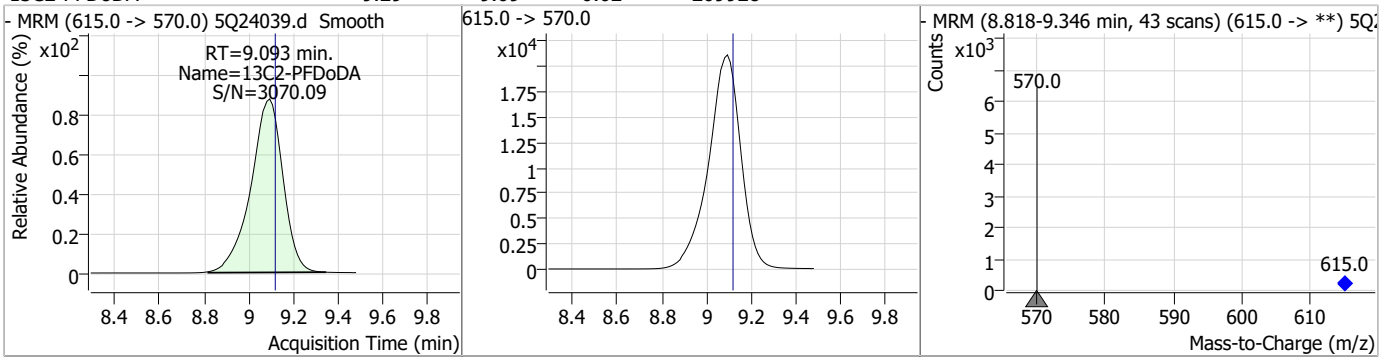


Perfluorinated Compounds by LC/MS/MS

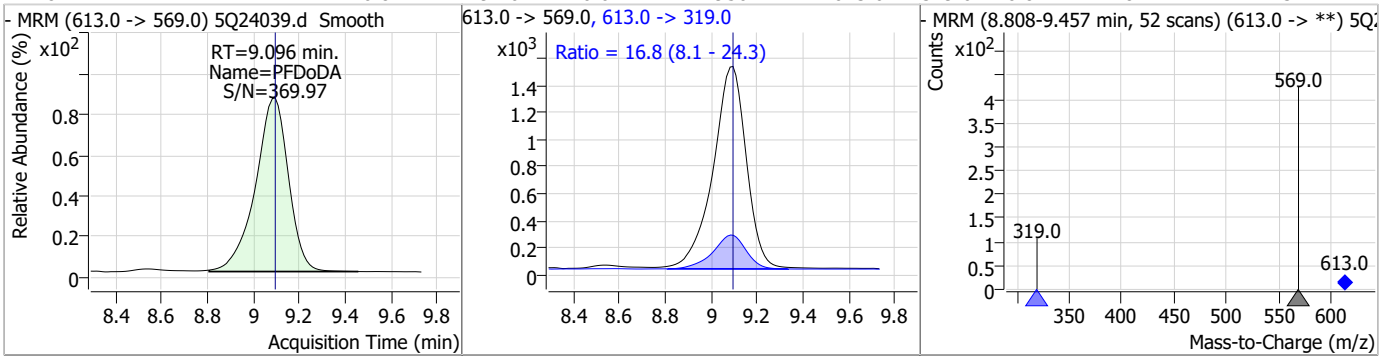
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	0.83	8.47	-0.02	10300	633.0 -> 453.0	32.0	15.6	46.8



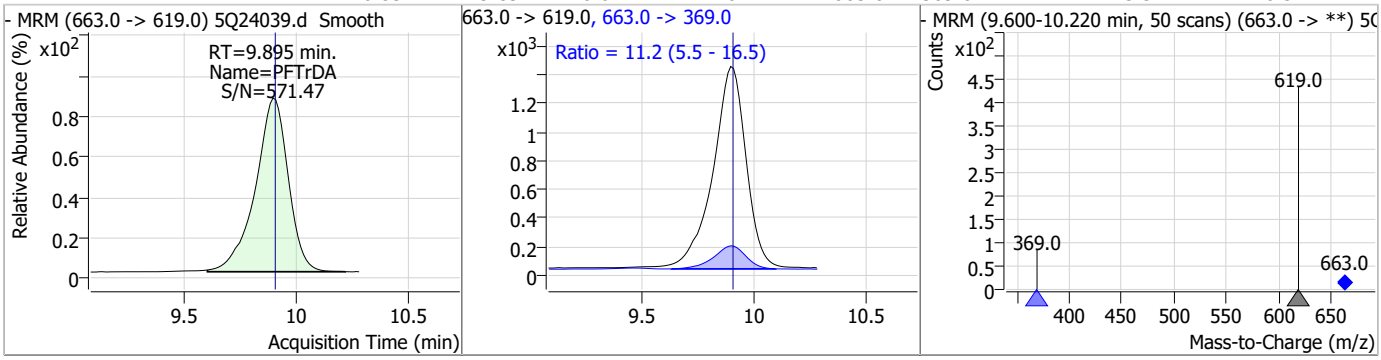
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	9.29	9.09	-0.02	209928				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	0.87	9.10	-0.02	14950	613.0 -> 319.0	16.8	8.1	24.3

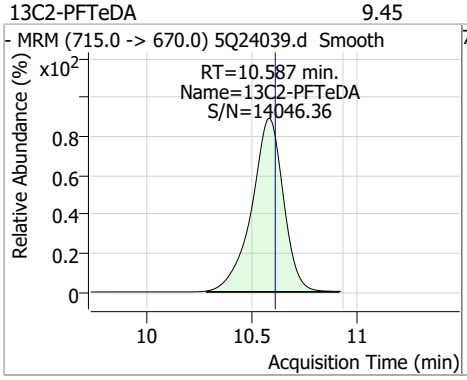


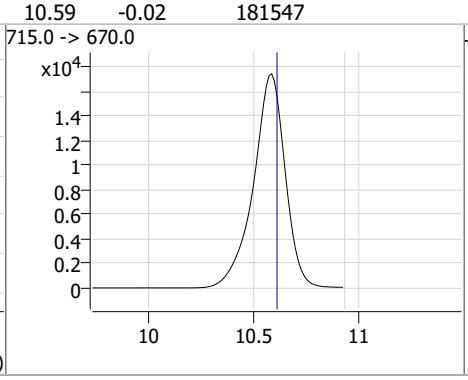
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	0.83	9.89	-0.04	14462	663.0 -> 369.0	11.2	5.5	16.5

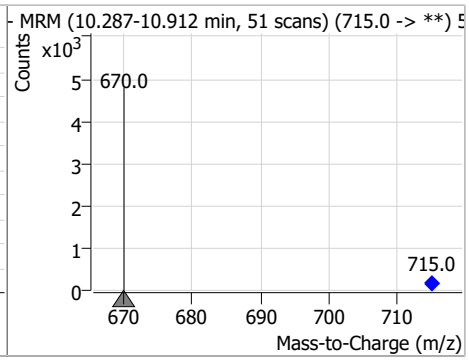


Perfluorinated Compounds by LC/MS/MS

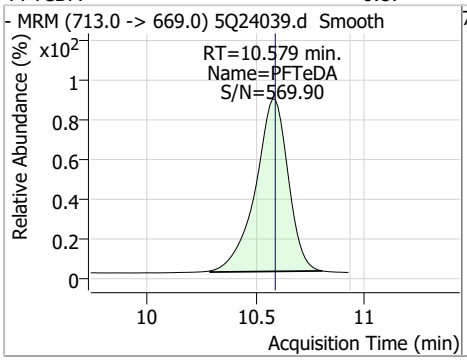
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	9.45	10.59	-0.02	181547				

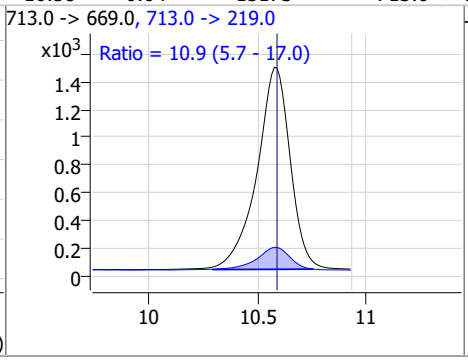


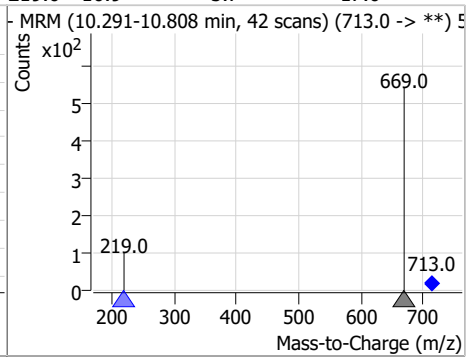




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	0.87	10.58	-0.04	15173	713.0 -> 219.0	10.9	5.7	17.0







Manual Integration Approval Summary

Sample Number: S5Q377-CC377
Lab FileID: 5Q24039.D
Injection Time: 01/02/24 20:40
Method: EPA 537M QSM5.3 B-15
Analyst approved: 01/03/24 16:03 Lindsay Ritner
Supervisor approved: 01/04/24 12:54 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.45	Split peak
Perfluorooctanesulfonic acid	1763-23-1		6.74	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Natasha Gumtie 01/04/24 12:54

Perfluorinated Compounds by LC/MS/MS

Data File : 5Q24050.d
Operator : lindsayr
Acq. Method : 537_ID.m
Acq. Date-Time : 1/2/2024 11:42:46 PM
Sample Name : cc377-20
Vial : P1-A7
DA Method File : ID_010224_S5Q377.quantmethod.xml
Batch Name : s5q377.batch.bin
Sample Information : OP401,S5Q377,250,,,1.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.987	217.0 -> 172.0	35701	10.00	µg/L	0.000
M5-PFPeA	3.419	268.0 -> 223.0	60382	10.00	µg/L	-0.012
M5-PFHxA	4.552	318.0 -> 273.0	94861	10.00	µg/L	-0.012
M4-PFHpA	5.413	367.0 -> 322.0	99340	10.00	µg/L	-0.012
M8-PFOA	6.137	421.0 -> 376.0	142490	10.00	µg/L	-0.012
M9-PFNA	6.768	472.0 -> 427.0	150416	10.00	µg/L	-0.012
M6-PFDA	7.301	519.0 -> 474.0	153791	10.00	µg/L	-0.012
M7-PFUnDA	8.097	570.0 -> 525.0	217776	10.00	µg/L	-0.037
M2-PFDoDA	9.093	615.0 -> 570.0	203604	10.00	µg/L	-0.025
M2-PFTeDA	10.587	715.0 -> 670.0	174294	10.00	µg/L	-0.025
M8-FOSA	6.192	506.0 -> 78.0	38946	10.00	µg/L	-0.012
M3-PFBS	3.624	302.0 -> 99.0	7412	10.00	µg/L	-0.012
M3-PFHxS	5.444	402.0 -> 99.0	9956	10.00	µg/L	0.000
M8-PFOS	6.741	507.0 -> 99.0	13472	10.00	µg/L	-0.012
M2-4:2FTS	4.474	329.0 -> 309.0	34134	10.00	µg/L	-0.012
M2-6:2FTS	6.135	429.0 -> 409.0	64595	10.00	µg/L	-0.012
M2-8:2FTS	7.363	529.0 -> 509.0	68032	10.00	µg/L	-0.012
M3-MeFOSAA	6.747	573.0 -> 419.0	32031	10.00	µg/L	0.000
M3-HFPO-DA	4.819	287.0 -> 169.0	4591	10.00	µg/L	-0.012
M3-MeFOSA	6.589	515.0 -> 169.0	12979	10.00	µg/L	0.000
M5-EtFOSAA	6.845	589.0 -> 419.0	29430	10.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.474	329.0 -> 309.0	34134	8.73	µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 87.3%		
13C2-6:2FTS	6.135	429.0 -> 409.0	64595	8.78	µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 87.8%		
13C2-8:2FTS	7.363	529.0 -> 509.0	68032	9.62	µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 96.2%		
13C2-PFDoDA	9.093	615.0 -> 570.0	203604	9.01	µg/L	-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 90.1%		
13C2-PFTeDA	10.587	715.0 -> 670.0	174294	9.07	µg/L	-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 90.7%		
13C3-PFBS	3.624	302.0 -> 99.0	7412	8.03	µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 80.3%		
13C3-PFHxS	5.444	402.0 -> 99.0	9956	8.81	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 88.1%		
13C4-PFBA	1.987	217.0 -> 172.0	35701	8.09	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 80.9%		
13C4-PFHpA	5.413	367.0 -> 322.0	99340	8.41	µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 84.1%		
13C5-PFHxA	4.552	318.0 -> 273.0	94861	8.26	µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 82.6%		
13C5-PFPeA	3.419	268.0 -> 223.0	60382	8.13	µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 81.3%		
13C6-PFDA	7.301	519.0 -> 474.0	153791	8.88	µg/L	-0.012

Perfluorinated Compounds by LC/MS/MS

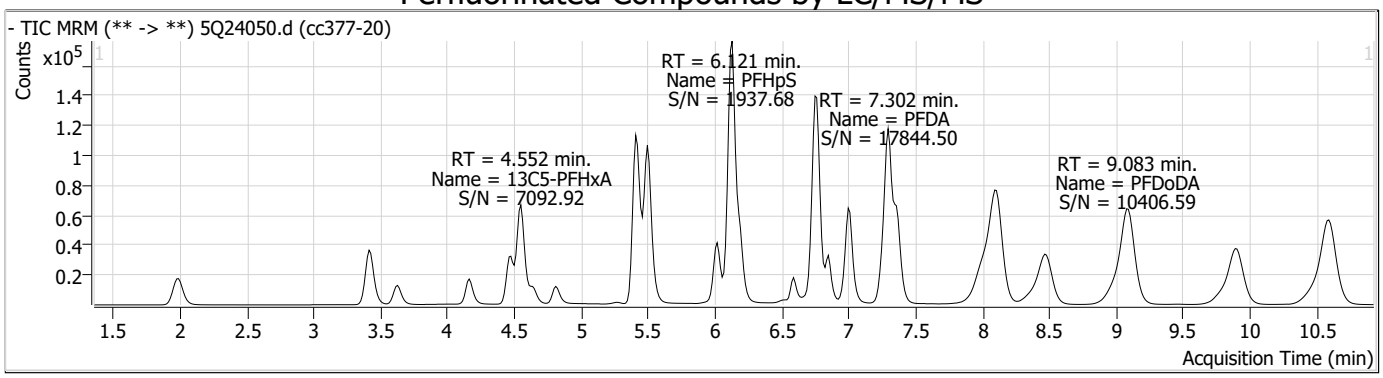
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 88.8%			
13C7-PFUnDA	8.097	570.0 -> 525.0	217776	8.92	µg/L		-0.037
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 89.2%			
13C8-FOSA	6.192	506.0 -> 78.0	38946	9.52	µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 95.2%			
13C8-PFOA	6.137	421.0 -> 376.0	142490	8.61	µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 86.1%			
13C8-PFOS	6.741	507.0 -> 99.0	13472	8.55	µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 85.5%			
13C9-PFNA	6.768	472.0 -> 427.0	150416	9.07	µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 90.7%			
d3-MeFOSAA	6.747	573.0 -> 419.0	32031	9.52	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 95.2%			
13C3-HFPO-DA	4.819	287.0 -> 169.0	4591	7.69	µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 76.9%			
d3-MeFOSA	6.589	515.0 -> 169.0	12979	9.32	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 93.2%			
d5-EtFOSAA	6.845	589.0 -> 419.0	29430	9.66	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 96.6%			
Target Compounds							QValue
4:2FTS	4.475	327.0 -> 307.0	63890	19.67	µg/L		99
		327.0 -> 81.0	36189				
6:2FTS	6.136	427.0 -> 407.0	111526	20.38	µg/L		99
		427.0 -> 81.0	43602				
8:2FTS	7.364	527.0 -> 507.0	109963	19.25	µg/L		99
		527.0 -> 81.0	51364				
EtFOSAA	6.846	584.0 -> 419.0	42869	19.04	µg/L		99
		584.0 -> 483.0	26566				
FOSA	6.194	498.0 -> 78.0	63778	18.54	µg/L		100
		498.0 -> 478.0	2107				
MeFOSAA	6.748	570.0 -> 419.0	44354	18.58	µg/L		95
		570.0 -> 512.0	17229				
PFBA	1.981	213.0 -> 169.0	59073	18.42	µg/L		100
PFBS	3.628	299.0 -> 80.0	33585	18.49	µg/L		100
		299.0 -> 99.0	14468				
PFDA	7.302	513.0 -> 469.0	266800	18.86	µg/L		100
		513.0 -> 219.0	46724				
PFDoDA	9.083	613.0 -> 569.0	315693	18.84	µg/L		100
		613.0 -> 319.0	50956				
PFDS	7.982	599.0 -> 80.0	48883	18.20	µg/L		98
		599.0 -> 99.0	30182				
PFHpA	5.413	363.0 -> 319.0	208369	19.06	µg/L		100
		363.0 -> 169.0	43669				
PFHpS	6.121	449.0 -> 80.0	33408	18.76	µg/L		100
		449.0 -> 99.0	18043				
PFHxA	4.553	313.0 -> 269.0	164916	18.66	µg/L		100
		313.0 -> 119.0	6729				
PFHxS	5.446	399.0 -> 80.0	32553	18.24	µg/L	m	98
		399.0 -> 99.0	18677				
PFNA	6.769	463.0 -> 419.0	252412	18.50	µg/L		98
		463.0 -> 219.0	51011				
PFNS	7.260	549.0 -> 80.0	30335	19.57	µg/L		97
		549.0 -> 99.0	17914				
PFOA	6.137	413.0 -> 369.0	255936	18.81	µg/L		100
		413.0 -> 169.0	63231				
PFOS	6.742	499.0 -> 80.0	42081	18.59	µg/L	m	97

Perfluorinated Compounds by LC/MS/MS

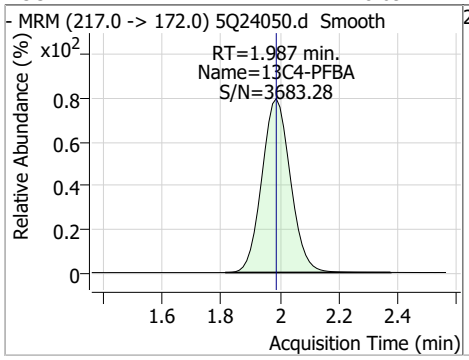
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		499.0 -> 99.0	20179			
PFPeA	3.422	263.0 -> 219.0	106295	18.67	µg/L	100
PFPeS	4.648	349.0 -> 80.0	24133	19.12	µg/L	99
		349.0 -> 99.0	12472			
PFTeDA	10.591	713.0 -> 669.0	317082	18.85	µg/L	100
		713.0 -> 219.0	36322			
PFTrDA	9.895	663.0 -> 619.0	310841	18.48	µg/L	100
		663.0 -> 369.0	34091			
PFUnDA	8.098	563.0 -> 519.0	357971	18.96	µg/L	100
		563.0 -> 269.0	61031			
11Cl-PF3OUdS	8.465	631.0 -> 451.0	218388	18.16	µg/L	99
		633.0 -> 453.0	69078			
9Cl-PF3ONS	6.999	531.0 -> 351.0	196002	18.43	µg/L	100
		533.0 -> 353.0	61343			
ADONA	5.502	377.0 -> 251.0	297579	18.15	µg/L	99
		377.0 -> 85.0	105472			
HFPO-DA	4.815	329.0 -> 169.0	35156	18.84	µg/L	99
		285.0 -> 169.0	7904			
MeFOSA	6.590	512.0 -> 169.0	20969	18.92	µg/L	93
		512.0 -> 219.0	16341			
4-PFECHS	6.018	461.0 -> 381.0	109946	18.22	µg/L	100
		461.0 -> 99.0	56510			
FBSA	4.170	298.0 -> 78.0	60185	19.19	µg/L	99
		298.0 -> 64.0	5855			
FHxSA	5.409	398.0 -> 78.0	67308	20.84	µg/L	99
		398.0 -> 64.0	6388			

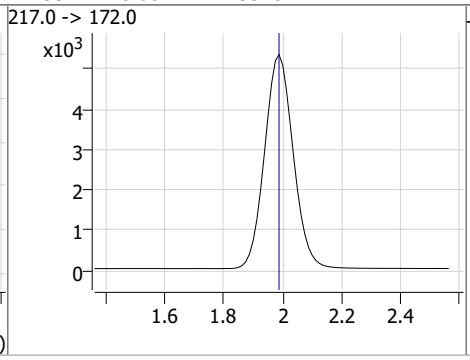
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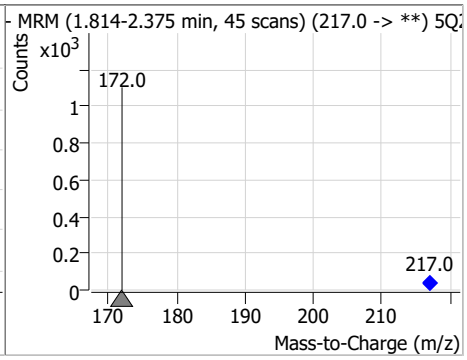
Perfluorinated Compounds by LC/MS/MS



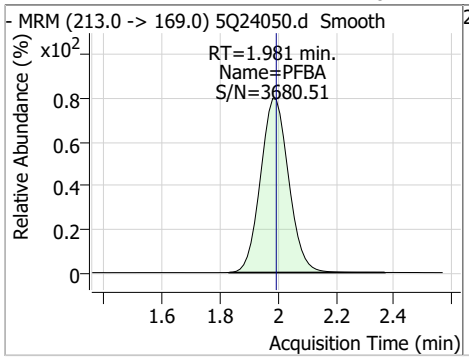
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	8.09	1.99	0.00	35701				

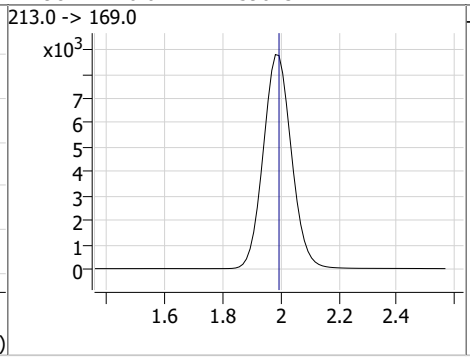


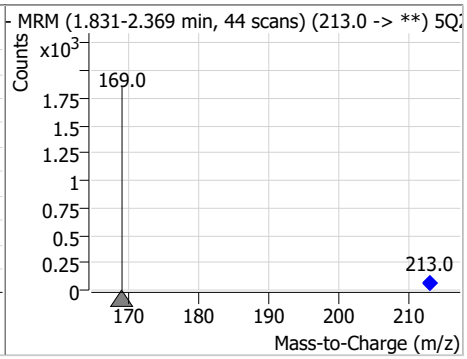




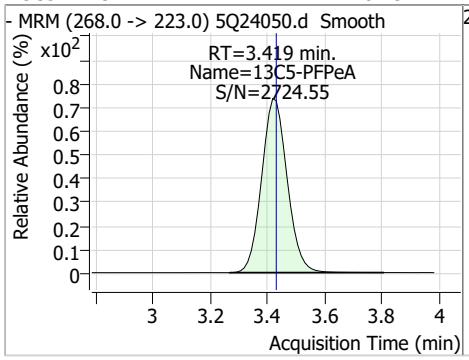
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	18.42	1.98	-0.01	59073				

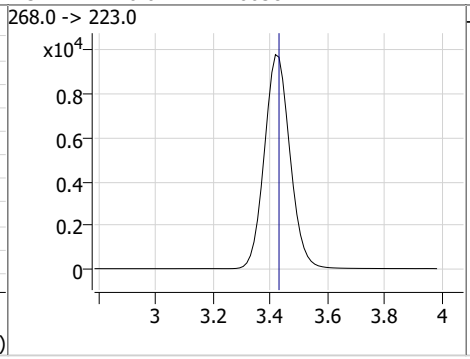


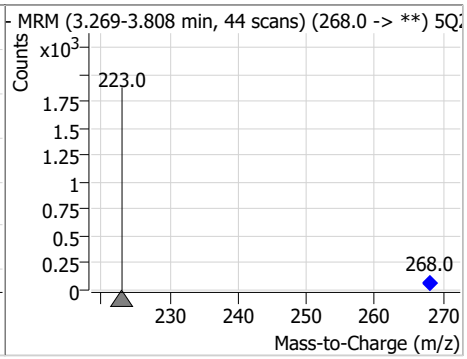




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	8.13	3.42	-0.01	60382				

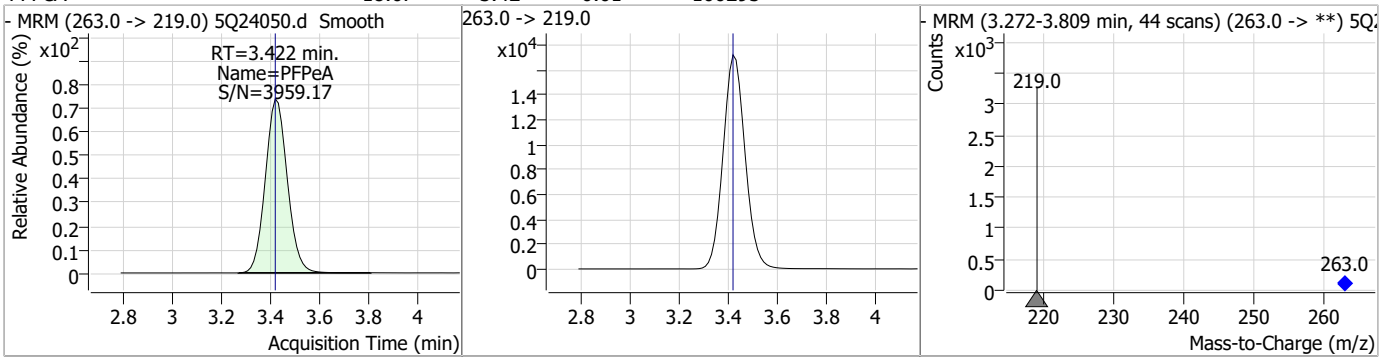




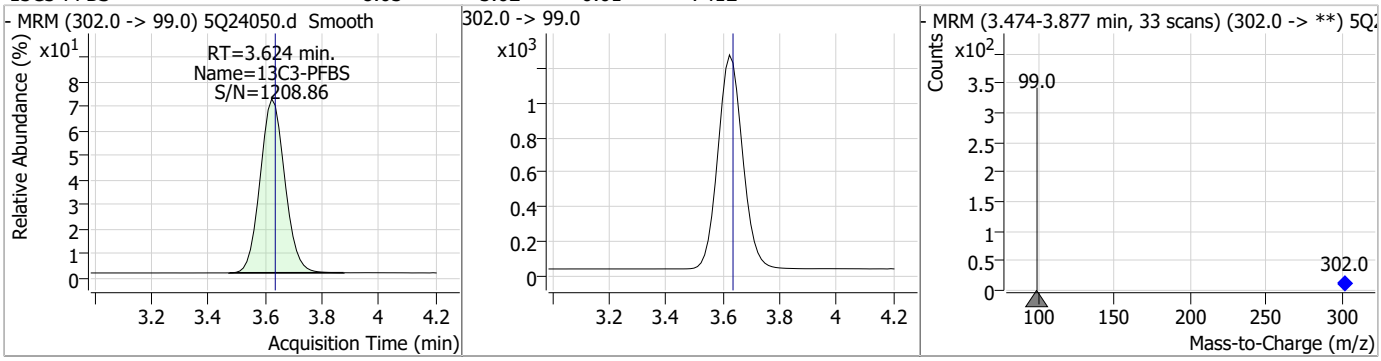


Perfluorinated Compounds by LC/MS/MS

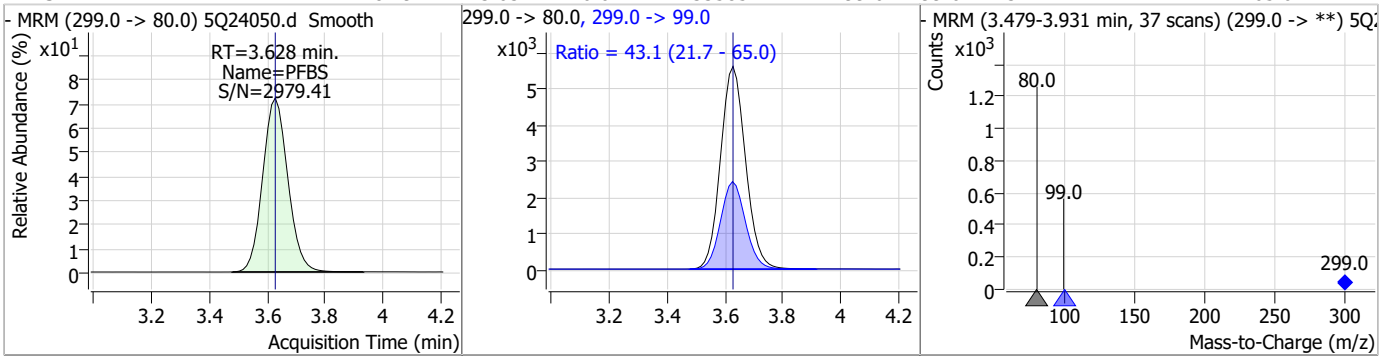
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	18.67	3.42	-0.01	106295				



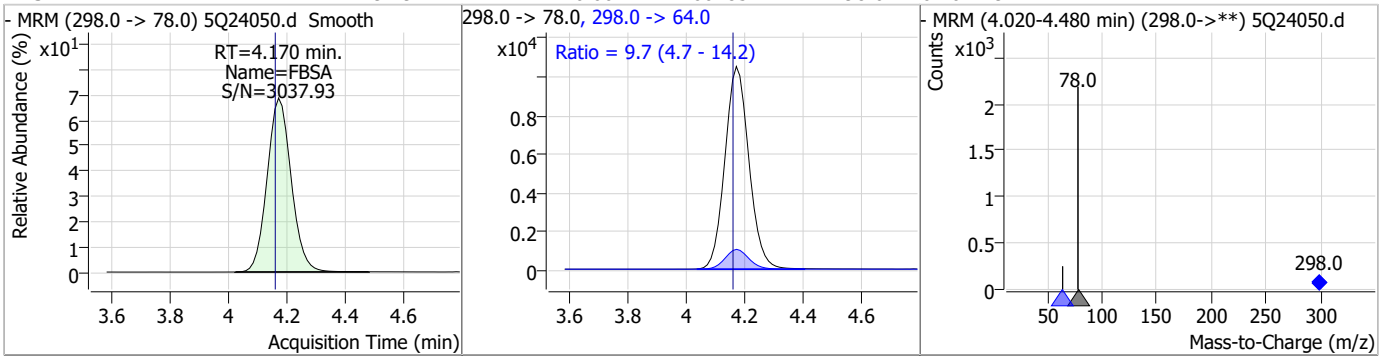
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	8.03	3.62	-0.01	7412				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	18.49	3.63	-0.01	33585	299.0 -> 99.0	43.1	21.7	65.0

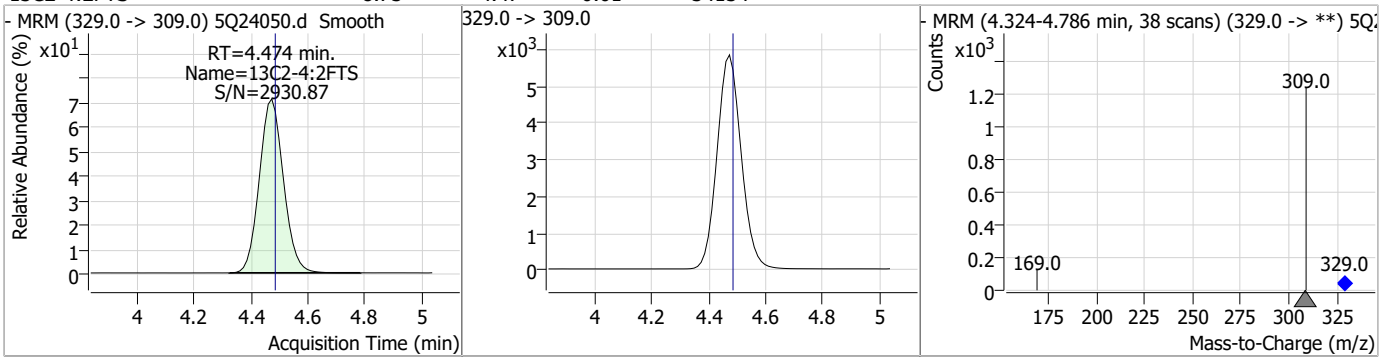


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	19.19	4.17	0.00	60185	298.0 -> 64.0	9.7	4.7	14.2

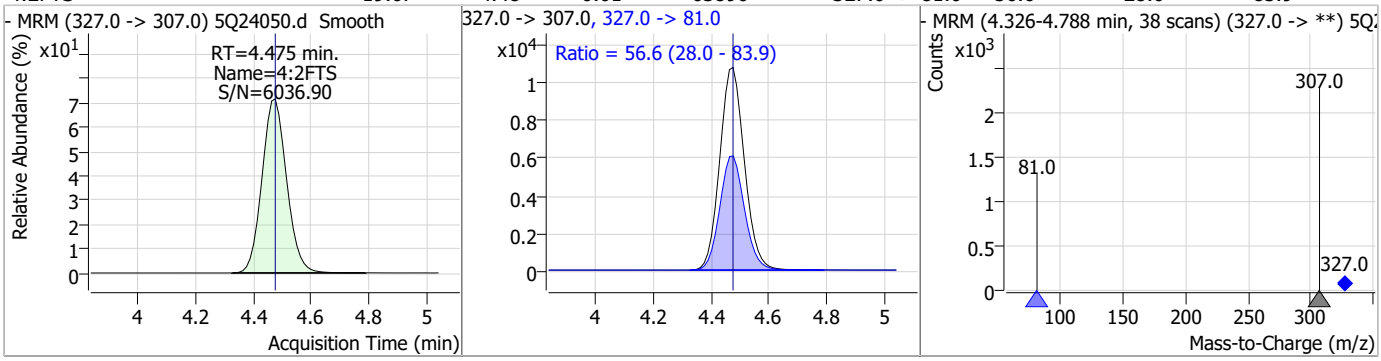


Perfluorinated Compounds by LC/MS/MS

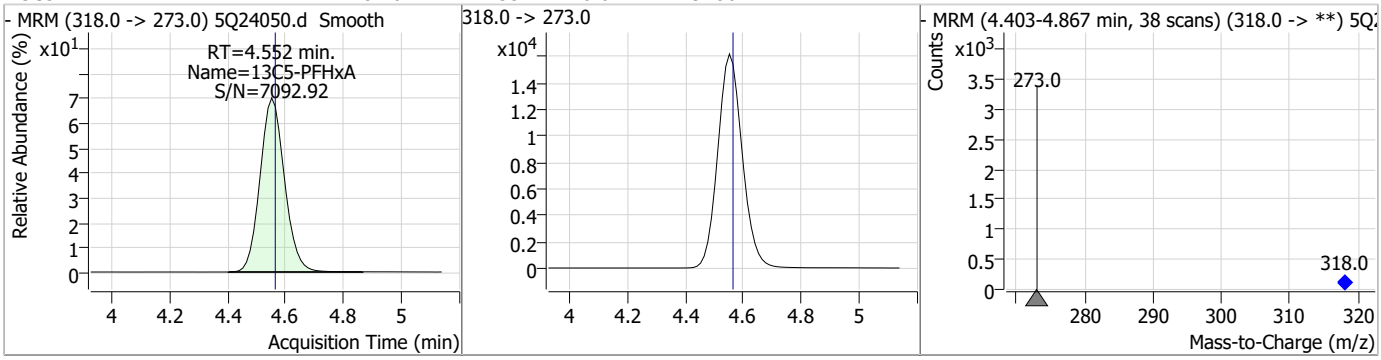
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	8.73	4.47	-0.01	34134				



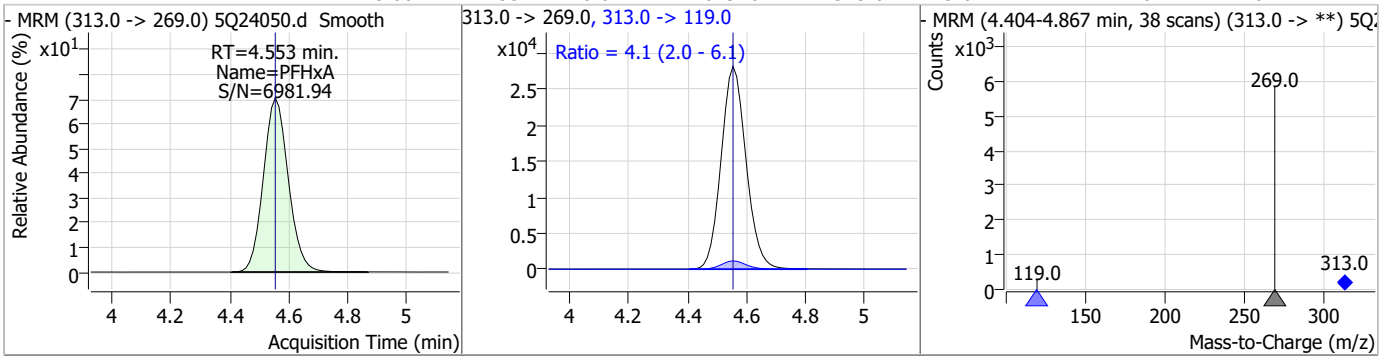
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	19.67	4.48	-0.01	63890	327.0 -> 81.0	56.6	28.0	83.9



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	8.26	4.55	-0.01	94861				

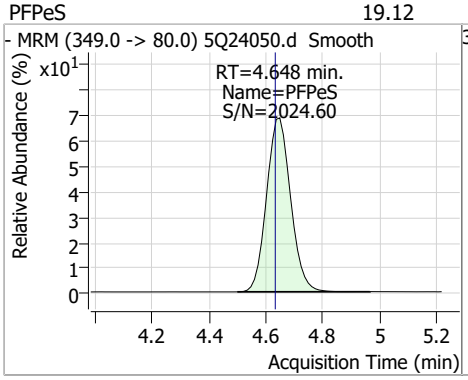


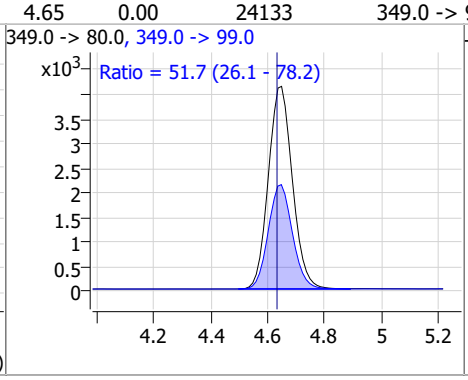
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	18.66	4.55	-0.01	164916	313.0 -> 119.0	4.1	2.0	6.1

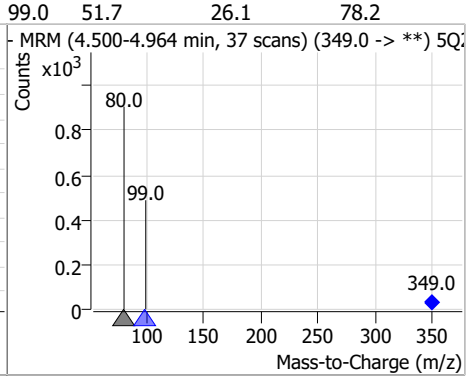


Perfluorinated Compounds by LC/MS/MS

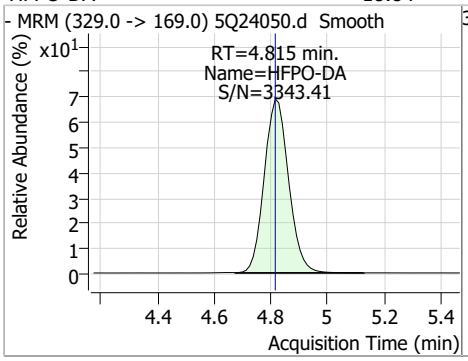
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	19.12	4.65	0.00	24133	349.0 -> 99.0	51.7	26.1	78.2

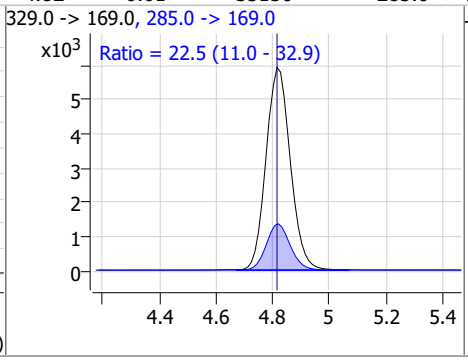


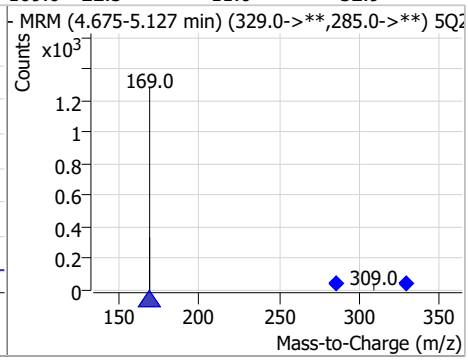




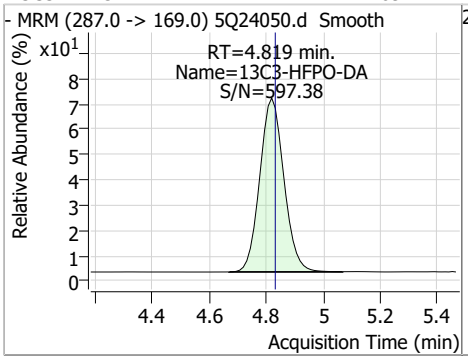
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	18.84	4.82	-0.01	35156	285.0 -> 169.0	22.5	11.0	32.9

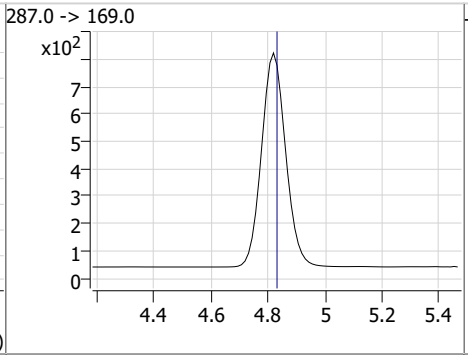


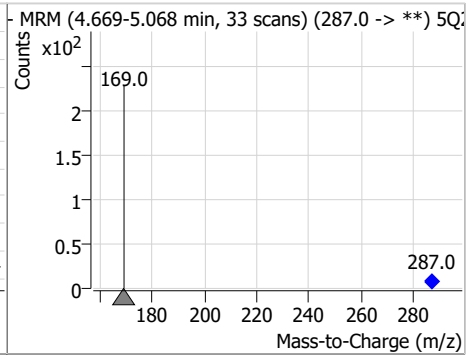




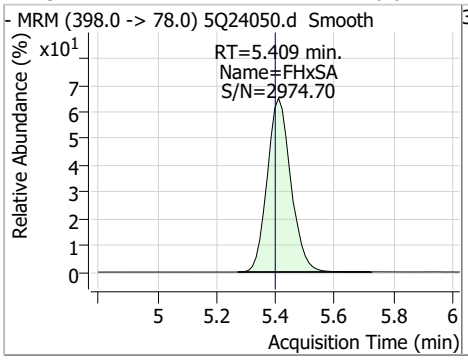
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	7.69	4.82	-0.01	4591				

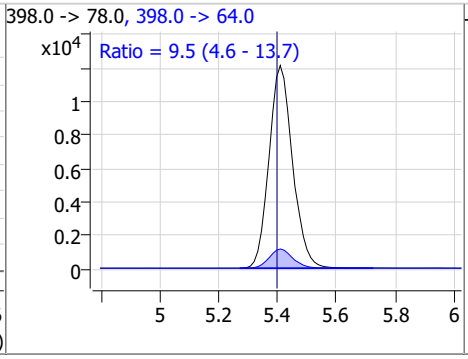


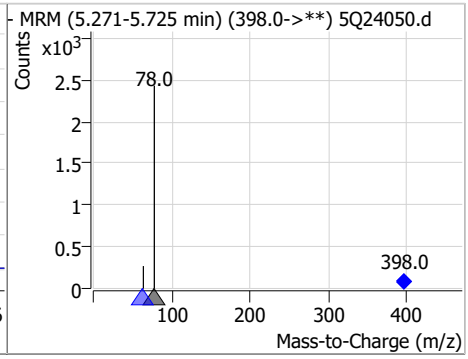




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	20.84	5.41	0.00	67308	398.0 -> 64.0	9.5	4.6	13.7

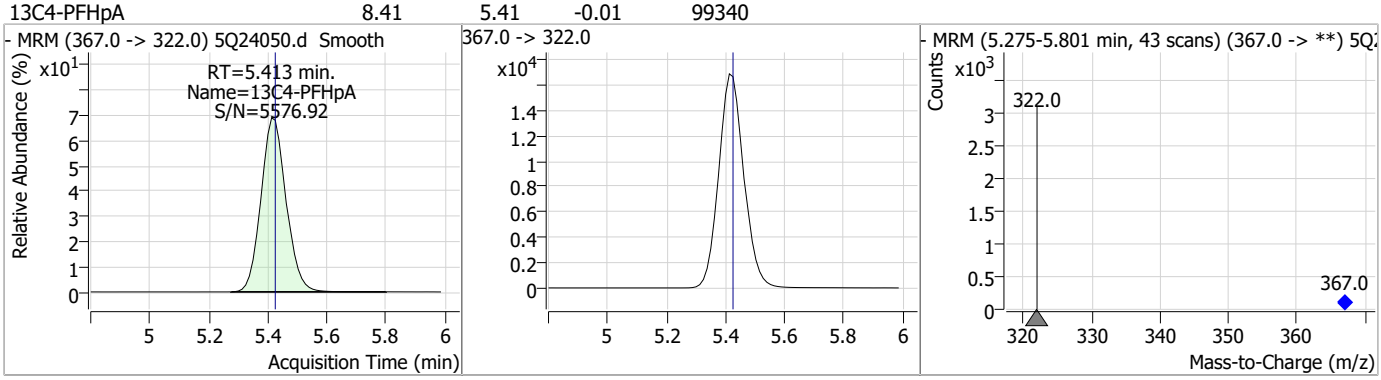




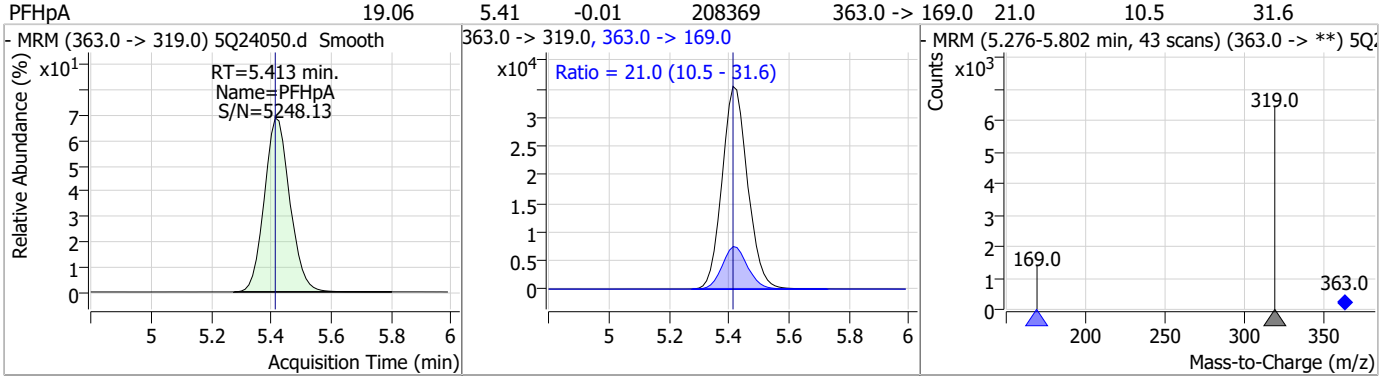


Perfluorinated Compounds by LC/MS/MS

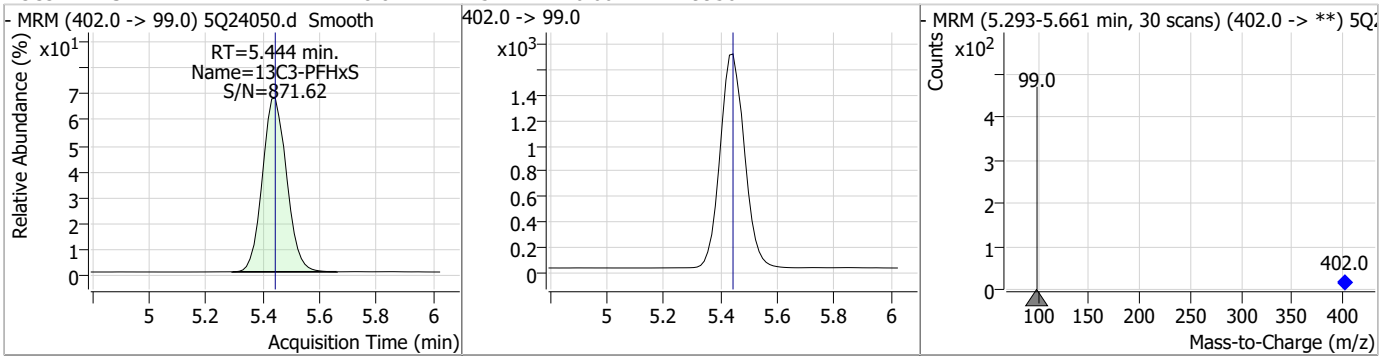
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	8.41	5.41	-0.01	99340				



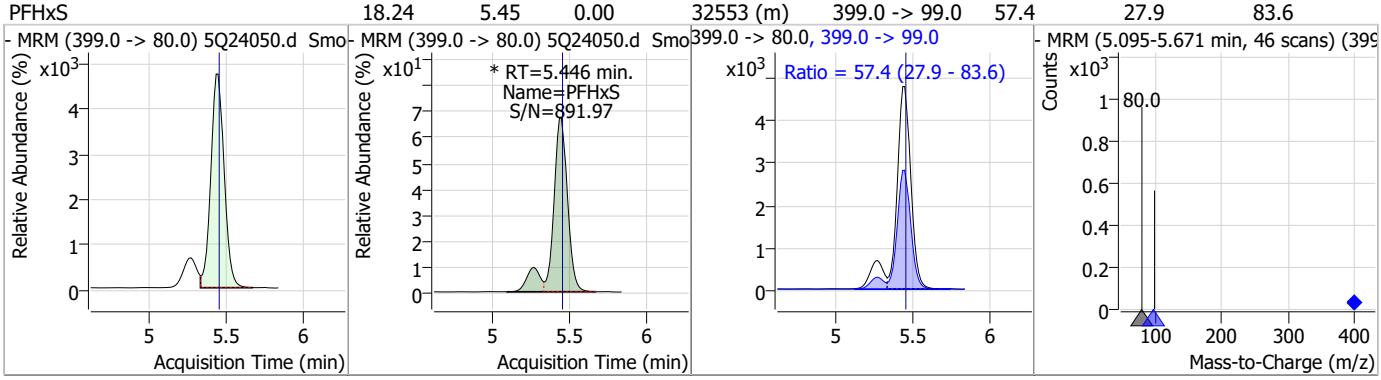
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	19.06	5.41	-0.01	208369	363.0 -> 169.0	21.0	10.5	31.6



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	8.81	5.44	0.00	9956				

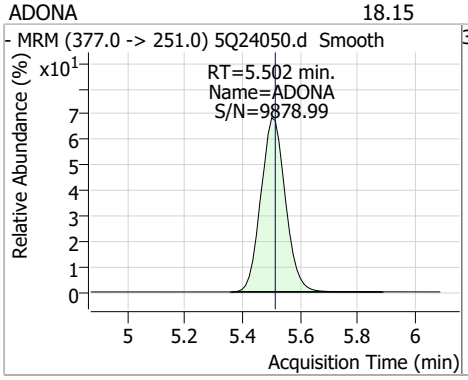


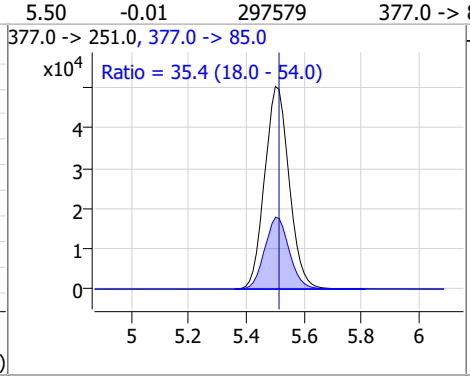
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	18.24	5.45	0.00	32553 (m)	399.0 -> 99.0	57.4	27.9	83.6

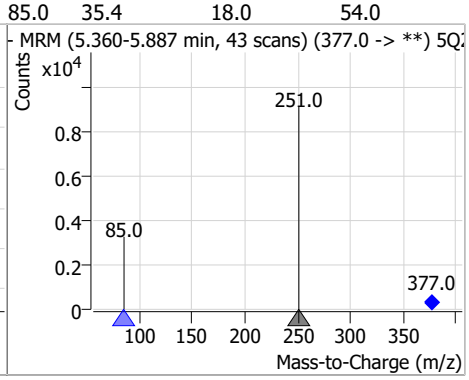


Perfluorinated Compounds by LC/MS/MS

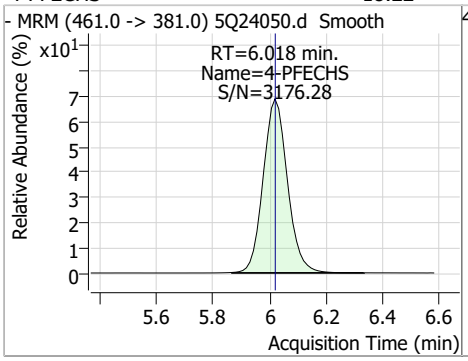
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	18.15	5.50	-0.01	297579	377.0 -> 85.0	35.4	18.0	54.0

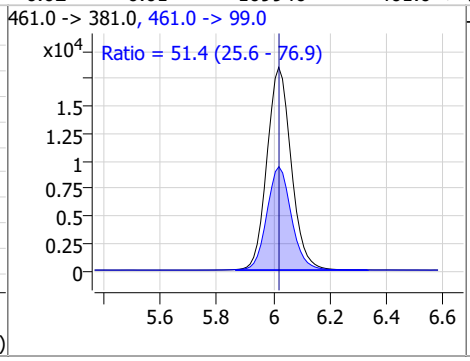


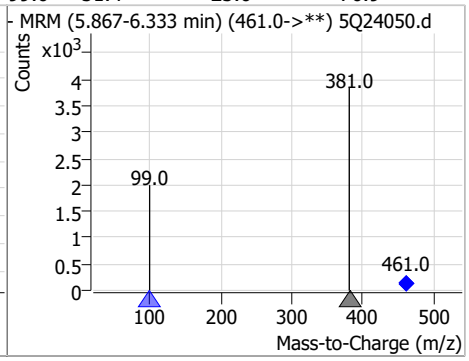




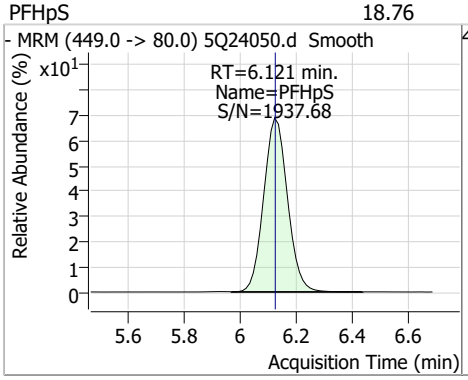
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS	18.22	6.02	-0.01	109946	461.0 -> 99.0	51.4	25.6	76.9

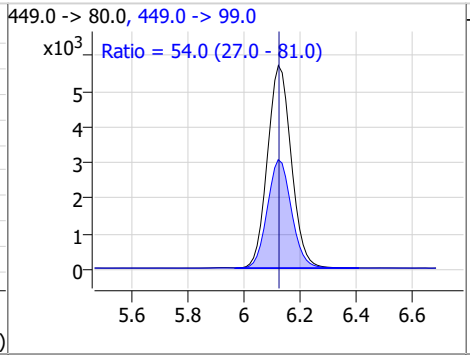


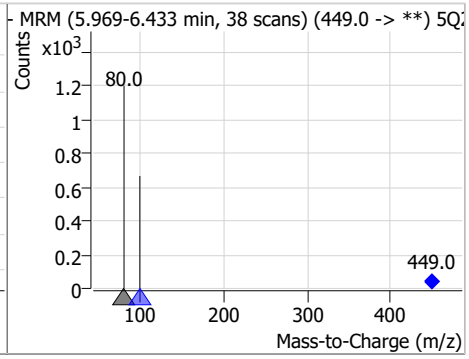




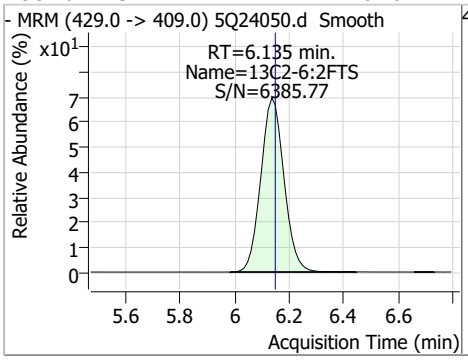
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	18.76	6.12	-0.01	33408	449.0 -> 99.0	54.0	27.0	81.0

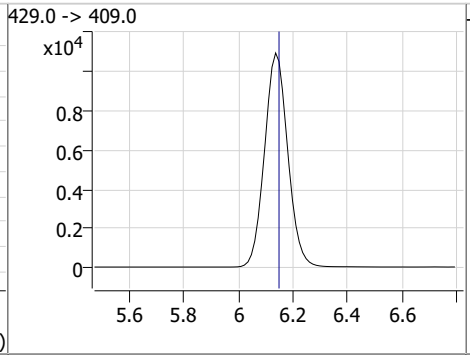


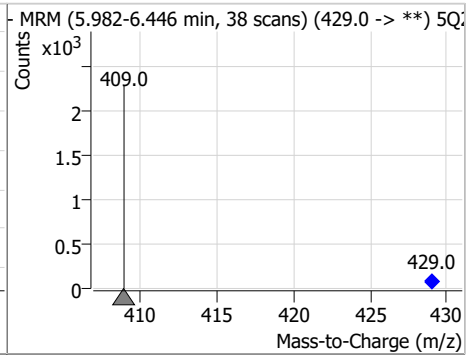




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	8.78	6.14	-0.01	64595				

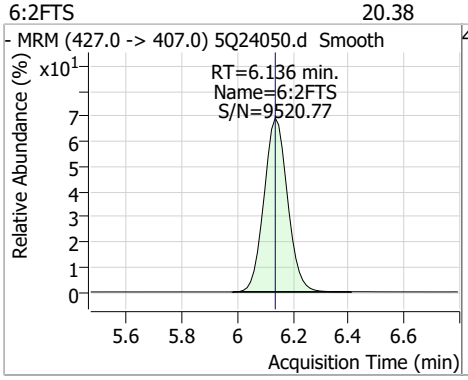


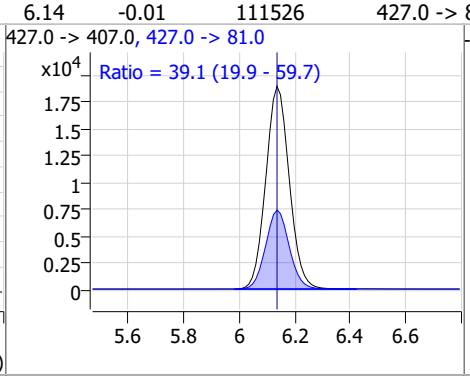


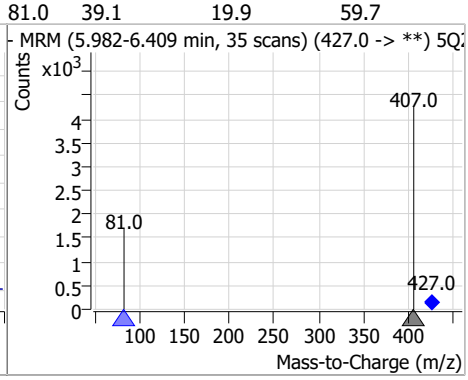


Perfluorinated Compounds by LC/MS/MS

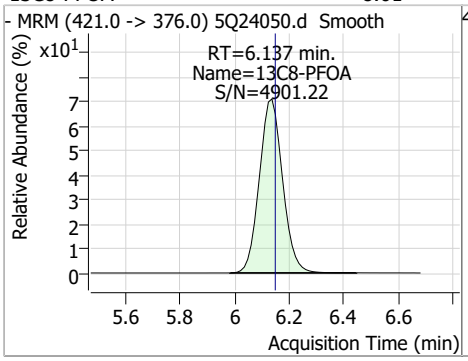
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	20.38	6.14	-0.01	111526	427.0 -> 81.0	39.1	19.9	59.7

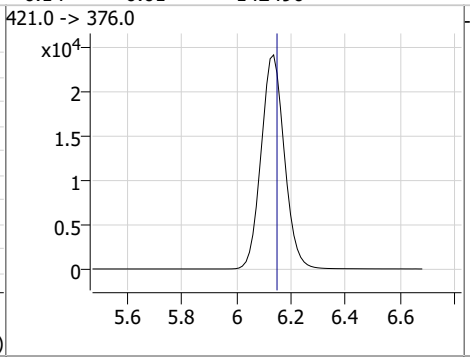


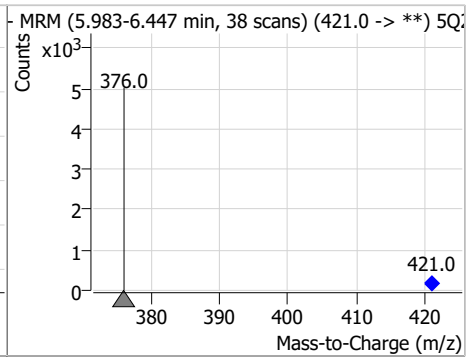




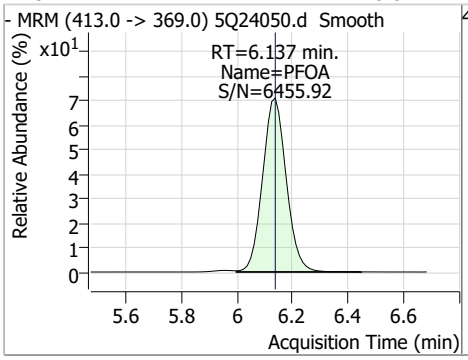
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	8.61	6.14	-0.01	142490				

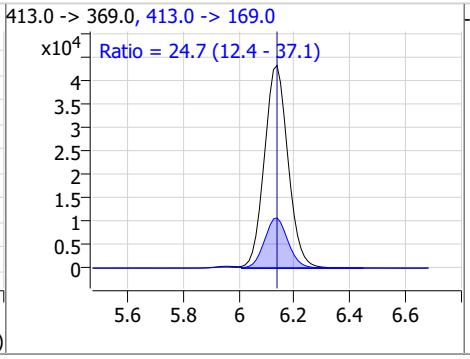


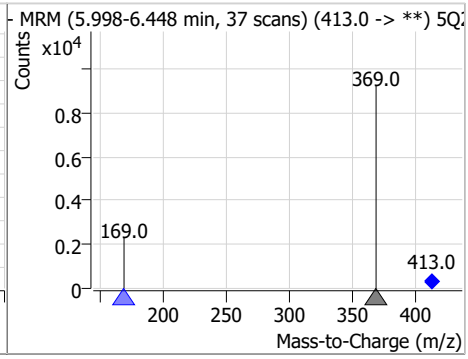




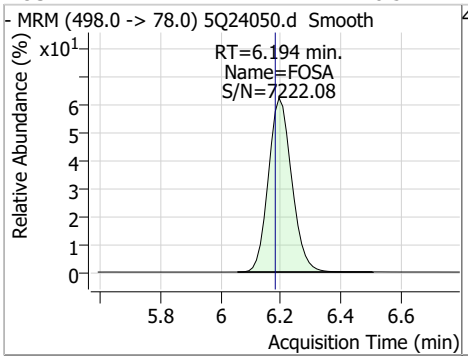
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	18.81	6.14	-0.01	255936	413.0 -> 169.0	24.7	12.4	37.1

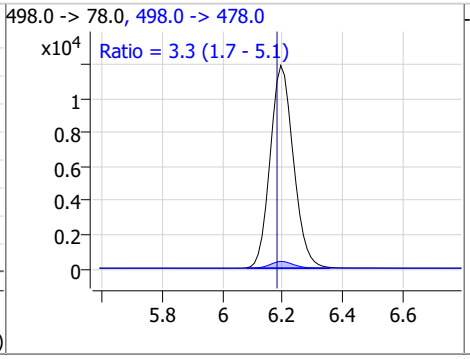


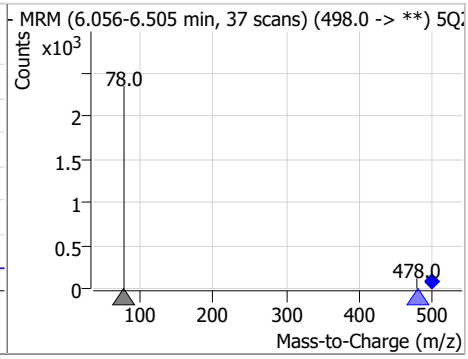




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	18.54	6.19	0.00	63778	498.0 -> 478.0	3.3	1.7	5.1

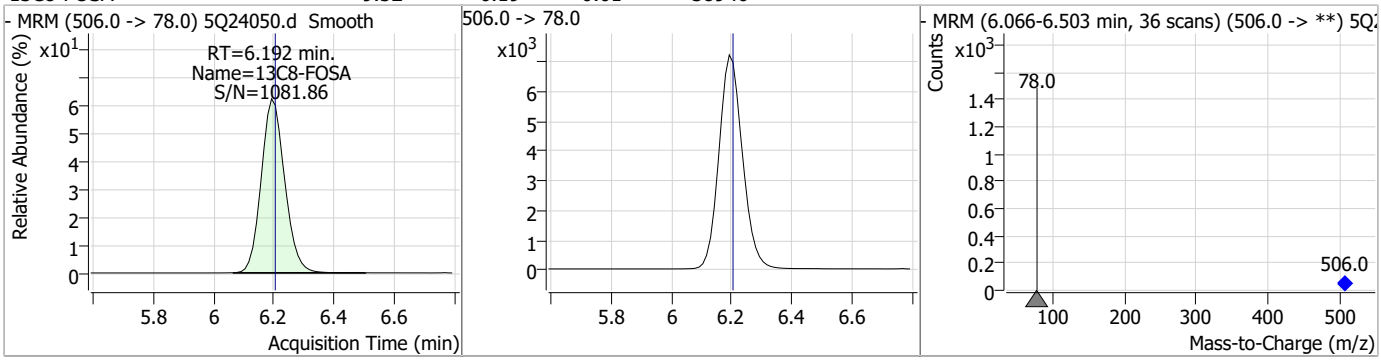




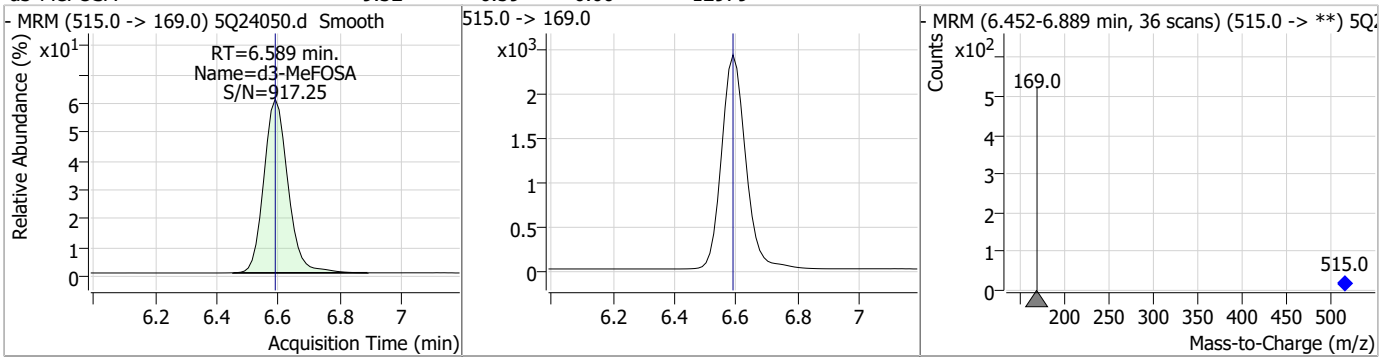


Perfluorinated Compounds by LC/MS/MS

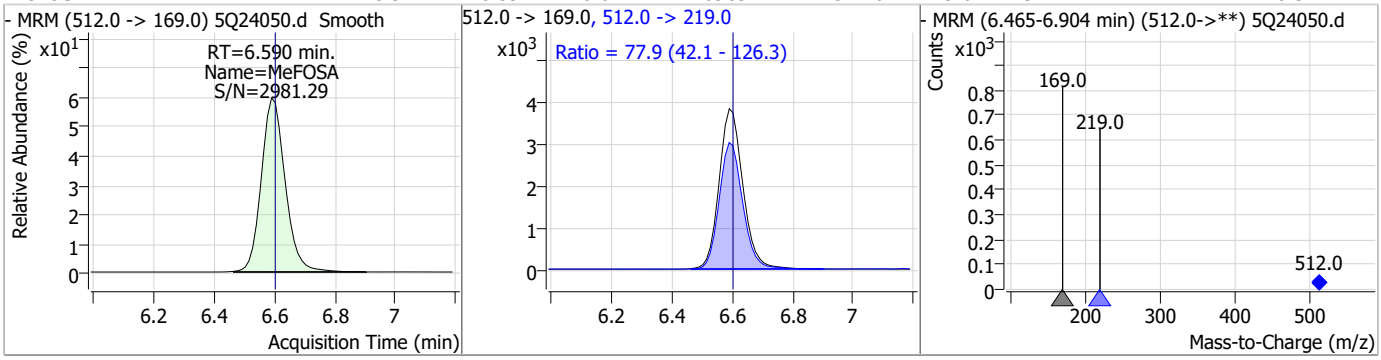
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	9.52	6.19	-0.01	38946				



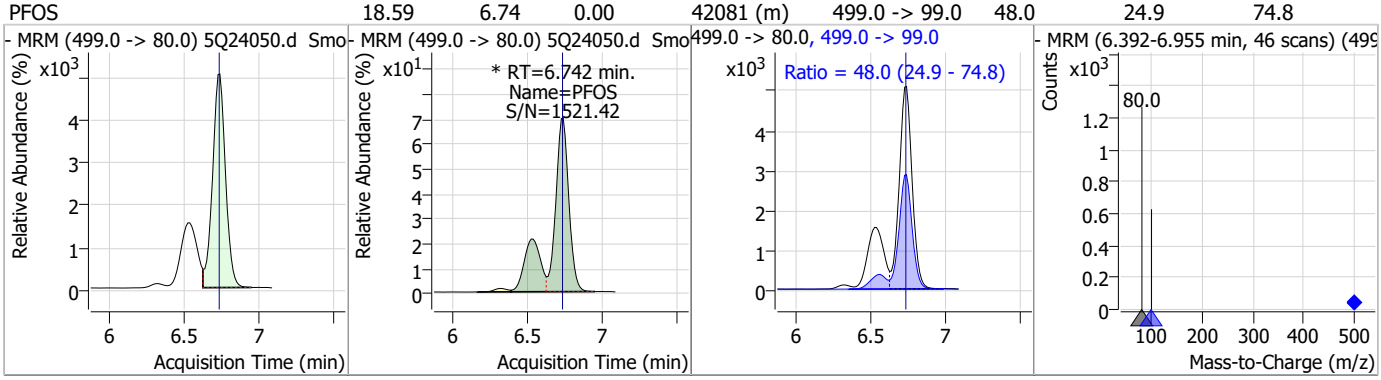
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	9.32	6.59	0.00	12979				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	18.92	6.59	-0.01	20969	512.0 -> 219.0	77.9	42.1	126.3

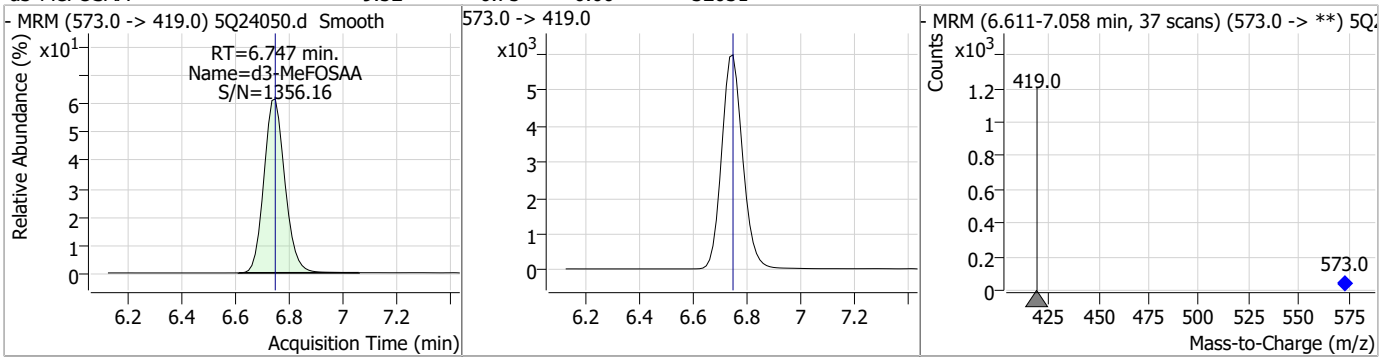


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	18.59	6.74	0.00	42081 (m)	499.0 -> 99.0	48.0	24.9	74.8

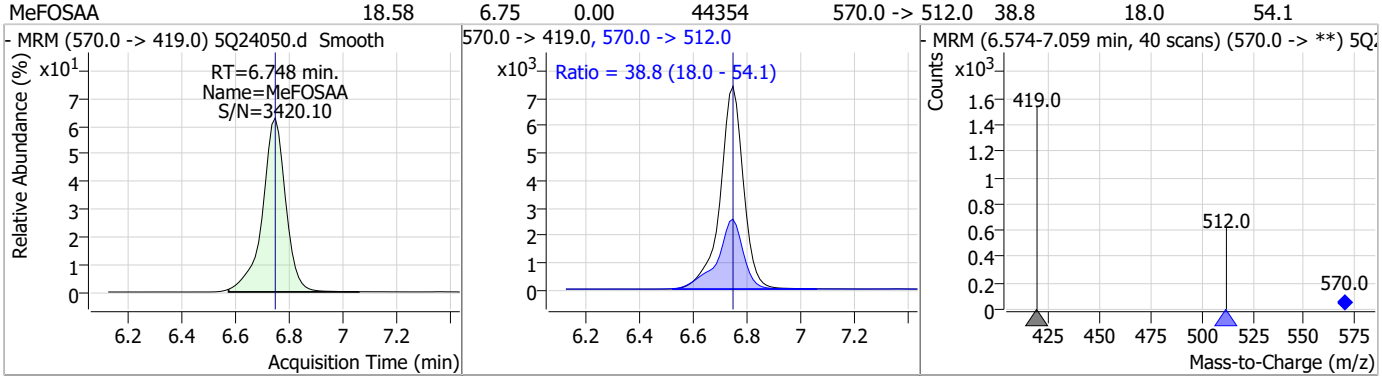


Perfluorinated Compounds by LC/MS/MS

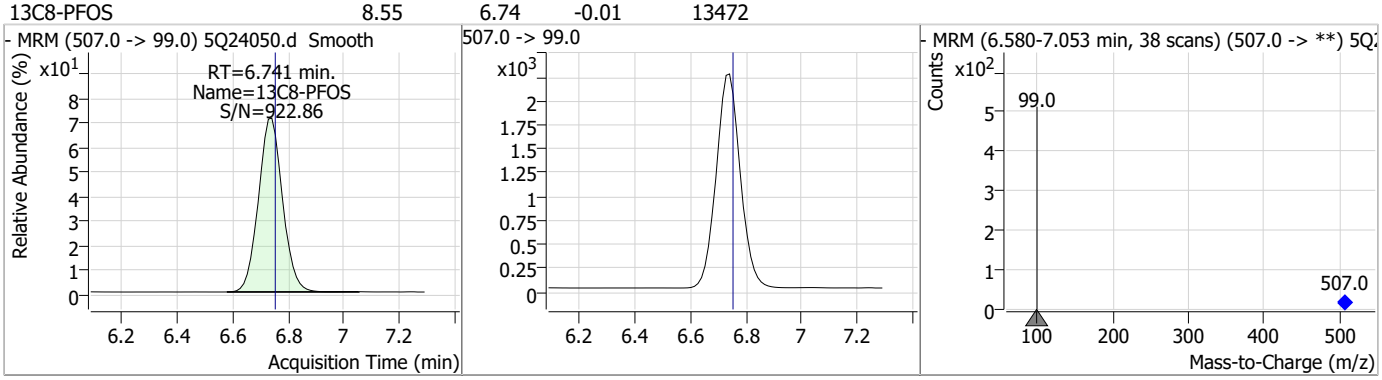
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	9.52	6.75	0.00	32031				



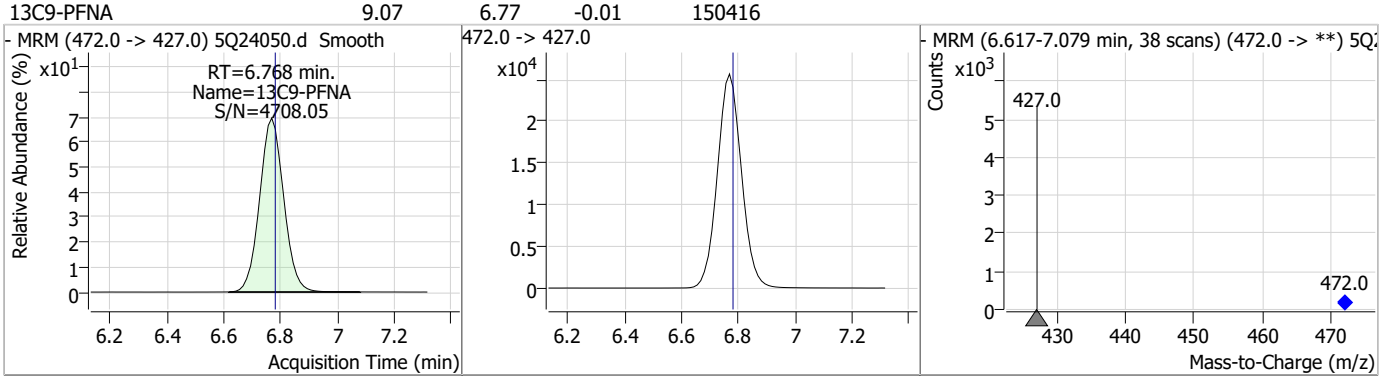
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	18.58	6.75	0.00	44354	570.0 -> 512.0	38.8	18.0	54.1



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	8.55	6.74	-0.01	13472				

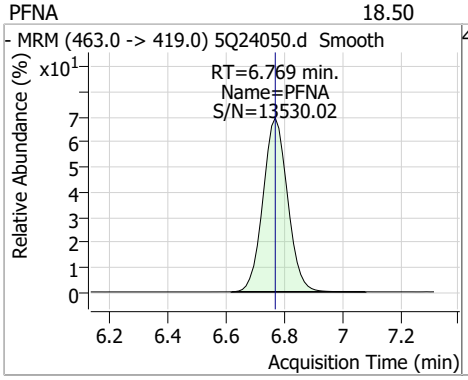


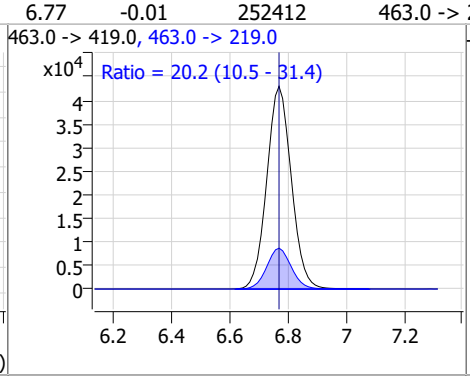
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	9.07	6.77	-0.01	150416				

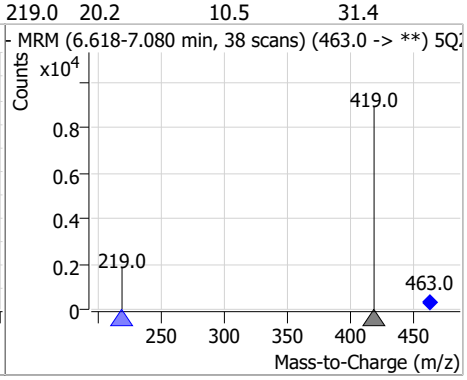


Perfluorinated Compounds by LC/MS/MS

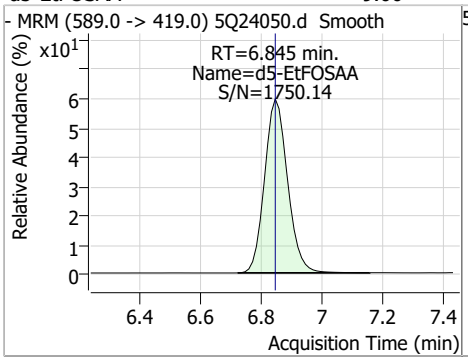
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	18.50	6.77	-0.01	252412	463.0 -> 219.0	20.2	10.5	31.4

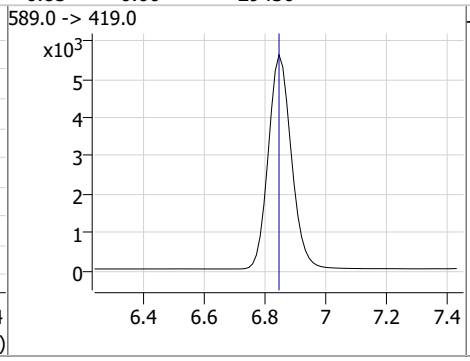


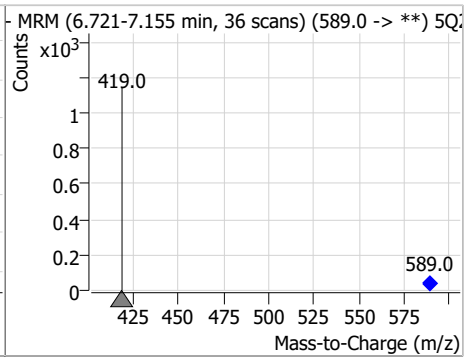




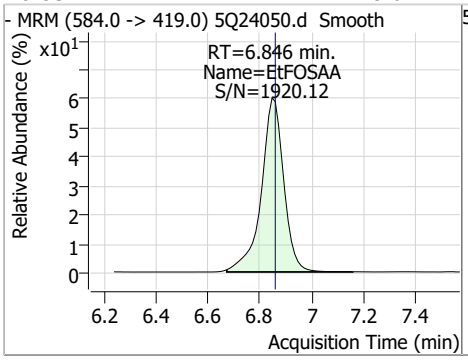
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	9.66	6.85	0.00	29430				

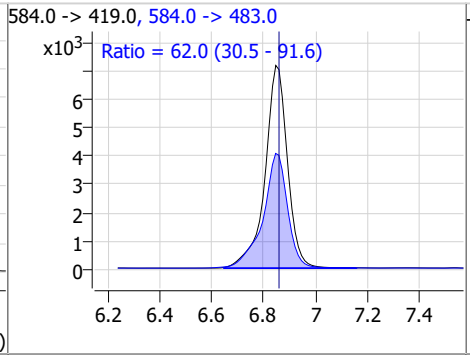


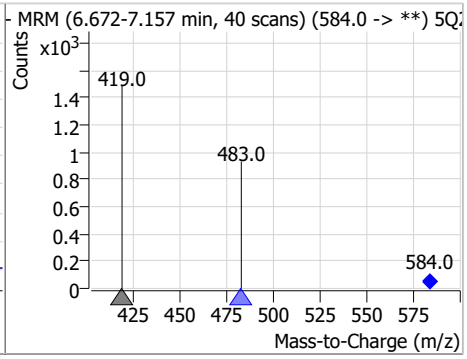




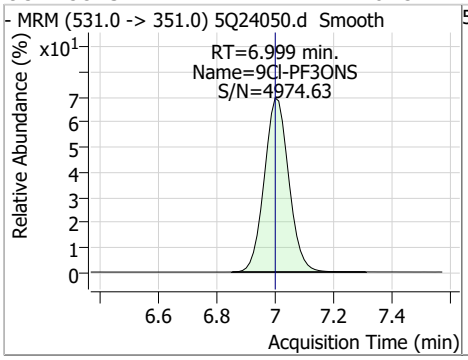
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	19.04	6.85	-0.01	42869	584.0 -> 483.0	62.0	30.5	91.6

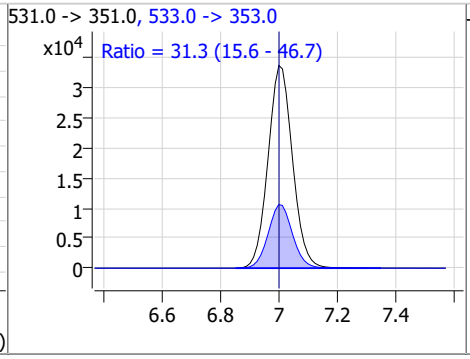


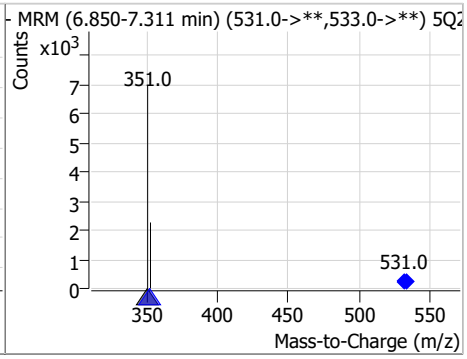




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	18.43	7.00	-0.01	196002	533.0 -> 353.0	31.3	15.6	46.7

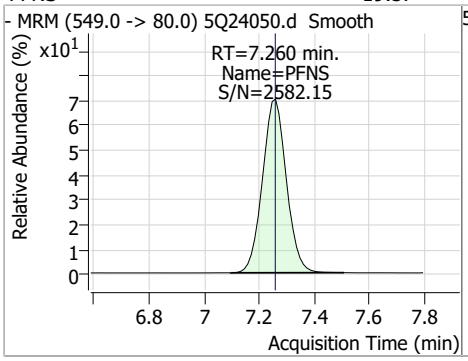


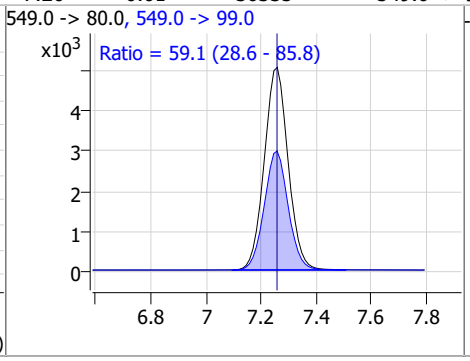


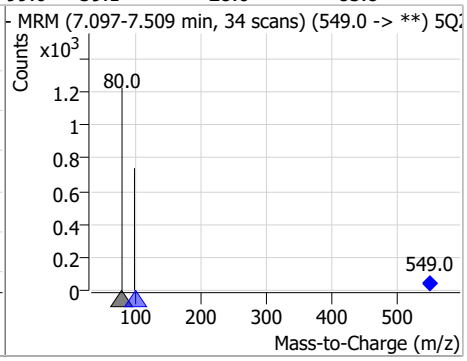


Perfluorinated Compounds by LC/MS/MS

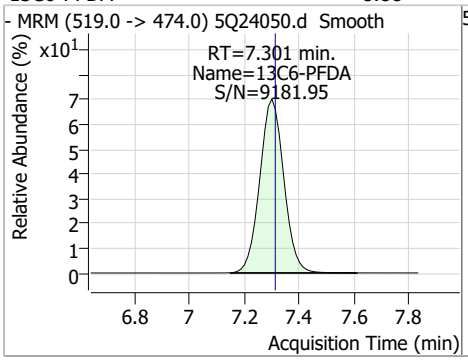
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	19.57	7.26	-0.01	30335	549.0 -> 99.0	59.1	28.6	85.8

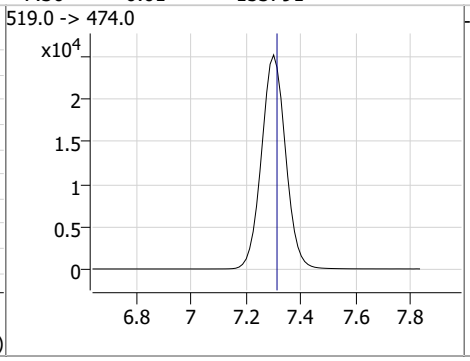


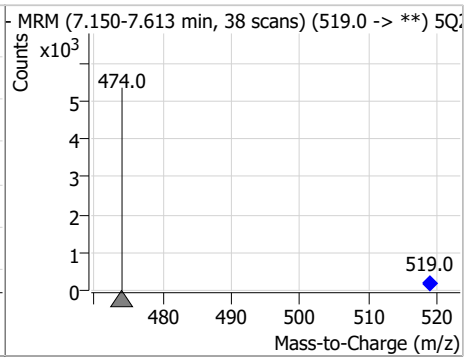




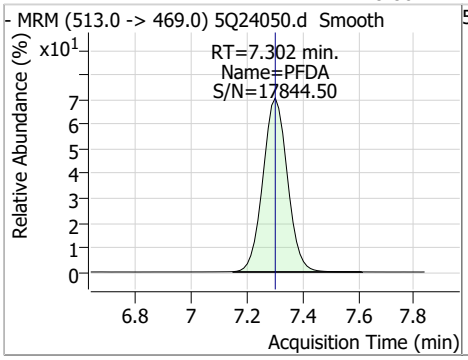
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	8.88	7.30	-0.01	153791				

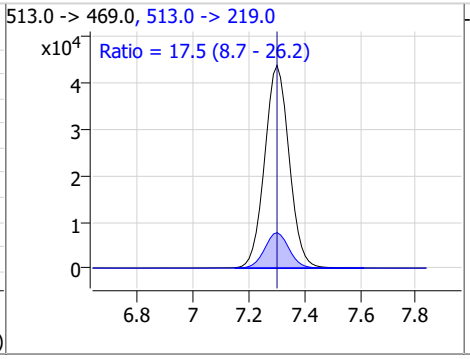


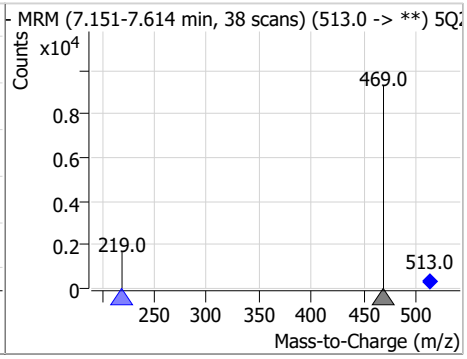




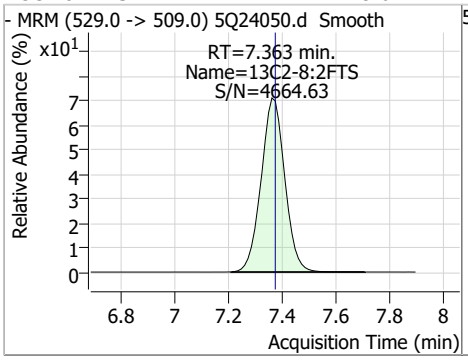
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	18.86	7.30	-0.01	266800	513.0 -> 219.0	17.5	8.7	26.2

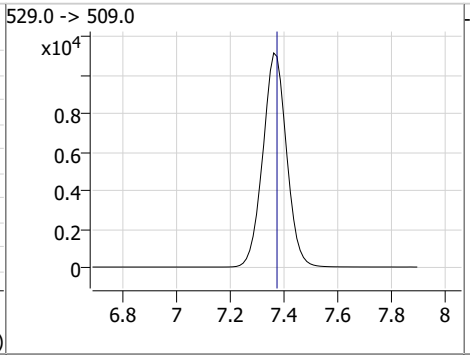


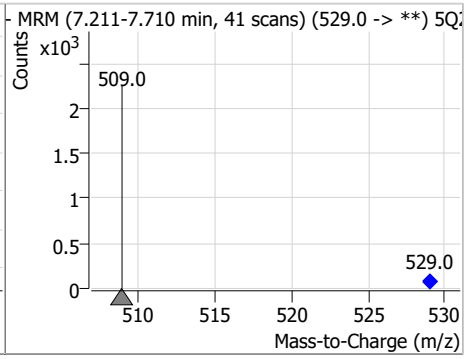




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	9.62	7.36	-0.01	68032				

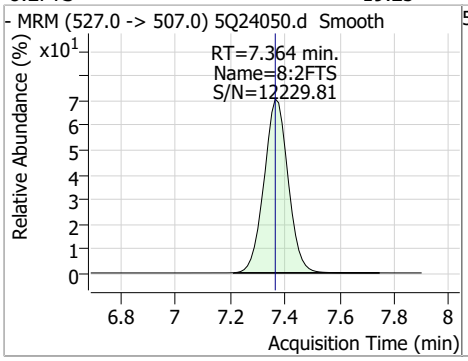


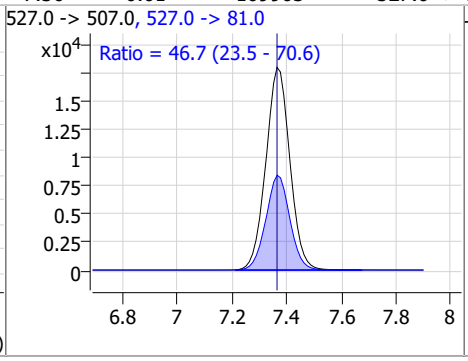


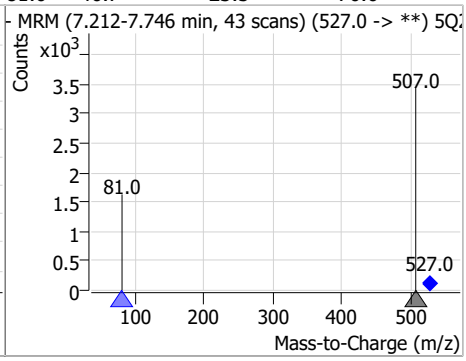


Perfluorinated Compounds by LC/MS/MS

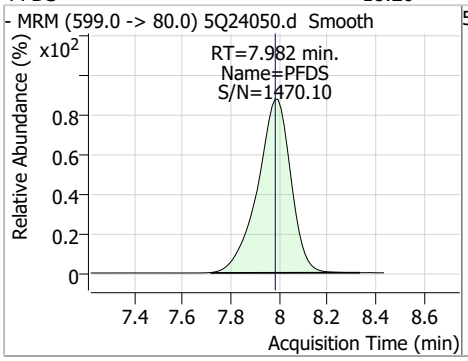
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	19.25	7.36	-0.01	109963	527.0 -> 81.0	46.7	23.5	70.6

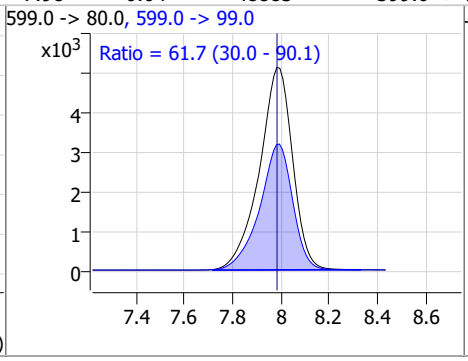


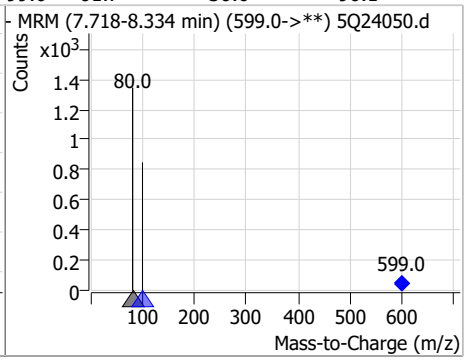




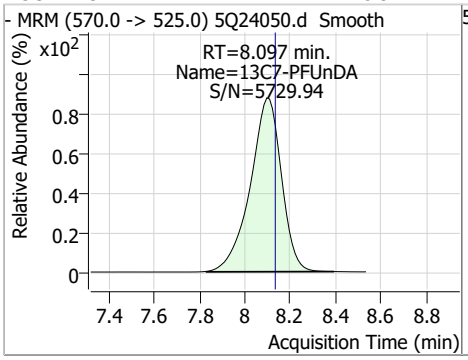
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	18.20	7.98	-0.04	48883	599.0 -> 99.0	61.7	30.0	90.1

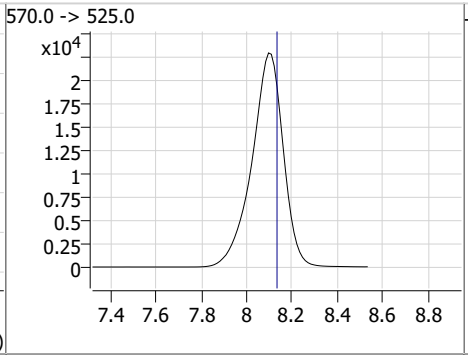


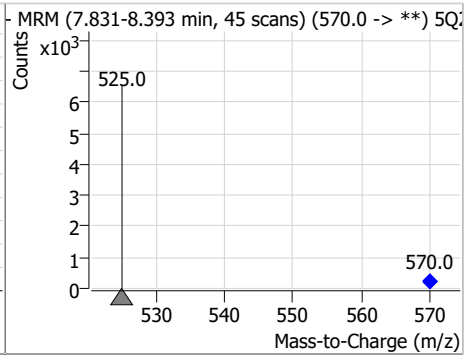




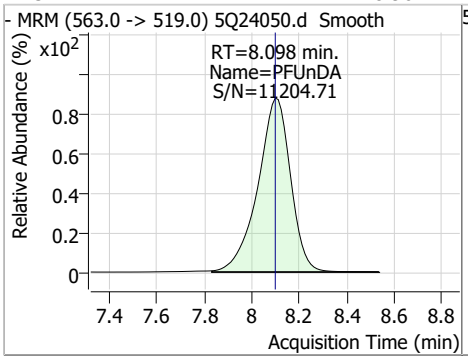
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	8.92	8.10	-0.04	217776				

