SUPPLY WAREHOUSE #3, SWMU 088
OPERATIONS, MAINTENANCE, AND MONITORING REPORT
KENNEDY SPACE CENTER, FLORIDA

Prepared for:

National Aeronautics and Space Administration
Kennedy Space Center, Florida

December 2016
Revision 0

Prepared by:

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Environmental Assurance Branch
National Aeronautics and Space Administration
John F. Kennedy Space Center
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December 2016

PROFESSIONAL ENGINEER CERTIFICATION

This Operations, Maintenance, and Monitoring Report for Supply Warehouse #3, SWMU 088, Kennedy Space Center, Florida, dated December 2016, has been prepared by or under the responsible supervision, direction, or control of the Florida-licensed professional engineer whose signature and seal appear below.

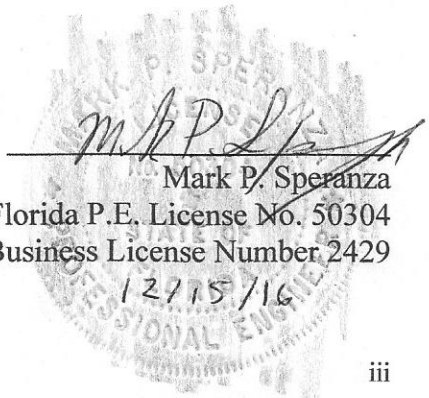

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TABLE OF CONTENTS

TABLE OF CONTENTS (Continued)

LIST OF TABLES

LIST OF ILLUSTRATIONS

LIST OF APPENDICES

ABBREVIATIONS AND ACRONYMS

11DCE	1,1-dichloroethene
ADP	advanced data package
ARZ	Active Remediation Zone
AS	air sparging
bls	below land surface
cDCE	cis-1,2-dichloroethene
CMD	Corrective Measures Design
CMI	Corrective Measures Implementation
CMO	corrective measures objective
CM&S	Communications, Maintenance, and Storage
COC	contaminant of concern
CVOC	chlorinated volatile organic compound
DO	dissolved oxygen
DPT	direct-push technology
ENCO	Environmental Conservation Laboratories
eV	electron volt
F.A.C.	Florida Administrative Code
FDEP	Florida Department of Environmental Protection
GCTL	Groundwater Cleanup Target Level
HMI	human-machine interface
IDIQ	Indefinite Delivery Indefinite Quantity
KSC	Kennedy Space Center
KSCRT	Kennedy Space Center Remediation Team
LCP	Low-Concentration Plume
mg/L	milligram per liter
MNA	monitored natural attenuation
NADC	Natural Attenuation Default Concentration
NASA	National Aeronautics and Space Administration

NGVD29	North Geodetic Vertical Datum of 1929
NELAC	National Environmental Laboratory Accreditation Council
O&M	operation and maintenance
OM&M	Operations, Maintenance, and Monitoring
OMMR	Operations, Maintenance, and Monitoring Report
PID	photoionization detector
POL	Paint and Oil Locker
psi	pound per square inch
RCRA	Resource Conservation and Recovery Act
RFI	RCRA Facility Investigation
ROI	radius of influence
SAP	Sampling and Analysis Plan
scfm	standard cubic foot per minute
SW3	Supply Warehouse #3
SWCTL	Surface Water Cleanup Target Level
SWMU	Solid Waste Management Unit
TCE	trichloroethene
tDCE	trans-1,2-dichloroethene
TO	Task Order
µg/L	microgram per liter
VC	vinyl chloride
VMF	Vehicle Maintenance Facility
VOC	volatile organic compound

EXECUTIVE SUMMARY

This document presents the findings, observations, and results associated with Operations, Maintenance, and Monitoring (OM&M) activities of Corrective Measures Implementation (CMI) activities conducted at Supply Warehouse #3 (SW3) located at John F. Kennedy Space Center (KSC), Florida from October 8, 2015, to September 12, 2016, and performance monitoring results for semi-annual sampling events conducted in March and September 2016. The primary objective of SW3 CMI is to actively decrease concentrations of trichloroethene (TCE) and vinyl chloride (VC) to less than Florida Department of Environmental Protection (FDEP) Natural Attenuation Default Concentrations (NADCs), and the secondary objective is to reduce TCE, cis-1,2-dichloroethene (cDCE), trans-1,2-dichloroethene (tDCE), 1,1-dichloroethene (11DCE), and VC concentrations to less than FDEP Groundwater Cleanup Target Levels (GCTLs). The SW3 facility has been designated Solid Waste Management Unit (SWMU) 088 under KSC's Resource Conservation and Recovery Act (RCRA) Corrective Action Program.

Based on the results to date, the SW3 air sparging (AS) system is operating at or below the performance criteria as presented in the 2008 SW3 Corrective Measures Implementation (CMI) Work Plan and 2009 and 2012 CMI Work Plan Addenda. Since the start of AS system operations on December 19, 2012, through the September 2016 groundwater sampling event, TCE concentrations have decreased to less than the GCTL in all wells within the Active Remediation Zone (ARZ), and VC results remain less than NADC but greater than GCTL. Based on these results, team consensus was reached at the October 2016 KSC Remediation Team (KSCRT) meeting to continue AS system operations and semi-annual performance monitoring of volatile organic compoundsS in March 2017 at ten monitoring wells at select locations, and in September 2017 at four monitoring wells at select locations to reduce VC concentrations to below GCTL. Additionally, surface water samples will be collected at locations SW0001, SW0002, and SW0003 during both the March and September 2017 events. Team consensus was also reached at the October 2017 KSCRT meeting to continue with operation and maintenance (O&M) of the AS system at SW3.

SECTION I

INTRODUCTION

The purpose of this Operations, Maintenance, and Monitoring (OM&M) Report (OMMR) is to present the actions taken and results obtained from October 2015 through September 2016 during implementation of corrective measures conducted in accordance with the Corrective Measures Implementation (CMI) Work Plan (NASA, 2008), Site-Specific Health and Safety Plan (NASA, 2012a), and CMI Work Plan Addenda (NASA, 2009 and 2012b) for Supply Warehouse #3 (SW3).

The 2012 CMI Work Plan Addendum was prepared based on the CMI Semi-Annual Performance Report (NASA, 2011b) and CMI revised Active Remediation Zone (ARZ) Air Sparging (AS) Expansion advance data package (ADP) presented to the John F. Kennedy Space Center (KSC) Remediation Team (KSCRT) in May 2011, which identified implementation of AS for remediation of vinyl chloride (VC) at concentrations greater than 10 times the Florida Department of Environmental Protection (FDEP) Natural Attenuation Default Concentration (NADC) and monitored natural attenuation (MNA) for remediation of trichloroethene (TCE), cis-1,2-dichloroethene (cDCE), trans-1,2-dichloroethene (tDCE), 1,1-dichloroethene (11DCE), and VC concentrations greater than applicable corrective measures objectives (CMOs) (Meeting Minute 1105-M10, Decision 1105-D27; see Appendix A).

This OMMR was prepared by Tetra Tech, Inc., under National Aeronautics and Space Administration (NASA) Indefinite Delivery Indefinite Quantity (IDIQ) Contract NNK12CA15B/NNK15CA24T, Task Order (TO) 12. SW3 has been designated Solid Waste Management Unit (SWMU) 088 under KSC's Resource Conservation and Recovery Act (RCRA) Corrective Action Program. Operations, maintenance, and monitoring (OM&M) activities include monthly flow, pressure, and run time meter readings; AS system trailer maintenance and repair (as needed); and groundwater sampling. OM&M activities performed by Tetra Tech from October 2015 through September 2016 are included in this OMMR.

1.1 REPORT ORGANIZATION

Section 1 of this OMMR provides an introduction to the project, description of the location and history of SW3, and rationale for OM&M. Section 2 describes a brief description of the AS system, and Section 3 describes the field activities conducted during the OM&M. Section 4 presents the results of the OM&M, and Section 5 provides conclusions and recommendations based on the results of OM&M at SW3. References are provided in Section 6.

1.2 SITE LOCATION

KSC is located on the northern portion of Merritt Island, between the Indian and Banana Rivers in Brevard County, Florida. The SW3 facility is located in the KSC Industrial Area, south of 4th Street and east of B Avenue (Figures 1-1 and 1-2). The SW3 site encompasses an area of approximately 12 acres, including the SW3 Building (M6-891) and the area south of 5th Street.

1.3 SITE DESCRIPTION

SW3 is bounded to the east by the Paint and Oil Locker (POL) facility, to the south by a former polishing pond, to the west by an undeveloped area, to the north by the Communications, Maintenance, and Storage (CM&S) facility, and to the northwest by the Vehicle Maintenance Facility (VMF). SW3 and immediately adjacent areas are shown on Figure 1-2. The SW3 Building, constructed in 1967, is used for storage of drywall, door frames, and other building materials.

1.4 CONTAMINANTS OF CONCERN

The August 2007 Corrective Measures Design (CMD) Report identified the contaminants of concern (COCs) as TCE, cDCE, 1,1-DCE, and VC based on groundwater sampling results from approximately 15 to 45 feet below land surface (bls) included in the RCRA Facility Investigation (RFI) (NASA, 2005), where these chlorinated volatile organic compounds (CVOCs) were

present at concentrations greater than FDEP Groundwater Cleanup Target Levels (GCTLs). Currently, only TCE and VC at detected at concentrations exceeding the GCTLs.

1.5 REMEDIAL APPROACH

AS, which delivers air to the subsurface and provides in-situ treatment of CVOCs via volatilization, was selected as the remedial action technology for SW3 in accordance with the CMD (NASA, 2007). A 15- to 50-foot radius of influence (ROI) from AS wells has been observed at SW3 in nearby monitoring wells and surface water. The AS system is a mobile unit (Mobile AS Unit No. 1) designed to meet air flow and injection pressure requirements for SW3. To meet pressure and flow requirements, the original design included operation in two zones running in parallel. Additional direct-push technology (DPT) delineation in 2011 identified a VC Hot Spot north of monitoring well MW0008 (NASA, 2011b), a third zone was added in 2012 to expand the system south of 5th Street to address this Hot Spot, and this zone operates in series with Zone 2 (NASA, 2013).

1.6 CORRECTIVE MEASURES OBJECTIVE

The CMO is to reduce concentrations of COCs (TCE, cDCE, tDCE, 11DCE, and VC) in groundwater at SW3 to the GCTLs set forth in Chapter 62-777 of the Florida Administrative Code (F.A.C.) (FDEP, 2005). The CMO for this site will be achieved in two phases, with the Phase I goal to reduce ARZ TCE and VC concentrations to less than NADCs (300 and 100 microgram per liter [µg/L], respectively) and the Phase II goal to achieve GCTLs for all COCs.

AS was selected for remediation of the ARZ, which was defined in the CMD (NASA, 2007) as the area with concentrations of TCE in excess of the NADC (300 µg/L) and VC concentrations in excess of 10 times the NADC (1,000 µg/L) and present from approximately 15 to 45 feet bls. The ARZ was expanded in May 2009 based on DPT groundwater sampling results identifying an area south of the original ARZ with VC concentrations exceeding 10 times the NADC (NASA, 2009). An additional ARZ, the revised ARZ, was defined in May 2011 based on DPT results

identifying an area south of 5th Street with VC concentrations exceeding 10 times the NADC and presented in the CMI Semi-Annual Performance Report and Work Plan Addendum (NASA, 2011b). As stated in the 2007 CMD, MNA was selected as the remedy for the Low-Concentration Plume (LCP), defined by TCE, cDCE, tDCE, 11DCE, and VC exceedances of GCTLs outside of the ARZs. The CMO for SW3 groundwater is divided into two phases, as presented below.

Contaminant of Concern	Phase I CMO (µg/L)	Phase II CMO (µg/L)
TCE	300	3
cDCE	NA	70
tDCE	NA	100
11DCE	NA	7
VC	NA	1

NA – Not applicable.

The ARZs and LCP are presented along with SW3 performance monitoring sampling locations on Figure 1-3.

FIGURE 1-1 SUPPLY WAREHOUSE #3 LOCATION MAP

SWMU 088, KENNEDY SPACE CENTER, FLORIDA

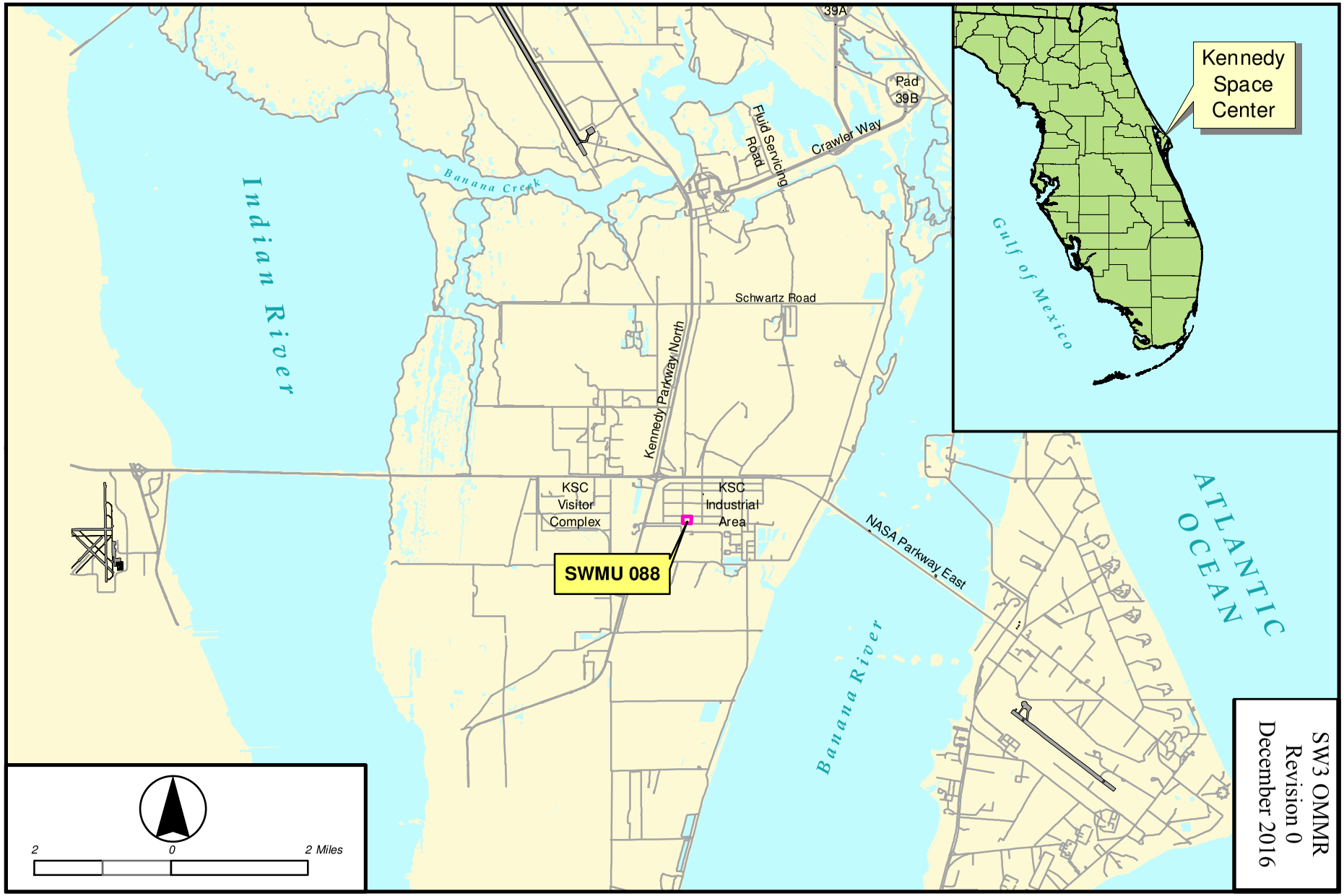

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FIGURE 1-2 SURROUNDING SITE MAP
SWMU 088, KENNEDY SPACE CENTER, FLORIDA

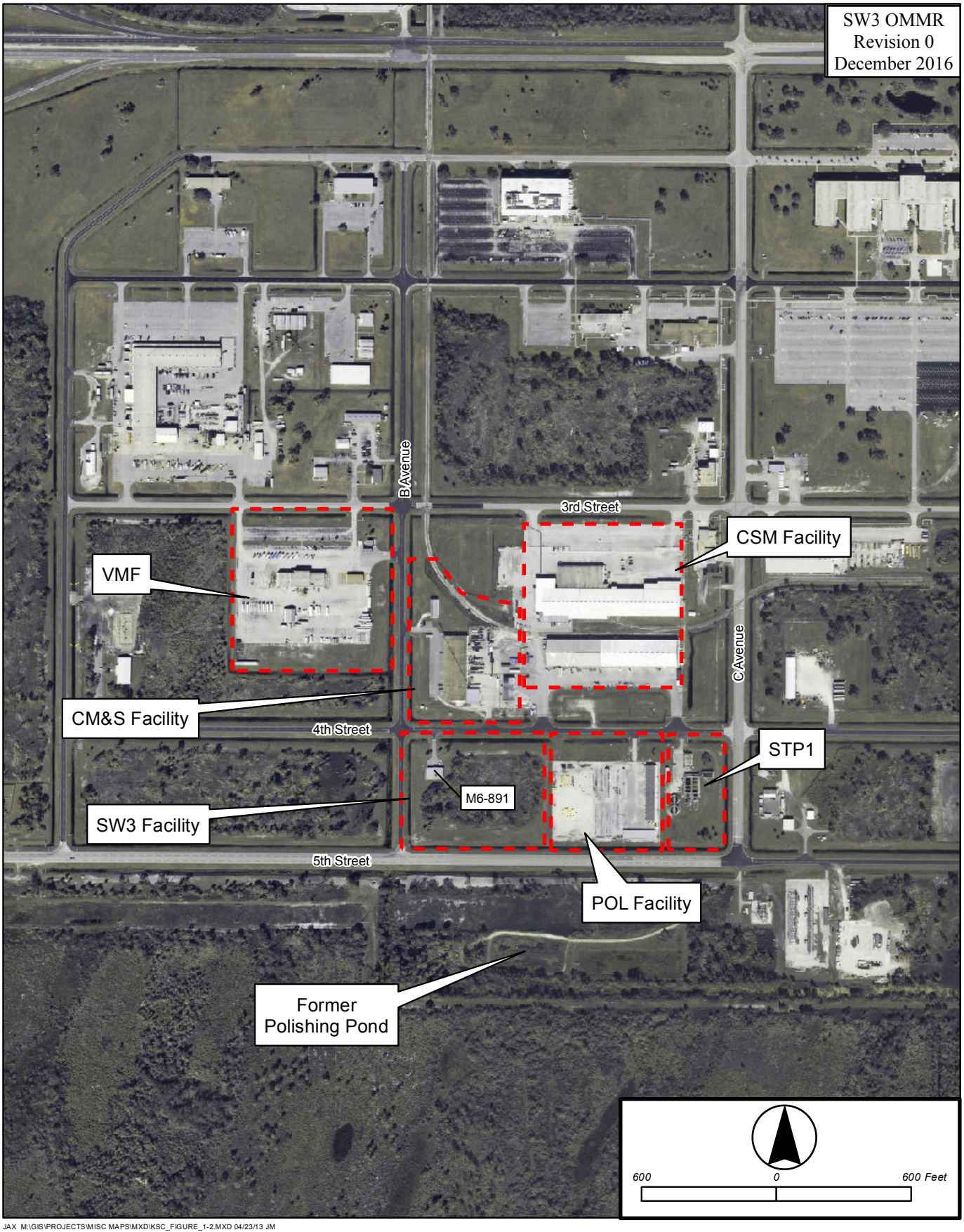

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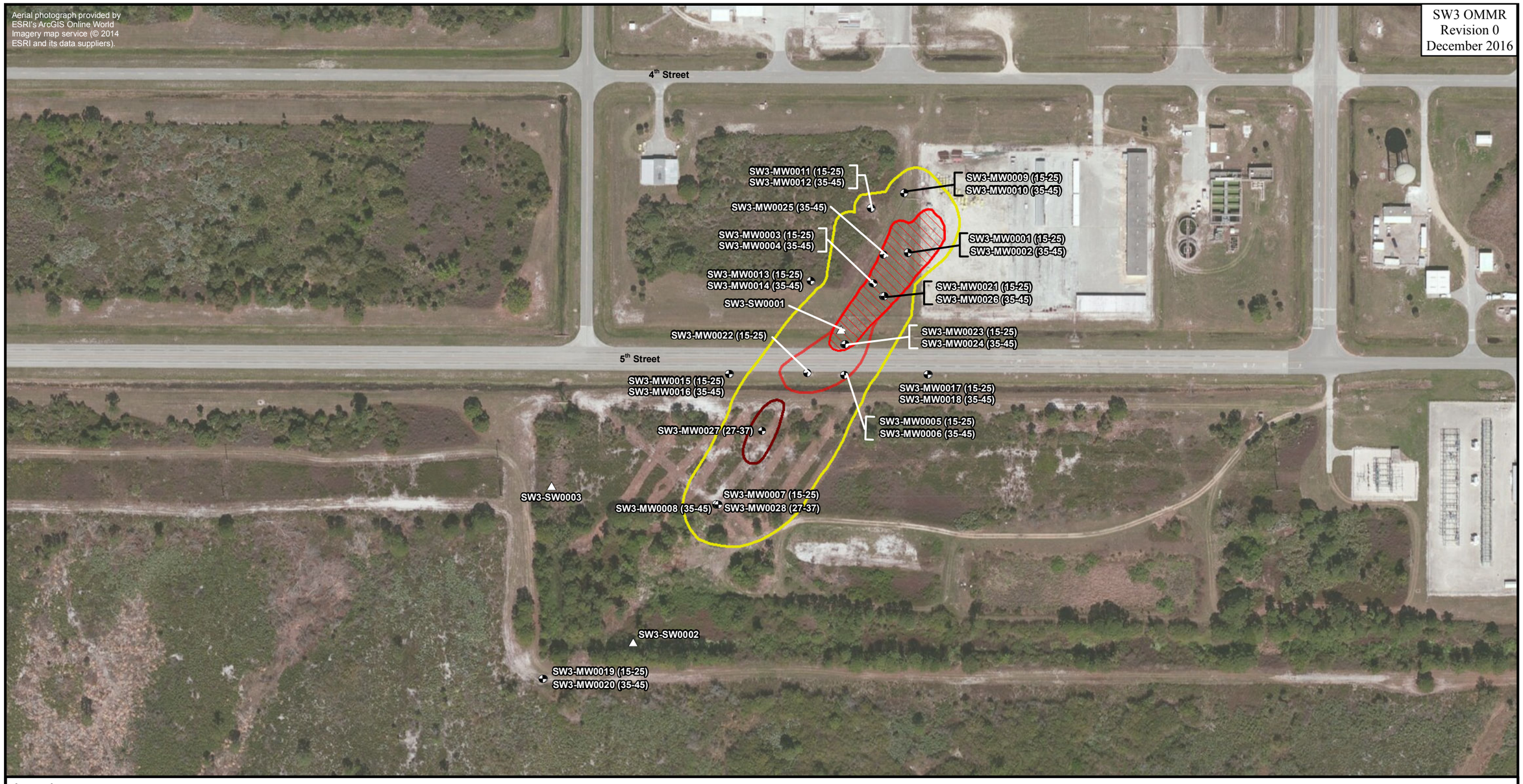
FIGURE 1-3 - GROUNDWATER MONITORING WELL LOCATIONS

SWMU 088, KENNEDY SPACE CENTER, FLORIDA



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SECTION II

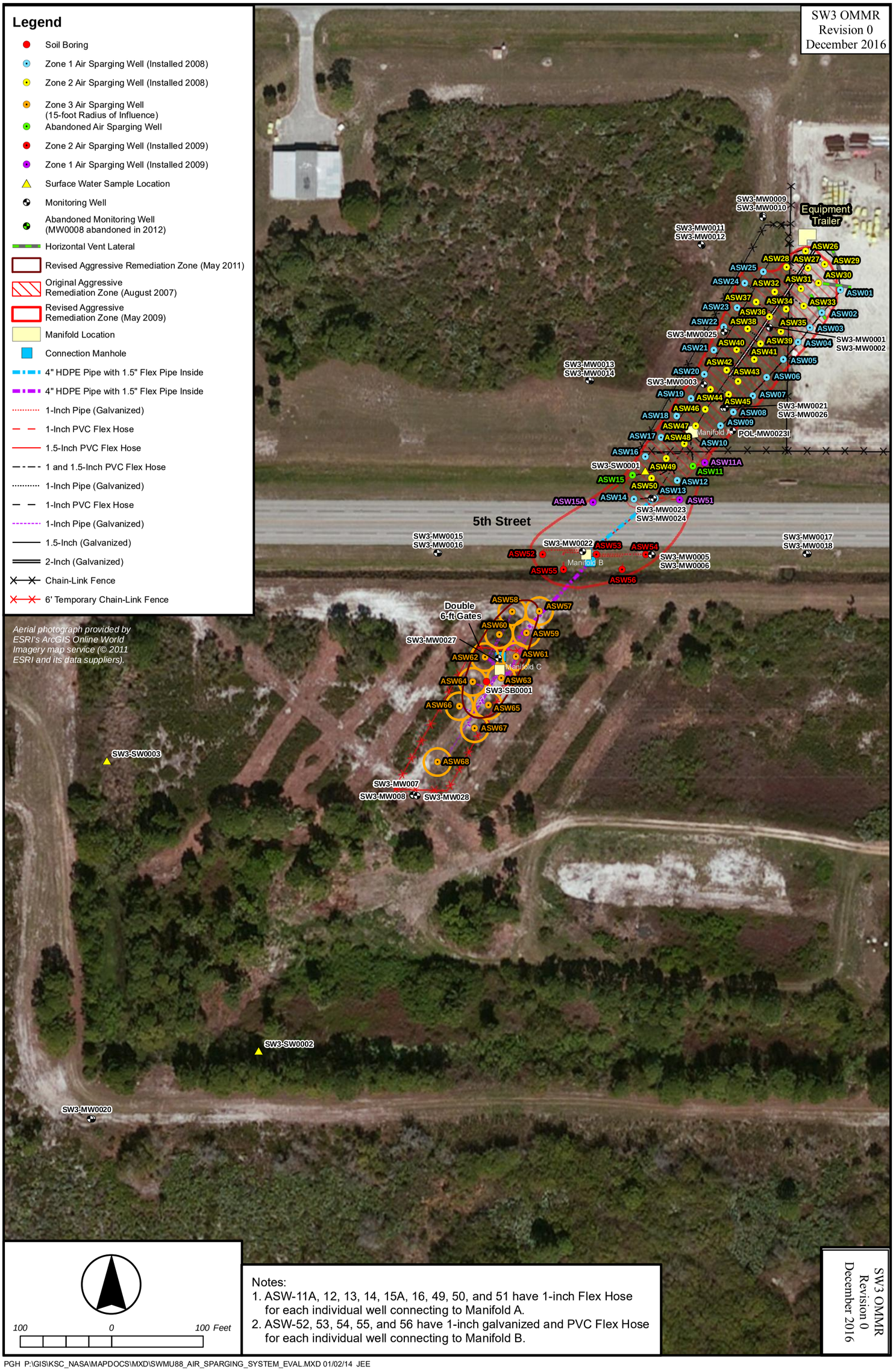
CORRECTIVE MEASURES IMPLEMENTATION

The AS system currently includes 25 AS wells in Zone 1, 31 AS wells in Zone 2, and 12 wells in Zone 3, as shown on Figure 2-1. The original AS system, which began operating in May 2009, and only included Zones 1 and 2, achieved the active remediation goals of reducing groundwater concentrations to NADCs in September 2009 and continued operating until May 2010 to further reduce CVOC concentrations. Based on VC concentrations exceeding 10 times the NADC identified in MW0008 in June 2010, a DPT investigation was conducted to delineate VC in groundwater in the vicinity of MW0008. A hot spot was identified during the DPT groundwater investigation conducted from November 2010 to February 2011 south of the drainage swale south of 5th Street, and 12 additional AS wells to treat this area were installed as Zone 3 in December 2012 and continue to operate, in accordance with the 2012 CMI Work Plan Addendum. MW0008 was screened from 35 to 45 feet bls, extending across a clay layer present from approximately 38 to 40 feet bls. In November 2012, MW0008 was abandoned to eliminate potential groundwater migration below the clay layer and was replaced by monitoring well MW0028, screened above the clay layer from 27 to 37 feet bls. Monitoring well MW0027 was also installed in November 2012 to monitor the effectiveness of AS in Zone 3. A complete description of SW3 AS system installation is provided in the Construction Completion Report (NASA, 2013).

In June 2013, the AS system trailer (Mobile AS Unit #1) was modified to simultaneously operate the SW3 system and a newly installed system at POL. Two additional legs were added to Mobile AS Unit #1 to accommodate the three POL AS zones. The system cycles through each zone in sequence, with each zone operating for 1 hour. SW3 Zones 2 and 3 are operating on leg 1, SW3 Zone 1 is operating on leg 2, POL Zone 1 is operating on leg 3, POL Zone 2 is operating on leg 4, and POL Zone 3 operating on leg 5.

FIGURE 2-1 AIR SPARGING SYSTEM WELLS, PIPING, AND SYSTEM EVALUATION SAMPLING LOCATIONS

SWMU 088, KENNEDY SPACE CENTER, FLORIDA



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SECTION III

SYSTEM OPERATION, MAINTENANCE, AND MONITORING

OM&M of the expanded AS treatment system was initiated in December 2012, and this report presents the results of system operations from October 2015 through September 2016. This section identifies the activities conducted and results obtained during O&M associated with the treatment system and summarizes the results of monthly system evaluations conducted to evaluate the performance of the remedial system. Based on KSCRT consensus reached at the November 2014 team meeting, system operations are to continue until active remediation goals are met (to reduce VC to NADC, reduce TCE to GCTL in the original ARZ or decrease LTM timeframe to achieve GCTL) (Meeting Minute 1411-M10, Decision 1411-D27).

3.1 SYSTEM EVALUATION AND MAINTENANCE

OM&M activities were conducted at SW3 to evaluate AS system operating parameters and were conducted as identified in the Operation and Maintenance Plan submitted with the CMI Work Plan Addendum (NASA, 2012b). Visual site and system evaluations were conducted monthly during the reporting period to collect operational data and to determine if any disturbances to the area, wells, system, or units had occurred since the previous evaluation. AS system data were also collected from inside the system trailer, including amp meter readings, system exhaust temperatures, bleed air valve positions, and system pressure and air flow rates. System operational data were collected for wells in each zone during operation, including valve position, flow rate, and observed pressure at each well head. If any adjustments were required to equalize the air flow, they were conducted and both pre- and post-adjustment readings were recorded. Prior to leaving the site following each evaluation, a final walk-through was conducted, and the system was secured until the next evaluation. Maintenance activities required for the AS unit during the October 2015 through September 2016 reporting period the included cleaning the heat exchanger cooling fins, providing air compressor oil changes with bearing and motor lubrication, and verifying that the air filter was free of obstructions and replacing. A thorough check of all

equipment was conducted to verify that no mechanical problems existed (e.g., leaks, ruptures, loose fittings, etc.). The blower oil level was checked monthly and changed at 22,410, 24,308, 26,160 and 27,445 operational hours. A total of 12 monthly system evaluations were conducted between October 2015 and September 2016. The expanded AS system well operational performance from October 2015 through September 2016 is summarized as follows:

- Zone 1 averaged 2.9 standard cubic feet per minute (scfm) at 14.9 pounds per square inch (psi), with monthly averages ranging from 1.8 to 2.6 scfm at 14.4 to 17.7 psi;
- Zone 2 averaged 3.1 scfm at 13.5 psi, with monthly averages ranging from 2.4 to 3.8 scfm at 15.7 to 11.7 psi; and
- Zone 3 averaged 2.2 scfm at 16.4 psi, with monthly averages ranging from 1.0 to 3.8 scfm at 10.0 to 17.2 psi.

Based on dissolved oxygen (DO) levels collected during system evaluations, the 15-foot design ROI was confirmed from ASW62 to MW0027, which had a DO level increase within 1 month of startup (December 2012) and DO levels increasing to greater than 10 milligram per liter (mg/L) by January 2013. For ASW55 and ASW56, 30-foot ROIs were observed, with bubbling in surface water present in the drainage swale along the southern side of 5th street. Based on DO levels collected during system evaluations, 50-foot ROIs was observed for ASW68 to MW0028, with a DO level increase within 1 month following startup and DO levels increasing to greater than 10 mg/L by January 2013. DO and water level data were not collected after August 2013.

The completed OM&M worksheets for O&M events during this reporting period are provided in Appendix B. The main header and individual system well air flows and observed pressures for Zone 1 and simultaneously operated Zones 2 and 3 are provided in Tables 3-1 and 3-2, respectively.

During each system evaluation OM&M event 27 AS wells (ASW08, ASW09, ASW10, ASW11A, ASW12, ASW13, ASW14, ASW15, ASW16, ASW17, ASW18, ASW19, ASW31, ASW48, ASW50, ASW52N, ASW53, ASW54, ASW56, ASW57, ASW59, ASW61, ASW63,

ASW65, ASW66, ASW67, and ASW68) were found to have air flow below the expected designed air flow rate. These AS wells were connected to a high-pressure/low-flow portable air compressor to assist with establishing air flow. Each well required a pressure of at least 20 psi to initiate flow. Air flow was not maintained after the portable compressor was removed, indicating the current compressor does not provide enough power to properly supply air to all AS wells.

The system was shut down for scheduled and unscheduled maintenance and sampling multiple times during this reporting period. System operation shut downs are shown in Table 3-3. On December 11, 2015, the system was shut down for an oil change and POL groundwater sampling event and was restarted upon completion of the sampling on December 16, 2015. On March 9, 2016, the system was shut down for an oil change and was subsequently restarted the same day. On March 20, 2016, the system was shut down for POL and SW3 groundwater sampling and was restarted upon completion of the sampling on March 24, 2016. On June 9, 2016, the system was shut down for an oil change and POL groundwater sampling and was restarted upon completion of the sampling on June 15, 2016. On July 25, 2016, the system was shut down due to human-machine interface (HMI) failure and repair and was restarted after the repair was completed on July 29, 2016. On September 7, 2016, the system was shut down for POL and SW3 groundwater sampling and was restarted on September 10, 2016 after groundwater sampling was complete. On September 12, 2016, the system was shut down for an oil change and was subsequently restarted the same day.

A summary of historical system runtimes and system runtime from the reporting period of October 8, 2015, to September 12, 2016, is included in Table 3-3. It was determined based on run meter data that the system operated 63.4 percent of the available time from startup on December 19, 2012, through September 12, 2016. This calculation includes downtime for a blower failure from October 17, 2013, to March 4, 2014, and a second blower failure from January 12, 2015, to July 9, 2015.

3.2 AIR QUALITY MONITORING

Air monitoring was conducted to monitor air quality during system operation with respect to established criteria. Action levels were established in the CMI Work Plan Addendum (NASA, 2012b) and discussed in the Site-Specific Health and Safety Plan (NASA, 2012a). Real-time air monitoring was conducted by means of a 10.6-electron-volt (eV) photoionization detector (PID) during system startup and during weekly and monthly system evaluations. No PID readings exceeding background levels were detected in the breathing zone from startup through 2013, when air monitoring was discontinued.

3.3 GROUNDWATER AND SURFACE WATER SAMPLING

Groundwater and surface water sampling was conducted in accordance with the CMI Work Plan Addendum (NASA, 2012b), December 2015 OMMR (NASA, 2015), consensus items from the November 2014 KSCRT Meeting (Meeting Minute 1411-M10, Decision 1411-D27), Sampling and Analysis Plan (SAP) for the RCRA Program at KSC (NASA, 2011a), and FDEP Standard Operating Procedure FS2200 (2014). Meeting Minutes are provided in Appendix A.

The December 2015 OMMR (NASA, 2015) recommended 10 monitoring wells and 3 surface water locations to be sampled in March 2016 and five monitoring wells and 3 surface water locations to be sampled in September 2016 to evaluate the effectiveness of the AS system and MNA of the LCP. In March 2016, samples were collected from monitoring wells MW0001, MW0005, MW0006, MW0009, MW0020, MW0024, MW0025, MW0026, MW0027, and MW0028 and from surface water locations SW0001, SW0002, and SW0003. In September 2016, samples were collected from monitoring wells MW0009, MW0025, MW0026, MW0027, and MW0028 and from surface water locations SW0002 and SW0003. No water was present at SW0001 at the time of sampling.

Groundwater and surface water samples were analyzed for VOCs (volatile organic compounds) via Method SW-846 8260B. Peristaltic pumps were used for purging, and VOC samples were

collected using the “reverse flow” technique. Samples were submitted to Environmental Conservation Laboratories (ENCO) of Orlando, Florida, which is a National Environmental Laboratory Accreditation Council (NELAC)-certified laboratory. Groundwater and surface water sample log sheets are provided in Appendix C, and chain-of-custody forms and laboratory data packages are provided in Appendix D.

Table 3-1. Zone 1 System Operation Evaluation Summary

Evaluation Date	Zone # 1 Headers			ASW-01			ASW-02			ASW-03			ASW-04			ASW-05		
	Flow (scfm)	Pressure (psi)	Bleed Air %	Flow (scfm)	Pressure (psi)	Valve (% open)	Flow (scfm)	Pressure (psi)	Valve (% open)	Flow (scfm)	Pressure (psi)	Valve (% open)	Flow (scfm)	Pressure (psi)	Valve (% open)	Flow (scfm)	Pressure (psi)	Valve (% open)
12/20/2012	-	-	-	3	-	-	3	-	-	3	-	-	3	-	-	3	-	-
12/21/2012	-	-	-	4	16	-	4	16	-	4	16	-	4	16	-	3	16	-
12/28/2012	105	15.5 & 16.5	50	4/4	17/17	70/100	4.2/4.2	14/14	70/100	4/4.3	0/0	50/100	4.5/4.5	14/14	70/100	4	15	100
01/03/2013	58&58	15.75&16.5	50	5	17	100	4.5	15	100	5	0	100	4	15	100	4.2	15	100
01/10/2013	85&65	16.5&17.5	40	4	15	50	3.6/4	14/14	50/55	3.6/4.0	0	40/50	4	14	40	3.4/4	15/15	40/50
01/18/2013	70&70	16.5&17.5	-	3.5/4	18/18	40/50	4	15	50	4	0	50	4	15	50	4	16	50
02/12/2013	72.5&72.5	16.5&17.5	40	4.5	15	50	4.2	13	50	4.3	0	50	4	12	50	4.1	14	50
03/12/2013	57&57	17&17.5	45	5	17	50	4.6	14.5	50	4.7	0	40	4.5	15	40	5	15	50
04/09/2013	57&65	17&17.6	-	4.7	16.5	50	4.5	14.5	50	4.4	13	50	4	13	45	5	15	50
05/23/2013	65&72	18&18.5	45	5	17	50	4.6/5	14/15	50/60	4.5/5	13.5/14	50/60	4.5/5	14/15	50/60	4.7/5	14.5/15	50/60
06/27/2013	150	19	50	4.5/5	18/18	50/55	4.7/5	15.5	50/55	5	15	50	4.8/5	15/15	50/55	4.5/5	15/15.5	50/60
07/17/2013	153	18	50	5	18	50	5	15	50	5	14	50	5	15	50	5.5/5	15/15	75/50
08/27/2013	153	19	50	5	17.25	50	5.4/5	15.5/15.5	45/40	5.8/5	15/15	45/30	5.4/5	15/15	35/30	5	16	50
09/17/2013	158	18	50	5.5/5	17/17	50/40	5	15	50	4.5/5	13/13.5	40/50	5	14	50	5	15	50
03/04/2014	150	19	50	4	18	50	4.2	15	50	4.5	15	50	4.5	15	50	5	17	50
03/24/2014	150	21	25	5	17.5	50	5	16	50	5	15	50	5	15	50	5	17	50
04/30/2014	145	22	50	5.5/5	17.5/17	50/50	5	15	50	5.5/5	14/14	50/25	4.8/5	14/14	25/25	5	15.5	50
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06/09/2014	140	22	25	6/5	16/16	25/25	5	14	25	5.5/5	12	25	5	13	25	5	14	25
07/14/2014	145	19	25	5	16.5	25	5	13/14	25	5	12.5	25	5	13	25	3/5	15/16	25/50
08/20/2014	138	20	25	5	17	25	5	15	25	5	13	25	5	15	25	5	15	25
09/18/2014	132	21	50	5	17	25	5	15	25	5.5/5	13/13	25/25	5.5/5	14.5/14	25/25	6/5	15/15	25/25
10/22/2014	138	21	0	5	16	25	5	14	25	5	13	25	5	14	25	5	14	25
11/18/2014	138	10	0	5	19.5	25	5	18	25	5	18	25	5	17	25	5	18	25
12/18/2014	130	23	0	5.5/5	18/18	25	5.4/5	16/16	25	5.5/5	15	25	6/5	15	25	7/5	16	25
07/09/2015	143	22	2	4	13	50	4	15	50	4	14	50	4	14.5	50	4	15	50
07/10/2015	143	20	15	5	15	50	5	12	50	5	12	50	5	13	50	5	14.5	50
08/05/2015	145	23	50	5	17	50	4.4	14	50	4.6	12	50	5	15	50	4	15	50
09/11/2015	145	21	50	5	16	25	4/5	13/13.5	20/30	4/5	11.5/12	15/20	4	15.5	25	3/5	14.5/15	25/50
10/08/2015	140	21	48	5	16	50	4.5	15	50	4.5	15	25	3.5	15.0	50	5	15.5	50
11/05/2015	145	21	50	4	17	30	5/4	15/13	30/25	5/4	15/13	30/25	4.0	15.0	25	7/4	15/15	50/30
12/11/2016	145	20	50	6/4	17/16	20	4	14	20	4	13	10	4	15	20	4	15	30
01/18/2016	138	23.5	40	5	18.5	25	5	16.5	30	4.8	15.5	30	5	15	30	5	17	50
02/05/2016	140	22	50	4	18	50	5/4	11/11	40/30	4	16	50	4	15	50	4	17	50
03/09/2016	145	20	50	4	15.5	30	3.5/4	13/13	30/35	4	12	30	4	15		4	15	30
04/06/2016	145	20	50	4	17	30	4	14.5	30	4	14	30	4	15	30	4	16	30
05/27/2016	140	21	50	4	17	30	4	14	30	3.5/4	12/12	30/40	4	15	40	4	15	30
06/09/2016	145	22	50	4	17	30	4	15	30	4	15	40	4	15	40	4	17	30
07/07/2016	140	21	50	4	15	50	4	12	50	4	10	40	4	15	40	4	15	50
08/05/2016	140	21	50	4	15	50	4	14	50	-	-	-	4	15	40	4	15	50
09/12/2016	145	20	50	4	17	50	4	14	50	4	15	50	4	15	40	4	15	50

Table 3-1. Zone 1 System Operation Evaluation Summary (continued)

Evaluation Date	ASW-06			ASW-07			ASW-08			ASW-09			ASW-10			ASW-11A		
	Flow (scfm)	Pressure (psi)	Valve (% open)	Flow (scfm)	Pressure (psi)	Valve (% open)	Flow (scfm)	Pressure (psi)	Valve (% open)	Flow (scfm)	Pressure (psi)	Valve (% open)	Flow (scfm)	Pressure (psi)	Valve (% open)	Flow (scfm)	Pressure (psi)	Valve (% open)
12/20/2012	3	-	-	3	-	-	3	-	-	3	-	-	-	-	-	3	-	-
12/21/2012	1.5	16	-	3	16	-	3	16	-	3.5	16	-	-	-	-	4	16	-
12/28/2012	1.5	12.5	100	1.5/1.7	15/15	50/100	2.4	13	100	1	15	100	1.8/2.2	15/15	50/100	2.4/2.5	13/13	50/100
01/03/2013	1	14	100	0.5	15	100	3.5	14	100	0.5	15	100	2	16.5	100	3.5	14	100
01/10/2013	4	13	50	0.5/0.5	13.5/15	0/100	3.5/4	14/14	50/60	3.6	15.5	100	4.2/4	16/16	100/50	4	14	50
01/18/2013	2.75/3	15.5/15.5	50/100	5.5/4	15/15	100/50	3.25/3.5	15/15	50/100	2.8	15	100	3/3	18.5/18.5	50/100	3.75	15	50
02/12/2013	2.7	11	100	2.5/3.4	16/16	50/100	2.7	13	100	2	15	100	3	15	100	3.4	12	50
03/12/2013	2	15	100	0	16	100	2.5	15	100	1.5	16	100	1.5	17	100	2.8/2.8	14/14	50/100
04/09/2013	2	12.5	100	3	15.5	100	2.3	14	100	1	16	100	0.5	16	100	0.5	14	100
05/23/2013	0.5	12	100	5	17	100	1.5	14	100	0.5	17	100	0.5	16	100	0.5	14	100
06/27/2013	0.5	13	100	4.5	12.5	100	1.3	15	100	0.5	18	100	0.5	17	100	0.5	15	100
07/17/2013	0.5	11	100	5	17	100	1.8	14	100	2	17	100	0.5	16	100	1	14	100
08/27/2013	0.5	13	100	5.3	17	100	2	15	100	4	17	100	0.5	16.5	100	1	14.25	100
09/17/2013	0.5	12	100	5	17	100	2	15	100	3	17	100	0.5	16	100	0.5	14	100
03/04/2014	0.5	14	100	5	17	100	1.6	16	100	3	17	100	0.5	17.5	100	1	15	100
03/24/2014	0.5	15	100	5	16	50	3	17	100	3	19	100	0.5	19	100	1	17	100
04/30/2014	0.5	15	100	6/5	17/17	50/50	0.5	18	100	0.5	21.5	100	0.5	20	100	1	17.5	100
05/20/2014	0.5	15	100	5	16.5	25	1.0	17	100	0.5	21.0	100	0.5	20	100	1	17.0	100
06/09/2014	0.5	13	100	5	16.5	25	0.5	17	100	1.5	21	100	0.5	18	100	1.5	16	100
07/14/2014	0.5	11	100	3.5/5	16/17	25/50	0.5	15	100	3	19	100	0.5	-	100	0.5	15	100
08/20/2014	0.5	11	100	5	18	25	0.5	15	100	2	19	100	0.5	16	100	0.5	15	100
09/18/2014	0.5	11	100	5	18	25	0.5	16	100	2.5	19	100	0.5	17.5	100	0.5	16	100
10/22/2014	0.5	12	100	5	17	25	0.5	15	100	0.5	19.5	100	0.5	17	100	0.5	16	100
11/18/2014	0.5	21	100	5	16	25	0.5	22	100	0.5	21	100	0.5	25	100	0.5	20	100
12/18/2014	0.5	17	100	5.5/5	18	25	0.5	21	100	0.5	23	100	0.5	22	100	0.5	21	100
07/09/2015	2	14	100	4	13	50	0	17	100	0.5	15	100	0	17	100	0.5	18	100
07/10/2015	8/5	12/10	100/50	4.5	14	50	0	17	100	2	13	100	0	17	100	0.5	17.5	100
08/05/2015	3.8/4.8	13/14	50/100	4	15	30	0	15.5	100	3	14.5	100	0	16	100	0	18	100
09/11/2015	4.5	12	100	3/5	18/19	25/50	0	14.5	100	4	14.5	100	0	15.5	100	0	17	100
10/08/2015	4	12	100	7/4	18/17	75/50	0	15.5	100	2	14.0	100	0	16	100	0	17	100
11/05/2015	4	12	100	4	17	10	0	16.0	100	0	15.0	100	0	15	100	0	16	100
12/11/2016	4	14	100	4	17	10	0	17	100	0	15	100	0	17	100	0	17	100
01/18/2016	1	17	100	4.8	18	10	0	20.5	100	0	16	100	0	21	100	0	20	100
02/05/2016	1	16	100	4	18	50	0	20	100	0	15	100	0	21	100	0	16	100
03/09/2016	6/5	14.5/13.5	100/50	4	17	30	0	16	100	0	14	100	0	16	100	0	15	100
04/06/2016	5	15.5	50	4	17.5	25	0	17	100	0	13	100	0	17.5	100	0	14	100
05/27/2016	4.5/4.0	14/14	50/40	4	17	25	0	16	100	0	22	100	0	16.5	100	0	15	100
06/09/2016	4	17	40	4	18	25	0	18	100	0	23	100	0	18	100	0	15	100
07/07/2016	4	15	50	4	17	50	0	15	100	0	20	100	0	15	100	0	15	100
08/05/2016	4	14	50	4	18	50	0	15	100	0	20	100	0	16	100	0	13	100
09/12/2016	4	14	50	4	14	50	4	15	100	0	20	100	0	17	100	0	15	100

Table 3-1. Zone 1 System Operation Evaluation Summary (continued)

Evaluation Date	ASW-12			ASW-13			ASW-14			ASW-15A			ASW-16			ASW-17		
	Flow (scfm)	Pressure (psi)	Valve (% open)	Flow (scfm)	Pressure (psi)	Valve (% open)	Flow (scfm)	Pressure (psi)	Valve (% open)	Flow (scfm)	Pressure (psi)	Valve (% open)	Flow (scfm)	Pressure (psi)	Valve (% open)	Flow (scfm)	Pressure (psi)	Valve (% open)
12/20/2012	-	-	-	3	-	-	3	-	-	3	-	-	-	-	-	3	-	-
12/21/2012	0	-	-	4	16	-	1.5	16	-	4	16	-	0	-	-	4	16	-
12/28/2012	1	14	100	2.8/3.5	13/13	50/100	1	14	100	3.7/5.0	0/0	40/50	1	13.5	100	4.2/4.2	13/13	70/100
01/03/2013	0.5	15	100	4.25	14	100	0.5	15	100	5	0	40	0.5	14.5	100	4	14	100
01/10/2013	1.75	15	100	4	14	50	2	15	100	10/4	0/0	40/30	1.6	14.5	100	4.2/4	14/14	100/50
01/18/2013	1.5	16.5	100	3.9	15	50	3.5	16	100	3.6/4.2	5/5	25/30	2.5	16.5	100	4	16	50
02/12/2013	1.5	13	100	4	13	50	3.5	14	100	4.5	0	40	1.5	13	100	4	12	50
03/12/2013	1.5	15	100	4.5	14	50	4.4	16	100	4.3/5	0	30/40	2.5	15.5	100	1.5/1.5	16	50/100
04/09/2013	2.75	14	100	4.5	13.5	50	5.5	15	100	5.1	0	30	2	14.5	100	0.5	14	100
05/23/2013	2.75	15	100	4.4/5	14/14	50/60	5	15	100	5.1	0	25	1	15	100	0.5	14	100
06/27/2013	0.5	15	100	4.7/5	15	50/75	4.5	16	100	5.4/5	0	25/25	0.6	15.5	100	0.5	15	100
07/17/2013	1.5	15	100	5	14	75	5.5/5	15	100/50	5	0	25	1.5	15	100	0.5	14	100
08/27/2013	0.2	15.25	100	5.4/5	14.5/14.5	60/50	5.4	16	40	5.4	0	20	0.5	15.5	100	0.5	15	100
09/17/2013	1.5	15	100	5	14	50	5	15	50	4.5/5	0/0	25/30	1.5	15	100	0.5	15	100
03/04/2014	1.3	16	100	5	15	50	5	16	50	5	0	25	1.6	16	100	0.5	16.5	100
03/24/2014	2	17	100	5	15	50	5	16	50	5	0	25	2	17	100	0.5	17	100
04/30/2014	0.5	19	100	6.4/5	15/15	50/50	6/5	16/16	50/50	5.7/5	0/0	50/50	0.5	19	100	0.5	19	100
05/20/2014	0.5	18	100	5	14.5	25	5	15	25	5	0	25	0.5	18	100	0.5	18	100
06/09/2014	0.5	17	100	5	14	25	5	13	25	5	0	25	0.5	17	100	0.5	17	100
07/14/2014	0.5	15	100	3.2	14	25	3/4	15	25	NA	NA	NA	0.5	15	100	0.5	15	100
08/20/2014	0.5	16	100	5	14	25	5	15	25	Off	Off	Off	0.5	16	100	0.5	16	100
09/18/2014	0.5	16	100	5	16	100	5	15	25	Off	Off	Off	0.5	16	100	0.5	16	100
10/22/2014	0.5	16	100	5.5	16	100	5	15	25	Off	Off	Off	0.5	16.5	100	0.5	15.5	100
11/18/2014	0.5	23	100	4.5	22	100	5	20	25	Off	Off	Off	0.5	23	100	0.5	23	100
12/18/2014	0.5	21	100	0.5	21	100	2.5/4	21	25	Off	Off	Off	0.5	23	100	0.5	21	100
07/09/2015	0	18	100	2	16	100	3	16	100	NA	NA	NA	1	16	100	0	15	100
07/10/2015	0	17	100	0	17	100	1	12	100	NA	NA	NA	1	12	100	NA	NA	NA
08/05/2015	0	16	100	0	17	100	0	16.5	100	5	0	50	0	17	100	0	15	100
09/11/2015	0	15.5	100	0	16	100	0	15.5	100	5	0	25	0	15.5	100	0	14.5	100
10/08/2015	0	16	100	0	17	100	0	16.0	100	4	NA	25	0	16	100	0	15	100
11/05/2015	0	16	100	0	16	100	0	16.0	100	4	0	10	0	16	100	0	15	100
12/11/2016	0	17	100	0	17	100	0	17	100	4	0	10	0	17	100	0	15	100
01/18/2016	0	21	100	0	21	100	0	21	100	4	0	20	0	20.5	100	0	19	100
02/05/2016	0	20	100	0	21	100	0	20		4	2	50	0	18	100	0	17	100
03/09/2016	0	16.5	100	0	16.5	100	0	16	100	4	0	40	0	16	100	0	14.5	100
04/06/2016	0	18	100	0	18	100	0	17.5	100	4	0	30	0	17.5	100	0	15	100
05/27/2016	0	16	100	0	16.5	100	0	16	100	3.5/4.0	15/15	30/40	0	15.5	100	0	15	100
06/09/2016	0	18	100	0	17	100	0	17	100	4	0	40	0	17	100	0	17	100
07/07/2016	0	15	100	0	15	100	0	15	100	4	0	40	0	15	100	0	15	100
08/05/2016	0	15	100	1	15	100	0	15	100	4	0	40	0	15	100	0	15	100
09/12/2016	0	16	100	0	17	100	0	16	100	4	0	40	0	16	100	0	15	100

Table 3-1. Zone 1 System Operation Evaluation Summary (continued)

Evaluation Date	ASW-18			ASW-19			ASW-20			ASW-21			ASW-22			ASW-23		
	Flow (scfm)	Pressure (psi)	Valve (% open)	Flow (scfm)	Pressure (psi)	Valve (% open)	Flow (scfm)	Pressure (psi)	Valve (% open)	Flow (scfm)	Pressure (psi)	Valve (% open)	Flow (scfm)	Pressure (psi)	Valve (% open)	Flow (scfm)	Pressure (psi)	Valve (% open)
12/20/2012	3	-	-	3	-	-	3	-	-	3	-	-	3	-	-	3	-	-
12/21/2012	3.8	16	-	4	16	-	3.7	16	-	4	16	-	3.8	16	-	3.7	16	-
12/28/2012	3	14.5	100	3.5	14	100	4.5/4.5	12.5/12.5	65/100	4	14/14	50/100	3.6/4.8	15/15	50/100	4	14	100
01/03/2013	2.5	15	100	3.4	15	100	4.5	14	100	4.25	15	100	5.5/5	15/15	100/50	3.5	15	100
01/10/2013	4	15	100	4	15	100	3.5/4	12.5/13	40/50	4	14	40	4	15	40	4.8/4	15/15	100/50
01/18/2013	4	17	100	4.3	16	100	4	15	50	4	16	50	4	16.5	50	4.2	17	50
02/12/2013	1.4	14	100	4	14	100	4	12	50	2.6/4	14/13	40/60	3.7/4	15/14	50/60	4.1	13	50
03/12/2013	0	16.5	100	1.3	15	100	2.3/2.4	14.5/14.5	50/100	0/0	16/16	50/100	4/5	15/15	50/60	5	15	40
04/09/2013	0.5	15	100	0.5	15	100	0.5	14	100	0.5	15	100	4	15	50	5.6	14	40
05/23/2013	0.5	15	100	0.5	15	100	0.5	14	100	5	15	100	7.5/5	15/15	50/25	5.5/5	14/14	50/40
06/27/2013	0.5	16	100	0.5	16	100	0.5	14	100	7/5	16/16	100/50	4/5	15/15	50/60	4.3/5	16/16	40/60
07/17/2013	0.5	16	100	0.5	16	100	0.5	14	100	4.5/5	16/16	50/50	5.5/5	15/15	50/50	5.3/5	15/15	75/50
08/27/2013	0.5	16	100	0.5	16	100	0.5	14	100	5.8	15	30	7.2/5.2	16/16	95/20	5	16.25	95
09/17/2013	0.5	15	100	0.5	15	100	0.5	14	100	5.5/5	14/14	50/45	5	15	50	6/5	15.5/15	90/50
03/04/2014	0.5	16.5	100	0.5	16.5	100	0.5	14	100	6.5/5.0	16/16	100/50	4.5	16	50	5	16.5	100
03/24/2014	0.5	17	100	0.5	17	100	1.5	14.5	100	5	16	50	5	16	50	5	16	50
04/30/2014	0.5	20	100	0.5	20	100	0.5	17	100	6.5/5	15.5/15	50/25	7/5	16/15	50/25	7.3/5	16/15	25/25
05/20/2014	0.5	19	100	0.5	18	100	0.5	15	100	5	14	25	5	15	25	5	15	25
06/09/2014	0.5	17	100	0.5	18	100	0.5	15	100	5	14	25	5	15	25	5	15	25
07/14/2014	0.5	15	100	0.5	15	100	0.5	17	100	5	15.5	50	5	15	25	5	15	25
08/20/2014	0.5	15	100	0.5	17	100	0.5	16	100	5	15	25	5	15	25	5	16	25
09/18/2014	0.5	16	100	0.5	17	100	0.5	16	100	5	15	25	5.4/5	16/16	25/25	5.3/5	15/15	25/25
10/22/2014	0.5	16.5	100	0.5	16.5	100	0.5	16	100	5	14	25	5	14.5	25	5	14	25
11/18/2014	0.5	23	100	0.5	22	100	0.5	16	100	5	18	25	5	17.5	25	5	18	25
12/18/2014	0.5	21	100	0.5	21.5	100	0.5	20.5	100	6/5	16	25	5.4/5	16	25	5.6/5	15	25
07/09/2015	0	17	100	0	18	100	NA	NA	NA	5	15	50	5	15	50	5	15	50
07/10/2015	0	17	100	0	18	100	NA	NA	NA	5	12	25	5	14	50	5	13	25
08/05/2015	0	17	100	0	17	100	NA	NA	NA	4	14	50	4.8	15	25	4.8	14	50
09/11/2015	0	16.5	100	0	16.5	100	NA	NA	NA	4	14.5	25	4.0	14.5	25	4.0	14	25
10/08/2015	0	17	100	0	17	100	NA	NA	NA	4	17	50	4.0	15	25	4.0	15	50
11/05/2015	0	17	100	0	17	100	NA	NA	NA	4	15	50	4.0	14	50	4.0	14	50
12/11/2016	0	17	100	0	17	100	NA	NA	NA	7/4	16/15	50/40	4	15	30	4	14	20
01/18/2016	0	20.5	100	0	21	100	NA	NA	NA	5	16	25	4.6	16	25	5	15.5	30
02/05/2016	0	21	100	0	20	100	NA	NA	NA	4	16	50	4	16	50	4	16	50
03/09/2016	0	17	100	0	17	100	NA	NA	NA	4	13.5	40	4	14.5	30	4	13	20
04/06/2016	0	18.5	100	0	18	100	NA	NA	NA	4	14.5	30	4	15	30	4	14.5	30
05/27/2016	0	16	100	0	16.5	100	NA	NA	NA	4	14.5	30	4	14.5	30	4	13	30
06/09/2016	0	18	100	0	18	100	NA	NA	NA	4	16	30	4	15	30	4	16	30
07/07/2016	0	15	100	0	16	100	NA	NA	NA	4	14	50	4	15	50	4	13	50
08/05/2016	0	15	100	0	16	100	NA	NA	NA	4	14	50	4	14	50	4	13	50
09/12/2016	0	16	100	0	17	100	NA	NA	NA	4	15	50	4	15	50	4	15	50

Table 3-1. Zone 1 System Operation Evaluation Summary (continued)

Evaluation Date	ASW-24			ASW-25			ASW-51			ASW-52N		
	Flow (scfm)	Pressure (psi)	Valve (% open)	Flow (scfm)	Pressure (psi)	Valve (% open)	Flow (scfm)	Pressure (psi)	Valve (% open)	Flow (scfm)	Pressure (psi)	Valve (% open)
12/20/2012	3	-	-	3	-	-	3	-	-	3	-	-
12/21/2012	3.75	16	-	3.75	16	-	3.75	16	-	4	16	-
12/28/2012	4/4.5	14/14	50/100	3.6/3.6	15/15	90/100	2.2	12	50	2.8/3.6	13.5/14	50/100
01/03/2013	5	15	100	4	15	100	1.5/3.5	13.5/13.5	40/100	3.75	14.5	100
01/10/2013	6/4	15/14	100/50	3.6	15	40	2.4/4	13/13	40/50	1.6	15	100
01/18/2013	4	15	50	4	15	50	4.5	16	50	7/4.5	16/16	100/50
02/12/2013	4	15	50	4	15	50	4.2	12	50	4	13	50
03/12/2013	5	15	50	4.5	15	50	4	14.5	50	4.5	15	50
04/09/2013	4.5	14	50	4.5	15	40	4	13	50	4.9	13.5	50
05/23/2013	5	15	50	4.5/5	16/16	40/50	4.2	13	50	4.5	14.5	50
06/27/2013	5	15	50	4.1/4.7	17	50/60	5.5/5	14/14	75/50	4/5	15/15	50/85
07/17/2013	5	15	50	5.5/5	16.5/16	50/50	5	13	50	5	15	75
08/27/2013	5	16	30	5	17	40	6/5	13.5/13.5	45/35	4.6/5.8	15	70
09/17/2013	5	16	50	5.4/5	16/16	50/50	4.4/5	13/13	50/55	5	14	75
03/04/2014	4.5	16	50	4.5	17.5	50/50	5.2	14	50	5	15.5	75
03/24/2014	5	16	50	5	16	50	5	13	50	5	15	75
04/30/2014	7/5	16/16	50/50	7.5/5	18/17.5	25/25	5.8/5	13.5/13	50/25	6.5/5	15/15	50/50
05/20/2014	5	16	25	5	16	25	5	13	25	5	14	25
06/09/2014	5	15	25	5	17	25	5	11	25	5	13	25
07/14/2014	5	15	25	5	13	25	5	13	25	4/5	13/13	25/25
08/20/2014	5	15	25	5	14	25	5	14	25	5	14	25
09/18/2014	5	16	25	5.2/5	7/7	25/25	5.2/5	13/13	25/25	5	15	25
10/22/2014	5	15	25	5	7.5	25	5	12	25	5.5	16	25
11/18/2014	5	19	25	5	6	25	5	19	25	5.5	17.5	25
12/18/2014	5.5/5	16	25	7/5	14	25	5.5/5	14	25	5.5/5	16	25
07/09/2015	5	15.5	50	5	5	50	NA	NA	NA	NA	NA	NA
07/10/2015	5	13	50	5	8	50	NA	NA	NA	5	12	50
08/05/2015	4	14	50	4.4	3	25	NA	NA	NA	5	14	50
09/11/2015	4	14	25	4/5	7/7	15/20	5	10	30	5	13.5	30
10/08/2015	4	16	25	5	10	25	5	13	50	4	14	25
11/05/2015	4	13	50	5/4	10/9	50/40	5/4	12/12	50/30	4	15	50
12/11/2016	4	14	50	4	10	20	4	12	10	5/4	14/14	30/20
01/18/2016	4	16	25	4/5	10/11	25/35	4.2/5	13/14	25/35	0/0	18/19	25/100
02/05/2016	3.5	16	50	4	12	50	4	15	50	0	20	100
03/09/2016	4	13.5	50	4	7.5	30	0	10	30	0	17	100
04/06/2016	4	15	30	4.5	7.5	30	4.4	11.5	50	0	12.5	100
05/27/2016	3.5/4	13/13.5	30/40	4	15	30	4	9	50	0	16	100
06/09/2016	4	12	40	4	12	30	4	13	50	0	17	100
07/07/2016	4	14	40	4	9	40	4	10	50	0	15	100
08/05/2016	4	13	50	4	10	50	4	10	50	0	15	100
09/12/2016	4	15	50	4	10	40	4	10	50	0	17	100

scfm = Standard cubic feet per minute.
psi = Pounds per square inch.
/ = Separates values before/after adjustment. ("Before" values used in performance average calculations)
& = Separates pressure readings observed on each of the two legs that make up Zone 1.
NA = Not available.

Table 3-2. Zones 2 and 3 System Operation Evaluation Summary

Evaluation Date	Zones 2 and 3 Header			ASW-26			ASW-27			ASW-28			ASW-29			ASW-30		
	Flow (scfm)	Pressure (psi)	Bleed Air %	Flow (scfm)	Pressure (psi)	Valve (% open)	Flow (scfm)	Pressure (psi)	Valve (% open)	Flow (scfm)	Pressure (psi)	Valve (% open)	Flow (scfm)	Pressure (psi)	Valve (% open)	Flow (scfm)	Pressure (psi)	Valve (% open)
12/20/2012	-	-	-	3	-	-	3	-	-	Off	Off	Off	Off	Off	Off	Off	Off	Off
12/21/2012	-	-	-	5	16	-	5	16	-	Off	Off	Off	Off	Off	Off	Off	Off	Off
12/28/2012	115	17.5	50	4.8/4.0	14/14.5	30/25	4.9/4.0	14/14	30/25	Off	Off	Off	Off	Off	Off	Off	Off	Off
01/03/2013	110	18	50	4	15	30	4	15	50	Off	Off	Off	Off	Off	Off	Off	Off	Off
01/10/2013	130	20.5	40	6.5/4	14/14.5	40/30	6/4	14/13	40/30	Off	Off	Off	Off	Off	Off	Off	Off	Off
01/18/2013	130	20	-	3.2/4	16/16	40/50	3.6/4	16/16	40/50	Off	Off	Off	Off	Off	Off	Off	Off	Off
02/12/2013	125	20.5	40	4.2	14	40	4	13	50	Off	Off	Off	Off	Off	Off	Off	Off	Off
03/12/2013	115	19.5	45	4	15	40	4	15	40	Off	Off	Off	Off	Off	Off	Off	Off	Off
04/09/2013	115	18.5	-	3.4/4	15/15	35/40	3.5/4	14/14	35/40	Off	Off	Off	Off	Off	Off	Off	Off	Off
05/23/2013	115	19.5	45	4.2/5	16/16	40/45	4.2/5	14.5/15	45/50	Off	Off	Off	Off	Off	Off	Off	Off	Off
06/27/2013	157.5	18.5	50	3/3	15	40/25	3.2/3/3	14/14	40/40/25	Off	Off	Off	Off	Off	Off	Off	Off	Off
07/17/2013	155	19	50	3	15	25	3	15	25	Off	Off	Off	Off	Off	Off	Off	Off	Off
08/27/2013	152.5	19.5	50	2.4/5	15.5/15.5	15/25	3/5	16/16	10/20	Off	Off	Off	Off	Off	Off	Off	Off	Off
09/17/2013	155	17.5	50	4.5/4	14/14	50/40	5.2/4	14/14	50/40	Off	Off	Off	Off	Off	Off	Off	Off	Off
03/04/2014	152.5	17.5	50	3.3/3.0	15/15	25/25	3.1	14	25	Off	Off	Off	Off	Off	Off	Off	Off	Off
03/24/2014	150	22	50	3	15	25	3	15	25	Off	Off	Off	Off	Off	Off	Off	Off	Off
04/30/2014	147.5	21.5	50	2.4/3	15/15	25/25	2.8/3	14.5/14.5	25/25	Off	Off	Off	Off	Off	Off	Off	Off	Off
05/20/2014	137.5	22.5	0	4	15	25	4	14	50	3	18	100	4	13	25	4	11	25
06/09/2014	145.0	19.5	0	4	13	25	4	13	25	6.5/4	14	100/25	4	11	25	4	9	25
07/14/2014	140.0	20.0	0	4	15	25	3.7/4	15/15	25/25	2	18	25	3.7/4	14/14	25/25	3.8/4	12	25/25
08/20/2014	137.5	21.0	0	4	15	25	4	15	25	2	19	100	4	13	25	4	12	25
09/18/2014	132.0	21.0	0	4	15	25	4	16	25	3	19	100	4	15	25	3.8/4	14/14	25/25
10/22/2014	130.0	20.0	0	4	14	25	4	14	25	3	17	100	4	13	25	4	11	25
11/18/2014	130.0	21.0	0	4	18	25	4	19	25	5	23	100	4	18	25	4	19	25
12/18/2014	130.0	21.5	0	4.3/4	16	25	4.2/4	16	25	5	20	100	4.2/4	15	25	4.2/4	14	25
07/09/2015	140	22.5	5	4	15	50	5	15	50	3	17	100	4	13	50	4	10	50
07/10/2015	140	22	50	4.5	15	50	5	15	50	2	17	100	4.5	13	50	4.5	10	50
08/05/2015	150	19.5	25	4	14	25	5	14	25	-	-	-	4	11.5	75	4	9	25
09/11/2015	138	21.5	25	4	15	25	5	14.5	30	2	12	100	4	10.5	25	3.8/4.0	12/12	25/30
10/08/2015	145	21.0	50	4	15.5	40	5	16	75	3.5	20	100	4.5	14	50	4	12.5	50
11/05/2015	145	19	25	4	14	25	5.5/4	14/13	25/20	4	20	100	4	11	25	4	10	25
12/11/2015	145	20	50	4	15	20	3.5	14	20	4	18	100	4	13	50	4	11	20
01/182016	148	20.5	50	3.4/5	16.5/17	30/40	3/5	16/17	30/45	3.5	14	100	3/5	15/15.5	50/55	3/5	13/13.5	30/50
02/05/2016	150	20	50	4	18	50	4	19	50	2	12	100	5/4	15/15	50/40	4	14	50
03/09/2016	155	17	50	4	15.5	40	4	14.5	50	0	10.5	100	4	12.5	40	4	10.5	40
04/06/2016	150	19.5	50	4.5	15.5	30	4.5	16	30	1	13.5	100	4	14.5	30	4	12.5	30
05/27/2016	150	18	50	5/4	15/15	30/20	5/4	14/13.5	30/20	2	13	100	4.5	11	30	4.5/4.0	11/10.5	30/25
06/09/2016	150	20	40	4	15	20	4	15	20	0	5	100	4.5	13	30	4	10	25
07/07/2016	145	19	50	4	15	50	4	16	50	NA	NA	NA	4	10	50	4	10	50
08/05/2016	150	16	50	4	15	50	4	13	50	NA	NA	NA	4	12	50	4	10	50
09/12/2016	150	17	50	4	15	50	4	15	50	NA	NA	NA	4	13	50	4	12	50

Table 3-2. Zones 2 and 3 System Operation Evaluation Summary (continued)

Evaluation Date	ASW-31			ASW-32			ASW-33			ASW-34			ASW-35			ASW-36			ASW-37		
	Flow (scfm)	Pressure (psi)	Valve (% open)	Flow (scfm)	Pressure (psi)	Valve (% open)	Flow (scfm)	Pressure (psi)	Valve (% open)	Flow (scfm)	Pressure (psi)	Valve (% open)	Flow (scfm)	Pressure (psi)	Valve (% open)	Flow (scfm)	Pressure (psi)	Valve (% open)	Flow (scfm)	Pressure (psi)	Valve (% open)
12/20/2012	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	5	-	-	Off	Off	Off
12/21/2012	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	5	16	-	Off	Off	Off
12/28/2012	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	4.5/4.0	14/14	40/35	Off	Off	Off
01/03/2013	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	4	15	50	Off	Off	Off
01/10/2013	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	6/4	14/13	40/30	Off	Off	Off
01/18/2013	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	3.3/4	15/15	40/50	Off	Off	Off
02/12/2013	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	4.3	14	40	Off	Off	Off
03/12/2013	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	4.4	14	40	Off	Off	Off
04/09/2013	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	3.8	13	35	Off	Off	Off
05/23/2013	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	4/5	14/14.5	45/50	Off	Off	Off
06/27/2013	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	3/3	14	40/25	Off	Off	Off
07/17/2013	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	3	13.5	25	Off	Off	Off
08/27/2013	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	3/4.8	15/15	10/15	Off	Off	Off
09/17/2013	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	5.3/4	13/13	40/30	Off	Off	Off
03/04/2014	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	3.3/3.0	13/13	25/25	Off	Off	Off
03/24/2014	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	3	14	25	Off	Off	Off
04/30/2014	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	2.8/3	13/13.5	25/25	Off	Off	Off
05/20/2014	0.5	14	100	4	14	25	4	0	25	4	14	25	4	15	25	4	14	25	4	15	25
06/09/2014	1.0	17	100	4	11	25	4	0	25	4	12	25	4	14	25	4	12	25	5/4	14/13	25/25
07/14/2014	0.5	18	100	4	14	25	4	0	25	4	15	25	4	15	25	3.5/4	14/14	25/25	4	15	25
08/20/2014	1.0	18	100	4	14	25	4	0	25	4	15	25	4	15	25	4	14	25	4	14	25
09/18/2014	1.0	19	100	4	15	25	3.3/4	0	25	4	16	25	3.8/4	17/17	25/25	4	15	25	4	15	25
10/22/2014	0.5	17	100	4	12	25	4	0	25	4	13	25	4	15	25	4	13	25	4	13	25
11/18/2014	0.5	22	100	4	19	25	4	17	25	4	18	25	4	19	25	4	18	25	4	17	25
12/18/2014	0.5	20	100	4.2/4	15	25	4.2/4	15	25	4.2/4	16	25	4.2/4	16	25	4.2/4	15	25	4	15	25
07/09/2015	0	15	100	4	12.5	50	4	14	50	NA	NA	NA	NA	NA	NA	4	14	50	4	13	50
07/10/2015	0.5	19	100	5	12	50	4.5	14	50	4/5	15	50/48	4.5	15	50	NA	NA	NA	4/5	14	50/48
08/05/2015	0	18	100	4	11.5	50	4	13.5	25	5	14	25	4	14.5	50	3.8/5.0	13.5	25/50	4	13	50
09/11/2015	0	18	100	4	12	25	4	14	25	5	14	20	3.8/4.0	15/15	25/30	5	14	25	4	8.5	50
10/08/2015	0	19	100	4	13.5	40	4	14	35	5.5/4	16/15.5	50/40	4	16	50	5	15	50	5	14	40
11/05/2015	0	18	100	4	11	40	4	14	30	4	14	10	4	15	30	5/4	14/14	30/25	4	14	25
12/11/2015	1	17	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	4	15	20	4	15	30	4	14	30
01/182016	0	19	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	4/5	16/17	50/60	4/5	15/16	30/40	4.5	15	25
02/05/2016	0	18	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	4	18	50	4	17	50	4	16	50
03/09/2016	0	17	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	4	15	50	4	14	50	4	13	50
04/06/2016	0	17.5	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	4	14	30	4	15.5	40	4	16	30
05/27/2016	0	17	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	4	9.5	30	4.5/4.0	13/13	40	4	13	30
06/09/2016	0	17	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	4	14	30	5/4	14/14	50/40	4	13	30
07/07/2016	0	17	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	3/4	14/15	30/50	3/4	14/14	40/50	4	13	50
08/05/2016	0	16	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	4	14	50	3/4	13/14	50/60	4	13	50
09/12/2016	0	17	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	4	15	50	4	15	60	4	14	50

Table 3-2. Zones 2 and 3 System Operation Evaluation Summary (continued)

Evaluation Date	ASW-38			ASW-39			ASW-40			ASW-41			ASW-42			ASW-43			ASW-44		
	Flow (scfm)	Pressure (psi)	Valve (% open)	Flow (scfm)	Pressure (psi)	Valve (% open)	Flow (scfm)	Pressure (psi)	Valve (% open)	Flow (scfm)	Pressure (psi)	Valve (% open)	Flow (scfm)	Pressure (psi)	Valve (% open)	Flow (scfm)	Pressure (psi)	Valve (% open)	Flow (scfm)	Pressure (psi)	Valve (% open)
12/20/2012	Off	Off	Off	Off	Off	Off	Off	Off	Off	3	-	-	3	-	-	Off	Off	Off	Off	Off	Off
12/21/2012	Off	Off	Off	Off	Off	Off	Off	Off	Off	5	16	-	5	16	-	Off	Off	Off	Off	Off	Off
12/28/2012	Off	Off	Off	Off	Off	Off	Off	Off	Off	5/4	13.5/14	50/40	4	16	50	Off	Off	Off	Off	Off	Off
01/03/2013	Off	Off	Off	Off	Off	Off	Off	Off	Off	4	15	40	4.5/4	16/16	50/45	Off	Off	Off	Off	Off	Off
01/10/2013	Off	Off	Off	Off	Off	Off	Off	Off	Off	3.5/4	13/14	40/45	4	16	40	Off	Off	Off	Off	Off	Off
01/18/2013	Off	Off	Off	Off	Off	Off	Off	Off	Off	3.5/4	15/15	40/45	3.5/4.0	15/15	40/45	Off	Off	Off	Off	Off	Off
02/12/2013	Off	Off	Off	Off	Off	Off	Off	Off	Off	4	13	40	0/0	20/20	40/100	Off	Off	Off	Off	Off	Off
03/12/2013	Off	Off	Off	Off	Off	Off	Off/5.1	Off/15	Off/50	4	14.5	40	0/Off	19/Off	50/Off	Off/4.1	Off/15.5	Off/40	Off/4	Off/15	Off/40
04/09/2013	Off	Off	Off	Off	Off	Off	3.7	12	50	2/4	15.5/15.5	40/50	Off	Off	Off	4	12.5	40	0/0	17/17	40/100
05/23/2013	Off	Off	Off	Off	Off	Off	4.3/5	12/12	50/55	0.5/0.5	17.5/17.5	50/100	Off	Off	Off	4.8/5	12/12	50/55	2/3.5	17/17	50/100
06/27/2013	Off	Off	Off	Off	Off	Off	3.6/3	13/13	50/25	0.5/0	16/0	100/0	Off	Off	Off	3.1/3	40/25	14/14	0.75/0	16	100/0
07/17/2013	Off	Off	Off	Off	Off	Off	3.2/3	12.5/12.5	40/25	Off	Off	Off	Off	Off	Off	3	15	25	0.5	17	100
08/27/2013	Off	Off	Off	Off	Off	Off	2.6/4	12.5/13	15/25	0.5/0.5	8/16.5	0/100	Off	Off	Off	2.8/5	16/16	10/40	0.5	16.5	100
09/17/2013	Off	Off	Off	Off	Off	Off	5/4	11/11	50/40	0.5	16	100	Off	Off	Off	7/4	14/14	50/25	0.5	16	100
03/04/2014	Off	Off	Off	Off	Off	Off	3	12.5	25	0.5	16	100	Off	Off	Off	3	16.5	25	0	16	100
03/24/2014	Off	Off	Off	Off	Off	Off	3	13	25	0.5	19	100	Off	Off	Off	3	16	25	1.5	19	100
04/30/2014	Off	Off	Off	Off	Off	Off	2.5/3	11/11.5	25/25	0.5	18.5	100	Off	Off	Off	3	15	25	Off	Off	Off
05/20/2014	4	13	25	4	17	25	4	11	25	Off	Off	100/Off	Off	Off	Off	4	14	25	Off	Off	Off
06/09/2014	4	11	25	4	17	25	4	9	25	Off	Off	Off	Off	Off	Off	3	14	50	Off	Off	Off
07/14/2014	4	14	25	3.5/4	17/17	25/25	4	13	25	Off	Off	Off	Off	Off	Off	9/4	16/15	50/25	Off	Off	Off
08/20/2014	4	14	25	4	18	25	4	12	25	Off	Off	Off	Off	Off	Off	4	15	25	Off	Off	Off
09/18/2014	4	14	25	4	19	25	4	14	25	Off	Off	Off	Off	Off	Off	3.8/4	17/17	25/25	Off	Off	Off
10/22/2014	3.5/4	11.5/11.5	25	4	17	25	4	9	25	Off	Off	Off	Off	Off	Off	4	15	25	Off	Off	Off
11/18/2014	4	17	25	4	21	25	4	16	25	Off	Off	Off	Off	Off	Off	4	22	25	Off	Off	Off
12/18/2014	4.5/4	14	25	4.1/4	19	25	4.4/4	12	25	Off	Off	Off	Off	Off	Off	1	21	25/100	Off	Off	Off
07/09/2015	4	13	50	4	15	50	4	19	50	NA	NA	NA	NA	NA	NA	0.5	19	100	NA	NA	NA
07/10/2015	NA	NA	NA	4/5	17.5	50/48	4/5	12/10	50/48	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
08/05/2015	6/5	13.5/13	25/20	5	17.5	50	5	9	50	NA	NA	NA	NA	NA	NA	4.8	19	100	NA	NA	NA
09/11/2015	5	13	30	4.8	18	40	4.8	10	50	NA	NA	NA	NA	NA	NA	6/5	20/19	100/50	NA	NA	NA
10/08/2015	5	15	50	5	18.5	40	5	11	50	NA	NA	NA	NA	NA	NA	3.5	20	60	NA	NA	NA
11/05/2015	5/4	13/12	30/25	5/4	17/16	50/30	5/4	9/8	30/25	NA	NA	NA	NA	NA	NA	3/3	20/20	50/100	NA	NA	NA
12/11/2015	3.5	12	20	3.5	17	20	NA	NA	NA	NA	NA	NA	NA	NA	NA	4	18	100	NA	NA	NA
01/182016	3/4.5	14.5/15	25/35	3.2/5	19/19	30/50	NA	NA	NA	NA	NA	NA	NA	NA	NA	10/5	18.5/17	100/30	NA	NA	NA
02/05/2016	4	15	50	4	25	50	NA	NA	NA	NA	NA	NA	NA	NA	NA	4	18	50	NA	NA	NA
03/09/2016	3.5	13.5	50	4	18	50	NA	NA	NA	NA	NA	NA	NA	NA	NA	3	15	30	NA	NA	NA
04/06/2016	4	14	30	4.4	18.5	30	NA	NA	NA	NA	NA	NA	NA	NA	NA	3.4	17	40	NA	NA	NA
05/27/2016	4	12.5	30	5/4	18/17	30/20	NA	NA	NA	NA	NA	NA	NA	NA	NA	3.5/4	11/11	40/45	NA	NA	NA
06/09/2016	6/4	14/13	40	5/4	17/16	20	NA	NA	NA	NA	NA	NA	NA	NA	NA	7/4	17/16	45/40	NA	NA	NA
07/07/2016	3/4	14/14	40/50	2/4	15/16	40/50	NA	NA	NA	NA	NA	NA	NA	NA	NA	2/4	15/16	40/50	NA	NA	NA
08/05/2016	4	13	50	4	17	50	NA	NA	NA	NA	NA	NA	NA	NA	NA	4	15	50	NA	NA	NA
09/12/2016	4	14	50	4	17	50	NA	NA	NA	NA	NA	NA	NA	NA	NA	4	16	50	NA	NA	NA

Table 3-2. Zones 2 and 3 System Operation Evaluation Summary (continued)

Evaluation Date	ASW-45			ASW-46			ASW-47			ASW-48			ASW-49			ASW-50			ASW-53		
	Flow (scfm)	Pressure (psi)	Valve (% open)	Flow (scfm)	Pressure (psi)	Valve (% open)	Flow (scfm)	Pressure (psi)	Valve (% open)	Flow (scfm)	Pressure (psi)	Valve (% open)	Flow (scfm)	Pressure (psi)	Valve (% open)	Flow (scfm)	Pressure (psi)	Valve (% open)	Flow (scfm)	Pressure (psi)	Valve (% open)
12/20/2012	3	-	-	3	-	-	3	-	-	3	-	-	3	-	-	Off	Off	Off	3	-	-
12/21/2012	5	16	-	5	16	-	5	16	-	2.5	16	-	2.5	16	-	Off	Off	Off	5	16	-
12/28/2012	4.2	15	40	2.4/3	15/15	40/100	4.2	15	40	2.2/4	15/15	30/50	3/4	12/12.5	40/50	Off	Off	Off	6/5	7.5/7.5	100/50
01/03/2013	4	16	50	0.5	17	100	4	15	40	5/4	15/15	50/40	4	14	40	Off	Off	Off	5	6	50
01/10/2013	5/4	15/15	40/30	0.5	19	100	2.6/3	18/19.5	40/100	5.5/4	15/15	40/30	5/4	13/13	40/30	Off	Off	Off	6/5	7/7	50/40
01/18/2013	4	15	30	0	21	100	0	20	100	3.5/4	15/15	40/45	4	14.5	40	Off	Off	Off	4.8	10	100
02/12/2013	3.1/4.3	15/15	40/50	0	17	100	0	17	100	4.1	13.5	50	4	13	50	Off	Off	Off	4	5	50
03/12/2013	3.5/4.1	17/17	40/50	0/Off	19/Off	100/Off	Off	Off	Off	Off	Off	Off	4	13	40	Off	Off	Off	0.5/0.5	8	50/100
04/09/2013	4	13.5	40	Off	Off	Off	Off	Off	Off	Off	Off	Off	0/0	17/17	45/100	Off	Off	Off	0	5	100
05/23/2013	0.5	18	100	Off	Off	Off	Off	Off	Off	Off	Off	Off	0.5	18	100	Off	Off	Off	0.5	2	100
06/27/2013	0.75	17	100	Off	Off	Off	Off	Off	Off	Off	Off	Off	0/0	17/0	100/0	Off	Off	Off	0	0	100
07/17/2013	1	17.5	100	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	0.5/Off	0/Off	100/Off
08/27/2013	0.5	17	100	Off	Off	Off	Off	Off	Off	Off	Off	Off	0.5/0.5	17/17	0/100	Off	Off	Off	0.5/0.5	0/0	0/100
09/17/2013	0.5	16.5	100	Off	Off	Off	Off	Off	Off	Off	Off	Off	0.5	17	100	Off	Off	Off	0.5	0	100
03/04/2014	0	17	100	Off	Off	Off	Off	Off	Off	Off	Off	Off	NA	NA	NA	Off	Off	Off	0	0	100
03/24/2014	0.5	20	100	Off	Off	Off	Off	Off	Off	Off	Off	Off	NA	NA	NA	Off	Off	Off	0	0	100
04/30/2014	0.5	19.5	100	Off	Off	Off	Off	Off	Off	Off	Off	Off	0.5	19.5	100	Off	Off	Off	0.5	0	100
05/20/2014	Off	Off	Off	Off	Off	Off	Off	Off	Off	4	15	25	-	-	-	4	14	25	0.5	0	100
06/09/2014	Off	Off	Off	Off	Off	Off	Off	Off	Off	NA	NA	NA	Off	Off	Off	4	12	25	0.5	0	100
07/14/2014	Off	Off	Off	Off	Off	Off	Off	Off	Off	1	18	100	Off	Off	Off	4	14	25	0.5	0	100
08/20/2014	Off	Off	Off	Off	Off	Off	Off	Off	Off	1	18	100	Off	Off	Off	4	14	25	0.5	0	100
09/18/2014	Off	Off	Off	Off	Off	Off	Off	Off	Off	1	20	100	Off	Off	Off	4	15	25	0.5	0	100
10/22/2014	Off	Off	Off	Off	Off	Off	Off	Off	Off	1	18	100	Off	Off	Off	4	13	25	0.0	0	100
11/18/2014	Off	Off	Off	Off	Off	Off	Off	Off	Off	1	22	100	Off	Off	Off	4	19	25	0.0	0	100
12/18/2014	Off	Off	Off	Off	Off	Off	Off	Off	Off	1	20	100	Off	Off	Off	1	20	25/100	0.5	NA	100
07/09/2015	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	5	22	100	NA	NA	NA
07/10/2015	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.5	20	100	NA	NA	NA	0.5	17	100	NA	NA	NA
08/05/2015	NA	NA	NA	NA	NA	NA	NA	NA	NA	0	17	100	NA	NA	NA	0	16.5	100	NA	NA	NA
09/11/2015	NA	NA	NA	NA	NA	NA	NA	NA	NA	0	18	100	NA	NA	NA	0	17	100	NA	NA	NA
10/08/2015	NA	NA	NA	NA	NA	NA	NA	NA	NA	0	20	100	NA	NA	NA	0	19	100	NA	NA	NA
11/05/2015	NA	NA	NA	NA	NA	NA	NA	NA	NA	4	15	100	NA	NA	NA	4	15	100	0	0	100
12/11/2015	NA	NA	NA	NA	NA	NA	NA	NA	NA	0	17	100	NA	NA	NA	0	17	100	0.5	0	100
01/182016	NA	NA	NA	NA	NA	NA	NA	NA	NA	0	18.5	100	NA	NA	NA	0	18	100	0.5	0	100
02/05/2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	0	18	100	NA	NA	NA	0	2	100	0	0	100
03/09/2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	0	15.5	100	NA	NA	NA	0	15	100	0	0	100
04/06/2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	0	16.5	100	NA	NA	NA	0	16.5	100	NA	NA	NA
05/27/2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	0	0	100	NA	NA	NA	0	15.5	100	NA	NA	NA
06/09/2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	0	19	100	NA	NA	NA	0	19	100	NA	NA	NA
07/07/2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	0	15	100	NA	NA	NA	0	15	100	0	8	100
08/05/2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	0	15	100	NA	NA	NA	0	14	100	0	8	100
09/12/2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	0	16	100	NA	NA	NA	0	16	100	1	10	100

Table 3-2. Zones 2 and 3 System Operation Evaluation Summary (continued)

Evaluation Date	ASW-54			ASW-55			ASW-56			ASW-57			ASW-58			ASW-59			ASW-60		
	Flow (scfm)	Pressure (psi)	Valve (% open)	Flow (scfm)	Pressure (psi)	Valve (% open)	Flow (scfm)	Pressure (psi)	Valve (% open)	Flow (scfm)	Pressure (psi)	Valve (% open)	Flow (scfm)	Pressure (psi)	Valve (% open)	Flow (scfm)	Pressure (psi)	Valve (% open)	Flow (scfm)	Pressure (psi)	Valve (% open)
12/20/2012	3	-	-	3	-	-	Off	Off	Off	2	-	-	2	-	-	<1-4	-	-	<1-4	-	-
12/21/2012	5	16	-	5	16	-	Off	Off	Off	1.25	14.5	100	2.75	14-15	100	1-1.5	14-15	100	2-8	14-15	100
12/28/2012	2.5	15	100	6.5/5	15/15	100/50	Off	Off	Off	1.5	14	100	2.75	15	100	1-3	15	100	3-5	15	100
01/03/2013	0.75	14	100	5.3/5	14.5/14.5	55/50	Off	Off	Off	0.5	14	100	1.25	15	100	0-1	15	100	3-5	15	100
01/10/2013	0.5	17	100	6/5	15/15	50/40	Off	Off	Off	0.5	16	100	5	17	100	0-2	16	100	5	16	100
01/18/2013	0	19	50	5	14	50	Off	Off	Off	1.5	16	100	3.5/5	15/15	30/50	1-4	17	100	3.7/5	15/15	30/50
02/12/2013	0	16.5	100	5	14	50	Off	Off	Off	0	16	100	6.8/5	15/14.5	50/40	1.5	17	100	5	15	50
03/12/2013	0.5/0/5	0	0/100	0.5/4.5	14	40/100	Off/5.2	Off/15	Off/15	0.5	14	100	3.7/4.7	14	40/50	0-1	16	100	4.3/4.7	14	40/50
04/09/2013	0	18	100	6.5/5	15/15	100/50	10/4	13/13	50/40	0.5	15	100	5.5	15	50	0-1	17	100	5	15	50
05/23/2013	0.5	18	100	4.7/5	16/16	50/60	0.5/0.5	15/15	50/100	0.5	15.5	100	5.2	16	50	<1	17	100	4.4/4.7	16/16	50/75
06/27/2013	0	0	0	4/4	15/16	60/50	NA	15/15	50/60	.5/.5/.5	17/17	100	3/3.5	16/16	50/100	<1/<1	18/18	100	4.3/3	16/16	75/100
07/17/2013	Off	Off	Off	3.8	14	50	NA	15	50	0.5	16	100	3.5	16	100	<1	17.5	100	3	16	100
08/27/2013	0.5/0.5	18	0/100	3.4/5	7/7	50/95	0.5/0.5	16	100/100	0.5	16	100	2.8	15.5	100	<1	18	100	2.2-3.4	16	100
09/17/2013	0	0	0	5.5/5	7/7	100/50	7/5	15/14	100/50	0.5	15	100	1.5	16	100	<1	17	100	1-4.5	14	100
03/04/2014	0	0	0	5	7	50	5	12	50	0.5	12	100	2.5	15	100	<1	17	100	2-4.5	16	100
03/24/2014	0	0	100	5	7	50	5	14	50	0.5	19	100	5	17	50	<1	21	100	5	17	50
04/30/2014	0.5	0	100	5.3/5	7/7	50/50	4.8/5	14/14	50/50	1.5	17.5	100	6/5	17.5/17	50/25	<1	20.5	100	6.2/5	18	50/25
05/20/2014	0.5	0	100	4.2/5	7/7	50/50	4.4/5	12.5/12.5	50/50	0.75	17	100	4/5	16/16	50/50	<1	21	100	4/5	17/17	50/50
06/09/2014	0.5	0	100	5	7	50	5	13	50	0.50	17	100	5	16	50	<1	20	100	5	16	50
07/14/2014	0.5	0	100	4.8	7	50	5.2	10	50	0.50	17	100	5	16	50	<1	20	100	5	16	50
08/20/2014	0.5	0	100	5	7	50	5	7	50	0.50	17	100	5	17	50	<1	20	100	5	17	50
09/18/2014	0.5	0	100	5	7	50	5	10	50	0.50	18	100	5	17	50	<1	20	100	5	17	50
10/22/2014	0.0	0	100	5	7	50	5	10	50	0.50	17	100	5	17	50	<1	20	100	5	17	50
11/18/2014	0.0	0	100	5	8	50	5	10	50	1.00	18	100	5	17	50	<1	21	100	5	17	50
12/18/2014	0.0	NA	100	5.5	NA	50	0.5	NA	50	1.50	18	100	5/6	18	50	<1	22	100	5	17	50
07/09/2015	NA	NA	NA	NA	NA	NA	NA	NA	NA	0	19	100	5	17.5	50	0	21	100	5	17	50
07/10/2015	NA	NA	NA	NA	NA	NA	NA	NA	NA	0	17	100	5	17	50	0	21	100	5	16	50
08/05/2015	NA	NA	NA	5	7.5	50	NA	NA	NA	0	17	100	3.8/5	18/17	50/50	0	22	100	5/5	20/16	50/50
09/11/2015	NA	NA	NA	5	7.5	50	NA	NA	NA	0	17	100	5	17.5	50	0	21	100	4.4	17	50
10/08/2015	NA	NA	NA	0	7.5	100	NA	NA	NA	0	17	100	4	17	50	0	21	100	3.75	16	50
11/05/2015	0	0	100	5/4	8/8	50/40	5/4	8/8	90/60	0	18	100	5	17	50	0	23	100	4	17	50
12/11/2015	1	0	100	4	10	50	4	0	50	0	15	100	3.5/4	16/16	40/50	0	18	100	3.5/4	16/16	50/60
01/182016	1	0	100	4	10	50	4	0	50	0	17	100	4.5	16	50	0	18	100	4	17	75
02/05/2016	0	2	100	4	10	50	4	0	50	0	17	100	2.5/4	16/16	50/100	1	18	100	3.5	18	50
03/09/2016	0	0	100	3	7.5	50	8/4	7.5/7.5	50/40	0	15	100	0	9	100	0	17	100	1/1	15.5/15.5	50/100
04/06/2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	0	14.5	100	0	7.5	100	0	18	100	2	17	100
05/27/2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	0	16	100	10/4	7.5/2	100/25	0	19.5	100	5/4	11.5/11.5	100/40
06/09/2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	0	17	100	4	0	25	0	20	100	5/4	16/15	40
07/07/2016	0	8	100	4	5	40	0	8	40/100	0	15	100	4	0	40	2	17	100	2/3	16/16	40/100
08/05/2016	0	8	100	4/4	5/5	100	0	8	100	0	14	100	4	0	40	0	9	100	3	15	100
09/12/2016	0	8	100	4	5	100	0	8	100	0	14	100	4	0	40	0	10	100	4	17	100

Table 3-2. Zones 2 and 3 System Operation Evaluation Summary (continued)

Evaluation Date	ASW-61			ASW-62			ASW-63			ASW-64			ASW-65			ASW-66			ASW-67		
	Flow (scfm)	Pressure (psi)	Valve (% open)	Flow (scfm)	Pressure (psi)	Valve (% open)	Flow (scfm)	Pressure (psi)	Valve (% open)	Flow (scfm)	Pressure (psi)	Valve (% open)	Flow (scfm)	Pressure (psi)	Valve (% open)	Flow (scfm)	Pressure (psi)	Valve (% open)	Flow (scfm)	Pressure (psi)	Valve (% open)
12/20/2012	<1-4	-	-	<1-4	-	-	<1-4	-	-	<1-4	-	-	<1-4	-	-	<1-4	-	-	<1-4	-	-
12/21/2012	1-1.5	14-15	100	1-1.5	14-15	100	1.5-2	14-15	100	1-6	14-15	100	1.5-7	14-15	100	2-10	14-15	100	1	14-15	100
12/28/2012	1-5.5	15	100	0-1	14	100	1-4	15	100	3-4	14	100	2-3	15	100	3-4	14	100	0-1	15	100
01/03/2013	0-1.5	15	100	0-1	15	100	0-1	15	100	1-10	15	100	1-3.5	15	100	2-4.5	15	100	1-2.5	15	100
01/10/2013	0-2	17	100	3.5	16.5	100	2	16.5	100	5.2	16	100	1.6-3	16.5	100	3-5	16	100	3-5	16	100
01/18/2013	3	17	100	3.5/5	16/16	30/50	3.5-4.5	16	100	3.7/5	14/14	30/40	7.6/5	15/15	100/40	3/5	15/15	30/50	3.6/5	15/15	30/40
02/12/2013	1-4	16	100	5	15	50	1-3.5	16	100	5	15	50	2/2.5	16	50/100	4.8	15	50	5	15	50
03/12/2013	0-1	15	100	3	14	50	0-1	15	100	3.5/4.1	14	40/50	3.8	15	100	3.8/4	14	40/50	3.8/4.3	14	40/50
04/09/2013	0-1	16	100	2.2/2.2	15/15	50/100	0-1	15	100	4/4.5	14/14	50/100	1.6	15	100	3.2/3.2	15/15	50/100	2.5/2.5	15/15	50/100
05/23/2013	<1	16	100	3	16	100	<1-1.5	16	100	5.3	16	100	2-3	16	100	3.6	16	100	2-5.5	15	100
06/27/2013	<1/<1	16/16	100	.5-2.5/1-2.	16/16	100	<1/<1	16/16	100	3.5/3.5	16/16	100	<1/<1	16/16	100	1-2.5/1.7	16/16	100	1-2/1.5	16/16	100
07/17/2013	<1	16	100	2	16	100	<1	16	100	4	16	100	<1-1	16	100	2	16	100	<1-1	16	100
08/27/2013	<1	16	100	1.2-3.2	15.5	100	<1	16	100	3-4.2	16	100	<1	15.5	100	0.2-2.2	16	100	<1	15.5	100
09/17/2013	<1	16	100	1-3	16	100	<1	15.5	100	2.5-4.5	15	100	<1	15	100	<1-2.5	16	100	<1	15.5	100
03/04/2014	<1	15.5	100	2.5	12.5	100	1	15.5	100	2-10	15.5	100	0-2	16	100	1-4.5	16	100	1	15	100
03/24/2014	<1	19	100	5	16	50	1.5-5	19	100	5	16.5	50	2.5	19	100	4	19	100	4	19	100
04/30/2014	1-4	18/17	100	5.7/5	16.5	50/25	<1	18.5	100	5.7/5	17/17	50/25	<1	18	100	3	18.5	100	3	18	100
05/20/2014	0-1.5	18	100	4/5	17/17	50/50	<1	18	100	4/5	17/17	50/50	<1	18	100	4	18	100	5	17	100
06/09/2014	<1	18	100	5	16	50	<1	18	100	5	16	50	<1	18	100	4	18	100	2.5	17	100
07/14/2014	<1	17	100	5	16	50	<1	17	100	5	16	25	<1	17	100	4	17	100	2	17	100
08/20/2014	<1	18	100	5	17	50	<1	18	100	5	17	50	<1	18	100	2	18	100	<1	18	100
09/18/2014	<1	18	100	5	17	50	<1	18	100	4.5	17	50	<1	18	100	4	18	100	<1	18	100
10/22/2014	<1	18	100	4.5	17	50	<1	18	100	4	16	50	1	18	100	2	17	100	<1	18	100
11/18/2014	<1	18	100	5	17	50	<1	18	100	5	17	50	<1	18	100	<1	18.5	100	<1	17	100
12/18/2014	<1	19	100	3	19	50	<1	19	100	6	17	50	<1	19	100	<1	12	100	<1	5	100
07/09/2015	NA	NA	NA	1	18	50	0	19	100	5	0.5	50	0.5	18.5	100	0	5	100	2	16	100
07/10/2015	NA	NA	NA	0/0.5	15/17	50/100	0	17	100	5	15	50	0.5	17	100	0	5	100	3	9	100
08/05/2015	0	19	100	0	18	100	0	18	100	3.8/5*	15/15*	50/50*	0	18	100	0	17	100	3	18	100
09/11/2015	0	19	100	2.5	18	100	0	18	100	4.5	15.5	50	0	17.5	100	0	17.5	100	3.5	18	100
10/08/2015	0	18	100	2	17	100	0	17	100	4	15	50	0	17	100	0	18	100	2	18	100
11/05/2015	0	20	100	4	17	100	0	20	100	4	16	50	0	16	100	0	17	100	4	19	100
12/11/2015	0	17	100	3/4	16/16	50/60	0	17	100	4	15	40	0	15	100	0	16	100	0	11	100
01/182016	0	17	100	3	16	75	0	17	100	3	15	50	0	22	100	0	16	100	0	16	100
02/05/2016	0	17	100	2/3	16/16	50/100	0	17	100	2/2	7/7	50/100	0	22	100	0	17	100	2	16	100
03/09/2016	0	16	100	1	15	100	0	16	100	0	7.5	100	0	20	100	0	15	100	0	14	100
04/06/2016	0	17	100	1	15.5	100	0	17	100	0	7	100	0	20	100	0	15	100	0	15	100
05/27/2016	0	19	100	5/4	18/17	100/25	0	19	100	3.5	10	100	0	7	100	0	17	100	0	11	100
06/09/2016	NA	NA	NA	3/4	17/18	25/50	2	20	100	2	17	100	0	15	100	0	20	100	0	15	100
07/07/2016	NA	NA	NA	2/3	17/17	50/100	0	17	100	1	10	100	0	14	100	0	17	100	2	14	100
08/05/2016	NA	NA	NA	2	15	100	0	16	100	2	11	100	0	10	100	0	15	100	0	13	100
09/12/2016	NA	NA	NA	2	16	100	0	16	100	0	10	100	0	4	100	0	15	100	1	10	100

Table 3-2. Zones 2 and 3 System Operation Evaluation Summary (continued)

Evaluation Date	ASW-68			ASW-52S		
	Flow (scfm)	Pressure (psi)	Valve (% open)	Flow (scfm)	Pressure (psi)	Valve (% open)
12/20/2012	<1-4	-	-	-	-	-
12/21/2012	1	14-15	100	-	-	-
12/28/2012	1-1.5	15	100	4.5	15	50
01/03/2013	0-1	15	100	5.3/5	14/14	55/50
01/10/2013	2-3	17	100	6.2/5	15/15	60/50
01/18/2013	3.5/5	16.5/16.5	30/100	5	15	50
02/12/2013	3.5	16	100	5	15	50
03/12/2013	1.7	15.5	100	2.3/4.5	16	50/100
04/09/2013	2.2	15	100	5.6/5	16/16	100/50
05/23/2013	2.8	16	100	4.5/5	18/18	50/75
06/27/2013	1.8/3/2	16/16	100	4/4	15/17.5	50/50
07/17/2013	2	16	100	3.8	50	17
08/27/2013	0.2-2.6	16	100	3.4/5	17/17	50/100
09/17/2013	<1-2	16	100	5	17	100
03/04/2014	0-2.5	0	100	0	17	100
03/24/2014	1-3	19	100	0	20	100
04/30/2014	<1	18	100	<1-4	20	100
05/20/2014	<1	18	100	<1	19	100
06/09/2014	<1	18	100	<1	17	100
07/14/2014	<1	18	100	<1	12	100
08/20/2014	<1	18	100	<1	10	100
09/18/2014	<1	18	100	2	10	100
10/22/2014	<1	18	100	2	10	100
11/18/2014	<1	18.5	100	<1	10	100
12/18/2014	<1	19	100	0.5	NA	100
07/09/2015	0	19	100	NA	NA	NA
07/10/2015	0	17	100	NA	NA	NA
08/05/2015	0	18	100	NA	NA	NA
09/11/2015	0	17	100	2	10	100
10/08/2015	0	18	100	4	14	100
11/05/2015	0	19	100	2	10	100
12/11/2015	0	17	100	2	7	100
01/182016	0	18	100	2	7	100
02/05/2016	0	18	100	2	10	100
03/09/2016	0	15.5	100	1	10	100
04/06/2016	0	17	100	1	0	100
05/27/2016	0	19	100	NA	NA	NA
06/09/2016	0	22	100	3	10	100
07/07/2016	0	18	100	3	8	100
08/05/2016	0	17	100	3	8	100
09/12/2016	0	17	100	3	8	100

scfm = Standard cubic feet per minute.
psi = Pounds per square inch.
/ = Separates values before/after adjustment. ("Before" values used in performance average calculations).
& = Separates pressure readings observed on each of the two legs that make up Zone 1.
NA = Not available.

Table 3-3. System Operation Run Time

Date	Evaluation Period (hours)			Cumulative (hours)			Comments
	Available Time	Run Time	Down Time	Available Time	Run Time	Down Time	
12/19/2012	0	0	0	0	5304	0	
12/20/2012	24	24	0	24	5328	0	
12/21/2012	24	24	0	48	5352	0	
12/28/2012	172	172	0	220	5524	0	
01/03/2013	141	141	0	361	5665	0	
01/10/2013	170	170	0	531	5835	0	
01/18/2013	188	188	0	719	6023	0	
02/12/2013	603	603	0	1322	6626	0	
03/12/2013	668	668	0	1990	7294	0	
04/09/2013	696	618	78	2686	7912	78	System off line for sampling on 3/18/2013 and 3/19/2013 and again from 4/2/2013 and 4/3/2013.
05/23/2013	1054	1051	3	3740	8963	81	
06/27/2013	840	786	54	4580	9749	135	SW3 system off line for 72 hours while POL system started.
07/17/2013	480	475	5	5060	10224	140	SW3 Zones 2&3 offline 6/28/2013 to 7/1/2013 for melted trunk line repair. System running in other zones.
08/27/2013	984	863	121	6044	11087	261	
09/17/2013	504	355	149	6548	11442	410	System off line for sampling on 9/3/2013 to 9/9/2013.
10/17/2013	720	720	0	7268	12162	410	Excessive blower noise. System shut down for off-site blower repair on 10/17/2013.
11/17/2013	744	0	744	8012	12162	1154	System shut down for off-site blower repair from 10/17/2013 to 03/04/2014.
12/17/2013	720	0	720	8732	12162	1874	System shut down for off-site blower repair from 10/17/2013 to 03/04/2014.
01/17/2014	744	0	744	9476	12162	2618	System shut down for off-site blower repair from 10/17/2013 to 03/04/2014.
02/17/2014	744	0	744	10220	12162	3362	System shut down for off-site blower repair from 10/17/2013 to 03/04/2014.
03/04/2014	360	0	360	10580	12162	3722	System shut down for off-site blower repair from 10/17/2013 to 03/04/2014.
03/24/2014	480	429	51	11060	12591	3773	System shut down for oil change.
04/30/2014	888	793	96	11948	13384	3869	System off for sampling 3/24/2014 to 3/28/2014.
05/20/2014	484	484	0	12432	13868	3869	

Table 3-3. System Operation Run Time

Date	Evaluation Period (hours)			Cumulative (hours)			Comments
	Available Time	Run Time	Down Time	Available Time	Run Time	Down Time	
06/09/2014	480	476	4	12912	14344	3873	Changed oil.
07/14/2014	840	743	97	13752	15087	3970	System off for sampling 6/9/2014 to 6/13/2014.
08/20/2014	888	885	3	14640	15972	3973	
09/18/2014	696	548	148	15336	16520	4121	Changed oil. System off line for DPT sampling 9/4/2014 to 9/10/2014.
10/22/2014	816	697	119	16152	17217	4240	System off line for sampling 9/18/2014 to 9/23/2014.
11/18/2014	648	648	0	16800	17865	4240	
12/18/2014	720	716	4	17520	18581	4244	Changed oil. System down due to power outage 12/31/2014
01/12/2015	600	600	0	18120	NA	4244	System shut down for blower repair off site on 1/12/2015.
07/09/2015	4272	0	4272	22392	18913	8516	Installed new blower and motor. System restarted 7/9/2015.
08/05/2015	648	637	11	23040	19550	8527	
09/11/2015	1536	1523	13	23928	20436	8540	Changed oil. System off line for sampling 9/13/2015 to 9/21/2015.
10/08/2015	1536	1325	211	24576	20875	8751	
11/05/2015	1320	1109	211	25248	21545	8962	
12/11/2015	1536	1535	1	26112	22410	8963	Changed oil. System off line for POL sampling 12/11/2015 to 12/16/2015.
01/18/2016	1776	1563	213	27024	23108	9176	
02/05/2016	1344	1130	214	27456	23540	9390	
03/09/2016	1224	1200	24	28248	24308	9414	Changed oil. System off line for POL/SW3 sampling 03/20/2016 to 3/24/2016.
04/06/2016	1464	1333	131	28920	24873	9545	
05/27/2016	1896	1538	358	30144	25846	9903	
06/09/2016	1536	1287	249	30456	26160	10152	Changed oil. System shut down for POL GW Sampling 06/09/2016 to 6/15/2016
07/07/2016	984	798	186	31128	26644	10338	
08/05/2016	1368	1204	164	31824	27364	10502	System off intermittently 07/25/16 to 07/29/16 for HMI failure and repair
09/12/2016	1608	1101	507	32736	27745	11009	Changed oil. System shut down for GW Sampling from 9/7/2017 through 9/10/2016
Totals	**26112**	**17362**	**8751**	**26112**	**63.4%**	**35.6%**	

SECTION IV

RESULTS AND DISCUSSION

This section presents the results of semi-annually sampling conducted to evaluate the effectiveness of the AS system in the ARZ. Monitoring well and surface water sample locations are provided on Figure 1-3. The groundwater and surface water analytical results are summarized in Tables 4-1 and 4-2, respectively. Figure 4-1 presents results for all VOCs detected in groundwater at concentrations exceeding GCTLs or in surface water at concentrations exceeding Freshwater Surface Water Cleanup Target Levels (SWCTLs) since CMI baseline sampling in October 2008, and Figure 4-2 presents all groundwater and surface water results for TCE, cDCE, tDCE, and VC since October 2008.

4.1 GROUNDWATER AND SURFACE WATER ANALYTICAL RESULTS

Groundwater and surface water results from semi-annual sampling events conducted during this reporting period are discussed in this section. In March 2016, 10 monitoring wells and 3 surface water locations were sampled, and in September 2016, 5 monitoring wells and 2 surface water locations were sampled. Groundwater and surface water analytical results are presented in Tables 4-1 and 4-2, respectively. Groundwater results exceeding GCTLs and groundwater sampling results are presented in Figures 4-1 and 4-2, respectively. Laboratory data packages are provided in Appendix D.

4.1.1 March 2016. Groundwater monitoring was conducted on March 24, 2016, following 1,192 calendar days and 1,024 run-time days of revised ARZ system operation. TCE results were less than the FDEP GCTL of 3 µg/L for all 10 wells sampled in March 2016, except MW0009 (19 µg/L). VC results exceeded the GCTL in 6 of 10 wells sampled, at concentrations ranging from 1.1 µg/L to 56.2 µg/L. No VOCs were detected in exceedance of NADCs during the March 2016 event. In surface water samples SW0001 and SW0002, carbon disulfide was detected at concentrations of 0.26 and 0.28 µg/L, respectively, less than the Freshwater SWCTL of 110

µg/L. The carbon disulfide detections are most likely attributable to the laboratory VOC extraction process. No other VOCs were detected in excess of method detection limits in surface water samples SW0001, SW0002, or SW0003.

4.1.2 September 2016. Groundwater monitoring was conducted on September 10, 2016, after 1,347 calendar days and 1,154 run-time days of the AS system in the original ARZ and revised ARZ. TCE results were less than the FDEP GCTL for all wells sampled in September 2016, except MW0009 (19 µg/L). VC results were less than the FDEP GCTL for monitoring well MW0026, and greater than the FDEP GCTL for monitoring wells MW0009 (13 µg/L), MW0025 (1.7 µg/L), MW0027 (61 µg/L) and MW0028 (21 µg/L). No VOCs were detected in exceedance of NADCs during the September 2016 event. In surface water sample SW0002, acetone was detected at a concentration of 13 µg/L and is most likely attributable to the laboratory extraction process. No water was present at SW0001 during the September 2016 sampling event. No other VOCs were detected in excess of method detection limits in surface water samples collected in September 2016.

4.2 CONTAMINANT REDUCTION

As defined in the CMD, TCE in the original ARZ is located within a discrete depth interval from 2 to 22 feet below sea level relative to the North Geodetic Vertical Datum of 1929 (NGVD29) and with an aerial extent of approximately 23,800 square feet (NASA, 2007). VC in the revised ARZ south of 5th Street is located within a discrete depth interval from 5 to 25 feet below sea level relative to NGVD29 and with an aerial extent of approximately 6,180 square feet, as defined in the CMI Semi-Annual Progress Report (NASA, 2011b) and Annual Performance Monitoring advance data package (ADP) presented to the KSCRT in May 2011 (Meeting Minute 1105-M10, Decision 1105-D24). These intervals were used to determine the soluble TCE and VC masses in the revised ARZ south of 5th Street prior to system startup in December 2012 and at the time of the quarterly and semi-annual sampling events.

It is estimated that approximately 7.08 pounds of soluble TCE existed in October 2008 in the northern ARZ prior to initial AS system startup and that 0.06 pound of soluble TCE remained in June 2012 after 9 months of system operation and 30 months of post-operational monitoring (based on the geometric mean concentration in the four wells located within the original ARZ, MW0001, MW0003, MW0021, and MW0023). The estimated soluble mass of TCE including that in the original ARZ and revised ARZ at the time of baseline sampling prior to restarting the system in December 2012 was 0.09 pound (based on the geometric mean concentration in the four original ARZ source wells MW0001, MW0003, MW0021, and MW0023 and southern source well MW0027), with 0.005 pound in the revised ARZ alone (based on the concentration in MW0027). From December 2012 through September 2016, 0.09 pound or 98.36 percent of TCE mass was removed from the original ARZ and revised ARZ, and all wells sampled had TCE concentrations less than the GCTL within the original ARZ and revised ARZ during this time period. These estimated masses of soluble TCE do not include any TCE adsorbed onto soils or possible free product that could exist but was not observed.

It is estimated that approximately 0.65 pound of soluble VC existed in October 2008 in the northern ARZ prior to startup and that 0.02 pound of soluble VC remained in June 2012 after 9 months of system operation and 30 months of post-active remediation monitoring (based on the geometric mean concentration in the four wells in the original ARZ). The estimated soluble mass of VC including that in the revised ARZ at the time of baseline sampling in December 2012 prior to restarting the system was 2.28 pounds (based on the geometric mean concentration in the four ARZ source area wells and revised ARZ source well), with 2.249 pounds in the revised ARZ alone (based on the concentration at MW0027). From December 2012 through September 2016, 2.14 pounds or 80.66 percent of VC mass was removed from the original ARZ and revised ARZ. The estimated masses of soluble VC do not include any VC adsorbed onto soils or possible free product that could exist but was not observed.

Table 4-1. Monitoring Well Analytical Results

PARAMETER	FDEP GCTL	SW3-MW0001											
		Feb-05	Aug-06	Apr-07	Oct-08	Sep-09	Dec-09	Mar-10	Jun-10	Sep-10	Dec-10	Mar-11	Jun-11
		15-25 ft bls											
Volatile Organics (µg/L)													
1,1-DICHLOROETHANE	70	1.1 U	**2.1**	50 U	48 U	0.24 U	0.24 U	0.22 U	0.22 U	0.22 U	0.25 U	0.25 U	0.25 U
1,1-DICHLOROETHENE	7	**13**	**8.3**	50 U	110 U	0.54 U	0.54 U	0.29 U	0.29 U	0.29 U	0.23 U	0.23 U	0.23 U
2-BUTANONE	4200	4.5 U	5 U	250 U	400 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
ACETONE	6300	39 U	**9.3 I**	1300 U	2000 U	**32.3**	**22.9 I**	10 U	10 U	10 U	10 U	10 U	10 U
CARBON DISULFIDE	700	1.3 U	2 U	100 U	80 U	**5.2**	0.4 U	0.4 U	0.4 U	0.4 U	0.5 U	0.5 U	0.5 U
CHLOROFORM	70	1.2 U	1 U	50 U	56 U	0.28 U	0.28 U	0.25 U	0.25 U	0.25 U	0.22 U	0.22 U	0.22 U
CHLOROMETHANE	2.7	7.8 U	2 U	100 U	120 U	0.61 U	0.61 U	**1.4 I**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
CIS-1,2-DICHLOROETHENE	70	**8300**	3890 U	**2530**	**6620**	**7.1**	**7**	**7.2**	**6.6**	**5.2**	**5.8**	**7.2**	**4.4**
ETHYLBENZENE	30	1.3 U	1 U	50 U	86 U	0.43 U	0.43 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
METHYL CYCLOHEXANE	NC	NA	NA	NA	**135 I**	0.3 U	0.3 U	0.2 U	0.2 U	0.2 U	0.38 U	0.38 U	0.38 U
METHYLENE CHLORIDE	5	1.4 U	5 U	250 U	200 U	1 U	1 U	2 U	2 U	2 U	2 U	2 U	2 U
TOLUENE	40	1.4 U	**0.72 I**	50 U	70 U	0.35 U	0.35 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
TOTAL XYLENES	20	5.5 U	3 U	150 U	230 U	1.2 U	1.2 U	0.54 U	0.54 U	0.54 U	0.52 U	0.52 U	0.52 U
TRANS-1,2-DICHLOROETHENE	100	**140**	**111 L**	**68.9**	**159 I**	0.45 U	0.45 U	**0.45 I**	**0.59 I**	**0.36 I**	**0.56 I**	**0.57 I**	**0.41 I**
TRICHLOROETHENE	3	**19000**	8440 U	**5530**	**13400**	**12.1**	**18.6**	**21.3**	**25.7**	**17.8**	**25.1**	**26**	**19.8**
VINYL CHLORIDE	1	**27**	**20.4**	50 U	**76.8 I**	0.3 U	0.3 U	0.28 U	0.28 U	0.28 U	0.22 U	0.22 U	0.22 U

Table 4-1. Monitoring Well Analytical Results (continued)

PARAMETER	FDEP GCTL	SW3-MW0001											
		Jun-12	Dec-12	Mar-13	Jun-13	Sep-13	Dec-13	Mar-14	Jun-14	Sep-14	Mar-15	Sep-15	Mar-16
		15-25 ft bls											
Volatile Organics (µg/L)													
1,1-DICHLOROETHANE	70	1 U	0.62 U	1 U	1 U	0.52 U	0.52 U	0.52 U	0.52 U	0.52 U	0.2 U	0.2 U	0.26 U
1,1-DICHLOROETHENE	7	1 U	0.94 U	1 U	1 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.27 U	0.27 U	0.22 U
2-BUTANONE	4200	12 U	4.5 U	12 U	12 U	8.4 U	8.4 U	8.4 U	8.4 U	8.4 U	1.2 U	1.2 U	2.6 U
ACETONE	6300	12 U	1.8 U	12 U	12 U	9.9 U	9.9 U	9.9 U	9.9 U	9.9 U	10 U	10 U	10 U
CARBON DISULFIDE	700	5 U	2.6 U	5 U	5 U	1 U	1 U	1 U	1 U	1 U	0.29 U	0.29 U	0.23 U
CHLOROFORM	70	1 U	0.8 U	1 U	1 U	0.9 U	0.9 U	0.9 U	0.9 U	0.9 U	0.3 U	0.3 U	0.3 U
CHLOROMETHANE	2.7	1 U	0.82 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.5 U	0.5 U	0.5 U
CIS-1,2-DICHLOROETHENE	70	**2.7**	**4.8**	1 U	1 U	**0.85 I**	**1.9**	**1.2**	0.65 U	0.65 U	**2.6**	0.22 U	**0.36**
ETHYLBENZENE	30	1 U	0.69 U	1 U	1 U	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U	0.2 U	0.2 U	0.25 U
METHYL CYCLOHEXANE	NC	1 U	0.64 U	1 U	1 U	NA	NA	NA	NA	NA	0.22 U	0.22 U	0.23 U
METHYLENE CHLORIDE	5	5 U	0.71 U	5 U	5 U	4 U	4 U	4 U	4 U	4 U	2 U	2 U	2 U
TOLUENE	40	1 U	0.72 U	1 U	1 U	0.51 U	0.51 U	0.51 U	0.51 U	0.51 U	0.4 U	0.4 U	0.2 U
TOTAL XYLENES	20	NA	NA	NA	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.51 U	0.51 U	0.56 U
TRANS-1,2-DICHLOROETHENE	100	1 U	0.73 U	1 U	1 U	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U	0.21 U	0.21 U	0.33 U
TRICHLOROETHENE	3	**13**	**19**	**1.6 J**	1 U	**2.8**	**7.4**	**4.5**	**0.96 I**	**1.4**	**5.8**	0.22 U	**1.2**
VINYL CHLORIDE	1	1 U	0.71 U	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.25 U	0.25 U	0.31 U

Table 4-1. Monitoring Well Analytical Results (continued)

PARAMETER	FDEP GCTL	SW3-MW0005									
		Feb-05	Aug-06	Oct-08	Dec-09	Jun-10	Dec-10	Jun-11	Jun-12	Dec-12	Mar-16
		15-25 ft bls									
Volatile Organics (µg/L)											
1,1-DICHLOROETHANE	70	0.11 U	1 U	0.24 U	0.24 U	0.22 U	0.25 U	0.25 U	1 U	0.62 U	0.26 U
1,1-DICHLOROETHENE	7	0.11 U	1 U	0.54 U	0.54 U	0.29 U	0.23 U	0.23 U	1 U	0.94 U	0.22 U
2-BUTANONE	4200	0.45 U	5 U	2 U	2 U	2 U	2 U	2 U	12 U	4.5 U	2.6 U
ACETONE	6300	3.9 U	25 U	10 U	10 U	10 U	10 U	10 U	12 U	1.8 U	10 U
CARBON DISULFIDE	700	0.13 U	2 U	0.4 U	0.4 U	0.4 U	0.5 U	0.5 U	5 U	2.6 U	0.23 U
CHLOROFORM	70	0.12 U	1 U	0.28 U	0.28 U	0.25 U	0.22 U	0.22 U	1 U	0.8 U	0.3 U
CHLOROMETHANE	2.7	0.78 U	2 U	0.61 U	0.61 U	0.5 U	0.5 U	0.5 U	1 U	0.82 U	0.5 U
CIS-1,2-DICHLOROETHENE	70	0.1 U	1 U	**0.34 I**	0.2 U	0.32 U	**0.42 I**	0.26 U	**10**	**8.4**	0.31 U
ETHYLBENZENE	30	0.13 U	1 U	0.43 U	0.43 U	0.2 U	0.2 U	0.2 U	1 U	0.69 U	0.25 U
METHYL CYCLOHEXANE	NC	NA	NA	0.3 U	0.3 U	0.2 U	0.38 U	0.38 U	1 U	0.64 U	0.23 U
METHYLENE CHLORIDE	5	0.14 U	5 U	1 U	1 U	2 U	2 U	2 U	5 U	0.71 U	2 U
TOLUENE	40	0.14 U	1 U	0.35 U	0.35 U	0.2 U	0.2 U	0.2 U	1 U	0.72 U	0.2 U
TOTAL XYLENES	20	0.55 U	3 U	1.2 U	1.2 U	0.54 U	0.52 U	0.52 U	NA	NA	0.56 U
TRANS-1,2-DICHLOROETHENE	100	0.25 U	**1.6**	**4.4**	0.45 U	0.34 U	0.35 U	0.35 U	**4.7**	**6.4**	0.33 U
TRICHLOROETHENE	3	0.12 U	1 U	**0.59 I**	0.32 U	0.24 U	0.26 U	0.26 U	1 U	0.89 U	0.27 U
VINYL CHLORIDE	1	**110**	123 U	**364**	**1.1**	**2.5**	**2.1**	**1.6**	**46**	**91**	0.31 U

Table 4-1. Monitoring Well Analytical Results (continued)

PARAMETER	FDEP GCTL	SW3-MW0006									
		Feb-05	Aug-06	Oct-08	Dec-09	Jun-10	Dec-10	Jun-11	Jun-12	Dec-12	Mar-16
		35-45 ft bls									
Volatile Organics (µg/L)											
1,1-DICHLOROETHANE	70	0.11 U	1 U	0.24 U	0.24 U	0.22 U	0.25 U	0.25 U	1 U	0.62 U	0.26 U
1,1-DICHLOROETHENE	7	0.11 U	1 U	0.54 U	0.54 U	0.29 U	0.23 U	0.23 U	1 U	0.94 U	0.22 U
2-BUTANONE	4200	0.45 U	5 U	2 U	2 U	2 U	2 U	2 U	12 U	4.5 U	2.6 U
ACETONE	6300	3.9 U	25 U	10 U	10 U	10 U	10 U	10 U	12 U	1.8 U	10 U
CARBON DISULFIDE	700	0.13 U	2 U	0.4 U	0.4 U	0.4 U	0.5 U	0.5 U	5 U	2.6 U	**0.3**
CHLOROFORM	70	0.12 U	1 U	0.28 U	0.28 U	0.25 U	0.22 U	0.22 U	1 U	0.8 U	0.3 U
CHLOROMETHANE	2.7	0.78 U	2 U	0.61 U	0.61 U	0.5 U	0.5 U	0.5 U	1 U	0.82 U	0.5 U
CIS-1,2-DICHLOROETHENE	70	0.1 U	1 U	**8.6**	**1.9**	**0.61 I**	**0.54 I**	**3.5**	**7.6**	**13**	**0.94**
ETHYLBENZENE	30	0.13 U	1 U	0.43 U	0.43 U	0.2 U	0.2 U	0.2 U	1 U	0.69 U	0.25 U
METHYL CYCLOHEXANE	NC	NA	NA	0.3 U	0.3 U	0.2 U	0.38 U	0.38 U	1 U	0.64 U	0.23 U
METHYLENE CHLORIDE	5	0.14 U	5 U	1 U	1 U	2 U	2 U	2 U	5 U	0.71 U	2 U
TOLUENE	40	0.14 U	1 U	0.35 U	0.35 U	0.2 U	0.2 U	0.2 U	1 U	0.72 U	0.2 U
TOTAL XYLENES	20	0.55 U	3 U	1.2 U	1.2 U	0.54 U	0.52 U	0.52 U	NA	NA	0.56 U
TRANS-1,2-DICHLOROETHENE	100	0.25 U	**1.1**	**0.96 I**	**3.2**	**4.1**	**5.8**	**5.1**	**2.4**	**3.6**	**1.2**
TRICHLOROETHENE	3	0.12 U	1 U	**3.7**	0.32 U	0.24 U	0.26 U	0.26 U	1 U	**1 J**	**0.27**
VINYL CHLORIDE	1	**43**	**54.2**	**19.6**	**82.8**	**62.4**	**80.6**	**76.7**	**27**	**48**	**15.1**

Table 4-1. Monitoring Well Analytical Results (continued)

PARAMETER	FDEP GCTL	SW3-MW0009													
		Apr-05	Aug-06	Apr-07	Oct-08	Dec-09	Jun-10	Dec-10	Jun-11	Jun-12	Dec-12	Mar-15	Sep-15	Mar-16	Sep-16
		15-25 ft bls													
Volatile Organics (µg/L)															
1,1-DICHLOROETHANE	70	1 U	1 U	1 U	0.24 U	0.24 U	0.22 U	0.25 U	0.25 U	1 U	0.62 U	0.2 U	0.2 U	0.26 U	0.62 U
1,1-DICHLOROETHENE	7	1 U	1 U	1 U	0.54 U	0.54 U	0.29 U	**0.44 I**	**0.53 I**	1 U	0.94 U	0.27 U	0.27 U	**0.28**	0.94 U
2-BUTANONE	4200	5 U	5 U	5 U	2 U	2 U	2 U	2 U	2 U	12 U	4.5 U	1.2 U	1.2 U	2.6 U	4.5 U
ACETONE	6300	25 U	25 U	**5.6 I**	10 U	10 U	10 U	10 U	10 U	12 U	1.8 U	10 U	10 U	10 U	10 U
CARBON DISULFIDE	700	2 U	2 U	2 U	0.4 U	**0.7 I**	**3.7**	0.5 U	0.5 U	5 U	2.6 U	0.29 U	0.29 U	0.23 U	2.6 U
CHLOROFORM	70	**0.66 J**	1 U	1 U	0.28 U	0.28 U	0.25 U	0.22 U	0.22 U	1 U	0.8 U	0.3 U	0.3 U	0.3 U	0.8 U
CHLOROMETHANE	2.7	2 U	2 U	2 U	0.61 U	0.61 U	0.5 U	0.5 U	0.5 U	1 U	0.82 U	0.5 U	0.5 U	0.5 U	0.82 U
CIS-1,2-DICHLOROETHENE	70	**73.8**	220 U	**77.8**	**59.5**	**33**	**99.1**	**63.4**	**91.4**	**56**	**57**	**75.8**	**116**	**79.8**	**79**
ETHYLBENZENE	30	1 U	1 U	1 U	0.43 U	0.43 U	0.2 U	0.2 U	0.2 U	1 U	0.69 U	0.2 U	0.2 U	0.25 U	0.69 U
METHYL CYCLOHEXANE	NC	NA	NA	NA	0.3 U	0.3 U	0.2 U	0.38 U	0.38 U	1 U	0.64 U	0.22 U	0.22 U	0.23 U	0.64 U
METHYLENE CHLORIDE	5	5 U	5 U	5 U	1 U	1 U	2 U	2 U	2 U	5 U	0.71 U	2 U	2 U	2 U	2 U
TOLUENE	40	1 U	1 U	1 U	0.35 U	0.35 U	0.2 U	0.2 U	0.2 U	1 U	0.72 U	0.4 U	0.4 U	0.2 U	0.72 U
TOTAL XYLENES	20	3 U	3 U	3 U	1.2 U	1.2 U	0.54 U	0.52 U	0.52 U	NA	NA	0.51 U	0.51 U	0.56 U	1.3 U
TRANS-1,2-DICHLOROETHENE	100	**3.6**	**9**	**4.5**	**3.8**	**5**	**11.6**	**7.6**	**8.4**	**6.1**	**4.9**	**8.8**	**14.6**	**8.7**	**8.8**
TRICHLOROETHENE	3	1 U	**1.9**	**0.6 I**	0.32 U	**3.8**	**12.8**	**45.9**	**70**	**64**	**25**	**15.2**	**46.5**	**19**	**19**
VINYL CHLORIDE	1	**27.4**	**26.9**	**36.1**	**7.2**	**32.7**	**9.2**	**8.8**	**6.9**	**2.8**	**2.3**	**7.7**	**7.4**	**8.5**	**13**

Table 4-1. Monitoring Well Analytical Results (continued)

PARAMETER	FDEP GCTL	SW3-MW0020										
		Apr-05	Aug-06	Oct-08	Dec-09	Jun-10	Dec-10	Jun-11	Jun-12	Dec-12	Mar-15	Mar-16
		35-45 ft bls										
Volatile Organics (µg/L)												
1,1-DICHLOROETHANE	70	1 U	1 U	0.24 U	0.24 U	0.22 U	0.25 U	0.25 U	1 U	0.62 U	0.2 U	0.26 U
1,1-DICHLOROETHENE	7	1 U	1 U	0.54 U	0.54 U	0.29 U	0.23 U	0.23 U	1 U	0.94 U	0.27 U	0.22 U
2-BUTANONE	4200	5 U	5 U	2 U	2 U	2 U	2 U	2 U	12 U	4.5 U	1.2 U	2.6 U
ACETONE	6300	25 U	25 U	10 U	10 U	10 U	10 U	10 U	12 U	1.8 U	10 U	10 U
CARBON DISULFIDE	700	2 U	2 U	0.4 U	0.4 U	0.4 U	0.5 U	0.5 U	5 U	2.6 U	0.29 U	0.23 U
CHLOROFORM	70	1 U	1 U	0.28 U	0.28 U	0.25 U	0.22 U	0.22 U	1 U	0.8 U	0.3 U	0.3 U
CHLOROMETHANE	2.7	2 U	2 U	0.61 U	0.61 U	0.5 U	0.5 U	0.5 U	1 U	0.82 U	0.5 U	0.5 U
CIS-1,2-DICHLOROETHENE	70	1 U	1 U	0.2 U	0.2 U	0.32 U	0.26 U	0.26 U	1 U	0.53 U	0.22 U	0.31 U
ETHYLBENZENE	30	1 U	1 U	0.43 U	0.43 U	0.2 U	0.2 U	0.2 U	1 U	0.69 U	0.2 U	0.25 U
METHYL CYCLOHEXANE	NC	NA	NA	0.3 U	0.3 U	0.2 U	0.38 U	0.38 U	1 U	0.64 U	0.22 U	0.23 U
METHYLENE CHLORIDE	5	5 U	5 U	1 U	1 U	2 U	2 U	2 U	5 U	0.71 U	2 U	2 U
TOLUENE	40	1 U	1 U	0.35 U	0.35 U	0.2 U	0.2 U	0.2 U	1 U	0.72 U	0.4 U	0.2 U
TOTAL XYLENES	20	3 U	3 U	1.2 U	1.2 U	0.54 U	0.52 U	0.52 U	NA	NA	0.51 U	0.56 U
TRANS-1,2-DICHLOROETHENE	100	1 U	1 U	**0.99 I**	0.45 U	0.34 U	0.35 U	0.35 U	1 U	0.73 U	0.21 U	0.33 U
TRICHLOROETHENE	3	1 U	1 U	0.32 U	**0.71 I**	**0.61 I**	**0.46 I**	0.26 U	1 U	0.89 U	0.22 U	0.27 U
VINYL CHLORIDE	1	1 U	1 U	**224**	0.3 U	0.28 U	0.22 U	0.22 U	1 U	0.71 U	0.25 U	0.31 U

Table 4-1. Monitoring Well Analytical Results (continued)

PARAMETER	FDEP GCTL	SW3-MW0024									
		Aug-06	Apr-07	Oct-08	Dec-09	Jun-10	Dec-10	Jun-11	Jun-12	Dec-12	Mar-16
		35-45 ft bls									
Volatile Organics (µg/L)											
1,1-DICHLOROETHANE	70	1 U	1 U	0.24 U	0.24 U	0.22 U	0.25 U	0.25 U	1 U	0.62 U	0.26 U
1,1-DICHLOROETHENE	7	1 U	1 U	0.54 U	0.54 U	0.29 U	0.23 U	0.23 U	1 U	0.94 U	0.22 U
2-BUTANONE	4200	5 U	5 U	2 U	2 U	2 U	2 U	2 U	12 U	4.5 U	2.6 U
ACETONE	6300	25 U	25 U	10 U	10 U	10 U	10 U	10 U	12 U	1.8 U	10 U
CARBON DISULFIDE	700	2 U	2 U	0.4 U	0.4 U	0.4 U	0.5 U	0.5 U	5 U	2.6 U	0.23 U
CHLOROFORM	70	1 U	1 U	0.28 U	0.28 U	0.25 U	0.22 U	0.22 U	1 U	0.8 U	0.3 U
CHLOROMETHANE	2.7	2 U	2 U	0.61 U	0.61 U	0.5 U	0.5 U	0.5 U	1 U	0.82 U	0.5 U
CIS-1,2-DICHLOROETHENE	70	**1.2**	**0.9 I**	**1**	**1.6**	0.32 U	**0.55 I**	0.26 U	**0.7 J**	**21**	0.31 U
ETHYLBENZENE	30	1 U	1 U	0.43 U	0.43 U	0.2 U	0.2 U	0.2 U	1 U	0.69 U	0.25 U
METHYL CYCLOHEXANE	NC	NA	NA	0.3 U	0.3 U	0.2 U	0.38 U	0.38 U	1 U	0.64 U	0.23 U
METHYLENE CHLORIDE	5	5 U	5 U	1 U	1 U	2 U	2 U	2 U	5 U	0.71 U	2 U
TOLUENE	40	1 U	1 U	0.35 U	0.35 U	0.2 U	0.2 U	0.2 U	1 U	0.72 U	0.2 U
TOTAL XYLENES	20	3 U	3 U	1.2 U	1.2 U	0.54 U	0.52 U	0.52 U	NA	NA	0.56 U
TRANS-1,2-DICHLOROETHENE	100	1 U	1 U	0.45 U	**4.1**	**7.6**	**3.4**	**1.5**	**1 J**	**3**	**1**
TRICHLOROETHENE	3	1 U	1 U	**0.72 I**	0.32 U	0.24 U	0.26 U	0.26 U	1 U	**2.1**	0.27 U
VINYL CHLORIDE	1	**32.9**	**54.4**	**17.3**	**101**	**85.2**	**91.7**	**79.1**	**52**	**120**	**21.5**

Table 4-1. Monitoring Well Analytical Results (continued)

PARAMETER	FDEP GCTL	SW3-MW0025												
		Aug-06	Apr-07	Oct-08	Dec-09	Jun-10	Dec-10	Jun-11	Jun-12	Dec-12	Mar-15	Sep-15	Mar-16	Sep-16
		35-45 ft bls												
Volatile Organics (µg/L)														
1,1-DICHLOROETHANE	70	1 U	1 U	1.2 U	0.24 U	0.22 U	0.5 U	0.5 U	1 U	0.62 U	0.2 U	0.2 U	0.26 U	0.62 U
1,1-DICHLOROETHENE	7	1 U	1 U	**3.5 I**	0.54 U	**1.5**	**2.2**	**2.3**	1 U	0.94 U	0.27 U	0.27 U	0.22 U	0.94 U
2-BUTANONE	4200	5 U	5 U	10 U	2 U	2 U	4 U	4 U	12 U	4.5 U	1.2 U	1.2 U	2.6 U	4.5 U
ACETONE	6300	**7.4 I**	25 U	50 U	10 U	10 U	20 U	20 U	12 U	1.8 U	10 U	10 U	10 U	**17 I**
CARBON DISULFIDE	700	2 U	2 U	2 U	0.4 U	0.4 U	1 U	1 U	5 U	2.6 U	0.29 U	0.29 U	0.23 U	2.6 U
CHLOROFORM	70	1 U	1 U	1.4 U	0.28 U	0.25 U	0.44 U	0.44 U	1 U	0.8 U	0.3 U	0.3 U	0.3 U	0.8 U
CHLOROMETHANE	2.7	2 U	2 U	3.1 U	0.61 U	0.5 U	1 U	1 U	1 U	0.82 U	0.5 U	0.5 U	0.5 U	0.82 U
CIS-1,2-DICHLOROETHENE	70	**18.2**	**7.3**	**300**	**10.2**	**54.1**	**99.3**	**88**	**3.2**	**9.2**	0.22 U	**0.28 I**	**0.44**	0.53 U
ETHYLBENZENE	30	1 U	1 U	2.2 U	0.43 U	0.2 U	0.4 U	0.4 U	1 U	0.69 U	0.2 U	0.2 U	0.25 U	0.69 U
METHYL CYCLOHEXANE	NC	NA	NA	1.5 U	0.3 U	0.2 U	0.76 U	0.76 U	1 U	0.64 U	0.22 U	0.22 U	0.23 U	0.64 U
METHYLENE CHLORIDE	5	5 U	5 U	5 U	1 U	2 U	4 U	4 U	5 U	0.71 U	2 U	2 U	2 U	2 U
TOLUENE	40	1 U	1 U	1.8 U	0.35 U	0.2 U	0.4 U	0.4 U	1 U	0.72 U	0.4 U	0.4 U	0.2 U	0.72 U
TOTAL XYLENES	20	3 U	3 U	5.8 U	1.2 U	0.54 U	1 U	1 U	NA	NA	0.51 U	0.51 U	0.56 U	1.3 U
TRANS-1,2-DICHLOROETHENE	100	**0.64 I**	**1**	**10.4**	**1.2**	**5.1**	**12**	**10.8**	**7**	**9.4**	**0.97 I**	**0.54 I**	0.33 U	0.73 U
TRICHLOROETHENE	3	1 U	1 U	**179**	**3.5**	**20.5**	**48**	**41.6**	**2.3**	**5**	0.22 U	0.22 U	0.27 U	0.89 U
VINYL CHLORIDE	1	**47.2**	**75.5**	**280**	**79.3**	**310**	**699**	**576**	**200**	**260**	**3.8**	**3**	**1.1**	**1.7 I**

Table 4-1. Monitoring Well Analytical Results (continued)

PARAMETER	FDEP GCTL	SW3-MW0026										
		Mar-13	Jun-13	Sep-13	Dec-13	Mar-14	Jun-14	Sep-14	Mar-15	Sep-15	Mar-16	Sep-16
		35-45 ft bls										
Volatile Organics (µg/L)												
1,1-DICHLOROETHANE	70	1 U	1 U	0.52 U	0.52 U	0.52 U	0.52 U	0.52 U	0.2 U	0.2 U	0.26 U	0.62 U
1,1-DICHLOROETHENE	7	1 U	1 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.27 U	0.27 U	0.22 U	0.94 U
2-BUTANONE	4200	12 U	12 U	8.4 U	8.4 U	8.4 U	8.4 U	8.4 U	1.2 U	1.2 U	2.6 U	4.5 U
ACETONE	6300	12 U	12 U	9.9 U	9.9 U	9.9 U	9.9 U	9.9 U	10 U	10 U	10 U	10 U
CARBON DISULFIDE	700	5 U	5 U	1 U	1 U	1 U	1 U	1 U	0.29 U	0.29 U	**0.38**	2.6 U
CHLOROFORM	70	1 U	1 U	0.9 U	0.9 U	0.9 U	0.9 U	0.9 U	0.3 U	0.3 U	0.3 U	0.8 U
CHLOROMETHANE	2.7	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.5 U	0.5 U	0.5 U	0.82 U
CIS-1,2-DICHLOROETHENE	70	**4**	**2.4**	**2.4**	**0.87 I**	**2.2**	**2.2**	**1.2**	**0.56 I**	**0.72 I**	**0.67**	**0.69 I**
ETHYLBENZENE	30	1 U	1 U	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U	0.2 U	0.2 U	0.25 U	0.69 U
METHYL CYCLOHEXANE	NC	1 U	1 U	NA	NA	NA	NA	NA	0.22 U	0.22 U	0.23 U	0.64 U
METHYLENE CHLORIDE	5	5 U	5 U	4 U	4 U	4 U	4 U	4 U	2 U	2 U	2 U	2 U
TOLUENE	40	1 U	1 U	0.51 U	0.51 U	0.51 U	0.51 U	0.51 U	0.4 U	0.4 U	0.2 U	0.72 U
TOTAL XYLENES	20	NA	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.51 U	0.51 U	0.56 U	1.3 U
TRANS-1,2-DICHLOROETHENE	100	1 U	1 U	0.44 U	0.44 U	**0.62 I**	**0.49 I**	0.44 U	0.21 U	**0.28 I**	0.33 U	0.73 U
TRICHLOROETHENE	3	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.22 U	**0.24 I**	0.27 U	0.89 U
VINYL CHLORIDE	1	**6.6**	**3.8**	**7.9**	**6**	**7.7**	**4.3**	**4.4**	**0.74 I**	**1.4**	**1.8**	0.71 U

Table 4-1. Monitoring Well Analytical Results (continued)

PARAMETER	FDEP GCTL	SW3-MW0027											
		Dec-12	Mar-13	Jun-13	Sep-13	Dec-13	Mar-14	Jun-14	Sep-14	Mar-15	Sep-15	Mar-16	Sep-16
		35-45 ft bls											
Volatile Organics (µg/L)													
1,1-DICHLOROETHANE	70	6.2 U	1 U	1 U	0.52 U	0.52 U	0.52 U	0.52 U	0.52 U	0.2 U	0.2 U	0.26 U	0.62 U
1,1-DICHLOROETHENE	7	9.4 U	1 U	1 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.27 U	0.27 U	0.22 U	0.94 U
2-BUTANONE	4200	45 U	12 U	12 U	8.4 U	8.4 U	8.4 U	8.4 U	8.4 U	1.2 U	1.2 U	2.6 U	4.5 U
ACETONE	6300	18 U	12 U	12 U	9.9 U	9.9 U	9.9 U	9.9 U	9.9 U	10 U	10 U	10 U	10 U
CARBON DISULFIDE	700	26 U	5 U	5 U	1 U	1 U	1 U	1 U	1 U	0.29 U	0.29 U	**0.31**	2.6 U
CHLOROFORM	70	8 U	1 U	1 U	0.9 U	0.9 U	0.9 U	0.9 U	0.9 U	0.3 U	0.3 U	0.3 U	0.8 U
CHLOROMETHANE	2.7	8.2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.5 U	0.5 U	0.5 U	0.82 U
CIS-1,2-DICHLOROETHENE	70	5.3 U	1 U	1 U	0.65 U	0.65 U	**1.1**	0.65 U	0.65 U	0.22 U	0.22 U	0.31 U	0.53 U
ETHYLBENZENE	30	6.9 U	1 U	1 U	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U	0.2 U	0.2 U	0.25 U	0.69 U
METHYL CYCLOHEXANE	NC	6.4 U	1 U	1 U	NA	NA	NA	NA	NA	0.22 U	0.22 U	0.23 U	0.64 U
METHYLENE CHLORIDE	5	7.1 U	5 U	5 U	4 U	4 U	4 U	4 U	4 U	2 U	2 U	2 U	2 U
TOLUENE	40	7.2 U	1 U	1 U	0.51 U	0.51 U	0.51 U	0.51 U	0.51 U	0.4 U	0.4 U	0.2 U	0.72 U
TOTAL XYLENES	20	NA	NA	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.51 U	0.51 U	0.56 U	1.3 U
TRANS-1,2-DICHLOROETHENE	100	7.3 U	**1.7 J**	1 U	0.44 U	0.44 U	**1.2**	0.44 U	0.44 U	0.21 U	0.21 U	0.33 U	0.73 U
TRICHLOROETHENE	3	8.9 U	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.22 U	0.22 U	0.27 U	0.89 U
VINYL CHLORIDE	1	**930**	**440**	**91**	**21**	**16**	**220**	**39**	**8.6**	0.25 U	**5.1**	**21.8**	**61**

Table 4-1. Monitoring Well Analytical Results (continued)

PARAMETER	FDEP GCTL	SW3-MW0028											
		Dec-12	Apr-13	Jun-13	Sep-13	Dec-13	Mar-14	Jun-14	Sep-14	Mar-15	Sep-15	Mar-16	Sep-16
		27-37 ft bls											
Volatile Organics (µg/L)													
1,1-DICHLOROETHANE	70	0.62 U	1 U	1 U	0.52 U	0.52 U	0.52 U	0.52 U	0.52 U	0.2 U	0.2 U	0.26 U	0.62 U
1,1-DICHLOROETHENE	7	0.94 U	1 U	1 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.27 U	0.27 U	0.22 U	0.94 U
2-BUTANONE	4200	4.5 U	12 U	12 U	8.4 U	8.4 U	8.4 U	8.4 U	8.4 U	1.2 U	1.2 U	2.6 U	4.5 U
ACETONE	6300	1.8 U	12 U	12 U	9.9 U	9.9 U	9.9 U	9.9 U	9.9 U	10 U	10 U	10 U	10 U
CARBON DISULFIDE	700	2.6 U	5 U	5 U	1 U	1 U	1 U	1 U	1 U	0.29 U	0.29 U	**0.31**	2.6 U
CHLOROFORM	70	0.8 U	1 U	1 U	0.9 U	0.9 U	0.9 U	0.9 U	0.9 U	0.3 U	0.3 U	0.3 U	0.8 U
CHLOROMETHANE	2.7	0.82 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.5 U	0.5 U	0.5 U	0.82 U
CIS-1,2-DICHLOROETHENE	70	0.53 U	1 U	1 U	0.65 U	0.65 U	0.65 U	0.65 U	0.65 U	0.22 U	0.22 U	0.31 U	0.53 U
ETHYLBENZENE	30	0.69 U	1 U	1 U	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U	0.2 U	0.2 U	0.25 U	0.69 U
METHYL CYCLOHEXANE	NC	0.64 U	1 U	1 U	NA	NA	NA	NA	NA	0.22 U	0.22 U	0.23 U	0.64 U
METHYLENE CHLORIDE	5	0.71 U	5 U	5 U	4 U	4 U	4 U	4 U	4 U	2 U	2 U	2 U	2 U
TOLUENE	40	0.72 U	1 U	1 U	0.51 U	0.51 U	0.51 U	0.51 U	0.51 U	0.4 U	0.4 U	0.2 U	0.72 U
TOTAL XYLENES	20	NA	NA	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.51 U	0.51 U	0.56 U	1.3 U
TRANS-1,2-DICHLOROETHENE	100	0.73 U	1 U	1 U	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U	0.21 U	0.21 U	0.33 U	0.73 U
TRICHLOROETHENE	3	0.89 U	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.22 U	0.22 U	0.27 U	0.89 U
VINYL CHLORIDE	1	**820**	**370**	**260**	**180**	**96**	**78**	**92**	**69**	**59.2**	**94.8**	**56.2**	**21**

Highlighted concentrations exceed Florida Department of Environmental Protextion Groundwater Cleaenup Target Levels (Florida Administrative Code 62-777).
Bolded concentrations exceed method detection limits.
ft bls = Feet below land surface.
I = Value is between method detection limit and practical quantitation limit.
J = Estimate value.
U = Not detected.
NA = Not analyzed.
L = Off scale high. Actual value is known to be greater than the value given.
µg/L = Micrograms per liter.
NC = No criterion.

Table 4-2. Surface Water Analytical Results

Parameter	Freshwater SWCTL	SW3-SW0001					
		10/16/2008	9/8/2009	3/29/2010	6/25/2013	9/22/2014	9/18/2015
Volatile Organics (µg/L)							
1,1,1,2-TETRACHLOROETHANE	NC	0.2 U	0.2 U	0.2 U	NA	NA	NA
1,1,1-TRICHLOROETHANE	270	0.33 U	0.33 U	0.22 U	1 U	0.46 U	0.26 U
1,1,2,2-TETRACHLOROETHANE	10.8	0.21 U	0.21 U	0.29 U	1 U	0.15 U	0.22 U
1,1,2-TRICHLOROETHANE	16	0.26 U	0.26 U	0.29 U	1 U	0.47 U	0.31 U
1,1,2-TRICHLOROTRIFLUOROETHANE	NC	0.34 U	0.34 U	0.43 U	1 U	NA	NA
1,1-DICHLOROETHANE	NC	0.24 U	0.24 U	0.22 U	1 U	0.52 U	0.2 U
1,1-DICHLOROETHENE	3.2	0.54 U	0.54 U	0.29 U	1 U	0.45 U	0.27 U
1,2,3-TRICHLOROBENZENE	85	0.5 U	0.5 U	0.5 U	NA	0.77 U	NA
1,2,4-TRICHLOROBENZENE	23	0.5 U	0.5 U	0.5 U	1 U	0.58 U	0.5 U
1,2-DIBROMO-3-CHLOROPROPANE	NC	0.32 U	0.32 U	0.59 U	5 U	2.5 U	0.61 U
1,2-DIBROMOETHANE	13	0.28 U	0.28 U	0.23 U	1 U	0.5 U	0.42 U
1,2-DICHLOROBENZENE	99	0.2 U	0.2 U	0.26 U	1 U	0.44 U	0.22 U
1,2-DICHLOROETHANE	37	0.34 U	0.34 U	0.33 U	1 U	0.57 U	0.2 U
1,2-DICHLOROPROPANE	14	0.21 U	0.21 U	0.27 U	1 U	0.52 U	0.25 U
1,3-DICHLOROBENZENE	85	0.23 U	0.23 U	0.29 U	1 U	0.64 U	0.22 U
1,4-DICHLOROBENZENE	3	0.22 U	0.22 U	0.22 U	1 U	0.52 U	0.25 U
2-BUTANONE	120000	2 U	2 U	2 U	12 U	8.4 U	1.2 U
2-HEXANONE	NC	5 U	5 U	5 U	2.5 U	4.4 U	2 U
4-METHYL-2-PENTANONE	23000	2 U	2 U	2 U	2.5 U	3.8 U	1 U
ACETONE	1700	10 U	**12.2 I**	10 U	12 U	9.9 U	10 U
BENZENE	71.28	0.4 U	0.4 U	0.21 U	1 U	0.5 U	20 U
BROMOCHLOROMETHANE	NC	0.23 U	0.23 U	0.23 U	NA	NA	NA
BROMODICHLOROMETHANE	22	0.2 U	0.2 U	0.28 U	1 U	0.35 U	0.22 U
BROMOFORM	360	0.33 U	0.33 U	0.24 U	1 U	0.58 U	0.32 U
BROMOMETHANE	35	0.78 U	0.78 U	0.78 U	1 U	2.5 U	NA
CARBON DISULFIDE	110	0.4 U	0.4 U	0.4 U	5 U	1 U	0.29 U
CARBON TETRACHLORIDE	4.42	0.22 U	0.22 U	0.34 U	1 U	0.42 U	0.28 U
CHLOROBENZENE	17	0.22 U	0.22 U	0.2 U	1 U	0.63 U	0.2 U
CHLORODIBROMOMETHANE	34	0.2 U	0.2 U	0.33 U	1 U	0.34 U	0.2 U
CHLOROETHANE	NC	0.48 U	0.48 U	0.51 U	1 U	2.5 U	0.5 U
CHLOROFORM	470.8	0.28 U	0.28 U	0.25 U	1 U	0.9 U	0.3 U
CHLOROMETHANE	470.8	0.61 U	0.61 U	0.5 U	1 U	1 U	0.5 U
CIS-1,2-DICHLOROETHENE	NC	**21.2**	0.2 U	0.32 U	1 U	0.65 U	0.22 U
CIS-1,3-DICHLOROPROPENE	NC	0.21 U	0.21 U	0.2 U	1 U	0.14 U	0.25 U
CYCLOHEXANE	NC	0.34 U	0.34 U	0.22 U	1 U	NA	0.2 U
DICHLORODIFLUOROMETHANE	NC	1 U	1 U	0.67 U	1 U	2.5 U	0.5 U
ETHYLBENZENE	610	0.43 U	0.43 U	0.2 U	1 U	0.44 U	0.2 U
ISOPROPYLBENZENE	260	0.2 U	0.2 U	0.2 U	1 U	0.19 U	0.2 U
M+P-XYLENES	NC	NA	NA	NA	2 U	NA	NA
METHYL ACETATE	NC	5 U	5 U	5 U	1 U	NA	5 U
METHYL CYCLOHEXANE	NC	0.3 U	0.3 U	0.2 U	1 U	NA	0.22 U
METHYL TERT-BUTYL ETHER	34000	0.26 U	0.26 U	0.25 U	1 U	0.44 U	0.3 U
METHYLENE CHLORIDE	1580	1 U	1 U	2 U	5 U	4 U	2 U
O-XYLENE	NC	NA	NA	NA	1 U	NA	NA
STYRENE	460	0.36 U	0.36 U	0.2 U	1 U	0.98 U	0.28 U
TETRACHLOROETHENE	8.85	0.22 U	0.22 U	0.44 U	1 U	0.5 U	0.22 U
TOLUENE	480	0.35 U	0.35 U	0.2 U	1 U	0.51 U	0.4 U
TOTAL XYLENES	370	1.2 U	1.2 U	0.54 U	NA	0.5 U	0.51 U
TRANS-1,2-DICHLOROETHENE	11000	**0.51 I**	0.45 U	0.34 U	1 U	0.44 U	0.21 U
TRANS-1,3-DICHLOROPROPENE	NC	0.21 U	0.21 U	0.22 U	1 U	0.14 U	0.26 U
TRICHLOROETHENE	80.7	**0.56 I**	0.32 U	0.24 U	1 U	0.5 U	**0.71**
TRICHLOROFLUOROMETHANE	NC	0.5 U	0.5 U	0.4 U	1 U	2.5 U	0.5 U
VINYL CHLORIDE	2.4	0.3 U	0.3 U	0.28 U	1 U	0.5 U	0.5 U

Table 4-2. Surface Water Analytical Results (continued)

Parameter	Freshwater SWCTL	SW3-SW0001 (continued)	SW3-SW0002			
		3/25/2016	12/11/2012	6/25/2013	9/9/2013	10/31/2013
Volatile Organics (µg/L)						
1,1,1,2-TETRACHLOROETHANE	NC	NA	NA	NA	NA	NA
1,1,1-TRICHLOROETHANE	270	0.2 U	0.8 U	1 U	0.46 U	0.8 U
1,1,2,2-TETRACHLOROETHANE	10.8	0.33 U	0.54 U	1 U	0.15 U	0.54 U
1,1,2-TRICHLOROETHANE	16	0.37 U	0.76 U	1 U	0.47 U	0.76 U
1,1,2-TRICHLOROTRIFLUOROETHANE	NC	NA	0.73 U	1 U	NA	0.73 U
1,1-DICHLOROETHANE	NC	0.26 U	0.62 U	1 U	0.52 U	0.62 U
1,1-DICHLOROETHENE	3.2	0.26 U	0.94 U	1 U	0.45 U	0.94 U
1,2,3-TRICHLOROBENZENE	85	NA	NA	NA	0.77 U	NA
1,2,4-TRICHLOROBENZENE	23	0.5 U	0.7 U	1 U	0.58 U	0.7 U
1,2-DIBROMO-3-CHLOROPROPANE	NC	0.81 U	0.96 U	5 U	2.5 U	0.96 U
1,2-DIBROMOETHANE	13	0.33 U	0.78 U	1 U	0.5 U	0.78 U
1,2-DICHLOROBENZENE	99	0.27 U	0.73 U	1 U	0.44 U	0.73 U
1,2-DICHLOROETHANE	37	0.28 U	0.63 U	1 U	0.57 U	0.63 U
1,2-DICHLOROPROPANE	14	0.34 U	0.8 U	1 U	0.52 U	0.8 U
1,3-DICHLOROBENZENE	85	0.39 U	0.77 U	1 U	0.64 U	0.77 U
1,4-DICHLOROBENZENE	3	0.39 U	0.76 U	1 U	0.52 U	0.76 U
2-BUTANONE	120000	2.6 U	4.5 U	12 U	8.4 U	4.5 U
2-HEXANONE	NC	2 U	1.4 U	2.5 U	4.4 U	1.4 U
4-METHYL-2-PENTANONE	23000	1.4 U	0.79 U	2.5 U	3.8 U	0.79 U
ACETONE	1700	10 U	1.8 U	12 U	9.9 U	1.8 U
BENZENE	71.28	0.2 U	0.71 U	1 U	0.5 U	0.71 U
BROMOCHLOROMETHANE	NC	0.24 U	NA	NA	NA	NA
BROMODICHLOROMETHANE	22	0.26 U	0.52 U	1 U	0.35 U	0.52 U
BROMOFORM	360	0.46 U	0.75 U	1 U	0.58 U	0.75 U
BROMOMETHANE	35	NA	0.95 U	1 U	2.5 U	0.95 U
CARBON DISULFIDE	110	**0.26**	2.6 U	5 U	1 U	2.6 U
CARBON TETRACHLORIDE	4.42	0.3 U	0.94 U	1 U	0.42 U	0.94 U
CHLOROBENZENE	17	0.2 U	0.72 U	1 U	0.63 U	0.72 U
CHLORODIBROMOMETHANE	34	0.24 U	0.44 U	1 U	0.34 U	0.44 U
CHLOROETHANE	NC	0.63 U	0.98 U	1 U	2.5 U	0.98 U
CHLOROFORM	470.8	0.3 U	0.8 U	1 U	0.9 U	0.8 U
CHLOROMETHANE	470.8	NA	0.82 U	1 U	1 U	0.82 U
CIS-1,2-DICHLOROETHENE	NC	0.31 U	0.53 U	1 U	**20**	0.53 U
CIS-1,3-DICHLOROPROPENE	NC	0.26 U	0.59 U	1 U	0.14 U	0.59 U
CYCLOHEXANE	NC	0.26 U	0.93 U	1 U	NA	0.93 U
DICHLORODIFLUOROMETHANE	NC	0.26 U	0.74 U	1 U	2.5 U	0.74 U
ETHYLBENZENE	610	0.25 U	0.69 U	1 U	0.44 U	0.69 U
ISOPROPYLBENZENE	260	0.33 U	0.67 U	1 U	0.19 U	0.67 U
M+P-XYLENES	NC	NA	1.3 U	2 U	NA	NA
METHYL ACETATE	NC	5 U	0.95 U	1 U	NA	0.95 U
METHYL CYCLOHEXANE	NC	0.23 U	0.64 U	1 U	NA	0.64 U
METHYL TERT-BUTYL ETHER	34000	0.2 U	0.6 U	1 U	0.44 U	0.6 U
METHYLENE CHLORIDE	1580	2 U	0.71 U	5 U	4 U	0.71 U
O-XYLENE	NC	NA	0.53 U	1 U	NA	0.53 U
STYRENE	460	0.24 U	0.61 U	1 U	0.98 U	0.61 U
TETRACHLOROETHENE	8.85	NA	0.76 U	1 U	0.5 U	0.76 U
TOLUENE	480	0.2 U	**1.5 I**	1 U	0.51 U	0.72 U
TOTAL XYLENES	370	0.56 U	NA	NA	0.5 U	1.3 U
TRANS-1,2-DICHLOROETHENE	11000	0.33 U	0.73 U	1 U	**2.2**	0.73 U
TRANS-1,3-DICHLOROPROPENE	NC	0.25 U	0.73 U	1 U	0.14 U	0.73 U
TRICHLOROETHENE	80.7	0.27 U	0.89 U	1 U	0.5 U	0.89 U
TRICHLOROFLUOROMETHANE	NC	0.5 U	0.94 U	1 U	2.5 U	0.94 U
VINYL CHLORIDE	2.4	0.31 U	0.71 U	1 U	24	0.71 U

Table 4-2. Surface Water Analytical Results (continued)

Parameter	Freshwater SWCTL	SW3-SW0002 (continued)					
		12/5/2013	3/27/2014	9/22/2014	3/24/2015	9/18/2015	3/25/2016
Volatile Organics (µg/L)							
1,1,1,2-TETRACHLOROETHANE	NC	NA	NA	NA	NA	NA	NA
1,1,1-TRICHLOROETHANE	270	0.46 U	0.46 U	0.46 U	0.26 U	0.26 U	0.2 U
1,1,2,2-TETRACHLOROETHANE	10.8	0.15 U	0.15 U	0.15 U	0.22 U	0.22 U	0.33 U
1,1,2-TRICHLOROETHANE	16	0.47 U	0.47 U	0.47 U	0.31 U	0.31 U	0.37 U
1,1,2-TRICHLOROTRIFLUOROETHANE	NC	NA	NA	NA	0.29 U	0.29 U	NA
1,1-DICHLOROETHANE	NC	0.52 U	0.52 U	0.52 U	0.2 U	0.2 U	0.26 U
1,1-DICHLOROETHENE	3.2	0.45 U	0.45 U	0.45 U	0.27 U	0.27 U	0.26 U
1,2,3-TRICHLOROBENZENE	85	0.77 U	0.77 U	0.77 U	NA	NA	NA
1,2,4-TRICHLOROBENZENE	23	0.58 U	0.58 U	0.58 U	0.5 U	0.5 U	0.5 U
1,2-DIBROMO-3-CHLOROPROPANE	NC	2.5 U	2.5 U	2.5 U	0.61 U	0.61 U	0.81 U
1,2-DIBROMOETHANE	13	0.5 U	0.5 U	0.5 U	0.42 U	0.42 U	0.33 U
1,2-DICHLOROBENZENE	99	0.44 U	0.44 U	0.44 U	0.22 U	0.22 U	0.27 U
1,2-DICHLOROETHANE	37	0.57 U	0.57 U	0.57 U	0.2 U	0.2 U	0.28 U
1,2-DICHLOROPROPANE	14	0.52 U	0.52 U	0.52 U	0.25 U	0.25 U	0.34 U
1,3-DICHLOROBENZENE	85	0.64 U	0.64 U	0.64 U	0.22 U	0.22 U	0.39 U
1,4-DICHLOROBENZENE	3	0.52 U	0.52 U	0.52 U	0.25 U	0.25 U	0.39 U
2-BUTANONE	120000	8.4 U	8.4 U	8.4 U	1.2 U	1.2 U	2.6 U
2-HEXANONE	NC	4.4 U	4.4 U	4.4 U	2 U	2 U	2 U
4-METHYL-2-PENTANONE	23000	3.8 U	3.8 U	3.8 U	1 U	1 U	1.4 U
ACETONE	1700	9.9 U	9.9 U	9.9 U	10 U	10 U	10 U
BENZENE	71.28	0.5 U	0.5 U	0.5 U	0.2 U	0.2 U	0.2 U
BROMOCHLOROMETHANE	NC	NA	NA	NA	NA	NA	0.24 U
BROMODICHLOROMETHANE	22	0.35 U	0.35 U	0.35 U	0.22 U	0.22 U	0.26 U
BROMOFORM	360	0.58 U	0.58 U	0.58 U	0.32 U	0.32 U	0.46 U
BROMOMETHANE	35	2.5 U	2.5 U	2.5 U	0.5 U	0.5 U	NA
CARBON DISULFIDE	110	1 U	1 U	1 U	0.29 U	0.29 U	**0.28**
CARBON TETRACHLORIDE	4.42	0.42 U	0.42 U	0.42 U	0.28 U	0.28 U	0.3 U
CHLOROBENZENE	17	0.63 U	0.63 U	0.63 U	0.2 U	0.2 U	0.2 U
CHLORODIBROMOMETHANE	34	0.34 U	0.34 U	0.34 U	0.2 U	0.2 U	0.24 U
CHLOROETHANE	NC	2.5 U	2.5 U	2.5 U	0.5 U	0.5 U	0.63 U
CHLOROFORM	470.8	0.9 U	0.9 U	0.9 U	0.3 U	0.3 U	0.3 U
CHLOROMETHANE	470.8	1 U	1 U	1 U	0.5 U	0.5 U	NA
CIS-1,2-DICHLOROETHENE	NC	0.65 U	0.65 U	0.65 U	0.22 U	0.22 U	0.31 U
CIS-1,3-DICHLOROPROPENE	NC	0.14 U	0.14 U	0.14 U	0.25 U	0.25 U	0.26 U
CYCLOHEXANE	NC	NA	NA	NA	0.2 U	0.2 U	0.26 U
DICHLORODIFLUOROMETHANE	NC	2.5 U	2.5 U	2.5 U	0.5 U	0.5 U	0.26 U
ETHYLBENZENE	610	0.44 U	0.44 U	0.44 U	0.2 U	0.2 U	0.25 U
ISOPROPYLBENZENE	260	0.19 U	0.19 U	0.19 U	0.2 U	0.2 U	0.33 U
M+P-XYLENES	NC	NA	NA	NA	NA	NA	NA
METHYL ACETATE	NC	NA	NA	NA	5 U	5 U	5 U
METHYL CYCLOHEXANE	NC	NA	NA	NA	0.22 U	0.22 U	0.23 U
METHYL TERT-BUTYL ETHER	34000	0.44 U	0.44 U	0.44 U	0.3 U	0.3 U	0.2 U
METHYLENE CHLORIDE	1580	4 U	4 U	4 U	2 U	2 U	2 U
O-XYLENE	NC	NA	NA	NA	NA	NA	NA
STYRENE	460	0.98 U	0.98 U	0.98 U	0.28 U	0.28 U	0.24 U
TETRACHLOROETHENE	8.85	0.5 U	0.5 U	0.5 U	0.33 U	0.33 U	NA
TOLUENE	480	0.51 U	0.51 U	0.51 U	0.4 U	0.4 U	0.2 U
TOTAL XYLENES	370	0.5 U	0.5 U	0.5 U	0.51 U	0.51 U	0.56 U
TRANS-1,2-DICHLOROETHENE	11000	0.44 U	0.44 U	0.44 U	0.21 U	0.21 U	0.33 U
TRANS-1,3-DICHLOROPROPENE	NC	0.14 U	0.14 U	0.14 U	0.26 U	0.26 U	0.25 U
TRICHLOROETHENE	80.7	0.5 U	0.5 U	0.5 U	0.22 U	0.22 U	0.27 U
TRICHLOROFLUOROMETHANE	NC	2.5 U	2.5 U	2.5 U	0.5 U	0.5 U	0.5 U
VINYL CHLORIDE	2.4	0.5 U	0.5 U	0.5 U	0.25 U	0.25 U	0.31 U

Table 4-2. Surface Water Analytical Results (continued)

Parameter	Freshwater SWCTL	SW3-SW0002 (continued)	SW3-SW0003					
		9/10/2016	10/31/2013	12/5/2013	3/27/2014	6/11/2014	9/22/2014	3/24/2015
Volatile Organics (µg/L)								
1,1,1,2-TETRACHLOROETHANE	NC	NA	NA	NA	NA	NA	NA	NA
1,1,1-TRICHLOROETHANE	270	0.8 U	0.8 U	0.46 U	0.46 U	0.46 U	0.46 U	0.26 U
1,1,2,2-TETRACHLOROETHANE	10.8	0.54 U	0.54 U	0.15 U	0.15 U	0.15 U	0.15 U	0.22 U
1,1,2-TRICHLOROETHANE	16	0.76 U	0.76 U	0.47 U	0.47 U	0.47 U	0.47 U	0.31 U
1,1,2-TRICHLOROTRIFLUOROETHANE	NC	NA	0.73 U	NA	NA	NA	NA	0.29 U
1,1-DICHLOROETHANE	NC	0.62 U	0.62 U	0.52 U	0.52 U	0.52 U	0.52 U	0.2 U
1,1-DICHLOROETHENE	3.2	0.94 U	0.94 U	0.45 U	0.45 U	0.45 U	0.45 U	0.27 U
1,2,3-TRICHLOROBENZENE	85	NA	NA	0.77 U	0.77 U	0.77 U	0.77 U	NA
1,2,4-TRICHLOROBENZENE	23	0.7 U	0.7 U	0.58 U	0.58 U	0.58 U	0.58 U	0.5 U
1,2-DIBROMO-3-CHLOROPROPANE	NC	0.96 U	0.96 U	2.5 U	2.5 U	2.5 U	2.5 U	0.61 U
1,2-DIBROMOETHANE	13	0.78 U	0.78 U	0.5 U	0.5 U	0.5 U	0.5 U	0.42 U
1,2-DICHLOROBENZENE	99	0.73 U	0.73 U	0.44 U	0.44 U	0.44 U	0.44 U	0.22 U
1,2-DICHLOROETHANE	37	0.63 U	0.63 U	0.57 U	0.57 U	0.57 U	0.57 U	0.2 U
1,2-DICHLOROPROPANE	14	0.8 U	0.8 U	0.52 U	0.52 U	0.52 U	0.52 U	0.25 U
1,3-DICHLOROBENZENE	85	0.77 U	0.77 U	0.64 U	0.64 U	0.64 U	0.64 U	0.22 U
1,4-DICHLOROBENZENE	3	0.76 U	0.76 U	0.52 U	0.52 U	0.52 U	0.52 U	0.25 U
2-BUTANONE	120000	4.5 U	4.5 U	8.4 U	8.4 U	8.4 U	8.4 U	1.2 U
2-HEXANONE	NC	1.4 U	1.4 U	4.4 U	4.4 U	4.4 U	4.4 U	2 U
4-METHYL-2-PENTANONE	23000	0.79 U	0.79 U	3.8 U	3.8 U	3.8 U	3.8 U	1 U
ACETONE	1700	**13 I**	1.8 U	9.9 U	9.9 U	9.9 U	9.9 U	10 U
BENZENE	71.28	0.71 U	0.71 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U
BROMOCHLOROMETHANE	NC	0.52 U	NA	NA	NA	NA	NA	NA
BROMODICHLOROMETHANE	22	0.52 U	0.52 U	0.35 U	0.35 U	0.35 U	0.35 U	0.22 U
BROMOFORM	360	0.75 U	0.75 U	0.58 U	0.58 U	0.58 U	0.58 U	0.32 U
BROMOMETHANE	35	0.95 U	0.95 U	2.5 U	2.5 U	2.5 U	2.5 U	0.5 U
CARBON DISULFIDE	110	2.6 U	2.6 U	1 U	1 U	1 U	1 U	0.29 U
CARBON TETRACHLORIDE	4.42	0.94 U	0.94 U	0.42 U	0.42 U	0.42 U	0.42 U	0.28 U
CHLOROBENZENE	17	0.72 U	0.72 U	0.63 U	0.63 U	0.63 U	0.63 U	0.2 U
CHLORODIBROMOMETHANE	34	0.44 U	0.44 U	0.34 U	0.34 U	0.34 U	0.34 U	0.2 U
CHLOROETHANE	NC	0.98 U	0.98 U	2.5 U	2.5 U	2.5 U	2.5 U	0.5 U
CHLOROFORM	470.8	0.8 U	0.8 U	0.9 U	0.9 U	0.9 U	0.9 U	0.3 U
CHLOROMETHANE	470.8	0.82 U	0.82 U	1 U	1 U	1 U	1 U	0.5 U
CIS-1,2-DICHLOROETHENE	NC	0.53 U	**0.54 I**	0.65 U	0.65 U	0.65 U	0.65 U	0.22 U
CIS-1,3-DICHLOROPROPENE	NC	0.59 U	0.59 U	0.14 U	0.14 U	0.14 U	0.14 U	0.25 U
CYCLOHEXANE	NC	0.93 U	0.93 U	NA	NA	NA	NA	0.2 U
DICHLORODIFLUOROMETHANE	NC	0.44 U	0.74 U	2.5 U	2.5 U	2.5 U	2.5 U	0.5 U
ETHYLBENZENE	610	0.69 U	0.69 U	0.44 U	0.44 U	0.44 U	0.44 U	0.2 U
ISOPROPYLBENZENE	260	0.67 U	0.67 U	0.19 U	0.19 U	0.19 U	0.19 U	0.2 U
M+P-XYLENES	NC	1.3 U	NA	NA	NA	NA	NA	NA
METHYL ACETATE	NC	0.95 U	0.95 U	NA	NA	NA	NA	5 U
METHYL CYCLOHEXANE	NC	0.64 U	0.64 U	NA	NA	NA	NA	0.22 U
METHYL TERT-BUTYL ETHER	34000	0.6 U	0.6 U	0.44 U	0.44 U	0.44 U	0.44 U	0.3 U
METHYLENE CHLORIDE	1580	2 U	0.71 U	4 U	4 U	4 U	4 U	2 U
O-XYLENE	NC	0.53 U	0.53 U	NA	NA	NA	NA	NA
STYRENE	460	0.61 U	0.61 U	0.98 U	0.98 U	0.98 U	0.98 U	0.28 U
TETRACHLOROETHENE	8.85	0.76 U	0.76 U	0.5 U	0.5 U	0.5 U	0.5 U	0.33 U
TOLUENE	480	0.72 U	0.72 U	0.51 U	**0.88 I**	**2.3**	0.51 U	0.4 U
TOTAL XYLENES	370	1.3 U	1.3 U	0.5 U	0.5 U	0.5 U	0.5 U	0.51 U
TRANS-1,2-DICHLOROETHENE	11000	0.73 U	0.73 U	0.44 U	0.44 U	0.44 U	0.44 U	0.21 U
TRANS-1,3-DICHLOROPROPENE	NC	0.73 U	0.73 U	0.14 U	0.14 U	0.14 U	0.14 U	0.26 U
TRICHLOROETHENE	80.7	0.89 U	0.89 U	0.5 U	0.5 U	0.5 U	0.5 U	0.22 U
TRICHLOROFLUOROMETHANE	NC	0.94 U	0.94 U	2.5 U	2.5 U	2.5 U	2.5 U	0.5 U
VINYL CHLORIDE	2.4	0.71 U	0.71 U	0.5 U	0.5 U	0.5 U	0.5 U	0.25 U

Table 4-2. Surface Water Analytical Results (continued)

Parameter	Freshwater SWCTL	SW3-SW0003 (continued)		
		9/18/2015	3/25/2016	9/10/2016
Volatile Organics (µg/L)				
1,1,1,2-TETRACHLOROETHANE	NC	NA	NA	NA
1,1,1-TRICHLOROETHANE	270	0.26 U	0.2 U	0.8 U
1,1,2,2-TETRACHLOROETHANE	10.8	0.22 U	0.33 U	0.54 U
1,1,2-TRICHLOROETHANE	16	0.31 U	0.37 U	0.76 U
1,1,2-TRICHLOROTRIFLUOROETHANE	NC	0.29 U	NA	NA
1,1-DICHLOROETHANE	NC	0.2 U	0.26 U	0.62 U
1,1-DICHLOROETHENE	3.2	0.27 U	0.26 U	0.94 U
1,2,3-TRICHLOROBENZENE	85	NA	NA	NA
1,2,4-TRICHLOROBENZENE	23	0.5 U	0.5 U	0.7 U
1,2-DIBROMO-3-CHLOROPROPANE	NC	0.61 U	0.81 U	0.96 U
1,2-DIBROMOETHANE	13	0.42 U	0.33 U	0.78 U
1,2-DICHLOROBENZENE	99	0.22 U	0.27 U	0.73 U
1,2-DICHLOROETHANE	37	0.2 U	0.28 U	0.63 U
1,2-DICHLOROPROPANE	14	0.25 U	0.34 U	0.8 U
1,3-DICHLOROBENZENE	85	0.22 U	0.39 U	0.77 U
1,4-DICHLOROBENZENE	3	0.25 U	0.39 U	0.76 U
2-BUTANONE	120000	1.2 U	2.6 U	4.5 U
2-HEXANONE	NC	2 U	2 U	1.4 U
4-METHYL-2-PENTANONE	23000	1 U	1.4 U	0.79 U
ACETONE	1700	10 U	10 U	10 U
BENZENE	71.28	0.2 U	0.2 U	0.71 U
BROMOCHLOROMETHANE	NC	NA	0.24 U	0.52 U
BROMODICHLOROMETHANE	22	0.22 U	0.26 U	0.52 U
BROMOFORM	360	0.32 U	0.46 U	0.75 U
BROMOMETHANE	35	0.5 U	NA	0.95 U
CARBON DISULFIDE	110	0.29 U	0.23 U	2.6 U
CARBON TETRACHLORIDE	4.42	0.28 U	0.3 U	0.94 U
CHLOROBENZENE	17	0.2 U	0.2 U	0.72 U
CHLORODIBROMOMETHANE	34	0.2 U	0.24 U	0.44 U
CHLOROETHANE	NC	0.5 U	0.63 U	0.98 U
CHLOROFORM	470.8	0.3 U	0.3 U	0.8 U
CHLOROMETHANE	470.8	0.5 U	NA	0.82 U
CIS-1,2-DICHLOROETHENE	NC	0.22 U	0.31 U	0.53 U
CIS-1,3-DICHLOROPROPENE	NC	0.25 U	0.26 U	0.59 U
CYCLOHEXANE	NC	0.2 U	0.26 U	0.93 U
DICHLORODIFLUOROMETHANE	NC	0.5 U	0.26 U	0.44 U
ETHYLBENZENE	610	0.2 U	0.25 U	0.69 U
ISOPROPYLBENZENE	260	0.2 U	0.33 U	0.67 U
M+P-XYLENES	NC	NA	NA	1.3 U
METHYL ACETATE	NC	5 U	5 U	0.95 U
METHYL CYCLOHEXANE	NC	0.22 U	0.23 U	0.64 U
METHYL TERT-BUTYL ETHER	34000	0.3 U	0.2 U	0.6 U
METHYLENE CHLORIDE	1580	2 U	2 U	2 U
O-XYLENE	NC	NA	NA	0.53 U
STYRENE	460	0.28 U	0.24 U	0.61 U
TETRACHLOROETHENE	8.85	0.33 U	NA	0.76 U
TOLUENE	480	0.4 U	0.2 U	0.72 U
TOTAL XYLENES	370	0.51 U	0.56 U	1.3 U
TRANS-1,2-DICHLOROETHENE	11000	0.21 U	0.33 U	0.73 U
TRANS-1,3-DICHLOROPROPENE	NC	0.26 U	0.25 U	0.73 U
TRICHLOROETHENE	80.7	0.22 U	0.27 U	0.89 U
TRICHLOROFLUOROMETHANE	NC	0.5 U	0.5 U	0.94 U
VINYL CHLORIDE	2.4	0.25 U	0.31 U	0.71 U

Bolded concentrations exceed method detection limits.
Highlighted concentrations exceed Freshwater Surface Water Cleanup Target Level (SWCTL) (62-777 Florida Administrative Code).
SWCTL = Surface Water Cleanup Target Level.
U = Not detected.
I = Value is between the method detection limit and practical quantitation limit.
NC = No criterion.
µg/L = Micrograms per liter.
NA = Not analyzed.

Table 4-3. Groundwater TCE System Evaluation Data Summary

Monitoring Well (SW3-)	Baseline Prior to System Startup	Operation				Post-Operation (system shut down on 3/2/2010)									
	October-08	September-09		December-09		March-10		June-10		September-10		December-10		March-11	
	TCE (µg/L)	TCE (µg/L)	Concentration Reduction	TCE (µg/L)	Concentration Reduction	TCE (µg/L)	Concentration Reduction	TCE (µg/L)	Concentration Reduction	TCE (µg/L)	Concentration Reduction	TCE (µg/L)	Concentration Reduction	TCE (µg/L)	TCE (µg/L)
Source Wells															
MW0001-025.0	**13400**	**12.1**	99.91%	**18.6**	99.86%	**21.3**	99.84%	**25.7**	99.81%	**17.8**	99.87%	**25.1**	99.81%	**26**	99.81%
MW0003-025.0	**7.6**	0.68	91.05%	0.53	93.03%	0.49	93.55%	0.88	88.42%	0.45	94.08%	0.64	91.58%	0.58	92.37%
MW0021-025.0	**4170**	**132**	96.83%	**6.5**	99.84%	**3.8**	99.91%	**7.0**	99.83%	**10.7**	99.74%	**32.2**	99.23%	**24.6**	99.41%
MW0023-025.0	**1920**	**6.7**	99.65%	**8.9**	99.54%	**5.4**	99.72%	**10.4**	99.46%	**11.1**	99.42%	**11.1**	99.42%	**11.5**	99.40%
MW0027-032.0	Not Installed														
Source Well Geometric Mean	**950.25**	**9.24**	99.03%	**4.89**	99.49%	**3.83**	99.60%	**6.37**	99.33%	**5.55**	99.42%	**8.70**	99.08%	**8.08**	99.15%
Source Well Mass (lbs.)	7.08	0.07		0.04		0.03		0.05		0.04		0.06		0.06	
Source Well Mass Removal (lbs.)		7.01		7.04		7.05		7.03		7.04		7.01		7.02	
Southern Edge of ARZ															
MW0022-025.0	**4.3**	0.32 U	100.00%	0.32 U	100.00%	0.24 U	100.00%	0.24 U	100.00%	0.28	100.00%	0.37	100.00%	0.26 U	100.00%
MW0028-032.0	Not Installed														
Below ARZ															
MW0026-040.0	0.85	0.32	62.35%	0.32 U	100.00%	0.5	41.18%	0.31	63.53%	0.24	71.76%	0.26	69.41%	0.26 U	100.00%

Table 4-3. Groundwater TCE System Evaluation Data Summary (continued)

Monitoring Well	Baseline Prior to System Startup	Post-Operation (system shut down on 3/2/2010)				Baseline Prior to South System Startup	Expanded Zone 3 Operation											
(SW3)	October-08	June-11		June-12		December-12	March-13		June-13		September-13		December-13		March-14		June-14	
TCE (µg/L)	TCE (µg/L)	TCE (µg/L)	Concentration Reduction	TCE (µg/L)	Concentration Reduction	TCE (µg/L)	TCE (µg/L)	Concentration Reduction	TCE (µg/L)	Concentration Reduction	TCE (µg/L)	Concentration Reduction	TCE (µg/L)	Concentration Reduction	TCE (µg/L)	Concentration Reduction	TCE (µg/L)	Concentration Reduction
Source Wells																		
MW0001-020.0	**13400**	**19.8**	99.85%	**13**	99.90%	**19**	1.6	91.58%	0.5	97.37%	2.8	85.26%	**7.4**	61.05%	**4.5**	76.32%	0.96	94.95%
MW0003-020.0	**7.6**	0.45	94.08%	1.9	75.00%	1	0.5	50.00%	0.5	50.00%	0.25	75.00%	0.25	75.00%	0.25	75.00%	0.25	75.00%
MW0021-020.0	**4170**	**21.6**	99.48%	**24**	99.42%	**20**	0.5	97.50%	0.5	97.50%	1	95.00%	2.1	89.50%	1.9	90.50%	2.30	88.50%
MW0023-020.0	**1920**	**7.8**	99.59%	**7.2**	99.63%	**16**	0.5	96.88%	0.5	96.88%	0.79	95.06%	1.4	91.25%	0.85	94.69%	0.25	98.44%
MW0027-032.0	Not Installed					8.9	0.5	94.38%	0.5	94.38%	0.25	97.19%	0.25	97.19%	0.25	97.19%	0.25	97.19%
Source Well Geometric Mean	**950.25**	**6.22**	99.34%	**8.08**	99.15%	**8.84**	0.63	92.87%	0.50	94.35%	0.67	92.39%	1.06	87.98%	0.85	90.34%	0.51	94.23%
Source Well Mass (lbs.)	7.08	0.05		0.06		0.09	0.01		0.00		0.01		0.01		0.01		0.01	
Source Well Mass Removal (lbs.)		7.03		7.02		-	0.08		0.08		0.08		0.08		0.05		0.08	
Southern Edge of ARZs																		
MW0022-020.0	4.3	0.26	93.95%	1	76.74%	0.9	0.5	44.44%	0.5	44.44%	0.25	72.22%	0.25	72.22%	0.25	72.22%	0.25	72.22%
MW0028-032.0	Not Installed					0.45	0.5	-11.11%	0.5	-11.11%	0.25	44.44%	0.25	44.44%	0.25	44.44%	0.25	44.44%
Below ARZ																		
MW0026-040.0	0.85	0.26	69.41%	1	-17.65%	1.8	0.5	72.22%	0.5	72.22%	0.25	86.11%	0.25	86.11%	0.25	86.11%	0.25	86.11%

Table 4-3. Groundwater TCE System Evaluation Data Summary (continued)

Monitoring Well										
(SW3)	September-14		March-15		September-15		March-16		September-16	
TCE (µg/L)	TCE (µg/L)	Concentration Reduction	TCE (µg/L)	Concentration Reduction	TCE (µg/L)	Concentration Reduction	TCE (µg/L)	Concentration Reduction	TCE (µg/L)	Concentration Reduction
MW0001-020.0	1.4	92.63%	5.8	69.47%	0.1	99.42%	1.2	93.68%	0.1	99.42%
MW0003-020.0	0.25	75.00%	-	-	-	-	-	-	-	-
MW0021-020.0	1.6	92.00%	-	-	-	-	-	-	-	-
MW0023-020.0	0.25	98.44%	0.11	99.31%	0.25	98.44%	-	-	0.25	98.44%
MW0027-032.0	0.25	97.19%	0.11	98.76%	0.11	98.76%	-	-	0.11	98.76%
Source Well Geometric Mean	0.51	94.22%	0.41	95.34%	0.14	98.36%	1.20	86.43%	0.14	98.36%
Source Well Mass (lbs.)	0.01		0.01		0.00		-		0.00	
	0.08		0.08		0.09		-		0.09	
MW0022-020.0	0.25	72.22%	0.11	87.78%	0.11	87.78%	-	-	0.11	87.78%
MW0028-032.0	0.25	44.44%	0.11	75.56%	0.11	75.56%	0.11	75.56%	0.11	75.56%
MW0026-040.0	0.25	86.11%	0.11	93.89%	0.11	93.89%	0.11	93.89%	0.11	93.89%

Highlighted concentrations exceed the CMI goal for active remediation (FDEP NADC for TCE of 300 µg/L).
Bolded concentrations exceed the final CMI goal (FDEP GCTL for TCE 3 µg/L).
U - Not detected.
NA - Not available.
ARZ - Aggressive Remediation Zone.
TCE - Trichloroethene.
FDEP - Florida Department of Environmental Protection.
NADC - Natural Attenuation Default Criterion.
GCTL - Groundwater Cleanup Target Level.
CMI - Corrective Measures Implementation.
µg/L - Micrograms per liter.
lbs - Pounds.

Table 4-4. Groundwater VC System Evaluation Data Summary

Monitoring Well (SW3-)	Baseline Prior to System Startup	Operation				Post-Operation (system shut down on 3/2/2010)									
	October-08	September-09		December-09		March-10		June-10		September-10		December-10		March-11	
	VC (µg/L)	VC (µg/L)	Concentration Reduction	VC (µg/L)	Concentration Reduction	VC (µg/L)	Concentration Reduction	VC (µg/L)	Concentration Reduction	VC (µg/L)	Concentration Reduction	VC (µg/L)	Concentration Reduction	VC (µg/L)	Concentration Reduction
Source Wells															
MW0001-025.0	**76.8**	**0.15**	99.80%	**0.15**	99.80%	**0.14**	99.82%	**0.14**	99.82%	**0.14**	99.82%	**0.11**	99.86%	0.11	99.86%
MW0003-025.0	**15.5**	0.15	99.03%	0.15	99.03%	0.14	99.10%	0.14	99.10%	0.14	99.10%	0.11	99.29%	0.11	99.29%
MW0021-025.0	**47.3**	**4.4**	90.70%	**0.15**	99.68%	**0.14**	99.70%	**0.14**	99.70%	**0.14**	99.70%	**0.85**	98.20%	0.11	99.77%
MW0023-025.0	**1050**	**5.6**	99.47%	**6.4**	99.39%	**7.4**	99.30%	**11.6**	98.90%	**9.8**	99.07%	**7.7**	99.27%	**13.2**	98.74%
MW0027-032.0	Not Installed														
Source Well Geometric Mean	**87.69**	0.86	99.02%	0.38	99.56%	0.38	99.57%	0.42	99.52%	0.40	99.54%	0.53	99.40%	0.36	99.58%
Source Well Mass (lbs.)	0.65	0.01		0.00		0.00		0.00		0.00		0.00		0.00	
Source Well Mass Removal (lbs.)		0.65		0.65		0.65		0.65		0.65		0.65		0.65	
Southern Edge of ARZ															
MW0022-020.0	**0.15**	87	-57900.00%	6.8	-4433.33%	4.8	-3100.00%	2.2	-1366.67%	2.3	-1433.33%	3.9	-2500.00%	**4**	-2566.67%
MW0028-032.0	Not Installed														
Below ARZ															
MW0026-040.0	19.5	5.9	69.74%	16	17.95%	13.5	30.77%	7	64.10%	7.3	62.56%	24.4	-25.13%	37.5	-92.31%

Table 4-4. Groundwater VC System Evaluation Data Summary (continued)

Monitoring Well (SW3-)	Baseline Prior to System Startup					Baseline Prior to South System Startup	Operation									
	October-08	June-11		June-12		December-12	March-13		June-13		September-13		December-13		March-14	
	VC (µg/L)	VC (µg/L)	Concentration Reduction	VC (µg/L)	Concentration Reduction	VC (µg/L)	VC (µg/L)	Concentration Reduction	VC (µg/L)	Concentration Reduction	VC (µg/L)	Concentration Reduction	VC (µg/L)	Concentration Reduction	VC (µg/L)	Concentration Reduction
Source Wells																
MW0001-025.0	**76.8**	0.11	99.86%	0.5	99.35%	0.71	0.5	29.58%	0.5	29.58%	0.25	64.79%	0.25	64.79%	0.25	64.79%
MW0003-025.0	**15.5**	0.11	99.29%	**3.9**	74.84%	**11**	0.5	95.45%	0.5	95.45%	0.25	97.73%	0.25	97.73%	0.25	97.73%
MW0021-025.0	**47.3**	0.11	99.77%	**1.6**	96.62%	**3.3**	0.5	84.85%	0.5	84.85%	0.25	92.42%	0.25	92.42%	0.25	92.42%
MW0023-025.0	**1050**	**7.7**	99.27%	**9.5**	99.10%	**18**	0.5	97.22%	0.5	97.22%	0.63	96.50%	0.37	97.94%	0.25	98.61%
MW0027-032.0	Not Installed					**930**	**440**	52.69%	**91**	90.22%	**21**	97.74%	**16**	98.28%	**220**	76.34%
Source Well Geometric Mean	**87.69**	0.32	99.64%	**2.33**	97.34%	**13.40**	**1.94**	85.52%	**1.42**	89.43%	0.73	94.55%	0.62	95.36%	0.97	92.76%
Source Well Mass (lbs.)	0.65	0.00		0.02		2.28	1.07		0.22		0.05		0.04		0.53	
Source Well Mass Removal (lbs.)		0.65		0.64			1.22		2.06		2.23		2.24		1.75	
Southern Edge of ARZs																
MW0022-020.0	**0.15**	**2.2**	-1366.67%	**67**	-44566.67%	**150**	4.8	96.80%	**1.1**	99.27%	1.5	99.00%	**2.5**	98.33%	**1.4**	99.07%
MW0028-032.0	Not Installed					**820**	**370**	54.88%	**260**	68.29%	**180**	78.05%	**96**	88.29%	**78**	90.49%
Below ARZ																
MW0026-040.0	19.5	28.3	-45.13%	27	-38.46%	**20**	**6.6**	67.00%	**3.8**	81.00%	**7.9**	60.50%	**6**	70.00%	**7.7**	61.50%

Table 4-4. Groundwater VC System Evaluation Data Summary (continued)

Monitoring Well (SW3-)	Operation											
	June-14		September-14		March-15		September-15		March-16		September-16	
	VC (µg/L)	Concentration Reduction	VC (µg/L)	Concentration Reduction	VC (µg/L)	Concentration Reduction	VC (µg/L)	Concentration Reduction	VC (µg/L)	Concentration Reduction	VC (µg/L)	Concentration Reduction
Source Wells												
MW0001-025.0	0.25	64.79%	0.25	64.79%	0.11	84.51%	0.11	84.51%	0.11	84.51%	0.11	84.51%
MW0003-025.0	0.25	97.73%	0.25	97.73%	-	-	-	-	-	-	-	-
MW0021-025.0	0.25	92.42%	0.25	92.42%	-	-	-	-	-	-	-	-
MW0023-025.0	0.25	98.61%	0.25	98.61%	-	-	-	-	-	-	-	-
MW0027-032.0	39	95.81%	8.6	99.08%	0.11	99.99%	5.1	99.45%	21.8	97.66%	61	93.44%
Source Well Geometric Mean	0.69	94.88%	0.51	96.21%	0.11	99.18%	0.75	94.41%	1.55	88.44%	2.59	80.66%
Source Well Mass (lbs.)	0.10		0.02		0.00		0.01		0.05		0.15	
Source Well Mass Removal (lbs.)	2.19		2.26		2.28		2.27		2.23		2.14	
Southern Edge of ARZs												
MW0022-020.0	0.73	99.51%	0.81	99.46%	0.11	99.93%	0.35	99.77%	-	-	-	-
MW0028-032.0	92	88.78%	69	91.59%	59.2	92.78%	94.8	88.44%	56.2	93.15%	21.0	97.44%
Below ARZ												
MW0026-040.0	4.3	78.50%	4.4	78.00%	0.74	96.30%	1.40	93.00%	1.80	91.00%	0.11	99.45%

Highlighted concentrations exceed the CMI goal for active remediation (FDEP NADC for VC of 100 µg/L).
Bolded concentrations exceeded the final CMI goal (FDEP GCTL 1 µg/L).
U - Not detected.
NA - Not available.
ARZ - Aggressive Remediation Zone.
VC - Vinyl chloride.
FDEP - Florida Department of Environmental Protection.
NADC - Natural Attenuation Default Criteria.
GCTL - Groundwater Cleanup target Level.
CMI - Corrective Measures Implementation.
µg/L - Micrograms per liter.

FIGURE 4-1 - GROUNDWATER RESULTS EXCEEDING GCTLs

SWMU 088, KENNEDY SPACE CENTER, FLORIDA

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SW3 OMMR Revision 0 December 2016

SW3-MW0012 [35-45]
ANALYTE Oct-08 Dec-09 Jun-10 Dec-10 Jun-11 Jun-12 Dec-12
No Exceedances of GCTLs

SW3-MW0009 [15-25]
ANALYTE Oct-08 Dec-09 Jun-10 Dec-10 Jun-11 Jun-12 Dec-12 Mar-15 Sep-15 Mar-16 Sep-16
cDCE 59.5 33 99.1 * 63.4 91.4 * 56 57 7.58 * 116 * 79.8 * 79 *
TCE 0.32 U 3.8 * 12.8 * 45.9 * 70 * 64 * 25 * 15.2 * 46.5 * 19 * 19 *
VC 7.2 * 32.7 * 9.2 * 8.8 * 6.9 * 2.8 * 2.3 * 7.7 * 7.4 * 8.5 * 13 *

SW3-MW0010 [35-45]
ANALYTE Oct-08 Dec-09 Jun-10 Dec-10 Jun-11 Jun-12 Dec-12
VC 0.35 I 0.3 U 0.28 U 1.4 * 0.22 U 1 U 0.71 U

SW3-MW0011 [15-25]
ANALYTE Oct-08 Dec-09 Jun-10 Dec-10 Jun-11 Jun-12 Dec-12
TCE 0.32 U 6.6 * 17.4 * 6.3 * 2.9 1.3 J 7.3 *

SW3-MW0025 [35-45]
ANALYTE Oct-08 Dec-09 Jun-10 Dec-10 Jun-11 Jun-12 Dec-12 Mar-15 Sep-15 Mar-16 Sep-16
cDCE 300 * 10.2 54.1 99.3 * 88 * 3.2 9.2 0.22 U 0.28 I 0.44 I 0.53 U
TCE 179 * 3.5 * 20.5 * 48 * 41.6 * 2.3 5 * 0.22 U 0.22 U 0.27 U 0.89 U
VC 280 * 79.3 * 310 * 699 * 576 * 200 * 260 * 3.8 * 3 * 1.1 * 1.7 I*

SW3-MW0013 [15-25]
ANALYTE Oct-08 Dec-09 Jun-10 Dec-10
No Exceedances of GCTLs

SW3-MW0014 [35-45]
ANALYTE Oct-08 Dec-09 Jun-10 Dec-10
No Exceedances of GCTLs

SW3-MW0003 [15-25]
ANALYTE Oct-08 Dec-09 Jun-10 Dec-10 Jun-11 Jun-12 Dec-12 Mar-13 Jun-13 Sep-13 Dec-13 Mar-14 Jun-14 Sep-14
cDCE 109 * 0.44 I 0.67 I 0.88 I 0.59 I 2.4 1.7 J 1 U 1 U 0.65 U 0.65 U 0.65 U 0.65 U 0.65 U
TCE 7.6 * 0.53 I 0.88 I 0.64 I 0.45 I 1.9 J 1 J 1 U 1 U 0.5 U 0.5 U 0.5 U 0.5 U 0.5 U
VC 15.5 * 0.3 U 0.28 U 0.22 U 0.22 U 3.9 * 11 * 1 U 1 U 0.5 U 0.5 U 0.5 U 0.5 U 0.5 U

SW3-MW0026 [35-45]
ANALYTE Oct-08 Dec-09 Jun-10 Dec-10 Jun-11 Jun-12 Dec-12 Mar-13 Jun-13 Sep-13 Dec-13 Mar-14 Jun-14 Sep-14 Mar-15 Sep-15 Mar-16 Sep-16
VC 19.5 * 16 * 7 * 24.4 * 28.3 * 27 * 20 * 6.6 * 3.8 * 7.9 * 6 * 7.7 * 4.3 * 4.4 * 0.74 I 1.4 * 1.8 * 0.71 U

SW3-MW0002 [35-45]
ANALYTE Oct-08 Dec-09 Mar-10 Jun-10 Sept-10 Dec-10
VC 5.5 * 0.3 U 0.22 U 0.53 I 0.28 U 0.22 U

SW3-MW0021 [15-25]
ANALYTE Oct-08 Dec-09 Jun-10 Dec-10 Jun-11 Jun-12 Dec-12 Mar-13 Jun-13 Sep-13 Dec-13 Mar-14 Jun-14 Sep-14
cDCE 6270 * 6.3 6.1 10.7 6.7 7.6 12 1 U 1 U 1 1.5 1.5 2.5 1.6
tDCE 239 * 0.63 I 0.6 I 1.4 0.7 I 0.96 J 1 J 1 U 1 U 0.44 U 0.44 U 0.44 U 0.44 U 0.44 U
TCE 4170 * 6.5 * 7 * 32.2 * 21.6 * 24 * 20 * 1 U 1 U 1 2.1 1.9 2.3 1.6
VC 47.3 I* 0.3 U 0.28 U 0.85 I 0.26 I 1.6 J* 3.3 * 1 U 1 U 0.5 U 0.5 U 0.5 U 0.5 U 0.5 U

SW3-MW0001 [15-25]
ANALYTE Oct-08 Dec-09 Jun-10 Dec-10 Jun-11 Jun-12 Dec-12 Mar-13 Jun-13 Sep-13 Dec-13 Mar-14 Jun-14 Sep-14 Mar-15 Sep-15 Mar-16
cDCE 6620 * 7 6.6 5.8 4.4 2.7 4.8 1 U 1 U 0.85 I 1.9 1.2 0.65 U 0.65 U 2.6 0.22 U 0.36 I
tDCE 159 I* 0.45 U 0.59 I 0.56 I 0.41 I 1 U 0.73 U 1 U 1 U 0.44 U 0.44 U 0.44 U 0.44 U 0.44 U 0.21 U 0.21 U 1.2
TCE 13400 * 18.6 * 25.7 * 25.1 * 19.8 * 13 * 19 * 1.6 J 1 U 2.8 7.4 * 4.5 0.96 I 1.4 5.8 * 0.22 U 0.33 U
VC 76.8 I* 0.3 U 0.28 U 0.22 U 0.22 U 1 U 0.71 U 1 U 1 U 0.5 U 0.5 U 0.5 U 0.5 U 1.4 0.25 U 0.25 U 0.31 U

SW3-MW0016 [35-45]
ANALYTE Oct-08 Dec-09 Jun-10 Dec-10
No Exceedances of GCTLs

SW3-MW0018 [35-45]
ANALYTE Oct-08 Jun-10 Dec-10
No Exceedances of GCTLs

SW3-MW0015 [15-25]
ANALYTE Oct-08 Dec-09 Jun-10 Dec-10
No Exceedances of GCTLs

SW3-MW0017 [15-25]
ANALYTE Oct-08 Dec-09 Jun-10 Dec-10
No Exceedances of GCTLs

SW3-MW0027 [35-45]
ANALYTE Dec-12 Mar-13 Jun-13 Sep-13 Dec-13 Mar-14 Jun-14 Sep-14 Mar-15 Sep-15 Mar-16 Sep-16
VC 930 * 440 * 91 D* 21 * 16 * 220 * 39 * 8.6 * 0.25 U 5.1 * 21.8 * 61 *

SW3-SW0001 [0-0.5]
ANALYTE Oct-08 Sep-09 Mar-10 Jun-13 Sep-14 Sep-15 Mar-16
No Exceedances of SWCTLs

SW3-MW0024 [35-45]
ANALYTE Oct-08 Dec-09 Jun-10 Dec-10 Jun-11 Jun-12 Dec-12 Mar-16
VC 17.3 * 101 * 85.2 * 91.7 * 79.1 * 52 * 120 * 21.5 *

SW3-SW0003 [0-0.5]
ANALYTE Oct-13 Dec-13 Mar-14 Jun-14 Sep-14 Mar-15 Sep-15 Mar-16 Sep-16
No Exceedances of SWCTLs

SW3-MW0023 [15-25]
ANALYTE Oct-08 Dec-09 Jun-10 Dec-10 Jun-11 Jun-12 Dec-12 Mar-13 Jun-13 Sep-13 Dec-13 Mar-14 Jun-14 Sep-14
cDCE 15800 * 64.4 93.5 * 58.2 149 * 330 * 200 * 5.6 3 8.5 17 5.5 2.9 4.6
tDCE 363 * 4.3 6.1 4.8 12.7 23 14 1 U 1 U 0.66 I 1 0.63 I 0.44 U 0.62 I
TCE 1920 * 8.9 * 10.4 * 11.1 * 7.8 * 7.2 * 16 * 1 U 1 U 0.79 I 1.4 0.85 I 0.5 I 0.57 I
VC 1050 * 6.4 * 11.6 * 7.7 * 7.7 * 9.5 * 18 * 1 U 1 U 0.63 I 0.74 I 0.5 U 0.5 U 0.5 U

SW3-MW0007 [15-25]
ANALYTE Oct-08 Dec-09 Jun-10 Dec-10
No Exceedances of GCTLs

SW3-MW0008 [35-45]
ANALYTE Oct-08 Dec-09 Jun-10 Dec-10 Jun-11 Jun-12
VC 212 * 581 * 1130 * 1010 * 0.22 U 360 *

SW3-MW0005 [15-25]
ANALYTE Oct-08 Dec-09 Jun-10 Dec-10 Jun-11 Jun-12 Dec-12
VC 364 * 1.1 * 2.5 * 2.1 * 1.6 * 46 * 91 *

SW3-MW0028 [27-37]
ANALYTE Dec-12 Apr-13 Jun-13 Sep-13 Dec-13 Mar-14 Jun-14 Sep-14 Mar-15 Sep-15 Mar-16 Sep-16
VC 820 * 370 * 260 D* 180 * 96 * 78 * 92 * 69 * 59.2 * 94.8 * 56.2 * 21 *

SW3-MW0006 [35-45]
ANALYTE Oct-08 Dec-09 Jun-10 Dec-10 Jun-11 Jun-12 Dec-12 Mar-16
TCE 3.7 * 0.32 U 0.24 U 0.26 U 0.26 U 1 U 1 J 0.27 U
VC 19.6 * 82.8 * 62.4 * 80.6 * 76.7 * 27 * 48 * 15.1 *

SW3-SW0002 [0-0.5]
ANALYTE Dec-12 Jun-13 Sep-13 Oct-13 Dec-13 Mar-14 Sep-14 Mar-15 Sep-15 Mar-16 Sep-16
VC 0.71 U 1 U 24 * 0.71 U 0.5 U 0.5 U 0.5 U 0.25 U 0.25 U 0.31 U 0.71 U

SW3-MW0022 [15-25]
ANALYTE Oct-08 Dec-09 Jun-10 Dec-10 Jun-11 Jun-12 Dec-12 Mar-13 Jun-13 Sep-13 Dec-13 Mar-14 Jun-14 Sep-14 Mar-15 Sep-15
cDCE 0.56 I 0.68 I 0.32 U 0.26 U 0.26 U 370 * 270 * 7.9 0.96 J 2 3.6 2.8 0.66 I 1.0 1.1 0.51 I
TCE 4.3 * 0.32 U 0.24 U 0.26 U 0.26 U 1 U 1.8 U 1 U 1 U 0.5 U 0.5 U 0.5 U 0.5 U 0.5 U 0.22 U 0.22 U
VC 0.3 U 6.8 * 2.2 * 3.9 * 2.2 * 67 * 150 * 4.8 * 1.1 J* 1.5 * 2.5 * 1.4 * 0.73 I 0.81 I 0.25 U 0.35 I

SW3-MW0020 [35-45]
ANALYTE Oct-08 Dec-09 Jun-10 Dec-10 Jun-11 Jun-12 Dec-12 Mar-15 Mar-16
VC 224 * 0.3 U 0.28 U 0.22 U 0.22 U 1 U 0.71 U 0.25 U 0.31 U

Legend

- Monitoring Well
- Abandoned Monitoring Well (MW0008 abandoned in 2012)
- Surface Water Sample Location
- Revised Aggressive Remediation Zone (May 2011)
- Revised Aggressive Remediation Zone (May 2009)
- Original Aggressive Remediation Zone (August 2007)
- Low-Concentration Plume (August 2007)

Screened Interval in feet below land surface

Sample Date

Monitoring Well → SW3-MW0024 [35-45] / ANALYTE Oct-08 / VC 17.3 *

Detected Concentration (ug/L)
I = Reported value between MDL and PQL
J = Estimated value
U = Not detected at or above MDL (associated value)
L = Off scale high
NS = Not sampled
NA = Not analyzed
* = Exceeds GCTL or SWCTL

Parameter	Abbrev.	GCTL	SWCTL
Trichloroethene	TCE	3	80.7
cis-1,2-Dichloroethene	cDCE	70	NC
trans-1,2-Dichloroethene	tDCE	100	11,000
Vinyl Chloride	VC	1	2.4

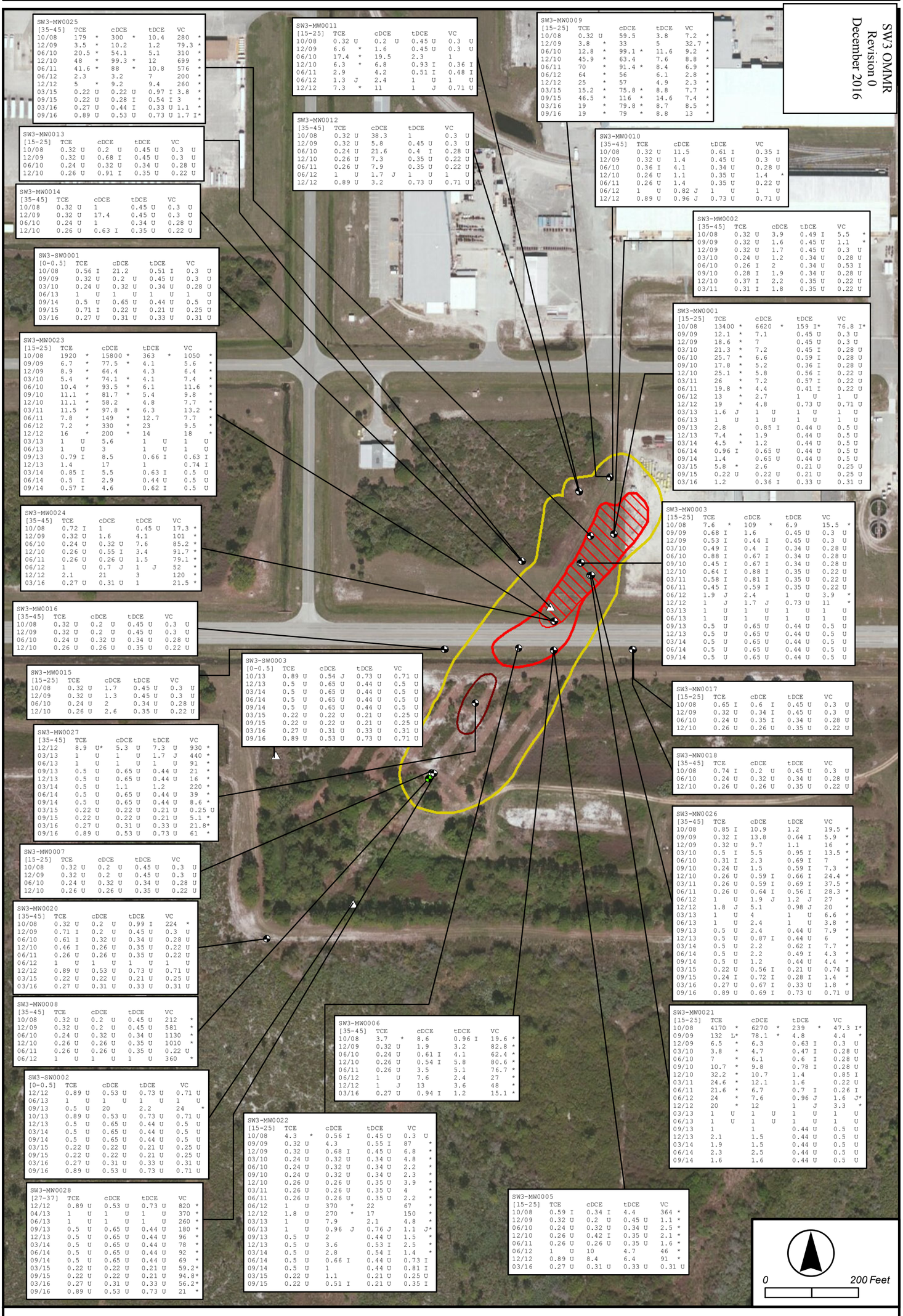
150 0 150 Feet

JAX C:\GIS\KSC\MXD\SW3\SW3_GCTL_EXCEEDANCES_SEP2016_JJ.MXD 12/19/16 JM

FIGURE 4-2 - GROUNDWATER SAMPLING RESULTS

SWMU 088, KENNEDY SPACE CENTER, FLORIDA

SW3 OMMR
Revision 0
December 2016



SW3-MW0025

[35-45]	TCE		cDCE		tDCE		VC	
10/08	179	*	300	*	10.4		280	*
12/09	3.5	*	10.2		1.2		79.3	*
06/10	20.5	*	54.1		5.1		310	*
12/10	48	*	99.3	*	12		699	*
06/11	41.6	*	88	*	10.8		576	*
06/12	2.3		3.2		7		200	*
12/12	5	*	9.2		9.4		260	*
03/15	0.22	U	0.22	U	0.97	I	3.8	*
09/15	0.22	U	0.28	I	0.54	I	3	*
03/16	0.27	U	0.44	I	0.33	U	1.1	*
09/16	0.89	U	0.53	U	0.73	U	1.7	I*

SW3-MW0011

[15-25]	TCE		cDCE		tDCE		VC	
10/08	0.32	U	0.2	U	0.45	U	0.3	U
12/09	6.6	*	1.6		0.45	U	0.3	U
06/10	17.4	*	19.5		2.3		1	
12/10	6.3	*	6.8		0.93	I	0.36	I
06/11	2.9		4.2		0.51	I	0.48	I
06/12	1.3	J	2.4		1	U	1	U
12/12	7.3	*	11		1	J	0.71	U

SW3-MW0009

[15-25]	TCE		cDCE		tDCE		VC	
10/08	0.32	U	59.5		3.8		7.2	*
12/09	3.8	*	33		5		32.7	*
06/10	12.8	*	99.1	*	11.6		9.2	*
12/10	45.9	*	63.4		7.6		8.8	*
06/11	70	*	91.4	*	8.4		6.9	*
06/12	64	*	56		6.1		2.8	*
12/12	25	*	57		4.9		2.3	*
03/15	15.2	*	75.8	*	8.8		7.7	*
09/15	46.5	*	116	*	14.6		7.4	*
03/16	19	*	79.8	*	8.7		8.5	*
09/16	19	*	79	*	8.8		13	*

SW3-MW0012

[35-45]	TCE		cDCE		tDCE		VC	
10/08	0.32	U	38.3		1		0.3	U
12/09	0.32	U	5.8		0.45	U	0.3	U
06/10	0.24	U	21.6		0.4	I	0.28	U
12/10	0.26	U	7.3		0.35	U	0.22	U
06/11	0.26	U	7.9		0.35	U	0.22	U
06/12	1	U	1.7	J	1	U	1	U
12/12	0.89	U	3.2		0.73	U	0.71	U

SW3-MW0010

[35-45]	TCE		cDCE		tDCE		VC	
10/08	0.32	U	11.5		0.61	I	0.35	I
12/09	0.32	U	1.4		0.45	U	0.3	U
06/10	0.36	I	4.1		0.34	U	0.28	U
12/10	0.26	U	1.1		0.35	U	1.4	*
06/11	0.26	U	1.4		0.35	U	0.22	U
06/12	1	U	0.82	J	1	U	1	U
12/12	0.89	U	0.96	J	0.73	U	0.71	U

SW3-MW0013

[15-25]	TCE		cDCE		tDCE		VC	
10/08	0.32	U	0.2	U	0.45	U	0.3	U
12/09	0.32	U	0.68	I	0.45	U	0.3	U
06/10	0.24	U	0.32	U	0.34	U	0.28	U
12/10	0.26	U	0.91	I	0.35	U	0.22	U

SW3-MW0014

[35-45]	TCE		cDCE		tDCE		VC	
10/08	0.32	U	1		0.45	U	0.3	U
12/09	0.32	U	17.4		0.45	U	0.3	U
06/10	0.24	U	1		0.34	U	0.28	U
12/10	0.26	U	0.63	I	0.35	U	0.22	U

SW3-MW0002

[35-45]	TCE		cDCE		tDCE		VC	
10/08	0.32	U	3.9		0.49	I	5.5	*
09/09	0.32	U	1.6		0.45	U	1.1	*
12/09	0.32	U	1.7		0.45	U	0.3	U
03/10	0.24	U	1.2		0.34	U	0.28	U
06/10	0.26	I	2		0.34	U	0.53	I
09/10	0.28	I	1.9		0.34	U	0.28	U
12/10	0.37	I	2.2		0.35	U	0.22	U
03/11	0.31	I	1.8		0.35	U	0.22	U

SW3-SW0001

[0-0.5]	TCE		cDCE		tDCE		VC	
10/08	0.56	I	21.2		0.51	I	0.3	U
09/09	0.32	U	0.2	U	0.45	U	0.3	U
03/10	0.24	U	0.32	U	0.34	U	0.28	U
06/13	1	U	1	U	1	U	1	U
09/14	0.5	U	0.65	U	0.44	U	0.5	U
09/15	0.71	I	0.22	U	0.21	U	0.25	U
03/16	0.27	U	0.31	U	0.33	U	0.31	U

SW3-MW0001

[15-25]	TCE		cDCE		tDCE		VC	
10/08	13400	*	6620	*	159	I*	76.8	I*
09/09	12.1	*	7.1		0.45	U	0.3	U
12/09	18.6	*	7		0.45	U	0.3	U
03/10	21.3	*	7.2		0.45	I	0.28	U
06/10	25.7	*	6.6		0.59	I	0.28	U
09/10	17.8	*	5.2		0.36	I	0.28	U
12/10	25.1	*	5.8		0.56	I	0.22	U
03/11	26	*	7.2		0.57	I	0.22	U
06/11	19.8	*	4.4		0.41	I	0.22	U
06/12	13	*	2.7		1	U	1	U
12/12	19	*	4.8		0.73	U	0.71	U
03/13	1.6	J	1	U	1	U	1	U
06/13	1	U	1	U	1	U	1	U
09/13	2.8		0.85	I	0.44	U	0.5	U
12/13	7.4	*	1.9		0.44	U	0.5	U
03/14	4.5	*	1.2		0.44	U	0.5	U
06/14	0.96	I	0.65	U	0.44	U	0.5	U
09/14	1.4		0.65	U	0.44	U	0.5	U
03/15	5.8	*	2.6		0.21	U	0.25	U
09/15	0.22	U	0.22	U	0.21	U	0.25	U
03/16	1.2		0.36	I	0.33	U	0.31	U

SW3-MW0023

[15-25]	TCE		cDCE		tDCE		VC	
10/08	1920	*	15800	*	363	*	1050	*
09/09	6.7	*	77.5	*	4.1		5.6	*
12/09	8.9	*	64.4		4.3		6.4	*
03/10	5.4	*	74.1	*	4.1		7.4	*
06/10	10.4	*	93.5	*	6.1		11.6	*
09/10	11.1	*	81.7	*	5.4		9.8	*
12/10	11.1	*	58.2		4.8		7.7	*
03/11	11.5	*	97.8	*	6.3		13.2	*
06/11	7.8	*	149	*	12.7		7.7	*
06/12	7.2	*	330	*	23		9.5	*
12/12	16	*	200	*	14		18	*
03/13	1	U	5.6		1	U	1	U
06/13	1	U	3		1	U	1	U
09/13	0.79	I	8.5		0.66	I	0.63	I
12/13	1.4		17		1		0.74	I
03/14	0.85	I	5.5		0.63	I	0.5	U
06/14	0.5	I	2.9		0.44	U	0.5	U
09/14	0.57	I	4.6		0.62	I	0.5	U

SW3-MW0003

[15-25]	TCE		cDCE		tDCE		VC	
10/08	7.6	*	109	*	6.9		15.5	*
09/09	0.68	I	1.6		0.45	U	0.3	U
12/09	0.53	I	0.44	I	0.45	U	0.3	U
03/10	0.49	I	0.4	I	0.34	U	0.28	U
06/10	0.88	I	0.67	I	0.34	U	0.28	U
09/10	0.45	I	0.67	I	0.34	U	0.28	U
12/10	0.64	I	0.88	I	0.35	U	0.22	U
03/11	0.58	I	0.81	I	0.35	U	0.22	U
06/11	0.45	I	0.59	I	0.35	U	0.22	U
06/12	1.9	J	2.4		1	U	3.9	*
12/12	1	J	1.7	J	0.73	U	11	*
03/13	1	U	1	U	1	U	1	U
06/13	1	U	1	U	1	U	1	U
09/13	0.5	U	0.65	U	0.44	U	0.5	U
12/13	0.5	U	0.65	U	0.44	U	0.5	U
03/14	0.5	U	0.65	U	0.44	U	0.5	U
06/14	0.5	U	0.65	U	0.44	U	0.5	U
09/14	0.5	U	0.65	U	0.44	U	0.5	U

SW3-MW0024

[35-45]	TCE		cDCE		tDCE		VC	
10/08	0.72	I	1		0.45	U	17.3	*
12/09	0.32	U	1.6		4.1		101	*
06/10	0.24	U	0.32	U	7.6		85.2	*
12/10	0.26	U	0.55	I	3.4		91.7	*
06/11	0.26	U	0.26	U	1.5		79.1	*
06/12	1	U	0.7	J	1	J	52	*
12/12	2.1		21		3		120	*
03/16	0.27	U	0.31	U	1		21.5	*

SW3-MW0016

[35-45]	TCE		cDCE		tDCE		VC	
10/08	0.32	U	0.2	U	0.45	U	0.3	U
12/09	0.32	U	0.2	U	0.45	U	0.3	U
06/10	0.24	U	0.32	U	0.34	U	0.28	U
12/10	0.26	U	0.26	U	0.35	U	0.22	U

SW3-SW0003

[0-0.5]	TCE		cDCE		tDCE		VC	
10/13	0.89	U	0.54	J	0.73	U	0.71	U
12/13	0.5	U	0.65	U	0.44	U	0.5	U
03/14	0.5	U	0.65	U	0.44	U	0.5	U
06/14	0.5	U	0.65	U	0.44	U	0.5	U
09/14	0.5	U	0.65	U	0.44	U	0.5	U
03/15	0.22	U	0.22	U	0.21	U	0.25	U
09/15	0.22	U	0.22	U	0.21	U	0.25	U
03/16	0.27	U	0.31	U	0.33	U	0.31	U
09/16	0.89	U	0.53	U	0.73	U	0.71	U

SW3-MW0017

[15-25]	TCE		cDCE		tDCE		VC	
10/08	0.65	I	0.6	I	0.45	U	0.3	U
12/09	0.32	U	0.34	I	0.45	U	0.3	U
06/10	0.24	U	0.35	I	0.34	U	0.28	U
12/10	0.26	U	0.26	U	0.35	U	0.22	U

SW3-MW0015

[15-25]	TCE		cDCE		tDCE		VC	
10/08	0.32	U	1.7		0.45	U	0.3	U
12/09	0.32	U	1.3		0.45	U	0.3	U
06/10	0.24	U	2		0.34	U	0.28	U
12/10	0.26	U	2.6		0.35	U	0.22	U

SW3-MW0018

[35-45]	TCE		cDCE		tDCE		VC	
10/08	0.74	I	0.2	U	0.45	U	0.3	U
06/10	0.24	U	0.32	U	0.34	U	0.28	U
12/10	0.26	U	0.26	U	0.35	U	0.22	U

SW3-MW0027

[35-45]	TCE		cDCE		tDCE		VC	
12/12	8.9	U*	5.3	U	7.3	U	930	*
03/13	1	U	1	U	1.7	J	440	*
06/13	1	U	1	U	1	U	91	*
09/13	0.5	U	0.65	U	0.44	U	21	*
12/13	0.5	U	0.65	U	0.44	U	16	*
03/14	0.5	U	1.1		1.2		220	*
06/14	0.5	U	0.65	U	0.44	U	39	*
09/14	0.5	U	0.65	U	0.44	U	8.6	*
03/15	0.22	U	0.22	U	0.21	U	0.25	U
09/15	0.22	U	0.22	U	0.21	U	5.1	*
03/16	0.27	U	0.31	U	0.33	U	21.8	*
09/16	0.89	U	0.53	U	0.73	U	61	*

SW3-MW0026

[35-45]	TCE		cDCE		tDCE		VC	
10/08	0.85	I	10.9		1.2		19.5	*
09/09	0.32	I	13.8		0.64	I	5.9	*
12/09	0.32	U	9.7		1.1		16	*
03/10	0.5	I	5.5		0.95	I	13.5	*
06/10	0.31	I	2.3		0.69	I	7	*
09/10	0.24	U	1.5		0.59	I	7.3	*
12/10	0.26	U	0.59	I	0.66	I	24.4	*
03/11	0.26	U	0.59	I	0.69	I	37.5	*
06/11	0.26	U	0.64	I	0.56	I	28.3	*
06/12	1	U	1.9	J	1.2	J	27	*
12/12	1.8	J	5.1		0.98	J	20	*
03/13	1	U	4		1	U	6.6	*
06/13	1	U	2.4		1	U	3.8	*
09/13	0.5	U	2.4		0.44	U	7.9	*
12/13	0.5	U	0.87	I	0.44	U	6	*
03/14	0.5	U	2.2		0.62	I	7.7	*
06/14	0.5	U	2.2		0.49	I	4.3	*
09/14	0.5	U	1.2		0.44	U	4.4	*
03/15	0.22	U	0.56	I	0.21	U	0.74	I
09/15	0.24	I	0.72	I	0.28	I	1.4	*
03/16	0.27	U	0.67	I	0.33	U	1.8	*
09/16	0.89	U	0.69	I	0.73	U	0.71	U

SW3-MW0020

[35-45]	TCE		cDCE		tDCE		VC	
10/08	0.32	U	0.2	U	0.99	I	224	*
12/09	0.71	I	0.2	U	0.45	U	0.3	U
06/10	0.61	I	0.32	U	0.34	U	0.28	U
12/10	0.46	I	0.26	U	0.35	U	0.22	U
06/11	0.26	U	0.26	U	0.35	U	0.22	U
06/12	1	U	1	U	1	U	1	U
12/12	0.89	U	0.53	U	0.73	U	0.71	U
03/15	0.22	U	0.22	U	0.21	U	0.25	U
03/16	0.27	U	0.31	U	0.33	U	0.31	U

SW3-MW0021

[15-25]	TCE		cDCE		tDCE		VC	
10/08	4170	*	6270	*	239	*	47.3	I*
09/09	132	L*	78.1	*	4.8		4.4	*
12/09	6.5	*	6.3		0.63	I	0.3	U
03/10	3.8	*	4.7		0.47	I	0.28	U
06/10	7	*	6.1		0.4	I	0.28	U
09/10	10.7	*	9.8		0.78	I	0.28	U
12/10	32.2	*	10.7		1.4		0.85	I
03/11	24.6	*	12.1		1.6		0.22	U
06/11	21.6	*	6.7		0.7	I	0.26	I
06/12	24	*	7.6		0.96	J	1.6	J*
12/12	20	*	12		1	J	3.3	*
03/13	1	U	1	U	1	U	1	U
06/13	1	U	1	U	1	U	1	U
09/13	1		1		0.44	U	0.5	U
12/13	2.1		1.5		0.44	U	0.5	U
03/14	1.9		1.5		0.44	U	0.5	U
06/14	2.3		2.5		0.44	U	0.5	U
09/14	1.6		1.6		0.44	U	0.5	U

SW3-MW0008

[35-45]	TCE		cDCE		tDCE		VC	
10/08	0.32	U	0.2	U	0.45	U	212	*
12/09	0.32	U	0.2	U	0.45	U	581	*
06/10	0.24	U	0.32	U	0.34	U	1130	*
12/10	0.26	U	0.26	U	0.35	U	1010	*
06/11	0.26	U	0.26	U	0.35	U	0.22	U
06/12	1	U	1	U	1	U	360	*

SW3-MW0006

[35-45]	TCE		cDCE		tDCE		VC	
10/08	3.7	*	8.6		0.96	I	19.6	*
12/09	0.32	U	1.9		3.2		82.8	*
06/10	0.24	U	0.61	I	4.1		62.4	*
12/10	0.26	U	0.54	I	5.8		80.6	*
06/11	0.26	U	3.5		5.1		76.7	*
06/12	1	U	7.6		2.4		27	*
12/12	1	J	13		3.6		48	*
03/16	0.27	U	0.94	I	1.2		15.1	*

SW3-SW0002

[0-0.5]	TCE		cDCE		tDCE		VC	
12/12	0.89	U	0.53	U	0.73	U	0.71	U
06/13	1	U	1	U	1	U	1	U
09/13	0.5	U	20		2.2		24	*
10/13	0.89	U	0.53	U	0.73	U	0.71	U
12/13	0.5	U	0.65	U	0.44	U	0.5	U
03/14	0.5	U	0.65	U	0.44	U	0.5	U
09/14	0.5	U	0.65	U	0.44	U	0.5	U
03/15	0.22	U	0.22	U	0.21	U	0.25	U
09/15	0.22	U	0.22	U	0.21	U	0.25	U
03/16	0.27	U	0.31	U	0.33	U	0.31	U
09/16	0.89	U	0.53	U	0.73	U	0.71	U

SW3-MW0022

[15-25]	TCE		cDCE		tDCE		VC	
10/08	4.3	*	0.56	I	0.45	U	0.3	U
09/09	0.32	U	4.3		0.55	I	87	*
12/09	0.32	U	0.68	I	0.45	U	6.8	*
03/10	0.24	U	0.32	U	0.34	U	4.8	*
06/10	0.24	U	0.32	U	0.34	U	2.2	*
09/10	0.24	U	0.32	U	0.34	U	2.3	*
12/10	0.26	U	0.26	U	0.35	U	3.9	*
03/11	0.26	U	0.26	U	0.35	U	4	*
06/11	0.26	U	0.26	U	0.35	U	2.2	*
06/12	1	U	370	*	22		67	*
12/12	1.8	U	270	*	17		150	*
03/13	1	U	7.9		2.1		4.8	*
06/13	1	U	0.96	J	0.76	J	1.1	J*
09/13	0.5	U	2		0.44	U	1.5	*
12/13	0.5	U	3.6		0.53	I	2.5	*
03/14	0.5	U	2.8		0.54	I	1.4	*
06/14	0.5	U	0.66	I	0.44	U	0.73	I
09/14	0.5	U	1		0.44	U	0.81	I
03/15	0.22	U	1.1		0.21	U	0.25	U
09/15	0.22	U	0.51	I	0.21	U	0.35	I

SW3-MW0005

[15-25]	TCE		cDCE		tDCE		VC	
10/08	0.59	I	0.34	I	4.4		364	*
12/09	0.32	U	0.2	U	0.45	U	1.1	*
06/10	0.24	U	0.32	U	0.34	U	2.5	*
12/10	0.26	U	0.42	I	0.35	U	2.1	*
06/11	0.26	U	0.26	U	0.35	U	1.6	*
06/12	1	U	10		4.7		46	*
12/12	0.89	U	8.4		6.4		91	*
03/16	0.27	U	0.31	U	0.33	U	0.31	U

SW3-MW0028

[27-37]	TCE		cDCE		tDCE		VC	
12/12	0.89	U	0.53	U	0.73	U	820	*
04/13	1	U	1	U	1	U	370	*
06/13	1	U	1	U	1	U	260	*
09/13	0.5	U	0.65	U	0.44	U	180	*
12/13	0.5	U	0.65	U	0.44	U	96	*
03/14	0.5	U	0.65	U	0.44	U	78	*
06/14	0.5	U	0.65	U	0.44	U	92	*
09/14	0.5	U	0.65	U	0.44	U	69	*
03/15	0.22	U	0.22	U	0.21	U	59.2	*
09/15	0.22	U	0.22	U	0.21	U	94.8	*
03/16	0.27	U	0.31	U	0.33	U	56.2	*
09/16	0.89	U	0.53	U	0.73	U	21	*

0 200 Feet

Legend

- Monitoring Well
- Abandoned Monitoring Well (MW0008 abandoned in 2012)
- Surface Water Sample Location
- Revised Aggressive Remediation Zone (May 2011)
- Revised Aggressive Remediation Zone (May 2009)
- Original Aggressive Remediation Zone (August 2007)
- Low-Concentration Plume (August 2007)

Screened Interval in feet below land surface

Sample Date

Monitoring Well

SW3-MW0028
[27-37] TCE
12/12 0.89 U

Detected Concentration (ug/L)
I = Reported value between MDL and PQL
U = Not detected at or above MDL (associated value)
J = Estimated value
L = Off scale high
NS = Not sampled
NA = Not analyzed
* = Exceeds GCTL or SWCTL

Aerial photograph provided by ESRI's ArcGIS Online World Imagery map service (© 2014 ESRI and its data suppliers).

Parameter	Abbrev.	GCTL	SWCTL
Trichloroethene	TCE	3	80.7
cis-1,2-Dichloroethene	cDCE	70	NC
trans-1,2-Dichloroethene	tDCE	100	11,000
Vinyl Chloride	VC	1	2.4

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SECTION V

CONCLUSIONS AND RECOMMENDATIONS

5.1 CONCLUSIONS

TCE and VC concentrations have shown a general decreasing trend since the implementation of the AS system in the revised ARZ in December 2012. Groundwater sampling results in March 2016 indicated that TCE concentrations since their last sampling event remained non-detect in 6 monitoring wells (MW0005, MW0020, MW0025, MW0026, MW0027, and MW0028), increased in one monitoring well (MW0001), and decreased in 3 monitoring wells (MW0006, MW0009, and MW0024); and VC concentrations since their last sampling event remained non detect in 2 monitoring wells (MW0001 and MW0020), decreased in 5 monitoring wells (MW0005, MW0006, MW0024, MW0025, and MW0028), and increased in three monitoring wells (MW0009, MW0028, and MW0027). Groundwater sampling results in September 2016 indicated that TCE concentrations remained non-detect in 5 monitoring wells (MW0025, MW0026, MW0027, and MW0028), and remained constant at 19 µg/L in MW0009 since their last sampling event in March 2016. VC concentrations in September 2016 decreased in 2 monitoring wells (MW0026 and MW0028), and increased in 3 monitoring wells (MW0009, MW0025, and MW0027) since their last sampling event in March 2016.

The use of AS at the site has resulted in significant VC and TCE concentration reductions across the revised ARZ south of 5th Street, with TCE concentrations remaining less than the GCTL and decreasing VC concentrations in most wells. The removal of soluble TCE in the revised ARZ south of 5th Street due to operation of the AS system from December 2012 to September 2016 was approximately 0.09 pound or 98.36 percent removal. The total removal of soluble VC in the revised ARZ due to operation of the AS system from December 2012 to September 2016 was approximately 2.14 pounds or 80.66 percent removal.

No TCE concentrations exceeding the GCTL were detected within the original or revised ARZs in March or September 2016. In March and September 2016, TCE concentrations remained greater than the GCTL in MW0009, at a concentration of 19 µg/L during both events. MW0009 is outside the designed influence of the AS system and approximately 50 feet upgradient of the nearest AS well.

VC concentrations continue to exceed the GCTL in five monitoring wells, MW0006, MW0009, MW0024, MW0025, MW0027, and MW0028. VC concentrations in MW0027 have increased to 21.8 µg/L in March 2016 and 61 µg/L in September 2016 from non-detect in March 2015. MW0027 is located within the revised ARZ south of 5th Street at a depth of 35 to 45 feet bls, and flow rates in AS wells in this area have been less than design flow rates.

5.2 RECOMMENDATIONS

The AS system currently includes 31 AS wells in Zone 1, 25 AS wells in Zone 2, and 12 AS wells in Zone 3, as shown on Figure 2-1. Based on the increasing September 2016 VC concentration at MW0027, AS operations in Zone 3 should continue to operate to further reduce increasing VC concentrations at MW0027 and the associated revised ARZ south of 5th Street. To increase flow to ASW61, ASW62, and ASW63 (closest AS wells to MW0028), flow reductions are proposed to ASW60 and ASW64 in Zone 3 and ASW32, ASW33, ASW34, and ASW40 in Zone 2. In addition, supplementing air flow to low-flow wells with a second compressor will be completed during each OM&M event.

It is recommended that AS in Zones 1 and 2 be continued to further reduce VC concentrations to reduce the long-term monitoring time frame. System monitoring will continue monthly, and sampling will continue semi-annually as outlined in Table 5-1. The proposed monitoring program is the same as was completed in 2016. In March 2017, samples will be collected at MW0001, MW0005, MW0006, MW0020, and MW0024. Monitoring wells will be proposed for removal from the performance monitoring program after two consecutive sampling events with results less than GCTLs. If TCE and VC concentrations remain less than NADCs, the system

may be shut down or remain on line to further reduce site concentrations in an attempt to reduce the duration of subsequent long-term monitoring. Any recommendation to shut down the system will be presented to the KSCRT, and the system will be shut down only with KSCRT consensus.

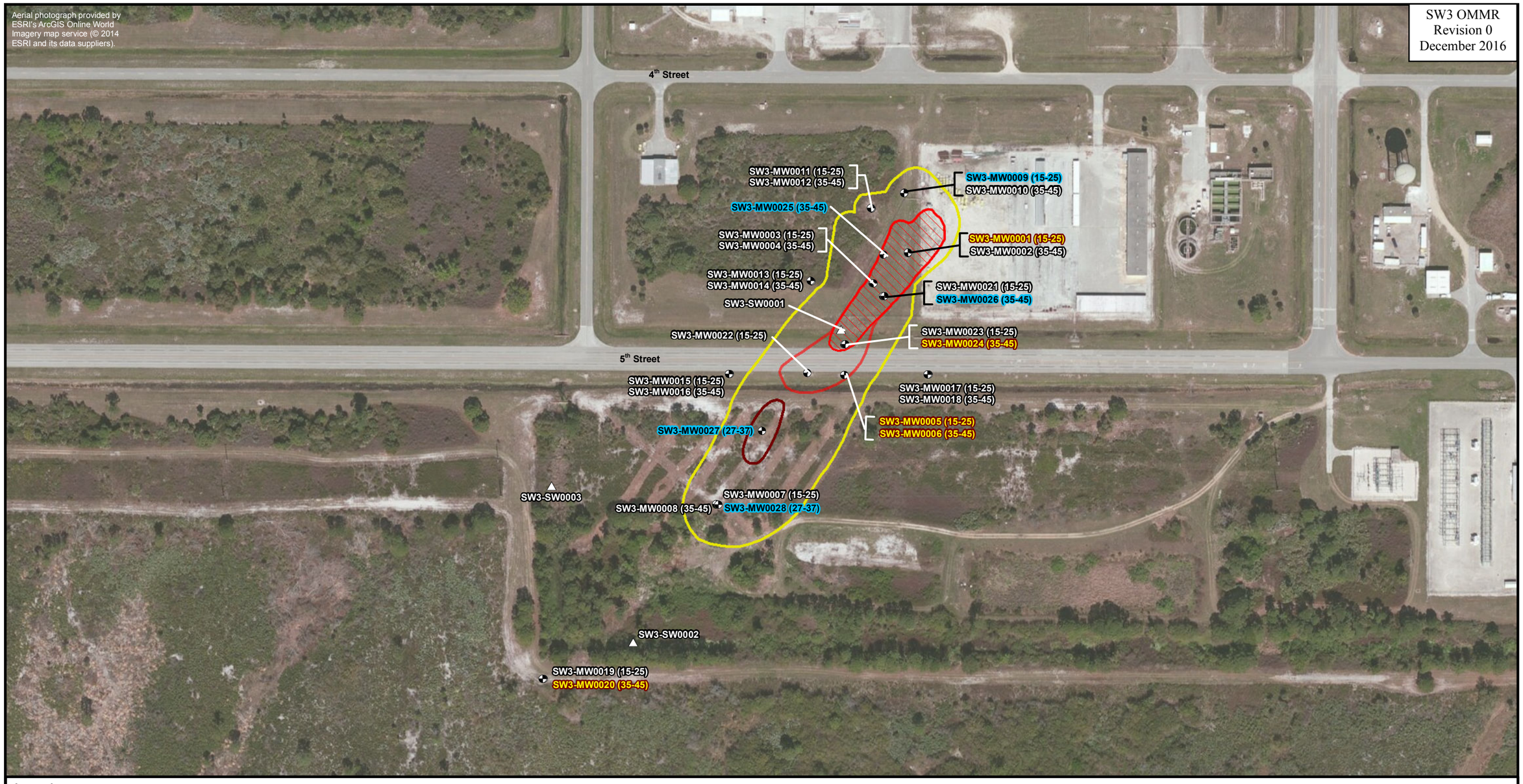
Table 5-1. Proposed Monitoring

Sample Location (SW3-)	Screened Interval (feet bls)	2017		2016 Sampling Rationale
		Mar.	Sept.	
		VOCs		
MW0001	15-25	1	-	ARZ monitoring well.
MW0005	15-25	1	-	Eastern edge of ARZ (shallow zone). Monitor annually based on 2012 VC concentratoin exceeding GCTL.
MW0006	35-45	1	-	Eastern edge of ARZ (intermediate zone). Monitor Annually based on 2012 VC concentrations exceeding GCTL.
MW0009	15-25	1	1	Upgradient LCP. Maximum TCE concentraton on site in 2012.
MW0020	35-45	1	-	LTM downgradient sentinel monitoring well.
MW0024	35-45	1	-	Along centerline of ARZ (intermediate zone). Monitor annually based on 2012 VC concentration exceeding NADC.
MW0025	35-45	1	1	Western edge of ARZ.
MW0026	35-45	1	1	Along centerline of ARZ (intermediate zone).
MW0027	27-37	1	1	Along centerline of ARZ.
MW0028	27-37	1	1	Downgradient of VC HCP (intermediate zone).
SW0001	NA	1	1	Surface water sample from ditch north of 5th Street.
SW0002	NA	1	1	Surface water sample from ditch south of southern ARZ.
SW0003	NA	1	1	Surface water sample from ditch west of southern ARZ.

bls - Below land surface.
VOCs - Volatile organic compounds.
GCTL - Groundwater Cleanup Target Level.
LTM - Long-term monitoring.
ARZ - Aggressive Remediation Zone.
TCE - Trichloroethene.
LCP - Low-Concentration Plume.
HCP - High-Concentration Plume.
VC - Vinyl chloride.
NA - Not applicable.

FIGURE 5-1 - PROPOSED GROUNDWATER MONITORING WELL LOCATIONS

SWMU 088, KENNEDY SPACE CENTER, FLORIDA



Legend

- Monitoring Well
- Abandoned Monitoring Well
- Surface Water Sample Location
- SW3-MW0020 - Sampled Annually
- SW3-MW0026 - Sampled Semi-Annually
- SW3-MW0003 - Not Sampled
- Revised Aggressive Remediation Zone (May 2011)
- Revised Aggressive Remediation Zone (May 2009)
- Original Aggressive Remediation Zone (August 2007)
- Low-Concentration Plume (August 2007)

200 0 200 Feet

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SECTION VI

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NASA, 2011b. SW3, SWMU No. 88, Corrective Measures Implementation Semi-Annual Performance Report and Work Plan Addendum Kennedy Space Center, Florida. Prepared by Tetra Tech, Inc. Revision 0, July.

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NASA, 2012b. SW3, SWMU No. 88, Corrective Measures Implementation Work Plan Addendum, Kennedy Space Center, Florida. Revision 0, November.

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APPENDIX A

MEETING MINUTES

1610-M03 Chris Neumann/ Tetra Tech

POL (SWMU 067)

Goal: Present North High Concentration Plume (HCP) air sparging construction completion.

Discussion: The focus of this interim measure (IM) is groundwater in northern area of POL facility, with an objective to reduce concentrations in groundwater treatment zone to less than groundwater cleanup target levels (GCTL).

Air sparge system consisted of seven air sparge wells [1 inch in diameter, with 20 inch long 20 micron diffusers, to a depth of 20 feet below land surface (ft BLS)]. The high-density polyethylene (HDPE) compressed air distribution infrastructure consists of:

- All piping below ground
- Air supplied from existing POL/Supply Warehouse 3 (SW3) air sparge treatment system inside the POL area.
- North HCP air sparge zone HDPE air supply connected directly to existing Zone 1 POL Shallow Aggressive Remediation Zone (ARZ) supply line.

Baseline monitoring well sampling was conducted on 15 June 2016 prior to commencement of north HCP air sparge well installation. One monitoring well (MW0021S) was sampled for volatile organic compounds (VOCs) in conjunction with the quarterly monitoring well sampling of 12 monitoring wells and two surface water samples at POL. In MW0021S, the trichloroethene (TCE) concentration of 2.9 I µg/L [(micrograms per liter), I indicates result is between the method detection limit and the practical quantitation limit] at was less than the GCTL of 3.0 µg/L and vinyl chloride (VC) was not detected.

The initial air sparge system startup and manual zone controls was conducted on 5 August 2016.

- Balanced Northern HCP Zone and shallow North ARZ
- No bubbling near North HCP treatment area observed
- No water overflow in POL-MW0021 cluster observed
- Design flow rate of 5 cfm could not be achieved in every well due to high amp draw at the blower

The supplemental startup manual zone control was conducted on 7 September 2016.

- Balanced Northern HCP Zone and shallow North ARZ (these are on the same operational air supply line)
- Shallow zone range 2.5 to 3 scfm at 12 psi, average 2.75 scfm at 12 psi

Operating three different depth interval zones of air sparge wells on 1 hour cycles independently. Alternate with SW3 site zones (POL Shallow, SW3 Zones 2 and 3, POL Shallow-Intermediate, SW3 Zone 1, POL Intermediate).

Conducted daily system evaluations for the first week. Conducted weekly system evaluations for 1 month. Conducting monthly system evaluation thereafter. Air monitoring was conducted per the site specific health and safety plan (SSHASP); there were no photoionization detector (PID) readings above background in the breathing zone. Vapor monitoring was conducted per the IM workplan (IMWP).

- Baseline monitoring well PID reading at MW0021S was less than detection limits
- PID reading at MW0021S during initial operation was less than detection limits

Deviations from IMWP

- Concrete was used to replace asphalt removed during trenching operations
- Flow rates in shallow air sparge wells limited to 4 scfm to minimize short circuiting

Lessons Learned

- Make sure to have appropriate manpower for excessively physical activities
- Optimized location of cabinet to increase piping efficiency and reduce asphalt disturbance and disposal

System is operating adequately.

- Well flows are less than design flow rate of 5 scfm (shallow zone range is 2.5 to 3 scfm at 12 psi, average 2.75 scfm at 12 psi).

- Operational radius of influence (ROI) is assumed to be design ROI due to limited monitoring well network near north HCP treatment zone and comparing to historical ROI of other air sparge well zones at POL.
- System flow should increase once water table falls based on historical activities at other POL AS well zones.

Continue operation in Zones 1 (S), 2 (SI), and 3 (I) with the trailer located at SW3 and running the system concurrently at SW3 and POL to achieve GCTLs.

- Continue monthly system evaluations and regular maintenance
- Modify quarterly surface water and monitoring well performance monitoring program
    - Recommend quarterly sampling only of wells with GCTL exceedances
    - Recommend decreasing sampling frequency at all other performance monitoring locations to semi-annual

Team consensus reached on the need for additional monitoring [direct push technology (DPT) and/or additional monitoring wells] in the area of affected groundwater to determine completion of air sparge system operation.

Results: Decision item 1906-D05

Meeting Minutes Report

Attendees:

(Geosyntec) Jim Langenbach, (FDEP) John Armstrong, (Geosyntec) Rebecca C. Daprato, (NASA) Mike Deliz, (Geosyntec) Melissa Hensley, (Geosyntec) Tom Peel, (NASA) Rosaly Santos-Ebaugh, (Tetra Tech) Mark Speranza, (Jacobs Engineering) Guy Fazzio, (Tetra Tech) Mark Jonnet, (IHA) Sue Tzareff, (NASA) Anne Chrest, (Tetra Tech) Chris Hook, (IHA) Amanda Beatty, (IHA) Michelle Moore, (IHA) Mike Hodges, (IHA) Patrice Hall

June 2014 Team Meeting

Meeting Date From: 6/26/2014 To: 6/26/2014

Meeting ID: 1406

Location Description: Kennedy Space Center-FL

Meeting Type: Full Partnering Team Meeting

Meeting Topic:	**Supply Warehouse #3 (SWMU 088)**		
Minute: 1406-M5	**Site:**	**Goal:**	**Discussion:**
Presenter: Shelton, Matt	SUPPLY WAREHOUSE 3, M6-0891 (SWMU 088)	Present Step 4C EE and obtain team consensus on path forward	Repairs and alterations: •Replaced air filter and control panel touch screen at 11,000 hours •Two Buck Boost step up transformers installed to increase voltage supplied to the trailer from 208 to 233 volts. •Cracked flow meters at manifold B replaced. •System was shut down from October 2013 to March 2014 for bearing repairs in the compressor/motor assembly. •Zone 2 and 3 trunk line repaired July 2013. •Assisted low flow wells with portable air compressor during April and May 2014 monthly O&M events. System design radius of influence (ROI) is 15 ft. A ROI of 30 ft observed from ASW0055 to ASW0056. Bubbling was observed in surface water present in drainage swale along with the southern side of 5th Street following start-up, and water overflowing at MW0022. A ROI of 50 ft observed from ASW0068 based on DO level increase within one month following start-up at MW0028, as well as a pressure of 0.3 inches of water measured in the well. Sampling is currently suspended for those wells recommended for semi-annual sampling. Quarterly monitoring well sampling conducted March, June, September, and December 2013 and March 2014. TCE was less than GCTLs in all wells since startup, with the exception of MW001 (7.5 µg/L December 2013 and 4.5 µg/L March 2014). VC concentrations in March 2014 were less than NADC in all wells
Decision:6	Team consensus reached on monitoring plan: Quarterly sampling of SW-3-MW0001, MW0009,		
Decision:7	Team consensus reached on performance monitoring of all air sparge systems on KSC; the system		

Meeting Minutes Report

Attendees:

(Geosyntec) Jim Langenbach, (FDEP) John Armstrong, (Geosyntec) Rebecca C. Daprato, (NASA) Mike Deliz, (Geosyntec) Melissa Hensley, (IHA) Tim Mrdjenovich, (Geosyntec) Tom Peel, (NASA) Rosaly Santos-Ebaugh, (Tetra Tech) Mark Speranza, (LFR) Scott Starr, (Jacobs Engineering) Deda Johansen, (NASA) Harry Plaza, (NASA) Dinh Vo, (FDEP) Ligia Applegate, (Tetra Tech) Mark Jonnet, (UF) Steve Roberts, (IHA) Sue Tzareff, (IHA) Michele Cielukowski, (NASA) Anne Chrest, (Geosyntec) Keith Tolson, (UF) Leah Stuchal, (IHA) Mike Hodges

August 2014 Team Meeting

Meeting Date From: 8/20/2014 To: 8/20/2014

Meeting ID: 1408

Location Description: Kennedy Space Center-FL

Meeting Type: Full Partnering Team Meeting

Meeting Topic:	**Supply Warehouse #3 (SWMU 088)**		
Minute: 1408-M11	**Site:**	**Goal:**	**Discussion:**
Presenter: Shelton, Matt	SUPPLY WAREHOUSE 3, M6-0891 (SWMU 088)	Update	SW3-MW0028, VC increasing. System will remain on line. Will discuss data from September event if there are plans to shut down the system.

Meeting Minutes Report

Attendees:

(LFR) Joe Applegate, (Geosyntec) Jim Langenbach, (FDEP) John Armstrong, (Geosyntec) Rebecca C. Daprato, (NASA) Mike Deliz, (Geosyntec) Melissa Hensley, (IHA) Tim Mrdjenovich, (NASA) Bob Kline, (NASA) Rosaly Santos-Ebaugh, (Tetra Tech) Mark Speranza, (Tetra Tech) Rob Simcik, (LFR) Scott Starr, (Jacobs Engineering) Deda Johansen, (NASA) Harry Plaza, (NASA) Dinh Vo, (Tetra Tech) Mark Jonnet, (Tetra Tech) Matt Shelton, (IHA) Sue Tzareff, (IHA) Michele Cielukowski, (NASA) Anne Chrest, (Tetra Tech) Chris Hook, (Geosyntec) Emily Lawson, (Tetra Tech) Jennifer Buel

November 2014 Team Meeting

Meeting Date From: 11/18/2014 To: 11/19/2014

Meeting ID: 1411

Location Description: Kennedy Space Center-FL

Meeting Type: Full Partnering Team Meeting

Meeting Topic:	**Supply Warehouse 3 (SWMU 088)**		
Minute: 1411-M10	**Site:**	**Goal:**	**Discussion:**
Presenter: Shelton, Matt	SUPPLY WAREHOUSE 3, M6-0891 (SWMU 088)	Present September 2014 performance monitoring and obtain team consensus on shutdown of the AS system.	Quarterly monitoring well sampling conducted March, June, September, and December 2013, and March, June, and September 2014. TCE less than GCTL in all wells since startup, except MW0001 (December 2013 7.5 µg/L and March 2014 4.5 µg/L). Vinyl chloride concentrations are less than NADCs in all wells. Only three wells had GCTL exceedances of vinyl chloride with a maximum detection of 69 µg/L. No other VOCs in exceedance of GCTLs. Right now the air is being shared between this site and POL. Suggestion was made to keep system running until air is needed for POL. Intend to present POL expansion at next meeting but it could be a year before expansion is completed. If project has funding through March 2015, keep running system until then. Sample at six months (March 2015) and evaluate shutting system down that at time. Team consensus reached to continue system operations, sample at six months, and evaluate shutting system down that at time.
Decision:27	eam consensus reached to continue system operations, sample at six months, and evaluate shutting		

Meeting Minutes Report

Meeting Date From: 5/26/2011 To: 5/27/2011

Meeting ID: 1105

Location Description: Kennedy Space Center-FL

Meeting Type: Full Partnering Team Meeting

Meeting Topic:	**Supply Warehouse #3 (SWMU 088)**		
Minute: 1105-M10	**Site:**	**Goal:**	**Discussion:**
Presenter: Shelton, Matt	SUPPLY WAREHOUSE #3 (M6-0891), (SWMU 88)	Present Step 4 EE on southern expansion and obtain team consensus.	Team discussed the potential of eliminating air sampling requirements, previous air sampling conducted resulted in no exceedances. Team consensus reached to install air sparge wells and system in accordance with the present plan plus additional wells towards the MW8 area, abandon and reinstall MW-8, install additional well as proposed, and remove air sampling. Team consensus reached to continue operation until active remediation goals are met (Reduce VC to NADC, reduce TCE to GCTL in the original ARZ or decrease LTM timeframe to achieve GCTL).
Decision:24	Team consensus reached to install air sparge wells and system in accordance with the present plan plus additional wells towards the MW8 area, abandon and reinstall MW-8, install additional well as proposed, and remove air sampling.		
Decision:25	Team consensus reached to continue operation until active remediation goals are met (Reduce VC to NADC, reduce TCE to GCTL in the original ARZ or decrease LTM timeframe to achieve GCTL).		