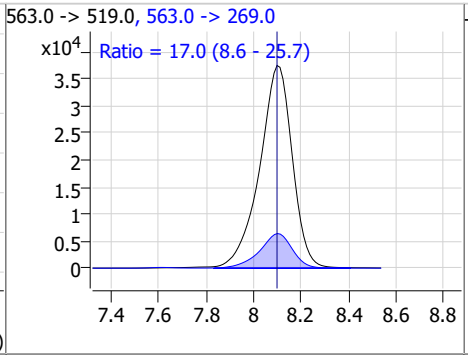


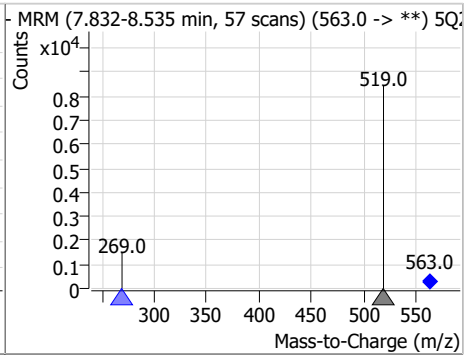




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	18.96	8.10	-0.04	357971	563.0 -> 269.0	17.0	8.6	25.7

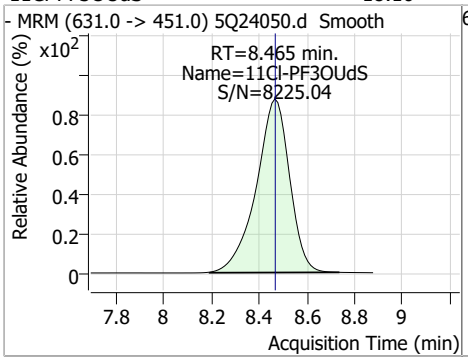


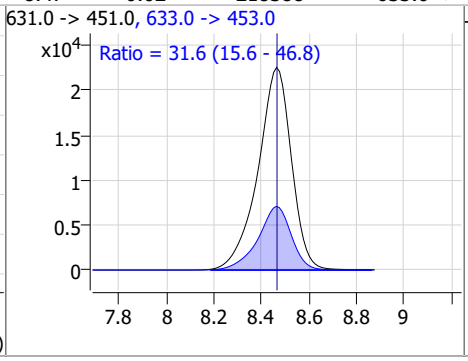


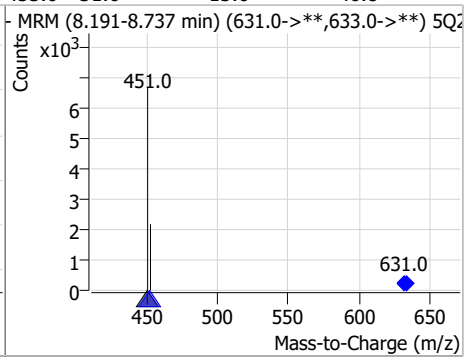


Perfluorinated Compounds by LC/MS/MS

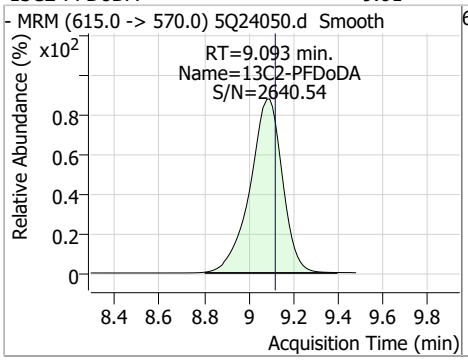
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	18.16	8.47	-0.02	218388	633.0 -> 453.0	31.6	15.6	46.8

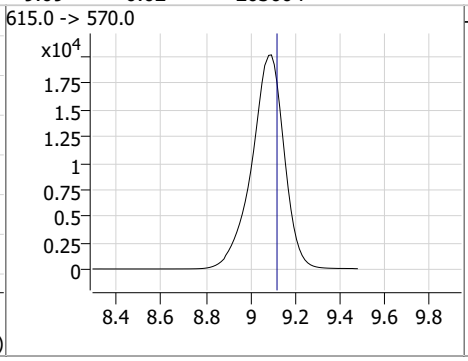


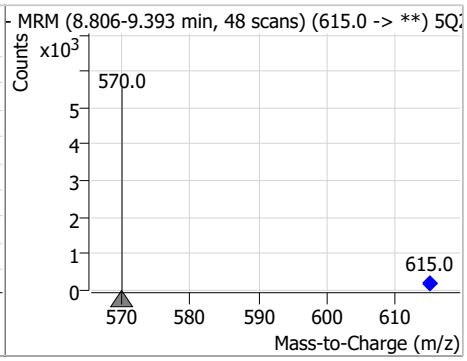




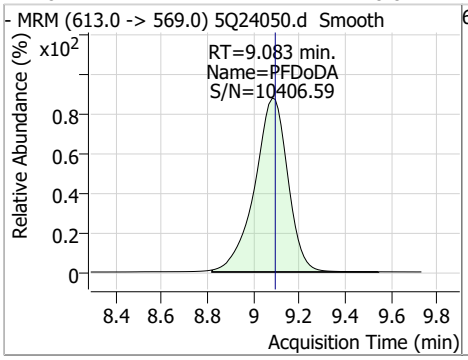
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	9.01	9.09	-0.02	203604				

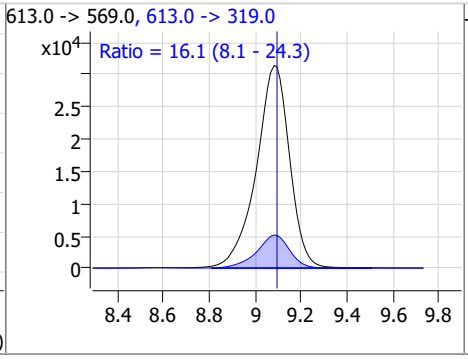


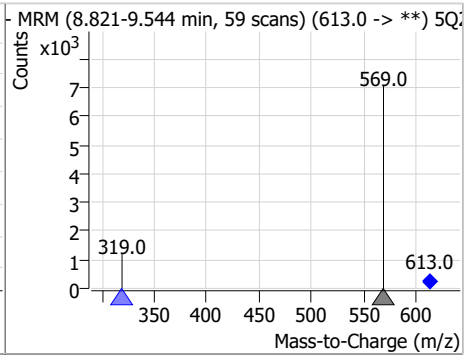




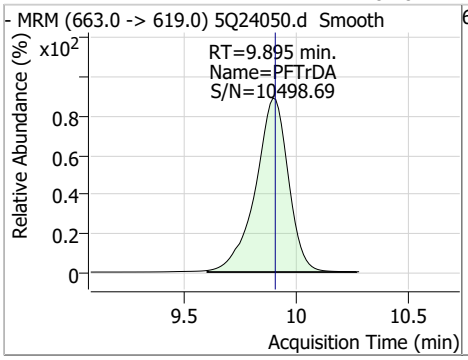
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	18.84	9.08	-0.04	315693	613.0 -> 319.0	16.1	8.1	24.3

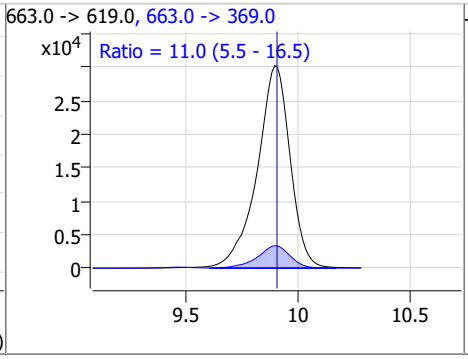


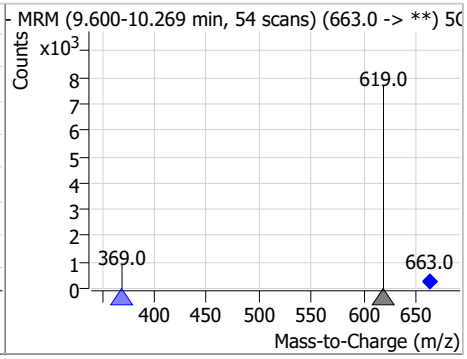




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	18.48	9.89	-0.04	310841	663.0 -> 369.0	11.0	5.5	16.5

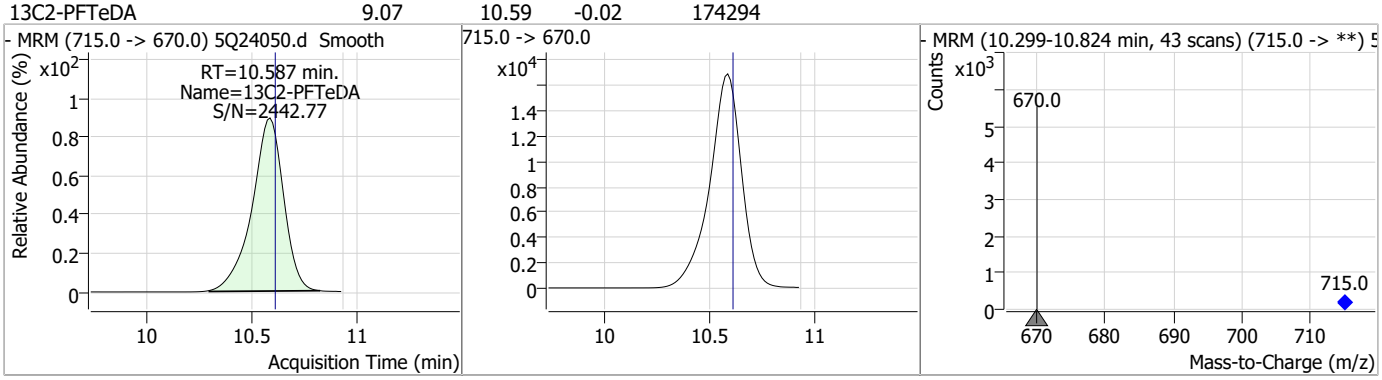




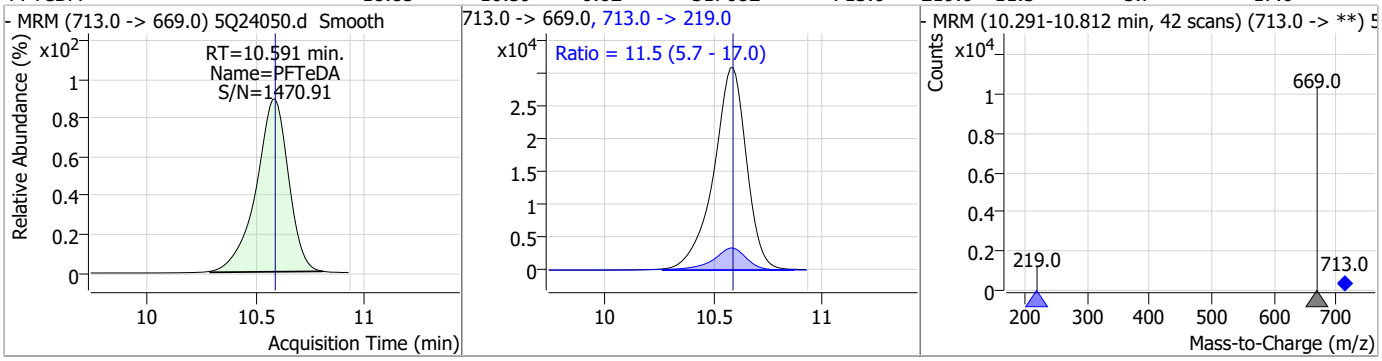


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	9.07	10.59	-0.02	174294				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	18.85	10.59	-0.02	317082	713.0 -> 219.0	11.5	5.7	17.0



Manual Integration Approval Summary

Sample Number: S5Q377-CC377
Lab FileID: 5Q24050.D
Injection Time: 01/02/24 23:42
Method: EPA 537M QSM5.3 B-15
Analyst approved: 01/03/24 16:03 Lindsay Ritner
Supervisor approved: 01/04/24 12:54 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.45	Split peak
Perfluorooctanesulfonic acid	1763-23-1		6.74	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Natasha Gumtie 01/04/24 12:54

Perfluorinated Compounds by LC/MS/MS

Data File : 5Q24074.d
Operator : lindsayr
Acq. Method : 537_ID.m
Acq. Date-Time : 1/3/2024 6:19:51 AM
Sample Name : cc377-20
Vial : P1-A7
DA Method File : ID_010224_S5Q377.quantmethod.xml
Batch Name : s5q377.batch.bin
Sample Information : OP401,S5Q377,250,,,1.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.975	217.0 -> 172.0	34125	10.00	µg/L	-0.013
M5-PFPeA	3.407	268.0 -> 223.0	57738	10.00	µg/L	-0.025
M5-PFHxA	4.527	318.0 -> 273.0	92040	10.00	µg/L	-0.037
M4-PFHpA	5.400	367.0 -> 322.0	96158	10.00	µg/L	-0.025
M8-PFOA	6.112	421.0 -> 376.0	139928	10.00	µg/L	-0.038
M9-PFNA	6.756	472.0 -> 427.0	148442	10.00	µg/L	-0.025
M6-PFDA	7.288	519.0 -> 474.0	156760	10.00	µg/L	-0.025
M7-PFUnDA	8.084	570.0 -> 525.0	221110	10.00	µg/L	-0.050
M2-PFDoDA	9.081	615.0 -> 570.0	207573	10.00	µg/L	-0.037
M2-PFTeDA	10.574	715.0 -> 670.0	177422	10.00	µg/L	-0.037
M8-FOSA	6.192	506.0 -> 78.0	38653	10.00	µg/L	-0.012
M3-PFBS	3.599	302.0 -> 99.0	7136	10.00	µg/L	-0.037
M3-PFHxS	5.419	402.0 -> 99.0	10109	10.00	µg/L	-0.025
M8-PFOS	6.729	507.0 -> 99.0	13198	10.00	µg/L	-0.025
M2-4:2FTS	4.449	329.0 -> 309.0	34112	10.00	µg/L	-0.037
M2-6:2FTS	6.122	429.0 -> 409.0	66387	10.00	µg/L	-0.026
M2-8:2FTS	7.363	529.0 -> 509.0	68668	10.00	µg/L	-0.012
M3-MeFOSAA	6.735	573.0 -> 419.0	32292	10.00	µg/L	-0.012
M3-HFPO-DA	4.794	287.0 -> 169.0	4485	10.00	µg/L	-0.038
M3-MeFOSA	6.589	515.0 -> 169.0	13428	10.00	µg/L	0.000
M5-EtFOSAA	6.845	589.0 -> 419.0	30143	10.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.449	329.0 -> 309.0	34112	8.73	µg/L	-0.037
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 87.3%		
13C2-6:2FTS	6.122	429.0 -> 409.0	66387	9.03	µg/L	-0.026
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 90.3%		
13C2-8:2FTS	7.363	529.0 -> 509.0	68668	9.71	µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 97.1%		
13C2-PFDoDA	9.081	615.0 -> 570.0	207573	9.18	µg/L	-0.037
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 91.8%		
13C2-PFTeDA	10.574	715.0 -> 670.0	177422	9.23	µg/L	-0.037
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 92.3%		
13C3-PFBS	3.599	302.0 -> 99.0	7136	7.73	µg/L	-0.037
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 77.3%		
13C3-PFHxS	5.419	402.0 -> 99.0	10109	8.95	µg/L	-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 89.5%		
13C4-PFBA	1.975	217.0 -> 172.0	34125	7.74	µg/L	-0.013
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 77.4%		
13C4-PFHpA	5.400	367.0 -> 322.0	96158	8.14	µg/L	-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 81.4%		
13C5-PFHxA	4.527	318.0 -> 273.0	92040	8.02	µg/L	-0.037
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 80.2%		
13C5-PFPeA	3.407	268.0 -> 223.0	57738	7.77	µg/L	-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 77.7%		
13C6-PFDA	7.288	519.0 -> 474.0	156760	9.06	µg/L	-0.025

Perfluorinated Compounds by LC/MS/MS

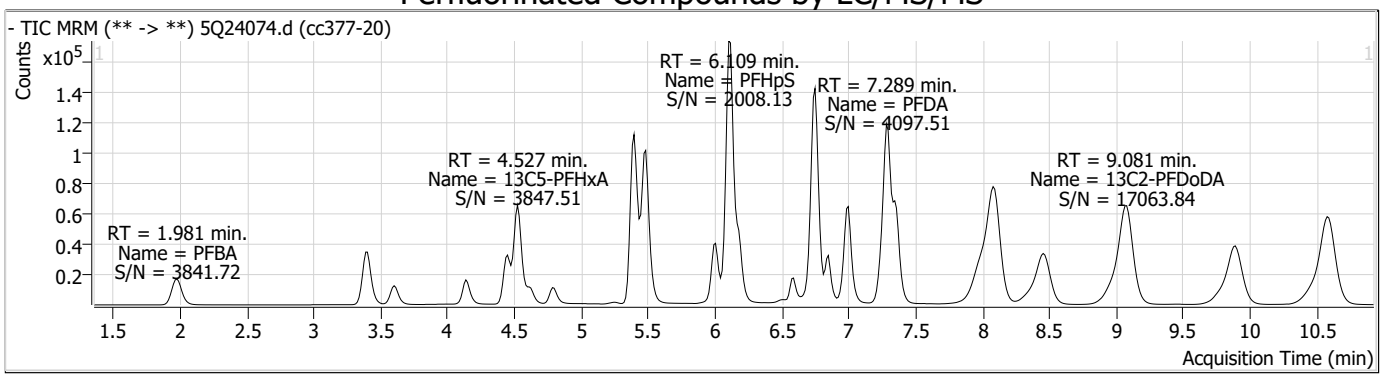
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 90.6%			
13C7-PFUnDA	8.084	570.0 -> 525.0	221110	9.06	µg/L		-0.050
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 90.6%			
13C8-FOSA	6.192	506.0 -> 78.0	38653	9.45	µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 94.5%			
13C8-PFOA	6.112	421.0 -> 376.0	139928	8.46	µg/L		-0.038
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 84.6%			
13C8-PFOS	6.729	507.0 -> 99.0	13198	8.38	µg/L		-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 83.8%			
13C9-PFNA	6.756	472.0 -> 427.0	148442	8.96	µg/L		-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 89.6%			
d3-MeFOSAA	6.735	573.0 -> 419.0	32292	9.60	µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 96.0%			
13C3-HFPO-DA	4.794	287.0 -> 169.0	4485	7.51	µg/L		-0.038
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 75.1%			
d3-MeFOSA	6.589	515.0 -> 169.0	13428	9.64	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 96.4%			
d5-EtFOSAA	6.845	589.0 -> 419.0	30143	9.89	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 98.9%			
Target Compounds							QValue
4:2FTS	4.450	327.0 -> 307.0	63669	19.62	µg/L		99
		327.0 -> 81.0	35173				
6:2FTS	6.123	427.0 -> 407.0	111112	19.75	µg/L		99
		427.0 -> 81.0	43430				
8:2FTS	7.364	527.0 -> 507.0	113583	19.70	µg/L		98
		527.0 -> 81.0	52341				
EtFOSAA	6.846	584.0 -> 419.0	44221	19.17	µg/L		100
		584.0 -> 483.0	27177				
FOSA	6.181	498.0 -> 78.0	63731	18.67	µg/L		99
		498.0 -> 478.0	2017				
MeFOSAA	6.736	570.0 -> 419.0	45365	18.85	µg/L		97
		570.0 -> 512.0	17217				
PFBA	1.981	213.0 -> 169.0	56669	18.49	µg/L		100
PFBS	3.603	299.0 -> 80.0	32376	18.51	µg/L		99
		299.0 -> 99.0	14160				
PFDA	7.289	513.0 -> 469.0	270099	18.73	µg/L		99
		513.0 -> 219.0	46299				
PFDoDA	9.067	613.0 -> 569.0	321898	18.84	µg/L		100
		613.0 -> 319.0	51499				
PFDS	7.970	599.0 -> 80.0	49029	17.98	µg/L		98
		599.0 -> 99.0	30280				
PFHpA	5.401	363.0 -> 319.0	203686	19.25	µg/L		99
		363.0 -> 169.0	41833				
PFHpS	6.109	449.0 -> 80.0	32611	18.69	µg/L		98
		449.0 -> 99.0	18024				
PFHxA	4.528	313.0 -> 269.0	160435	18.71	µg/L		100
		313.0 -> 119.0	6620				
PFHxS	5.421	399.0 -> 80.0	32946	18.18	µg/L	m	98
		399.0 -> 99.0	18824				
PFNA	6.756	463.0 -> 419.0	246422	18.30	µg/L		100
		463.0 -> 219.0	51789				
PFNS	7.248	549.0 -> 80.0	29743	19.59	µg/L		97
		549.0 -> 99.0	17730				
PFOA	6.125	413.0 -> 369.0	253597	18.98	µg/L		100
		413.0 -> 169.0	62601				
PFOS	6.730	499.0 -> 80.0	41697	18.80	µg/L	m	99

Perfluorinated Compounds by LC/MS/MS

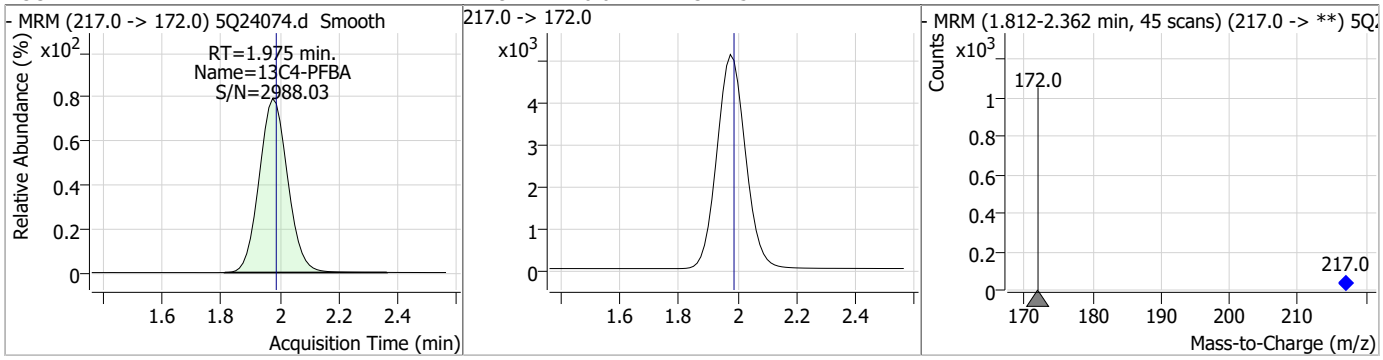
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		499.0 -> 99.0	20394			
PFPeA	3.409	263.0 -> 219.0	103223	18.96	µg/L	100
PFPeS	4.624	349.0 -> 80.0	23266	19.15	µg/L	100
		349.0 -> 99.0	12113			
PFTeDA	10.578	713.0 -> 669.0	331235	19.34	µg/L	99
		713.0 -> 219.0	36516			
PFTrDA	9.895	663.0 -> 619.0	313056	18.25	µg/L	100
		663.0 -> 369.0	34516			
PFUnDA	8.086	563.0 -> 519.0	358174	18.68	µg/L	100
		563.0 -> 269.0	61563			
11Cl-PF3OUdS	8.453	631.0 -> 451.0	219490	17.90	µg/L	100
		633.0 -> 453.0	68581			
9Cl-PF3ONS	6.999	531.0 -> 351.0	196948	18.17	µg/L	100
		533.0 -> 353.0	61296			
ADONA	5.489	377.0 -> 251.0	284826	17.11	µg/L	100
		377.0 -> 85.0	102893			
HFPO-DA	4.803	329.0 -> 169.0	32869	18.03	µg/L	99
		285.0 -> 169.0	7370			
MeFOSA	6.590	512.0 -> 169.0	21279	18.56	µg/L	97
		512.0 -> 219.0	17296			
4-PFECHS	6.006	461.0 -> 381.0	108198	18.26	µg/L	100
		461.0 -> 99.0	55175			
FBSA	4.145	298.0 -> 78.0	57646	18.94	µg/L	100
		298.0 -> 64.0	5500			
FHxSA	5.397	398.0 -> 78.0	66906	21.09	µg/L	99
		398.0 -> 64.0	6210			

 # = Qualifier out of range, m = manually integrated, + = Area summed

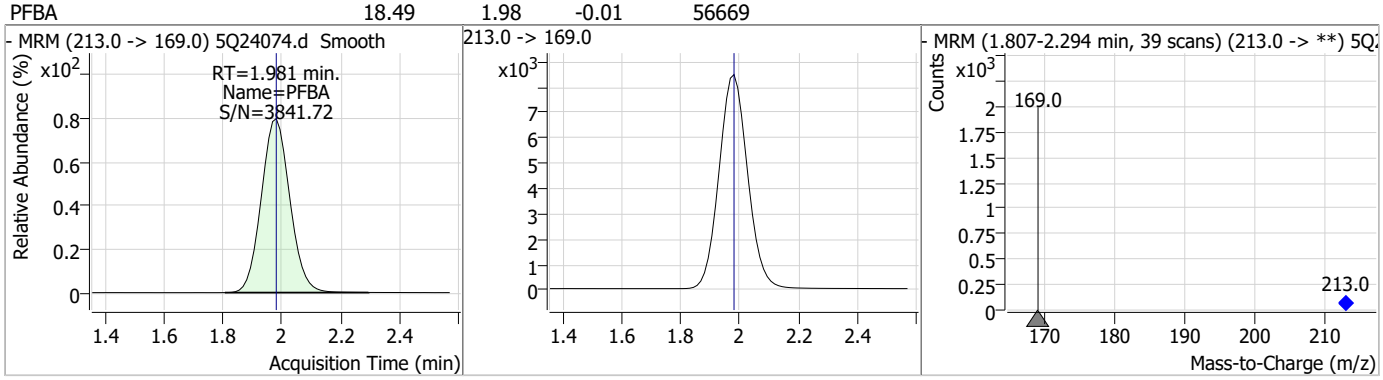
Perfluorinated Compounds by LC/MS/MS



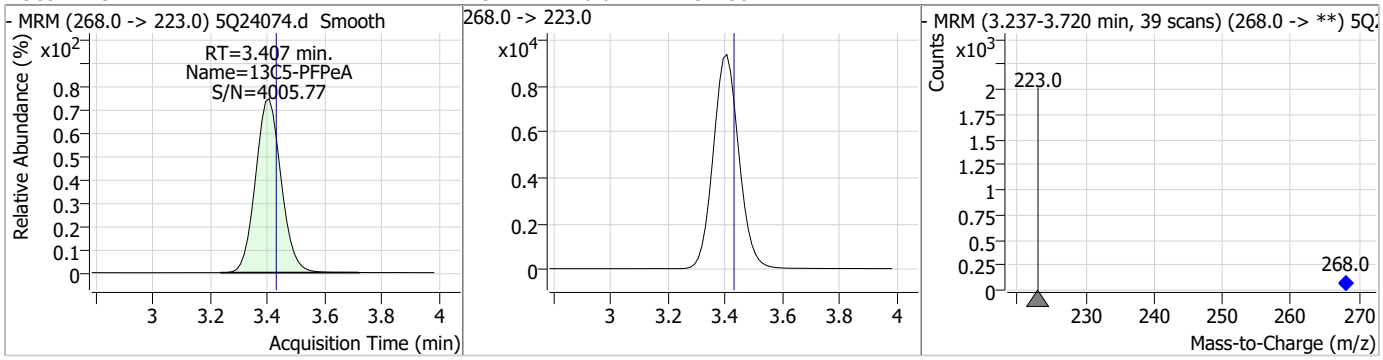
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	7.74	1.97	-0.01	34125				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	18.49	1.98	-0.01	56669				

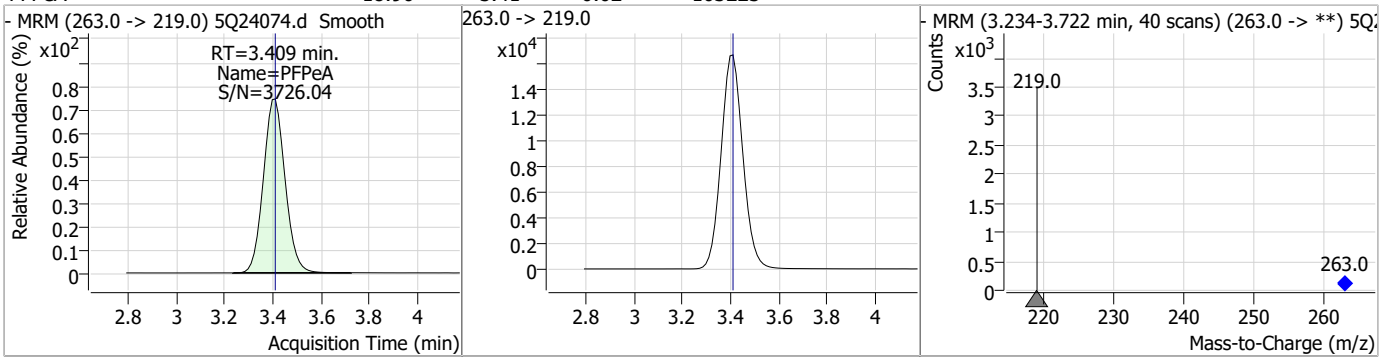


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	7.77	3.41	-0.02	57738				

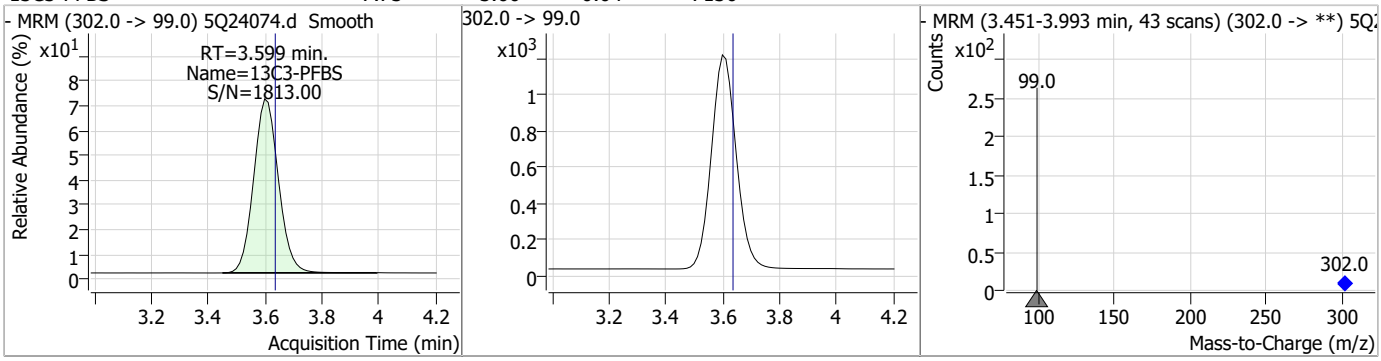


Perfluorinated Compounds by LC/MS/MS

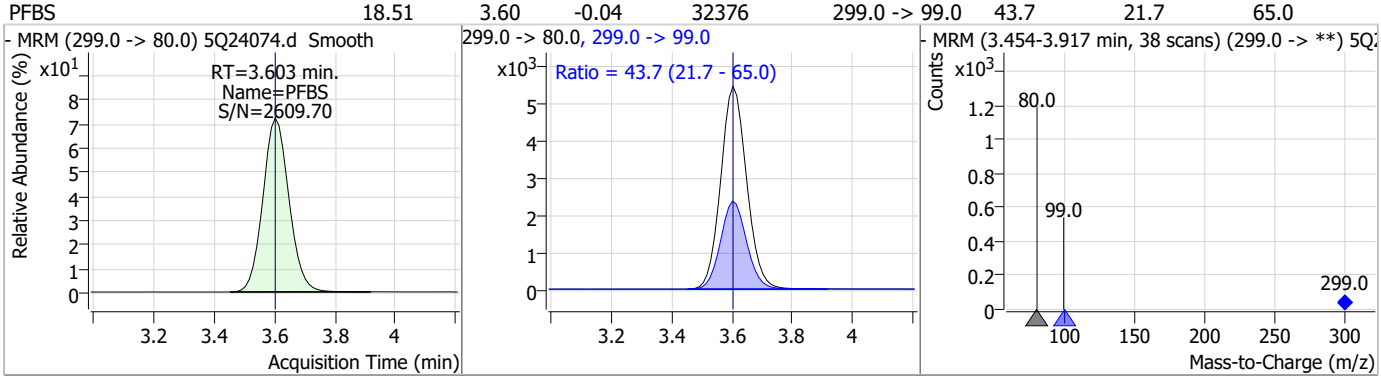
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	18.96	3.41	-0.02	103223				



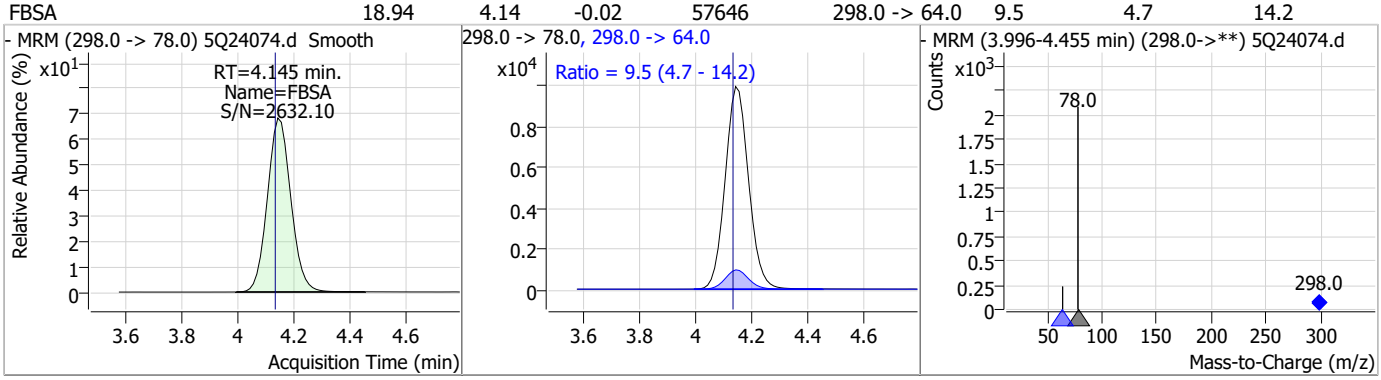
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	7.73	3.60	-0.04	7136				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	18.51	3.60	-0.04	32376	299.0 -> 99.0	43.7	21.7	65.0

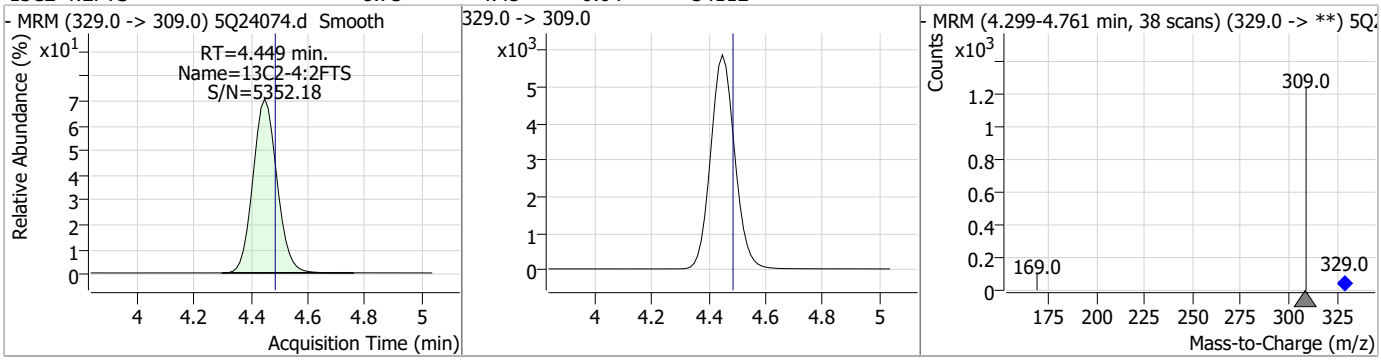


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	18.94	4.14	-0.02	57646	298.0 -> 64.0	9.5	4.7	14.2

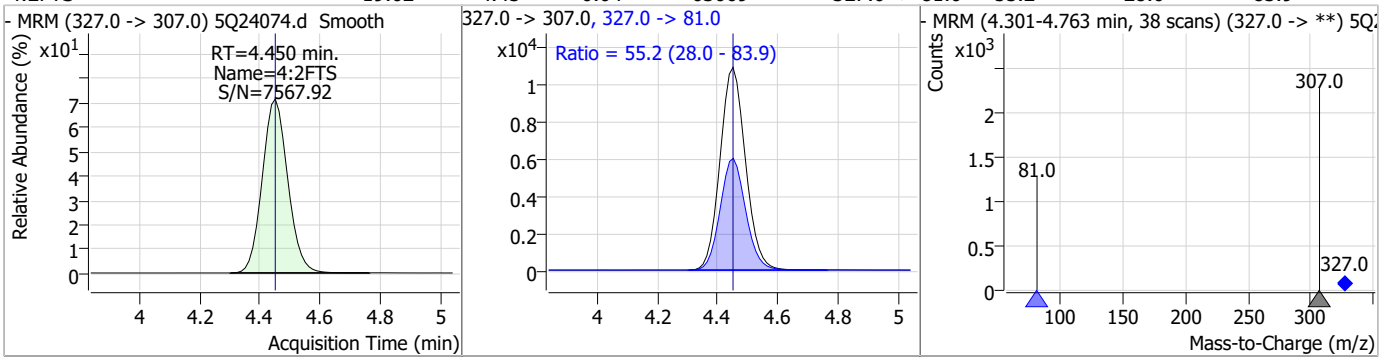


Perfluorinated Compounds by LC/MS/MS

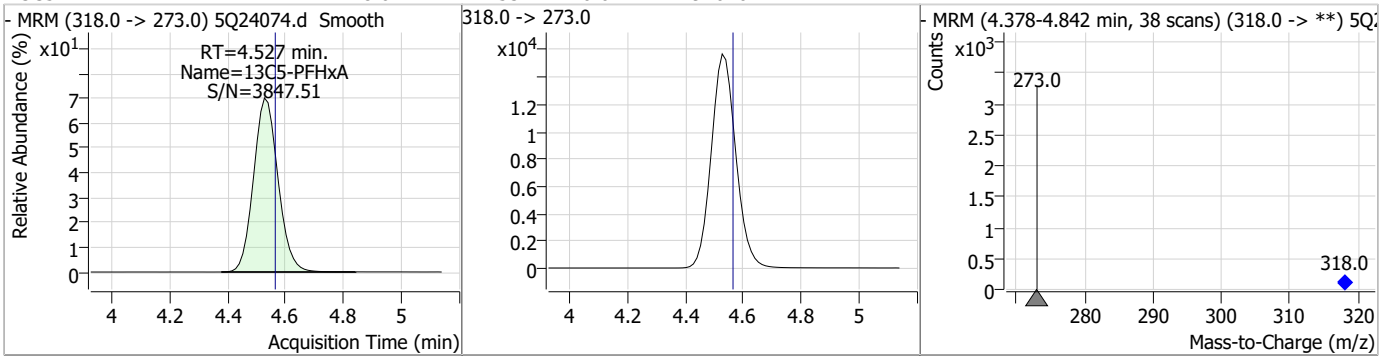
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	8.73	4.45	-0.04	34112				



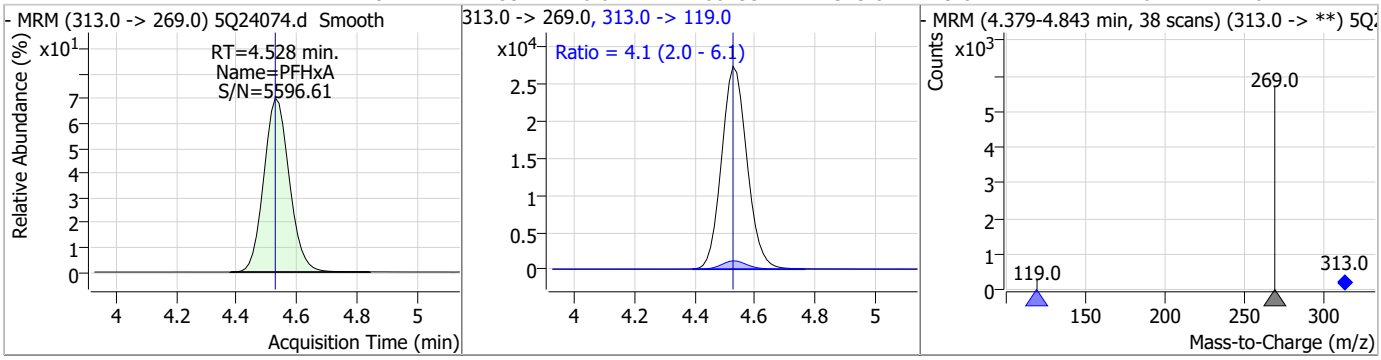
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	19.62	4.45	-0.04	63669	327.0 -> 81.0	55.2	28.0	83.9



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	8.02	4.53	-0.04	92040				

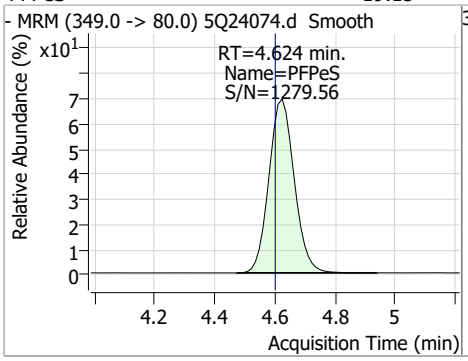


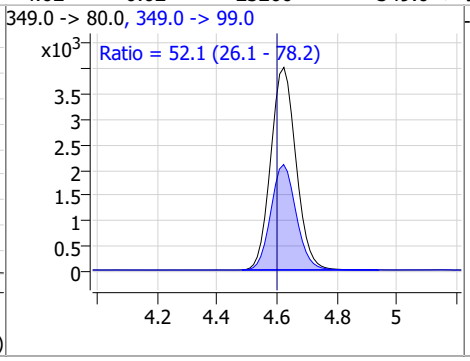
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	18.71	4.53	-0.04	160435	313.0 -> 119.0	4.1	2.0	6.1

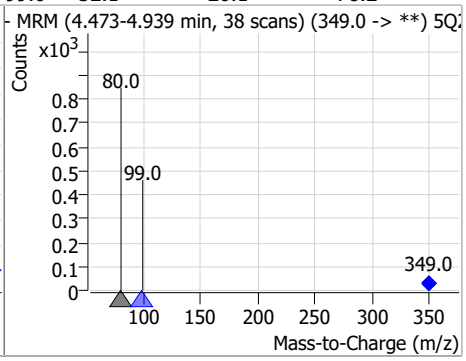


Perfluorinated Compounds by LC/MS/MS

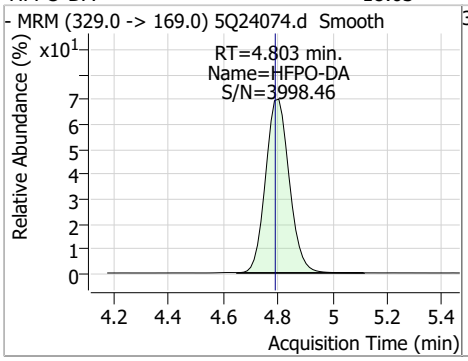
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	19.15	4.62	-0.02	23266	349.0 -> 99.0	52.1	26.1	78.2

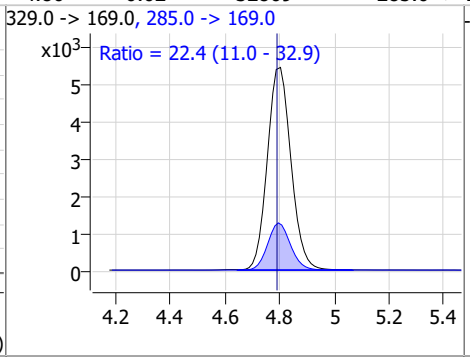


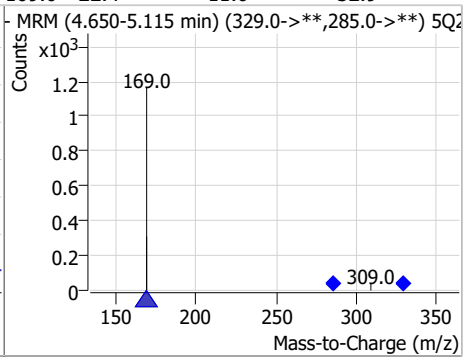




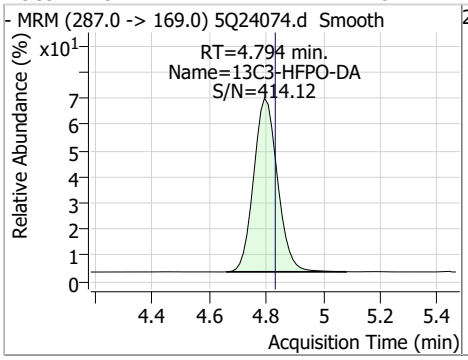
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	18.03	4.80	-0.02	32869	285.0 -> 169.0	22.4	11.0	32.9

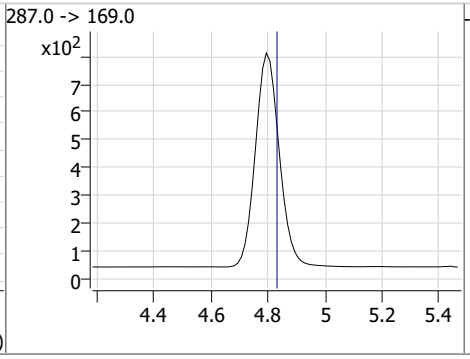


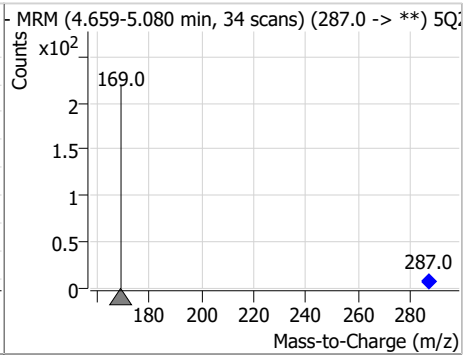




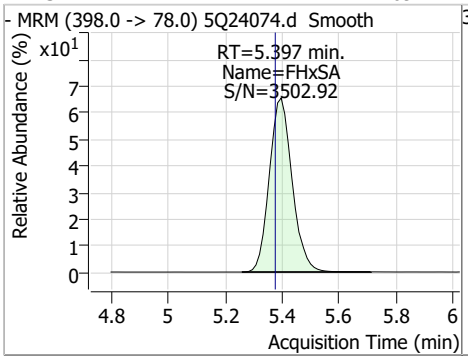
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	7.51	4.79	-0.04	4485				

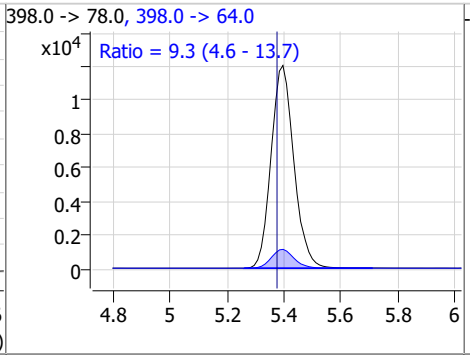


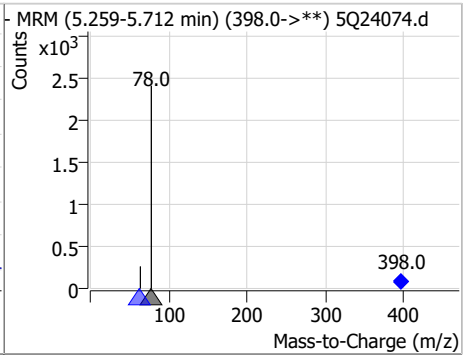




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	21.09	5.40	-0.01	66906	398.0 -> 64.0	9.3	4.6	13.7

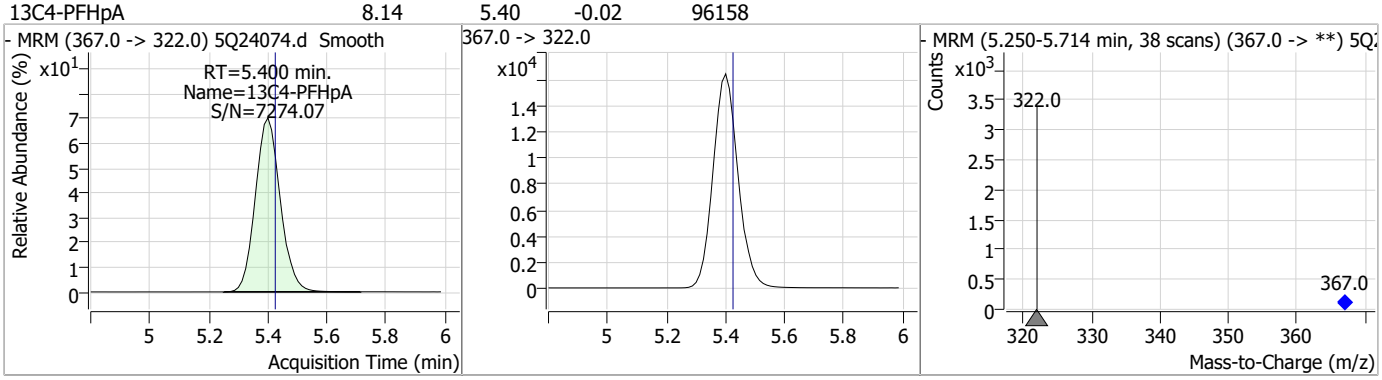




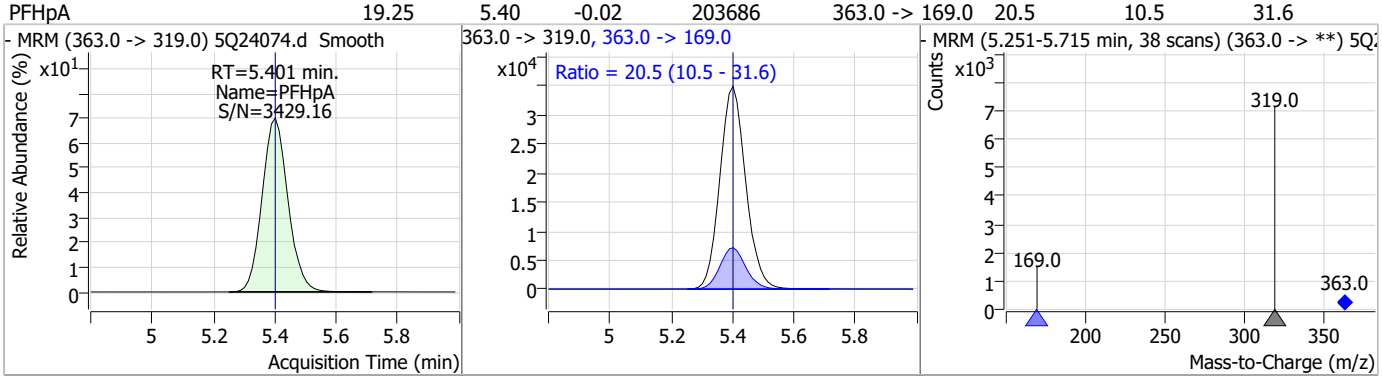


Perfluorinated Compounds by LC/MS/MS

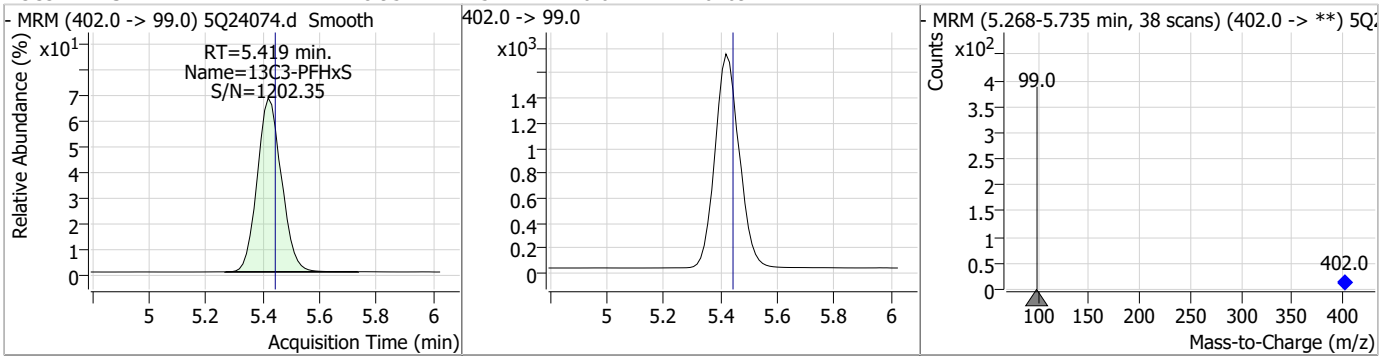
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	8.14	5.40	-0.02	96158				



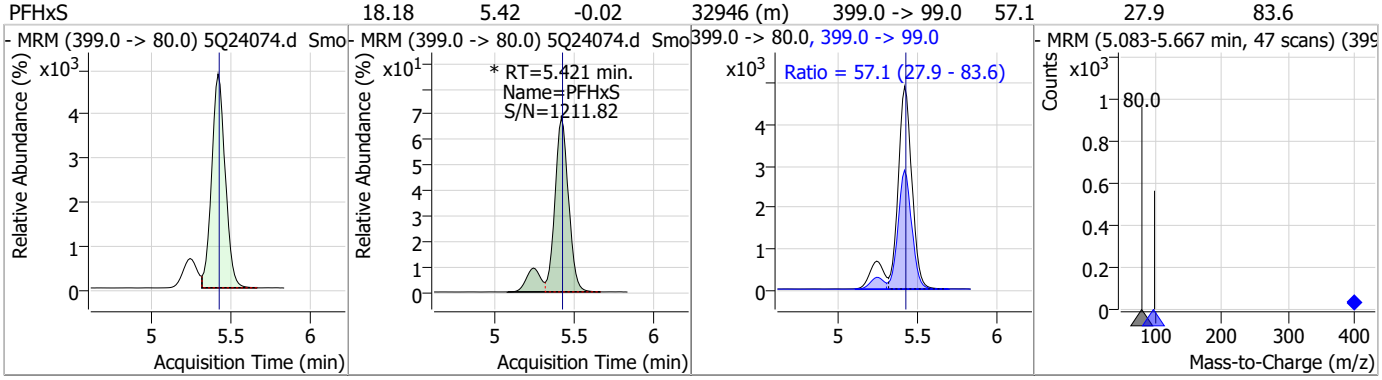
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	19.25	5.40	-0.02	203686	363.0 -> 169.0	20.5	10.5	31.6



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	8.95	5.42	-0.02	10109				

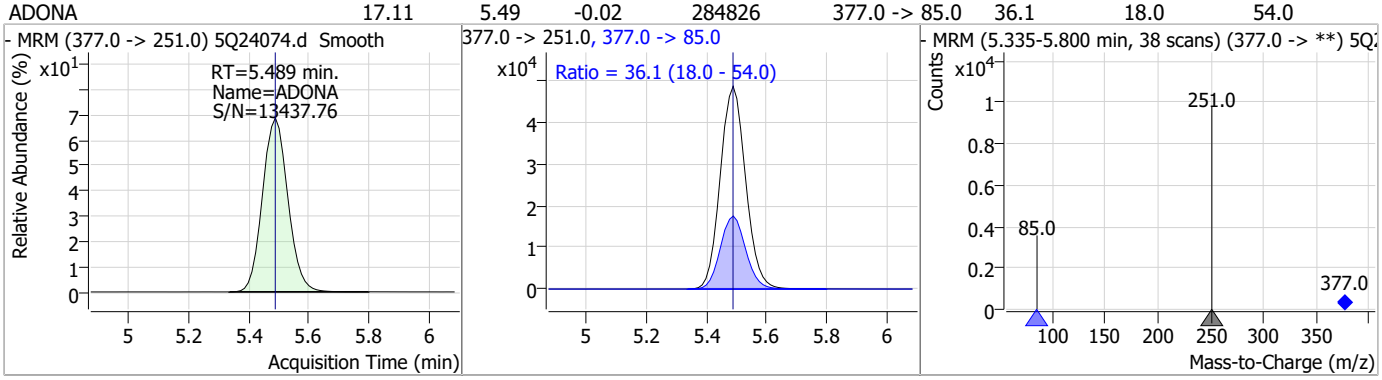


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	18.18	5.42	-0.02	32946 (m)	399.0 -> 99.0	57.1	27.9	83.6

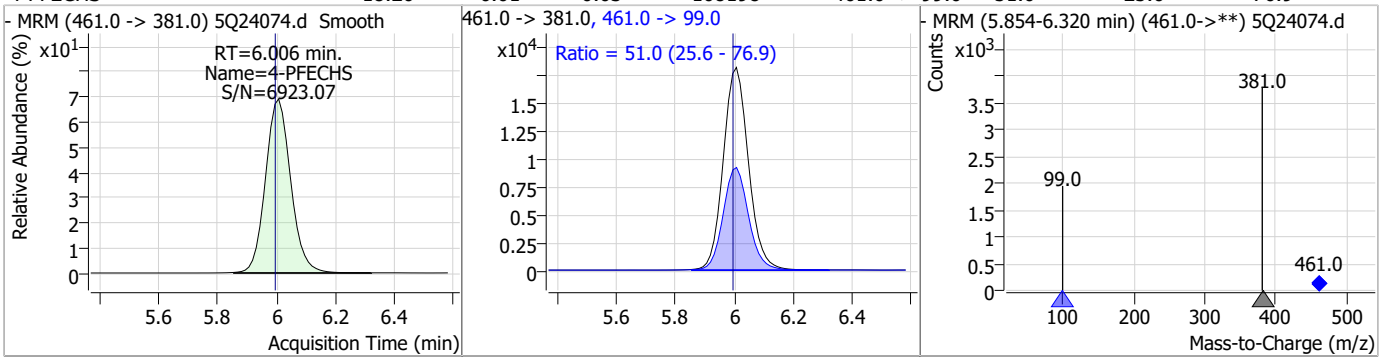


Perfluorinated Compounds by LC/MS/MS

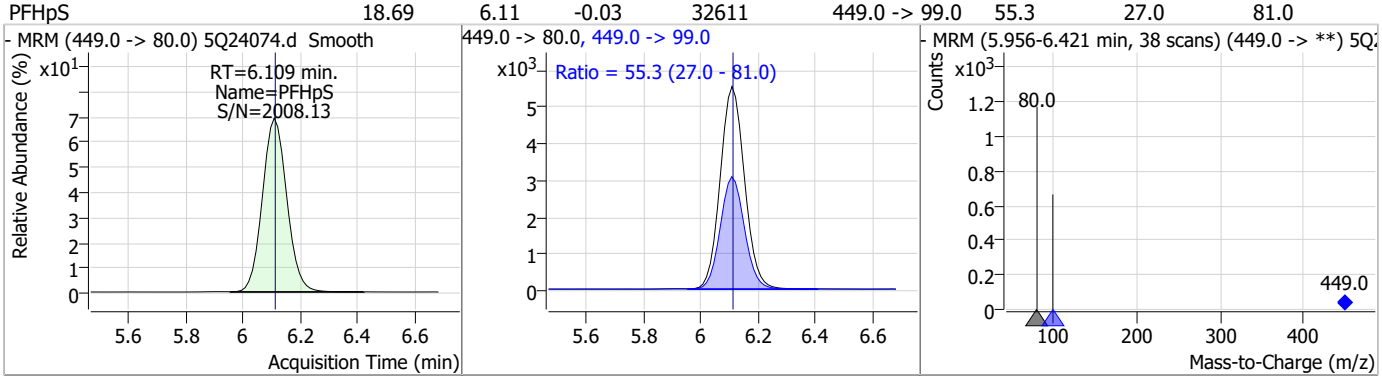
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	17.11	5.49	-0.02	284826	377.0 -> 85.0	36.1	18.0	54.0



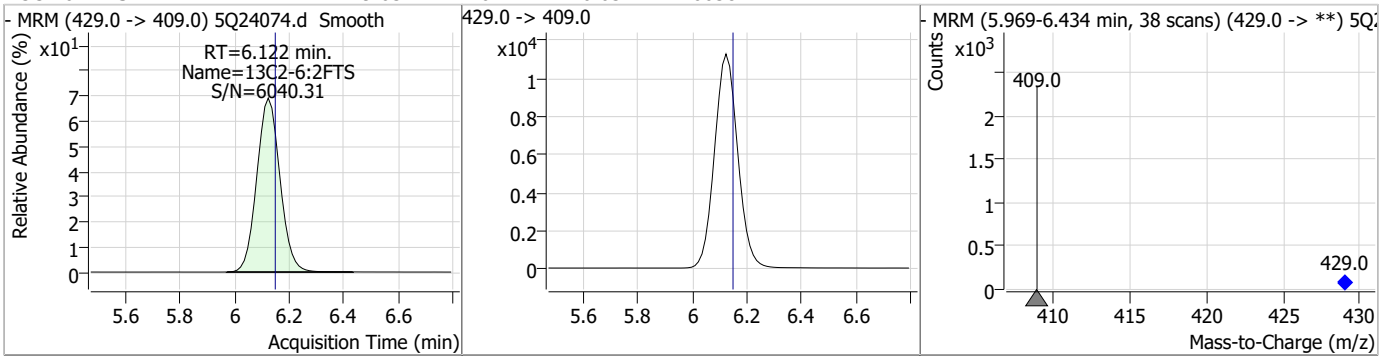
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS	18.26	6.01	-0.03	108198	461.0 -> 99.0	51.0	25.6	76.9



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	18.69	6.11	-0.03	32611	449.0 -> 99.0	55.3	27.0	81.0

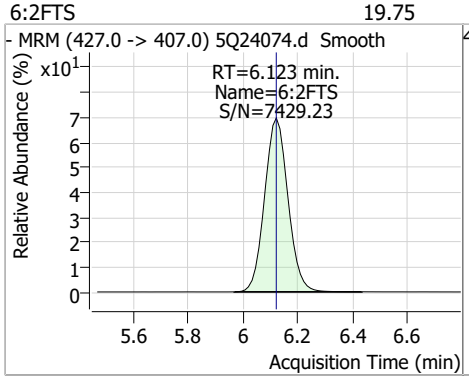


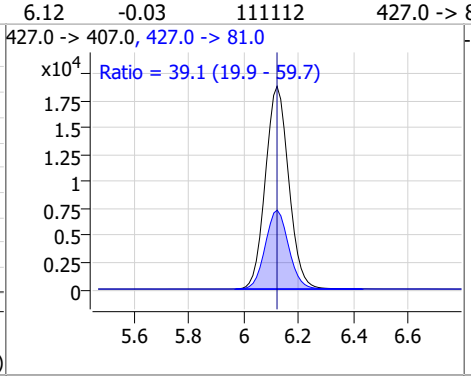
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	9.03	6.12	-0.03	66387				

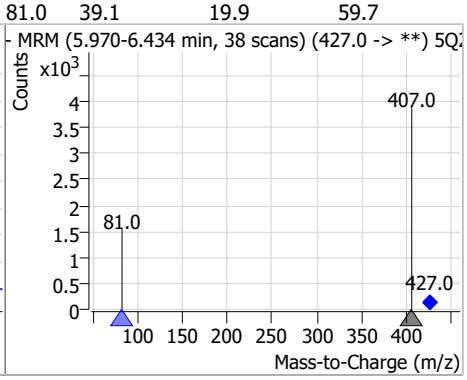


Perfluorinated Compounds by LC/MS/MS

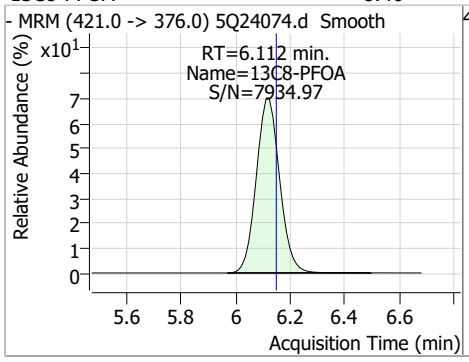
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	19.75	6.12	-0.03	111112	427.0 -> 81.0	39.1	19.9	59.7

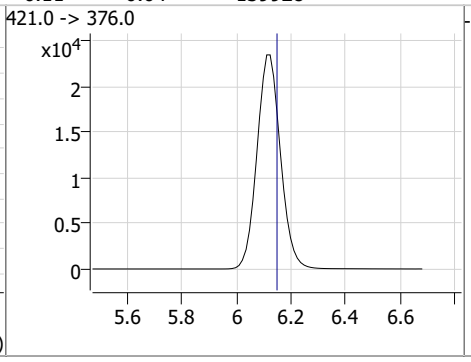


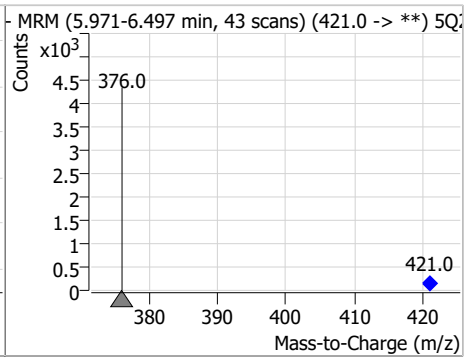




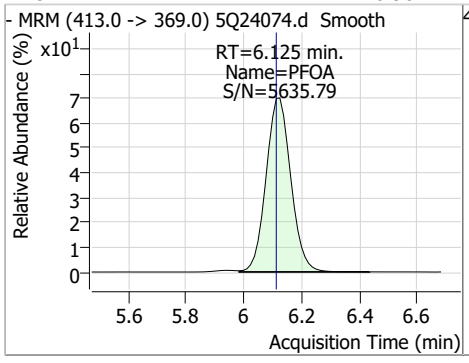
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	8.46	6.11	-0.04	139928				

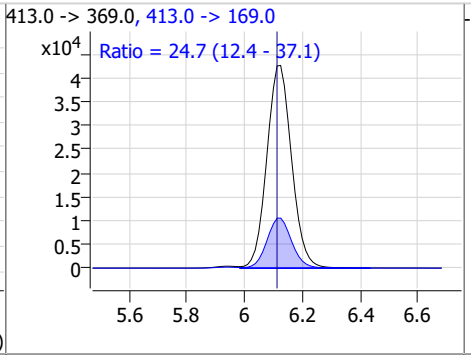


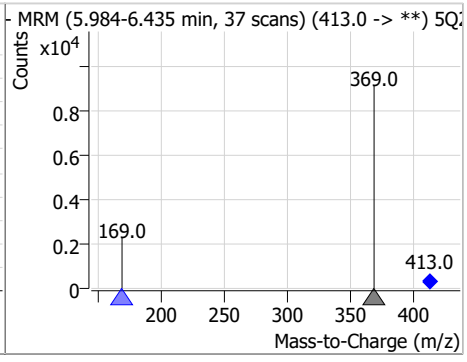




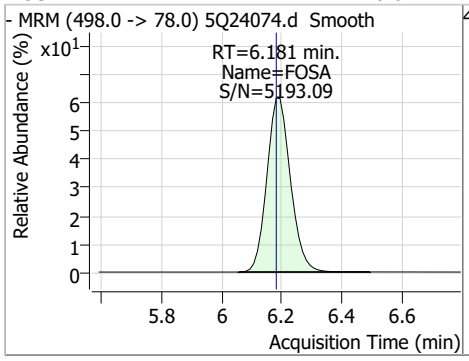
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	18.98	6.12	-0.03	253597	413.0 -> 169.0	24.7	12.4	37.1

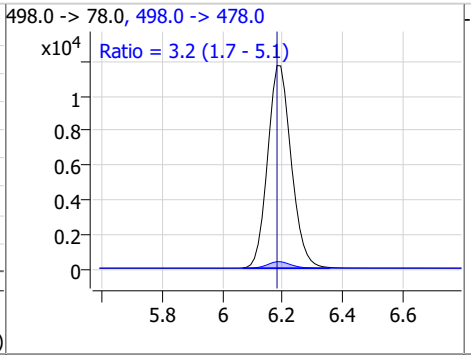


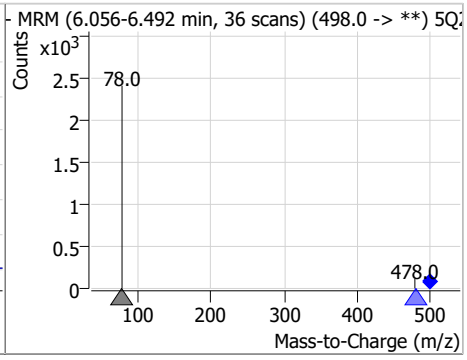




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	18.67	6.18	-0.01	63731	498.0 -> 478.0	3.2	1.7	5.1

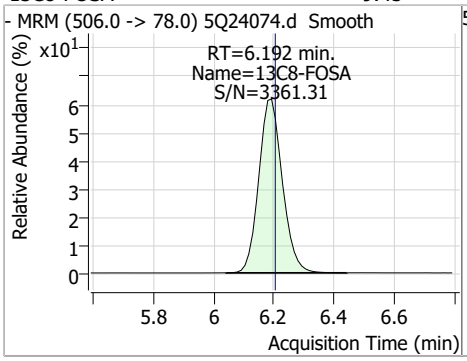


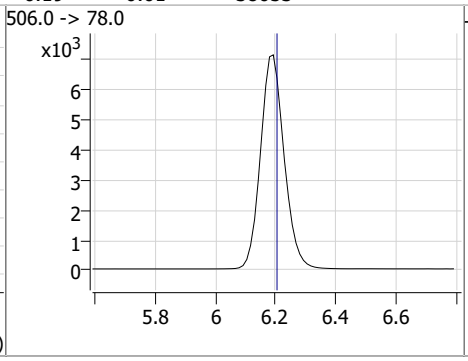


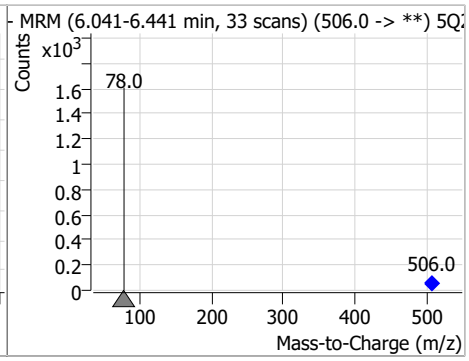


Perfluorinated Compounds by LC/MS/MS

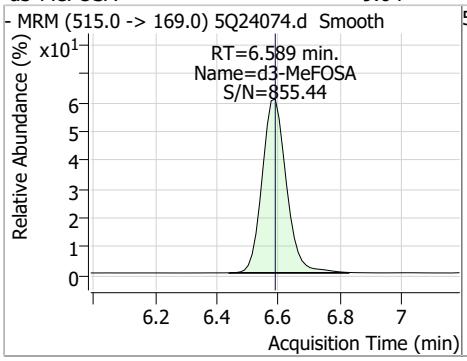
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	9.45	6.19	-0.01	38653				

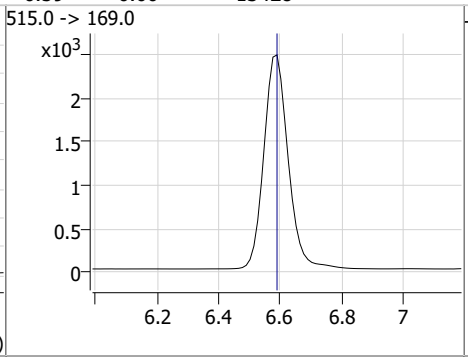


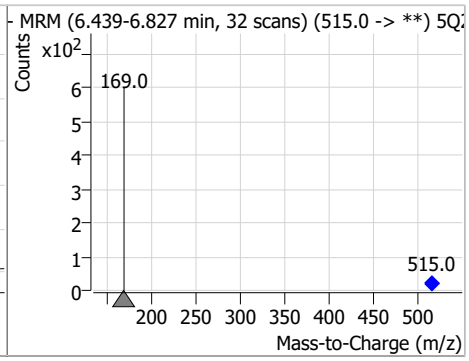




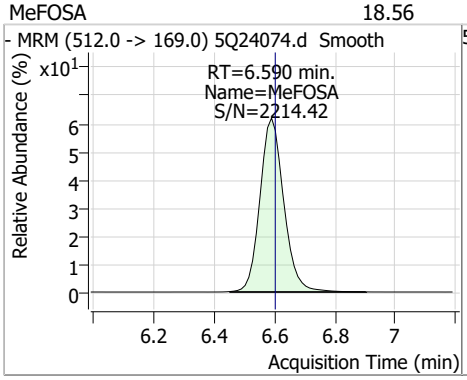
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	9.64	6.59	0.00	13428				

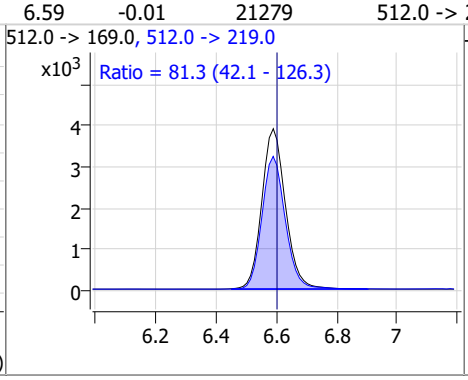


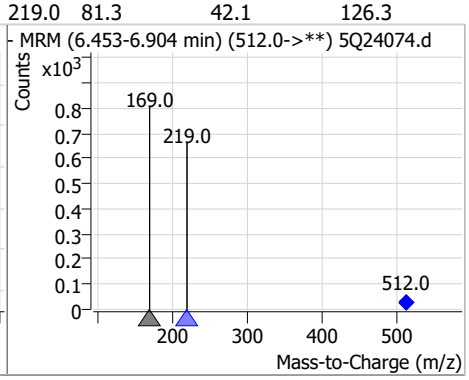




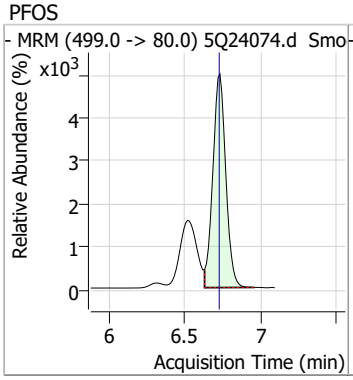
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	18.56	6.59	-0.01	21279	512.0 -> 219.0	81.3	42.1	126.3

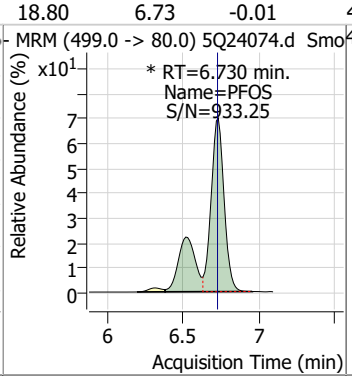


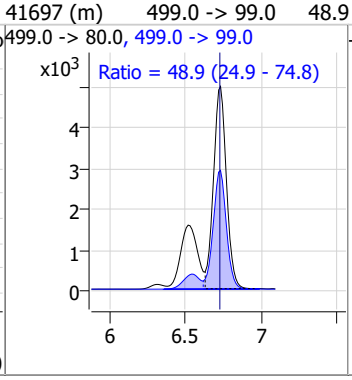


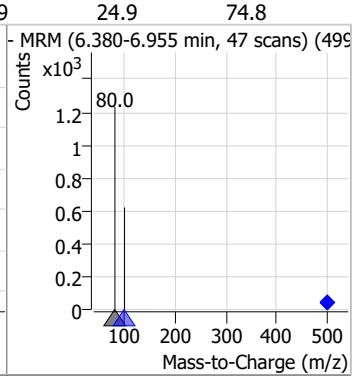


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	18.80	6.73	-0.01	41697 (m)	499.0 -> 99.0	48.9	24.9	74.8



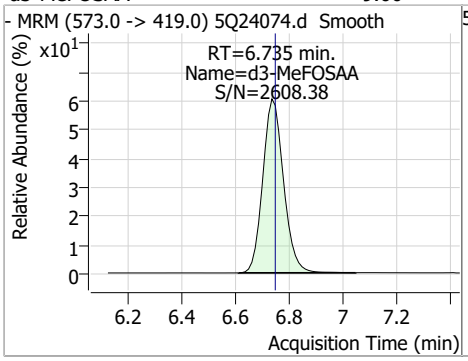


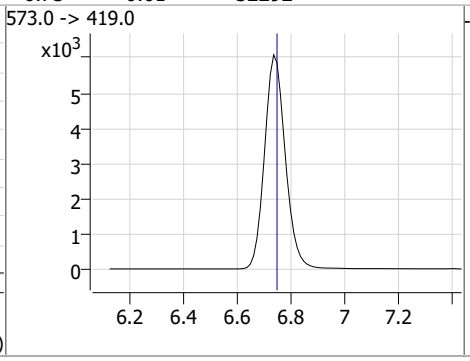


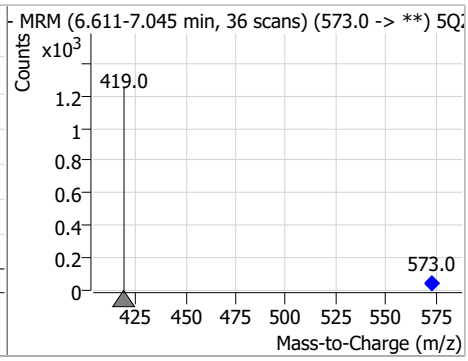


Perfluorinated Compounds by LC/MS/MS

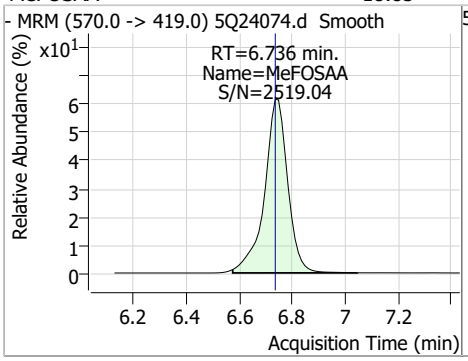
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	9.60	6.73	-0.01	32292				

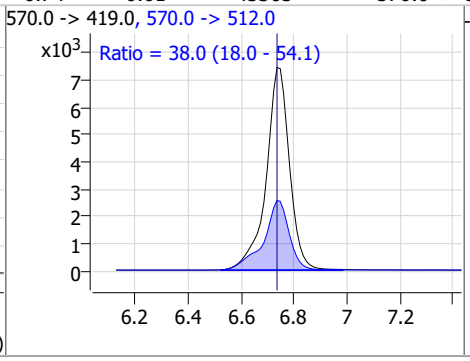


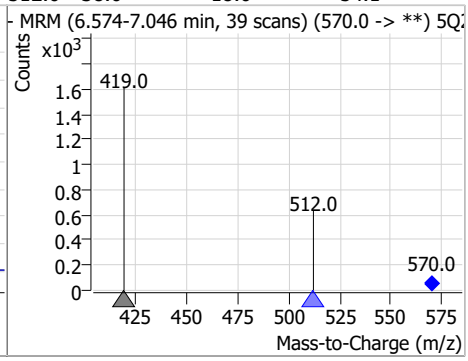




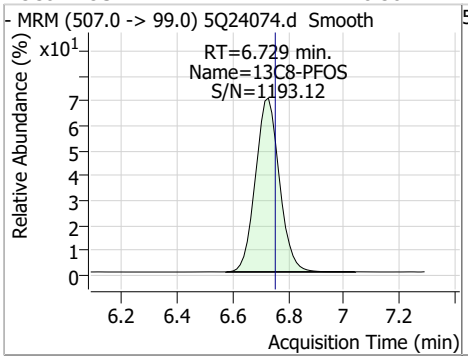
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	18.85	6.74	-0.01	45365	570.0 -> 512.0	38.0	18.0	54.1

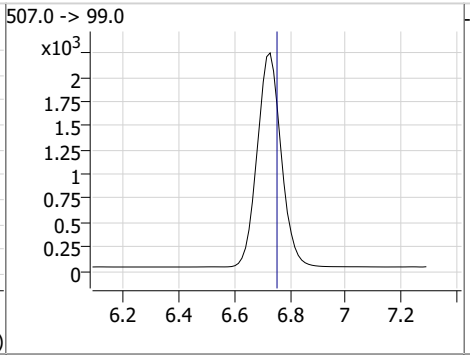


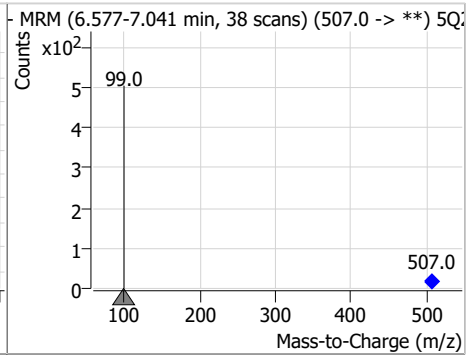




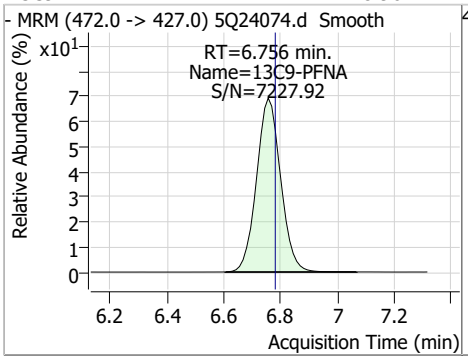
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	8.38	6.73	-0.02	13198				

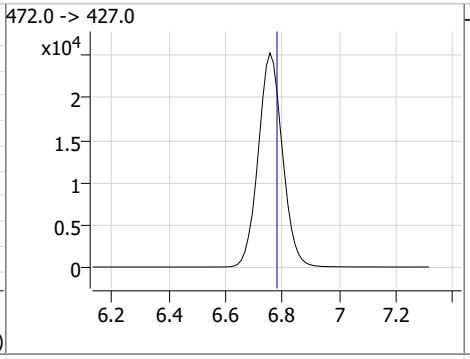


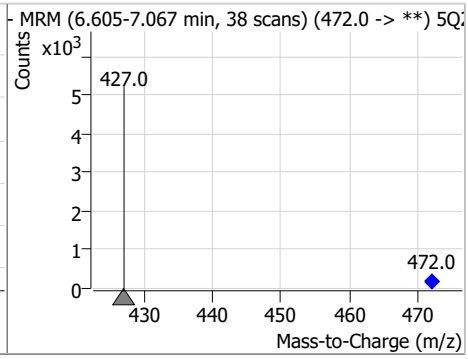




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	8.96	6.76	-0.02	148442				

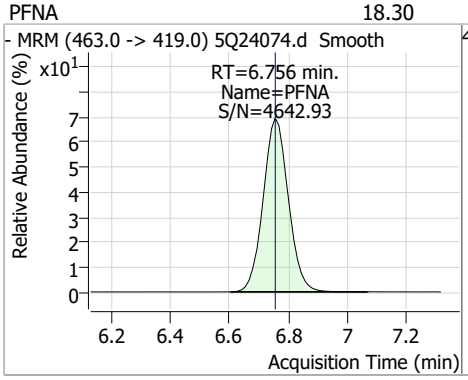


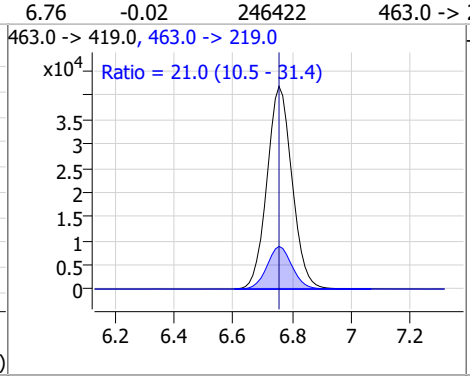


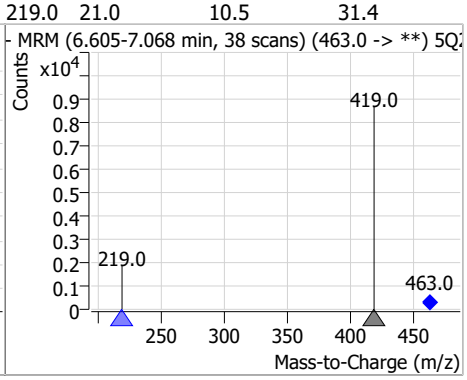


Perfluorinated Compounds by LC/MS/MS

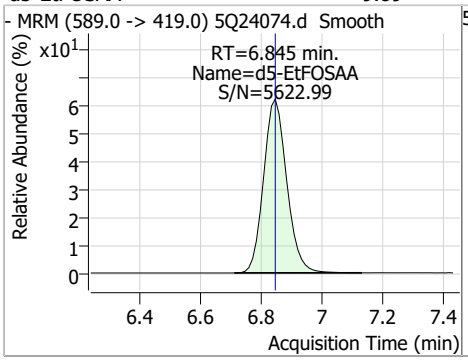
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	18.30	6.76	-0.02	246422	463.0 -> 219.0	21.0	10.5	31.4

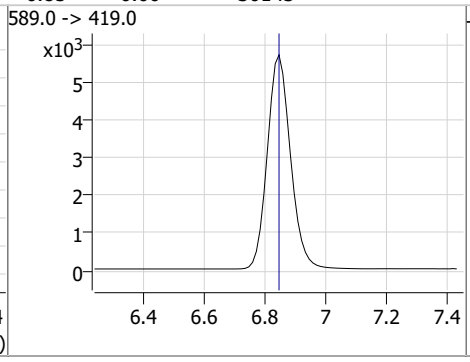


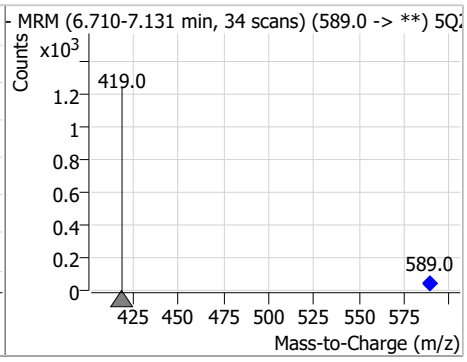




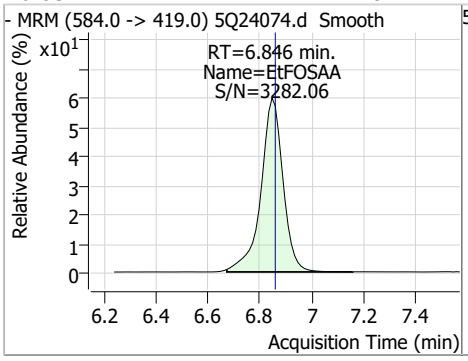
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	9.89	6.85	0.00	30143				

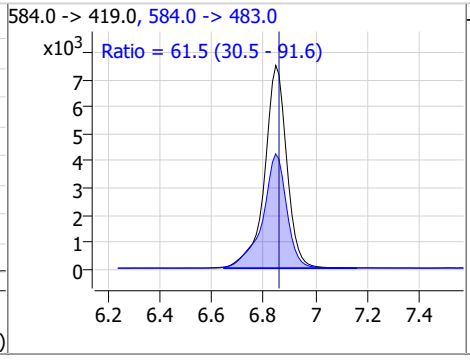


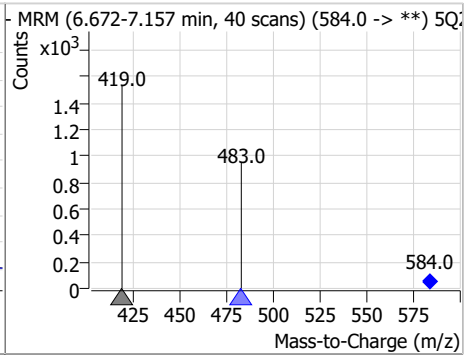




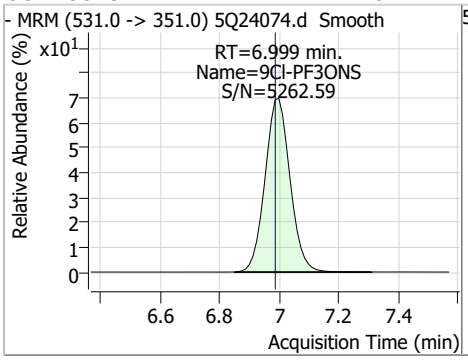
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	19.17	6.85	-0.01	44221	584.0 -> 483.0	61.5	30.5	91.6

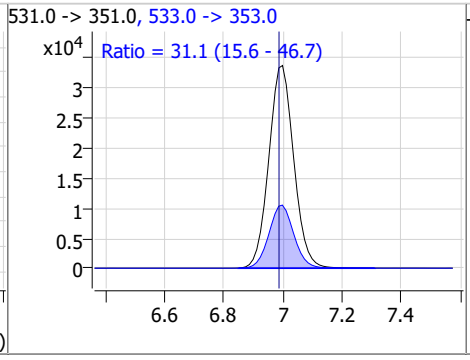


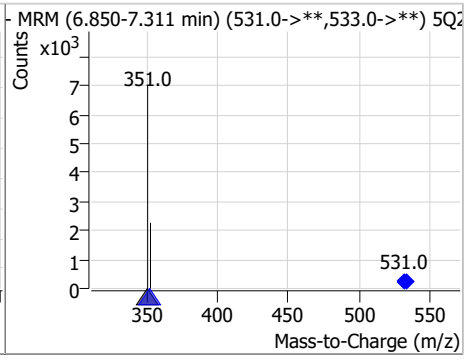




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	18.17	7.00	-0.01	196948	533.0 -> 353.0	31.1	15.6	46.7

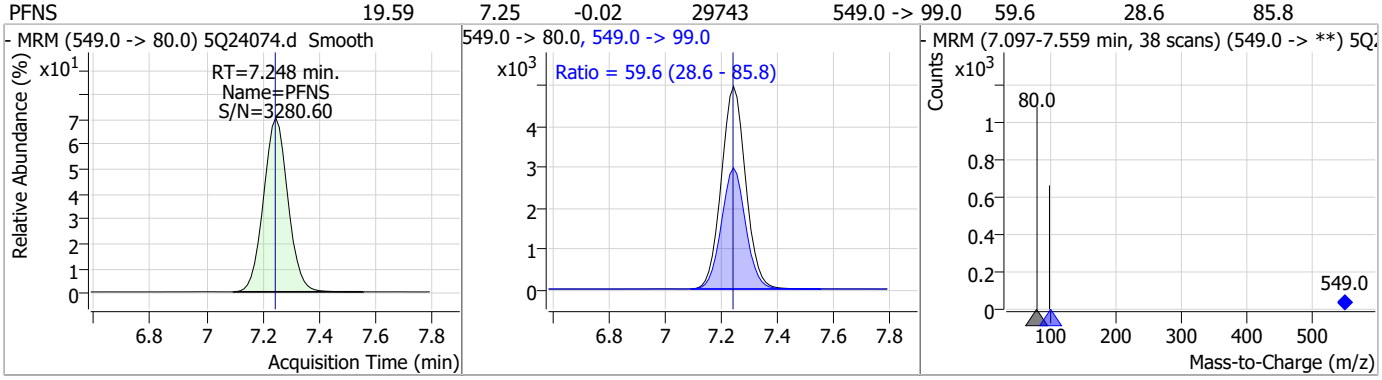




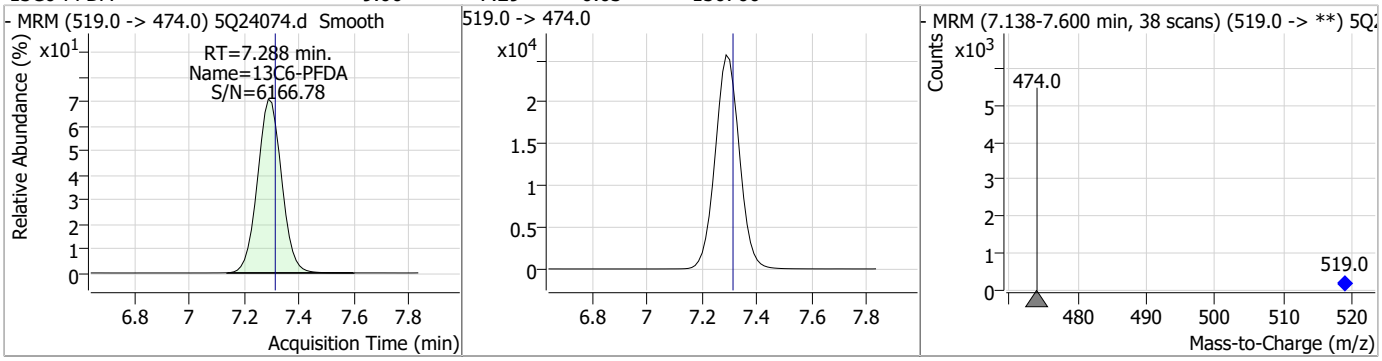


Perfluorinated Compounds by LC/MS/MS

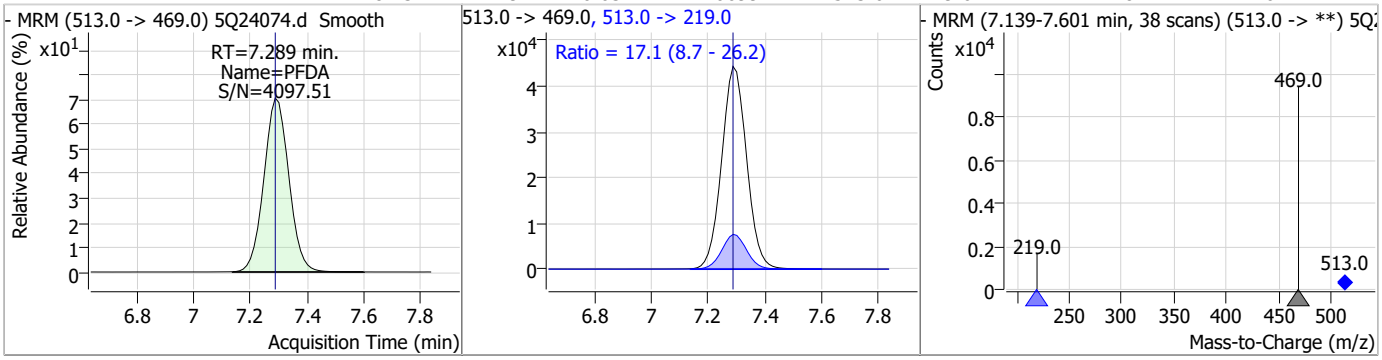
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	19.59	7.25	-0.02	29743	549.0 -> 99.0	59.6	28.6	85.8



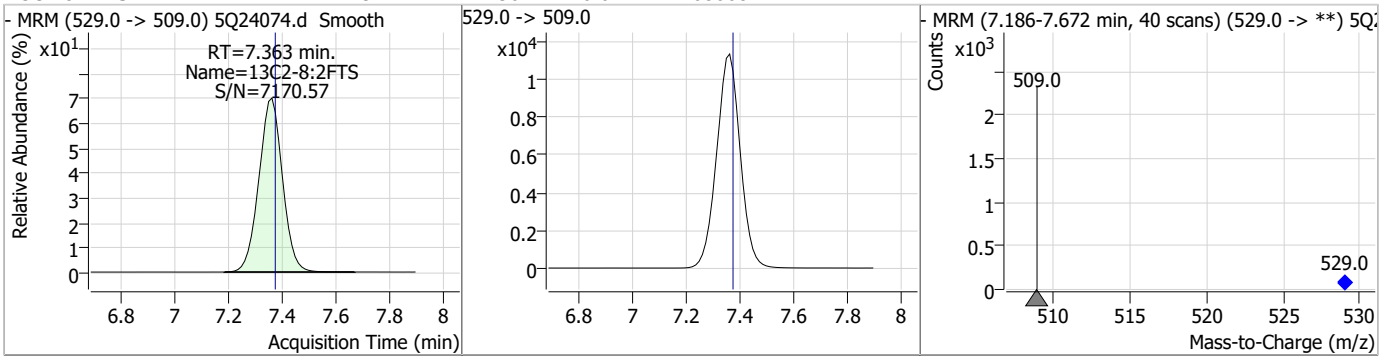
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	9.06	7.29	-0.03	156760				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	18.73	7.29	-0.03	270099	513.0 -> 219.0	17.1	8.7	26.2

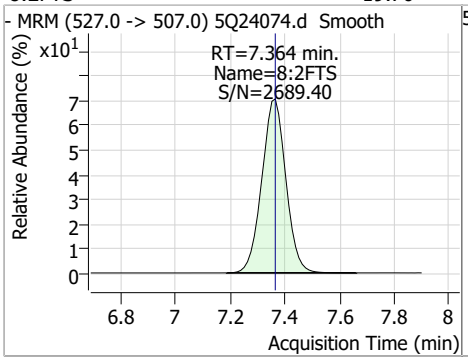


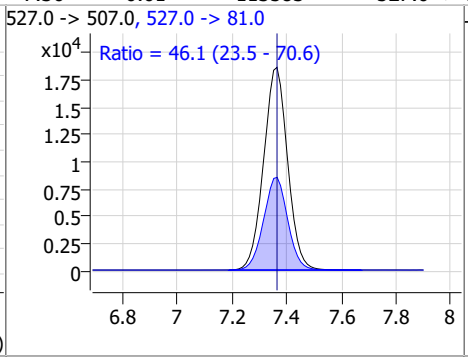
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	9.71	7.36	-0.01	68668				

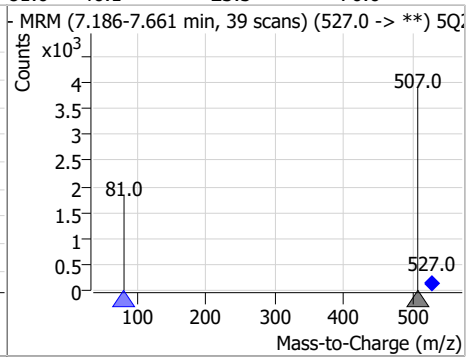


Perfluorinated Compounds by LC/MS/MS

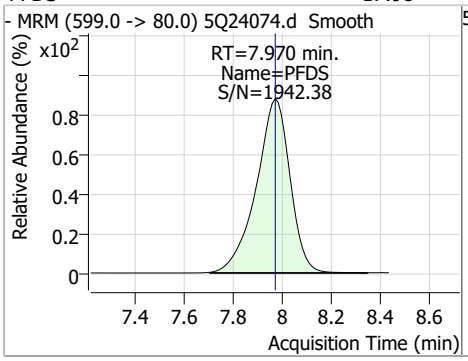
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	19.70	7.36	-0.01	113583	527.0 -> 81.0	46.1	23.5	70.6