APPENDIX B

OM&M LOG SHEETS

(ELECTRONIC FILE ONLY)

WEEKLY EVALUATION WORKSHEET

SUPPLY WAREHOUSE No. 3 (SW3), SWMU NO. 088

OPERATIONS AND MAINTENANCE

KENNEDY SPACE CENTER, FLORIDA

	Description	Subtask	Indicate Task Completion With Checkmark	Comments
1	Site inspection	Any land disturbance (Y/N)	No	
		Any damage to system (Y/N)	No	
		Observed PID levels in treatment area? (Y/N)	No	
2	Verify maintenance conducted on Sparge Unit.		YES	
3	Collect system operation data (All Legs Operational)		YES	
4	Collect air sparge well data (All Legs operational)		YES	
5	PID, groundwater elevation, and dissolved oxygen data		No longer Collect	
6	Note any comments		N/A	
7	Final site inspection (general site walk through)	Site free of garbage and debris. Well covers replaced. System operational and site secured.	YES	

Date: 9/11/2015

Time: 1530

Field Personnel: A. Murphy

AIR SPARGE SYSTEM OPERATION DATAWELL DATA
SUPPLY WAREHOUSE No. 3 (SW3), SWMU NO. 088
OPERATIONS AND MAINTENANCE
KENNEDY SPACE CENTER, FLORIDA

Date: 9/11/2015 Field Personnel: A. Murphy
Time: 1300

Power Meter (hours): 99942 Runtime Meter (hours): _____
Exhaust Line Temperature (°F) before cooler: 340 North Treatment Area PID reading (PPM): 0
Exhaust Line Temperature (°F) after cooler: 114 South Treatment Area PID reading (PPM): 0
Zones of Operation: _____

	Location	Bleed Air (% open)	Amps	Gauge Pressure (psi)	Flow Rate (SCFM)
Time	**Air Sparge Compressor**				
1300	Bleed Air Control Valve	0	46	NA	—
	Main Header	NA	46	Before cooler: 22 After cooler: 24	3 = 70
Time	**Manifold Network**				
~~1305~~	Leg #1 well header (SW3 Zones 2 & 3)	25%	49	21.5	11.5 = 138
~~1305~~	Leg #2 well header (SW3 Zone 1)	50%	46	21	12 = 145

Zone #1: ASW01, ASW02, ASW03, ASW04, ASW05, ASW06, ASW07, ASW08, ASW09, ASW10, ASW11A, ASW12, ASW13, ASW14, ASW15A, ASW16, ASW17, ASW18, ASW19, ASW20, ASW21, ASW22, ASW23, ASW24, ASW25, ASW51, ASW52
Zone #2: ASW26, ASW27, ASW28, ASW29, ASW30, ASW31, ASW32, ASW33, ASW34, ASW35, ASW36, ASW37, ASW38, ASW39, ASW40, ASW41, ASW42, ASW43, ASW44, ASW45, ASW46, ASW47, ASW48, ASW49, ASW50, ASW53, ASW54, ASW55, ASW56
Zone #3: ASW57, ASW58, ASW59, ASW60, ASW61, ASW62, ASW63, ASW64, ASW65, ASW66, ASW67, ASW68

Comments _____

AIR SPARGE WELL DATA (Page 1 of 3)

SUPPLY WAREHOUSE No. 3 (SW3), SWMU NO. 088

OPERATIONS AND MAINTENANCE

KENNEDY SPACE CENTER, FLORIDA

Date: 9/11/2015

Time: 1305

Field Personnel: A. Murphy

Air Sparge Well Number	Valve Position % (initial / after adjustment)	Flow Rate (SCFM) (initial / after adjustment)	Pressure (psi) (initial / after adjustment)
ZONE 1			
ASW-1	25%	5.0	16
ASW-2	20% / 30%	4.0 / 5.0	13 / 13.5
ASW-3	15% / 20%	4.0 / 5.0	11.5 / 12.0
ASW-4	~~25%~~ 15% / 20% ~~25%~~	~~4.0~~ / ~~5.0~~ 4.0 4.0	~~7.0~~ / ~~7.0~~ ~~14.0~~ 15.5
ASW-5	~~25%~~ 25% / 50%	~~4.0~~ 3.0 / 5.0	~~14.0~~ 14.5 / 15.0
ASW-6	100%	4.5	12.0
ASW-7	25% / 50%	3.0 / 5.0	18.0 / 19.0
ASW-8	100%	0.0	14.5
ASW-9	100%	4.0	14.5
ASW-10	100%	0.0	15.5
ASW-11A	100%	0.0	17.0
ASW-12	100%	0.0	15.5
ASW-13	100%	0.0	16.0
ASW-14	100%	0.0	15.5
ASW-15A	~~100%~~ ~~0%~~ 25%	~~0.0~~ 5.0	~~0.0~~ —
ASW-16	100%	0.0	15.5
ASW-17	100%	0.0	14.5
ASW-18	100%	0.0	16.5
ASW-19	100%	0.0	16.5
ASW-20	—	—	—
ASW-21	25%	4.0	14.5
ASW-22	25%	4.0	14.5
ASW-23	25%	4.0	14.0
ASW-24	25%	4.0	14.0
ASW-25	15% / 20%	4.0 / 5.0	7.0 / 7.0
ASW-51	30%	5.0	10.0
ASW-52N	30%	5.0	13.5

AIR SPARGE WELL DATA (Page 2 of 3)
SUPPLY WAREHOUSE No. 3 (SW3), SWMU NO. 088
OPERATIONS AND MAINTENANCE
KENNEDY SPACE CENTER, FLORIDA

Air Sparge Well Number	Valve Position % (initial / after adjustment)	Flow Rate (SCFM) (initial / after adjustment)	Pressure (psi) (initial / after adjustment)
ZONE 2			
ASW-26	25%	4.0	15.0
ASW-27	~~30%~~	5.0	14.5
ASW-28	~~25%~~ / ~~30%~~ 100%	~~3.8~~ / ~~4.0~~ 2.0	~~12.0~~ / ~~12.0~~ 12.0
ASW-29	25%	4.0	16.5
ASW-30	25% / 30%	~~4.0~~ 3.8 / 4.0	~~11.0~~ 12.0 / 12.0
ASW-31	100%	0.0	18.0
ASW-32	25%	4.0	12.0
ASW-33	25%	4.0	14.0
ASW-34	20%	5.0	14.0
ASW-35	25% / 30%	3.8 / 4.0	15.0 / 15.0
ASW-36	25%	5.0	14.0
ASW-37	50%	4.0	8.5
ASW-38	30%	5.0	13.0
ASW-39	40%	4.8	18.0
ASW-40	50%	4.8	10%
ASW-41	NA	NA	NA
ASW-42	NA	NA	NA
ASW-43	100% / 50%	6.0 / 5.0	20.0 / 19.0
ASW-44	NA	NA	NA
ASW-45	NA	NA	NA
ASW-46	NA	NA	NA
ASW-47	NA	NA	NA
ASW-48	100%	0.0	18.0
ASW-49	NA	NA	NA
ASW-50	100%	0.0	17.0
ASW-52S	100%	2.0	10.0
ASW-53	~~100~~ 0%	0.0	0.0
ASW-54	0% / 100%	0	0
ASW-55	50%	5.0	~~7.5~~
ASW-56	0% / ~~100%~~ 75%	0 / 5.0	0 / —

AIR SPARGE WELL DATA (Page 3 of 3)

SUPPLY WAREHOUSE No. 3 (SW3), SWMU NO. 088

OPERATIONS AND MAINTENANCE

KENNEDY SPACE CENTER, FLORIDA

Air Sparge Well Number	Valve Position % (initial / after adjustment)	Flow Rate (SCFM) (initial / after adjustment)	Pressure (psi) (initial / after adjustment)
ZONE 3			
ASW-57	100%	0	17
ASW-58	50%	5	17.5
ASW-59	100%	0	21
ASW-60	50%	4.4	17
ASW-61	100%	0	19
ASW-62	100%	2.5	18
ASW-63	100%	0	18
ASW-64	50%	4.5	15.5
ASW-65	100%	0	17.5
ASW-66	100%	0	17.5
ASW-67	100%	3.5	18.
ASW-68	100%	0	17

GROUNDWATER LEVEL MEASUREMENTS, PID READINGS, DISSOLVED OXYGEN, AND OBSERVATIONS
SUPPLY WAREHOUSE No. 3 (SW3), SWMU NO. 088
OPERATIONS AND MAINTENANCE
KENNEDY SPACE CENTER, FLORIDA

Date: _____
Time: _____
Field Personnel: _____

Location	PID reading (ppm)	Depth to GW (feet below TOC)	Pressure (inches water)	Dissolved Oxygen (mg/L)	Observations
SW3MW0001					
SW3MW0002					
SW3MW0003					
SW3MW0004					
SW3MW0005					
SW3MW0007					
SW3MW0009					
SW3MW0013					
SW3MW0017					
SW3MW0021					
SW3MW0022					
SW3MW0023					
SW3MW0025					
SW3MW0026					
SW3MW0027					
SW3MW0028					

No longer collect

AS System Status Information:

Zones (Legs) operating during evaluation: _____

Observations: _____

FIELD NOTES AND ADDITIONAL COMMENTS

SUPPLY WAREHOUSE No.3 (SW3), SWMU NO. 088

OPERATIONS AND MAINTENANCE

KENNEDY SPACE CENTER, FLORIDA

Date: 9/11/2015

Time: 1530

Field Personnel: A. Murphy

Comments: Blow Out Wells ASW-57, -59, -61, -62, -63, -65, -66 & -68

AIR SPARGE SYSTEM CHECKLIST
Supply Warhouse No.3 (SW3), SWMU NO. 088
OPERATIONS AND MAINTENANCE
KENNEDY SPACE CENTER, FLORIDA

	Monthly	Every 3 Months or 2000 hours	Every 6 Months	As needed
AIR PRESSURE PUMP				
Check Unit for loose bolts and parts	X			
Clean/Replace Air Filter	X			
Lubricate Bearings		X		
AFTERCOOLER				
Check Unit for loose bolts and parts	X			
Cleaning Coil cooling fins of oil and dust	X			
Internal Coil Flush				X
Electric Motor Lubrication			X	
Cleaning of Fan Blades	X			

AIR SPARGE SYSTEM OPERATION DATAWELL DATA
SUPPLY WAREHOUSE No. 3 (SW3), SWMU NO. 088
OPERATIONS AND MAINTENANCE
KENNEDY SPACE CENTER, FLORIDA

Date: 10/8/2015
Time: 0845

Field Personnel: A. Murphy

Power Meter (hours): 10212
Runtime Meter (hours): _____
Exhaust Line Temperature (°F) before cooler: 320
North Treatment Area PID reading (PPM): 0
Exhaust Line Temperature (°F) after cooler: 92
South Treatment Area PID reading (PPM): _____
Zones of Operation: 1

	Location	Bleed Air (% open)	Amps	Gauge Pressure (psi)	Flow Rate (SCFM)
Time	**Air Sparge Compressor**				
0845	Bleed Air Control Valve	0%	48	NA	
	Main Header	NA	48	Before cooler: 22.5 After cooler: 24	3 = 80 70
Time	**Manifold Network**				
0845	Leg #1 well header (SW3 Zones 2 & 3)	75%	48	20 ~~5~~	~~3 = 70~~ 12 = 140
0940	Leg #2 well header (SW3 Zone 1)	50%	48.5	~~15~~ 21	12.5 = 145

Zone #1: ASW01, ASW02, ASW03, ASW04, ASW05, ASW06, ASW07, ASW08, ASW09, ASW10, ASW11A, ASW12, ASW13, ASW14, ASW15A, ASW16, ASW17, ASW18, ASW19, ASW20, ASW21, ASW22, ASW23, ASW24, ASW25, ASW51, ASW52
Zone #2: ASW26, ASW27, ASW28, ASW29, ASW30, ASW31, ASW32, ASW33, ASW34, ASW35, ASW36, ASW37, ASW38, ASW39, ASW40, ASW41, ASW42, ASW43, ASW44, ASW45, ASW46, ASW47, ASW48, ASW49, ASW50, ASW53, ASW54, ASW55, ASW56
Zone #3: ASW57, ASW58, ASW59, ASW60, ASW61, ASW62, ASW63, ASW64, ASW65, ASW66, ASW67, ASW68

Comments _____

AIR SPARGE WELL DATA (Page 1 of 3)

SUPPLY WAREHOUSE No. 3 (SW3), SWMU NO. 088

OPERATIONS AND MAINTENANCE

KENNEDY SPACE CENTER, FLORIDA

Date: 10/8/2015

Time: 0940

Field Personnel: R. Murphy

Air Sparge Well Number	Valve Position % (initial / after adjustment)	Flow Rate (SCFM) (initial / after adjustment)	Pressure (psi) (initial / after adjustment)
ZONE 1			
ASW-1	50%	5	16
ASW-2	50%	9.5	15
ASW-3	25%	5	13
ASW-4	50%	3.5	15
ASW-5	50%	5	15.5
ASW-6	100%	4	12
ASW-7	75% / 50%	7 / 4	18 / ~~15~~ 17
ASW-8	100%	0	15.5
ASW-9	100%	2	14
ASW-10	100%	0	16
ASW-11A	100%	0	17
ASW-12	100%	0	16
ASW-13	100%	0	17
ASW-14	100%	0	16
ASW-15A	25%	4	~~0~~ N/A
ASW-16	100%	6	16
ASW-17	100%	0	15
ASW-18	100%	6	17
ASW-19	100%	0	17
ASW-20	—	—	—
ASW-21	50%	4	17
ASW-22	25%	4	15
ASW-23	50%	4	15
ASW-24	25%	4	16
ASW-25	25%	5	10
ASW-51	50%	5	13
ASW-52N	25%	4	14

AIR SPARGE WELL DATA (Page 2 of 3)

SUPPLY WAREHOUSE No. 3 (SW3), SWMU NO. 088

OPERATIONS AND MAINTENANCE

KENNEDY SPACE CENTER, FLORIDA

Air Sparge Well Number	Valve Position % (initial / after adjustment)	Flow Rate (SCFM) (initial / after adjustment)	Pressure (psi) (initial / after adjustment)
ZONE 2			
ASW-26	40%	4	15.5
ASW-27	75%	5	16
ASW-28	100%	3.5	20
ASW-29	50%	4.5	14
ASW-30	~~75%~~ 50%	~~5~~ 4	~~16~~ 12.5
ASW-31	100%	0	19
ASW-32	40%	4	13.5
ASW-33	50%	4	14
ASW-34	50% / 40%	5.5 / 4	16 / 15.5
ASW-35	50%	4	16
ASW-36	50%	5	15
ASW-37	40%	5	14
ASW-38	50%	5	15
ASW-39	40%	5	18.5
ASW-40	50%	5	11
ASW-41	NA	NA	NA
ASW-42	NA	NA	NA
ASW-43	60% 50%	3.5	20
ASW-44	NA	NA	NA
ASW-45	NA	NA	NA
ASW-46	NA	NA	NA
ASW-47	NA	NA	NA
ASW-48	100%	0	20
ASW-49	NA	NA	NA
ASW-50	100%	0	19
ASW-52S	100%	1	10
ASW-53	100%	0	6
ASW-54	100%	0	0
ASW-55	100%	0	7.5
ASW-56	50%	0	0

AIR SPARGE WELL DATA (Page 3 of 3)

SUPPLY WAREHOUSE No. 3 (SW3), SWMU NO. 088

OPERATIONS AND MAINTENANCE

KENNEDY SPACE CENTER, FLORIDA

	Air Sparge Well Number	Valve Position % (initial / after adjustment)	Flow Rate (SCFM) (initial / after adjustment)	Pressure (psi) (initial / after adjustment)
	ZONE 3			
B	ASW-57	100%	0	17
~~B~~	ASW-58	~~100%~~ 50%	~~4~~ 4	~~21~~ 17
B	ASW-59	100%	0	21
	ASW-60	50%	3.75	16
B	ASW-61	100%	0	18
B	ASW-62	100%	2	17
B	ASW-63	100%	0	17
	ASW-64	50%	4	15
B	ASW-65	100%	0	17
B	ASW-66	100%	0	18
B	ASW-67	100%	2	18
B	ASW-68	100%	0	18

FIELD NOTES AND ADDITIONAL COMMENTS

SUPPLY WAREHOUSE No.3 (SW3), SWMU NO. 088

OPERATIONS AND MAINTENANCE

KENNEDY SPACE CENTER, FLORIDA

Date: _____

Time: _____

Field Personnel: _____

Comments: _____

AIR SPARGE SYSTEM CHECKLIST
Supply Warhouse No.3 (SW3), SWMU NO. 088
OPERATIONS AND MAINTENANCE
KENNEDY SPACE CENTER, FLORIDA

	Monthly	Every 3 Months or 2000 hours	Every 6 Months	As needed
AIR PRESSURE PUMP				
Check Unit for loose bolts and parts	X			
Clean/Replace Air Filter	X			
Lubricate Bearings		X		
AFTERCOOLER				
Check Unit for loose bolts and parts	X			
Cleaning Coil cooling fins of oil and dust	X			
Internal Coil Flush				X
Electric Motor Lubrication			X	
Cleaning of Fan Blades	X			

WEEKLY EVALUATION WORKSHEET

SUPPLY WAREHOUSE No. 3 (SW3), SWMU NO. 088

OPERATIONS AND MAINTENANCE

KENNEDY SPACE CENTER, FLORIDA

	Description	Subtask	Indicate Task Completion With Checkmark	Comments
1	Site inspection	Any land disturbance (Y/N)	✓	
		Any damage to system (Y/N)	✓	
		Observed PID levels in treatment area? (Y/N)	✓	
2	Verify maintenance conducted on Sparge Unit.		✓	
3	Collect system operation data (All Legs Operational)		✓	
4	Collect air sparge well data (All Legs operational)		✓	
5	PID, groundwater elevation, and dissolved oxygen data		NA	
6	Note any comments		✓	
7	Final site inspection (general site walk through)	Site free of garbage and debris. Well covers replaced. System operational and site secured.	✓	

Date: 5 NOV 2015

Time: 1200 - 1700

Field Personnel: DAN FORSER

AIR SPARGE SYSTEM OPERATION DATAWELL DATA
SUPPLY WAREHOUSE No. 3 (SW3), SWMU NO. 088
OPERATIONS AND MAINTENANCE
KENNEDY SPACE CENTER, FLORIDA

Date: 5 NOV 2015 Field Personnel: DAN FORESTIER

Time: 1200-1700

0000-5NOV2015 - 2154.5 HR

Power Meter (hours): _____ Runtime Meter (hours): _____

Exhaust Line Temperature (°F) before cooler: 330 North Treatment Area PID reading (PPM): NA

Exhaust Line Temperature (°F) after cooler: 110 South Treatment Area PID reading (PPM): NA

Zones of Operation: SV 2804

	Location	Bleed Air (% open)	Amps	Gauge Pressure (psi)	Flow Rate (SCFM)
Time	**Air Sparge Compressor**				
1300	Bleed Air Control Valve	0	45	NA	70
	Main Header	NA	45	Before cooler: 21 After cooler: 23	70
Time	**Manifold Network**				
1330	Leg #1 well header (SW3 Zones 2 & 3)	25	46	19	145
1330	Leg #2 well header (SW3 Zone 1)	[redacted] 50	46	21	145

Zone #1: ASW01, ASW02, ASW03, ASW04, ASW05, ASW06, ASW07, ASW08, ASW09, ASW10, ASW11A, ASW12, ASW13, ASW14, ASW15A, ASW16, ASW17, ASW18, ASW19, ASW20, ASW21, ASW22, ASW23, ASW24, ASW25, ASW51, ASW52
Zone #2: ASW26, ASW27, ASW28, ASW29, ASW30, ASW31, ASW32, ASW33, ASW34, ASW35, ASW36, ASW37, ASW38, ASW39, ASW40, ASW41, ASW42, ASW43, ASW44, ASW45, ASW46, ASW47, ASW48, ASW49, ASW50, ASW53, ASW54, ASW55, ASW56
Zone #3: ASW57, ASW58, ASW59, ASW60, ASW61, ASW62, ASW63, ASW64, ASW65, ASW66, ASW67, ASW68

Comments COMPRESSOR HAS SLIGHT SHEEN + HAS SLIGHT SMELL OF BURNT OIL. OIL LEVEL STILL AT HALF WAY SAME AS WHEN CHANGED IN OCT

(NOTHING TO BE ALARMED ABOUT BUT NEED TO WATCH)

AIR SPARGE WELL DATA (Page 1 of 3)

SUPPLY WAREHOUSE No. 3 (SW3), SWMU NO. 088

OPERATIONS AND MAINTENANCE

KENNEDY SPACE CENTER, FLORIDA

Date: 5 Nov 2015

Time: 1430

Field Personnel: DAVIDSON

Air Sparge Well Number	Valve Position % (initial / after adjustment)	Flow Rate (SCFM) (initial / after adjustment)	Pressure (psi) (initial / after adjustment)
ZONE 1			
ASW-1	30	4	17
ASW-2	30/25	5/4	15/13
ASW-3	30/25	5/4	15/13
ASW-4	25	4	15
ASW-5	50/30	7/4	15/15
ASW-6	100	4	12
ASW-7	10	4	17
B ASW-8	100	0	16
B ASW-9	100	0	15
B ASW-10	100	0	15
B ASW-11A	100	0	16
B ASW-12	100	0	16
B ASW-13	100	0	16
B ASW-14	100	0	16
ASW-15A	10	4	0
B ASW-16	100	0	16
B ASW-17	100	0	15
B ASW-18	100	0	17
B ASW-19	100	0	17
ASW-20	WELL	TBROKEN	
ASW-21	50	4	15
ASW-22	30	4	15
ASW-23	50	4	14
ASW-24	50	4	13
ASW-25	50/40	5/4	10/9
ASW-51	50/30	5/4	12
ASW-52N	50	4	15

AIR SPARGE WELL DATA (Page 2 of 3)

SUPPLY WAREHOUSE No. 3 (SW3), SWMU NO. 088

OPERATIONS AND MAINTENANCE

KENNEDY SPACE CENTER, FLORIDA

Air Sparge Well Number	Valve Position % (initial / after adjustment)	Flow Rate (SCFM) (initial / after adjustment)	Pressure (psi) (initial / after adjustment)
ZONE 2			
ASW-26	25	4	14
ASW-27	25 / 20	5.5/4	14/13
ASW-28	100	4	20
ASW-29	25	4	11
ASW-30	25	4	10
ASW-31	100	0	18
ASW-32	40	4	11
ASW-33	30	4	14
ASW-34	10	4	14
ASW-35	30	4	15
ASW-36	30/25	5/4	14/14
ASW-37	25	4	14
ASW-38	30/25	5/4	13/12
ASW-39	50/30	5/4	17/16
ASW-40	30/25	5/4	9/8
ASW-41	NA	NA	NA
ASW-42	NA	NA	NA
ASW-43	50/100	3/3	20/20
ASW-44	NA	NA	NA
ASW-45	NA	NA	NA
ASW-46	NA	NA	NA
ASW-47	NA	NA	NA
ASW-48	100	4	15
ASW-49	NA	NA	NA
ASW-50	100	4	15
ASW-52S	100	2	10
ASW-53	100	0	0
ASW-54	100	0	0
ASW-55	50/40	5/4	8
ASW-56	90/60	9/4	8

BROKE DOWN SPARGE STILL FUNCTIONAL

AIR SPARGE WELL DATA (Page 3 of 3)

SUPPLY WAREHOUSE No. 3 (SW3), SWMU NO. 088

OPERATIONS AND MAINTENANCE

KENNEDY SPACE CENTER, FLORIDA

	Air Sparge Well Number	Valve Position % (initial / after adjustment)	Flow Rate (SCFM) (initial / after adjustment)	Pressure (psi) (initial / after adjustment)
	ZONE 3			
B	ASW-57	100	0	18
	ASW-58	50	5	17
B	ASW-59	100	0	23
	ASW-60	50	4	17
B	ASW-61	100	0	20
	ASW-62	100	4	17
B	ASW-63	100	0	20
	ASW-64	50	4	16
B	ASW-65	100	0	16
B	ASW-66	100	0	17
	ASW-67	100	4	19
B	ASW-68	100	0	19

GROUNDWATER LEVEL MEASUREMENTS, PID READINGS, DISSOLVED OXYGEN, AND OBSERVATIONS

SUPPLY WAREHOUSE No. 3 (SW3), SWMU NO. 088

OPERATIONS AND MAINTENANCE

KENNEDY SPACE CENTER, FLORIDA

Date: 5 NOV 2015

Time: 1200 - 1700

Field Personnel: D FORESTER

Location	PID reading (ppm)	Depth to GW (feet below TOC)	Pressure (inches water)	Dissolved Oxygen (mg/L)	Observations
SW3MW0001					
SW3MW0002					
SW3MW0003					
SW3MW0004					
SW3MW0005					
SW3MW0007					
SW3MW0009					
SW3MW0013					
SW3MW0017					
SW3MW0021					
SW3MW0022					
SW3MW0023					
SW3MW0025					
SW3MW0026					
SW3MW0027					
SW3MW0028					

AS System Status Information:

Zones (Legs) operating during evaluation: _____

Observations: _____

FIELD NOTES AND ADDITIONAL COMMENTS

SUPPLY WAREHOUSE No.3 (SW3), SWMU NO. 088

OPERATIONS AND MAINTENANCE

KENNEDY SPACE CENTER, FLORIDA

Date: 5 Nov 2015

Time: 1800 - 1700

Field Personnel: D FORESTER

Comments: ALL WELL WITH ONE BROKEN WELL AS-20 AT THE PVC COLLAR

SEE PG 2

AIR SPARGE SYSTEM CHECKLIST
Supply Warhouse No.3 (SW3), SWMU NO. 088
OPERATIONS AND MAINTENANCE
KENNEDY SPACE CENTER, FLORIDA

	Monthly	Every 3 Months or 2000 hours	Every 6 Months	As needed
AIR PRESSURE PUMP				
Check Unit for loose bolts and parts	X			
Clean/Replace Air Filter	X			
Lubricate Bearings		X		
AFTERCOOLER				
Check Unit for loose bolts and parts	X			
Cleaning Coil cooling fins of oil and dust	X			
Internal Coil Flush				X
Electric Motor Lubrication			X	
Cleaning of Fan Blades	X			

WEEKLY EVALUATION WORKSHEET

SUPPLY WAREHOUSE No. 3 (SW3), SWMU NO. 088

OPERATIONS AND MAINTENANCE

KENNEDY SPACE CENTER, FLORIDA

	Description	Subtask	Indicate Task Completion With Checkmark	Comments
1	Site inspection	Any land disturbance (Y/N)	✓	
		Any damage to system (Y/N)	✓	
		Observed PID levels in treatment area? (Y/N)	✓	
2	Verify maintenance conducted on Sparge Unit.		✓	
3	Collect system operation data (All Legs Operational)		✓	
4	Collect air sparge well data (All Legs operational)		✓	
5	PID, groundwater elevation, and dissolved oxygen data		NA	
6	Note any comments		✓	
7	Final site inspection (general site walk through)	Site free of garbage and debris. Well covers replaced. System operational and site secured.	✓	

Date: 11 DEC 2015

Time: 0700

Field Personnel: D. FORESTER

AIR SPARGE SYSTEM OPERATION DATAWELL DATA
SUPPLY WAREHOUSE No. 3 (SW3), SWMU NO. 088
OPERATIONS AND MAINTENANCE
KENNEDY SPACE CENTER, FLORIDA

Date: 11 DEC 2015 Field Personnel: D. FORESTER

Time: 0700 -1600

E-MON D-NON - LOAD 10.8 KWH
- KWH 4511

Power Meter (hours): _____ Runtime Meter (hours): 22440

Exhaust Line Temperature (°F) before cooler: 310 North Treatment Area PID reading (PPM): NA

Exhaust Line Temperature (°F) after cooler: 100 South Treatment Area PID reading (PPM): NA

Zones of Operation: SV-2802

	Location	Bleed Air (% open)	Amps	Gauge Pressure (psi)	Flow Rate (SCFM)
Time	**Air Sparge Compressor**				
0700 - 1600	Bleed Air Control Valve	0	46	NA	70
	Main Header	NA	46	Before cooler: 23 After cooler: 25	NA
Time	**Manifold Network**				
1200	Leg #1 well header (SW3 Zones 2 & 3)	50	46	20	145
1330	Leg #2 well header (SW3 Zone 1)	50	46	21	145

Zone #1: ASW01, ASW02, ASW03, ASW04, ASW05, ASW06, ASW07, ASW08, ASW09, ASW10, ASW11A, ASW12, ASW13, ASW14, ASW15A, ASW16, ASW17, ASW18, ASW19, ASW20, ASW21, ASW22, ASW23, ASW24, ASW25, ASW51, ASW52
Zone #2: ASW26, ASW27, ASW28, ASW29, ASW30, ASW31, ASW32, ASW33, ASW34, ASW35, ASW36, ASW37, ASW38, ASW39, ASW40, ASW41, ASW42, ASW43, ASW44, ASW45, ASW46, ASW47, ASW48, ASW49, ASW50, ASW53, ASW54, ASW55, ASW56
Zone #3: ASW57, ASW58, ASW59, ASW60, ASW61, ASW62, ASW63, ASW64, ASW65, ASW66, ASW67, ASW68

Comments _____

AIR SPARGE WELL DATA (Page 1 of 3)

SUPPLY WAREHOUSE No. 3 (SW3), SWMU NO. 088

OPERATIONS AND MAINTENANCE

KENNEDY SPACE CENTER, FLORIDA

Date: 11 DEC 2015

Time: 0700 - 1600

Field Personnel: D. FORESTER

Air Sparge Well Number	Valve Position % (initial / after adjustment)	Flow Rate (SCFM) (initial / after adjustment)	Pressure (psi) (initial / after adjustment)
ZONE 1			
ASW-1	10	6 / 4	17 / 16
ASW-2	20	4	14
ASW-3	10	4	13
ASW-4	20	4	15
ASW-5	30	4	15
ASW-6	100	4	14
ASW-7	10	4	17
ASW-8	100	0	17
ASW-9	100	0	15
ASW-10	100	0	17
ASW-11A	100	0	17
ASW-12	100	0	17
ASW-13	100	0	17
ASW-14	100	0	17
ASW-15A	10	4	0
ASW-16	100	0	17
ASW-17	100	0	15
ASW-18	100	0	17
ASW-19	100	0	17
ASW-20	BROKEN AT WELL DVC		
ASW-21	50 / 40	7 / 4	16 / 15
ASW-22	30	4	15
ASW-23	20	4	14
ASW-24	50	4	14
ASW-25	20	4	10
ASW-51	10	4	12
ASW-52N	30 / 20	5 / 4	14

AIR SPARGE WELL DATA (Page 2 of 3)

SUPPLY WAREHOUSE No. 3 (SW3), SWMU NO. 088

OPERATIONS AND MAINTENANCE

KENNEDY SPACE CENTER, FLORIDA

Air Sparge Well Number	Valve Position % (initial / after adjustment)	Flow Rate (SCFM) (initial / after adjustment)	Pressure (psi) (initial / after adjustment)
ZONE 2			
ASW-26	20	4	15
ASW-27	20	3.5	14
ASW-28	100	4	18
ASW-29	20	4	13
ASW-30	20	4	11
ASW-31	100	1	17
ASW-32	0	0	0
ASW-33	0	0	0
ASW-34	0	0	0
ASW-35	20	4	15
ASW-36	30	4	15
ASW-37	30	4	14
ASW-38	20	3.5	12
ASW-39	20	3.5	17
ASW-40	0	0	0
ASW-41	NA	NA	NA
ASW-42	NA	NA	NA
ASW-43	100	4	18
ASW-44	NA	NA	NA
ASW-45	NA	NA	NA
ASW-46	NA	NA	NA
ASW-47	NA	NA	NA
ASW-48	100	0	17
ASW-49	NA	NA	NA
ASW-50	100	0	17
ASW-52S	100	2	7
ASW-53	100	0.5	0
ASW-54	100	1	0
ASW-55	50	4	10
ASW-56	50	4	0

AIR SPARGE WELL DATA (Page 3 of 3)

SUPPLY WAREHOUSE No. 3 (SW3), SWMU NO. 088

OPERATIONS AND MAINTENANCE

KENNEDY SPACE CENTER, FLORIDA

Air Sparge Well Number	Valve Position % (initial / after adjustment)	Flow Rate (SCFM) (initial / after adjustment)	Pressure (psi) (initial / after adjustment)
ZONE 3			
ASW-57	100	NO MOVEMENT	15
ASW-58	~~50~~ / 50	3.5 / 4	16/16
ASW-59	100	NM	18
ASW-60	~~00~~ / 60	3.5 / 4	16/16
ASW-61	100	NM	17
ASW-62	50 / 60	3 / ~~4~~	16/16
ASW-63	100	NM	17
ASW-64	~~50~~	4	15
ASW-65	100	NM	15
ASW-66	100	NM	16
ASW-67	100	NM	11
ASW-68	100	NM	17

NM = NO MOVEMENT

GROUNDWATER LEVEL MEASUREMENTS, PID READINGS, DISSOLVED OXYGEN, AND OBSERVATIONS
SUPPLY WAREHOUSE No. 3 (SW3), SWMU NO. 088
OPERATIONS AND MAINTENANCE
KENNEDY SPACE CENTER, FLORIDA

Date: 11 DEC 2013
Time: 0700
Field Personnel: D. FORESTER

Location	PID reading (ppm)	Depth to GW (feet below TOC)	Pressure (inches water)	Dissolved Oxygen (mg/L)	Observations
SW3MW0001					
SW3MW0002					
SW3MW0003					
SW3MW0004					
SW3MW0005					
SW3MW0007					
SW3MW0009					
SW3MW0013					
SW3MW0017					
SW3MW0021					
SW3MW0022					
SW3MW0023					
SW3MW0025					
SW3MW0026					
SW3MW0027					
SW3MW0028					

AS System Status Information:

Zones (Legs) operating during evaluation: _____

Observations: _____

FIELD NOTES AND ADDITIONAL COMMENTS

SUPPLY WAREHOUSE No.3 (SW3), SWMU NO. 088

OPERATIONS AND MAINTENANCE

KENNEDY SPACE CENTER, FLORIDA

Date: 11 DEC 2015

Time: 0700

Field Personnel: D. FORESTER

Comments:

AIR SPARGE SYSTEM CHECKLIST
Supply Warhouse No.3 (SW3), SWMU NO. 088
OPERATIONS AND MAINTENANCE
KENNEDY SPACE CENTER, FLORIDA

	Monthly	Every 3 Months or 2000 hours	Every 6 Months	As needed
AIR PRESSURE PUMP				
Check Unit for loose bolts and parts	X			
Clean/Replace Air Filter	X			
Lubricate Bearings		X		
AFTERCOOLER				
Check Unit for loose bolts and parts	X			
Cleaning Coil cooling fins of oil and dust	X			
Internal Coil Flush				X
Electric Motor Lubrication			X	
Cleaning of Fan Blades	X			

WEEKLY EVALUATION WORKSHEET

SUPPLY WAREHOUSE No. 3 (SW3), SWMU NO. 088

OPERATIONS AND MAINTENANCE

KENNEDY SPACE CENTER, FLORIDA

	Description	Subtask	Indicate Task Completion With Checkmark	Comments
1	Site inspection	Any land disturbance (Y/N)	NO	
		Any damage to system (Y/N)	NO	
		Observed PID levels in treatment area? (Y/N)	N/A	
2	Verify maintenance conducted on Sparge Unit.	YES		oil changed
3	Collect system operation data (All Legs Operational)	YES		
4	Collect air sparge well data (All Legs operational)	YES		
5	PID, groundwater elevation, and dissolved oxygen data	N/A		
6	Note any comments			
7	Final site inspection (general site walk through)	Site free of garbage and debris. Well covers replaced. System operational and site secured.	YES	

Date: 1/18/2016

Time:

Field Personnel: K. Alex Murphy

AIR SPARGE SYSTEM OPERATION DATAWELL DATA
SUPPLY WAREHOUSE No. 3 (SW3), SWMU NO. 088
OPERATIONS AND MAINTENANCE
KENNEDY SPACE CENTER, FLORIDA

Date: 1/10/2016 Field Personnel: A. Murphy

Time: 1330

Power Meter (hours): 23106 Runtime Meter (hours): _____

Exhaust Line Temperature (°F) before cooler: 140 300°C 22psi North Treatment Area PID reading (PPM): 0

Exhaust Line Temperature (°F) after cooler: 84 81°C 23.5 South Treatment Area PID reading (PPM): 6

Zones of Operation: Leg 1

	Location	Bleed Air (% open)	Amps	Gauge Pressure (psi)	Flow Rate (SCFM)
Time	**Air Sparge Compressor**				
1330	Bleed Air Control Valve	0%	46	NA	3 → 70
	Main Header	NA		Before cooler: 22 After cooler: 23.5	
Time	**Manifold Network**				
1335	Leg #1 well header (SW3 Zones 2 & 3)	50%	46	20.5	12.5 → 145
1436	Leg #2 well header (SW3 Zone 1)	40%	47	23.5	11 → 138

Zone #1: ASW01, ASW02, ASW03, ASW04, ASW05, ASW06, ASW07, ASW08, ASW09, ASW10, ASW11A, ASW12, ASW13, ASW14, ASW15A, ASW16, ASW17, ASW18, ASW19, ASW20, ASW21, ASW22, ASW23, ASW24, ASW25, ASW51, ASW52
Zone #2: ASW26, ASW27, ASW28, ASW29, ASW30, ASW31, ASW32, ASW33, ASW34, ASW35, ASW36, ASW37, ASW38, ASW39, ASW40, ASW41, ASW42, ASW43, ASW44, ASW45, ASW46, ASW47, ASW48, ASW49, ASW50, ASW53, ASW54, ASW55, ASW56
Zone #3: ASW57, ASW58, ASW59, ASW60, ASW61, ASW62, ASW63, ASW64, ASW65, ASW66, ASW67, ASW68

Comments _____

AIR SPARGE WELL DATA (Page 1 of 3)

SUPPLY WAREHOUSE No. 3 (SW3), SWMU NO. 088

OPERATIONS AND MAINTENANCE

KENNEDY SPACE CENTER, FLORIDA

Date: 1/12/2016

Time: 1330

Field Personnel: A. Murgia

Air Sparge Well Number	Valve Position % (initial / after adjustment)	Flow Rate (SCFM) (initial / after adjustment)	Pressue PSI
ZONE 1			
ASW-1	25	5 05	18.5
ASW-2	30	5	16.5
ASW-3	30	4.8	15.5
ASW-4	30	5	15
ASW-5	50	5	17
ASW-6	100	1	17
ASW-7	10	4.8	18
ASW-8	100	0	20.5
ASW-9	100	0	16
ASW-10	100	0	21
ASW-11A	100	0	20
ASW-12	100	0	21
ASW-13	100	0	21
ASW-14	100	0	21
ASW-15A	20	4	20
ASW-16	100	0	20.5
ASW-17	100	0	19
ASW-18	100	0	20.5
ASW-19	100	0	21
ASW-20	WELL BROKEN		
ASW-21	25	5	16
ASW-22	25	4.6	16
ASW-23	30	5	15.5
ASW-24	25	4	16
ASW-25	25 / 35	4 / 5	10 / 11
ASW-51	25 / 35	4.2 / 5	13 / 14
ASW-52N	25 / 100	0 / 0	18 / 19

AIR SPARGE WELL DATA (Page 2 of 3)
SUPPLY WAREHOUSE No. 3 (SW3), SWMU NO. 088
OPERATIONS AND MAINTENANCE
KENNEDY SPACE CENTER, FLORIDA

Air Sparge Well Number	Valve Position % (initial / after adjustment)	Flow Rate (SCFM) (initial / after adjustment)	
ZONE 2			
ASW-26	30 / 40	3.4 / 5	16.5 / 17
ASW-27	30 / 45	3 / 5	16 / 17
ASW-28	100	3.5	14
ASW-29	50 / 55	3 / 5	15 / 15.5
ASW-30	30 / 50	3 / 5	13 / 13.5
ASW-31	100	0	19
ASW-32	0	0	0
ASW-33	0	0	0
ASW-34	0	0	0
ASW-35	50 / 60	4 / 5	16 / 17
ASW-36	30 / 40	4 / 5	15 / 16
ASW-37	25	4.5	15
ASW-38	25 / 35	3 / 4.5	14.5 / 15
ASW-39	30 / 50	3.2 / 5	19 / 19
ASW-40	0	0	0
ASW-41	NA	NA	
ASW-42	NA	NA	
ASW-43	100 / 30	10 / 5	18.5 / 17
ASW-44	NA	NA	
ASW-45	NA	NA	
ASW-46	NA	NA	
ASW-47	NA	NA	
ASW-48	100	0	18.5
ASW-49	NA	NA	
ASW-50	100	0	18
ASW-52S	100	2	7
ASW-53	100	0.5	0
ASW-54	100	1	0
ASW-55	~~100~~ 50	4	10
ASW-56	50	4	0

AIR SPARGE WELL DATA (Page 3 of 3)

SUPPLY WAREHOUSE No. 3 (SW3), SWMU NO. 088

OPERATIONS AND MAINTENANCE

KENNEDY SPACE CENTER, FLORIDA

Air Sparge Well Number	Valve Position % (initial / after adjustment)	Flow Rate (SCFM) (initial / after adjustment)	PSI
ZONE 3			
ASW-57	100	0	17
ASW-58	~~100~~ 50	~~0~~ 4.5	16
ASW-59	100	0	18
ASW-60	75	4	17
ASW-61	100	0	17
ASW-62	75	3	16
ASW-63	100	0	17
ASW-64	50	3	15
ASW-65	100	0	22
ASW-66	100	0	16
ASW-67	100	0	16
ASW-68	100	0	18

GROUNDWATER LEVEL MEASUREMENTS, PID READINGS, DISSOLVED OXYGEN, AND OBSERVATIONS

SUPPLY WAREHOUSE No. 3 (SW3), SWMU NO. 088

OPERATIONS AND MAINTENANCE

KENNEDY SPACE CENTER, FLORIDA

Date: _____

Time: _____

Field Personnel: _____

Location	PID reading (ppm)	Depth to GW (feet below TOC)	Pressure (inches water)	Dissolved Oxygen (mg/L)	Observations
SW3MW0001					
SW3MW0002					
SW3MW0003					
SW3MW0004					
SW3MW0005					
SW3MW0007					
SW3MW0009					
SW3MW0013					
SW3MW0017					
SW3MW0021					
SW3MW0022					
SW3MW0023					
SW3MW0025					
SW3MW0026					
SW3MW0027					
SW3MW0028					

N/A

AS System Status Information:

Zones (Legs) operating during evaluation: _____

Observations: _____

FIELD NOTES AND ADDITIONAL COMMENTS

SUPPLY WAREHOUSE No.3 (SW3), SWMU NO. 088

OPERATIONS AND MAINTENANCE

KENNEDY SPACE CENTER, FLORIDA

Date: 1/18/2015

Time: 1330

Field Personnel: A. Murphy

Comments: ~~Storage on Building SWELL. Will call~~

~~Skip to Access~~

Changed out. Need to change area letter

AIR SPARGE SYSTEM CHECKLIST
Supply Warhouse No.3 (SW3), SWMU NO. 088
OPERATIONS AND MAINTENANCE
KENNEDY SPACE CENTER, FLORIDA

	Monthly	Every 3 Months or 2000 hours	Every 6 Months	As needed
AIR PRESSURE PUMP				
Check Unit for loose bolts and parts	X			
Clean/Replace Air Filter	X			
Lubricate Bearings		X		
AFTERCOOLER				
Check Unit for loose bolts and parts	X			
Cleaning Coil cooling fins of oil and dust	X			
Internal Coil Flush				X
Electric Motor Lubrication			X	
Cleaning of Fan Blades	X			

AIR SPARGE SYSTEM OPERATION DATAWELL DATA
SUPPLY WAREHOUSE No. 3 (SW3), SWMU NO. 088
OPERATIONS AND MAINTENANCE
KENNEDY SPACE CENTER, FLORIDA

Date: 5-FEB-2016
Time: 10:00 - 16:00

Field Personnel: DAN FORSTER
WAYNE CRISHOLM

KW HR 17231

Power Meter (hours): 23540
Runtime Meter (hours): _____

Exhaust Line Temperature (°F) before cooler: 300
North Treatment Area PID reading (PPM): ~~_____~~

Exhaust Line Temperature (°F) after cooler: 82
South Treatment Area PID reading (PPM): ~~_____~~

Zones of Operation: ALL

	Location	Bleed Air (% open)	Amps	Gauge Pressure (psi)	Flow Rate (SCFM)
Time	**Air Sparge Compressor**				
1430	Bleed Air Control Valve	0	42	NA	70
	Main Header	NA	42	Before cooler: 20 After cooler: 21	70
Time	**Manifold Network**				
	Leg #1 well header (SW3 Zones 2 & 3)		46	20	150
1430	Leg #2 well header (SW3 Zone 1)	50	46	22	140

Zone #1: ASW01, ASW02, ASW03, ASW04, ASW05, ASW06, ASW07, ASW08, ASW09, ASW10, ASW11A, ASW12, ASW13, ASW14, ASW15A, ASW16, ASW17, ASW18, ASW19, ASW20, ASW21, ASW22, ASW23, ASW24, ASW25, ASW51, ASW52
Zone #2: ASW26, ASW27, ASW28, ASW29, ASW30, ASW31, ASW32, ASW33, ASW34, ASW35, ASW36, ASW37, ASW38, ASW39, ASW40, ASW41, ASW42, ASW43, ASW44, ASW45, ASW46, ASW47, ASW48, ASW49, ASW50, ASW53, ASW54, ASW55, ASW56
Zone #3: ASW57, ASW58, ASW59, ASW60, ASW61, ASW62, ASW63, ASW64, ASW65, ASW66, ASW67, ASW68

Comments _____

AIR SPARGE WELL DATA (Page 1 of 3)

SUPPLY WAREHOUSE No. 3 (SW3), SWMU NO. 088

OPERATIONS AND MAINTENANCE

KENNEDY SPACE CENTER, FLORIDA

Date: 5 FEB 2016

Time: 10:00 - 1600

Field Personnel: DAN FAZESTER / NAYDE CRESPILLO

Air Sparge Well Number	Valve Position % (initial / after adjustment)	Flow Rate (SCFM) (initial / after adjustment)	Pressure (psi) (initial / after adjustment)
ZONE 1			
ASW-1	50	4	18
ASW-2	40 / 30	5 / 4	11
ASW-3	50	4	16
ASW-4	50	4	15
ASW-5	50	4	17
ASW-6	100	1	16
ASW-7	50	4	18
ASW-8	100	0	20
ASW-9	100	0	15
ASW-10	100	0	21
ASW-11A	100	0	16
ASW-12	100	0	20
ASW-13	100	0	21
ASW-14	100	0	20
ASW-15A	50	4	2
ASW-16	100	0	18
ASW-17	100	0	13
ASW-18	100	0	21
ASW-19	100	0	20
ASW-20	STUCK	BROKEN	
ASW-21	50	4	16
ASW-22	50	4	16
ASW-23	50	4	16
ASW-24	50	3.5	16
ASW-25	50	4	13
ASW-51	50	4	15
ASW-52N	100	0	20

AIR SPARGE WELL DATA (Page 2 of 3)
SUPPLY WAREHOUSE No. 3 (SW3), SWMU NO. 088
OPERATIONS AND MAINTENANCE
KENNEDY SPACE CENTER, FLORIDA

Air Sparge Well Number	Valve Position % (initial / after adjustment)	Flow Rate (SCFM) (initial / after adjustment)	Pressure (psi) (initial / after adjustment)
ZONE 2			
ASW-26	50	4	18
ASW-27	50	4	19
ASW-28	100	2	12
ASW-29	50/40	5/4	15
ASW-30	50	4	14
ASW-31	100	0	18
ASW-32	OFF		
ASW-33	OFF		
ASW-34	OFF		
ASW-35	50	4	18
ASW-36	50	4	17
ASW-37	50	4	16
ASW-38	50	4	15
ASW-39	50	4	25
ASW-40	OFF		
ASW-41	NA	NA	NA
ASW-42	NA	NA	NA
ASW-43	50	4	18
ASW-44	NA	NA	NA
ASW-45	NA	NA	NA
ASW-46	NA	NA	NA
ASW-47	NA	NA	NA
ASW-48	100	0	18
ASW-49	NA	NA	NA
ASW-50	100	0	22
ASW-52S	100	2	10
ASW-53	100	0	0
ASW-54	100	0	2
ASW-55	50	4	10
ASW-56	50	4	0

AIR SPARGE WELL DATA (Page 3 of 3)

SUPPLY WAREHOUSE No. 3 (SW3), SWMU NO. 088

OPERATIONS AND MAINTENANCE

KENNEDY SPACE CENTER, FLORIDA

Air Sparge Well Number	Valve Position % (initial / after adjustment)	Flow Rate (SCFM) (initial / after adjustment)	Pressure (psi) (initial / after adjustment)
ZONE 3			
ASW-57	100	0	17
ASW-58	50/100	2.5/4	16
ASW-59	100	1	18
ASW-60	50	3.5	18
ASW-61	100	0	17
ASW-62	50/100	2/3	16
ASW-63	100	0	17
ASW-64	50/100	2/2	7
ASW-65	100	8	22
ASW-66	100	0	17
ASW-67	100	2	16
ASW-68	100	0	18

GROUNDWATER LEVEL MEASUREMENTS, PID READINGS, DISSOLVED OXYGEN, AND OBSERVATIONS
SUPPLY WAREHOUSE No. 3 (SW3), SWMU NO. 088
OPERATIONS AND MAINTENANCE
KENNEDY SPACE CENTER, FLORIDA

Date: 5-FEB 2016
Time: 10:00 - 1600
Field Personnel: DAN FORSTER
WAYNE CRISTOLLI

Location	PID reading (ppm)	Depth to GW (feet below TOC)	Pressure (inches water)	Dissolved Oxygen (mg/L)	Observations
SW3MW0001					
SW3MW0002					
SW3MW0003					
SW3MW0004					
SW3MW0005					
SW3MW0007					
SW3MW0009					
SW3MW0013					
SW3MW0017					
SW3MW0021					
SW3MW0022					
SW3MW0023					
SW3MW0025					
SW3MW0026					
SW3MW0027					
SW3MW0028					

AS System Status Information:

Zones (Legs) operating during evaluation: _____

Observations: _____

FIELD NOTES AND ADDITIONAL COMMENTS

SUPPLY WAREHOUSE No.3 (SW3), SWMU NO. 088

OPERATIONS AND MAINTENANCE

KENNEDY SPACE CENTER, FLORIDA

Date: 5 FEB 2016

Time: 1000/1600

Field Personnel: DAN FORESTIER
WAYNE CROSFOULZ

Comments: CUT & WEED EATED GRASS ALONG W/ USUAL O/M

WEEKLY EVALUATION WORKSHEET

SUPPLY WAREHOUSE No. 3 (SW3), SWMU NO. 088

OPERATIONS AND MAINTENANCE

KENNEDY SPACE CENTER, FLORIDA

	Description	Subtask	Indicate Task Completion With Checkmark	Comments
1	Site inspection	Any land disturbance (Y/N)	No	
		Any damage to system (Y/N)	No	
		Observed PID levels in treatment area? (Y/N)	No	
2	Verify maintenance conducted on Sparge Unit.		yes	
3	Collect system operation data (All Legs Operational)		yes	
4	Collect air sparge well data (All Legs operational)		yes	
5	PID, groundwater elevation, and dissolved oxygen data		n/a	
6	Note any comments		N/A	
7	Final site inspection (general site walk through)	Site free of garbage and debris. Well covers replaced. System operational and site secured.	yes	

Date: 3/9/2016

Time: 1145

Field Personnel: K. Alex Murphy

AIR SPARGE SYSTEM OPERATION DATAWELL DATA
SUPPLY WAREHOUSE No. 3 (SW3), SWMU NO. 088
OPERATIONS AND MAINTENANCE
KENNEDY SPACE CENTER, FLORIDA

Date: 3/9/2016 Field Personnel: A. Murphy
Time: ~~1135~~ 1145

Power Meter (hours): _____ Runtime Meter (hours): _____
Exhaust Line Temperature (°F) before cooler: 325 North Treatment Area PID reading (PPM): N/A
Exhaust Line Temperature (°F) after cooler: 100 South Treatment Area PID reading (PPM): NA
Zones of Operation: 1

	Location	Bleed Air (% open)	Amps	Gauge Pressure (psi)	Flow Rate (SCFM)
Time	**Air Sparge Compressor**				
1145	Bleed Air Control Valve	0	46	NA	
	Main Header	NA	46	Before cooler: 22 After cooler: 235	1.5 → 50
Time	**Manifold Network**				
1205 ~~1145~~	Leg #1 well header (SW3 Zones 2 & 3)	50%	44	17	13 → 155
1145	Leg #2 well header (SW3 Zone 1)	50%	46	20	12 → 145

Zone #1: ASW01, ASW02, ASW03, ASW04, ASW05, ASW06, ASW07, ASW08, ASW09, ASW10, ASW11A, ASW12, ASW13, ASW14, ASW15A, ASW16, ASW17, ASW18, ASW19, ASW20, ASW21, ASW22, ASW23, ASW24, ASW25, ASW51, ASW52
Zone #2: ASW26, ASW27, ASW28, ASW29, ASW30, ASW31, ASW32, ASW33, ASW34, ASW35, ASW36, ASW37, ASW38, ASW39, ASW40, ASW41, ASW42, ASW43, ASW44, ASW45, ASW46, ASW47, ASW48, ASW49, ASW50, ASW53, ASW54, ASW55, ASW56
Zone #3: ASW57, ASW58, ASW59, ASW60, ASW61, ASW62, ASW63, ASW64, ASW65, ASW66, ASW67, ASW68

Comments _____

AIR SPARGE WELL DATA (Page 1 of 3)

SUPPLY WAREHOUSE No. 3 (SW3), SWMU NO. 088

OPERATIONS AND MAINTENANCE

KENNEDY SPACE CENTER, FLORIDA

Date: 3/9/2016

Time: 1145

Field Personnel: A. Murphy

Air Sparge Well Number	Valve Position % (initial / after adjustment)	Flow Rate (SCFM) (initial / after adjustment)	Pressure (psi) (initial / after adjustment)
ZONE 1			
ASW-1	30	4	15.5
ASW-2	30 / 35	3.5 / 4	13 / 13
ASW-3	30	4	12
ASW-4	30	4	15
ASW-5	30	4	15
ASW-6	100 / 50	6 / 5	14.5 / 13.5
ASW-7	30	4	17
ASW-8	100	0	16
ASW-9	100	0	14
ASW-10	100	0	16
ASW-11A	100	0	15
ASW-12	100	0	16.5
ASW-13	100	0	16.5
ASW-14	100	0	16
ASW-15A	40	4	N/A
ASW-16	100	0	16
ASW-17	100	0	14.5
ASW-18	100	0	17
ASW-19	100	0	17
ASW-20	N/A	N/A	N/A
ASW-21	40	4	13.5
ASW-22	30	4	14.5
ASW-23	20	4	13
ASW-24	50	4	13.5
ASW-25	30	4	7.5
ASW-51	30	0	10
ASW-52N	100	0	17

AIR SPARGE WELL DATA (Page 2 of 3)

SUPPLY WAREHOUSE No. 3 (SW3), SWMU NO. 088

OPERATIONS AND MAINTENANCE

KENNEDY SPACE CENTER, FLORIDA

Air Sparge Well Number	Valve Position % (initial / after adjustment)	Flow Rate (SCFM) (initial / after adjustment)	Pressure (psi) (initial / after adjustment)
ZONE 2			
ASW-26	40	4	15.5
ASW-27	50	4	14.5
ASW-28	~~40~~ 100	~~4~~ 0	~~10.5~~ 10.5
ASW-29	40	4	~~12.5~~ 12.5
ASW-30	40	4	10.5
ASW-31	100	0	17
ASW-32	0	0	0
ASW-33	~~100~~ 0	0	0
ASW-34	0	0	0
ASW-35	~~50~~ 50	~~4~~ 4	~~13~~ 15
ASW-36	50	4	14
ASW-37	50	4	13
ASW-38	50	3.5	13.5
ASW-39	50	4	18
ASW-40	0	0	0
ASW-41	NA	NA	NA
ASW-42	NA	NA	NA
ASW-43	30	3	15
ASW-44	NA	NA	NA
ASW-45	NA	NA	NA
ASW-46	NA	NA	NA
ASW-47	NA	NA	NA
ASW-48	100	0	15.5
ASW-49	NA	NA	NA
ASW-50	100	0	15
ASW-52S	100	1	10
ASW-53	100	0	0
ASW-54	~~0~~ 100	0	0
ASW-55	~~3~~ 50	~~A~~ 3	7.5
ASW-56	0 / 4	50 / 40	7.5 / 7.5

AIR SPARGE WELL DATA (Page 3 of 3)

SUPPLY WAREHOUSE No. 3 (SW3), SWMU NO. 088

OPERATIONS AND MAINTENANCE

KENNEDY SPACE CENTER, FLORIDA

Air Sparge Well Number	Valve Position % (initial / after adjustment)	Flow Rate (SCFM) (initial / after adjustment)	Pressure (psi) (initial / after adjustment)
ZONE 3			
ASW-57	100	0	15
ASW-58	100	0	9
ASW-59	100	0	17
ASW-60	50 / 100	1 / 1	15.5 / 15.5
ASW-61	100	0	16
ASW-62	100	1	15
ASW-63	100	0	16
ASW-64	100	0	7.5
ASW-65	100	0	20
ASW-66	100	0	15
ASW-67	100	0	14
ASW-68	100	0	15.5

GROUNDWATER LEVEL MEASUREMENTS, PID READINGS, DISSOLVED OXYGEN, AND OBSERVATIONS

SUPPLY WAREHOUSE No. 3 (SW3), SWMU NO. 088

OPERATIONS AND MAINTENANCE

KENNEDY SPACE CENTER, FLORIDA

Date: _____

Time: _____

Field Personnel: _____

Location	PID reading (ppm)	Depth to GW (feet below TOC)	Pressure (inches water)	Dissolved Oxygen (mg/L)	Observations
SW3MW0001					
SW3MW0002					
SW3MW0003					
SW3MW0004					
SW3MW0005					
SW3MW0007					
SW3MW0009					
SW3MW0013					
SW3MW0017					
SW3MW0021					
SW3MW0022					
SW3MW0023					
SW3MW0025					
SW3MW0026					
SW3MW0027					
SW3MW0028					

AS System Status Information:

Zones (Legs) operating during evaluation: _____

Observations: _____

FIELD NOTES AND ADDITIONAL COMMENTS

SUPPLY WAREHOUSE No.3 (SW3), SWMU NO. 088

OPERATIONS AND MAINTENANCE

KENNEDY SPACE CENTER, FLORIDA

Date: _____

Time: _____

Field Personnel: _____

Comments: _____

AIR SPARGE SYSTEM CHECKLIST
Supply Warhouse No.3 (SW3), SWMU NO. 088
OPERATIONS AND MAINTENANCE
KENNEDY SPACE CENTER, FLORIDA

	Monthly	Every 3 Months or 2000 hours	Every 6 Months	As needed
AIR PRESSURE PUMP				
Check Unit for loose bolts and parts	X			
Clean/Replace Air Filter	X			
Lubricate Bearings		X		
AFTERCOOLER				
Check Unit for loose bolts and parts	X			
Cleaning Coil cooling fins of oil and dust	X			
Internal Coil Flush				X
Electric Motor Lubrication			X	
Cleaning of Fan Blades	X			

WEEKLY EVALUATION WORKSHEET

SUPPLY WAREHOUSE No. 3 (SW3), SWMU NO. 088

OPERATIONS AND MAINTENANCE

KENNEDY SPACE CENTER, FLORIDA

	Description	Subtask	Indicate Task Completion With Checkmark	Comments
1	Site inspection	Any land disturbance (Y/N)	N	
		Any damage to system (Y/N)	N	
		Observed PID levels in treatment area? (Y/N)	N/A	
2	Verify maintenance conducted on Sparge Unit.		yes	
3	Collect system operation data (All Legs Operational)		yes	
4	Collect air sparge well data (All Legs operational)		yes	
5	PID, groundwater elevation, and dissolved oxygen data		N/A	
6	Note any comments		N/A	
7	Final site inspection (general site walk through)	Site free of garbage and debris. Well covers replaced. System operational and site secured.	yes	

Date: 4/6/2016

Time: 1000

Field Personnel: A. Murphy

AIR SPARGE SYSTEM OPERATION DATAWELL DATA
SUPPLY WAREHOUSE No. 3 (SW3), SWMU NO. 088
OPERATIONS AND MAINTENANCE
KENNEDY SPACE CENTER, FLORIDA

Date: 4/6/2016 Field Personnel: A. Murphy
Time: 1600

Power Meter (hours): _____ Runtime Meter (hours): _____
Exhaust Line Temperature (°F) before cooler: 290 North Treatment Area PID reading (PPM): N/A
Exhaust Line Temperature (°F) after cooler: 92 South Treatment Area PID reading (PPM): N/A
Zones of Operation: 1

	Location	Bleed Air (% open)	Amps	Gauge Pressure (psi)	Flow Rate (SCFM)
Time	**Air Sparge Compressor**				
1000	Bleed Air Control Valve	~	~	NA	~
	Main Header	NA	46	Before cooler: 22 After cooler: 23.5	12 = 145
Time	**Manifold Network**				
	Leg #1 well header (SW3 Zones 2 & 3)	~~50%~~ 50%	46	19.5 ~~20~~	12.5 = ~~12 = 145~~ 150
1000	Leg #2 well header (SW3 Zone 1)	50%	46	20	12 = 145

Zone #1: ASW01, ASW02, ASW03, ASW04, ASW05, ASW06, ASW07, ASW08, ASW09, ASW10, ASW11A, ASW12, ASW13, ASW14, ASW15A, ASW16, ASW17, ASW18, ASW19, ASW20, ASW21, ASW22, ASW23, ASW24, ASW25, ASW51, ASW52
Zone #2: ASW26, ASW27, ASW28, ASW29, ASW30, ASW31, ASW32, ASW33, ASW34, ASW35, ASW36, ASW37, ASW38, ASW39, ASW40, ASW41, ASW42, ASW43, ASW44, ASW45, ASW46, ASW47, ASW48, ASW49, ASW50, ASW53, ASW54, ASW55, ASW56
Zone #3: ASW57, ASW58, ASW59, ASW60, ASW61, ASW62, ASW63, ASW64, ASW65, ASW66, ASW67, ASW68

Comments _____

AIR SPARGE WELL DATA (Page 1 of 3)

SUPPLY WAREHOUSE No. 3 (SW3), SWMU NO. 088

OPERATIONS AND MAINTENANCE

KENNEDY SPACE CENTER, FLORIDA

Date: 4/6/2010

Time: 1000

Field Personnel: A. Murphy

Air Sparge Well Number	Valve Position % (initial / after adjustment)	Flow Rate (SCFM) (initial / after adjustment)	Pressure (psi) (initial / after adjustment)
ZONE 1			
ASW-1	30%	4.0	17
ASW-2	30%	4.0	14.5
ASW-3	30%	4.0	14
ASW-4	40%	4.0	15
ASW-5	30%	4.0	16
ASW-6	50%	5.0	~~16~~ 15.5
ASW-7	25%	4.0	17.5
ASW-8	100%	0	17
ASW-9	100%	0	13
ASW-10	100%	0	17.5
ASW-11A	100%	0	14
ASW-12	100%	0	18
ASW-13	100%	0	18
ASW-14	100%	0	17.5
ASW-15A	30%	4.0	N/A
ASW-16	100%	0	17.5
ASW-17	100%	0	15
ASW-18	100%	0	18.5
ASW-19	100%	0	18
ASW-20	N/A	N/A	N/A
ASW-21	30%	4.0	14.5
ASW-22	30%	4.0	15
ASW-23	30%	4.0	14.5
ASW-24	30%	4.0	15
ASW-25	30%	4.4	7.5
ASW-51	50%	4.4	11.5
ASW-52N	100%	0	12.5

AIR SPARGE WELL DATA (Page 2 of 3)

SUPPLY WAREHOUSE No. 3 (SW3), SWMU NO. 088

OPERATIONS AND MAINTENANCE

KENNEDY SPACE CENTER, FLORIDA

Air Sparge Well Number	Valve Position % (initial / after adjustment)	Flow Rate (SCFM) (initial / after adjustment)	Pressure (psi) (initial / after adjustment)
ZONE 2			
ASW-26	30%	4.5	15.5
ASW-27	30%	4.5	16
ASW-28	100%	1.0	13.5
ASW-29	30%	4.0	14.5
ASW-30	30%	4.0	12.5
ASW-31	100%	0	17.5
ASW-32	0%	0	0
ASW-33	0%	0	0
ASW-34	0%	0	0
ASW-35	30%	4.0	14
ASW-36	40%	4.0	15.5
ASW-37	30%	4.0	16
ASW-38	30%	4.0	14
ASW-39	30%	4.4	18.5
ASW-40	0%	0	0
ASW-41	NA	NA	NA
ASW-42	NA	NA	NA
ASW-43	40%	3.4	17
ASW-44	NA	NA	NA
ASW-45	NA	NA	NA
ASW-46	NA	NA	NA
ASW-47	NA	NA	NA
ASW-48	100%	0	16.5
ASW-49	NA	NA	NA
ASW-50	100%	0	16.5
ASW-52S	~~100%~~	~~0~~ 1.0	~~0~~
ASW-53		0	
ASW-54		0	
ASW-55		0	
ASW-56		0	

AIR SPARGE WELL DATA (Page 3 of 3)

SUPPLY WAREHOUSE No. 3 (SW3), SWMU NO. 088

OPERATIONS AND MAINTENANCE

KENNEDY SPACE CENTER, FLORIDA

Air Sparge Well Number	Valve Position % (initial / after adjustment)	Flow Rate (SCFM) (initial / after adjustment)	Pressure (psi) (initial / after adjustment)
ZONE 3			
ASW-57	100%	0	14.5
ASW-58	100%	0	7.5
ASW-59	100%	0	18
ASW-60	100%	2.0	17
ASW-61	100%	0	17
ASW-62	100%	1.0	15.5
ASW-63	100%	0	17
ASW-64	100%	0	7
ASW-65	100%	0	20
ASW-66	100%	0	15
ASW-67	100%	0	15
ASW-68	100%	0	17

GROUNDWATER LEVEL MEASUREMENTS, PID READINGS, DISSOLVED OXYGEN, AND OBSERVATIONS

SUPPLY WAREHOUSE No. 3 (SW3), SWMU NO. 088

OPERATIONS AND MAINTENANCE

KENNEDY SPACE CENTER, FLORIDA

Date: _____

Time: _____

Field Personnel: _____

Location	PID reading (ppm)	Depth to GW (feet below TOC)	Pressure (inches water)	Dissolved Oxygen (mg/L)	Observations
SW3MW0001					
SW3MW0002					
SW3MW0003					
SW3MW0004					
SW3MW0005					
SW3MW0007					
SW3MW0009					
SW3MW0013					
SW3MW0017					
SW3MW0021					
SW3MW0022					
SW3MW0023					
SW3MW0025					
SW3MW0026					
SW3MW0027					
SW3MW0028					

AS System Status Information

Zones (Legs) operating during evaluation _____

Observations _____

FIELD NOTES AND ADDITIONAL COMMENTS

SUPPLY WAREHOUSE No.3 (SW3), SWMU NO. 088

OPERATIONS AND MAINTENANCE

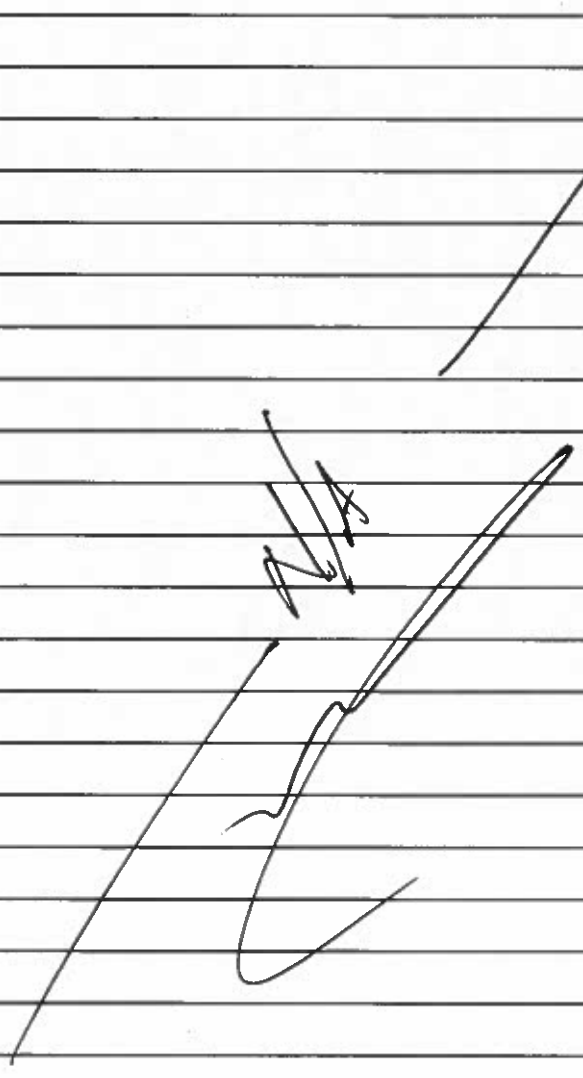
KENNEDY SPACE CENTER, FLORIDA

Date: _____

Time: _____

Field Personnel: _____

Comments: _____



AIR SPARGE SYSTEM CHECKLIST
Supply Warhouse No.3 (SW3), SWMU NO. 088
OPERATIONS AND MAINTENANCE
KENNEDY SPACE CENTER, FLORIDA

	Monthly	Every 3 Months or 2000 hours	Every 6 Months	As needed
AIR PRESSURE PUMP				
Check Unit for loose bolts and parts	X			
Clean/Replace Air Filter	X			
Lubricate Bearings		X		
AFTERCOOLER				
Check Unit for loose bolts and parts	X			
Cleaning Coil cooling fins of oil and dust	X			
Internal Coil Flush				X
Electric Motor Lubrication			X	
Cleaning of Fan Blades	X			

WEEKLY/MONTHLY EVALUATION WORKSHEET
PAINT AND OIL LOCKER (POL), SWMU 067
OPERATIONS AND MAINTENANCE
KENNEDY SPACE CENTER, FLORIDA

	Description	Subtask	Indicate Task Completion With Checkmark	Comments
1	Site inspection	Any land disturbance (Y/N)	N	
		Any damage to system (Y/N)	N	
		Observed PID levels in treatment area? (Y/N)	N/A	
2	Verify maintenance conducted on Sparge Unit.		✓	
3	Collect system operation data (page 2 of 5) (All Legs Operational)		✓	
4	Collect air sparge well data (page 3 of 5) (All Legs operational)		✓	
5	PID, groundwater elevation, and dissolved oxygen data (page 4 of 5)		N/A	
6	Note any comments (page 5 of 5)		N/A	
7	Final site inspection (general site walk through)	Site free of garbage and debris. Well covers replaced. System operational and site secured.	✓	

Date: 03/27/2016

Time: 1200

Field Personnel: Chuck Sorden

AIR SPARGE SYSTEM CHECKLIST
PAINT AND OIL LOCKER (POL), SWMU NO. 067
OPERATIONS AND MAINTENANCE
KENNEDY SPACE CENTER, FLORIDA

	Monthly	Every 3 Months or 2000 hours	Every 6 Months	As needed
AIR PRESSURE PUMP				
Check Unit for loose bolts and parts	X			
Clean/Replace Air Filter	X			
Lubricate Bearings		X		
AFTERCOOLER				
Check Unit for loose bolts and parts	X			
Cleaning Coil cooling fins of oil and dust	X			
Internal Coil Flush				X
Electric Motor Lubrication			X	
Cleaning of Fan Blades	X			

AIR SPARGE WELL DATA (Page 1 of 2)
PAINT AND OIL LOCKER (POL), SWMU NO. 067
OPERATIONS AND MAINTENANCE
KENNEDY SPACE CENTER, FLORIDA

Date: 05/27/2016
Time: 1015
Field Personnel: C. Soden

Air Sparge Well Number	Valve Position % (initial / after adjustment)	Flow Rate (SCFM) (initial / after adjustment)	Pressure (psi) (initial / after adjustment)	Manifold Pressure (psi)
POL ZONE 1 (Shallow)				
ASW-20S	100%	200.0	~~16.5~~ 10.0	
ASW-21S	75% / 100%	~~4.0~~ 2.5 / 3.0	~~10.0~~ 9.0 / 9.0	
ASW-22S	60% / 100%	0.0 / 3.0 / 4.0	~~100.0~~ ~~18~~ 9.0	
ASW-24S	100%	~~4.0~~ 2.0	~~9.0~~ 9.0	
ASW-25S	100%	0.0	10.0	~~18.0~~
ASW-26S	100% / 30%	6.0 / 4.0	10.0 / 7.0	
ASW-27S	100%	0.0	11.0	10.0
ASW-32S	100%	0.0	9.0	
ASW-33S	100%	~~3.5~~ 4.0	9.0	
ASW-39S	100%	0.0	9.0	
ASW-41S	100%	2.0	9.5	
ASW-42S	40% / 50%	3.0 / 4.0	9.0 / 8.0	
POL ZONE 3 (Intermediate)				
ASW-05I	100%	2.0	16.5	
ASW-09I	65%	4.0	16.0	
ASW-10I	100%	0.0	18.0	
ASW-13I	100%	0.0	16.5	
ASW-14I	100%	0.5	17.0	
ASW-15I	100%	0.0	17.5	
ASW-29I	100%	0.0	17.0	18.0
ASW-30I	100%	0.0	16.5	
ASW-37I	40% / 50%	3.5 / 4.0	15.0	
ASW-38I	100%	0.0	20.0	
ASW-45I	100%	~~0.0~~ 2.0	17.0	
ASW-52I	100%	0.0	17.0	

AIR SPARGE SYSTEM OPERATION DATAWELL DATA
PAINT AND OIL LOCKER (POL), SWMU NO. 067
OPERATIONS AND MAINTENANCE
KENNEDY SPACE CENTER, FLORIDA

Date: 05/~~26~~/27/16
Time: 0930
Field Personnel: Chuck Sorden
Runtime Meter (hours): 25846 POL North Treatment Area PID reading (PPM): N/A
Exhaust Line Temperature (°F) before cooler: 315 @ 20.5 psi
Exhaust Line Temperature (°F) after cooler: 104 @ 22 psi
Zones of Operation: Intermediate

	Location	Bleed Air (% open)	Amp Meter (Amps)	Pressure	Flow Rate ("H2O-SCFM)
Time	**Air Sparge Compressor**				
0940	Main Header	NA	45	Gauge: psi 19.3	2 = 60
Time	**Manifold Network**				
1035	POL S Zone well header	15 / 50/0	40/46	Gauge: psi 16/215	15 = 160/12.5 = 145
0940	POL SI Zone well header	~~50 40/0 45/0~~	~~42.5~~ (45) ~~46~~	Gauge: psi 16.5	~~13=150 13=150~~
1015 0946	POL I Zone well header	~~40 30 40~~ 40/0/45/0	~~47.5~~ 45/46	Gauge: 18 psi ~~16.5~~	11 = 1840 ~~13=150~~

Comments: _____
_____
_____

AIR SPARGE WELL DATA (Page 2 of 2)
PAINT AND OIL LOCKER (POL), SWMU NO. 067
OPERATIONS AND MAINTENANCE
KENNEDY SPACE CENTER, FLORIDA

Air Sparge Well Number	Valve Position % (initial / after adjustment)	Flow Rate (SCFM) (initial / after adjustment)	Pressure (psi) (initial / after adjustment)	Manifold Pressure (psi)
POL ZONE 2 (Shallow-Intermediate)				
ASW-1SI	100%	0	10.5	
ASW-2SI	100% / 40%	6.0 / 4.0	10.0	
ASW-3SI	~~100%~~ 50% / 100%	2.0 / 2.0	12.0	
ASW-4SI	~~60~~ 80% / 100.%	2.0 / 4.0	11.0	
ASW-6SI	30% / 50.0	2.75 / 4.0	10.0 / 11.0	17.5
ASW-7SI	50%	4.0	11.0	
ASW-8SI	50%	4.0	10.0	
ASW-11SI	90%	4.0	12.0	
ASW-12SI	40%	4.0	10.0	
ASW-16SI	100%	3.5	12.0	
ASW-17SI	40% / 50%	3.5 / 4.0	11.0	
ASW-18SI	100%	4.0	11.0	
ASW-19SI	40.% / 50%	3.0 / 4.0	10.0	
ASW-23SI	45%	4.0	10.0	
ASW-28SI	40%	3.0 / 4.0	13.0 / 14.0	
ASW-31SI	~~30%~~ 40%	4.0	10.0	
ASW-34SI	30% / 50	3.0 / 4.0	11.0	
ASW-35SI	100%	0.0	14.0	
ASW-36SI	~~36%~~ 100%	0.0	11.0	
ASW-40SI	~~100%~~ 35%	4.0	11.0	17.0
ASW-43SI	100%	0.0	12.0	
ASW-44SI	100%	0.0	12.0	
ASW-46SI	100%	0.0	12.5	
ASW-47SI	40% / 50%	3.5 / 4.0	10.5 / 11.0	
ASW-48SI	100%	4.0	12.0	
ASW-49SI	50% / 100%	3.0 / ~~3.0~~ 3.5	10.0 / 11.0	
ASW-50SI	40%	4.0	12.0	
ASW-51SI	40% / 50%	3.5 / 4.0	11.0	
ASW-53SI	30% / 40%	~~4.0~~ 3.75 / 4.0	11.0	
ASW-54SI	40%	4.0	11.0	
ASW-55SI	100%	0.0	12.0	

GROUNDWATER LEVEL MEASUREMENTS, PID READINGS, DISSOLVED OXYGEN, AND OBSERVATIONS

PAINT AND OIL LOCKER (POL), SWMU NO. 067

OPERATIONS AND MAINTENANCE

KENNEDY SPACE CENTER, FLORIDA

Date: _____

Time: _____

Field Personnel: _____

Location	PID reading (ppm)	Depth to GW (feet below TOC)	Pressure (inches water)	Dissolved Oxygen (mg/L)	Observations
MONITORING WELLS					
POL-MW0001S					
POL-MW0009S					
POL-MW0009SI					
POL-MW0009I					
POL-MW0026S					
POL-MW0029S					
POL-MW0031S					
POL-MW0031I					
POL-MW0033S					
POL-MW0033SI					
POL-MW0033I					
POL-MW0034S					

Location	PID reading (ppm)	Time	Observations
POL-VL0001			
POL-VL0002			
POL-VL0003			
POL-VL0004			
POL-VMP0001			
POL-VMP0002			
POL-VMP0003			
POL-VMP0004			
POL-AIR0001			
POL-AIR0002			
POL-AIR0003			

AS System Status Information:

Zones (Legs) operating during evaluation: _____

Observations: _____

FIELD NOTES AND ADDITIONAL COMMENTS

PAINT AND OIL LOCKER (POL), SWMU NO. 067

OPERATIONS AND MAINTENANCE

KENNEDY SPACE CENTER, FLORIDA

Date: _____

Time: _____

Field Personnel: _____

Comments: _____

AIR SPARGE SYSTEM CHECKLIST
Supply Warhouse No.3 (SW3), SWMU NO. 088
OPERATIONS AND MAINTENANCE
KENNEDY SPACE CENTER, FLORIDA

	Monthly	Every 3 Months or 2000 hours	Every 6 Months	As needed
AIR PRESSURE PUMP				
Check Unit for loose bolts and parts	X			
Clean/Replace Air Filter	X			
Lubricate Bearings		X		
AFTERCOOLER				
Check Unit for loose bolts and parts	X			
Cleaning Coil cooling fins of oil and dust	X			
Internal Coil Flush				X
Electric Motor Lubrication			X	
Cleaning of Fan Blades	X			

WEEKLY EVALUATION WORKSHEET

SUPPLY WAREHOUSE No. 3 (SW3), SWMU NO. 088

OPERATIONS AND MAINTENANCE

KENNEDY SPACE CENTER, FLORIDA

	Description	Subtask	Indicate Task Completion With Checkmark	Comments
1	Site inspection	Any land disturbance (Y/N)	N	
		Any damage to system (Y/N)	N	
		Observed PID levels in treatment area? (Y/N)	N/A	
2	Verify maintenance conducted on Sparge Unit.		✓	
3	Collect system operation data (All Legs Operational)		✓	
4	Collect air sparge well data (All Legs operational)		✓	
5	PID, groundwater elevation, and dissolved oxygen data		N/A	
6	Note any comments		N/A	
7	Final site inspection (general site walk through)	Site free of garbage and debris. Well covers replaced. System operational and site secured.	✓	

Date: 05/27/2016

Time: 1100

Field Personnel: C. Sorden

AIR SPARGE SYSTEM OPERATION DATAWELL DATA
SUPPLY WAREHOUSE No. 3 (SW3), SWMU NO. 088
OPERATIONS AND MAINTENANCE
KENNEDY SPACE CENTER, FLORIDA

Date: 05/27/16 Field Personnel: C. Sorden
Time: 1100

Power Meter (hours): — Runtime Meter (hours): 25847
Exhaust Line Temperature (°F) before cooler: 315° North Treatment Area PID reading (PPM): N/A
Exhaust Line Temperature (°F) after cooler: 104° South Treatment Area PID reading (PPM): N/A
Zones of Operation: #2:3

	Location	Bleed Air (% open)	Amps	Gauge Pressure (psi)	Flow Rate (SCFM)
Time	**Air Sparge Compressor**				
1100	Bleed Air Control Valve	—	—	NA	—
	Main Header	NA	44	Before cooler: 20.5 After cooler: 22.0	2.0 = 60
Time	**Manifold Network**				
1120	Leg #1 well header (SW3 Zones 2 & 3)	50%	46	18	13 = 150
1200	Leg #2 well header (SW3 Zone 1)	50%	46	21	12 = 140

Zone #1: ASW01, ASW02, ASW03, ASW04, ASW05, ASW06, ASW07, ASW08, ASW09, ASW10, ASW11A, ASW12, ASW13, ASW14, ASW15A, ASW16, ASW17, ASW18, ASW19, ASW20, ASW21, ASW22, ASW23, ASW24, ASW25, ASW51. ASW52
Zone #2: ASW26, ASW27, ASW28, ASW29, ASW30, ASW31, ASW32, ASW33, ASW34, ASW35, ASW36, ASW37, ASW38, ASW39, ASW40, ASW41, ASW42, ASW43, ASW44, ASW45, ASW46, ASW47, ASW48, ASW49, ASW50, ASW53, ASW54, ASW55, ASW56
Zone #3: ASW57, ASW58, ASW59, ASW60, ASW61, ASW62, ASW63, ASW64, ASW65, ASW66, ASW67, ASW68

Comments

AIR SPARGE WELL DATA (Page 1 of 3)
SUPPLY WAREHOUSE No. 3 (SW3), SWMU NO. 088
OPERATIONS AND MAINTENANCE
KENNEDY SPACE CENTER, FLORIDA

Date: 05/27/16
Time: 1200
Field Personnel: C. Sorden

Air Sparge Well Number	Valve Position % (initial / after adjustment)	Flow Rate (SCFM) (initial / after adjustment)	Pressure (psi) (initial / after adjustment)
ZONE 1			
ASW-1	30%	4.0	~~12.0~~ 17
ASW-2	30%	4.0	14
ASW-3	30% / 40%	3.5 / 4.0	12.0 / 12.0
ASW-4	40%	4.0	15.0
ASW-5	30%	4.0	15.0
ASW-6	50% / 40%	4.5 / 4.0	14.0 / 14.0
ASW-7	25%	4.0	17.0
ASW-8	100%	0.0	16
ASW-9	100%	0.0	22
ASW-10	100%	0.0	16.5
ASW-11A	100%	0.0	15.0
ASW-12	100%	0.0	16.0
ASW-13	100%	0.0	16.5
ASW-14	100%	0.0	16
ASW-15A	30% / 40%	3.5 / 4.0	15.0 / 15.0
ASW-16	100%	0.0	15.5
ASW-17	100%	0.0	15.0
ASW-18	100%	0.0	16.0
ASW-19	100%	0.0	16.5
ASW-20	N/A	N/A	N/A
ASW-21	30%	4.0	14.5
ASW-22	30%	4.0	14.5
ASW-23	30%	4.0	13.0
ASW-24	30% / 40%	3.5 / 4.0	13.0 / 13.5
ASW-25	30%	4.0	15.0
ASW-51	50%	4.0	9.0
ASW-52N	100%	~~4.0~~ 0.0	16.0

Replaced PSI Gauge

AIR SPARGE WELL DATA (Page 2 of 3)
SUPPLY WAREHOUSE No. 3 (SW3), SWMU NO. 088
OPERATIONS AND MAINTENANCE
KENNEDY SPACE CENTER, FLORIDA

Air Sparge Well Number	Valve Position % (initial / after adjustment)	Flow Rate (SCFM) (initial / after adjustment)	Pressure (psi) (initial / after adjustment)
ZONE 2			
ASW-26	30% / 20%	5.0 / 4.0	15.0 / 15.0
ASW-27	30% / 20%	5.0 / 4.0	14.0 / 13.5
ASW-28	100%	2.0	13.0
ASW-29	30% / ~~25%~~	~~4.5~~ / ~~4.0~~	11.0 / 10.5
ASW-30	30% / 25	4.5 / 4.0	11.0 / 10.5
ASW-31	100%	0	17.0
ASW-32	0%	0	0
ASW-33	0%	0	0
ASW-34	0%	0	0
ASW-35	30%	4.0	9.5
ASW-36	40%	4.5 / 4.0	13.0 / 13.0
ASW-37	30%	~~4.0~~ 4.0	~~12.5~~ 13.0
ASW-38	30%	4.0	12.5
ASW-39	30% / 20%	5.0 / 4.0	18.0 / 17
ASW-40	0.%	0	0
ASW-41	NA	NA	NA
ASW-42	NA	NA	NA
ASW-43	40% / 45%	3.5 / 4.0	11.0 / 11.0
ASW-44	NA	NA	NA
ASW-45	NA	NA	NA
ASW-46	NA	NA	NA
ASW-47	NA	NA	NA
ASW-48	100%	0.0	0.0
ASW-49	NA	NA	NA
ASW-50	100%	0.0	~~10.0~~ 15.5
ASW-52S	0%	0.0	0.0
ASW-53	0%	0	0
ASW-54	0%	0	0
ASW-55	0%	0	0
ASW-56	0%	0	0

AIR SPARGE WELL DATA (Page 3 of 3)
SUPPLY WAREHOUSE No. 3 (SW3), SWMU NO. 088
OPERATIONS AND MAINTENANCE
KENNEDY SPACE CENTER, FLORIDA

Air Sparge Well Number	Valve Position % (initial / after adjustment)	Flow Rate (SCFM) (initial / after adjustment)	Pressure (psi) (initial / after adjustment)
ZONE 3			
ASW-57	100%	0.0	16
ASW-58	100% /25%	7.0 / ~~2.5~~ 4.0	7.5 /12
ASW-59	100%	0.0	19.5
ASW-60	100% /40%	5.0 / 4.0	11.5 / 11.5
ASW-61	100%	0.0	~~20~~ 19
ASW-62	100% /25%	~~0.0~~ 5.0 /4.0	~~14~~ 16 /17
ASW-63	100%	~~3.5~~ 0.0	~~18~~ 19
ASW-64	100%	3.5	10
ASW-65	100%	0.0	7.0
ASW-66	100%	0.0	17
ASW-67	100%	0.0	11
ASW-68	100%	0.0	19

GROUNDWATER LEVEL MEASUREMENTS, PID READINGS, DISSOLVED OXYGEN, AND OBSERVATIONS
SUPPLY WAREHOUSE No. 3 (SW3), SWMU NO. 088
OPERATIONS AND MAINTENANCE
KENNEDY SPACE CENTER, FLORIDA

Date: _____
Time: _____
Field Personnel: _____

Location	PID reading (ppm)	Depth to GW (feet below TOC)	Pressure (inches water)	Dissolved Oxygen (mg/L)	Observations
SW3MW0001					
SW3MW0002					
SW3MW0003					
SW3MW0004					
SW3MW0005					
SW3MW0007					
SW3MW0009					
SW3MW0013					
SW3MW0017					
SW3MW0021					
SW3MW0022					
SW3MW0023					
SW3MW0025					
SW3MW0026					
SW3MW0027					
SW3MW0028					

AS System Status Information:

Zones (Legs) operating during evaluation: _____

Observations: _____

FIELD NOTES AND ADDITIONAL COMMENTS

SUPPLY WAREHOUSE No.3 (SW3), SWMU NO. 088

OPERATIONS AND MAINTENANCE

KENNEDY SPACE CENTER, FLORIDA

Date: _____

Time: _____

Field Personnel: _____

Comments: _____

AIR SPARGE SYSTEM OPERATION DATAWELL DATA
PAINT AND OIL LOCKER (POL), SWMU NO. 067
OPERATIONS AND MAINTENANCE
KENNEDY SPACE CENTER, FLORIDA

Date: 9-SON 2016
Time: 0730-1730
Field Personnel: DLF
Runtime Meter (hours): 26160 POL North Treatment Area PID reading (PPM): NA
Exhaust Line Temperature (°F) before cooler: 325 @ 22 psi
Exhaust Line Temperature (°F) after cooler: 100 @ 23 psi
Zones of Operation: ALL

Time	Location	Bleed Air (% open)	Amp Meter (Amps)	Pressure	Flow Rate ("H2O~SCFM)
	Air Sparge Compressor				
1325	Main Header	NA	44	Gauge: 25 psi	70
Time	**Manifold Network**				
1325	POL S Zone well header	50	45	Gauge: 22 psi	145
1330	POL SI Zone well header	40	46	Gauge: 29 psi	150
1345	POL I Zone well header	60	44	Gauge: 18 psi	140

Comments:

GROUNDWATER LEVEL MEASUREMENTS, PID READINGS, DISSOLVED OXYGEN, AND OBSERVATIONS
PAINT AND OIL LOCKER (POL), SWMU NO. 067
OPERATIONS AND MAINTENANCE
KENNEDY SPACE CENTER, FLORIDA

Date: _____
Time: _____
Field Personnel: _____

Location	PID reading (ppm)	Depth to GW (feet below TOC)	Pressure (inches water)	Dissolved Oxygen (mg/L)	Observations
MONITORING WELLS					
POL-MW0001S					
POL-MW0009S					
POL-MW0009SI					
POL-MW0009I					
POL-MW0026S					
POL-MW0029S					
POL-MW0031S					
POL-MW0031I					
POL-MW0033S					
POL-MW0033SI					
POL-MW0033I					
POL-MW0034S					

Location	PID reading (ppm)	Time	Observations
POL-VL0001			
POL-VL0002			
POL-VL0003			
POL-VL0004			
POL-VMP0001			
POL-VMP0002			
POL-VMP0003			
POL-VMP0004			
POL-AIR0001			
POL-AIR0002			
POL-AIR0003			

AS System Status Information:

Zones (Legs) operating during evaluation: _____

Observations: _____

AIR SPARGE WELL DATA (Page 1 of 2)

PAINT AND OIL LOCKER (POL), SWMU NO. 067

OPERATIONS AND MAINTENANCE

KENNEDY SPACE CENTER, FLORIDA

Date: 9-Jun 2016

Time: 0730 - 1730

Field Personnel: DLF

Air Sparge Well Number	Valve Position % (initial / after adjustment)	Flow Rate (SCFM) (initial / after adjustment)	Pressure (psi) (initial / after adjustment)	Manifold Pressure (psi)
POL ZONE 1 (Shallow)				
ASW-20S	100	0.5	22	16
ASW-21S	100 / 30	10 / 4	15 / 8	
ASW-22S	100 / 30	10 / 4	11 / 10	
ASW-24S	100	4	16	
ASW-25S	100	0	17	
ASW-26S	130	8 / 4	9 / 7	
ASW-27S	100	0	18	
ASW-32S	100	0	16	
ASW-33S	100	2	16	
ASW-39S	100	8.5	17	
ASW-41S	100	3	16	
ASW-42S	130	10 / 4	13 / 8	
POL ZONE 3 (Intermediate)				
ASW-05I	100	2	14	15
ASW-09I	100	3 / 4	15 / 15	
ASW-10I	100	0	15	
ASW-13I	100	0	15	
ASW-14I	100	0.5	15	
ASW-15I	100	0	15	
ASW-29I	100	0	15	
ASW-30I	100	0	15	
ASW-37I	1	4	13	
ASW-38I	100	0	20	
ASW-45I	100	4	15	
ASW-52I	100 / 50	10 / 10	15 / 15	

AIR SPARGE WELL DATA (Page 1 of 3)

SUPPLY WAREHOUSE No. 3 (SW3), SWMU NO. 088

OPERATIONS AND MAINTENANCE

KENNEDY SPACE CENTER, FLORIDA

Date: 9 JUN 2016

Time: 1300

Field Personnel: DLT

Air Sparge Well Number	Valve Position % (initial / after adjustment)	Flow Rate (SCFM) (initial / after adjustment)	Pressure (psi) (initial / after adjustment)
ZONE 1			
ASW-1	/	4	17
ASW-2	/	4	15
ASW-3	/	4	15
ASW-4	/	4	15
ASW-5	/	4	17
ASW-6	/	4	16
ASW-7	/	4	18
ASW-8	100	0	18
ASW-9	100	0	23
ASW-10	100	0	18
ASW-11A	100	0	15
ASW-12	100	0	18
ASW-13	100	0	17
ASW-14	100	0	17
ASW-15A	/	4	0
ASW-16	100	0	17
ASW-17	100	0	17
ASW-18	100	0	18
ASW-19	100	0	18
ASW-20	STOLEN		
ASW-21	/	4	16
ASW-22	/	4	15
ASW-23	/	4	16
ASW-24	/	4	16
ASW-25	/	4	12
ASW-51	/	4	13
ASW-52N	100	0	17

AIR SPARGE WELL DATA (Page 3 of 3)

SUPPLY WAREHOUSE No. 3 (SW3), SWMU NO. 088

OPERATIONS AND MAINTENANCE

KENNEDY SPACE CENTER, FLORIDA

Air Sparge Well Number	Valve Position % (initial / after adjustment)	Flow Rate (SCFM) (initial / after adjustment)	Pressure (psi) (initial / after adjustment)
ZONE 3			
ASW-57	100	0	17
ASW-58	/	4	0
ASW-59	100	0	20
ASW-60	/ 40	5/4	16/ 15
ASW-61	0	0	0 OFF
ASW-62	150	3/4	17 / 18
ASW-63	100	0	20
ASW-64	100	2	17
ASW-65	100	0	15
ASW-66	100	0	20
ASW-67	100	0	15
ASW-68	100	0	22

FIELD NOTES AND ADDITIONAL COMMENTS

SUPPLY WAREHOUSE No.3 (SW3), SWMU NO. 088

OPERATIONS AND MAINTENANCE

KENNEDY SPACE CENTER, FLORIDA

Date: _____

Time: _____

Field Personnel: _____

Comments: _____

GROUNDWATER LEVEL MEASUREMENTS, PID READINGS, DISSOLVED OXYGEN, AND OBSERVATIONS

SUPPLY WAREHOUSE No. 3 (SW3), SWMU NO. 088

OPERATIONS AND MAINTENANCE

KENNEDY SPACE CENTER, FLORIDA

Date: _____

Time: _____

Field Personnel: _____

Location	PID reading (ppm)	Depth to GW (feet below TOC)	Pressure (inches water)	Dissolved Oxygen (mg/L)	Observations
SW3MW0001					
SW3MW0002					
SW3MW0003					
SW3MW0004					
SW3MW0005					
SW3MW0007					
SW3MW0009					
SW3MW0013					
SW3MW0017					
SW3MW0021					
SW3MW0022					
SW3MW0023					
SW3MW0025					
SW3MW0026					
SW3MW0027					
SW3MW0028					

AS System Status Information:

Zones (Legs) operating during evaluation: _____

Observations: _____

AIR SPARGE WELL DATA (Page 2 of 3)
SUPPLY WAREHOUSE No. 3 (SW3), SWMU NO. 088
OPERATIONS AND MAINTENANCE
KENNEDY SPACE CENTER, FLORIDA

Air Sparge Well Number	Valve Position % (initial / after adjustment)	Flow Rate (SCFM) (initial / after adjustment)	Pressure (psi) (initial / after adjustment)	
ZONE 2				
ASW-26	1	4	15	
ASW-27	1	4	15	
ASW-28	100 / 100	10 [illegible] 0	[illegible] 5/0	TURNED OFF BROKEN
ASW-29	1	4.5	13	
ASW-30	1	4	10	
ASW-31	100	0	17	
ASW-32	0	0	0	OFF
ASW-33	0	0	0	OFF
ASW-34	0	0	0	OFF
ASW-35	130	4	14/14	
ASW-36	50 / 140	5/4	14/	
ASW-37	1	4	13	
ASW-38	140	4/4	14 / 13	
ASW-39	140	5/4	17/16	
ASW-40	0	0	0	OFF
ASW-41	NA	NA	NA	
ASW-42	NA	NA	NA	
ASW-43	140	7 / 4	17 /16	
ASW-44	NA	NA	NA	
ASW-45	NA	NA	NA	
ASW-46	NA	NA	NA	
ASW-47	NA	NA	NA	
ASW-48	100	0	19	
ASW-49	NA	NA	NA	
ASW-50	100	0 [illegible]	19	
ASW-52S	100	3	10	
ASW-53		0	0	
ASW-54		0	0	
ASW-55	140	[illegible] /4	0	
ASW-56		0	0	

WEEKLY EVALUATION WORKSHEET

SUPPLY WAREHOUSE No. 3 (SW3), SWMU NO. 088

OPERATIONS AND MAINTENANCE

KENNEDY SPACE CENTER, FLORIDA

	Description	Subtask	Indicate Task Completion With Checkmark	Comments
1	Site inspection	Any land disturbance (Y/N)	NO	
		Any damage to system (Y/N)	NO	
		Observed PID levels in treatment area? (Y/N)	NA	
2	Verify maintenance conducted on Sparge Unit.		✓	
3	Collect system operation data (All Legs Operational)		✓	
4	Collect air sparge well data (All Legs operational)		✓	
5	PID, groundwater elevation, and dissolved oxygen data		NA	
6	Note any comments			
7	Final site inspection (general site walk through)	Site free of garbage and debris. Well covers replaced. System operational and site secured.	✓	

Date: 9-JUN 2016

Time: 0730 - 1730

Field Personnel: DAN LOHESTER

AIR SPARGE WELL DATA (Page 2 of 2)
PAINT AND OIL LOCKER (POL), SWMU NO. 067
OPERATIONS AND MAINTENANCE
KENNEDY SPACE CENTER, FLORIDA

Air Sparge Well Number	Valve Position % (initial / after adjustment)	Flow Rate (SCFM) (initial / after adjustment)	Pressure (psi) (initial / after adjustment)	Manifold Pressure (psi)
POL ZONE 2 (Shallow-Intermediate)				
ASW-1SI	100	0	7	18
ASW-2SI	100	3 / 4	12 / 12	
ASW-3SI	100	1	13	
ASW-4SI	100 / 50	7 / 4	12 / 10	
ASW-6SI	/ 40	5 / 4	12 / 10	
ASW-7SI	/	4	11	
ASW-8SI	/	4	11	
ASW-11SI	/	4	12	
ASW-12SI	/	4	11	
ASW-16SI	100	4	13	
ASW-17SI	/	4	12	
ASW-18SI	100	3	13	
ASW-19SI	/ 50	4	10	
ASW-23SI	/	4	11	17
ASW-28SI	/	4	15	
ASW-31SI	/	4	11	
ASW-34SI	/	4	13	
ASW-35SI	100	0	15	
ASW-36SI	100	0	13	
ASW-40SI	/	4	12	
ASW-43SI	100	0	12	
ASW-44SI	100	0	13	
ASW-46SI	100	0	13	
ASW-47SI	/	4	12	
ASW-48SI	100	4	13	
ASW-49SI	/	4	12	
ASW-50SI	/ 40	6 / 4	12 / 11	
ASW-51SI	/	4	12	
ASW-53SI	/	4	11	
ASW-54SI	/	4	12	
ASW-55SI	100	0	12	

FIELD NOTES AND ADDITIONAL COMMENTS

PAINT AND OIL LOCKER (POL), SWMU NO. 067

OPERATIONS AND MAINTENANCE

KENNEDY SPACE CENTER, FLORIDA

Date: _____

Time: _____

Field Personnel: _____

Comments: _____

WEEKLY/MONTHLY EVALUATION WORKSHEET

PAINT AND OIL LOCKER (POL), SWMU 067

OPERATIONS AND MAINTENANCE

KENNEDY SPACE CENTER, FLORIDA

	Description	Subtask	Indicate Task Completion With Checkmark	Comments
1	Site inspection	Any land disturbance (Y/N)	N	
		Any damage to system (Y/N)	N	
		Observed PID levels in treatment area? (Y/N)	NA	
2	Verify maintenance conducted on Sparge Unit.		✓	
3	Collect system operation data (page 2 of 5) (All Legs Operational)		✓	
4	Collect air sparge well data (page 3 of 5) (All Legs operational)		✓	
5	PID, groundwater elevation, and dissolved oxygen data (page 4 of 5)		N/A	
6	Note any comments (page 5 of 5)			
7	Final site inspection (general site walk through)	Site free of garbage and debris. Well covers replaced. System operational and site secured.	✓	

Date: 9 - JUN 2016

Time: 0730 – 1730

Field Personnel: DLF

AIR SPARGE SYSTEM OPERATION DATAWELL DATA
SUPPLY WAREHOUSE No. 3 (SW3), SWMU NO. 088
OPERATIONS AND MAINTENANCE
KENNEDY SPACE CENTER, FLORIDA

Date: 7 Jul 2016 Field Personnel: DAN FORESTER

Time: 0900-

Power Meter (hours): _____ Runtime Meter (hours): 2C6444

Exhaust Line Temperature (°F) before cooler: 345 North Treatment Area PID reading (PPM): NA

Exhaust Line Temperature (°F) after cooler: 110 South Treatment Area PID reading (PPM): NA

Zones of Operation: ALL

	Location	Bleed Air (% open)	Amps	Gauge Pressure (psi)	Flow Rate (SCFM)
Time	**Air Sparge Compressor**				
1030	Bleed Air Control Valve	0	46	NA	60
	Main Header	NA	46	Before cooler: 22 After cooler: 23	60
Time	**Manifold Network**				
	Leg #1 well header (SW3 Zones 2 & 3)	50	46	19	145
1230	Leg #2 well header (SW3 Zone 1)	50	46	21	140

Zone #1: ASW01, ASW02, ASW03, ASW04, ASW05, ASW06, ASW07, ASW08, ASW09, ASW10, ASW11A, ASW12, ASW13, ASW14, ASW15A, ASW16, ASW17, ASW18, ASW19, ASW20, ASW21, ASW22, ASW23, ASW24, ASW25, ASW51, ASW52

Zone #2: ASW26, ASW27, ASW28, ASW29, ASW30, ASW31, ASW32, ASW33, ASW34, ASW35, ASW36, ASW37, ASW38, ASW39, ASW40, ASW41, ASW42, ASW43, ASW44, ASW45, ASW46, ASW47, ASW48, ASW49, ASW50, ASW53, ASW54, ASW55, ASW56

Zone #3: ASW57, ASW58, ASW59, ASW60, ASW61, ASW62, ASW63, ASW64, ASW65, ASW66, ASW67, ASW68

Comments _____

AIR SPARGE WELL DATA (Page 1 of 3)

SUPPLY WAREHOUSE No. 3 (SW3), SWMU NO. 088

OPERATIONS AND MAINTENANCE

KENNEDY SPACE CENTER, FLORIDA

Date: 7 JUL 2016

Time: 0900 -

Field Personnel: DAN FORBSTER

Air Sparge Well Number	Valve Position % (initial / after adjustment)		Flow Rate (SCFM) (initial / after adjustment)		Pressure (psi) (initial / after adjustment)	
ZONE 1	PRE	POST	PRE	POST	PRE	POST
ASW-1	50	50	4	4	15	15
ASW-2	50	50	4	4	12	12
ASW-3	40	40	4	4	10	10
ASW-4	40	40	4	4	15	15
ASW-5	50	50	4	4	15	15
ASW-6	50	50	4	4	15	15
ASW-7	50	50	4	4	17	17
ASW-8	100	100	0	0	15	15
ASW-9	100	100	0	0	20	20
ASW-10	100	100	0	0	15	15
ASW-11A	100	100	0	0	15	15
ASW-12	100	100	0	0	15	15
ASW-13	100	100	0	0	15	15
ASW-14	100	100	0	0	15	15
ASW-15A	40	40	4	4	0	0
ASW-16	100	100	0	0	15	15
ASW-17	100	100	0	0	15	15
ASW-18	100	100	0	0	15	15
ASW-19	100	100	0	0	16	16
ASW-20	BROKEN					
ASW-21	50	50	4	4	14	14
ASW-22	50	50	4	4	15	15
ASW-23	50	50	4	4	13	13
ASW-24	50	50	4	4	14	14
ASW-25	40	40	4	4	9	9
ASW-51	50	50	4	4	10	10
ASW-52N	100	100	0	0	15	15

AIR SPARGE WELL DATA (Page 2 of 3)

SUPPLY WAREHOUSE No. 3 (SW3), SWMU NO. 088

OPERATIONS AND MAINTENANCE

KENNEDY SPACE CENTER, FLORIDA

Air Sparge Well Number	Valve Position % (initial / after adjustment)		Flow Rate (SCFM) (initial / after adjustment)		Pressure (psi) (initial / after adjustment)	
ZONE 2	PRE	POST				
ASW-26	50	50	4	4	15	15
ASW-27	50	50	4	4	13	13
ASW-28 (BROKEN → OFF)	~~100~~ 0	0	0	0	0	0
ASW-29	50	50	4	4	10	10
ASW-30	50	50	4	4	10	10
ASW-31	100	100	0	0	17	17
ASW-32 (OFF)	~~0~~	0	0	0	0	0
ASW-33 (OFF)	~~0~~	0	0	0	0	0
ASW-34 (OFF)	~~0~~	—				
ASW-35	30	50	3	4	14	15
ASW-36	40	50	3	4	14	14
ASW-37	50	50	4	4	13	13
ASW-38	40	50	3	4	14	14
ASW-39	40	50	2	4	16	17
ASW-40 (OFF)	~~0~~					
ASW-41	NA		NA		NA	
ASW-42	NA		NA		NA	
ASW-43	40	50	2	4	15	16
ASW-44	NA		NA		NA	
ASW-45	NA		NA		NA	
ASW-46	NA		NA		NA	
ASW-47	NA		NA		NA	
ASW-48	100	100	0	0	15	15
ASW-49	NA		NA		NA	
ASW-50	100	100	0	0	15	15
ASW-52S	100	100	3	3	8	8
ASW-53	100	100	0	0	8	8
ASW-54	100	100	0	0	8	8
ASW-55	40	40	4	4	5	5
ASW-56	40	100	0	0	8	8

AIR SPARGE WELL DATA (Page 3 of 3)

SUPPLY WAREHOUSE No. 3 (SW3), SWMU NO. 088

OPERATIONS AND MAINTENANCE

KENNEDY SPACE CENTER, FLORIDA

Air Sparge Well Number	Valve Position % (initial / after adjustment)		Flow Rate (SCFM) (initial / after adjustment)		Pressure (psi) (initial / after adjustment)	
ZONE 3	PRE	POST				
ASW-57	100	100	0	0	15	15
ASW-58	40	40	4	4	0	0
ASW-59	100	100	2	2	17	17
ASW-60	40	100	2	3	16	16
ASW-61	0	—	—	—	—	—
ASW-62	50	100	2	3	17	17
ASW-63	100	100	0	0	17	17
ASW-64	100	100	1	1	10	10
ASW-65	100	100	0	0	14	14
ASW-66	100	100	0	0	17	17
ASW-67	100	100	2	2	14	14
ASW-68	100	100	0	0	18	18

OFF

GROUNDWATER LEVEL MEASUREMENTS, PID READINGS, DISSOLVED OXYGEN, AND OBSERVATIONS
SUPPLY WAREHOUSE No. 3 (SW3), SWMU NO. 088
OPERATIONS AND MAINTENANCE
KENNEDY SPACE CENTER, FLORIDA

Date: 7 Jul 2016
Time: 0930 -
Field Personnel: DJT

Location	PID reading (ppm)	Depth to GW (feet below TOC)	Pressure (inches water)	Dissolved Oxygen (mg/L)	Observations
SW3MW0001					
SW3MW0002					
SW3MW0003					
SW3MW0004					
SW3MW0005					
SW3MW0007					
SW3MW0009					
SW3MW0013					
SW3MW0017					
SW3MW0021					
SW3MW0022					
SW3MW0023					
SW3MW0025					
SW3MW0026					
SW3MW0027					
SW3MW0028					

AS System Status Information:

Zones (Legs) operating during evaluation: _____

Observations: _____

FIELD NOTES AND ADDITIONAL COMMENTS

SUPPLY WAREHOUSE No.3 (SW3), SWMU NO. 088

OPERATIONS AND MAINTENANCE

KENNEDY SPACE CENTER, FLORIDA

Date: 7 JUL 2016

Time: 0900 -

Field Personnel: DAN FORESTOR

Comments:

WEEKLY EVALUATION WORKSHEET

SUPPLY WAREHOUSE No. 3 (SW3), SWMU NO. 088

OPERATIONS AND MAINTENANCE

KENNEDY SPACE CENTER, FLORIDA

	Description	Subtask	Indicate Task Completion With Checkmark	Comments
1	Site inspection	Any land disturbance (Y/N)	~~✓~~ NO	
		Any damage to system (Y/N)	NO	
		Observed PID levels in treatment area? (Y/N)	NA	
2	Verify maintenance conducted on Sparge Unit.		✓	
3	Collect system operation data (All Legs Operational)		✓	
4	Collect air sparge well data (All Legs operational)		✓	
5	PID, groundwater elevation, and dissolved oxygen data		NA	
6	Note any comments		✓	
7	Final site inspection (general site walk through)	Site free of garbage and debris. Well covers replaced. System operational and site secured.	✓	

Date: 7 JULY 2016

Time: 0900 -

Field Personnel: DAN FORESTER

AIR SPARGE SYSTEM OPERATION DATAWELL DATA
SUPPLY WAREHOUSE No. 3 (SW3), SWMU NO. 088
OPERATIONS AND MAINTENANCE
KENNEDY SPACE CENTER, FLORIDA

Date: 5 AUG 2016 Field Personnel: JAN FORESTER
Time: 1200 –

Power Meter (hours): 53580 Runtime Meter (hours): NA
Exhaust Line Temperature (°F) before cooler: 330 North Treatment Area PID reading (PPM): NA
Exhaust Line Temperature (°F) after cooler: 111 South Treatment Area PID reading (PPM): NA
Zones of Operation: ALL

Time	Location	Bleed Air (% open)	Amps	Gauge Pressure (psi)	Flow Rate (SCFM)
	Air Sparge Compressor				
	Bleed Air Control Valve	0	44	NA	70
	Main Header	NA	44	Before cooler: 21 After cooler: 22	
Time	**Manifold Network**				
1300	Leg #1 well header (SW3 Zones 2 & 3)	50	44	16	150
1330	Leg #2 well header (SW3 Zone 1)	50	46	21	140

Zone #1: ASW01, ASW02, ASW03, ASW04, ASW05, ASW06, ASW07, ASW08, ASW09, ASW10, ASW11A, ASW12, ASW13, ASW14, ASW15A, ASW16, ASW17, ASW18, ASW19, ASW20, ASW21, ASW22, ASW23, ASW24, ASW25, ASW51, ASW52
Zone #2: ASW26, ASW27, ASW28, ASW29, ASW30, ASW31, ASW32, ASW33, ASW34, ASW35, ASW36, ASW37, ASW38, ASW39, ASW40, ASW41, ASW42, ASW43, ASW44, ASW45, ASW46, ASW47, ASW48, ASW49, ASW50, ASW53, ASW54, ASW55, ASW56
Zone #3: ASW57, ASW58, ASW59, ASW60, ASW61, ASW62, ASW63, ASW64, ASW65, ASW66, ASW67, ASW68

Comments

AIR SPARGE WELL DATA (Page 1 of 3)

SUPPLY WAREHOUSE No. 3 (SW3), SWMU NO. 088

OPERATIONS AND MAINTENANCE

KENNEDY SPACE CENTER, FLORIDA

Date: 5 AUG

Time: _____

Field Personnel: _____

Air Sparge Well Number	Valve Position % (initial / after adjustment)		Flow Rate (SCFM) (initial / after adjustment)		Pressure (psi) (initial / after adjustment)	
ZONE 1						
ASW-1	50	50	4	4	15	15
ASW-2	50	50	4	4	14	14
ASW-3	40	50	4	4	11	11
ASW-4	40	40	4	4	15	15
ASW-5	50	5	4	4	15	15
ASW-6	50	50	4	4	14	14
ASW-7	50	50	4	4	18	18
ASW-8	100	100	0	0	15	15
ASW-9	100	100	0	0	20	20
ASW-10	100	100	0	0	16	16
ASW-11A	100	100	0	0	13	13
ASW-12	100	100	0	0	15	15
ASW-13	100	100	0	0	15	15
ASW-14	100	100	0	0	15	15
ASW-15A	40	40	4	4	0	0
ASW-16	100	100	0	0	15	15
ASW-17	100	100	0	0	15	15
ASW-18	100	100	0	0	15	15
ASW-19	100	100	0	0	16	16
ASW-20	OFF					
ASW-21	50	50	4	4	14	14
ASW-22	50	50	4	4	14	14
ASW-23	50	50	4	4	13	13
ASW-24	50	50	4	4	13	13
ASW-25	40	40	4	4	10	10
ASW-51	50	50	4	4	10	10
ASW-52N	100	100	0	0	15	10

AIR SPARGE WELL DATA (Page 2 of 3)

SUPPLY WAREHOUSE No. 3 (SW3), SWMU NO. 088

OPERATIONS AND MAINTENANCE

KENNEDY SPACE CENTER, FLORIDA

Air Sparge Well Number	Valve Position % (initial / after adjustment)		Flow Rate (SCFM) (initial / after adjustment)		Pressure (psi) (initial / after adjustment)	
ZONE 2						
ASW-26	50	50	4	4	15	15
ASW-27	50	50	4	4	13	13
ASW-28	OFF					
ASW-29	50	50	4	4	12	12
ASW-30	50	50	4	4	10	10
ASW-31	100	100	0	0	16	16
ASW-32	OFF					
ASW-33	OFF					
ASW-34	OFF					
ASW-35	50	50	4	4	14	14
ASW-36	50	60	3	4	13	14
ASW-37	50	50	4	4	13	13
ASW-38	50	50	4	4	13	13
ASW-39	50	50	4	4	17	17
ASW-40	OFF					
ASW-41	NA		NA		NA	
ASW-42	NA		NA		NA	
ASW-43	50	50	4	4	15	15
ASW-44	NA		NA		NA	
ASW-45	NA		NA		NA	
ASW-46	NA		NA		NA	
ASW-47	NA		NA		NA	
ASW-48	100		0	0	15	15
ASW-49	NA		NA		NA	
ASW-50	100	100	0	0	14	14
ASW-52S	100	100	3	3	8	8
ASW-53	100	100	0	0	8	8
ASW-54	100	100	0	0	8	8
ASW-55	40	100	4	4	5	5
ASW-56	100	100	0	0	8	8

AIR SPARGE WELL DATA (Page 3 of 3)

SUPPLY WAREHOUSE No. 3 (SW3), SWMU NO. 088

OPERATIONS AND MAINTENANCE

KENNEDY SPACE CENTER, FLORIDA

Air Sparge Well Number	Valve Position % (initial / after adjustment)		Flow Rate (SCFM) (initial / after adjustment)		Pressure (psi) (initial / after adjustment)	
ZONE 3						
ASW-57	100	100	0	0	14	14
ASW-58	40	40	4	4	0	0
ASW-59	100	100	0	0	9	9
ASW-60	100	100	3	3	15	15
ASW-61	OFF					
ASW-62	100	100	2	2	15	15
ASW-63	100	100	0	0	16	16
ASW-64	100	100	2	2	11	11
ASW-65	100	100	0	0	10	10
ASW-66	100	100	0	0	15	15
ASW-67	100	100	0	0	13	13
ASW-68	100	100	0	0	17	17

GROUNDWATER LEVEL MEASUREMENTS, PID READINGS, DISSOLVED OXYGEN, AND OBSERVATIONS

SUPPLY WAREHOUSE No. 3 (SW3), SWMU NO. 088

OPERATIONS AND MAINTENANCE

KENNEDY SPACE CENTER, FLORIDA

Date: 5 AUG 2016

Time: _____

Field Personnel: _____

Location	PID reading (ppm)	Depth to GW (feet below TOC)	Pressure (inches water)	Dissolved Oxygen (mg/L)	Observations
SW3MW0001					
SW3MW0002					
SW3MW0003					
SW3MW0004					
SW3MW0005					
SW3MW0007					
SW3MW0009					
SW3MW0013					
SW3MW0017					
SW3MW0021					
SW3MW0022					
SW3MW0023					
SW3MW0025					
SW3MW0026					
SW3MW0027					
SW3MW0028					

AS System Status Information:

Zones (Legs) operating during evaluation: _____

Observations: _____

FIELD NOTES AND ADDITIONAL COMMENTS

SUPPLY WAREHOUSE No.3 (SW3), SWMU NO. 088

OPERATIONS AND MAINTENANCE

KENNEDY SPACE CENTER, FLORIDA

Date: 5 AUG 2016

Time: _____

Field Personnel: _____

Comments: ALL GOOD WELL HOLE DOWN

WEEKLY EVALUATION WORKSHEET

SUPPLY WAREHOUSE No. 3 (SW3), SWMU NO. 088

OPERATIONS AND MAINTENANCE

KENNEDY SPACE CENTER, FLORIDA

	Description	Subtask	Indicate Task Completion With Checkmark	Comments
1	Site inspection	Any land disturbance (Y/N)	N	
		Any damage to system (Y/N)	N	
		Observed PID levels in treatment area? (Y/N)	N	
2	Verify maintenance conducted on Sparge Unit.		✓	
3	Collect system operation data (All Legs Operational)		✓	
4	Collect air sparge well data (All Legs operational)		✓	
5	PID, groundwater elevation, and dissolved oxygen data		N/A	
6	Note any comments		✓	
7	Final site inspection (general site walk through)	Site free of garbage and debris. Well covers replaced. System operational and site secured.	✓	

Date: 5 AUG 10

Time: 1200 —

Field Personnel: DAN FORESTER

AIR SPARGE SYSTEM OPERATION DATAWELL DATA
SUPPLY WAREHOUSE No. 3 (SW3), SWMU NO. 088
OPERATIONS AND MAINTENANCE
KENNEDY SPACE CENTER, FLORIDA

Date: 8 SEP 2016 Field Personnel: DAN FORESTER

Time: _____

Power Meter (hours): 61876 KWH Runtime Meter (hours): 27745

Exhaust Line Temperature (°F) before cooler: 300 North Treatment Area PID reading (PPM): NA

Exhaust Line Temperature (°F) after cooler: 100 South Treatment Area PID reading (PPM): NA

Zones of Operation: ALL

	Location	Bleed Air (% open)	Amps	Gauge Pressure (psi)	Flow Rate (SCFM)
Time	**Air Sparge Compressor**				
0900	Bleed Air Control Valve	NA	40	NA	70
	Main Header	NA	40	Before cooler: After cooler: 15	70
Time	**Manifold Network**				
1030	Leg #1 well header (SW3 Zones 2 & 3)	50	44	17	150
1100	Leg #2 well header (SW3 Zone 1)	50	44	20	145

Zone #1: ASW01, ASW02, ASW03, ASW04, ASW05, ASW06, ASW07, ASW08, ASW09, ASW10, ASW11A, ASW12, ASW13, ASW14, ASW15A, ASW16, ASW17, ASW18, ASW19, ASW20, ASW21, ASW22, ASW23, ASW24, ASW25, ASW51, ASW52
Zone #2: ASW26, ASW27, ASW28, ASW29, ASW30, ASW31, ASW32, ASW33, ASW34, ASW35, ASW36, ASW37, ASW38, ASW39, ASW40, ASW41, ASW42, ASW43, ASW44, ASW45, ASW46, ASW47, ASW48, ASW49, ASW50, ASW53, ASW54, ASW55, ASW56
Zone #3: ASW57, ASW58, ASW59, ASW60, ASW61, ASW62, ASW63, ASW64, ASW65, ASW66, ASW67, ASW68

Comments OIL CHANGED

AIR SPARGE WELL DATA (Page 1 of 3)

SUPPLY WAREHOUSE No. 3 (SW3), SWMU NO. 088

OPERATIONS AND MAINTENANCE

KENNEDY SPACE CENTER, FLORIDA

Date: 12 SEP 2016

Time: _____

Field Personnel: _____

Air Sparge Well Number	Valve Position % (initial / after adjustment)		Flow Rate (SCFM) (initial / after adjustment)		Pressure (psi) (initial / after adjustment)	
ZONE 1						
ASW-1	50	50	4	4	17	17
ASW-2	50	50	4	4	14	14
ASW-3	50	50	4	4	15	15
ASW-4	40	40	4	4	15	15
ASW-5	50	50	4	4	15	15
ASW-6	50	50	4	4	14	14
ASW-7	50	50	4	4	14	14
ASW-8	100	100	4	4	15	15
ASW-9	100	100	0	0	20	20
ASW-10	100	100	0	0	17	17
ASW-11A	100	100	0	0	15	15
ASW-12	100	100	0	0	16	16
ASW-13	100	100	0	0	17	17
ASW-14	100	100	0	0	14	16
ASW-15A	40	40	4	4	0	0
ASW-16	100	100	0	0	16	16
ASW-17	100	100	0	0	15	15
ASW-18	100	100	0	0	16	16
ASW-19	100	100	0	0	17	17
ASW-20	OFF					
ASW-21	50	50	4	4	15	15
ASW-22	50	50	4	4	15	15
ASW-23	50	50	4	4	15	15
ASW-24	50	50	4	4	15	15
ASW-25	40	40	4	4	10	10
ASW-51	50	50	4	4	10	10
ASW-52N	100	100	0	0	17	17

BROKEN

AIR SPARGE WELL DATA (Page 2 of 3)

SUPPLY WAREHOUSE No. 3 (SW3), SWMU NO. 088

OPERATIONS AND MAINTENANCE

KENNEDY SPACE CENTER, FLORIDA

Air Sparge Well Number	Valve Position % (initial / after adjustment)		Flow Rate (SCFM) (initial / after adjustment)		Pressure (psi) (initial / after adjustment)	
ZONE 2						
ASW-26	50	50	4	4	15	15
ASW-27	50	50	4	4	15	15
ASW-28	OFF	-				
ASW-29	50	50	4	4	13	13
ASW-30	50	50	4	4	12	12
ASW-31	100	100	0	0	17	17
ASW-32	OFF					
ASW-33	OFF					
ASW-34	OFF					
ASW-35	50	50	4	4	15	15
ASW-36	60	60	4	4	15	15
ASW-37	50	50	4	4	14	14
ASW-38	50	50	4	4	14	14
ASW-39	50	50	4	4	17	17
ASW-40	OFF					
ASW-41	NA		NA		NA	
ASW-42	NA		NA		NA	
ASW-43	50	50	4	4	16	16
ASW-44	NA		NA		NA	
ASW-45	NA		NA		NA	
ASW-46	NA		NA		NA	
ASW-47	NA		NA		NA	
ASW-48	100	1000	0	0	16	16
ASW-49	NA		NA		NA	
ASW-50	100	100	0	0	16	16
ASW-52S	100	100	3	3	8	8
ASW-53	100	100	1	1	10	10
ASW-54	100	100	0	0	8	8
ASW-55	100	100	4	4	5	5
ASW-56	100	100	0	0	8	8

AIR SPARGE WELL DATA (Page 3 of 3)

SUPPLY WAREHOUSE No. 3 (SW3), SWMU NO. 088

OPERATIONS AND MAINTENANCE

KENNEDY SPACE CENTER, FLORIDA

Air Sparge Well Number	Valve Position % (initial / after adjustment)		Flow Rate (SCFM) (initial / after adjustment)		Pressure (psi) (initial / after adjustment)	
ZONE 3						
ASW-57	100	100	0	0	14	14
ASW-58	40	40	4	4	0	0
ASW-59	100	100	0	0	10	10
ASW-60	100	100	4	4	17	17
ASW-61	OFF					
ASW-62	100	100	2	2	16	16
ASW-63	100	100	0	0	16	16
ASW-64	100	100	0	0	10	10
ASW-65	100	100	0	0	4	4
ASW-66	100	100	0	0	15	15
ASW-67	100	100	1	1	10	10
ASW-68	100	100	0	0	17	17

WEEKLY EVALUATION WORKSHEET

SUPPLY WAREHOUSE No. 3 (SW3), SWMU NO. 088

OPERATIONS AND MAINTENANCE

KENNEDY SPACE CENTER, FLORIDA

	Description	Subtask	Indicate Task Completion With Checkmark	Comments
1	Site inspection	Any land disturbance (Y/N)	N	
		Any damage to system (Y/N)	N	
		Observed PID levels in treatment area? (Y/N)	NA	
2	Verify maintenance conducted on Sparge Unit.		✓	
3	Collect system operation data (All Legs Operational)		✓	
4	Collect air sparge well data (All Legs operational)		✓	
5	PID, groundwater elevation, and dissolved oxygen data		NA	
6	Note any comments		✓	
7	Final site inspection (general site walk through)	Site free of garbage and debris. Well covers replaced. System operational and site secured.	✓	

Date: 12 SEP 2016

Time:

Field Personnel: DAN FORESTER

GROUNDWATER LEVEL MEASUREMENTS, PID READINGS, DISSOLVED OXYGEN, AND OBSERVATIONS

SUPPLY WAREHOUSE No. 3 (SW3), SWMU NO. 088

OPERATIONS AND MAINTENANCE

KENNEDY SPACE CENTER, FLORIDA

Date: _____

Time: _____

Field Personnel: _____

Location	PID reading (ppm)	Depth to GW (feet below TOC)	Pressure (inches water)	Dissolved Oxygen (mg/L)	Observations
SW3MW0001					
SW3MW0002					
SW3MW0003					
SW3MW0004					
SW3MW0005					
SW3MW0007					
SW3MW0009					
SW3MW0013					
SW3MW0017					
SW3MW0021					
SW3MW0022					
SW3MW0023					
SW3MW0025					
SW3MW0026					
SW3MW0027					
SW3MW0028					

AS System Status Information:

Zones (Legs) operating during evaluation: _____

Observations: _____

FIELD NOTES AND ADDITIONAL COMMENTS

SUPPLY WAREHOUSE No.3 (SW3), SWMU NO. 088

OPERATIONS AND MAINTENANCE

KENNEDY SPACE CENTER, FLORIDA

Date: 12 SEP 2016

Time: _____

Field Personnel: _____

Comments: OIL CHANGED
ASW 3 FIXED

APPENDIX C

SAMPLE LOG SHEETS

(ELECTRONIC FILE ONLY)

112g07161 & 112g07588 POL & SW3 GW Sampling 3/24/2016
Personnel: Alex Murphy T+E Engineer (A.M.)
Weather: Clear Skies 60°F+ PPE: Level D
Objective: GW Sampling
0645: A.M. mobilizes from office to NASA-KSC picking up ME along to way.
0715: A.M. arrives at POL. Begins calibrating equipment. See CALI SHEETS for details.
0800: A.M. mobilizes to CCF to the T+E work trailer to pick up additional groundwater sampling equipment.
0935: Set up on POL-MW00036. Purge Initiated
1005: Purge Complete. Parameters stable except DO. Purge 5 Well Volumes. 9L purged
1010: Sample Collected. POL-MW00363-010.1-20160324. VOCs
1020: Set up on POL-MW00095. Purge Initiated
1100: Purge Complete. Parameters Stable. 12.0 L purged
1105: Sample Collected. POL-MW00095-009.5-20160324. VOCs
1110: Set Up on POL-MW0009I. Purge Initiated.
1130: Purge Complete. Parameters Stable. 6.0 L purged.
1135: Sample Collected. POL-MW0009I-027.5-20160324. VOCs
1146
1205: ~~Purge~~ Set up on POL-MW00265. Purge Initiated.
1205: Purge Complete. ~~Parameters Stable.~~ Well purged dry. Was unable to reduce ~~turbidity~~ flow any further than 100mL/min. Allowing well to recharge prior to sampling.
1215: Sample Collected. POL-MW00265-013.0-20160324 VOCs.
1220: A.M. mobilizes to SW3 to begin gw sampling until Dan Forester can arrive onsite to help with lane closure for POL GW sampling
1230: Set up on SW3-MW0006. Purge Initiated.
1250: Purge Complete. Parameters Stable. 6.0L purged.
1255: Sample Collected. SW3-MW0006-040.0-20160324. VOCs
1300: Dan Forester arrives onsite. Begins conducting lane closure. A.M. sets up on SW3-MW0005. Purge Initiated
1325: Purge Complete. Parameters Stable. 7.5L purged.
1330: Sample Collected. SW3-MW0005-020.0-20160324. VOCs
1335: A.M. helps Dan Forester to finish lane closure
1340: Purge Initiated on POL-MW0031I.
1415: Purge Complete. Parameters Stable. 10.5 L purged.
1420: Sample Collected. POL-MW0031I-027.5-20160324. VOCs
1425: Set up on POL-MW00295. Purge Initiated.
1455: Purge Complete. Parameters Stable. 9.0 L purged
500: Sample Collected. POL-MW00295-010.0-20160324. VOCs

112g07161 & 112g07542 POL-3 SW3 GW Sampling 3/24/2016

1505: BEGIN TAKING DOWN LANE CLOSURE.

510: PEGGY WHILE D.F. CONTINUES TAKING DOWN LANE CLOSURE.
A.M. SETS UP ON SW3-MW0024. PURGE INITIATED.

540: PURGE COMPLETE. PARAMETERS STABLE. 9.0 L PURGED.

1545: Sample Collected. SW3-MW0024-040.0-20160324. VOCs

600: A.M. CONTAINS all IDW PURGE WATER AT IDW STAGING AREA.

1645: A.M. offsite.

3/24/2016

Scale: 1 square = _____

112g07548 SW3 GW Sampling 3/25/2016

Personnel: Alex Murphy T2 Engineer (A.M.)

Weather: 85°F Clear Skies PPE: Level D

Objective: GW Sampling

0635: A.M. onsite. Mobilizes to site picking up ice en route.

0700: A.M. arrives onsite. Begins calibrating equipment. See CalSheets for details.

0735: Set up on SW3-MW0009. Purge Initiated.

0825: Purge Complete, Parameters Stable. 15 L purged.

0830: Sample Collected. SW3-MW0009-020.0-20160325. VOCs.

0835: Set up on SW3-MW0001. Purge Initiated.

0915: Purge Complete. Parameters Stable. 12.0L purged.

0920: Sample Collected. SW3-MW0001-020.0-20160325. VOCs

0930: Set up on ~~MW~~ SW3-MW0025. Purge Initiated.

1015: Purge Complete. Parameters Stable 13.5L purged.

1020: Sample Collected. SW3-MW0025-040.0-20160325. VOCs

1030: Set up on SW3-MW0026. Purge Initiated.

1050: Purge Complete. Parameters Stable. 6.0 L purged.

1055: Sample Collected. SW3-MW0026-040.0-~~03~~ 20160325 VOCs

1105: Set Up on SW3-MW0027. Purge Initiated.

1215: Purge Complete. Parameters Stable. 21.0 L purged.

1220: Sample Collected. SW3-MW0027-~~03~~ 032.0-20160325. VOCs

1225: Set up on SW3-MW0028.

1245: Purge Complete. Parameters Stable. 6.0 L purged.

1250: Sample Collected. SW3-MW0028-032.0-20160325. VOCs

1305: Set up on SW3-MW0020. Purge Initiated.

1325: Purge Complete. Parameters Stable. 6.0L purged.

1330: Sample Collected. SW3-MW0020-040.0-20160325-25. VOCs

1345: Sample Collected. SW3-SW0001-000.5-20160325. VOCs

1400: Sample Collected. SW3-SW0002-000.5-20160325. VOCs

1415: Sample Collected. SW3-SW0002-000.5-20160325. VOCs

1500: IDW Contained at IDW storage area.

A.M. Begins packing coolers.

1530: AS system turned back on.

1600: A.M offsite.

3/25/2016

Tetra Tech NUS, Inc.

EQUIPMENT CALIBRATION LOG

PROJECT NAME : NASA KSC SW31 POL

INSTRUMENT NAME/MODEL: 556 MPS

SITE NAME: SW31 POL

MANUFACTURER: YSI

PROJECT No.: 112g07580 / 112g07161

SERIAL NUMBER: 05H2352 A0

Date of Calibration	Instrument I.D. Number	Person Performing Calibration	Instrument Settings		Instrument Readings		Calibration Standard (Lot No.)	Remarks and Comments
			Pre-calibration	Post-calibration	Pre-calibration	Post-calibration		
3/24/2016	05H2352A0	A. Murphy		100%	175%	100%		DO 100%
				7.0	7.23	7.00	2508700	Exp 7/31/2017
				4.0	4.05	4.00	2509895	Exp 8/31/2017
				10.0	9.96	10.00	2506A21	Exp 12/31/2016
				1.413mS/cm	1514	1.413	5A5099	Exp 9/30/2016
				240mV	238mV	240mV	8752	Exp 4/30/2020
3/25/2016	"	"		100%	163%	100%	"	
				7.0	7.04	7.00	"	
				4.0	4.05	4.00	"	
				10.0	9.99	10.00	"	
				1.413mS/cm	1516	1413	"	
				240mV	227.2	240	"	

Tetra Tech NUS, Inc.

EQUIPMENT CALIBRATION LOG

PROJECT NAME : NASA KSC SW3/POL

INSTRUMENT NAME/MODEL: 2020WE

SITE NAME: SW3/POL

MANUFACTURER: LaMotte

PROJECT No.: 112g07580 / 112g07161

SERIAL NUMBER: 2337-2612

Date of Calibration	Instrument I.D. Number	Person Performing Calibration	Instrument Settings		Instrument Readings		Calibration Standard (Lot No.)	Remarks and Comments
			Pre-calibration	Post-calibration	Pre-calibration	Post-calibration		
3/24/2016	2337-2612	A. Murphy		0.0	2.52	0.00		
				1.0	1.11	1.04		
				10.0	7.51	10.02		
3/25/2016	"	"		0.0	3.01	0.31		
				1.0	1.30	1.00		
				10.0	9.99	10.00		

Table 5-1. Proposed Monitoring

Sample Location (SW3-)	Screened Interval (feet bls)	2016 Mar. VOCs	2016 Sept. VOCs	2016 Sampling Rationale
MW0001	15-25	1	1(-)	ARZ monitoring well.
MW0005	15-25	1*		Eastern edge of ARZ (shallow zone). Monitor annually based on 2012 VC concentratoin exceeding GCTL.
MW0006	35-45	1*		Eastern edge of ARZ (intermediate zone). Monitor Annually based on 2012 VC concentrations exceeding GCTL.
MW0009	15-25	1	1	Upgradient LCP. Maximum TCE concentraton on site in 2012.
MW0020	35-45	1		LTM downgradient sentinel monitoring well.
MW0022	15-25			Southwestern edge of ARZ. Propose to discontinue sapmling. No detections since March 2014.
MW0024	35-45	1*		Along centerline of ARZ (intermediate zone). Monitor annually based on 2012 VC concentration exceeding NADC.
MW0025	35-45	1	1	Western edge of ARZ.
MW0026	35-45	1	1	Along centerline of ARZ (intermediate zone).
MW0027	27-37	1	1	Along centerline of ARZ.
MW0028	27-37	1	1	Downgradient of VC HCP (intermediate zone).
SW0001	NA	1	1	Surface water sample from ditch north of 5th Street.
SW0002	NA	1	1	Surface water sample from ditch south of southern ARZ.
SW0003	NA	1	1	Surface water sample from ditch west of southern ARZ.

bls - Below land surface.
VOCs - Volatile organic compounds.
GCTL - Groundwater Cleanup Target Level.
LTM - Long-term monitoring.
ARZ - Aggressive Remediation Zone.
TCE - Trichloroethene.
LCP - Low-Concentration Plume.
HCP - High-Concentration Plume.
VC - Vinyl chloride.
NA - Not applicable.
* - Proposed addition to current sampling plan.
(-) - Remove from sampling program if March 2016 results are less than GCTLs.

Tetra Tech NUS / FDEP Groundwater Sampling Sheet

SITE NAME: Supply Warehouse No. 3 (SW3)	SITE LOCATION: Kennedy Space Center (KSC), Florida	
LOCATION ID: SW3-MW0001	SAMPLE ID: SW3-MW0001-020.0-2016 0325 Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: 3 / 25 / 2016

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 5.60	CASING HEIGHT (feet als): -0.3	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als): 5.90	WELL SCREEN INTERVAL DEPTH (feet bls): 15 to 25

WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): 3/16	PURGE PUMP TYPE OR BAILER: Peristaltic Pump	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): 15	BOTTOM DEPTH (feet bls): 25

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

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
0.675 Liters (35 ft * 0.005) + 0.5L = 0.675L

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 20	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 20	PURGING INITIATED AT: 0835	PURGING ENDED AT: 0915	TOTAL VOLUME PURGED (Liters): 12

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
0835	0	0	300	5.60	PURGE INITIATED						
0845	3	3	300	5.64	4.24	23.98	2123	2.46	4.06	248.0	CLEAR
0850	1.5	4.5	300	5.64	4.16	23.77	2156	2.11	3.78	311.6	"
0855	1.5	6	300	5.63	4.14	23.85	2164	1.98	3.46	326.3	"
0900	1.5	7.5	300	5.63	4.12	24.05	2178	1.73	2.32	330.0	"
0905	1.5	9	300	5.63	4.11	24.07	2181	1.66	1.69	338.9	"
0910	1.5	10.5	300	5.64	4.11	24.08	2185	1.63	1.55	340.7	"
0915	1.5	12	300	5.64	4.11	24.10	2188	1.64	1.43	341.5	"

WELL CAPACITY (Liters Per Foot): 0.75" = 0.076; 1" = 0.15; 1.25" = 0.23; 2" = 0.61; 3" = 1.40; 4" = 2.46; 5" = 3.86; 6" = 5.57; 12" = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): 1/8" = 0.002; 3/16" = 0.005; 1/4" = 0.0098; 5/16" = 0.015; 3/8" = 0.023; 1/2" = 0.038; 5/8" = 0.06

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: K. Alex Murphy /Tetra Tech	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 0920	SAMPLING ENDED AT: 0925
PUMP OR TUBING DEPTH IN WELL (feet): 20	SAMPLE PUMP SM FLOW RATE (mL per minute): 100	TUBING MATERIAL CODE: Teflon	
FIELD DECONTAMINATION: Y (N)	FIELD-FILTERED: Y (N) FILTER SIZE: ____ µm Filtration Equipment Type: _____	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
(1)	3	CG	40 mL	HCl	NONE	< 2	SW-846 8260B (VOCS)	SM

REMARKS:

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

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

Tetra Tech NUS / FDEP Groundwater Sampling Sheet

SITE NAME: Supply Warehouse No. 3 (SW3)	SITE LOCATION: Kennedy Space Center (KSC), Florida	
LOCATION ID: SW3-~~MW0005~~ MW0005	SAMPLE ID: SW3-~~MW0005-040.0-2016~~ MW0005-020-20160324 Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: 03 / 24 / 2016

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 4.10	CASING HEIGHT (feet als): -0.3	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als): 4.40	WELL SCREEN INTERVAL DEPTH (feet bls): ~~25 to 45~~ 15 to 25

WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): 3/16	PURGE PUMP TYPE OR BAILER: Peristaltic Pump	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): ~~25~~ 20	BOTTOM DEPTH (feet bls): ~~45~~ 25

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

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
_____ Liters (35Ft * 0.005) + 0.52 = 0.6752

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 20	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 20	PURGING INITIATED AT: 1300	PURGING ENDED AT: 1325	TOTAL VOLUME PURGED (Liters): 7.5

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
1300	0	0	300	4.10	PURGE INITIATED						
1310	3.0	3.0	300	4.10	4.20	26.46	2438	4.60	19.3	272.1	CLEAR
1315	1.5	4.5	300	4.14	4.18	26.47	2543	3.50	14.65	289.5	CLEAR
1320	1.5	6.0	300	4.13	4.19	26.49	2572	3.66	11.5	286.5	CLEAR
1325	1.5	7.5	300	4.13	4.20	26.50	2583	3.69	9.96	286.7	CLEAR

WELL CAPACITY (Liters Per Foot): 0.75" = 0.076; 1" = 0.15; 1.25" = 0.23; 2" = 0.61; 3" = 1.40; 4" = 2.46; 5" = 3.86; 6" = 5.57; 12" = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): 1/8" = 0.002; 3/16" = 0.005; 1/4" = 0.0098; 5/16" = 0.015; 3/8" = 0.023; 1/2" = 0.038; 5/8" = 0.06

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: K. Alex Murphy /Tetra Tech	SAMPLER(S) SIGNATURES	SAMPLING INITIATED AT: 1330	SAMPLING ENDED AT: 1335
PUMP OR TUBING DEPTH IN WELL (feet): 20	SAMPLE PUMP SM FLOW RATE (mL per minute): 100	TUBING MATERIAL CODE: Teflon	
FIELD DECONTAMINATION: Y (N)	FIELD-FILTERED: Y (N) FILTER SIZE: ____ µm Filtration Equipment Type: _____	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
	3	CG	40 mL	HCl	NONE	< 2	SW-846 8260B (VOCS)	SM
	~~2~~	~~CG~~	~~40 mL~~	~~HCl~~	~~None~~	~~<2~~	~~RSK-175 (MEE)~~	~~SM~~

REMARKS:

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

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

Tetra Tech NUS / FDEP Groundwater Sampling Sheet

SITE NAME: Supply Warehouse No. 3 (SW3)	SITE LOCATION: Kennedy Space Center (KSC), Florida	
LOCATION ID: SW3-~~MW0005~~ MW0006	SAMPLE ID: SW3-~~MW0005-030.0~~ MW0006 040.0 2016 0324 Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: 03 / 24 / 2016

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 4.30	CASING HEIGHT (feet als): -0.3	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als): 4.60	WELL SCREEN INTERVAL DEPTH (feet bls): ~~15 to 25~~ 35-45	
WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): 3/16	PURGE PUMP TYPE OR BAILER: **Peristaltic Pump**	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): 15	BOTTOM DEPTH (feet bls): ~~25~~ 45

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

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
_____ Liters (~~35~~ FT * 0.005) + 0.5L = ~~0.675~~ 0.775L

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): ~~40~~ 40	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 40 ~~20~~	PURGING INITIATED AT: 1230	PURGING ENDED AT: 1250	TOTAL VOLUME PURGED (Liters): 6.0

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
1230	0	0	300	4.30	PURGE INITIATED						
1240	3.0	3.0	300	4.30	6.55	26.44	2857	3.16	11.4	-47.6	Clear
1245	1.5	4.5	300	4.32	6.57	26.41	2874	3.86	9.76	-57.4	Clear
1250	1.5	6.0	300	4.32	6.59	26.47	2885	3.10	7.45	-66.4	Clear

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.15; **1.25"** = 0.23; **2"** = 0.61; **3"** = 1.40; **4"** = 2.46; **5"** = 3.86; **6"** = 5.57; **12"** = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.06

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: K Alex Murphy /Tetra Tech	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 1255	SAMPLING ENDED AT: 1300
PUMP OR TUBING DEPTH IN WELL (feet): 40	SAMPLE PUMP SM FLOW RATE (mL per minute): 100	TUBING MATERIAL CODE: Teflon	
FIELD DECONTAMINATION: Y (N)	FIELD-FILTERED: Y (N) FILTER SIZE: ____ µm Filtration Equipment Type: _____	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
(1)	3	CG	40 mL	HCl	NONE	< 2	SW-846 8260B (VOCS)	SM
	~~2~~	~~CG~~	~~40 mL~~	~~HCl~~	~~None~~	~~<2~~	RSK175 (MEE)	SM

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

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

Tetra Tech NUS / FDEP Groundwater Sampling Sheet

SITE NAME: Supply Warehouse No. 3 (SW3)	SITE LOCATION: Kennedy Space Center (KSC), Florida	
LOCATION ID: SW3-MW0009	SAMPLE ID: SW3-MW0009-020.0-2016 0825 Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: 3 / 25 / 2016

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 6.00	CASING HEIGHT (feet als): -0.30	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als): 6.30	WELL SCREEN INTERVAL DEPTH (feet bls): 15 to 25	
WELL DIAMETER (inches):	TUBING DIAMETER (inches): 3/16	PURGE PUMP TYPE OR BAILER: Peristaltic Pump	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): 15	BOTTOM DEPTH (feet bls): 25

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

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
0.675 Liters (35 FT * 0.005) + 0.5 L = 0.675 L

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 20	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 20	PURGING INITIATED AT: 0735	PURGING ENDED AT: 0825	TOTAL VOLUME PURGED (Liters): 15

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
0735	0	0	300	6.00	PURGE INITIATED						
0805	9	9	300	6.00	5.38	22.69	182	2.95	30.1	120	CLEAR
0815	3	12	300	6.00	5.26	22.99	149	2.32	15.9	36.4	"
0820	1.5	13.5	300	6.01	5.28	23.00	148	2.31	15.6	38.0	"
0825	1.5	15.0	300	6.01	5.31	23.01	147	2.29	13.6	39.7	"

WELL CAPACITY (Liters Per Foot): 0.75" = 0.076; 1" = 0.15; 1.25" = 0.23; 2" = 0.61; 3" = 1.40; 4" = 2.46; 5" = 3.86; 6" = 5.57; 12" = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): 1/8" = 0.002; 3/16" = 0.005; 1/4" = 0.0098; 5/16" = 0.015; 3/8" = 0.023; 1/2" = 0.038; 5/8" = 0.06

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: K. Alex Murphy /Tetra Tech	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 0830	SAMPLING ENDED AT: 0835
PUMP OR TUBING DEPTH IN WELL (feet): 20	SAMPLE PUMP SM FLOW RATE (mL per minute): 100	TUBING MATERIAL CODE: Teflon	
FIELD DECONTAMINATION: Y (N)	FIELD-FILTERED: Y (N) FILTER SIZE: ____ µm Filtration Equipment Type: _____	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
(D)	3	CG	40 mL	HCl	NONE	< 2	SW-846 8260B (VOCS)	SM

REMARKS:

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

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

Tetra Tech NUS / FDEP Groundwater Sampling Sheet

SITE NAME: Supply Warehouse No. 3 (SW3)	SITE LOCATION: Kennedy Space Center (KSC), Florida	
LOCATION ID: SW3-MW0020	SAMPLE ID: SW3-MW0020-040.0-20160325 Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: 03 / 25 / 2016

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 7.00	CASING HEIGHT (feet als): 3	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als): 4.00	WELL SCREEN INTERVAL DEPTH (feet bls): 35 to 45	
WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): 3/16	PURGE PUMP TYPE OR BAILER: Peristaltic Pump	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): 35	BOTTOM DEPTH (feet bls): 45

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

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
1L Liters (55 ft * 0.005) + 0.5L = 1L

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 40	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 40	PURGING INITIATED AT: 1305	PURGING ENDED AT: 1325	TOTAL VOLUME PURGED (Liters): 6

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
1305	0	0	300	7.00	Purge	Initiated					
1315	3	3	300	7.00	7.00	24.11	1059	1.64	19.2	-45.9	clear
1320	1.5	4.5	300	7.00	7.00	24.08	1050	1.53	12.4	-46.6	"
1325	1.5	6	300	7.00	7.00	24.08	1046	1.45	6.12	-37.4	"

WELL CAPACITY (Liters Per Foot): 0.75" = 0.076; 1" = 0.15; 1.25" = 0.23; 2" = 0.61; 3" = 1.40; 4" = 2.46; 5" = 3.86; 6" = 5.57; 12" = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): 1/8" = 0.002; 3/16" = 0.005; 1/4" = 0.0098; 5/16" = 0.015; 3/8" = 0.023; 1/2" = 0.038; 5/8" = 0.06

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: K. Alex Murphy /Tetra Tech	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 1330	SAMPLING ENDED AT: 1335
PUMP OR TUBING DEPTH IN WELL (feet): 40	SAMPLE PUMP SM FLOW RATE (mL per minute): 100	TUBING MATERIAL CODE: Teflon	
FIELD DECONTAMINATION: Y (N)	FIELD-FILTERED: Y (N) FILTER SIZE: ____ µm Filtration Equipment Type: _____	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
(1)	3	CG	40 mL	HCl	NONE	< 2	SW-846 8260B (VOCS)	SM

REMARKS:

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

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

Tetra Tech NUS / FDEP Groundwater Sampling Sheet

SITE NAME: Supply Warehouse No. 3 (SW3)	SITE LOCATION: Kennedy Space Center (KSC), Florida	
LOCATION ID: SW3-MW0024	SAMPLE ID: SW3-MW0024-040.0-2016 0324 Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: 03 / 24 / 2016

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 4.10	CASING HEIGHT (feet als): -0.3	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als): 4.40	WELL SCREEN INTERVAL DEPTH (feet bls): 35 to 45

WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): 3/16	PURGE PUMP TYPE OR BAILER: Peristaltic Pump	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): 35	BOTTOM DEPTH (feet bls): 45

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

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
_____ Liters (55 x 0.005) + 0.5L = 0.775L

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 40	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 40	PURGING INITIATED AT: 1510	PURGING ENDED AT: 1540	TOTAL VOLUME PURGED (Liters): 9.0

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
1510	0	0	300	4.10	PURGE INITIATED						
1525	4.5	4.5	300	4.14	6.63	25.56	2441	1.49	32.9	-79.6	Grey
1530	1.5	6.0	300	4.14	6.62	25.59	2473	1.43	18.2	-73.7	clear
1535	1.5	7.5	300	4.14	6.62	25.68	2481	1.54	12.1	-79.3	clear
1540	1.5	9.0	300	4.14	6.62	25.58	2478	1.44	9.7	-76.4	clear

WELL CAPACITY (Liters Per Foot): 0.75" = 0.076; 1" = 0.15; 1.25" = 0.23; 2" = 0.61; 3" = 1.40; 4" = 2.46; 5" = 3.86; 6" = 5.57; 12" = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): 1/8" = 0.002; 3/16" = 0.005; 1/4" = 0.0098; 5/16" = 0.015; 3/8" = 0.023; 1/2" = 0.038; 5/8" = 0.06

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Kelly Murphy /Tetra Tech	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 1545	SAMPLING ENDED AT: 1550
PUMP OR TUBING DEPTH IN WELL (feet): 40	SAMPLE PUMP SM FLOW RATE (mL per minute): 100	TUBING MATERIAL CODE: Teflon	
FIELD DECONTAMINATION: Y (N)	FIELD-FILTERED: Y (N) FILTER SIZE: ____ µm Filtration Equipment Type:	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
(1)	3	CG	40 mL	HCl	NONE	< 2	SW-846 8260B (VOCS)	SM

REMARKS:

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

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

Tetra Tech NUS / FDEP Groundwater Sampling Sheet

SITE NAME: Supply Warehouse No. 3 (SW3)	SITE LOCATION: Kennedy Space Center (KSC), Florida	
LOCATION ID: SW3-MW0025	SAMPLE ID: SW3-MW0025-040.0-2016 0325 Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: 3 / 25 / 2016

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 8.65	CASING HEIGHT (feet als): 3	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als): 5.65	WELL SCREEN INTERVAL DEPTH (feet bls): 35 to 45

WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): 3/16	PURGE PUMP TYPE OR BAILER: Peristaltic Pump	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): 35	BOTTOM DEPTH (feet bls): 45

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

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
_____ Liters (55FT * 0.005) + 0.5L = 1L

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 40	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 40	PURGING INITIATED AT: 0930	PURGING ENDED AT: 1015	TOTAL VOLUME PURGED (Liters): 13.5

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
0930	0	0	300	8.65	PURGE INITIATED						
0940	3	3	300	8.70	6.90	23.63	729	2.12	3.22	-70.8	clear
0945	1.5	4.5	300	8.70	6.91	23.69	663	1.89	3.14	-69.5	"
0950	1.5	6	300	8.70	6.91	24.10	655	1.81	3.02	-62.1	"
0955	1.5	7.5	300	8.70	6.91	24.16	656	1.79	2.78	-58.6	"
1005	3.0	10.5	300	8.70	6.89	24.46	663	1.70	2.16	-46.8	"
1010	1.5	12	300	8.70	6.90	24.50	671	1.69	2.06	-44.7	"
1015	1.5	13.5	300	8.70	6.92	24.49	670	1.70	1.95	-46.3	"

WELL CAPACITY (Liters Per Foot): 0.75" = 0.076; 1" = 0.15; 1.25" = 0.23; 2" = 0.61; 3" = 1.40; 4" = 2.46; 5" = 3.86; 6" = 5.57; 12" = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): 1/8" = 0.002; 3/16" = 0.005; 1/4" = 0.0098; 5/16" = 0.015; 3/8" = 0.023; 1/2" = 0.038; 5/8" = 0.06

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: K. Alex Murphy /Tetra Tech	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 1020	SAMPLING ENDED AT: 1025
PUMP OR TUBING DEPTH IN WELL (feet):	SAMPLE PUMP SM FLOW RATE (mL per minute): 100	TUBING MATERIAL CODE: Teflon	
FIELD DECONTAMINATION: Y (N)	FIELD-FILTERED: Y (N) FILTER SIZE: ____ µm Filtration Equipment Type:	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
(1)	3	CG	40 mL	HCl	NONE	< 2	SW-846 8260B (VOCS)	SM

REMARKS:

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

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

Tetra Tech NUS / FDEP Groundwater Sampling Sheet

SITE NAME: Supply Warehouse No. 3 (SW3)	SITE LOCATION: Kennedy Space Center (KSC), Florida	
LOCATION ID: SW3-MW0026	SAMPLE ID: SW3-MW0026-040.0-2016 0325 Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: 3 / 25 / 2016

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 6.2	CASING HEIGHT (feet als): -0.5	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als): 6.5	WELL SCREEN INTERVAL DEPTH (feet bls): 35 to 45

WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): 3/16	PURGE PUMP TYPE OR BAILER: Peristaltic Pump	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): 35	BOTTOM DEPTH (feet bls): 45

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

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
1 L Liters (.55 or + 0.005) + 0.52 = 1 L

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 40	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 40	PURGING INITIATED AT: 1030	PURGING ENDED AT: 1050	TOTAL VOLUME PURGED (Liters): 6

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
1030	0	0	300	6.2	PURGE INITIATED						
1040	3	3	300	6.22	6.76	25.10	2436	1.43	6.72	-46.2	Clear
1045	1.5	4.5	300	6.22	6.71	25.15	2419	1.36	5.34	-47.3	clear
1050	1.5	6	300	6.22	6.71	25.20	2420	1.30	4.45	-45.8	Clear

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.15; **1.25"** = 0.23; **2"** = 0.61; **3"** = 1.40; **4"** = 2.46; **5"** = 3.86; **6"** = 5.57; **12"** = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.06

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: K. Alex Murphy /Tetra Tech	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 1055	SAMPLING ENDED AT: 1100
PUMP OR TUBING DEPTH IN WELL (feet): 40	SAMPLE PUMP SM FLOW RATE (mL per minute): 100	TUBING MATERIAL CODE: Teflon	
FIELD DECONTAMINATION: Y (N)	FIELD-FILTERED: Y (N) FILTER SIZE: ____ µm Filtration Equipment Type: _____	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
(1)	3	CG	40 mL	HCl	NONE	< 2	SW-846 8260B (VOCS)	SM

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

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

Tetra Tech NUS / FDEP Groundwater Sampling Sheet

SITE NAME: Supply Warehouse No. 3 (SW3)	SITE LOCATION: Kennedy Space Center (KSC), Florida	
LOCATION ID: SW3-MW0027	SAMPLE ID: SW3-MW0027-032.0-20160325 Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: 3 / 25 / 2016

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 8.6	CASING HEIGHT (feet als): 3	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als): 5.6	WELL SCREEN INTERVAL DEPTH (feet bls): 27 to 37

WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): 3/16	PURGE PUMP TYPE OR BAILER: Peristaltic Pump	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): 27	BOTTOM DEPTH (feet bls): 37

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

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
1L Liters (47FT * 0.005) + 0.5L ≈ 1L

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 32	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 32	PURGING INITIATED AT: 1105	PURGING ENDED AT: 1215	TOTAL VOLUME PURGED (Liters): 21

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
1105	0	0	300	8.6	PURGE	INITIATED					
1115	3	3	300	8.62	6.58	26.21	2734	1.65	58.2	-22.8	CLEAR
1125	3	6	300	8.62	6.55	26.34	2672	1.37	47.0	-11.7	"
1135	3	9	300	8.62	6.57	26.22	2733	1.45	43.2	-8.4	"
1205	9	18	300	8.64	6.55	26.08	2716	1.20	61.6	-7.6	"
1210	1.5	19.5	300	8.64	6.53	26.06	2718	1.22	65.9	-7.5	"
1215	1.5	21.0	300	8.64	6.56	26.06	2719	1.20	63.0	-7.6	"

WELL CAPACITY (Liters Per Foot): 0.75" = 0.076; 1" = 0.15; 1.25" = 0.23; 2" = 0.61; 3" = 1.40; 4" = 2.46; 5" = 3.86; 6" = 5.57; 12" = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): 1/8" = 0.002; 3/16" = 0.005; 1/4" = 0.0098; 5/16" = 0.015; 3/8" = 0.023; 1/2" = 0.038; 5/8" = 0.06

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: K. Alex Murphy /Tetra Tech	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 1220	SAMPLING ENDED AT: 1225
PUMP OR TUBING DEPTH IN WELL (feet): 32.0	SAMPLE PUMP SM FLOW RATE (mL per minute): 100	TUBING MATERIAL CODE: Teflon	
FIELD DECONTAMINATION: Y (N)	FIELD-FILTERED: Y (N) FILTER SIZE: ____ µm Filtration Equipment Type: _____	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
(N)	3	CG	40 mL	HCl	NONE	< 2	SW-846 8260B (VOCS)	SM

REMARKS:

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

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

Tetra Tech NUS / FDEP Groundwater Sampling Sheet

SITE NAME: Supply Warehouse No. 3 (SW3)	SITE LOCATION: Kennedy Space Center (KSC), Florida	
LOCATION ID: SW3-MW0028	SAMPLE ID: SW3-MW0028-032.0-20160325 Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: 3 / 25 / 2016

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 8.45	CASING HEIGHT (feet als): 3	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als): 5.45	WELL SCREEN INTERVAL DEPTH (feet bls): 27 to 37	
WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): 3/16	PURGE PUMP TYPE OR BAILER: Peristaltic Pump	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): 27	BOTTOM DEPTH (feet bls): 37

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

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
_____ Liters (50 ft * 0.005) + 0.5L ≈ 1L

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 32	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 32	PURGING INITIATED AT: 1225	PURGING ENDED AT: 1245	TOTAL VOLUME PURGED (Liters): 6

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
1225	0	0	300	8.45	PUMP INITIATED						
1235	3	3	300	8.46	6.37	24.73	2693	1.44	19.4	-70.8	Clear
1240	1.5	4.5	300	8.45	6.41	24.76	2700	1.29	18.2	-64.6	"
1245	1.5	6	300	8.45	6.37	24.80	2705	1.24	17.8	-65.1	"

WELL CAPACITY (Liters Per Foot): 0.75" = 0.076; 1" = 0.15; 1.25" = 0.23; 2" = 0.61; 3" = 1.40; 4" = 2.46; 5" = 3.86; 6" = 5.57; 12" = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): 1/8" = 0.002; 3/16" = 0.005; 1/4" = 0.0098; 5/16" = 0.015; 3/8" = 0.023; 1/2" = 0.038; 5/8" = 0.06

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: E. Alex Murphy /Tetra Tech	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 1250	SAMPLING ENDED AT: 1255
PUMP OR TUBING DEPTH IN WELL (feet):	SAMPLE PUMP SM FLOW RATE (mL per minute): 100	TUBING MATERIAL CODE: Teflon	
FIELD DECONTAMINATION: Y (N)	FIELD-FILTERED: Y (N) FILTER SIZE: ____ µm Filtration Equipment Type: _____	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
(1)	3	CG	40 mL	HCl	NONE	< 2	SW-846 8260B (VOCS)	SM
	2	CG	40 mL	HCl	None	<2	RSK 175 (MEE)	

REMARKS:

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

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

Tetra Tech NUS, Inc.

SURFACE WATER SAMPLE LOG SHEET

Project Site Name: NASA KSC SW3
Project No.: 112g07580

Sample ID No.: SW3-SW0001-000.5-2016 0325
Sample Location: SW3-SW0001
Sampled By: A. Murphy
C.O.C. No.:

[] Stream
[] Spring
[] Pond
[] Lake
[X] Other: SWALE
[] QA Sample Type:

Type of Sample:
[] Low Concentration
[] High Concentration

SAMPLING DATA:

Date: 3/25/2016	Color (Visual)	pH (S.U.)	S.C. (µS/cm)	Temp. (°C)	Turbidity (NTU)	DO (mg/l)	Salinity (%)	Other ORP
Time: 1345								
Depth: 0-0.5	Clear	6.29	58	29.07	3.21	6.29	0.02	115.3
Method: GRAB								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOC via 8260	HCl	40 ml Glass	YES

OBSERVATIONS / NOTES:

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s):

Tetra Tech NUS, Inc.

SURFACE WATER SAMPLE LOG SHEET

Project Site Name: NASA KSC SW3
Project No.:

[] Stream
[] Spring
[] Pond
[] Lake
[] Other:
[] QA Sample Type:

Sample ID No.: SW3-SW0002-000.5-2016 0329
Sample Location: SW3-SW0002
Sampled By: A. Murphy
C.O.C. No.:

Type of Sample:
[] Low Concentration
[] High Concentration

SAMPLING DATA:

Date: 3/25/2016	Color (Visual)	pH (S.U.)	S.C. (µS/cm)	Temp. (°C)	Turbidity (NTU)	DO (mg/l)	Salinity (%)	Other orp
Time: 1415								
Depth: 0-0.5	Clear	6.88	196	22.41	2.56	3.92	0.10	106.0
Method: Grab								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOC via 8260	HCl	40 ml Glass	

OBSERVATIONS / NOTES:

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s):

Tetra Tech NUS, Inc.

SURFACE WATER SAMPLE LOG SHEET

Project Site Name: NASA KSC SW3
Project No.: 112g07580

[] Stream
[] Spring
[] Pond
[] Lake
[X] Other: Surface
[] QA Sample Type:

Sample ID No.: SW3-SW0003-000.5-2016 0325
Sample Location: SW3-SW0003
Sampled By: A. Murphy
C.O.C. No.:

Type of Sample:
[] Low Concentration
[] High Concentration

SAMPLING DATA:

Date: 3/25/2016	Color (Visual)	pH (S.U.)	S.C. (µS/cm)	Temp. (°C)	Turbidity (NTU)	DO (mg/l)	Salinity (%)	Other ORP
Time: 1400								
Depth: 0-0.5	clear	6.66	181	22.00	3.18	4.04	0.09	104.9
Method: Grab								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOC via 8260	HCl	40 ml Glass	

OBSERVATIONS / NOTES:

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s):

Tetra Tech, Inc. | CHAIN OF CUSTODY | NUMBER No. 0070 | PAGE 1 OF 1

PROJECT NO:	FACILITY:	PROJECT MANAGER	PHONE NUMBER	LABORATORY NAME AND CONTACT:
112g07584	NASA KSC SW3	Chris Neumann	321 636 6470	Alltest
SAMPLERS (SIGNATURE)		FIELD OPERATIONS LEADER: Alex Murphy	PHONE NUMBER: 321 292 0842	ADDRESS: 4405 Vineland Road
		CARRIER/WAYBILL NUMBER		CITY, STATE: Orlando, FL 32811

STANDARD TAT ☒ 10
RUSH TAT ☐
☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

DATE YEAR	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	CONTAINER TYPE PLASTIC (P) or GLASS (G): G	PRESERVATIVE USED: HCl	TYPE OF ANALYSIS: VOCs 8260B	COMMENTS
24	1255	SW3-MW0006-040.0-20160324		35	45	GW	G	3			X	
"	1330	SW3-MW0005-020.0-20160324		15	25	GW	G	3			X	
"	1545	SW3-MW0024-040.0-20160324		35	45	GW	G	3			X	
25	0830	SW3-MW0009-020.0-20160325		15	25	GW	G	3			X	
	0920	SW3-MW0001-020.0-20160325		15	25	GW	G	3			X	
	1020	SW3-MW0025-040.0-20160325		35	45	GW	G	3			X	
	1055	SW3-MW0026-040.0-20160325		35	45	GW	G	3			X	
	1220	SW3-MW0027-032.0-20160325		27	37	GW	G	3			X	
	1250	SW3-MW0028-032.0-20160325		27	37	GW	G	3			X	
	1330	SW3-MW0026-046.0-20160325		35	45	GW	G	3			X	
	1345	SW3-SW0001-000.5-20160325		0	0.5	GW	G	3			X	
	1400	SW3-SW0003-000.5-20160325		0	0.5	GW	G	3			X	
	1415	SW3-SW0002-000.5-20160325		0	0.5	GW	G	3			X	

	DATE	TIME		DATE	TIME
1. RELINQUISHED BY	3/28/2016	1415	1. RECEIVED BY	03/28/16	1415
2. RELINQUISHED BY	DATE	TIME	2. RECEIVED BY	DATE	TIME
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME

COMMENTS

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY)

4/02R
FORM NO. TtNUS-001

Tetra Tech, Inc. | **CHAIN OF CUSTODY** | **NUMBER** No. 0070 | **PAGE** 1 **OF** 1

PROJECT NO: 112c07584	**FACILITY:** NASA KSC SWMU 3	**PROJECT MANAGER** Chris Neumann	**PHONE NUMBER** 321 636 6470	**LABORATORY NAME AND CONTACT:** Accutest
SAMPLERS (SIGNATURE)		**FIELD OPERATIONS LEADER** Alex Murphy	**PHONE NUMBER** 321 292 0842	**ADDRESS** 41105 Vineland Road
		CARRIER/WAYBILL NUMBER		**CITY, STATE** Orlando, FL 32811

STANDARD TAT ☒ 7d
RUSH TAT ☐ ☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

DATE YEAR 03/2016	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	CONTAINER TYPE PLASTIC (P) or GLASS (G): G	PRESERVATIVE USED: HCl	TYPE OF ANALYSIS: VOCs 8260B	COMMENTS
24	1245	SW3 MW0026-0460-20160324	24	35 45	24	GW	G	3		x		
	1330	SW3 MW0026-0260-20160324	24	15	25	GW	G	3		x		
	1545	SW3 MW0024-0400-20160324	24	35	45	GW	G	3		x		
25	0830	SW3 MW0031-0280-20160325	25	15	25	GW	G	3		x		
	0920	SW3-MW0001-0260-20160325	25	15	25	GW	G	3		x		
	1020	SW3-MW0025-0480-20160325	25	35	45	GW	G	3		x		
	1055	SW3-MW0026-0480-20160325	25	35	45	GW	G	3		x		
	1220	SW3-MW0027-0370-20160325	25	27	37	GW	G	3		x		
	1250	SW3-MW0025-0370-20160325	25	27	37	GW	G	3		x		
	1330	SW3-MW0026-0460-20160325	25	35	45	GW	G	3		x		
	1345	SW3-SW0001-0005-20160325	25	0	05	GW	G	3		x		
	1400	SW3-SW0003-0005-20160325	25	0	05	GW	G	3		x		
	1415	SW3-SW0002-0005-20160325	25	0	05	GW	G	3		x		

	DATE	TIME		DATE	TIME
1. RELINQUISHED BY	3/24/2016	1415	1. RECEIVED BY		
2. RELINQUISHED BY			2. RECEIVED BY		
3. RELINQUISHED BY			3. RECEIVED BY		

COMMENTS

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY)

4/02R
FORM NO. TtNUS-001

09/10/2016 POL/SW3 1126071 / 1126075&4

Personnel : Chuck Sorden (CS) Geologist TT.

weather : Sunny 80°F

PPE : Level D

objective : Conduct POL/SW3 performance monitoring Sampling

0730	CS on site; Calibrating TSI/Lamotte (see Cal Sheets); daily prep		
0935	Purging POL-MW0031I		
0950	Purging Complete		
0955	Sample Collected	POL-MW0031I-027.5-20160910	8260B
1010	Purging POL-MW0029S		
1025	Purging Complete		
1030	Sample Collected	POL-MW0029S-010.6-20160910	8260B
1045	Purging POL-MW0026S		
1100	Purging Complete; well purged dry; recharge at sampling per FS2202 Section 3.7		
1115	Sample collected	POL-MW0026S-010.0-20160910	8260B
1125	Purging POL-MW0009I		
1140	Purging Complete		
1145	Sample Collected	POL-MW0009I-027.5-20160910	8260B
1155	Purging POL-MW0009S		
1210	Purging Complete		
1215	Sample Collected	POL-MW0009S-009.5-20160910	8260B
1230	Purging POL-MW0021S		
1245	Purging Complete		
1250	Sample collected	POL-MW0021S-010.5-20160910	8260B
1305	Purging POL-MW0034S		
1330	Purging Complete		
1335	Sample Collected	POL-MW0034S-010.0-20160910	8260B
	-POL complete; Begin Sampling SW3		
1350	Purging SW3-MW0007		
1405	Purging Complete		
1410	Sample Collected	SW3-MW0007-020.0-20160910	8260B
1420	Purging SW3-MW002C		
1435	Purging Complete		
1440	Sample Collected	SW3-MW002C-040.0-20160910	8260B
1455	Purging SW3-MW002S		
1510	Purging Complete		
1515	Sample Collected	SW3-MW002S-040.0-20160910	8260B
1535	Purging SW3-MW0027		
1550	Purging Complete		
1555	Sample Collected	SW3-MW0027-032.0-20160910	8260B
1610	Purging SW3-MW002S		

09/10/16

Scale: 1 square =

09/10/16 POL / SW3 1126071C1 / 1126071584

1625	Purging Complete		
1630	Sample Collected	SW3-MW0028-032.0-20160910	8260B
1650	Sample Collected	SW3-SW0002-000.5-20160910	8260B
1730	Sample Collected	SW3-SW0003-000.5-20160910	8260B

-Sampling Complete; Continuing cleanup and IDW management

1800 IDW placed in Drum # 207624 on Pallet # 207623; Site Secured; CS offsite

C.S.

09/10/16

Scale: 1 square = _____

YSI 556 EQUIPMENT CALIBRATION SHEET

Tetra Tech, Inc.

PROJECT NAME : Paint and Oil Locker/Supply Warehouse #3

SITE NAME: POL/SW3

PROJECT No.:

INSTRUMENT NAME/MODEL: YSI 556 MPS

MANUFACTURER: YSI

SERIAL NUMBER: 12A 100316

761.9

Date of Calibration	Person Performing Calibration	pH			Cond.	Temp.	Dissolved Oxyden	ORP	Calibration Standard (Lot#/Expiration Date)	Comments
(mm/dd/yy)	**(Name)**	**(S.U.)**			**(µS/cm)**	**(Celsius)**	**(%)**	**(mV)**		
09/10/16	C. Sorden	4.02 4.0	6.95 7.0	10.02 10.0	1420 1413	26.80	98.1 100.2	244.5 240	Lot# 2508845 Exp.Date: 7/31/17	Ph 4.0
		4.0	7.0	10.0					Lot# 2508700 Exp.Date: 7/31/17	Ph 7.0
		4.0	7.0	10.0					Lot# 2507895 Exp.Date: 1/31/17	Ph 10.0
		4.0	7.0	10.0					Lot# 8832 Exp.Date: 4/30/20	ORP -240 mV
		4.0	7.0	10.0					Lot# SGI 099 Exp.Date: 9/30/16	Conductivity -1413 µS/cm
		4.0	7.0	10.0						
		4.0	7.0	10.0						
		4.0	7.0	10.0						
		4.0	7.0	10.0						
		4.0	7.0	10.0						
		4.0	7.0	10.0						
		4.0	7.0	10.0						
		4.0	7.0	10.0						
		4.0	7.0	10.0						
		4.0	7.0	10.0						

LAMOTTE TURBIDITY METER CALIBRATION LOG

Tetra Tech NUS, Inc.

PROJECT NAME : Painted Oil Locker / Supply Warehouse #3
INSTRUMENT NAME/MODEL: Lamotte 2020we Turbidimeter

SITE NAME: POL/SW3
MANUFACTURER: Lamotte

PROJECT No.:
SERIAL NUMBER: 5213-0115

Date of Calibration	Instrument I.D. Number	Person Performing Calibration	Instrument Settings		Instrument Readings		Calibration Standard (Lot No.)	Remarks and Comments
			Pre-Calibration	Post-Calibration	Pre-Calibration	Post-Calibration		
(mm/dd/yy)	(Number)	(Name)	Nephelometric Turbidity Units (NTUs)				(Number)	
09/10/16	—	C. Sorden	1.0	1.0	0.77	1.0	—	
			10.0	10.0	10.11	10.0		

Tetra Tech, Inc. CHAIN OF CUSTODY | NUMBER No. 0816 | PAGE 1 OF 1

PROJECT NO: 112G07584	FACILITY: KSC-SW3	PROJECT MANAGER Chris Neumann	PHONE NUMBER (412) 802-7756	LABORATORY NAME AND CONTACT: ENCO-Kristin Dilnicki
SAMPLERS (SIGNATURE)		FIELD OPERATIONS LEADER Chuck Soider	PHONE NUMBER (321) 541-7580	ADDRESS 10775 Central Park Dr.
		CARRIER/WAYBILL NUMBER		CITY, STATE Orlando, FL

STANDARD TAT ☒
RUSH TAT ☐
☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

DATE YEAR 2016	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	CONTAINER TYPE PLASTIC (P) or GLASS (G)	PRESERVATIVE USED	TYPE OF ANALYSIS: SW-846 8260B VOCs HCl	COMMENTS
09/6	1410	SW3-MW0039-020.0-20160910		15	25	GW	G	3	G	HCl	X	Cool to 4°C
	1440	SW3-MW0026-040.0-20160910		35	45							
	1515	SW3-MW0025-040.0-20160910		35	45							
	1555	SW3-MW0027-032.0-20160910		27	37							
	1630	SW3-MW0028-032.0-20160910		27	37	GW						
	1650	SW3-SW0002-000.5-20160910		0.0	0.5	SW						
09/10	1730	SW3-SW0003-000.5-20160910		0.0	0.5	SW	G	3	G	HCl	X	

	DATE	TIME		DATE	TIME
1. RELINQUISHED BY	09/12/16	1515	1. RECEIVED BY	9/12/16	1515
2. RELINQUISHED BY	DATE	TIME	2. RECEIVED BY	DATE	TIME
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME

COMMENTS

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY)

4/02R
FORM NO. TtNUS-001

Tetra Tech NUS / FDEP Groundwater Sampling Sheet

SITE NAME: **Supply Warehouse No. 3 (SW3)**	SITE LOCATION: **Kennedy Space Center (KSC), Florida**	
LOCATION ID: **SW3-MW0009**	SAMPLE ID: **SW3-MW0009-020.0-2016**0910 Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: 09 / 10 / **2016**

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 6.54	CASING HEIGHT (feet als): NA	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als): NA	WELL SCREEN INTERVAL DEPTH (feet bls): **15 to 25**	
WELL DIAMETER (inches): 3/4	TUBING DIAMETER (inches): **3/16**	PURGE PUMP TYPE OR BAILER: **Peristaltic Pump**	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): **15**	BOTTOM DEPTH (feet bls): **25**

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

EQUIPMENT VOLUME PURGE: **1 EQUIPMENT VOL.** = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
0.63 Liters (0.005 x 30) + 0.475 = 0.63

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 20	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 20	PURGING INITIATED AT: 1350	PURGING ENDED AT: 1405	TOTAL VOLUME PURGED (Liters): 2.25

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
1400	1.5	1.5	150	6.73	5.18	26.35	149	0.30	17.5	76.4	yellow
1402	0.3	1.8	150	6.73	5.17	26.34	150	0.26	15.8	76.4	yellow
1405	0.45	2.25	150	6.73	5.17	26.30	152	0.23	13.1	76.3	yellow
1410	Sample	Collected									

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.15; **1.25"** = 0.23; **2"** = 0.61; **3"** = 1.40; **4"** = 2.46; **5"** = 3.86; **6"** = 5.57; **12"** = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.06

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Charles Sereden /Tetra Tech	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 1410	SAMPLING ENDED AT: 1415
PUMP OR TUBING DEPTH IN WELL (feet): 20	SAMPLE PUMP SM FLOW RATE (mL per minute): 100	TUBING MATERIAL CODE: Teflon	
FIELD DECONTAMINATION: (Y) N	FIELD-FILTERED: Y (N) FILTER SIZE: ____ µm Filtration Equipment Type: _____	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
	3	CG	40 mL	HCl	NONE	< 2	SW-846 8260B (VOCS)	SM

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

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

Tetra Tech NUS / FDEP Groundwater Sampling Sheet

SITE NAME: **Supply Warehouse No. 3 (SW3)**	SITE LOCATION: **Kennedy Space Center (KSC), Florida**	
LOCATION ID: **SW3-MW0025**	SAMPLE ID: **SW3-MW0025-040.0-2016** 0910 Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: 09 / 10 / 2016

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 9.22	CASING HEIGHT (feet als): NA	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als): NA	WELL SCREEN INTERVAL DEPTH (feet bls): **35 to 45**	
WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): **3/16**	PURGE PUMP TYPE OR BAILER: **Peristaltic Pump**	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): **35**	BOTTOM DEPTH (feet bls): **45**

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

EQUIPMENT VOLUME PURGE: **1 EQUIPMENT VOL.** = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
0.74 Liters (0.005 x 53) + 0.475 = 0.74

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 40	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 40	PURGING INITIATED AT: 1455	PURGING ENDED AT: 1510	TOTAL VOLUME PURGED (Liters): 2.25

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
1505	1.5	1.5	150	9.24	6.84	26.60	807	0.26	1.72	-59.4	clear
1507	0.3	1.8	150	9.24	6.83	26.74	805	0.26	1.34	-59.9	clear
1510	0.45	2.25	150	9.24	6.83	26.71	806	0.23	0.95	-60.6	clear
1515	Sample	Collected									

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.15; **1.25"** = 0.23; **2"** = 0.61; **3"** = 1.40; **4"** = 2.46; **5"** = 3.86; **6"** = 5.57; **12"** = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.06

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Charles Sorden /Tetra Tech	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 1515	SAMPLING ENDED AT: 1520
PUMP OR TUBING DEPTH IN WELL (feet): 40	SAMPLE PUMP SM FLOW RATE (mL per minute): 100	TUBING MATERIAL CODE: Teflon	
FIELD DECONTAMINATION: (Y) N	FIELD-FILTERED: Y (N) FILTER SIZE: ____ µm Filtration Equipment Type:	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
	3	CG	40 mL	HCl	NONE	< 2	SW-846 8260B (VOCS)	SM

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

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

Tetra Tech NUS / FDEP Groundwater Sampling Sheet

SITE NAME: **Supply Warehouse No. 3 (SW3)**	SITE LOCATION: **Kennedy Space Center (KSC), Florida**	
LOCATION ID: **SW3-MW0026**	SAMPLE ID: **SW3-MW0026-040.0-2016 0910** Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: 01 / 10 / 2016

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 6.85	CASING HEIGHT (feet als): N/A	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als): N/A	WELL SCREEN INTERVAL DEPTH (feet bls): **35 to 45**	
WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): **3/16**	PURGE PUMP TYPE OR BAILER: **Peristaltic Pump**	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): **35**	BOTTOM DEPTH (feet bls): **45**

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

EQUIPMENT VOLUME PURGE: **1 EQUIPMENT VOL.** = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
0.73 Liters (0.005x 50)+0.475=0.73

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 40	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 40	PURGING INITIATED AT: 1420	PURGING ENDED AT: 1435	TOTAL VOLUME PURGED (Liters): 2.25

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
1430	1.5	1.5	150	6.86	6.55	26.95	2245	0.36	3.39	-12.2	Clear
1432	0.3	1.8	150	6.86	6.56	26.98	2245	0.33	1.87	~~-12.5~~ -12.3	clear
1435	0.45	2.25	150	6.86	6.58	26.95	2244	0.28	1.02	-15.7	clear
1440	Sample Collected										

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.15; **1.25"** = 0.23; **2"** = 0.61; **3"** = 1.40; **4"** = 2.46; **5"** = 3.86; **6"** = 5.57; **12"** = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.06

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Charles Sarden /Tetra Tech	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 1440	SAMPLING ENDED AT: 1445
PUMP OR TUBING DEPTH IN WELL (feet): 40	SAMPLE PUMP SM FLOW RATE (mL per minute): 100	TUBING MATERIAL CODE: Teflon	
FIELD DECONTAMINATION: (Y) N	FIELD-FILTERED: Y (N) FILTER SIZE: ____ µm Filtration Equipment Type:	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
	3	CG	40 mL	HCl	NONE	< 2	SW-846 8260B (VOCS)	SM

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

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

Tetra Tech NUS / FDEP Groundwater Sampling Sheet

SITE NAME: **Supply Warehouse No. 3 (SW3)**	SITE LOCATION: **Kennedy Space Center (KSC), Florida**	
LOCATION ID: **SW3-MW0027**	SAMPLE ID: **SW3-MW0027-032.0-2016 0910** Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: 09 / 10 / 2016

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 9.44	CASING HEIGHT (feet als): NA	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als): NA	WELL SCREEN INTERVAL DEPTH (feet bls): **27 to 37**

WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): **3/16**	PURGE PUMP TYPE OR BAILER: **Peristaltic Pump**	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): **27**	BOTTOM DEPTH (feet bls): **37**

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

EQUIPMENT VOLUME PURGE: **1 EQUIPMENT VOL.** = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
0.70 Liters (0.005 X 45) + 0.475 = 0.70

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 32	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 32	PURGING INITIATED AT: 1535	PURGING ENDED AT: 1550	TOTAL VOLUME PURGED (Liters): 2.25

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
1545	1.5	1.5	150	9.47	6.56	28.26	2471	1.03	14.7	3.5	clear
1547	0.3	1.8	150	9.47	6.56	28.29	2474	1.07	11.1	4.8	Clear
1550	0.45	2.25	150	9.47	6.56	28.35	2479	1.14	10.26	4.5	Clear
1555	Sample Collected										

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.15; **1.25"** = 0.23; **2"** = 0.61; **3"** = 1.40; **4"** = 2.46; **5"** = 3.86; **6"** = 5.57; **12"** = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.06

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Charles Sorden /Tetra Tech	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 1555	SAMPLING ENDED AT: 1600
PUMP OR TUBING DEPTH IN WELL (feet): 32	SAMPLE PUMP SM FLOW RATE (mL per minute): 100	TUBING MATERIAL CODE: Teflon	
FIELD DECONTAMINATION: (Y) N	FIELD-FILTERED: Y (N) FILTER SIZE: ____ µm Filtration Equipment Type: _____	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
	3	CG	40 mL	HCl	NONE	< 2	SW-846 8260B (VOCS)	SM

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

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

Tetra Tech NUS / FDEP Groundwater Sampling Sheet

SITE NAME: **Supply Warehouse No. 3 (SW3)**	SITE LOCATION: **Kennedy Space Center (KSC), Florida**	
LOCATION ID: **SW3-MW0028**	SAMPLE ID: **SW3-MW0028-032.0-2016** 0910 Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: 09 / 10 / **2016**

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 9.53	CASING HEIGHT (feet als): NA	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als): NA	WELL SCREEN INTERVAL DEPTH (feet bls): **27 to 37**	
WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): **3/16**	PURGE PUMP TYPE OR BAILER: **Peristaltic Pump**	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): **27**	BOTTOM DEPTH (feet bls): **37**

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

EQUIPMENT VOLUME PURGE: **1 EQUIPMENT VOL.** = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
0.70 Liters (0.005 x 45) + 0.475 = 0.70

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 32	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 32	PURGING INITIATED AT: 1610	PURGING ENDED AT:	TOTAL VOLUME PURGED (Liters):

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
1620	1.5	1.5	150	9.55	6.26	26.61	2927	0.27	9.27	-73.4	clear
1622	0.3	1.8	150	9.55	6.25	26.66	2939	0.25	8.39	-75.1	clear
1625	0.45	2.25	150	9.55	6.25	26.62	2935	0.21	5.13	-76.4	clear
1630	Sample Collected										

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.15; **1.25"** = 0.23; **2"** = 0.61; **3"** = 1.40; **4"** = 2.46; **5"** = 3.86; **6"** = 5.57; **12"** = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.06

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Charles Sorden /Tetra Tech	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 1620	SAMPLING ENDED AT: 1635
PUMP OR TUBING DEPTH IN WELL (feet): 32	SAMPLE PUMP SM FLOW RATE (mL per minute): 100	TUBING MATERIAL CODE: Teflon	
FIELD DECONTAMINATION: (Y) N	FIELD-FILTERED: Y (N) FILTER SIZE: ____ µm Filtration Equipment Type:	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
	3	CG	40 mL	HCl	NONE	< 2	SW-846 8260B (VOCS)	SM

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

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

Tetra Tech NUS, Inc.

SURFACE WATER SAMPLE LOG SHEET

Project Site Name: NASA KSC SW3
Project No.: 112G07584

Sample ID No.: SW3-SW0002-000.5-2016 0910
Sample Location: SW3-SW0002
Sampled By: C. Sorden
C.O.C. No.: 0816

[X] Stream
[ ] Spring
[ ] Pond
[ ] Lake
[ ] Other: _____
[ ] QA Sample Type: _____

Type of Sample:
[ ] Low Concentration
[ ] High Concentration

SAMPLING DATA:

Date: 09/28/10/16 Time: 1650 Depth: 0.0-0.5 Method: Grab	Color (Visual)	pH (S.U.)	S.C. ~~(mS/cm)~~ 004 758	Temp. (°C)	Turbidity (NTU)	DO (mg/l)	Salinity (%)	Other ORP
	Yellow	6.74		29.63	3.14	0.38	0.35	147

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOC via 8260	HCl	40 ml Glass	X

OBSERVATIONS / NOTES:

MAP:

See Figure

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s):

Tetra Tech NUS, Inc.

SURFACE WATER SAMPLE LOG SHEET

Project Site Name: NASA KSC SW3
Project No.: 112G07584

Sample ID No.: SW3-SW0001-000.5-2016
Sample Location: SW3-SW0001
Sampled By:
C.O.C. No.:

[] Stream
[] Spring
[] Pond
[] Lake
[] Other:
[] QA Sample Type:

Type of Sample:
[] Low Concentration
[] High Concentration

SAMPLING DATA:

	Color (Visual)	pH (S.U.)	S.C. (mS/cm)	Temp. (^{0}C)	Turbidity (NTU)	DO (mg/l)	Salinity (%)	Other
Date: / Time: / Depth: / Method:								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOC via 8260	HCl	40 ml Glass	

OBSERVATIONS / NOTES:

No Water Present to Collect Sample

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s):

Tetra Tech NUS, Inc.

SURFACE WATER SAMPLE LOG SHEET

Project Site Name: NASA KSC SW3
Project No.: 112G07584

Sample ID No.: SW3-SW0003-000.5-2016 0910
Sample Location: SW3-SW0003
Sampled By: C. Sorden
C.O.C. No.: 0815

[X] Stream
[] Spring
[] Pond
[] Lake
[] Other:
[] QA Sample Type:

Type of Sample:
[] Low Concentration
[] High Concentration

SAMPLING DATA:

	Color (Visual)	pH (S.U.)	S.C. µS/cm (mS/cm)	Temp. (°C)	Turbidity (NTU)	DO (mg/l)	Salinity (%)	Other ORP
Date: 09/10/16								
Time: 1730								
Depth: 0.0-0.5	Yellow	6.43	633	30.65	3.30	0.83	0.27	-57.0
Method: Grab								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOC via 8260	HCl	40 ml Glass	X

OBSERVATIONS / NOTES:

MAP:

See Figure

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s):

APPENDIX D

CHAIN-OF-CUSTODY FORMS AND LABORATORY DATA PACKAGES

(ELECTRONIC FILE ONLY)

e-Hardcopy 2.0
Automated Report

Technical Report for

Tetra Tech NUS

SW3

112G07584

SGS Accutest Job Number: FA32657

Sampling Dates: 03/24/16 - 03/25/16

Report to:

Tetra-Tech,Inc.
661 Andersen Drive
Foster Plaza 7
Pittsburgh, PA 15220

ATTN: Amy Thomson

Total number of pages in report: 354

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Norm Farmer
Technical Director

Client Service contact: Andrea Colby 407-425-6700

Certifications: FL (E83510), LA (03051), KS (E-10327), IA (366), IL (200063), NC (573), NJ (FL002), SC (96038001) DoD ELAP (L-A-B L2229), CA (2937), TX (T104704404), PA (68-03573), VA (460177), AK, AR, GA, KY, MA, NV, OK, UT, WA

Table of Contents

Sample Summary

Tetra Tech NUS

Job No: FA32657

SW3
Project No: 112G07584

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
FA32657-1	03/24/16	12:55 AM		03/29/16	AQ	Ground Water	SW3-MW0006-040.0-20160324
FA32657-2	03/24/16	13:30 AM		03/29/16	AQ	Ground Water	SW3-MW0005-020.0-20160324
FA32657-3	03/24/16	15:45 AM		03/29/16	AQ	Ground Water	SW3-MW0024-040.0-20160324
FA32657-4	03/25/16	08:30 AM		03/29/16	AQ	Ground Water	SW3-MW0009-020.0-20160325
FA32657-5	03/25/16	09:20 AM		03/29/16	AQ	Ground Water	SW3-MW0001-020.0-20160325
FA32657-6	03/25/16	10:20 AM		03/29/16	AQ	Ground Water	SW3-MW0025-040.0-20160325
FA32657-7	03/25/16	10:55 AM		03/29/16	AQ	Ground Water	SW3-MW0026-040.0-20160325
FA32657-8	03/25/16	12:20 AM		03/29/16	AQ	Ground Water	SW3-MW0027-032.0-20160325
FA32657-9	03/25/16	12:50 AM		03/29/16	AQ	Ground Water	SW3-MW0028-032.0-20160325
FA32657-10	03/25/16	13:30 AM		03/29/16	AQ	Ground Water	SW3-MW0020-040.0-20160325
FA32657-11	03/25/16	13:45 AM		03/29/16	AQ	Ground Water	SW3-SW0001-000.5-20160325
FA32657-12	03/25/16	14:00 AM		03/29/16	AQ	Ground Water	SW3-SW0003-000.5-20160325
FA32657-13	03/25/16	14:15 AM		03/29/16	AQ	Ground Water	SW3-SW0002-000.5-20160325

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: Tetra Tech NUS **Job No:** FA32657

Site: SW3 **Report Date:** 4/12/2016 2:13:06 PM

13 Sample(s) were collected on/ between 03/24/2016 and 03/25/2016 and were received at SGS Accutest Southeast (SASE) on 03/29/2016 properly preserved, at 3 Deg. C and intact. These Samples received an SASE job number of FA32657. A listing of the Laboratory Sample ID, Client Sample ID and dates of collection are presented in the Results Summary Section.

Except as noted below, all method specified calibrations and quality control performance criteria were met for this job. For more information, please refer to QC summary pages.

Volatiles by GCMS By Method SW846 8260B

Matrix: AQ **Batch ID:** VA1906

All samples were analyzed within the recommended method holding time.

All method blanks for this batch meet method specific criteria.

Sample(s) FA32549-1MS, FA32549-1MSD were used as the QC samples indicated.

Matrix Spike/Matrix Spike Duplicate Recovery(s) for cis-1,3-Dichloropropene are outside control limits. Probable cause is due to matrix interference. % RPD was within control limits in MS/MSD.

Matrix: AQ **Batch ID:** VJ5255

All samples were analyzed within the recommended method holding time.

All method blanks for this batch meet method specific criteria.

Sample(s) FA32712-1MS, FA32712-1MSD were used as the QC samples indicated.

Matrix Spike Recovery(s) for trans-1,3-Dichloropropene are outside control limits. Probable cause is due to matrix interference. % RPD was within control limits in MS/MSD.

Matrix Spike Duplicate Recovery(s) for cis-1,3-Dichloropropene, trans-1,3-Dichloropropene are outside control limits. Probable cause is due to matrix interference. % RPD was within control limits in MS/MSD.

FA32657-3: Sample vial(s) contained significant headspace; reported results are considered minimum values.

FA32657-7: Sample vial(s) contained significant headspace; reported results are considered minimum values.

FA32657-9: Sample vial(s) contained significant headspace; reported results are considered minimum values.

SGS Accutest (SASE) certifies that this report meets the project requirements for analytical data produced for the samples as received at SASE and as stated on the COC. SASE certifies that the data meets the Data Quality Objectives for precision, accuracy and completeness as specified in the SASE Quality Manual except as noted above. This report is to be used in its entirety. SASE is not responsible for any assumptions of data quality if partial data packages are used.

Narrative prepared by:

_____ Date: April 12, 2016

Kim Benham, Client Services (signature on file)

Manual Integration Summary

Lab Sample ID	Analysis Type	File ID	Manual
FA32712-1MS	MSVOA	J0975642.D	Carbon Tetrachloride, Ethyl Alcohol, Trichlorofluoromethane
FA32712-1MSD	MSVOA	J0975643.D	Carbon Tetrachloride, Ethyl Alcohol, Trichlorofluoromethane
VA1897-IC1897	MSVOA	A0199813.D	1,4-Dichlorobenzene
VJ5237-IC5237	MSVOA	J0975150.D	Methyl Bromide, Trichlorofluoromethane
VJ5237-IC5237	MSVOA	J0975151.D	Ethyl Alcohol, Trichlorofluoromethane
VJ5237-IC5237	MSVOA	J0975152.D	Carbon Tetrachloride, Ethyl Alcohol, Trichlorofluoromethane
VJ5237-IC5237	MSVOA	J0975153.D	Carbon Tetrachloride, Ethyl Alcohol, Trichlorofluoromethane
VJ5237-IC5237	MSVOA	J0975155.D	Carbon Tetrachloride, Ethyl Alcohol, Trichlorofluoromethane
VJ5237-IC5237	MSVOA	J0975156.D	Carbon Tetrachloride, Ethyl Alcohol, Trichlorofluoromethane
VJ5237-ICC5237	MSVOA	J0975154.D	Carbon Tetrachloride, Ethyl Alcohol, Trichlorofluoromethane
VJ5237-ICV5237	MSVOA	J0975159.D	Carbon Tetrachloride, Ethyl Alcohol, Trichlorofluoromethane
VJ5255-BS	MSVOA	J0975620.D	Carbon Tetrachloride, Ethyl Alcohol, Trichlorofluoromethane
VJ5255-CC5237	MSVOA	J0975619.D	Carbon Tetrachloride, Ethyl Alcohol, Trichlorofluoromethane

13 Manual Integrations were found for FA32657

Summary of Hits

Job Number: FA32657
Account: Tetra Tech NUS
Project: SW3
Collected: 03/24/16 thru 03/25/16

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	PQL	MDL	Units	Method
FA32657-1	**SW3-MW0006-040.0-20160324**					
Carbon Disulfide		0.30 I	2.0	0.23	ug/l	SW846 8260B
cis-1,2-Dichloroethylene		0.94 I	1.0	0.31	ug/l	SW846 8260B
trans-1,2-Dichloroethylene		1.2	1.0	0.33	ug/l	SW846 8260B
Vinyl Chloride		15.1	1.0	0.31	ug/l	SW846 8260B
FA32657-2	**SW3-MW0005-020.0-20160324**					
No hits reported in this sample.						
FA32657-3	**SW3-MW0024-040.0-20160324**					
trans-1,2-Dichloroethylene [a]		1.0	1.0	0.33	ug/l	SW846 8260B
Vinyl Chloride [a]		21.5	1.0	0.31	ug/l	SW846 8260B
FA32657-4	**SW3-MW0009-020.0-20160325**					
1,1-Dichloroethylene		0.28 I	1.0	0.22	ug/l	SW846 8260B
cis-1,2-Dichloroethylene		79.8	1.0	0.31	ug/l	SW846 8260B
trans-1,2-Dichloroethylene		8.7	1.0	0.33	ug/l	SW846 8260B
Trichloroethylene		19.0	1.0	0.27	ug/l	SW846 8260B
Vinyl Chloride		8.5	1.0	0.31	ug/l	SW846 8260B
FA32657-5	**SW3-MW0001-020.0-20160325**					
cis-1,2-Dichloroethylene		0.36 I	1.0	0.31	ug/l	SW846 8260B
Trichloroethylene		1.2	1.0	0.27	ug/l	SW846 8260B
FA32657-6	**SW3-MW0025-040.0-20160325**					
cis-1,2-Dichloroethylene		0.44 I	1.0	0.31	ug/l	SW846 8260B
Vinyl Chloride		1.1	1.0	0.31	ug/l	SW846 8260B
FA32657-7	**SW3-MW0026-040.0-20160325**					
Carbon Disulfide [a]		0.38 I	2.0	0.23	ug/l	SW846 8260B
cis-1,2-Dichloroethylene [a]		0.67 I	1.0	0.31	ug/l	SW846 8260B
Vinyl Chloride [a]		1.8	1.0	0.31	ug/l	SW846 8260B
FA32657-8	**SW3-MW0027-032.0-20160325**					
Carbon Disulfide		0.31 I	2.0	0.23	ug/l	SW846 8260B
Vinyl Chloride		21.8	1.0	0.31	ug/l	SW846 8260B

Summary of Hits

Job Number: FA32657
Account: Tetra Tech NUS
Project: SW3
Collected: 03/24/16 thru 03/25/16

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	PQL	MDL	Units	Method
FA32657-9	**SW3-MW0028-032.0-20160325**					
Chloroethane [a]		2.6	2.0	0.63	ug/l	SW846 8260B
Vinyl Chloride [a]		56.2	1.0	0.31	ug/l	SW846 8260B
FA32657-10	**SW3-MW0020-040.0-20160325**					
No hits reported in this sample.						
FA32657-11	**SW3-SW0001-000.5-20160325**					
Carbon Disulfide		0.26 I	2.0	0.23	ug/l	SW846 8260B
FA32657-12	**SW3-SW0003-000.5-20160325**					
No hits reported in this sample.						
FA32657-13	**SW3-SW0002-000.5-20160325**					
Carbon Disulfide		0.28 I	2.0	0.23	ug/l	SW846 8260B

(a) Sample vial(s) contained significant headspace; reported results are considered minimum values.

Sample Results

Report of Analysis

SGS Accutest

Report of Analysis

Client Sample ID: SW3-MW0006-040.0-20160324
Lab Sample ID: FA32657-1
Matrix: AQ - Ground Water
Method: SW846 8260B
Project: SW3

Date Sampled: 03/24/16
Date Received: 03/29/16
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	J0975622.D	1	04/05/16	MM	n/a	n/a	VJ5255
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA TCL 4.2 List

CAS No.	Compound	Result	PQL	MDL	Units	Q
67-64-1	Acetone	10 U	25	10	ug/l	
71-43-2	Benzene	0.20 U	1.0	0.20	ug/l	
75-27-4	Bromodichloromethane	0.24 U	1.0	0.24	ug/l	
75-25-2	Bromoform	0.46 U	1.0	0.46	ug/l	
78-93-3	2-Butanone (MEK)	2.6 U	5.0	2.6	ug/l	
75-15-0	Carbon Disulfide	0.30	2.0	0.23	ug/l	I
56-23-5	Carbon Tetrachloride	0.30 U	1.0	0.30	ug/l	
108-90-7	Chlorobenzene	0.20 U	1.0	0.20	ug/l	
75-00-3	Chloroethane	0.63 U	2.0	0.63	ug/l	
67-66-3	Chloroform	0.30 U	1.0	0.30	ug/l	
110-82-7	Cyclohexane	0.26 U	1.0	0.26	ug/l	
124-48-1	Dibromochloromethane	0.26 U	1.0	0.26	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	0.81 U	5.0	0.81	ug/l	
106-93-4	1,2-Dibromoethane	0.33 U	2.0	0.33	ug/l	
75-71-8	Dichlorodifluoromethane	0.50 U	2.0	0.50	ug/l	
95-50-1	1,2-Dichlorobenzene	0.27 U	1.0	0.27	ug/l	
541-73-1	1,3-Dichlorobenzene	0.24 U	1.0	0.24	ug/l	
106-46-7	1,4-Dichlorobenzene	0.39 U	1.0	0.39	ug/l	
75-34-3	1,1-Dichloroethane	0.26 U	1.0	0.26	ug/l	
107-06-2	1,2-Dichloroethane	0.28 U	1.0	0.28	ug/l	
75-35-4	1,1-Dichloroethylene	0.22 U	1.0	0.22	ug/l	
156-59-2	cis-1,2-Dichloroethylene	0.94	1.0	0.31	ug/l	I
156-60-5	trans-1,2-Dichloroethylene	1.2	1.0	0.33	ug/l	
78-87-5	1,2-Dichloropropane	0.34 U	1.0	0.34	ug/l	
10061-01-5	cis-1,3-Dichloropropene	0.26 U	1.0	0.26	ug/l	
10061-02-6	trans-1,3-Dichloropropene	0.25 U	1.0	0.25	ug/l	
100-41-4	Ethylbenzene	0.25 U	1.0	0.25	ug/l	
76-13-1	Freon 113	0.32 U	1.0	0.32	ug/l	
591-78-6	2-Hexanone	2.0 U	10	2.0	ug/l	
98-82-8	Isopropylbenzene	0.33 U	1.0	0.33	ug/l	
79-20-9	Methyl Acetate	5.0 U	20	5.0	ug/l	
74-83-9	Methyl Bromide	0.50 U	2.0	0.50	ug/l	

U = Not detected MDL = Method Detection Limit I = Result > = MDL but < PQL J = Estimated value
PQL = Practical Quantitation Limit V = Indicates analyte found in associated method blank
L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	SW3-MW0006-040.0-20160324		
Lab Sample ID:	FA32657-1	**Date Sampled:**	03/24/16
Matrix:	AQ - Ground Water	**Date Received:**	03/29/16
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	SW3		

VOA TCL 4.2 List

CAS No.	Compound	Result	PQL	MDL	Units	Q
74-87-3	Methyl Chloride	0.50 U	2.0	0.50	ug/l	
108-87-2	Methylcyclohexane	0.23 U	1.0	0.23	ug/l	
75-09-2	Methylene Chloride	2.0 U	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	1.4 U	5.0	1.4	ug/l	
1634-04-4	Methyl Tert Butyl Ether	0.20 U	1.0	0.20	ug/l	
100-42-5	Styrene	0.24 U	1.0	0.24	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	0.33 U	1.0	0.33	ug/l	
127-18-4	Tetrachloroethylene	0.30 U	1.0	0.30	ug/l	
108-88-3	Toluene	0.20 U	1.0	0.20	ug/l	
120-82-1	1,2,4-Trichlorobenzene	0.50 U	2.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	0.20 U	1.0	0.20	ug/l	
79-00-5	1,1,2-Trichloroethane	0.37 U	1.0	0.37	ug/l	
79-01-6	Trichloroethylene	0.27 U	1.0	0.27	ug/l	
75-69-4	Trichlorofluoromethane	0.50 U	2.0	0.50	ug/l	
75-01-4	Vinyl Chloride	15.1	1.0	0.31	ug/l	
1330-20-7	Xylene (total)	0.56 U	3.0	0.56	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	100%		83-118%
17060-07-0	1,2-Dichloroethane-D4	94%		79-125%
2037-26-5	Toluene-D8	101%		85-112%
460-00-4	4-Bromofluorobenzene	107%		83-118%

U = Not detected MDL = Method Detection Limit
PQL = Practical Quantitation Limit
L = Indicates value exceeds calibration range
I = Result > = MDL but < PQL J = Estimated value
V = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS Accutest

Report of Analysis

Client Sample ID:	SW3-MW0005-020.0-20160324		
Lab Sample ID:	FA32657-2	**Date Sampled:**	03/24/16
Matrix:	AQ - Ground Water	**Date Received:**	03/29/16
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	SW3		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	J0975623.D	1	04/05/16	MM	n/a	n/a	VJ5255
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA TCL 4.2 List

CAS No.	Compound	Result	PQL	MDL	Units	Q
67-64-1	Acetone	10 U	25	10	ug/l	
71-43-2	Benzene	0.20 U	1.0	0.20	ug/l	
75-27-4	Bromodichloromethane	0.24 U	1.0	0.24	ug/l	
75-25-2	Bromoform	0.46 U	1.0	0.46	ug/l	
78-93-3	2-Butanone (MEK)	2.6 U	5.0	2.6	ug/l	
75-15-0	Carbon Disulfide	0.23 U	2.0	0.23	ug/l	
56-23-5	Carbon Tetrachloride	0.30 U	1.0	0.30	ug/l	
108-90-7	Chlorobenzene	0.20 U	1.0	0.20	ug/l	
75-00-3	Chloroethane	0.63 U	2.0	0.63	ug/l	
67-66-3	Chloroform	0.30 U	1.0	0.30	ug/l	
110-82-7	Cyclohexane	0.26 U	1.0	0.26	ug/l	
124-48-1	Dibromochloromethane	0.26 U	1.0	0.26	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	0.81 U	5.0	0.81	ug/l	
106-93-4	1,2-Dibromoethane	0.33 U	2.0	0.33	ug/l	
75-71-8	Dichlorodifluoromethane	0.50 U	2.0	0.50	ug/l	
95-50-1	1,2-Dichlorobenzene	0.27 U	1.0	0.27	ug/l	
541-73-1	1,3-Dichlorobenzene	0.24 U	1.0	0.24	ug/l	
106-46-7	1,4-Dichlorobenzene	0.39 U	1.0	0.39	ug/l	
75-34-3	1,1-Dichloroethane	0.26 U	1.0	0.26	ug/l	
107-06-2	1,2-Dichloroethane	0.28 U	1.0	0.28	ug/l	
75-35-4	1,1-Dichloroethylene	0.22 U	1.0	0.22	ug/l	
156-59-2	cis-1,2-Dichloroethylene	0.31 U	1.0	0.31	ug/l	
156-60-5	trans-1,2-Dichloroethylene	0.33 U	1.0	0.33	ug/l	
78-87-5	1,2-Dichloropropane	0.34 U	1.0	0.34	ug/l	
10061-01-5	cis-1,3-Dichloropropene	0.26 U	1.0	0.26	ug/l	
10061-02-6	trans-1,3-Dichloropropene	0.25 U	1.0	0.25	ug/l	
100-41-4	Ethylbenzene	0.25 U	1.0	0.25	ug/l	
76-13-1	Freon 113	0.32 U	1.0	0.32	ug/l	
591-78-6	2-Hexanone	2.0 U	10	2.0	ug/l	
98-82-8	Isopropylbenzene	0.33 U	1.0	0.33	ug/l	
79-20-9	Methyl Acetate	5.0 U	20	5.0	ug/l	
74-83-9	Methyl Bromide	0.50 U	2.0	0.50	ug/l	

U = Not detected MDL = Method Detection Limit I = Result > = MDL but < PQL J = Estimated value
PQL = Practical Quantitation Limit V = Indicates analyte found in associated method blank
L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	SW3-MW0005-020.0-20160324		
Lab Sample ID:	FA32657-2	**Date Sampled:**	03/24/16
Matrix:	AQ - Ground Water	**Date Received:**	03/29/16
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	SW3		

VOA TCL 4.2 List

CAS No.	Compound	Result	PQL	MDL	Units	Q
74-87-3	Methyl Chloride	0.50 U	2.0	0.50	ug/l	
108-87-2	Methylcyclohexane	0.23 U	1.0	0.23	ug/l	
75-09-2	Methylene Chloride	2.0 U	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	1.4 U	5.0	1.4	ug/l	
1634-04-4	Methyl Tert Butyl Ether	0.20 U	1.0	0.20	ug/l	
100-42-5	Styrene	0.24 U	1.0	0.24	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	0.33 U	1.0	0.33	ug/l	
127-18-4	Tetrachloroethylene	0.30 U	1.0	0.30	ug/l	
108-88-3	Toluene	0.20 U	1.0	0.20	ug/l	
120-82-1	1,2,4-Trichlorobenzene	0.50 U	2.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	0.20 U	1.0	0.20	ug/l	
79-00-5	1,1,2-Trichloroethane	0.37 U	1.0	0.37	ug/l	
79-01-6	Trichloroethylene	0.27 U	1.0	0.27	ug/l	
75-69-4	Trichlorofluoromethane	0.50 U	2.0	0.50	ug/l	
75-01-4	Vinyl Chloride	0.31 U	1.0	0.31	ug/l	
1330-20-7	Xylene (total)	0.56 U	3.0	0.56	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	100%		83-118%
17060-07-0	1,2-Dichloroethane-D4	94%		79-125%
2037-26-5	Toluene-D8	95%		85-112%
460-00-4	4-Bromofluorobenzene	106%		83-118%

U = Not detected MDL = Method Detection Limit
PQL = Practical Quantitation Limit
L = Indicates value exceeds calibration range
I = Result > = MDL but < PQL J = Estimated value
V = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS Accutest

Report of Analysis

Client Sample ID: SW3-MW0024-040.0-20160324
Lab Sample ID: FA32657-3
Matrix: AQ - Ground Water
Method: SW846 8260B
Project: SW3

Date Sampled: 03/24/16
Date Received: 03/29/16
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	J0975624.D	1	04/05/16	MM	n/a	n/a	VJ5255
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA TCL 4.2 List

CAS No.	Compound	Result	PQL	MDL	Units	Q
67-64-1	Acetone	10 U	25	10	ug/l	
71-43-2	Benzene	0.20 U	1.0	0.20	ug/l	
75-27-4	Bromodichloromethane	0.24 U	1.0	0.24	ug/l	
75-25-2	Bromoform	0.46 U	1.0	0.46	ug/l	
78-93-3	2-Butanone (MEK)	2.6 U	5.0	2.6	ug/l	
75-15-0	Carbon Disulfide	0.23 U	2.0	0.23	ug/l	
56-23-5	Carbon Tetrachloride	0.30 U	1.0	0.30	ug/l	
108-90-7	Chlorobenzene	0.20 U	1.0	0.20	ug/l	
75-00-3	Chloroethane	0.63 U	2.0	0.63	ug/l	
67-66-3	Chloroform	0.30 U	1.0	0.30	ug/l	
110-82-7	Cyclohexane	0.26 U	1.0	0.26	ug/l	
124-48-1	Dibromochloromethane	0.26 U	1.0	0.26	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	0.81 U	5.0	0.81	ug/l	
106-93-4	1,2-Dibromoethane	0.33 U	2.0	0.33	ug/l	
75-71-8	Dichlorodifluoromethane	0.50 U	2.0	0.50	ug/l	
95-50-1	1,2-Dichlorobenzene	0.27 U	1.0	0.27	ug/l	
541-73-1	1,3-Dichlorobenzene	0.24 U	1.0	0.24	ug/l	
106-46-7	1,4-Dichlorobenzene	0.39 U	1.0	0.39	ug/l	
75-34-3	1,1-Dichloroethane	0.26 U	1.0	0.26	ug/l	
107-06-2	1,2-Dichloroethane	0.28 U	1.0	0.28	ug/l	
75-35-4	1,1-Dichloroethylene	0.22 U	1.0	0.22	ug/l	
156-59-2	cis-1,2-Dichloroethylene	0.31 U	1.0	0.31	ug/l	
156-60-5	trans-1,2-Dichloroethylene	1.0	1.0	0.33	ug/l	
78-87-5	1,2-Dichloropropane	0.34 U	1.0	0.34	ug/l	
10061-01-5	cis-1,3-Dichloropropene	0.26 U	1.0	0.26	ug/l	
10061-02-6	trans-1,3-Dichloropropene	0.25 U	1.0	0.25	ug/l	
100-41-4	Ethylbenzene	0.25 U	1.0	0.25	ug/l	
76-13-1	Freon 113	0.32 U	1.0	0.32	ug/l	
591-78-6	2-Hexanone	2.0 U	10	2.0	ug/l	
98-82-8	Isopropylbenzene	0.33 U	1.0	0.33	ug/l	
79-20-9	Methyl Acetate	5.0 U	20	5.0	ug/l	
74-83-9	Methyl Bromide	0.50 U	2.0	0.50	ug/l	

U = Not detected MDL = Method Detection Limit I = Result > = MDL but < PQL J = Estimated value
PQL = Practical Quantitation Limit V = Indicates analyte found in associated method blank
L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	SW3-MW0024-040.0-20160324		
Lab Sample ID:	FA32657-3	**Date Sampled:**	03/24/16
Matrix:	AQ - Ground Water	**Date Received:**	03/29/16
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	SW3		

VOA TCL 4.2 List

CAS No.	Compound	Result	PQL	MDL	Units	Q
74-87-3	Methyl Chloride	0.50 U	2.0	0.50	ug/l	
108-87-2	Methylcyclohexane	0.23 U	1.0	0.23	ug/l	
75-09-2	Methylene Chloride	2.0 U	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	1.4 U	5.0	1.4	ug/l	
1634-04-4	Methyl Tert Butyl Ether	0.20 U	1.0	0.20	ug/l	
100-42-5	Styrene	0.24 U	1.0	0.24	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	0.33 U	1.0	0.33	ug/l	
127-18-4	Tetrachloroethylene	0.30 U	1.0	0.30	ug/l	
108-88-3	Toluene	0.20 U	1.0	0.20	ug/l	
120-82-1	1,2,4-Trichlorobenzene	0.50 U	2.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	0.20 U	1.0	0.20	ug/l	
79-00-5	1,1,2-Trichloroethane	0.37 U	1.0	0.37	ug/l	
79-01-6	Trichloroethylene	0.27 U	1.0	0.27	ug/l	
75-69-4	Trichlorofluoromethane	0.50 U	2.0	0.50	ug/l	
75-01-4	Vinyl Chloride	21.5	1.0	0.31	ug/l	
1330-20-7	Xylene (total)	0.56 U	3.0	0.56	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	99%		83-118%
17060-07-0	1,2-Dichloroethane-D4	96%		79-125%
2037-26-5	Toluene-D8	99%		85-112%
460-00-4	4-Bromofluorobenzene	105%		83-118%

(a) Sample vial(s) contained significant headspace; reported results are considered minimum values.

U = Not detected MDL = Method Detection Limit I = Result > = MDL but < PQL J = Estimated value
PQL = Practical Quantitation Limit V = Indicates analyte found in associated method blank
L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

SGS Accutest

Report of Analysis

Client Sample ID:	SW3-MW0009-020.0-20160325		
Lab Sample ID:	FA32657-4	**Date Sampled:**	03/25/16
Matrix:	AQ - Ground Water	**Date Received:**	03/29/16
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	SW3		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	J0975625.D	1	04/05/16	MM	n/a	n/a	VJ5255
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA TCL 4.2 List

CAS No.	Compound	Result	PQL	MDL	Units	Q
67-64-1	Acetone	10 U	25	10	ug/l	
71-43-2	Benzene	0.20 U	1.0	0.20	ug/l	
75-27-4	Bromodichloromethane	0.24 U	1.0	0.24	ug/l	
75-25-2	Bromoform	0.46 U	1.0	0.46	ug/l	
78-93-3	2-Butanone (MEK)	2.6 U	5.0	2.6	ug/l	
75-15-0	Carbon Disulfide	0.23 U	2.0	0.23	ug/l	
56-23-5	Carbon Tetrachloride	0.30 U	1.0	0.30	ug/l	
108-90-7	Chlorobenzene	0.20 U	1.0	0.20	ug/l	
75-00-3	Chloroethane	0.63 U	2.0	0.63	ug/l	
67-66-3	Chloroform	0.30 U	1.0	0.30	ug/l	
110-82-7	Cyclohexane	0.26 U	1.0	0.26	ug/l	
124-48-1	Dibromochloromethane	0.26 U	1.0	0.26	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	0.81 U	5.0	0.81	ug/l	
106-93-4	1,2-Dibromoethane	0.33 U	2.0	0.33	ug/l	
75-71-8	Dichlorodifluoromethane	0.50 U	2.0	0.50	ug/l	
95-50-1	1,2-Dichlorobenzene	0.27 U	1.0	0.27	ug/l	
541-73-1	1,3-Dichlorobenzene	0.24 U	1.0	0.24	ug/l	
106-46-7	1,4-Dichlorobenzene	0.39 U	1.0	0.39	ug/l	
75-34-3	1,1-Dichloroethane	0.26 U	1.0	0.26	ug/l	
107-06-2	1,2-Dichloroethane	0.28 U	1.0	0.28	ug/l	
75-35-4	1,1-Dichloroethylene	0.28	1.0	0.22	ug/l	I
156-59-2	cis-1,2-Dichloroethylene	79.8	1.0	0.31	ug/l	
156-60-5	trans-1,2-Dichloroethylene	8.7	1.0	0.33	ug/l	
78-87-5	1,2-Dichloropropane	0.34 U	1.0	0.34	ug/l	
10061-01-5	cis-1,3-Dichloropropene	0.26 U	1.0	0.26	ug/l	
10061-02-6	trans-1,3-Dichloropropene	0.25 U	1.0	0.25	ug/l	
100-41-4	Ethylbenzene	0.25 U	1.0	0.25	ug/l	
76-13-1	Freon 113	0.32 U	1.0	0.32	ug/l	
591-78-6	2-Hexanone	2.0 U	10	2.0	ug/l	
98-82-8	Isopropylbenzene	0.33 U	1.0	0.33	ug/l	
79-20-9	Methyl Acetate	5.0 U	20	5.0	ug/l	
74-83-9	Methyl Bromide	0.50 U	2.0	0.50	ug/l	

U = Not detected MDL = Method Detection Limit I = Result > = MDL but < PQL J = Estimated value
PQL = Practical Quantitation Limit V = Indicates analyte found in associated method blank
L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	SW3-MW0009-020.0-20160325		
Lab Sample ID:	FA32657-4	**Date Sampled:**	03/25/16
Matrix:	AQ - Ground Water	**Date Received:**	03/29/16
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	SW3		

VOA TCL 4.2 List

CAS No.	Compound	Result	PQL	MDL	Units	Q
74-87-3	Methyl Chloride	0.50 U	2.0	0.50	ug/l	
108-87-2	Methylcyclohexane	0.23 U	1.0	0.23	ug/l	
75-09-2	Methylene Chloride	2.0 U	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	1.4 U	5.0	1.4	ug/l	
1634-04-4	Methyl Tert Butyl Ether	0.20 U	1.0	0.20	ug/l	
100-42-5	Styrene	0.24 U	1.0	0.24	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	0.33 U	1.0	0.33	ug/l	
127-18-4	Tetrachloroethylene	0.30 U	1.0	0.30	ug/l	
108-88-3	Toluene	0.20 U	1.0	0.20	ug/l	
120-82-1	1,2,4-Trichlorobenzene	0.50 U	2.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	0.20 U	1.0	0.20	ug/l	
79-00-5	1,1,2-Trichloroethane	0.37 U	1.0	0.37	ug/l	
79-01-6	Trichloroethylene	19.0	1.0	0.27	ug/l	
75-69-4	Trichlorofluoromethane	0.50 U	2.0	0.50	ug/l	
75-01-4	Vinyl Chloride	8.5	1.0	0.31	ug/l	
1330-20-7	Xylene (total)	0.56 U	3.0	0.56	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	101%		83-118%
17060-07-0	1,2-Dichloroethane-D4	95%		79-125%
2037-26-5	Toluene-D8	100%		85-112%
460-00-4	4-Bromofluorobenzene	111%		83-118%

U = Not detected MDL = Method Detection Limit
PQL = Practical Quantitation Limit
L = Indicates value exceeds calibration range
I = Result > = MDL but < PQL J = Estimated value
V = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS Accutest

Report of Analysis

Client Sample ID:	SW3-MW0001-020.0-20160325		
Lab Sample ID:	FA32657-5	**Date Sampled:**	03/25/16
Matrix:	AQ - Ground Water	**Date Received:**	03/29/16
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	SW3		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	J0975626.D	1	04/05/16	MM	n/a	n/a	VJ5255
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA TCL 4.2 List

CAS No.	Compound	Result	PQL	MDL	Units	Q
67-64-1	Acetone	10 U	25	10	ug/l	
71-43-2	Benzene	0.20 U	1.0	0.20	ug/l	
75-27-4	Bromodichloromethane	0.24 U	1.0	0.24	ug/l	
75-25-2	Bromoform	0.46 U	1.0	0.46	ug/l	
78-93-3	2-Butanone (MEK)	2.6 U	5.0	2.6	ug/l	
75-15-0	Carbon Disulfide	0.23 U	2.0	0.23	ug/l	
56-23-5	Carbon Tetrachloride	0.30 U	1.0	0.30	ug/l	
108-90-7	Chlorobenzene	0.20 U	1.0	0.20	ug/l	
75-00-3	Chloroethane	0.63 U	2.0	0.63	ug/l	
67-66-3	Chloroform	0.30 U	1.0	0.30	ug/l	
110-82-7	Cyclohexane	0.26 U	1.0	0.26	ug/l	
124-48-1	Dibromochloromethane	0.26 U	1.0	0.26	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	0.81 U	5.0	0.81	ug/l	
106-93-4	1,2-Dibromoethane	0.33 U	2.0	0.33	ug/l	
75-71-8	Dichlorodifluoromethane	0.50 U	2.0	0.50	ug/l	
95-50-1	1,2-Dichlorobenzene	0.27 U	1.0	0.27	ug/l	
541-73-1	1,3-Dichlorobenzene	0.24 U	1.0	0.24	ug/l	
106-46-7	1,4-Dichlorobenzene	0.39 U	1.0	0.39	ug/l	
75-34-3	1,1-Dichloroethane	0.26 U	1.0	0.26	ug/l	
107-06-2	1,2-Dichloroethane	0.28 U	1.0	0.28	ug/l	
75-35-4	1,1-Dichloroethylene	0.22 U	1.0	0.22	ug/l	
156-59-2	cis-1,2-Dichloroethylene	0.36	1.0	0.31	ug/l	I
156-60-5	trans-1,2-Dichloroethylene	0.33 U	1.0	0.33	ug/l	
78-87-5	1,2-Dichloropropane	0.34 U	1.0	0.34	ug/l	
10061-01-5	cis-1,3-Dichloropropene	0.26 U	1.0	0.26	ug/l	
10061-02-6	trans-1,3-Dichloropropene	0.25 U	1.0	0.25	ug/l	
100-41-4	Ethylbenzene	0.25 U	1.0	0.25	ug/l	
76-13-1	Freon 113	0.32 U	1.0	0.32	ug/l	
591-78-6	2-Hexanone	2.0 U	10	2.0	ug/l	
98-82-8	Isopropylbenzene	0.33 U	1.0	0.33	ug/l	
79-20-9	Methyl Acetate	5.0 U	20	5.0	ug/l	
74-83-9	Methyl Bromide	0.50 U	2.0	0.50	ug/l	

U = Not detected MDL = Method Detection Limit I = Result > = MDL but < PQL J = Estimated value
PQL = Practical Quantitation Limit V = Indicates analyte found in associated method blank
L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	SW3-MW0001-020.0-20160325		
Lab Sample ID:	FA32657-5	**Date Sampled:**	03/25/16
Matrix:	AQ - Ground Water	**Date Received:**	03/29/16
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	SW3		

VOA TCL 4.2 List

CAS No.	Compound	Result	PQL	MDL	Units	Q
74-87-3	Methyl Chloride	0.50 U	2.0	0.50	ug/l	
108-87-2	Methylcyclohexane	0.23 U	1.0	0.23	ug/l	
75-09-2	Methylene Chloride	2.0 U	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	1.4 U	5.0	1.4	ug/l	
1634-04-4	Methyl Tert Butyl Ether	0.20 U	1.0	0.20	ug/l	
100-42-5	Styrene	0.24 U	1.0	0.24	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	0.33 U	1.0	0.33	ug/l	
127-18-4	Tetrachloroethylene	0.30 U	1.0	0.30	ug/l	
108-88-3	Toluene	0.20 U	1.0	0.20	ug/l	
120-82-1	1,2,4-Trichlorobenzene	0.50 U	2.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	0.20 U	1.0	0.20	ug/l	
79-00-5	1,1,2-Trichloroethane	0.37 U	1.0	0.37	ug/l	
79-01-6	Trichloroethylene	1.2	1.0	0.27	ug/l	
75-69-4	Trichlorofluoromethane	0.50 U	2.0	0.50	ug/l	
75-01-4	Vinyl Chloride	0.31 U	1.0	0.31	ug/l	
1330-20-7	Xylene (total)	0.56 U	3.0	0.56	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	100%		83-118%
17060-07-0	1,2-Dichloroethane-D4	96%		79-125%
2037-26-5	Toluene-D8	98%		85-112%
460-00-4	4-Bromofluorobenzene	105%		83-118%

U = Not detected MDL = Method Detection Limit
PQL = Practical Quantitation Limit
L = Indicates value exceeds calibration range
I = Result > = MDL but < PQL J = Estimated value
V = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS Accutest

Report of Analysis

Client Sample ID:	SW3-MW0025-040.0-20160325		
Lab Sample ID:	FA32657-6	**Date Sampled:**	03/25/16
Matrix:	AQ - Ground Water	**Date Received:**	03/29/16
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	SW3		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	J0975627.D	1	04/05/16	MM	n/a	n/a	VJ5255
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA TCL 4.2 List

CAS No.	Compound	Result	PQL	MDL	Units	Q
67-64-1	Acetone	10 U	25	10	ug/l	
71-43-2	Benzene	0.20 U	1.0	0.20	ug/l	
75-27-4	Bromodichloromethane	0.24 U	1.0	0.24	ug/l	
75-25-2	Bromoform	0.46 U	1.0	0.46	ug/l	
78-93-3	2-Butanone (MEK)	2.6 U	5.0	2.6	ug/l	
75-15-0	Carbon Disulfide	0.23 U	2.0	0.23	ug/l	
56-23-5	Carbon Tetrachloride	0.30 U	1.0	0.30	ug/l	
108-90-7	Chlorobenzene	0.20 U	1.0	0.20	ug/l	
75-00-3	Chloroethane	0.63 U	2.0	0.63	ug/l	
67-66-3	Chloroform	0.30 U	1.0	0.30	ug/l	
110-82-7	Cyclohexane	0.26 U	1.0	0.26	ug/l	
124-48-1	Dibromochloromethane	0.26 U	1.0	0.26	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	0.81 U	5.0	0.81	ug/l	
106-93-4	1,2-Dibromoethane	0.33 U	2.0	0.33	ug/l	
75-71-8	Dichlorodifluoromethane	0.50 U	2.0	0.50	ug/l	
95-50-1	1,2-Dichlorobenzene	0.27 U	1.0	0.27	ug/l	
541-73-1	1,3-Dichlorobenzene	0.24 U	1.0	0.24	ug/l	
106-46-7	1,4-Dichlorobenzene	0.39 U	1.0	0.39	ug/l	
75-34-3	1,1-Dichloroethane	0.26 U	1.0	0.26	ug/l	
107-06-2	1,2-Dichloroethane	0.28 U	1.0	0.28	ug/l	
75-35-4	1,1-Dichloroethylene	0.22 U	1.0	0.22	ug/l	
156-59-2	cis-1,2-Dichloroethylene	0.44	1.0	0.31	ug/l	I
156-60-5	trans-1,2-Dichloroethylene	0.33 U	1.0	0.33	ug/l	
78-87-5	1,2-Dichloropropane	0.34 U	1.0	0.34	ug/l	
10061-01-5	cis-1,3-Dichloropropene	0.26 U	1.0	0.26	ug/l	
10061-02-6	trans-1,3-Dichloropropene	0.25 U	1.0	0.25	ug/l	
100-41-4	Ethylbenzene	0.25 U	1.0	0.25	ug/l	
76-13-1	Freon 113	0.32 U	1.0	0.32	ug/l	
591-78-6	2-Hexanone	2.0 U	10	2.0	ug/l	
98-82-8	Isopropylbenzene	0.33 U	1.0	0.33	ug/l	
79-20-9	Methyl Acetate	5.0 U	20	5.0	ug/l	
74-83-9	Methyl Bromide	0.50 U	2.0	0.50	ug/l	

U = Not detected MDL = Method Detection Limit I = Result > = MDL but < PQL J = Estimated value
PQL = Practical Quantitation Limit V = Indicates analyte found in associated method blank
L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	SW3-MW0025-040.0-20160325		
Lab Sample ID:	FA32657-6	**Date Sampled:**	03/25/16
Matrix:	AQ - Ground Water	**Date Received:**	03/29/16
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	SW3		

VOA TCL 4.2 List

CAS No.	Compound	Result	PQL	MDL	Units	Q
74-87-3	Methyl Chloride	0.50 U	2.0	0.50	ug/l	
108-87-2	Methylcyclohexane	0.23 U	1.0	0.23	ug/l	
75-09-2	Methylene Chloride	2.0 U	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	1.4 U	5.0	1.4	ug/l	
1634-04-4	Methyl Tert Butyl Ether	0.20 U	1.0	0.20	ug/l	
100-42-5	Styrene	0.24 U	1.0	0.24	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	0.33 U	1.0	0.33	ug/l	
127-18-4	Tetrachloroethylene	0.30 U	1.0	0.30	ug/l	
108-88-3	Toluene	0.20 U	1.0	0.20	ug/l	
120-82-1	1,2,4-Trichlorobenzene	0.50 U	2.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	0.20 U	1.0	0.20	ug/l	
79-00-5	1,1,2-Trichloroethane	0.37 U	1.0	0.37	ug/l	
79-01-6	Trichloroethylene	0.27 U	1.0	0.27	ug/l	
75-69-4	Trichlorofluoromethane	0.50 U	2.0	0.50	ug/l	
75-01-4	Vinyl Chloride	1.1	1.0	0.31	ug/l	
1330-20-7	Xylene (total)	0.56 U	3.0	0.56	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	100%		83-118%
17060-07-0	1,2-Dichloroethane-D4	95%		79-125%
2037-26-5	Toluene-D8	101%		85-112%
460-00-4	4-Bromofluorobenzene	110%		83-118%

U = Not detected MDL = Method Detection Limit
PQL = Practical Quantitation Limit
L = Indicates value exceeds calibration range
I = Result > = MDL but < PQL J = Estimated value
V = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS Accutest

Report of Analysis

Client Sample ID:	SW3-MW0026-040.0-20160325		
Lab Sample ID:	FA32657-7	**Date Sampled:**	03/25/16
Matrix:	AQ - Ground Water	**Date Received:**	03/29/16
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	SW3		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	J0975636.D	1	04/05/16	MM	n/a	n/a	VJ5255
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA TCL 4.2 List

CAS No.	Compound	Result	PQL	MDL	Units	Q
67-64-1	Acetone	10 U	25	10	ug/l	
71-43-2	Benzene	0.20 U	1.0	0.20	ug/l	
75-27-4	Bromodichloromethane	0.24 U	1.0	0.24	ug/l	
75-25-2	Bromoform	0.46 U	1.0	0.46	ug/l	
78-93-3	2-Butanone (MEK)	2.6 U	5.0	2.6	ug/l	
75-15-0	Carbon Disulfide	0.38	2.0	0.23	ug/l	I
56-23-5	Carbon Tetrachloride	0.30 U	1.0	0.30	ug/l	
108-90-7	Chlorobenzene	0.20 U	1.0	0.20	ug/l	
75-00-3	Chloroethane	0.63 U	2.0	0.63	ug/l	
67-66-3	Chloroform	0.30 U	1.0	0.30	ug/l	
110-82-7	Cyclohexane	0.26 U	1.0	0.26	ug/l	
124-48-1	Dibromochloromethane	0.26 U	1.0	0.26	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	0.81 U	5.0	0.81	ug/l	
106-93-4	1,2-Dibromoethane	0.33 U	2.0	0.33	ug/l	
75-71-8	Dichlorodifluoromethane	0.50 U	2.0	0.50	ug/l	
95-50-1	1,2-Dichlorobenzene	0.27 U	1.0	0.27	ug/l	
541-73-1	1,3-Dichlorobenzene	0.24 U	1.0	0.24	ug/l	
106-46-7	1,4-Dichlorobenzene	0.39 U	1.0	0.39	ug/l	
75-34-3	1,1-Dichloroethane	0.26 U	1.0	0.26	ug/l	
107-06-2	1,2-Dichloroethane	0.28 U	1.0	0.28	ug/l	
75-35-4	1,1-Dichloroethylene	0.22 U	1.0	0.22	ug/l	
156-59-2	cis-1,2-Dichloroethylene	0.67	1.0	0.31	ug/l	I
156-60-5	trans-1,2-Dichloroethylene	0.33 U	1.0	0.33	ug/l	
78-87-5	1,2-Dichloropropane	0.34 U	1.0	0.34	ug/l	
10061-01-5	cis-1,3-Dichloropropene	0.26 U	1.0	0.26	ug/l	
10061-02-6	trans-1,3-Dichloropropene	0.25 U	1.0	0.25	ug/l	
100-41-4	Ethylbenzene	0.25 U	1.0	0.25	ug/l	
76-13-1	Freon 113	0.32 U	1.0	0.32	ug/l	
591-78-6	2-Hexanone	2.0 U	10	2.0	ug/l	
98-82-8	Isopropylbenzene	0.33 U	1.0	0.33	ug/l	
79-20-9	Methyl Acetate	5.0 U	20	5.0	ug/l	
74-83-9	Methyl Bromide	0.50 U	2.0	0.50	ug/l	

U = Not detected MDL = Method Detection Limit I = Result > = MDL but < PQL J = Estimated value
PQL = Practical Quantitation Limit V = Indicates analyte found in associated method blank
L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	SW3-MW0026-040.0-20160325		
Lab Sample ID:	FA32657-7	**Date Sampled:**	03/25/16
Matrix:	AQ - Ground Water	**Date Received:**	03/29/16
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	SW3		

VOA TCL 4.2 List

CAS No.	Compound	Result	PQL	MDL	Units	Q
74-87-3	Methyl Chloride	0.50 U	2.0	0.50	ug/l	
108-87-2	Methylcyclohexane	0.23 U	1.0	0.23	ug/l	
75-09-2	Methylene Chloride	2.0 U	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	1.4 U	5.0	1.4	ug/l	
1634-04-4	Methyl Tert Butyl Ether	0.20 U	1.0	0.20	ug/l	
100-42-5	Styrene	0.24 U	1.0	0.24	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	0.33 U	1.0	0.33	ug/l	
127-18-4	Tetrachloroethylene	0.30 U	1.0	0.30	ug/l	
108-88-3	Toluene	0.20 U	1.0	0.20	ug/l	
120-82-1	1,2,4-Trichlorobenzene	0.50 U	2.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	0.20 U	1.0	0.20	ug/l	
79-00-5	1,1,2-Trichloroethane	0.37 U	1.0	0.37	ug/l	
79-01-6	Trichloroethylene	0.27 U	1.0	0.27	ug/l	
75-69-4	Trichlorofluoromethane	0.50 U	2.0	0.50	ug/l	
75-01-4	Vinyl Chloride	1.8	1.0	0.31	ug/l	
1330-20-7	Xylene (total)	0.56 U	3.0	0.56	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	102%		83-118%
17060-07-0	1,2-Dichloroethane-D4	99%		79-125%
2037-26-5	Toluene-D8	97%		85-112%
460-00-4	4-Bromofluorobenzene	104%		83-118%

(a) Sample vial(s) contained significant headspace; reported results are considered minimum values.

U = Not detected MDL = Method Detection Limit
PQL = Practical Quantitation Limit
L = Indicates value exceeds calibration range
I = Result > = MDL but < PQL J = Estimated value
V = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS Accutest

Report of Analysis

Client Sample ID:	SW3-MW0027-032.0-20160325		
Lab Sample ID:	FA32657-8	**Date Sampled:**	03/25/16
Matrix:	AQ - Ground Water	**Date Received:**	03/29/16
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	SW3		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	J0975637.D	1	04/05/16	MM	n/a	n/a	VJ5255
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA TCL 4.2 List

CAS No.	Compound	Result	PQL	MDL	Units	Q
67-64-1	Acetone	10 U	25	10	ug/l	
71-43-2	Benzene	0.20 U	1.0	0.20	ug/l	
75-27-4	Bromodichloromethane	0.24 U	1.0	0.24	ug/l	
75-25-2	Bromoform	0.46 U	1.0	0.46	ug/l	
78-93-3	2-Butanone (MEK)	2.6 U	5.0	2.6	ug/l	
75-15-0	Carbon Disulfide	0.31	2.0	0.23	ug/l	I
56-23-5	Carbon Tetrachloride	0.30 U	1.0	0.30	ug/l	
108-90-7	Chlorobenzene	0.20 U	1.0	0.20	ug/l	
75-00-3	Chloroethane	0.63 U	2.0	0.63	ug/l	
67-66-3	Chloroform	0.30 U	1.0	0.30	ug/l	
110-82-7	Cyclohexane	0.26 U	1.0	0.26	ug/l	
124-48-1	Dibromochloromethane	0.26 U	1.0	0.26	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	0.81 U	5.0	0.81	ug/l	
106-93-4	1,2-Dibromoethane	0.33 U	2.0	0.33	ug/l	
75-71-8	Dichlorodifluoromethane	0.50 U	2.0	0.50	ug/l	
95-50-1	1,2-Dichlorobenzene	0.27 U	1.0	0.27	ug/l	
541-73-1	1,3-Dichlorobenzene	0.24 U	1.0	0.24	ug/l	
106-46-7	1,4-Dichlorobenzene	0.39 U	1.0	0.39	ug/l	
75-34-3	1,1-Dichloroethane	0.26 U	1.0	0.26	ug/l	
107-06-2	1,2-Dichloroethane	0.28 U	1.0	0.28	ug/l	
75-35-4	1,1-Dichloroethylene	0.22 U	1.0	0.22	ug/l	
156-59-2	cis-1,2-Dichloroethylene	0.31 U	1.0	0.31	ug/l	
156-60-5	trans-1,2-Dichloroethylene	0.33 U	1.0	0.33	ug/l	
78-87-5	1,2-Dichloropropane	0.34 U	1.0	0.34	ug/l	
10061-01-5	cis-1,3-Dichloropropene	0.26 U	1.0	0.26	ug/l	
10061-02-6	trans-1,3-Dichloropropene	0.25 U	1.0	0.25	ug/l	
100-41-4	Ethylbenzene	0.25 U	1.0	0.25	ug/l	
76-13-1	Freon 113	0.32 U	1.0	0.32	ug/l	
591-78-6	2-Hexanone	2.0 U	10	2.0	ug/l	
98-82-8	Isopropylbenzene	0.33 U	1.0	0.33	ug/l	
79-20-9	Methyl Acetate	5.0 U	20	5.0	ug/l	
74-83-9	Methyl Bromide	0.50 U	2.0	0.50	ug/l	

U = Not detected MDL = Method Detection Limit I = Result > = MDL but < PQL J = Estimated value
PQL = Practical Quantitation Limit V = Indicates analyte found in associated method blank
L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	SW3-MW0027-032.0-20160325		
Lab Sample ID:	FA32657-8	**Date Sampled:**	03/25/16
Matrix:	AQ - Ground Water	**Date Received:**	03/29/16
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	SW3		

VOA TCL 4.2 List

CAS No.	Compound	Result	PQL	MDL	Units	Q
74-87-3	Methyl Chloride	0.50 U	2.0	0.50	ug/l	
108-87-2	Methylcyclohexane	0.23 U	1.0	0.23	ug/l	
75-09-2	Methylene Chloride	2.0 U	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	1.4 U	5.0	1.4	ug/l	
1634-04-4	Methyl Tert Butyl Ether	0.20 U	1.0	0.20	ug/l	
100-42-5	Styrene	0.24 U	1.0	0.24	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	0.33 U	1.0	0.33	ug/l	
127-18-4	Tetrachloroethylene	0.30 U	1.0	0.30	ug/l	
108-88-3	Toluene	0.20 U	1.0	0.20	ug/l	
120-82-1	1,2,4-Trichlorobenzene	0.50 U	2.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	0.20 U	1.0	0.20	ug/l	
79-00-5	1,1,2-Trichloroethane	0.37 U	1.0	0.37	ug/l	
79-01-6	Trichloroethylene	0.27 U	1.0	0.27	ug/l	
75-69-4	Trichlorofluoromethane	0.50 U	2.0	0.50	ug/l	
75-01-4	Vinyl Chloride	21.8	1.0	0.31	ug/l	
1330-20-7	Xylene (total)	0.56 U	3.0	0.56	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	102%		83-118%
17060-07-0	1,2-Dichloroethane-D4	96%		79-125%
2037-26-5	Toluene-D8	99%		85-112%
460-00-4	4-Bromofluorobenzene	106%		83-118%

U = Not detected MDL = Method Detection Limit
PQL = Practical Quantitation Limit
L = Indicates value exceeds calibration range
I = Result > = MDL but < PQL J = Estimated value
V = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS Accutest

Report of Analysis

Client Sample ID:	SW3-MW0028-032.0-20160325		
Lab Sample ID:	FA32657-9	**Date Sampled:**	03/25/16
Matrix:	AQ - Ground Water	**Date Received:**	03/29/16
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	SW3		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	J0975638.D	1	04/05/16	MM	n/a	n/a	VJ5255
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA TCL 4.2 List

CAS No.	Compound	Result	PQL	MDL	Units	Q
67-64-1	Acetone	10 U	25	10	ug/l	
71-43-2	Benzene	0.20 U	1.0	0.20	ug/l	
75-27-4	Bromodichloromethane	0.24 U	1.0	0.24	ug/l	
75-25-2	Bromoform	0.46 U	1.0	0.46	ug/l	
78-93-3	2-Butanone (MEK)	2.6 U	5.0	2.6	ug/l	
75-15-0	Carbon Disulfide	0.23 U	2.0	0.23	ug/l	
56-23-5	Carbon Tetrachloride	0.30 U	1.0	0.30	ug/l	
108-90-7	Chlorobenzene	0.20 U	1.0	0.20	ug/l	
75-00-3	Chloroethane	2.6	2.0	0.63	ug/l	
67-66-3	Chloroform	0.30 U	1.0	0.30	ug/l	
110-82-7	Cyclohexane	0.26 U	1.0	0.26	ug/l	
124-48-1	Dibromochloromethane	0.26 U	1.0	0.26	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	0.81 U	5.0	0.81	ug/l	
106-93-4	1,2-Dibromoethane	0.33 U	2.0	0.33	ug/l	
75-71-8	Dichlorodifluoromethane	0.50 U	2.0	0.50	ug/l	
95-50-1	1,2-Dichlorobenzene	0.27 U	1.0	0.27	ug/l	
541-73-1	1,3-Dichlorobenzene	0.24 U	1.0	0.24	ug/l	
106-46-7	1,4-Dichlorobenzene	0.39 U	1.0	0.39	ug/l	
75-34-3	1,1-Dichloroethane	0.26 U	1.0	0.26	ug/l	
107-06-2	1,2-Dichloroethane	0.28 U	1.0	0.28	ug/l	
75-35-4	1,1-Dichloroethylene	0.22 U	1.0	0.22	ug/l	
156-59-2	cis-1,2-Dichloroethylene	0.31 U	1.0	0.31	ug/l	
156-60-5	trans-1,2-Dichloroethylene	0.33 U	1.0	0.33	ug/l	
78-87-5	1,2-Dichloropropane	0.34 U	1.0	0.34	ug/l	
10061-01-5	cis-1,3-Dichloropropene	0.26 U	1.0	0.26	ug/l	
10061-02-6	trans-1,3-Dichloropropene	0.25 U	1.0	0.25	ug/l	
100-41-4	Ethylbenzene	0.25 U	1.0	0.25	ug/l	
76-13-1	Freon 113	0.32 U	1.0	0.32	ug/l	
591-78-6	2-Hexanone	2.0 U	10	2.0	ug/l	
98-82-8	Isopropylbenzene	0.33 U	1.0	0.33	ug/l	
79-20-9	Methyl Acetate	5.0 U	20	5.0	ug/l	
74-83-9	Methyl Bromide	0.50 U	2.0	0.50	ug/l	

U = Not detected MDL = Method Detection Limit I = Result > = MDL but < PQL J = Estimated value
PQL = Practical Quantitation Limit V = Indicates analyte found in associated method blank
L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	SW3-MW0028-032.0-20160325		
Lab Sample ID:	FA32657-9	**Date Sampled:**	03/25/16
Matrix:	AQ - Ground Water	**Date Received:**	03/29/16
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	SW3		

VOA TCL 4.2 List

CAS No.	Compound	Result	PQL	MDL	Units	Q
74-87-3	Methyl Chloride	0.50 U	2.0	0.50	ug/l	
108-87-2	Methylcyclohexane	0.23 U	1.0	0.23	ug/l	
75-09-2	Methylene Chloride	2.0 U	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	1.4 U	5.0	1.4	ug/l	
1634-04-4	Methyl Tert Butyl Ether	0.20 U	1.0	0.20	ug/l	
100-42-5	Styrene	0.24 U	1.0	0.24	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	0.33 U	1.0	0.33	ug/l	
127-18-4	Tetrachloroethylene	0.30 U	1.0	0.30	ug/l	
108-88-3	Toluene	0.20 U	1.0	0.20	ug/l	
120-82-1	1,2,4-Trichlorobenzene	0.50 U	2.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	0.20 U	1.0	0.20	ug/l	
79-00-5	1,1,2-Trichloroethane	0.37 U	1.0	0.37	ug/l	
79-01-6	Trichloroethylene	0.27 U	1.0	0.27	ug/l	
75-69-4	Trichlorofluoromethane	0.50 U	2.0	0.50	ug/l	
75-01-4	Vinyl Chloride	56.2	1.0	0.31	ug/l	
1330-20-7	Xylene (total)	0.56 U	3.0	0.56	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	101%		83-118%
17060-07-0	1,2-Dichloroethane-D4	97%		79-125%
2037-26-5	Toluene-D8	100%		85-112%
460-00-4	4-Bromofluorobenzene	105%		83-118%

(a) Sample vial(s) contained significant headspace; reported results are considered minimum values.

U = Not detected MDL = Method Detection Limit
PQL = Practical Quantitation Limit
L = Indicates value exceeds calibration range
I = Result > = MDL but < PQL J = Estimated value
V = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS Accutest

Report of Analysis

Client Sample ID:	SW3-MW0020-040.0-20160325		
Lab Sample ID:	FA32657-10	**Date Sampled:**	03/25/16
Matrix:	AQ - Ground Water	**Date Received:**	03/29/16
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	SW3		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	J0975639.D	1	04/05/16	MM	n/a	n/a	VJ5255
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA TCL 4.2 List

CAS No.	Compound	Result	PQL	MDL	Units	Q
67-64-1	Acetone	10 U	25	10	ug/l	
71-43-2	Benzene	0.20 U	1.0	0.20	ug/l	
75-27-4	Bromodichloromethane	0.24 U	1.0	0.24	ug/l	
75-25-2	Bromoform	0.46 U	1.0	0.46	ug/l	
78-93-3	2-Butanone (MEK)	2.6 U	5.0	2.6	ug/l	
75-15-0	Carbon Disulfide	0.23 U	2.0	0.23	ug/l	
56-23-5	Carbon Tetrachloride	0.30 U	1.0	0.30	ug/l	
108-90-7	Chlorobenzene	0.20 U	1.0	0.20	ug/l	
75-00-3	Chloroethane	0.63 U	2.0	0.63	ug/l	
67-66-3	Chloroform	0.30 U	1.0	0.30	ug/l	
110-82-7	Cyclohexane	0.26 U	1.0	0.26	ug/l	
124-48-1	Dibromochloromethane	0.26 U	1.0	0.26	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	0.81 U	5.0	0.81	ug/l	
106-93-4	1,2-Dibromoethane	0.33 U	2.0	0.33	ug/l	
75-71-8	Dichlorodifluoromethane	0.50 U	2.0	0.50	ug/l	
95-50-1	1,2-Dichlorobenzene	0.27 U	1.0	0.27	ug/l	
541-73-1	1,3-Dichlorobenzene	0.24 U	1.0	0.24	ug/l	
106-46-7	1,4-Dichlorobenzene	0.39 U	1.0	0.39	ug/l	
75-34-3	1,1-Dichloroethane	0.26 U	1.0	0.26	ug/l	
107-06-2	1,2-Dichloroethane	0.28 U	1.0	0.28	ug/l	
75-35-4	1,1-Dichloroethylene	0.22 U	1.0	0.22	ug/l	
156-59-2	cis-1,2-Dichloroethylene	0.31 U	1.0	0.31	ug/l	
156-60-5	trans-1,2-Dichloroethylene	0.33 U	1.0	0.33	ug/l	
78-87-5	1,2-Dichloropropane	0.34 U	1.0	0.34	ug/l	
10061-01-5	cis-1,3-Dichloropropene	0.26 U	1.0	0.26	ug/l	
10061-02-6	trans-1,3-Dichloropropene	0.25 U	1.0	0.25	ug/l	
100-41-4	Ethylbenzene	0.25 U	1.0	0.25	ug/l	
76-13-1	Freon 113	0.32 U	1.0	0.32	ug/l	
591-78-6	2-Hexanone	2.0 U	10	2.0	ug/l	
98-82-8	Isopropylbenzene	0.33 U	1.0	0.33	ug/l	
79-20-9	Methyl Acetate	5.0 U	20	5.0	ug/l	
74-83-9	Methyl Bromide	0.50 U	2.0	0.50	ug/l	

U = Not detected MDL = Method Detection Limit I = Result > = MDL but < PQL J = Estimated value
PQL = Practical Quantitation Limit V = Indicates analyte found in associated method blank
L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	SW3-MW0020-040.0-20160325		
Lab Sample ID:	FA32657-10	**Date Sampled:**	03/25/16
Matrix:	AQ - Ground Water	**Date Received:**	03/29/16
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	SW3		

VOA TCL 4.2 List

CAS No.	Compound	Result	PQL	MDL	Units	Q
74-87-3	Methyl Chloride	0.50 U	2.0	0.50	ug/l	
108-87-2	Methylcyclohexane	0.23 U	1.0	0.23	ug/l	
75-09-2	Methylene Chloride	2.0 U	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	1.4 U	5.0	1.4	ug/l	
1634-04-4	Methyl Tert Butyl Ether	0.20 U	1.0	0.20	ug/l	
100-42-5	Styrene	0.24 U	1.0	0.24	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	0.33 U	1.0	0.33	ug/l	
127-18-4	Tetrachloroethylene	0.30 U	1.0	0.30	ug/l	
108-88-3	Toluene	0.20 U	1.0	0.20	ug/l	
120-82-1	1,2,4-Trichlorobenzene	0.50 U	2.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	0.20 U	1.0	0.20	ug/l	
79-00-5	1,1,2-Trichloroethane	0.37 U	1.0	0.37	ug/l	
79-01-6	Trichloroethylene	0.27 U	1.0	0.27	ug/l	
75-69-4	Trichlorofluoromethane	0.50 U	2.0	0.50	ug/l	
75-01-4	Vinyl Chloride	0.31 U	1.0	0.31	ug/l	
1330-20-7	Xylene (total)	0.56 U	3.0	0.56	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	98%		83-118%
17060-07-0	1,2-Dichloroethane-D4	93%		79-125%
2037-26-5	Toluene-D8	99%		85-112%
460-00-4	4-Bromofluorobenzene	104%		83-118%

U = Not detected MDL = Method Detection Limit
PQL = Practical Quantitation Limit
L = Indicates value exceeds calibration range
I = Result > = MDL but < PQL J = Estimated value
V = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS Accutest

Report of Analysis

Client Sample ID:	SW3-SW0001-000.5-20160325		
Lab Sample ID:	FA32657-11	**Date Sampled:**	03/25/16
Matrix:	AQ - Ground Water	**Date Received:**	03/29/16
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	SW3		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	J0975640.D	1	04/05/16	MM	n/a	n/a	VJ5255
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA TCL 4.2 List

CAS No.	Compound	Result	PQL	MDL	Units	Q
67-64-1	Acetone	10 U	25	10	ug/l	
71-43-2	Benzene	0.20 U	1.0	0.20	ug/l	
75-27-4	Bromodichloromethane	0.24 U	1.0	0.24	ug/l	
75-25-2	Bromoform	0.46 U	1.0	0.46	ug/l	
78-93-3	2-Butanone (MEK)	2.6 U	5.0	2.6	ug/l	
75-15-0	Carbon Disulfide	0.26	2.0	0.23	ug/l	I
56-23-5	Carbon Tetrachloride	0.30 U	1.0	0.30	ug/l	
108-90-7	Chlorobenzene	0.20 U	1.0	0.20	ug/l	
75-00-3	Chloroethane	0.63 U	2.0	0.63	ug/l	
67-66-3	Chloroform	0.30 U	1.0	0.30	ug/l	
110-82-7	Cyclohexane	0.26 U	1.0	0.26	ug/l	
124-48-1	Dibromochloromethane	0.26 U	1.0	0.26	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	0.81 U	5.0	0.81	ug/l	
106-93-4	1,2-Dibromoethane	0.33 U	2.0	0.33	ug/l	
75-71-8	Dichlorodifluoromethane	0.50 U	2.0	0.50	ug/l	
95-50-1	1,2-Dichlorobenzene	0.27 U	1.0	0.27	ug/l	
541-73-1	1,3-Dichlorobenzene	0.24 U	1.0	0.24	ug/l	
106-46-7	1,4-Dichlorobenzene	0.39 U	1.0	0.39	ug/l	
75-34-3	1,1-Dichloroethane	0.26 U	1.0	0.26	ug/l	
107-06-2	1,2-Dichloroethane	0.28 U	1.0	0.28	ug/l	
75-35-4	1,1-Dichloroethylene	0.22 U	1.0	0.22	ug/l	
156-59-2	cis-1,2-Dichloroethylene	0.31 U	1.0	0.31	ug/l	
156-60-5	trans-1,2-Dichloroethylene	0.33 U	1.0	0.33	ug/l	
78-87-5	1,2-Dichloropropane	0.34 U	1.0	0.34	ug/l	
10061-01-5	cis-1,3-Dichloropropene	0.26 U	1.0	0.26	ug/l	
10061-02-6	trans-1,3-Dichloropropene	0.25 U	1.0	0.25	ug/l	
100-41-4	Ethylbenzene	0.25 U	1.0	0.25	ug/l	
76-13-1	Freon 113	0.32 U	1.0	0.32	ug/l	
591-78-6	2-Hexanone	2.0 U	10	2.0	ug/l	
98-82-8	Isopropylbenzene	0.33 U	1.0	0.33	ug/l	
79-20-9	Methyl Acetate	5.0 U	20	5.0	ug/l	
74-83-9	Methyl Bromide	0.50 U	2.0	0.50	ug/l	

U = Not detected MDL = Method Detection Limit I = Result > = MDL but < PQL J = Estimated value
PQL = Practical Quantitation Limit V = Indicates analyte found in associated method blank
L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	SW3-SW0001-000.5-20160325		
Lab Sample ID:	FA32657-11	**Date Sampled:**	03/25/16
Matrix:	AQ - Ground Water	**Date Received:**	03/29/16
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	SW3		

VOA TCL 4.2 List

CAS No.	Compound	Result	PQL	MDL	Units	Q
74-87-3	Methyl Chloride	0.50 U	2.0	0.50	ug/l	
108-87-2	Methylcyclohexane	0.23 U	1.0	0.23	ug/l	
75-09-2	Methylene Chloride	2.0 U	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	1.4 U	5.0	1.4	ug/l	
1634-04-4	Methyl Tert Butyl Ether	0.20 U	1.0	0.20	ug/l	
100-42-5	Styrene	0.24 U	1.0	0.24	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	0.33 U	1.0	0.33	ug/l	
127-18-4	Tetrachloroethylene	0.30 U	1.0	0.30	ug/l	
108-88-3	Toluene	0.20 U	1.0	0.20	ug/l	
120-82-1	1,2,4-Trichlorobenzene	0.50 U	2.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	0.20 U	1.0	0.20	ug/l	
79-00-5	1,1,2-Trichloroethane	0.37 U	1.0	0.37	ug/l	
79-01-6	Trichloroethylene	0.27 U	1.0	0.27	ug/l	
75-69-4	Trichlorofluoromethane	0.50 U	2.0	0.50	ug/l	
75-01-4	Vinyl Chloride	0.31 U	1.0	0.31	ug/l	
1330-20-7	Xylene (total)	0.56 U	3.0	0.56	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	100%		83-118%
17060-07-0	1,2-Dichloroethane-D4	95%		79-125%
2037-26-5	Toluene-D8	100%		85-112%
460-00-4	4-Bromofluorobenzene	100%		83-118%

U = Not detected MDL = Method Detection Limit
PQL = Practical Quantitation Limit
L = Indicates value exceeds calibration range
I = Result > = MDL but < PQL J = Estimated value
V = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS Accutest

Report of Analysis

Client Sample ID:	SW3-SW0003-000.5-20160325		
Lab Sample ID:	FA32657-12	**Date Sampled:**	03/25/16
Matrix:	AQ - Ground Water	**Date Received:**	03/29/16
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	SW3		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	J0975641.D	1	04/05/16	MM	n/a	n/a	VJ5255
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA TCL 4.2 List

CAS No.	Compound	Result	PQL	MDL	Units	Q
67-64-1	Acetone	10 U	25	10	ug/l	
71-43-2	Benzene	0.20 U	1.0	0.20	ug/l	
75-27-4	Bromodichloromethane	0.24 U	1.0	0.24	ug/l	
75-25-2	Bromoform	0.46 U	1.0	0.46	ug/l	
78-93-3	2-Butanone (MEK)	2.6 U	5.0	2.6	ug/l	
75-15-0	Carbon Disulfide	0.23 U	2.0	0.23	ug/l	
56-23-5	Carbon Tetrachloride	0.30 U	1.0	0.30	ug/l	
108-90-7	Chlorobenzene	0.20 U	1.0	0.20	ug/l	
75-00-3	Chloroethane	0.63 U	2.0	0.63	ug/l	
67-66-3	Chloroform	0.30 U	1.0	0.30	ug/l	
110-82-7	Cyclohexane	0.26 U	1.0	0.26	ug/l	
124-48-1	Dibromochloromethane	0.26 U	1.0	0.26	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	0.81 U	5.0	0.81	ug/l	
106-93-4	1,2-Dibromoethane	0.33 U	2.0	0.33	ug/l	
75-71-8	Dichlorodifluoromethane	0.50 U	2.0	0.50	ug/l	
95-50-1	1,2-Dichlorobenzene	0.27 U	1.0	0.27	ug/l	
541-73-1	1,3-Dichlorobenzene	0.24 U	1.0	0.24	ug/l	
106-46-7	1,4-Dichlorobenzene	0.39 U	1.0	0.39	ug/l	
75-34-3	1,1-Dichloroethane	0.26 U	1.0	0.26	ug/l	
107-06-2	1,2-Dichloroethane	0.28 U	1.0	0.28	ug/l	
75-35-4	1,1-Dichloroethylene	0.22 U	1.0	0.22	ug/l	
156-59-2	cis-1,2-Dichloroethylene	0.31 U	1.0	0.31	ug/l	
156-60-5	trans-1,2-Dichloroethylene	0.33 U	1.0	0.33	ug/l	
78-87-5	1,2-Dichloropropane	0.34 U	1.0	0.34	ug/l	
10061-01-5	cis-1,3-Dichloropropene	0.26 U	1.0	0.26	ug/l	
10061-02-6	trans-1,3-Dichloropropene	0.25 U	1.0	0.25	ug/l	
100-41-4	Ethylbenzene	0.25 U	1.0	0.25	ug/l	
76-13-1	Freon 113	0.32 U	1.0	0.32	ug/l	
591-78-6	2-Hexanone	2.0 U	10	2.0	ug/l	
98-82-8	Isopropylbenzene	0.33 U	1.0	0.33	ug/l	
79-20-9	Methyl Acetate	5.0 U	20	5.0	ug/l	
74-83-9	Methyl Bromide	0.50 U	2.0	0.50	ug/l	

U = Not detected MDL = Method Detection Limit I = Result > = MDL but < PQL J = Estimated value
PQL = Practical Quantitation Limit V = Indicates analyte found in associated method blank
L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	SW3-SW0003-000.5-20160325		
Lab Sample ID:	FA32657-12	**Date Sampled:**	03/25/16
Matrix:	AQ - Ground Water	**Date Received:**	03/29/16
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	SW3		

VOA TCL 4.2 List

CAS No.	Compound	Result	PQL	MDL	Units	Q
74-87-3	Methyl Chloride	0.50 U	2.0	0.50	ug/l	
108-87-2	Methylcyclohexane	0.23 U	1.0	0.23	ug/l	
75-09-2	Methylene Chloride	2.0 U	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	1.4 U	5.0	1.4	ug/l	
1634-04-4	Methyl Tert Butyl Ether	0.20 U	1.0	0.20	ug/l	
100-42-5	Styrene	0.24 U	1.0	0.24	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	0.33 U	1.0	0.33	ug/l	
127-18-4	Tetrachloroethylene	0.30 U	1.0	0.30	ug/l	
108-88-3	Toluene	0.20 U	1.0	0.20	ug/l	
120-82-1	1,2,4-Trichlorobenzene	0.50 U	2.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	0.20 U	1.0	0.20	ug/l	
79-00-5	1,1,2-Trichloroethane	0.37 U	1.0	0.37	ug/l	
79-01-6	Trichloroethylene	0.27 U	1.0	0.27	ug/l	
75-69-4	Trichlorofluoromethane	0.50 U	2.0	0.50	ug/l	
75-01-4	Vinyl Chloride	0.31 U	1.0	0.31	ug/l	
1330-20-7	Xylene (total)	0.56 U	3.0	0.56	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	101%		83-118%
17060-07-0	1,2-Dichloroethane-D4	96%		79-125%
2037-26-5	Toluene-D8	101%		85-112%
460-00-4	4-Bromofluorobenzene	106%		83-118%

U = Not detected MDL = Method Detection Limit
PQL = Practical Quantitation Limit
L = Indicates value exceeds calibration range
I = Result > = MDL but < PQL J = Estimated value
V = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS Accutest

Report of Analysis

Client Sample ID:	SW3-SW0002-000.5-20160325		
Lab Sample ID:	FA32657-13	**Date Sampled:**	03/25/16
Matrix:	AQ - Ground Water	**Date Received:**	03/29/16
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	SW3		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	A0200026.D	1	04/05/16	TD	n/a	n/a	VA1906
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA TCL 4.2 List

CAS No.	Compound	Result	PQL	MDL	Units	Q
67-64-1	Acetone	10 U	25	10	ug/l	
71-43-2	Benzene	0.20 U	1.0	0.20	ug/l	
75-27-4	Bromodichloromethane	0.24 U	1.0	0.24	ug/l	
75-25-2	Bromoform	0.46 U	1.0	0.46	ug/l	
78-93-3	2-Butanone (MEK)	2.6 U	5.0	2.6	ug/l	
75-15-0	Carbon Disulfide	0.28	2.0	0.23	ug/l	I
56-23-5	Carbon Tetrachloride	0.30 U	1.0	0.30	ug/l	
108-90-7	Chlorobenzene	0.20 U	1.0	0.20	ug/l	
75-00-3	Chloroethane	0.63 U	2.0	0.63	ug/l	
67-66-3	Chloroform	0.30 U	1.0	0.30	ug/l	
110-82-7	Cyclohexane	0.26 U	1.0	0.26	ug/l	
124-48-1	Dibromochloromethane	0.26 U	1.0	0.26	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	0.81 U	5.0	0.81	ug/l	
106-93-4	1,2-Dibromoethane	0.33 U	2.0	0.33	ug/l	
75-71-8	Dichlorodifluoromethane	0.50 U	2.0	0.50	ug/l	
95-50-1	1,2-Dichlorobenzene	0.27 U	1.0	0.27	ug/l	
541-73-1	1,3-Dichlorobenzene	0.24 U	1.0	0.24	ug/l	
106-46-7	1,4-Dichlorobenzene	0.39 U	1.0	0.39	ug/l	
75-34-3	1,1-Dichloroethane	0.26 U	1.0	0.26	ug/l	
107-06-2	1,2-Dichloroethane	0.28 U	1.0	0.28	ug/l	
75-35-4	1,1-Dichloroethylene	0.22 U	1.0	0.22	ug/l	
156-59-2	cis-1,2-Dichloroethylene	0.31 U	1.0	0.31	ug/l	
156-60-5	trans-1,2-Dichloroethylene	0.33 U	1.0	0.33	ug/l	
78-87-5	1,2-Dichloropropane	0.34 U	1.0	0.34	ug/l	
10061-01-5	cis-1,3-Dichloropropene	0.26 U	1.0	0.26	ug/l	
10061-02-6	trans-1,3-Dichloropropene	0.25 U	1.0	0.25	ug/l	
100-41-4	Ethylbenzene	0.25 U	1.0	0.25	ug/l	
76-13-1	Freon 113	0.32 U	1.0	0.32	ug/l	
591-78-6	2-Hexanone	2.0 U	10	2.0	ug/l	
98-82-8	Isopropylbenzene	0.33 U	1.0	0.33	ug/l	
79-20-9	Methyl Acetate	5.0 U	20	5.0	ug/l	
74-83-9	Methyl Bromide	0.50 U	2.0	0.50	ug/l	

U = Not detected MDL = Method Detection Limit I = Result > = MDL but < PQL J = Estimated value
PQL = Practical Quantitation Limit V = Indicates analyte found in associated method blank
L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	SW3-SW0002-000.5-20160325		
Lab Sample ID:	FA32657-13	**Date Sampled:**	03/25/16
Matrix:	AQ - Ground Water	**Date Received:**	03/29/16
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	SW3		

VOA TCL 4.2 List

CAS No.	Compound	Result	PQL	MDL	Units	Q
74-87-3	Methyl Chloride	0.50 U	2.0	0.50	ug/l	
108-87-2	Methylcyclohexane	0.23 U	1.0	0.23	ug/l	
75-09-2	Methylene Chloride	2.0 U	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	1.4 U	5.0	1.4	ug/l	
1634-04-4	Methyl Tert Butyl Ether	0.20 U	1.0	0.20	ug/l	
100-42-5	Styrene	0.24 U	1.0	0.24	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	0.33 U	1.0	0.33	ug/l	
127-18-4	Tetrachloroethylene	0.30 U	1.0	0.30	ug/l	
108-88-3	Toluene	0.20 U	1.0	0.20	ug/l	
120-82-1	1,2,4-Trichlorobenzene	0.50 U	2.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	0.20 U	1.0	0.20	ug/l	
79-00-5	1,1,2-Trichloroethane	0.37 U	1.0	0.37	ug/l	
79-01-6	Trichloroethylene	0.27 U	1.0	0.27	ug/l	
75-69-4	Trichlorofluoromethane	0.50 U	2.0	0.50	ug/l	
75-01-4	Vinyl Chloride	0.31 U	1.0	0.31	ug/l	
1330-20-7	Xylene (total)	0.56 U	3.0	0.56	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	105%		83-118%
17060-07-0	1,2-Dichloroethane-D4	109%		79-125%
2037-26-5	Toluene-D8	102%		85-112%
460-00-4	4-Bromofluorobenzene	104%		83-118%

U = Not detected MDL = Method Detection Limit
PQL = Practical Quantitation Limit
L = Indicates value exceeds calibration range
I = Result > = MDL but < PQL J = Estimated value
V = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

5

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Certification Exceptions
- Chain of Custody

Parameter Certification Exceptions

Job Number: FA32657
Account: TTNASA Tetra Tech NUS
Project: SW3

The following parameters included in this report are exceptions to NELAC certification.
The certification status of each is indicated below.

Parameter	CAS#	Method	Mat	Certification Status
Freon 113	76-13-1	**SW846 8260B**	AQ	Certified by SOP MS005

Tetra Tech, Inc.

CHAIN OF CUSTODY | NUMBER No. 0070 | PAGE 1 OF 1

FA32657

PROJECT NO: 112c07584	FACILITY: NASA KSC SW3	PROJECT MANAGER: Chris Neumann	PHONE NUMBER: 321 636 6470	LABORATORY NAME AND CONTACT: Accutest	
SAMPLERS (SIGNATURE)		FIELD OPERATIONS LEADER: Alex Murphy	PHONE NUMBER: 321 292 0842	ADDRESS: 4405 Vineland Road	
		CARRIER/WAYBILL NUMBER		CITY, STATE: Orlando, FL 32811	

STANDARD TAT ☒ RUSH TAT ☐ ☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

CONTAINER TYPE PLASTIC (P) or GLASS (G): G
PRESERVATIVE USED: HCl

	DATE YEAR 03/2016	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	TYPE OF ANALYSIS VOCs 8260B	COMMENTS
1	24	1255	SW3-MW00006-040.0-20160324		35 ~~45~~	~~45~~ 25	GW	G	3	X	
2		1330	SW3-MW00005-020.0-20160324		15	25	GW	G	3	X	
3		1545	SW3-MW0024-040.0-20160324		35	45	GW	G	3	X	
4	25	0830	SW3-MW00009-020.0-20160325		15	25	GW	G	3	X	
5		0920	SW3-MW0001-020.0-20160325		15	25	GW	G	3	X	
6		1020	SW3-MW0025-040.0-20160325		35	45	GW	G	3	X	
7		1055	SW3-MW0026-040.0-20160325		35	45	GW	G	3	X	
8		1220	SW3-MW0027-032.0-20160325		27	37	GW	G	3	X	
9		1250	SW3-MW0028-032.0-20160325		27	37	GW	G	3	X	
10		1330	SW3-MW0026-040.0-20160325		35	45	GW	G	3	X	
11		1345	SW3-SW0001-000.5-20160325		0	0.5	GW	G	3	X	
12		1400	SW3-SW0003-000.5-20160325		0	0.5	GW	G	3	X	
13		1415	SW3-SW0002-000.5-20160325		0	0.5	GW	G	3	X	

	DATE	TIME		DATE	TIME
1. RELINQUISHED BY	3/28/2016	1445	1. RECEIVED BY	03/28/16	1445
2. RELINQUISHED BY	03/28/16	1800	2. RECEIVED BY	6-29-16	08:30
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME

COMMENTS: 1. Cooler (ALSE)

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY)

3.0 4/02R FORM NO. TtNUS-001

FA32657: Chain of Custody
Page 1 of 2

ACCUTEST LABORATORIES SAMPLE RECEIPT CONFIRMATION

ACCUTEST'S JOB NUMBER: FA 32657 CLIENT: TETRA TECH PROJECT: 112607584

DATE/TIME RECEIVED: 3-29-16 08:30 {MM/DD/YY 24:00} NUMBER OF COOLERS RECEIVED: 1

METHOD OF DELIVERY: FEDEX UPS (ACCUTEST COURIER) DELIVERY OTHER:

AIRBILL NUMBERS:

COOLER INFORMATION

- [ ] CUSTODY SEAL NOT PRESENT OR NOT INTACT
- [ ] CHAIN OF CUSTODY NOT RECEIVED (COC)
- [ ] ANALYSIS REQUESTED IS UNCLEAR OR MISSING
- [ ] SAMPLE DATES OR TIMES UNCLEAR OR MISSING
- [ ] TEMPERATURE CRITERIA NOT MET

TRIP BLANK INFORMATION

- [ ] TRIP BLANK PROVIDED
- [X] TRIP BLANK NOT PROVIDED
- [X] TRIP BLANK NOT ON COC
- [ ] TRIP BLANK INTACT
- [ ] TRIP BLANK NOT INTACT
- [ ] RECEIVED WATER TRIP BLANK
- [ ] RECEIVED SOIL TRIP BLANK

MISC. INFORMATION

NUMBER OF ENCORES ? 25-GRAM_____ 5-GRAM_____

NUMBER OF 5035 FIELD KITS ? _____

NUMBER OF LAB FILTERED METALS ? _____

TEMPERATURE INFORMATION

- [ ] IR THERM ID 1 CORR. FACTOR +0.2
- [ ] OBSERVED TEMPS: 9.8
- [ ] CORRECTED TEMPS: 3.0 (USED FOR LIMS)

SAMPLE INFORMATION

- [ ] INCORRECT NUMBER OF CONTAINERS USED
- [ ] SAMPLE RECEIVED IMPROPERLY PRESERVED
- [ ] INSUFFICIENT VOLUME FOR ANALYSIS
- [ ] DATES/TIMES ON COC DO NOT MATCH SAMPLE LABEL
- [ ] ID'S ON COC DO NOT MATCH LABEL
- [ ] VOC VIALS HAVE HEADSPACE (MACRO BUBBLES)
- [ ] BOTTLES RECEIVED BUT ANALYSIS NOT REQUESTED
- [ ] NO BOTTLES RECEIVED FOR ANALYSIS REQUESTED
- [ ] UNCLEAR FILTERING OR COMPOSITING INSTRUCTIONS
- [ ] SAMPLE CONTAINER(S) RECEIVED BROKEN
- [ ] 5035 FIELD KITS NOT RECEIVED WITHIN 48 HOURS
- [ ] BULK VOA SOIL JARS NOT RECEIVED WITHIN 48 HOURS
- [ ] % SOLIDS JAR NOT RECEIVED
- [ ] RESIDUAL CHLORINE PRESENT LOT#_____

{APPLICABLE TO EPA 600 SERIES OR NORTH CAROLINA ORGANICS}

TEST STRIP LOT#s pH 0-3 204413A pH 10-12 219813A OTHER (specify) _____

SUMMARY OF COMMENTS:

TECHNICIAN SIGNATURE/DATE: 3-29-16 REVIEWER SIGNATURE/DATE: 3/29/16

NF 11/15 receipt confirmation 111015.xls

GC/MS Volatiles

6

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Instrument Performance Checks (BFB)
- Internal Standard Area Summaries
- Surrogate Recovery Summaries
- Initial and Continuing Calibration Summaries

Method Blank Summary

Job Number: FA32657
Account: TTNASA Tetra Tech NUS
Project: SW3

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VJ5255-MB	J0975621.D	1	04/05/16	MM	n/a	n/a	VJ5255

The QC reported here applies to the following samples: **Method:** SW846 8260B

FA32657-1, FA32657-2, FA32657-3, FA32657-4, FA32657-5, FA32657-6, FA32657-7, FA32657-8, FA32657-9, FA32657-10, FA32657-11, FA32657-12

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	25	10	ug/l	
71-43-2	Benzene	ND	1.0	0.20	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.24	ug/l	
75-25-2	Bromoform	ND	1.0	0.46	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.6	ug/l	
75-15-0	Carbon Disulfide	ND	2.0	0.23	ug/l	
56-23-5	Carbon Tetrachloride	ND	1.0	0.30	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.20	ug/l	
75-00-3	Chloroethane	ND	2.0	0.63	ug/l	
67-66-3	Chloroform	ND	1.0	0.30	ug/l	
110-82-7	Cyclohexane	ND	1.0	0.26	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.26	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5.0	0.81	ug/l	
106-93-4	1,2-Dibromoethane	ND	2.0	0.33	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.50	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.27	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.24	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.39	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.26	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.28	ug/l	
75-35-4	1,1-Dichloroethylene	ND	1.0	0.22	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	1.0	0.31	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	1.0	0.33	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.34	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.26	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.25	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.25	ug/l	
76-13-1	Freon 113	ND	1.0	0.32	ug/l	
591-78-6	2-Hexanone	ND	10	2.0	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	0.33	ug/l	
79-20-9	Methyl Acetate	ND	20	5.0	ug/l	
74-83-9	Methyl Bromide	ND	2.0	0.50	ug/l	
74-87-3	Methyl Chloride	ND	2.0	0.50	ug/l	
108-87-2	Methylcyclohexane	ND	1.0	0.23	ug/l	
75-09-2	Methylene Chloride	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	1.4	ug/l	

Method Blank Summary

Job Number: FA32657
Account: TTNASA Tetra Tech NUS
Project: SW3

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VJ5255-MB	J0975621.D	1	04/05/16	MM	n/a	n/a	VJ5255

The QC reported here applies to the following samples: **Method:** SW846 8260B

FA32657-1, FA32657-2, FA32657-3, FA32657-4, FA32657-5, FA32657-6, FA32657-7, FA32657-8, FA32657-9, FA32657-10, FA32657-11, FA32657-12

CAS No.	Compound	Result	RL	MDL	Units	Q
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.20	ug/l	
100-42-5	Styrene	ND	1.0	0.24	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.33	ug/l	
127-18-4	Tetrachloroethylene	ND	1.0	0.30	ug/l	
108-88-3	Toluene	ND	1.0	0.20	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	2.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.20	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.37	ug/l	
79-01-6	Trichloroethylene	ND	1.0	0.27	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	0.50	ug/l	
75-01-4	Vinyl Chloride	ND	1.0	0.31	ug/l	
1330-20-7	Xylene (total)	ND	3.0	0.56	ug/l	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	99%	83-118%
17060-07-0	1,2-Dichloroethane-D4	96%	79-125%
2037-26-5	Toluene-D8	101%	85-112%
460-00-4	4-Bromofluorobenzene	106%	83-118%

Method Blank Summary

Job Number: FA32657
Account: TTNASA Tetra Tech NUS
Project: SW3

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VA1906-MB	A0200021.D	1	04/05/16	TD	n/a	n/a	VA1906

The QC reported here applies to the following samples: **Method:** SW846 8260B

FA32657-13

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	25	10	ug/l	
71-43-2	Benzene	ND	1.0	0.20	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.24	ug/l	
75-25-2	Bromoform	ND	1.0	0.46	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.6	ug/l	
75-15-0	Carbon Disulfide	ND	2.0	0.23	ug/l	
56-23-5	Carbon Tetrachloride	ND	1.0	0.30	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.20	ug/l	
75-00-3	Chloroethane	ND	2.0	0.63	ug/l	
67-66-3	Chloroform	ND	1.0	0.30	ug/l	
110-82-7	Cyclohexane	ND	1.0	0.26	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.26	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5.0	0.81	ug/l	
106-93-4	1,2-Dibromoethane	ND	2.0	0.33	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.50	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.27	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.24	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.39	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.26	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.28	ug/l	
75-35-4	1,1-Dichloroethylene	ND	1.0	0.22	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	1.0	0.31	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	1.0	0.33	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.34	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.26	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.25	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.25	ug/l	
76-13-1	Freon 113	ND	1.0	0.32	ug/l	
591-78-6	2-Hexanone	ND	10	2.0	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	0.33	ug/l	
79-20-9	Methyl Acetate	ND	20	5.0	ug/l	
74-83-9	Methyl Bromide	ND	2.0	0.50	ug/l	
74-87-3	Methyl Chloride	ND	2.0	0.50	ug/l	
108-87-2	Methylcyclohexane	ND	1.0	0.23	ug/l	
75-09-2	Methylene Chloride	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	1.4	ug/l	

Method Blank Summary

Job Number: FA32657
Account: TTNASA Tetra Tech NUS
Project: SW3

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VA1906-MB	A0200021.D	1	04/05/16	TD	n/a	n/a	VA1906

The QC reported here applies to the following samples: **Method:** SW846 8260B

FA32657-13

CAS No.	Compound	Result	RL	MDL	Units	Q
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.20	ug/l	
100-42-5	Styrene	ND	1.0	0.24	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.33	ug/l	
127-18-4	Tetrachloroethylene	ND	1.0	0.30	ug/l	
108-88-3	Toluene	ND	1.0	0.20	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	2.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.20	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.37	ug/l	
79-01-6	Trichloroethylene	ND	1.0	0.27	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	0.50	ug/l	
75-01-4	Vinyl Chloride	ND	1.0	0.31	ug/l	
1330-20-7	Xylene (total)	ND	3.0	0.56	ug/l	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	103%	83-118%
17060-07-0	1,2-Dichloroethane-D4	106%	79-125%
2037-26-5	Toluene-D8	102%	85-112%
460-00-4	4-Bromofluorobenzene	106%	83-118%

Blank Spike Summary

Job Number: FA32657
Account: TTNASA Tetra Tech NUS
Project: SW3

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VJ5255-BS	J0975620.D	1	04/05/16	MM	n/a	n/a	VJ5255

The QC reported here applies to the following samples: **Method:** SW846 8260B

FA32657-1, FA32657-2, FA32657-3, FA32657-4, FA32657-5, FA32657-6, FA32657-7, FA32657-8, FA32657-9, FA32657-10, FA32657-11, FA32657-12

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
67-64-1	Acetone	125	149	119	50-147
71-43-2	Benzene	25	25.1	100	81-122
75-27-4	Bromodichloromethane	25	24.7	99	79-123
75-25-2	Bromoform	25	22.8	91	66-123
78-93-3	2-Butanone (MEK)	125	117	94	56-143
75-15-0	Carbon Disulfide	25	26.7	107	66-148
56-23-5	Carbon Tetrachloride	25	28.4	114	76-136
108-90-7	Chlorobenzene	25	24.9	100	82-124
75-00-3	Chloroethane	25	29.6	118	62-144
67-66-3	Chloroform	25	25.5	102	80-124
110-82-7	Cyclohexane	25	26.1	104	73-138
124-48-1	Dibromochloromethane	25	24.7	99	78-122
96-12-8	1,2-Dibromo-3-chloropropane	25	18.6	74	64-123
106-93-4	1,2-Dibromoethane	25	22.3	89	75-120
75-71-8	Dichlorodifluoromethane	25	25.5	102	42-167
95-50-1	1,2-Dichlorobenzene	25	24.0	96	82-124
541-73-1	1,3-Dichlorobenzene	25	25.6	102	84-125
106-46-7	1,4-Dichlorobenzene	25	24.3	97	78-120
75-34-3	1,1-Dichloroethane	25	26.6	106	81-122
107-06-2	1,2-Dichloroethane	25	22.7	91	75-125
75-35-4	1,1-Dichloroethylene	25	28.7	115	78-137
156-59-2	cis-1,2-Dichloroethylene	25	24.4	98	78-120
156-60-5	trans-1,2-Dichloroethylene	25	29.4	118	76-127
78-87-5	1,2-Dichloropropane	25	23.9	96	76-124
10061-01-5	cis-1,3-Dichloropropene	25	24.0	96	75-118
10061-02-6	trans-1,3-Dichloropropene	25	23.9	96	80-120
100-41-4	Ethylbenzene	25	26.0	104	81-121
76-13-1	Freon 113	25	25.0	100	72-134
591-78-6	2-Hexanone	125	116	93	61-129
98-82-8	Isopropylbenzene	25	27.3	109	83-132
79-20-9	Methyl Acetate	125	103	82	65-126
74-83-9	Methyl Bromide	25	24.0	96	59-143
74-87-3	Methyl Chloride	25	26.6	106	50-159
108-87-2	Methylcyclohexane	25	28.2	113	76-129
75-09-2	Methylene Chloride	25	25.4	102	69-135
108-10-1	4-Methyl-2-pentanone (MIBK)	125	103	82	66-122

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FA32657
Account: TTNASA Tetra Tech NUS
Project: SW3

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VJ5255-BS	J0975620.D	1	04/05/16	MM	n/a	n/a	VJ5255

The QC reported here applies to the following samples: **Method:** SW846 8260B

FA32657-1, FA32657-2, FA32657-3, FA32657-4, FA32657-5, FA32657-6, FA32657-7, FA32657-8, FA32657-9, FA32657-10, FA32657-11, FA32657-12

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
1634-04-4	Methyl Tert Butyl Ether	25	22.7	91	72-117
100-42-5	Styrene	25	23.2	93	78-119
79-34-5	1,1,2,2-Tetrachloroethane	25	21.5	86	72-120
127-18-4	Tetrachloroethylene	25	23.8	95	76-135
108-88-3	Toluene	25	24.4	98	80-120
120-82-1	1,2,4-Trichlorobenzene	25	22.7	91	73-129
71-55-6	1,1,1-Trichloroethane	25	26.6	106	75-130
79-00-5	1,1,2-Trichloroethane	25	22.8	91	76-119
79-01-6	Trichloroethylene	25	25.3	101	81-126
75-69-4	Trichlorofluoromethane	25	30.0	120	71-156
75-01-4	Vinyl Chloride	25	29.2	117	69-159
1330-20-7	Xylene (total)	75	75.0	100	80-126

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	104%	83-118%
17060-07-0	1,2-Dichloroethane-D4	96%	79-125%
2037-26-5	Toluene-D8	98%	85-112%
460-00-4	4-Bromofluorobenzene	102%	83-118%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FA32657
Account: TTNASA Tetra Tech NUS
Project: SW3

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VA1906-BS	A0200020.D	1	04/05/16	TD	n/a	n/a	VA1906

The QC reported here applies to the following samples: **Method:** SW846 8260B

FA32657-13

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
67-64-1	Acetone	125	139	111	50-147
71-43-2	Benzene	25	27.0	108	81-122
75-27-4	Bromodichloromethane	25	27.7	111	79-123
75-25-2	Bromoform	25	24.3	97	66-123
78-93-3	2-Butanone (MEK)	125	120	96	56-143
75-15-0	Carbon Disulfide	25	24.6	98	66-148
56-23-5	Carbon Tetrachloride	25	27.7	111	76-136
108-90-7	Chlorobenzene	25	27.1	108	82-124
75-00-3	Chloroethane	25	26.5	106	62-144
67-66-3	Chloroform	25	26.7	107	80-124
110-82-7	Cyclohexane	25	27.6	110	73-138
124-48-1	Dibromochloromethane	25	26.9	108	78-122
96-12-8	1,2-Dibromo-3-chloropropane	25	25.3	101	64-123
106-93-4	1,2-Dibromoethane	25	27.7	111	75-120
75-71-8	Dichlorodifluoromethane	25	26.8	107	42-167
95-50-1	1,2-Dichlorobenzene	25	29.5	118	82-124
541-73-1	1,3-Dichlorobenzene	25	29.5	118	84-125
106-46-7	1,4-Dichlorobenzene	25	27.1	108	78-120
75-34-3	1,1-Dichloroethane	25	27.6	110	81-122
107-06-2	1,2-Dichloroethane	25	27.4	110	75-125
75-35-4	1,1-Dichloroethylene	25	28.6	114	78-137
156-59-2	cis-1,2-Dichloroethylene	25	27.2	109	78-120
156-60-5	trans-1,2-Dichloroethylene	25	30.2	121	76-127
78-87-5	1,2-Dichloropropane	25	27.6	110	76-124
10061-01-5	cis-1,3-Dichloropropene	25	24.4	98	75-118
10061-02-6	trans-1,3-Dichloropropene	25	27.1	108	80-120
100-41-4	Ethylbenzene	25	27.5	110	81-121
76-13-1	Freon 113	25	25.2	101	72-134
591-78-6	2-Hexanone	125	125	100	61-129
98-82-8	Isopropylbenzene	25	25.6	102	83-132
79-20-9	Methyl Acetate	125	138	110	65-126
74-83-9	Methyl Bromide	25	24.6	98	59-143
74-87-3	Methyl Chloride	25	25.1	100	50-159
108-87-2	Methylcyclohexane	25	25.1	100	76-129
75-09-2	Methylene Chloride	25	28.5	114	69-135
108-10-1	4-Methyl-2-pentanone (MIBK)	125	122	98	66-122

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FA32657
Account: TTNASA Tetra Tech NUS
Project: SW3

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VA1906-BS	A0200020.D	1	04/05/16	TD	n/a	n/a	VA1906

The QC reported here applies to the following samples: **Method:** SW846 8260B

FA32657-13

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
1634-04-4	Methyl Tert Butyl Ether	25	28.0	112	72-117
100-42-5	Styrene	25	24.4	98	78-119
79-34-5	1,1,2,2-Tetrachloroethane	25	25.4	102	72-120
127-18-4	Tetrachloroethylene	25	29.7	119	76-135
108-88-3	Toluene	25	26.7	107	80-120
120-82-1	1,2,4-Trichlorobenzene	25	25.0	100	73-129
71-55-6	1,1,1-Trichloroethane	25	26.9	108	75-130
79-00-5	1,1,2-Trichloroethane	25	26.1	104	76-119
79-01-6	Trichloroethylene	25	28.4	114	81-126
75-69-4	Trichlorofluoromethane	25	26.5	106	71-156
75-01-4	Vinyl Chloride	25	26.9	108	69-159
1330-20-7	Xylene (total)	75	81.7	109	80-126

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	100%	83-118%
17060-07-0	1,2-Dichloroethane-D4	103%	79-125%
2037-26-5	Toluene-D8	98%	85-112%
460-00-4	4-Bromofluorobenzene	100%	83-118%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: FA32657
Account: TTNASA Tetra Tech NUS
Project: SW3

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
FA32549-1MS	A0200027.D	1	04/05/16	TD	n/a	n/a	VA1906
FA32549-1MSD	A0200028.D	1	04/05/16	TD	n/a	n/a	VA1906
FA32549-1	A0200023.D	1	04/05/16	TD	n/a	n/a	VA1906

The QC reported here applies to the following samples: **Method:** SW846 8260B

FA32657-13

CAS No.	Compound	FA32549-1 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	ND		125	102	82	125	101	81	1	50-147/21
71-43-2	Benzene	ND		25	25.1	100	25	23.4	94	7	81-122/14
75-27-4	Bromodichloromethane	ND		25	24.9	100	25	23.7	95	5	79-123/19
75-25-2	Bromoform	ND		25	19.4	78	25	18.7	75	4	66-123/21
78-93-3	2-Butanone (MEK)	ND		125	101	81	125	98.6	79	2	56-143/18
75-15-0	Carbon Disulfide	ND		25	21.7	87	25	20.4	82	6	66-148/23
56-23-5	Carbon Tetrachloride	ND		25	25.2	101	25	23.7	95	6	76-136/23
108-90-7	Chlorobenzene	ND		25	24.6	98	25	23.0	92	7	82-124/14
75-00-3	Chloroethane	ND		25	25.9	104	25	24.7	99	5	62-144/20
67-66-3	Chloroform	ND		25	25.2	101	25	23.7	95	6	80-124/15
110-82-7	Cyclohexane	ND		25	25.3	101	25	23.6	94	7	73-138/18
124-48-1	Dibromochloromethane	ND		25	22.5	90	25	21.8	87	3	78-122/19
96-12-8	1,2-Dibromo-3-chloropropane	ND		25	21.0	84	25	20.4	82	3	64-123/18
106-93-4	1,2-Dibromoethane	ND		25	24.3	97	25	23.9	96	2	75-120/13
75-71-8	Dichlorodifluoromethane	ND		25	27.3	109	25	25.9	104	5	42-167/19
95-50-1	1,2-Dichlorobenzene	ND		25	26.2	105	25	25.1	100	4	82-124/14
541-73-1	1,3-Dichlorobenzene	ND		25	26.7	107	25	25.4	102	5	84-125/14
106-46-7	1,4-Dichlorobenzene	ND		25	24.8	99	25	23.5	94	5	78-120/15
75-34-3	1,1-Dichloroethane	ND		25	26.0	104	25	24.4	98	6	81-122/15
107-06-2	1,2-Dichloroethane	ND		25	25.3	101	25	24.8	99	2	75-125/14
75-35-4	1,1-Dichloroethylene	ND		25	26.1	104	25	24.0	96	8	78-137/18
156-59-2	cis-1,2-Dichloroethylene	ND		25	23.6	94	25	23.1	92	2	78-120/15
156-60-5	trans-1,2-Dichloroethylene	ND		25	27.8	111	25	26.4	106	5	76-127/17
78-87-5	1,2-Dichloropropane	ND		25	24.9	100	25	23.5	94	6	76-124/14
10061-01-5	cis-1,3-Dichloropropene	ND		25	17.5	70*	25	17.3	69*	1	75-118/23
10061-02-6	trans-1,3-Dichloropropene	ND		25	21.9	88	25	21.8	87	0	80-120/22
100-41-4	Ethylbenzene	ND		25	25.3	101	25	23.9	96	6	81-121/14
76-13-1	Freon 113	ND		25	23.6	94	25	23.1	92	2	72-134/20
591-78-6	2-Hexanone	ND		125	105	84	125	102	82	3	61-129/18
98-82-8	Isopropylbenzene	ND		25	22.4	90	25	21.3	85	5	83-132/15
79-20-9	Methyl Acetate	ND		125	124	99	125	122	98	2	65-126/18
74-83-9	Methyl Bromide	ND		25	23.5	94	25	23.0	92	2	59-143/19
74-87-3	Methyl Chloride	ND		25	22.9	92	25	23.1	92	1	50-159/19
108-87-2	Methylcyclohexane	ND		25	23.1	92	25	21.5	86	7	76-129/17
75-09-2	Methylene Chloride	ND		25	26.7	107	25	25.6	102	4	69-135/16
108-10-1	4-Methyl-2-pentanone (MIBK)	ND		125	103	82	125	102	82	1	66-122/16

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: FA32657
Account: TTNASA Tetra Tech NUS
Project: SW3

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
FA32549-1MS	A0200027.D	1	04/05/16	TD	n/a	n/a	VA1906
FA32549-1MSD	A0200028.D	1	04/05/16	TD	n/a	n/a	VA1906
FA32549-1	A0200023.D	1	04/05/16	TD	n/a	n/a	VA1906

The QC reported here applies to the following samples: **Method:** SW846 8260B

FA32657-13

CAS No.	Compound	FA32549-1 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
1634-04-4	Methyl Tert Butyl Ether	ND		25	24.6	98	25	24.2	97	2	72-117/14
100-42-5	Styrene	ND		25	21.7	87	25	20.6	82	5	78-119/23
79-34-5	1,1,2,2-Tetrachloroethane	ND		25	22.6	90	25	21.9	88	3	72-120/14
127-18-4	Tetrachloroethylene	ND		25	24.4	98	25	22.8	91	7	76-135/16
108-88-3	Toluene	ND		25	24.0	96	25	22.7	91	6	80-120/14
120-82-1	1,2,4-Trichlorobenzene	ND		25	20.1	80	25	19.8	79	2	73-129/20
71-55-6	1,1,1-Trichloroethane	ND		25	25.6	102	25	23.9	96	7	75-130/16
79-00-5	1,1,2-Trichloroethane	ND		25	22.8	91	25	22.9	92	0	76-119/14
79-01-6	Trichloroethylene	ND		25	27.5	110	25	25.1	100	9	81-126/15
75-69-4	Trichlorofluoromethane	ND		25	26.6	106	25	24.6	98	8	71-156/21
75-01-4	Vinyl Chloride	ND		25	25.2	101	25	25.0	100	1	69-159/18
1330-20-7	Xylene (total)	ND		75	73.1	97	75	69.1	92	6	80-126/15

CAS No.	Surrogate Recoveries	MS	MSD	FA32549-1	Limits
1868-53-7	Dibromofluoromethane	101%	101%	102%	83-118%
17060-07-0	1,2-Dichloroethane-D4	105%	104%	106%	79-125%
2037-26-5	Toluene-D8	95%	95%	102%	85-112%
460-00-4	4-Bromofluorobenzene	99%	99%	106%	83-118%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: FA32657
Account: TTNASA Tetra Tech NUS
Project: SW3

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
FA32712-1MS	J0975642.D	1	04/05/16	MM	n/a	n/a	VJ5255
FA32712-1MSD	J0975643.D	1	04/05/16	MM	n/a	n/a	VJ5255
FA32712-1 [a]	J0975628.D	1	04/05/16	MM	n/a	n/a	VJ5255

The QC reported here applies to the following samples: **Method:** SW846 8260B

FA32657-1, FA32657-2, FA32657-3, FA32657-4, FA32657-5, FA32657-6, FA32657-7, FA32657-8, FA32657-9, FA32657-10, FA32657-11, FA32657-12

CAS No.	Compound	FA32712-1 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	25 U		125	121	97	125	127	102	5	50-147/21
71-43-2	Benzene	1.0 U		25	25.7	103	25	25.0	100	3	81-122/14
75-27-4	Bromodichloromethane	1.0 U		25	25.1	100	25	22.7	91	10	79-123/19
75-25-2	Bromoform	1.0 U		25	19.1	76	25	17.2	69	10	66-123/21
78-93-3	2-Butanone (MEK)	5.0 U		125	106	85	125	110	88	4	56-143/18
75-15-0	Carbon Disulfide	2.0 U		25	25.2	101	25	23.6	94	7	66-148/23
56-23-5	Carbon Tetrachloride	1.0 U		25	27.8	111	25	24.5	98	13	76-136/23
108-90-7	Chlorobenzene	0.41	J	25	25.6	101	25	25.0	98	2	82-124/14
75-00-3	Chloroethane	2.0 U		25	29.7	119	25	29.7	119	0	62-144/20
67-66-3	Chloroform	1.0 U		25	25.2	101	25	25.1	100	0	80-124/15
110-82-7	Cyclohexane	1.0 U		25	26.2	105	25	25.0	100	5	73-138/18
124-48-1	Dibromochloromethane	1.0 U		25	22.8	91	25	21.0	84	8	78-122/19
96-12-8	1,2-Dibromo-3-chloropropane	5.0 U		25	18.0	72	25	17.6	70	2	64-123/18
106-93-4	1,2-Dibromoethane	2.0 U		25	22.1	88	25	22.6	90	2	75-120/13
75-71-8	Dichlorodifluoromethane	2.0 U		25	23.9	96	25	23.8	95	0	42-167/19
95-50-1	1,2-Dichlorobenzene	1.0 U		25	23.9	96	25	22.7	91	5	82-124/14
541-73-1	1,3-Dichlorobenzene	1.0 U		25	25.8	103	25	24.9	100	4	84-125/14
106-46-7	1,4-Dichlorobenzene	1.0 U		25	24.8	99	25	24.1	96	3	78-120/15
75-34-3	1,1-Dichloroethane	1.0 U		25	27.1	108	25	26.0	104	4	81-122/15
107-06-2	1,2-Dichloroethane	1.0 U		25	22.3	89	25	22.0	88	1	75-125/14
75-35-4	1,1-Dichloroethylene	1.0 U		25	27.5	110	25	27.7	111	1	78-137/18
156-59-2	cis-1,2-Dichloroethylene	1.0 U		25	24.4	98	25	23.3	93	5	78-120/15
156-60-5	trans-1,2-Dichloroethylene	1.9		25	31.0	116	25	30.1	113	3	76-127/17
78-87-5	1,2-Dichloropropane	1.0 U		25	23.8	95	25	23.4	94	2	76-124/14
10061-01-5	cis-1,3-Dichloropropene	1.0 U		25	20.5	82	25	17.6	70*	15	75-118/23
10061-02-6	trans-1,3-Dichloropropene	1.0 U		25	19.0	76*	25	16.5	66*	14	80-120/22
100-41-4	Ethylbenzene	1.0 U		25	25.8	103	25	25.4	102	2	81-121/14
76-13-1	Freon 113	1.0 U		25	23.5	94	25	24.1	96	3	72-134/20
591-78-6	2-Hexanone	10 U		125	109	87	125	115	92	5	61-129/18
98-82-8	Isopropylbenzene	1.0 U		25	26.4	106	25	26.3	105	0	83-132/15
79-20-9	Methyl Acetate	20 U		125	102	82	125	104	83	2	65-126/18
74-83-9	Methyl Bromide	2.0 U		25	23.2	93	25	22.9	92	1	59-143/19
74-87-3	Methyl Chloride	2.0 U		25	24.7	99	25	24.5	98	1	50-159/19
108-87-2	Methylcyclohexane	1.0 U		25	27.4	110	25	26.4	106	4	76-129/17
75-09-2	Methylene Chloride	5.0 U		25	25.4	102	25	25.6	102	1	69-135/16
108-10-1	4-Methyl-2-pentanone (MIBK)	5.0 U		125	102	82	125	109	87	7	66-122/16

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: FA32657
Account: TTNASA Tetra Tech NUS
Project: SW3

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
FA32712-1MS	J0975642.D	1	04/05/16	MM	n/a	n/a	VJ5255
FA32712-1MSD	J0975643.D	1	04/05/16	MM	n/a	n/a	VJ5255
FA32712-1 [a]	J0975628.D	1	04/05/16	MM	n/a	n/a	VJ5255

The QC reported here applies to the following samples: **Method:** SW846 8260B

FA32657-1, FA32657-2, FA32657-3, FA32657-4, FA32657-5, FA32657-6, FA32657-7, FA32657-8, FA32657-9, FA32657-10, FA32657-11, FA32657-12

CAS No.	Compound	FA32712-1 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
1634-04-4	Methyl Tert Butyl Ether	1.0 U		25	21.7	87	25	21.9	88	1	72-117/14
100-42-5	Styrene	1.0 U		25	22.4	90	25	21.6	86	4	78-119/23
79-34-5	1,1,2,2-Tetrachloroethane	1.0 U		25	21.4	86	25	21.9	88	2	72-120/14
127-18-4	Tetrachloroethylene	1.0 U		25	24.2	97	25	24.3	97	0	76-135/16
108-88-3	Toluene	1.0 U		25	24.7	99	25	24.5	98	1	80-120/14
120-82-1	1,2,4-Trichlorobenzene	2.0 U		25	22.3	89	25	21.8	87	2	73-129/20
71-55-6	1,1,1-Trichloroethane	1.0 U		25	26.2	105	25	25.5	102	3	75-130/16
79-00-5	1,1,2-Trichloroethane	1.0 U		25	22.3	89	25	22.5	90	1	76-119/14
79-01-6	Trichloroethylene	1.0 U		25	25.5	102	25	25.7	103	1	81-126/15
75-69-4	Trichlorofluoromethane	2.0 U		25	31.0	124	25	30.2	121	3	71-156/21
75-01-4	Vinyl Chloride	5.6		25	32.8	109	25	32.3	107	2	69-159/18
1330-20-7	Xylene (total)	3.0 U		75	74.0	99	75	72.5	97	2	80-126/15

CAS No.	Surrogate Recoveries	MS	MSD	FA32712-1	Limits
1868-53-7	Dibromofluoromethane	103%	101%	101%	83-118%
17060-07-0	1,2-Dichloroethane-D4	95%	97%	93%	79-125%
2037-26-5	Toluene-D8	97%	99%	101%	85-112%
460-00-4	4-Bromofluorobenzene	98%	99%	106%	83-118%

(a) Sample was not preserved to a pH < 2.

* = Outside of Control Limits.