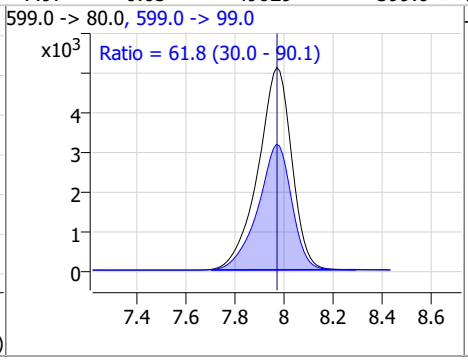


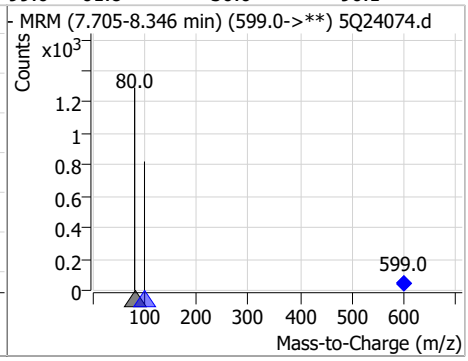




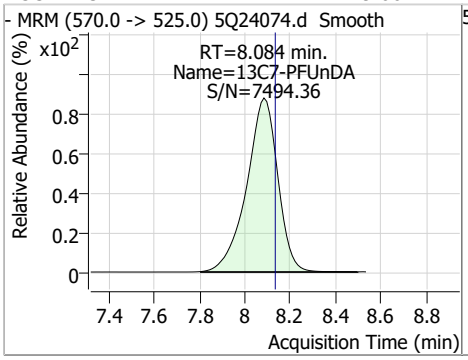
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	17.98	7.97	-0.05	49029	599.0 -> 99.0	61.8	30.0	90.1

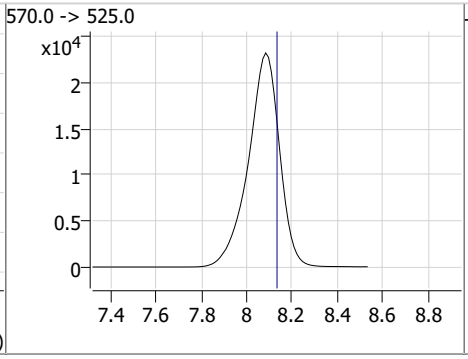


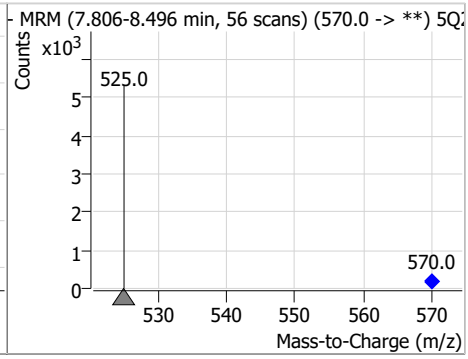




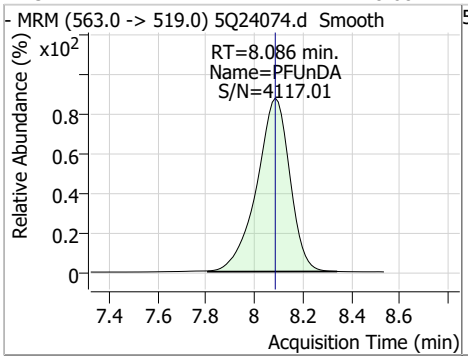
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	9.06	8.08	-0.05	221110				

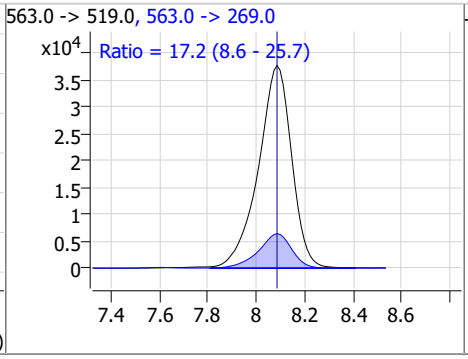


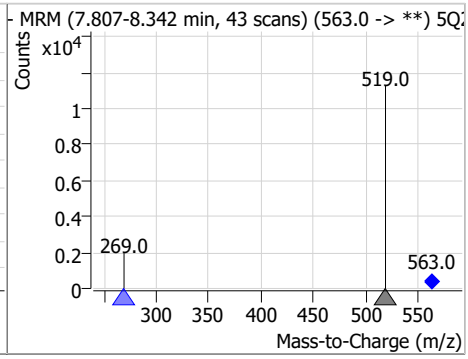




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	18.68	8.09	-0.05	358174	563.0 -> 269.0	17.2	8.6	25.7

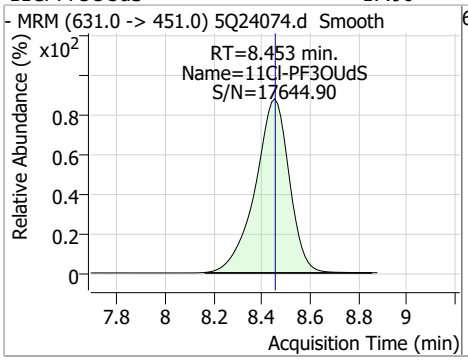


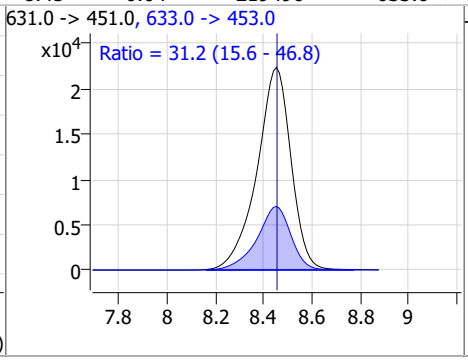


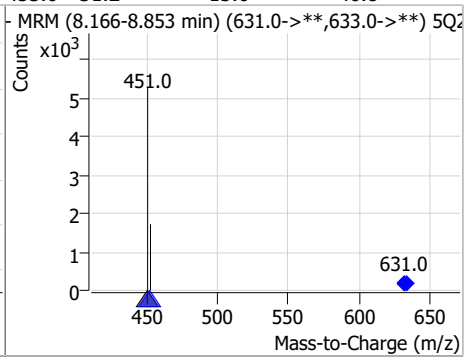


Perfluorinated Compounds by LC/MS/MS

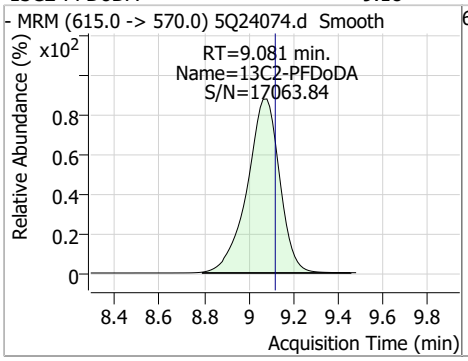
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	17.90	8.45	-0.04	219490	633.0 -> 453.0	31.2	15.6	46.8

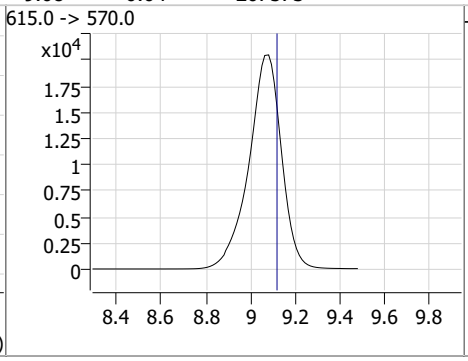


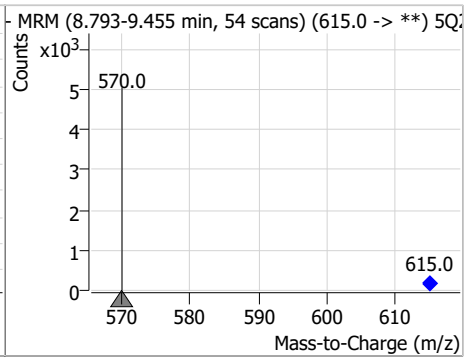




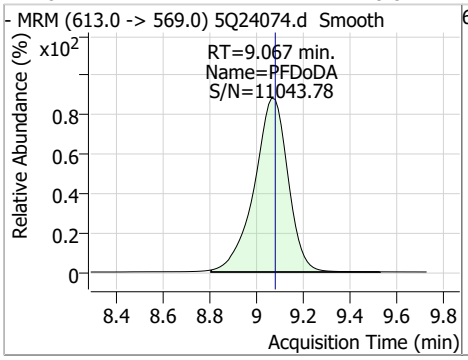
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	9.18	9.08	-0.04	207573				

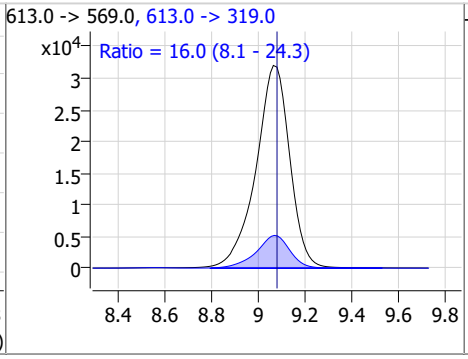


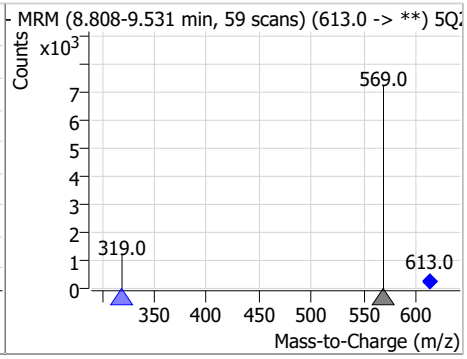




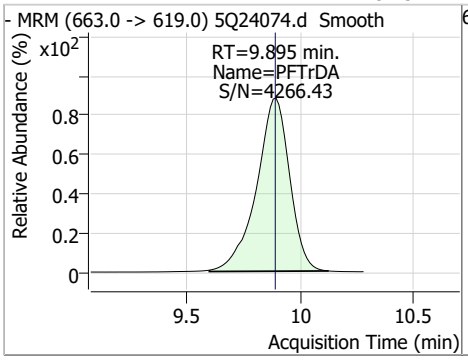
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	18.84	9.07	-0.05	321898	613.0 -> 319.0	16.0	8.1	24.3

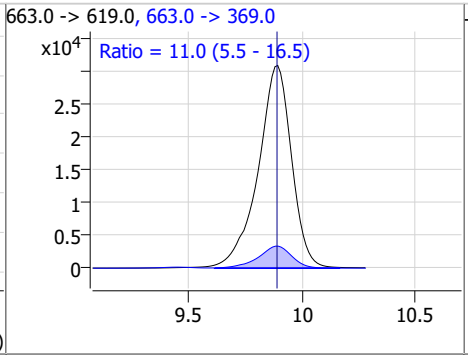


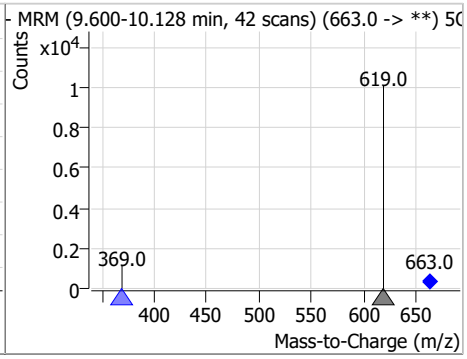




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	18.25	9.89	-0.04	313056	663.0 -> 369.0	11.0	5.5	16.5

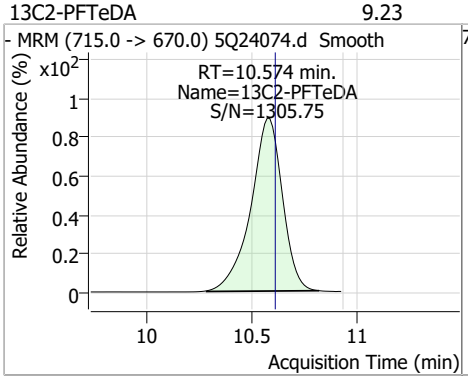


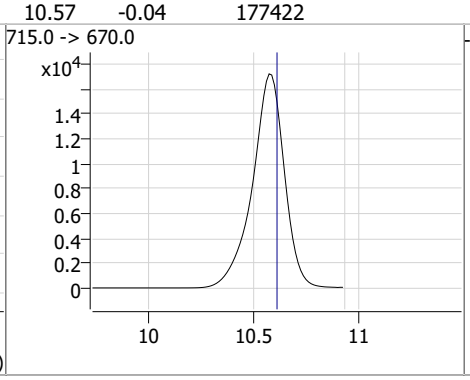


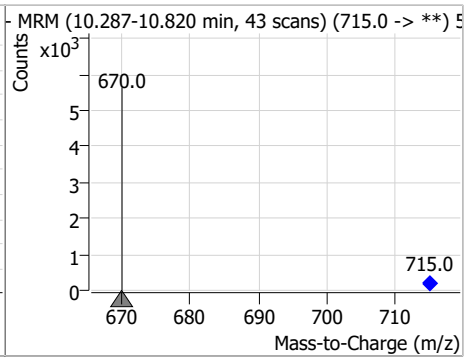


Perfluorinated Compounds by LC/MS/MS

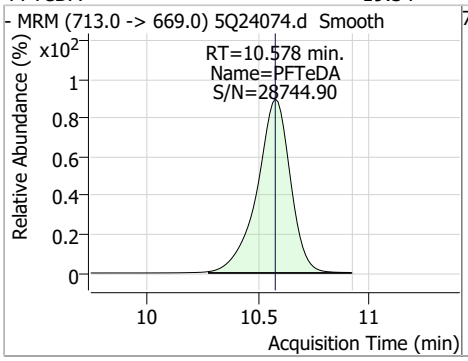
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	9.23	10.57	-0.04	177422				

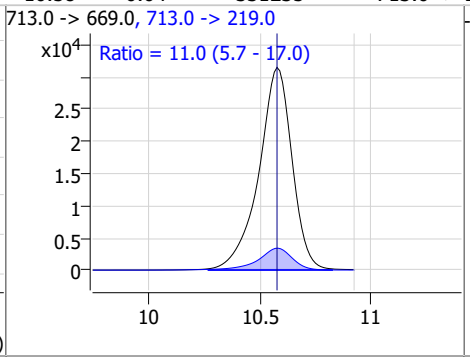


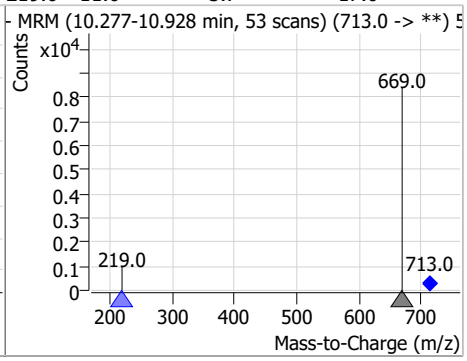




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	19.34	10.58	-0.04	331235	713.0 -> 219.0	11.0	5.7	17.0







9.6.47

9

Manual Integration Approval Summary

Sample Number: S5Q377-CC377
Lab FileID: 5Q24074.D
Injection Time: 01/03/24 06:19
Method: EPA 537M QSM5.3 B-15
Analyst approved: 01/03/24 16:03 Lindsay Ritner
Supervisor approved: 01/04/24 12:54 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.42	Split peak
Perfluorooctanesulfonic acid	1763-23-1		6.73	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Natasha Gumtie 01/04/24 12:54

Perfluorinated Compounds by LC/MS/MS

Data File : 5Q24080.d
Operator : lindsayr
Acq. Method : 537_ID.m
Acq. Date-Time : 1/3/2024 7:59:02 AM
Sample Name : ecc377-20
Vial : P1-A7
DA Method File : ID_010224_S5Q377.quantmethod.xml
Batch Name : s5q377.batch.bin
Sample Information : OP401,S5Q377,250,,,1.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.987	217.0 -> 172.0	34379	10.00	µg/L	0.000
M5-PFPeA	3.432	268.0 -> 223.0	57583	10.00	µg/L	0.000
M5-PFHxA	4.552	318.0 -> 273.0	92372	10.00	µg/L	-0.012
M4-PFHpA	5.425	367.0 -> 322.0	97224	10.00	µg/L	0.000
M8-PFOA	6.137	421.0 -> 376.0	142887	10.00	µg/L	-0.012
M9-PFNA	6.768	472.0 -> 427.0	148536	10.00	µg/L	-0.012
M6-PFDA	7.301	519.0 -> 474.0	156124	10.00	µg/L	-0.012
M7-PFUnDA	8.097	570.0 -> 525.0	223259	10.00	µg/L	-0.037
M2-PFDoDA	9.081	615.0 -> 570.0	207281	10.00	µg/L	-0.037
M2-PFTeDA	10.587	715.0 -> 670.0	178976	10.00	µg/L	-0.025
M8-FOSA	6.192	506.0 -> 78.0	38661	10.00	µg/L	-0.012
M3-PFBS	3.624	302.0 -> 99.0	7098	10.00	µg/L	-0.012
M3-PFHxS	5.444	402.0 -> 99.0	9318	10.00	µg/L	0.000
M8-PFOS	6.741	507.0 -> 99.0	13642	10.00	µg/L	-0.012
M2-4:2FTS	4.474	329.0 -> 309.0	33847	10.00	µg/L	-0.012
M2-6:2FTS	6.135	429.0 -> 409.0	65507	10.00	µg/L	-0.012
M2-8:2FTS	7.363	529.0 -> 509.0	68970	10.00	µg/L	-0.012
M3-MeFOSAA	6.747	573.0 -> 419.0	32842	10.00	µg/L	0.000
M3-HFPO-DA	4.819	287.0 -> 169.0	4676	10.00	µg/L	-0.012
M3-MeFOSA	6.589	515.0 -> 169.0	13503	10.00	µg/L	0.000
M5-EtFOSAA	6.845	589.0 -> 419.0	30009	10.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.474	329.0 -> 309.0	33847	8.66	µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 86.6%		
13C2-6:2FTS	6.135	429.0 -> 409.0	65507	8.91	µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 89.1%		
13C2-8:2FTS	7.363	529.0 -> 509.0	68970	9.75	µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 97.5%		
13C2-PFDoDA	9.081	615.0 -> 570.0	207281	9.17	µg/L	-0.037
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 91.7%		
13C2-PFTeDA	10.587	715.0 -> 670.0	178976	9.31	µg/L	-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 93.1%		
13C3-PFBS	3.624	302.0 -> 99.0	7098	7.69	µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 76.9%		
13C3-PFHxS	5.444	402.0 -> 99.0	9318	8.25	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 82.5%		
13C4-PFBA	1.987	217.0 -> 172.0	34379	7.79	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 77.9%		
13C4-PFHpA	5.425	367.0 -> 322.0	97224	8.23	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 82.3%		
13C5-PFHxA	4.552	318.0 -> 273.0	92372	8.05	µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 80.5%		
13C5-PFPeA	3.432	268.0 -> 223.0	57583	7.75	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 77.5%		
13C6-PFDA	7.301	519.0 -> 474.0	156124	9.02	µg/L	-0.012

Perfluorinated Compounds by LC/MS/MS

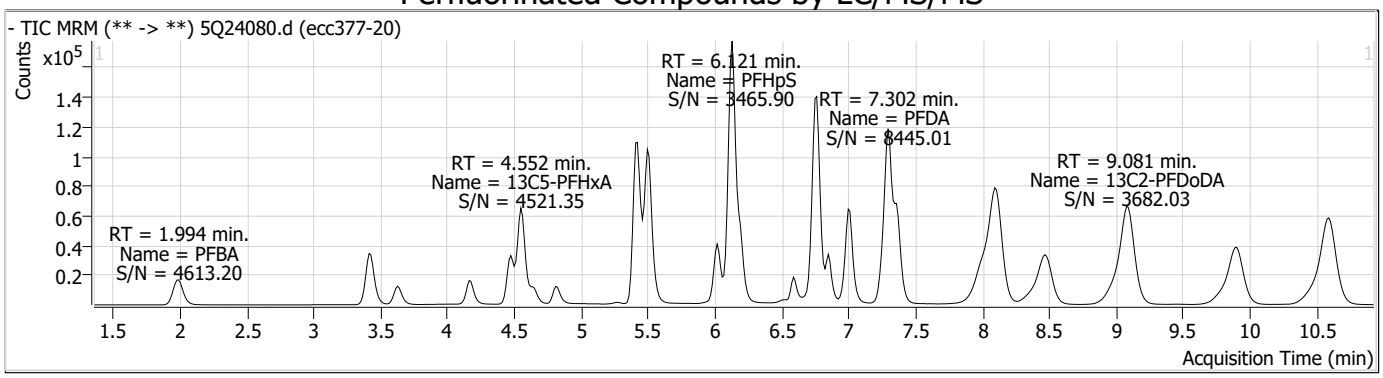
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 90.2%			
13C7-PFUnDA	8.097	570.0 -> 525.0	223259	9.15	µg/L		-0.037
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 91.5%			
13C8-FOSA	6.192	506.0 -> 78.0	38661	9.46	µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 94.6%			
13C8-PFOA	6.137	421.0 -> 376.0	142887	8.63	µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 86.3%			
13C8-PFOS	6.741	507.0 -> 99.0	13642	8.66	µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 86.6%			
13C9-PFNA	6.768	472.0 -> 427.0	148536	8.96	µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 89.6%			
d3-MeFOSAA	6.747	573.0 -> 419.0	32842	9.76	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 97.6%			
13C3-HFPO-DA	4.819	287.0 -> 169.0	4676	7.83	µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 78.3%			
d3-MeFOSA	6.589	515.0 -> 169.0	13503	9.69	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 96.9%			
d5-EtFOSAA	6.845	589.0 -> 419.0	30009	9.85	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 98.5%			
Target Compounds							QValue
4:2FTS	4.475	327.0 -> 307.0	63831	19.82	µg/L		100
		327.0 -> 81.0	35887				
6:2FTS	6.136	427.0 -> 407.0	113174	20.39	µg/L		99
		427.0 -> 81.0	44293				
8:2FTS	7.364	527.0 -> 507.0	114422	19.75	µg/L		98
		527.0 -> 81.0	52262				
EtFOSAA	6.859	584.0 -> 419.0	45236	19.70	µg/L		98
		584.0 -> 483.0	26961				
FOSA	6.194	498.0 -> 78.0	64099	18.77	µg/L		99
		498.0 -> 478.0	1908				
MeFOSAA	6.748	570.0 -> 419.0	46711	19.08	µg/L		98
		570.0 -> 512.0	17303				
PFBA	1.994	213.0 -> 169.0	56414	18.27	µg/L		100
PFBS	3.628	299.0 -> 80.0	32141	18.47	µg/L		99
		299.0 -> 99.0	14144				
PFDA	7.302	513.0 -> 469.0	267292	18.61	µg/L		99
		513.0 -> 219.0	45253				
PFDoDA	9.083	613.0 -> 569.0	324632	19.03	µg/L		99
		613.0 -> 319.0	51347				
PFDS	7.982	599.0 -> 80.0	49438	17.96	µg/L		99
		599.0 -> 99.0	29884				
PFHpA	5.426	363.0 -> 319.0	205275	19.19	µg/L		99
		363.0 -> 169.0	42014				
PFHpS	6.121	449.0 -> 80.0	32200	17.86	µg/L		98
		449.0 -> 99.0	17750				
PFHxA	4.553	313.0 -> 269.0	160562	18.66	µg/L		100
		313.0 -> 119.0	6474				
PFHxS	5.446	399.0 -> 80.0	31606	18.92	µg/L	m	100
		399.0 -> 99.0	17695				
PFNA	6.769	463.0 -> 419.0	248233	18.42	µg/L		99
		463.0 -> 219.0	51046				
PFNS	7.260	549.0 -> 80.0	29718	18.94	µg/L		99
		549.0 -> 99.0	17325				
PFOA	6.137	413.0 -> 369.0	252204	18.49	µg/L		99
		413.0 -> 169.0	60897				
PFOS	6.742	499.0 -> 80.0	43369	18.92	µg/L	m	98

Perfluorinated Compounds by LC/MS/MS

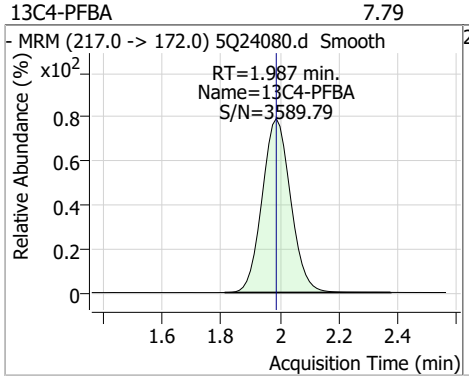
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		499.0 -> 99.0	20935			
PFPeA	3.422	263.0 -> 219.0	102270	18.84	µg/L	100
PFPeS	4.648	349.0 -> 80.0	23946	19.81	µg/L	100
		349.0 -> 99.0	12525			
PFTeDA	10.591	713.0 -> 669.0	325897	18.87	µg/L	100
		713.0 -> 219.0	37022			
PFTrDA	9.895	663.0 -> 619.0	314148	18.34	µg/L	100
		663.0 -> 369.0	34534			
PFUnDA	8.098	563.0 -> 519.0	362400	18.72	µg/L	100
		563.0 -> 269.0	61196			
11Cl-PF3OUdS	8.465	631.0 -> 451.0	218813	17.87	µg/L	99
		633.0 -> 453.0	69045			
9Cl-PF3ONS	6.999	531.0 -> 351.0	195454	18.11	µg/L	98
		533.0 -> 353.0	62847			
ADONA	5.514	377.0 -> 251.0	294045	19.17	µg/L	99
		377.0 -> 85.0	104369			
HFPO-DA	4.827	329.0 -> 169.0	35765	18.81	µg/L	99
		285.0 -> 169.0	7713			
MeFOSA	6.590	512.0 -> 169.0	21368	18.53	µg/L	96
		512.0 -> 219.0	17147			
4-PFECHS	6.018	461.0 -> 381.0	108211	17.89	µg/L	100
		461.0 -> 99.0	55232			
FBSA	4.182	298.0 -> 78.0	58585	19.18	µg/L	100
		298.0 -> 64.0	5506			
FHxSA	5.409	398.0 -> 78.0	67375	20.80	µg/L	100
		398.0 -> 64.0	6224			

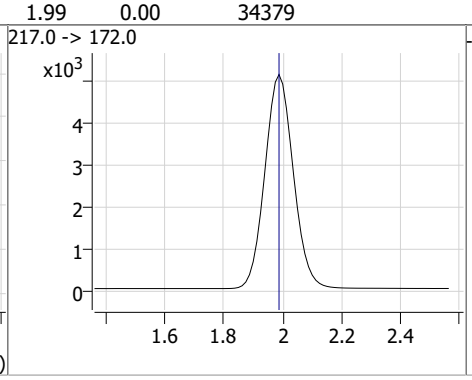
 # = Qualifier out of range, m = manually integrated, + = Area summed

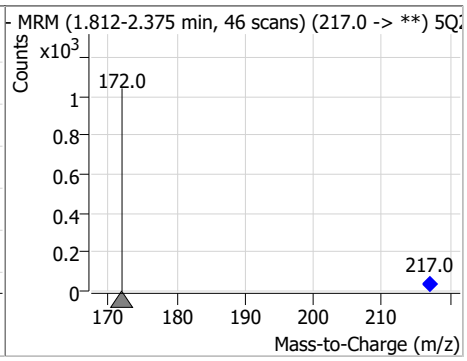
Perfluorinated Compounds by LC/MS/MS



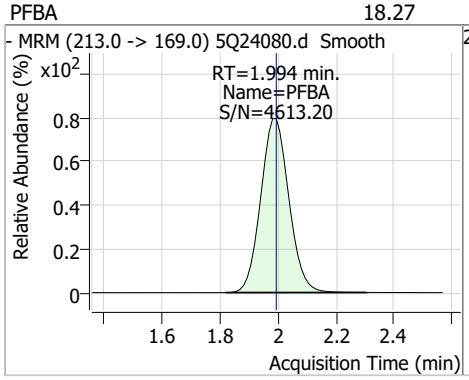
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	7.79	1.99	0.00	34379				

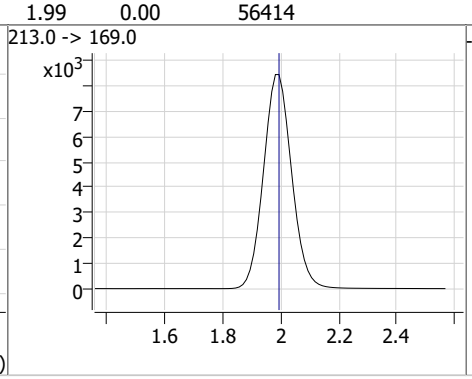


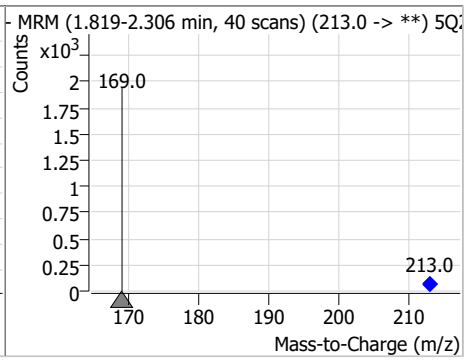




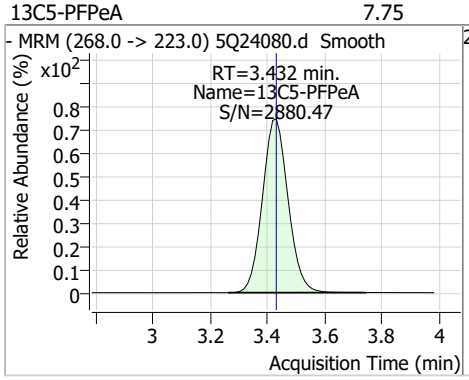
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	18.27	1.99	0.00	56414				

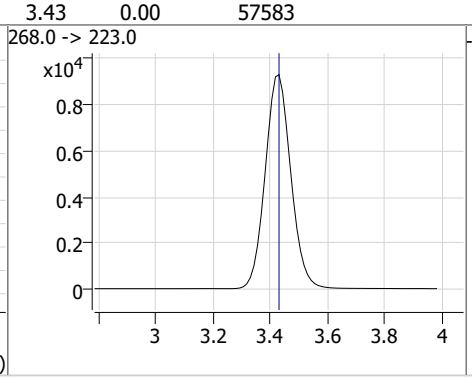


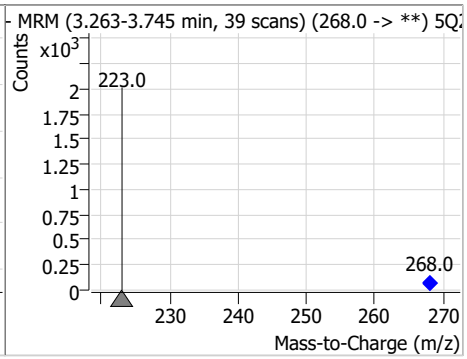




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	7.75	3.43	0.00	57583				

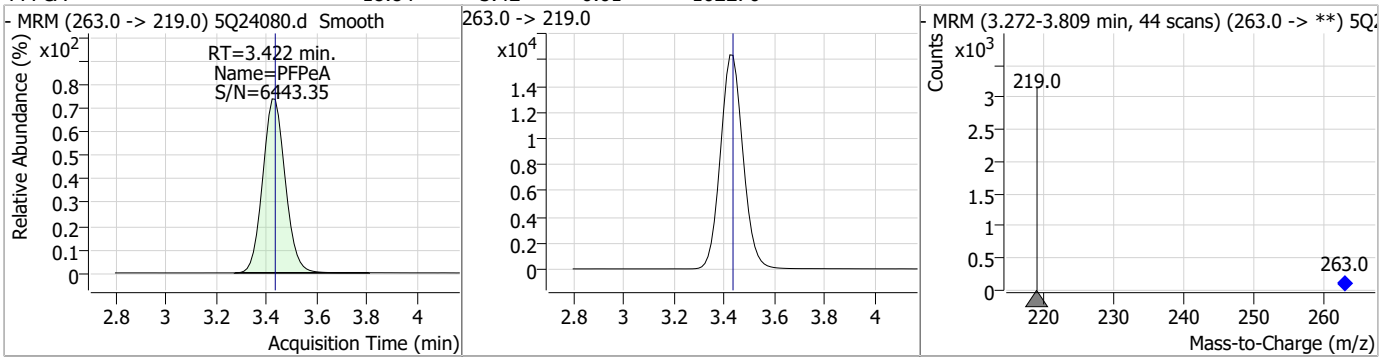




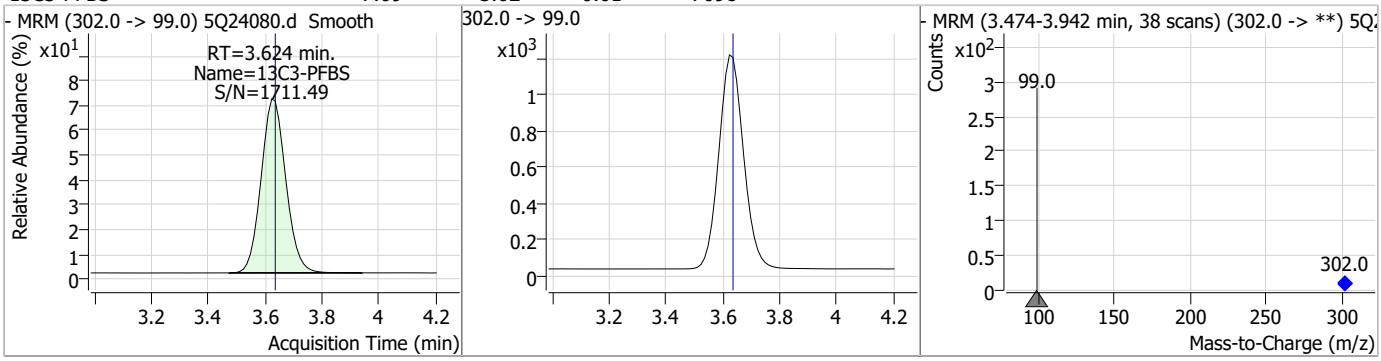


Perfluorinated Compounds by LC/MS/MS

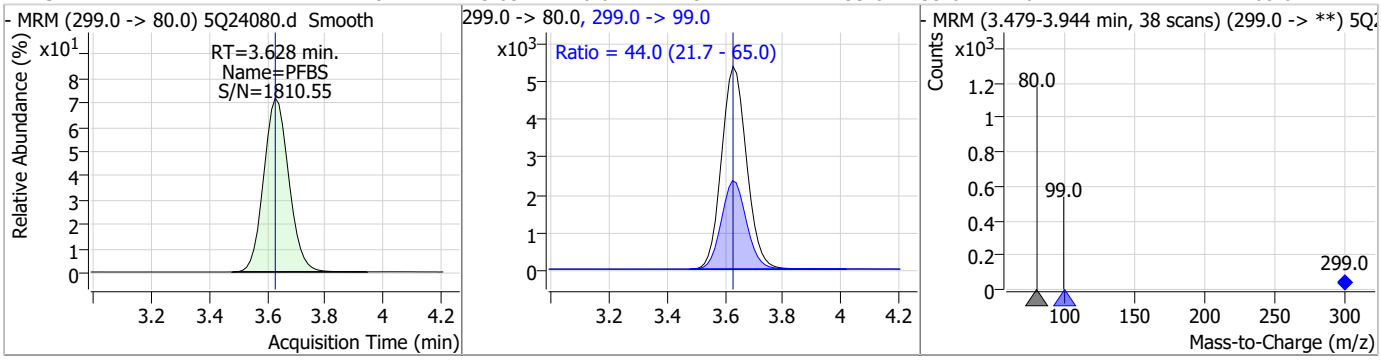
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	18.84	3.42	-0.01	102270				



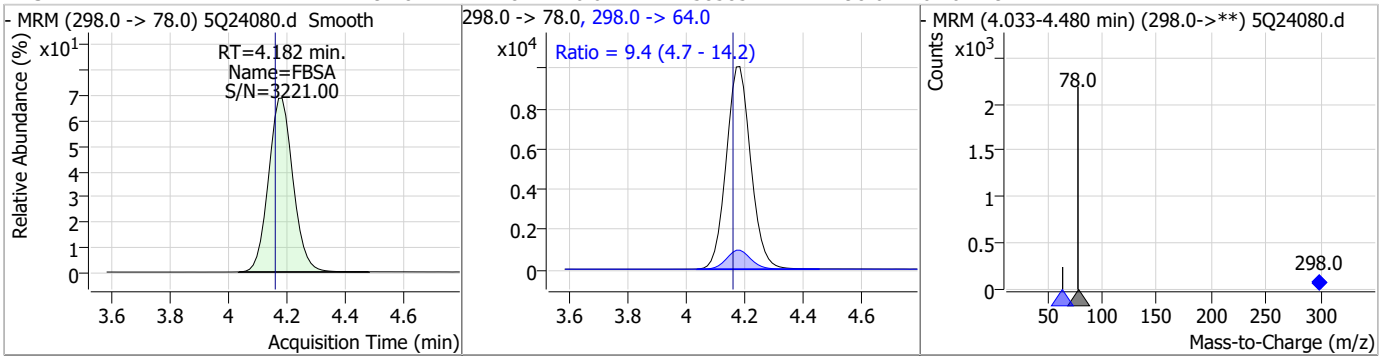
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	7.69	3.62	-0.01	7098				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	18.47	3.63	-0.01	32141	299.0 -> 99.0	44.0	21.7	65.0

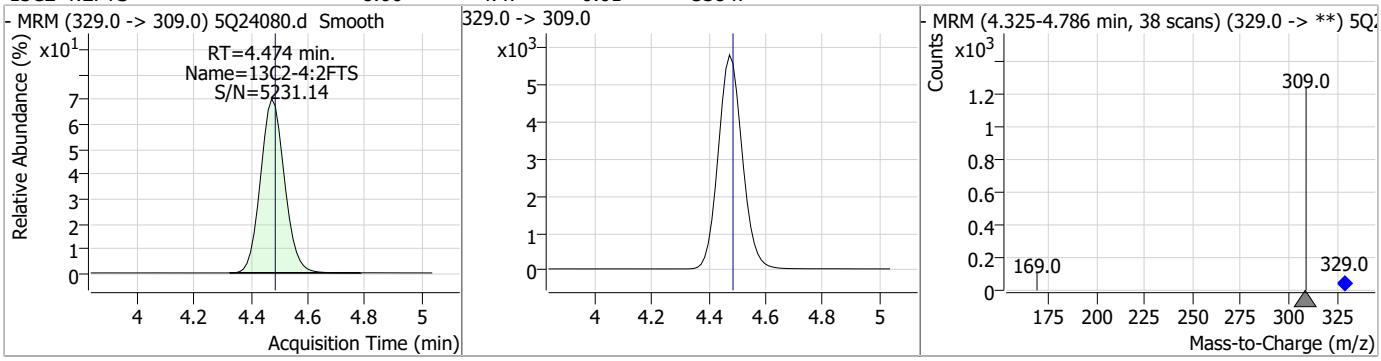


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	19.18	4.18	0.01	58585	298.0 -> 64.0	9.4	4.7	14.2

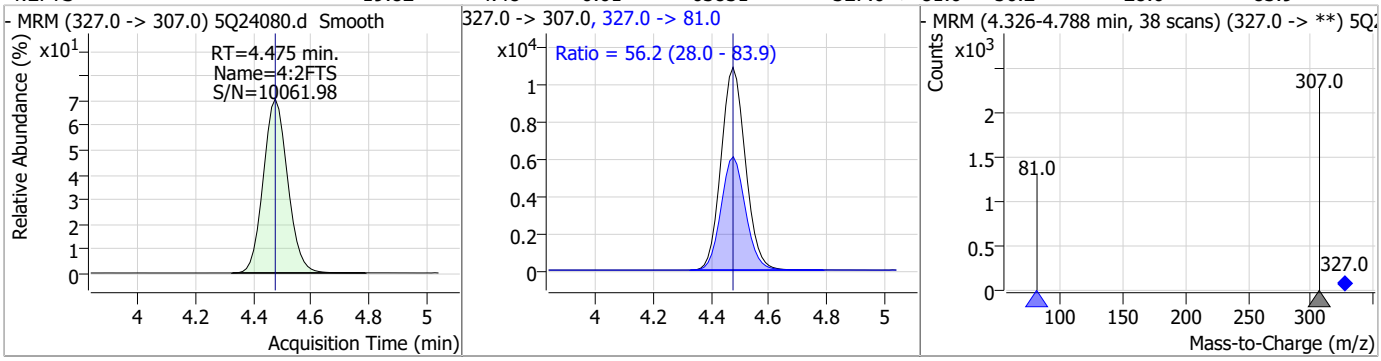


Perfluorinated Compounds by LC/MS/MS

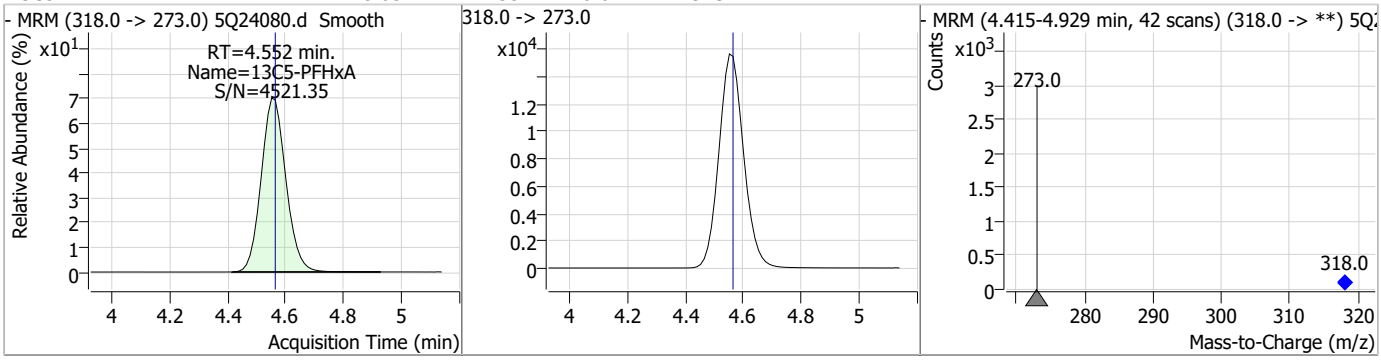
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	8.66	4.47	-0.01	33847				



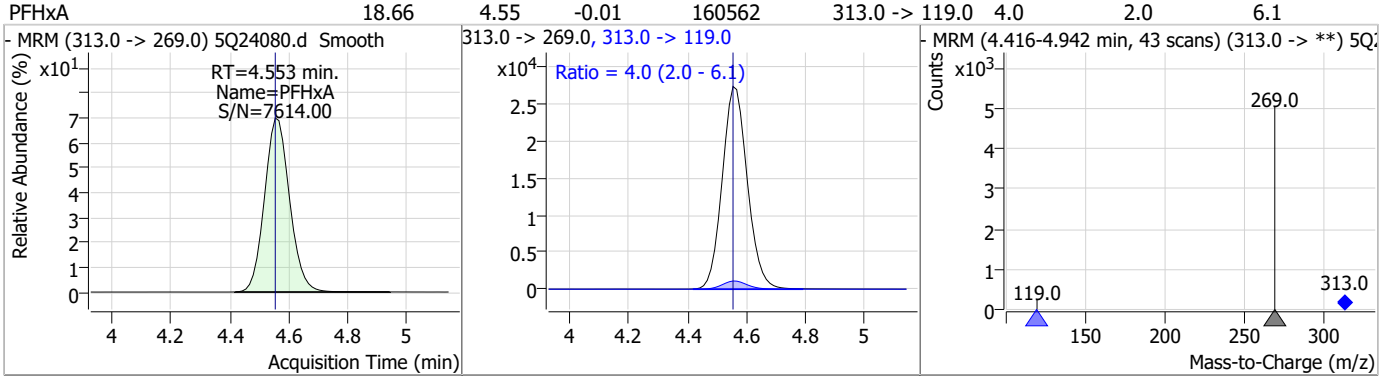
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	19.82	4.48	-0.01	63831	327.0 -> 81.0	56.2	28.0	83.9



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	8.05	4.55	-0.01	92372				

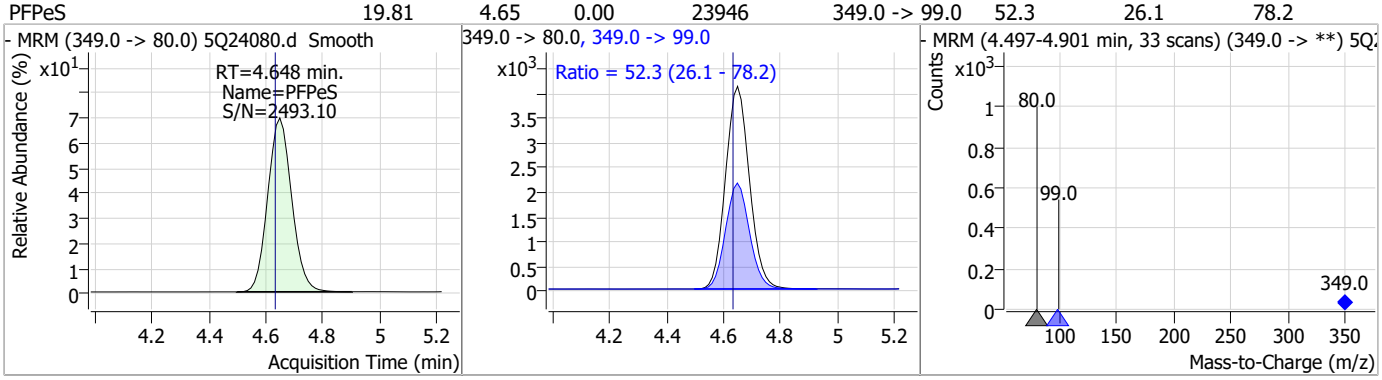


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	18.66	4.55	-0.01	160562	313.0 -> 119.0	4.0	2.0	6.1

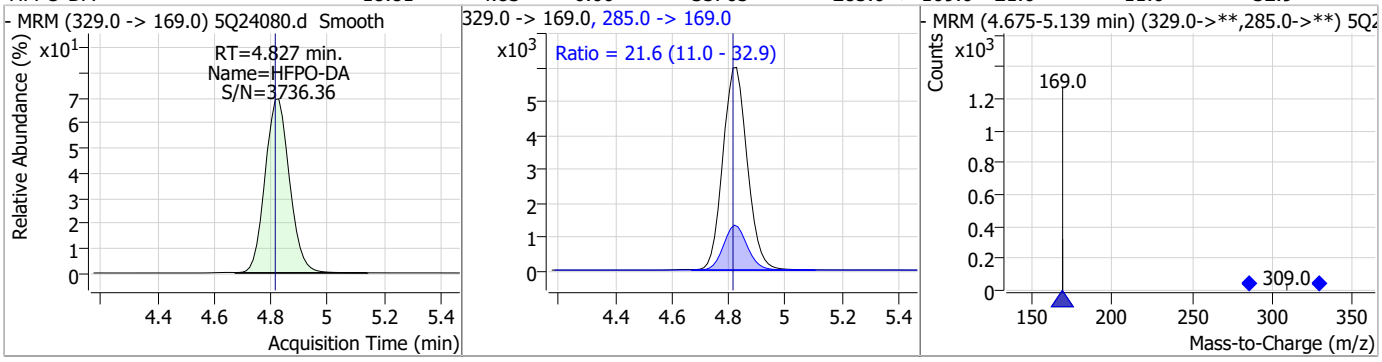


Perfluorinated Compounds by LC/MS/MS

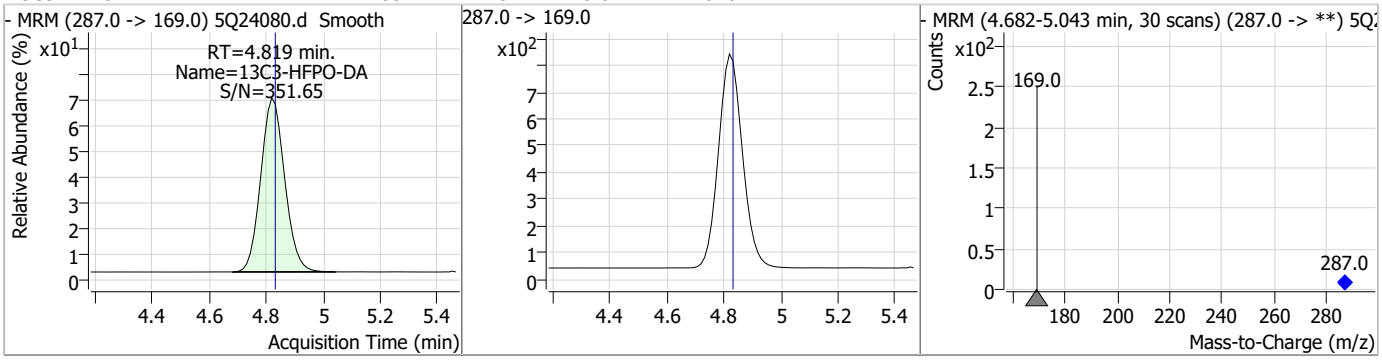
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	19.81	4.65	0.00	23946	349.0 -> 99.0	52.3	26.1	78.2



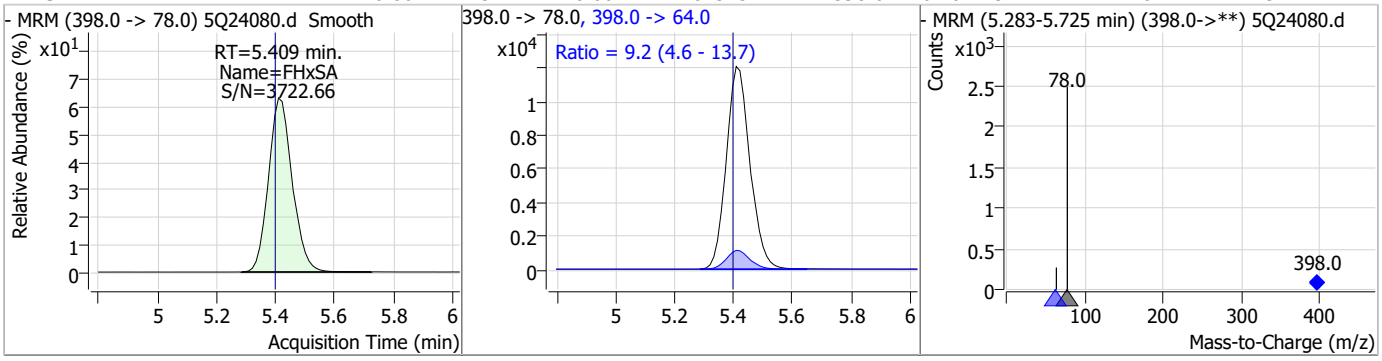
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	18.81	4.83	0.00	35765	285.0 -> 169.0	21.6	11.0	32.9



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	7.83	4.82	-0.01	4676				

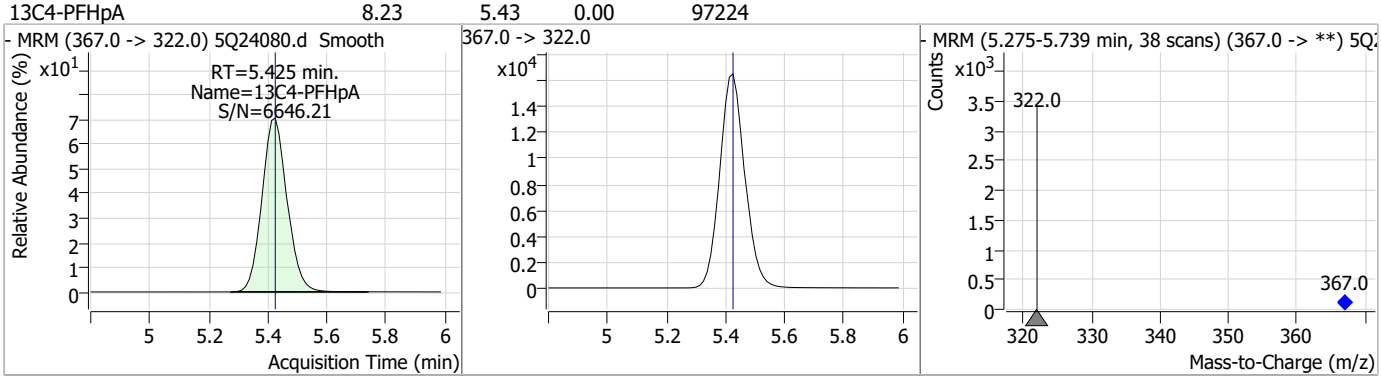


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	20.80	5.41	0.00	67375	398.0 -> 64.0	9.2	4.6	13.7

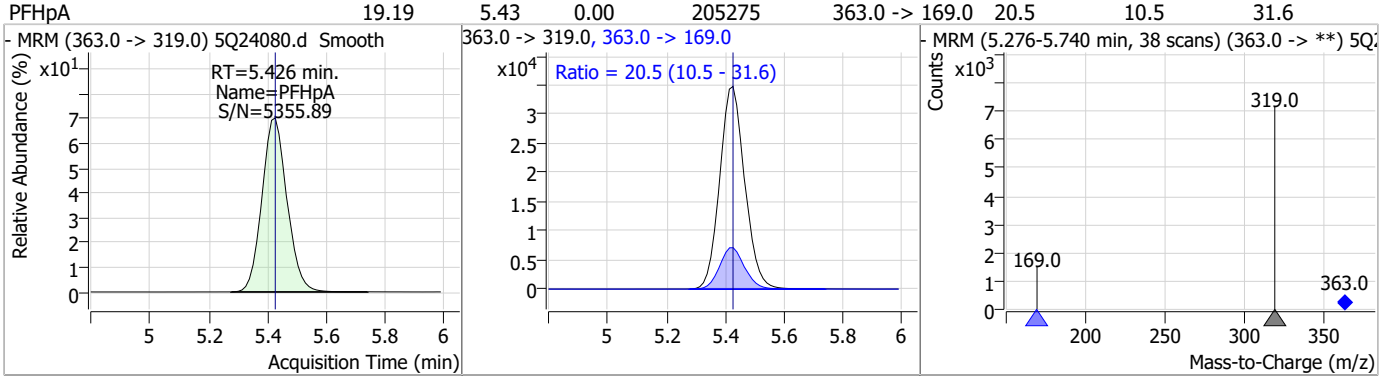


Perfluorinated Compounds by LC/MS/MS

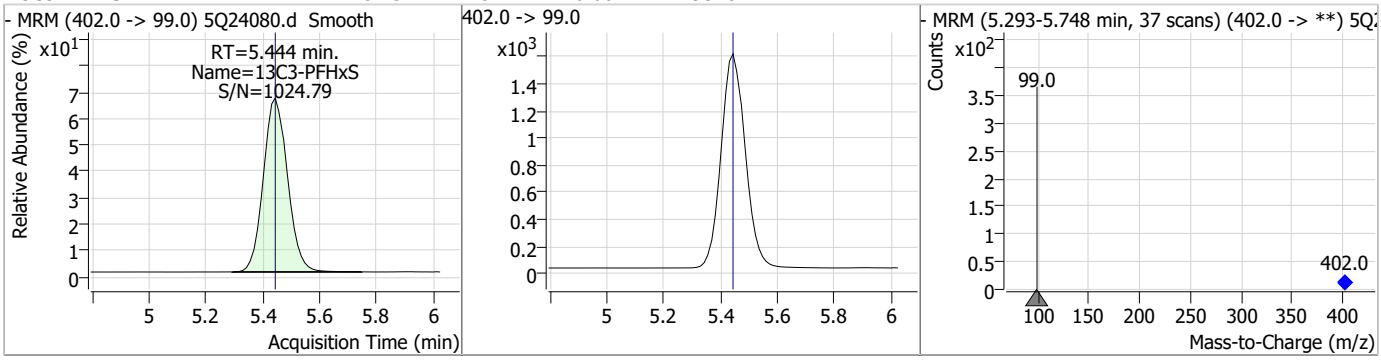
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	8.23	5.43	0.00	97224				



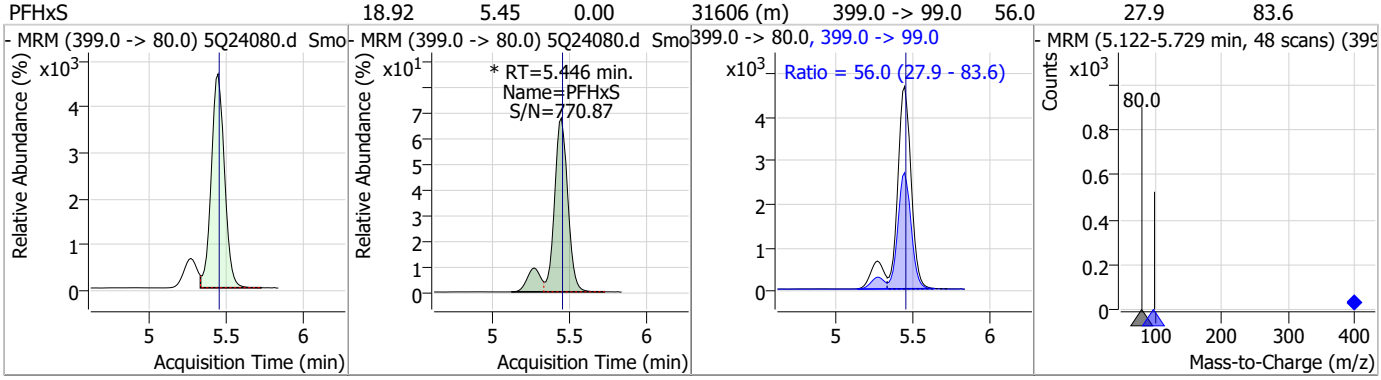
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	19.19	5.43	0.00	205275	363.0 -> 169.0	20.5	10.5	31.6



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	8.25	5.44	0.00	9318				

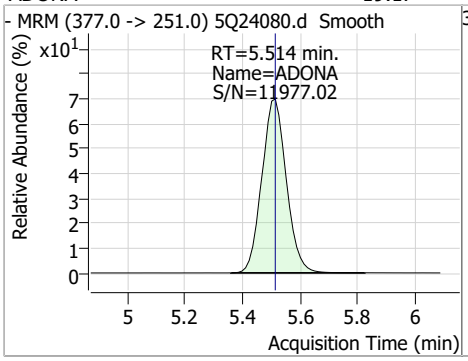


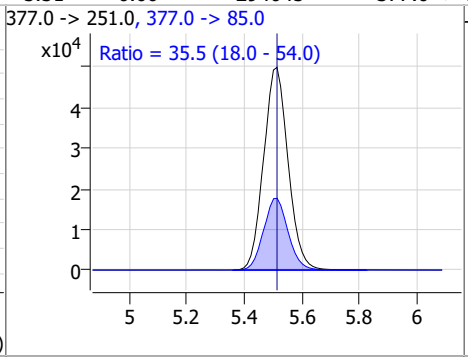
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	18.92	5.45	0.00	31606 (m)	399.0 -> 99.0	56.0	27.9	83.6

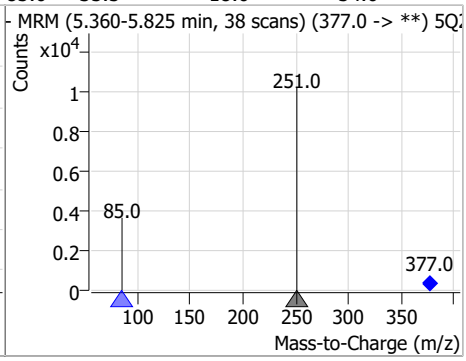


Perfluorinated Compounds by LC/MS/MS

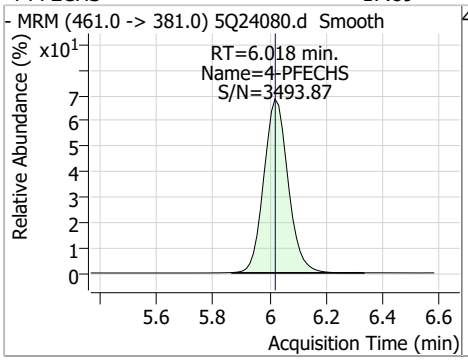
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	19.17	5.51	0.00	294045	377.0 -> 85.0	35.5	18.0	54.0

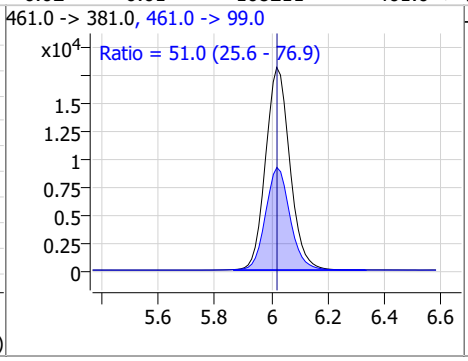


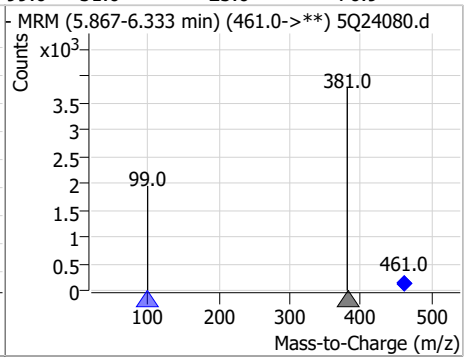




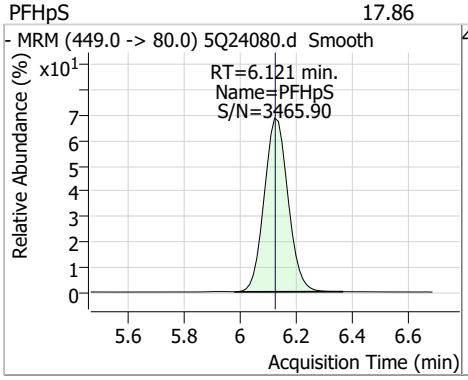
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS	17.89	6.02	-0.01	108211	461.0 -> 99.0	51.0	25.6	76.9

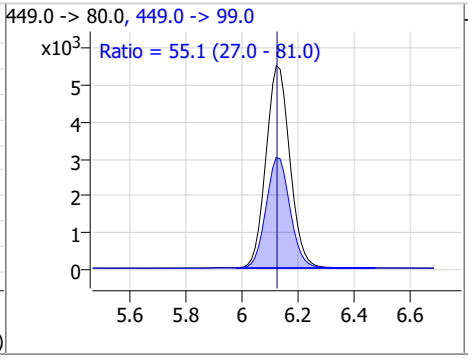


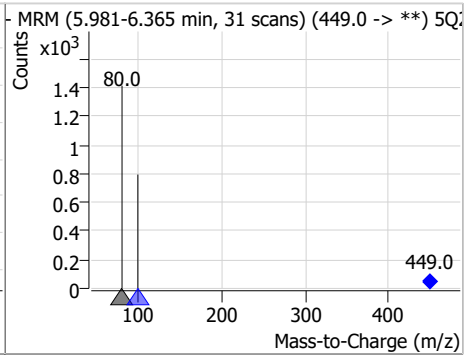




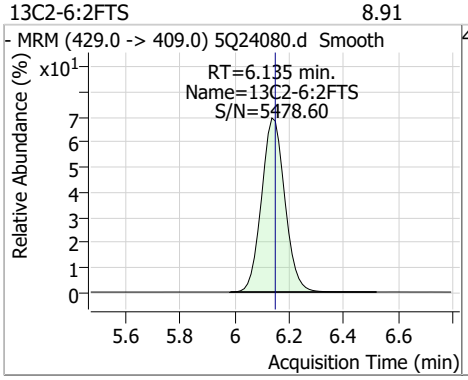
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	17.86	6.12	-0.01	32200	449.0 -> 99.0	55.1	27.0	81.0

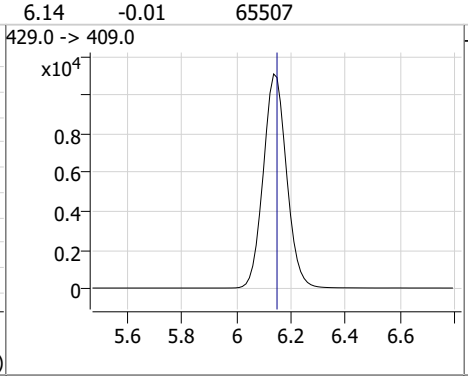


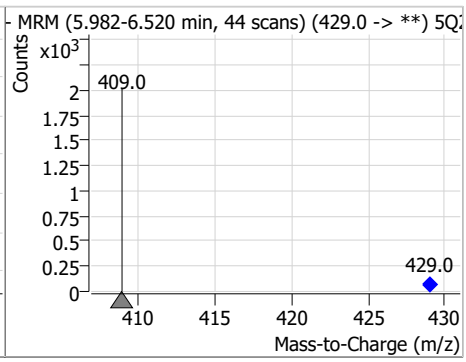




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	8.91	6.14	-0.01	65507				

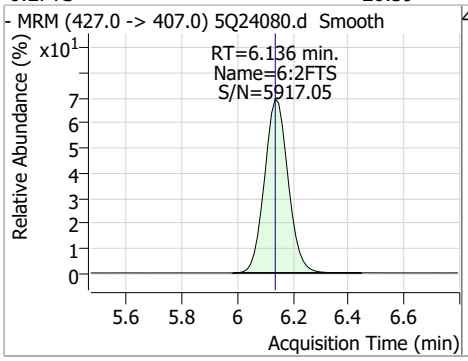


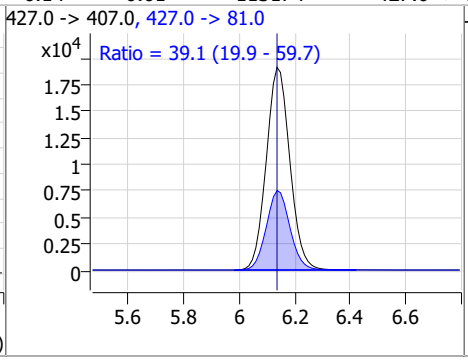


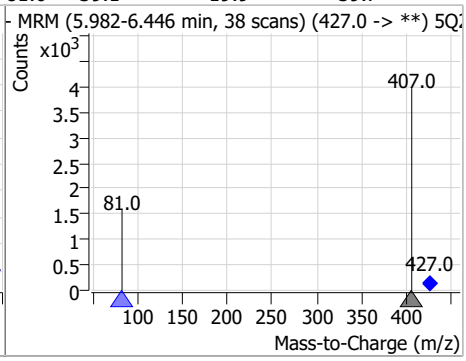


Perfluorinated Compounds by LC/MS/MS

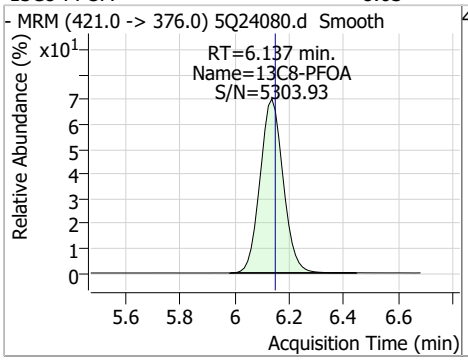
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	20.39	6.14	-0.01	113174	427.0 -> 81.0	39.1	19.9	59.7

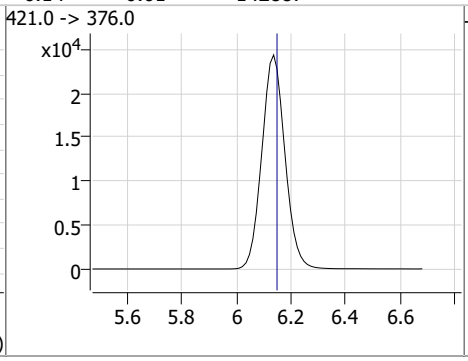


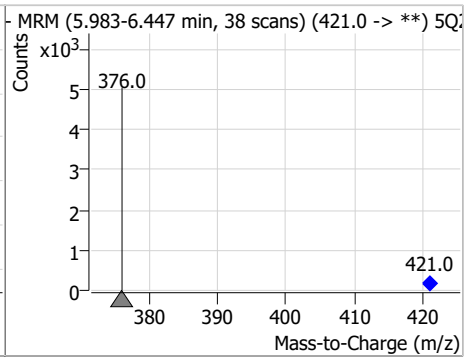




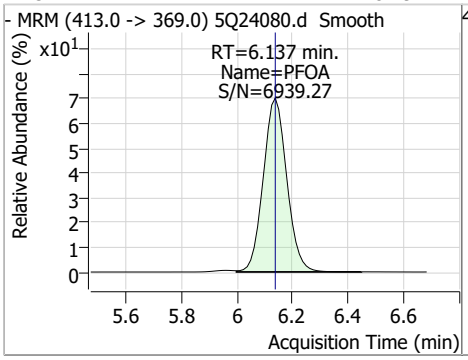
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	8.63	6.14	-0.01	142887				

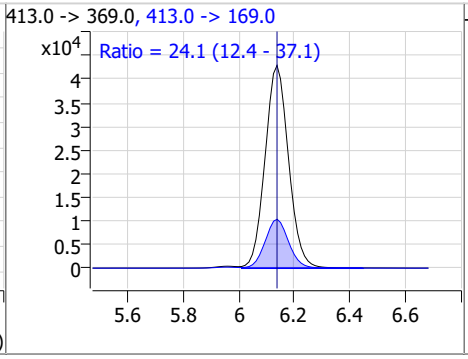


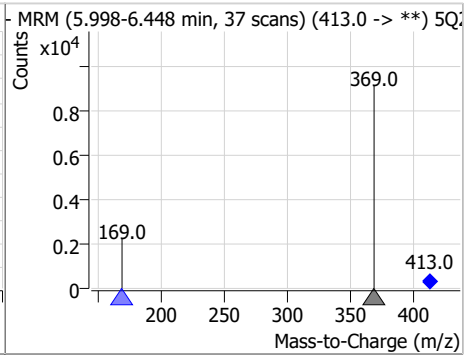




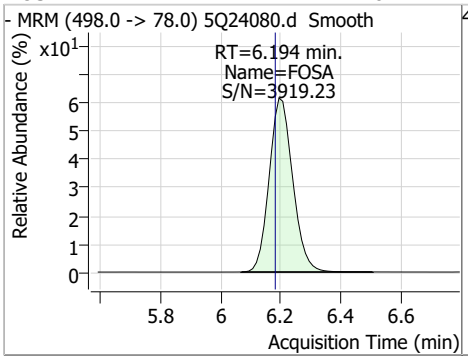
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	18.49	6.14	-0.01	252204	413.0 -> 169.0	24.1	12.4	37.1

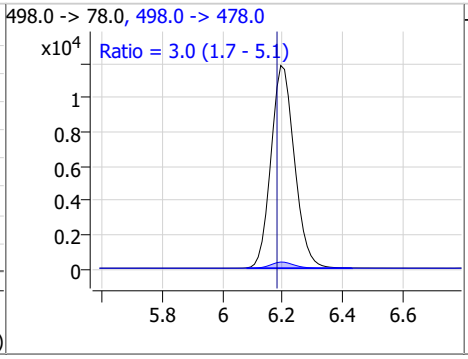


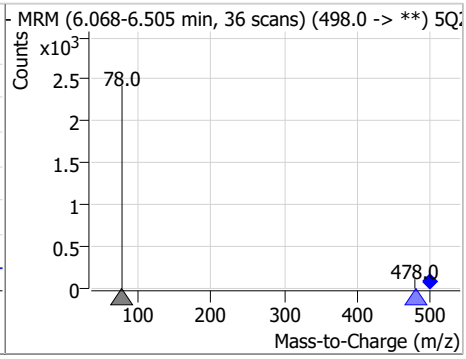




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	18.77	6.19	0.00	64099	498.0 -> 478.0	3.0	1.7	5.1

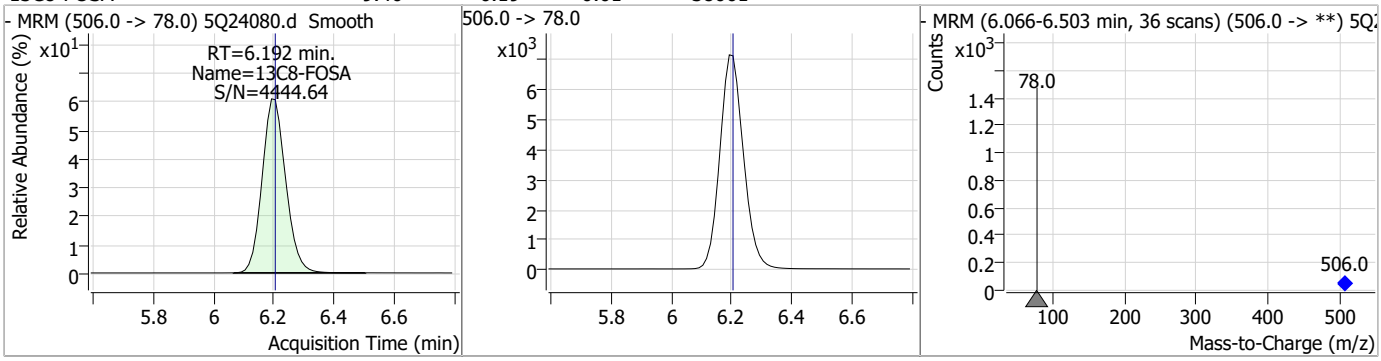




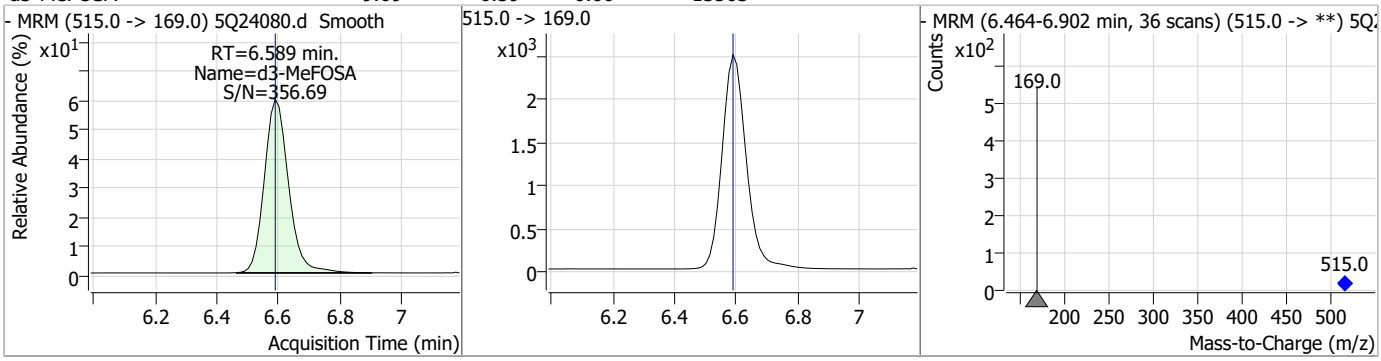


Perfluorinated Compounds by LC/MS/MS

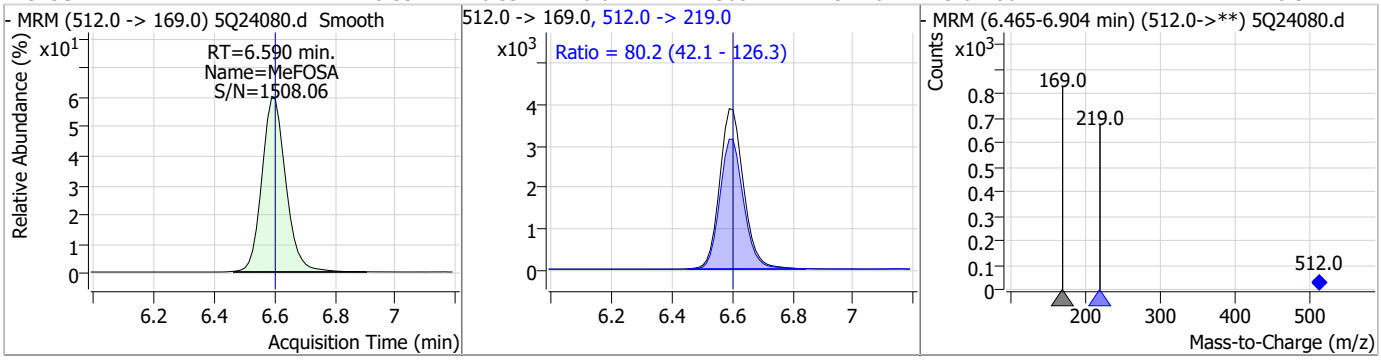
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	9.46	6.19	-0.01	38661				



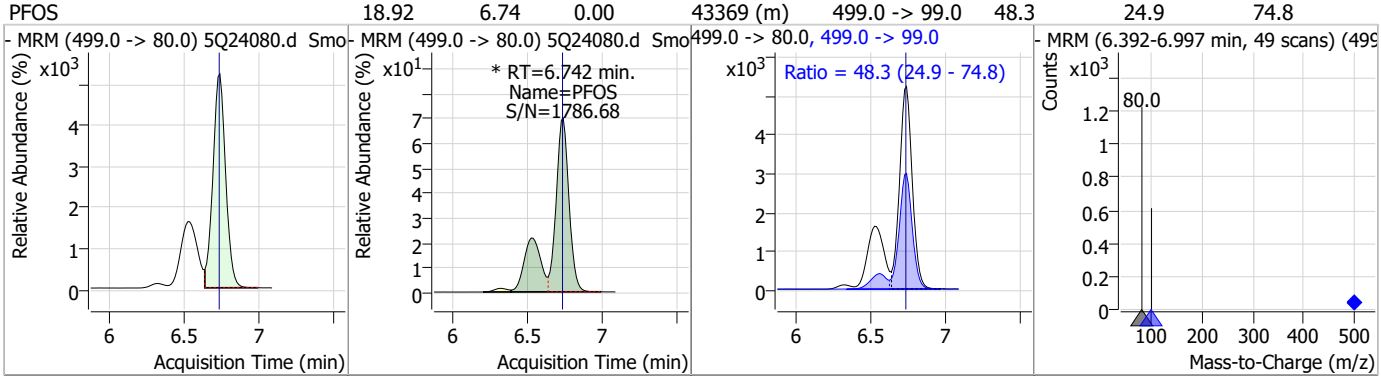
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	9.69	6.59	0.00	13503				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	18.53	6.59	-0.01	21368	512.0 -> 219.0	80.2	42.1	126.3

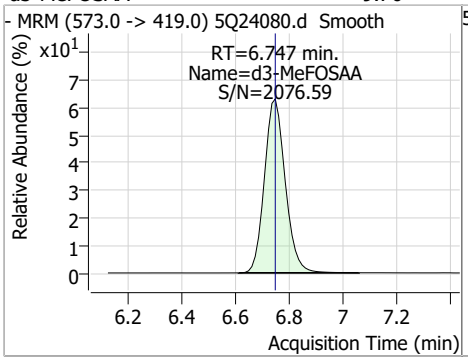


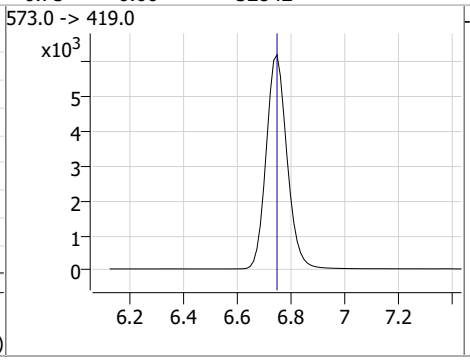
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	18.92	6.74	0.00	43369 (m)	499.0 -> 99.0	48.3	24.9	74.8

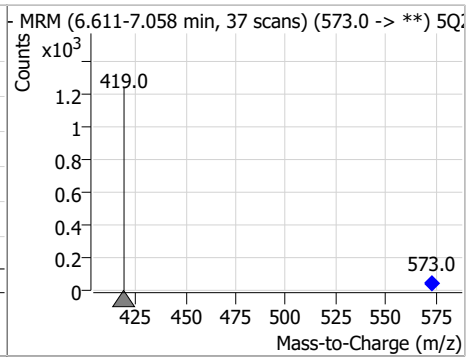


Perfluorinated Compounds by LC/MS/MS

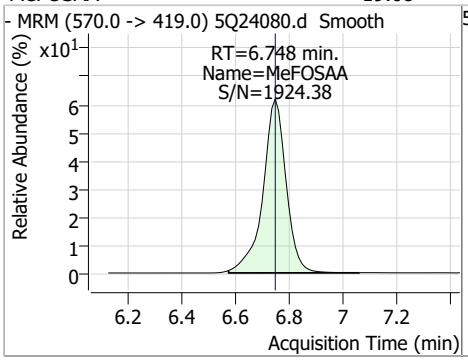
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	9.76	6.75	0.00	32842				

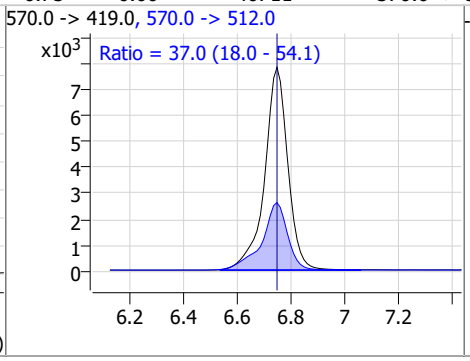


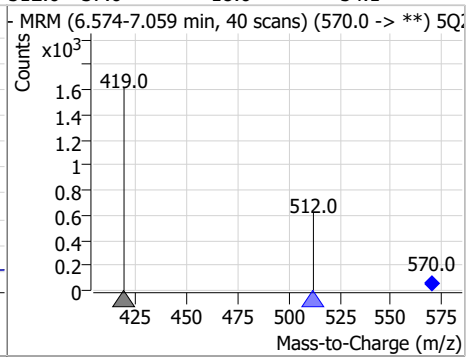




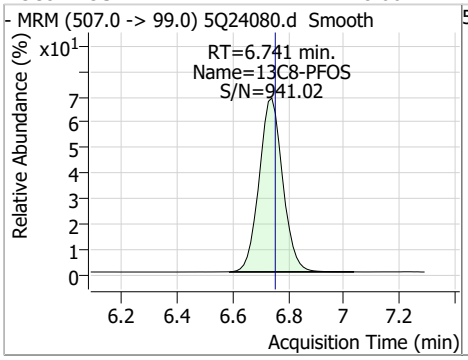
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	19.08	6.75	0.00	46711	570.0 -> 512.0	37.0	18.0	54.1

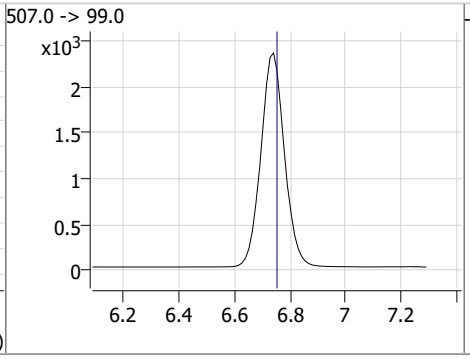


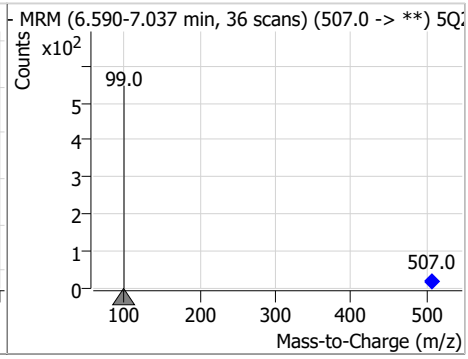




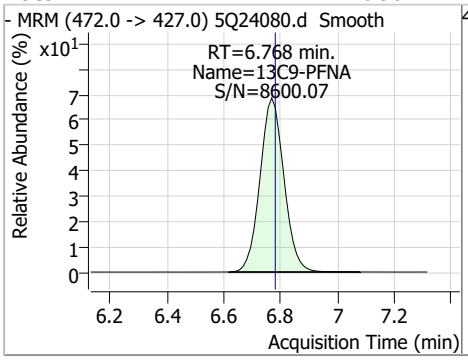
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	8.66	6.74	-0.01	13642				

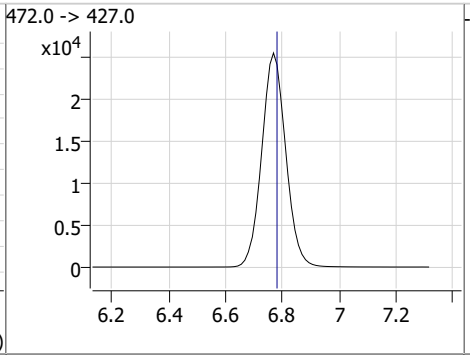


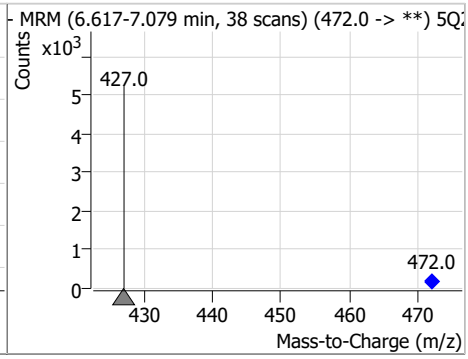




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	8.96	6.77	-0.01	148536				

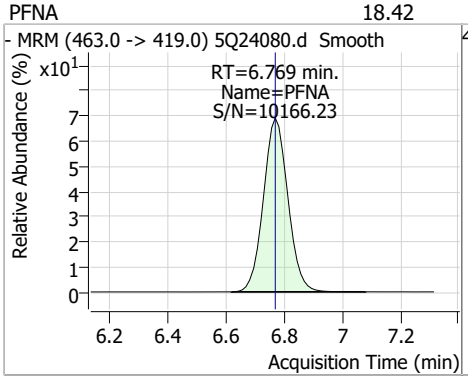


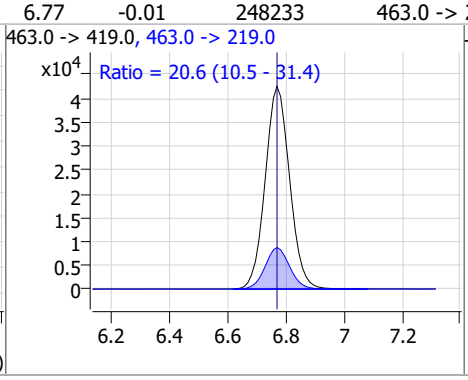


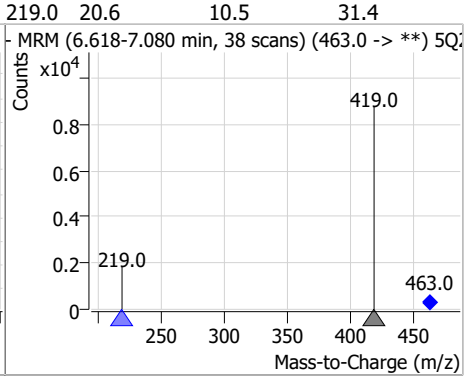


Perfluorinated Compounds by LC/MS/MS

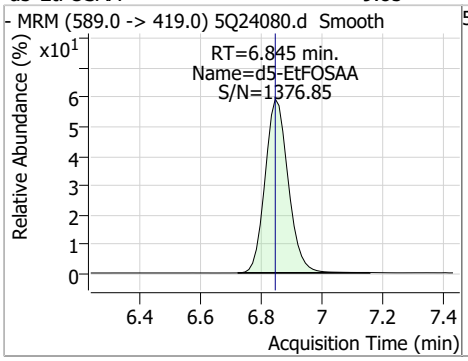
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	18.42	6.77	-0.01	248233	463.0 -> 219.0	20.6	10.5	31.4

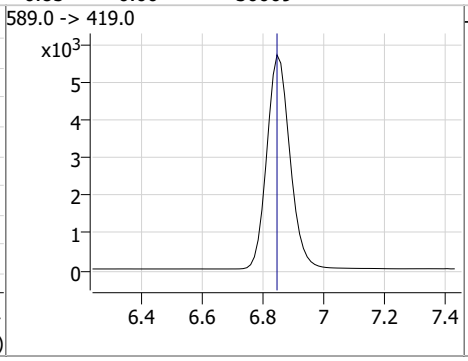


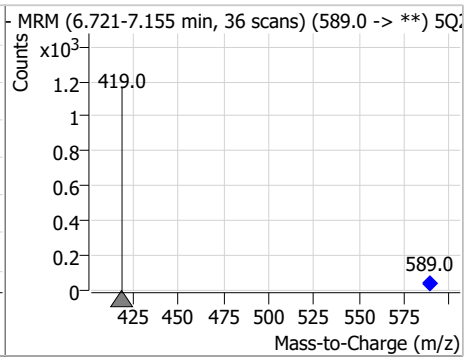




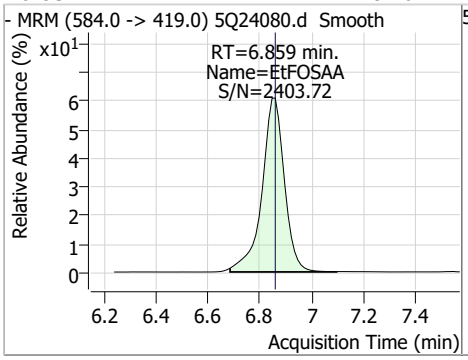
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	9.85	6.85	0.00	30009				

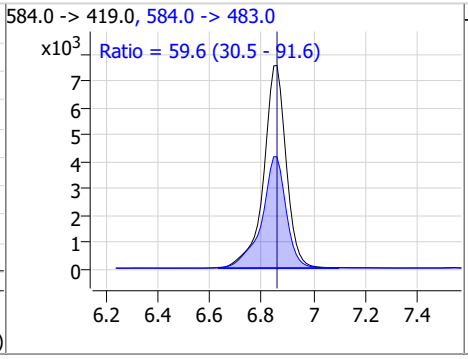


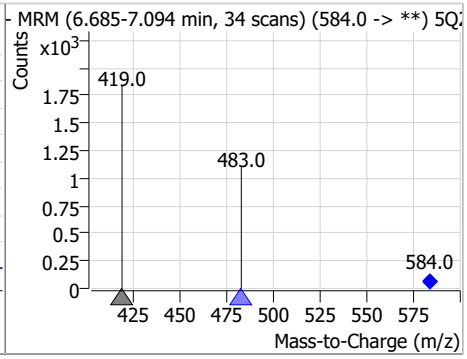




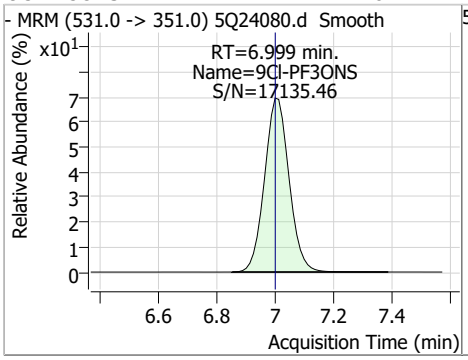
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	19.70	6.86	0.00	45236	584.0 -> 483.0	59.6	30.5	91.6

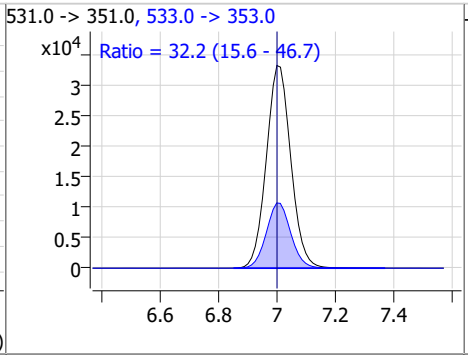


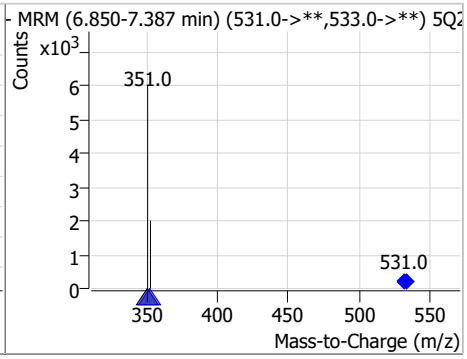




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	18.11	7.00	-0.01	195454	533.0 -> 353.0	32.2	15.6	46.7

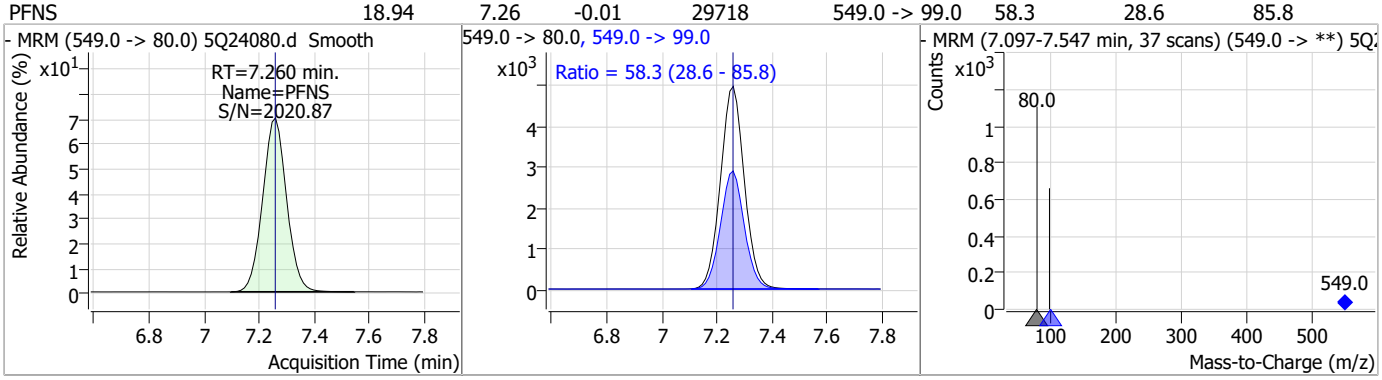




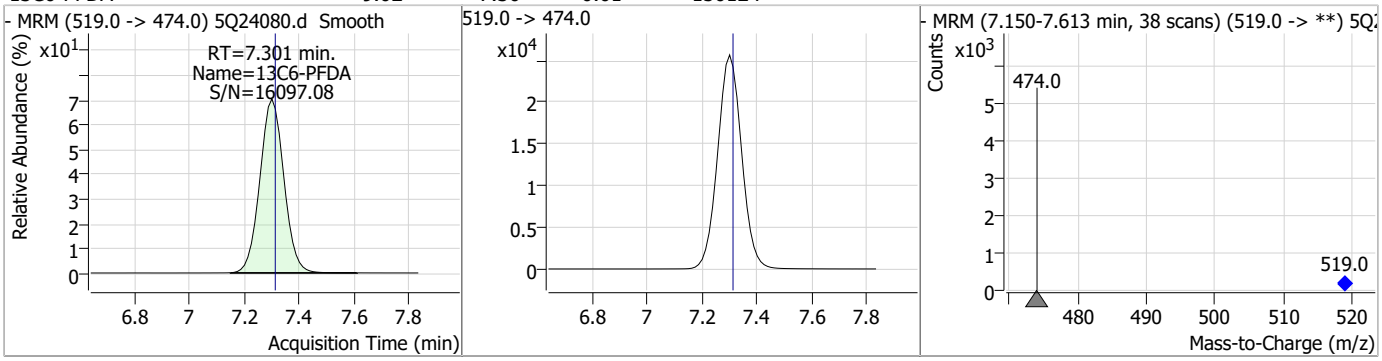


Perfluorinated Compounds by LC/MS/MS

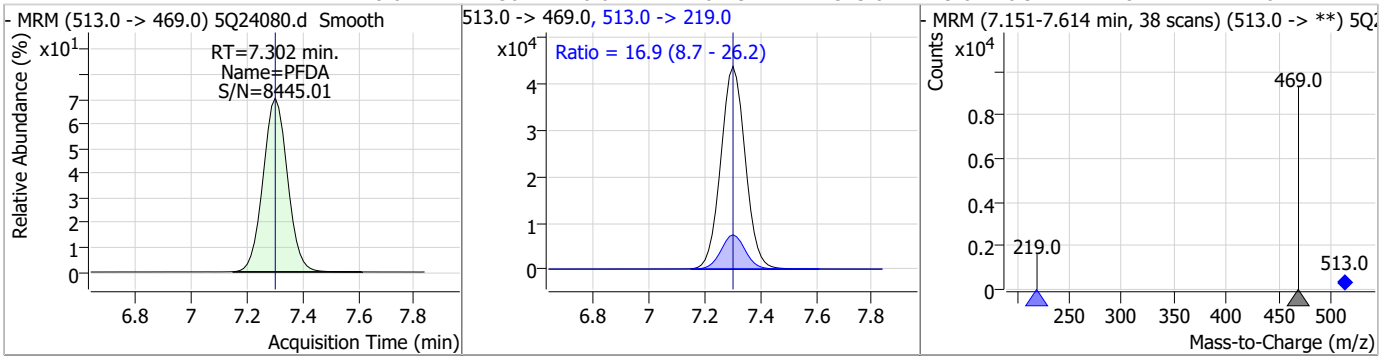
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	18.94	7.26	-0.01	29718	549.0 -> 99.0	58.3	28.6	85.8