Instrument Performance Check (BFB)

Job Number: FA32657
Account: TTNASA Tetra Tech NUS
Project: SW3

Sample: VA1897-BFB
Lab File ID: A0199810.D
Instrument ID: GCMSA
Injection Date: 03/25/16
Injection Time: 13:19

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	15.0 - 40.0% of mass 95	147797	33.4		Pass
75	30.0 - 60.0% of mass 95	238433	53.9		Pass
95	Base peak, 100% relative abundance	441982	100.0		Pass
96	5.0 - 9.0% of mass 95	29754	6.73		Pass
173	Less than 2.0% of mass 174	0	0.00	(0.00) [a]	Pass
174	50.0 - 100.0% of mass 95	395221	89.4		Pass
175	5.0 - 9.0% of mass 174	32416	7.33	(8.20) [a]	Pass
176	95.0 - 101.0% of mass 174	382272	86.5	(96.7) [a]	Pass
177	5.0 - 9.0% of mass 176	25288	5.72	(6.62) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
VA1897-IC1897	A0199813.D	03/25/16	14:46	01:27	Initial cal 1
VA1897-IC1897	A0199814.D	03/25/16	15:09	01:50	Initial cal 2
VA1897-IC1897	A0199815.D	03/25/16	15:34	02:15	Initial cal 3
VA1897-IC1897	A0199816.D	03/25/16	16:00	02:41	Initial cal 4
VA1897-ICC1897	A0199817.D	03/25/16	16:21	03:02	Initial cal 5
VA1897-IC1897	A0199818.D	03/25/16	16:48	03:29	Initial cal 6
VA1897-IC1897	A0199819.D	03/25/16	17:13	03:54	Initial cal 7
VA1897-ICV1897	A0199821.D	03/25/16	18:04	04:45	Initial cal verification 4

Instrument Performance Check (BFB)

Job Number: FA32657
Account: TTNASA Tetra Tech NUS
Project: SW3

Sample: VA1906-BFB
Lab File ID: A0200018.D
Instrument ID: GCMSA
Injection Date: 04/05/16
Injection Time: 10:41

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	15.0 - 40.0% of mass 95	147725	35.3		Pass
75	30.0 - 60.0% of mass 95	229291	54.8		Pass
95	Base peak, 100% relative abundance	418155	100.0		Pass
96	5.0 - 9.0% of mass 95	29070	6.95		Pass
173	Less than 2.0% of mass 174	0	0.00	(0.00) [a]	Pass
174	50.0 - 100.0% of mass 95	375594	89.8		Pass
175	5.0 - 9.0% of mass 174	31720	7.59	(8.45) [a]	Pass
176	95.0 - 101.0% of mass 174	373547	89.3	(99.5) [a]	Pass
177	5.0 - 9.0% of mass 176	24798	5.93	(6.64) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
VA1906-CC1897	A0200019.D	04/05/16	11:15	00:34	Continuing cal 5
VA1906-BS	A0200020.D	04/05/16	11:40	00:59	Blank Spike
VA1906-MB	A0200021.D	04/05/16	12:06	01:25	Method Blank
ZZZZZZ	A0200022.D	04/05/16	12:32	01:51	(unrelated sample)
FA32549-1	A0200023.D	04/05/16	12:57	02:16	(used for QC only; not part of job FA32657)
ZZZZZZ	A0200024.D	04/05/16	13:22	02:41	(unrelated sample)
ZZZZZZ	A0200025.D	04/05/16	13:48	03:07	(unrelated sample)
FA32657-13	A0200026.D	04/05/16	14:13	03:32	SW3-SW0002-000.5-20160325
FA32549-1MS	A0200027.D	04/05/16	14:38	03:57	Matrix Spike
FA32549-1MSD	A0200028.D	04/05/16	15:04	04:23	Matrix Spike Duplicate
ZZZZZZ	A0200029.D	04/05/16	15:29	04:48	(unrelated sample)
ZZZZZZ	A0200030.D	04/05/16	15:55	05:14	(unrelated sample)
ZZZZZZ	A0200031.D	04/05/16	16:21	05:40	(unrelated sample)
ZZZZZZ	A0200032.D	04/05/16	16:46	06:05	(unrelated sample)
ZZZZZZ	A0200034.D	04/05/16	17:38	06:57	(unrelated sample)
ZZZZZZ	A0200035.D	04/05/16	18:03	07:22	(unrelated sample)
ZZZZZZ	A0200036.D	04/05/16	18:29	07:48	(unrelated sample)
ZZZZZZ	A0200037.D	04/05/16	18:54	08:13	(unrelated sample)
ZZZZZZ	A0200038.D	04/05/16	19:20	08:39	(unrelated sample)
ZZZZZZ	A0200039.D	04/05/16	19:45	09:04	(unrelated sample)
ZZZZZZ	A0200041.D	04/05/16	20:37	09:56	(unrelated sample)
ZZZZZZ	A0200042.D	04/05/16	21:03	10:22	(unrelated sample)
VA1906-ECC1897	A0200043.D	04/05/16	21:29	10:48	Ending cal 5

Instrument Performance Check (BFB)

Job Number: FA32657
Account: TTNASA Tetra Tech NUS
Project: SW3

Sample: VJ5237-BFB
Lab File ID: J0975149.D
Instrument ID: GCMSJ
Injection Date: 03/15/16
Injection Time: 13:53

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	15.0 - 40.0% of mass 95	66293	17.6		Pass
75	30.0 - 60.0% of mass 95	194069	51.4		Pass
95	Base peak, 100% relative abundance	377600	100.0		Pass
96	5.0 - 9.0% of mass 95	26531	7.03		Pass
173	Less than 2.0% of mass 174	0	0.00	(0.00) [a]	Pass
174	50.0 - 100.0% of mass 95	318315	84.3		Pass
175	5.0 - 9.0% of mass 174	22907	6.07	(7.20) [a]	Pass
176	95.0 - 101.0% of mass 174	311403	82.5	(97.8) [a]	Pass
177	5.0 - 9.0% of mass 176	20325	5.38	(6.53) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
VJ5237-IC5237	J0975150.D	03/15/16	14:17	00:24	Initial cal 1
VJ5237-IC5237	J0975151.D	03/15/16	14:41	00:48	Initial cal 2
VJ5237-IC5237	J0975152.D	03/15/16	15:05	01:12	Initial cal 3
VJ5237-IC5237	J0975153.D	03/15/16	15:28	01:35	Initial cal 4
VJ5237-ICC5237	J0975154.D	03/15/16	15:51	01:58	Initial cal 5
VJ5237-IC5237	J0975155.D	03/15/16	16:15	02:22	Initial cal 6
VJ5237-IC5237	J0975156.D	03/15/16	16:39	02:46	Initial cal 7
VJ5237-ICV5237	J0975158.D	03/15/16	17:26	03:33	Initial cal verification 5
VJ5237-ICV5237	J0975159.D	03/15/16	17:51	03:58	Initial cal verification 5

Instrument Performance Check (BFB)

Job Number: FA32657
Account: TTNASA Tetra Tech NUS
Project: SW3

Sample: VJ5255-BFB
Lab File ID: J0975618.D
Instrument ID: GCMSJ
Injection Date: 04/05/16
Injection Time: 07:40

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	15.0 - 40.0% of mass 95	54325	16.8		Pass
75	30.0 - 60.0% of mass 95	158923	49.2		Pass
95	Base peak, 100% relative abundance	323179	100.0		Pass
96	5.0 - 9.0% of mass 95	21923	6.78		Pass
173	Less than 2.0% of mass 174	0	0.00	(0.00) [a]	Pass
174	50.0 - 100.0% of mass 95	274773	85.0		Pass
175	5.0 - 9.0% of mass 174	20571	6.37	(7.49) [a]	Pass
176	95.0 - 101.0% of mass 174	264064	81.7	(96.1) [a]	Pass
177	5.0 - 9.0% of mass 176	18139	5.61	(6.87) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
VJ5255-CC5237	J0975619.D	04/05/16	08:30	00:50	Continuing cal 5
VJ5255-BS	J0975620.D	04/05/16	08:59	01:19	Blank Spike
VJ5255-MB	J0975621.D	04/05/16	09:23	01:43	Method Blank
FA32657-1	J0975622.D	04/05/16	09:58	02:18	SW3-MW0006-040.0-20160324
FA32657-2	J0975623.D	04/05/16	10:22	02:42	SW3-MW0005-020.0-20160324
FA32657-3	J0975624.D	04/05/16	10:46	03:06	SW3-MW0024-040.0-20160324
FA32657-4	J0975625.D	04/05/16	11:10	03:30	SW3-MW0009-020.0-20160325
FA32657-5	J0975626.D	04/05/16	11:34	03:54	SW3-MW0001-020.0-20160325
FA32657-6	J0975627.D	04/05/16	11:58	04:18	SW3-MW0025-040.0-20160325
FA32712-1	J0975628.D	04/05/16	12:22	04:42	(used for QC only; not part of job FA32657)
ZZZZZZ	J0975629.D	04/05/16	12:48	05:08	(unrelated sample)
ZZZZZZ	J0975630.D	04/05/16	13:11	05:31	(unrelated sample)
ZZZZZZ	J0975631.D	04/05/16	13:36	05:56	(unrelated sample)
ZZZZZZ	J0975632.D	04/05/16	14:00	06:20	(unrelated sample)
ZZZZZZ	J0975633.D	04/05/16	14:24	06:44	(unrelated sample)
ZZZZZZ	J0975634.D	04/05/16	14:47	07:07	(unrelated sample)
ZZZZZZ	J0975635.D	04/05/16	15:11	07:31	(unrelated sample)
FA32657-7	J0975636.D	04/05/16	15:35	07:55	SW3-MW0026-040.0-20160325
FA32657-8	J0975637.D	04/05/16	15:58	08:18	SW3-MW0027-032.0-20160325
FA32657-9	J0975638.D	04/05/16	16:23	08:43	SW3-MW0028-032.0-20160325
FA32657-10	J0975639.D	04/05/16	16:47	09:07	SW3-MW0020-040.0-20160325
FA32657-11	J0975640.D	04/05/16	17:11	09:31	SW3-SW0001-000.5-20160325
FA32657-12	J0975641.D	04/05/16	17:34	09:54	SW3-SW0003-000.5-20160325
FA32712-1MS	J0975642.D	04/05/16	17:58	10:18	Matrix Spike

Instrument Performance Check (BFB)

Job Number: FA32657
Account: TTNASA Tetra Tech NUS
Project: SW3

Sample:	VJ5255-BFB	**Injection Date:**	04/05/16
Lab File ID:	J0975618.D	**Injection Time:**	07:40
Instrument ID:	GCMSJ		

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
FA32712-1MSD	J0975643.D	04/05/16	18:21	10:41	Matrix Spike Duplicate
FA32688-5MS	J0975644.D	04/05/16	18:45	11:05	Matrix Spike
FA32688-5MSD	J0975645.D	04/05/16	19:07	11:27	Matrix Spike Duplicate
VJ5255-ECC5237	J0975646.D	04/05/16	19:31	11:51	Ending cal 5

Volatile Internal Standard Area Summary

Job Number: FA32657
Account: TTNASA Tetra Tech NUS
Project: SW3

Check Std:	VA1906-CC1897	**Injection Date:**	04/05/16
Lab File ID:	A0200019.D	**Injection Time:**	11:15
Instrument ID:	GCMSA	**Method:**	SW846 8260B

	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT
Initial Cal [a]	3631686	7.38	2998630	10.44	1744734	12.79	281280	5.05
Check Std [b]	2990783	7.38	2456099	10.44	1421978	12.79	254019	5.05
Upper Limit [c]	5981566	7.88	4912198	10.94	2843956	13.29	508038	5.55
Lower Limit [d]	1495392	6.88	1228050	9.94	710989	12.29	127010	4.55

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT
VA1906-BS	2973219	7.38	2453531	10.44	1391153	12.79	230972	5.05
VA1906-MB	2747923	7.38	2082064	10.44	1093117	12.79	214400	5.05
ZZZZZZ	2817164	7.38	2217820	10.44	1335897	12.79	210499	5.04
FA32549-1	2804930	7.38	2107189	10.44	1102771	12.79	214545	5.05
ZZZZZZ	2642125	7.38	1999102	10.44	1048757	12.79	211325	5.05
ZZZZZZ	2586394	7.38	2058314	10.44	1199529	12.79	207473	5.05
FA32657-13	2563567	7.38	1929738	10.44	1014950	12.79	212301	5.05
FA32549-1MS	2778763	7.38	2334952	10.44	1319666	12.79	193966	5.05
FA32549-1MSD	2781224	7.38	2308008	10.44	1307622	12.79	212493	5.05
ZZZZZZ	2573487	7.38	1936803	10.44	999460	12.79	181106	5.05
ZZZZZZ	3004016	7.38	2344593	10.44	1315028	12.79	174799	5.05
ZZZZZZ	2872387	7.38	2163665	10.44	1109079	12.79	207703	5.05
ZZZZZZ	2588660	7.38	1971536	10.44	1030667	12.79	195687	5.04
ZZZZZZ	2731148	7.38	2177914	10.44	1143315	12.79	198801	5.04
ZZZZZZ	2507314	7.38	1931650	10.44	998937	12.79	190058	5.05
ZZZZZZ	2433924	7.38	1825681	10.44	951071	12.79	171353	5.04
ZZZZZZ	2342296	7.38	1792511	10.44	942784	12.79	188878	5.05
ZZZZZZ	2329862	7.38	1760903	10.44	898243	12.79	190635	5.05
ZZZZZZ	2267961	7.38	1707879	10.44	940950	12.79	181828	5.05
ZZZZZZ	2454743	7.38	2045126	10.44	1166618	12.79	187779	5.05
ZZZZZZ	2731593	7.38	2103607	10.44	1159091	12.79	201919	5.04
VA1906-ECC18972	2848875	7.38	2347563	10.44	1342784	12.79	221248	5.04

IS 1 = Fluorobenzene
IS 2 = Chlorobenzene-D5
IS 3 = 1,4-Dichlorobenzene-d4
IS 4 = Tert Butyl Alcohol-D10

(a) Initial Cal is: VA1897-ICC1897 A0199817.D 03/25/16 16:21
(b) Check Std Limit = -50 to + 100% of initial cal area.
(c) Upper Limit = + 100% of check standard area; Retention time + 0.5 minutes.
(d) Lower Limit = -50% of check standard area; Retention time -0.5 minutes.

Volatile Internal Standard Area Summary

Job Number: FA32657
Account: TTNASA Tetra Tech NUS
Project: SW3

Check Std:	VJ5255-CC5237	**Injection Date:**	04/05/16
Lab File ID:	J0975619.D	**Injection Time:**	08:30
Instrument ID:	GCMSJ	**Method:**	SW846 8260B

	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT
Initial Cal [a]	1586569	7.76	1198090	10.85	683182	13.21	86536	5.30
Check Std [b]	1443136	7.76	1118221	10.85	595246	13.21	84016	5.30
Upper Limit [c]	2886272	8.26	2236442	11.35	1190492	13.71	168032	5.80
Lower Limit [d]	721568	7.26	559111	10.35	297623	12.71	42008	4.80

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT
VJ5255-BS	1440647	7.76	1113453	10.85	607584	13.21	83554	5.30
VJ5255-MB	1360900	7.76	1038558	10.85	542392	13.21	73628	5.30
FA32657-1	1336011	7.76	1006151	10.85	500658	13.21	65247	5.29
FA32657-2	1259486	7.76	963495	10.85	495555	13.21	55442	5.30
FA32657-3 [e]	1291868	7.76	993317	10.85	501606	13.21	63946	5.29
FA32657-4	1273577	7.76	976706	10.85	479664	13.21	59355	5.30
FA32657-5	1173190	7.76	915516	10.85	483729	13.21	59309	5.29
FA32657-6	1254945	7.76	930179	10.85	471630	13.21	62772	5.29
FA32712-1	1222895	7.76	943275	10.85	480180	13.21	55778	5.29
ZZZZZZ	1240063	7.76	934745	10.85	484638	13.21	66915	5.30
ZZZZZZ	1198165	7.76	905182	10.85	480378	13.21	85298	5.30
ZZZZZZ	1230927	7.76	921360	10.85	485543	13.21	55298	5.30
ZZZZZZ	1227856	7.76	937974	10.85	483939	13.21	60080	5.30
ZZZZZZ	1176767	7.76	914072	10.85	467410	13.21	55843	5.29
ZZZZZZ	1214310	7.76	912392	10.85	472081	13.21	56073	5.29
ZZZZZZ	1176716	7.76	901929	10.85	472548	13.21	60346	5.30
FA32657-7 [e]	1126242	7.76	872931	10.85	462271	13.21	60377	5.29
FA32657-8	1172033	7.76	884141	10.85	449012	13.21	60241	5.30
FA32657-9 [e]	1185502	7.76	907907	10.85	461778	13.21	62504	5.30
FA32657-10	1200985	7.76	911008	10.85	474889	13.21	61762	5.29
FA32657-11	1172453	7.76	887394	10.85	467844	13.21	56946	5.29
FA32657-12	1155248	7.76	916398	10.85	459861	13.21	53804	5.30
FA32712-1MS	1231498	7.75	974254	10.85	526184	13.21	64632	5.29
FA32712-1MSD	1312828	7.76	1013534	10.85	566834	13.21	72954	5.29
FA32688-5MS	1348495	7.76	1057211	10.85	567560	13.21	73825	5.30
FA32688-5MSD	1406360	7.76	1063901	10.85	558632	13.21	71730	5.31
VJ5255-ECC5237	1429179	7.76	1108413	10.85	596812	13.21	75462	5.29

IS 1 = Fluorobenzene
IS 2 = Chlorobenzene-D5
IS 3 = 1,4-Dichlorobenzene-d4
IS 4 = Tert Butyl Alcohol-D10

Volatile Internal Standard Area Summary

Job Number: FA32657
Account: TTNASA Tetra Tech NUS
Project: SW3

Check Std:	VJ5255-CC5237	**Injection Date:**	04/05/16
Lab File ID:	J0975619.D	**Injection Time:**	08:30
Instrument ID:	GCMSJ	**Method:**	SW846 8260B

Lab Sample ID	IS 1 AREA	IS 1 RT	IS 2 AREA	IS 2 RT	IS 3 AREA	IS 3 RT	IS 4 AREA	IS 4 RT

(a) Initial Cal is: VJ5237-ICC5237 J0975154.D 03/15/16 15:51
(b) Check Std Limit = -50 to + 100% of initial cal area.
(c) Upper Limit = + 100% of check standard area; Retention time + 0.5 minutes.
(d) Lower Limit = -50% of check standard area; Retention time -0.5 minutes.
(e) Sample vial(s) contained significant headspace; reported results are considered minimum values.

Volatile Surrogate Recovery Summary

Job Number: FA32657
Account: TTNASA Tetra Tech NUS
Project: SW3

Method: SW846 8260B **Matrix:** AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3	S4
FA32657-1	J0975622.D	100	94	101	107
FA32657-2	J0975623.D	100	94	95	106
FA32657-3	J0975624.D	99	96	99	105
FA32657-4	J0975625.D	101	95	100	111
FA32657-5	J0975626.D	100	96	98	105
FA32657-6	J0975627.D	100	95	101	110
FA32657-7	J0975636.D	102	99	97	104
FA32657-8	J0975637.D	102	96	99	106
FA32657-9	J0975638.D	101	97	100	105
FA32657-10	J0975639.D	98	93	99	104
FA32657-11	J0975640.D	100	95	100	100
FA32657-12	J0975641.D	101	96	101	106
FA32657-13	A0200026.D	105	109	102	104
FA32549-1MS	A0200027.D	101	105	95	99
FA32549-1MSD	A0200028.D	101	104	95	99
FA32712-1MS	J0975642.D	103	95	97	98
FA32712-1MSD	J0975643.D	101	97	99	99
VA1906-BS	A0200020.D	100	103	98	100
VA1906-MB	A0200021.D	103	106	102	106
VJ5255-BS	J0975620.D	104	96	98	102
VJ5255-MB	J0975621.D	99	96	101	106

Surrogate Compounds	Recovery Limits
S1 = Dibromofluoromethane	83-118%
S2 = 1,2-Dichloroethane-D4	79-125%
S3 = Toluene-D8	85-112%
S4 = 4-Bromofluorobenzene	83-118%

Initial Calibration Summary

Job Number: FA32657
Account: TTNASA Tetra Tech NUS
Project: SW3

Sample: VA1897-ICC1897
Lab FileID: A0199817.D

Response Factor Report MSVOA10

Method : C:\msdchem\1\METHODS\032516oxy.m (RTE Integrator)
Title : SW-846 Method 5030B/8260B & EPA 624
Last Update : Tue Mar 29 09:52:15 2016
Response via : Initial Calibration

Calibration Files
1 =A0199813.D 2 =A0199814.D 3 =A0199815.D 4 =A0199816.D
5 =A0199817.D 6 =A0199818.D 7 =A0199819.D

Compound	1	2	3	4	5	6	7	Avg	%RSD
1) I Fluorobenzene	ISTD								
2) Dichlorodifluorom	0.350	0.325	0.278	0.349	0.343	0.345	0.353	0.335	7.99
3)P Chloromethane	0.636	0.506	0.435	0.529	0.543	0.574	0.588	0.545	11.85
4)C Vinyl Chloride	0.253	0.236	0.213	0.264	0.276	0.292	0.309	0.263	12.48
5) Bromomethane	0.188	0.133	0.104	0.118	0.117	0.121	0.127	0.130	21.00
---- Linear regr., Force(0,0) ---- Coefficient = 0.9980									
Response Ratio = 0.00000 + 0.12380 *A									
6) Chloroethane	0.164	0.134	0.115	0.129	0.126	0.125	0.132	0.132	11.51
7) Trichlorofluorome	0.391	0.398	0.334	0.408	0.405	0.397	0.410	0.392	6.74
8) Ethyl Ether	0.220	0.202	0.195	0.201	0.208	0.212	0.221	0.208	4.74
9) 1,2-Dichlorotrifl	0.278	0.251	0.243	0.242	0.241	0.244	0.247	0.249	5.30
10)C 1,1-Dichloroethen	0.487	0.425	0.418	0.428	0.463	0.481	0.491	0.456	6.95
11) Freon 113	0.259	0.230	0.227	0.227	0.220	0.214	0.225	0.229	6.18
12) Carbon Disulfide	0.703	0.593	0.570	0.582	0.588	0.585	0.606	0.604	7.45
13) Iodomethane	0.445	0.376	0.362	0.374	0.386	0.383	0.405	0.390	7.05
14) Methylene Chlorid	1.244	0.617	0.531	0.503	0.502	0.486	0.492	0.625	44.26
---- Linear regr., Force(0,0) ---- Coefficient = 0.9998									
Response Ratio = 0.00000 + 0.49177 *A									
15) Acetone	0.113	0.092	0.087	0.087	0.082	0.089	0.085	0.091	11.43
16) Methyl acetate	0.241	0.230	0.220	0.220	0.216	0.223	0.223	0.225	3.78
17) trans-1,2-Dichlor	0.409	0.344	0.334	0.350	0.366	0.368	0.375	0.364	6.77
18) Hexane	0.306	0.292	0.283	0.290	0.291	0.293	0.295	0.293	2.37
19) Methyl Tert Butyl	0.527	0.481	0.458	0.476	0.484	0.513	0.531	0.496	5.60
20) Di-isopropyl ethe	1.123	1.027	0.893	1.072	1.202	1.280	1.343	1.134	13.63
---- Linear regr., Force(0,0) ---- Coefficient = 0.9972									
Response Ratio = 0.00000 + 1.29933 *A									
21)P 1,1-Dichloroethan	0.589	0.528	0.512	0.528	0.550	0.542	0.543	0.542	4.52
22) Acrylonitrile	0.101	0.100	0.103	0.111	0.111	0.119	0.119	0.109	7.48
23) ETBE	0.520	0.619	0.679	0.810	0.855	0.901	0.930	0.759	20.46
---- Quadratic regr., Force(0,0) ---- Coefficient = 0.9997									
Response Ratio = 0.00000 + 0.78928 *A + 0.07238 *A^2									
24) Vinyl acetate	0.523	0.711	0.782	0.860	0.852	0.751	0.595	0.725	17.45
---- Quadratic regr., Force(0,0) ---- Coefficient = 0.9963									
Response Ratio = 0.00000 + 0.92088 *A + -0.02991 *A^2									
25) cis-1,2-Dichloroe	0.232	0.218	0.215	0.248	0.269	0.276	0.283	0.249	11.33
26) 2,2-Dichloropropa	0.319	0.264	0.263	0.257	0.270	0.246	0.247	0.266	9.30
27) Bromochloromethan	0.153	0.155	0.147	0.152	0.153	0.150	0.150	0.151	1.79
28) Cyclohexane	0.341	0.358	0.428	0.545	0.583	0.616	0.644	0.502	24.87
---- Quadratic regr., Force(0,0) ---- Coefficient = 0.9996									
Response Ratio = 0.00000 + 0.52429 *A + 0.06103 *A^2									

Initial Calibration Summary

Job Number: FA32657
Account: TTNASA Tetra Tech NUS
Project: SW3

Sample: VA1897-ICC1897
Lab FileID: A0199817.D

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29)C Chloroform        0.596 0.529 0.508 0.515 0.518 0.507 0.504 0.525   6.14
30)  Tetrahydrofuran   0.077 0.063 0.066 0.076 0.078 0.091 0.095 0.078  14.93
            ---- Linear regr., Force(0,0) ----  Coefficient =  0.9957
              Response Ratio = 0.00000 + 0.09119 *A

31)S Dibromofluorometh 0.325 0.324 0.318 0.316 0.312 0.304 0.302 0.314   2.86
32)  Carbon Tetrachlor 0.466 0.433 0.428 0.441 0.450 0.446 0.453 0.445   2.83
33)  1,1,1-Trichloroet 0.469 0.439 0.429 0.435 0.442 0.428 0.429 0.439   3.32
34)  2-Butanone        0.100 0.111 0.111 0.132 0.135 0.150 0.148 0.127  15.52
            ---- Linear regr., Force(0,0) ----  Coefficient =  0.9984
              Response Ratio = 0.00000 + 0.14676 *A

35)  1,1-Dichloroprope 0.241 0.253 0.277 0.328 0.353 0.363 0.366 0.312  17.18
            ---- Linear regr., Force(0,0) ----  Coefficient =  0.9995
              Response Ratio = 0.00000 + 0.36177 *A

36)  tert-Butyl Format 0.161 0.202 0.205 0.227 0.237 0.237 0.228 0.214  12.82
            ---- Linear regr., Force(0,0) ----  Coefficient =  0.9990
              Response Ratio = 0.00000 + 0.23094 *A

37)  Benzene           0.897 0.868 0.872 0.915 0.946 0.937 0.928 0.909   3.41
38)  TAME              0.379 0.497 0.528 0.577 0.595 0.610 0.619 0.544  15.64
            ---- Linear regr., Force(0,0) ----  Coefficient =  0.9998
              Response Ratio = 0.00000 + 0.61227 *A

39)S 1,2-Dichloroethan 0.453 0.452 0.446 0.433 0.424 0.413 0.405 0.432   4.40
40)  1,2-Dichloroethan 0.585 0.508 0.493 0.487 0.493 0.490 0.487 0.506   7.02
41)  Trichloroethene   0.293 0.265 0.271 0.280 0.286 0.282 0.281 0.280   3.34
42)  Methylcyclohexane 0.272 0.293 0.334 0.397 0.417 0.425 0.431 0.367  18.02
            ---- Linear regr., Force(0,0) ----  Coefficient =  0.9997
              Response Ratio = 0.00000 + 0.42558 *A

43)  Dibromomethane    0.168 0.163 0.154 0.160 0.166 0.165 0.167 0.163   2.95
44)C 1,2-Dichloropropa 0.255 0.242 0.235 0.256 0.275 0.284 0.290 0.262   7.99
45)  Bromodichlorometh 0.377 0.355 0.339 0.360 0.376 0.374 0.376 0.365   4.02
46)  2-Chloroethyl vin 0.058 0.081 0.099 0.136 0.144 0.157 0.154 0.118  32.97
            ---- Linear regr., Force(0,0) ----  Coefficient =  0.9986
              Response Ratio = 0.00000 + 0.15301 *A

47)  cis-1,3-Dichlorop 0.244 0.285 0.308 0.357 0.386 0.398 0.406 0.341  18.32
            ---- Linear regr., Force(0,0) ----  Coefficient =  0.9994
              Response Ratio = 0.00000 + 0.39920 *A


48) I   Chlorobenzene-d5      ----------------ISTD--------------------
49)S Toluene-d8        1.201 1.167 1.161 1.155 1.153 1.168 1.182 1.170   1.44
50)C Toluene           1.332 1.144 1.128 1.199 1.252 1.268 1.258 1.226   5.92
51)  2-Nitropropane    0.100 0.094 0.094 0.104 0.106 0.117 0.118 0.105   9.51
52)  4-Methyl-2-pentan 0.243 0.285 0.304 0.372 0.377 0.417 0.397 0.342  18.98
            ---- Linear regr., Force(0,0) ----  Coefficient =  0.9981
              Response Ratio = 0.00000 + 0.39939 *A

53)  trans-1,3-Dichlor 0.323 0.340 0.346 0.392 0.414 0.436 0.434 0.384  12.22
            ---- Linear regr., Force(0,0) ----  Coefficient =  0.9994
              Response Ratio = 0.00000 + 0.43042 *A

54)  Tetrachloroethene 0.379 0.373 0.374 0.387 0.391 0.416 0.425 0.392   5.26
55)  1,1,2-Trichloroet 0.243 0.224 0.215 0.220 0.219 0.220 0.221 0.223   4.14
56)  Dibromochlorometh 0.344 0.326 0.312 0.337 0.347 0.369 0.374 0.344   6.43
57)  1,3-Dichloropropa 0.368 0.381 0.368 0.413 0.428 0.449 0.454 0.409   9.00
```

Initial Calibration Summary

Job Number: FA32657
Account: TTNASA Tetra Tech NUS
Project: SW3

Sample: VA1897-ICC1897
Lab FileID: A0199817.D

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58)  1,2-Dibromoethane 0.243 0.246 0.235 0.254 0.267 0.284 0.290 0.260   8.06
59)  2-hexanone        0.135 0.207 0.226 0.264 0.264 0.297 0.286 0.240  23.35
            ---- Linear regr., Force(0,0) ----  Coefficient =  0.9981
              Response Ratio = 0.00000 + 0.28575 *A

60)  1-Chlorohexane    0.185 0.219 0.267 0.354 0.392 0.421 0.436 0.325  31.04
            ---- Linear regr., Force(0,0) ----  Coefficient =  0.9981
              Response Ratio = 0.00000 + 0.42343 *A

61)C Ethylbenzene      1.519 1.348 1.351 1.427 1.455 1.457 1.418 1.425   4.27
62)P Chlorobenzene     1.014 0.902 0.835 0.867 0.874 0.864 0.849 0.886   6.77
63)  1,1,1,2-Tetrachlo 0.412 0.355 0.342 0.348 0.357 0.367 0.372 0.365   6.42
64)  m,p-Xylene        0.773 0.867 0.942 1.089 1.126 1.120 1.033 0.993  13.73
            ---- Linear regr., Force(0,0) ----  Coefficient =  0.9965
              Response Ratio = 0.00000 + 1.06758 *A

65)  o-Xylene          0.582 0.609 0.691 0.987 1.097 1.175 1.179 0.903  29.60
            ---- Linear regr., Force(0,0) ----  Coefficient =  0.9985
              Response Ratio = 0.00000 + 1.15975 *A

66)  Styrene           0.366 0.480 0.614 0.810 0.872 0.911 0.913 0.709  31.45
            ---- Linear regr., Force(0,0) ----  Coefficient =  0.9993
              Response Ratio = 0.00000 + 0.90275 *A

67)P Bromoform         0.256 0.208 0.197 0.212 0.219 0.233 0.240 0.224   9.06
68)  Isopropylbenzene  0.631 0.758 0.925 1.279 1.419 1.475 1.459 1.135  31.40
            ---- Linear regr., Force(0,0) ----  Coefficient =  0.9989
              Response Ratio = 0.00000 + 1.44918 *A


69) I   1,4-Dichlorobenzene-d ----------------ISTD---------------------
70)S 4-Bromofluorobenz 0.839 0.814 0.814 0.809 0.811 0.818 0.838 0.821   1.53
71)  n-Propylbenzene   1.560 1.660 1.849 2.041 2.078 2.053 2.035 1.897  11.16
72)  Bromobenzene      0.765 0.701 0.720 0.727 0.735 0.737 0.750 0.733   2.84
73)P 1,1,2,2-Tetrachlo 0.675 0.642 0.595 0.592 0.565 0.586 0.587 0.606   6.33
74)  1,3,5-Trimethylbe 1.197 1.475 1.754 2.155 2.249 2.277 2.257 1.909  22.96
            ---- Linear regr., Force(0,0) ----  Coefficient =  0.9996
              Response Ratio = 0.00000 + 2.25411 *A

75)  2-Chlorotoluene   1.560 1.660 1.849 2.041 2.078 2.053 2.035 1.897  11.16
76)  trans-1,4-Dichlor 0.232 0.179 0.190 0.222 0.227 0.251 0.258 0.223  13.10
77)  1,2,3-Trichloropr 0.186 0.194 0.183 0.181 0.174 0.182 0.182 0.183   3.28
78)  Cyclohexanone     0.019 0.013 0.013 0.015 0.015 0.018 0.019 0.016  16.32
            ---- Linear regr., Force(0,0) ----  Coefficient =  0.9931
              Response Ratio = 0.00000 + 0.01815 *A

79)  4-Chlorotoluene   1.224 1.310 1.520 1.831 1.896 1.951 1.958 1.670  18.78
            ---- Linear regr., Force(0,0) ----  Coefficient =  0.9997
              Response Ratio = 0.00000 + 1.94202 *A

80)  tert-Butylbenzene 0.694 0.858 1.038 1.274 1.341 1.371 1.385 1.137  24.36
            ---- Linear regr., Force(0,0) ----  Coefficient =  0.9997
              Response Ratio = 0.00000 + 1.37007 *A

81)  1,2,4-Trimethylbe 1.125 1.469 1.848 2.205 2.291 2.330 2.303 1.939  24.67
            ---- Linear regr., Force(0,0) ----  Coefficient =  0.9997
              Response Ratio = 0.00000 + 2.30218 *A

82)  sec-Butylbenzene  1.443 1.869 2.259 2.726 2.854 2.884 2.849 2.412  23.72
            ---- Linear regr., Force(0,0) ----  Coefficient =  0.9996
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Initial Calibration Summary

Job Number: FA32657
Account: TTNASA Tetra Tech NUS
Project: SW3

Sample: VA1897-ICC1897
Lab FileID: A0199817.D

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               Response Ratio = 0.00000 + 2.84977 *A

 83)  4-Isopropyltoluen 0.967 1.378 1.748 2.299 2.469 2.552 2.543 1.994  31.91
             ---- Linear regr., Force(0,0) ----  Coefficient =  0.9994
               Response Ratio = 0.00000 + 2.52348 *A

 84)  1,3-Dichlorobenze 1.105 1.205 1.237 1.329 1.381 1.410 1.417 1.298   9.13
 85)  1,4-Dichlorobenze 1.694 1.483 1.386 1.418 1.434 1.441 1.451 1.473   6.95
 86)  n-Butylbenzene    0.700 0.793 0.979 1.266 1.358 1.406 1.412 1.131  26.71
             ---- Linear regr., Force(0,0) ----  Coefficient =  0.9994
               Response Ratio = 0.00000 + 1.39664 *A

 87)  Benzyl Chloride   0.180 0.198 0.209 0.237 0.244 0.264 0.265 0.228  14.57
             ---- Linear regr., Force(0,0) ----  Coefficient =  0.9990
               Response Ratio = 0.00000 + 0.26143 *A

 88)  1,2-Dichlorobenze 1.011 1.109 1.125 1.247 1.296 1.330 1.350 1.210  10.64
 89)  1,2-Dibromo-3-Chl 0.107 0.100 0.089 0.097 0.099 0.107 0.107 0.101   6.63
 90)  Hexachlorobutadie 0.556 0.471 0.477 0.508 0.550 0.555 0.568 0.527   7.69
 91)  1,2,4-Trichlorobe 0.535 0.577 0.613 0.798 0.924 0.963 0.989 0.771  25.24
             ---- Linear regr., Force(0,0) ----  Coefficient =  0.9983
               Response Ratio = 0.00000 + 0.96602 *A

 92)  Naphthalene       0.657 0.740 0.858 1.254 1.498 1.662 1.699 1.196  37.07
             ---- Linear regr., Force(0,0) ----  Coefficient =  0.9966
               Response Ratio = 0.00000 + 1.64778 *A

 93)  1,2,3-Trichlorobe 0.522 0.561 0.611 0.752 0.825 0.843 0.859 0.710  20.11
             ---- Linear regr., Force(0,0) ----  Coefficient =  0.9993
               Response Ratio = 0.00000 + 0.84548 *A


 94) I   Tert Butyl Alcohol-d1 ----------------ISTD----------------------
 95)  Ethanol           0.101 0.152 0.166 0.137 0.140 0.153 0.149 0.143  14.42
             ---- Linear regr., Force(0,0) ----  Coefficient =  0.9983
               Response Ratio = 0.00000 + 0.14908 *A

 96)  acrolein          1.910 2.131 1.853 1.875 2.250 2.249 2.324 2.085   9.64
 97)  Tert Butyl Alcoho 1.105 1.132 1.070 1.023 1.117 1.188 1.148 1.112   4.81
 98)  tert Amyl alcohol 0.555 0.682 0.616 0.645 0.801 0.854 0.885 0.720  17.64
             ---- Linear regr., Force(0,0) ----  Coefficient =  0.9963
               Response Ratio = 0.00000 + 0.85767 *A

 99)  1,4-Dioxane       0.039 0.053 0.058 0.070 0.079 0.093 0.090 0.069  28.69
             ---- Linear regr., Force(0,0) ----  Coefficient =  0.9958
               Response Ratio = 0.00000 + 0.08880 *A

100)  3,3-Dimethyl-1-bu 0.412 0.557 0.624 0.755 0.959 1.118 1.098 0.789  34.98
             ---- Quadratic regr., Force(0,0) ----  Coefficient =  0.9953
               Response Ratio = 0.00000 + 0.85582 *A + 0.01326 *A^2

 ---------------------------------------------------------------------------
 (#) = Out of Range

          032516oxy.m        Tue Mar 29 09:53:44 2016
```

Initial Calibration Verification

Job Number: FA32657
Account: TTNASA Tetra Tech NUS
Project: SW3

Sample: VA1897-ICV1897
Lab FileID: A0199821.D

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\032516\A0199821.D Vial: 11
Acq On : 25 Mar 2016 6:04 pm Operator: TRANGD
Sample : ICV1897-4 Inst : MSVOA10
Misc : MS33377,VA1897,,,,, Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\msdchem\1\METHODS\032516oxy.m (RTE Integrator)
Title : SW-846 Method 5030B/8260B & EPA 624
Last Update : Tue Mar 29 09:52:15 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1	I	Fluorobenzene	1.000	1.000	0.0	102	0.00	7.38
2		Dichlorodifluoromethane	0.335	0.343	-2.4	101	0.00	2.60
3	P	Chloromethane	0.545	0.554	-1.7	104	0.00	2.84
4	C	Vinyl Chloride	0.263	0.283	-7.6	104	0.00	2.96
			Amount	Calc.	%Drift			
5		Bromomethane	40.000	40.853	-2.1	110	0.00	3.34
			AvgRF	CCRF	%Dev			
6		Chloroethane	0.132	0.130	1.5	105	0.00	3.48
7		Trichlorofluoromethane	0.392	0.420	-7.1	105	0.00	3.65
8		Ethyl Ether	0.208	0.198	4.8	97	0.00	3.95
9		1,2-Dichlorotrifluoroetha	0.249	0.262	-5.2	110	0.00	4.16
10	C	1,1-Dichloroethene	0.456	0.452	0.9	99	0.00	4.18
11		Freon 113	0.229	0.199	13.1	92	0.00	4.23
12		Carbon Disulfide	0.604	0.522	13.6	90	0.00	4.24
13		Iodomethane	0.390	0.362	7.2	95	0.00	4.35
			Amount	Calc.	%Drift			
14		Methylene Chloride	40.000	40.145	-0.4	100	0.00	4.79
			AvgRF	CCRF	%Dev			
15		Acetone	0.091	0.087	4.4	108	0.00	4.84
16		Methyl acetate	0.225	0.228	-1.3	107	0.00	4.95
17		trans-1,2-Dichloroethene	0.364	0.389	-6.9	108	0.00	4.96
18		Hexane	0.293	0.269	8.2	94	0.00	5.01
19		Methyl Tert Butyl Ether	0.496	0.489	1.4	103	0.00	5.05
			Amount	Calc.	%Drift			
20		Di-isopropyl ether	40.000	38.152	4.6	105	0.00	5.42
			AvgRF	CCRF	%Dev			
21	P	1,1-Dichloroethane	0.542	0.548	-1.1	101	0.00	5.59
22		Acrylonitrile	0.109	0.114	-4.6	105	0.00	5.65
			Amount	Calc.	%Drift			
23		ETBE	40.000	40.151	-0.4	101	0.00	5.79
24		Vinyl acetate	200.000	176.825	11.6	86	0.00	5.81
			AvgRF	CCRF	%Dev			
25		cis-1,2-Dichloroethene	0.249	0.255	-2.4	96	0.00	6.14
26		2,2-Dichloropropane	0.266	0.267	-0.4	100	0.00	6.25

Initial Calibration Verification

Job Number: FA32657
Account: TTNASA Tetra Tech NUS
Project: SW3

Sample: VA1897-ICV1897
Lab FileID: A0199821.D

27		Bromochloromethane	0.151	0.145	4.0	96	0.00	6.35
			Amount	Calc.	%Drift			
28		Cyclohexane	40.000	38.910	2.7	97	0.00	6.35
			AvgRF	CCRF	%Dev			
29	C	Chloroform	0.525	0.509	3.0	100	0.00	6.40
			Amount	Calc.	%Drift			
30		Tetrahydrofuran	40.000	37.326	6.7	110	0.00	6.57
			AvgRF	CCRF	%Dev			
31	S	Dibromofluoromethane	0.314	0.308	1.9	100	0.00	6.59
32		Carbon Tetrachloride	0.445	0.441	0.9	100	0.00	6.56
33		1,1,1-Trichloroethane	0.439	0.422	3.9	97	0.00	6.62
			Amount	Calc.	%Drift			
34		2-Butanone	200.000	194.388	2.8	108	0.00	6.70
35		1,1-Dichloropropene	40.000	39.276	1.8	102	0.00	6.74
36		tert-Butyl Formate	400.000	437.209	-9.3	108	0.00	6.83
			AvgRF	CCRF	%Dev			
37		Benzene	0.909	0.924	-1.7	99	0.00	6.99
			Amount	Calc.	%Drift			
38		TAME	40.000	36.570	8.6	96	0.00	7.06
			AvgRF	CCRF	%Dev			
39	S	1,2-Dichloroethane-d4	0.432	0.419	3.0	100	0.00	7.12
40		1,2-Dichloroethane	0.506	0.481	4.9	99	0.00	7.19
41		Trichloroethene	0.280	0.280	0.0	100	0.00	7.55
			Amount	Calc.	%Drift			
42		Methylcyclohexane	40.000	37.825	5.4	98	0.00	7.55
			AvgRF	CCRF	%Dev			
43		Dibromomethane	0.163	0.165	-1.2	101	0.00	7.98
44	C	1,2-Dichloropropane	0.262	0.274	-4.6	101	0.00	8.07
45		Bromodichloromethane	0.365	0.372	-1.9	101	0.00	8.11
			Amount	Calc.	%Drift			
46		2-Chloroethyl vinyl ether	200.000	194.127	2.9	105	0.00	8.63
47		cis-1,3-Dichloropropene	40.000	38.107	4.7	100	0.00	8.72
			AvgRF	CCRF	%Dev			
48	I	Chlorobenzene-d5	1.000	1.000	0.0	100	0.00	10.44
49	S	Toluene-d8	1.170	1.171	-0.1	101	0.00	8.90
50	C	Toluene	1.226	1.236	-0.8	99	0.00	8.95
51		2-Nitropropane	0.105	0.107	-1.9	101	0.00	9.18
			Amount	Calc.	%Drift			
52		4-Methyl-2-pentanone	200.000	201.015	-0.5	106	0.00	9.29
53		trans-1,3-Dichloropropene	40.000	41.165	-2.9	107	0.00	9.35
			AvgRF	CCRF	%Dev			
54		Tetrachloroethene	0.392	0.452	-15.3	116	0.00	9.34
55		1,1,2-Trichloroethane	0.223	0.216	3.1	98	0.00	9.51
56		Dibromochloromethane	0.344	0.358	-4.1	103	0.00	9.70
57		1,3-Dichloropropane	0.409	0.413	-1.0	96	0.00	9.79

Initial Calibration Verification

Job Number: FA32657
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Project: SW3

Sample: VA1897-ICV1897
Lab FileID: A0199821.D

58		1,2-Dibromoethane	0.260	0.271	-4.2	102	0.00	9.96
			Amount	Calc.	%Drift			
59		2-hexanone	200.000	196.933	1.5	106	0.00	10.11
60		1-Chlorohexane	40.000	37.039	7.4	100	0.00	10.39
			AvgRF	CCRF	%Dev			
61	C	Ethylbenzene	1.425	1.444	-1.3	99	0.00	10.46
62	P	Chlorobenzene	0.886	0.873	1.5	100	0.00	10.46
63		1,1,1,2-Tetrachloroethane	0.365	0.364	0.3	102	0.00	10.51
			Amount	Calc.	%Drift			
64		m,p-Xylene	80.000	84.392	-5.5	100	0.00	10.59
65		o-Xylene	40.000	39.322	1.7	104	0.00	11.03
66		Styrene	40.000	37.806	5.5	98	0.00	11.08
			AvgRF	CCRF	%Dev			
67	P	Bromoform	0.224	0.224	0.0	102	0.00	11.14
			Amount	Calc.	%Drift			
68		Isopropylbenzene	40.000	39.806	0.5	101	0.00	11.33
			AvgRF	CCRF	%Dev			
69	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	99	0.00	12.79
70	S	4-Bromofluorobenzene	0.821	0.821	0.0	100	0.00	11.65
71		n-Propylbenzene	1.897	2.081	-9.7	99	0.00	11.94
72		Bromobenzene	0.733	0.729	0.5	98	0.00	11.77
73	P	1,1,2,2-Tetrachloroethane	0.606	0.554	8.6	97	0.00	11.83
			Amount	Calc.	%Drift			
74		1,3,5-Trimethylbenzene	40.000	39.090	2.3	97	0.00	11.94
			AvgRF	CCRF	%Dev			
75		2-Chlorotoluene	1.897	2.081	-9.7	99	0.00	11.94
76		trans-1,4-Dichloro-2-Bute	0.223	0.222	0.4	97	0.00	12.01
77		1,2,3-Trichloropropane	0.183	0.179	2.2	101	0.00	11.99
			Amount	Calc.	%Drift			
78		Cyclohexanone	200.000	185.309	7.3	111	0.00	12.05
79		4-Chlorotoluene	40.000	39.363	1.6	99	0.00	12.11
80		tert-Butylbenzene	40.000	38.021	4.9	96	0.00	12.27
81		1,2,4-Trimethylbenzene	40.000	39.398	1.5	98	0.00	12.35
82		sec-Butylbenzene	40.000	40.374	-0.9	99	0.00	12.46
83		4-Isopropyltoluene	40.000	38.987	2.5	98	0.00	12.59
			AvgRF	CCRF	%Dev			
84		1,3-Dichlorobenzene	1.298	1.401	-7.9	100	0.00	12.72
85		1,4-Dichlorobenzene	1.473	1.430	2.9	98	0.00	12.81
			Amount	Calc.	%Drift			
86		n-Butylbenzene	40.000	38.391	4.0	97	0.00	13.03
87		Benzyl Chloride	40.000	36.562	8.6	97	0.00	13.05
			AvgRF	CCRF	%Dev			
88		1,2-Dichlorobenzene	1.210	1.305	-7.9	99	0.00	13.24
89		1,2-Dibromo-3-Chloropropa	0.101	0.097	4.0	97	0.00	14.00
90		Hexachlorobutadiene	0.527	0.528	-0.2	95	0.00	14.55
			Amount	Calc.	%Drift			

Initial Calibration Verification

Job Number: FA32657
Account: TTNASA Tetra Tech NUS
Project: SW3

Sample: VA1897-ICV1897
Lab FileID: A0199821.D

91		1,2,4-Trichlorobenzene	40.000	37.353	6.6	96	0.00	14.60
92		Naphthalene	40.000	39.758	0.6	108	0.00	14.88
93		1,2,3-Trichlorobenzene	40.000	38.541	3.6	97	0.00	15.05
			AvgRF	CCRF	%Dev			
94	I	Tert Butyl Alcohol-d10	1.000	1.000	0.0	119	0.00	5.05
			Amount	Calc.	%Drift			
95		Ethanol	800.000	753.736	5.8	119	0.00	4.09
			AvgRF	CCRF	%Dev			
96		acrolein	2.085	2.178	-4.5	115	0.00	4.54
97		Tert Butyl Alcohol	1.112	1.029	7.5	110	0.00	5.13
			Amount	Calc.	%Drift			
98		tert Amyl alcohol	400.000	343.536	14.1	109	0.00	7.23
99		1,4-Dioxane	800.000	749.413	6.3	126	0.00	8.30
100		3,3-Dimethyl-1-butanol	2000.000	1855.125	7.2	110	0.00	10.06

(#) = Out of Range SPCC's out = 0 CCC's out = 0
A0199817.D 032516oxy.m Tue Mar 29 10:28:28 2016

Continuing Calibration Summary

Job Number: FA32657
Account: TTNASA Tetra Tech NUS
Project: SW3

Sample: VA1906-CC1897
Lab FileID: A0200019.D

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\040516\A0200019.D Vial: 1
Acq On : 5 Apr 2016 11:15 am Operator: TRANGD
Sample : CC1897-5 Inst : MSVOA10
Misc : MS33459,VA1906,,,,, Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\msdchem\1\METHODS\032516oxy.m (RTE Integrator)
Title : SW-846 Method 5030B/8260B & EPA 624
Last Update : Tue Mar 29 09:52:15 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1	I	Fluorobenzene	1.000	1.000	0.0	82	0.00	7.38
2		Dichlorodifluoromethane	0.335	0.388	-15.8	93	0.00	2.60
3	P	Chloromethane	0.545	0.572	-5.0	87	0.00	2.84
4	C	Vinyl Chloride	0.263	0.282	-7.2	84	0.00	2.95
		----------	Amount	Calc.	%Drift			
5		Bromomethane	40.000	40.608	-1.5	89	0.00	3.34
		----------	AvgRF	CCRF	%Dev			
6		Chloroethane	0.132	0.135	-2.3	88	0.00	3.48
7		Trichlorofluoromethane	0.392	0.416	-6.1	85	0.00	3.64
8		Ethyl Ether	0.208	0.226	-8.7	90	0.00	3.95
9		1,2-Dichlorotrifluoroetha	0.249	0.240	3.6	82	0.00	4.16
10	C	1,1-Dichloroethene	0.456	0.460	-0.9	82	0.00	4.18
11		Freon 113	0.229	0.223	2.6	83	0.00	4.23
12		Carbon Disulfide	0.604	0.547	9.4	77	0.00	4.24
13		Iodomethane	0.390	0.395	-1.3	84	0.00	4.35
		----------	Amount	Calc.	%Drift			
14		Methylene Chloride	40.000	41.144	-2.9	83	0.00	4.79
		----------	AvgRF	CCRF	%Dev			
15		Acetone	0.091	0.089	2.2	89	0.00	4.84
16		Methyl acetate	0.225	0.244	-8.4	93	0.00	4.95
17		trans-1,2-Dichloroethene	0.364	0.373	-2.5	84	0.00	4.95
18		Hexane	0.293	0.296	-1.0	84	0.00	5.01
19		Methyl Tert Butyl Ether	0.496	0.543	-9.5	92	0.00	5.05
		----------	Amount	Calc.	%Drift			
20		Di-isopropyl ether	40.000	40.824	-2.1	91	0.00	5.42
		----------	AvgRF	CCRF	%Dev			
21	P	1,1-Dichloroethane	0.542	0.534	1.5	80	0.00	5.59
22		Acrylonitrile	0.109	0.117	-7.3	87	0.00	5.65
		----------	Amount	Calc.	%Drift			
23		ETBE	40.000	43.418	-8.5	89	0.00	5.79
24		Vinyl acetate	200.000	234.054	-17.0	88	0.00	5.81
		----------	AvgRF	CCRF	%Dev			
25		cis-1,2-Dichloroethene	0.249	0.263	-5.6	80	0.00	6.14
26		2,2-Dichloropropane	0.266	0.253	4.9	77	0.00	6.25

Continuing Calibration Summary

Job Number: FA32657
Account: TTNASA Tetra Tech NUS
Project: SW3

Sample: VA1906-CC1897
Lab FileID: A0200019.D

27		Bromochloromethane	0.151	0.154	-2.0	83	0.00	6.34
			Amount	Calc.	%Drift			
28		Cyclohexane	40.000	41.147	-2.9	84	0.00	6.35
			AvgRF	CCRF	%Dev			
29	C	Chloroform	0.525	0.517	1.5	82	0.00	6.40
			Amount	Calc.	%Drift			
30		Tetrahydrofuran	40.000	41.246	-3.1	99	0.00	6.57
			AvgRF	CCRF	%Dev			
31	S	Dibromofluoromethane	0.314	0.314	0.0	83	0.00	6.58
32		Carbon Tetrachloride	0.445	0.440	1.1	81	0.00	6.56
33		1,1,1-Trichloroethane	0.439	0.443	-0.9	82	0.00	6.62
			Amount	Calc.	%Drift			
34		2-Butanone	200.000	200.553	-0.3	90	0.00	6.70
35		1,1-Dichloropropene	40.000	37.665	5.8	79	0.00	6.74
36		tert-Butyl Formate	400.000	428.848	-7.2	86	0.00	6.83
			AvgRF	CCRF	%Dev			
37		Benzene	0.909	0.905	0.4	79	0.00	6.99
			Amount	Calc.	%Drift			
38		TAME	40.000	39.995	0.0	85	0.00	7.06
			AvgRF	CCRF	%Dev			
39	S	1,2-Dichloroethane-d4	0.432	0.439	-1.6	85	0.00	7.12
40		1,2-Dichloroethane	0.506	0.528	-4.3	88	0.00	7.19
41		Trichloroethene	0.280	0.287	-2.5	83	0.00	7.55
			Amount	Calc.	%Drift			
42		Methylcyclohexane	40.000	36.308	9.2	76	0.00	7.54
			AvgRF	CCRF	%Dev			
43		Dibromomethane	0.163	0.168	-3.1	83	0.00	7.98
44	C	1,2-Dichloropropane	0.262	0.278	-6.1	83	0.00	8.07
45		Bromodichloromethane	0.365	0.373	-2.2	82	0.00	8.11
			Amount	Calc.	%Drift			
46		2-Chloroethyl vinyl ether	200.000	206.380	-3.2	90	0.00	8.63
47		cis-1,3-Dichloropropene	40.000	37.532	6.2	80	0.00	8.72
			AvgRF	CCRF	%Dev			
48	I	Chlorobenzene-d5	1.000	1.000	0.0	82	0.00	10.44
49	S	Toluene-d8	1.170	1.143	2.3	81	0.00	8.90
50	C	Toluene	1.226	1.221	0.4	80	0.00	8.95
51		2-Nitropropane	0.105	0.121	-15.2	94	0.00	9.18
			Amount	Calc.	%Drift			
52		4-Methyl-2-pentanone	200.000	211.532	-5.8	92	0.00	9.29
53		trans-1,3-Dichloropropene	40.000	38.853	2.9	83	0.00	9.35
			AvgRF	CCRF	%Dev			
54		Tetrachloroethene	0.392	0.389	0.8	82	0.00	9.34
55		1,1,2-Trichloroethane	0.223	0.225	-0.9	84	0.00	9.51
56		Dibromochloromethane	0.344	0.355	-3.2	84	0.00	9.70
57		1,3-Dichloropropane	0.409	0.442	-8.1	84	0.00	9.79

Continuing Calibration Summary

Job Number: FA32657
Account: TTNASA Tetra Tech NUS
Project: SW3

Sample: VA1906-CC1897
Lab FileID: A0200019.D

58		1,2-Dibromoethane	0.260	0.285	-9.6	87	0.00	9.96
			Amount	Calc.	%Drift			
59		2-hexanone	200.000	213.532	-6.8	95	0.00	10.10
60		1-Chlorohexane	40.000	35.274	11.8	78	0.00	10.39
			AvgRF	CCRF	%Dev			
61	C	Ethylbenzene	1.425	1.436	-0.8	81	0.00	10.45
62	P	Chlorobenzene	0.886	0.870	1.8	82	0.00	10.46
63		1,1,1,2-Tetrachloroethane	0.365	0.359	1.6	82	0.00	10.51
			Amount	Calc.	%Drift			
64		m,p-Xylene	80.000	84.645	-5.8	82	0.00	10.59
65		o-Xylene	40.000	37.852	5.4	82	0.00	11.03
66		Styrene	40.000	39.266	1.8	83	0.00	11.08
			AvgRF	CCRF	%Dev			
67	P	Bromoform	0.224	0.214	4.5	80	0.00	11.14
			Amount	Calc.	%Drift			
68		Isopropylbenzene	40.000	38.165	4.6	80	0.00	11.33
			AvgRF	CCRF	%Dev			
69	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	82	0.00	12.79
70	S	4-Bromofluorobenzene	0.821	0.823	-0.2	83	0.00	11.65
71		n-Propylbenzene	1.897	2.080	-9.6	82	0.00	11.94
72		Bromobenzene	0.733	0.760	-3.7	84	0.00	11.77
73	P	1,1,2,2-Tetrachloroethane	0.606	0.598	1.3	86	0.00	11.83
			Amount	Calc.	%Drift			
74		1,3,5-Trimethylbenzene	40.000	39.315	1.7	80	0.00	11.94
			AvgRF	CCRF	%Dev			
75		2-Chlorotoluene	1.897	2.080	-9.6	82	0.00	11.94
76		trans-1,4-Dichloro-2-Bute	0.223	0.157	29.6#	56	0.00	12.01
77		1,2,3-Trichloropropane	0.183	0.196	-7.1	92	0.00	11.99
			Amount	Calc.	%Drift			
78		Cyclohexanone	200.000	205.493	-2.7	101	0.00	12.05
79		4-Chlorotoluene	40.000	39.443	1.4	82	0.00	12.10
80		tert-Butylbenzene	40.000	36.780	8.0	77	0.00	12.27
81		1,2,4-Trimethylbenzene	40.000	38.926	2.7	80	0.00	12.35
82		sec-Butylbenzene	40.000	38.080	4.8	77	0.00	12.46
83		4-Isopropyltoluene	40.000	37.994	5.0	79	0.00	12.59
			AvgRF	CCRF	%Dev			
84		1,3-Dichlorobenzene	1.298	1.410	-8.6	83	0.00	12.72
85		1,4-Dichlorobenzene	1.473	1.456	1.2	83	0.00	12.81
			Amount	Calc.	%Drift			
86		n-Butylbenzene	40.000	36.370	9.1	76	0.00	13.03
87		Benzyl Chloride	40.000	38.733	3.2	84	0.00	13.05
			AvgRF	CCRF	%Dev			
88		1,2-Dichlorobenzene	1.210	1.325	-9.5	83	0.00	13.24
89		1,2-Dibromo-3-Chloropropa	0.101	0.100	1.0	83	0.00	14.00
90		Hexachlorobutadiene	0.527	0.509	3.4	75	0.00	14.55
			Amount	Calc.	%Drift			

Continuing Calibration Summary

Job Number: FA32657 **Sample:** VA1906-CC1897
Account: TTNASA Tetra Tech NUS **Lab FileID:** A0200019.D
Project: SW3

91	1,2,4-Trichlorobenzene	40.000	37.644	5.9	80	0.00	14.60
92	Naphthalene	40.000	35.930	10.2	81	0.00	14.88
93	1,2,3-Trichlorobenzene	40.000	38.369	4.1	80	0.00	15.05
	----------	AvgRF	CCRF	%Dev	----------		
94 I	Tert Butyl Alcohol-d10	1.000	1.000	0.0	90	0.00	5.05
	----------	Amount	Calc.	%Drift	----------		
95	Ethanol	800.000	552.330	31.0#	66	0.00	4.09
	----------	AvgRF	CCRF	%Dev	----------		
96	acrolein	2.085	2.499	-19.9	100	0.00	4.54
97	Tert Butyl Alcohol	1.112	1.123	-1.0	91	0.00	5.13
	----------	Amount	Calc.	%Drift	----------		
98	tert Amyl alcohol	400.000	371.416	7.1	90	0.00	7.23
99	1,4-Dioxane	800.000	638.758	20.2#	81	0.00	8.30
100	3,3-Dimethyl-1-butanol	2000.000	1917.083	4.1	86	0.00	10.06

(#) = Out of Range SPCC's out = 0 CCC's out = 0
A0199817.D 032516oxy.m Tue Apr 05 15:51:54 2016

Continuing Calibration Summary

Job Number: FA32657
Account: TTNASA Tetra Tech NUS
Project: SW3

Sample: VA1906-ECC1897
Lab FileID: A0200043.D

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\040516\A0200043.D Vial: 25
Acq On : 5 Apr 2016 9:29 pm Operator: TRANGD
Sample : ECC1897-4 Inst : MSVOA10
Misc : MS33459,VA1906,,,,, Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\msdchem\1\METHODS\032516oxy.m (RTE Integrator)
Title : SW-846 Method 5030B/8260B & EPA 624
Last Update : Tue Mar 29 09:52:15 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 50% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1	I	Fluorobenzene	1.000	1.000	0.0	78	0.00	7.38
2		Dichlorodifluoromethane	0.335	0.422	-26.0	97	0.00	2.59
3	P	Chloromethane	0.545	0.597	-9.5	86	0.00	2.84
4	C	Vinyl Chloride	0.263	0.297	-12.9	84	0.00	2.95
			Amount	Calc.	%Drift			
5		Bromomethane	40.000	44.546	-11.4	93	0.00	3.34
			AvgRF	CCRF	%Dev			
6		Chloroethane	0.132	0.149	-12.9	93	0.00	3.48
7		Trichlorofluoromethane	0.392	0.468	-19.4	91	0.00	3.65
8		Ethyl Ether	0.208	0.236	-13.5	89	0.00	3.94
9		1,2-Dichlorotrifluoroetha	0.249	0.275	-10.4	90	0.00	4.15
10	C	1,1-Dichloroethene	0.456	0.528	-15.8	89	0.00	4.18
11		Freon 113	0.229	0.255	-11.4	91	0.00	4.23
12		Carbon Disulfide	0.604	0.630	-4.3	84	0.00	4.24
13		Iodomethane	0.390	0.447	-14.6	91	0.00	4.35
			Amount	Calc.	%Drift			
14		Methylene Chloride	40.000	46.520	-16.3	89	0.00	4.79
			AvgRF	CCRF	%Dev			
15		Acetone	0.091	0.089	2.2	85	0.00	4.84
16		Methyl acetate	0.225	0.253	-12.4	92	0.00	4.95
17		trans-1,2-Dichloroethene	0.364	0.424	-16.5	91	0.00	4.95
18		Hexane	0.293	0.333	-13.7	90	0.00	5.01
19		Methyl Tert Butyl Ether	0.496	0.573	-15.5	93	0.00	5.04
			Amount	Calc.	%Drift			
20		Di-isopropyl ether	40.000	44.075	-10.2	93	0.00	5.41
			AvgRF	CCRF	%Dev			
21	P	1,1-Dichloroethane	0.542	0.590	-8.9	84	0.00	5.59
22		Acrylonitrile	0.109	0.112	-2.8	79	0.00	5.64
			Amount	Calc.	%Drift			
23		ETBE	40.000	45.324	-13.3	89	0.00	5.79
24		Vinyl acetate	200.000	225.203	-12.6	82	0.00	5.81
			AvgRF	CCRF	%Dev			
25		cis-1,2-Dichloroethene	0.249	0.288	-15.7	84	0.00	6.14
26		2,2-Dichloropropane	0.266	0.277	-4.1	80	0.00	6.25

Continuing Calibration Summary

Job Number: FA32657
Account: TTNASA Tetra Tech NUS
Project: SW3

Sample: VA1906-ECC1897
Lab FileID: A0200043.D

27		Bromochloromethane	0.151	0.161	-6.6	83	0.00	6.34
			Amount	Calc.	%Drift			
28		Cyclohexane	40.000	46.087	-15.2	90	0.00	6.35
			AvgRF	CCRF	%Dev			
29	C	Chloroform	0.525	0.566	-7.8	86	0.00	6.40
			Amount	Calc.	%Drift			
30		Tetrahydrofuran	40.000	39.031	2.4	89	0.00	6.57
			AvgRF	CCRF	%Dev			
31	S	Dibromofluoromethane	0.314	0.314	0.0	79	0.00	6.58
32		Carbon Tetrachloride	0.445	0.488	-9.7	85	0.00	6.56
33		1,1,1-Trichloroethane	0.439	0.510	-16.2	90	0.00	6.62
			Amount	Calc.	%Drift			
34		2-Butanone	200.000	195.831	2.1	84	0.00	6.70
35		1,1-Dichloropropene	40.000	42.202	-5.5	85	0.00	6.74
36		tert-Butyl Formate	400.000	469.883	-17.5	90	0.00	6.83
			AvgRF	CCRF	%Dev			
37		Benzene	0.909	0.986	-8.5	82	0.00	6.99
			Amount	Calc.	%Drift			
38		TAME	40.000	40.598	-1.5	82	0.00	7.06
			AvgRF	CCRF	%Dev			
39	S	1,2-Dichloroethane-d4	0.432	0.440	-1.9	81	0.00	7.12
40		1,2-Dichloroethane	0.506	0.563	-11.3	90	0.00	7.18
41		Trichloroethene	0.280	0.320	-14.3	88	0.00	7.55
			Amount	Calc.	%Drift			
42		Methylcyclohexane	40.000	41.029	-2.6	82	0.00	7.54
			AvgRF	CCRF	%Dev			
43		Dibromomethane	0.163	0.174	-6.7	82	0.00	7.98
44	C	1,2-Dichloropropane	0.262	0.293	-11.8	84	0.00	8.07
45		Bromodichloromethane	0.365	0.398	-9.0	83	0.00	8.11
			Amount	Calc.	%Drift			
46		2-Chloroethyl vinyl ether	200.000	212.473	-6.2	89	0.00	8.63
47		cis-1,3-Dichloropropene	40.000	39.015	2.5	79	0.00	8.72
			AvgRF	CCRF	%Dev			
48	I	Chlorobenzene-d5	1.000	1.000	0.0	78	0.00	10.44
49	S	Toluene-d8	1.170	1.146	2.1	78	0.00	8.90
50	C	Toluene	1.226	1.333	-8.7	83	0.00	8.95
51		2-Nitropropane	0.105	0.121	-15.2	89	0.00	9.18
			Amount	Calc.	%Drift			
52		4-Methyl-2-pentanone	200.000	214.501	-7.3	89	0.00	9.29
53		trans-1,3-Dichloropropene	40.000	39.220	2.0	80	0.00	9.35
			AvgRF	CCRF	%Dev			
54		Tetrachloroethene	0.392	0.458	-16.8	92	0.00	9.34
55		1,1,2-Trichloroethane	0.223	0.226	-1.3	81	0.00	9.51
56		Dibromochloromethane	0.344	0.358	-4.1	81	0.00	9.70
57		1,3-Dichloropropane	0.409	0.458	-12.0	84	0.00	9.79

Continuing Calibration Summary

Job Number: FA32657
Account: TTNASA Tetra Tech NUS
Project: SW3

Sample: VA1906-ECC1897
Lab FileID: A0200043.D

58		1,2-Dibromoethane	0.260	0.293	-12.7	86	0.00	9.96
			Amount	Calc.	%Drift			
59		2-hexanone	200.000	218.774	-9.4	93	0.00	10.10
60		1-Chlorohexane	40.000	39.954	0.1	84	0.00	10.39
			AvgRF	CCRF	%Dev			
61	C	Ethylbenzene	1.425	1.572	-10.3	85	0.00	10.45
62	P	Chlorobenzene	0.886	0.932	-5.2	83	0.00	10.46
63		1,1,1,2-Tetrachloroethane	0.365	0.380	-4.1	83	0.00	10.51
			Amount	Calc.	%Drift			
64		m,p-Xylene	80.000	92.902	-16.1	86	0.00	10.59
65		o-Xylene	40.000	41.564	-3.9	86	0.00	11.03
66		Styrene	40.000	42.006	-5.0	85	0.00	11.08
			AvgRF	CCRF	%Dev			
67	P	Bromoform	0.224	0.205	8.5	73	0.00	11.14
			Amount	Calc.	%Drift			
68		Isopropylbenzene	40.000	42.490	-6.2	85	0.00	11.33
			AvgRF	CCRF	%Dev			
69	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	77	0.00	12.79
70	S	4-Bromofluorobenzene	0.821	0.830	-1.1	79	0.00	11.65
71		n-Propylbenzene	1.897	2.278	-20.1	84	0.00	11.94
72		Bromobenzene	0.733	0.815	-11.2	85	0.00	11.77
73	P	1,1,2,2-Tetrachloroethane	0.606	0.599	1.2	82	0.00	11.83
			Amount	Calc.	%Drift			
74		1,3,5-Trimethylbenzene	40.000	43.869	-9.7	85	0.00	11.94
			AvgRF	CCRF	%Dev			
75		2-Chlorotoluene	1.897	2.278	-20.1	84	0.00	11.94
76		trans-1,4-Dichloro-2-Bute	0.223	0.112	49.8	38#	0.00	12.01
77		1,2,3-Trichloropropane	0.183	0.194	-6.0	86	0.00	11.99
			Amount	Calc.	%Drift			
78		Cyclohexanone	200.000	177.715	11.1	83	0.00	12.05
79		4-Chlorotoluene	40.000	43.204	-8.0	85	0.00	12.10
80		tert-Butylbenzene	40.000	41.716	-4.3	82	0.00	12.27
81		1,2,4-Trimethylbenzene	40.000	43.054	-7.6	83	0.00	12.35
82		sec-Butylbenzene	40.000	42.525	-6.3	82	0.00	12.46
83		4-Isopropyltoluene	40.000	41.885	-4.7	82	0.00	12.59
			AvgRF	CCRF	%Dev			
84		1,3-Dichlorobenzene	1.298	1.487	-14.6	83	0.00	12.72
85		1,4-Dichlorobenzene	1.473	1.572	-6.7	84	0.00	12.81
			Amount	Calc.	%Drift			
86		n-Butylbenzene	40.000	40.006	-0.0	79	0.00	13.03
87		Benzyl Chloride	40.000	35.347	11.6	73	0.00	13.05
			AvgRF	CCRF	%Dev			
88		1,2-Dichlorobenzene	1.210	1.403	-16.0	83	0.00	13.24
89		1,2-Dibromo-3-Chloropropa	0.101	0.101	0.0	79	0.00	14.00
90		Hexachlorobutadiene	0.527	0.563	-6.8	79	0.00	14.55
			Amount	Calc.	%Drift			

Continuing Calibration Summary

Job Number: FA32657
Account: TTNASA Tetra Tech NUS
Project: SW3

Sample: VA1906-ECC1897
Lab FileID: A0200043.D

91	1,2,4-Trichlorobenzene	40.000	39.763	0.6	80	0.00	14.60
92	Naphthalene	40.000	36.757	8.1	78	0.00	14.88
93	1,2,3-Trichlorobenzene	40.000	39.718	0.7	78	0.00	15.05
		AvgRF	CCRF	%Dev			
94 I	Tert Butyl Alcohol-d10	1.000	1.000	0.0	79	0.00	5.04
		Amount	Calc.	%Drift			
95	Ethanol	800.000	572.185	28.5	60	0.00	4.09
		AvgRF	CCRF	%Dev			
96	acrolein	2.085	2.719	-30.4	95	0.00	4.54
97	Tert Butyl Alcohol	1.112	1.142	-2.7	80	0.00	5.12
		Amount	Calc.	%Drift			
98	tert Amyl alcohol	400.000	372.708	6.8	78	0.00	7.23
99	1,4-Dioxane	800.000	631.875	21.0	70	0.00	8.30
100	3,3-Dimethyl-1-butanol	2000.000	2158.174	-7.9	86	0.00	10.05

(#) = Out of Range SPCC's out = 0 CCC's out = 0
A0199817.D 032516oxy.m Wed Apr 06 13:56:11 2016

6.7.4

6

Initial Calibration Summary

Job Number: FA32657
Account: TTNASA Tetra Tech NUS
Project: SW3

Sample: VJ5237-ICC5237
Lab FileID: J0975154.D

Response Factor Report MSVOA6

Method : C:\msdchem\2\methods\MSJ031516.M (RTE Integrator)
Title : SW-846 Method 5030B/8260B & EPA 624
Last Update : Wed Mar 16 08:34:48 2016
Response via : Initial Calibration

Calibration Files
1 =J0975150.D 2 =J0975151.D 3 =J0975152.D 4 =J0975153.D
5 =J0975154.D 6 =J0975155.D 7 =J0975156.D

Compound	1	2	3	4	5	6	7	Avg	%RSD
1) I Fluorobenzene	----------ISTD----------								
2) Dichlorodifluorom	0.226	0.305	0.314	0.308	0.327	0.342	0.332	0.308	12.46
3)P Chloromethane	0.335	0.301	0.320	0.324	0.334	0.351	0.340	0.329	4.86
4)C Vinyl Chloride	0.306	0.335	0.326	0.343	0.351	0.357	0.343	0.337	5.08
5) 1,3-Butadiene	0.236	0.241	0.269	0.252	0.249	0.264	0.245	0.251	4.77
6) Bromomethane	0.330	0.262	0.247	0.239	0.228	0.219	0.189	0.245	17.99
---- Quadratic regr., Force(0,0) ---- Coefficient = 0.9990									
Response Ratio = 0.00000 + 0.26348 *A + -0.03644 *A^2									
7) Chloroethane	0.215	0.175	0.178	0.175	0.164	0.158		0.178	11.29
---- Quadratic regr., Force(0,0) ---- Coefficient = 0.9997									
Response Ratio = 0.00000 + 0.17878 *A + -0.01522 *A^2									
8) Trichlorofluorome	0.349	0.410	0.421	0.423	0.442	0.461	0.424	0.419	8.36
9) Ethyl Ether	0.182	0.184	0.195	0.194	0.201	0.199	0.198	0.193	3.78
10) 1,2-Dichlorotrifl	0.298	0.273	0.294	0.289	0.298	0.290	0.293	0.291	2.94
11)C 1,1-Dichloroethen	0.379	0.323	0.361	0.360	0.366	0.371	0.374	0.362	5.07
12) Freon 113	0.245	0.237	0.254	0.253	0.254	0.252	0.257	0.250	2.71
13) Carbon Disulfide	0.730	0.678	0.750	0.760	0.772	0.781	0.805	0.754	5.44
14) Iodomethane	0.407	0.373	0.395	0.393	0.409	0.405	0.418	0.400	3.68
15) Allyl chloride	0.286	0.321	0.336	0.334	0.336	0.377	0.351	0.335	8.31
16) Methylene Chlorid	0.637	0.344	0.339	0.327	0.332	0.317	0.319	0.374	31.16
---- Quadratic regr., Force(0,0) ---- Coefficient = 0.9997									
Response Ratio = 0.00000 + 0.33127 *A + -0.00672 *A^2									
17) Acetone	0.014	0.017	0.016	0.015	0.014	0.015	0.014	0.015	7.86
18) Methyl acetate	0.028	0.029	0.028	0.029	0.030	0.030	0.030	0.029	3.89
19) trans-1,2-Dichlor	0.330	0.306	0.333	0.332	0.342	0.341	0.343	0.332	3.84
20) Hexane	0.206	0.202	0.219	0.216	0.219	0.216	0.215	0.213	3.17
21) Methyl Tert Butyl	0.660	0.619	0.646	0.664	0.689	0.679	0.682	0.663	3.67
22) Acetonitrile	0.015	0.014	0.012	0.009	0.009	0.010	0.009	0.011	22.87
---- Quadratic regr., Force(0,0) ---- Coefficient = 0.9971									
Response Ratio = 0.00000 + 0.00954 *A + -0.00002 *A^2									
23) Di-isopropyl ethe	0.775	0.685	0.741	0.755	0.797	0.780	0.778	0.759	4.90
24) Chloroprene	0.322	0.323	0.353	0.351	0.369	0.402	0.382	0.357	8.29
25)P 1,1-Dichloroethan	0.468	0.411	0.443	0.436	0.450	0.447	0.452	0.444	3.95
26) Acrylonitrile	0.074	0.063	0.066	0.066	0.064	0.068	0.063	0.066	6.02
27) ETBE	0.704	0.682	0.741	0.781	0.815	0.795	0.801	0.760	6.80
28) Vinyl acetate	0.374	0.384	0.400	0.402	0.397	0.391	0.341	0.384	5.59
29) cis-1,2-Dichloroe	0.285	0.271	0.280	0.280	0.296	0.289	0.294	0.285	3.00
30) 2,2-Dichloropropa	0.357	0.301	0.344	0.342	0.356	0.358	0.366	0.346	6.31
31) Bromochloromethan	0.119	0.129	0.132	0.126	0.135	0.130	0.131	0.129	4.03
32) Cyclohexane	0.410	0.364	0.415	0.424	0.432	0.432	0.445	0.417	6.30
33)C Chloroform	0.515	0.467	0.484	0.491	0.504	0.493	0.496	0.493	3.09
34) Ethyl acetate	0.157	0.155	0.155	0.156	0.152	0.158	0.149	0.154	2.13

Initial Calibration Summary

Job Number: FA32657
Account: TTNASA Tetra Tech NUS
Project: SW3

Sample: VJ5237-ICC5237
Lab FileID: J0975154.D

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35)  Tetrahydrofuran   0.104 0.052 0.047 0.044 0.044 0.044 0.042 0.054  41.52
            ---- Quadratic regr., Force(0,0) ----  Coefficient =  0.9996
              Response Ratio = 0.00000 + 0.04630 *A + -0.00198 *A^2

36)S Dibromofluorometh 0.250 0.255 0.253 0.252 0.257 0.254 0.255 0.254   0.97
37)  Carbon Tetrachlor 0.330 0.312 0.318 0.342 0.362 0.363 0.370 0.343   6.72
38)  1,1,1-Trichloroet 0.416 0.375 0.425 0.415 0.438 0.436 0.446 0.421   5.61
39)  2-Butanone        0.082 0.058 0.062 0.062 0.064 0.067 0.065 0.066  11.50
            ---- Quadratic regr., Force(0,0) ----  Coefficient =  0.9994
              Response Ratio = 0.00000 + 0.06439 *A + 0.00008 *A^2

40)  1,1-Dichloroprope 0.343 0.311 0.333 0.342 0.348 0.350 0.355 0.340   4.29
41)  tert-Butyl Format 0.126 0.128 0.140 0.152 0.153 0.158 0.153 0.144   8.96
            ---- Quadratic regr., Force(0,0) ----  Coefficient =  0.9996
              Response Ratio = 0.00000 + 0.15510 *A + -0.00004 *A^2

42)  Propionitrile     0.025 0.022 0.023 0.022 0.022 0.024 0.022 0.023   5.22
43)  Methacrylonitrile 0.113 0.119 0.118 0.102 0.099 0.104 0.092 0.107   9.60
44)  Benzene           1.059 0.971 0.998 1.041 1.070 1.058 1.054 1.036   3.54
45)  TAME              0.673 0.616 0.654 0.689 0.727 0.716 0.724 0.686   6.02
46)S 1,2-Dichloroethan 0.307 0.314 0.312 0.312 0.304 0.302 0.297 0.307   2.01
47)  1,2-Dichloroethan 0.429 0.351 0.353 0.352 0.361 0.347 0.345 0.363   8.20
48)  Trichloroethene   0.274 0.243 0.267 0.267 0.271 0.277 0.280 0.268   4.61
49)  Methylcyclohexane 0.410 0.398 0.456 0.458 0.471 0.473 0.491 0.451   7.63
50)  Dibromomethane    0.164 0.141 0.141 0.144 0.156 0.152 0.150 0.150   5.69
51)C 1,2-Dichloropropa 0.276 0.239 0.251 0.257 0.270 0.263 0.265 0.260   4.85
52)  Bromodichlorometh 0.318 0.299 0.327 0.330 0.351 0.353 0.357 0.334   6.38
53)  Methyl methacryla 0.107 0.131 0.136 0.139 0.143 0.159 0.149 0.138  11.83
54)  2-Chloroethyl vin 0.116 0.121 0.129 0.139 0.136 0.143 0.140 0.132   7.93
55)  cis-1,3-Dichlorop 0.323 0.319 0.361 0.389 0.410 0.410 0.415 0.375  11.08
            ---- Quadratic regr., Force(0,0) ----  Coefficient =  0.9998
              Response Ratio = 0.00000 + 0.39315 *A + 0.01136 *A^2


56) I   Chlorobenzene-d5      ----------------ISTD---------------------
57)S Toluene-d8        1.355 1.347 1.323 1.321 1.300 1.298 1.265 1.315   2.35
58)C Toluene           1.653 1.365 1.460 1.446 1.471 1.407 1.336 1.448   7.11
59)  2-Nitropropane    0.042 0.045 0.049 0.055 0.059 0.057 0.056 0.052  12.75
            ---- Quadratic regr., Force(0,0) ----  Coefficient =  0.9995
              Response Ratio = 0.00000 + 0.05795 *A + -0.00013 *A^2

60)  4-Methyl-2-pentan 0.205 0.199 0.211 0.211 0.212 0.212 0.197 0.207   3.18
61)  trans-1,3-Dichlor 0.363 0.367 0.402 0.430 0.466 0.456 0.447 0.419  10.05
            ---- Quadratic regr., Force(0,0) ----  Coefficient =  0.9995
              Response Ratio = 0.00000 + 0.45690 *A + -0.00394 *A^2

62)  Tetrachloroethene 0.394 0.342 0.379 0.383 0.402 0.391 0.418 0.387   6.11
63)  Ethyl methacrylat 0.241 0.301 0.329 0.344 0.354 0.385 0.362 0.331  14.40
64)  1,1,2-Trichloroet 0.239 0.219 0.236 0.239 0.248 0.240 0.233 0.236   3.73
65)  Dibromochlorometh 0.286 0.270 0.283 0.301 0.323 0.321 0.319 0.300   7.15
66)  1,3-Dichloropropa 0.516 0.449 0.471 0.483 0.505 0.484 0.470 0.483   4.63
67)  1,2-Dibromoethane 0.286 0.233 0.261 0.268 0.284 0.274 0.268 0.268   6.68
68)  2-hexanone        0.127 0.127 0.137 0.141 0.144 0.145 0.137 0.137   5.38
69)  1-Chlorohexane    0.374 0.365 0.429 0.433 0.455 0.460 0.457 0.425   9.29
70)C Ethylbenzene      1.800 1.588 1.686 1.674 1.710 1.611 1.489 1.651   6.01
71)P Chlorobenzene     1.070 0.900 0.950 0.938 0.995 0.954 0.934 0.963   5.72
72)  1,1,1,2-Tetrachlo 0.297 0.290 0.298 0.315 0.335 0.330 0.329 0.313   5.94
73)  m,p-Xylene        1.246 1.163 1.285 1.281 1.283 1.151 0.989 1.200   9.06
            ---- Quadratic regr., Force(0,0) ----  Coefficient =  0.9994
              Response Ratio = 0.00000 + 1.44860 *A + -0.11321 *A^2
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Initial Calibration Summary

Job Number: FA32657
Account: TTNASA Tetra Tech NUS
Project: SW3

Sample: VJ5237-ICC5237
Lab FileID: J0975154.D

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 74)  o-Xylene          1.242 1.170 1.286 1.311 1.364 1.312 1.246 1.276   4.93
 75)  Styrene           0.778 0.811 0.917 0.997 1.036 1.013 0.989 0.934  11.01
             ---- Quadratic regr., Force(0,0) ----  Coefficient =  0.9997
               Response Ratio = 0.00000 + 1.03569 *A + -0.02194 *A^2

 76)P Bromoform         0.141 0.150 0.163 0.182 0.193 0.199 0.200 0.175  13.84
             ---- Quadratic regr., Force(0,0) ----  Coefficient =  0.9997
               Response Ratio = 0.00000 + 0.18423 *A + 0.00857 *A^2

 77)  Isopropylbenzene  1.347 1.359 1.510 1.550 1.598 1.525 1.432 1.474   6.56

 78) I   1,4-Dichlorobenzene-d ----------------ISTD--------------------
 79)S 4-Bromofluorobenz 0.921 0.908 0.904 0.900 0.902 0.910 0.885 0.904   1.20
 80)  cis-1,4-Dichloro- 0.142 0.152 0.160 0.165 0.165 0.185 0.168 0.162   8.31
 81)  n-Propylbenzene   3.234 3.011 3.289 3.294 3.344 3.138 2.897 3.173   5.22
 82)  Bromobenzene      0.772 0.702 0.735 0.728 0.771 0.760 0.761 0.747   3.50
 83)P 1,1,2,2-Tetrachlo 0.630 0.569 0.592 0.600 0.626 0.607 0.596 0.603   3.46
 84)  1,3,5-Trimethylbe 2.140 2.215 2.428 2.494 2.610 2.517 2.400 2.401   6.99
 85)  2-Chlorotoluene   2.404 2.202 2.363 2.370 2.400 2.324 2.238 2.329   3.42
 86)  trans-1,4-Dichlor 0.105 0.116 0.141 0.148 0.153 0.157 0.156 0.140  14.80
             ---- Quadratic regr., Force(0,0) ----  Coefficient =  0.9997
               Response Ratio = 0.00000 + 0.15022 *A + 0.00335 *A^2

 87)  1,2,3-Trichloropr 0.149 0.146 0.154 0.150 0.161 0.160 0.156 0.154   3.69
 88)  Cyclohexanone     0.011 0.009 0.010 0.009 0.009 0.010 0.009 0.010   8.74
 89)  4-Chlorotoluene   2.027 1.956 2.127 2.091 2.204 2.124 2.064 2.085   3.81
 90)  a-Methyl Styrene  0.597 0.610 0.646 0.682 0.716 0.790 0.760 0.686  10.72
 91)  tert-Butylbenzene 1.371 1.252 1.402 1.420 1.475 1.448 1.451 1.403   5.33
 92)  1,2,4-Trimethylbe 2.082 2.300 2.460 2.510 2.600 2.470 2.362 2.398   7.08
 93)  Pentachloroethane 0.414 0.385 0.412 0.413 0.415 0.484 0.418 0.420   7.18
             ---- Quadratic regr., Force(0,0) ----  Coefficient =  0.9917
               Response Ratio = 0.00000 + 0.46688 *A + -0.01851 *A^2

 94)  sec-Butylbenzene  2.800 2.681 3.012 3.027 3.097 2.922 2.752 2.899   5.41
 95)  4-Isopropyltoluen 2.228 2.226 2.494 2.552 2.616 2.508 2.397 2.432   6.34
 96)  1,3-Dichlorobenze 1.395 1.218 1.320 1.325 1.357 1.336 1.323 1.325   4.07
 97)  1,4-Dichlorobenze 1.607 1.334 1.384 1.367 1.417 1.373 1.362 1.406   6.55
 98)  n-Butylbenzene    1.186 1.230 1.408 1.459 1.506 1.513 1.511 1.402   9.85
 99)  Benzyl Chloride   0.099 0.125 0.161 0.179 0.216 0.221 0.227 0.175  28.43
             ---- Quadratic regr., Force(0,0) ----  Coefficient =  0.9987
               Response Ratio = 0.00000 + 0.19046 *A + 0.01906 *A^2

100)  1,2-Dichlorobenze 1.358 1.199 1.227 1.261 1.307 1.264 1.260 1.268   4.09
101)  1,2-Dibromo-3-Chl 0.093 0.073 0.080 0.085 0.096 0.096 0.097 0.089  10.86
             ---- Quadratic regr., Force(0,0) ----  Coefficient =  0.9993
               Response Ratio = 0.00000 + 0.08978 *A + 0.00377 *A^2

102)  Hexachlorobutadie 0.538 0.506 0.560 0.565 0.593 0.585 0.618 0.566   6.56
103)  1,2,4-Trichlorobe 0.828 0.834 0.896 0.945 1.001 0.977 0.998 0.926   7.99
104)  Naphthalene       1.180 1.150 1.346 1.516 1.606 1.531 1.529 1.408  13.07
             ---- Quadratic regr., Force(0,0) ----  Coefficient =  0.9994
               Response Ratio = 0.00000 + 1.55943 *A + -0.01523 *A^2

105)  1,2,3-Trichlorobe 0.839 0.735 0.781 0.828 0.875 0.828 0.855 0.820   5.78

106) I   Tert Butyl Alcohol-d1 ----------------ISTD--------------------
107)  Ethanol                0.141 0.133 0.116 0.107 0.108 0.096 0.117  14.69
             ---- Quadratic regr., Force(0,0) ----  Coefficient =  0.9982
               Response Ratio = 0.00000 + 0.12372 *A + -0.00341 *A^2
```

Initial Calibration Summary

Job Number: FA32657
Account: TTNASA Tetra Tech NUS
Project: SW3

Sample: VJ5237-ICC5237
Lab FileID: J0975154.D

```
108)  acrolein          2.418 2.888 3.009 3.281 2.989 3.071 2.805 2.923   9.18
109)  Tert Butyl Alcoho 1.180 1.273 1.244 1.202 1.239 1.212 1.133 1.212   3.83
110)  tert Amyl alcohol 0.706 0.750 0.859 0.892 0.929 0.920 0.893 0.850  10.24
111)  Isobutyl alcohol  0.233 0.438 0.421 0.457 0.446 0.452 0.400 0.407  19.43
             ---- Quadratic regr., Force(0,0) ----  Coefficient =  0.9981
               Response Ratio = 0.00000 + 0.49668 *A + -0.01141 *A^2

112)  1,4-Dioxane       0.110 0.091 0.100 0.099 0.102 0.100 0.093 0.099   6.24
113)  3,3-Dimethyl-1-bu 0.907 0.899 1.082 1.094 1.106 1.160       1.041  10.59
 ---------------------------------------------------------------------------
 (#) = Out of Range