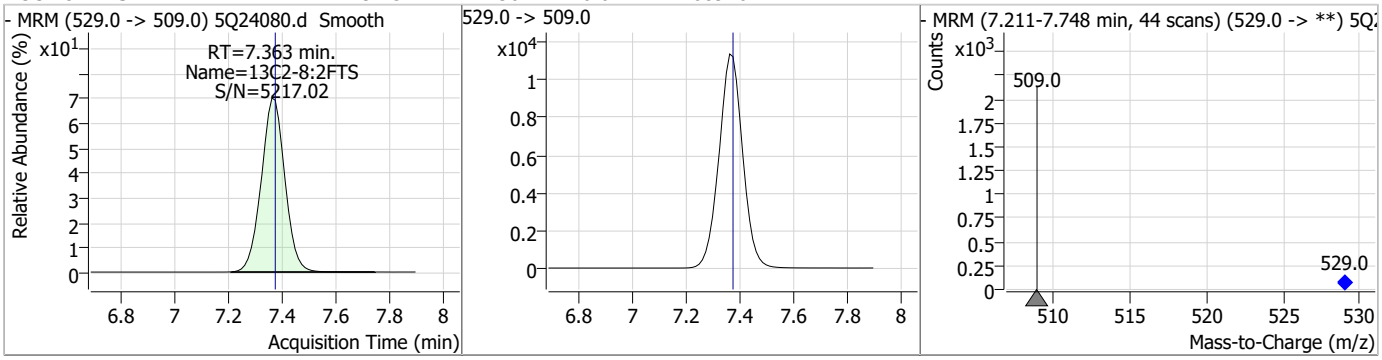
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	9.02	7.30	-0.01	156124				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	18.61	7.30	-0.01	267292	513.0 -> 219.0	16.9	8.7	26.2

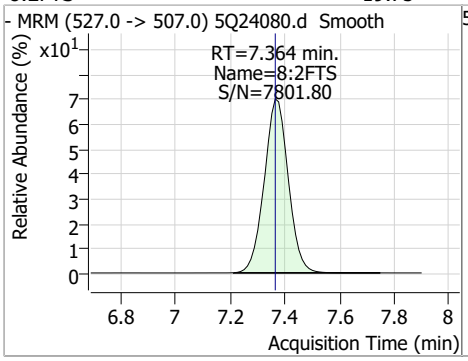


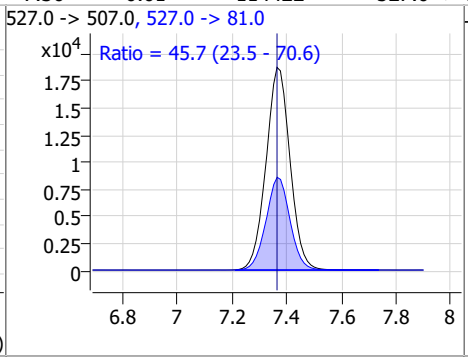
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	9.75	7.36	-0.01	68970				

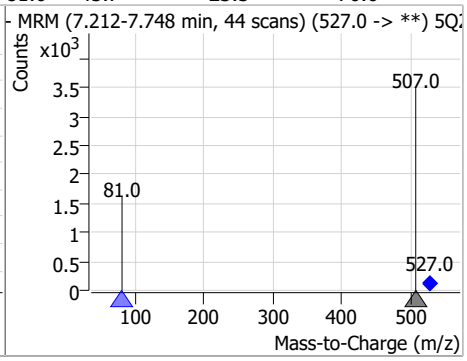


Perfluorinated Compounds by LC/MS/MS

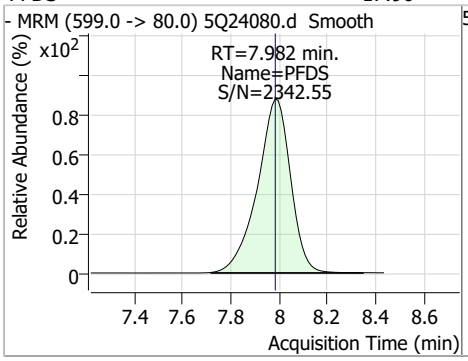
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	19.75	7.36	-0.01	114422	527.0 -> 81.0	45.7	23.5	70.6

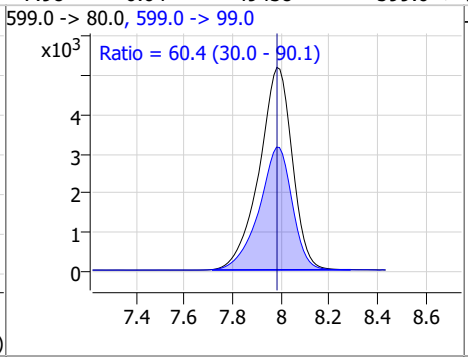


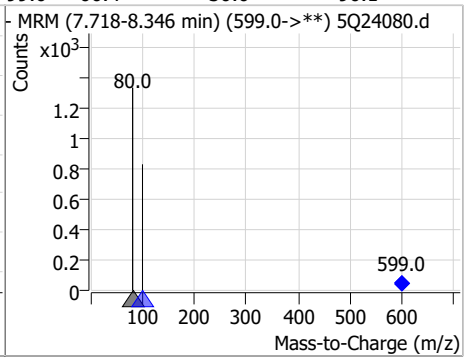




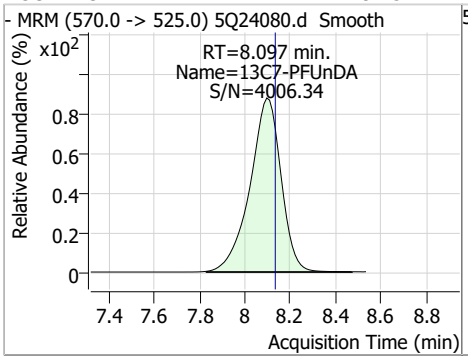
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	17.96	7.98	-0.04	49438	599.0 -> 99.0	60.4	30.0	90.1

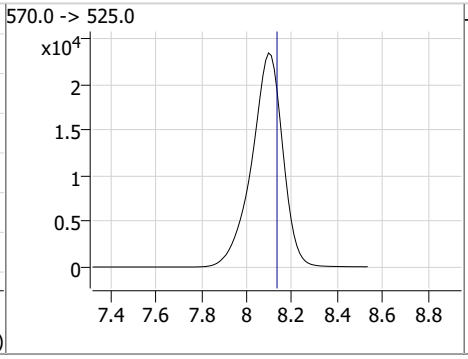


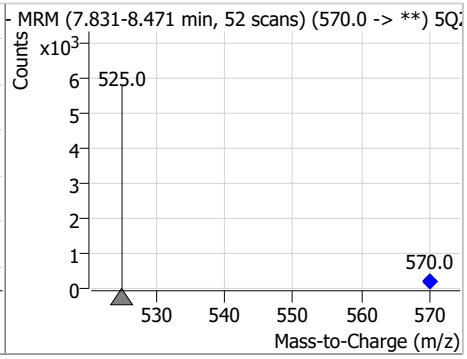




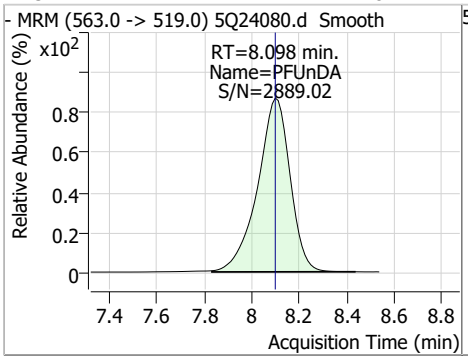
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	9.15	8.10	-0.04	223259				

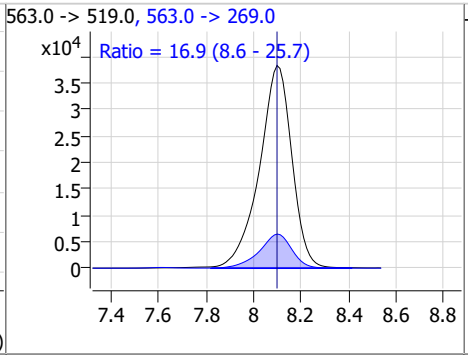


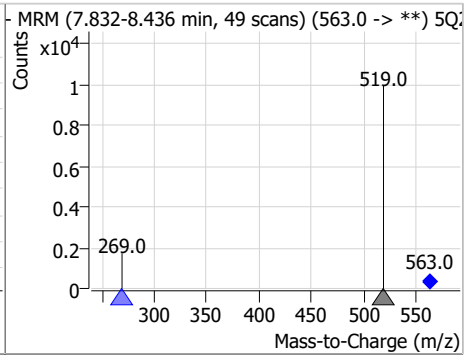




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	18.72	8.10	-0.04	362400	563.0 -> 269.0	16.9	8.6	25.7

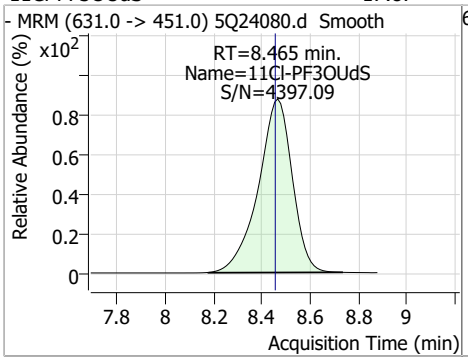


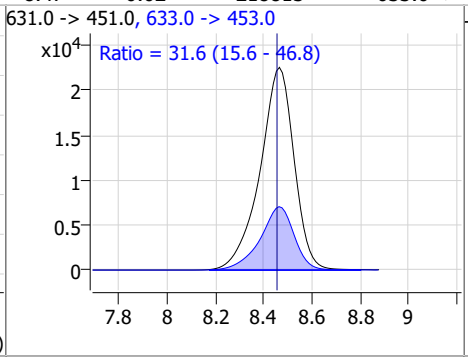


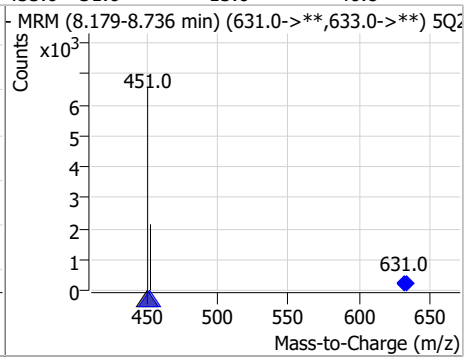


Perfluorinated Compounds by LC/MS/MS

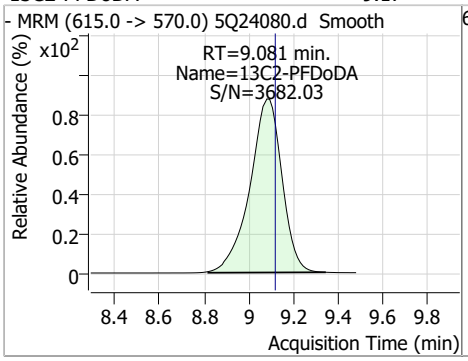
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	17.87	8.47	-0.02	218813	633.0 -> 453.0	31.6	15.6	46.8

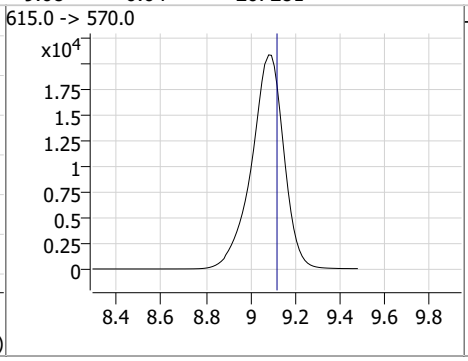


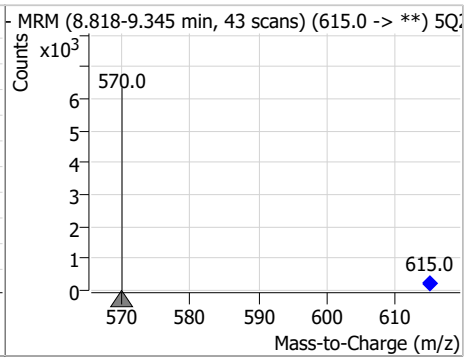




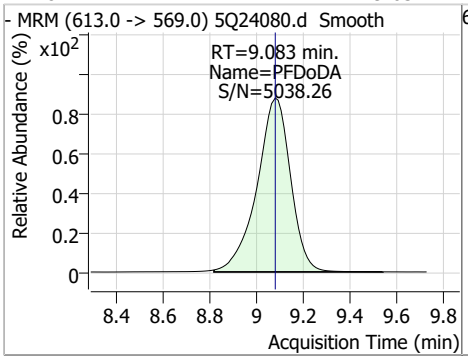
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	9.17	9.08	-0.04	207281				

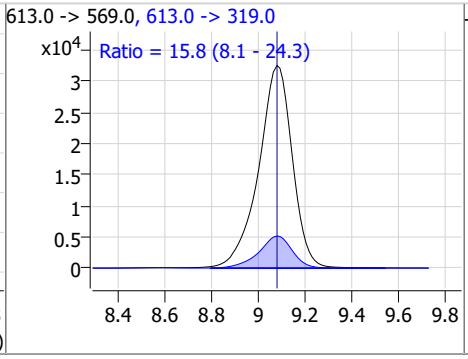


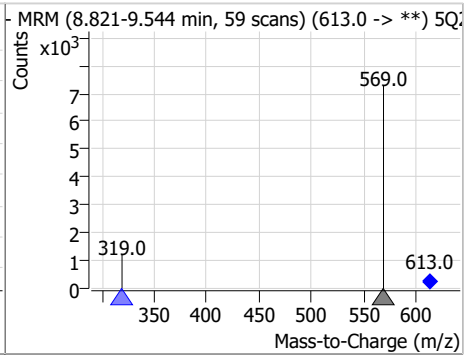




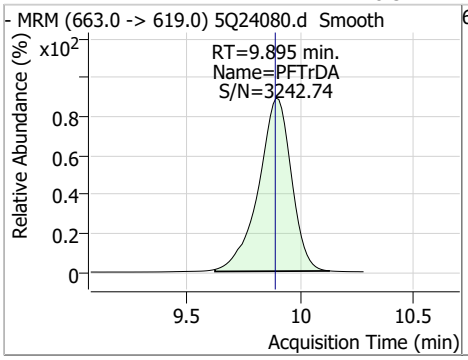
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	19.03	9.08	-0.04	324632	613.0 -> 319.0	15.8	8.1	24.3

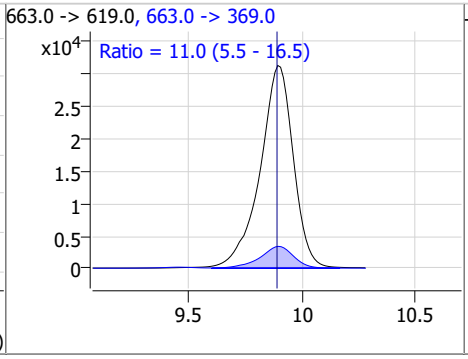


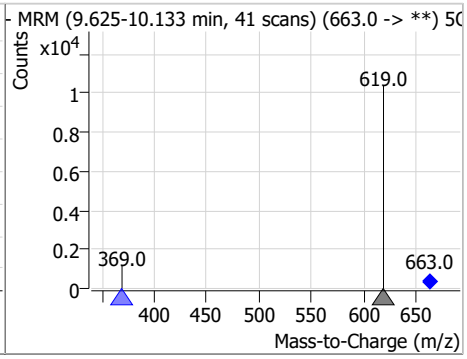




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	18.34	9.89	-0.04	314148	663.0 -> 369.0	11.0	5.5	16.5

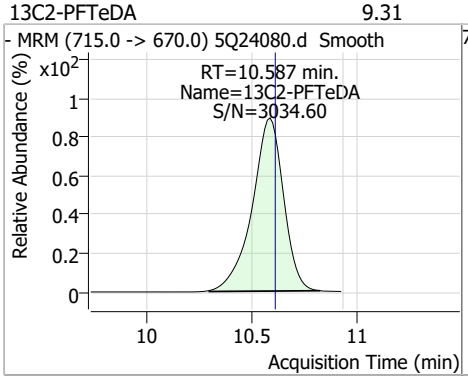


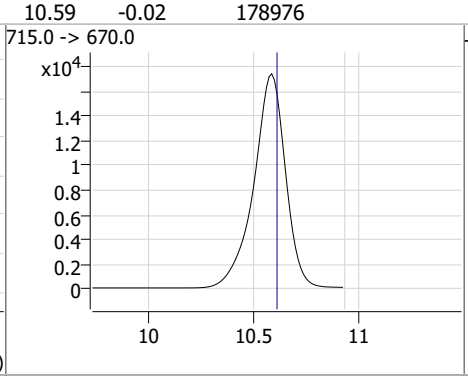


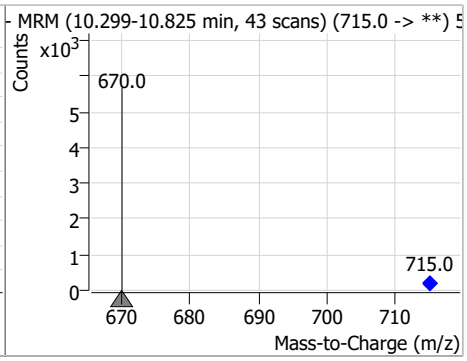


Perfluorinated Compounds by LC/MS/MS

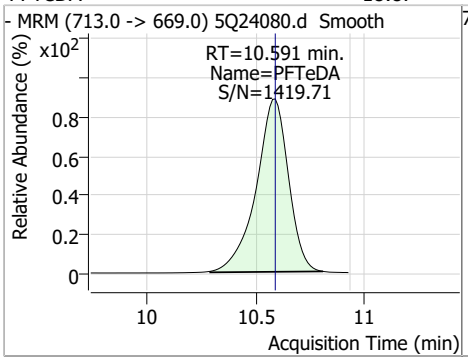
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	9.31	10.59	-0.02	178976				

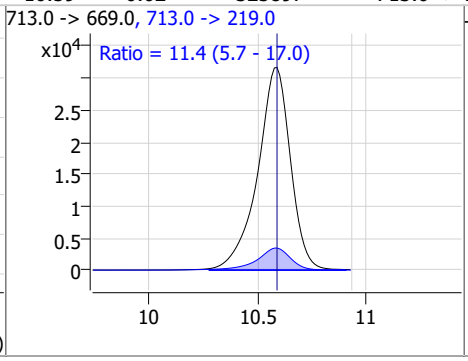


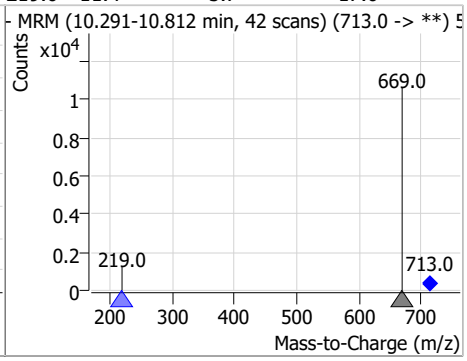




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	18.87	10.59	-0.02	325897	713.0 -> 219.0	11.4	5.7	17.0







9.6.48

9

Manual Integration Approval Summary

Sample Number: S5Q377-ECC377
Lab FileID: 5Q24080.D
Injection Time: 01/03/24 07:59
Method: EPA 537M QSM5.3 B-15
Analyst approved: 01/03/24 16:03 Lindsay Ritner
Supervisor approved: 01/04/24 12:54 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.45	Split peak
Perfluorooctanesulfonic acid	1763-23-1		6.74	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Natasha Gumtie
01/09/24 09:58

Perfluorinated Compounds by LC/MS/MS

Data File : 5Q24238.d
Operator : lindsayr
Acq. Method : 537_ID.m
Acq. Date-Time : 1/5/2024 4:18:10 PM
Sample Name : cc377-1.0LL
Vial : P1-A3
DA Method File : ID_010224_S5Q377.quantmethod.xml
Batch Name : s5q380.batch.bin
Sample Information : OP401,S5Q380,250,,,1.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.987	217.0 -> 172.0	42076	10.00	µg/L	0.000
M5-PFPeA	3.432	268.0 -> 223.0	67693	10.00	µg/L	0.000
M5-PFHxA	4.552	318.0 -> 273.0	109893	10.00	µg/L	-0.012
M4-PFHpA	5.425	367.0 -> 322.0	111015	10.00	µg/L	0.000
M8-PFOA	6.137	421.0 -> 376.0	157178	10.00	µg/L	-0.012
M9-PFNA	6.768	472.0 -> 427.0	165980	10.00	µg/L	-0.012
M6-PFDA	7.301	519.0 -> 474.0	173015	10.00	µg/L	-0.012
M7-PFUnDA	8.097	570.0 -> 525.0	233201	10.00	µg/L	-0.037
M2-PFDoDA	9.081	615.0 -> 570.0	203233	10.00	µg/L	-0.037
M2-PFTeDA	10.574	715.0 -> 670.0	177693	10.00	µg/L	-0.037
M8-FOSA	6.192	506.0 -> 78.0	46744	10.00	µg/L	-0.012
M3-PFBS	3.624	302.0 -> 99.0	8084	10.00	µg/L	-0.012
M3-PFHxS	5.444	402.0 -> 99.0	10860	10.00	µg/L	0.000
M8-PFOS	6.741	507.0 -> 99.0	14957	10.00	µg/L	-0.012
M2-4:2FTS	4.474	329.0 -> 309.0	35765	10.00	µg/L	-0.012
M2-6:2FTS	6.135	429.0 -> 409.0	67034	10.00	µg/L	-0.012
M2-8:2FTS	7.363	529.0 -> 509.0	67615	10.00	µg/L	-0.012
M3-MeFOSAA	6.747	573.0 -> 419.0	37667	10.00	µg/L	0.000
M3-HFPO-DA	4.819	287.0 -> 169.0	5710	10.00	µg/L	-0.012
M3-MeFOSA	6.589	515.0 -> 169.0	15613	10.00	µg/L	0.000
M5-EtFOSAA	6.845	589.0 -> 419.0	33772	10.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.474	329.0 -> 309.0	35765	9.15	µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 91.5%		
13C2-6:2FTS	6.135	429.0 -> 409.0	67034	9.11	µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 91.1%		
13C2-8:2FTS	7.363	529.0 -> 509.0	67615	9.56	µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 95.6%		
13C2-PFDoDA	9.081	615.0 -> 570.0	203233	8.99	µg/L	-0.037
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 89.9%		
13C2-PFTeDA	10.574	715.0 -> 670.0	177693	9.25	µg/L	-0.037
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 92.5%		
13C3-PFBS	3.624	302.0 -> 99.0	8084	8.76	µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 87.6%		
13C3-PFHxS	5.444	402.0 -> 99.0	10860	9.61	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 96.1%		
13C4-PFBA	1.987	217.0 -> 172.0	42076	9.54	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 95.4%		
13C4-PFHpA	5.425	367.0 -> 322.0	111015	9.39	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 93.9%		
13C5-PFHxA	4.552	318.0 -> 273.0	109893	9.57	µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 95.7%		
13C5-PFPeA	3.432	268.0 -> 223.0	67693	9.11	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 91.1%		
13C6-PFDA	7.301	519.0 -> 474.0	173015	9.99	µg/L	-0.012

Perfluorinated Compounds by LC/MS/MS

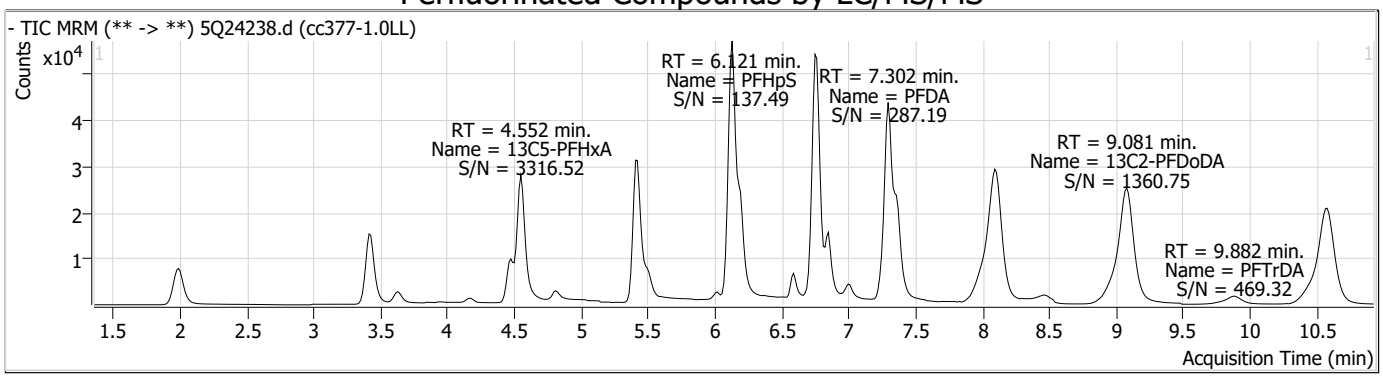
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.9%			
13C7-PFUnDA	8.097	570.0 -> 525.0	233201	9.55	µg/L		-0.037
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 95.5%			
13C8-FOSA	6.192	506.0 -> 78.0	46744	11.43	µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 114.3%			
13C8-PFOA	6.137	421.0 -> 376.0	157178	9.50	µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 95.0%			
13C8-PFOS	6.741	507.0 -> 99.0	14957	9.50	µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 95.0%			
13C9-PFNA	6.768	472.0 -> 427.0	165980	10.01	µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.1%			
d3-MeFOSAA	6.747	573.0 -> 419.0	37667	11.20	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 112.0%			
13C3-HFPO-DA	4.819	287.0 -> 169.0	5710	9.56	µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 95.6%			
d3-MeFOSA	6.589	515.0 -> 169.0	15613	11.21	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 112.1%			
d5-EtFOSAA	6.845	589.0 -> 419.0	33772	11.08	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 110.8%			
Target Compounds							QValue
4:2FTS	4.475	327.0 -> 307.0	3243	0.95	µg/L		95
		327.0 -> 81.0	1922				
6:2FTS	6.136	427.0 -> 407.0	5350	0.94	µg/L		96
		427.0 -> 81.0	2277				
8:2FTS	7.364	527.0 -> 507.0	5496	0.97	µg/L		94
		527.0 -> 81.0	2794				
EtFOSAA	6.846	584.0 -> 419.0	2612	1.01	µg/L		98
		584.0 -> 483.0	1646				
FOSA	6.194	498.0 -> 78.0	3370	0.82	µg/L		98
		498.0 -> 478.0	132				
MeFOSAA	6.748	570.0 -> 419.0	2641	0.94	µg/L		96
		570.0 -> 512.0	889				
PFBA	1.981	213.0 -> 169.0	2982	0.79	µg/L		100
PFBS	3.628	299.0 -> 80.0	1601	0.81	µg/L		94
		299.0 -> 99.0	751				
PFDA	7.302	513.0 -> 469.0	12804	0.80	µg/L		97
		513.0 -> 219.0	2382				
PFDoDA	9.083	613.0 -> 569.0	15232	0.91	µg/L		99
		613.0 -> 319.0	2519				
PFDS	7.982	599.0 -> 80.0	2374	0.83	µg/L		98
		599.0 -> 99.0	1386				
PFHpA	5.426	363.0 -> 319.0	10270	0.84	µg/L		98
		363.0 -> 169.0	2241				
PFHpS	6.121	449.0 -> 80.0	1583	0.80	µg/L		100
		449.0 -> 99.0	859				
PFHxA	4.553	313.0 -> 269.0	8164	0.80	µg/L		98
		313.0 -> 119.0	288				
PFHxS	5.446	399.0 -> 80.0	1443	0.74	µg/L	m	98
		399.0 -> 99.0	788				
PFNA	6.769	463.0 -> 419.0	12631	0.84	µg/L		98
		463.0 -> 219.0	2553				
PFNS	7.260	549.0 -> 80.0	1520	0.88	µg/L		95
		549.0 -> 99.0	927				
PFOA	6.137	413.0 -> 369.0	12448	0.83	µg/L		99
		413.0 -> 169.0	3140				
PFOS	6.742	499.0 -> 80.0	1918	0.76	µg/L	m	97

Perfluorinated Compounds by LC/MS/MS

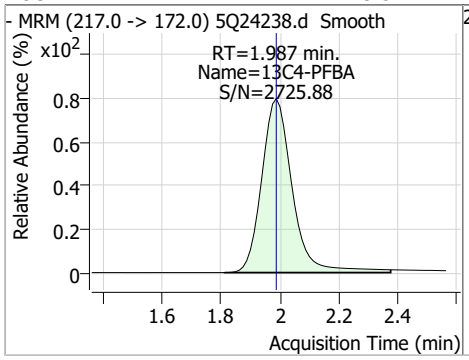
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		499.0 -> 99.0	915			
PFPeA	3.422	263.0 -> 219.0	5276	0.83	µg/L	100
PFPeS	4.648	349.0 -> 80.0	1089	0.79	µg/L	94
		349.0 -> 99.0	614			
PFTeDA	10.566	713.0 -> 669.0	15827	0.92	µg/L	99
		713.0 -> 219.0	1726			
PFTrDA	9.882	663.0 -> 619.0	14628	0.87	µg/L	99
		663.0 -> 369.0	1642			
PFUnDA	8.098	563.0 -> 519.0	16226	0.80	µg/L	96
		563.0 -> 269.0	3057			
11Cl-PF3OUdS	8.453	631.0 -> 451.0	10194	0.85	µg/L	98
		633.0 -> 453.0	3088			
9Cl-PF3ONS	6.999	531.0 -> 351.0	9153	0.77	µg/L	92
		533.0 -> 353.0	3243			
ADONA	5.514	377.0 -> 251.0	14069	0.79	µg/L	97
		377.0 -> 85.0	5320			
HFPO-DA	4.815	329.0 -> 169.0	2025	0.87	µg/L	99
		285.0 -> 169.0	459			
MeFOSA	6.590	512.0 -> 169.0	1043	0.78	µg/L	94
		512.0 -> 219.0	818			
4-PFECHS	6.018	461.0 -> 381.0	5269	0.79	µg/L	100
		461.0 -> 99.0	2712			
FBSA	4.170	298.0 -> 78.0	3147	0.87	µg/L	98
		298.0 -> 64.0	320			
FHxSA	5.409	398.0 -> 78.0	3547	1.00	µg/L	98
		398.0 -> 64.0	352			

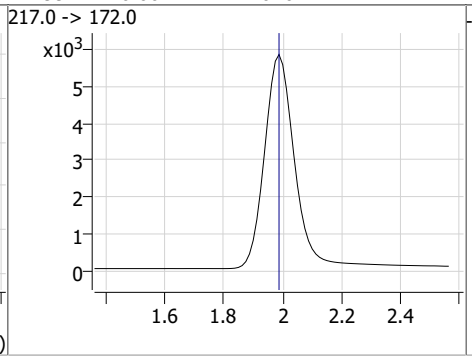
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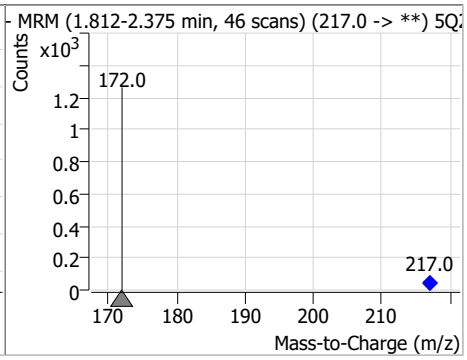
Perfluorinated Compounds by LC/MS/MS



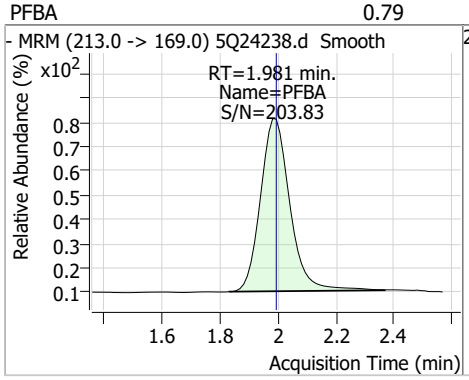
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	9.54	1.99	0.00	42076				

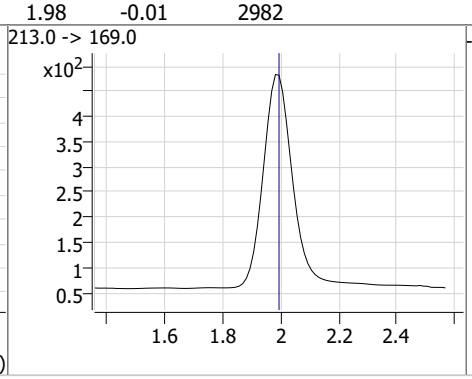


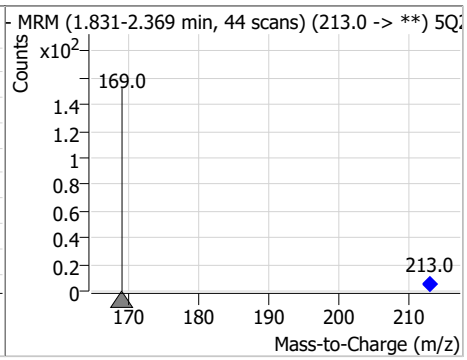




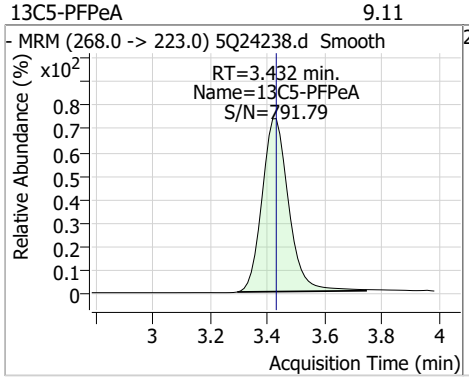
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	0.79	1.98	-0.01	2982				

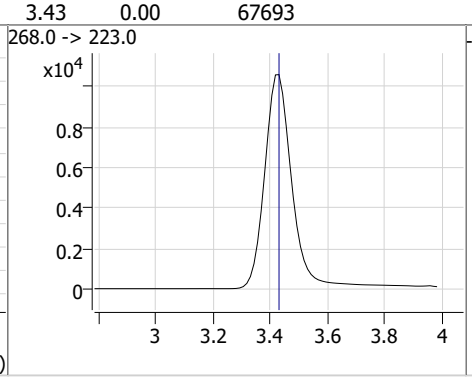


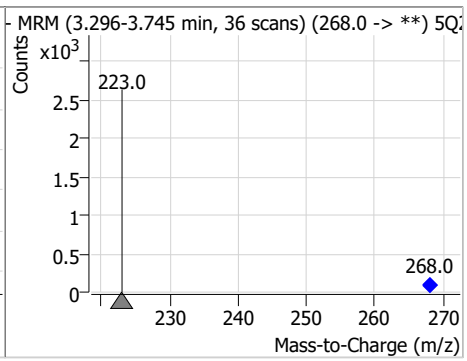




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	9.11	3.43	0.00	67693				

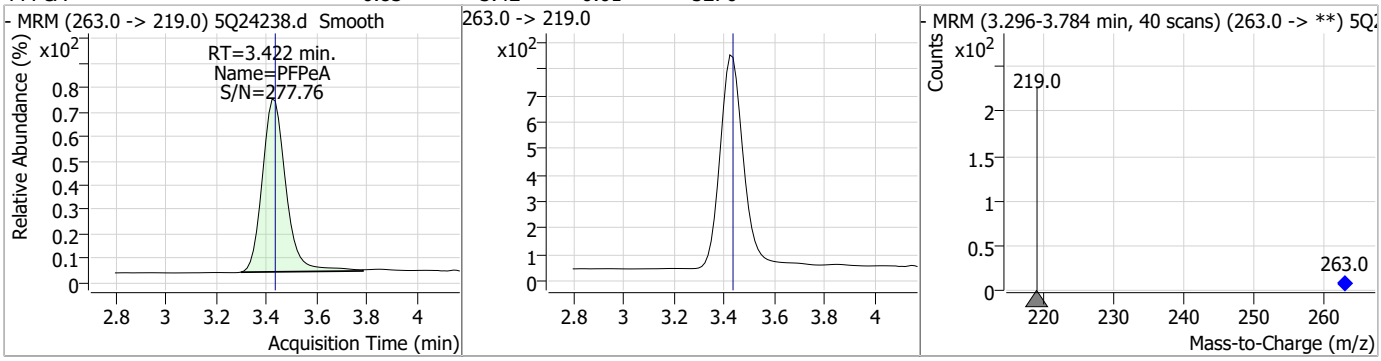




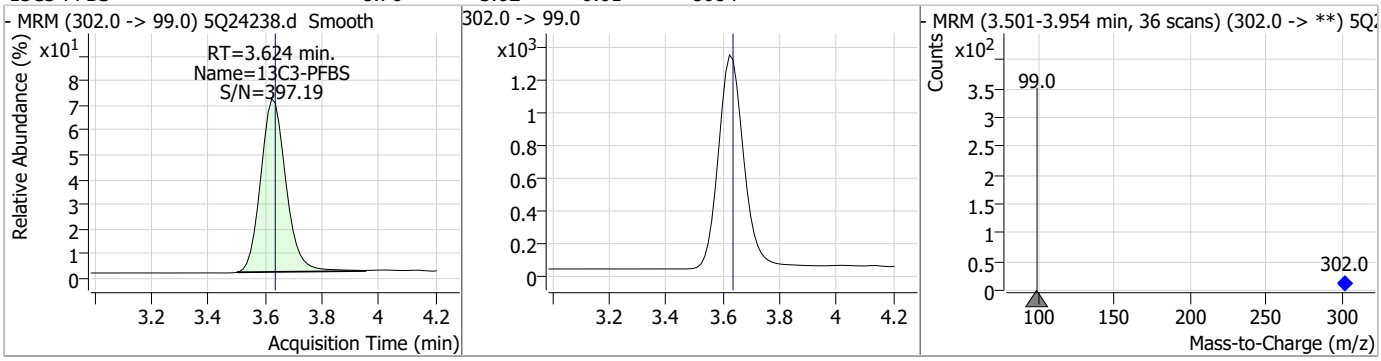


Perfluorinated Compounds by LC/MS/MS

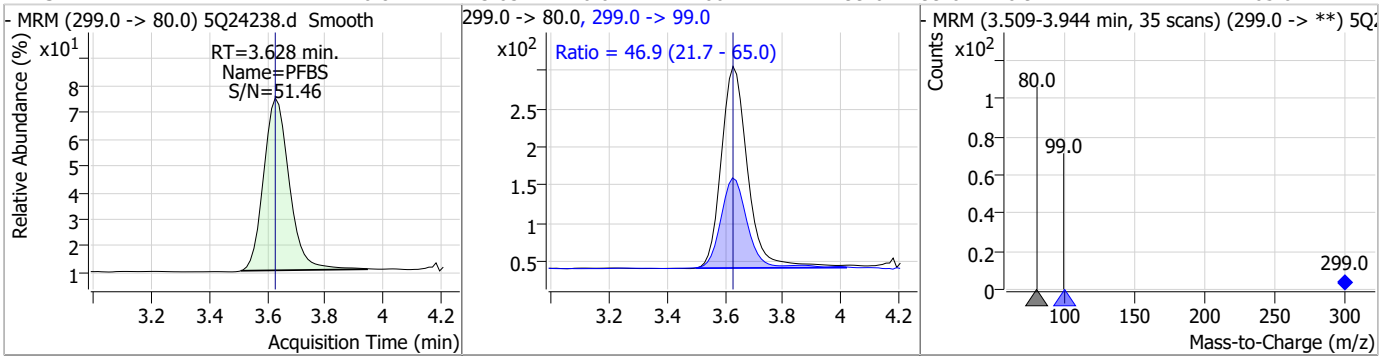
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	0.83	3.42	-0.01	5276				



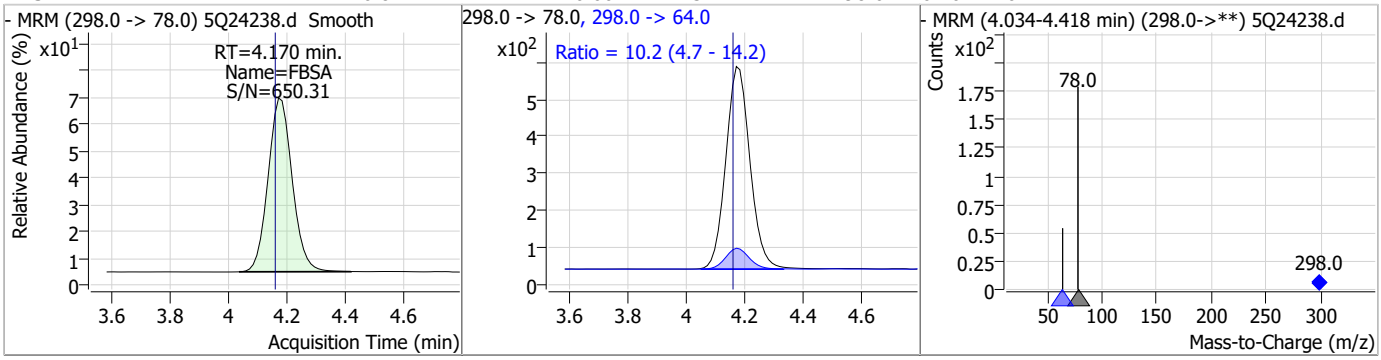
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	8.76	3.62	-0.01	8084				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	0.81	3.63	-0.01	1601	299.0 -> 99.0	46.9	21.7	65.0

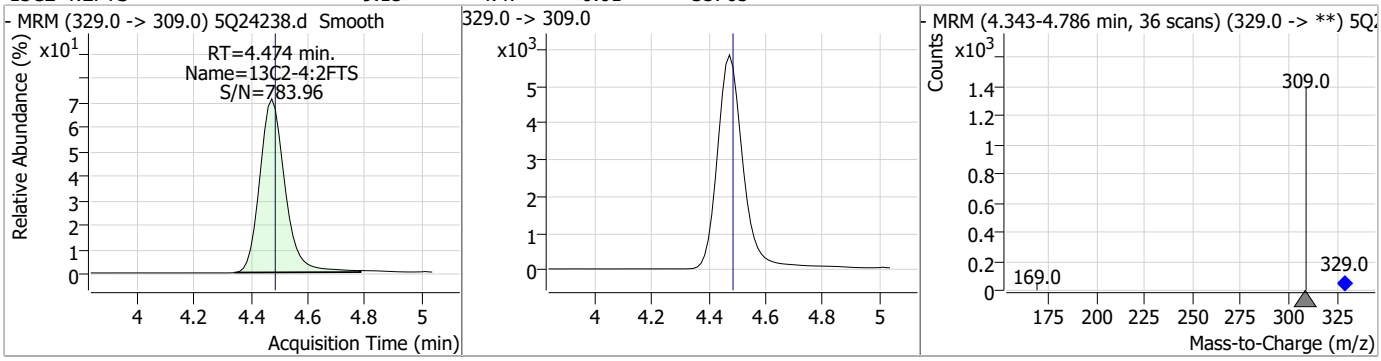


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	0.87	4.17	0.00	3147	298.0 -> 64.0	10.2	4.7	14.2

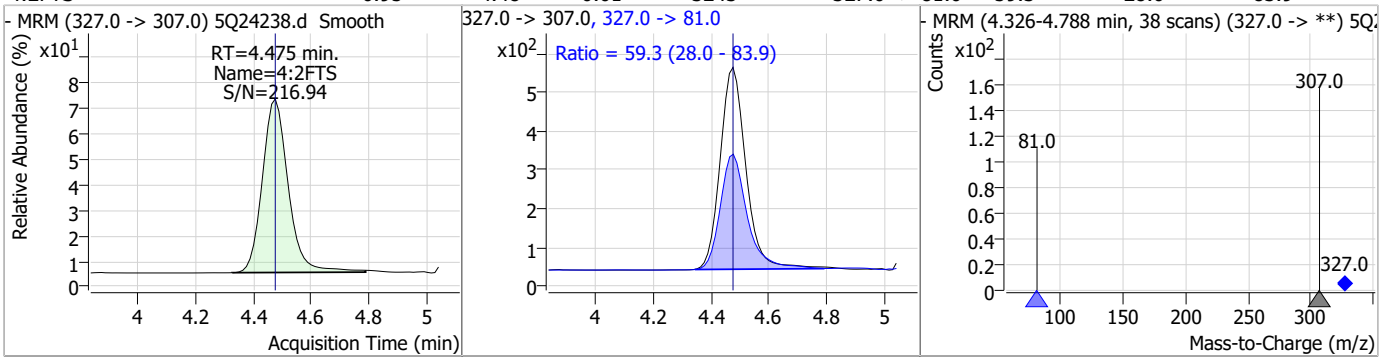


Perfluorinated Compounds by LC/MS/MS

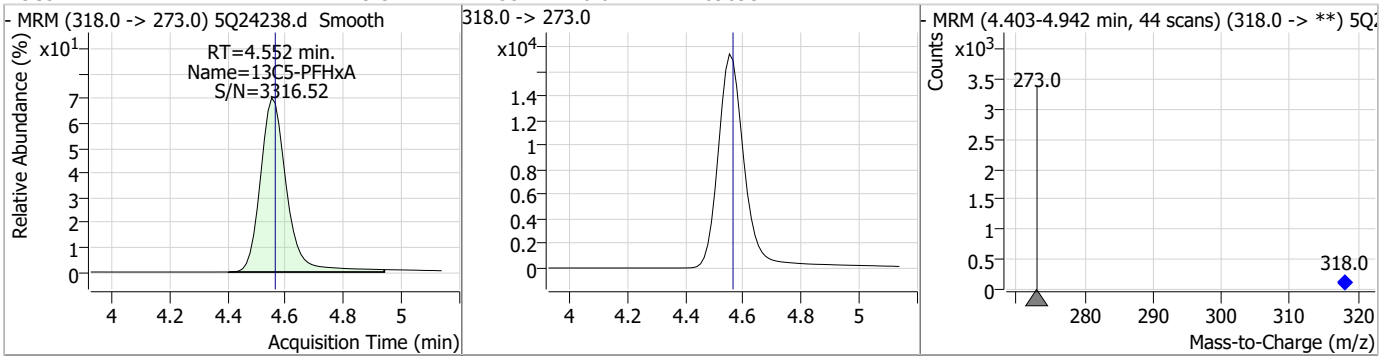
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	9.15	4.47	-0.01	35765				



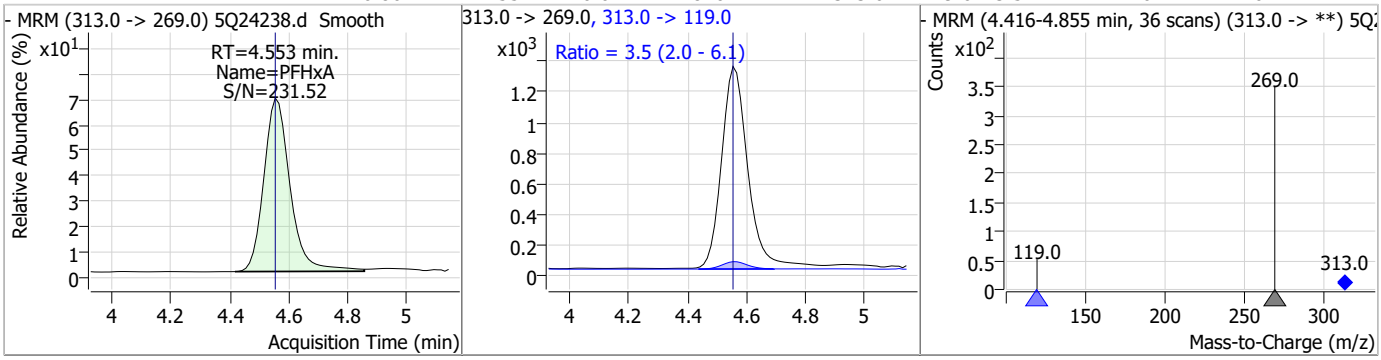
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	0.95	4.48	-0.01	3243	327.0 -> 81.0	59.3	28.0	83.9



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	9.57	4.55	-0.01	109893				

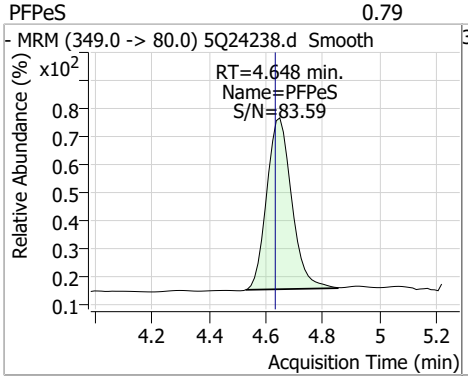


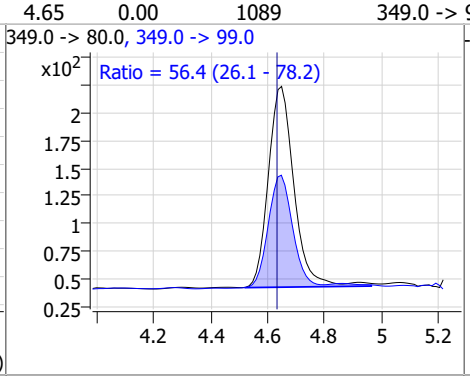
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	0.80	4.55	-0.01	8164	313.0 -> 119.0	3.5	2.0	6.1

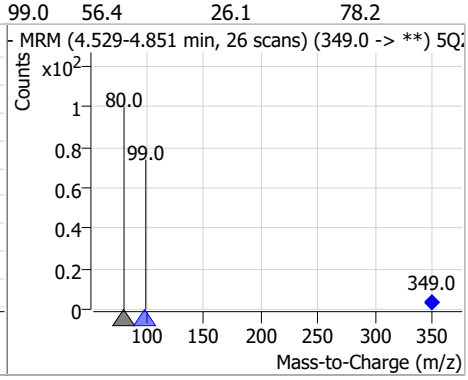


Perfluorinated Compounds by LC/MS/MS

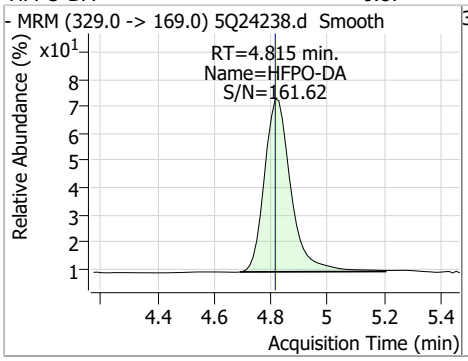
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	0.79	4.65	0.00	1089	349.0 -> 99.0	56.4	26.1	78.2

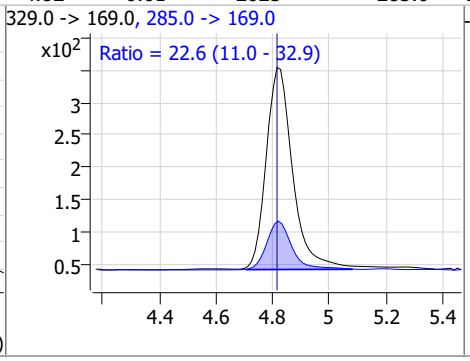


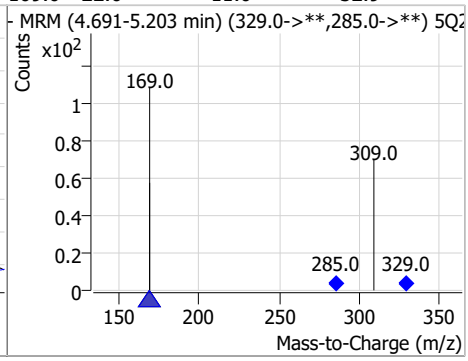




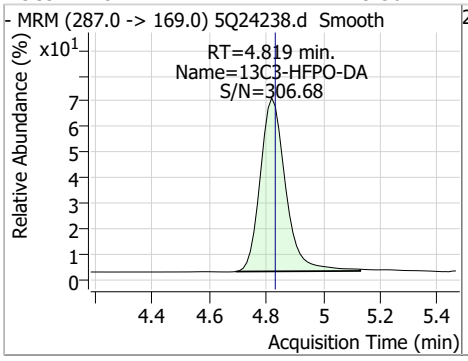
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	0.87	4.82	-0.01	2025	285.0 -> 169.0	22.6	11.0	32.9

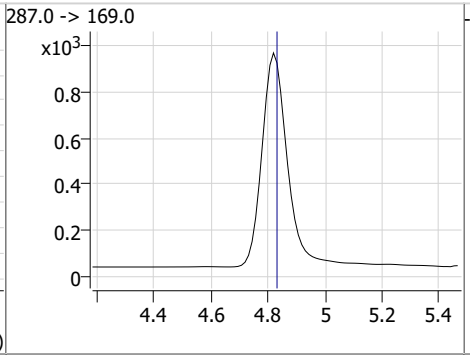


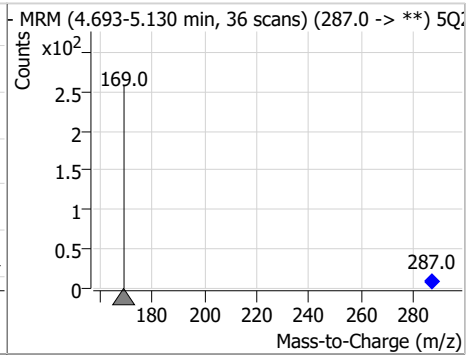




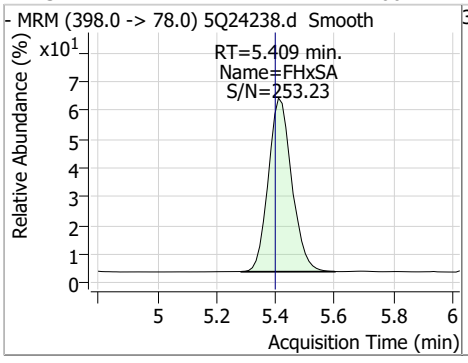
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	9.56	4.82	-0.01	5710				

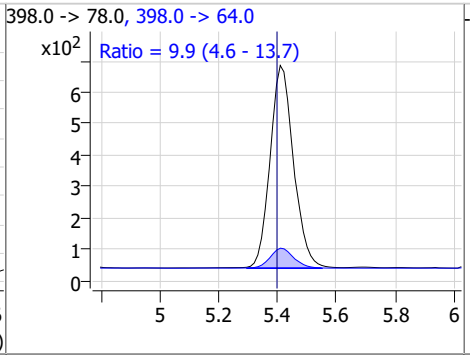


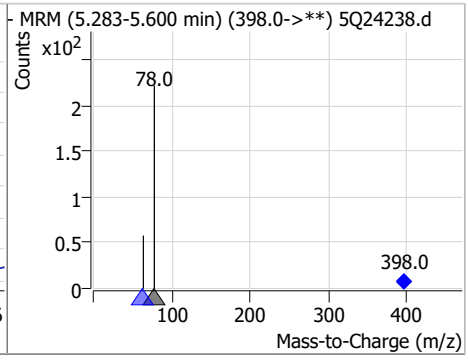




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	1.00	5.41	0.00	3547	398.0 -> 64.0	9.9	4.6	13.7

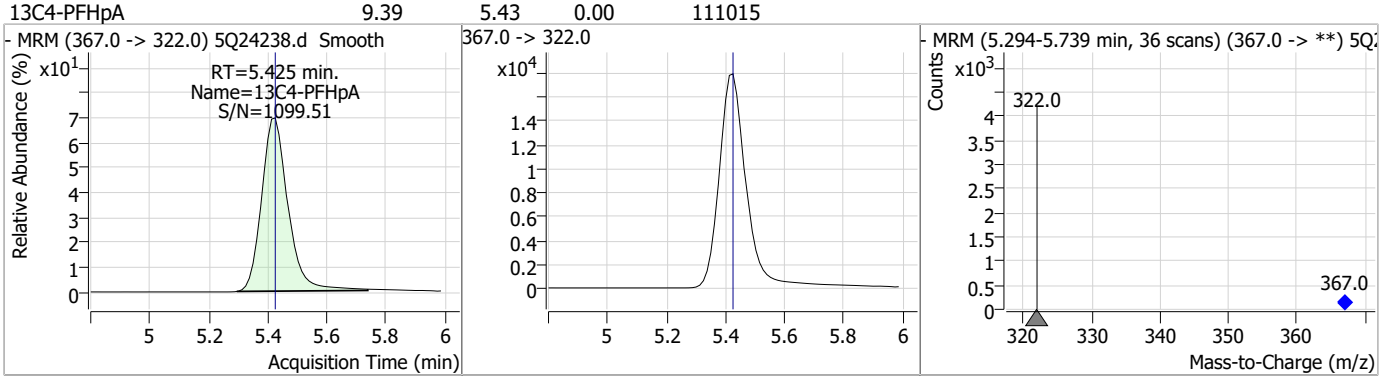




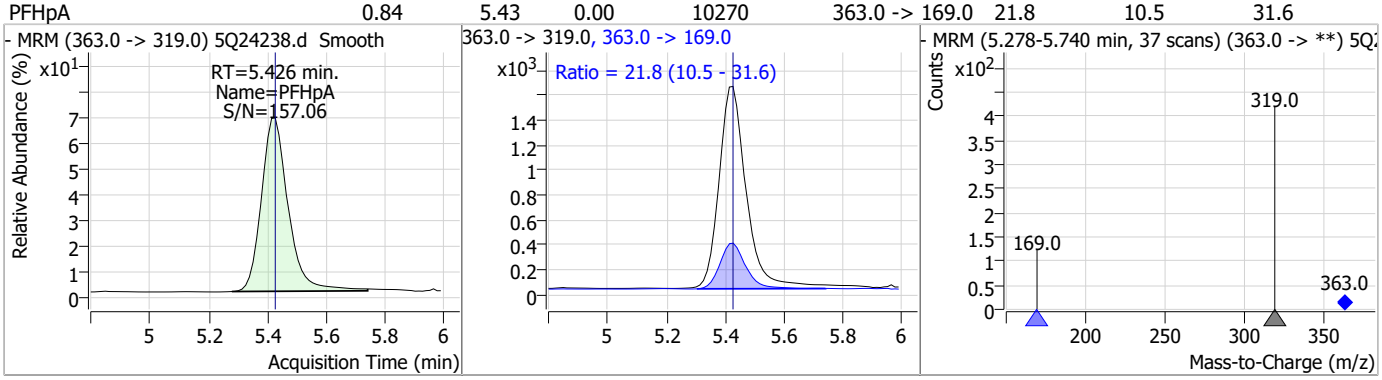


Perfluorinated Compounds by LC/MS/MS

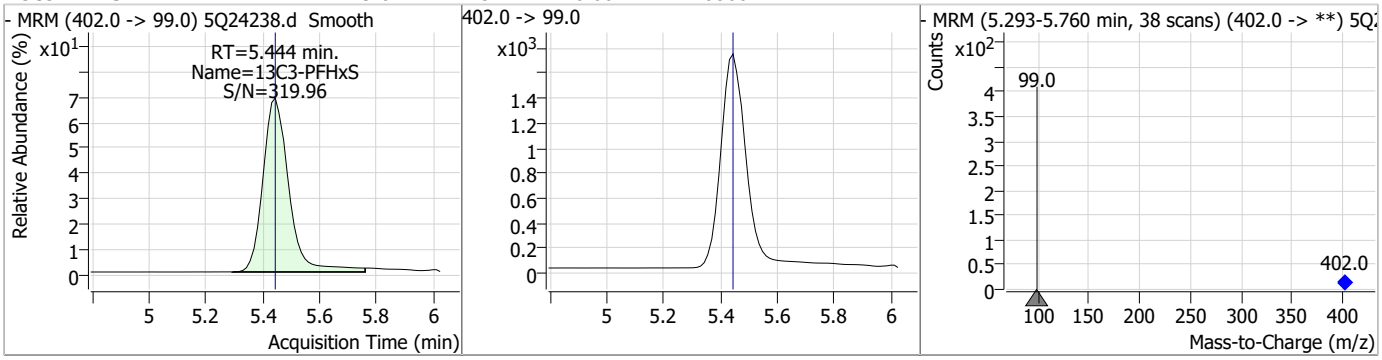
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	9.39	5.43	0.00	111015				



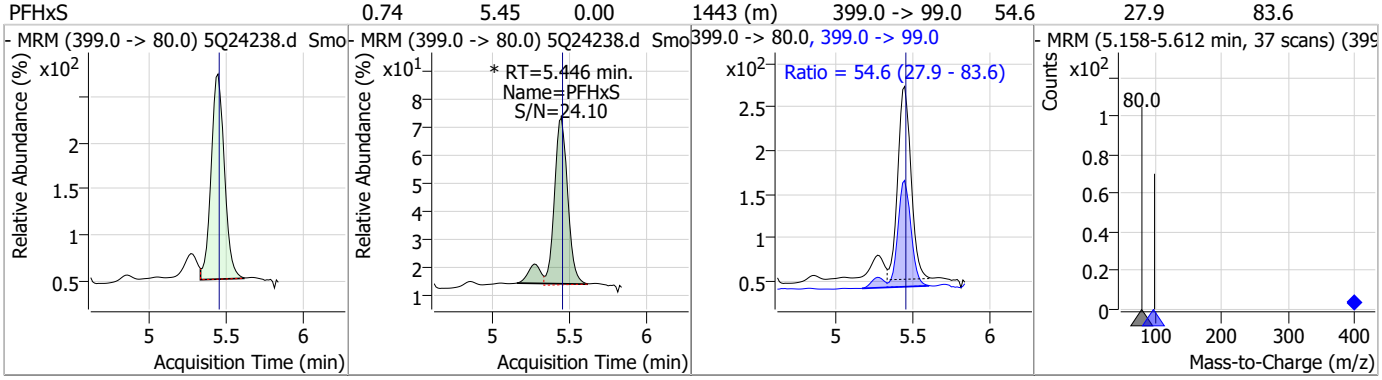
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	0.84	5.43	0.00	10270	363.0 -> 169.0	21.8	10.5	31.6



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	9.61	5.44	0.00	10860				

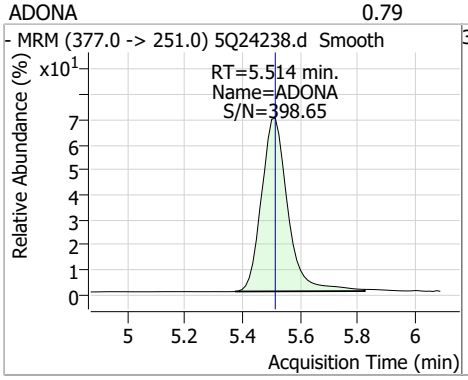


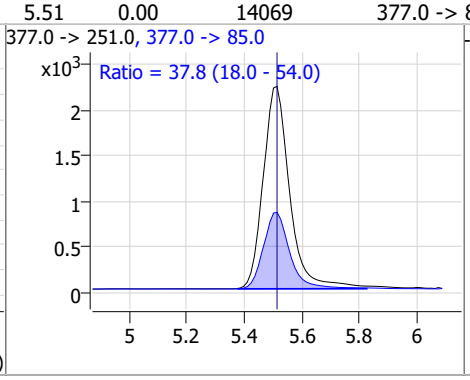
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	0.74	5.45	0.00	1443 (m)	399.0 -> 99.0	54.6	27.9	83.6

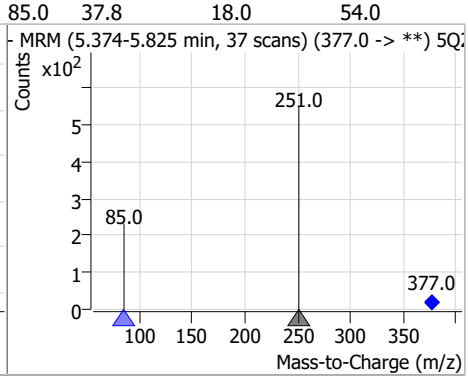


Perfluorinated Compounds by LC/MS/MS

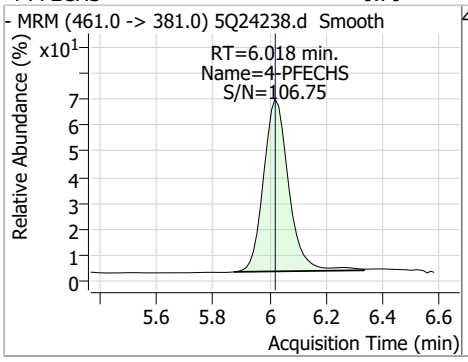
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	0.79	5.51	0.00	14069	377.0 -> 85.0	37.8	18.0	54.0

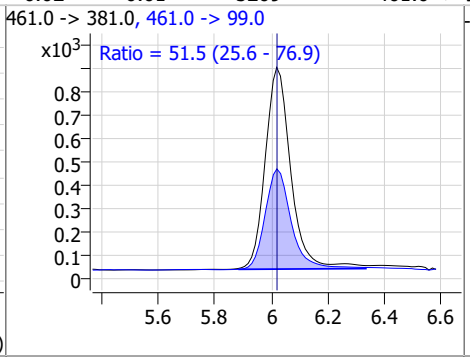


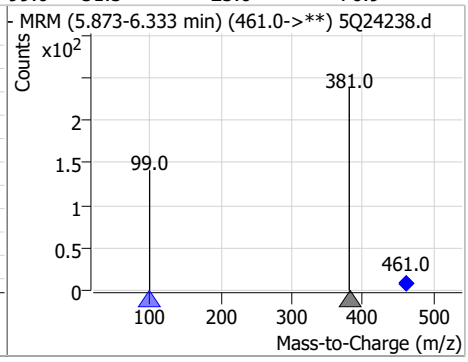




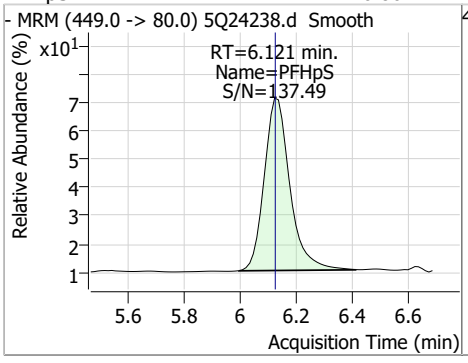
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS	0.79	6.02	-0.01	5269	461.0 -> 99.0	51.5	25.6	76.9

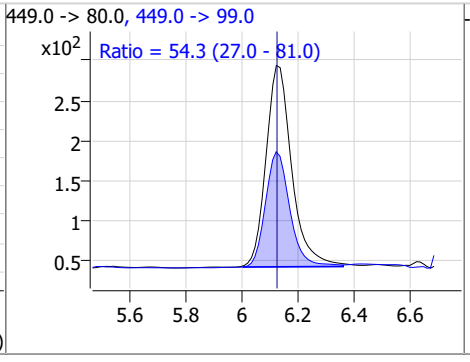


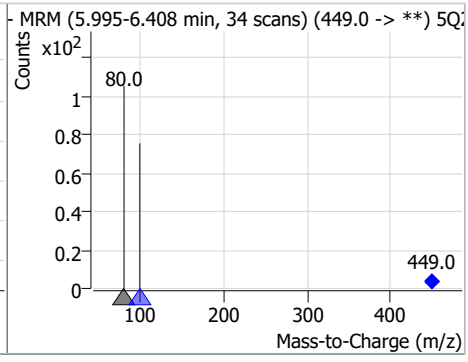




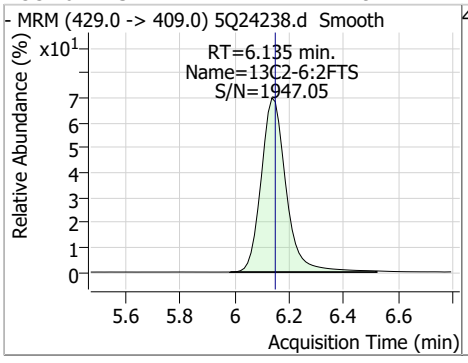
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	0.80	6.12	-0.01	1583	449.0 -> 99.0	54.3	27.0	81.0

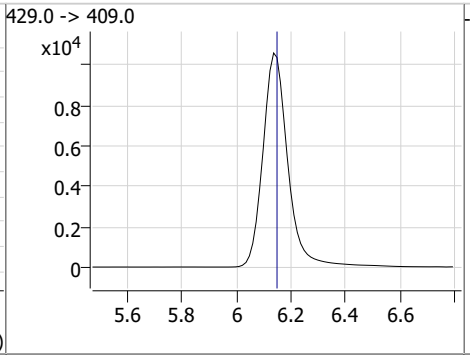


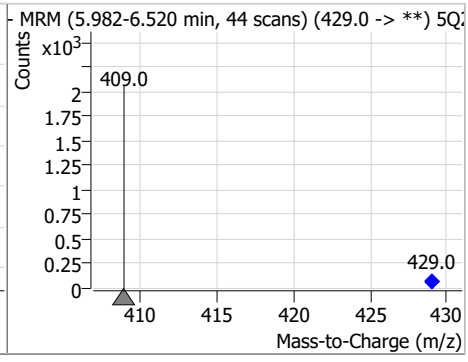




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	9.11	6.14	-0.01	67034				

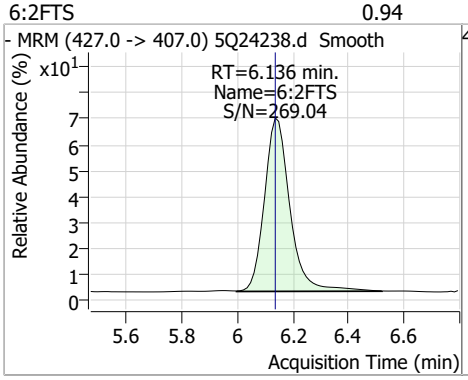


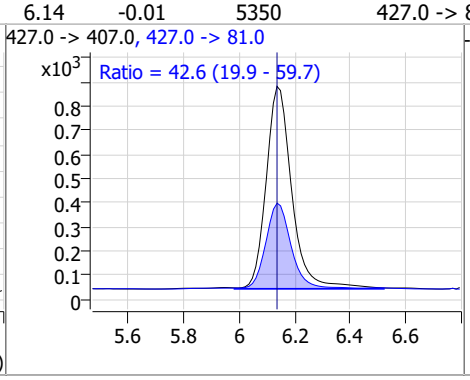


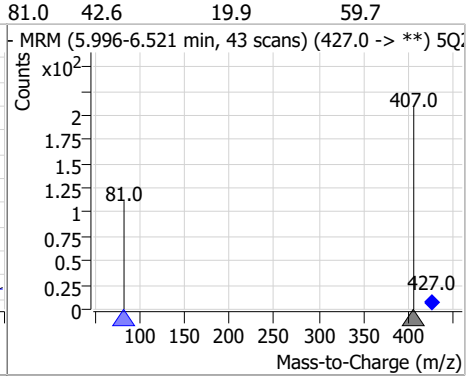


Perfluorinated Compounds by LC/MS/MS

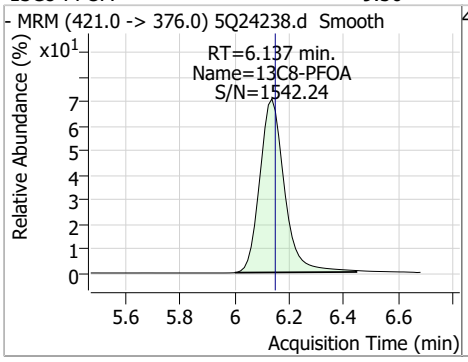
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	0.94	6.14	-0.01	5350	427.0 -> 81.0	42.6	19.9	59.7

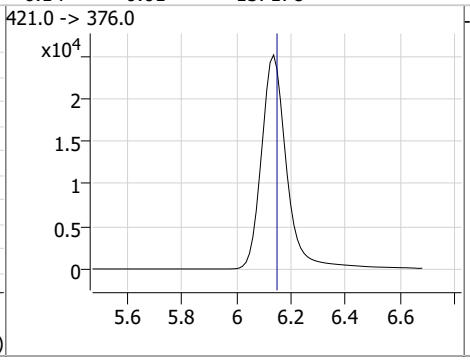


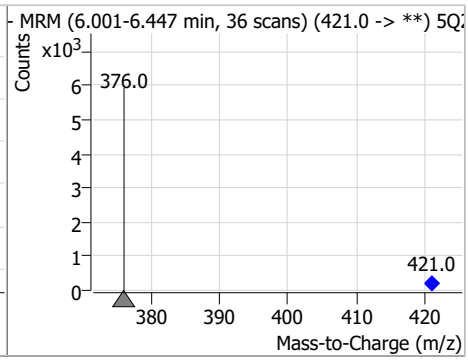




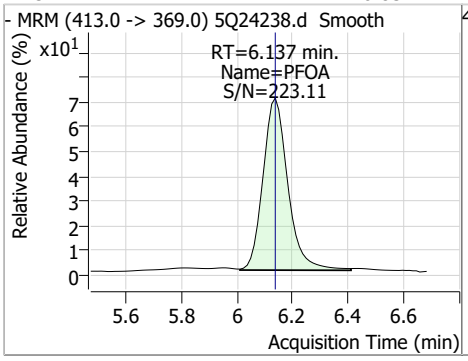
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	9.50	6.14	-0.01	157178				

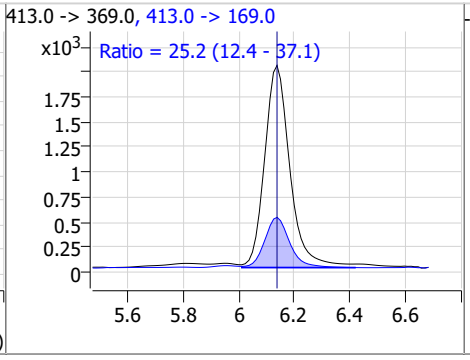


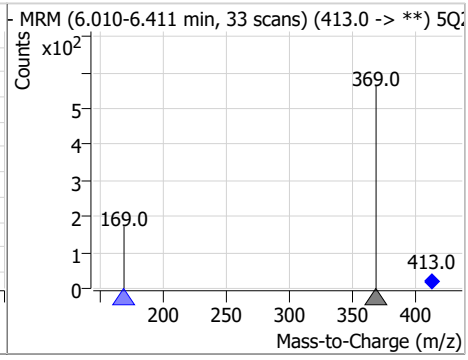




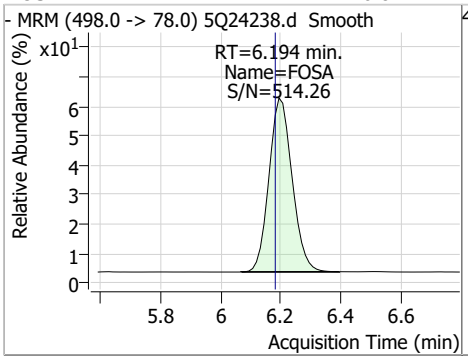
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	0.83	6.14	-0.01	12448	413.0 -> 169.0	25.2	12.4	37.1

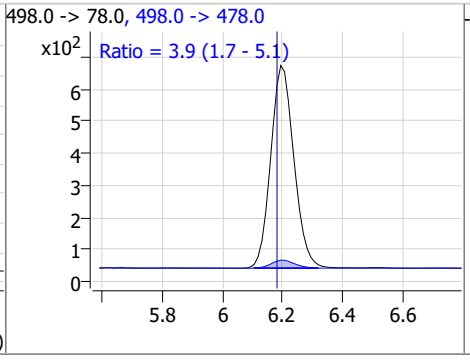


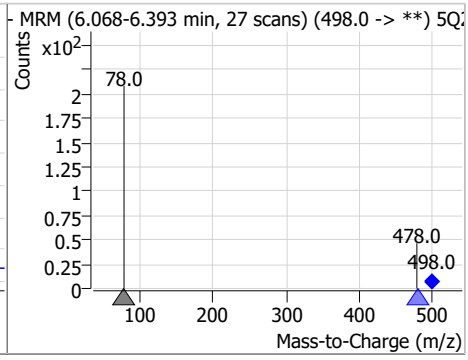




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	0.82	6.19	0.00	3370	498.0 -> 478.0	3.9	1.7	5.1

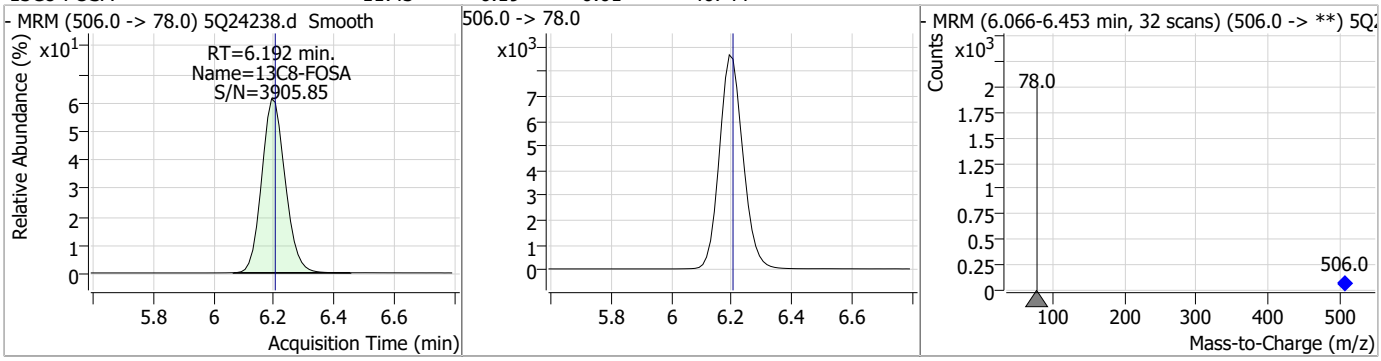




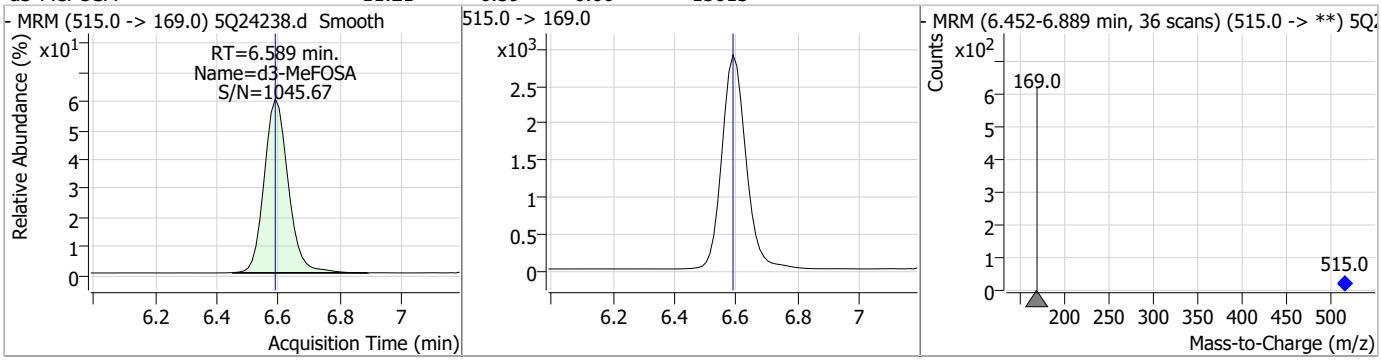


Perfluorinated Compounds by LC/MS/MS

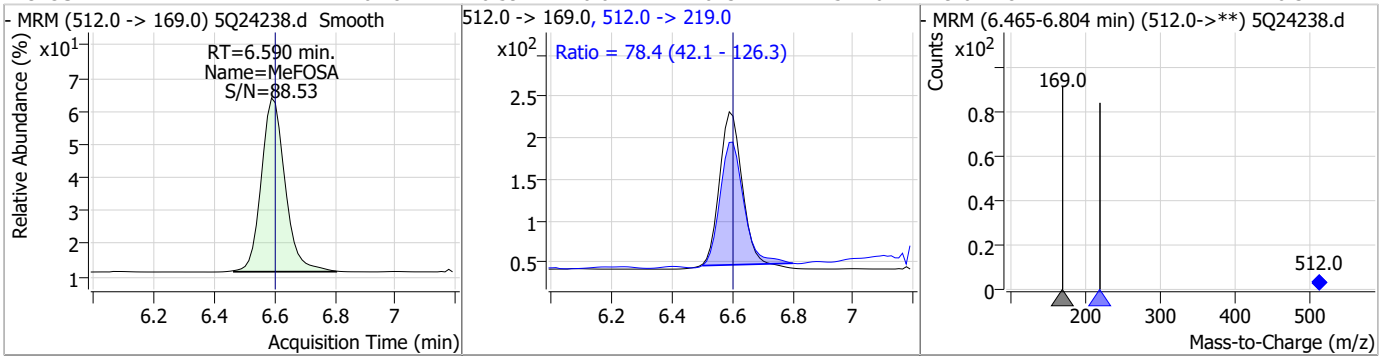
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	11.43	6.19	-0.01	46744				



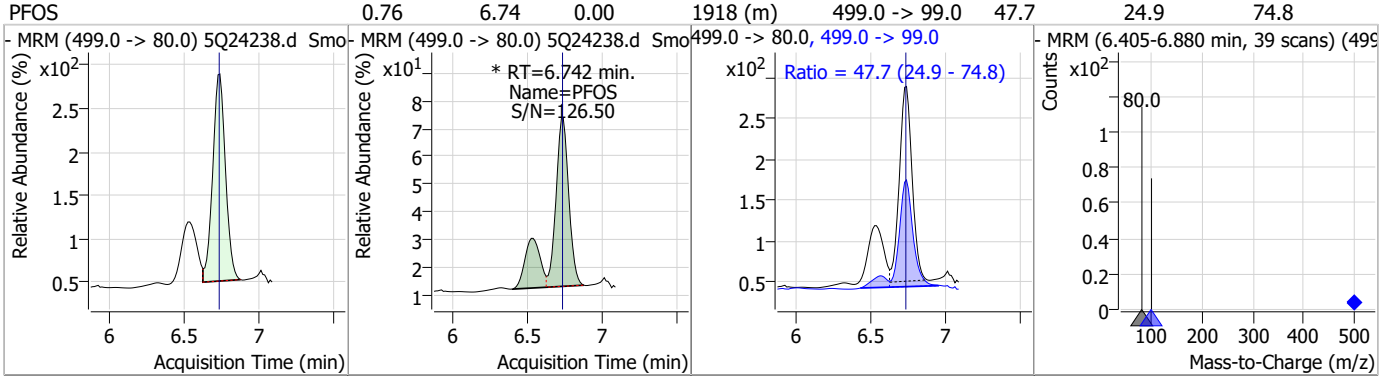
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	11.21	6.59	0.00	15613				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	0.78	6.59	-0.01	1043	512.0 -> 219.0	78.4	42.1	126.3

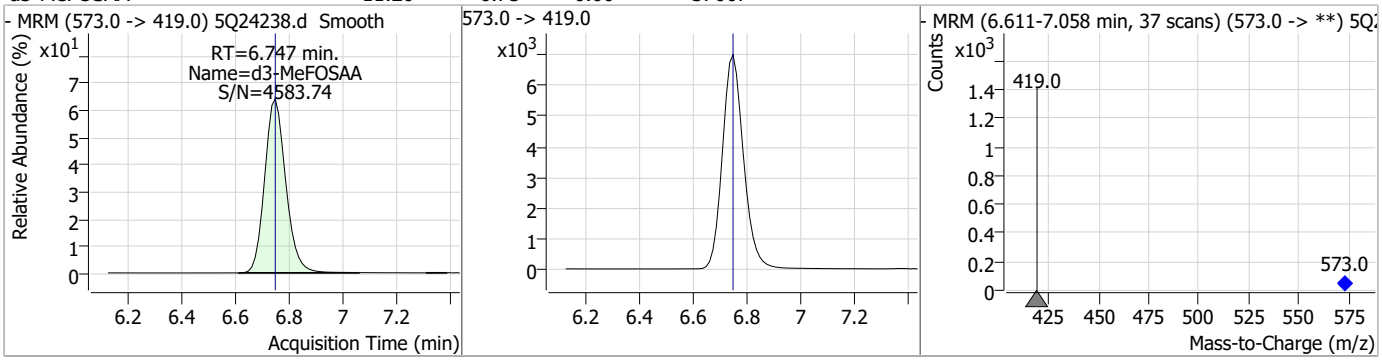


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	0.76	6.74	0.00	1918 (m)	499.0 -> 99.0	47.7	24.9	74.8

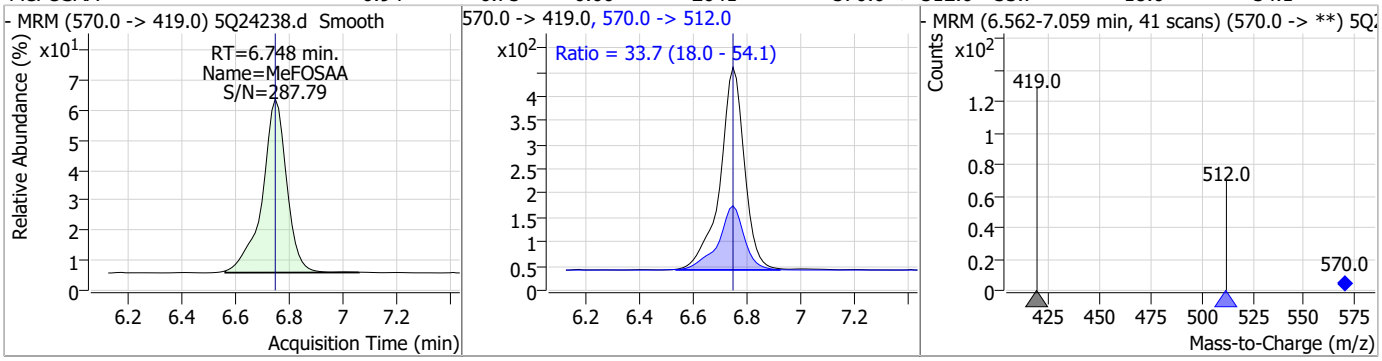


Perfluorinated Compounds by LC/MS/MS

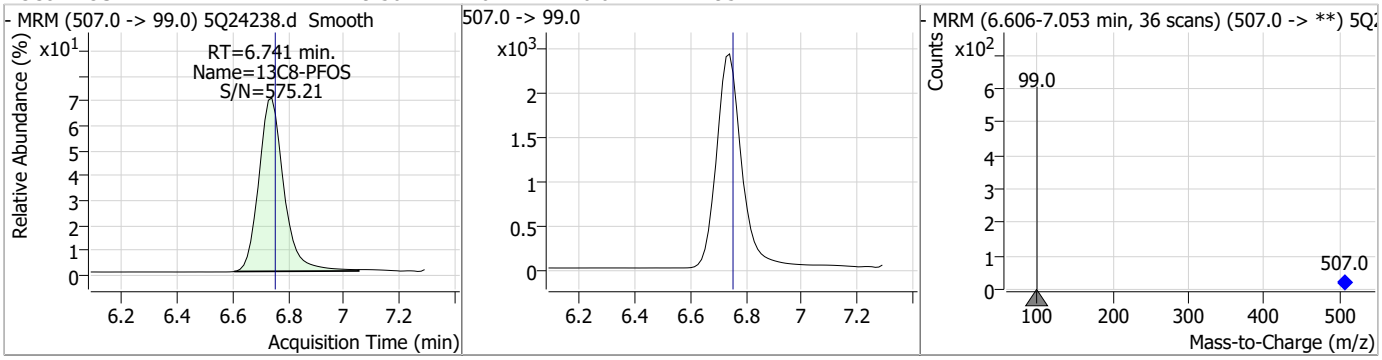
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	11.20	6.75	0.00	37667				



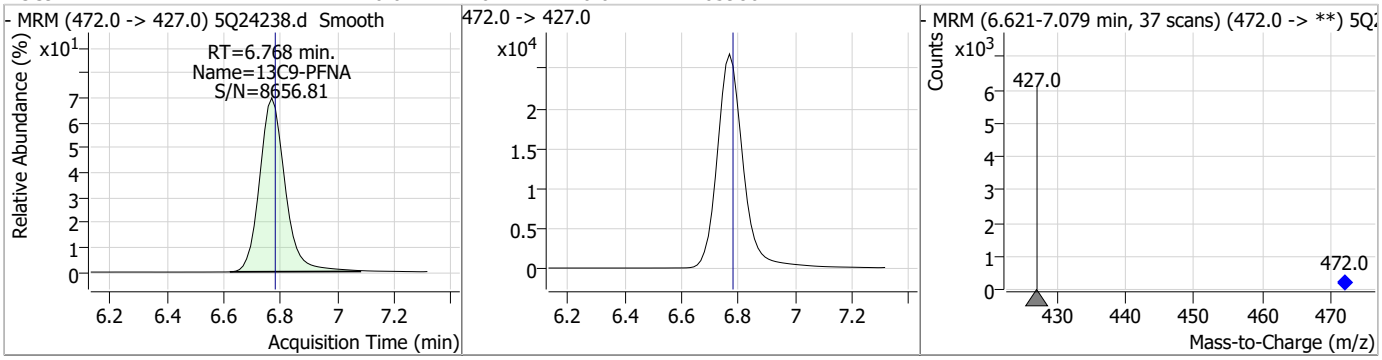
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	0.94	6.75	0.00	2641	570.0 -> 512.0	33.7	18.0	54.1



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	9.50	6.74	-0.01	14957				

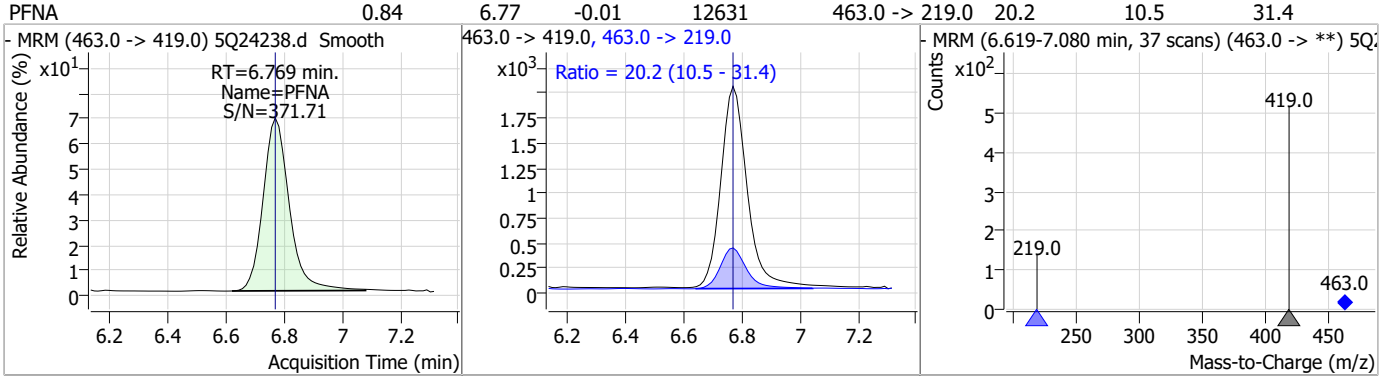


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	10.01	6.77	-0.01	165980				

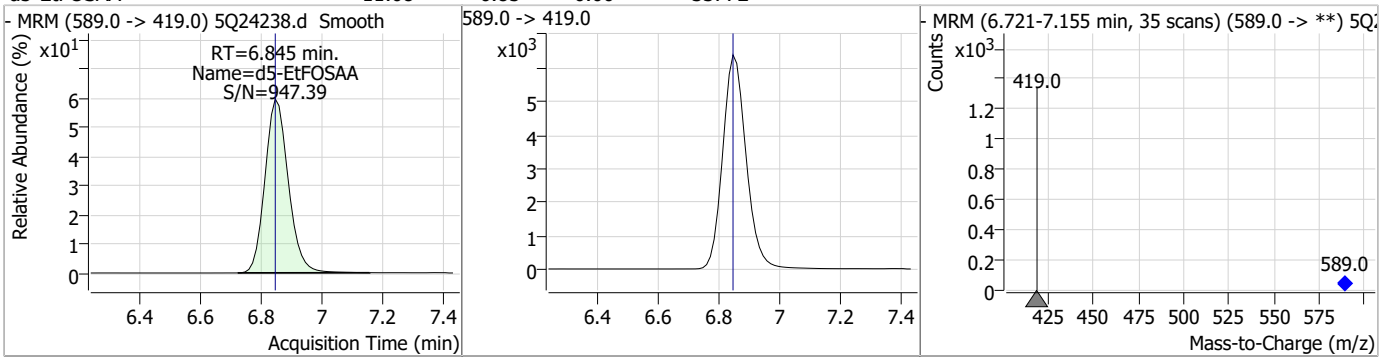


Perfluorinated Compounds by LC/MS/MS

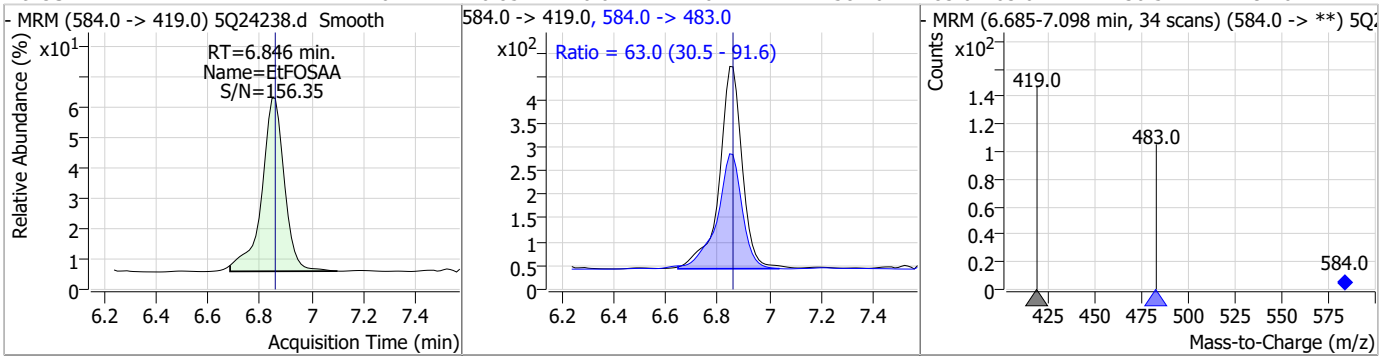
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	0.84	6.77	-0.01	12631	463.0 -> 219.0	20.2	10.5	31.4



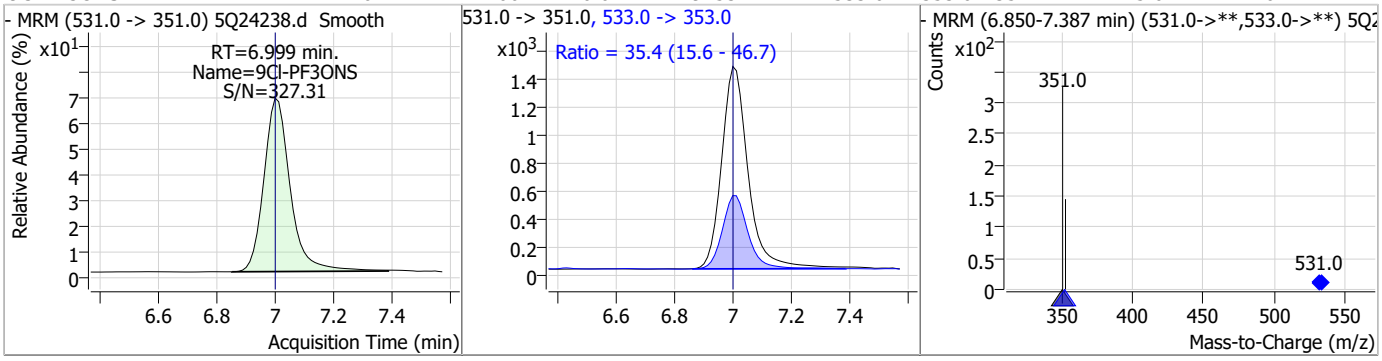
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	11.08	6.85	0.00	33772				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	1.01	6.85	-0.01	2612	584.0 -> 483.0	63.0	30.5	91.6

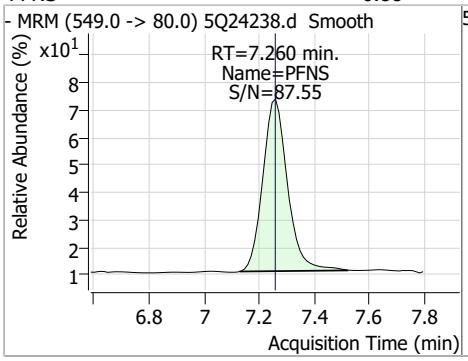


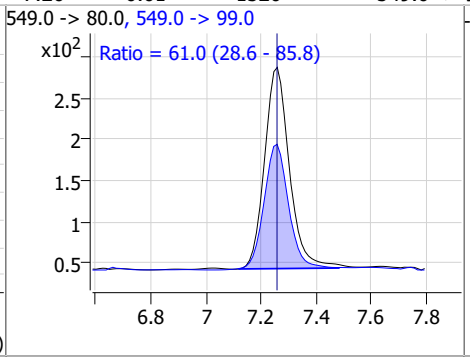
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	0.77	7.00	-0.01	9153	533.0 -> 353.0	35.4	15.6	46.7

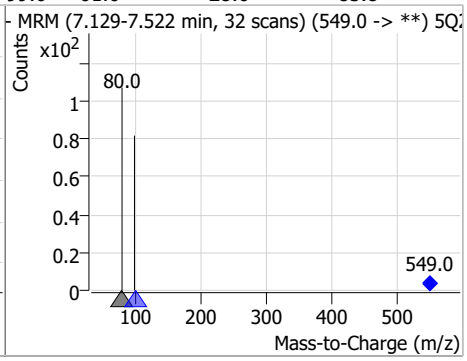


Perfluorinated Compounds by LC/MS/MS

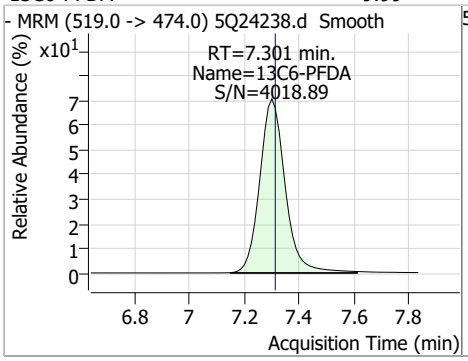
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	0.88	7.26	-0.01	1520	549.0 -> 99.0	61.0	28.6	85.8

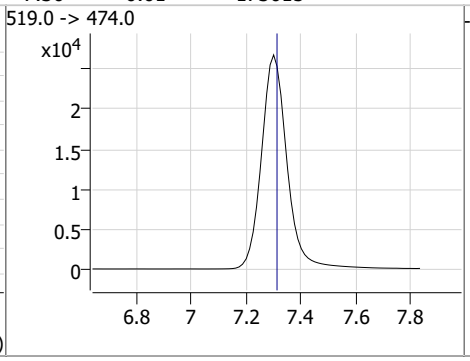


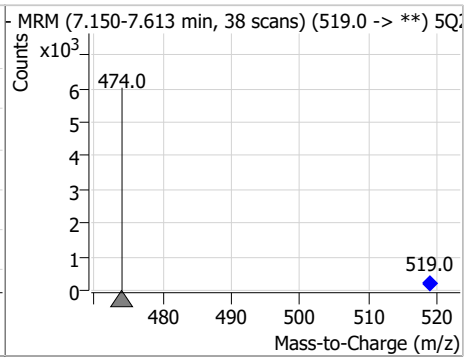




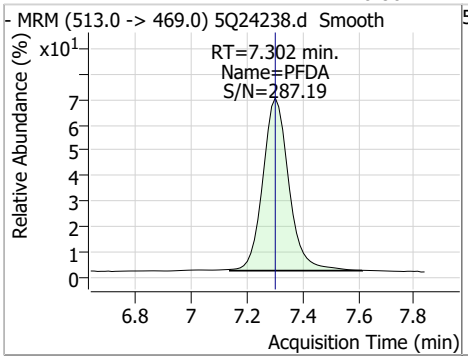
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	9.99	7.30	-0.01	173015				

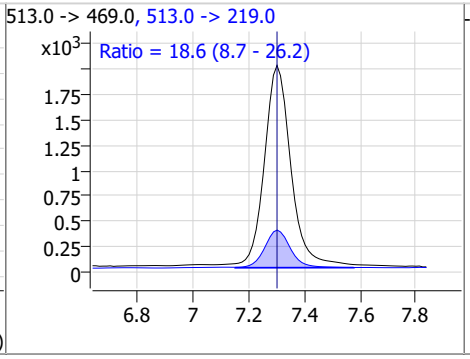


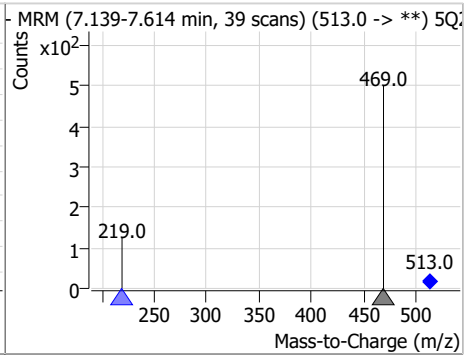




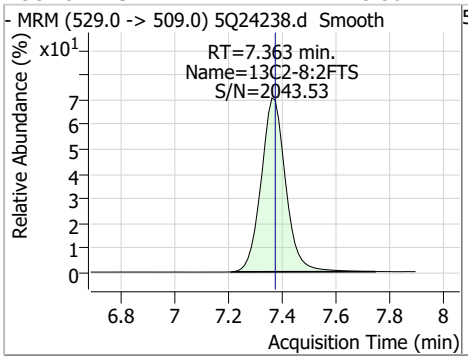
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	0.80	7.30	-0.01	12804	513.0 -> 219.0	18.6	8.7	26.2

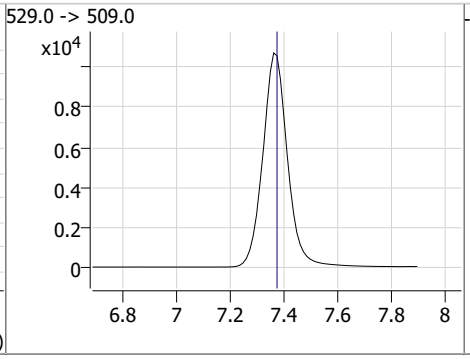


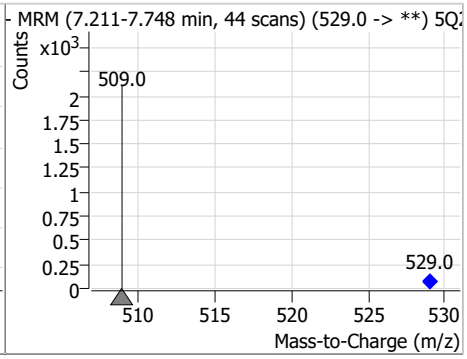




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	9.56	7.36	-0.01	67615				

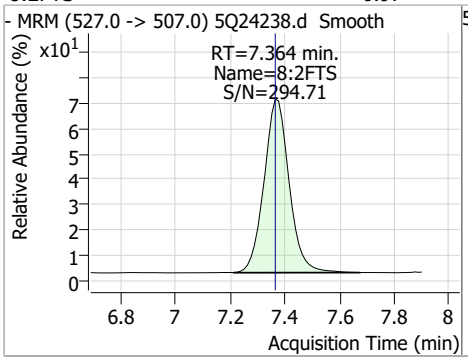


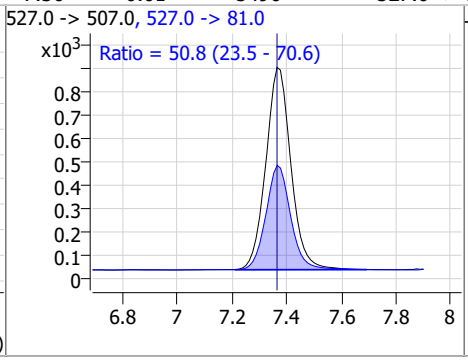


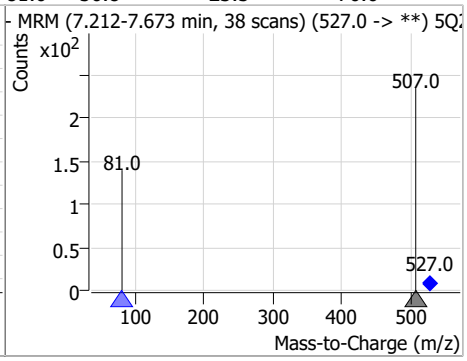


Perfluorinated Compounds by LC/MS/MS

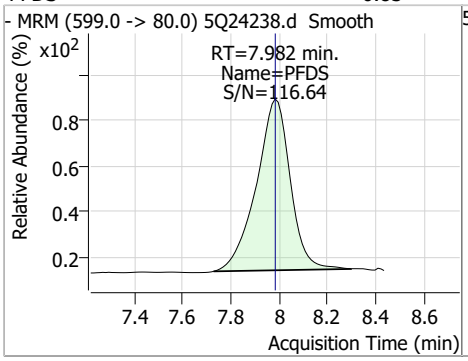
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	0.97	7.36	-0.01	5496	527.0 -> 81.0	50.8	23.5	70.6

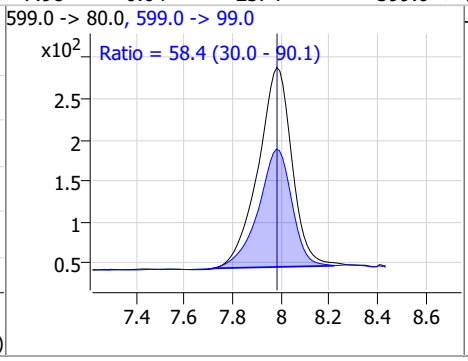


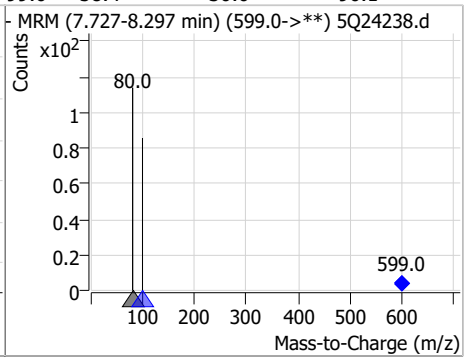




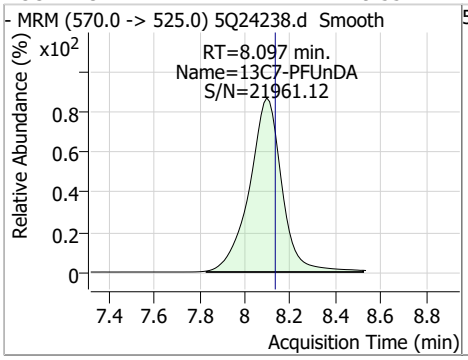
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	0.83	7.98	-0.04	2374	599.0 -> 99.0	58.4	30.0	90.1

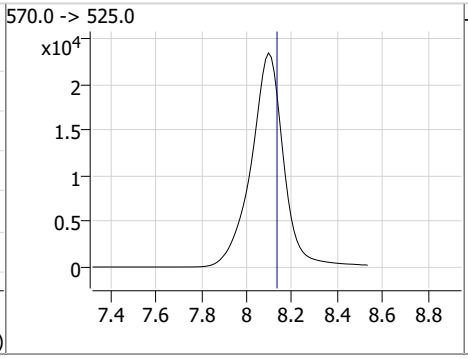


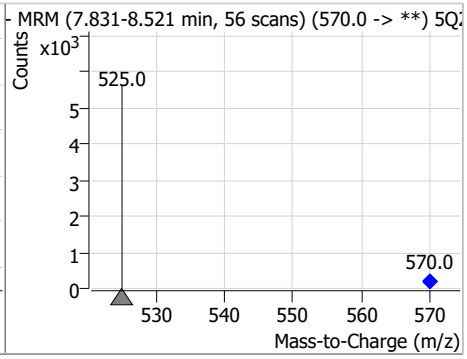




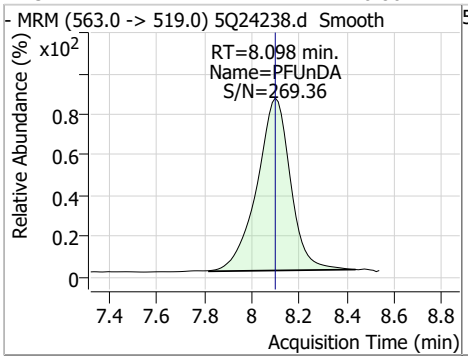
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	9.55	8.10	-0.04	233201				

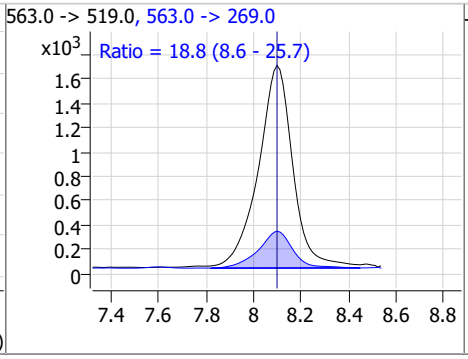


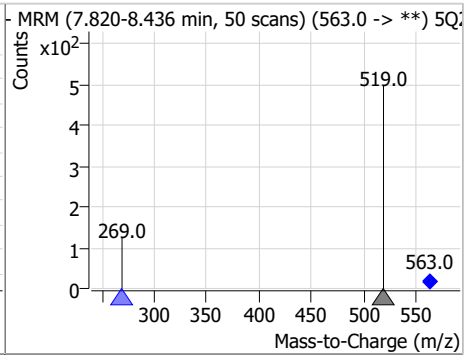




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	0.80	8.10	-0.04	16226	563.0 -> 269.0	18.8	8.6	25.7

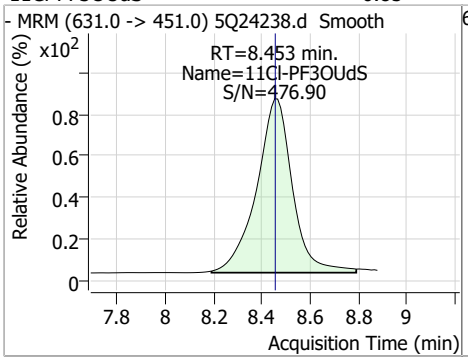


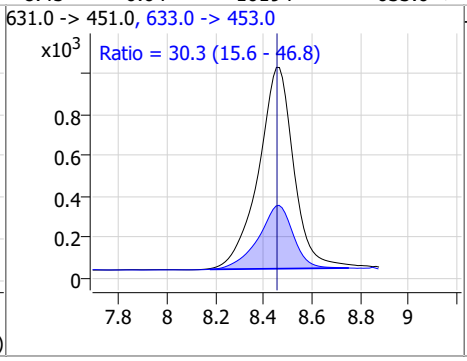


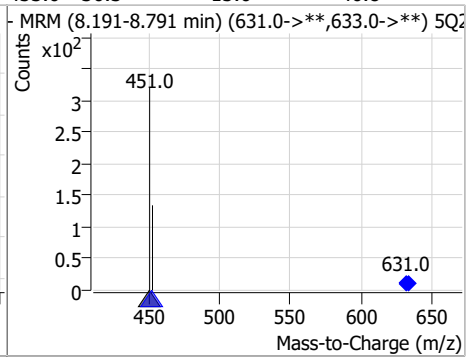


Perfluorinated Compounds by LC/MS/MS

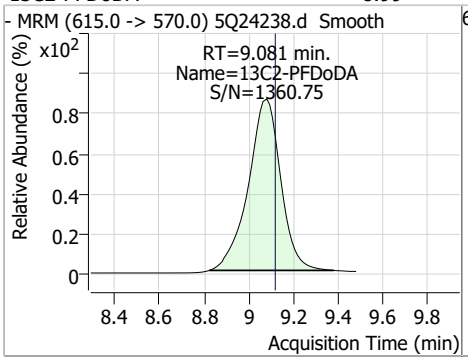
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	0.85	8.45	-0.04	10194	633.0 -> 453.0	30.3	15.6	46.8

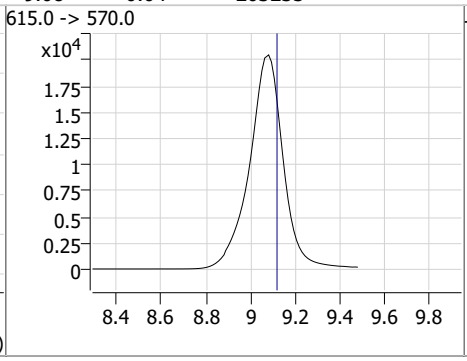


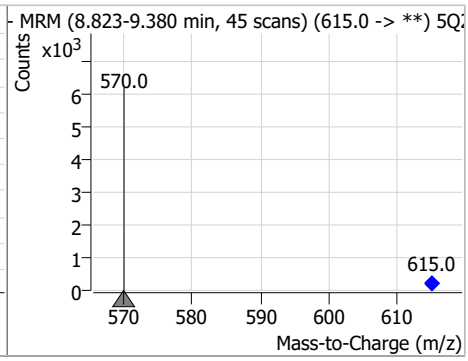




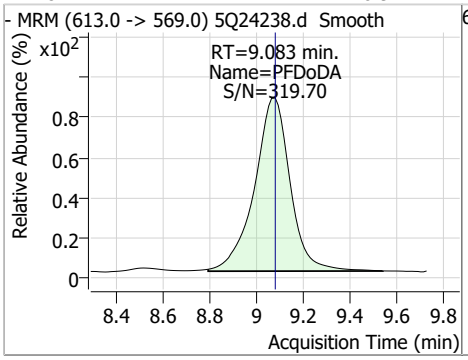
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	8.99	9.08	-0.04	203233				

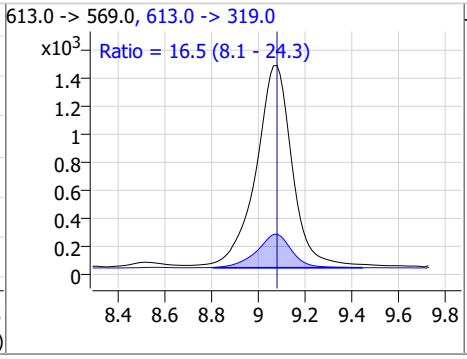


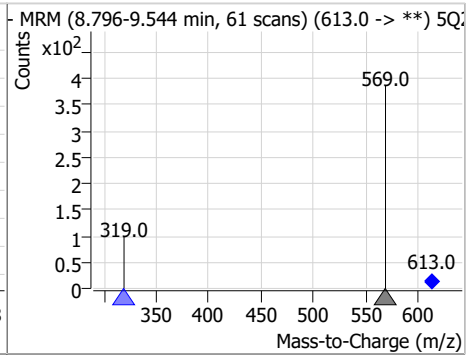




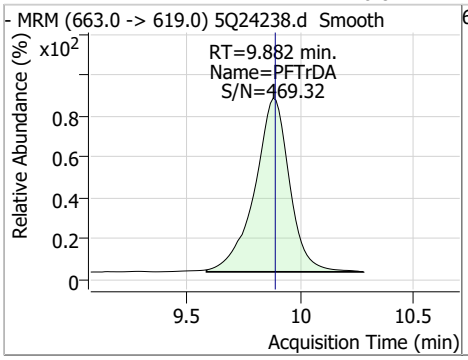
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	0.91	9.08	-0.04	15232	613.0 -> 319.0	16.5	8.1	24.3

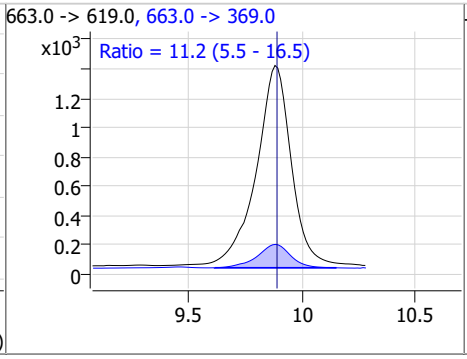


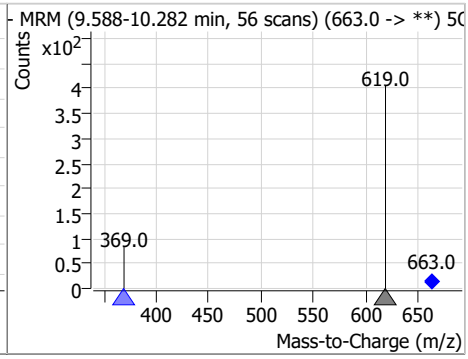




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	0.87	9.88	-0.05	14628	663.0 -> 369.0	11.2	5.5	16.5

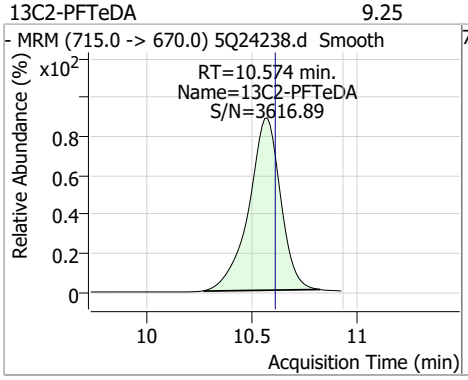


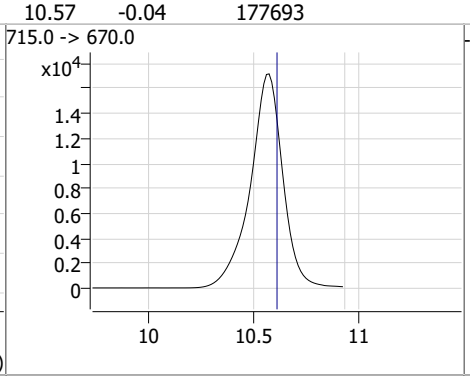


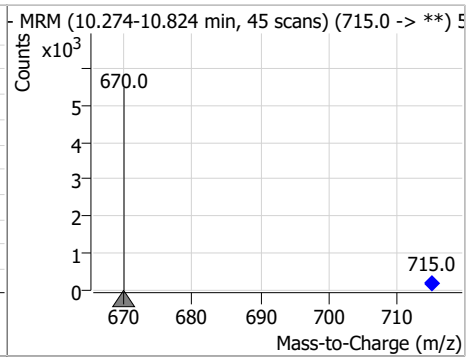


Perfluorinated Compounds by LC/MS/MS

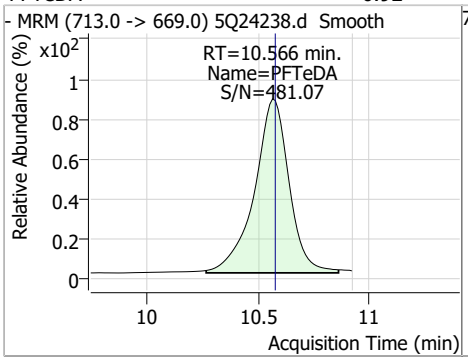
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	9.25	10.57	-0.04	177693				

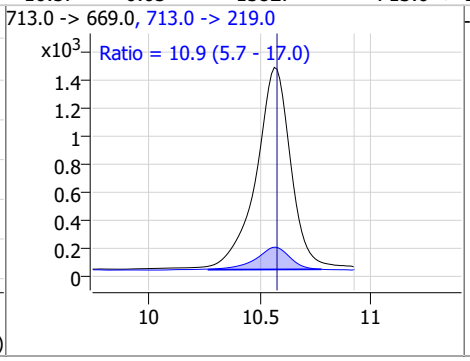


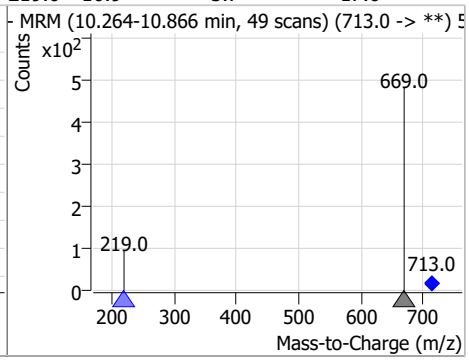




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	0.92	10.57	-0.05	15827	713.0 -> 219.0	10.9	5.7	17.0







9.6.49

6

Manual Integration Approval Summary

Sample Number: S5Q380-CC377
Lab FileID: 5Q24238.D
Injection Time: 01/05/24 16:18
Method: EPA 537M QSM5.3 B-15
Analyst approved: 01/08/24 14:10 Lindsay Ritner
Supervisor approved: 01/09/24 09:58 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.45	Split peak
Perfluorooctanesulfonic acid	1763-23-1		6.74	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Natasha Gumtie
01/09/24 09:58

Perfluorinated Compounds by LC/MS/MS

Data File : 5Q24246.d
Operator : lindsayr
Acq. Method : 537_ID.m
Acq. Date-Time : 1/5/2024 6:07:05 PM
Sample Name : cc377-20
Vial : P1-A7
DA Method File : ID_010224_S5Q377.quantmethod.xml
Batch Name : s5q380.batch.bin
Sample Information : OP401,S5Q380,250,,,1.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.987	217.0 -> 172.0	40662	10.00	µg/L	0.000
M5-PFPeA	3.432	268.0 -> 223.0	70206	10.00	µg/L	0.000
M5-PFHxA	4.552	318.0 -> 273.0	111536	10.00	µg/L	-0.012
M4-PFHpA	5.425	367.0 -> 322.0	113011	10.00	µg/L	0.000
M8-PFOA	6.137	421.0 -> 376.0	161299	10.00	µg/L	-0.012
M9-PFNA	6.768	472.0 -> 427.0	165351	10.00	µg/L	-0.012
M6-PFDA	7.301	519.0 -> 474.0	168046	10.00	µg/L	-0.012
M7-PFUnDA	8.097	570.0 -> 525.0	218993	10.00	µg/L	-0.037
M2-PFDoDA	9.081	615.0 -> 570.0	211053	10.00	µg/L	-0.037
M2-PFTeDA	10.574	715.0 -> 670.0	183370	10.00	µg/L	-0.037
M8-FOSA	6.192	506.0 -> 78.0	44687	10.00	µg/L	-0.012
M3-PFBS	3.624	302.0 -> 99.0	7876	10.00	µg/L	-0.012
M3-PFHxS	5.444	402.0 -> 99.0	10380	10.00	µg/L	0.000
M8-PFOS	6.741	507.0 -> 99.0	14988	10.00	µg/L	-0.012
M2-4:2FTS	4.474	329.0 -> 309.0	39082	10.00	µg/L	-0.012
M2-6:2FTS	6.135	429.0 -> 409.0	72356	10.00	µg/L	-0.012
M2-8:2FTS	7.363	529.0 -> 509.0	72965	10.00	µg/L	-0.012
M3-MeFOSAA	6.747	573.0 -> 419.0	37045	10.00	µg/L	0.000
M3-HFPO-DA	4.819	287.0 -> 169.0	5694	10.00	µg/L	-0.012
M3-MeFOSA	6.589	515.0 -> 169.0	15269	10.00	µg/L	0.000
M5-EtFOSAA	6.845	589.0 -> 419.0	33149	10.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.474	329.0 -> 309.0	39082	10.00	µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.0%		
13C2-6:2FTS	6.135	429.0 -> 409.0	72356	9.84	µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 98.4%		
13C2-8:2FTS	7.363	529.0 -> 509.0	72965	10.31	µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 103.1%		
13C2-PFDoDA	9.081	615.0 -> 570.0	211053	9.34	µg/L	-0.037
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 93.4%		
13C2-PFTeDA	10.574	715.0 -> 670.0	183370	9.54	µg/L	-0.037
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 95.4%		
13C3-PFBS	3.624	302.0 -> 99.0	7876	8.54	µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 85.4%		
13C3-PFHxS	5.444	402.0 -> 99.0	10380	9.19	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 91.9%		
13C4-PFBA	1.987	217.0 -> 172.0	40662	9.22	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 92.2%		
13C4-PFHpA	5.425	367.0 -> 322.0	113011	9.56	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 95.6%		
13C5-PFHxA	4.552	318.0 -> 273.0	111536	9.72	µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 97.2%		
13C5-PFPeA	3.432	268.0 -> 223.0	70206	9.45	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 94.5%		
13C6-PFDA	7.301	519.0 -> 474.0	168046	9.71	µg/L	-0.012

Perfluorinated Compounds by LC/MS/MS

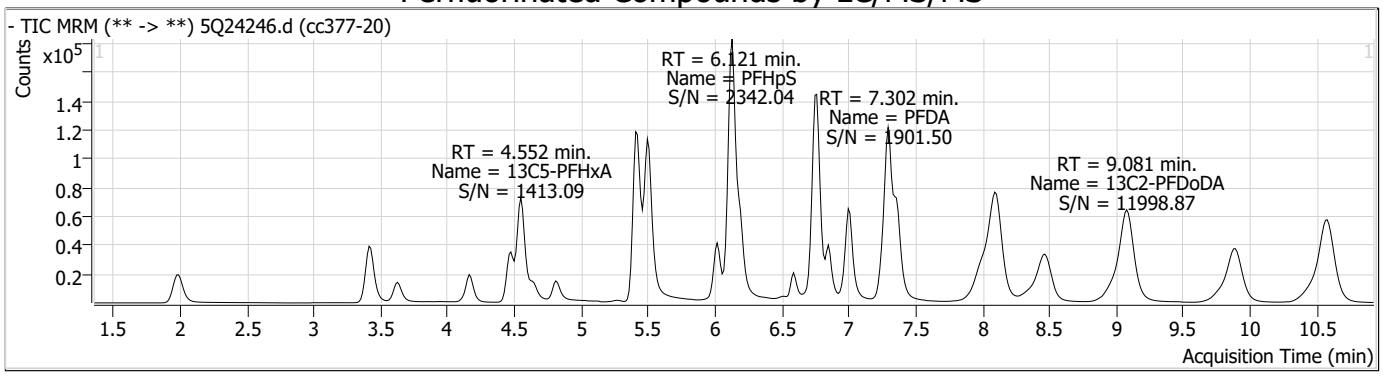
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 97.1%			
13C7-PFUnDA	8.097	570.0 -> 525.0	218993	8.97	µg/L		-0.037
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 89.7%			
13C8-FOSA	6.192	506.0 -> 78.0	44687	10.93	µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 109.3%			
13C8-PFOA	6.137	421.0 -> 376.0	161299	9.75	µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 97.5%			
13C8-PFOS	6.741	507.0 -> 99.0	14988	9.52	µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 95.2%			
13C9-PFNA	6.768	472.0 -> 427.0	165351	9.98	µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.8%			
d3-MeFOSAA	6.747	573.0 -> 419.0	37045	11.01	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 110.1%			
13C3-HFPO-DA	4.819	287.0 -> 169.0	5694	9.54	µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 95.4%			
d3-MeFOSA	6.589	515.0 -> 169.0	15269	10.96	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 109.6%			
d5-EtFOSAA	6.845	589.0 -> 419.0	33149	10.88	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 108.8%			
Target Compounds							QValue
4:2FTS	4.475	327.0 -> 307.0	74435	20.02	µg/L		99
		327.0 -> 81.0	40812				
6:2FTS	6.136	427.0 -> 407.0	123753	20.18	µg/L		99
		427.0 -> 81.0	48495				
8:2FTS	7.364	527.0 -> 507.0	119123	19.44	µg/L		100
		527.0 -> 81.0	56333				
EtFOSAA	6.846	584.0 -> 419.0	48088	18.96	µg/L		98
		584.0 -> 483.0	29949				
FOSA	6.194	498.0 -> 78.0	72817	18.45	µg/L		100
		498.0 -> 478.0	2381				
MeFOSAA	6.748	570.0 -> 419.0	50672	18.35	µg/L		98
		570.0 -> 512.0	19019				
PFBA	1.981	213.0 -> 169.0	67116	18.38	µg/L		100
PFBS	3.628	299.0 -> 80.0	36039	18.67	µg/L		99
		299.0 -> 99.0	15922				
PFDA	7.302	513.0 -> 469.0	291140	18.84	µg/L		99
		513.0 -> 219.0	49925				
PFDoDA	9.083	613.0 -> 569.0	323769	18.64	µg/L		99
		613.0 -> 319.0	53764				
PFDS	7.982	599.0 -> 80.0	49901	18.48	µg/L		95
		599.0 -> 99.0	31833				
PFHpA	5.426	363.0 -> 319.0	229849	18.48	µg/L		100
		363.0 -> 169.0	48285				
PFHpS	6.121	449.0 -> 80.0	35331	17.83	µg/L		99
		449.0 -> 99.0	19374				
PFHxA	4.553	313.0 -> 269.0	191379	18.42	µg/L		100
		313.0 -> 119.0	7695				
PFHxS	5.446	399.0 -> 80.0	33917	18.22	µg/L	m	94
		399.0 -> 99.0	20423				
PFNA	6.769	463.0 -> 419.0	273143	18.21	µg/L		100
		463.0 -> 219.0	57156				
PFNS	7.260	549.0 -> 80.0	32379	18.78	µg/L		95
		549.0 -> 99.0	19619				
PFOA	6.137	413.0 -> 369.0	278500	18.08	µg/L		99
		413.0 -> 169.0	69502				
PFOS	6.742	499.0 -> 80.0	46115	18.31	µg/L	m	95

Perfluorinated Compounds by LC/MS/MS

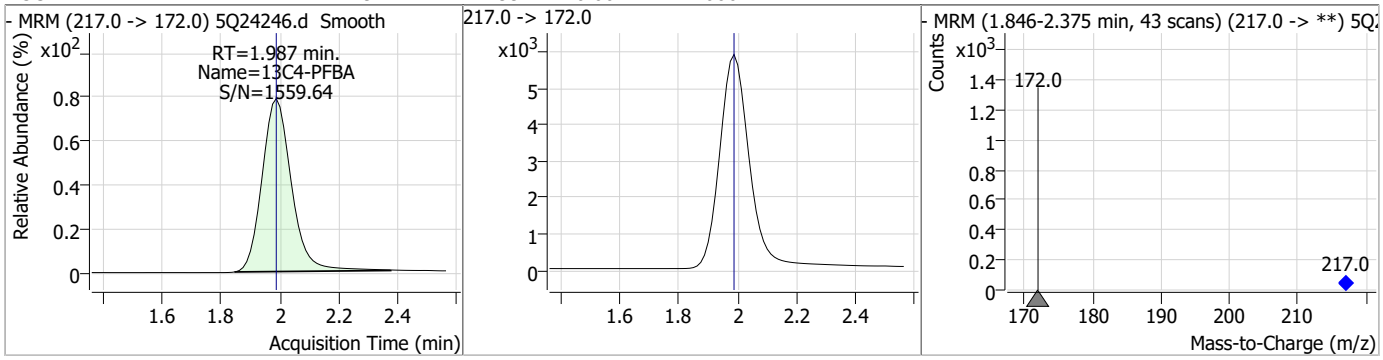
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		499.0 -> 99.0	21355			
PFPeA	3.422	263.0 -> 219.0	121292	18.32	µg/L	100
PFPeS	4.648	349.0 -> 80.0	26553	19.80	µg/L	98
		349.0 -> 99.0	13476			
PFTeDA	10.578	713.0 -> 669.0	323792	18.29	µg/L	100
		713.0 -> 219.0	36319			
PFTrDA	9.895	663.0 -> 619.0	320763	18.39	µg/L	99
		663.0 -> 369.0	33879			
PFUnDA	8.098	563.0 -> 519.0	370102	19.49	µg/L	100
		563.0 -> 269.0	62630			
11Cl-PF3OUdS	8.465	631.0 -> 451.0	228037	18.29	µg/L	100
		633.0 -> 453.0	71079			
9Cl-PF3ONS	6.999	531.0 -> 351.0	210074	18.08	µg/L	99
		533.0 -> 353.0	66429			
ADONA	5.514	377.0 -> 251.0	338142	19.79	µg/L	99
		377.0 -> 85.0	118837			
HFPO-DA	4.815	329.0 -> 169.0	44179	19.09	µg/L	99
		285.0 -> 169.0	9490			
MeFOSA	6.590	512.0 -> 169.0	23031	17.66	µg/L	98
		512.0 -> 219.0	19078			
4-PFECHS	6.018	461.0 -> 381.0	117215	17.16	µg/L	99
		461.0 -> 99.0	59485			
FBSA	4.170	298.0 -> 78.0	72018	19.53	µg/L	99
		298.0 -> 64.0	6707			
FHxSA	5.409	398.0 -> 78.0	78530	21.47	µg/L	99
		398.0 -> 64.0	7394			

 # = Qualifier out of range, m = manually integrated, + = Area summed

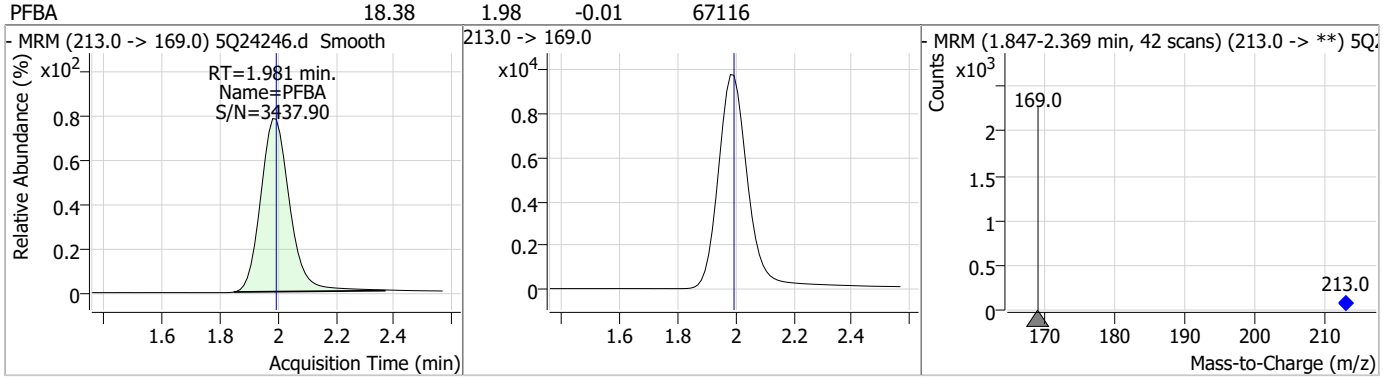
Perfluorinated Compounds by LC/MS/MS



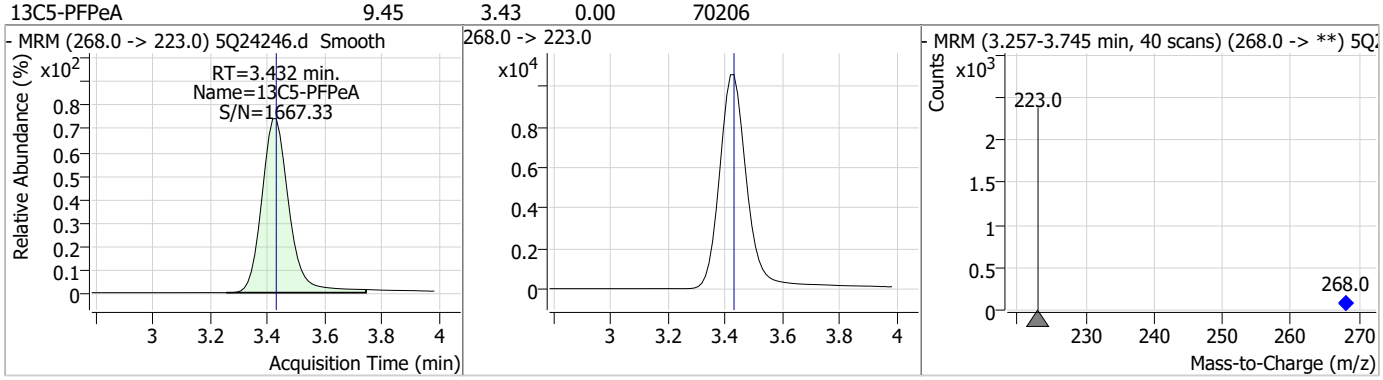
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	9.22	1.99	0.00	40662				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	18.38	1.98	-0.01	67116				

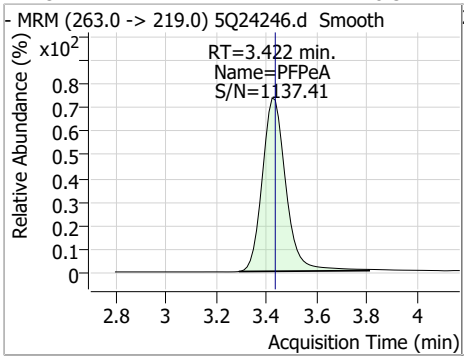


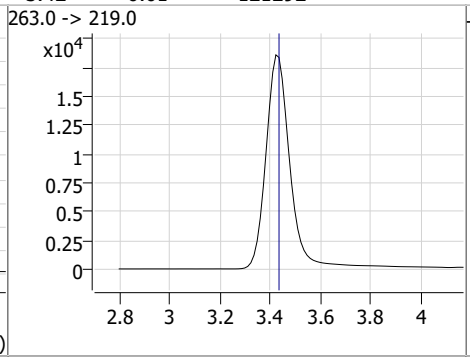
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	9.45	3.43	0.00	70206				

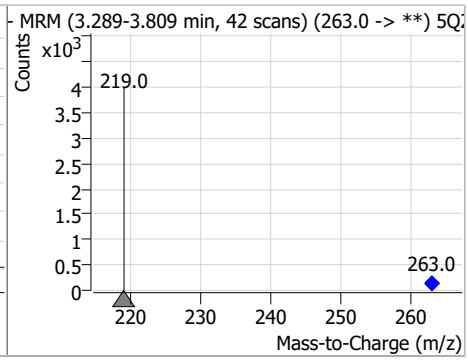


Perfluorinated Compounds by LC/MS/MS

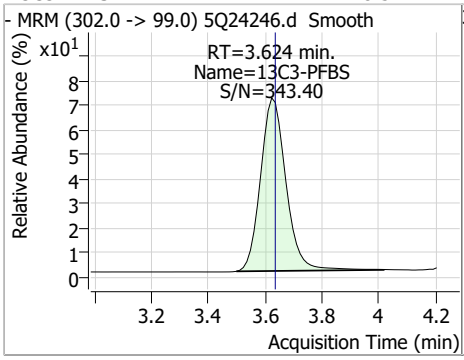
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	18.32	3.42	-0.01	121292				

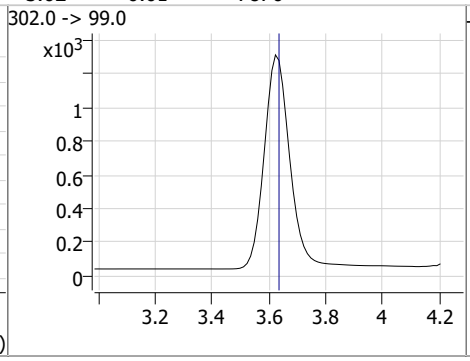


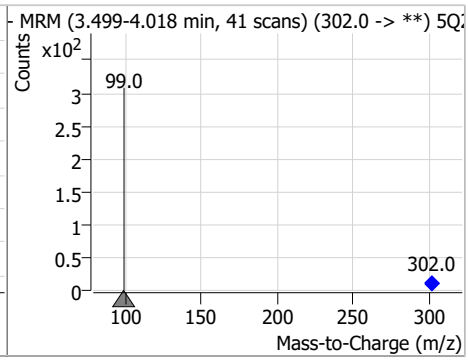




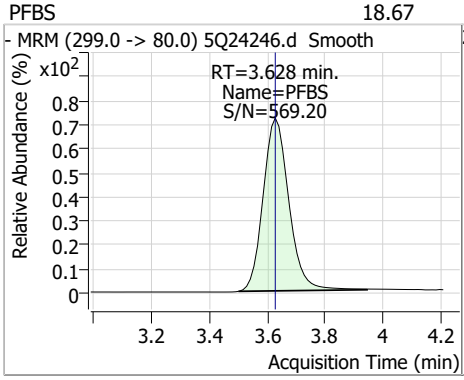
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	8.54	3.62	-0.01	7876				

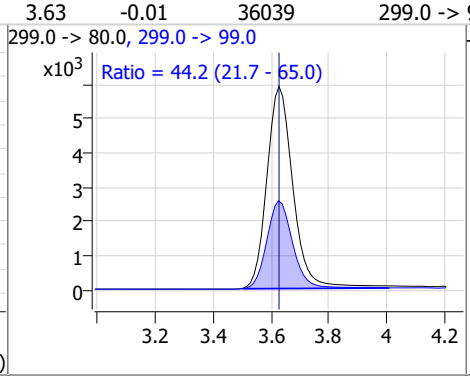


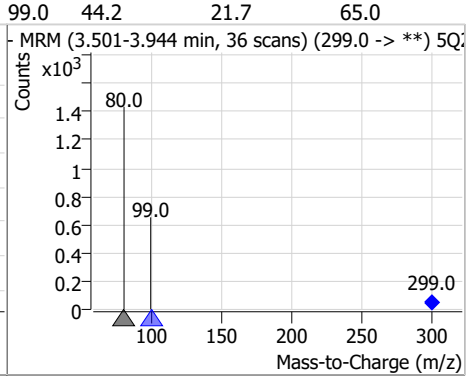




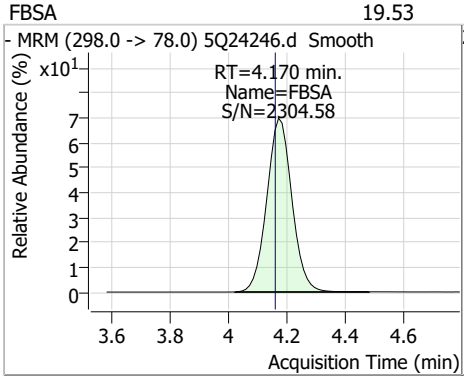
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	18.67	3.63	-0.01	36039	299.0 -> 99.0	44.2	21.7	65.0

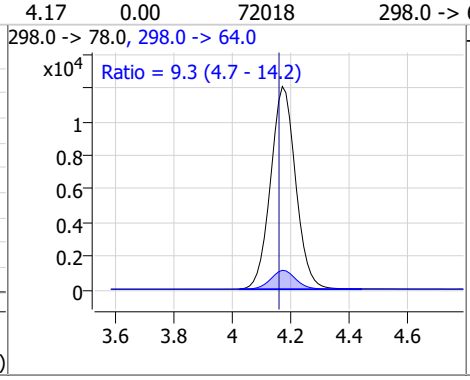


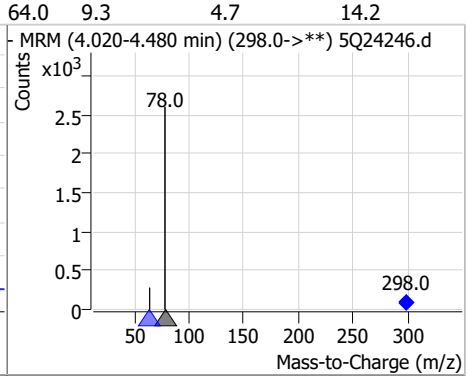




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	19.53	4.17	0.00	72018	298.0 -> 64.0	9.3	4.7	14.2

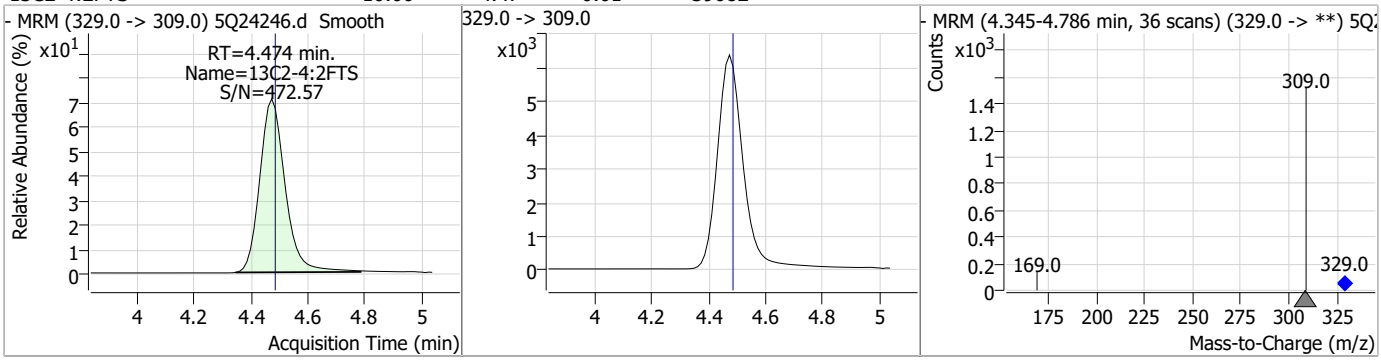




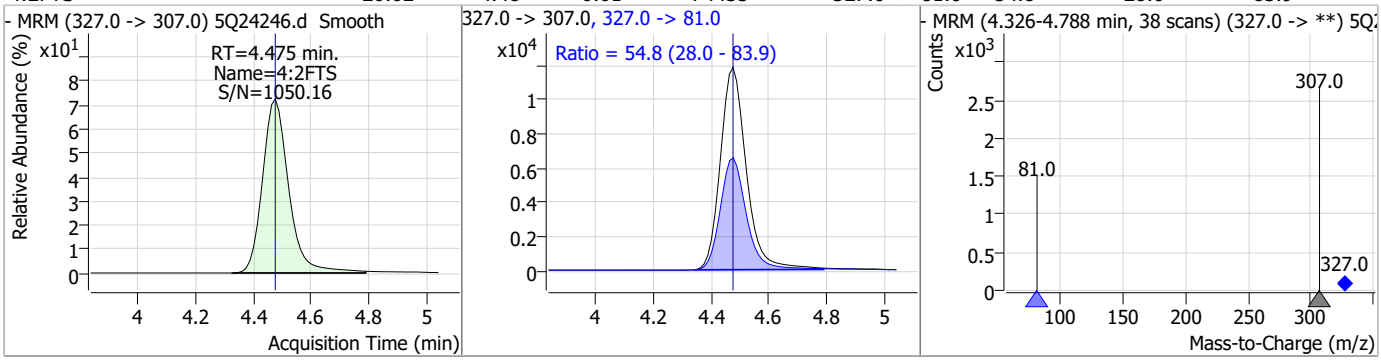


Perfluorinated Compounds by LC/MS/MS

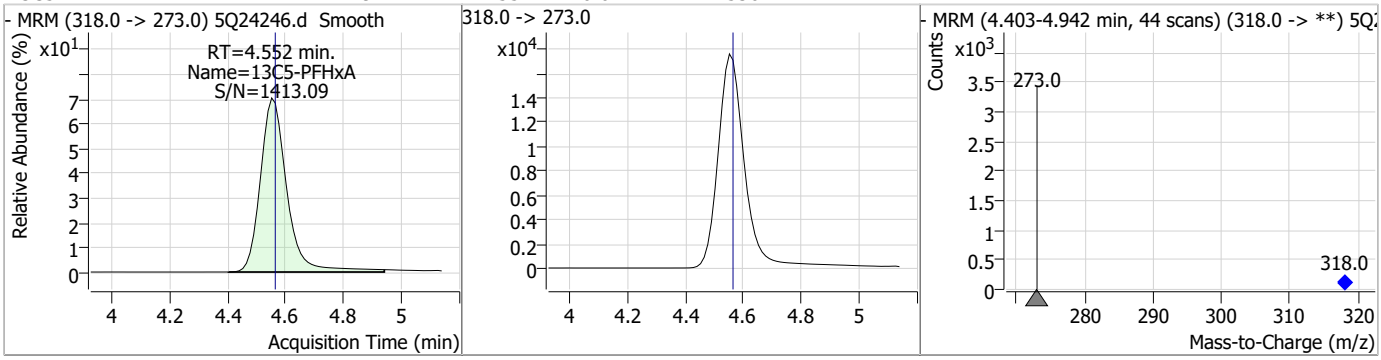
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	10.00	4.47	-0.01	39082				



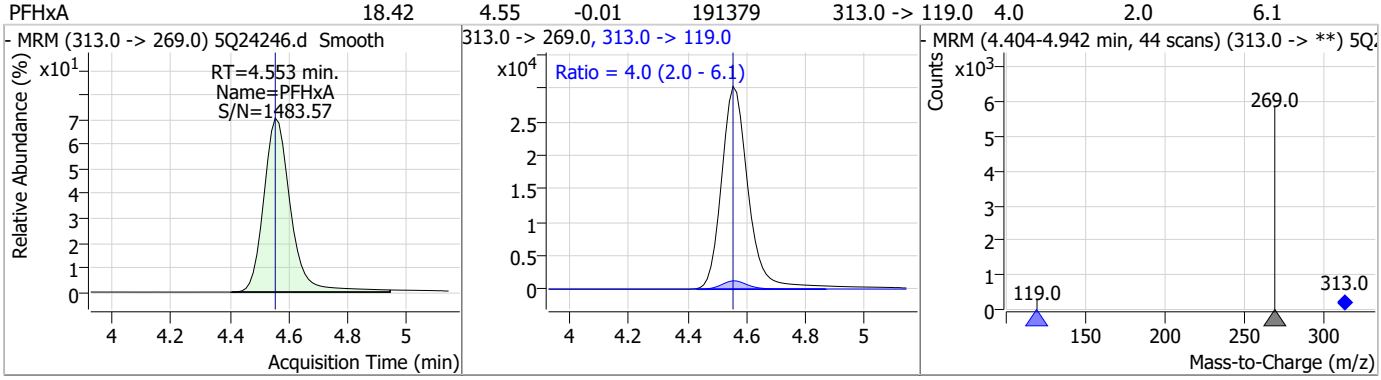
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	20.02	4.48	-0.01	74435	327.0 -> 81.0	54.8	28.0	83.9



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	9.72	4.55	-0.01	111536				

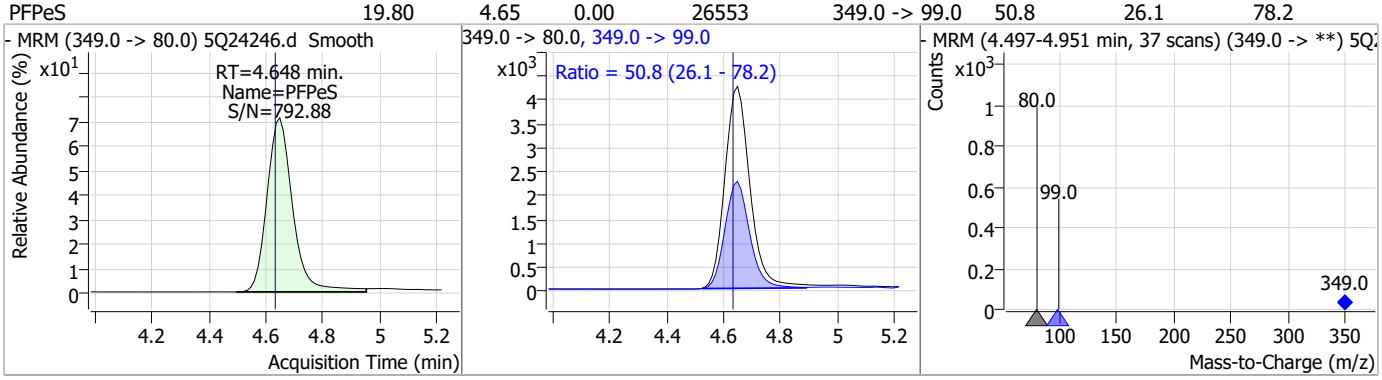


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	18.42	4.55	-0.01	191379	313.0 -> 119.0	4.0	2.0	6.1

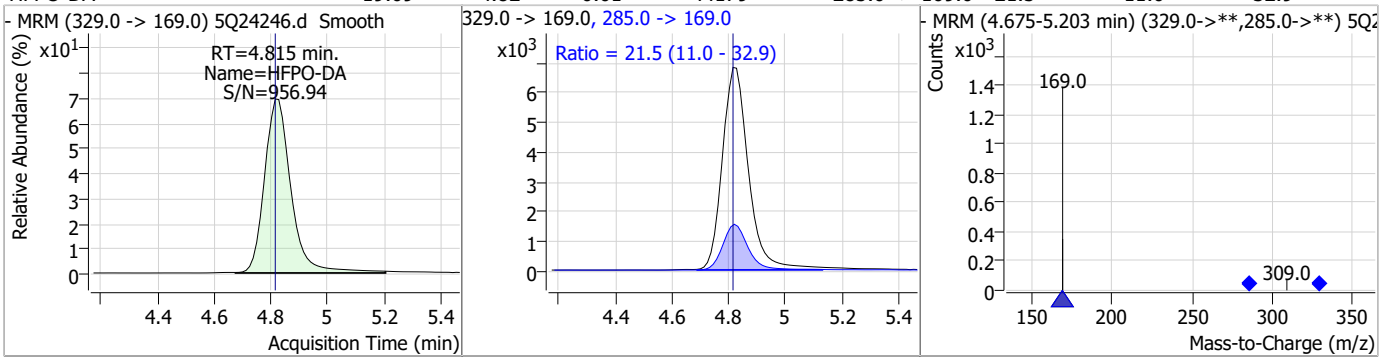


Perfluorinated Compounds by LC/MS/MS

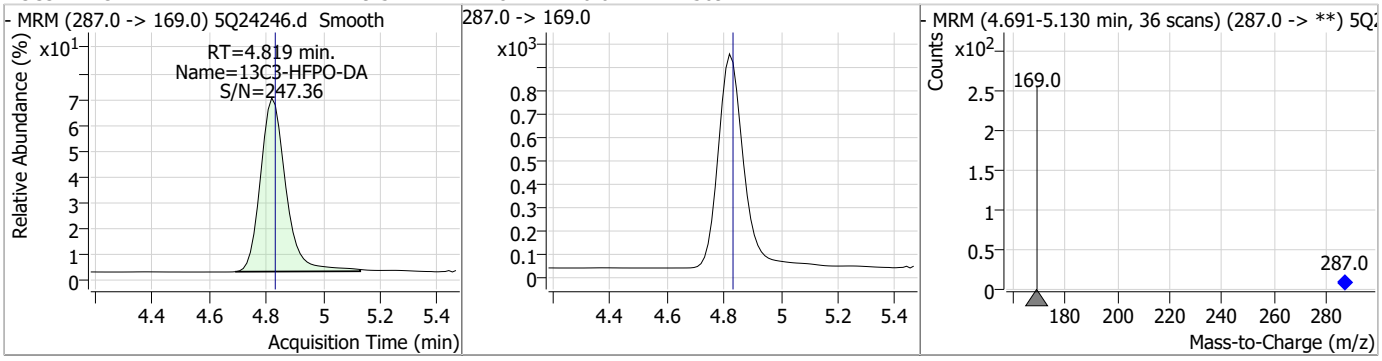
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	19.80	4.65	0.00	26553	349.0 -> 99.0	50.8	26.1	78.2



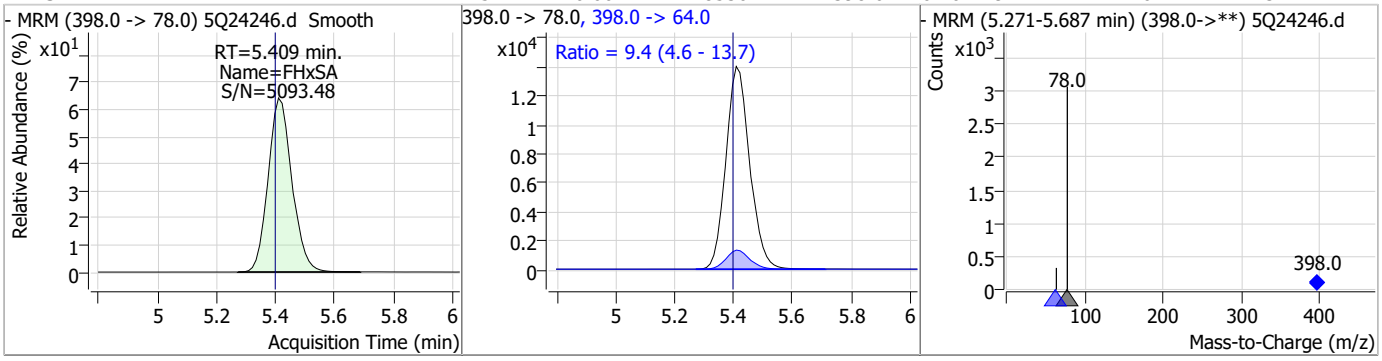
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	19.09	4.82	-0.01	44179	285.0 -> 169.0	21.5	11.0	32.9



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	9.54	4.82	-0.01	5694				

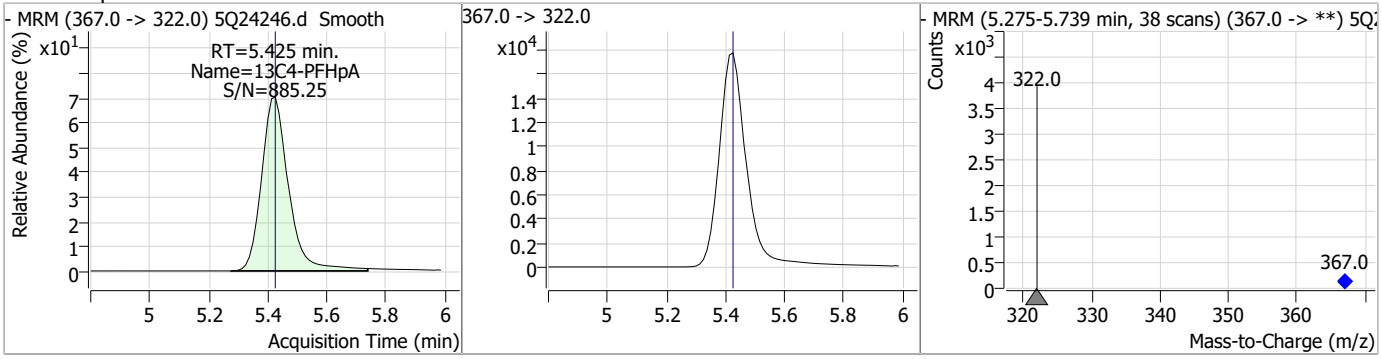


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	21.47	5.41	0.00	78530	398.0 -> 64.0	9.4	4.6	13.7

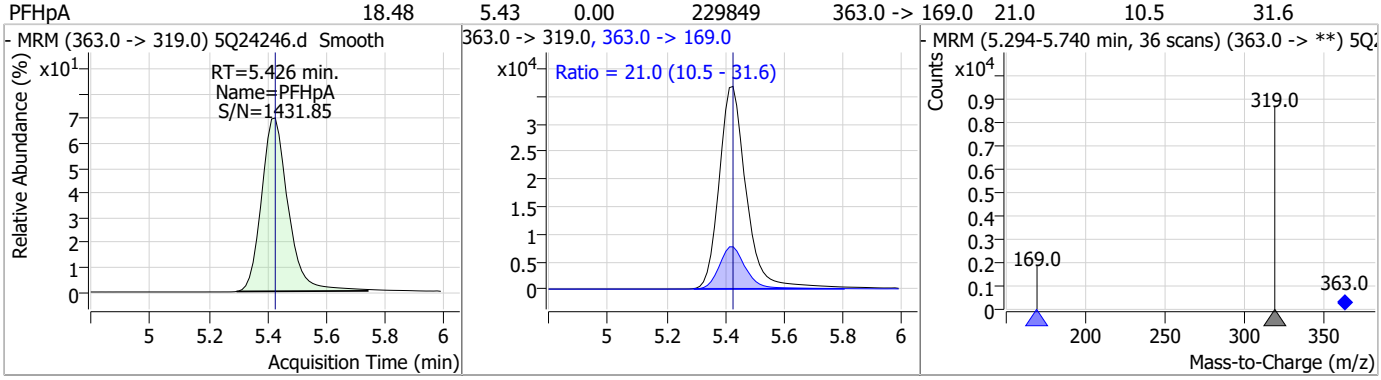


Perfluorinated Compounds by LC/MS/MS

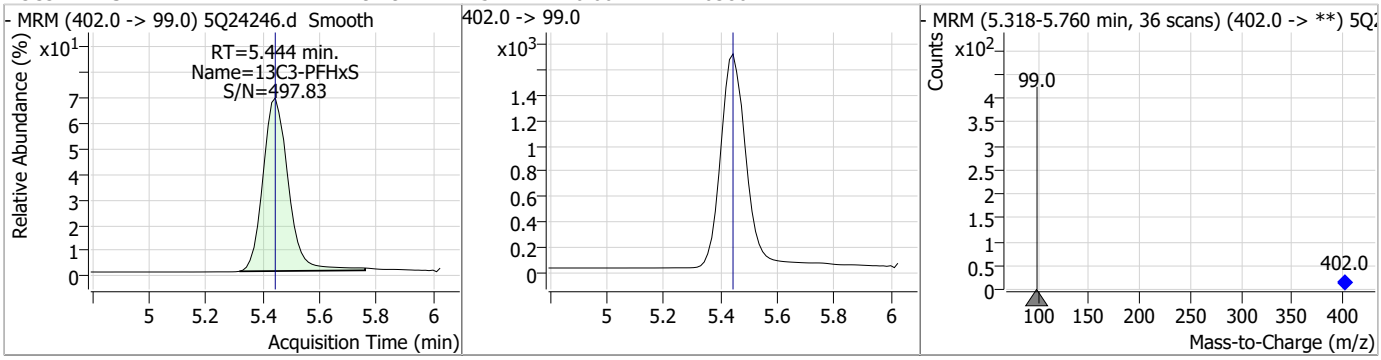
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	9.56	5.43	0.00	113011				



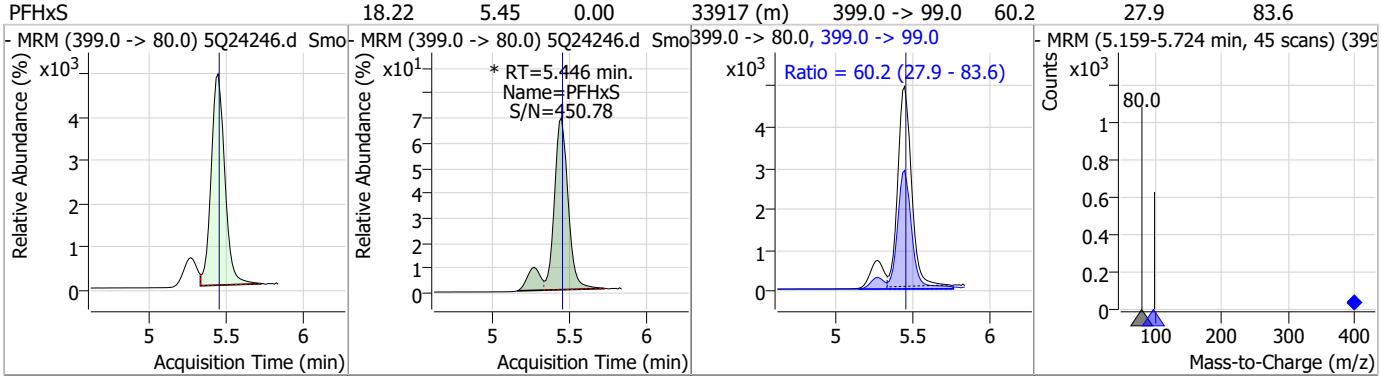
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	18.48	5.43	0.00	229849	363.0 -> 169.0	21.0	10.5	31.6



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	9.19	5.44	0.00	10380				

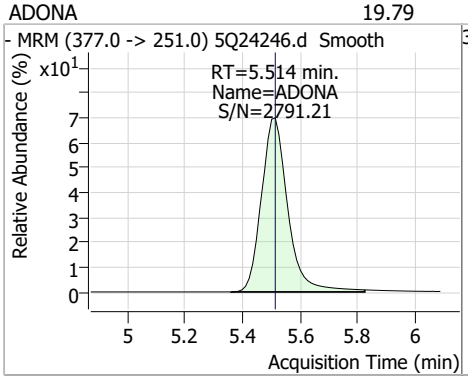


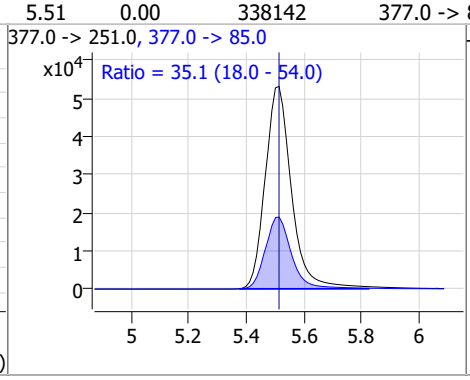
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	18.22	5.45	0.00	33917 (m)	399.0 -> 99.0	60.2	27.9	83.6

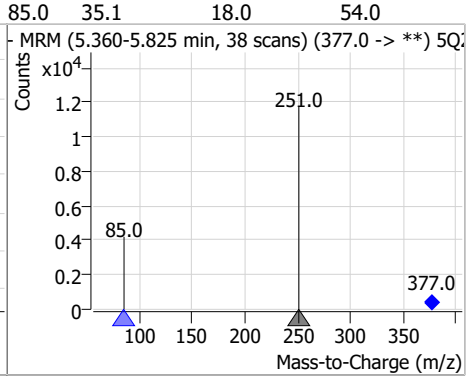


Perfluorinated Compounds by LC/MS/MS

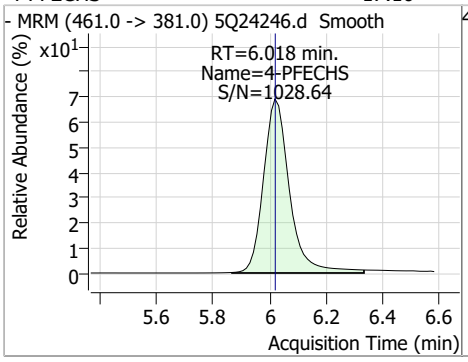
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	19.79	5.51	0.00	338142	377.0 -> 85.0	35.1	18.0	54.0

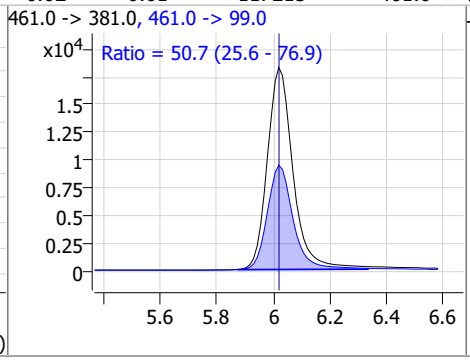


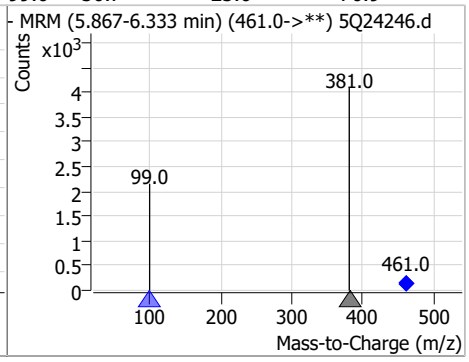




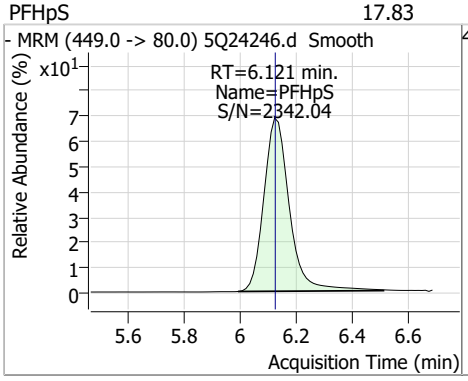
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS	17.16	6.02	-0.01	117215	461.0 -> 99.0	50.7	25.6	76.9

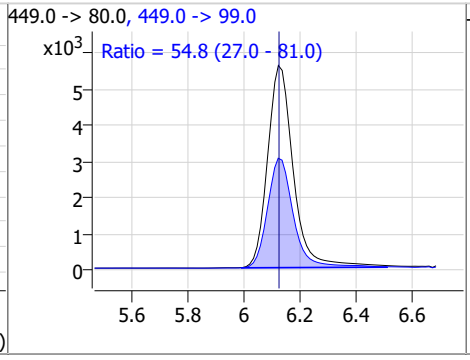


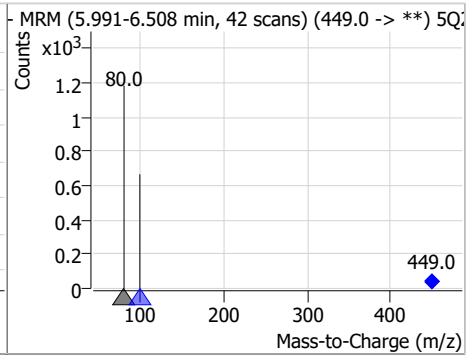




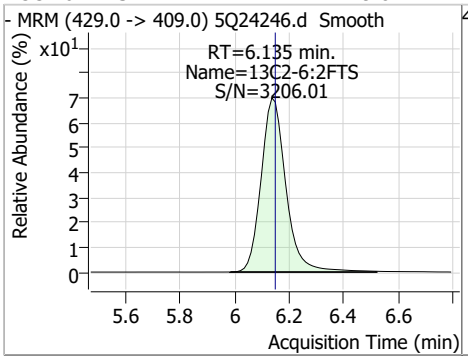
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	17.83	6.12	-0.01	35331	449.0 -> 99.0	54.8	27.0	81.0

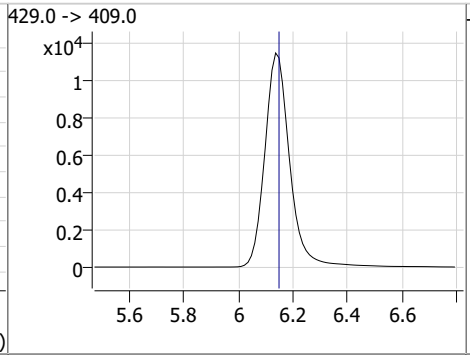


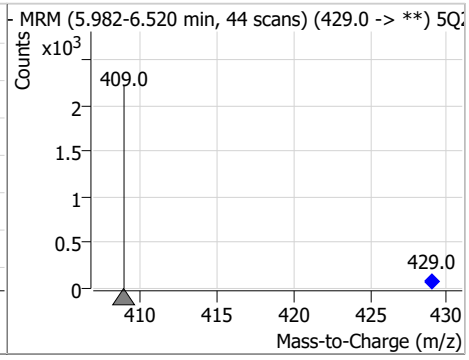




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	9.84	6.14	-0.01	72356				

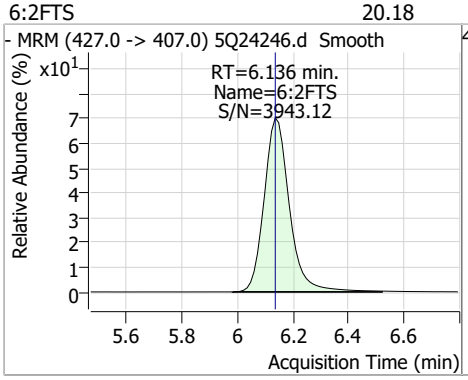


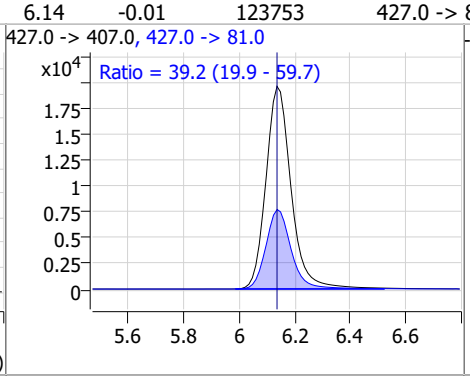


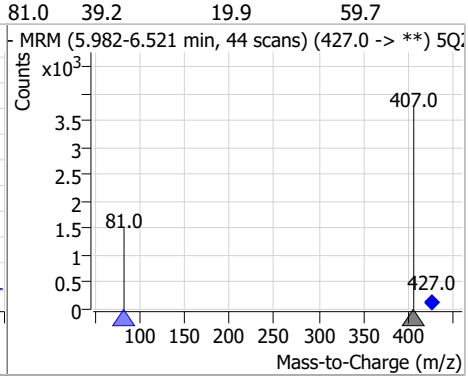


Perfluorinated Compounds by LC/MS/MS

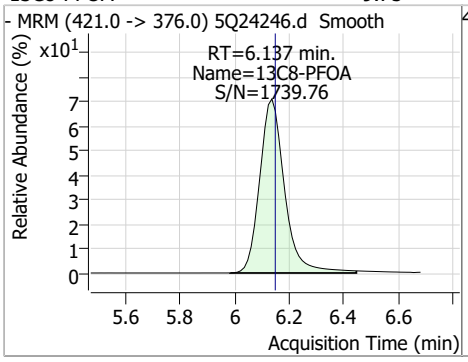
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	20.18	6.14	-0.01	123753	427.0 -> 81.0	39.2	19.9	59.7

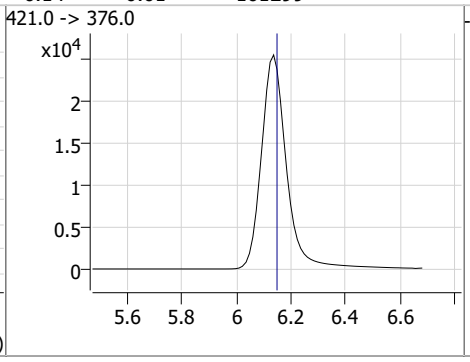


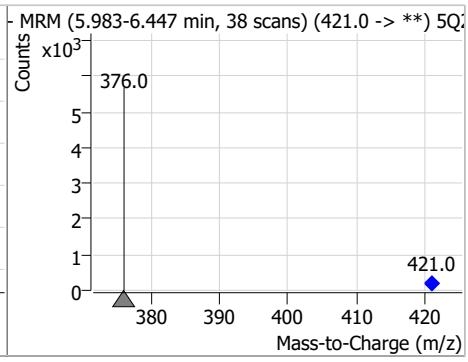




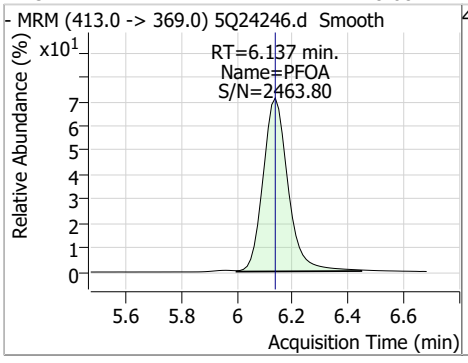
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	9.75	6.14	-0.01	161299				

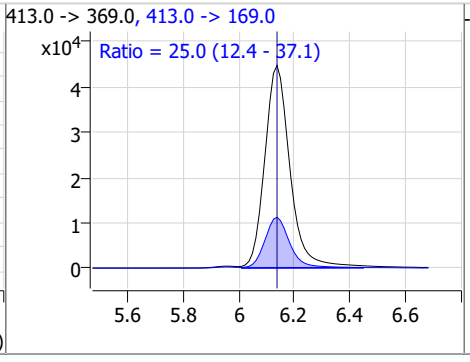


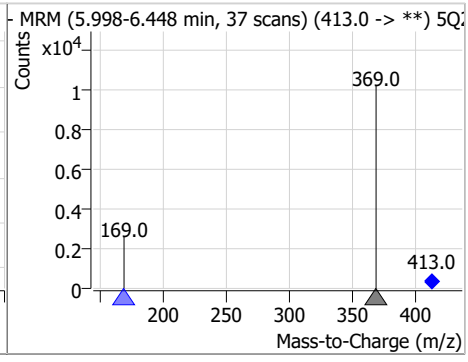




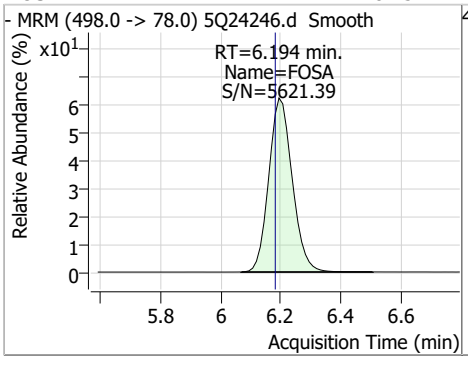
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	18.08	6.14	-0.01	278500	413.0 -> 169.0	25.0	12.4	37.1

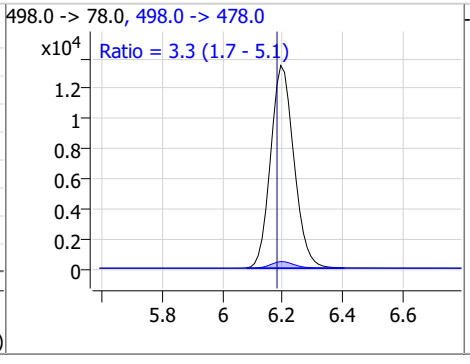


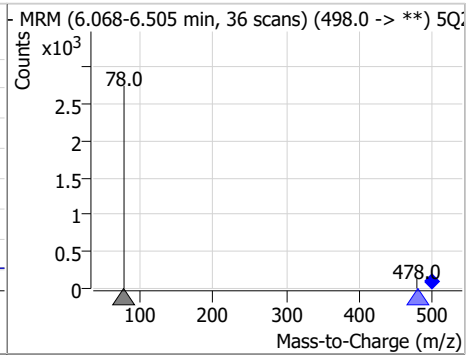




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	18.45	6.19	0.00	72817	498.0 -> 478.0	3.3	1.7	5.1

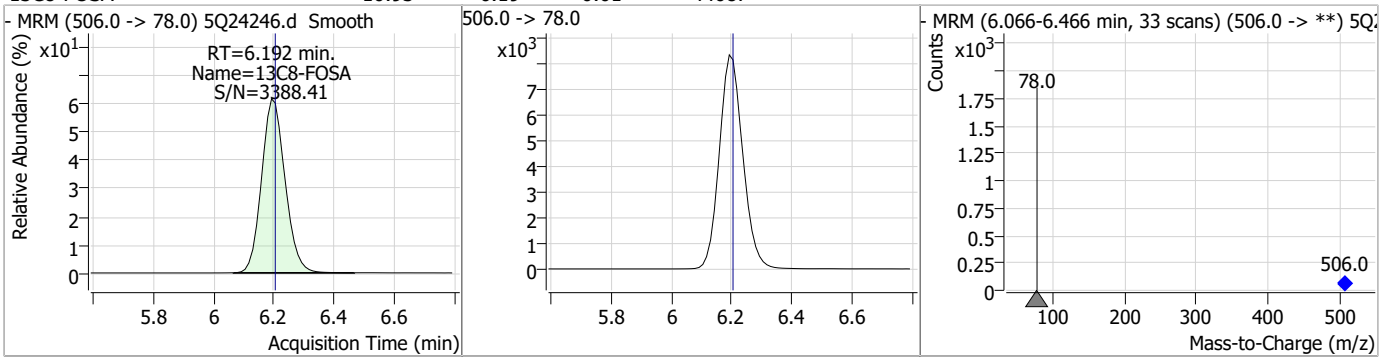




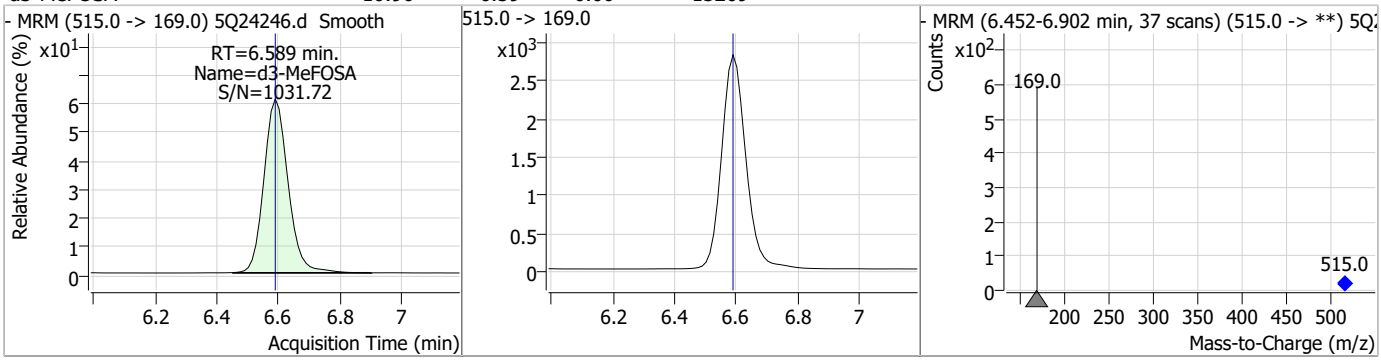


Perfluorinated Compounds by LC/MS/MS

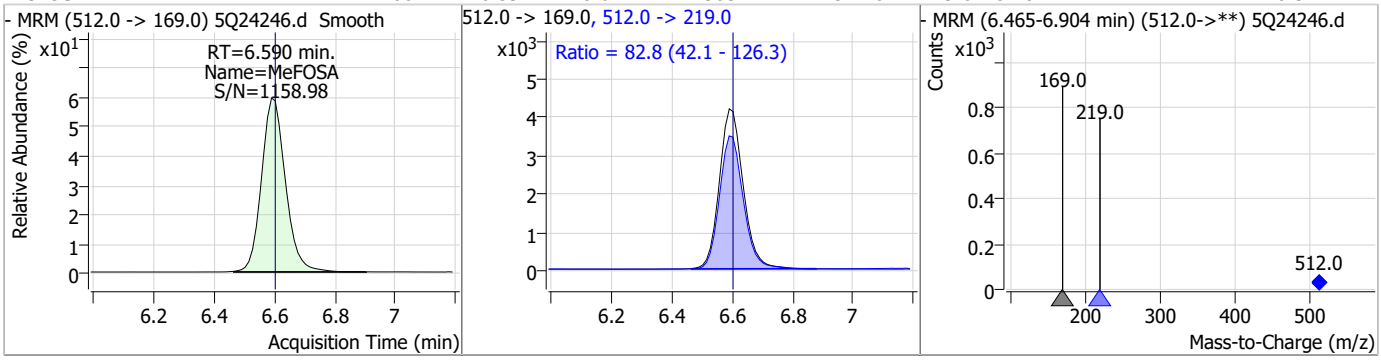
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	10.93	6.19	-0.01	44687				



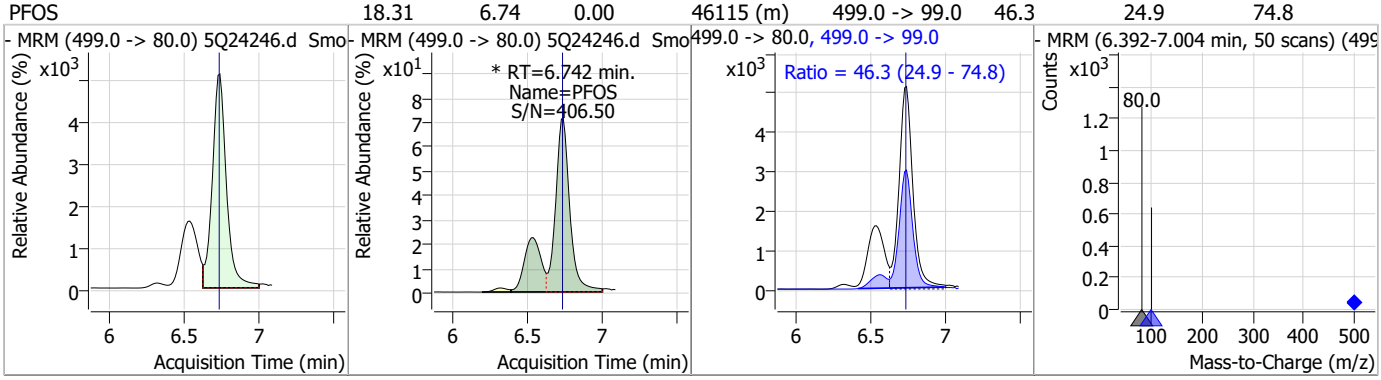
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	10.96	6.59	0.00	15269				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	17.66	6.59	-0.01	23031	512.0 -> 219.0	82.8	42.1	126.3

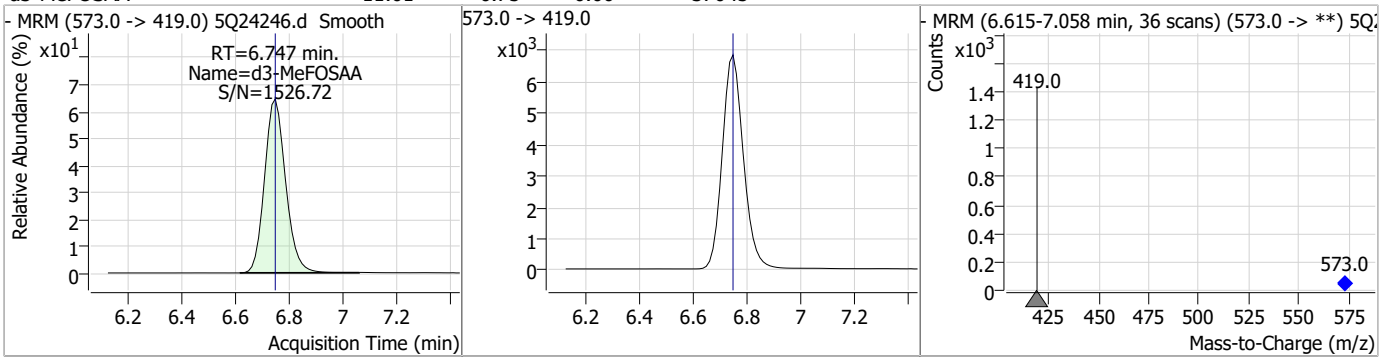


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	18.31	6.74	0.00	46115 (m)	499.0 -> 99.0	46.3	24.9	74.8

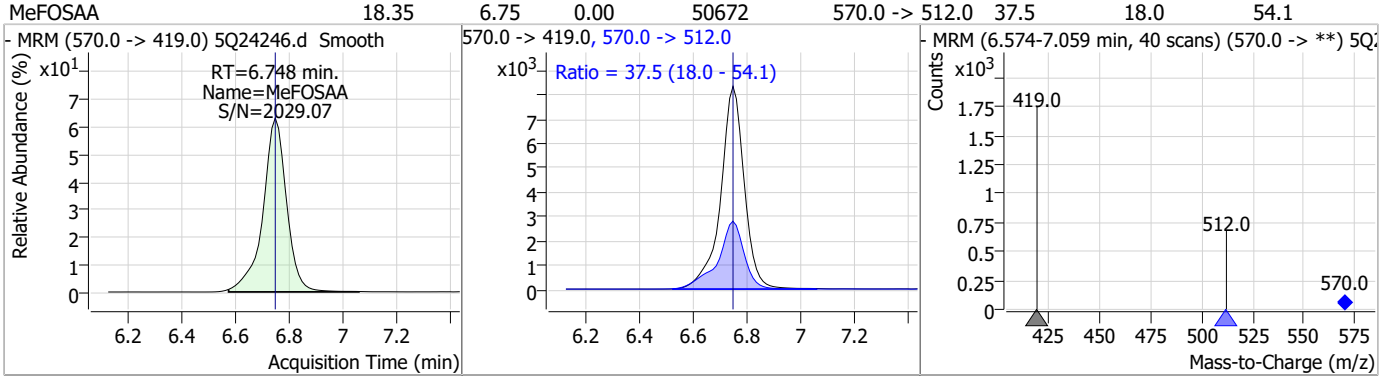


Perfluorinated Compounds by LC/MS/MS

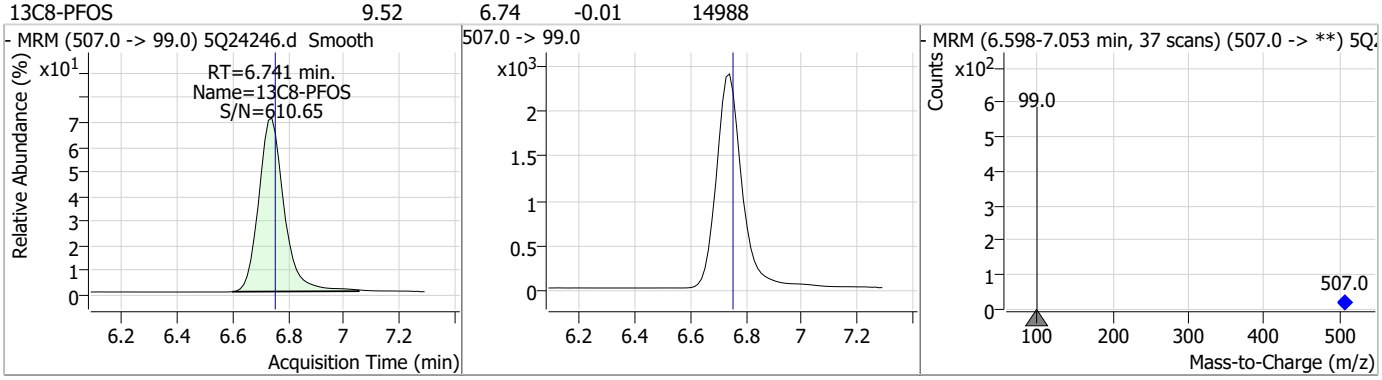
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	11.01	6.75	0.00	37045				



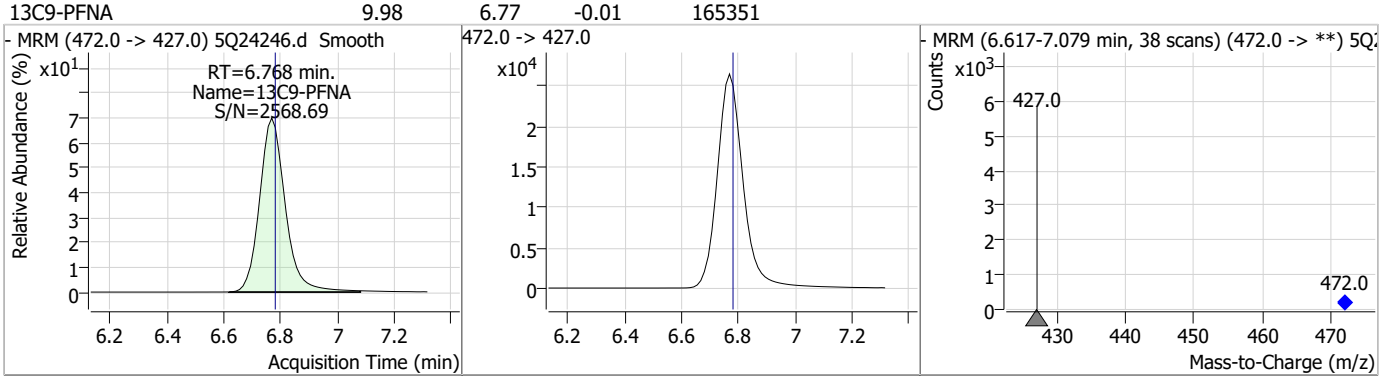
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	18.35	6.75	0.00	50672	570.0 -> 512.0	37.5	18.0	54.1



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	9.52	6.74	-0.01	14988				

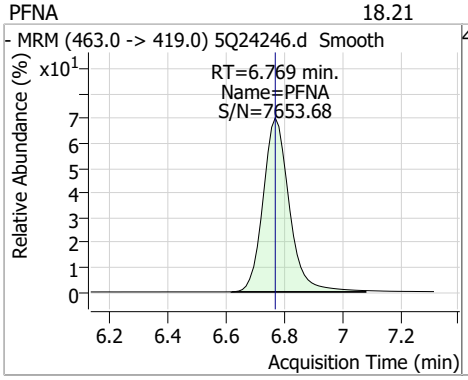


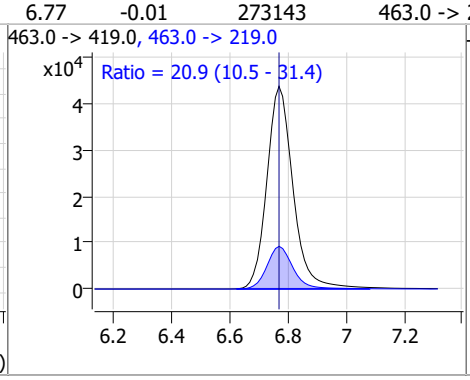
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	9.98	6.77	-0.01	165351				

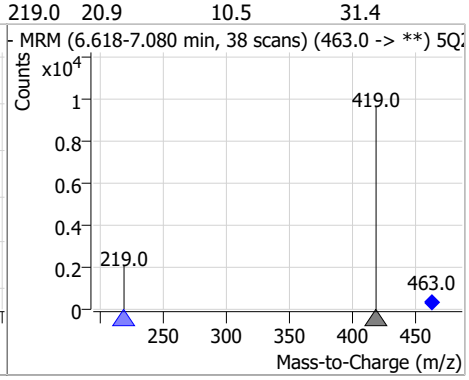


Perfluorinated Compounds by LC/MS/MS

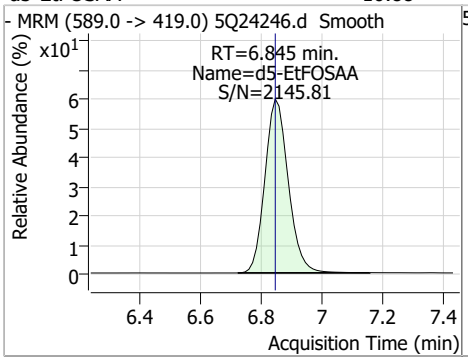
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	18.21	6.77	-0.01	273143	463.0 -> 219.0	20.9	10.5	31.4

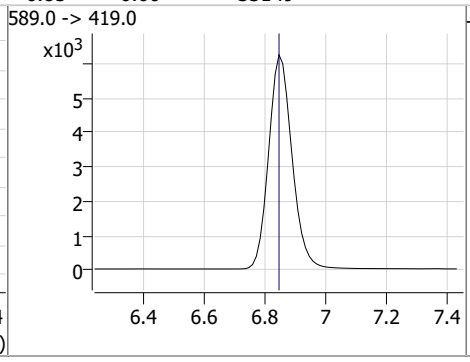


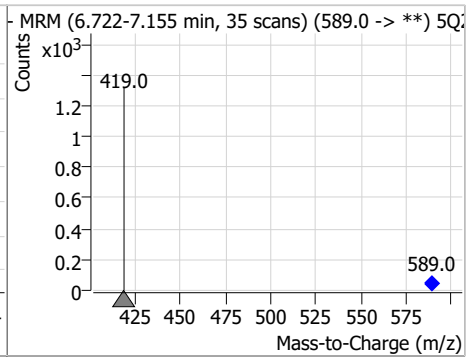




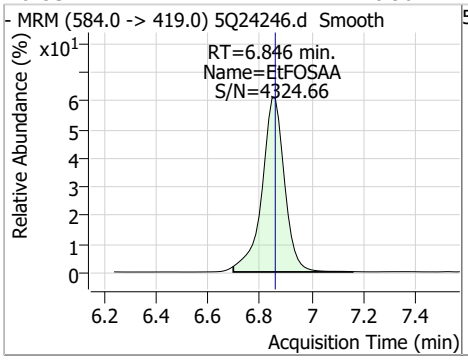
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	10.88	6.85	0.00	33149				

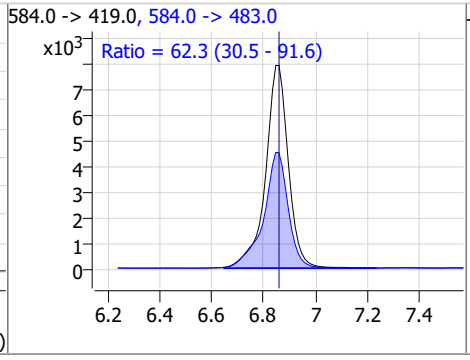


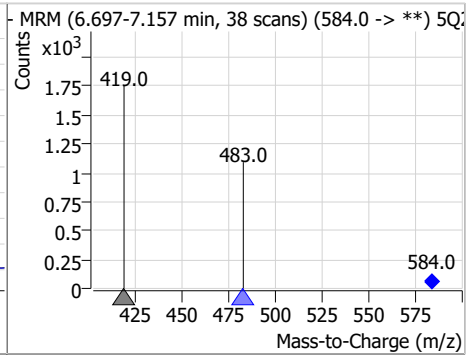




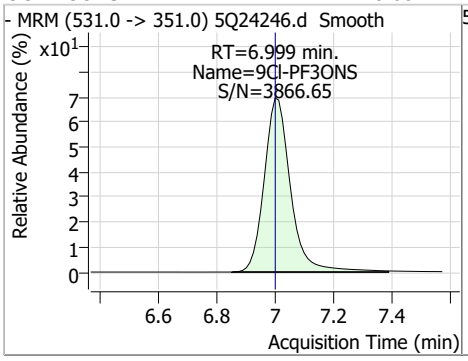
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	18.96	6.85	-0.01	48088	584.0 -> 483.0	62.3	30.5	91.6