          MSJ031516.M        Wed Mar 16 09:51:03 2016
```

6.7.5

6

Initial Calibration Verification

Job Number: FA32657
Account: TTNASA Tetra Tech NUS
Project: SW3

Sample: VJ5237-ICV5237
Lab FileID: J0975158.D

Evaluate Continuing Calibration Report

Data File : C:\msdchem\2\data\031516\J0975158.D Vial: 12
Acq On : 15 Mar 2016 5:26 pm Operator: DARSHNAP
Sample : ICV5237-5 Inst : MSVOA6
Misc : MS33279,VJ5237,,,,, Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\msdchem\2\methods\MSJ031516.M (RTE Integrator)
Title : SW-846 Method 5030B/8260B & EPA 624
Last Update : Wed Mar 16 08:34:48 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1	I	Fluorobenzene	1.000	1.000	0.0	103	0.00	7.76
2		Dichlorodifluoromethane		----------	NA	----------		
3	P	Chloromethane		----------	NA	----------		
4	C	Vinyl Chloride		----------	NA	----------		
5		1,3-Butadiene		----------	NA	----------		
		----------	Amount	Calc.	%Drift	----------		
6		Bromomethane		----------	NA	----------		
7		Chloroethane		----------	NA	----------		
		----------	AvgRF	CCRF	%Dev	----------		
8		Trichlorofluoromethane		----------	NA	----------		
9		Ethyl Ether		----------	NA	----------		
10		1,2-Dichlorotrifluoroetha	0.291	0.287	1.4	99	0.00	4.36
11	C	1,1-Dichloroethene		----------	NA	----------		
12		Freon 113		----------	NA	----------		
13		Carbon Disulfide		----------	NA	----------		
14		Iodomethane		----------	NA	----------		
15		Allyl chloride		----------	NA	----------		
		----------	Amount	Calc.	%Drift	----------		
16		Methylene Chloride		----------	NA	----------		
		----------	AvgRF	CCRF	%Dev	----------		
17		Acetone		----------	NA	----------		
18		Methyl acetate		----------	NA	----------		
19		trans-1,2-Dichloroethene		----------	NA	----------		
20		Hexane		----------	NA	----------		
21		Methyl Tert Butyl Ether		----------	NA	----------		
		----------	Amount	Calc.	%Drift	----------		
22		Acetonitrile		----------	NA	----------		
		----------	AvgRF	CCRF	%Dev	----------		
23		Di-isopropyl ether		----------	NA	----------		
24		Chloroprene		----------	NA	----------		
25	P	1,1-Dichloroethane		----------	NA	----------		
26		Acrylonitrile		----------	NA	----------		
27		ETBE		----------	NA	----------		
28		Vinyl acetate		----------	NA	----------		
29		cis-1,2-Dichloroethene		----------	NA	----------		
30		2,2-Dichloropropane		----------	NA	----------		

Initial Calibration Verification

Job Number: FA32657
Account: TTNASA Tetra Tech NUS
Project: SW3

Sample: VJ5237-ICV5237
Lab FileID: J0975158.D

31		Bromochloromethane		NA					
32		Cyclohexane		NA					
33	C	Chloroform		NA					
34		Ethyl acetate		NA					
			Amount	Calc.	%Drift				
35		Tetrahydrofuran		NA					
			AvgRF	CCRF	%Dev				
36	S	Dibromofluoromethane		NA					
37		Carbon Tetrachloride		NA					
38		1,1,1-Trichloroethane		NA					
			Amount	Calc.	%Drift				
39		2-Butanone		NA					
			AvgRF	CCRF	%Dev				
40		1,1-Dichloropropene		NA					
			Amount	Calc.	%Drift				
41		tert-Butyl Formate		NA					
			AvgRF	CCRF	%Dev				
42		Propionitrile		NA					
43		Methacrylonitrile		NA					
44		Benzene		NA					
45		TAME		NA					
46	S	1,2-Dichloroethane-d4	0.307	0.305	0.7	103	0.00	7.48	
47		1,2-Dichloroethane		NA					
48		Trichloroethene		NA					
49		Methylcyclohexane		NA					
50		Dibromomethane		NA					
51	C	1,2-Dichloropropane		NA					
52		Bromodichloromethane		NA					
53		Methyl methacrylate		NA					
54		2-Chloroethyl vinyl ether		NA					
			Amount	Calc.	%Drift				
55		cis-1,3-Dichloropropene		NA					
			AvgRF	CCRF	%Dev				
56	I	Chlorobenzene-d5	1.000	1.000	0.0	104	0.00	10.85	
57	S	Toluene-d8	1.315	1.293	1.7	104	0.00	9.30	
58	C	Toluene		NA					
			Amount	Calc.	%Drift				
59		2-Nitropropane		NA					
			AvgRF	CCRF	%Dev				
60		4-Methyl-2-pentanone		NA					
			Amount	Calc.	%Drift				
61		trans-1,3-Dichloropropene		NA					
			AvgRF	CCRF	%Dev				
62		Tetrachloroethene		NA					
63		Ethyl methacrylate		NA					
64		1,1,2-Trichloroethane		NA					
65		Dibromochloromethane		NA					

Initial Calibration Verification

Job Number: FA32657
Account: TTNASA Tetra Tech NUS
Project: SW3

Sample: VJ5237-ICV5237
Lab FileID: J0975158.D

66		1,3-Dichloropropane			NA				
67		1,2-Dibromoethane			NA				
68		2-hexanone			NA				
69		1-Chlorohexane			NA				
70	C	Ethylbenzene			NA				
71	P	Chlorobenzene			NA				
72		1,1,1,2-Tetrachloroethane			NA				
			Amount	Calc.	%Drift				
73		m,p-Xylene			NA				
			AvgRF	CCRF	%Dev				
74		o-Xylene			NA				
			Amount	Calc.	%Drift				
75		Styrene			NA				
76	P	Bromoform			NA				
			AvgRF	CCRF	%Dev				
77		Isopropylbenzene			NA				
78	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	104	0.00	13.21	
79	S	4-Bromofluorobenzene	0.904	0.920	-1.8	106	0.00	12.06	
80		cis-1,4-Dichloro-2-butene			NA				
81		n-Propylbenzene			NA				
82		Bromobenzene			NA				
83	P	1,1,2,2-Tetrachloroethane			NA				
84		1,3,5-Trimethylbenzene			NA				
85		2-Chlorotoluene			NA				
			Amount	Calc.	%Drift				
86		trans-1,4-Dichloro-2-Bute			NA				
			AvgRF	CCRF	%Dev				
87		1,2,3-Trichloropropane			NA				
88		Cyclohexanone			NA				
89		4-Chlorotoluene			NA				
90		a-Methyl Styrene			NA				
91		tert-Butylbenzene			NA				
92		1,2,4-Trimethylbenzene			NA				
			Amount	Calc.	%Drift				
93		Pentachloroethane			NA				
			AvgRF	CCRF	%Dev				
94		sec-Butylbenzene			NA				
95		4-Isopropyltoluene			NA				
96		1,3-Dichlorobenzene			NA				
97		1,4-Dichlorobenzene			NA				
98		n-Butylbenzene			NA				
			Amount	Calc.	%Drift				
99		Benzyl Chloride			NA				
			AvgRF	CCRF	%Dev				
100		1,2-Dichlorobenzene			NA				
			Amount	Calc.	%Drift				
101		1,2-Dibromo-3-Chloropropa			NA				

Initial Calibration Verification

Job Number: FA32657
Account: TTNASA Tetra Tech NUS
Project: SW3

Sample: VJ5237-ICV5237
Lab FileID: J0975158.D

			AvgRF	CCRF	%Dev			
102		Hexachlorobutadiene		NA				
103		1,2,4-Trichlorobenzene		NA				
			Amount	Calc.	%Drift			
104		Naphthalene		NA				
			AvgRF	CCRF	%Dev			
105		1,2,3-Trichlorobenzene		NA				
106	I	Tert Butyl Alcohol-d10	1.000	1.000	0.0	102	0.00	5.29
			Amount	Calc.	%Drift			
107		Ethanol		NA				
			AvgRF	CCRF	%Dev			
108		acrolein		NA				
109		Tert Butyl Alcohol		NA				
110		tert Amyl alcohol		NA				
			Amount	Calc.	%Drift			
111		Isobutyl alcohol		NA				
			AvgRF	CCRF	%Dev			
112		1,4-Dioxane		NA				
113		3,3-Dimethyl-1-butanol		NA				

(#) = Out of Range SPCC's out = 4 CCC's out = 6
J0975154.D MSJ031516.M Wed Mar 16 09:50:48 2016

Initial Calibration Verification

Job Number: FA32657
Account: TTNASA Tetra Tech NUS
Project: SW3

Sample: VJ5237-ICV5237
Lab FileID: J0975159.D

Evaluate Continuing Calibration Report

Data File : C:\msdchem\2\data\031516\J0975159.D Vial: 13
Acq On : 15 Mar 2016 5:51 pm Operator: DARSHNAP
Sample : ICV5237-5 Inst : MSVOA6
Misc : MS33279,VJ5237,,,,, Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\msdchem\2\methods\MSJ031516.M (RTE Integrator)
Title : SW-846 Method 5030B/8260B & EPA 624
Last Update : Wed Mar 16 08:34:48 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1 I	Fluorobenzene	1.000	1.000	0.0	106	0.00	7.76
2	Dichlorodifluoromethane	0.308	0.262	14.9	85	0.00	2.69
3 P	Chloromethane	0.329	0.287	12.8	91	0.00	2.90
4 C	Vinyl Chloride	0.337	0.315	6.5	96	0.00	3.04
5	1,3-Butadiene	0.251	0.001	99.6#	0#	-0.02	3.02
		Amount	Calc.	%Drift			
6	Bromomethane	40.000	34.533	13.7	96	0.00	3.46
7	Chloroethane	40.000	38.560	3.6	105	0.00	3.61
		AvgRF	CCRF	%Dev			
8	Trichlorofluoromethane	0.419	0.410	2.1	99	0.00	3.84
9	Ethyl Ether	0.193	0.190	1.6	100	0.00	4.12
10	1,2-Dichlorotrifluoroetha		----------NA----------				
11 C	1,1-Dichloroethene	0.362	0.353	2.5	103	0.00	4.40
12	Freon 113	0.250	0.214	14.4	90	0.00	4.46
13	Carbon Disulfide	0.754	0.721	4.4	99	0.00	4.48
14	Iodomethane	0.400	0.376	6.0	98	0.00	4.59
15	Allyl chloride	0.335	0.281	16.1	89	0.00	4.92
		Amount	Calc.	%Drift			
16	Methylene Chloride	40.000	37.430	6.4	98	0.00	5.05
		AvgRF	CCRF	%Dev			
17	Acetone	0.015	0.015	0.0	111	0.00	5.07
18	Methyl acetate	0.029	0.029	0.0	103	0.00	5.19
19	trans-1,2-Dichloroethene	0.332	0.338	-1.8	105	0.00	5.23
20	Hexane	0.213	0.207	2.8	101	0.00	5.30
21	Methyl Tert Butyl Ether	0.663	0.652	1.7	101	0.00	5.34
		Amount	Calc.	%Drift			
22	Acetonitrile	400.000	320.467	19.9	92	0.00	5.59
		AvgRF	CCRF	%Dev			
23	Di-isopropyl ether	0.759	0.738	2.8	99	0.00	5.72
24	Chloroprene	0.357	0.318	10.9	92	0.00	5.87
25 P	1,1-Dichloroethane	0.444	0.423	4.7	100	0.00	5.89
26	Acrylonitrile	0.066	0.061	7.6	102	0.00	5.93
27	ETBE	0.760	0.747	1.7	98	0.00	6.12
28	Vinyl acetate	0.384	0.350	8.9	94	0.00	6.11
29	cis-1,2-Dichloroethene	0.285	0.260	8.8	94	0.00	6.47
30	2,2-Dichloropropane	0.346	0.347	-0.3	104	0.00	6.61

Initial Calibration Verification

Job Number: FA32657
Account: TTNASA Tetra Tech NUS
Project: SW3

Sample: VJ5237-ICV5237
Lab FileID: J0975159.D

31		Bromochloromethane	0.129	0.125	3.1	99	0.00	6.69
32		Cyclohexane	0.417	0.389	6.7	96	0.00	6.73
33	C	Chloroform	0.493	0.458	7.1	97	0.00	6.74
34		Ethyl acetate	0.154	0.135	12.3	95	0.00	6.81
			Amount	Calc.	%Drift			
35		Tetrahydrofuran	40.000	37.551	6.1	101	0.00	6.92
			AvgRF	CCRF	%Dev			
36	S	Dibromofluoromethane	0.254	0.256	-0.8	106	0.00	6.93
37		Carbon Tetrachloride	0.343	0.336	2.0	99	0.00	6.93
38		1,1,1-Trichloroethane	0.421	0.384	8.8	93	0.00	7.00
			Amount	Calc.	%Drift			
39		2-Butanone	200.000	194.637	2.7	105	0.00	7.03
			AvgRF	CCRF	%Dev			
40		1,1-Dichloropropene	0.340	0.329	3.2	101	0.00	7.10
			Amount	Calc.	%Drift			
41		tert-Butyl Formate	400.000	415.053	-3.8	111	0.00	7.19
			AvgRF	CCRF	%Dev			
42		Propionitrile	0.023	0.020	13.0	97	0.00	7.34
43		Methacrylonitrile	0.107	0.092	14.0	99	0.00	7.36
44		Benzene	1.036	0.961	7.2	96	0.00	7.36
45		TAME	0.686	0.655	4.5	96	0.00	7.43
46	S	1,2-Dichloroethane-d4	0.307	0.307	0.0	108	0.00	7.48
47		1,2-Dichloroethane	0.363	0.331	8.8	98	0.00	7.55
48		Trichloroethene	0.268	0.249	7.1	98	0.00	7.94
49		Methylcyclohexane	0.451	0.441	2.2	100	0.00	7.96
50		Dibromomethane	0.150	0.149	0.7	102	0.00	8.36
51	C	1,2-Dichloropropane	0.260	0.241	7.3	95	0.00	8.45
52		Bromodichloromethane	0.334	0.332	0.6	101	0.00	8.50
53		Methyl methacrylate	0.138	0.149	-8.0	111	0.00	8.60
54		2-Chloroethyl vinyl ether	0.132	0.128	3.0	100	0.00	9.01
			Amount	Calc.	%Drift			
55		cis-1,3-Dichloropropene	40.000	38.680	3.3	101	0.00	9.11
			AvgRF	CCRF	%Dev			
56	I	Chlorobenzene-d5	1.000	1.000	0.0	106	0.00	10.85
57	S	Toluene-d8	1.315	1.310	0.4	107	0.00	9.30
58	C	Toluene	1.448	1.327	8.4	96	0.00	9.36
			Amount	Calc.	%Drift			
59		2-Nitropropane	200.000	195.657	2.2	101	0.00	9.56
			AvgRF	CCRF	%Dev			
60		4-Methyl-2-pentanone	0.207	0.199	3.9	100	0.00	9.67
			Amount	Calc.	%Drift			
61		trans-1,3-Dichloropropene	40.000	41.876	-4.7	108	0.00	9.74
			AvgRF	CCRF	%Dev			
62		Tetrachloroethene	0.387	0.345	10.9	91	0.00	9.76
63		Ethyl methacrylate	0.331	0.292	11.8	88	0.00	9.84
64		1,1,2-Trichloroethane	0.236	0.236	0.0	101	0.00	9.90
65		Dibromochloromethane	0.300	0.309	-3.0	102	0.00	10.10

Initial Calibration Verification

Job Number: FA32657
Account: TTNASA Tetra Tech NUS
Project: SW3

Sample: VJ5237-ICV5237
Lab FileID: J0975159.D

66		1,3-Dichloropropane	0.483	0.458	5.2	96	0.00	10.18
67		1,2-Dibromoethane	0.268	0.263	1.9	99	0.00	10.37
68		2-hexanone	0.137	0.131	4.4	97	0.00	10.49
69		1-Chlorohexane	0.425	0.430	-1.2	101	0.00	10.80
70	C	Ethylbenzene	1.651	1.575	4.6	98	0.00	10.86
71	P	Chlorobenzene	0.963	0.905	6.0	97	0.00	10.86
72		1,1,1,2-Tetrachloroethane	0.313	0.318	-1.6	101	0.00	10.91
			Amount	Calc.	%Drift			
73		m,p-Xylene	80.000	74.784	6.5	99	0.00	11.00
			AvgRF	CCRF	%Dev			
74		o-Xylene	1.276	1.262	1.1	98	0.00	11.44
			Amount	Calc.	%Drift			
75		Styrene	40.000	36.538	8.7	96	0.00	11.48
76	P	Bromoform	40.000	40.080	-0.2	105	0.00	11.55
			AvgRF	CCRF	%Dev			
77		Isopropylbenzene	1.474	1.496	-1.5	100	0.00	11.74
78	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	106	0.00	13.21
79	S	4-Bromofluorobenzene	0.904	0.917	-1.4	108	0.00	12.06
80		cis-1,4-Dichloro-2-butene	0.162	0.145	10.5	93	0.00	12.09
81		n-Propylbenzene	3.173	3.208	-1.1	102	0.00	12.16
82		Bromobenzene	0.747	0.708	5.2	97	0.00	12.18
83	P	1,1,2,2-Tetrachloroethane	0.603	0.583	3.3	99	0.00	12.22
84		1,3,5-Trimethylbenzene	2.401	2.350	2.1	96	0.00	12.34
85		2-Chlorotoluene	2.329	2.261	2.9	100	0.00	12.35
			Amount	Calc.	%Drift			
86		trans-1,4-Dichloro-2-Bute	40.000	40.996	-2.5	109	0.00	12.40
			AvgRF	CCRF	%Dev			
87		1,2,3-Trichloropropane	0.154	0.155	-0.6	102	0.00	12.39
88		Cyclohexanone	0.010	0.008	20.0	86	0.00	12.45
89		4-Chlorotoluene	2.085	2.084	0.0	100	0.00	12.52
90		a-Methyl Styrene	0.686	0.017	97.5#	3#	0.14	12.75
91		tert-Butylbenzene	1.403	1.351	3.7	97	0.00	12.68
92		1,2,4-Trimethylbenzene	2.398	2.363	1.5	96	0.00	12.76
			Amount	Calc.	%Drift			
93		Pentachloroethane	40.000	35.494	11.3	103	0.00	12.74
			AvgRF	CCRF	%Dev			
94		sec-Butylbenzene	2.899	2.890	0.3	99	0.00	12.87
95		4-Isopropyltoluene	2.432	2.390	1.7	97	0.00	13.00
96		1,3-Dichlorobenzene	1.325	1.292	2.5	101	0.00	13.13
97		1,4-Dichlorobenzene	1.406	1.321	6.0	99	0.00	13.22
98		n-Butylbenzene	1.402	1.436	-2.4	101	0.00	13.43
			Amount	Calc.	%Drift			
99		Benzyl Chloride	40.000	41.280	-3.2	105	0.00	13.45
			AvgRF	CCRF	%Dev			
100		1,2-Dichlorobenzene	1.268	1.223	3.5	99	0.00	13.64
			Amount	Calc.	%Drift			
101		1,2-Dibromo-3-Chloropropa	40.000	37.513	6.2	96	0.00	14.38

Initial Calibration Verification

Job Number: FA32657
Account: TTNASA Tetra Tech NUS
Project: SW3

Sample: VJ5237-ICV5237
Lab FileID: J0975159.D

		AvgRF	CCRF	%Dev			
102	Hexachlorobutadiene	0.566	0.525	7.2	94	0.00	14.93
103	1,2,4-Trichlorobenzene	0.926	0.914	1.3	97	0.00	14.97

		Amount	Calc.	%Drift			
104	Naphthalene	40.000	41.497	-3.7	106	0.00	15.26

		AvgRF	CCRF	%Dev			
105	1,2,3-Trichlorobenzene	0.820	0.805	1.8	98	0.00	15.43
106 I	Tert Butyl Alcohol-d10	1.000	1.000	0.0	95	0.00	5.30

		Amount	Calc.	%Drift			
107	Ethanol	800.000	682.264	14.7	87	0.00	4.28

		AvgRF	CCRF	%Dev			
108	acrolein	2.923	3.226	-10.4	103	0.00	4.76
109	Tert Butyl Alcohol	1.212	1.230	-1.5	95	0.00	5.37
110	tert Amyl alcohol	0.850	0.964	-13.4	99	0.00	7.57

		Amount	Calc.	%Drift			
111	Isobutyl alcohol	800.000	742.753	7.2	92	0.00	7.46

		AvgRF	CCRF	%Dev			
112	1,4-Dioxane	0.099	0.103	-4.0	96	0.00	8.67
113	3,3-Dimethyl-1-butanol	1.041	1.125	-8.1	97	0.00	10.43

(#) = Out of Range SPCC's out = 0 CCC's out = 0
J0975154.D MSJ031516.M Wed Mar 16 09:50:50 2016

Continuing Calibration Summary

Job Number: FA32657
Account: TTNASA Tetra Tech NUS
Project: SW3

Sample: VJ5255-CC5237
Lab FileID: J0975619.D

Evaluate Continuing Calibration Report

Data File : C:\msdchem\2\data\040516\J0975619.D Vial: 1
Acq On : 5 Apr 2016 8:30 am Operator: melissam
Sample : cc5237-5 Inst : MSVOA6
Misc : MS33374,VJ5255,,,,, Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\msdchem\2\methods\MSJ031516.M (RTE Integrator)
Title : SW-846 Method 5030B/8260B & EPA 624
Last Update : Wed Mar 16 08:34:48 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1	I	Fluorobenzene	1.000	1.000	0.0	91	0.00	7.76
2		Dichlorodifluoromethane	0.308	0.314	-1.9	87	0.00	2.69
3	P	Chloromethane	0.329	0.350	-6.4	95	0.00	2.90
4	C	Vinyl Chloride	0.337	0.371	-10.1	96	0.01	3.05
5		1,3-Butadiene	0.251	0.276	-10.0	101	0.00	3.04
			Amount	Calc.	%Drift			
6		Bromomethane	40.000	40.102	-0.3	94	0.00	3.47
7		Chloroethane	40.000	44.095	-10.2	101	0.00	3.61
			AvgRF	CCRF	%Dev			
8		Trichlorofluoromethane	0.419	0.491	-17.2	101	0.00	3.83
9		Ethyl Ether	0.193	0.188	2.6	85	0.00	4.11
10		1,2-Dichlorotrifluoroetha	0.291	0.294	-1.0	90	0.00	4.36
11	C	1,1-Dichloroethene	0.362	0.376	-3.9	94	0.00	4.40
12		Freon 113	0.250	0.251	-0.4	90	0.00	4.46
13		Carbon Disulfide	0.754	0.798	-5.8	94	0.00	4.47
14		Iodomethane	0.400	0.406	-1.5	90	0.00	4.58
15		Allyl chloride	0.335	0.347	-3.6	94	0.00	4.92
			Amount	Calc.	%Drift			
16		Methylene Chloride	40.000	39.722	0.7	89	0.00	5.04
			AvgRF	CCRF	%Dev			
17		Acetone	0.015	0.014	6.7	92	0.00	5.06
18		Methyl acetate	0.029	0.027	6.9	80	0.00	5.19
19		trans-1,2-Dichloroethene	0.332	0.346	-4.2	92	0.00	5.22
20		Hexane	0.213	0.213	0.0	88	0.00	5.30
21		Methyl Tert Butyl Ether	0.663	0.634	4.4	84	0.00	5.33
			Amount	Calc.	%Drift			
22		Acetonitrile	400.000	391.304	2.2	96	0.00	5.59
			AvgRF	CCRF	%Dev			
23		Di-isopropyl ether	0.759	0.754	0.7	86	0.00	5.71
24		Chloroprene	0.357	0.351	1.7	87	0.00	5.87
25	P	1,1-Dichloroethane	0.444	0.448	-0.9	91	0.00	5.89
26		Acrylonitrile	0.066	0.061	7.6	87	0.00	5.92
27		ETBE	0.760	0.763	-0.4	85	0.00	6.11
28		Vinyl acetate	0.384	0.385	-0.3	88	-0.01	6.10
29		cis-1,2-Dichloroethene	0.285	0.286	-0.4	88	0.00	6.47
30		2,2-Dichloropropane	0.346	0.365	-5.5	93	0.00	6.61

Continuing Calibration Summary

Job Number: FA32657 **Sample:** VJ5255-CC5237
Account: TTNASA Tetra Tech NUS **Lab FileID:** J0975619.D
Project: SW3

31		Bromochloromethane	0.129	0.127	1.6	86	0.00	6.69
32		Cyclohexane	0.417	0.411	1.4	87	0.00	6.73
33	C	Chloroform	0.493	0.484	1.8	87	0.00	6.73
34		Ethyl acetate	0.154	0.137	11.0	82	0.00	6.80
			Amount	Calc.	%Drift			
35		Tetrahydrofuran	40.000	33.771	15.6	78	0.00	6.92
			AvgRF	CCRF	%Dev			
36	S	Dibromofluoromethane	0.254	0.260	-2.4	92	0.00	6.92
37		Carbon Tetrachloride	0.343	0.364	-6.1	91	0.00	6.93
38		1,1,1-Trichloroethane	0.421	0.434	-3.1	90	0.00	6.99
			Amount	Calc.	%Drift			
39		2-Butanone	200.000	174.318	12.8	80	0.00	7.02
			AvgRF	CCRF	%Dev			
40		1,1-Dichloropropene	0.340	0.340	0.0	89	0.00	7.10
			Amount	Calc.	%Drift			
41		tert-Butyl Formate	400.000	396.362	0.9	91	0.00	7.18
			AvgRF	CCRF	%Dev			
42		Propionitrile	0.023	0.021	8.7	86	0.00	7.33
43		Methacrylonitrile	0.107	0.090	15.9	83	0.00	7.35
44		Benzene	1.036	1.037	-0.1	88	0.00	7.35
45		TAME	0.686	0.669	2.5	84	0.00	7.43
46	S	1,2-Dichloroethane-d4	0.307	0.297	3.3	89	0.00	7.48
47		1,2-Dichloroethane	0.363	0.333	8.3	84	0.00	7.54
48		Trichloroethene	0.268	0.263	1.9	88	0.00	7.93
49		Methylcyclohexane	0.451	0.455	-0.9	88	0.00	7.96
50		Dibromomethane	0.150	0.140	6.7	81	0.00	8.36
51	C	1,2-Dichloropropane	0.260	0.250	3.8	84	0.00	8.45
52		Bromodichloromethane	0.334	0.335	-0.3	87	0.00	8.49
53		Methyl methacrylate	0.138	0.132	4.3	84	0.00	8.59
54		2-Chloroethyl vinyl ether	0.132	0.132	0.0	88	0.00	9.01
			Amount	Calc.	%Drift			
55		cis-1,3-Dichloropropene	40.000	39.163	2.1	87	0.00	9.11
			AvgRF	CCRF	%Dev			
56	I	Chlorobenzene-d5	1.000	1.000	0.0	93	0.00	10.85
57	S	Toluene-d8	1.315	1.296	1.4	93	0.00	9.30
58	C	Toluene	1.448	1.400	3.3	89	0.00	9.35
			Amount	Calc.	%Drift			
59		2-Nitropropane	200.000	180.236	9.9	82	0.00	9.56
			AvgRF	CCRF	%Dev			
60		4-Methyl-2-pentanone	0.207	0.184	11.1	81	0.00	9.67
			Amount	Calc.	%Drift			
61		trans-1,3-Dichloropropene	40.000	38.032	4.9	86	0.00	9.74
			AvgRF	CCRF	%Dev			
62		Tetrachloroethene	0.387	0.348	10.1	81	0.00	9.76
63		Ethyl methacrylate	0.331	0.321	3.0	85	0.00	9.84
64		1,1,2-Trichloroethane	0.236	0.226	4.2	85	0.00	9.90
65		Dibromochloromethane	0.300	0.298	0.7	86	0.00	10.10

Continuing Calibration Summary

Job Number: FA32657
Account: TTNASA Tetra Tech NUS
Project: SW3

Sample: VJ5255-CC5237
Lab FileID: J0975619.D

66		1,3-Dichloropropane	0.483	0.455	5.8	84	0.00	10.18
67		1,2-Dibromoethane	0.268	0.250	6.7	82	0.00	10.36
68		2-hexanone	0.137	0.129	5.8	84	0.00	10.49
69		1-Chlorohexane	0.425	0.451	-6.1	93	0.00	10.80
70	C	Ethylbenzene	1.651	1.651	0.0	90	0.00	10.86
71	P	Chlorobenzene	0.963	0.941	2.3	88	0.00	10.86
72		1,1,1,2-Tetrachloroethane	0.313	0.317	-1.3	89	0.00	10.91
			Amount	Calc.	%Drift			
73		m,p-Xylene	80.000	77.838	2.7	90	0.00	11.00
			AvgRF	CCRF	%Dev			
74		o-Xylene	1.276	1.267	0.7	87	0.00	11.44
			Amount	Calc.	%Drift			
75		Styrene	40.000	37.942	5.1	87	0.00	11.48
76	P	Bromoform	40.000	36.818	8.0	85	0.00	11.55
			AvgRF	CCRF	%Dev			
77		Isopropylbenzene	1.474	1.470	0.3	86	0.00	11.74
78	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	87	0.00	13.21
79	S	4-Bromofluorobenzene	0.904	0.907	-0.3	88	0.00	12.06
80		cis-1,4-Dichloro-2-butene	0.162	0.130	19.8	69	0.00	12.09
81		n-Propylbenzene	3.173	3.328	-4.9	87	0.00	12.16
82		Bromobenzene	0.747	0.738	1.2	84	0.00	12.18
83	P	1,1,2,2-Tetrachloroethane	0.603	0.553	8.3	77	0.00	12.22
84		1,3,5-Trimethylbenzene	2.401	2.526	-5.2	84	0.00	12.34
85		2-Chlorotoluene	2.329	2.334	-0.2	85	0.00	12.35
			Amount	Calc.	%Drift			
86		trans-1,4-Dichloro-2-Bute	40.000	31.862	20.3#	69	0.00	12.40
			AvgRF	CCRF	%Dev			
87		1,2,3-Trichloropropane	0.154	0.146	5.2	79	0.00	12.39
88		Cyclohexanone	0.010	0.013	-30.0#	121	0.00	12.45
89		4-Chlorotoluene	2.085	2.157	-3.5	85	0.00	12.52
90		a-Methyl Styrene	0.686	0.017	97.5#	2#	0.07	12.68
91		tert-Butylbenzene	1.403	1.401	0.1	83	0.00	12.68
92		1,2,4-Trimethylbenzene	2.398	2.468	-2.9	83	0.00	12.75
			Amount	Calc.	%Drift			
93		Pentachloroethane	40.000	41.237	-3.1	98	0.00	12.74
			AvgRF	CCRF	%Dev			
94		sec-Butylbenzene	2.899	2.994	-3.3	84	0.00	12.87
95		4-Isopropyltoluene	2.432	2.543	-4.6	85	0.00	13.00
96		1,3-Dichlorobenzene	1.325	1.310	1.1	84	0.00	13.14
97		1,4-Dichlorobenzene	1.406	1.379	1.9	85	0.00	13.22
98		n-Butylbenzene	1.402	1.473	-5.1	85	0.00	13.43
			Amount	Calc.	%Drift			
99		Benzyl Chloride	40.000	37.921	5.2	78	0.00	13.45
			AvgRF	CCRF	%Dev			
100		1,2-Dichlorobenzene	1.268	1.218	3.9	81	0.00	13.64
			Amount	Calc.	%Drift			
101		1,2-Dibromo-3-Chloropropa	40.000	33.254	16.9	69	0.00	14.38

Continuing Calibration Summary

Job Number: FA32657
Account: TTNASA Tetra Tech NUS
Project: SW3

Sample: VJ5255-CC5237
Lab FileID: J0975619.D

		AvgRF	CCRF	%Dev			
102	Hexachlorobutadiene	0.566	0.555	1.9	82	0.00	14.93
103	1,2,4-Trichlorobenzene	0.926	0.874	5.6	76	0.00	14.97
		Amount	Calc.	%Drift			
104	Naphthalene	40.000	30.882	22.8#	65	0.00	15.26
		AvgRF	CCRF	%Dev			
105	1,2,3-Trichlorobenzene	0.820	0.671	18.2	67	0.00	15.43
106 I	Tert Butyl Alcohol-d10	1.000	1.000	0.0	97	0.00	5.30
		Amount	Calc.	%Drift			
107	Ethanol	800.000	1031.468	-28.9#	128	0.00	4.27
		AvgRF	CCRF	%Dev			
108	acrolein	2.923	2.794	4.4	91	0.00	4.75
109	Tert Butyl Alcohol	1.212	1.185	2.2	93	0.00	5.37
110	tert Amyl alcohol	0.850	0.879	-3.4	92	0.00	7.57
		Amount	Calc.	%Drift			
111	Isobutyl alcohol	800.000	707.372	11.6	89	0.00	7.45
		AvgRF	CCRF	%Dev			
112	1,4-Dioxane	0.099	0.132	-33.3#	126	0.00	8.67
113	3,3-Dimethyl-1-butanol	1.041	1.043	-0.2	92	0.00	10.43

(#) = Out of Range SPCC's out = 0 CCC's out = 0

J0975154.D MSJ031516.M Wed Apr 06 08:01:27 2016

Continuing Calibration Summary

Job Number: FA32657
Account: TTNASA Tetra Tech NUS
Project: SW3

Sample: VJ5255-ECC5237
Lab FileID: J0975646.D

Evaluate Continuing Calibration Report

Data File : C:\msdchem\2\data\040516\J0975646.D Vial: 26
Acq On : 5 Apr 2016 7:31 pm Operator: melissam
Sample : ECC5237-5 Inst : MSVOA6
Misc : MS33477,VJ5255,,,,, Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\msdchem\2\methods\MSJ031516.M (RTE Integrator)
Title : SW-846 Method 5030B/8260B & EPA 624
Last Update : Wed Mar 16 08:34:48 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 50% Max. Rel. Area : 200%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1 I	Fluorobenzene	1.000	1.000	0.0	90	0.00	7.76
2	Dichlorodifluoromethane	0.308	0.307	0.3	84	0.00	2.69
3 P	Chloromethane	0.329	0.334	-1.5	90	0.00	2.90
4 C	Vinyl Chloride	0.337	0.363	-7.7	93	0.00	3.04
5	1,3-Butadiene	0.251	0.336	-33.9	122	0.00	3.04
		Amount	Calc.	%Drift			
6	Bromomethane	40.000	37.302	6.7	87	0.00	3.47
7	Chloroethane	40.000	43.825	-9.6	100	0.00	3.61
		AvgRF	CCRF	%Dev			
8	Trichlorofluoromethane	0.419	0.486	-16.0	99	0.00	3.84
9	Ethyl Ether	0.193	0.180	6.7	81	0.00	4.12
10	1,2-Dichlorotrifluoroetha	0.291	0.289	0.7	87	0.00	4.35
11 C	1,1-Dichloroethene	0.362	0.374	-3.3	92	0.00	4.39
12	Freon 113	0.250	0.240	4.0	85	0.00	4.46
13	Carbon Disulfide	0.754	0.785	-4.1	92	0.00	4.47
14	Iodomethane	0.400	0.393	1.8	87	0.00	4.59
15	Allyl chloride	0.335	0.331	1.2	89	0.00	4.92
		Amount	Calc.	%Drift			
16	Methylene Chloride	40.000	39.185	2.0	87	0.00	5.04
		AvgRF	CCRF	%Dev			
17	Acetone	0.015	0.012	20.0	79	0.00	5.07
18	Methyl acetate	0.029	0.026	10.3	77	0.00	5.19
19	trans-1,2-Dichloroethene	0.332	0.348	-4.8	92	0.00	5.23
20	Hexane	0.213	0.208	2.3	85	-0.01	5.29
21	Methyl Tert Butyl Ether	0.663	0.610	8.0	80	0.00	5.33
		Amount	Calc.	%Drift			
22	Acetonitrile	400.000	379.728	5.1	92	0.00	5.58
		AvgRF	CCRF	%Dev			
23	Di-isopropyl ether	0.759	0.750	1.2	85	0.00	5.71
24	Chloroprene	0.357	0.377	-5.6	92	0.00	5.87
25 P	1,1-Dichloroethane	0.444	0.451	-1.6	90	0.00	5.89
26	Acrylonitrile	0.066	0.056	15.2	80	0.00	5.92
27	ETBE	0.760	0.747	1.7	83	0.00	6.11
28	Vinyl acetate	0.384	0.362	5.7	82	-0.01	6.10
29	cis-1,2-Dichloroethene	0.285	0.291	-2.1	89	0.00	6.47
30	2,2-Dichloropropane	0.346	0.309	10.7	78	0.00	6.61

Continuing Calibration Summary

Job Number: FA32657 **Sample:** VJ5255-ECC5237
Account: TTNASA Tetra Tech NUS **Lab FileID:** J0975646.D
Project: SW3

31		Bromochloromethane	0.129	0.125	3.1	84	0.00	6.69
32		Cyclohexane	0.417	0.416	0.2	87	0.00	6.73
33	C	Chloroform	0.493	0.486	1.4	87	0.00	6.73
34		Ethyl acetate	0.154	0.124	19.5	74	0.00	6.80
			Amount	Calc.	%Drift			
35		Tetrahydrofuran	40.000	32.606	18.5	75	-0.01	6.91
			AvgRF	CCRF	%Dev			
36	S	Dibromofluoromethane	0.254	0.257	-1.2	90	0.00	6.92
37		Carbon Tetrachloride	0.343	0.359	-4.7	89	0.00	6.93
38		1,1,1-Trichloroethane	0.421	0.436	-3.6	90	0.00	7.00
			Amount	Calc.	%Drift			
39		2-Butanone	200.000	155.184	22.4	71	0.00	7.02
			AvgRF	CCRF	%Dev			
40		1,1-Dichloropropene	0.340	0.343	-0.9	89	0.00	7.10
			Amount	Calc.	%Drift			
41		tert-Butyl Formate	400.000	363.264	9.2	83	0.00	7.18
			AvgRF	CCRF	%Dev			
42		Propionitrile	0.023	0.019	17.4	79	0.00	7.33
43		Methacrylonitrile	0.107	0.086	19.6	78	0.00	7.35
44		Benzene	1.036	1.043	-0.7	88	0.00	7.35
45		TAME	0.686	0.646	5.8	80	0.00	7.43
46	S	1,2-Dichloroethane-d4	0.307	0.291	5.2	86	0.00	7.48
47		1,2-Dichloroethane	0.363	0.323	11.0	81	0.00	7.54
48		Trichloroethene	0.268	0.263	1.9	87	0.00	7.93
49		Methylcyclohexane	0.451	0.465	-3.1	89	0.00	7.96
50		Dibromomethane	0.150	0.135	10.0	78	0.00	8.36
51	C	1,2-Dichloropropane	0.260	0.252	3.1	84	0.00	8.45
52		Bromodichloromethane	0.334	0.326	2.4	84	0.00	8.49
53		Methyl methacrylate	0.138	0.123	10.9	77	0.00	8.59
54		2-Chloroethyl vinyl ether	0.132	0.122	7.6	81	0.00	9.00
			Amount	Calc.	%Drift			
55		cis-1,3-Dichloropropene	40.000	36.976	7.6	82	0.00	9.11
			AvgRF	CCRF	%Dev			
56	I	Chlorobenzene-d5	1.000	1.000	0.0	93	0.00	10.85
57	S	Toluene-d8	1.315	1.286	2.2	91	0.00	9.30
58	C	Toluene	1.448	1.407	2.8	89	0.00	9.35
			Amount	Calc.	%Drift			
59		2-Nitropropane	200.000	161.575	19.2	73	0.00	9.56
			AvgRF	CCRF	%Dev			
60		4-Methyl-2-pentanone	0.207	0.170	17.9	74	0.00	9.67
			Amount	Calc.	%Drift			
61		trans-1,3-Dichloropropene	40.000	35.085	12.3	79	0.00	9.73
			AvgRF	CCRF	%Dev			
62		Tetrachloroethene	0.387	0.358	7.5	82	0.00	9.76
63		Ethyl methacrylate	0.331	0.305	7.9	80	0.00	9.84
64		1,1,2-Trichloroethane	0.236	0.215	8.9	80	0.00	9.90
65		Dibromochloromethane	0.300	0.288	4.0	83	0.00	10.10

Continuing Calibration Summary

Job Number: FA32657
Account: TTNASA Tetra Tech NUS
Project: SW3

Sample: VJ5255-ECC5237
Lab FileID: J0975646.D

66		1,3-Dichloropropane	0.483	0.431	10.8	79	0.00	10.18
67		1,2-Dibromoethane	0.268	0.238	11.2	78	0.00	10.36
68		2-hexanone	0.137	0.117	14.6	75	0.00	10.49
69		1-Chlorohexane	0.425	0.446	-4.9	91	0.00	10.80
70	C	Ethylbenzene	1.651	1.671	-1.2	90	0.00	10.86
71	P	Chlorobenzene	0.963	0.953	1.0	89	0.00	10.86
72		1,1,1,2-Tetrachloroethane	0.313	0.309	1.3	85	0.00	10.91
		----------	Amount	Calc.	%Drift	----------		
73		m,p-Xylene	80.000	79.417	0.7	91	0.00	11.00
		----------	AvgRF	CCRF	%Dev	----------		
74		o-Xylene	1.276	1.275	0.1	86	0.00	11.44
		----------	Amount	Calc.	%Drift	----------		
75		Styrene	40.000	38.417	4.0	87	0.00	11.49
76	P	Bromoform	40.000	33.679	15.8	76	0.00	11.55
		----------	AvgRF	CCRF	%Dev	----------		
77		Isopropylbenzene	1.474	1.489	-1.0	86	0.00	11.74
78	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	87	0.00	13.21
79	S	4-Bromofluorobenzene	0.904	0.921	-1.9	89	0.00	12.06
80		cis-1,4-Dichloro-2-butene	0.162	0.049	69.8#	26#	0.00	12.09
81		n-Propylbenzene	3.173	3.446	-8.6	90	0.00	12.16
82		Bromobenzene	0.747	0.755	-1.1	86	0.00	12.18
83	P	1,1,2,2-Tetrachloroethane	0.603	0.542	10.1	76	0.00	12.22
84		1,3,5-Trimethylbenzene	2.401	2.620	-9.1	88	0.00	12.34
85		2-Chlorotoluene	2.329	2.455	-5.4	89	0.00	12.35
		----------	Amount	Calc.	%Drift	----------		
86		trans-1,4-Dichloro-2-Bute	40.000	14.390	64.0#	31	0.00	12.40
		----------	AvgRF	CCRF	%Dev	----------		
87		1,2,3-Trichloropropane	0.154	0.141	8.4	77	0.00	12.38
88		Cyclohexanone	0.010	0.011	-10.0	101	0.00	12.45
89		4-Chlorotoluene	2.085	2.224	-6.7	88	0.00	12.52
90		a-Methyl Styrene	0.686	0.013	98.1#	2#	0.07	12.68
91		tert-Butylbenzene	1.403	1.440	-2.6	85	0.00	12.68
92		1,2,4-Trimethylbenzene	2.398	2.553	-6.5	86	0.00	12.75
		----------	Amount	Calc.	%Drift	----------		
93		Pentachloroethane	40.000	39.761	0.6	95	0.00	12.74
		----------	AvgRF	CCRF	%Dev	----------		
94		sec-Butylbenzene	2.899	3.091	-6.6	87	0.00	12.87
95		4-Isopropyltoluene	2.432	2.602	-7.0	87	0.00	13.00
96		1,3-Dichlorobenzene	1.325	1.327	-0.2	85	0.00	13.13
97		1,4-Dichlorobenzene	1.406	1.367	2.8	84	0.00	13.22
98		n-Butylbenzene	1.402	1.451	-3.5	84	0.00	13.43
		----------	Amount	Calc.	%Drift	----------		
99		Benzyl Chloride	40.000	26.013	35.0	53	0.00	13.45
		----------	AvgRF	CCRF	%Dev	----------		
100		1,2-Dichlorobenzene	1.268	1.195	5.8	80	0.00	13.64
		----------	Amount	Calc.	%Drift	----------		
101		1,2-Dibromo-3-Chloropropa	40.000	28.751	28.1	60	0.00	14.38

Continuing Calibration Summary

Job Number: FA32657
Account: TTNASA Tetra Tech NUS
Project: SW3

Sample: VJ5255-ECC5237
Lab FileID: J0975646.D

		AvgRF	CCRF	%Dev			
102	Hexachlorobutadiene	0.566	0.528	6.7	78	0.00	14.93
103	1,2,4-Trichlorobenzene	0.926	0.830	10.4	72	0.00	14.97

		Amount	Calc.	%Drift			
104	Naphthalene	40.000	29.250	26.9	62	0.00	15.26

		AvgRF	CCRF	%Dev			
105	1,2,3-Trichlorobenzene	0.820	0.678	17.3	68	0.00	15.43
106 I	Tert Butyl Alcohol-d10	1.000	1.000	0.0	87	0.00	5.29

		Amount	Calc.	%Drift			
107	Ethanol	800.000	1051.322	-31.4	117	-0.01	4.26

		AvgRF	CCRF	%Dev			
108	acrolein	2.923	2.702	7.6	79	0.00	4.75
109	Tert Butyl Alcohol	1.212	1.249	-3.1	88	0.00	5.38
110	tert Amyl alcohol	0.850	0.907	-6.7	85	0.00	7.57

		Amount	Calc.	%Drift			
111	Isobutyl alcohol	800.000	714.330	10.7	81	0.00	7.45

		AvgRF	CCRF	%Dev			
112	1,4-Dioxane	0.099	0.139	-40.4	119	0.00	8.67
113	3,3-Dimethyl-1-butanol	1.041	1.046	-0.5	82	0.00	10.43

(#) = Out of Range SPCC's out = 0 CCC's out = 0
J0975154.D MSJ031516.M Wed Apr 06 08:04:07 2016

GC/MS Volatiles

Raw Data

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\040516\
Data File : J0975622.D
Acq On : 5 Apr 2016 9:58 am
Operator : melissam
Sample : FA32657-1 Inst : MSVOA6
Misc : MS33477,VJ5255,,,,,
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Apr 05 13:36:05 2016
Quant Method : C:\msdchem\2\methods\MSJ031516.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Wed Mar 16 08:34:48 2016
Response via : Initial Calibration

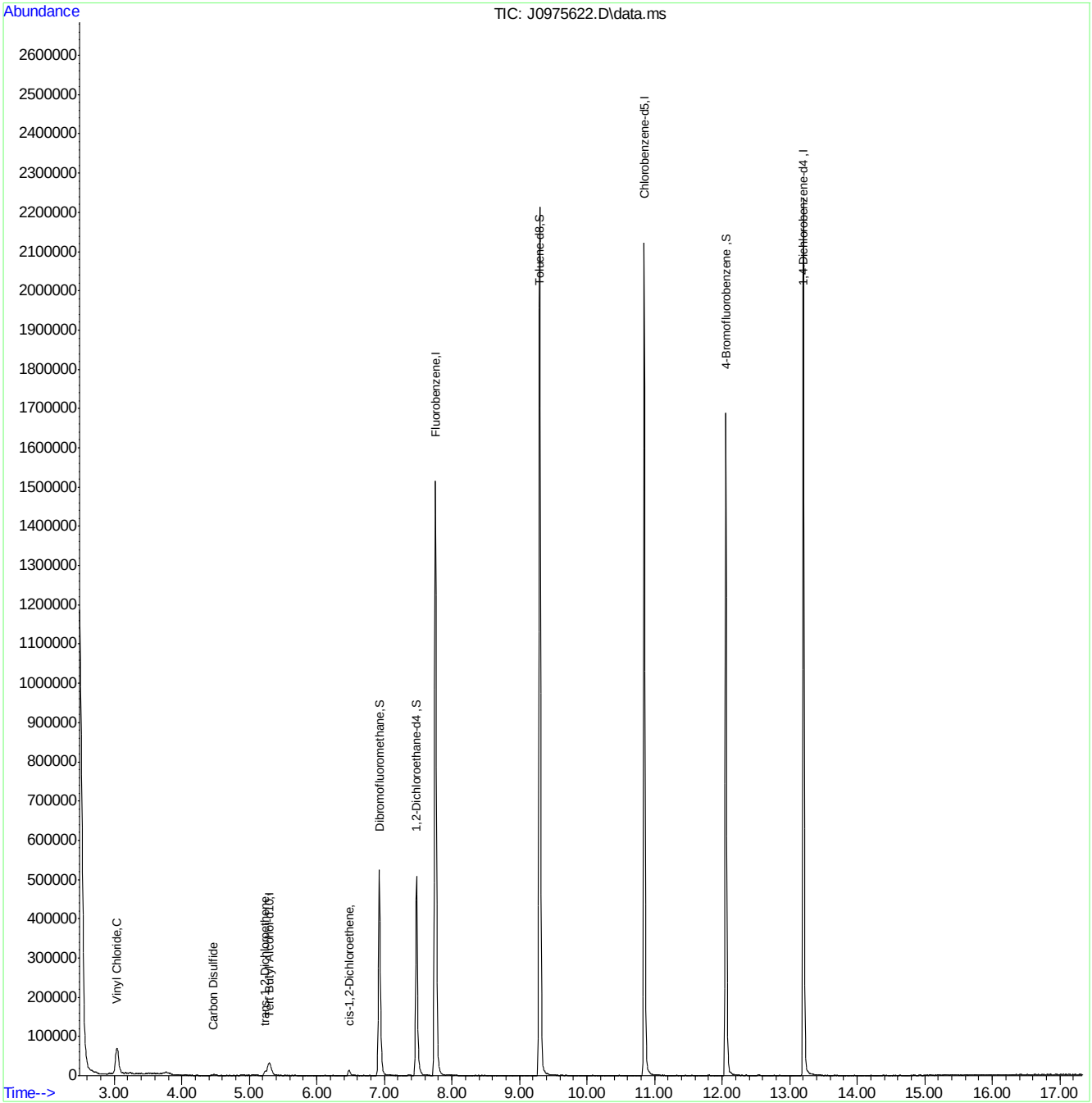
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	7.756	96	1336011	50.00	ug/L	0.00
56) Chlorobenzene-d5	10.846	117	1006151	50.00	ug/L	0.00
78) 1,4-Dichlorobenzene-d4	13.207	152	500658	50.00	ug/L	0.00
106) Tert Butyl Alcohol-d10	5.292	65	65247	250.00	ug/L	0.00
System Monitoring Compounds						
36) Dibromofluoromethane	6.928	113	338920	49.99	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 99.98%			
46) 1,2-Dichloroethane-d4	7.476	65	385055	46.97	ug/L	0.00
Spiked Amount 50.000	Range 79 - 125		Recovery = 93.94%			
57) Toluene-d8	9.301	98	1336481	50.49	ug/L	0.00
Spiked Amount 50.000	Range 85 - 112		Recovery = 100.98%			
79) 4-Bromofluorobenzene	12.057	95	486292	53.70	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 107.40%			
Target Compounds						Qvalue
4) Vinyl Chloride	3.041	62	136075	15.09	ug/L	99
13) Carbon Disulfide	4.471	76	6018	0.30	ug/L	95
19) trans-1,2-Dichloroethene	5.231	61	10445	1.18	ug/L #	74
29) cis-1,2-Dichloroethene	6.478	96	7192	0.94	ug/L	96

(#) = qualifier out of range (m) = manual integration (+) = signals summed

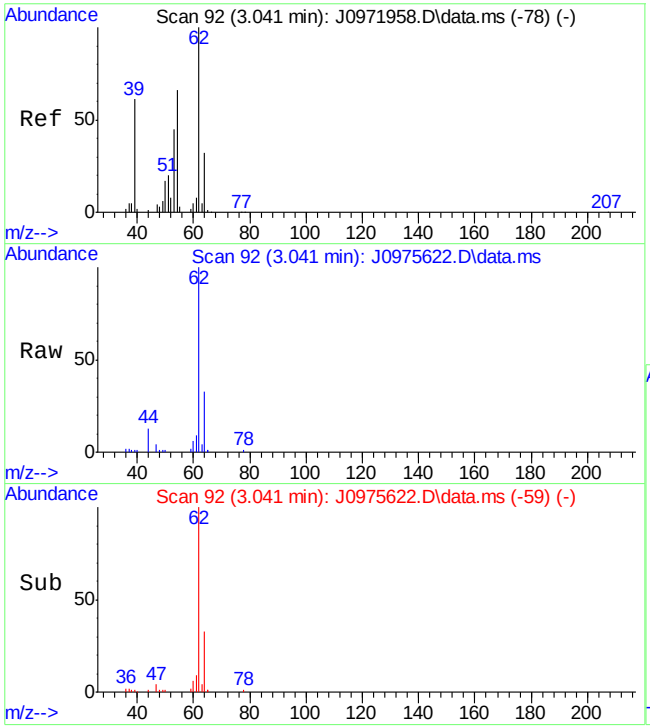
Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\040516\
Data File : J0975622.D
Acq On : 5 Apr 2016 9:58 am
Operator : melissam
Sample : FA32657-1 Inst : MSVOA6
Misc : MS33477,VJ5255,,,,,
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Apr 05 13:36:05 2016
Quant Method : C:\msdchem\2\methods\MSJ031516.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Wed Mar 16 08:34:48 2016
Response via : Initial Calibration



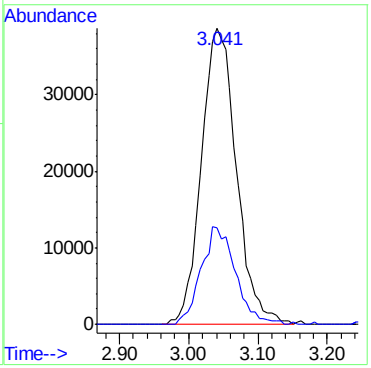
MSJ031516.M Wed Apr 06 08:00:00 2016 Page: 2

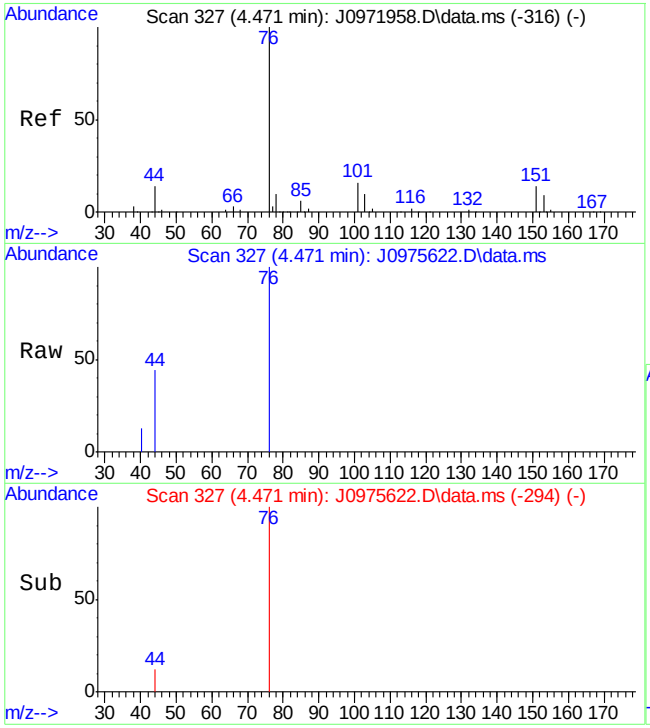


#4
Vinyl Chloride
Concen: 15.09 ug/L
RT: 3.041 min Scan# 92
Delta R.T. 0.000 min
Lab File: J0975622.D
Acq: 5 Apr 2016 9:58 am

Tgt Ion: 62 Resp: 136075

Ion	Ratio	Lower	Upper
62	100		
64	32.7	2.2	62.2

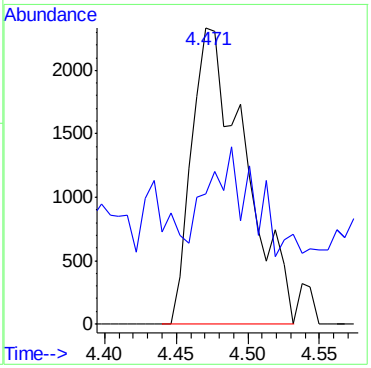


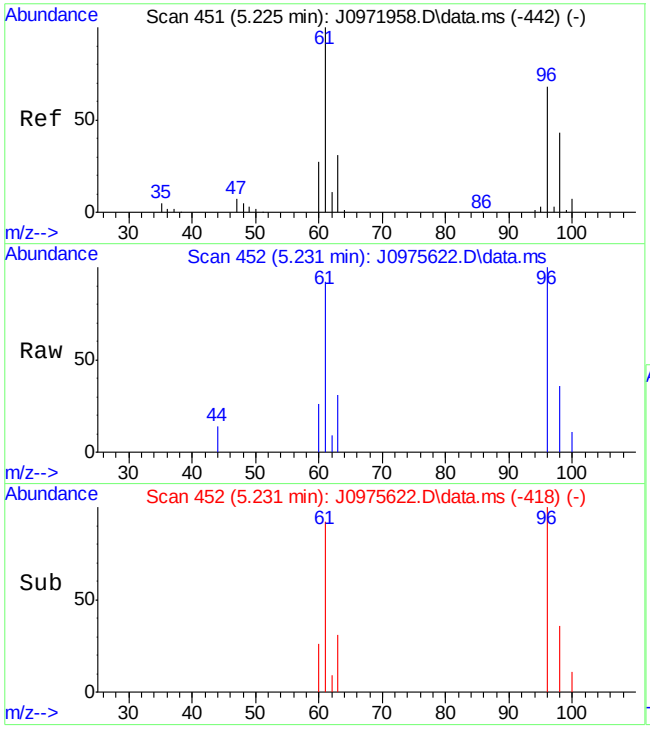


#13
Carbon Disulfide
Concen: 0.30 ug/L
RT: 4.471 min Scan# 327
Delta R.T. -0.000 min
Lab File: J0975622.D
Acq: 5 Apr 2016 9:58 am

Tgt Ion: 76 Resp: 6018

Ion	Ratio	Lower	Upper
76	100		
44	13.7	0.0	41.6

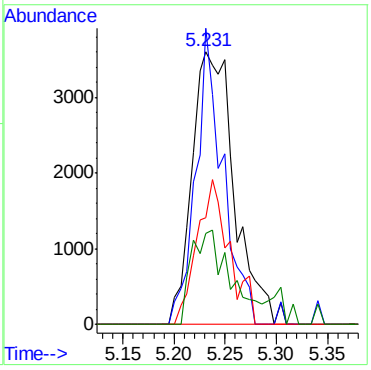


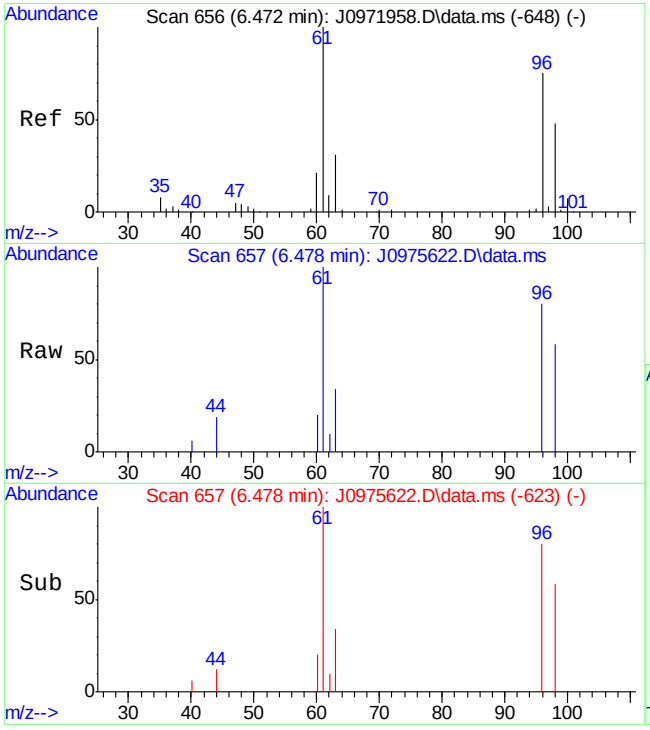


#19
trans-1,2-Dichloroethene
Concen: 1.18 ug/L
RT: 5.231 min Scan# 452
Delta R.T. 0.006 min
Lab File: J0975622.D
Acq: 5 Apr 2016 9:58 am

Tgt Ion: 61 Resp: 10445

Ion	Ratio	Lower	Upper
61	100		
96	108.4	39.0	99.0#
98	38.9	13.2	73.2
63	33.3	1.4	61.4

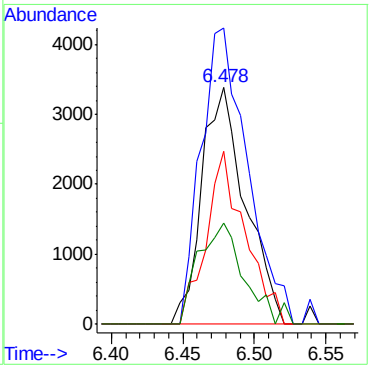




#29
cis-1,2-Dichloroethene
Concen: 0.94 ug/L
RT: 6.478 min Scan# 657
Delta R.T. 0.006 min
Lab File: J0975622.D
Acq: 5 Apr 2016 9:58 am

Tgt Ion: 96 Resp: 7192

Ion	Ratio	Lower	Upper
96	100		
61	125.0	96.4	156.4
98	73.1	33.8	93.8
63	42.5	14.2	74.2



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\040516\
Data File : J0975623.D
Acq On : 5 Apr 2016 10:22 am
Operator : melissam
Sample : FA32657-2 Inst : MSVOA6
Misc : MS33477,VJ5255,,,,,
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Apr 05 13:36:29 2016
Quant Method : C:\msdchem\2\methods\MSJ031516.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Wed Mar 16 08:34:48 2016
Response via : Initial Calibration

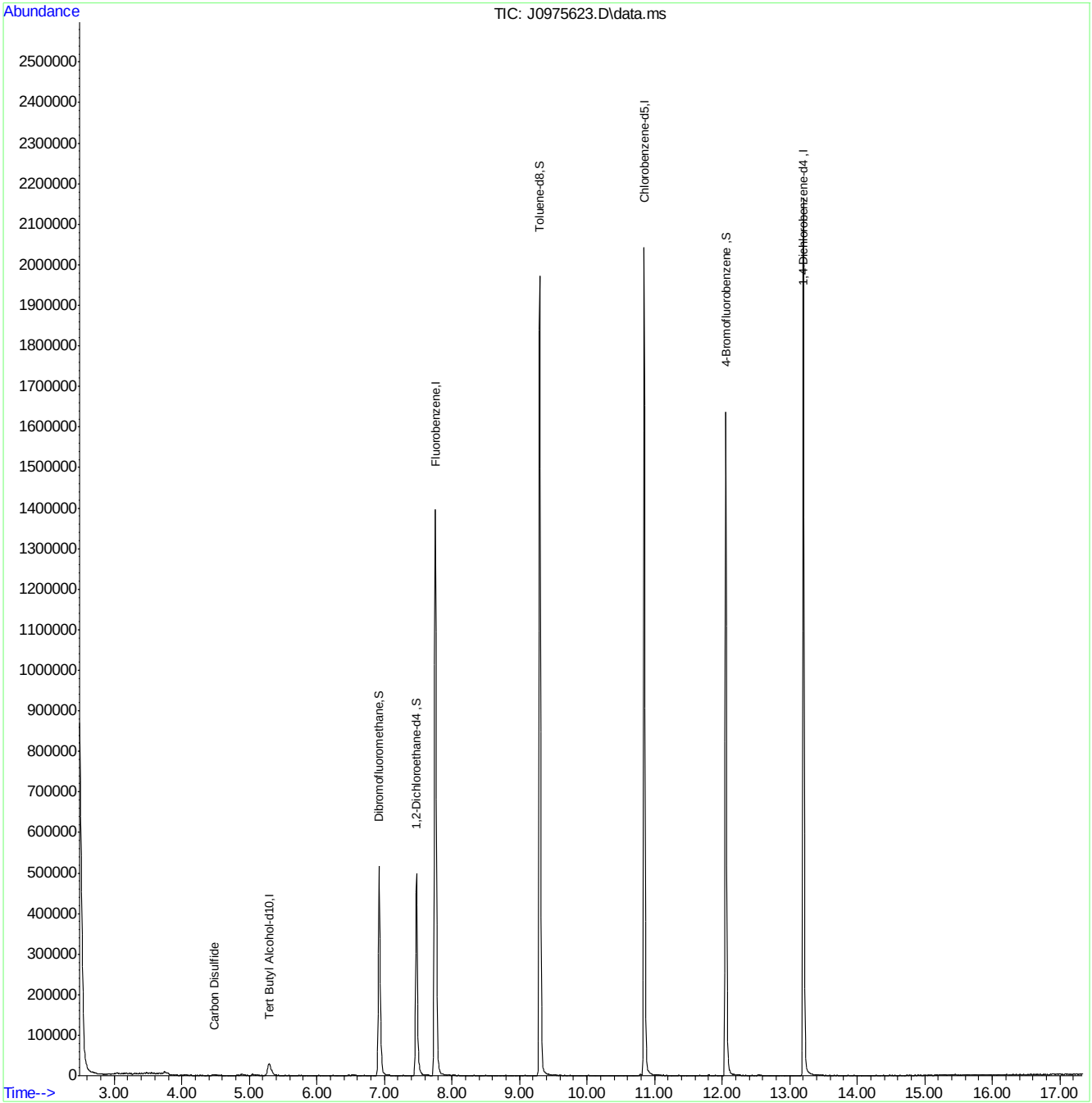
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	7.756	96	1259486	50.00	ug/L	0.00
56) Chlorobenzene-d5	10.846	117	963495	50.00	ug/L	0.00
78) 1,4-Dichlorobenzene-d4	13.207	152	495555	50.00	ug/L	0.00
106) Tert Butyl Alcohol-d10	5.298	65	55442	250.00	ug/L	0.00
System Monitoring Compounds						
36) Dibromofluoromethane	6.922	113	318378	49.82	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 99.64%			
46) 1,2-Dichloroethane-d4	7.476	65	361488	46.77	ug/L	0.00
Spiked Amount 50.000	Range 79 - 125		Recovery = 93.54%			
57) Toluene-d8	9.301	98	1206097	47.58	ug/L	0.00
Spiked Amount 50.000	Range 85 - 112		Recovery = 95.16%			
79) 4-Bromofluorobenzene	12.057	95	476424	53.15	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 106.30%			
Target Compounds						Qvalue
13) Carbon Disulfide	4.477	76	4284	0.23	ug/L	98

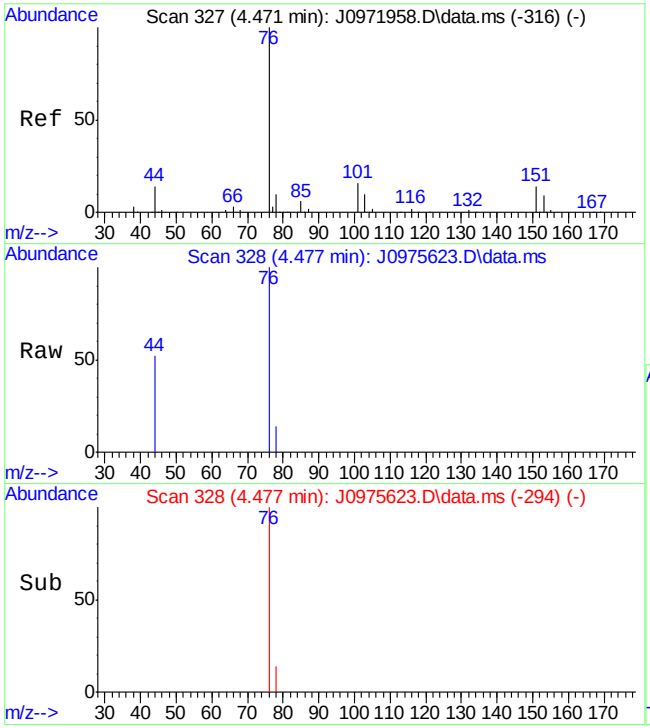
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\040516\
Data File : J0975623.D
Acq On : 5 Apr 2016 10:22 am
Operator : melissam
Sample : FA32657-2 Inst : MSVOA6
Misc : MS33477,VJ5255,,,,,
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Apr 05 13:36:29 2016
Quant Method : C:\msdchem\2\methods\MSJ031516.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Wed Mar 16 08:34:48 2016
Response via : Initial Calibration

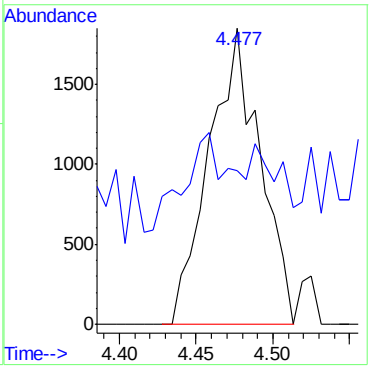




#13
Carbon Disulfide
Concen: 0.23 ug/L
RT: 4.477 min Scan# 328
Delta R.T. 0.006 min
Lab File: J0975623.D
Acq: 5 Apr 2016 10:22 am

Tgt Ion: 76 Resp: 4284

Ion	Ratio	Lower	Upper
76	100		
44	12.4	0.0	41.6



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\040516\
Data File : J0975624.D
Acq On : 5 Apr 2016 10:46 am
Operator : melissam
Sample : FA32657-3 Inst : MSVOA6
Misc : MS33477,VJ5255,,,,,
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Apr 05 13:36:51 2016
Quant Method : C:\msdchem\2\methods\MSJ031516.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Wed Mar 16 08:34:48 2016
Response via : Initial Calibration

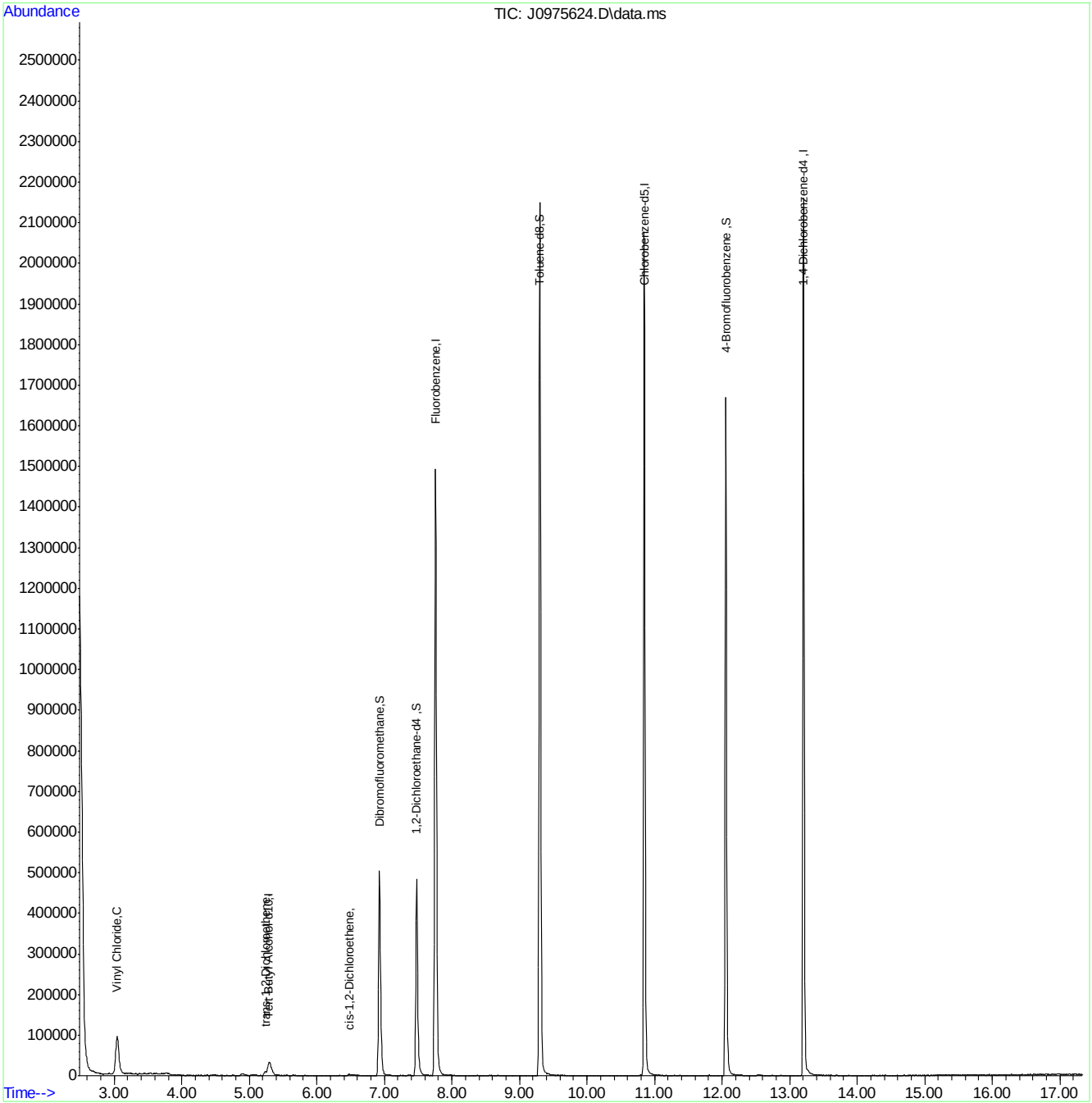
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	7.756	96	1291868	50.00	ug/L	0.00
56) Chlorobenzene-d5	10.846	117	993317	50.00	ug/L	0.00
78) 1,4-Dichlorobenzene-d4	13.207	152	501606	50.00	ug/L	0.00
106) Tert Butyl Alcohol-d10	5.286	65	63946	250.00	ug/L	-0.01
System Monitoring Compounds						
36) Dibromofluoromethane	6.928	113	325651	49.68	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 99.36%			
46) 1,2-Dichloroethane-d4	7.476	65	380159	47.95	ug/L	0.00
Spiked Amount 50.000	Range 79 - 125		Recovery = 95.90%			
57) Toluene-d8	9.301	98	1288437	49.30	ug/L	0.00
Spiked Amount 50.000	Range 85 - 112		Recovery = 98.60%			
79) 4-Bromofluorobenzene	12.057	95	475987	52.46	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 104.92%			
Target Compounds						Qvalue
4) Vinyl Chloride	3.041	62	187778	21.54	ug/L	99
19) trans-1,2-Dichloroethene	5.237	61	8755	1.02	ug/L	94
29) cis-1,2-Dichloroethene	6.484	96	1889	0.26	ug/L	90

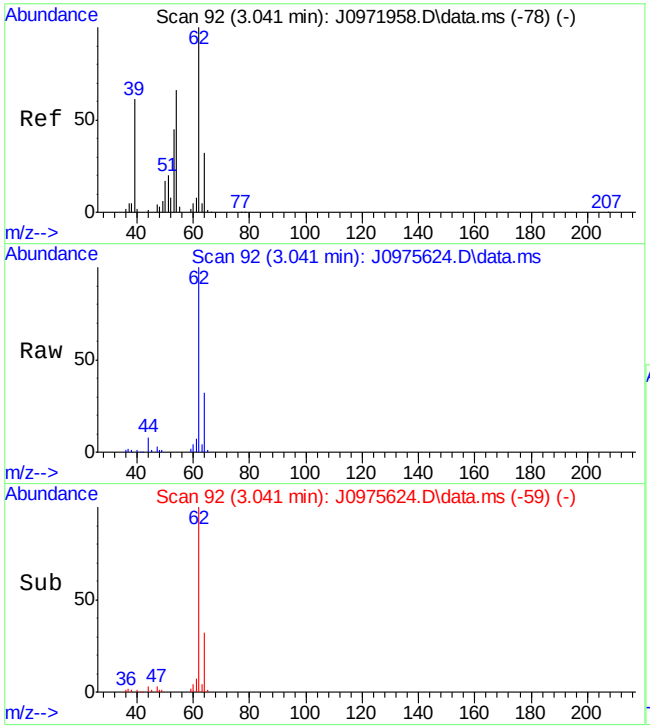
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\040516\
Data File : J0975624.D
Acq On : 5 Apr 2016 10:46 am
Operator : melissam
Sample : FA32657-3 Inst : MSVOA6
Misc : MS33477,VJ5255,,,,,
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Apr 05 13:36:51 2016
Quant Method : C:\msdchem\2\methods\MSJ031516.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Wed Mar 16 08:34:48 2016
Response via : Initial Calibration

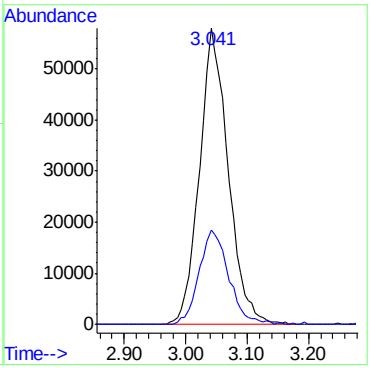


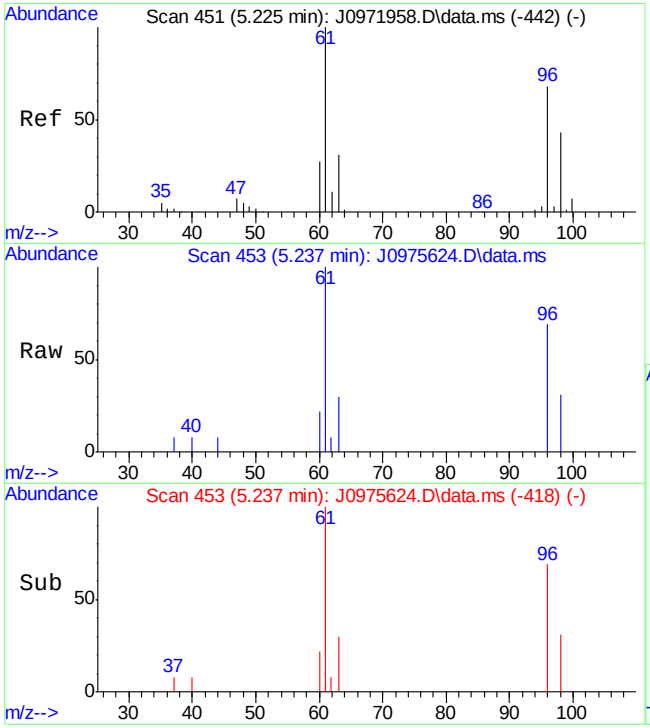


#4
Vinyl Chloride
Concen: 21.54 ug/L
RT: 3.041 min Scan# 92
Delta R.T. -0.000 min
Lab File: J0975624.D
Acq: 5 Apr 2016 10:46 am

Tgt Ion: 62 Resp: 187778

Ion	Ratio	Lower	Upper
62	100		
64	31.7	2.2	62.2

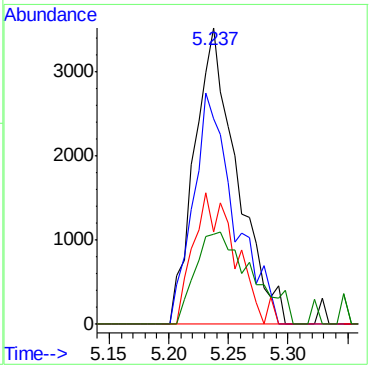


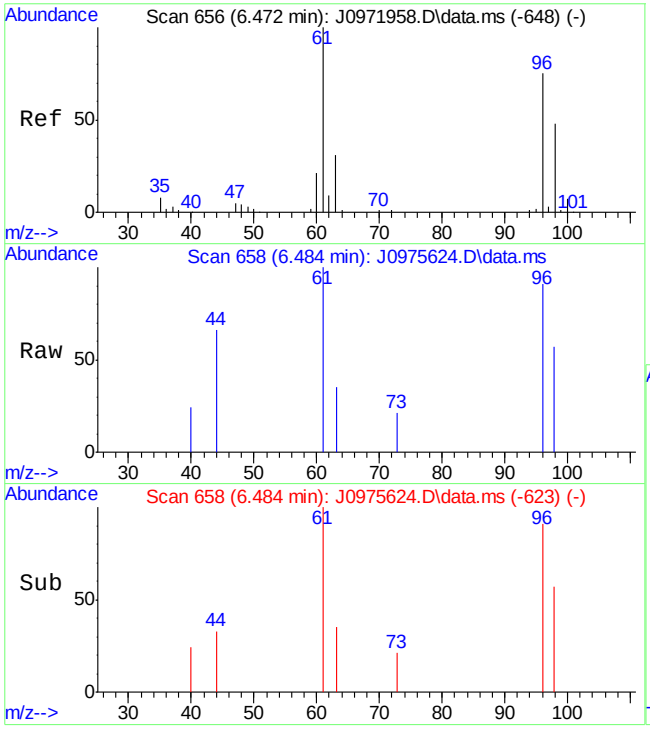


#19
trans-1,2-Dichloroethene
Concen: 1.02 ug/L
RT: 5.237 min Scan# 453
Delta R.T. 0.012 min
Lab File: J0975624.D
Acq: 5 Apr 2016 10:46 am

Tgt Ion: 61 Resp: 8755

Ion	Ratio	Lower	Upper
61	100		
96	69.4	39.0	99.0
98	31.3	13.2	73.2
63	30.4	1.4	61.4

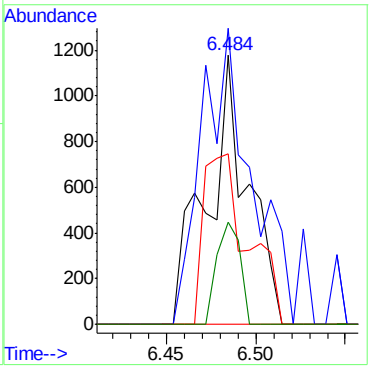




#29
cis-1,2-Dichloroethene
Concen: 0.26 ug/L
RT: 6.484 min Scan# 658
Delta R.T. 0.012 min
Lab File: J0975624.D
Acq: 5 Apr 2016 10:46 am

Tgt Ion: 96 Resp: 1889

Ion	Ratio	Lower	Upper
96	100		
61	109.8	96.4	156.4
98	63.1	33.8	93.8
63	38.0	14.2	74.2



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\040516\
Data File : J0975625.D
Acq On : 5 Apr 2016 11:10 am
Operator : melissam
Sample : FA32657-4 Inst : MSVOA6
Misc : MS33477,VJ5255,,,,,
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Apr 05 13:37:16 2016
Quant Method : C:\msdchem\2\methods\MSJ031516.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Wed Mar 16 08:34:48 2016
Response via : Initial Calibration

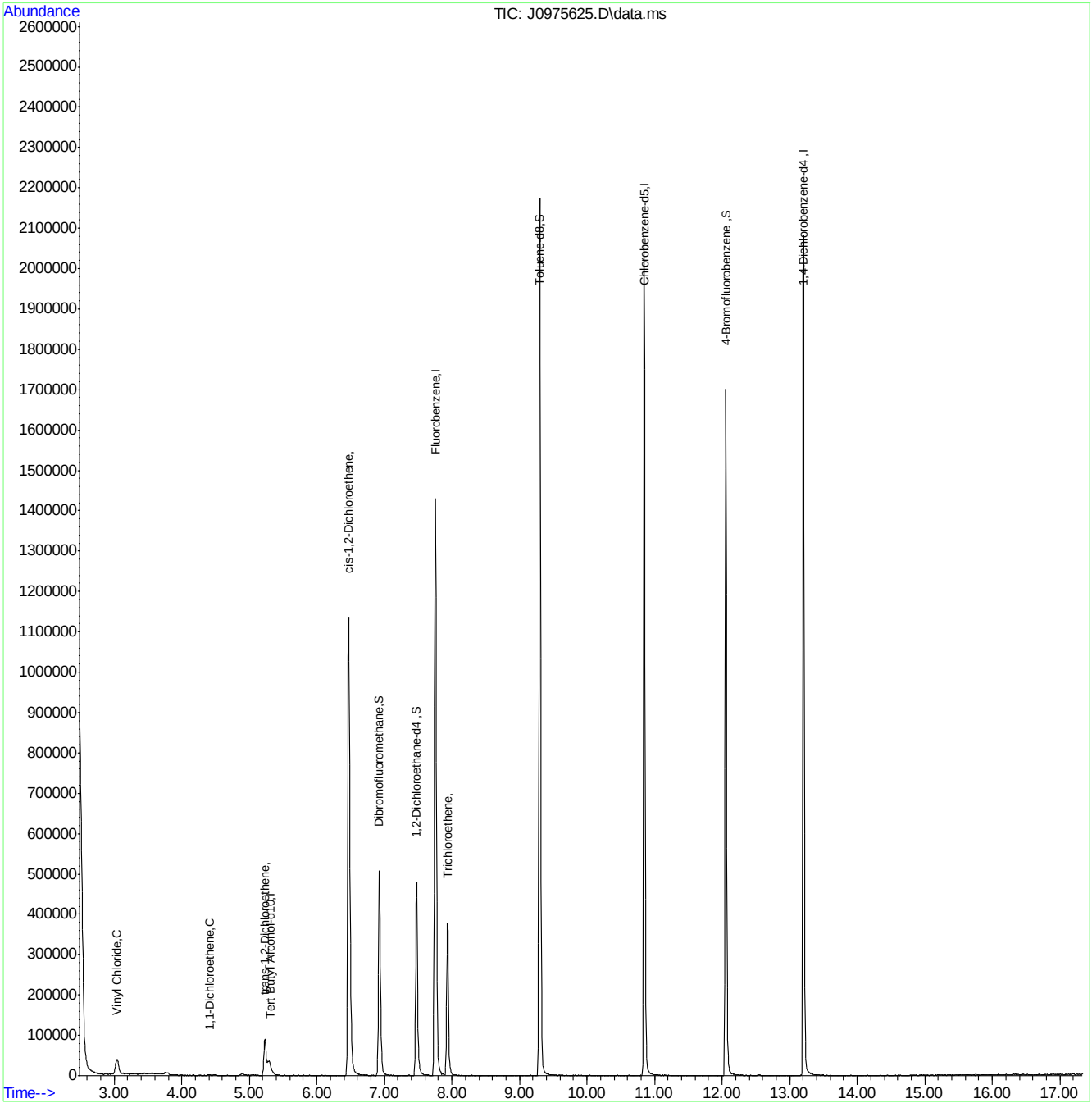
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	7.756	96	1273577	50.00	ug/L	0.00
56) Chlorobenzene-d5	10.846	117	976706	50.00	ug/L	0.00
78) 1,4-Dichlorobenzene-d4	13.207	152	479664	50.00	ug/L	0.00
106) Tert Butyl Alcohol-d10	5.304	65	59355	250.00	ug/L	0.00
System Monitoring Compounds						
36) Dibromofluoromethane	6.922	113	324836	50.27	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 100.54%			
46) 1,2-Dichloroethane-d4	7.476	65	371430	47.52	ug/L	0.00
Spiked Amount 50.000	Range 79 - 125		Recovery = 95.04%			
57) Toluene-d8	9.301	98	1284505	49.99	ug/L	0.00
Spiked Amount 50.000	Range 85 - 112		Recovery = 99.98%			
79) 4-Bromofluorobenzene	12.057	95	483158	55.69	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 111.38%			
Target Compounds						Qvalue
4) Vinyl Chloride	3.041	62	72909	8.48	ug/L	98
11) 1,1-Dichloroethene	4.410	61	2536	0.28	ug/L #	61
19) trans-1,2-Dichloroethene	5.231	61	73652	8.70	ug/L	98
29) cis-1,2-Dichloroethene	6.472	96	579522	79.83	ug/L	98
48) Trichloroethene	7.932	95	129987	19.01	ug/L	94

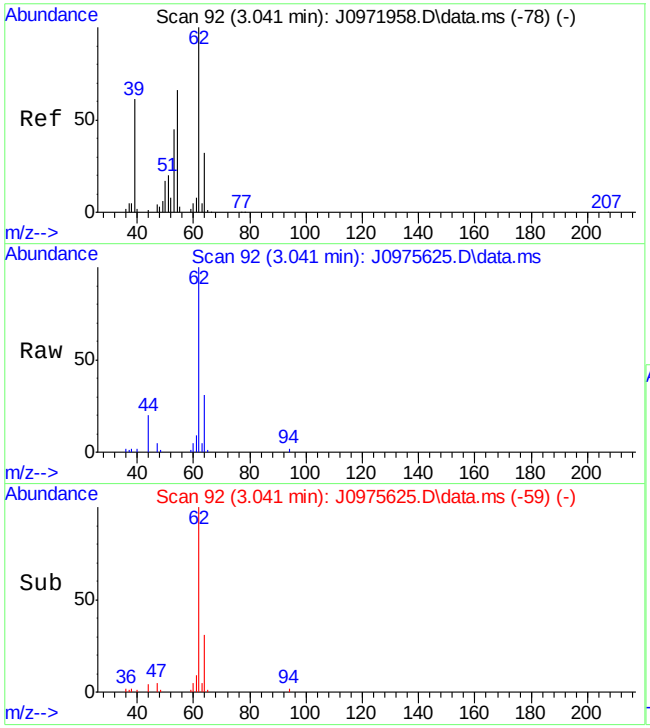
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\040516\
Data File : J0975625.D
Acq On : 5 Apr 2016 11:10 am
Operator : melissam
Sample : FA32657-4 Inst : MSVOA6
Misc : MS33477,VJ5255,,,,,
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Apr 05 13:37:16 2016
Quant Method : C:\msdchem\2\methods\MSJ031516.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Wed Mar 16 08:34:48 2016
Response via : Initial Calibration

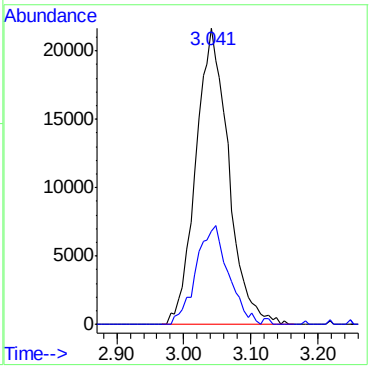


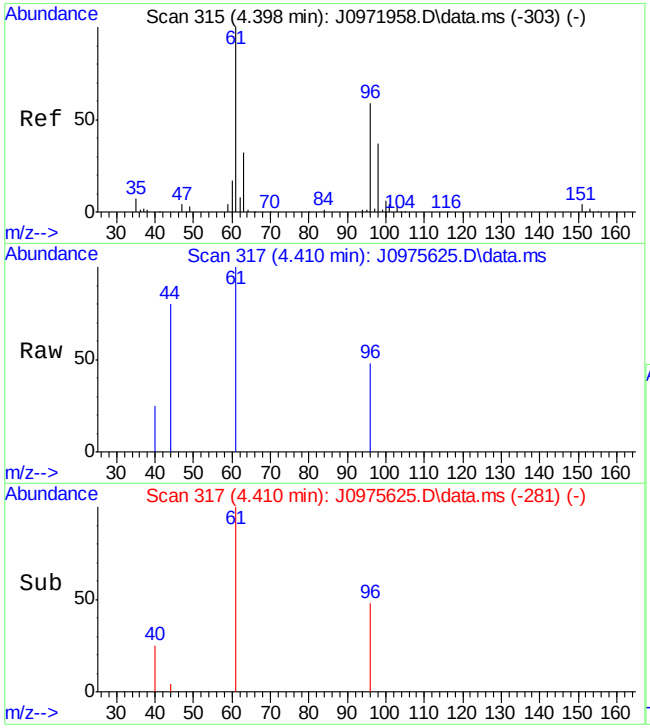


#4
Vinyl Chloride
Concen: 8.48 ug/L
RT: 3.041 min Scan# 92
Delta R.T. 0.000 min
Lab File: J0975625.D
Acq: 5 Apr 2016 11:10 am

Tgt Ion: 62 Resp: 72909

Ion	Ratio	Lower	Upper
62	100		
64	31.3	2.2	62.2

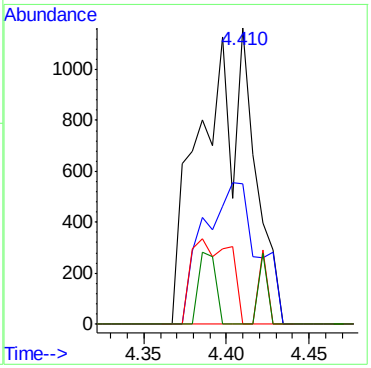


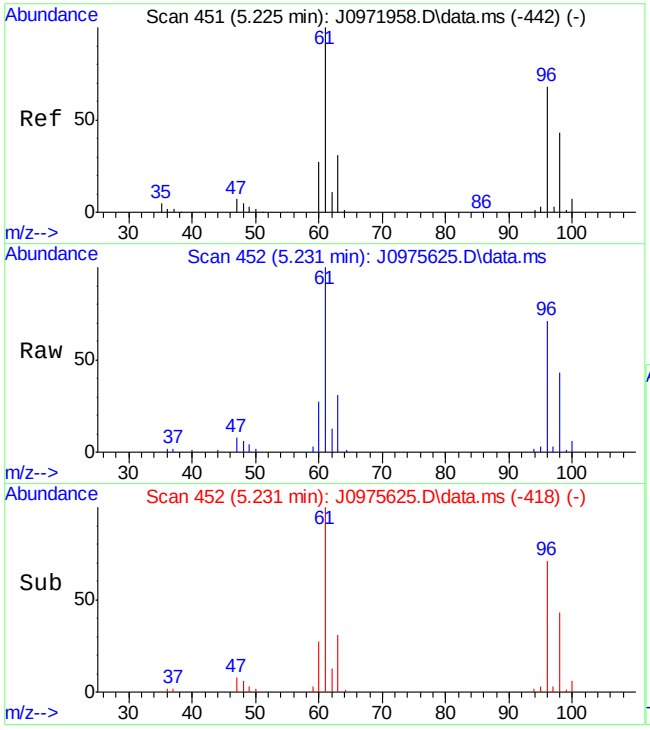


#11
1,1-Dichloroethene
Concen: 0.28 ug/L
RT: 4.410 min Scan# 317
Delta R.T. 0.018 min
Lab File: J0975625.D
Acq: 5 Apr 2016 11:10 am

Tgt Ion: 61 Resp: 2536

Ion	Ratio	Lower	Upper
61	100		
96	47.5	28.9	88.9
98	0.0	6.7	66.7#
63	0.0	0.6	60.6#

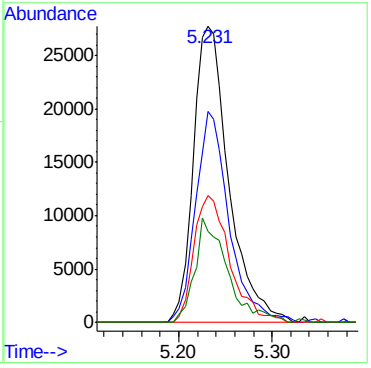


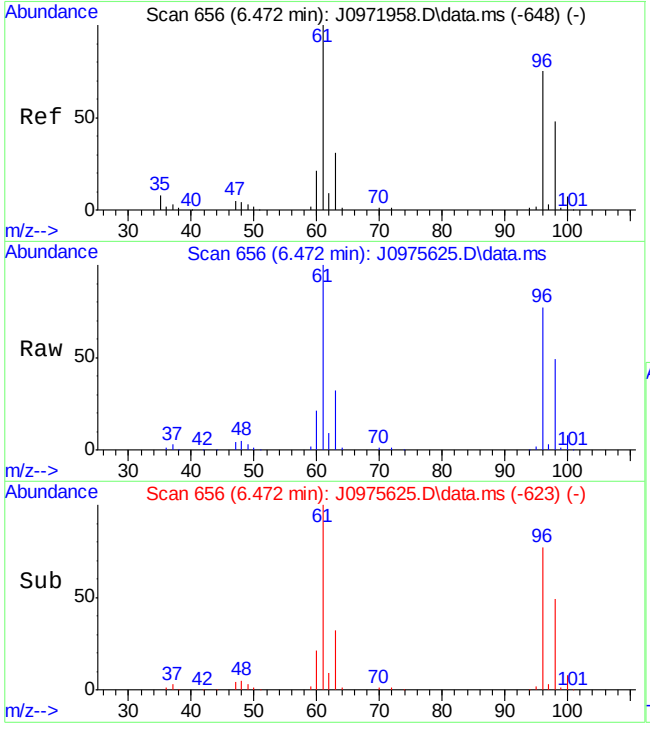


#19
trans-1,2-Dichloroethene
Concen: 8.70 ug/L
RT: 5.231 min Scan# 452
Delta R.T. 0.006 min
Lab File: J0975625.D
Acq: 5 Apr 2016 11:10 am

Tgt Ion: 61 Resp: 73652

Ion	Ratio	Lower	Upper
61	100		
96	71.1	39.0	99.0
98	42.9	13.2	73.2
63	30.8	1.4	61.4

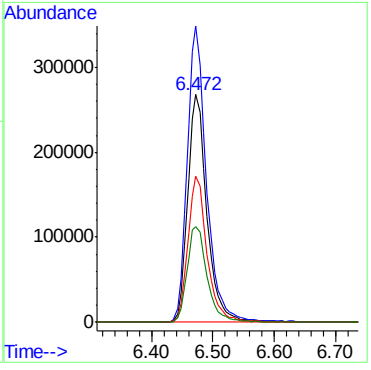


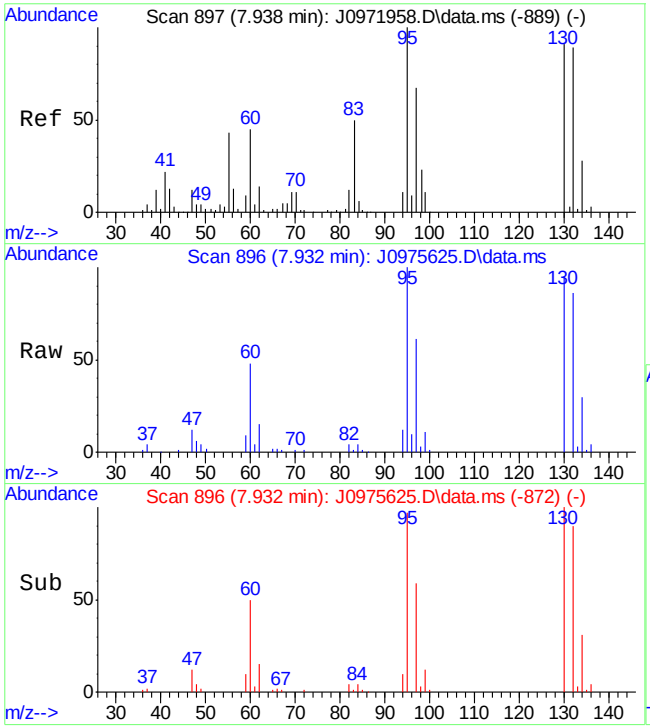


#29
cis-1,2-Dichloroethene
Concen: 79.83 ug/L
RT: 6.472 min Scan# 656
Delta R.T. 0.000 min
Lab File: J0975625.D
Acq: 5 Apr 2016 11:10 am

Tgt Ion: 96 Resp: 579522

Ion	Ratio	Lower	Upper
96	100		
61	130.2	96.4	156.4
98	64.0	33.8	93.8
63	42.2	14.2	74.2

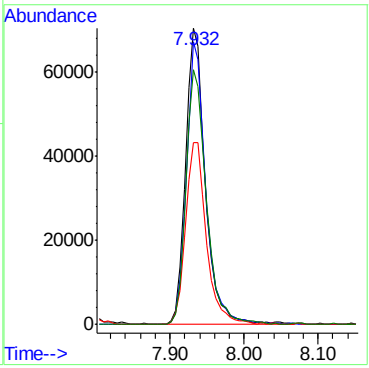




#48
Trichloroethene
Concen: 19.01 ug/L
RT: 7.932 min Scan# 896
Delta R.T. -0.006 min
Lab File: J0975625.D
Acq: 5 Apr 2016 11:10 am

Tgt Ion: 95 Resp: 129987

Ion	Ratio	Lower	Upper
95	100		
130	95.4	63.3	123.3
97	61.3	38.8	98.8
132	86.1	63.7	123.7



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\040516\
Data File : J0975626.D
Acq On : 5 Apr 2016 11:34 am
Operator : melissam
Sample : FA32657-5 Inst : MSVOA6
Misc : MS33477,VJ5255,,,,,
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Apr 05 13:37:42 2016
Quant Method : C:\msdchem\2\methods\MSJ031516.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Wed Mar 16 08:34:48 2016
Response via : Initial Calibration

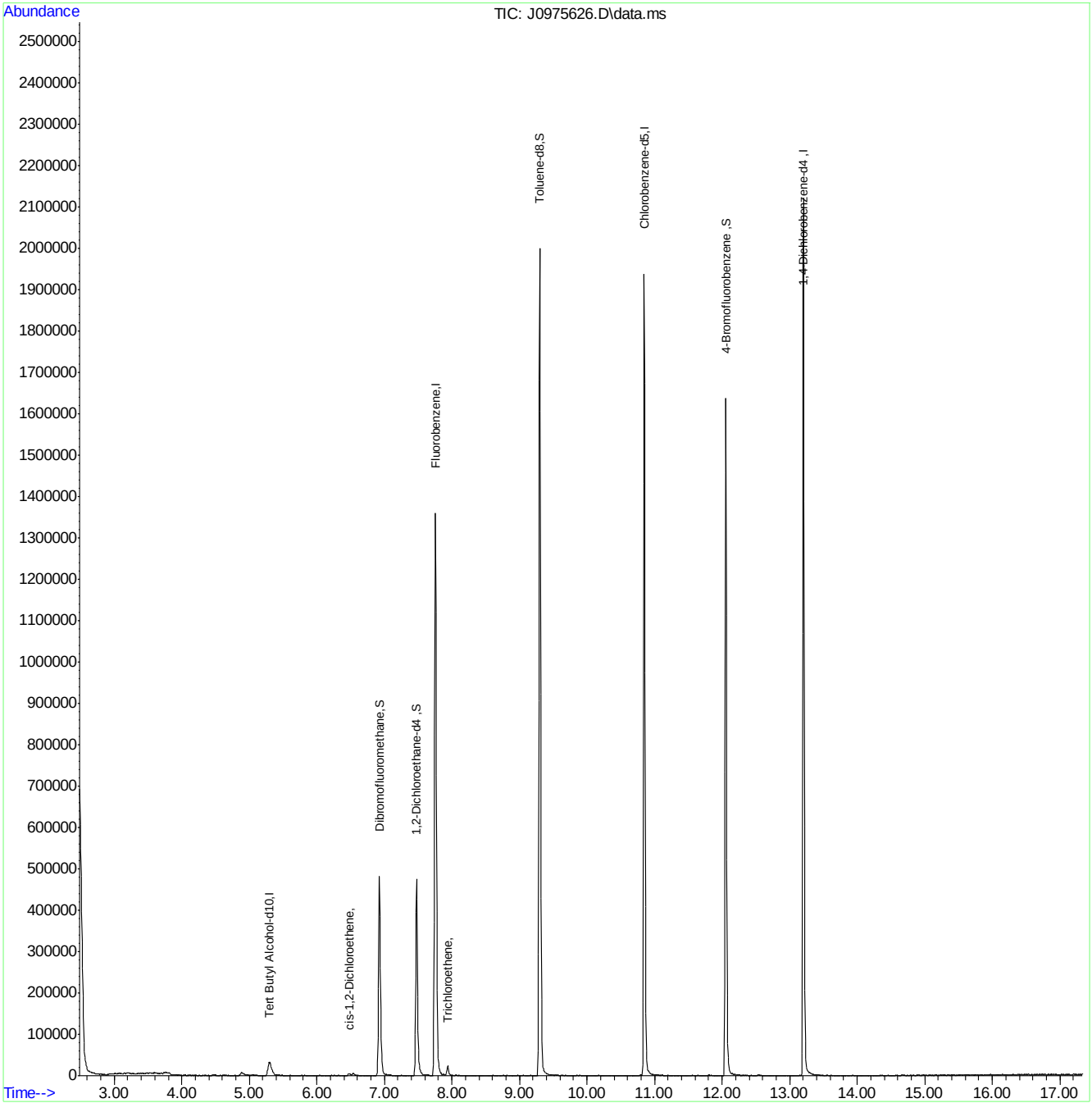
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	7.756	96	1173190	50.00	ug/L	0.00
56) Chlorobenzene-d5	10.846	117	915516	50.00	ug/L	0.00
78) 1,4-Dichlorobenzene-d4	13.207	152	483729	50.00	ug/L	0.00
106) Tert Butyl Alcohol-d10	5.292	65	59309	250.00	ug/L	0.00
System Monitoring Compounds						
36) Dibromofluoromethane	6.928	113	299135	50.25	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 100.50%			
46) 1,2-Dichloroethane-d4	7.476	65	344049	47.79	ug/L	0.00
Spiked Amount 50.000	Range 79 - 125		Recovery = 95.58%			
57) Toluene-d8	9.301	98	1180189	49.00	ug/L	0.00
Spiked Amount 50.000	Range 85 - 112		Recovery = 98.00%			
79) 4-Bromofluorobenzene	12.057	95	460608	52.64	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 105.28%			
Target Compounds						Qvalue
29) cis-1,2-Dichloroethene	6.484	96	2415	0.36	ug/L	82
48) Trichloroethene	7.932	95	7531	1.20	ug/L	85

(#) = qualifier out of range (m) = manual integration (+) = signals summed

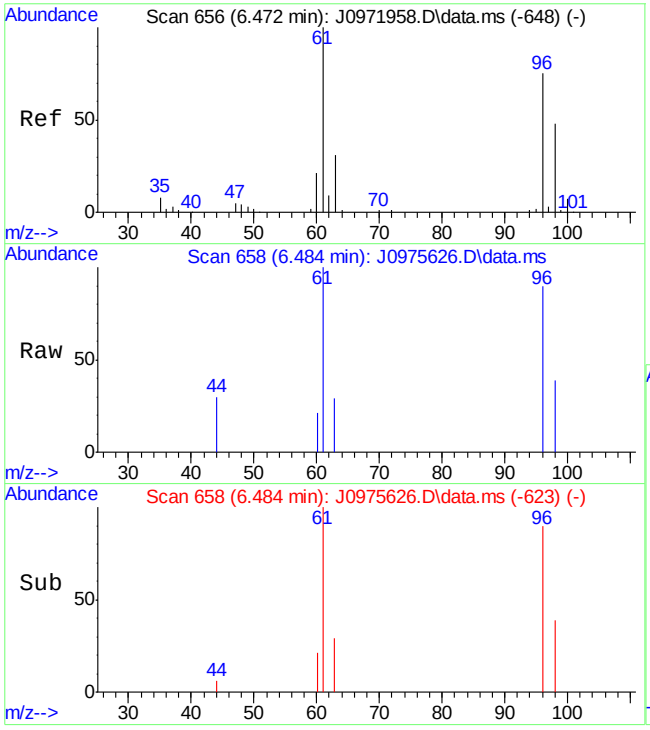
Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\040516\
Data File : J0975626.D
Acq On : 5 Apr 2016 11:34 am
Operator : melissam
Sample : FA32657-5 Inst : MSVOA6
Misc : MS33477,VJ5255,,,,,
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Apr 05 13:37:42 2016
Quant Method : C:\msdchem\2\methods\MSJ031516.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Wed Mar 16 08:34:48 2016
Response via : Initial Calibration



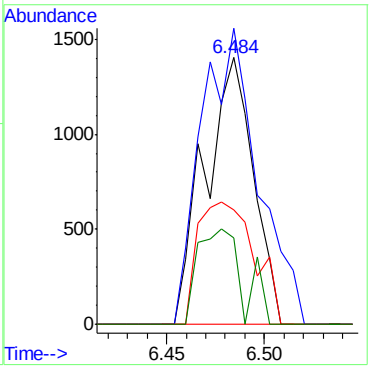
MSJ031516.M Wed Apr 06 08:00:11 2016 Page: 2

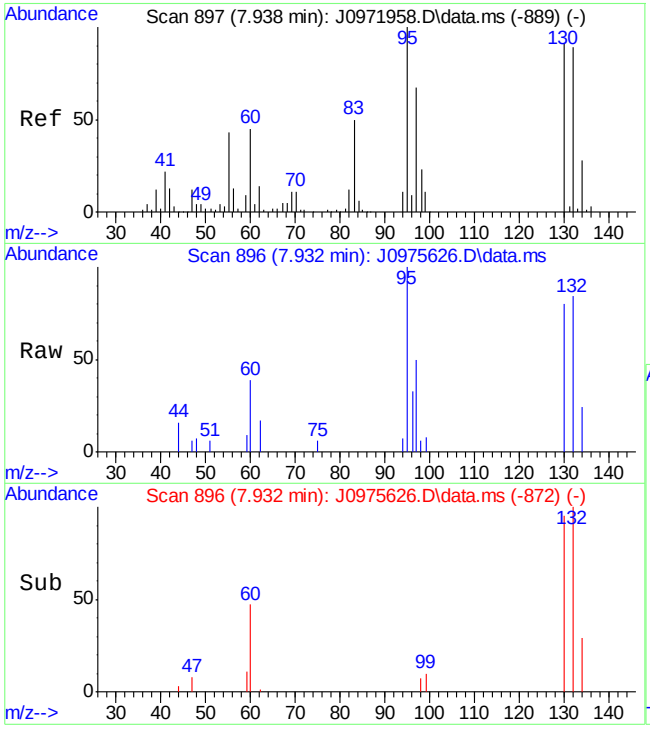


#29
cis-1,2-Dichloroethene
Concen: 0.36 ug/L
RT: 6.484 min Scan# 658
Delta R.T. 0.012 min
Lab File: J0975626.D
Acq: 5 Apr 2016 11:34 am

Tgt Ion: 96 Resp: 2415

Ion	Ratio	Lower	Upper
96	100		
61	111.1	96.4	156.4
98	43.0	33.8	93.8
63	32.6	14.2	74.2

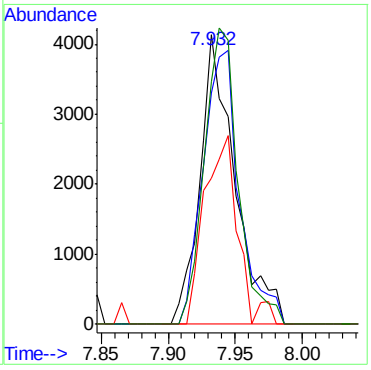




#48
Trichloroethene
Concen: 1.20 ug/L
RT: 7.932 min Scan# 896
Delta R.T. -0.006 min
Lab File: J0975626.D
Acq: 5 Apr 2016 11:34 am

Tgt Ion: 95 Resp: 7531

Ion	Ratio	Lower	Upper
95	100		
130	79.8	63.3	123.3
97	50.4	38.8	98.8
132	84.0	63.7	123.7



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\040516\
Data File : J0975627.D
Acq On : 5 Apr 2016 11:58 am
Operator : melissam
Sample : FA32657-6 Inst : MSVOA6
Misc : MS33477,VJ5255,,,,,
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Apr 05 13:38:04 2016
Quant Method : C:\msdchem\2\methods\MSJ031516.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Wed Mar 16 08:34:48 2016
Response via : Initial Calibration

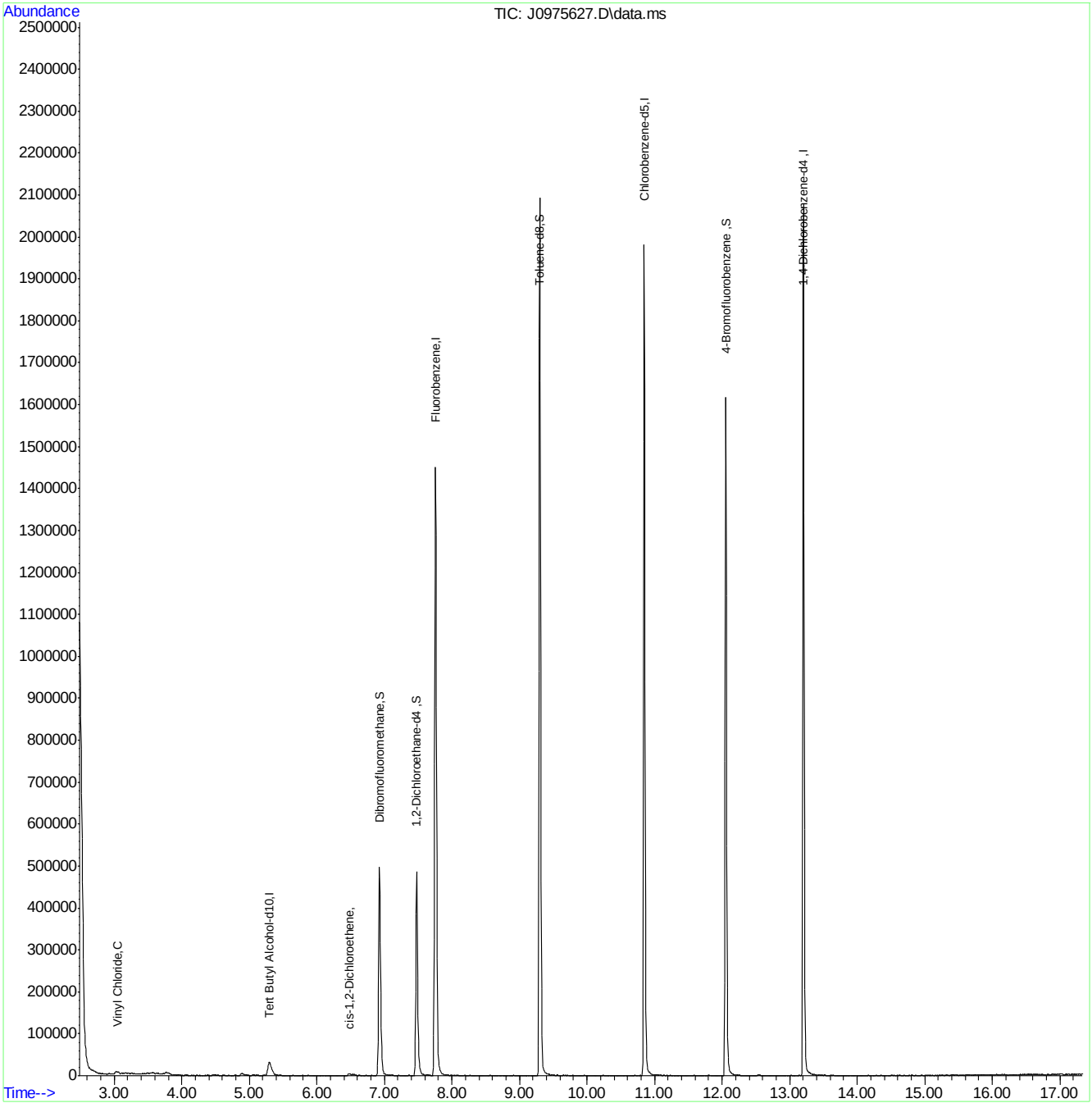
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	7.756	96	1254945	50.00	ug/L	0.00
56) Chlorobenzene-d5	10.846	117	930179	50.00	ug/L	0.00
78) 1,4-Dichlorobenzene-d4	13.207	152	471630	50.00	ug/L	0.00
106) Tert Butyl Alcohol-d10	5.292	65	62772	250.00	ug/L	0.00
System Monitoring Compounds						
36) Dibromofluoromethane	6.928	113	319096	50.11	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 100.22%			
46) 1,2-Dichloroethane-d4	7.476	65	366735	47.62	ug/L	0.00
Spiked Amount 50.000	Range 79 - 125		Recovery = 95.24%			
57) Toluene-d8	9.301	98	1237252	50.56	ug/L	0.00
Spiked Amount 50.000	Range 85 - 112		Recovery = 101.12%			
79) 4-Bromofluorobenzene	12.057	95	469581	55.05	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 110.10%			
Target Compounds						Qvalue
4) Vinyl Chloride	3.047	62	8980	1.06	ug/L	97
29) cis-1,2-Dichloroethene	6.478	96	3121	0.44	ug/L	89

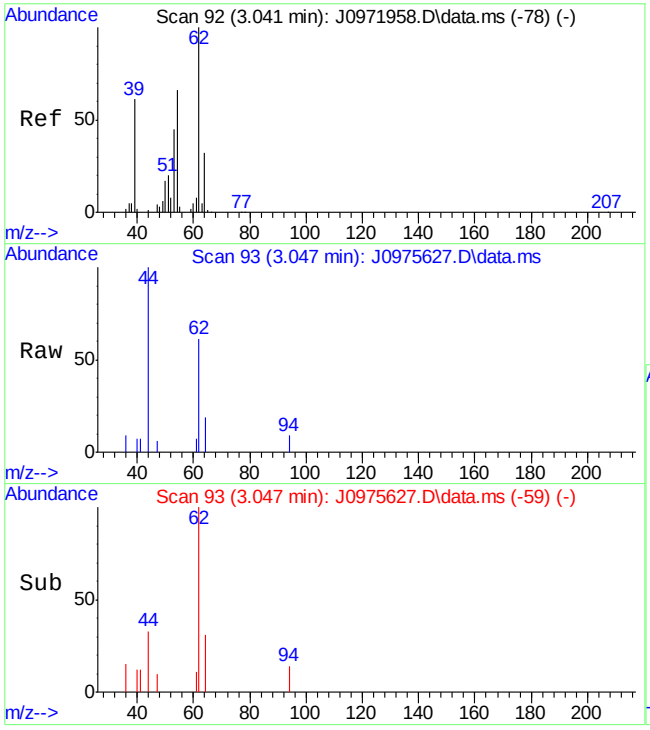
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\040516\
Data File : J0975627.D
Acq On : 5 Apr 2016 11:58 am
Operator : melissam
Sample : FA32657-6 Inst : MSVOA6
Misc : MS33477,VJ5255,,,,,
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Apr 05 13:38:04 2016
Quant Method : C:\msdchem\2\methods\MSJ031516.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Wed Mar 16 08:34:48 2016
Response via : Initial Calibration

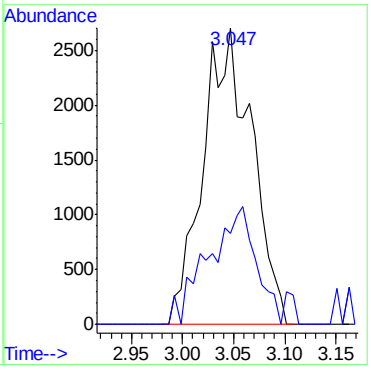


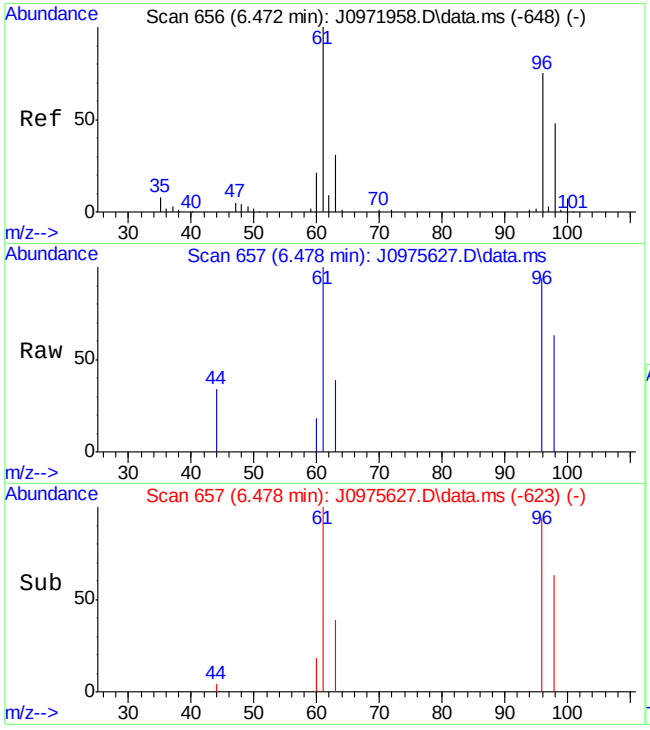


#4
Vinyl Chloride
Concen: 1.06 ug/L
RT: 3.047 min Scan# 93
Delta R.T. 0.006 min
Lab File: J0975627.D
Acq: 5 Apr 2016 11:58 am

Tgt Ion: 62 Resp: 8980

Ion	Ratio	Lower	Upper
62	100		
64	30.8	2.2	62.2

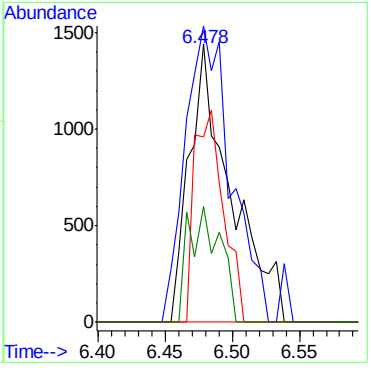




#29
cis-1,2-Dichloroethene
Concen: 0.44 ug/L
RT: 6.478 min Scan# 657
Delta R.T. 0.006 min
Lab File: J0975627.D
Acq: 5 Apr 2016 11:58 am

Tgt Ion: 96 Resp: 3121

Ion	Ratio	Lower	Upper
96	100		
61	106.3	96.4	156.4
98	66.5	33.8	93.8
63	41.3	14.2	74.2



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\040516\
Data File : J0975636.D
Acq On : 5 Apr 2016 3:35 pm
Operator : melissam
Sample : FA32657-7 Inst : MSVOA6
Misc : MS33477,VJ5255,,,,,
ALS Vial : 18 Sample Multiplier: 1

Quant Time: Apr 06 07:51:50 2016
Quant Method : C:\msdchem\2\methods\MSJ031516.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Wed Mar 16 08:34:48 2016
Response via : Initial Calibration

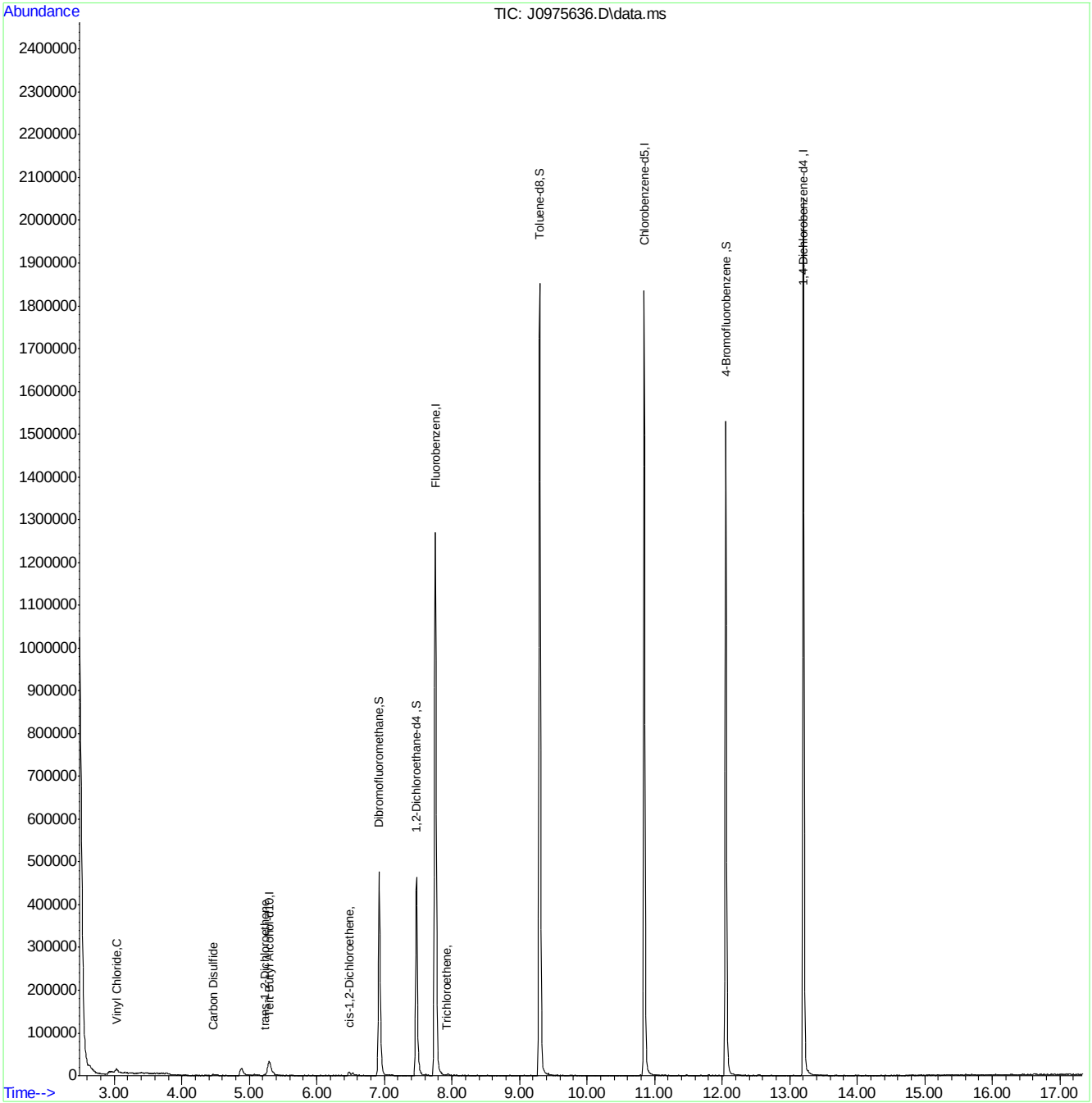
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	7.756	96	1126242	50.00	ug/L	0.00
56) Chlorobenzene-d5	10.846	117	872931	50.00	ug/L	0.00
78) 1,4-Dichlorobenzene-d4	13.207	152	462271	50.00	ug/L	0.00
106) Tert Butyl Alcohol-d10	5.292	65	60377	250.00	ug/L	0.00
System Monitoring Compounds						
36) Dibromofluoromethane	6.922	113	291570	51.02	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 102.04%			
46) 1,2-Dichloroethane-d4	7.476	65	341806	49.46	ug/L	0.00
Spiked Amount 50.000	Range 79 - 125		Recovery = 98.92%			
57) Toluene-d8	9.301	98	1115401	48.57	ug/L	0.00
Spiked Amount 50.000	Range 85 - 112		Recovery = 97.14%			
79) 4-Bromofluorobenzene	12.057	95	433589	51.86	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 103.72%			
Target Compounds						Qvalue
4) Vinyl Chloride	3.035	62	13898	1.83	ug/L	79
13) Carbon Disulfide	4.464	76	6462	0.38	ug/L	72
19) trans-1,2-Dichloroethene	5.231	61	2218	0.30	ug/L	85
29) cis-1,2-Dichloroethene	6.478	96	4270	0.67	ug/L	85
48) Trichloroethene	7.926	95	1223	0.20	ug/L #	38

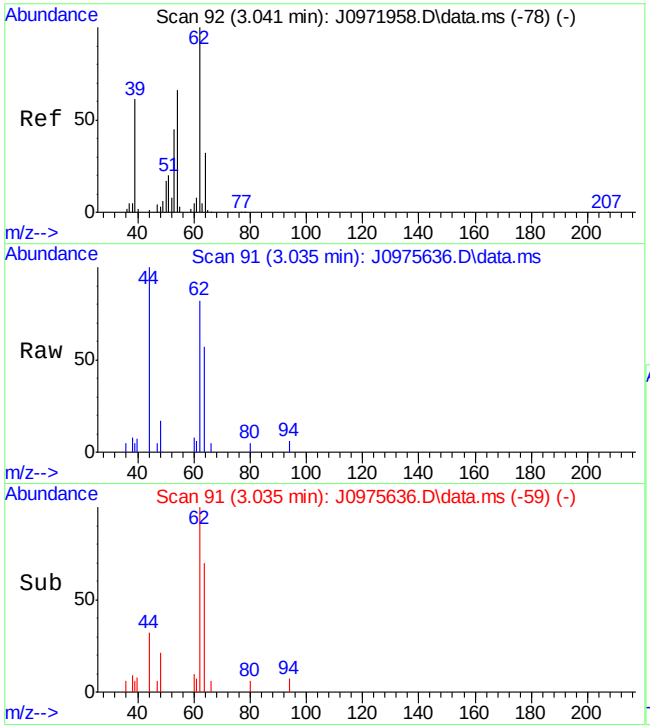
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\040516\
Data File : J0975636.D
Acq On : 5 Apr 2016 3:35 pm
Operator : melissam
Sample : FA32657-7 Inst : MSVOA6
Misc : MS33477,VJ5255,,,,,
ALS Vial : 18 Sample Multiplier: 1

Quant Time: Apr 06 07:51:50 2016
Quant Method : C:\msdchem\2\methods\MSJ031516.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Wed Mar 16 08:34:48 2016
Response via : Initial Calibration

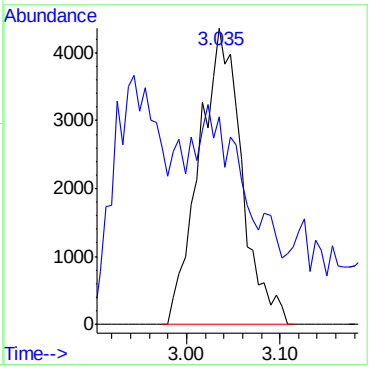


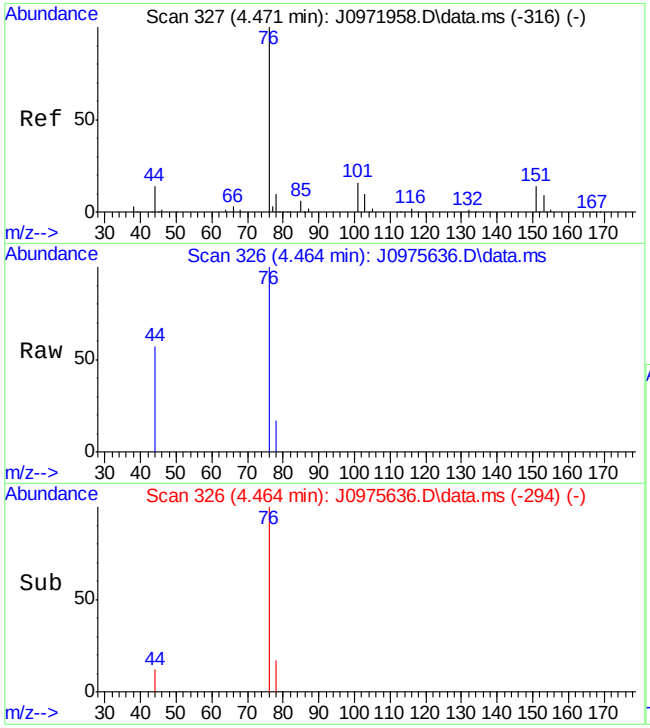


#4
Vinyl Chloride
Concen: 1.83 ug/L
RT: 3.035 min Scan# 91
Delta R.T. -0.006 min
Lab File: J0975636.D
Acq: 5 Apr 2016 3:35 pm

Tgt Ion: 62 Resp: 13898

Ion	Ratio	Lower	Upper
62	100		
64	43.9	2.2	62.2

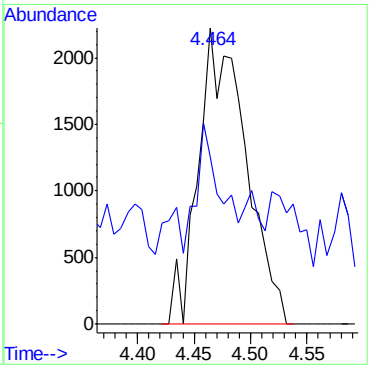


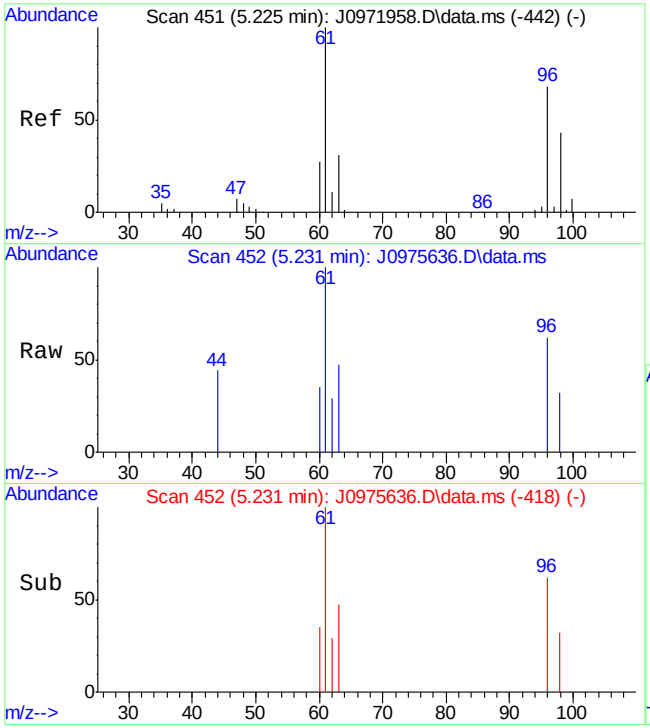


#13
Carbon Disulfide
Concen: 0.38 ug/L
RT: 4.464 min Scan# 326
Delta R.T. -0.007 min
Lab File: J0975636.D
Acq: 5 Apr 2016 3:35 pm

Tgt Ion: 76 Resp: 6462

Ion	Ratio	Lower	Upper
76	100		
44	22.3	0.0	41.6

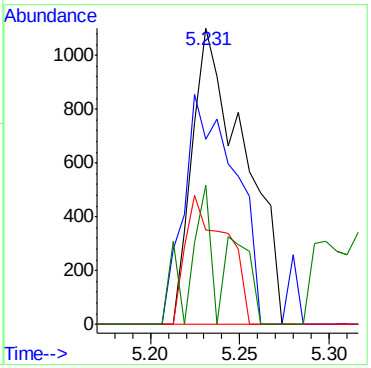


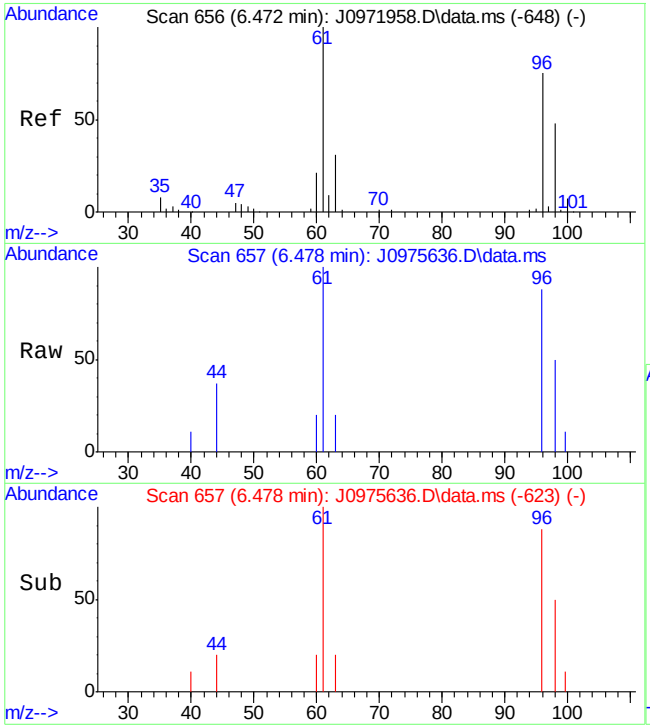


#19
trans-1,2-Dichloroethene
Concen: 0.30 ug/L
RT: 5.231 min Scan# 452
Delta R.T. 0.006 min
Lab File: J0975636.D
Acq: 5 Apr 2016 3:35 pm

Tgt Ion: 61 Resp: 2218

Ion	Ratio	Lower	Upper
61	100		
96	62.5	39.0	99.0
98	31.8	13.2	73.2
63	47.0	1.4	61.4

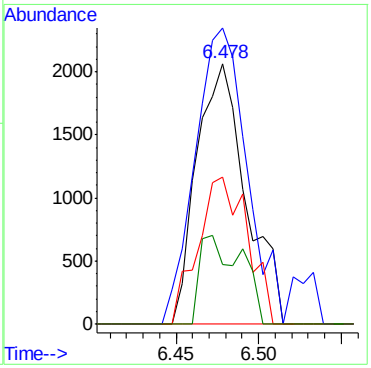


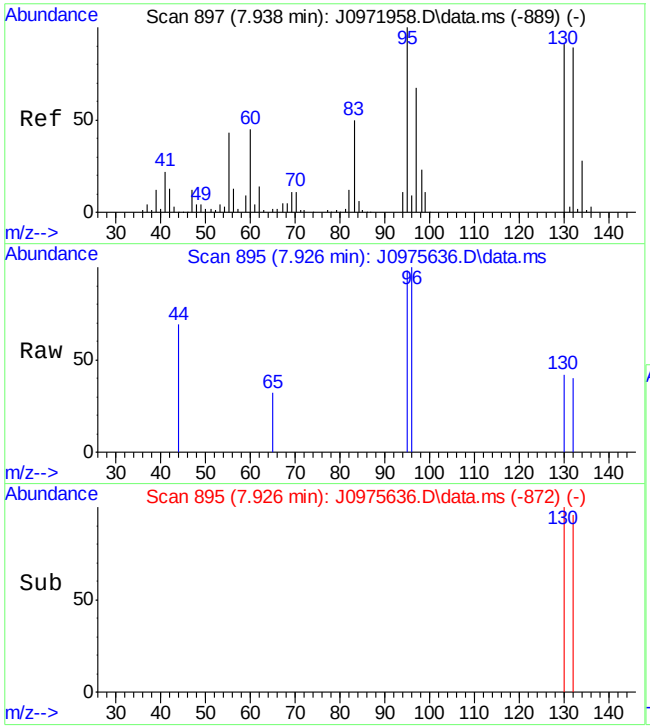


#29
cis-1,2-Dichloroethene
Concen: 0.67 ug/L
RT: 6.478 min Scan# 657
Delta R.T. 0.006 min
Lab File: J0975636.D
Acq: 5 Apr 2016 3:35 pm

Tgt Ion: 96 Resp: 4270

Ion	Ratio	Lower	Upper
96	100		
61	113.8	96.4	156.4
98	56.3	33.8	93.8
63	22.9	14.2	74.2

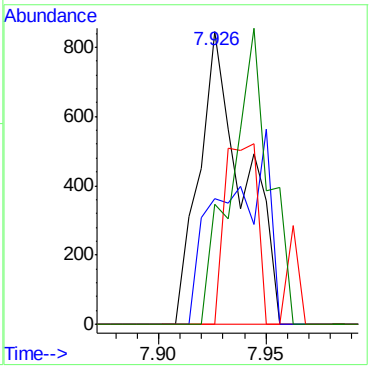




#48
Trichloroethene
Concen: 0.20 ug/L
RT: 7.926 min Scan# 895
Delta R.T. -0.012 min
Lab File: J0975636.D
Acq: 5 Apr 2016 3:35 pm

Tgt Ion: 95 Resp: 1223

Ion	Ratio	Lower	Upper
95	100		
130	42.9	63.3	123.3#
97	0.0	38.8	98.8#
132	41.1	63.7	123.7#



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\040516\
Data File : J0975637.D
Acq On : 5 Apr 2016 3:58 pm
Operator : melissam
Sample : FA32657-8 Inst : MSVOA6
Misc : MS33477,VJ5255,,,,,
ALS Vial : 19 Sample Multiplier: 1

Quant Time: Apr 06 07:52:17 2016
Quant Method : C:\msdchem\2\methods\MSJ031516.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Wed Mar 16 08:34:48 2016
Response via : Initial Calibration

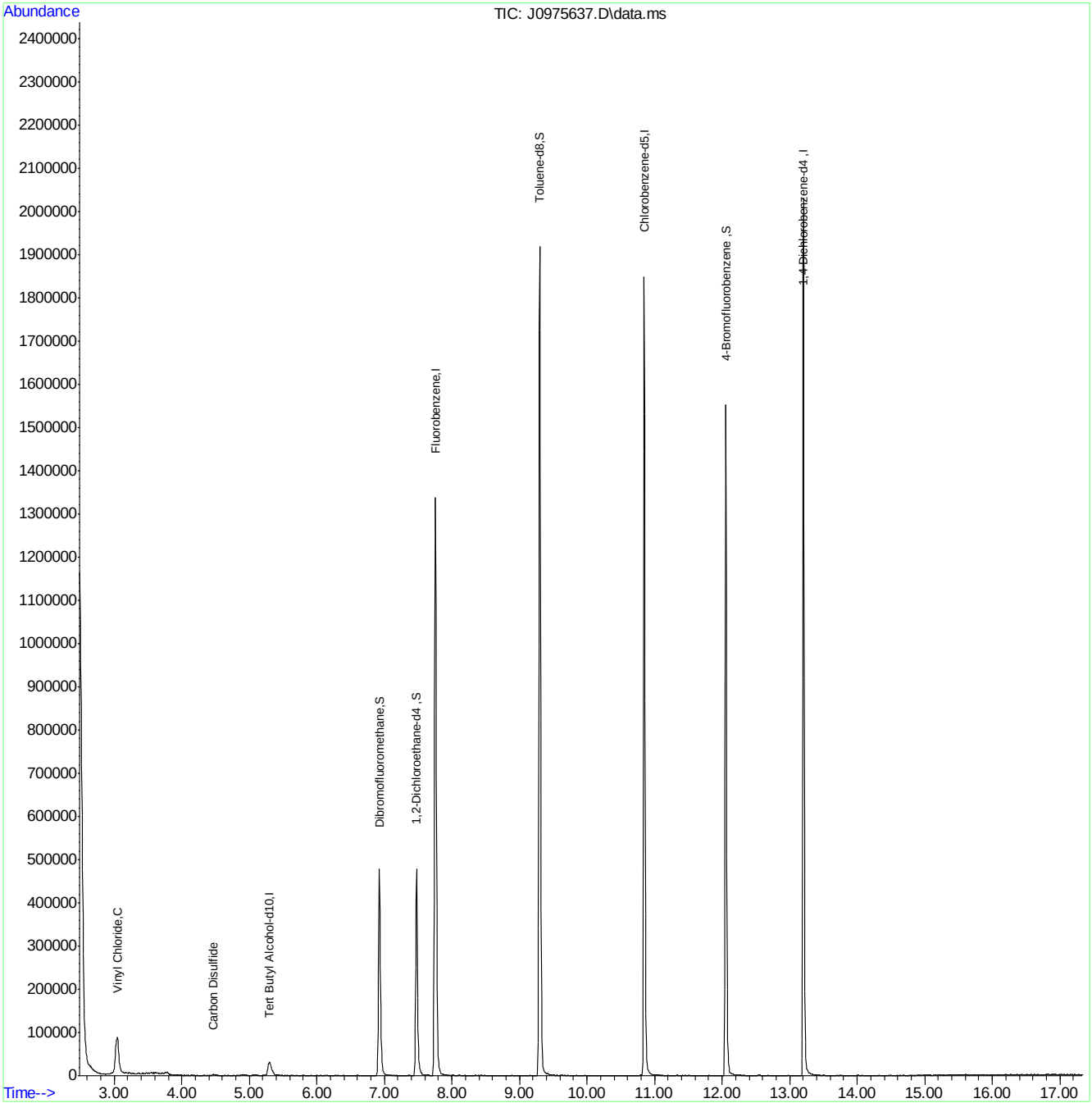
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	7.756	96	1172033	50.00	ug/L	0.00
56) Chlorobenzene-d5	10.846	117	884141	50.00	ug/L	0.00
78) 1,4-Dichlorobenzene-d4	13.207	152	449012	50.00	ug/L	0.00
106) Tert Butyl Alcohol-d10	5.298	65	60241	250.00	ug/L	0.00
System Monitoring Compounds						
36) Dibromofluoromethane	6.928	113	303240	50.99	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 101.98%			
46) 1,2-Dichloroethane-d4	7.476	65	345544	48.04	ug/L	0.00
Spiked Amount 50.000	Range 79 - 125		Recovery = 96.08%			
57) Toluene-d8	9.301	98	1151750	49.51	ug/L	0.00
Spiked Amount 50.000	Range 85 - 112		Recovery = 99.02%			
79) 4-Bromofluorobenzene	12.057	95	432106	53.21	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 106.42%			
Target Compounds						Qvalue
4) Vinyl Chloride	3.047	62	172573	21.82	ug/L	95
13) Carbon Disulfide	4.471	76	5397	0.31	ug/L	83

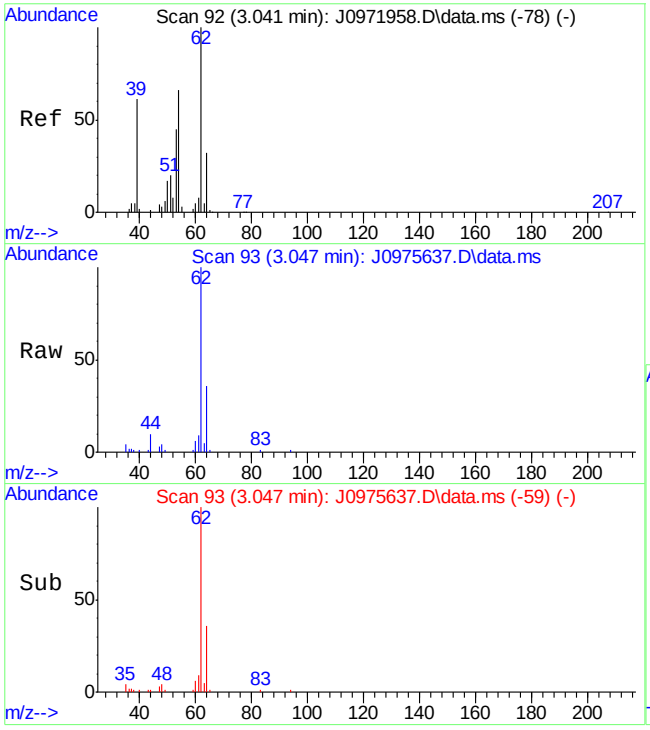
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\040516\
Data File : J0975637.D
Acq On : 5 Apr 2016 3:58 pm
Operator : melissam
Sample : FA32657-8 Inst : MSVOA6
Misc : MS33477,VJ5255,,,,,
ALS Vial : 19 Sample Multiplier: 1

Quant Time: Apr 06 07:52:17 2016
Quant Method : C:\msdchem\2\methods\MSJ031516.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Wed Mar 16 08:34:48 2016
Response via : Initial Calibration

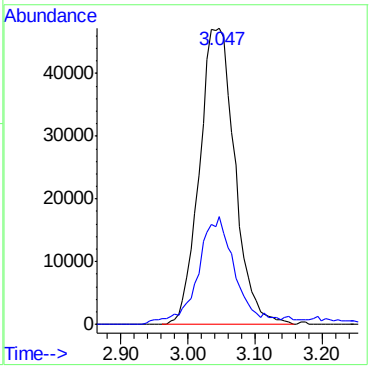


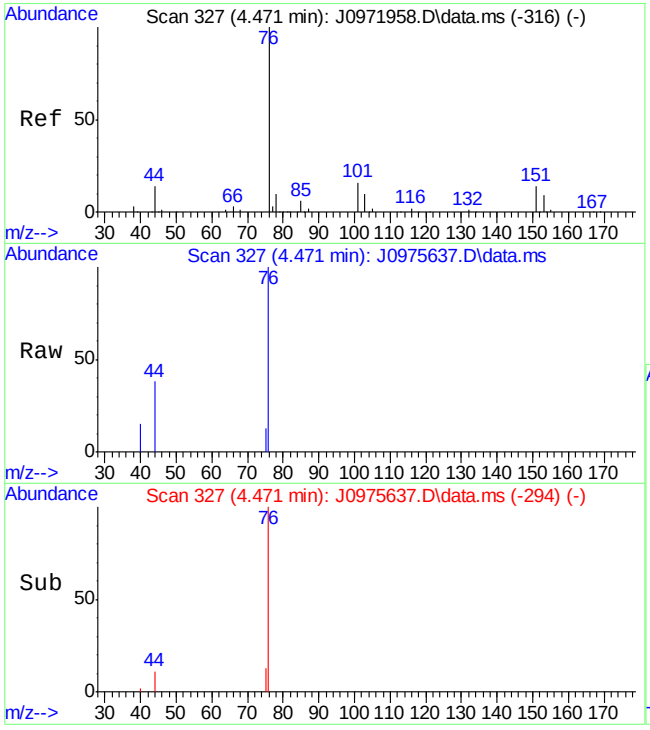


#4
Vinyl Chloride
Concen: 21.82 ug/L
RT: 3.047 min Scan# 93
Delta R.T. 0.006 min
Lab File: J0975637.D
Acq: 5 Apr 2016 3:58 pm

Tgt Ion: 62 Resp: 172573

Ion	Ratio	Lower	Upper
62	100		
64	34.8	2.2	62.2

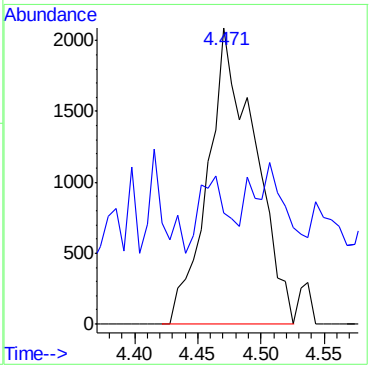




#13
Carbon Disulfide
Concen: 0.31 ug/L
RT: 4.471 min Scan# 327
Delta R.T. -0.000 min
Lab File: J0975637.D
Acq: 5 Apr 2016 3:58 pm

Tgt Ion: 76 Resp: 5397

Ion	Ratio	Lower	Upper
76	100		
44	5.1	0.0	41.6



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\040516\
Data File : J0975638.D
Acq On : 5 Apr 2016 4:23 pm
Operator : melissam
Sample : FA32657-9 Inst : MSVOA6
Misc : MS33477,VJ5255,,,,,
ALS Vial : 20 Sample Multiplier: 1

Quant Time: Apr 06 07:52:41 2016
Quant Method : C:\msdchem\2\methods\MSJ031516.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Wed Mar 16 08:34:48 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	7.756	96	1185502	50.00	ug/L	0.00
56) Chlorobenzene-d5	10.846	117	907907	50.00	ug/L	0.00
78) 1,4-Dichlorobenzene-d4	13.207	152	461778	50.00	ug/L	0.00
106) Tert Butyl Alcohol-d10	5.304	65	62504	250.00	ug/L	0.00
System Monitoring Compounds						
36) Dibromofluoromethane	6.928	113	304576	50.63	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 101.26%			
46) 1,2-Dichloroethane-d4	7.476	65	351154	48.27	ug/L	0.00
Spiked Amount 50.000	Range 79 - 125		Recovery = 96.54%			
57) Toluene-d8	9.301	98	1189014	49.78	ug/L	0.00
Spiked Amount 50.000	Range 85 - 112		Recovery = 99.56%			
79) 4-Bromofluorobenzene	12.057	95	440100	52.69	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 105.38%			
Target Compounds						Qvalue
4) Vinyl Chloride	3.047	62	449971	56.25	ug/L	97
7) Chloroethane	3.625	64	10836	2.57	ug/L	86

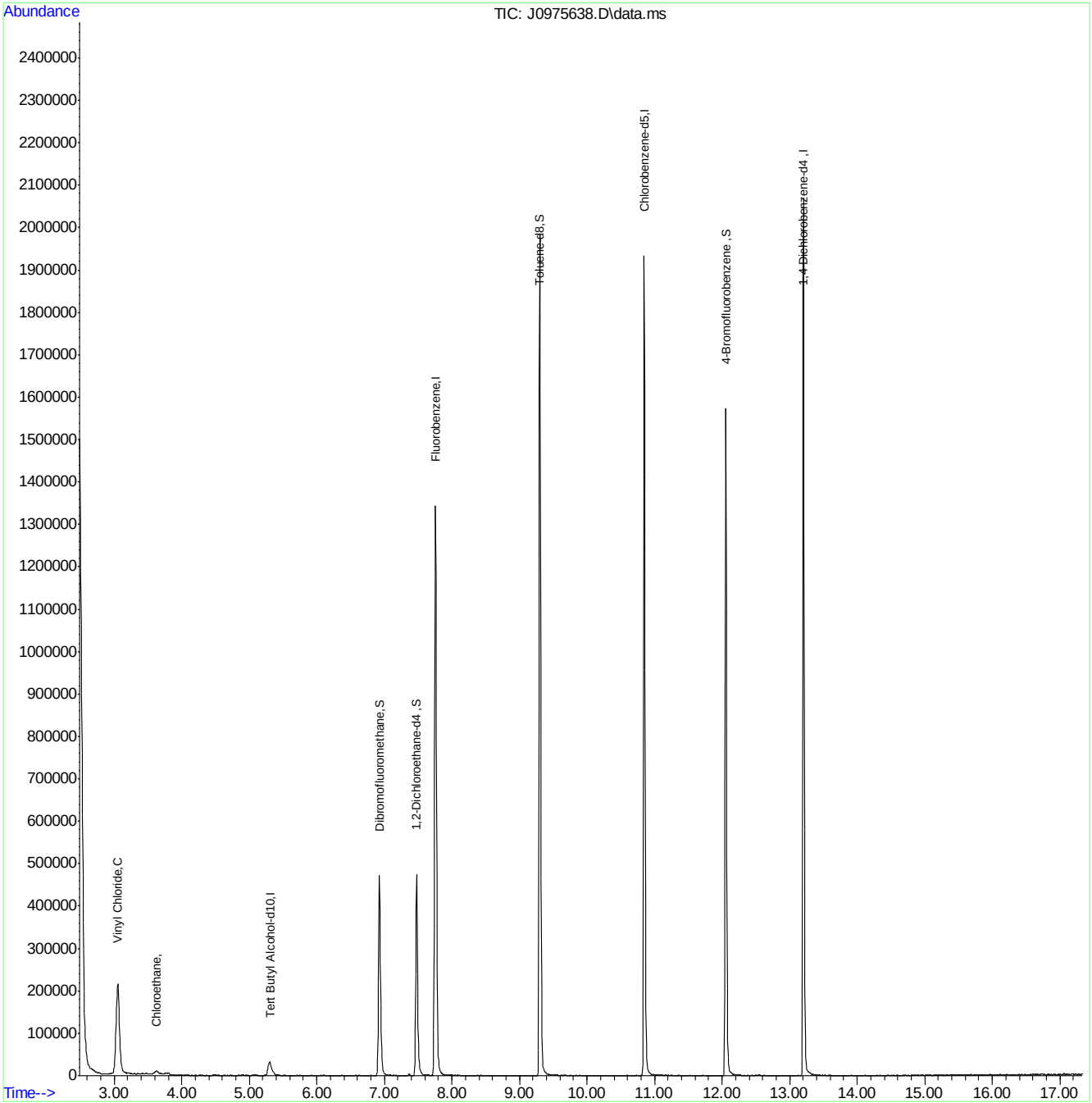
(#) = qualifier out of range (m) = manual integration (+) = signals summed

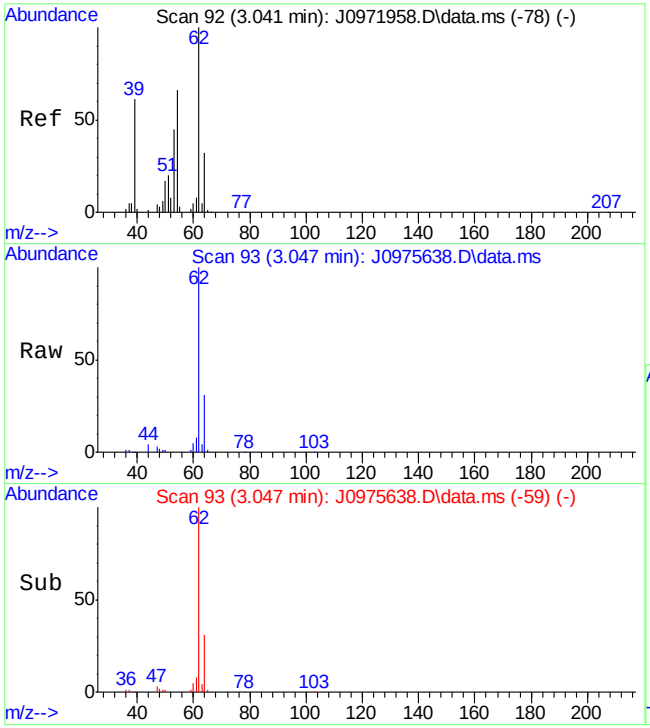
7.1.9
7

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\040516\
Data File : J0975638.D
Acq On : 5 Apr 2016 4:23 pm
Operator : melissam
Sample : FA32657-9 Inst : MSVOA6
Misc : MS33477,VJ5255,,,,,
ALS Vial : 20 Sample Multiplier: 1

Quant Time: Apr 06 07:52:41 2016
Quant Method : C:\msdchem\2\methods\MSJ031516.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Wed Mar 16 08:34:48 2016
Response via : Initial Calibration

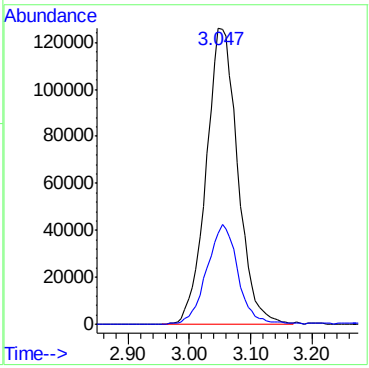


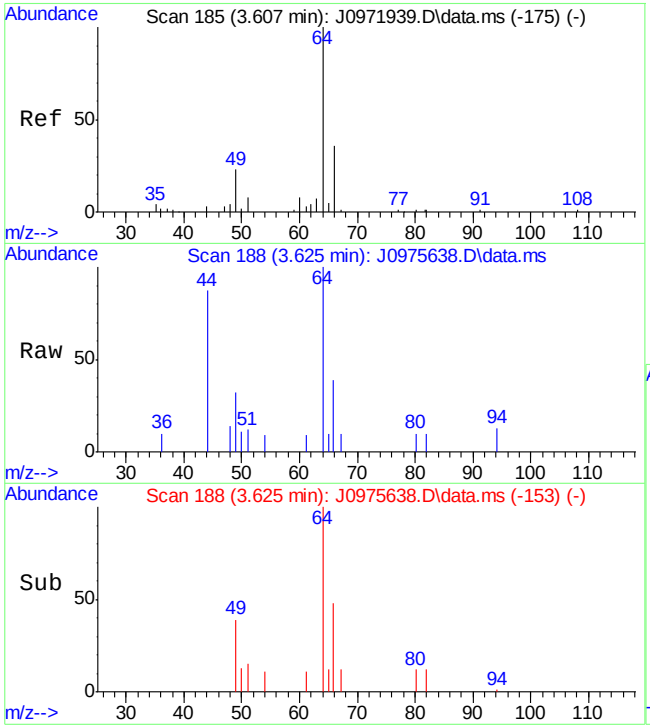


#4
Vinyl Chloride
Concen: 56.25 ug/L
RT: 3.047 min Scan# 93
Delta R.T. 0.006 min
Lab File: J0975638.D
Acq: 5 Apr 2016 4:23 pm

Tgt Ion: 62 Resp: 449971

Ion	Ratio	Lower	Upper
62	100		
64	30.8	2.2	62.2

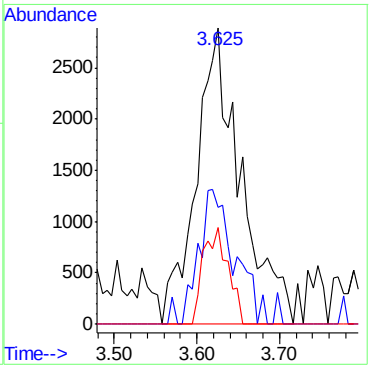




#7
Chloroethane
Concen: 2.57 ug/L
RT: 3.625 min Scan# 188
Delta R.T. 0.012 min
Lab File: J0975638.D
Acq: 5 Apr 2016 4:23 pm

Tgt Ion: 64 Resp: 10836

Ion	Ratio	Lower	Upper
64	100		
66	39.4	2.7	62.7
49	32.4	0.0	53.7



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\040516\
Data File : J0975639.D
Acq On : 5 Apr 2016 4:47 pm
Operator : melissam
Sample : FA32657-10 Inst : MSVOA6
Misc : MS33477,VJ5255,,,,,
ALS Vial : 21 Sample Multiplier: 1

Quant Time: Apr 06 07:52:58 2016
Quant Method : C:\msdchem\2\methods\MSJ031516.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Wed Mar 16 08:34:48 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	7.756	96	1200985	50.00	ug/L	0.00
56) Chlorobenzene-d5	10.846	117	911008	50.00	ug/L	0.00
78) 1,4-Dichlorobenzene-d4	13.207	152	474889	50.00	ug/L	0.00
106) Tert Butyl Alcohol-d10	5.292	65	61762	250.00	ug/L	0.00
System Monitoring Compounds						
36) Dibromofluoromethane	6.928	113	297799	48.87	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 97.74%			
46) 1,2-Dichloroethane-d4	7.476	65	344464	46.74	ug/L	0.00
Spiked Amount 50.000	Range 79 - 125		Recovery = 93.48%			
57) Toluene-d8	9.301	98	1192195	49.74	ug/L	0.00
Spiked Amount 50.000	Range 85 - 112		Recovery = 99.48%			
79) 4-Bromofluorobenzene	12.057	95	446449	51.98	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 103.96%			
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

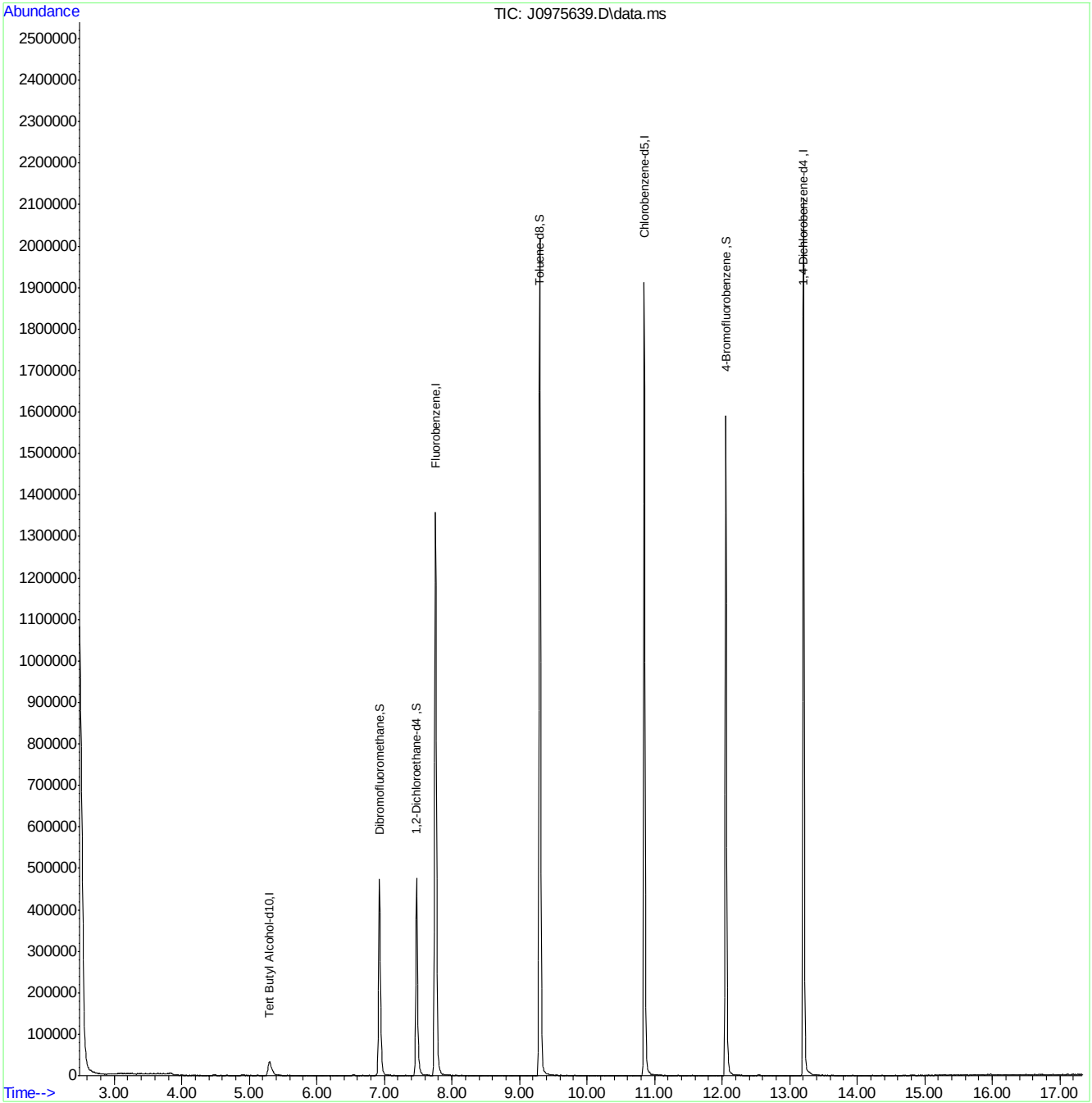
7.1.10

7

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\040516\
Data File : J0975639.D
Acq On : 5 Apr 2016 4:47 pm
Operator : melissam
Sample : FA32657-10 Inst : MSVOA6
Misc : MS33477,VJ5255,,,,,
ALS Vial : 21 Sample Multiplier: 1

Quant Time: Apr 06 07:52:58 2016
Quant Method : C:\msdchem\2\methods\MSJ031516.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Wed Mar 16 08:34:48 2016
Response via : Initial Calibration



MSJ031516.M Wed Apr 06 08:00:42 2016 Page: 2

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\040516\
Data File : J0975640.D
Acq On : 5 Apr 2016 5:11 pm
Operator : melissam
Sample : FA32657-11 Inst : MSVOA6
Misc : MS33477,VJ5255,,,,,
ALS Vial : 22 Sample Multiplier: 1

Quant Time: Apr 06 07:53:33 2016
Quant Method : C:\msdchem\2\methods\MSJ031516.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Wed Mar 16 08:34:48 2016
Response via : Initial Calibration

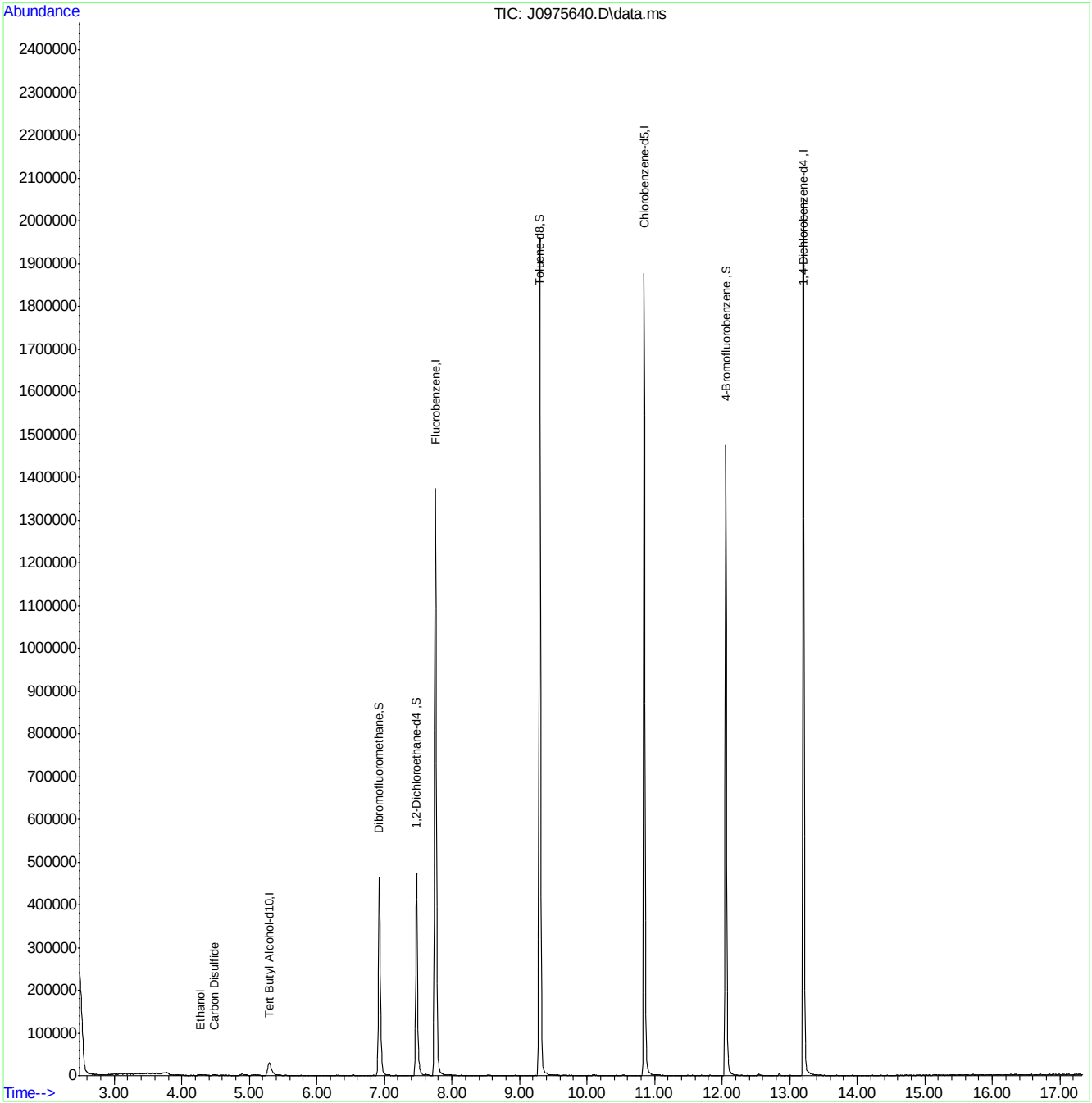
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	7.756	96	1172453	50.00	ug/L	0.00
56) Chlorobenzene-d5	10.846	117	887394	50.00	ug/L	0.00
78) 1,4-Dichlorobenzene-d4	13.206	152	467844	50.00	ug/L	0.00
106) Tert Butyl Alcohol-d10	5.292	65	56946	250.00	ug/L	0.00
System Monitoring Compounds						
36) Dibromofluoromethane	6.922	113	298531	50.18	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 100.36%			
46) 1,2-Dichloroethane-d4	7.476	65	342992	47.67	ug/L	0.00
Spiked Amount 50.000	Range 79 - 125		Recovery = 95.34%			
57) Toluene-d8	9.301	98	1170852	50.15	ug/L	0.00
Spiked Amount 50.000	Range 85 - 112		Recovery = 100.30%			
79) 4-Bromofluorobenzene	12.057	95	422179	49.89	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 99.78%			
Target Compounds						Qvalue
13) Carbon Disulfide	4.476	76	4606	0.26	ug/L	76
107) Ethanol	4.282	45	3604	129.74	ug/L	98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

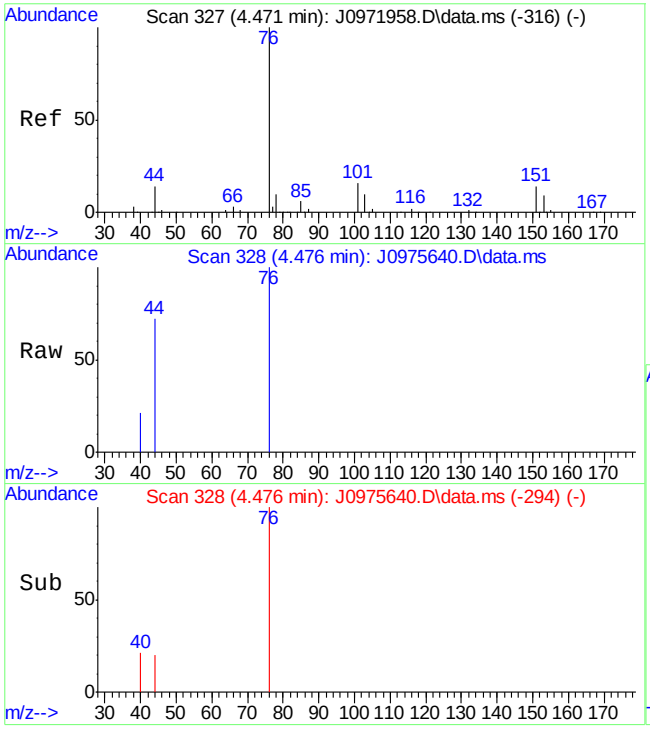
Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\040516\
Data File : J0975640.D
Acq On : 5 Apr 2016 5:11 pm
Operator : melissam
Sample : FA32657-11 Inst : MSVOA6
Misc : MS33477,VJ5255,,,,,
ALS Vial : 22 Sample Multiplier: 1

Quant Time: Apr 06 07:53:33 2016
Quant Method : C:\msdchem\2\methods\MSJ031516.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Wed Mar 16 08:34:48 2016
Response via : Initial Calibration



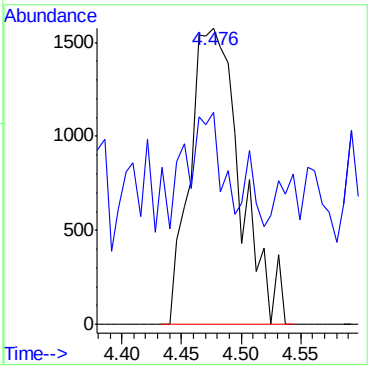
MSJ031516.M Wed Apr 06 08:00:44 2016 Page: 2

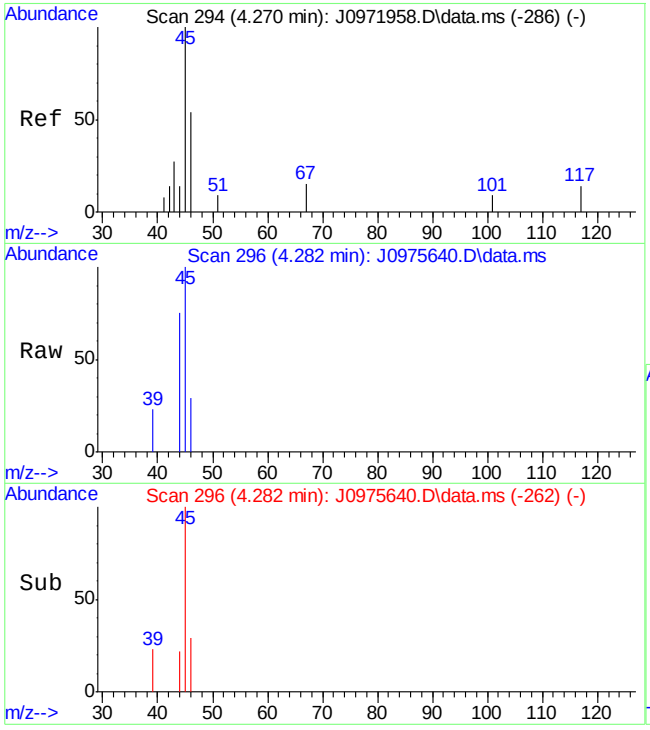


#13
Carbon Disulfide
Concen: 0.26 ug/L
RT: 4.476 min Scan# 328
Delta R.T. 0.005 min
Lab File: J0975640.D
Acq: 5 Apr 2016 5:11 pm

Tgt Ion: 76 Resp: 4606

Ion	Ratio	Lower	Upper
76	100		
44	20.9	0.0	41.6

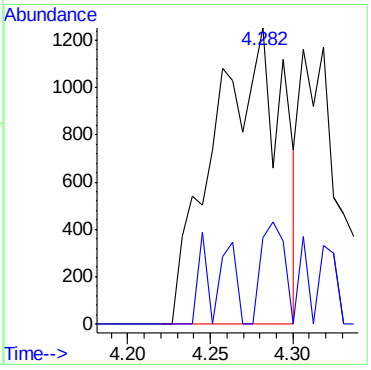




#107
Ethanol
Concen: 129.74 ug/L
RT: 4.282 min Scan# 296
Delta R.T. 0.006 min
Lab File: J0975640.D
Acq: 5 Apr 2016 5:11 pm

Tgt Ion: 45 Resp: 3604

Ion	Ratio	Lower	Upper
45	100		
46	29.2	8.2	48.2



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\040516\
Data File : J0975641.D
Acq On : 5 Apr 2016 5:34 pm
Operator : melissam
Sample : FA32657-12 Inst : MSVOA6
Misc : MS33477,VJ5255,,,,,
ALS Vial : 23 Sample Multiplier: 1

Quant Time: Apr 06 07:53:50 2016
Quant Method : C:\msdchem\2\methods\MSJ031516.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Wed Mar 16 08:34:48 2016
Response via : Initial Calibration

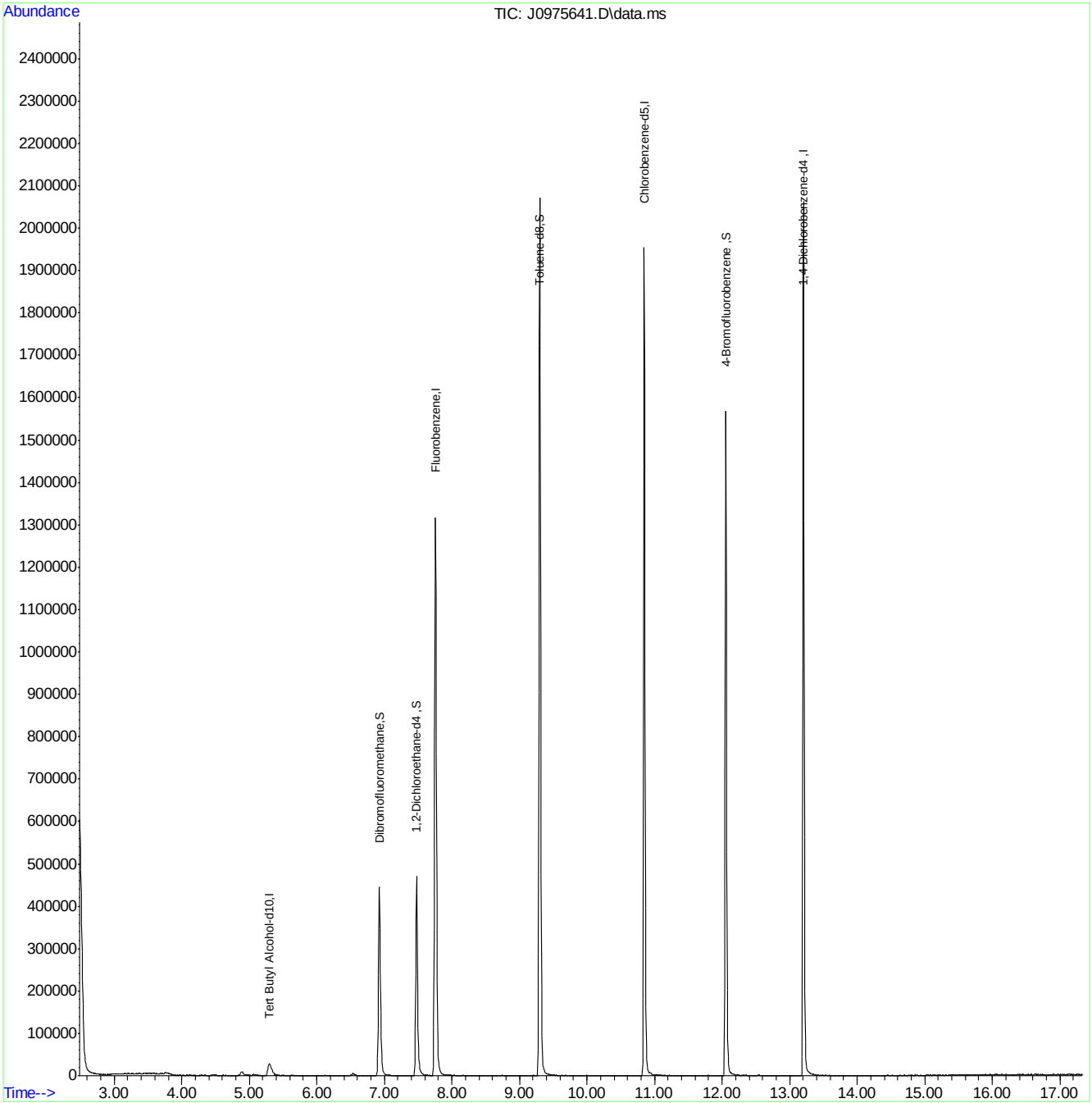
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	7.756	96	1155248	50.00	ug/L	0.00
56) Chlorobenzene-d5	10.846	117	916398	50.00	ug/L	0.00
78) 1,4-Dichlorobenzene-d4	13.207	152	459861	50.00	ug/L	0.00
106) Tert Butyl Alcohol-d10	5.298	65	53804	250.00	ug/L	0.00
System Monitoring Compounds						
36) Dibromofluoromethane	6.928	113	295242	50.37	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 100.74%			
46) 1,2-Dichloroethane-d4	7.476	65	340846	48.08	ug/L	0.00
Spiked Amount 50.000	Range 79 - 125		Recovery = 96.16%			
57) Toluene-d8	9.301	98	1215930	50.43	ug/L	0.00
Spiked Amount 50.000	Range 85 - 112		Recovery = 100.86%			
79) 4-Bromofluorobenzene	12.057	95	442040	53.14	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 106.28%			
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\040516\
Data File : J0975641.D
Acq On : 5 Apr 2016 5:34 pm
Operator : melissam
Sample : FA32657-12 Inst : MSVOA6
Misc : MS33477,VJ5255,,,,,
ALS Vial : 23 Sample Multiplier: 1

Quant Time: Apr 06 07:53:50 2016
Quant Method : C:\msdchem\2\methods\MSJ031516.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Wed Mar 16 08:34:48 2016
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\040516\
Data File : A0200026.D
Acq On : 5 Apr 2016 2:13 pm
Operator : TRANGD
Sample : FA32657-13 Inst : MSVOA10
Misc : MS33477,VA1906,,,,,
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Apr 05 15:48:12 2016
Quant Method : C:\msdchem\1\METHODS\032516oxy.m
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Tue Mar 29 09:52:15 2016
Response via : Initial Calibration

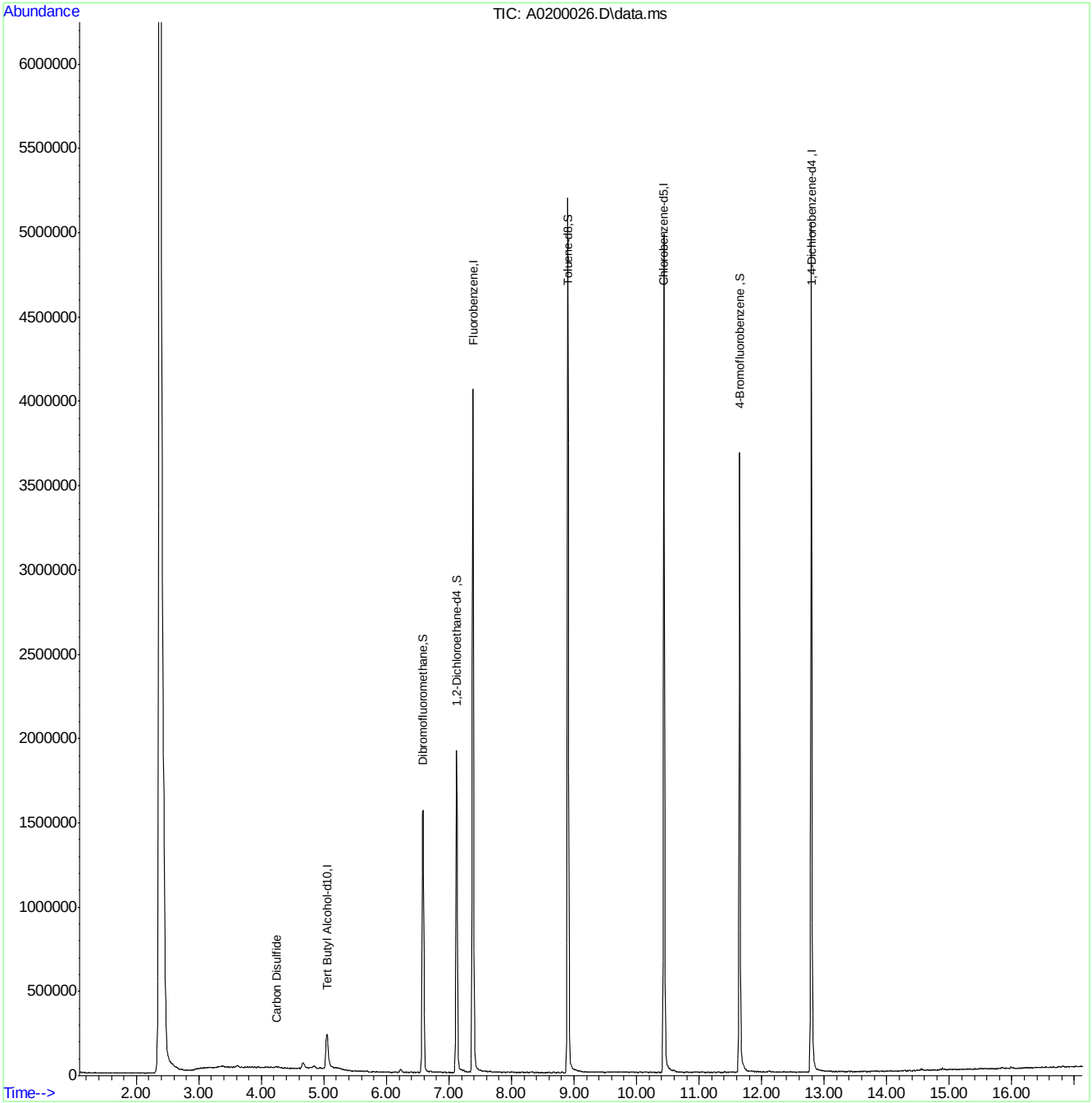
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	7.384	96	2563567	50.00	ug/L	0.00
48) Chlorobenzene-d5	10.439	117	1929738	50.00	ug/L	0.00
69) 1,4-Dichlorobenzene-d4	12.792	152	1014950	50.00	ug/L	0.00
94) Tert Butyl Alcohol-d10	5.050	65	212301	250.00	ug/L	0.00
System Monitoring Compounds						
31) Dibromofluoromethane	6.586	113	846143	52.48	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 104.96%			
39) 1,2-Dichloroethane-d4	7.122	65	1207347	54.48	ug/L	0.00
Spiked Amount 50.000	Range 79 - 125		Recovery = 108.96%			
49) Toluene-d8	8.902	98	2299052	50.93	ug/L	0.00
Spiked Amount 50.000	Range 85 - 112		Recovery = 101.86%			
70) 4-Bromofluorobenzene	11.646	95	870171	52.24	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 104.48%			
Target Compounds						Qvalue
12) Carbon Disulfide	4.245	76	8768	0.28	ug/L	# 1

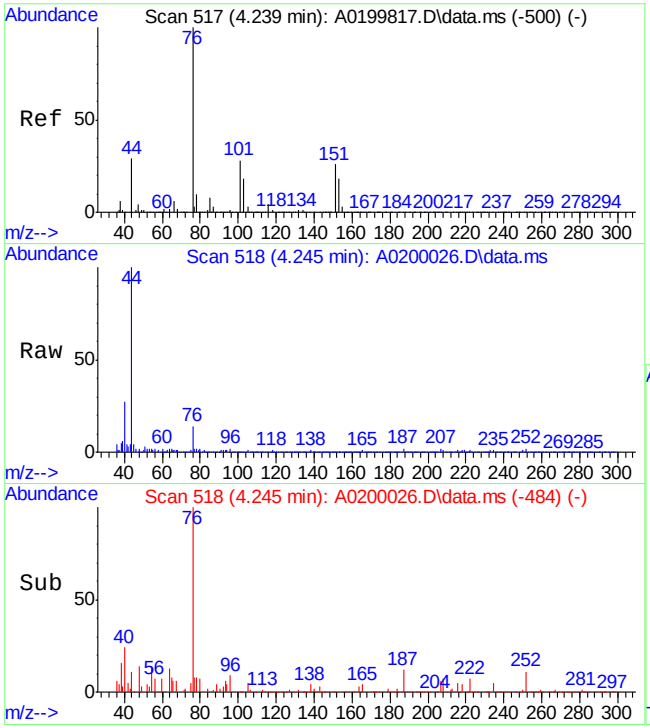
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\040516\
Data File : A0200026.D
Acq On : 5 Apr 2016 2:13 pm
Operator : TRANGD
Sample : FA32657-13 Inst : MSVOA10
Misc : MS33477,VA1906,,,,,
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Apr 05 15:48:12 2016
Quant Method : C:\msdchem\1\METHODS\032516oxy.m
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Tue Mar 29 09:52:15 2016
Response via : Initial Calibration

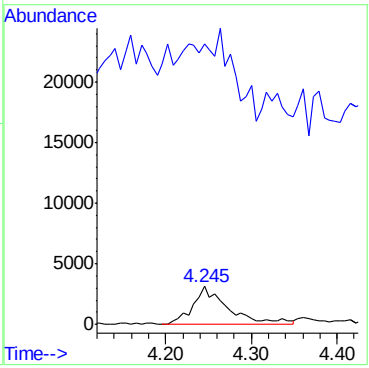




#12
Carbon Disulfide
Concen: 0.28 ug/L
RT: 4.245 min Scan# 518
Delta R.T. 0.006 min
Lab File: A0200026.D
Acq: 5 Apr 2016 2:13 pm

Tgt Ion: 76 Resp: 8768

Ion	Ratio	Lower	Upper
76	100		
44	194.5	0.0	59.3#



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\040516\
Data File : J0975621.D
Acq On : 5 Apr 2016 9:23 am
Operator : melissam
Sample : mb Inst : MSVOA6
Misc : MS33374,VJ5255,,,,,
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Apr 05 13:35:35 2016
Quant Method : C:\msdchem\2\methods\MSJ031516.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Wed Mar 16 08:34:48 2016
Response via : Initial Calibration

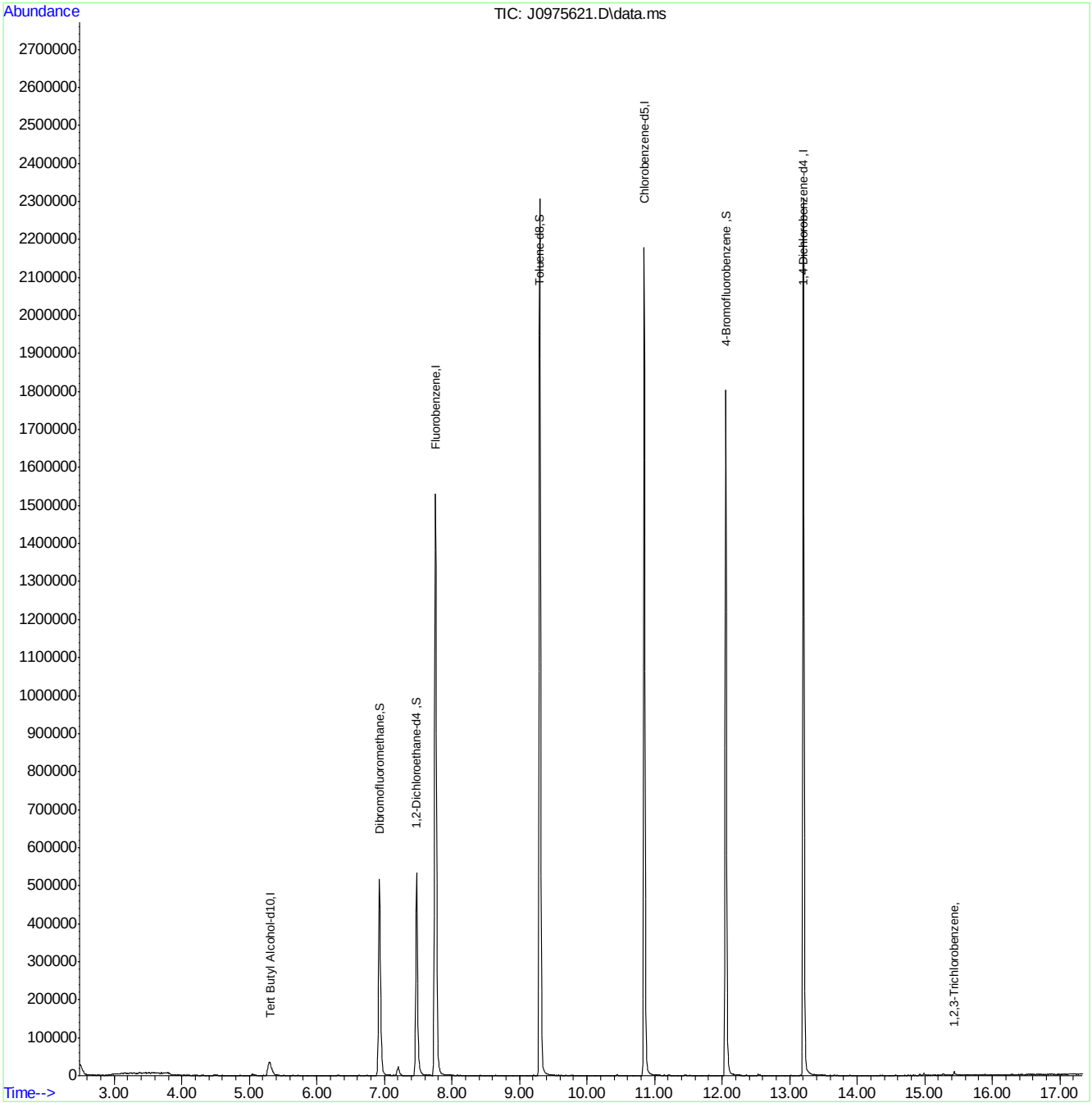
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	7.756	96	1360900	50.00	ug/L	0.00
56) Chlorobenzene-d5	10.846	117	1038558	50.00	ug/L	0.00
78) 1,4-Dichlorobenzene-d4	13.207	152	542392	50.00	ug/L	0.00
106) Tert Butyl Alcohol-d10	5.304	65	73628	250.00	ug/L	0.00
System Monitoring Compounds						
36) Dibromofluoromethane	6.928	113	342332	49.57	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 99.14%			
46) 1,2-Dichloroethane-d4	7.476	65	401847	48.12	ug/L	0.00
Spiked Amount 50.000	Range 79 - 125		Recovery = 96.24%			
57) Toluene-d8	9.301	98	1380389	50.52	ug/L	0.00
Spiked Amount 50.000	Range 85 - 112		Recovery = 101.04%			
79) 4-Bromofluorobenzene	12.057	95	519634	52.97	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 105.94%			
Target Compounds						Qvalue
105) 1,2,3-Trichlorobenzene	15.433	180	3835	0.43	ug/L	89

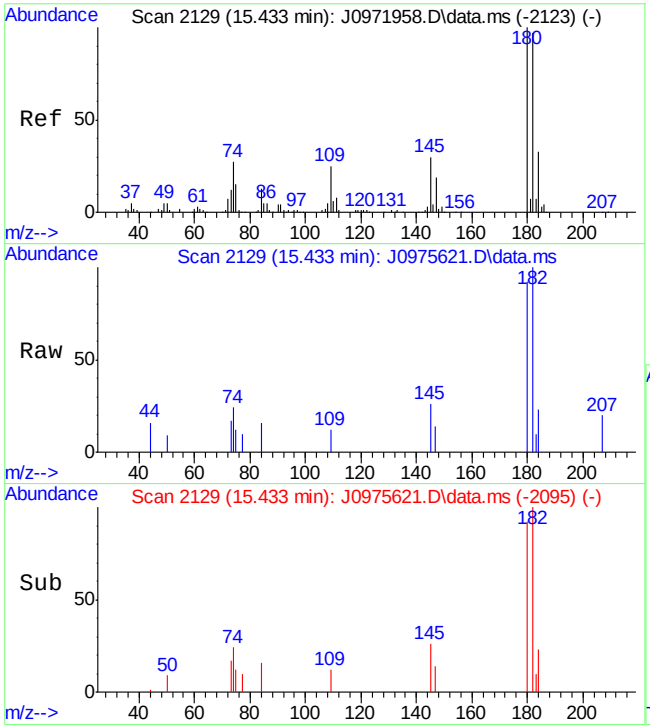
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\040516\
Data File : J0975621.D
Acq On : 5 Apr 2016 9:23 am
Operator : melissam
Sample : mb Inst : MSVOA6
Misc : MS33374,VJ5255,,,,,
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Apr 05 13:35:35 2016
Quant Method : C:\msdchem\2\methods\MSJ031516.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Wed Mar 16 08:34:48 2016
Response via : Initial Calibration

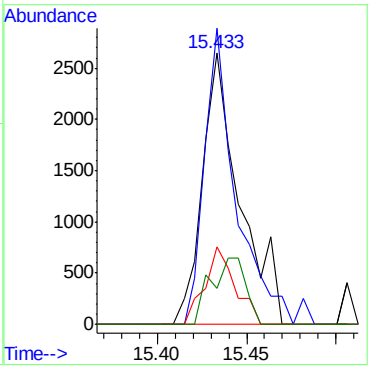




#105
1,2,3-Trichlorobenzene
Concen: 0.43 ug/L
RT: 15.433 min Scan# 2129
Delta R.T. 0.006 min
Lab File: J0975621.D
Acq: 5 Apr 2016 9:23 am

Tgt Ion:180 Resp: 3835

Ion	Ratio	Lower	Upper
180	100		
182	109.3	67.7	127.7
145	28.4	0.0	59.0
109	13.1	0.0	53.6



7.2.1

7

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\040516\
Data File : A0200021.D
Acq On : 5 Apr 2016 12:06 pm
Operator : TRANGD
Sample : MB Inst : MSVOA10
Misc : MS33459,VA1906,,,,,
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Apr 05 15:43:48 2016
Quant Method : C:\msdchem\1\METHODS\032516oxy.m
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Tue Mar 29 09:52:15 2016
Response via : Initial Calibration

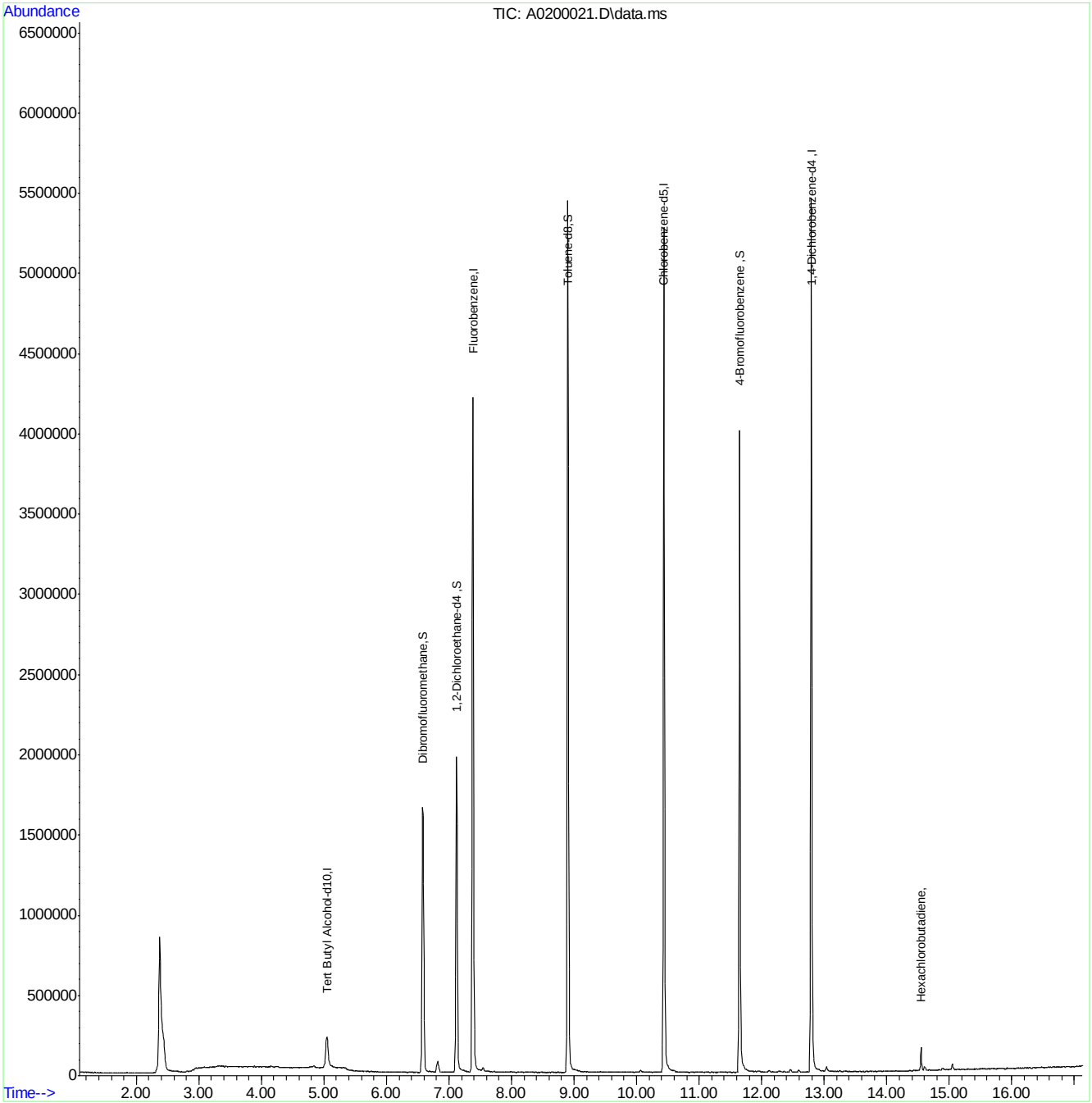
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	7.384	96	2747923	50.00	ug/L	0.00
48) Chlorobenzene-d5	10.439	117	2082064	50.00	ug/L	0.00
69) 1,4-Dichlorobenzene-d4	12.792	152	1093117	50.00	ug/L	0.00
94) Tert Butyl Alcohol-d10	5.049	65	214400	250.00	ug/L	0.00
System Monitoring Compounds						
31) Dibromofluoromethane	6.580	113	887302	51.34	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 102.68%			
39) 1,2-Dichloroethane-d4	7.122	65	1264649	53.24	ug/L	0.00
Spiked Amount 50.000	Range 79 - 125		Recovery = 106.48%			
49) Toluene-d8	8.902	98	2482767	50.98	ug/L	0.00
Spiked Amount 50.000	Range 85 - 112		Recovery = 101.96%			
70) 4-Bromofluorobenzene	11.646	95	948640	52.88	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 105.76%			
Target Compounds						Qvalue
90) Hexachlorobutadiene	14.548	225	19267	1.67	ug/L	86

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\040516\
Data File : A0200021.D
Acq On : 5 Apr 2016 12:06 pm
Operator : TRANGD
Sample : MB Inst : MSVOA10
Misc : MS33459,VA1906,,,,,
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Apr 05 15:43:48 2016
Quant Method : C:\msdchem\1\METHODS\032516oxy.m
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Tue Mar 29 09:52:15 2016
Response via : Initial Calibration



Manual Integrations APPROVED (compounds with "m" flag)
Juan Garcia
04/06/16 12:06

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\040516\
Data File : J0975620.D
Acq On : 5 Apr 2016 8:59 am
Operator : melissam
Sample : bs Inst : MSVOA6
Misc : MS33374,VJ5255,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Apr 05 09:28:03 2016
Quant Method : C:\msdchem\2\methods\MSJ031516.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Wed Mar 16 08:34:48 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	7.756	96	1440647	50.00	ug/L	0.00
56) Chlorobenzene-d5	10.846	117	1113453	50.00	ug/L	0.00
78) 1,4-Dichlorobenzene-d4	13.207	152	607584	50.00	ug/L	0.00
106) Tert Butyl Alcohol-d10	5.298	65	83554	250.00	ug/L	0.00
System Monitoring Compounds						
36) Dibromofluoromethane	6.928	113	379300	51.89	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 103.78%			
46) 1,2-Dichloroethane-d4	7.476	65	426447	48.24	ug/L	0.00
Spiked Amount 50.000	Range 79 - 125		Recovery = 96.48%			
57) Toluene-d8	9.301	98	1432015	48.88	ug/L	0.00
Spiked Amount 50.000	Range 85 - 112		Recovery = 97.76%			
79) 4-Bromofluorobenzene	12.057	95	561325	51.08	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 102.16%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	2.688	85	226524	25.54	ug/L	98
3) Chloromethane	2.901	50	252086	26.56	ug/L	97
4) Vinyl Chloride	3.047	62	283807	29.19	ug/L	97
5) 1,3-Butadiene	3.023	54	21669	3.00	ug/L	86
6) Bromomethane	3.467	94	170419	24.05	ug/L	96
7) Chloroethane	3.619	64	144581	29.55	ug/L	93
8) Trichlorofluoromethane	3.832	101	361375m	29.96	ug/L	
9) Ethyl Ether	4.124	59	126498	22.71	ug/L	92
10) 1,2-Dichlorotrifluoroe...	4.355	67	249945	29.84	ug/L	94
11) 1,1-Dichloroethene	4.398	61	299364	28.70	ug/L	94
12) Freon 113	4.465	101	180014	24.96	ug/L	98
13) Carbon Disulfide	4.477	76	580826	26.74	ug/L	98
14) Iodomethane	4.586	142	289254	25.10	ug/L	96
15) Allyl chloride	4.921	41	243156	25.22	ug/L	95
16) Methylene Chloride	5.049	49	240073	25.41	ug/L	98
17) Acetone	5.067	58	64172	148.54	ug/L	87
18) Methyl acetate	5.195	74	86834	103.21	ug/L	96
19) trans-1,2-Dichloroethene	5.231	61	281743	29.41	ug/L	99
20) Hexane	5.298	56	157391	25.60	ug/L	90
21) Methyl Tert Butyl Ether	5.341	73	434140	22.74	ug/L	80
22) Acetonitrile	5.596	40	63017	231.02	ug/L	97
23) Di-isopropyl ether	5.718	45	525555	24.04	ug/L	97
24) Chloroprene	5.870	53	264075	25.64	ug/L	98
25) 1,1-Dichloroethane	5.894	63	340350	26.61	ug/L	98
26) Acrylonitrile	5.925	53	207661	108.63	ug/L	95
27) ETBE	6.113	59	513492	23.46	ug/L	99
28) Vinyl acetate	6.107	43	1151389	103.99	ug/L	97
29) cis-1,2-Dichloroethene	6.472	96	200449	24.41	ug/L	97
30) 2,2-Dichloropropane	6.612	77	279112	27.96	ug/L	98
31) Bromochloromethane	6.691	128	86086	23.19	ug/L	92
32) Cyclohexane	6.734	56	313718	26.09	ug/L	97
33) Chloroform	6.734	83	361510	25.46	ug/L	99
34) Ethyl acetate	6.801	43	415992	93.45	ug/L	100

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\040516\
Data File : J0975620.D
Acq On : 5 Apr 2016 8:59 am
Operator : melissam
Sample : bs Inst : MSVOA6
Misc : MS33374,VJ5255,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Apr 05 09:28:03 2016
Quant Method : C:\msdchem\2\methods\MSJ031516.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Wed Mar 16 08:34:48 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
35) Tetrahydrofuran	6.922	42	26425	20.16	ug/L		86
37) Carbon Tetrachloride	6.934	117	280255m	28.40	ug/L		
38) 1,1,1-Trichloroethane	6.995	97	322410	26.55	ug/L		96
39) 2-Butanone	7.020	43	217578	116.93	ug/L		99
40) 1,1-Dichloropropene	7.105	75	268523	27.39	ug/L		97
41) tert-Butyl Formate	7.184	59	1120742	251.12	ug/L		90
42) Propionitrile	7.330	54	150682	228.24	ug/L		84
43) Methacrylonitrile	7.354	41	652294	212.32	ug/L		94
44) Benzene	7.354	78	748817	25.09	ug/L		97
45) TAME	7.433	73	436585	22.10	ug/L		99
47) 1,2-Dichloroethane	7.543	62	236740	22.66	ug/L		96
48) Trichloroethene	7.932	95	195793	25.32	ug/L		94
49) Methylcyclohexane	7.956	83	366683	28.22	ug/L		97
50) Dibromomethane	8.358	93	99798	23.12	ug/L		95
51) 1,2-Dichloropropane	8.449	63	179031	23.88	ug/L		95
52) Bromodichloromethane	8.492	83	237288	24.69	ug/L		99
53) Methyl methacrylate	8.589	41	95616	24.12	ug/L		94
54) 2-Chloroethyl vinyl ether	9.009	63	461778	121.27	ug/L		97
55) cis-1,3-Dichloropropene	9.106	75	275259	23.97	ug/L		97
58) Toluene	9.350	91	788391	24.45	ug/L		99
59) 2-Nitropropane	9.556	41	128568	100.07	ug/L		96
60) 4-Methyl-2-pentanone	9.672	43	473111	102.68	ug/L		99
61) trans-1,3-Dichloropropene	9.739	75	242356	23.92	ug/L		94
62) Tetrachloroethene	9.757	166	205192	23.80	ug/L		96
63) Ethyl methacrylate	9.836	69	151112	20.51	ug/L		95
64) 1,1,2-Trichloroethane	9.903	83	119714	22.76	ug/L		98
65) Dibromochloromethane	10.098	129	165128	24.70	ug/L		100
66) 1,3-Dichloropropane	10.183	76	233591	21.73	ug/L		97
67) 1,2-Dibromoethane	10.366	107	133170	22.33	ug/L		99
68) 2-hexanone	10.487	43	354633	116.40	ug/L		95
69) 1-Chlorohexane	10.798	91	260647	27.56	ug/L		97
70) Ethylbenzene	10.858	91	955892	26.00	ug/L		100
71) Chlorobenzene	10.864	112	533573	24.88	ug/L		96
72) 1,1,1,2-Tetrachloroethane	10.913	131	175802	25.20	ug/L		97
73) m,p-Xylene	10.998	91	1461839	49.08	ug/L		98
74) o-Xylene	11.436	91	735291	25.88	ug/L		99
75) Styrene	11.485	104	528952	23.16	ug/L		98
76) Bromoform	11.552	173	95478	22.79	ug/L		96
77) Isopropylbenzene	11.740	105	894680	27.25	ug/L		99
80) cis-1,4-Dichloro-2-butene	12.087	53	31883	16.15	ug/L		92
81) n-Propylbenzene	12.160	91	1093473	28.36	ug/L		99
82) Bromobenzene	12.185	156	218939	24.12	ug/L		99
83) 1,1,2,2-Tetrachloroethane	12.221	83	157227	21.46	ug/L		99
84) 1,3,5-Trimethylbenzene	12.343	105	757377	25.96	ug/L		99
85) 2-Chlorotoluene	12.355	91	730112	25.80	ug/L		96
86) trans-1,4-Dichloro-2-B...	12.404	53	27776	15.11	ug/L	#	83
87) 1,2,3-Trichloropropane	12.385	110	41825	22.40	ug/L		95
88) Cyclohexanone	12.446	55	58658	499.60	ug/L		90
89) 4-Chlorotoluene	12.519	91	665449	26.27	ug/L		98
90) a-Methyl Styrene	12.677	118	3461	0.42	ug/L	#	1

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\040516\
Data File : J0975620.D
Acq On : 5 Apr 2016 8:59 am
Operator : melissam
Sample : bs Inst : MSVOA6
Misc : MS33374,VJ5255,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Apr 05 09:28:03 2016
Quant Method : C:\msdchem\2\methods\MSJ031516.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Wed Mar 16 08:34:48 2016
Response via : Initial Calibration

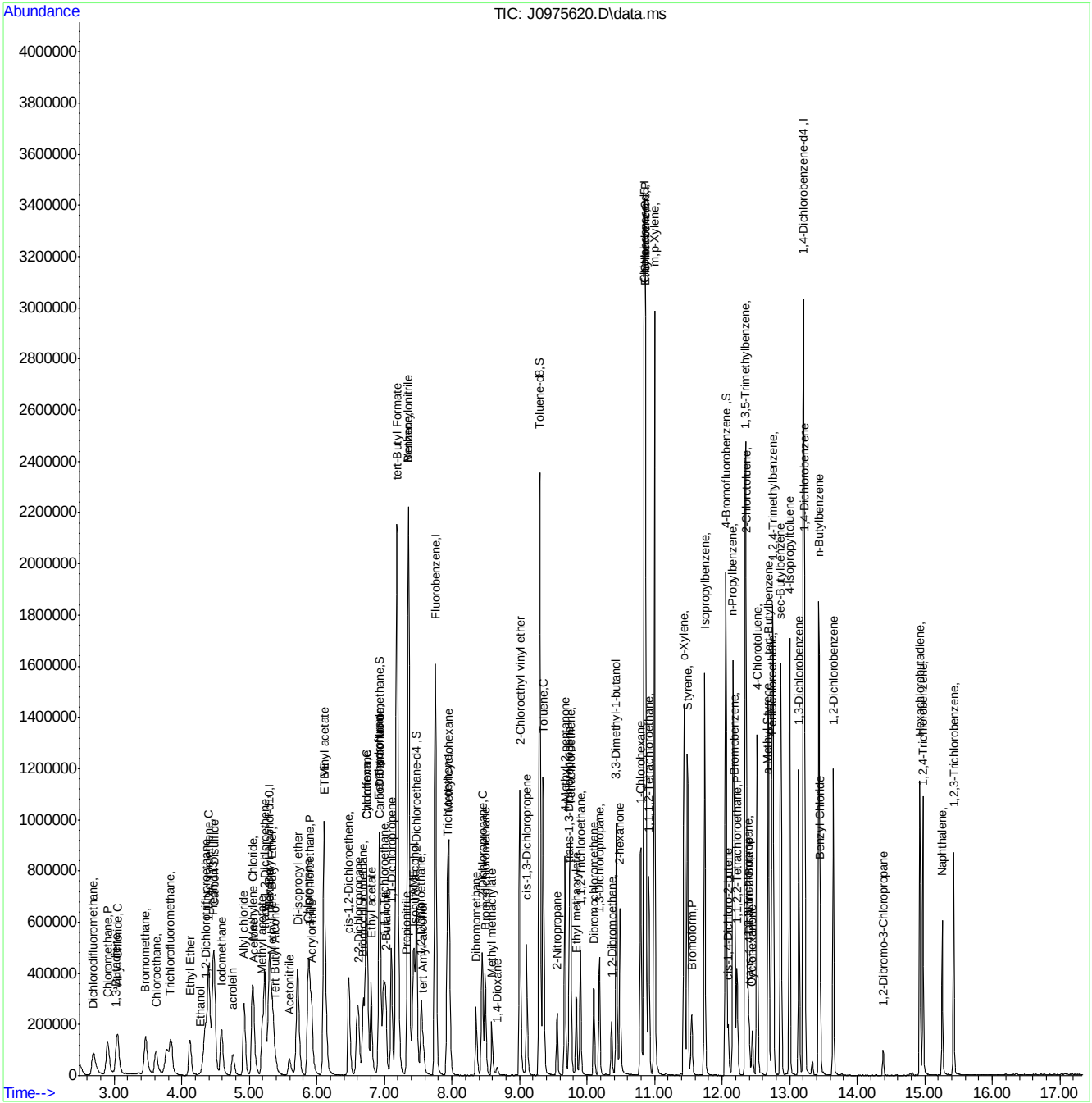
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
91) tert-Butylbenzene	12.683	91	437938	25.69	ug/L		97
92) 1,2,4-Trimethylbenzene	12.750	105	758692	26.04	ug/L		96
93) Pentachloroethane	12.738	167	136645	24.56	ug/L		95
94) sec-Butylbenzene	12.866	105	981116	27.85	ug/L		100
95) 4-Isopropyltoluene	13.000	119	807771	27.34	ug/L		99
96) 1,3-Dichlorobenzene	13.134	146	412762	25.64	ug/L		96
97) 1,4-Dichlorobenzene	13.219	146	414808	24.28	ug/L		94
98) n-Butylbenzene	13.432	92	466589	27.39	ug/L		98
99) Benzyl Chloride	13.450	126	49762	20.65	ug/L	#	84
100) 1,2-Dichlorobenzene	13.645	146	369594	23.99	ug/L		98
101) 1,2-Dibromo-3-Chloropr...	14.381	75	20566	18.56	ug/L		89
102) Hexachlorobutadiene	14.928	225	170927	24.84	ug/L		99
103) 1,2,4-Trichlorobenzene	14.977	180	255522	22.72	ug/L		97
104) Naphthalene	15.257	128	362097	19.18	ug/L		97
105) 1,2,3-Trichlorobenzene	15.427	180	202141	20.28	ug/L		97
107) Ethanol	4.282	45	22268m	574.95	ug/L		
108) acrolein	4.757	56	114769	117.48	ug/L		97
109) Tert Butyl Alcohol	5.377	59	96788	238.98	ug/L		83
110) tert Amyl alcohol	7.573	59	67553	237.80	ug/L		98
111) Isobutyl alcohol	7.452	42	64923	406.27	ug/L		94
112) 1,4-Dioxane	8.668	88	20715	624.36	ug/L		95
113) 3,3-Dimethyl-1-butanol	10.432	57	387821	1114.40	ug/L		97

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\040516\
Data File : J0975620.D
Acq On : 5 Apr 2016 8:59 am
Operator : melissam
Sample : bs Inst : MSVOA6
Misc : MS33374,VJ5255,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Apr 05 09:28:03 2016
Quant Method : C:\msdchem\2\methods\MSJ031516.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Wed Mar 16 08:34:48 2016
Response via : Initial Calibration



Manual Integration Approval Summary

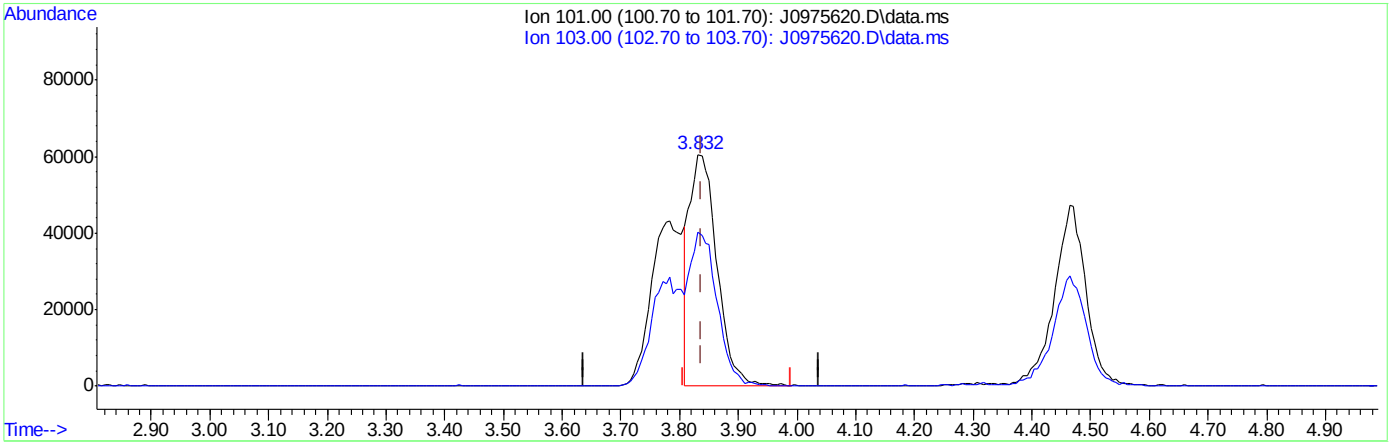
Sample Number: VJ5255-BS
Lab FileID: J0975620.D
Injection Time: 04/05/16 08:59
Method: SW846 8260B
Analyst approved: 04/05/16 09:28 Melissa Mangual
Supervisor approved: 04/06/16 12:06 Juan Garcia

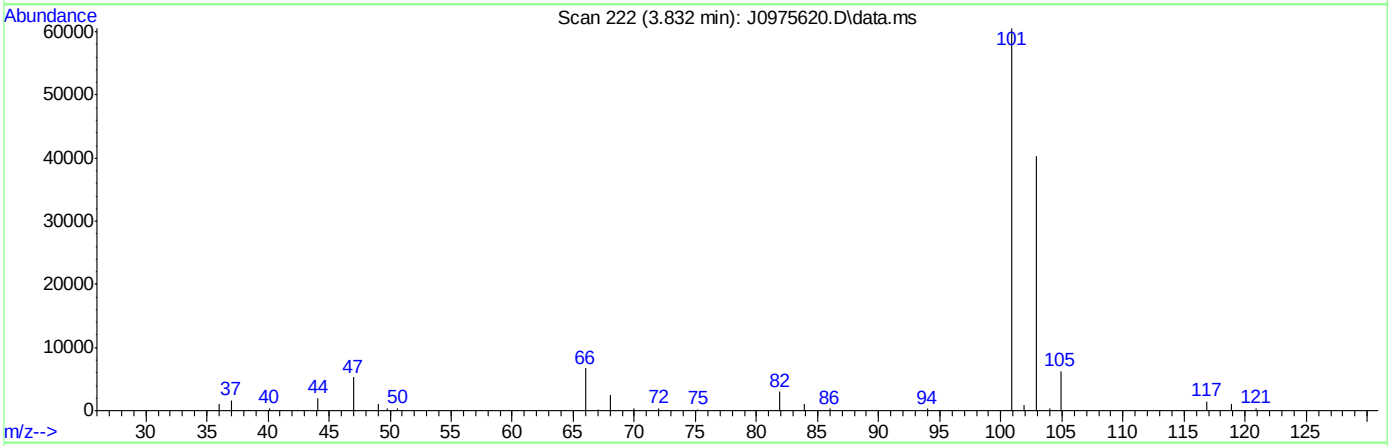
Parameter	CAS	Sig#	R.T. (min.)	Reason
Trichlorofluoromethane	75-69-4		3.83	Split peak
Ethyl Alcohol	64-17-5		4.28	Poor instrument integration
Carbon Tetrachloride	56-23-5		6.93	Overlapping peak

Quantitation Report (Qedit)

Data Path : C:\msdchem\2\data\040516\
Data File : J0975620.D
Acq On : 5 Apr 2016 8:59 am
Operator : melissam
Sample : bs Inst : MSVOA6
Misc : MS33374,VJ5255,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Apr 05 09:27:27 2016
Quant Method : C:\msdchem\2\methods\MSJ031516.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Wed Mar 16 08:34:48 2016
Response via : Initial Calibration





TIC: J0975620.D\data.ms

(8) Trichlorofluoromethane ( )

3.832min (-0.006) 16.49ug/L

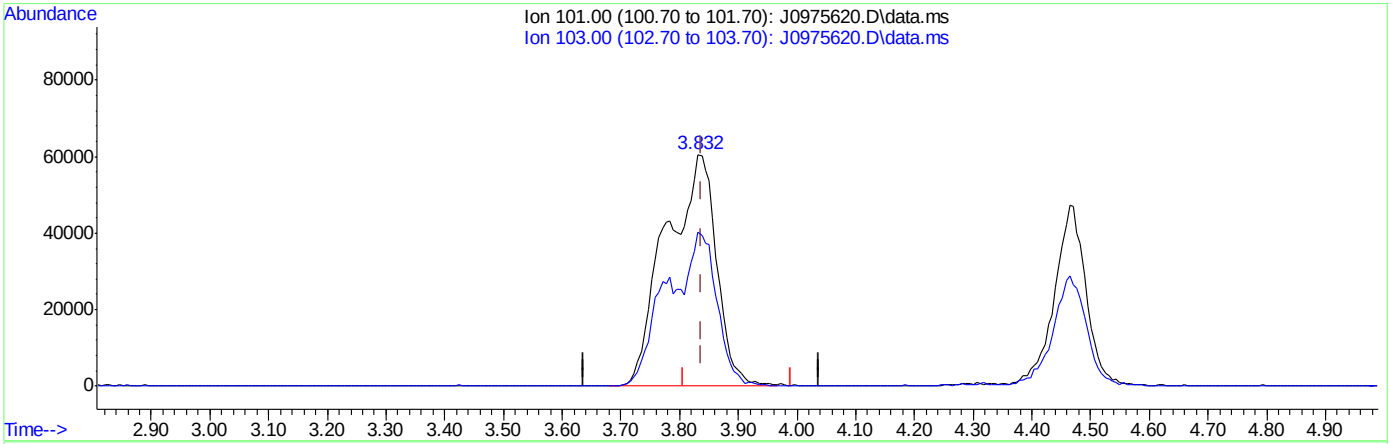
response 198843

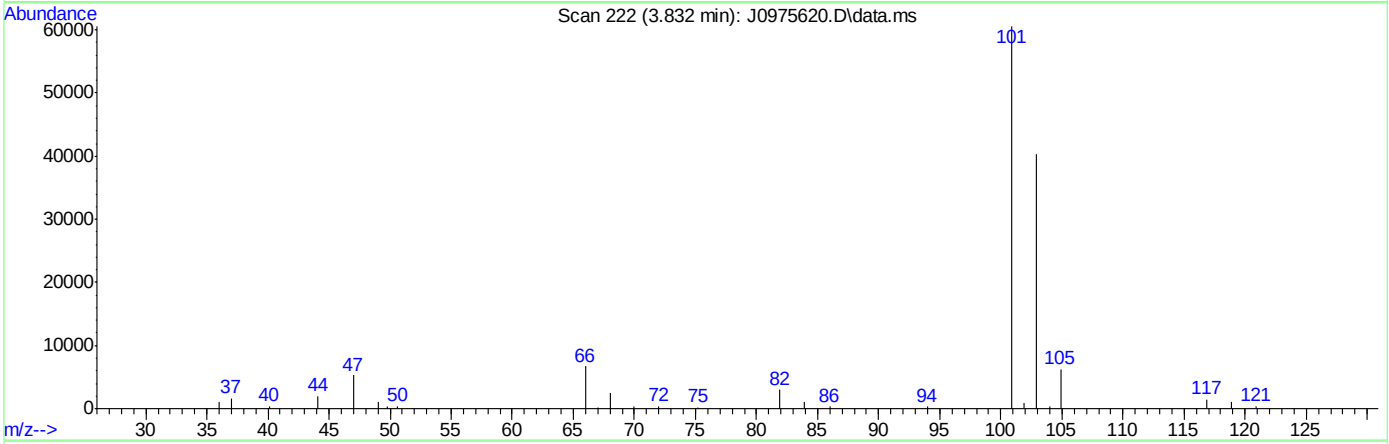
Ion	Exp%	Act%
101.00	100	100
103.00	63.50	66.53
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\2\data\040516\
Data File : J0975620.D
Acq On : 5 Apr 2016 8:59 am
Operator : melissam
Sample : bs Inst : MSVOA6
Misc : MS33374,VJ5255,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Apr 05 09:27:27 2016
Quant Method : C:\msdchem\2\methods\MSJ031516.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Wed Mar 16 08:34:48 2016
Response via : Initial Calibration





TIC: J0975620.D\data.ms

(8) Trichlorofluoromethane ( )

3.832min (-0.006) 29.96ug/L m

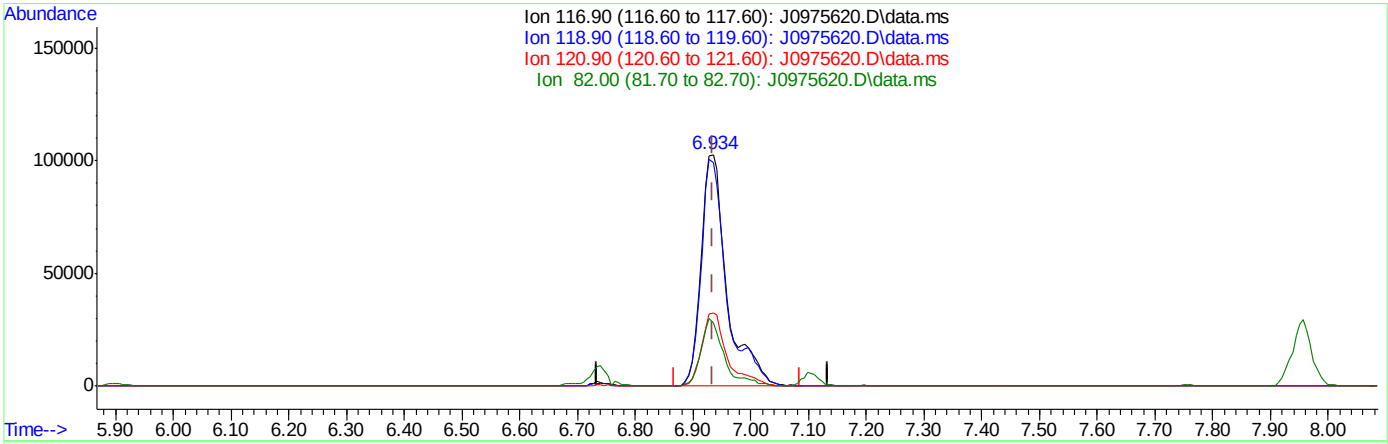
response 361375

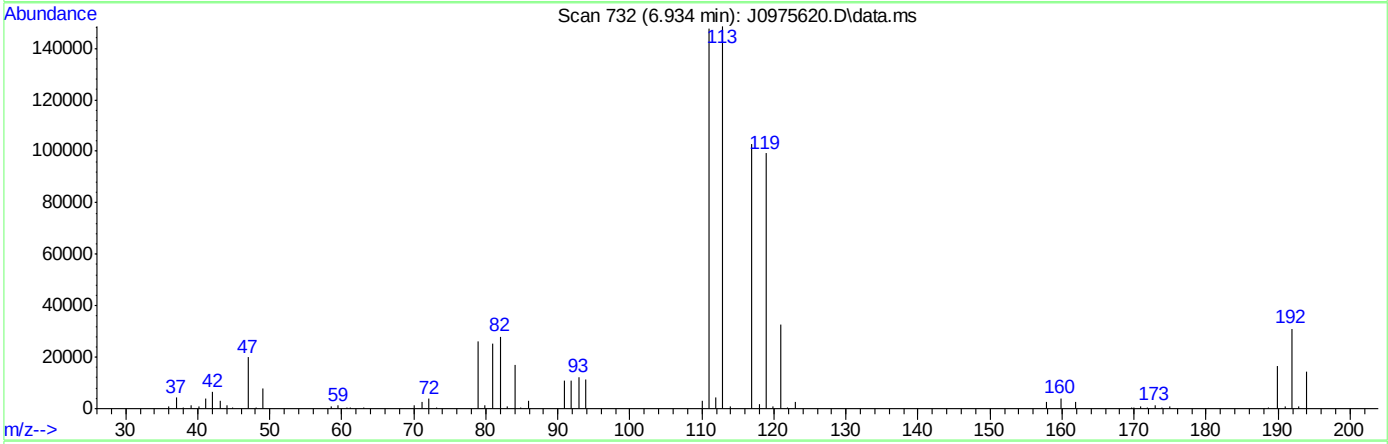
Ion	Exp%	Act%
101.00	100	100
103.00	63.50	66.53
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\2\data\040516\
Data File : J0975620.D
Acq On : 5 Apr 2016 8:59 am
Operator : melissam
Sample : bs Inst : MSVOA6
Misc : MS33374,VJ5255,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Apr 05 09:27:27 2016
Quant Method : C:\msdchem\2\methods\MSJ031516.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Wed Mar 16 08:34:48 2016
Response via : Initial Calibration





TIC: J0975620.D\data.ms

(37) Carbon Tetrachloride ( )

6.934min (-0.001) 32.46ug/L

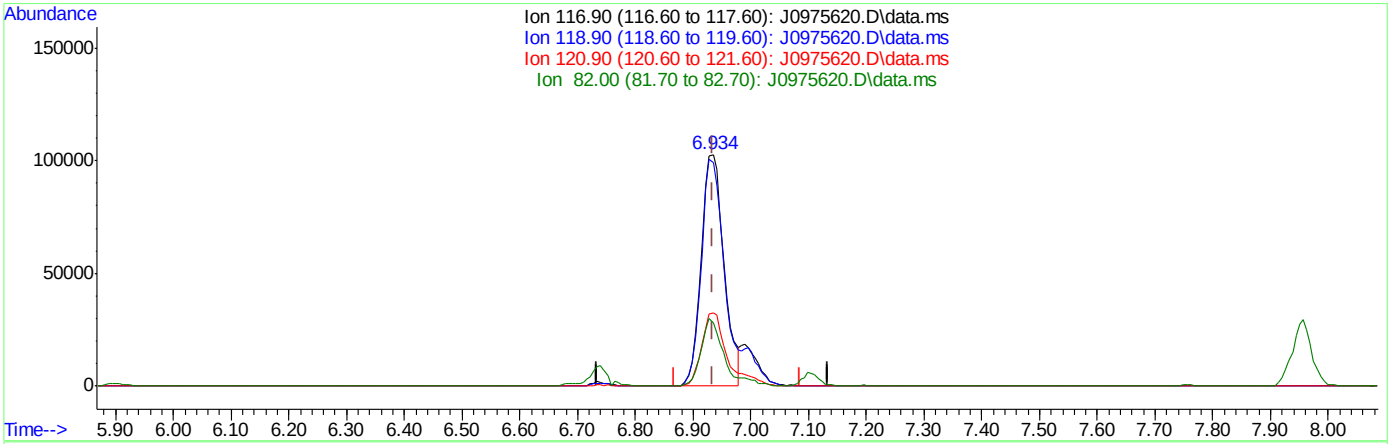
response 320374

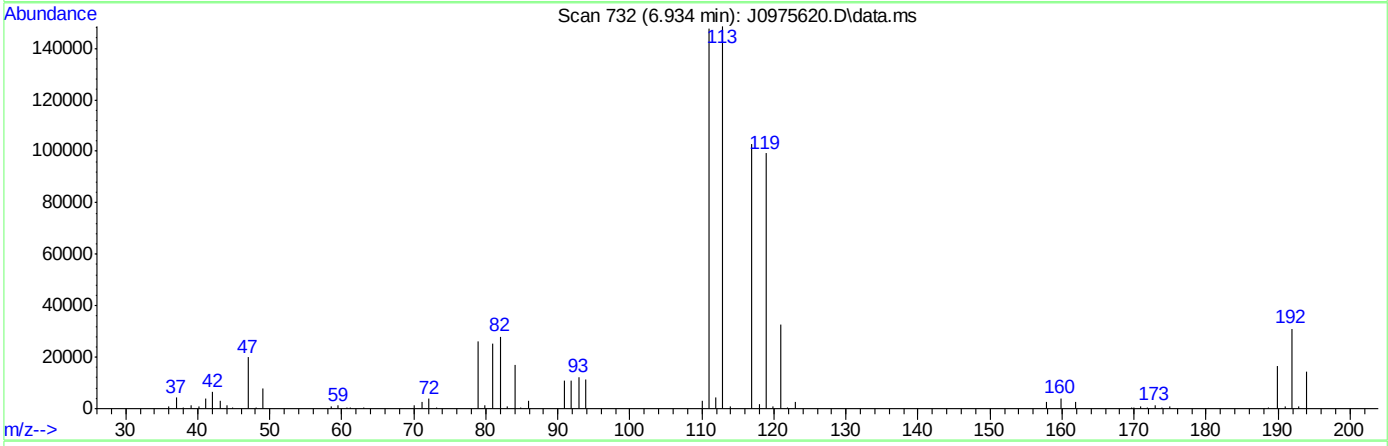
Ion	Exp%	Act%
116.90	100	100
118.90	96.80	96.54
120.90	31.80	31.86
82.00	25.40	27.16

Quantitation Report (Qedit)

Data Path : C:\msdchem\2\data\040516\
Data File : J0975620.D
Acq On : 5 Apr 2016 8:59 am
Operator : melissam
Sample : bs Inst : MSVOA6
Misc : MS33374,VJ5255,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Apr 05 09:27:27 2016
Quant Method : C:\msdchem\2\methods\MSJ031516.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Wed Mar 16 08:34:48 2016
Response via : Initial Calibration





TIC: J0975620.D\data.ms

(37) Carbon Tetrachloride ( )

6.934min (-0.001) 28.40ug/L m

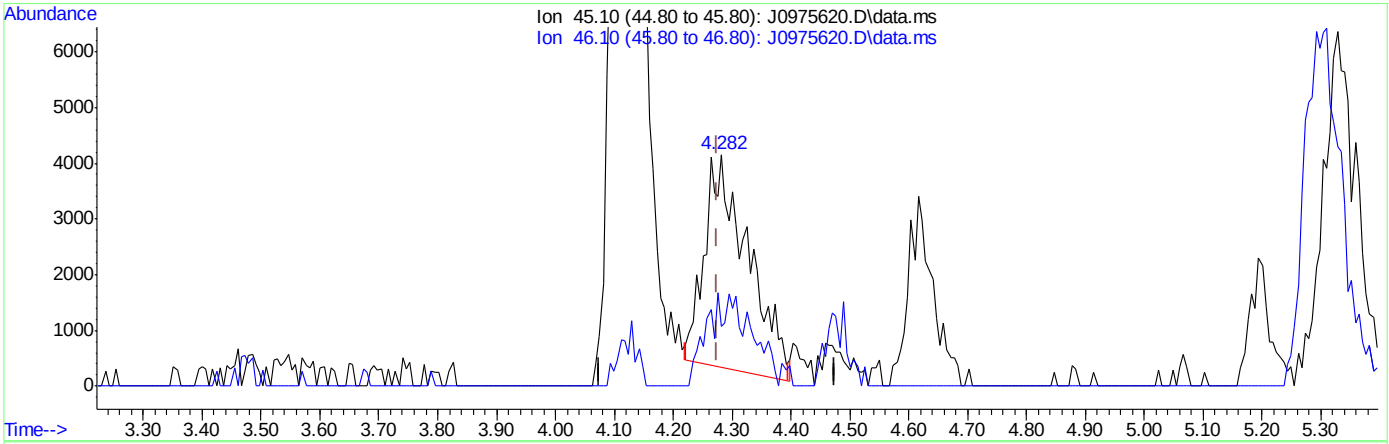
response 280255

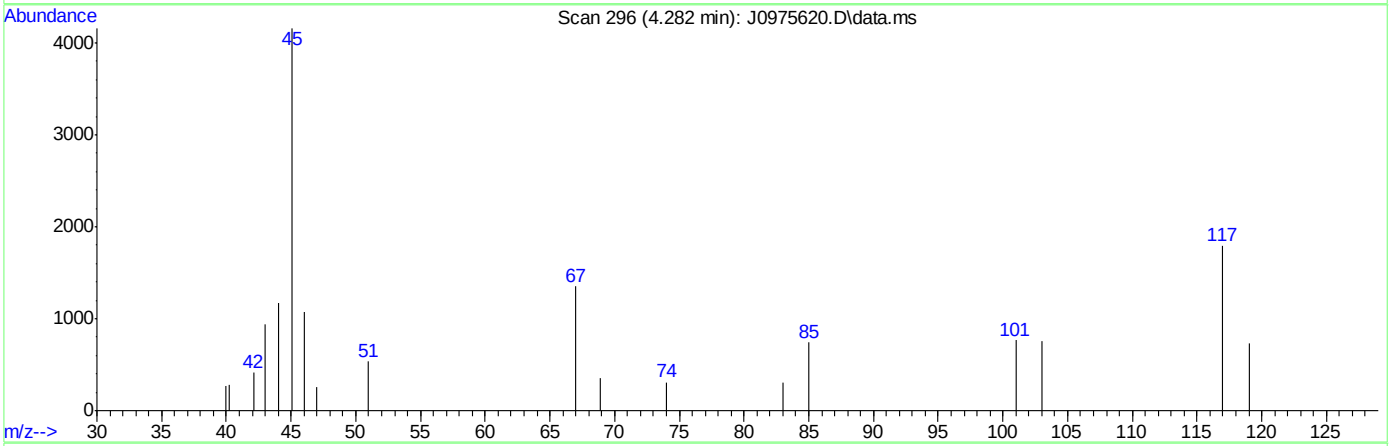
Ion	Exp%	Act%
116.90	100	100
118.90	96.80	96.54
120.90	31.80	31.86
82.00	25.40	27.16

Quantitation Report (Qedit)

Data Path : C:\msdchem\2\data\040516\
Data File : J0975620.D
Acq On : 5 Apr 2016 8:59 am
Operator : melissam
Sample : bs Inst : MSVOA6
Misc : MS33374,VJ5255,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Apr 05 09:27:27 2016
Quant Method : C:\msdchem\2\methods\MSJ031516.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Wed Mar 16 08:34:48 2016
Response via : Initial Calibration





TIC: J0975620.D\data.ms

(107) Ethanol

4.282min (+0.006) 499.24ug/L

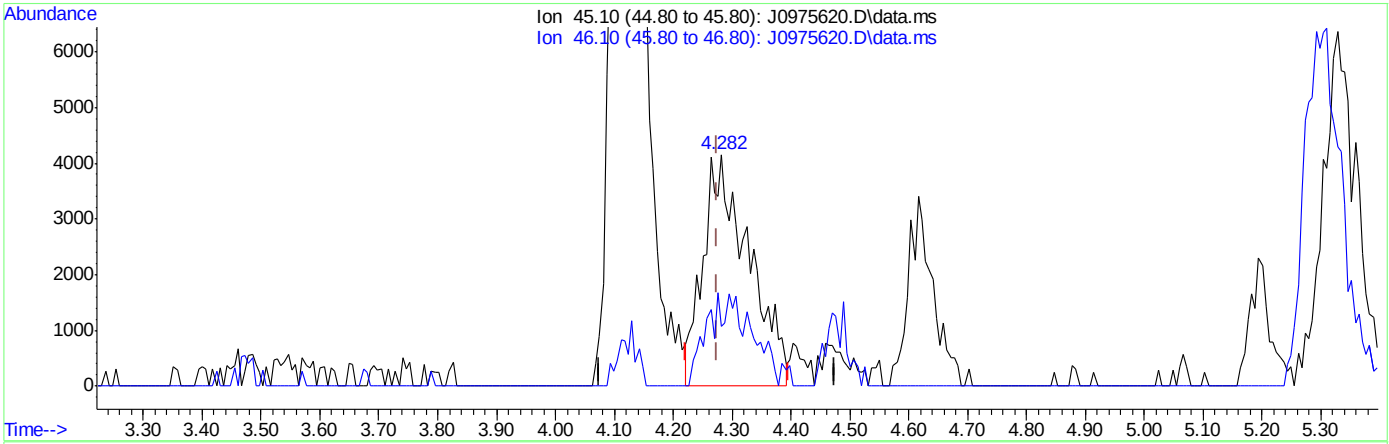
response 19508

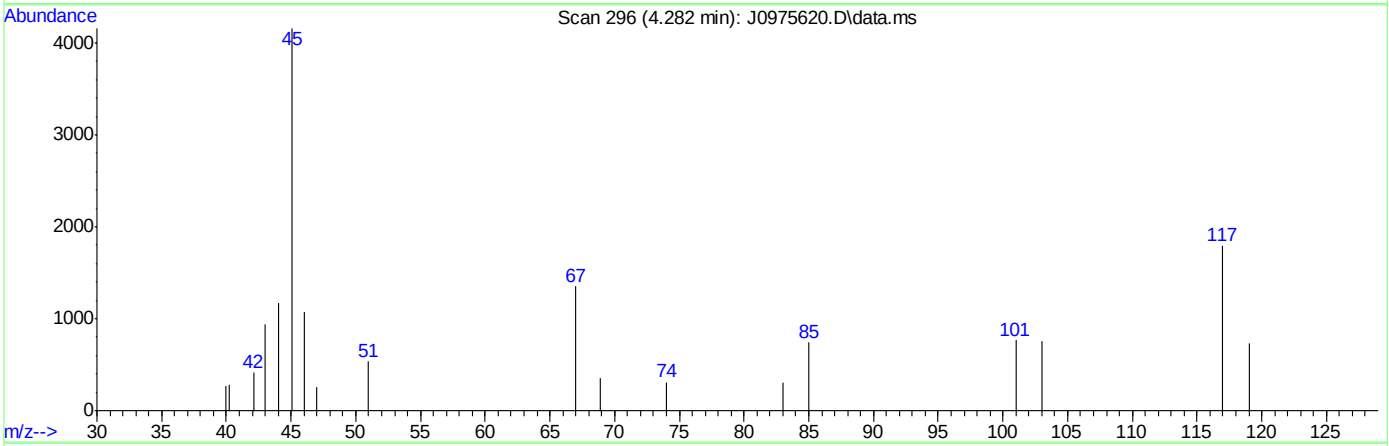
Ion	Exp%	Act%
45.10	100	100
46.10	28.20	29.17
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\2\data\040516\
Data File : J0975620.D
Acq On : 5 Apr 2016 8:59 am
Operator : melissam
Sample : bs Inst : MSVOA6
Misc : MS33374,VJ5255,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Apr 05 09:27:27 2016
Quant Method : C:\msdchem\2\methods\MSJ031516.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Wed Mar 16 08:34:48 2016
Response via : Initial Calibration





TIC: J0975620.D\data.ms

(107) Ethanol

4.282min (+0.006) 574.95ug/L m

response 22268

Ion	Exp%	Act%
45.10	100	100
46.10	28.20	25.85
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\040516\
Data File : A0200020.D
Acq On : 5 Apr 2016 11:40 am
Operator : TRANGD
Sample : BS Inst : MSVOA10
Misc : MS33459,VA1906,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Apr 05 14:59:39 2016
Quant Method : C:\msdchem\1\METHODS\032516oxy.m
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Tue Mar 29 09:52:15 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Fluorobenzene	7.384	96	2973219	50.00	ug/L		0.00
48) Chlorobenzene-d5	10.439	117	2453531	50.00	ug/L		0.00
69) 1,4-Dichlorobenzene-d4	12.792	152	1391153	50.00	ug/L		0.00
94) Tert Butyl Alcohol-d10	5.050	65	230972	250.00	ug/L		0.00
System Monitoring Compounds							
31) Dibromofluoromethane	6.580	113	939005	50.22	ug/L		0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 100.44%				
39) 1,2-Dichloroethane-d4	7.122	65	1324459	51.53	ug/L		0.00
Spiked Amount 50.000	Range 79 - 125		Recovery = 103.06%				
49) Toluene-d8	8.902	98	2810793	48.98	ug/L		0.00
Spiked Amount 50.000	Range 85 - 112		Recovery = 97.96%				
70) 4-Bromofluorobenzene	11.646	95	1138845	49.88	ug/L		0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 99.76%				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	2.593	85	533749	26.82	ug/L		99
3) Chloromethane	2.843	50	812151	25.08	ug/L		99
4) Vinyl Chloride	2.958	62	420614	26.86	ug/L		97
5) Bromomethane	3.343	94	180908	24.58	ug/L		97
6) Chloroethane	3.489	64	208589	26.53	ug/L		99
7) Trichlorofluoromethane	3.647	101	617557	26.50	ug/L		98
8) Ethyl Ether	3.946	59	342798	27.67	ug/L		94
9) 1,2-Dichlorotrifluoroe...	4.166	67	1057632	71.30	ug/L		98
10) 1,1-Dichloroethene	4.184	61	774801	28.57	ug/L		98
11) Freon 113	4.233	101	343537	25.23	ug/L		97
12) Carbon Disulfide	4.239	76	883746	24.61	ug/L		96
13) Iodomethane	4.355	142	628609	27.10	ug/L		99
14) Methylene Chloride	4.787	49	832431	28.47	ug/L		97
15) Acetone	4.836	43	747222	138.58	ug/L		98
16) Methyl acetate	4.946	43	1843416	137.99	ug/L		98
17) trans-1,2-Dichloroethene	4.952	61	652247	30.16	ug/L		98
18) Hexane	5.013	56	467698	26.85	ug/L		97
19) Methyl Tert Butyl Ether	5.043	73	825066	27.99	ug/L		90
20) Di-isopropyl ether	5.415	45	2063462	26.71	ug/L		98
21) 1,1-Dichloroethane	5.592	63	890107	27.63	ug/L		98
22) Acrylonitrile	5.647	53	857146	132.29	ug/L		98
23) ETBE	5.787	59	1378069	27.93	ug/L		99
24) Vinyl acetate	5.805	43	6972553	140.08	ug/L		100
25) cis-1,2-Dichloroethene	6.141	96	401830	27.16	ug/L		98
26) 2,2-Dichloropropane	6.251	77	416703	26.31	ug/L		98
27) Bromochloromethane	6.342	128	239022	26.57	ug/L	#	89
28) Cyclohexane	6.354	56	915726	27.60	ug/L		97
29) Chloroform	6.397	83	833376	26.67	ug/L		97
30) Tetrahydrofuran	6.574	42	124326	22.93	ug/L		93
32) Carbon Tetrachloride	6.555	117	734367	27.74	ug/L		99
33) 1,1,1-Trichloroethane	6.622	97	701170	26.88	ug/L		99
34) 2-Butanone	6.696	43	1050339	120.35	ug/L		96
35) 1,1-Dichloropropene	6.738	75	564475	26.24	ug/L		95

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\040516\
Data File : A0200020.D
Acq On : 5 Apr 2016 11:40 am
Operator : TRANGD
Sample : BS Inst : MSVOA10
Misc : MS33459,VA1906,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Apr 05 14:59:39 2016
Quant Method : C:\msdchem\1\METHODS\032516oxy.m
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Tue Mar 29 09:52:15 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
36) tert-Butyl Formate	6.830	59	3744808	272.69	ug/L	#	88
37) Benzene	6.988	78	1457096	26.96	ug/L		95
38) TAME	7.055	73	889010	24.42	ug/L		90
40) 1,2-Dichloroethane	7.189	62	823859	27.36	ug/L		99
41) Trichloroethene	7.549	95	472376	28.42	ug/L		100
42) Methylcyclohexane	7.543	83	634277	25.06	ug/L		89
43) Dibromomethane	7.976	93	265097	27.34	ug/L		97
44) 1,2-Dichloropropane	8.067	63	430664	27.60	ug/L		96
45) Bromodichloromethane	8.110	83	601471	27.68	ug/L		99
46) 2-Chloroethyl vinyl ether	8.628	63	1203585	132.28	ug/L		97
47) cis-1,3-Dichloropropene	8.720	75	578320	24.36	ug/L		92
50) Toluene	8.951	91	1607533	26.72	ug/L		99
51) 2-Nitropropane	9.183	41	737240	143.52	ug/L		99
52) 4-Methyl-2-pentanone	9.293	43	2399765	122.45	ug/L		99
53) trans-1,3-Dichloropropene	9.347	75	571609	27.06	ug/L		89
54) Tetrachloroethene	9.341	166	572408	29.75	ug/L		98
55) 1,1,2-Trichloroethane	9.512	83	285265	26.06	ug/L		96
56) Dibromochloromethane	9.701	129	455049	26.95	ug/L		100
57) 1,3-Dichloropropane	9.786	76	543730	27.11	ug/L		91
58) 1,2-Dibromoethane	9.957	107	353318	27.73	ug/L		99
59) 2-hexanone	10.103	43	1747447	124.62	ug/L		96
60) 1-Chlorohexane	10.390	91	495099	23.83	ug/L		95
61) Ethylbenzene	10.451	91	1919742	27.46	ug/L		98
62) Chlorobenzene	10.457	112	1179224	27.12	ug/L		99
63) 1,1,1,2-Tetrachloroethane	10.506	131	476933	26.64	ug/L		98
64) m,p-Xylene	10.591	91	2993354	57.14	ug/L		98
65) o-Xylene	11.030	91	1396389	24.54	ug/L		98
66) Styrene	11.085	104	1080438	24.39	ug/L		99
67) Bromoform	11.140	173	266916	24.33	ug/L		99
68) Isopropylbenzene	11.335	105	1817349	25.56	ug/L		100
71) n-Propylbenzene	11.938	91	1616171	30.63	ug/L		97
72) Bromobenzene	11.768	156	564244	27.65	ug/L		98
73) 1,1,2,2-Tetrachloroethane	11.829	83	428123	25.40	ug/L		99
74) 1,3,5-Trimethylbenzene	11.938	105	1656397	26.41	ug/L		100
75) 2-Chlorotoluene	11.938	91	1616171	30.63	ug/L		100
76) trans-1,4-Dichloro-2-B...	12.006	53	106848	17.24	ug/L		82
77) 1,2,3-Trichloropropane	11.987	110	141884	27.83	ug/L		96
78) Cyclohexanone	12.048	55	57619	114.10	ug/L		95
79) 4-Chlorotoluene	12.109	91	1444216	26.73	ug/L		100
80) tert-Butylbenzene	12.274	91	960078	25.19	ug/L		92
81) 1,2,4-Trimethylbenzene	12.347	105	1691652	26.41	ug/L		99
82) sec-Butylbenzene	12.457	105	2101897	26.51	ug/L		100
83) 4-Isopropyltoluene	12.591	119	1782067	25.38	ug/L		99
84) 1,3-Dichlorobenzene	12.719	146	1064699	29.49	ug/L		96
85) 1,4-Dichlorobenzene	12.810	146	1108436	27.05	ug/L		99
86) n-Butylbenzene	13.030	92	960810	24.73	ug/L		96
87) Benzyl Chloride	13.054	126	179135	24.63	ug/L		98
88) 1,2-Dichlorobenzene	13.243	146	992007	29.47	ug/L		99
89) 1,2-Dibromo-3-Chloropr...	13.999	75	70967	25.30	ug/L		96
90) Hexachlorobutadiene	14.548	225	406191	27.73	ug/L		93

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\040516\
Data File : A0200020.D
Acq On : 5 Apr 2016 11:40 am
Operator : TRANGD
Sample : BS Inst : MSVOA10
Misc : MS33459,VA1906,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Apr 05 14:59:39 2016
Quant Method : C:\msdchem\1\METHODS\032516oxy.m
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Tue Mar 29 09:52:15 2016
Response via : Initial Calibration

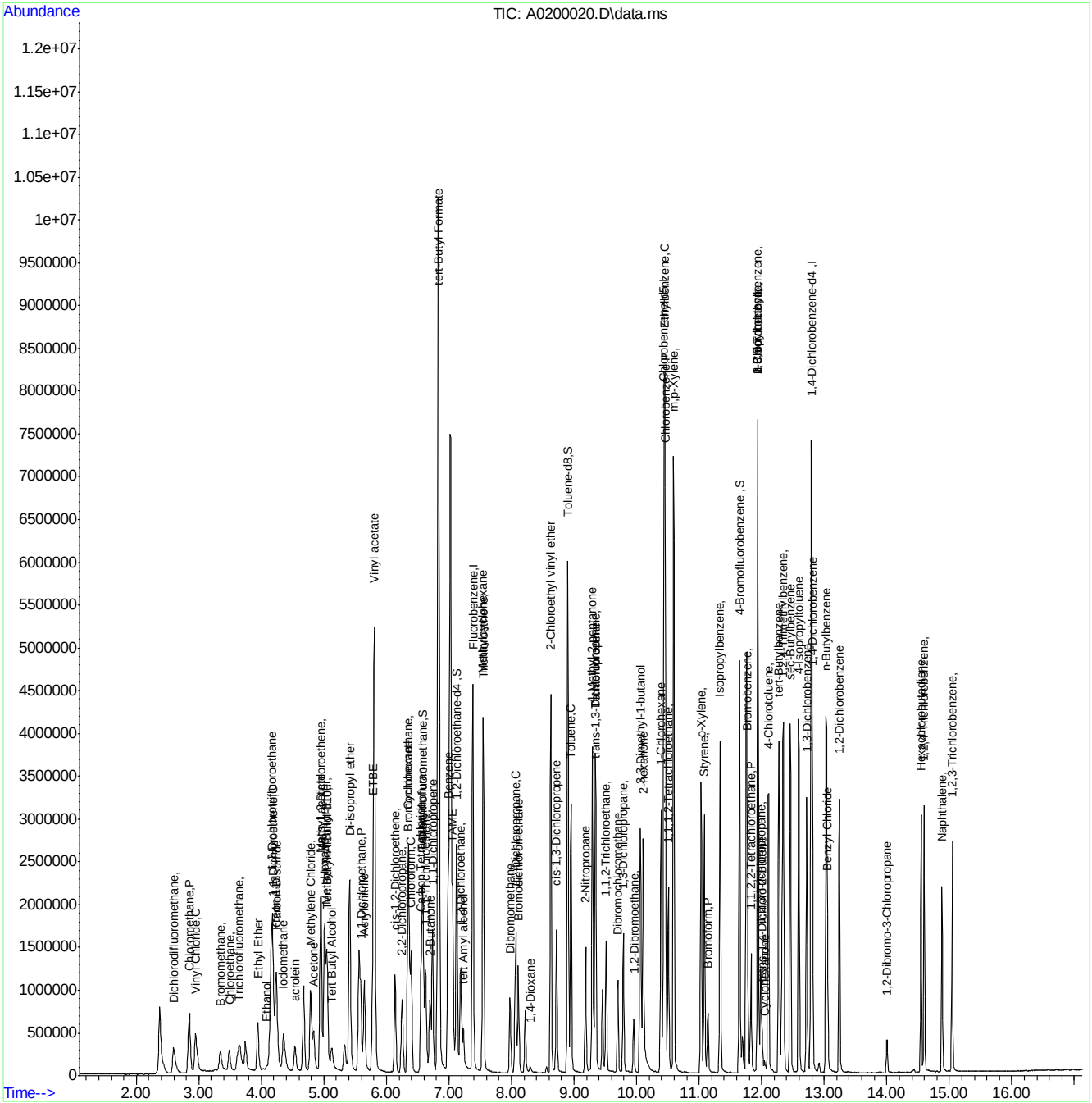
	Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
91)	1,2,4-Trichlorobenzene	14.596	180	671762	24.99	ug/L	97
92)	Naphthalene	14.883	128	1099172	23.98	ug/L	99
93)	1,2,3-Trichlorobenzene	15.048	180	609452	25.91	ug/L	98
95)	Ethanol	4.086	45	49986	362.92	ug/L	82
96)	acrolein	4.537	56	278859	144.79	ug/L	98
97)	Tert Butyl Alcohol	5.123	59	294102	286.32	ug/L	98
98)	tert Amyl alcohol	7.226	59	208046	262.55	ug/L	93
99)	1,4-Dioxane	8.299	88	36690	447.23	ug/L	93
100)	3,3-Dimethyl-1-butanol	10.061	57	1022773	1203.75	ug/L	96

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\040516\
Data File : A0200020.D
Acq On : 5 Apr 2016 11:40 am
Operator : TRANGD
Sample : BS Inst : MSVOA10
Misc : MS33459,VA1906,,,,,
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Apr 05 14:59:39 2016
Quant Method : C:\msdchem\1\METHODS\032516oxy.m
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Tue Mar 29 09:52:15 2016
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\040516\
Data File : A0200027.D
Acq On : 5 Apr 2016 2:38 pm
Operator : TRANGD
Sample : FA32549-1MS Inst : MSVOA10
Misc : MS33459,VA1906,,,,,
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Apr 05 15:00:09 2016
Quant Method : C:\msdchem\1\METHODS\032516oxy.m
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Tue Mar 29 09:52:15 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	7.384	96	2778763	50.00	ug/L	0.00
48) Chlorobenzene-d5	10.439	117	2334952	50.00	ug/L	0.00
69) 1,4-Dichlorobenzene-d4	12.792	152	1319666	50.00	ug/L	0.00
94) Tert Butyl Alcohol-d10	5.049	65	193966	250.00	ug/L	0.00
System Monitoring Compounds						
31) Dibromofluoromethane	6.580	113	886485	50.73	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 101.46%			
39) 1,2-Dichloroethane-d4	7.122	65	1261686	52.52	ug/L	0.00
Spiked Amount 50.000	Range 79 - 125		Recovery = 105.04%			
49) Toluene-d8	8.902	98	2597719	47.56	ug/L	0.00
Spiked Amount 50.000	Range 85 - 112		Recovery = 95.12%			
70) 4-Bromofluorobenzene	11.646	95	1068837	49.35	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 98.70%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	2.599	85	507512	27.28	ug/L	99
3) Chloromethane	2.842	50	692084	22.87	ug/L	97
4) Vinyl Chloride	2.958	62	369097	25.22	ug/L	98
5) Bromomethane	3.342	94	161978	23.54	ug/L	99
6) Chloroethane	3.489	64	190573	25.93	ug/L	96
7) Trichlorofluoromethane	3.653	101	578626	26.57	ug/L	100
8) Ethyl Ether	3.946	59	282061	24.36	ug/L	98
9) 1,2-Dichlorotrifluoroe...	4.159	67	386479	27.88	ug/L	98
10) 1,1-Dichloroethene	4.184	61	661953	26.11	ug/L	97
11) Freon 113	4.232	101	300599	23.62	ug/L	94
12) Carbon Disulfide	4.239	76	728418	21.71	ug/L	94
13) Iodomethane	4.354	142	551487	25.44	ug/L	99
14) Methylene Chloride	4.787	49	729642	26.70	ug/L	98
15) Acetone	4.836	43	513802	101.96	ug/L	94
16) Methyl acetate	4.946	43	1553430	124.42	ug/L	99
17) trans-1,2-Dichloroethene	4.958	61	562496	27.83	ug/L	99
18) Hexane	5.013	56	429418	26.37	ug/L	96
19) Methyl Tert Butyl Ether	5.049	73	678036	24.61	ug/L	92
20) Di-isopropyl ether	5.415	45	1660137	22.99	ug/L	97
21) 1,1-Dichloroethane	5.592	63	781424	25.96	ug/L	96
22) Acrylonitrile	5.647	53	727971	120.22	ug/L	98
23) ETBE	5.787	59	1112580	24.28	ug/L	100
24) Vinyl acetate	5.805	43	6217672	132.98	ug/L	100
25) cis-1,2-Dichloroethene	6.141	96	326020	23.58	ug/L	94
26) 2,2-Dichloropropane	6.250	77	382910	25.87	ug/L	95
27) Bromochloromethane	6.348	128	203497	24.21	ug/L	92
28) Cyclohexane	6.354	56	780010	25.28	ug/L	95
29) Chloroform	6.397	83	735987	25.20	ug/L	97
30) Tetrahydrofuran	6.573	42	97467	19.23	ug/L	96
32) Carbon Tetrachloride	6.555	117	624180	25.23	ug/L	99
33) 1,1,1-Trichloroethane	6.622	97	624462	25.61	ug/L	98
34) 2-Butanone	6.695	43	824062	101.03	ug/L	94
35) 1,1-Dichloropropene	6.738	75	479750	23.86	ug/L	94

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\040516\
Data File : A0200027.D
Acq On : 5 Apr 2016 2:38 pm
Operator : TRANGD
Sample : FA32549-1MS Inst : MSVOA10
Misc : MS33459,VA1906,,,,,
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Apr 05 15:00:09 2016
Quant Method : C:\msdchem\1\METHODS\032516oxy.m
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Tue Mar 29 09:52:15 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
36) tert-Butyl Formate	6.829	59	2588853	201.71	ug/L	89
37) Benzene	6.988	78	1268975	25.12	ug/L	93
38) TAME	7.061	73	723601	21.27	ug/L	92
40) 1,2-Dichloroethane	7.189	62	711376	25.28	ug/L	99
41) Trichloroethene	7.549	95	427898	27.54	ug/L	98
42) Methylcyclohexane	7.549	83	547246	23.14	ug/L	96
43) Dibromomethane	7.976	93	226068	24.95	ug/L	97
44) 1,2-Dichloropropane	8.067	63	363856	24.95	ug/L	93
45) Bromodichloromethane	8.110	83	505521	24.89	ug/L	99
46) 2-Chloroethyl vinyl ether	8.628	63	2631	0.31	ug/L	86
47) cis-1,3-Dichloropropene	8.719	75	388387	17.51	ug/L	91
50) Toluene	8.951	91	1372344	23.97	ug/L	99
51) 2-Nitropropane	9.183	41	586962	120.07	ug/L	99
52) 4-Methyl-2-pentanone	9.292	43	1929495	103.45	ug/L	98
53) trans-1,3-Dichloropropene	9.347	75	440786	21.93	ug/L	86
54) Tetrachloroethene	9.341	166	446061	24.36	ug/L	99
55) 1,1,2-Trichloroethane	9.512	83	237562	22.80	ug/L	94
56) Dibromochloromethane	9.701	129	361190	22.48	ug/L	98
57) 1,3-Dichloropropane	9.786	76	443849	23.25	ug/L	85
58) 1,2-Dibromoethane	9.957	107	294970	24.32	ug/L	100
59) 2-hexanone	10.109	43	1402049	105.07	ug/L	97
60) 1-Chlorohexane	10.390	91	404284	20.45	ug/L	89
61) Ethylbenzene	10.451	91	1686323	25.34	ug/L	96
62) Chlorobenzene	10.457	112	1019295	24.63	ug/L	99
63) 1,1,1,2-Tetrachloroethane	10.506	131	405167	23.78	ug/L	97
64) m,p-Xylene	10.591	91	2593069	52.01	ug/L	99
65) o-Xylene	11.030	91	1140180	21.05	ug/L	100
66) Styrene	11.085	104	914608	21.69	ug/L	99
67) Bromoform	11.140	173	202577	19.40	ug/L	98
68) Isopropylbenzene	11.335	105	1519047	22.45	ug/L	99
71) n-Propylbenzene	11.938	91	1388147	27.73	ug/L	95
72) Bromobenzene	11.768	156	494765	25.56	ug/L	95
73) 1,1,2,2-Tetrachloroethane	11.829	83	362101	22.65	ug/L	98
74) 1,3,5-Trimethylbenzene	11.938	105	1410190	23.70	ug/L	98
75) 2-Chlorotoluene	11.938	91	1388147	27.73	ug/L	100
76) trans-1,4-Dichloro-2-B...	12.011	53	52016	8.85	ug/L	93
77) 1,2,3-Trichloropropane	11.987	110	119006	24.61	ug/L	96
78) Cyclohexanone	12.048	55	48243	100.71	ug/L	94
79) 4-Chlorotoluene	12.109	91	1207664	23.56	ug/L	100
80) tert-Butylbenzene	12.274	91	803135	22.21	ug/L	90
81) 1,2,4-Trimethylbenzene	12.347	105	1448948	23.85	ug/L	99
82) sec-Butylbenzene	12.456	105	1797331	23.90	ug/L	98
83) 4-Isopropyltoluene	12.591	119	1487073	22.33	ug/L	97
84) 1,3-Dichlorobenzene	12.719	146	915752	26.74	ug/L	97
85) 1,4-Dichlorobenzene	12.810	146	964003	24.80	ug/L	99
86) n-Butylbenzene	13.029	92	805808	21.86	ug/L	96
87) Benzyl Chloride	13.054	126	144296	20.91	ug/L	95
88) 1,2-Dichlorobenzene	13.243	146	835750	26.17	ug/L	98
89) 1,2-Dibromo-3-Chloropr...	13.999	75	55992	21.04	ug/L	95
90) Hexachlorobutadiene	14.547	225	324780	23.37	ug/L	91

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\040516\
Data File : A0200027.D
Acq On : 5 Apr 2016 2:38 pm
Operator : TRANGD
Sample : FA32549-1MS Inst : MSVOA10
Misc : MS33459,VA1906,,,,,
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Apr 05 15:00:09 2016
Quant Method : C:\msdchem\1\METHODS\032516oxy.m
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Tue Mar 29 09:52:15 2016
Response via : Initial Calibration

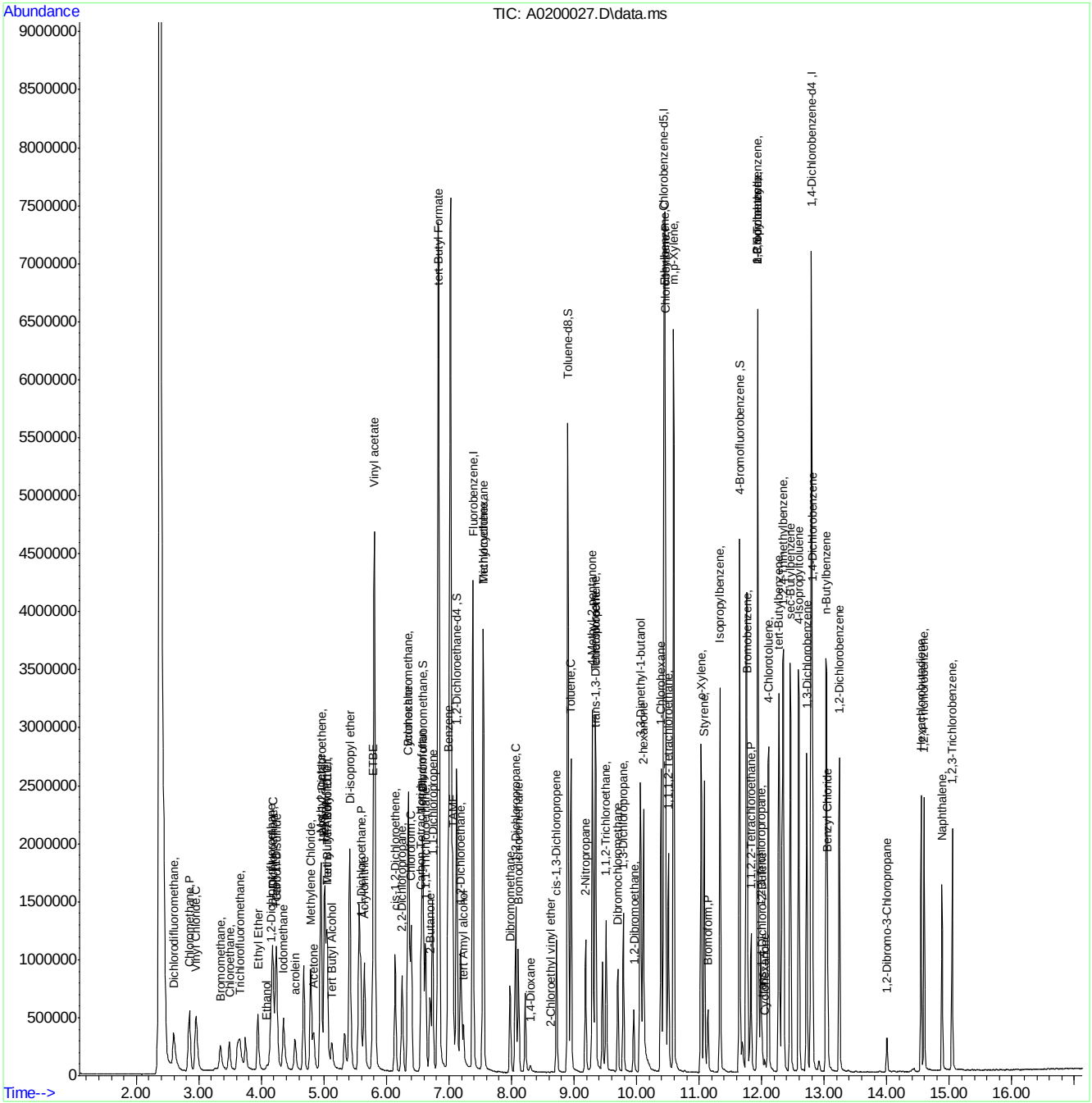
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
91) 1,2,4-Trichlorobenzene	14.596	180	511645	20.07	ug/L	98
92) Naphthalene	14.883	128	823925	18.94	ug/L	100
93) 1,2,3-Trichlorobenzene	15.047	180	468901	21.01	ug/L	96
95) Ethanol	4.086	45	60124	519.81	ug/L	92
96) acrolein	4.537	56	252814	156.31	ug/L	99
97) Tert Butyl Alcohol	5.122	59	236351	274.00	ug/L	94
98) tert Amyl alcohol	7.232	59	144791	217.59	ug/L	92
99) 1,4-Dioxane	8.299	88	27274	395.88	ug/L	90
100) 3,3-Dimethyl-1-butanol	10.061	57	834782	1172.08	ug/L	97

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\040516\
Data File : A0200027.D
Acq On : 5 Apr 2016 2:38 pm
Operator : TRANGD
Sample : FA32549-1MS Inst : MSVOA10
Misc : MS33459,VA1906,,,,,
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Apr 05 15:00:09 2016
Quant Method : C:\msdchem\1\METHODS\032516oxy.m
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Tue Mar 29 09:52:15 2016
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\040516\
Data File : A0200028.D
Acq On : 5 Apr 2016 3:04 pm
Operator : TRANGD
Sample : FA32549-1MSD Inst : MSVOA10
Misc : MS33459,VA1906,,,,,
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Apr 05 15:48:34 2016
Quant Method : C:\msdchem\1\METHODS\032516oxy.m
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Tue Mar 29 09:52:15 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	7.378	96	2781224	50.00	ug/L	0.00
48) Chlorobenzene-d5	10.439	117	2308008	50.00	ug/L	0.00
69) 1,4-Dichlorobenzene-d4	12.792	152	1307622	50.00	ug/L	0.00
94) Tert Butyl Alcohol-d10	5.050	65	212493	250.00	ug/L	0.00
System Monitoring Compounds						
31) Dibromofluoromethane	6.580	113	881686	50.41	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 100.82%			
39) 1,2-Dichloroethane-d4	7.122	65	1246056	51.83	ug/L	0.00
Spiked Amount 50.000	Range 79 - 125		Recovery = 103.66%			
49) Toluene-d8	8.902	98	2553845	47.31	ug/L	0.00
Spiked Amount 50.000	Range 85 - 112		Recovery = 94.62%			
70) 4-Bromofluorobenzene	11.646	95	1065431	49.65	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 99.30%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	2.593	85	481798	25.88	ug/L	97
3) Chloromethane	2.843	50	699403	23.09	ug/L	100
4) Vinyl Chloride	2.959	62	366232	25.01	ug/L	99
5) Bromomethane	3.343	94	158223	22.98	ug/L	99
6) Chloroethane	3.489	64	181831	24.72	ug/L	97
7) Trichlorofluoromethane	3.647	101	535766	24.58	ug/L	97
8) Ethyl Ether	3.946	59	277812	23.97	ug/L	94
9) 1,2-Dichlorotrifluoroe...	4.153	67	354413	25.54	ug/L	98
10) 1,1-Dichloroethene	4.184	61	609652	24.03	ug/L	96
11) Freon 113	4.233	101	294417	23.12	ug/L	98
12) Carbon Disulfide	4.239	76	686367	20.44	ug/L	94
13) Iodomethane	4.355	142	525068	24.20	ug/L	94
14) Methylene Chloride	4.787	49	700879	25.62	ug/L	97
15) Acetone	4.836	43	510682	101.25	ug/L	94
16) Methyl acetate	4.946	43	1523468	121.91	ug/L	99
17) trans-1,2-Dichloroethene	4.952	61	534158	26.41	ug/L	95
18) Hexane	5.013	56	406216	24.93	ug/L	97
19) Methyl Tert Butyl Ether	5.043	73	666498	24.17	ug/L	90
20) Di-isopropyl ether	5.409	45	1595603	22.08	ug/L	95
21) 1,1-Dichloroethane	5.592	63	733982	24.36	ug/L	97
22) Acrylonitrile	5.647	53	716264	118.18	ug/L	98
23) ETBE	5.787	59	1092193	23.84	ug/L	98
24) Vinyl acetate	5.806	43	6056797	129.06	ug/L	100
25) cis-1,2-Dichloroethene	6.141	96	319614	23.10	ug/L	95
26) 2,2-Dichloropropane	6.251	77	366962	24.77	ug/L	99
27) Bromochloromethane	6.348	128	195570	23.24	ug/L	92
28) Cyclohexane	6.354	56	725501	23.58	ug/L	96
29) Chloroform	6.397	83	693890	23.74	ug/L	96
30) Tetrahydrofuran	6.574	42	95645	18.86	ug/L	94
32) Carbon Tetrachloride	6.555	117	587275	23.71	ug/L	98
33) 1,1,1-Trichloroethane	6.622	97	582917	23.89	ug/L	99
34) 2-Butanone	6.696	43	804929	98.60	ug/L	96
35) 1,1-Dichloropropene	6.738	75	444729	22.10	ug/L	94

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\040516\
Data File : A0200028.D
Acq On : 5 Apr 2016 3:04 pm
Operator : TRANGD
Sample : FA32549-1MSD Inst : MSVOA10
Misc : MS33459,VA1906,,,,,
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Apr 05 15:48:34 2016
Quant Method : C:\msdchem\1\METHODS\032516oxy.m
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Tue Mar 29 09:52:15 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
36) tert-Butyl Formate	6.830	59	2289146	178.20	ug/L	#	73
37) Benzene	6.988	78	1183509	23.41	ug/L		92
38) TAME	7.055	73	720261	21.15	ug/L		93
40) 1,2-Dichloroethane	7.183	62	699292	24.83	ug/L		98
41) Trichloroethene	7.549	95	389959	25.08	ug/L		97
42) Methylcyclohexane	7.543	83	508622	21.49	ug/L		94
43) Dibromomethane	7.976	93	221341	24.40	ug/L		99
44) 1,2-Dichloropropane	8.067	63	343176	23.51	ug/L		93
45) Bromodichloromethane	8.110	83	481636	23.70	ug/L		100
47) cis-1,3-Dichloropropene	8.720	75	383933	17.29	ug/L		96
50) Toluene	8.951	91	1281833	22.65	ug/L		99
51) 2-Nitropropane	9.183	41	567361	117.42	ug/L		100
52) 4-Methyl-2-pentanone	9.293	43	1876959	101.81	ug/L		98
53) trans-1,3-Dichloropropene	9.348	75	433572	21.82	ug/L		94
54) Tetrachloroethene	9.341	166	413001	22.82	ug/L		98
55) 1,1,2-Trichloroethane	9.512	83	235704	22.89	ug/L		96
56) Dibromochloromethane	9.701	129	345786	21.77	ug/L		99
57) 1,3-Dichloropropane	9.786	76	429174	22.74	ug/L		85
58) 1,2-Dibromoethane	9.957	107	285943	23.85	ug/L		99
59) 2-hexanone	10.103	43	1348542	102.24	ug/L		95
60) 1-Chlorohexane	10.390	91	370015	18.93	ug/L		92
61) Ethylbenzene	10.451	91	1573605	23.92	ug/L		96
62) Chlorobenzene	10.457	112	938778	22.95	ug/L		98
63) 1,1,1,2-Tetrachloroethane	10.506	131	386805	22.97	ug/L		99
64) m,p-Xylene	10.591	91	2420609	49.12	ug/L		98
65) o-Xylene	11.030	91	1071201	20.01	ug/L		100
66) Styrene	11.085	104	857825	20.59	ug/L		99
67) Bromoform	11.140	173	193070	18.71	ug/L		94
68) Isopropylbenzene	11.335	105	1424824	21.30	ug/L		100
71) n-Propylbenzene	11.938	91	1305480	26.32	ug/L		97
72) Bromobenzene	11.768	156	465925	24.29	ug/L		99
73) 1,1,2,2-Tetrachloroethane	11.829	83	347532	21.94	ug/L		98
74) 1,3,5-Trimethylbenzene	11.938	105	1320810	22.41	ug/L		99
75) 2-Chlorotoluene	11.938	91	1305480	26.32	ug/L		99
76) trans-1,4-Dichloro-2-B...	12.012	53	53397	9.17	ug/L		95
77) 1,2,3-Trichloropropane	11.987	110	116494	24.31	ug/L		95
78) Cyclohexanone	12.054	55	42921	90.42	ug/L		93
79) 4-Chlorotoluene	12.109	91	1141308	22.47	ug/L		100
80) tert-Butylbenzene	12.280	91	753791	21.04	ug/L		97
81) 1,2,4-Trimethylbenzene	12.347	105	1348925	22.40	ug/L		99
82) sec-Butylbenzene	12.457	105	1664063	22.33	ug/L		100
83) 4-Isopropyltoluene	12.591	119	1411608	21.39	ug/L		98
84) 1,3-Dichlorobenzene	12.719	146	861276	25.38	ug/L		96
85) 1,4-Dichlorobenzene	12.810	146	904567	23.49	ug/L		100
86) n-Butylbenzene	13.030	92	754828	20.67	ug/L		97
87) Benzyl Chloride	13.054	126	139173	20.36	ug/L		96
88) 1,2-Dichlorobenzene	13.243	146	794705	25.12	ug/L		99
89) 1,2-Dibromo-3-Chloropr...	13.999	75	53666	20.36	ug/L		97
90) Hexachlorobutadiene	14.548	225	305699	22.20	ug/L		91
91) 1,2,4-Trichlorobenzene	14.596	180	500665	19.82	ug/L		98

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\040516\
Data File : A0200028.D
Acq On : 5 Apr 2016 3:04 pm
Operator : TRANGD
Sample : FA32549-1MSD Inst : MSVOA10
Misc : MS33459,VA1906,,,,,
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Apr 05 15:48:34 2016
Quant Method : C:\msdchem\1\METHODS\032516oxy.m
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Tue Mar 29 09:52:15 2016
Response via : Initial Calibration

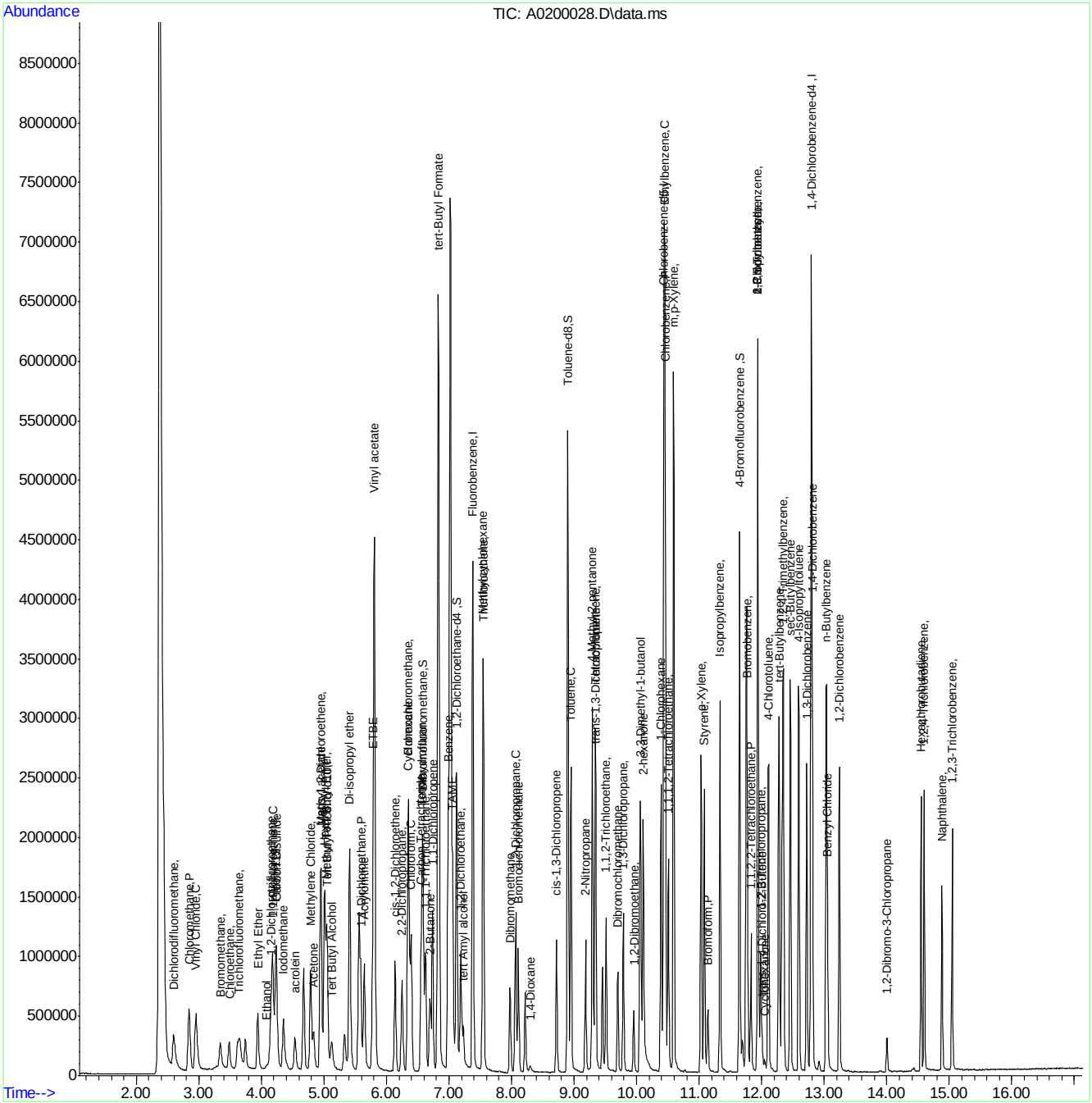
	Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
92)	Naphthalene	14.883	128	795687	18.46	ug/L	100
93)	1,2,3-Trichlorobenzene	15.048	180	465015	21.03	ug/L	99
95)	Ethanol	4.086	45	53905	425.41	ug/L	90
96)	acrolein	4.537	56	253486	143.06	ug/L	97
97)	Tert Butyl Alcohol	5.123	59	240849	254.87	ug/L	92
98)	tert Amyl alcohol	7.226	59	137965	189.25	ug/L	89
99)	1,4-Dioxane	8.299	88	27359	362.49	ug/L	88
100)	3,3-Dimethyl-1-butanol	10.061	57	800672	1034.40	ug/L	97

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\040516\
Data File : A0200028.D
Acq On : 5 Apr 2016 3:04 pm
Operator : TRANGD
Sample : FA32549-1MSD Inst : MSVOA10
Misc : MS33459,VA1906,,,,,
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Apr 05 15:48:34 2016
Quant Method : C:\msdchem\1\METHODS\032516oxy.m
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Tue Mar 29 09:52:15 2016
Response via : Initial Calibration



Manual Integrations APPROVED (compounds with "m" flag)
Juan Garcia
04/12/16 13:27

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\040516\
Data File : J0975642.D
Acq On : 5 Apr 2016 5:58 pm
Operator : melissam
Sample : FA32712-1MS Inst : MSVOA6
Misc : MS33477,VJ5255,,,,,
ALS Vial : 24 Sample Multiplier: 1

Quant Time: Apr 06 07:54:26 2016
Quant Method : C:\msdchem\2\methods\MSJ031516.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Wed Mar 16 08:34:48 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	7.750	96	1231498	50.00	ug/L	0.00
56) Chlorobenzene-d5	10.846	117	974254	50.00	ug/L	0.00
78) 1,4-Dichlorobenzene-d4	13.207	152	526184	50.00	ug/L	0.00
106) Tert Butyl Alcohol-d10	5.292	65	64632	250.00	ug/L	0.00
System Monitoring Compounds						
36) Dibromofluoromethane	6.922	113	321729	51.49	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 102.98%			
46) 1,2-Dichloroethane-d4	7.476	65	357992	47.37	ug/L	0.00
Spiked Amount 50.000	Range 79 - 125		Recovery = 94.74%			
57) Toluene-d8	9.301	98	1243087	48.50	ug/L	0.00
Spiked Amount 50.000	Range 85 - 112		Recovery = 97.00%			
79) 4-Bromofluorobenzene	12.057	95	467817	49.15	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 98.30%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	2.676	85	181520	23.94	ug/L	100
3) Chloromethane	2.907	50	200777	24.75	ug/L	100
4) Vinyl Chloride	3.047	62	272183	32.75	ug/L	94
5) 1,3-Butadiene	3.029	54	83180	13.46	ug/L	93
6) Bromomethane	3.461	94	141048	23.23	ug/L	98
7) Chloroethane	3.607	64	124264	29.72	ug/L	97
8) Trichlorofluoromethane	3.826	101	319998m	31.04	ug/L	
9) Ethyl Ether	4.118	59	101733	21.36	ug/L	96
10) 1,2-Dichlorotrifluoroe...	4.343	67	208570	29.13	ug/L	97
11) 1,1-Dichloroethene	4.391	61	245492	27.53	ug/L	98
12) Freon 113	4.458	101	145170	23.55	ug/L	96
13) Carbon Disulfide	4.464	76	467585	25.19	ug/L	93
14) Iodomethane	4.580	142	217732	22.10	ug/L	98
15) Allyl chloride	4.915	41	125545	15.23	ug/L	87
16) Methylene Chloride	5.036	49	205171	25.41	ug/L	99
17) Acetone	5.067	58	44580	120.71	ug/L	94
18) Methyl acetate	5.188	74	73031	101.55	ug/L	96
19) trans-1,2-Dichloroethene	5.225	61	253779	30.99	ug/L	97
20) Hexane	5.286	56	132165	25.15	ug/L	92
21) Methyl Tert Butyl Ether	5.334	73	354948	21.75	ug/L	81
22) Acetonitrile	5.590	40	51733	221.79	ug/L	91
23) Di-isopropyl ether	5.712	45	434181	23.24	ug/L	97
24) Chloroprene	5.864	53	207573	23.58	ug/L	99
25) 1,1-Dichloroethane	5.894	63	296167	27.09	ug/L	97
26) Acrylonitrile	5.925	53	173103	105.93	ug/L	92
27) ETBE	6.113	59	434389	23.21	ug/L	97
28) Vinyl acetate	6.101	43	960437	101.48	ug/L	99
29) cis-1,2-Dichloroethene	6.472	96	171220	24.39	ug/L	98
30) 2,2-Dichloropropane	6.600	77	201657	23.63	ug/L	98
31) Bromochloromethane	6.679	128	73421	23.14	ug/L	97
32) Cyclohexane	6.728	56	269301	26.20	ug/L	95
33) Chloroform	6.734	83	306047	25.21	ug/L	97
34) Ethyl acetate	6.801	43	353026	92.77	ug/L	97

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\040516\
Data File : J0975642.D
Acq On : 5 Apr 2016 5:58 pm
Operator : melissam
Sample : FA32712-1MS Inst : MSVOA6
Misc : MS33477,VJ5255,,,,,
ALS Vial : 24 Sample Multiplier: 1

Quant Time: Apr 06 07:54:26 2016
Quant Method : C:\msdchem\2\methods\MSJ031516.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Wed Mar 16 08:34:48 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
35) Tetrahydrofuran	6.910	42	22836	20.38	ug/L		86
37) Carbon Tetrachloride	6.928	117	234938m	27.85	ug/L		
38) 1,1,1-Trichloroethane	6.989	97	271862	26.19	ug/L		96
39) 2-Butanone	7.020	43	168419	105.92	ug/L		99
40) 1,1-Dichloropropene	7.099	75	226620	27.04	ug/L		96
41) tert-Butyl Formate	7.184	59	835305	218.91	ug/L	#	81
42) Propionitrile	7.330	54	125648	222.64	ug/L		92
43) Methacrylonitrile	7.354	41	555607	211.56	ug/L		95
44) Benzene	7.354	78	655815	25.71	ug/L		97
45) TAME	7.433	73	361362	21.40	ug/L		98
47) 1,2-Dichloroethane	7.543	62	198910	22.27	ug/L		97
48) Trichloroethene	7.932	95	168257	25.45	ug/L		98
49) Methylcyclohexane	7.956	83	304865	27.45	ug/L		98
50) Dibromomethane	8.358	93	82996	22.49	ug/L		97
51) 1,2-Dichloropropane	8.449	63	152740	23.83	ug/L		94
52) Bromodichloromethane	8.492	83	206247	25.10	ug/L		99
53) Methyl methacrylate	8.589	41	74840	22.09	ug/L		98
54) 2-Chloroethyl vinyl ether	9.003	63	307559	94.49	ug/L		96
55) cis-1,3-Dichloropropene	9.106	75	201119	20.53	ug/L		97
58) Toluene	9.350	91	696960	24.70	ug/L		99
59) 2-Nitropropane	9.556	41	109077	97.02	ug/L		97
60) 4-Methyl-2-pentanone	9.672	43	409719	101.63	ug/L		98
61) trans-1,3-Dichloropropene	9.739	75	168838	19.03	ug/L		98
62) Tetrachloroethene	9.757	166	182745	24.23	ug/L		98
63) Ethyl methacrylate	9.836	69	122161	18.95	ug/L		95
64) 1,1,2-Trichloroethane	9.903	83	102669	22.30	ug/L		98
65) Dibromochloromethane	10.104	129	133455	22.81	ug/L		99
66) 1,3-Dichloropropane	10.183	76	198581	21.12	ug/L		95
67) 1,2-Dibromoethane	10.359	107	115096	22.06	ug/L		99
68) 2-hexanone	10.487	43	290455	108.96	ug/L		97
69) 1-Chlorohexane	10.797	91	212782	25.71	ug/L		98
70) Ethylbenzene	10.858	91	830771	25.82	ug/L		100
71) Chlorobenzene	10.864	112	480252	25.59	ug/L		97
72) 1,1,1,2-Tetrachloroethane	10.913	131	148540	24.33	ug/L		98
73) m,p-Xylene	10.998	91	1272458	48.80	ug/L		99
74) o-Xylene	11.436	91	625291	25.15	ug/L		97
75) Styrene	11.485	104	448101	22.42	ug/L		98
76) Bromoform	11.552	173	69931	19.14	ug/L		97
77) Isopropylbenzene	11.740	105	759626	26.44	ug/L		98
80) cis-1,4-Dichloro-2-butene	12.160	53	4767	2.79	ug/L	#	1
81) n-Propylbenzene	12.160	91	954332	28.58	ug/L		99
82) Bromobenzene	12.185	156	192025	24.43	ug/L		96
83) 1,1,2,2-Tetrachloroethane	12.221	83	135932	21.43	ug/L		99
84) 1,3,5-Trimethylbenzene	12.343	105	665689	26.35	ug/L		99
85) 2-Chlorotoluene	12.349	91	648142	26.45	ug/L		98
86) trans-1,4-Dichloro-2-B...	12.446	53	2814	1.78	ug/L	#	1
87) 1,2,3-Trichloropropane	12.385	110	36616	22.65	ug/L		96
88) Cyclohexanone	12.446	55	57732	567.78	ug/L		93
89) 4-Chlorotoluene	12.519	91	576725	26.29	ug/L		99
90) a-Methyl Styrene	12.750	118	6466	0.90	ug/L	#	1

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\040516\
Data File : J0975642.D
Acq On : 5 Apr 2016 5:58 pm
Operator : melissam
Sample : FA32712-1MS Inst : MSVOA6
Misc : MS33477,VJ5255,,,,,
ALS Vial : 24 Sample Multiplier: 1

Quant Time: Apr 06 07:54:26 2016
Quant Method : C:\msdchem\2\methods\MSJ031516.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Wed Mar 16 08:34:48 2016
Response via : Initial Calibration

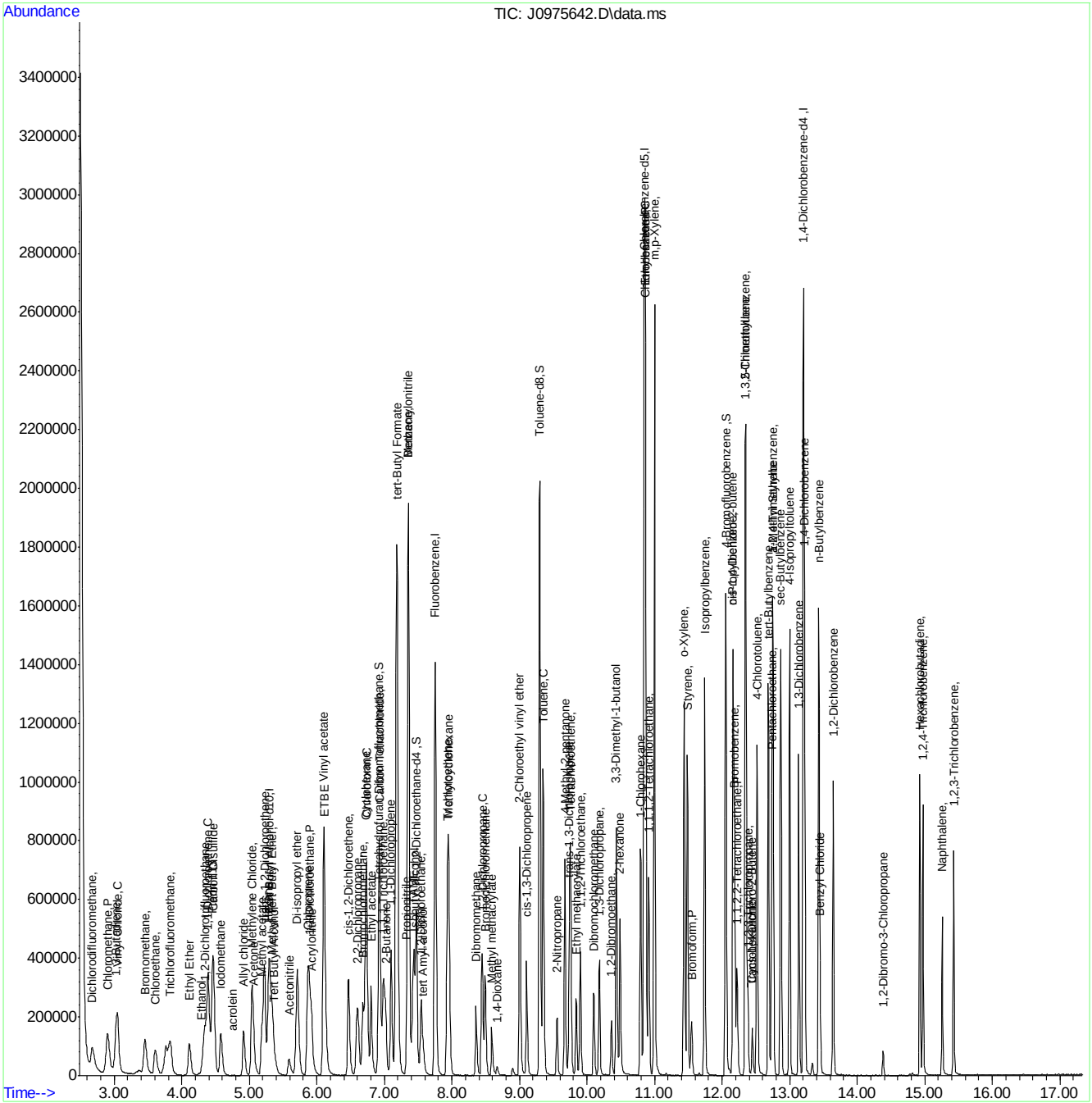
	Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
91)	tert-Butylbenzene	12.683	91	388314	26.31	ug/L		95
92)	1,2,4-Trimethylbenzene	12.750	105	681330	27.00	ug/L		98
93)	Pentachloroethane	12.738	167	101282	20.96	ug/L		94
94)	sec-Butylbenzene	12.866	105	874370	28.66	ug/L		100
95)	4-Isopropyltoluene	13.000	119	690422	26.98	ug/L		98
96)	1,3-Dichlorobenzene	13.134	146	359597	25.79	ug/L		96
97)	1,4-Dichlorobenzene	13.219	146	366973	24.80	ug/L		95
98)	n-Butylbenzene	13.432	92	387484	26.27	ug/L		98
99)	Benzyl Chloride	13.450	126	25642	12.48	ug/L	#	61
100)	1,2-Dichlorobenzene	13.645	146	319405	23.94	ug/L		98
101)	1,2-Dibromo-3-Chloropr...	14.381	75	17260	18.00	ug/L		95
102)	Hexachlorobutadiene	14.928	225	146346	24.55	ug/L		95
103)	1,2,4-Trichlorobenzene	14.971	180	217659	22.34	ug/L		95
104)	Naphthalene	15.257	128	317815	19.44	ug/L		99
105)	1,2,3-Trichlorobenzene	15.427	180	179033	20.74	ug/L		99
107)	Ethanol	4.294	45	17564m	587.10	ug/L		
108)	acrolein	4.750	56	270	0.36	ug/L	#	18
109)	Tert Butyl Alcohol	5.371	59	76432	243.97	ug/L		81
110)	tert Amyl alcohol	7.573	59	55083	250.67	ug/L		96
111)	Isobutyl alcohol	7.451	42	56210	456.94	ug/L		89
112)	1,4-Dioxane	8.668	88	17442	679.62	ug/L		93
113)	3,3-Dimethyl-1-butanol	10.432	57	328475	1220.20	ug/L		97

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\040516\
Data File : J0975642.D
Acq On : 5 Apr 2016 5:58 pm
Operator : melissam
Sample : FA32712-1MS Inst : MSVOA6
Misc : MS33477,VJ5255,,,,,
ALS Vial : 24 Sample Multiplier: 1

Quant Time: Apr 06 07:54:26 2016
Quant Method : C:\msdchem\2\methods\MSJ031516.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Wed Mar 16 08:34:48 2016
Response via : Initial Calibration



MSJ031516.M Wed Apr 06 07:58:53 2016 Page: 4

Manual Integration Approval Summary

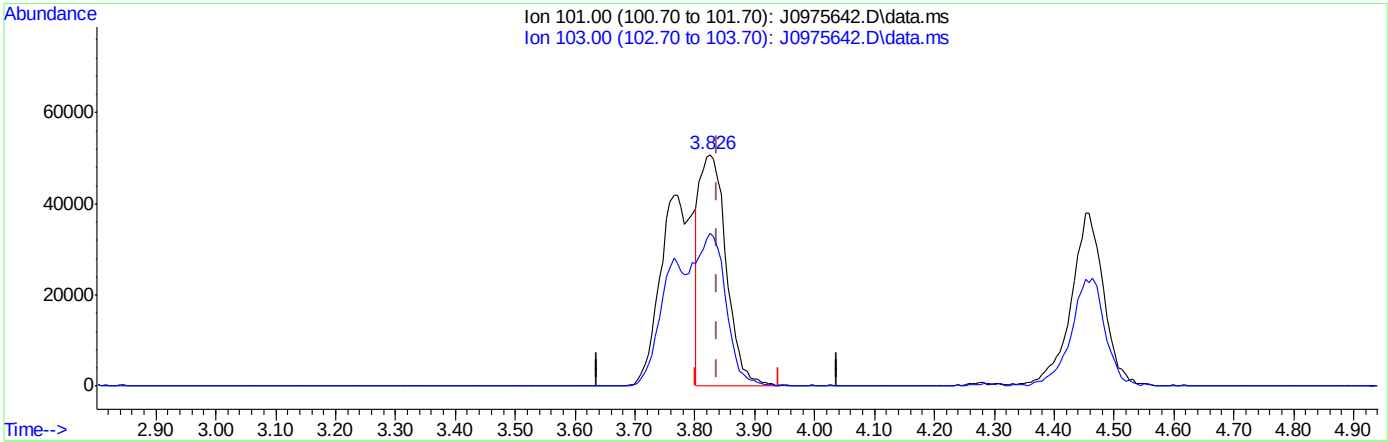
Sample Number: FA32712-1MS
Lab FileID: J0975642.D
Injection Time: 04/05/16 17:58
Method: SW846 8260B
Analyst approved: 04/06/16 11:04 Darshna Patel
Supervisor approved: 04/12/16 13:27 Juan Garcia

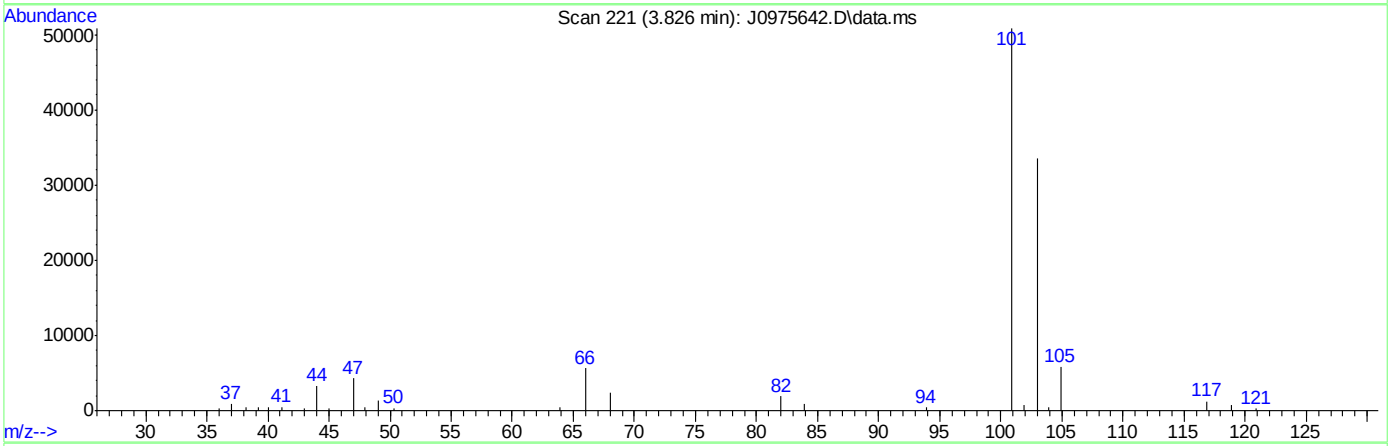
Parameter	CAS	Sig#	R.T. (min.)	Reason
Trichlorofluoromethane	75-69-4		3.83	Split peak
Ethyl Alcohol	64-17-5		4.29	Poor instrument integration
Carbon Tetrachloride	56-23-5		6.93	Overlapping peak

Quantitation Report (Qedit)

Data Path : C:\msdchem\2\data\040516\
Data File : J0975642.D
Acq On : 5 Apr 2016 5:58 pm
Operator : melissam
Sample : FA32712-1MS Inst : MSVOA6
Misc : MS33477,VJ5255,,,,,
ALS Vial : 24 Sample Multiplier: 1

Quant Time: Apr 06 07:43:26 2016
Quant Method : C:\msdchem\2\methods\MSJ031516.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Wed Mar 16 08:34:48 2016
Response via : Initial Calibration





TIC: J0975642.D\data.ms

(8) Trichlorofluoromethane ( )

3.826min (-0.012) 15.25ug/L

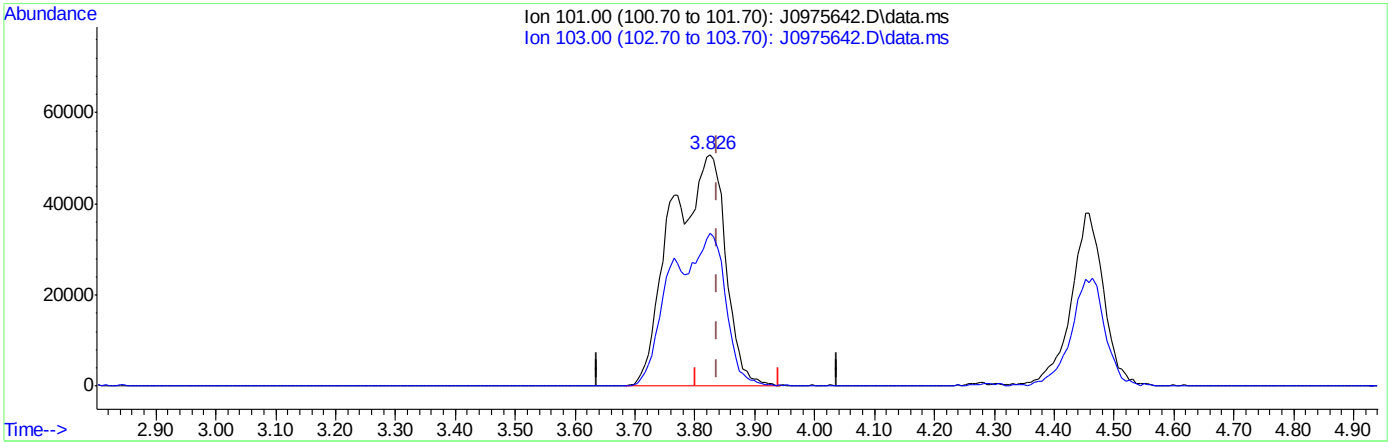
response 157206

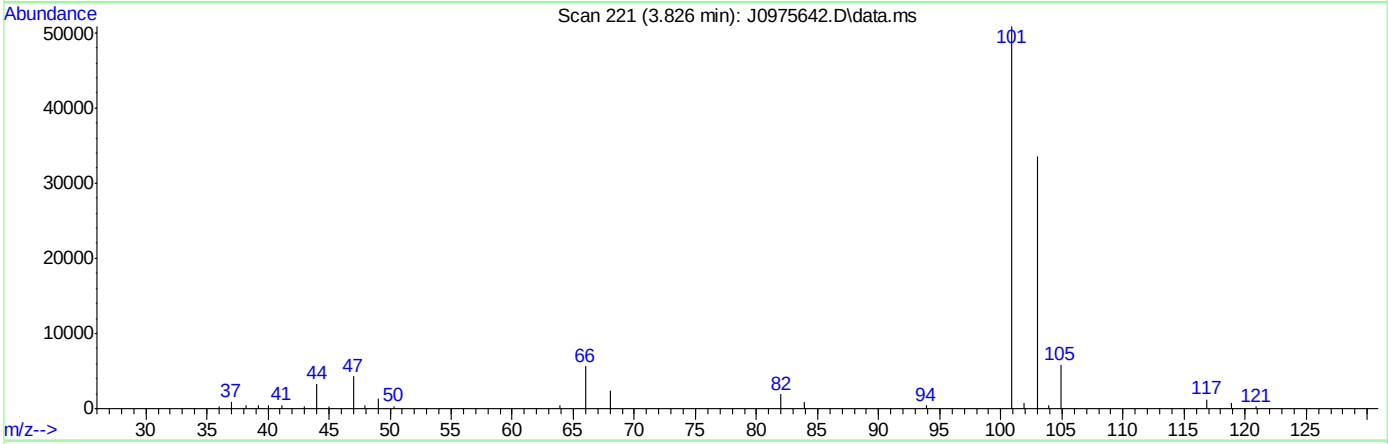
Ion	Exp%	Act%
101.00	100	100
103.00	63.50	65.34
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\2\data\040516\
Data File : J0975642.D
Acq On : 5 Apr 2016 5:58 pm
Operator : melissam
Sample : FA32712-1MS Inst : MSVOA6
Misc : MS33477,VJ5255,,,,,
ALS Vial : 24 Sample Multiplier: 1

Quant Time: Apr 06 07:43:26 2016
Quant Method : C:\msdchem\2\methods\MSJ031516.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Wed Mar 16 08:34:48 2016
Response via : Initial Calibration





TIC: J0975642.D\data.ms

(8) Trichlorofluoromethane ( )

3.826min (-0.012) 31.04ug/L m

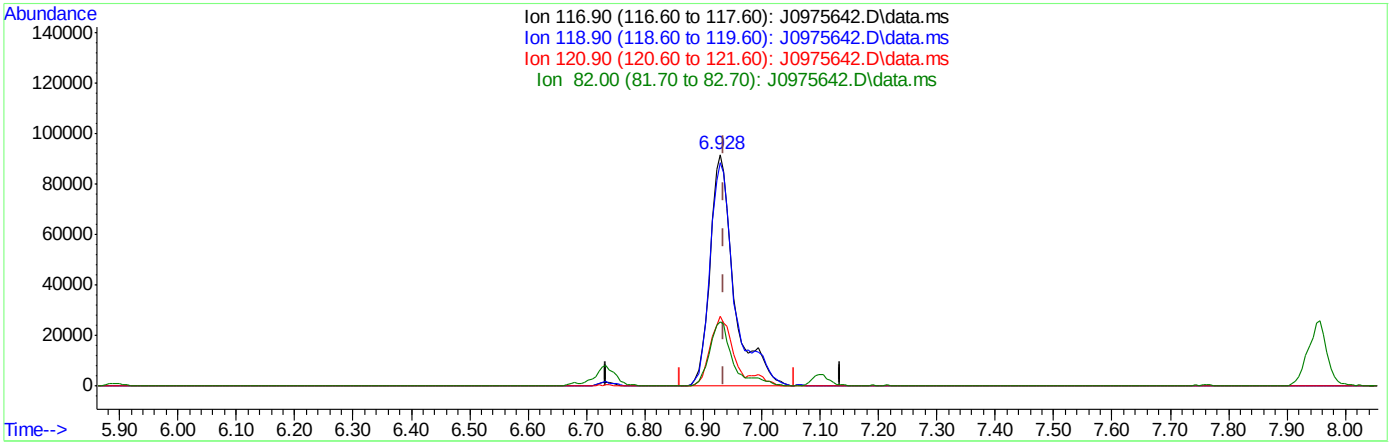
response 319998

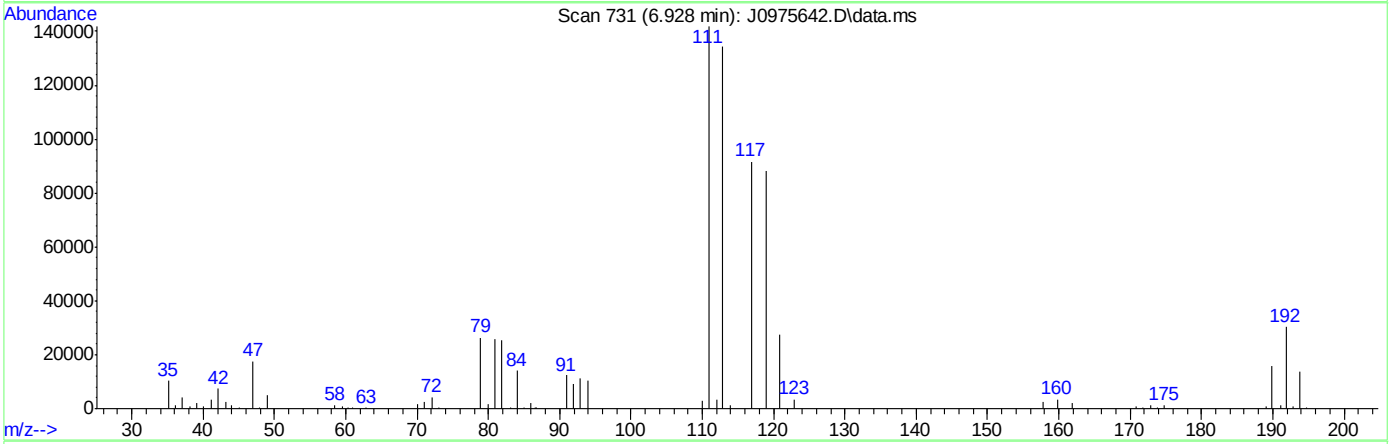
Ion	Exp%	Act%
101.00	100	100
103.00	63.50	65.89
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\2\data\040516\
Data File : J0975642.D
Acq On : 5 Apr 2016 5:58 pm
Operator : melissam
Sample : FA32712-1MS Inst : MSVOA6
Misc : MS33477,VJ5255,,,,,
ALS Vial : 24 Sample Multiplier: 1

Quant Time: Apr 06 07:43:26 2016
Quant Method : C:\msdchem\2\methods\MSJ031516.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Wed Mar 16 08:34:48 2016
Response via : Initial Calibration





TIC: J0975642.D\data.ms

(37) Carbon Tetrachloride ( )

6.928min (-0.007) 31.23ug/L

response 263486

Ion	Exp%	Act%
116.90	100	100
118.90	96.80	96.38
120.90	31.80	30.13
82.00	25.40	27.84

Quantitation Report (Qedit)

Data Path : C:\msdchem\2\data\040516\
Data File : J0975642.D
Acq On : 5 Apr 2016 5:58 pm
Operator : melissam
Sample : FA32712-1MS Inst : MSVOA6
Misc : MS33477,VJ5255,,,,,
ALS Vial : 24 Sample Multiplier: 1

Quant Time: Apr 06 07:43:26 2016
Quant Method : C:\msdchem\2\methods\MSJ031516.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Wed Mar 16 08:34:48 2016
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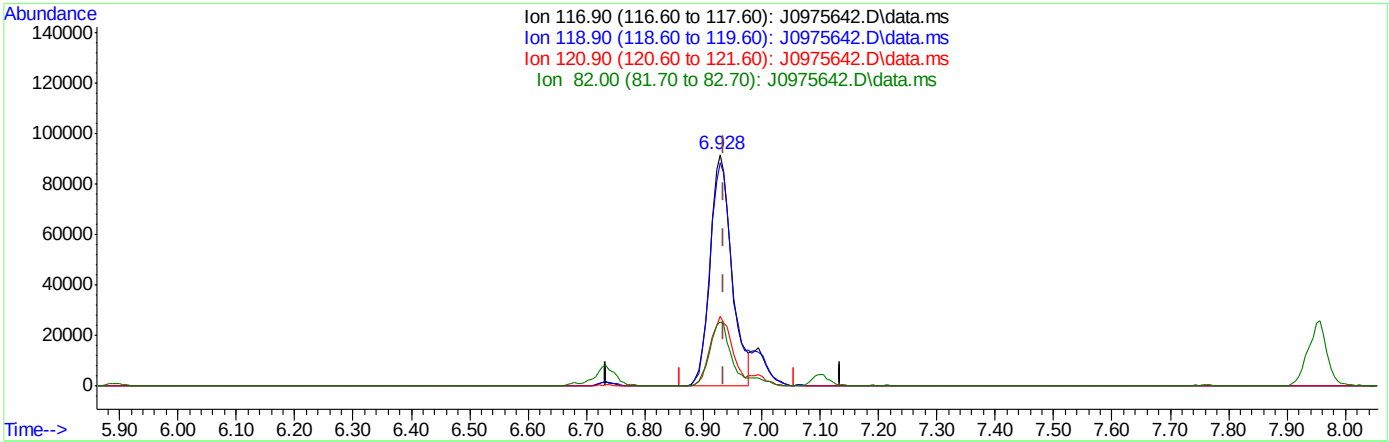

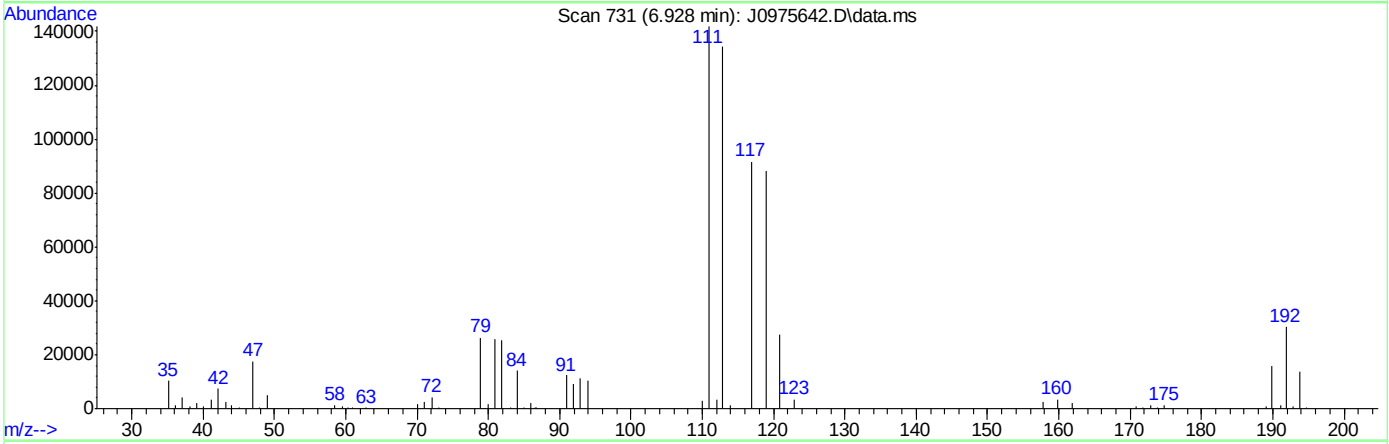

TIC: J0975642.D\data.ms

(37) Carbon Tetrachloride ( )

6.928min (-0.007) 27.85ug/L m

response 234938

Ion	Exp%	Act%
116.90	100	100
118.90	96.80	96.38
120.90	31.80	30.13
82.00	25.40	27.84

Quantitation Report (Qedit)

Data Path : C:\msdchem\2\data\040516\
Data File : J0975642.D
Acq On : 5 Apr 2016 5:58 pm
Operator : melissam
Sample : FA32712-1MS Inst : MSVOA6
Misc : MS33477,VJ5255,,,,,
ALS Vial : 24 Sample Multiplier: 1

Quant Time: Apr 06 07:43:26 2016
Quant Method : C:\msdchem\2\methods\MSJ031516.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Wed Mar 16 08:34:48 2016
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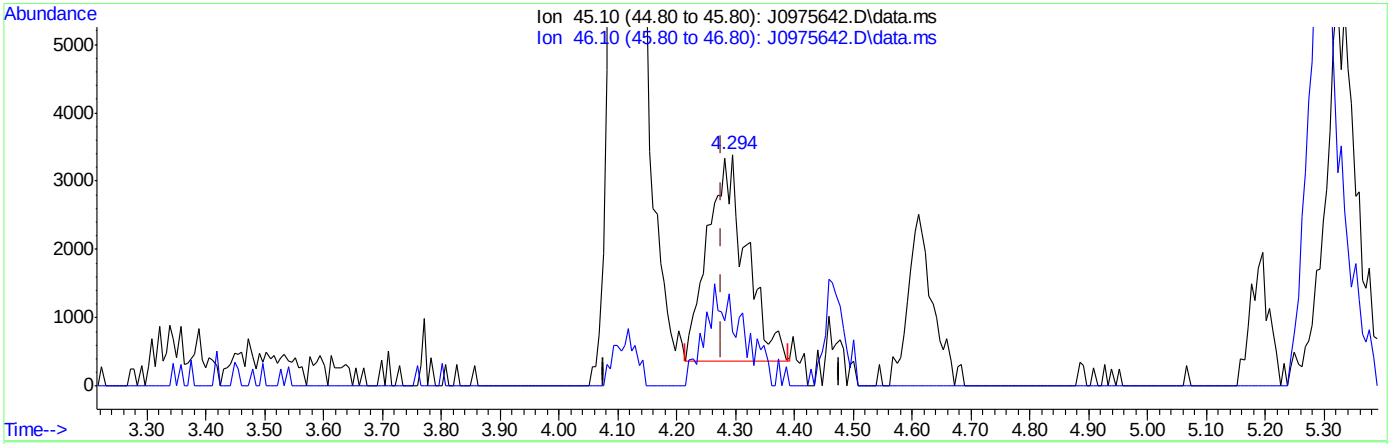

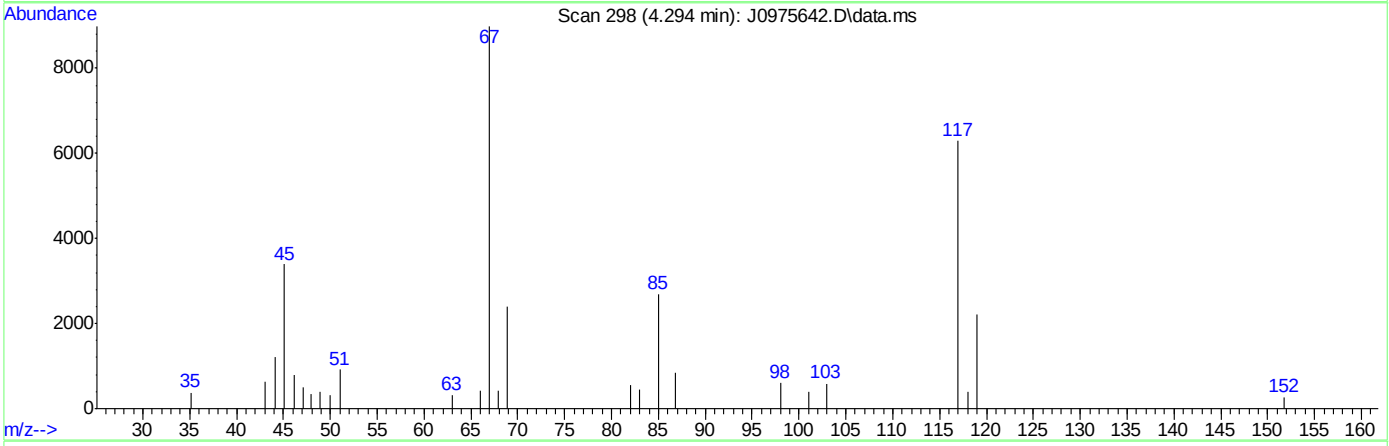

TIC: J0975642.D\data.ms

(107) Ethanol

4.294min (+0.018) 451.81ug/L

response 13732

Ion	Exp%	Act%
45.10	100	100
46.10	28.20	26.29
0.00	0.00	0.00
0.00	0.00	0.00

J0975642.D edits: Ethanol

Quantitation Report (Qedit)

Data Path : C:\msdchem\2\data\040516\
Data File : J0975642.D
Acq On : 5 Apr 2016 5:58 pm
Operator : melissam
Sample : FA32712-1MS Inst : MSVOA6
Misc : MS33477,VJ5255,,,,,
ALS Vial : 24 Sample Multiplier: 1

Quant Time: Apr 06 07:43:26 2016
Quant Method : C:\msdchem\2\methods\MSJ031516.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Wed Mar 16 08:34:48 2016
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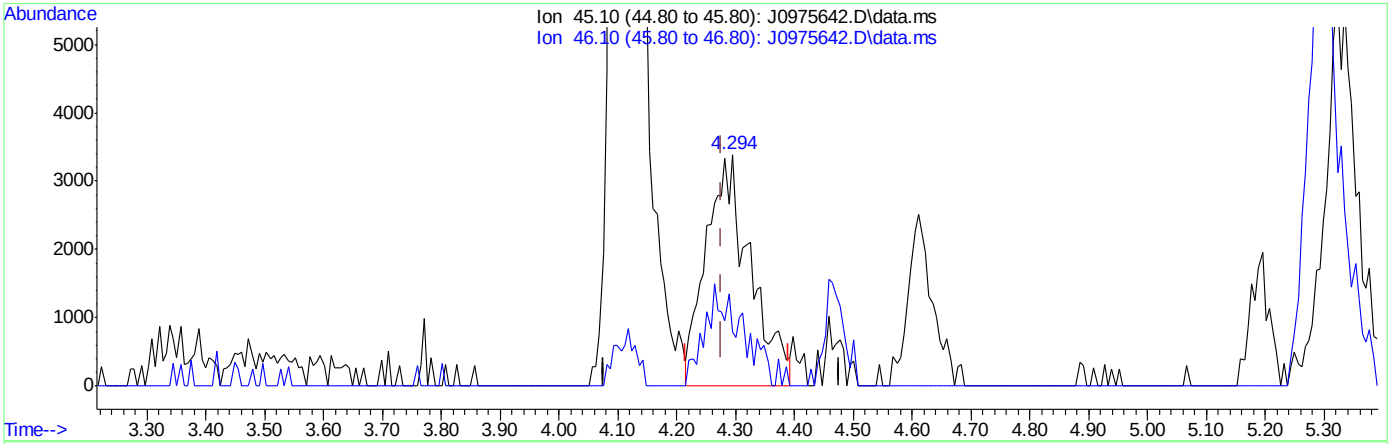

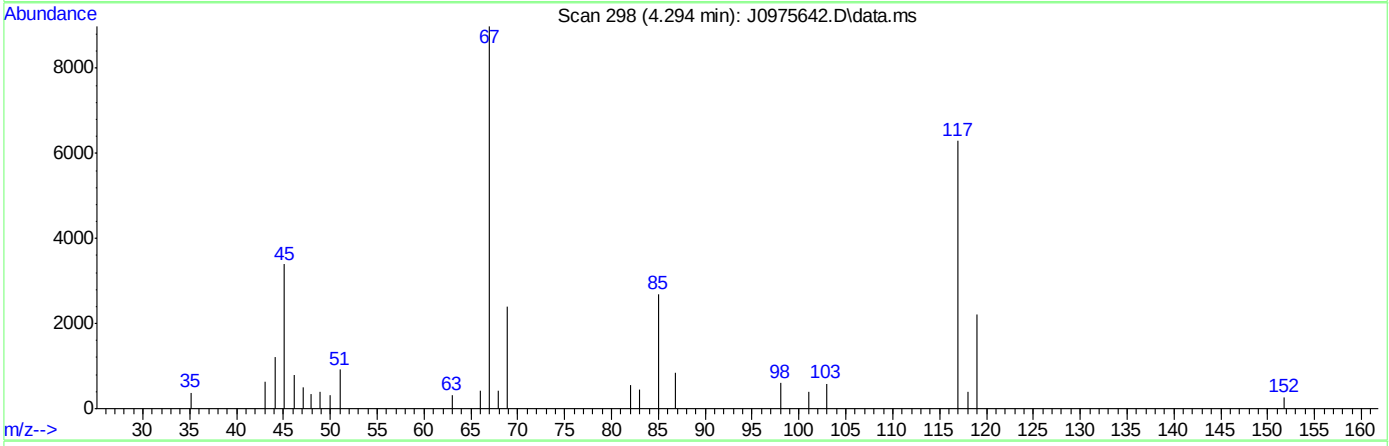

TIC: J0975642.D\data.ms

(107) Ethanol

4.294min (+0.018) 587.10ug/L m

response 17564

Ion	Exp%	Act%
45.10	100	100
46.10	28.20	23.48
0.00	0.00	0.00
0.00	0.00	0.00

Manual Integrations APPROVED (compounds with "m" flag)
Juan Garcia
04/12/16 13:27

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\040516\
Data File : J0975643.D
Acq On : 5 Apr 2016 6:21 pm
Operator : melissam
Sample : FA32712-1MSD Inst : MSVOA6
Misc : MS33477,VJ5255,,,,,
ALS Vial : 24 Sample Multiplier: 1

Quant Time: Apr 06 07:55:06 2016
Quant Method : C:\msdchem\2\methods\MSJ031516.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Wed Mar 16 08:34:48 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	7.756	96	1312828	50.00	ug/L	0.00
56) Chlorobenzene-d5	10.846	117	1013534	50.00	ug/L	0.00
78) 1,4-Dichlorobenzene-d4	13.207	152	566834	50.00	ug/L	0.00
106) Tert Butyl Alcohol-d10	5.292	65	72954	250.00	ug/L	0.00
System Monitoring Compounds						
36) Dibromofluoromethane	6.922	113	336287	50.48	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 100.96%			
46) 1,2-Dichloroethane-d4	7.476	65	389511	48.35	ug/L	0.00
Spiked Amount 50.000	Range 79 - 125		Recovery = 96.70%			
57) Toluene-d8	9.301	98	1318295	49.44	ug/L	0.00
Spiked Amount 50.000	Range 85 - 112		Recovery = 98.88%			
79) 4-Bromofluorobenzene	12.057	95	508471	49.59	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 99.18%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	2.688	85	192672	23.84	ug/L	99
3) Chloromethane	2.907	50	211806	24.49	ug/L	100
4) Vinyl Chloride	3.053	62	286159	32.30	ug/L	99
5) 1,3-Butadiene	3.035	54	101968	15.48	ug/L	95
6) Bromomethane	3.461	94	148185	22.87	ug/L	95
7) Chloroethane	3.619	64	132183	29.66	ug/L	96
8) Trichlorofluoromethane	3.832	101	331831m	30.19	ug/L	
9) Ethyl Ether	4.118	59	110081	21.68	ug/L	97
10) 1,2-Dichlorotrifluoroe...	4.349	67	218631	28.65	ug/L	97
11) 1,1-Dichloroethene	4.398	61	263491	27.72	ug/L	99
12) Freon 113	4.464	101	158349	24.09	ug/L	96
13) Carbon Disulfide	4.471	76	466395	23.56	ug/L	95
14) Iodomethane	4.586	142	231718	22.06	ug/L	98
15) Allyl chloride	4.921	41	110093	12.53	ug/L	97
16) Methylene Chloride	5.042	49	220354	25.60	ug/L	97
17) Acetone	5.061	58	50158	127.40	ug/L	98
18) Methyl acetate	5.194	74	80057	104.42	ug/L #	88
19) trans-1,2-Dichloroethene	5.225	61	262866	30.11	ug/L	98
20) Hexane	5.298	56	137420	24.53	ug/L	95
21) Methyl Tert Butyl Ether	5.328	73	381597	21.93	ug/L	93
22) Acetonitrile	5.584	40	56769	228.35	ug/L #	85
23) Di-isopropyl ether	5.718	45	456438	22.91	ug/L	97
24) Chloroprene	5.870	53	214197	22.82	ug/L	98
25) 1,1-Dichloroethane	5.894	63	303348	26.03	ug/L	99
26) Acrylonitrile	5.925	53	180712	103.73	ug/L	98
27) ETBE	6.119	59	456810	22.90	ug/L	99
28) Vinyl acetate	6.107	43	1025276	101.62	ug/L	97
29) cis-1,2-Dichloroethene	6.472	96	174702	23.34	ug/L	98
30) 2,2-Dichloropropane	6.606	77	215218	23.66	ug/L	97
31) Bromochloromethane	6.685	128	75644	22.36	ug/L	93
32) Cyclohexane	6.734	56	274417	25.04	ug/L	97
33) Chloroform	6.734	83	324383	25.07	ug/L	99
34) Ethyl acetate	6.807	43	394883	97.34	ug/L	99

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\040516\
Data File : J0975643.D
Acq On : 5 Apr 2016 6:21 pm
Operator : melissam
Sample : FA32712-1MSD Inst : MSVOA6
Misc : MS33477,VJ5255,,,,,
ALS Vial : 24 Sample Multiplier: 1

Quant Time: Apr 06 07:55:06 2016
Quant Method : C:\msdchem\2\methods\MSJ031516.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Wed Mar 16 08:34:48 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
35) Tetrahydrofuran	6.916	42	23150	19.36	ug/L		86
37) Carbon Tetrachloride	6.934	117	220663m	24.53	ug/L		
38) 1,1,1-Trichloroethane	6.995	97	281924	25.48	ug/L		97
39) 2-Butanone	7.020	43	187132	110.38	ug/L		98
40) 1,1-Dichloropropene	7.105	75	228569	25.58	ug/L		95
41) tert-Butyl Formate	7.184	59	904871	222.46	ug/L	#	82
42) Propionitrile	7.330	54	138649	230.46	ug/L		84
43) Methacrylonitrile	7.360	41	591741	211.36	ug/L		96
44) Benzene	7.354	78	680550	25.02	ug/L		97
45) TAME	7.433	73	392311	21.79	ug/L		96
47) 1,2-Dichloroethane	7.549	62	209447	22.00	ug/L		99
48) Trichloroethene	7.932	95	181190	25.71	ug/L		99
49) Methylcyclohexane	7.956	83	312045	26.35	ug/L		98
50) Dibromomethane	8.358	93	88775	22.57	ug/L		94
51) 1,2-Dichloropropane	8.449	63	159873	23.40	ug/L		97
52) Bromodichloromethane	8.492	83	199002	22.72	ug/L		100
53) Methyl methacrylate	8.589	41	84284	23.33	ug/L		96
54) 2-Chloroethyl vinyl ether	9.009	63	336362	96.94	ug/L		97
55) cis-1,3-Dichloropropene	9.112	75	183661	17.61	ug/L		99
58) Toluene	9.356	91	720361	24.54	ug/L		98
59) 2-Nitropropane	9.556	41	120490	103.04	ug/L		98
60) 4-Methyl-2-pentanone	9.672	43	455560	108.62	ug/L		99
61) trans-1,3-Dichloropropene	9.739	75	152491	16.51	ug/L		95
62) Tetrachloroethene	9.757	166	190287	24.25	ug/L		99
63) Ethyl methacrylate	9.842	69	134003	19.98	ug/L		98
64) 1,1,2-Trichloroethane	9.903	83	107979	22.55	ug/L		96
65) Dibromochloromethane	10.104	129	127818	21.00	ug/L		98
66) 1,3-Dichloropropane	10.183	76	214329	21.91	ug/L		96
67) 1,2-Dibromoethane	10.366	107	122632	22.59	ug/L		95
68) 2-hexanone	10.487	43	317715	114.57	ug/L		96
69) 1-Chlorohexane	10.797	91	221616	25.74	ug/L		98
70) Ethylbenzene	10.858	91	851431	25.44	ug/L		99
71) Chlorobenzene	10.864	112	488196	25.01	ug/L		98
72) 1,1,1,2-Tetrachloroethane	10.913	131	151991	23.93	ug/L		99
73) m,p-Xylene	10.998	91	1300096	47.85	ug/L		98
74) o-Xylene	11.436	91	636750	24.62	ug/L		99
75) Styrene	11.485	104	449767	21.62	ug/L		99
76) Bromoform	11.552	173	65315	17.21	ug/L		97
77) Isopropylbenzene	11.740	105	785669	26.29	ug/L		100
80) cis-1,4-Dichloro-2-butene	12.118	53	371	0.20	ug/L	#	38
81) n-Propylbenzene	12.160	91	1000010	27.80	ug/L		99
82) Bromobenzene	12.185	156	204493	24.15	ug/L		98
83) 1,1,2,2-Tetrachloroethane	12.221	83	149958	21.94	ug/L		97
84) 1,3,5-Trimethylbenzene	12.343	105	700791	25.75	ug/L		99
85) 2-Chlorotoluene	12.355	91	677088	25.65	ug/L		96
86) trans-1,4-Dichloro-2-B...	12.452	53	2805	1.65	ug/L	#	1
87) 1,2,3-Trichloropropane	12.385	110	40577	23.30	ug/L		96
88) Cyclohexanone	12.446	55	64617	589.92	ug/L		93
89) 4-Chlorotoluene	12.519	91	612142	25.90	ug/L		97
90) a-Methyl Styrene	12.677	118	2585	0.33	ug/L	#	1

Quantitation Report (QT Reviewed)

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Data File : J0975643.D
Acq On : 5 Apr 2016 6:21 pm
Operator : melissam
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Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Wed Mar 16 08:34:48 2016
Response via : Initial Calibration

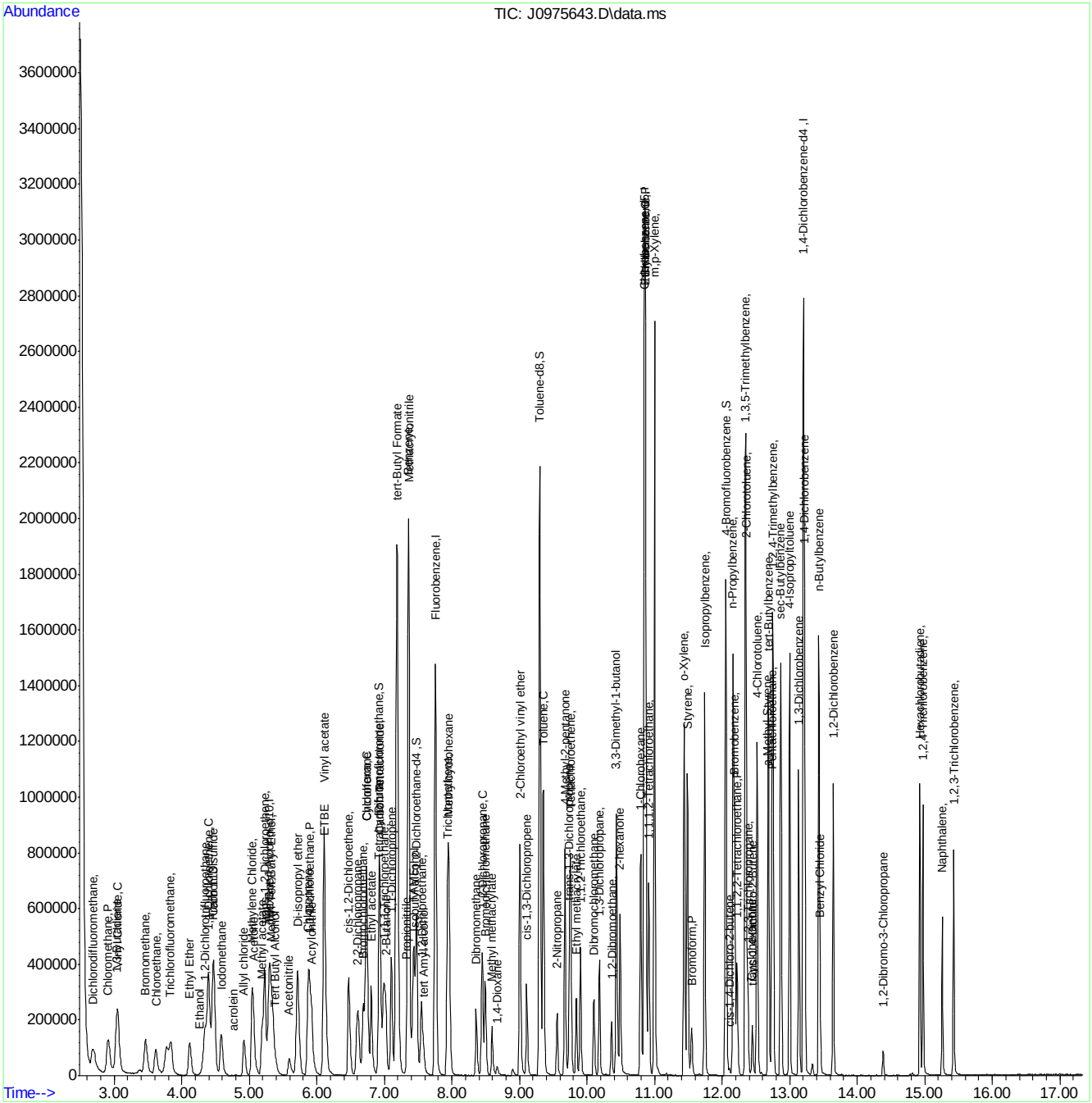
	Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
91)	tert-Butylbenzene	12.683	91	403236	25.36	ug/L		98
92)	1,2,4-Trimethylbenzene	12.750	105	710227	26.13	ug/L		98
93)	Pentachloroethane	12.738	167	98301	18.85	ug/L		97
94)	sec-Butylbenzene	12.866	105	901247	27.43	ug/L		98
95)	4-Isopropyltoluene	13.000	119	708169	25.69	ug/L		100
96)	1,3-Dichlorobenzene	13.134	146	374433	24.93	ug/L		96
97)	1,4-Dichlorobenzene	13.219	146	383669	24.07	ug/L		95
98)	n-Butylbenzene	13.432	92	388259	24.43	ug/L		97
99)	Benzyl Chloride	13.450	126	23921	10.84	ug/L	#	42
100)	1,2-Dichlorobenzene	13.645	146	325680	22.66	ug/L		98
101)	1,2-Dibromo-3-Chloropr...	14.381	75	18128	17.55	ug/L		89
102)	Hexachlorobutadiene	14.928	225	156320	24.35	ug/L		97
103)	1,2,4-Trichlorobenzene	14.971	180	228616	21.79	ug/L		96
104)	Naphthalene	15.257	128	337678	19.17	ug/L		99
105)	1,2,3-Trichlorobenzene	15.427	180	193661	20.82	ug/L		97
107)	Ethanol	4.264	45	22202m	663.44	ug/L		
108)	acrolein	4.763	56	261	0.31	ug/L	#	18
109)	Tert Butyl Alcohol	5.383	59	89124	252.03	ug/L		99
110)	tert Amyl alcohol	7.579	59	62966	253.86	ug/L		91
111)	Isobutyl alcohol	7.452	42	60503	434.81	ug/L	#	88
112)	1,4-Dioxane	8.674	88	19879	686.22	ug/L		98
113)	3,3-Dimethyl-1-butanol	10.432	57	378686	1246.26	ug/L		98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\040516\
Data File : J0975643.D
Acq On : 5 Apr 2016 6:21 pm
Operator : melissam
Sample : FA32712-1MSD Inst : MSVOA6
Misc : MS33477,VJ5255,,,,,
ALS Vial : 24 Sample Multiplier: 1

Quant Time: Apr 06 07:55:06 2016
Quant Method : C:\msdchem\2\methods\MSJ031516.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Wed Mar 16 08:34:48 2016
Response via : Initial Calibration



Manual Integration Approval Summary

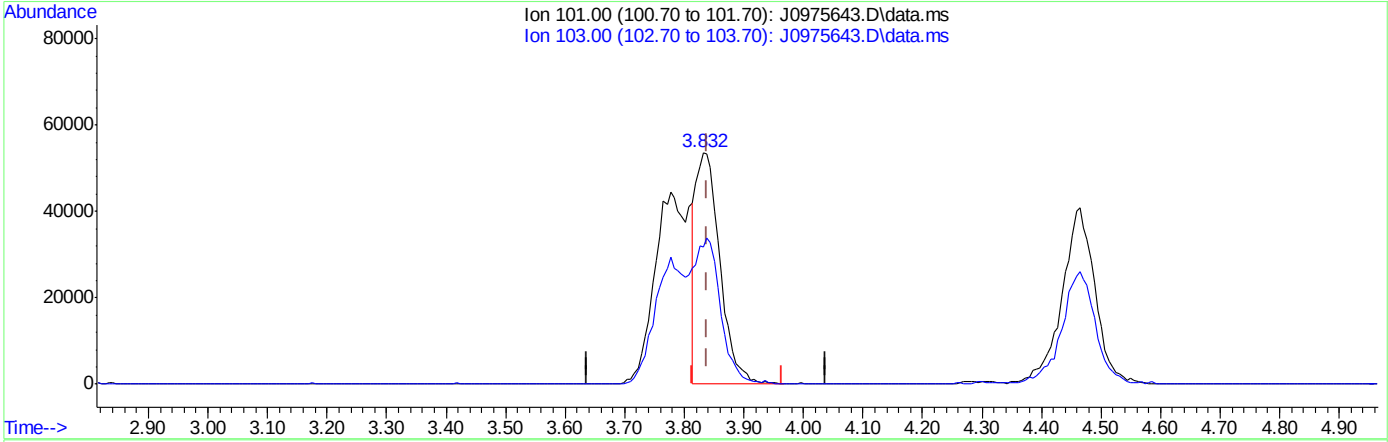
Sample Number: FA32712-1MSD
Lab FileID: J0975643.D
Injection Time: 04/05/16 18:21
Method: SW846 8260B
Analyst approved: 04/06/16 11:04 Darshna Patel
Supervisor approved: 04/12/16 13:27 Juan Garcia

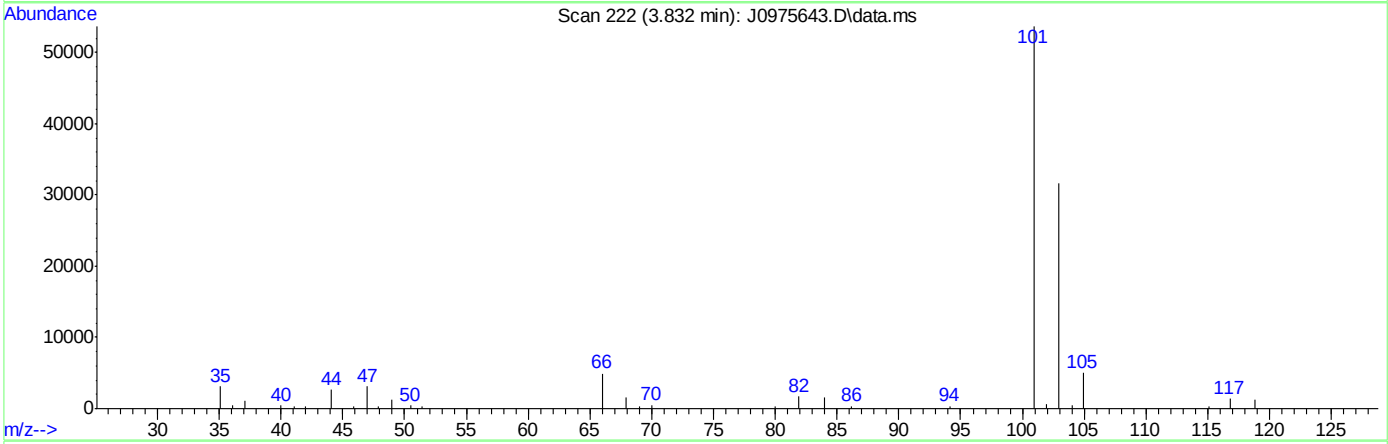
Parameter	CAS	Sig#	R.T. (min.)	Reason
Trichlorofluoromethane	75-69-4		3.83	Split peak
Ethyl Alcohol	64-17-5		4.26	Poor instrument integration
Carbon Tetrachloride	56-23-5		6.93	Overlapping peak

Quantitation Report (Qedit)

Data Path : C:\msdchem\2\data\040516\
Data File : J0975643.D
Acq On : 5 Apr 2016 6:21 pm
Operator : melissam
Sample : FA32712-1MSD Inst : MSVOA6
Misc : MS33477,VJ5255,,,,,
ALS Vial : 24 Sample Multiplier: 1

Quant Time: Apr 06 07:43:29 2016
Quant Method : C:\msdchem\2\methods\MSJ031516.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Wed Mar 16 08:34:48 2016
Response via : Initial Calibration





TIC: J0975643.D\data.ms

(8) Trichlorofluoromethane ( )

3.832min (-0.006) 13.62ug/L

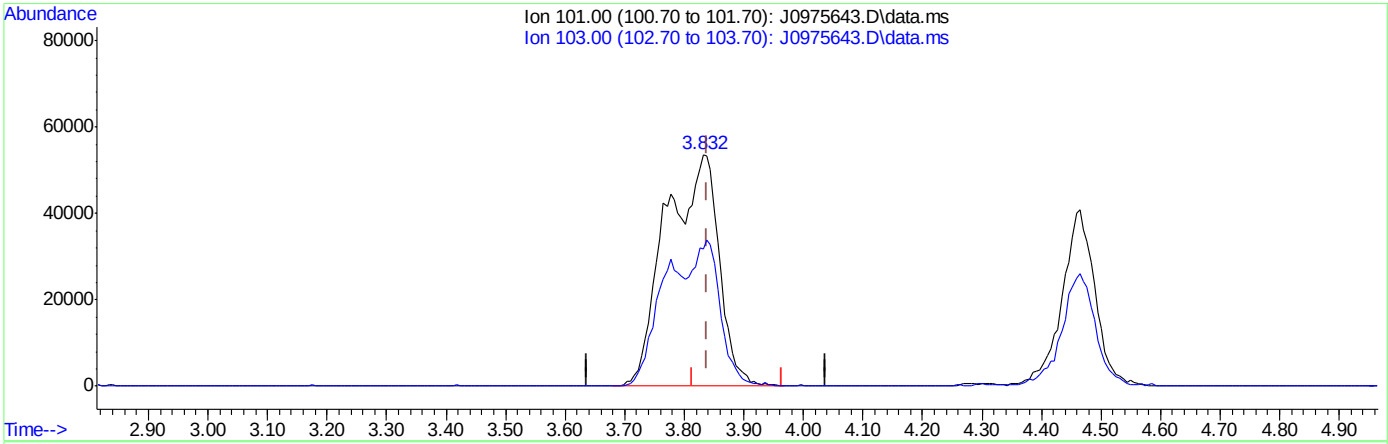
response 149635

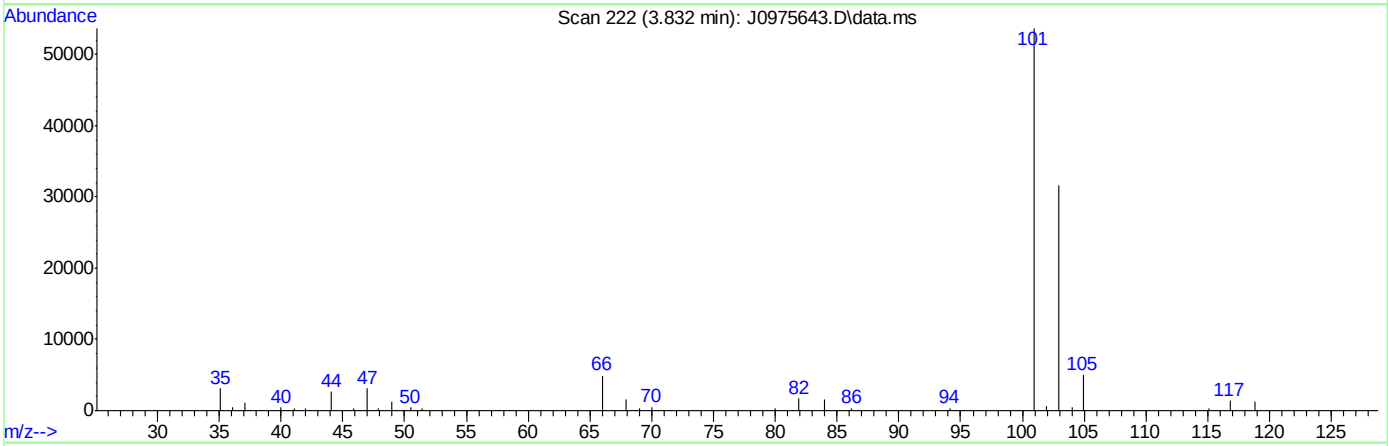
Ion	Exp%	Act%
101.00	100	100
103.00	63.50	59.09
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\2\data\040516\
Data File : J0975643.D
Acq On : 5 Apr 2016 6:21 pm
Operator : melissam
Sample : FA32712-1MSD Inst : MSVOA6
Misc : MS33477,VJ5255,,,,,
ALS Vial : 24 Sample Multiplier: 1

Quant Time: Apr 06 07:43:29 2016
Quant Method : C:\msdchem\2\methods\MSJ031516.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Wed Mar 16 08:34:48 2016
Response via : Initial Calibration





TIC: J0975643.D\data.ms

(8) Trichlorofluoromethane ( )

3.832min (-0.006) 30.19ug/L m

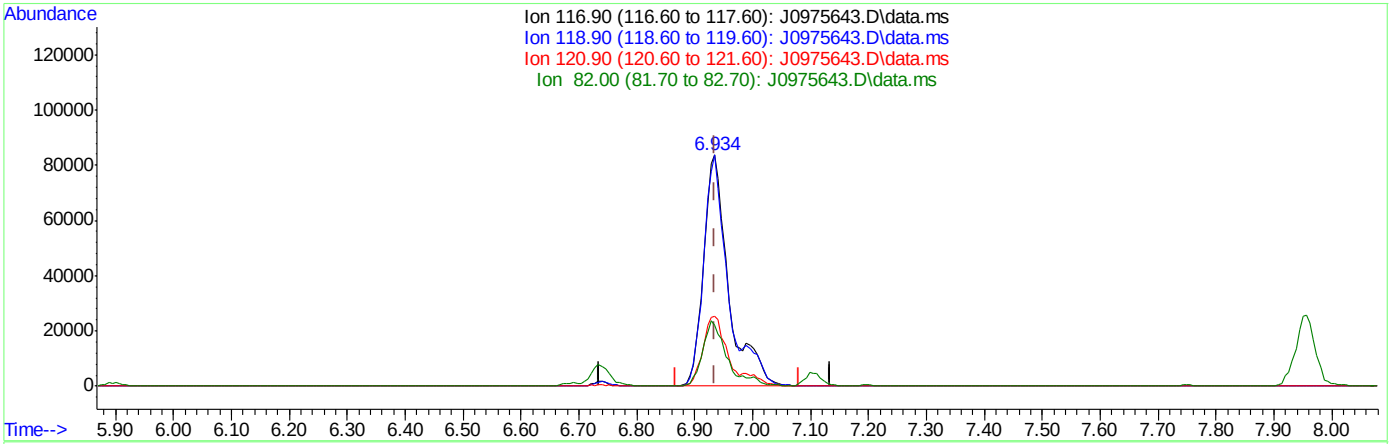
response 331831

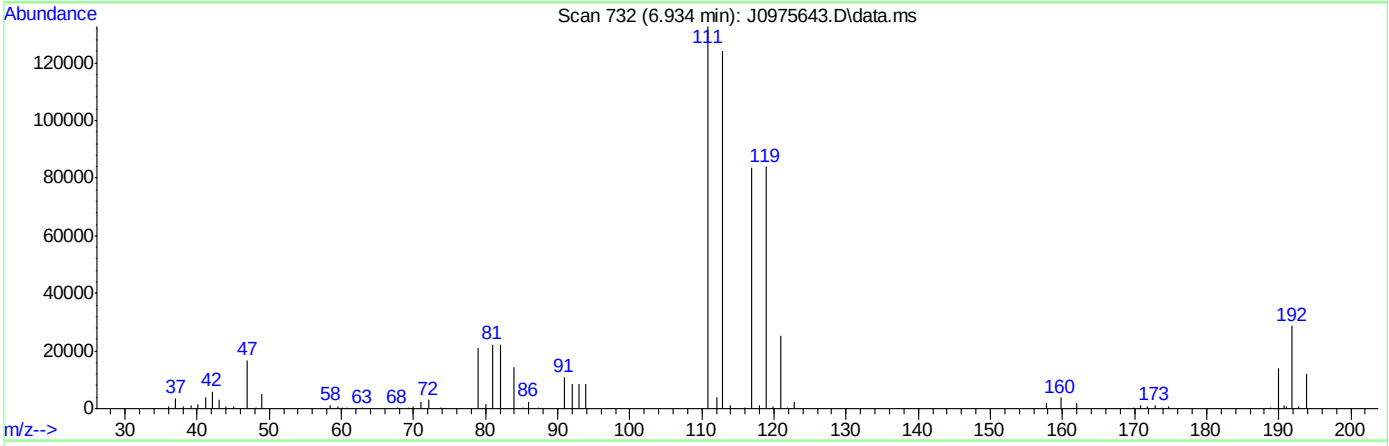
Ion	Exp%	Act%
101.00	100	100
103.00	63.50	59.09
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\2\data\040516\
Data File : J0975643.D
Acq On : 5 Apr 2016 6:21 pm
Operator : melissam
Sample : FA32712-1MSD Inst : MSVOA6
Misc : MS33477,VJ5255,,,,,
ALS Vial : 24 Sample Multiplier: 1

Quant Time: Apr 06 07:43:29 2016
Quant Method : C:\msdchem\2\methods\MSJ031516.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Wed Mar 16 08:34:48 2016
Response via : Initial Calibration





TIC: J0975643.D\data.ms

(37) Carbon Tetrachloride ( )

6.934min (-0.001) 28.26ug/L

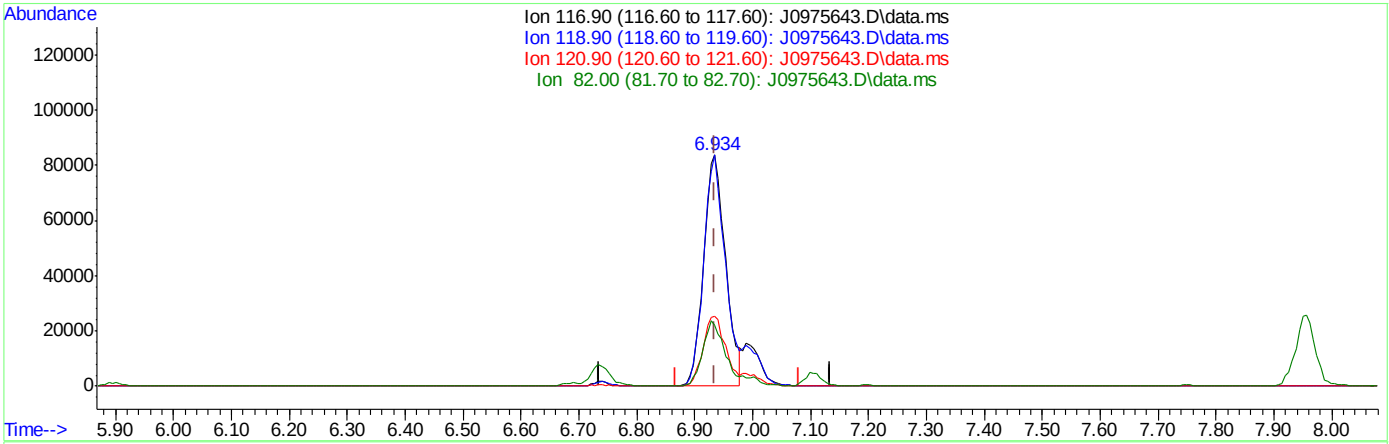
response 254144

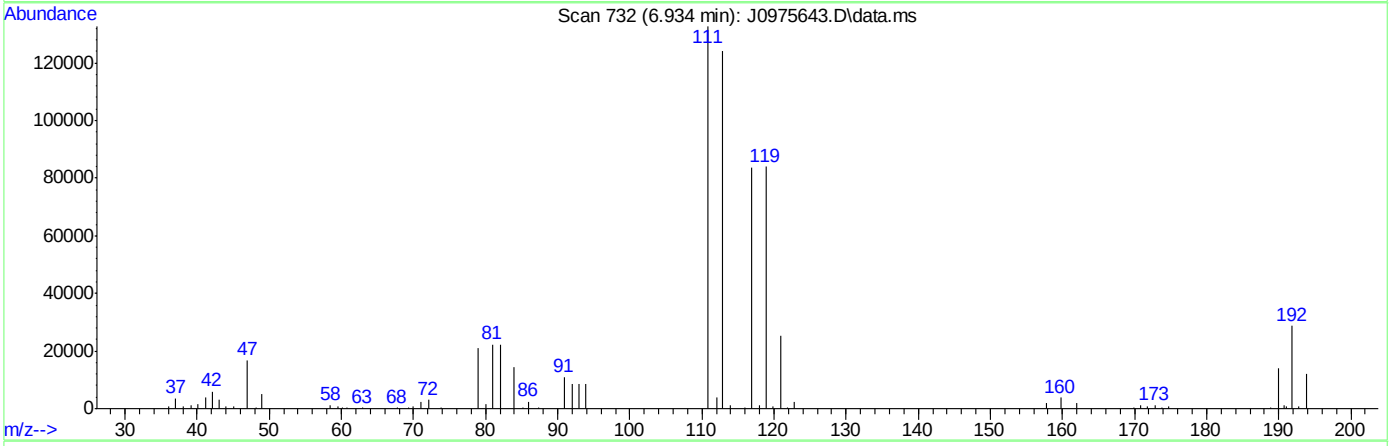
Ion	Exp%	Act%
116.90	100	100
118.90	96.80	100.28
120.90	31.80	30.39
82.00	25.40	26.60

Quantitation Report (Qedit)

Data Path : C:\msdchem\2\data\040516\
Data File : J0975643.D
Acq On : 5 Apr 2016 6:21 pm
Operator : melissam
Sample : FA32712-1MSD Inst : MSVOA6
Misc : MS33477,VJ5255,,,,,
ALS Vial : 24 Sample Multiplier: 1

Quant Time: Apr 06 07:43:29 2016
Quant Method : C:\msdchem\2\methods\MSJ031516.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Wed Mar 16 08:34:48 2016
Response via : Initial Calibration





TIC: J0975643.D\data.ms

(37) Carbon Tetrachloride ( )

6.934min (-0.001) 24.53ug/L m

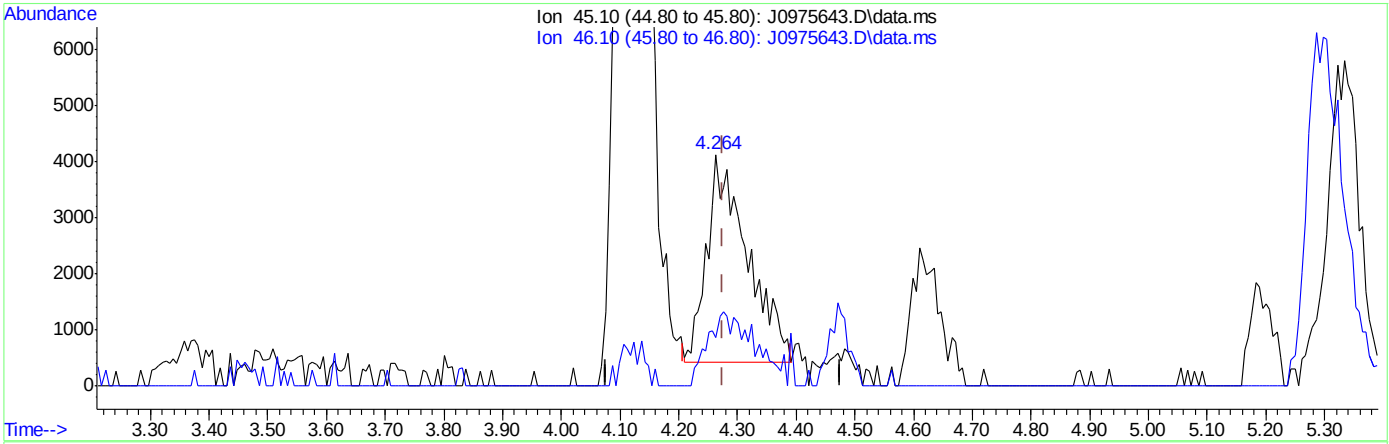
response 220663

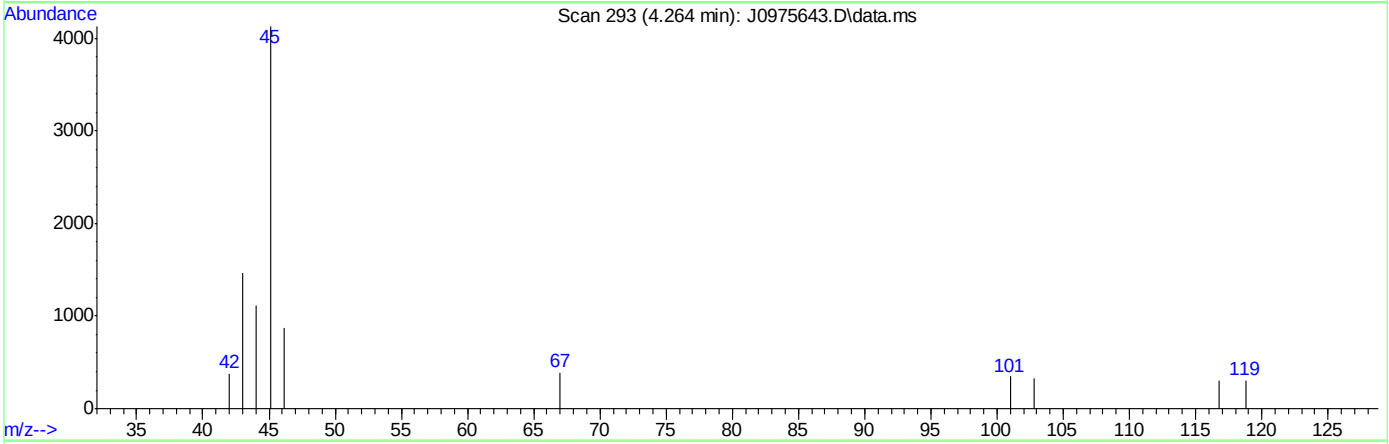
Ion	Exp%	Act%
116.90	100	100
118.90	96.80	100.28
120.90	31.80	30.39
82.00	25.40	26.60

Quantitation Report (Qedit)

Data Path : C:\msdchem\2\data\040516\
Data File : J0975643.D
Acq On : 5 Apr 2016 6:21 pm
Operator : melissam
Sample : FA32712-1MSD Inst : MSVOA6
Misc : MS33477,VJ5255,,,,,
ALS Vial : 24 Sample Multiplier: 1

Quant Time: Apr 06 07:43:29 2016
Quant Method : C:\msdchem\2\methods\MSJ031516.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Wed Mar 16 08:34:48 2016
Response via : Initial Calibration





TIC: J0975643.D\data.ms

(107) Ethanol

4.264min (-0.012) 514.27ug/L

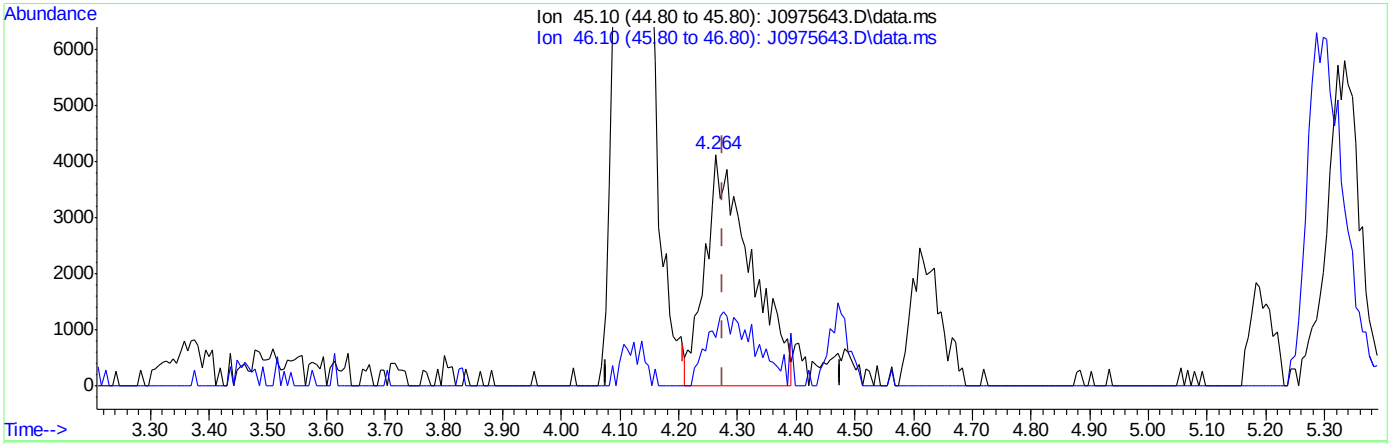
response 17515

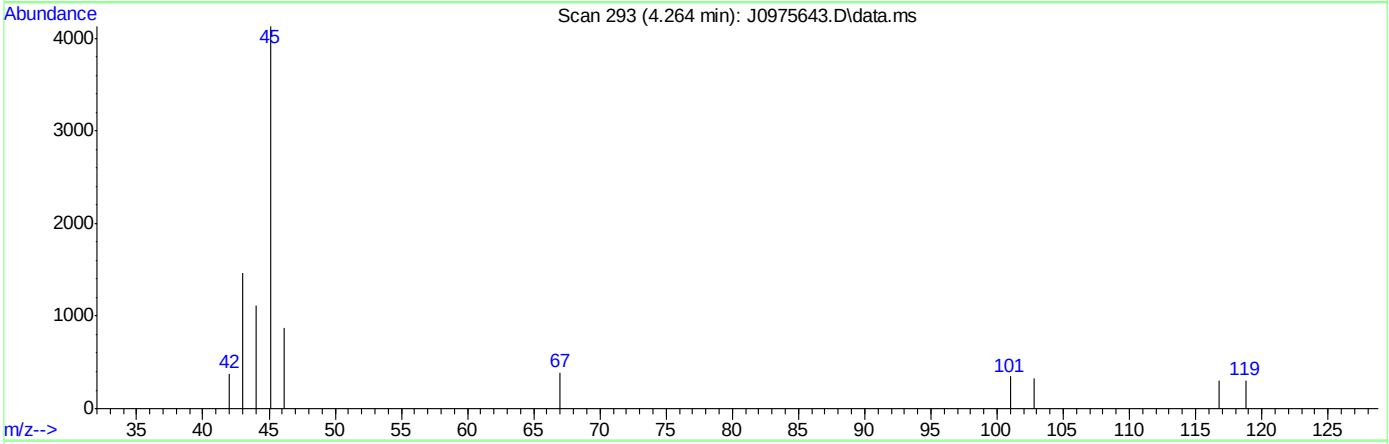
Ion	Exp%	Act%
45.10	100	100
46.10	28.20	23.57
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\2\data\040516\
Data File : J0975643.D
Acq On : 5 Apr 2016 6:21 pm
Operator : melissam
Sample : FA32712-1MSD Inst : MSVOA6
Misc : MS33477,VJ5255,,,,,
ALS Vial : 24 Sample Multiplier: 1

Quant Time: Apr 06 07:43:29 2016
Quant Method : C:\msdchem\2\methods\MSJ031516.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Wed Mar 16 08:34:48 2016
Response via : Initial Calibration





TIC: J0975643.D\data.ms

(107) Ethanol

4.264min (-0.012) 663.44ug/L m

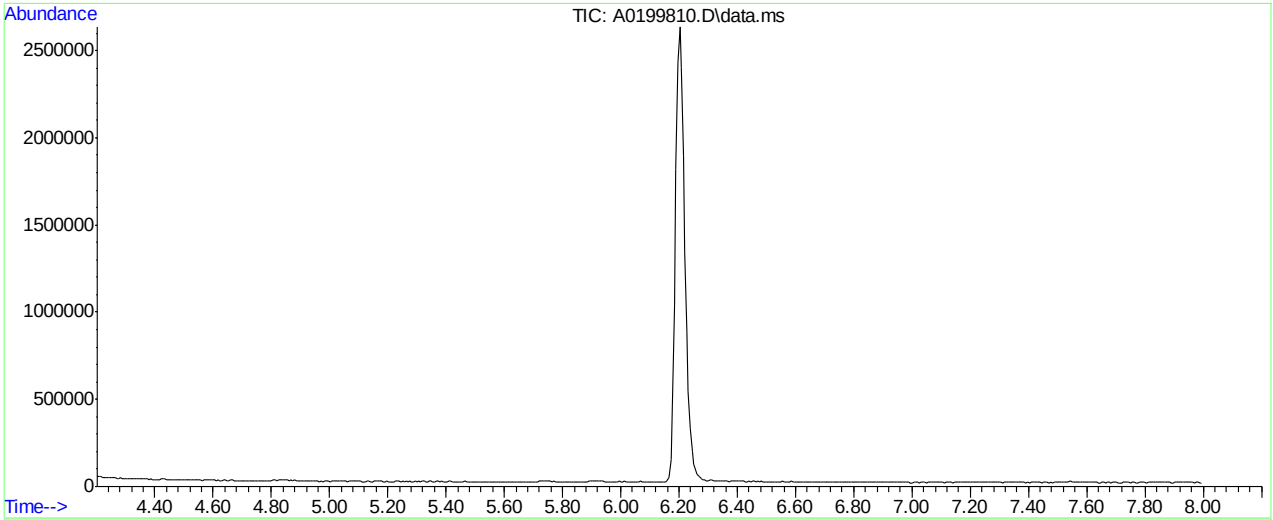
response 22202

Ion	Exp%	Act%
45.10	100	100
46.10	28.20	21.12
0.00	0.00	0.00
0.00	0.00	0.00

Methods: SW-846 8260B

Data File : C:\msdchem\1\DATA\032516\A0199810.D Vial: 1
Acq On : 25 Mar 2016 1:19 pm Operator: TRANGD
Sample : BFB TUNE Inst : MSVOA10
Misc : MS33377,VA1897,,,,, Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\msdchem\1\METHODS\031616oxy.m (RTE Integrator)
Title : SW-846 Method 5030B/8260B & EPA 624



AutoFind: Scans 387, 388, 389; Background Corrected with Scan 375

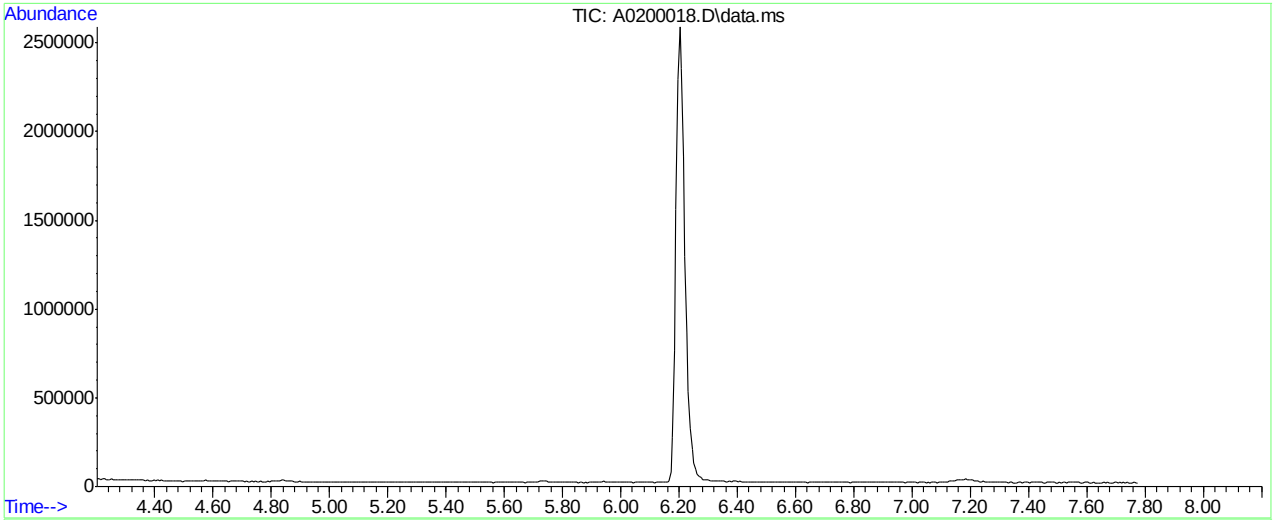
Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	33.4	147797	PASS
75	95	30	60	53.9	238433	PASS
95	95	100	100	100.0	441982	PASS
96	95	5	9	6.7	29754	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	89.4	395221	PASS
175	174	5	9	8.2	32416	PASS
176	174	95	101	96.7	382272	PASS
177	176	5	9	6.6	25288	PASS

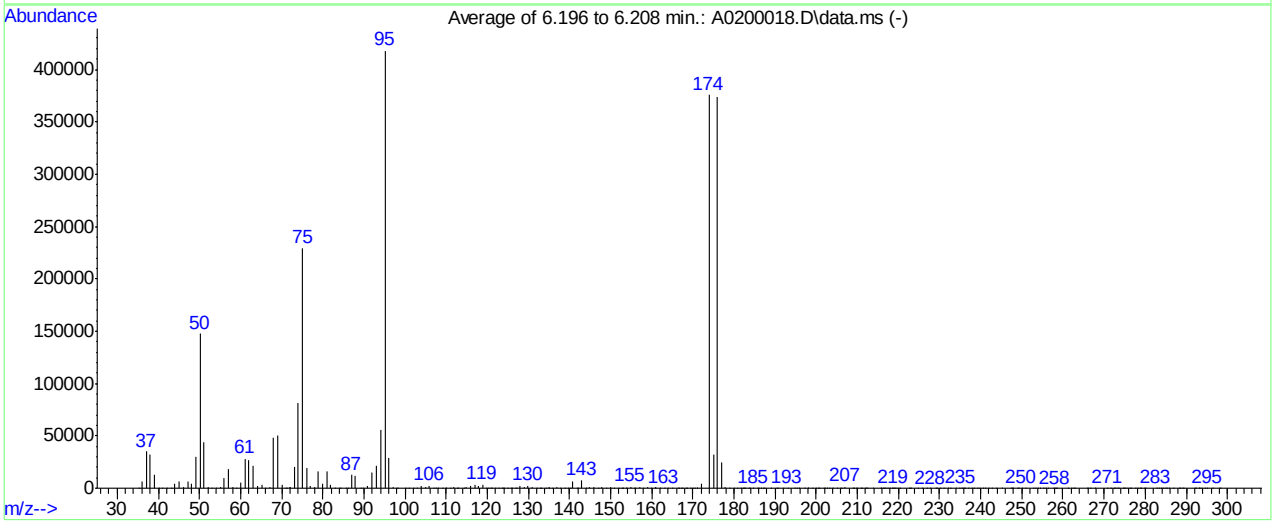
A0199810.D 031616oxy.m Mon Mar 28 11:29:16 2016

Methods: SW-846 8260B

Data File : C:\msdchem\1\DATA\040516\A0200018.D Vial: 1
Acq On : 5 Apr 2016 10:41 am Operator: TRANGD
Sample : BFB TUNE Inst : MSVOA10
Misc : MS33459,VA1906,,,,, Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\msdchem\1\METHODS\032516oxy.m (RTE Integrator)
Title : SW-846 Method 5030B/8260B & EPA 624





AutoFind: Scans 387, 388, 389; Background Corrected with Scan 377

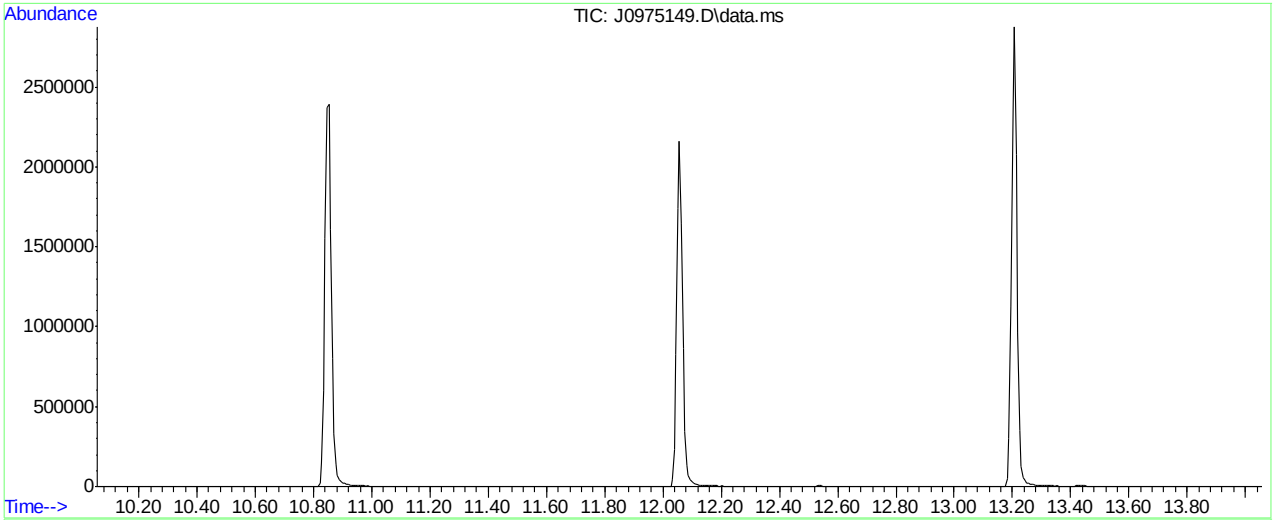
Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	35.3	147725	PASS
75	95	30	60	54.8	229291	PASS
95	95	100	100	100.0	418155	PASS
96	95	5	9	7.0	29070	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	89.8	375594	PASS
175	174	5	9	8.4	31720	PASS
176	174	95	101	99.5	373547	PASS
177	176	5	9	6.6	24798	PASS

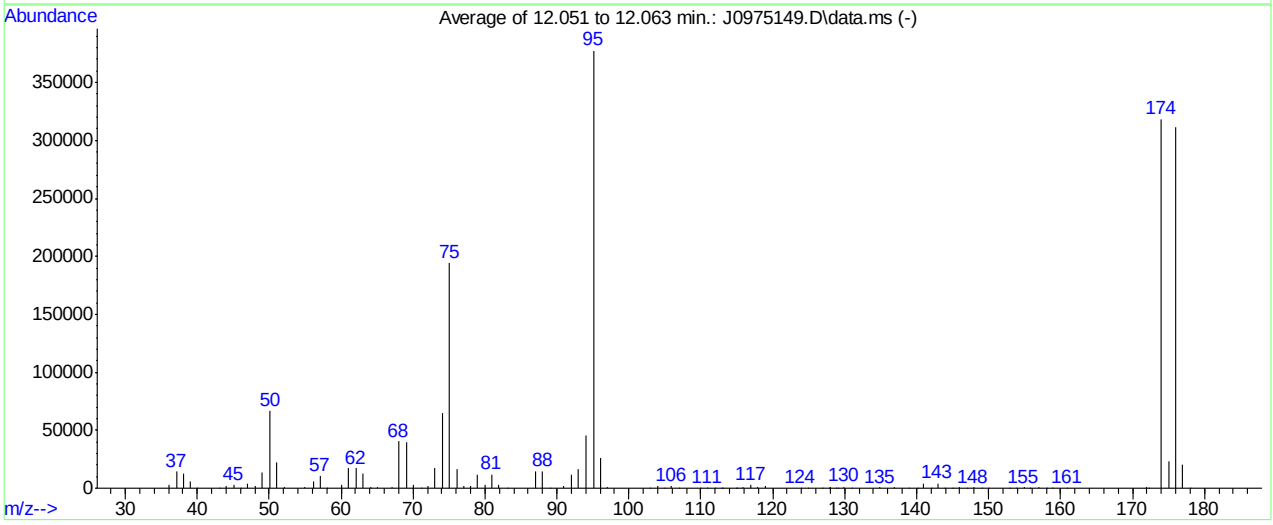
A0200018.D 032516oxy.m Tue Apr 05 15:53:36 2016

Methods: SW-846 8260B

Data File : C:\msdchem\2\data\031516\J0975149.D Vial: 5
Acq On : 15 Mar 2016 1:53 pm Operator: DARSHNAP
Sample : BFB Inst : MSVOA6
Misc : MS33279,VJ5237,,,,, Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\msdchem\2\methods\MSJ031516.M (RTE Integrator)
Title : SW-846 Method 5030B/8260B & EPA 624





AutoFind: Scans 1573, 1574, 1575; Background Corrected with Scan 1566

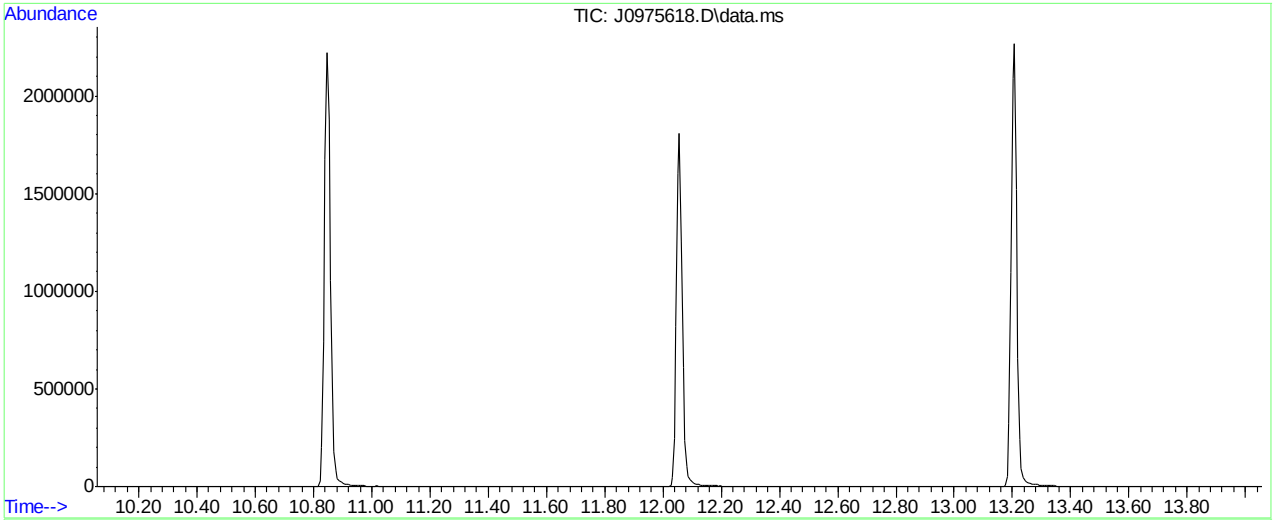
Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	17.6	66293	PASS
75	95	30	60	51.4	194069	PASS
95	95	100	100	100.0	377600	PASS
96	95	5	9	7.0	26531	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	84.3	318315	PASS
175	174	5	9	7.2	22907	PASS
176	174	95	101	97.8	311403	PASS
177	176	5	9	6.5	20325	PASS

J0975149.D MSJ031516.M Wed Mar 16 09:52:48 2016

Methods: SW-846 8260B

Data File : C:\msdchem\2\data\040516\J0975618.D Vial: 1
Acq On : 5 Apr 2016 7:40 am Operator: melissam
Sample : bfb Inst : MSVOA6
Misc : MS33374,VJ5255,,,,, Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\msdchem\2\methods\MSJ031516.M (RTE Integrator)
Title : SW-846 Method 5030B/8260B & EPA 624



AutoFind: Scans 1573, 1574, 1575; Background Corrected with Scan 1566

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	16.8	54325	PASS
75	95	30	60	49.2	158923	PASS
95	95	100	100	100.0	323179	PASS
96	95	5	9	6.8	21923	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	85.0	274773	PASS
175	174	5	9	7.5	20571	PASS
176	174	95	101	96.1	264064	PASS
177	176	5	9	6.9	18139	PASS

J0975618.D MSJ031516.M Wed Apr 06 08:02:04 2016

Manual Integrations APPROVED (compounds with "m" flag)
Juan Garcia
03/29/16 15:11

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\032516\
Data File : A0199813.D
Acq On : 25 Mar 2016 2:46 pm
Operator : TRANGD
Sample : IC1897-1 Inst : MSVOA10
Misc : MS33377,VA1897,,,,,
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Mar 29 09:48:13 2016
Quant Method : C:\msdchem\1\METHODS\032516oxy.m
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Tue Mar 29 09:45:40 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	7.378	96	3268686	50.00	ug/L	0.00
48) Chlorobenzene-d5	10.439	117	2508404	50.00	ug/L	0.00
69) 1,4-Dichlorobenzene-d4	12.792	152	1330385	50.00	ug/L	0.00
94) Tert Butyl Alcohol-d10	5.037	65	310627	250.00	ug/L	-0.01
System Monitoring Compounds						
31) Dibromofluoromethane	6.580	113	1062087	51.67	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 103.34%			
39) 1,2-Dichloroethane-d4	7.116	65	1480120	52.38	ug/L	0.00
Spiked Amount 50.000	Range 79 - 125		Recovery = 104.76%			
49) Toluene-d8	8.902	98	3012774	51.35	ug/L	0.00
Spiked Amount 50.000	Range 85 - 112		Recovery = 102.70%			
70) 4-Bromofluorobenzene	11.646	95	1115863	51.11	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 102.22%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	2.599	85	22861	1.04	ug/L	97
3) Chloromethane	2.830	50	41602	1.17	ug/L	97
4) Vinyl Chloride	2.952	62	16520	0.96	ug/L	100
5) Bromomethane	3.336	94	12292	1.52	ug/L	79
6) Chloroethane	3.489	64	10721	1.24	ug/L	82
7) Trichlorofluoromethane	3.629	101	25567	1.00	ug/L	85
8) Ethyl Ether	3.940	59	14398	1.06	ug/L	93
9) 1,2-Dichlorotrifluoroe...	4.159	67	18205	1.12	ug/L	95
10) 1,1-Dichloroethene	4.184	61	31833	1.07	ug/L	95
11) Freon 113	4.233	101	16909	1.13	ug/L	94
12) Carbon Disulfide	4.239	76	45944	1.16	ug/L	59
13) Iodomethane	4.354	142	29070	1.14	ug/L	99
14) Methylene Chloride	4.787	49	81298	2.53	ug/L	93
15) Acetone	4.830	43	36943	6.23	ug/L	99
16) Methyl acetate	4.946	43	78870	5.37	ug/L	98
17) trans-1,2-Dichloroethene	4.958	61	26727	1.12	ug/L	94
18) Hexane	5.007	56	20033	1.05	ug/L #	92
19) Methyl Tert Butyl Ether	5.049	73	34457	1.06	ug/L	87
20) Di-isopropyl ether	5.409	45	73444	0.86	ug/L	85
21) 1,1-Dichloroethane	5.586	63	38516	1.09	ug/L	98
22) Acrylonitrile	5.647	53	32857	4.61	ug/L	94
23) ETBE	5.781	59	33965	0.66	ug/L	97
24) Vinyl acetate	5.805	43	171011	2.85	ug/L	92
25) cis-1,2-Dichloroethene	6.141	96	15168	0.93	ug/L	88
26) 2,2-Dichloropropane	6.244	77	20832	1.20	ug/L	90
27) Bromochloromethane	6.348	128	10017	1.01	ug/L	91
28) Cyclohexane	6.354	56	22320	0.65	ug/L	91
29) Chloroform	6.397	83	38972	1.13	ug/L	92
30) Tetrahydrofuran	6.580	42	5024	0.85	ug/L	77
32) Carbon Tetrachloride	6.555	117	30439	1.05	ug/L	91
33) 1,1,1-Trichloroethane	6.622	97	30681	1.07	ug/L	98
34) 2-Butanone	6.696	43	32699	3.41	ug/L	93
35) 1,1-Dichloropropene	6.738	75	15771	0.67	ug/L	94

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\032516\
Data File : A0199813.D
Acq On : 25 Mar 2016 2:46 pm
Operator : TRANGD
Sample : IC1897-1 Inst : MSVOA10
Misc : MS33377,VA1897,,,,,
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Mar 29 09:48:13 2016
Quant Method : C:\msdchem\1\METHODS\032516oxy.m
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Tue Mar 29 09:45:40 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
36) tert-Butyl Formate	6.830	59	104929	6.95 ug/L #	59
37) Benzene	6.988	78	58636	0.99 ug/L	97
38) TAME	7.055	73	24792	0.62 ug/L	87
40) 1,2-Dichloroethane	7.189	62	38269	1.16 ug/L	97
41) Trichloroethene	7.549	95	19160	1.05 ug/L	93
42) Methylcyclohexane	7.543	83	17779	0.64 ug/L	87
43) Dibromomethane	7.976	93	10955	1.03 ug/L	91
44) 1,2-Dichloropropane	8.067	63	16652	0.97 ug/L	88
45) Bromodichloromethane	8.110	83	24674	1.03 ug/L	92
46) 2-Chloroethyl vinyl ether	8.634	63	19022	1.90 ug/L	97
47) cis-1,3-Dichloropropene	8.720	75	15931	0.61 ug/L	96
50) Toluene	8.951	91	66820	1.09 ug/L	97
51) 2-Nitropropane	9.183	41	25079	4.55 ug/L	86
52) 4-Methyl-2-pentanone	9.293	43	61069	3.05 ug/L	95
53) trans-1,3-Dichloropropene	9.347	75	16211	0.75 ug/L	93
54) Tetrachloroethene	9.341	166	19023	0.97 ug/L	92
55) 1,1,2-Trichloroethane	9.518	83	12192	1.09 ug/L	84
56) Dibromochloromethane	9.695	129	17245	1.00 ug/L	80
57) 1,3-Dichloropropane	9.792	76	18482	0.90 ug/L	93
58) 1,2-Dibromoethane	9.957	107	12191	0.94 ug/L	88
59) 2-hexanone	10.109	43	33884	2.36 ug/L	90
60) 1-Chlorohexane	10.390	91	9306	0.44 ug/L #	91
61) Ethylbenzene	10.451	91	76197	1.07 ug/L	99
62) Chlorobenzene	10.457	112	50854	1.14 ug/L	95
63) 1,1,1,2-Tetrachloroethane	10.506	131	20688	1.13 ug/L	87
64) m,p-Xylene	10.591	91	77546	1.45 ug/L	97
65) o-Xylene	11.030	91	29219	0.50 ug/L	91
66) Styrene	11.085	104	18346	0.41 ug/L	89
67) Bromoform	11.140	173	12836	1.14 ug/L	88
68) Isopropylbenzene	11.335	105	31653	0.44 ug/L	86
71) n-Propylbenzene	11.938	91	41504	0.82 ug/L	79
72) Bromobenzene	11.768	156	20359	1.04 ug/L	89
73) 1,1,2,2-Tetrachloroethane	11.829	83	17952	1.11 ug/L	86
74) 1,3,5-Trimethylbenzene	11.938	105	31839	0.53 ug/L	95
75) 2-Chlorotoluene	11.938	91	41504	0.82 ug/L	96
76) trans-1,4-Dichloro-2-B...	12.012	53	6165	1.04 ug/L	79
77) 1,2,3-Trichloropropane	11.987	110	4961	1.02 ug/L	78
78) Cyclohexanone	12.054	55	2524	5.20 ug/L #	58
79) 4-Chlorotoluene	12.109	91	32561	0.63 ug/L	92
80) tert-Butylbenzene	12.280	91	18473	0.51 ug/L	78
81) 1,2,4-Trimethylbenzene	12.347	105	29933	0.49 ug/L	93
82) sec-Butylbenzene	12.457	105	38389	0.51 ug/L	92
83) 4-Isopropyltoluene	12.591	119	25717	0.38 ug/L	96
84) 1,3-Dichlorobenzene	12.719	146	29406	0.85 ug/L	90
85) 1,4-Dichlorobenzene	12.810	146	45083m	1.15 ug/L	
86) n-Butylbenzene	13.030	92	18622	0.50 ug/L	90
87) Benzyl Chloride	13.060	126	4777	0.69 ug/L	97
88) 1,2-Dichlorobenzene	13.249	146	26911	0.84 ug/L	95
89) 1,2-Dibromo-3-Chloropr...	14.005	75	2854	1.06 ug/L #	81
90) Hexachlorobutadiene	14.554	225	14807	1.06 ug/L	96

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\032516\
Data File : A0199813.D
Acq On : 25 Mar 2016 2:46 pm
Operator : TRANGD
Sample : IC1897-1 Inst : MSVOA10
Misc : MS33377,VA1897,,,,,
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Mar 29 09:48:13 2016
Quant Method : C:\msdchem\1\METHODS\032516oxy.m
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Tue Mar 29 09:45:40 2016
Response via : Initial Calibration

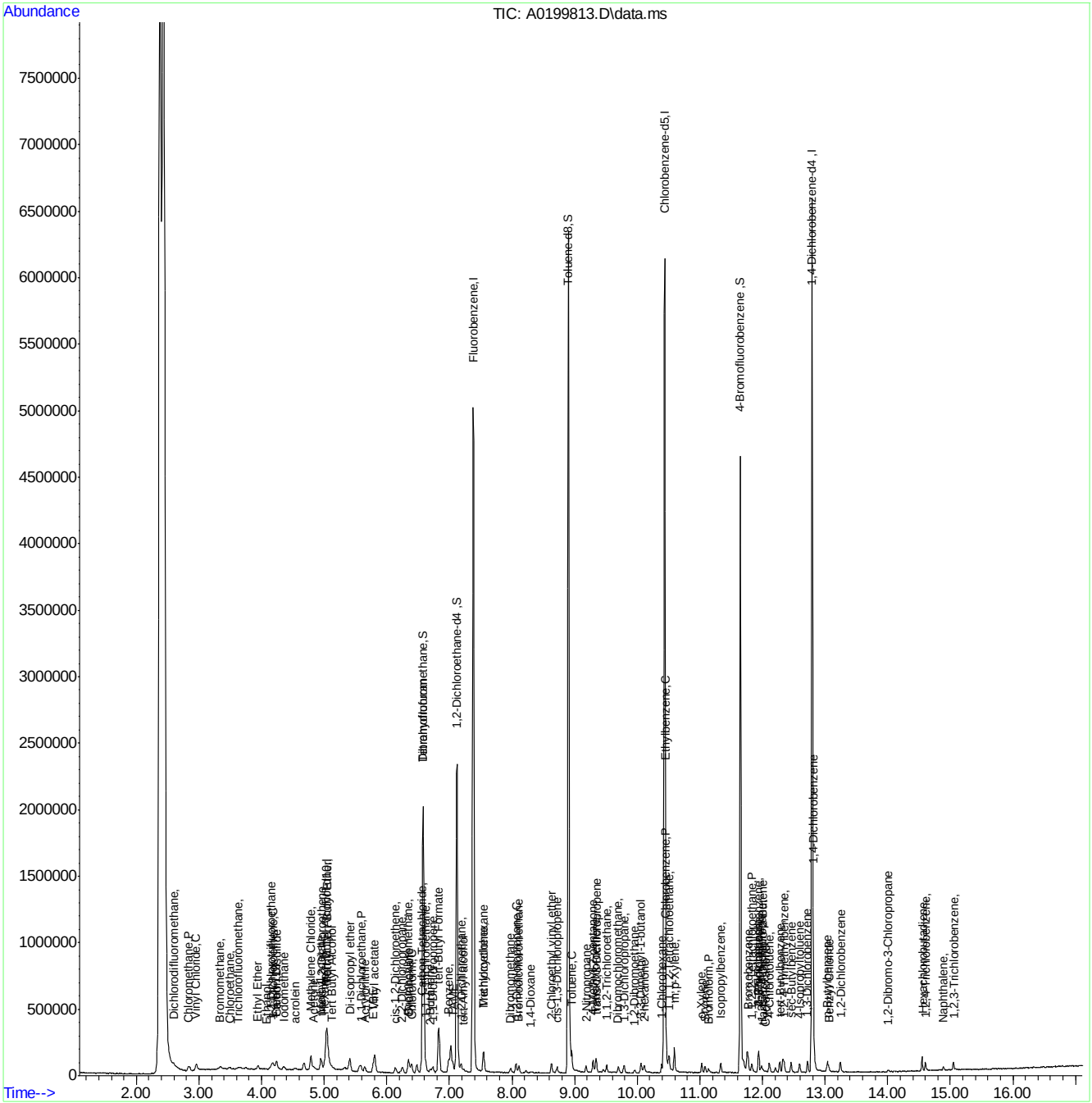
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
91) 1,2,4-Trichlorobenzene	14.602	180	14225	0.55	ug/L	82
92) Naphthalene	14.889	128	17473	0.40	ug/L	89
93) 1,2,3-Trichlorobenzene	15.054	180	13878	0.62	ug/L	84
95) Ethanol	4.080	45	2512	13.56	ug/L	77
96) acrolein	4.537	56	11864	4.58	ug/L	99
97) Tert Butyl Alcohol	5.117	59	13727	9.94	ug/L	89
98) tert Amyl alcohol	7.220	59	6897	6.47	ug/L	83
99) 1,4-Dioxane	8.299	88	980	8.87	ug/L	76
100) 3,3-Dimethyl-1-butanol	10.061	57	25600	24.04	ug/L	91

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\032516\
Data File : A0199813.D
Acq On : 25 Mar 2016 2:46 pm
Operator : TRANGD
Sample : IC1897-1 Inst : MSVOA10
Misc : MS33377,VA1897,,,,,
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Mar 29 09:48:13 2016
Quant Method : C:\msdchem\1\METHODS\032516oxy.m
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Tue Mar 29 09:45:40 2016
Response via : Initial Calibration



Manual Integration Approval Summary

Sample Number: VA1897-IC1897
Lab FileID: A0199813.D
Injection Time: 03/25/16 14:46

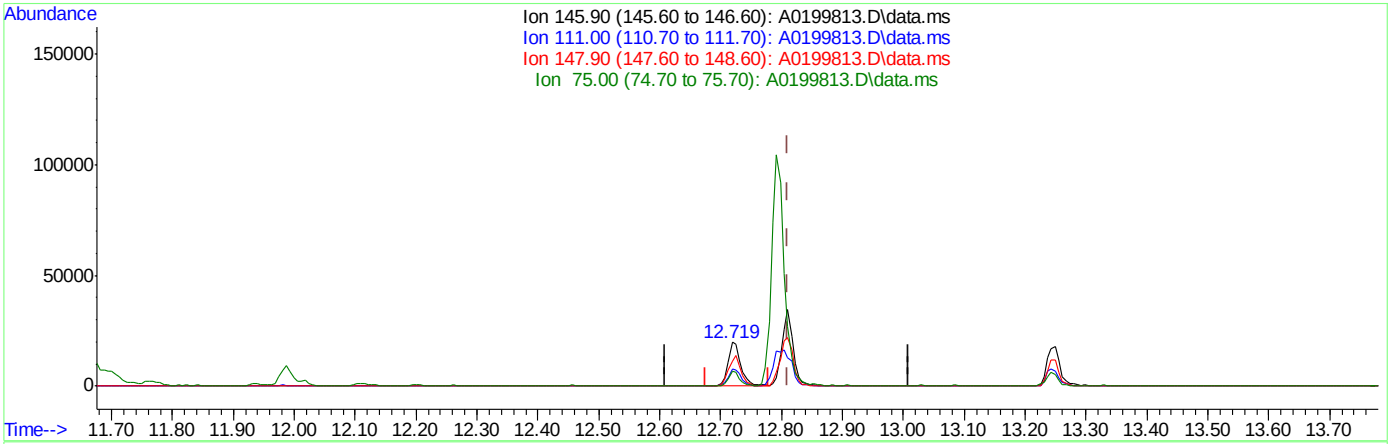
Method: SW846 8260B
Analyst approved: 03/29/16 09:54 Trang Diep
Supervisor approved: 03/29/16 15:11 Juan Garcia

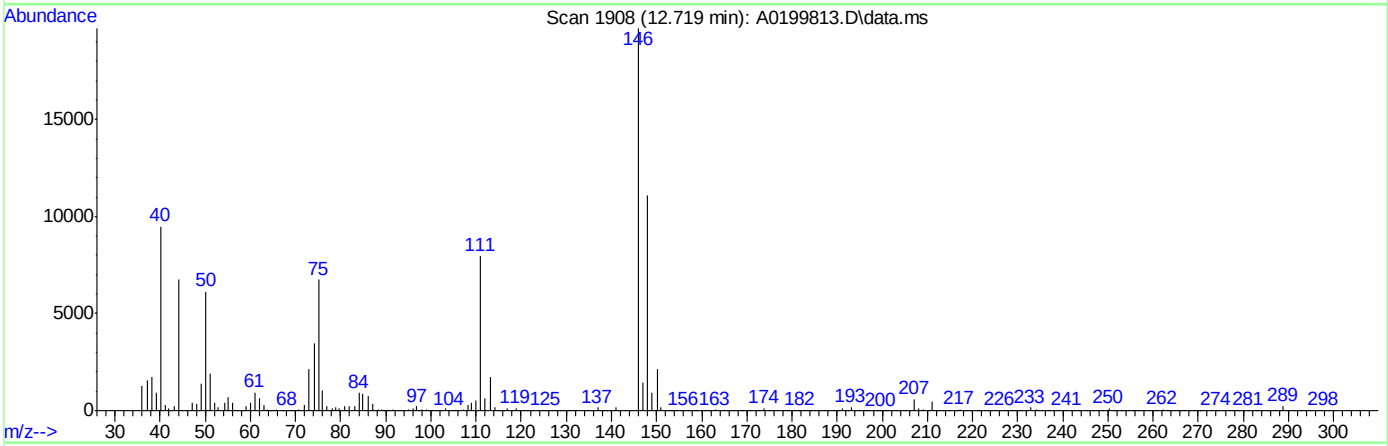
Parameter	CAS	Sig#	R.T. (min.)	Reason
1,4-Dichlorobenzene	106-46-7		12.81	Missed peak

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\032516\
Data File : A0199813.D
Acq On : 25 Mar 2016 2:46 pm
Operator : TRANGD
Sample : IC1897-1 Inst : MSVOA10
Misc : MS33377,VA1897,,,,,
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Mar 25 16:13:37 2016
Quant Method : C:\msdchem\1\METHODS\031616oxy.m
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Tue Mar 22 12:23:01 2016
Response via : Initial Calibration





TIC: A0199813.D\data.ms

(85) 1,4-Dichlorobenzene

12.719min (-0.091) 0.77ug/L

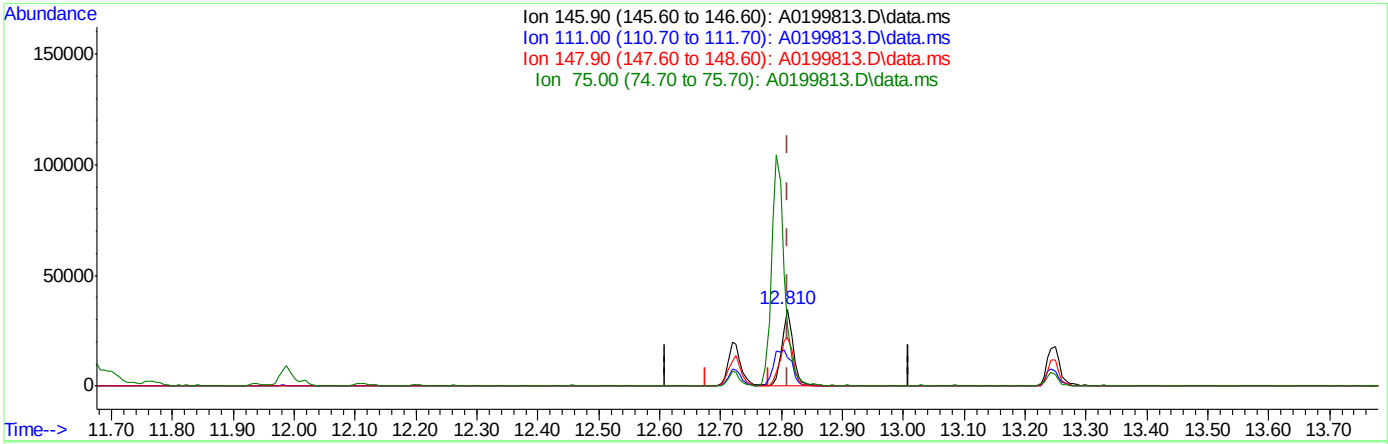
response 29406

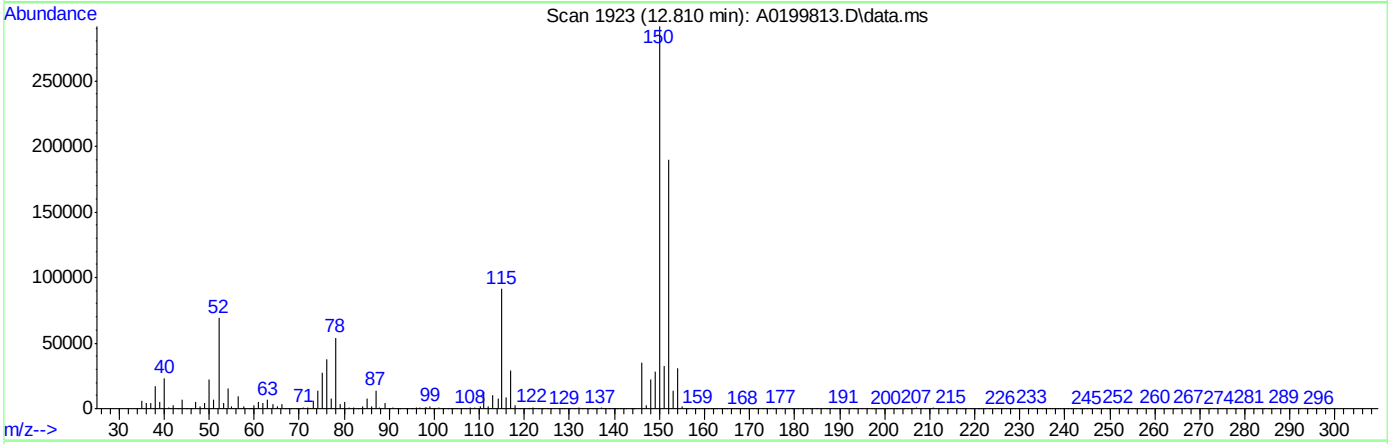
Ion	Exp%	Act%
145.90	100	100
111.00	36.90	40.40
147.90	64.30	56.36
75.00	30.20	33.86

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\032516\
Data File : A0199813.D
Acq On : 25 Mar 2016 2:46 pm
Operator : TRANGD
Sample : IC1897-1 Inst : MSVOA10
Misc : MS33377,VA1897,,,,,
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Mar 25 16:13:37 2016
Quant Method : C:\msdchem\1\METHODS\031616oxy.m
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Tue Mar 22 12:23:01 2016
Response via : Initial Calibration





TIC: A0199813.D\data.ms

(85) 1,4-Dichlorobenzene

12.810min (-0.000) 1.18ug/L m

response 45128

Ion	Exp%	Act%
145.90	100	100
111.00	36.90	36.70
147.90	64.30	62.93
75.00	30.20	77.71#

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\032516\
Data File : A0199814.D
Acq On : 25 Mar 2016 3:09 pm
Operator : TRANGD
Sample : IC1897-2 Inst : MSVOA10
Misc : MS33377,VA1897,,,,,
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Mar 29 09:45:56 2016
Quant Method : C:\msdchem\1\METHODS\032516oxy.m
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Mon Mar 28 11:34:19 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	7.384	96	3340342	50.00	ug/L	0.00
48) Chlorobenzene-d5	10.439	117	2696770	50.00	ug/L	0.00
69) 1,4-Dichlorobenzene-d4	12.792	152	1480410	50.00	ug/L	0.00
94) Tert Butyl Alcohol-d10	5.049	65	273006	250.00	ug/L	0.00
System Monitoring Compounds						
31) Dibromofluoromethane	6.586	113	1082732	51.54	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 103.08%			
39) 1,2-Dichloroethane-d4	7.122	65	1510363	52.30	ug/L	0.00
Spiked Amount 50.000	Range 79 - 125		Recovery = 104.60%			
49) Toluene-d8	8.902	98	3146984	49.89	ug/L	0.00
Spiked Amount 50.000	Range 85 - 112		Recovery = 99.78%			
70) 4-Bromofluorobenzene	11.646	95	1205118	49.60	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 99.20%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	2.599	85	108651	4.86	ug/L	99
3) Chloromethane	2.843	50	169101	4.65	ug/L	98
4) Vinyl Chloride	2.958	62	78900	4.49	ug/L	94
5) Bromomethane	3.342	94	44380	5.37	ug/L	94
6) Chloroethane	3.489	64	44721	5.06	ug/L	94
7) Trichlorofluoromethane	3.653	101	132986	5.08	ug/L	90
8) Ethyl Ether	3.946	59	67394	4.84	ug/L	93
9) 1,2-Dichlorotrifluoroe...	4.159	67	83747	5.03	ug/L	96
10) 1,1-Dichloroethene	4.184	61	142108	4.66	ug/L	98
11) Freon 113	4.233	101	76881	5.03	ug/L	99
12) Carbon Disulfide	4.245	76	197995	4.91	ug/L	100
13) Iodomethane	4.354	142	125721	4.82	ug/L	95
14) Methylene Chloride	4.793	49	206159	6.28	ug/L	97
15) Acetone	4.836	43	154365	25.48	ug/L	93
16) Methyl acetate	4.952	43	384137	25.59	ug/L	99
17) trans-1,2-Dichloroethene	4.958	61	114997	4.73	ug/L	99
18) Hexane	5.013	56	97514	4.98	ug/L	89
19) Methyl Tert Butyl Ether	5.049	73	160785	4.85	ug/L	88
20) Di-isopropyl ether	5.415	45	342899	3.95	ug/L	94
21) 1,1-Dichloroethane	5.592	63	176356	4.87	ug/L	97
22) Acrylonitrile	5.647	53	166829	22.92	ug/L	99
23) ETBE	5.793	59	206812	3.89	ug/L	99
24) Vinyl acetate	5.812	43	1186723	19.54	ug/L	97
25) cis-1,2-Dichloroethene	6.141	96	72730	4.38	ug/L	99
26) 2,2-Dichloropropane	6.250	77	88176	4.96	ug/L	89
27) Bromochloromethane	6.348	128	51633	5.11	ug/L	98
28) Cyclohexane	6.360	56	119458	3.38	ug/L	93
29) Chloroform	6.397	83	176730	5.03	ug/L	96
30) Tetrahydrofuran	6.586	42	20988	3.45	ug/L	87
32) Carbon Tetrachloride	6.561	117	144510	4.86	ug/L	97
33) 1,1,1-Trichloroethane	6.628	97	146586	5.00	ug/L	99
34) 2-Butanone	6.702	43	184653	18.83	ug/L	98
35) 1,1-Dichloropropene	6.744	75	84407	3.49	ug/L	95

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\032516\
Data File : A0199814.D
Acq On : 25 Mar 2016 3:09 pm
Operator : TRANGD
Sample : IC1897-2 Inst : MSVOA10
Misc : MS33377,VA1897,,,,,
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Mar 29 09:45:56 2016
Quant Method : C:\msdchem\1\METHODS\032516oxy.m
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Mon Mar 28 11:34:19 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
36) tert-Butyl Formate	6.836	59	673976	43.69	ug/L	#	64
37) Benzene	6.988	78	289860	4.77	ug/L		99
38) TAME	7.061	73	166028	4.06	ug/L		92
40) 1,2-Dichloroethane	7.189	62	169839	5.02	ug/L		95
41) Trichloroethene	7.549	95	88443	4.74	ug/L		99
42) Methylcyclohexane	7.549	83	98037	3.45	ug/L		93
43) Dibromomethane	7.976	93	54346	4.99	ug/L		98
44) 1,2-Dichloropropane	8.067	63	80798	4.61	ug/L		94
45) Bromodichloromethane	8.110	83	118509	4.85	ug/L		99
46) 2-Chloroethyl vinyl ether	8.634	63	134664	13.17	ug/L		95
47) cis-1,3-Dichloropropene	8.719	75	95364	3.58	ug/L		95
50) Toluene	8.951	91	308607	4.67	ug/L		98
51) 2-Nitropropane	9.189	41	126265	21.30	ug/L		90
52) 4-Methyl-2-pentanone	9.299	43	383654	17.81	ug/L		96
53) trans-1,3-Dichloropropene	9.347	75	91729	3.95	ug/L		89
54) Tetrachloroethene	9.341	166	100569	4.76	ug/L		95
55) 1,1,2-Trichloroethane	9.512	83	60502	5.03	ug/L		93
56) Dibromochloromethane	9.701	129	87883	4.74	ug/L		99
57) 1,3-Dichloropropane	9.792	76	102817	4.66	ug/L		97
58) 1,2-Dibromoethane	9.957	107	66348	4.74	ug/L		92
59) 2-hexanone	10.109	43	278977	18.10	ug/L		97
60) 1-Chlorohexane	10.390	91	58941	2.58	ug/L	#	87
61) Ethylbenzene	10.451	91	363464	4.73	ug/L		97
62) Chlorobenzene	10.457	112	243155	5.09	ug/L		97
63) 1,1,1,2-Tetrachloroethane	10.506	131	95696	4.86	ug/L		95
64) m,p-Xylene	10.597	91	467630	8.12	ug/L		99
65) o-Xylene	11.030	91	164347	2.63	ug/L		98
66) Styrene	11.085	104	129488	2.66	ug/L		98
67) Bromoform	11.140	173	56221	4.66	ug/L		98
68) Isopropylbenzene	11.335	105	204411	2.62	ug/L		98
71) n-Propylbenzene	11.938	91	245732	4.38	ug/L		83
72) Bromobenzene	11.768	156	103724	4.78	ug/L		98
73) 1,1,2,2-Tetrachloroethane	11.829	83	95036	5.30	ug/L		99
74) 1,3,5-Trimethylbenzene	11.938	105	218341	3.27	ug/L		95
75) 2-Chlorotoluene	11.938	91	245732	4.38	ug/L		99
76) trans-1,4-Dichloro-2-B...	12.012	53	26497	4.02	ug/L		94
77) 1,2,3-Trichloropropane	11.987	110	28710	5.29	ug/L		97
78) Cyclohexanone	12.054	55	9451	17.49	ug/L		91
79) 4-Chlorotoluene	12.109	91	193981	3.37	ug/L		99
80) tert-Butylbenzene	12.280	91	127014	3.13	ug/L		85
81) 1,2,4-Trimethylbenzene	12.347	105	217479	3.19	ug/L		97
82) sec-Butylbenzene	12.463	105	276738	3.28	ug/L		94
83) 4-Isopropyltoluene	12.597	119	203931	2.73	ug/L		97
84) 1,3-Dichlorobenzene	12.725	146	178346	4.64	ug/L		97
85) 1,4-Dichlorobenzene	12.810	146	219613	5.04	ug/L		93
86) n-Butylbenzene	13.036	92	117463	2.84	ug/L		94
87) Benzyl Chloride	13.054	126	29348	3.79	ug/L	#	74
88) 1,2-Dichlorobenzene	13.243	146	164237	4.58	ug/L		98
89) 1,2-Dibromo-3-Chloropr...	14.005	75	14760	4.95	ug/L		93
90) Hexachlorobutadiene	14.548	225	69705	4.47	ug/L		90

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\032516\
Data File : A0199814.D
Acq On : 25 Mar 2016 3:09 pm
Operator : TRANGD
Sample : IC1897-2 Inst : MSVOA10
Misc : MS33377,VA1897,,,,,
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Mar 29 09:45:56 2016
Quant Method : C:\msdchem\1\METHODS\032516oxy.m
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Mon Mar 28 11:34:19 2016
Response via : Initial Calibration

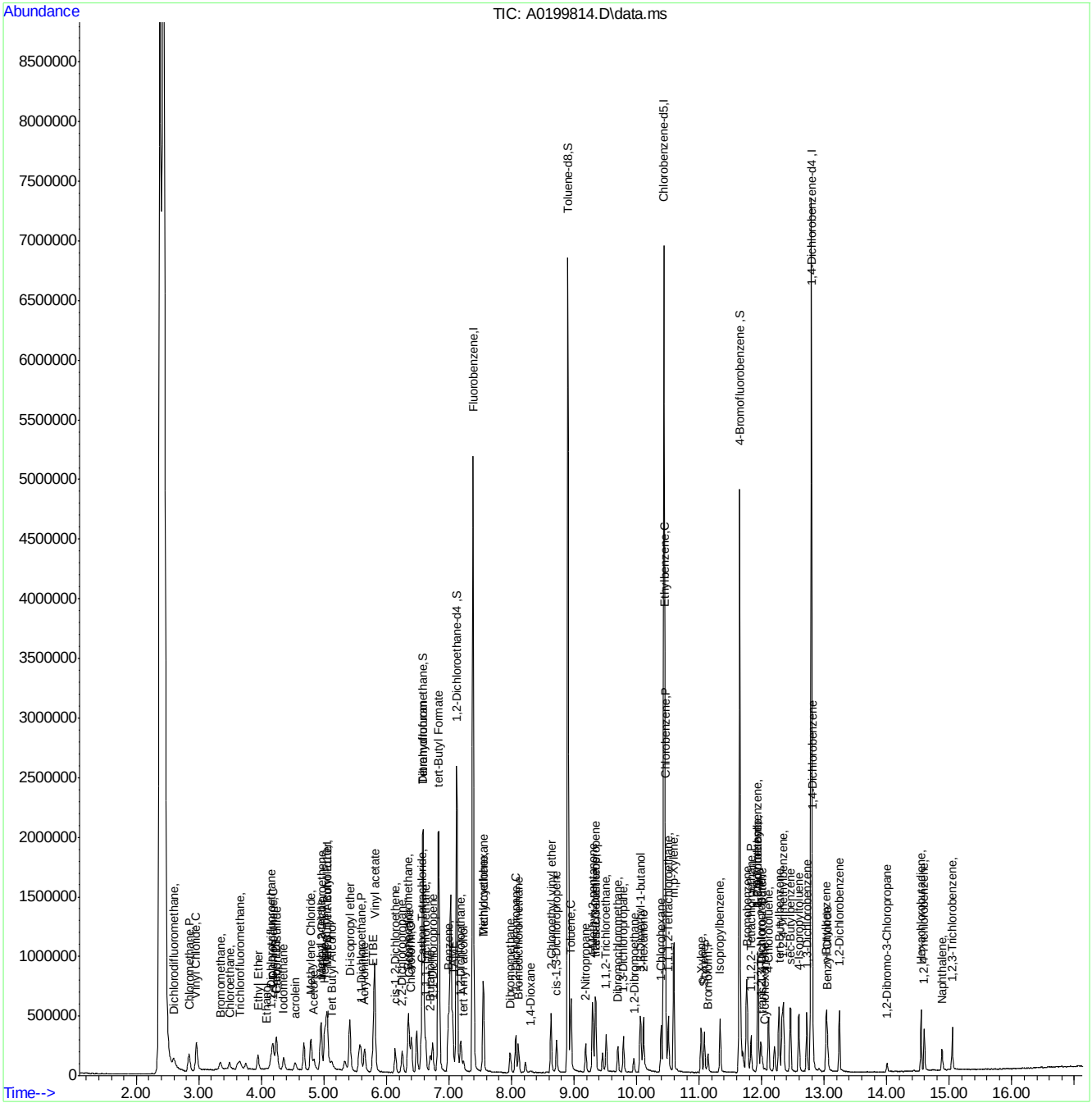
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
91) 1,2,4-Trichlorobenzene	14.596	180	85379	2.99	ug/L	99
92) Naphthalene	14.883	128	109515	2.24	ug/L	94
93) 1,2,3-Trichlorobenzene	15.048	180	82982	3.31	ug/L	98
95) Ethanol	4.080	45	16590	101.91	ug/L	85
96) acrolein	4.537	56	58168	25.55	ug/L	96
97) Tert Butyl Alcohol	5.129	59	61788	50.89	ug/L	92
98) tert Amyl alcohol	7.232	59	37237	39.76	ug/L	88
99) 1,4-Dioxane	8.299	88	5807	59.81	ug/L	82
100) 3,3-Dimethyl-1-butanol	10.061	57	152042	161.08	ug/L	90

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\032516\
Data File : A0199814.D
Acq On : 25 Mar 2016 3:09 pm
Operator : TRANGD
Sample : IC1897-2 Inst : MSVOA10
Misc : MS33377,VA1897,,,,,
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Mar 29 09:45:56 2016
Quant Method : C:\msdchem\1\METHODS\032516oxy.m
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Mon Mar 28 11:34:19 2016
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\032516\
Data File : A0199815.D
Acq On : 25 Mar 2016 3:34 pm
Operator : TRANGD
Sample : IC1897-3 Inst : MSVOA10
Misc : MS33377,VA1897,,,,,
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Mar 29 09:46:01 2016
Quant Method : C:\msdchem\1\METHODS\032516oxy.m
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Mon Mar 28 11:34:19 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	7.384	96	3393009	50.00	ug/L	0.00
48) Chlorobenzene-d5	10.439	117	2780300	50.00	ug/L	0.00
69) 1,4-Dichlorobenzene-d4	12.792	152	1552225	50.00	ug/L	0.00
94) Tert Butyl Alcohol-d10	5.043	65	292053	250.00	ug/L	0.00
System Monitoring Compounds						
31) Dibromofluoromethane	6.580	113	1079292	50.58	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 101.16%			
39) 1,2-Dichloroethane-d4	7.122	65	1512526	51.57	ug/L	0.00
Spiked Amount 50.000	Range 79 - 125		Recovery = 103.14%			
49) Toluene-d8	8.902	98	3226976	49.62	ug/L	0.00
Spiked Amount 50.000	Range 85 - 112		Recovery = 99.24%			
70) 4-Bromofluorobenzene	11.646	95	1263830	49.61	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 99.22%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	2.599	85	188386	8.29	ug/L	97
3) Chloromethane	2.836	50	294868	7.98	ug/L	99
4) Vinyl Chloride	2.952	62	144425	8.09	ug/L	96
5) Bromomethane	3.342	94	70858	8.44	ug/L	99
6) Chloroethane	3.483	64	78290	8.72	ug/L	92
7) Trichlorofluoromethane	3.653	101	226551	8.52	ug/L	95
8) Ethyl Ether	3.946	59	132396	9.37	ug/L	96
9) 1,2-Dichlorotrifluoroe...	4.159	67	164585	9.72	ug/L	99
10) 1,1-Dichloroethene	4.184	61	283681	9.17	ug/L	96
11) Freon 113	4.226	101	154296	9.93	ug/L	95
12) Carbon Disulfide	4.239	76	387029	9.45	ug/L	98
13) Iodomethane	4.354	142	245517	9.27	ug/L	96
14) Methylene Chloride	4.787	49	360401	10.80	ug/L	99
15) Acetone	4.836	43	295785	48.07	ug/L	100
16) Methyl acetate	4.946	43	745473	48.90	ug/L	98
17) trans-1,2-Dichloroethene	4.958	61	226560	9.18	ug/L	98
18) Hexane	5.013	56	192275	9.67	ug/L	96
19) Methyl Tert Butyl Ether	5.043	73	311002	9.24	ug/L	90
20) Di-isopropyl ether	5.415	45	605818	6.87	ug/L	90
21) 1,1-Dichloroethane	5.592	63	347246	9.45	ug/L	98
22) Acrylonitrile	5.647	53	348572	47.14	ug/L	95
23) ETBE	5.787	59	460491	8.47	ug/L	99
24) Vinyl acetate	5.811	43	2653068	43.70	ug/L	99
25) cis-1,2-Dichloroethene	6.141	96	145761	8.63	ug/L	98
26) 2,2-Dichloropropane	6.250	77	178158	9.86	ug/L	98
27) Bromochloromethane	6.342	128	99487	9.69	ug/L	94
28) Cyclohexane	6.354	56	290690	8.02	ug/L	95
29) Chloroform	6.397	83	344732	9.67	ug/L	93
30) Tetrahydrofuran	6.580	42	44962	7.29	ug/L	90
32) Carbon Tetrachloride	6.555	117	290660	9.62	ug/L	97
33) 1,1,1-Trichloroethane	6.622	97	290923	9.77	ug/L	97
34) 2-Butanone	6.695	43	377549	37.91	ug/L	99
35) 1,1-Dichloropropene	6.738	75	188162	7.66	ug/L	97

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\032516\
Data File : A0199815.D
Acq On : 25 Mar 2016 3:34 pm
Operator : TRANGD
Sample : IC1897-3 Inst : MSVOA10
Misc : MS33377,VA1897,,,,,
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Mar 29 09:46:01 2016
Quant Method : C:\msdchem\1\METHODS\032516oxy.m
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Mon Mar 28 11:34:19 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
36) tert-Butyl Formate	6.830	59	1389195	88.66	ug/L	#	66
37) Benzene	6.988	78	591789	9.59	ug/L		100
38) TAME	7.055	73	358173	8.62	ug/L		92
40) 1,2-Dichloroethane	7.189	62	334710	9.74	ug/L		97
41) Trichloroethene	7.549	95	183701	9.68	ug/L		95
42) Methylcyclohexane	7.549	83	226872	7.86	ug/L		94
43) Dibromomethane	7.976	93	104380	9.43	ug/L		96
44) 1,2-Dichloropropane	8.067	63	159616	8.96	ug/L		96
45) Bromodichloromethane	8.110	83	229972	9.27	ug/L		99
46) 2-Chloroethyl vinyl ether	8.634	63	337460	32.50	ug/L		95
47) cis-1,3-Dichloropropene	8.719	75	209220	7.72	ug/L		98
50) Toluene	8.951	91	627466	9.20	ug/L		100
51) 2-Nitropropane	9.183	41	260760	42.68	ug/L		95
52) 4-Methyl-2-pentanone	9.292	43	845814	38.08	ug/L		96
53) trans-1,3-Dichloropropene	9.347	75	192566	8.05	ug/L		87
54) Tetrachloroethene	9.341	166	208016	9.54	ug/L		98
55) 1,1,2-Trichloroethane	9.512	83	119302	9.62	ug/L		96
56) Dibromochloromethane	9.701	129	173423	9.06	ug/L		98
57) 1,3-Dichloropropane	9.792	76	204504	9.00	ug/L		97
58) 1,2-Dibromoethane	9.957	107	130771	9.06	ug/L		97
59) 2-hexanone	10.109	43	629321	39.61	ug/L		97
60) 1-Chlorohexane	10.396	91	148505	6.31	ug/L		95
61) Ethylbenzene	10.457	91	751101	9.48	ug/L		98
62) Chlorobenzene	10.457	112	464068	9.42	ug/L		99
63) 1,1,1,2-Tetrachloroethane	10.506	131	190157	9.37	ug/L		97
64) m,p-Xylene	10.597	91	1047611	17.65	ug/L		99
65) o-Xylene	11.030	91	384496	5.96	ug/L		99
66) Styrene	11.085	104	341176	6.80	ug/L		100
67) Bromoform	11.140	173	109690	8.82	ug/L		97
68) Isopropylbenzene	11.335	105	514353	6.38	ug/L		99
71) n-Propylbenzene	11.938	91	574161	9.75	ug/L		89
72) Bromobenzene	11.768	156	223409	9.81	ug/L		98
73) 1,1,2,2-Tetrachloroethane	11.829	83	184869	9.83	ug/L		100
74) 1,3,5-Trimethylbenzene	11.938	105	544578	7.78	ug/L		99
75) 2-Chlorotoluene	11.938	91	574161	9.75	ug/L		99
76) trans-1,4-Dichloro-2-B...	12.011	53	59017	8.54	ug/L		97
77) 1,2,3-Trichloropropane	11.987	110	56674	9.96	ug/L		96
78) Cyclohexanone	12.054	55	20883	36.86	ug/L		94
79) 4-Chlorotoluene	12.109	91	471947	7.83	ug/L		98
80) tert-Butylbenzene	12.280	91	322202	7.58	ug/L		94
81) 1,2,4-Trimethylbenzene	12.347	105	573557	8.03	ug/L		99
82) sec-Butylbenzene	12.463	105	701309	7.93	ug/L		100
83) 4-Isopropyltoluene	12.597	119	542756	6.93	ug/L		100
84) 1,3-Dichlorobenzene	12.719	146	383881	9.53	ug/L		96
85) 1,4-Dichlorobenzene	12.810	146	430146	9.41	ug/L		97
86) n-Butylbenzene	13.036	92	304015	7.01	ug/L		98
87) Benzyl Chloride	13.054	126	64740	7.98	ug/L		95
88) 1,2-Dichlorobenzene	13.243	146	349368	9.30	ug/L		98
89) 1,2-Dibromo-3-Chloropr...	14.005	75	27725	8.86	ug/L		92
90) Hexachlorobutadiene	14.548	225	148165	9.06	ug/L		91

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\032516\
Data File : A0199815.D
Acq On : 25 Mar 2016 3:34 pm
Operator : TRANGD
Sample : IC1897-3 Inst : MSVOA10
Misc : MS33377,VA1897,,,,,
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Mar 29 09:46:01 2016
Quant Method : C:\msdchem\1\METHODS\032516oxy.m
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Mon Mar 28 11:34:19 2016
Response via : Initial Calibration

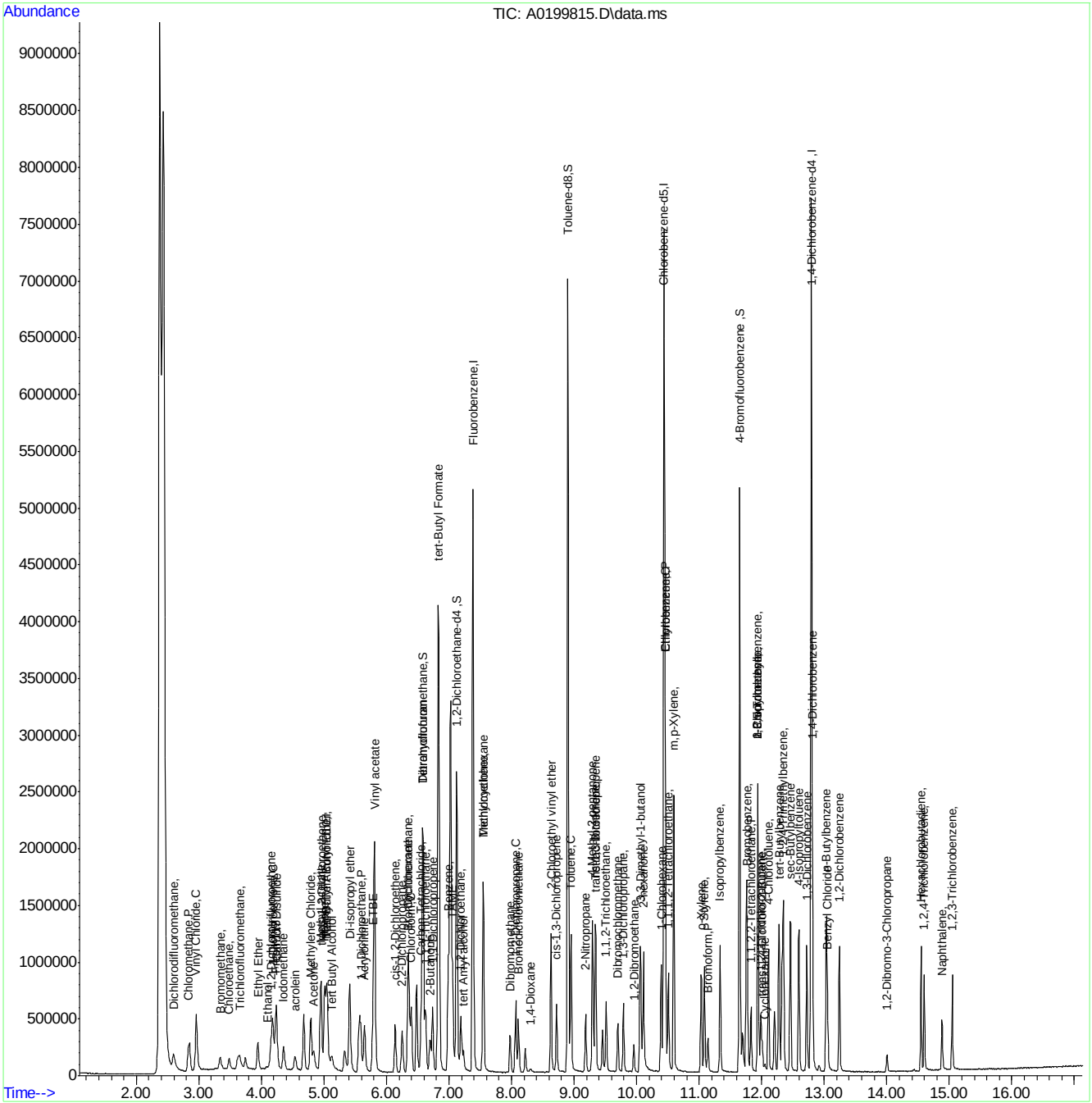
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
91) 1,2,4-Trichlorobenzene	14.596	180	190275	6.34	ug/L	98
92) Naphthalene	14.883	128	266404	5.21	ug/L	98
93) 1,2,3-Trichlorobenzene	15.047	180	189821	7.23	ug/L	97
95) Ethanol	4.092	45	38733	222.41	ug/L	91
96) acrolein	4.537	56	108223	44.44	ug/L	98
97) Tert Butyl Alcohol	5.129	59	125019	96.26	ug/L	95
98) tert Amyl alcohol	7.226	59	72020	71.88	ug/L	99
99) 1,4-Dioxane	8.299	88	13573	130.68	ug/L	89
100) 3,3-Dimethyl-1-butanol	10.061	57	364280	356.49	ug/L	98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\032516\
Data File : A0199815.D
Acq On : 25 Mar 2016 3:34 pm
Operator : TRANGD
Sample : IC1897-3 Inst : MSVOA10
Misc : MS33377,VA1897,,,,,
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Mar 29 09:46:01 2016
Quant Method : C:\msdchem\1\METHODS\032516oxy.m
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Mon Mar 28 11:34:19 2016
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\032516\
Data File : A0199816.D
Acq On : 25 Mar 2016 4:00 pm
Operator : TRANGD
Sample : IC1897-4 Inst : MSVOA10
Misc : MS33377,VA1897,,,,,
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Mar 29 09:46:05 2016
Quant Method : C:\msdchem\1\METHODS\032516oxy.m
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Mon Mar 28 11:34:19 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	7.384	96	3500163	50.00	ug/L	0.00
48) Chlorobenzene-d5	10.439	117	2871914	50.00	ug/L	0.00
69) 1,4-Dichlorobenzene-d4	12.792	152	1647174	50.00	ug/L	0.00
94) Tert Butyl Alcohol-d10	5.049	65	329524	250.00	ug/L	0.00
System Monitoring Compounds						
31) Dibromofluoromethane	6.580	113	1106463	50.26	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 100.52%			
39) 1,2-Dichloroethane-d4	7.122	65	1515005	50.07	ug/L	0.00
Spiked Amount 50.000	Range 79 - 125		Recovery = 100.14%			
49) Toluene-d8	8.902	98	3317182	49.38	ug/L	0.00
Spiked Amount 50.000	Range 85 - 112		Recovery = 98.76%			
70) 4-Bromofluorobenzene	11.646	95	1332883	49.31	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 98.62%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	2.593	85	611603	26.10	ug/L	96
3) Chloromethane	2.836	50	926362	24.30	ug/L	98
4) Vinyl Chloride	2.952	62	462450	25.10	ug/L	94
5) Bromomethane	3.336	94	206725	23.86	ug/L	97
6) Chloroethane	3.483	64	226473	24.46	ug/L	99
7) Trichlorofluoromethane	3.647	101	713694	26.02	ug/L	100
8) Ethyl Ether	3.946	59	351208	24.08	ug/L	97
9) 1,2-Dichlorotrifluoroe...	4.153	67	424244	24.29	ug/L	93
10) 1,1-Dichloroethene	4.184	61	748496	23.44	ug/L	99
11) Freon 113	4.226	101	397506	24.80	ug/L	97
12) Carbon Disulfide	4.239	76	1017704	24.08	ug/L	95
13) Iodomethane	4.354	142	654422	23.96	ug/L	98
14) Methylene Chloride	4.787	49	879944	25.56	ug/L	98
15) Acetone	4.836	43	758132	119.44	ug/L	97
16) Methyl acetate	4.946	43	1924619	122.38	ug/L	100
17) trans-1,2-Dichloroethene	4.952	61	613180	24.09	ug/L	99
18) Hexane	5.013	56	507740	24.76	ug/L	95
19) Methyl Tert Butyl Ether	5.049	73	833822	24.03	ug/L	95
20) Di-isopropyl ether	5.415	45	1876470	20.63	ug/L	98
21) 1,1-Dichloroethane	5.592	63	924179	24.37	ug/L	99
22) Acrylonitrile	5.647	53	971100	127.32	ug/L	99
23) ETBE	5.787	59	1417322	24.55	ug/L	100
24) Vinyl acetate	5.805	43	7525110	127.25	ug/L	99
25) cis-1,2-Dichloroethene	6.141	96	434098	24.93	ug/L	97
26) 2,2-Dichloropropane	6.250	77	448968	24.08	ug/L	98
27) Bromochloromethane	6.348	128	266407	25.16	ug/L	98
28) Cyclohexane	6.354	56	953630	24.58	ug/L	98
29) Chloroform	6.397	83	901751	24.52	ug/L	98
30) Tetrahydrofuran	6.580	42	133467	20.96	ug/L	95
32) Carbon Tetrachloride	6.555	117	772393	24.78	ug/L	97
33) 1,1,1-Trichloroethane	6.622	97	760811	24.77	ug/L	99
34) 2-Butanone	6.695	43	1151516	112.08	ug/L	98
35) 1,1-Dichloropropene	6.738	75	573156	22.63	ug/L	98

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\032516\
Data File : A0199816.D
Acq On : 25 Mar 2016 4:00 pm
Operator : TRANGD
Sample : IC1897-4 Inst : MSVOA10
Misc : MS33377,VA1897,,,,,
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Mar 29 09:46:05 2016
Quant Method : C:\msdchem\1\METHODS\032516oxy.m
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Mon Mar 28 11:34:19 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
36) tert-Butyl Formate	6.830	59	3973248	245.83	ug/L	#	87
37) Benzene	6.988	78	1602123	25.18	ug/L		99
38) TAME	7.055	73	1010299	23.57	ug/L		96
40) 1,2-Dichloroethane	7.189	62	852973	24.06	ug/L		100
41) Trichloroethene	7.549	95	489739	25.03	ug/L		99
42) Methylcyclohexane	7.543	83	694451	23.31	ug/L		98
43) Dibromomethane	7.976	93	279976	24.53	ug/L		97
44) 1,2-Dichloropropane	8.067	63	448625	24.42	ug/L		96
45) Bromodichloromethane	8.110	83	630249	24.64	ug/L		99
46) 2-Chloroethyl vinyl ether	8.628	63	1186705	110.79	ug/L		99
47) cis-1,3-Dichloropropene	8.719	75	624447	22.35	ug/L		96
50) Toluene	8.951	91	1721543	24.45	ug/L		99
51) 2-Nitropropane	9.183	41	748731	118.63	ug/L		100
52) 4-Methyl-2-pentanone	9.293	43	2671463	116.45	ug/L		100
53) trans-1,3-Dichloropropene	9.347	75	563384	22.79	ug/L		91
54) Tetrachloroethene	9.341	166	555235	24.65	ug/L		98
55) 1,1,2-Trichloroethane	9.512	83	316358	24.69	ug/L		98
56) Dibromochloromethane	9.701	129	484489	24.51	ug/L		99
57) 1,3-Dichloropropane	9.786	76	592679	25.24	ug/L		92
58) 1,2-Dibromoethane	9.957	107	364150	24.41	ug/L		97
59) 2-hexanone	10.109	43	1894713	115.44	ug/L		99
60) 1-Chlorohexane	10.390	91	508659	20.91	ug/L		96
61) Ethylbenzene	10.457	91	2049274	25.04	ug/L		98
62) Chlorobenzene	10.457	112	1244681	24.45	ug/L		99
63) 1,1,1,2-Tetrachloroethane	10.506	131	499619	23.84	ug/L		99
64) m,p-Xylene	10.591	91	3128382	51.02	ug/L		98
65) o-Xylene	11.030	91	1417300	21.28	ug/L		100
66) Styrene	11.085	104	1162654	22.42	ug/L		99
67) Bromoform	11.140	173	303893	23.67	ug/L		99
68) Isopropylbenzene	11.335	105	1837052	22.07	ug/L		99
71) n-Propylbenzene	11.938	91	1680755	26.90	ug/L		99
72) Bromobenzene	11.768	156	598424	24.77	ug/L		98
73) 1,1,2,2-Tetrachloroethane	11.829	83	487182	24.41	ug/L		100
74) 1,3,5-Trimethylbenzene	11.938	105	1774499	23.90	ug/L		98
75) 2-Chlorotoluene	11.938	91	1680755	26.90	ug/L		99
76) trans-1,4-Dichloro-2-B...	12.012	53	183165	24.97	ug/L		97
77) 1,2,3-Trichloropropane	11.987	110	149245	24.73	ug/L		98
78) Cyclohexanone	12.048	55	61212	101.83	ug/L		92
79) 4-Chlorotoluene	12.109	91	1508370	23.58	ug/L		99
80) tert-Butylbenzene	12.274	91	1049218	23.25	ug/L		93
81) 1,2,4-Trimethylbenzene	12.347	105	1816272	23.95	ug/L		99
82) sec-Butylbenzene	12.457	105	2245359	23.92	ug/L		98
83) 4-Isopropyltoluene	12.597	119	1893394	22.78	ug/L		99
84) 1,3-Dichlorobenzene	12.719	146	1094855	25.61	ug/L		96
85) 1,4-Dichlorobenzene	12.810	146	1167766	24.07	ug/L		100
86) n-Butylbenzene	13.036	92	1042385	22.66	ug/L		98
87) Benzyl Chloride	13.054	126	195065	22.65	ug/L		97
88) 1,2-Dichlorobenzene	13.243	146	1027244	25.77	ug/L		98
89) 1,2-Dibromo-3-Chloropr...	14.005	75	79840	24.04	ug/L		90
90) Hexachlorobutadiene	14.548	225	418629	24.13	ug/L		89

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\032516\
Data File : A0199816.D
Acq On : 25 Mar 2016 4:00 pm
Operator : TRANGD
Sample : IC1897-4 Inst : MSVOA10
Misc : MS33377,VA1897,,,,,
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Mar 29 09:46:05 2016
Quant Method : C:\msdchem\1\METHODS\032516oxy.m
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Mon Mar 28 11:34:19 2016
Response via : Initial Calibration

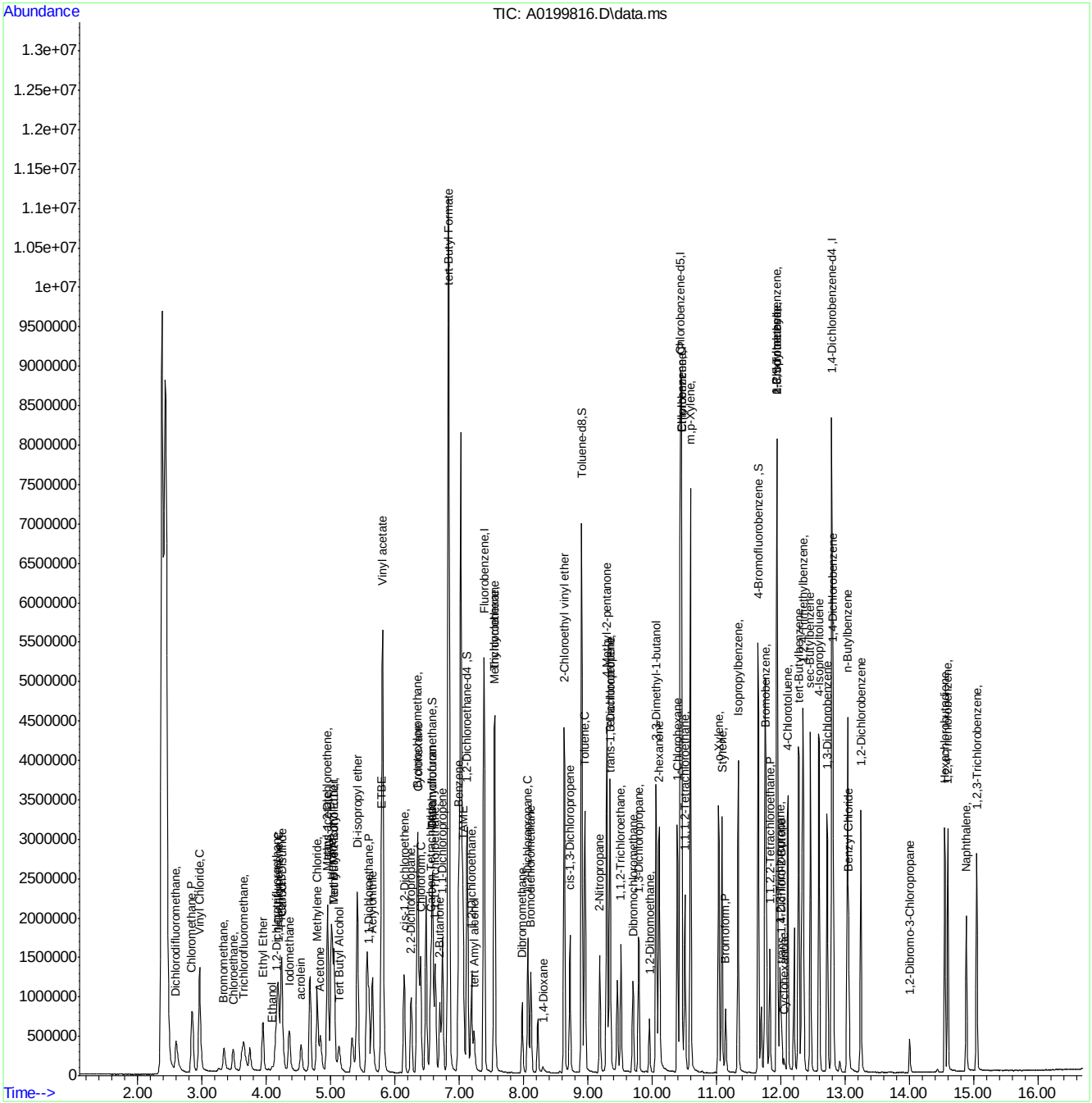
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
91) 1,2,4-Trichlorobenzene	14.596	180	657390	20.66	ug/L	100
92) Naphthalene	14.883	128	1033106	19.03	ug/L	100
93) 1,2,3-Trichlorobenzene	15.047	180	619587	22.24	ug/L	97
95) Ethanol	4.092	45	90345	459.77	ug/L	97
96) acrolein	4.537	56	308973	112.45	ug/L	98
97) Tert Butyl Alcohol	5.129	59	337207	230.10	ug/L	91
98) tert Amyl alcohol	7.232	59	212493	187.96	ug/L	96
99) 1,4-Dioxane	8.299	88	46416	396.08	ug/L	97
100) 3,3-Dimethyl-1-butanol	10.061	57	1244025	1036.27	ug/L	98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\032516\
Data File : A0199816.D
Acq On : 25 Mar 2016 4:00 pm
Operator : TRANGD
Sample : IC1897-4 Inst : MSVOA10
Misc : MS33377,VA1897,,,,,
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Mar 29 09:46:05 2016
Quant Method : C:\msdchem\1\METHODS\032516oxy.m
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Mon Mar 28 11:34:19 2016
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\032516\
Data File : A0199817.D
Acq On : 25 Mar 2016 4:21 pm
Operator : TRANGD
Sample : ICC1897-5 Inst : MSVOA10
Misc : MS33377,VA1897,,,,,
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Mar 29 09:46:10 2016
Quant Method : C:\msdchem\1\METHODS\032516oxy.m
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Mon Mar 28 11:34:19 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	7.384	96	3631686	50.00	ug/L	0.00
48) Chlorobenzene-d5	10.439	117	2998630	50.00	ug/L	0.00
69) 1,4-Dichlorobenzene-d4	12.792	152	1744734	50.00	ug/L	0.00
94) Tert Butyl Alcohol-d10	5.050	65	281280	250.00	ug/L	0.00
System Monitoring Compounds						
31) Dibromofluoromethane	6.586	113	1132098	49.57	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 99.14%			
39) 1,2-Dichloroethane-d4	7.122	65	1538788	49.01	ug/L	0.00
Spiked Amount 50.000	Range 79 - 125		Recovery = 98.02%			
49) Toluene-d8	8.902	98	3458373	49.31	ug/L	0.00
Spiked Amount 50.000	Range 85 - 112		Recovery = 98.62%			
70) 4-Bromofluorobenzene	11.646	95	1415794	49.45	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 98.90%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	2.593	85	997627	41.04	ug/L	96
3) Chloromethane	2.843	50	1578107	39.90	ug/L	99
4) Vinyl Chloride	2.959	62	802364	41.96	ug/L	96
5) Bromomethane	3.343	94	338702	37.67	ug/L	95
6) Chloroethane	3.483	64	366051	38.11	ug/L	97
7) Trichlorofluoromethane	3.647	101	1176501	41.34	ug/L	100
8) Ethyl Ether	3.946	59	603106	39.86	ug/L	98
9) 1,2-Dichlorotrifluoroe...	4.160	67	699642	38.61	ug/L	97
10) 1,1-Dichloroethene	4.184	61	1343969	40.57	ug/L	99
11) Freon 113	4.233	101	638216	38.38	ug/L	95
12) Carbon Disulfide	4.239	76	1708672	38.96	ug/L	97
13) Iodomethane	4.355	142	1122122	39.60	ug/L	100
14) Methylene Chloride	4.794	49	1457284	40.80	ug/L	98
15) Acetone	4.836	43	1189368	180.59	ug/L	98
16) Methyl acetate	4.946	43	3137851	192.30	ug/L	99
17) trans-1,2-Dichloroethene	4.958	61	1062182	40.21	ug/L	99
18) Hexane	5.013	56	845894	39.75	ug/L	96
19) Methyl Tert Butyl Ether	5.050	73	1404741	39.01	ug/L	95
20) Di-isopropyl ether	5.415	45	3490960	36.99	ug/L	100
21) 1,1-Dichloroethane	5.592	63	1597102	40.59	ug/L	99
22) Acrylonitrile	5.647	53	1608709	203.27	ug/L	97
23) ETBE	5.787	59	2484711	40.35	ug/L	100
24) Vinyl acetate	5.812	43	12376515	215.09	ug/L	100
25) cis-1,2-Dichloroethene	6.141	96	781641	43.26	ug/L	97
26) 2,2-Dichloropropane	6.251	77	785247	40.59	ug/L	97
27) Bromochloromethane	6.348	128	443798	40.39	ug/L	93
28) Cyclohexane	6.354	56	1693388	40.63	ug/L	98
29) Chloroform	6.397	83	1504282	39.42	ug/L	98
30) Tetrahydrofuran	6.580	42	227938	34.51	ug/L	96
32) Carbon Tetrachloride	6.561	117	1306683	40.41	ug/L	99
33) 1,1,1-Trichloroethane	6.629	97	1284895	40.32	ug/L	100
34) 2-Butanone	6.696	43	1956777	183.56	ug/L	99
35) 1,1-Dichloropropene	6.738	75	1026359	39.06	ug/L	96

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\032516\
Data File : A0199817.D
Acq On : 25 Mar 2016 4:21 pm
Operator : TRANGD
Sample : ICC1897-5 Inst : MSVOA10
Misc : MS33377,VA1897,,,,,
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Mar 29 09:46:10 2016
Quant Method : C:\msdchem\1\METHODS\032516oxy.m
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Mon Mar 28 11:34:19 2016
Response via : Initial Calibration

	Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
36)	tert-Butyl Formate	6.836	59	6876656	410.05	ug/L	#	82
37)	Benzene	6.988	78	2749321	41.64	ug/L		100
38)	TAME	7.061	73	1727809	38.85	ug/L		100
40)	1,2-Dichloroethane	7.189	62	1431591	38.92	ug/L		99
41)	Trichloroethene	7.549	95	829681	40.86	ug/L		98
42)	Methylcyclohexane	7.549	83	1211331	39.19	ug/L		98
43)	Dibromomethane	7.976	93	481428	40.65	ug/L		94
44)	1,2-Dichloropropane	8.067	63	798023	41.87	ug/L		98
45)	Bromodichloromethane	8.116	83	1093604	41.21	ug/L		98
46)	2-Chloroethyl vinyl ether	8.634	63	2091864	188.22	ug/L		96
47)	cis-1,3-Dichloropropene	8.720	75	1121727	38.69	ug/L		99
50)	Toluene	8.951	91	3002910	40.84	ug/L		100
51)	2-Nitropropane	9.183	41	1271474	192.94	ug/L		98
52)	4-Methyl-2-pentanone	9.293	43	4525247	188.93	ug/L		99
53)	trans-1,3-Dichloropropene	9.348	75	992588	38.45	ug/L		89
54)	Tetrachloroethene	9.341	166	937339	39.86	ug/L		99
55)	1,1,2-Trichloroethane	9.512	83	525614	39.28	ug/L		98
56)	Dibromochloromethane	9.701	129	831913	40.31	ug/L		100
57)	1,3-Dichloropropane	9.793	76	1027803	41.92	ug/L		97
58)	1,2-Dibromoethane	9.957	107	639604	41.07	ug/L		97
59)	2-hexanone	10.110	43	3170896	185.03	ug/L		99
60)	1-Chlorohexane	10.390	91	940443	37.03	ug/L		99
61)	Ethylbenzene	10.457	91	3490530	40.84	ug/L		99
62)	Chlorobenzene	10.457	112	2096332	39.45	ug/L		98
63)	1,1,1,2-Tetrachloroethane	10.506	131	856008	39.12	ug/L		99
64)	m,p-Xylene	10.591	91	5400054	84.34	ug/L		100
65)	o-Xylene	11.030	91	2631043	37.83	ug/L		99
66)	Styrene	11.085	104	2091298	38.63	ug/L		98
67)	Bromoform	11.140	173	526273	39.25	ug/L		98
68)	Isopropylbenzene	11.335	105	3403940	39.17	ug/L		99
71)	n-Propylbenzene	11.938	91	2900542	43.83	ug/L		99
72)	Bromobenzene	11.768	156	1025731	40.08	ug/L		100
73)	1,1,2,2-Tetrachloroethane	11.829	83	788419	37.30	ug/L		99
74)	1,3,5-Trimethylbenzene	11.938	105	3138556	39.90	ug/L		98
75)	2-Chlorotoluene	11.938	91	2900542	43.83	ug/L		99
76)	trans-1,4-Dichloro-2-B...	12.012	53	316836	40.77	ug/L		97
77)	1,2,3-Trichloropropane	11.987	110	242927	38.00	ug/L		95
78)	Cyclohexanone	12.048	55	104716	164.45	ug/L		96
79)	4-Chlorotoluene	12.109	91	2646715	39.06	ug/L		100
80)	tert-Butylbenzene	12.280	91	1871942	39.15	ug/L		98
81)	1,2,4-Trimethylbenzene	12.347	105	3197872	39.81	ug/L		100
82)	sec-Butylbenzene	12.457	105	3983751	40.06	ug/L		99
83)	4-Isopropyltoluene	12.597	119	3446505	39.14	ug/L		99
84)	1,3-Dichlorobenzene	12.719	146	1927007	42.56	ug/L		96
85)	1,4-Dichlorobenzene	12.810	146	2001965	38.95	ug/L		99
86)	n-Butylbenzene	13.036	92	1895998	38.90	ug/L		99
87)	Benzyl Chloride	13.054	126	340866	37.37	ug/L		98
88)	1,2-Dichlorobenzene	13.243	146	1809457	42.86	ug/L		98
89)	1,2-Dibromo-3-Chloropr...	14.005	75	137751	39.16	ug/L		86
90)	Hexachlorobutadiene	14.548	225	767270	41.76	ug/L		90

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\032516\
Data File : A0199817.D
Acq On : 25 Mar 2016 4:21 pm
Operator : TRANGD
Sample : ICC1897-5 Inst : MSVOA10
Misc : MS33377,VA1897,,,,,
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Mar 29 09:46:10 2016
Quant Method : C:\msdchem\1\METHODS\032516oxy.m
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Mon Mar 28 11:34:19 2016
Response via : Initial Calibration

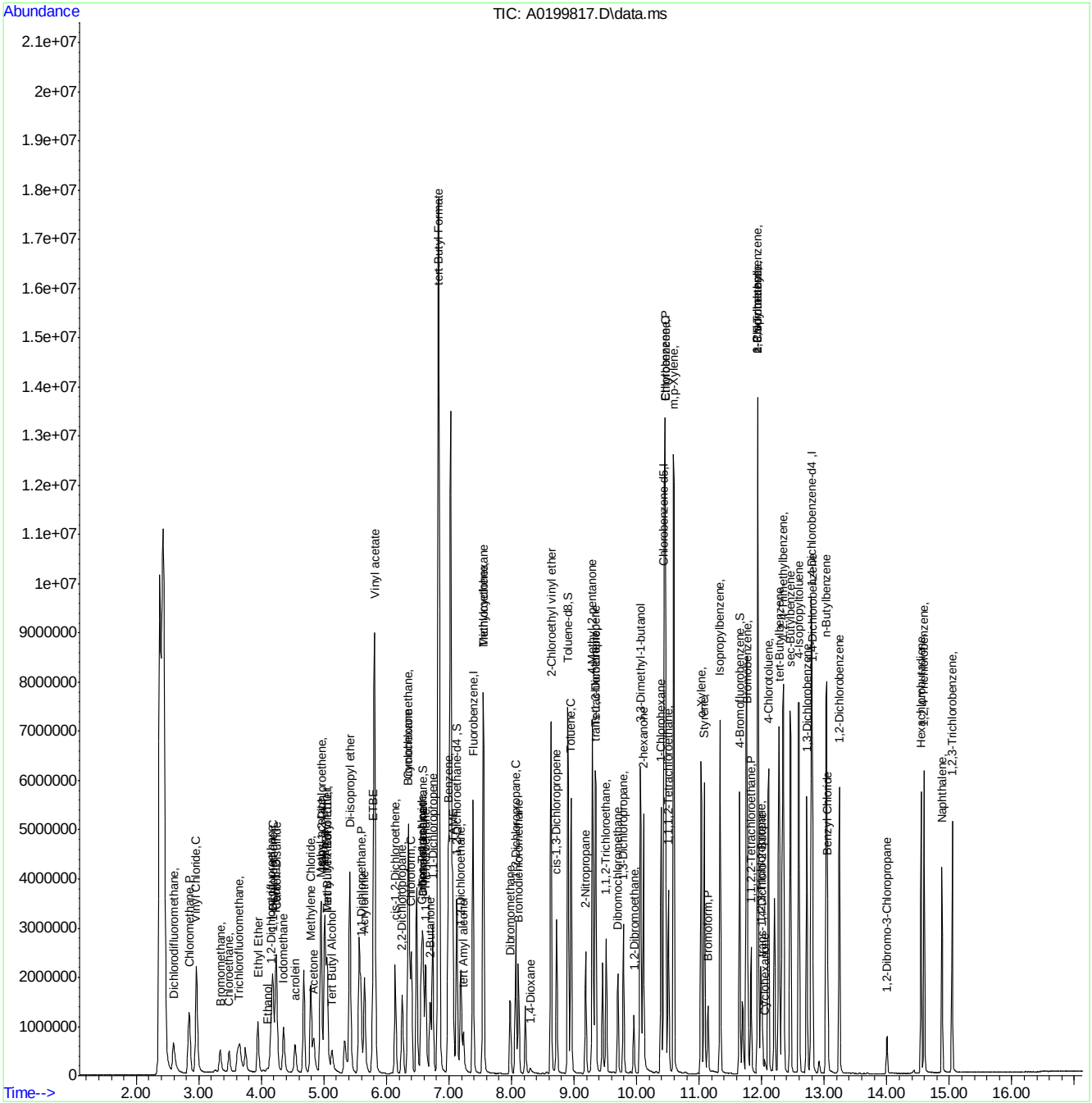
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
91) 1,2,4-Trichlorobenzene	14.596	180	1290316	38.28	ug/L	99
92) Naphthalene	14.883	128	2091440	36.37	ug/L	99
93) 1,2,3-Trichlorobenzene	15.048	180	1151369	39.03	ug/L	99
95) Ethanol	4.092	45	126138	752.03	ug/L	92
96) acrolein	4.537	56	506399	215.91	ug/L	100
97) Tert Butyl Alcohol	5.129	59	502667	401.84	ug/L	98
98) tert Amyl alcohol	7.232	59	360435	373.51	ug/L	97
99) 1,4-Dioxane	8.299	88	70781	707.59	ug/L	96
100) 3,3-Dimethyl-1-butanol	10.061	57	2158458	1995.00	ug/L	97

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\032516\
Data File : A0199817.D
Acq On : 25 Mar 2016 4:21 pm
Operator : TRANGD
Sample : ICC1897-5 Inst : MSVOA10
Misc : MS33377,VA1897,,,,,
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Mar 29 09:46:10 2016
Quant Method : C:\msdchem\1\METHODS\032516oxy.m
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Mon Mar 28 11:34:19 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\032516\
Data File : A0199818.D
Acq On : 25 Mar 2016 4:48 pm
Operator : TRANGD
Sample : IC1897-6 Inst : MSVOA10
Misc : MS33377,VA1897,,,,,
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Mar 29 09:46:15 2016
Quant Method : C:\msdchem\1\METHODS\032516oxy.m
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Mon Mar 28 11:34:19 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	7.384	96	3816018	50.00	ug/L	0.00
48) Chlorobenzene-d5	10.439	117	3082637	50.00	ug/L	0.00
69) 1,4-Dichlorobenzene-d4	12.792	152	1795002	50.00	ug/L	0.00
94) Tert Butyl Alcohol-d10	5.056	65	334192	250.00	ug/L	0.00
System Monitoring Compounds						
31) Dibromofluoromethane	6.580	113	1159872	48.33	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 96.66%			
39) 1,2-Dichloroethane-d4	7.122	65	1575608	47.76	ug/L	0.00
Spiked Amount 50.000	Range 79 - 125		Recovery = 95.52%			
49) Toluene-d8	8.902	98	3599651	49.92	ug/L	0.00
Spiked Amount 50.000	Range 85 - 112		Recovery = 99.84%			
70) 4-Bromofluorobenzene	11.646	95	1468637	49.85	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 99.70%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	2.599	85	1840937	72.07	ug/L	99
3) Chloromethane	2.843	50	3066688	73.79	ug/L	99
4) Vinyl Chloride	2.958	62	1558540	77.58	ug/L	100
5) Bromomethane	3.343	94	643774	68.14	ug/L	98
6) Chloroethane	3.483	64	669544	66.34	ug/L	95
7) Trichlorofluoromethane	3.647	101	2123197	71.00	ug/L	99
8) Ethyl Ether	3.946	59	1134040	71.33	ug/L	97
9) 1,2-Dichlorotrifluoroe...	4.166	67	1303622	68.47	ug/L	98
10) 1,1-Dichloroethene	4.184	61	2570016	73.83	ug/L	100
11) Freon 113	4.239	101	1145498	65.56	ug/L	96
12) Carbon Disulfide	4.239	76	3125372	67.82	ug/L	99
13) Iodomethane	4.355	142	2043675	68.64	ug/L	97
14) Methylene Chloride	4.787	49	2594126	69.12	ug/L	98
15) Acetone	4.842	43	2366421	341.95	ug/L	99
16) Methyl acetate	4.946	43	5955062	347.32	ug/L	99
17) trans-1,2-Dichloroethene	4.952	61	1963524	70.74	ug/L	99
18) Hexane	5.007	56	1565200	70.00	ug/L	96
19) Methyl Tert Butyl Ether	5.050	73	2740300	72.43	ug/L	97
20) Di-isopropyl ether	5.415	45	6839455	68.97	ug/L	97
21) 1,1-Dichloroethane	5.592	63	2894548	70.02	ug/L	98
22) Acrylonitrile	5.647	53	3165972	380.72	ug/L	99
23) ETBE	5.787	59	4813801	70.74	ug/L	99
24) Vinyl acetate	5.799	43	20052103	378.25	ug/L	97
25) cis-1,2-Dichloroethene	6.141	96	1475875	77.74	ug/L	97
26) 2,2-Dichloropropane	6.250	77	1312357	64.56	ug/L	99
27) Bromochloromethane	6.348	128	799647	69.26	ug/L	96
28) Cyclohexane	6.354	56	3291327	70.64	ug/L	98
29) Chloroform	6.397	83	2710461	67.59	ug/L	99
30) Tetrahydrofuran	6.574	42	485076	69.88	ug/L	99
32) Carbon Tetrachloride	6.555	117	2384539	70.17	ug/L	99
33) 1,1,1-Trichloroethane	6.622	97	2288159	68.34	ug/L	99
34) 2-Butanone	6.696	43	4009200	357.93	ug/L	99
35) 1,1-Dichloropropene	6.738	75	1941962	70.33	ug/L	98

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\032516\
Data File : A0199818.D
Acq On : 25 Mar 2016 4:48 pm
Operator : TRANGD
Sample : IC1897-6 Inst : MSVOA10
Misc : MS33377,VA1897,,,,,
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Mar 29 09:46:15 2016
Quant Method : C:\msdchem\1\METHODS\032516oxy.m
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Mon Mar 28 11:34:19 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
36) tert-Butyl Formate	6.830	59	12663983	718.67	ug/L	93
37) Benzene	6.988	78	5003491	72.12	ug/L	98
38) TAME	7.055	73	3260359	69.77	ug/L	97
40) 1,2-Dichloroethane	7.189	62	2620123	67.79	ug/L	100
41) Trichloroethene	7.549	95	1506279	70.60	ug/L	100
42) Methylcyclohexane	7.543	83	2267944	69.82	ug/L	95
43) Dibromomethane	7.976	93	881966	70.87	ug/L	100
44) 1,2-Dichloropropane	8.067	63	1516294	75.71	ug/L	98
45) Bromodichloromethane	8.110	83	1999200	71.69	ug/L	99
46) 2-Chloroethyl vinyl ether	8.628	63	4201964	359.82	ug/L	98
47) cis-1,3-Dichloropropene	8.720	75	2128087	69.85	ug/L	98
50) Toluene	8.951	91	5474392	72.43	ug/L	99
51) 2-Nitropropane	9.183	41	2535404	374.25	ug/L	96
52) 4-Methyl-2-pentanone	9.293	43	9008302	365.84	ug/L	97
53) trans-1,3-Dichloropropene	9.347	75	1880758	70.87	ug/L	91
54) Tetrachloroethene	9.341	166	1796283	74.30	ug/L	99
55) 1,1,2-Trichloroethane	9.512	83	948387	68.95	ug/L	98
56) Dibromochloromethane	9.701	129	1590961	74.99	ug/L	99
57) 1,3-Dichloropropane	9.786	76	1938669	76.92	ug/L	94
58) 1,2-Dibromoethane	9.957	107	1224375	76.47	ug/L	97
59) 2-hexanone	10.109	43	6419332	364.37	ug/L	99
60) 1-Chlorohexane	10.390	91	1815345	69.54	ug/L	97
61) Ethylbenzene	10.457	91	6287245	71.57	ug/L	100
62) Chlorobenzene	10.457	112	3726642	68.21	ug/L	97
63) 1,1,1,2-Tetrachloroethane	10.506	131	1585949	70.51	ug/L	99
64) m,p-Xylene	10.591	91	9663104	146.81	ug/L	96
65) o-Xylene	11.030	91	5072241	70.94	ug/L	98
66) Styrene	11.085	104	3931807	70.64	ug/L	99
67) Bromoform	11.140	173	1004025	72.84	ug/L	99
68) Isopropylbenzene	11.335	105	6366686	71.26	ug/L	99
71) n-Propylbenzene	11.938	91	5159560	75.78	ug/L	96
72) Bromobenzene	11.768	156	1851159	70.32	ug/L	100
73) 1,1,2,2-Tetrachloroethane	11.829	83	1471747	67.67	ug/L	99
74) 1,3,5-Trimethylbenzene	11.938	105	5722490	70.72	ug/L	100
75) 2-Chlorotoluene	11.938	91	5159560	75.78	ug/L	99
76) trans-1,4-Dichloro-2-B...	12.012	53	629888	78.79	ug/L	97
77) 1,2,3-Trichloropropane	11.987	110	458491	69.71	ug/L	98
78) Cyclohexanone	12.054	55	224872	343.27	ug/L	99
79) 4-Chlorotoluene	12.109	91	4902913	70.32	ug/L	99
80) tert-Butylbenzene	12.280	91	3445722	70.05	ug/L	99
81) 1,2,4-Trimethylbenzene	12.347	105	5855404	70.85	ug/L	99
82) sec-Butylbenzene	12.457	105	7247081	70.84	ug/L	99
83) 4-Isopropyltoluene	12.597	119	6412592	70.78	ug/L	99
84) 1,3-Dichlorobenzene	12.719	146	3543178	76.06	ug/L	97
85) 1,4-Dichlorobenzene	12.810	146	3622141	68.50	ug/L	99
86) n-Butylbenzene	13.030	92	3533118	70.47	ug/L	92
87) Benzyl Chloride	13.054	126	663060	70.65	ug/L	94
88) 1,2-Dichlorobenzene	13.243	146	3342461	76.95	ug/L	98
89) 1,2-Dibromo-3-Chloropr...	13.999	75	267785	73.99	ug/L	97
90) Hexachlorobutadiene	14.548	225	1393487	73.72	ug/L	90

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\032516\
Data File : A0199818.D
Acq On : 25 Mar 2016 4:48 pm
Operator : TRANGD
Sample : IC1897-6 Inst : MSVOA10
Misc : MS33377,VA1897,,,,,
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Mar 29 09:46:15 2016
Quant Method : C:\msdchem\1\METHODS\032516oxy.m
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Mon Mar 28 11:34:19 2016
Response via : Initial Calibration

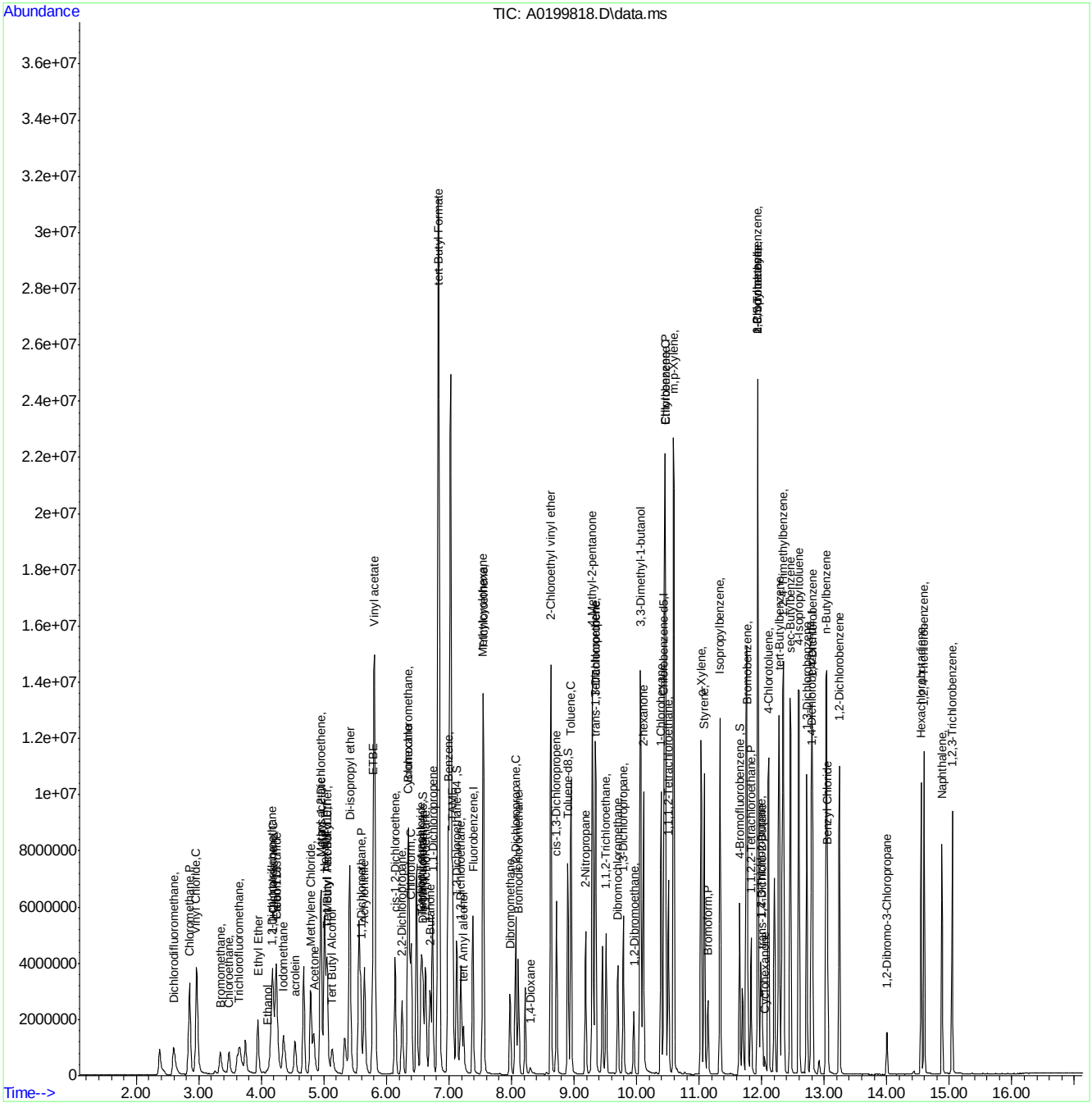
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
91) 1,2,4-Trichlorobenzene	14.596	180	2419262	69.76	ug/L	98
92) Naphthalene	14.883	128	4177282	70.62	ug/L	100
93) 1,2,3-Trichlorobenzene	15.048	180	2118791	69.81	ug/L	99
95) Ethanol	4.098	45	286523	1437.77	ug/L	99
96) acrolein	4.537	56	1052309	377.63	ug/L	100
97) Tert Butyl Alcohol	5.129	59	1111781	748.06	ug/L	97
98) tert Amyl alcohol	7.232	59	799495	697.33	ug/L	97
99) 1,4-Dioxane	8.299	88	173801	1462.37	ug/L	93
100) 3,3-Dimethyl-1-butanol	10.061	57	5229027	3715.34	ug/L	94

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\032516\
Data File : A0199818.D
Acq On : 25 Mar 2016 4:48 pm
Operator : TRANGD
Sample : IC1897-6 Inst : MSVOA10
Misc : MS33377,VA1897,,,,,
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Mar 29 09:46:15 2016
Quant Method : C:\msdchem\1\METHODS\032516oxy.m
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Mon Mar 28 11:34:19 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\032516\
Data File : A0199819.D
Acq On : 25 Mar 2016 5:13 pm
Operator : TRANGD
Sample : IC1897-7 Inst : MSVOA10
Misc : MS33377,VA1897,,,,,
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Mar 29 09:46:20 2016
Quant Method : C:\msdchem\1\METHODS\032516oxy.m
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Mon Mar 28 11:34:19 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	7.384	96	3937928	50.00	ug/L	0.00
48) Chlorobenzene-d5	10.439	117	3162109	50.00	ug/L	0.00
69) 1,4-Dichlorobenzene-d4	12.792	152	1814703	50.00	ug/L	0.00
94) Tert Butyl Alcohol-d10	5.055	65	357350	250.00	ug/L	0.00
System Monitoring Compounds						
31) Dibromofluoromethane	6.586	113	1190167	48.06	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 96.12%			
39) 1,2-Dichloroethane-d4	7.122	65	1596807	46.91	ug/L	0.00
Spiked Amount 50.000	Range 79 - 125		Recovery = 93.82%			
49) Toluene-d8	8.902	98	3737694	50.53	ug/L	0.00
Spiked Amount 50.000	Range 85 - 112		Recovery = 101.06%			
70) 4-Bromofluorobenzene	11.646	95	1521043	51.07	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 102.14%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	2.593	85	2779268	105.43	ug/L	98
3) Chloromethane	2.842	50	4631341	107.99	ug/L	99
4) Vinyl Chloride	2.958	62	2435800	117.49	ug/L	100
5) Bromomethane	3.336	94	1000884	102.66	ug/L	99
6) Chloroethane	3.470	64	1037388	99.60	ug/L	93
7) Trichlorofluoromethane	3.647	101	3226625	104.55	ug/L	100
8) Ethyl Ether	3.946	59	1737466	105.90	ug/L	98
9) 1,2-Dichlorotrifluoroe...	4.159	67	1946873	99.10	ug/L	96
10) 1,1-Dichloroethene	4.178	61	3867419	107.66	ug/L	99
11) Freon 113	4.232	101	1774060	98.38	ug/L	96
12) Carbon Disulfide	4.232	76	4775072	100.41	ug/L	100
13) Iodomethane	4.348	142	3192485	103.90	ug/L	97
14) Methylene Chloride	4.787	49	3873074	100.00	ug/L	99
15) Acetone	4.836	43	3347499	468.74	ug/L	100
16) Methyl acetate	4.946	43	8769044	495.61	ug/L	99
17) trans-1,2-Dichloroethene	4.952	61	2955553	103.19	ug/L	99
18) Hexane	5.007	56	2322551	100.65	ug/L	96
19) Methyl Tert Butyl Ether	5.049	73	4179475	107.04	ug/L	98
20) Di-isopropyl ether	5.415	45	10579676	103.38	ug/L	97
21) 1,1-Dichloroethane	5.592	63	4279601	100.31	ug/L	99
22) Acrylonitrile	5.647	53	4698673	547.55	ug/L	99
23) ETBE	5.787	59	7327148	99.66	ug/L	100
24) Vinyl acetate	5.799	43	23439575	461.59	ug/L	84
25) cis-1,2-Dichloroethene	6.141	96	2232492	113.95	ug/L	98
26) 2,2-Dichloropropane	6.250	77	1942626	92.61	ug/L	100
27) Bromochloromethane	6.348	128	1180374	99.07	ug/L	94
28) Cyclohexane	6.354	56	5070823	99.67	ug/L	99
29) Chloroform	6.397	83	3971876	95.98	ug/L	98
30) Tetrahydrofuran	6.573	42	745584	104.09	ug/L	96
32) Carbon Tetrachloride	6.555	117	3564841	101.66	ug/L	98
33) 1,1,1-Trichloroethane	6.622	97	3376345	97.72	ug/L	100
34) 2-Butanone	6.695	43	5846417	505.79	ug/L	99
35) 1,1-Dichloropropene	6.738	75	2879115	101.05	ug/L	97

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\032516\
Data File : A0199819.D
Acq On : 25 Mar 2016 5:13 pm
Operator : TRANGD
Sample : IC1897-7 Inst : MSVOA10
Misc : MS33377,VA1897,,,,,
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Mar 29 09:46:20 2016
Quant Method : C:\msdchem\1\METHODS\032516oxy.m
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Mon Mar 28 11:34:19 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
36) tert-Butyl Formate	6.830	59	17926641	985.83	ug/L		93
37) Benzene	6.988	78	7309725	102.10	ug/L		97
38) TAME	7.061	73	4878244	101.16	ug/L		96
40) 1,2-Dichloroethane	7.189	62	3837028	96.21	ug/L		99
41) Trichloroethene	7.549	95	2211758	100.46	ug/L		98
42) Methylcyclohexane	7.543	83	3390886	101.17	ug/L		94
43) Dibromomethane	7.976	93	1311982	102.16	ug/L		99
44) 1,2-Dichloropropane	8.067	63	2285838	110.60	ug/L		97
45) Bromodichloromethane	8.110	83	2959998	102.86	ug/L		100
46) 2-Chloroethyl vinyl ether	8.628	63	6070974	503.77	ug/L		97
47) cis-1,3-Dichloropropene	8.719	75	3194290	101.60	ug/L		96
50) Toluene	8.951	91	7956185	102.61	ug/L		97
51) 2-Nitropropane	9.183	41	3717586	534.95	ug/L		93
52) 4-Methyl-2-pentanone	9.292	43	12554691	497.05	ug/L		94
53) trans-1,3-Dichloropropene	9.347	75	2744127	100.81	ug/L		90
54) Tetrachloroethene	9.341	166	2687660	108.38	ug/L		98
55) 1,1,2-Trichloroethane	9.512	83	1395421	98.90	ug/L		98
56) Dibromochloromethane	9.701	129	2367371	108.79	ug/L		99
57) 1,3-Dichloropropane	9.786	76	2869531	110.99	ug/L		94
58) 1,2-Dibromoethane	9.957	107	1832305	111.56	ug/L		98
59) 2-hexanone	10.109	43	9030944	499.73	ug/L		97
60) 1-Chlorohexane	10.390	91	2758881	103.03	ug/L		97
61) Ethylbenzene	10.457	91	8968495	99.52	ug/L		98
62) Chlorobenzene	10.457	112	5368904	95.80	ug/L		96
63) 1,1,1,2-Tetrachloroethane	10.512	131	2355430	102.08	ug/L		99
64) m,p-Xylene	10.591	91	13069387	193.57	ug/L		90
65) o-Xylene	11.030	91	7456989	101.67	ug/L		97
66) Styrene	11.085	104	5776932	101.19	ug/L		98
67) Bromoform	11.140	173	1515443	107.19	ug/L		99
68) Isopropylbenzene	11.335	105	9226536	100.67	ug/L		96
71) n-Propylbenzene	11.938	91	7384769	107.28	ug/L		96
72) Bromobenzene	11.768	156	2720892	102.23	ug/L		99
73) 1,1,2,2-Tetrachloroethane	11.829	83	2128762	96.82	ug/L		100
74) 1,3,5-Trimethylbenzene	11.938	105	8191468	100.13	ug/L		98
75) 2-Chlorotoluene	11.938	91	7384769	107.28	ug/L		99
76) trans-1,4-Dichloro-2-B...	12.011	53	936532	115.87	ug/L		95
77) 1,2,3-Trichloropropane	11.987	110	659885	99.24	ug/L		98
78) Cyclohexanone	12.054	55	345570	521.79	ug/L		98
79) 4-Chlorotoluene	12.109	91	7105371	100.81	ug/L		97
80) tert-Butylbenzene	12.280	91	5026156	101.07	ug/L		99
81) 1,2,4-Trimethylbenzene	12.347	105	8358876	100.04	ug/L		97
82) sec-Butylbenzene	12.456	105	10338728	99.96	ug/L		96
83) 4-Isopropyltoluene	12.597	119	9229979	100.78	ug/L		96
84) 1,3-Dichlorobenzene	12.725	146	5142873	109.20	ug/L		98
85) 1,4-Dichlorobenzene	12.810	146	5267125	98.53	ug/L		99
86) n-Butylbenzene	13.036	92	5125274	101.11	ug/L		94
87) Benzyl Chloride	13.054	126	962642	101.45	ug/L	#	93
88) 1,2-Dichlorobenzene	13.243	146	4898125	111.54	ug/L		98
89) 1,2-Dibromo-3-Chloropr...	13.999	75	389011	106.33	ug/L		92
90) Hexachlorobutadiene	14.548	225	2063306	107.97	ug/L		91

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\032516\
Data File : A0199819.D
Acq On : 25 Mar 2016 5:13 pm
Operator : TRANGD
Sample : IC1897-7 Inst : MSVOA10
Misc : MS33377,VA1897,,,,,
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Mar 29 09:46:20 2016
Quant Method : C:\msdchem\1\METHODS\032516oxy.m
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Mon Mar 28 11:34:19 2016
Response via : Initial Calibration

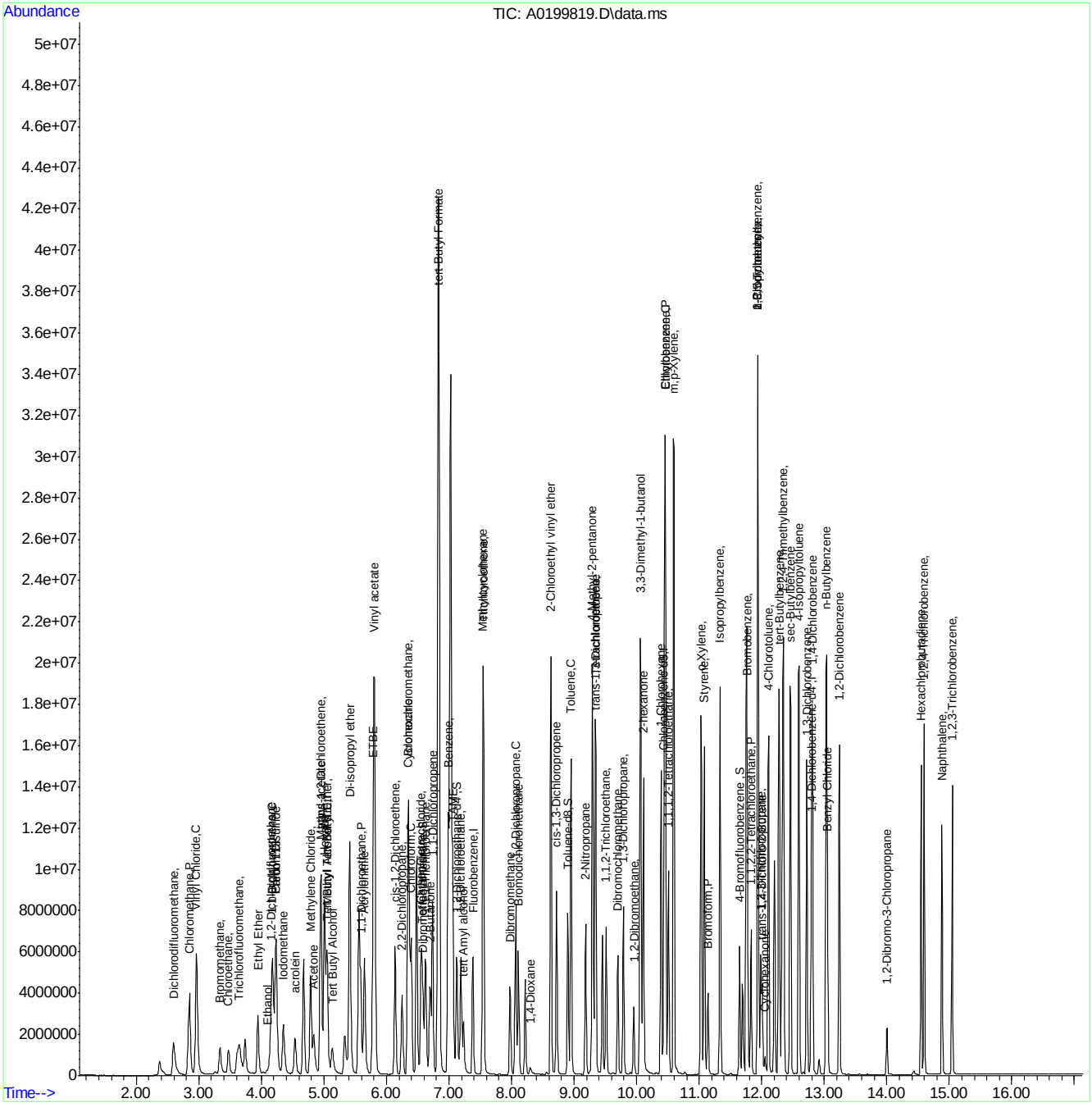
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
91) 1,2,4-Trichlorobenzene	14.596	180	3590737	102.41	ug/L	99
92) Naphthalene	14.883	128	6167955	103.13	ug/L	98
93) 1,2,3-Trichlorobenzene	15.047	180	3117031	101.58	ug/L	97
95) Ethanol	4.104	45	426298	2000.53	ug/L	94
96) acrolein	4.537	56	1661155	557.48	ug/L	99
97) Tert Butyl Alcohol	5.135	59	1640435	1032.24	ug/L	95
98) tert Amyl alcohol	7.232	59	1264372	1031.33	ug/L	92
99) 1,4-Dioxane	8.299	88	257228	2024.07	ug/L	89
100) 3,3-Dimethyl-1-butanol	10.061	57	7846826	4916.56	ug/L	93

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\032516\
Data File : A0199819.D
Acq On : 25 Mar 2016 5:13 pm
Operator : TRANGD
Sample : IC1897-7 Inst : MSVOA10
Misc : MS33377,VA1897,,,,,
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Mar 29 09:46:20 2016
Quant Method : C:\msdchem\1\METHODS\032516oxy.m
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Mon Mar 28 11:34:19 2016
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\032516\
Data File : A0199821.D
Acq On : 25 Mar 2016 6:04 pm
Operator : TRANGD
Sample : ICV1897-4 Inst : MSVOA10
Misc : MS33377,VA1897,,,,,
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Mar 29 09:52:26 2016
Quant Method : C:\msdchem\1\METHODS\032516oxy.m
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Tue Mar 29 09:49:44 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	7.384	96	3688973	50.00	ug/L	0.00
48) Chlorobenzene-d5	10.439	117	2992280	50.00	ug/L	0.00
69) 1,4-Dichlorobenzene-d4	12.792	152	1721066	50.00	ug/L	0.00
94) Tert Butyl Alcohol-d10	5.050	65	334509	250.00	ug/L	0.00
System Monitoring Compounds						
31) Dibromofluoromethane	6.586	113	1136407	48.98	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 97.96%			
39) 1,2-Dichloroethane-d4	7.122	65	1546430	48.49	ug/L	0.00
Spiked Amount 50.000	Range 79 - 125		Recovery = 96.98%			
49) Toluene-d8	8.902	98	3502705	50.04	ug/L	0.00
Spiked Amount 50.000	Range 85 - 112		Recovery = 100.08%			
70) 4-Bromofluorobenzene	11.646	95	1413344	50.04	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 100.08%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	2.599	85	1012483	41.00	ug/L	100
3) Chloromethane	2.843	50	1636269	40.73	ug/L	100
4) Vinyl Chloride	2.958	62	834458	42.95	ug/L	99
5) Bromomethane	3.336	94	373132	40.85	ug/L	98
6) Chloroethane	3.483	64	384770	39.44	ug/L	99
7) Trichlorofluoromethane	3.647	101	1238795	42.85	ug/L	97
8) Ethyl Ether	3.946	59	585163	38.07	ug/L	96
9) 1,2-Dichlorotrifluoroe...	4.159	67	772663	41.98	ug/L	99
10) 1,1-Dichloroethene	4.184	61	1333347	39.62	ug/L	99
11) Freon 113	4.233	101	587515	34.78	ug/L	98
12) Carbon Disulfide	4.239	76	1540570	34.58	ug/L	99
13) Iodomethane	4.355	142	1068199	37.11	ug/L	98
14) Methylene Chloride	4.787	49	1456557	40.14	ug/L	99
15) Acetone	4.836	43	1283477	191.85	ug/L	95
16) Methyl acetate	4.946	43	3365758	203.07	ug/L	100
17) trans-1,2-Dichloroethene	4.958	61	1148803	42.81	ug/L	100
18) Hexane	5.013	56	792625	36.67	ug/L	95
19) Methyl Tert Butyl Ether	5.050	73	1442834	39.45	ug/L	95
20) Di-isopropyl ether	5.415	45	3657446	38.15	ug/L	97
21) 1,1-Dichloroethane	5.592	63	1618040	40.49	ug/L	99
22) Acrylonitrile	5.647	53	1684749	209.58	ug/L	98
23) ETBE	5.787	59	2510299	40.15	ug/L	99
24) Vinyl acetate	5.812	43	10633853	176.82	ug/L	99
25) cis-1,2-Dichloroethene	6.141	96	753532	41.06	ug/L	97
26) 2,2-Dichloropropane	6.250	77	789115	40.16	ug/L	100
27) Bromochloromethane	6.348	128	427191	38.28	ug/L	95
28) Cyclohexane	6.354	56	1641448	38.91	ug/L	99
29) Chloroform	6.397	83	1501755	38.74	ug/L	98
30) Tetrahydrofuran	6.574	42	251113	37.33	ug/L	98
32) Carbon Tetrachloride	6.555	117	1302448	39.65	ug/L	98
33) 1,1,1-Trichloroethane	6.622	97	1244172	38.44	ug/L	99
34) 2-Butanone	6.696	43	2104875	194.39	ug/L	98
35) 1,1-Dichloropropene	6.738	75	1048322	39.28	ug/L	98

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\032516\
Data File : A0199821.D
Acq On : 25 Mar 2016 6:04 pm
Operator : TRANGD
Sample : ICV1897-4 Inst : MSVOA10
Misc : MS33377,VA1897,,,,,
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Mar 29 09:52:26 2016
Quant Method : C:\msdchem\1\METHODS\032516oxy.m
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Tue Mar 29 09:49:44 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
36) tert-Butyl Formate	6.830	59	7449453	437.21	ug/L	#	82
37) Benzene	6.988	78	2727940	40.67	ug/L		97
38) TAME	7.061	73	1651963	36.57	ug/L		99
40) 1,2-Dichloroethane	7.189	62	1420745	38.03	ug/L		99
41) Trichloroethene	7.549	95	827466	40.12	ug/L		97
42) Methylcyclohexane	7.549	83	1187684	37.83	ug/L		99
43) Dibromomethane	7.976	93	487830	40.55	ug/L		98
44) 1,2-Dichloropropane	8.067	63	807470	41.71	ug/L		99
45) Bromodichloromethane	8.110	83	1099152	40.77	ug/L		99
46) 2-Chloroethyl vinyl ether	8.628	63	2191558	194.13	ug/L		99
47) cis-1,3-Dichloropropene	8.720	75	1122360	38.11	ug/L		97
50) Toluene	8.951	91	2959737	40.34	ug/L		99
51) 2-Nitropropane	9.183	41	1285091	205.13	ug/L		98
52) 4-Methyl-2-pentanone	9.293	43	4804627	201.01	ug/L		99
53) trans-1,3-Dichloropropene	9.347	75	1060351	41.16	ug/L		89
54) Tetrachloroethene	9.341	166	1083059	46.15	ug/L		99
55) 1,1,2-Trichloroethane	9.512	83	517580	38.76	ug/L		96
56) Dibromochloromethane	9.701	129	856170	41.58	ug/L		99
57) 1,3-Dichloropropane	9.793	76	989306	40.44	ug/L		96
58) 1,2-Dibromoethane	9.957	107	649414	41.79	ug/L		97
59) 2-hexanone	10.110	43	3367769	196.93	ug/L		99
60) 1-Chlorohexane	10.390	91	938587	37.04	ug/L		98
61) Ethylbenzene	10.457	91	3457485	40.54	ug/L		99
62) Chlorobenzene	10.457	112	2089072	39.39	ug/L		99
63) 1,1,1,2-Tetrachloroethane	10.506	131	871755	39.93	ug/L		99
64) m,p-Xylene	10.591	91	5391791	84.39	ug/L		100
65) o-Xylene	11.030	91	2729147	39.32	ug/L		99
66) Styrene	11.085	104	2042521	37.81	ug/L		100
67) Bromoform	11.140	173	535528	40.03	ug/L		96
68) Isopropylbenzene	11.335	105	3452254	39.81	ug/L		100
71) n-Propylbenzene	11.938	91	2864608	43.88	ug/L		98
72) Bromobenzene	11.768	156	1003677	39.76	ug/L		99
73) 1,1,2,2-Tetrachloroethane	11.829	83	762694	36.57	ug/L		99
74) 1,3,5-Trimethylbenzene	11.938	105	3032956	39.09	ug/L		99
75) 2-Chlorotoluene	11.938	91	2864608	43.88	ug/L		99
76) trans-1,4-Dichloro-2-B...	12.005	53	305927	39.91	ug/L		92
77) 1,2,3-Trichloropropane	11.987	110	246550	39.10	ug/L		98
78) Cyclohexanone	12.054	55	115770	185.31	ug/L		91
79) 4-Chlorotoluene	12.109	91	2631327	39.36	ug/L		98
80) tert-Butylbenzene	12.274	91	1793033	38.02	ug/L		94
81) 1,2,4-Trimethylbenzene	12.347	105	3122045	39.40	ug/L		99
82) sec-Butylbenzene	12.457	105	3960384	40.37	ug/L		100
83) 4-Isopropyltoluene	12.591	119	3386444	38.99	ug/L		99
84) 1,3-Dichlorobenzene	12.719	146	1928906	43.19	ug/L		96
85) 1,4-Dichlorobenzene	12.810	146	1968712	38.84	ug/L		99
86) n-Butylbenzene	13.030	92	1845639	38.39	ug/L		94
87) Benzyl Chloride	13.054	126	329012	36.56	ug/L	#	92
88) 1,2-Dichlorobenzene	13.243	146	1797008	43.15	ug/L		99
89) 1,2-Dibromo-3-Chloropr...	13.999	75	134046	38.63	ug/L		95
90) Hexachlorobutadiene	14.548	225	726642	40.09	ug/L		91

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\032516\
Data File : A0199821.D
Acq On : 25 Mar 2016 6:04 pm
Operator : TRANGD
Sample : ICV1897-4 Inst : MSVOA10
Misc : MS33377,VA1897,,,,,
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Mar 29 09:52:26 2016
Quant Method : C:\msdchem\1\METHODS\032516oxy.m
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Tue Mar 29 09:49:44 2016
Response via : Initial Calibration

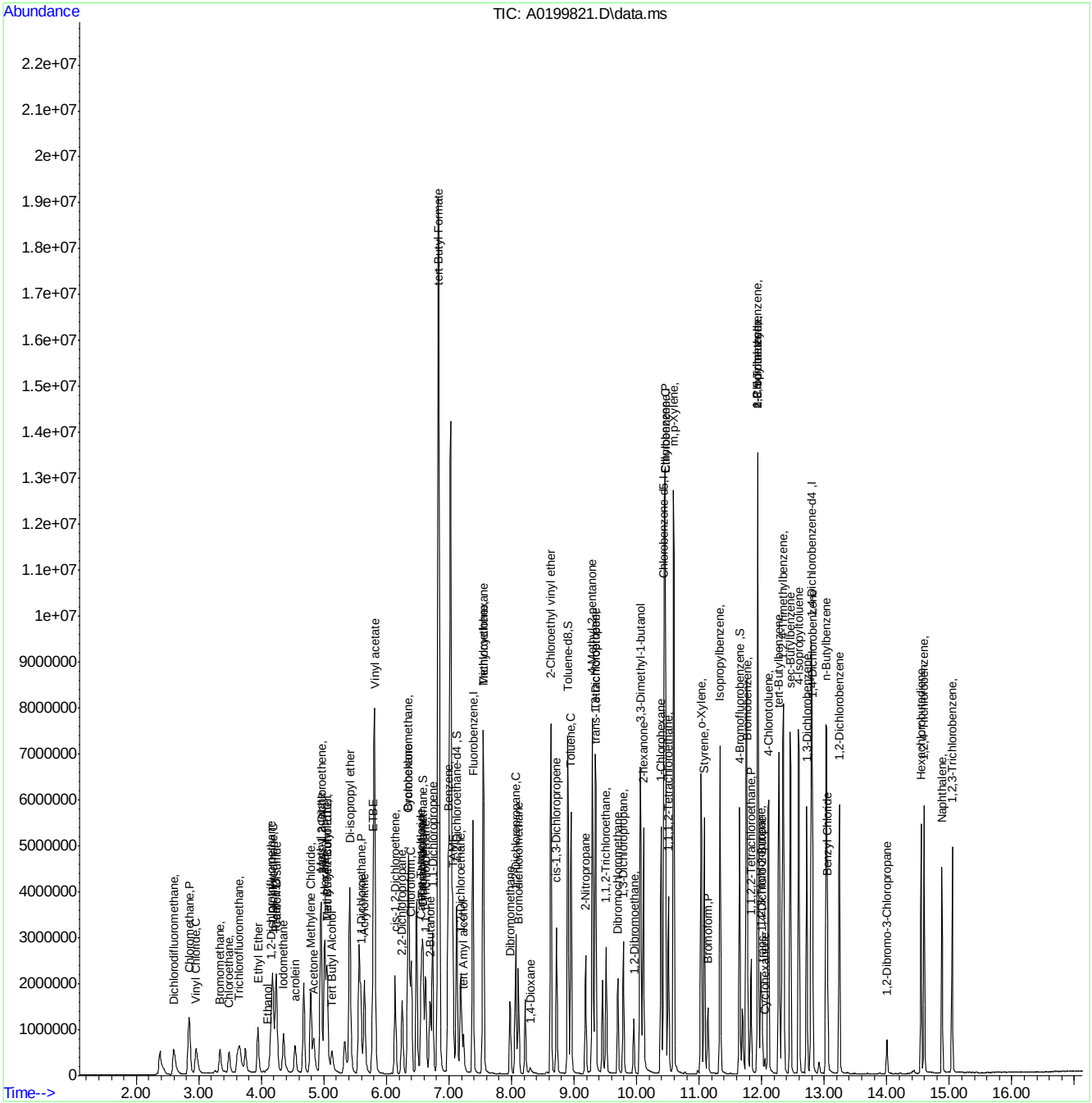
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
91) 1,2,4-Trichlorobenzene	14.596	180	1242041	37.35	ug/L	99
92) Naphthalene	14.883	128	2255049	39.76	ug/L	100
93) 1,2,3-Trichlorobenzene	15.048	180	1121629	38.54	ug/L	98
95) Ethanol	4.092	45	150349	753.74	ug/L	97
96) acrolein	4.537	56	582918	208.99	ug/L	97
97) Tert Butyl Alcohol	5.129	59	550900	370.32	ug/L	98
98) tert Amyl alcohol	7.232	59	394241	343.54	ug/L	99
99) 1,4-Dioxane	8.299	88	89041	749.41	ug/L	97
100) 3,3-Dimethyl-1-butanol	10.061	57	2368535	1855.12	ug/L	95

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\032516\
Data File : A0199821.D
Acq On : 25 Mar 2016 6:04 pm
Operator : TRANGD
Sample : ICV1897-4 Inst : MSVOA10
Misc : MS33377,VA1897,,,,,
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Mar 29 09:52:26 2016
Quant Method : C:\msdchem\1\METHODS\032516oxy.m
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Tue Mar 29 09:49:44 2016
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\040516\
Data File : A0200019.D
Acq On : 5 Apr 2016 11:15 am
Operator : TRANGD
Sample : CC1897-5 Inst : MSVOA10
Misc : MS33459,VA1906,,,,,
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Apr 05 14:59:35 2016
Quant Method : C:\msdchem\1\METHODS\032516oxy.m
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Tue Mar 29 09:52:15 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Fluorobenzene	7.378	96	2990783	50.00	ug/L		0.00
48) Chlorobenzene-d5	10.439	117	2456099	50.00	ug/L		0.00
69) 1,4-Dichlorobenzene-d4	12.792	152	1421978	50.00	ug/L		0.00
94) Tert Butyl Alcohol-d10	5.050	65	254019	250.00	ug/L		0.00
System Monitoring Compounds							
31) Dibromofluoromethane	6.580	113	940160	49.98	ug/L		0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 99.96%				
39) 1,2-Dichloroethane-d4	7.122	65	1313420	50.80	ug/L		0.00
Spiked Amount 50.000	Range 79 - 125		Recovery = 101.60%				
49) Toluene-d8	8.902	98	2807548	48.87	ug/L		0.00
Spiked Amount 50.000	Range 85 - 112		Recovery = 97.74%				
70) 4-Bromofluorobenzene	11.646	95	1170578	50.16	ug/L		0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 100.32%				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	2.599	85	927830	46.34	ug/L		99
3) Chloromethane	2.843	50	1369482	42.05	ug/L		99
4) Vinyl Chloride	2.952	62	674274	42.81	ug/L		98
5) Bromomethane	3.343	94	300701	40.61	ug/L		98
6) Chloroethane	3.483	64	322453	40.76	ug/L		100
7) Trichlorofluoromethane	3.641	101	996330	42.51	ug/L		100
8) Ethyl Ether	3.946	59	540693	43.39	ug/L		99
9) 1,2-Dichlorotrifluoroe...	4.159	67	573454	38.43	ug/L		99
10) 1,1-Dichloroethene	4.184	61	1100506	40.34	ug/L		97
11) Freon 113	4.233	101	532903	38.91	ug/L		95
12) Carbon Disulfide	4.239	76	1309166	36.25	ug/L		97
13) Iodomethane	4.355	142	945102	40.50	ug/L		99
14) Methylene Chloride	4.787	49	1210278	41.14	ug/L		99
15) Acetone	4.836	43	1061936	195.79	ug/L		97
16) Methyl acetate	4.946	43	2919139	217.23	ug/L		98
17) trans-1,2-Dichloroethene	4.952	61	893127	41.06	ug/L		96
18) Hexane	5.007	56	707861	40.39	ug/L		97
19) Methyl Tert Butyl Ether	5.050	73	1298871	43.80	ug/L		95
20) Di-isopropyl ether	5.415	45	3172868	40.82	ug/L		97
21) 1,1-Dichloroethane	5.592	63	1277090	39.41	ug/L		97
22) Acrylonitrile	5.647	53	1404384	215.48	ug/L		97
23) ETBE	5.787	59	2213032	43.42	ug/L		100
24) Vinyl acetate	5.805	43	10932245	234.05	ug/L		100
25) cis-1,2-Dichloroethene	6.141	96	628105	42.21	ug/L		93
26) 2,2-Dichloropropane	6.250	77	604283	37.93	ug/L		99
27) Bromochloromethane	6.342	128	367351	40.60	ug/L	#	85
28) Cyclohexane	6.354	56	1414029	41.15	ug/L		96
29) Chloroform	6.397	83	1238157	39.40	ug/L		98
30) Tetrahydrofuran	6.574	42	224970	41.25	ug/L		99
32) Carbon Tetrachloride	6.555	117	1053785	39.57	ug/L		99
33) 1,1,1-Trichloroethane	6.622	97	1059286	40.37	ug/L		99
34) 2-Butanone	6.696	43	1760623	200.55	ug/L		96
35) 1,1-Dichloropropene	6.738	75	815056	37.66	ug/L		95

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\040516\
Data File : A0200019.D
Acq On : 5 Apr 2016 11:15 am
Operator : TRANGD
Sample : CC1897-5 Inst : MSVOA10
Misc : MS33459,VA1906,,,,,
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Apr 05 14:59:35 2016
Quant Method : C:\msdchem\1\METHODS\032516oxy.m
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Tue Mar 29 09:52:15 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
36) tert-Butyl Formate	6.830	59	5924039	428.85	ug/L	#	76
37) Benzene	6.988	78	2164937	39.82	ug/L		93
38) TAME	7.055	73	1464728	39.99	ug/L		94
40) 1,2-Dichloroethane	7.189	62	1264103	41.73	ug/L		99
41) Trichloroethene	7.549	95	687578	41.12	ug/L		99
42) Methylcyclohexane	7.543	83	924278	36.31	ug/L		90
43) Dibromomethane	7.976	93	401411	41.15	ug/L		97
44) 1,2-Dichloropropane	8.067	63	666189	42.44	ug/L		97
45) Bromodichloromethane	8.110	83	892214	40.82	ug/L		99
46) 2-Chloroethyl vinyl ether	8.628	63	1888922	206.38	ug/L		96
47) cis-1,3-Dichloropropene	8.720	75	896216	37.53	ug/L		94
50) Toluene	8.951	91	2399698	39.85	ug/L		100
51) 2-Nitropropane	9.183	41	1191952	231.80	ug/L		96
52) 4-Methyl-2-pentanone	9.293	43	4150031	211.53	ug/L		100
53) trans-1,3-Dichloropropene	9.347	75	821470	38.85	ug/L		93
54) Tetrachloroethene	9.341	166	764663	39.70	ug/L		98
55) 1,1,2-Trichloroethane	9.512	83	441188	40.26	ug/L		96
56) Dibromochloromethane	9.701	129	697910	41.29	ug/L		99
57) 1,3-Dichloropropane	9.786	76	868262	43.24	ug/L		88
58) 1,2-Dibromoethane	9.957	107	559232	43.84	ug/L		98
59) 2-hexanone	10.103	43	2997299	213.53	ug/L		96
60) 1-Chlorohexane	10.390	91	733693	35.27	ug/L		97
61) Ethylbenzene	10.451	91	2821911	40.32	ug/L		98
62) Chlorobenzene	10.457	112	1708542	39.25	ug/L		97
63) 1,1,1,2-Tetrachloroethane	10.506	131	704608	39.32	ug/L		99
64) m,p-Xylene	10.591	91	4438905	84.64	ug/L		100
65) o-Xylene	11.030	91	2156422	37.85	ug/L		100
66) Styrene	11.079	104	1741258	39.27	ug/L		95
67) Bromoform	11.140	173	420090	38.25	ug/L		99
68) Isopropylbenzene	11.335	105	2716822	38.16	ug/L		99
71) n-Propylbenzene	11.938	91	2366580	43.88	ug/L		99
72) Bromobenzene	11.768	156	864635	41.46	ug/L		100
73) 1,1,2,2-Tetrachloroethane	11.829	83	679977	39.47	ug/L		99
74) 1,3,5-Trimethylbenzene	11.938	105	2520300	39.31	ug/L		100
75) 2-Chlorotoluene	11.938	91	2366580	43.88	ug/L		99
76) trans-1,4-Dichloro-2-B...	12.005	53	178544	28.19	ug/L		91
77) 1,2,3-Trichloropropane	11.987	110	222501	42.70	ug/L		99
78) Cyclohexanone	12.048	55	106070	205.49	ug/L		91
79) 4-Chlorotoluene	12.103	91	2178441	39.44	ug/L		98
80) tert-Butylbenzene	12.274	91	1433092	36.78	ug/L		93
81) 1,2,4-Trimethylbenzene	12.347	105	2548602	38.93	ug/L		99
82) sec-Butylbenzene	12.457	105	3086238	38.08	ug/L		100
83) 4-Isopropyltoluene	12.591	119	2726723	37.99	ug/L		99
84) 1,3-Dichlorobenzene	12.719	146	1603612	43.45	ug/L		97
85) 1,4-Dichlorobenzene	12.810	146	1656828	39.56	ug/L		99
86) n-Butylbenzene	13.030	92	1444612	36.37	ug/L		98
87) Benzyl Chloride	13.054	126	287980	38.73	ug/L		95
88) 1,2-Dichlorobenzene	13.243	146	1507364	43.81	ug/L		98
89) 1,2-Dibromo-3-Chloropr...	13.999	75	114167	39.82	ug/L		97
90) Hexachlorobutadiene	14.548	225	578751	38.65	ug/L		93

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\040516\
Data File : A0200019.D
Acq On : 5 Apr 2016 11:15 am
Operator : TRANGD
Sample : CC1897-5 Inst : MSVOA10
Misc : MS33459,VA1906,,,,,
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Apr 05 14:59:35 2016
Quant Method : C:\msdchem\1\METHODS\032516oxy.m
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Tue Mar 29 09:52:15 2016
Response via : Initial Calibration

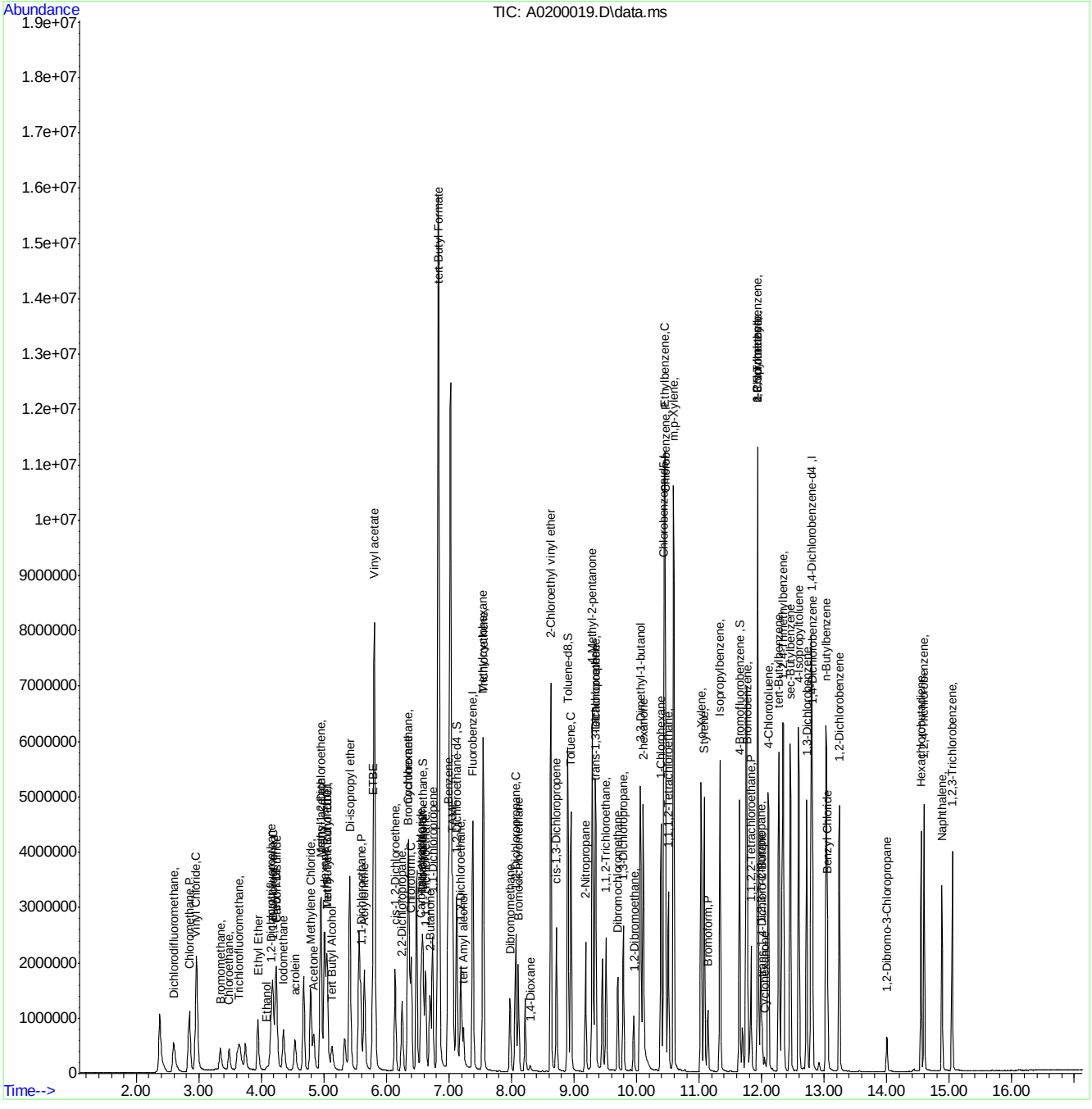
	Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
91)	1,2,4-Trichlorobenzene	14.596	180	1034209	37.64	ug/L	97
92)	Naphthalene	14.883	128	1683774	35.93	ug/L	100
93)	1,2,3-Trichlorobenzene	15.048	180	922590	38.37	ug/L	99
95)	Ethanol	4.086	45	83664	552.33	ug/L	85
96)	acrolein	4.537	56	507781	239.73	ug/L	98
97)	Tert Butyl Alcohol	5.129	59	456364	403.98	ug/L	97
98)	tert Amyl alcohol	7.232	59	323675	371.42	ug/L	97
99)	1,4-Dioxane	8.299	88	57632	638.76	ug/L	94
100)	3,3-Dimethyl-1-butanol	10.061	57	1865086	1917.08	ug/L	95

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\040516\
Data File : A0200019.D
Acq On : 5 Apr 2016 11:15 am
Operator : TRANGD
Sample : CC1897-5 Inst : MSVOA10
Misc : MS33459,VA1906,,,,,
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Apr 05 14:59:35 2016
Quant Method : C:\msdchem\1\METHODS\032516oxy.m
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Tue Mar 29 09:52:15 2016
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\040516\
Data File : A0200043.D
Acq On : 5 Apr 2016 9:29 pm
Operator : TRANGD
Sample : ECC1897-5 Inst : MSVOA10
Misc : MS33459,VA1906,,,,,
ALS Vial : 25 Sample Multiplier: 1

Quant Time: Apr 06 13:36:03 2016
Quant Method : C:\msdchem\1\METHODS\032516oxy.m
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Tue Mar 29 09:52:15 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Fluorobenzene	7.378	96	2848875	50.00	ug/L		0.00
48) Chlorobenzene-d5	10.439	117	2347563	50.00	ug/L		0.00
69) 1,4-Dichlorobenzene-d4	12.792	152	1342784	50.00	ug/L		0.00
94) Tert Butyl Alcohol-d10	5.043	65	221248	250.00	ug/L		0.00
System Monitoring Compounds							
31) Dibromofluoromethane	6.580	113	894849	49.94	ug/L		0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 99.88%				
39) 1,2-Dichloroethane-d4	7.122	65	1253856	50.91	ug/L		0.00
Spiked Amount 50.000	Range 79 - 125		Recovery = 101.82%				
49) Toluene-d8	8.902	98	2691260	49.01	ug/L		0.00
Spiked Amount 50.000	Range 85 - 112		Recovery = 98.02%				
70) 4-Bromofluorobenzene	11.646	95	1113994	50.55	ug/L		0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 101.10%				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	2.593	85	962717	50.48	ug/L		98
3) Chloromethane	2.842	50	1359583	43.82	ug/L		98
4) Vinyl Chloride	2.952	62	676905	45.12	ug/L		100
5) Bromomethane	3.342	94	314205	44.55	ug/L		98
6) Chloroethane	3.483	64	338802	44.97	ug/L		99
7) Trichlorofluoromethane	3.647	101	1067042	47.79	ug/L		97
8) Ethyl Ether	3.940	59	536819	45.23	ug/L		96
9) 1,2-Dichlorotrifluoroe...	4.153	67	627001	44.11	ug/L		95
10) 1,1-Dichloroethene	4.184	61	1202796	46.28	ug/L		98
11) Freon 113	4.232	101	581844	44.60	ug/L		95
12) Carbon Disulfide	4.239	76	1435332	41.72	ug/L		92
13) Iodomethane	4.354	142	1018622	45.83	ug/L		97
14) Methylene Chloride	4.787	49	1303483	46.52	ug/L		98
15) Acetone	4.836	43	1010343	195.56	ug/L		96
16) Methyl acetate	4.946	43	2877671	224.82	ug/L		99
17) trans-1,2-Dichloroethene	4.952	61	967379	46.69	ug/L		98
18) Hexane	5.013	56	758742	45.45	ug/L		97
19) Methyl Tert Butyl Ether	5.043	73	1307061	46.27	ug/L		88
20) Di-isopropyl ether	5.409	45	3262969	44.07	ug/L		97
21) 1,1-Dichloroethane	5.592	63	1344747	43.57	ug/L		100
22) Acrylonitrile	5.641	53	1273661	205.16	ug/L		96
23) ETBE	5.787	59	2207685	45.32	ug/L		99
24) Vinyl acetate	5.805	43	10087649	225.20	ug/L		100
25) cis-1,2-Dichloroethene	6.141	96	655317	46.23	ug/L		96
26) 2,2-Dichloropropane	6.250	77	631751	41.63	ug/L		98
27) Bromochloromethane	6.342	128	367236	42.61	ug/L	#	86
28) Cyclohexane	6.354	56	1524477	46.09	ug/L		96
29) Chloroform	6.397	83	1290304	43.10	ug/L		97
30) Tetrahydrofuran	6.573	42	202787	39.03	ug/L		98
32) Carbon Tetrachloride	6.555	117	1112857	43.87	ug/L		99
33) 1,1,1-Trichloroethane	6.622	97	1162288	46.50	ug/L		97
34) 2-Butanone	6.695	43	1637593	195.83	ug/L		96
35) 1,1-Dichloropropene	6.738	75	869899	42.20	ug/L		91

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\040516\
Data File : A0200043.D
Acq On : 5 Apr 2016 9:29 pm
Operator : TRANGD
Sample : ECC1897-5 Inst : MSVOA10
Misc : MS33459,VA1906,,,,,
ALS Vial : 25 Sample Multiplier: 1

Quant Time: Apr 06 13:36:03 2016
Quant Method : C:\msdchem\1\METHODS\032516oxy.m
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Tue Mar 29 09:52:15 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
36) tert-Butyl Formate	6.830	59	6182911	469.88	ug/L	#	78
37) Benzene	6.988	78	2246494	43.37	ug/L		92
38) TAME	7.055	73	1416288	40.60	ug/L		94
40) 1,2-Dichloroethane	7.183	62	1282436	44.45	ug/L		100
41) Trichloroethene	7.549	95	728352	45.73	ug/L		98
42) Methylcyclohexane	7.543	83	994886	41.03	ug/L		92
43) Dibromomethane	7.976	93	396907	42.72	ug/L		98
44) 1,2-Dichloropropane	8.067	63	667645	44.65	ug/L		97
45) Bromodichloromethane	8.110	83	907101	43.57	ug/L		99
46) 2-Chloroethyl vinyl ether	8.628	63	1852417	212.47	ug/L		96
47) cis-1,3-Dichloropropene	8.719	75	887426	39.02	ug/L		92
50) Toluene	8.951	91	2503616	43.49	ug/L		100
51) 2-Nitropropane	9.183	41	1135027	230.94	ug/L		96
52) 4-Methyl-2-pentanone	9.292	43	4022319	214.50	ug/L		99
53) trans-1,3-Dichloropropene	9.347	75	792586	39.22	ug/L		93
54) Tetrachloroethene	9.341	166	861056	46.77	ug/L		98
55) 1,1,2-Trichloroethane	9.512	83	425012	40.57	ug/L		96
56) Dibromochloromethane	9.701	129	672253	41.61	ug/L		98
57) 1,3-Dichloropropane	9.786	76	859998	44.81	ug/L		83
58) 1,2-Dibromoethane	9.957	107	549542	45.07	ug/L		97
59) 2-hexanone	10.103	43	2935178	218.77	ug/L		95
60) 1-Chlorohexane	10.390	91	794304	39.95	ug/L		96
61) Ethylbenzene	10.451	91	2951760	44.12	ug/L		98
62) Chlorobenzene	10.457	112	1749689	42.05	ug/L		97
63) 1,1,1,2-Tetrachloroethane	10.506	131	714572	41.72	ug/L		97
64) m,p-Xylene	10.591	91	4656616	92.90	ug/L		99
65) o-Xylene	11.030	91	2263221	41.56	ug/L		100
66) Styrene	11.079	104	1780430	42.01	ug/L		95
67) Bromoform	11.140	173	385604	36.74	ug/L		98
68) Isopropylbenzene	11.335	105	2891035	42.49	ug/L		99
71) n-Propylbenzene	11.938	91	2446759	48.04	ug/L		99
72) Bromobenzene	11.768	156	875039	44.43	ug/L		99
73) 1,1,2,2-Tetrachloroethane	11.829	83	643857	39.57	ug/L		99
74) 1,3,5-Trimethylbenzene	11.938	105	2655659	43.87	ug/L		98
75) 2-Chlorotoluene	11.938	91	2446759	48.04	ug/L		99
76) trans-1,4-Dichloro-2-B...	12.005	53	120844	20.21	ug/L	#	77
77) 1,2,3-Trichloropropane	11.987	110	208850	42.45	ug/L		96
78) Cyclohexanone	12.048	55	86623	177.72	ug/L		89
79) 4-Chlorotoluene	12.103	91	2253267	43.20	ug/L		98
80) tert-Butylbenzene	12.274	91	1534895	41.72	ug/L		93
81) 1,2,4-Trimethylbenzene	12.347	105	2661901	43.05	ug/L		100
82) sec-Butylbenzene	12.456	105	3254530	42.52	ug/L		100
83) 4-Isopropyltoluene	12.591	119	2838540	41.89	ug/L		98
84) 1,3-Dichlorobenzene	12.719	146	1597087	45.83	ug/L		96
85) 1,4-Dichlorobenzene	12.810	146	1688892	42.71	ug/L		99
86) n-Butylbenzene	13.030	92	1500528	40.01	ug/L		96
87) Benzyl Chloride	13.054	126	248167	35.35	ug/L		96
88) 1,2-Dichlorobenzene	13.243	146	1507602	46.40	ug/L		99
89) 1,2-Dibromo-3-Chloropr...	13.999	75	108963	40.25	ug/L		96
90) Hexachlorobutadiene	14.548	225	605297	42.81	ug/L		92

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\040516\
Data File : A0200043.D
Acq On : 5 Apr 2016 9:29 pm
Operator : TRANGD
Sample : ECC1897-5 Inst : MSVOA10
Misc : MS33459,VA1906,,,,,
ALS Vial : 25 Sample Multiplier: 1

Quant Time: Apr 06 13:36:03 2016
Quant Method : C:\msdchem\1\METHODS\032516oxy.m
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Tue Mar 29 09:52:15 2016
Response via : Initial Calibration

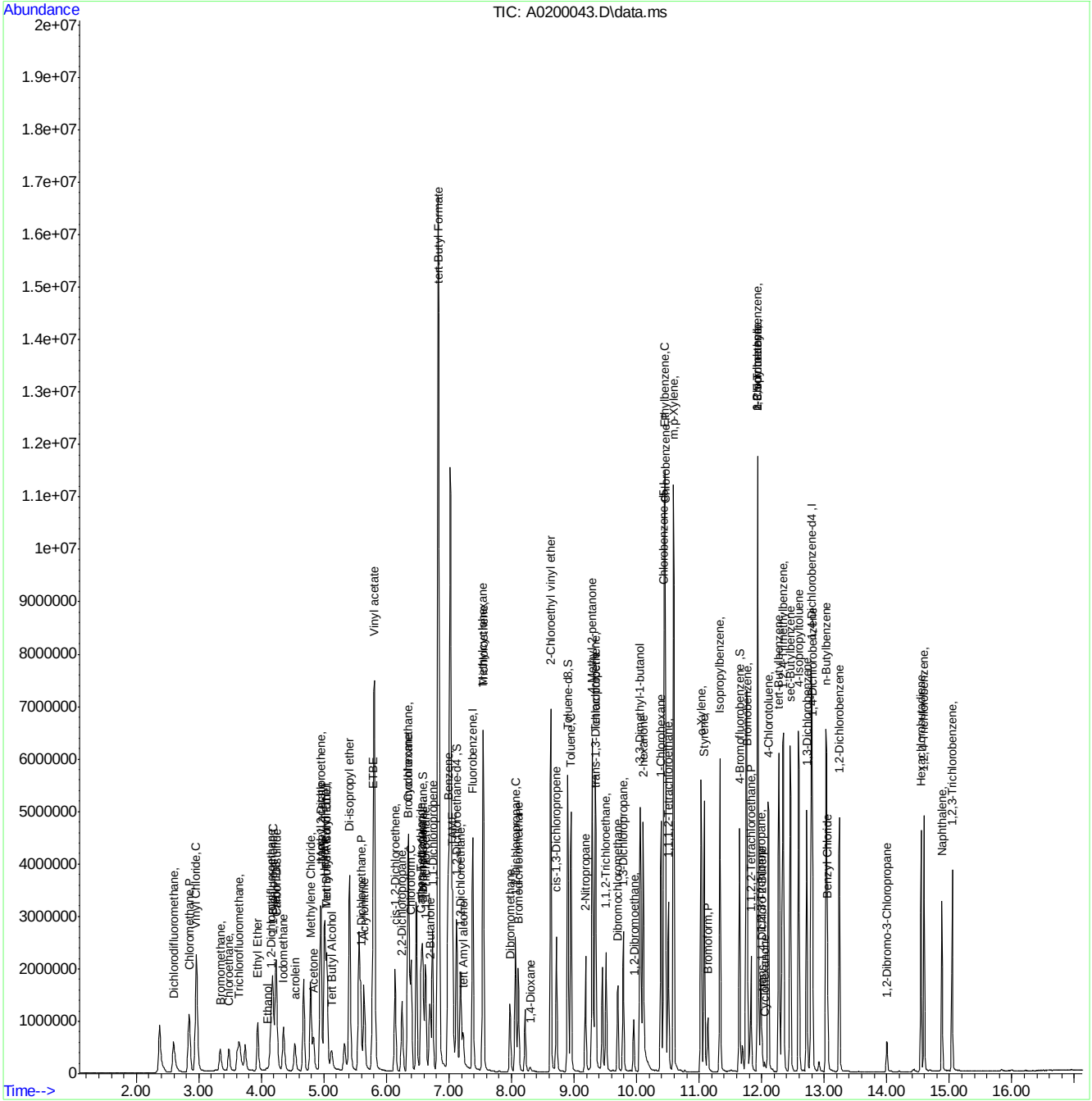
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
91) 1,2,4-Trichlorobenzene	14.596	180	1031578	39.76	ug/L	98
92) Naphthalene	14.883	128	1626599	36.76	ug/L	100
93) 1,2,3-Trichlorobenzene	15.047	180	901841	39.72	ug/L	99
95) Ethanol	4.092	45	75490	572.19	ug/L	100
96) acrolein	4.537	56	481237	260.85	ug/L	99
97) Tert Butyl Alcohol	5.123	59	404094	410.69	ug/L	99
98) tert Amyl alcohol	7.226	59	282898	372.71	ug/L	95
99) 1,4-Dioxane	8.299	88	49656	631.88	ug/L	85
100) 3,3-Dimethyl-1-butanol	10.055	57	1853183	2158.17	ug/L	98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\040516\
Data File : A0200043.D
Acq On : 5 Apr 2016 9:29 pm
Operator : TRANGD
Sample : ECC1897-5 Inst : MSVOA10
Misc : MS33459,VA1906,,,,,
ALS Vial : 25 Sample Multiplier: 1

Quant Time: Apr 06 13:36:03 2016
Quant Method : C:\msdchem\1\METHODS\032516oxy.m
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Tue Mar 29 09:52:15 2016
Response via : Initial Calibration



Manual Integrations APPROVED (compounds with "m" flag)
Melissa Mangual 03/16/16 15:48

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\031516\
Data File : J0975150.D
Acq On : 15 Mar 2016 2:17 pm
Operator : DARSHNAP
Sample : IC5237-1 Inst : MSVOA6
Misc : MS33279,VJ5237,,,,,
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Mar 16 08:19:35 2016
Quant Method : C:\msdchem\2\methods\MSJ031516.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Tue Mar 15 07:56:34 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Fluorobenzene	7.762	96	1497519	50.00	ug/L		0.00
56) Chlorobenzene-d5	10.846	117	1089904	50.00	ug/L		0.00
78) 1,4-Dichlorobenzene-d4	13.207	152	603459	50.00	ug/L		0.00
106) Tert Butyl Alcohol-d10	5.298	65	91725	250.00	ug/L		0.00
System Monitoring Compounds							
36) Dibromofluoromethane	6.928	113	373911	48.86	ug/L		0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 97.72%				
46) 1,2-Dichloroethane-d4	7.482	65	459347	49.68	ug/L		0.00
Spiked Amount 50.000	Range 79 - 125		Recovery = 99.36%				
57) Toluene-d8	9.301	98	1476291	51.18	ug/L		0.00
Spiked Amount 50.000	Range 85 - 112		Recovery = 102.36%				
79) 4-Bromofluorobenzene	12.057	95	555679	47.95	ug/L		0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 95.90%				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	2.676	85	6775	0.68	ug/L		95
3) Chloromethane	2.895	50	10042	1.02	ug/L		86
4) Vinyl Chloride	3.029	62	9163	0.89	ug/L		84
5) 1,3-Butadiene	3.029	54	7059	0.86	ug/L		85
6) Bromomethane	3.455	94	9881m	1.44	ug/L		
7) Chloroethane	3.607	64	6448	1.12	ug/L		90
8) Trichlorofluoromethane	3.850	101	10448m	0.79	ug/L		
9) Ethyl Ether	4.130	59	5459	0.88	ug/L		92
10) 1,2-Dichlorotrifluoroe...	4.355	67	8916	1.01	ug/L	#	71
11) 1,1-Dichloroethene	4.398	61	11350	1.02	ug/L		94
12) Freon 113	4.458	101	7347	0.99	ug/L	#	83
13) Carbon Disulfide	4.471	76	21866	0.93	ug/L		92
14) Iodomethane	4.586	142	12203	1.00	ug/L		95
15) Allyl chloride	4.927	41	8571	0.82	ug/L		96
16) Methylene Chloride	5.042	49	19069	1.87	ug/L		92
17) Acetone	5.091	58	2092	4.99	ug/L		92
18) Methyl acetate	5.213	74	4128	4.66	ug/L	#	49
19) trans-1,2-Dichloroethene	5.231	61	9877	0.91	ug/L		95
20) Hexane	5.310	56	6156	0.92	ug/L	#	69
21) Methyl Tert Butyl Ether	5.334	73	19763	0.98	ug/L		85
22) Acetonitrile	5.608	40	4443	14.08	ug/L	#	56
23) Di-isopropyl ether	5.724	45	23214	1.00	ug/L		83
24) Chloroprene	5.876	53	9643	0.84	ug/L		85
25) 1,1-Dichloroethane	5.900	63	14012	1.00	ug/L		98
26) Acrylonitrile	5.949	53	11139	5.74	ug/L		97
27) ETBE	6.113	59	21083	0.90	ug/L		79
28) Vinyl acetate	6.125	43	55946	4.80	ug/L		97
29) cis-1,2-Dichloroethene	6.478	96	8540	0.96	ug/L		93
30) 2,2-Dichloropropane	6.606	77	10698	1.02	ug/L		86
31) Bromochloromethane	6.691	128	3551	0.86	ug/L	#	79
32) Cyclohexane	6.734	56	12273	0.98	ug/L	#	81
33) Chloroform	6.746	83	15433	1.01	ug/L		93
34) Ethyl acetate	6.825	43	23574	5.07	ug/L		90

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\031516\
Data File : J0975150.D
Acq On : 15 Mar 2016 2:17 pm
Operator : DARSHNAP
Sample : IC5237-1 Inst : MSVOA6
Misc : MS33279,VJ5237,,,,,
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Mar 16 08:19:35 2016
Quant Method : C:\msdchem\2\methods\MSJ031516.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Tue Mar 15 07:56:34 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
35) Tetrahydrofuran	6.947	42	3124	2.34	ug/L	#	71
37) Carbon Tetrachloride	6.934	117	9892	0.93	ug/L	#	81
38) 1,1,1-Trichloroethane	6.995	97	12445	0.97	ug/L		92
39) 2-Butanone	7.050	43	12221	5.99	ug/L		98
40) 1,1-Dichloropropene	7.105	75	10270	0.96	ug/L		93
41) tert-Butyl Formate	7.190	59	37883	8.06	ug/L	#	33
42) Propionitrile	7.348	54	7401	10.45	ug/L	#	64
43) Methacrylonitrile	7.366	41	33814	10.07	ug/L		88
44) Benzene	7.360	78	31721	0.98	ug/L		85
45) TAME	7.439	73	20156	0.98	ug/L		94
47) 1,2-Dichloroethane	7.549	62	12849	1.15	ug/L		88
48) Trichloroethene	7.944	95	8203	0.96	ug/L		96
49) Methylcyclohexane	7.950	83	12273	0.91	ug/L		93
50) Dibromomethane	8.370	93	4922	1.10	ug/L		92
51) 1,2-Dichloropropane	8.455	63	8279	1.04	ug/L		93
52) Bromodichloromethane	8.504	83	9529	0.93	ug/L		93
53) Methyl methacrylate	8.607	41	3207	0.75	ug/L	#	72
54) 2-Chloroethyl vinyl ether	9.015	63	17389	4.02	ug/L		93
55) cis-1,3-Dichloropropene	9.118	75	9664	0.83	ug/L		98
58) Toluene	9.356	91	36026	1.05	ug/L		93
59) 2-Nitropropane	9.556	41	4628	3.48	ug/L		84
60) 4-Methyl-2-pentanone	9.678	43	22365	4.71	ug/L		96
61) trans-1,3-Dichloropropene	9.745	75	7916	0.84	ug/L		90
62) Tetrachloroethene	9.757	166	8590	0.93	ug/L		86
63) Ethyl methacrylate	9.848	69	5248	0.64	ug/L		93
64) 1,1,2-Trichloroethane	9.903	83	5205	0.97	ug/L		87
65) Dibromochloromethane	10.110	129	6228	0.91	ug/L		85
66) 1,3-Dichloropropane	10.189	76	11243	1.03	ug/L		95
67) 1,2-Dibromoethane	10.378	107	6238	1.07	ug/L	#	60
68) 2-hexanone	10.505	43	13884	4.29	ug/L		77
69) 1-Chlorohexane	10.797	91	8158	0.81	ug/L	#	83
70) Ethylbenzene	10.864	91	39232	0.97	ug/L		97
71) Chlorobenzene	10.864	112	23328	1.06	ug/L		91
72) 1,1,1,2-Tetrachloroethane	10.913	131	6466	0.93	ug/L	#	75
73) m,p-Xylene	11.004	91	54337	1.71	ug/L		98
74) o-Xylene	11.442	91	27064	0.95	ug/L		95
75) Styrene	11.491	104	16955	0.80	ug/L		94
76) Bromoform	11.552	173	3073	0.82	ug/L		78
77) Isopropylbenzene	11.746	105	29354	0.80	ug/L		96
80) cis-1,4-Dichloro-2-butene	12.099	53	1716	1.08	ug/L	#	39
81) n-Propylbenzene	12.166	91	39032	0.93	ug/L		97
82) Bromobenzene	12.191	156	9314	0.95	ug/L		97
83) 1,1,2,2-Tetrachloroethane	12.221	83	7603	1.06	ug/L		95
84) 1,3,5-Trimethylbenzene	12.343	105	25826	0.82	ug/L		93
85) 2-Chlorotoluene	12.355	91	29015	0.95	ug/L		99
86) trans-1,4-Dichloro-2-B...	12.410	53	1269	0.87	ug/L	#	57
87) 1,2,3-Trichloropropane	12.385	110	1795	0.91	ug/L		75
88) Cyclohexanone	12.452	55	686	5.72	ug/L	#	65
89) 4-Chlorotoluene	12.525	91	24461	0.87	ug/L		95
90) a-Methyl Styrene	12.610	118	7205	0.82	ug/L	#	90

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\031516\
Data File : J0975150.D
Acq On : 15 Mar 2016 2:17 pm
Operator : DARSHNAP
Sample : IC5237-1 Inst : MSVOA6
Misc : MS33279,VJ5237,,,,,
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Mar 16 08:19:35 2016
Quant Method : C:\msdchem\2\methods\MSJ031516.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Tue Mar 15 07:56:34 2016
Response via : Initial Calibration

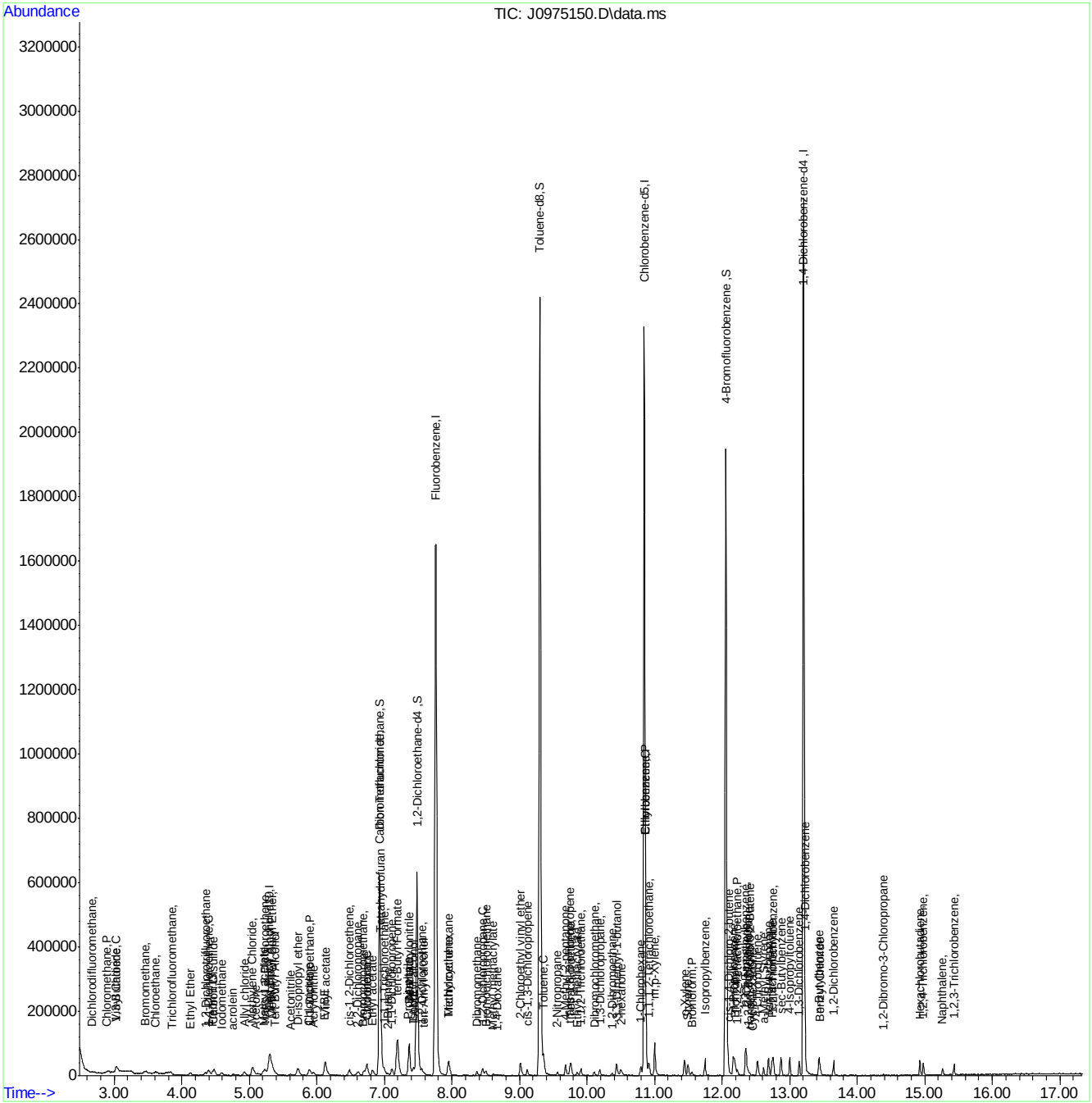
	Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
91)	tert-Butylbenzene	12.683	91	16548	0.90	ug/L		96
92)	1,2,4-Trimethylbenzene	12.756	105	25129	0.80	ug/L		93
93)	Pentachloroethane	12.738	167	4995	1.16	ug/L	#	88
94)	sec-Butylbenzene	12.872	105	33797	0.91	ug/L		95
95)	4-Isopropyltoluene	13.000	119	26896	0.86	ug/L		97
96)	1,3-Dichlorobenzene	13.140	146	16834	1.01	ug/L		86
97)	1,4-Dichlorobenzene	13.225	146	19396	1.09	ug/L		86
98)	n-Butylbenzene	13.438	92	14315	0.80	ug/L		94
99)	Benzyl Chloride	13.450	126	1193	0.60	ug/L	#	6
100)	1,2-Dichlorobenzene	13.651	146	16386	1.08	ug/L		89
101)	1,2-Dibromo-3-Chloropr...	14.387	75	1127	1.88	ug/L	#	47
102)	Hexachlorobutadiene	14.934	225	6492	1.35	ug/L		94
103)	1,2,4-Trichlorobenzene	14.977	180	9990	1.91	ug/L		94
104)	Naphthalene	15.263	128	14240	2.35	ug/L		90
105)	1,2,3-Trichlorobenzene	15.433	180	10129	3.18	ug/L		95
108)	acrolein	4.756	56	4435	4.39	ug/L		82
109)	Tert Butyl Alcohol	5.383	59	4329	10.16	ug/L		82
110)	tert Amyl alcohol	7.579	59	2592	8.16	ug/L	#	63
111)	Isobutyl alcohol	7.433	42	1712	9.78	ug/L	#	83
112)	1,4-Dioxane	8.674	88	807	19.87	ug/L	#	29
113)	3,3-Dimethyl-1-butanol	10.438	57	16639	48.08	ug/L		89

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\031516\
Data File : J0975150.D
Acq On : 15 Mar 2016 2:17 pm
Operator : DARSHNAP
Sample : IC5237-1 Inst : MSVOA6
Misc : MS33279,VJ5237,,,,,
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Mar 16 08:19:35 2016
Quant Method : C:\msdchem\2\methods\MSJ031516.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Tue Mar 15 07:56:34 2016
Response via : Initial Calibration



Manual Integration Approval Summary

Sample Number: VJ5237-IC5237
Lab FileID: J0975150.D
Injection Time: 03/15/16 14:17

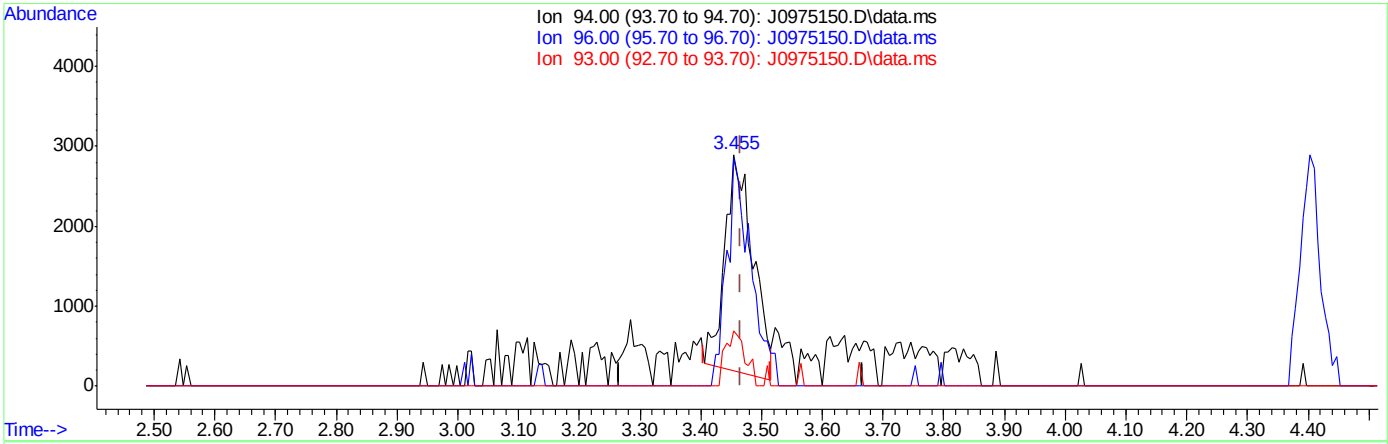
Method: SW846 8260B
Analyst approved: 03/16/16 09:56 Darshna Patel
Supervisor approved: 03/16/16 15:48 Melissa Mangual

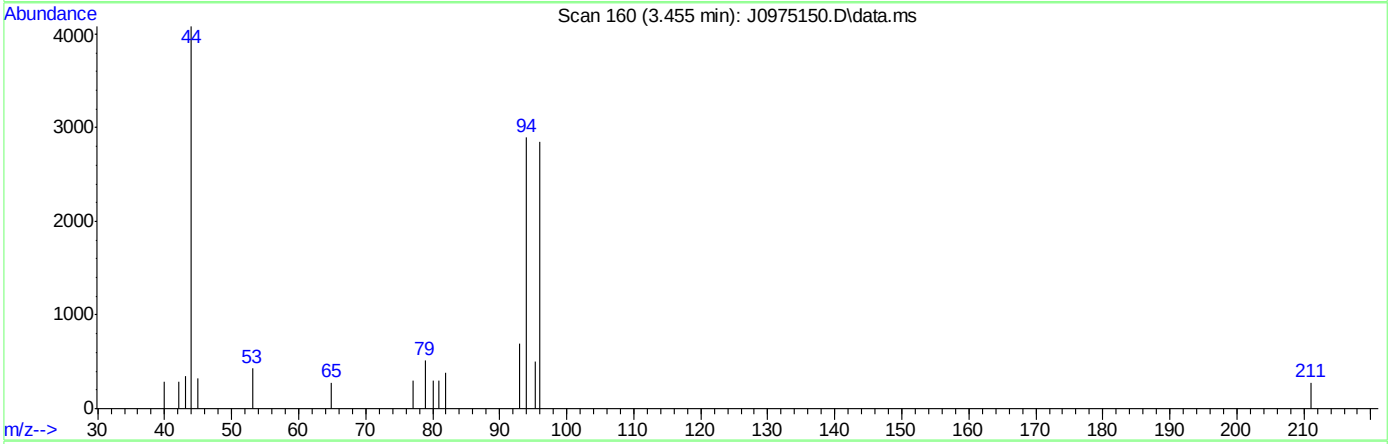
Parameter	CAS	Sig#	R.T. (min.)	Reason
Methyl Bromide	74-83-9		3.45	Poor instrument integration
Trichlorofluoromethane	75-69-4		3.85	Split peak

Quantitation Report (Qedit)

Data Path : C:\msdchem\2\data\031516\
Data File : J0975150.D
Acq On : 15 Mar 2016 2:17 pm
Operator : DARSHNAP
Sample : IC5237-1 Inst : MSVOA6
Misc : MS33279,VJ5237,,,,,
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Mar 16 08:17:21 2016
Quant Method : C:\msdchem\2\methods\MSJ031516.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Tue Mar 15 07:56:34 2016
Response via : Initial Calibration





TIC: J0975150.D\data.ms

(6) Bromomethane ( )

3.455min (-0.012) 1.27ug/L

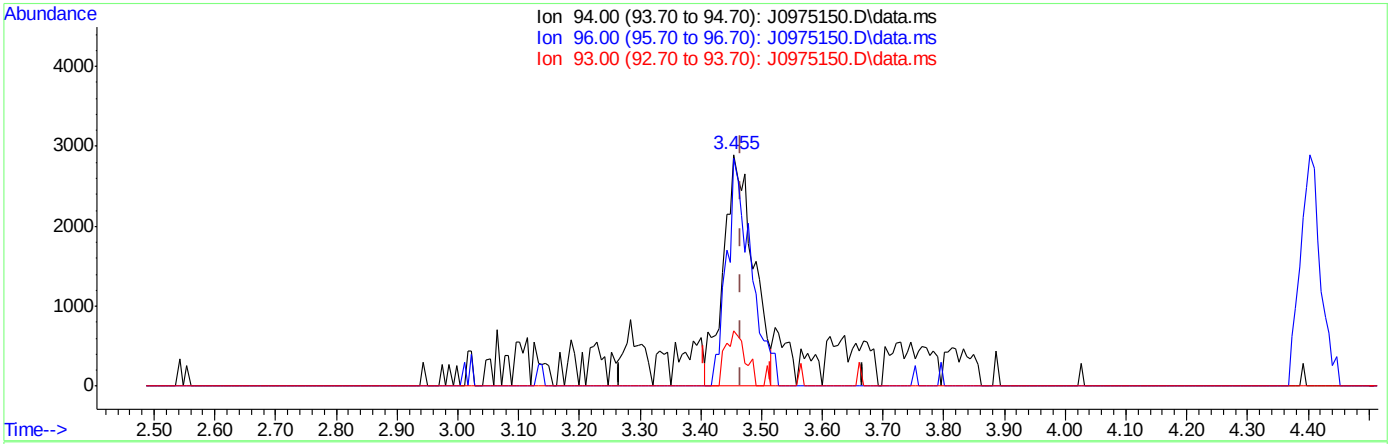
response 8695

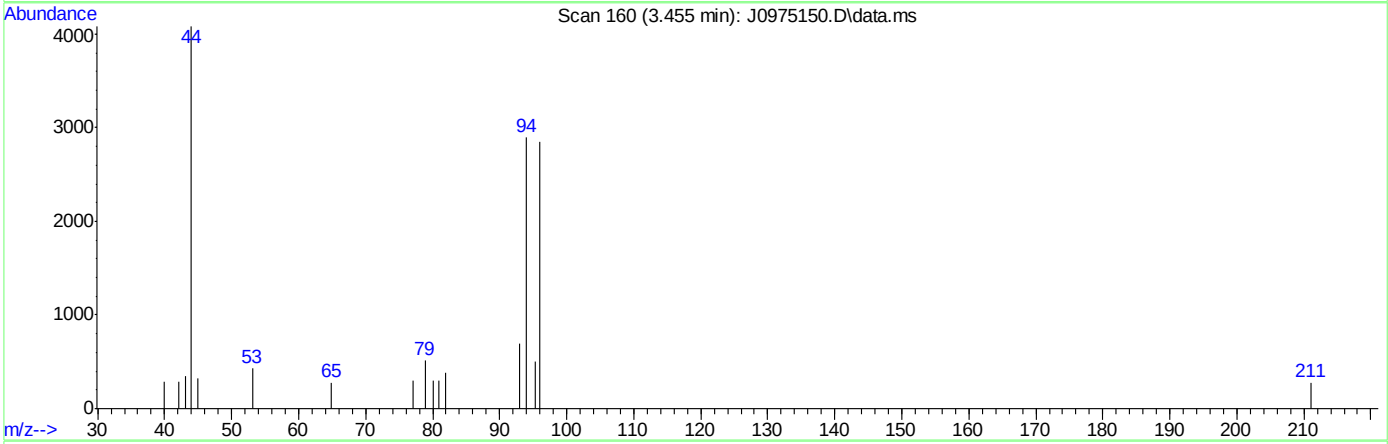
Ion	Exp%	Act%
94.00	100	100
96.00	91.30	108.90
93.00	18.00	26.71
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\2\data\031516\
Data File : J0975150.D
Acq On : 15 Mar 2016 2:17 pm
Operator : DARSHNAP
Sample : IC5237-1 Inst : MSVOA6
Misc : MS33279,VJ5237,,,,,
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Mar 16 08:17:21 2016
Quant Method : C:\msdchem\2\methods\MSJ031516.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Tue Mar 15 07:56:34 2016
Response via : Initial Calibration





TIC: J0975150.D\data.ms

(6) Bromomethane ( )

3.455min (-0.012) 1.44ug/L m

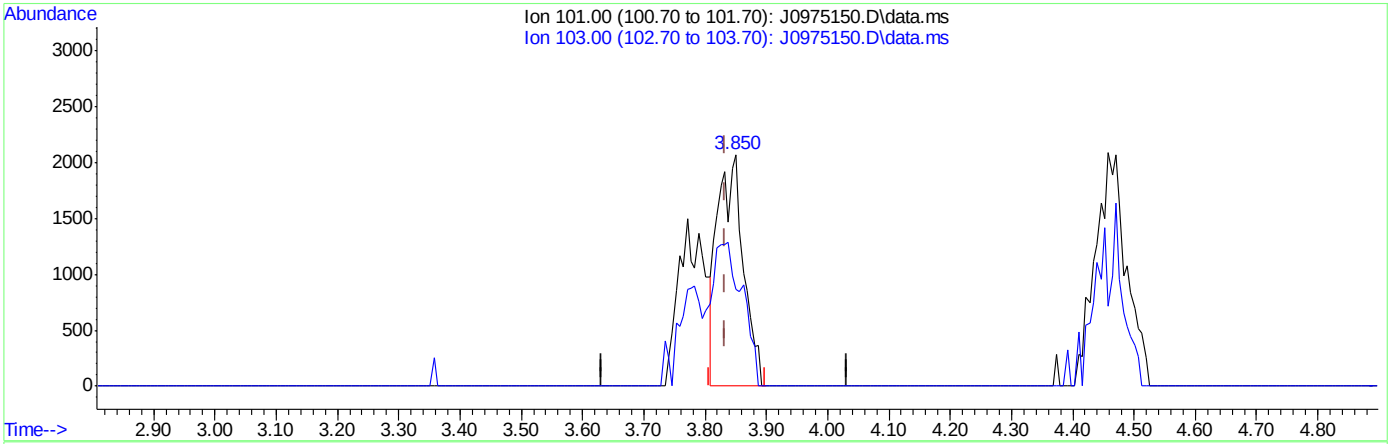
response 9881

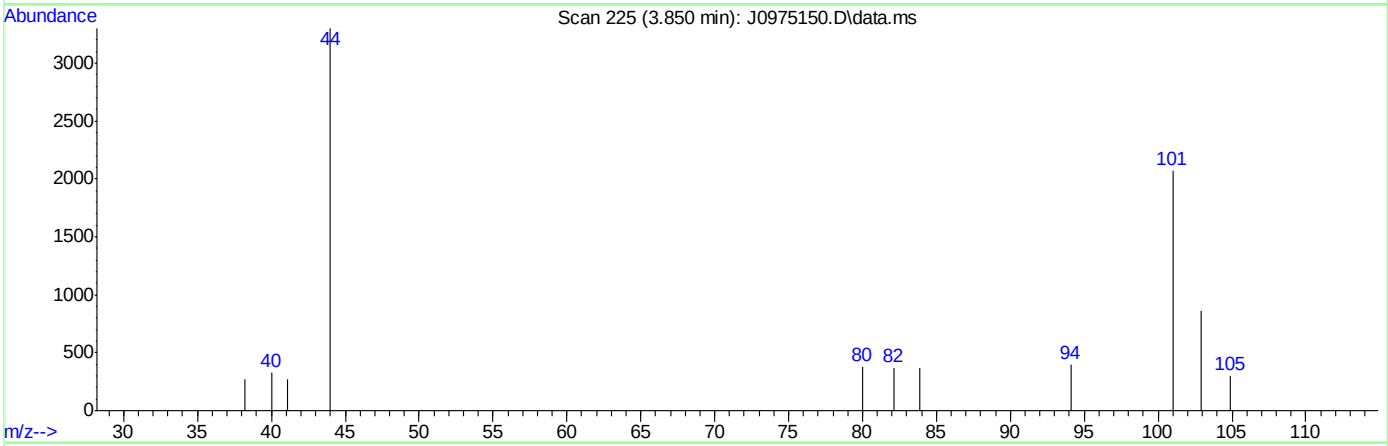
Ion	Exp%	Act%
94.00	100	100
96.00	91.30	98.31
93.00	18.00	24.11
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\2\data\031516\
Data File : J0975150.D
Acq On : 15 Mar 2016 2:17 pm
Operator : DARSHNAP
Sample : IC5237-1 Inst : MSVOA6
Misc : MS33279,VJ5237,,,,,
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Mar 16 08:17:21 2016
Quant Method : C:\msdchem\2\methods\MSJ031516.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Tue Mar 15 07:56:34 2016
Response via : Initial Calibration





TIC: J0975150.D\data.ms

(8) Trichlorofluoromethane ( )

3.850min (+0.018) 0.46ug/L

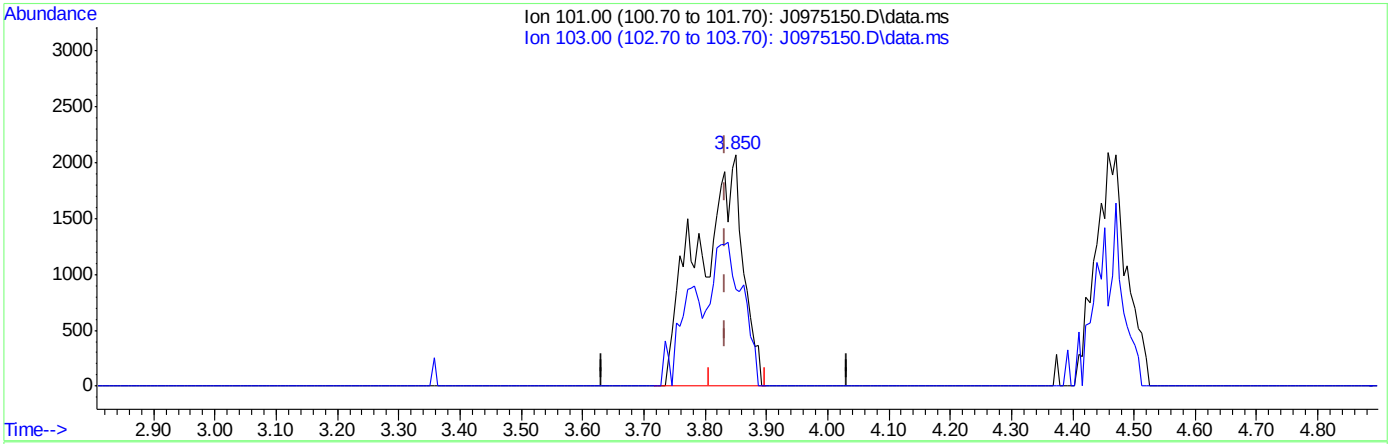
response 6075

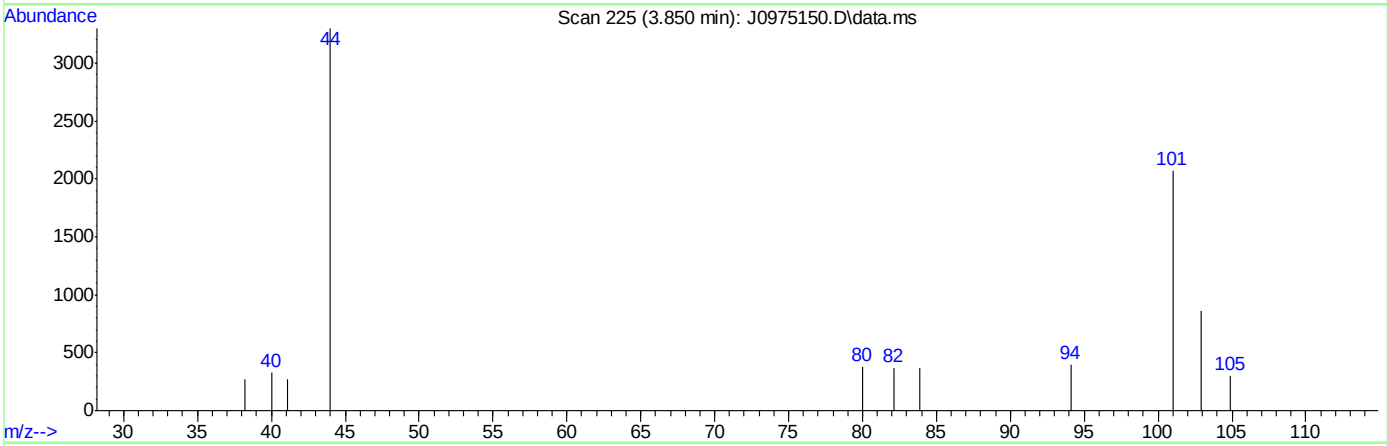
Ion	Exp%	Act%
101.00	100	100
103.00	63.50	41.68
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\2\data\031516\
Data File : J0975150.D
Acq On : 15 Mar 2016 2:17 pm
Operator : DARSHNAP
Sample : IC5237-1 Inst : MSVOA6
Misc : MS33279,VJ5237,,,,,
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Mar 16 08:17:21 2016
Quant Method : C:\msdchem\2\methods\MSJ031516.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Tue Mar 15 07:56:34 2016
Response via : Initial Calibration





TIC: J0975150.D\data.ms

(8) Trichlorofluoromethane ( )

3.850min (+0.018) 0.79ug/L m

response 10448

Ion	Exp%	Act%
101.00	100	100
103.00	63.50	41.68
0.00	0.00	0.00
0.00	0.00	0.00

Manual Integrations APPROVED (compounds with "m" flag)
Melissa Mangual 03/16/16 15:48

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\031516\
Data File : J0975151.D
Acq On : 15 Mar 2016 2:41 pm
Operator : DARSHNAP
Sample : IC5237-2 Inst : MSVOA6
Misc : MS33279,VJ5237,,,,,
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Mar 16 08:20:13 2016
Quant Method : C:\msdchem\2\methods\MSJ031516.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Tue Mar 15 07:56:34 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Fluorobenzene	7.756	96	1497867	50.00	ug/L		0.00
56) Chlorobenzene-d5	10.846	117	1105198	50.00	ug/L		0.00
78) 1,4-Dichlorobenzene-d4	13.207	152	620103	50.00	ug/L		0.00
106) Tert Butyl Alcohol-d10	5.298	65	80218	250.00	ug/L		0.00
System Monitoring Compounds							
36) Dibromofluoromethane	6.928	113	381652	49.86	ug/L		0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 99.72%				
46) 1,2-Dichloroethane-d4	7.482	65	470179	50.84	ug/L		0.00
Spiked Amount 50.000	Range 79 - 125		Recovery = 101.68%				
57) Toluene-d8	9.301	98	1489073	50.91	ug/L		0.00
Spiked Amount 50.000	Range 85 - 112		Recovery = 101.82%				
79) 4-Bromofluorobenzene	12.057	95	563252	47.30	ug/L		0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 94.60%				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	2.700	85	45739	4.57	ug/L		97
3) Chloromethane	2.883	50	45096	4.58	ug/L		99
4) Vinyl Chloride	3.035	62	50250	4.89	ug/L		100
5) 1,3-Butadiene	3.023	54	36147	4.38	ug/L		91
6) Bromomethane	3.455	94	39184	5.80	ug/L		92
7) Chloroethane	3.613	64	26261	4.61	ug/L		95
8) Trichlorofluoromethane	3.832	101	61441m	4.67	ug/L		
9) Ethyl Ether	4.118	59	27596	4.44	ug/L		97
10) 1,2-Dichlorotrifluoroe...	4.349	67	40875	4.65	ug/L		94
11) 1,1-Dichloroethene	4.391	61	48452	4.36	ug/L		95
12) Freon 113	4.464	101	35541	4.79	ug/L		92
13) Carbon Disulfide	4.471	76	101564	4.31	ug/L		100
14) Iodomethane	4.580	142	55852	4.59	ug/L		92
15) Allyl chloride	4.921	41	48119	4.60	ug/L		92
16) Methylene Chloride	5.042	49	51479	5.05	ug/L		94
17) Acetone	5.073	58	12734	30.31	ug/L		91
18) Methyl acetate	5.201	74	21874	24.70	ug/L	#	77
19) trans-1,2-Dichloroethene	5.231	61	45857	4.24	ug/L		95
20) Hexane	5.298	56	30261	4.50	ug/L	#	90
21) Methyl Tert Butyl Ether	5.334	73	92687	4.59	ug/L		79
22) Acetonitrile	5.596	40	21113	67.20	ug/L	#	86
23) Di-isopropyl ether	5.718	45	102600	4.41	ug/L		96
24) Chloroprene	5.876	53	48399	4.22	ug/L		95
25) 1,1-Dichloroethane	5.894	63	61532	4.39	ug/L		98
26) Acrylonitrile	5.931	53	47478	24.45	ug/L		96
27) ETBE	6.119	59	102089	4.38	ug/L		97
28) Vinyl acetate	6.113	43	287674	24.68	ug/L		98
29) cis-1,2-Dichloroethene	6.472	96	40640	4.55	ug/L		96
30) 2,2-Dichloropropane	6.600	77	45028	4.28	ug/L		98
31) Bromochloromethane	6.691	128	19294	4.65	ug/L		97
32) Cyclohexane	6.728	56	54509	4.36	ug/L		93
33) Chloroform	6.740	83	69984	4.58	ug/L		96
34) Ethyl acetate	6.813	43	116131	24.95	ug/L		97

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\031516\
Data File : J0975151.D
Acq On : 15 Mar 2016 2:41 pm
Operator : DARSHNAP
Sample : IC5237-2 Inst : MSVOA6
Misc : MS33279,VJ5237,,,,,
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Mar 16 08:20:13 2016
Quant Method : C:\msdchem\2\methods\MSJ031516.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Tue Mar 15 07:56:34 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
35) Tetrahydrofuran	6.928	42	7754	5.81	ug/L		91
37) Carbon Tetrachloride	6.928	117	46777	4.41	ug/L		94
38) 1,1,1-Trichloroethane	6.995	97	56130	4.36	ug/L		88
39) 2-Butanone	7.032	43	43633	21.39	ug/L		98
40) 1,1-Dichloropropene	7.105	75	46613	4.37	ug/L		98
41) tert-Butyl Formate	7.190	59	191737	40.76	ug/L	#	67
42) Propionitrile	7.342	54	32717	46.19	ug/L	#	73
43) Methacrylonitrile	7.360	41	178244	53.47	ug/L		96
44) Benzene	7.360	78	145505	4.48	ug/L		97
45) TAME	7.433	73	92220	4.49	ug/L		89
47) 1,2-Dichloroethane	7.549	62	52574	4.69	ug/L		96
48) Trichloroethene	7.938	95	36327	4.24	ug/L		93
49) Methylcyclohexane	7.950	83	59605	4.41	ug/L		95
50) Dibromomethane	8.364	93	21077	4.73	ug/L		93
51) 1,2-Dichloropropane	8.449	63	35727	4.47	ug/L		95
52) Bromodichloromethane	8.498	83	44773	4.35	ug/L		96
53) Methyl methacrylate	8.601	41	19555	4.55	ug/L		95
54) 2-Chloroethyl vinyl ether	9.009	63	90559	20.99	ug/L		99
55) cis-1,3-Dichloropropene	9.112	75	47740	4.11	ug/L		93
58) Toluene	9.356	91	150830	4.34	ug/L		98
59) 2-Nitropropane	9.563	41	24627	18.28	ug/L		88
60) 4-Methyl-2-pentanone	9.678	43	110229	22.87	ug/L		97
61) trans-1,3-Dichloropropene	9.739	75	40521	4.26	ug/L		93
62) Tetrachloroethene	9.757	166	37799	4.02	ug/L		96
63) Ethyl methacrylate	9.842	69	33308	4.03	ug/L		93
64) 1,1,2-Trichloroethane	9.903	83	24194	4.45	ug/L		96
65) Dibromochloromethane	10.104	129	29798	4.27	ug/L		97
66) 1,3-Dichloropropane	10.189	76	49657	4.47	ug/L		95
67) 1,2-Dibromoethane	10.366	107	25707	4.34	ug/L		99
68) 2-hexanone	10.493	43	69997	21.35	ug/L		96
69) 1-Chlorohexane	10.797	91	40374	3.98	ug/L		96
70) Ethylbenzene	10.864	91	175498	4.31	ug/L		100
71) Chlorobenzene	10.864	112	99467	4.45	ug/L		93
72) 1,1,1,2-Tetrachloroethane	10.913	131	32015	4.52	ug/L		94
73) m,p-Xylene	10.998	91	257172	8.07	ug/L		97
74) o-Xylene	11.436	91	129261	4.46	ug/L		92
75) Styrene	11.491	104	89606	4.18	ug/L		99
76) Bromoform	11.552	173	16553	4.34	ug/L		94
77) Isopropylbenzene	11.747	105	150179	4.07	ug/L		98
80) cis-1,4-Dichloro-2-butene	12.087	53	9412	5.79	ug/L	#	83
81) n-Propylbenzene	12.166	91	186692	4.32	ug/L		97
82) Bromobenzene	12.185	156	43521	4.34	ug/L		93
83) 1,1,2,2-Tetrachloroethane	12.221	83	35300	4.80	ug/L		96
84) 1,3,5-Trimethylbenzene	12.343	105	137372	4.27	ug/L		100
85) 2-Chlorotoluene	12.355	91	136546	4.36	ug/L		93
86) trans-1,4-Dichloro-2-B...	12.404	53	7220	4.78	ug/L	#	56
87) 1,2,3-Trichloropropane	12.385	110	9078	4.49	ug/L		91
88) Cyclohexanone	12.458	55	2885	23.41	ug/L	#	85
89) 4-Chlorotoluene	12.519	91	121317	4.22	ug/L		96
90) a-Methyl Styrene	12.610	118	37805	4.21	ug/L		96

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\031516\
Data File : J0975151.D
Acq On : 15 Mar 2016 2:41 pm
Operator : DARSHNAP
Sample : IC5237-2 Inst : MSVOA6
Misc : MS33279,VJ5237,,,,,
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Mar 16 08:20:13 2016
Quant Method : C:\msdchem\2\methods\MSJ031516.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Tue Mar 15 07:56:34 2016
Response via : Initial Calibration

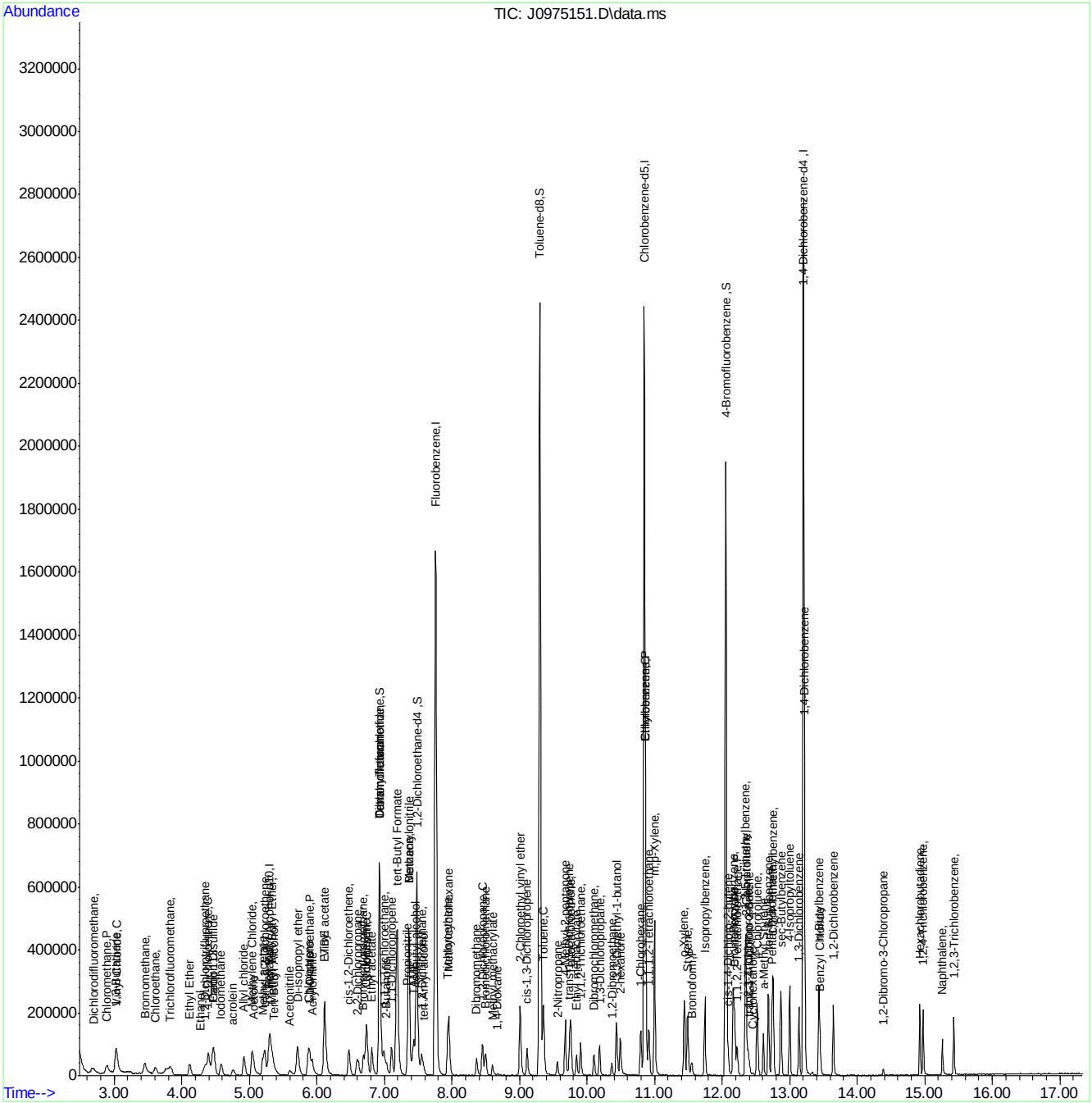
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
91) tert-Butylbenzene	12.683	91	77635	4.09	ug/L		92
92) 1,2,4-Trimethylbenzene	12.756	105	142610	4.42	ug/L		96
93) Pentachloroethane	12.738	167	23873	5.36	ug/L		96
94) sec-Butylbenzene	12.872	105	166261	4.33	ug/L		99
95) 4-Isopropyltoluene	13.000	119	138055	4.32	ug/L		95
96) 1,3-Dichlorobenzene	13.140	146	75534	4.40	ug/L		95
97) 1,4-Dichlorobenzene	13.219	146	82699	4.53	ug/L		86
98) n-Butylbenzene	13.432	92	76297	4.17	ug/L		97
99) Benzyl Chloride	13.450	126	7780	3.78	ug/L	#	84
100) 1,2-Dichlorobenzene	13.645	146	74335	4.76	ug/L		99
101) 1,2-Dibromo-3-Chloropr...	14.381	75	4498	7.21	ug/L		88
102) Hexachlorobutadiene	14.928	225	31359	6.31	ug/L		98
103) 1,2,4-Trichlorobenzene	14.977	180	51743	9.47	ug/L		97
104) Naphthalene	15.263	128	71283	10.99	ug/L		99
105) 1,2,3-Trichlorobenzene	15.433	180	45604	13.31	ug/L		98
107) Ethanol	4.282	45	4538m	130.44	ug/L		
108) acrolein	4.756	56	23167	26.19	ug/L		87
109) Tert Butyl Alcohol	5.371	59	20425	54.82	ug/L	#	64
110) tert Amyl alcohol	7.579	59	12035	43.30	ug/L	#	76
111) Isobutyl alcohol	7.458	42	14047	92.39	ug/L	#	89
112) 1,4-Dioxane	8.674	88	2924	82.31	ug/L		91
113) 3,3-Dimethyl-1-butanol	10.439	57	72142	236.23	ug/L		99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\031516\
Data File : J0975151.D
Acq On : 15 Mar 2016 2:41 pm
Operator : DARSHNAP
Sample : IC5237-2 Inst : MSVOA6
Misc : MS33279,VJ5237,,,,,
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Mar 16 08:20:13 2016
Quant Method : C:\msdchem\2\methods\MSJ031516.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Tue Mar 15 07:56:34 2016
Response via : Initial Calibration



Manual Integration Approval Summary

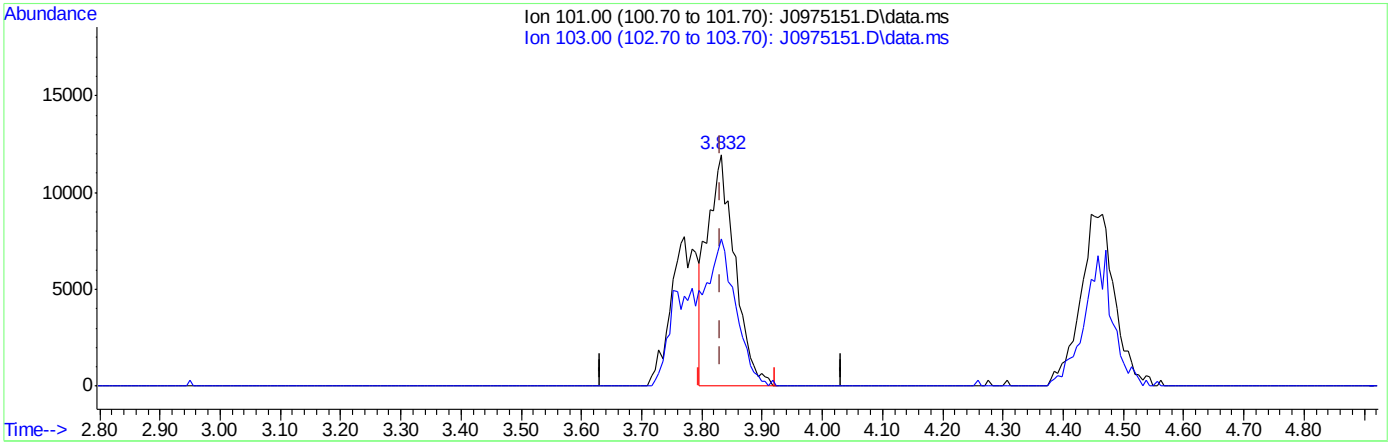
Sample Number: VJ5237-IC5237
Lab FileID: J0975151.D
Injection Time: 03/15/16 14:41
Method: SW846 8260B
Analyst approved: 03/16/16 09:56 Darshna Patel
Supervisor approved: 03/16/16 15:48 Melissa Mangual

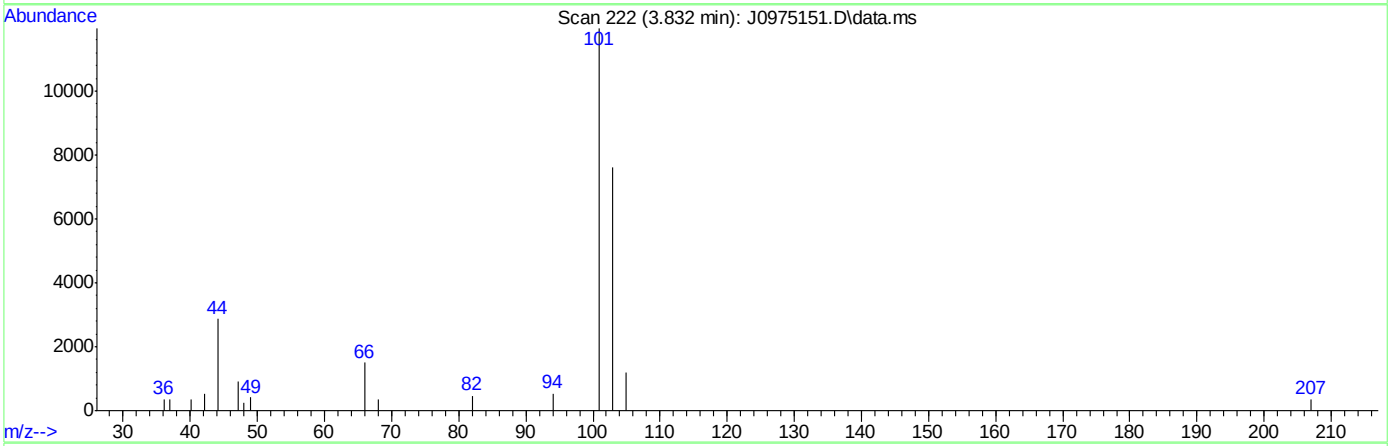
Parameter	CAS	Sig#	R.T. (min.)	Reason
Trichlorofluoromethane	75-69-4		3.83	Split peak
Ethyl Alcohol	64-17-5		4.28	Poor instrument integration

Quantitation Report (Qedit)

Data Path : C:\msdchem\2\data\031516\
Data File : J0975151.D
Acq On : 15 Mar 2016 2:41 pm
Operator : DARSHNAP
Sample : IC5237-2 Inst : MSVOA6
Misc : MS33279,VJ5237,,,,,
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Mar 16 08:17:24 2016
Quant Method : C:\msdchem\2\methods\MSJ031516.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Tue Mar 15 07:56:34 2016
Response via : Initial Calibration





TIC: J0975151.D\data.ms

(8) Trichlorofluoromethane ( )

3.832min (-0.000) 2.87ug/L

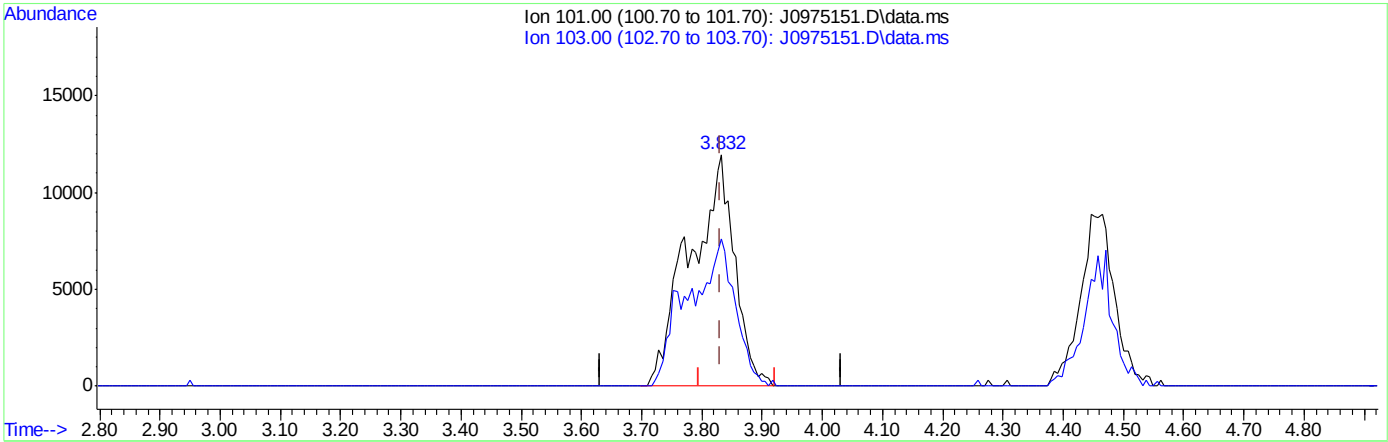
response 37793

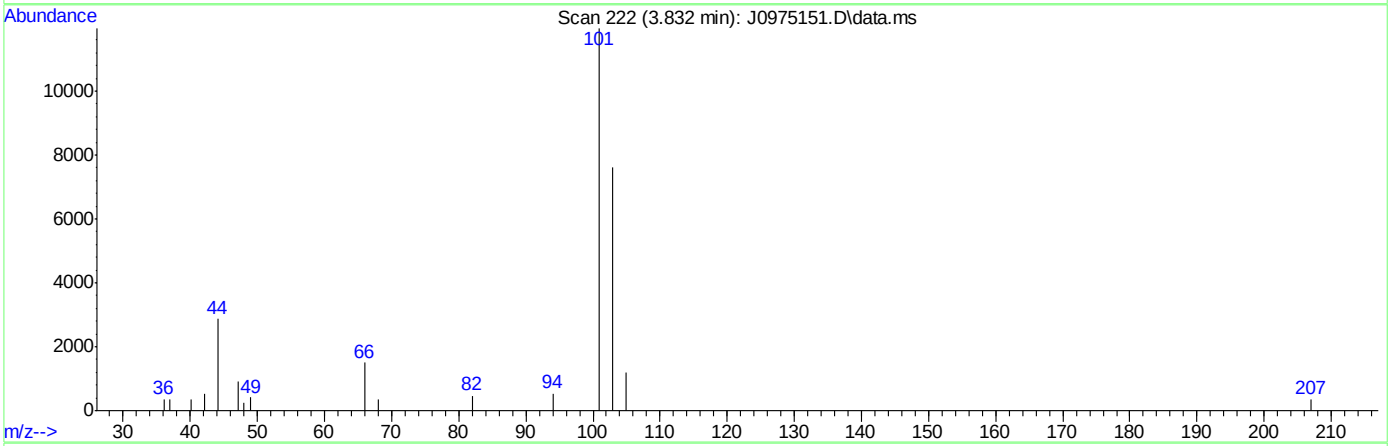
Ion	Exp%	Act%
101.00	100	100
103.00	63.50	63.74
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\2\data\031516\
Data File : J0975151.D
Acq On : 15 Mar 2016 2:41 pm
Operator : DARSHNAP
Sample : IC5237-2 Inst : MSVOA6
Misc : MS33279,VJ5237,,,,,
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Mar 16 08:17:24 2016
Quant Method : C:\msdchem\2\methods\MSJ031516.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Tue Mar 15 07:56:34 2016
Response via : Initial Calibration





TIC: J0975151.D\data.ms

(8) Trichlorofluoromethane ( )

3.832min (-0.000) 4.67ug/L m

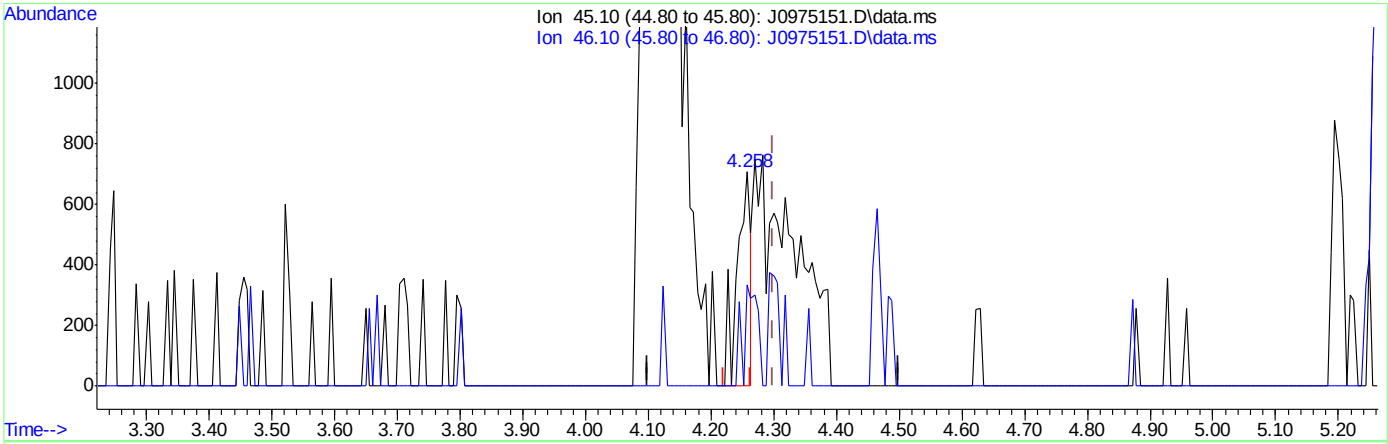
response 61441

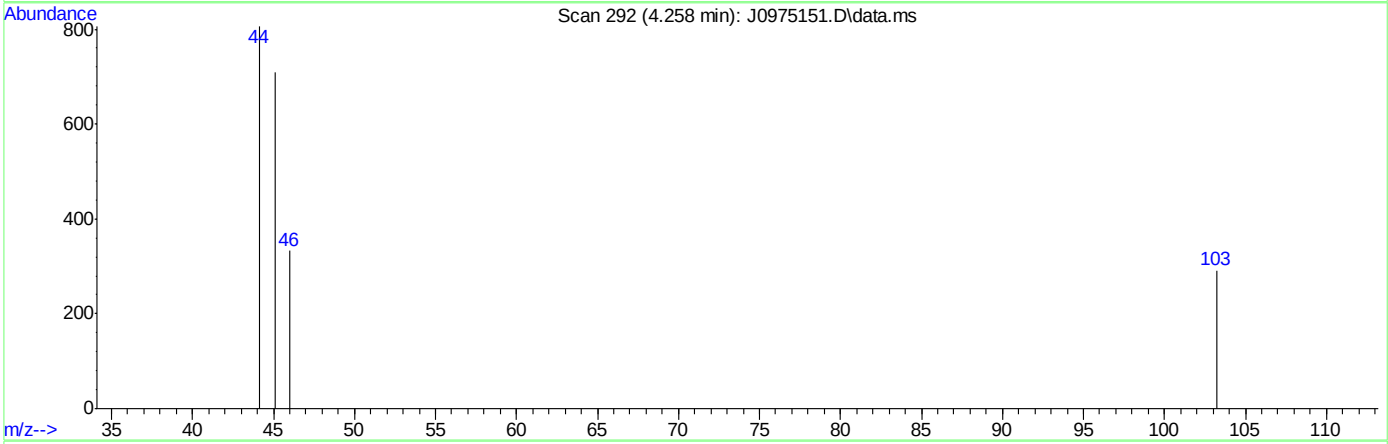
Ion	Exp%	Act%
101.00	100	100
103.00	63.50	63.74
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\2\data\031516\
Data File : J0975151.D
Acq On : 15 Mar 2016 2:41 pm
Operator : DARSHNAP
Sample : IC5237-2 Inst : MSVOA6
Misc : MS33279,VJ5237,,,,,
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Mar 16 08:17:24 2016
Quant Method : C:\msdchem\2\methods\MSJ031516.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Tue Mar 15 07:56:34 2016
Response via : Initial Calibration





TIC: J0975151.D\data.ms

(107) Ethanol

4.258min (-0.042) 31.39ug/L

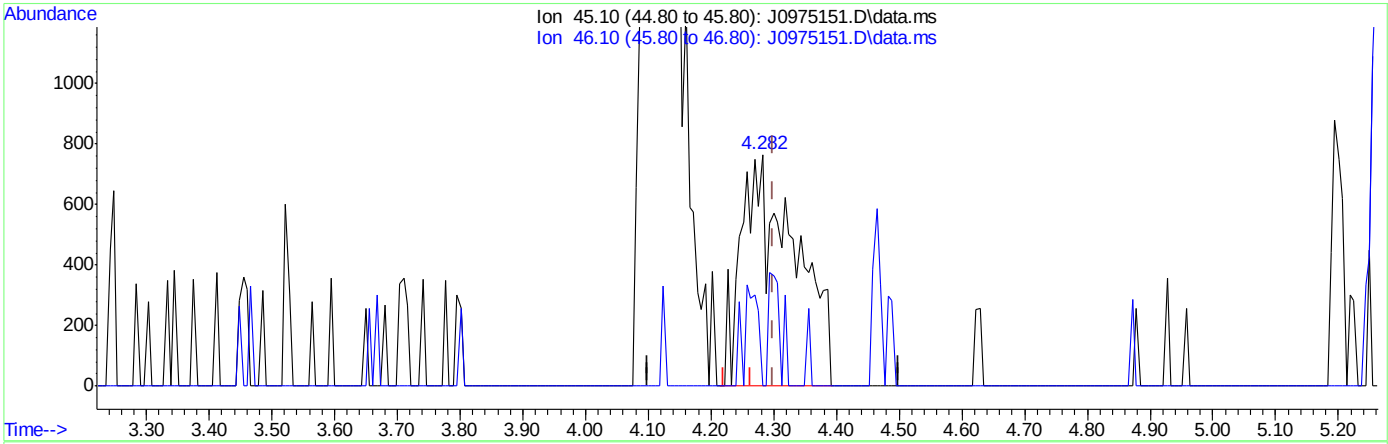
response 1092

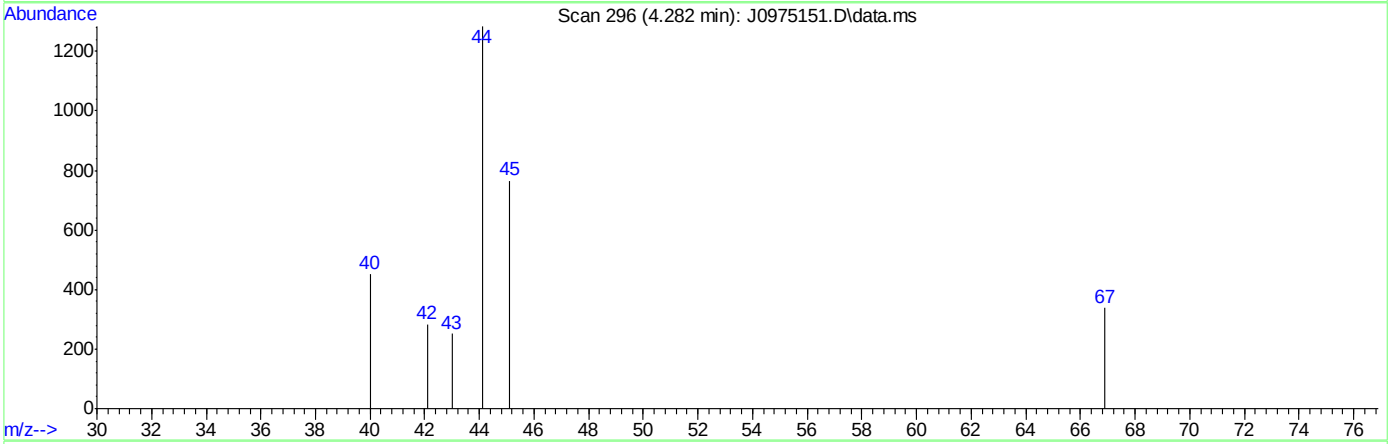
Ion	Exp%	Act%
45.10	100	100
46.10	28.20	47.03
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\2\data\031516\
Data File : J0975151.D
Acq On : 15 Mar 2016 2:41 pm
Operator : DARSHNAP
Sample : IC5237-2 Inst : MSVOA6
Misc : MS33279,VJ5237,,,,,
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Mar 16 08:17:24 2016
Quant Method : C:\msdchem\2\methods\MSJ031516.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Tue Mar 15 07:56:34 2016
Response via : Initial Calibration





TIC: J0975151.D\data.ms

(107) Ethanol

4.282min (-0.018) 130.44ug/L m

response 4538

Ion	Exp%	Act%
45.10	100	100
46.10	28.20	0.00#
0.00	0.00	0.00
0.00	0.00	0.00

Manual Integrations APPROVED (compounds with "m" flag)
Melissa Mangual 03/16/16 15:48

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\031516\
Data File : J0975152.D
Acq On : 15 Mar 2016 3:05 pm
Operator : DARSHNAP
Sample : IC5237-3 Inst : MSVOA6
Misc : MS33279,VJ5237,,,,,
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Mar 16 08:20:54 2016
Quant Method : C:\msdchem\2\methods\MSJ031516.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Tue Mar 15 07:56:34 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	7.756	96	1542004	50.00	ug/L	0.00
56) Chlorobenzene-d5	10.846	117	1142014	50.00	ug/L	0.00
78) 1,4-Dichlorobenzene-d4	13.207	152	645463	50.00	ug/L	0.00
106) Tert Butyl Alcohol-d10	5.292	65	86968	250.00	ug/L	-0.01
System Monitoring Compounds						
36) Dibromofluoromethane	6.928	113	390494	49.55	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 99.10%			
46) 1,2-Dichloroethane-d4	7.482	65	480391	50.46	ug/L	0.00
Spiked Amount 50.000	Range 79 - 125		Recovery = 100.92%			
57) Toluene-d8	9.301	98	1510629	49.99	ug/L	0.00
Spiked Amount 50.000	Range 85 - 112		Recovery = 99.98%			
79) 4-Bromofluorobenzene	12.057	95	583662	47.09	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 94.18%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	2.682	85	96837	9.39	ug/L	89
3) Chloromethane	2.889	50	98790	9.76	ug/L	92
4) Vinyl Chloride	3.035	62	100613	9.52	ug/L	99
5) 1,3-Butadiene	3.023	54	82854	9.75	ug/L	94
6) Bromomethane	3.455	94	76300	11.20	ug/L	97
7) Chloroethane	3.613	64	54861	9.56	ug/L	98
8) Trichlorofluoromethane	3.832	101	129700m	9.58	ug/L	
9) Ethyl Ether	4.118	59	60071	9.39	ug/L	98
10) 1,2-Dichlorotrifluoroe...	4.361	67	90564	10.00	ug/L	93
11) 1,1-Dichloroethene	4.392	61	111413	9.75	ug/L	96
12) Freon 113	4.452	101	78248	10.25	ug/L	96
13) Carbon Disulfide	4.471	76	231267	9.54	ug/L	92
14) Iodomethane	4.580	142	121731	9.73	ug/L	97
15) Allyl chloride	4.921	41	103477	9.62	ug/L	90
16) Methylene Chloride	5.043	49	104616	10.01	ug/L	98
17) Acetone	5.079	58	24885	57.38	ug/L	94
18) Methyl acetate	5.195	74	43154	47.33	ug/L	93
19) trans-1,2-Dichloroethene	5.225	61	102701	9.23	ug/L	95
20) Hexane	5.298	56	67523	9.75	ug/L	95
21) Methyl Tert Butyl Ether	5.335	73	199338	9.58	ug/L	82
22) Acetonitrile	5.590	40	35809	111.18	ug/L	97
23) Di-isopropyl ether	5.718	45	228448	9.53	ug/L	97
24) Chloroprene	5.870	53	108840	9.22	ug/L	96
25) 1,1-Dichloroethane	5.894	63	136729	9.48	ug/L	99
26) Acrylonitrile	5.925	53	101112	50.59	ug/L	95
27) ETBE	6.113	59	228598	9.53	ug/L	98
28) Vinyl acetate	6.113	43	617170	51.43	ug/L	96
29) cis-1,2-Dichloroethene	6.472	96	86398	9.39	ug/L	96
30) 2,2-Dichloropropane	6.600	77	106201	9.81	ug/L	98
31) Bromochloromethane	6.685	128	40628	9.51	ug/L	97
32) Cyclohexane	6.728	56	128094	9.95	ug/L	96
33) Chloroform	6.740	83	149140	9.47	ug/L	96
34) Ethyl acetate	6.807	43	238777	49.82	ug/L	99

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\031516\
Data File : J0975152.D
Acq On : 15 Mar 2016 3:05 pm
Operator : DARSHNAP
Sample : IC5237-3 Inst : MSVOA6
Misc : MS33279,VJ5237,,,,,
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Mar 16 08:20:54 2016
Quant Method : C:\msdchem\2\methods\MSJ031516.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Tue Mar 15 07:56:34 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
35) Tetrahydrofuran	6.922	42	14645	10.65	ug/L		93
37) Carbon Tetrachloride	6.928	117	98194m	8.99	ug/L		
38) 1,1,1-Trichloroethane	6.995	97	130953	9.89	ug/L		96
39) 2-Butanone	7.032	43	95601	45.54	ug/L		97
40) 1,1-Dichloropropene	7.105	75	102750	9.36	ug/L		96
41) tert-Butyl Formate	7.184	59	431536	89.05	ug/L	#	79
42) Propionitrile	7.336	54	71061	97.45	ug/L		99
43) Methacrylonitrile	7.360	41	364135	107.10	ug/L		98
44) Benzene	7.360	78	307875	9.21	ug/L		98
45) TAME	7.433	73	201643	9.53	ug/L		94
47) 1,2-Dichloroethane	7.549	62	108962	9.44	ug/L		97
48) Trichloroethene	7.938	95	82434	9.35	ug/L		95
49) Methylcyclohexane	7.957	83	140503	10.10	ug/L		94
50) Dibromomethane	8.364	93	43618	9.51	ug/L		91
51) 1,2-Dichloropropane	8.449	63	77405	9.41	ug/L		97
52) Bromodichloromethane	8.498	83	100869	9.52	ug/L		97
53) Methyl methacrylate	8.595	41	41843	9.45	ug/L		96
54) 2-Chloroethyl vinyl ether	9.009	63	198236	44.77	ug/L		99
55) cis-1,3-Dichloropropene	9.112	75	111485	9.33	ug/L		96
58) Toluene	9.356	91	333474	9.35	ug/L		98
59) 2-Nitropropane	9.557	41	56369	40.49	ug/L		98
60) 4-Methyl-2-pentanone	9.672	43	241484	48.48	ug/L		98
61) trans-1,3-Dichloropropene	9.739	75	91892	9.35	ug/L		99
62) Tetrachloroethene	9.757	166	86651	8.91	ug/L		97
63) Ethyl methacrylate	9.842	69	75067	8.79	ug/L		96
64) 1,1,2-Trichloroethane	9.903	83	53956	9.61	ug/L		94
65) Dibromochloromethane	10.104	129	64538	8.94	ug/L		90
66) 1,3-Dichloropropane	10.183	76	107662	9.37	ug/L		95
67) 1,2-Dibromoethane	10.366	107	59559	9.73	ug/L		99
68) 2-hexanone	10.493	43	156481	46.19	ug/L		94
69) 1-Chlorohexane	10.798	91	97922	9.33	ug/L		95
70) Ethylbenzene	10.858	91	385160	9.25	ug/L		99
71) Chlorobenzene	10.865	112	216946	9.43	ug/L		92
72) 1,1,1,2-Tetrachloroethane	10.913	131	67973	9.29	ug/L		96
73) m,p-Xylene	10.998	91	586786	18.12	ug/L		96
74) o-Xylene	11.436	91	293795	9.82	ug/L		98
75) Styrene	11.485	104	209544	9.47	ug/L		97
76) Bromoform	11.546	173	37240	9.38	ug/L		97
77) Isopropylbenzene	11.741	105	344800	9.12	ug/L		99
80) cis-1,4-Dichloro-2-butene	12.087	53	20702	12.22	ug/L	#	83
81) n-Propylbenzene	12.160	91	424611	9.43	ug/L		96
82) Bromobenzene	12.185	156	94857	9.08	ug/L		100
83) 1,1,2,2-Tetrachloroethane	12.221	83	76382	9.98	ug/L		97
84) 1,3,5-Trimethylbenzene	12.343	105	313459	9.35	ug/L		97
85) 2-Chlorotoluene	12.355	91	305103	9.36	ug/L		97
86) trans-1,4-Dichloro-2-B...	12.404	53	18224	11.47	ug/L	#	83
87) 1,2,3-Trichloropropane	12.385	110	19886	9.45	ug/L		96
88) Cyclohexanone	12.446	55	6163	48.04	ug/L		95
89) 4-Chlorotoluene	12.519	91	274526	9.17	ug/L		99
90) a-Methyl Styrene	12.611	118	83330	8.90	ug/L		98

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\031516\
Data File : J0975152.D
Acq On : 15 Mar 2016 3:05 pm
Operator : DARSHNAP
Sample : IC5237-3 Inst : MSVOA6
Misc : MS33279,VJ5237,,,,,
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Mar 16 08:20:54 2016
Quant Method : C:\msdchem\2\methods\MSJ031516.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Tue Mar 15 07:56:34 2016
Response via : Initial Calibration

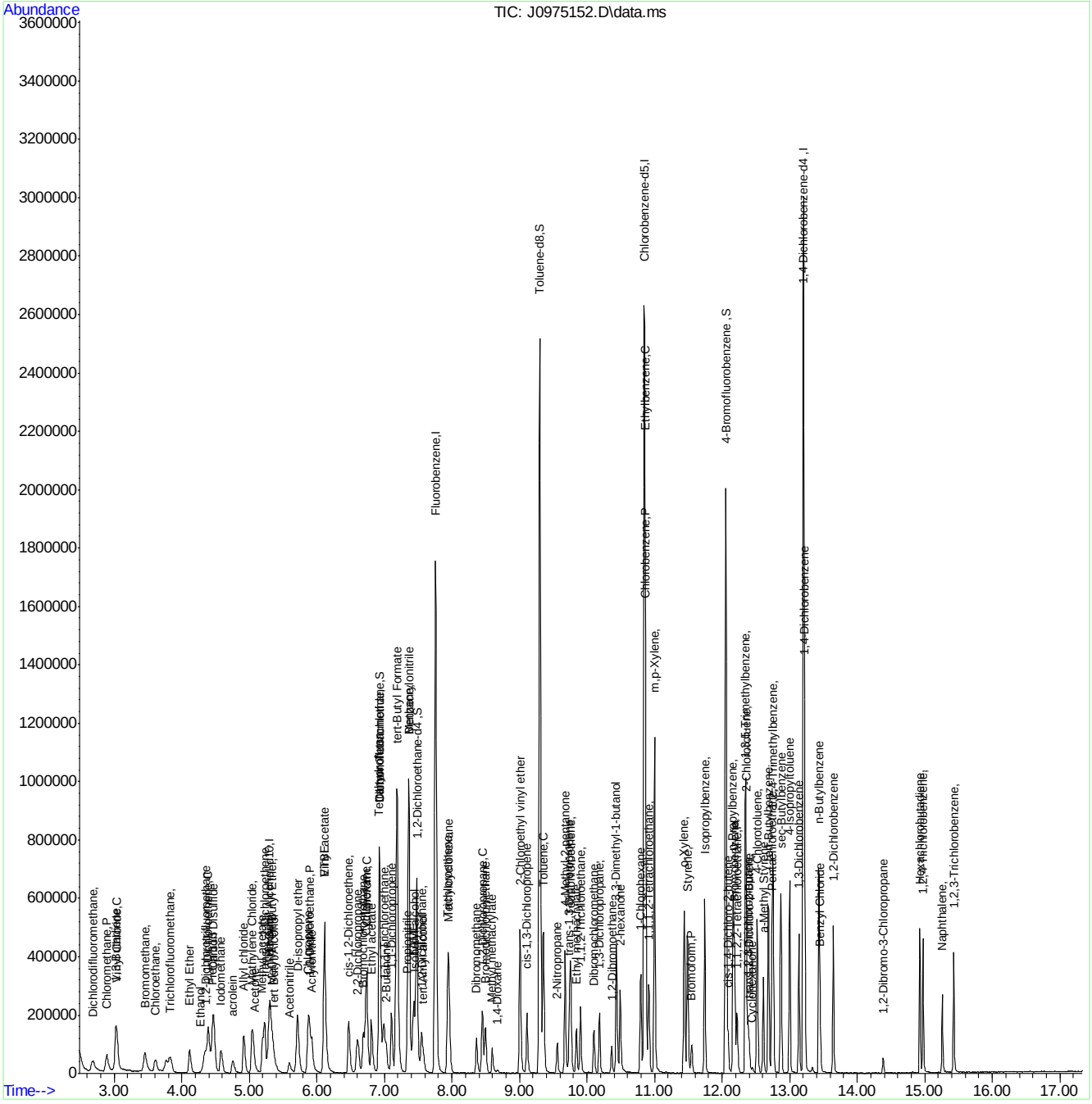
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
91) tert-Butylbenzene	12.684	91	180959	9.16	ug/L		94
92) 1,2,4-Trimethylbenzene	12.750	105	317609	9.46	ug/L		98
93) Pentachloroethane	12.738	167	53231	11.32	ug/L		98
94) sec-Butylbenzene	12.872	105	388833	9.74	ug/L		99
95) 4-Isopropyltoluene	13.000	119	322012	9.68	ug/L		99
96) 1,3-Dichlorobenzene	13.140	146	170341	9.52	ug/L		98
97) 1,4-Dichlorobenzene	13.219	146	178667	9.41	ug/L		92
98) n-Butylbenzene	13.432	92	181738	9.54	ug/L		98
99) Benzyl Chloride	13.450	126	20775	9.56	ug/L		98
100) 1,2-Dichlorobenzene	13.645	146	158407	9.75	ug/L		99
101) 1,2-Dibromo-3-Chloropr...	14.381	75	10283	15.60	ug/L		91
102) Hexachlorobutadiene	14.928	225	72278	13.85	ug/L		98
103) 1,2,4-Trichlorobenzene	14.977	180	115617	19.85	ug/L		97
104) Naphthalene	15.263	128	173792	24.23	ug/L		99
105) 1,2,3-Trichlorobenzene	15.427	180	100782	26.68	ug/L		96
107) Ethanol	4.282	45	9223m	244.52	ug/L		
108) acrolein	4.757	56	52343	54.58	ug/L		93
109) Tert Butyl Alcohol	5.371	59	43268	107.11	ug/L		83
110) tert Amyl alcohol	7.573	59	29873	99.13	ug/L		91
111) Isobutyl alcohol	7.452	42	29297	179.04	ug/L	#	88
112) 1,4-Dioxane	8.674	88	6964	180.83	ug/L		98
113) 3,3-Dimethyl-1-butanol	10.433	57	188130	559.66	ug/L		96

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\031516\
Data File : J0975152.D
Acq On : 15 Mar 2016 3:05 pm
Operator : DARSHNAP
Sample : IC5237-3 Inst : MSVOA6
Misc : MS33279,VJ5237,,,,,
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Mar 16 08:20:54 2016
Quant Method : C:\msdchem\2\methods\MSJ031516.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Tue Mar 15 07:56:34 2016
Response via : Initial Calibration



MSJ031516.M Wed Mar 16 09:49:27 2016 Page: 4

Manual Integration Approval Summary

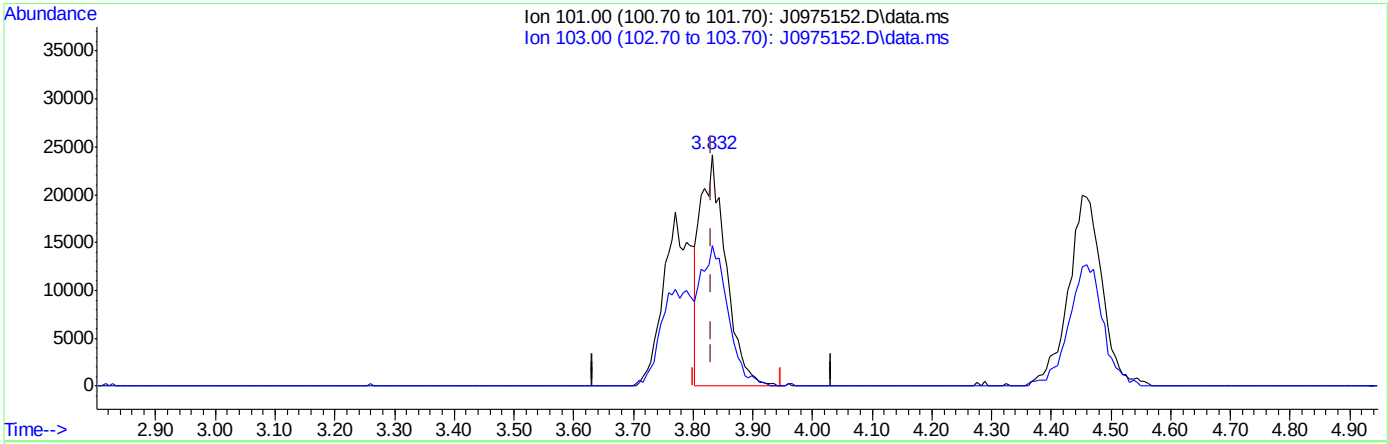
Sample Number: VJ5237-IC5237
Lab FileID: J0975152.D
Injection Time: 03/15/16 15:05
Method: SW846 8260B
Analyst approved: 03/16/16 09:56 Darshna Patel
Supervisor approved: 03/16/16 15:48 Melissa Mangual

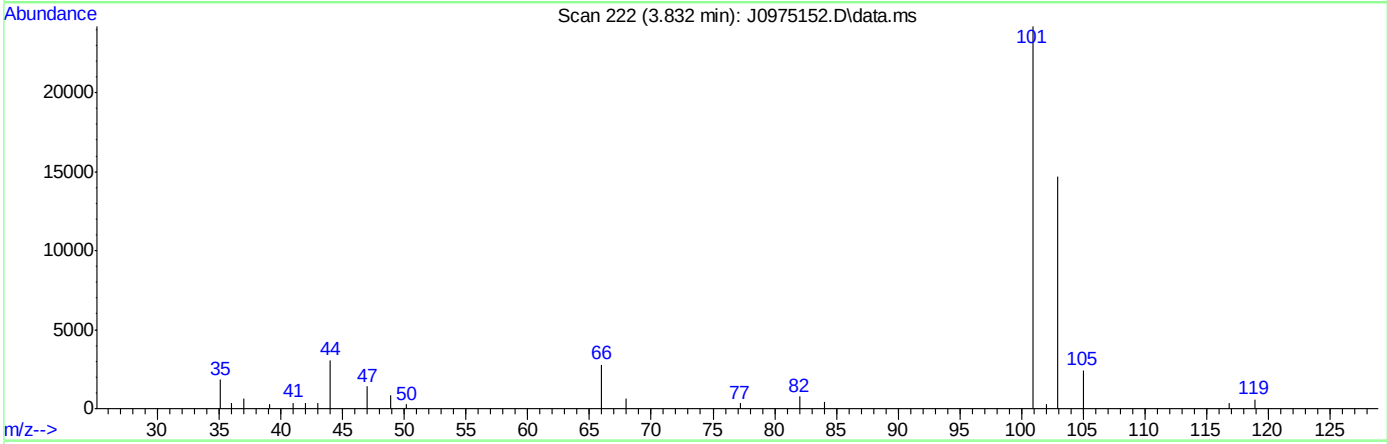
Parameter	CAS	Sig#	R.T. (min.)	Reason
Trichlorofluoromethane	75-69-4		3.83	Split peak
Ethyl Alcohol	64-17-5		4.28	Poor instrument integration
Carbon Tetrachloride	56-23-5		6.93	Overlapping peak

Quantitation Report (Qedit)

Data Path : C:\msdchem\2\data\031516\
Data File : J0975152.D
Acq On : 15 Mar 2016 3:05 pm
Operator : DARSHNAP
Sample : IC5237-3 Inst : MSVOA6
Misc : MS33279,VJ5237,,,,,
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Mar 16 08:17:27 2016
Quant Method : C:\msdchem\2\methods\MSJ031516.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Tue Mar 15 07:56:34 2016
Response via : Initial Calibration





TIC: J0975152.D\data.ms

(8) Trichlorofluoromethane ( )

3.832min (-0.000) 5.33ug/L

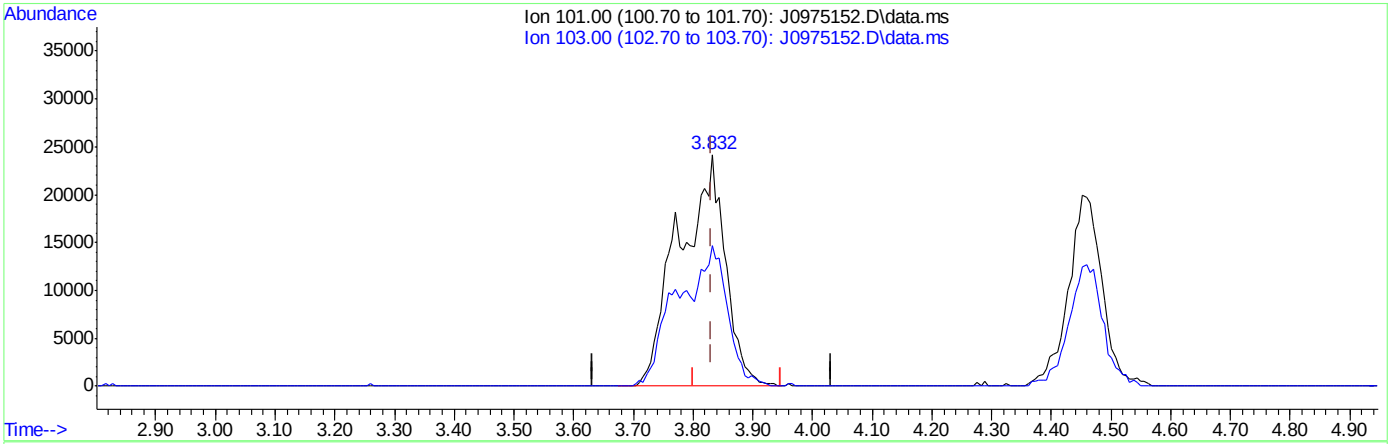
response 72205

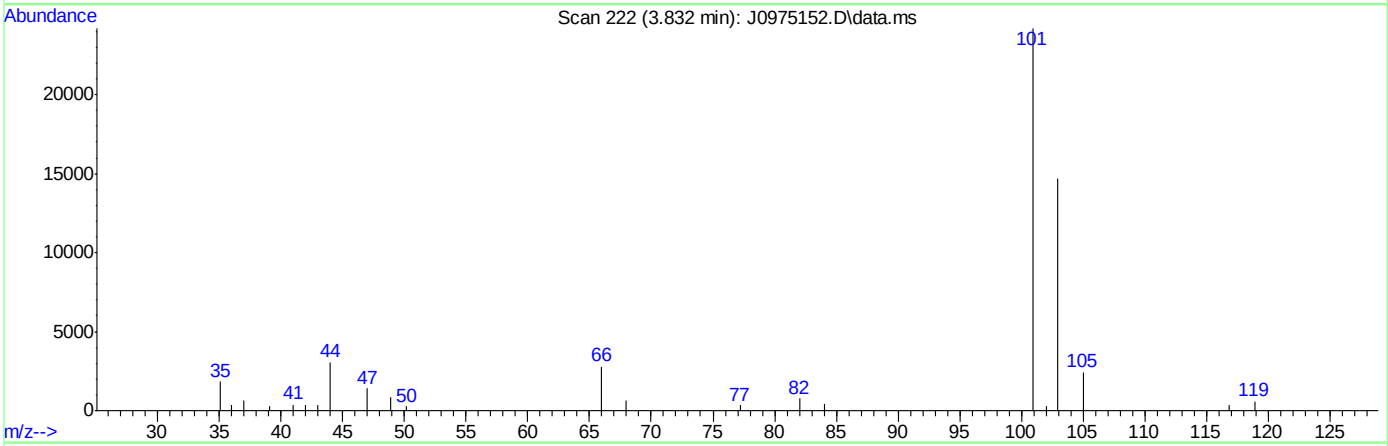
Ion	Exp%	Act%
101.00	100	100
103.00	63.50	60.65
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\2\data\031516\
Data File : J0975152.D
Acq On : 15 Mar 2016 3:05 pm
Operator : DARSHNAP
Sample : IC5237-3 Inst : MSVOA6
Misc : MS33279,VJ5237,,,,,
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Mar 16 08:17:27 2016
Quant Method : C:\msdchem\2\methods\MSJ031516.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Tue Mar 15 07:56:34 2016
Response via : Initial Calibration





TIC: J0975152.D\data.ms

(8) Trichlorofluoromethane ( )

3.832min (-0.000) 9.58ug/L m

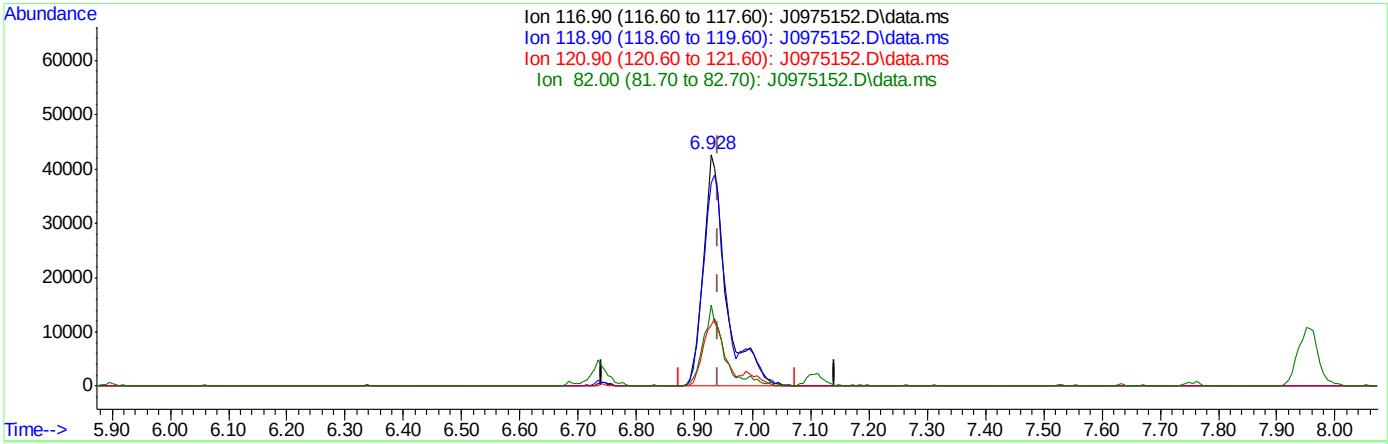
response 129700

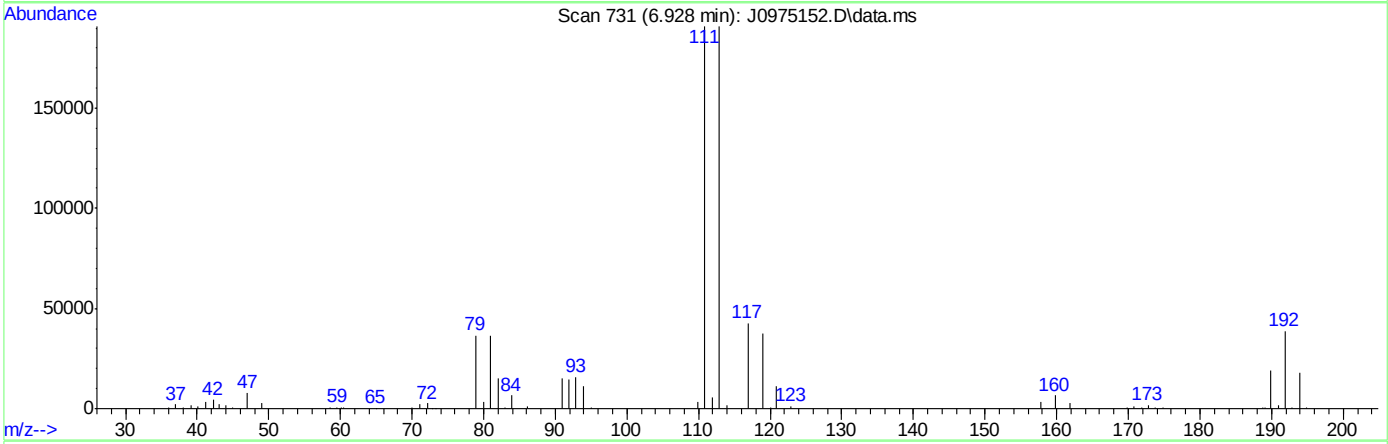
Ion	Exp%	Act%
101.00	100	100
103.00	63.50	60.65
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\2\data\031516\
Data File : J0975152.D
Acq On : 15 Mar 2016 3:05 pm
Operator : DARSHNAP
Sample : IC5237-3 Inst : MSVOA6
Misc : MS33279,VJ5237,,,,,
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Mar 16 08:17:27 2016
Quant Method : C:\msdchem\2\methods\MSJ031516.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Tue Mar 15 07:56:34 2016
Response via : Initial Calibration





TIC: J0975152.D\data.ms

(37) Carbon Tetrachloride ( )

6.928min (-0.013) 10.70ug/L

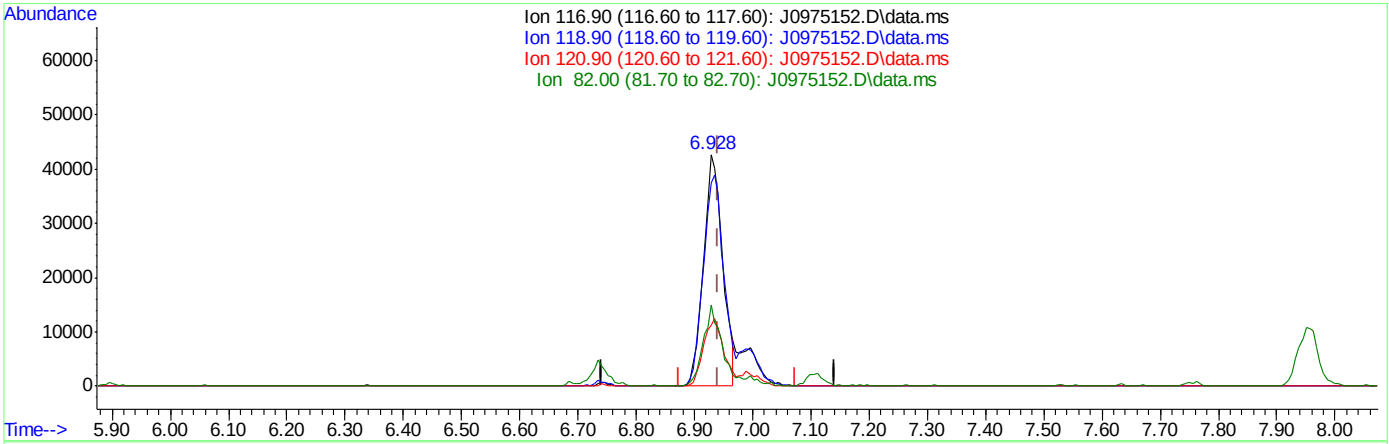
response 116845

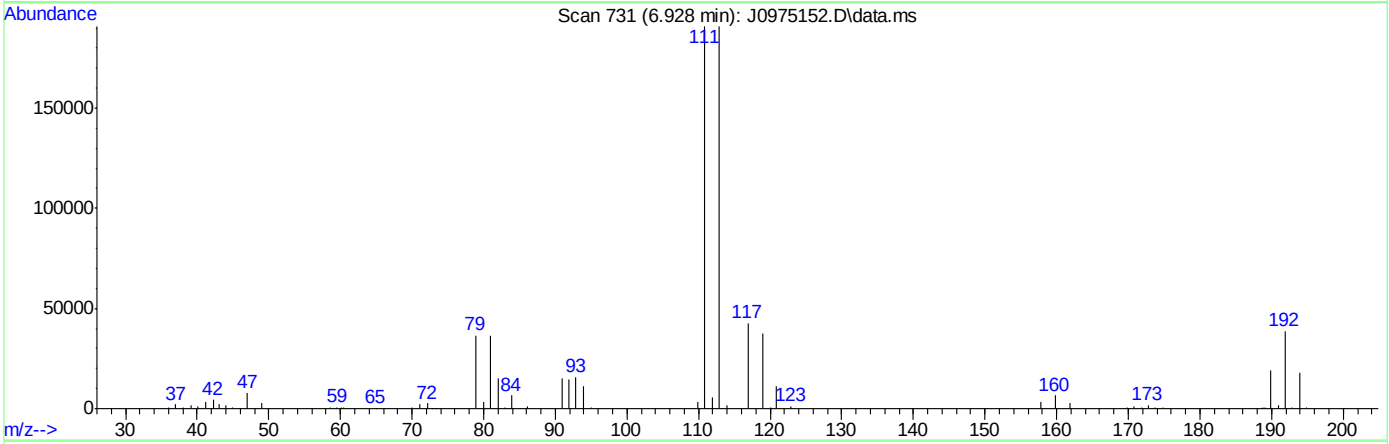
Ion	Exp%	Act%
116.90	100	100
118.90	96.80	87.87
120.90	31.80	26.11
82.00	25.40	35.08

Quantitation Report (Qedit)

Data Path : C:\msdchem\2\data\031516\
Data File : J0975152.D
Acq On : 15 Mar 2016 3:05 pm
Operator : DARSHNAP
Sample : IC5237-3 Inst : MSVOA6
Misc : MS33279,VJ5237,,,,,
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Mar 16 08:17:27 2016
Quant Method : C:\msdchem\2\methods\MSJ031516.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Tue Mar 15 07:56:34 2016
Response via : Initial Calibration





TIC: J0975152.D\data.ms

(37) Carbon Tetrachloride ( )

6.928min (-0.013) 8.99ug/L m

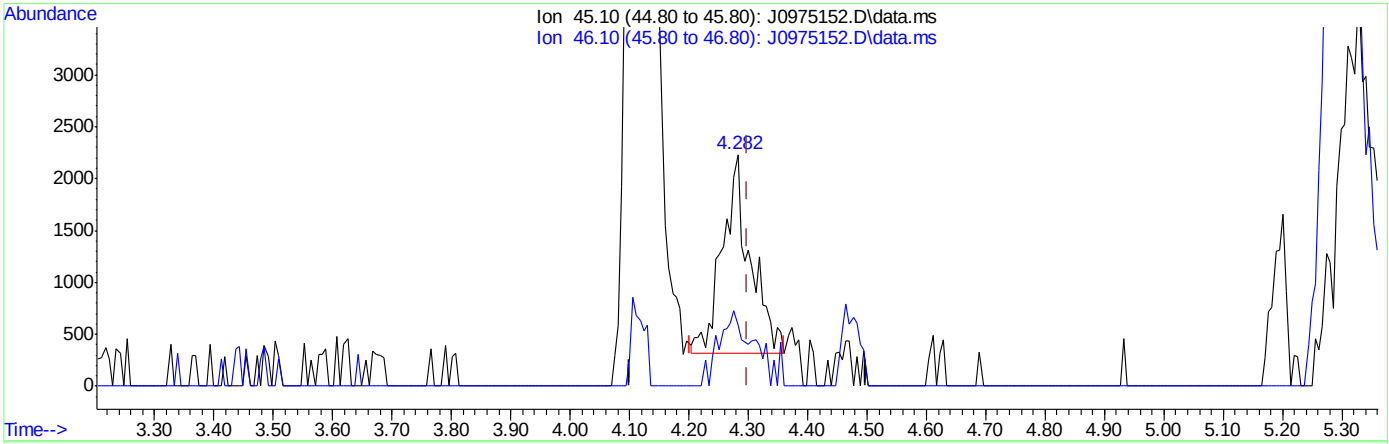
response 98194

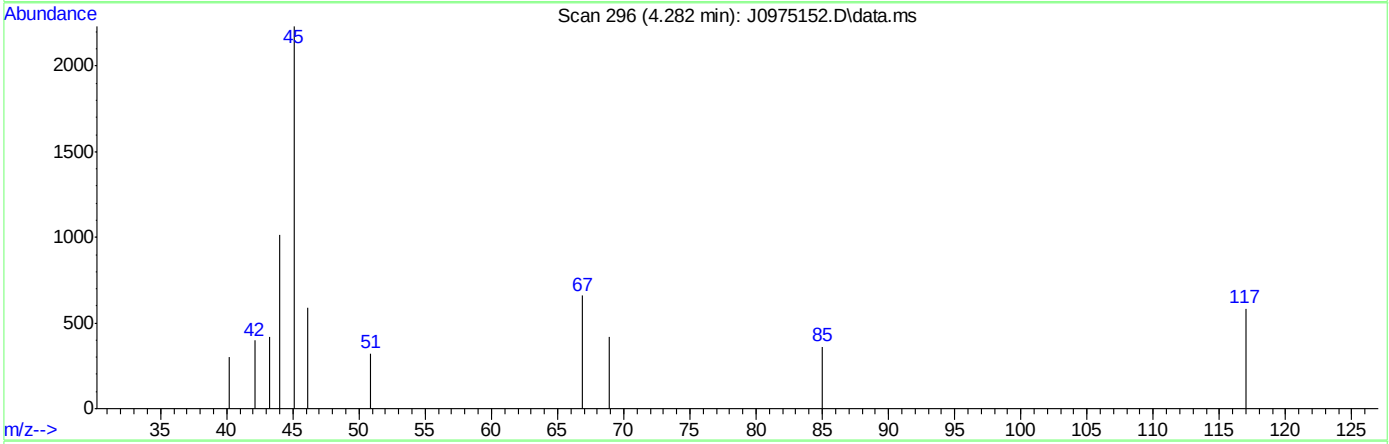
Ion	Exp%	Act%
116.90	100	100
118.90	96.80	87.87
120.90	31.80	26.11
82.00	25.40	35.08

Quantitation Report (Qedit)

Data Path : C:\msdchem\2\data\031516\
Data File : J0975152.D
Acq On : 15 Mar 2016 3:05 pm
Operator : DARSHNAP
Sample : IC5237-3 Inst : MSVOA6
Misc : MS33279,VJ5237,,,,,
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Mar 16 08:17:27 2016
Quant Method : C:\msdchem\2\methods\MSJ031516.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Tue Mar 15 07:56:34 2016
Response via : Initial Calibration





TIC: J0975152.D\data.ms

(107) Ethanol

4.282min (-0.018) 164.75ug/L

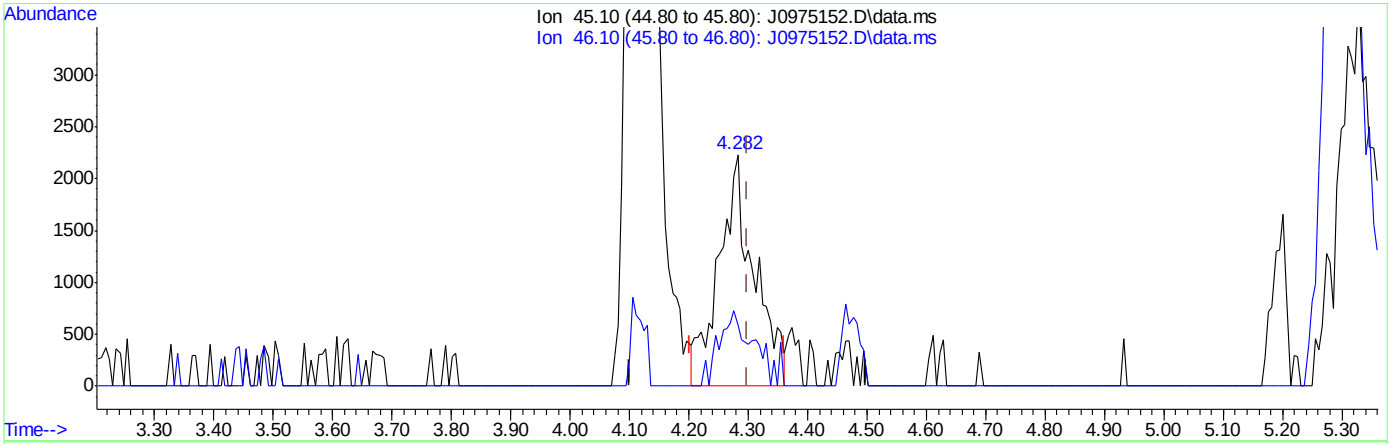
response 6214

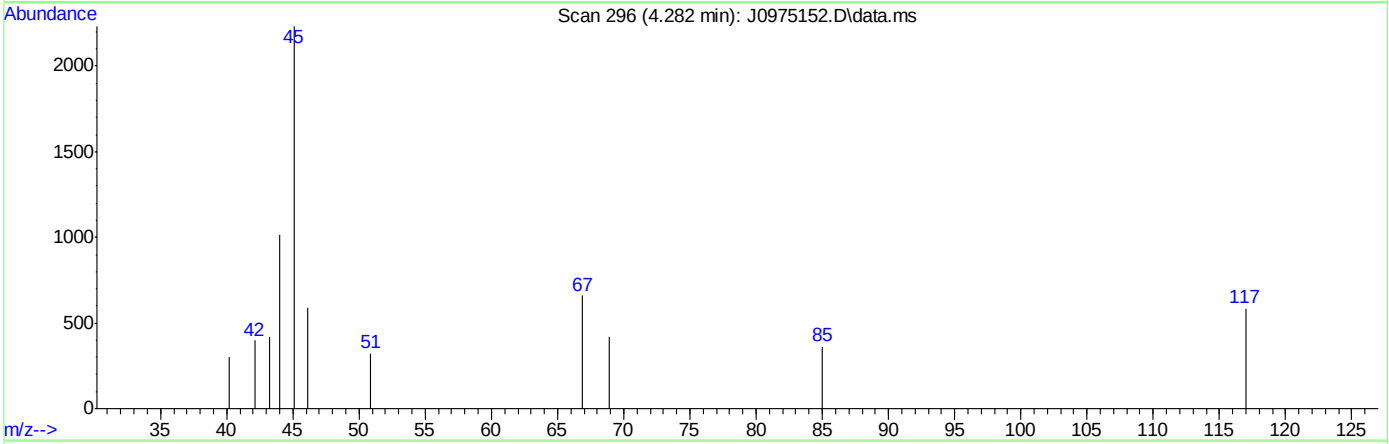
Ion	Exp%	Act%
45.10	100	100
46.10	28.20	30.86
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\2\data\031516\
Data File : J0975152.D
Acq On : 15 Mar 2016 3:05 pm
Operator : DARSHNAP
Sample : IC5237-3 Inst : MSVOA6
Misc : MS33279,VJ5237,,,,,
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Mar 16 08:17:27 2016
Quant Method : C:\msdchem\2\methods\MSJ031516.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Tue Mar 15 07:56:34 2016
Response via : Initial Calibration





TIC: J0975152.D\data.ms

(107) Ethanol

4.282min (-0.018) 244.52ug/L m

response 9223

Ion	Exp%	Act%
45.10	100	100
46.10	28.20	26.48
0.00	0.00	0.00
0.00	0.00	0.00

Manual Integrations APPROVED (compounds with "m" flag)
Melissa Mangual 03/16/16 15:48

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\031516\
Data File : J0975153.D
Acq On : 15 Mar 2016 3:28 pm
Operator : DARSHNAP
Sample : IC5237-4 Inst : MSVOA6
Misc : MS33279,VJ5237,,,,,
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Mar 16 08:21:39 2016
Quant Method : C:\msdchem\2\methods\MSJ031516.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Tue Mar 15 07:56:34 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	7.762	96	1533430	50.00	ug/L	0.00
56) Chlorobenzene-d5	10.846	117	1155545	50.00	ug/L	0.00
78) 1,4-Dichlorobenzene-d4	13.207	152	660864	50.00	ug/L	0.00
106) Tert Butyl Alcohol-d10	5.310	65	80804	250.00	ug/L	0.00
System Monitoring Compounds						
36) Dibromofluoromethane	6.928	113	385904	49.24	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 98.48%			
46) 1,2-Dichloroethane-d4	7.482	65	478987	50.60	ug/L	0.00
Spiked Amount 50.000	Range 79 - 125		Recovery = 101.20%			
57) Toluene-d8	9.301	98	1526389	49.92	ug/L	0.00
Spiked Amount 50.000	Range 85 - 112		Recovery = 99.84%			
79) 4-Bromofluorobenzene	12.057	95	594796	46.87	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 93.74%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	2.688	85	236090	23.03	ug/L	96
3) Chloromethane	2.895	50	248511	24.83	ug/L	99
4) Vinyl Chloride	3.041	62	262732	24.99	ug/L	97
5) 1,3-Butadiene	3.041	54	192842	22.81	ug/L	97
6) Bromomethane	3.467	94	183448	29.03	ug/L	99
7) Chloroethane	3.619	64	134383	25.30	ug/L	98
8) Trichlorofluoromethane	3.838	101	324542m	24.10	ug/L	
9) Ethyl Ether	4.124	59	148874	23.39	ug/L	92
10) 1,2-Dichlorotrifluoroe...	4.349	67	221917	24.65	ug/L	99
11) 1,1-Dichloroethene	4.398	61	275821	24.26	ug/L	95
12) Freon 113	4.464	101	193752	25.52	ug/L	97
13) Carbon Disulfide	4.477	76	582506	24.16	ug/L	99
14) Iodomethane	4.586	142	301222	24.20	ug/L	99
15) Allyl chloride	4.921	41	256312	23.95	ug/L	96
16) Methylene Chloride	5.042	49	250982	24.38	ug/L	98
17) Acetone	5.067	58	56549	130.19	ug/L	98
18) Methyl acetate	5.201	74	110573	121.96	ug/L	94
19) trans-1,2-Dichloroethene	5.231	61	254770	23.02	ug/L	98
20) Hexane	5.298	56	165802	24.07	ug/L	98
21) Methyl Tert Butyl Ether	5.334	73	508807	24.59	ug/L	85
22) Acetonitrile	5.590	40	70431	222.21	ug/L	95
23) Di-isopropyl ether	5.718	45	579005	24.29	ug/L	95
24) Chloroprene	5.870	53	268885	22.90	ug/L	98
25) 1,1-Dichloroethane	5.900	63	334371	23.31	ug/L	98
26) Acrylonitrile	5.925	53	252370	126.97	ug/L	96
27) ETBE	6.119	59	598509	25.08	ug/L	99
28) Vinyl acetate	6.113	43	1542708	129.29	ug/L	97
29) cis-1,2-Dichloroethene	6.478	96	214930	23.50	ug/L	99
30) 2,2-Dichloropropane	6.606	77	262403	24.38	ug/L	95
31) Bromochloromethane	6.685	128	96920	22.82	ug/L	93
32) Cyclohexane	6.734	56	324888	25.37	ug/L	97
33) Chloroform	6.740	83	376439	24.05	ug/L	98
34) Ethyl acetate	6.813	43	597459	125.36	ug/L	98

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\031516\
Data File : J0975153.D
Acq On : 15 Mar 2016 3:28 pm
Operator : DARSHNAP
Sample : IC5237-4 Inst : MSVOA6
Misc : MS33279,VJ5237,,,,,
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Mar 16 08:21:39 2016
Quant Method : C:\msdchem\2\methods\MSJ031516.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Tue Mar 15 07:56:34 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
35) Tetrahydrofuran	6.922	42	33527	24.42 ug/L	92
37) Carbon Tetrachloride	6.934	117	262480m	24.16 ug/L	
38) 1,1,1-Trichloroethane	6.995	97	318246	24.16 ug/L	96
39) 2-Butanone	7.026	43	237967	114.01 ug/L	99
40) 1,1-Dichloropropene	7.105	75	262106	24.02 ug/L	99
41) tert-Butyl Formate	7.190	59	1165018	241.25 ug/L	87
42) Propionitrile	7.336	54	169075	233.16 ug/L	87
43) Methacrylonitrile	7.360	41	781087	236.37 ug/L	96
44) Benzene	7.360	78	797780	24.00 ug/L	100
45) TAME	7.433	73	528216	25.10 ug/L	95
47) 1,2-Dichloroethane	7.549	62	269892	23.52 ug/L	98
48) Trichloroethene	7.938	95	204516	23.33 ug/L	96
49) Methylcyclohexane	7.956	83	351296	25.39 ug/L	99
50) Dibromomethane	8.364	93	110710	24.27 ug/L	99
51) 1,2-Dichloropropane	8.449	63	197382	24.13 ug/L	99
52) Bromodichloromethane	8.498	83	253035	24.02 ug/L	99
53) Methyl methacrylate	8.595	41	106473	24.18 ug/L	94
54) 2-Chloroethyl vinyl ether	9.009	63	533856	122.44 ug/L	99
55) cis-1,3-Dichloropropene	9.112	75	298406	25.11 ug/L	95
58) Toluene	9.356	91	835217	23.62 ug/L	96
59) 2-Nitropropane	9.556	41	159940	113.53 ug/L	99
60) 4-Methyl-2-pentanone	9.672	43	610403	121.12 ug/L	98
61) trans-1,3-Dichloropropene	9.739	75	248569	24.99 ug/L	96
62) Tetrachloroethene	9.757	166	221333	22.50 ug/L	99
63) Ethyl methacrylate	9.842	69	198559	22.96 ug/L	97
64) 1,1,2-Trichloroethane	9.903	83	138084	24.30 ug/L	97
65) Dibromochloromethane	10.104	129	173760	23.68 ug/L	97
66) 1,3-Dichloropropane	10.183	76	279208	24.02 ug/L	96
67) 1,2-Dibromoethane	10.366	107	155004	25.02 ug/L	99
68) 2-hexanone	10.487	43	407879	118.99 ug/L	96
69) 1-Chlorohexane	10.797	91	250072	23.55 ug/L	98
70) Ethylbenzene	10.864	91	966996	23.63 ug/L	99
71) Chlorobenzene	10.864	112	542095	23.50 ug/L	93
72) 1,1,1,2-Tetrachloroethane	10.913	131	181972	24.59 ug/L	97
73) m,p-Xylene	10.998	91	1479689	47.57 ug/L	98
74) o-Xylene	11.436	91	757610	25.01 ug/L	98
75) Styrene	11.485	104	576061	25.73 ug/L	98
76) Bromoform	11.552	173	105048	25.68 ug/L	97
77) Isopropylbenzene	11.747	105	895282	23.97 ug/L	99
80) cis-1,4-Dichloro-2-butene	12.087	53	54472	31.42 ug/L	90
81) n-Propylbenzene	12.160	91	1088512	23.62 ug/L	100
82) Bromobenzene	12.185	156	240631	22.50 ug/L	98
83) 1,1,2,2-Tetrachloroethane	12.221	83	198304	25.30 ug/L	98
84) 1,3,5-Trimethylbenzene	12.343	105	824062	24.01 ug/L	99
85) 2-Chlorotoluene	12.355	91	783191	23.47 ug/L	97
86) trans-1,4-Dichloro-2-B...	12.404	53	49038	29.39 ug/L	89
87) 1,2,3-Trichloropropane	12.385	110	49418	22.94 ug/L	93
88) Cyclohexanone	12.452	55	14654	111.57 ug/L	94
89) 4-Chlorotoluene	12.519	91	691016	22.55 ug/L	99
90) a-Methyl Styrene	12.610	118	225477	23.53 ug/L	99

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\031516\
Data File : J0975153.D
Acq On : 15 Mar 2016 3:28 pm
Operator : DARSHNAP
Sample : IC5237-4 Inst : MSVOA6
Misc : MS33279,VJ5237,,,,,
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Mar 16 08:21:39 2016
Quant Method : C:\msdchem\2\methods\MSJ031516.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Tue Mar 15 07:56:34 2016
Response via : Initial Calibration

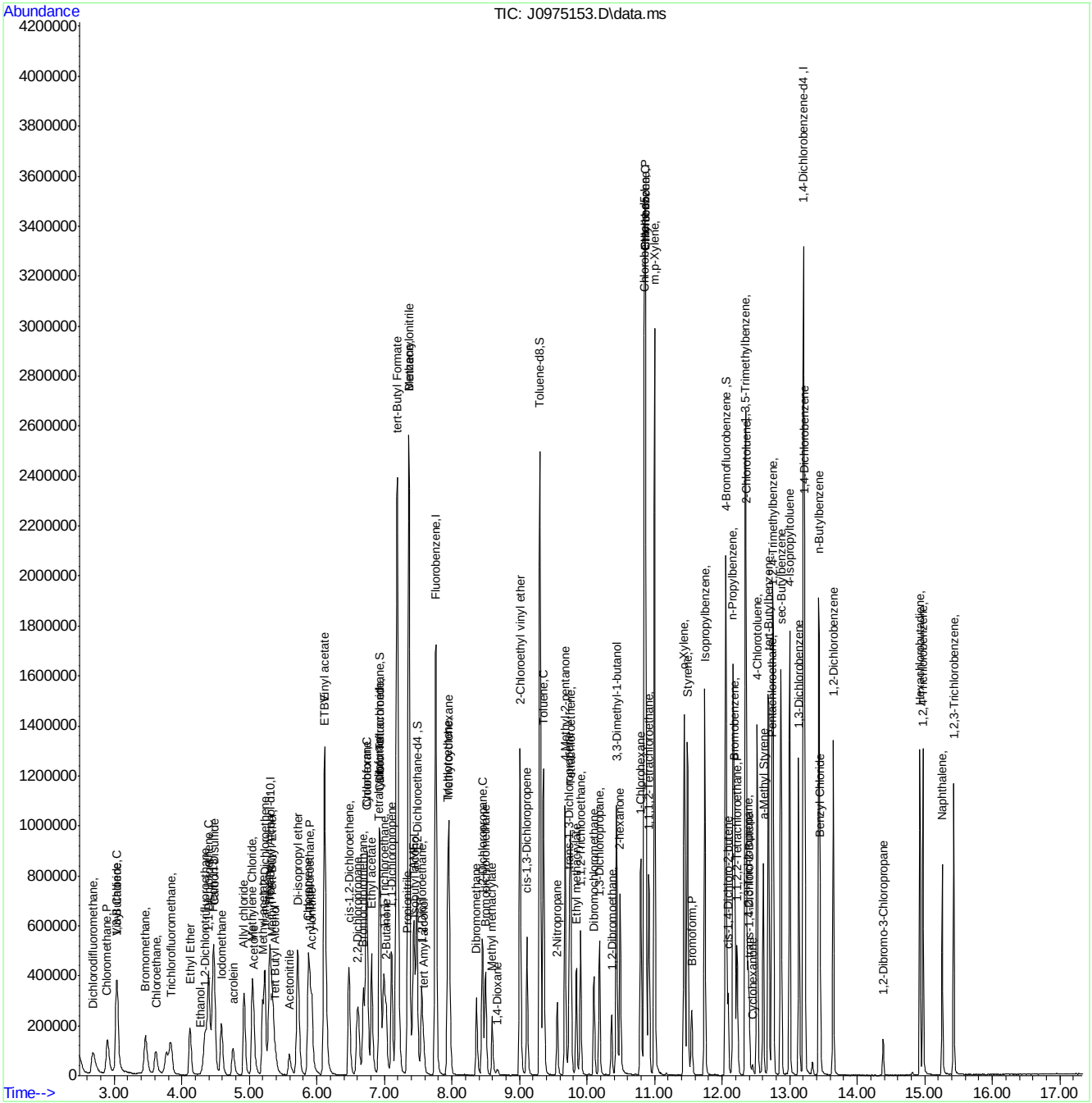
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
91) tert-Butylbenzene	12.683	91	469170	23.19	ug/L		94
92) 1,2,4-Trimethylbenzene	12.756	105	829299	24.13	ug/L		99
93) Pentachloroethane	12.738	167	136417	27.26	ug/L		97
94) sec-Butylbenzene	12.872	105	1000249	24.47	ug/L		100
95) 4-Isopropyltoluene	13.000	119	843251	24.76	ug/L		99
96) 1,3-Dichlorobenzene	13.140	146	437811	23.91	ug/L		97
97) 1,4-Dichlorobenzene	13.219	146	451698	23.23	ug/L		95
98) n-Butylbenzene	13.432	92	482211	24.72	ug/L		98
99) Benzyl Chloride	13.450	126	59122	25.52	ug/L	#	93
100) 1,2-Dichlorobenzene	13.645	146	416704	25.05	ug/L		99
101) 1,2-Dibromo-3-Chloropr...	14.381	75	28131	39.89	ug/L		91
102) Hexachlorobutadiene	14.928	225	186738	34.17	ug/L		96
103) 1,2,4-Trichlorobenzene	14.977	180	312376	49.18	ug/L		99
104) Naphthalene	15.257	128	500811	59.09	ug/L		97
105) 1,2,3-Trichlorobenzene	15.427	180	273581	61.74	ug/L		99
107) Ethanol	4.282	45	18758m	535.26	ug/L		
108) acrolein	4.763	56	132543	148.76	ug/L		96
109) Tert Butyl Alcohol	5.383	59	97091	258.68	ug/L		95
110) tert Amyl alcohol	7.579	59	72108	257.53	ug/L		86
111) Isobutyl alcohol	7.452	42	73885	499.48	ug/L	#	82
112) 1,4-Dioxane	8.674	88	16071	449.14	ug/L		87
113) 3,3-Dimethyl-1-butanol	10.439	57	441948	1363.94	ug/L		96

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\031516\
Data File : J0975153.D
Acq On : 15 Mar 2016 3:28 pm
Operator : DARSHNAP
Sample : IC5237-4 Inst : MSVOA6
Misc : MS33279,VJ5237,,,,,
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Mar 16 08:21:39 2016
Quant Method : C:\msdchem\2\methods\MSJ031516.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Tue Mar 15 07:56:34 2016
Response via : Initial Calibration



Manual Integration Approval Summary

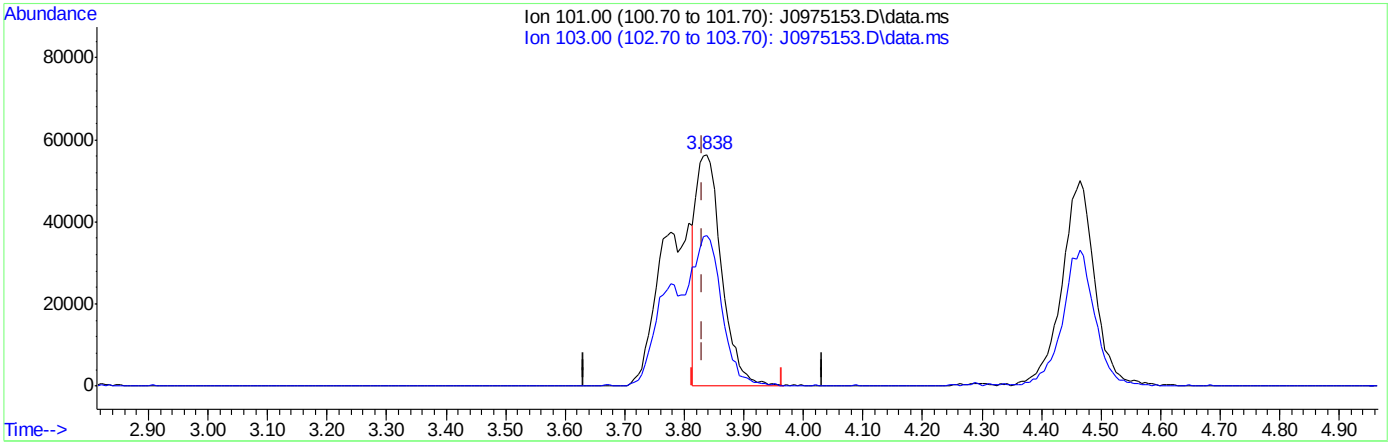
Sample Number: VJ5237-IC5237
Lab FileID: J0975153.D
Injection Time: 03/15/16 15:28
Method: SW846 8260B
Analyst approved: 03/16/16 09:56 Darshna Patel
Supervisor approved: 03/16/16 15:48 Melissa Mangual

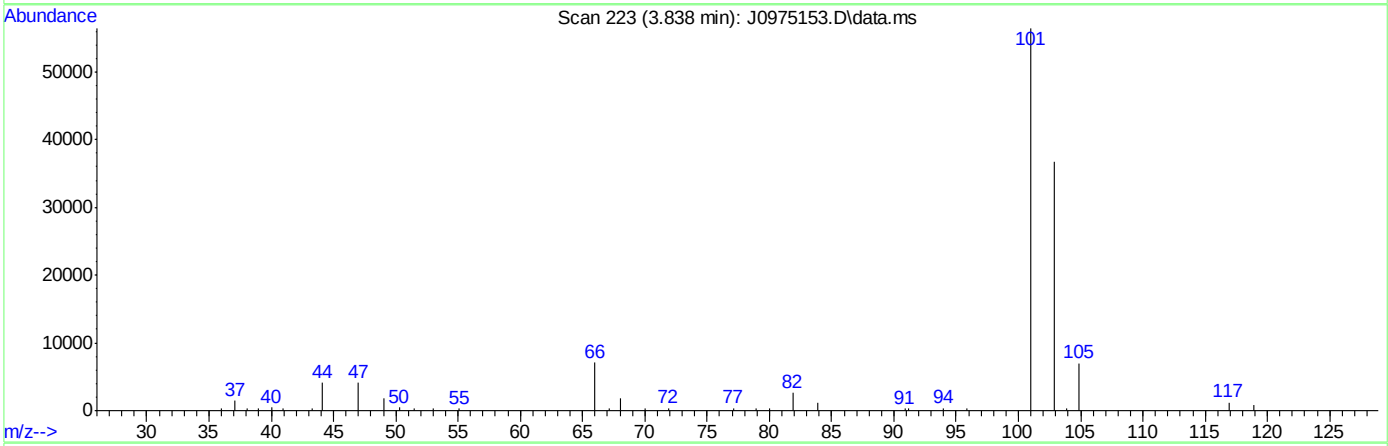
Parameter	CAS	Sig#	R.T. (min.)	Reason
Trichlorofluoromethane	75-69-4		3.84	Split peak
Ethyl Alcohol	64-17-5		4.28	Poor instrument integration
Carbon Tetrachloride	56-23-5		6.93	Overlapping peak

Quantitation Report (Qedit)

Data Path : C:\msdchem\2\data\031516\
Data File : J0975153.D
Acq On : 15 Mar 2016 3:28 pm
Operator : DARSHNAP
Sample : IC5237-4 Inst : MSVOA6
Misc : MS33279,VJ5237,,,,,
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Mar 16 08:17:30 2016
Quant Method : C:\msdchem\2\methods\MSJ031516.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Tue Mar 15 07:56:34 2016
Response via : Initial Calibration





TIC: J0975153.D\data.ms

(8) Trichlorofluoromethane ( )

3.838min (+0.006) 12.38ug/L

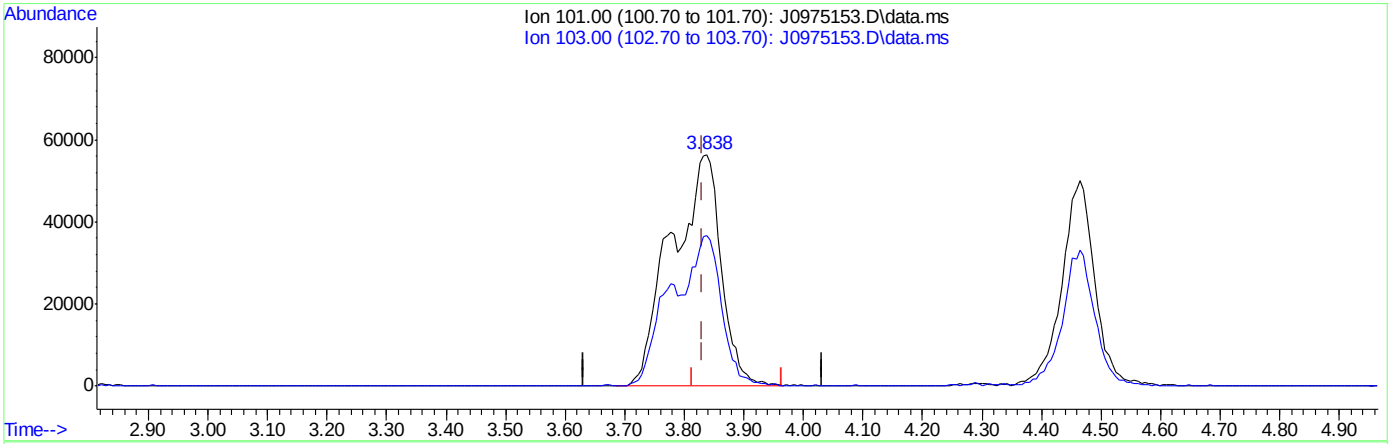
response 166709

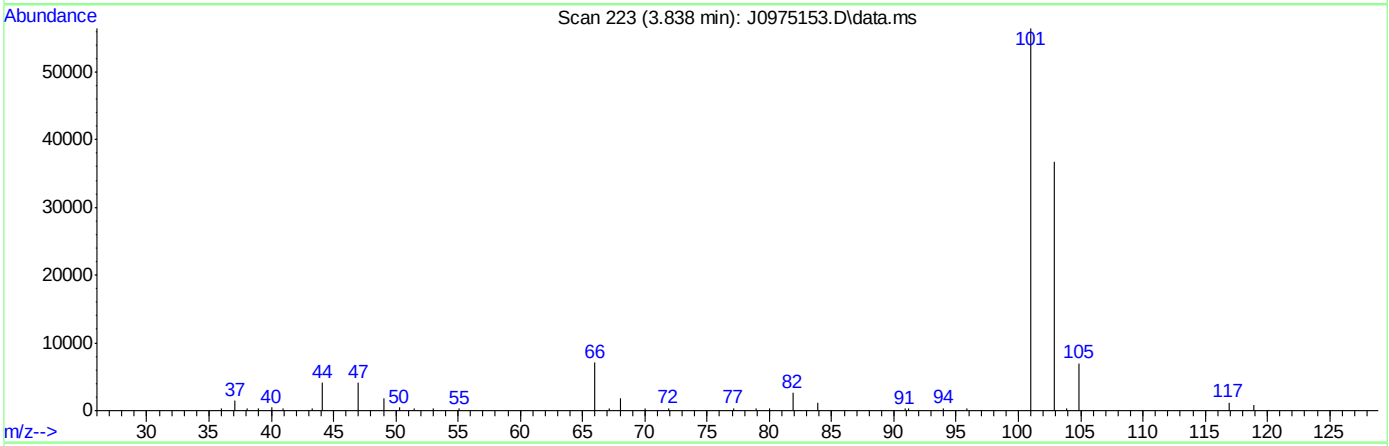
Ion	Exp%	Act%
101.00	100	100
103.00	63.50	65.20
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\2\data\031516\
Data File : J0975153.D
Acq On : 15 Mar 2016 3:28 pm
Operator : DARSHNAP
Sample : IC5237-4 Inst : MSVOA6
Misc : MS33279,VJ5237,,,,,
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Mar 16 08:17:30 2016
Quant Method : C:\msdchem\2\methods\MSJ031516.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Tue Mar 15 07:56:34 2016
Response via : Initial Calibration





TIC: J0975153.D\data.ms

(8) Trichlorofluoromethane ( )

3.838min (+0.006) 24.10ug/L m

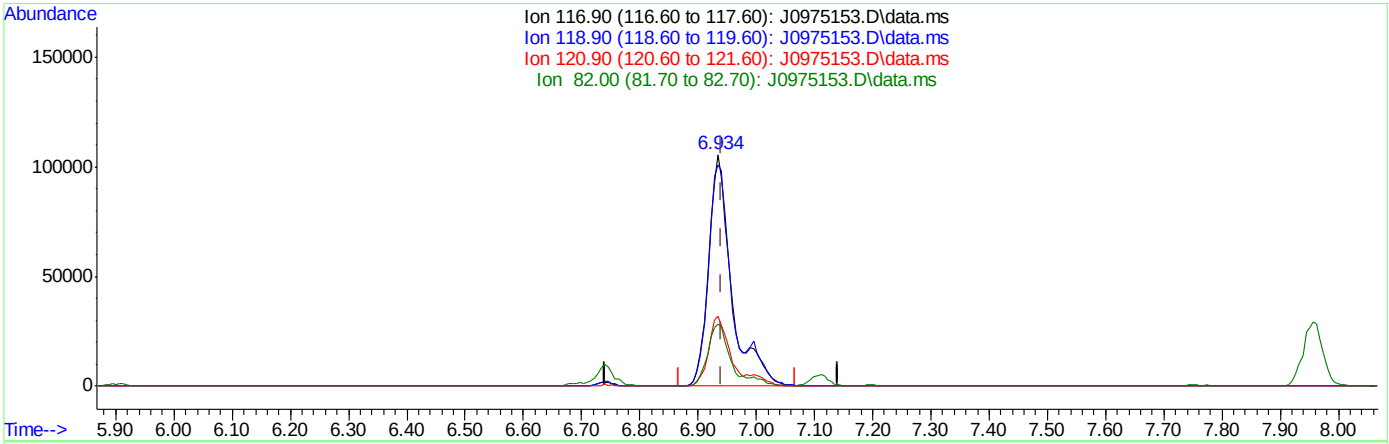
response 324542

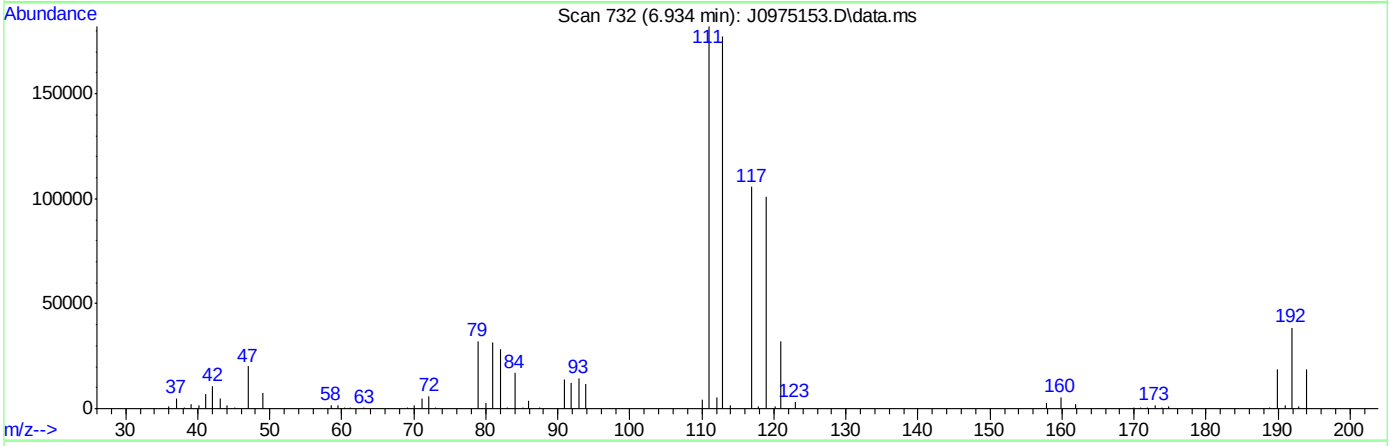
Ion	Exp%	Act%
101.00	100	100
103.00	63.50	65.20
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\2\data\031516\
Data File : J0975153.D
Acq On : 15 Mar 2016 3:28 pm
Operator : DARSHNAP
Sample : IC5237-4 Inst : MSVOA6
Misc : MS33279,VJ5237,,,,,
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Mar 16 08:17:30 2016
Quant Method : C:\msdchem\2\methods\MSJ031516.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Tue Mar 15 07:56:34 2016
Response via : Initial Calibration





TIC: J0975153.D\data.ms

(37) Carbon Tetrachloride ( )

6.934min (-0.007) 27.13ug/L

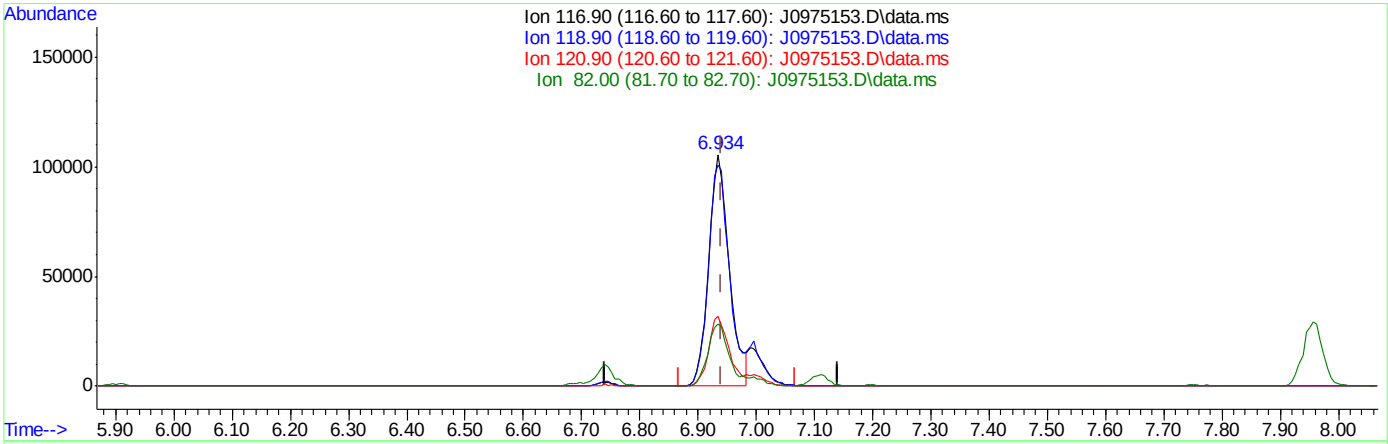
response 294752

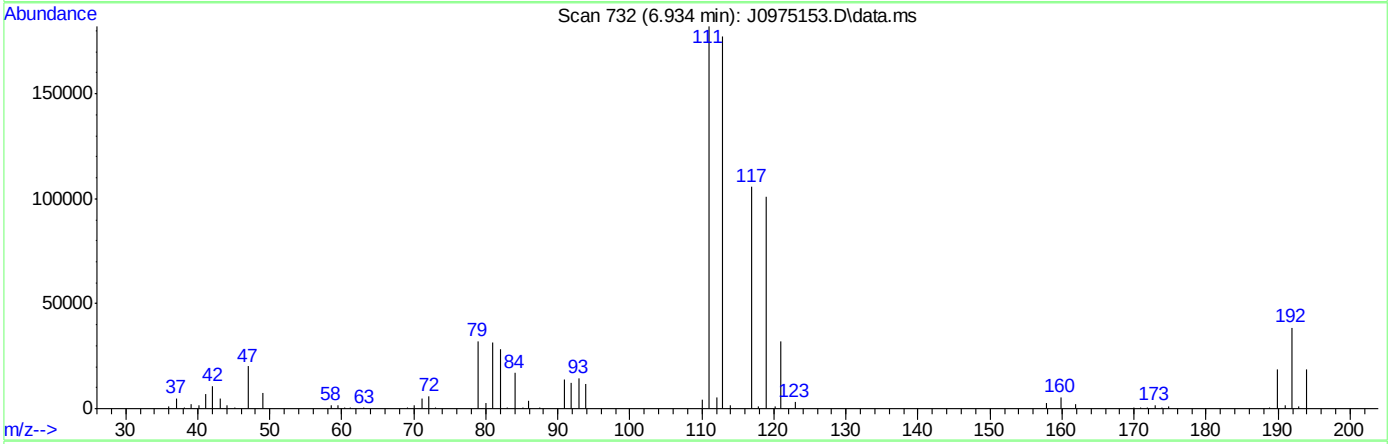
Ion	Exp%	Act%
116.90	100	100
118.90	96.80	95.48
120.90	31.80	30.27
82.00	25.40	26.77

Quantitation Report (Qedit)

Data Path : C:\msdchem\2\data\031516\
Data File : J0975153.D
Acq On : 15 Mar 2016 3:28 pm
Operator : DARSHNAP
Sample : IC5237-4 Inst : MSVOA6
Misc : MS33279,VJ5237,,,,,
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Mar 16 08:17:30 2016
Quant Method : C:\msdchem\2\methods\MSJ031516.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Tue Mar 15 07:56:34 2016
Response via : Initial Calibration





TIC: J0975153.D\data.ms

(37) Carbon Tetrachloride ( )

6.934min (-0.007) 24.16ug/L m

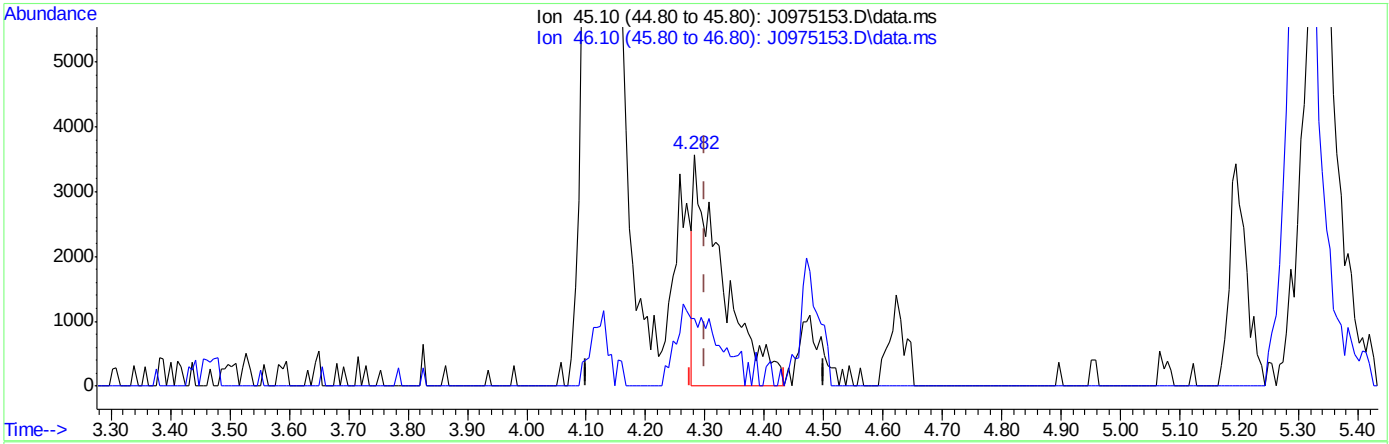
response 262480

Ion	Exp%	Act%
116.90	100	100
118.90	96.80	95.48
120.90	31.80	30.27
82.00	25.40	26.77

Quantitation Report (Qedit)

Data Path : C:\msdchem\2\data\031516\
Data File : J0975153.D
Acq On : 15 Mar 2016 3:28 pm
Operator : DARSHNAP
Sample : IC5237-4 Inst : MSVOA6
Misc : MS33279,VJ5237,,,,,
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Mar 16 08:17:30 2016
Quant Method : C:\msdchem\2\methods\MSJ031516.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Tue Mar 15 07:56:34 2016
Response via : Initial Calibration



TIC: J0975153.D\data.ms

(107) Ethanol

4.282min (-0.018) 352.95ug/L

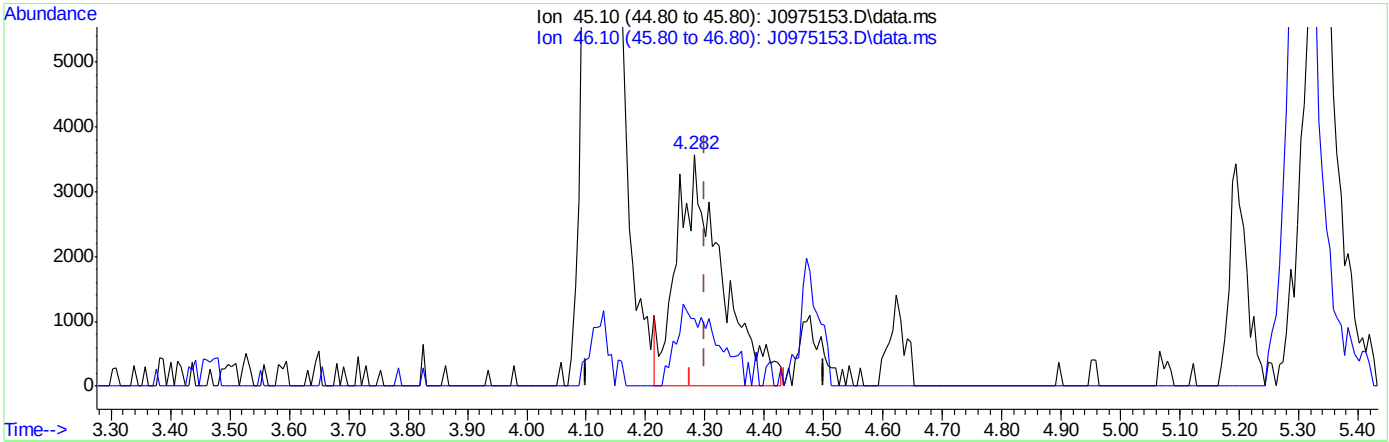
response 12369

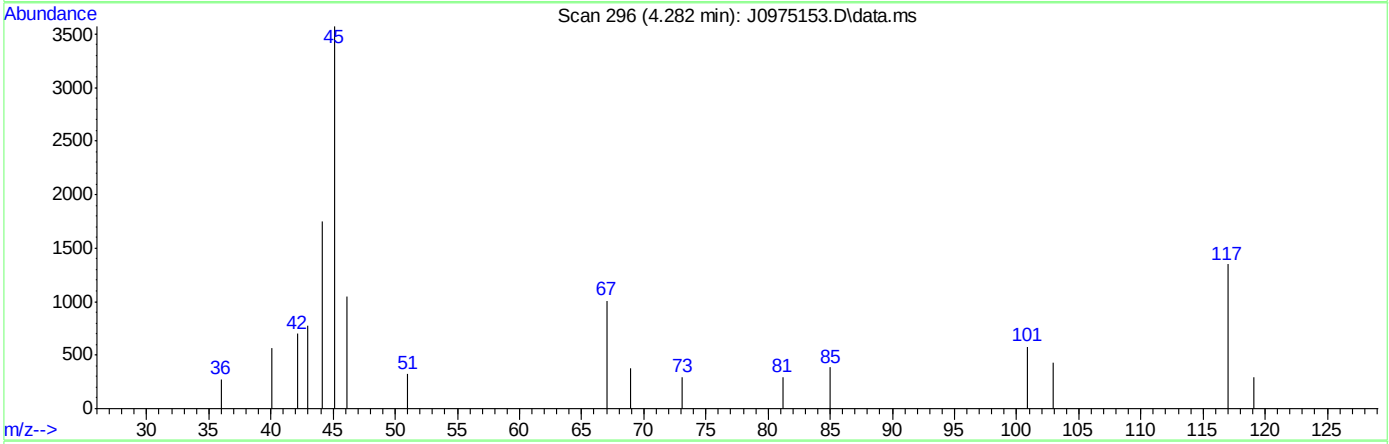
Ion	Exp%	Act%
45.10	100	100
46.10	28.20	29.42
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\2\data\031516\
Data File : J0975153.D
Acq On : 15 Mar 2016 3:28 pm
Operator : DARSHNAP
Sample : IC5237-4 Inst : MSVOA6
Misc : MS33279,VJ5237,,,,,
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Mar 16 08:17:30 2016
Quant Method : C:\msdchem\2\methods\MSJ031516.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Tue Mar 15 07:56:34 2016
Response via : Initial Calibration





TIC: J0975153.D\data.ms

(107) Ethanol

4.282min (-0.018) 535.26ug/L m

response 18758

Ion	Exp%	Act%
45.10	100	100
46.10	28.20	29.42
0.00	0.00	0.00
0.00	0.00	0.00

Manual Integrations APPROVED (compounds with "m" flag)
Melissa Mangual 03/16/16 15:48

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\031516\
Data File : J0975154.D
Acq On : 15 Mar 2016 3:51 pm
Operator : DARSHNAP
Sample : ICC5237-5 Inst : MSVOA6
Misc : MS33279,VJ5237,,,,,
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Mar 16 08:22:25 2016
Quant Method : C:\msdchem\2\methods\MSJ031516.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Tue Mar 15 07:56:34 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	7.756	96	1586569	50.00	ug/L	0.00
56) Chlorobenzene-d5	10.846	117	1198090	50.00	ug/L	0.00
78) 1,4-Dichlorobenzene-d4	13.207	152	683182	50.00	ug/L	0.00
106) Tert Butyl Alcohol-d10	5.298	65	86536	250.00	ug/L	0.00
System Monitoring Compounds						
36) Dibromofluoromethane	6.929	113	408048	50.32	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 100.64%			
46) 1,2-Dichloroethane-d4	7.482	65	482966	49.31	ug/L	0.00
Spiked Amount 50.000	Range 79 - 125		Recovery = 98.62%			
57) Toluene-d8	9.301	98	1558079	49.14	ug/L	0.00
Spiked Amount 50.000	Range 85 - 112		Recovery = 98.28%			
79) 4-Bromofluorobenzene	12.057	95	616289	46.98	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 93.96%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	2.688	85	415271	39.15	ug/L	96
3) Chloromethane	2.901	50	424351	41.25	ug/L	100
4) Vinyl Chloride	3.041	62	445143	40.92	ug/L	94
5) 1,3-Butadiene	3.035	54	315692	36.10	ug/L	96
6) Bromomethane	3.461	94	289547	47.95	ug/L	99
7) Chloroethane	3.613	64	208091	40.89	ug/L	98
8) Trichlorofluoromethane	3.838	101	561191m	40.27	ug/L	
9) Ethyl Ether	4.118	59	255135	38.75	ug/L	96
10) 1,2-Dichlorotrifluoroe...	4.355	67	378597	40.65	ug/L	99
11) 1,1-Dichloroethene	4.392	61	464099	39.46	ug/L	98
12) Freon 113	4.465	101	322937	41.11	ug/L	99
13) Carbon Disulfide	4.471	76	980388	39.30	ug/L	97
14) Iodomethane	4.586	142	519003	40.30	ug/L	99
15) Allyl chloride	4.921	41	426981	38.56	ug/L	94
16) Methylene Chloride	5.043	49	421451	40.00	ug/L	95
17) Acetone	5.067	58	87983	194.56	ug/L	89
18) Methyl acetate	5.195	74	192440	205.15	ug/L	99
19) trans-1,2-Dichloroethene	5.225	61	434370	37.94	ug/L	98
20) Hexane	5.304	56	278304	39.05	ug/L	96
21) Methyl Tert Butyl Ether	5.335	73	873948	40.83	ug/L	83
22) Acetonitrile	5.584	40	111089	342.69	ug/L	91
23) Di-isopropyl ether	5.718	45	1011013	40.99	ug/L	99
24) Chloroprene	5.870	53	468107	38.53	ug/L	98
25) 1,1-Dichloroethane	5.900	63	571199	38.49	ug/L	99
26) Acrylonitrile	5.925	53	404863	196.86	ug/L	95
27) ETBE	6.113	59	1034777	41.91	ug/L	99
28) Vinyl acetate	6.113	43	2522469	204.32	ug/L	98
29) cis-1,2-Dichloroethene	6.472	96	375158	39.64	ug/L	96
30) 2,2-Dichloropropane	6.606	77	452177	40.61	ug/L	97
31) Bromochloromethane	6.685	128	170819	38.87	ug/L	98
32) Cyclohexane	6.734	56	547845	41.34	ug/L	95
33) Chloroform	6.740	83	640283	39.53	ug/L	97
34) Ethyl acetate	6.807	43	962139	195.12	ug/L	100

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\031516\
Data File : J0975154.D
Acq On : 15 Mar 2016 3:51 pm
Operator : DARSHNAP
Sample : ICC5237-5 Inst : MSVOA6
Misc : MS33279,VJ5237,,,,,
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Mar 16 08:22:25 2016
Quant Method : C:\msdchem\2\methods\MSJ031516.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Tue Mar 15 07:56:34 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
35) Tetrahydrofuran	6.922	42	56284	39.45	ug/L		91
37) Carbon Tetrachloride	6.935	117	459299m	40.87	ug/L		
38) 1,1,1-Trichloroethane	6.995	97	555621	40.77	ug/L		96
39) 2-Butanone	7.026	43	404230	187.23	ug/L		97
40) 1,1-Dichloropropene	7.105	75	441244	39.08	ug/L		98
41) tert-Butyl Formate	7.190	59	1946975	388.88	ug/L		90
42) Propionitrile	7.336	54	278535	371.24	ug/L		95
43) Methacrylonitrile	7.360	41	1256833	377.12	ug/L		95
44) Benzene	7.360	78	1357482	39.47	ug/L		99
45) TAME	7.433	73	922804	42.38	ug/L		98
47) 1,2-Dichloroethane	7.549	62	457821	38.56	ug/L		98
48) Trichloroethene	7.938	95	344581	37.99	ug/L		97
49) Methylcyclohexane	7.957	83	597642	41.74	ug/L		99
50) Dibromomethane	8.364	93	198020	41.96	ug/L		98
51) 1,2-Dichloropropane	8.449	63	342560	40.48	ug/L		97
52) Bromodichloromethane	8.498	83	445682	40.89	ug/L		99
53) Methyl methacrylate	8.595	41	181806	39.91	ug/L		97
54) 2-Chloroethyl vinyl ether	9.009	63	866218	193.77	ug/L		97
55) cis-1,3-Dichloropropene	9.113	75	520569	42.33	ug/L		97
58) Toluene	9.356	91	1409718	39.36	ug/L		99
59) 2-Nitropropane	9.557	41	283671	194.21	ug/L		99
60) 4-Methyl-2-pentanone	9.672	43	1017283	194.69	ug/L		99
61) trans-1,3-Dichloropropene	9.739	75	446417	43.29	ug/L		96
62) Tetrachloroethene	9.757	166	384918	37.75	ug/L		98
63) Ethyl methacrylate	9.843	69	339257	37.79	ug/L		97
64) 1,1,2-Trichloroethane	9.903	83	237256	40.26	ug/L		98
65) Dibromochloromethane	10.104	129	309572	40.48	ug/L		98
66) 1,3-Dichloropropane	10.183	76	483827	40.15	ug/L		98
67) 1,2-Dibromoethane	10.360	107	271883	42.33	ug/L		96
68) 2-hexanone	10.487	43	687786	193.52	ug/L		97
69) 1-Chlorohexane	10.798	91	435688	39.57	ug/L		98
70) Ethylbenzene	10.859	91	1639107	40.00	ug/L		100
71) Chlorobenzene	10.865	112	953873	40.30	ug/L		96
72) 1,1,1,2-Tetrachloroethane	10.913	131	320629	41.79	ug/L		97
73) m,p-Xylene	10.998	91	2459561	81.21	ug/L		97
74) o-Xylene	11.436	91	1307404	41.63	ug/L		99
75) Styrene	11.485	104	993416	42.79	ug/L		98
76) Bromoform	11.546	173	185461	42.90	ug/L		98
77) Isopropylbenzene	11.741	105	1531567	40.66	ug/L		99
80) cis-1,4-Dichloro-2-butene	12.087	53	90262	50.36	ug/L		94
81) n-Propylbenzene	12.160	91	1827678	38.36	ug/L		99
82) Bromobenzene	12.185	156	421116	38.09	ug/L		98
83) 1,1,2,2-Tetrachloroethane	12.221	83	342225	42.23	ug/L		100
84) 1,3,5-Trimethylbenzene	12.343	105	1426304	40.21	ug/L		100
85) 2-Chlorotoluene	12.349	91	1311770	38.02	ug/L		99
86) trans-1,4-Dichloro-2-B...	12.398	53	83427	47.19	ug/L	#	78
87) 1,2,3-Trichloropropane	12.385	110	88036	39.52	ug/L		95
88) Cyclohexanone	12.452	55	25515	187.91	ug/L		90
89) 4-Chlorotoluene	12.519	91	1204575	38.03	ug/L		99
90) a-Methyl Styrene	12.611	118	391096	39.49	ug/L		99

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\031516\
Data File : J0975154.D
Acq On : 15 Mar 2016 3:51 pm
Operator : DARSHNAP
Sample : ICC5237-5 Inst : MSVOA6
Misc : MS33279,VJ5237,,,,,
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Mar 16 08:22:25 2016
Quant Method : C:\msdchem\2\methods\MSJ031516.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Tue Mar 15 07:56:34 2016
Response via : Initial Calibration

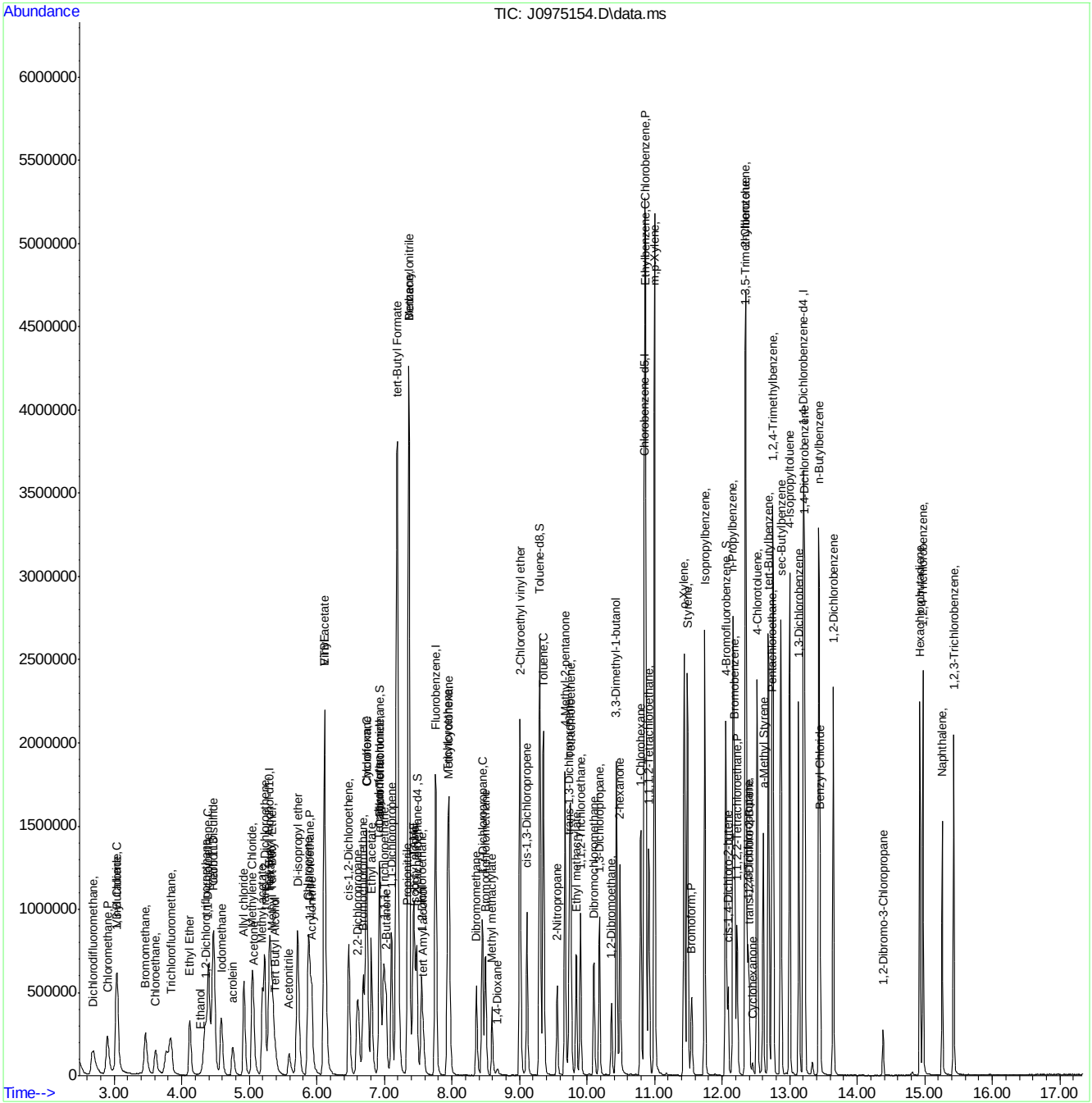
	Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
91)	tert-Butylbenzene	12.684	91	806108	38.54	ug/L		96
92)	1,2,4-Trimethylbenzene	12.751	105	1420845	40.00	ug/L		99
93)	Pentachloroethane	12.738	167	226954	42.38	ug/L		96
94)	sec-Butylbenzene	12.872	105	1692642	40.05	ug/L		98
95)	4-Isopropyltoluene	13.000	119	1429582	40.60	ug/L		97
96)	1,3-Dichlorobenzene	13.134	146	741697	39.18	ug/L		96
97)	1,4-Dichlorobenzene	13.219	146	774353	38.52	ug/L		94
98)	n-Butylbenzene	13.432	92	822978	40.81	ug/L		98
99)	Benzyl Chloride	13.450	126	117906	46.76	ug/L	#	74
100)	1,2-Dichlorobenzene	13.645	146	714095	41.52	ug/L		98
101)	1,2-Dibromo-3-Chloropr...	14.381	75	52670	68.74	ug/L		93
102)	Hexachlorobutadiene	14.928	225	324044	56.03	ug/L		97
103)	1,2,4-Trichlorobenzene	14.971	180	547353	78.54	ug/L		97
104)	Naphthalene	15.257	128	877863	89.67	ug/L		100
105)	1,2,3-Trichlorobenzene	15.427	180	478341	93.59	ug/L		97
107)	Ethanol	4.276	45	29706m	791.51	ug/L		
108)	acrolein	4.757	56	206891	216.83	ug/L		92
109)	Tert Butyl Alcohol	5.377	59	171596	426.90	ug/L		83
110)	tert Amyl alcohol	7.573	59	128641	429.01	ug/L		95
111)	Isobutyl alcohol	7.452	42	123504	800.53	ug/L	#	86
112)	1,4-Dioxane	8.668	88	28170	735.12	ug/L		95
113)	3,3-Dimethyl-1-butanol	10.433	57	765808	2133.22	ug/L		97

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\031516\
Data File : J0975154.D
Acq On : 15 Mar 2016 3:51 pm
Operator : DARSHNAP
Sample : ICC5237-5 Inst : MSVOA6
Misc : MS33279,VJ5237,,,,,
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Mar 16 08:22:25 2016
Quant Method : C:\msdchem\2\methods\MSJ031516.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Tue Mar 15 07:56:34 2016
Response via : Initial Calibration



Manual Integration Approval Summary

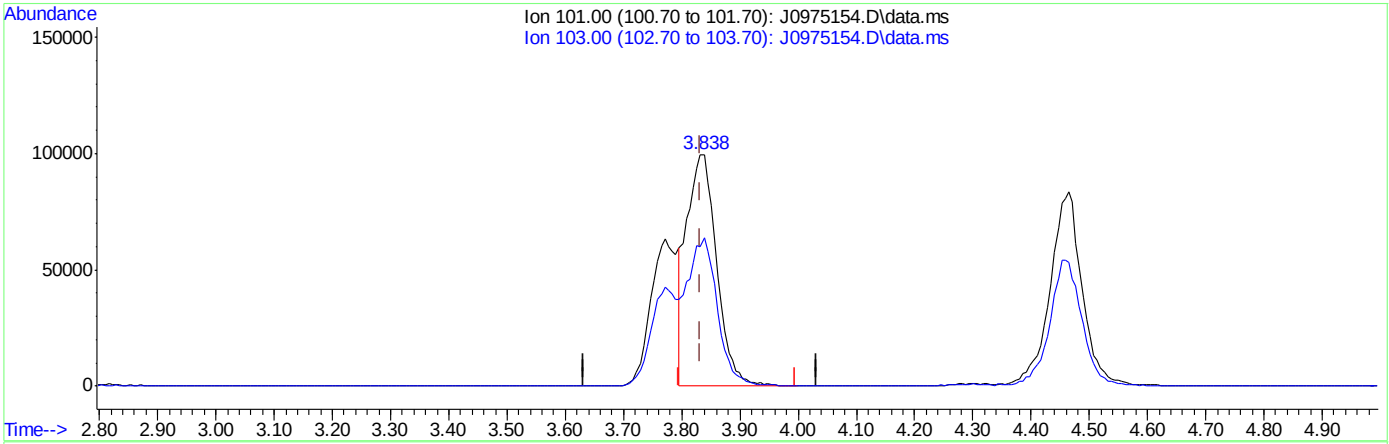
Sample Number: VJ5237-ICC5237
Lab FileID: J0975154.D
Injection Time: 03/15/16 15:51
Method: SW846 8260B
Analyst approved: 03/16/16 09:56 Darshna Patel
Supervisor approved: 03/16/16 15:48 Melissa Mangual

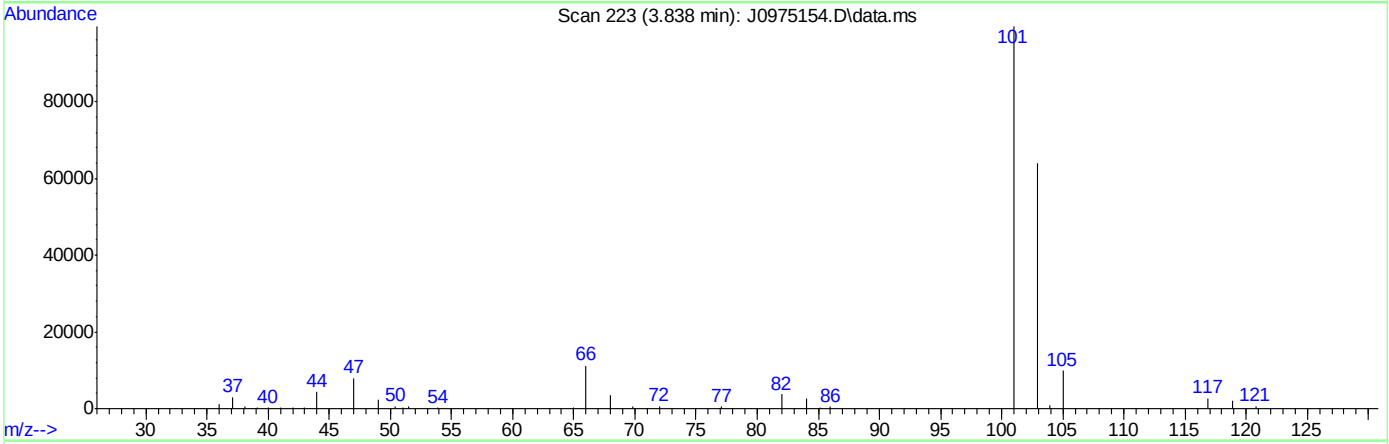
Parameter	CAS	Sig#	R.T. (min.)	Reason
Trichlorofluoromethane	75-69-4		3.84	Split peak
Ethyl Alcohol	64-17-5		4.28	Poor instrument integration
Carbon Tetrachloride	56-23-5		6.93	Overlapping peak

Quantitation Report (Qedit)

Data Path : C:\msdchem\2\data\031516\
Data File : J0975154.D
Acq On : 15 Mar 2016 3:51 pm
Operator : DARSHNAP
Sample : ICC5237-5 Inst : MSVOA6
Misc : MS33279,VJ5237,,,,,
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Mar 16 08:17:33 2016
Quant Method : C:\msdchem\2\methods\MSJ031516.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Tue Mar 15 07:56:34 2016
Response via : Initial Calibration





TIC: J0975154.D\data.ms

(8) Trichlorofluoromethane ( )

3.838min (+0.006) 25.59ug/L

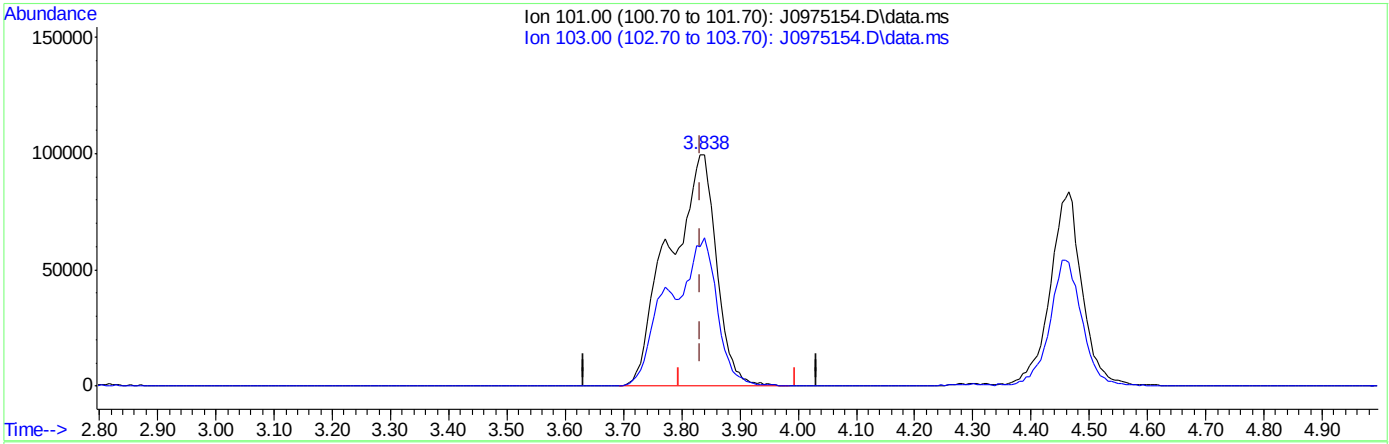
response 356542

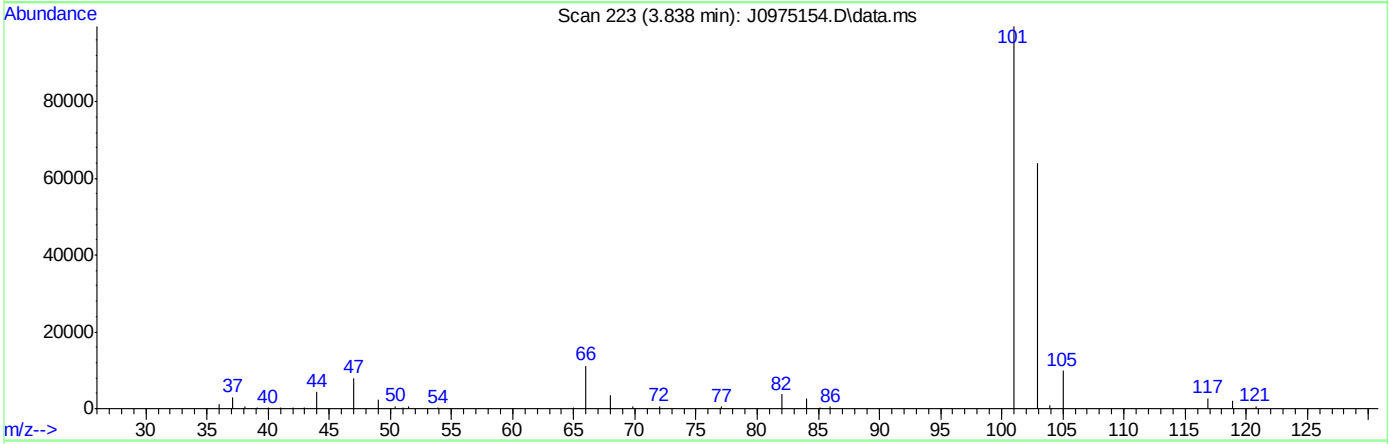
Ion	Exp%	Act%
101.00	100	100
103.00	63.50	64.12
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\2\data\031516\
Data File : J0975154.D
Acq On : 15 Mar 2016 3:51 pm
Operator : DARSHNAP
Sample : ICC5237-5 Inst : MSVOA6
Misc : MS33279,VJ5237,,,,,
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Mar 16 08:17:33 2016
Quant Method : C:\msdchem\2\methods\MSJ031516.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Tue Mar 15 07:56:34 2016
Response via : Initial Calibration





TIC: J0975154.D\data.ms

(8) Trichlorofluoromethane ( )

3.838min (+0.006) 40.27ug/L m

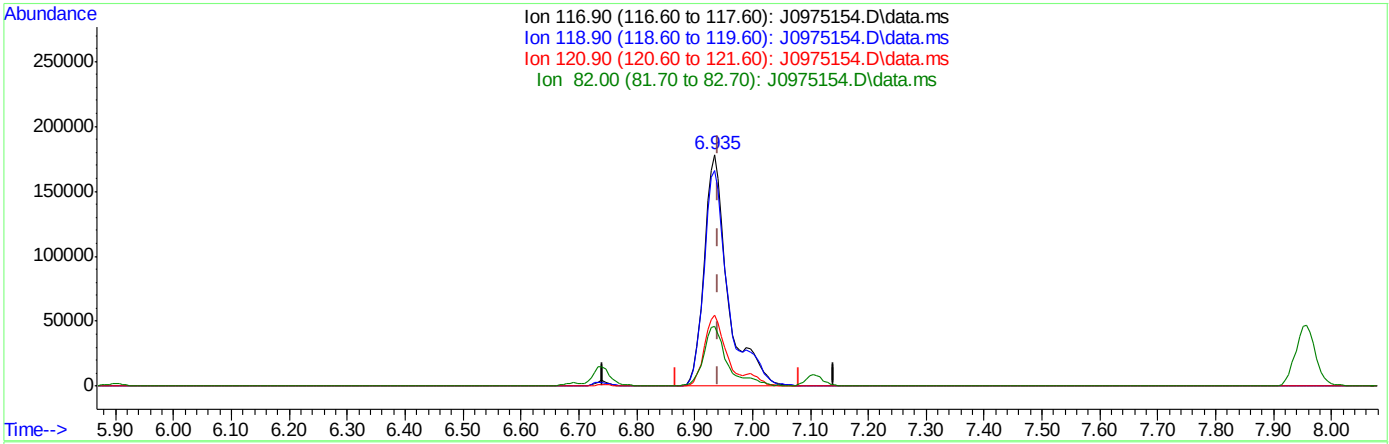
response 561191

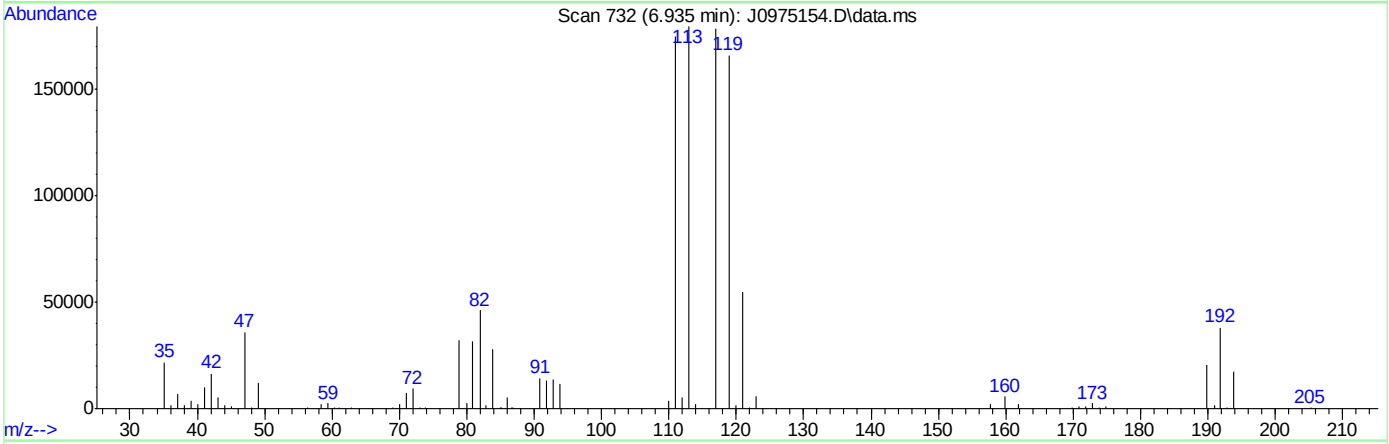
Ion	Exp%	Act%
101.00	100	100
103.00	63.50	64.12
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\2\data\031516\
Data File : J0975154.D
Acq On : 15 Mar 2016 3:51 pm
Operator : DARSHNAP
Sample : ICC5237-5 Inst : MSVOA6
Misc : MS33279,VJ5237,,,,,
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Mar 16 08:17:33 2016
Quant Method : C:\msdchem\2\methods\MSJ031516.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Tue Mar 15 07:56:34 2016
Response via : Initial Calibration





TIC: J0975154.D\data.ms

(37) Carbon Tetrachloride ( )

6.935min (-0.006) 45.76ug/L

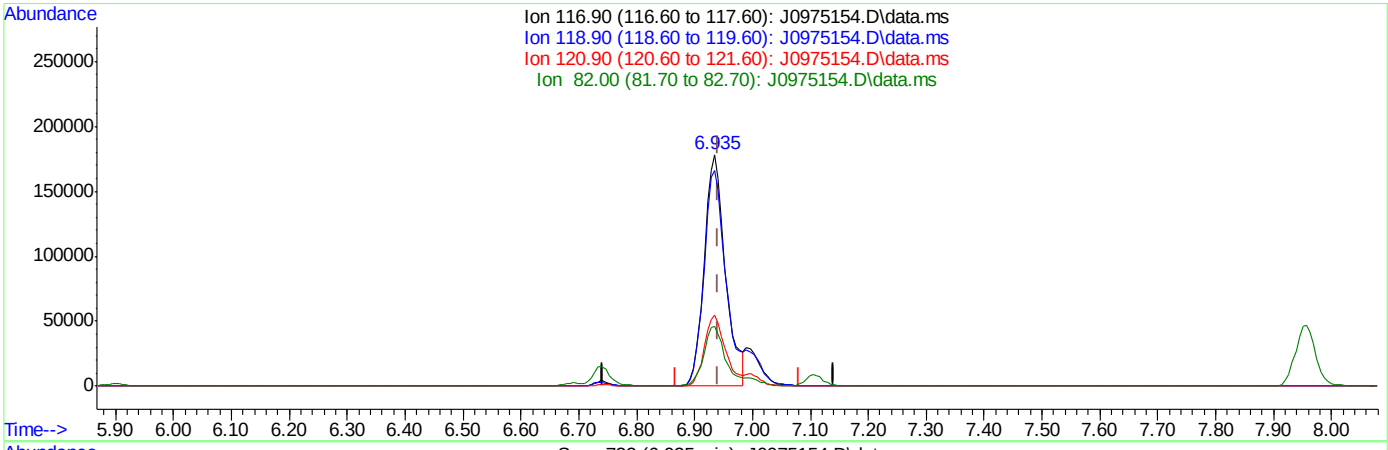
response 514333

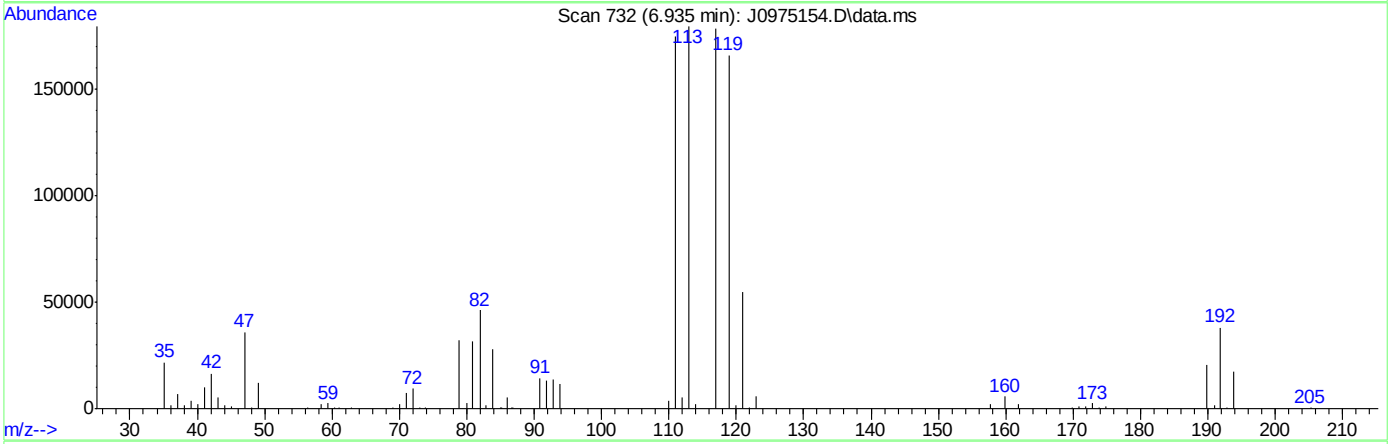
Ion	Exp%	Act%
116.90	100	100
118.90	96.80	92.97
120.90	31.80	30.81
82.00	25.40	25.83

Quantitation Report (Qedit)

Data Path : C:\msdchem\2\data\031516\
Data File : J0975154.D
Acq On : 15 Mar 2016 3:51 pm
Operator : DARSHNAP
Sample : ICC5237-5 Inst : MSVOA6
Misc : MS33279,VJ5237,,,,,
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Mar 16 08:17:33 2016
Quant Method : C:\msdchem\2\methods\MSJ031516.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Tue Mar 15 07:56:34 2016
Response via : Initial Calibration





TIC: J0975154.D\data.ms

(37) Carbon Tetrachloride ( )

6.935min (-0.006) 40.87ug/L m

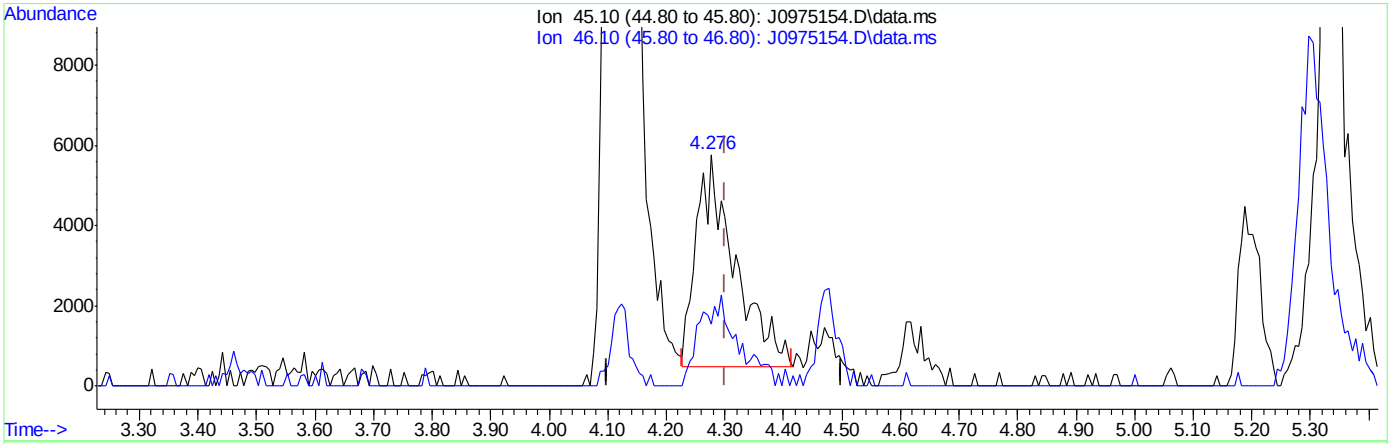
response 459299

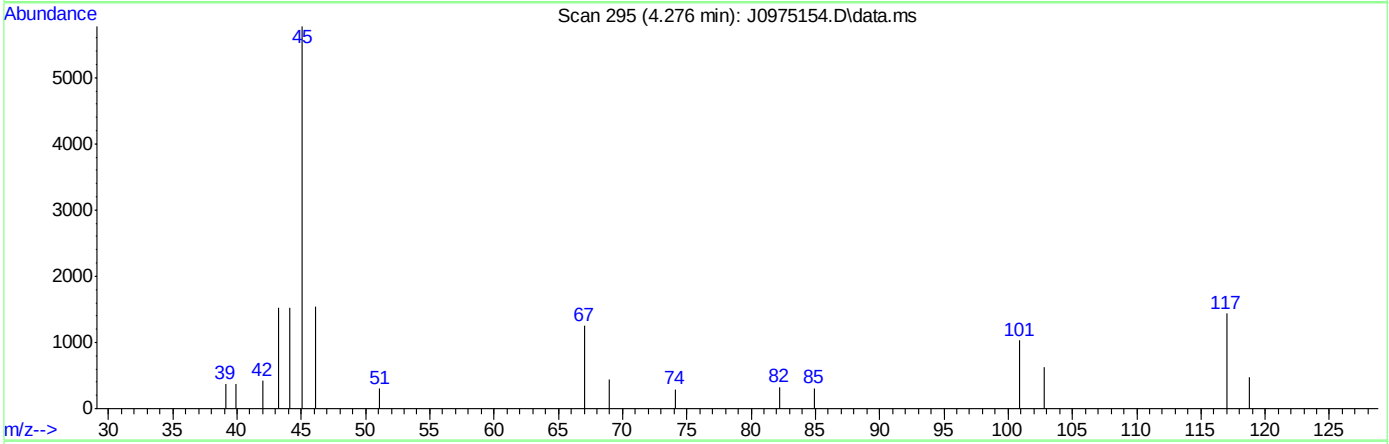
Ion	Exp%	Act%
116.90	100	100
118.90	96.80	92.97
120.90	31.80	30.81
82.00	25.40	25.83

Quantitation Report (Qedit)

Data Path : C:\msdchem\2\data\031516\
Data File : J0975154.D
Acq On : 15 Mar 2016 3:51 pm
Operator : DARSHNAP
Sample : ICC5237-5 Inst : MSVOA6
Misc : MS33279,VJ5237,,,,,
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Mar 16 08:17:33 2016
Quant Method : C:\msdchem\2\methods\MSJ031516.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Tue Mar 15 07:56:34 2016
Response via : Initial Calibration





TIC: J0975154.D\data.ms

(107) Ethanol

4.276min (-0.024) 648.61ug/L

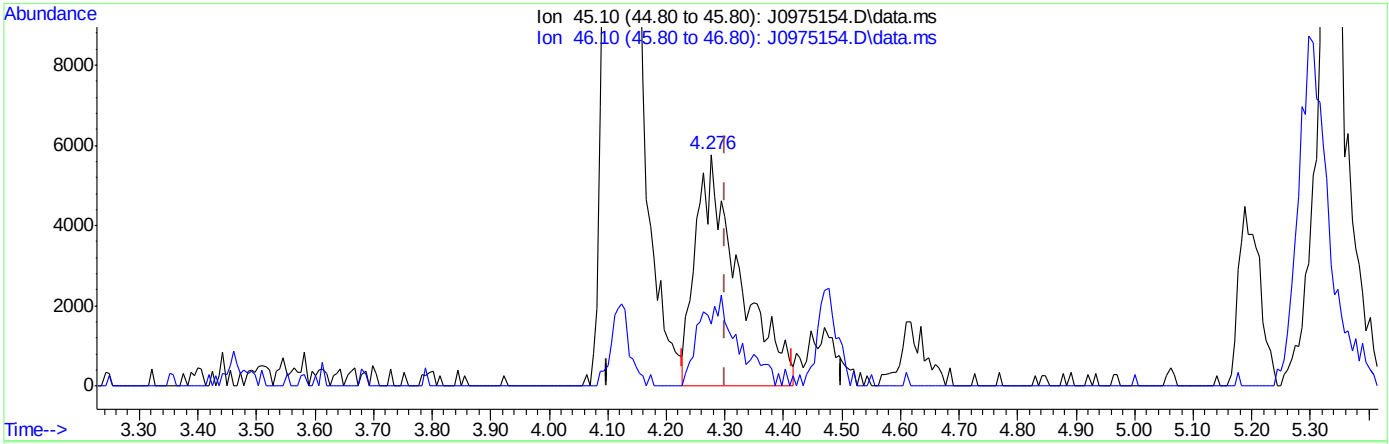
response 24343

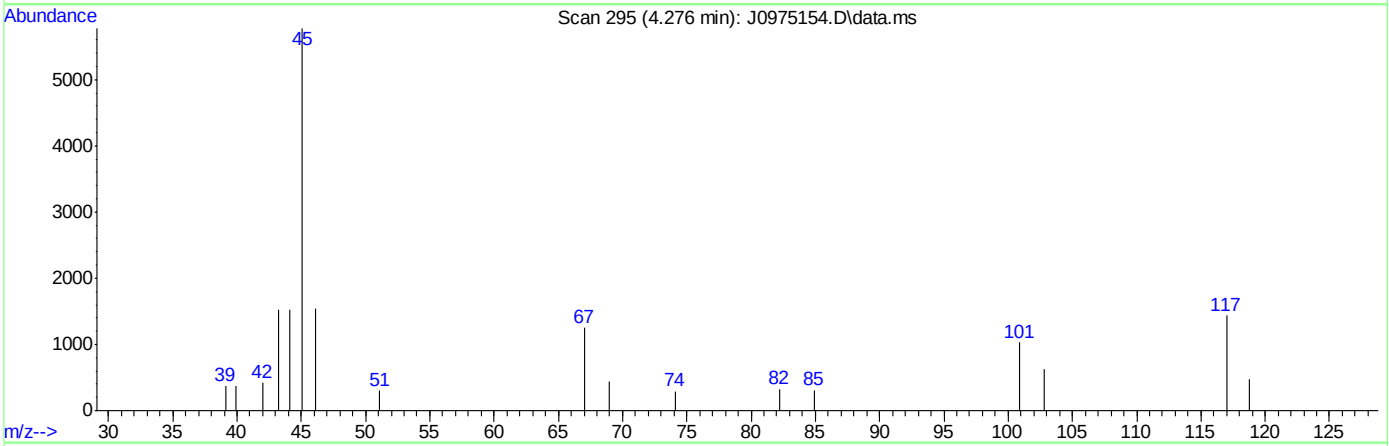
Ion	Exp%	Act%
45.10	100	100
46.10	28.20	29.18
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\2\data\031516\
Data File : J0975154.D
Acq On : 15 Mar 2016 3:51 pm
Operator : DARSHNAP
Sample : ICC5237-5 Inst : MSVOA6
Misc : MS33279,VJ5237,,,,,
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Mar 16 08:17:33 2016
Quant Method : C:\msdchem\2\methods\MSJ031516.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Tue Mar 15 07:56:34 2016
Response via : Initial Calibration





TIC: J0975154.D\data.ms

(107) Ethanol

4.276min (-0.024) 791.51ug/L m

response 29706

Ion	Exp%	Act%
45.10	100	100
46.10	28.20	26.78
0.00	0.00	0.00
0.00	0.00	0.00

Manual Integrations APPROVED (compounds with "m" flag)
Melissa Mangual 03/16/16 15:48

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\031516\
Data File : J0975155.D
Acq On : 15 Mar 2016 4:15 pm
Operator : DARSHNAP
Sample : IC5237-6 Inst : MSVOA6
Misc : MS33279,VJ5237,,,,,
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Mar 16 08:23:03 2016
Quant Method : C:\msdchem\2\methods\MSJ031516.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Tue Mar 15 07:56:34 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	7.762	96	1663509	50.00	ug/L	0.00
56) Chlorobenzene-d5	10.846	117	1267133	50.00	ug/L	0.00
78) 1,4-Dichlorobenzene-d4	13.207	152	720297	50.00	ug/L	0.00
106) Tert Butyl Alcohol-d10	5.310	65	95696	250.00	ug/L	0.00
System Monitoring Compounds						
36) Dibromofluoromethane	6.928	113	422774	49.73	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 99.46%			
46) 1,2-Dichloroethane-d4	7.482	65	502188	48.90	ug/L	0.00
Spiked Amount 50.000	Range 79 - 125		Recovery = 97.80%			
57) Toluene-d8	9.301	98	1644207	49.03	ug/L	0.00
Spiked Amount 50.000	Range 85 - 112		Recovery = 98.06%			
79) 4-Bromofluorobenzene	12.057	95	655388	47.38	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 94.76%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	2.688	85	796177	71.59	ug/L	96
3) Chloromethane	2.913	50	817162	76.83	ug/L	96
4) Vinyl Chloride	3.053	62	832466	72.98	ug/L	97
5) 1,3-Butadiene	3.047	54	615937	67.17	ug/L	99
6) Bromomethane	3.473	94	509770	111.69	ug/L	97
7) Chloroethane	3.613	64	367451	95.87	ug/L	96
8) Trichlorofluoromethane	3.844	101	1073506m	73.47	ug/L	
9) Ethyl Ether	4.124	59	462843	67.04	ug/L	97
10) 1,2-Dichlorotrifluoroe...	4.355	67	675216	69.14	ug/L	97
11) 1,1-Dichloroethene	4.404	61	863633	70.03	ug/L	97
12) Freon 113	4.464	101	586383	71.20	ug/L	96
13) Carbon Disulfide	4.477	76	1819367	69.56	ug/L	97
14) Iodomethane	4.592	142	943964	69.91	ug/L	99
15) Allyl chloride	4.927	41	878928	75.70	ug/L	95
16) Methylene Chloride	5.048	49	738336	68.18	ug/L	95
17) Acetone	5.073	58	174900	362.96	ug/L	95
18) Methyl acetate	5.195	74	349986	355.84	ug/L	98
19) trans-1,2-Dichloroethene	5.231	61	794113	66.14	ug/L	99
20) Hexane	5.304	56	503015	67.32	ug/L	98
21) Methyl Tert Butyl Ether	5.341	73	1582123	70.49	ug/L	79
22) Acetonitrile	5.596	40	224350	682.39	ug/L	95
23) Di-isopropyl ether	5.718	45	1816338	70.24	ug/L	97
24) Chloroprene	5.876	53	937188	73.58	ug/L	97
25) 1,1-Dichloroethane	5.900	63	1041124	66.92	ug/L	99
26) Acrylonitrile	5.925	53	796530	369.39	ug/L	97
27) ETBE	6.119	59	1850410	71.47	ug/L	99
28) Vinyl acetate	6.113	43	4549644	351.47	ug/L	95
29) cis-1,2-Dichloroethene	6.478	96	672081	67.73	ug/L	98
30) 2,2-Dichloropropane	6.612	77	833617	71.41	ug/L	96
31) Bromochloromethane	6.691	128	303789	65.93	ug/L	98
32) Cyclohexane	6.734	56	1006050	72.41	ug/L	97
33) Chloroform	6.740	83	1148321	67.61	ug/L	95
34) Ethyl acetate	6.807	43	1839719	355.84	ug/L	99

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\031516\
Data File : J0975155.D
Acq On : 15 Mar 2016 4:15 pm
Operator : DARSHNAP
Sample : IC5237-6 Inst : MSVOA6
Misc : MS33279,VJ5237,,,,,
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Mar 16 08:23:03 2016
Quant Method : C:\msdchem\2\methods\MSJ031516.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Tue Mar 15 07:56:34 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
35) Tetrahydrofuran	6.922	42	102589	68.04	ug/L	94
37) Carbon Tetrachloride	6.934	117	845243m	71.73	ug/L	
38) 1,1,1-Trichloroethane	6.995	97	1015151	71.04	ug/L	98
39) 2-Butanone	7.026	43	776266	343.13	ug/L	99
40) 1,1-Dichloropropene	7.105	75	815891	68.92	ug/L	100
41) tert-Butyl Formate	7.190	59	3673836	696.93	ug/L	94
42) Propionitrile	7.336	54	568454	722.62	ug/L	88
43) Methacrylonitrile	7.360	41	2411629	739.42	ug/L	97
44) Benzene	7.360	78	2463561	68.32	ug/L	99
45) TAME	7.433	73	1667655	73.05	ug/L	98
47) 1,2-Dichloroethane	7.549	62	807016	64.83	ug/L	98
48) Trichloroethene	7.938	95	645164	67.84	ug/L	97
49) Methylcyclohexane	7.956	83	1101854	73.40	ug/L	99
50) Dibromomethane	8.364	93	353388	71.42	ug/L	96
51) 1,2-Dichloropropane	8.449	63	612595	69.05	ug/L	97
52) Bromodichloromethane	8.498	83	821422	71.87	ug/L	99
53) Methyl methacrylate	8.595	41	369451	77.35	ug/L	95
54) 2-Chloroethyl vinyl ether	9.009	63	1668101	363.83	ug/L	97
55) cis-1,3-Dichloropropene	9.112	75	955569	74.12	ug/L	98
58) Toluene	9.356	91	2496299	68.91	ug/L	96
59) 2-Nitropropane	9.556	41	508815	329.36	ug/L	95
60) 4-Methyl-2-pentanone	9.672	43	1880700	340.32	ug/L	96
61) trans-1,3-Dichloropropene	9.739	75	809345	74.20	ug/L	97
62) Tetrachloroethene	9.757	166	694249	64.37	ug/L	99
63) Ethyl methacrylate	9.842	69	683133	71.80	ug/L	95
64) 1,1,2-Trichloroethane	9.903	83	425903	68.34	ug/L	99
65) Dibromochloromethane	10.104	129	569577	69.79	ug/L	98
66) 1,3-Dichloropropane	10.183	76	858931	67.39	ug/L	96
67) 1,2-Dibromoethane	10.359	107	486838	71.67	ug/L	99
68) 2-hexanone	10.487	43	1286975	342.39	ug/L	99
69) 1-Chlorohexane	10.797	91	815671	70.05	ug/L	96
70) Ethylbenzene	10.864	91	2858512	70.62	ug/L	93
71) Chlorobenzene	10.864	112	1693129	68.89	ug/L	96
72) 1,1,1,2-Tetrachloroethane	10.913	131	585767	72.18	ug/L	100
73) m,p-Xylene	10.998	91	4082149	145.43	ug/L	87
74) o-Xylene	11.436	91	2326915	70.06	ug/L	96
75) Styrene	11.485	104	1796313	73.16	ug/L	96
76) Bromoform	11.552	173	352668	74.52	ug/L	98
77) Isopropylbenzene	11.740	105	2705718	71.65	ug/L	95
80) cis-1,4-Dichloro-2-butene	12.087	53	186907	98.90	ug/L	96
81) n-Propylbenzene	12.160	91	3164340	62.99	ug/L	93
82) Bromobenzene	12.185	156	766821	65.78	ug/L	99
83) 1,1,2,2-Tetrachloroethane	12.221	83	612245	71.66	ug/L	97
84) 1,3,5-Trimethylbenzene	12.343	105	2538671	67.87	ug/L	95
85) 2-Chlorotoluene	12.355	91	2343688	64.43	ug/L	95
86) trans-1,4-Dichloro-2-B...	12.404	53	158679	81.31	ug/L	87
87) 1,2,3-Trichloropropane	12.385	110	161261	68.67	ug/L	98
88) Cyclohexanone	12.446	55	50911	355.62	ug/L	92
89) 4-Chlorotoluene	12.519	91	2142166	64.15	ug/L	96
90) a-Methyl Styrene	12.610	118	796296	76.25	ug/L	97

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\031516\
Data File : J0975155.D
Acq On : 15 Mar 2016 4:15 pm
Operator : DARSHNAP
Sample : IC5237-6 Inst : MSVOA6
Misc : MS33279,VJ5237,,,,,
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Mar 16 08:23:03 2016
Quant Method : C:\msdchem\2\methods\MSJ031516.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Tue Mar 15 07:56:34 2016
Response via : Initial Calibration

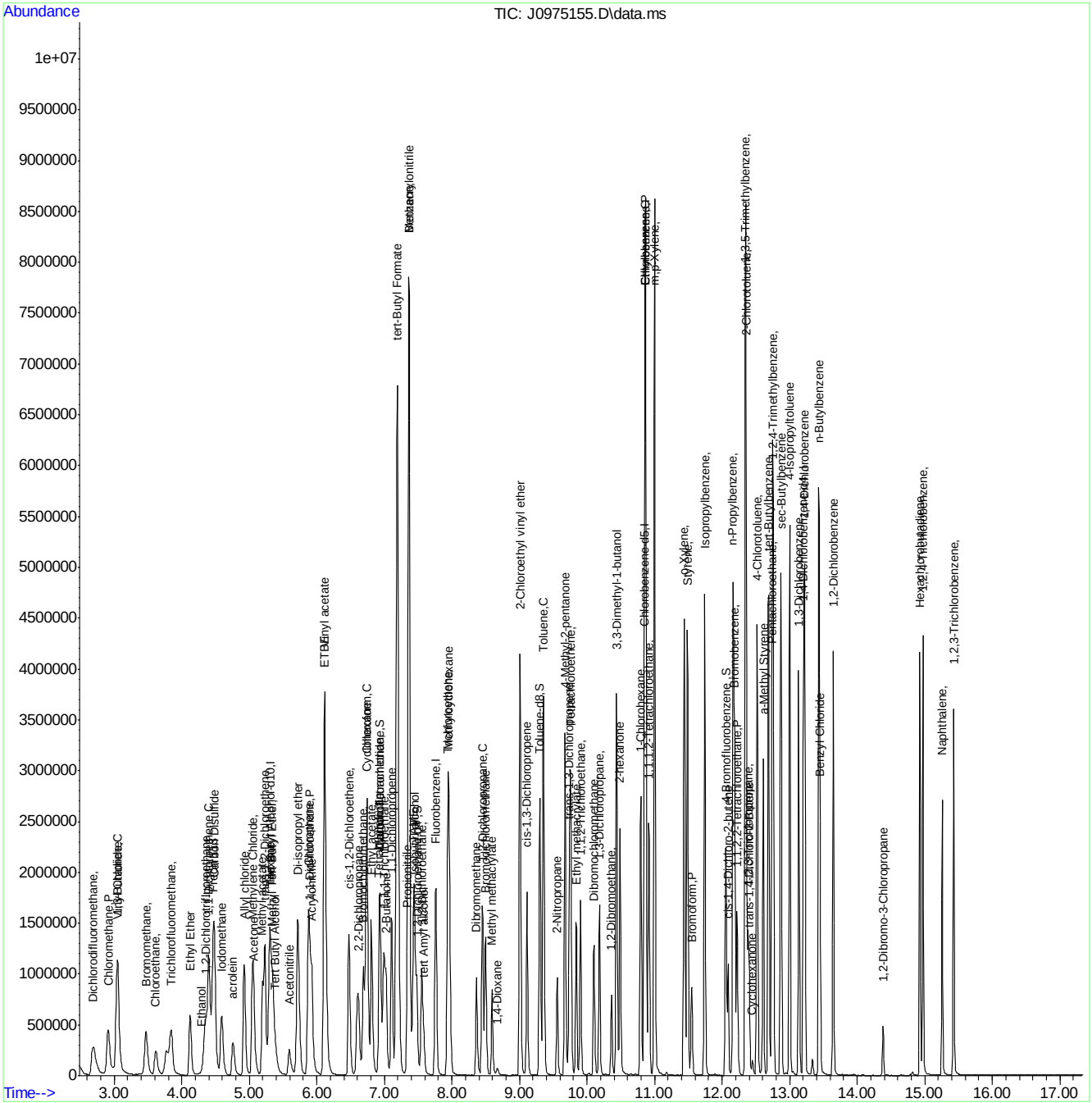
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
91) tert-Butylbenzene	12.689	91	1460467	66.23 ug/L	99
92) 1,2,4-Trimethylbenzene	12.756	105	2491193	66.52 ug/L	96