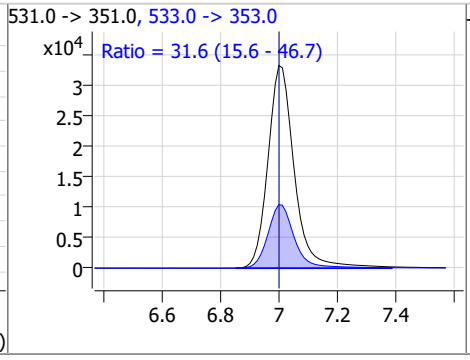


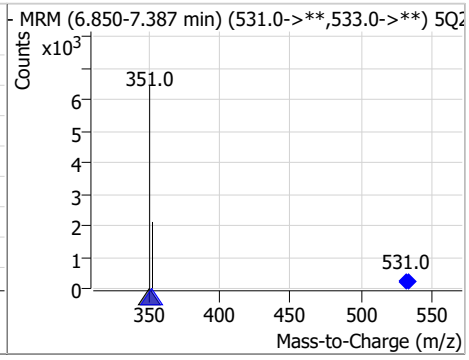




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	18.08	7.00	-0.01	210074	533.0 -> 353.0	31.6	15.6	46.7

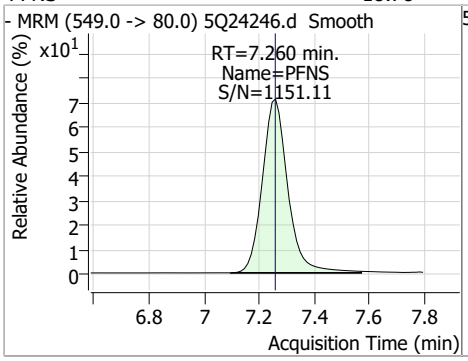


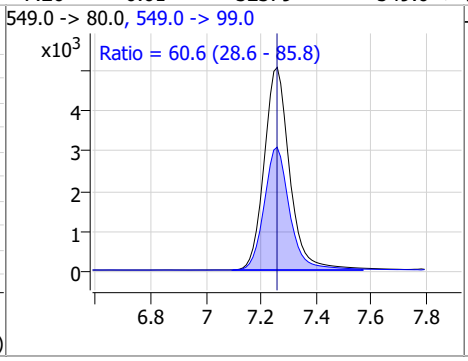


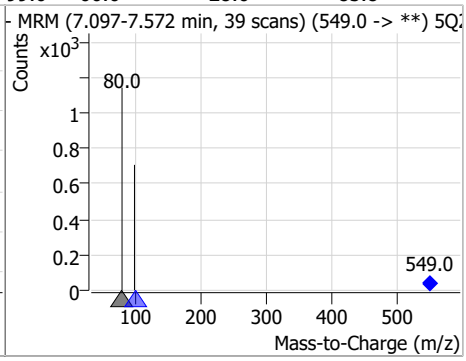


Perfluorinated Compounds by LC/MS/MS

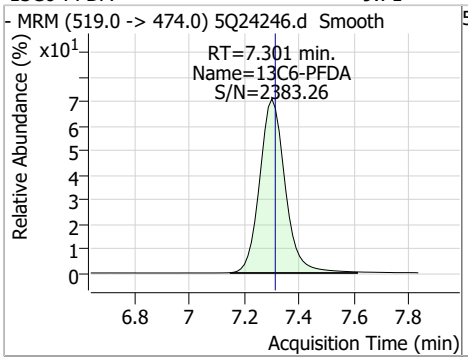
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	18.78	7.26	-0.01	32379	549.0 -> 99.0	60.6	28.6	85.8

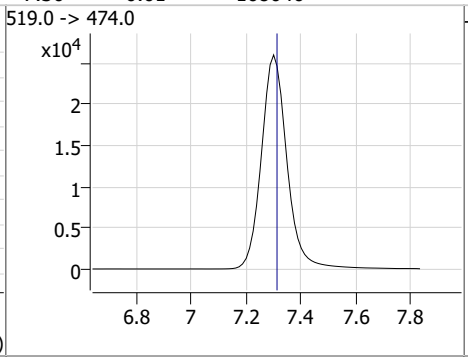


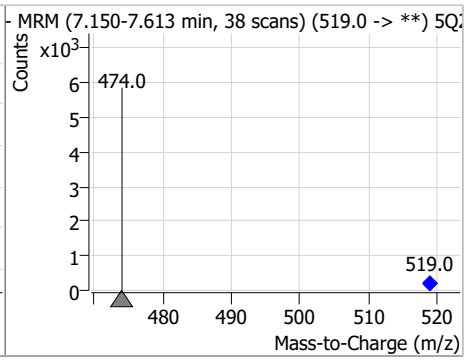




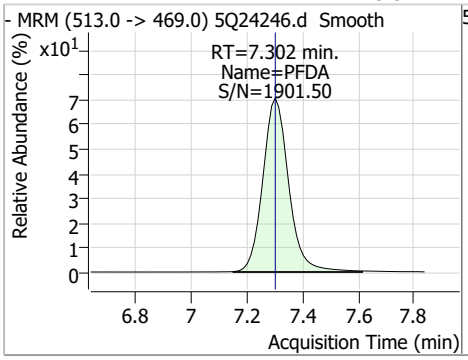
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	9.71	7.30	-0.01	168046				

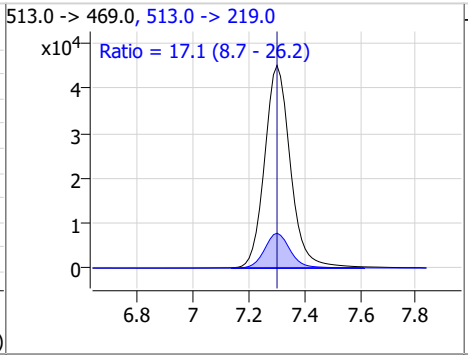


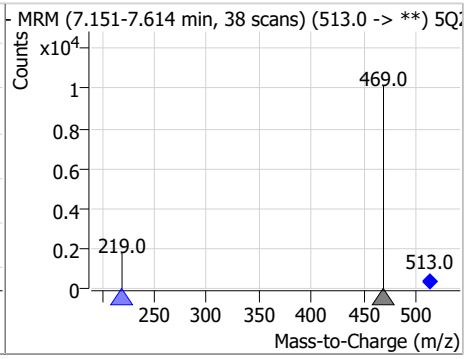




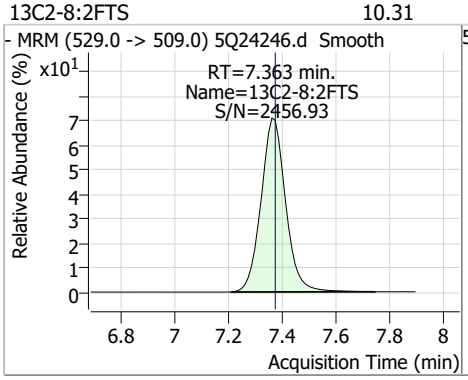
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	18.84	7.30	-0.01	291140	513.0 -> 219.0	17.1	8.7	26.2

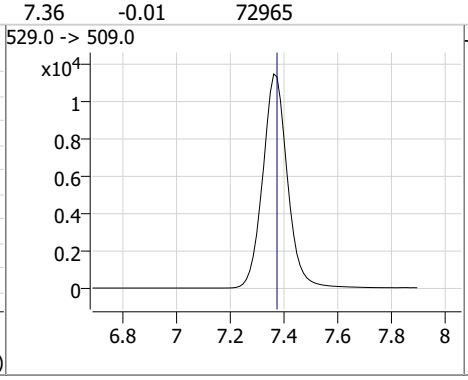


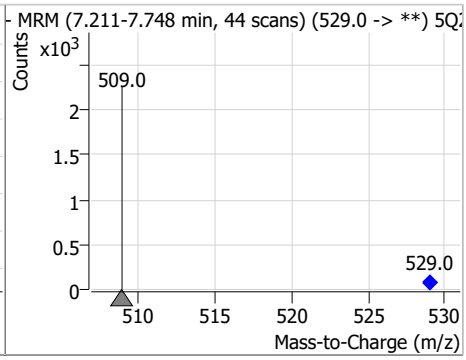




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	10.31	7.36	-0.01	72965				

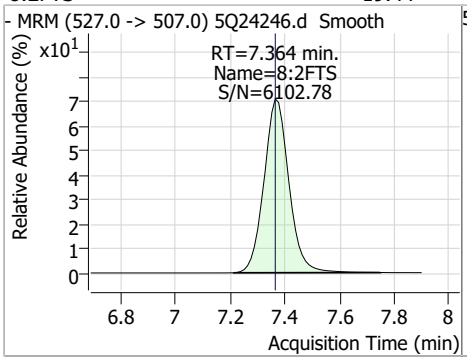


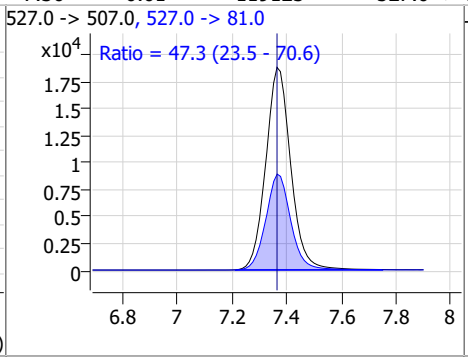


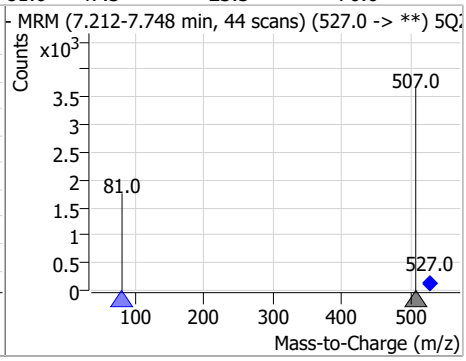


Perfluorinated Compounds by LC/MS/MS

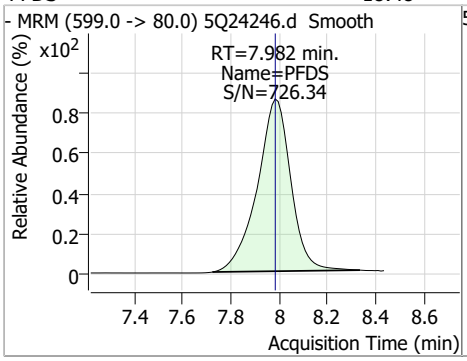
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	19.44	7.36	-0.01	119123	527.0 -> 81.0	47.3	23.5	70.6

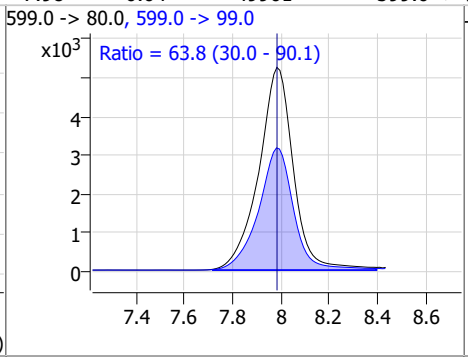


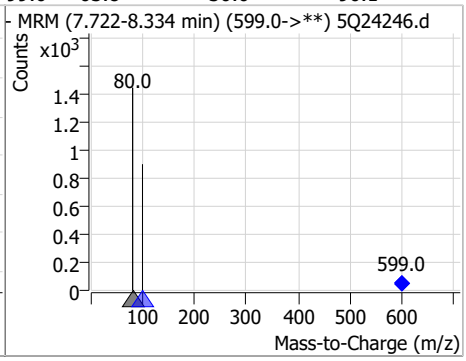




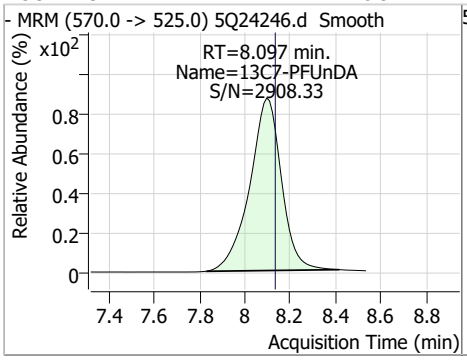
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	18.48	7.98	-0.04	49901	599.0 -> 99.0	63.8	30.0	90.1

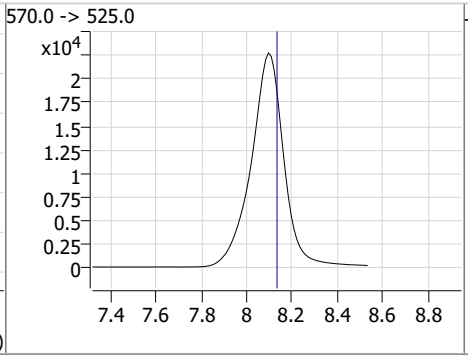


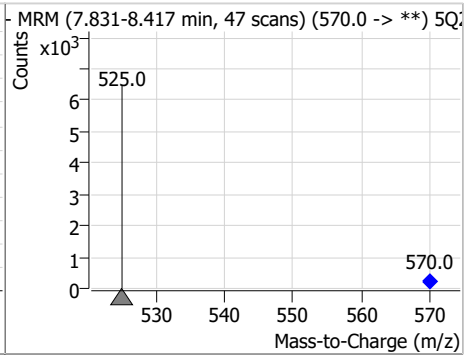




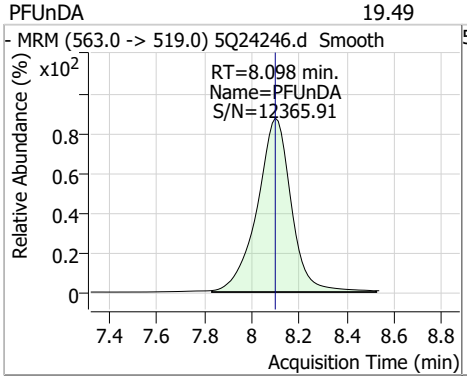
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	8.97	8.10	-0.04	218993				

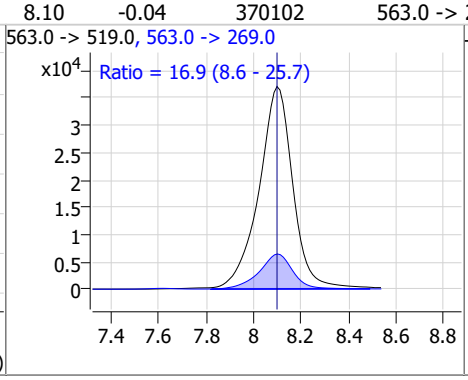


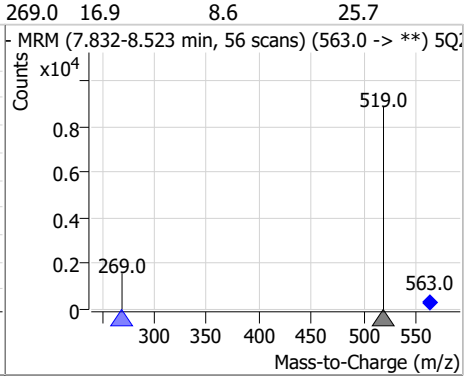




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	19.49	8.10	-0.04	370102	563.0 -> 269.0	16.9	8.6	25.7

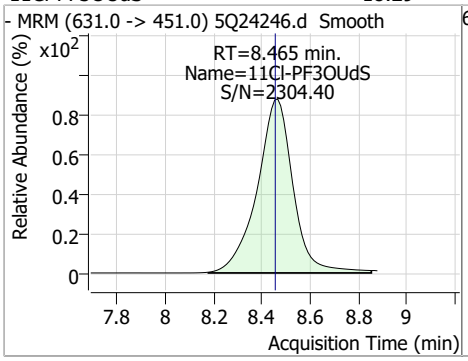


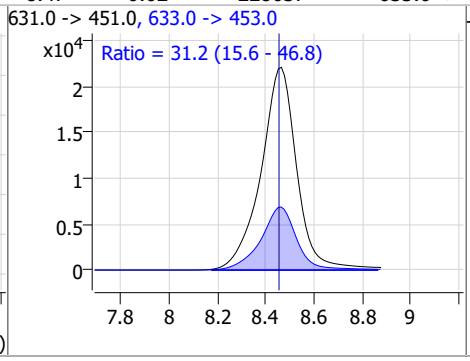


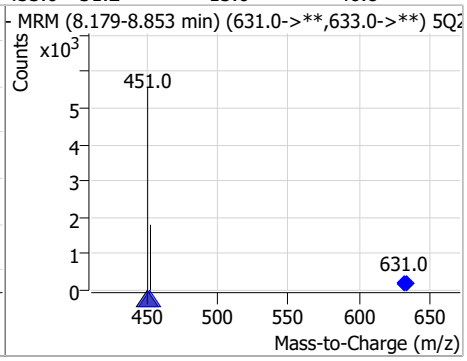


Perfluorinated Compounds by LC/MS/MS

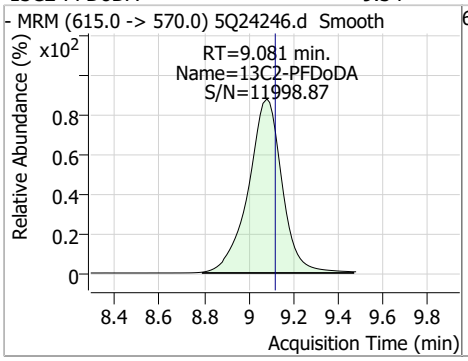
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	18.29	8.47	-0.02	228037	633.0 -> 453.0	31.2	15.6	46.8

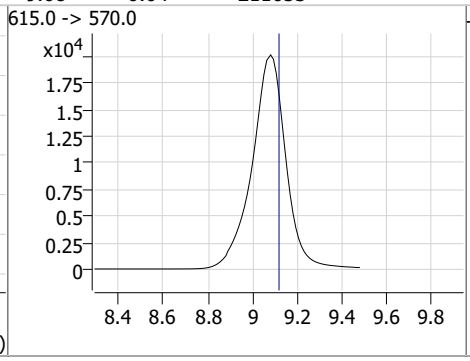


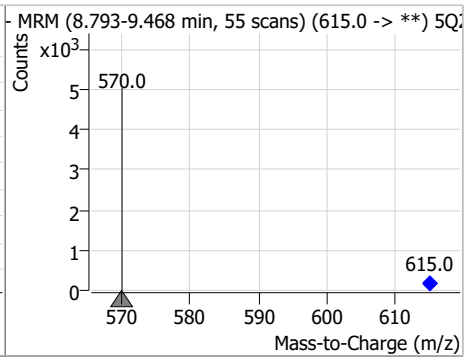




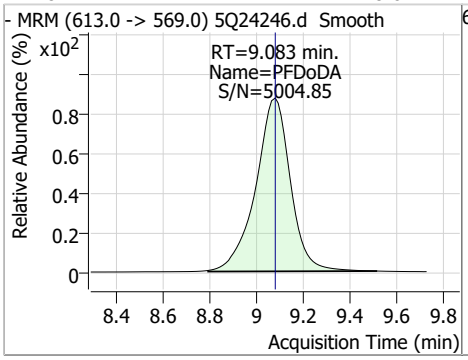
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	9.34	9.08	-0.04	211053				

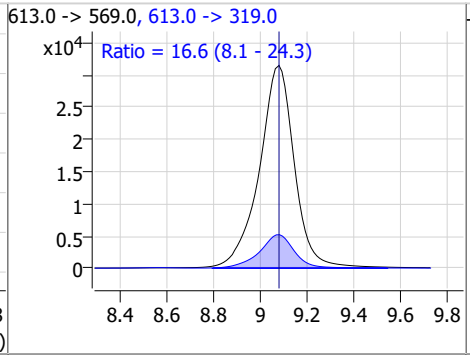


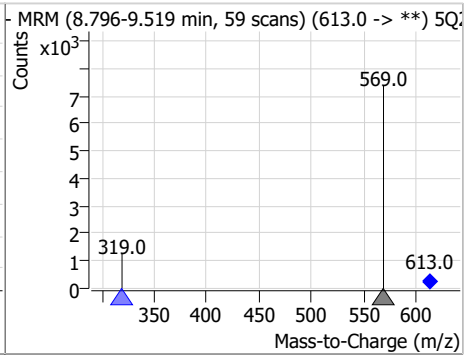




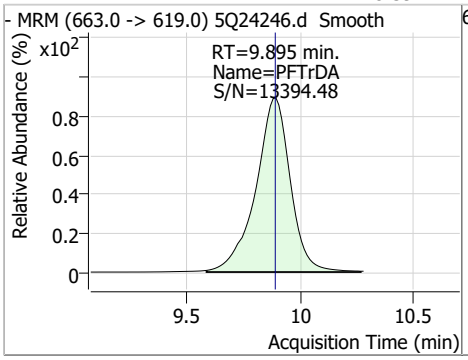
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	18.64	9.08	-0.04	323769	613.0 -> 319.0	16.6	8.1	24.3

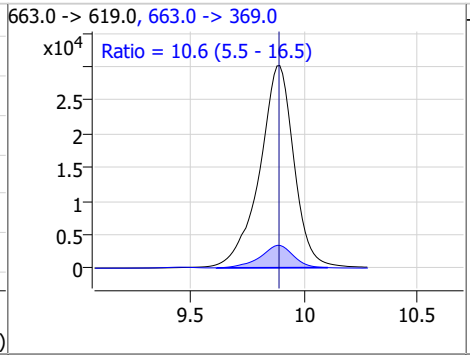


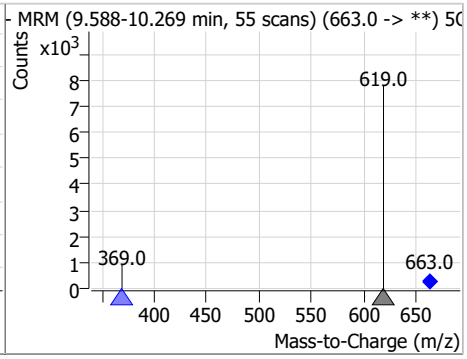




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	18.39	9.89	-0.04	320763	663.0 -> 369.0	10.6	5.5	16.5

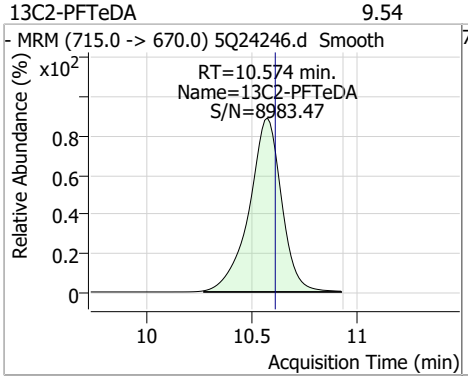


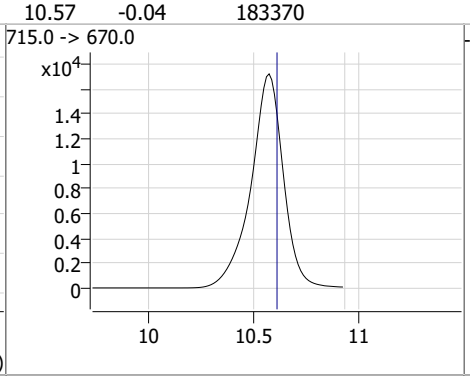


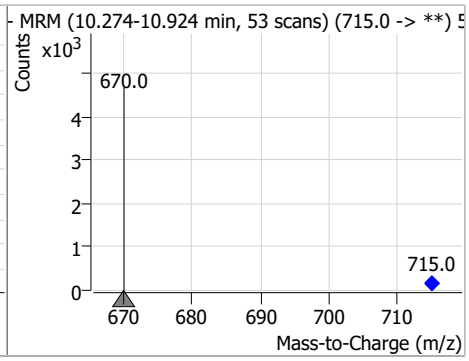


Perfluorinated Compounds by LC/MS/MS

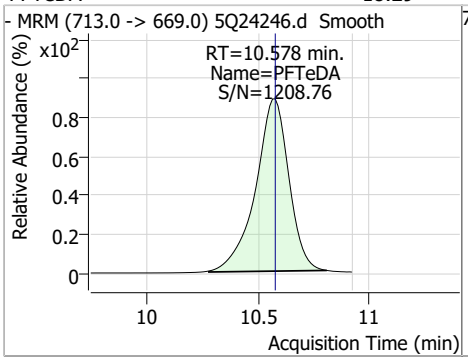
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	9.54	10.57	-0.04	183370				

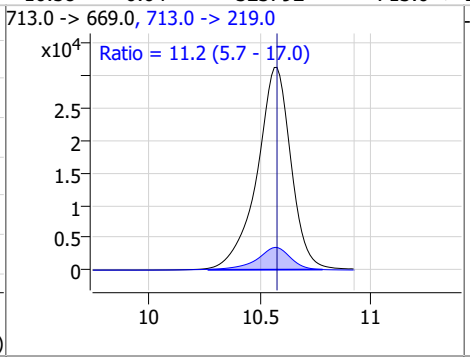


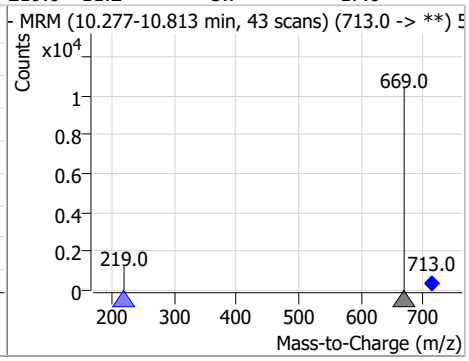




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	18.29	10.58	-0.04	323792	713.0 -> 219.0	11.2	5.7	17.0







9.6.9.50

6

Manual Integration Approval Summary

Sample Number: S5Q380-CC377
Lab FileID: 5Q24246.D
Injection Time: 01/05/24 18:07
Method: EPA 537M QSM5.3 B-15
Analyst approved: 01/08/24 14:10 Lindsay Ritner
Supervisor approved: 01/09/24 09:58 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.45	Split peak
Perfluorooctanesulfonic acid	1763-23-1		6.74	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Natasha Gumtie 01/09/24 09:58

Perfluorinated Compounds by LC/MS/MS

Data File : 5Q24258.d
Operator : lindsayr
Acq. Method : 537_ID.m
Acq. Date-Time : 1/5/2024 9:25:39 PM
Sample Name : cc377-20
Vial : P1-A7
DA Method File : ID_010224_S5Q377.quantmethod.xml
Batch Name : s5q380.batch.bin
Sample Information : OP401,S5Q380,250,,,1.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.987	217.0 -> 172.0	41439	10.00	µg/L	0.000
M5-PFPeA	3.419	268.0 -> 223.0	69967	10.00	µg/L	-0.012
M5-PFHxA	4.552	318.0 -> 273.0	108000	10.00	µg/L	-0.012
M4-PFHpA	5.413	367.0 -> 322.0	111496	10.00	µg/L	-0.012
M8-PFOA	6.137	421.0 -> 376.0	157693	10.00	µg/L	-0.012
M9-PFNA	6.768	472.0 -> 427.0	160132	10.00	µg/L	-0.012
M6-PFDA	7.301	519.0 -> 474.0	166391	10.00	µg/L	-0.012
M7-PFUnDA	8.097	570.0 -> 525.0	220787	10.00	µg/L	-0.037
M2-PFDoDA	9.081	615.0 -> 570.0	204872	10.00	µg/L	-0.037
M2-PFTeDA	10.562	715.0 -> 670.0	183226	10.00	µg/L	-0.050
M8-FOSA	6.192	506.0 -> 78.0	43445	10.00	µg/L	-0.012
M3-PFBS	3.624	302.0 -> 99.0	8346	10.00	µg/L	-0.012
M3-PFHxS	5.444	402.0 -> 99.0	10654	10.00	µg/L	0.000
M8-PFOS	6.729	507.0 -> 99.0	14742	10.00	µg/L	-0.025
M2-4:2FTS	4.474	329.0 -> 309.0	39114	10.00	µg/L	-0.012
M2-6:2FTS	6.135	429.0 -> 409.0	70155	10.00	µg/L	-0.012
M2-8:2FTS	7.363	529.0 -> 509.0	71810	10.00	µg/L	-0.012
M3-MeFOSAA	6.747	573.0 -> 419.0	36139	10.00	µg/L	0.000
M3-HFPO-DA	4.819	287.0 -> 169.0	5328	10.00	µg/L	-0.012
M3-MeFOSA	6.589	515.0 -> 169.0	15353	10.00	µg/L	0.000
M5-EtFOSAA	6.845	589.0 -> 419.0	33057	10.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.474	329.0 -> 309.0	39114	10.01	µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.1%		
13C2-6:2FTS	6.135	429.0 -> 409.0	70155	9.54	µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 95.4%		
13C2-8:2FTS	7.363	529.0 -> 509.0	71810	10.15	µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.5%		
13C2-PFDoDA	9.081	615.0 -> 570.0	204872	9.06	µg/L	-0.037
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 90.6%		
13C2-PFTeDA	10.562	715.0 -> 670.0	183226	9.53	µg/L	-0.050
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 95.3%		
13C3-PFBS	3.624	302.0 -> 99.0	8346	9.05	µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 90.5%		
13C3-PFHxS	5.444	402.0 -> 99.0	10654	9.43	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 94.3%		
13C4-PFBA	1.987	217.0 -> 172.0	41439	9.39	µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 93.9%		
13C4-PFHpA	5.413	367.0 -> 322.0	111496	9.44	µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 94.4%		
13C5-PFHxA	4.552	318.0 -> 273.0	108000	9.41	µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 94.1%		
13C5-PFPeA	3.419	268.0 -> 223.0	69967	9.42	µg/L	-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 94.2%		
13C6-PFDA	7.301	519.0 -> 474.0	166391	9.61	µg/L	-0.012

Perfluorinated Compounds by LC/MS/MS

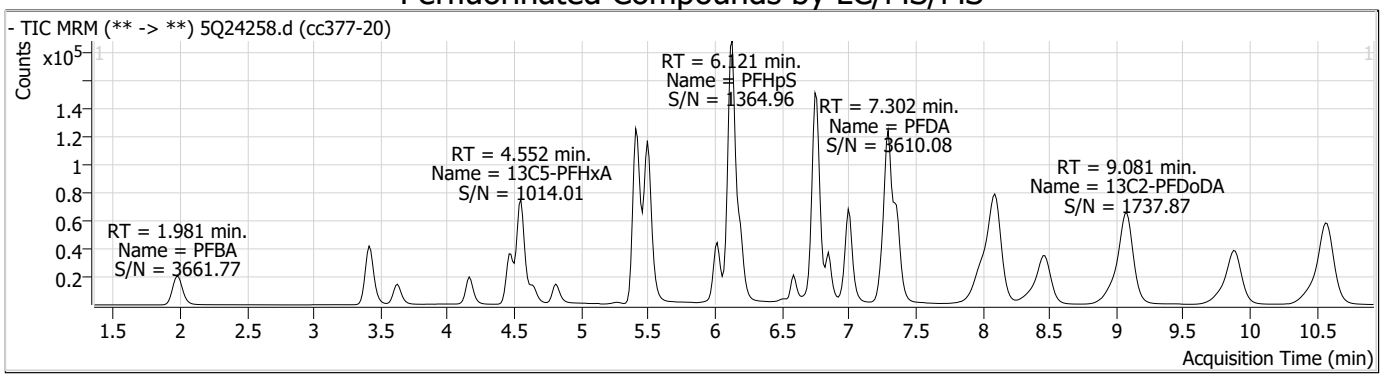
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 96.1%			
13C7-PFUnDA	8.097	570.0 -> 525.0	220787	9.05	µg/L		-0.037
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 90.5%			
13C8-FOSA	6.192	506.0 -> 78.0	43445	10.63	µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 106.3%			
13C8-PFOA	6.137	421.0 -> 376.0	157693	9.53	µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 95.3%			
13C8-PFOS	6.729	507.0 -> 99.0	14742	9.36	µg/L		-0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 93.6%			
13C9-PFNA	6.768	472.0 -> 427.0	160132	9.66	µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 96.6%			
d3-MeFOSAA	6.747	573.0 -> 419.0	36139	10.74	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 107.4%			
13C3-HFPO-DA	4.819	287.0 -> 169.0	5328	8.92	µg/L		-0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 89.2%			
d3-MeFOSA	6.589	515.0 -> 169.0	15353	11.02	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 110.2%			
d5-EtFOSAA	6.845	589.0 -> 419.0	33057	10.85	µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 108.5%			
Target Compounds							QValue
4:2FTS	4.475	327.0 -> 307.0	73167	19.66	µg/L		99
		327.0 -> 81.0	41216				
6:2FTS	6.136	427.0 -> 407.0	122387	20.59	µg/L		99
		427.0 -> 81.0	47966				
8:2FTS	7.364	527.0 -> 507.0	118945	19.72	µg/L		100
		527.0 -> 81.0	55894				
EtFOSAA	6.846	584.0 -> 419.0	47885	18.93	µg/L		100
		584.0 -> 483.0	29325				
FOSA	6.194	498.0 -> 78.0	71084	18.52	µg/L		99
		498.0 -> 478.0	2285				
MeFOSAA	6.748	570.0 -> 419.0	50550	18.76	µg/L		100
		570.0 -> 512.0	18193				
PFBA	1.981	213.0 -> 169.0	68748	18.47	µg/L		100
PFBS	3.628	299.0 -> 80.0	37528	18.35	µg/L		98
		299.0 -> 99.0	16664				
PFDA	7.302	513.0 -> 469.0	282847	18.48	µg/L		99
		513.0 -> 219.0	50119				
PFDoDA	9.067	613.0 -> 569.0	325043	19.27	µg/L		100
		613.0 -> 319.0	52768				
PFDS	7.982	599.0 -> 80.0	51602	18.95	µg/L		99
		599.0 -> 99.0	31244				
PFHpA	5.413	363.0 -> 319.0	232996	18.99	µg/L		100
		363.0 -> 169.0	49191				
PFHpS	6.121	449.0 -> 80.0	36186	18.57	µg/L		99
		449.0 -> 99.0	19880				
PFHxA	4.553	313.0 -> 269.0	189038	18.79	µg/L		100
		313.0 -> 119.0	7620				
PFHxS	5.433	399.0 -> 80.0	35627	18.65	µg/L	m	100
		399.0 -> 99.0	19751				
PFNA	6.769	463.0 -> 419.0	269568	18.55	µg/L		100
		463.0 -> 219.0	56052				
PFNS	7.260	549.0 -> 80.0	31348	18.48	µg/L		94
		549.0 -> 99.0	19220				
PFOA	6.137	413.0 -> 369.0	278776	18.52	µg/L		100
		413.0 -> 169.0	69251				
PFOS	6.730	499.0 -> 80.0	46966	18.96	µg/L	m	98

Perfluorinated Compounds by LC/MS/MS

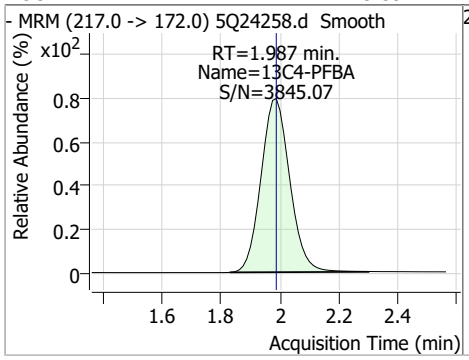
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		499.0 -> 99.0	22745			
PFPeA	3.422	263.0 -> 219.0	122689	18.60	µg/L	100
PFPeS	4.648	349.0 -> 80.0	26972	18.98	µg/L	99
		349.0 -> 99.0	14312			
PFTeDA	10.566	713.0 -> 669.0	333980	18.89	µg/L	99
		713.0 -> 219.0	36265			
PFTrDA	9.882	663.0 -> 619.0	311326	18.39	µg/L	99
		663.0 -> 369.0	35198			
PFUnDA	8.098	563.0 -> 519.0	359585	18.78	µg/L	99
		563.0 -> 269.0	62935			
11Cl-PF3OUdS	8.453	631.0 -> 451.0	221198	18.28	µg/L	100
		633.0 -> 453.0	68906			
9Cl-PF3ONS	6.999	531.0 -> 351.0	206585	17.96	µg/L	99
		533.0 -> 353.0	65424			
ADONA	5.502	377.0 -> 251.0	332779	18.97	µg/L	100
		377.0 -> 85.0	119044			
HFPO-DA	4.815	329.0 -> 169.0	42611	19.67	µg/L	99
		285.0 -> 169.0	9096			
MeFOSA	6.590	512.0 -> 169.0	23951	18.27	µg/L	98
		512.0 -> 219.0	19715			
4-PFECHS	6.018	461.0 -> 381.0	118442	17.74	µg/L	100
		461.0 -> 99.0	60754			
FBSA	4.170	298.0 -> 78.0	70651	19.78	µg/L	99
		298.0 -> 64.0	6548			
FHxSA	5.409	398.0 -> 78.0	78437	21.94	µg/L	99
		398.0 -> 64.0	7309			

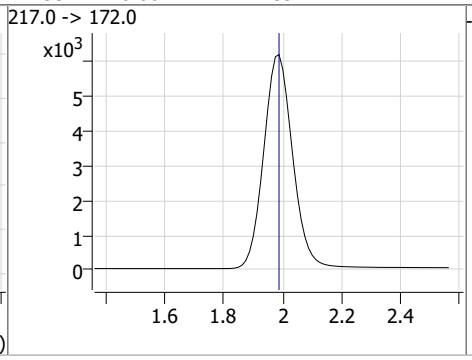
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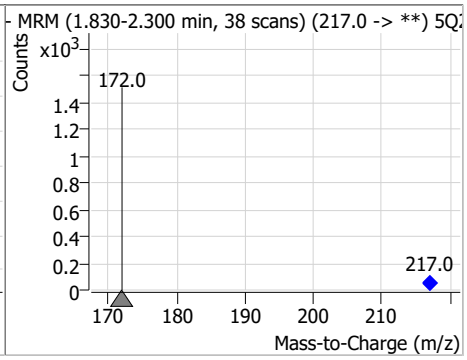
Perfluorinated Compounds by LC/MS/MS



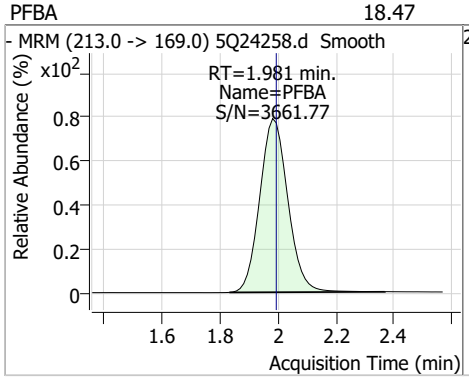
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	9.39	1.99	0.00	41439				

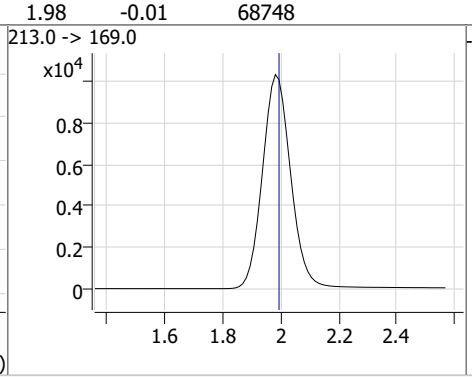


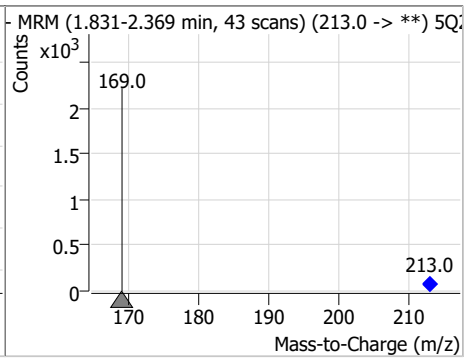




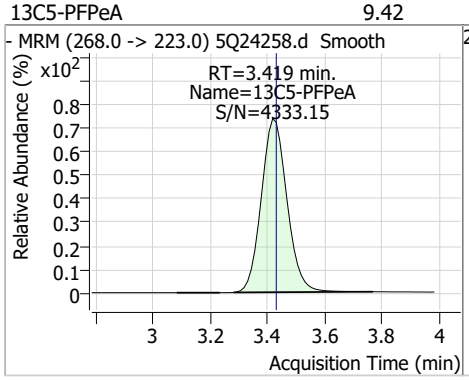
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	18.47	1.98	-0.01	68748				

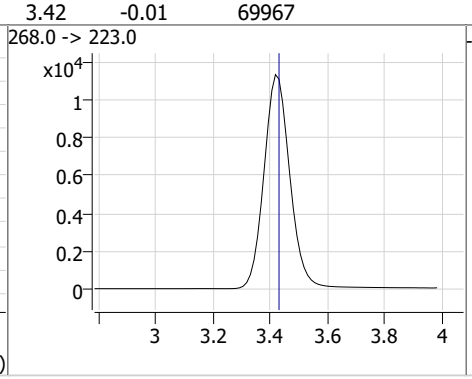


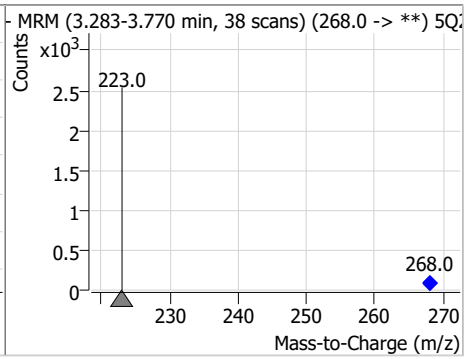




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	9.42	3.42	-0.01	69967				

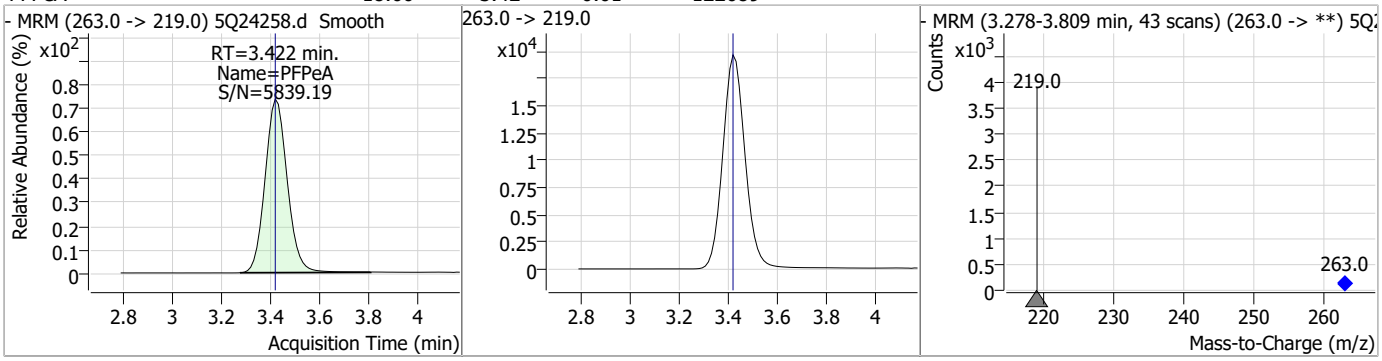




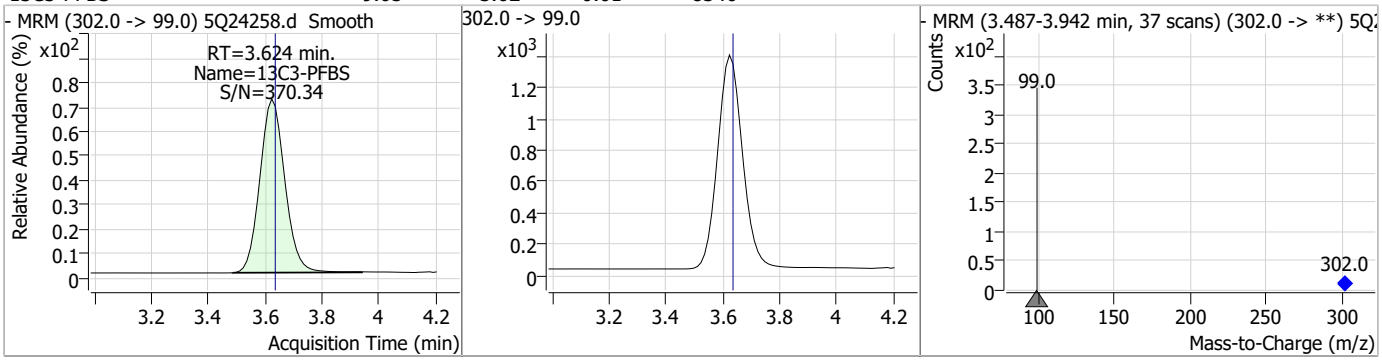


Perfluorinated Compounds by LC/MS/MS

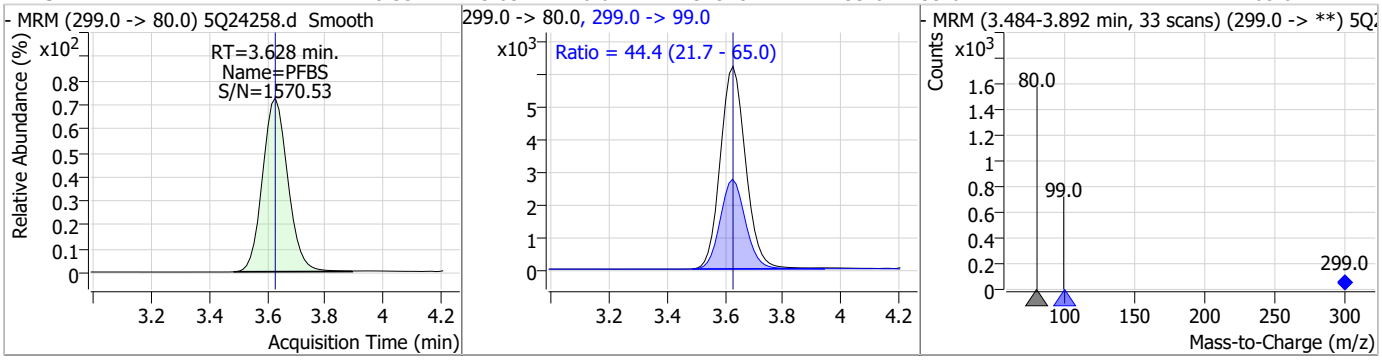
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	18.60	3.42	-0.01	122689				



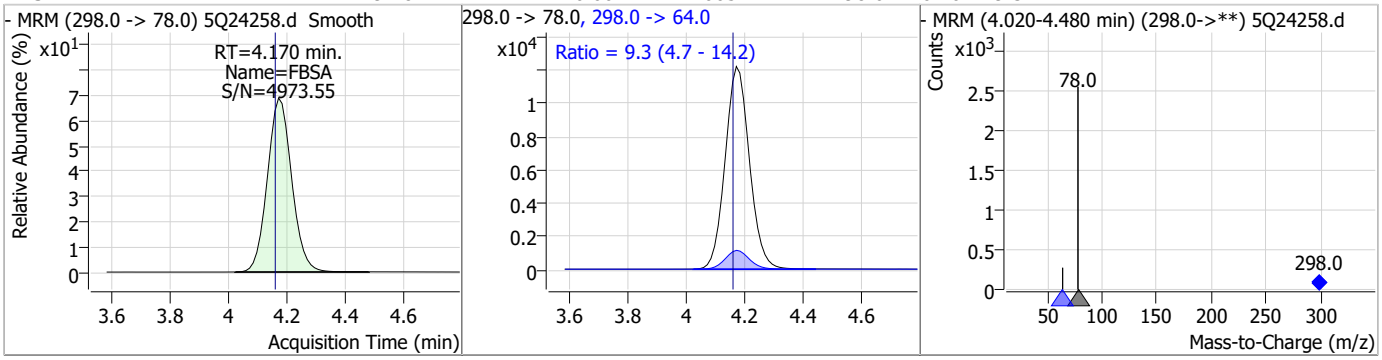
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	9.05	3.62	-0.01	8346				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	18.35	3.63	-0.01	37528	299.0 -> 99.0	44.4	21.7	65.0

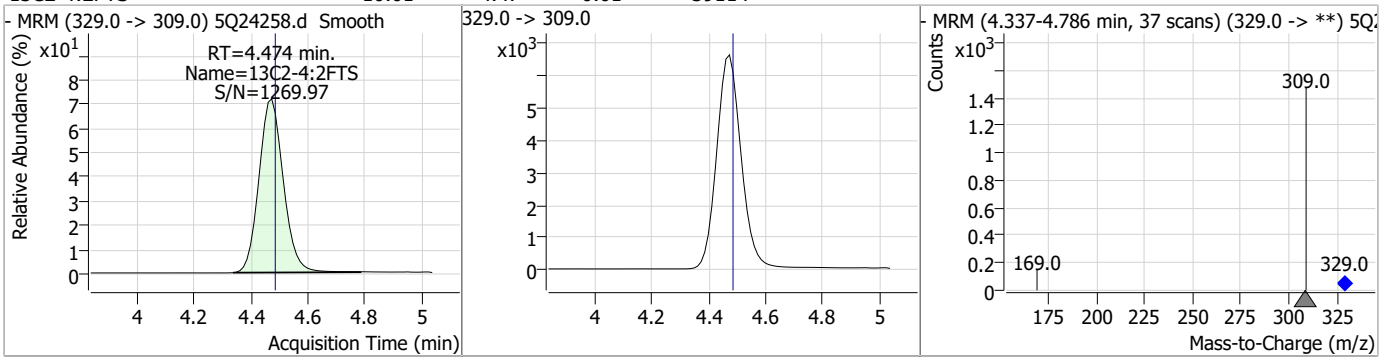


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	19.78	4.17	0.00	70651	298.0 -> 64.0	9.3	4.7	14.2

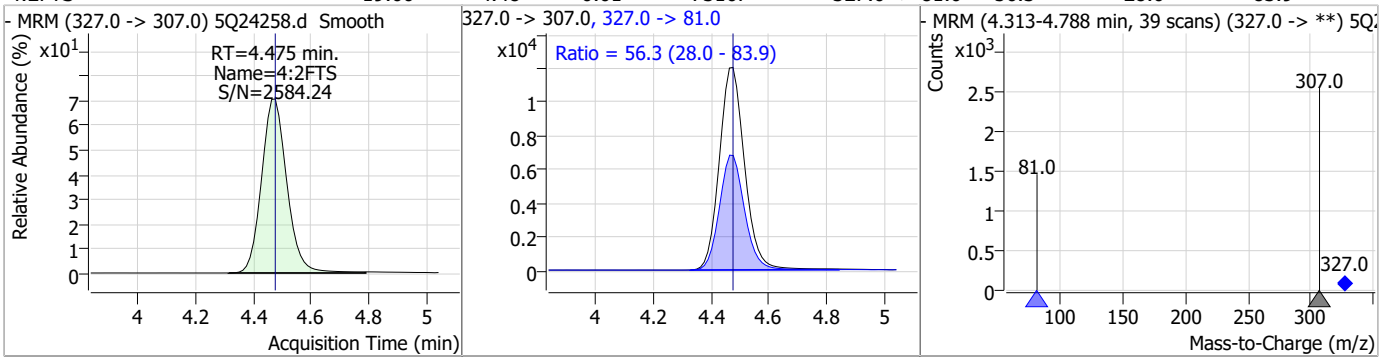


Perfluorinated Compounds by LC/MS/MS

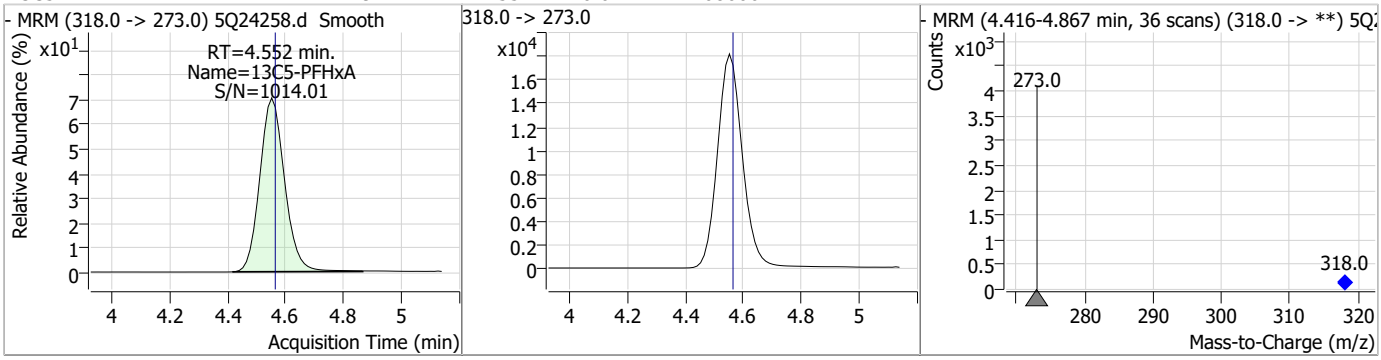
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	10.01	4.47	-0.01	39114				



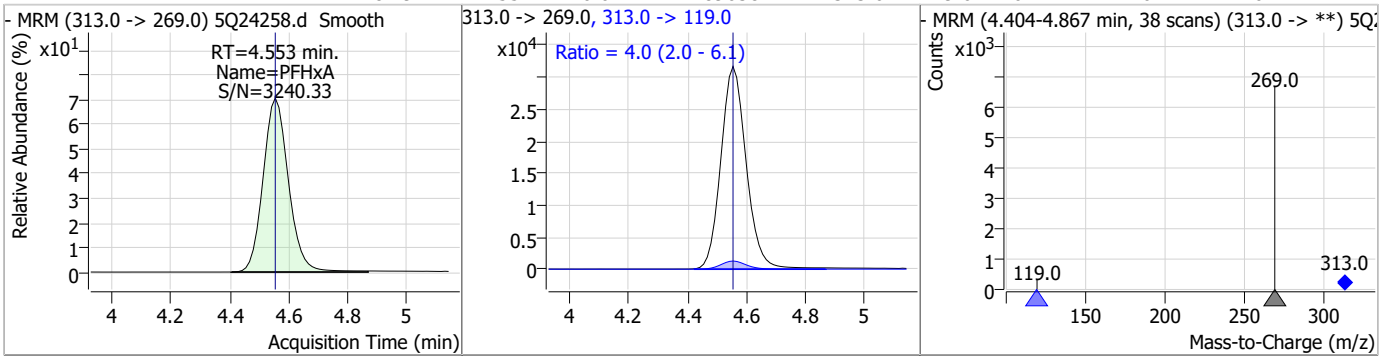
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	19.66	4.48	-0.01	73167	327.0 -> 81.0	56.3	28.0	83.9



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	9.41	4.55	-0.01	108000				

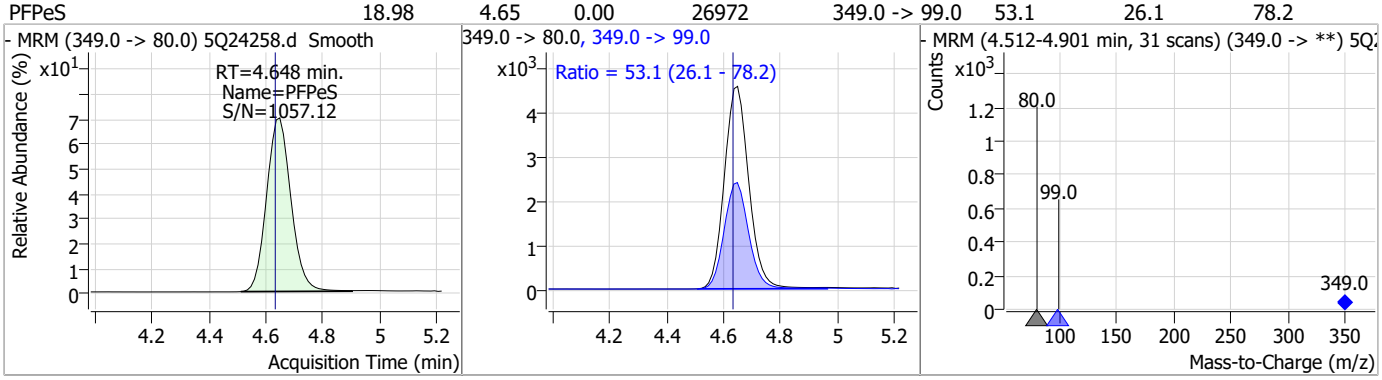


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	18.79	4.55	-0.01	189038	313.0 -> 119.0	4.0	2.0	6.1

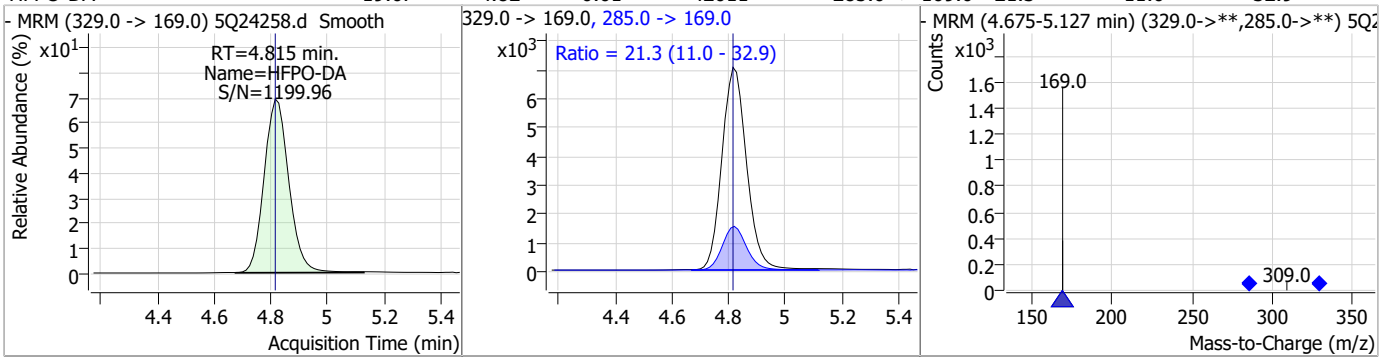


Perfluorinated Compounds by LC/MS/MS

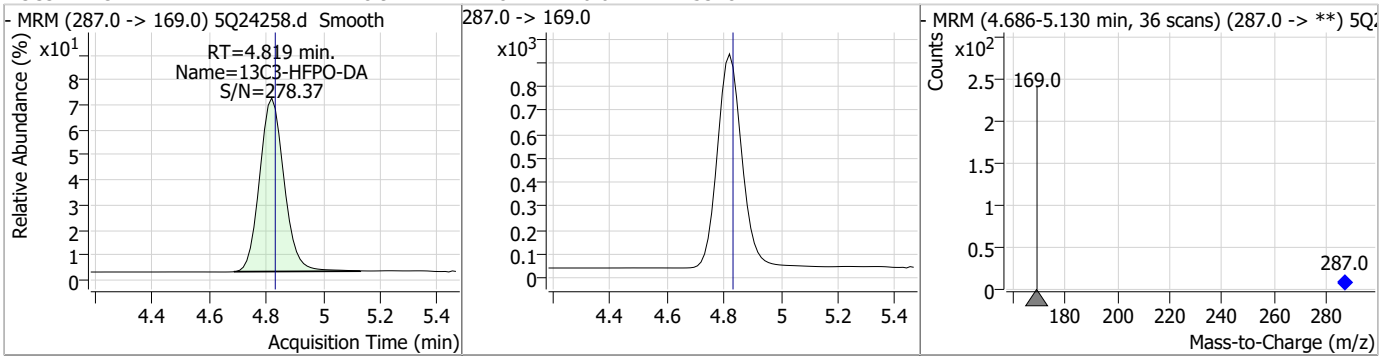
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	18.98	4.65	0.00	26972	349.0 -> 99.0	53.1	26.1	78.2



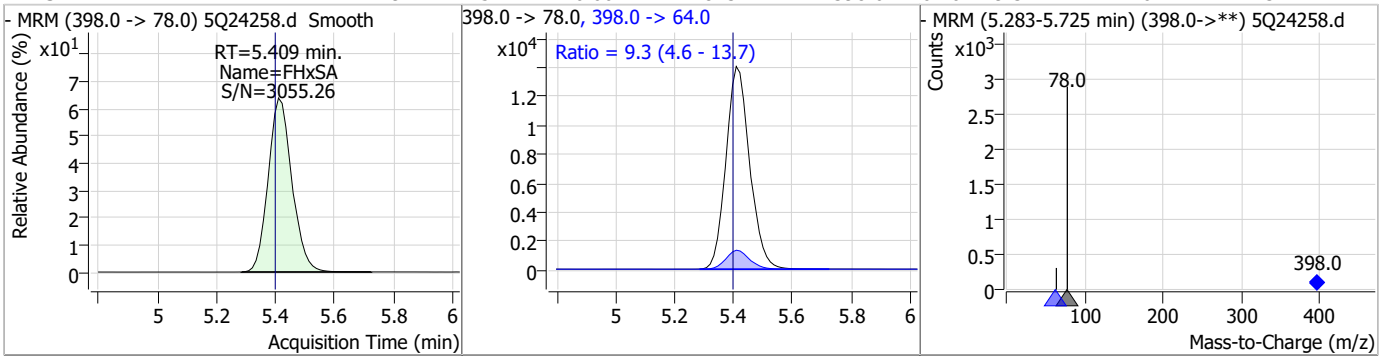
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	19.67	4.82	-0.01	42611	285.0 -> 169.0	21.3	11.0	32.9



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	8.92	4.82	-0.01	5328				

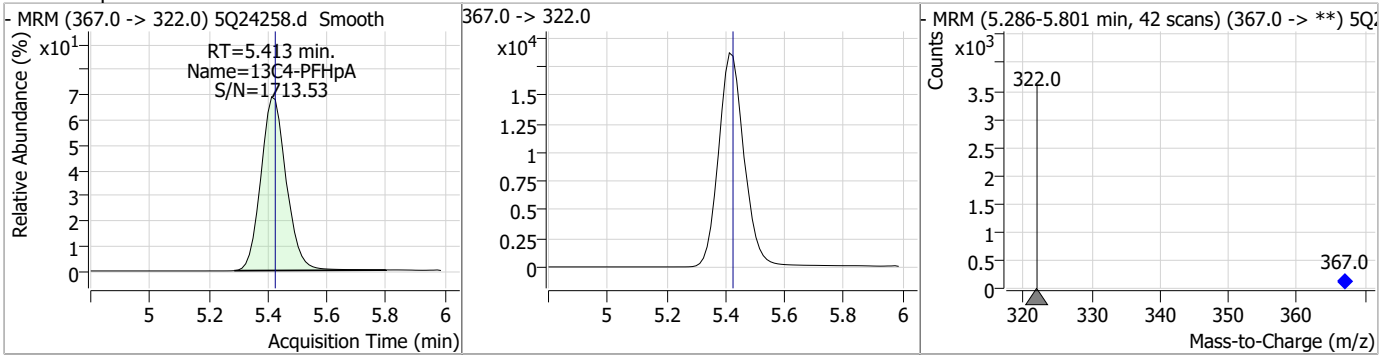


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	21.94	5.41	0.00	78437	398.0 -> 64.0	9.3	4.6	13.7

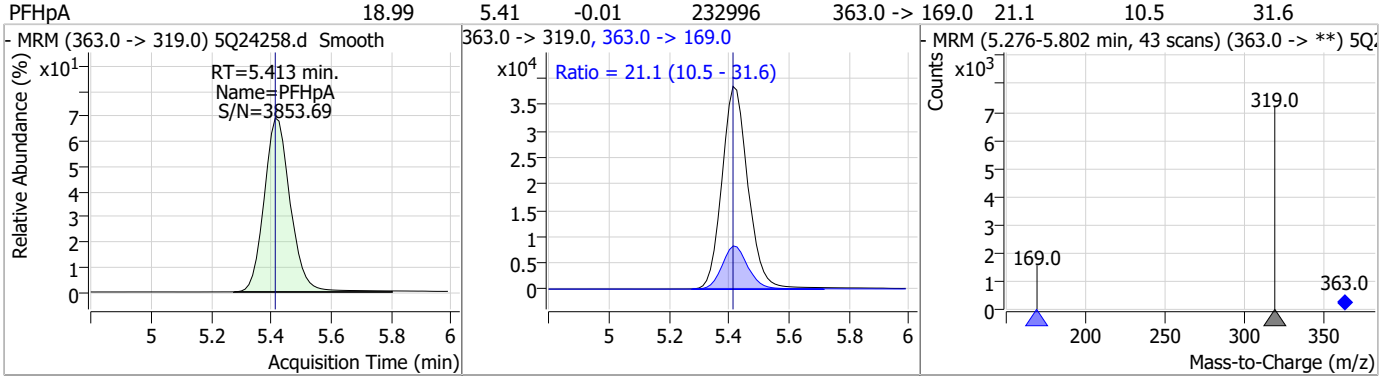


Perfluorinated Compounds by LC/MS/MS

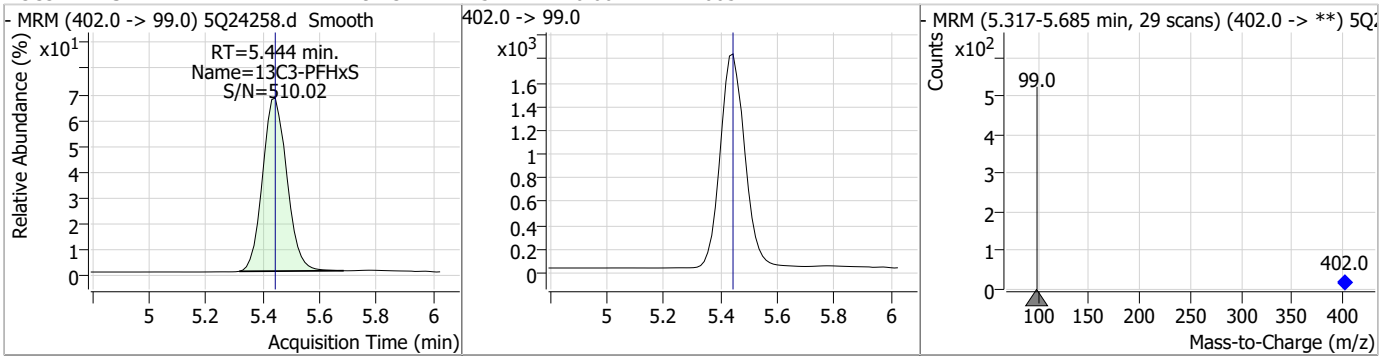
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	9.44	5.41	-0.01	111496				



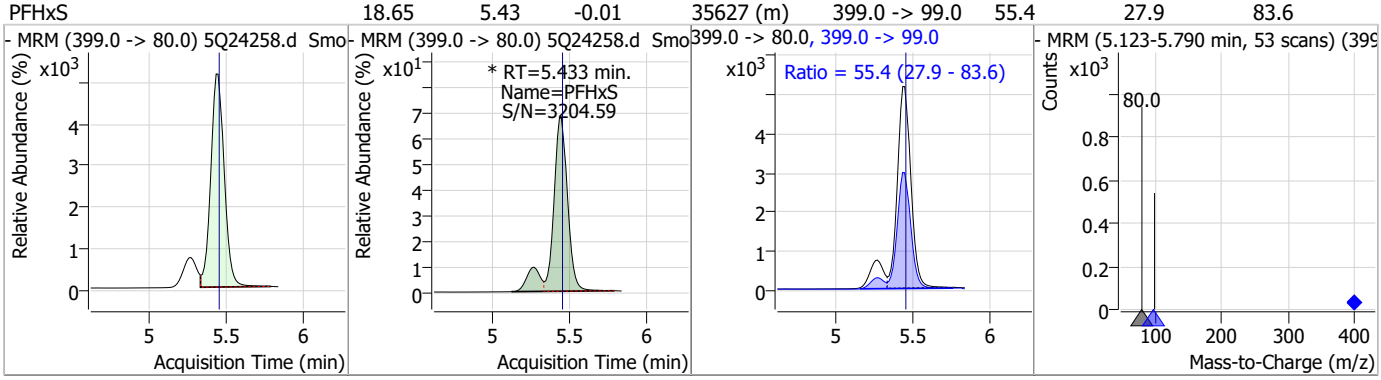
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	18.99	5.41	-0.01	232996	363.0 -> 169.0	21.1	10.5	31.6



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	9.43	5.44	0.00	10654				

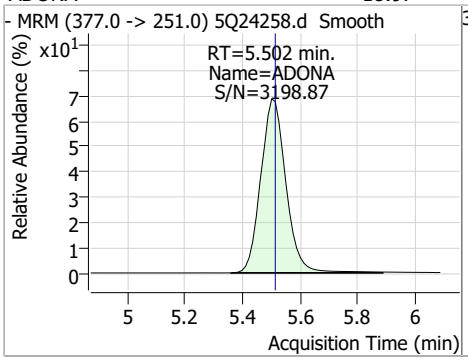


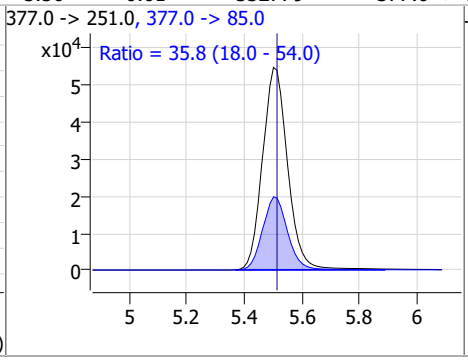
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	18.65	5.43	-0.01	35627 (m)	399.0 -> 99.0	55.4	27.9	83.6

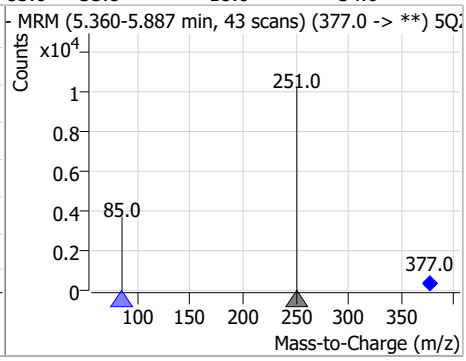


Perfluorinated Compounds by LC/MS/MS

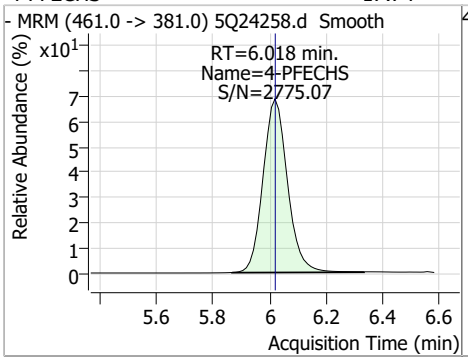
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	18.97	5.50	-0.01	332779	377.0 -> 85.0	35.8	18.0	54.0

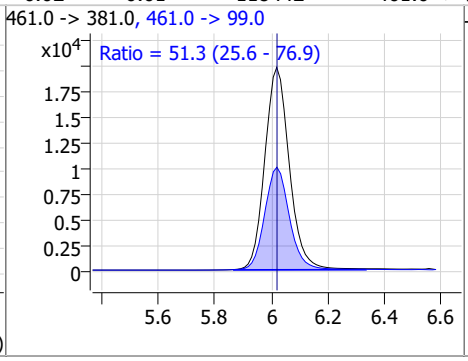


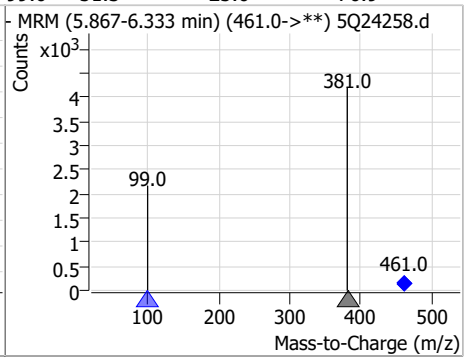




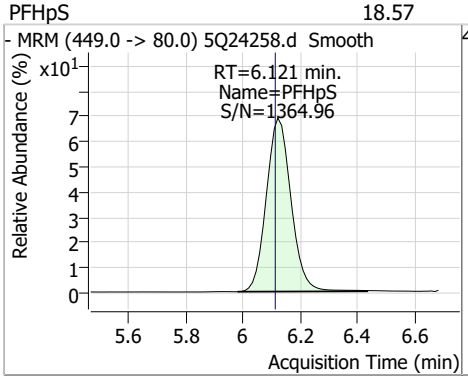
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS	17.74	6.02	-0.01	118442	461.0 -> 99.0	51.3	25.6	76.9

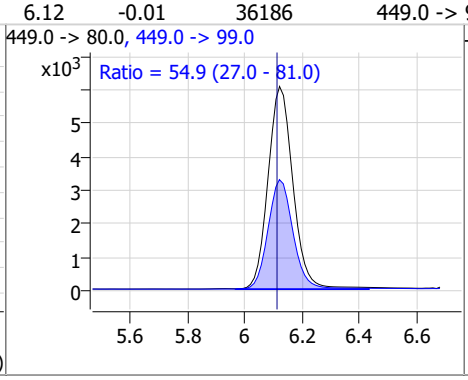


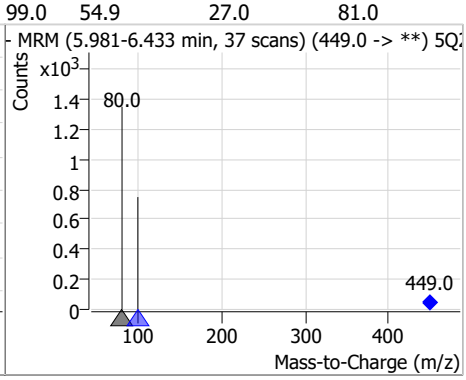




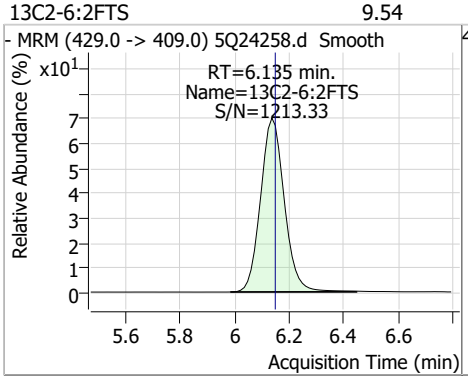
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	18.57	6.12	-0.01	36186	449.0 -> 99.0	54.9	27.0	81.0

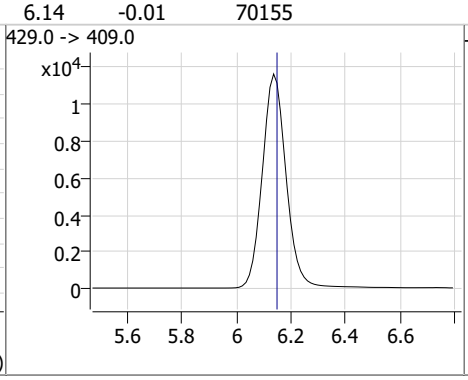


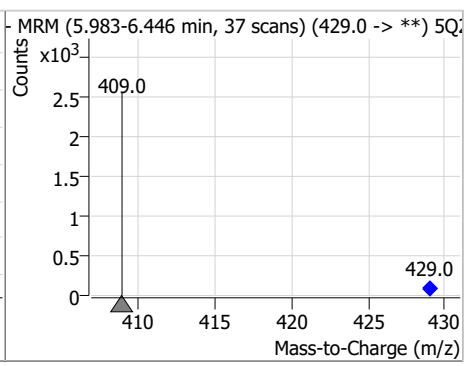




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	9.54	6.14	-0.01	70155				

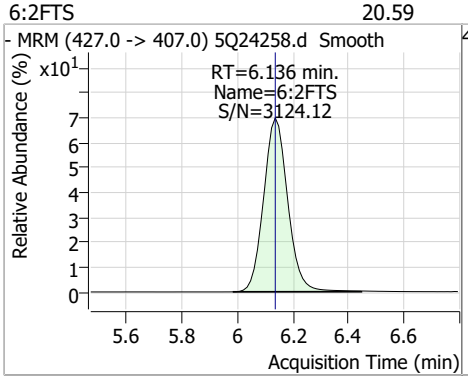


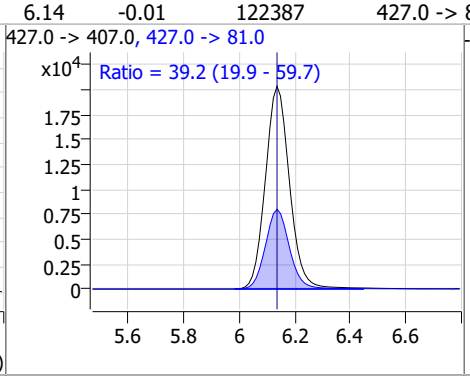


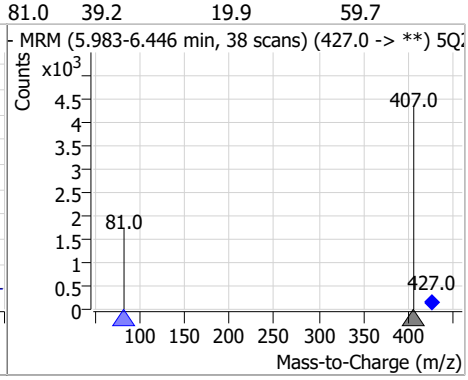


Perfluorinated Compounds by LC/MS/MS

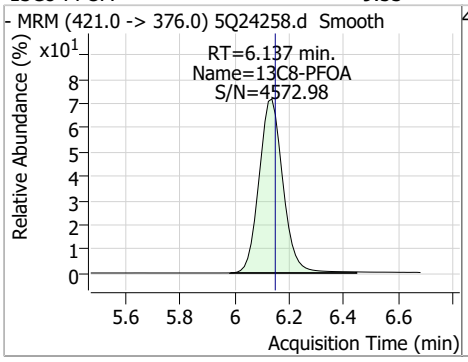
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	20.59	6.14	-0.01	122387	427.0 -> 81.0	39.2	19.9	59.7

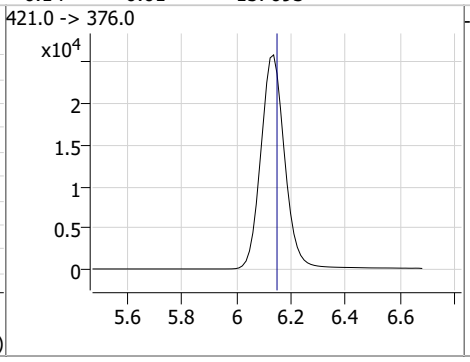


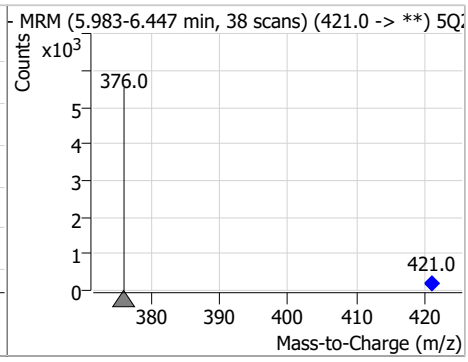




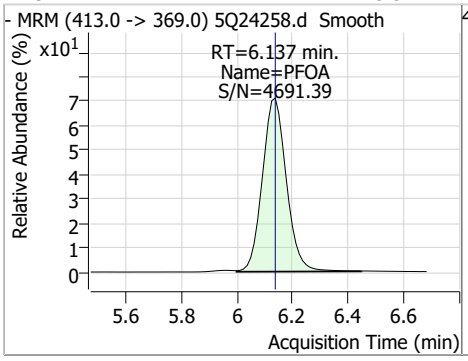
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	9.53	6.14	-0.01	157693				

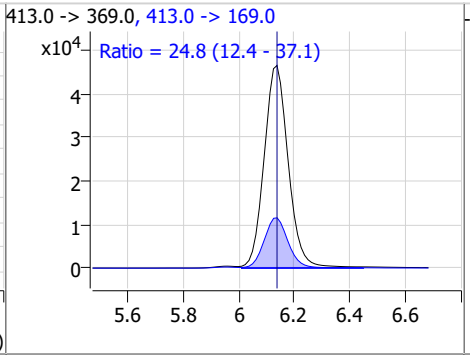


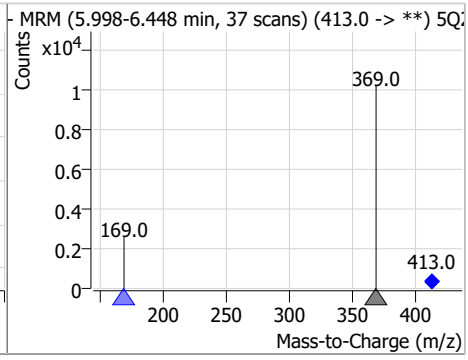




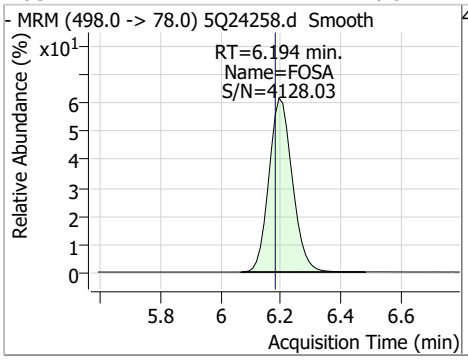
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	18.52	6.14	-0.01	278776	413.0 -> 169.0	24.8	12.4	37.1

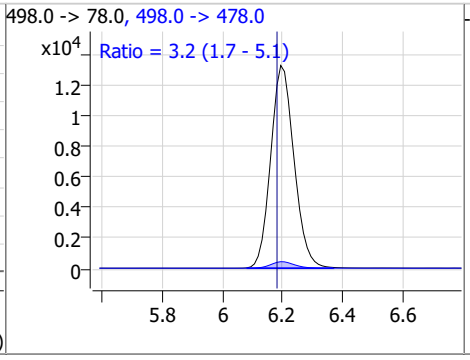


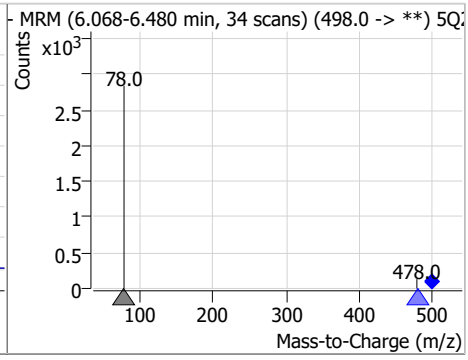




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	18.52	6.19	0.00	71084	498.0 -> 478.0	3.2	1.7	5.1

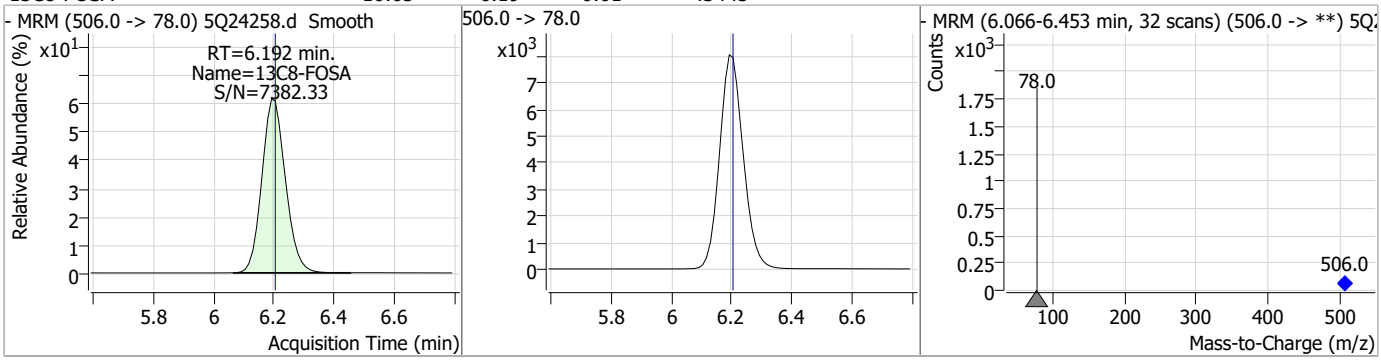




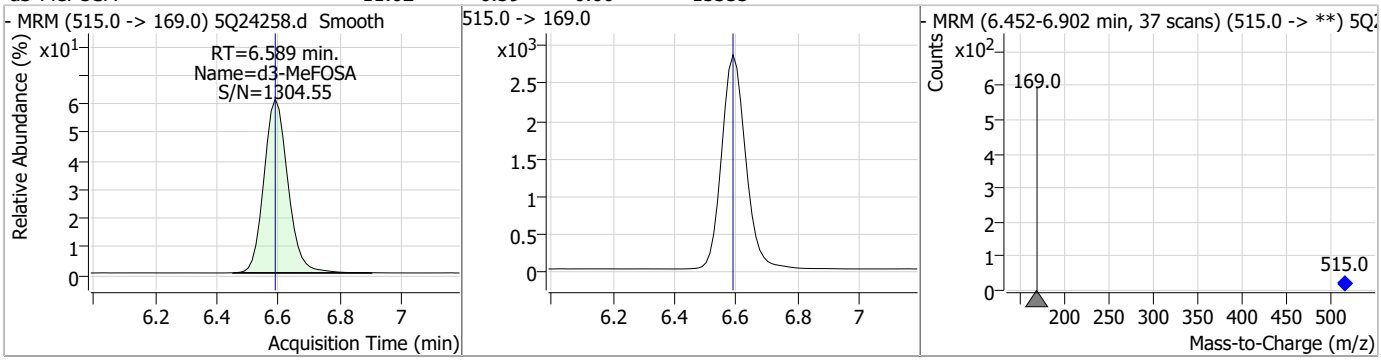


Perfluorinated Compounds by LC/MS/MS

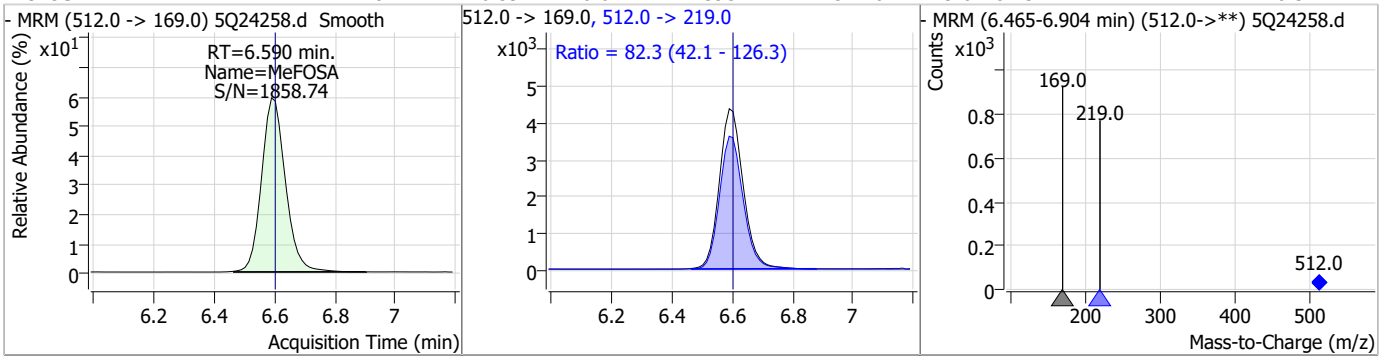
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	10.63	6.19	-0.01	43445				



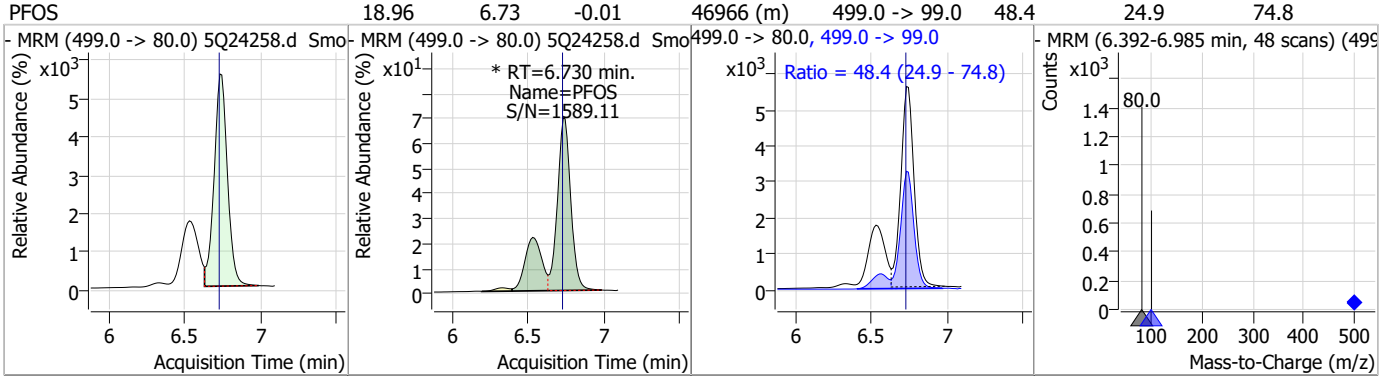
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	11.02	6.59	0.00	15353				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	18.27	6.59	-0.01	23951	512.0 -> 219.0	82.3	42.1	126.3

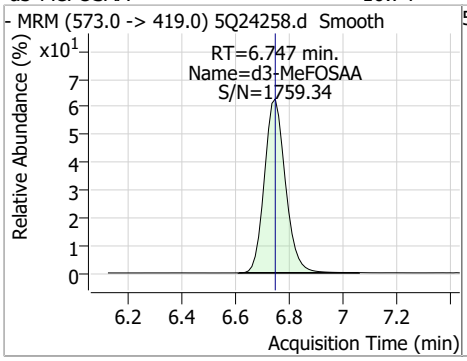


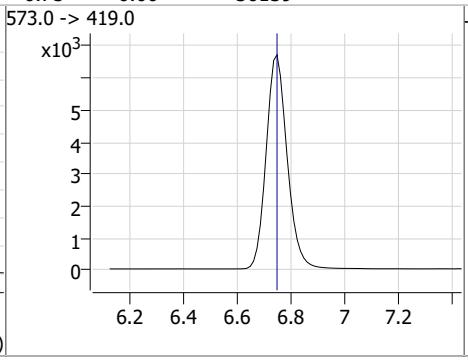
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	18.96	6.73	-0.01	46966 (m)	499.0 -> 99.0	48.4	24.9	74.8

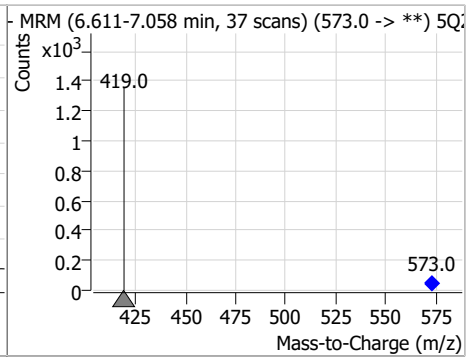


Perfluorinated Compounds by LC/MS/MS

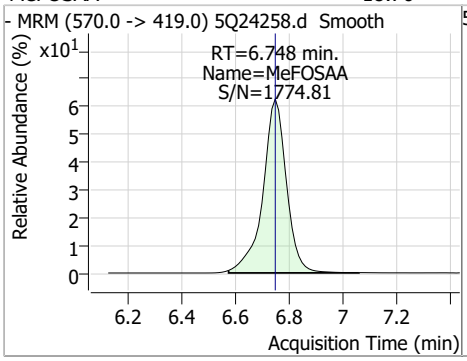
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	10.74	6.75	0.00	36139				

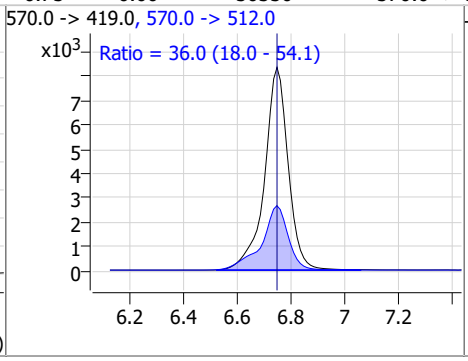


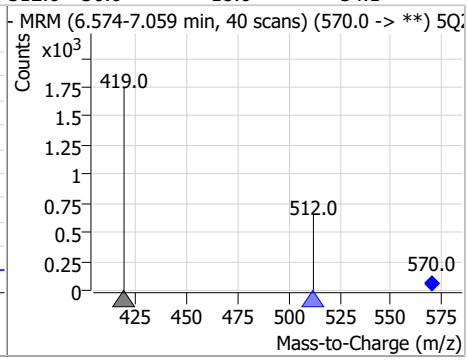




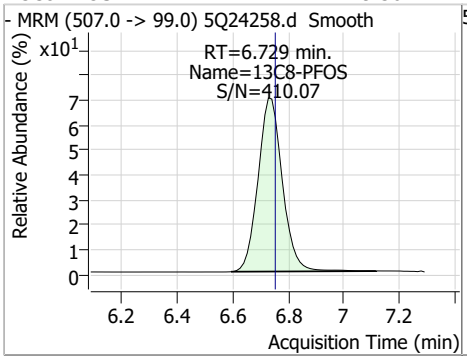
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	18.76	6.75	0.00	50550	570.0 -> 512.0	36.0	18.0	54.1

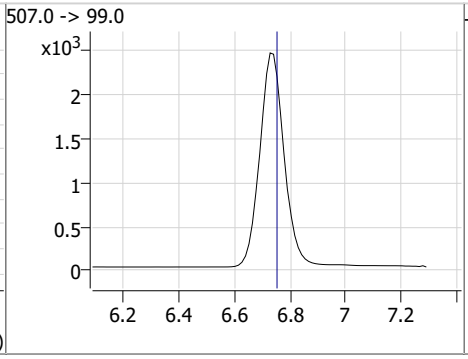


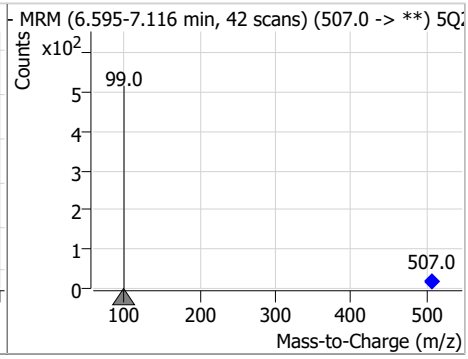




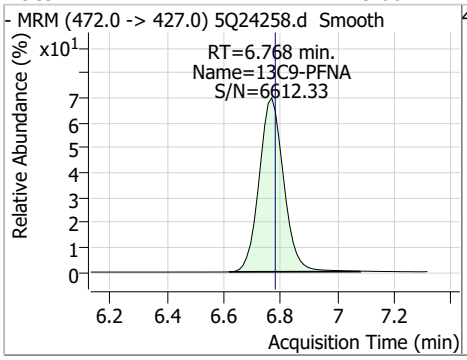
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	9.36	6.73	-0.02	14742				

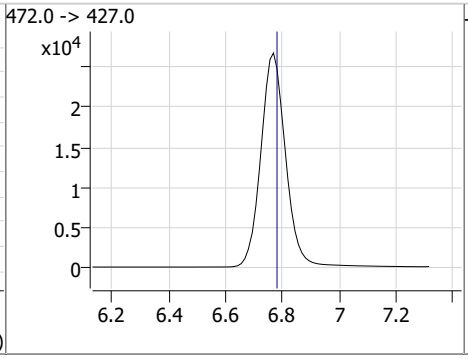


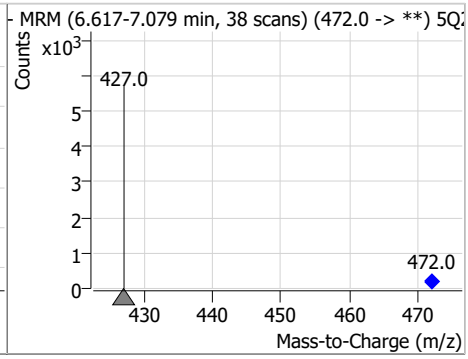




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	9.66	6.77	-0.01	160132				

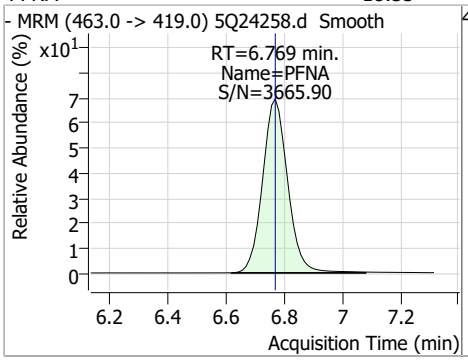


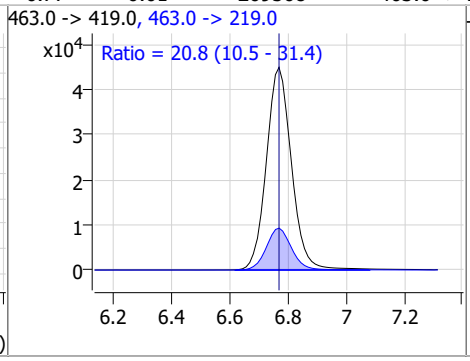


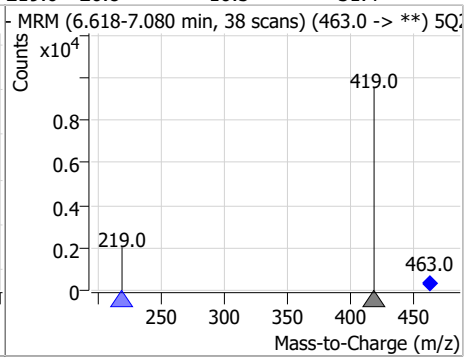


Perfluorinated Compounds by LC/MS/MS

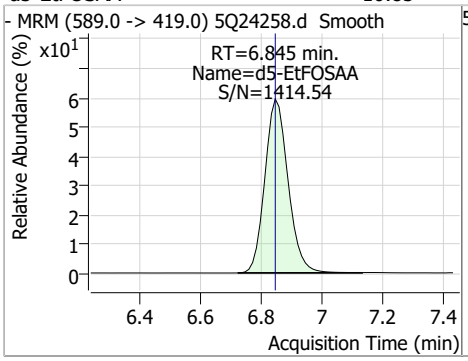
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	18.55	6.77	-0.01	269568	463.0 -> 219.0	20.8	10.5	31.4