93) Pentachloroethane	12.738	167	487790	79.67 ug/L	98
94) sec-Butylbenzene	12.872	105	2946134	66.12 ug/L	94
95) 4-Isopropyltoluene	13.000	119	2529417	68.14 ug/L	93
96) 1,3-Dichlorobenzene	13.134	146	1347196	67.49 ug/L	96
97) 1,4-Dichlorobenzene	13.219	146	1384060	65.31 ug/L	96
98) n-Butylbenzene	13.432	92	1525563	71.75 ug/L	90
99) Benzyl Chloride	13.450	126	222363	77.92 ug/L #	72
100) 1,2-Dichlorobenzene	13.645	146	1274423	70.28 ug/L	97
101) 1,2-Dibromo-3-Chloropr...	14.381	75	96556	111.51 ug/L	91
102) Hexachlorobutadiene	14.928	225	589535	93.01 ug/L	98
103) 1,2,4-Trichlorobenzene	14.971	180	985671	123.30 ug/L	95
104) Naphthalene	15.257	128	1543756	130.98 ug/L	98
105) 1,2,3-Trichlorobenzene	15.427	180	835296	136.14 ug/L	98
107) Ethanol	4.288	45	57616m	1388.22 ug/L	
108) acrolein	4.756	56	411471	389.95 ug/L	93
109) Tert Butyl Alcohol	5.383	59	324763	730.62 ug/L	92
110) tert Amyl alcohol	7.579	59	246499	743.36 ug/L	95
111) Isobutyl alcohol	7.452	42	242482	1518.42 ug/L #	84
112) 1,4-Dioxane	8.674	88	53462	1261.60 ug/L	93
113) 3,3-Dimethyl-1-butanol	10.439	57	1553566	3668.90 ug/L	98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\031516\
Data File : J0975155.D
Acq On : 15 Mar 2016 4:15 pm
Operator : DARSHNAP
Sample : IC5237-6 Inst : MSVOA6
Misc : MS33279,VJ5237,,,,,
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Mar 16 08:23:03 2016
Quant Method : C:\msdchem\2\methods\MSJ031516.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Tue Mar 15 07:56:34 2016
Response via : Initial Calibration



Manual Integration Approval Summary

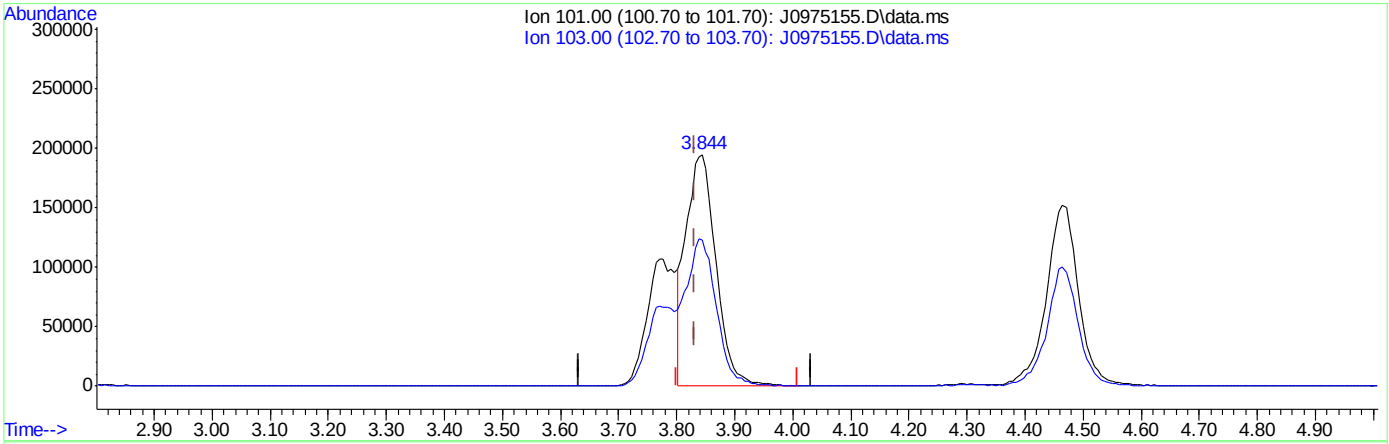
Sample Number: VJ5237-IC5237
Lab FileID: J0975155.D
Injection Time: 03/15/16 16:15
Method: SW846 8260B
Analyst approved: 03/16/16 09:56 Darshna Patel
Supervisor approved: 03/16/16 15:48 Melissa Mangual

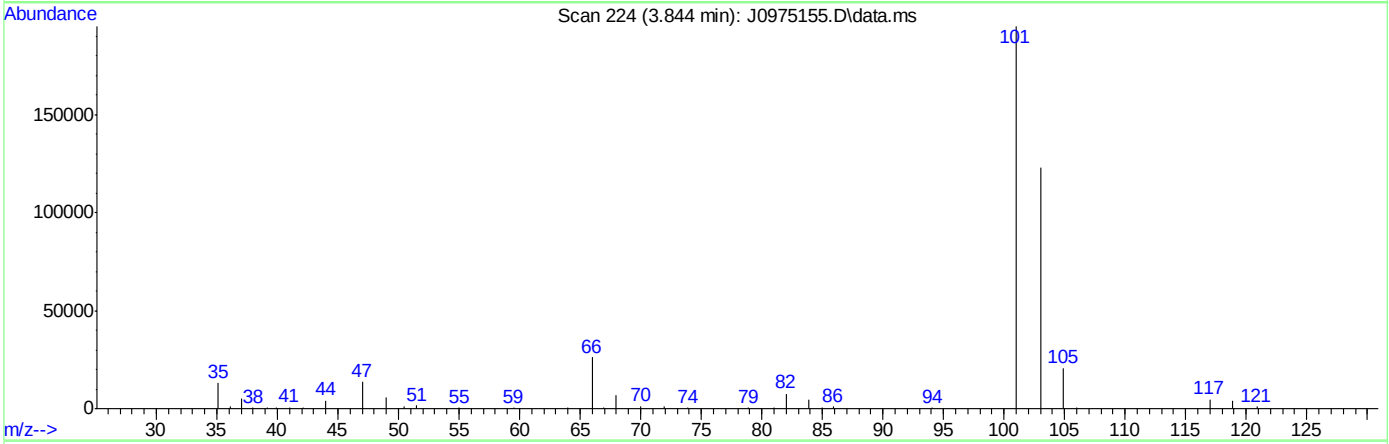
Parameter	CAS	Sig#	R.T. (min.)	Reason
Trichlorofluoromethane	75-69-4		3.84	Split peak
Ethyl Alcohol	64-17-5		4.29	Poor instrument integration
Carbon Tetrachloride	56-23-5		6.93	Overlapping peak

Quantitation Report (Qedit)

Data Path : C:\msdchem\2\data\031516\
Data File : J0975155.D
Acq On : 15 Mar 2016 4:15 pm
Operator : DARSHNAP
Sample : IC5237-6 Inst : MSVOA6
Misc : MS33279,VJ5237,,,,,
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Mar 16 08:17:36 2016
Quant Method : C:\msdchem\2\methods\MSJ031516.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Tue Mar 15 07:56:34 2016
Response via : Initial Calibration





TIC: J0975155.D\data.ms

(8) Trichlorofluoromethane ( )

3.844min (+0.012) 47.92ug/L

response 700090

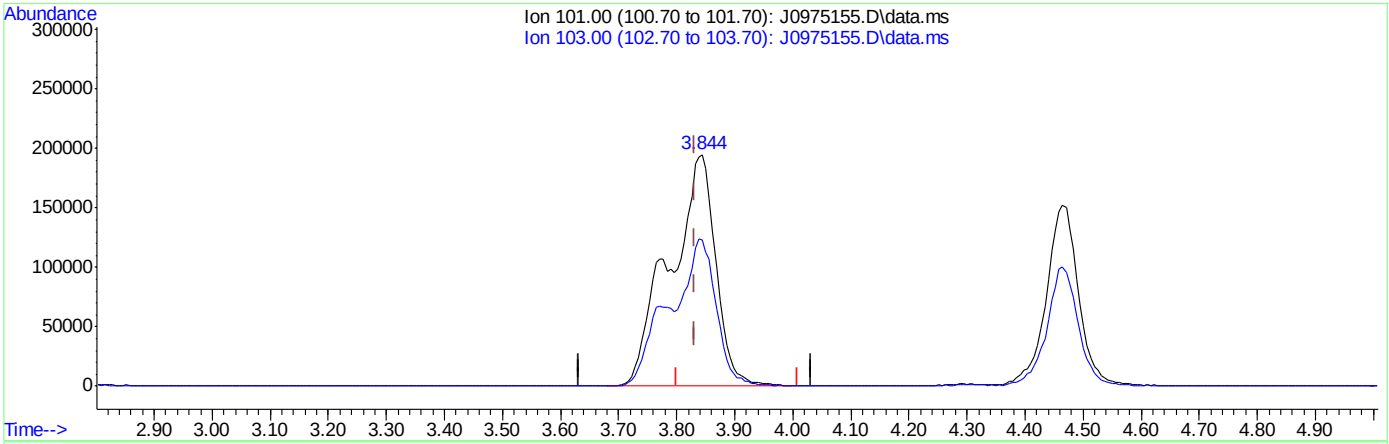
Ion	Exp%	Act%
101.00	100	100
103.00	63.50	62.84
0.00	0.00	0.00
0.00	0.00	0.00

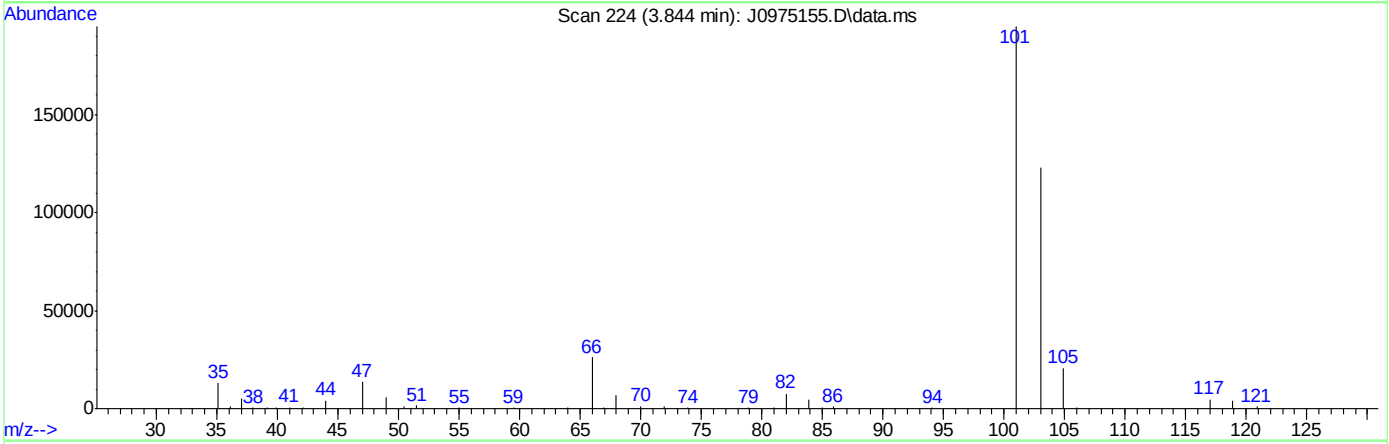
J0975155.D edits: Trichlorofluoromethane

Quantitation Report (Qedit)

Data Path : C:\msdchem\2\data\031516\
Data File : J0975155.D
Acq On : 15 Mar 2016 4:15 pm
Operator : DARSHNAP
Sample : IC5237-6 Inst : MSVOA6
Misc : MS33279,VJ5237,,,,,
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Mar 16 08:17:36 2016
Quant Method : C:\msdchem\2\methods\MSJ031516.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Tue Mar 15 07:56:34 2016
Response via : Initial Calibration





TIC: J0975155.D\data.ms

(8) Trichlorofluoromethane ( )

3.844min (+0.012) 73.47ug/L m

response 1073506

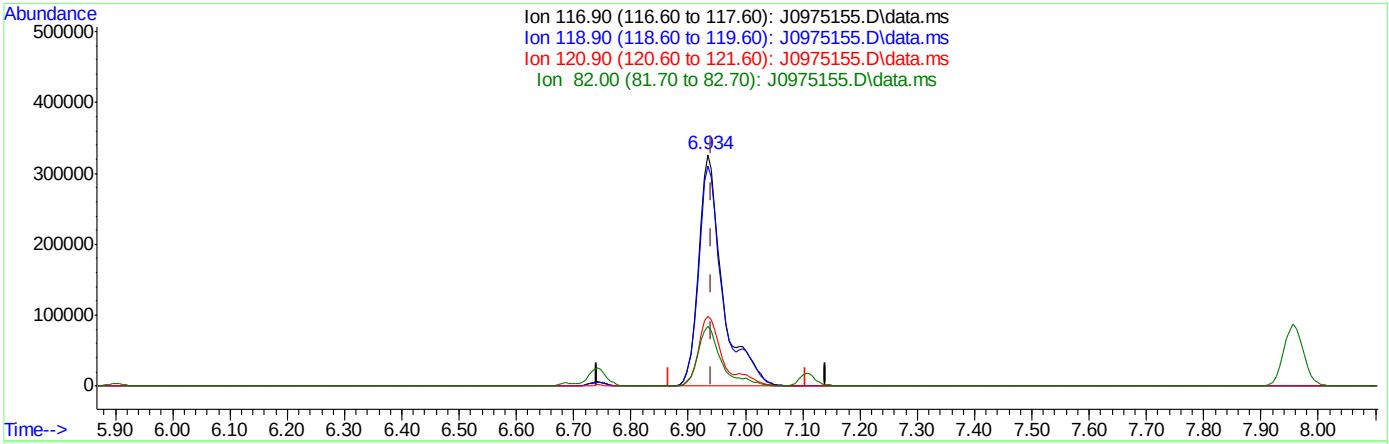
Ion	Exp%	Act%
101.00	100	100
103.00	63.50	63.02
0.00	0.00	0.00
0.00	0.00	0.00

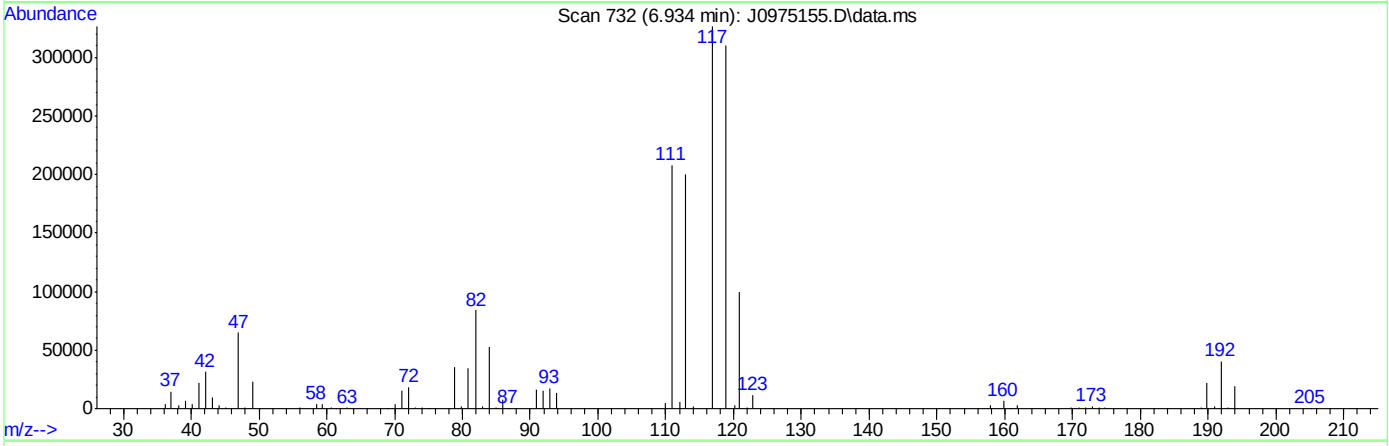
J0975155.D edits: Trichlorofluoromethane

Quantitation Report (Qedit)

Data Path : C:\msdchem\2\data\031516\
Data File : J0975155.D
Acq On : 15 Mar 2016 4:15 pm
Operator : DARSHNAP
Sample : IC5237-6 Inst : MSVOA6
Misc : MS33279,VJ5237,,,,,
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Mar 16 08:17:36 2016
Quant Method : C:\msdchem\2\methods\MSJ031516.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Tue Mar 15 07:56:34 2016
Response via : Initial Calibration





TIC: J0975155.D\data.ms

(37) Carbon Tetrachloride ( )

6.934min (-0.007) 81.22ug/L

response 957149

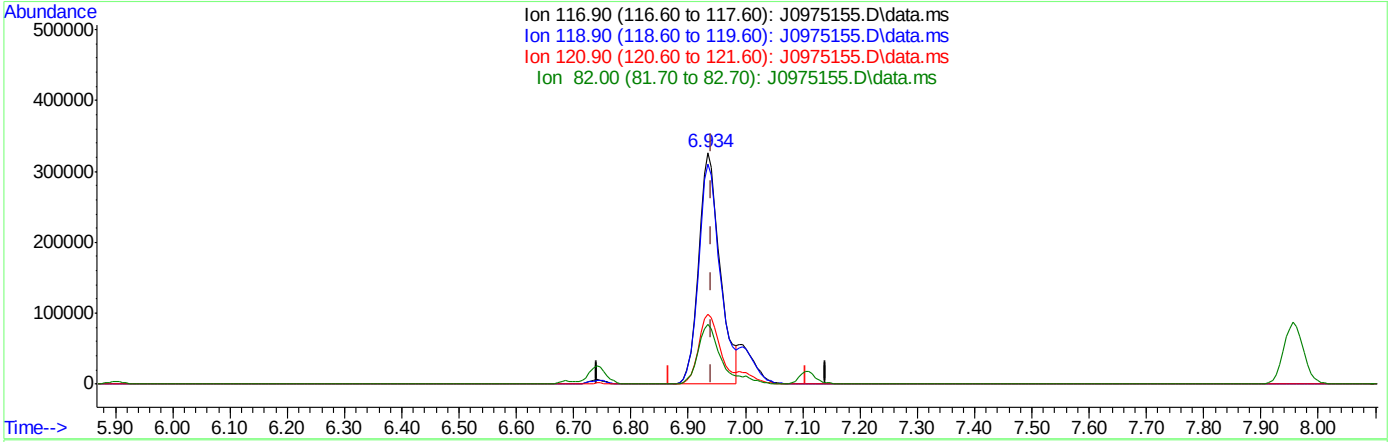
Ion	Exp%	Act%
116.90	100	100
118.90	96.80	94.95
120.90	31.80	30.39
82.00	25.40	25.70

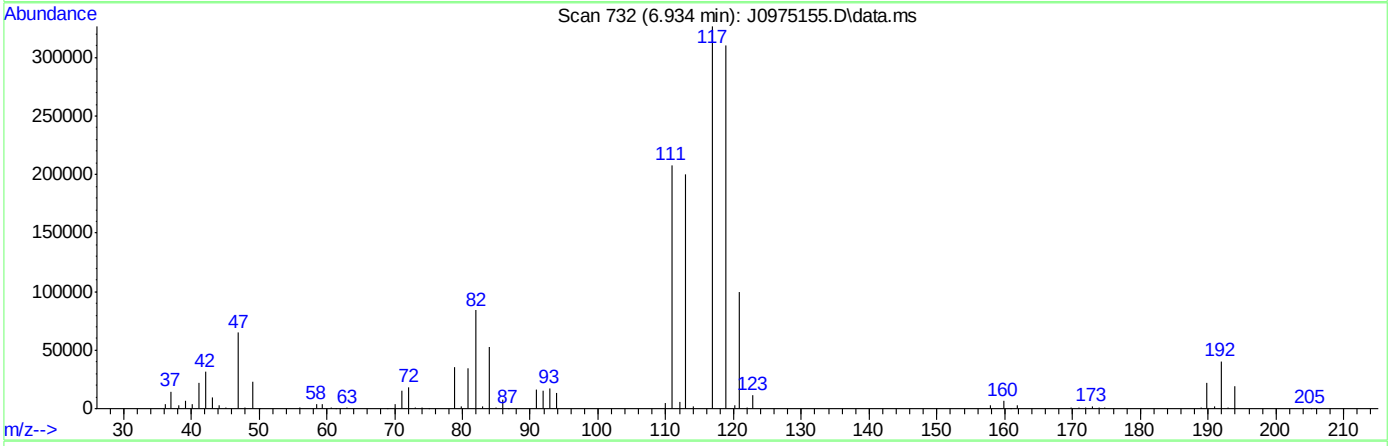
J0975155.D edits: Carbon Tetrachloride

Quantitation Report (Qedit)

Data Path : C:\msdchem\2\data\031516\
Data File : J0975155.D
Acq On : 15 Mar 2016 4:15 pm
Operator : DARSHNAP
Sample : IC5237-6 Inst : MSVOA6
Misc : MS33279,VJ5237,,,,,
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Mar 16 08:17:36 2016
Quant Method : C:\msdchem\2\methods\MSJ031516.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Tue Mar 15 07:56:34 2016
Response via : Initial Calibration





TIC: J0975155.D\data.ms

(37) Carbon Tetrachloride ( )

6.934min (-0.007) 71.73ug/L m

response 845243

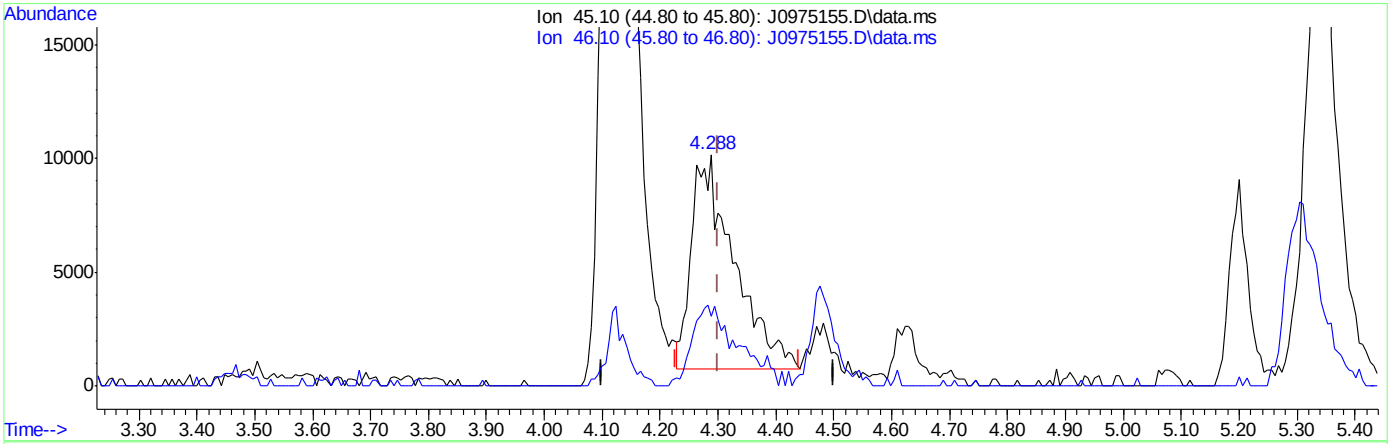
Ion	Exp%	Act%
116.90	100	100
118.90	96.80	94.95
120.90	31.80	30.39
82.00	25.40	25.70

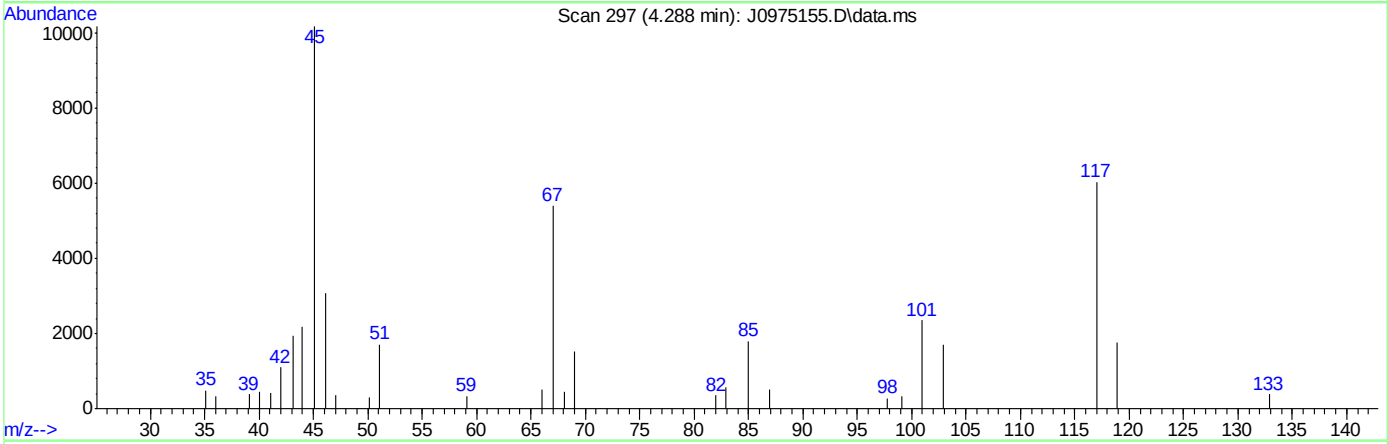
J0975155.D edits: Carbon Tetrachloride

Quantitation Report (Qedit)

Data Path : C:\msdchem\2\data\031516\
Data File : J0975155.D
Acq On : 15 Mar 2016 4:15 pm
Operator : DARSHNAP
Sample : IC5237-6 Inst : MSVOA6
Misc : MS33279,VJ5237,,,,,
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Mar 16 08:17:36 2016
Quant Method : C:\msdchem\2\methods\MSJ031516.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Tue Mar 15 07:56:34 2016
Response via : Initial Calibration





TIC: J0975155.D\data.ms

(107) Ethanol

4.288min (-0.012) 1148.43ug/L

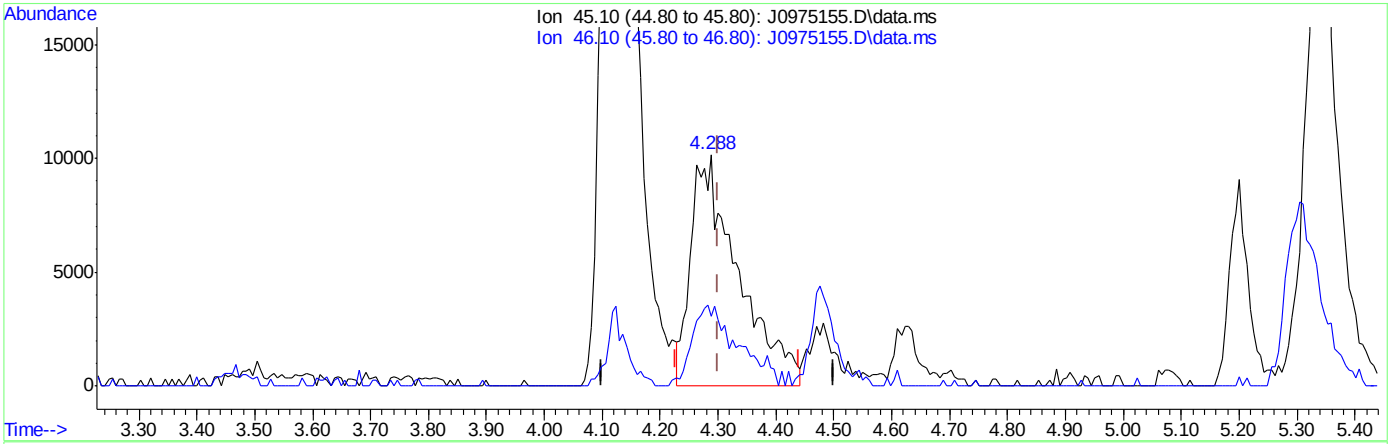
response 47664

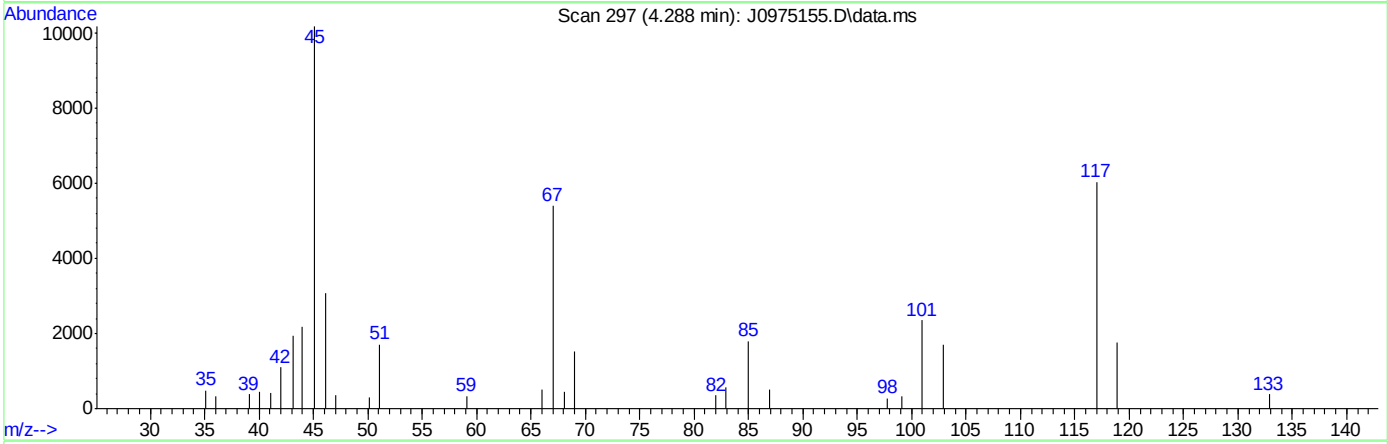
Ion	Exp%	Act%
45.10	100	100
46.10	28.20	28.80
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\2\data\031516\
Data File : J0975155.D
Acq On : 15 Mar 2016 4:15 pm
Operator : DARSHNAP
Sample : IC5237-6 Inst : MSVOA6
Misc : MS33279,VJ5237,,,,,
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Mar 16 08:17:36 2016
Quant Method : C:\msdchem\2\methods\MSJ031516.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Tue Mar 15 07:56:34 2016
Response via : Initial Calibration





TIC: J0975155.D\data.ms

(107) Ethanol

4.288min (-0.012) 1388.22ug/L m

response 57616

Ion	Exp%	Act%
45.10	100	100
46.10	28.20	30.28
0.00	0.00	0.00
0.00	0.00	0.00

J0975156.D

Manual Integrations APPROVED (compounds with "m" flag)

Melissa Mangual 03/16/16 15:48

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\031516\
Data File : J0975156.D
Acq On : 15 Mar 2016 4:39 pm
Operator : DARSHNAP
Sample : IC5237-7 Inst : MSVOA6
Misc : MS33279,VJ5237,,,,,
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Mar 16 08:23:48 2016
Quant Method : C:\msdchem\2\methods\MSJ031516.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Tue Mar 15 07:56:34 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	7.756	96	1677660	50.00	ug/L	0.00
56) Chlorobenzene-d5	10.846	117	1313937	50.00	ug/L	0.00
78) 1,4-Dichlorobenzene-d4	13.207	152	735618	50.00	ug/L	0.00
106) Tert Butyl Alcohol-d10	5.304	65	101995	250.00	ug/L	0.00
System Monitoring Compounds						
36) Dibromofluoromethane	6.928	113	428253	49.95	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 99.90%			
46) 1,2-Dichloroethane-d4	7.482	65	498305	48.11	ug/L	0.00
Spiked Amount 50.000	Range 79 - 125		Recovery = 96.22%			
57) Toluene-d8	9.301	98	1661771	47.79	ug/L	0.00
Spiked Amount 50.000	Range 85 - 112		Recovery = 95.58%			
79) 4-Bromofluorobenzene	12.057	95	651178	46.10	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 92.20%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	2.688	85	1114041	99.32	ug/L	98
3) Chloromethane	2.907	50	1139732	107.58	ug/L	98
4) Vinyl Chloride	3.053	62	1151714	100.12	ug/L	99
5) 1,3-Butadiene	3.041	54	823142	89.01	ug/L	99
6) Bromomethane	3.467	94	633782	Below Cal		98
7) Chloroethane	3.613	64	426457	Below Cal		98
8) Trichlorofluoromethane	3.838	101	1422690m	96.55	ug/L	
9) Ethyl Ether	4.118	59	665052	95.52	ug/L	95
10) 1,2-Dichlorotrifluoroe...	4.349	67	982810	99.79	ug/L	98
11) 1,1-Dichloroethene	4.398	61	1255822	100.97	ug/L	95
12) Freon 113	4.465	101	862244	103.81	ug/L	98
13) Carbon Disulfide	4.471	76	2701494	102.41	ug/L	97
14) Iodomethane	4.586	142	1402340	102.98	ug/L	99
15) Allyl chloride	4.921	41	1179323	100.72	ug/L	95
16) Methylene Chloride	5.043	49	1070637	100.32	ug/L	96
17) Acetone	5.073	58	238474	485.07	ug/L	96
18) Methyl acetate	5.195	74	510159	514.32	ug/L #	88
19) trans-1,2-Dichloroethene	5.225	61	1150951	95.06	ug/L	98
20) Hexane	5.298	56	722765	95.92	ug/L	97
21) Methyl Tert Butyl Ether	5.341	73	2289989	101.17	ug/L	76
22) Acetonitrile	5.590	40	307391	952.74	ug/L	94
23) Di-isopropyl ether	5.718	45	2611639	100.14	ug/L	98
24) Chloroprene	5.870	53	1282244	99.82	ug/L	97
25) 1,1-Dichloroethane	5.900	63	1517500	96.71	ug/L	99
26) Acrylonitrile	5.925	53	1057913	486.47	ug/L	99
27) ETBE	6.119	59	2687192	102.92	ug/L	99
28) Vinyl acetate	6.113	43	5725222	438.56	ug/L	93
29) cis-1,2-Dichloroethene	6.472	96	986636	98.59	ug/L	98
30) 2,2-Dichloropropane	6.606	77	1229663	104.45	ug/L	99
31) Bromochloromethane	6.685	128	440819	94.86	ug/L	98
32) Cyclohexane	6.734	56	1493354	106.58	ug/L	93
33) Chloroform	6.740	83	1662786	97.08	ug/L	97
34) Ethyl acetate	6.807	43	2494873	478.48	ug/L	98

Quantitation Report (QT Reviewed)

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Data File : J0975156.D
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Misc : MS33279,VJ5237,,,,,
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Mar 16 08:23:48 2016
Quant Method : C:\msdchem\2\methods\MSJ031516.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Tue Mar 15 07:56:34 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
35) Tetrahydrofuran	6.922	42	141622	92.52	ug/L	96
37) Carbon Tetrachloride	6.935	117	1240589m	104.39	ug/L	
38) 1,1,1-Trichloroethane	6.995	97	1496888	103.86	ug/L	98
39) 2-Butanone	7.026	43	1085834	476.16	ug/L	99
40) 1,1-Dichloropropene	7.105	75	1191218	99.78	ug/L	97
41) tert-Butyl Formate	7.190	59	5144797	964.23	ug/L	96
42) Propionitrile	7.336	54	751362	947.07	ug/L	95
43) Methacrylonitrile	7.366	41	3085566	985.97	ug/L	95
44) Benzene	7.360	78	3537446	97.27	ug/L	99
45) TAME	7.433	73	2430907	105.58	ug/L	97
47) 1,2-Dichloroethane	7.549	62	1159083	92.33	ug/L	99
48) Trichloroethene	7.938	95	938979	97.90	ug/L	98
49) Methylcyclohexane	7.957	83	1648708	108.90	ug/L	98
50) Dibromomethane	8.358	93	503424	100.88	ug/L	99
51) 1,2-Dichloropropane	8.449	63	890414	99.51	ug/L	99
52) Bromodichloromethane	8.498	83	1197814	103.92	ug/L	98
53) Methyl methacrylate	8.589	41	499600	103.72	ug/L	96
54) 2-Chloroethyl vinyl ether	9.009	63	2357081	520.45	ug/L	97
55) cis-1,3-Dichloropropene	9.112	75	1392882	107.12	ug/L	97
58) Toluene	9.356	91	3511420	97.88	ug/L	92
59) 2-Nitropropane	9.557	41	742165	463.29	ug/L	98
60) 4-Methyl-2-pentanone	9.672	43	2582624	450.69	ug/L	93
61) trans-1,3-Dichloropropene	9.739	75	1174760	103.87	ug/L	96
62) Tetrachloroethene	9.757	166	1098957	98.27	ug/L	99
63) Ethyl methacrylate	9.836	69	951549	96.29	ug/L	97
64) 1,1,2-Trichloroethane	9.903	83	612697	94.81	ug/L	99
65) Dibromochloromethane	10.104	129	838584	98.24	ug/L	98
66) 1,3-Dichloropropane	10.183	76	1234537	93.41	ug/L	97
67) 1,2-Dibromoethane	10.360	107	705132	100.10	ug/L	99
68) 2-hexanone	10.487	43	1797070	461.06	ug/L	98
69) 1-Chlorohexane	10.798	91	1201715	99.52	ug/L	96
70) Ethylbenzene	10.865	91	3913054	100.03	ug/L	85
71) Chlorobenzene	10.865	112	2454813	98.17	ug/L	94
72) 1,1,1,2-Tetrachloroethane	10.913	131	865611	102.87	ug/L	98
73) m,p-Xylene	10.998	91	5199315	206.12	ug/L	71
74) o-Xylene	11.436	91	3274848	95.09	ug/L	92
75) Styrene	11.485	104	2597936	102.05	ug/L	94
76) Bromoform	11.552	173	526813	104.07	ug/L	97
77) Isopropylbenzene	11.741	105	3763480	101.47	ug/L	88
80) cis-1,4-Dichloro-2-butene	12.087	53	246701	127.83	ug/L	93
81) n-Propylbenzene	12.160	91	4262827	83.09	ug/L	84
82) Bromobenzene	12.185	156	1120243	94.09	ug/L	98
83) 1,1,2,2-Tetrachloroethane	12.221	83	876296	100.43	ug/L	99
84) 1,3,5-Trimethylbenzene	12.343	105	3530308	92.42	ug/L	87
85) 2-Chlorotoluene	12.355	91	3292953	88.64	ug/L	90
86) trans-1,4-Dichloro-2-B...	12.404	53	229741	110.96	ug/L	90
87) 1,2,3-Trichloropropane	12.385	110	229231	95.58	ug/L	99
88) Cyclohexanone	12.446	55	67015	458.36	ug/L	91
89) 4-Chlorotoluene	12.519	91	3036759	89.04	ug/L	91
90) a-Methyl Styrene	12.611	118	1117515	104.79	ug/L	98

Quantitation Report (QT Reviewed)

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Data File : J0975156.D
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Sample : IC5237-7 Inst : MSVOA6
Misc : MS33279,VJ5237,,,,,
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Mar 16 08:23:48 2016
Quant Method : C:\msdchem\2\methods\MSJ031516.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Tue Mar 15 07:56:34 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
91) tert-Butylbenzene	12.690	91	2134042	94.76	ug/L		96
92) 1,2,4-Trimethylbenzene	12.750	105	3474573	90.84	ug/L		89
93) Pentachloroethane	12.738	167	615420	95.31	ug/L		98
94) sec-Butylbenzene	12.872	105	4048307	88.96	ug/L		85
95) 4-Isopropyltoluene	13.000	119	3526930	93.03	ug/L		87
96) 1,3-Dichlorobenzene	13.134	146	1945931	95.46	ug/L		96
97) 1,4-Dichlorobenzene	13.225	146	2004086	92.60	ug/L		97
98) n-Butylbenzene	13.432	92	2222818	102.37	ug/L	#	80
99) Benzyl Chloride	13.450	126	334209	107.65	ug/L	#	66
100) 1,2-Dichlorobenzene	13.645	146	1853570	100.08	ug/L		96
101) 1,2-Dibromo-3-Chloropr...	14.381	75	142658	151.74	ug/L		92
102) Hexachlorobutadiene	14.928	225	909906	134.80	ug/L		97
103) 1,2,4-Trichlorobenzene	14.971	180	1467882	166.70	ug/L		97
104) Naphthalene	15.257	128	2248808	168.08	ug/L		95
105) 1,2,3-Trichlorobenzene	15.427	180	1258478	178.93	ug/L		97
107) Ethanol	4.276	45	78200m	1767.82	ug/L		
108) acrolein	4.757	56	572291	508.87	ug/L		94
109) Tert Butyl Alcohol	5.383	59	462156	975.50	ug/L		96
110) tert Amyl alcohol	7.579	59	364351	1030.91	ug/L		97
111) Isobutyl alcohol	7.458	42	326293	2011.49	ug/L		95
112) 1,4-Dioxane	8.674	88	75690	1675.83	ug/L		93
113) 3,3-Dimethyl-1-butanol	10.439	57	2227836	4731.75	ug/L		97

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\031516\
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Acq On : 15 Mar 2016 4:39 pm
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Sample : IC5237-7 Inst : MSVOA6
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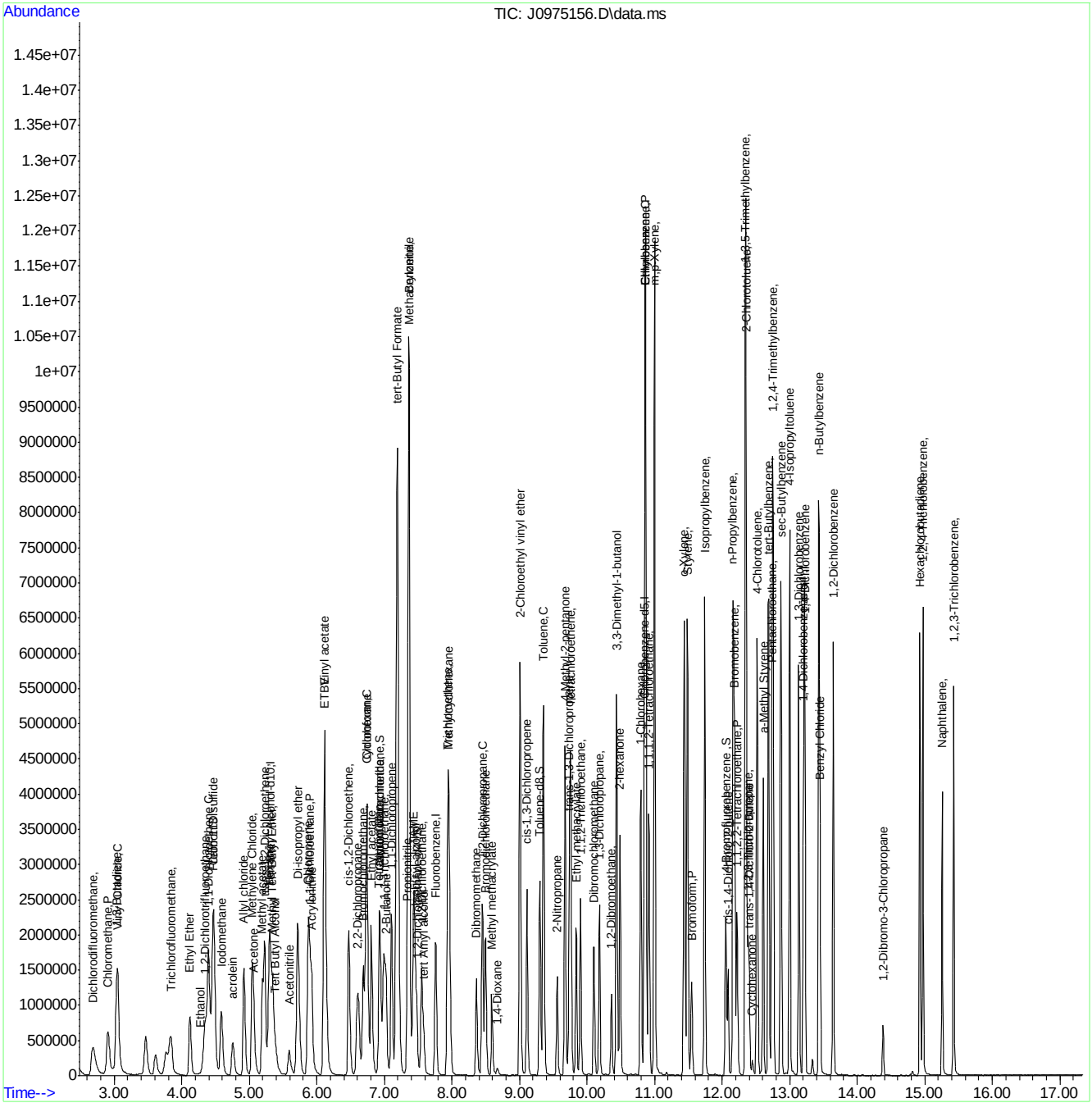
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Mar 16 08:23:48 2016
Quant Method : C:\msdchem\2\methods\MSJ031516.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Tue Mar 15 07:56:34 2016
Response via : Initial Calibration



Manual Integration Approval Summary

Sample Number: VJ5237-IC5237
Lab FileID: J0975156.D
Injection Time: 03/15/16 16:39
Method: SW846 8260B
Analyst approved: 03/16/16 09:56 Darshna Patel
Supervisor approved: 03/16/16 15:48 Melissa Mangual

Parameter	CAS	Sig#	R.T. (min.)	Reason
Trichlorofluoromethane	75-69-4		3.84	Split peak
Ethyl Alcohol	64-17-5		4.28	Poor instrument integration
Carbon Tetrachloride	56-23-5		6.93	Overlapping peak

Quantitation Report (Qedit)

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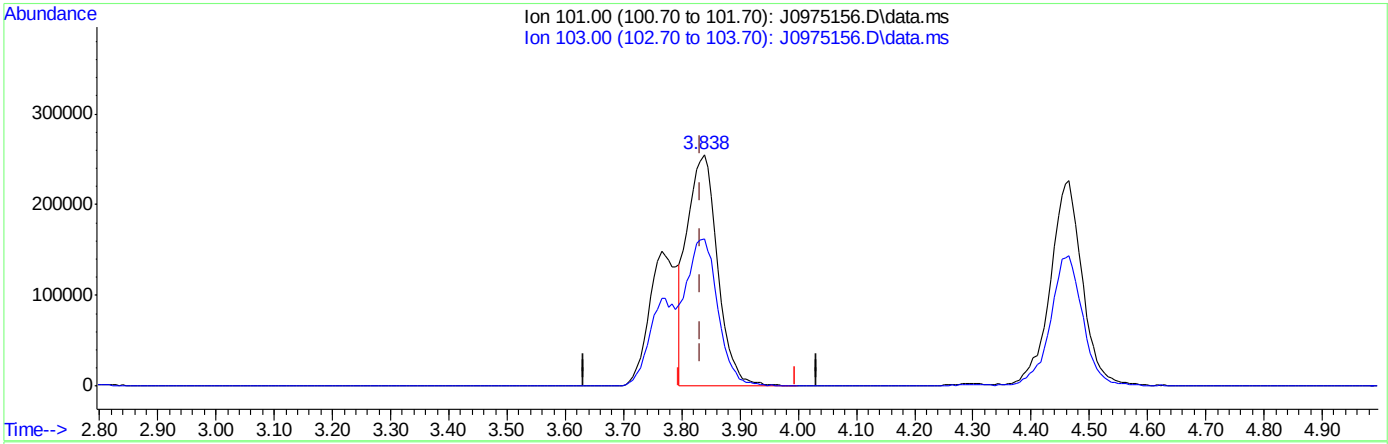

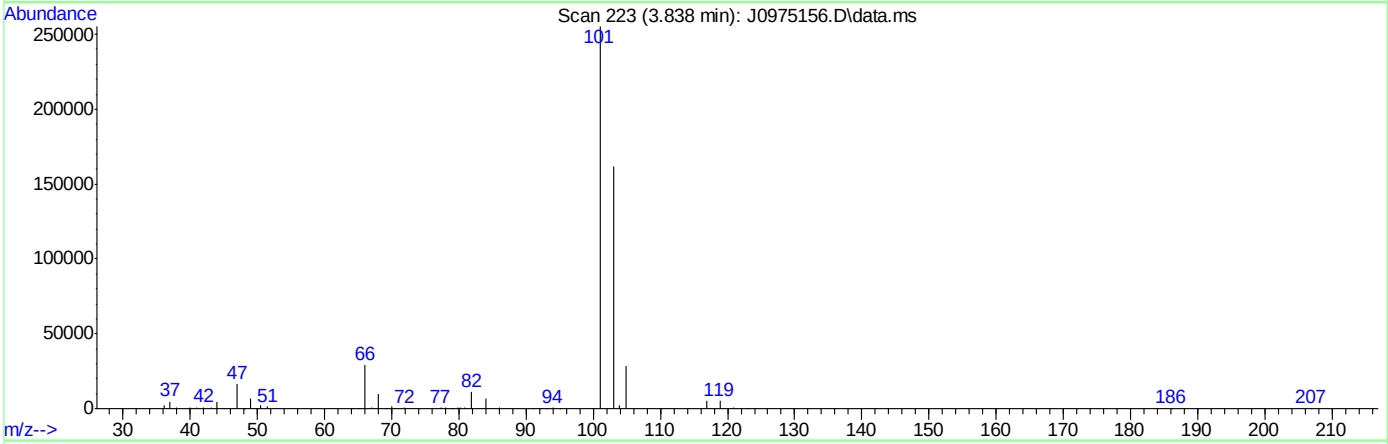

TIC: J0975156.D\data.ms

(8) Trichlorofluoromethane ( )

3.838min (+0.006) 62.31ug/L

response 918142

Ion	Exp%	Act%
101.00	100	100
103.00	63.50	63.35
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

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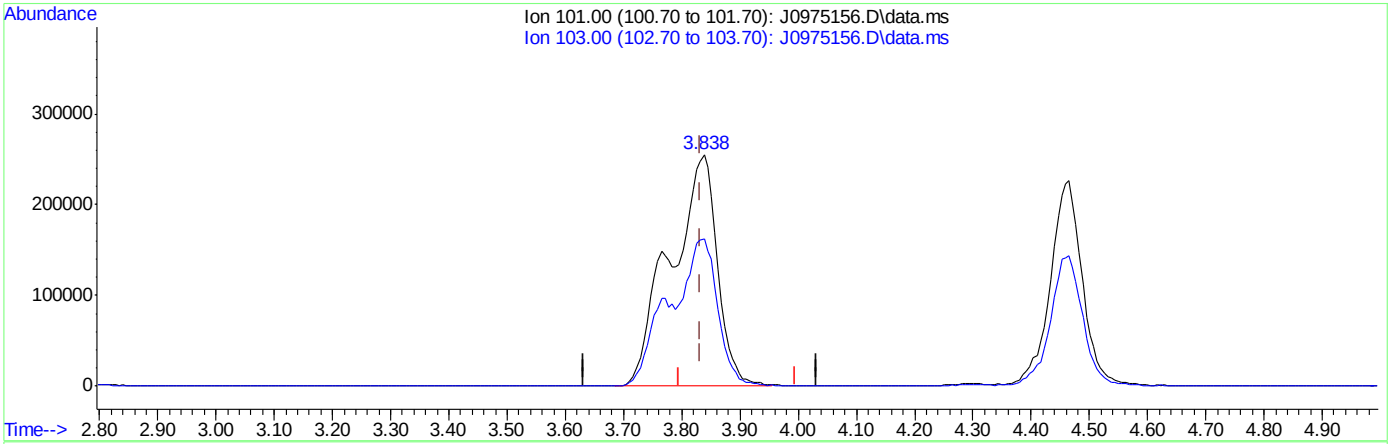

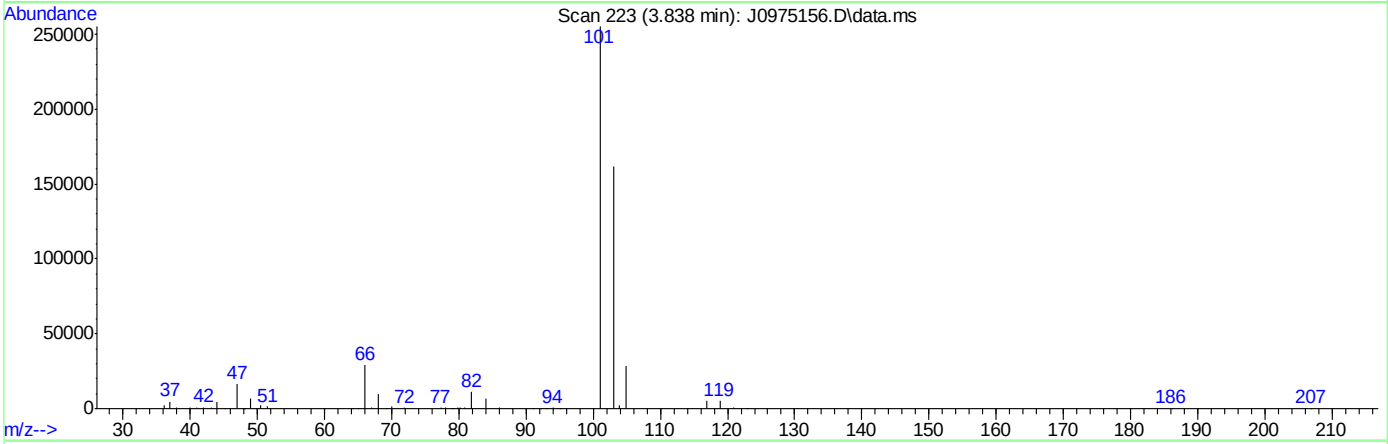

TIC: J0975156.D\data.ms

(8) Trichlorofluoromethane ( )

3.838min (+0.006) 96.55ug/L m

response 1422690

Ion	Exp%	Act%
101.00	100	100
103.00	63.50	63.42
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\2\data\031516\
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Acq On : 15 Mar 2016 4:39 pm
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Sample : IC5237-7 Inst : MSVOA6
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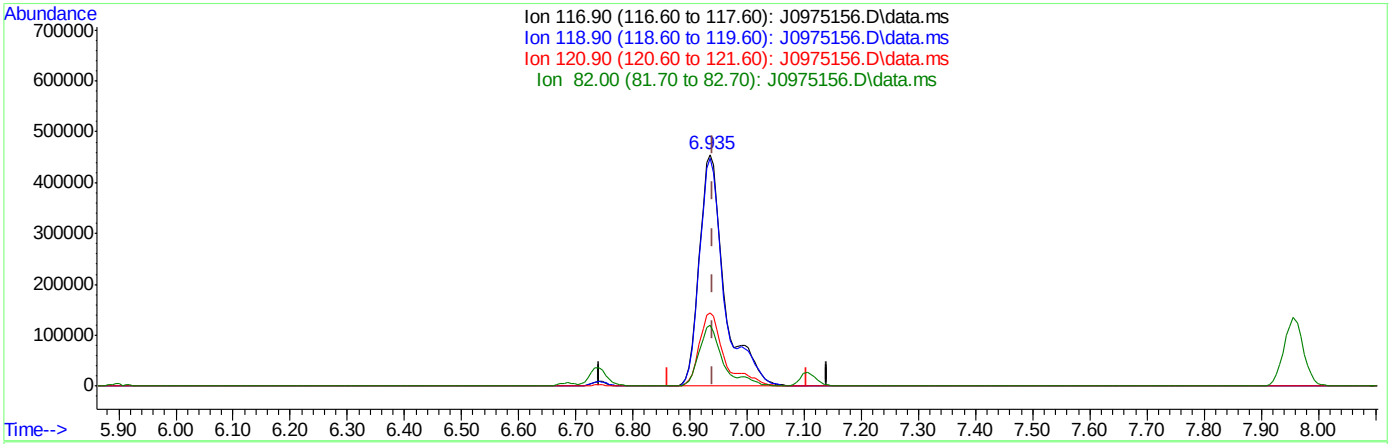

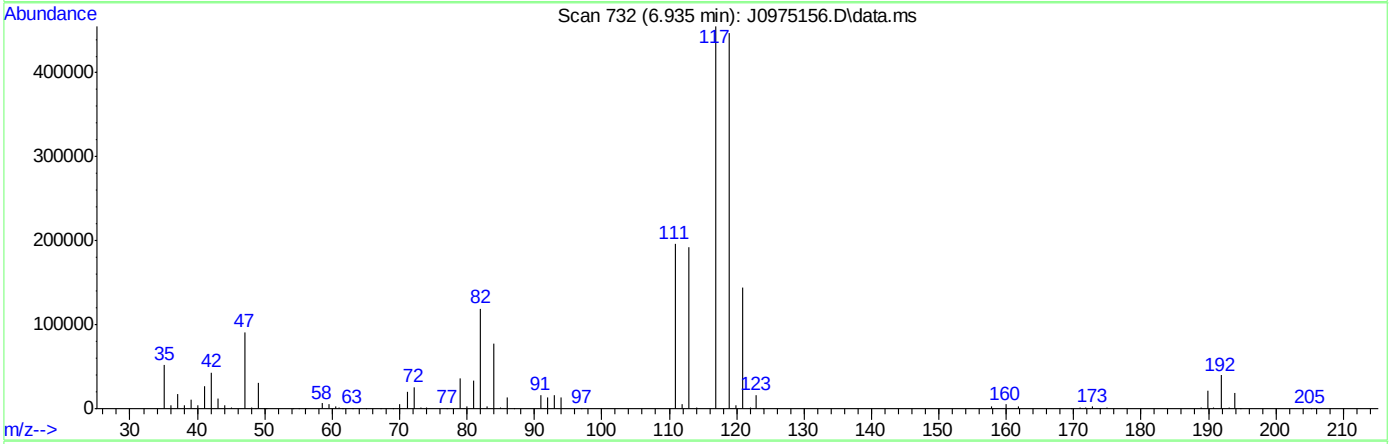

TIC: J0975156.D\data.ms

(37) Carbon Tetrachloride ( )

6.935min (-0.006) 118.07ug/L

response 1403127

Ion	Exp%	Act%
116.90	100	100
118.90	96.80	98.22
120.90	31.80	31.58
82.00	25.40	26.25

J0975156.D edits: Carbon Tetrachloride

Quantitation Report (Qedit)

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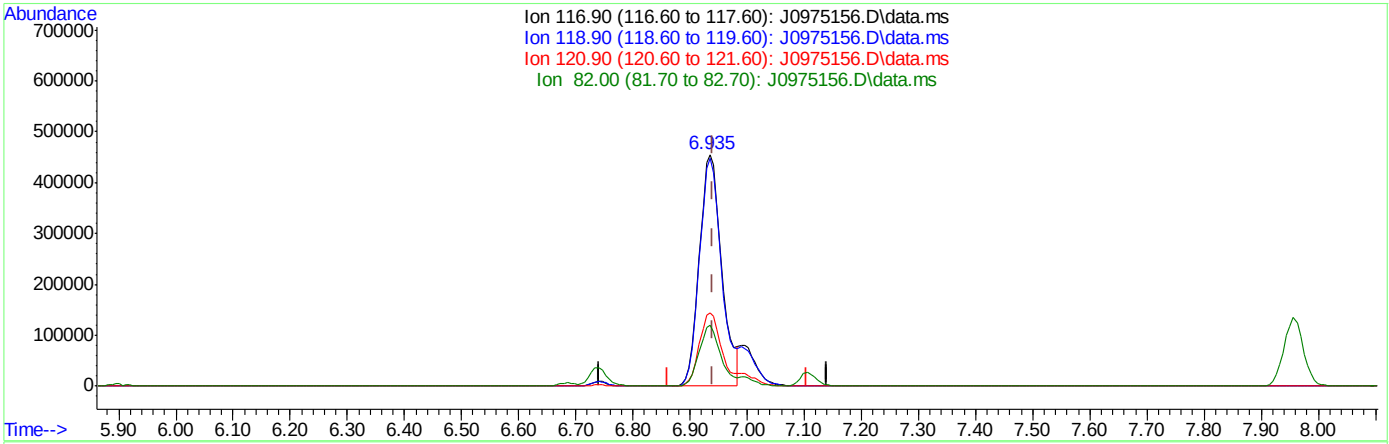

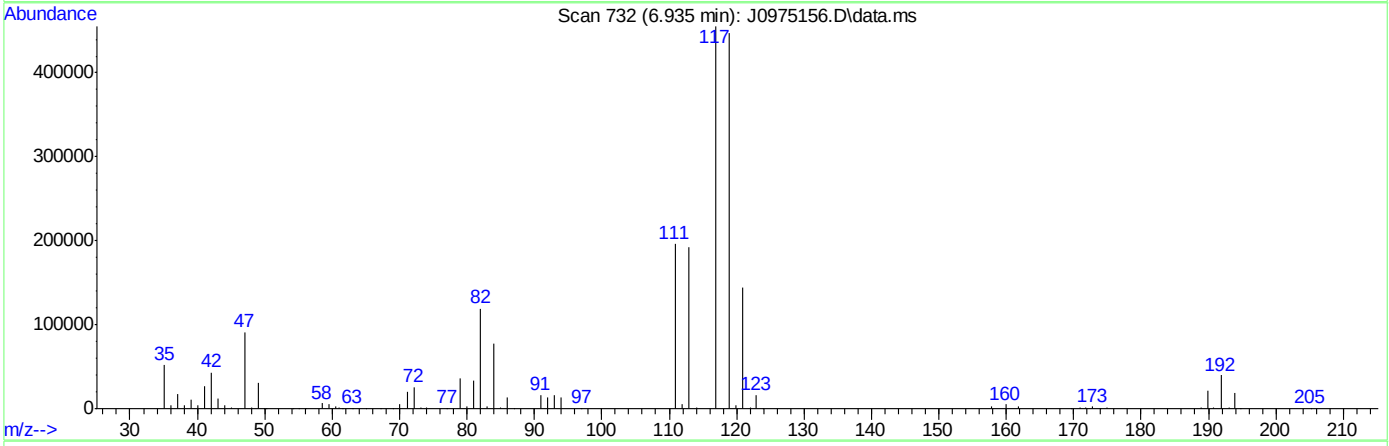

TIC: J0975156.D\data.ms

(37) Carbon Tetrachloride ( )

6.935min (-0.006) 104.39ug/L m

response 1240589

Ion	Exp%	Act%
116.90	100	100
118.90	96.80	98.22
120.90	31.80	31.58
82.00	25.40	26.25

Quantitation Report (Qedit)

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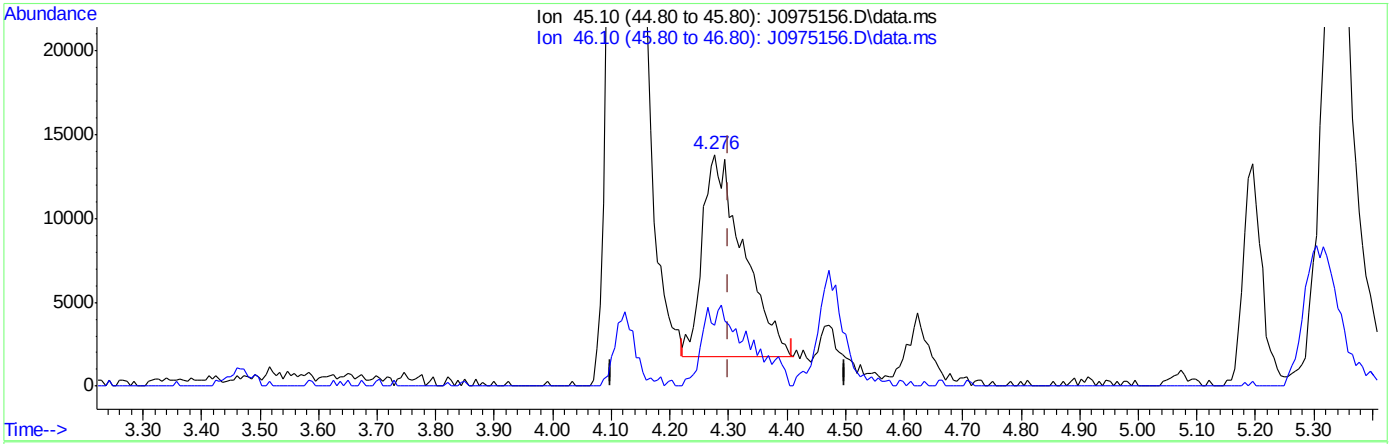

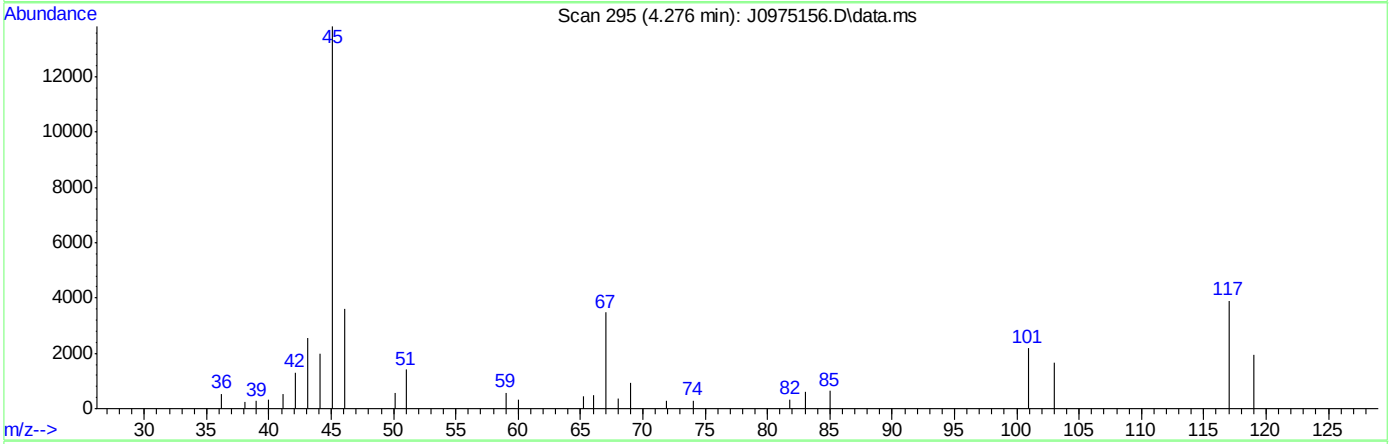

TIC: J0975156.D\data.ms

(107) Ethanol

4.276min (-0.024) 1320.44ug/L

response 58410

Ion	Exp%	Act%
45.10	100	100
46.10	28.20	29.86
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

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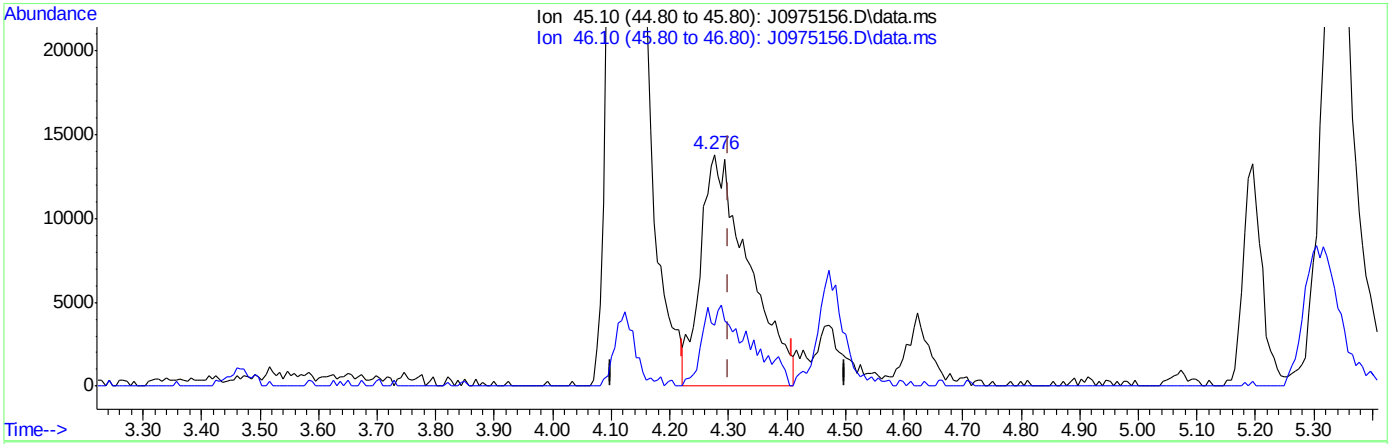
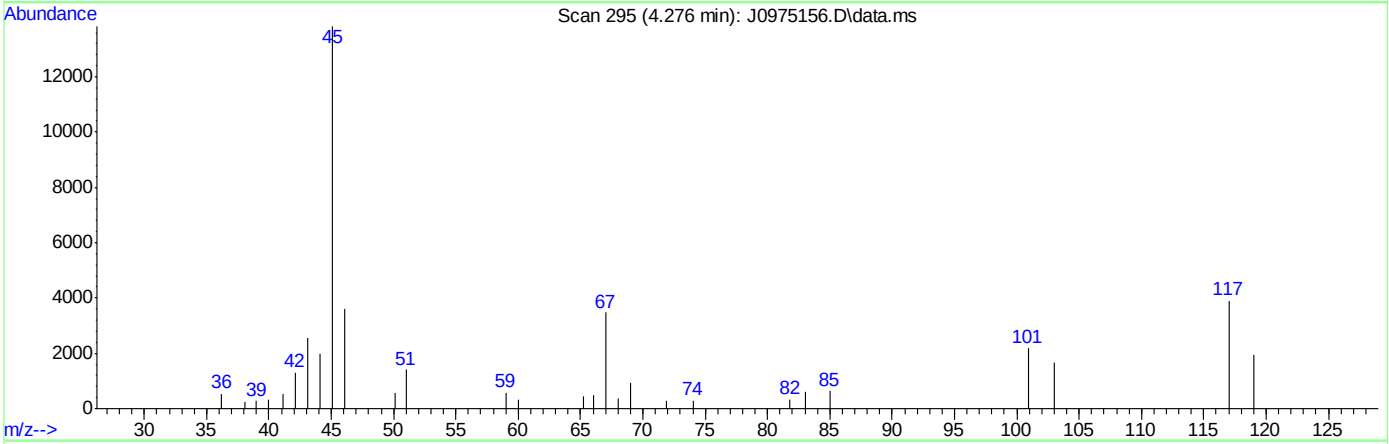
Response via : Initial Calibration





TIC: J0975156.D\data.ms

(107) Ethanol

4.276min (-0.024) 1767.82ug/L m

response 78200

Ion	Exp%	Act%
45.10	100	100
46.10	28.20	26.08
0.00	0.00	0.00
0.00	0.00	0.00

J0975156.D edits: Ethanol

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\031516\
Data File : J0975158.D
Acq On : 15 Mar 2016 5:26 pm
Operator : DARSHNAP
Sample : ICV5237-5 Inst : MSVOA6
Misc : MS33279,VJ5237,,,,,
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Mar 16 08:39:04 2016
Quant Method : C:\msdchem\2\methods\MSJ031516.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Wed Mar 16 08:34:48 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	7.756	96	1639270	50.00	ug/L	0.00
56) Chlorobenzene-d5	10.846	117	1249756	50.00	ug/L	0.00
78) 1,4-Dichlorobenzene-d4	13.207	152	712475	50.00	ug/L	0.00
106) Tert Butyl Alcohol-d10	5.292	65	88026	250.00	ug/L	0.00
System Monitoring Compounds						
36) Dibromofluoromethane	0.000	113	0d	0.00	ug/L	
Spiked Amount 50.000	Range 83 - 118		Recovery = 0.00%#			
46) 1,2-Dichloroethane-d4	7.482	65	499348	49.64	ug/L	0.00
Spiked Amount 50.000	Range 79 - 125		Recovery = 99.28%			
57) Toluene-d8	9.301	98	1616219	49.15	ug/L	0.00
Spiked Amount 50.000	Range 85 - 112		Recovery = 98.30%			
79) 4-Bromofluorobenzene	12.057	95	655632	50.88	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 101.76%			
Target Compounds						Qvalue
10) 1,2-Dichlorotrifluoroe...	4.355	67	376698	39.53	ug/L	98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

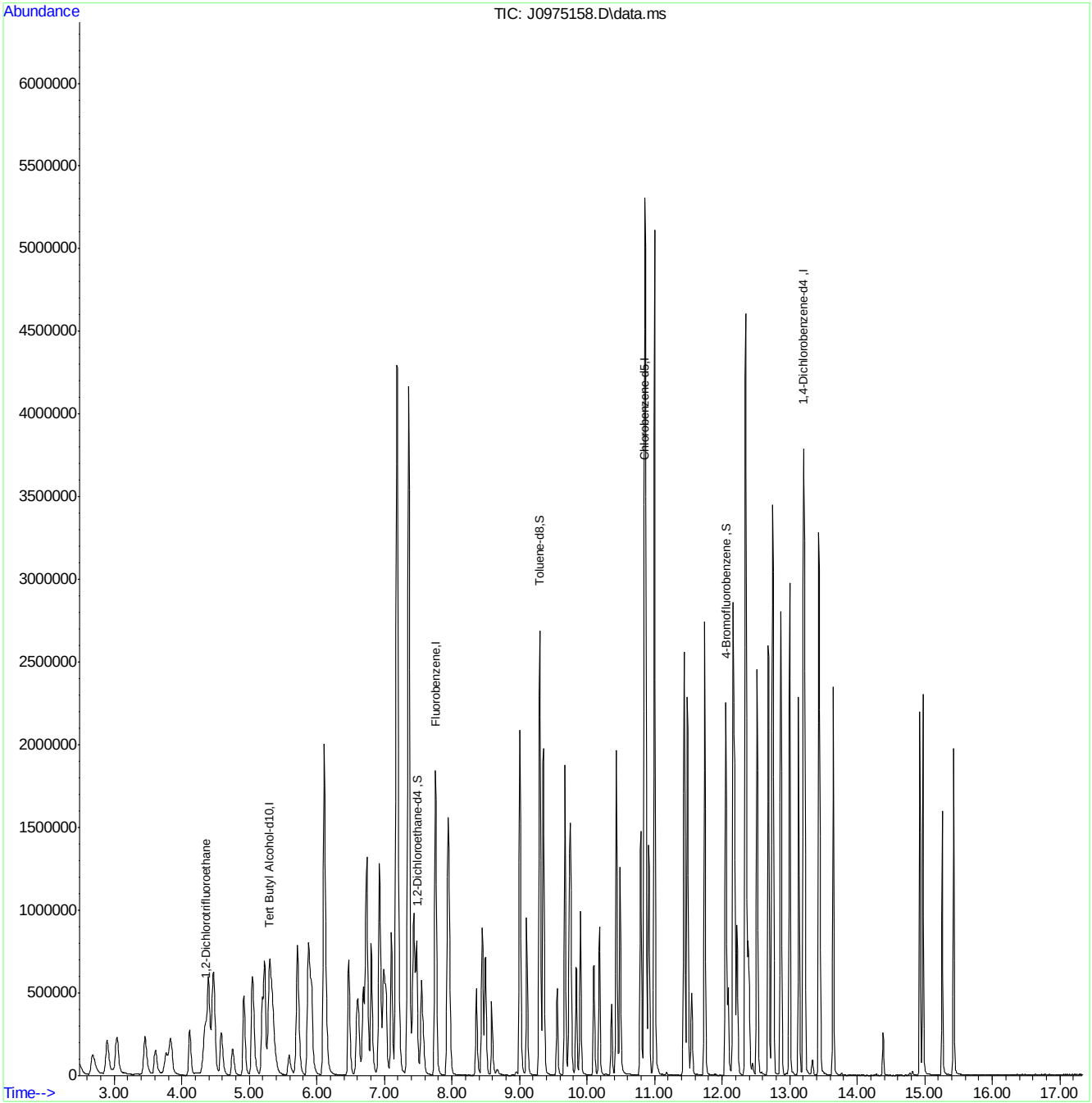
7.6.18

7

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\031516\
Data File : J0975158.D
Acq On : 15 Mar 2016 5:26 pm
Operator : DARSHNAP
Sample : ICV5237-5 Inst : MSVOA6
Misc : MS33279,VJ5237,,,,,
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Mar 16 08:39:04 2016
Quant Method : C:\msdchem\2\methods\MSJ031516.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Wed Mar 16 08:34:48 2016
Response via : Initial Calibration

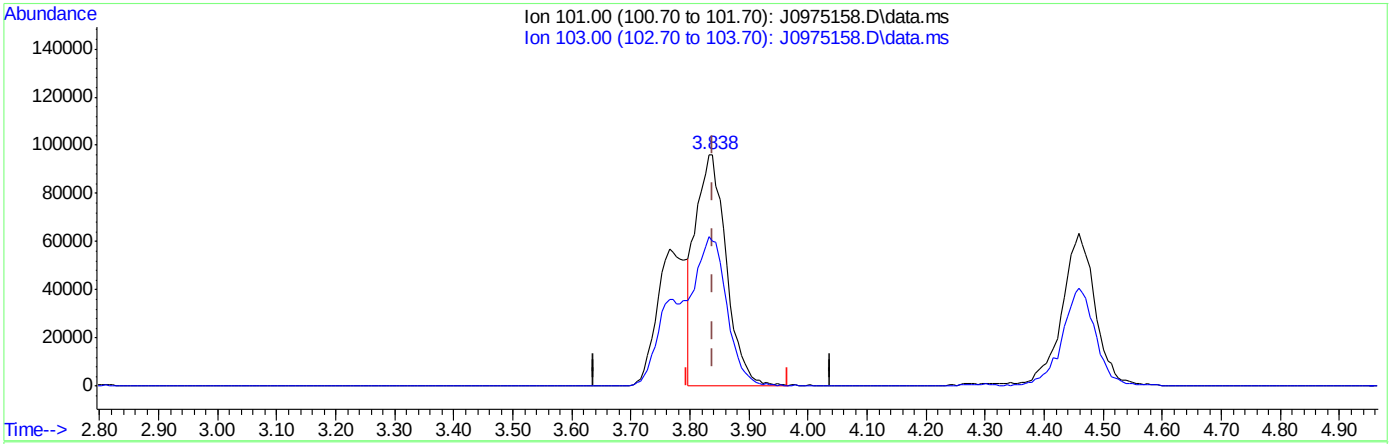


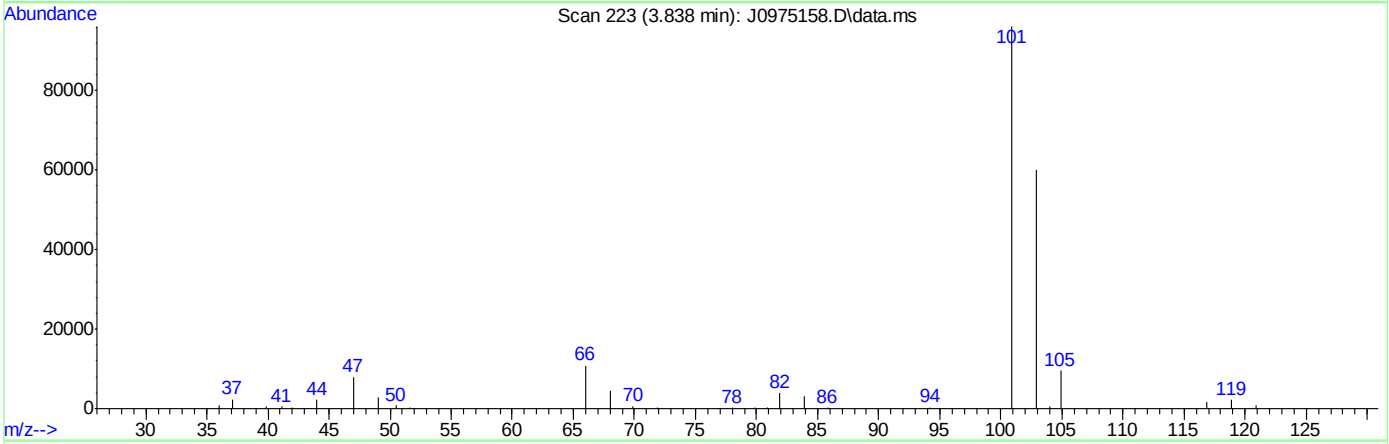
MSJ031516.M Wed Mar 16 09:49:38 2016 Page: 2

Quantitation Report (Qedit)

Data Path : C:\msdchem\2\data\031516\
Data File : J0975158.D
Acq On : 15 Mar 2016 5:26 pm
Operator : DARSHNAP
Sample : ICV5237-5 Inst : MSVOA6
Misc : MS33279,VJ5237,,,,,
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Mar 16 08:35:34 2016
Quant Method : C:\msdchem\2\methods\MSJ031516.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Wed Mar 16 08:34:48 2016
Response via : Initial Calibration





TIC: J0975158.D\data.ms

(8) Trichlorofluoromethane ( )

3.838min (-0.000) 25.41ug/L

response 348698

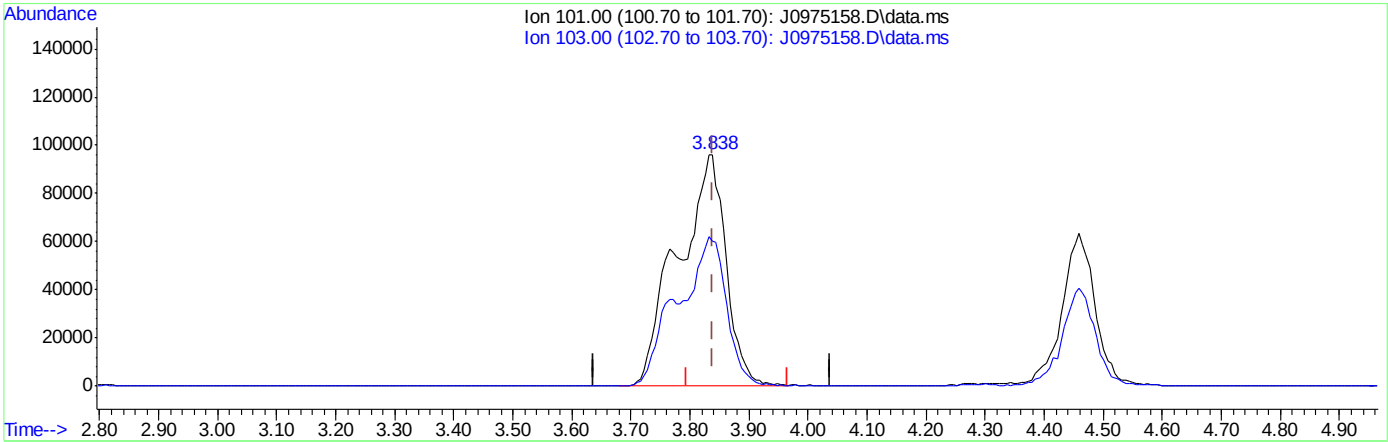
Ion	Exp%	Act%
101.00	100	100
103.00	63.50	62.38
0.00	0.00	0.00
0.00	0.00	0.00

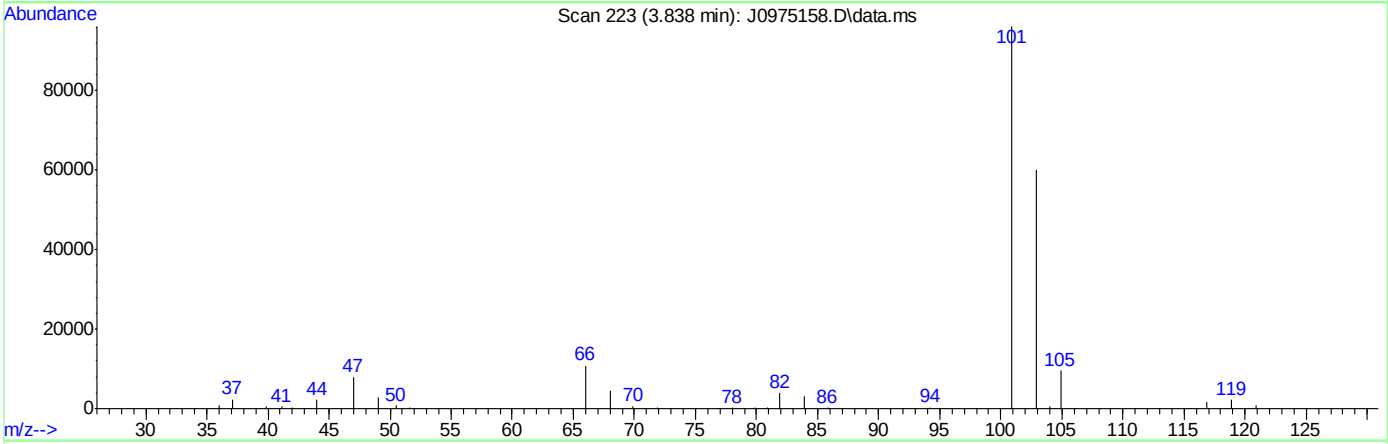
J0975158.D edits: Trichlorofluoromethane

Quantitation Report (Qedit)

Data Path : C:\msdchem\2\data\031516\
Data File : J0975158.D
Acq On : 15 Mar 2016 5:26 pm
Operator : DARSHNAP
Sample : ICV5237-5 Inst : MSVOA6
Misc : MS33279,VJ5237,,,,,
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Mar 16 08:35:34 2016
Quant Method : C:\msdchem\2\methods\MSJ031516.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Wed Mar 16 08:34:48 2016
Response via : Initial Calibration





TIC: J0975158.D\data.ms

(8) Trichlorofluoromethane ( )

3.838min (-0.000) 39.59ug/L m

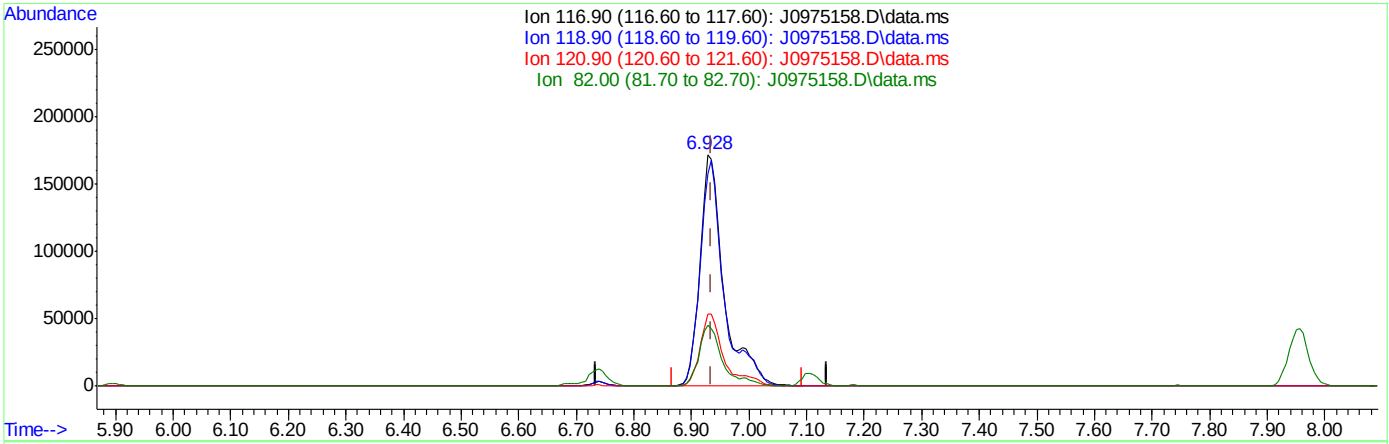
response 543281

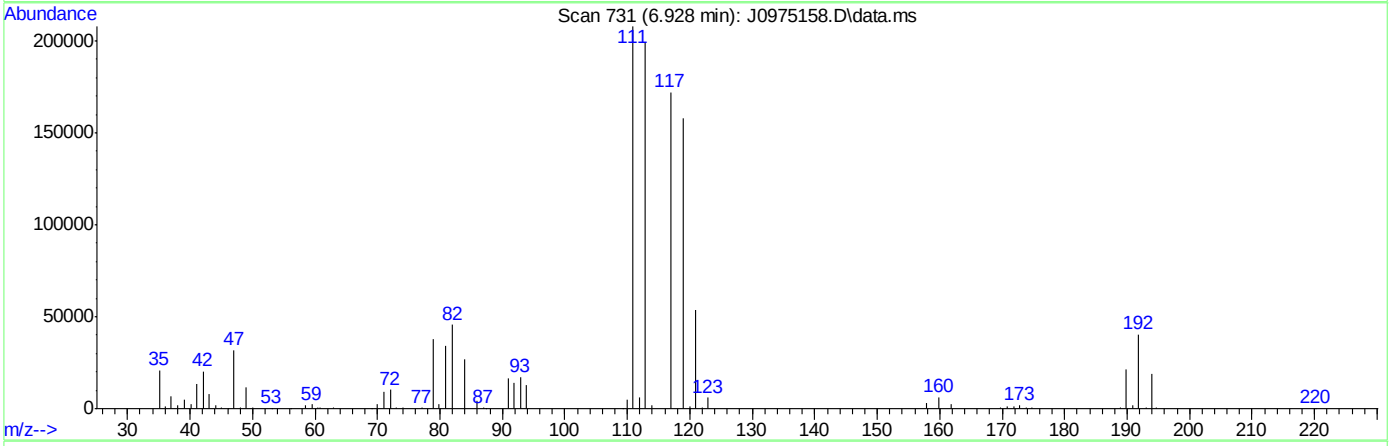
Ion	Exp%	Act%
101.00	100	100
103.00	63.50	62.54
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\2\data\031516\
Data File : J0975158.D
Acq On : 15 Mar 2016 5:26 pm
Operator : DARSHNAP
Sample : ICV5237-5 Inst : MSVOA6
Misc : MS33279,VJ5237,,,,,
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Mar 16 08:35:34 2016
Quant Method : C:\msdchem\2\methods\MSJ031516.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Wed Mar 16 08:34:48 2016
Response via : Initial Calibration





TIC: J0975158.D\data.ms

(37) Carbon Tetrachloride ( )

6.928min (-0.007) 45.07ug/L

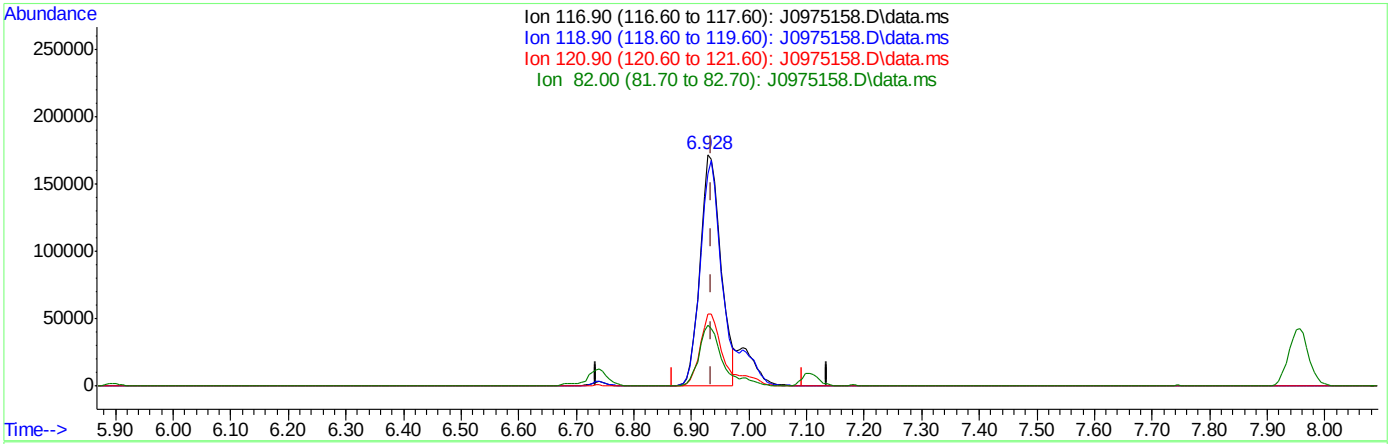
response 506180

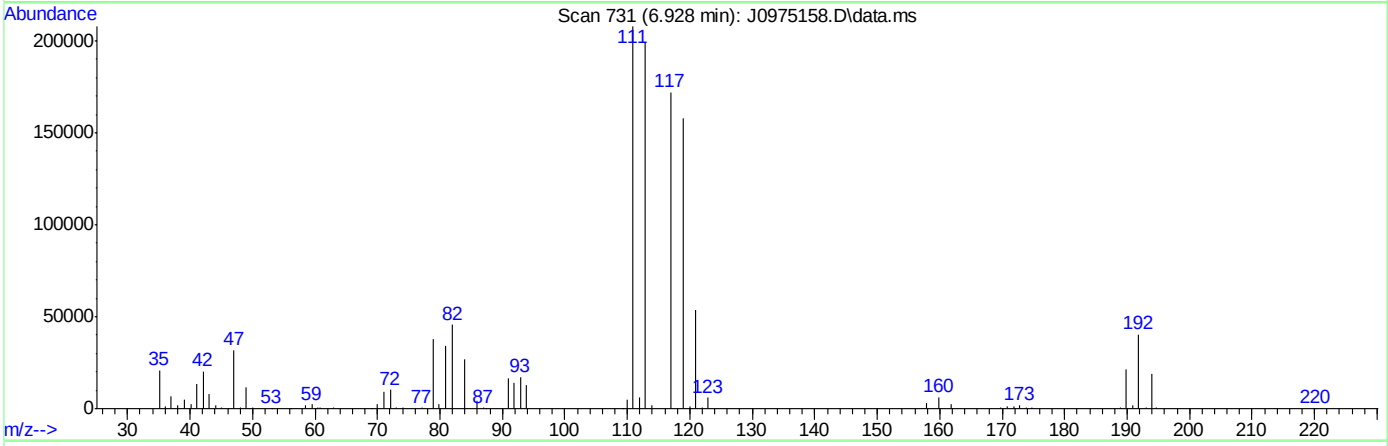
Ion	Exp%	Act%
116.90	100	100
118.90	96.80	91.71
120.90	31.80	31.05
82.00	25.40	26.52

Quantitation Report (Qedit)

Data Path : C:\msdchem\2\data\031516\
Data File : J0975158.D
Acq On : 15 Mar 2016 5:26 pm
Operator : DARSHNAP
Sample : ICV5237-5 Inst : MSVOA6
Misc : MS33279,VJ5237,,,,,
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Mar 16 08:35:34 2016
Quant Method : C:\msdchem\2\methods\MSJ031516.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Wed Mar 16 08:34:48 2016
Response via : Initial Calibration





TIC: J0975158.D\data.ms

(37) Carbon Tetrachloride ( )

6.928min (-0.007) 38.77ug/L m

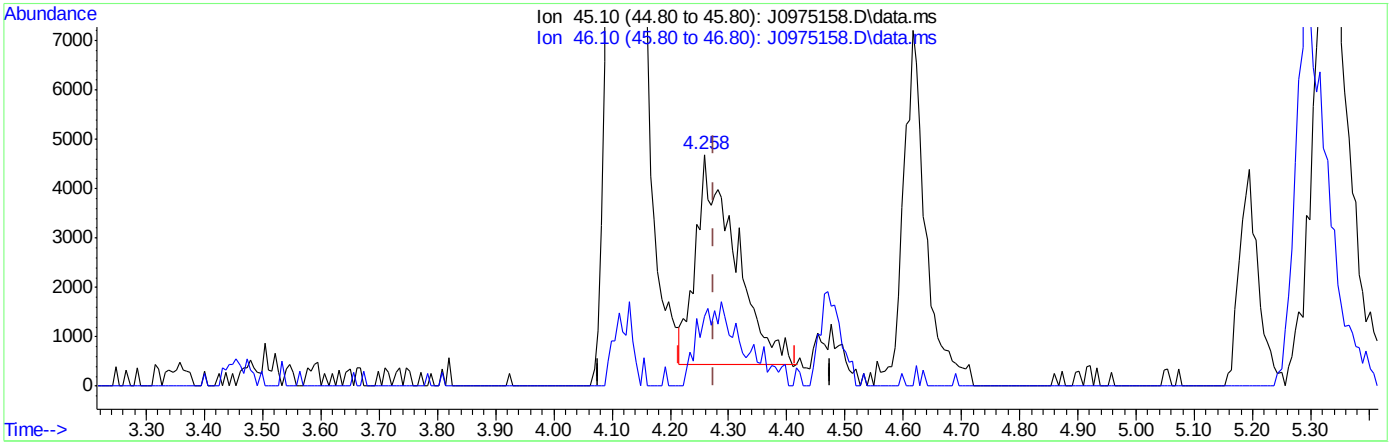
response 435379

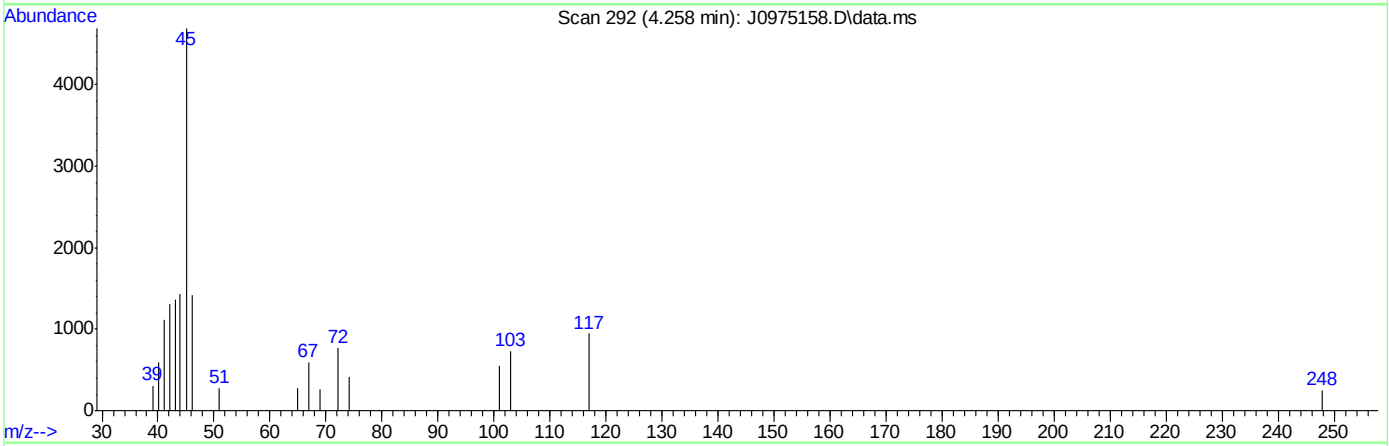
Ion	Exp%	Act%
116.90	100	100
118.90	96.80	91.71
120.90	31.80	31.05
82.00	25.40	26.52

Quantitation Report (Qedit)

Data Path : C:\msdchem\2\data\031516\
Data File : J0975158.D
Acq On : 15 Mar 2016 5:26 pm
Operator : DARSHNAP
Sample : ICV5237-5 Inst : MSVOA6
Misc : MS33279,VJ5237,,,,,
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Mar 16 08:35:34 2016
Quant Method : C:\msdchem\2\methods\MSJ031516.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Wed Mar 16 08:34:48 2016
Response via : Initial Calibration





TIC: J0975158.D\data.ms

(107) Ethanol

4.258min (-0.018) 482.59ug/L

response 19905

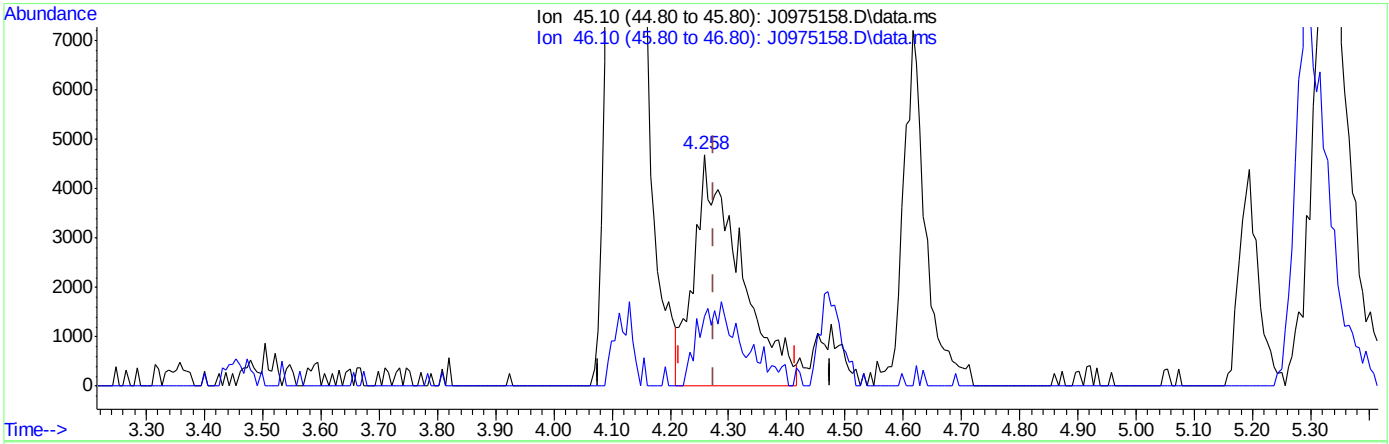
Ion	Exp%	Act%
45.10	100	100
46.10	28.20	33.25
0.00	0.00	0.00
0.00	0.00	0.00

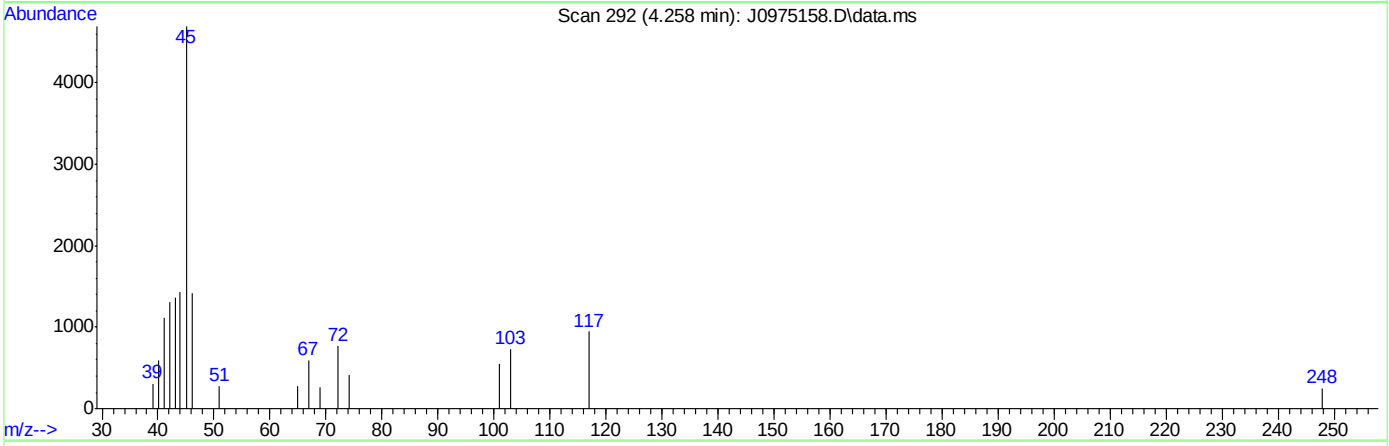
J0975158.D edits: Ethanol

Quantitation Report (Qedit)

Data Path : C:\msdchem\2\data\031516\
Data File : J0975158.D
Acq On : 15 Mar 2016 5:26 pm
Operator : DARSHNAP
Sample : ICV5237-5 Inst : MSVOA6
Misc : MS33279,VJ5237,,,,,
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Mar 16 08:35:34 2016
Quant Method : C:\msdchem\2\methods\MSJ031516.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Wed Mar 16 08:34:48 2016
Response via : Initial Calibration





TIC: J0975158.D\data.ms

(107) Ethanol

4.258min (-0.018) 633.21ug/L m

response 25660

Ion	Exp%	Act%
45.10	100	100
46.10	28.20	30.12
0.00	0.00	0.00
0.00	0.00	0.00

J0975158.D edits: Ethanol

Manual Integrations APPROVED (compounds with "m" flag)
Melissa Mangual 03/16/16 15:48

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\031516\
Data File : J0975159.D
Acq On : 15 Mar 2016 5:51 pm
Operator : DARSHNAP
Sample : ICV5237-5 Inst : MSVOA6
Misc : MS33279,VJ5237,,,,,
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Mar 16 09:50:27 2016
Quant Method : C:\msdchem\2\methods\MSJ031516.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Wed Mar 16 08:34:48 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	7.756	96	1689319	50.00	ug/L	0.00
56) Chlorobenzene-d5	10.846	117	1274772	50.00	ug/L	0.00
78) 1,4-Dichlorobenzene-d4	13.207	152	725111	50.00	ug/L	0.00
106) Tert Butyl Alcohol-d10	5.298	65	82619	250.00	ug/L	0.00
System Monitoring Compounds						
36) Dibromofluoromethane	6.928	113	432540	50.46	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 100.92%			
46) 1,2-Dichloroethane-d4	7.482	65	519342	50.10	ug/L	0.00
Spiked Amount 50.000	Range 79 - 125		Recovery = 100.20%			
57) Toluene-d8	9.301	98	1670418	49.81	ug/L	0.00
Spiked Amount 50.000	Range 85 - 112		Recovery = 99.62%			
79) 4-Bromofluorobenzene	12.057	95	665209	50.72	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 101.44%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	2.688	85	354259	34.07	ug/L	96
3) Chloromethane	2.901	50	387748	34.84	ug/L	95
4) Vinyl Chloride	3.041	62	425438	37.32	ug/L	99
6) Bromomethane	3.461	94	278051	34.53	ug/L	95
7) Chloroethane	3.613	64	217628	38.56	ug/L	97
8) Trichlorofluoromethane	3.844	101	553847m	39.16	ug/L	
9) Ethyl Ether	4.124	59	256246	39.23	ug/L	99
11) 1,1-Dichloroethene	4.398	61	477652	39.05	ug/L	97
12) Freon 113	4.465	101	289648	34.25	ug/L	94
13) Carbon Disulfide	4.477	76	975070	38.29	ug/L	98
14) Iodomethane	4.586	142	507869	37.58	ug/L	97
15) Allyl chloride	4.921	41	379599	33.57	ug/L	96
16) Methylene Chloride	5.049	49	412563	37.43	ug/L	92
17) Acetone	5.067	58	98076	193.60	ug/L #	83
18) Methyl acetate	5.195	74	198401	201.11	ug/L	98
19) trans-1,2-Dichloroethene	5.231	61	456974	40.68	ug/L	97
20) Hexane	5.298	56	279737	38.81	ug/L	96
21) Methyl Tert Butyl Ether	5.341	73	881327	39.36	ug/L	79
22) Acetonitrile	5.590	40	102201	320.47	ug/L	97
23) Di-isopropyl ether	5.718	45	997320	38.91	ug/L	98
24) Chloroprene	5.870	53	429680	35.58	ug/L	98
25) 1,1-Dichloroethane	5.894	63	571999	38.14	ug/L	100
26) Acrylonitrile	5.931	53	411362	183.51	ug/L	96
27) ETBE	6.119	59	1009684	39.34	ug/L	98
28) Vinyl acetate	6.113	43	2362562	181.98	ug/L	98
29) cis-1,2-Dichloroethene	6.472	96	351476	36.50	ug/L	96
30) 2,2-Dichloropropane	6.606	77	469483	40.11	ug/L	98
31) Bromochloromethane	6.685	128	168857	38.79	ug/L	98
32) Cyclohexane	6.734	56	525225	37.25	ug/L	95
33) Chloroform	6.740	83	618400	37.14	ug/L	97
34) Ethyl acetate	6.807	43	910882	174.50	ug/L	98
35) Tetrahydrofuran	6.916	42	56856	37.55	ug/L	86
37) Carbon Tetrachloride	6.934	117	454277m	39.25	ug/L	

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\031516\
Data File : J0975159.D
Acq On : 15 Mar 2016 5:51 pm
Operator : DARSHNAP
Sample : ICV5237-5 Inst : MSVOA6
Misc : MS33279,VJ5237,,,,,
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Mar 16 09:50:27 2016
Quant Method : C:\msdchem\2\methods\MSJ031516.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Wed Mar 16 08:34:48 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
38) 1,1,1-Trichloroethane	6.995	97	518860	36.44	ug/L		97
39) 2-Butanone	7.026	43	425502	194.64	ug/L		99
40) 1,1-Dichloropropene	7.105	75	445038	38.71	ug/L		99
41) tert-Butyl Formate	7.190	59	2170239	415.05	ug/L		91
42) Propionitrile	7.336	54	271119	350.21	ug/L		92
43) Methacrylonitrile	7.360	41	1247708	346.35	ug/L		95
44) Benzene	7.360	78	1298928	37.11	ug/L		99
45) TAME	7.433	73	884954	38.21	ug/L		97
47) 1,2-Dichloroethane	7.549	62	446703	36.47	ug/L		96
48) Trichloroethene	7.938	95	336292	37.08	ug/L		98
49) Methylcyclohexane	7.957	83	595618	39.09	ug/L		98
50) Dibromomethane	8.364	93	201900	39.89	ug/L		93
51) 1,2-Dichloropropane	8.449	63	325127	36.98	ug/L		95
52) Bromodichloromethane	8.498	83	448772	39.82	ug/L		98
53) Methyl methacrylate	8.595	41	201813	43.42	ug/L		98
54) 2-Chloroethyl vinyl ether	9.009	63	863009	193.28	ug/L		98
55) cis-1,3-Dichloropropene	9.112	75	525273	38.68	ug/L		99
58) Toluene	9.356	91	1352904	36.64	ug/L		99
59) 2-Nitropropane	9.556	41	286557	195.66	ug/L		99
60) 4-Methyl-2-pentanone	9.672	43	1016587	192.72	ug/L		99
61) trans-1,3-Dichloropropene	9.739	75	484292	41.88	ug/L		98
62) Tetrachloroethene	9.757	166	351639	35.63	ug/L		97
63) Ethyl methacrylate	9.836	69	298048	35.34	ug/L		95
64) 1,1,2-Trichloroethane	9.903	83	240723	39.97	ug/L		98
65) Dibromochloromethane	10.104	129	315391	41.20	ug/L		96
66) 1,3-Dichloropropane	10.183	76	466774	37.93	ug/L		99
67) 1,2-Dibromoethane	10.366	107	267849	39.24	ug/L		100
68) 2-hexanone	10.487	43	667151	191.27	ug/L		99
69) 1-Chlorohexane	10.798	91	438744	40.52	ug/L		98
70) Ethylbenzene	10.864	91	1605826	38.15	ug/L		99
71) Chlorobenzene	10.864	112	922655	37.57	ug/L		95
72) 1,1,1,2-Tetrachloroethane	10.913	131	324751	40.66	ug/L		99
73) m,p-Xylene	10.998	91	2439122	74.78	ug/L		98
74) o-Xylene	11.436	91	1286993	39.57	ug/L		99
75) Styrene	11.485	104	949865	36.54	ug/L		98
76) Bromoform	11.546	173	195280	40.08	ug/L		97
77) Isopropylbenzene	11.740	105	1525541	40.59	ug/L		100
80) cis-1,4-Dichloro-2-butene	12.087	53	84202	35.73	ug/L		96
81) n-Propylbenzene	12.160	91	1860742	40.44	ug/L		99
82) Bromobenzene	12.185	156	410484	37.89	ug/L		100
83) 1,1,2,2-Tetrachloroethane	12.221	83	338472	38.72	ug/L		97
84) 1,3,5-Trimethylbenzene	12.343	105	1363036	39.15	ug/L		99
85) 2-Chlorotoluene	12.355	91	1311798	38.84	ug/L		97
86) trans-1,4-Dichloro-2-B...	12.398	53	90941	41.00	ug/L	#	84
87) 1,2,3-Trichloropropane	12.385	110	90006	40.39	ug/L		95
88) Cyclohexanone	12.446	55	22052	157.38	ug/L		88
89) 4-Chlorotoluene	12.519	91	1209033	39.99	ug/L		98
90) a-Methyl Styrene	12.750	118	10042	1.01	ug/L	#	1
91) tert-Butylbenzene	12.683	91	783832	38.53	ug/L		96
92) 1,2,4-Trimethylbenzene	12.756	105	1370993	39.43	ug/L		99

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\031516\
Data File : J0975159.D
Acq On : 15 Mar 2016 5:51 pm
Operator : DARSHNAP
Sample : ICV5237-5 Inst : MSVOA6
Misc : MS33279,VJ5237,,,,,
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Mar 16 09:50:27 2016
Quant Method : C:\msdchem\2\methods\MSJ031516.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Wed Mar 16 08:34:48 2016
Response via : Initial Calibration

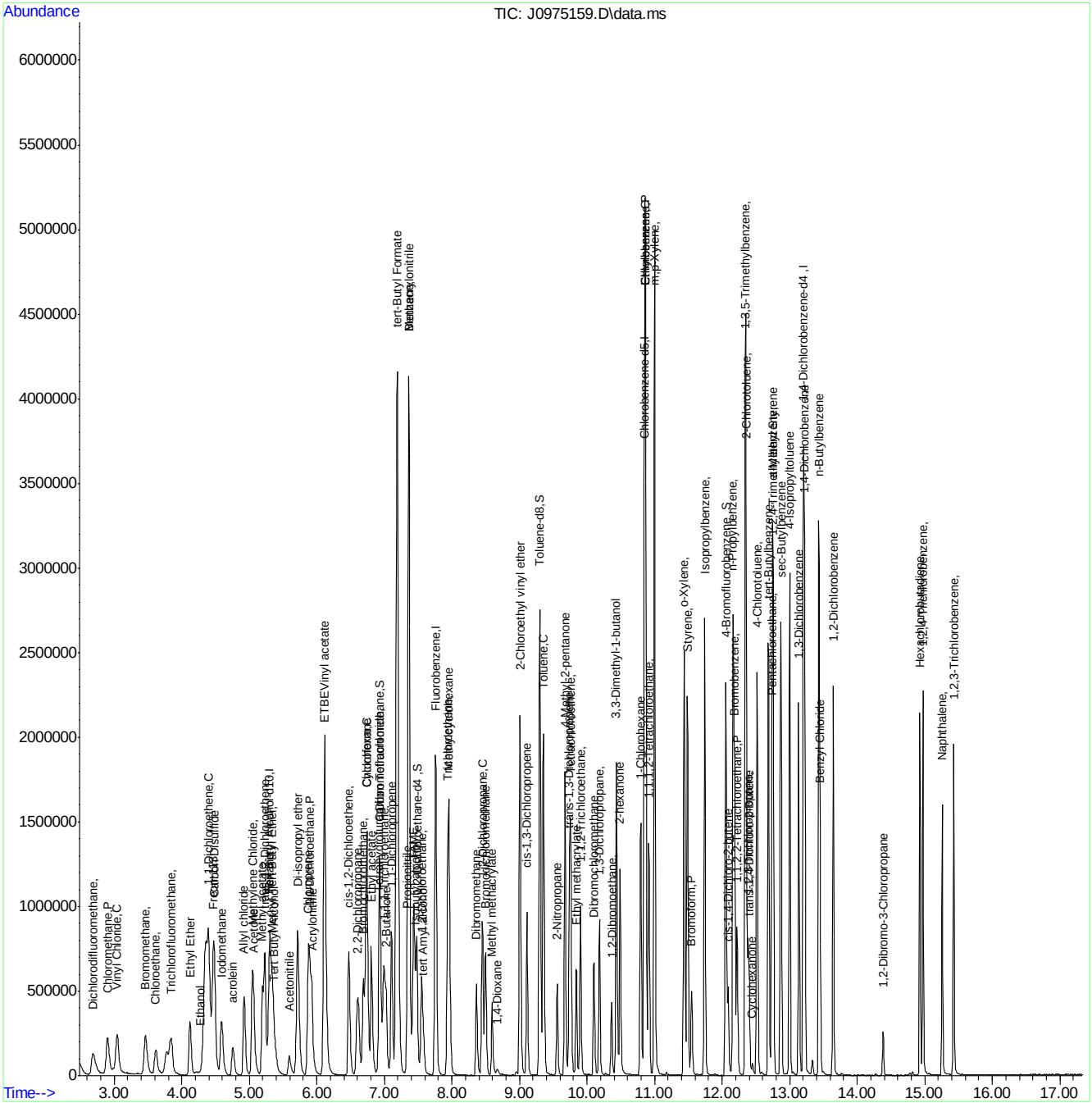
	Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
93)	Pentachloroethane	12.738	167	233557	35.49	ug/L		98
94)	sec-Butylbenzene	12.872	105	1676645	39.88	ug/L		99
95)	4-Isopropyltoluene	13.000	119	1386532	39.32	ug/L		99
96)	1,3-Dichlorobenzene	13.134	146	749434	39.01	ug/L		96
97)	1,4-Dichlorobenzene	13.219	146	766175	37.57	ug/L		95
98)	n-Butylbenzene	13.432	92	833176	40.98	ug/L		99
99)	Benzyl Chloride	13.450	126	123442	41.28	ug/L	#	79
100)	1,2-Dichlorobenzene	13.645	146	709720	38.60	ug/L		98
101)	1,2-Dibromo-3-Chloropr...	14.381	75	50379	37.51	ug/L		96
102)	Hexachlorobutadiene	14.928	225	304579	37.08	ug/L		99
103)	1,2,4-Trichlorobenzene	14.971	180	530342	39.51	ug/L		97
104)	Naphthalene	15.257	128	930860	41.50	ug/L		99
105)	1,2,3-Trichlorobenzene	15.427	180	466779	39.24	ug/L		98
107)	Ethanol	4.276	45	25799m	682.26	ug/L		
108)	acrolein	4.757	56	213250	220.76	ug/L		94
109)	Tert Butyl Alcohol	5.371	59	162595	406.01	ug/L	#	57
110)	tert Amyl alcohol	7.573	59	127486	453.85	ug/L		96
111)	Isobutyl alcohol	7.458	42	113595	742.75	ug/L		96
112)	1,4-Dioxane	8.674	88	27105	826.21	ug/L		93
113)	3,3-Dimethyl-1-butanol	10.433	57	743617	2160.96	ug/L		98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\031516\
Data File : J0975159.D
Acq On : 15 Mar 2016 5:51 pm
Operator : DARSHNAP
Sample : ICV5237-5 Inst : MSVOA6
Misc : MS33279,VJ5237,,,,,
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Mar 16 09:50:27 2016
Quant Method : C:\msdchem\2\methods\MSJ031516.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Wed Mar 16 08:34:48 2016
Response via : Initial Calibration



Manual Integration Approval Summary

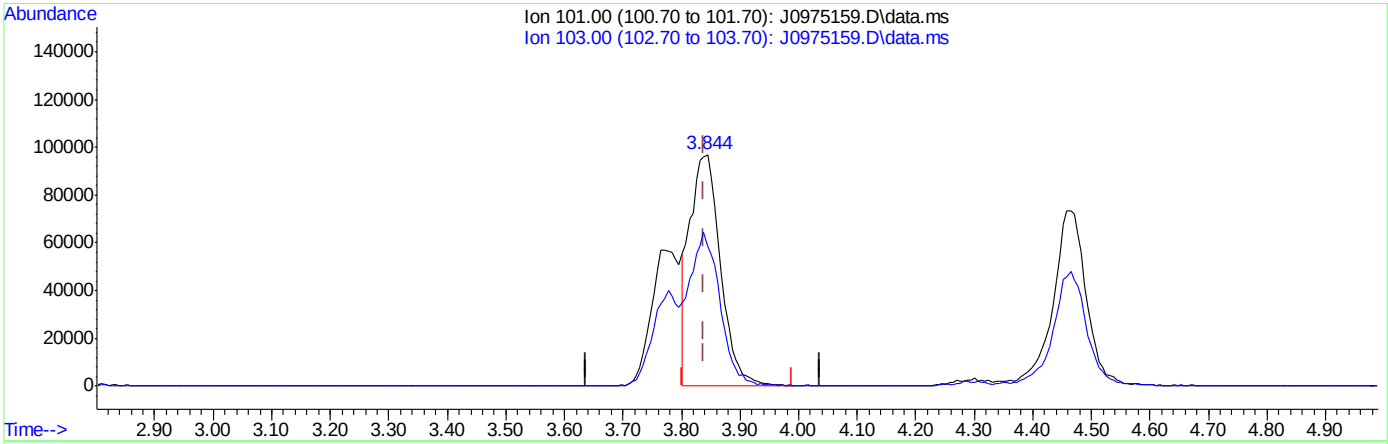
Sample Number: VJ5237-ICV5237 **Method:** SW846 8260B
Lab FileID: J0975159.D **Analyst approved:** 03/16/16 09:56 Darshna Patel
Injection Time: 03/15/16 17:51 **Supervisor approved:** 03/16/16 15:48 Melissa Mangual

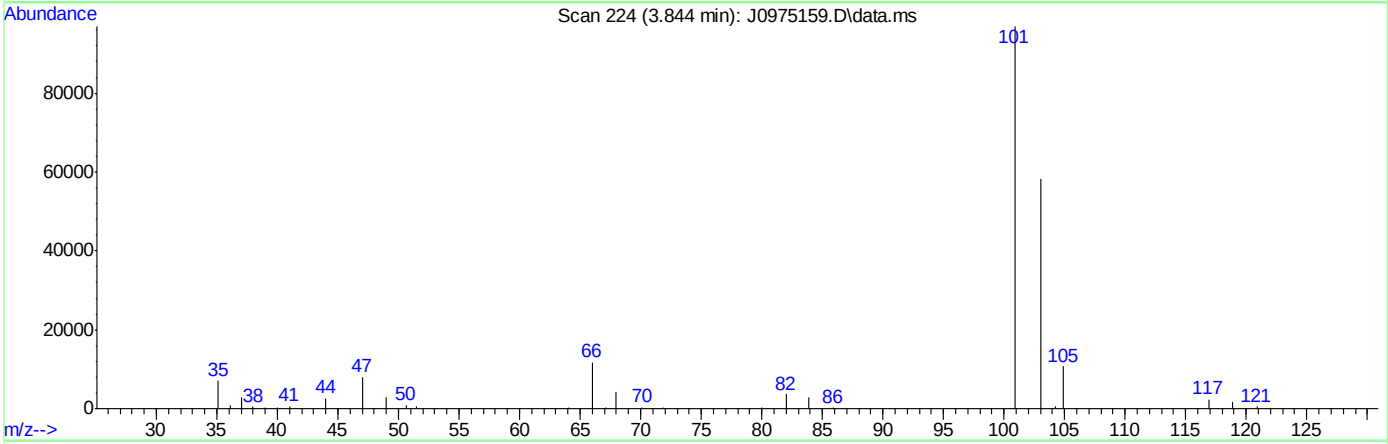
Parameter	CAS	Sig#	R.T. (min.)	Reason
Trichlorofluoromethane	75-69-4		3.84	Split peak
Ethyl Alcohol	64-17-5		4.28	Poor instrument integration
Carbon Tetrachloride	56-23-5		6.93	Overlapping peak

Quantitation Report (Qedit)

Data Path : C:\msdchem\2\data\031516\
Data File : J0975159.D
Acq On : 15 Mar 2016 5:51 pm
Operator : DARSHNAP
Sample : ICV5237-5 Inst : MSVOA6
Misc : MS33279,VJ5237,,,,,
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Mar 16 08:34:57 2016
Quant Method : C:\msdchem\2\methods\MSJ031516.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Wed Mar 16 08:34:48 2016
Response via : Initial Calibration





TIC: J0975159.D\data.ms

(8) Trichlorofluoromethane ( )

3.844min (+0.006) 24.89ug/L

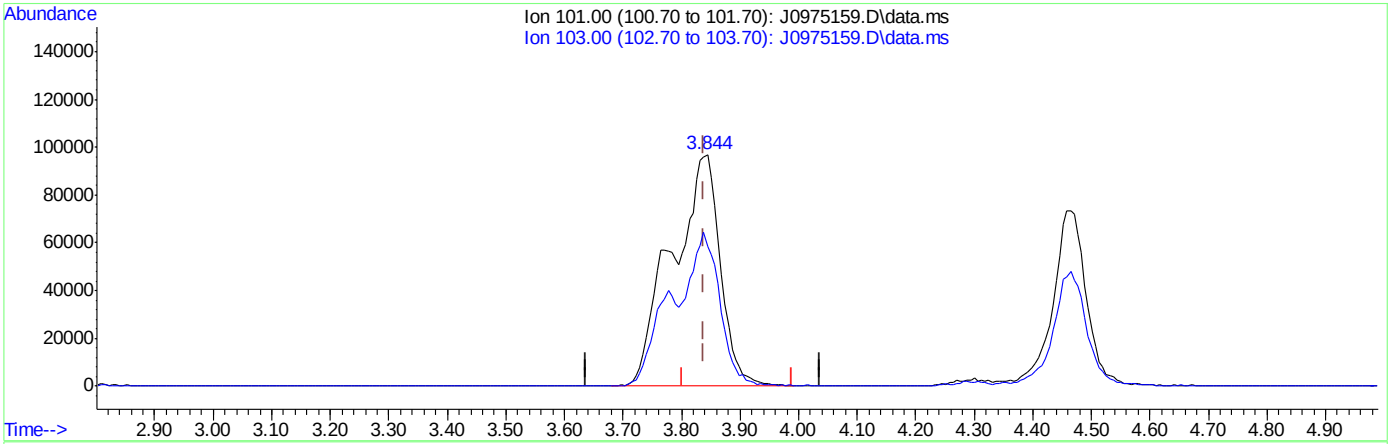
response 352017

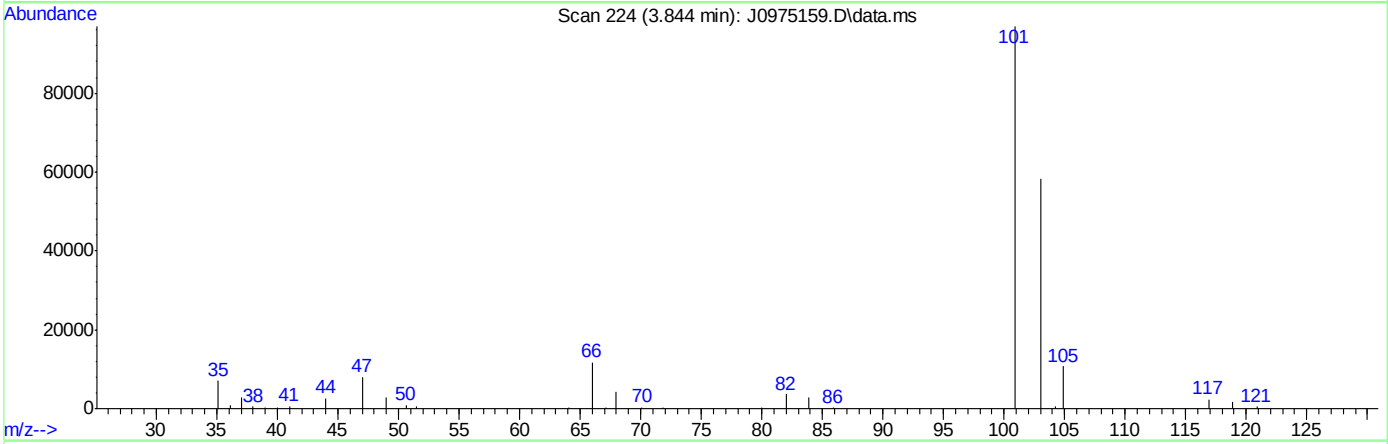
Ion	Exp%	Act%
101.00	100	100
103.00	63.50	60.08
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\2\data\031516\
Data File : J0975159.D
Acq On : 15 Mar 2016 5:51 pm
Operator : DARSHNAP
Sample : ICV5237-5 Inst : MSVOA6
Misc : MS33279,VJ5237,,,,,
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Mar 16 08:34:57 2016
Quant Method : C:\msdchem\2\methods\MSJ031516.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Wed Mar 16 08:34:48 2016
Response via : Initial Calibration





TIC: J0975159.D\data.ms

(8) Trichlorofluoromethane ( )

3.844min (+0.006) 39.16ug/L m

response 553847

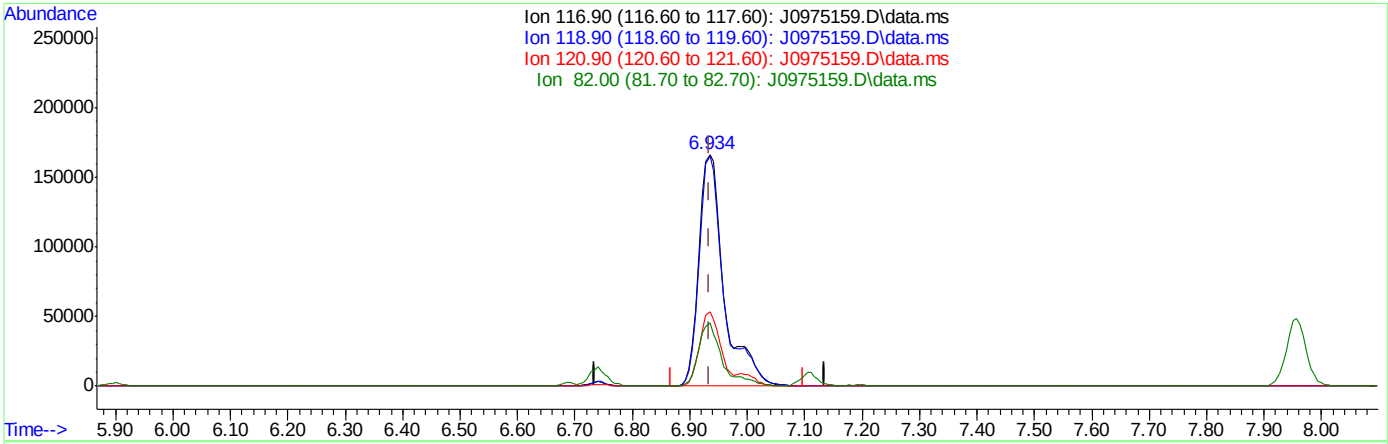
Ion	Exp%	Act%
101.00	100	100
103.00	63.50	60.08
0.00	0.00	0.00
0.00	0.00	0.00

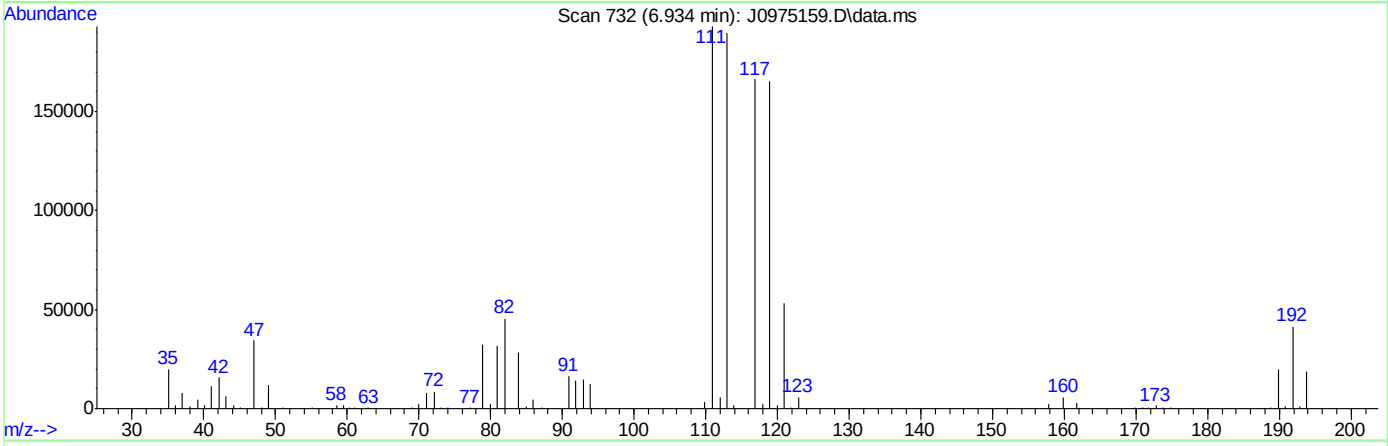
J0975159.D edits: Trichlorofluoromethane

Quantitation Report (Qedit)

Data Path : C:\msdchem\2\data\031516\
Data File : J0975159.D
Acq On : 15 Mar 2016 5:51 pm
Operator : DARSHNAP
Sample : ICV5237-5 Inst : MSVOA6
Misc : MS33279,VJ5237,,,,,
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Mar 16 08:34:57 2016
Quant Method : C:\msdchem\2\methods\MSJ031516.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Wed Mar 16 08:34:48 2016
Response via : Initial Calibration





TIC: J0975159.D\data.ms

(37) Carbon Tetrachloride ( )

6.934min (-0.001) 43.99ug/L

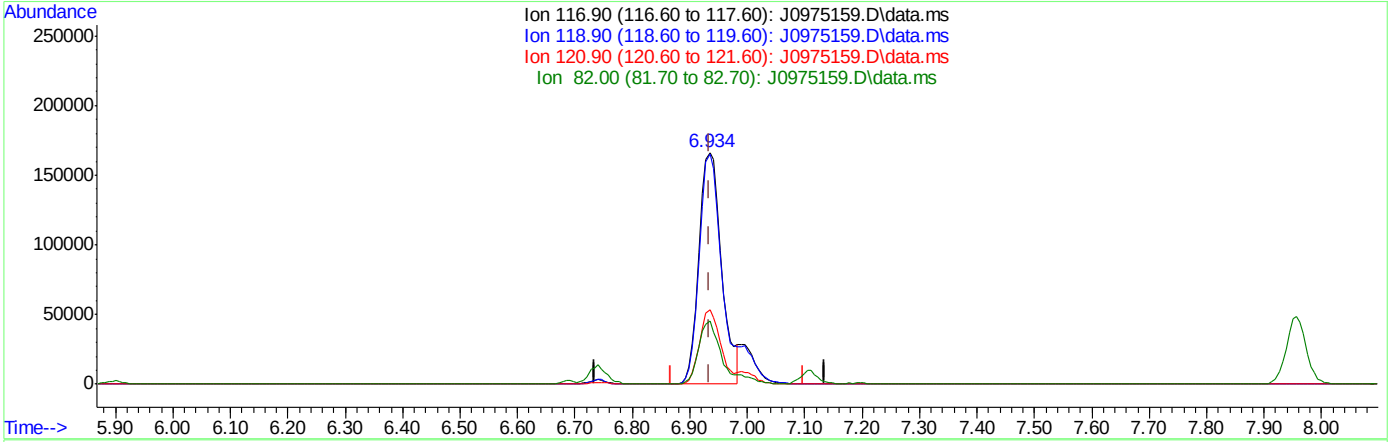
response 509174

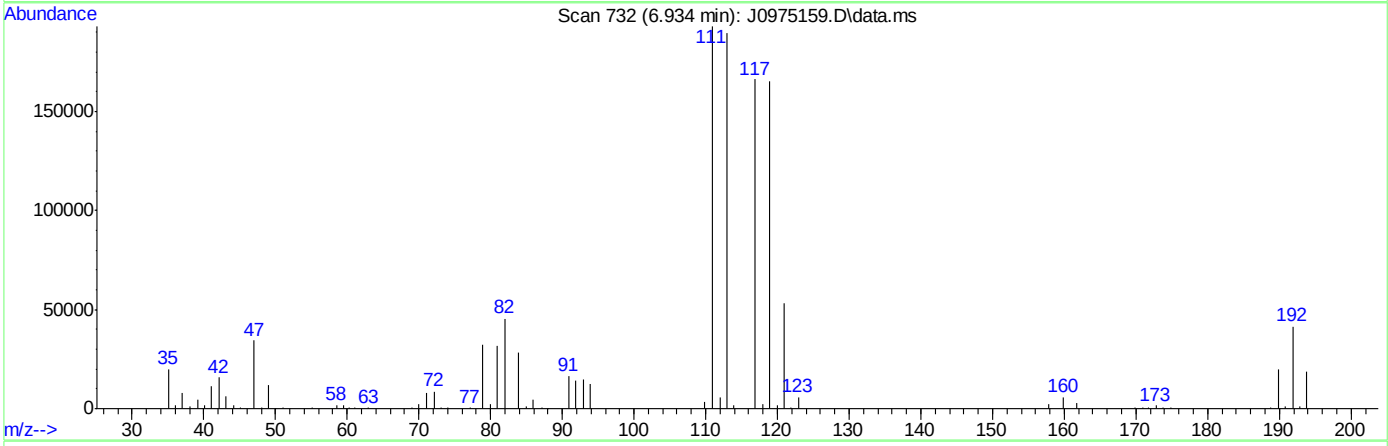
Ion	Exp%	Act%
116.90	100	100
118.90	96.80	99.23
120.90	31.80	31.88
82.00	25.40	27.27

Quantitation Report (Qedit)

Data Path : C:\msdchem\2\data\031516\
Data File : J0975159.D
Acq On : 15 Mar 2016 5:51 pm
Operator : DARSHNAP
Sample : ICV5237-5 Inst : MSVOA6
Misc : MS33279,VJ5237,,,,,
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Mar 16 08:34:57 2016
Quant Method : C:\msdchem\2\methods\MSJ031516.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Wed Mar 16 08:34:48 2016
Response via : Initial Calibration





TIC: J0975159.D\data.ms

(37) Carbon Tetrachloride ( )

6.934min (-0.001) 39.25ug/L m

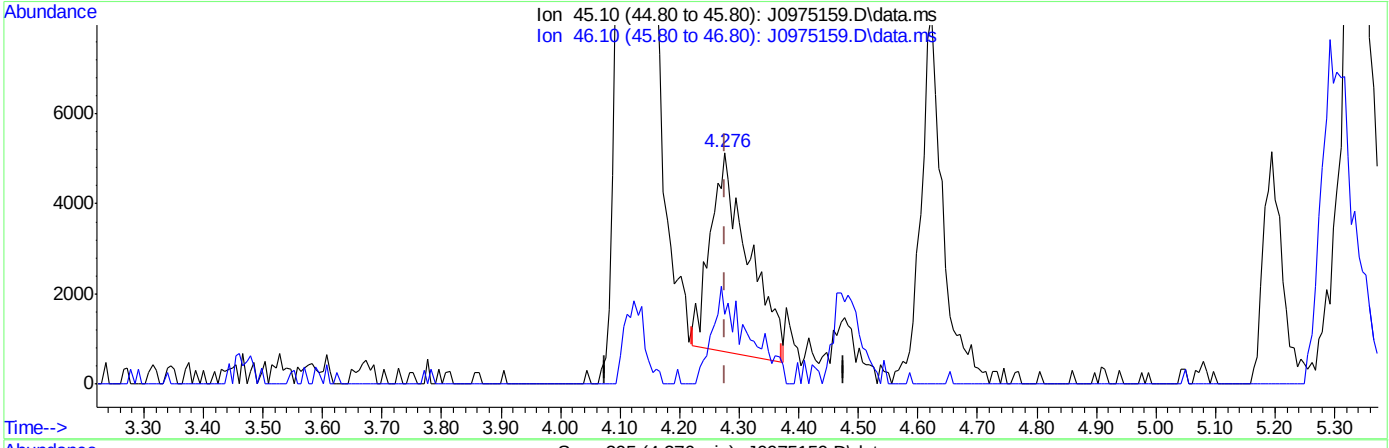
response 454277

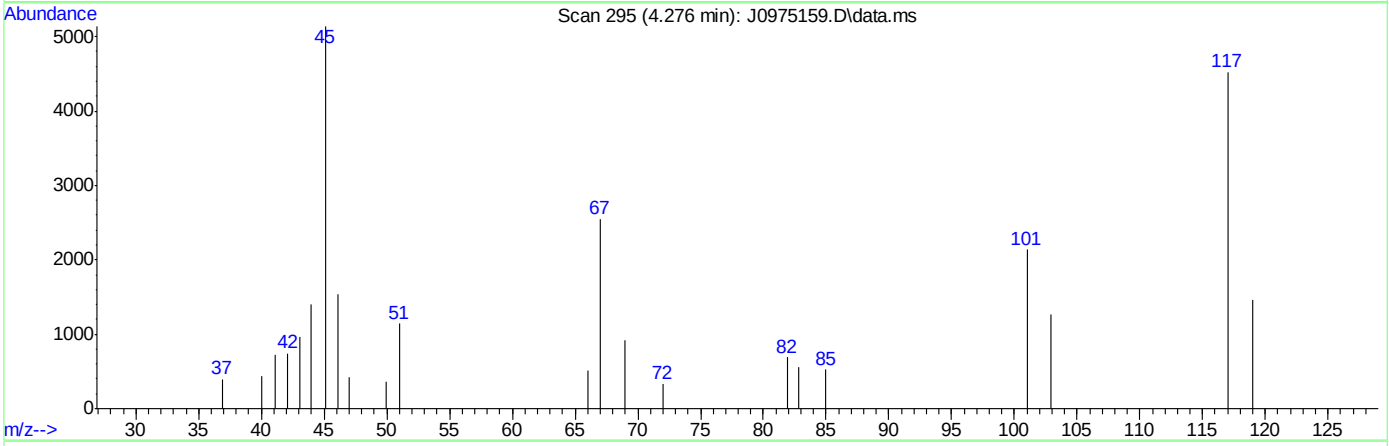
Ion	Exp%	Act%
116.90	100	100
118.90	96.80	99.23
120.90	31.80	31.88
82.00	25.40	27.27

Quantitation Report (Qedit)

Data Path : C:\msdchem\2\data\031516\
Data File : J0975159.D
Acq On : 15 Mar 2016 5:51 pm
Operator : DARSHNAP
Sample : ICV5237-5 Inst : MSVOA6
Misc : MS33279,VJ5237,,,,,
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Mar 16 08:34:57 2016
Quant Method : C:\msdchem\2\methods\MSJ031516.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Wed Mar 16 08:34:48 2016
Response via : Initial Calibration





TIC: J0975159.D\data.ms

(107) Ethanol

4.276min (-0.000) 508.74ug/L

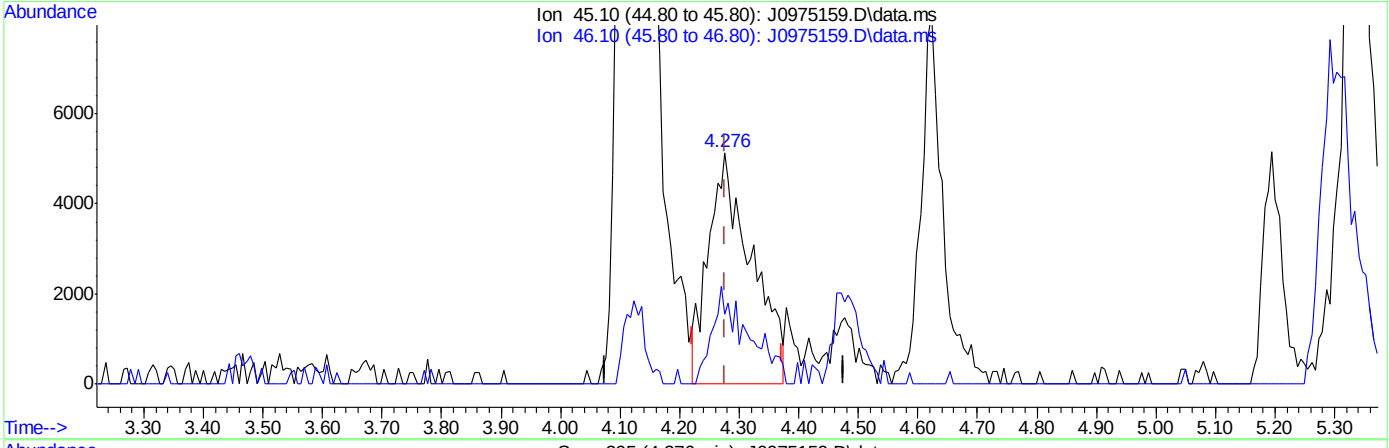
response 19635

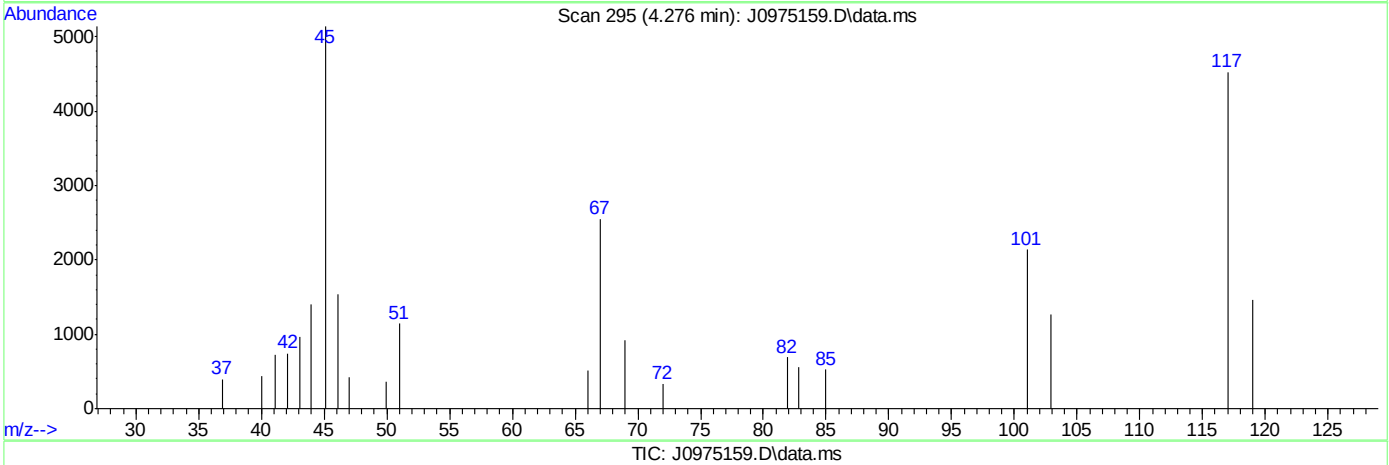
Ion	Exp%	Act%
45.10	100	100
46.10	28.20	36.04
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\2\data\031516\
Data File : J0975159.D
Acq On : 15 Mar 2016 5:51 pm
Operator : DARSHNAP
Sample : ICV5237-5 Inst : MSVOA6
Misc : MS33279,VJ5237,,,,,
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Mar 16 08:34:57 2016
Quant Method : C:\msdchem\2\methods\MSJ031516.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Wed Mar 16 08:34:48 2016
Response via : Initial Calibration





TIC: J0975159.D\data.ms

(107) Ethanol

4.276min (-0.000) 682.26ug/L m

response 25799

Ion	Exp%	Act%
45.10	100	100
46.10	28.20	30.02
0.00	0.00	0.00
0.00	0.00	0.00

J0975159.D edits: Ethanol

Manual Integrations APPROVED (compounds with "m" flag)
Juan Garcia
04/06/16 12:06

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\040516\
Data File : J0975619.D
Acq On : 5 Apr 2016 8:30 am
Operator : melissam
Sample : cc5237-5 Inst : MSVOA6
Misc : MS33374,VJ5255,,,,,
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Apr 05 09:30:37 2016
Quant Method : C:\msdchem\2\methods\MSJ031516.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Wed Mar 16 08:34:48 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	7.756	96	1443136	50.00	ug/L	0.00
56) Chlorobenzene-d5	10.846	117	1118221	50.00	ug/L	0.00
78) 1,4-Dichlorobenzene-d4	13.207	152	595246	50.00	ug/L	0.00
106) Tert Butyl Alcohol-d10	5.298	65	84016	250.00	ug/L	0.00
System Monitoring Compounds						
36) Dibromofluoromethane	6.922	113	375431	51.27	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 102.54%			
46) 1,2-Dichloroethane-d4	7.476	65	428024	48.33	ug/L	0.00
Spiked Amount 50.000	Range 79 - 125		Recovery = 96.66%			
57) Toluene-d8	9.301	98	1449155	49.26	ug/L	0.00
Spiked Amount 50.000	Range 85 - 112		Recovery = 98.52%			
79) 4-Bromofluorobenzene	12.057	95	539788	50.14	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 100.28%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	2.688	85	362481	40.80	ug/L	100
3) Chloromethane	2.901	50	404237	42.52	ug/L	98
4) Vinyl Chloride	3.053	62	428502	44.00	ug/L	99
5) 1,3-Butadiene	3.041	54	319090	44.08	ug/L	97
6) Bromomethane	3.467	94	271137	40.10	ug/L	95
7) Chloroethane	3.613	64	210451	44.09	ug/L	99
8) Trichlorofluoromethane	3.832	101	566415m	46.88	ug/L	
9) Ethyl Ether	4.112	59	217277	38.94	ug/L	97
10) 1,2-Dichlorotrifluoroe...	4.355	67	339364	40.45	ug/L	97
11) 1,1-Dichloroethene	4.398	61	434484	41.58	ug/L	94
12) Freon 113	4.465	101	289916	40.13	ug/L	98
13) Carbon Disulfide	4.471	76	920958	42.33	ug/L	97
14) Iodomethane	4.580	142	469048	40.63	ug/L	99
15) Allyl chloride	4.921	41	401125	41.53	ug/L	94
16) Methylene Chloride	5.042	49	373671	39.72	ug/L	98
17) Acetone	5.061	58	80802	186.71	ug/L	96
18) Methyl acetate	5.188	74	153568	182.22	ug/L	98
19) trans-1,2-Dichloroethene	5.225	61	399960	41.68	ug/L	98
20) Hexane	5.298	56	245383	39.85	ug/L	96
21) Methyl Tert Butyl Ether	5.335	73	731882	38.26	ug/L	83
22) Acetonitrile	5.590	40	106354	391.30	ug/L	98
23) Di-isopropyl ether	5.712	45	869965	39.73	ug/L	99
24) Chloroprene	5.870	53	405542	39.31	ug/L	99
25) 1,1-Dichloroethane	5.894	63	517716	40.41	ug/L	100
26) Acrylonitrile	5.919	53	351030	183.31	ug/L	97
27) ETBE	6.113	59	881437	40.20	ug/L	99
28) Vinyl acetate	6.101	43	2224284	200.55	ug/L	98
29) cis-1,2-Dichloroethene	6.472	96	330336	40.16	ug/L	97
30) 2,2-Dichloropropane	6.606	77	421745	42.18	ug/L	97
31) Bromochloromethane	6.685	128	147114	39.56	ug/L	94
32) Cyclohexane	6.734	56	474561	39.40	ug/L	94
33) Chloroform	6.734	83	559214	39.31	ug/L	96
34) Ethyl acetate	6.801	43	790360	177.24	ug/L	100

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\040516\
Data File : J0975619.D
Acq On : 5 Apr 2016 8:30 am
Operator : melissam
Sample : cc5237-5 Inst : MSVOA6
Misc : MS33374,VJ5255,,,,,
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Apr 05 09:30:37 2016
Quant Method : C:\msdchem\2\methods\MSJ031516.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Wed Mar 16 08:34:48 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
35) Tetrahydrofuran	6.916	42	43828	33.77	ug/L		88
37) Carbon Tetrachloride	6.934	117	420224m	42.50	ug/L		
38) 1,1,1-Trichloroethane	6.989	97	500850	41.18	ug/L		96
39) 2-Butanone	7.020	43	325380	174.32	ug/L		98
40) 1,1-Dichloropropene	7.099	75	392618	39.97	ug/L		97
41) tert-Butyl Formate	7.184	59	1770657	396.36	ug/L		92
42) Propionitrile	7.330	54	240484	363.63	ug/L		96
43) Methacrylonitrile	7.354	41	1042738	338.83	ug/L		95
44) Benzene	7.354	78	1197696	40.06	ug/L		98
45) TAME	7.427	73	772031	39.02	ug/L		97
47) 1,2-Dichloroethane	7.543	62	384780	36.77	ug/L		99
48) Trichloroethene	7.932	95	303818	39.22	ug/L		96
49) Methylcyclohexane	7.957	83	525501	40.37	ug/L		98
50) Dibromomethane	8.358	93	161207	37.28	ug/L		97
51) 1,2-Dichloropropane	8.449	63	288906	38.46	ug/L		95
52) Bromodichloromethane	8.492	83	386883	40.18	ug/L		97
53) Methyl methacrylate	8.589	41	152344	38.37	ug/L		97
54) 2-Chloroethyl vinyl ether	9.009	63	764516	200.43	ug/L		98
55) cis-1,3-Dichloropropene	9.106	75	454457	39.16	ug/L		94
58) Toluene	9.350	91	1252273	38.67	ug/L		100
59) 2-Nitropropane	9.556	41	231715	180.24	ug/L		98
60) 4-Methyl-2-pentanone	9.672	43	821350	177.51	ug/L		99
61) trans-1,3-Dichloropropene	9.739	75	386077	38.03	ug/L		96
62) Tetrachloroethene	9.757	166	311442	35.97	ug/L		96
63) Ethyl methacrylate	9.836	69	287136	38.81	ug/L		96
64) 1,1,2-Trichloroethane	9.903	83	201926	38.22	ug/L		98
65) Dibromochloromethane	10.104	129	266760	39.73	ug/L		97
66) 1,3-Dichloropropane	10.183	76	406919	37.70	ug/L		94
67) 1,2-Dibromoethane	10.360	107	223693	37.36	ug/L		100
68) 2-hexanone	10.487	43	576082	188.29	ug/L		98
69) 1-Chlorohexane	10.798	91	403410	42.47	ug/L		99
70) Ethylbenzene	10.864	91	1477392	40.01	ug/L		98
71) Chlorobenzene	10.864	112	842105	39.09	ug/L		95
72) 1,1,1,2-Tetrachloroethane	10.913	131	283908	40.52	ug/L		96
73) m,p-Xylene	10.998	91	2214909	77.84	ug/L		98
74) o-Xylene	11.436	91	1133834	39.74	ug/L		99
75) Styrene	11.485	104	864710	37.94	ug/L		98
76) Bromoform	11.552	173	156895	36.82	ug/L		97
77) Isopropylbenzene	11.741	105	1315235	39.89	ug/L		99
80) cis-1,4-Dichloro-2-butene	12.087	53	61979	32.04	ug/L		97
81) n-Propylbenzene	12.160	91	1584694	41.96	ug/L		99
82) Bromobenzene	12.185	156	351647	39.54	ug/L		100
83) 1,1,2,2-Tetrachloroethane	12.221	83	263248	36.68	ug/L		98
84) 1,3,5-Trimethylbenzene	12.343	105	1202697	42.08	ug/L		99
85) 2-Chlorotoluene	12.355	91	1111531	40.09	ug/L		98
86) trans-1,4-Dichloro-2-B...	12.398	53	57789	31.86	ug/L	#	73
87) 1,2,3-Trichloropropane	12.385	110	69391	37.94	ug/L		96
88) Cyclohexanone	12.452	55	30957	269.13	ug/L		96
89) 4-Chlorotoluene	12.519	91	1027175	41.39	ug/L		98
90) a-Methyl Styrene	12.683	118	8142	1.00	ug/L	#	1

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\040516\
Data File : J0975619.D
Acq On : 5 Apr 2016 8:30 am
Operator : melissam
Sample : cc5237-5 Inst : MSVOA6
Misc : MS33374,VJ5255,,,,,
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Apr 05 09:30:37 2016
Quant Method : C:\msdchem\2\methods\MSJ031516.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Wed Mar 16 08:34:48 2016
Response via : Initial Calibration

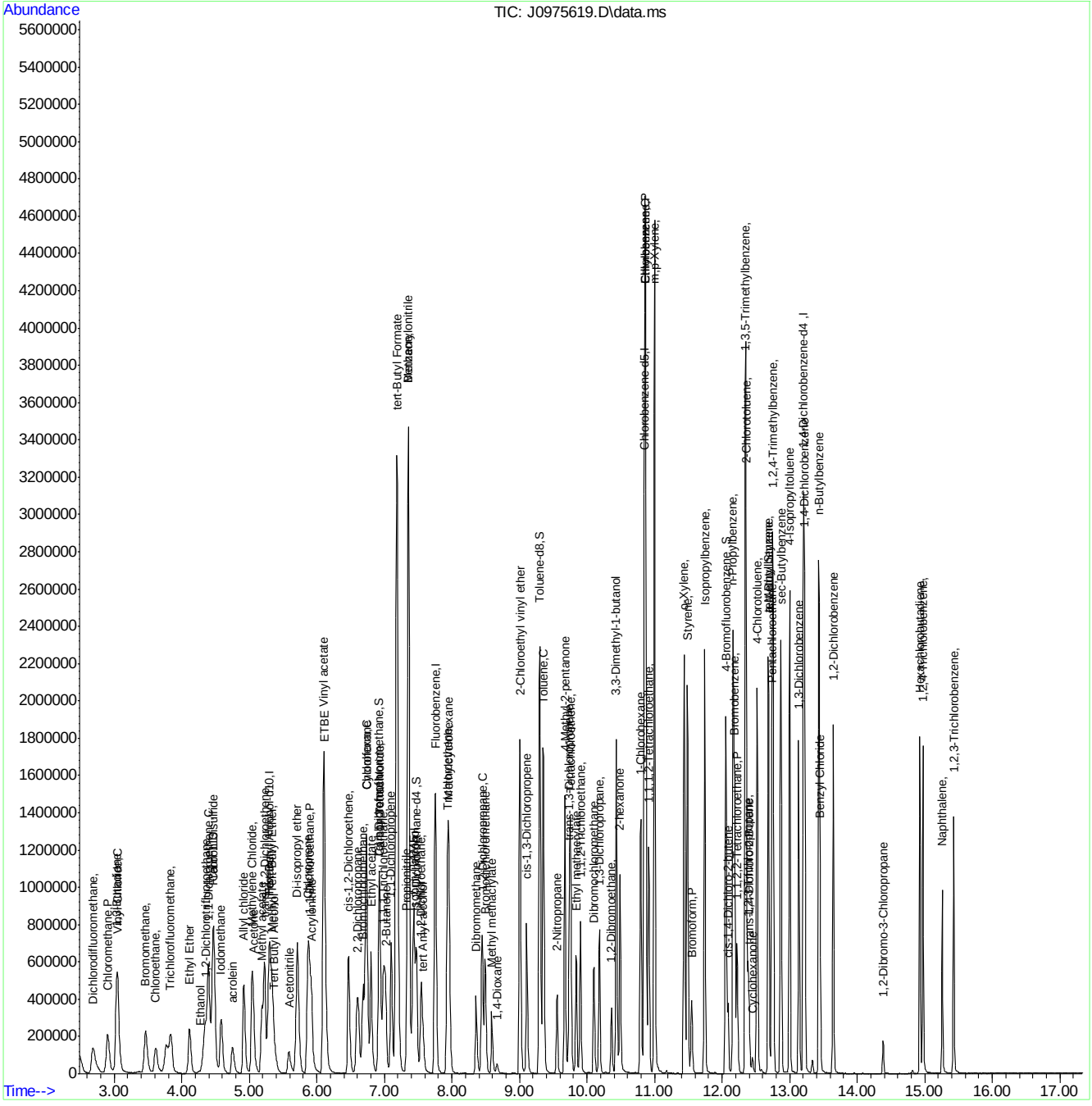
	Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
91)	tert-Butylbenzene	12.683	91	667126	39.95	ug/L		98
92)	1,2,4-Trimethylbenzene	12.750	105	1175287	41.17	ug/L		98
93)	Pentachloroethane	12.738	167	221705	41.24	ug/L		98
94)	sec-Butylbenzene	12.872	105	1425792	41.32	ug/L		98
95)	4-Isopropyltoluene	13.000	119	1210740	41.82	ug/L		98
96)	1,3-Dichlorobenzene	13.140	146	623863	39.56	ug/L		99
97)	1,4-Dichlorobenzene	13.219	146	656568	39.22	ug/L		96
98)	n-Butylbenzene	13.432	92	701575	42.04	ug/L		96
99)	Benzyl Chloride	13.450	126	92509	37.92	ug/L	#	86
100)	1,2-Dichlorobenzene	13.645	146	580000	38.43	ug/L		99
101)	1,2-Dibromo-3-Chloropr...	14.381	75	36534	33.25	ug/L		97
102)	Hexachlorobutadiene	14.928	225	264307	39.20	ug/L		98
103)	1,2,4-Trichlorobenzene	14.971	180	415958	37.75	ug/L		96
104)	Naphthalene	15.257	128	569870	30.88	ug/L		98
105)	1,2,3-Trichlorobenzene	15.427	180	319526	32.72	ug/L		97
107)	Ethanol	4.270	45	38014m	1031.47	ug/L		
108)	acrolein	4.750	56	187815	191.20	ug/L		96
109)	Tert Butyl Alcohol	5.371	59	159281	391.13	ug/L		83
110)	tert Amyl alcohol	7.567	59	118201	413.80	ug/L		96
111)	Isobutyl alcohol	7.452	42	110397	707.37	ug/L		94
112)	1,4-Dioxane	8.668	88	35414	1061.53	ug/L		95
113)	3,3-Dimethyl-1-butanol	10.433	57	700787	2002.63	ug/L		97

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\040516\
Data File : J0975619.D
Acq On : 5 Apr 2016 8:30 am
Operator : melissam
Sample : cc5237-5 Inst : MSVOA6
Misc : MS33374,VJ5255,,,,,
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Apr 05 09:30:37 2016
Quant Method : C:\msdchem\2\methods\MSJ031516.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Wed Mar 16 08:34:48 2016
Response via : Initial Calibration



Manual Integration Approval Summary

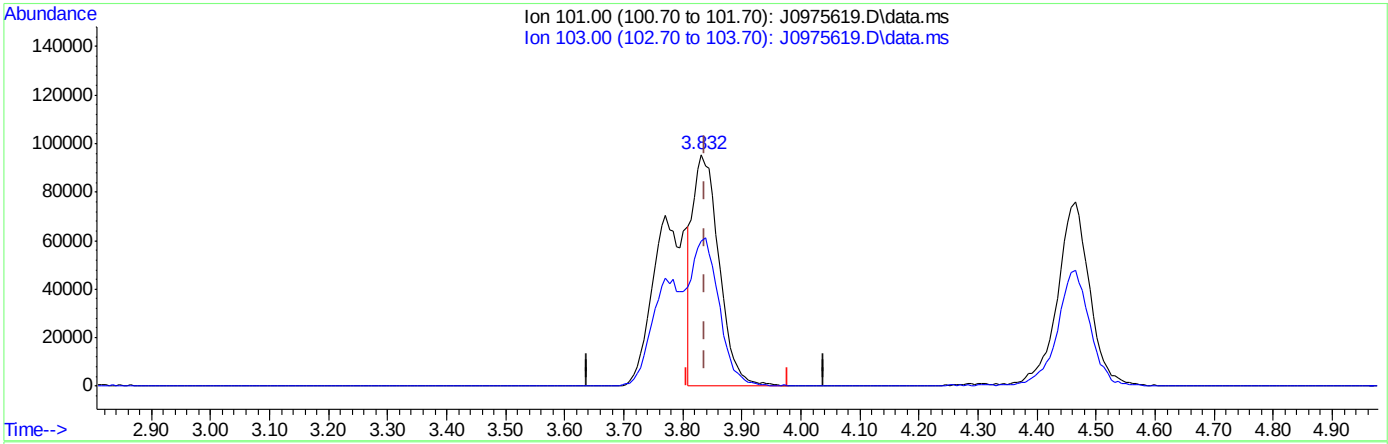
Sample Number: VJ5255-CC5237
Lab FileID: J0975619.D
Injection Time: 04/05/16 08:30
Method: SW846 8260B
Analyst approved: 04/06/16 11:04 Darshna Patel
Supervisor approved: 04/06/16 12:06 Juan Garcia

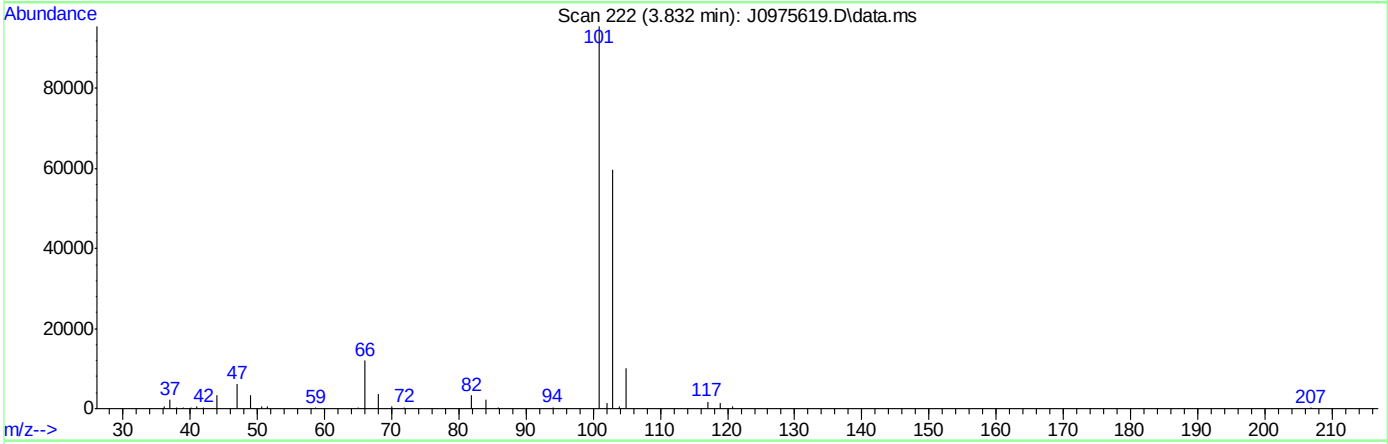
Parameter	CAS	Sig#	R.T. (min.)	Reason
Trichlorofluoromethane	75-69-4		3.83	Split peak
Ethyl Alcohol	64-17-5		4.27	Poor instrument integration
Carbon Tetrachloride	56-23-5		6.93	Overlapping peak

Quantitation Report (Qedit)

Data Path : C:\msdchem\2\data\040516\
Data File : J0975619.D
Acq On : 5 Apr 2016 8:30 am
Operator : melissam
Sample : cc5237-5 Inst : MSVOA6
Misc : MS33374,VJ5255,,,,,
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Apr 05 09:30:05 2016
Quant Method : C:\msdchem\2\methods\MSJ031516.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Wed Mar 16 08:34:48 2016
Response via : Initial Calibration





TIC: J0975619.D\data.ms

(8) Trichlorofluoromethane ( )

3.832min (-0.006) 24.73ug/L

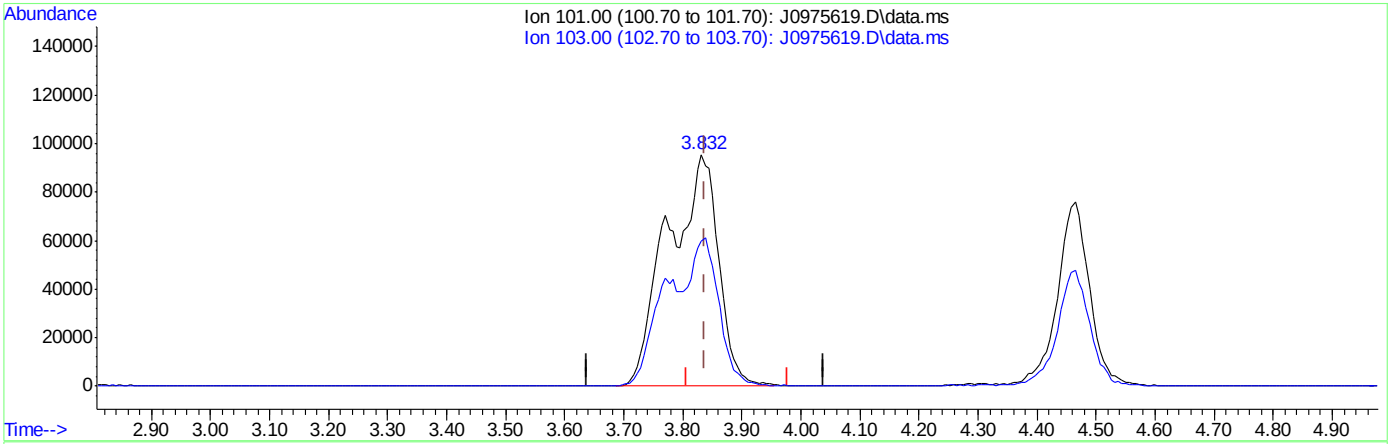
response 298730

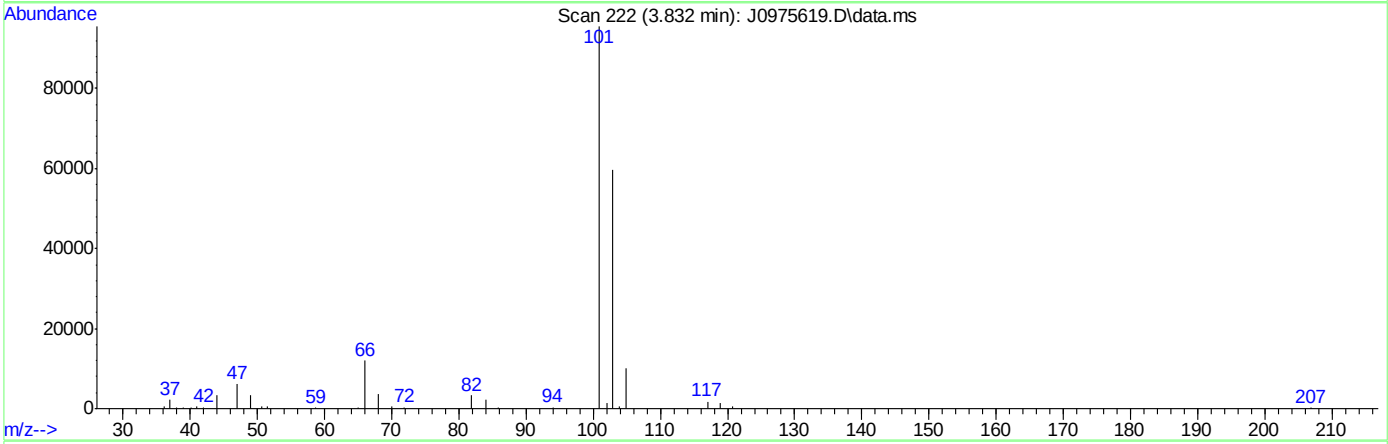
Ion	Exp%	Act%
101.00	100	100
103.00	63.50	62.44
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\2\data\040516\
Data File : J0975619.D
Acq On : 5 Apr 2016 8:30 am
Operator : melissam
Sample : cc5237-5 Inst : MSVOA6
Misc : MS33374,VJ5255,,,,,
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Apr 05 09:30:05 2016
Quant Method : C:\msdchem\2\methods\MSJ031516.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Wed Mar 16 08:34:48 2016
Response via : Initial Calibration





TIC: J0975619.D\data.ms

(8) Trichlorofluoromethane ( )

3.832min (-0.006) 46.88ug/L m

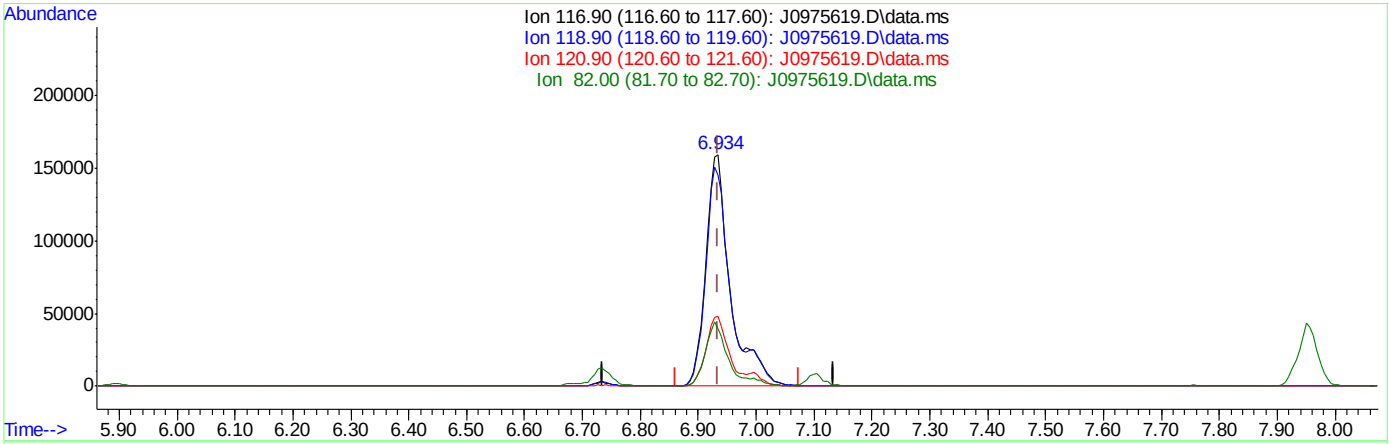
response 566415

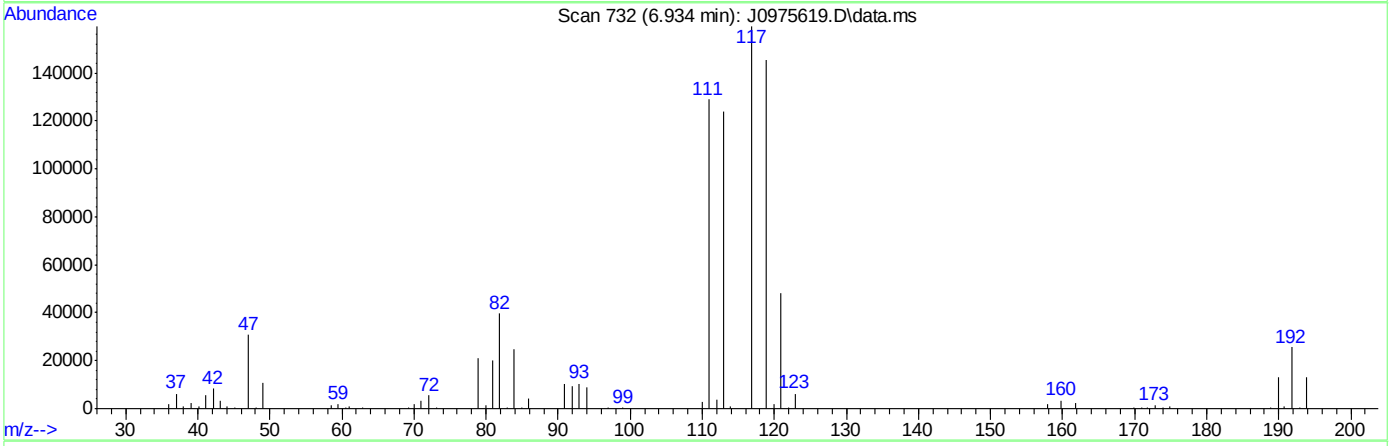
Ion	Exp%	Act%
101.00	100	100
103.00	63.50	62.44
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\2\data\040516\
Data File : J0975619.D
Acq On : 5 Apr 2016 8:30 am
Operator : melissam
Sample : cc5237-5 Inst : MSVOA6
Misc : MS33374,VJ5255,,,,,
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Apr 05 09:30:05 2016
Quant Method : C:\msdchem\2\methods\MSJ031516.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Wed Mar 16 08:34:48 2016
Response via : Initial Calibration





TIC: J0975619.D\data.ms

(37) Carbon Tetrachloride ( )

6.934min (-0.001) 48.13ug/L

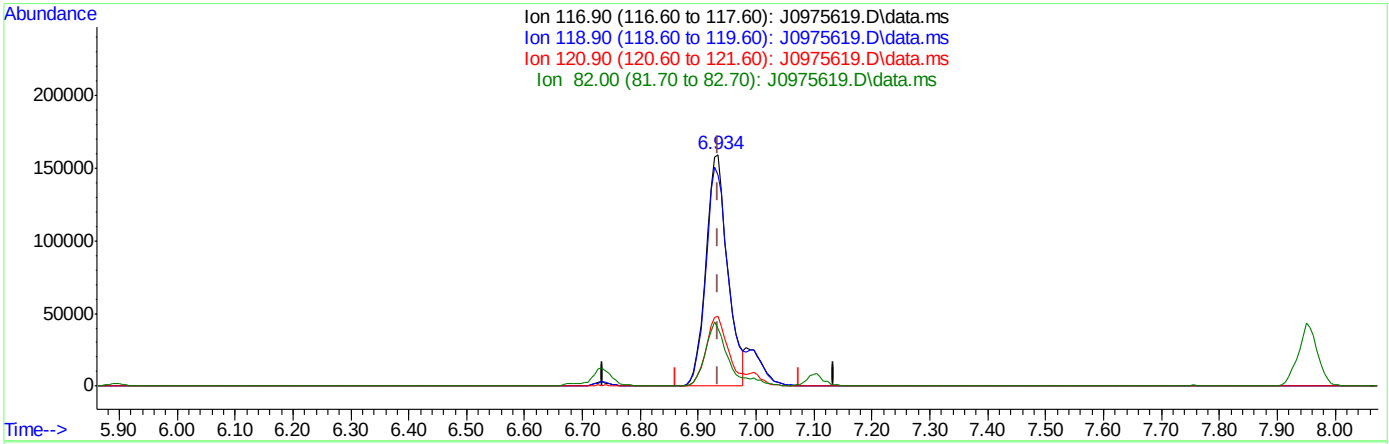
response 475841

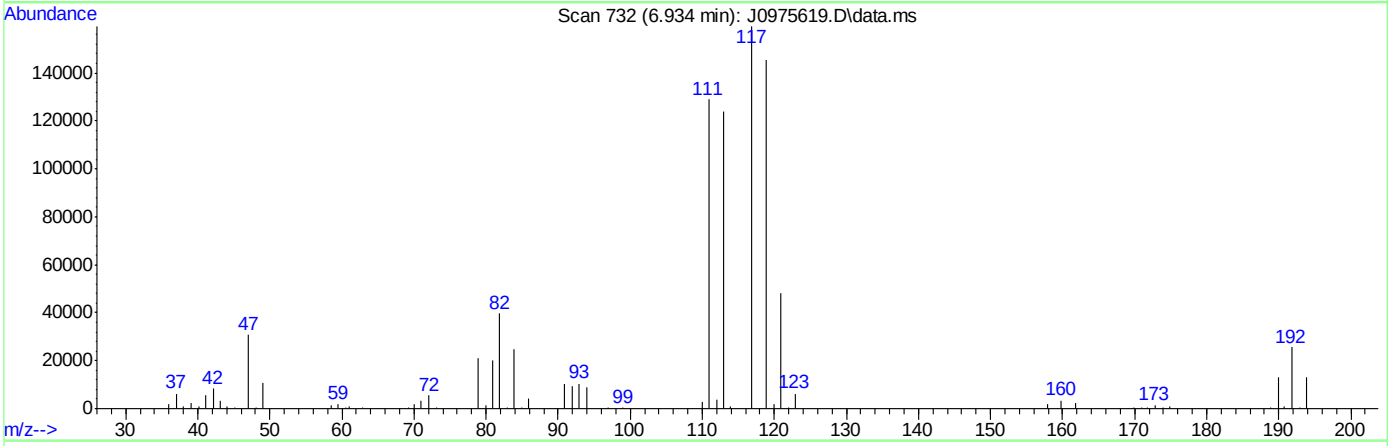
Ion	Exp%	Act%
116.90	100	100
118.90	96.80	91.25
120.90	31.80	30.14
82.00	25.40	24.82

Quantitation Report (Qedit)

Data Path : C:\msdchem\2\data\040516\
Data File : J0975619.D
Acq On : 5 Apr 2016 8:30 am
Operator : melissam
Sample : cc5237-5 Inst : MSVOA6
Misc : MS33374,VJ5255,,,,,
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Apr 05 09:30:05 2016
Quant Method : C:\msdchem\2\methods\MSJ031516.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Wed Mar 16 08:34:48 2016
Response via : Initial Calibration





TIC: J0975619.D\data.ms

(37) Carbon Tetrachloride ( )

6.934min (-0.001) 42.50ug/L m

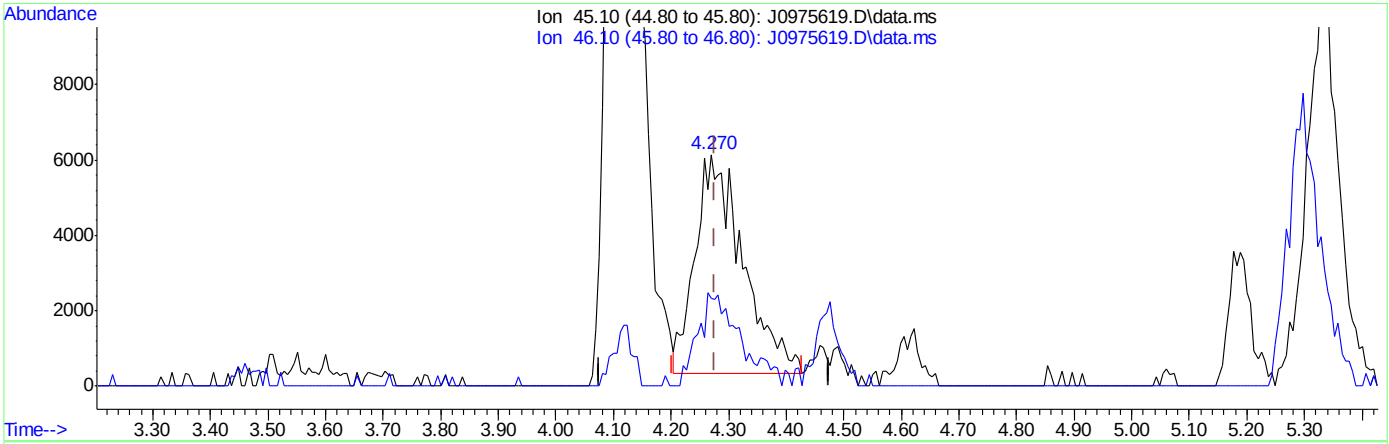
response 420224

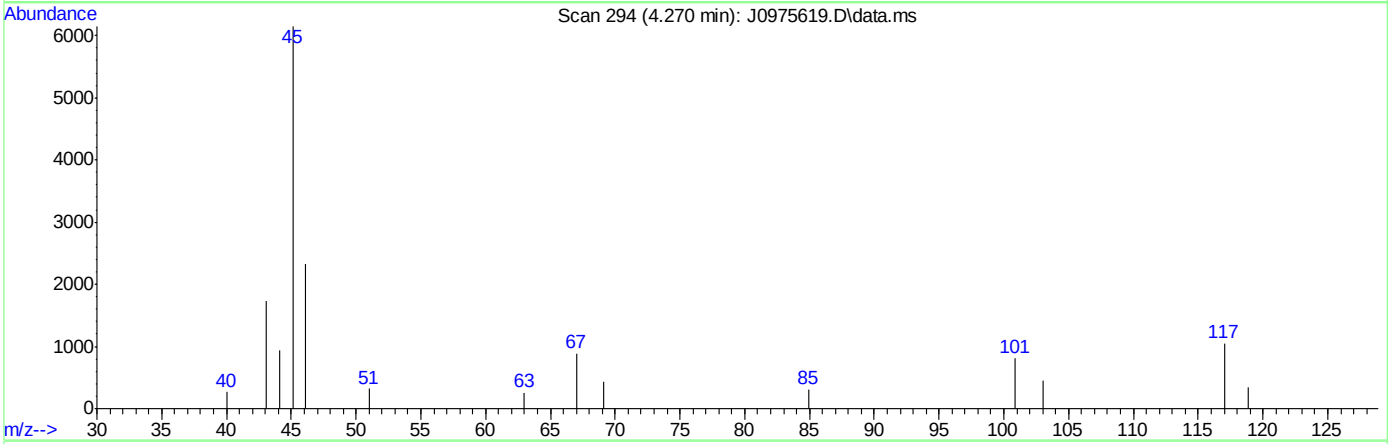
Ion	Exp%	Act%
116.90	100	100
118.90	96.80	91.25
120.90	31.80	30.14
82.00	25.40	24.82

Quantitation Report (Qedit)

Data Path : C:\msdchem\2\data\040516\
Data File : J0975619.D
Acq On : 5 Apr 2016 8:30 am
Operator : melissam
Sample : cc5237-5 Inst : MSVOA6
Misc : MS33374,VJ5255,,,,,
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Apr 05 09:30:05 2016
Quant Method : C:\msdchem\2\methods\MSJ031516.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Wed Mar 16 08:34:48 2016
Response via : Initial Calibration





TIC: J0975619.D\data.ms

(107) Ethanol

4.270min (-0.006) 893.39ug/L

response 33490

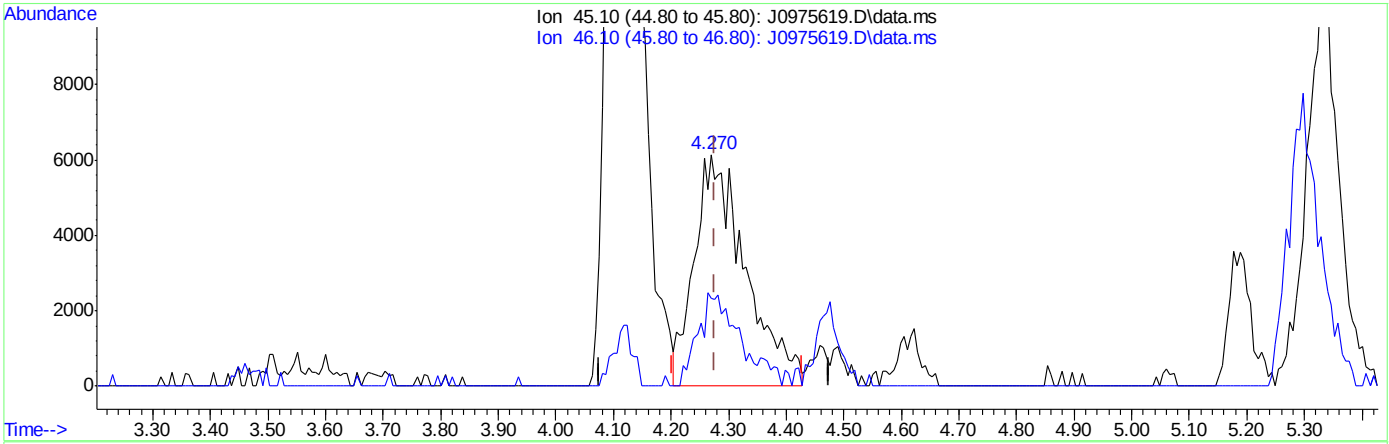
Ion	Exp%	Act%
45.10	100	100
46.10	28.20	39.97
0.00	0.00	0.00
0.00	0.00	0.00

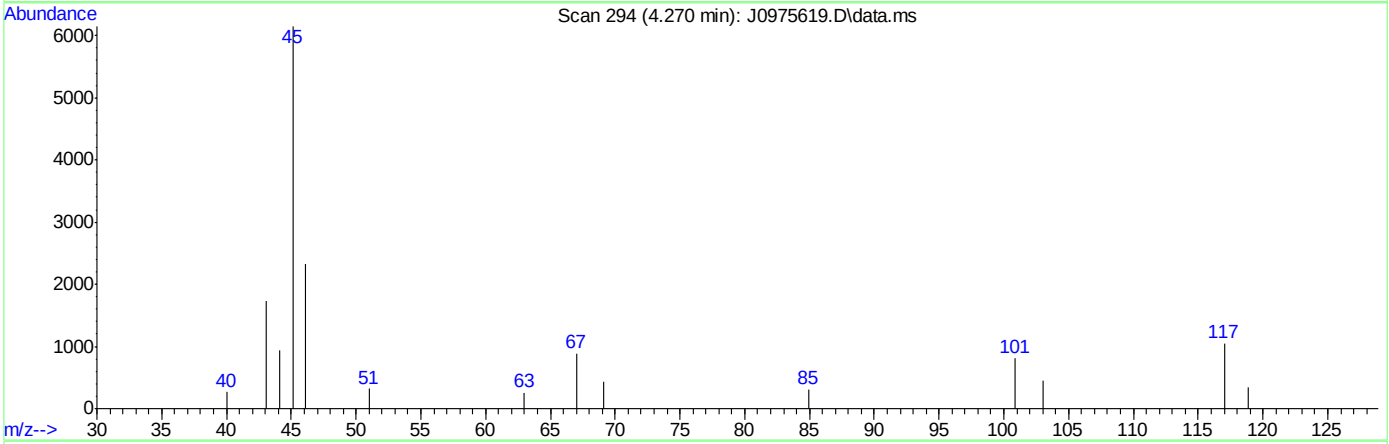
J0975619.D edits: Ethanol

Quantitation Report (Qedit)

Data Path : C:\msdchem\2\data\040516\
Data File : J0975619.D
Acq On : 5 Apr 2016 8:30 am
Operator : melissam
Sample : cc5237-5 Inst : MSVOA6
Misc : MS33374,VJ5255,,,,,
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Apr 05 09:30:05 2016
Quant Method : C:\msdchem\2\methods\MSJ031516.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Wed Mar 16 08:34:48 2016
Response via : Initial Calibration





TIC: J0975619.D\data.ms

(107) Ethanol

4.270min (-0.006) 1031.47ug/L m

response 38014

Ion	Exp%	Act%
45.10	100	100
46.10	28.20	37.79
0.00	0.00	0.00
0.00	0.00	0.00

Manual Integrations APPROVED (compounds with "m" flag)
Juan Garcia
04/06/16 12:06

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\040516\
Data File : J0975646.D
Acq On : 5 Apr 2016 7:31 pm
Operator : melissam
Sample : ECC5237-5 Inst : MSVOA6
Misc : MS33477,VJ5255,,,,,
ALS Vial : 26 Sample Multiplier: 1

Quant Time: Apr 06 07:57:48 2016
Quant Method : C:\msdchem\2\methods\MSJ031516.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Wed Mar 16 08:34:48 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	7.756	96	1429179	50.00	ug/L	0.00
56) Chlorobenzene-d5	10.846	117	1108413	50.00	ug/L	0.00
78) 1,4-Dichlorobenzene-d4	13.207	152	596812	50.00	ug/L	0.00
106) Tert Butyl Alcohol-d10	5.292	65	75462	250.00	ug/L	0.00
System Monitoring Compounds						
36) Dibromofluoromethane	6.922	113	367659	50.70	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 101.40%			
46) 1,2-Dichloroethane-d4	7.476	65	416125	47.45	ug/L	0.00
Spiked Amount 50.000	Range 79 - 125		Recovery = 94.90%			
57) Toluene-d8	9.301	98	1425444	48.88	ug/L	0.00
Spiked Amount 50.000	Range 85 - 112		Recovery = 97.76%			
79) 4-Bromofluorobenzene	12.057	95	549606	50.91	ug/L	0.00
Spiked Amount 50.000	Range 83 - 118		Recovery = 101.82%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	2.688	85	350858	39.88	ug/L	96
3) Chloromethane	2.901	50	381430	40.51	ug/L	98
4) Vinyl Chloride	3.041	62	414740	43.01	ug/L	98
5) 1,3-Butadiene	3.041	54	384665	53.66	ug/L	97
6) Bromomethane	3.467	94	251943	37.30	ug/L	98
7) Chloroethane	3.613	64	207243	43.82	ug/L	98
8) Trichlorofluoromethane	3.838	101	555838	46.46	ug/L	100
9) Ethyl Ether	4.118	59	205613	37.20	ug/L	95
10) 1,2-Dichlorotrifluoroe...	4.349	67	330701	39.80	ug/L	98
11) 1,1-Dichloroethene	4.392	61	427186	41.28	ug/L	99
12) Freon 113	4.458	101	274169	38.32	ug/L	98
13) Carbon Disulfide	4.471	76	897366	41.65	ug/L	95
14) Iodomethane	4.586	142	449625	39.32	ug/L	99
15) Allyl chloride	4.921	41	377883	39.51	ug/L	95
16) Methylene Chloride	5.043	49	365138	39.19	ug/L	96
17) Acetone	5.067	58	69830	162.93	ug/L	87
18) Methyl acetate	5.189	74	148509	177.94	ug/L #	90
19) trans-1,2-Dichloroethene	5.225	61	397775	41.85	ug/L	98
20) Hexane	5.292	56	237382	38.93	ug/L	97
21) Methyl Tert Butyl Ether	5.335	73	697060	36.80	ug/L	84
22) Acetonitrile	5.584	40	102249	379.73	ug/L	97
23) Di-isopropyl ether	5.712	45	857196	39.53	ug/L	97
24) Chloroprene	5.870	53	431296	42.21	ug/L	97
25) 1,1-Dichloroethane	5.894	63	515974	40.66	ug/L	98
26) Acrylonitrile	5.925	53	322389	169.99	ug/L	96
27) ETBE	6.113	59	853925	39.32	ug/L	98
28) Vinyl acetate	6.101	43	2068827	188.36	ug/L	98
29) cis-1,2-Dichloroethene	6.472	96	332960	40.87	ug/L	97
30) 2,2-Dichloropropane	6.606	77	353467	35.69	ug/L	99
31) Bromochloromethane	6.685	128	143428	38.94	ug/L	96
32) Cyclohexane	6.734	56	475481	39.86	ug/L	96
33) Chloroform	6.734	83	556012	39.47	ug/L	97
34) Ethyl acetate	6.801	43	709743	160.72	ug/L	99

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\040516\
Data File : J0975646.D
Acq On : 5 Apr 2016 7:31 pm
Operator : melissam
Sample : ECC5237-5 Inst : MSVOA6
Misc : MS33477,VJ5255,,,,,
ALS Vial : 26 Sample Multiplier: 1

Quant Time: Apr 06 07:57:48 2016
Quant Method : C:\msdchem\2\methods\MSJ031516.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Wed Mar 16 08:34:48 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
35) Tetrahydrofuran	6.910	42	41949	32.61	ug/L		91
37) Carbon Tetrachloride	6.934	117	410874m	41.96	ug/L		
38) 1,1,1-Trichloroethane	6.995	97	498442	41.38	ug/L		96
39) 2-Butanone	7.020	43	286726	155.18	ug/L		99
40) 1,1-Dichloropropene	7.105	75	392636	40.37	ug/L		97
41) tert-Butyl Formate	7.184	59	1607386	363.26	ug/L		89
42) Propionitrile	7.330	54	221112	337.60	ug/L		90
43) Methacrylonitrile	7.354	41	978698	321.12	ug/L		95
44) Benzene	7.354	78	1192183	40.27	ug/L		97
45) TAME	7.433	73	739105	37.72	ug/L		99
47) 1,2-Dichloroethane	7.543	62	369001	35.61	ug/L		97
48) Trichloroethene	7.932	95	301107	39.25	ug/L		98
49) Methylcyclohexane	7.957	83	531186	41.21	ug/L		98
50) Dibromomethane	8.358	93	154303	36.03	ug/L		96
51) 1,2-Dichloropropane	8.449	63	287658	38.67	ug/L		95
52) Bromodichloromethane	8.492	83	373219	39.14	ug/L		99
53) Methyl methacrylate	8.589	41	140883	35.83	ug/L		96
54) 2-Chloroethyl vinyl ether	9.003	63	699375	185.14	ug/L		98
55) cis-1,3-Dichloropropene	9.106	75	424394	36.98	ug/L		96
58) Toluene	9.350	91	1247996	38.87	ug/L		99
59) 2-Nitropropane	9.557	41	206074	161.57	ug/L		98
60) 4-Methyl-2-pentanone	9.672	43	754827	164.57	ug/L		99
61) trans-1,3-Dichloropropene	9.733	75	353214	35.08	ug/L		95
62) Tetrachloroethene	9.757	166	317346	36.98	ug/L		98
63) Ethyl methacrylate	9.836	69	270674	36.91	ug/L		96
64) 1,1,2-Trichloroethane	9.903	83	190398	36.36	ug/L		97
65) Dibromochloromethane	10.098	129	255753	38.42	ug/L		97
66) 1,3-Dichloropropane	10.183	76	382304	35.73	ug/L		97
67) 1,2-Dibromoethane	10.360	107	211394	35.62	ug/L		99
68) 2-hexanone	10.487	43	517887	170.76	ug/L		98
69) 1-Chlorohexane	10.798	91	395442	42.00	ug/L		96
70) Ethylbenzene	10.858	91	1482115	40.49	ug/L		99
71) Chlorobenzene	10.865	112	844670	39.56	ug/L		98
72) 1,1,1,2-Tetrachloroethane	10.913	131	273955	39.45	ug/L		97
73) m,p-Xylene	10.998	91	2233733	79.42	ug/L		99
74) o-Xylene	11.436	91	1130259	39.96	ug/L		100
75) Styrene	11.485	104	867668	38.42	ug/L		98
76) Bromoform	11.552	173	141860	33.68	ug/L		98
77) Isopropylbenzene	11.741	105	1320613	40.41	ug/L		99
80) cis-1,4-Dichloro-2-butene	12.087	53	23540	12.14	ug/L		88
81) n-Propylbenzene	12.160	91	1645243	43.45	ug/L		99
82) Bromobenzene	12.185	156	360665	40.45	ug/L		99
83) 1,1,2,2-Tetrachloroethane	12.221	83	258934	35.98	ug/L		99
84) 1,3,5-Trimethylbenzene	12.343	105	1251069	43.66	ug/L		99
85) 2-Chlorotoluene	12.355	91	1172288	42.17	ug/L		96
86) trans-1,4-Dichloro-2-B...	12.398	53	25968	14.39	ug/L	#	38
87) 1,2,3-Trichloropropane	12.379	110	67378	36.74	ug/L		93
88) Cyclohexanone	12.452	55	25817	223.86	ug/L		91
89) 4-Chlorotoluene	12.519	91	1062009	42.68	ug/L		99
90) a-Methyl Styrene	12.683	118	6350	0.78	ug/L	#	1

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\040516\
Data File : J0975646.D
Acq On : 5 Apr 2016 7:31 pm
Operator : melissam
Sample : ECC5237-5 Inst : MSVOA6
Misc : MS33477,VJ5255,,,,,
ALS Vial : 26 Sample Multiplier: 1

Quant Time: Apr 06 07:57:48 2016
Quant Method : C:\msdchem\2\methods\MSJ031516.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Wed Mar 16 08:34:48 2016
Response via : Initial Calibration

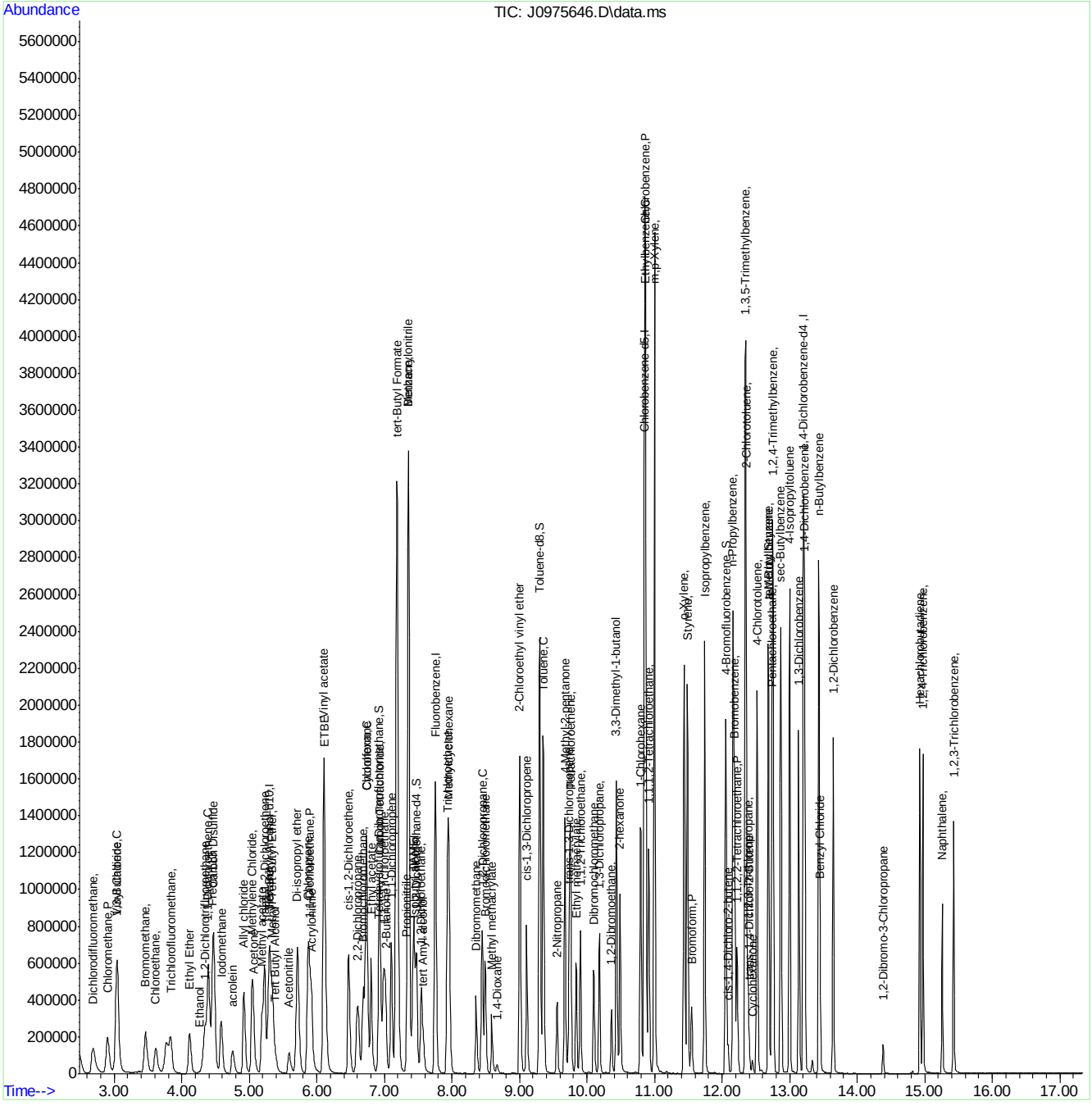
	Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
91)	tert-Butylbenzene	12.683	91	687509	41.06	ug/L		98
92)	1,2,4-Trimethylbenzene	12.750	105	1218845	42.59	ug/L		99
93)	Pentachloroethane	12.738	167	214589	39.76	ug/L		95
94)	sec-Butylbenzene	12.866	105	1475639	42.65	ug/L		100
95)	4-Isopropyltoluene	13.000	119	1242116	42.79	ug/L		99
96)	1,3-Dichlorobenzene	13.134	146	633347	40.05	ug/L		97
97)	1,4-Dichlorobenzene	13.219	146	652811	38.89	ug/L		96
98)	n-Butylbenzene	13.432	92	692621	41.39	ug/L		98
99)	Benzyl Chloride	13.450	126	62218	26.01	ug/L	#	89
100)	1,2-Dichlorobenzene	13.645	146	570591	37.70	ug/L		99
101)	1,2-Dibromo-3-Chloropr...	14.381	75	31554	28.75	ug/L		97
102)	Hexachlorobutadiene	14.928	225	251903	37.26	ug/L		97
103)	1,2,4-Trichlorobenzene	14.971	180	396105	35.85	ug/L		98
104)	Naphthalene	15.257	128	541345	29.25	ug/L		99
105)	1,2,3-Trichlorobenzene	15.427	180	323827	33.07	ug/L		97
107)	Ethanol	4.264	45	34715m	1051.32	ug/L		
108)	acrolein	4.750	56	163118	184.88	ug/L		97
109)	Tert Butyl Alcohol	5.383	59	150784	412.23	ug/L		91
110)	tert Amyl alcohol	7.573	59	109493	426.77	ug/L		97
111)	Isobutyl alcohol	7.452	42	100064	714.33	ug/L	#	85
112)	1,4-Dioxane	8.668	88	33574	1120.46	ug/L		96
113)	3,3-Dimethyl-1-butanol	10.433	57	631268	2008.46	ug/L		99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\040516\
Data File : J0975646.D
Acq On : 5 Apr 2016 7:31 pm
Operator : melissam
Sample : ECC5237-5 Inst : MSVOA6
Misc : MS33477,VJ5255,,,,,
ALS Vial : 26 Sample Multiplier: 1

Quant Time: Apr 06 07:57:48 2016
Quant Method : C:\msdchem\2\methods\MSJ031516.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Wed Mar 16 08:34:48 2016
Response via : Initial Calibration



Manual Integration Approval Summary

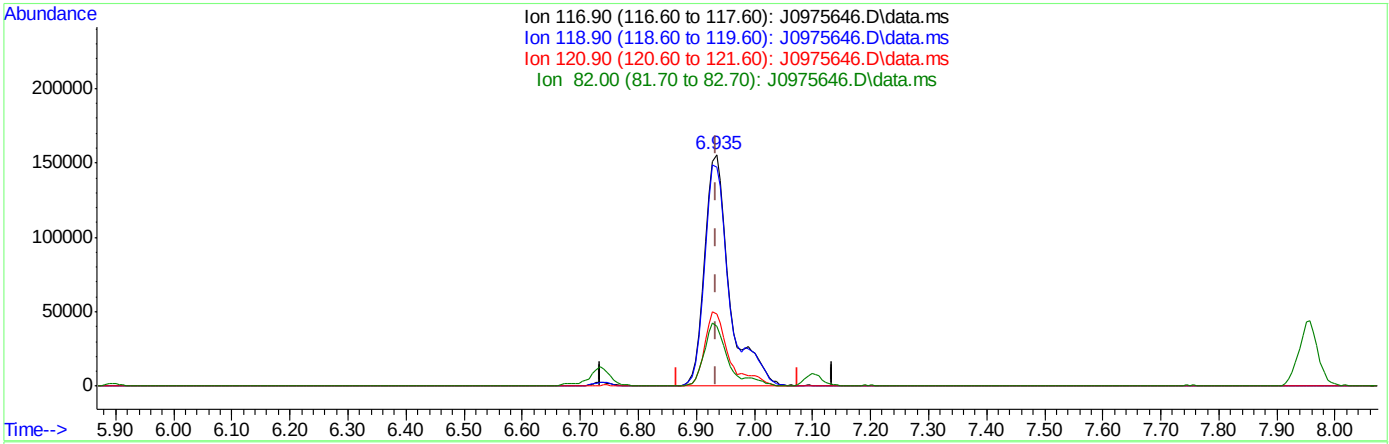
Sample Number: VJ5255-ECC5237
Lab FileID: J0975646.D
Injection Time: 04/05/16 19:31
Method: SW846 8260B
Analyst approved: 04/06/16 11:04 Darshna Patel
Supervisor approved: 04/06/16 12:06 Juan Garcia

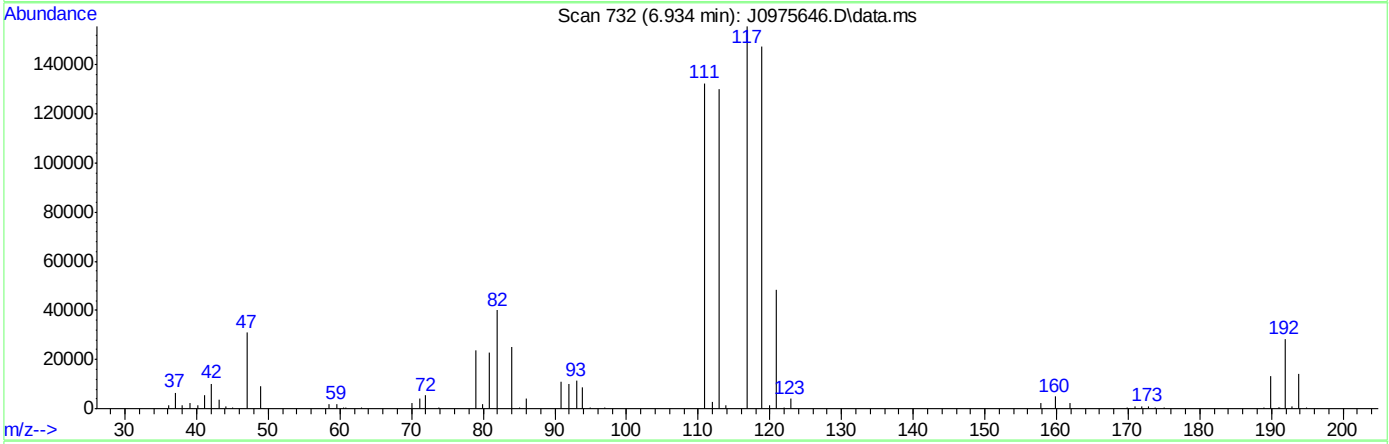
Parameter	CAS	Sig#	R.T. (min.)	Reason
Ethyl Alcohol	64-17-5		4.26	Poor instrument integration
Carbon Tetrachloride	56-23-5		6.93	Overlapping peak

Quantitation Report (Qedit)

Data Path : C:\msdchem\2\data\040516\
Data File : J0975646.D
Acq On : 5 Apr 2016 7:31 pm
Operator : melissam
Sample : ECC5237-5 Inst : MSVOA6
Misc : MS33477,VJ5255,,,,,
ALS Vial : 26 Sample Multiplier: 1

Quant Time: Apr 06 07:43:38 2016
Quant Method : C:\msdchem\2\methods\MSJ031516.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Wed Mar 16 08:34:48 2016
Response via : Initial Calibration





TIC: J0975646.D\data.ms

(37) Carbon Tetrachloride ( )

6.934min (-0.000) 47.73ug/L

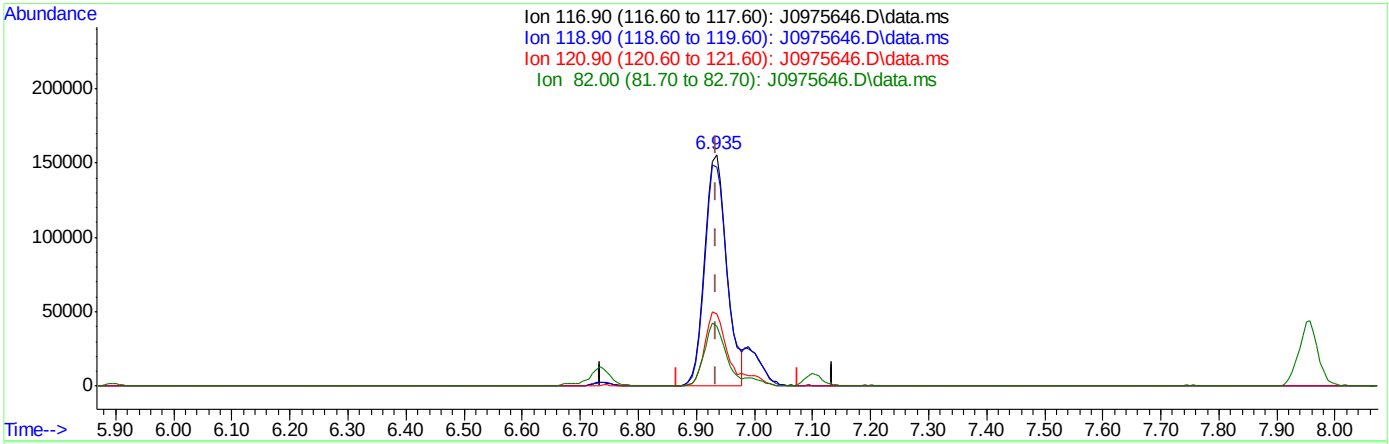
response 467357

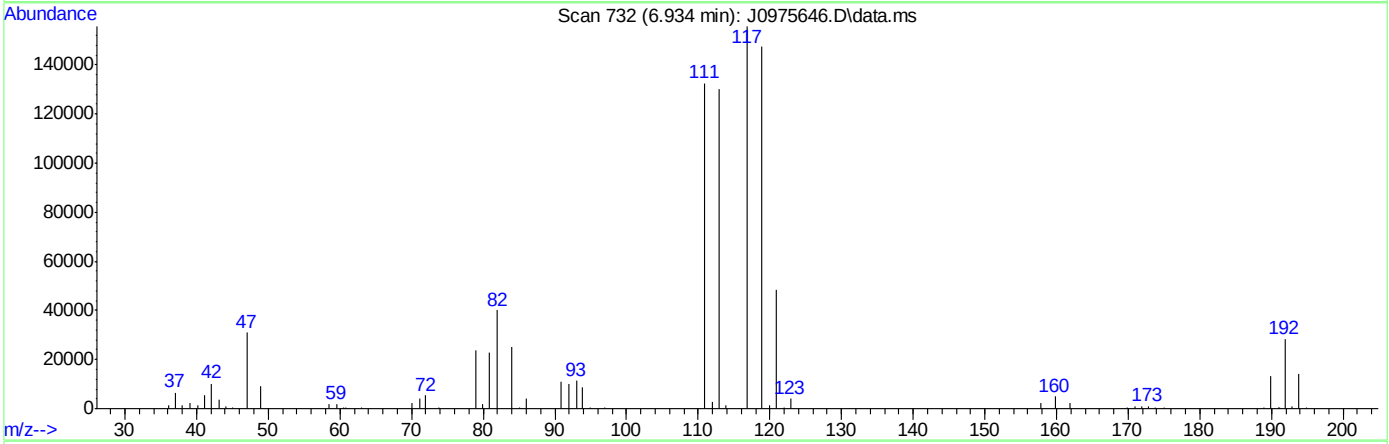
Ion	Exp%	Act%
116.90	100	100
118.90	96.80	94.62
120.90	31.80	30.98
82.00	25.40	25.71

Quantitation Report (Qedit)

Data Path : C:\msdchem\2\data\040516\
Data File : J0975646.D
Acq On : 5 Apr 2016 7:31 pm
Operator : melissam
Sample : ECC5237-5 Inst : MSVOA6
Misc : MS33477,VJ5255,,,,,
ALS Vial : 26 Sample Multiplier: 1

Quant Time: Apr 06 07:43:38 2016
Quant Method : C:\msdchem\2\methods\MSJ031516.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Wed Mar 16 08:34:48 2016
Response via : Initial Calibration





TIC: J0975646.D\data.ms

(37) Carbon Tetrachloride ( )

6.934min (-0.000) 41.96ug/L m

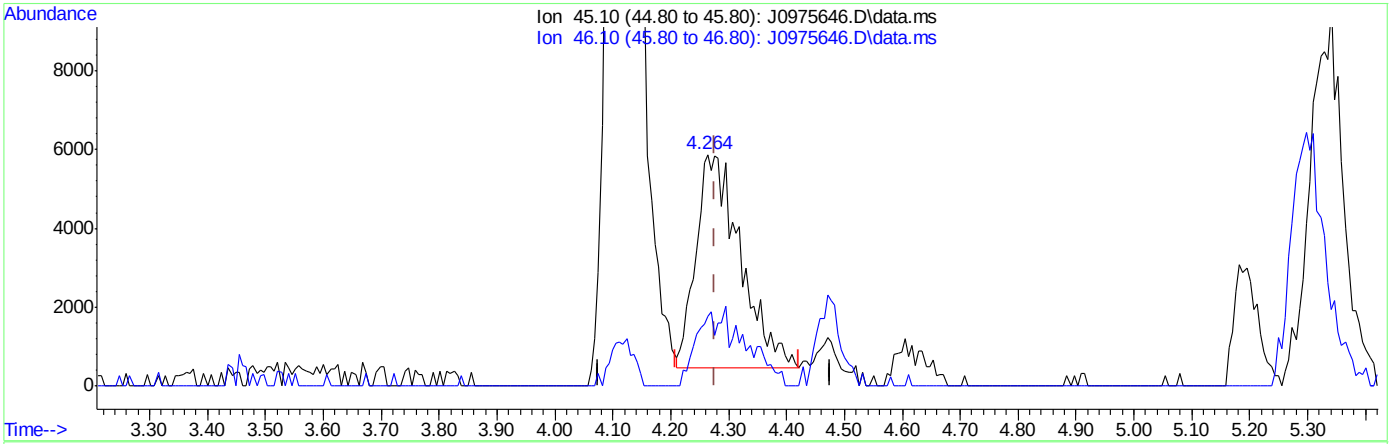
response 410874

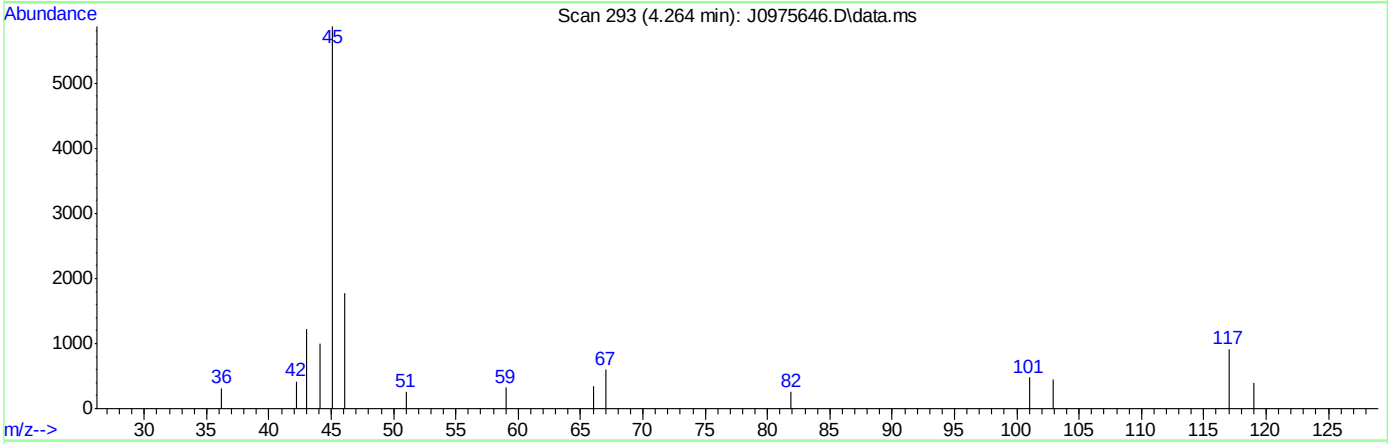
Ion	Exp%	Act%
116.90	100	100
118.90	96.80	94.62
120.90	31.80	30.98
82.00	25.40	25.71

Quantitation Report (Qedit)

Data Path : C:\msdchem\2\data\040516\
Data File : J0975646.D
Acq On : 5 Apr 2016 7:31 pm
Operator : melissam
Sample : ECC5237-5 Inst : MSVOA6
Misc : MS33477,VJ5255,,,,,
ALS Vial : 26 Sample Multiplier: 1

Quant Time: Apr 06 07:43:38 2016
Quant Method : C:\msdchem\2\methods\MSJ031516.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Wed Mar 16 08:34:48 2016
Response via : Initial Calibration





TIC: J0975646.D\data.ms

(107) Ethanol

4.264min (-0.012) 851.38ug/L

response 28813

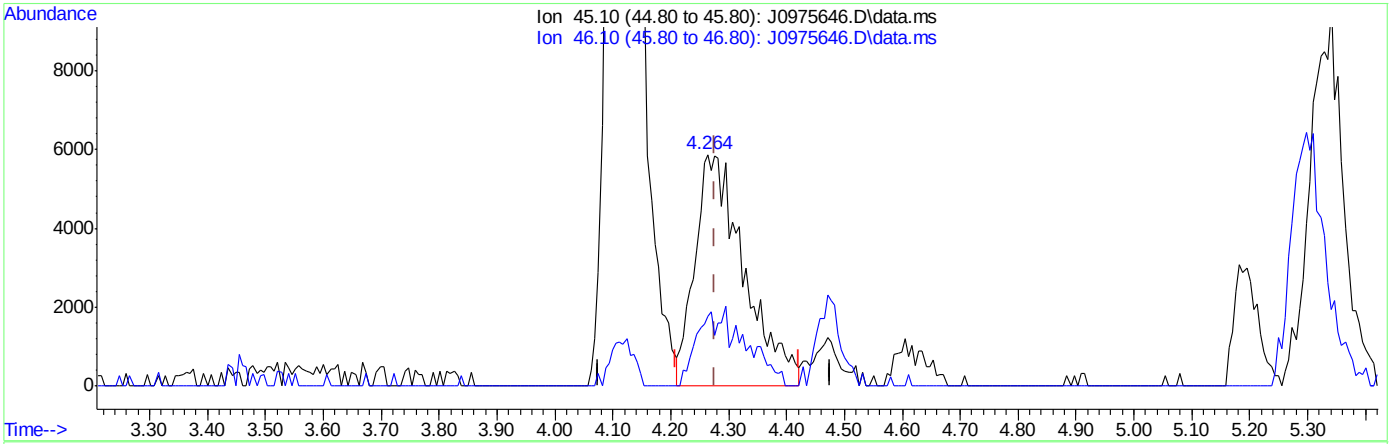
Ion	Exp%	Act%
45.10	100	100
46.10	28.20	32.74
0.00	0.00	0.00
0.00	0.00	0.00

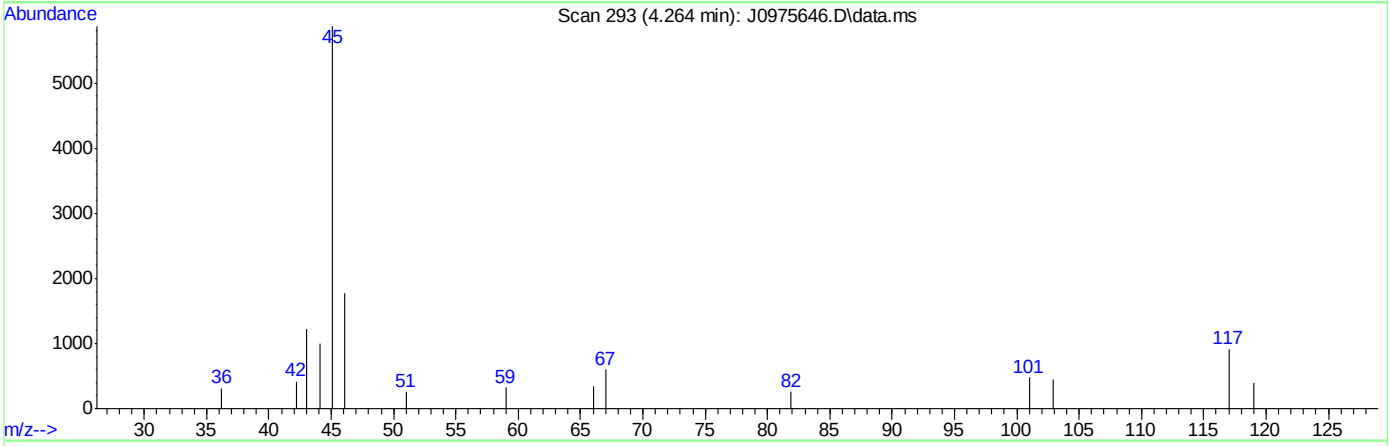
J0975646.D edits: Ethanol

Quantitation Report (Qedit)

Data Path : C:\msdchem\2\data\040516\
Data File : J0975646.D
Acq On : 5 Apr 2016 7:31 pm
Operator : melissam
Sample : ECC5237-5 Inst : MSVOA6
Misc : MS33477,VJ5255,,,,,
ALS Vial : 26 Sample Multiplier: 1

Quant Time: Apr 06 07:43:38 2016
Quant Method : C:\msdchem\2\methods\MSJ031516.M
Quant Title : SW-846 Method 5030B/8260B & EPA 624
QLast Update : Wed Mar 16 08:34:48 2016
Response via : Initial Calibration





TIC: J0975646.D\data.ms

(107) Ethanol

4.264min (-0.012) 1051.32ug/L m

response 34715

Ion	Exp%	Act%
45.10	100	100
46.10	28.20	30.16
0.00	0.00	0.00
0.00	0.00	0.00

ACCUTEST LABORATORIES SE

DATE:	3-25-16
COLUMN TYPE:	RTX-VMS
DETECTOR:	5975 MSD
INSTRUMENT:	MSVOA10-A
PURGE PRESSURE:	8.5 psi
ANALYST:	

MS VOA10-A ANALYSIS LOG

METHODS:*	8260
METHOD FILE:	032516OX4
CALIB. DATE:	03-25-16
EM VOLTAGE:	1537
BFB RESPONSE:	6027941
RUN ID:	VA1897

1-12PH
LOT 200814
0-3 PH
LOT 204413

STANDARDS

BFB:	V20014
ICAL/CCV:	V19998 V20018 V20019 V20008 V20005 V20004 V19929 V19909
ISTD/SURR:	V19925
ICV/QC:	V19999 V20020 V19960 V19976 V19974 V20013, V20021 V19992
Purge Volume	5ml

DATA FILE	SAMPLE ID, DIL.	Vial #	MATRIX	ALS POS.	SAMPLE METHOD	MANUALLY INTEGRATED PEAKS RATIONALE, PEAK #	PH	CI ?	RR	COMMENTS
A 0199810	BFB Tune	N/A	7/20	100	8260VMS		N/A	N/A	N/A	passed auto tune 2nd
A 11	BLK			1						
A 12	BLK			2						
A 13	201897-1			3		#85(me)				(1ml)@ 100mL
A 14	201897-2			4						(5ml)@ 100mL
A 15	201897-3			5						(10ml)@ 100mL
A 16	201897-4			6						(12.5ml)@ 50mL
A 17	201897-5			7						(20ml)@ 50mL
A 18	201897-6			8						(35ml)@ 50mL
A 19	201897-7			9						(50ml)@ 50mL
A 20	BLK			10						
A 21	201997-4			11						(25ml)@
A 27	BLK			12						
A										
A										
A										
A										
A										
A										
A										
A										
A										
A										
A										
A										
A										
A										
A										
A										

3/25/16

* For NELAC purposes, Method 8260 includes analytes by SOP MS005 and Method 624 includes analytes by SOP MS003
Matrix: Designate "W" for Water, "S" for Soil, "O" for Oil, "Liq" for Non-aqueous Liquid, and "TCLP" or "SPLP" for Leachate
All strikeouts must be initialed and dated. If correction was not due to a transcription error, then list the reason for correction.
Manual Integration Rationale SOP QA029: **MP** Missed Peak, **OP** Overlapping Peak, **SP** Split Peak, **PDB** Poorly Defined Baseline, **BR** Baseline Ripple, **PII** Poor Instrument Integration

Analyst's Signature:

msvoa10_a_log.xls NF 06/10

ACCUTEST LABORATORIES SE

DATE:	4-5-16
COLUMN TYPE:	RTX-VMS
DETECTOR:	5975 MSD
INSTRUMENT:	MSVOA10-A
PURGE PRESSURE:	8.7 Psi
ANALYST:	RD

MS VOA10-A ANALYSIS LOG

METHODS:*	8260
METHOD FILE:	03251600.y
CALIB. DATE:	03-25-16
EM VOLTAGE:	1535
BFB RESPONSE:	5914173
RUN ID:	VA 1906

1-12PH
LOT 200814
0-3 PH
LOT 204413

STANDARDS

BFB:	V20014
ICAL/CCV:	V20042 V20048 V20019 V20041 V20047 V20043 V20031 V20045
ISTD/SURR:	V20050
ICV/QC:	V20042 V20020 V20035 V19960
Purge Volume	5ml V20021 V19992 V20013 V20051

DATA FILE	SAMPLE ID, DIL.	Vial #	MATRIX	ALS POS.	SAMPLE METHOD	MANUALLY INTEGRATED PEAKS RATIONALE, PEAK #	PH	CI ?	RR	COMMENTS
A0200018	BFB TUNE	N/A	H_2O	100	8260VMS		N/A	N/A	N/A	passed auto tune file
A 19	CC1897-5	↓	↓	1	↓	↓	↓	↓	↓	(20ml)8
A 20	BS			2						(12.5ml)8
A 21	MB BIK			3						
A 22	FA32739-11	2		4			2	N	N	
A 23	FA32549-1	2		5			2	N	N	
A 24	-2	1		6			2	N	N	
A 25	FA32633-12,2X	3		7		25:SV	2	N	N	
A 26	FA32657-13	2		8			2	N	N	
A 27	FA32549-1MS	3		9			2	N	N	
A 28	-1MSD	3		10			2	N	N	
A 29	FA32796-1	1		11			2	N	N	
A 30	-2	1		12			2	N	5X	
A 31	-3	1		13			2	N	N	
A 32	-4	1		14			2	N	N	
A 33	~~-4MSD~~	1		15			2	N	N	
A 34	-5	1		16			2	N	N	
A 35	FA32797-1	1		17			2	N	N	
A 36	-2	1		18			2	N	N	
A 37	FA32798-1	2		19			2	N	N	
A 38	-2	2		20			2	N	N	
A 39	FA32800-1	2		21			2	N	N	
A 40	-2	1		22			2	N	N	
A 41	FA32802-1	2		23			2	N	N	
A 42	FA32796-25X	2		24		10:SV	2	N	N	
A 43	ECB1867-5	N/A		25			N/A	N/A	N/A	(20ml)8
A 44	BIK	N/A	↓	26	↓		N/A	N/A	N/A	

* For NELAC purposes, Method 8260 includes analytes by SOP MS005 and Method 624 includes analytes by SOP MS003
Matrix: Designate "W" for Water, "S" for Soil, "O" for Oil, "Liq" for Non-aqueous Liquid, and "TCLP" or "SPLP" for Leachate
All strikeouts must be initialed and dated. If correction was not due to a transcription error, then list the reason for correction.
Manual Integration Rationale SOP QA029: **MP** Missed Peak, **OP** Overlapping Peak, **SP** Split Peak, **PDB** Poorly Defined Baseline, **BR** Baseline Ripple, **PII** Poor Instrument Integration

Analyst's Signature:

msvoa10_a_log.xls NF 06/10

ACCUTEST LABORATORIES SE

DATE:	03-15-16
COLUMN TYPE:	RTX-VMS
DETECTOR:	5973 MSD
INSTRUMENT:	MSVOA6-J
PURGE PRESSURE:	10.6 psi
ANALYST:	DP

1-12 pH LOT 200814
0-3 pH LOT 204413A

MS VOA6-J ANALYSIS LOG

METHODS:*	8260
METHOD FILE:	MSJ031516.m
CALIB. DATE:	03-15-16
EM VOLTAGE:	1553
BFB RESPONSE:	30120415
RUN ID:	VJ~~5237~~ 5237 DP 03-16-16

STANDARDS

BFB:	V19931 V19964 (new gross) V19953 (4 cm)
ICAL/CCV:	V19947 V19895 V19919 V19932 V19955 V19909 V19928 V19929
ISTD/SURR:	V19931
ICV/QC:	V19967 V19924 V19956 V19900
Purge Volume	V19916 V19960 V19853 V19869

DATA FILE	SAMPLE ID, DIL.	Vial #	MATRIX	ALS POS.	SAMPLE METHOD	MANUALLY INTEGRATED PEAKS RATIONALE, PEAK #	PH	CI ?	RR	COMMENTS
J0975140	BLK	N/A	W	1	8260		N/A	N/A		
J 41	BLK			1						
J 42	BLK			1						20ml->50ml Naph ↑
J 43	CC5236-5 A			1						↓ ↓
J 44	-5			1						
J 45	BLK New trap			1						
J 46	BLK			1						
J 47	BLK			1						
J 48	BLK			2						
J 49	BLK / BFB			3						
J 50	ICS237-1			4		PII(6) SP(8)				0.5ml ->50ml
J 51	-2			5		SP(8) OP(37) PII(102)				2.5ml ->50ml
J 52	-3			6		SP(8) OP(37) PII(107)				5ml ->50ml
J 53	-4			7		SP(8) OP(37) PII(107)				12.5ml ->50ml
J 54	-5			8		SP(8) OP(37) PII(107)				20ml ->50ml
J 55	-6			9		SP(8) OP(37) PII(107)				35ml ->50ml
J 56	-7			10		SP(8) OP(37) PII(107)				50ml ->50ml
J 57	BLK			11						
J 58	ICV5237-5	↓	↓	12	↓		↓	↓		25ml ->50ml
J 59	ICV5237-5			13						
J										
J										
J										
J										
J										
J										
J										

03-16-16 DP

* For NELAC purposes, Method 8260 includes analytes by SOP MS005 and Method 624 includes analytes by SOP MS003
Matrix: Designate "W" for Water, "S" for Soil, "O" for Oil, "Liq" for Non-aqueous Liquid, and "TCLP" or "SPLP" for Leachate
All strikeouts must be initialed and dated. If correction was not due to a transcription error, then list the reason for correction.
Manual Integration Rationale SOP QA029: **MP** Missed Peak, **OP** Overlapping Peak, **SP** Split Peak, **PDB** Poorly Defined Baseline, **BR** Baseline Ripple, **PII** Poor Instrument Integration

Analyst's Signature: DP

ACCUTEST LABORATORIES SE

DATE:	04-05-16
COLUMN TYPE:	RTX-VMS
DETECTOR:	5973 MSD
INSTRUMENT:	MSVOA6-J
PURGE PRESSURE:	11.4 psi
ANALYST:	Melissa Hingsley

1-12 pH
LOT 200814
0-3 pH
LOT 204413A

MS VOA6-J ANALYSIS LOG

METHODS:*	8260
METHOD FILE:	MSJ032516.M
CALIB. DATE:	03-15-16
EM VOLTAGE:	1553 V
BFB RESPONSE:	25306.95
RUN ID:	VJ5255

STANDARDS

BFB:	V20056
ICAL/CCV:	V20042, V20018, V20019, V20041 V20043, V20004, V20031, V20045
ISTD/SURR:	V20056
ICV/QC:	V20032, V20020, V19960, V20023, V20051
Purge Volume	5 mL V20035, V20036 V19939

DATA FILE	SAMPLE ID, DIL.	Vial #	MATRIX	ALS POS.	SAMPLE METHOD	MANUALLY INTEGRATED PEAKS RATIONALE, PEAK #	PH	CI ?	RR	COMMENTS
J 0975617	Blank	—	W	1	8260		—	—		✓
J 18	BFB	—		1			—	—		Pass on curve fit.
J 19	CCV5237-5	—		1		#8(SP), 37(OP), 107(PDB)	—	—		20 mL (.5 mL)
J 20	BS	—		2		#8(SP), 37(OP), 107(PDB)	—	—		10.5 mL (.5 mL)
J 21	MB	—		3			—	—		✓
J 22	FA32657-1	1		4			1	2		✓
J 23	-2	2		5			1			✓
J 24	-3 MS	2		6		arrived with MS.	1			✓
J 25	-4	2		7			1			✓
J 26	-5	2		8			1			✓
J 27	-6	2		9			1			✓
J 28	FA32712-1	2		10			4			✓
J 29	-6	2		11			4			✓
J 30	FA32688-6	2		12			4			✓
J 31	-1, 20X	2		13		2.5 mL (.5 mL)	4			✓
J 32	-2, 20X	2		14		2.5 mL (.5 mL)	4			✓
J 33	-7, 50X	2		15/16		1 mL (.5 mL)	4			✓
J 34	FA32712-2, 20X	2				2.5 mL (.5 mL)	4			✓
J 35	-7, 5X	2		17		10 mL (.5 mL)	4			✓
J 36	FA32657-7 MS	2		18		arrived with MS.	1			✓
J 37	-8	2		19			1			✓
J 38	-9 MS	2		20		arrived with MS.	1			✓
J 39	-10	2		21			1			NO
J 40	-11	2		22			1			✓
J 41	-12	2		23			1			NO
J 42	FA32712-1 MSD	3	✓	24	✓	SP(8) OP(37) PII(107)	4			12.5 mL (.5 mL) ✓
J 43	-1 MSD	3		24		SP(8) OP(37) PII(107)	4	✓		12.5 mL (.5 mL) ✓
~~44~~	~~FA32657-5~~ SP 04/05/16					~~SP(6) OP(37) PII(107)~~ dg-06-16 DP				~~12.5 mL (.5 mL)~~ JD 04/05/16

* For NELAC purposes, Method 8260 includes analytes by SOP MS005 and Method 624 includes analytes by SOP MS005

Matrix: Designate "W" for Water, "S" for Soil, "O" for Oil, "Liq" for Non-aqueous Liquid, and "TCLP" or "SPLP" for Leachate

All strikeouts must be initialed and dated. If correction was not due to a transcription error, then list the reason for correction.

Manual Integration Rationale SOP QA029: **MP** Missed Peak, **OP** Overlapping Peak, **SP** Split Peak, **PDB** Poorly Defined Baseline, **BR** Baseline Ripple, **PII** Poor Instrument Integration

Analyst's Signature: [signature] PG

ACCUTEST LABORATORIES SE

DATE:	04/05/16
COLUMN TYPE:	RTX - VMS
DETECTOR:	5973 MSD
INSTRUMENT:	MSVOA6-J
PURGE PRESSURE:	11.4 psi
ANALYST:	SP

MS VOA6-J ANALYSIS LOG

METHODS:*	8260
METHOD FILE:	MSJ031516.m
CALIB. DATE:	03/15/16
EM VOLTAGE:	1553 V
BFB RESPONSE:	2526695
RUN ID:	VJ 5255

STANDARDS

BFB:	V20056
ICAL/CCV:	V20042 V20018 V20019 V20041 V20047 V20004 V20031 V20045
ISTD/SURR:	V20056
ICV/QC:	V20032, V20020, V19960, ~~V20002~~ V20021, V19974
Purge Volume	5ml V20051, V20035, V20013, SP 04/05/16

	DATA FILE	SAMPLE ID, DIL.	Vial #	MATRIX	ALS POS.	SAMPLE METHOD	MANUALLY INTEGRATED PEAKS RATIONALE, PEAK #	PH	CI ?	RR	COMMENTS
J	975644	FA32688-5MS, 200x	2	W	25	8260	SP(8) OP(37) PII(107)	6	N		12.5ul - 40ml 0.25ml:5ml
J	45	5MSD, 200x	2	↓	25	↓	OP(37)	6	↓		12.5ul - 40ml 0.25ml:5ml
J	46	ECC15237-5	NA	↓	26	↓	OP(37) PII(107)	—	-	—	20ul - 50ml
J											
J											
J											
J											
J											
J											
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J											

* For NELAC purposes, Method 8260 includes analytes by SOP MS005 and Method 624 includes analytes by SOP MS003

Matrix: Designate "W" for Water, "S" for Soil, "O" for Oil, "Liq" for Non-aqueous Liquid, and "TCLP" or "SPLP" for Leachate

All strikeouts must be initialed and dated. If correction was not due to a transcription error, then list the reason for correction.

Manual Integration Rationale SOP QA029: **MP** Missed Peak, **OP** Overlapping Peak, **SP** Split Peak, **PDB** Poorly Defined Baseline, **BR** Baseline Ripple, **PII** Poor Instrument Integration

Analyst's Signature: FDD

TABLE OF CONTENTS

ENCO Laboratories

Accurate. Timely. Responsive. Innovative.

10775 Central Port Drive
Orlando FL, 32824
Phone: 407.826.5314 FAX: 407.850.6945

Wednesday, September 21, 2016
Tetra Tech, Inc. (TE016)
Attn: Alex Murphy
11 Riverside Drive, Suite 204
Cocoa, FL 32922

RE: Laboratory Results for
Project Number: 112G07584, Project Name/Desc: NASA-KSC-SW3
ENCO Workorder(s): AZ06090

Dear Alex Murphy,

Enclosed is a copy of your laboratory report for test samples received by our laboratory on Monday, September 12, 2016.

Unless otherwise noted in an attached project narrative, all samples were received in acceptable condition and processed in accordance with the referenced methods/procedures. Results for these procedures apply only to the samples as submitted.

The analytical results contained in this report are in compliance with NELAC standards, except as noted in the project narrative. This report shall not be reproduced except in full, without the written approval of the Laboratory.

This report contains only those analyses performed by Environmental Conservation Laboratories. Unless otherwise noted, all analyses were performed at ENCO Orlando. Data from outside organizations will be reported under separate cover.

If you have any questions or require further information, please do not hesitate to contact me.

Sincerely,

Kaitlin Dylnicki

Project Manager

Enclosure(s)

PROJECT NARRATIVE

www.encolabs.com

Client: Tetra Tech, Inc. (TE016)
Project: NASA-KSC-SW3
Project Number: 112G07584
ENCO Project ID: AZ06090
SDG: AZ06090-TE016

Overview

All samples submitted were analyzed by Environmental Conservation Laboratories, Inc. in accordance with the methods referenced in the laboratory report. Any particular difficulties encountered during sample handling and processing will be discussed in the Remarks section below.

Remarks

List of instruments used:

Analytical and Preparation Method	SOP Reference Instrument
EPA 8260B	OVGCMS5

Analysis: EPA 8260B

Manual integrations were performed on samples associated with EPA 8260B. All data & explanations are included in the raw data section of the report.

Affected Samples: AZ06090-01 (SW3-MW0009-020.0-20160910), 6I19025-MS1, 6I19025-MSD1
Precision between matrix spikes of the same sample were outside acceptance limits for bromomethane.

Affected Samples: AZ06090-03RE1 (SW3-MW0025-040.0-20160910),
AZ06090-04RE1 (SW3-MW0027-032.0-20160910), AZ06090-05RE1 (SW3-MW0028-032.0-20160910)
Initial result is over diluted. Sample was reanalyzed at a lower dilution. RE1 reported, all raw data included.

Affected Samples: AA40509-CCV1, AZ06090-01 (SW3-MW0009-020.0-20160910),
AZ06090-02 (SW3-MW0026-040.0-20160910), AZ06090-06 (SW3-SW0002-000.5-20160910),
AZ06090-07 (SW3-SW0003-000.5-20160910), AZ06090-08 (TRIP BLANK)
Recoveries for 1,2,4-trichlorobenzene, 1,2-dibromo-3-chloropropane, and 1,2,3-trichlorobenzene were biased low. CCC's and SPCC's meet method criteria.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy package and in computer-readable data submitted on diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signatures.

Kaitlin Dylnicki
Project Manager

SAMPLE SUMMARY/LABORATORY CHRONICLE

Client ID:	Lab ID:	Sampled:	Received:
SW3-MW0009-020.0-20160910	AZ06090-01	09/10/16 14:10	09/12/16 16:10

Parameter	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260B	09/24/16	09/19/16 00:00	09/19/16 14:41

Client ID:	Lab ID:	Sampled:	Received:
SW3-MW0026-040.0-20160910	AZ06090-02	09/10/16 14:40	09/12/16 16:10

Parameter	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260B	09/24/16	09/19/16 00:00	09/19/16 15:11

Client ID:	Lab ID:	Sampled:	Received:
SW3-MW0025-040.0-20160910	AZ06090-03	09/10/16 15:15	09/12/16 16:10

Parameter	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260B	09/24/16	09/19/16 00:00	09/19/16 15:40

Client ID:	Lab ID:	Sampled:	Received:
SW3-MW0025-040.0-20160910	AZ06090-03RE1	09/10/16 15:15	09/12/16 16:10

Parameter	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260B	09/24/16	09/20/16 00:00	09/20/16 11:44

Client ID:	Lab ID:	Sampled:	Received:
SW3-MW0027-032.0-20160910	AZ06090-04	09/10/16 15:55	09/12/16 16:10

Parameter	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260B	09/24/16	09/19/16 00:00	09/19/16 16:10

Client ID:	Lab ID:	Sampled:	Received:
SW3-MW0027-032.0-20160910	AZ06090-04RE1	09/10/16 15:55	09/12/16 16:10

Parameter	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260B	09/24/16	09/20/16 00:00	09/20/16 12:14

Client ID:	Lab ID:	Sampled:	Received:
SW3-MW0028-032.0-20160910	AZ06090-05	09/10/16 16:30	09/12/16 16:10

Parameter	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260B	09/24/16	09/19/16 00:00	09/19/16 16:40

Client ID:	Lab ID:	Sampled:	Received:
SW3-MW0028-032.0-20160910	AZ06090-05RE1	09/10/16 16:30	09/12/16 16:10

Parameter	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260B	09/24/16	09/20/16 00:00	09/20/16 12:43

Client ID:	Lab ID:	Sampled:	Received:
SW3-SW0002-000.5-20160910	AZ06090-06	09/10/16 16:50	09/12/16 16:10

Parameter	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260B	09/24/16	09/19/16 00:00	09/19/16 17:09

Client ID:	Lab ID:	Sampled:	Received:
SW3-SW0003-000.5-20160910	AZ06090-07	09/10/16 17:30	09/12/16 16:10

Parameter	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260B	09/24/16	09/19/16 00:00	09/19/16 17:39

Client ID:	Lab ID:	Sampled:	Received:
TRIP BLANK	AZ06090-08	09/10/16 00:00	09/12/16 16:10

Parameter	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260B	09/24/16	09/19/16 00:00	09/19/16 18:08

SAMPLE DETECTION SUMMARY

Client ID: SW3-MW0009-020.0-20160910 **Lab ID:** AZ06090-01

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
cis-1,2-Dichloroethene	79		0.53	2.0	ug/L	EPA 8260B	
trans-1,2-Dichloroethene	8.8		0.73	2.0	ug/L	EPA 8260B	
Trichloroethene	19		0.89	2.0	ug/L	EPA 8260B	
Vinyl chloride	13		0.71	2.0	ug/L	EPA 8260B	

Client ID: SW3-MW0026-040.0-20160910 **Lab ID:** AZ06090-02

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
cis-1,2-Dichloroethene	0.69	I	0.53	2.0	ug/L	EPA 8260B	

Client ID: SW3-MW0025-040.0-20160910 **Lab ID:** AZ06090-03RE1

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
Acetone	17	I	10	25	ug/L	EPA 8260B	
Vinyl chloride	1.7	I	0.71	2.0	ug/L	EPA 8260B	

Client ID: SW3-MW0027-032.0-20160910 **Lab ID:** AZ06090-04RE1

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
Vinyl chloride	61		0.71	2.0	ug/L	EPA 8260B	

Client ID: SW3-MW0028-032.0-20160910 **Lab ID:** AZ06090-05RE1

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
Vinyl chloride	21		0.71	2.0	ug/L	EPA 8260B	

Client ID: SW3-SW0002-000.5-20160910 **Lab ID:** AZ06090-06

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
Acetone	13	I	10	25	ug/L	EPA 8260B	

ANALYTICAL RESULTS

Description: SW3-MW0009-020.0-20160910 **Lab Sample ID:** AZ06090-01 **Received:** 09/12/16 16:10

Matrix: Ground Water **Sampled:** 09/10/16 14:10 **Work Order:** AZ06090

Project: NASA-KSC-SW3 **Sampled By:** Chuck Sorden

Volatile Organic Compounds by GCMS

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]	0.80	U	ug/L	1	0.80	2.0	6I19025	EPA 8260B	09/19/16 14:41	KKW	
1,1,2,2-Tetrachloroethane [79-34-5]	0.54	U	ug/L	1	0.54	2.0	6I19025	EPA 8260B	09/19/16 14:41	KKW	
1,1,2-Trichloroethane [79-00-5]	0.76	U	ug/L	1	0.76	2.0	6I19025	EPA 8260B	09/19/16 14:41	KKW	
1,1-Dichloroethane [75-34-3]	0.62	U	ug/L	1	0.62	2.0	6I19025	EPA 8260B	09/19/16 14:41	KKW	
1,1-Dichloroethene [75-35-4]	0.94	U	ug/L	1	0.94	2.0	6I19025	EPA 8260B	09/19/16 14:41	KKW	
1,2,4-Trichlorobenzene [120-82-1]	0.70	U	ug/L	1	0.70	2.0	6I19025	EPA 8260B	09/19/16 14:41	KKW	
1,2-Dibromo-3-chloropropane [96-12-8]	0.96	U	ug/L	1	0.96	10	6I19025	EPA 8260B	09/19/16 14:41	KKW	
1,2-Dibromoethane [106-93-4]	0.78	U	ug/L	1	0.78	2.0	6I19025	EPA 8260B	09/19/16 14:41	KKW	
1,2-Dichlorobenzene [95-50-1]	0.73	U	ug/L	1	0.73	2.0	6I19025	EPA 8260B	09/19/16 14:41	KKW	
1,2-Dichloroethane [107-06-2]	0.63	U	ug/L	1	0.63	2.0	6I19025	EPA 8260B	09/19/16 14:41	KKW	
1,2-Dichloropropane [78-87-5]	0.80	U	ug/L	1	0.80	2.0	6I19025	EPA 8260B	09/19/16 14:41	KKW	
1,3-Dichlorobenzene [541-73-1]	0.77	U	ug/L	1	0.77	2.0	6I19025	EPA 8260B	09/19/16 14:41	KKW	
1,4-Dichlorobenzene [106-46-7]	0.76	U	ug/L	1	0.76	2.0	6I19025	EPA 8260B	09/19/16 14:41	KKW	
2-Butanone [78-93-3]	4.5	U	ug/L	1	4.5	25	6I19025	EPA 8260B	09/19/16 14:41	KKW	
2-Hexanone [591-78-6]	1.4	U	ug/L	1	1.4	5.0	6I19025	EPA 8260B	09/19/16 14:41	KKW	
4-Methyl-2-pentanone [108-10-1]	0.79	U	ug/L	1	0.79	5.0	6I19025	EPA 8260B	09/19/16 14:41	KKW	
Acetone [67-64-1]	10	U	ug/L	1	10	25	6I19025	EPA 8260B	09/19/16 14:41	KKW	
Benzene [71-43-2]	0.71	U	ug/L	1	0.71	2.0	6I19025	EPA 8260B	09/19/16 14:41	KKW	
Bromodichloromethane [75-27-4]	0.52	U	ug/L	1	0.52	2.0	6I19025	EPA 8260B	09/19/16 14:41	KKW	
Bromoform [75-25-2]	0.75	U	ug/L	1	0.75	2.0	6I19025	EPA 8260B	09/19/16 14:41	KKW	
Bromomethane [74-83-9]	0.95	U	ug/L	1	0.95	2.0	6I19025	EPA 8260B	09/19/16 14:41	KKW	QM-11
Carbon disulfide [75-15-0]	2.6	U	ug/L	1	2.6	10	6I19025	EPA 8260B	09/19/16 14:41	KKW	
Carbon Tetrachloride [56-23-5]	0.94	U	ug/L	1	0.94	2.0	6I19025	EPA 8260B	09/19/16 14:41	KKW	
Chlorobenzene [108-90-7]	0.72	U	ug/L	1	0.72	2.0	6I19025	EPA 8260B	09/19/16 14:41	KKW	
Chloroethane [75-00-3]	0.98	U	ug/L	1	0.98	2.0	6I19025	EPA 8260B	09/19/16 14:41	KKW	
Chloroform [67-66-3]	0.80	U	ug/L	1	0.80	2.0	6I19025	EPA 8260B	09/19/16 14:41	KKW	
Chloromethane [74-87-3]	0.82	U	ug/L	1	0.82	2.0	6I19025	EPA 8260B	09/19/16 14:41	KKW	
cis-1,2-Dichloroethene [156-59-2]	**79**		ug/L	1	0.53	2.0	6I19025	EPA 8260B	09/19/16 14:41	KKW	
cis-1,3-Dichloropropene [10061-01-5]	0.59	U	ug/L	1	0.59	2.0	6I19025	EPA 8260B	09/19/16 14:41	KKW	
Cyclohexane [110-82-7]	0.93	U	ug/L	1	0.93	2.0	6I19025	EPA 8260B	09/19/16 14:41	KKW	
Dibromochloromethane [124-48-1]	0.44	U	ug/L	1	0.44	2.0	6I19025	EPA 8260B	09/19/16 14:41	KKW	
Dichlorodifluoromethane [75-71-8]	0.74	U	ug/L	1	0.74	2.0	6I19025	EPA 8260B	09/19/16 14:41	KKW	
Ethylbenzene [100-41-4]	0.69	U	ug/L	1	0.69	2.0	6I19025	EPA 8260B	09/19/16 14:41	KKW	
Freon 113 [76-13-1]	0.73	U	ug/L	1	0.73	2.0	6I19025	EPA 8260B	09/19/16 14:41	KKW	
Isopropylbenzene [98-82-8]	0.67	U	ug/L	1	0.67	2.0	6I19025	EPA 8260B	09/19/16 14:41	KKW	
m,p-Xylenes [108-38-3/106-42-3]	1.3	U	ug/L	1	1.3	4.0	6I19025	EPA 8260B	09/19/16 14:41	KKW	
Methyl acetate [79-20-9]	0.95	U	ug/L	1	0.95	2.0	6I19025	EPA 8260B	09/19/16 14:41	KKW	
Methyl cyclohexane [108-87-2]	0.64	U	ug/L	1	0.64	2.0	6I19025	EPA 8260B	09/19/16 14:41	KKW	
Methylene Chloride [75-09-2]	2.0	U	ug/L	1	2.0	10	6I19025	EPA 8260B	09/19/16 14:41	KKW	
Methyl-tert-Butyl Ether [1634-04-4]	0.60	U	ug/L	1	0.60	2.0	6I19025	EPA 8260B	09/19/16 14:41	KKW	
o-Xylene [95-47-6]	0.53	U	ug/L	1	0.53	2.0	6I19025	EPA 8260B	09/19/16 14:41	KKW	
Styrene [100-42-5]	0.61	U	ug/L	1	0.61	2.0	6I19025	EPA 8260B	09/19/16 14:41	KKW	
Tetrachloroethene [127-18-4]	0.76	U	ug/L	1	0.76	2.0	6I19025	EPA 8260B	09/19/16 14:41	KKW	
Toluene [108-88-3]	0.72	U	ug/L	1	0.72	2.0	6I19025	EPA 8260B	09/19/16 14:41	KKW	
trans-1,2-Dichloroethene [156-60-5]	**8.8**		ug/L	1	0.73	2.0	6I19025	EPA 8260B	09/19/16 14:41	KKW	
trans-1,3-Dichloropropene [10061-02-6]	0.73	U	ug/L	1	0.73	2.0	6I19025	EPA 8260B	09/19/16 14:41	KKW	
Trichloroethene [79-01-6]	**19**		ug/L	1	0.89	2.0	6I19025	EPA 8260B	09/19/16 14:41	KKW	

ANALYTICAL RESULTS

Description: SW3-MW0009-020.0-20160910 **Lab Sample ID:** AZ06090-01 **Received:** 09/12/16 16:10

Matrix: Ground Water **Sampled:** 09/10/16 14:10 **Work Order:** AZ06090

Project: NASA-KSC-SW3 **Sampled By:** Chuck Sorden

Volatile Organic Compounds by GCMS

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
Trichlorofluoromethane [75-69-4]	0.94	U	ug/L	1	0.94	2.0	6I19025	EPA 8260B	09/19/16 14:41	KKW	
Vinyl chloride [75-01-4]	**13**		ug/L	1	0.71	2.0	6I19025	EPA 8260B	09/19/16 14:41	KKW	
Xylenes (Total) [1330-20-7]	1.3	U	ug/L	1	1.3	4.0	6I19025	EPA 8260B	09/19/16 14:41	KKW	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
4-Bromofluorobenzene	*54*	*1*	*50.0*	*107 %*	*41-142*	*6I19025*	*EPA 8260B*	*09/19/16 14:41*	*KKW*	
Dibromofluoromethane	*52*	*1*	*50.0*	*104 %*	*53-146*	*6I19025*	*EPA 8260B*	*09/19/16 14:41*	*KKW*	
Toluene-d8	*52*	*1*	*50.0*	*104 %*	*41-146*	*6I19025*	*EPA 8260B*	*09/19/16 14:41*	*KKW*	

ANALYTICAL RESULTS

Description: SW3-MW0026-040.0-20160910 **Lab Sample ID:** AZ06090-02 **Received:** 09/12/16 16:10

Matrix: Ground Water **Sampled:** 09/10/16 14:40 **Work Order:** AZ06090

Project: NASA-KSC-SW3 **Sampled By:** Chuck Sorden

Volatile Organic Compounds by GCMS

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]	0.80	U	ug/L	1	0.80	2.0	6I19025	EPA 8260B	09/19/16 15:11	KKW	
1,1,2,2-Tetrachloroethane [79-34-5]	0.54	U	ug/L	1	0.54	2.0	6I19025	EPA 8260B	09/19/16 15:11	KKW	
1,1,2-Trichloroethane [79-00-5]	0.76	U	ug/L	1	0.76	2.0	6I19025	EPA 8260B	09/19/16 15:11	KKW	
1,1-Dichloroethane [75-34-3]	0.62	U	ug/L	1	0.62	2.0	6I19025	EPA 8260B	09/19/16 15:11	KKW	
1,1-Dichloroethene [75-35-4]	0.94	U	ug/L	1	0.94	2.0	6I19025	EPA 8260B	09/19/16 15:11	KKW	
1,2,4-Trichlorobenzene [120-82-1]	0.70	U	ug/L	1	0.70	2.0	6I19025	EPA 8260B	09/19/16 15:11	KKW	
1,2-Dibromo-3-chloropropane [96-12-8]	0.96	U	ug/L	1	0.96	10	6I19025	EPA 8260B	09/19/16 15:11	KKW	
1,2-Dibromoethane [106-93-4]	0.78	U	ug/L	1	0.78	2.0	6I19025	EPA 8260B	09/19/16 15:11	KKW	
1,2-Dichlorobenzene [95-50-1]	0.73	U	ug/L	1	0.73	2.0	6I19025	EPA 8260B	09/19/16 15:11	KKW	
1,2-Dichloroethane [107-06-2]	0.63	U	ug/L	1	0.63	2.0	6I19025	EPA 8260B	09/19/16 15:11	KKW	
1,2-Dichloropropane [78-87-5]	0.80	U	ug/L	1	0.80	2.0	6I19025	EPA 8260B	09/19/16 15:11	KKW	
1,3-Dichlorobenzene [541-73-1]	0.77	U	ug/L	1	0.77	2.0	6I19025	EPA 8260B	09/19/16 15:11	KKW	
1,4-Dichlorobenzene [106-46-7]	0.76	U	ug/L	1	0.76	2.0	6I19025	EPA 8260B	09/19/16 15:11	KKW	
2-Butanone [78-93-3]	4.5	U	ug/L	1	4.5	25	6I19025	EPA 8260B	09/19/16 15:11	KKW	
2-Hexanone [591-78-6]	1.4	U	ug/L	1	1.4	5.0	6I19025	EPA 8260B	09/19/16 15:11	KKW	
4-Methyl-2-pentanone [108-10-1]	0.79	U	ug/L	1	0.79	5.0	6I19025	EPA 8260B	09/19/16 15:11	KKW	
Acetone [67-64-1]	10	U	ug/L	1	10	25	6I19025	EPA 8260B	09/19/16 15:11	KKW	
Benzene [71-43-2]	0.71	U	ug/L	1	0.71	2.0	6I19025	EPA 8260B	09/19/16 15:11	KKW	
Bromodichloromethane [75-27-4]	0.52	U	ug/L	1	0.52	2.0	6I19025	EPA 8260B	09/19/16 15:11	KKW	
Bromoform [75-25-2]	0.75	U	ug/L	1	0.75	2.0	6I19025	EPA 8260B	09/19/16 15:11	KKW	
Bromomethane [74-83-9]	0.95	U	ug/L	1	0.95	2.0	6I19025	EPA 8260B	09/19/16 15:11	KKW	
Carbon disulfide [75-15-0]	2.6	U	ug/L	1	2.6	10	6I19025	EPA 8260B	09/19/16 15:11	KKW	
Carbon Tetrachloride [56-23-5]	0.94	U	ug/L	1	0.94	2.0	6I19025	EPA 8260B	09/19/16 15:11	KKW	
Chlorobenzene [108-90-7]	0.72	U	ug/L	1	0.72	2.0	6I19025	EPA 8260B	09/19/16 15:11	KKW	
Chloroethane [75-00-3]	0.98	U	ug/L	1	0.98	2.0	6I19025	EPA 8260B	09/19/16 15:11	KKW	
Chloroform [67-66-3]	0.80	U	ug/L	1	0.80	2.0	6I19025	EPA 8260B	09/19/16 15:11	KKW	
Chloromethane [74-87-3]	0.82	U	ug/L	1	0.82	2.0	6I19025	EPA 8260B	09/19/16 15:11	KKW	
cis-1,2-Dichloroethene [156-59-2]	**0.69**	I	ug/L	1	0.53	2.0	6I19025	EPA 8260B	09/19/16 15:11	KKW	
cis-1,3-Dichloropropene [10061-01-5]	0.59	U	ug/L	1	0.59	2.0	6I19025	EPA 8260B	09/19/16 15:11	KKW	
Cyclohexane [110-82-7]	0.93	U	ug/L	1	0.93	2.0	6I19025	EPA 8260B	09/19/16 15:11	KKW	
Dibromochloromethane [124-48-1]	0.44	U	ug/L	1	0.44	2.0	6I19025	EPA 8260B	09/19/16 15:11	KKW	
Dichlorodifluoromethane [75-71-8]	0.74	U	ug/L	1	0.74	2.0	6I19025	EPA 8260B	09/19/16 15:11	KKW	
Ethylbenzene [100-41-4]	0.69	U	ug/L	1	0.69	2.0	6I19025	EPA 8260B	09/19/16 15:11	KKW	
Freon 113 [76-13-1]	0.73	U	ug/L	1	0.73	2.0	6I19025	EPA 8260B	09/19/16 15:11	KKW	
Isopropylbenzene [98-82-8]	0.67	U	ug/L	1	0.67	2.0	6I19025	EPA 8260B	09/19/16 15:11	KKW	
m,p-Xylenes [108-38-3/106-42-3]	1.3	U	ug/L	1	1.3	4.0	6I19025	EPA 8260B	09/19/16 15:11	KKW	
Methyl acetate [79-20-9]	0.95	U	ug/L	1	0.95	2.0	6I19025	EPA 8260B	09/19/16 15:11	KKW	
Methyl cyclohexane [108-87-2]	0.64	U	ug/L	1	0.64	2.0	6I19025	EPA 8260B	09/19/16 15:11	KKW	
Methylene Chloride [75-09-2]	2.0	U	ug/L	1	2.0	10	6I19025	EPA 8260B	09/19/16 15:11	KKW	
Methyl-tert-Butyl Ether [1634-04-4]	0.60	U	ug/L	1	0.60	2.0	6I19025	EPA 8260B	09/19/16 15:11	KKW	
o-Xylene [95-47-6]	0.53	U	ug/L	1	0.53	2.0	6I19025	EPA 8260B	09/19/16 15:11	KKW	
Styrene [100-42-5]	0.61	U	ug/L	1	0.61	2.0	6I19025	EPA 8260B	09/19/16 15:11	KKW	
Tetrachloroethene [127-18-4]	0.76	U	ug/L	1	0.76	2.0	6I19025	EPA 8260B	09/19/16 15:11	KKW	
Toluene [108-88-3]	0.72	U	ug/L	1	0.72	2.0	6I19025	EPA 8260B	09/19/16 15:11	KKW	
trans-1,2-Dichloroethene [156-60-5]	0.73	U	ug/L	1	0.73	2.0	6I19025	EPA 8260B	09/19/16 15:11	KKW	
trans-1,3-Dichloropropene [10061-02-6]	0.73	U	ug/L	1	0.73	2.0	6I19025	EPA 8260B	09/19/16 15:11	KKW	
Trichloroethene [79-01-6]	0.89	U	ug/L	1	0.89	2.0	6I19025	EPA 8260B	09/19/16 15:11	KKW	

ANALYTICAL RESULTS

Description: SW3-MW0026-040.0-20160910 **Lab Sample ID:** AZ06090-02 **Received:** 09/12/16 16:10

Matrix: Ground Water **Sampled:** 09/10/16 14:40 **Work Order:** AZ06090

Project: NASA-KSC-SW3 **Sampled By:** Chuck Sorden

Volatile Organic Compounds by GCMS

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
Trichlorofluoromethane [75-69-4]	0.94	U	ug/L	1	0.94	2.0	6I19025	EPA 8260B	09/19/16 15:11	KKW	
Vinyl chloride [75-01-4]	0.71	U	ug/L	1	0.71	2.0	6I19025	EPA 8260B	09/19/16 15:11	KKW	
Xylenes (Total) [1330-20-7]	1.3	U	ug/L	1	1.3	4.0	6I19025	EPA 8260B	09/19/16 15:11	KKW	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
4-Bromofluorobenzene	*51*	*1*	*50.0*	*101 %*	*41-142*	*6I19025*	*EPA 8260B*	*09/19/16 15:11*	*KKW*	
Dibromofluoromethane	*51*	*1*	*50.0*	*102 %*	*53-146*	*6I19025*	*EPA 8260B*	*09/19/16 15:11*	*KKW*	
Toluene-d8	*51*	*1*	*50.0*	*102 %*	*41-146*	*6I19025*	*EPA 8260B*	*09/19/16 15:11*	*KKW*	

ANALYTICAL RESULTS

Description: SW3-MW0025-040.0-20160910 **Lab Sample ID:** AZ06090-03 **Received:** 09/12/16 16:10

Matrix: Ground Water **Sampled:** 09/10/16 15:15 **Work Order:** AZ06090

Project: NASA-KSC-SW3 **Sampled By:** Chuck Sorden

Volatile Organic Compounds by GCMS

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]	0.80	U	ug/L	1	0.80	2.0	6I20014	EPA 8260B	09/20/16 11:44	KKW	
1,1,2,2-Tetrachloroethane [79-34-5]	0.54	U	ug/L	1	0.54	2.0	6I20014	EPA 8260B	09/20/16 11:44	KKW	
1,1,2-Trichloroethane [79-00-5]	0.76	U	ug/L	1	0.76	2.0	6I20014	EPA 8260B	09/20/16 11:44	KKW	
1,1-Dichloroethane [75-34-3]	0.62	U	ug/L	1	0.62	2.0	6I20014	EPA 8260B	09/20/16 11:44	KKW	
1,1-Dichloroethene [75-35-4]	0.94	U	ug/L	1	0.94	2.0	6I20014	EPA 8260B	09/20/16 11:44	KKW	
1,2,4-Trichlorobenzene [120-82-1]	0.70	U	ug/L	1	0.70	2.0	6I20014	EPA 8260B	09/20/16 11:44	KKW	
1,2-Dibromo-3-chloropropane [96-12-8]	0.96	U	ug/L	1	0.96	10	6I20014	EPA 8260B	09/20/16 11:44	KKW	
1,2-Dibromoethane [106-93-4]	0.78	U	ug/L	1	0.78	2.0	6I20014	EPA 8260B	09/20/16 11:44	KKW	
1,2-Dichlorobenzene [95-50-1]	0.73	U	ug/L	1	0.73	2.0	6I20014	EPA 8260B	09/20/16 11:44	KKW	
1,2-Dichloroethane [107-06-2]	0.63	U	ug/L	1	0.63	2.0	6I20014	EPA 8260B	09/20/16 11:44	KKW	
1,2-Dichloropropane [78-87-5]	0.80	U	ug/L	1	0.80	2.0	6I20014	EPA 8260B	09/20/16 11:44	KKW	
1,3-Dichlorobenzene [541-73-1]	0.77	U	ug/L	1	0.77	2.0	6I20014	EPA 8260B	09/20/16 11:44	KKW	
1,4-Dichlorobenzene [106-46-7]	0.76	U	ug/L	1	0.76	2.0	6I20014	EPA 8260B	09/20/16 11:44	KKW	
2-Butanone [78-93-3]	4.5	U	ug/L	1	4.5	25	6I20014	EPA 8260B	09/20/16 11:44	KKW	
2-Hexanone [591-78-6]	1.4	U	ug/L	1	1.4	5.0	6I20014	EPA 8260B	09/20/16 11:44	KKW	
4-Methyl-2-pentanone [108-10-1]	0.79	U	ug/L	1	0.79	5.0	6I20014	EPA 8260B	09/20/16 11:44	KKW	
Acetone [67-64-1]	**17**	I	ug/L	1	10	25	6I20014	EPA 8260B	09/20/16 11:44	KKW	
Benzene [71-43-2]	0.71	U	ug/L	1	0.71	2.0	6I20014	EPA 8260B	09/20/16 11:44	KKW	
Bromodichloromethane [75-27-4]	0.52	U	ug/L	1	0.52	2.0	6I20014	EPA 8260B	09/20/16 11:44	KKW	
Bromoform [75-25-2]	0.75	U	ug/L	1	0.75	2.0	6I20014	EPA 8260B	09/20/16 11:44	KKW	
Bromomethane [74-83-9]	0.95	U	ug/L	1	0.95	2.0	6I20014	EPA 8260B	09/20/16 11:44	KKW	
Carbon disulfide [75-15-0]	2.6	U	ug/L	1	2.6	10	6I20014	EPA 8260B	09/20/16 11:44	KKW	
Carbon Tetrachloride [56-23-5]	0.94	U	ug/L	1	0.94	2.0	6I20014	EPA 8260B	09/20/16 11:44	KKW	
Chlorobenzene [108-90-7]	0.72	U	ug/L	1	0.72	2.0	6I20014	EPA 8260B	09/20/16 11:44	KKW	
Chloroethane [75-00-3]	0.98	U	ug/L	1	0.98	2.0	6I20014	EPA 8260B	09/20/16 11:44	KKW	
Chloroform [67-66-3]	0.80	U	ug/L	1	0.80	2.0	6I20014	EPA 8260B	09/20/16 11:44	KKW	
Chloromethane [74-87-3]	0.82	U	ug/L	1	0.82	2.0	6I20014	EPA 8260B	09/20/16 11:44	KKW	
cis-1,2-Dichloroethene [156-59-2]	0.53	U	ug/L	1	0.53	2.0	6I20014	EPA 8260B	09/20/16 11:44	KKW	
cis-1,3-Dichloropropene [10061-01-5]	0.59	U	ug/L	1	0.59	2.0	6I20014	EPA 8260B	09/20/16 11:44	KKW	
Cyclohexane [110-82-7]	0.93	U	ug/L	1	0.93	2.0	6I20014	EPA 8260B	09/20/16 11:44	KKW	
Dibromochloromethane [124-48-1]	0.44	U	ug/L	1	0.44	2.0	6I20014	EPA 8260B	09/20/16 11:44	KKW	
Dichlorodifluoromethane [75-71-8]	0.74	U	ug/L	1	0.74	2.0	6I20014	EPA 8260B	09/20/16 11:44	KKW	
Ethylbenzene [100-41-4]	0.69	U	ug/L	1	0.69	2.0	6I20014	EPA 8260B	09/20/16 11:44	KKW	
Freon 113 [76-13-1]	0.73	U	ug/L	1	0.73	2.0	6I20014	EPA 8260B	09/20/16 11:44	KKW	
Isopropylbenzene [98-82-8]	0.67	U	ug/L	1	0.67	2.0	6I20014	EPA 8260B	09/20/16 11:44	KKW	
m,p-Xylenes [108-38-3/106-42-3]	1.3	U	ug/L	1	1.3	4.0	6I20014	EPA 8260B	09/20/16 11:44	KKW	
Methyl acetate [79-20-9]	0.95	U	ug/L	1	0.95	2.0	6I20014	EPA 8260B	09/20/16 11:44	KKW	
Methyl cyclohexane [108-87-2]	0.64	U	ug/L	1	0.64	2.0	6I20014	EPA 8260B	09/20/16 11:44	KKW	
Methylene Chloride [75-09-2]	2.0	U	ug/L	1	2.0	10	6I20014	EPA 8260B	09/20/16 11:44	KKW	
Methyl-tert-Butyl Ether [1634-04-4]	0.60	U	ug/L	1	0.60	2.0	6I20014	EPA 8260B	09/20/16 11:44	KKW	
o-Xylene [95-47-6]	0.53	U	ug/L	1	0.53	2.0	6I20014	EPA 8260B	09/20/16 11:44	KKW	
Styrene [100-42-5]	0.61	U	ug/L	1	0.61	2.0	6I20014	EPA 8260B	09/20/16 11:44	KKW	
Tetrachloroethene [127-18-4]	0.76	U	ug/L	1	0.76	2.0	6I20014	EPA 8260B	09/20/16 11:44	KKW	
Toluene [108-88-3]	0.72	U	ug/L	1	0.72	2.0	6I20014	EPA 8260B	09/20/16 11:44	KKW	
trans-1,2-Dichloroethene [156-60-5]	0.73	U	ug/L	1	0.73	2.0	6I20014	EPA 8260B	09/20/16 11:44	KKW	
trans-1,3-Dichloropropene [10061-02-6]	0.73	U	ug/L	1	0.73	2.0	6I20014	EPA 8260B	09/20/16 11:44	KKW	
Trichloroethene [79-01-6]	0.89	U	ug/L	1	0.89	2.0	6I20014	EPA 8260B	09/20/16 11:44	KKW	

ANALYTICAL RESULTS

Description: SW3-MW0025-040.0-20160910 **Lab Sample ID:** AZ06090-03 **Received:** 09/12/16 16:10

Matrix: Ground Water **Sampled:** 09/10/16 15:15 **Work Order:** AZ06090

Project: NASA-KSC-SW3 **Sampled By:** Chuck Sorden

Volatile Organic Compounds by GCMS

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
Trichlorofluoromethane [75-69-4]	0.94	U	ug/L	1	0.94	2.0	6I20014	EPA 8260B	09/20/16 11:44	KKW	
Vinyl chloride [75-01-4]	**1.7**	I	ug/L	1	0.71	2.0	6I20014	EPA 8260B	09/20/16 11:44	KKW	
Xylenes (Total) [1330-20-7]	1.3	U	ug/L	1	1.3	4.0	6I20014	EPA 8260B	09/20/16 11:44	KKW	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
4-Bromofluorobenzene	*52*	*1*	*50.0*	*105 %*	*41-142*	*6I20014*	*EPA 8260B*	*09/20/16 11:44*	*KKW*	
Dibromofluoromethane	*50*	*1*	*50.0*	*99 %*	*53-146*	*6I19025*	*EPA 8260B*	*09/19/16 15:40*	*KKW*	
Dibromofluoromethane	*49*	*1*	*50.0*	*98 %*	*53-146*	*6I20014*	*EPA 8260B*	*09/20/16 11:44*	*KKW*	
Toluene-d8	*50*	*1*	*50.0*	*101 %*	*41-146*	*6I20014*	*EPA 8260B*	*09/20/16 11:44*	*KKW*	

ANALYTICAL RESULTS

Description: SW3-MW0027-032.0-20160910 **Lab Sample ID:** AZ06090-04 **Received:** 09/12/16 16:10

Matrix: Ground Water **Sampled:** 09/10/16 15:55 **Work Order:** AZ06090

Project: NASA-KSC-SW3 **Sampled By:** Chuck Sorden

Volatile Organic Compounds by GCMS

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]	0.80	U	ug/L	1	0.80	2.0	6I20014	EPA 8260B	09/20/16 12:14	KKW	
1,1,2,2-Tetrachloroethane [79-34-5]	0.54	U	ug/L	1	0.54	2.0	6I20014	EPA 8260B	09/20/16 12:14	KKW	
1,1,2-Trichloroethane [79-00-5]	0.76	U	ug/L	1	0.76	2.0	6I20014	EPA 8260B	09/20/16 12:14	KKW	
1,1-Dichloroethane [75-34-3]	0.62	U	ug/L	1	0.62	2.0	6I20014	EPA 8260B	09/20/16 12:14	KKW	
1,1-Dichloroethene [75-35-4]	0.94	U	ug/L	1	0.94	2.0	6I20014	EPA 8260B	09/20/16 12:14	KKW	
1,2,4-Trichlorobenzene [120-82-1]	0.70	U	ug/L	1	0.70	2.0	6I20014	EPA 8260B	09/20/16 12:14	KKW	
1,2-Dibromo-3-chloropropane [96-12-8]	0.96	U	ug/L	1	0.96	10	6I20014	EPA 8260B	09/20/16 12:14	KKW	
1,2-Dibromoethane [106-93-4]	0.78	U	ug/L	1	0.78	2.0	6I20014	EPA 8260B	09/20/16 12:14	KKW	
1,2-Dichlorobenzene [95-50-1]	0.73	U	ug/L	1	0.73	2.0	6I20014	EPA 8260B	09/20/16 12:14	KKW	
1,2-Dichloroethane [107-06-2]	0.63	U	ug/L	1	0.63	2.0	6I20014	EPA 8260B	09/20/16 12:14	KKW	
1,2-Dichloropropane [78-87-5]	0.80	U	ug/L	1	0.80	2.0	6I20014	EPA 8260B	09/20/16 12:14	KKW	
1,3-Dichlorobenzene [541-73-1]	0.77	U	ug/L	1	0.77	2.0	6I20014	EPA 8260B	09/20/16 12:14	KKW	
1,4-Dichlorobenzene [106-46-7]	0.76	U	ug/L	1	0.76	2.0	6I20014	EPA 8260B	09/20/16 12:14	KKW	
2-Butanone [78-93-3]	4.5	U	ug/L	1	4.5	25	6I20014	EPA 8260B	09/20/16 12:14	KKW	
2-Hexanone [591-78-6]	1.4	U	ug/L	1	1.4	5.0	6I20014	EPA 8260B	09/20/16 12:14	KKW	
4-Methyl-2-pentanone [108-10-1]	0.79	U	ug/L	1	0.79	5.0	6I20014	EPA 8260B	09/20/16 12:14	KKW	
Acetone [67-64-1]	10	U	ug/L	1	10	25	6I20014	EPA 8260B	09/20/16 12:14	KKW	
Benzene [71-43-2]	0.71	U	ug/L	1	0.71	2.0	6I20014	EPA 8260B	09/20/16 12:14	KKW	
Bromodichloromethane [75-27-4]	0.52	U	ug/L	1	0.52	2.0	6I20014	EPA 8260B	09/20/16 12:14	KKW	
Bromoform [75-25-2]	0.75	U	ug/L	1	0.75	2.0	6I20014	EPA 8260B	09/20/16 12:14	KKW	
Bromomethane [74-83-9]	0.95	U	ug/L	1	0.95	2.0	6I20014	EPA 8260B	09/20/16 12:14	KKW	
Carbon disulfide [75-15-0]	2.6	U	ug/L	1	2.6	10	6I20014	EPA 8260B	09/20/16 12:14	KKW	
Carbon Tetrachloride [56-23-5]	0.94	U	ug/L	1	0.94	2.0	6I20014	EPA 8260B	09/20/16 12:14	KKW	
Chlorobenzene [108-90-7]	0.72	U	ug/L	1	0.72	2.0	6I20014	EPA 8260B	09/20/16 12:14	KKW	
Chloroethane [75-00-3]	0.98	U	ug/L	1	0.98	2.0	6I20014	EPA 8260B	09/20/16 12:14	KKW	
Chloroform [67-66-3]	0.80	U	ug/L	1	0.80	2.0	6I20014	EPA 8260B	09/20/16 12:14	KKW	
Chloromethane [74-87-3]	0.82	U	ug/L	1	0.82	2.0	6I20014	EPA 8260B	09/20/16 12:14	KKW	
cis-1,2-Dichloroethene [156-59-2]	0.53	U	ug/L	1	0.53	2.0	6I20014	EPA 8260B	09/20/16 12:14	KKW	
cis-1,3-Dichloropropene [10061-01-5]	0.59	U	ug/L	1	0.59	2.0	6I20014	EPA 8260B	09/20/16 12:14	KKW	
Cyclohexane [110-82-7]	0.93	U	ug/L	1	0.93	2.0	6I20014	EPA 8260B	09/20/16 12:14	KKW	
Dibromochloromethane [124-48-1]	0.44	U	ug/L	1	0.44	2.0	6I20014	EPA 8260B	09/20/16 12:14	KKW	
Dichlorodifluoromethane [75-71-8]	0.74	U	ug/L	1	0.74	2.0	6I20014	EPA 8260B	09/20/16 12:14	KKW	
Ethylbenzene [100-41-4]	0.69	U	ug/L	1	0.69	2.0	6I20014	EPA 8260B	09/20/16 12:14	KKW	
Freon 113 [76-13-1]	0.73	U	ug/L	1	0.73	2.0	6I20014	EPA 8260B	09/20/16 12:14	KKW	
Isopropylbenzene [98-82-8]	0.67	U	ug/L	1	0.67	2.0	6I20014	EPA 8260B	09/20/16 12:14	KKW	
m,p-Xylenes [108-38-3/106-42-3]	1.3	U	ug/L	1	1.3	4.0	6I20014	EPA 8260B	09/20/16 12:14	KKW	
Methyl acetate [79-20-9]	0.95	U	ug/L	1	0.95	2.0	6I20014	EPA 8260B	09/20/16 12:14	KKW	
Methyl cyclohexane [108-87-2]	0.64	U	ug/L	1	0.64	2.0	6I20014	EPA 8260B	09/20/16 12:14	KKW	
Methylene Chloride [75-09-2]	2.0	U	ug/L	1	2.0	10	6I20014	EPA 8260B	09/20/16 12:14	KKW	
Methyl-tert-Butyl Ether [1634-04-4]	0.60	U	ug/L	1	0.60	2.0	6I20014	EPA 8260B	09/20/16 12:14	KKW	
o-Xylene [95-47-6]	0.53	U	ug/L	1	0.53	2.0	6I20014	EPA 8260B	09/20/16 12:14	KKW	
Styrene [100-42-5]	0.61	U	ug/L	1	0.61	2.0	6I20014	EPA 8260B	09/20/16 12:14	KKW	
Tetrachloroethene [127-18-4]	0.76	U	ug/L	1	0.76	2.0	6I20014	EPA 8260B	09/20/16 12:14	KKW	
Toluene [108-88-3]	0.72	U	ug/L	1	0.72	2.0	6I20014	EPA 8260B	09/20/16 12:14	KKW	
trans-1,2-Dichloroethene [156-60-5]	0.73	U	ug/L	1	0.73	2.0	6I20014	EPA 8260B	09/20/16 12:14	KKW	
trans-1,3-Dichloropropene [10061-02-6]	0.73	U	ug/L	1	0.73	2.0	6I20014	EPA 8260B	09/20/16 12:14	KKW	
Trichloroethene [79-01-6]	0.89	U	ug/L	1	0.89	2.0	6I20014	EPA 8260B	09/20/16 12:14	KKW	

ANALYTICAL RESULTS

Description: SW3-MW0027-032.0-20160910 **Lab Sample ID:** AZ06090-04 **Received:** 09/12/16 16:10

Matrix: Ground Water **Sampled:** 09/10/16 15:55 **Work Order:** AZ06090

Project: NASA-KSC-SW3 **Sampled By:** Chuck Sorden

Volatile Organic Compounds by GCMS

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
Trichlorofluoromethane [75-69-4]	0.94	U	ug/L	1	0.94	2.0	6I20014	EPA 8260B	09/20/16 12:14	KKW	
Vinyl chloride [75-01-4]	**61**		ug/L	1	0.71	2.0	6I20014	EPA 8260B	09/20/16 12:14	KKW	
Xylenes (Total) [1330-20-7]	1.3	U	ug/L	1	1.3	4.0	6I20014	EPA 8260B	09/20/16 12:14	KKW	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
4-Bromofluorobenzene	*50*	*1*	*50.0*	*99 %*	*41-142*	*6I20014*	*EPA 8260B*	*09/20/16 12:14*	*KKW*	
Dibromofluoromethane	*50*	*1*	*50.0*	*100 %*	*53-146*	*6I19025*	*EPA 8260B*	*09/19/16 16:10*	*KKW*	
Dibromofluoromethane	*49*	*1*	*50.0*	*97 %*	*53-146*	*6I20014*	*EPA 8260B*	*09/20/16 12:14*	*KKW*	
Toluene-d8	*50*	*1*	*50.0*	*99 %*	*41-146*	*6I20014*	*EPA 8260B*	*09/20/16 12:14*	*KKW*	

ANALYTICAL RESULTS

Description: SW3-MW0028-032.0-20160910 **Lab Sample ID:** AZ06090-05 **Received:** 09/12/16 16:10

Matrix: Ground Water **Sampled:** 09/10/16 16:30 **Work Order:** AZ06090

Project: NASA-KSC-SW3 **Sampled By:** Chuck Sorden

Volatile Organic Compounds by GCMS

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]	0.80	U	ug/L	1	0.80	2.0	6I20014	EPA 8260B	09/20/16 12:43	KKW	
1,1,2,2-Tetrachloroethane [79-34-5]	0.54	U	ug/L	1	0.54	2.0	6I20014	EPA 8260B	09/20/16 12:43	KKW	
1,1,2-Trichloroethane [79-00-5]	0.76	U	ug/L	1	0.76	2.0	6I20014	EPA 8260B	09/20/16 12:43	KKW	
1,1-Dichloroethane [75-34-3]	0.62	U	ug/L	1	0.62	2.0	6I20014	EPA 8260B	09/20/16 12:43	KKW	
1,1-Dichloroethene [75-35-4]	0.94	U	ug/L	1	0.94	2.0	6I20014	EPA 8260B	09/20/16 12:43	KKW	
1,2,4-Trichlorobenzene [120-82-1]	0.70	U	ug/L	1	0.70	2.0	6I20014	EPA 8260B	09/20/16 12:43	KKW	
1,2-Dibromo-3-chloropropane [96-12-8]	0.96	U	ug/L	1	0.96	10	6I20014	EPA 8260B	09/20/16 12:43	KKW	
1,2-Dibromoethane [106-93-4]	0.78	U	ug/L	1	0.78	2.0	6I20014	EPA 8260B	09/20/16 12:43	KKW	
1,2-Dichlorobenzene [95-50-1]	0.73	U	ug/L	1	0.73	2.0	6I20014	EPA 8260B	09/20/16 12:43	KKW	
1,2-Dichloroethane [107-06-2]	0.63	U	ug/L	1	0.63	2.0	6I20014	EPA 8260B	09/20/16 12:43	KKW	
1,2-Dichloropropane [78-87-5]	0.80	U	ug/L	1	0.80	2.0	6I20014	EPA 8260B	09/20/16 12:43	KKW	
1,3-Dichlorobenzene [541-73-1]	0.77	U	ug/L	1	0.77	2.0	6I20014	EPA 8260B	09/20/16 12:43	KKW	
1,4-Dichlorobenzene [106-46-7]	0.76	U	ug/L	1	0.76	2.0	6I20014	EPA 8260B	09/20/16 12:43	KKW	
2-Butanone [78-93-3]	4.5	U	ug/L	1	4.5	25	6I20014	EPA 8260B	09/20/16 12:43	KKW	
2-Hexanone [591-78-6]	1.4	U	ug/L	1	1.4	5.0	6I20014	EPA 8260B	09/20/16 12:43	KKW	
4-Methyl-2-pentanone [108-10-1]	0.79	U	ug/L	1	0.79	5.0	6I20014	EPA 8260B	09/20/16 12:43	KKW	
Acetone [67-64-1]	10	U	ug/L	1	10	25	6I20014	EPA 8260B	09/20/16 12:43	KKW	
Benzene [71-43-2]	0.71	U	ug/L	1	0.71	2.0	6I20014	EPA 8260B	09/20/16 12:43	KKW	
Bromodichloromethane [75-27-4]	0.52	U	ug/L	1	0.52	2.0	6I20014	EPA 8260B	09/20/16 12:43	KKW	
Bromoform [75-25-2]	0.75	U	ug/L	1	0.75	2.0	6I20014	EPA 8260B	09/20/16 12:43	KKW	
Bromomethane [74-83-9]	0.95	U	ug/L	1	0.95	2.0	6I20014	EPA 8260B	09/20/16 12:43	KKW	
Carbon disulfide [75-15-0]	2.6	U	ug/L	1	2.6	10	6I20014	EPA 8260B	09/20/16 12:43	KKW	
Carbon Tetrachloride [56-23-5]	0.94	U	ug/L	1	0.94	2.0	6I20014	EPA 8260B	09/20/16 12:43	KKW	
Chlorobenzene [108-90-7]	0.72	U	ug/L	1	0.72	2.0	6I20014	EPA 8260B	09/20/16 12:43	KKW	
Chloroethane [75-00-3]	0.98	U	ug/L	1	0.98	2.0	6I20014	EPA 8260B	09/20/16 12:43	KKW	
Chloroform [67-66-3]	0.80	U	ug/L	1	0.80	2.0	6I20014	EPA 8260B	09/20/16 12:43	KKW	
Chloromethane [74-87-3]	0.82	U	ug/L	1	0.82	2.0	6I20014	EPA 8260B	09/20/16 12:43	KKW	
cis-1,2-Dichloroethene [156-59-2]	0.53	U	ug/L	1	0.53	2.0	6I20014	EPA 8260B	09/20/16 12:43	KKW	
cis-1,3-Dichloropropene [10061-01-5]	0.59	U	ug/L	1	0.59	2.0	6I20014	EPA 8260B	09/20/16 12:43	KKW	
Cyclohexane [110-82-7]	0.93	U	ug/L	1	0.93	2.0	6I20014	EPA 8260B	09/20/16 12:43	KKW	
Dibromochloromethane [124-48-1]	0.44	U	ug/L	1	0.44	2.0	6I20014	EPA 8260B	09/20/16 12:43	KKW	
Dichlorodifluoromethane [75-71-8]	0.74	U	ug/L	1	0.74	2.0	6I20014	EPA 8260B	09/20/16 12:43	KKW	
Ethylbenzene [100-41-4]	0.69	U	ug/L	1	0.69	2.0	6I20014	EPA 8260B	09/20/16 12:43	KKW	
Freon 113 [76-13-1]	0.73	U	ug/L	1	0.73	2.0	6I20014	EPA 8260B	09/20/16 12:43	KKW	
Isopropylbenzene [98-82-8]	0.67	U	ug/L	1	0.67	2.0	6I20014	EPA 8260B	09/20/16 12:43	KKW	
m,p-Xylenes [108-38-3/106-42-3]	1.3	U	ug/L	1	1.3	4.0	6I20014	EPA 8260B	09/20/16 12:43	KKW	
Methyl acetate [79-20-9]	0.95	U	ug/L	1	0.95	2.0	6I20014	EPA 8260B	09/20/16 12:43	KKW	
Methyl cyclohexane [108-87-2]	0.64	U	ug/L	1	0.64	2.0	6I20014	EPA 8260B	09/20/16 12:43	KKW	
Methylene Chloride [75-09-2]	2.0	U	ug/L	1	2.0	10	6I20014	EPA 8260B	09/20/16 12:43	KKW	
Methyl-tert-Butyl Ether [1634-04-4]	0.60	U	ug/L	1	0.60	2.0	6I20014	EPA 8260B	09/20/16 12:43	KKW	
o-Xylene [95-47-6]	0.53	U	ug/L	1	0.53	2.0	6I20014	EPA 8260B	09/20/16 12:43	KKW	
Styrene [100-42-5]	0.61	U	ug/L	1	0.61	2.0	6I20014	EPA 8260B	09/20/16 12:43	KKW	
Tetrachloroethene [127-18-4]	0.76	U	ug/L	1	0.76	2.0	6I20014	EPA 8260B	09/20/16 12:43	KKW	
Toluene [108-88-3]	0.72	U	ug/L	1	0.72	2.0	6I20014	EPA 8260B	09/20/16 12:43	KKW	
trans-1,2-Dichloroethene [156-60-5]	0.73	U	ug/L	1	0.73	2.0	6I20014	EPA 8260B	09/20/16 12:43	KKW	
trans-1,3-Dichloropropene [10061-02-6]	0.73	U	ug/L	1	0.73	2.0	6I20014	EPA 8260B	09/20/16 12:43	KKW	
Trichloroethene [79-01-6]	0.89	U	ug/L	1	0.89	2.0	6I20014	EPA 8260B	09/20/16 12:43	KKW	

ANALYTICAL RESULTS

Description: SW3-MW0028-032.0-20160910 **Lab Sample ID:** AZ06090-05 **Received:** 09/12/16 16:10

Matrix: Ground Water **Sampled:** 09/10/16 16:30 **Work Order:** AZ06090

Project: NASA-KSC-SW3 **Sampled By:** Chuck Sorden

Volatile Organic Compounds by GCMS

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
Trichlorofluoromethane [75-69-4]	0.94	U	ug/L	1	0.94	2.0	6I20014	EPA 8260B	09/20/16 12:43	KKW	
Vinyl chloride [75-01-4]	**21**		ug/L	1	0.71	2.0	6I20014	EPA 8260B	09/20/16 12:43	KKW	
Xylenes (Total) [1330-20-7]	1.3	U	ug/L	1	1.3	4.0	6I20014	EPA 8260B	09/20/16 12:43	KKW	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
4-Bromofluorobenzene	*53*	*1*	*50.0*	*106 %*	*41-142*	*6I20014*	*EPA 8260B*	*09/20/16 12:43*	*KKW*	
Dibromofluoromethane	*50*	*1*	*50.0*	*100 %*	*53-146*	*6I19025*	*EPA 8260B*	*09/19/16 16:40*	*KKW*	
Dibromofluoromethane	*48*	*1*	*50.0*	*97 %*	*53-146*	*6I20014*	*EPA 8260B*	*09/20/16 12:43*	*KKW*	
Toluene-d8	*50*	*1*	*50.0*	*100 %*	*41-146*	*6I20014*	*EPA 8260B*	*09/20/16 12:43*	*KKW*	

ANALYTICAL RESULTS

Description: SW3-SW0002-000.5-20160910 **Lab Sample ID:** AZ06090-06 **Received:** 09/12/16 16:10

Matrix: Surface Water **Sampled:** 09/10/16 16:50 **Work Order:** AZ06090

Project: NASA-KSC-SW3 **Sampled By:** Chuck Sorden

Volatile Organic Compounds by GCMS

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]	0.80	U	ug/L	1	0.80	2.0	6I19025	EPA 8260B	09/19/16 17:09	KKW	
1,1,2,2-Tetrachloroethane [79-34-5]	0.54	U	ug/L	1	0.54	2.0	6I19025	EPA 8260B	09/19/16 17:09	KKW	
1,1,2-Trichloroethane [79-00-5]	0.76	U	ug/L	1	0.76	2.0	6I19025	EPA 8260B	09/19/16 17:09	KKW	
1,1-Dichloroethane [75-34-3]	0.62	U	ug/L	1	0.62	2.0	6I19025	EPA 8260B	09/19/16 17:09	KKW	
1,1-Dichloroethene [75-35-4]	0.94	U	ug/L	1	0.94	2.0	6I19025	EPA 8260B	09/19/16 17:09	KKW	
1,2,4-Trichlorobenzene [120-82-1]	0.70	U	ug/L	1	0.70	2.0	6I19025	EPA 8260B	09/19/16 17:09	KKW	
1,2-Dibromo-3-chloropropane [96-12-8]	0.96	U	ug/L	1	0.96	10	6I19025	EPA 8260B	09/19/16 17:09	KKW	
1,2-Dibromoethane [106-93-4]	0.78	U	ug/L	1	0.78	2.0	6I19025	EPA 8260B	09/19/16 17:09	KKW	
1,2-Dichlorobenzene [95-50-1]	0.73	U	ug/L	1	0.73	2.0	6I19025	EPA 8260B	09/19/16 17:09	KKW	
1,2-Dichloroethane [107-06-2]	0.63	U	ug/L	1	0.63	2.0	6I19025	EPA 8260B	09/19/16 17:09	KKW	
1,2-Dichloropropane [78-87-5]	0.80	U	ug/L	1	0.80	2.0	6I19025	EPA 8260B	09/19/16 17:09	KKW	
1,3-Dichlorobenzene [541-73-1]	0.77	U	ug/L	1	0.77	2.0	6I19025	EPA 8260B	09/19/16 17:09	KKW	
1,4-Dichlorobenzene [106-46-7]	0.76	U	ug/L	1	0.76	2.0	6I19025	EPA 8260B	09/19/16 17:09	KKW	
2-Butanone [78-93-3]	4.5	U	ug/L	1	4.5	25	6I19025	EPA 8260B	09/19/16 17:09	KKW	
2-Hexanone [591-78-6]	1.4	U	ug/L	1	1.4	5.0	6I19025	EPA 8260B	09/19/16 17:09	KKW	
4-Methyl-2-pentanone [108-10-1]	0.79	U	ug/L	1	0.79	5.0	6I19025	EPA 8260B	09/19/16 17:09	KKW	
Acetone [67-64-1]	**13**	I	ug/L	1	10	25	6I19025	EPA 8260B	09/19/16 17:09	KKW	
Benzene [71-43-2]	0.71	U	ug/L	1	0.71	2.0	6I19025	EPA 8260B	09/19/16 17:09	KKW	
Bromodichloromethane [75-27-4]	0.52	U	ug/L	1	0.52	2.0	6I19025	EPA 8260B	09/19/16 17:09	KKW	
Bromoform [75-25-2]	0.75	U	ug/L	1	0.75	2.0	6I19025	EPA 8260B	09/19/16 17:09	KKW	
Bromomethane [74-83-9]	0.95	U	ug/L	1	0.95	2.0	6I19025	EPA 8260B	09/19/16 17:09	KKW	
Carbon disulfide [75-15-0]	2.6	U	ug/L	1	2.6	10	6I19025	EPA 8260B	09/19/16 17:09	KKW	
Carbon Tetrachloride [56-23-5]	0.94	U	ug/L	1	0.94	2.0	6I19025	EPA 8260B	09/19/16 17:09	KKW	
Chlorobenzene [108-90-7]	0.72	U	ug/L	1	0.72	2.0	6I19025	EPA 8260B	09/19/16 17:09	KKW	
Chloroethane [75-00-3]	0.98	U	ug/L	1	0.98	2.0	6I19025	EPA 8260B	09/19/16 17:09	KKW	
Chloroform [67-66-3]	0.80	U	ug/L	1	0.80	2.0	6I19025	EPA 8260B	09/19/16 17:09	KKW	
Chloromethane [74-87-3]	0.82	U	ug/L	1	0.82	2.0	6I19025	EPA 8260B	09/19/16 17:09	KKW	
cis-1,2-Dichloroethene [156-59-2]	0.53	U	ug/L	1	0.53	2.0	6I19025	EPA 8260B	09/19/16 17:09	KKW	
cis-1,3-Dichloropropene [10061-01-5]	0.59	U	ug/L	1	0.59	2.0	6I19025	EPA 8260B	09/19/16 17:09	KKW	
Cyclohexane [110-82-7]	0.93	U	ug/L	1	0.93	2.0	6I19025	EPA 8260B	09/19/16 17:09	KKW	
Dibromochloromethane [124-48-1]	0.44	U	ug/L	1	0.44	2.0	6I19025	EPA 8260B	09/19/16 17:09	KKW	
Dichlorodifluoromethane [75-71-8]	0.74	U	ug/L	1	0.74	2.0	6I19025	EPA 8260B	09/19/16 17:09	KKW	
Ethylbenzene [100-41-4]	0.69	U	ug/L	1	0.69	2.0	6I19025	EPA 8260B	09/19/16 17:09	KKW	
Freon 113 [76-13-1]	0.73	U	ug/L	1	0.73	2.0	6I19025	EPA 8260B	09/19/16 17:09	KKW	
Isopropylbenzene [98-82-8]	0.67	U	ug/L	1	0.67	2.0	6I19025	EPA 8260B	09/19/16 17:09	KKW	
m,p-Xylenes [108-38-3/106-42-3]	1.3	U	ug/L	1	1.3	4.0	6I19025	EPA 8260B	09/19/16 17:09	KKW	
Methyl acetate [79-20-9]	0.95	U	ug/L	1	0.95	2.0	6I19025	EPA 8260B	09/19/16 17:09	KKW	
Methyl cyclohexane [108-87-2]	0.64	U	ug/L	1	0.64	2.0	6I19025	EPA 8260B	09/19/16 17:09	KKW	
Methylene Chloride [75-09-2]	2.0	U	ug/L	1	2.0	10	6I19025	EPA 8260B	09/19/16 17:09	KKW	
Methyl-tert-Butyl Ether [1634-04-4]	0.60	U	ug/L	1	0.60	2.0	6I19025	EPA 8260B	09/19/16 17:09	KKW	
o-Xylene [95-47-6]	0.53	U	ug/L	1	0.53	2.0	6I19025	EPA 8260B	09/19/16 17:09	KKW	
Styrene [100-42-5]	0.61	U	ug/L	1	0.61	2.0	6I19025	EPA 8260B	09/19/16 17:09	KKW	
Tetrachloroethene [127-18-4]	0.76	U	ug/L	1	0.76	2.0	6I19025	EPA 8260B	09/19/16 17:09	KKW	
Toluene [108-88-3]	0.72	U	ug/L	1	0.72	2.0	6I19025	EPA 8260B	09/19/16 17:09	KKW	
trans-1,2-Dichloroethene [156-60-5]	0.73	U	ug/L	1	0.73	2.0	6I19025	EPA 8260B	09/19/16 17:09	KKW	
trans-1,3-Dichloropropene [10061-02-6]	0.73	U	ug/L	1	0.73	2.0	6I19025	EPA 8260B	09/19/16 17:09	KKW	
Trichloroethene [79-01-6]	0.89	U	ug/L	1	0.89	2.0	6I19025	EPA 8260B	09/19/16 17:09	KKW	

ANALYTICAL RESULTS

Description: SW3-SW0002-000.5-20160910 **Lab Sample ID:** AZ06090-06 **Received:** 09/12/16 16:10

Matrix: Surface Water **Sampled:** 09/10/16 16:50 **Work Order:** AZ06090

Project: NASA-KSC-SW3 **Sampled By:** Chuck Sorden

Volatile Organic Compounds by GCMS

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
Trichlorofluoromethane [75-69-4]	0.94	U	ug/L	1	0.94	2.0	6I19025	EPA 8260B	09/19/16 17:09	KKW	
Vinyl chloride [75-01-4]	0.71	U	ug/L	1	0.71	2.0	6I19025	EPA 8260B	09/19/16 17:09	KKW	
Xylenes (Total) [1330-20-7]	1.3	U	ug/L	1	1.3	4.0	6I19025	EPA 8260B	09/19/16 17:09	KKW	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
4-Bromofluorobenzene	*51*	*1*	*50.0*	*101 %*	*41-142*	*6I19025*	*EPA 8260B*	*09/19/16 17:09*	*KKW*	
Dibromofluoromethane	*50*	*1*	*50.0*	*99 %*	*53-146*	*6I19025*	*EPA 8260B*	*09/19/16 17:09*	*KKW*	
Toluene-d8	*51*	*1*	*50.0*	*102 %*	*41-146*	*6I19025*	*EPA 8260B*	*09/19/16 17:09*	*KKW*	

ANALYTICAL RESULTS

Description: SW3-SW0003-000.5-20160910 **Lab Sample ID:** AZ06090-07 **Received:** 09/12/16 16:10

Matrix: Surface Water **Sampled:** 09/10/16 17:30 **Work Order:** AZ06090

Project: NASA-KSC-SW3 **Sampled By:** Chuck Sorden

Volatile Organic Compounds by GCMS

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]	0.80	U	ug/L	1	0.80	2.0	6I19025	EPA 8260B	09/19/16 17:39	KKW	
1,1,2,2-Tetrachloroethane [79-34-5]	0.54	U	ug/L	1	0.54	2.0	6I19025	EPA 8260B	09/19/16 17:39	KKW	
1,1,2-Trichloroethane [79-00-5]	0.76	U	ug/L	1	0.76	2.0	6I19025	EPA 8260B	09/19/16 17:39	KKW	
1,1-Dichloroethane [75-34-3]	0.62	U	ug/L	1	0.62	2.0	6I19025	EPA 8260B	09/19/16 17:39	KKW	
1,1-Dichloroethene [75-35-4]	0.94	U	ug/L	1	0.94	2.0	6I19025	EPA 8260B	09/19/16 17:39	KKW	
1,2,4-Trichlorobenzene [120-82-1]	0.70	U	ug/L	1	0.70	2.0	6I19025	EPA 8260B	09/19/16 17:39	KKW	
1,2-Dibromo-3-chloropropane [96-12-8]	0.96	U	ug/L	1	0.96	10	6I19025	EPA 8260B	09/19/16 17:39	KKW	
1,2-Dibromoethane [106-93-4]	0.78	U	ug/L	1	0.78	2.0	6I19025	EPA 8260B	09/19/16 17:39	KKW	
1,2-Dichlorobenzene [95-50-1]	0.73	U	ug/L	1	0.73	2.0	6I19025	EPA 8260B	09/19/16 17:39	KKW	
1,2-Dichloroethane [107-06-2]	0.63	U	ug/L	1	0.63	2.0	6I19025	EPA 8260B	09/19/16 17:39	KKW	
1,2-Dichloropropane [78-87-5]	0.80	U	ug/L	1	0.80	2.0	6I19025	EPA 8260B	09/19/16 17:39	KKW	
1,3-Dichlorobenzene [541-73-1]	0.77	U	ug/L	1	0.77	2.0	6I19025	EPA 8260B	09/19/16 17:39	KKW	
1,4-Dichlorobenzene [106-46-7]	0.76	U	ug/L	1	0.76	2.0	6I19025	EPA 8260B	09/19/16 17:39	KKW	
2-Butanone [78-93-3]	4.5	U	ug/L	1	4.5	25	6I19025	EPA 8260B	09/19/16 17:39	KKW	
2-Hexanone [591-78-6]	1.4	U	ug/L	1	1.4	5.0	6I19025	EPA 8260B	09/19/16 17:39	KKW	
4-Methyl-2-pentanone [108-10-1]	0.79	U	ug/L	1	0.79	5.0	6I19025	EPA 8260B	09/19/16 17:39	KKW	
Acetone [67-64-1]	10	U	ug/L	1	10	25	6I19025	EPA 8260B	09/19/16 17:39	KKW	
Benzene [71-43-2]	0.71	U	ug/L	1	0.71	2.0	6I19025	EPA 8260B	09/19/16 17:39	KKW	
Bromodichloromethane [75-27-4]	0.52	U	ug/L	1	0.52	2.0	6I19025	EPA 8260B	09/19/16 17:39	KKW	
Bromoform [75-25-2]	0.75	U	ug/L	1	0.75	2.0	6I19025	EPA 8260B	09/19/16 17:39	KKW	
Bromomethane [74-83-9]	0.95	U	ug/L	1	0.95	2.0	6I19025	EPA 8260B	09/19/16 17:39	KKW	
Carbon disulfide [75-15-0]	2.6	U	ug/L	1	2.6	10	6I19025	EPA 8260B	09/19/16 17:39	KKW	
Carbon Tetrachloride [56-23-5]	0.94	U	ug/L	1	0.94	2.0	6I19025	EPA 8260B	09/19/16 17:39	KKW	
Chlorobenzene [108-90-7]	0.72	U	ug/L	1	0.72	2.0	6I19025	EPA 8260B	09/19/16 17:39	KKW	
Chloroethane [75-00-3]	0.98	U	ug/L	1	0.98	2.0	6I19025	EPA 8260B	09/19/16 17:39	KKW	
Chloroform [67-66-3]	0.80	U	ug/L	1	0.80	2.0	6I19025	EPA 8260B	09/19/16 17:39	KKW	
Chloromethane [74-87-3]	0.82	U	ug/L	1	0.82	2.0	6I19025	EPA 8260B	09/19/16 17:39	KKW	
cis-1,2-Dichloroethene [156-59-2]	0.53	U	ug/L	1	0.53	2.0	6I19025	EPA 8260B	09/19/16 17:39	KKW	
cis-1,3-Dichloropropene [10061-01-5]	0.59	U	ug/L	1	0.59	2.0	6I19025	EPA 8260B	09/19/16 17:39	KKW	
Cyclohexane [110-82-7]	0.93	U	ug/L	1	0.93	2.0	6I19025	EPA 8260B	09/19/16 17:39	KKW	
Dibromochloromethane [124-48-1]	0.44	U	ug/L	1	0.44	2.0	6I19025	EPA 8260B	09/19/16 17:39	KKW	
Dichlorodifluoromethane [75-71-8]	0.74	U	ug/L	1	0.74	2.0	6I19025	EPA 8260B	09/19/16 17:39	KKW	
Ethylbenzene [100-41-4]	0.69	U	ug/L	1	0.69	2.0	6I19025	EPA 8260B	09/19/16 17:39	KKW	
Freon 113 [76-13-1]	0.73	U	ug/L	1	0.73	2.0	6I19025	EPA 8260B	09/19/16 17:39	KKW	
Isopropylbenzene [98-82-8]	0.67	U	ug/L	1	0.67	2.0	6I19025	EPA 8260B	09/19/16 17:39	KKW	
m,p-Xylenes [108-38-3/106-42-3]	1.3	U	ug/L	1	1.3	4.0	6I19025	EPA 8260B	09/19/16 17:39	KKW	
Methyl acetate [79-20-9]	0.95	U	ug/L	1	0.95	2.0	6I19025	EPA 8260B	09/19/16 17:39	KKW	
Methyl cyclohexane [108-87-2]	0.64	U	ug/L	1	0.64	2.0	6I19025	EPA 8260B	09/19/16 17:39	KKW	
Methylene Chloride [75-09-2]	2.0	U	ug/L	1	2.0	10	6I19025	EPA 8260B	09/19/16 17:39	KKW	
Methyl-tert-Butyl Ether [1634-04-4]	0.60	U	ug/L	1	0.60	2.0	6I19025	EPA 8260B	09/19/16 17:39	KKW	
o-Xylene [95-47-6]	0.53	U	ug/L	1	0.53	2.0	6I19025	EPA 8260B	09/19/16 17:39	KKW	
Styrene [100-42-5]	0.61	U	ug/L	1	0.61	2.0	6I19025	EPA 8260B	09/19/16 17:39	KKW	
Tetrachloroethene [127-18-4]	0.76	U	ug/L	1	0.76	2.0	6I19025	EPA 8260B	09/19/16 17:39	KKW	
Toluene [108-88-3]	0.72	U	ug/L	1	0.72	2.0	6I19025	EPA 8260B	09/19/16 17:39	KKW	
trans-1,2-Dichloroethene [156-60-5]	0.73	U	ug/L	1	0.73	2.0	6I19025	EPA 8260B	09/19/16 17:39	KKW	
trans-1,3-Dichloropropene [10061-02-6]	0.73	U	ug/L	1	0.73	2.0	6I19025	EPA 8260B	09/19/16 17:39	KKW	
Trichloroethene [79-01-6]	0.89	U	ug/L	1	0.89	2.0	6I19025	EPA 8260B	09/19/16 17:39	KKW	

ANALYTICAL RESULTS

Description: SW3-SW0003-000.5-20160910 **Lab Sample ID:** AZ06090-07 **Received:** 09/12/16 16:10

Matrix: Surface Water **Sampled:** 09/10/16 17:30 **Work Order:** AZ06090

Project: NASA-KSC-SW3 **Sampled By:** Chuck Sorden

Volatile Organic Compounds by GCMS

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
Trichlorofluoromethane [75-69-4]	0.94	U	ug/L	1	0.94	2.0	6I19025	EPA 8260B	09/19/16 17:39	KKW	
Vinyl chloride [75-01-4]	0.71	U	ug/L	1	0.71	2.0	6I19025	EPA 8260B	09/19/16 17:39	KKW	
Xylenes (Total) [1330-20-7]	1.3	U	ug/L	1	1.3	4.0	6I19025	EPA 8260B	09/19/16 17:39	KKW	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
4-Bromofluorobenzene	*51*	*1*	*50.0*	*101 %*	*41-142*	*6I19025*	*EPA 8260B*	*09/19/16 17:39*	*KKW*	
Dibromofluoromethane	*51*	*1*	*50.0*	*102 %*	*53-146*	*6I19025*	*EPA 8260B*	*09/19/16 17:39*	*KKW*	
Toluene-d8	*53*	*1*	*50.0*	*106 %*	*41-146*	*6I19025*	*EPA 8260B*	*09/19/16 17:39*	*KKW*	

ANALYTICAL RESULTS

Description: TRIP BLANK | **Lab Sample ID:** AZ06090-08 | **Received:** 09/12/16 16:10
Matrix: Water | **Sampled:** 09/10/16 00:00 | **Work Order:** AZ06090
Project: NASA-KSC-SW3 | **Sampled By:** ENCO ORL

Volatile Organic Compounds by GCMS

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]	0.80	U	ug/L	1	0.80	2.0	6I19025	EPA 8260B	09/19/16 18:08	KKW	
1,1,2,2-Tetrachloroethane [79-34-5]	0.54	U	ug/L	1	0.54	2.0	6I19025	EPA 8260B	09/19/16 18:08	KKW	
1,1,2-Trichloroethane [79-00-5]	0.76	U	ug/L	1	0.76	2.0	6I19025	EPA 8260B	09/19/16 18:08	KKW	
1,1-Dichloroethane [75-34-3]	0.62	U	ug/L	1	0.62	2.0	6I19025	EPA 8260B	09/19/16 18:08	KKW	
1,1-Dichloroethene [75-35-4]	0.94	U	ug/L	1	0.94	2.0	6I19025	EPA 8260B	09/19/16 18:08	KKW	
1,2,4-Trichlorobenzene [120-82-1]	0.70	U	ug/L	1	0.70	2.0	6I19025	EPA 8260B	09/19/16 18:08	KKW	
1,2-Dibromo-3-chloropropane [96-12-8]	0.96	U	ug/L	1	0.96	10	6I19025	EPA 8260B	09/19/16 18:08	KKW	
1,2-Dibromoethane [106-93-4]	0.78	U	ug/L	1	0.78	2.0	6I19025	EPA 8260B	09/19/16 18:08	KKW	
1,2-Dichlorobenzene [95-50-1]	0.73	U	ug/L	1	0.73	2.0	6I19025	EPA 8260B	09/19/16 18:08	KKW	
1,2-Dichloroethane [107-06-2]	0.63	U	ug/L	1	0.63	2.0	6I19025	EPA 8260B	09/19/16 18:08	KKW	
1,2-Dichloropropane [78-87-5]	0.80	U	ug/L	1	0.80	2.0	6I19025	EPA 8260B	09/19/16 18:08	KKW	
1,3-Dichlorobenzene [541-73-1]	0.77	U	ug/L	1	0.77	2.0	6I19025	EPA 8260B	09/19/16 18:08	KKW	
1,4-Dichlorobenzene [106-46-7]	0.76	U	ug/L	1	0.76	2.0	6I19025	EPA 8260B	09/19/16 18:08	KKW	
2-Butanone [78-93-3]	4.5	U	ug/L	1	4.5	25	6I19025	EPA 8260B	09/19/16 18:08	KKW	
2-Hexanone [591-78-6]	1.4	U	ug/L	1	1.4	5.0	6I19025	EPA 8260B	09/19/16 18:08	KKW	
4-Methyl-2-pentanone [108-10-1]	0.79	U	ug/L	1	0.79	5.0	6I19025	EPA 8260B	09/19/16 18:08	KKW	
Acetone [67-64-1]	10	U	ug/L	1	10	25	6I19025	EPA 8260B	09/19/16 18:08	KKW	
Benzene [71-43-2]	0.71	U	ug/L	1	0.71	2.0	6I19025	EPA 8260B	09/19/16 18:08	KKW	
Bromodichloromethane [75-27-4]	0.52	U	ug/L	1	0.52	2.0	6I19025	EPA 8260B	09/19/16 18:08	KKW	
Bromoform [75-25-2]	0.75	U	ug/L	1	0.75	2.0	6I19025	EPA 8260B	09/19/16 18:08	KKW	
Bromomethane [74-83-9]	0.95	U	ug/L	1	0.95	2.0	6I19025	EPA 8260B	09/19/16 18:08	KKW	
Carbon disulfide [75-15-0]	2.6	U	ug/L	1	2.6	10	6I19025	EPA 8260B	09/19/16 18:08	KKW	
Carbon Tetrachloride [56-23-5]	0.94	U	ug/L	1	0.94	2.0	6I19025	EPA 8260B	09/19/16 18:08	KKW	
Chlorobenzene [108-90-7]	0.72	U	ug/L	1	0.72	2.0	6I19025	EPA 8260B	09/19/16 18:08	KKW	
Chloroethane [75-00-3]	0.98	U	ug/L	1	0.98	2.0	6I19025	EPA 8260B	09/19/16 18:08	KKW	
Chloroform [67-66-3]	0.80	U	ug/L	1	0.80	2.0	6I19025	EPA 8260B	09/19/16 18:08	KKW	
Chloromethane [74-87-3]	0.82	U	ug/L	1	0.82	2.0	6I19025	EPA 8260B	09/19/16 18:08	KKW	
cis-1,2-Dichloroethene [156-59-2]	0.53	U	ug/L	1	0.53	2.0	6I19025	EPA 8260B	09/19/16 18:08	KKW	
cis-1,3-Dichloropropene [10061-01-5]	0.59	U	ug/L	1	0.59	2.0	6I19025	EPA 8260B	09/19/16 18:08	KKW	
Cyclohexane [110-82-7]	0.93	U	ug/L	1	0.93	2.0	6I19025	EPA 8260B	09/19/16 18:08	KKW	
Dibromochloromethane [124-48-1]	0.44	U	ug/L	1	0.44	2.0	6I19025	EPA 8260B	09/19/16 18:08	KKW	
Dichlorodifluoromethane [75-71-8]	0.74	U	ug/L	1	0.74	2.0	6I19025	EPA 8260B	09/19/16 18:08	KKW	
Ethylbenzene [100-41-4]	0.69	U	ug/L	1	0.69	2.0	6I19025	EPA 8260B	09/19/16 18:08	KKW	
Freon 113 [76-13-1]	0.73	U	ug/L	1	0.73	2.0	6I19025	EPA 8260B	09/19/16 18:08	KKW	
Isopropylbenzene [98-82-8]	0.67	U	ug/L	1	0.67	2.0	6I19025	EPA 8260B	09/19/16 18:08	KKW	
m,p-Xylenes [108-38-3/106-42-3]	1.3	U	ug/L	1	1.3	4.0	6I19025	EPA 8260B	09/19/16 18:08	KKW	
Methyl acetate [79-20-9]	0.95	U	ug/L	1	0.95	2.0	6I19025	EPA 8260B	09/19/16 18:08	KKW	
Methyl cyclohexane [108-87-2]	0.64	U	ug/L	1	0.64	2.0	6I19025	EPA 8260B	09/19/16 18:08	KKW	
Methylene Chloride [75-09-2]	2.0	U	ug/L	1	2.0	10	6I19025	EPA 8260B	09/19/16 18:08	KKW	
Methyl-tert-Butyl Ether [1634-04-4]	0.60	U	ug/L	1	0.60	2.0	6I19025	EPA 8260B	09/19/16 18:08	KKW	
o-Xylene [95-47-6]	0.53	U	ug/L	1	0.53	2.0	6I19025	EPA 8260B	09/19/16 18:08	KKW	
Styrene [100-42-5]	0.61	U	ug/L	1	0.61	2.0	6I19025	EPA 8260B	09/19/16 18:08	KKW	
Tetrachloroethene [127-18-4]	0.76	U	ug/L	1	0.76	2.0	6I19025	EPA 8260B	09/19/16 18:08	KKW	
Toluene [108-88-3]	0.72	U	ug/L	1	0.72	2.0	6I19025	EPA 8260B	09/19/16 18:08	KKW	
trans-1,2-Dichloroethene [156-60-5]	0.73	U	ug/L	1	0.73	2.0	6I19025	EPA 8260B	09/19/16 18:08	KKW	
trans-1,3-Dichloropropene [10061-02-6]	0.73	U	ug/L	1	0.73	2.0	6I19025	EPA 8260B	09/19/16 18:08	KKW	
Trichloroethene [79-01-6]	0.89	U	ug/L	1	0.89	2.0	6I19025	EPA 8260B	09/19/16 18:08	KKW	

ANALYTICAL RESULTS

Description: TRIP BLANK
Matrix: Water
Project: NASA-KSC-SW3

Lab Sample ID: AZ06090-08
Sampled: 09/10/16 00:00
Sampled By: ENCO ORL

Received: 09/12/16 16:10
Work Order: AZ06090

Volatile Organic Compounds by GCMS

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
Trichlorofluoromethane [75-69-4]	0.94	U	ug/L	1	0.94	2.0	6I19025	EPA 8260B	09/19/16 18:08	KKW	
Vinyl chloride [75-01-4]	0.71	U	ug/L	1	0.71	2.0	6I19025	EPA 8260B	09/19/16 18:08	KKW	
Xylenes (Total) [1330-20-7]	1.3	U	ug/L	1	1.3	4.0	6I19025	EPA 8260B	09/19/16 18:08	KKW	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
4-Bromofluorobenzene	*50*	*1*	*50.0*	*101 %*	*41-142*	*6I19025*	*EPA 8260B*	*09/19/16 18:08*	*KKW*	
Dibromofluoromethane	*51*	*1*	*50.0*	*101 %*	*53-146*	*6I19025*	*EPA 8260B*	*09/19/16 18:08*	*KKW*	
Toluene-d8	*48*	*1*	*50.0*	*97 %*	*41-146*	*6I19025*	*EPA 8260B*	*09/19/16 18:08*	*KKW*	

QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 6I19025 - EPA 5030B_MS

Blank (6I19025-BLK1) Prepared: 09/19/2016 00:00 Analyzed: 09/19/2016 14:11

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1-Trichloroethane	0.80	U	2.0	ug/L							
1,1,2,2-Tetrachloroethane	0.54	U	2.0	ug/L							
1,1,2-Trichloroethane	0.76	U	2.0	ug/L							
1,1-Dichloroethane	0.62	U	2.0	ug/L							
1,1-Dichloroethene	0.94	U	2.0	ug/L							
1,2,4-Trichlorobenzene	0.70	U	2.0	ug/L							
1,2-Dibromo-3-chloropropane	0.96	U	10	ug/L							
1,2-Dibromoethane	0.78	U	2.0	ug/L							
1,2-Dichlorobenzene	0.73	U	2.0	ug/L							
1,2-Dichloroethane	0.63	U	2.0	ug/L							
1,2-Dichloropropane	0.80	U	2.0	ug/L							
1,3-Dichlorobenzene	0.77	U	2.0	ug/L							
1,4-Dichlorobenzene	0.76	U	2.0	ug/L							
2-Butanone	4.5	U	25	ug/L							
2-Hexanone	1.4	U	5.0	ug/L							
4-Methyl-2-pentanone	0.79	U	5.0	ug/L							
Acetone	10	U	25	ug/L							
Benzene	0.71	U	2.0	ug/L							
Bromodichloromethane	0.52	U	2.0	ug/L							
Bromoform	0.75	U	2.0	ug/L							
Bromomethane	0.95	U	2.0	ug/L							
Carbon disulfide	2.6	U	10	ug/L							
Carbon Tetrachloride	0.94	U	2.0	ug/L							
Chlorobenzene	0.72	U	2.0	ug/L							
Chloroethane	0.98	U	2.0	ug/L							
Chloroform	0.80	U	2.0	ug/L							
Chloromethane	0.82	U	2.0	ug/L							
cis-1,2-Dichloroethene	0.53	U	2.0	ug/L							
cis-1,3-Dichloropropene	0.59	U	2.0	ug/L							
Cyclohexane	0.93	U	2.0	ug/L							
Dibromochloromethane	0.44	U	2.0	ug/L							
Dichlorodifluoromethane	0.74	U	2.0	ug/L							
Ethylbenzene	0.69	U	2.0	ug/L							
Freon 113	0.73	U	2.0	ug/L							
Isopropylbenzene	0.67	U	2.0	ug/L							
m,p-Xylenes	1.3	U	4.0	ug/L							
Methyl acetate	0.95	U	2.0	ug/L							
Methyl cyclohexane	0.64	U	2.0	ug/L							
Methylene Chloride	2.0	U	10	ug/L							
Methyl-tert-Butyl Ether	0.60	U	2.0	ug/L							
o-Xylene	0.53	U	2.0	ug/L							
Styrene	0.61	U	2.0	ug/L							
Tetrachloroethene	0.76	U	2.0	ug/L							
Toluene	0.72	U	2.0	ug/L							
trans-1,2-Dichloroethene	0.73	U	2.0	ug/L							
trans-1,3-Dichloropropene	0.73	U	2.0	ug/L							
Trichloroethene	0.89	U	2.0	ug/L							
Trichlorofluoromethane	0.94	U	2.0	ug/L							
Vinyl chloride	0.71	U	2.0	ug/L							

QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 6I19025 - EPA 5030B_MS - Continued

Blank (6I19025-BLK1) Continued Prepared: 09/19/2016 00:00 Analyzed: 09/19/2016 14:11

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Xylenes (Total)	1.3	U	4.0	ug/L							
4-Bromofluorobenzene	*52*			*ug/L*	*50.0*		*105*	*41-142*			
Dibromofluoromethane	*50*			*ug/L*	*50.0*		*99*	*53-146*			
Toluene-d8	*53*			*ug/L*	*50.0*		*106*	*41-146*			

LCS (6I19025-BS1) Prepared: 09/19/2016 00:00 Analyzed: 09/19/2016 13:12

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1-Trichloroethane	19		2.0	ug/L	20.0		96	57-148			
1,1,2,2-Tetrachloroethane	20		2.0	ug/L	20.0		100	60-139			
1,1,2-Trichloroethane	21		2.0	ug/L	20.0		103	57-141			
1,1-Dichloroethane	22		2.0	ug/L	20.0		108	57-142			
1,1-Dichloroethene	21		2.0	ug/L	20.0		104	47-139			
1,2,4-Trichlorobenzene	18		2.0	ug/L	20.0		89	52-159			
1,2-Dibromo-3-chloropropane	17		10	ug/L	20.0		84	48-150			
1,2-Dibromoethane	21		2.0	ug/L	20.0		105	57-140			
1,2-Dichlorobenzene	21		2.0	ug/L	20.0		103	63-131			
1,2-Dichloroethane	20		2.0	ug/L	20.0		100	50-156			
1,2-Dichloropropane	20		2.0	ug/L	20.0		102	61-133			
1,3-Dichlorobenzene	22		2.0	ug/L	20.0		109	66-129			
1,4-Dichlorobenzene	20		2.0	ug/L	20.0		102	65-133			
2-Butanone	130		25	ug/L	100		128	10-180			
2-Hexanone	110		5.0	ug/L	100		109	12-180			
4-Methyl-2-pentanone	95		5.0	ug/L	100		95	19-180			
Acetone	110		25	ug/L	100		111	10-180			
Benzene	21		2.0	ug/L	20.0		104	56-136			
Bromodichloromethane	21		2.0	ug/L	20.0		106	58-135			
Bromoform	16		2.0	ug/L	20.0		80	46-148			
Bromomethane	14		2.0	ug/L	20.0		68	10-173			
Carbon disulfide	19		10	ug/L	20.0		95	43-153			
Carbon Tetrachloride	17		2.0	ug/L	20.0		87	54-156			
Chlorobenzene	22		2.0	ug/L	20.0		108	51-139			
Chloroethane	21		2.0	ug/L	20.0		106	27-180			
Chloroform	21		2.0	ug/L	20.0		107	58-139			
Chloromethane	20		2.0	ug/L	20.0		102	33-154			
cis-1,2-Dichloroethene	20		2.0	ug/L	20.0		102	56-128			
cis-1,3-Dichloropropene	19		2.0	ug/L	20.0		97	64-128			
Cyclohexane	19		2.0	ug/L	20.0		97	70-130			
Dibromochloromethane	21		2.0	ug/L	20.0		105	50-140			
Dichlorodifluoromethane	19		2.0	ug/L	20.0		94	10-180			
Ethylbenzene	20		2.0	ug/L	20.0		100	63-133			
Freon 113	18		2.0	ug/L	20.0		91	47-173			
Isopropylbenzene	20		2.0	ug/L	20.0		101	60-132			
m,p-Xylenes	38		4.0	ug/L	40.0		96	64-133			
Methyl acetate	23		2.0	ug/L	20.0		115	70-130			
Methyl cyclohexane	21		2.0	ug/L	20.0		103	70-130			
Methylene Chloride	21		10	ug/L	20.0		105	43-142			
Methyl-tert-Butyl Ether	22		2.0	ug/L	20.0		108	51-145			
o-Xylene	21		2.0	ug/L	20.0		107	61-129			

QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 6I19025 - EPA 5030B_MS - Continued

LCS (6I19025-BS1) Continued Prepared: 09/19/2016 00:00 Analyzed: 09/19/2016 13:12

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Styrene	20		2.0	ug/L	20.0		102	59-136			
Tetrachloroethene	21		2.0	ug/L	20.0		103	60-147			
Toluene	21		2.0	ug/L	20.0		104	64-131			
trans-1,2-Dichloroethene	20		2.0	ug/L	20.0		99	54-134			
trans-1,3-Dichloropropene	22		2.0	ug/L	20.0		109	65-149			
Trichloroethene	20		2.0	ug/L	20.0		100	62-135			
Trichlorofluoromethane	17		2.0	ug/L	20.0		83	56-155			
Vinyl chloride	19		2.0	ug/L	20.0		95	20-167			
4-Bromofluorobenzene	*52*			*ug/L*	*50.0*		*104*	*41-142*			
Dibromofluoromethane	*52*			*ug/L*	*50.0*		*104*	*53-146*			
Toluene-d8	*52*			*ug/L*	*50.0*		*103*	*41-146*			

Matrix Spike (6I19025-MS1) Prepared: 09/19/2016 00:00 Analyzed: 09/19/2016 18:37

Source: AZ06090-01

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1-Trichloroethane	22		2.0	ug/L	20.0	0.80 U	112	57-148			
1,1,2,2-Tetrachloroethane	20		2.0	ug/L	20.0	0.54 U	99	60-139			
1,1,2-Trichloroethane	21		2.0	ug/L	20.0	0.76 U	104	57-141			
1,1-Dichloroethane	23		2.0	ug/L	20.0	0.62 U	114	57-142			
1,1-Dichloroethene	24		2.0	ug/L	20.0	0.94 U	118	47-139			
1,2,4-Trichlorobenzene	17		2.0	ug/L	20.0	0.70 U	83	52-159			
1,2-Dibromo-3-chloropropane	13		10	ug/L	20.0	0.96 U	66	48-150			
1,2-Dibromoethane	21		2.0	ug/L	20.0	0.78 U	103	57-140			
1,2-Dichlorobenzene	21		2.0	ug/L	20.0	0.73 U	105	63-131			
1,2-Dichloroethane	22		2.0	ug/L	20.0	0.63 U	108	50-156			
1,2-Dichloropropane	20		2.0	ug/L	20.0	0.80 U	101	61-133			
1,3-Dichlorobenzene	23		2.0	ug/L	20.0	0.77 U	117	66-129			
1,4-Dichlorobenzene	21		2.0	ug/L	20.0	0.76 U	106	65-133			
2-Butanone	110		25	ug/L	100	4.5 U	106	10-180			
2-Hexanone	99		5.0	ug/L	100	1.4 U	99	12-180			
4-Methyl-2-pentanone	94		5.0	ug/L	100	0.79 U	94	19-180			
Acetone	110		25	ug/L	100	10 U	108	10-180			
Benzene	23		2.0	ug/L	20.0	0.71 U	113	56-136			
Bromodichloromethane	24		2.0	ug/L	20.0	0.52 U	121	58-135			
Bromoform	17		2.0	ug/L	20.0	0.75 U	86	46-148			
Bromomethane	15		2.0	ug/L	20.0	0.95 U	77	10-173			QM-11
Carbon disulfide	22		10	ug/L	20.0	2.6 U	112	43-153			
Carbon Tetrachloride	22		2.0	ug/L	20.0	0.94 U	109	54-156			
Chlorobenzene	23		2.0	ug/L	20.0	0.72 U	114	51-139			
Chloroethane	24		2.0	ug/L	20.0	0.98 U	118	27-180			
Chloroform	24		2.0	ug/L	20.0	0.80 U	118	58-139			
Chloromethane	23		2.0	ug/L	20.0	0.82 U	115	33-154			
cis-1,2-Dichloroethene	99		2.0	ug/L	20.0	79	102	56-128			
cis-1,3-Dichloropropene	20		2.0	ug/L	20.0	0.59 U	98	64-128			
Cyclohexane	23		2.0	ug/L	20.0	0.93 U	116	70-130			
Dibromochloromethane	23		2.0	ug/L	20.0	0.44 U	116	50-140			
Dichlorodifluoromethane	24		2.0	ug/L	20.0	0.74 U	118	10-180			
Ethylbenzene	22		2.0	ug/L	20.0	0.69 U	108	63-133			
Freon 113	23		2.0	ug/L	20.0	0.73 U	115	47-173			

QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 6I19025 - EPA 5030B_MS - Continued

Matrix Spike (6I19025-MS1) Continued Prepared: 09/19/2016 00:00 Analyzed: 09/19/2016 18:37

Source: AZ06090-01

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Isopropylbenzene	23		2.0	ug/L	20.0	0.67 U	113	60-132			
m,p-Xylenes	42		4.0	ug/L	40.0	1.3 U	106	64-133			
Methyl acetate	19		2.0	ug/L	20.0	0.95 U	95	70-130			
Methyl cyclohexane	25		2.0	ug/L	20.0	0.64 U	123	70-130			
Methylene Chloride	21		10	ug/L	20.0	2.0 U	107	43-142			
Methyl-tert-Butyl Ether	20		2.0	ug/L	20.0	0.60 U	100	51-145			
o-Xylene	22		2.0	ug/L	20.0	0.53 U	110	61-129			
Styrene	21		2.0	ug/L	20.0	0.61 U	105	59-136			
Tetrachloroethene	22		2.0	ug/L	20.0	0.76 U	112	60-147			
Toluene	23		2.0	ug/L	20.0	0.72 U	117	64-131			
trans-1,2-Dichloroethene	30		2.0	ug/L	20.0	8.8	106	54-134			
trans-1,3-Dichloropropene	23		2.0	ug/L	20.0	0.73 U	114	65-149			
Trichloroethene	41		2.0	ug/L	20.0	19	112	62-135			
Trichlorofluoromethane	22		2.0	ug/L	20.0	0.94 U	110	56-155			
Vinyl chloride	36		2.0	ug/L	20.0	13	116	20-167			
4-Bromofluorobenzene	*49*			*ug/L*	*50.0*		*98*	*41-142*			
Dibromofluoromethane	*52*			*ug/L*	*50.0*		*103*	*53-146*			
Toluene-d8	*51*			*ug/L*	*50.0*		*101*	*41-146*			

Matrix Spike Dup (6I19025-MSD1) Prepared: 09/19/2016 00:00 Analyzed: 09/19/2016 19:07

Source: AZ06090-01

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1-Trichloroethane	21		2.0	ug/L	20.0	0.80 U	107	57-148	4	25	
1,1,2,2-Tetrachloroethane	19		2.0	ug/L	20.0	0.54 U	93	60-139	7	17	
1,1,2-Trichloroethane	21		2.0	ug/L	20.0	0.76 U	104	57-141	0.1	16	
1,1-Dichloroethane	23		2.0	ug/L	20.0	0.62 U	115	57-142	1	24	
1,1-Dichloroethene	24		2.0	ug/L	20.0	0.94 U	119	47-139	0.9	16	
1,2,4-Trichlorobenzene	17		2.0	ug/L	20.0	0.70 U	85	52-159	3	24	
1,2-Dibromo-3-chloropropane	14		10	ug/L	20.0	0.96 U	72	48-150	9	21	
1,2-Dibromoethane	19		2.0	ug/L	20.0	0.78 U	96	57-140	7	16	
1,2-Dichlorobenzene	20		2.0	ug/L	20.0	0.73 U	102	63-131	3	25	
1,2-Dichloroethane	21		2.0	ug/L	20.0	0.63 U	104	50-156	3	18	
1,2-Dichloropropane	20		2.0	ug/L	20.0	0.80 U	99	61-133	2	26	
1,3-Dichlorobenzene	23		2.0	ug/L	20.0	0.77 U	116	66-129	0.9	23	
1,4-Dichlorobenzene	21		2.0	ug/L	20.0	0.76 U	103	65-133	3	23	
2-Butanone	95		25	ug/L	100	4.5 U	95	10-180	11	29	
2-Hexanone	100		5.0	ug/L	100	1.4 U	103	12-180	4	28	
4-Methyl-2-pentanone	82		5.0	ug/L	100	0.79 U	82	19-180	14	24	
Acetone	100		25	ug/L	100	10 U	104	10-180	3	19	
Benzene	23		2.0	ug/L	20.0	0.71 U	116	56-136	3	14	
Bromodichloromethane	22		2.0	ug/L	20.0	0.52 U	111	58-135	8	19	
Bromoform	17		2.0	ug/L	20.0	0.75 U	84	46-148	2	18	
Bromomethane	22		2.0	ug/L	20.0	0.95 U	109	10-173	34	29	QM-11
Carbon disulfide	21		10	ug/L	20.0	2.6 U	107	43-153	4	26	
Carbon Tetrachloride	24		2.0	ug/L	20.0	0.94 U	119	54-156	9	27	
Chlorobenzene	22		2.0	ug/L	20.0	0.72 U	109	51-139	4	13	
Chloroethane	23		2.0	ug/L	20.0	0.98 U	115	27-180	2	22	
Chloroform	24		2.0	ug/L	20.0	0.80 U	119	58-139	1	17	
Chloromethane	22		2.0	ug/L	20.0	0.82 U	108	33-154	6	31	

QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 6I19025 - EPA 5030B_MS - Continued

Matrix Spike Dup (6I19025-MSD1) Continued Prepared: 09/19/2016 00:00 Analyzed: 09/19/2016 19:07

Source: AZ06090-01

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
cis-1,2-Dichloroethene	97		2.0	ug/L	20.0	79	89	56-128	3	17	
cis-1,3-Dichloropropene	20		2.0	ug/L	20.0	0.59 U	100	64-128	2	20	
Cyclohexane	23		2.0	ug/L	20.0	0.93 U	116	70-130	0.6	20	
Dibromochloromethane	22		2.0	ug/L	20.0	0.44 U	109	50-140	6	18	
Dichlorodifluoromethane	26		2.0	ug/L	20.0	0.74 U	128	10-180	8	26	
Ethylbenzene	21		2.0	ug/L	20.0	0.69 U	105	63-133	3	18	
Freon 113	23		2.0	ug/L	20.0	0.73 U	113	47-173	1	30	
Isopropylbenzene	22		2.0	ug/L	20.0	0.67 U	111	60-132	2	23	
m,p-Xylenes	44		4.0	ug/L	40.0	1.3 U	109	64-133	3	18	
Methyl acetate	18		2.0	ug/L	20.0	0.95 U	89	70-130	7	20	
Methyl cyclohexane	25		2.0	ug/L	20.0	0.64 U	124	70-130	1	20	
Methylene Chloride	22		10	ug/L	20.0	2.0 U	111	43-142	3	23	
Methyl-tert-Butyl Ether	20		2.0	ug/L	20.0	0.60 U	102	51-145	2	22	
o-Xylene	21		2.0	ug/L	20.0	0.53 U	106	61-129	4	16	
Styrene	21		2.0	ug/L	20.0	0.61 U	103	59-136	2	32	
Tetrachloroethene	21		2.0	ug/L	20.0	0.76 U	106	60-147	5	21	
Toluene	22		2.0	ug/L	20.0	0.72 U	111	64-131	5	16	
trans-1,2-Dichloroethene	31		2.0	ug/L	20.0	8.8	109	54-134	2	20	
trans-1,3-Dichloropropene	21		2.0	ug/L	20.0	0.73 U	103	65-149	10	17	
Trichloroethene	40		2.0	ug/L	20.0	19	104	62-135	4	20	
Trichlorofluoromethane	21		2.0	ug/L	20.0	0.94 U	106	56-155	4	22	
Vinyl chloride	34		2.0	ug/L	20.0	13	106	20-167	6	24	
4-Bromofluorobenzene	*49*			*ug/L*	*50.0*		*99*	*41-142*			
Dibromofluoromethane	*51*			*ug/L*	*50.0*		*101*	*53-146*			
Toluene-d8	*51*			*ug/L*	*50.0*		*101*	*41-146*			

Batch 6I20014 - EPA 5030B_MS

Blank (6I20014-BLK1) Prepared: 09/20/2016 00:00 Analyzed: 09/20/2016 10:45

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1-Trichloroethane	0.80	U	2.0	ug/L							
1,1,2,2-Tetrachloroethane	0.54	U	2.0	ug/L							
1,1,2-Trichloroethane	0.76	U	2.0	ug/L							
1,1-Dichloroethane	0.62	U	2.0	ug/L							
1,1-Dichloroethene	0.94	U	2.0	ug/L							
1,2,4-Trichlorobenzene	0.70	U	2.0	ug/L							
1,2-Dibromo-3-chloropropane	0.96	U	10	ug/L							
1,2-Dibromoethane	0.78	U	2.0	ug/L							
1,2-Dichlorobenzene	0.73	U	2.0	ug/L							
1,2-Dichloroethane	0.63	U	2.0	ug/L							
1,2-Dichloropropane	0.80	U	2.0	ug/L							
1,3-Dichlorobenzene	0.77	U	2.0	ug/L							
1,4-Dichlorobenzene	0.76	U	2.0	ug/L							
2-Butanone	4.5	U	25	ug/L							
2-Hexanone	1.4	U	5.0	ug/L							
4-Methyl-2-pentanone	0.79	U	5.0	ug/L							
Acetone	10	U	25	ug/L							
Benzene	0.71	U	2.0	ug/L							

QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 6I20014 - EPA 5030B_MS - Continued

Blank (6I20014-BLK1) Continued Prepared: 09/20/2016 00:00 Analyzed: 09/20/2016 10:45

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Bromodichloromethane	0.52	U	2.0	ug/L							
Bromoform	0.75	U	2.0	ug/L							
Bromomethane	0.95	U	2.0	ug/L							
Carbon disulfide	2.6	U	10	ug/L							
Carbon Tetrachloride	0.94	U	2.0	ug/L							
Chlorobenzene	0.72	U	2.0	ug/L							
Chloroethane	0.98	U	2.0	ug/L							
Chloroform	0.80	U	2.0	ug/L							
Chloromethane	0.82	U	2.0	ug/L							
cis-1,2-Dichloroethene	0.53	U	2.0	ug/L							
cis-1,3-Dichloropropene	0.59	U	2.0	ug/L							
Cyclohexane	0.93	U	2.0	ug/L							
Dibromochloromethane	0.44	U	2.0	ug/L							
Dichlorodifluoromethane	0.74	U	2.0	ug/L							
Ethylbenzene	0.69	U	2.0	ug/L							
Freon 113	0.73	U	2.0	ug/L							
Isopropylbenzene	0.67	U	2.0	ug/L							
m,p-Xylenes	1.3	U	4.0	ug/L							
Methyl acetate	0.95	U	2.0	ug/L							
Methyl cyclohexane	0.64	U	2.0	ug/L							
Methylene Chloride	2.0	U	10	ug/L							
Methyl-tert-Butyl Ether	0.60	U	2.0	ug/L							
o-Xylene	0.53	U	2.0	ug/L							
Styrene	0.61	U	2.0	ug/L							
Tetrachloroethene	0.76	U	2.0	ug/L							
Toluene	0.72	U	2.0	ug/L							
trans-1,2-Dichloroethene	0.73	U	2.0	ug/L							
trans-1,3-Dichloropropene	0.73	U	2.0	ug/L							
Trichloroethene	0.89	U	2.0	ug/L							
Trichlorofluoromethane	0.94	U	2.0	ug/L							
Vinyl chloride	0.71	U	2.0	ug/L							
Xylenes (Total)	1.3	U	4.0	ug/L							
4-Bromofluorobenzene	*51*			*ug/L*	*50.0*		*103*	*41-142*			
Dibromofluoromethane	*48*			*ug/L*	*50.0*		*95*	*53-146*			
Toluene-d8	*51*			*ug/L*	*50.0*		*102*	*41-146*			

LCS (6I20014-BS1) Prepared: 09/20/2016 00:00 Analyzed: 09/20/2016 09:17

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1-Trichloroethane	18		2.0	ug/L	20.0		90	57-148			
1,1,2,2-Tetrachloroethane	17		2.0	ug/L	20.0		83	60-139			
1,1,2-Trichloroethane	18		2.0	ug/L	20.0		90	57-141			
1,1-Dichloroethane	18		2.0	ug/L	20.0		88	57-142			
1,1-Dichloroethene	16		2.0	ug/L	20.0		82	47-139			
1,2,4-Trichlorobenzene	13		2.0	ug/L	20.0		65	52-159			