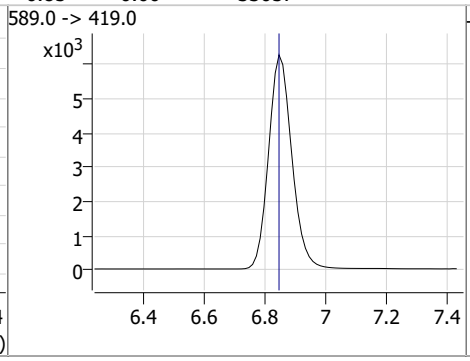


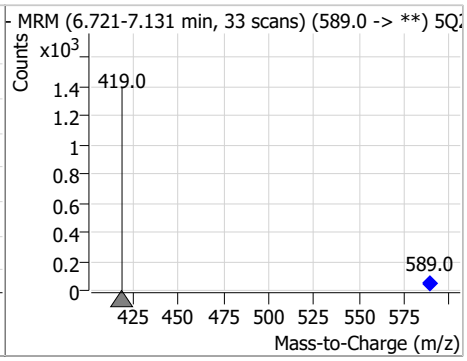




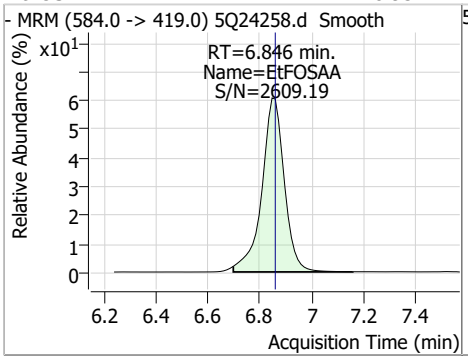
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	10.85	6.85	0.00	33057				

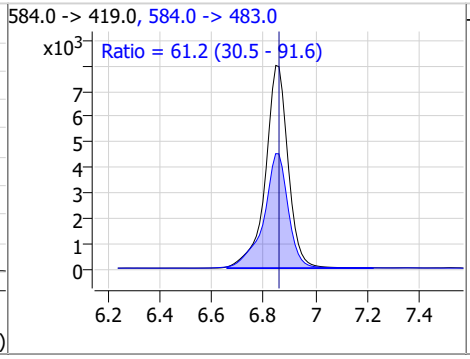


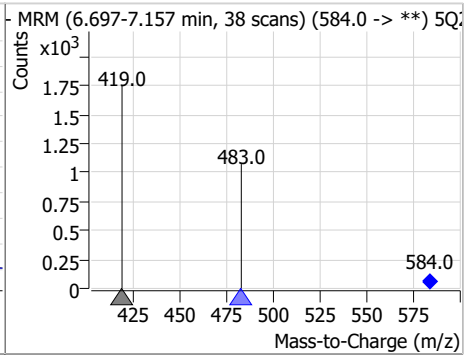




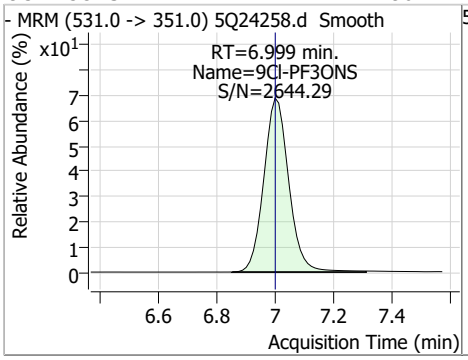
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	18.93	6.85	-0.01	47885	584.0 -> 483.0	61.2	30.5	91.6

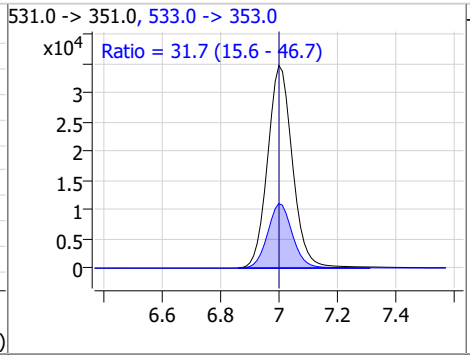


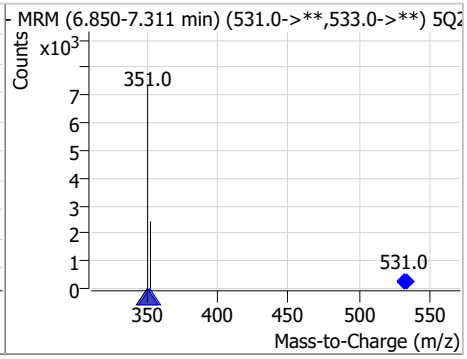




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	17.96	7.00	-0.01	206585	533.0 -> 353.0	31.7	15.6	46.7

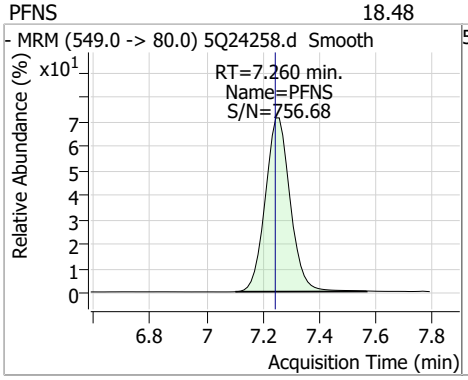


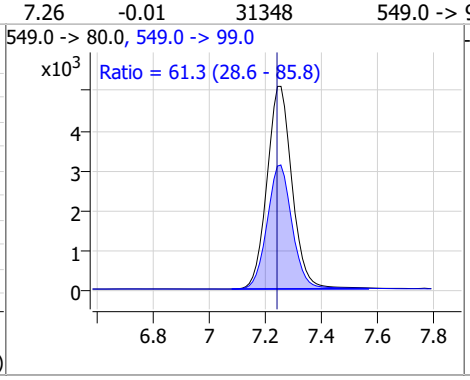


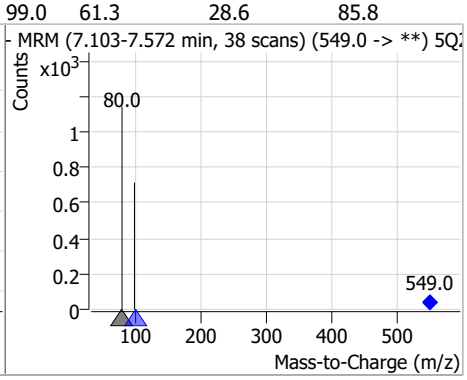


Perfluorinated Compounds by LC/MS/MS

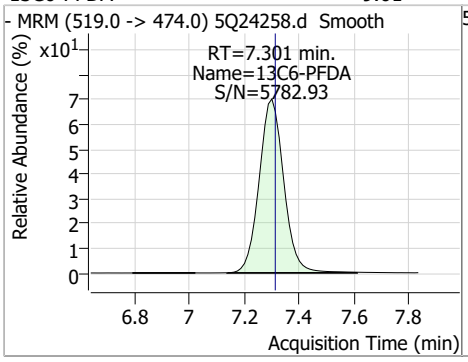
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	18.48	7.26	-0.01	31348	549.0 -> 99.0	61.3	28.6	85.8

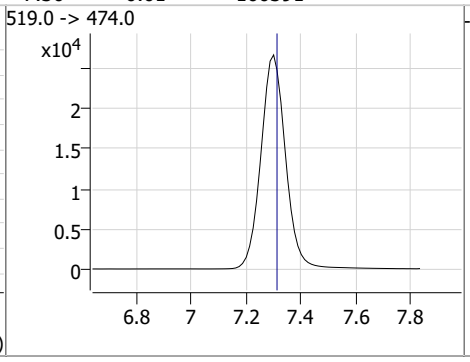


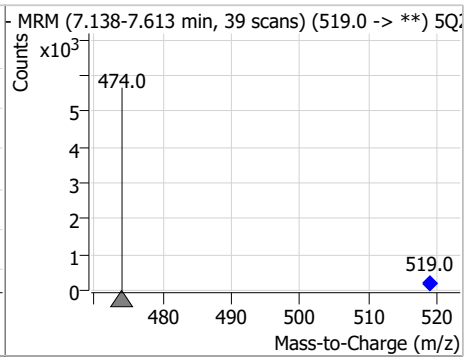




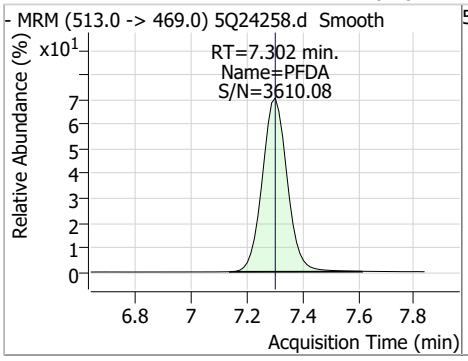
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	9.61	7.30	-0.01	166391				

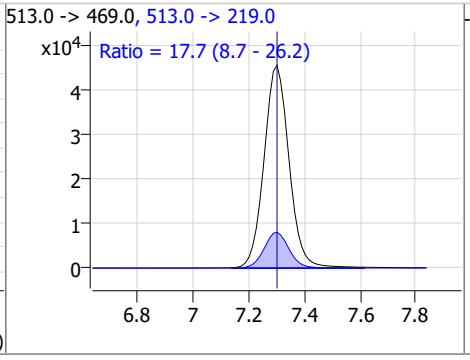


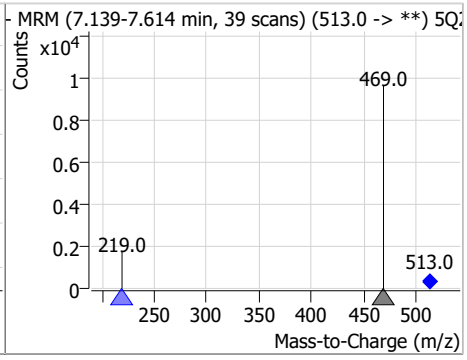




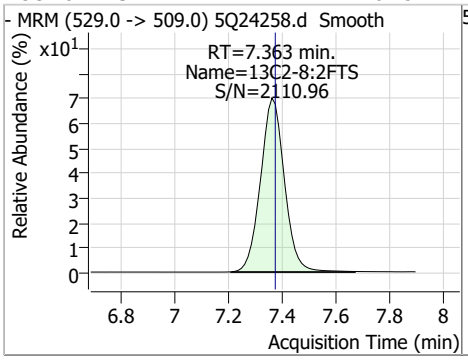
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	18.48	7.30	-0.01	282847	513.0 -> 219.0	17.7	8.7	26.2

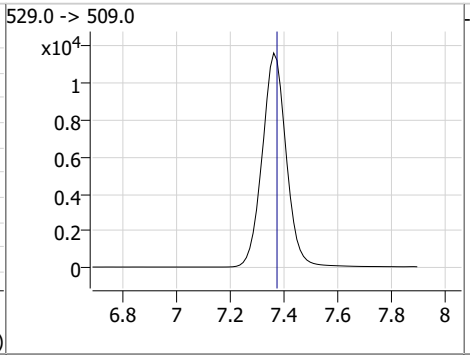


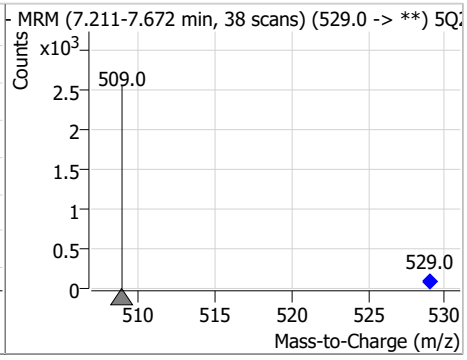




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	10.15	7.36	-0.01	71810				

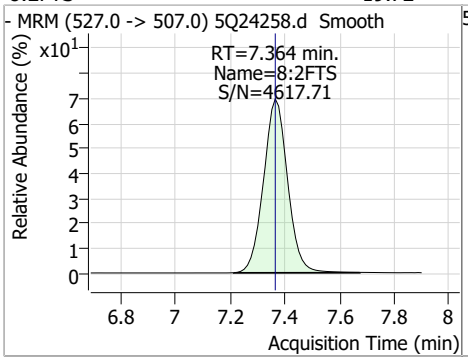


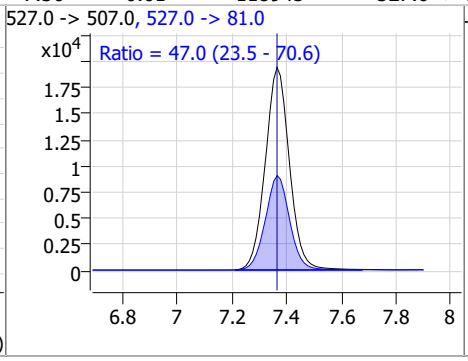


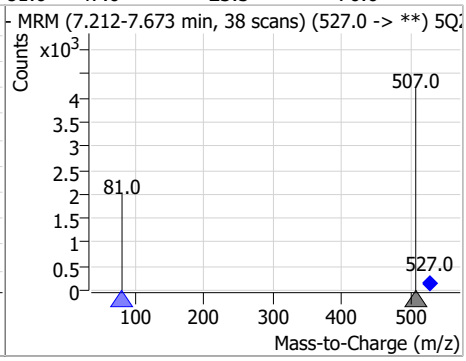


Perfluorinated Compounds by LC/MS/MS

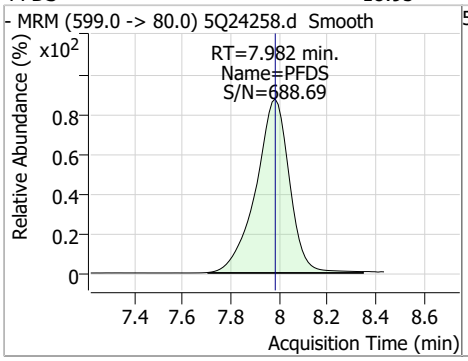
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	19.72	7.36	-0.01	118945	527.0 -> 81.0	47.0	23.5	70.6

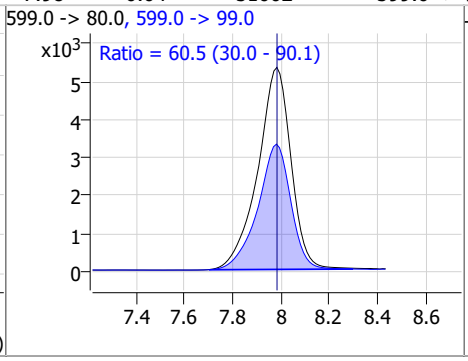


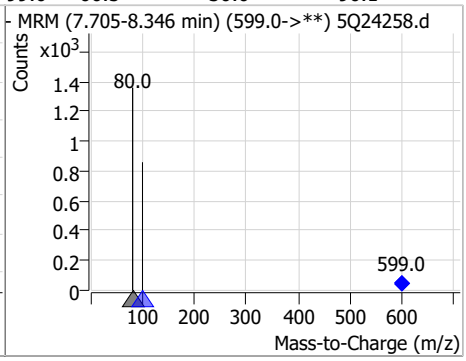




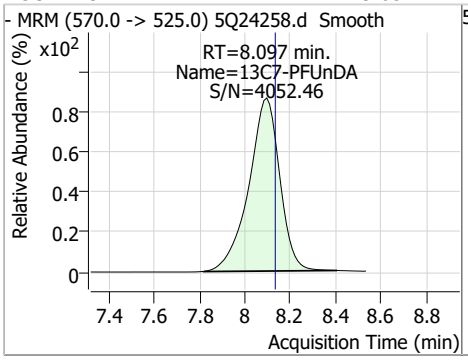
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	18.95	7.98	-0.04	51602	599.0 -> 99.0	60.5	30.0	90.1

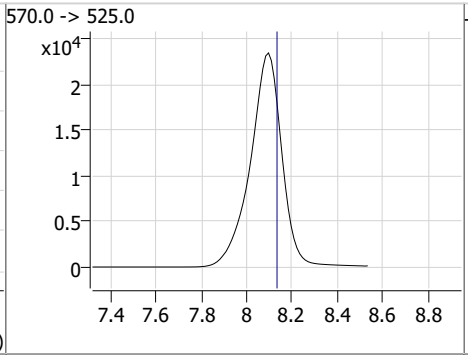


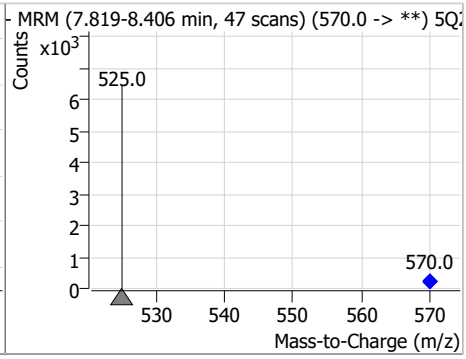




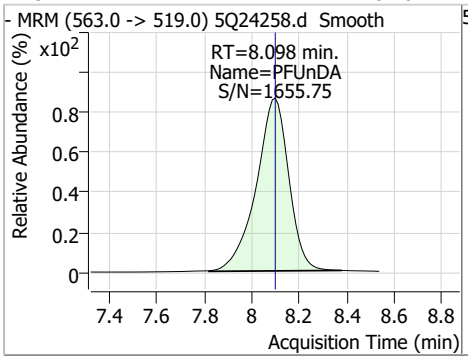
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	9.05	8.10	-0.04	220787				

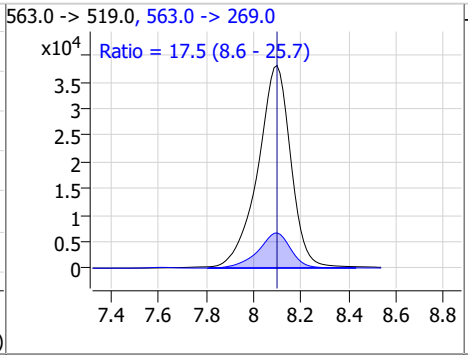


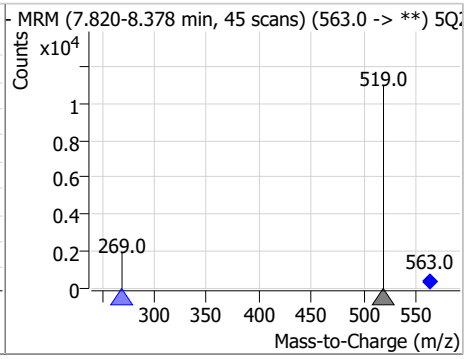




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	18.78	8.10	-0.04	359585	563.0 -> 269.0	17.5	8.6	25.7

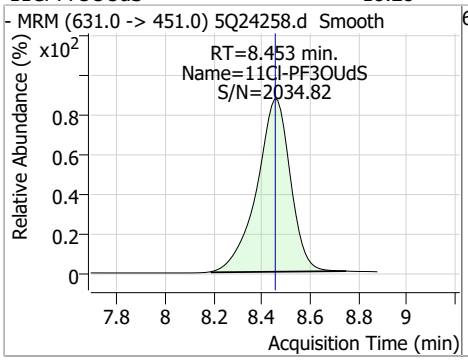


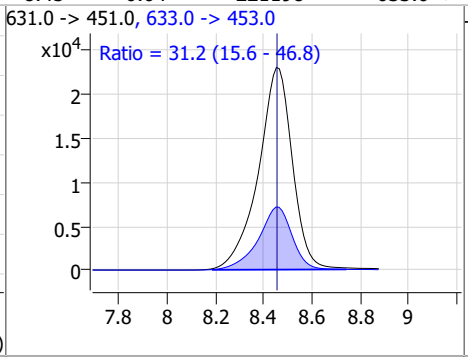


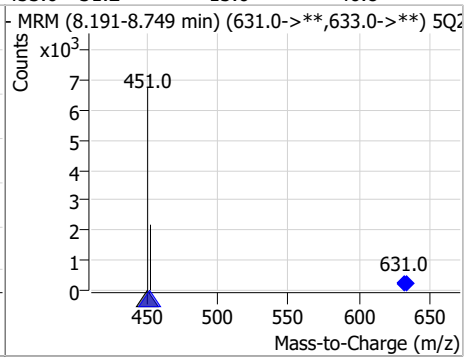


Perfluorinated Compounds by LC/MS/MS

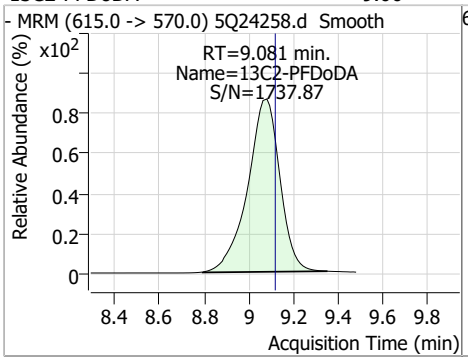
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	18.28	8.45	-0.04	221198	633.0 -> 453.0	31.2	15.6	46.8

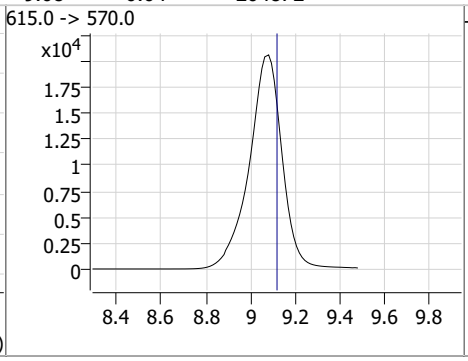


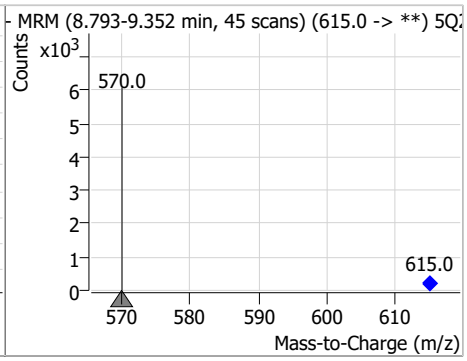




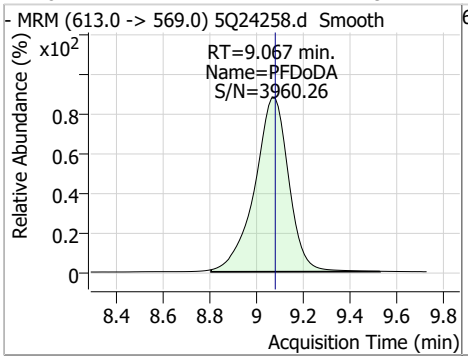
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	9.06	9.08	-0.04	204872				

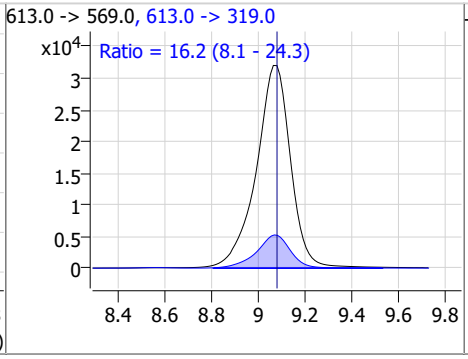


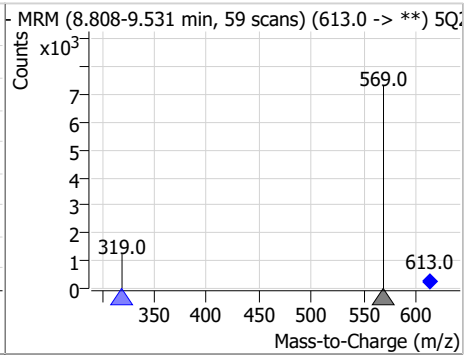




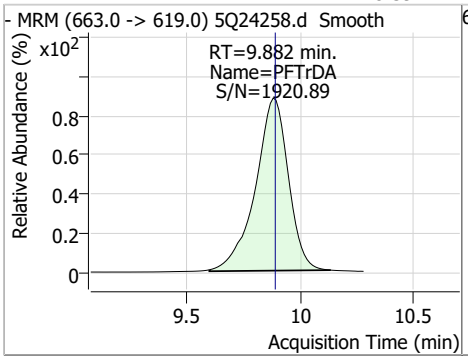
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	19.27	9.07	-0.05	325043	613.0 -> 319.0	16.2	8.1	24.3

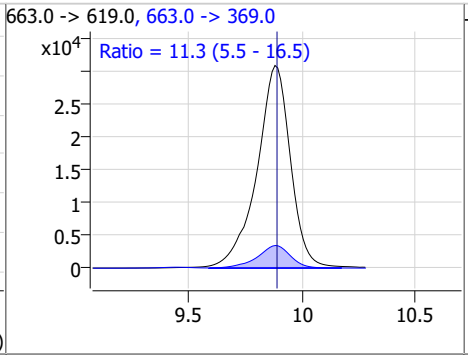


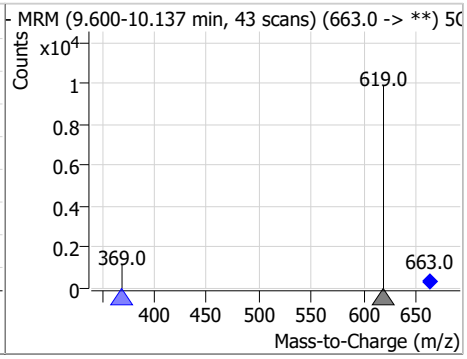




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	18.39	9.88	-0.05	311326	663.0 -> 369.0	11.3	5.5	16.5

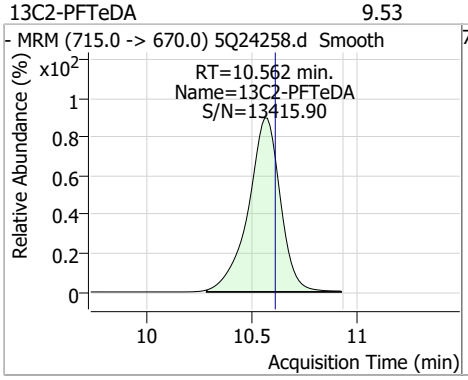


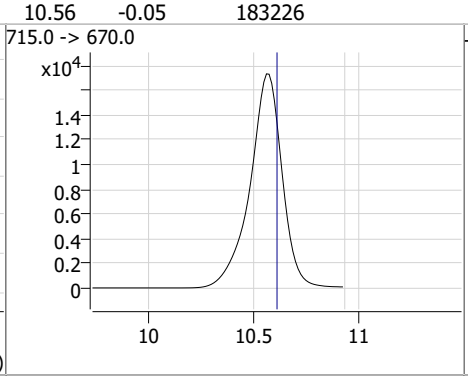


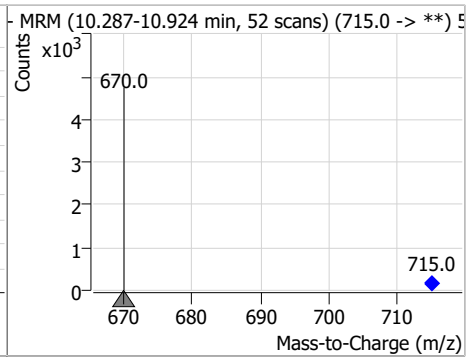


Perfluorinated Compounds by LC/MS/MS

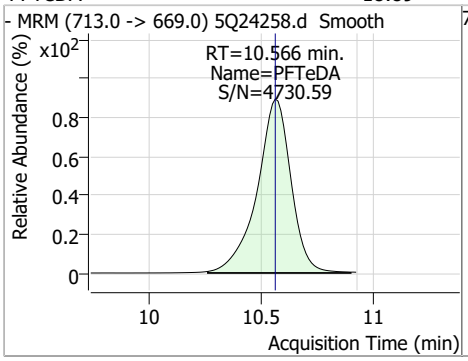
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	9.53	10.56	-0.05	183226				

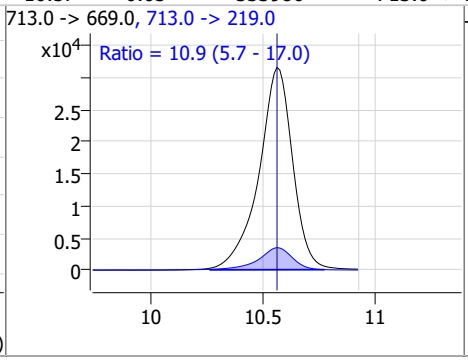


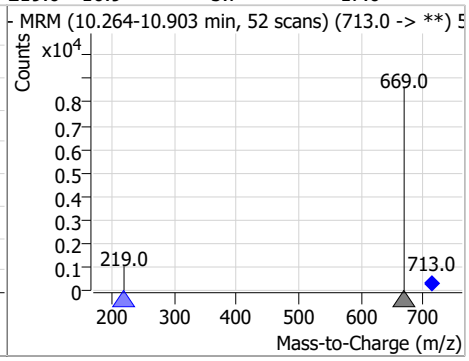




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	18.89	10.57	-0.05	333980	713.0 -> 219.0	10.9	5.7	17.0







Manual Integration Approval Summary

Sample Number: S5Q380-CC377
Lab FileID: 5Q24258.D
Injection Time: 01/05/24 21:25
Method: EPA 537M QSM5.3 B-15
Analyst approved: 01/08/24 14:10 Lindsay Ritner
Supervisor approved: 01/09/24 09:58 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.43	Split peak
Perfluorooctanesulfonic acid	1763-23-1		6.73	Split peak

SGS ORLANDO

LCMS2-2Q ANALYSIS LOG

DATE:	01/02/24
COLUMN TYPE:	Poroshell EC-18
AMOUNT INJ:	4 ul
INSTRUMENT:	LCMS2-2Q

METHODS:	537MOD MS014 MS019
PROC. METH:	ID_010224_S2Q1691
CAL DATE:	01/02/24
ANALYST:	LR
RUN BATCH:	S2Q1691

ELUENT A LOT #:	223964 w/ 0.1% AA 194003
ELUENT B LOT #:	224267 w/0.1% AA 194003
IC/CC STD LOT #:	LCMS2234
ICV STD LOT #:	11598, 12009A
ISTD/ID STD LOT #:	LCMS2224-C

	Data File	Sample	Sample Name	Method	Sample Type	Level	Misc. Info	Comments
1	2q118505.d	P1-A1	ccb	537_ID.m	Sample		op401,S2Q1690,250,,,1.0,1,water	-
2	2q118506.d	P1-A1	ccb	537_ID.m	Sample		op401,S2Q1690,250,,,1.0,1,water	-
3	2q118507.d	P1-A1	ccb	537_ID.m	Sample		op401,S2Q1691,250,,,1.0,1,water	-
4	2q118508.d	P1-B9	lcms2224-c	537_ID.m	Sample		op401,S2Q1691,250,,,1.0,1,water	testing
5	2q118509.d	P1-A1	ic1691-0	537_ID.m	Sample		op401,S2Q1691,250,,,1.0,1,water	Check tune file ✓
6	2q118510.d	P1-A2	ic1691-0.5	537_ID.m	Calibration	2.5/500	op401,S2Q1691,250,,,1.0,1,water	Dropped: PFECHS ✓
7	2q118511.d	P1-A3	ic1691-1	537_ID.m	Calibration	5/500	op401,S2Q1691,250,,,1.0,1,water	✓
8	2q118512.d	P1-A4	ic1691-2	537_ID.m	Calibration	10/500	op401,S2Q1691,250,,,1.0,1,water	✓
9	2q118513.d	P1-A5	ic1691-5	537_ID.m	Calibration	25/500	op401,S2Q1691,250,,,1.0,1,water	✓
10	2q118514.d	P1-A6	ic1691-10	537_ID.m	Calibration	50/500	op401,S2Q1691,250,,,1.0,1,water	✓
11	2q118515.d	P1-A7	icc1691-20	537_ID.m	Calibration	100/500	op401,S2Q1691,250,,,1.0,1,water	✓
12	2q118516.d	P1-A8	ic1691-50	537_ID.m	Calibration	200/400	op401,S2Q1691,250,,,1.0,1,water	✓
13	2q118517.d	P1-A9	ic1691-100	537_ID.m	Calibration	1x	op401,S2Q1691,250,,,1.0,1,water	Dropped: 4:2 & 8:2 ✓
14	2q118518.d	P1-A1	iblk	537_ID.m	Sample		op401,S2Q1691,250,,,1.0,1,water	✓
15	2q118519.d	P1-B1	icv1691-20	537_ID.m	QC	10/500	op401,S2Q1691,250,,,1.0,1,water	par30 ✓
16	2q118520.d	P1-B2	icv1691-20	537_ID.m	QC	10/500	op401,S2Q1691,250,,,1.0,1,water	mefosa ✓
17	2q118521.d	P1-B3	rt	537_ID.m	Sample		op401,S2Q1691,250,,,1.0,1,water	✓
18	2q118522.d	P1-A7	cc1691-20	537_ID.m	QC	100/500	op401,S2Q1691,250,,,1.0,1,water	✓
19	2q118523.d	P1-A3	cc1691-1.0LL	537_ID.m	QC	5/500	op401,S2Q1691,250,,,1.0,1,water	✓
20	2q118524.d	P4-A1	op894-bs1	537_ID.m	Sample		op894,S2Q1691,250,,,1.0,1,water	BSA & HxSA ↑; EIS ↓
21	2q118525.d	P4-A2	op894-bs2	537_ID.m	Sample		op894,S2Q1691,250,,,1.0,1,water	✓
22	2q118526.d	P4-A3	op894-bs3	537_ID.m	Sample		op894,S2Q1691,250,,,1.0,1,water	BSA & HxSA ↑; EIS ↓
23	2q118527.d	P4-A4	op894-bs4	537_ID.m	Sample		op894,S2Q1691,250,,,1.0,1,water	✓
24	2q118528.d	P4-A5	op894-mb	537_ID.m	Sample		op894,S2Q1691,250,,,1.0,1,water	✓
25	2q118529.d	P4-A6	fc12116-1	537_ID.m	Sample		op894,S2Q1691,125,,,1.0,1,water	rr5x, TeDA ↓
26	2q118530.d	P4-A7	fc12118-1	537_ID.m	Sample		op894,S2Q1691,125,,,1.0,1,water	✓
27	2q118531.d	P4-A8	fc12165-1	537_ID.m	Sample		op894,S2Q1691,125,,,1.0,1,water	rr100x, e val; rr5x, EIS ↓
28	2q118532.d	P4-A9	op894-ms	537_ID.m	Sample		op894,S2Q1691,125,,,1.0,1,water	✓
29	2q118533.d	P1-A7	cc1691-20	537_ID.m	QC	100/500	op401,S2Q1691,250,,,1.0,1,water	✓
30	2q118534.d	P1-A1	ccb	537_ID.m	Sample		op401,S2Q1691,250,,,1.0,1,water	-
31	2q118535.d	P4-B1	fc12165-2	537_ID.m	Sample		op894,S2Q1691,125,,,1.0,1,water	rr100x, e val; rr5x, EIS ↓
32	2q118536.d	P4-B2	op894-dup	537_ID.m	Sample		op894,S2Q1691,120,,,1.0,1,water	rr100x, e val; rr5x, EIS ↓
33	2q118537.d	P4-B3	fc12181-1	537_ID.m	Sample		op894,S2Q1691,250,,,1.0,1,water	rr5x, TeDA ↓
34	2q118538.d	P3-E1	op875-bs	537_ID.m	Sample		op875,S2Q1691,250,,,1.0,1,water	PFDS, 9Cl, 11Cl, PFECHS ↓

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35	2q118539.d	P3-C8	op875-mb	537_ID.m	Sample		op875,S2Q1691,250,,,1.0,1,water	redo, BS ↓
36	2q118540.d	P3-C9	fc12106-1	537_ID.m	Sample		op875,S2Q1691,245,,,1.0,1,water	redo, BS ↓
37	2q118541.d	P3-D1	op875-ms	537_ID.m	Sample		op875,S2Q1691,270,,,1.0,1,water	redo, BS ↓
38	2q118542.d	P3-D2	fc12106-2	537_ID.m	Sample		op875,S2Q1691,265,,,1.0,1,water	redo, BS ↓
39	2q118543.d	P3-E2	fc12106-2	537_ID.m	Sample	100/500	op875,S2Q1691,265,,,1.0,5,water	redo, BS ↓
40	2q118544.d	P3-D3	op875-dup	537_ID.m	Sample		op875,S2Q1691,255,,,1.0,1,water	redo, BS ↓
41	2q118545.d	P1-A7	cc1691-20	537_ID.m	QC	100/500	op401,S2Q1691,250,,,1.0,1,water	✓
42	2q118546.d	P1-A1	ccb	537_ID.m	Sample		op401,S2Q1691,250,,,1.0,1,water	-
43	2q118547.d	P3-D4	fc12126-1	537_ID.m	Sample		op875,S2Q1691,255,,,1.0,1,water	redo, BS ↓
44	2q118548.d	P3-D5	fc12126-2	537_ID.m	Sample		op875,S2Q1691,250,,,1.0,1,water	redo, BS ↓
45	2q118549.d	P1-A7	ecc1691-20	537_ID.m	QC	100/500	op401,S2Q1691,250,,,1.0,1,water	✓
46	2q118550.d	P1-A1	ccb	537_ID.m	Sample		op401,S2Q1691,250,,,1.0,1,water	-

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LCMS2-2Q ANALYSIS LOG

DATE:	01/04/24
COLUMN TYPE:	Poroshell EC-18
AMOUNT INJ:	4 ul
INSTRUMENT:	LCMS2-2Q

METHODS:	537MOD MS014 MS019
PROC. METH:	ID_010224_S2Q1691
CAL DATE:	01/02/24
ANALYST:	LR
RUN BATCH:	S2Q1693

ELUENT A LOT #:	223964 w/ 0.1% AA 194003
ELUENT B LOT #:	224267 w/0.1% AA 194003
IC/CC STD LOT #:	LCMS2234
ICV STD LOT #:	11598, 12009A
ISTD/ID STD LOT #:	LCMS2224-C

	Data File	Sample	Sample Name	Method	Sample Type	Level	Misc. Info	Comments
1	2q118596.d	P1-A1	ccb	537_ID.m	Sample		op401,S2Q1693,250,,,1.0,1,water	-
2	2q118597.d	P1-A1	ccb	537_ID.m	Sample		op401,S2Q1693,250,,,1.0,1,water	-
3	2q118598.d	P1-A1	ccb	537_ID.m	Sample		op401,S2Q1693,250,,,1.0,1,water	-
4	2q118599.d	P1-A9	high standard	537_ID.m	Sample		op401,S2Q1693,250,,,1.0,1,water	-
5	2q118600.d	P1-A1	iblk	537_ID.m	Sample		op401,S2Q1693,250,,,1.0,1,water	✓
6	2q118601.d	P1-B3	rt	537_ID.m	Sample		op401,S2Q1693,250,,,1.0,1,water	✓
7	2q118602.d	P1-A7	cc1691-20	537_ID.m	QC	100/500	op401,S2Q1693,250,,,1.0,1,water	✓
8	2q118603.d	P1-A3	cc1691-1.0LL	537_ID.m	QC	5/500	op401,S2Q1693,250,,,1.0,1,water	✓
9	2q118604.d	P6-A1	op937-bs	537_ID.m	Sample		op937,S2Q1693,125,,,1.0,1,water	✓
10	2q118605.d	P6-A2	op937-mb	537_ID.m	Sample		op937,S2Q1693,125,,,1.0,1,water	✓
11	2q118606.d	P6-A3	fc12099-3re	537_ID.m	Sample		op937,S2Q1693,125,,,1.0,1,water	rr5x, EIS ↓; PFBS qualifier OCL
12	2q118607.d	P6-A4	fc12099-14re	537_ID.m	Sample		op937,S2Q1693,125,,,1.0,1,water	rr5x, EIS ↓
13	2q118608.d	P6-A5	fc12099-15re	537_ID.m	Sample		op937,S2Q1693,125,,,1.0,1,water	✓
14	2q118609.d	P6-A6	fc12184-1re	537_ID.m	Sample		op937,S2Q1693,125,,,1.0,1,water	rr5x, EIS ↓
15	2q118610.d	P6-A7	fc12184-2re	537_ID.m	Sample		op937,S2Q1693,110,,,1.0,1,water	✓
16	2q118611.d	P6-A8	fc12185-1re	537_ID.m	Sample		op937,S2Q1693,125,,,1.0,1,water	✓
17	2q118612.d	P1-A7	cc1691-20	537_ID.m	QC	100/500	op401,S2Q1693,250,,,1.0,1,water	✓
18	2q118613.d	P1-A1	ccb	537_ID.m	Sample		op401,S2Q1693,250,,,1.0,1,water	-
19	2q118614.d	P6-A9	fc12185-2re	537_ID.m	Sample		op937,S2Q1693,120,,,1.0,1,water	✓
20	2q118615.d	P6-B1	op937-ms	537_ID.m	Sample		op937,S2Q1693,125,,,1.0,1,water	✓
21	2q118616.d	P6-B2	op937-msd	537_ID.m	Sample		op937,S2Q1693,125,,,1.0,1,water	✓
22	2q118617.d	P6-B3	fc12185-3re	537_ID.m	Sample		op937,S2Q1693,125,,,1.0,1,water	✓
23	2q118618.d	P6-B4	fc12185-4re	537_ID.m	Sample		op937,S2Q1693,125,,,1.0,1,water	rr5x, EIS ↓
24	2q118619.d	P6-B5	fc12185-5re	537_ID.m	Sample		op937,S2Q1693,110,,,1.0,1,water	rr5x, EIS ↓
25	2q118620.d	P6-B6	fc12185-6re	537_ID.m	Sample		op937,S2Q1693,120,,,1.0,1,water	✓
26	2q118621.d	P6-B7	fc12185-7re	537_ID.m	Sample		op937,S2Q1693,125,,,1.0,1,water	rr5x, EIS ↓
27	2q118622.d	P6-B8	fc12210-1re	537_ID.m	Sample		op937,S2Q1693,125,,,1.0,1,water	rr5x, EIS ↓
28	2q118623.d	P6-B9	fc12210-2re	537_ID.m	Sample		op937,S2Q1693,125,,,1.0,1,water	✓
29	2q118624.d	P1-A7	cc1691-20	537_ID.m	QC	100/500	op401,S2Q1693,250,,,1.0,1,water	✓
30	2q118625.d	P1-A1	ccb	537_ID.m	Sample		op401,S2Q1693,250,,,1.0,1,water	-
31	2q118626.d	P6-C1	fc12210-3re	537_ID.m	Sample		op937,S2Q1693,125,,,1.0,1,water	✓
32	2q118627.d	P6-C2	fc12210-4re	537_ID.m	Sample		op937,S2Q1693,120,,,1.0,1,water	✓
33	2q118628.d	P6-C3	fc12210-5re	537_ID.m	Sample		op937,S2Q1693,125,,,1.0,1,water	✓
34	2q118629.d	P6-D1	op939-bs	537_ID.m	Sample		op939,S2Q1693,250,,,1.0,1,water	✓

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35	2q118630.d	P6-D2	op939-mb	537_ID.m	Sample		op939,S2Q1693,250,,,1.0,1,water	✓
36	2q118631.d	P6-D3	fc12242-1	537_ID.m	Sample		op939,S2Q1693,125,,,1.0,1,water	✓
37	2q118632.d	P6-D4	fc12242-2	537_ID.m	Sample		op939,S2Q1693,120,,,1.0,1,water	PFBS & HxS qualifier OCL ✓
38	2q118633.d	P6-D5	fc12242-3	537_ID.m	Sample		op939,S2Q1693,125,,,1.0,1,water	PFBS qualifier OCL ✓
39	2q118634.d	P6-D6	op939-ms	537_ID.m	Sample		op939,S2Q1693,125,,,1.0,1,water	✓
40	2q118635.d	P6-D7	fc12243-2	537_ID.m	Sample		op939,S2Q1693,125,,,1.0,1,water	✓
41	2q118636.d	P1-A7	cc1691-20	537_ID.m	QC	100/500	op401,S2Q1693,250,,,1.0,1,water	✓
42	2q118637.d	P1-A3	cc1691-1.0LL	537_ID.m	QC	5/500	op401,S2Q1693,250,,,1.0,1,water	✓
43	2q118638.d	P6-D8	fc12245-1	537_ID.m	Sample		op939,S2Q1693,235,,,1.0,1,water	✓
44	2q118639.d	P6-D9	fc12245-2	537_ID.m	Sample		op939,S2Q1693,275,,,1.0,1,water	✓
45	2q118640.d	P6-E1	fc12245-3	537_ID.m	Sample		op939,S2Q1693,270,,,1.0,1,water	✓
46	2q118641.d	P6-E2	fc12245-4	537_ID.m	Sample		op939,S2Q1693,260,,,1.0,1,water	✓
47	2q118642.d	P6-E3	op939-dup	537_ID.m	Sample		op939,S2Q1693,240,,,1.0,1,water	✓
48	2q118643.d	P6-E4	fc12245-5	537_ID.m	Sample		op939,S2Q1693,260,,,1.0,1,water	✓
49	2q118644.d	P6-E5	fc12245-6	537_ID.m	Sample		op939,S2Q1693,265,,,1.0,1,water	✓
50	2q118645.d	P6-E6	fc12254-1	537_ID.m	Sample		op939,S2Q1693,120,,,1.0,1,water	FOSA qualifier OCL ✓
51	2q118646.d	P6-E7	fc12254-2	537_ID.m	Sample		op939,S2Q1693,120,,,1.0,1,water	✓
52	2q118647.d	P6-E8	fc12254-3	537_ID.m	Sample		op939,S2Q1693,125,,,1.0,1,water	✓
53	2q118648.d	P1-A7	cc1691-20	537_ID.m	QC	100/500	op401,S2Q1693,250,,,1.0,1,water	✓
54	2q118649.d	P1-A1	ccb	537_ID.m	Sample		op401,S2Q1693,250,,,1.0,1,water	-
55	2q118650.d	P6-E9	fc12254-4	537_ID.m	Sample		op939,S2Q1693,120,,,1.0,1,water	rr10x/50x, e val; PFNS qualifier OCL
56	2q118651.d	P6-F1	da60938-1	537_ID.m	Sample		op939,S2Q1693,270,,,1.0,1,water	rr1x, c/o; HxA & HxS qualifier OCL; interfering matrix in HxS region
57	2q118652.d	P6-F2	da60938-2	537_ID.m	Sample		op939,S2Q1693,280,,,1.0,1,water	✓
58	2q118653.d	P6-F3	fc12243-1	537_ID.m	Sample		op939,S2Q1693,125,,,1.0,1,water	✓
59	2q118654.d	P1-A7	ecc1691-20	537_ID.m	QC	100/500	op401,S2Q1693,250,,,1.0,1,water	✓
60	2q118655.d	P1-A1	ccb	537_ID.m	Sample		op401,S2Q1693,250,,,1.0,1,water	-

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LCMS2-2Q ANALYSIS LOG

DATE:	12/28/23
COLUMN TYPE:	Poroshell EC18
AMOUNT INJ:	6 ul
INSTRUMENT:	LCMS5-5Q

METHODS:	537 ID
PROC. METH:	ID_122823_S5Q375
CAL DATE:	12/28/23
ANALYST:	LR
RUN BATCH:	S5Q375

ELUENT A LOT #:	H2O lot:225382 w 0.1% A.A lot:194003
ELUENT B LOT #:	MeOH:224231 w 0.1% AA:194003
IC/CC STD LOT #:	LCMS2234
ICV STD LOT #:	11598/12009A
ISTD/ID STD LOT #:	LCMS2224-C

	Data File	Sample	Sample Name	Method	Sample Type	Level	Misc. Info	Comments
1	5Q23904.d	P1-A1	ccb	537_ID.m	Sample		OP401,S5Q375,250,,,1.0,1,water	-
2	5Q23905.d	P1-A1	ccb	537_ID.m	Sample		OP401,S5Q375,250,,,1.0,1,water	-
3	5Q23906.d	P1-A1	ccb	537_ID.m	Sample		OP401,S5Q375,250,,,1.0,1,water	-
4	5Q23907.d	P1-A1	ic375-0	537_ID.m	Sample		OP401,S5Q375,250,,,1.0,1,water	Check tune file ✓
5	5Q23908.d	P1-A2	ic375-0.5	537_ID.m	Calibration	2.5/500	OP401,S5Q375,250,,,1.0,1,water	Dropped: PFECHS ✓
6	5Q23909.d	P1-A3	ic375-1	537_ID.m	Calibration	5/500	OP401,S5Q375,250,,,1.0,1,water	✓
7	5Q23910.d	P1-A4	ic375-2	537_ID.m	Calibration	10/500	OP401,S5Q375,250,,,1.0,1,water	✓
8	5Q23911.d	P1-A5	ic375-5	537_ID.m	Calibration	25/500	OP401,S5Q375,250,,,1.0,1,water	✓
9	5Q23912.d	P1-A6	ic375-10	537_ID.m	Calibration	50/500	OP401,S5Q375,250,,,1.0,1,water	✓
10	5Q23913.d	P1-A7	icc375-20	537_ID.m	Calibration	100/500	OP401,S5Q375,250,,,1.0,1,water	✓
11	5Q23914.d	P1-A8	ic375-50	537_ID.m	Calibration	200/400	OP401,S5Q375,250,,,1.0,1,water	✓
12	5Q23915.d	P1-A9	ic375-100	537_ID.m	Calibration	1x	OP401,S5Q375,250,,,1.0,1,water	Dropped: 4:2, 6:2, 8:2 ✓
13	5Q23916.d	P1-A1	iblk	537_ID.m	Sample		OP401,S5Q375,250,,,1.0,1,water	✓
14	5Q23917.d	P1-B1	icv375-20	537_ID.m	QC	10/500	OP401,S5Q375,250,,,1.0,1,water	par30 ✓
15	5Q23918.d	P1-B2	icv375-20	537_ID.m	QC	10/500	OP401,S5Q375,250,,,1.0,1,water	mefosa ✓
16	5Q23919.d	P1-B3	rt	537_ID.m	Sample		OP401,S5Q375,250,,,1.0,1,water	✓
17	5Q23920.d	P1-A7	cc375-20	537_ID.m	QC	100/500	OP401,S5Q375,250,,,1.0,1,water	✓
18	5Q23921.d	P1-A3	cc375-1.0LL	537_ID.m	QC	5/500	OP401,S5Q375,250,,,1.0,1,water	✓
19	5Q23922.d	P2-A1	op834-bs	537_ID.m	Sample		OP834,S5Q375,125,,,1.0,1,water	✓
20	5Q23923.d	P2-A2	op834-mb	537_ID.m	Sample		OP834,S5Q375,125,,,1.0,1,water	✓
21	5Q23924.d	P2-A3	fc12184-1	537_ID.m	Sample		OP834,S5Q375,125,,,1.0,1,water	rr5x, TeDA ↓
22	5Q23925.d	P2-A4	fc12184-2	537_ID.m	Sample		OP834,S5Q375,120,,,1.0,1,water	✓
23	5Q23926.d	P2-A5	fc12185-1	537_ID.m	Sample		OP834,S5Q375,125,,,1.0,1,water	rr5x, EIS ↓
24	5Q23927.d	P2-A6	fc12185-2	537_ID.m	Sample		OP834,S5Q375,115,,,1.0,1,water	✓
25	5Q23928.d	P2-A7	op834-ms	537_ID.m	Sample		OP834,S5Q375,125,,,1.0,1,water	✓
26	5Q23929.d	P2-A8	op834-msd	537_ID.m	Sample		OP834,S5Q375,125,,,1.0,1,water	✓
27	5Q23930.d	P2-A9	fc12185-3	537_ID.m	Sample		OP834,S5Q375,125,,,1.0,1,water	✓
28	5Q23931.d	P2-B1	fc12185-4	537_ID.m	Sample		OP834,S5Q375,115,,,1.0,1,water	✓
29	5Q23932.d	P1-A7	cc375-20	537_ID.m	QC	100/500	OP401,S5Q375,250,,,1.0,1,water	✓
30	5Q23933.d	P1-A1	ccb	537_ID.m	Sample		OP401,S5Q375,250,,,1.0,1,water	-
31	5Q23934.d	P2-B2	fc12185-5	537_ID.m	Sample		OP834,S5Q375,125,,,1.0,1,water	✓
32	5Q23935.d	P2-B3	fc12185-6	537_ID.m	Sample		OP834,S5Q375,105,,,1.0,1,water	rr5x, DoDA & TeDA ↓
33	5Q23936.d	P2-B4	fc12185-7	537_ID.m	Sample		OP834,S5Q375,120,,,1.0,1,water	rr5x, DoDA & TeDA ↓
34	5Q23937.d	P2-B5	fc12210-1	537_ID.m	Sample		OP834,S5Q375,125,,,1.0,1,water	rr5x, FOSA & TeDA ↓
35	5Q23938.d	P2-B6	fc12210-2	537_ID.m	Sample		OP834,S5Q375,125,,,1.0,1,water	✓

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36	5Q23939.d	P2-B7	fc12210-3	537_ID.m	Sample		OP834,S5Q375,125,,,1.0,1,water	✓
37	5Q23940.d	P2-B8	fc12210-4	537_ID.m	Sample		OP834,S5Q375,125,,,1.0,1,water	✓
38	5Q23941.d	P2-B9	fc12210-5	537_ID.m	Sample		OP834,S5Q375,125,,,1.0,1,water	rr5/25x, EIS ↓
39	5Q23942.d	P1-A7	cc375-20	537_ID.m	QC	100/500	OP401,S5Q375,250,,,1.0,1,water	✓
40	5Q23943.d	P1-A3	cc375-1.0LL	537_ID.m	QC	5/500	OP401,S5Q375,250,,,1.0,1,water	✓
41	5Q23944.d	P2-C1	op835-bs	537_ID.m	Sample		OP835,S5Q375,125,,,1.0,1,water	✓
42	5Q23945.d	P2-C2	op835-mb	537_ID.m	Sample		OP835,S5Q375,125,,,1.0,1,water	✓
43	5Q23946.d	P2-C3	fc12099-1	537_ID.m	Sample		OP835,S5Q375,120,,,1.0,1,water	✓
44	5Q23947.d	P2-C4	fc12099-2	537_ID.m	Sample		OP835,S5Q375,120,,,1.0,1,water	✓
45	5Q23948.d	P2-C5	fc12099-3	537_ID.m	Sample		OP835,S5Q375,120,,,1.0,1,water	rr5x, FOSA & TeDA ↓; PFBS qualifier OCL
46	5Q23949.d	P2-C6	fc12099-4	537_ID.m	Sample		OP835,S5Q375,120,,,1.0,1,water	rr5x, FOSA ↓; PFBS qualifier OCL
47	5Q23950.d	P2-C7	fc12099-5	537_ID.m	Sample		OP835,S5Q375,120,,,1.0,1,water	PFNS qualifier OCL ✓
48	5Q23951.d	P2-C8	fc12099-6	537_ID.m	Sample		OP835,S5Q375,120,,,1.0,1,water	rr5x, FOSA ↓
49	5Q23952.d	P2-C9	fc12099-7	537_ID.m	Sample		OP835,S5Q375,120,,,1.0,1,water	✓
50	5Q23953.d	P2-D1	fc12099-8	537_ID.m	Sample		OP835,S5Q375,120,,,1.0,1,water	✓
51	5Q23954.d	P1-A7	cc375-20	537_ID.m	QC	100/500	OP401,S5Q375,250,,,1.0,1,water	✓
52	5Q23955.d	P1-A1	ccb	537_ID.m	Sample		OP401,S5Q375,250,,,1.0,1,water	-
53	5Q23956.d	P2-D2	fc12099-14	537_ID.m	Sample		OP835,S5Q375,120,,,1.0,1,water	rr5x, TeDA ↓
54	5Q23957.d	P2-D3	fc12099-15	537_ID.m	Sample		OP835,S5Q375,120,,,1.0,1,water	rr5x, EIS ↓
55	5Q23958.d	P2-D4	fc12099-16	537_ID.m	Sample		OP835,S5Q375,120,,,1.0,1,water	✓
56	5Q23959.d	P2-D5	fc12099-17	537_ID.m	Sample		OP835,S5Q375,120,,,1.0,1,water	✓
57	5Q23960.d	P2-D6	fc12189-1	537_ID.m	Sample		OP835,S5Q375,120,,,1.0,1,water	✓
58	5Q23961.d	P2-D7	fc12189-2	537_ID.m	Sample		OP835,S5Q375,115,,,1.0,1,water	✓
59	5Q23962.d	P2-D8	fc12189-3	537_ID.m	Sample		OP835,S5Q375,125,,,1.0,1,water	✓
60	5Q23963.d	P2-D9	fc12189-4	537_ID.m	Sample		OP835,S5Q375,125,,,1.0,1,water	✓
61	5Q23964.d	P2-E1	op835-ms	537_ID.m	Sample		OP835,S5Q375,125,,,1.0,1,water	✓
62	5Q23965.d	P2-E2	op835-msd	537_ID.m	Sample		OP835,S5Q375,125,,,1.0,1,water	✓
63	5Q23966.d	P1-A7	cc375-20	537_ID.m	QC	100/500	OP401,S5Q375,250,,,1.0,1,water	✓
64	5Q23967.d	P1-A1	ccb	537_ID.m	Sample		OP401,S5Q375,250,,,1.0,1,water	-
65	5Q23968.d	P2-E3	fc12189-5	537_ID.m	Sample		OP835,S5Q375,125,,,1.0,1,water	✓
66	5Q23969.d	P2-E4	fc12189-6	537_ID.m	Sample		OP835,S5Q375,125,,,1.0,1,water	✓
67	5Q23970.d	P2-E5	fc12189-7	537_ID.m	Sample		OP835,S5Q375,125,,,1.0,1,water	✓
68	5Q23971.d	P1-A7	ecc375-20	537_ID.m	QC	100/500	OP401,S5Q375,250,,,1.0,1,water	✓
69	5Q23972.d	P1-A1	ccb	537_ID.m	Sample		OP401,S5Q375,250,,,1.0,1,water	-

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LCMS2-2Q ANALYSIS LOG

DATE:	01/02/24
COLUMN TYPE:	Poroshell EC18
AMOUNT INJ:	6 ul
INSTRUMENT:	LCMS5-5Q

METHODS:	537 ID
PROC. METH:	ID_010224_S5Q377
CAL DATE:	01/02/24
ANALYST:	LR
RUN BATCH:	S5Q377

ELUENT A LOT #:	H2O lot:225382 w 0.1% A.A lot:194003
ELUENT B LOT #:	MeOH:224231 w 0.1% AA:194003
IC/CC STD LOT #:	LCMS2234
ICV STD LOT #:	11903/12009A
ISTD/ID STD LOT #:	LCMS2201-J

	Data File	Sample	Sample Name	Method	Sample Type	Level	Misc. Info	Comments
1	5Q24023.d	P1-A1	ccb	537_ID.m	Sample		OP401,S5Q377,250,,,1.0,1,water	-
2	5Q24024.d	P1-A1	ccb	537_ID.m	Sample		OP401,S5Q377,250,,,1.0,1,water	-
3	5Q24025.d	P1-A1	ic377-0	537_ID.m	Sample		OP401,S5Q377,250,,,1.0,1,water	Check tune file ✓
4	5Q24026.d	P1-A2	ic377-0.5	537_ID.m	Calibration	2.5/500	OP401,S5Q377,250,,,1.0,1,water	✓
5	5Q24027.d	P1-A3	ic377-1	537_ID.m	Calibration	5/500	OP401,S5Q377,250,,,1.0,1,water	✓
6	5Q24028.d	P1-A4	ic377-2	537_ID.m	Calibration	10/500	OP401,S5Q377,250,,,1.0,1,water	✓
7	5Q24029.d	P1-A5	ic377-5	537_ID.m	Calibration	25/500	OP401,S5Q377,250,,,1.0,1,water	✓
8	5Q24030.d	P1-A6	ic377-10	537_ID.m	Calibration	50/500	OP401,S5Q377,250,,,1.0,1,water	✓
9	5Q24031.d	P1-A7	icc377-20	537_ID.m	Calibration	100/500	OP401,S5Q377,250,,,1.0,1,water	✓
10	5Q24032.d	P1-A8	ic377-50	537_ID.m	Calibration	200/400	OP401,S5Q377,250,,,1.0,1,water	✓
11	5Q24033.d	P1-A9	ic377-100	537_ID.m	Calibration	1x	OP401,S5Q377,250,,,1.0,1,water	Dropped: 4:2, 8:2 ✓
12	5Q24034.d	P1-A1	iblk	537_ID.m	Sample		OP401,S5Q377,250,,,1.0,1,water	✓
13	5Q24035.d	P1-B1	icv377-20	537_ID.m	QC	10/500	OP401,S5Q377,250,,,1.0,1,water	par30 (dropped HxS) ✓
14	5Q24036.d	P1-B2	icv377-20	537_ID.m	QC	10/500	OP401,S5Q377,250,,,1.0,1,water	mefosa ✓
15	5Q24037.d	P1-B3	rt	537_ID.m	Sample		OP401,S5Q377,250,,,1.0,1,water	✓
16	5Q24038.d	P1-A7	cc377-20	537_ID.m	QC	100/500	OP401,S5Q377,250,,,1.0,1,water	✓
17	5Q24039.d	P1-A3	cc377-1.0LL	537_ID.m	QC	5/500	OP401,S5Q377,250,,,1.0,1,water	✓
18	5Q24040.d	P3-A1	op877-bs	537_ID.m	Sample		OP877,S5Q377,125,,,1.0,1,water	✓
19	5Q24041.d	P3-A2	op877-mb	537_ID.m	Sample		OP877,S5Q377,125,,,1.0,1,water	✓
20	5Q24042.d	P3-A3	op877-ms	537_ID.m	Sample		OP877,S5Q377,125,,,1.0,1,water	✓
21	5Q24043.d	P3-A4	fc12145-1	537_ID.m	Sample		OP877,S5Q377,125,,,1.0,1,water	✓
22	5Q24044.d	P3-A5	fc12145-2	537_ID.m	Sample		OP877,S5Q377,125,,,1.0,1,water	✓
23	5Q24045.d	P3-A6	op877-dup	537_ID.m	Sample		OP877,S5Q377,125,,,1.0,1,water	✓
24	5Q24046.d	P3-A7	fc12145-3	537_ID.m	Sample		OP877,S5Q377,125,,,1.0,1,water	✓
25	5Q24047.d	P3-A8	fc12145-4	537_ID.m	Sample		OP877,S5Q377,125,,,1.0,1,water	✓
26	5Q24048.d	P3-A9	fc12145-5	537_ID.m	Sample		OP877,S5Q377,125,,,1.0,1,water	✓
27	5Q24049.d	P3-B1	fc12145-6	537_ID.m	Sample		OP877,S5Q377,125,,,1.0,1,water	✓
28	5Q24050.d	P1-A7	cc377-20	537_ID.m	QC	100/500	OP401,S5Q377,250,,,1.0,1,water	✓
29	5Q24051.d	P1-A1	ccb	537_ID.m	Sample		OP401,S5Q377,250,,,1.0,1,water	-
30	5Q24052.d	P3-B2	fc12145-7	537_ID.m	Sample		OP877,S5Q377,125,,,1.0,1,water	✓
31	5Q24053.d	P3-B3	fc12145-8	537_ID.m	Sample		OP877,S5Q377,125,,,1.0,1,water	✓
32	5Q24054.d	P3-B4	fc12145-9	537_ID.m	Sample		OP877,S5Q377,125,,,1.0,1,water	✓
33	5Q24055.d	P3-B5	fc12145-10	537_ID.m	Sample		OP877,S5Q377,125,,,1.0,1,water	✓
34	5Q24056.d	P3-B6	fc12145-11	537_ID.m	Sample		OP877,S5Q377,125,,,1.0,1,water	✓
35	5Q24057.d	P3-B7	fc12145-12	537_ID.m	Sample		OP877,S5Q377,125,,,1.0,1,water	✓

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LCMS2-2Q ANALYSIS LOG

36	5Q24058.d	P3-B8	fc12145-13	537_ID.m	Sample		OP877,S5Q377,125,,,1.0,1,water	✓
37	5Q24059.d	P3-B9	fc12145-14	537_ID.m	Sample		OP877,S5Q377,125,,,1.0,1,water	✓
38	5Q24060.d	P3-C1	fc12145-15	537_ID.m	Sample		OP877,S5Q377,125,,,1.0,1,water	✓
39	5Q24061.d	P3-C2	fc12145-16	537_ID.m	Sample		OP877,S5Q377,125,,,1.0,1,water	✓
40	5Q24062.d	P1-A7	cc377-20	537_ID.m	QC	100/500	OP401,S5Q377,250,,,1.0,1,water	✓
41	5Q24063.d	P1-A1	ccb	537_ID.m	Sample		OP401,S5Q377,250,,,1.0,1,water	-
42	5Q24064.d	P3-C3	fc12145-17	537_ID.m	Sample		OP877,S5Q377,125,,,1.0,1,water	✓
43	5Q24065.d	P3-C4	fc12145-18	537_ID.m	Sample		OP877,S5Q377,125,,,1.0,1,water	✓
44	5Q24066.d	P3-D1	fc12184-1	537_ID.m	Sample	100/500	OP834,S5Q377,125,,,1.0,5,water	CF; redo
45	5Q24067.d	P3-D2	fc12185-1	537_ID.m	Sample	100/500	OP834,S5Q377,125,,,1.0,5,water	CF; redo
46	5Q24068.d	P3-D3	fc12185-6	537_ID.m	Sample	100/500	OP834,S5Q377,105,,,1.0,5,water	CF; redo
47	5Q24069.d	P3-D4	fc12185-7	537_ID.m	Sample	100/500	OP834,S5Q377,120,,,1.0,5,water	CF; redo
48	5Q24070.d	P3-D5	fc12210-1	537_ID.m	Sample	100/500	OP834,S5Q377,125,,,1.0,5,water	redo
49	5Q24071.d	P3-D6	fc12210-5	537_ID.m	Sample	100/500	OP834,S5Q377,125,,,1.0,5,water	redo
50	5Q24072.d	P3-D7	fc12210-5	537_ID.m	Sample	20/500	OP834,S5Q377,125,,,1.0,25,water	redo
51	5Q24073.d	P3-D8	fc12099-3	537_ID.m	Sample	100/500	OP835,S5Q377,120,,,1.0,5,water	CF; redo
52	5Q24074.d	P1-A7	cc377-20	537_ID.m	QC	100/500	OP401,S5Q377,250,,,1.0,1,water	✓
53	5Q24075.d	P1-A1	ccb	537_ID.m	Sample		OP401,S5Q377,250,,,1.0,1,water	-
54	5Q24076.d	P3-D9	fc12099-4	537_ID.m	Sample	100/500	OP835,S5Q377,120,,,1.0,5,water	✓
55	5Q24077.d	P3-E1	fc12099-6	537_ID.m	Sample	100/500	OP835,S5Q377,120,,,1.0,5,water	✓
56	5Q24078.d	P3-E2	fc12099-14	537_ID.m	Sample	100/500	OP835,S5Q377,120,,,1.0,5,water	CF; redo
57	5Q24079.d	P3-E3	fc12099-15	537_ID.m	Sample	100/500	OP835,S5Q377,120,,,1.0,5,water	CF; redo
58	5Q24080.d	P1-A7	ecc377-20	537_ID.m	QC	100/500	OP401,S5Q377,250,,,1.0,1,water	✓
59	5Q24081.d	P1-A1	ccb	537_ID.m	Sample		OP401,S5Q377,250,,,1.0,1,water	-

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LCMS2-2Q ANALYSIS LOG

DATE:	01/05/24
COLUMN TYPE:	Poroshell EC18
AMOUNT INJ:	6 ul
INSTRUMENT:	LCMS5-5Q

METHODS:	537 ID
PROC. METH:	ID_010224_S5Q377
CAL DATE:	01/02/24
ANALYST:	LR / MB
RUN BATCH:	S5Q380

ELUENT A LOT #:	H2O lot:225382 w 0.1% A.A lot:194003
ELUENT B LOT #:	MeOH:224231 w 0.1% AA:194003
IC/CC STD LOT #:	LCMS2234
ICV STD LOT #:	11903/12009A
ISTD/ID STD LOT #:	LCMS2201-J

	Data File	Sample	Sample Name	Method	Sample Type	Level	Misc. Info	Comments
1	5Q24195.d	P1-A1	ccb	537_ID.m	Sample		OP401,S5Q380,250,,,1.0,1,water	-
2	5Q24196.d	P1-A9	high standard	537_ID.m	Sample		OP401,S5Q380,250,,,1.0,1,water	-
3	5Q24197.d	P1-A1	iblk	537_ID.m	Sample		OP401,S5Q380,250,,,1.0,1,water	✓
4	5Q24198.d	P1-B3	rt	537_ID.m	Sample		OP401,S5Q380,250,,,1.0,1,water	✓
5	5Q24199.d	P1-A7	cc377-20	537_ID.m	QC	100/500	OP401,S5Q380,250,,,1.0,1,water	✓
6	5Q24200.d	P1-A3	cc377-1.0LL	537_ID.m	QC	5/500	OP401,S5Q380,250,,,1.0,1,water	✓
7	5Q24201.d	P1-E6	fc12110-2	537_ID.m	Sample	100/500	OP923,S5Q380,2.02,,,1.0,5,soil	✓
8	5Q24202.d	P1-E7	fc12110-3	537_ID.m	Sample	100/500	OP923,S5Q380,2.05,,,1.0,5,soil	✓
9	5Q24203.d	P1-E8	fc12110-4	537_ID.m	Sample	100/500	OP923,S5Q380,1.96,,,1.0,5,soil	✓
10	5Q24204.d	P1-E9	fc12110-5	537_ID.m	Sample	100/500	OP923,S5Q380,1.97,,,1.0,5,soil	✓
11	5Q24205.d	P1-F1	fc12110-6	537_ID.m	Sample	100/500	OP923,S5Q380,1.98,,,1.0,5,soil	✓
12	5Q24206.d	P1-F2	fc12110-7	537_ID.m	Sample	100/500	OP923,S5Q380,2.03,,,1.0,5,soil	✓
13	5Q24207.d	P1-F3	fc12110-8	537_ID.m	Sample	100/500	OP923,S5Q380,1.98,,,1.0,5,soil	✓
14	5Q24208.d	P1-A1	ccb	537_ID.m	Sample		OP401,S5Q380,250,,,1.0,1,water	run error; restart
15	5Q24209.d	P1-A7	cc377-20	537_ID.m	QC	100/500	OP401,S5Q380,250,,,1.0,1,water	✓
16	5Q24210.d	P1-A1	ccb	537_ID.m	Sample		OP401,S5Q380,250,,,1.0,1,water	-
17	5Q24211.d	P1-F4	fc12110-9	537_ID.m	Sample	100/500	OP923,S5Q380,1.98,,,1.0,5,soil	PFNS qualifier OCL ✓
18	5Q24212.d	P1-F5	fc12110-10	537_ID.m	Sample	100/500	OP923,S5Q380,1.96,,,1.0,5,soil	✓
19	5Q24213.d	P1-F6	fc12110-11	537_ID.m	Sample	100/500	OP923,S5Q380,1.98,,,1.0,5,soil	✓
20	5Q24214.d	P1-A7	cc377-20	537_ID.m	QC	100/500	OP401,S5Q380,250,,,1.0,1,water	✓
21	5Q24215.d	P1-A1	ccb	537_ID.m	Sample		OP401,S5Q380,250,,,1.0,1,water	-
22	5Q24216.d	P1-F7	fc12110-12	537_ID.m	Sample	100/500	OP923,S5Q380,2.04,,,1.0,5,soil	✓
23	5Q24217.d	P1-D1	op927-bs	537_ID.m	Sample		OP927,S5Q380,250,,,1.0,1,water	redo
24	5Q24218.d	P1-D2	op927-mb	537_ID.m	Sample		OP927,S5Q380,250,,,1.0,1,water	redo
25	5Q24219.d	P4-C1	fc12113-1	537_ID.m	Sample		OP927,S5Q380,25,,,1.0,1,water	xNot used, not needed
26	5Q24220.d	P1-D3	fc12113-1	537_ID.m	Sample	100/500	OP927,S5Q380,25,,,1.0,5,water	✓
27	5Q24221.d	P4-C2	op927-dup	537_ID.m	Sample		OP927,S5Q380,25,,,1.0,1,water	xNot used, not needed
28	5Q24222.d	P1-D4	op927-dup	537_ID.m	Sample	100/500	OP927,S5Q380,25,,,1.0,5,water	✓
29	5Q24223.d	P4-C3	fc12113-2	537_ID.m	Sample		OP927,S5Q380,2.5,,,1.0,1,water	xNot used, not needed
30	5Q24224.d	P1-D5	fc12113-2	537_ID.m	Sample	100/500	OP927,S5Q380,2.5,,,1.0,5,water	rr50x, 6:2 ↑; redo; FOSA & PFNS qualifiers OCL
31	5Q24225.d	P1-A7	cc377-20	537_ID.m	QC	100/500	OP401,S5Q380,250,,,1.0,1,water	✓
32	5Q24226.d	P1-A1	ccb	537_ID.m	Sample		OP401,S5Q380,250,,,1.0,1,water	-
33	5Q24227.d	P1-C4	op927-mb	537_ID.m	Sample		OP927,S5Q380,250,,,1.0,1,water	test: eluted from cartridge
34	5Q24228.d	P4-C4	fc12182-21	537_ID.m	Sample		OP927,S5Q380,125,,,1.0,1,water	xNot used, not needed

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LCMS2-2Q ANALYSIS LOG

35	5Q24229.d	P1-D6	fc12182-21	537_ID.m	Sample	100/500	OP927,S5Q380,125,,,1.0,5,water	redo
36	5Q24230.d	P4-C5	jd79444-1	537_ID.m	Sample		OP927,S5Q380,250,,,1.0,1,water	xNot used, not needed
37	5Q24231.d	P1-D7	jd79444-1	537_ID.m	Sample	100/500	OP927,S5Q380,250,,,1.0,5,water	redo
38	5Q24232.d	P4-C6	jd79444-2	537_ID.m	Sample		OP927,S5Q380,250,,,1.0,1,water	xNot used, not needed
39	5Q24233.d	P1-D8	jd79444-2	537_ID.m	Sample	100/500	OP927,S5Q380,250,,,1.0,5,water	redo
40	5Q24234.d	P4-C7	da60865-1	537_ID.m	Sample		OP927,S5Q380,265,,,1.0,1,water	xNot used, not needed
41	5Q24235.d	P1-D9	da60865-1	537_ID.m	Sample	100/500	OP927,S5Q380,265,,,1.0,5,water	✓
42	5Q24236.d	P4-C8	op927-ms	537_ID.m	Sample		OP927,S5Q380,270,,,1.0,1,water	xNot used, not needed
43	5Q24237.d	P1-A7	cc377-20	537_ID.m	QC	100/500	OP401,S5Q380,250,,,1.0,1,water	✓
44	5Q24238.d	P1-A3	cc377-1.0LL	537_ID.m	QC	5/500	OP401,S5Q380,250,,,1.0,1,water	✓
45	5Q24239.d	P4-C9	da60865-3	537_ID.m	Sample		OP927,S5Q380,270,,,1.0,1,water	xNot used, not needed
46	5Q24240.d	P4-D1	da60875-2	537_ID.m	Sample		OP927,S5Q380,255,,,1.0,1,water	xNot used, not needed
47	5Q24241.d	P1-E1	da60875-2	537_ID.m	Sample	100/500	OP927,S5Q380,255,,,1.0,5,water	redo
48	5Q24242.d	P4-D2	da60875-3	537_ID.m	Sample		OP927,S5Q380,260,,,1.0,1,water	xNot used, not needed
49	5Q24243.d	P1-E2	da60875-3	537_ID.m	Sample	100/500	OP927,S5Q380,260,,,1.0,5,water	xNot used, not needed
50	5Q24244.d	P1-E3	da60875-4	537_ID.m	Sample	100/500	OP927,S5Q380,265,,,1.0,5,water	redo
51	5Q24245.d	P1-E4	da60875-5	537_ID.m	Sample	100/500	OP927,S5Q380,270,,,1.0,5,water	redo
52	5Q24246.d	P1-A7	cc377-20	537_ID.m	QC	100/500	OP401,S5Q380,250,,,1.0,1,water	✓
53	5Q24247.d	P1-A1	ccb	537_ID.m	Sample		OP401,S5Q380,250,,,1.0,1,water	-
54	5Q24248.d	P1-E5	da60875-6	537_ID.m	Sample	100/500	OP927,S5Q380,280,,,1.0,5,water	redo
55	5Q24249.d	P1-C1	fc12111-4	537_ID.m	Sample	100/500	OP947,S5Q380,1.96,,,1.0,5,soil	✓
56	5Q24250.d	P1-C2	fc12111-5	537_ID.m	Sample		OP947,S5Q380,2.01,,,1.0,1,soil	✓
57	5Q24251.d	P1-C3	fc12118-9	537_ID.m	Sample	100/500	OP948,S5Q380,1.96,,,1.0,5,soil	CF ✓
58	5Q24252.d	P2-A1	da60938-1	537_ID.m	Sample		OP939,S5Q380,270,,,1.0,1,water	rr1x, EIS ↓; HxA & HxS qualifiers OCL
59	5Q24253.d	P2-A2	fc12254-4	537_ID.m	Sample	50/500	OP939,S5Q380,120,,,1.0,10,water	PFNS qualifier OCL ✓
60	5Q24254.d	P2-A3	fc12254-4	537_ID.m	Sample	10/500	OP939,S5Q380,120,,,1.0,50,water	✓
61	5Q24255.d	P2-A4	fc12099-3re	537_ID.m	Sample	100/500	OP937,S5Q380,125,,,1.0,5,water	✓
62	5Q24256.d	P2-A5	fc12099-14re	537_ID.m	Sample	100/500	OP937,S5Q380,125,,,1.0,5,water	✓
63	5Q24257.d	P2-A6	fc12184-1re	537_ID.m	Sample	100/500	OP937,S5Q380,120,,,1.0,5,water	xNot used, TeDA ↓
64	5Q24258.d	P1-A7	cc377-20	537_ID.m	QC	100/500	OP401,S5Q380,250,,,1.0,1,water	✓
65	5Q24259.d	P1-A1	ccb	537_ID.m	Sample		OP401,S5Q380,250,,,1.0,1,water	-
66	5Q24260.d	P2-A7	fc12185-4re	537_ID.m	Sample	100/500	OP937,S5Q380,125,,,1.0,5,water	✓
67	5Q24261.d	P2-A8	fc12185-5re	537_ID.m	Sample	100/500	OP937,S5Q380,110,,,1.0,5,water	xNot used, FOSA ↓
68	5Q24262.d	P2-A9	fc12185-7re	537_ID.m	Sample	100/500	OP937,S5Q380,125,,,1.0,5,water	xNot used, EIS ↓
69	5Q24263.d	P2-B1	fc12210-1re	537_ID.m	Sample	100/500	OP937,S5Q380,125,,,1.0,5,water	✓
70	5Q24264.d	P1-A7	ecc377-20	537_ID.m	QC	100/500	OP401,S5Q380,250,,,1.0,1,water	✓
71	5Q24265.d	P1-A1	ccb	537_ID.m	Sample		OP401,S5Q380,250,,,1.0,1,water	-

Printed 1/8/2024 @ 3:08 PM

SGS - ORLANDO

SPE LIQUID SAMPLE PREP REPORT

Date/Time Started: 12/26/23 07:30 {mm/dd/yy 24:00}

Date/Time Finished: 12-28-23 10:20 {mm/dd/yy 24:00}

Prep Method: 3535A or 537 or 537MOD (circle)

Analytical Method: LC537(QSM)

Batch#: OP 835 Ext. By: GH Conc. By: an Vialed By:

Sample ID	Bottle Number	Amount Extracted (ml)	Initial pH	Adjusted pH	Surrogate Amount	Spike Amount	Final Volume (ml)	Manifold ID	Comments
OP 835 MB	/	125	7	N/A	20		1ml	E	
OP 835 BS	/	125	7			50			
FC12099-1	1	120	7						
2	1	120							
3	7	120							
4	1	120							
5	1	120							
6	1	120							
7	1	120							
8	1	120						E	
14	1	120						F	Cartridge clog
15	4	120							
16	1	120							
17	4	120							
FC12189-1	1	120							Centrifuge, decant
2	1	115							Centrifuge, decant
3	1	125							
4	1	125							Centrifuge, decant
5	1	125							
6	1	125	↓	↓	↓			↓	↓
7	1	125	7	N/A	20		↓	F	Centrifuge, decant
FC12189-4 MS	3	125	7	N/A	20	50	1ml	E	Centrifuge, decant
FC12189-4 MSD	4	125	7	N/A	20	50	↓	E	Centrifuge, decant
DUP									

Comments:

Surr.1 ID: LCMS2224I Conc: 0.5 PPM Exp. Date: 05/16/24 Inj. By: GH Ver. By AG

Spk.1 ID: LCMS2235 Conc: 400 PPB Exp. Date: 06/14/24 Inj. By: GH Ver. By AG

Spk.2 ID: Conc: Exp. Date: Inj. By: Ver. By

Spk.3 ID: Conc: Exp. Date: Inj. By: Ver. By

TurboVap Temp (Therm ID): TV#19

Observed Temp °C: 55c Corr. Temp °C: -

N-Evap Temp (Therm ID): /

Observed Temp °C: / Corr. Temp °C: /

Methanol Lot # 232701

Acetonitrile Lot #

Water Lot# DI H2O

Solvent#

SPE Lot # 604-0-07

Syringe filter Lot #

Pre-filter Lot#

Carbon Lot# 99687

pH Paper # 205423

Reagent # PE777(1:1) NH4OH/MeOH

Reagent # PE778 0.1M Formic

Other

Relinquished By: Date: 12-28-23

Accepted By: Date: 12/28/23

ORLD-EXT-0001-3-08-FORM-extwater_spe.xls 032718

SGS - ORLANDO

SPE LIQUID SAMPLE PREP REPORT

Date/Time: 1-3-24 10:35 Started {mm/dd/yy 24:00}

Prep Method: 3535A or 537 or 537MOD (circle)

Date/Time: 1-4-24 9:00 Finished {mm/dd/yy 24:00}

Analytical Method: 537 MOD (QSM)

Batch#: OP 937 Ext. By: R.S. / K.G. Trainee/trainer Conc. By: an Vialed By: 1-4-24 * an

Sample ID	Bottle Number	Amount Extracted (ml)	Initial pH	Adjusted pH	Surrogate Amount	Spike Amount	Final Volume (ml)	Manifold ID	Comments
OP 937 MB	/	125	7	NA	20		1ml	A5	
OP 937 BS	/	125				50			
FC12099-3 Re	8	125							
FC12099-14 Re	2	125							
FC12099-15 Re	5	125							
FC12184-1 Re	2	120							Decant/centrifuge
FC12184-2 Re	2	110							Decant/centrifuge
FC12185-1 Re	2	125							
-2 Re	5	120							
-3 Re	2	125						A5	
-4 Re	2	125						C	Decant/centrifuge
-5 Re	2	110							Decant/centrifuge
-6 Re	2	120							Decant/centrifuge
-7 Re	2	125							Decant/centrifuge
FC12210-1 Re	2	125							
-2 Re	2	125							
-3 Re	2	125							
-4 Re	2	120	↓	↓	↓			↓	Decant/centrifuge
-5 Re	2	125	7	NA	20		↓	C	Decant/centrifuge
			R.S.	1-3-24					
FC12185-2 Re MS	6	125	7	NA	20	50	1ml	A5	
FC12185-2 Re MSD	3	125	7	NA	20	50	↓	A5	
DUP									

Comments: * an 1-4-24

Surr.1 ID: LCMS2236-A Conc: 0.5PPM Exp. Date: 6-14-24 Inj. By: R.S. Ver. By K.G.

Spk.1 ID: LCMS 2235 Conc: 400PPB Exp. Date: 6-14-24 Inj. By: R.S. Ver. By K.G.

Spk.2 ID: _____ Conc: _____ Exp. Date: _____ Inj. By: _____ Ver. By _____

Spk.3 ID: _____ Conc: _____ Exp. Date: _____ Inj. By: _____ Ver. By _____

TurboVap Temp (Therm ID): TV#19

Observed Temp °C: 55c Corr. Temp °C: _____

N-Evap Temp (Therm ID): _____

Observed Temp °C: _____ Corr. Temp °C: _____

Methanol Lot # 23270 SPE Lot # 614-1-02 pH Paper # 205423

Acetonitrile Lot # _____ Syringe filter Lot # _____ Reagent # 18 NH4OH PF791

Water Lot# DI water Pre-filter Lot# _____ Reagent # 1:10 HM Formic Acid PF792

Solvent# _____ Carbon Lot# 99687 Other _____

Relinquished By: an Date: 1-4-23

Accepted By: an Date: 01/04/24

ORLD-EXT-0001-3-08-FORM-extwater_spe.xls 032718

9.8.2

9

General Chemistry

QC Data Summaries

Includes the following where applicable:

- Method Blank and Blank Spike Summaries
- Duplicate Summaries
- Matrix Spike Summaries

METHOD BLANK AND SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: FC12099
Account: HGLFLMI - Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Solids, Total Dissolved	GN96183	50	0.0	mg/l	2000	1970	98.5	85-115%

Associated Samples:
Batch GN96183: FC12099-3, FC12099-19
(*) Outside of QC limits

DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: FC12099
Account: HGLFLMI - Hydrogeologic, Inc.
Project: CRHEA-GWIM; Contractors Rd, KSC, FL

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Solids, Total Dissolved	GN96183	FC12045-3	mg/l	186	188	1.1	0-10%

Associated Samples:
Batch GN96183: FC12099-3, FC12099-19
(*) Outside of QC limits

General Chemistry

Raw Data

TDS Worksheet

Method: SM2540-16, Editorial Rev. 2020

GN Batch ID:	GN96183	Filter Lot#	115519				104 Oven ID	oven#3	
Analyst:	JR	Date (mm/dd/yy):	12/22/2023	12/22/2023			180 Oven ID	oven#4	
Filter Date:	12/20/2023	Time (24hr)(Start/Finish):	9:35-10:35	11:35-14:00			Therm ID (Oven 3)	925350	Corr. Factor, C: 0
Balance ID:	C309773746	Temp Deg C (Start/Finish):	180/180	180/180			Therm ID (Oven 4)	925330	Corr. Factor, C: 0

All recorded temperatures are in corrected temperature.

	Bottle #	Sample ID	Dish #	Volume Filtered (ml)	Filter tare weight (g)	Initial weight after drying at 180 deg C (g)	Redry 1 Constant Weight in g (a)	Redry ?	Redry 2 Constant Weight in g (a)	Redry ?	Redry 3 Constant Weight in g (a)	Redry ?	TDS (mg/l)	RL (mg/l)	MDL (mg/l)	Scon(Umhos/cm)
MB	-	Method Blank	77	50.0	47.4772	47.4762	47.4762	NO		***FALSE***		FALSE	-20.0	50.0	40.0	-
QC1	40	FC12045-3	702	50.0	48.2401	48.2499	48.2494	NO		***FALSE***		FALSE	186.0	50.0	40.0	304
D1	40	FC12045-3	210	50.0	50.7530	50.7627	50.7624	NO		***FALSE***		FALSE	188.0	50.0	40.0	304
	-	Blank Spike	504	50.0	50.6414	50.7400	50.7399	NO		FALSE		FALSE	1970.0	50.0	40.0	-
	14	FC12045-2	501	50.0	49.1404	49.1600	49.1604	NO		FALSE		FALSE	400.0	50.0	40.0	565
	14	FC12045-4	587	50.0	63.2550	63.2579	63.2579	NO		FALSE		FALSE	58.0	50.0	40.0	71
	14	FC12045-5	691	50.0	49.1802	49.1857	49.1856	NO		FALSE		FALSE	108.0	50.0	40.0	194
	14	FC12045-6	mb	50.0	47.9937	47.9964	47.9963	NO		FALSE		FALSE	52.0	50.0	40.0	60
	24	FC12066-1	314	50.0	68.5731	68.5945	68.5941	NO		FALSE		FALSE	420.0	50.0	40.0	618
	24	FC12066-2	491	50.0	49.2567	49.2611	49.2610	NO		FALSE		FALSE	86.0	50.0	40.0	103
	24	FC12066-3	803	50.0	49.7593	49.7631	49.7633	NO		FALSE		FALSE	80.0	50.0	40.0	103
	9	FC12099-3	800	50.0	49.5155	49.5622	49.5625	NO		FALSE		FALSE	940.0	50.0	40.0	1371
	1	FC12099-19	699	50.0	50.3841	50.4131	50.4128	NO		FALSE		FALSE	574.0	50.0	40.0	870
								FALSE		FALSE		FALSE		#DIV/0!	#DIV/0!	
								FALSE		FALSE		FALSE		#DIV/0!	#DIV/0!	
								FALSE		FALSE		FALSE		#DIV/0!	#DIV/0!	
								FALSE		FALSE		FALSE		#DIV/0!	#DIV/0!	
								FALSE		FALSE		FALSE		#DIV/0!	#DIV/0!	
								FALSE		FALSE		FALSE		#DIV/0!	#DIV/0!	
								FALSE		FALSE		FALSE		#DIV/0!	#DIV/0!	
								FALSE		FALSE		FALSE		#DIV/0!	#DIV/0!	
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								FALSE		FALSE		FALSE		#DIV/0!	#DIV/0!	

Duplicate 1 RPD **1.070**

Analyst's Signature: Johnna Rivera Sara Smith Date: 12/23/23

Reviewer's Signature: _____ Date: _____

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12-26-23

TDS Worksheet

Method: SM2540-15, Editorial Rev. 2020

GN Batch ID:	GN96183	Filter Lot#	115519
Analyst:	JR	Date (mm/dd/yy):	
Filter Date:	12/20/2023	Time (24hr)(Start/Finish):	
Balance ID:	C309773746	Temp Deg C (Start/Finish):	

All recorded temperatures are in corrected temperature.

104 Oven ID	oven#3
180 Oven ID	oven#4
Therm ID (Oven 3)	925350
Therm ID (Oven 4)	925330

Corr. Factor, C	0
Corr. Factor, C	0

	Bottle #	Sample ID	Dish #	Volume Filtered (ml)	Filter tare weight (g)	Initial weight after drying at 180 deg C (g)	Redry 1 Constant Weight in g (a)	Redry ?	Redry 2 Constant Weight in g (a)	Redry ?	Redry 3 Constant Weight in g (a)	Redry ?	TDS (mg/l)	RL (mg/l)	MDL (mg/l)	Scon(Umhos/cm)
MB	-	Method Blank		50.0	47.4772			FALSE		FALSE		FALSE		50.0	40.0	-
QC1	40	FC12045-3		50.0	48.2401			FALSE		FALSE		FALSE		50.0	40.0	304
D1	40	FC12045-3	210	50.0	50.7530			FALSE		FALSE		FALSE		50.0	40.0	304
	-	Blank Spike	504	50.0	50.6414			FALSE		FALSE		FALSE		50.0	40.0	-
	14	FC12045-2	501	50.0	49.1404			FALSE		FALSE		FALSE		50.0	40.0	565
	14	FC12045-4	587	50.0	63.2550			FALSE		FALSE		FALSE		50.0	40.0	71
	14	FC12045-5	691	50.0	49.1802			FALSE		FALSE		FALSE		50.0	40.0	194
	14	FC12045-6	mb	50.0	47.9937			FALSE		FALSE		FALSE		50.0	40.0	60
	24	FC12066-1	314	50.0	68.5731			FALSE		FALSE		FALSE		50.0	40.0	618
	24	FC12066-2	491	50.0	49.2567			FALSE		FALSE		FALSE		50.0	40.0	103
	24	FC12066-3	803	50.0	49.7593			FALSE		FALSE		FALSE		50.0	40.0	103
	9	FC12099-3	800	50.0	49.5155			FALSE		FALSE		FALSE		50.0	40.0	1371
	1	FC12099-19	699	50.0	50.3841			FALSE		FALSE		FALSE		50.0	40.0	870
								FALSE		FALSE		FALSE		#DIV/0!	#DIV/0!	
								FALSE		FALSE		FALSE		#DIV/0!	#DIV/0!	
								FALSE		FALSE		FALSE		#DIV/0!	#DIV/0!	
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								FALSE		FALSE		FALSE		#DIV/0!	#DIV/0!	
								FALSE		FALSE		FALSE		#DIV/0!	#DIV/0!	
								FALSE		FALSE		FALSE		#DIV/0!	#DIV/0!	
								FALSE		FALSE		FALSE		#DIV/0!	#DIV/0!	
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Duplicate 1 RPD **#VALUE!**

Analyst's Signature:_____ Date:_____

Reviewer's Signature:_____ Date:_____

TDS Worksheet

Method: SM2540-15, Editorial Rev. 2020

GN Batch ID:	GN96183	Filter Lot#	115519		
Analyst:	JR	Date (mm/dd/yy):			
Filter Date:	12/20/2023	Time (24hr)(Start/Finish):			
Balance ID:	C309773746	Temp Deg C (Start/Finish):			

All recorded temperatures are in corrected temperature.

104 Oven ID	oven#3		
180 Oven ID	oven#4		
Therm ID (Oven 3)	925350	Corr. Factor, C	0
Therm ID (Oven 4)	925330	Corr. Factor, C	0

	Bottle #	Sample ID	Dish #	Volume Filtered (ml)	Filter tare weight (g)	Initial weight after drying at 180 deg C (g)	Redry 1 Constant Weight in g (a)	Redry ?	Redry 2 Constant Weight in g (a)	Redry ?	Redry 3 Constant Weight in g (a)	Redry ?	TDS (mg/l)	RL (mg/l)	MDL (mg/l)	Scon(Umhos/cm)
MB	-	Method Blank		50.0				FALSE		FALSE		FALSE		50.0	40.0	-
QC1	40	FC12045-3						FALSE		FALSE		FALSE		#DIV/0!	#DIV/0!	304 µS
D1	40	FC12045-3						FALSE		FALSE		FALSE		#DIV/0!	#DIV/0!	↓
	-	Blank Spike		50.0				FALSE		FALSE		FALSE		50.0	40.0	-
	14	FC12045-2						FALSE		FALSE		FALSE		#DIV/0!	#DIV/0!	565
	14	FC12045-4						FALSE		FALSE		FALSE		#DIV/0!	#DIV/0!	71
	14	FC12045-5						FALSE		FALSE		FALSE		#DIV/0!	#DIV/0!	694
	14	FC12045-6						FALSE		FALSE		FALSE		#DIV/0!	#DIV/0!	605
	24	FC12066-1						FALSE		FALSE		FALSE		#DIV/0!	#DIV/0!	618
	24	FC12066-2						FALSE		FALSE		FALSE		#DIV/0!	#DIV/0!	103
	24	FC12066-3						FALSE		FALSE		FALSE		#DIV/0!	#DIV/0!	103
	9	FC12099-3						FALSE		FALSE		FALSE		#DIV/0!	#DIV/0!	1371
	1	FC12099-19						FALSE		FALSE		FALSE		#DIV/0!	#DIV/0!	870.
								FALSE		FALSE		FALSE		#DIV/0!	#DIV/0!	
								FALSE		FALSE		FALSE		#DIV/0!	#DIV/0!	
								FALSE		FALSE		FALSE		#DIV/0!	#DIV/0!	
								FALSE		FALSE		FALSE		#DIV/0!	#DIV/0!	
								FALSE		FALSE		FALSE		#DIV/0!	#DIV/0!	
								FALSE		FALSE		FALSE		#DIV/0!	#DIV/0!	
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								FALSE		FALSE		FALSE		#DIV/0!	#DIV/0!	
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Duplicate 1 RPD **#VALUE!**

Analyst's Signature:_____ *Date:*_____

Reviewer's Signature:_____ *Date:*_____

in 104 at 13:34 12/20/23

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APPENDIX D

GROUNDWATER TREND GRAPHS
(ELECTRONIC ONLY)

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Figure J-24
Northern Area
Interim Groundwater Monitoring Well

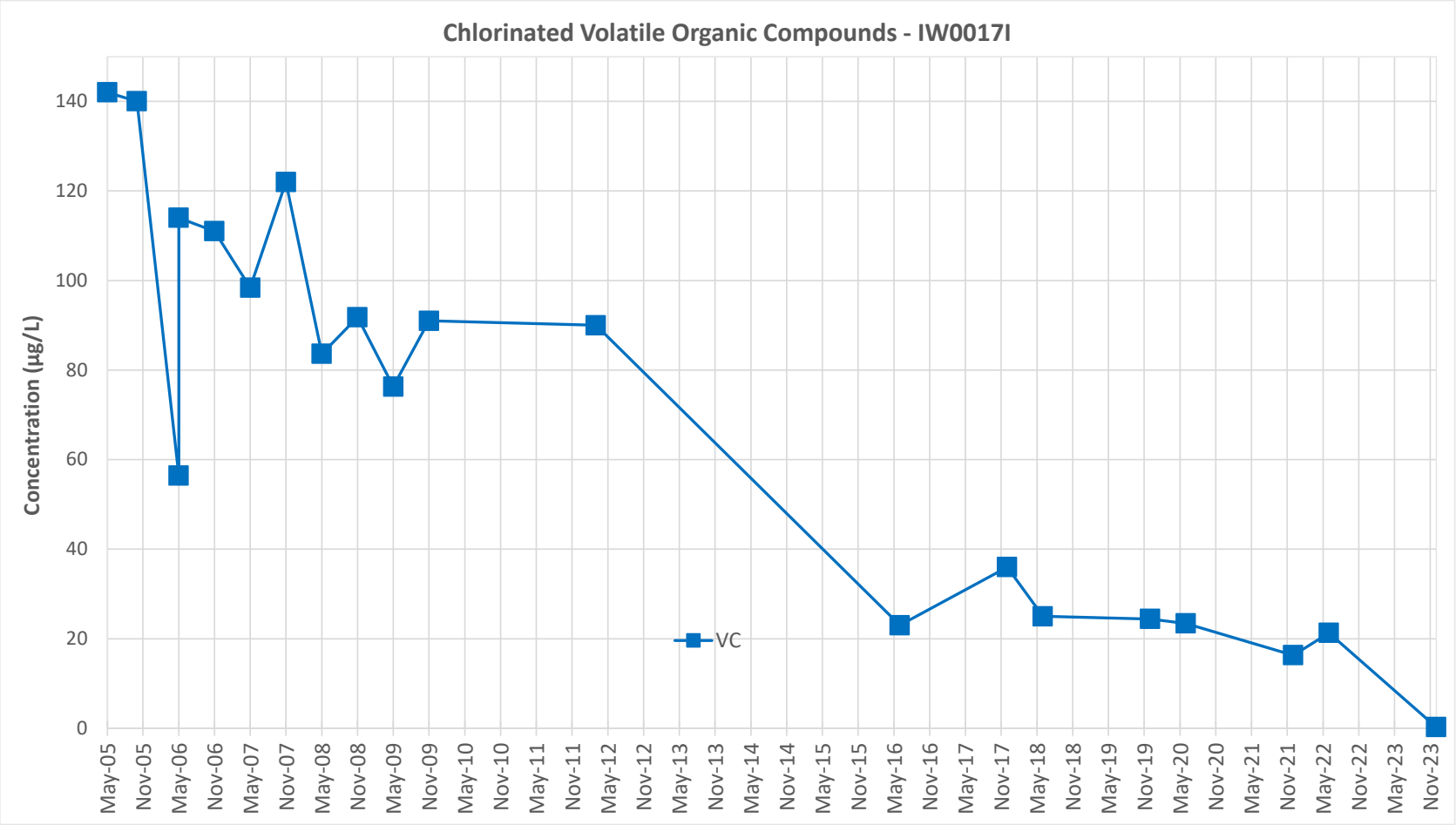
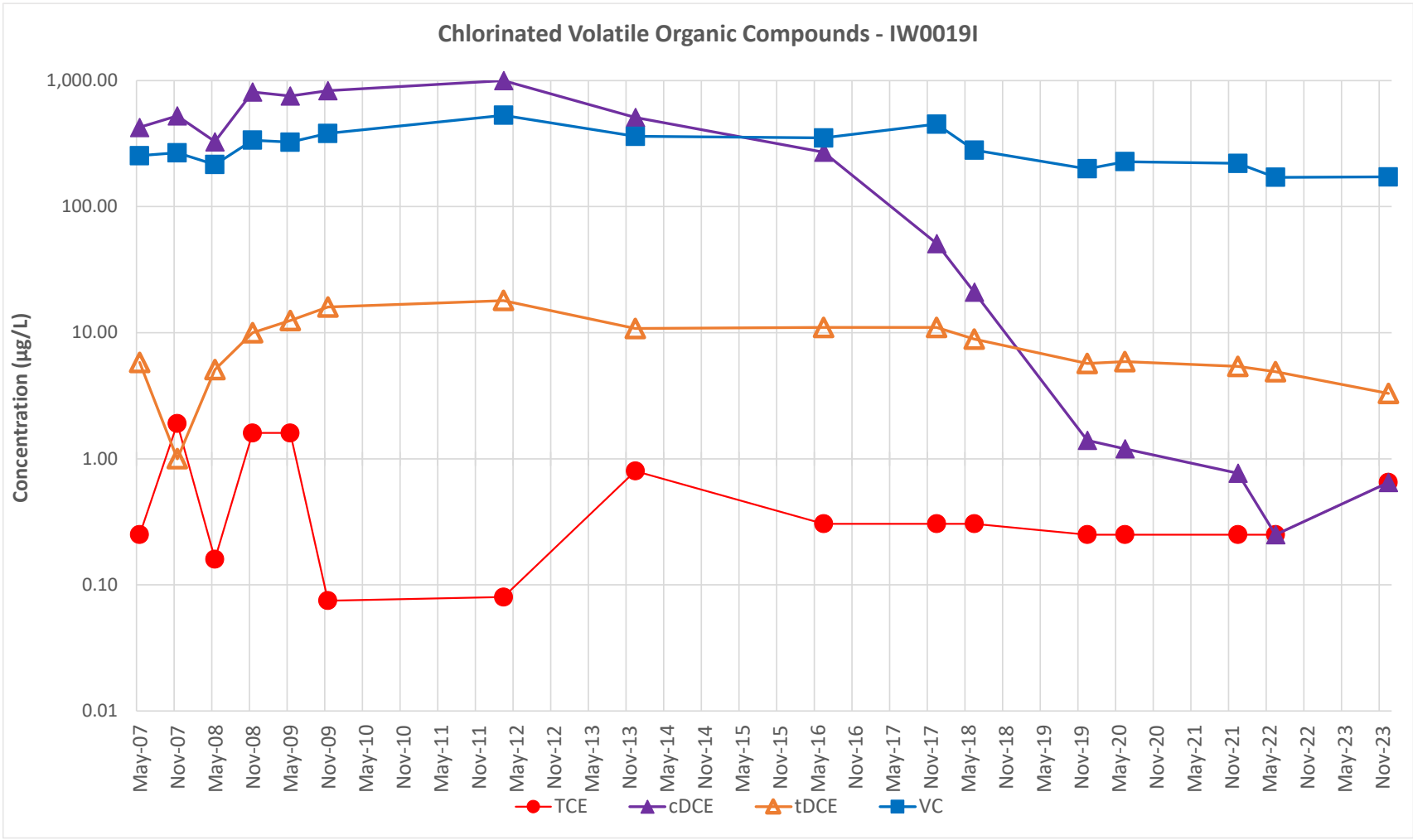


Figure J-24
Northern Area
Interim Groundwater Monitoring Well



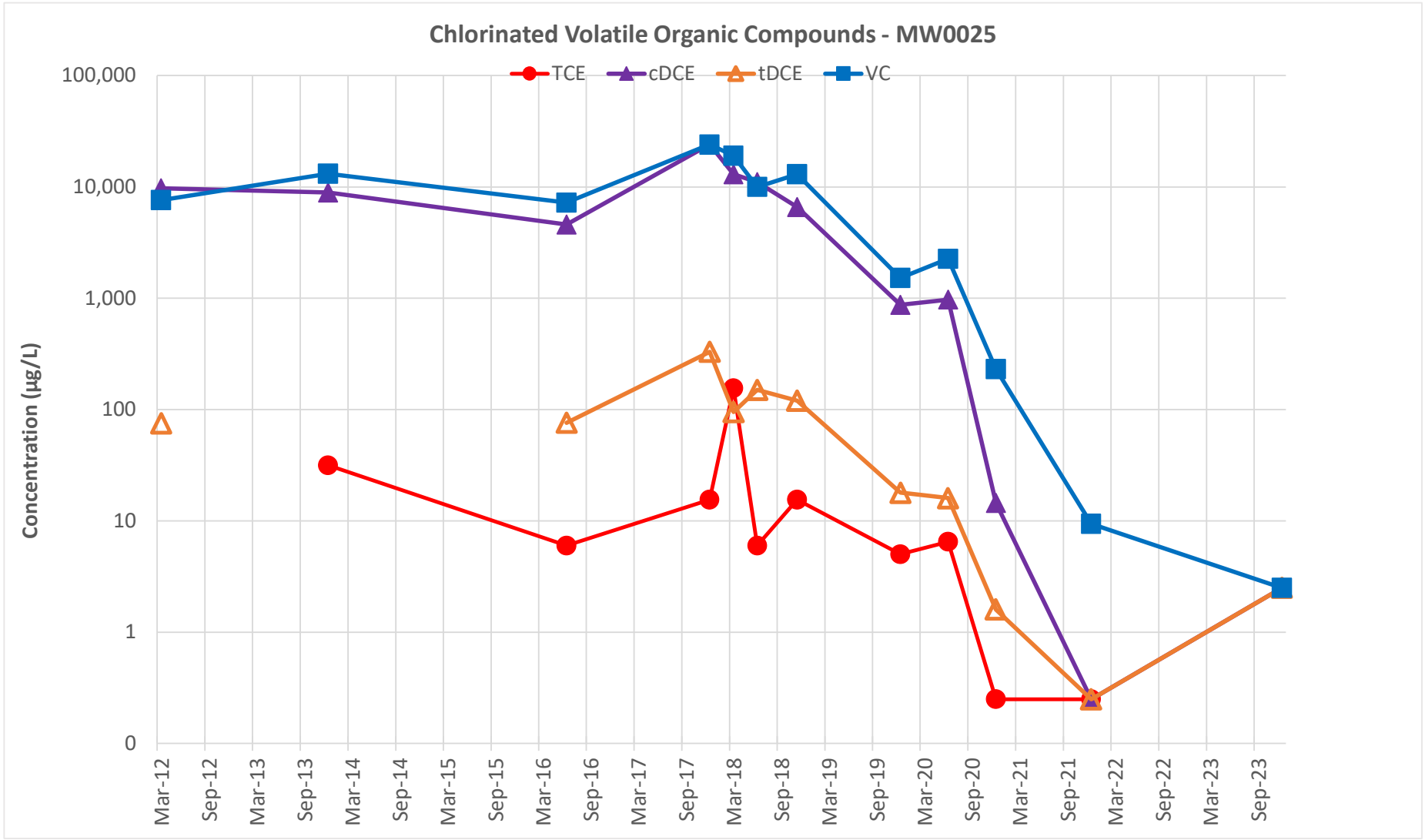
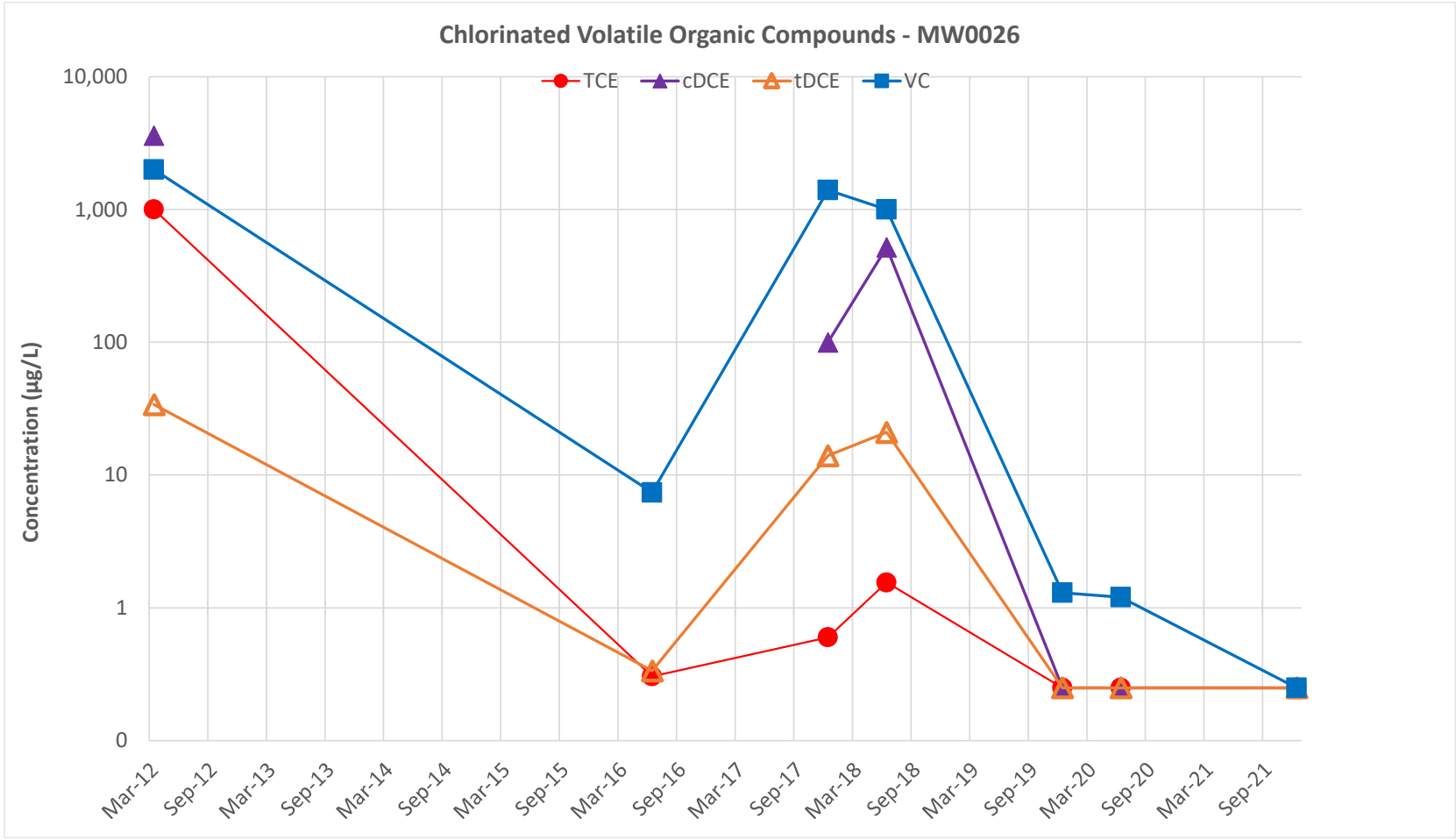
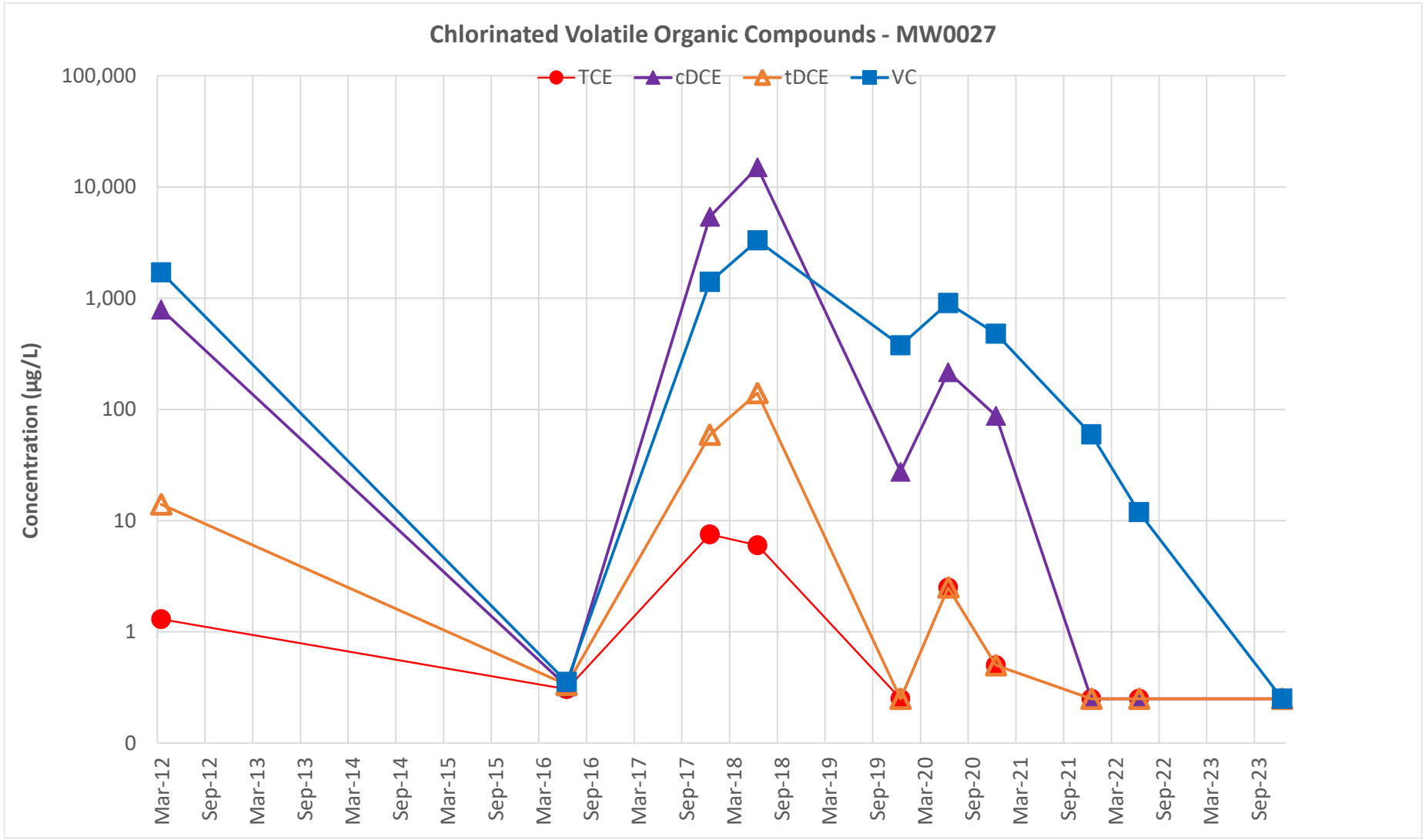
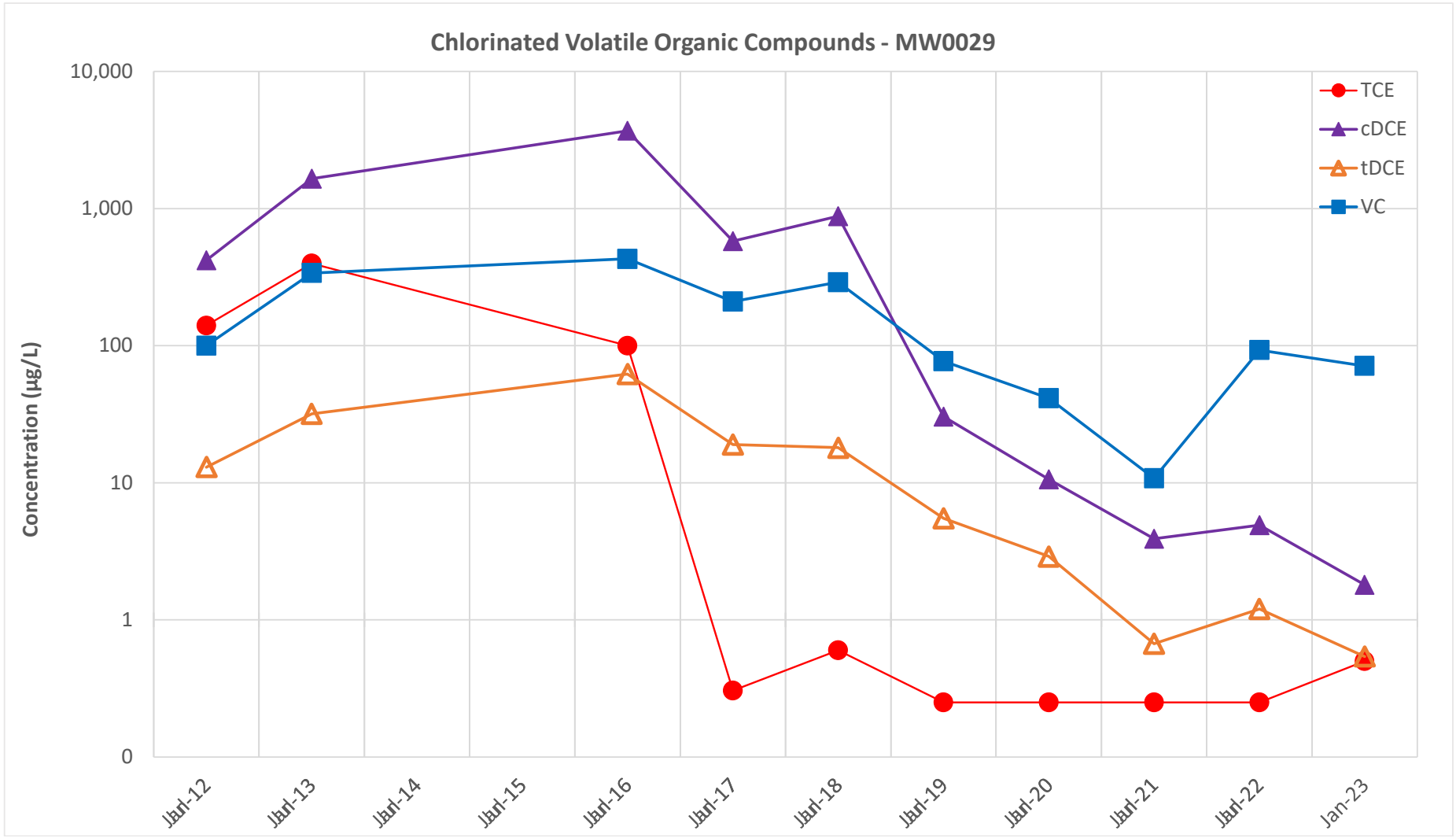
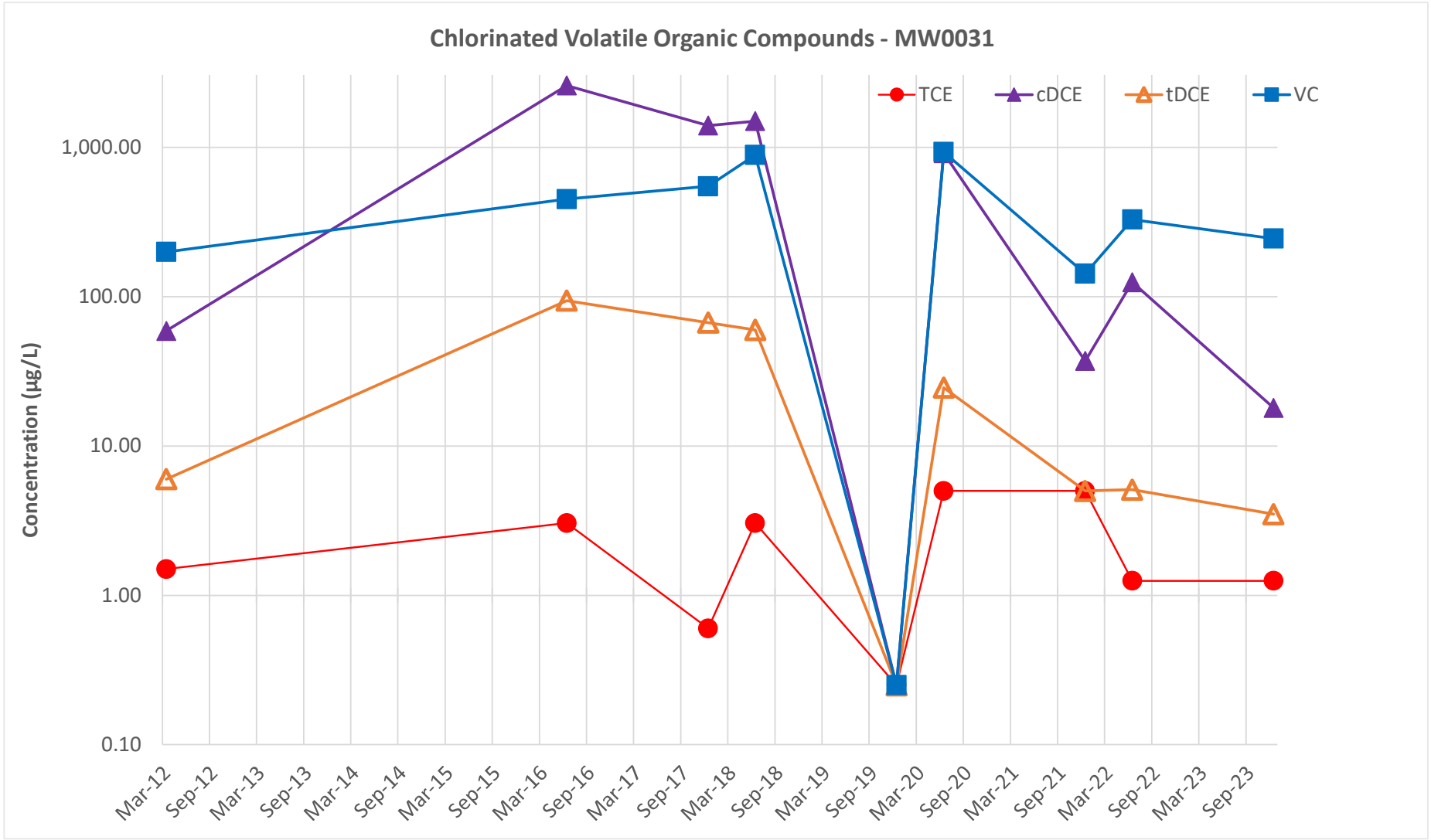

Chlorinated Volatile Organic Compounds - MW0025
TCE
cDCE
tDCE
VC
Concentration (µg/L)
100,000
10,000
1,000
100
10
1
0
Mar-12
Sep-12
Mar-13
Sep-13
Mar-14
Sep-14
Mar-15
Sep-15
Mar-16
Sep-16
Mar-17
Sep-17
Mar-18
Sep-18
Mar-19
Sep-19
Mar-20
Sep-20
Mar-21
Sep-21
Mar-22
Sep-22
Mar-23
Sep-23

Figure J-24
Northern Area
Interim Groundwater Monitoring Well




Chlorinated Volatile Organic Compounds - MW0027
TCE
cDCE
tDCE
VC
Concentration (µg/L)
100,000
10,000
1,000
100
10
1
0
Mar-12
Sep-12
Mar-13
Sep-13
Mar-14
Sep-14
Mar-15
Sep-15
Mar-16
Sep-16
Mar-17
Sep-17
Mar-18
Sep-18
Mar-19
Sep-19
Mar-20
Sep-20
Mar-21
Sep-21
Mar-22
Sep-22
Mar-23
Sep-23


Chlorinated Volatile Organic Compounds - MW0029
Concentration (µg/L)
10,000
1,000
100
10
1
0
TCE
cDCE
tDCE
VC
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Jan-18
Jan-19
Jan-20
Jan-21
Jan-22
Jan-23


Chlorinated Volatile Organic Compounds - MW0031
TCE
cDCE
tDCE
VC
Concentration (µg/L)
1,000.00
100.00
10.00
1.00
0.10
Mar-12
Sep-12
Mar-13
Sep-13
Mar-14
Sep-14
Mar-15
Sep-15
Mar-16
Sep-16
Mar-17
Sep-17
Mar-18
Sep-18
Mar-19
Sep-19
Mar-20
Sep-20
Mar-21
Sep-21
Mar-22
Sep-22
Mar-23
Sep-23

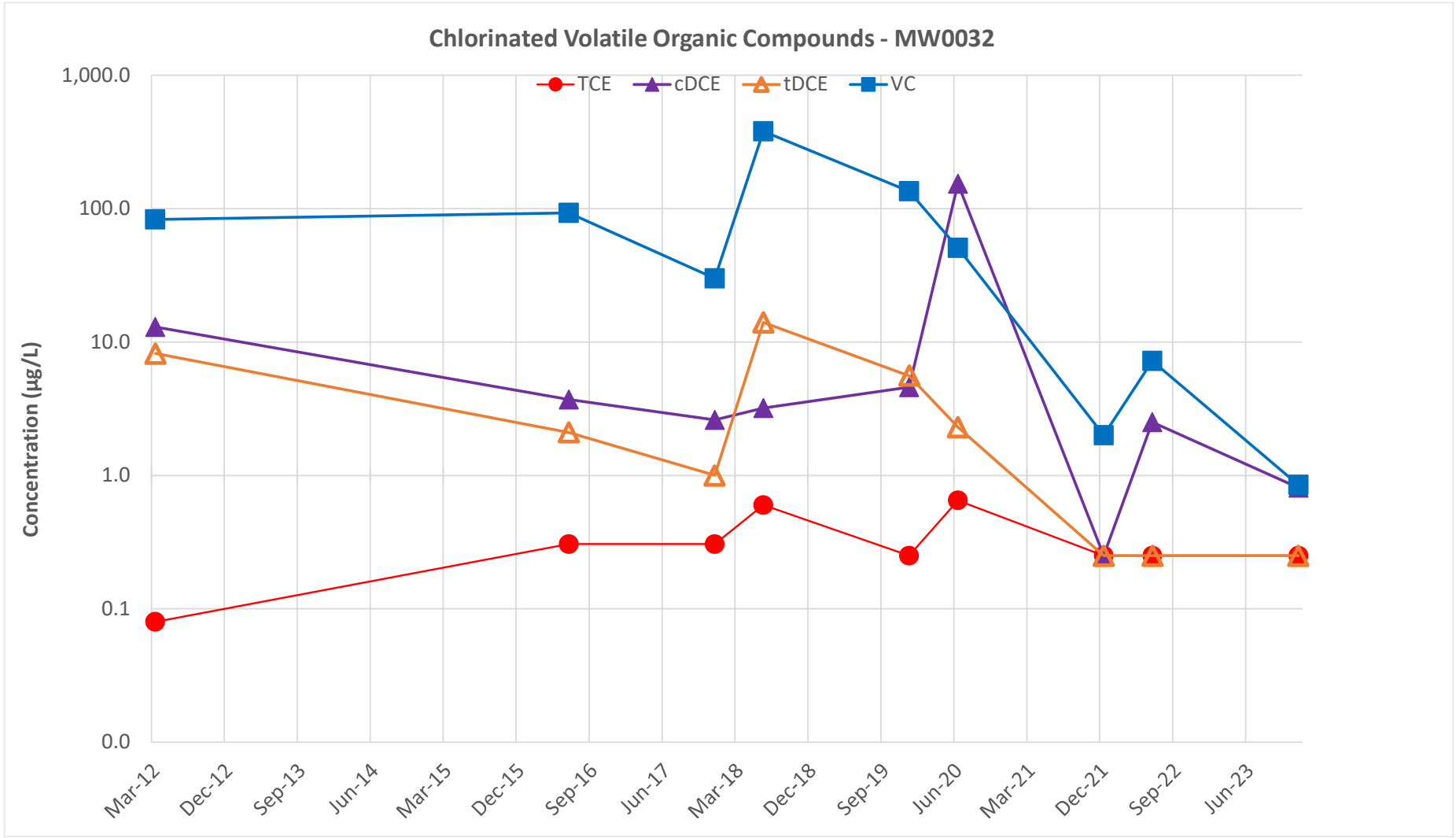
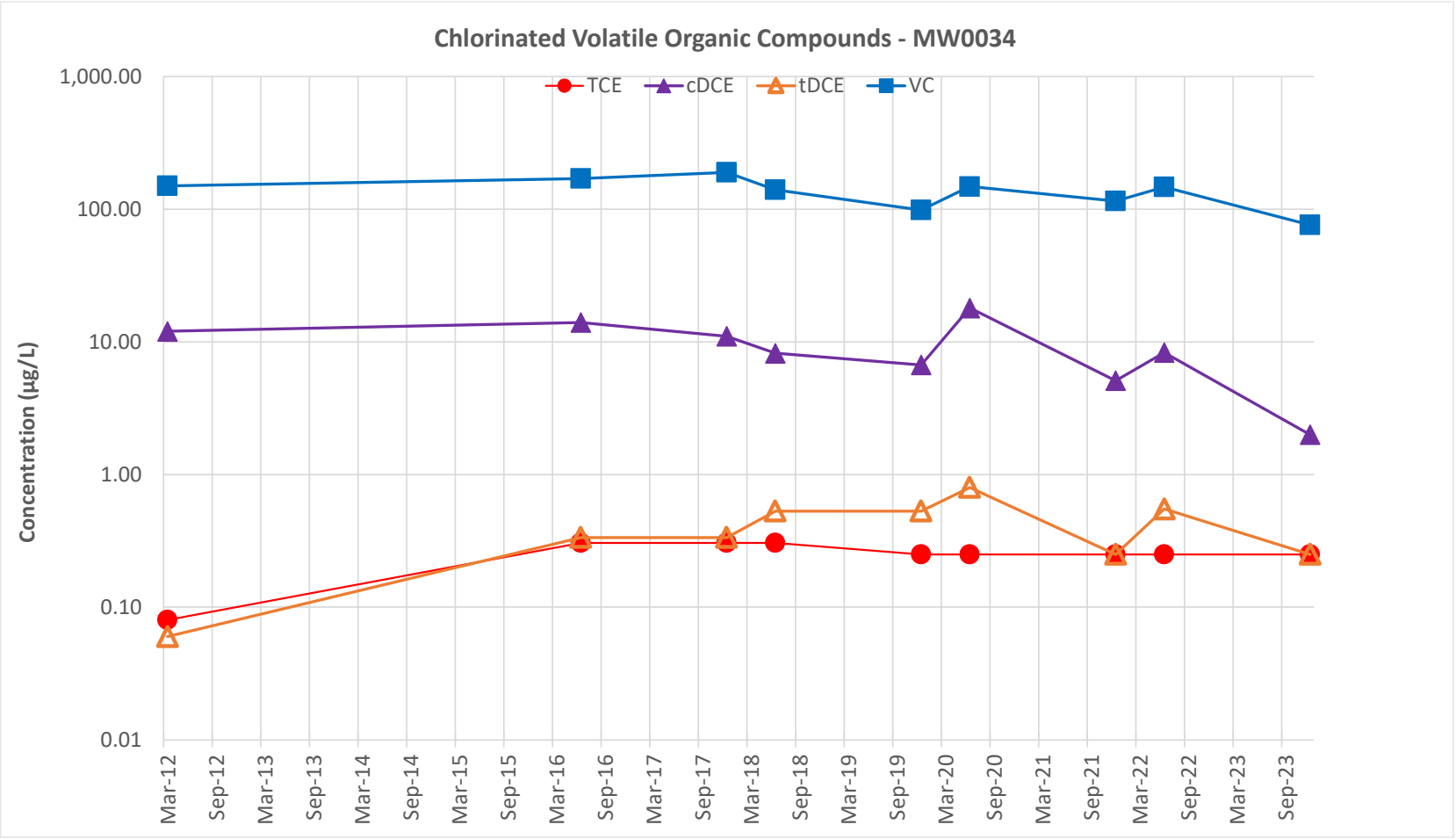
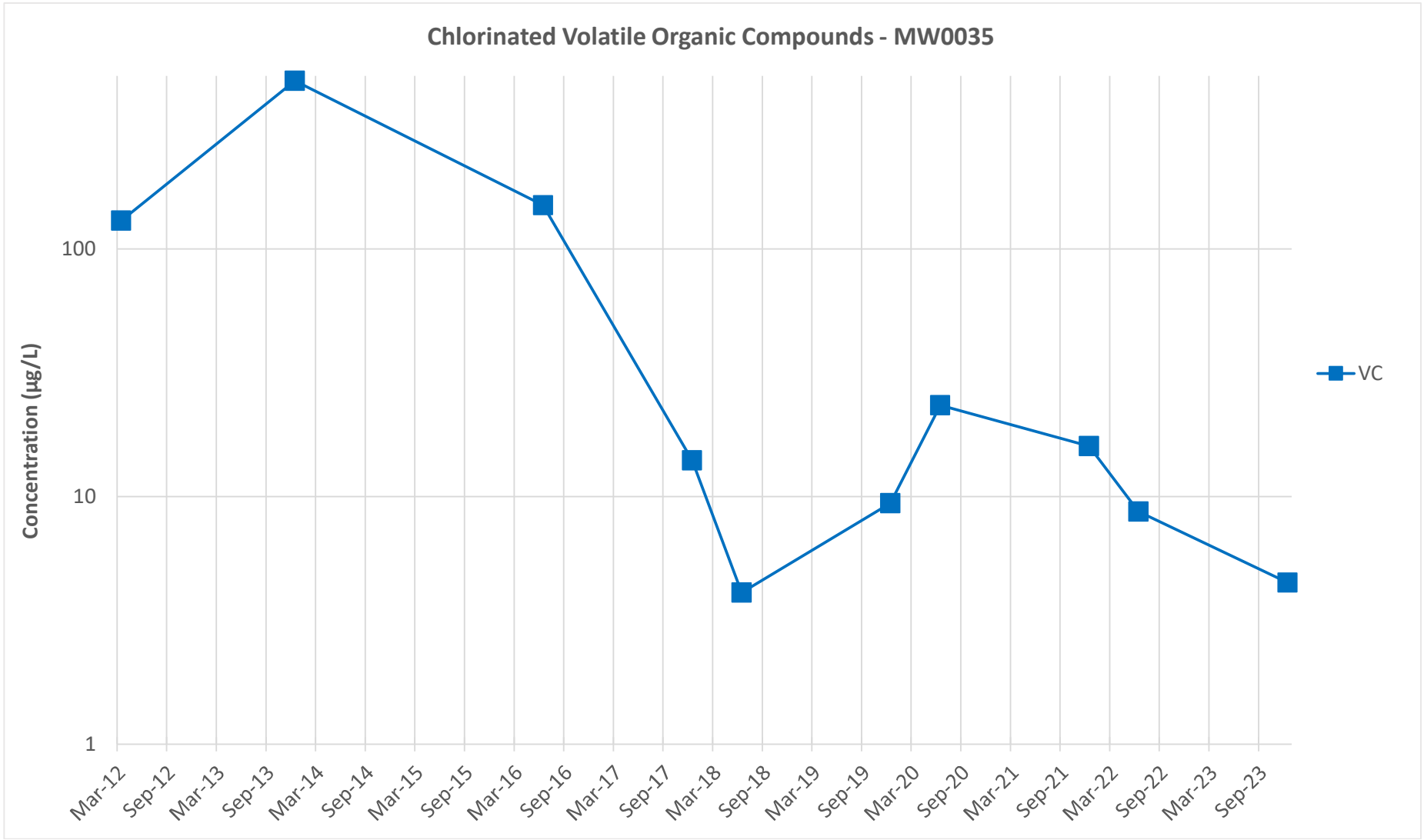
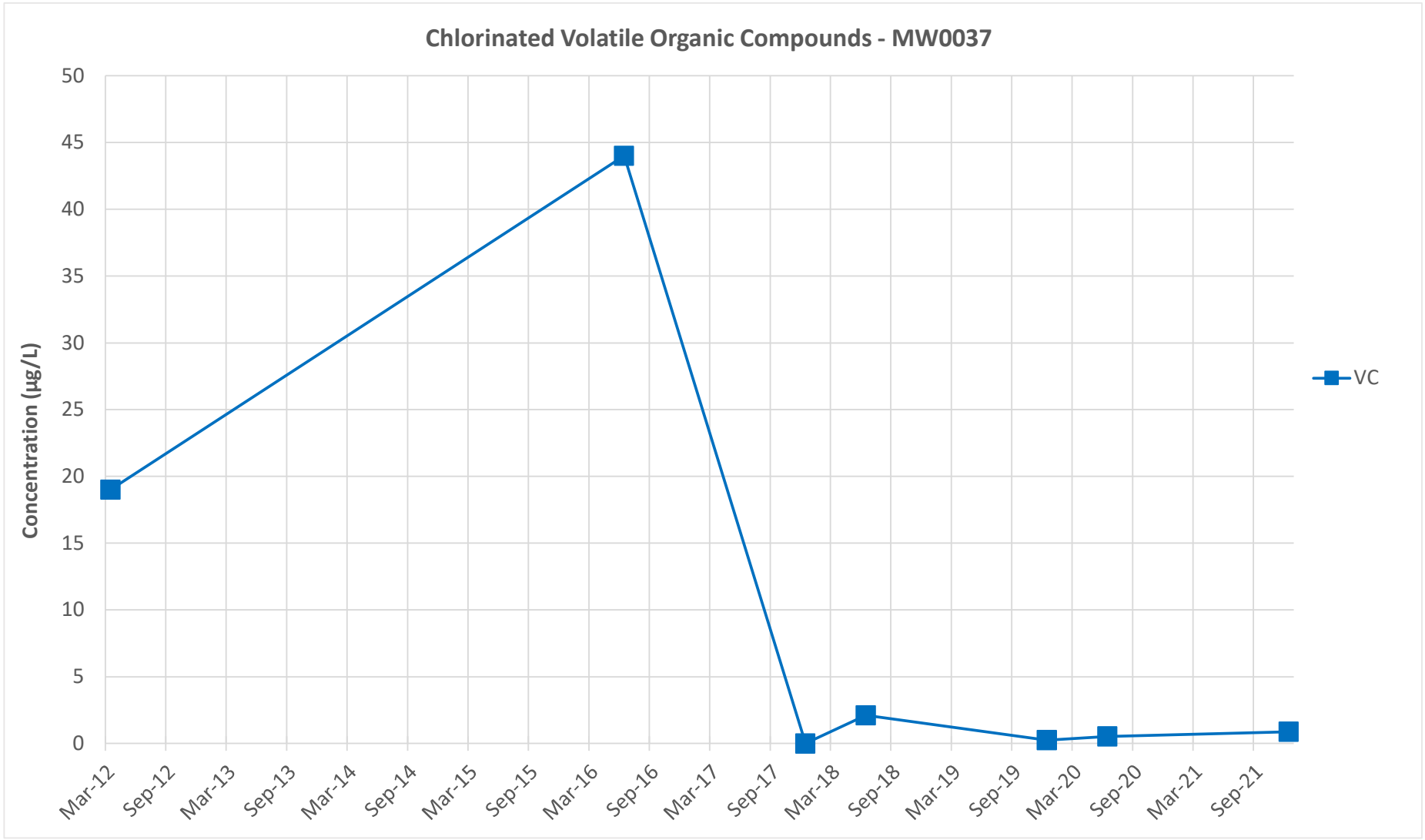

Chlorinated Volatile Organic Compounds - MW0032
TCE
cDCE
tDCE
VC
Concentration (µg/L)
1,000.0
100.0
10.0
1.0
0.1
0.0
Mar-12
Dec-12
Sep-13
Jun-14
Mar-15
Dec-15
Sep-16
Jun-17
Mar-18
Dec-18
Sep-19
Jun-20
Mar-21
Dec-21
Sep-22
Jun-23

Figure J-24
Northern Area
Interim Groundwater Monitoring Well




Chlorinated Volatile Organic Compounds - MW0035
Concentration (µg/L)
100
10
1
Mar-12
Sep-12
Mar-13
Sep-13
Mar-14
Sep-14
Mar-15
Sep-15
Mar-16
Sep-16
Mar-17
Sep-17
Mar-18
Sep-18
Mar-19
Sep-19
Mar-20
Sep-20
Mar-21
Sep-21
Mar-22
Sep-22
Mar-23
Sep-23
VC


Chlorinated Volatile Organic Compounds - MW0037
Concentration (µg/L)
50
45
40
35
30
25
20
15
10
5
0
Mar-12
Sep-12
Mar-13
Sep-13
Mar-14
Sep-14
Mar-15
Sep-15
Mar-16
Sep-16
Mar-17
Sep-17
Mar-18
Sep-18
Mar-19
Sep-19
Mar-20
Sep-20
Mar-21
Sep-21
VC

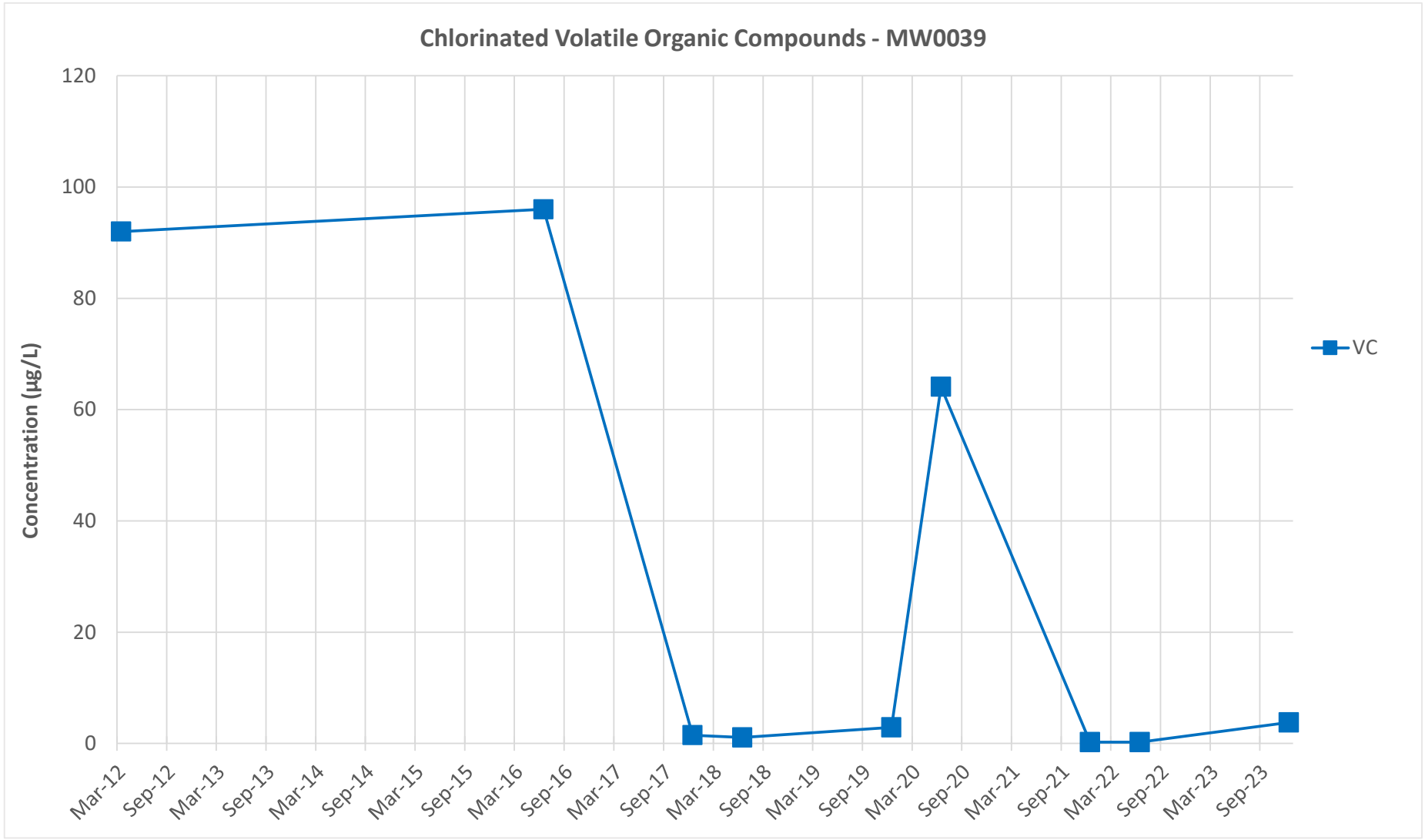
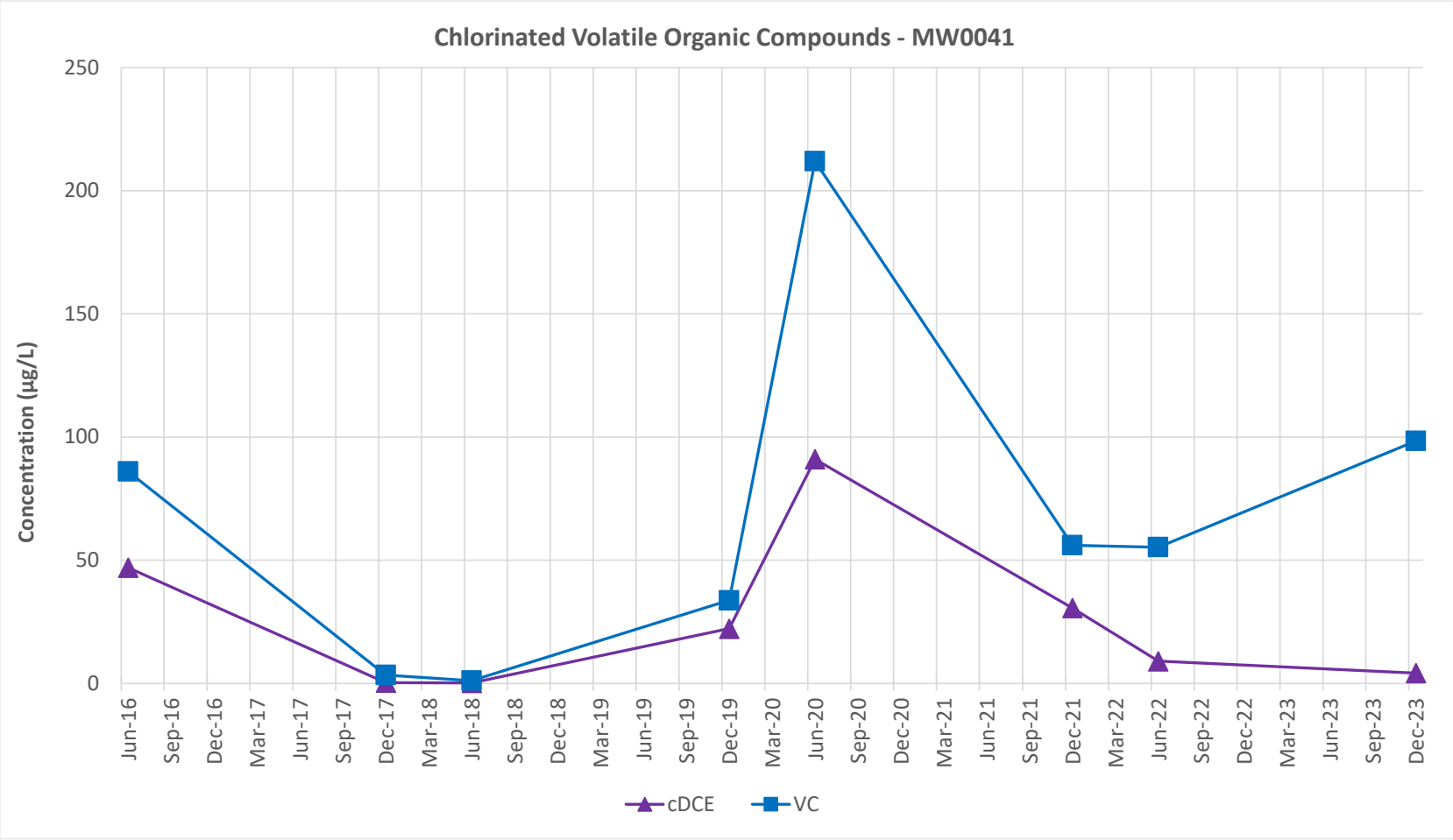
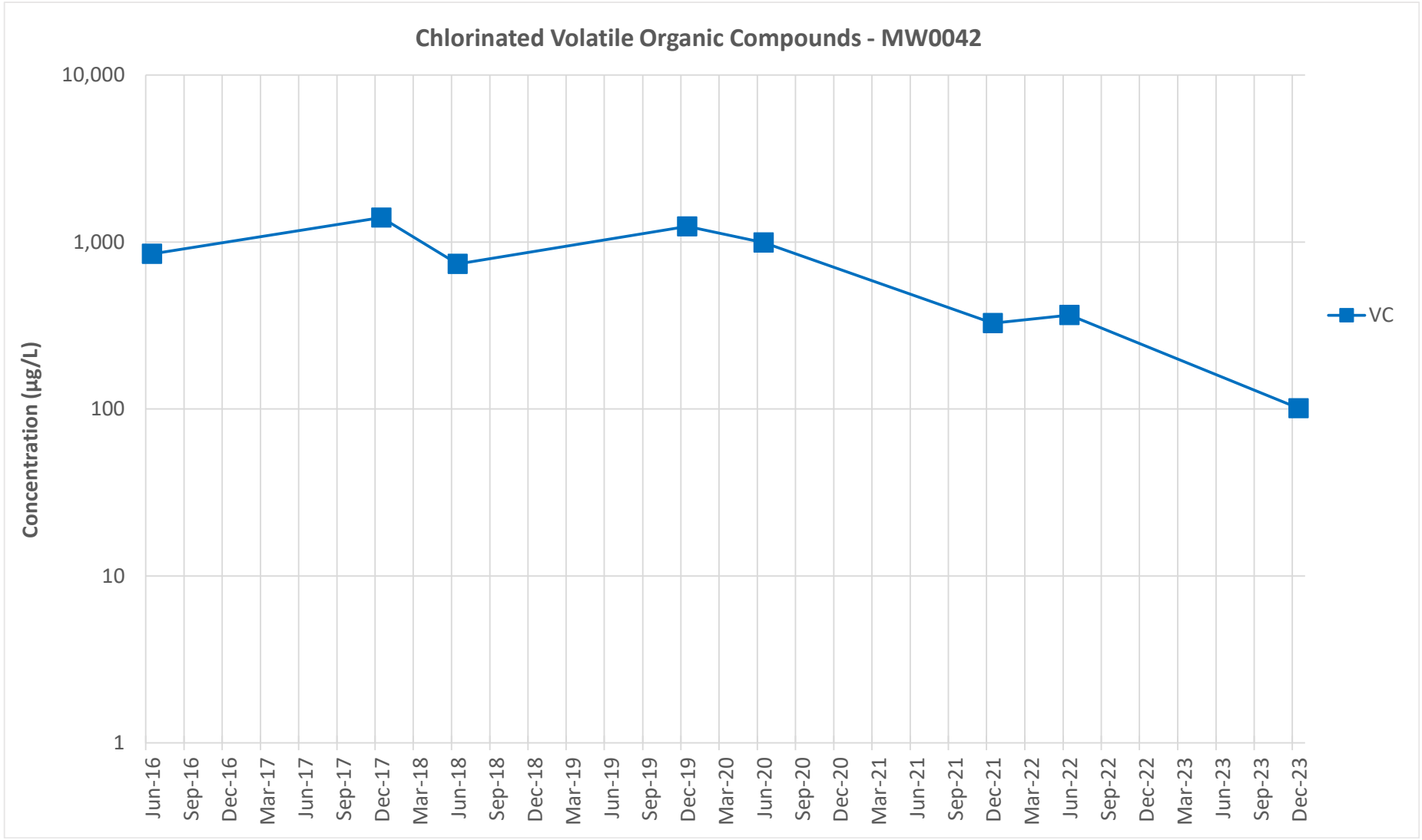

Chlorinated Volatile Organic Compounds - MW0039
Concentration (µg/L)
120
100
80
60
40
20
0
Mar-12
Sep-12
Mar-13
Sep-13
Mar-14
Sep-14
Mar-15
Sep-15
Mar-16
Sep-16
Mar-17
Sep-17
Mar-18
Sep-18
Mar-19
Sep-19
Mar-20
Sep-20
Mar-21
Sep-21
Mar-22
Sep-22
Mar-23
Sep-23
VC

Figure J-24
Northern Area
Interim Groundwater Monitoring Well




Chlorinated Volatile Organic Compounds - MW0042
Concentration (µg/L)
10,000
1,000
100
10
1
Jun-16
Sep-16
Dec-16
Mar-17
Jun-17
Sep-17
Dec-17
Mar-18
Jun-18
Sep-18
Dec-18
Mar-19
Jun-19
Sep-19
Dec-19
Mar-20
Jun-20
Sep-20
Dec-20
Mar-21
Jun-21
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Dec-21
Mar-22
Jun-22
Sep-22
Dec-22
Mar-23
Jun-23
Sep-23
Dec-23
VC

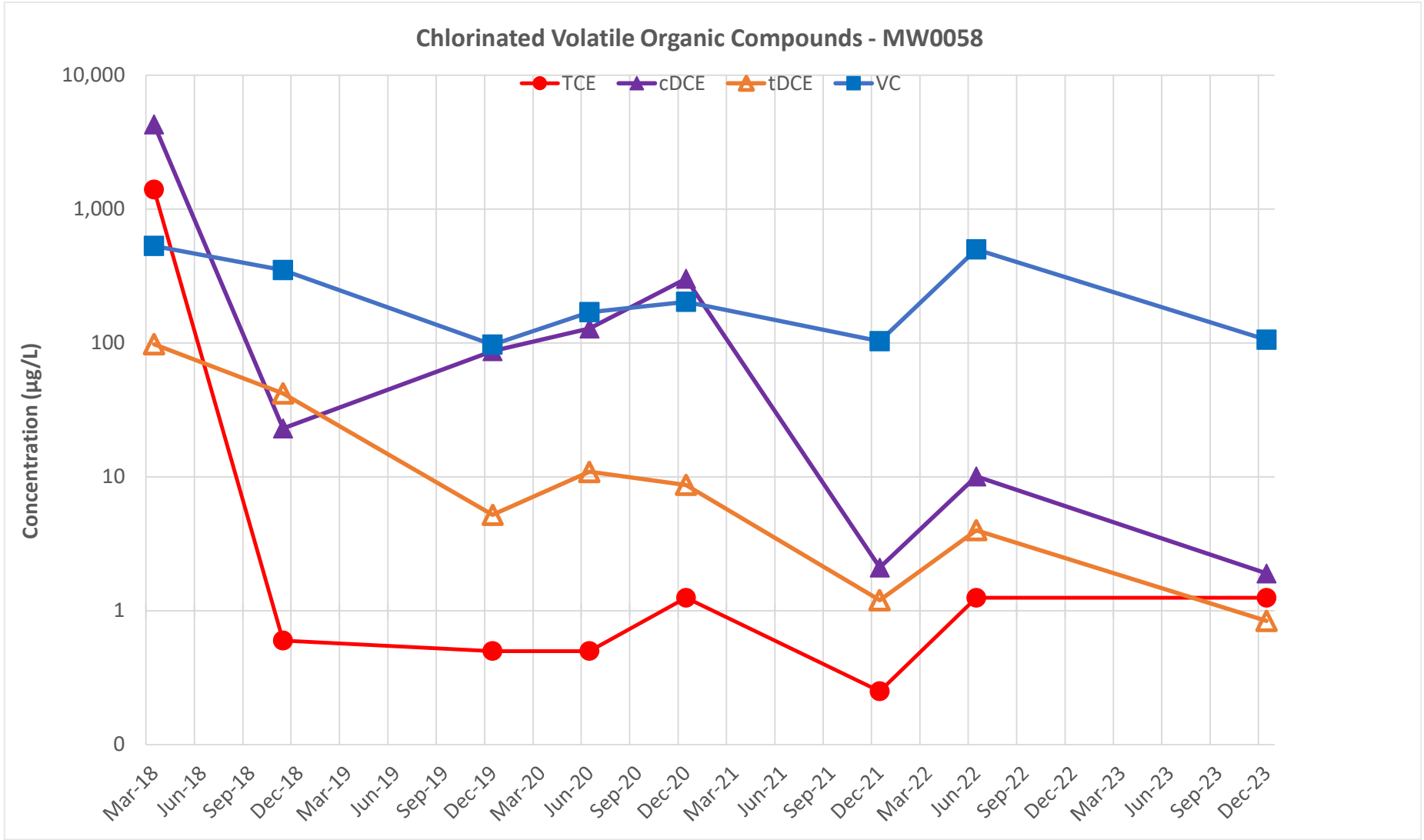
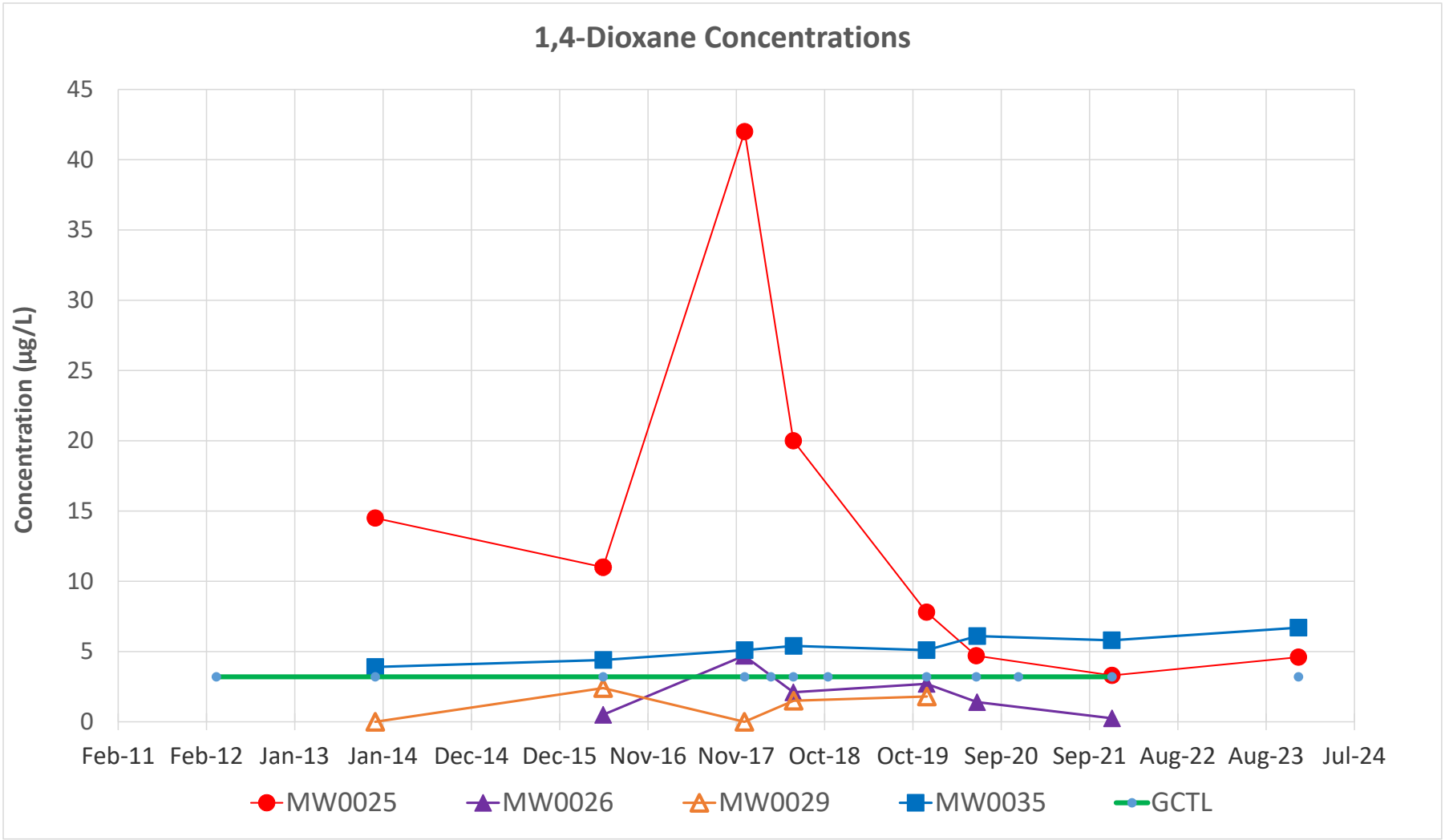

Chlorinated Volatile Organic Compounds - MW0058
TCE
cDCE
tDCE
VC
Concentration (µg/L)
10,000
1,000
100
10
1
0
Mar-18
Jun-18
Sep-18
Dec-18
Mar-19
Jun-19
Sep-19
Dec-19
Mar-20
Jun-20
Sep-20
Dec-20
Mar-21
Jun-21
Sep-21
Dec-21
Mar-22
Jun-22
Sep-22
Dec-22
Mar-23
Jun-23
Sep-23
Dec-23

Figure G-35
Interim Groundwater Monitoring Wells



APPENDIX E

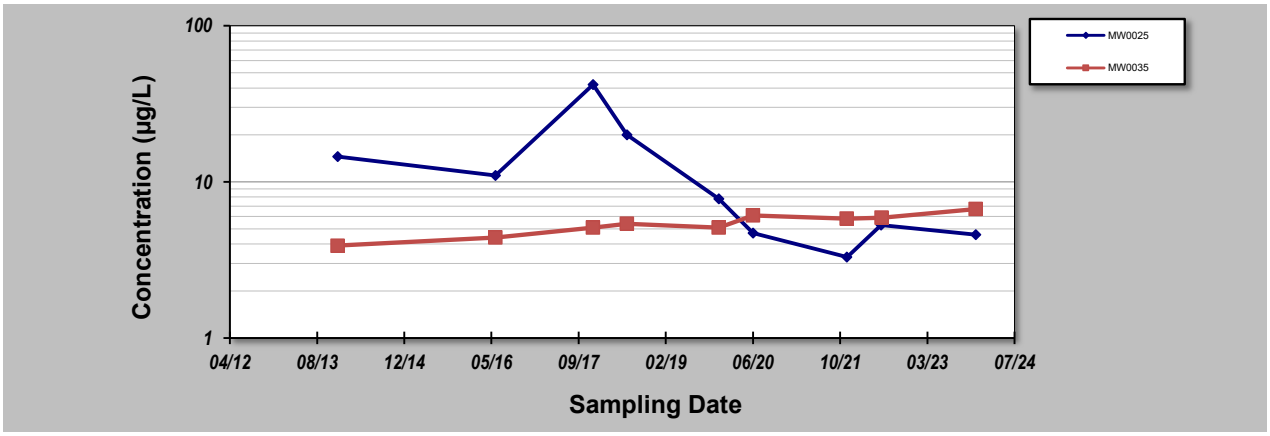
MANN-KENDALL CALCULATIONS
(ELECTRONIC ONLY)

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GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	28-Feb-24	Job ID:	CRHE IGM
Facility Name:	NASA KSC	Constituent:	1,4-Dioxane
Conducted By:	HGL	Concentration Units:	µg/L

Sampling Point ID:	MW0025	MW0035					
Sampling Event	Sampling Date	1,4-DIOXANE CONCENTRATION (µg/L)					
1	12/11/2013	14.5	3.9				
2	06/02/2016	11.0	4.4				
3	12/14/2017	42.0	5.1				
4	06/26/2018	20.0	5.4				
5	12/05/2019	7.8	5.1				
6	06/19/2020	4.7	6.1				
7	12/09/2021	3.3	5.8				
8	06/23/2022	5.3					
9	06/27/2022		5.9				
10	12/18/2023	4.6	6.7				
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
Coefficient of Variation:		0.98	0.16				
Mann-Kendall Statistic (S):		-22	29				
Confidence Factor:		98.8%	100.0%				
Concentration Trend:		Decreasing	Increasing				



Notes:

1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water*, 41(3):355-367, 2003.
4. Yellow highlighting indicates the result was a non-detect, and 1/2 of the detection limit was used.

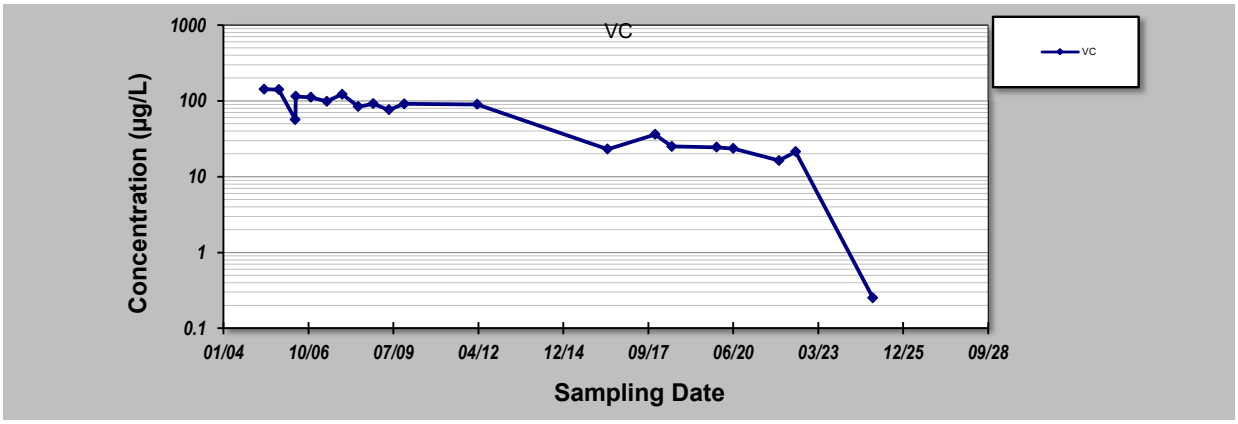
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GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	28-Feb-24	Job ID:	CRHE IGM
Facility Name:	NASA KSC	Constituent:	IW0017I
Conducted By:	HGL	Concentration Units:	µg/L

Sampling Point ID:	VC						

Sampling Event	Sampling Date	IW0017I CONCENTRATION (µg/L)						
1	05/06/2005	142						
2	10/27/2005	140						
3	05/09/2006	56						
4	05/15/2006	114						
5	11/07/2006	111						
6	05/16/2007	98						
7	11/12/2007	122						
8	05/20/2008	84						
9	11/10/2008	92						
10	05/15/2009	76						
11	11/10/2009	91						
12	03/20/2012	90						
13	06/01/2016	23						
14	12/12/2017	36						
15	06/26/2018	25						
16	12/6/2019	24.4						
17	6/19/2020	23.4						
18	12/9/2021	16.3						
19	23-Jun-22	21.3						
20	18-Dec-24	0.3						
21								
22								
23								
24								
25								
Coefficient of Variation:		0.65						
Mann-Kendall Statistic (S):		-146						
Confidence Factor:		>99.9%						
Concentration Trend:		Decreasing						



Notes:

1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water*, 41(3):355-367, 2003.
4. Yellow highlighting indicates the result was a non-detect, and 1/2 of the detection limit was used.

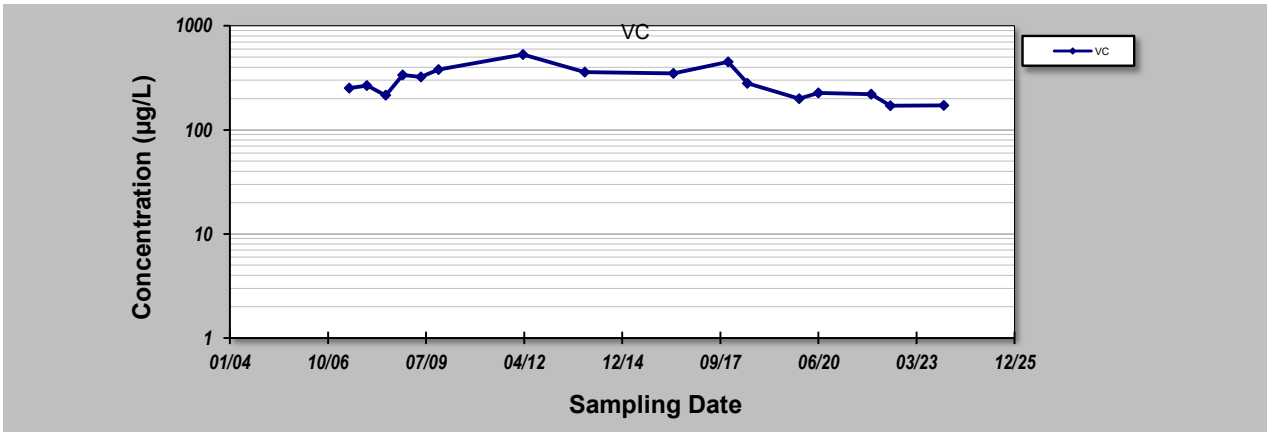
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GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	28-Feb-24	Job ID:	CRHE IGM
Facility Name:	NASA KSC	Constituent:	IW0019I
Conducted By:	HGL	Concentration Units:	µg/L

Sampling Point ID:	VC						

Sampling Event	Sampling Date	IW0019I CONCENTRATION (µg/L)						
1	05/16/2007	253						
2	11/12/2007	267						
3	05/20/2008	215						
4	11/11/2008	336						
5	05/15/2009	324						
6	11/10/2009	380						
7	03/20/2012	530						
8	12/11/2013	360						
9	06/01/2016	350						
10	12/12/2017	450						
11	06/26/2018	280						
12	12/06/2019	199						
13	06/19/2020	227						
14	12/09/2021	220						
15	06/23/2022	171						
16	12/18/2023	172						
17								
18								
19								
20								
Coefficient of Variation:		0.34						
Mann-Kendall Statistic (S):		-32						
Confidence Factor:		91.7%						
Concentration Trend:		Prob. Decreasing						



Notes:

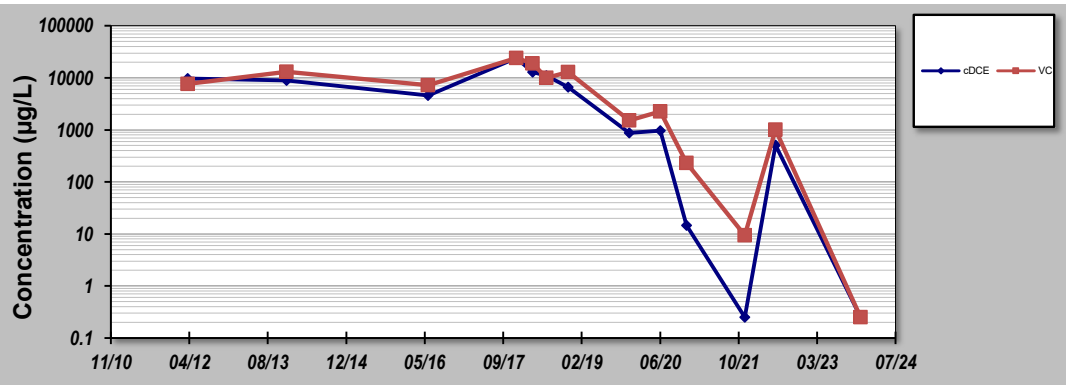
1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water*, 41(3):355-367, 2003.
4. Yellow highlighting indicates the result was a non-detect, and 1/2 of the detection limit was used.

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GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	28-Feb-24	Job ID:	CRHE IGM
Facility Name:	NASA KSC	Constituent:	MW0025
Conducted By:	HGL	Concentration Units:	µg/L

Sampling Point ID:	cDCE	VC					
Sampling Event	Sampling Date	MW0025 CONCENTRATION (µg/L)						
1	03/21/2012	9,700	7,600					
2	12/11/2013	8,900	13,100					
3	06/01/2016	4,600	7,200					
4	12/14/2017	24,000	24,000					
5	03/28/2018	13,000	19,000					
6	06/25/2018	11,000	10,000					
7	11/09/2018	6,600	13,000					
8	12/05/2019	871	1,520					
9	06/19/2020	972	2,260					
10	12/03/2020	14.5	231					
11	12/09/2021	0.3	9.4					
12	06/23/2022	514.0	1,010					
13	12/18/2023	0.25	0.25					
14								
15								
16								
17								
18								
19								
20								
Coefficient of Variation:		1.16	1.03					
Mann-Kendall Statistic (S):		-51	-48					
Confidence Factor:		100.0%	99.9%					
Concentration Trend:		Decreasing	Decreasing					



Notes:

1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water*, 41(3):355-367, 2003.
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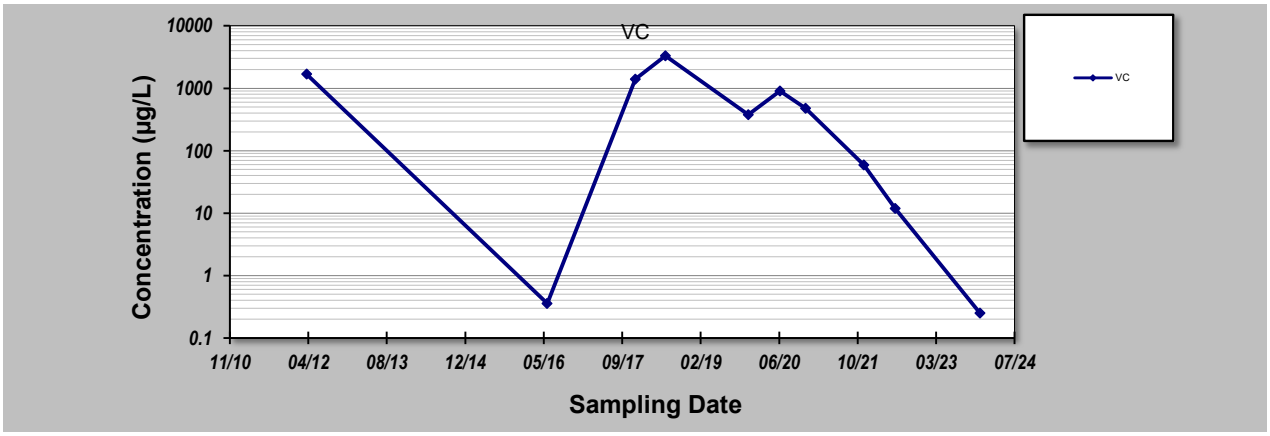
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GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	28-Feb-24	Job ID:	CRHE IGM
Facility Name:	NASA KSC	Constituent:	MW0027
Conducted By:	HGL	Concentration Units:	µg/L

Sampling Point ID:	VC						

Sampling Event	Sampling Date	MW0027 CONCENTRATION (µg/L)						
1	03/21/2012	1,700						
2	06/01/2016	0.4						
3	12/14/2017	1,400						
4	06/25/2018	3,300						
5	12/05/2019	377						
6	06/23/2020	904						
7	12/03/2020	479						
8	12/09/2021	59.5						
9	06/27/2022	11.9						
10	12/19/2023	0.25						
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								
Coefficient of Variation:		1.29						
Mann-Kendall Statistic (S):		-23						
Confidence Factor:		97.7%						
Concentration Trend:		Decreasing						



Notes:

1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water*, 41(3):355-367, 2003.
4. Yellow highlighting indicates the result was a non-detect, and 1/2 of the detection limit was used.

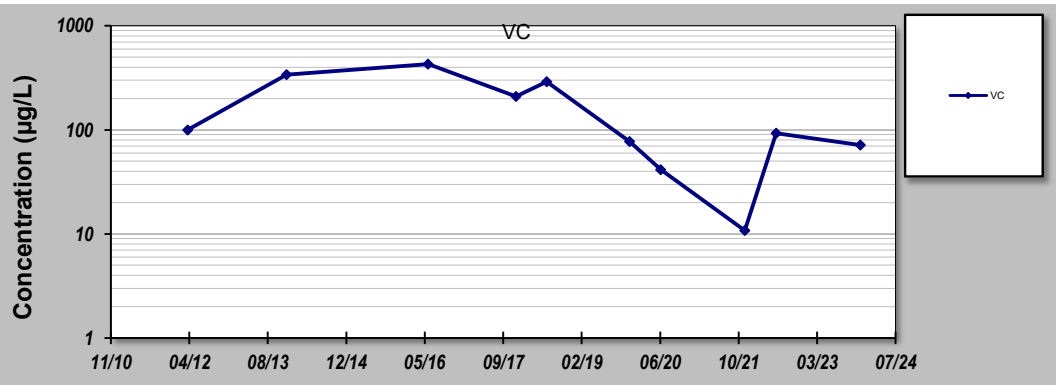
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GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	28-Feb-24	Job ID:	CRHE IGM
Facility Name:	NASA KSC	Constituent:	MW0029
Conducted By:	HGL	Concentration Units:	µg/L

Sampling Point ID: VC

Sampling Event	Sampling Date	MW0029 CONCENTRATION (µg/L)
1	03/21/2012	100
2	12/11/2013	339
3	06/01/2016	430
4	12/13/2017	210
5	06/26/2018	290
6	12/06/2019	77.1
7	06/22/2020	41.4
8	12/09/2021	10.8
9	06/27/2022	92.8
10	12/15/2023	71.3
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		
Coefficient of Variation:		0.86
Mann-Kendall Statistic (S):		-23
Confidence Factor:		97.7%
Concentration Trend:		Decreasing



Notes:

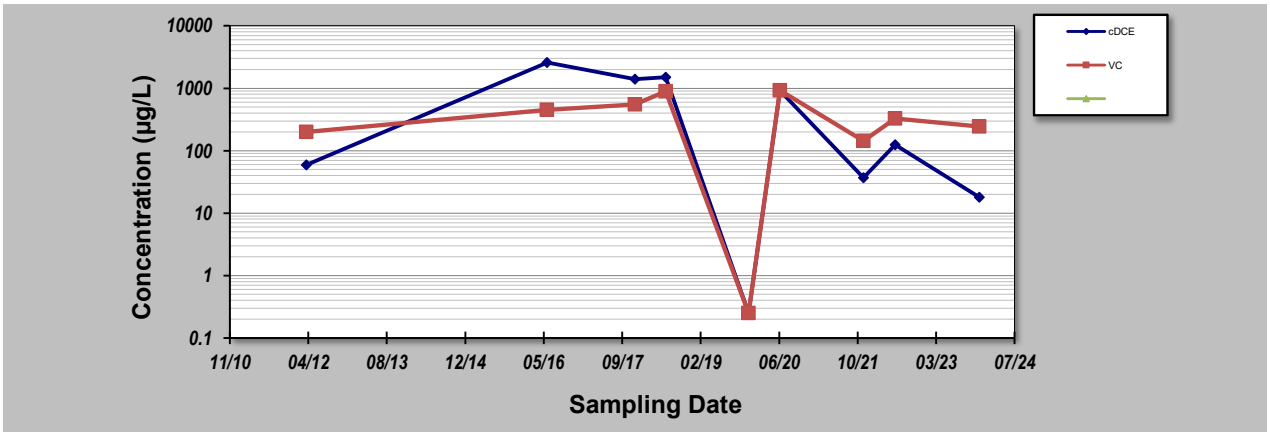
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GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	28-Feb-24	Job ID:	CRHE IGM
Facility Name:	NASA KSC	Constituent:	MW0031
Conducted By:	HGL	Concentration Units:	µg/L

Sampling Point ID:	cDCE	VC					
Sampling Event	Sampling Date	MW0031 CONCENTRATION (µg/L)						
1	03/19/2012	59	200					
2	06/01/2016	2,600	450					
3	12/13/2017	1,400	550					
4	06/26/2018	1,500	890					
5	12/06/2019	0.3	0.3					
6	06/23/2020	915	931					
7	12/08/2021	37.1	143					
8	06/27/2022	125	329					
9	12/15/2023	18	245					
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20								
Coefficient of Variation:		1.26	0.78					
Mann-Kendall Statistic (S):		-14	0					
Confidence Factor:		91.0%	46.0%					
Concentration Trend:		Prob. Decreasing	Stable					



Notes:

1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water*, 41(3):355-367, 2003.
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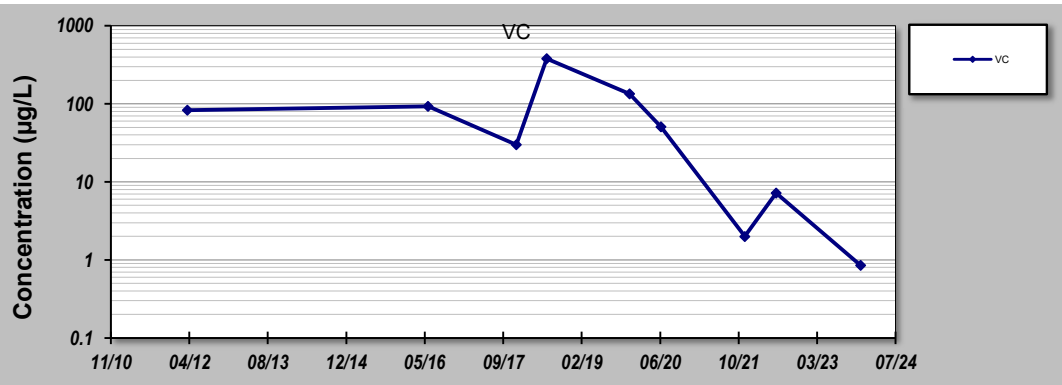
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GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	28-Feb-24	Job ID:	CRHE IGM
Facility Name:	NASA KSC	Constituent:	MW0032
Conducted By:	HGL	Concentration Units:	µg/L

Sampling Point ID: VC

Sampling Event	Sampling Date	MW0032 CONCENTRATION (µg/L)
1	03/19/2012	83
2	06/01/2016	93
3	12/14/2017	30
4	06/26/2018	380
5	12/06/2019	135
6	06/23/2020	50.8
7	12/09/2021	2.0
8	06/27/2022	7.2
9	12/18/2023	0.85
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Coefficient of Variation:		1.37
Mann-Kendall Statistic (S):		-18
Confidence Factor:		96.2%
Concentration Trend:		Decreasing



Notes:

1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water*, 41(3):355-367, 2003.
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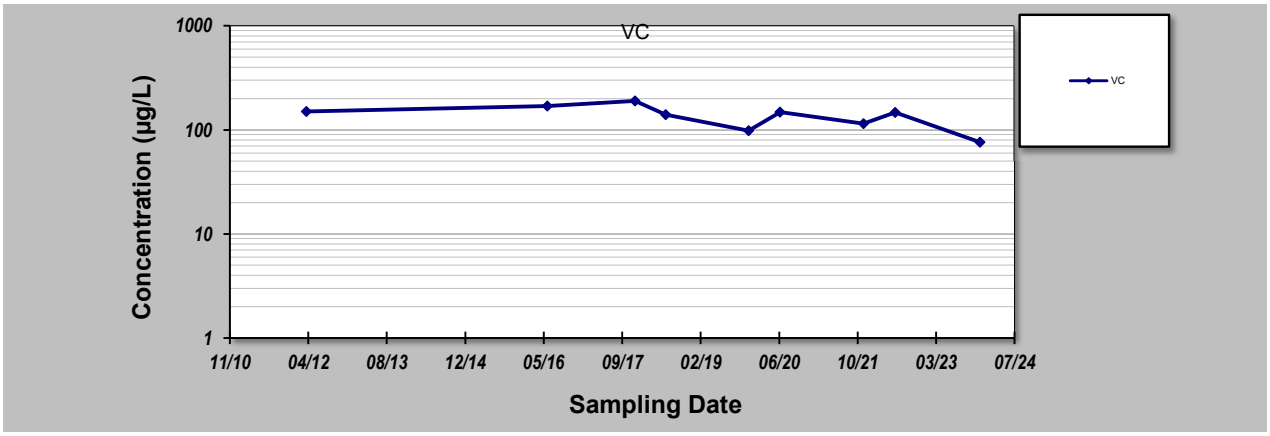
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GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	28-Feb-24	Job ID:	CRHE IGM
Facility Name:	NASA KSC	Constituent:	MW0034
Conducted By:	HGL	Concentration Units:	µg/L

Sampling Point ID:	VC						

Sampling Event	Sampling Date	MW0034 CONCENTRATION (µg/L)						
1	03/20/2012	150						
2	06/02/2016	170						
3	12/13/2017	190						
4	06/26/2018	140						
5	12/06/2019	98.5						
6	06/24/2020	148						
7	12/08/2021	115						
8	06/28/2022	147						
9	12/19/2023	76.1						
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20								
Coefficient of Variation:		0.26						
Mann-Kendall Statistic (S):		-18						
Confidence Factor:		96.2%						
Concentration Trend:		Decreasing						



Notes:

1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water*, 41(3):355-367, 2003.
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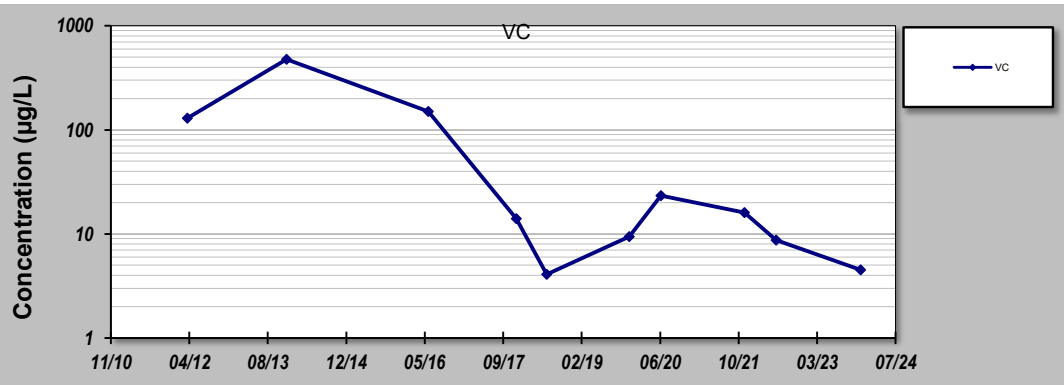
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GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	28-Feb-24	Job ID:	CRHE IGM
Facility Name:	NASA KSC	Constituent:	MW0035
Conducted By:	HGL	Concentration Units:	µg/L

Sampling Point ID: VC

Sampling Event	Sampling Date	MW0035 CONCENTRATION (µg/L)
1	03/20/2012	130
2	12/11/2013	477
3	06/02/2016	150
4	12/14/2017	14
5	06/26/2018	4.1
6	12/05/2019	9.4
7	06/23/2020	23.4
8	12/08/2021	16.0
9	06/27/2022	8.7
10	12/18/2023	4.5
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Coefficient of Variation:		1.77
Mann-Kendall Statistic (S):		-23
Confidence Factor:		97.7%
Concentration Trend:		Decreasing



Notes:

1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water*, 41(3):355-367, 2003.
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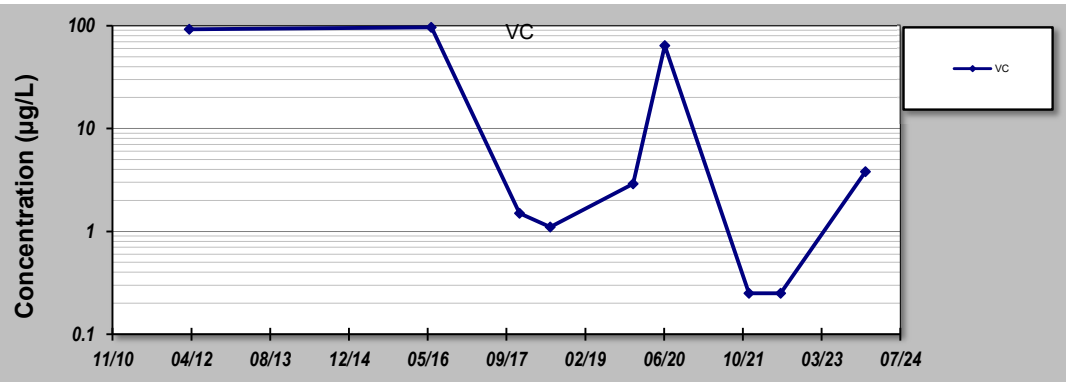
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GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	28-Feb-24	Job ID:	CRHE IGM
Facility Name:	NASA KSC	Constituent:	MW0047
Conducted By:	HGL	Concentration Units:	µg/L

Sampling Point ID: VC

Sampling Event	Sampling Date	MW0047 CONCENTRATION (µg/L)
1	03/19/2012	92
2	06/02/2016	96
3	12/13/2017	2
4	06/26/2018	1
5	12/05/2019	3
6	06/23/2020	64
7	12/08/2021	0.3
8	06/27/2022	0.3
9	12/19/2023	3.8
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Coefficient of Variation:		1.45
Mann-Kendall Statistic (S):		-13
Confidence Factor:		89.0%
Concentration Trend:		No Trend



Notes:

1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water*, 41(3):355-367, 2003.
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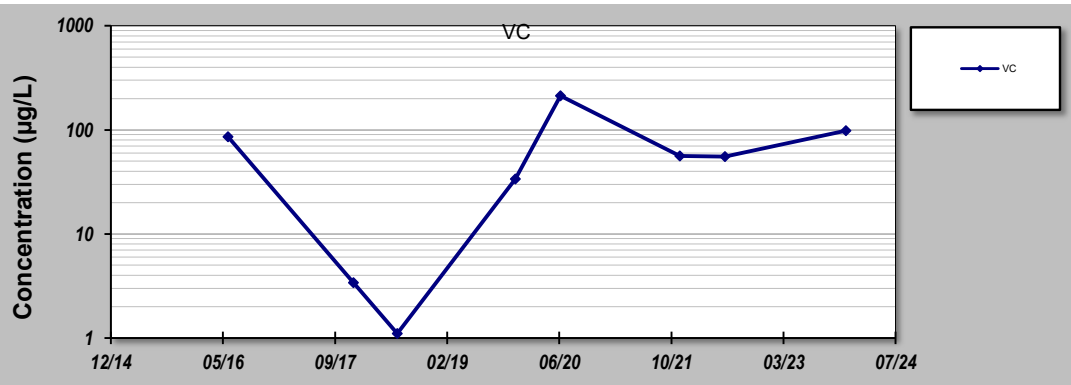
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GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	28-Feb-24	Job ID:	CRHE IGM
Facility Name:	NASA KSC	Constituent:	MW0041
Conducted By:	HGL	Concentration Units:	µg/L

Sampling Point ID: VC

Sampling Event	Sampling Date	MW0041 CONCENTRATION (µg/L)
1	06/02/2016	86
2	12/13/2017	3.4
3	06/26/2018	1.1
4	12/05/2019	33.7
5	06/23/2020	212
6	12/08/2021	56.1
7	06/27/2022	55.3
8	12/19/2023	98.4
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Coefficient of Variation:		0.99
Mann-Kendall Statistic (S):		8
Confidence Factor:		80.1%
Concentration Trend:		No Trend



Notes:

1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water*, 41(3):355-367, 2003.
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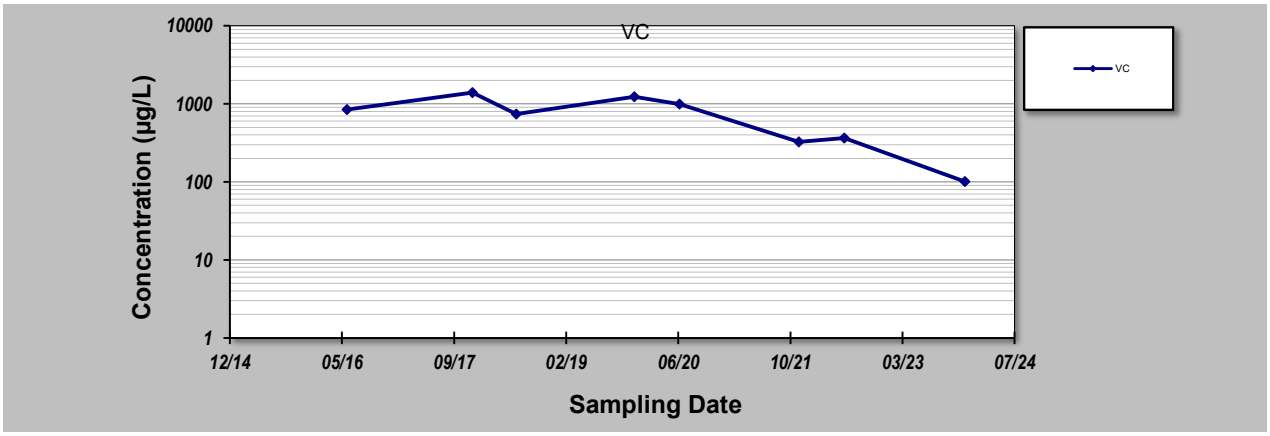
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GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	28-Feb-24	Job ID:	CRHE IGM
Facility Name:	NASA KSC	Constituent:	MW0042
Conducted By:	HGL	Concentration Units:	µg/L

Sampling Point ID:	VC						

Sampling Event	Sampling Date	MW0042 CONCENTRATION (µg/L)						
1	06/02/2016	850						
2	12/13/2017	1,400						
3	06/26/2018	740						
4	12/05/2019	1240						
5	06/24/2020	994						
6	12/08/2021	327						
7	06/28/2022	366						
8	12/19/2023	101						
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20								
Coefficient of Variation:		0.61						
Mann-Kendall Statistic (S):		-16						
Confidence Factor:		96.9%						
Concentration Trend:		Decreasing						



Notes:

1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water*, 41(3):355-367, 2003.
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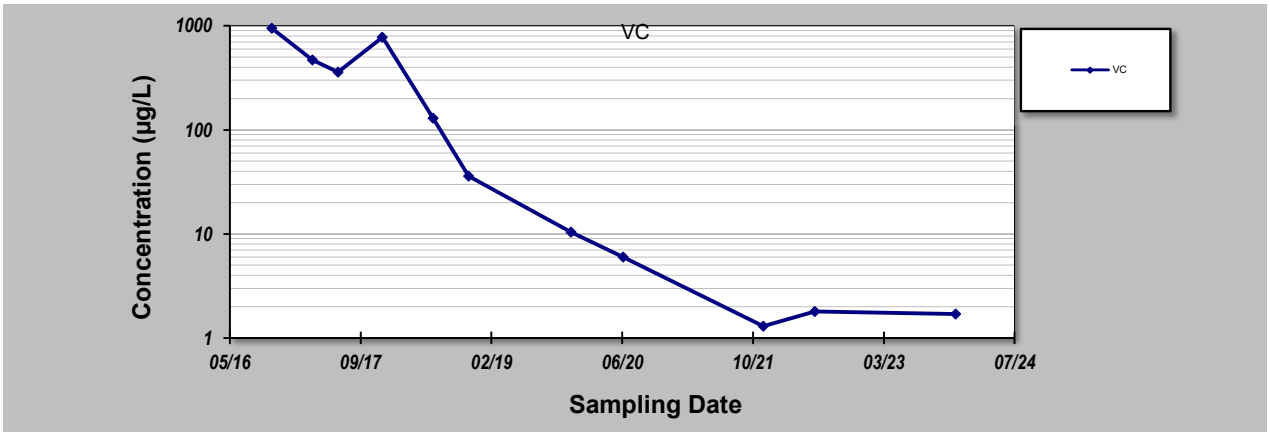
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GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	28-Feb-24	Job ID:	CRHE IGM
Facility Name:	NASA KSC	Constituent:	MW0047
Conducted By:	HGL	Concentration Units:	µg/L

Sampling Point ID: VC

Sampling Event	Sampling Date	MW0047 CONCENTRATION (µg/L)
1	10/18/2016	950
2	03/22/2017	470
3	06/28/2017	360
4	12/14/2017	780
5	06/26/2018	130
6	11/09/2018	36
7	12/05/2019	10.4
8	06/22/2020	6.0
9	12/09/2021	1.3
10	06/24/2022	1.8
11	12/15/2023	1.7
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Coefficient of Variation:		1.38
Mann-Kendall Statistic (S):		-47
Confidence Factor:		>99.9%
Concentration Trend:		Decreasing



Notes:

1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water*, 41(3):355-367, 2003.
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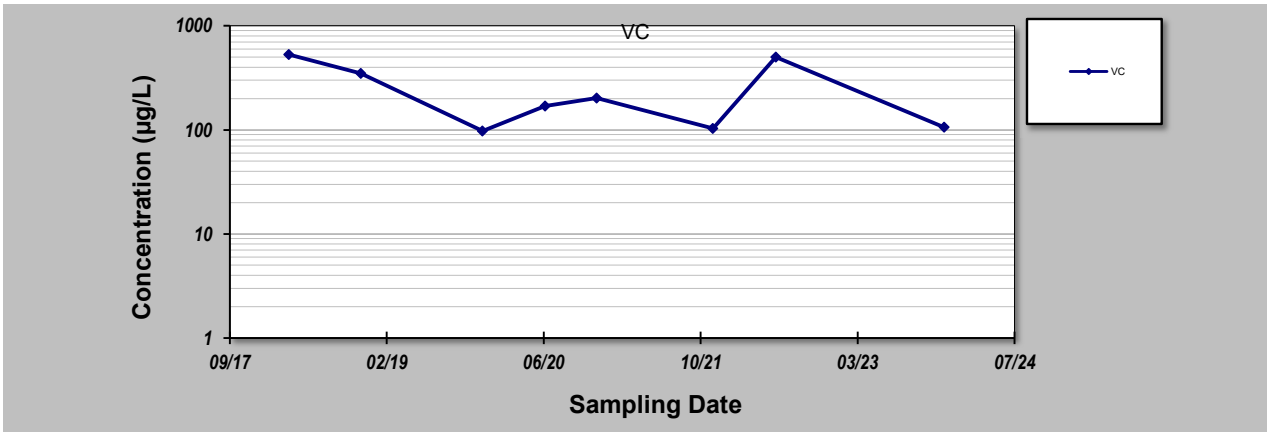
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GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	28-Feb-24	Job ID:	CRHE IGM
Facility Name:	NASA KSC	Constituent:	MW0058
Conducted By:	HGL	Concentration Units:	µg/L

Sampling Point ID: VC

Sampling Event	Sampling Date	MW0058 CONCENTRATION (µg/L)
1	03/29/2018	530
2	11/13/2018	350
3	12/06/2019	97.3
4	06/22/2020	170
5	12/03/2020	203
6	12/09/2021	103
7	06/27/2022	500
8	12/15/2023	106
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Coefficient of Variation:		0.70
Mann-Kendall Statistic (S):		-6
Confidence Factor:		72.6%
Concentration Trend:		Stable



Notes:

1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water*, 41(3):355-367, 2003.
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