1,2-Dibromo-3-chloropropane	10		10	ug/L	20.0		51	48-150			
1,2-Dibromoethane	18		2.0	ug/L	20.0		90	57-140			
1,2-Dichlorobenzene	17		2.0	ug/L	20.0		85	63-131			
1,2-Dichloroethane	19		2.0	ug/L	20.0		97	50-156			

QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 6I20014 - EPA 5030B_MS - Continued

LCS (6I20014-BS1) Continued Prepared: 09/20/2016 00:00 Analyzed: 09/20/2016 09:17

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,2-Dichloropropane	18		2.0	ug/L	20.0		88	61-133			
1,3-Dichlorobenzene	20		2.0	ug/L	20.0		99	66-129			
1,4-Dichlorobenzene	18		2.0	ug/L	20.0		91	65-133			
2-Butanone	90		25	ug/L	100		90	10-180			
2-Hexanone	80		5.0	ug/L	100		80	12-180			
4-Methyl-2-pentanone	74		5.0	ug/L	100		74	19-180			
Acetone	80		25	ug/L	100		80	10-180			
Benzene	19		2.0	ug/L	20.0		93	56-136			
Bromodichloromethane	21		2.0	ug/L	20.0		107	58-135			
Bromoform	16		2.0	ug/L	20.0		79	46-148			
Bromomethane	18		2.0	ug/L	20.0		91	10-173			
Carbon disulfide	16		10	ug/L	20.0		79	43-153			
Carbon Tetrachloride	18		2.0	ug/L	20.0		92	54-156			
Chlorobenzene	20		2.0	ug/L	20.0		99	51-139			
Chloroethane	17		2.0	ug/L	20.0		87	27-180			
Chloroform	19		2.0	ug/L	20.0		97	58-139			
Chloromethane	16		2.0	ug/L	20.0		82	33-154			
cis-1,2-Dichloroethene	17		2.0	ug/L	20.0		83	56-128			
cis-1,3-Dichloropropene	18		2.0	ug/L	20.0		89	64-128			
Cyclohexane	16		2.0	ug/L	20.0		80	70-130			
Dibromochloromethane	20		2.0	ug/L	20.0		99	50-140			
Dichlorodifluoromethane	20		2.0	ug/L	20.0		101	10-180			
Ethylbenzene	17		2.0	ug/L	20.0		84	63-133			
Freon 113	17		2.0	ug/L	20.0		84	47-173			
Isopropylbenzene	18		2.0	ug/L	20.0		91	60-132			
m,p-Xylenes	36		4.0	ug/L	40.0		90	64-133			
Methyl acetate	16		2.0	ug/L	20.0		80	70-130			
Methyl cyclohexane	19		2.0	ug/L	20.0		96	70-130			
Methylene Chloride	18		10	ug/L	20.0		90	43-142			
Methyl-tert-Butyl Ether	16		2.0	ug/L	20.0		82	51-145			
o-Xylene	17		2.0	ug/L	20.0		87	61-129			
Styrene	18		2.0	ug/L	20.0		90	59-136			
Tetrachloroethene	20		2.0	ug/L	20.0		99	60-147			
Toluene	19		2.0	ug/L	20.0		95	64-131			
trans-1,2-Dichloroethene	17		2.0	ug/L	20.0		83	54-134			
trans-1,3-Dichloropropene	18		2.0	ug/L	20.0		91	65-149			
Trichloroethene	20		2.0	ug/L	20.0		101	62-135			
Trichlorofluoromethane	17		2.0	ug/L	20.0		87	56-155			
Vinyl chloride	17		2.0	ug/L	20.0		86	20-167			
4-Bromofluorobenzene	*53*			*ug/L*	*50.0*		*105*	*41-142*			
Dibromofluoromethane	*50*			*ug/L*	*50.0*		*101*	*53-146*			
Toluene-d8	*50*			*ug/L*	*50.0*		*99*	*41-146*			

Matrix Spike (6I20014-MS1) Prepared: 09/20/2016 00:00 Analyzed: 09/20/2016 18:37

Source: AZ06092-01

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1-Trichloroethane	21		2.0	ug/L	20.0	0.80 U	106	57-148			
1,1,2,2-Tetrachloroethane	18		2.0	ug/L	20.0	0.54 U	91	60-139			
1,1,2-Trichloroethane	18		2.0	ug/L	20.0	0.76 U	90	57-141			

QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 6I20014 - EPA 5030B_MS - Continued

Matrix Spike (6I20014-MS1) Continued Prepared: 09/20/2016 00:00 Analyzed: 09/20/2016 18:37

Source: AZ06092-01

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1-Dichloroethane	20		2.0	ug/L	20.0	0.62 U	100	57-142			
1,1-Dichloroethene	19		2.0	ug/L	20.0	0.94 U	94	47-139			
1,2,4-Trichlorobenzene	15		2.0	ug/L	20.0	0.70 U	77	52-159			
1,2-Dibromo-3-chloropropane	14		10	ug/L	20.0	0.96 U	68	48-150			
1,2-Dibromoethane	19		2.0	ug/L	20.0	0.78 U	93	57-140			
1,2-Dichlorobenzene	19		2.0	ug/L	20.0	0.73 U	96	63-131			
1,2-Dichloroethane	21		2.0	ug/L	20.0	0.63 U	105	50-156			
1,2-Dichloropropane	18		2.0	ug/L	20.0	0.80 U	88	61-133			
1,3-Dichlorobenzene	21		2.0	ug/L	20.0	0.77 U	104	66-129			
1,4-Dichlorobenzene	21		2.0	ug/L	20.0	0.76 U	103	65-133			
2-Butanone	88		25	ug/L	100	4.5 U	88	10-180			
2-Hexanone	91		5.0	ug/L	100	1.4 U	91	12-180			
4-Methyl-2-pentanone	92		5.0	ug/L	100	0.79 U	92	19-180			
Acetone	91		25	ug/L	100	10 U	91	10-180			
Benzene	21		2.0	ug/L	20.0	0.71 U	103	56-136			
Bromodichloromethane	20		2.0	ug/L	20.0	0.52 U	102	58-135			
Bromoform	11		2.0	ug/L	20.0	0.75 U	53	46-148			QM-11
Bromomethane	14		2.0	ug/L	20.0	0.95 U	68	10-173			
Carbon disulfide	18		10	ug/L	20.0	2.6 U	92	43-153			
Carbon Tetrachloride	25		2.0	ug/L	20.0	0.94 U	124	54-156			
Chlorobenzene	20		2.0	ug/L	20.0	0.72 U	102	51-139			
Chloroethane	21		2.0	ug/L	20.0	0.98 U	103	27-180			
Chloroform	21		2.0	ug/L	20.0	0.80 U	105	58-139			
Chloromethane	20		2.0	ug/L	20.0	0.82 U	100	33-154			
cis-1,2-Dichloroethene	19		2.0	ug/L	20.0	0.53 U	94	56-128			
cis-1,3-Dichloropropene	19		2.0	ug/L	20.0	0.59 U	93	64-128			
Cyclohexane	19		2.0	ug/L	20.0	0.93 U	93	70-130			
Dibromochloromethane	17		2.0	ug/L	20.0	0.44 U	83	50-140			
Dichlorodifluoromethane	24		2.0	ug/L	20.0	0.74 U	118	10-180			
Ethylbenzene	19		2.0	ug/L	20.0	0.69 U	93	63-133			
Freon 113	19		2.0	ug/L	20.0	0.73 U	97	47-173			
Isopropylbenzene	19		2.0	ug/L	20.0	0.67 U	96	60-132			
m,p-Xylenes	36		4.0	ug/L	40.0	1.3 U	90	64-133			
Methyl acetate	16		2.0	ug/L	20.0	0.95 U	79	70-130			
Methyl cyclohexane	22		2.0	ug/L	20.0	0.64 U	112	70-130			
Methylene Chloride	18		10	ug/L	20.0	2.0 U	91	43-142			
Methyl-tert-Butyl Ether	18		2.0	ug/L	20.0	0.60 U	89	51-145			
o-Xylene	18		2.0	ug/L	20.0	0.53 U	91	61-129			
Styrene	13		2.0	ug/L	20.0	0.61 U	64	59-136			
Tetrachloroethene	21		2.0	ug/L	20.0	0.76 U	106	60-147			
Toluene	19		2.0	ug/L	20.0	0.72 U	97	64-131			
trans-1,2-Dichloroethene	19		2.0	ug/L	20.0	0.73 U	94	54-134			
trans-1,3-Dichloropropene	18		2.0	ug/L	20.0	0.73 U	92	65-149			
Trichloroethene	22		2.0	ug/L	20.0	0.89 U	111	62-135			
Trichlorofluoromethane	21		2.0	ug/L	20.0	0.94 U	106	56-155			
Vinyl chloride	20		2.0	ug/L	20.0	0.71 U	100	20-167			
4-Bromofluorobenzene	*49*			*ug/L*	*50.0*		*98*	*41-142*			
Dibromofluoromethane	*47*			*ug/L*	*50.0*		*94*	*53-146*			
Toluene-d8	*49*			*ug/L*	*50.0*		*98*	*41-146*			

QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 6I20014 - EPA 5030B_MS - Continued

Matrix Spike Dup (6I20014-MSD1) Prepared: 09/20/2016 00:00 Analyzed: 09/20/2016 19:07

Source: AZ06092-01

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1-Trichloroethane	20		2.0	ug/L	20.0	0.80 U	102	57-148	3	25	
1,1,2,2-Tetrachloroethane	20		2.0	ug/L	20.0	0.54 U	102	60-139	11	17	
1,1,2-Trichloroethane	21		2.0	ug/L	20.0	0.76 U	103	57-141	14	16	
1,1-Dichloroethane	20		2.0	ug/L	20.0	0.62 U	99	57-142	1	24	
1,1-Dichloroethene	21		2.0	ug/L	20.0	0.94 U	106	47-139	12	16	
1,2,4-Trichlorobenzene	17		2.0	ug/L	20.0	0.70 U	83	52-159	8	24	
1,2-Dibromo-3-chloropropane	14		10	ug/L	20.0	0.96 U	71	48-150	4	21	
1,2-Dibromoethane	19		2.0	ug/L	20.0	0.78 U	94	57-140	0.6	16	
1,2-Dichlorobenzene	20		2.0	ug/L	20.0	0.73 U	99	63-131	3	25	
1,2-Dichloroethane	22		2.0	ug/L	20.0	0.63 U	110	50-156	5	18	
1,2-Dichloropropane	18		2.0	ug/L	20.0	0.80 U	91	61-133	3	26	
1,3-Dichlorobenzene	22		2.0	ug/L	20.0	0.77 U	110	66-129	6	23	
1,4-Dichlorobenzene	22		2.0	ug/L	20.0	0.76 U	109	65-133	6	23	
2-Butanone	78		25	ug/L	100	4.5 U	78	10-180	12	29	
2-Hexanone	97		5.0	ug/L	100	1.4 U	97	12-180	7	28	
4-Methyl-2-pentanone	83		5.0	ug/L	100	0.79 U	83	19-180	10	24	
Acetone	91		25	ug/L	100	10 U	91	10-180	0.5	19	
Benzene	21		2.0	ug/L	20.0	0.71 U	105	56-136	2	14	
Bromodichloromethane	22		2.0	ug/L	20.0	0.52 U	111	58-135	8	19	
Bromoform	16		2.0	ug/L	20.0	0.75 U	82	46-148	43	18	QM-11
Bromomethane	18		2.0	ug/L	20.0	0.95 U	89	10-173	27	29	
Carbon disulfide	18		10	ug/L	20.0	2.6 U	89	43-153	4	26	
Carbon Tetrachloride	23		2.0	ug/L	20.0	0.94 U	117	54-156	5	27	
Chlorobenzene	21		2.0	ug/L	20.0	0.72 U	103	51-139	1	13	
Chloroethane	21		2.0	ug/L	20.0	0.98 U	107	27-180	4	22	
Chloroform	22		2.0	ug/L	20.0	0.80 U	109	58-139	3	17	
Chloromethane	19		2.0	ug/L	20.0	0.82 U	97	33-154	3	31	
cis-1,2-Dichloroethene	17		2.0	ug/L	20.0	0.53 U	86	56-128	8	17	
cis-1,3-Dichloropropene	17		2.0	ug/L	20.0	0.59 U	85	64-128	9	20	
Cyclohexane	19		2.0	ug/L	20.0	0.93 U	94	70-130	1	20	
Dibromochloromethane	20		2.0	ug/L	20.0	0.44 U	98	50-140	17	18	
Dichlorodifluoromethane	24		2.0	ug/L	20.0	0.74 U	119	10-180	0.8	26	
Ethylbenzene	19		2.0	ug/L	20.0	0.69 U	97	63-133	4	18	
Freon 113	22		2.0	ug/L	20.0	0.73 U	110	47-173	12	30	
Isopropylbenzene	20		2.0	ug/L	20.0	0.67 U	102	60-132	6	23	
m,p-Xylenes	37		4.0	ug/L	40.0	1.3 U	92	64-133	3	18	
Methyl acetate	17		2.0	ug/L	20.0	0.95 U	83	70-130	5	20	
Methyl cyclohexane	22		2.0	ug/L	20.0	0.64 U	109	70-130	3	20	
Methylene Chloride	19		10	ug/L	20.0	2.0 U	93	43-142	2	23	
Methyl-tert-Butyl Ether	19		2.0	ug/L	20.0	0.60 U	94	51-145	5	22	
o-Xylene	19		2.0	ug/L	20.0	0.53 U	94	61-129	3	16	
Styrene	15		2.0	ug/L	20.0	0.61 U	75	59-136	16	32	
Tetrachloroethene	22		2.0	ug/L	20.0	0.76 U	112	60-147	5	21	
Toluene	20		2.0	ug/L	20.0	0.72 U	101	64-131	4	16	
trans-1,2-Dichloroethene	19		2.0	ug/L	20.0	0.73 U	93	54-134	1	20	
trans-1,3-Dichloropropene	21		2.0	ug/L	20.0	0.73 U	104	65-149	12	17	
Trichloroethene	22		2.0	ug/L	20.0	0.89 U	108	62-135	3	20	
Trichlorofluoromethane	22		2.0	ug/L	20.0	0.94 U	108	56-155	2	22	
Vinyl chloride	21		2.0	ug/L	20.0	0.71 U	104	20-167	4	24	

QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 6I20014 - EPA 5030B_MS - Continued

Matrix Spike Dup (6I20014-MSD1) Continued Prepared: 09/20/2016 00:00 Analyzed: 09/20/2016 19:07

Source: AZ06092-01

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
4-Bromofluorobenzene	*52*			*ug/L*	*50.0*		*104*	*41-142*			
Dibromofluoromethane	*49*			*ug/L*	*50.0*		*98*	*53-146*			
Toluene-d8	*51*			*ug/L*	*50.0*		*103*	*41-146*			

FLAGS/NOTES AND DEFINITIONS

PQL	PQL: Practical Quantitation Limit.
B	Results are based upon membrane filter colony counts that are outside the method indicated ideal range.
I	The reported value is between the laboratory method detection limit (MDL) and the practical quantitation limit (PQL).
J	Estimated value.
K	Off-scale low; Actual value is known to be less than the value given.
L	Off-scale high; Actual value is known to be greater than value given.
M	Presence of analyte is verified but not quantified; the actual value is less than the MRL but greater than the MDL.
N	Presumptive evidence of presence of material.
O	Sampled, but analysis lost or not performed.
Q	Sample exceeded the accepted holding time.
T	Value reported is less than the laboratory method detection limit. The value is reported for informational purposes only and shall not be used in statistical analysis.
U	Indicates that the compound was analyzed for but not detected.
V	Indicates that the analyte was detected in both the sample and the associated method blank.
Y	The laboratory analysis was from an improperly preserved sample. The data may not be accurate.
Z	Too many colonies were present (TNTC); the numeric value represents the filtration volume.
?	Data are rejected and should not be used. Some or all of the quality control data for the analyte were outside criteria, and the presence or absence of the analyte cannot be determined from the data.
*****	Not reported due to interference.
QM-11	Precision between duplicate matrix spikes of the same sample was outside acceptance limits.

AZ86090

Tetra Tech, Inc. CHAIN OF CUSTODY | NUMBER No. 0816 | PAGE 1 OF 1

PROJECT NO: 112G07584	FACILITY: KSC-SW3	PROJECT MANAGER Chris Neumann	PHONE NUMBER (412) 852-7756	LABORATORY NAME AND CONTACT: ENCO-Kaitlin Dylnicki
SAMPLERS (SIGNATURE)		FIELD OPERATIONS LEADER Chuck Sorden	PHONE NUMBER (321) 591-7580	ADDRESS 10775 Central Port Dr.
		CARRIER/WAYBILL NUMBER		CITY, STATE Orlando, FL

STANDARD TAT ☒
RUSH TAT ☐ ☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

DATE YEAR 2016	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	CONTAINER TYPE PLASTIC (P) or GLASS (G): G	PRESERVATIVE USED: HCl	TYPE OF ANALYSIS: SW-846 8260 VOCs	COMMENTS
09/10	1410	SW3-MW0009-020.0-20160910		15	25	GW	G	3	X			
	1440	SW3-MW0026-040.0-20160910		35	45							Cool to 4°C
	1515	SW3-MW0025-040.0-20160910		35	45							
	1555	SW3-MW0027-032.0-20160910		27	37							
	1630	SW3-MW0028-032.0-20160910		27	37	GW						
	1650	SW3-SW0002-000.5-20160910		0.0	0.5	SW						
09/10	1730	SW3-SW0003-000.5-20160910		0.0	0.5	SW	G	3	X			

C.S.

1. RELINQUISHED BY		DATE 09/12/16	TIME 1315	1. RECEIVED BY		DATE 9/12/16	TIME 1515
2. RELINQUISHED BY		DATE	TIME	2. RECEIVED BY	S. Casey Jr.	DATE 9/12/16	TIME 1610
3. RELINQUISHED BY		DATE	TIME	3. RECEIVED BY		DATE	TIME

COMMENTS R+W #2012 @ -1.1°C

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY)

4/02R
FORM NO. TINUS-001

9/13/2016

Environmental Conservation Labs, Inc.

Alex Murphy
Tetra Tech, Inc. (TE016)
11 Riverside Drive, Suite 204
Cocoa, FL 32922

Phone: (321) 636-6470
Fax: (321) 636-6473

Reference : **Sample Receipt Confirmation - *Please Review***
Project Name / Number : NASA-KSC-SW3 / 112G07584
Purchase Order # :

Lab Reference # : AZ06090 Lab Receipt Date: 12-Sep-16 16:10
Anticipated ***(Estimated)*** Completion Date: 21-Sep-16 17:00

This is an automated notification from our laboratory information management system (LIMS), indicating the samples we have recently received and their associated analyses. Should any of the following information be in error, please contact us immediately.

Thank you for choosing Environmental Conservation Laboratories. Should any events occur that delay the processing of your samples or inhibit our ability to complete the project within the projected time frame you will be contacted.

Sincerely,

Kaitlin Dylnicki

Client: Tetra Tech, Inc. (TE016) **Project Name:** NASA-KSC-SW3
Requested TAT: 7 **Project Number:** 112G07584

Analysis	TAT	Expires	Status
Sample ID: SW3-MW0009-020.0-20160910(Lab ID: AZ06090-01), Matrix: Ground Water, Sampled: 10-Sep-16 14:10 (GMT-05:00) Eastern Time (US &			
8260B TCL SOM01.2 CLP-LIKE	7	24-Sep-16 14:10	Received
Sample ID: SW3-MW0026-040.0-20160910(Lab ID: AZ06090-02), Matrix: Ground Water, Sampled: 10-Sep-16 14:40 (GMT-05:00) Eastern Time (US &			
8260B TCL SOM01.2 CLP-LIKE	7	24-Sep-16 14:40	Received
Sample ID: SW3-MW0025-040.0-20160910(Lab ID: AZ06090-03), Matrix: Ground Water, Sampled: 10-Sep-16 15:15 (GMT-05:00) Eastern Time (US &			
8260B TCL SOM01.2 CLP-LIKE	7	24-Sep-16 15:15	Received
Sample ID: SW3-MW0027-032.0-20160910(Lab ID: AZ06090-04), Matrix: Ground Water, Sampled: 10-Sep-16 15:55 (GMT-05:00) Eastern Time (US &			
8260B TCL SOM01.2 CLP-LIKE	7	24-Sep-16 15:55	Received
Sample ID: SW3-MW0028-032.0-20160910(Lab ID: AZ06090-05), Matrix: Ground Water, Sampled: 10-Sep-16 16:30 (GMT-05:00) Eastern Time (US &			
8260B TCL SOM01.2 CLP-LIKE	7	24-Sep-16 16:30	Received
Sample ID: SW3-SW0002-000.5-20160910(Lab ID: AZ06090-06), Matrix: Surface Water, Sampled: 10-Sep-16 16:50 (GMT-05:00) Eastern Time (US &			
8260B TCL SOM01.2 CLP-LIKE	7	24-Sep-16 16:50	Received
Sample ID: SW3-SW0003-000.5-20160910(Lab ID: AZ06090-07), Matrix: Surface Water, Sampled: 10-Sep-16 17:30 (GMT-05:00) Eastern Time (US &			
8260B TCL SOM01.2 CLP-LIKE	7	24-Sep-16 17:30	Received
Sample ID: TRIP BLANK(Lab ID: AZ06090-08), Matrix: Water, Sampled: 10-Sep-16 00:00 (GMT-05:00) Eastern Time (US &			
8260B TCL SOM01.2 CLP-LIKE	7	24-Sep-16 00:00	Received

Client: Tetra Tech, Inc. (TE016)	**Project Name:** NASA-KSC-SW3
Requested TAT: 7	**Project Number:** 112G07584

Analysis Groups included in this work order

ENCO Orlando

SDG: AZ06090-TE016

CLASS: 01_VOA_MS

METHOD: EPA 8260B

ANALYSES DATA PACKAGE COVER PAGE

EPA 8260B

Laboratory: ENCO Orlando

SDG: AZ06090-TE016

Client: Tetra Tech, Inc. (TE016)

Project: NASA-KSC-SW3

Client Sample Id:	Lab Sample Id:
SW3-MW0009-020.0-20160910	AZ06090-01
SW3-MW0026-040.0-20160910	AZ06090-02
SW3-MW0025-040.0-20160910	AZ06090-03
SW3-MW0025-040.0-20160910	AZ06090-03RE1
SW3-MW0027-032.0-20160910	AZ06090-04
SW3-MW0027-032.0-20160910	AZ06090-04RE1
SW3-MW0028-032.0-20160910	AZ06090-05
SW3-MW0028-032.0-20160910	AZ06090-05RE1
SW3-SW0002-000.5-20160910	AZ06090-06
SW3-SW0003-000.5-20160910	AZ06090-07
TRIP BLANK	AZ06090-08

ORGANIC ANALYSIS DATA SHEET

EPA 8260B

SW3-MW0009-020.0-20160910

Laboratory: ENCO Orlando SDG: AZ06090-TE016

Client: Tetra Tech, Inc. (TE016) Project: NASA-KSC-SW3

Matrix: Ground Water Laboratory ID: AZ06090-01 File ID: 5IN015.D

Sampled: 09/10/16 14:10 Prepared: 09/19/16 00:00 Analyzed: 09/19/16 14:41

Solids: Preparation: EPA 5030B_MS Initial/Final: 5 mL / 5 mL

Batch: 6I19025 Sequence: AA40509 Calibration: 1609060 Instrument: OVGCMS5

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
75-71-8	Dichlorodifluoromethane	1	0.74	U	0.74	2.0
74-87-3	Chloromethane	1	0.82	U	0.82	2.0
75-01-4	Vinyl chloride	1	13		0.71	2.0
74-83-9	Bromomethane	1	0.95	U	0.95	2.0
75-00-3	Chloroethane	1	0.98	U	0.98	2.0
75-69-4	Trichlorofluoromethane	1	0.94	U	0.94	2.0
76-13-1	Freon 113	1	0.73	U	0.73	2.0
67-64-1	Acetone	1	10	U	10	25
75-35-4	1,1-Dichloroethene	1	0.94	U	0.94	2.0
75-15-0	Carbon disulfide	1	2.6	U	2.6	10
75-09-2	Methylene Chloride	1	2.0	U	2.0	10
1634-04-4	Methyl-tert-Butyl Ether	1	0.60	U	0.60	2.0
156-60-5	trans-1,2-Dichloroethene	1	8.8		0.73	2.0
156-59-2	cis-1,2-Dichloroethene	1	79		0.53	2.0
75-34-3	1,1-Dichloroethane	1	0.62	U	0.62	2.0
78-93-3	2-Butanone	1	4.5	U	4.5	25
67-66-3	Chloroform	1	0.80	U	0.80	2.0
71-55-6	1,1,1-Trichloroethane	1	0.80	U	0.80	2.0
79-20-9	Methyl acetate	1	0.95	U	0.95	2.0
110-82-7	Cyclohexane	1	0.93	U	0.93	2.0
108-87-2	Methyl cyclohexane	1	0.64	U	0.64	2.0
56-23-5	Carbon Tetrachloride	1	0.94	U	0.94	2.0
107-06-2	1,2-Dichloroethane	1	0.63	U	0.63	2.0
71-43-2	Benzene	1	0.71	U	0.71	2.0
79-01-6	Trichloroethene	1	19		0.89	2.0
78-87-5	1,2-Dichloropropane	1	0.80	U	0.80	2.0
75-27-4	Bromodichloromethane	1	0.52	U	0.52	2.0
108-10-1	4-Methyl-2-pentanone	1	0.79	U	0.79	5.0
591-78-6	2-Hexanone	1	1.4	U	1.4	5.0
10061-01-5	cis-1,3-Dichloropropene	1	0.59	U	0.59	2.0
108-88-3	Toluene	1	0.72	U	0.72	2.0
10061-02-6	trans-1,3-Dichloropropene	1	0.73	U	0.73	2.0
79-00-5	1,1,2-Trichloroethane	1	0.76	U	0.76	2.0
127-18-4	Tetrachloroethene	1	0.76	U	0.76	2.0
124-48-1	Dibromochloromethane	1	0.44	U	0.44	2.0
106-93-4	1,2-Dibromoethane	1	0.78	U	0.78	2.0
108-90-7	Chlorobenzene	1	0.72	U	0.72	2.0
100-41-4	Ethylbenzene	1	0.69	U	0.69	2.0
108-38-3/106-42-	m,p-Xylenes	1	1.3	U	1.3	4.0
95-47-6	o-Xylene	1	0.53	U	0.53	2.0
75-25-2	Bromoform	1	0.75	U	0.75	2.0

ORGANIC ANALYSIS DATA SHEET

EPA 8260B

SW3-MW0009-020.0-20160910

Laboratory: ENCO Orlando SDG: AZ06090-TE016

Client: Tetra Tech, Inc. (TE016) Project: NASA-KSC-SW3

Matrix: Ground Water Laboratory ID: AZ06090-01 File ID: 5IN015.D

Sampled: 09/10/16 14:10 Prepared: 09/19/16 00:00 Analyzed: 09/19/16 14:41

Solids: Preparation: EPA 5030B_MS Initial/Final: 5 mL / 5 mL

Batch: 6I19025 Sequence: AA40509 Calibration: 1609060 Instrument: OVGCMS5

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
100-42-5	Styrene	1	0.61	U	0.61	2.0
98-82-8	Isopropylbenzene	1	0.67	U	0.67	2.0
79-34-5	1,1,2,2-Tetrachloroethane	1	0.54	U	0.54	2.0
120-82-1	1,2,4-Trichlorobenzene	1	0.70	U	0.70	2.0
541-73-1	1,3-Dichlorobenzene	1	0.77	U	0.77	2.0
106-46-7	1,4-Dichlorobenzene	1	0.76	U	0.76	2.0
95-50-1	1,2-Dichlorobenzene	1	0.73	U	0.73	2.0
96-12-8	1,2-Dibromo-3-chloropropane	1	0.96	U	0.96	10
1330-20-7	Xylenes (Total)	1	1.3	U	1.3	4.0

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	52	104	53 - 146	
Toluene-d8	50.0	52	104	41 - 146	
4-Bromofluorobenzene	50.0	54	107	41 - 142	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	1226939	10.209	1122443	10.209	
1,4-Difluorobenzene	2058138	10.791	1890598	10.791	
Chlorobenzene-d5	921465	13.511	875986	13.511	
1,4-Dichlorobenzene-d4	1219364	15.797	1135498	15.797	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET

EPA 8260B

SW3-MW0026-040.0-20160910

Laboratory: ENCO Orlando SDG: AZ06090-TE016

Client: Tetra Tech, Inc. (TE016) Project: NASA-KSC-SW3

Matrix: Ground Water Laboratory ID: AZ06090-02 File ID: 5IN016.D

Sampled: 09/10/16 14:40 Prepared: 09/19/16 00:00 Analyzed: 09/19/16 15:11

Solids: Preparation: EPA 5030B_MS Initial/Final: 5 mL / 5 mL

Batch: 6I19025 Sequence: AA40509 Calibration: 1609060 Instrument: OVGCMS5

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
75-71-8	Dichlorodifluoromethane	1	0.74	U	0.74	2.0
74-87-3	Chloromethane	1	0.82	U	0.82	2.0
75-01-4	Vinyl chloride	1	0.71	U	0.71	2.0
74-83-9	Bromomethane	1	0.95	U	0.95	2.0
75-00-3	Chloroethane	1	0.98	U	0.98	2.0
75-69-4	Trichlorofluoromethane	1	0.94	U	0.94	2.0
76-13-1	Freon 113	1	0.73	U	0.73	2.0
67-64-1	Acetone	1	10	U	10	25
75-35-4	1,1-Dichloroethene	1	0.94	U	0.94	2.0
75-15-0	Carbon disulfide	1	2.6	U	2.6	10
75-09-2	Methylene Chloride	1	2.0	U	2.0	10
1634-04-4	Methyl-tert-Butyl Ether	1	0.60	U	0.60	2.0
156-60-5	trans-1,2-Dichloroethene	1	0.73	U	0.73	2.0
156-59-2	cis-1,2-Dichloroethene	1	0.69	J	0.53	2.0
75-34-3	1,1-Dichloroethane	1	0.62	U	0.62	2.0
78-93-3	2-Butanone	1	4.5	U	4.5	25
67-66-3	Chloroform	1	0.80	U	0.80	2.0
71-55-6	1,1,1-Trichloroethane	1	0.80	U	0.80	2.0
79-20-9	Methyl acetate	1	0.95	U	0.95	2.0
110-82-7	Cyclohexane	1	0.93	U	0.93	2.0
108-87-2	Methyl cyclohexane	1	0.64	U	0.64	2.0
56-23-5	Carbon Tetrachloride	1	0.94	U	0.94	2.0
107-06-2	1,2-Dichloroethane	1	0.63	U	0.63	2.0
71-43-2	Benzene	1	0.71	U	0.71	2.0
79-01-6	Trichloroethene	1	0.89	U	0.89	2.0
78-87-5	1,2-Dichloropropane	1	0.80	U	0.80	2.0
75-27-4	Bromodichloromethane	1	0.52	U	0.52	2.0
108-10-1	4-Methyl-2-pentanone	1	0.79	U	0.79	5.0
591-78-6	2-Hexanone	1	1.4	U	1.4	5.0
10061-01-5	cis-1,3-Dichloropropene	1	0.59	U	0.59	2.0
108-88-3	Toluene	1	0.72	U	0.72	2.0
10061-02-6	trans-1,3-Dichloropropene	1	0.73	U	0.73	2.0
79-00-5	1,1,2-Trichloroethane	1	0.76	U	0.76	2.0
127-18-4	Tetrachloroethene	1	0.76	U	0.76	2.0
124-48-1	Dibromochloromethane	1	0.44	U	0.44	2.0
106-93-4	1,2-Dibromoethane	1	0.78	U	0.78	2.0
108-90-7	Chlorobenzene	1	0.72	U	0.72	2.0
100-41-4	Ethylbenzene	1	0.69	U	0.69	2.0
108-38-3/106-42-	m,p-Xylenes	1	1.3	U	1.3	4.0
95-47-6	o-Xylene	1	0.53	U	0.53	2.0
75-25-2	Bromoform	1	0.75	U	0.75	2.0

ORGANIC ANALYSIS DATA SHEET

EPA 8260B

SW3-MW0026-040.0-20160910

Laboratory: ENCO Orlando SDG: AZ06090-TE016

Client: Tetra Tech, Inc. (TE016) Project: NASA-KSC-SW3

Matrix: Ground Water Laboratory ID: AZ06090-02 File ID: 5IN016.D

Sampled: 09/10/16 14:40 Prepared: 09/19/16 00:00 Analyzed: 09/19/16 15:11

Solids: Preparation: EPA 5030B_MS Initial/Final: 5 mL / 5 mL

Batch: 6I19025 Sequence: AA40509 Calibration: 1609060 Instrument: OVGCMS5

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
100-42-5	Styrene	1	0.61	U	0.61	2.0
98-82-8	Isopropylbenzene	1	0.67	U	0.67	2.0
79-34-5	1,1,2,2-Tetrachloroethane	1	0.54	U	0.54	2.0
120-82-1	1,2,4-Trichlorobenzene	1	0.70	U	0.70	2.0
541-73-1	1,3-Dichlorobenzene	1	0.77	U	0.77	2.0
106-46-7	1,4-Dichlorobenzene	1	0.76	U	0.76	2.0
95-50-1	1,2-Dichlorobenzene	1	0.73	U	0.73	2.0
96-12-8	1,2-Dibromo-3-chloropropane	1	0.96	U	0.96	10
1330-20-7	Xylenes (Total)	1	1.3	U	1.3	4.0

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	51	102	53 - 146	
Toluene-d8	50.0	51	102	41 - 146	
4-Bromofluorobenzene	50.0	51	101	41 - 142	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	1224832	10.209	1122443	10.209	
1,4-Difluorobenzene	2114827	10.791	1890598	10.791	
Chlorobenzene-d5	936825	13.505	875986	13.511	
1,4-Dichlorobenzene-d4	1263469	15.791	1135498	15.797	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET

EPA 8260B

SW3-MW0025-040.0-20160910

Laboratory: ENCO Orlando SDG: AZ06090-TE016

Client: Tetra Tech, Inc. (TE016) Project: NASA-KSC-SW3

Matrix: Ground Water Laboratory ID: AZ06090-03 File ID: 5IN017.D

Sampled: 09/10/16 15:15 Prepared: 09/19/16 00:00 Analyzed: 09/19/16 15:40

Solids: Preparation: EPA 5030B_MS Initial/Final: 5 mL / 5 mL

Batch: 6I19025 Sequence: AA40509 Calibration: 1609060 Instrument: OVGCMS5

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	50	99	53 - 146	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET

EPA 8260B

SW3-MW0025-040.0-20160910

Laboratory: ENCO Orlando SDG: AZ06090-TE016

Client: Tetra Tech, Inc. (TE016) Project: NASA-KSC-SW3

Matrix: Ground Water Laboratory ID: AZ06090-03RE1 File ID: 5IO009.D

Sampled: 09/10/16 15:15 Prepared: 09/20/16 00:00 Analyzed: 09/20/16 11:44

Solids: Preparation: EPA 5030B_MS Initial/Final: 5 mL / 5 mL

Batch: 6I20014 Sequence: AA40538 Calibration: 1609060 Instrument: OVGCMS5

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
75-71-8	Dichlorodifluoromethane	1	0.74	U	0.74	2.0
74-87-3	Chloromethane	1	0.82	U	0.82	2.0
75-01-4	Vinyl chloride	1	1.7	J	0.71	2.0
74-83-9	Bromomethane	1	0.95	U	0.95	2.0
75-00-3	Chloroethane	1	0.98	U	0.98	2.0
75-69-4	Trichlorofluoromethane	1	0.94	U	0.94	2.0
76-13-1	Freon 113	1	0.73	U	0.73	2.0
67-64-1	Acetone	1	17	J	10	25
75-35-4	1,1-Dichloroethene	1	0.94	U	0.94	2.0
75-15-0	Carbon disulfide	1	2.6	U	2.6	10
75-09-2	Methylene Chloride	1	2.0	U	2.0	10
1634-04-4	Methyl-tert-Butyl Ether	1	0.60	U	0.60	2.0
156-60-5	trans-1,2-Dichloroethene	1	0.73	U	0.73	2.0
156-59-2	cis-1,2-Dichloroethene	1	0.53	U	0.53	2.0
75-34-3	1,1-Dichloroethane	1	0.62	U	0.62	2.0
78-93-3	2-Butanone	1	4.5	U	4.5	25
67-66-3	Chloroform	1	0.80	U	0.80	2.0
71-55-6	1,1,1-Trichloroethane	1	0.80	U	0.80	2.0
79-20-9	Methyl acetate	1	0.95	U	0.95	2.0
110-82-7	Cyclohexane	1	0.93	U	0.93	2.0
108-87-2	Methyl cyclohexane	1	0.64	U	0.64	2.0
56-23-5	Carbon Tetrachloride	1	0.94	U	0.94	2.0
107-06-2	1,2-Dichloroethane	1	0.63	U	0.63	2.0
71-43-2	Benzene	1	0.71	U	0.71	2.0
79-01-6	Trichloroethene	1	0.89	U	0.89	2.0
78-87-5	1,2-Dichloropropane	1	0.80	U	0.80	2.0
75-27-4	Bromodichloromethane	1	0.52	U	0.52	2.0
108-10-1	4-Methyl-2-pentanone	1	0.79	U	0.79	5.0
591-78-6	2-Hexanone	1	1.4	U	1.4	5.0
10061-01-5	cis-1,3-Dichloropropene	1	0.59	U	0.59	2.0
108-88-3	Toluene	1	0.72	U	0.72	2.0
10061-02-6	trans-1,3-Dichloropropene	1	0.73	U	0.73	2.0
79-00-5	1,1,2-Trichloroethane	1	0.76	U	0.76	2.0
127-18-4	Tetrachloroethene	1	0.76	U	0.76	2.0
124-48-1	Dibromochloromethane	1	0.44	U	0.44	2.0
106-93-4	1,2-Dibromoethane	1	0.78	U	0.78	2.0
108-90-7	Chlorobenzene	1	0.72	U	0.72	2.0
100-41-4	Ethylbenzene	1	0.69	U	0.69	2.0
108-38-3/106-42-	m,p-Xylenes	1	1.3	U	1.3	4.0
95-47-6	o-Xylene	1	0.53	U	0.53	2.0
75-25-2	Bromoform	1	0.75	U	0.75	2.0

ORGANIC ANALYSIS DATA SHEET

EPA 8260B

SW3-MW0025-040.0-20160910

Laboratory: ENCO Orlando SDG: AZ06090-TE016

Client: Tetra Tech, Inc. (TE016) Project: NASA-KSC-SW3

Matrix: Ground Water Laboratory ID: AZ06090-03RE1 File ID: 5IO009.D

Sampled: 09/10/16 15:15 Prepared: 09/20/16 00:00 Analyzed: 09/20/16 11:44

Solids: Preparation: EPA 5030B_MS Initial/Final: 5 mL / 5 mL

Batch: 6I20014 Sequence: AA40538 Calibration: 1609060 Instrument: OVGCMS5

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
100-42-5	Styrene	1	0.61	U	0.61	2.0
98-82-8	Isopropylbenzene	1	0.67	U	0.67	2.0
79-34-5	1,1,2,2-Tetrachloroethane	1	0.54	U	0.54	2.0
120-82-1	1,2,4-Trichlorobenzene	1	0.70	U	0.70	2.0
541-73-1	1,3-Dichlorobenzene	1	0.77	U	0.77	2.0
106-46-7	1,4-Dichlorobenzene	1	0.76	U	0.76	2.0
95-50-1	1,2-Dichlorobenzene	1	0.73	U	0.73	2.0
96-12-8	1,2-Dibromo-3-chloropropane	1	0.96	U	0.96	10
1330-20-7	Xylenes (Total)	1	1.3	U	1.3	4.0

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	49	98	53 - 146	
Toluene-d8	50.0	50	101	41 - 146	
4-Bromofluorobenzene	50.0	52	105	41 - 142	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	1017792	10.209	1122443	10.209	
1,4-Difluorobenzene	1687739	10.791	1890598	10.791	
Chlorobenzene-d5	742877	13.511	875986	13.511	
1,4-Dichlorobenzene-d4	1044246	15.797	1135498	15.797	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET

EPA 8260B

SW3-MW0027-032.0-20160910

Laboratory:	ENCO Orlando	SDG:	AZ06090-TE016
Client:	Tetra Tech, Inc. (TE016)	Project:	NASA-KSC-SW3

Matrix:	Ground Water	Laboratory ID:	AZ06090-04	File ID:	5IN018.D
Sampled:	09/10/16 15:55	Prepared:	09/19/16 00:00	Analyzed:	09/19/16 16:10
Solids:		Preparation:	EPA 5030B_MS	Initial/Final:	5 mL / 5 mL

Batch:	6I19025	Sequence:	AA40509	Calibration:	1609060	Instrument:	OVGCMS5

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	50	100	53 - 146	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET

EPA 8260B

SW3-MW0027-032.0-20160910

Laboratory: ENCO Orlando SDG: AZ06090-TE016

Client: Tetra Tech, Inc. (TE016) Project: NASA-KSC-SW3

Matrix: Ground Water Laboratory ID: AZ06090-04RE1 File ID: 5IO010.D

Sampled: 09/10/16 15:55 Prepared: 09/20/16 00:00 Analyzed: 09/20/16 12:14

Solids: Preparation: EPA 5030B_MS Initial/Final: 5 mL / 5 mL

Batch: 6I20014 Sequence: AA40538 Calibration: 1609060 Instrument: OVGCMS5

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
75-71-8	Dichlorodifluoromethane	1	0.74	U	0.74	2.0
74-87-3	Chloromethane	1	0.82	U	0.82	2.0
75-01-4	Vinyl chloride	1	61		0.71	2.0
74-83-9	Bromomethane	1	0.95	U	0.95	2.0
75-00-3	Chloroethane	1	0.98	U	0.98	2.0
75-69-4	Trichlorofluoromethane	1	0.94	U	0.94	2.0
76-13-1	Freon 113	1	0.73	U	0.73	2.0
67-64-1	Acetone	1	10	U	10	25
75-35-4	1,1-Dichloroethene	1	0.94	U	0.94	2.0
75-15-0	Carbon disulfide	1	2.6	U	2.6	10
75-09-2	Methylene Chloride	1	2.0	U	2.0	10
1634-04-4	Methyl-tert-Butyl Ether	1	0.60	U	0.60	2.0
156-60-5	trans-1,2-Dichloroethene	1	0.73	U	0.73	2.0
156-59-2	cis-1,2-Dichloroethene	1	0.53	U	0.53	2.0
75-34-3	1,1-Dichloroethane	1	0.62	U	0.62	2.0
78-93-3	2-Butanone	1	4.5	U	4.5	25
67-66-3	Chloroform	1	0.80	U	0.80	2.0
71-55-6	1,1,1-Trichloroethane	1	0.80	U	0.80	2.0
79-20-9	Methyl acetate	1	0.95	U	0.95	2.0
110-82-7	Cyclohexane	1	0.93	U	0.93	2.0
108-87-2	Methyl cyclohexane	1	0.64	U	0.64	2.0
56-23-5	Carbon Tetrachloride	1	0.94	U	0.94	2.0
107-06-2	1,2-Dichloroethane	1	0.63	U	0.63	2.0
71-43-2	Benzene	1	0.71	U	0.71	2.0
79-01-6	Trichloroethene	1	0.89	U	0.89	2.0
78-87-5	1,2-Dichloropropane	1	0.80	U	0.80	2.0
75-27-4	Bromodichloromethane	1	0.52	U	0.52	2.0
108-10-1	4-Methyl-2-pentanone	1	0.79	U	0.79	5.0
591-78-6	2-Hexanone	1	1.4	U	1.4	5.0
10061-01-5	cis-1,3-Dichloropropene	1	0.59	U	0.59	2.0
108-88-3	Toluene	1	0.72	U	0.72	2.0
10061-02-6	trans-1,3-Dichloropropene	1	0.73	U	0.73	2.0
79-00-5	1,1,2-Trichloroethane	1	0.76	U	0.76	2.0
127-18-4	Tetrachloroethene	1	0.76	U	0.76	2.0
124-48-1	Dibromochloromethane	1	0.44	U	0.44	2.0
106-93-4	1,2-Dibromoethane	1	0.78	U	0.78	2.0
108-90-7	Chlorobenzene	1	0.72	U	0.72	2.0
100-41-4	Ethylbenzene	1	0.69	U	0.69	2.0
108-38-3/106-42-	m,p-Xylenes	1	1.3	U	1.3	4.0
95-47-6	o-Xylene	1	0.53	U	0.53	2.0
75-25-2	Bromoform	1	0.75	U	0.75	2.0

ORGANIC ANALYSIS DATA SHEET

EPA 8260B

SW3-MW0027-032.0-20160910

Laboratory: ENCO Orlando SDG: AZ06090-TE016

Client: Tetra Tech, Inc. (TE016) Project: NASA-KSC-SW3

Matrix: Ground Water Laboratory ID: AZ06090-04RE1 File ID: 5IO010.D

Sampled: 09/10/16 15:55 Prepared: 09/20/16 00:00 Analyzed: 09/20/16 12:14

Solids: Preparation: EPA 5030B_MS Initial/Final: 5 mL / 5 mL

Batch: 6I20014 Sequence: AA40538 Calibration: 1609060 Instrument: OVGCMS5

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
100-42-5	Styrene	1	0.61	U	0.61	2.0
98-82-8	Isopropylbenzene	1	0.67	U	0.67	2.0
79-34-5	1,1,2,2-Tetrachloroethane	1	0.54	U	0.54	2.0
120-82-1	1,2,4-Trichlorobenzene	1	0.70	U	0.70	2.0
541-73-1	1,3-Dichlorobenzene	1	0.77	U	0.77	2.0
106-46-7	1,4-Dichlorobenzene	1	0.76	U	0.76	2.0
95-50-1	1,2-Dichlorobenzene	1	0.73	U	0.73	2.0
96-12-8	1,2-Dibromo-3-chloropropane	1	0.96	U	0.96	10
1330-20-7	Xylenes (Total)	1	1.3	U	1.3	4.0

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	49	97	53 - 146	
Toluene-d8	50.0	50	99	41 - 146	
4-Bromofluorobenzene	50.0	50	99	41 - 142	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	1047721	10.209	1122443	10.209	
1,4-Difluorobenzene	1672245	10.791	1890598	10.791	
Chlorobenzene-d5	754662	13.511	875986	13.511	
1,4-Dichlorobenzene-d4	1024453	15.797	1135498	15.797	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET

EPA 8260B

SW3-MW0028-032.0-20160910

Laboratory: ENCO Orlando | SDG: AZ06090-TE016

Client: Tetra Tech, Inc. (TE016) | Project: NASA-KSC-SW3

Matrix: Ground Water | Laboratory ID: AZ06090-05 | File ID: 5IN019.D

Sampled: 09/10/16 16:30 | Prepared: 09/19/16 00:00 | Analyzed: 09/19/16 16:40

Solids: | Preparation: EPA 5030B_MS | Initial/Final: 5 mL / 5 mL

Batch: 6I19025 | Sequence: AA40509 | Calibration: 1609060 | Instrument: OVGCMS5

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	50	100	53 - 146	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET

EPA 8260B

SW3-MW0028-032.0-20160910

Laboratory: ENCO Orlando SDG: AZ06090-TE016

Client: Tetra Tech, Inc. (TE016) Project: NASA-KSC-SW3

Matrix: Ground Water Laboratory ID: AZ06090-05RE1 File ID: 5IO011.D

Sampled: 09/10/16 16:30 Prepared: 09/20/16 00:00 Analyzed: 09/20/16 12:43

Solids: Preparation: EPA 5030B_MS Initial/Final: 5 mL / 5 mL

Batch: 6I20014 Sequence: AA40538 Calibration: 1609060 Instrument: OVGCMS5

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
75-71-8	Dichlorodifluoromethane	1	0.74	U	0.74	2.0
74-87-3	Chloromethane	1	0.82	U	0.82	2.0
75-01-4	Vinyl chloride	1	21		0.71	2.0
74-83-9	Bromomethane	1	0.95	U	0.95	2.0
75-00-3	Chloroethane	1	0.98	U	0.98	2.0
75-69-4	Trichlorofluoromethane	1	0.94	U	0.94	2.0
76-13-1	Freon 113	1	0.73	U	0.73	2.0
67-64-1	Acetone	1	10	U	10	25
75-35-4	1,1-Dichloroethene	1	0.94	U	0.94	2.0
75-15-0	Carbon disulfide	1	2.6	U	2.6	10
75-09-2	Methylene Chloride	1	2.0	U	2.0	10
1634-04-4	Methyl-tert-Butyl Ether	1	0.60	U	0.60	2.0
156-60-5	trans-1,2-Dichloroethene	1	0.73	U	0.73	2.0
156-59-2	cis-1,2-Dichloroethene	1	0.53	U	0.53	2.0
75-34-3	1,1-Dichloroethane	1	0.62	U	0.62	2.0
78-93-3	2-Butanone	1	4.5	U	4.5	25
67-66-3	Chloroform	1	0.80	U	0.80	2.0
71-55-6	1,1,1-Trichloroethane	1	0.80	U	0.80	2.0
79-20-9	Methyl acetate	1	0.95	U	0.95	2.0
110-82-7	Cyclohexane	1	0.93	U	0.93	2.0
108-87-2	Methyl cyclohexane	1	0.64	U	0.64	2.0
56-23-5	Carbon Tetrachloride	1	0.94	U	0.94	2.0
107-06-2	1,2-Dichloroethane	1	0.63	U	0.63	2.0
71-43-2	Benzene	1	0.71	U	0.71	2.0
79-01-6	Trichloroethene	1	0.89	U	0.89	2.0
78-87-5	1,2-Dichloropropane	1	0.80	U	0.80	2.0
75-27-4	Bromodichloromethane	1	0.52	U	0.52	2.0
108-10-1	4-Methyl-2-pentanone	1	0.79	U	0.79	5.0
591-78-6	2-Hexanone	1	1.4	U	1.4	5.0
10061-01-5	cis-1,3-Dichloropropene	1	0.59	U	0.59	2.0
108-88-3	Toluene	1	0.72	U	0.72	2.0
10061-02-6	trans-1,3-Dichloropropene	1	0.73	U	0.73	2.0
79-00-5	1,1,2-Trichloroethane	1	0.76	U	0.76	2.0
127-18-4	Tetrachloroethene	1	0.76	U	0.76	2.0
124-48-1	Dibromochloromethane	1	0.44	U	0.44	2.0
106-93-4	1,2-Dibromoethane	1	0.78	U	0.78	2.0
108-90-7	Chlorobenzene	1	0.72	U	0.72	2.0
100-41-4	Ethylbenzene	1	0.69	U	0.69	2.0
108-38-3/106-42-	m,p-Xylenes	1	1.3	U	1.3	4.0
95-47-6	o-Xylene	1	0.53	U	0.53	2.0
75-25-2	Bromoform	1	0.75	U	0.75	2.0

ORGANIC ANALYSIS DATA SHEET

EPA 8260B

SW3-MW0028-032.0-20160910

Laboratory: ENCO Orlando SDG: AZ06090-TE016

Client: Tetra Tech, Inc. (TE016) Project: NASA-KSC-SW3

Matrix: Ground Water Laboratory ID: AZ06090-05RE1 File ID: 5IO011.D

Sampled: 09/10/16 16:30 Prepared: 09/20/16 00:00 Analyzed: 09/20/16 12:43

Solids: Preparation: EPA 5030B_MS Initial/Final: 5 mL / 5 mL

Batch: 6I20014 Sequence: AA40538 Calibration: 1609060 Instrument: OVGCMS5

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
100-42-5	Styrene	1	0.61	U	0.61	2.0
98-82-8	Isopropylbenzene	1	0.67	U	0.67	2.0
79-34-5	1,1,2,2-Tetrachloroethane	1	0.54	U	0.54	2.0
120-82-1	1,2,4-Trichlorobenzene	1	0.70	U	0.70	2.0
541-73-1	1,3-Dichlorobenzene	1	0.77	U	0.77	2.0
106-46-7	1,4-Dichlorobenzene	1	0.76	U	0.76	2.0
95-50-1	1,2-Dichlorobenzene	1	0.73	U	0.73	2.0
96-12-8	1,2-Dibromo-3-chloropropane	1	0.96	U	0.96	10
1330-20-7	Xylenes (Total)	1	1.3	U	1.3	4.0

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	48	97	53 - 146	
Toluene-d8	50.0	50	100	41 - 146	
4-Bromofluorobenzene	50.0	53	106	41 - 142	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	1043516	10.209	1122443	10.209	
1,4-Difluorobenzene	1644825	10.797	1890598	10.791	
Chlorobenzene-d5	735941	13.511	875986	13.511	
1,4-Dichlorobenzene-d4	1017997	15.797	1135498	15.797	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET

EPA 8260B

SW3-SW0002-000.5-20160910

Laboratory: ENCO Orlando SDG: AZ06090-TE016

Client: Tetra Tech, Inc. (TE016) Project: NASA-KSC-SW3

Matrix: Surface Water Laboratory ID: AZ06090-06 File ID: 5IN020.D

Sampled: 09/10/16 16:50 Prepared: 09/19/16 00:00 Analyzed: 09/19/16 17:09

Solids: Preparation: EPA 5030B_MS Initial/Final: 5 mL / 5 mL

Batch: 6I19025 Sequence: AA40509 Calibration: 1609060 Instrument: OVGCMS5

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
75-71-8	Dichlorodifluoromethane	1	0.74	U	0.74	2.0
74-87-3	Chloromethane	1	0.82	U	0.82	2.0
75-01-4	Vinyl chloride	1	0.71	U	0.71	2.0
74-83-9	Bromomethane	1	0.95	U	0.95	2.0
75-00-3	Chloroethane	1	0.98	U	0.98	2.0
75-69-4	Trichlorofluoromethane	1	0.94	U	0.94	2.0
76-13-1	Freon 113	1	0.73	U	0.73	2.0
67-64-1	Acetone	1	13	J	10	25
75-35-4	1,1-Dichloroethene	1	0.94	U	0.94	2.0
75-15-0	Carbon disulfide	1	2.6	U	2.6	10
75-09-2	Methylene Chloride	1	2.0	U	2.0	10
1634-04-4	Methyl-tert-Butyl Ether	1	0.60	U	0.60	2.0
156-60-5	trans-1,2-Dichloroethene	1	0.73	U	0.73	2.0
156-59-2	cis-1,2-Dichloroethene	1	0.53	U	0.53	2.0
75-34-3	1,1-Dichloroethane	1	0.62	U	0.62	2.0
78-93-3	2-Butanone	1	4.5	U	4.5	25
67-66-3	Chloroform	1	0.80	U	0.80	2.0
71-55-6	1,1,1-Trichloroethane	1	0.80	U	0.80	2.0
79-20-9	Methyl acetate	1	0.95	U	0.95	2.0
110-82-7	Cyclohexane	1	0.93	U	0.93	2.0
108-87-2	Methyl cyclohexane	1	0.64	U	0.64	2.0
56-23-5	Carbon Tetrachloride	1	0.94	U	0.94	2.0
107-06-2	1,2-Dichloroethane	1	0.63	U	0.63	2.0
71-43-2	Benzene	1	0.71	U	0.71	2.0
79-01-6	Trichloroethene	1	0.89	U	0.89	2.0
78-87-5	1,2-Dichloropropane	1	0.80	U	0.80	2.0
75-27-4	Bromodichloromethane	1	0.52	U	0.52	2.0
108-10-1	4-Methyl-2-pentanone	1	0.79	U	0.79	5.0
591-78-6	2-Hexanone	1	1.4	U	1.4	5.0
10061-01-5	cis-1,3-Dichloropropene	1	0.59	U	0.59	2.0
108-88-3	Toluene	1	0.72	U	0.72	2.0
10061-02-6	trans-1,3-Dichloropropene	1	0.73	U	0.73	2.0
79-00-5	1,1,2-Trichloroethane	1	0.76	U	0.76	2.0
127-18-4	Tetrachloroethene	1	0.76	U	0.76	2.0
124-48-1	Dibromochloromethane	1	0.44	U	0.44	2.0
106-93-4	1,2-Dibromoethane	1	0.78	U	0.78	2.0
108-90-7	Chlorobenzene	1	0.72	U	0.72	2.0
100-41-4	Ethylbenzene	1	0.69	U	0.69	2.0
108-38-3/106-42-	m,p-Xylenes	1	1.3	U	1.3	4.0
95-47-6	o-Xylene	1	0.53	U	0.53	2.0
75-25-2	Bromoform	1	0.75	U	0.75	2.0

ORGANIC ANALYSIS DATA SHEET

EPA 8260B

SW3-SW0002-000.5-20160910

Laboratory: ENCO Orlando SDG: AZ06090-TE016

Client: Tetra Tech, Inc. (TE016) Project: NASA-KSC-SW3

Matrix: Surface Water Laboratory ID: AZ06090-06 File ID: 5IN020.D

Sampled: 09/10/16 16:50 Prepared: 09/19/16 00:00 Analyzed: 09/19/16 17:09

Solids: Preparation: EPA 5030B_MS Initial/Final: 5 mL / 5 mL

Batch: 6I19025 Sequence: AA40509 Calibration: 1609060 Instrument: OVGCMS5

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
100-42-5	Styrene	1	0.61	U	0.61	2.0
98-82-8	Isopropylbenzene	1	0.67	U	0.67	2.0
79-34-5	1,1,2,2-Tetrachloroethane	1	0.54	U	0.54	2.0
120-82-1	1,2,4-Trichlorobenzene	1	0.70	U	0.70	2.0
541-73-1	1,3-Dichlorobenzene	1	0.77	U	0.77	2.0
106-46-7	1,4-Dichlorobenzene	1	0.76	U	0.76	2.0
95-50-1	1,2-Dichlorobenzene	1	0.73	U	0.73	2.0
96-12-8	1,2-Dibromo-3-chloropropane	1	0.96	U	0.96	10
1330-20-7	Xylenes (Total)	1	1.3	U	1.3	4.0

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	50	99	53 - 146	
Toluene-d8	50.0	51	102	41 - 146	
4-Bromofluorobenzene	50.0	51	101	41 - 142	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	1219787	10.209	1122443	10.209	
1,4-Difluorobenzene	2014441	10.791	1890598	10.791	
Chlorobenzene-d5	923893	13.511	875986	13.511	
1,4-Dichlorobenzene-d4	1233611	15.791	1135498	15.797	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET

EPA 8260B

SW3-SW0003-000.5-20160910

Laboratory: ENCO Orlando SDG: AZ06090-TE016

Client: Tetra Tech, Inc. (TE016) Project: NASA-KSC-SW3

Matrix: Surface Water Laboratory ID: AZ06090-07 File ID: 5IN021.D

Sampled: 09/10/16 17:30 Prepared: 09/19/16 00:00 Analyzed: 09/19/16 17:39

Solids: Preparation: EPA 5030B_MS Initial/Final: 5 mL / 5 mL

Batch: 6I19025 Sequence: AA40509 Calibration: 1609060 Instrument: OVGCMS5

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
75-71-8	Dichlorodifluoromethane	1	0.74	U	0.74	2.0
74-87-3	Chloromethane	1	0.82	U	0.82	2.0
75-01-4	Vinyl chloride	1	0.71	U	0.71	2.0
74-83-9	Bromomethane	1	0.95	U	0.95	2.0
75-00-3	Chloroethane	1	0.98	U	0.98	2.0
75-69-4	Trichlorofluoromethane	1	0.94	U	0.94	2.0
76-13-1	Freon 113	1	0.73	U	0.73	2.0
67-64-1	Acetone	1	10	U	10	25
75-35-4	1,1-Dichloroethene	1	0.94	U	0.94	2.0
75-15-0	Carbon disulfide	1	2.6	U	2.6	10
75-09-2	Methylene Chloride	1	2.0	U	2.0	10
1634-04-4	Methyl-tert-Butyl Ether	1	0.60	U	0.60	2.0
156-60-5	trans-1,2-Dichloroethene	1	0.73	U	0.73	2.0
156-59-2	cis-1,2-Dichloroethene	1	0.53	U	0.53	2.0
75-34-3	1,1-Dichloroethane	1	0.62	U	0.62	2.0
78-93-3	2-Butanone	1	4.5	U	4.5	25
67-66-3	Chloroform	1	0.80	U	0.80	2.0
71-55-6	1,1,1-Trichloroethane	1	0.80	U	0.80	2.0
79-20-9	Methyl acetate	1	0.95	U	0.95	2.0
110-82-7	Cyclohexane	1	0.93	U	0.93	2.0
108-87-2	Methyl cyclohexane	1	0.64	U	0.64	2.0
56-23-5	Carbon Tetrachloride	1	0.94	U	0.94	2.0
107-06-2	1,2-Dichloroethane	1	0.63	U	0.63	2.0
71-43-2	Benzene	1	0.71	U	0.71	2.0
79-01-6	Trichloroethene	1	0.89	U	0.89	2.0
78-87-5	1,2-Dichloropropane	1	0.80	U	0.80	2.0
75-27-4	Bromodichloromethane	1	0.52	U	0.52	2.0
108-10-1	4-Methyl-2-pentanone	1	0.79	U	0.79	5.0
591-78-6	2-Hexanone	1	1.4	U	1.4	5.0
10061-01-5	cis-1,3-Dichloropropene	1	0.59	U	0.59	2.0
108-88-3	Toluene	1	0.72	U	0.72	2.0
10061-02-6	trans-1,3-Dichloropropene	1	0.73	U	0.73	2.0
79-00-5	1,1,2-Trichloroethane	1	0.76	U	0.76	2.0
127-18-4	Tetrachloroethene	1	0.76	U	0.76	2.0
124-48-1	Dibromochloromethane	1	0.44	U	0.44	2.0
106-93-4	1,2-Dibromoethane	1	0.78	U	0.78	2.0
108-90-7	Chlorobenzene	1	0.72	U	0.72	2.0
100-41-4	Ethylbenzene	1	0.69	U	0.69	2.0
108-38-3/106-42-	m,p-Xylenes	1	1.3	U	1.3	4.0
95-47-6	o-Xylene	1	0.53	U	0.53	2.0
75-25-2	Bromoform	1	0.75	U	0.75	2.0

ORGANIC ANALYSIS DATA SHEET

EPA 8260B

SW3-SW0003-000.5-20160910

Laboratory: ENCO Orlando SDG: AZ06090-TE016

Client: Tetra Tech, Inc. (TE016) Project: NASA-KSC-SW3

Matrix: Surface Water Laboratory ID: AZ06090-07 File ID: 5IN021.D

Sampled: 09/10/16 17:30 Prepared: 09/19/16 00:00 Analyzed: 09/19/16 17:39

Solids: Preparation: EPA 5030B_MS Initial/Final: 5 mL / 5 mL

Batch: 6I19025 Sequence: AA40509 Calibration: 1609060 Instrument: OVGCMS5

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
100-42-5	Styrene	1	0.61	U	0.61	2.0
98-82-8	Isopropylbenzene	1	0.67	U	0.67	2.0
79-34-5	1,1,2,2-Tetrachloroethane	1	0.54	U	0.54	2.0
120-82-1	1,2,4-Trichlorobenzene	1	0.70	U	0.70	2.0
541-73-1	1,3-Dichlorobenzene	1	0.77	U	0.77	2.0
106-46-7	1,4-Dichlorobenzene	1	0.76	U	0.76	2.0
95-50-1	1,2-Dichlorobenzene	1	0.73	U	0.73	2.0
96-12-8	1,2-Dibromo-3-chloropropane	1	0.96	U	0.96	10
1330-20-7	Xylenes (Total)	1	1.3	U	1.3	4.0

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	51	102	53 - 146	
Toluene-d8	50.0	53	106	41 - 146	
4-Bromofluorobenzene	50.0	51	101	41 - 142	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	1186823	10.209	1122443	10.209	
1,4-Difluorobenzene	1963489	10.791	1890598	10.791	
Chlorobenzene-d5	876623	13.511	875986	13.511	
1,4-Dichlorobenzene-d4	1173489	15.797	1135498	15.797	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET

EPA 8260B

TRIP BLANK

Laboratory: ENCO Orlando SDG: AZ06090-TE016

Client: Tetra Tech, Inc. (TE016) Project: NASA-KSC-SW3

Matrix: Water Laboratory ID: AZ06090-08 File ID: 5IN022.D

Sampled: 09/10/16 00:00 Prepared: 09/19/16 00:00 Analyzed: 09/19/16 18:08

Solids: Preparation: EPA 5030B_MS Initial/Final: 5 mL / 5 mL

Batch: 6I19025 Sequence: AA40509 Calibration: 1609060 Instrument: OVGCMS5

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
75-71-8	Dichlorodifluoromethane	1	0.74	U	0.74	2.0
74-87-3	Chloromethane	1	0.82	U	0.82	2.0
75-01-4	Vinyl chloride	1	0.71	U	0.71	2.0
74-83-9	Bromomethane	1	0.95	U	0.95	2.0
75-00-3	Chloroethane	1	0.98	U	0.98	2.0
75-69-4	Trichlorofluoromethane	1	0.94	U	0.94	2.0
76-13-1	Freon 113	1	0.73	U	0.73	2.0
67-64-1	Acetone	1	10	U	10	25
75-35-4	1,1-Dichloroethene	1	0.94	U	0.94	2.0
75-15-0	Carbon disulfide	1	2.6	U	2.6	10
75-09-2	Methylene Chloride	1	2.0	U	2.0	10
1634-04-4	Methyl-tert-Butyl Ether	1	0.60	U	0.60	2.0
156-60-5	trans-1,2-Dichloroethene	1	0.73	U	0.73	2.0
156-59-2	cis-1,2-Dichloroethene	1	0.53	U	0.53	2.0
75-34-3	1,1-Dichloroethane	1	0.62	U	0.62	2.0
78-93-3	2-Butanone	1	4.5	U	4.5	25
67-66-3	Chloroform	1	0.80	U	0.80	2.0
71-55-6	1,1,1-Trichloroethane	1	0.80	U	0.80	2.0
79-20-9	Methyl acetate	1	0.95	U	0.95	2.0
110-82-7	Cyclohexane	1	0.93	U	0.93	2.0
108-87-2	Methyl cyclohexane	1	0.64	U	0.64	2.0
56-23-5	Carbon Tetrachloride	1	0.94	U	0.94	2.0
107-06-2	1,2-Dichloroethane	1	0.63	U	0.63	2.0
71-43-2	Benzene	1	0.71	U	0.71	2.0
79-01-6	Trichloroethene	1	0.89	U	0.89	2.0
78-87-5	1,2-Dichloropropane	1	0.80	U	0.80	2.0
75-27-4	Bromodichloromethane	1	0.52	U	0.52	2.0
108-10-1	4-Methyl-2-pentanone	1	0.79	U	0.79	5.0
591-78-6	2-Hexanone	1	1.4	U	1.4	5.0
10061-01-5	cis-1,3-Dichloropropene	1	0.59	U	0.59	2.0
108-88-3	Toluene	1	0.72	U	0.72	2.0
10061-02-6	trans-1,3-Dichloropropene	1	0.73	U	0.73	2.0
79-00-5	1,1,2-Trichloroethane	1	0.76	U	0.76	2.0
127-18-4	Tetrachloroethene	1	0.76	U	0.76	2.0
124-48-1	Dibromochloromethane	1	0.44	U	0.44	2.0
106-93-4	1,2-Dibromoethane	1	0.78	U	0.78	2.0
108-90-7	Chlorobenzene	1	0.72	U	0.72	2.0
100-41-4	Ethylbenzene	1	0.69	U	0.69	2.0
108-38-3/106-42-	m,p-Xylenes	1	1.3	U	1.3	4.0
95-47-6	o-Xylene	1	0.53	U	0.53	2.0
75-25-2	Bromoform	1	0.75	U	0.75	2.0

ORGANIC ANALYSIS DATA SHEET

EPA 8260B

TRIP BLANK

Laboratory: ENCO Orlando SDG: AZ06090-TE016

Client: Tetra Tech, Inc. (TE016) Project: NASA-KSC-SW3

Matrix: Water Laboratory ID: AZ06090-08 File ID: 5IN022.D

Sampled: 09/10/16 00:00 Prepared: 09/19/16 00:00 Analyzed: 09/19/16 18:08

Solids: Preparation: EPA 5030B_MS Initial/Final: 5 mL / 5 mL

Batch: 6I19025 Sequence: AA40509 Calibration: 1609060 Instrument: OVGCMS5

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
100-42-5	Styrene	1	0.61	U	0.61	2.0
98-82-8	Isopropylbenzene	1	0.67	U	0.67	2.0
79-34-5	1,1,2,2-Tetrachloroethane	1	0.54	U	0.54	2.0
120-82-1	1,2,4-Trichlorobenzene	1	0.70	U	0.70	2.0
541-73-1	1,3-Dichlorobenzene	1	0.77	U	0.77	2.0
106-46-7	1,4-Dichlorobenzene	1	0.76	U	0.76	2.0
95-50-1	1,2-Dichlorobenzene	1	0.73	U	0.73	2.0
96-12-8	1,2-Dibromo-3-chloropropane	1	0.96	U	0.96	10
1330-20-7	Xylenes (Total)	1	1.3	U	1.3	4.0

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	51	101	53 - 146	
Toluene-d8	50.0	48	97	41 - 146	
4-Bromofluorobenzene	50.0	50	101	41 - 142	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	1220714	10.209	1122443	10.209	
1,4-Difluorobenzene	2056967	10.791	1890598	10.791	
Chlorobenzene-d5	890141	13.511	875986	13.511	
1,4-Dichlorobenzene-d4	1169139	15.797	1135498	15.797	

* Values outside of QC limits

HOLDING TIME SUMMARY

EPA 8260B

Laboratory: ENCO Orlando SDG: AZ06090-TE016

Client: Tetra Tech, Inc. (TE016) Project: NASA-KSC-SW3

Sample Name	Date Collected	Date Received	Date Prepared	Days to Prep	Max Days to Prep	Date Analyzed	Days to Analysis	Max Days to Analysis	Q
SW3-MW0009-020.0-20160910	09/10/16 14:10	09/12/16 16:10	09/19/16 00:00	8.41	NA	09/19/16 14:41	9.00	14.00	
SW3-MW0026-040.0-20160910	09/10/16 14:40	09/12/16 16:10	09/19/16 00:00	8.39	NA	09/19/16 15:11	9.00	14.00	
SW3-MW0025-040.0-20160910	09/10/16 15:15	09/12/16 16:10	09/19/16 00:00	8.36	NA	09/19/16 15:40	9.00	14.00	
SW3-MW0025-040.0-20160910	09/10/16 15:15	09/12/16 16:10	09/20/16 00:00	9.36	NA	09/20/16 11:44	10.00	14.00	
SW3-MW0027-032.0-20160910	09/10/16 15:55	09/12/16 16:10	09/19/16 00:00	8.34	NA	09/19/16 16:10	9.00	14.00	
SW3-MW0027-032.0-20160910	09/10/16 15:55	09/12/16 16:10	09/20/16 00:00	9.34	NA	09/20/16 12:14	10.00	14.00	
SW3-MW0028-032.0-20160910	09/10/16 16:30	09/12/16 16:10	09/19/16 00:00	8.31	NA	09/19/16 16:40	9.00	14.00	
SW3-MW0028-032.0-20160910	09/10/16 16:30	09/12/16 16:10	09/20/16 00:00	9.31	NA	09/20/16 12:43	10.00	14.00	
SW3-SW0002-000.5-20160910	09/10/16 16:50	09/12/16 16:10	09/19/16 00:00	8.30	NA	09/19/16 17:09	9.00	14.00	
SW3-SW0003-000.5-20160910	09/10/16 17:30	09/12/16 16:10	09/19/16 00:00	8.27	NA	09/19/16 17:39	9.00	14.00	
TRIP BLANK	09/10/16 00:00	09/12/16 16:10	09/19/16 00:00	9.00	NA	09/19/16 18:08	10.00	14.00	

PREPARATION BATCH SUMMARY

EPA 8260B

Laboratory: ENCO Orlando SDG: AZ06090-TE016

Client: Tetra Tech, Inc. (TE016) Project: NASA-KSC-SW3

Batch: 6I19025 Batch Matrix: Water Preparation: EPA 5030B_MS

SAMPLE NAME	LAB SAMPLE ID	LAB FILE ID	DATE PREPARED	OBSERVATIONS
Blank	6I19025-BLK1	5IN014.D	09/19/16 00:00	
LCS	6I19025-BS1	5IN012.D	09/19/16 00:00	
SW3-MW0009-020.0-20160910	6I19025-MS1	5IN023.D	09/19/16 00:00	
SW3-MW0009-020.0-20160910	6I19025-MSD1	5IN024.D	09/19/16 00:00	
SW3-MW0009-020.0-20160910	AZ06090-01	5IN015.D	09/19/16 00:00	
SW3-MW0026-040.0-20160910	AZ06090-02	5IN016.D	09/19/16 00:00	
SW3-MW0025-040.0-20160910	AZ06090-03	5IN017.D	09/19/16 00:00	
SW3-MW0027-032.0-20160910	AZ06090-04	5IN018.D	09/19/16 00:00	
SW3-MW0028-032.0-20160910	AZ06090-05	5IN019.D	09/19/16 00:00	
SW3-SW0002-000.5-20160910	AZ06090-06	5IN020.D	09/19/16 00:00	
SW3-SW0003-000.5-20160910	AZ06090-07	5IN021.D	09/19/16 00:00	
TRIP BLANK	AZ06090-08	5IN022.D	09/19/16 00:00	

PREPARATION BATCH SUMMARY

EPA 8260B

Laboratory: ENCO Orlando SDG: AZ06090-TE016

Client: Tetra Tech, Inc. (TE016) Project: NASA-KSC-SW3

Batch: 6I20014 Batch Matrix: Water Preparation: EPA 5030B_MS

SAMPLE NAME	LAB SAMPLE ID	LAB FILE ID	DATE PREPARED	OBSERVATIONS
Blank	6I20014-BLK1	5IO007.D	09/20/16 00:00	
LCS	6I20014-BS1	5IO004.D	09/20/16 00:00	
POL-MW0031I-027.5 -20160910	6I20014-MS1	5IO023.D	09/20/16 00:00	
POL-MW0031I-027.5 -20160910	6I20014-MSD1	5IO024.D	09/20/16 00:00	
SW3-MW0025-040.0-20160910	AZ06090-03RE1	5IO009.D	09/20/16 00:00	
SW3-MW0027-032.0-20160910	AZ06090-04RE1	5IO010.D	09/20/16 00:00	
SW3-MW0028-032.0-20160910	AZ06090-05RE1	5IO011.D	09/20/16 00:00	

METHOD BLANK DATA SHEET
EPA 8260B

Laboratory:	ENCO Orlando	SDG:	AZ06090-TE016
Client:	Tetra Tech, Inc. (TE016)	Project:	NASA-KSC-SW3

Matrix:	Water	Laboratory ID:	6I19025-BLK1	File ID:	5IN014.D
Prepared:	09/19/16 00:00	Preparation:	EPA 5030B_MS	Initial/Final:	5 mL / 5 mL
Analyzed:	09/19/16 14:11	Instrument:	OVGCMS5		
Batch:	6I19025	Sequence:	AA40509	Calibration:	1609060

CAS NO.	COMPOUND	CONC. (ug/L)	Q
75-71-8	Dichlorodifluoromethane	0.74	U
74-87-3	Chloromethane	0.82	U
75-01-4	Vinyl chloride	0.71	U
74-83-9	Bromomethane	0.95	U
75-00-3	Chloroethane	0.98	U
75-69-4	Trichlorofluoromethane	0.94	U
76-13-1	Freon 113	0.73	U
67-64-1	Acetone	10	U
75-35-4	1,1-Dichloroethene	0.94	U
75-15-0	Carbon disulfide	2.6	U
75-09-2	Methylene Chloride	2.0	U
1634-04-4	Methyl-tert-Butyl Ether	0.60	U
156-60-5	trans-1,2-Dichloroethene	0.73	U
156-59-2	cis-1,2-Dichloroethene	0.53	U
75-34-3	1,1-Dichloroethane	0.62	U
78-93-3	2-Butanone	4.5	U
67-66-3	Chloroform	0.80	U
71-55-6	1,1,1-Trichloroethane	0.80	U
79-20-9	Methyl acetate	0.95	U
110-82-7	Cyclohexane	0.93	U
108-87-2	Methyl cyclohexane	0.64	U
56-23-5	Carbon Tetrachloride	0.94	U
107-06-2	1,2-Dichloroethane	0.63	U
71-43-2	Benzene	0.71	U
79-01-6	Trichloroethene	0.89	U
78-87-5	1,2-Dichloropropane	0.80	U
75-27-4	Bromodichloromethane	0.52	U
108-10-1	4-Methyl-2-pentanone	0.79	U
591-78-6	2-Hexanone	1.4	U
10061-01-5	cis-1,3-Dichloropropene	0.59	U

METHOD BLANK DATA SHEET
EPA 8260B

Laboratory:	ENCO Orlando	SDG:	AZ06090-TE016
Client:	Tetra Tech, Inc. (TE016)	Project:	NASA-KSC-SW3

Matrix:	Water	Laboratory ID:	6I19025-BLK1	File ID:	5IN014.D
Prepared:	09/19/16 00:00	Preparation:	EPA 5030B_MS	Initial/Final:	5 mL / 5 mL
Analyzed:	09/19/16 14:11	Instrument:	OVGCMS5		
Batch:	6I19025	Sequence:	AA40509	Calibration:	1609060

CAS NO.	COMPOUND	CONC. (ug/L)	Q
108-88-3	Toluene	0.72	U
10061-02-6	trans-1,3-Dichloropropene	0.73	U
79-00-5	1,1,2-Trichloroethane	0.76	U
127-18-4	Tetrachloroethene	0.76	U
124-48-1	Dibromochloromethane	0.44	U
106-93-4	1,2-Dibromoethane	0.78	U
108-90-7	Chlorobenzene	0.72	U
100-41-4	Ethylbenzene	0.69	U
108-38-3/106-42-3	m,p-Xylenes	1.3	U
95-47-6	o-Xylene	0.53	U
75-25-2	Bromoform	0.75	U
100-42-5	Styrene	0.61	U
98-82-8	Isopropylbenzene	0.67	U
79-34-5	1,1,2,2-Tetrachloroethane	0.54	U
120-82-1	1,2,4-Trichlorobenzene	0.70	U
541-73-1	1,3-Dichlorobenzene	0.77	U
106-46-7	1,4-Dichlorobenzene	0.76	U
95-50-1	1,2-Dichlorobenzene	0.73	U
96-12-8	1,2-Dibromo-3-chloropropane	0.96	U
1330-20-7	Xylenes (Total)	1.3	U

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	50	99	53 - 146	
Toluene-d8	50.0	53	106	41 - 146	
4-Bromofluorobenzene	50.0	52	105	41 - 142	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	1255883	10.209	1122443	10.209	
1,4-Difluorobenzene	2085638	10.791	1890598	10.791	
Chlorobenzene-d5	947505	13.511	875986	13.511	
1,4-Dichlorobenzene-d4	1242736	15.797	1135498	15.797	

METHOD BLANK DATA SHEET
EPA 8260B

Laboratory:	ENCO Orlando	SDG:	AZ06090-TE016
Client:	Tetra Tech, Inc. (TE016)	Project:	NASA-KSC-SW3

Matrix:	Water	Laboratory ID:	6I20014-BLK1	File ID:	5IO007.D
Prepared:	09/20/16 00:00	Preparation:	EPA 5030B_MS	Initial/Final:	5 mL / 5 mL
Analyzed:	09/20/16 10:45	Instrument:	OVGCMS5		
Batch:	6I20014	Sequence:	AA40538	Calibration:	1609060

CAS NO.	COMPOUND	CONC. (ug/L)	Q
75-71-8	Dichlorodifluoromethane	0.74	U
74-87-3	Chloromethane	0.82	U
75-01-4	Vinyl chloride	0.71	U
74-83-9	Bromomethane	0.95	U
75-00-3	Chloroethane	0.98	U
75-69-4	Trichlorofluoromethane	0.94	U
76-13-1	Freon 113	0.73	U
67-64-1	Acetone	10	U
75-35-4	1,1-Dichloroethene	0.94	U
75-15-0	Carbon disulfide	2.6	U
75-09-2	Methylene Chloride	2.0	U
1634-04-4	Methyl-tert-Butyl Ether	0.60	U
156-60-5	trans-1,2-Dichloroethene	0.73	U
156-59-2	cis-1,2-Dichloroethene	0.53	U
75-34-3	1,1-Dichloroethane	0.62	U
78-93-3	2-Butanone	4.5	U
67-66-3	Chloroform	0.80	U
71-55-6	1,1,1-Trichloroethane	0.80	U
79-20-9	Methyl acetate	0.95	U
110-82-7	Cyclohexane	0.93	U
108-87-2	Methyl cyclohexane	0.64	U
56-23-5	Carbon Tetrachloride	0.94	U
107-06-2	1,2-Dichloroethane	0.63	U
71-43-2	Benzene	0.71	U
79-01-6	Trichloroethene	0.89	U
78-87-5	1,2-Dichloropropane	0.80	U
75-27-4	Bromodichloromethane	0.52	U
108-10-1	4-Methyl-2-pentanone	0.79	U
591-78-6	2-Hexanone	1.4	U
10061-01-5	cis-1,3-Dichloropropene	0.59	U

METHOD BLANK DATA SHEET
EPA 8260B

Laboratory:	ENCO Orlando	SDG:	AZ06090-TE016
Client:	Tetra Tech, Inc. (TE016)	Project:	NASA-KSC-SW3

Matrix:	Water	Laboratory ID:	6I20014-BLK1	File ID:	5IO007.D
Prepared:	09/20/16 00:00	Preparation:	EPA 5030B_MS	Initial/Final:	5 mL / 5 mL
Analyzed:	09/20/16 10:45	Instrument:	OVGCMS5		
Batch:	6I20014	Sequence:	AA40538	Calibration:	1609060

CAS NO.	COMPOUND	CONC. (ug/L)	Q
108-88-3	Toluene	0.72	U
10061-02-6	trans-1,3-Dichloropropene	0.73	U
79-00-5	1,1,2-Trichloroethane	0.76	U
127-18-4	Tetrachloroethene	0.76	U
124-48-1	Dibromochloromethane	0.44	U
106-93-4	1,2-Dibromoethane	0.78	U
108-90-7	Chlorobenzene	0.72	U
100-41-4	Ethylbenzene	0.69	U
108-38-3/106-42-3	m,p-Xylenes	1.3	U
95-47-6	o-Xylene	0.53	U
75-25-2	Bromoform	0.75	U
100-42-5	Styrene	0.61	U
98-82-8	Isopropylbenzene	0.67	U
79-34-5	1,1,2,2-Tetrachloroethane	0.54	U
120-82-1	1,2,4-Trichlorobenzene	0.70	U
541-73-1	1,3-Dichlorobenzene	0.77	U
106-46-7	1,4-Dichlorobenzene	0.76	U
95-50-1	1,2-Dichlorobenzene	0.73	U
96-12-8	1,2-Dibromo-3-chloropropane	0.96	U
1330-20-7	Xylenes (Total)	1.3	U

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	48	95	53 - 146	
Toluene-d8	50.0	51	102	41 - 146	
4-Bromofluorobenzene	50.0	51	103	41 - 142	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	1043311	10.209	1122443	10.209	
1,4-Difluorobenzene	1658892	10.791	1890598	10.791	
Chlorobenzene-d5	762472	13.511	875986	13.511	
1,4-Dichlorobenzene-d4	1028838	15.797	1135498	15.797	

LCS / LCS DUPLICATE RECOVERY

EPA 8260B

Laboratory:	ENCO Orlando	SDG:	AZ06090-TE016
Client:	Tetra Tech, Inc. (TE016)	Project:	NASA-KSC-SW3
Matrix:	Water		
Batch:	6I19025	Laboratory ID:	6I19025-BS1
Preparation:	EPA 5030B_MS	Initial/Final:	5 mL / 5 mL

COMPOUND	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC. #	QC LIMITS REC.
Dichlorodifluoromethane	20.0	19	94	10 - 180
Chloromethane	20.0	20	102	33 - 154
Vinyl chloride	20.0	19	95	20 - 167
Bromomethane	20.0	14	68	10 - 173
Chloroethane	20.0	21	106	27 - 180
Trichlorofluoromethane	20.0	17	83	56 - 155
Freon 113	20.0	18	91	47 - 173
Acetone	100	110	111	10 - 180
1,1-Dichloroethene	20.0	21	104	47 - 139
Carbon disulfide	20.0	19	95	43 - 153
Methylene Chloride	20.0	21	105	43 - 142
Methyl-tert-Butyl Ether	20.0	22	108	51 - 145
trans-1,2-Dichloroethene	20.0	20	99	54 - 134
cis-1,2-Dichloroethene	20.0	20	102	56 - 128
1,1-Dichloroethane	20.0	22	108	57 - 142
2-Butanone	100	130	128	10 - 180
Chloroform	20.0	21	107	58 - 139
1,1,1-Trichloroethane	20.0	19	96	57 - 148
Methyl acetate	20.0	23	115	70 - 130
Cyclohexane	20.0	19	97	70 - 130
Methyl cyclohexane	20.0	21	103	70 - 130
Carbon Tetrachloride	20.0	17	87	54 - 156
1,2-Dichloroethane	20.0	20	100	50 - 156
Benzene	20.0	21	104	56 - 136
Trichloroethene	20.0	20	100	62 - 135
1,2-Dichloropropane	20.0	20	102	61 - 133
Bromodichloromethane	20.0	21	106	58 - 135
4-Methyl-2-pentanone	100	95	95	19 - 180
2-Hexanone	100	110	109	12 - 180
cis-1,3-Dichloropropene	20.0	19	97	64 - 128

LCS / LCS DUPLICATE RECOVERY

EPA 8260B

Laboratory:	ENCO Orlando	SDG:	AZ06090-TE016
Client:	Tetra Tech, Inc. (TE016)	Project:	NASA-KSC-SW3
Matrix:	Water		
Batch:	6I19025	Laboratory ID:	6I19025-BS1
Preparation:	EPA 5030B_MS	Initial/Final:	5 mL / 5 mL

COMPOUND	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC. #	QC LIMITS REC.
Toluene	20.0	21	104	64 - 131
trans-1,3-Dichloropropene	20.0	22	109	65 - 149
1,1,2-Trichloroethane	20.0	21	103	57 - 141
Tetrachloroethene	20.0	21	103	60 - 147
Dibromochloromethane	20.0	21	105	50 - 140
1,2-Dibromoethane	20.0	21	105	57 - 140
Chlorobenzene	20.0	22	108	51 - 139
Ethylbenzene	20.0	20	100	63 - 133
m,p-Xylenes	40.0	38	96	64 - 133
o-Xylene	20.0	21	107	61 - 129
Bromoform	20.0	16	80	46 - 148
Styrene	20.0	20	102	59 - 136
Isopropylbenzene	20.0	20	101	60 - 132
1,1,2,2-Tetrachloroethane	20.0	20	100	60 - 139
1,2,4-Trichlorobenzene	20.0	18	89	52 - 159
1,3-Dichlorobenzene	20.0	22	109	66 - 129
1,4-Dichlorobenzene	20.0	20	102	65 - 133
1,2-Dichlorobenzene	20.0	21	103	63 - 131
1,2-Dibromo-3-chloropropane	20.0	17	84	48 - 150

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

LCS / LCS DUPLICATE RECOVERY

EPA 8260B

Laboratory:	ENCO Orlando	SDG:	AZ06090-TE016
Client:	Tetra Tech, Inc. (TE016)	Project:	NASA-KSC-SW3
Matrix:	Water		
Batch:	6I20014	Laboratory ID:	6I20014-BS1
Preparation:	EPA 5030B_MS	Initial/Final:	5 mL / 5 mL

COMPOUND	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC. #	QC LIMITS REC.
Dichlorodifluoromethane	20.0	20	101	10 - 180
Chloromethane	20.0	16	82	33 - 154
Vinyl chloride	20.0	17	86	20 - 167
Bromomethane	20.0	18	91	10 - 173
Chloroethane	20.0	17	87	27 - 180
Trichlorofluoromethane	20.0	17	87	56 - 155
Freon 113	20.0	17	84	47 - 173
Acetone	100	80	80	10 - 180
1,1-Dichloroethene	20.0	16	82	47 - 139
Carbon disulfide	20.0	16	79	43 - 153
Methylene Chloride	20.0	18	90	43 - 142
Methyl-tert-Butyl Ether	20.0	16	82	51 - 145
trans-1,2-Dichloroethene	20.0	17	83	54 - 134
cis-1,2-Dichloroethene	20.0	17	83	56 - 128
1,1-Dichloroethane	20.0	18	88	57 - 142
2-Butanone	100	90	90	10 - 180
Chloroform	20.0	19	97	58 - 139
1,1,1-Trichloroethane	20.0	18	90	57 - 148
Methyl acetate	20.0	16	80	70 - 130
Cyclohexane	20.0	16	80	70 - 130
Methyl cyclohexane	20.0	19	96	70 - 130
Carbon Tetrachloride	20.0	18	92	54 - 156
1,2-Dichloroethane	20.0	19	97	50 - 156
Benzene	20.0	19	93	56 - 136
Trichloroethene	20.0	20	101	62 - 135
1,2-Dichloropropane	20.0	18	88	61 - 133
Bromodichloromethane	20.0	21	107	58 - 135
4-Methyl-2-pentanone	100	74	74	19 - 180
2-Hexanone	100	80	80	12 - 180
cis-1,3-Dichloropropene	20.0	18	89	64 - 128

LCS / LCS DUPLICATE RECOVERY

EPA 8260B

Laboratory:	ENCO Orlando	SDG:	AZ06090-TE016
Client:	Tetra Tech, Inc. (TE016)	Project:	NASA-KSC-SW3
Matrix:	Water		
Batch:	6I20014	Laboratory ID:	6I20014-BS1
Preparation:	EPA 5030B_MS	Initial/Final:	5 mL / 5 mL

COMPOUND	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC. #	QC LIMITS REC.
Toluene	20.0	19	95	64 - 131
trans-1,3-Dichloropropene	20.0	18	91	65 - 149
1,1,2-Trichloroethane	20.0	18	90	57 - 141
Tetrachloroethene	20.0	20	99	60 - 147
Dibromochloromethane	20.0	20	99	50 - 140
1,2-Dibromoethane	20.0	18	90	57 - 140
Chlorobenzene	20.0	20	99	51 - 139
Ethylbenzene	20.0	17	84	63 - 133
m,p-Xylenes	40.0	36	90	64 - 133
o-Xylene	20.0	17	87	61 - 129
Bromoform	20.0	16	79	46 - 148
Styrene	20.0	18	90	59 - 136
Isopropylbenzene	20.0	18	91	60 - 132
1,1,2,2-Tetrachloroethane	20.0	17	83	60 - 139
1,2,4-Trichlorobenzene	20.0	13	65	52 - 159
1,3-Dichlorobenzene	20.0	20	99	66 - 129
1,4-Dichlorobenzene	20.0	18	91	65 - 133
1,2-Dichlorobenzene	20.0	17	85	63 - 131
1,2-Dibromo-3-chloropropane	20.0	10	51	48 - 150

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

EPA 8260B

SW3-MW0009-020.0-20160910

Laboratory: ENCO Orlando
SDG: AZ06090-TE016
Client: Tetra Tech, Inc. (TE016)
Project: NASA-KSC-SW3
Matrix: Water
Batch: 6I19025
Laboratory ID: 6I19025-MS1
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Source Sample Name: SW3-MW0009-020.0-20160910

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC. #	QC LIMITS REC.
Dichlorodifluoromethane	20.0	ND	24	118	10 - 180
Chloromethane	20.0	ND	23	115	33 - 154
Vinyl chloride	20.0	13	36	116	20 - 167
Bromomethane	20.0	ND	15	77	10 - 173
Chloroethane	20.0	ND	24	118	27 - 180
Trichlorofluoromethane	20.0	ND	22	110	56 - 155
Freon 113	20.0	ND	23	115	47 - 173
Acetone	100	ND	110	108	10 - 180
1,1-Dichloroethene	20.0	ND	24	118	47 - 139
Carbon disulfide	20.0	ND	22	112	43 - 153
Methylene Chloride	20.0	ND	21	107	43 - 142
Methyl-tert-Butyl Ether	20.0	ND	20	100	51 - 145
trans-1,2-Dichloroethene	20.0	8.8	30	106	54 - 134
cis-1,2-Dichloroethene	20.0	79	99	102	56 - 128
1,1-Dichloroethane	20.0	ND	23	114	57 - 142
2-Butanone	100	ND	110	106	10 - 180
Chloroform	20.0	ND	24	118	58 - 139
1,1,1-Trichloroethane	20.0	ND	22	112	57 - 148
Methyl acetate	20.0	ND	19	95	70 - 130
Cyclohexane	20.0	ND	23	116	70 - 130
Methyl cyclohexane	20.0	ND	25	123	70 - 130
Carbon Tetrachloride	20.0	ND	22	109	54 - 156
1,2-Dichloroethane	20.0	ND	22	108	50 - 156
Benzene	20.0	ND	23	113	56 - 136
Trichloroethene	20.0	19	41	112	62 - 135
1,2-Dichloropropane	20.0	ND	20	101	61 - 133
Bromodichloromethane	20.0	ND	24	121	58 - 135
4-Methyl-2-pentanone	100	ND	94	94	19 - 180
2-Hexanone	100	ND	99	99	12 - 180
cis-1,3-Dichloropropene	20.0	ND	20	98	64 - 128
Toluene	20.0	ND	23	117	64 - 131

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

EPA 8260B

SW3-MW0009-020.0-20160910

Laboratory: ENCO Orlando
SDG: AZ06090-TE016
Client: Tetra Tech, Inc. (TE016)
Project: NASA-KSC-SW3
Matrix: Water
Batch: 6I19025
Laboratory ID: 6I19025-MS1
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Source Sample Name: SW3-MW0009-020.0-20160910

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC. #	QC LIMITS REC.
trans-1,3-Dichloropropene	20.0	ND	23	114	65 - 149
1,1,2-Trichloroethane	20.0	ND	21	104	57 - 141
Tetrachloroethene	20.0	ND	22	112	60 - 147
Dibromochloromethane	20.0	ND	23	116	50 - 140
1,2-Dibromoethane	20.0	ND	21	103	57 - 140
Chlorobenzene	20.0	ND	23	114	51 - 139
Ethylbenzene	20.0	ND	22	108	63 - 133
m,p-Xylenes	40.0	ND	42	106	64 - 133
o-Xylene	20.0	ND	22	110	61 - 129
Bromoform	20.0	ND	17	86	46 - 148
Styrene	20.0	ND	21	105	59 - 136
Isopropylbenzene	20.0	ND	23	113	60 - 132
1,1,2,2-Tetrachloroethane	20.0	ND	20	99	60 - 139
1,2,4-Trichlorobenzene	20.0	ND	17	83	52 - 159
1,3-Dichlorobenzene	20.0	ND	23	117	66 - 129
1,4-Dichlorobenzene	20.0	ND	21	106	65 - 133
1,2-Dichlorobenzene	20.0	ND	21	105	63 - 131
1,2-Dibromo-3-chloropropane	20.0	ND	13	66	48 - 150

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

EPA 8260B

SW3-MW0009-020.0-20160910

Laboratory: ENCO Orlando
SDG: AZ06090-TE016
Client: Tetra Tech, Inc. (TE016)
Project: NASA-KSC-SW3
Matrix: Water
Batch: 6I19025
Laboratory ID: 6I19025-MSD1
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Source Sample Name: SW3-MW0009-020.0-20160910

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC. #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Dichlorodifluoromethane	20.0	26	128	8	26	10 - 180
Chloromethane	20.0	22	108	6	31	33 - 154
Vinyl chloride	20.0	34	106	6	24	20 - 167
Bromomethane	20.0	22	109	34 *	29	10 - 173
Chloroethane	20.0	23	115	2	22	27 - 180
Trichlorofluoromethane	20.0	21	106	4	22	56 - 155
Freon 113	20.0	23	113	1	30	47 - 173
Acetone	100	100	104	3	19	10 - 180
1,1-Dichloroethene	20.0	24	119	0.9	16	47 - 139
Carbon disulfide	20.0	21	107	4	26	43 - 153
Methylene Chloride	20.0	22	111	3	23	43 - 142
Methyl-tert-Butyl Ether	20.0	20	102	2	22	51 - 145
trans-1,2-Dichloroethene	20.0	31	109	2	20	54 - 134
cis-1,2-Dichloroethene	20.0	97	89	3	17	56 - 128
1,1-Dichloroethane	20.0	23	115	1	24	57 - 142
2-Butanone	100	95	95	11	29	10 - 180
Chloroform	20.0	24	119	1	17	58 - 139
1,1,1-Trichloroethane	20.0	21	107	4	25	57 - 148
Methyl acetate	20.0	18	89	7	20	70 - 130
Cyclohexane	20.0	23	116	0.6	20	70 - 130
Methyl cyclohexane	20.0	25	124	1	20	70 - 130
Carbon Tetrachloride	20.0	24	119	9	27	54 - 156
1,2-Dichloroethane	20.0	21	104	3	18	50 - 156
Benzene	20.0	23	116	3	14	56 - 136
Trichloroethene	20.0	40	104	4	20	62 - 135
1,2-Dichloropropane	20.0	20	99	2	26	61 - 133
Bromodichloromethane	20.0	22	111	8	19	58 - 135
4-Methyl-2-pentanone	100	82	82	14	24	19 - 180
2-Hexanone	100	100	103	4	28	12 - 180
cis-1,3-Dichloropropene	20.0	20	100	2	20	64 - 128
Toluene	20.0	22	111	5	16	64 - 131
trans-1,3-Dichloropropene	20.0	21	103	10	17	65 - 149

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

EPA 8260B

SW3-MW0009-020.0-20160910

Laboratory: ENCO Orlando
SDG: AZ06090-TE016
Client: Tetra Tech, Inc. (TE016)
Project: NASA-KSC-SW3
Matrix: Water
Batch: 6I19025
Laboratory ID: 6I19025-MSD1
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Source Sample Name: SW3-MW0009-020.0-20160910

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC. #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
1,1,2-Trichloroethane	20.0	21	104	0.1	16	57 - 141
Tetrachloroethene	20.0	21	106	5	21	60 - 147
Dibromochloromethane	20.0	22	109	6	18	50 - 140
1,2-Dibromoethane	20.0	19	96	7	16	57 - 140
Chlorobenzene	20.0	22	109	4	13	51 - 139
Ethylbenzene	20.0	21	105	3	18	63 - 133
m,p-Xylenes	40.0	44	109	3	18	64 - 133
o-Xylene	20.0	21	106	4	16	61 - 129
Bromoform	20.0	17	84	2	18	46 - 148
Styrene	20.0	21	103	2	32	59 - 136
Isopropylbenzene	20.0	22	111	2	23	60 - 132
1,1,2,2-Tetrachloroethane	20.0	19	93	7	17	60 - 139
1,2,4-Trichlorobenzene	20.0	17	85	3	24	52 - 159
1,3-Dichlorobenzene	20.0	23	116	0.9	23	66 - 129
1,4-Dichlorobenzene	20.0	21	103	3	23	65 - 133
1,2-Dichlorobenzene	20.0	20	102	3	25	63 - 131
1,2-Dibromo-3-chloropropane	20.0	14	72	9	21	48 - 150

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

EPA 8260B

POL-MW0031I-027.5 -20160910

Laboratory: ENCO Orlando
SDG: AZ06090-TE016
Client: Tetra Tech, Inc. (TE016)
Project: NASA-KSC-SW3
Matrix: Water
Batch: 6I20014
Laboratory ID: 6I20014-MS1
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Source Sample Name: POL-MW0031I-027.5 -20160910

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC. #	QC LIMITS REC.
Dichlorodifluoromethane	20.0	ND	24	118	10 - 180
Chloromethane	20.0	ND	20	100	33 - 154
Vinyl chloride	20.0	ND	20	100	20 - 167
Bromomethane	20.0	ND	14	68	10 - 173
Chloroethane	20.0	ND	21	103	27 - 180
Trichlorofluoromethane	20.0	ND	21	106	56 - 155
Freon 113	20.0	ND	19	97	47 - 173
Acetone	100	ND	91	91	10 - 180
1,1-Dichloroethene	20.0	ND	19	94	47 - 139
Carbon disulfide	20.0	ND	18	92	43 - 153
Methylene Chloride	20.0	ND	18	91	43 - 142
Methyl-tert-Butyl Ether	20.0	ND	18	89	51 - 145
trans-1,2-Dichloroethene	20.0	ND	19	94	54 - 134
cis-1,2-Dichloroethene	20.0	ND	19	94	56 - 128
1,1-Dichloroethane	20.0	ND	20	100	57 - 142
2-Butanone	100	ND	88	88	10 - 180
Chloroform	20.0	ND	21	105	58 - 139
1,1,1-Trichloroethane	20.0	ND	21	106	57 - 148
Methyl acetate	20.0	ND	16	79	70 - 130
Cyclohexane	20.0	ND	19	93	70 - 130
Methyl cyclohexane	20.0	ND	22	112	70 - 130
Carbon Tetrachloride	20.0	ND	25	124	54 - 156
1,2-Dichloroethane	20.0	ND	21	105	50 - 156
Benzene	20.0	ND	21	103	56 - 136
Trichloroethene	20.0	ND	22	111	62 - 135
1,2-Dichloropropane	20.0	ND	18	88	61 - 133
Bromodichloromethane	20.0	ND	20	102	58 - 135
4-Methyl-2-pentanone	100	ND	92	92	19 - 180
2-Hexanone	100	ND	91	91	12 - 180
cis-1,3-Dichloropropene	20.0	ND	19	93	64 - 128
Toluene	20.0	ND	19	97	64 - 131

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

EPA 8260B

POL-MW0031I-027.5 -20160910

Laboratory:	ENCO Orlando	SDG:	AZ06090-TE016
Client:	Tetra Tech, Inc. (TE016)	Project:	NASA-KSC-SW3
Matrix:	Water		
Batch:	6I20014	Laboratory ID:	6I20014-MS1
Preparation:	EPA 5030B_MS	Initial/Final:	5 mL / 5 mL

Source Sample Name: POL-MW0031I-027.5 -20160910

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC. #	QC LIMITS REC.
trans-1,3-Dichloropropene	20.0	ND	18	92	65 - 149
1,1,2-Trichloroethane	20.0	ND	18	90	57 - 141
Tetrachloroethene	20.0	ND	21	106	60 - 147
Dibromochloromethane	20.0	ND	17	83	50 - 140
1,2-Dibromoethane	20.0	ND	19	93	57 - 140
Chlorobenzene	20.0	ND	20	102	51 - 139
Ethylbenzene	20.0	ND	19	93	63 - 133
m,p-Xylenes	40.0	ND	36	90	64 - 133
o-Xylene	20.0	ND	18	91	61 - 129
Bromoform	20.0	ND	11	53	46 - 148
Styrene	20.0	ND	13	64	59 - 136
Isopropylbenzene	20.0	ND	19	96	60 - 132
1,1,2,2-Tetrachloroethane	20.0	ND	18	91	60 - 139
1,2,4-Trichlorobenzene	20.0	ND	15	77	52 - 159
1,3-Dichlorobenzene	20.0	ND	21	104	66 - 129
1,4-Dichlorobenzene	20.0	ND	21	103	65 - 133
1,2-Dichlorobenzene	20.0	ND	19	96	63 - 131
1,2-Dibromo-3-chloropropane	20.0	ND	14	68	48 - 150

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

EPA 8260B

POL-MW0031I-027.5 -20160910

Laboratory: ENCO Orlando
SDG: AZ06090-TE016
Client: Tetra Tech, Inc. (TE016)
Project: NASA-KSC-SW3
Matrix: Water
Batch: 6I20014
Laboratory ID: 6I20014-MSD1
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Source Sample Name: POL-MW0031I-027.5 -20160910

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC. #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Dichlorodifluoromethane	20.0	24	119	0.8	26	10 - 180
Chloromethane	20.0	19	97	3	31	33 - 154
Vinyl chloride	20.0	21	104	4	24	20 - 167
Bromomethane	20.0	18	89	27	29	10 - 173
Chloroethane	20.0	21	107	4	22	27 - 180
Trichlorofluoromethane	20.0	22	108	2	22	56 - 155
Freon 113	20.0	22	110	12	30	47 - 173
Acetone	100	91	91	0.5	19	10 - 180
1,1-Dichloroethene	20.0	21	106	12	16	47 - 139
Carbon disulfide	20.0	18	89	4	26	43 - 153
Methylene Chloride	20.0	19	93	2	23	43 - 142
Methyl-tert-Butyl Ether	20.0	19	94	5	22	51 - 145
trans-1,2-Dichloroethene	20.0	19	93	1	20	54 - 134
cis-1,2-Dichloroethene	20.0	17	86	8	17	56 - 128
1,1-Dichloroethane	20.0	20	99	1	24	57 - 142
2-Butanone	100	78	78	12	29	10 - 180
Chloroform	20.0	22	109	3	17	58 - 139
1,1,1-Trichloroethane	20.0	20	102	3	25	57 - 148
Methyl acetate	20.0	17	83	5	20	70 - 130
Cyclohexane	20.0	19	94	1	20	70 - 130
Methyl cyclohexane	20.0	22	109	3	20	70 - 130
Carbon Tetrachloride	20.0	23	117	5	27	54 - 156
1,2-Dichloroethane	20.0	22	110	5	18	50 - 156
Benzene	20.0	21	105	2	14	56 - 136
Trichloroethene	20.0	22	108	3	20	62 - 135
1,2-Dichloropropane	20.0	18	91	3	26	61 - 133
Bromodichloromethane	20.0	22	111	8	19	58 - 135
4-Methyl-2-pentanone	100	83	83	10	24	19 - 180
2-Hexanone	100	97	97	7	28	12 - 180
cis-1,3-Dichloropropene	20.0	17	85	9	20	64 - 128
Toluene	20.0	20	101	4	16	64 - 131
trans-1,3-Dichloropropene	20.0	21	104	12	17	65 - 149

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

EPA 8260B

POL-MW0031I-027.5 -20160910

Laboratory: ENCO Orlando
SDG: AZ06090-TE016
Client: Tetra Tech, Inc. (TE016)
Project: NASA-KSC-SW3
Matrix: Water
Batch: 6I20014
Laboratory ID: 6I20014-MSD1
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Source Sample Name: POL-MW0031I-027.5 -20160910

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC. #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
1,1,2-Trichloroethane	20.0	21	103	14	16	57 - 141
Tetrachloroethene	20.0	22	112	5	21	60 - 147
Dibromochloromethane	20.0	20	98	17	18	50 - 140
1,2-Dibromoethane	20.0	19	94	0.6	16	57 - 140
Chlorobenzene	20.0	21	103	1	13	51 - 139
Ethylbenzene	20.0	19	97	4	18	63 - 133
m,p-Xylenes	40.0	37	92	3	18	64 - 133
o-Xylene	20.0	19	94	3	16	61 - 129
Bromoform	20.0	16	82	43 *	18	46 - 148
Styrene	20.0	15	75	16	32	59 - 136
Isopropylbenzene	20.0	20	102	6	23	60 - 132
1,1,2,2-Tetrachloroethane	20.0	20	102	11	17	60 - 139
1,2,4-Trichlorobenzene	20.0	17	83	8	24	52 - 159
1,3-Dichlorobenzene	20.0	22	110	6	23	66 - 129
1,4-Dichlorobenzene	20.0	22	109	6	23	65 - 133
1,2-Dichlorobenzene	20.0	20	99	3	25	63 - 131
1,2-Dibromo-3-chloropropane	20.0	14	71	4	21	48 - 150

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

SURROGATE STANDARD RECOVERY AND RT SUMMARY

EPA 8260B

Laboratory: ENCO Orlando
SDG: AZ06090-TE016
Client: Tetra Tech, Inc. (TE016)
Project: NASA-KSC-SW3

Sequence: AA40502
Instrument: OVGCMS5
Matrix: -
Calibration: 1609060

Surrogate Compound	Spike Level ug/L	% Recovery	Recovery Limits	RT	Calibration RT	RT Diff	RT Diff Limit	Q
Secondary Cal Check (AA40502-SCV1)			Lab File ID: 5IK022.D		Analyzed: 09/16/16 18:27			
Dibromofluoromethane	50.0	97	80 - 120	9.798	9.791143	0.0069	+/-0.5	
Toluene-d8	50.0	101	80 - 120	12.095	12.09586	-0.0009	+/-0.5	
4-Bromofluorobenzene	50.0	104	80 - 120	14.616	14.616	0.0000	+/-0.5	

SURROGATE STANDARD RECOVERY AND RT SUMMARY

EPA 8260B

Laboratory: ENCO Orlando
SDG: AZ06090-TE016
Client: Tetra Tech, Inc. (TE016)
Project: NASA-KSC-SW3

Sequence: AA40509
Instrument: OVGCMS5
Matrix: -
Calibration: 1609060

Surrogate Compound	Spike Level ug/L	% Recovery	Recovery Limits	RT	Calibration RT	RT Diff	RT Diff Limit	Q
Calibration Check (AA40509-CCV1)			Lab File ID: 5IN002.D		Analyzed: 09/19/16 08:07			
Dibromofluoromethane	50.0	96	80 - 120	9.792	9.791143	0.0009	+/-0.5	
Toluene-d8	50.0	100	80 - 120	12.101	12.09586	0.0051	+/-0.5	
4-Bromofluorobenzene	50.0	98	80 - 120	14.616	14.616	0.0000	+/-0.5	
LCS (6I19025-BS1)			Lab File ID: 5IN012.D		Analyzed: 09/19/16 13:12			
Dibromofluoromethane	50.0	104	53 - 146	9.798	9.791143	0.0069	+/-0.5	
Toluene-d8	50.0	103	41 - 146	12.101	12.09586	0.0051	+/-0.5	
4-Bromofluorobenzene	50.0	104	41 - 142	14.616	14.616	0.0000	+/-0.5	
Blank (6I19025-BLK1)			Lab File ID: 5IN014.D		Analyzed: 09/19/16 14:11			
Dibromofluoromethane	50.0	99	53 - 146	9.792	9.791143	0.0009	+/-0.5	
Toluene-d8	50.0	106	41 - 146	12.095	12.09586	-0.0009	+/-0.5	
4-Bromofluorobenzene	50.0	105	41 - 142	14.616	14.616	0.0000	+/-0.5	
SW3-MW0009-020.0-20160910 (AZ06090-01)			Lab File ID: 5IN015.D		Analyzed: 09/19/16 14:41			
Dibromofluoromethane	50.0	104	53 - 146	9.792	9.791143	0.0009	+/-0.5	
Toluene-d8	50.0	104	41 - 146	12.095	12.09586	-0.0009	+/-0.5	
4-Bromofluorobenzene	50.0	107	41 - 142	14.616	14.616	0.0000	+/-0.5	
SW3-MW0026-040.0-20160910 (AZ06090-02)			Lab File ID: 5IN016.D		Analyzed: 09/19/16 15:11			
Dibromofluoromethane	50.0	102	53 - 146	9.792	9.791143	0.0009	+/-0.5	
Toluene-d8	50.0	102	41 - 146	12.095	12.09586	-0.0009	+/-0.5	
4-Bromofluorobenzene	50.0	101	41 - 142	14.61	14.616	-0.0060	+/-0.5	
SW3-MW0025-040.0-20160910 (AZ06090-03)			Lab File ID: 5IN017.D		Analyzed: 09/19/16 15:40			
Dibromofluoromethane	50.0	99	53 - 146	9.792	9.791143	0.0009	+/-0.5	
SW3-MW0027-032.0-20160910 (AZ06090-04)			Lab File ID: 5IN018.D		Analyzed: 09/19/16 16:10			
Dibromofluoromethane	50.0	100	53 - 146	9.792	9.791143	0.0009	+/-0.5	
SW3-MW0028-032.0-20160910 (AZ06090-05)			Lab File ID: 5IN019.D		Analyzed: 09/19/16 16:40			
Dibromofluoromethane	50.0	100	53 - 146	9.798	9.791143	0.0069	+/-0.5	
SW3-SW0002-000.5-20160910 (AZ06090-06)			Lab File ID: 5IN020.D		Analyzed: 09/19/16 17:09			
Dibromofluoromethane	50.0	99	53 - 146	9.792	9.791143	0.0009	+/-0.5	
Toluene-d8	50.0	102	41 - 146	12.095	12.09586	-0.0009	+/-0.5	
4-Bromofluorobenzene	50.0	101	41 - 142	14.616	14.616	0.0000	+/-0.5	
SW3-SW0003-000.5-20160910 (AZ06090-07)			Lab File ID: 5IN021.D		Analyzed: 09/19/16 17:39			
Dibromofluoromethane	50.0	102	53 - 146	9.792	9.791143	0.0009	+/-0.5	
Toluene-d8	50.0	106	41 - 146	12.095	12.09586	-0.0009	+/-0.5	
4-Bromofluorobenzene	50.0	101	41 - 142	14.616	14.616	0.0000	+/-0.5	

SURROGATE STANDARD RECOVERY AND RT SUMMARY

EPA 8260B

Laboratory: ENCO Orlando
SDG: AZ06090-TE016
Client: Tetra Tech, Inc. (TE016)
Project: NASA-KSC-SW3

Sequence: AA40509
Instrument: OVGCMS5
Matrix: -
Calibration: 1609060

Surrogate Compound	Spike Level ug/L	% Recovery	Recovery Limits	RT	Calibration RT	RT Diff	RT Diff Limit	Q
TRIP BLANK (AZ06090-08)			Lab File ID: 5IN022.D		Analyzed: 09/19/16 18:08			
Dibromofluoromethane	50.0	101	53 - 146	9.792	9.791143	0.0009	+/-0.5	
Toluene-d8	50.0	97	41 - 146	12.095	12.09586	-0.0009	+/-0.5	
4-Bromofluorobenzene	50.0	101	41 - 142	14.61	14.616	-0.0060	+/-0.5	
Matrix Spike (6I19025-MS1)			Lab File ID: 5IN023.D		Analyzed: 09/19/16 18:37			
Dibromofluoromethane	50.0	103	53 - 146	9.792	9.791143	0.0009	+/-0.5	
Toluene-d8	50.0	101	41 - 146	12.095	12.09586	-0.0009	+/-0.5	
4-Bromofluorobenzene	50.0	98	41 - 142	14.616	14.616	0.0000	+/-0.5	
Matrix Spike Dup (6I19025-MSD1)			Lab File ID: 5IN024.D		Analyzed: 09/19/16 19:07			
Dibromofluoromethane	50.0	101	53 - 146	9.792	9.791143	0.0009	+/-0.5	
Toluene-d8	50.0	101	41 - 146	12.095	12.09586	-0.0009	+/-0.5	
4-Bromofluorobenzene	50.0	99	41 - 142	14.616	14.616	0.0000	+/-0.5	

SURROGATE STANDARD RECOVERY AND RT SUMMARY

EPA 8260B

Laboratory: ENCO Orlando
SDG: AZ06090-TE016
Client: Tetra Tech, Inc. (TE016)
Project: NASA-KSC-SW3

Sequence: AA40538
Instrument: OVGCMS5
Matrix: -
Calibration: 1609060

Surrogate Compound	Spike Level ug/L	% Recovery	Recovery Limits	RT	Calibration RT	RT Diff	RT Diff Limit	Q
Calibration Check (AA40538-CCV1)			Lab File ID: 5IO002.D		Analyzed: 09/20/16 08:16			
Dibromofluoromethane	50.0	99	80 - 120	9.792	9.791143	0.0009	+/-0.5	
Toluene-d8	50.0	102	80 - 120	12.101	12.09586	0.0051	+/-0.5	
4-Bromofluorobenzene	50.0	104	80 - 120	14.616	14.616	0.0000	+/-0.5	
LCS (6I20014-BS1)			Lab File ID: 5IO004.D		Analyzed: 09/20/16 09:17			
Dibromofluoromethane	50.0	101	53 - 146	9.792	9.791143	0.0009	+/-0.5	
Toluene-d8	50.0	99	41 - 146	12.095	12.09586	-0.0009	+/-0.5	
4-Bromofluorobenzene	50.0	105	41 - 142	14.616	14.616	0.0000	+/-0.5	
Blank (6I20014-BLK1)			Lab File ID: 5IO007.D		Analyzed: 09/20/16 10:45			
Dibromofluoromethane	50.0	95	53 - 146	9.798	9.791143	0.0069	+/-0.5	
Toluene-d8	50.0	102	41 - 146	12.095	12.09586	-0.0009	+/-0.5	
4-Bromofluorobenzene	50.0	103	41 - 142	14.616	14.616	0.0000	+/-0.5	
SW3-MW0025-040.0-20160910 (AZ06090-03RE1)			Lab File ID: 5IO009.D		Analyzed: 09/20/16 11:44			
Dibromofluoromethane	50.0	98	53 - 146	9.792	9.791143	0.0009	+/-0.5	
Toluene-d8	50.0	101	41 - 146	12.095	12.09586	-0.0009	+/-0.5	
4-Bromofluorobenzene	50.0	105	41 - 142	14.616	14.616	0.0000	+/-0.5	
SW3-MW0027-032.0-20160910 (AZ06090-04RE1)			Lab File ID: 5IO010.D		Analyzed: 09/20/16 12:14			
Dibromofluoromethane	50.0	97	53 - 146	9.792	9.791143	0.0009	+/-0.5	
Toluene-d8	50.0	99	41 - 146	12.095	12.09586	-0.0009	+/-0.5	
4-Bromofluorobenzene	50.0	99	41 - 142	14.616	14.616	0.0000	+/-0.5	
SW3-MW0028-032.0-20160910 (AZ06090-05RE1)			Lab File ID: 5IO011.D		Analyzed: 09/20/16 12:43			
Dibromofluoromethane	50.0	97	53 - 146	9.792	9.791143	0.0009	+/-0.5	
Toluene-d8	50.0	100	41 - 146	12.095	12.09586	-0.0009	+/-0.5	
4-Bromofluorobenzene	50.0	106	41 - 142	14.616	14.616	0.0000	+/-0.5	
Matrix Spike (6I20014-MS1)			Lab File ID: 5IO023.D		Analyzed: 09/20/16 18:37			
Dibromofluoromethane	50.0	94	53 - 146	9.798	9.791143	0.0069	+/-0.5	
Toluene-d8	50.0	98	41 - 146	12.095	12.09586	-0.0009	+/-0.5	
4-Bromofluorobenzene	50.0	98	41 - 142	14.61	14.616	-0.0060	+/-0.5	
Matrix Spike Dup (6I20014-MSD1)			Lab File ID: 5IO024.D		Analyzed: 09/20/16 19:07			
Dibromofluoromethane	50.0	98	53 - 146	9.792	9.791143	0.0009	+/-0.5	
Toluene-d8	50.0	103	41 - 146	12.095	12.09586	-0.0009	+/-0.5	
4-Bromofluorobenzene	50.0	104	41 - 142	14.616	14.616	0.0000	+/-0.5	

INTERNAL STANDARD AREA AND RT SUMMARY
EPA 8260B

Laboratory: ENCO Orlando
SDG: AZ06090-TE016
Client: Tetra Tech, Inc. (TE016)
Project: NASA-KSC-SW3

Sequence: AA40502
Instrument: OVGCMS5
Matrix: Water
Calibration: 1609060

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Cal Standard (AA40502-CAL1)			Lab File ID: 5IK013.D			Analyzed: 09/16/16 13:59			
Pentafluorobenzene	993483	10.209	1122443	10.209	89	50 - 200	0.0000	+/-0.50	
1,4-Difluorobenzene	1563495	10.797	1890598	10.791	83	50 - 200	0.0060	+/-0.50	
Chlorobenzene-d5	703472	13.511	875986	13.511	80	50 - 200	0.0000	+/-0.50	
1,4-Dichlorobenzene-d4	971966	15.797	1135498	15.797	86	50 - 200	0.0000	+/-0.50	
Cal Standard (AA40502-CAL2)			Lab File ID: 5IK014.D			Analyzed: 09/16/16 14:29			
Pentafluorobenzene	1033903	10.209	1122443	10.209	92	50 - 200	0.0000	+/-0.50	
1,4-Difluorobenzene	1585423	10.791	1890598	10.791	84	50 - 200	0.0000	+/-0.50	
Chlorobenzene-d5	736735	13.511	875986	13.511	84	50 - 200	0.0000	+/-0.50	
1,4-Dichlorobenzene-d4	971570	15.797	1135498	15.797	86	50 - 200	0.0000	+/-0.50	
Cal Standard (AA40502-CAL3)			Lab File ID: 5IK015.D			Analyzed: 09/16/16 14:59			
Pentafluorobenzene	1084542	10.209	1122443	10.209	97	50 - 200	0.0000	+/-0.50	
1,4-Difluorobenzene	1650017	10.791	1890598	10.791	87	50 - 200	0.0000	+/-0.50	
Chlorobenzene-d5	767038	13.511	875986	13.511	88	50 - 200	0.0000	+/-0.50	
1,4-Dichlorobenzene-d4	1061042	15.797	1135498	15.797	93	50 - 200	0.0000	+/-0.50	
Cal Standard (AA40502-CAL4)			Lab File ID: 5IK016.D			Analyzed: 09/16/16 15:29			
Pentafluorobenzene	1050771	10.209	1122443	10.209	94	50 - 200	0.0000	+/-0.50	
1,4-Difluorobenzene	1730261	10.791	1890598	10.791	92	50 - 200	0.0000	+/-0.50	
Chlorobenzene-d5	788160	13.505	875986	13.511	90	50 - 200	-0.0060	+/-0.50	
1,4-Dichlorobenzene-d4	1040185	15.791	1135498	15.797	92	50 - 200	-0.0060	+/-0.50	
Cal Standard (AA40502-CAL5)			Lab File ID: 5IK017.D			Analyzed: 09/16/16 15:58			
Pentafluorobenzene	1122443	10.209	1122443	10.209	100	50 - 200	0.0000	+/-0.50	
1,4-Difluorobenzene	1890598	10.791	1890598	10.791	100	50 - 200	0.0000	+/-0.50	
Chlorobenzene-d5	875986	13.511	875986	13.511	100	50 - 200	0.0000	+/-0.50	
1,4-Dichlorobenzene-d4	1135498	15.797	1135498	15.797	100	50 - 200	0.0000	+/-0.50	
Cal Standard (AA40502-CAL6)			Lab File ID: 5IK018.D			Analyzed: 09/16/16 16:28			
Pentafluorobenzene	1201314	10.209	1122443	10.209	107	50 - 200	0.0000	+/-0.50	
1,4-Difluorobenzene	2005053	10.791	1890598	10.791	106	50 - 200	0.0000	+/-0.50	
Chlorobenzene-d5	921274	13.511	875986	13.511	105	50 - 200	0.0000	+/-0.50	
1,4-Dichlorobenzene-d4	1228128	15.797	1135498	15.797	108	50 - 200	0.0000	+/-0.50	
Cal Standard (AA40502-CAL7)			Lab File ID: 5IK019.D			Analyzed: 09/16/16 16:58			
Pentafluorobenzene	1243698	10.209	1122443	10.209	111	50 - 200	0.0000	+/-0.50	
1,4-Difluorobenzene	2086773	10.791	1890598	10.791	110	50 - 200	0.0000	+/-0.50	
Chlorobenzene-d5	925907	13.511	875986	13.511	106	50 - 200	0.0000	+/-0.50	
1,4-Dichlorobenzene-d4	1285642	15.797	1135498	15.797	113	50 - 200	0.0000	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY
EPA 8260B

Laboratory: ENCO Orlando
SDG: AZ06090-TE016
Client: Tetra Tech, Inc. (TE016)
Project: NASA-KSC-SW3
Sequence: AA40502
Instrument: OVGCMS5
Matrix: Water
Calibration: 1609060

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Secondary Cal Check (AA40502-SCV1)			Lab File ID: 5IK022.D			Analyzed: 09/16/16 18:27			
Pentafluorobenzene	1246420	10.209	1122443	10.209	111	50 - 200	0.0000	+/-0.50	
1,4-Difluorobenzene	2024709	10.791	1890598	10.791	107	50 - 200	0.0000	+/-0.50	
Chlorobenzene-d5	916907	13.511	875986	13.511	105	50 - 200	0.0000	+/-0.50	
1,4-Dichlorobenzene-d4	1238227	15.797	1135498	15.797	109	50 - 200	0.0000	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY
EPA 8260B

Laboratory: ENCO Orlando
SDG: AZ06090-TE016
Client: Tetra Tech, Inc. (TE016)
Project: NASA-KSC-SW3
Sequence: AA40509
Instrument: OVGCMS5
Matrix: Water
Calibration: 1609060

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Calibration Check (AA40509-CCV1)			Lab File ID: 5IN002.D			Analyzed: 09/19/16 08:07			
Pentafluorobenzene	1390714	10.215	1122443	10.209	124	50 - 200	0.0060	+/-0.50	
1,4-Difluorobenzene	2265031	10.797	1890598	10.791	120	50 - 200	0.0060	+/-0.50	
Chlorobenzene-d5	1036110	13.511	875986	13.511	118	50 - 200	0.0000	+/-0.50	
1,4-Dichlorobenzene-d4	1316031	15.797	1135498	15.797	116	50 - 200	0.0000	+/-0.50	
LCS (6I19025-BS1)			Lab File ID: 5IN012.D			Analyzed: 09/19/16 13:12			
Pentafluorobenzene	1228126	10.209	1122443	10.209	109	50 - 200	0.0000	+/-0.50	
1,4-Difluorobenzene	2116334	10.797	1890598	10.791	112	50 - 200	0.0060	+/-0.50	
Chlorobenzene-d5	936198	13.511	875986	13.511	107	50 - 200	0.0000	+/-0.50	
1,4-Dichlorobenzene-d4	1269251	15.797	1135498	15.797	112	50 - 200	0.0000	+/-0.50	
Blank (6I19025-BLK1)			Lab File ID: 5IN014.D			Analyzed: 09/19/16 14:11			
Pentafluorobenzene	1255883	10.209	1122443	10.209	112	50 - 200	0.0000	+/-0.50	
1,4-Difluorobenzene	2085638	10.791	1890598	10.791	110	50 - 200	0.0000	+/-0.50	
Chlorobenzene-d5	947505	13.511	875986	13.511	108	50 - 200	0.0000	+/-0.50	
1,4-Dichlorobenzene-d4	1242736	15.797	1135498	15.797	109	50 - 200	0.0000	+/-0.50	
SW3-MW0009-020.0-20160910 (AZ06090-01)			Lab File ID: 5IN015.D			Analyzed: 09/19/16 14:41			
Pentafluorobenzene	1226939	10.209	1122443	10.209	109	50 - 200	0.0000	+/-0.50	
1,4-Difluorobenzene	2058138	10.791	1890598	10.791	109	50 - 200	0.0000	+/-0.50	
Chlorobenzene-d5	921465	13.511	875986	13.511	105	50 - 200	0.0000	+/-0.50	
1,4-Dichlorobenzene-d4	1219364	15.797	1135498	15.797	107	50 - 200	0.0000	+/-0.50	
SW3-MW0026-040.0-20160910 (AZ06090-02)			Lab File ID: 5IN016.D			Analyzed: 09/19/16 15:11			
Pentafluorobenzene	1224832	10.209	1122443	10.209	109	50 - 200	0.0000	+/-0.50	
1,4-Difluorobenzene	2114827	10.791	1890598	10.791	112	50 - 200	0.0000	+/-0.50	
Chlorobenzene-d5	936825	13.505	875986	13.511	107	50 - 200	-0.0060	+/-0.50	
1,4-Dichlorobenzene-d4	1263469	15.791	1135498	15.797	111	50 - 200	-0.0060	+/-0.50	
SW3-SW0002-000.5-20160910 (AZ06090-06)			Lab File ID: 5IN020.D			Analyzed: 09/19/16 17:09			
Pentafluorobenzene	1219787	10.209	1122443	10.209	109	50 - 200	0.0000	+/-0.50	
1,4-Difluorobenzene	2014441	10.791	1890598	10.791	107	50 - 200	0.0000	+/-0.50	
Chlorobenzene-d5	923893	13.511	875986	13.511	105	50 - 200	0.0000	+/-0.50	
1,4-Dichlorobenzene-d4	1233611	15.791	1135498	15.797	109	50 - 200	-0.0060	+/-0.50	
SW3-SW0003-000.5-20160910 (AZ06090-07)			Lab File ID: 5IN021.D			Analyzed: 09/19/16 17:39			
Pentafluorobenzene	1186823	10.209	1122443	10.209	106	50 - 200	0.0000	+/-0.50	
1,4-Difluorobenzene	1963489	10.791	1890598	10.791	104	50 - 200	0.0000	+/-0.50	
Chlorobenzene-d5	876623	13.511	875986	13.511	100	50 - 200	0.0000	+/-0.50	
1,4-Dichlorobenzene-d4	1173489	15.797	1135498	15.797	103	50 - 200	0.0000	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY
EPA 8260B

Laboratory: ENCO Orlando
SDG: AZ06090-TE016
Client: Tetra Tech, Inc. (TE016)
Project: NASA-KSC-SW3

Sequence: AA40509
Instrument: OVGCMS5
Matrix: Water
Calibration: 1609060

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
TRIP BLANK (AZ06090-08)			Lab File ID: 5IN022.D			Analyzed: 09/19/16 18:08			
Pentafluorobenzene	1220714	10.209	1122443	10.209	109	50 - 200	0.0000	+/-0.50	
1,4-Difluorobenzene	2056967	10.791	1890598	10.791	109	50 - 200	0.0000	+/-0.50	
Chlorobenzene-d5	890141	13.511	875986	13.511	102	50 - 200	0.0000	+/-0.50	
1,4-Dichlorobenzene-d4	1169139	15.797	1135498	15.797	103	50 - 200	0.0000	+/-0.50	
Matrix Spike (6I19025-MS1)			Lab File ID: 5IN023.D			Analyzed: 09/19/16 18:37			
Pentafluorobenzene	1192535	10.209	1122443	10.209	106	50 - 200	0.0000	+/-0.50	
1,4-Difluorobenzene	2015081	10.791	1890598	10.791	107	50 - 200	0.0000	+/-0.50	
Chlorobenzene-d5	917480	13.511	875986	13.511	105	50 - 200	0.0000	+/-0.50	
1,4-Dichlorobenzene-d4	1217993	15.797	1135498	15.797	107	50 - 200	0.0000	+/-0.50	
Matrix Spike Dup (6I19025-MSD1)			Lab File ID: 5IN024.D			Analyzed: 09/19/16 19:07			
Pentafluorobenzene	1193913	10.209	1122443	10.209	106	50 - 200	0.0000	+/-0.50	
1,4-Difluorobenzene	2018882	10.791	1890598	10.791	107	50 - 200	0.0000	+/-0.50	
Chlorobenzene-d5	919701	13.511	875986	13.511	105	50 - 200	0.0000	+/-0.50	
1,4-Dichlorobenzene-d4	1219593	15.797	1135498	15.797	107	50 - 200	0.0000	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY
EPA 8260B

Laboratory: ENCO Orlando
SDG: AZ06090-TE016
Client: Tetra Tech, Inc. (TE016)
Project: NASA-KSC-SW3

Sequence: AA40538
Instrument: OVGCMS5
Matrix: Water
Calibration: 1609060

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Calibration Check (AA40538-CCV1)			Lab File ID: 5IO002.D			Analyzed: 09/20/16 08:16			
Pentafluorobenzene	1077219	10.215	1122443	10.209	96	50 - 200	0.0060	+/-0.50	
1,4-Difluorobenzene	1754430	10.791	1890598	10.791	93	50 - 200	0.0000	+/-0.50	
Chlorobenzene-d5	811715	13.511	875986	13.511	93	50 - 200	0.0000	+/-0.50	
1,4-Dichlorobenzene-d4	1111837	15.797	1135498	15.797	98	50 - 200	0.0000	+/-0.50	
LCS (6I20014-BS1)			Lab File ID: 5IO004.D			Analyzed: 09/20/16 09:17			
Pentafluorobenzene	1127685	10.209	1122443	10.209	100	50 - 200	0.0000	+/-0.50	
1,4-Difluorobenzene	1801557	10.791	1890598	10.791	95	50 - 200	0.0000	+/-0.50	
Chlorobenzene-d5	837697	13.511	875986	13.511	96	50 - 200	0.0000	+/-0.50	
1,4-Dichlorobenzene-d4	1147607	15.797	1135498	15.797	101	50 - 200	0.0000	+/-0.50	
Blank (6I20014-BLK1)			Lab File ID: 5IO007.D			Analyzed: 09/20/16 10:45			
Pentafluorobenzene	1043311	10.209	1122443	10.209	93	50 - 200	0.0000	+/-0.50	
1,4-Difluorobenzene	1658892	10.791	1890598	10.791	88	50 - 200	0.0000	+/-0.50	
Chlorobenzene-d5	762472	13.511	875986	13.511	87	50 - 200	0.0000	+/-0.50	
1,4-Dichlorobenzene-d4	1028838	15.797	1135498	15.797	91	50 - 200	0.0000	+/-0.50	
SW3-MW0025-040.0-20160910 (AZ06090-03RE1)			Lab File ID: 5IO009.D			Analyzed: 09/20/16 11:44			
Pentafluorobenzene	1017792	10.209	1122443	10.209	91	50 - 200	0.0000	+/-0.50	
1,4-Difluorobenzene	1687739	10.791	1890598	10.791	89	50 - 200	0.0000	+/-0.50	
Chlorobenzene-d5	742877	13.511	875986	13.511	85	50 - 200	0.0000	+/-0.50	
1,4-Dichlorobenzene-d4	1044246	15.797	1135498	15.797	92	50 - 200	0.0000	+/-0.50	
SW3-MW0027-032.0-20160910 (AZ06090-04RE1)			Lab File ID: 5IO010.D			Analyzed: 09/20/16 12:14			
Pentafluorobenzene	1047721	10.209	1122443	10.209	93	50 - 200	0.0000	+/-0.50	
1,4-Difluorobenzene	1672245	10.791	1890598	10.791	88	50 - 200	0.0000	+/-0.50	
Chlorobenzene-d5	754662	13.511	875986	13.511	86	50 - 200	0.0000	+/-0.50	
1,4-Dichlorobenzene-d4	1024453	15.797	1135498	15.797	90	50 - 200	0.0000	+/-0.50	
SW3-MW0028-032.0-20160910 (AZ06090-05RE1)			Lab File ID: 5IO011.D			Analyzed: 09/20/16 12:43			
Pentafluorobenzene	1043516	10.209	1122443	10.209	93	50 - 200	0.0000	+/-0.50	
1,4-Difluorobenzene	1644825	10.797	1890598	10.791	87	50 - 200	0.0060	+/-0.50	
Chlorobenzene-d5	735941	13.511	875986	13.511	84	50 - 200	0.0000	+/-0.50	
1,4-Dichlorobenzene-d4	1017997	15.797	1135498	15.797	90	50 - 200	0.0000	+/-0.50	
Matrix Spike (6I20014-MS1)			Lab File ID: 5IO023.D			Analyzed: 09/20/16 18:37			
Pentafluorobenzene	1061579	10.209	1122443	10.209	95	50 - 200	0.0000	+/-0.50	
1,4-Difluorobenzene	1650646	10.791	1890598	10.791	87	50 - 200	0.0000	+/-0.50	
Chlorobenzene-d5	794913	13.511	875986	13.511	91	50 - 200	0.0000	+/-0.50	
1,4-Dichlorobenzene-d4	1103904	15.797	1135498	15.797	97	50 - 200	0.0000	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY
EPA 8260B

Laboratory: ENCO Orlando
SDG: AZ06090-TE016
Client: Tetra Tech, Inc. (TE016)
Project: NASA-KSC-SW3

Sequence: AA40538
Instrument: OVGCMS5
Matrix: Water
Calibration: 1609060

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Matrix Spike Dup (6I20014-MSD1)			Lab File ID: 5IO024.D			Analyzed: 09/20/16 19:07			
Pentafluorobenzene	1063029	10.209	1122443	10.209	95	50 - 200	0.0000	+/-0.50	
1,4-Difluorobenzene	1712564	10.791	1890598	10.791	91	50 - 200	0.0000	+/-0.50	
Chlorobenzene-d5	786894	13.511	875986	13.511	90	50 - 200	0.0000	+/-0.50	
1,4-Dichlorobenzene-d4	1084319	15.797	1135498	15.797	95	50 - 200	0.0000	+/-0.50	

ANALYSIS BATCH (SEQUENCE) SUMMARY

EPA 8260B

Laboratory:	ENCO Orlando	SDG:	AZ06090-TE016
Client:	Tetra Tech, Inc. (TE016)	Project:	NASA-KSC-SW3
Sequence:	AA40502		
Calibration:	1609060	Instrument:	OVGCMS5

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
MS Tune	AA40502-TUN1	5IK012.D	09/16/16 13:29
Cal Standard	AA40502-CAL1	5IK013.D	09/16/16 13:59
Cal Standard	AA40502-CAL2	5IK014.D	09/16/16 14:29
Cal Standard	AA40502-CAL3	5IK015.D	09/16/16 14:59
Cal Standard	AA40502-CAL4	5IK016.D	09/16/16 15:29
Cal Standard	AA40502-CAL5	5IK017.D	09/16/16 15:58
Cal Standard	AA40502-CAL6	5IK018.D	09/16/16 16:28
Cal Standard	AA40502-CAL7	5IK019.D	09/16/16 16:58
Secondary Cal Check	AA40502-SCV1	5IK022.D	09/16/16 18:27

ANALYSIS BATCH (SEQUENCE) SUMMARY

EPA 8260B

Laboratory:	ENCO Orlando	SDG:	AZ06090-TE016
Client:	Tetra Tech, Inc. (TE016)	Project:	NASA-KSC-SW3
Sequence:	AA40509		
Calibration:	1609060	Instrument:	OVGCMS5

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
MS Tune	AA40509-TUN1	5IN001.D	09/19/16 07:37
Calibration Check	AA40509-CCV1	5IN002.D	09/19/16 08:07
LCS	6I19025-BS1	5IN012.D	09/19/16 13:12
Blank	6I19025-BLK1	5IN014.D	09/19/16 14:11
SW3-MW0009-020.0-20160910	AZ06090-01	5IN015.D	09/19/16 14:41
SW3-MW0026-040.0-20160910	AZ06090-02	5IN016.D	09/19/16 15:11
SW3-MW0025-040.0-20160910	AZ06090-03	5IN017.D	09/19/16 15:40
SW3-MW0027-032.0-20160910	AZ06090-04	5IN018.D	09/19/16 16:10
SW3-MW0028-032.0-20160910	AZ06090-05	5IN019.D	09/19/16 16:40
SW3-SW0002-000.5-20160910	AZ06090-06	5IN020.D	09/19/16 17:09
SW3-SW0003-000.5-20160910	AZ06090-07	5IN021.D	09/19/16 17:39
TRIP BLANK	AZ06090-08	5IN022.D	09/19/16 18:08
SW3-MW0009-020.0-20160910	6I19025-MS1	5IN023.D	09/19/16 18:37
SW3-MW0009-020.0-20160910	6I19025-MSD1	5IN024.D	09/19/16 19:07

ANALYSIS BATCH (SEQUENCE) SUMMARY

EPA 8260B

Laboratory:	ENCO Orlando	SDG:	AZ06090-TE016
Client:	Tetra Tech, Inc. (TE016)	Project:	NASA-KSC-SW3
Sequence:	AA40538		
Calibration:	1609060	Instrument:	OVGCMS5

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
MS Tune	AA40538-TUN1	5IO001.D	09/20/16 07:47
Calibration Check	AA40538-CCV1	5IO002.D	09/20/16 08:16
LCS	6I20014-BS1	5IO004.D	09/20/16 09:17
Blank	6I20014-BLK1	5IO007.D	09/20/16 10:45
SW3-MW0025-040.0-20160910	AZ06090-03RE1	5IO009.D	09/20/16 11:44
SW3-MW0027-032.0-20160910	AZ06090-04RE1	5IO010.D	09/20/16 12:14
SW3-MW0028-032.0-20160910	AZ06090-05RE1	5IO011.D	09/20/16 12:43
POL-MW0031I-027.5 -20160910	6I20014-MS1	5IO023.D	09/20/16 18:37
POL-MW0031I-027.5 -20160910	6I20014-MSD1	5IO024.D	09/20/16 19:07

MASS SPECTROMETER INSTRUMENT PERFORMANCE CHECK

EPA 8260B

Laboratory:	ENCO Orlando	SDG:	AZ06090-TE016
Client:	Tetra Tech, Inc. (TE016)	Project:	NASA-KSC-SW3
Lab File ID:	5IK012.D	Injection Date:	09/16/16
Instrument ID:	OVGCMS5	Injection Time:	13:29
Sequence:	AA40502	Lab Sample ID:	AA40502-TUN1

m/z	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
50	15 - 40% of 95	33.4	PASS
75	30 - 60% of 95	50.8	PASS
95	Base peak, 100% relative abundance	100	PASS
96	5 - 9% of 95	6.7	PASS
173	Less than 2% of 174	0	PASS
174	50 - 100% of 95	88.3	PASS
175	5 - 9% of 174	7.83	PASS
176	95 - 101% of 174	99	PASS
177	5 - 9% of 176	6.51	PASS

MASS SPECTROMETER INSTRUMENT PERFORMANCE CHECK

EPA 8260B

Laboratory:	ENCO Orlando	SDG:	AZ06090-TE016
Client:	Tetra Tech, Inc. (TE016)	Project:	NASA-KSC-SW3
Lab File ID:	5IN001.D	Injection Date:	09/19/16
Instrument ID:	OVGCMS5	Injection Time:	07:37
Sequence:	AA40509	Lab Sample ID:	AA40509-TUN1

m/z	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
50	15 - 40% of 95	32.2	PASS
75	30 - 60% of 95	49.4	PASS
95	Base peak, 100% relative abundance	100	PASS
96	5 - 9% of 95	6.93	PASS
173	Less than 2% of 174	0	PASS
174	50 - 100% of 95	90	PASS
175	5 - 9% of 174	5.45	PASS
176	95 - 101% of 174	95.9	PASS
177	5 - 9% of 176	7.24	PASS

MASS SPECTROMETER INSTRUMENT PERFORMANCE CHECK

EPA 8260B

Laboratory:	ENCO Orlando	SDG:	AZ06090-TE016
Client:	Tetra Tech, Inc. (TE016)	Project:	NASA-KSC-SW3
Lab File ID:	5IO001.D	Injection Date:	09/20/16
Instrument ID:	OVGCMS5	Injection Time:	07:47
Sequence:	AA40538	Lab Sample ID:	AA40538-TUN1

m/z	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
50	15 - 40% of 95	31.2	PASS
75	30 - 60% of 95	49.5	PASS
95	Base peak, 100% relative abundance	100	PASS
96	5 - 9% of 95	6.54	PASS
173	Less than 2% of 174	0.113	PASS
174	50 - 100% of 95	94.3	PASS
175	5 - 9% of 174	7.62	PASS
176	95 - 101% of 174	95.3	PASS
177	5 - 9% of 176	5.97	PASS

CONTINUING CALIBRATION CHECK

EPA 8260B

Laboratory:	ENCO Orlando	SDG:	AZ06090-TE016
Client:	Tetra Tech, Inc. (TE016)	Project:	NASA-KSC-SW3
Instrument ID:	OVGCMS5	Calibration:	1609060
Lab File ID:	5IN002.D	Calibration Date:	09/16/16 10:22
Sequence:	AA40509	Injection Date:	09/19/16
Lab Sample ID:	AA40509-CCV1	Injection Time:	08:07

		CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Dichlorodifluoromethane	A	50.0	46	0.3776205	0.3509241		-7.1	20
Chloromethane	A	50.0	48	0.7635111	0.7622789	0.1	-3.2	20
Vinyl chloride	A	50.0	53	0.5525518	0.5830998		5.5	20
Bromomethane	A	50.0	41	0.1712452	0.1305344		-18	20
Chloroethane	A	50.0	59	0.3080188	0.3301455		17	20
Trichlorofluoromethane	A	50.0	44	0.5521246	0.5182618		-13	20
Freon 113	A	50.0	49	0.2653261	0.2846437		-2.1	20
Acetone	A	250	210	0.184417	0.1363421		-18	20
1,1-Dichloroethene	A	50.0	52	0.2948511	0.3083179		4.6	20
Carbon disulfide	A	250	250	0.8038069	0.9583778		-0.2	20
Methylene Chloride	A	50.0	46	0.3409272	0.3015343		-7.4	20
Methyl-tert-Butyl Ether	A	50.0	44	0.8027697	0.7581063		-11	20
trans-1,2-Dichloroethene	A	50.0	49	0.3091836	0.3504775		-1.7	20
cis-1,2-Dichloroethene	A	50.0	46	0.3837189	0.3629366		-7.3	20
1,1-Dichloroethane	A	50.0	49	0.7660369	0.7537114	0.1	-1.6	20
2-Butanone	A	250	240	4.454967E-02	4.247415E-02		-4.7	20
Chloroform	A	50.0	49	0.5585487	0.5422855		-2.9	20
1,1,1-Trichloroethane	A	50.0	46	0.4999275	0.4716951		-7.9	20
Methyl acetate	A	50.0	45	0.5699293	0.4610876		-11	20
Cyclohexane	A	50.0	48	0.7904743	0.9463527		-4.6	20
Methyl cyclohexane	A	50.0	50	0.5147981	0.3817992		-0.5	20
Carbon Tetrachloride	A	50.0	46	0.2762984	0.2519736		-8.8	20
1,2-Dichloroethane	A	50.0	46	0.368433	0.2966366		-8.8	20
Benzene	A	50.0	50	0.8278443	0.82081		-0.8	20
Trichloroethene	A	50.0	49	0.2577111	0.2529347		-1.9	20
1,2-Dichloropropane	A	50.0	49	0.2754297	0.278484		-1.1	20
Bromodichloromethane	A	50.0	50	0.2254204	0.2243148		-0.5	20
4-Methyl-2-pentanone	A	250	200	3.572087E-02	3.314939E-02		-19	20
2-Hexanone	A	250	240	0.2454848	0.2331912		-5	20

CONTINUING CALIBRATION CHECK

EPA 8260B

Laboratory:	ENCO Orlando	SDG:	AZ06090-TE016
Client:	Tetra Tech, Inc. (TE016)	Project:	NASA-KSC-SW3
Instrument ID:	OVGCMS5	Calibration:	1609060
Lab File ID:	5IN002.D	Calibration Date:	09/16/16 10:22
Sequence:	AA40509	Injection Date:	09/19/16
Lab Sample ID:	AA40509-CCV1	Injection Time:	08:07

		CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT		
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)	
cis-1,3-Dichloropropene	A	50.0	51	0.2539105	0.3205956		2.0	20	
Toluene	A	50.0	52	1.171789	1.239061		5.7	20	
trans-1,3-Dichloropropene	A	50.0	48	0.5171083	0.5471446		-4.9	20	
1,1,2-Trichloroethane	A	50.0	46	0.3887492	0.3751957		-8.4	20	
Tetrachloroethene	A	50.0	44	0.4322926	0.3847314		-11	20	
Dibromochloromethane	A	50.0	49	0.4220701	0.4122497		-2.3	20	
1,2-Dibromoethane	A	50.0	46	0.4418968	0.400582		-8.9	20	
Chlorobenzene	A	50.0	47	1.406009	1.333671	0.3	-5.1	20	
Ethylbenzene	A	50.0	47	0.7896259	0.7883236		-6.8	20	
m,p-Xylenes	A	100	90	0.9489392	0.9567758		-10	20	
o-Xylene	A	50.0	46	0.8817429	0.9241384		4.8	20	
Bromoform	A	50.0	41	0.2657736	0.2704124	0.1	-18	20	
Styrene	A	50.0	47	1.405042	1.629601		-6.1	20	
Isopropylbenzene	A	50.0	46	2.196136	2.308001		-8.7	20	
1,1,2,2-Tetrachloroethane	A	50.0	42	0.5938555	0.5201591	0.3	-16	20	
1,2,4-Trichlorobenzene	A	50.0	35	0.3238988	0.310384		-30	20	*
1,3-Dichlorobenzene	A	50.0	50	0.9526396	0.9608451		0.90	20	
1,4-Dichlorobenzene	A	50.0	46	1.072773	0.9818165		-7.8	20	
1,2-Dichlorobenzene	A	50.0	45	0.9024179	0.8787498		-9.6	20	
1,2-Dibromo-3-chloropropane	A	50.0	36	0.08846	7.350587E-02		-28	20	*

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

EPA 8260B

Laboratory:	ENCO Orlando	SDG:	AZ06090-TE016
Client:	Tetra Tech, Inc. (TE016)	Project:	NASA-KSC-SW3
Instrument ID:	OVGCMS5	Calibration:	1609060
Lab File ID:	5IO002.D	Calibration Date:	09/16/16 10:22
Sequence:	AA40538	Injection Date:	09/20/16
Lab Sample ID:	AA40538-CCV1	Injection Time:	08:16

		CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Dichlorodifluoromethane	A	50.0	49	0.3776205	0.3717155		-1.6	20
Chloromethane	A	50.0	40	0.7635111	0.6298051	0.1	-20	20
Vinyl chloride	A	50.0	49	0.5525518	0.5373838		-2.7	20
Bromomethane	A	50.0	45	0.1712452	0.1475819		-10	20
Chloroethane	A	50.0	56	0.3080188	0.319326		12	20
Trichlorofluoromethane	A	50.0	50	0.5521246	0.5940668		0.10	20
Freon 113	A	50.0	52	0.2653261	0.3037256		4.5	20
Acetone	A	250	210	0.184417	0.1360988		-18	20
1,1-Dichloroethene	A	50.0	52	0.2948511	0.3078121		4.4	20
Carbon disulfide	A	250	240	0.8038069	0.9376643		-2.3	20
Methylene Chloride	A	50.0	48	0.3409272	0.3139408		-3.6	20
Methyl-tert-Butyl Ether	A	50.0	43	0.8027697	0.7283366		-15	20
trans-1,2-Dichloroethene	A	50.0	47	0.3091836	0.3354592		-5.9	20
cis-1,2-Dichloroethene	A	50.0	45	0.3837189	0.3536542		-9.6	20
1,1-Dichloroethane	A	50.0	50	0.7660369	0.7589664	0.1	-0.9	20
2-Butanone	A	250	210	4.454967E-02	3.699452E-02		-17	20
Chloroform	A	50.0	53	0.5585487	0.5882806		5.3	20
1,1,1-Trichloroethane	A	50.0	50	0.4999275	0.507906		-0.9	20
Methyl acetate	A	50.0	43	0.5699293	0.4421729		-15	20
Cyclohexane	A	50.0	46	0.7904743	0.9137511		-7.9	20
Methyl cyclohexane	A	50.0	50	0.5147981	0.3873725		1.0	20
Carbon Tetrachloride	A	50.0	55	0.2762984	0.3047645		10	20
1,2-Dichloroethane	A	50.0	48	0.368433	0.3132579		-3.7	20
Benzene	A	50.0	49	0.8278443	0.8185052		-1.1	20
Trichloroethene	A	50.0	52	0.2577111	0.2664524		3.4	20
1,2-Dichloropropane	A	50.0	47	0.2754297	0.2627395		-6.7	20
Bromodichloromethane	A	50.0	53	0.2254204	0.239557		6.3	20
4-Methyl-2-pentanone	A	250	210	3.572087E-02	3.384347E-02		-17	20
2-Hexanone	A	250	230	0.2454848	0.2251884		-8.3	20

CONTINUING CALIBRATION CHECK

EPA 8260B

Laboratory:	ENCO Orlando	SDG:	AZ06090-TE016
Client:	Tetra Tech, Inc. (TE016)	Project:	NASA-KSC-SW3
Instrument ID:	OVGCMS5	Calibration:	1609060
Lab File ID:	5IO002.D	Calibration Date:	09/16/16 10:22
Sequence:	AA40538	Injection Date:	09/20/16
Lab Sample ID:	AA40538-CCV1	Injection Time:	08:16

		CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT		
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)	
cis-1,3-Dichloropropene	A	50.0	47	0.2539105	0.2950007		-6.2	20	
Toluene	A	50.0	51	1.171789	1.226237		4.6	20	
trans-1,3-Dichloropropene	A	50.0	49	0.5171083	0.5587614		-2.9	20	
1,1,2-Trichloroethane	A	50.0	47	0.3887492	0.3833944		-6.4	20	
Tetrachloroethene	A	50.0	52	0.4322926	0.4513518		4.4	20	
Dibromochloromethane	A	50.0	52	0.4220701	0.4385098		3.9	20	
1,2-Dibromoethane	A	50.0	45	0.4418968	0.3946668		-10	20	
Chlorobenzene	A	50.0	49	1.406009	1.371601	0.3	-2.4	20	
Ethylbenzene	A	50.0	51	0.7896259	0.8607233		1.7	20	
m,p-Xylenes	A	100	98	0.9489392	1.042188		-2.3	20	
o-Xylene	A	50.0	48	0.8817429	0.9506847		7.8	20	
Bromoform	A	50.0	44	0.2657736	0.2908989	0.1	-12	20	
Styrene	A	50.0	47	1.405042	1.629632		-6.1	20	
Isopropylbenzene	A	50.0	48	2.196136	2.419908		-4.3	20	
1,1,2,2-Tetrachloroethane	A	50.0	42	0.5938555	0.5179909	0.3	-16	20	
1,2,4-Trichlorobenzene	A	50.0	29	0.3238988	0.2607801		-41	20	*
1,3-Dichlorobenzene	A	50.0	50	0.9526396	0.9456881		-0.7	20	
1,4-Dichlorobenzene	A	50.0	48	1.072773	1.024148		-3.9	20	
1,2-Dichlorobenzene	A	50.0	46	0.9024179	0.893765		-8.1	20	
1,2-Dibromo-3-chloropropane	A	50.0	32	0.08846	6.452565E-02		-37	20	*

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

INITIAL CALIBRATION STANDARDS

EPA 8260B

Laboratory:	ENCO Orlando	SDG:	AZ06090-TE016
Client:	Tetra Tech, Inc. (TE016)	Project:	NASA-KSC-SW3
Sequence:	AA40502	Instrument:	OVGCMS5
Calibration:	1609060		

Standard ID	Description	Lab Sample ID	Lab File ID	Analysis Date/Time
A6I0391	MS Tune (lower conc.)	AA40502-TUN1	5IK012.D	09/16/16 13:29
A6I0635	8260 Calibration 1 ppb	AA40502-CAL1	5IK013.D	09/16/16 13:59
A6I0636	8260 Calibration 2 ppb	AA40502-CAL2	5IK014.D	09/16/16 14:29
A6I0637	8260 Calibration 5 ppb	AA40502-CAL3	5IK015.D	09/16/16 14:59
A6I0638	8260 Calibration 20 ppb	AA40502-CAL4	5IK016.D	09/16/16 15:29
A6I0639	8260 Calibration 50 ppb	AA40502-CAL5	5IK017.D	09/16/16 15:58
A6I0640	8260 Calibration 80 ppb	AA40502-CAL6	5IK018.D	09/16/16 16:28
A6I0641	8260 Calibration 100 ppb	AA40502-CAL7	5IK019.D	09/16/16 16:58
A6I0486	8260 scv working 50 ppb	AA40502-SCV1	5IK022.D	09/16/16 18:27

INITIAL CALIBRATION DATA

EPA 8260B

Laboratory: ENCO Orlando
SDG: AZ06090-TE016
Client: Tetra Tech, Inc. (TE016)
Project: NASA-KSC-SW3
Calibration: 1609060
Instrument: OVGCMS5
Matrix: Water
Calibration Date: 09/16/16 10:22

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF
Dichlorodifluoromethane	1	0.4364443	2	0.3235071	5	0.340245	20	0.3384515	50	0.3982964	80	0.4086296
Chloromethane	1	0.9590501	2	0.8025898	5	0.6075007	20	0.691704	50	0.6819277	80	0.7747542
Vinyl chloride	1	0.5863211	2	0.4992006	5	0.4734718	20	0.5175295	50	0.5726696	80	0.5924856
Bromomethane	1	0.1889816	2	0.1592267	5	0.1423735	20	0.10119	50	0.1712025	80	0.2112931
Chloroethane	1	0.3946721	2	0.4022137	5	0.2677628	20	0.3119971	50	0.3058917	80	0.2480118
Trichlorofluoromethane	1	0.6979989	2	0.4512996	5	0.4431825	20	0.5088216	50	0.5638175	80	0.5980327
Freon 113	1	0.3476154	2	0.1609677	5	0.2460854	20	0.2416797	50	0.2737466	80	0.2895512
Acetone	5	0.2844337	10	0.1859652	25	0.1697823	100	0.1511928	250	0.1683699	400	0.1654545
1,1-Dichloroethene	1	0.360902	2	0.2379092	5	0.2778961	20	0.2597212	50	0.2875442	80	0.3153672
Carbon disulfide	5	0.7040382	10	0.5909355	25	0.653013	100	0.7996961	250	0.9533224	400	0.9515258
Methylene Chloride	1	0.4857154	2	0.3318251	5	0.2678827	20	0.33075	50	0.3202675	80	0.319085
Methyl-tert-Butyl Ether	1	1.116778	2	0.6256148	5	0.5975333	20	0.7502872	50	0.8185262	80	0.8318376
trans-1,2-Dichloroethene	1	0.3720748	2	0.2181297	5	0.2560712	20	0.2722667	50	0.3241777	80	0.347405
cis-1,2-Dichloroethene	1	0.5736887	2	0.3369513	5	0.2756094	20	0.3363721	50	0.3733348	80	0.3922252
1,1-Dichloroethane	1	0.963479	2	0.7361184	5	0.6059793	20	0.7034406	50	0.7657048	80	0.7730088
2-Butanone	5	4.196348E-02	10	3.422952E-02	25	4.546988E-02	100	4.378785E-02	250	4.714645E-02	400	4.877336E-02
Chloroform	1	0.5776143	2	0.5018846	5	0.5303713	20	0.5677426	50	0.5586725	80	0.5739075
1,1,1-Trichloroethane	1	0.671174	2	0.4201313	5	0.4268714	20	0.4707829	50	0.4784893	80	0.504175
Methyl acetate	1	0.8843634	2	0.6150238	5	0.4754081	20	0.473381	50	0.5042973	80	0.5103859
Cyclohexane	1	0.6879333	2	0.5245657	5	0.620769	20	0.7805221	50	0.8975449	80	1.005125
Methyl cyclohexane	1	1.123285	2	0.6404285	5	0.3877596	20	0.3242849	50	0.3485352	80	0.3864795
Carbon Tetrachloride	1	0.290535	2	0.2502487	5	0.2571549	20	0.258552	50	0.2743587	80	0.2973216
1,2-Dichloroethane	1	0.5483548	2	0.4288288	5	0.2943788	20	0.3297855	50	0.3292757	80	0.3231623
Benzene	1	1.025459	2	0.8176209	5	0.692702	20	0.7336018	50	0.8065332	80	0.8401583
Trichloroethene	1	0.2760802	2	0.2661908	5	0.2324582	20	0.2370423	50	0.246705	80	0.2673508
1,2-Dichloropropane	1	0.3573085	2	0.2708899	5	0.2338946	20	0.2357751	50	0.26006	80	0.2808476
Bromodichloromethane	1	0.2735858	2	0.1899335	5	0.2038767	20	0.2116097	50	0.2224428	80	0.2346843
4-Methyl-2-pentanone	5	0.0406717	10	1.986221E-02	25	3.362147E-02	100	3.458582E-02	250	3.890959E-02	400	4.067417E-02
2-Hexanone	5	0.2426231	10	0.1918699	25	0.2189735	100	0.2494944	250	0.2641808	400	0.2726627
cis-1,3-Dichloropropene	1	0.1568281	2	0.2187902	5	0.2043979	20	0.2652909	50	0.2983918	80	0.3105236
Toluene	1	1.42877	2	0.9987309	5	1.051643	20	1.149843	50	1.168572	80	1.233173

INITIAL CALIBRATION DATA

EPA 8260B

Laboratory: ENCO Orlando
SDG: AZ06090-TE016
Client: Tetra Tech, Inc. (TE016)
Project: NASA-KSC-SW3
Calibration: 1609060
Instrument: OVGCMS5
Matrix: Water
Calibration Date: 09/16/16 10:22

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF
trans-1,3-Dichloropropene	1	0.6977534	2	0.3783246	5	0.3517557	20	0.5001523	50	0.5297105	80	0.5650368
1,1,2-Trichloroethane	1	0.5062035	2	0.2863648	5	0.3611555	20	0.3531199	50	0.3916581	80	0.3999943
Tetrachloroethene	1	0.4752144	2	0.4202664	5	0.4031873	20	0.3845824	50	0.4113879	80	0.4576238
Dibromochloromethane	1	0.4582983	2	0.3956986	5	0.3620681	20	0.3749556	50	0.4362341	80	0.4496199
1,2-Dibromoethane	1	0.6189301	2	0.3628849	5	0.3814022	20	0.4294655	50	0.4172863	80	0.4321163
Chlorobenzene	1	1.7656	2	1.177289	5	1.272662	20	1.312785	50	1.355733	80	1.404219
Ethylbenzene	1	1.039416	2	0.6375766	5	0.6548046	20	0.7067886	50	0.7747841	80	0.8402732
m,p-Xylenes	2	1.112553	4	0.6829796	10	0.8128476	40	0.9075188	100	0.9687204	160	1.046929
o-Xylene	1	0.9483675	2	0.7498965	5	0.7134979	20	0.8321692	50	0.9195341	80	0.9735309
Bromoform	1	0.2481264	2	0.2132721	5	0.1901861	20	0.2363702	50	0.303337	80	0.3179178
Styrene	1	1.19692	2	1.011931	5	1.19689	20	1.331465	50	1.61592	80	1.637921
Isopropylbenzene	1	2.264767	2	1.839773	5	1.751491	20	2.101074	50	2.30786	80	2.466799
1,1,2,2-Tetrachloroethane	1	0.7870249	2	0.4379119	5	0.5521369	20	0.5628077	50	0.5835002	80	0.591414
1,2,4-Trichlorobenzene	1	0.2368396	2	0.1523308	5	0.2488591	20	0.334515	50	0.3921663	80	0.4281857
1,3-Dichlorobenzene	1	1.059142	2	0.8637823	5	0.8066316	20	0.8875008	50	0.9994945	80	1.010915
1,4-Dichlorobenzene	1	1.439968	2	1.012228	5	0.8874107	20	0.9911218	50	1.040419	80	1.059903
1,2-Dichlorobenzene	1	1.094997	2	0.7247548	5	0.7241089	20	0.8709436	50	0.9560307	80	0.9504984
1,2-Dibromo-3-chloropropane	1	0.1295827	2	5.596612E-02	5	6.316432E-02	20	7.250874E-02	50	9.066683E-02	80	0.1021504
Dibromofluoromethane	10	0.3022045	20	0.3409701	30	0.3812977	40	0.4368649	50	0.4337013	60	0.4520148
Toluene-d8	10	0.7608179	20	0.8958382	30	1.036385	40	1.077712	50	1.075573	60	1.108434
4-Bromofluorobenzene	10	0.6065273	20	0.7465201	30	0.836006	40	0.844765	50	0.8691086	60	0.9002814

INITIAL CALIBRATION DATA (Continued)

EPA 8260B

Laboratory: ENCO Orlando
SDG: AZ06090-TE016
Client: Tetra Tech, Inc. (TE016)
Project: NASA-KSC-SW3
Calibration: 1609060
Instrument: OVGCMS5
Matrix: Water
Calibration Date: 09/16/16 10:22

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF
Dichlorodifluoromethane	100	0.3977698										
Chloromethane	100	0.8270509										
Vinyl chloride	100	0.6261842										
Bromomethane	100	0.2244488										
Chloroethane	100	0.2255821										
Trichlorofluoromethane	100	0.6017192										
Freon 113	100	0.297637										
Acetone	500	0.1657205										
1,1-Dichloroethene	100	0.3246178										
Carbon disulfide	500	0.9741175										
Methylene Chloride	100	0.3309646										
Methyl-tert-Butyl Ether	100	0.878811										
trans-1,2-Dichloroethene	100	0.37416										
cis-1,2-Dichloroethene	100	0.3978506										
1,1-Dichloroethane	100	0.8145273										
2-Butanone	500	5.047713E-02										
Chloroform	100	0.5996484										
1,1,1-Trichloroethane	100	0.5278689										
Methyl acetate	100	0.5266459										
Cyclohexane	100	1.01686										
Methyl cyclohexane	100	0.3928139										
Carbon Tetrachloride	100	0.305918										
1,2-Dichloroethane	100	0.3252452										
Benzene	100	0.8788352										
Trichloroethene	100	0.2781505										
1,2-Dichloropropane	100	0.2892325										
Bromodichloromethane	100	0.24181										
4-Methyl-2-pentanone	500	4.172112E-02										
2-Hexanone	500	0.2785895										
cis-1,3-Dichloropropene	100	0.3231513										
Toluene	100	~~1.362212~~										

INITIAL CALIBRATION DATA (Continued)

EPA 8260B

Laboratory: ENCO Orlando
SDG: AZ06090-TE016
Client: Tetra Tech, Inc. (TE016)
Project: NASA-KSC-SW3
Calibration: 1609060
Instrument: OVGCMS5
Matrix: Water
Calibration Date: 09/16/16 10:22

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF
trans-1,3-Dichloropropene	100	0.5970249										
1,1,2-Trichloroethane	100	0.4227482										
Tetrachloroethene	100	0.4737857										
Dibromochloromethane	100	0.477616										
1,2-Dibromoethane	100	0.4511922										
Chlorobenzene	100	1.553776										
Ethylbenzene	100	0.8737384										
m,p-Xylenes	200	1.111026										
o-Xylene	100	1.035204										
Bromoform	100	0.3512059										
Styrene	100	1.844248										
Isopropylbenzene	100	2.641186										
1,1,2,2-Tetrachloroethane	100	0.642193										
1,2,4-Trichlorobenzene	100	0.4743953										
1,3-Dichlorobenzene	100	1.041011										
1,4-Dichlorobenzene	100	1.078361										
1,2-Dichlorobenzene	100	0.9955921										
1,2-Dibromo-3-chloropropane	100	0.1051809										
Dibromofluoromethane	70	0.4470418										
Toluene-d8	70	1.121998										
4-Bromofluorobenzene	70	0.9437163										

INITIAL CALIBRATION DATA (Continued)

EPA 8260B

Laboratory: ENCO Orlando
SDG: AZ06090-TE016
Client: Tetra Tech, Inc. (TE016)
Project: NASA-KSC-SW3
Calibration: 1609060
Instrument: OVGCMS5
Matrix: Water
Calibration Date: 09/16/16 10:22

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
Dichlorodifluoromethane	0.3776205	11.39772	4.277572	7.230346E-02			15	
Chloromethane	0.7635111	15.1309	4.739857	8.895762E-02	0.993		SPCC (0.1)	
Vinyl chloride	0.5525518	10.1542	4.926143	0.1098009			CCC (30)	
Bromomethane	0.1712452	24.58501	5.597857	7.298577E-02				
Chloroethane	0.3080188	22.34353	5.814429	0.3495599				
Trichlorofluoromethane	0.5521246	16.51599	6.072857	0.3183797	0.999		0.99	
Freon 113	0.2653261	21.91901	6.953143	0.1167051	0.998		0.99	
Acetone	0.184417	24.5418	7.792286	3.584679E-02	1.000		0.99	
1,1-Dichloroethene	0.2948511	14.17909	6.926714	0.1086374			CCC (30)	
Carbon disulfide	0.8038069	19.74949	7.013857	6.083941E-02	0.999		0.99	
Methylene Chloride	0.3409272	19.85363	7.731571	5.511604E-02	0.999		0.99	
Methyl-tert-Butyl Ether	0.8027697	21.67978	8.031572	4.085548E-02	0.998		0.99	
trans-1,2-Dichloroethene	0.3091836	19.73447	7.933286	5.750695E-02	0.995		0.99	
cis-1,2-Dichloroethene	0.3837189	24.39732	9.331286	7.221305E-02	0.999		0.99	
1,1-Dichloroethane	0.7660369	14.2818	8.715286	3.860758E-02			SPCC (0.1)	
2-Butanone	4.454967E-02	12.09976	9.916714	0.0233019			15	
Chloroform	0.5585487	5.837163	9.591143	5.547528E-02			CCC (30)	
1,1,1-Trichloroethane	0.4999275	16.96079	9.858572	2.589859E-02	0.998		0.99	
Methyl acetate	0.5699293	25.71603	7.916143	8.009629E-02	0.999		0.99	
Cyclohexane	0.7904743	24.16406	9.574857	6.870691E-02	0.997		0.99	
Methyl cyclohexane	0.5147981	55.93294	10.80386	2.063072E-02	0.996		0.99	
Carbon Tetrachloride	0.2762984	7.937316	9.786	3.463064E-02			15	
1,2-Dichloroethane	0.368433	24.38882	10.44057	2.773627E-02	1.000		0.99	
Benzene	0.8278443	13.00139	10.24243	4.509675E-02			15	
Trichloroethene	0.2577111	7.269878	10.79014	1.556266E-02			15	
1,2-Dichloropropane	0.2754297	15.1727	11.32243	3.977353E-02	0.997		CCC (30)	
Bromodichloromethane	0.2254204	12.27968	11.34043	3.768543E-02			15	
4-Methyl-2-pentanone	3.572087E-02	21.45489	12.44286	5.262009E-02	0.999		0.99	
2-Hexanone	0.2454848	12.64971	13.16643	2.759097E-02			15	
cis-1,3-Dichloropropene	0.2539105	24.49909	11.92586	3.182647E-02	0.998		0.99	
Toluene	1.171789	12.92456	12.149	3.724888E-02			CCC (30)	
trans-1,3-Dichloropropene	0.5171083	23.4684	12.495	2.267636E-02	0.997		0.99	

INITIAL CALIBRATION DATA (Continued)

EPA 8260B

Laboratory: ENCO Orlando
SDG: AZ06090-TE016
Client: Tetra Tech, Inc. (TE016)
Project: NASA-KSC-SW3
Calibration: 1609060
Instrument: OVGCMS5
Matrix: Water
Calibration Date: 09/16/16 10:22

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
1,1,2-Trichloroethane	0.3887492	17.44647	12.65657	2.099602E-02	0.998		0.99	
Tetrachloroethene	0.4322926	8.399485	12.51214	4.469055E-02			15	
Dibromochloromethane	0.4220701	10.53946	12.84057	2.651013E-02			15	
1,2-Dibromoethane	0.4418968	18.97515	13.1	4.919709E-02	0.999		0.99	
Chlorobenzene	1.406009	13.99933	13.52557	1.941245E-02			SPCC (0.3)	
Ethylbenzene	0.7896259	17.94073	13.49957	3.148429E-02	0.997		CCC (30)	
m,p-Xylenes	0.9489392	16.8832	13.611	2.596649E-02	0.996		0.99	
o-Xylene	0.8817429	13.57706	14.02229	0.0108264			15	
Bromoform	0.2657736	22.29933	14.15514	3.845108E-02	0.993		SPCC (0.1)	
Styrene	1.405042	21.31597	14.06357	1.113388E-02	0.993		0.99	
Isopropylbenzene	2.196136	14.66396	14.29129	2.184088E-02	0.996		0.99	
1,1,2,2-Tetrachloroethane	0.5938555	17.76599	14.75014	1.188949E-02	0.997		SPCC (0.3)	
1,2,4-Trichlorobenzene	0.3238988	35.85975	18.55814	1.459649E-02	0.992		0.99	
1,3-Dichlorobenzene	0.9526396	10.33855	15.72357	2.780361E-02			15	
1,4-Dichlorobenzene	1.072773	16.17993	15.816	3.265649E-02	1.000		0.99	
1,2-Dichlorobenzene	0.9024179	15.36162	16.34814	2.285354E-02	0.999		0.99	
1,2-Dibromo-3-chloropropane	0.08846	29.59808	17.45043	6.418709E-02	0.995		0.99	
Dibromofluoromethane	0.3991564	14.75304	9.791143	4.352569E-02	0.998		0.99	
Toluene-d8	1.010965	13.2051	12.09586	0.0216519	0.999		0.99	
4-Bromofluorobenzene	0.8209893	13.70817	14.616	1.818835E-02	0.998		0.99	

SECOND-SOURCE CALIBRATION VERIFICATION

EPA 8260B

Laboratory: ENCO Orlando **SDG:** AZ06090-TE016

Client: Tetra Tech, Inc. (TE016) **Project:** NASA-KSC-SW3

Calibration: 1609060 **Laboratory ID:** AA40502-SCV1

Sequence: AA40502 **Standard ID:** A6I0486

ANALYTE	EXPECTED (ug/L)	FOUND (ug/L)	% DRIFT	QC LIMIT
Cyclohexane	50.0	52	4.0	20.00
Ethylbenzene	50.0	53	5.0	20.00
Carbon Tetrachloride	50.0	57	14.0	20.00
1,3-Dichlorobenzene	50.0	56	12.2	20.00
4-Bromofluorobenzene	50.0	52	4.3	20.00
Toluene-d8	50.0	50	0.9	20.00
Dibromofluoromethane	50.0	49	-2.7	20.00
Methyl-tert-Butyl Ether	50.0	52	4.0	20.00
trans-1,2-Dichloroethene	50.0	50	-1.0	20.00
cis-1,2-Dichloroethene	50.0	50	-0.5	20.00
Tetrachloroethene	50.0	54	8.9	20.00
Acetone	250	250	0.9	20.00
1,2,4-Trichlorobenzene	50.0	46	-7.8	20.00
Chloroform	50.0	55	10.6	20.00
Chlorobenzene	50.0	55	10.4	20.00
Toluene	50.0	57	14.4	20.00
Methyl cyclohexane	50.0	56	12.7	20.00
m,p-Xylenes	100	100	3.7	20.00
4-Methyl-2-pentanone	250	240	-5.6	20.00
1,2-Dichloroethane	50.0	53	5.1	20.00
1,2-Dibromoethane	50.0	53	5.5	20.00
1,4-Dichlorobenzene	50.0	52	3.1	20.00
trans-1,3-Dichloropropene	50.0	55	9.3	20.00
cis-1,3-Dichloropropene	50.0	53	5.7	20.00
Styrene	50.0	55	9.3	20.00
Dibromochloromethane	50.0	58	16.6	20.00
1,1-Dichloroethene	50.0	56	11.8	20.00

SECOND-SOURCE CALIBRATION VERIFICATION

EPA 8260B

Laboratory: ENCO Orlando **SDG:** AZ06090-TE016

Client: Tetra Tech, Inc. (TE016) **Project:** NASA-KSC-SW3

Calibration: 1609060 **Laboratory ID:** AA40502-SCV1

Sequence: AA40502 **Standard ID:** A6I0486

ANALYTE	EXPECTED (ug/L)	FOUND (ug/L)	% DRIFT	QC LIMIT
1,2-Dibromo-3-chloropropane	50.0	40	-19.5	20.00
1,2-Dichlorobenzene	50.0	53	6.8	20.00
o-Xylene	50.0	53	5.8	20.00
1,1,2,2-Tetrachloroethane	50.0	50	-0.5	20.00
Methyl acetate	50.0	47	-5.8	20.00
Trichloroethene	50.0	56	11.5	20.00
1,1,2-Trichloroethane	50.0	52	3.6	20.00
2-Butanone	250	270	7.1	20.00
1,2-Dichloropropane	50.0	51	3.0	20.00
Freon 113	50.0	53	6.9	20.00
2-Hexanone	250	260	4.5	20.00
Trichlorofluoromethane	50.0	50	-0.08	20.00
Isopropylbenzene	50.0	55	10.9	20.00
1,1-Dichloroethane	50.0	53	6.4	20.00
Bromodichloromethane	50.0	57	13.3	20.00
Bromoform	50.0	47	-6.6	20.00
Carbon disulfide	50.0	53	6.0	20.00
Methylene Chloride	50.0	51	1.9	20.00
Vinyl chloride	50.0	51	1.2	20.00
Chloroethane	50.0	54	7.7	20.00
Chloromethane	50.0	48	-3.7	20.00
Bromomethane	50.0	43	-14.9	20.00
1,1,1-Trichloroethane	50.0	52	4.9	20.00
Benzene	50.0	54	8.1	20.00
Dichlorodifluoromethane	50.0	58	15.6	20.00

* Values outside of QC limits

ANALYSIS SEQUENCE

AA40509

Instrument: OVGCMS5

Calibration ID: 1609060

Lab Number	Analysis	Container	Order	Position	STD ID	ISTD ID	Client
AA40509-TUN1	QC		1		A6I0391		
AA40509-CCV1	QC		2		A6I0454	A6H1179	
6I19007-BS1	QC		3			A6H1179	
6I19007-BSD1	QC		4			A6H1179	
6I19007-BLK1	QC		5			A6H1179	
AZ06259-07RE1	8260B	C	6			A6H1179	
AZ06259-08RE1	8260B	C	7			A6H1179	
AZ06256-01	8260B Arom	B	8			A6H1179	
AZ06451-01	8260B Arom	E	9			A6H1179	
AZ06451-02	8260B Arom	E	10			A6H1179	
6I19025-BS1	QC		11			A6H1179	
6I19025-BLK1	QC		12			A6H1179	
AZ06090-01	8260B TCL SOM01.2 CLP-LIKE	B	13			A6H1179	Tetra Tech, Inc. (TE016)
AZ06090-02	8260B TCL SOM01.2 CLP-LIKE	A	14			A6H1179	Tetra Tech, Inc. (TE016)
AZ06090-03	8260B TCL SOM01.2 CLP-LIKE	A	15			A6H1179	Tetra Tech, Inc. (TE016)
AZ06090-04	8260B TCL SOM01.2 CLP-LIKE	A	16			A6H1179	Tetra Tech, Inc. (TE016)
AZ06090-05	8260B TCL SOM01.2 CLP-LIKE	A	17			A6H1179	Tetra Tech, Inc. (TE016)
AZ06090-06	8260B TCL SOM01.2 CLP-LIKE	A	18			A6H1179	Tetra Tech, Inc. (TE016)
AZ06090-07	8260B TCL SOM01.2 CLP-LIKE	B	19			A6H1179	Tetra Tech, Inc. (TE016)
AZ06090-08	8260B TCL SOM01.2 CLP-LIKE	A	20			A6H1179	Tetra Tech, Inc. (TE016)
6I19025-MS1	QC		21			A6H1179	
6I19025-MSD1	QC		22			A6H1179	

Samples Loaded By Date

Data Processed By Date

VOLATILES GC/MS LOGBOOK

Volatiles

EPA Method 624

SW-846 Method 8260

Tune Start Date/Time: 09/19/16
Sequence: AA010509
Batch: 6I19007 / 6I19025
Method: 8260

Surrogate ID: AG IO390
Internal ID: AG H1178
LCS Mix 2⁰: AG IO392
LCS Acrolein 2⁰: AG H1092
LCS Gas 2⁰: AG IO348

8260 Mix: AG IO451
8260 Add: AG IO316
8260 Ac/Ac: AG H1172
8260 Gases: AG IO450
Instrument #: MS-5

Filename	ENCO No.	Vial #	Dilution Factor	Pos.	pH (<2)	RC (Y/N)	Comments	LIMS
SIN001	Tune			1			evaluate	
SIN002	CCV1			2			CCC's & SPCC's	
SIN003	BS1			3			✓	
SIN004	BSD1			4			✓	
SIN005	rinse		KW 09/19/16	5				
SIN006	BLK1			6			✓	
SIN007	A206059-07Re1	C	1	7			✓	
SIN008	A206059-08Re1	C	1	8			✓	
SIN009	A206256-01	B	1	9			✓	
SIN010	A206451-01	E	1	10			✓	
SIN011	A206451-02	E	1	11			✓	
SIN012	6I19025-BS1			12				
SIN013	rinse		KW 09/19/16	13				
SIN014	6I19025-BLK1			14	KW 09/19/16		✓	
SIN015	A206090-01	B	1	15	✓	N	✓	
SIN016	A206090-02	A	1	16	✓	N	✓	
SIN017	A206090-03	A	5	17	✓	N	✓ rough overd. lute	
SIN018	A206090-04	A	10	18	✓	N	✓ rough overd. lute	
SIN019	A206090-05	A	10	19	✓	N	✓ rough overd. lute	
SIN020	A206090-06	A	1	20	✓	N	✓	

Analyst: KW

VOLATILES GC/MS LOGBOOK
Volatiles
EPA Method 624
SW-846 Method 8260

Tune Start Date/Time:	Surrogate ID:	8260 Mix:
Sequence:	Internal ID:	~~8260 Add:~~
Batch:	~~LCS Mix 2⁰:~~	8260 Ac/Ac:
Method:	LCS Acrolein 2⁰: See pg 20 KMO 09/9/14	8260 Gases:
	LCS Gas 2⁰:	**Instrument #:** MS-5

Filename	ENCO No.	Vial #	Dilution Factor	Pos.	pH (<2)	RC (Y/N)	Comments	LIMS
SIN021	AZ06090-07	B	1	21	✓	N	✓	
SIN022	AZ06090-08	A	1	22	✓	N	✓	
SIN023	6I19025-MS1	C	1	23	✓	N	✓	
SIN024	6I19025-MSD1	C	1	23	✓	N	✓	

KMO 09/20/14

Analyst: KMO

GC/MS QA-QC Check Report

Tune File : C:\msdchem\1\data\091916\5IN001.D
Tune Time : 19 Sep 2016 7:37 am

Daily Calibration File : C:\msdchem\1\data\091616\5IK017.D

1122440 1890600 875936

1135500

File	Sample	Surrogate Recovery %				Internal Standard Responses		
5IN002.D								
	AA50509-CC	96	98	100	98	1390714	2265031	1036110
			1316031					
5IN003.D								
	6I19007-BS	95	89	99	101	1311029	2145938	948321
			1234942					
5IN004.D								
	6I19007-BS	96	86	99	97	1281245	2164971	959916
			1233285					
5IN006.D								
	6I19007-BL	91	84	96	95	1368205	2289071	995016
			1243752					
5IN007.D								
	AZ06259-07	93	82	99	89	1230925	2034426	810175
			833657					
5IN008.D								
	AZ06259-08	100	85	97	93	1125671	1959123	795548
			844696					
5IN009.D								
	AZ06256-01	97	94	97	94	1112288	1856985	792516
			870769					
5IN010.D								
	AZ06451-01	103	96	103	103	1157460	1937405	886440
			1186782					
5IN011.D								
	AZ06451-02	97	89	101	98	1179499	1947751	880052
			1019585					
5IN012.D								
	6I19025-BS	104	100	103	104	1228126	2116334	936198
			1269251					
5IN014.D								
	6I19025-BL	99	98	106	105	1255883	2085638	947505
			1242736					
5IN015.D								
	AZ06090-01	104	99	104	107	1226939	2058138	921465
			1219364					
5IN016.D								
	AZ06090-02	102	98	102	101	1224832	2114827	936825
			1263469					
5IN017.D								

	AZ06090-03	99	99	102	99	1231267	2031485	934893
			1237379					
5IN018.D								
	AZ06090-04	100	101	106	106	1213478	2050493	913265
			1248080					
5IN019.D								
	AZ06090-05	100	95	101	108	1194885	2035035	891800
			1208769					
5IN020.D								
	AZ06090-06	99	97	102	101	1219787	2014441	923893
			1233611					
5IN021.D								
	AZ06090-07	102	101	106	101	1186823	1963489	876623
			1173489					
5IN022.D								
	AZ06090-08	101	98	97	101	1220714	2056967	890141
			1169139					
5IN023.D								
	6I19025-MS	103	101	101	98	1192535	2015081	917480
			1217993					
5IN024.D								
	6I19025-MS	101	101	101	99	1193913	2018882	919701
			1219593					

(fails) - fails 12hr time check * - fails criteria

Created: Tue Sep 20 08:26:32 2016 OVGCMS5

PREPARATION BENCH SHEET

Printed: 9/19/2016 1:58:15PM

Analysis
8260B TCL SOM01.2 CLP-LIKE [EPA 8260B]

6I19025

ENCO Orlando

Prepared using: EPA 5030B_MS

Surrogate Solution
___ A6H0787 8260 surr working (lower conc.)

Spiking Solution
A6I0392 8260 2nd source Mega Mix
A6I0503 8260 2nd source Gases/Acrolein virtual

Matrix: Water

Lab Number	Code	Sample ID, Source and Sample Location	Due Date	Analysis	pH adj	Res Cl(1)	Initial (mL)	Final (mL)	Spike ID	ul Spike	ul Surr1	Comments
6I19025-BLK1		Blank		QC			5	5			5	
6I19025-BS1		LCS		QC			5	5	A6I0503 A6I0392	2 2	5	
6I19025-MS1		Matrix Spike [AZ06090-01]		QC			5	5	A6I0503 A6I0392	2 2	5	
6I19025-MSD1		Matrix Spike Dup [AZ06090-01]		QC			5	5	A6I0503 A6I0392	2 2	5	
AZ06090-01	D	SW3-MW0009-020.0-20160910B[MS45	21-Sep-16	8260B TCL SOM01.2 CLP-LIKE			5	5			5	hist 1x rgg 91316
AZ06090-02	D	SW3-MW0026-040.0-20160910A[MS45	21-Sep-16	8260B TCL SOM01.2 CLP-LIKE			5	5			5	hist 1x rgg 91316
AZ06090-03	D	SW3-MW0025-040.0-20160910A[MS45	21-Sep-16	8260B TCL SOM01.2 CLP-LIKE			5	5			5	hist 5x rgg 91316
AZ06090-04	D	SW3-MW0027-032.0-20160910A[MS45	21-Sep-16	8260B TCL SOM01.2 CLP-LIKE			5	5			5	hist 10x rgg 91316
AZ06090-05	D	SW3-MW0028-032.0-20160910A[MS45	21-Sep-16	8260B TCL SOM01.2 CLP-LIKE			5	5			5	hist 10x rgg 91316
AZ06090-06	D	SW3-SW0002-000.5-20160910A[MS45	21-Sep-16	8260B TCL SOM01.2 CLP-LIKE			5	5			5	hist 1x rgg 91316
AZ06090-07	D	SW3-SW0003-000.5-20160910B[MS45	21-Sep-16	8260B TCL SOM01.2 CLP-LIKE			5	5			5	run 1x, JAJ 9/14/16
AZ06090-08	D	TRIP BLANK A[MS45	21-Sep-16	8260B TCL SOM01.2 CLP-LIKE			5	5			5	tb

(1) Before solvent extraction proceeds, verify that there is no residual chlorine above 0.5 mg/L. Any sample above this must be treated to remove excess chlorine before extraction, and this documented as a comment.

PREPARATION BENCH SHEET

Printed: 9/19/2016 1:58:15PM

6I19025

ENCO Orlando

Prepared using: EPA 5030B_MS

Surrogate Solution

___	A6H0787	8260 surr working (lower conc.)

Spiking Solution

A6I0392	8260 2nd source Mega Mix
A6I0503	8260 2nd source Gases/Acrolein virtual

Matrix: Water

Lab Number	Code	Sample ID, Source and Sample Location	Due Date	Analysis	pH adj	Res Cl(1)	Initial (mL)	Final (mL)	Spike ID	ul Spike	ul Surr1	Comments

Instrument 5

EST Centurian autosampler manufacturer reccommends adding 5 uL of IS/SS.

Start Date _____

StopDate _____

Instrument ID _____

Standard ID#	Description	Manufacture Lot#

_____ _____

Samples Prepared By Date

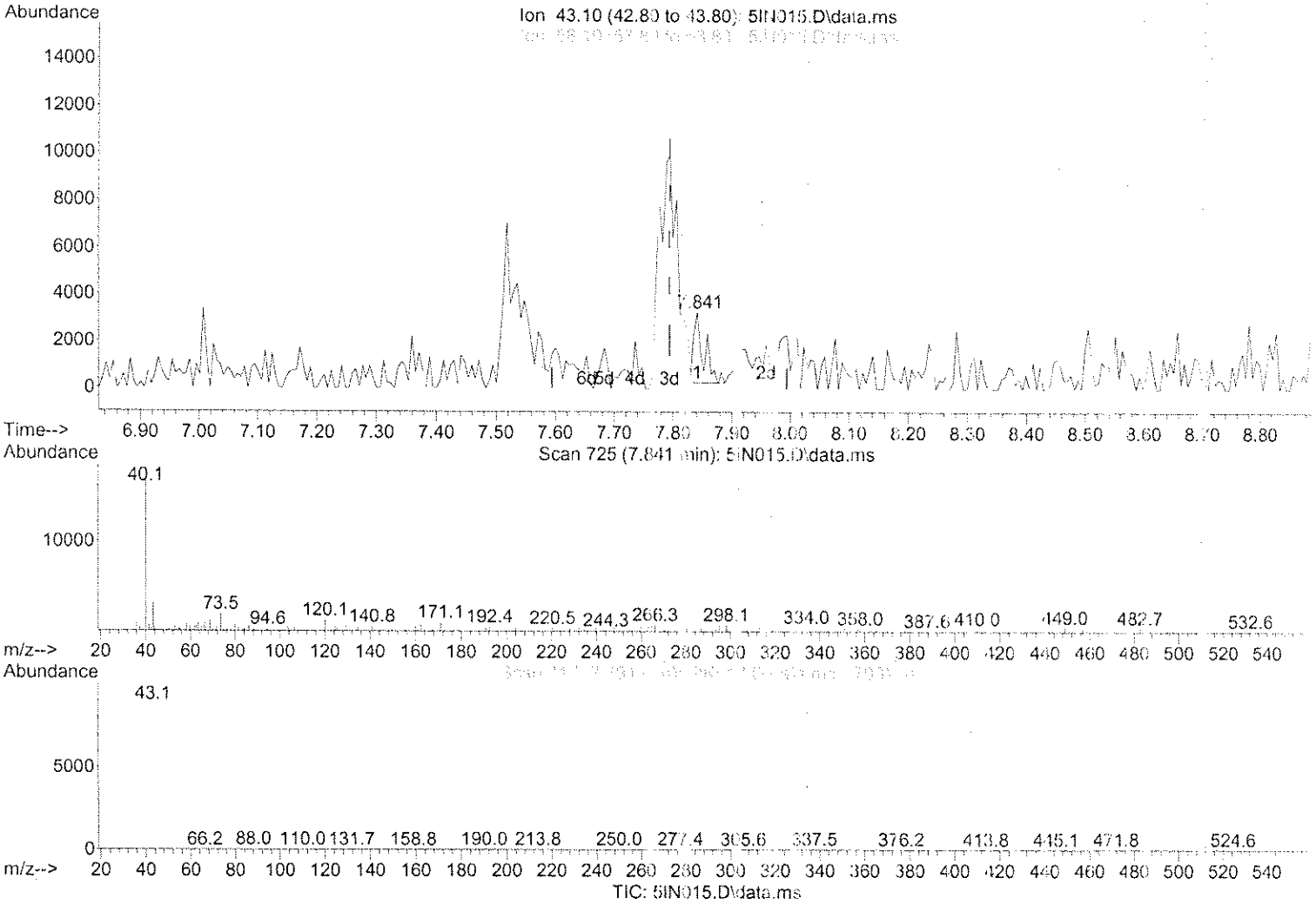
_____ _____

Samples Prepared By Date

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\091916\
Data File : 5IN015.D
Acq On : 19 Sep 2016 2:41 pm
Operator : KKW
InstName : OVGCMS5
Sample : AZ06090-01
Misc :
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Sep 20 08:23:19 2016
Quant Method : C:\msdchem\1\methods\091616.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Mon Sep 19 08:51:53 2016
Response via : Initial Calibration



TIC: 5IN015.D\data.ms

(15) Acetone

7.841min (+ 0.047) 0.88 ug/L

response 3571

Ion	Exp%	Act%
43.10	100.00	100.00
58.10	30.00	30.78
0.00	0.00	0.00
0.00	0.00	0.00

Select One:

[N] Original Integration [ ] Manual Integration

Select reason for manual integration:

[ ] Poor integration (peak tailing, baseline selection)

[ ] Uncorrect peak selection/Peak not found

[ ] Hump integration

[ ] Baseline drop for split peaks

[ ] ISTD reintegration

[ ] Other:

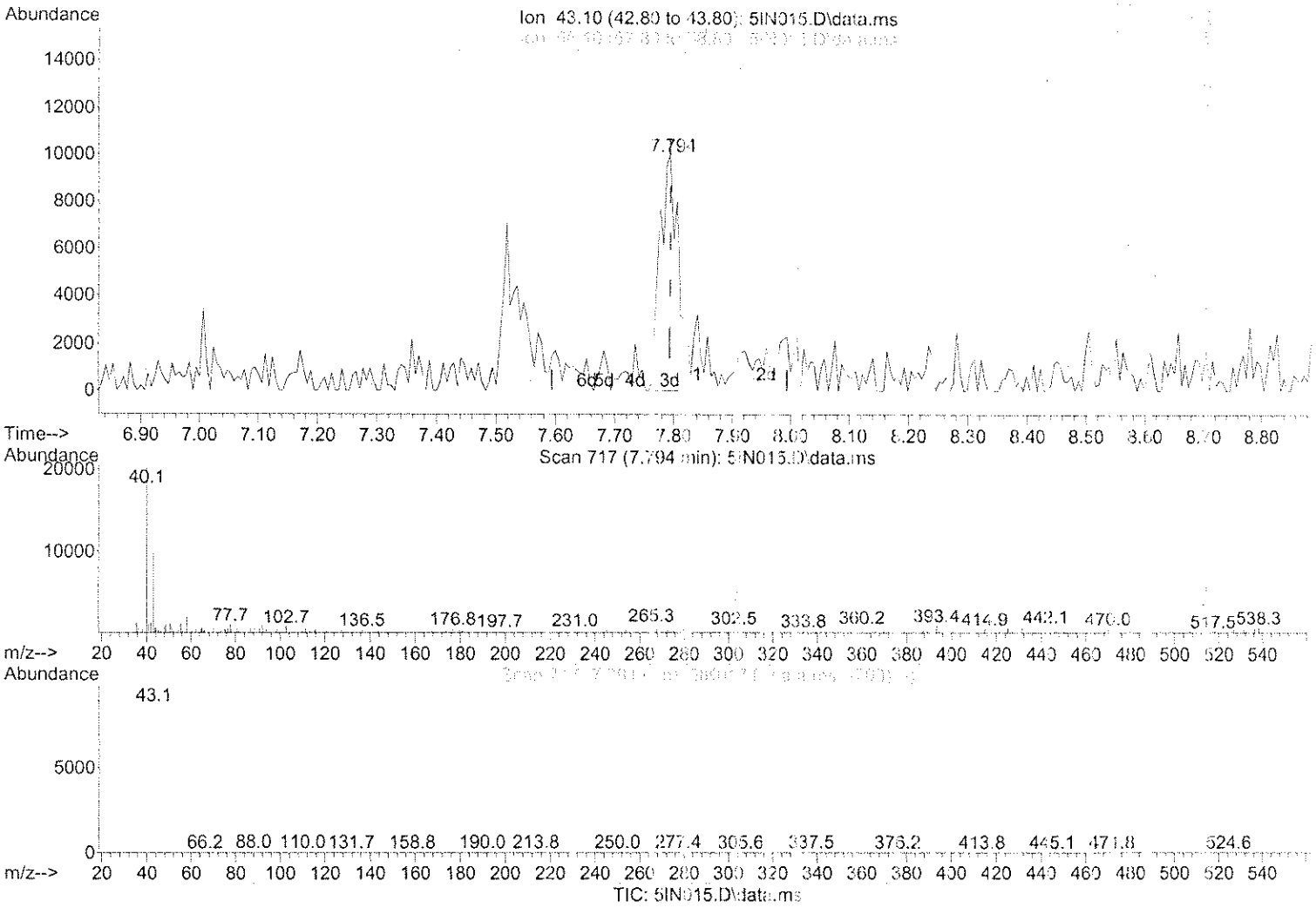
Review by/Date KKW 09/19/16

Review by/Date: JD 9/20/16

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\091916\
Data File : 5IN015.D
Acq On : 19 Sep 2016 2:41 pm
Operator : KKW
InstName : OVGCMS5
Sample : AZ06090-01
Misc :
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Sep 20 08:23:19 2016
Quant Method : C:\msdchem\1\methods\091616.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Mon Sep 19 08:51:53 2016
Response via : Initial Calibration



(15) Acetone

7.794min (-0.000) 5.44 ug/L m

response 22113

Ion	Exp%	Act%
43.10	100.00	100.00
58.10	30.00	4.97#
0.00	0.00	0.00
0.00	0.00	0.00

Select One:

[ ] Original Integration [X] Manual Integration

Select reason for manual integration:

[ ] Poor integration (peak tailing, baseline selection)

[X] Incorrect peak selection/Peak not found

[ ] Hump integration

[ ] Baseline drop for split peaks

[ ] ISTD reintegration

[ ] Other:

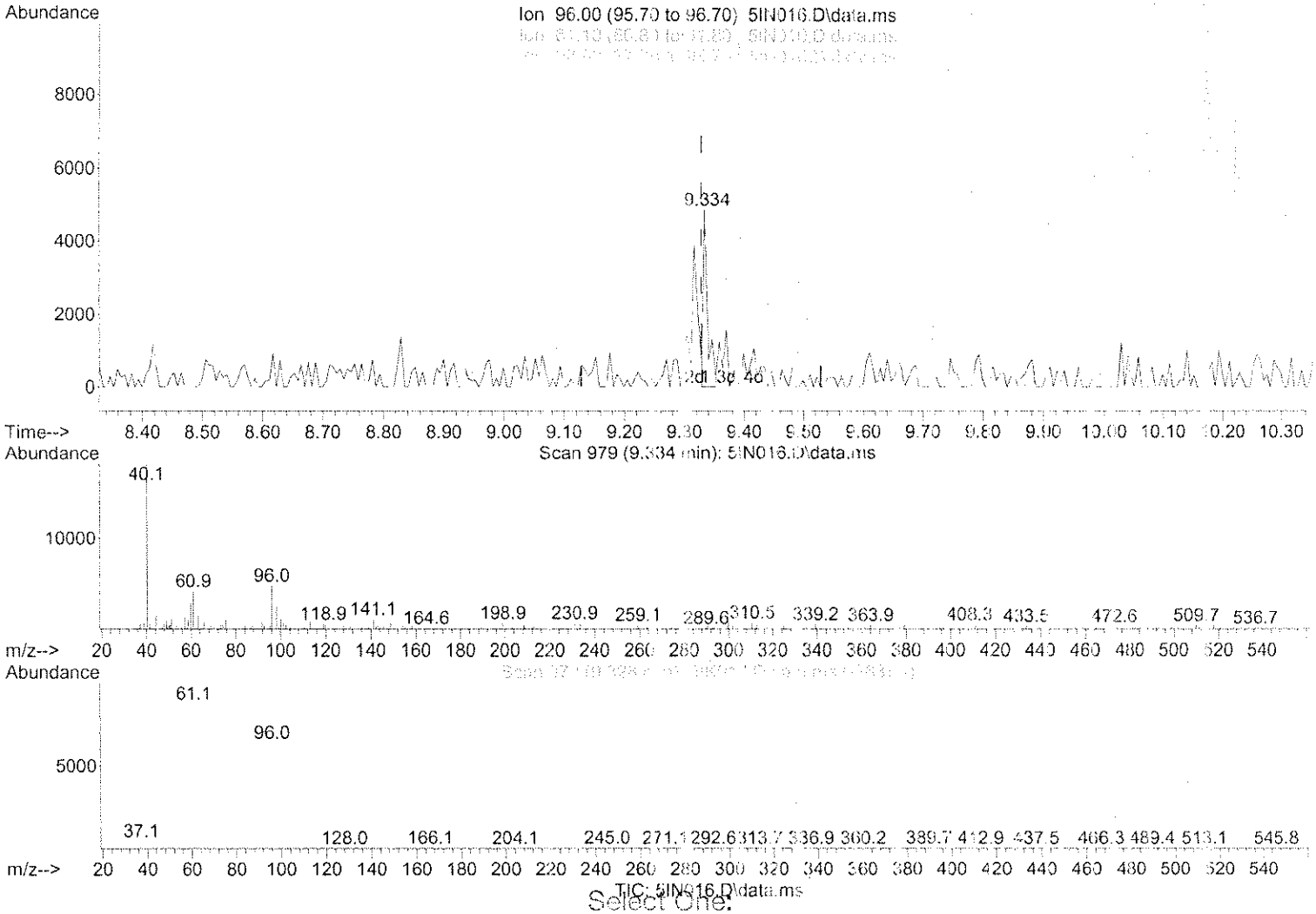
Review by/Date KEW 09/19/16

Review by/Date: JP 9/20/16

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\091916\
Data File : 5IN016.D
Acq On : 19 Sep 2016 3:11 pm
Operator : KKW
InstName : OVGCMS5
Sample : AZ06090-02
Misc :
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Sep 20 08:23:24 2016
Quant Method : C:\msdchem\1\methods\091616.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Mon Sep 19 08:51:53 2016
Response via : Initial Calibration



(26) c-1,2-Dichloroethene

9.334min (+ 0.006) 0.27 ug/L

response 2563

Ion	Exp%	Act%
96.00	100.00	100.00
61.10	168.80	434.92#
98.00	60.70	234.80#
0.00	0.00	0.00

Select One:

[X] Original Integration [ ] Manual Integration

Select reason for manual integration:

[ ] Poor integration (peak tailing, baseline selection)

[ ] Incorrect peak selection/Peak not found

[ ] Hump integration

[ ] Baseline drop for split peaks

[ ] ISTD reintegration

[ ] Other:

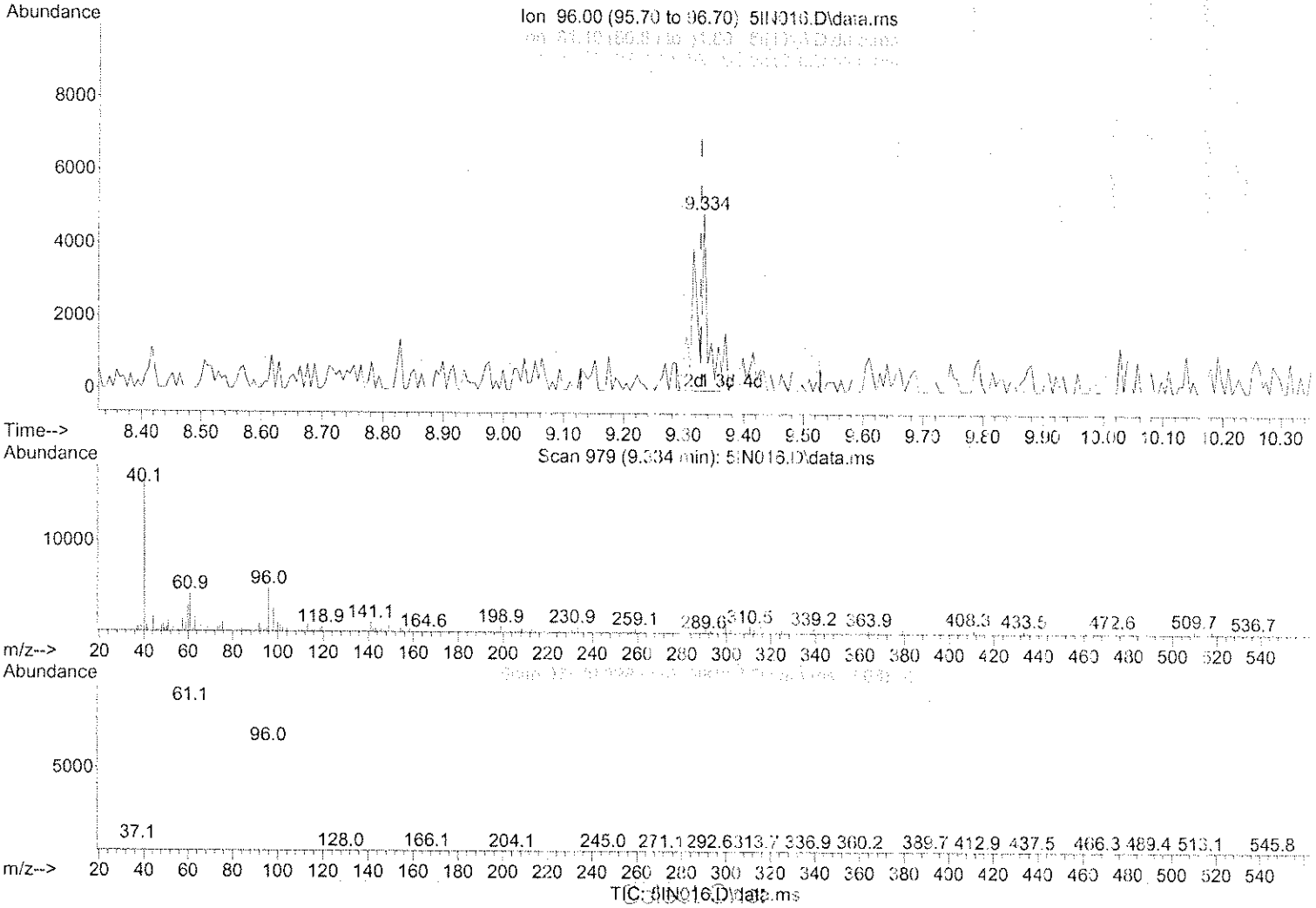
Review by/Date KW 09/20/16

Peer Review/Date: JB 9/20/16

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\091916\
Data File : 5IN016.D
Acq On : 19 Sep 2016 3:11 pm
Operator : KKW
InstName : OVGCMS5
Sample : AZ06090-02
Misc :
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Sep 20 08:23:24 2016
Quant Method : C:\msdchem\1\methods\091616.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Mon Sep 19 08:51:53 2016
Response via : Initial Calibration



TIC: 5IN016.D\data.ms

(26) c-1,2-Dichloroethene

9.334min (+ 0.006) 0.69 ug/L m

response 6626

Ion	Exp%	Act%
96.00	100.00	100.00
61.10	168.80	168.23
98.00	60.70	90.82#
0.00	0.00	0.00

[ ] Original Integration [ ] Manual Integration

Select reason for manual integration:

[ ] Poor integration (peak tailing, baseline selection)

[ ] Incorrect peak selection/Peak not found

[ ] Hump integration

[ ] Baseline drop for split peaks

[ ] ISTD reintegration

[ ] Other:

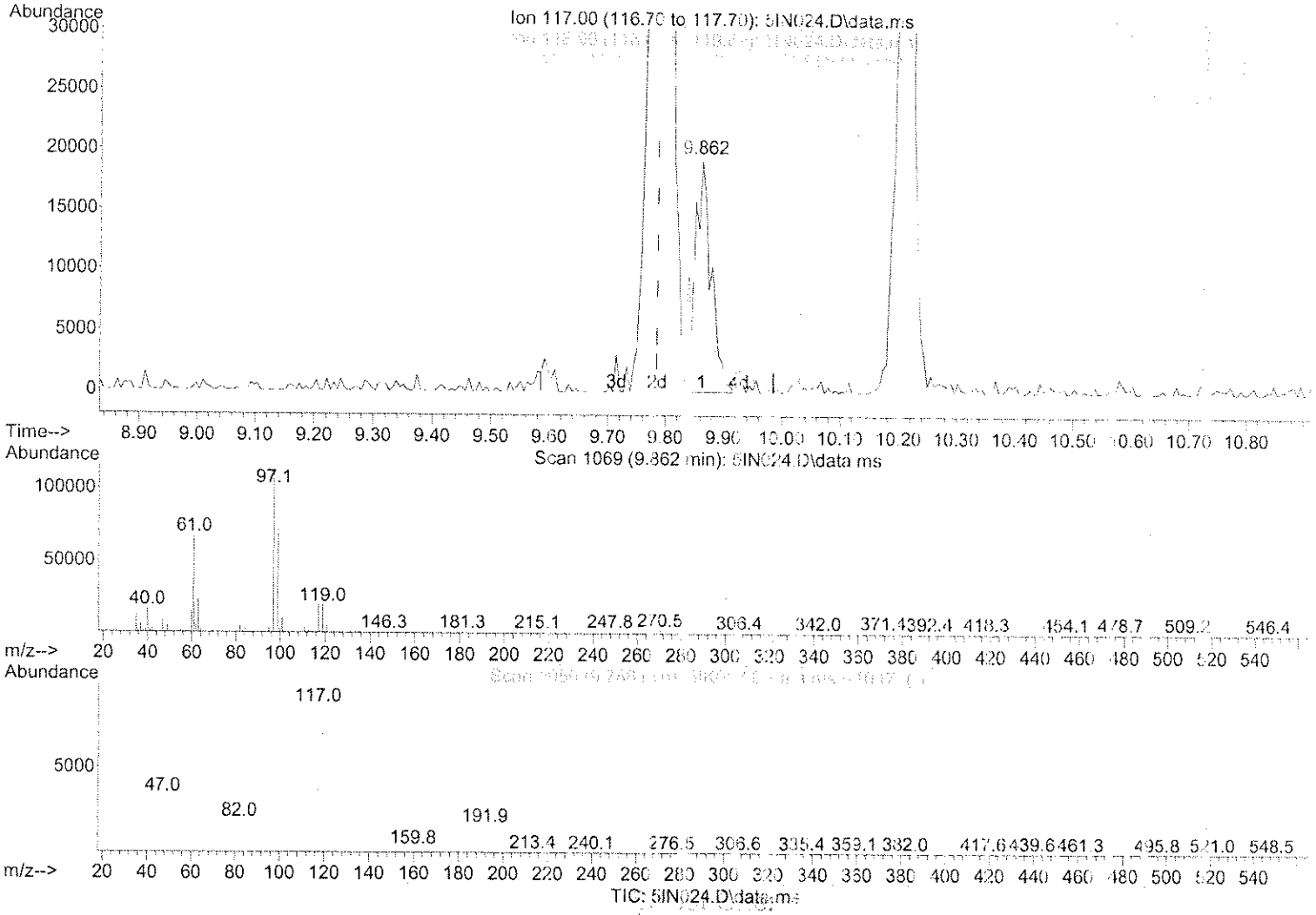
Review by/Date KKW 09/20/16

Review by/Date: [illegible] 9/26/16

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\091916\
Data File : 5IN024.D
Acq On : 19 Sep 2016 7:07 pm
Operator : KKW
InstName : OVGCMS5
Sample : 6I19025-MSD1
Misc :
ALS Vial : 23 Sample Multiplier: 1

Quant Time: Sep 20 08:24:03 2016
Quant Method : C:\msdchem\1\methods\091616.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Mon Sep 19 08:51:53 2016
Response via : Initial Calibration



TIC: 5IN024.D\data.ms

(40) Carbon Tetrachloride

9.862min (+ 0.076) 3.55 ug/L

response 39653

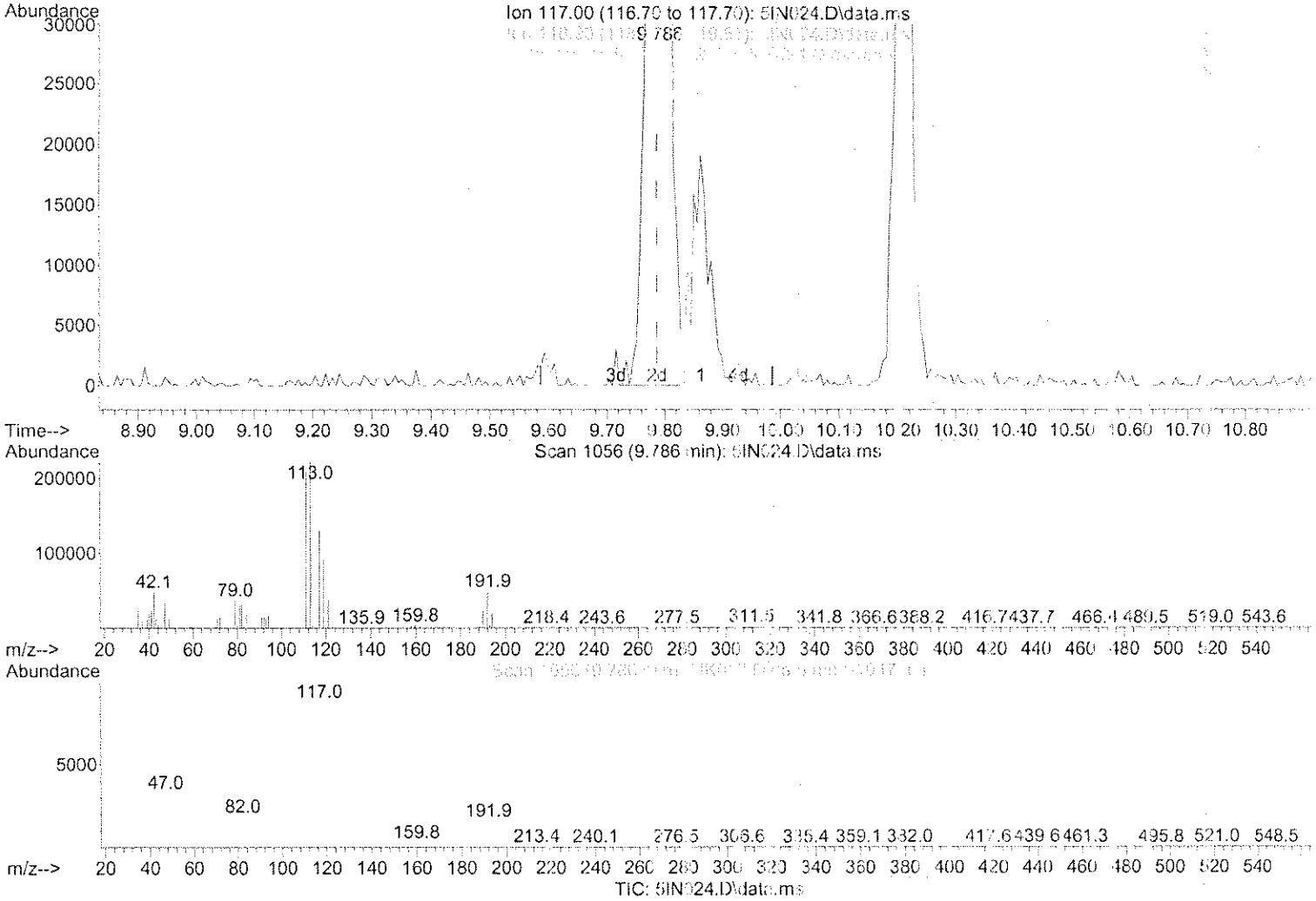
Ion	Exp%	Act%
117.00	100.00	100.00
118.90	109.90	106.00
82.00	25.40	20.51
0.00	0.00	0.00

[ ] Original Integration [ ] Manual Integration
Select reason for manual integration:
[ ] Poor integration (peak tailing, baseline selection)
[X] Incorrect peak selection/Peak not found
[ ] Hump integration
[ ] Baseline drop for split peaks
[ ] ISTD reintegration
[ ] Other:
Review by/Date KKW 09/20/16
Review by/Date: JD 9/26/16

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\091916\
Data File : 5IN024.D
Acq On : 19 Sep 2016 7:07 pm
Operator : KKW
InstName : OVGCMS5
Sample : 6I19025-MSD1
Misc :
ALS Vial : 23 Sample Multiplier: 1

Quant Time: Sep 20 08:24:03 2016
Quant Method : C:\msdchem\1\methods\091616.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Mon Sep 19 08:51:53 2016
Response via : Initial Calibration



(40) Carbon Tetrachloride

9.786min (-0.000) 23.88 ug/L m

response 266375

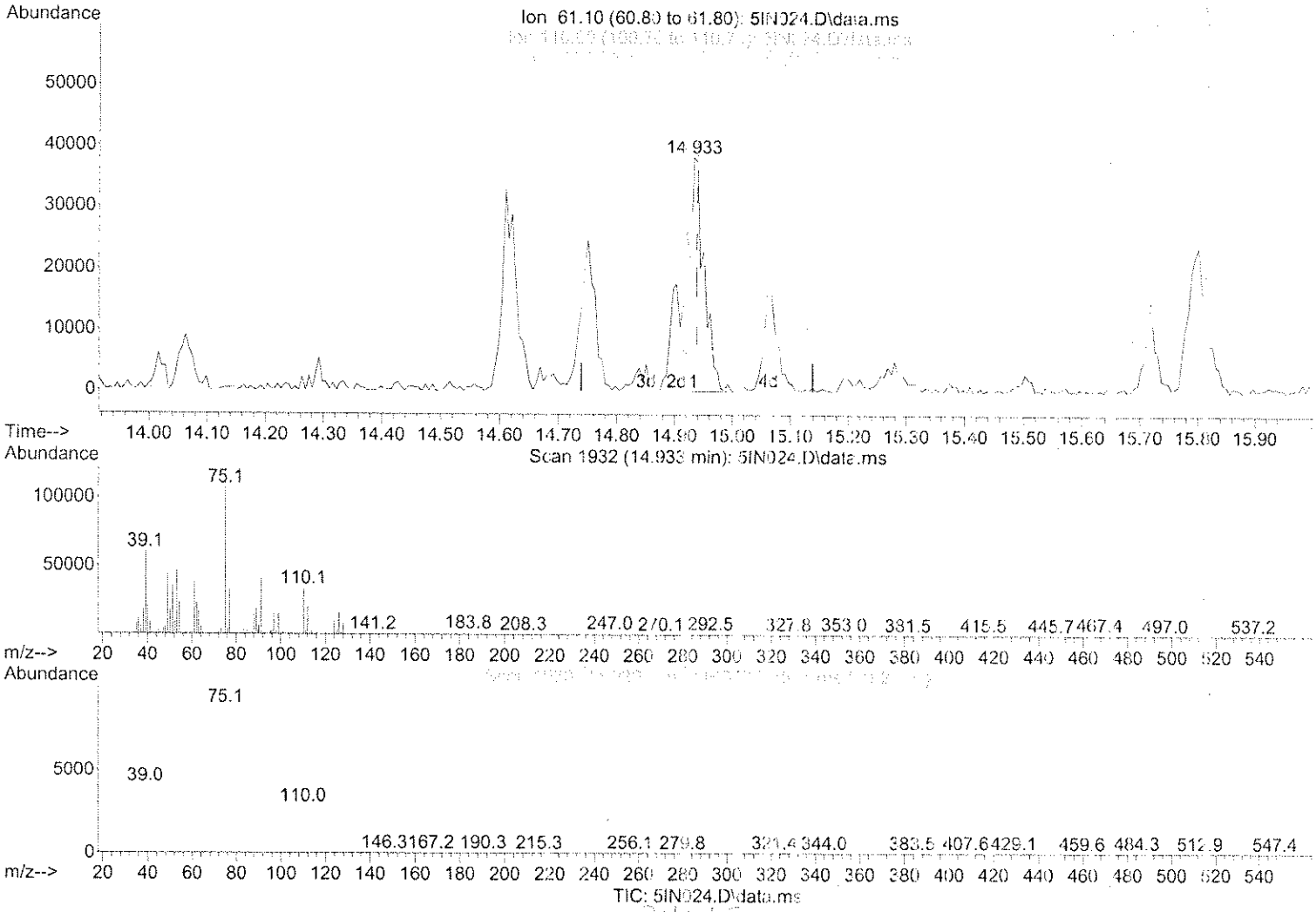
Ion	Exp%	Act%
117.00	100.00	100.00
118.90	109.90	15.78#
82.00	25.40	3.05#
0.00	0.00	0.00

Select One:
[ ] Original Integration [X] Manual Integration
Select reason for manual integration:
[ ] Poor integration (peak tailing, baseline selection)
[X] Incorrect peak selection/Peak not found
[ ] Hump integration
[ ] Baseline drop for split peaks
[ ] RTTD reintegration
[ ] Other:
Review by/Date KW 09/20/16
Review by/Date JN 9/20/16

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\091916\
Data File : 5IN024.D
Acq On : 19 Sep 2016 7:07 pm
Operator : KKW
InstName : OVGCMS5
Sample : 6I19025-MSD1
Misc :
ALS Vial : 23 Sample Multiplier: 1

Quant Time: Sep 20 08:24:03 2016
Quant Method : C:\msdchem\1\methods\091616.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Mon Sep 19 08:51:53 2016
Response via : Initial Calibration



TIC: 5IN024.D\data.ms

(79) 1,2,3-Trichloropropane

14.933min (-0.006) 16.10 ug/L

response 70620

Ion	Exp%	Act%
61.10	100.00	100.00
110.00	79.20	103.69#
97.00	44.30	61.85#
0.00	0.00	0.00

Select One:

[X] Original Integration [ ] Manual Integration

Select reason for manual integration:

[X] Poor integration (peak tailing, baseline selection)

[ ] Incorrect peak selection/Peak not found

[ ] Hump integration

[ ] Baseline drop for split peaks

[ ] ISTD reintegration

[ ] Other:

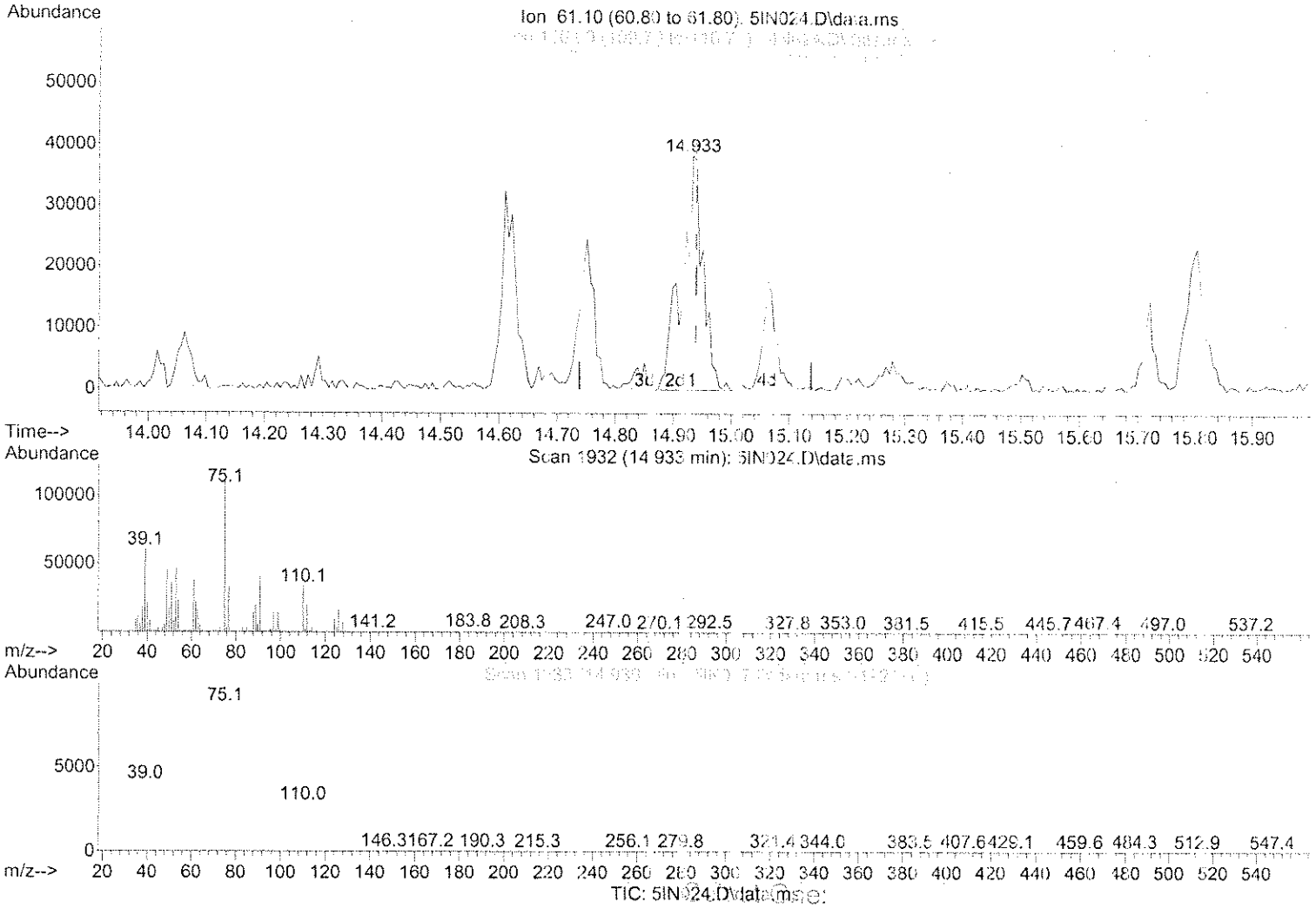
Review by/Date KKW 09/20/16

Review by/Date: JRS 9/20/16

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\091916\
Data File : 5IN024.D
Acq On : 19 Sep 2016 7:07 pm
Operator : KKW
InstName : OVGCMS5
Sample : 6I19025-MSD1
Misc :
ALS Vial : 23 Sample Multiplier: 1

Quant Time: Sep 20 08:24:03 2016
Quant Method : C:\msdchem\1\methods\091616.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Mon Sep 19 08:51:53 2016
Response via : Initial Calibration



(79) 1,2,3-Trichloropropane

14.933min (-0.006) 22.05 ug/L m

response 96689

Ion	Exp%	Act%
61.10	100.00	100.00
110.00	79.20	75.73
97.00	44.30	45.17
0.00	0.00	0.00

[ ] Original Integration [X] Manual Integration

Select reason for manual integration:

[X] Poor integration (peak tailing, baseline selection)

[ ] Incorrect peak selection/Peak not found

[ ] Hump integration

[ ] Baseline drop for split peaks

[ ] ISTD reintegration

[ ] Other:

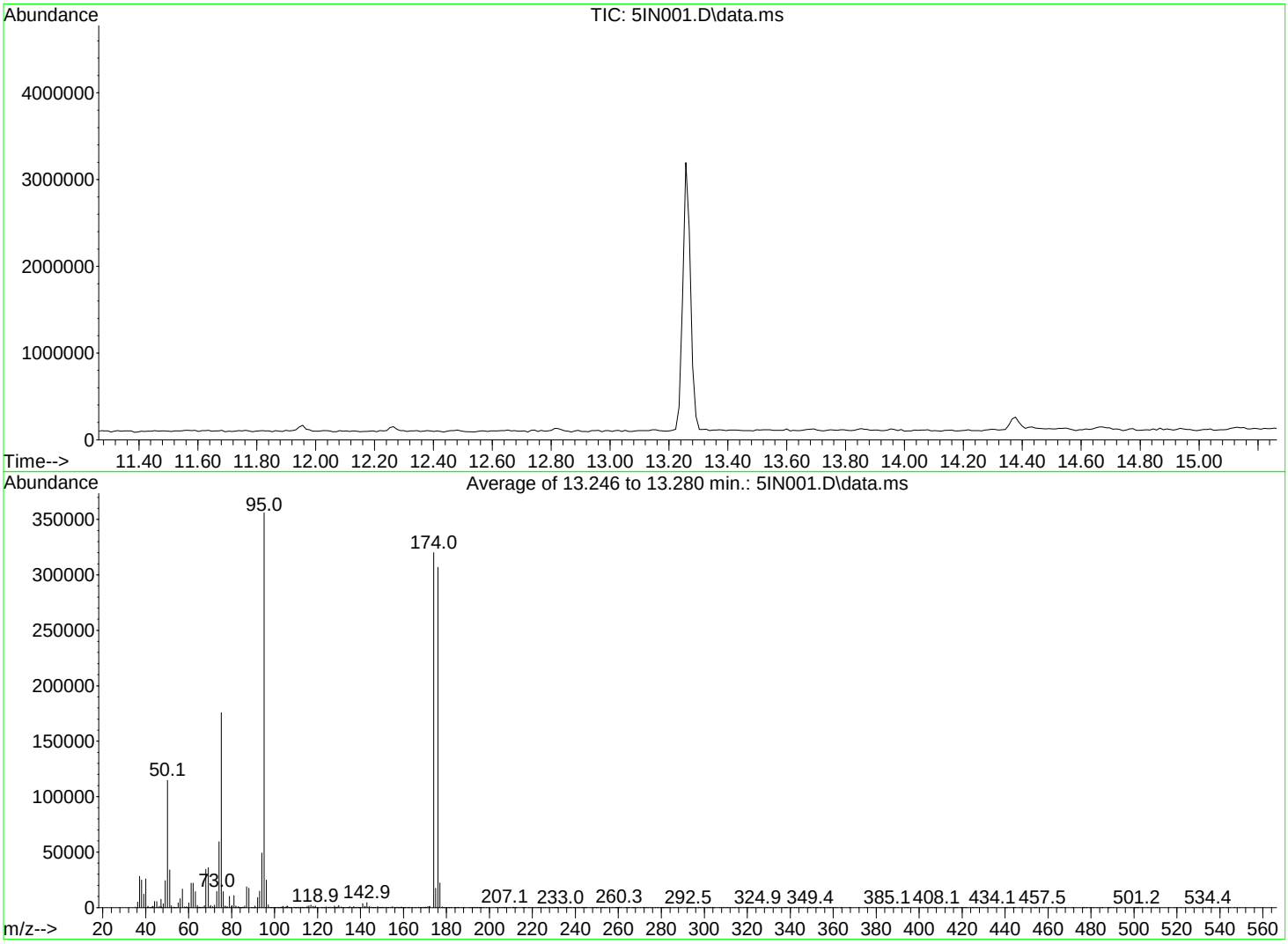
Review by/Date: KKW 09/20/16

Review by/Date: JD 9/20/16

Data Path : C:\msdchem\1\data\091916\
Data File : 5IN001.D
Acq On : 19 Sep 2016 7:37 am
Operator : KKW
InstName : OVGCMS5
Sample : AA50509-TUN1
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\methods\091616.M
Title : ENCO SOP VGCMS05; Element Cal
Last Update : Mon Sep 19 08:51:53 2016



Spectrum Information: Average of 13.246 to 13.280 min.

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	32.2	114682	PASS
75	95	30	60	49.4	175702	PASS
95	95	100	100	100.0	355792	PASS
96	95	5	9	6.9	24672	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	90.0	320096	PASS
175	174	5	9	5.4	17445	PASS
176	174	95	101	95.9	306880	PASS
177	176	5	9	7.2	22222	PASS

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\091916\
Data File : 5IN002.D
Acq On : 19 Sep 2016 8:07 am
Operator : KKW
InstName : OVGCMS5
Sample : AA50509-CCV1
Misc :
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Sep 19 12:41:16 2016
Quant Method : C:\msdchem\1\methods\091616.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Mon Sep 19 08:51:53 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) PENTAFLUOROBENZENE (IS)	10.215	168	1390714	50.00	ug/L		0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.797	114	2265031	50.00	ug/L		0.00
57) CHLOROBENZENE-D5 (IS)	13.511	82	1036110	50.00	ug/L		0.00
81) 1,4-DICHLOROBENZENE-D4...	15.797	152	1316031	50.00	ug/L		0.00
System Monitoring Compounds							
31) Dibromofluoromethane	9.792	113	585482	48.23	ug/L		0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 96.46%				
42) 1,2-Dichloroethane-d4	10.380	65	760525	49.25	ug/L		0.00
Spiked Amount 50.000	Range 70 - 120		Recovery = 98.50%				
54) D8-Toluene	12.101	98	2481170	50.22	ug/L		0.00
Spiked Amount 50.000	Range 85 - 120		Recovery = 100.44%				
75) Bromofluorobenzene	14.616	95	910632	49.21	ug/L		0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 98.42%				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	4.281	85	488035	46.47	ug/L		94
3) Chloromethane	4.739	50	1060112	48.38	ug/L		100
4) Vinyl Chloride	4.927	62	810925	52.76	ug/L		95
5) Bromomethane	5.603	94	181536	40.93	ug/L	#	81
6) Chloroethane	5.808	64	459138	58.51	ug/L		97
7) Trichlorofluoromethane	6.073	101	720754	43.67	ug/L	#	96
8) Diethyl ether	6.578	59	534443	47.09	ug/L		94
9) 1,1-Dichloroethene	6.925	96	428782	52.28	ug/L		98
10) Trichlorotrifluoroethane	6.948	151	395858	48.97	ug/L		98
11) Acrolein	7.412	56	922900	519.88	ug/L		97
12) Iodomethane	7.177	142	2245273	230.87	ug/L	#	94
13) Carbon Disulfide	7.019	76	6664147	249.62	ug/L		97
14) 3-chloropropene	7.595	41	1130657	57.59	ug/L		97
15) Acetone	7.789	43	948064	205.72	ug/L		96
16) Methylene Chloride	7.730	84	419348	46.31	ug/L		86
17) Methyl Acetate	7.912	43	641241	44.57	ug/L		99
18) t-1,2-Dichloroethene	7.935	96	487414	49.15	ug/L		95
19) Methyl tert-butyl ether	8.029	73	1054309	44.47	ug/L		100
20) Acetonitrile	8.423	41	1465497	688.22	ug/L	#	81
21) Isopropyl ether	8.470	45	2478533	55.28	ug/L		98
22) Chloroprene	8.682	88	446839	49.17	ug/L		93
23) 1,1-Dichloroethane	8.717	63	1048197	49.20	ug/L		97
24) Acrylonitrile	8.787	53	3360595	486.68	ug/L		99
25) Vinyl Acetate	8.940	43	8491934	240.23	ug/L		99
26) c-1,2-Dichloroethene	9.334	96	504741	46.37	ug/L		98
27) 2,2-Dichloropropane	9.463	77	599855	54.25	ug/L		98
28) Bromochloromethane	9.557	128	256354	58.55	ug/L		95
29) Cyclohexane	9.575	56	1316106	47.70	ug/L		99
30) Chloroform	9.592	83	754164	48.54	ug/L		100
32) Dibromofluoromethane	9.792	113	585482	48.23	ug/L		95
33) 2-Butanone	9.915	72	295347	238.35	ug/L		96
34) 1,1,1-Trichloroethane	9.863	97	655993	46.04	ug/L		98
35) 1,1-Dichloropropene	9.974	75	666563	49.51	ug/L		92
36) Propionitrile	10.262	54	1199273	417.61	ug/L		97
37) Methacrylonitrile	10.280	41	4928899	473.72	ug/L	#	100
38) Isobutyl Alcohol	10.286	43	1245770	793.98	ug/L	#	99
40) Carbon Tetrachloride	9.792	117	570728	45.60	ug/L		91
41) Benzene	10.239	78	1859160	49.58	ug/L		98
43) 1,2-Dichloroethane-d4	10.380	65	760525	49.25	ug/L	#	70
44) 1,2-Dichloroethane	10.444	62	671891	45.61	ug/L		92

Data Path : C:\msdchem\1\data\091916\
Data File : 5IN002.D
Acq On : 19 Sep 2016 8:07 am
Operator : KKW
InstName : OVGCMS5
Sample : AA50509-CCV1
Misc :
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Sep 19 12:41:16 2016
Quant Method : C:\msdchem\1\methods\091616.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Mon Sep 19 08:51:53 2016
Response via : Initial Calibration

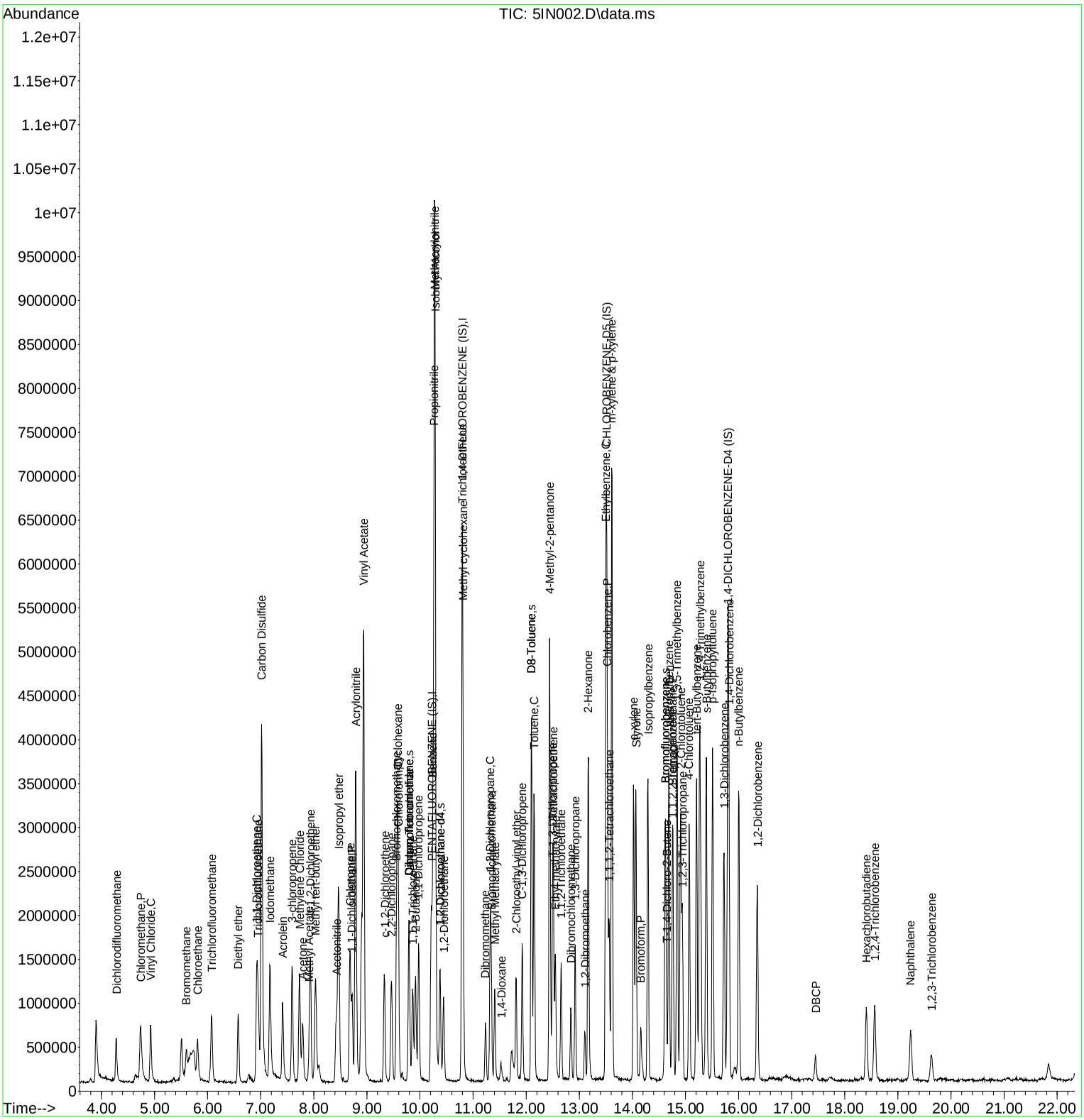
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
45) Trichloroethene	10.803	130	572905	49.07 ug/L	96
46) Methyl cyclohexane	10.809	83	864787	49.76 ug/L	99
47) Dibromomethane	11.232	93	245241	44.24 ug/L	97
48) 1,2-Dichloropropane	11.326	63	630775	49.46 ug/L	95
49) Bromodichloromethane	11.343	83	508080	49.75 ug/L	99
50) Methyl Methacrylate	11.408	69	309829	47.76 ug/L	95
51) 1,4-Dioxane	11.525	88	134439	823.22 ug/L	87
52) 2-Chloroethyl vinyl ether	11.807	63	423093	171.48 ug/L	98
53) C-1,3-Dichloropropene	11.925	75	726159	50.99 ug/L	97
55) D8-Toluene	12.101	98	2481170	50.22 ug/L #	88
56) 4-Methyl-2-pentanone	12.442	100	375422	202.88 ug/L	94
58) Toluene	12.148	92	1283804	51.67 ug/L	99
59) T-1,3-Dichloropropene	12.495	75	566902	47.55 ug/L	98
60) Tetrachloroethene	12.512	164	398624	44.50 ug/L	97
61) Ethyl methacrylate	12.548	69	565359	45.28 ug/L	99
62) 1,1,2-Trichloroethane	12.659	97	388744	45.79 ug/L	96
63) Dibromochloromethane	12.842	129	427136	48.84 ug/L	94
64) 1,3-Dichloropropane	12.924	76	674659	49.55 ug/L	95
65) 1,2-Dibromoethane	13.106	107	415047	45.53 ug/L #	97
66) 2-Hexanone	13.171	43	2640926	237.11 ug/L	97
67) Ethylbenzene	13.500	106	816790	46.59 ug/L	96
68) Chlorobenzene	13.529	112	1381830	47.43 ug/L	94
69) 1,1,1,2-Tetrachloroethane	13.564	131	476801	48.58 ug/L	98
70) m-xylene & p-xylene	13.611	106	1982650	89.69 ug/L	97
71) o-xylene	14.023	106	957509	46.43 ug/L	97
72) Styrene	14.070	104	1688446	46.97 ug/L	97
73) Bromoform	14.158	173	280177	40.80 ug/L	94
74) Isopropylbenzene	14.293	105	2391343	45.65 ug/L	98
76) Bromofluorobenzene	14.616	95	910632	49.21 ug/L	94
77) n-Propylbenzene	14.686	91	2906337	46.57 ug/L	99
78) 1,1,2,2-Tetrachloroethane	14.751	83	538942	42.22 ug/L #	97
79) 1,2,3-Trichloropropane	14.945	61	234753	47.52 ug/L	99
80) T-1,4-Dichloro-2-Butene	14.645	53	329313	46.38 ug/L	98
82) Bromobenzene	14.763	156	603660	49.71 ug/L	96
83) 1,2,4-Trimethylbenzene	15.268	105	2236519	47.50 ug/L	98
84) 2-Chlorotoluene	14.910	91	1698204	54.52 ug/L	99
85) 4-Chlorotoluene	15.068	91	1733151	53.81 ug/L	97
86) tert-Butylbenzene	15.209	119	1977105	47.20 ug/L	99
87) 1,3,5-Trimethylbenzene	14.839	105	2236165	55.75 ug/L	98
88) p-Isopropyltoluene	15.509	119	2572697	47.51 ug/L	99
89) s-Butylbenzene	15.392	105	2816533	48.19 ug/L	99
90) 1,3-Dichlorobenzene	15.726	146	1264502	50.43 ug/L	98
91) 1,4-Dichlorobenzene	15.820	146	1292101	46.08 ug/L	96
92) n-Butylbenzene	16.003	91	2190873	49.74 ug/L	98
93) 1,2-Dichlorobenzene	16.355	146	1156462	45.18 ug/L	98
94) DBCP	17.454	157	96736	36.19 ug/L	91
95) Hexachlorobutadiene	18.406	225	218277	41.91 ug/L	96
96) 1,2,4-Trichlorobenzene	18.564	180	408475	34.86 ug/L	95
97) Naphthalene	19.240	128	741748	36.75 ug/L	97
98) 1,2,3-Trichlorobenzene	19.628	180	157779	32.44 ug/L #	93

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\091916\
Data File : 5IN002.D
Acq On : 19 Sep 2016 8:07 am
Operator : KKW
InstName : OVGCMS5
Sample : AA50509-CCV1
Misc :
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Sep 19 12:41:16 2016
Quant Method : C:\msdchem\1\methods\091616.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Mon Sep 19 08:51:53 2016
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\091916\
Data File : 5IN012.D
Acq On : 19 Sep 2016 1:12 pm
Operator : KKW
InstName : OVGCMS5
Sample : 6I19025-BS1
Misc :
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Sep 19 13:39:51 2016
Quant Method : C:\msdchem\1\methods\091616.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Mon Sep 19 08:51:53 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) PENTAFLUOROBENZENE (IS)	10.209	168	1228126	50.00	ug/L		0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.797	114	2116334	50.00	ug/L		0.00
57) CHLOROBENZENE-D5 (IS)	13.511	82	936198	50.00	ug/L		0.00
81) 1,4-DICHLOROBENZENE-D4...	15.797	152	1269251	50.00	ug/L		0.00
System Monitoring Compounds							
31) Dibromofluoromethane	9.798	113	559273	52.17	ug/L		0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 104.34%				
42) 1,2-Dichloroethane-d4	10.374	65	721018	49.97	ug/L		0.00
Spiked Amount 50.000	Range 70 - 120		Recovery = 99.94%				
54) D8-Toluene	12.101	98	2383872	51.64	ug/L		0.00
Spiked Amount 50.000	Range 85 - 120		Recovery = 103.28%				
75) Bromofluorobenzene	14.616	95	872383	52.18	ug/L		0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 104.36%				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	4.281	85	175280	18.90	ug/L		98
3) Chloromethane	4.739	50	395342	20.43	ug/L		97
4) Vinyl Chloride	4.933	62	256811	18.92	ug/L	#	78
5) Bromomethane	5.597	94	42713	13.60	ug/L	#	41
6) Chloroethane	5.808	64	173430	21.15	ug/L		94
7) Trichlorofluoromethane	6.073	101	241811	16.59	ug/L		95
8) Diethyl ether	6.578	59	231493	23.10	ug/L		99
9) 1,1-Dichloroethene	6.925	96	150504	20.78	ug/L		95
10) Trichlorotrifluoroethane	6.954	151	129582	18.15	ug/L		93
11) Acrolein	7.412	56	201039	128.24	ug/L		88
12) Iodomethane	7.177	142	137332	15.99	ug/L	#	89
13) Carbon Disulfide	7.019	76	446893	18.96	ug/L		100
14) 3-chloropropene	7.594	41	387269	22.34	ug/L		97
15) Acetone	7.794	43	453005	111.31	ug/L		98
16) Methylene Chloride	7.735	84	167198	20.91	ug/L		100
17) Methyl Acetate	7.918	43	291182	22.92	ug/L		98
18) t-1,2-Dichloroethene	7.941	96	173578	19.82	ug/L		97
19) Methyl tert-butyl ether	8.029	73	450577	21.52	ug/L		97
20) Acetonitrile	8.464	41	220151	117.07	ug/L	#	92
21) Isopropyl ether	8.470	45	953953	24.09	ug/L		98
22) Chloroprene	8.681	88	151467	18.87	ug/L		97
23) 1,1-Dichloroethane	8.717	63	404596	21.50	ug/L		98
24) Acrylonitrile	8.787	53	152795	25.06	ug/L	#	97
25) Vinyl Acetate	8.934	43	601872	19.28	ug/L		96
26) c-1,2-Dichloroethene	9.328	96	196809	20.47	ug/L		97
27) 2,2-Dichloropropane	9.463	77	208262	21.33	ug/L		97
28) Bromochloromethane	9.563	128	96395	24.93	ug/L		94
29) Cyclohexane	9.575	56	471586	19.35	ug/L		96
30) Chloroform	9.592	83	293123	21.37	ug/L		98
32) Dibromofluoromethane	9.798	113	559273	52.17	ug/L		93
33) 2-Butanone	9.909	72	139880	127.83	ug/L		77
34) 1,1,1-Trichloroethane	9.862	97	242476	19.27	ug/L		95
35) 1,1-Dichloropropene	9.974	75	242432	20.39	ug/L		95
36) Propionitrile	10.262	54	72422	28.56	ug/L	#	1
37) Methacrylonitrile	10.280	41	308047	33.53	ug/L	#	100
38) Isobutyl Alcohol	10.274	43	247032	178.29	ug/L	#	95
40) Carbon Tetrachloride	9.786	117	203095	17.37	ug/L		89
41) Benzene	10.244	78	726518	20.73	ug/L		99
43) 1,2-Dichloroethane-d4	10.374	65	721018	49.97	ug/L	#	78
44) 1,2-Dichloroethane	10.444	62	275802	20.04	ug/L		91

Data Path : C:\msdchem\1\data\091916\
Data File : 5IN012.D
Acq On : 19 Sep 2016 1:12 pm
Operator : KKW
InstName : OVGCMS5
Sample : 6I19025-BS1
Misc :
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Sep 19 13:39:51 2016
Quant Method : C:\msdchem\1\methods\091616.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Mon Sep 19 08:51:53 2016
Response via : Initial Calibration

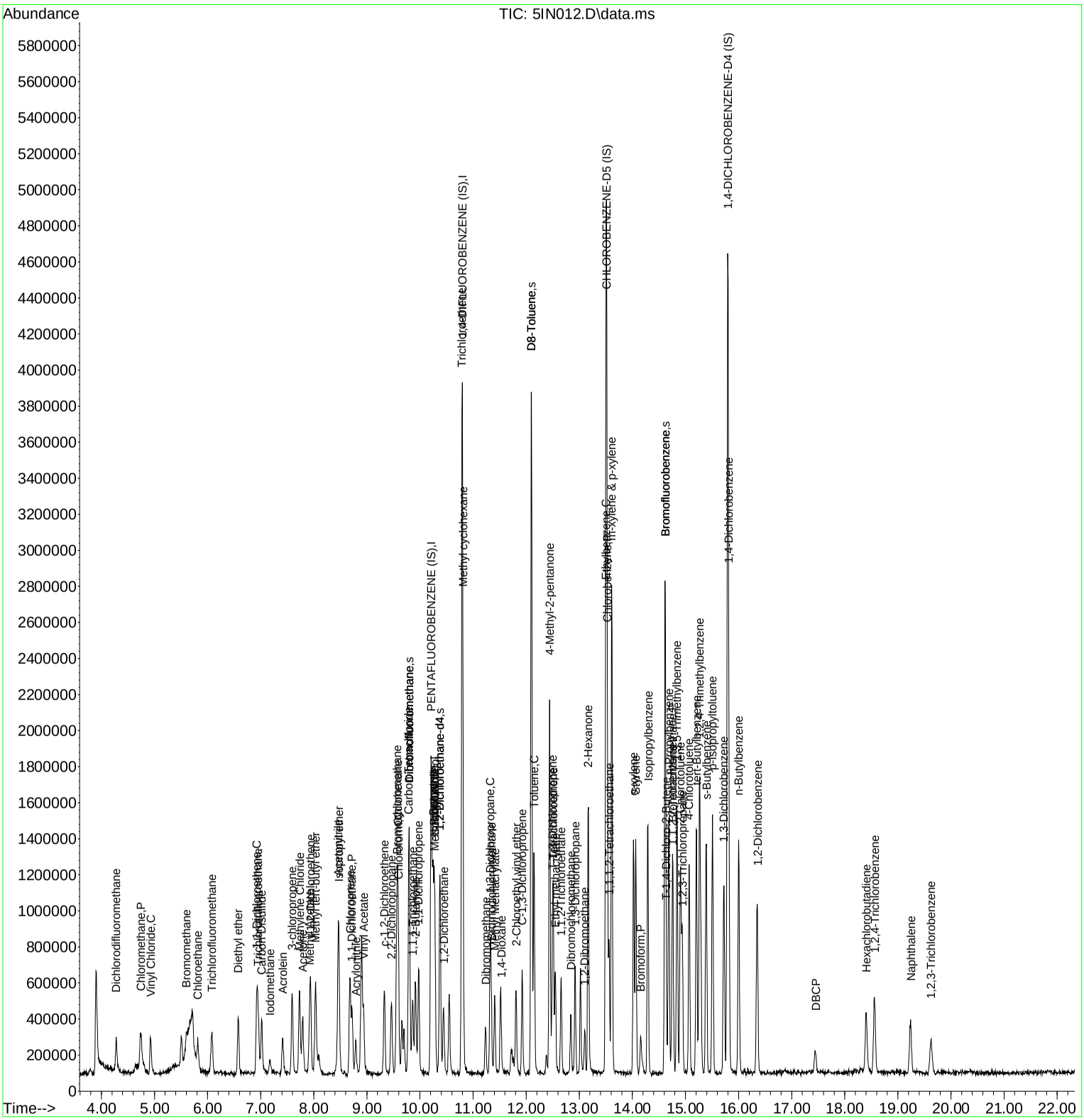
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
45) Trichloroethene	10.791	130	217529	19.94	ug/L		91
46) Methyl cyclohexane	10.808	83	334319	20.59	ug/L		98
47) Dibromomethane	11.237	93	106170	20.50	ug/L		97
48) 1,2-Dichloropropane	11.325	63	243441	20.43	ug/L		97
49) Bromodichloromethane	11.343	83	203273	21.30	ug/L		96
50) Methyl Methacrylate	11.408	69	133346	22.00	ug/L		88
51) 1,4-Dioxane	11.531	88	58392	382.68	ug/L		97
52) 2-Chloroethyl vinyl ether	11.807	63	171867	74.55	ug/L		99
53) C-1,3-Dichloropropene	11.925	75	258582	19.43	ug/L		92
55) D8-Toluene	12.101	98	2383872	51.64	ug/L	#	91
56) 4-Methyl-2-pentanone	12.442	100	165018	95.44	ug/L		100
58) Toluene	12.148	92	468196	20.86	ug/L		93
59) T-1,3-Dichloropropene	12.495	75	234905	21.80	ug/L		96
60) Tetrachloroethene	12.512	164	166019	20.51	ug/L		95
61) Ethyl methacrylate	12.548	69	223358	19.80	ug/L		96
62) 1,1,2-Trichloroethane	12.653	97	158439	20.66	ug/L		94
63) Dibromochloromethane	12.841	129	166380	21.05	ug/L		88
64) 1,3-Dichloropropane	12.918	76	272242	22.13	ug/L		98
65) 1,2-Dibromoethane	13.100	107	172914	20.99	ug/L		99
66) 2-Hexanone	13.164	43	1095053	108.81	ug/L		99
67) Ethylbenzene	13.494	106	316237	19.96	ug/L		96
68) Chlorobenzene	13.529	112	568246	21.58	ug/L		92
69) 1,1,1,2-Tetrachloroethane	13.558	131	172926	19.50	ug/L		97
70) m-xylene & p-xylene	13.611	106	768072	38.46	ug/L		98
71) o-xylene	14.022	106	398201	21.37	ug/L		100
72) Styrene	14.063	104	665085	20.48	ug/L		94
73) Bromoform	14.157	173	99297	16.00	ug/L		95
74) Isopropylbenzene	14.293	105	953552	20.15	ug/L		98
76) Bromofluorobenzene	14.616	95	872383	52.18	ug/L		95
77) n-Propylbenzene	14.686	91	1129036	20.02	ug/L		99
78) 1,1,2,2-Tetrachloroethane	14.751	83	230931	20.02	ug/L		95
79) 1,2,3-Trichloropropane	14.945	61	104341	23.37	ug/L		86
80) T-1,4-Dichloro-2-Butene	14.639	53	129981	20.26	ug/L	#	57
82) Bromobenzene	14.763	156	242717	20.72	ug/L		96
83) 1,2,4-Trimethylbenzene	15.262	105	928660	20.45	ug/L		98
84) 2-Chlorotoluene	14.904	91	670333	22.31	ug/L		98
85) 4-Chlorotoluene	15.068	91	699169	22.51	ug/L		99
86) tert-Butylbenzene	15.203	119	781782	19.35	ug/L		97
87) 1,3,5-Trimethylbenzene	14.839	105	842178	21.77	ug/L		99
88) p-Isopropyltoluene	15.509	119	991583	18.99	ug/L		98
89) s-Butylbenzene	15.391	105	1078036	19.13	ug/L		98
90) 1,3-Dichlorobenzene	15.720	146	526384	21.77	ug/L		96
91) 1,4-Dichlorobenzene	15.814	146	552432	20.43	ug/L	#	84
92) n-Butylbenzene	16.002	91	817822	19.25	ug/L		100
93) 1,2-Dichlorobenzene	16.355	146	509871	20.65	ug/L		99
94) DBCP	17.454	157	43478	16.86	ug/L		92
95) Hexachlorobutadiene	18.406	225	85221	16.97	ug/L		96
96) 1,2,4-Trichlorobenzene	18.558	180	201736	17.85	ug/L		98
97) Naphthalene	19.246	128	370120	21.50	ug/L	#	88
98) 1,2,3-Trichlorobenzene	19.616	180	94919	22.31	ug/L	#	90

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\091916\
Data File : 5IN012.D
Acq On : 19 Sep 2016 1:12 pm
Operator : KKW
InstName : OVGCMS5
Sample : 6I19025-BS1
Misc :
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Sep 19 13:39:51 2016
Quant Method : C:\msdchem\1\methods\091616.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Mon Sep 19 08:51:53 2016
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\091916\
Data File : 5IN014.D
Acq On : 19 Sep 2016 2:11 pm
Operator : KKW
InstName : OVGCMS5
Sample : 6I19025-BLK1
Misc :
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Sep 20 08:23:13 2016
Quant Method : C:\msdchem\1\methods\091616.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Mon Sep 19 08:51:53 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) PENTAFLUOROBENZENE (IS)	10.209	168	1255883	50.00	ug/L	0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.791	114	2085638	50.00	ug/L	0.00
57) CHLOROBENZENE-D5 (IS)	13.511	82	947505	50.00	ug/L	0.00
81) 1,4-DICHLOROBENZENE-D4...	15.797	152	1242736	50.00	ug/L	0.00
System Monitoring Compounds						
31) Dibromofluoromethane	9.792	113	543300	49.56	ug/L	0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 99.12%			
42) 1,2-Dichloroethane-d4	10.374	65	698422	49.12	ug/L	0.00
Spiked Amount 50.000	Range 70 - 120		Recovery = 98.24%			
54) D8-Toluene	12.095	98	2401518	52.79	ug/L	0.00
Spiked Amount 50.000	Range 85 - 120		Recovery = 105.58%			
75) Bromofluorobenzene	14.616	95	885669	52.34	ug/L	0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 104.68%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	4.363	85	1034	N.D.		
3) Chloromethane	0.000		0	N.D. d		
4) Vinyl Chloride	4.874	62	1459	N.D.		
5) Bromomethane	0.000		0	N.D. d		
6) Chloroethane	5.844	64	1382	N.D.		
7) Trichlorofluoromethane	0.000		0	N.D.		
8) Diethyl ether	6.590	59	1646	N.D.		
9) 1,1-Dichloroethene	6.895	96	1301	N.D.		
10) Trichlorotrifluoroethane	7.066	151	1268	N.D.		
11) Acrolein	0.000		0	N.D. d		
12) Iodomethane	0.000		0	N.D. d		
13) Carbon Disulfide	0.000		0	N.D. d		
14) 3-chloropropene	7.595	41	1154	N.D.		
15) Acetone	0.000		0	N.D. d		
16) Methylene Chloride	7.747	84	1519	N.D.		
17) Methyl Acetate	0.000		0	N.D. d		
18) t-1,2-Dichloroethene	0.000		0	N.D.		
19) Methyl tert-butyl ether	8.029	73	1178	N.D.		
20) Acetonitrile	0.000		0	N.D. d		
21) Isopropyl ether	8.411	45	1220	N.D.		
22) Chloroprene	0.000		0	N.D.		
23) 1,1-Dichloroethane	8.699	63	1657	N.D.		
24) Acrylonitrile	0.000		0	N.D. d		
25) Vinyl Acetate	8.923	43	2261	N.D.		
26) c-1,2-Dichloroethene	9.210	96	1048	N.D.		
27) 2,2-Dichloropropane	9.481	77	1487	N.D.		
28) Bromochloromethane	0.000		0	N.D.		
29) Cyclohexane	9.539	56	2047	N.D.		
30) Chloroform	9.586	83	1470	N.D.		
32) Dibromofluoromethane	9.792	113	543300	49.56	ug/L	92
33) 2-Butanone	0.000		0	N.D. d		
34) 1,1,1-Trichloroethane	9.769	97	1063	N.D.		
35) 1,1-Dichloropropene	9.851	75	1960	N.D.		
36) Propionitrile	0.000		0	N.D. d		
37) Methacrylonitrile	0.000		0	N.D. d		
38) Isobutyl Alcohol	0.000		0	N.D. d		
40) Carbon Tetrachloride	0.000		0	N.D. d		
41) Benzene	10.233	78	1142	N.D.		
43) 1,2-Dichloroethane-d4	10.374	65	697604	49.06	ug/L #	69
44) 1,2-Dichloroethane	10.491	62	2215	N.D.		

Data Path : C:\msdchem\1\data\091916\
Data File : 5IN014.D
Acq On : 19 Sep 2016 2:11 pm
Operator : KKW
InstName : OVGCMS5
Sample : 6I19025-BLK1
Misc :
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Sep 20 08:23:13 2016
Quant Method : C:\msdchem\1\methods\091616.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Mon Sep 19 08:51:53 2016
Response via : Initial Calibration

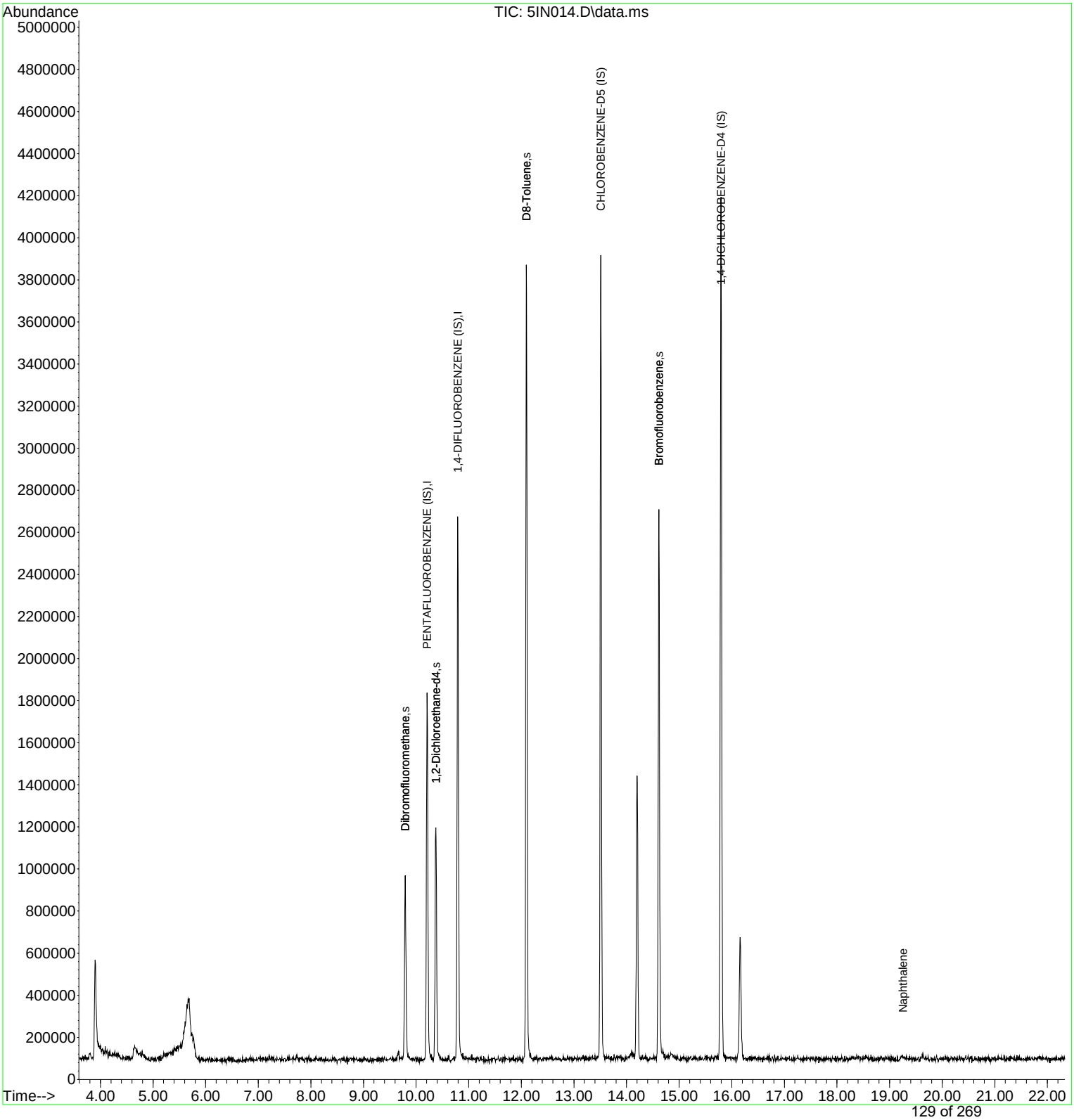
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
45) Trichloroethene	10.773	130	1044	N.D.	
46) Methyl cyclohexane	0.000		0	N.D. d	
47) Dibromomethane	0.000		0	N.D. d	
48) 1,2-Dichloropropane	11.267	63	1066	N.D.	
49) Bromodichloromethane	0.000		0	N.D.	
50) Methyl Methacrylate	0.000		0	N.D. d	
51) 1,4-Dioxane	0.000		0	N.D. d	
52) 2-Chloroethyl vinyl ether	0.000		0	N.D. d	
53) C-1,3-Dichloropropene	12.037	75	1251	N.D.	
55) D8-Toluene	12.095	98	2401518	52.79 ug/L #	93
56) 4-Methyl-2-pentanone	0.000		0	N.D. d	
58) Toluene	12.131	92	1150	N.D.	
59) T-1,3-Dichloropropene	0.000		0	N.D. d	
60) Tetrachloroethene	0.000		0	N.D.	
61) Ethyl methacrylate	0.000		0	N.D. d	
62) 1,1,2-Trichloroethane	12.648	97	1002	N.D.	
63) Dibromochloromethane	12.983	129	1048	N.D.	
64) 1,3-Dichloropropane	12.947	76	1975	N.D.	
65) 1,2-Dibromoethane	13.153	107	1089	N.D.	
66) 2-Hexanone	0.000		0	N.D. d	
67) Ethylbenzene	13.611	106	1090	N.D.	
68) Chlorobenzene	13.517	112	1244	N.D.	
69) 1,1,1,2-Tetrachloroethane	13.594	131	1565	N.D.	
70) m-xylene & p-xylene	13.611	106	1090	N.D.	
71) o-xylene	13.870	106	1357	N.D.	
72) Styrene	14.058	104	1335	N.D.	
73) Bromoform	0.000		0	N.D.	
74) Isopropylbenzene	14.293	105	2460	N.D.	
76) Bromofluorobenzene	14.616	95	885669	52.34 ug/L	96
77) n-Propylbenzene	14.686	91	3392	N.D.	
78) 1,1,2,2-Tetrachloroethane	14.610	83	2313	N.D.	
79) 1,2,3-Trichloropropane	0.000		0	N.D. d	
80) T-1,4-Dichloro-2-Butene	0.000		0	N.D. d	
82) Bromobenzene	0.000		0	N.D. d	
83) 1,2,4-Trimethylbenzene	15.274	105	2488	N.D.	
84) 2-Chlorotoluene	14.874	91	2605	N.D.	
85) 4-Chlorotoluene	15.068	91	3110	N.D.	
86) tert-Butylbenzene	15.192	119	3716	N.D.	
87) 1,3,5-Trimethylbenzene	14.839	105	1944	N.D.	
88) p-Isopropyltoluene	15.497	119	1680	N.D.	
89) s-Butylbenzene	15.380	105	2726	N.D.	
90) 1,3-Dichlorobenzene	15.726	146	2548	N.D.	
91) 1,4-Dichlorobenzene	15.797	146	2572	N.D.	
92) n-Butylbenzene	15.991	91	5539	N.D.	
93) 1,2-Dichlorobenzene	16.349	146	1173	N.D.	
94) DBCP	0.000		0	N.D.	
95) Hexachlorobutadiene	0.000		0	N.D. d	
96) 1,2,4-Trichlorobenzene	0.000		0	N.D. d	
97) Naphthalene	19.252	128	15256	1.10 ug/L #	69
98) 1,2,3-Trichlorobenzene	0.000		0	N.D. d	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\091916\
Data File : 5IN014.D
Acq On : 19 Sep 2016 2:11 pm
Operator : KKW
InstName : OVGCMS5
Sample : 6I19025-BLK1
Misc :
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Sep 20 08:23:13 2016
Quant Method : C:\msdchem\1\methods\091616.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Mon Sep 19 08:51:53 2016
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\091916\
Data File : 5IN015.D
Acq On : 19 Sep 2016 2:41 pm
Operator : KKW
InstName : OVGCMS5
Sample : AZ06090-01
Misc :
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Sep 20 08:23:19 2016
Quant Method : C:\msdchem\1\methods\091616.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Mon Sep 19 08:51:53 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) PENTAFLUOROBENZENE (IS)	10.209	168	1226939	50.00 ug/L	0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.791	114	2058138	50.00 ug/L	0.00
57) CHLOROBENZENE-D5 (IS)	13.511	82	921465	50.00 ug/L	0.00
81) 1,4-DICHLOROBENZENE-D4...	15.797	152	1219364	50.00 ug/L	0.00
System Monitoring Compounds					
31) Dibromofluoromethane	9.792	113	558338	52.13 ug/L	0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 104.26%		
42) 1,2-Dichloroethane-d4	10.374	65	696521	49.64 ug/L	0.00
Spiked Amount 50.000	Range 70 - 120		Recovery = 99.28%		
54) D8-Toluene	12.095	98	2329559	51.89 ug/L	0.00
Spiked Amount 50.000	Range 85 - 120		Recovery = 103.78%		
75) Bromofluorobenzene	14.616	95	881080	53.54 ug/L	0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 107.08%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	4.369	85	1612	N.D.	
3) Chloromethane	0.000		0	N.D. d	
4) Vinyl Chloride	4.921	62	174000	12.83 ug/L	99
5) Bromomethane	0.000		0	N.D. d	
6) Chloroethane	0.000		0	N.D. d	
7) Trichlorofluoromethane	0.000		0	N.D.	
8) Diethyl ether	6.578	59	1219	N.D.	
9) 1,1-Dichloroethene	0.000		0	N.D. d	
10) Trichlorotrifluoroethane	0.000		0	N.D.	
11) Acrolein	0.000		0	N.D. d	
12) Iodomethane	0.000		0	N.D. d	
13) Carbon Disulfide	0.000		0	N.D. d	
14) 3-chloropropene	7.600	41	1090	N.D.	
15) Acetone	7.794	43	22113m	5.44 ug/L	
16) Methylene Chloride	7.730	84	1533	N.D.	
17) Methyl Acetate	0.000		0	N.D. d	
18) t-1,2-Dichloroethene	7.941	96	77424	8.85 ug/L #	83
19) Methyl tert-butyl ether	8.035	73	1127	N.D.	
20) Acetonitrile	0.000		0	N.D. d	
21) Isopropyl ether	8.446	45	5366	N.D.	
22) Chloroprene	8.752	88	1073	N.D.	
23) 1,1-Dichloroethane	8.723	63	1044	N.D.	
24) Acrylonitrile	0.000		0	N.D. d	
25) Vinyl Acetate	8.916	43	2341	N.D.	
26) c-1,2-Dichloroethene	9.328	96	757137	78.83 ug/L	96
27) 2,2-Dichloropropane	9.510	77	1182	N.D.	
28) Bromochloromethane	0.000		0	N.D.	
29) Cyclohexane	9.563	56	2290	N.D.	
30) Chloroform	0.000		0	N.D.	
32) Dibromofluoromethane	9.792	113	558338	52.13 ug/L	93
33) 2-Butanone	0.000		0	N.D. d	
34) 1,1,1-Trichloroethane	9.774	97	1467	N.D.	
35) 1,1-Dichloropropene	10.003	75	2014	N.D.	
36) Propionitrile	0.000		0	N.D. d	
37) Methacrylonitrile	10.274	41	1342	N.D.	
38) Isobutyl Alcohol	0.000		0	N.D. d	
40) Carbon Tetrachloride	9.716	117	1873	N.D.	
41) Benzene	10.250	78	4204	N.D.	
43) 1,2-Dichloroethane-d4	10.374	65	695748	49.58 ug/L #	71
44) 1,2-Dichloroethane	10.432	62	1710	N.D.	

Data Path : C:\msdchem\1\data\091916\
Data File : 5IN015.D
Acq On : 19 Sep 2016 2:41 pm
Operator : KKW
InstName : OVGCMS5
Sample : AZ06090-01
Misc :
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Sep 20 08:23:19 2016
Quant Method : C:\msdchem\1\methods\091616.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Mon Sep 19 08:51:53 2016
Response via : Initial Calibration

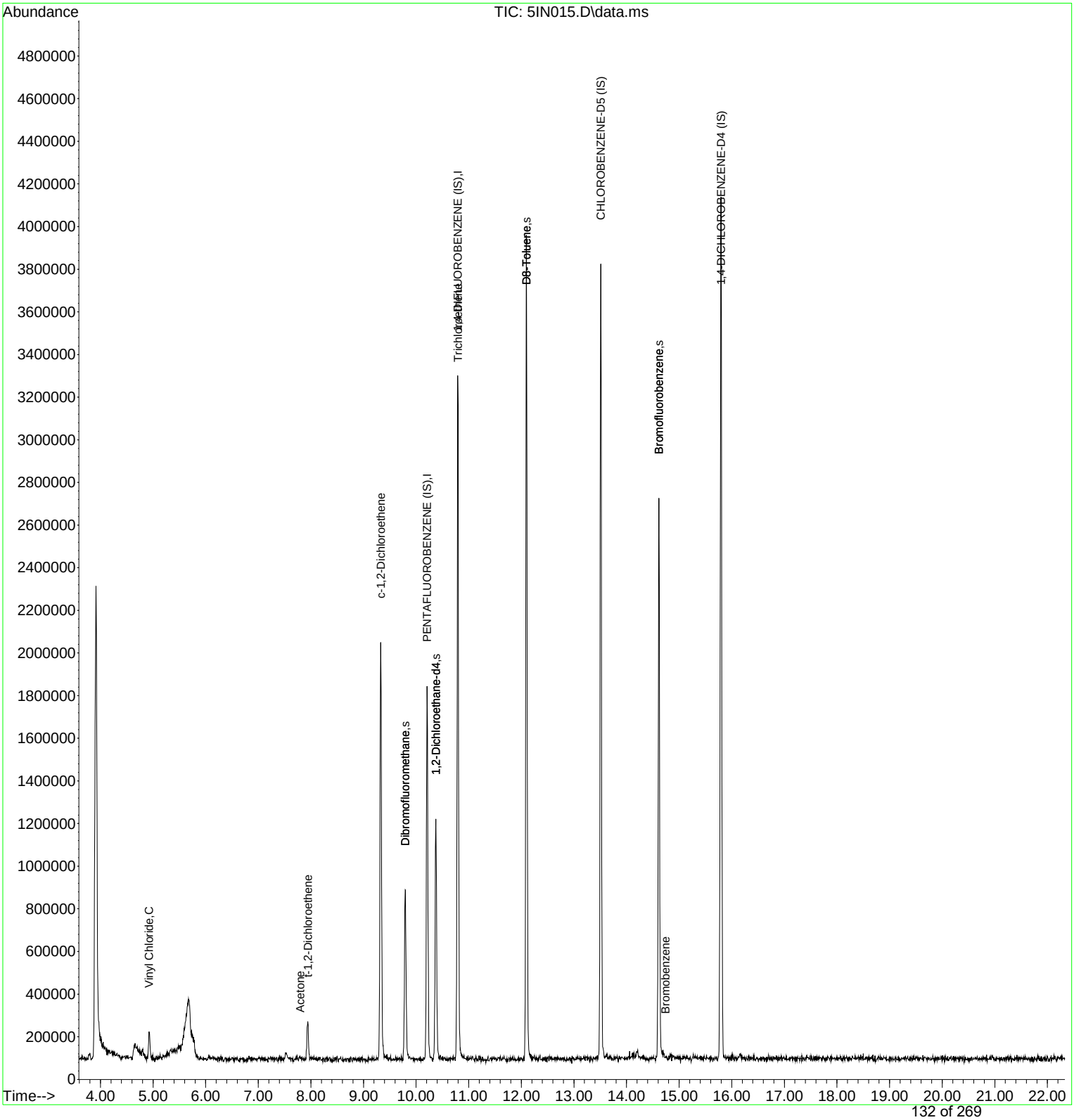
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
45) Trichloroethene	10.797	130	199240	18.78 ug/L	91
46) Methyl cyclohexane	0.000		0	N.D. d	
47) Dibromomethane	0.000		0	N.D. d	
48) 1,2-Dichloropropane	0.000		0	N.D. d	
49) Bromodichloromethane	0.000		0	N.D.	
50) Methyl Methacrylate	11.466	69	1160	N.D.	
51) 1,4-Dioxane	0.000		0	N.D. d	
52) 2-Chloroethyl vinyl ether	0.000		0	N.D. d	
53) C-1,3-Dichloropropene	0.000		0	N.D.	
55) D8-Toluene	12.095	98	2329559	51.89 ug/L #	90
56) 4-Methyl-2-pentanone	0.000		0	N.D.	
58) Toluene	12.113	92	1332	N.D.	
59) T-1,3-Dichloropropene	12.471	75	1390	N.D.	
60) Tetrachloroethene	0.000		0	N.D.	
61) Ethyl methacrylate	12.542	69	2106	N.D.	
62) 1,1,2-Trichloroethane	12.512	97	1324	N.D.	
63) Dibromochloromethane	12.724	129	1024	N.D.	
64) 1,3-Dichloropropane	12.882	76	1518	N.D.	
65) 1,2-Dibromoethane	13.106	107	1219	N.D.	
66) 2-Hexanone	0.000		0	N.D. d	
67) Ethylbenzene	13.511	106	1072	N.D.	
68) Chlorobenzene	13.511	112	1519	N.D.	
69) 1,1,1,2-Tetrachloroethane	0.000		0	N.D.	
70) m-xylene & p-xylene	13.629	106	2153	N.D.	
71) o-xylene	14.040	106	1484	N.D.	
72) Styrene	14.058	104	1250	N.D.	
73) Bromoform	0.000		0	N.D.	
74) Isopropylbenzene	0.000		0	N.D.	
76) Bromofluorobenzene	14.616	95	881080	53.54 ug/L	97
77) n-Propylbenzene	14.686	91	2199	N.D.	
78) 1,1,2,2-Tetrachloroethane	14.722	83	1439	N.D.	
79) 1,2,3-Trichloropropane	0.000		0	N.D. d	
80) T-1,4-Dichloro-2-Butene	14.645	53	1230	N.D.	
82) Bromobenzene	14.739	156	5294	0.47 ug/L #	18
83) 1,2,4-Trimethylbenzene	15.268	105	3232	N.D.	
84) 2-Chlorotoluene	15.033	91	1379	N.D.	
85) 4-Chlorotoluene	15.068	91	1563	N.D.	
86) tert-Butylbenzene	15.215	119	2364	N.D.	
87) 1,3,5-Trimethylbenzene	14.845	105	1106	N.D.	
88) p-Isopropyltoluene	15.509	119	1863	N.D.	
89) s-Butylbenzene	15.391	105	1006	N.D.	
90) 1,3-Dichlorobenzene	15.709	146	1219	N.D.	
91) 1,4-Dichlorobenzene	15.808	146	3641	N.D.	
92) n-Butylbenzene	15.996	91	2445	N.D.	
93) 1,2-Dichlorobenzene	16.378	146	1362	N.D.	
94) DBCP	0.000		0	N.D.	
95) Hexachlorobutadiene	0.000		0	N.D.	
96) 1,2,4-Trichlorobenzene	18.558	180	1837	N.D.	
97) Naphthalene	0.000		0	N.D. d	
98) 1,2,3-Trichlorobenzene	0.000		0	N.D. d	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\091916\
Data File : 5IN015.D
Acq On : 19 Sep 2016 2:41 pm
Operator : KKW
InstName : OVGCMS5
Sample : AZ06090-01
Misc :
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Sep 20 08:23:19 2016
Quant Method : C:\msdchem\1\methods\091616.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Mon Sep 19 08:51:53 2016
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\091916\
Data File : 5IN016.D
Acq On : 19 Sep 2016 3:11 pm
Operator : KKW
InstName : OVGCMS5
Sample : AZ06090-02
Misc :
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Sep 20 08:23:24 2016
Quant Method : C:\msdchem\1\methods\091616.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Mon Sep 19 08:51:53 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) PENTAFLUOROBENZENE (IS)	10.209	168	1224832	50.00 ug/L	0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.791	114	2114827	50.00 ug/L	0.00
57) CHLOROBENZENE-D5 (IS)	13.505	82	936825	50.00 ug/L	# 0.00
81) 1,4-DICHLOROBENZENE-D4...	15.791	152	1263469	50.00 ug/L	0.00
System Monitoring Compounds					
31) Dibromofluoromethane	9.792	113	546237	51.09 ug/L	0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 102.18%		
42) 1,2-Dichloroethane-d4	10.374	65	706660	49.01 ug/L	0.00
Spiked Amount 50.000	Range 70 - 120		Recovery = 98.02%		
54) D8-Toluene	12.095	98	2342126	50.77 ug/L	0.00
Spiked Amount 50.000	Range 85 - 120		Recovery = 101.54%		
75) Bromofluorobenzene	14.610	95	848305	50.70 ug/L	0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 101.40%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	0.000		0	N.D.	
3) Chloromethane	4.627	50	3135	N.D.	
4) Vinyl Chloride	0.000		0	N.D. d	
5) Bromomethane	0.000		0	N.D. d	
6) Chloroethane	0.000		0	N.D. d	
7) Trichlorofluoromethane	6.155	101	1303	N.D.	
8) Diethyl ether	6.596	59	1114	N.D.	
9) 1,1-Dichloroethene	7.019	96	1141	N.D.	
10) Trichlorotrifluoroethane	0.000		0	N.D.	
11) Acrolein	0.000		0	N.D. d	
12) Iodomethane	0.000		0	N.D. d	
13) Carbon Disulfide	7.001	76	4165	N.D.	
14) 3-chloropropene	7.606	41	3183	N.D.	
15) Acetone	7.788	43	17216	4.24 ug/L	96
16) Methylene Chloride	0.000		0	N.D. d	
17) Methyl Acetate	0.000		0	N.D. d	
18) t-1,2-Dichloroethene	7.906	96	1742	N.D.	
19) Methyl tert-butyl ether	8.070	73	1082	N.D.	
20) Acetonitrile	0.000		0	N.D. d	
21) Isopropyl ether	8.470	45	1846	N.D.	
22) Chloroprene	8.764	88	1390	N.D.	
23) 1,1-Dichloroethane	8.770	63	1081	N.D.	
24) Acrylonitrile	0.000		0	N.D. d	
25) Vinyl Acetate	8.917	43	2323	N.D.	
26) c-1,2-Dichloroethene	9.334	96	6626m	0.69 ug/L	
27) 2,2-Dichloropropane	9.510	77	1425	N.D.	
28) Bromochloromethane	0.000		0	N.D. d	
29) Cyclohexane	9.598	56	1346	N.D.	
30) Chloroform	9.451	83	1498	N.D.	
32) Dibromofluoromethane	9.792	113	546237	51.09 ug/L	93
33) 2-Butanone	0.000		0	N.D. d	
34) 1,1,1-Trichloroethane	9.939	97	1722	N.D.	
35) 1,1-Dichloropropene	9.968	75	1621	N.D.	
36) Propionitrile	0.000		0	N.D. d	
37) Methacrylonitrile	10.291	41	1779	N.D.	
38) Isobutyl Alcohol	0.000		0	N.D. d	
40) Carbon Tetrachloride	0.000		0	N.D.	
41) Benzene	10.239	78	2452	N.D.	
43) 1,2-Dichloroethane-d4	10.374	65	706660	49.01 ug/L #	74
44) 1,2-Dichloroethane	10.479	62	1139	N.D.	

Data Path : C:\msdchem\1\data\091916\
Data File : 5IN016.D
Acq On : 19 Sep 2016 3:11 pm
Operator : KKW
InstName : OVGCMS5
Sample : AZ06090-02
Misc :
ALS Vial : 16 Sample Multiplier: 1

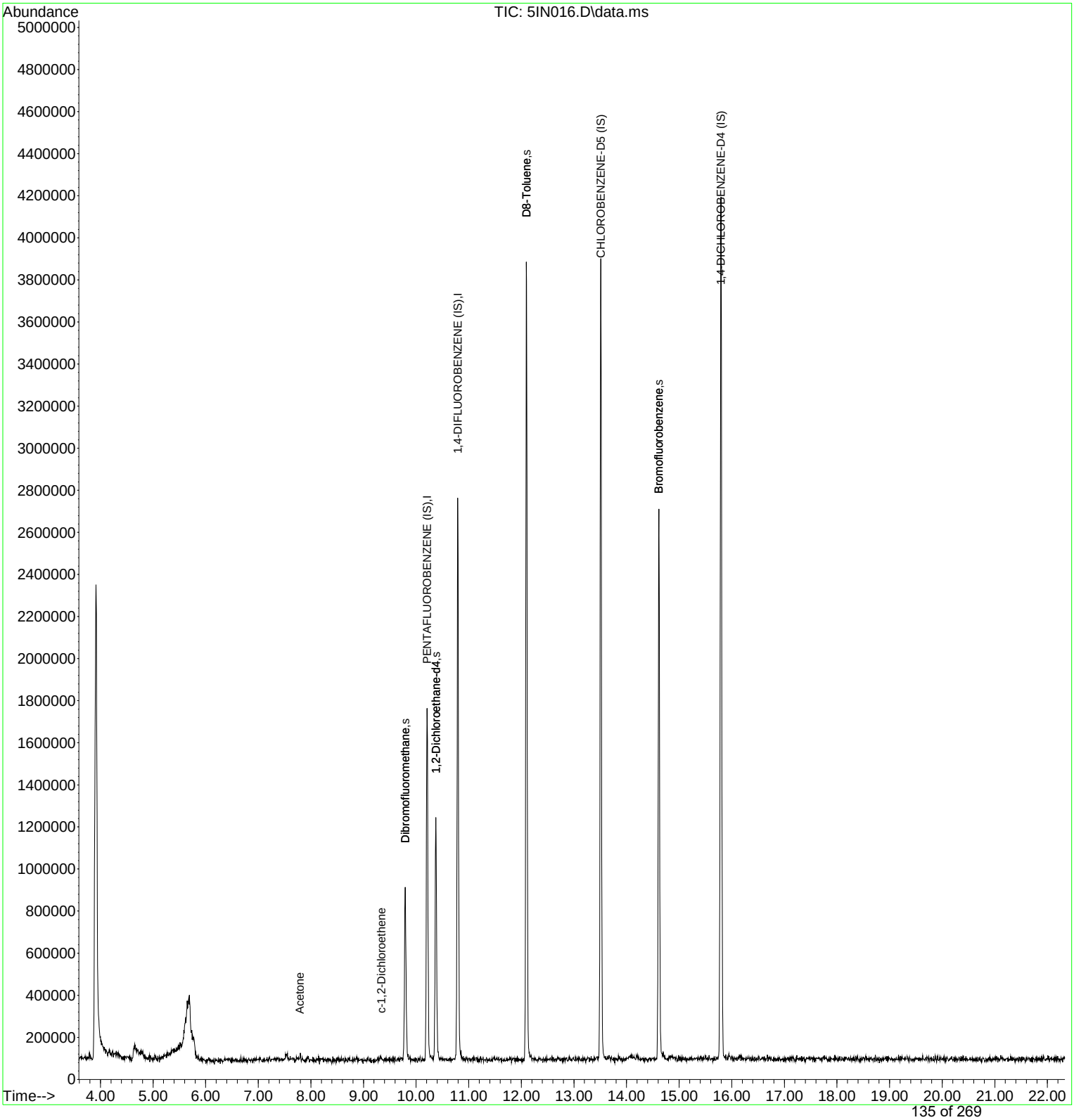
Quant Time: Sep 20 08:23:24 2016
Quant Method : C:\msdchem\1\methods\091616.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Mon Sep 19 08:51:53 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
45) Trichloroethene	10.791	130	1399	N.D.	
46) Methyl cyclohexane	0.000		0	N.D. d	
47) Dibromomethane	0.000		0	N.D. d	
48) 1,2-Dichloropropane	11.261	63	1110	N.D.	
49) Bromodichloromethane	11.284	83	1377	N.D.	
50) Methyl Methacrylate	0.000		0	N.D. d	
51) 1,4-Dioxane	0.000		0	N.D. d	
52) 2-Chloroethyl vinyl ether	0.000		0	N.D. d	
53) C-1,3-Dichloropropene	11.960	75	1067	N.D.	
55) D8-Toluene	12.095	98	2342126	50.77 ug/L #	90
56) 4-Methyl-2-pentanone	0.000		0	N.D. d	
58) Toluene	12.160	92	1512	N.D.	
59) T-1,3-Dichloropropene	12.495	75	1954	N.D.	
60) Tetrachloroethene	0.000		0	N.D.	
61) Ethyl methacrylate	0.000		0	N.D. d	
62) 1,1,2-Trichloroethane	0.000		0	N.D.	
63) Dibromochloromethane	12.724	129	1087	N.D.	
64) 1,3-Dichloropropane	12.924	76	1115	N.D.	
65) 1,2-Dibromoethane	0.000		0	N.D.	
66) 2-Hexanone	0.000		0	N.D. d	
67) Ethylbenzene	13.576	106	1111	N.D.	
68) Chlorobenzene	13.482	112	1185	N.D.	
69) 1,1,1,2-Tetrachloroethane	13.582	131	1165	N.D.	
70) m-xylene & p-xylene	13.576	106	1111	N.D.	
71) o-xylene	0.000		0	N.D.	
72) Styrene	0.000		0	N.D.	
73) Bromoform	0.000		0	N.D.	
74) Isopropylbenzene	14.140	105	1324	N.D.	
76) Bromofluorobenzene	14.610	95	848305	50.70 ug/L	95
77) n-Propylbenzene	14.704	91	1419	N.D.	
78) 1,1,2,2-Tetrachloroethane	14.757	83	1013	N.D.	
79) 1,2,3-Trichloropropane	0.000		0	N.D. d	
80) T-1,4-Dichloro-2-Butene	0.000		0	N.D. d	
82) Bromobenzene	0.000		0	N.D. d	
83) 1,2,4-Trimethylbenzene	15.262	105	2253	N.D.	
84) 2-Chlorotoluene	14.839	91	1271	N.D.	
85) 4-Chlorotoluene	15.068	91	1661	N.D.	
86) tert-Butylbenzene	15.227	119	1757	N.D.	
87) 1,3,5-Trimethylbenzene	14.833	105	1997	N.D.	
88) p-Isopropyltoluene	15.509	119	2370	N.D.	
89) s-Butylbenzene	15.391	105	1996	N.D.	
90) 1,3-Dichlorobenzene	15.803	146	4243	N.D.	
91) 1,4-Dichlorobenzene	15.803	146	4243	N.D.	
92) n-Butylbenzene	15.997	91	2541	N.D.	
93) 1,2-Dichlorobenzene	0.000		0	N.D.	
94) DBCP	0.000		0	N.D.	
95) Hexachlorobutadiene	0.000		0	N.D. d	
96) 1,2,4-Trichlorobenzene	18.582	180	1037	N.D.	
97) Naphthalene	0.000		0	N.D. d	
98) 1,2,3-Trichlorobenzene	0.000		0	N.D. d	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\091916\
Data File : 5IN016.D
Acq On : 19 Sep 2016 3:11 pm
Operator : KKW
InstName : OVGCMS5
Sample : AZ06090-02
Misc :
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Sep 20 08:23:24 2016
Quant Method : C:\msdchem\1\methods\091616.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Mon Sep 19 08:51:53 2016
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\091916\
Data File : 5IN017.D
Acq On : 19 Sep 2016 3:40 pm
Operator : KKW
InstName : OVGCMS5
Sample : AZ06090-03
Misc :
ALS Vial : 17 Sample Multiplier: 1

Quant Time: Sep 20 08:23:29 2016
Quant Method : C:\msdchem\1\methods\091616.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Mon Sep 19 08:51:53 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) PENTAFLUOROBENZENE (IS)	10.209	168	1231267	50.00 ug/L	0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.791	114	2031485	50.00 ug/L	0.00
57) CHLOROBENZENE-D5 (IS)	13.511	82	934893	50.00 ug/L	# 0.00
81) 1,4-DICHLOROBENZENE-D4...	15.797	152	1237379	50.00 ug/L	0.00
System Monitoring Compounds					
31) Dibromofluoromethane	9.792	113	532145	49.51 ug/L	0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 99.02%		
42) 1,2-Dichloroethane-d4	10.374	65	682221	49.25 ug/L	0.00
Spiked Amount 50.000	Range 70 - 120		Recovery = 98.50%		
54) D8-Toluene	12.095	98	2252918	50.84 ug/L	0.00
Spiked Amount 50.000	Range 85 - 120		Recovery = 101.68%		
75) Bromofluorobenzene	14.616	95	824561	49.39 ug/L	0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 98.78%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	4.187	85	1436	N.D.	
3) Chloromethane	0.000		0	N.D. d	
4) Vinyl Chloride	0.000		0	N.D. d	
5) Bromomethane	0.000		0	N.D. d	
6) Chloroethane	0.000		0	N.D. d	
7) Trichlorofluoromethane	0.000		0	N.D.	
8) Diethyl ether	6.584	59	1249	N.D.	
9) 1,1-Dichloroethene	6.825	96	1132	N.D.	
10) Trichlorotrifluoroethane	6.790	151	1236	N.D.	
11) Acrolein	0.000		0	N.D. d	
12) Iodomethane	0.000		0	N.D. d	
13) Carbon Disulfide	7.007	76	1444	N.D.	
14) 3-chloropropene	7.589	41	1676	N.D.	
15) Acetone	7.794	43	13045	3.20 ug/L #	61
16) Methylene Chloride	7.712	84	1026	N.D.	
17) Methyl Acetate	0.000		0	N.D. d	
18) t-1,2-Dichloroethene	7.941	96	1267	N.D.	
19) Methyl tert-butyl ether	7.988	73	3281	N.D.	
20) Acetonitrile	0.000		0	N.D. d	
21) Isopropyl ether	8.441	45	1701	N.D.	
22) Chloroprene	0.000		0	N.D. d	
23) 1,1-Dichloroethane	8.687	63	1268	N.D.	
24) Acrylonitrile	0.000		0	N.D. d	
25) Vinyl Acetate	8.934	43	2051	N.D.	
26) c-1,2-Dichloroethene	0.000		0	N.D. d	
27) 2,2-Dichloropropane	0.000		0	N.D.	
28) Bromochloromethane	0.000		0	N.D.	
29) Cyclohexane	9.580	56	1592	N.D.	
30) Chloroform	9.622	83	1117	N.D.	
32) Dibromofluoromethane	9.792	113	532145	49.51 ug/L	93
33) 2-Butanone	0.000		0	N.D. d	
34) 1,1,1-Trichloroethane	9.710	97	1378	N.D.	
35) 1,1-Dichloropropene	9.933	75	1565	N.D.	
36) Propionitrile	0.000		0	N.D. d	
37) Methacrylonitrile	0.000		0	N.D. d	
38) Isobutyl Alcohol	0.000		0	N.D. d	
40) Carbon Tetrachloride	9.716	117	1732	N.D.	
41) Benzene	0.000		0	N.D.	
43) 1,2-Dichloroethane-d4	10.374	65	682221	49.25 ug/L #	72
44) 1,2-Dichloroethane	10.462	62	1403	N.D.	

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\091916\
Data File : 5IN017.D
Acq On : 19 Sep 2016 3:40 pm
Operator : KKW
InstName : OVGCMS5
Sample : AZ06090-03
Misc :
ALS Vial : 17 Sample Multiplier: 1

Quant Time: Sep 20 08:23:29 2016
Quant Method : C:\msdchem\1\methods\091616.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Mon Sep 19 08:51:53 2016
Response via : Initial Calibration

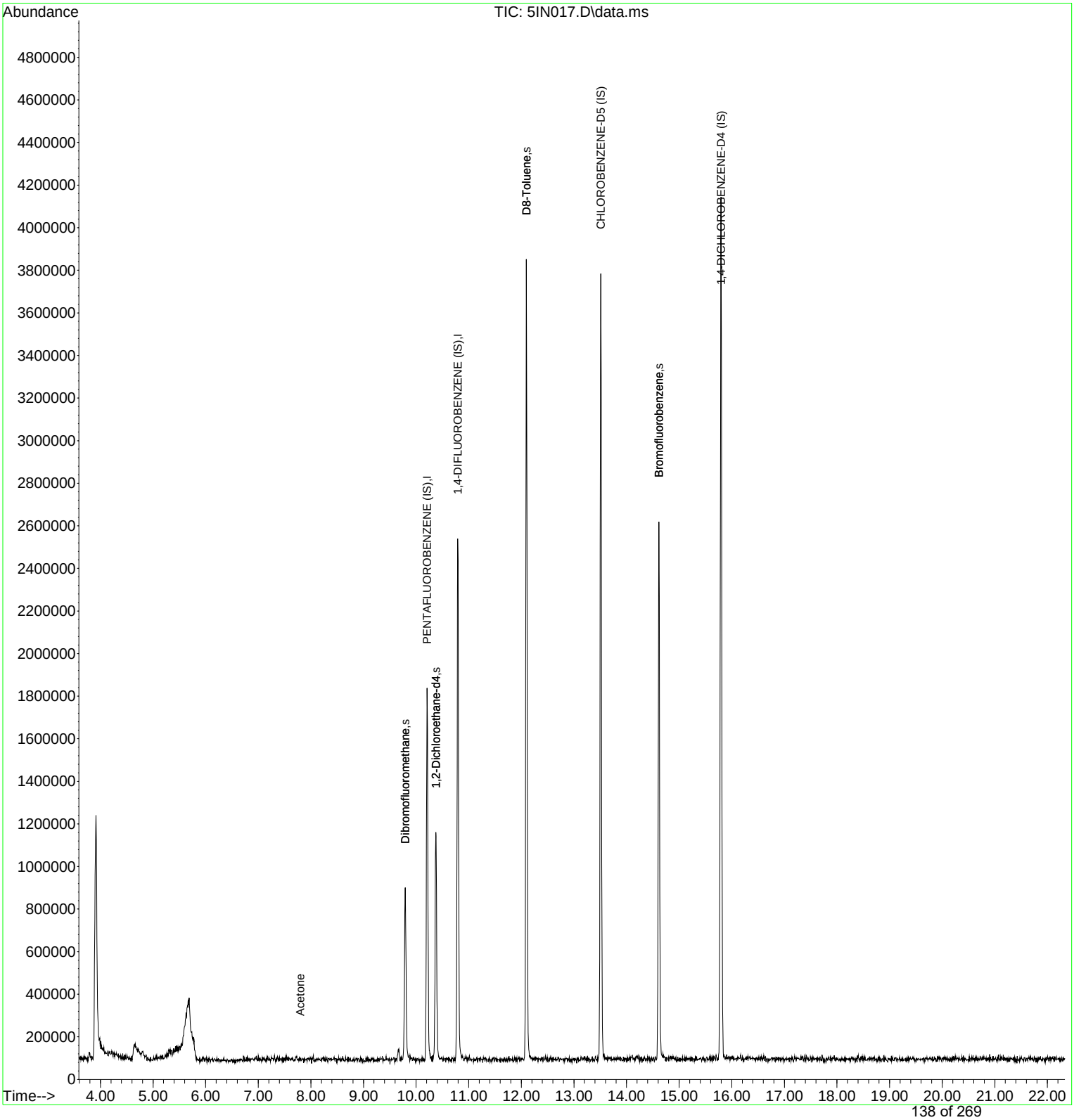
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
45) Trichloroethene	10.938	130	1109	N.D.	
46) Methyl cyclohexane	0.000		0	N.D. d	
47) Dibromomethane	0.000		0	N.D. d	
48) 1,2-Dichloropropane	11.373	63	1393	N.D.	
49) Bromodichloromethane	11.179	83	1001	N.D.	
50) Methyl Methacrylate	11.455	69	1090	N.D.	
51) 1,4-Dioxane	0.000		0	N.D. d	
52) 2-Chloroethyl vinyl ether	0.000		0	N.D. d	
53) C-1,3-Dichloropropene	11.931	75	1417	N.D.	
55) D8-Toluene	12.095	98	2252918	50.84 ug/L #	92
56) 4-Methyl-2-pentanone	0.000		0	N.D. d	
58) Toluene	12.125	92	1356	N.D.	
59) T-1,3-Dichloropropene	0.000		0	N.D.	
60) Tetrachloroethene	0.000		0	N.D.	
61) Ethyl methacrylate	12.542	69	1146	N.D.	
62) 1,1,2-Trichloroethane	0.000		0	N.D. d	
63) Dibromochloromethane	0.000		0	N.D.	
64) 1,3-Dichloropropane	0.000		0	N.D. d	
65) 1,2-Dibromoethane	0.000		0	N.D.	
66) 2-Hexanone	0.000		0	N.D. d	
67) Ethylbenzene	0.000		0	N.D.	
68) Chlorobenzene	0.000		0	N.D.	
69) 1,1,1,2-Tetrachloroethane	13.470	131	1225	N.D.	
70) m-xylene & p-xylene	0.000		0	N.D.	
71) o-xylene	13.917	106	1011	N.D.	
72) Styrene	14.210	104	1453	N.D.	
73) Bromoform	0.000		0	N.D.	
74) Isopropylbenzene	14.122	105	1146	N.D.	
76) Bromofluorobenzene	14.616	95	824561	49.39 ug/L	93
77) n-Propylbenzene	14.669	91	1320	N.D.	
78) 1,1,2,2-Tetrachloroethane	14.757	83	1259	N.D.	
79) 1,2,3-Trichloropropane	0.000		0	N.D. d	
80) T-1,4-Dichloro-2-Butene	14.586	53	1251	N.D.	
82) Bromobenzene	14.769	156	1130	N.D.	
83) 1,2,4-Trimethylbenzene	15.386	105	1602	N.D.	
84) 2-Chlorotoluene	14.986	91	1157	N.D.	
85) 4-Chlorotoluene	15.080	91	1002	N.D.	
86) tert-Butylbenzene	15.162	119	1286	N.D.	
87) 1,3,5-Trimethylbenzene	14.851	105	1598	N.D.	
88) p-Isopropyltoluene	15.662	119	1104	N.D.	
89) s-Butylbenzene	15.386	105	1602	N.D.	
90) 1,3-Dichlorobenzene	15.791	146	2773	N.D.	
91) 1,4-Dichlorobenzene	15.791	146	2773	N.D.	
92) n-Butylbenzene	16.002	91	1244	N.D.	
93) 1,2-Dichlorobenzene	16.331	146	1954	N.D.	
94) DBCP	0.000		0	N.D.	
95) Hexachlorobutadiene	0.000		0	N.D.	
96) 1,2,4-Trichlorobenzene	0.000		0	N.D.	
97) Naphthalene	0.000		0	N.D. d	
98) 1,2,3-Trichlorobenzene	0.000		0	N.D.	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\091916\
Data File : 5IN017.D
Acq On : 19 Sep 2016 3:40 pm
Operator : KKW
InstName : OVGCMS5
Sample : AZ06090-03
Misc :
ALS Vial : 17 Sample Multiplier: 1

Quant Time: Sep 20 08:23:29 2016
Quant Method : C:\msdchem\1\methods\091616.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Mon Sep 19 08:51:53 2016
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\091916\
Data File : 5IN018.D
Acq On : 19 Sep 2016 4:10 pm
Operator : KKW
InstName : OVGCMS5
Sample : AZ06090-04
Misc :
ALS Vial : 18 Sample Multiplier: 1

Quant Time: Sep 20 08:23:33 2016
Quant Method : C:\msdchem\1\methods\091616.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Mon Sep 19 08:51:53 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) PENTAFLUOROBENZENE (IS)	10.209	168	1213478	50.00	ug/L	0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.791	114	2050493	50.00	ug/L	0.00
57) CHLOROBENZENE-D5 (IS)	13.511	82	913265	50.00	ug/L	0.00
81) 1,4-DICHLOROBENZENE-D4...	15.797	152	1248080	50.00	ug/L	0.00
System Monitoring Compounds						
31) Dibromofluoromethane	9.792	113	529235	49.96	ug/L	0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 99.92%			
42) 1,2-Dichloroethane-d4	10.374	65	704555	50.40	ug/L	0.00
Spiked Amount 50.000	Range 70 - 120		Recovery = 100.80%			
54) D8-Toluene	12.095	98	2363091	52.83	ug/L	0.00
Spiked Amount 50.000	Range 85 - 120		Recovery = 105.66%			
75) Bromofluorobenzene	14.616	95	860902	52.78	ug/L	0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 105.56%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	4.322	85	1656	N.D.		
3) Chloromethane	4.698	50	2820	N.D.		
4) Vinyl Chloride	4.933	62	72318	5.39	ug/L #	8
5) Bromomethane	0.000		0	N.D.	d	
6) Chloroethane	0.000		0	N.D.	d	
7) Trichlorofluoromethane	0.000		0	N.D.		
8) Diethyl ether	6.590	59	1902	N.D.		
9) 1,1-Dichloroethene	0.000		0	N.D.		
10) Trichlorotrifluoroethane	6.913	151	1218	N.D.		
11) Acrolein	0.000		0	N.D.	d	
12) Iodomethane	0.000		0	N.D.	d	
13) Carbon Disulfide	7.013	76	3434	N.D.		
14) 3-chloropropene	7.606	41	3348	N.D.		
15) Acetone	0.000		0	N.D.	d	
16) Methylene Chloride	7.724	84	1330	N.D.		
17) Methyl Acetate	0.000		0	N.D.	d	
18) t-1,2-Dichloroethene	7.947	96	1530	N.D.		
19) Methyl tert-butyl ether	8.082	73	1166	N.D.		
20) Acetonitrile	0.000		0	N.D.	d	
21) Isopropyl ether	8.476	45	1716	N.D.		
22) Chloroprene	8.535	88	1327	N.D.		
23) 1,1-Dichloroethane	8.699	63	1862	N.D.		
24) Acrylonitrile	0.000		0	N.D.	d	
25) Vinyl Acetate	8.928	43	2737	N.D.		
26) c-1,2-Dichloroethene	9.340	96	1061	N.D.		
27) 2,2-Dichloropropane	9.457	77	1463	N.D.		
28) Bromochloromethane	0.000		0	N.D.		
29) Cyclohexane	9.598	56	1753	N.D.		
30) Chloroform	9.592	83	1360	N.D.		
32) Dibromofluoromethane	9.792	113	529235	49.96	ug/L	95
33) 2-Butanone	0.000		0	N.D.	d	
34) 1,1,1-Trichloroethane	9.686	97	1041	N.D.		
35) 1,1-Dichloropropene	9.898	75	1394	N.D.		
36) Propionitrile	0.000		0	N.D.	d	
37) Methacrylonitrile	0.000		0	N.D.	d	
38) Isobutyl Alcohol	0.000		0	N.D.	d	
40) Carbon Tetrachloride	9.721	117	1638	N.D.		
41) Benzene	10.327	78	1177	N.D.		
43) 1,2-Dichloroethane-d4	10.374	65	704555	50.40	ug/L #	73
44) 1,2-Dichloroethane	10.509	62	1089	N.D.		

Data Path : C:\msdchem\1\data\091916\
Data File : 5IN018.D
Acq On : 19 Sep 2016 4:10 pm
Operator : KKW
InstName : OVGCMS5
Sample : AZ06090-04
Misc :
ALS Vial : 18 Sample Multiplier: 1

Quant Time: Sep 20 08:23:33 2016
Quant Method : C:\msdchem\1\methods\091616.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Mon Sep 19 08:51:53 2016
Response via : Initial Calibration

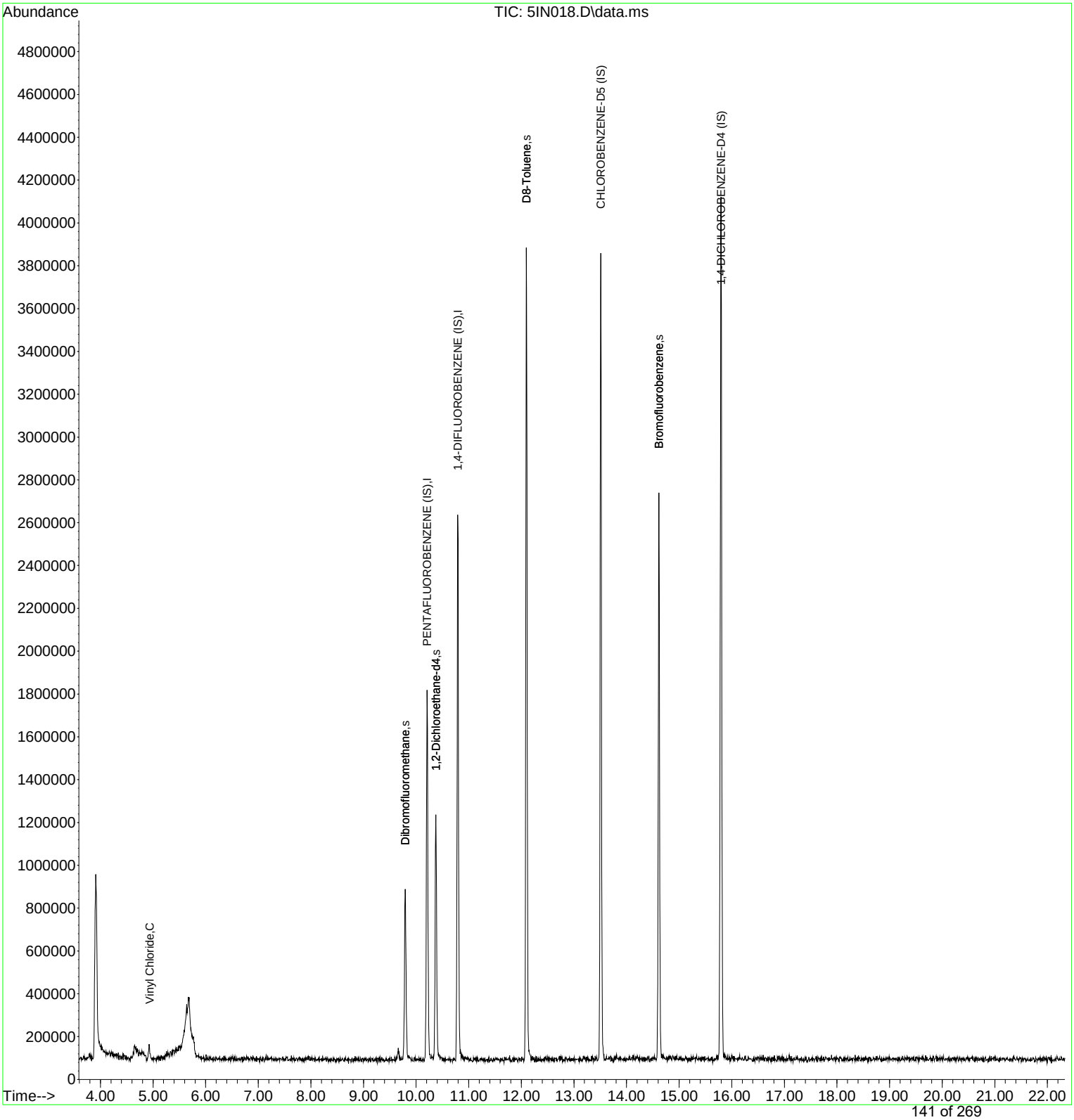
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
45) Trichloroethene	0.000		0	N.D.	
46) Methyl cyclohexane	0.000		0	N.D. d	
47) Dibromomethane	0.000		0	N.D. d	
48) 1,2-Dichloropropane	11.314	63	1313	N.D.	
49) Bromodichloromethane	11.267	83	1350	N.D.	
50) Methyl Methacrylate	11.396	69	1007	N.D.	
51) 1,4-Dioxane	0.000		0	N.D. d	
52) 2-Chloroethyl vinyl ether	0.000		0	N.D. d	
53) C-1,3-Dichloropropene	11.960	75	1145	N.D.	
55) D8-Toluene	12.095	98	2363091	52.83 ug/L #	92
56) 4-Methyl-2-pentanone	0.000		0	N.D. d	
58) Toluene	12.136	92	1177	N.D.	
59) T-1,3-Dichloropropene	12.424	75	1112	N.D.	
60) Tetrachloroethene	0.000		0	N.D.	
61) Ethyl methacrylate	0.000		0	N.D. d	
62) 1,1,2-Trichloroethane	12.736	97	1098	N.D.	
63) Dibromochloromethane	0.000		0	N.D.	
64) 1,3-Dichloropropane	12.853	76	2292	N.D.	
65) 1,2-Dibromoethane	13.153	107	1000	N.D.	
66) 2-Hexanone	0.000		0	N.D. d	
67) Ethylbenzene	13.488	106	1089	N.D.	
68) Chlorobenzene	0.000		0	N.D.	
69) 1,1,1,2-Tetrachloroethane	13.417	131	1315	N.D.	
70) m-xylene & p-xylene	0.000		0	N.D.	
71) o-xylene	14.152	106	1496	N.D.	
72) Styrene	0.000		0	N.D.	
73) Bromoform	0.000		0	N.D.	
74) Isopropylbenzene	0.000		0	N.D.	
76) Bromofluorobenzene	14.616	95	860902	52.78 ug/L	94
77) n-Propylbenzene	14.622	91	2520	N.D.	
78) 1,1,2,2-Tetrachloroethane	14.727	83	1261	N.D.	
79) 1,2,3-Trichloropropane	0.000		0	N.D. d	
80) T-1,4-Dichloro-2-Butene	0.000		0	N.D. d	
82) Bromobenzene	0.000		0	N.D. d	
83) 1,2,4-Trimethylbenzene	0.000		0	N.D.	
84) 2-Chlorotoluene	14.816	91	1169	N.D.	
85) 4-Chlorotoluene	15.062	91	1277	N.D.	
86) tert-Butylbenzene	15.209	119	1600	N.D.	
87) 1,3,5-Trimethylbenzene	14.851	105	1255	N.D.	
88) p-Isopropyltoluene	0.000		0	N.D.	
89) s-Butylbenzene	0.000		0	N.D.	
90) 1,3-Dichlorobenzene	15.738	146	1368	N.D.	
91) 1,4-Dichlorobenzene	15.803	146	2763	N.D.	
92) n-Butylbenzene	16.026	91	1203	N.D.	
93) 1,2-Dichlorobenzene	0.000		0	N.D.	
94) DBCP	0.000		0	N.D.	
95) Hexachlorobutadiene	0.000		0	N.D. d	
96) 1,2,4-Trichlorobenzene	0.000		0	N.D.	
97) Naphthalene	0.000		0	N.D. d	
98) 1,2,3-Trichlorobenzene	0.000		0	N.D.	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\091916\
Data File : 5IN018.D
Acq On : 19 Sep 2016 4:10 pm
Operator : KKW
InstName : OVGCMS5
Sample : AZ06090-04
Misc :
ALS Vial : 18 Sample Multiplier: 1

Quant Time: Sep 20 08:23:33 2016
Quant Method : C:\msdchem\1\methods\091616.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Mon Sep 19 08:51:53 2016
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\091916\
Data File : 5IN019.D
Acq On : 19 Sep 2016 4:40 pm
Operator : KKW
InstName : OVGCMS5
Sample : AZ06090-05
Misc :
ALS Vial : 19 Sample Multiplier: 1

Quant Time: Sep 20 08:23:38 2016
Quant Method : C:\msdchem\1\methods\091616.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Mon Sep 19 08:51:53 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) PENTAFLUOROBENZENE (IS)	10.215	168	1194885	50.00	ug/L	0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.791	114	2035035	50.00	ug/L	0.00
57) CHLOROBENZENE-D5 (IS)	13.511	82	891800	50.00	ug/L	0.00
81) 1,4-DICHLOROBENZENE-D4...	15.797	152	1208769	50.00	ug/L	0.00
System Monitoring Compounds						
31) Dibromofluoromethane	9.798	113	523804	50.22	ug/L	0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 100.44%			
42) 1,2-Dichloroethane-d4	10.374	65	662040	47.71	ug/L	0.00
Spiked Amount 50.000	Range 70 - 120		Recovery = 95.42%			
54) D8-Toluene	12.095	98	2245577	50.59	ug/L	0.00
Spiked Amount 50.000	Range 85 - 120		Recovery = 101.18%			
75) Bromofluorobenzene	14.616	95	858243	53.89	ug/L	0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 107.78%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	4.281	85	1121	N.D.		
3) Chloromethane	0.000		0	N.D.	d	
4) Vinyl Chloride	4.921	62	28164	2.13	ug/L #	43
5) Bromomethane	0.000		0	N.D.	d	
6) Chloroethane	0.000		0	N.D.	d	
7) Trichlorofluoromethane	0.000		0	N.D.		
8) Diethyl ether	6.660	59	1348	N.D.		
9) 1,1-Dichloroethene	0.000		0	N.D.		
10) Trichlorotrifluoroethane	0.000		0	N.D.		
11) Acrolein	0.000		0	N.D.	d	
12) Iodomethane	0.000		0	N.D.	d	
13) Carbon Disulfide	7.025	76	2268	N.D.		
14) 3-chloropropene	7.589	41	1338	N.D.		
15) Acetone	0.000		0	N.D.	d	
16) Methylene Chloride	0.000		0	N.D.	d	
17) Methyl Acetate	0.000		0	N.D.	d	
18) t-1,2-Dichloroethene	8.053	96	1586	N.D.		
19) Methyl tert-butyl ether	8.035	73	1495	N.D.		
20) Acetonitrile	0.000		0	N.D.	d	
21) Isopropyl ether	8.494	45	2680	N.D.		
22) Chloroprene	8.599	88	1356	N.D.		
23) 1,1-Dichloroethane	8.611	63	1244	N.D.		
24) Acrylonitrile	0.000		0	N.D.	d	
25) Vinyl Acetate	8.987	43	1299	N.D.		
26) c-1,2-Dichloroethene	0.000		0	N.D.		
27) 2,2-Dichloropropane	9.393	77	1071	N.D.		
28) Bromochloromethane	0.000		0	N.D.		
29) Cyclohexane	9.598	56	1024	N.D.		
30) Chloroform	9.516	83	1666	N.D.		
32) Dibromofluoromethane	9.798	113	523804	50.22	ug/L	97
33) 2-Butanone	0.000		0	N.D.	d	
34) 1,1,1-Trichloroethane	9.745	97	1109	N.D.		
35) 1,1-Dichloropropene	9.880	75	1548	N.D.		
36) Propionitrile	0.000		0	N.D.	d	
37) Methacrylonitrile	10.280	41	1271	N.D.		
38) Isobutyl Alcohol	0.000		0	N.D.	d	
40) Carbon Tetrachloride	9.727	117	2223	N.D.		
41) Benzene	10.127	78	1192	N.D.		
43) 1,2-Dichloroethane-d4	10.374	65	662040	47.71	ug/L #	71
44) 1,2-Dichloroethane	10.462	62	1856	N.D.		

Data Path : C:\msdchem\1\data\091916\
Data File : 5IN019.D
Acq On : 19 Sep 2016 4:40 pm
Operator : KKW
InstName : OVGCMS5
Sample : AZ06090-05
Misc :
ALS Vial : 19 Sample Multiplier: 1

Quant Time: Sep 20 08:23:38 2016
Quant Method : C:\msdchem\1\methods\091616.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Mon Sep 19 08:51:53 2016
Response via : Initial Calibration

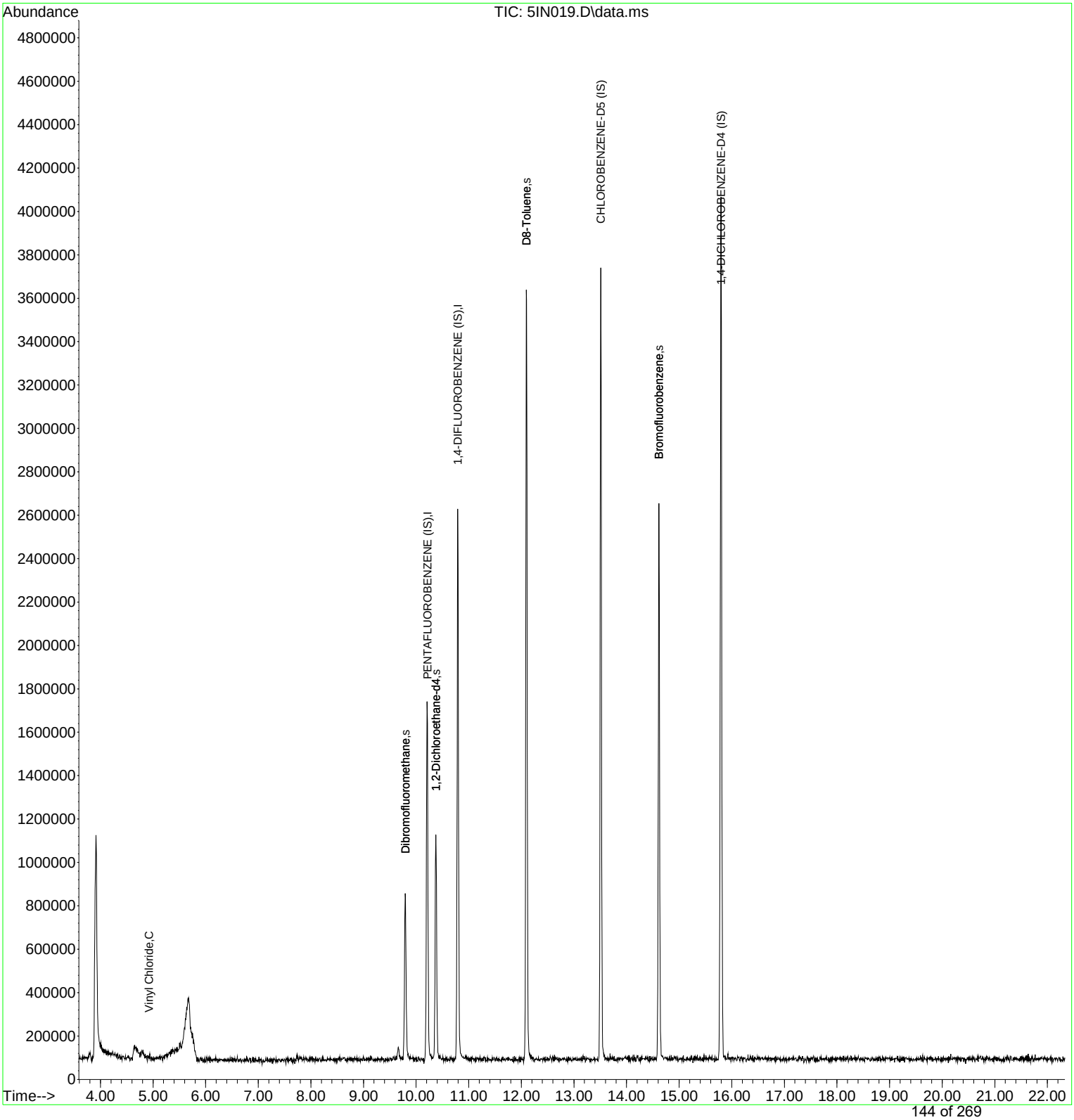
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
45) Trichloroethene	0.000		0	N.D.	
46) Methyl cyclohexane	0.000		0	N.D. d	
47) Dibromomethane	0.000		0	N.D.	
48) 1,2-Dichloropropane	11.361	63	1267	N.D.	
49) Bromodichloromethane	11.426	83	1195	N.D.	
50) Methyl Methacrylate	0.000		0	N.D. d	
51) 1,4-Dioxane	0.000		0	N.D. d	
52) 2-Chloroethyl vinyl ether	0.000		0	N.D.	
53) C-1,3-Dichloropropene	11.890	75	2126	N.D.	
55) D8-Toluene	12.095	98	2245577	50.59 ug/L #	91
56) 4-Methyl-2-pentanone	0.000		0	N.D. d	
58) Toluene	12.101	92	1339	N.D.	
59) T-1,3-Dichloropropene	0.000		0	N.D.	
60) Tetrachloroethene	0.000		0	N.D.	
61) Ethyl methacrylate	0.000		0	N.D. d	
62) 1,1,2-Trichloroethane	12.536	97	1095	N.D.	
63) Dibromochloromethane	12.777	129	1415	N.D.	
64) 1,3-Dichloropropane	0.000		0	N.D.	
65) 1,2-Dibromoethane	13.065	107	1040	N.D.	
66) 2-Hexanone	13.212	43	1725	N.D.	
67) Ethylbenzene	0.000		0	N.D.	
68) Chlorobenzene	13.517	112	2233	N.D.	
69) 1,1,1,2-Tetrachloroethane	0.000		0	N.D.	
70) m-xylene & p-xylene	0.000		0	N.D.	
71) o-xylene	0.000		0	N.D.	
72) Styrene	14.046	104	1418	N.D.	
73) Bromoform	0.000		0	N.D.	
74) Isopropylbenzene	14.275	105	1253	N.D.	
76) Bromofluorobenzene	14.616	95	858243	53.89 ug/L	96
77) n-Propylbenzene	14.686	91	2175	N.D.	
78) 1,1,2,2-Tetrachloroethane	14.757	83	1334	N.D.	
79) 1,2,3-Trichloropropane	0.000		0	N.D. d	
80) T-1,4-Dichloro-2-Butene	0.000		0	N.D. d	
82) Bromobenzene	0.000		0	N.D. d	
83) 1,2,4-Trimethylbenzene	15.215	105	1168	N.D.	
84) 2-Chlorotoluene	14.945	91	1383	N.D.	
85) 4-Chlorotoluene	14.945	91	1383	N.D.	
86) tert-Butylbenzene	15.239	119	1131	N.D.	
87) 1,3,5-Trimethylbenzene	0.000		0	N.D.	
88) p-Isopropyltoluene	0.000		0	N.D.	
89) s-Butylbenzene	15.339	105	1073	N.D.	
90) 1,3-Dichlorobenzene	15.832	146	2796	N.D.	
91) 1,4-Dichlorobenzene	15.832	146	2796	N.D.	
92) n-Butylbenzene	15.997	91	1284	N.D.	
93) 1,2-Dichlorobenzene	0.000		0	N.D.	
94) DBCP	0.000		0	N.D.	
95) Hexachlorobutadiene	0.000		0	N.D. d	
96) 1,2,4-Trichlorobenzene	0.000		0	N.D.	
97) Naphthalene	19.299	128	1196	N.D.	
98) 1,2,3-Trichlorobenzene	0.000		0	N.D.	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\091916\
Data File : 5IN019.D
Acq On : 19 Sep 2016 4:40 pm
Operator : KKW
InstName : OVGCMS5
Sample : AZ06090-05
Misc :
ALS Vial : 19 Sample Multiplier: 1

Quant Time: Sep 20 08:23:38 2016
Quant Method : C:\msdchem\1\methods\091616.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Mon Sep 19 08:51:53 2016
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\091916\
Data File : 5IN020.D
Acq On : 19 Sep 2016 5:09 pm
Operator : KKW
InstName : OVGCMS5
Sample : AZ06090-06
Misc :
ALS Vial : 20 Sample Multiplier: 1

Quant Time: Sep 20 08:23:43 2016
Quant Method : C:\msdchem\1\methods\091616.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Mon Sep 19 08:51:53 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) PENTAFLUOROBENZENE (IS)	10.209	168	1219787	50.00 ug/L	0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.791	114	2014441	50.00 ug/L	0.00
57) CHLOROBENZENE-D5 (IS)	13.511	82	923893	50.00 ug/L	# 0.00
81) 1,4-DICHLOROBENZENE-D4...	15.791	152	1233611	50.00 ug/L	0.00
System Monitoring Compounds					
31) Dibromofluoromethane	9.792	113	528436	49.63 ug/L	0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 99.26%		
42) 1,2-Dichloroethane-d4	10.374	65	668419	48.67 ug/L	0.00
Spiked Amount 50.000	Range 70 - 120		Recovery = 97.34%		
54) D8-Toluene	12.095	98	2238443	50.94 ug/L	0.00
Spiked Amount 50.000	Range 85 - 120		Recovery = 101.88%		
75) Bromofluorobenzene	14.616	95	834281	50.56 ug/L	0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 101.12%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	0.000		0	N.D. d	
3) Chloromethane	4.827	50	3178	N.D.	
4) Vinyl Chloride	4.798	62	1262	N.D.	
5) Bromomethane	0.000		0	N.D. d	
6) Chloroethane	0.000		0	N.D. d	
7) Trichlorofluoromethane	6.020	101	1377	N.D.	
8) Diethyl ether	6.578	59	1144	N.D.	
9) 1,1-Dichloroethene	6.883	96	1013	N.D.	
10) Trichlorotrifluoroethane	0.000		0	N.D.	
11) Acrolein	0.000		0	N.D. d	
12) Iodomethane	7.160	142	1579	N.D.	
13) Carbon Disulfide	7.019	76	3395	N.D.	
14) 3-chloropropene	0.000		0	N.D. d	
15) Acetone	7.794	43	51984	12.86 ug/L #	89
16) Methylene Chloride	0.000		0	N.D. d	
17) Methyl Acetate	0.000		0	N.D. d	
18) t-1,2-Dichloroethene	8.035	96	1062	N.D.	
19) Methyl tert-butyl ether	8.076	73	1522	N.D.	
20) Acetonitrile	0.000		0	N.D. d	
21) Isopropyl ether	8.452	45	1344	N.D.	
22) Chloroprene	0.000		0	N.D.	
23) 1,1-Dichloroethane	8.670	63	1214	N.D.	
24) Acrylonitrile	0.000		0	N.D. d	
25) Vinyl Acetate	8.922	43	5637	N.D.	
26) c-1,2-Dichloroethene	0.000		0	N.D.	
27) 2,2-Dichloropropane	9.357	77	1045	N.D.	
28) Bromochloromethane	0.000		0	N.D.	
29) Cyclohexane	9.598	56	1937	N.D.	
30) Chloroform	0.000		0	N.D.	
32) Dibromofluoromethane	9.792	113	528436	49.63 ug/L #	95
33) 2-Butanone	0.000		0	N.D. d	
34) 1,1,1-Trichloroethane	9.986	97	1035	N.D.	
35) 1,1-Dichloropropene	9.927	75	1224	N.D.	
36) Propionitrile	0.000		0	N.D. d	
37) Methacrylonitrile	0.000		0	N.D. d	
38) Isobutyl Alcohol	0.000		0	N.D. d	
40) Carbon Tetrachloride	9.739	117	2094	N.D.	
41) Benzene	10.133	78	1386	N.D.	
43) 1,2-Dichloroethane-d4	10.374	65	668419	48.67 ug/L #	73
44) 1,2-Dichloroethane	10.491	62	1156	N.D.	

Data Path : C:\msdchem\1\data\091916\
Data File : 5IN020.D
Acq On : 19 Sep 2016 5:09 pm
Operator : KKW
InstName : OVGCMS5
Sample : AZ06090-06
Misc :
ALS Vial : 20 Sample Multiplier: 1

Quant Time: Sep 20 08:23:43 2016
Quant Method : C:\msdchem\1\methods\091616.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Mon Sep 19 08:51:53 2016
Response via : Initial Calibration

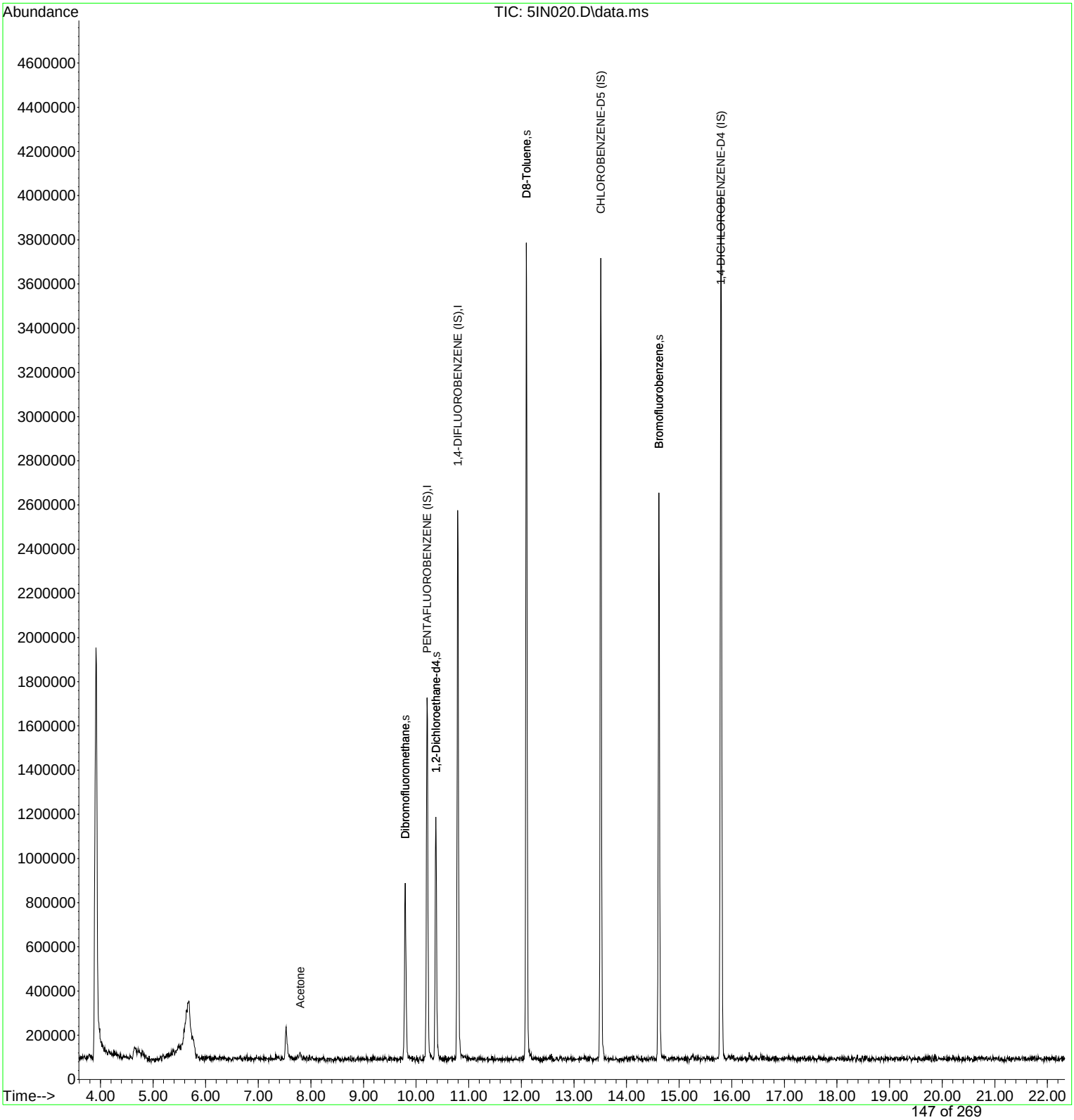
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
45) Trichloroethene	10.855	130	1237	N.D.	
46) Methyl cyclohexane	0.000		0	N.D. d	
47) Dibromomethane	0.000		0	N.D. d	
48) 1,2-Dichloropropane	11.402	63	1314	N.D.	
49) Bromodichloromethane	11.396	83	1668	N.D.	
50) Methyl Methacrylate	0.000		0	N.D. d	
51) 1,4-Dioxane	0.000		0	N.D. d	
52) 2-Chloroethyl vinyl ether	0.000		0	N.D. d	
53) C-1,3-Dichloropropene	11.919	75	1730	N.D.	
55) D8-Toluene	12.095	98	2238443	50.94 ug/L #	89
56) 4-Methyl-2-pentanone	0.000		0	N.D.	
58) Toluene	12.148	92	1123	N.D.	
59) T-1,3-Dichloropropene	12.459	75	1493	N.D.	
60) Tetrachloroethene	0.000		0	N.D.	
61) Ethyl methacrylate	0.000		0	N.D. d	
62) 1,1,2-Trichloroethane	12.759	97	1469	N.D.	
63) Dibromochloromethane	13.000	129	1183	N.D.	
64) 1,3-Dichloropropane	12.859	76	1209	N.D.	
65) 1,2-Dibromoethane	13.129	107	1317	N.D.	
66) 2-Hexanone	0.000		0	N.D. d	
67) Ethylbenzene	0.000		0	N.D.	
68) Chlorobenzene	0.000		0	N.D.	
69) 1,1,1,2-Tetrachloroethane	13.570	131	1163	N.D.	
70) m-xylene & p-xylene	0.000		0	N.D.	
71) o-xylene	0.000		0	N.D.	
72) Styrene	14.075	104	1556	N.D.	
73) Bromoform	14.304	173	1205	N.D.	
74) Isopropylbenzene	0.000		0	N.D.	
76) Bromofluorobenzene	14.616	95	834281	50.56 ug/L	97
77) n-Propylbenzene	14.622	91	2043	N.D.	
78) 1,1,2,2-Tetrachloroethane	14.857	83	1711	N.D.	
79) 1,2,3-Trichloropropane	0.000		0	N.D. d	
80) T-1,4-Dichloro-2-Butene	0.000		0	N.D. d	
82) Bromobenzene	14.710	156	1739	N.D.	
83) 1,2,4-Trimethylbenzene	15.256	105	1003	N.D.	
84) 2-Chlorotoluene	0.000		0	N.D.	
85) 4-Chlorotoluene	15.074	91	1090	N.D.	
86) tert-Butylbenzene	15.268	119	1026	N.D.	
87) 1,3,5-Trimethylbenzene	14.880	105	1039	N.D.	
88) p-Isopropyltoluene	15.521	119	4113	N.D.	
89) s-Butylbenzene	15.256	105	1003	N.D.	
90) 1,3-Dichlorobenzene	15.791	146	4083	N.D.	
91) 1,4-Dichlorobenzene	15.791	146	4083	N.D.	
92) n-Butylbenzene	16.108	91	1157	N.D.	
93) 1,2-Dichlorobenzene	0.000		0	N.D.	
94) DBCP	0.000		0	N.D.	
95) Hexachlorobutadiene	0.000		0	N.D.	
96) 1,2,4-Trichlorobenzene	0.000		0	N.D.	
97) Naphthalene	19.146	128	1003	N.D.	
98) 1,2,3-Trichlorobenzene	0.000		0	N.D. d	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\091916\
Data File : 5IN020.D
Acq On : 19 Sep 2016 5:09 pm
Operator : KKW
InstName : OVGCMS5
Sample : AZ06090-06
Misc :
ALS Vial : 20 Sample Multiplier: 1

Quant Time: Sep 20 08:23:43 2016
Quant Method : C:\msdchem\1\methods\091616.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Mon Sep 19 08:51:53 2016
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\091916\
Data File : 5IN021.D
Acq On : 19 Sep 2016 5:39 pm
Operator : KKW
InstName : OVGCMS5
Sample : AZ06090-07
Misc :
ALS Vial : 21 Sample Multiplier: 1

Quant Time: Sep 20 08:23:48 2016
Quant Method : C:\msdchem\1\methods\091616.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Mon Sep 19 08:51:53 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) PENTAFLUOROBENZENE (IS)	10.209	168	1186823	50.00	ug/L	0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.791	114	1963489	50.00	ug/L	0.00
57) CHLOROBENZENE-D5 (IS)	13.511	82	876623	50.00	ug/L	0.00
81) 1,4-DICHLOROBENZENE-D4...	15.797	152	1173489	50.00	ug/L	0.00
System Monitoring Compounds						
31) Dibromofluoromethane	9.792	113	528773	51.04	ug/L	0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 102.08%			
42) 1,2-Dichloroethane-d4	10.374	65	674760	50.40	ug/L	0.00
Spiked Amount 50.000	Range 70 - 120		Recovery = 100.80%			
54) D8-Toluene	12.095	98	2268935	52.98	ug/L	0.00
Spiked Amount 50.000	Range 85 - 120		Recovery = 105.96%			
75) Bromofluorobenzene	14.616	95	792272	50.61	ug/L	0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 101.22%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	4.228	85	1250	N.D.		
3) Chloromethane	0.000		0	N.D. d		
4) Vinyl Chloride	4.804	62	1146	N.D.		
5) Bromomethane	0.000		0	N.D. d		
6) Chloroethane	5.844	64	1444	N.D.		
7) Trichlorofluoromethane	5.961	101	1080	N.D.		
8) Diethyl ether	0.000		0	N.D. d		
9) 1,1-Dichloroethene	0.000		0	N.D.		
10) Trichlorotrifluoroethane	0.000		0	N.D.		
11) Acrolein	0.000		0	N.D. d		
12) Iodomethane	0.000		0	N.D. d		
13) Carbon Disulfide	7.013	76	2456	N.D.		
14) 3-chloropropene	7.577	41	1739	N.D.		
15) Acetone	7.800	43	35182	8.95	ug/L	99
16) Methylene Chloride	7.700	84	1172	N.D.		
17) Methyl Acetate	0.000		0	N.D. d		
18) t-1,2-Dichloroethene	7.771	96	1162	N.D.		
19) Methyl tert-butyl ether	8.118	73	1999	N.D.		
20) Acetonitrile	0.000		0	N.D. d		
21) Isopropyl ether	8.482	45	1643	N.D.		
22) Chloroprene	8.594	88	1258	N.D.		
23) 1,1-Dichloroethane	8.776	63	1217	N.D.		
24) Acrylonitrile	8.746	53	1174	N.D.		
25) Vinyl Acetate	8.946	43	2184	N.D.		
26) c-1,2-Dichloroethene	9.246	96	1188	N.D.		
27) 2,2-Dichloropropane	0.000		0	N.D.		
28) Bromochloromethane	0.000		0	N.D.		
29) Cyclohexane	9.586	56	1850	N.D.		
30) Chloroform	9.622	83	1022	N.D.		
32) Dibromofluoromethane	9.792	113	528773	51.04	ug/L	96
33) 2-Butanone	0.000		0	N.D. d		
34) 1,1,1-Trichloroethane	0.000		0	N.D.		
35) 1,1-Dichloropropene	9.933	75	1223	N.D.		
36) Propionitrile	0.000		0	N.D. d		
37) Methacrylonitrile	10.280	41	1234	N.D.		
38) Isobutyl Alcohol	0.000		0	N.D. d		
40) Carbon Tetrachloride	0.000		0	N.D. d		
41) Benzene	10.233	78	1464	N.D.		
43) 1,2-Dichloroethane-d4	10.374	65	674760	50.40	ug/L #	73
44) 1,2-Dichloroethane	10.579	62	1079	N.D.		

Data Path : C:\msdchem\1\data\091916\
Data File : 5IN021.D
Acq On : 19 Sep 2016 5:39 pm
Operator : KKW
InstName : OVGCMS5
Sample : AZ06090-07
Misc :
ALS Vial : 21 Sample Multiplier: 1

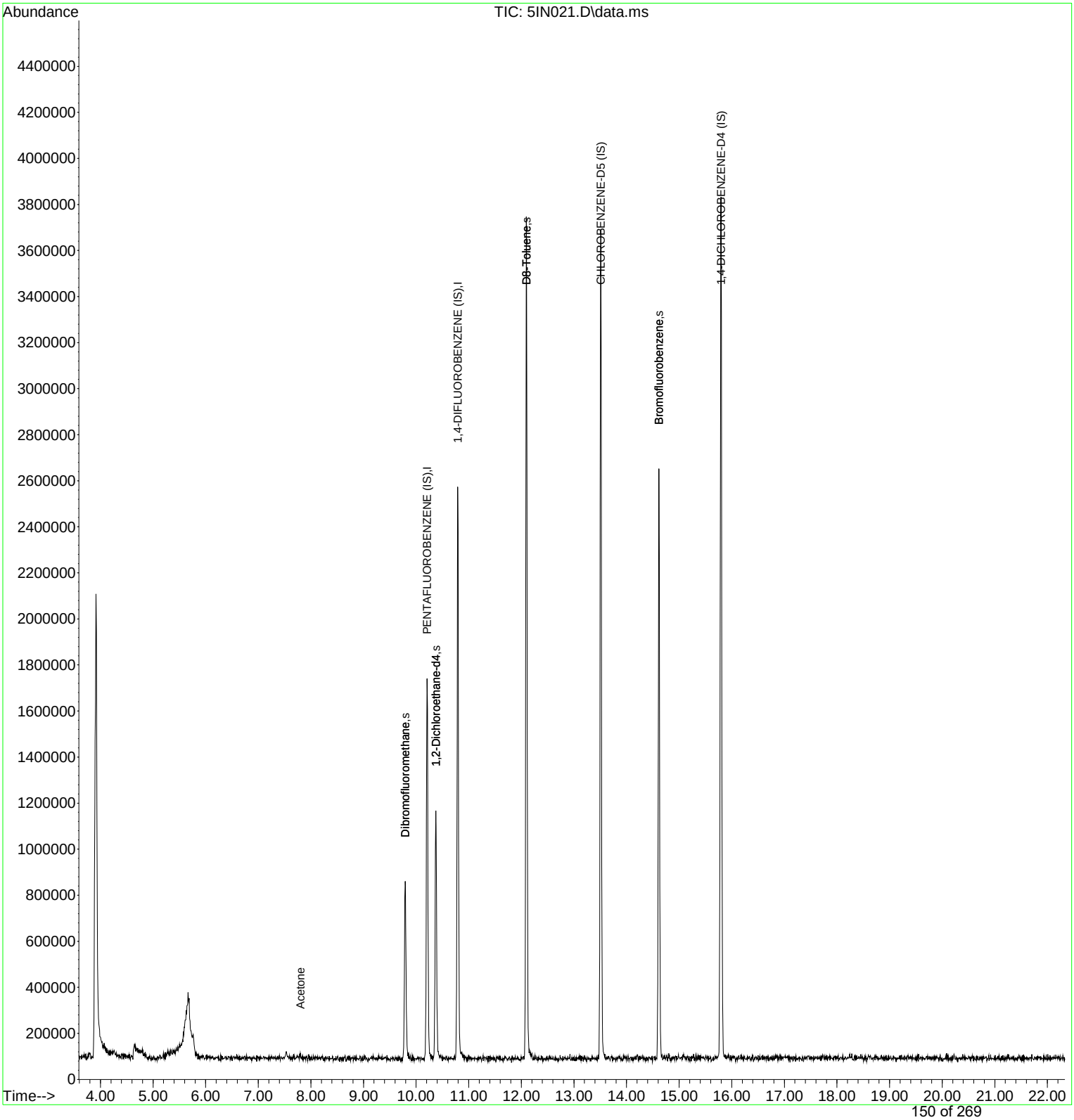
Quant Time: Sep 20 08:23:48 2016
Quant Method : C:\msdchem\1\methods\091616.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Mon Sep 19 08:51:53 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
45) Trichloroethene	0.000		0	N.D.	
46) Methyl cyclohexane	0.000		0	N.D. d	
47) Dibromomethane	0.000		0	N.D. d	
48) 1,2-Dichloropropane	11.320	63	1650	N.D.	
49) Bromodichloromethane	11.437	83	1301	N.D.	
50) Methyl Methacrylate	11.320	69	1087	N.D.	
51) 1,4-Dioxane	0.000		0	N.D. d	
52) 2-Chloroethyl vinyl ether	0.000		0	N.D. d	
53) C-1,3-Dichloropropene	11.943	75	1264	N.D.	
55) D8-Toluene	12.095	98	2268935	52.98 ug/L #	92
56) 4-Methyl-2-pentanone	0.000		0	N.D.	
58) Toluene	12.148	92	2107	N.D.	
59) T-1,3-Dichloropropene	12.601	75	1418	N.D.	
60) Tetrachloroethene	0.000		0	N.D. d	
61) Ethyl methacrylate	12.536	69	1096	N.D.	
62) 1,1,2-Trichloroethane	0.000		0	N.D.	
63) Dibromochloromethane	0.000		0	N.D.	
64) 1,3-Dichloropropane	13.059	76	1529	N.D.	
65) 1,2-Dibromoethane	13.077	107	1285	N.D.	
66) 2-Hexanone	0.000		0	N.D. d	
67) Ethylbenzene	13.335	106	1765	N.D.	
68) Chlorobenzene	13.505	112	1254	N.D.	
69) 1,1,1,2-Tetrachloroethane	0.000		0	N.D.	
70) m-xylene & p-xylene	0.000		0	N.D.	
71) o-xylene	13.952	106	1610	N.D.	
72) Styrene	14.075	104	1306	N.D.	
73) Bromoform	0.000		0	N.D.	
74) Isopropylbenzene	14.181	105	1135	N.D.	
76) Bromofluorobenzene	14.616	95	792272	50.61 ug/L	93
77) n-Propylbenzene	14.692	91	2521	N.D.	
78) 1,1,2,2-Tetrachloroethane	14.651	83	1081	N.D.	
79) 1,2,3-Trichloropropane	0.000		0	N.D. d	
80) T-1,4-Dichloro-2-Butene	0.000		0	N.D. d	
82) Bromobenzene	14.739	156	1465	N.D.	
83) 1,2,4-Trimethylbenzene	15.256	105	1354	N.D.	
84) 2-Chlorotoluene	14.880	91	1393	N.D.	
85) 4-Chlorotoluene	14.933	91	1295	N.D.	
86) tert-Butylbenzene	15.356	119	1871	N.D.	
87) 1,3,5-Trimethylbenzene	0.000		0	N.D.	
88) p-Isopropyltoluene	15.503	119	1843	N.D.	
89) s-Butylbenzene	15.256	105	1354	N.D.	
90) 1,3-Dichlorobenzene	15.768	146	1295	N.D.	
91) 1,4-Dichlorobenzene	15.791	146	2396	N.D.	
92) n-Butylbenzene	16.003	91	1176	N.D.	
93) 1,2-Dichlorobenzene	0.000		0	N.D.	
94) DBCP	0.000		0	N.D.	
95) Hexachlorobutadiene	0.000		0	N.D.	
96) 1,2,4-Trichlorobenzene	18.576	180	1166	N.D.	
97) Naphthalene	19.252	128	1102	N.D.	
98) 1,2,3-Trichlorobenzene	0.000		0	N.D. d	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\091916\
Data File : 5IN021.D
Acq On : 19 Sep 2016 5:39 pm
Operator : KKW
InstName : OVGCMS5
Sample : AZ06090-07
Misc :
ALS Vial : 21 Sample Multiplier: 1

Quant Time: Sep 20 08:23:48 2016
Quant Method : C:\msdchem\1\methods\091616.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Mon Sep 19 08:51:53 2016
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\091916\
Data File : 5IN022.D
Acq On : 19 Sep 2016 6:08 pm
Operator : KKW
InstName : OVGCMS5
Sample : AZ06090-08
Misc :
ALS Vial : 22 Sample Multiplier: 1

Quant Time: Sep 20 08:23:53 2016
Quant Method : C:\msdchem\1\methods\091616.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Mon Sep 19 08:51:53 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) PENTAFLUOROBENZENE (IS)	10.209	168	1220714	50.00	ug/L	0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.791	114	2056967	50.00	ug/L	0.00
57) CHLOROBENZENE-D5 (IS)	13.511	82	890141	50.00	ug/L	0.00
81) 1,4-DICHLOROBENZENE-D4...	15.797	152	1169139	50.00	ug/L	0.00
System Monitoring Compounds						
31) Dibromofluoromethane	9.792	113	539663	50.64	ug/L	0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 101.28%			
42) 1,2-Dichloroethane-d4	10.374	65	686352	48.94	ug/L	0.00
Spiked Amount 50.000	Range 70 - 120		Recovery = 97.88%			
54) D8-Toluene	12.095	98	2167393	48.31	ug/L	0.00
Spiked Amount 50.000	Range 85 - 120		Recovery = 96.62%			
75) Bromofluorobenzene	14.610	95	799565	50.30	ug/L	0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 100.60%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	0.000		0	N.D.		
3) Chloromethane	0.000		0	N.D. d		
4) Vinyl Chloride	0.000		0	N.D.		
5) Bromomethane	0.000		0	N.D. d		
6) Chloroethane	5.820	64	1199	N.D.		
7) Trichlorofluoromethane	0.000		0	N.D.		
8) Diethyl ether	0.000		0	N.D. d		
9) 1,1-Dichloroethene	0.000		0	N.D.		
10) Trichlorotrifluoroethane	0.000		0	N.D.		
11) Acrolein	0.000		0	N.D. d		
12) Iodomethane	0.000		0	N.D. d		
13) Carbon Disulfide	7.007	76	1141	N.D.		
14) 3-chloropropene	0.000		0	N.D. d		
15) Acetone	0.000		0	N.D. d		
16) Methylene Chloride	7.671	84	1187	N.D.		
17) Methyl Acetate	7.906	43	1946	N.D.		
18) t-1,2-Dichloroethene	0.000		0	N.D.		
19) Methyl tert-butyl ether	7.976	73	1093	N.D.		
20) Acetonitrile	0.000		0	N.D. d		
21) Isopropyl ether	8.476	45	1908	N.D.		
22) Chloroprene	8.740	88	1469	N.D.		
23) 1,1-Dichloroethane	8.658	63	1197	N.D.		
24) Acrylonitrile	0.000		0	N.D. d		
25) Vinyl Acetate	8.934	43	2210	N.D.		
26) c-1,2-Dichloroethene	0.000		0	N.D.		
27) 2,2-Dichloropropane	9.557	77	1228	N.D.		
28) Bromochloromethane	0.000		0	N.D.		
29) Cyclohexane	9.557	56	2923	N.D.		
30) Chloroform	9.604	83	1010	N.D.		
32) Dibromofluoromethane	9.792	113	539663	50.64	ug/L	95
33) 2-Butanone	0.000		0	N.D. d		
34) 1,1,1-Trichloroethane	9.927	97	1456	N.D.		
35) 1,1-Dichloropropene	0.000		0	N.D. d		
36) Propionitrile	0.000		0	N.D. d		
37) Methacrylonitrile	10.285	41	1508	N.D.		
38) Isobutyl Alcohol	0.000		0	N.D. d		
40) Carbon Tetrachloride	9.809	117	1096	N.D.		
41) Benzene	10.250	78	1428	N.D.		
43) 1,2-Dichloroethane-d4	10.374	65	686352	48.94	ug/L #	76
44) 1,2-Dichloroethane	10.421	62	1439	N.D.		

Data Path : C:\msdchem\1\data\091916\
Data File : 5IN022.D
Acq On : 19 Sep 2016 6:08 pm
Operator : KKW
InstName : OVGCMS5
Sample : AZ06090-08
Misc :
ALS Vial : 22 Sample Multiplier: 1

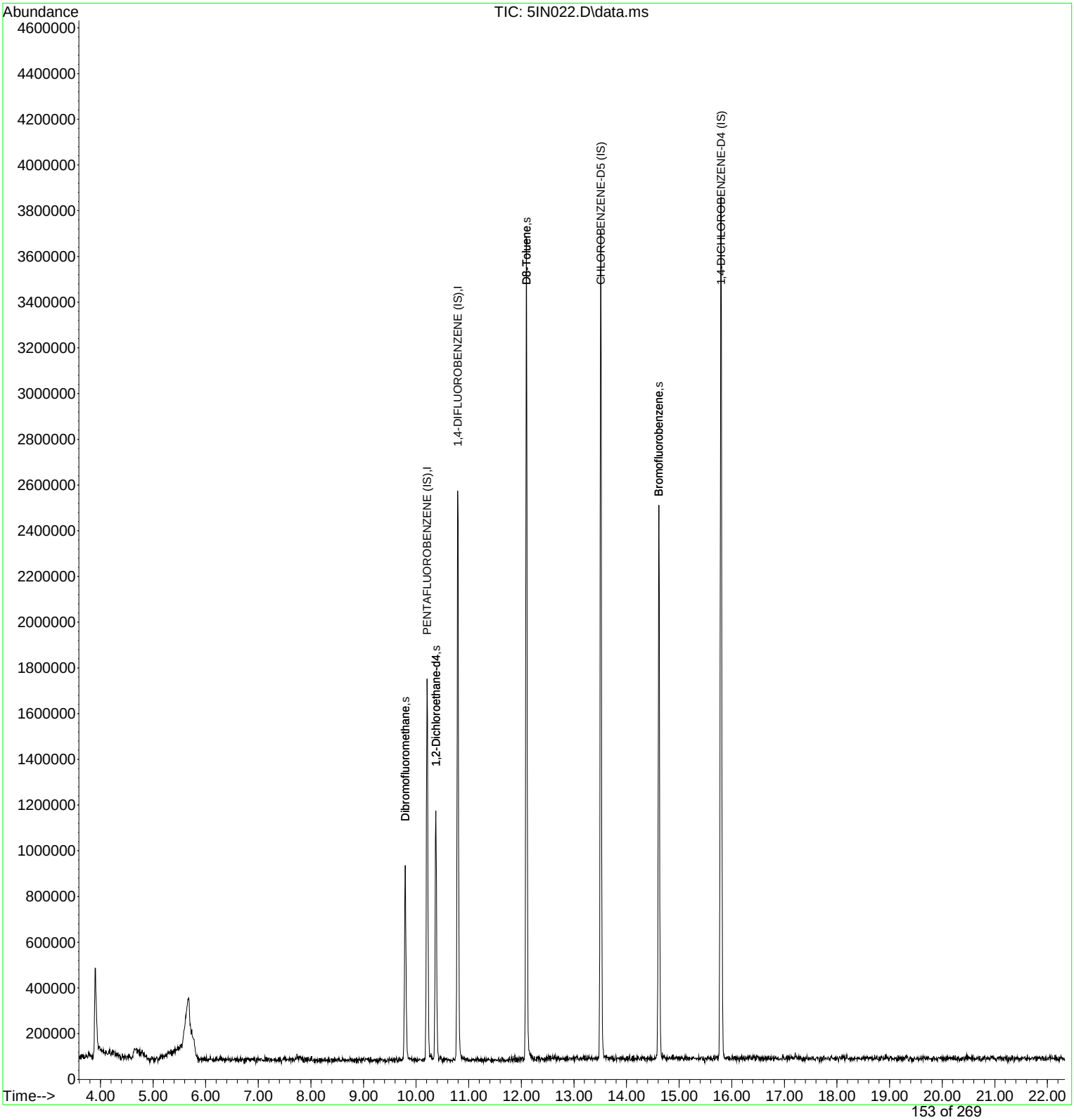
Quant Time: Sep 20 08:23:53 2016
Quant Method : C:\msdchem\1\methods\091616.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Mon Sep 19 08:51:53 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
45) Trichloroethene	10.614	130	1034	N.D.	
46) Methyl cyclohexane	0.000		0	N.D. d	
47) Dibromomethane	0.000		0	N.D.	
48) 1,2-Dichloropropane	11.267	63	2249	N.D.	
49) Bromodichloromethane	11.355	83	1042	N.D.	
50) Methyl Methacrylate	0.000		0	N.D. d	
51) 1,4-Dioxane	0.000		0	N.D.	
52) 2-Chloroethyl vinyl ether	0.000		0	N.D. d	
53) C-1,3-Dichloropropene	12.019	75	1991	N.D.	
55) D8-Toluene	12.095	98	2167393	48.31 ug/L	91
56) 4-Methyl-2-pentanone	0.000		0	N.D. d	
58) Toluene	0.000		0	N.D.	
59) T-1,3-Dichloropropene	12.489	75	1170	N.D.	
60) Tetrachloroethene	12.354	164	1270	N.D.	
61) Ethyl methacrylate	0.000		0	N.D. d	
62) 1,1,2-Trichloroethane	12.718	97	1089	N.D.	
63) Dibromochloromethane	0.000		0	N.D.	
64) 1,3-Dichloropropane	12.830	76	1291	N.D.	
65) 1,2-Dibromoethane	13.159	107	1381	N.D.	
66) 2-Hexanone	0.000		0	N.D. d	
67) Ethylbenzene	0.000		0	N.D.	
68) Chlorobenzene	0.000		0	N.D.	
69) 1,1,1,2-Tetrachloroethane	0.000		0	N.D.	
70) m-xylene & p-xylene	0.000		0	N.D.	
71) o-xylene	13.887	106	1205	N.D.	
72) Styrene	0.000		0	N.D.	
73) Bromoform	0.000		0	N.D.	
74) Isopropylbenzene	14.293	105	2509	N.D.	
76) Bromofluorobenzene	14.610	95	799565	50.30 ug/L	95
77) n-Propylbenzene	14.639	91	1222	N.D.	
78) 1,1,2,2-Tetrachloroethane	14.622	83	1037	N.D.	
79) 1,2,3-Trichloropropane	0.000		0	N.D. d	
80) T-1,4-Dichloro-2-Butene	0.000		0	N.D. d	
82) Bromobenzene	14.804	156	1452	N.D.	
83) 1,2,4-Trimethylbenzene	0.000		0	N.D.	
84) 2-Chlorotoluene	14.968	91	1059	N.D.	
85) 4-Chlorotoluene	15.027	91	1524	N.D.	
86) tert-Butylbenzene	0.000		0	N.D.	
87) 1,3,5-Trimethylbenzene	0.000		0	N.D.	
88) p-Isopropyltoluene	0.000		0	N.D.	
89) s-Butylbenzene	15.503	105	1044	N.D.	
90) 1,3-Dichlorobenzene	15.691	146	1548	N.D.	
91) 1,4-Dichlorobenzene	15.791	146	1598	N.D.	
92) n-Butylbenzene	0.000		0	N.D.	
93) 1,2-Dichlorobenzene	0.000		0	N.D.	
94) DBCP	0.000		0	N.D.	
95) Hexachlorobutadiene	0.000		0	N.D.	
96) 1,2,4-Trichlorobenzene	0.000		0	N.D.	
97) Naphthalene	19.234	128	1902	N.D.	
98) 1,2,3-Trichlorobenzene	0.000		0	N.D.	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\091916\
Data File : 5IN022.D
Acq On : 19 Sep 2016 6:08 pm
Operator : KKW
InstName : OVGCMS5
Sample : AZ06090-08
Misc :
ALS Vial : 22 Sample Multiplier: 1

Quant Time: Sep 20 08:23:53 2016
Quant Method : C:\msdchem\1\methods\091616.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Mon Sep 19 08:51:53 2016
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\091916\
Data File : 5IN023.D
Acq On : 19 Sep 2016 6:37 pm
Operator : KKW
InstName : OVGCMS5
Sample : 6I19025-MS1
Misc :
ALS Vial : 23 Sample Multiplier: 1

Quant Time: Sep 20 08:23:58 2016
Quant Method : C:\msdchem\1\methods\091616.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Mon Sep 19 08:51:53 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) PENTAFLUOROBENZENE (IS)	10.209	168	1192535	50.00	ug/L		0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.791	114	2015081	50.00	ug/L		0.00
57) CHLOROBENZENE-D5 (IS)	13.511	82	917480	50.00	ug/L		0.00
81) 1,4-DICHLOROBENZENE-D4...	15.797	152	1217993	50.00	ug/L		0.00
System Monitoring Compounds							
31) Dibromofluoromethane	9.792	113	538354	51.71	ug/L		0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 103.42%				
42) 1,2-Dichloroethane-d4	10.374	65	693660	50.49	ug/L		0.00
Spiked Amount 50.000	Range 70 - 120		Recovery = 100.98%				
54) D8-Toluene	12.095	98	2225409	50.63	ug/L		0.00
Spiked Amount 50.000	Range 85 - 120		Recovery = 101.26%				
75) Bromofluorobenzene	14.616	95	802059	48.95	ug/L		0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 97.90%				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	4.275	85	212858	23.63	ug/L		97
3) Chloromethane	4.739	50	431467	22.96	ug/L		99
4) Vinyl Chloride	4.927	62	473816	35.95	ug/L		97
5) Bromomethane	5.603	94	47775	15.41	ug/L	#	84
6) Chloroethane	5.820	64	186319	23.64	ug/L		95
7) Trichlorofluoromethane	6.079	101	312265	22.06	ug/L		98
8) Diethyl ether	6.578	59	234121	24.05	ug/L		92
9) 1,1-Dichloroethene	6.931	96	166356	23.66	ug/L		98
10) Trichlorotrifluoroethane	6.954	151	158994	22.94	ug/L		99
11) Acrolein	7.406	56	190854	125.38	ug/L		94
12) Iodomethane	7.171	142	136086	16.32	ug/L	#	96
13) Carbon Disulfide	7.025	76	511231	22.33	ug/L		99
14) 3-chloropropene	7.589	41	423114	25.13	ug/L		98
15) Acetone	7.788	43	426167	107.84	ug/L		97
16) Methylene Chloride	7.730	84	166637	21.46	ug/L		85
17) Methyl Acetate	7.906	43	234551	19.01	ug/L	#	95
18) t-1,2-Dichloroethene	7.941	96	255687	30.07	ug/L		96
19) Methyl tert-butyl ether	8.035	73	408548	20.10	ug/L		98
20) Acetonitrile	8.464	41	208144	113.99	ug/L	#	92
21) Isopropyl ether	8.464	45	939359	24.43	ug/L		97
22) Chloroprene	8.681	88	175003	22.46	ug/L		100
23) 1,1-Dichloroethane	8.717	63	415400	22.74	ug/L		99
24) Acrylonitrile	8.787	53	130851	22.10	ug/L		96
25) Vinyl Acetate	8.934	43	525430	17.33	ug/L		97
26) c-1,2-Dichloroethene	9.322	96	925388	99.13	ug/L		99
27) 2,2-Dichloropropane	9.463	77	221024	23.31	ug/L	#	95
28) Bromochloromethane	9.563	128	102238	27.23	ug/L		95
29) Cyclohexane	9.575	56	547727	23.15	ug/L		98
30) Chloroform	9.592	83	313573	23.54	ug/L		96
32) Dibromofluoromethane	9.792	113	538354	51.71	ug/L		95
33) 2-Butanone	9.909	72	112981	106.33	ug/L		90
34) 1,1,1-Trichloroethane	9.868	97	273377	22.37	ug/L		95
35) 1,1-Dichloropropene	9.980	75	256925	22.26	ug/L		94
36) Propionitrile	10.274	54	52105	21.16	ug/L	#	1
37) Methacrylonitrile	10.274	41	277259	31.08	ug/L	#	100
38) Isobutyl Alcohol	10.274	43	252734	187.85	ug/L	#	97
40) Carbon Tetrachloride	9.792	117	241914	21.73	ug/L		90
41) Benzene	10.244	78	750945	22.51	ug/L		97
43) 1,2-Dichloroethane-d4	10.374	65	693660	50.49	ug/L	#	76
44) 1,2-Dichloroethane	10.444	62	283233	21.61	ug/L		98

Data Path : C:\msdchem\1\data\091916\
Data File : 5IN023.D
Acq On : 19 Sep 2016 6:37 pm
Operator : KKW
InstName : OVGCMS5
Sample : 6I19025-MS1
Misc :
ALS Vial : 23 Sample Multiplier: 1

Quant Time: Sep 20 08:23:58 2016
Quant Method : C:\msdchem\1\methods\091616.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Mon Sep 19 08:51:53 2016
Response via : Initial Calibration

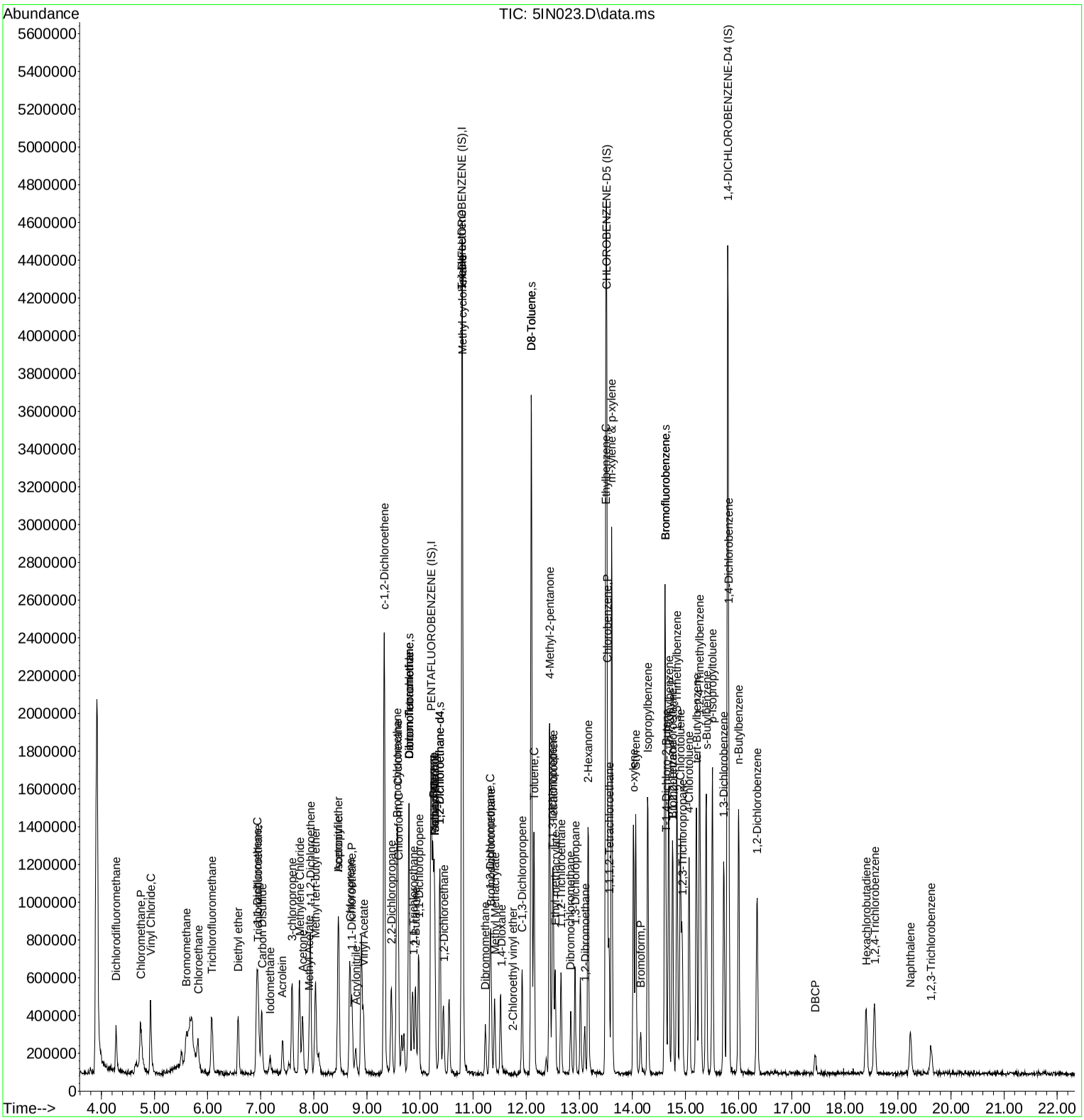
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
45) Trichloroethene	10.791	130	426832	41.10	ug/L		98
46) Methyl cyclohexane	10.803	83	379557	24.55	ug/L		97
47) Dibromomethane	11.226	93	98446	19.96	ug/L		96
48) 1,2-Dichloropropane	11.325	63	229977	20.27	ug/L		95
49) Bromodichloromethane	11.337	83	219208	24.13	ug/L		94
50) Methyl Methacrylate	11.408	69	115963	20.09	ug/L		92
51) 1,4-Dioxane	11.525	88	56888	391.56	ug/L		91
52) 2-Chloroethyl vinyl ether	11.754	63	1718	0.78	ug/L	#	29
53) C-1,3-Dichloropropene	11.919	75	249312	19.68	ug/L		97
55) D8-Toluene	12.095	98	2225409	50.63	ug/L	#	91
56) 4-Methyl-2-pentanone	12.442	100	154386	93.78	ug/L		88
58) Toluene	12.142	92	514774	23.40	ug/L		99
59) T-1,3-Dichloropropene	12.495	75	241155	22.84	ug/L		99
60) Tetrachloroethene	12.506	164	177534	22.38	ug/L		98
61) Ethyl methacrylate	12.548	69	198128	17.92	ug/L		97
62) 1,1,2-Trichloroethane	12.653	97	156486	20.82	ug/L		95
63) Dibromochloromethane	12.836	129	179424	23.17	ug/L		98
64) 1,3-Dichloropropane	12.924	76	253401	21.02	ug/L		96
65) 1,2-Dibromoethane	13.106	107	166750	20.66	ug/L		99
66) 2-Hexanone	13.165	43	972206	98.58	ug/L		99
67) Ethylbenzene	13.494	106	333759	21.50	ug/L		99
68) Chlorobenzene	13.529	112	585607	22.70	ug/L		99
69) 1,1,1,2-Tetrachloroethane	13.558	131	178801	20.57	ug/L		97
70) m-xylene & p-xylene	13.611	106	829435	42.37	ug/L		99
71) o-xylene	14.017	106	402570	22.05	ug/L		96
72) Styrene	14.063	104	667734	20.98	ug/L		98
73) Bromoform	14.158	173	104886	17.25	ug/L		98
74) Isopropylbenzene	14.287	105	1045002	22.53	ug/L		98
76) Bromofluorobenzene	14.616	95	802059	48.95	ug/L		93
77) n-Propylbenzene	14.686	91	1241597	22.47	ug/L		99
78) 1,1,2,2-Tetrachloroethane	14.751	83	224247	19.84	ug/L		98
79) 1,2,3-Trichloropropane	14.939	61	102400	23.41	ug/L		94
80) T-1,4-Dichloro-2-Butene	14.633	53	124680	19.83	ug/L	#	59
82) Bromobenzene	14.763	156	245404	21.83	ug/L		97
83) 1,2,4-Trimethylbenzene	15.262	105	944538	21.68	ug/L		98
84) 2-Chlorotoluene	14.904	91	695877	24.14	ug/L		98
85) 4-Chlorotoluene	15.068	91	696066	23.35	ug/L		98
86) tert-Butylbenzene	15.203	119	835104	21.54	ug/L		97
87) 1,3,5-Trimethylbenzene	14.839	105	876464	23.61	ug/L		98
88) p-Isopropyltoluene	15.509	119	1108117	22.11	ug/L		99
89) s-Butylbenzene	15.391	105	1216692	22.49	ug/L		99
90) 1,3-Dichlorobenzene	15.720	146	544606	23.47	ug/L		95
91) 1,4-Dichlorobenzene	15.814	146	549529	21.18	ug/L	#	82
92) n-Butylbenzene	16.002	91	916736	22.49	ug/L		97
93) 1,2-Dichlorobenzene	16.349	146	496342	20.95	ug/L		99
94) DBCP	17.448	157	32656	13.20	ug/L		100
95) Hexachlorobutadiene	18.400	225	88567	18.37	ug/L		95
96) 1,2,4-Trichlorobenzene	18.564	180	179296	16.53	ug/L		96
97) Naphthalene	19.234	128	283867	17.75	ug/L	#	94
98) 1,2,3-Trichlorobenzene	19.616	180	78350	19.71	ug/L		94

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\091916\
Data File : 5IN023.D
Acq On : 19 Sep 2016 6:37 pm
Operator : KKW
InstName : OVGCMS5
Sample : 6I19025-MS1
Misc :
ALS Vial : 23 Sample Multiplier: 1

Quant Time: Sep 20 08:23:58 2016
Quant Method : C:\msdchem\1\methods\091616.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Mon Sep 19 08:51:53 2016
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\091916\
Data File : 5IN024.D
Acq On : 19 Sep 2016 7:07 pm
Operator : KKW
InstName : OVGCMS5
Sample : 6I19025-MSD1
Misc :
ALS Vial : 23 Sample Multiplier: 1

Quant Time: Sep 20 08:24:03 2016
Quant Method : C:\msdchem\1\methods\091616.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Mon Sep 19 08:51:53 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) PENTAFLUOROBENZENE (IS)	10.209	168	1193913	50.00	ug/L	0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.791	114	2018882	50.00	ug/L	0.00
57) CHLOROBENZENE-D5 (IS)	13.511	82	919701	50.00	ug/L	0.00
81) 1,4-DICHLOROBENZENE-D4...	15.797	152	1219593	50.00	ug/L	0.00
System Monitoring Compounds						
31) Dibromofluoromethane	9.792	113	528284	50.69	ug/L	0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 101.38%			
42) 1,2-Dichloroethane-d4	10.374	65	693216	50.36	ug/L	0.00
Spiked Amount 50.000	Range 70 - 120		Recovery = 100.72%			
54) D8-Toluene	12.095	98	2227843	50.59	ug/L	0.00
Spiked Amount 50.000	Range 85 - 120		Recovery = 101.18%			
75) Bromofluorobenzene	14.616	95	810164	49.33	ug/L	0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 98.66%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	4.281	85	230970	25.62	ug/L	99
3) Chloromethane	4.733	50	405248	21.54	ug/L	96
4) Vinyl Chloride	4.927	62	448374	33.98	ug/L	95
5) Bromomethane	5.603	94	71343	21.76	ug/L #	92
6) Chloroethane	5.820	64	182357	23.06	ug/L	99
7) Trichlorofluoromethane	6.079	101	300363	21.20	ug/L	100
8) Diethyl ether	6.572	59	213153	21.88	ug/L #	94
9) 1,1-Dichloroethene	6.925	96	168056	23.87	ug/L	99
10) Trichlorotrifluoroethane	6.942	151	156830	22.60	ug/L	97
11) Acrolein	7.412	56	183610	120.48	ug/L	94
12) Iodomethane	7.177	142	178476	21.38	ug/L #	91
13) Carbon Disulfide	7.019	76	491268	21.43	ug/L	95
14) 3-chloropropene	7.589	41	418025	24.80	ug/L	99
15) Acetone	7.794	43	413365	104.48	ug/L	94
16) Methylene Chloride	7.730	84	172769	22.22	ug/L	94
17) Methyl Acetate	7.912	43	219294	17.76	ug/L	94
18) t-1,2-Dichloroethene	7.935	96	260574	30.61	ug/L	98
19) Methyl tert-butyl ether	8.029	73	416992	20.49	ug/L	97
20) Acetonitrile	8.464	41	210565	115.19	ug/L #	92
21) Isopropyl ether	8.464	45	951426	24.72	ug/L	98
22) Chloroprene	8.676	88	155766	19.97	ug/L	90
23) 1,1-Dichloroethane	8.717	63	422165	23.08	ug/L	99
24) Acrylonitrile	8.787	53	108387	18.28	ug/L #	94
25) Vinyl Acetate	8.940	43	528649	17.42	ug/L	96
26) c-1,2-Dichloroethene	9.328	96	902338	96.55	ug/L	94
27) 2,2-Dichloropropane	9.457	77	236361	24.90	ug/L	98
28) Bromochloromethane	9.557	128	97370	25.91	ug/L	99
29) Cyclohexane	9.574	56	551981	23.30	ug/L	97
30) Chloroform	9.586	83	317616	23.81	ug/L	95
32) Dibromofluoromethane	9.792	113	528284	50.69	ug/L	93
33) 2-Butanone	9.915	72	100884	94.84	ug/L	85
34) 1,1,1-Trichloroethane	9.857	97	262134	21.43	ug/L	98
35) 1,1-Dichloropropene	9.974	75	269730	23.34	ug/L	96
36) Propionitrile	10.262	54	55511	22.52	ug/L #	1
37) Methacrylonitrile	10.274	41	276867	31.00	ug/L #	100
38) Isobutyl Alcohol	10.274	43	252872	187.73	ug/L #	97
40) Carbon Tetrachloride	9.786	117	266375m	23.88	ug/L	
41) Benzene	10.238	78	773784	23.15	ug/L	99
43) 1,2-Dichloroethane-d4	10.374	65	693216	50.36	ug/L #	70
44) 1,2-Dichloroethane	10.444	62	274096	20.88	ug/L	99

Data Path : C:\msdchem\1\data\091916\
Data File : 5IN024.D
Acq On : 19 Sep 2016 7:07 pm
Operator : KKW
InstName : OVGCMS5
Sample : 6I19025-MSD1
Misc :
ALS Vial : 23 Sample Multiplier: 1

Quant Time: Sep 20 08:24:03 2016
Quant Method : C:\msdchem\1\methods\091616.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Mon Sep 19 08:51:53 2016
Response via : Initial Calibration

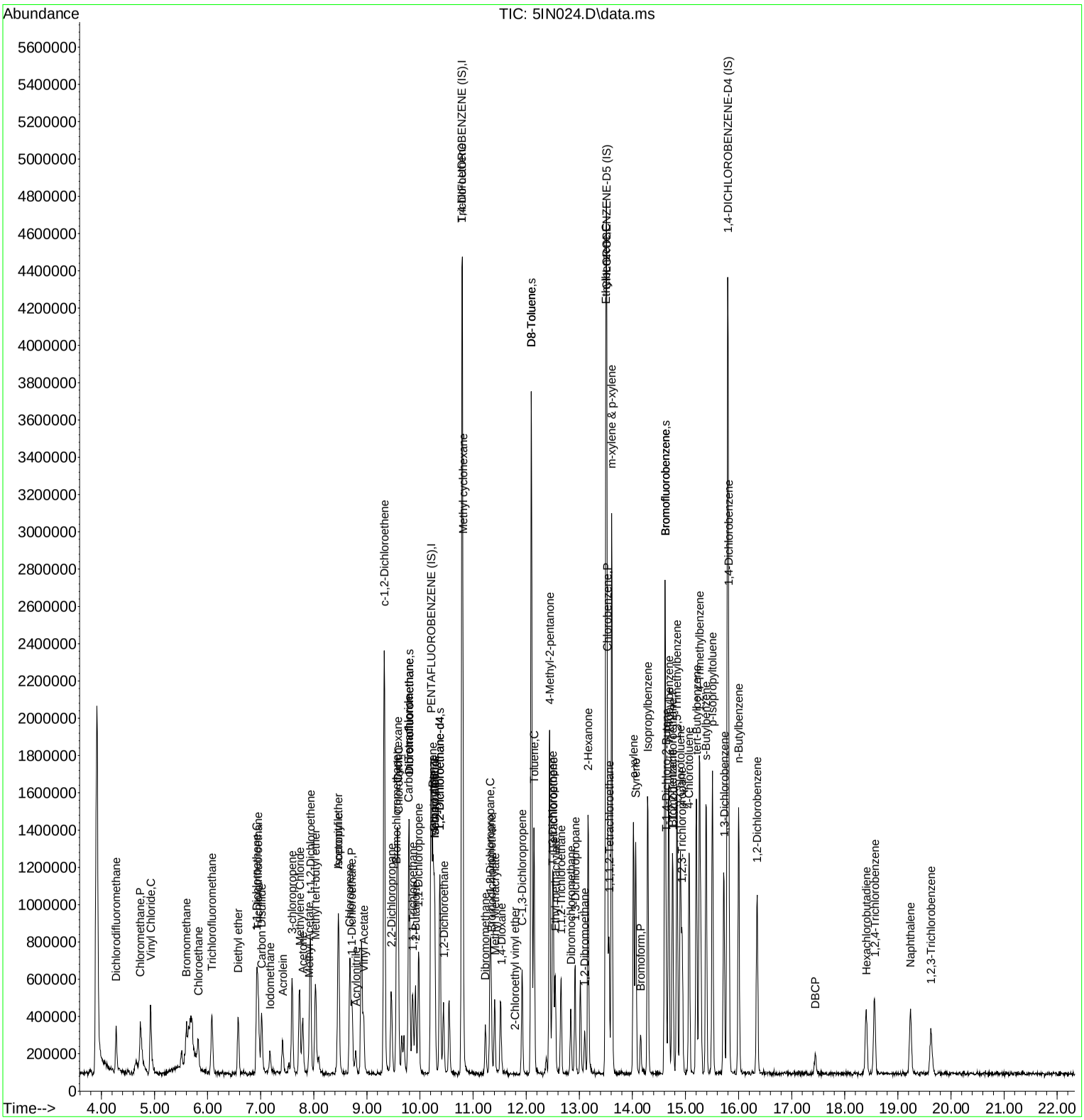
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
45) Trichloroethene	10.791	130	412849	39.68 ug/L	98
46) Methyl cyclohexane	10.808	83	384962	24.85 ug/L	96
47) Dibromomethane	11.231	93	103296	20.91 ug/L	93
48) 1,2-Dichloropropane	11.325	63	225455	19.84 ug/L	97
49) Bromodichloromethane	11.343	83	202497	22.25 ug/L	98
50) Methyl Methacrylate	11.408	69	120757	20.89 ug/L	79
51) 1,4-Dioxane	11.525	88	50616	347.73 ug/L	98
52) 2-Chloroethyl vinyl ether	11.784	63	1057	0.48 ug/L #	49
53) C-1,3-Dichloropropene	11.925	75	254851	20.08 ug/L	95
55) D8-Toluene	12.095	98	2227843	50.59 ug/L	91
56) 4-Methyl-2-pentanone	12.436	100	135055	81.88 ug/L	88
58) Toluene	12.148	92	490370	22.23 ug/L	94
59) T-1,3-Dichloropropene	12.495	75	218748	20.67 ug/L	95
60) Tetrachloroethene	12.512	164	168996	21.25 ug/L	95
61) Ethyl methacrylate	12.548	69	206328	18.62 ug/L	97
62) 1,1,2-Trichloroethane	12.659	97	156738	20.80 ug/L	100
63) Dibromochloromethane	12.841	129	169788	21.87 ug/L	91
64) 1,3-Dichloropropane	12.924	76	259405	21.46 ug/L	92
65) 1,2-Dibromoethane	13.100	107	155689	19.24 ug/L	98
66) 2-Hexanone	13.164	43	1014691	102.63 ug/L	98
67) Ethylbenzene	13.499	106	326017	20.95 ug/L	95
68) Chlorobenzene	13.529	112	563722	21.80 ug/L	96
69) 1,1,1,2-Tetrachloroethane	13.558	131	175119	20.10 ug/L	92
70) m-xylene & p-xylene	13.611	106	854469	43.55 ug/L	99
71) o-xylene	14.022	106	386897	21.14 ug/L	90
72) Styrene	14.063	104	658825	20.65 ug/L	96
73) Bromoform	14.157	173	102792	16.86 ug/L	97
74) Isopropylbenzene	14.287	105	1028729	22.12 ug/L	99
76) Bromofluorobenzene	14.616	95	810164	49.33 ug/L	93
77) n-Propylbenzene	14.686	91	1251598	22.60 ug/L	99
78) 1,1,2,2-Tetrachloroethane	14.751	83	209845	18.52 ug/L	99
79) 1,2,3-Trichloropropane	14.933	61	96689m	22.05 ug/L	
80) T-1,4-Dichloro-2-Butene	14.633	53	117030	18.57 ug/L #	61
82) Bromobenzene	14.763	156	260048	23.11 ug/L	95
83) 1,2,4-Trimethylbenzene	15.262	105	938976	21.52 ug/L	97
84) 2-Chlorotoluene	14.904	91	677916	23.49 ug/L	98
85) 4-Chlorotoluene	15.068	91	740158	24.80 ug/L	98
86) tert-Butylbenzene	15.203	119	848044	21.85 ug/L	98
87) 1,3,5-Trimethylbenzene	14.839	105	908589	24.44 ug/L	95
88) p-Isopropyltoluene	15.509	119	1110445	22.13 ug/L	98
89) s-Butylbenzene	15.385	105	1212535	22.39 ug/L	99
90) 1,3-Dichlorobenzene	15.726	146	540625	23.27 ug/L	96
91) 1,4-Dichlorobenzene	15.814	146	534572	20.57 ug/L #	86
92) n-Butylbenzene	16.002	91	892414	21.86 ug/L	99
93) 1,2-Dichlorobenzene	16.343	146	484022	20.40 ug/L	98
94) DBCP	17.442	157	35743	14.43 ug/L	96
95) Hexachlorobutadiene	18.411	225	100309	20.78 ug/L	92
96) 1,2,4-Trichlorobenzene	18.564	180	184937	17.03 ug/L	95
97) Naphthalene	19.234	128	462930	26.78 ug/L #	85
98) 1,2,3-Trichlorobenzene	19.622	180	119446	27.70 ug/L	97

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\091916\
Data File : 5IN024.D
Acq On : 19 Sep 2016 7:07 pm
Operator : KKW
InstName : OVGCMS5
Sample : 6I19025-MSD1
Misc :
ALS Vial : 23 Sample Multiplier: 1

Quant Time: Sep 20 08:24:03 2016
Quant Method : C:\msdchem\1\methods\091616.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Mon Sep 19 08:51:53 2016
Response via : Initial Calibration



ANALYSIS SEQUENCE

AA40538

Instrument: OVGCMS5

Calibration ID: 1609060

Lab Number	Analysis	Container	Order	Position	STD ID	ISTD ID	Client
AA40538-TUN1	QC		1		A6I0391		
AA40538-CCV1	QC		2		A6I0689	A6H1179	
6I20014-BS1	QC		3			A6H1179	
6I20014-BLK1	QC		4			A6H1179	
AZ06180-01RE1	8260B Arom + Naph	I	5			A6H1179	
AZ06090-03RE1	8260B TCL SOM01.2 CLP-LIKE	B	6			A6H1179	Tetra Tech, Inc. (TE016)
AZ06090-04RE1	8260B TCL SOM01.2 CLP-LIKE	B	7			A6H1179	Tetra Tech, Inc. (TE016)
AZ06090-05RE1	8260B TCL SOM01.2 CLP-LIKE	B	8			A6H1179	Tetra Tech, Inc. (TE016)
AZ06092-01	8260B TCL SOM01.2 CLP-LIKE	B	9			A6H1179	Tetra Tech, Inc. (TE016)
AZ06092-01	8260B Arom + Naph	B	10			A6H1179	Tetra Tech, Inc. (TE016)
AZ06092-01	8260B	B	11			A6H1179	Tetra Tech, Inc. (TE016)
AZ06092-02	8260B TCL SOM01.2 CLP-LIKE	A	12			A6H1179	Tetra Tech, Inc. (TE016)
AZ06092-03	8260B TCL SOM01.2 CLP-LIKE	A	13			A6H1179	Tetra Tech, Inc. (TE016)
AZ06092-04	8260B TCL SOM01.2 CLP-LIKE	A	14			A6H1179	Tetra Tech, Inc. (TE016)
AZ06092-05	8260B TCL SOM01.2 CLP-LIKE	A	15			A6H1179	Tetra Tech, Inc. (TE016)
AZ06092-06	8260B TCL SOM01.2 CLP-LIKE	A	16			A6H1179	Tetra Tech, Inc. (TE016)
AZ06092-07	8260B TCL SOM01.2 CLP-LIKE	A	17			A6H1179	Tetra Tech, Inc. (TE016)
AZ06092-08	8260B TCL SOM01.2 CLP-LIKE	A	18			A6H1179	Tetra Tech, Inc. (TE016)
AZ06077-01	8260B	B	19			A6H1179	
AZ06442-01RE1	8260B	D	20			A6H1179	
AZ06442-02RE1	8260B	D	21			A6H1179	
6I20014-MS1	QC		22			A6H1179	
6I20014-MSD1	QC		23			A6H1179	

Samples Loaded By Date

Data Processed By Date

VOLATILES GC/MS LOGBOOK
Volatiles
EPA Method 624
SW-846 Method 8260

Tune Start Date/Time: 09/20/14	Surrogate ID: AGI0390	8260 Mix: AGI0451
Sequence: AA40538	Internal ID: AGH1178	8260 Add: AGI0314
Batch: GI200014	LCS Mix 2⁰: AGI0392	8260 Ac/Ac: AGI0674
Method: 8260	LCS Acrolein 2⁰: AGH1090	8260 Gases: AGI0452
AFA: AGI0389	LCS Gas 2⁰: AGI0502	**Instrument #:** MS-5

Filename	ENCO No.	Vial #	Dilution Factor	Pos.	pH (<2)	RC (Y/N)	Comments	LIMS
SI0001	Tune			1			Autofind entire Peak	
SI0002	CCV1			2			CCC's & SPCC's	
SI0003	rinse			3				
SI0004	BS1			4			✓	
SI0005	rinse			5				
SI0006	rinse		KW 09/20/14	6		KW 09/20/14		
SI0007	BLK1			7			✓ w/AFA	
SI0008	AZ06180-01Re1	I	100	8	✓	N	✓	
SI0009	AZ06090-03Re1	B	1	9	✓	N	✓	
SI0010	AZ06090-04Re1	B	1	10	✓	N	✓	
SI0011	AZ06090-05Re1	B	1	11	✓	N	✓	
SI0012	AZ06092-01	B	1	12	✓	N	✓ MS/MSD	
SI0013	AZ06092-02	A	1	13	✓	N	✓	
SI0014	AZ06092-03	A	1	14	✓	N	✓ w/AFA	
SI0015	AZ06092-04	A	1	15	✓	N	✓	
SI0016	AZ06092-05	A	1	16	✓	N	✓	
SI0017	AZ06092-06	A	1	17	✓	N	✓	
SI0018	AZ06092-07	A	2.5	18	✓	N	✓ Product C.S	
SI0019	AZ06092-08	A	1	19	✓	N	✓	
SI0020	AZ06077-01	B	1	20	✓	N	✓	

Analyst: KW

VOLATILES GC/MS LOGBOOK
Volatiles
EPA Method 624
SW-846 Method 8260

Tune Start Date/Time:
Sequence:
Batch:
Method:

Surrogate ID:
Internal ID:
~~LCS Mix 2⁰:~~ See Pg 24 KW 09/20/14
LCS Acrolein 2⁰:
~~LCS Gas 2⁰:~~

8260 Mix:
~~8260 Add:~~
8260 Ac/Ac:
8260 Gases:
Instrument #: MS-5

Filename	ENCO No.	Vial #	Dilution Factor	Pos.	pH (<2)	RC (Y/N)	Comments	LIMS
SI0021	A206442-01re1	D	50	21	✓	N	✓	
SI0022	A206442-02re1	D	100	22	✓	Y	✓	
SI0023	6I20014-MS1	C	1	23	✓	N	✓	
SI0024	6I20014-MSD	C	1	23	✓	N	✓	

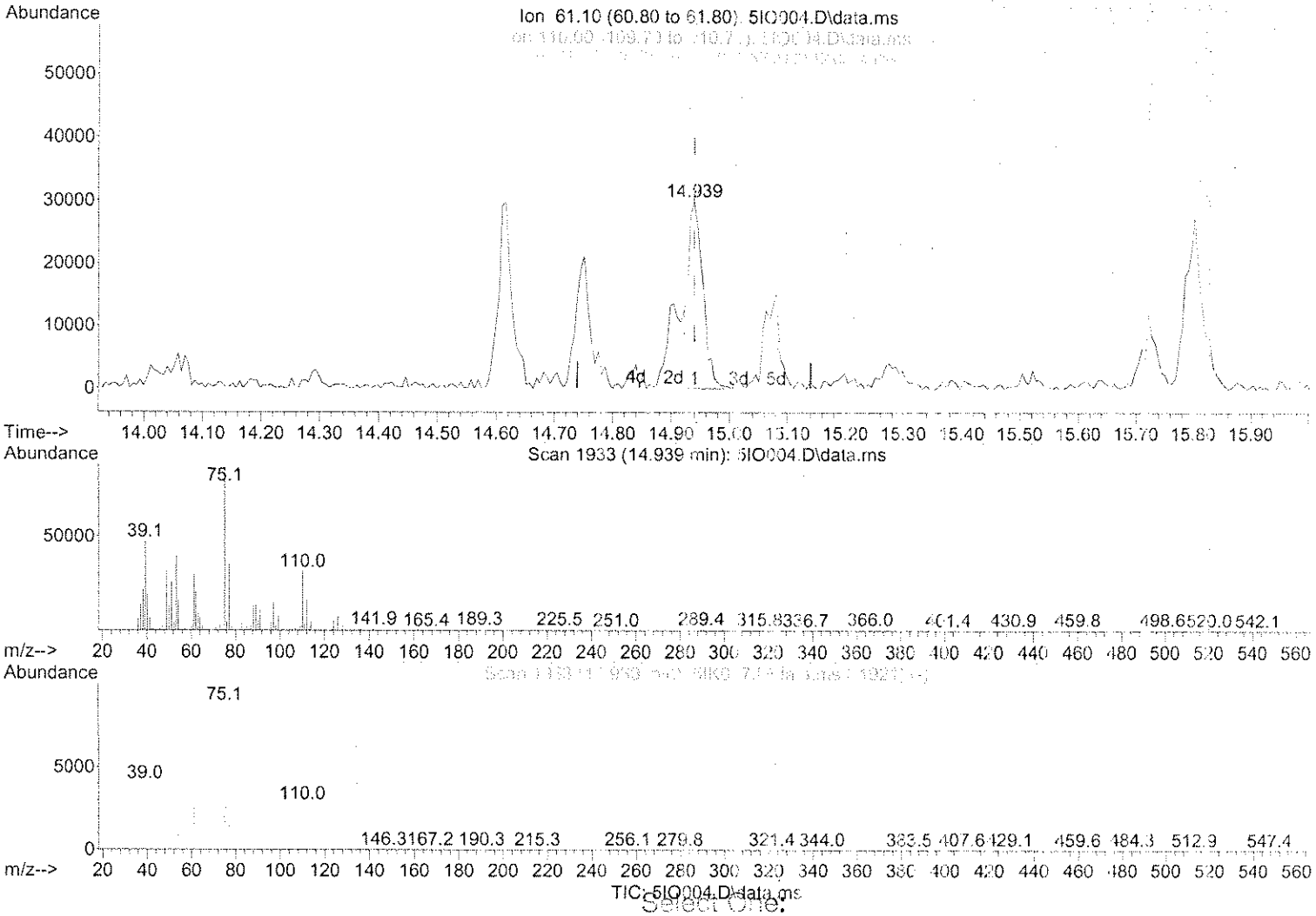
KW 09/20/14

Analyst: KW

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\092016\
Data File : 5IO004.D
Acq On : 20 Sep 2016 9:17 am
Operator : KKW
InstName : OVGCMS5
Sample : BS1
Misc :
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Sep 20 09:41:37 2016
Quant Method : C:\msdchem\1\methods\091616.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Mon Sep 19 08:51:53 2016
Response via : Initial Calibration



TIC: 5IO004.D\data.ms

(79) 1,2,3-Trichloropropane

14.939min (-0.000) 13.10 ug/L

response 52313

Ion	Exp%	Act%
61.10	100.00	100.00
110.00	79.20	127.62#
97.00	44.30	58.79#
0.00	0.00	0.00

Select One:

[X] Original Integration [ ] Manual Integration

Select reason for manual integration:

[X] Poor integration (peak tailing, baseline selection)

[ ] Incorrect peak selection/Peak not found

[ ] Hump integration

[ ] Baseline drop for split peaks

[ ] ISTD reintegration

[ ] Other:

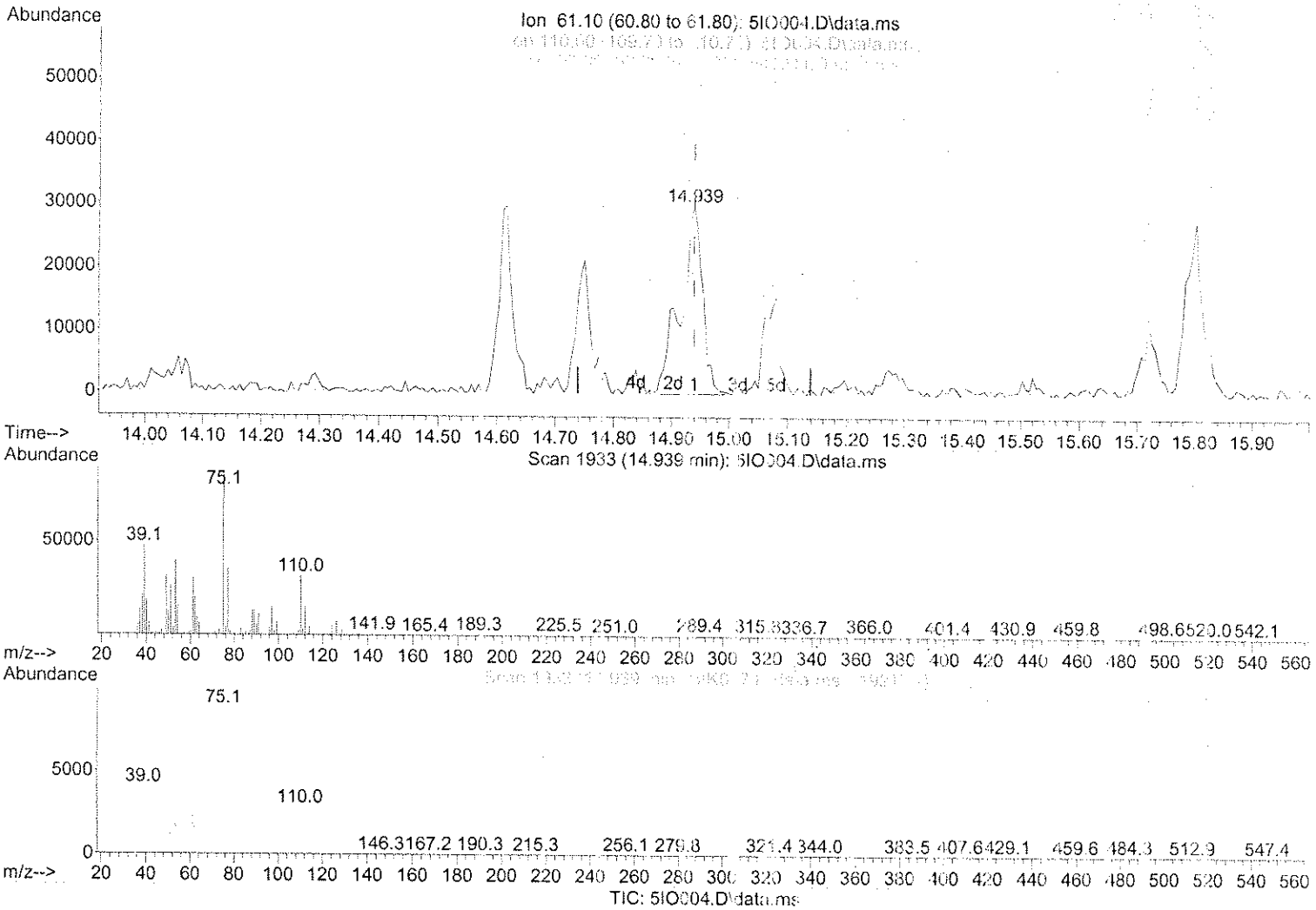
Review by/Date KKW 09/21/16

Review by/Date: JM 9/21/16

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\092016\
Data File : 5IO004.D
Acq On : 20 Sep 2016 9:17 am
Operator : KKW
InstName : OVGCMS5
Sample : BS1
Misc :
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Sep 20 09:41:37 2016
Quant Method : C:\msdchem\1\methods\091616.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Mon Sep 19 08:51:53 2016
Response via : Initial Calibration



TIC: 5IO004.D\data.ms

(79) 1,2,3-Trichloropropane

14.939min (-0.000) 19.85 ug/L m

response 79297

Ion	Exp%	Act%
61.10	100.00	100.00
110.00	79.20	84.19
97.00	44.30	38.78
0.00	0.00	0.00

Select One:

[] Original Integration [X] Manual Integration

Select reason for manual integration:

[X] Poor integration (peak tailing, baseline selection)

[] Incorrect peak selection/Peak not found

[] Hump integration

[] Baseline drop for split peaks

[] IS/TD reintegration

[] Other:

Review by/Date KW 09/21/16

Review by/Date: 9/21/16

GC/MS QA-QC Check Report

Tune File : C:\msdchem\1\data\092016\5IO001.D
Tune Time : 20 Sep 2016 7:47 am

Daily Calibration File : C:\msdchem\1\data\09161[\5IK0.7.D

1122440 1890600 875986

1135500

File	Sample	Surrogate Recovery %				Internal Standard Responses		
5IO002.D								
	AA40538-CC	99	106	102	104	1077819	1754430	811715
			1111837					
5IO004.D								
	6I20014-BS	101	106	99	105	1127685	1801557	837697
			1147607					
5IO007.D								
	6I20014-BL	95	110	102	103	1043911	1658892	762472
			1028838					
5IO008.D								
	AZ0618-01R	98	105	100	106	1047665	1673141	748583
			1027932					
5IO009.D								
	AZ06090-03	98	106	101	105	1017792	1687739	742877
			1044246					
5IO010.D								
	AZ06090-04	97	105	99	99	1047721	1672245	754662
			1024453					
5IO011.D								
	AZ06090-05	97	108	100	106	1043516	1644825	735941
			1017997					
5IO012.D								
	AZ06092-01	99	109	100	104	953610	1573941	710442
			987741					
5IO013.D								
	AZ06092-02	97	110	104	103	968434	1520865	696962
			958626					
5IO014.D								
	AZ06092-03	97	110	100	106	988720	1560520	711488
			995844					
5IO015.D								
	AZ06092-04	99	111	102	107	973839	1540730	683598
			952790					
5IO016.D								
	AZ06092-05	99	110	99	106	967500	1568031	694091
			978007					
5IO017.D								
	AZ06092-06	100	114	103	104	971933	1537469	707460
			962728					
5IO018.D								

	AZ06092-07	102	106	97	103	944878	1602612	711740
				976996				
5IO019.D								
	AZ06092-08	102	108	100	105	927877	1527708	676232
				957228				
5IO020.D								
	AZ06077-01	94	113	99	107	985437	1522687	689857
				931164				
5IO021.D								
	AZ06442-01	101	113	101	104	923130	1489904	698168
				938407				
5IO022.D								
	AZ06442-02	97	114	102	105	1000801	1560421	699843
				986171				
5IO023.D								
	6I20014-MS	94	110	98	98	1061579	1650646	794913
				1103904				
5IO024.D								
	6I20014-MS	98	104	103	104	1063029	1712564	786894
				1084319				

(fails) - fails 12hr time check * - fails criteria

Created: Wed Sep 21 07:45:42 2016 OVGCMS5

PREPARATION BENCH SHEET

Printed: 9/20/2016 1:19:48PM

6I20014

ENCO Orlando

Analysis
8260B [EPA 8260B]
8260B Arom + Naph [EPA 8260B]
8260B TCL SOM01.2 CLP-LIKE [EPA 8260B]

Surrogate Solution
___ A6H0787 8260 surr working (lower conc.)

Prepared using: EPA 5030B_MS

Spiking Solution

A6I0392	8260 2nd source Mega Mix
A6I0503	8260 2nd source Gases/Acrolein virtual

Matrix: Water

Lab Number	Code	Sample ID, Source and Sample Location	Due Date	Analysis	pH adj	Res Cl(1)	Initial (mL)	Final (mL)	Spike ID	ul Spike	ul Surr1	Comments
6I20014-BLK1		Blank		QC			5	5			5	
6I20014-BS1		LCS		QC			5	5	A6I0503 A6I0392	2 2	5	
6I20014-MS1		Matrix Spike [AZ06092-01]		QC			5	5	A6I0503 A6I0392	2 2	5	
6I20014-MSD1		Matrix Spike Dup [AZ06092-01]		QC			5	5	A6I0503 A6I0392	2 2	5	
AZ06077-01		N-31 B[MS10	22-Sep-16	8260B			5	5			5	hist 1x rgg 91516
AZ06090-03RE1	D	SW3-MW0035-040.0-2016091[illegible]	21-Sep-16	8260B TCL SOM01.2 CLP-LIKE			5	5			5	rr@1x overdilute. Re-extract added 9/20/2016 by KKW
AZ06090-04RE1	D	SW3-MW0027-032.0-2016091[illegible]	21-Sep-16	8260B TCL SOM01.2 CLP-LIKE			5	5			5	rr@1x overdilute. Re-extract added 9/20/2016 by KKW
AZ06090-05RE1	D	SW3-MW0028-032.0-2016091[illegible]	21-Sep-16	8260B TCL SOM01.2 CLP-LIKE			5	5			5	rr@1x overdilute. Re-extract added 9/20/2016 by KKW
AZ06092-01	D	POL-MW0031I-027.5 -2016091[illegible]	21-Sep-16	8260B TCL SOM01.2 CLP-LIKE			5	5			5	hist 1x rgg 91316
AZ06092-01	D	POL-MW0031I-027.5 -2016091[illegible]		8260B			5	5			5	Added for BatchQC in: 6I20014
AZ06092-01	D	POL-MW0031I-027.5 -2016091[illegible]		8260B Arom + Naph			5	5			5	Added for BatchQC in: 6I20014
AZ06092-02	D	POL-MW0029S-010.6-2016091[illegible]	21-Sep-16	8260B TCL SOM01.2 CLP-LIKE			5	5			5	hist 1x rgg 91316
AZ06092-03	D	POL-MW0026S-010.0-2016091[illegible]	21-Sep-16	8260B TCL SOM01.2 CLP-LIKE			5	5			5	hist 1x rgg 91316
AZ06092-04	D	POL-MW0009I-027.5-2016091[illegible]	21-Sep-16	8260B TCL SOM01.2 CLP-LIKE			5	5			5	hist 1x rgg 91316
AZ06092-05	D	POL-MW0009S-009.5-2016091[illegible]	21-Sep-16	8260B TCL SOM01.2 CLP-LIKE			5	5			5	hist 1x rgg 91316
AZ06092-06	D	POL-MW0021S-010.5-2016091[illegible]	21-Sep-16	8260B TCL SOM01.2 CLP-LIKE			5	5			5	hist 1x rgg 91316

PREPARATION BENCH SHEET

Printed: 9/20/2016 1:19:48PM

6I20014

ENCO Orlando

Prepared using: EPA 5030B_MS

Surrogate Solution

___ A6H0787 8260 surr working (lower conc.)

Spiking Solution

A6I0392 8260 2nd source Mega Mix

A6I0503 8260 2nd source Gases/Acrolein virtual

Matrix: Water

Lab Number	Code	Sample ID, Source and Sample Location	Due Date	Analysis	pH adj	Res Cl[(1)]	Initial (mL)	Final (mL)	Spike ID	ul Spike	ul Surr1	Comments
AZ06092-07	D	POL-MW0034S-010.0-20160914 A[MS45]	21-Sep-16	8260B TCL SOM01.2 CLP-LIKE			5	5			5	hist 2.5x rgg 91316
AZ06092-08	D	TRIP BLANK A[MS45]	21-Sep-16	8260B TCL SOM01.2 CLP-LIKE			5	5			5	tb
AZ06180-01RE1	C	MW-5 I[MS8]	21-Sep-16	8260B Arom + Naph			5	5			5	rr100x nap (will be about 15); Re-extract added 9/16/2016 by JAJ
AZ06442-01RE1		Control D[MS9]	21-Sep-16	8260B			5	5			5	rr50x acetone; Re-extract added 9/17/2016 by JAJ
AZ06442-02RE1		Hi Dose D[MS9]	21-Sep-16	8260B			5	5			5	rr100x acetone; Re-extract added 9/17/2016 by JAJ

(1) Before solvent extraction proceeds, verify that there is no residual chlorine above 0.5 mg/L. Any sample above this must be treated to remove excess chlorine before extraction, and this documented as a comment.

Instrument 5

EST Centurian autosampler manufacturer reccommends adding 5 uL of IS/SS

Start Date _____

StopDate _____

Instrument ID _____

Standard ID#	Description	Manufacture Lot#

_____ _____

Samples Prepared By Date

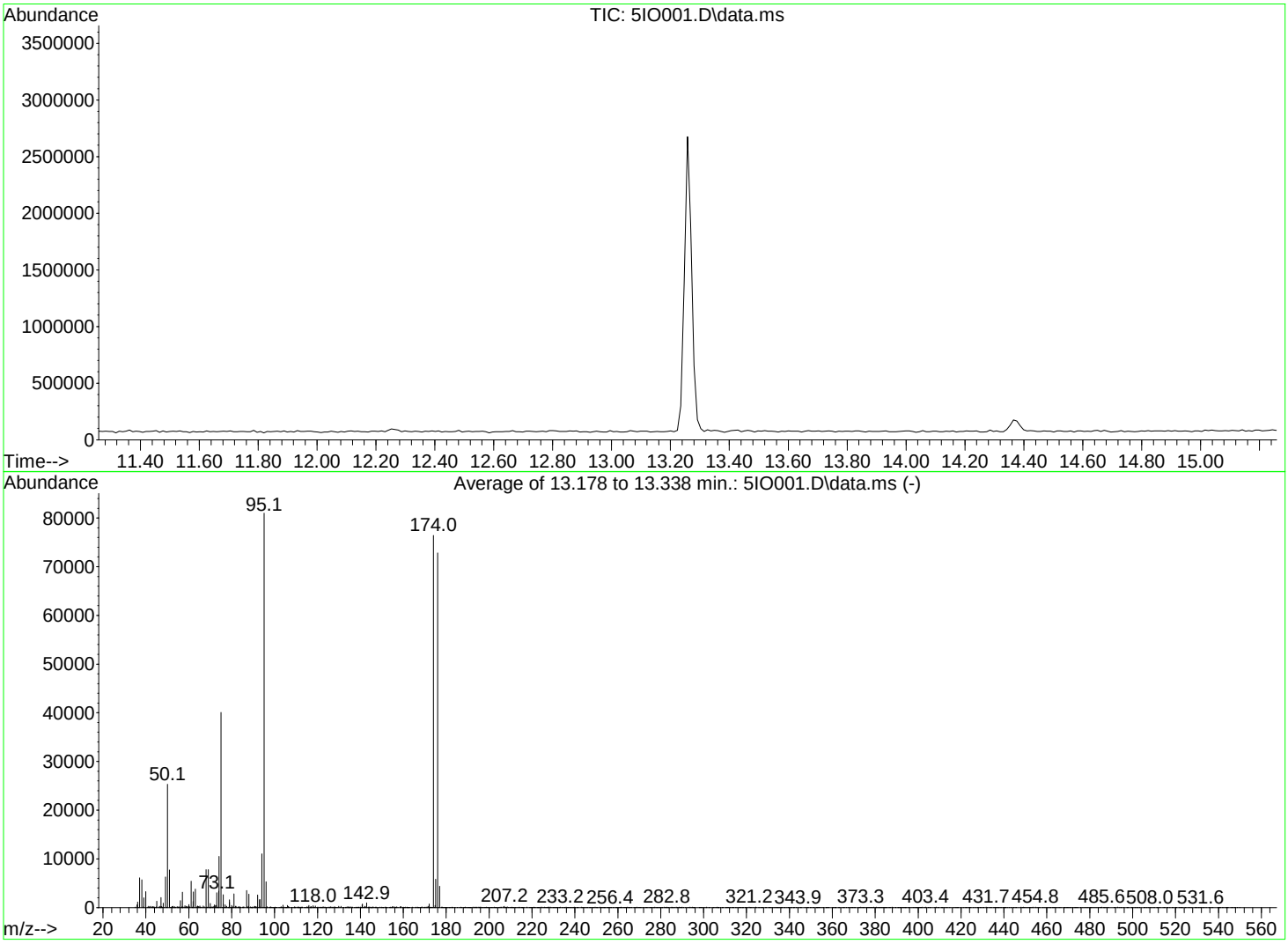
_____ _____

Samples Prepared By Date

Data Path : C:\msdchem\1\data\092016\
Data File : 5IO001.D
Acq On : 20 Sep 2016 7:47 am
Operator : KKW
InstName : OVGCMS5
Sample : AA40538-TUN1
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\methods\091616.M
Title : ENCO SOP VGCMS05; Element Cal
Last Update : Wed Sep 21 08:34:19 2016



Spectrum Information: Average of 13.178 to 13.338 min.

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	31.2	25311	PASS
75	95	30	60	49.5	40073	PASS
95	95	100	100	100.0	81021	PASS
96	95	5	9	6.5	5301	PASS
173	174	0.00	2	0.1	86	PASS
174	95	50	100	94.3	76399	PASS
175	174	5	9	7.6	5824	PASS
176	174	95	101	95.3	72815	PASS
177	176	5	9	6.0	4344	PASS

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\092016\
Data File : 5IO002.D
Acq On : 20 Sep 2016 8:16 am
Operator : KKW
InstName : OVGCMS5
Sample : AA40538-CCV1
Misc :
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Sep 20 10:19:17 2016
Quant Method : C:\msdchem\1\methods\091616.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Mon Sep 19 08:51:53 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) PENTAFLUOROBENZENE (IS)	10.215	168	1077219	50.00	ug/L		0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.791	114	1754430	50.00	ug/L		0.00
57) CHLOROBENZENE-D5 (IS)	13.511	82	811715	50.00	ug/L		0.00
81) 1,4-DICHLOROBENZENE-D4...	15.797	152	1111837	50.00	ug/L		0.00
System Monitoring Compounds							
31) Dibromofluoromethane	9.792	113	464266	49.37	ug/L		0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 98.74%				
42) 1,2-Dichloroethane-d4	10.380	65	633281	52.94	ug/L		0.00
Spiked Amount 50.000	Range 70 - 120		Recovery = 105.88%				
54) D8-Toluene	12.101	98	1947113	50.88	ug/L		0.00
Spiked Amount 50.000	Range 85 - 120		Recovery = 101.76%				
75) Bromofluorobenzene	14.616	95	755350	52.11	ug/L		0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 104.22%				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	4.275	85	400419	49.22	ug/L		96
3) Chloromethane	4.733	50	678438	39.97	ug/L		98
4) Vinyl Chloride	4.933	62	578880	48.63	ug/L	#	88
5) Bromomethane	5.597	94	158978	44.96	ug/L		94
6) Chloroethane	5.814	64	343984	55.87	ug/L		98
7) Trichlorofluoromethane	6.079	101	639940	50.05	ug/L		97
8) Diethyl ether	6.578	59	393679	44.78	ug/L		99
9) 1,1-Dichloroethene	6.925	96	331581	52.20	ug/L		95
10) Trichlorotrifluoroethane	6.960	151	327179	52.25	ug/L		97
11) Acrolein	7.412	56	632157	459.73	ug/L		98
12) Iodomethane	7.177	142	1844564	244.87	ug/L		98
13) Carbon Disulfide	7.019	76	5050349	244.23	ug/L		99
14) 3-chloropropene	7.595	41	821584	54.02	ug/L		95
15) Acetone	7.788	43	733041	205.35	ug/L		99
16) Methylene Chloride	7.730	84	338183	48.21	ug/L		98
17) Methyl Acetate	7.912	43	476317	42.74	ug/L		98
18) t-1,2-Dichloroethene	7.935	96	361363	47.04	ug/L		99
19) Methyl tert-butyl ether	8.029	73	784578	42.72	ug/L		97
20) Acetonitrile	8.423	41	1121252	679.80	ug/L	#	82
21) Isopropyl ether	8.464	45	1757736	50.61	ug/L		100
22) Chloroprene	8.682	88	327564	46.54	ug/L		98
23) 1,1-Dichloroethane	8.717	63	817573	49.54	ug/L		99
24) Acrylonitrile	8.787	53	2392079	447.23	ug/L		99
25) Vinyl Acetate	8.940	43	6537078	238.74	ug/L		99
26) c-1,2-Dichloroethene	9.328	96	380963	45.18	ug/L		95
27) 2,2-Dichloropropane	9.463	77	486863	56.85	ug/L		97
28) Bromochloromethane	9.557	128	199101	58.71	ug/L		98
29) Cyclohexane	9.575	56	984310	46.06	ug/L		98
30) Chloroform	9.592	83	633707	52.66	ug/L		96
32) Dibromofluoromethane	9.792	113	464266	49.37	ug/L		92
33) 2-Butanone	9.915	72	199256	207.60	ug/L		86
34) 1,1,1-Trichloroethane	9.863	97	547126	49.57	ug/L		98
35) 1,1-Dichloropropene	9.980	75	498136	47.77	ug/L		98
36) Propionitrile	10.268	54	867784	390.12	ug/L		88
37) Methacrylonitrile	10.274	41	3739349	463.98	ug/L	#	100
38) Isobutyl Alcohol	10.280	43	932448	767.24	ug/L	#	100
40) Carbon Tetrachloride	9.792	117	534688	55.15	ug/L		87
41) Benzene	10.244	78	1436010	49.44	ug/L		99
43) 1,2-Dichloroethane-d4	10.380	65	633281	52.94	ug/L	#	80
44) 1,2-Dichloroethane	10.444	62	549589	48.17	ug/L		99

Data Path : C:\msdchem\1\data\092016\
Data File : 5IO002.D
Acq On : 20 Sep 2016 8:16 am
Operator : KKW
InstName : OVGCMS5
Sample : AA40538-CCV1
Misc :
ALS Vial : 2 Sample Multiplier: 1

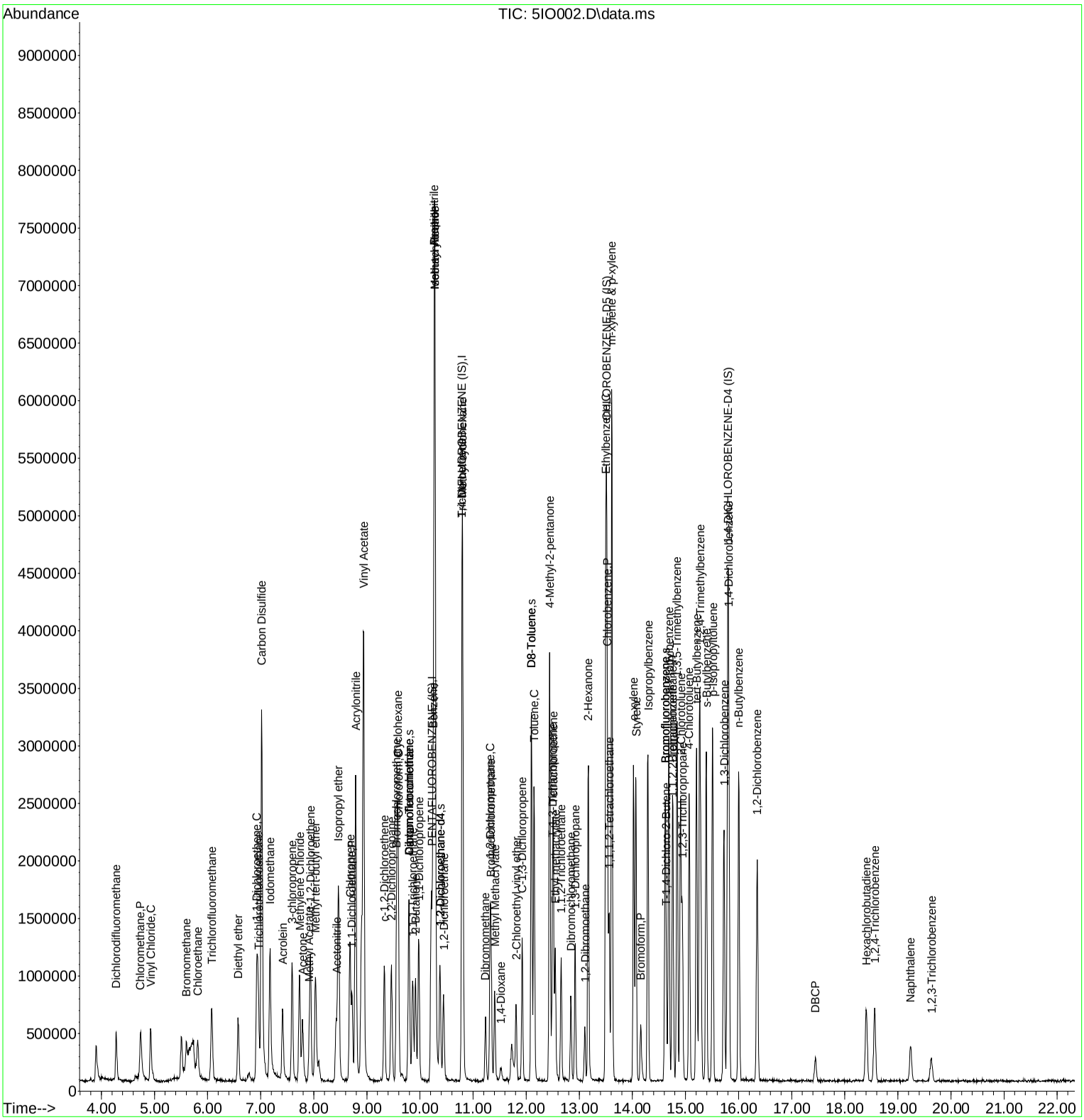
Quant Time: Sep 20 10:19:17 2016
Quant Method : C:\msdchem\1\methods\091616.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Mon Sep 19 08:51:53 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
45) Trichloroethene	10.791	130	467472	51.70 ug/L	98
46) Methyl cyclohexane	10.803	83	679618	50.48 ug/L	96
47) Dibromomethane	11.232	93	203080	47.30 ug/L	98
48) 1,2-Dichloropropane	11.326	63	460958	46.67 ug/L	94
49) Bromodichloromethane	11.337	83	420286	53.14 ug/L	96
50) Methyl Methacrylate	11.408	69	222026	44.19 ug/L	98
51) 1,4-Dioxane	11.519	88	85017	672.10 ug/L	97
52) 2-Chloroethyl vinyl ether	11.807	63	215691	112.86 ug/L	98
53) C-1,3-Dichloropropene	11.925	75	517558	46.92 ug/L	95
55) D8-Toluene	12.101	98	1947113	50.88 ug/L #	90
56) 4-Methyl-2-pentanone	12.442	100	296880	207.13 ug/L	95
58) Toluene	12.148	92	995355	51.14 ug/L	100
59) T-1,3-Dichloropropene	12.495	75	453555	48.56 ug/L	98
60) Tetrachloroethene	12.512	164	366369	52.20 ug/L	93
61) Ethyl methacrylate	12.548	69	412337	42.15 ug/L	97
62) 1,1,2-Trichloroethane	12.659	97	311207	46.80 ug/L	97
63) Dibromochloromethane	12.841	129	355945	51.95 ug/L	94
64) 1,3-Dichloropropane	12.918	76	501086	46.98 ug/L	98
65) 1,2-Dibromoethane	13.106	107	320357	44.85 ug/L	97
66) 2-Hexanone	13.170	43	1975386	226.39 ug/L	100
67) Ethylbenzene	13.500	106	698662	50.87 ug/L	95
68) Chlorobenzene	13.529	112	1113349	48.78 ug/L	95
69) 1,1,1,2-Tetrachloroethane	13.564	131	391676	50.94 ug/L	99
70) m-xylene & p-xylene	13.611	106	1691919	97.70 ug/L	100
71) o-xylene	14.022	106	771685	47.77 ug/L	95
72) Styrene	14.069	104	1322797	46.97 ug/L	100
73) Bromoform	14.158	173	236127	43.89 ug/L	99
74) Isopropylbenzene	14.293	105	1964276	47.87 ug/L	99
76) Bromofluorobenzene	14.616	95	755350	52.11 ug/L	95
77) n-Propylbenzene	14.686	91	2399271	49.08 ug/L	99
78) 1,1,2,2-Tetrachloroethane	14.751	83	420461	42.05 ug/L	93
79) 1,2,3-Trichloropropane	14.939	61	194689	50.30 ug/L	93
80) T-1,4-Dichloro-2-Butene	14.639	53	260647	46.85 ug/L #	82
82) Bromobenzene	14.763	156	504319	49.15 ug/L	98
83) 1,2,4-Trimethylbenzene	15.268	105	1857954	46.71 ug/L	97
84) 2-Chlorotoluene	14.910	91	1384408	52.61 ug/L	99
85) 4-Chlorotoluene	15.068	91	1440462	52.94 ug/L	99
86) tert-Butylbenzene	15.209	119	1683926	47.59 ug/L	98
87) 1,3,5-Trimethylbenzene	14.839	105	1848710	54.56 ug/L	99
88) p-Isopropyltoluene	15.515	119	2149822	46.99 ug/L	97
89) s-Butylbenzene	15.391	105	2351608	47.63 ug/L	99
90) 1,3-Dichlorobenzene	15.726	146	1051451	49.64 ug/L	96
91) 1,4-Dichlorobenzene	15.815	146	1138686	48.07 ug/L	96
92) n-Butylbenzene	16.003	91	1719569	46.21 ug/L	100
93) 1,2-Dichlorobenzene	16.349	146	993721	45.95 ug/L	100
94) DBCP	17.448	157	71742	31.77 ug/L	98
95) Hexachlorobutadiene	18.400	225	173246	39.37 ug/L	94
96) 1,2,4-Trichlorobenzene	18.564	180	289945	29.29 ug/L	96
97) Naphthalene	19.234	128	411101	26.21 ug/L	96
98) 1,2,3-Trichlorobenzene	19.634	180	106199	27.16 ug/L	94

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\092016\
Data File : 5IO002.D
Acq On : 20 Sep 2016 8:16 am
Operator : KKW
InstName : OVGCMS5
Sample : AA40538-CCV1
Misc :
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Sep 20 10:19:17 2016
Quant Method : C:\msdchem\1\methods\091616.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Mon Sep 19 08:51:53 2016
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\092016\
Data File : 5IO004.D
Acq On : 20 Sep 2016 9:17 am
Operator : KKW
InstName : OVGCMS5
Sample : 6I20014-BS1
Misc :
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Sep 20 09:41:37 2016
Quant Method : C:\msdchem\1\methods\091616.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Mon Sep 19 08:51:53 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) PENTAFLUOROBENZENE (IS)	10.209	168	1127685	50.00	ug/L		0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.791	114	1801557	50.00	ug/L		0.00
57) CHLOROBENZENE-D5 (IS)	13.511	82	837697	50.00	ug/L		0.00
81) 1,4-DICHLOROBENZENE-D4...	15.797	152	1147607	50.00	ug/L		0.00
System Monitoring Compounds							
31) Dibromofluoromethane	9.792	113	496587	50.44	ug/L		0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 100.88%				
42) 1,2-Dichloroethane-d4	10.374	65	648164	52.77	ug/L		0.00
Spiked Amount 50.000	Range 70 - 120		Recovery = 105.54%				
54) D8-Toluene	12.095	98	1949405	49.61	ug/L		0.00
Spiked Amount 50.000	Range 85 - 120		Recovery = 99.22%				
75) Bromofluorobenzene	14.616	95	788841	52.73	ug/L		0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 105.46%				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	4.275	85	171779	20.17	ug/L		93
3) Chloromethane	4.733	50	290163	16.33	ug/L		98
4) Vinyl Chloride	4.927	62	215101	17.26	ug/L		90
5) Bromomethane	5.603	94	54980	18.29	ug/L		94
6) Chloroethane	5.826	64	132460	17.32	ug/L		95
7) Trichlorofluoromethane	6.084	101	232009	17.33	ug/L		97
8) Diethyl ether	6.578	59	172034	18.69	ug/L		97
9) 1,1-Dichloroethene	6.925	96	109451	16.46	ug/L		91
10) Trichlorotrifluoroethane	6.954	151	110450	16.85	ug/L		97
11) Acrolein	7.418	56	150521	104.57	ug/L		87
12) Iodomethane	7.177	142	117471	14.90	ug/L		95
13) Carbon Disulfide	7.019	76	341544	15.78	ug/L		98
14) 3-chloropropene	7.589	41	300859	18.90	ug/L		97
15) Acetone	7.788	43	300501	80.41	ug/L		100
16) Methylene Chloride	7.735	84	131991	17.98	ug/L		93
17) Methyl Acetate	7.918	43	186706	16.00	ug/L		98
18) t-1,2-Dichloroethene	7.941	96	133062	16.55	ug/L		93
19) Methyl tert-butyl ether	8.035	73	315204	16.40	ug/L		94
20) Acetonitrile	8.464	41	164425	95.23	ug/L	#	91
21) Isopropyl ether	8.470	45	692781	19.05	ug/L		98
22) Chloroprene	8.687	88	117775	15.98	ug/L		99
23) 1,1-Dichloroethane	8.723	63	305215	17.67	ug/L	#	98
24) Acrylonitrile	8.787	53	86783	15.50	ug/L		92
25) Vinyl Acetate	8.940	43	436572	15.23	ug/L	#	95
26) c-1,2-Dichloroethene	9.322	96	146742	16.62	ug/L		97
27) 2,2-Dichloropropane	9.463	77	179733	20.05	ug/L		96
28) Bromochloromethane	9.551	128	79768	22.47	ug/L		94
29) Cyclohexane	9.580	56	358722	16.03	ug/L		95
30) Chloroform	9.586	83	244341	19.40	ug/L		93
32) Dibromofluoromethane	9.792	113	496587	50.44	ug/L		96
33) 2-Butanone	9.921	72	90514	90.09	ug/L		79
34) 1,1,1-Trichloroethane	9.862	97	207836	17.99	ug/L		97
35) 1,1-Dichloropropene	9.974	75	190927	17.49	ug/L		96
36) Propionitrile	10.262	54	41685	17.90	ug/L	#	1
37) Methacrylonitrile	10.274	41	221611	26.27	ug/L	#	100
38) Isobutyl Alcohol	10.274	43	188479	148.14	ug/L	#	91
40) Carbon Tetrachloride	9.792	117	183261	18.41	ug/L		88
41) Benzene	10.244	78	557502	18.69	ug/L		99
43) 1,2-Dichloroethane-d4	10.374	65	648164	52.77	ug/L	#	83
44) 1,2-Dichloroethane	10.444	62	227150	19.39	ug/L		98

Data Path : C:\msdchem\1\data\092016\
Data File : 5IO004.D
Acq On : 20 Sep 2016 9:17 am
Operator : KKW
InstName : OVGCMS5
Sample : 6I20014-BS1
Misc :
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Sep 20 09:41:37 2016
Quant Method : C:\msdchem\1\methods\091616.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Mon Sep 19 08:51:53 2016
Response via : Initial Calibration

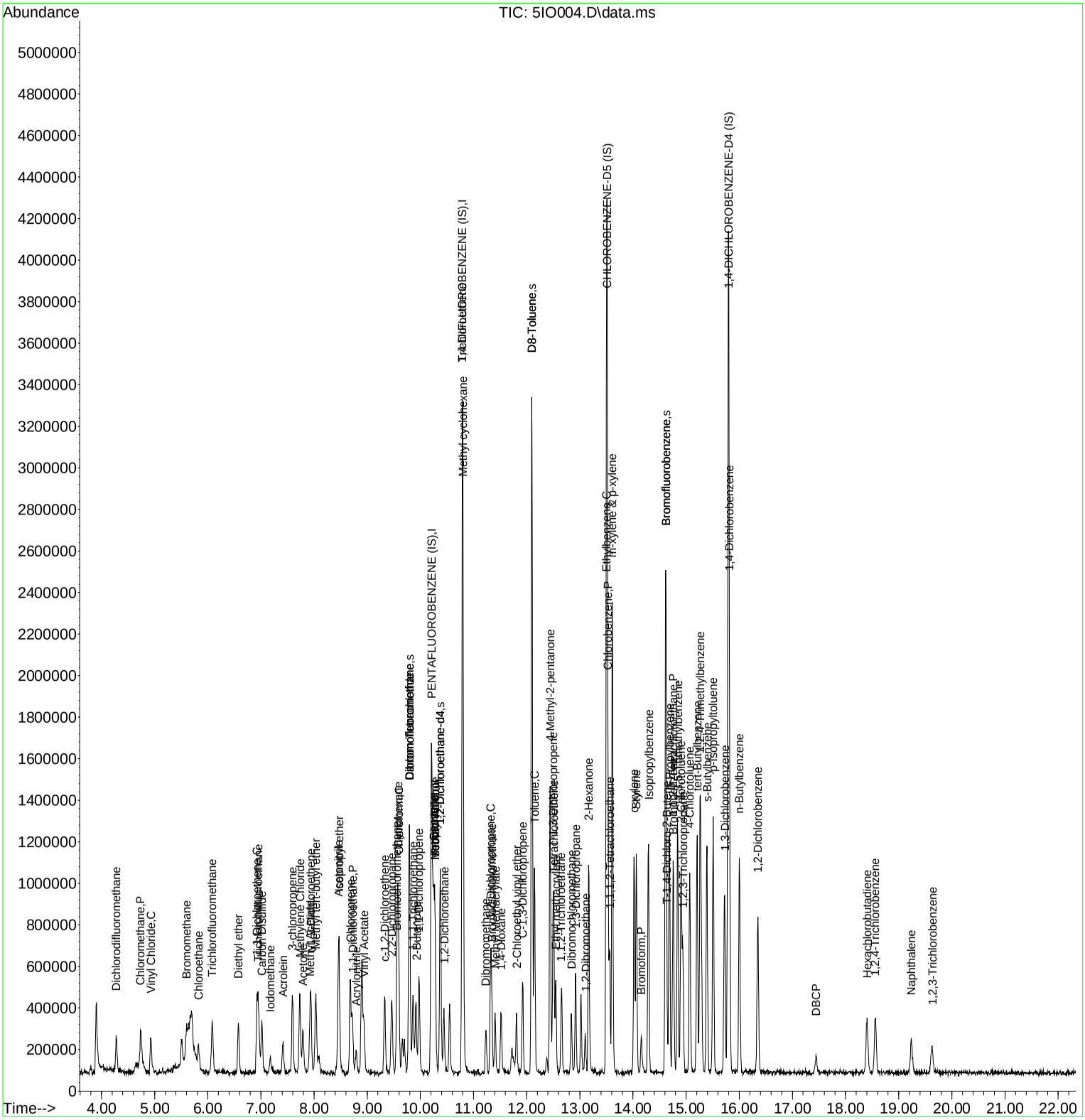
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
45) Trichloroethene	10.791	130	186718	20.11 ug/L	95
46) Methyl cyclohexane	10.803	83	264929	19.17 ug/L	98
47) Dibromomethane	11.231	93	81900	18.58 ug/L	99
48) 1,2-Dichloropropane	11.320	63	178587	17.61 ug/L	99
49) Bromodichloromethane	11.343	83	174115	21.44 ug/L	96
50) Methyl Methacrylate	11.408	69	89172	17.28 ug/L	82
51) 1,4-Dioxane	11.519	88	35778	275.45 ug/L	97
52) 2-Chloroethyl vinyl ether	11.807	63	93927	47.86 ug/L	96
53) C-1,3-Dichloropropene	11.925	75	201830	17.82 ug/L	97
55) D8-Toluene	12.095	98	1949405	49.61 ug/L #	88
56) 4-Methyl-2-pentanone	12.442	100	108615	73.80 ug/L	96
58) Toluene	12.148	92	382551	19.04 ug/L	97
59) T-1,3-Dichloropropene	12.501	75	176140	18.27 ug/L	96
60) Tetrachloroethene	12.512	164	143722	19.84 ug/L	90
61) Ethyl methacrylate	12.553	69	176627	17.50 ug/L	95
62) 1,1,2-Trichloroethane	12.647	97	123155	17.94 ug/L	93
63) Dibromochloromethane	12.841	129	139549	19.73 ug/L	99
64) 1,3-Dichloropropane	12.918	76	203816	18.52 ug/L	99
65) 1,2-Dibromoethane	13.106	107	133114	18.06 ug/L #	96
66) 2-Hexanone	13.165	43	724797	80.49 ug/L	99
67) Ethylbenzene	13.494	106	238410	16.82 ug/L #	91
68) Chlorobenzene	13.529	112	464544	19.72 ug/L	99
69) 1,1,1,2-Tetrachloroethane	13.564	131	146183	18.42 ug/L	96
70) m-xylene & p-xylene	13.611	106	640387	35.83 ug/L	99
71) o-xylene	14.022	106	291541	17.49 ug/L	87
72) Styrene	14.063	104	520508	17.91 ug/L	97
73) Bromoform	14.152	173	87941	15.84 ug/L	94
74) Isopropylbenzene	14.293	105	772308	18.24 ug/L	99
76) Bromofluorobenzene	14.616	95	788841	52.73 ug/L	96
77) n-Propylbenzene	14.686	91	941479	18.66 ug/L	99
78) 1,1,2,2-Tetrachloroethane	14.757	83	172161	16.68 ug/L	94
79) 1,2,3-Trichloropropane	14.939	61	79297m	19.85 ug/L	
80) T-1,4-Dichloro-2-Butene	14.639	53	104187	18.15 ug/L #	61
82) Bromobenzene	14.763	156	191059	18.04 ug/L	92
83) 1,2,4-Trimethylbenzene	15.262	105	741579	18.06 ug/L	98
84) 2-Chlorotoluene	14.904	91	554798	20.43 ug/L	98
85) 4-Chlorotoluene	15.068	91	563603	20.07 ug/L	98
86) tert-Butylbenzene	15.209	119	640542	17.54 ug/L	98
87) 1,3,5-Trimethylbenzene	14.845	105	709074	20.27 ug/L	97
88) p-Isopropyltoluene	15.509	119	832509	17.63 ug/L	100
89) s-Butylbenzene	15.391	105	862259	16.92 ug/L	98
90) 1,3-Dichlorobenzene	15.726	146	434245	19.86 ug/L	98
91) 1,4-Dichlorobenzene	15.814	146	443329	18.13 ug/L #	86
92) n-Butylbenzene	16.002	91	641168	16.69 ug/L	99
93) 1,2-Dichlorobenzene	16.349	146	379009	16.98 ug/L	97
94) DBCP	17.436	157	23972	10.28 ug/L #	78
95) Hexachlorobutadiene	18.400	225	66387	14.62 ug/L	94
96) 1,2,4-Trichlorobenzene	18.552	180	133752	13.09 ug/L	96
97) Naphthalene	19.240	128	204739	14.05 ug/L	98
98) 1,2,3-Trichlorobenzene	19.634	180	68726	18.57 ug/L	96

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\092016\
Data File : 5IO004.D
Acq On : 20 Sep 2016 9:17 am
Operator : KKW
InstName : OVGCMS5
Sample : 6I20014-BS1
Misc :
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Sep 20 09:41:37 2016
Quant Method : C:\msdchem\1\methods\091616.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Mon Sep 19 08:51:53 2016
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\092016\
Data File : 5IO007.D
Acq On : 20 Sep 2016 10:45 am
Operator : KKW
InstName : OVGCMS5
Sample : 6I20014-BLK1
Misc :
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Sep 20 11:11:09 2016
Quant Method : C:\msdchem\1\methods\091616.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Mon Sep 19 08:51:53 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) PENTAFLUOROBENZENE (IS)	10.209	168	1043311	50.00	ug/L	0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.791	114	1658892	50.00	ug/L	0.00
57) CHLOROBENZENE-D5 (IS)	13.511	82	762472	50.00	ug/L	0.00
81) 1,4-DICHLOROBENZENE-D4...	15.797	152	1028838	50.00	ug/L	0.00
System Monitoring Compounds						
31) Dibromofluoromethane	9.798	113	433256	47.57	ug/L	0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 95.14%			
42) 1,2-Dichloroethane-d4	10.374	65	620662	54.87	ug/L	0.00
Spiked Amount 50.000	Range 70 - 120		Recovery = 109.74%			
54) D8-Toluene	12.095	98	1852935	51.21	ug/L	0.00
Spiked Amount 50.000	Range 85 - 120		Recovery = 102.42%			
75) Bromofluorobenzene	14.616	95	699481	51.37	ug/L	0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 102.74%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	0.000		0	N.D. d		
3) Chloromethane	0.000		0	N.D. d		
4) Vinyl Chloride	4.909	62	1077	N.D.		
5) Bromomethane	0.000		0	N.D. d		
6) Chloroethane	5.802	64	1276	N.D.		
7) Trichlorofluoromethane	6.155	101	1391	N.D.		
8) Diethyl ether	6.543	59	1557	N.D.		
9) 1,1-Dichloroethene	0.000		0	N.D. d		
10) Trichlorotrifluoroethane	0.000		0	N.D.		
11) Acrolein	0.000		0	N.D. d		
12) Iodomethane	0.000		0	N.D. d		
13) Carbon Disulfide	7.013	76	2359	N.D.		
14) 3-chloropropene	7.594	41	1425	N.D.		
15) Acetone	0.000		0	N.D. d		
16) Methylene Chloride	0.000		0	N.D.		
17) Methyl Acetate	0.000		0	N.D. d		
18) t-1,2-Dichloroethene	7.824	96	1063	N.D.		
19) Methyl tert-butyl ether	8.029	73	1224	N.D.		
20) Acetonitrile	0.000		0	N.D. d		
21) Isopropyl ether	8.452	45	1490	N.D.		
22) Chloroprene	8.828	88	1077	N.D.		
23) 1,1-Dichloroethane	8.816	63	2039	N.D.		
24) Acrylonitrile	0.000		0	N.D. d		
25) Vinyl Acetate	8.928	43	1624	N.D.		
26) c-1,2-Dichloroethene	9.275	96	1147	N.D.		
27) 2,2-Dichloropropane	9.328	77	1102	N.D.		
28) Bromochloromethane	0.000		0	N.D.		
29) Cyclohexane	9.545	56	1097	N.D.		
30) Chloroform	9.721	83	1208	N.D.		
32) Dibromofluoromethane	9.798	113	433256	47.57	ug/L	89
33) 2-Butanone	0.000		0	N.D. d		
34) 1,1,1-Trichloroethane	10.003	97	1310	N.D.		
35) 1,1-Dichloropropene	0.000		0	N.D. d		
36) Propionitrile	0.000		0	N.D. d		
37) Methacrylonitrile	0.000		0	N.D. d		
38) Isobutyl Alcohol	0.000		0	N.D. d		
40) Carbon Tetrachloride	9.727	117	1097	N.D.		
41) Benzene	10.291	78	1057	N.D.		
43) 1,2-Dichloroethane-d4	10.374	65	620662	54.87	ug/L #	79
44) 1,2-Dichloroethane	10.468	62	1430	N.D.		

Data Path : C:\msdchem\1\data\092016\
Data File : 5IO007.D
Acq On : 20 Sep 2016 10:45 am
Operator : KKW
InstName : OVGCMS5
Sample : 6I20014-BLK1
Misc :
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Sep 20 11:11:09 2016
Quant Method : C:\msdchem\1\methods\091616.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Mon Sep 19 08:51:53 2016
Response via : Initial Calibration

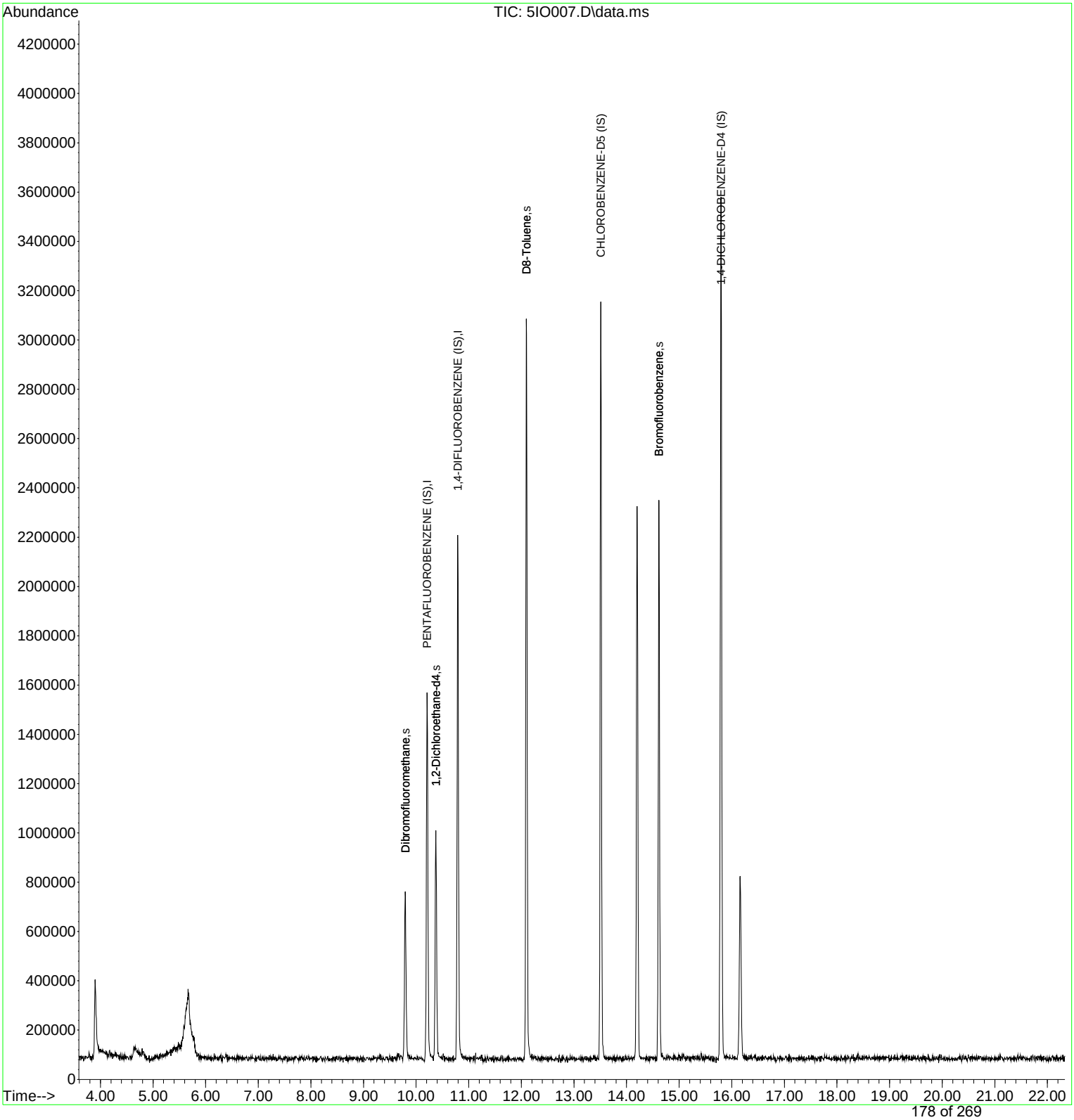
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
45) Trichloroethene	10.779	130	1015	N.D.	
46) Methyl cyclohexane	0.000		0	N.D. d	
47) Dibromomethane	0.000		0	N.D. d	
48) 1,2-Dichloropropane	11.302	63	1323	N.D.	
49) Bromodichloromethane	11.302	83	1263	N.D.	
50) Methyl Methacrylate	0.000		0	N.D. d	
51) 1,4-Dioxane	0.000		0	N.D.	
52) 2-Chloroethyl vinyl ether	0.000		0	N.D. d	
53) C-1,3-Dichloropropene	11.925	75	1799	N.D.	
55) D8-Toluene	12.095	98	1852935	51.21 ug/L #	92
56) 4-Methyl-2-pentanone	0.000		0	N.D. d	
58) Toluene	12.142	92	1265	N.D.	
59) T-1,3-Dichloropropene	12.483	75	1184	N.D.	
60) Tetrachloroethene	0.000		0	N.D.	
61) Ethyl methacrylate	0.000		0	N.D. d	
62) 1,1,2-Trichloroethane	0.000		0	N.D. d	
63) Dibromochloromethane	0.000		0	N.D.	
64) 1,3-Dichloropropane	12.841	76	1105	N.D.	
65) 1,2-Dibromoethane	0.000		0	N.D.	
66) 2-Hexanone	0.000		0	N.D. d	
67) Ethylbenzene	13.517	106	1052	N.D.	
68) Chlorobenzene	0.000		0	N.D.	
69) 1,1,1,2-Tetrachloroethane	0.000		0	N.D.	
70) m-xylene & p-xylene	13.623	106	2317	N.D.	
71) o-xylene	0.000		0	N.D.	
72) Styrene	14.134	104	1151	N.D.	
73) Bromoform	0.000		0	N.D. d	
74) Isopropylbenzene	14.281	105	1471	N.D.	
76) Bromofluorobenzene	14.616	95	699481	51.37 ug/L	96
77) n-Propylbenzene	14.698	91	3423	N.D.	
78) 1,1,2,2-Tetrachloroethane	14.763	83	1613	N.D.	
79) 1,2,3-Trichloropropane	0.000		0	N.D. d	
80) T-1,4-Dichloro-2-Butene	0.000		0	N.D. d	
82) Bromobenzene	0.000		0	N.D.	
83) 1,2,4-Trimethylbenzene	15.262	105	2789	N.D.	
84) 2-Chlorotoluene	14.915	91	1785	N.D.	
85) 4-Chlorotoluene	15.062	91	1191	N.D.	
86) tert-Butylbenzene	15.215	119	1438	N.D.	
87) 1,3,5-Trimethylbenzene	0.000		0	N.D.	
88) p-Isopropyltoluene	15.503	119	3338	N.D.	
89) s-Butylbenzene	15.385	105	2787	N.D.	
90) 1,3-Dichlorobenzene	15.714	146	1244	N.D.	
91) 1,4-Dichlorobenzene	15.814	146	3296	N.D.	
92) n-Butylbenzene	16.002	91	3449	N.D.	
93) 1,2-Dichlorobenzene	16.343	146	1409	N.D.	
94) DBCP	0.000		0	N.D.	
95) Hexachlorobutadiene	0.000		0	N.D.	
96) 1,2,4-Trichlorobenzene	0.000		0	N.D. d	
97) Naphthalene	0.000		0	N.D. d	
98) 1,2,3-Trichlorobenzene	0.000		0	N.D. d	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\092016\
Data File : 5IO007.D
Acq On : 20 Sep 2016 10:45 am
Operator : KKW
InstName : OVGCMS5
Sample : 6I20014-BLK1
Misc :
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Sep 20 11:11:09 2016
Quant Method : C:\msdchem\1\methods\091616.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Mon Sep 19 08:51:53 2016
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\092016\
Data File : 5IO009.D
Acq On : 20 Sep 2016 11:44 am
Operator : KKW
InstName : OVGCMS5
Sample : AZ06090-03RE1
Misc :
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Sep 20 13:10:11 2016
Quant Method : C:\msdchem\1\methods\091616.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Mon Sep 19 08:51:53 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) PENTAFLUOROBENZENE (IS)	10.209	168	1017792	50.00	ug/L	0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.791	114	1687739	50.00	ug/L	0.00
57) CHLOROBENZENE-D5 (IS)	13.511	82	742877	50.00	ug/L	0.00
81) 1,4-DICHLOROBENZENE-D4...	15.797	152	1044246	50.00	ug/L	0.00
System Monitoring Compounds						
31) Dibromofluoromethane	9.792	113	436497	49.13	ug/L	0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 98.26%			
42) 1,2-Dichloroethane-d4	10.374	65	611578	53.15	ug/L	0.00
Spiked Amount 50.000	Range 70 - 120		Recovery = 106.30%			
54) D8-Toluene	12.095	98	1850061	50.26	ug/L	0.00
Spiked Amount 50.000	Range 85 - 120		Recovery = 100.52%			
75) Bromofluorobenzene	14.616	95	695680	52.44	ug/L	0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 104.88%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	4.257	85	1175	N.D.		
3) Chloromethane	0.000		0	N.D.	d	
4) Vinyl Chloride	4.921	62	19308	1.72	ug/L #	43
5) Bromomethane	0.000		0	N.D.	d	
6) Chloroethane	5.773	64	1359	N.D.		
7) Trichlorofluoromethane	6.178	101	1845	N.D.		
8) Diethyl ether	6.596	59	1568	N.D.		
9) 1,1-Dichloroethene	0.000		0	N.D.	d	
10) Trichlorotrifluoroethane	0.000		0	N.D.	d	
11) Acrolein	0.000		0	N.D.	d	
12) Iodomethane	0.000		0	N.D.	d	
13) Carbon Disulfide	7.019	76	3036	N.D.		
14) 3-chloropropene	0.000		0	N.D.	d	
15) Acetone	7.794	43	56263	16.68	ug/L	100
16) Methylene Chloride	0.000		0	N.D.	d	
17) Methyl Acetate	0.000		0	N.D.	d	
18) t-1,2-Dichloroethene	0.000		0	N.D.	d	
19) Methyl tert-butyl ether	7.918	73	1361	N.D.		
20) Acetonitrile	0.000		0	N.D.	d	
21) Isopropyl ether	8.470	45	1122	N.D.		
22) Chloroprene	0.000		0	N.D.		
23) 1,1-Dichloroethane	8.675	63	1249	N.D.		
24) Acrylonitrile	0.000		0	N.D.	d	
25) Vinyl Acetate	8.946	43	1289	N.D.		
26) c-1,2-Dichloroethene	9.316	96	1207	N.D.		
27) 2,2-Dichloropropane	9.480	77	1601	N.D.		
28) Bromochloromethane	0.000		0	N.D.	d	
29) Cyclohexane	9.539	56	3155	N.D.		
30) Chloroform	9.627	83	1836	N.D.		
32) Dibromofluoromethane	9.792	113	436497	49.13	ug/L	94
33) 2-Butanone	0.000		0	N.D.	d	
34) 1,1,1-Trichloroethane	9.710	97	1030	N.D.		
35) 1,1-Dichloropropene	0.000		0	N.D.		
36) Propionitrile	0.000		0	N.D.	d	
37) Methacrylonitrile	0.000		0	N.D.	d	
38) Isobutyl Alcohol	0.000		0	N.D.	d	
40) Carbon Tetrachloride	9.839	117	1708	N.D.		
41) Benzene	10.150	78	1458	N.D.		
43) 1,2-Dichloroethane-d4	10.374	65	611578	53.15	ug/L #	80
44) 1,2-Dichloroethane	10.450	62	1158	N.D.		

Data Path : C:\msdchem\1\data\092016\
Data File : 5IO009.D
Acq On : 20 Sep 2016 11:44 am
Operator : KKW
InstName : OVGCMS5
Sample : AZ06090-03RE1
Misc :
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Sep 20 13:10:11 2016
Quant Method : C:\msdchem\1\methods\091616.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Mon Sep 19 08:51:53 2016
Response via : Initial Calibration

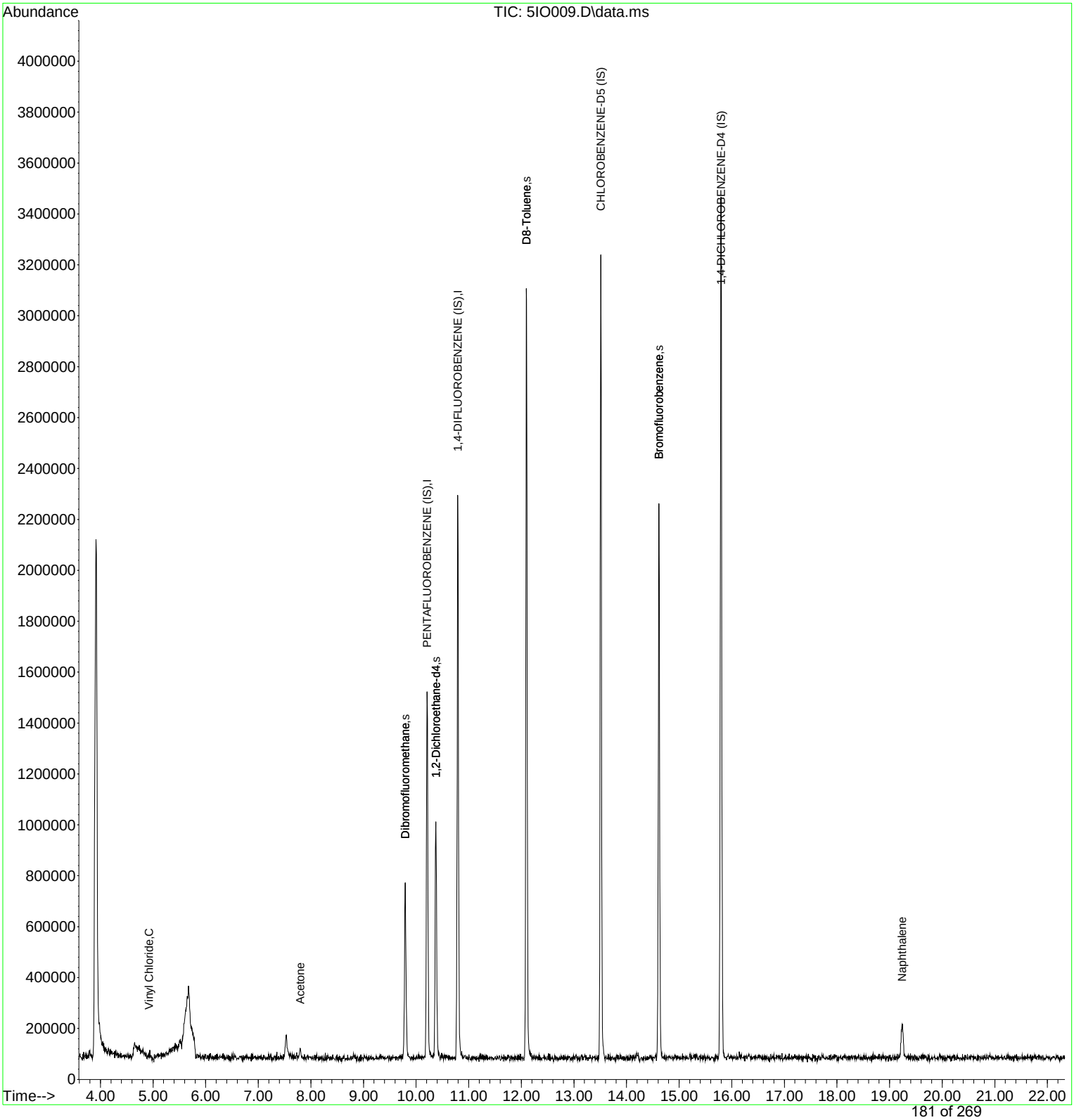
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
45) Trichloroethene	10.797	130	1044	N.D.	
46) Methyl cyclohexane	0.000		0	N.D. d	
47) Dibromomethane	0.000		0	N.D.	
48) 1,2-Dichloropropane	11.355	63	1256	N.D.	
49) Bromodichloromethane	0.000		0	N.D.	
50) Methyl Methacrylate	0.000		0	N.D. d	
51) 1,4-Dioxane	0.000		0	N.D.	
52) 2-Chloroethyl vinyl ether	0.000		0	N.D. d	
53) C-1,3-Dichloropropene	11.978	75	1362	N.D.	
55) D8-Toluene	12.095	98	1850061	50.26 ug/L #	94
56) 4-Methyl-2-pentanone	0.000		0	N.D. d	
58) Toluene	12.283	92	1297	N.D.	
59) T-1,3-Dichloropropene	12.501	75	1027	N.D.	
60) Tetrachloroethene	0.000		0	N.D.	
61) Ethyl methacrylate	12.547	69	1003	N.D.	
62) 1,1,2-Trichloroethane	12.718	97	1091	N.D.	
63) Dibromochloromethane	0.000		0	N.D.	
64) 1,3-Dichloropropane	0.000		0	N.D. d	
65) 1,2-Dibromoethane	13.129	107	1288	N.D.	
66) 2-Hexanone	0.000		0	N.D. d	
67) Ethylbenzene	13.388	106	1277	N.D.	
68) Chlorobenzene	13.535	112	1668	N.D.	
69) 1,1,1,2-Tetrachloroethane	0.000		0	N.D.	
70) m-xylene & p-xylene	0.000		0	N.D.	
71) o-xylene	0.000		0	N.D.	
72) Styrene	14.187	104	1540	N.D.	
73) Bromoform	0.000		0	N.D. d	
74) Isopropylbenzene	0.000		0	N.D.	
76) Bromofluorobenzene	14.616	95	695680	52.44 ug/L	96
77) n-Propylbenzene	14.686	91	2332	N.D.	
78) 1,1,2,2-Tetrachloroethane	14.657	83	1032	N.D.	
79) 1,2,3-Trichloropropane	0.000		0	N.D. d	
80) T-1,4-Dichloro-2-Butene	0.000		0	N.D. d	
82) Bromobenzene	0.000		0	N.D.	
83) 1,2,4-Trimethylbenzene	15.262	105	1267	N.D.	
84) 2-Chlorotoluene	14.862	91	1050	N.D.	
85) 4-Chlorotoluene	15.203	91	1277	N.D.	
86) tert-Butylbenzene	15.209	119	1868	N.D.	
87) 1,3,5-Trimethylbenzene	14.939	105	1341	N.D.	
88) p-Isopropyltoluene	15.509	119	1369	N.D.	
89) s-Butylbenzene	15.374	105	1540	N.D.	
90) 1,3-Dichlorobenzene	15.779	146	1011	N.D.	
91) 1,4-Dichlorobenzene	15.797	146	2299	N.D.	
92) n-Butylbenzene	16.008	91	2293	N.D.	
93) 1,2-Dichlorobenzene	0.000		0	N.D.	
94) DBCP	0.000		0	N.D.	
95) Hexachlorobutadiene	0.000		0	N.D.	
96) 1,2,4-Trichlorobenzene	0.000		0	N.D. d	
97) Naphthalene	19.234	128	177020	13.43 ug/L	97
98) 1,2,3-Trichlorobenzene	0.000		0	N.D. d	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\092016\
Data File : 5IO009.D
Acq On : 20 Sep 2016 11:44 am
Operator : KKW
InstName : OVGCMS5
Sample : AZ06090-03RE1
Misc :
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Sep 20 13:10:11 2016
Quant Method : C:\msdchem\1\methods\091616.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Mon Sep 19 08:51:53 2016
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\092016\
Data File : 5IO010.D
Acq On : 20 Sep 2016 12:14 pm
Operator : KKW
InstName : OVGCMS5
Sample : AZ06090-04RE1
Misc :
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Sep 20 13:12:17 2016
Quant Method : C:\msdchem\1\methods\091616.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Mon Sep 19 08:51:53 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) PENTAFLUOROBENZENE (IS)	10.209	168	1047721	50.00	ug/L	0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.791	114	1672245	50.00	ug/L	0.00
57) CHLOROBENZENE-D5 (IS)	13.511	82	754662	50.00	ug/L	0.00
81) 1,4-DICHLOROBENZENE-D4...	15.797	152	1024453	50.00	ug/L	0.00
System Monitoring Compounds						
31) Dibromofluoromethane	9.792	113	444837	48.64	ug/L	0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 97.28%			
42) 1,2-Dichloroethane-d4	10.380	65	596574	52.32	ug/L	0.00
Spiked Amount 50.000	Range 70 - 120		Recovery = 104.64%			
54) D8-Toluene	12.095	98	1806569	49.53	ug/L	0.00
Spiked Amount 50.000	Range 85 - 120		Recovery = 99.06%			
75) Bromofluorobenzene	14.616	95	667341	49.52	ug/L	0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 99.04%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	4.398	85	1421	N.D.		
3) Chloromethane	0.000		0	N.D. d		
4) Vinyl Chloride	4.927	62	707414	61.10	ug/L	100
5) Bromomethane	0.000		0	N.D. d		
6) Chloroethane	0.000		0	N.D. d		
7) Trichlorofluoromethane	0.000		0	N.D.		
8) Diethyl ether	6.619	59	1000	N.D.		
9) 1,1-Dichloroethene	6.754	96	1016	N.D.		
10) Trichlorotrifluoroethane	0.000		0	N.D.		
11) Acrolein	0.000		0	N.D. d		
12) Iodomethane	0.000		0	N.D. d		
13) Carbon Disulfide	7.001	76	1168	N.D.		
14) 3-chloropropene	7.630	41	1805	N.D.		
15) Acetone	7.794	43	31828	9.17	ug/L	94
16) Methylene Chloride	0.000		0	N.D. d		
17) Methyl Acetate	0.000		0	N.D. d		
18) t-1,2-Dichloroethene	7.941	96	5303	0.71	ug/L	98
19) Methyl tert-butyl ether	8.076	73	1024	N.D.		
20) Acetonitrile	0.000		0	N.D. d		
21) Isopropyl ether	8.493	45	2138	N.D.		
22) Chloroprene	8.705	88	1263	N.D.		
23) 1,1-Dichloroethane	8.711	63	1550	N.D.		
24) Acrylonitrile	0.000		0	N.D. d		
25) Vinyl Acetate	8.893	43	1257	N.D.		
26) c-1,2-Dichloroethene	0.000		0	N.D. d		
27) 2,2-Dichloropropane	0.000		0	N.D.		
28) Bromochloromethane	0.000		0	N.D.		
29) Cyclohexane	9.569	56	1712	N.D.		
30) Chloroform	9.610	83	1232	N.D.		
32) Dibromofluoromethane	9.792	113	444837	48.64	ug/L	94
33) 2-Butanone	0.000		0	N.D. d		
34) 1,1,1-Trichloroethane	9.862	97	1187	N.D.		
35) 1,1-Dichloropropene	9.939	75	1052	N.D.		
36) Propionitrile	0.000		0	N.D. d		
37) Methacrylonitrile	10.274	41	1078	N.D.		
38) Isobutyl Alcohol	0.000		0	N.D. d		
40) Carbon Tetrachloride	0.000		0	N.D.		
41) Benzene	10.239	78	2358	N.D.		
43) 1,2-Dichloroethane-d4	10.380	65	596574	52.32	ug/L #	77
44) 1,2-Dichloroethane	10.515	62	1684	N.D.		

Data Path : C:\msdchem\1\data\092016\
Data File : 5IO010.D
Acq On : 20 Sep 2016 12:14 pm
Operator : KKW
InstName : OVGCMS5
Sample : AZ06090-04RE1
Misc :
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Sep 20 13:12:17 2016
Quant Method : C:\msdchem\1\methods\091616.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Mon Sep 19 08:51:53 2016
Response via : Initial Calibration

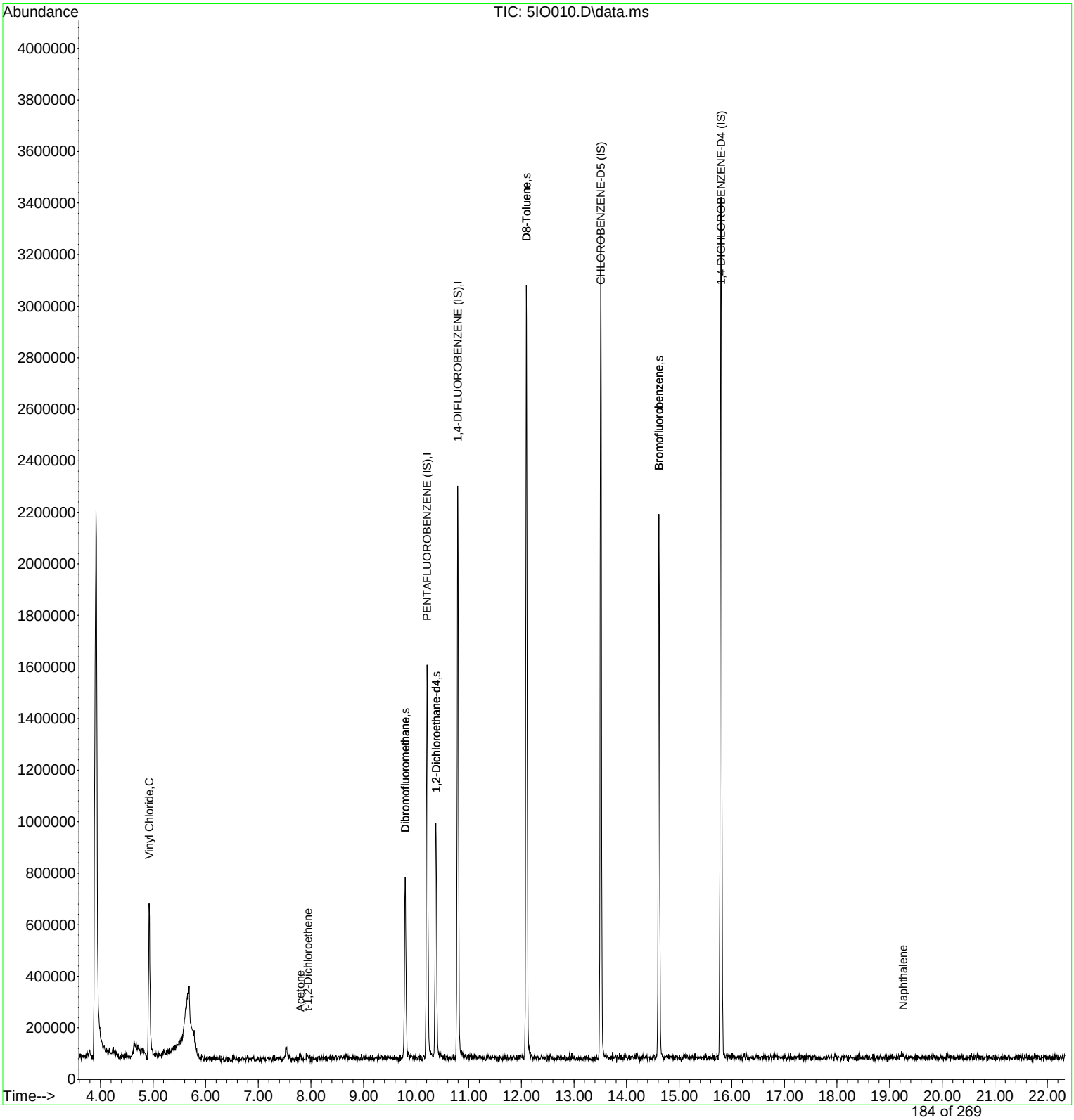
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
45) Trichloroethene	0.000		0	N.D.	
46) Methyl cyclohexane	0.000		0	N.D. d	
47) Dibromomethane	0.000		0	N.D. d	
48) 1,2-Dichloropropane	11.378	63	1281	N.D.	
49) Bromodichloromethane	11.220	83	1059	N.D.	
50) Methyl Methacrylate	0.000		0	N.D. d	
51) 1,4-Dioxane	0.000		0	N.D. d	
52) 2-Chloroethyl vinyl ether	0.000		0	N.D. d	
53) C-1,3-Dichloropropene	11.790	75	1146	N.D.	
55) D8-Toluene	12.095	98	1805912	49.51 ug/L #	90
56) 4-Methyl-2-pentanone	0.000		0	N.D. d	
58) Toluene	12.107	92	1258	N.D.	
59) T-1,3-Dichloropropene	12.495	75	1027	N.D.	
60) Tetrachloroethene	0.000		0	N.D.	
61) Ethyl methacrylate	0.000		0	N.D. d	
62) 1,1,2-Trichloroethane	0.000		0	N.D.	
63) Dibromochloromethane	0.000		0	N.D.	
64) 1,3-Dichloropropane	12.971	76	1567	N.D.	
65) 1,2-Dibromoethane	0.000		0	N.D.	
66) 2-Hexanone	0.000		0	N.D. d	
67) Ethylbenzene	13.593	106	1059	N.D.	
68) Chlorobenzene	13.517	112	2005	N.D.	
69) 1,1,1,2-Tetrachloroethane	0.000		0	N.D.	
70) m-xylene & p-xylene	13.593	106	1059	N.D.	
71) o-xylene	14.099	106	1236	N.D.	
72) Styrene	14.205	104	1708	N.D.	
73) Bromoform	0.000		0	N.D.	
74) Isopropylbenzene	0.000		0	N.D.	
76) Bromofluorobenzene	14.616	95	667341	49.52 ug/L	92
77) n-Propylbenzene	14.716	91	1648	N.D.	
78) 1,1,2,2-Tetrachloroethane	14.774	83	1246	N.D.	
79) 1,2,3-Trichloropropane	0.000		0	N.D. d	
80) T-1,4-Dichloro-2-Butene	0.000		0	N.D. d	
82) Bromobenzene	14.622	156	1273	N.D.	
83) 1,2,4-Trimethylbenzene	15.262	105	1203	N.D.	
84) 2-Chlorotoluene	14.939	91	1169	N.D.	
85) 4-Chlorotoluene	14.939	91	1169	N.D.	
86) tert-Butylbenzene	15.198	119	1409	N.D.	
87) 1,3,5-Trimethylbenzene	14.686	105	1440	N.D.	
88) p-Isopropyltoluene	15.497	119	2020	N.D.	
89) s-Butylbenzene	15.386	105	1800	N.D.	
90) 1,3-Dichlorobenzene	15.826	146	3115	N.D.	
91) 1,4-Dichlorobenzene	15.826	146	3115	N.D.	
92) n-Butylbenzene	16.008	91	2270	N.D.	
93) 1,2-Dichlorobenzene	0.000		0	N.D.	
94) DBCP	0.000		0	N.D.	
95) Hexachlorobutadiene	0.000		0	N.D.	
96) 1,2,4-Trichlorobenzene	18.547	180	1219	N.D.	
97) Naphthalene	19.258	128	22262	1.93 ug/L #	76
98) 1,2,3-Trichlorobenzene	0.000		0	N.D.	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\092016\
Data File : 5IO010.D
Acq On : 20 Sep 2016 12:14 pm
Operator : KKW
InstName : OVGCMS5
Sample : AZ06090-04RE1
Misc :
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Sep 20 13:12:17 2016
Quant Method : C:\msdchem\1\methods\091616.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Mon Sep 19 08:51:53 2016
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\092016\
Data File : 5IO011.D
Acq On : 20 Sep 2016 12:43 pm
Operator : KKW
InstName : OVGCMS5
Sample : AZ06090-05RE1
Misc :
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Sep 20 13:14:07 2016
Quant Method : C:\msdchem\1\methods\091616.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Mon Sep 19 08:51:53 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) PENTAFLUOROBENZENE (IS)	10.209	168	1043516	50.00	ug/L	0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.797	114	1644825	50.00	ug/L	0.00
57) CHLOROBENZENE-D5 (IS)	13.511	82	735941	50.00	ug/L	0.00
81) 1,4-DICHLOROBENZENE-D4...	15.797	152	1017997	50.00	ug/L	0.00
System Monitoring Compounds						
31) Dibromofluoromethane	9.792	113	439593	48.26	ug/L	0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 96.52%			
42) 1,2-Dichloroethane-d4	10.374	65	605836	54.02	ug/L	0.00
Spiked Amount 50.000	Range 70 - 120		Recovery = 108.04%			
54) D8-Toluene	12.095	98	1793091	49.98	ug/L	0.00
Spiked Amount 50.000	Range 85 - 120		Recovery = 99.96%			
75) Bromofluorobenzene	14.616	95	699039	53.19	ug/L	0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 106.38%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	0.000		0	N.D.		
3) Chloromethane	0.000		0	N.D.	d	
4) Vinyl Chloride	4.927	62	240498	20.85	ug/L	90
5) Bromomethane	0.000		0	N.D.	d	
6) Chloroethane	0.000		0	N.D.	d	
7) Trichlorofluoromethane	0.000		0	N.D.		
8) Diethyl ether	6.631	59	1138	N.D.		
9) 1,1-Dichloroethene	0.000		0	N.D.	d	
10) Trichlorotrifluoroethane	0.000		0	N.D.		
11) Acrolein	0.000		0	N.D.	d	
12) Iodomethane	0.000		0	N.D.	d	
13) Carbon Disulfide	7.001	76	1421	N.D.		
14) 3-chloropropene	7.577	41	2440	N.D.		
15) Acetone	7.783	43	30023	8.68	ug/L	95
16) Methylene Chloride	7.712	84	1332	N.D.		
17) Methyl Acetate	0.000		0	N.D.	d	
18) t-1,2-Dichloroethene	7.947	96	1166	N.D.		
19) Methyl tert-butyl ether	8.088	73	1021	N.D.		
20) Acetonitrile	0.000		0	N.D.	d	
21) Isopropyl ether	8.452	45	1255	N.D.		
22) Chloroprene	8.693	88	1116	N.D.		
23) 1,1-Dichloroethane	8.852	63	1261	N.D.		
24) Acrylonitrile	0.000		0	N.D.	d	
25) Vinyl Acetate	8.905	43	1291	N.D.		
26) c-1,2-Dichloroethene	0.000		0	N.D.		
27) 2,2-Dichloropropane	9.539	77	1114	N.D.		
28) Bromochloromethane	0.000		0	N.D.		
29) Cyclohexane	9.704	56	2097	N.D.		
30) Chloroform	9.439	83	1096	N.D.		
32) Dibromofluoromethane	9.792	113	439593	48.26	ug/L	90
33) 2-Butanone	0.000		0	N.D.	d	
34) 1,1,1-Trichloroethane	9.763	97	1049	N.D.		
35) 1,1-Dichloropropene	9.939	75	1640	N.D.		
36) Propionitrile	0.000		0	N.D.	d	
37) Methacrylonitrile	0.000		0	N.D.	d	
38) Isobutyl Alcohol	0.000		0	N.D.	d	
40) Carbon Tetrachloride	9.721	117	1678	N.D.		
41) Benzene	10.244	78	3930	N.D.		
43) 1,2-Dichloroethane-d4	10.374	65	605836	54.02	ug/L #	81
44) 1,2-Dichloroethane	10.427	62	1023	N.D.		

Data Path : C:\msdchem\1\data\092016\
Data File : 5IO011.D
Acq On : 20 Sep 2016 12:43 pm
Operator : KKW
InstName : OVGCMS5
Sample : AZ06090-05RE1
Misc :
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Sep 20 13:14:07 2016
Quant Method : C:\msdchem\1\methods\091616.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Mon Sep 19 08:51:53 2016
Response via : Initial Calibration

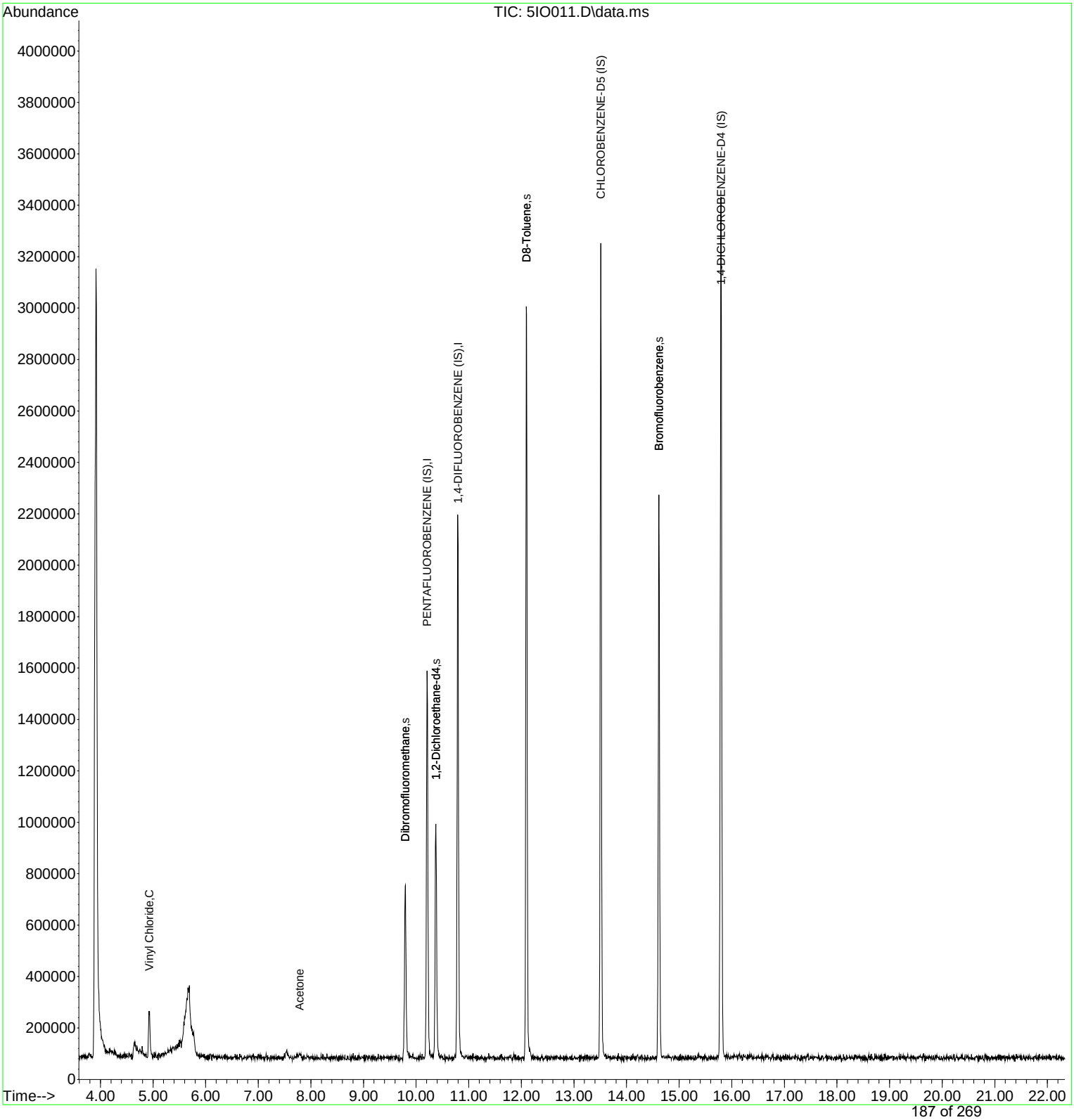
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
45) Trichloroethene	0.000		0	N.D.	
46) Methyl cyclohexane	0.000		0	N.D. d	
47) Dibromomethane	0.000		0	N.D.	
48) 1,2-Dichloropropane	11.314	63	1031	N.D.	
49) Bromodichloromethane	11.378	83	1108	N.D.	
50) Methyl Methacrylate	0.000		0	N.D. d	
51) 1,4-Dioxane	0.000		0	N.D. d	
52) 2-Chloroethyl vinyl ether	0.000		0	N.D. d	
53) C-1,3-Dichloropropene	12.066	75	1072	N.D.	
55) D8-Toluene	12.095	98	1793091	49.98 ug/L #	91
56) 4-Methyl-2-pentanone	0.000		0	N.D.	
58) Toluene	12.177	92	1921	N.D.	
59) T-1,3-Dichloropropene	0.000		0	N.D.	
60) Tetrachloroethene	0.000		0	N.D. d	
61) Ethyl methacrylate	0.000		0	N.D. d	
62) 1,1,2-Trichloroethane	0.000		0	N.D.	
63) Dibromochloromethane	0.000		0	N.D.	
64) 1,3-Dichloropropane	12.806	76	1226	N.D.	
65) 1,2-Dibromoethane	0.000		0	N.D.	
66) 2-Hexanone	0.000		0	N.D. d	
67) Ethylbenzene	13.558	106	1077	N.D.	
68) Chlorobenzene	13.511	112	1455	N.D.	
69) 1,1,1,2-Tetrachloroethane	0.000		0	N.D.	
70) m-xylene & p-xylene	13.558	106	1077	N.D.	
71) o-xylene	14.081	106	1101	N.D.	
72) Styrene	0.000		0	N.D.	
73) Bromoform	0.000		0	N.D.	
74) Isopropylbenzene	0.000		0	N.D.	
76) Bromofluorobenzene	14.616	95	699039	53.19 ug/L	96
77) n-Propylbenzene	14.610	91	4226	N.D.	
78) 1,1,2,2-Tetrachloroethane	14.569	83	1161	N.D.	
79) 1,2,3-Trichloropropane	0.000		0	N.D. d	
80) T-1,4-Dichloro-2-Butene	0.000		0	N.D. d	
82) Bromobenzene	14.633	156	1494	N.D.	
83) 1,2,4-Trimethylbenzene	15.268	105	1531	N.D.	
84) 2-Chlorotoluene	14.839	91	1334	N.D.	
85) 4-Chlorotoluene	0.000		0	N.D.	
86) tert-Butylbenzene	0.000		0	N.D.	
87) 1,3,5-Trimethylbenzene	14.763	105	1046	N.D.	
88) p-Isopropyltoluene	0.000		0	N.D.	
89) s-Butylbenzene	15.391	105	1491	N.D.	
90) 1,3-Dichlorobenzene	15.732	146	1658	N.D.	
91) 1,4-Dichlorobenzene	15.797	146	3819	N.D.	
92) n-Butylbenzene	16.008	91	1812	N.D.	
93) 1,2-Dichlorobenzene	16.402	146	1000	N.D.	
94) DBCP	0.000		0	N.D.	
95) Hexachlorobutadiene	0.000		0	N.D. d	
96) 1,2,4-Trichlorobenzene	0.000		0	N.D.	
97) Naphthalene	0.000		0	N.D. d	
98) 1,2,3-Trichlorobenzene	0.000		0	N.D. d	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\092016\
Data File : 5IO011.D
Acq On : 20 Sep 2016 12:43 pm
Operator : KKW
InstName : OVGCMS5
Sample : AZ06090-05RE1
Misc :
ALS Vial : 11 Sample Multiplier: 1

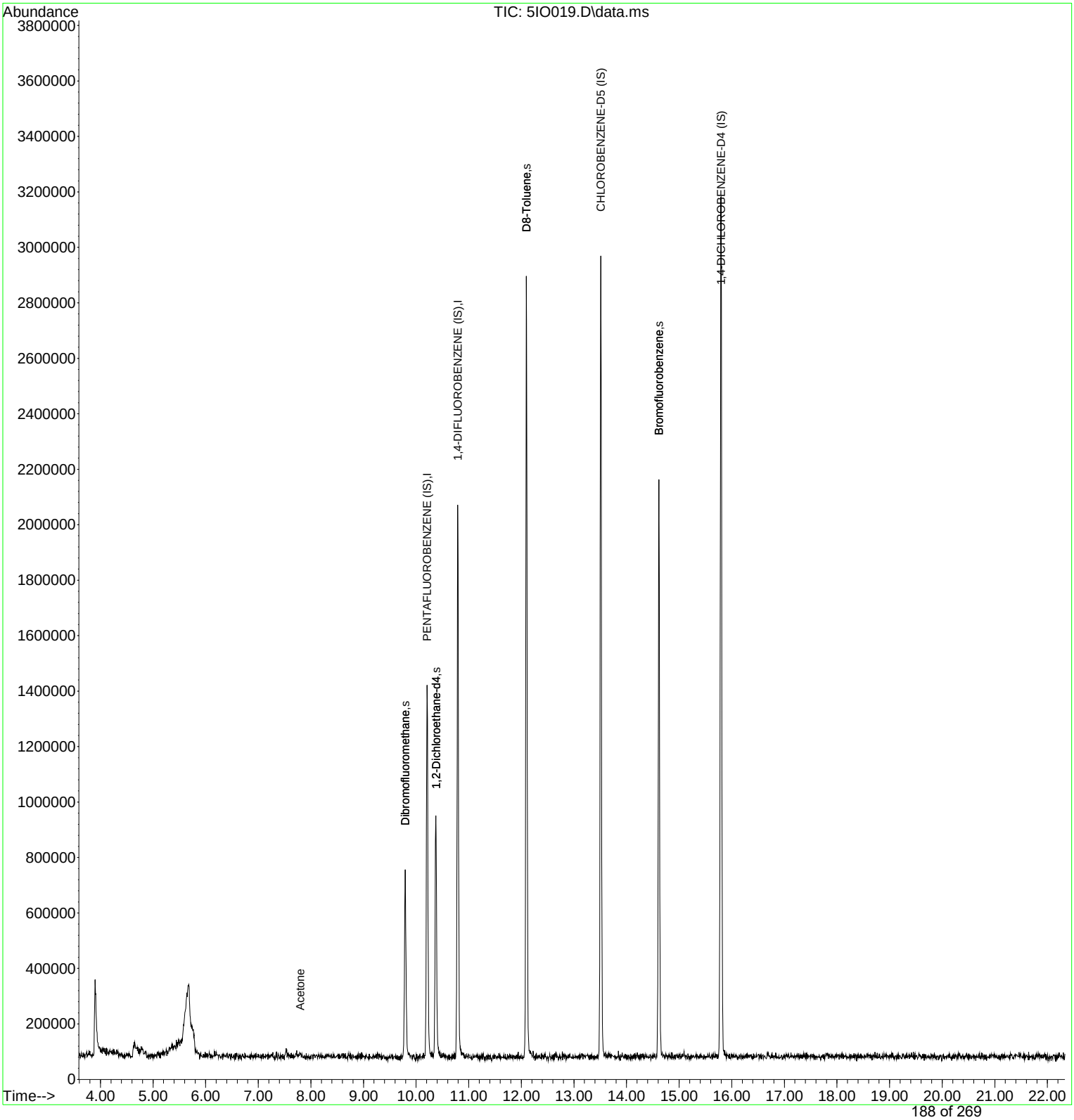
Quant Time: Sep 20 13:14:07 2016
Quant Method : C:\msdchem\1\methods\091616.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Mon Sep 19 08:51:53 2016
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\092016\
Data File : 5IO019.D
Acq On : 20 Sep 2016 4:39 pm
Operator : KKW
InstName : OVGCMS5
Sample : AZ06092-08
Misc :
ALS Vial : 19 Sample Multiplier: 1

Quant Time: Sep 21 07:41:33 2016
Quant Method : C:\msdchem\1\methods\091616.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Mon Sep 19 08:51:53 2016
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\092016\
Data File : 5IO023.D
Acq On : 20 Sep 2016 6:37 pm
Operator : KKW
InstName : OVGCMS5
Sample : 6I20014-MS1
Misc :
ALS Vial : 23 Sample Multiplier: 1

Quant Time: Sep 21 07:41:45 2016
Quant Method : C:\msdchem\1\methods\091616.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Mon Sep 19 08:51:53 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) PENTAFLUOROBENZENE (IS)	10.209	168	1061579	50.00	ug/L		0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.791	114	1650646	50.00	ug/L		0.00
57) CHLOROBENZENE-D5 (IS)	13.511	82	794913	50.00	ug/L		0.00
81) 1,4-DICHLOROBENZENE-D4...	15.797	152	1103904	50.00	ug/L		0.00
System Monitoring Compounds							
31) Dibromofluoromethane	9.798	113	436335	47.08	ug/L		0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 94.16%				
42) 1,2-Dichloroethane-d4	10.374	65	620251	55.11	ug/L		0.00
Spiked Amount 50.000	Range 70 - 120		Recovery = 110.22%				
54) D8-Toluene	12.095	98	1766019	49.05	ug/L		0.00
Spiked Amount 50.000	Range 85 - 120		Recovery = 98.10%				
75) Bromofluorobenzene	14.610	95	693004	48.82	ug/L		0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 97.64%				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	4.281	85	188718	23.54	ug/L		98
3) Chloromethane	4.739	50	333218	19.92	ug/L		98
4) Vinyl Chloride	4.933	62	233618	19.91	ug/L	#	52
5) Bromomethane	5.597	94	36741	13.54	ug/L	#	74
6) Chloroethane	5.838	64	146179	20.57	ug/L	#	94
7) Trichlorofluoromethane	6.091	101	268169	21.28	ug/L	#	95
8) Diethyl ether	6.572	59	160788	18.56	ug/L		95
9) 1,1-Dichloroethene	6.931	96	117473	18.77	ug/L		94
10) Trichlorotrifluoroethane	6.960	151	120273	19.49	ug/L		93
11) Acrolein	7.424	56	1502	1.11	ug/L		93
12) Iodomethane	7.178	142	92472	12.46	ug/L	#	90
13) Carbon Disulfide	7.019	76	376524	18.48	ug/L		99
14) 3-chloropropene	7.589	41	279133	18.63	ug/L		88
15) Acetone	7.783	43	321404	91.36	ug/L		97
16) Methylene Chloride	7.736	84	126113	18.24	ug/L		88
17) Methyl Acetate	7.918	43	172532	15.71	ug/L	#	86
18) t-1,2-Dichloroethene	7.941	96	142955	18.88	ug/L		93
19) Methyl tert-butyl ether	8.035	73	322577	17.82	ug/L		96
20) Acetonitrile	8.470	41	159708	98.26	ug/L	#	89
21) Isopropyl ether	8.464	45	679486	19.85	ug/L		99
22) Chloroprene	8.676	88	110752	15.97	ug/L		96
23) 1,1-Dichloroethane	8.717	63	326281	20.06	ug/L		99
24) Acrylonitrile	8.782	53	75199	14.27	ug/L		99
25) Vinyl Acetate	8.934	43	348159	12.90	ug/L		98
26) c-1,2-Dichloroethene	9.328	96	155837	18.75	ug/L		99
27) 2,2-Dichloropropane	9.463	77	171473	20.32	ug/L		95
28) Bromochloromethane	9.557	128	81004	24.24	ug/L		95
29) Cyclohexane	9.575	56	392555	18.64	ug/L		95
30) Chloroform	9.586	83	249938	21.08	ug/L		99
32) Dibromofluoromethane	9.798	113	436335	47.08	ug/L		93
33) 2-Butanone	9.916	72	83708	88.50	ug/L		92
34) 1,1,1-Trichloroethane	9.857	97	229591	21.11	ug/L		98
35) 1,1-Dichloropropene	9.974	75	190706	18.56	ug/L		88
36) Propionitrile	10.262	54	36278	16.55	ug/L	#	1
37) Methacrylonitrile	10.274	41	187426	23.60	ug/L	#	100
38) Isobutyl Alcohol	10.274	43	191836	160.17	ug/L	#	99
40) Carbon Tetrachloride	9.786	117	225397	24.71	ug/L	#	83
41) Benzene	10.239	78	563826	20.63	ug/L		96
43) 1,2-Dichloroethane-d4	10.374	65	620251	55.11	ug/L	#	85
44) 1,2-Dichloroethane	10.444	62	224928	20.95	ug/L		97

Data Path : C:\msdchem\1\data\092016\
Data File : 5IO023.D
Acq On : 20 Sep 2016 6:37 pm
Operator : KKW
InstName : OVGCMS5
Sample : 6I20014-MS1
Misc :
ALS Vial : 23 Sample Multiplier: 1

Quant Time: Sep 21 07:41:45 2016
Quant Method : C:\msdchem\1\methods\091616.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Mon Sep 19 08:51:53 2016
Response via : Initial Calibration

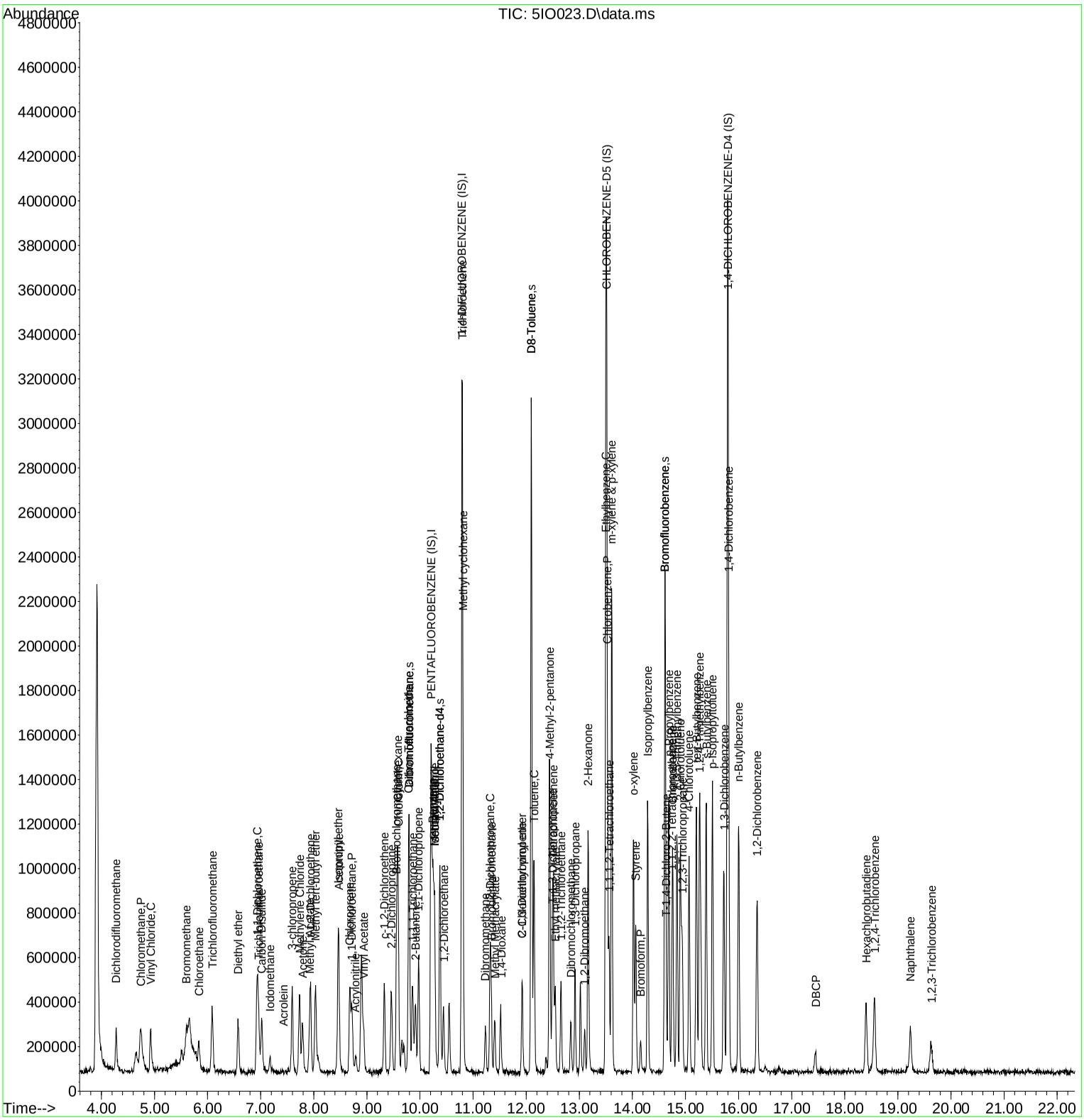
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
45) Trichloroethene	10.797	130	189166	22.23	ug/L		94
46) Methyl cyclohexane	10.809	83	283281	22.37	ug/L		98
47) Dibromomethane	11.232	93	76563	18.95	ug/L		96
48) 1,2-Dichloropropane	11.320	63	163138	17.55	ug/L		95
49) Bromodichloromethane	11.343	83	152164	20.45	ug/L	#	98
50) Methyl Methacrylate	11.414	69	71893	15.21	ug/L		96
51) 1,4-Dioxane	11.525	88	21822	183.36	ug/L		95
52) 2-Chloroethyl vinyl ether	11.925	63	1812	1.01	ug/L	#	1
53) C-1,3-Dichloropropene	11.919	75	193685	18.66	ug/L		98
55) D8-Toluene	12.095	98	1766019	49.05	ug/L	#	90
56) 4-Methyl-2-pentanone	12.448	100	124439	92.28	ug/L		86
58) Toluene	12.142	92	370155	19.42	ug/L		97
59) T-1,3-Dichloropropene	12.489	75	168868	18.46	ug/L	#	93
60) Tetrachloroethene	12.513	164	146265	21.28	ug/L		93
61) Ethyl methacrylate	12.548	69	136462	14.25	ug/L		94
62) 1,1,2-Trichloroethane	12.659	97	117104	17.98	ug/L		92
63) Dibromochloromethane	12.842	129	111502	16.62	ug/L	#	89
64) 1,3-Dichloropropane	12.924	76	186392	17.84	ug/L		90
65) 1,2-Dibromoethane	13.100	107	130266	18.62	ug/L	#	99
66) 2-Hexanone	13.165	43	779669	91.24	ug/L		98
67) Ethylbenzene	13.494	106	251119	18.67	ug/L		95
68) Chlorobenzene	13.529	112	455341	20.37	ug/L		96
69) 1,1,1,2-Tetrachloroethane	13.558	131	163477	21.71	ug/L		91
70) m-xylene & p-xylene	13.611	106	610014	35.97	ug/L		98
71) o-xylene	14.023	106	288974	18.27	ug/L		92
72) Styrene	14.064	104	350183	12.70	ug/L		98
73) Bromoform	14.158	173	55729	10.58	ug/L		92
74) Isopropylbenzene	14.287	105	772290	19.22	ug/L		96
76) Bromofluorobenzene	14.610	95	693004	48.82	ug/L		97
77) n-Propylbenzene	14.687	91	981988	20.51	ug/L		99
78) 1,1,2,2-Tetrachloroethane	14.745	83	179055	18.28	ug/L		95
79) 1,2,3-Trichloropropane	14.939	61	83982	22.16	ug/L		96
80) T-1,4-Dichloro-2-Butene	14.640	53	88215	16.19	ug/L	#	57
82) Bromobenzene	14.757	156	193825	19.03	ug/L		96
83) 1,2,4-Trimethylbenzene	15.262	105	695011	17.60	ug/L		95
84) 2-Chlorotoluene	14.904	91	565638	21.65	ug/L		96
85) 4-Chlorotoluene	15.068	91	576782	21.35	ug/L		98
86) tert-Butylbenzene	15.204	119	677028	19.27	ug/L		100
87) 1,3,5-Trimethylbenzene	14.839	105	620545	18.44	ug/L		97
88) p-Isopropyltoluene	15.503	119	845815	18.62	ug/L		97
89) s-Butylbenzene	15.392	105	951697	19.41	ug/L		98
90) 1,3-Dichlorobenzene	15.726	146	438075	20.83	ug/L		98
91) 1,4-Dichlorobenzene	15.815	146	482854	20.53	ug/L	#	87
92) n-Butylbenzene	16.003	91	722200	19.55	ug/L		100
93) 1,2-Dichlorobenzene	16.349	146	412126	19.19	ug/L		99
94) DBCP	17.454	157	30548	13.62	ug/L		95
95) Hexachlorobutadiene	18.406	225	84675	19.38	ug/L		97
96) 1,2,4-Trichlorobenzene	18.558	180	151043	15.37	ug/L		98
97) Naphthalene	19.234	128	243015	16.90	ug/L	#	86
98) 1,2,3-Trichlorobenzene	19.628	180	77556	21.20	ug/L		97

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\092016\
Data File : 5IO023.D
Acq On : 20 Sep 2016 6:37 pm
Operator : KKW
InstName : OVGCMS5
Sample : 6I20014-MS1
Misc :
ALS Vial : 23 Sample Multiplier: 1

Quant Time: Sep 21 07:41:45 2016
Quant Method : C:\msdchem\1\methods\091616.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Mon Sep 19 08:51:53 2016
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\092016\
Data File : 5IO024.D
Acq On : 20 Sep 2016 7:07 pm
Operator : KKW
InstName : OVGCMS5
Sample : 6I20014-MSD1
Misc :
ALS Vial : 23 Sample Multiplier: 1

Quant Time: Sep 21 07:41:48 2016
Quant Method : C:\msdchem\1\methods\091616.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Mon Sep 19 08:51:53 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) PENTAFLUOROBENZENE (IS)	10.209	168	1063029	50.00	ug/L		0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.791	114	1712564	50.00	ug/L		0.00
57) CHLOROBENZENE-D5 (IS)	13.511	82	786894	50.00	ug/L		0.00
81) 1,4-DICHLOROBENZENE-D4...	15.797	152	1084319	50.00	ug/L		0.00
System Monitoring Compounds							
31) Dibromofluoromethane	9.792	113	454711	49.00	ug/L		0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 98.00%				
42) 1,2-Dichloroethane-d4	10.374	65	604973	51.81	ug/L		0.00
Spiked Amount 50.000	Range 70 - 120		Recovery = 103.62%				
54) D8-Toluene	12.095	98	1921228	51.43	ug/L		0.00
Spiked Amount 50.000	Range 85 - 120		Recovery = 102.86%				
75) Bromofluorobenzene	14.616	95	733436	52.19	ug/L		0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 104.38%				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	4.275	85	190408	23.72	ug/L		95
3) Chloromethane	4.739	50	324816	19.39	ug/L		100
4) Vinyl Chloride	4.927	62	244267	20.79	ug/L	#	77
5) Bromomethane	5.603	94	50296	17.82	ug/L	#	97
6) Chloroethane	5.826	64	151458	21.36	ug/L		93
7) Trichlorofluoromethane	6.090	101	273713	21.69	ug/L		97
8) Diethyl ether	6.578	59	161449	18.61	ug/L		92
9) 1,1-Dichloroethene	6.936	96	132640	21.16	ug/L		96
10) Trichlorotrifluoroethane	6.954	151	135385	21.91	ug/L		93
11) Acrolein	7.453	56	3112	2.29	ug/L	#	81
12) Iodomethane	7.177	142	123168	16.57	ug/L	#	92
13) Carbon Disulfide	7.019	76	361823	17.73	ug/L	#	88
14) 3-chloropropene	7.589	41	306530	20.43	ug/L		95
15) Acetone	7.782	43	320277	90.92	ug/L		95
16) Methylene Chloride	7.730	84	129289	18.68	ug/L		90
17) Methyl Acetate	7.912	43	181963	16.55	ug/L		98
18) t-1,2-Dichloroethene	7.935	96	141557	18.67	ug/L		97
19) Methyl tert-butyl ether	8.035	73	339957	18.76	ug/L		96
20) Acetonitrile	8.464	41	158319	97.27	ug/L	#	87
21) Isopropyl ether	8.464	45	715076	20.86	ug/L		96
22) Chloroprene	8.676	88	97848	14.09	ug/L		77
23) 1,1-Dichloroethane	8.717	63	323500	19.86	ug/L	#	99
24) Acrylonitrile	8.787	53	89842	17.02	ug/L	#	94
25) Vinyl Acetate	8.934	43	394443	14.60	ug/L	#	96
26) c-1,2-Dichloroethene	9.334	96	143590	17.26	ug/L		87
27) 2,2-Dichloropropane	9.469	77	180163	21.32	ug/L		95
28) Bromochloromethane	9.557	128	72446	21.65	ug/L		93
29) Cyclohexane	9.574	56	398584	18.90	ug/L		90
30) Chloroform	9.586	83	259291	21.83	ug/L		100
32) Dibromofluoromethane	9.792	113	454711	49.00	ug/L	#	90
33) 2-Butanone	9.909	72	74267	78.41	ug/L		84
34) 1,1,1-Trichloroethane	9.862	97	223182	20.49	ug/L		97
35) 1,1-Dichloropropene	9.968	75	201465	19.58	ug/L		95
36) Propionitrile	10.268	54	39817	18.14	ug/L	#	1
37) Methacrylonitrile	10.274	41	214792	27.01	ug/L	#	100
38) Isobutyl Alcohol	10.268	43	194105	161.85	ug/L	#	94
40) Carbon Tetrachloride	9.786	117	221673	23.42	ug/L		84
41) Benzene	10.244	78	593904	20.95	ug/L		99
43) 1,2-Dichloroethane-d4	10.374	65	604973	51.81	ug/L	#	79
44) 1,2-Dichloroethane	10.444	62	245066	22.00	ug/L		99

Data Path : C:\msdchem\1\data\092016\
Data File : 5IO024.D
Acq On : 20 Sep 2016 7:07 pm
Operator : KKW
InstName : OVGCMS5
Sample : 6I20014-MSD1
Misc :
ALS Vial : 23 Sample Multiplier: 1

Quant Time: Sep 21 07:41:48 2016
Quant Method : C:\msdchem\1\methods\091616.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Mon Sep 19 08:51:53 2016
Response via : Initial Calibration

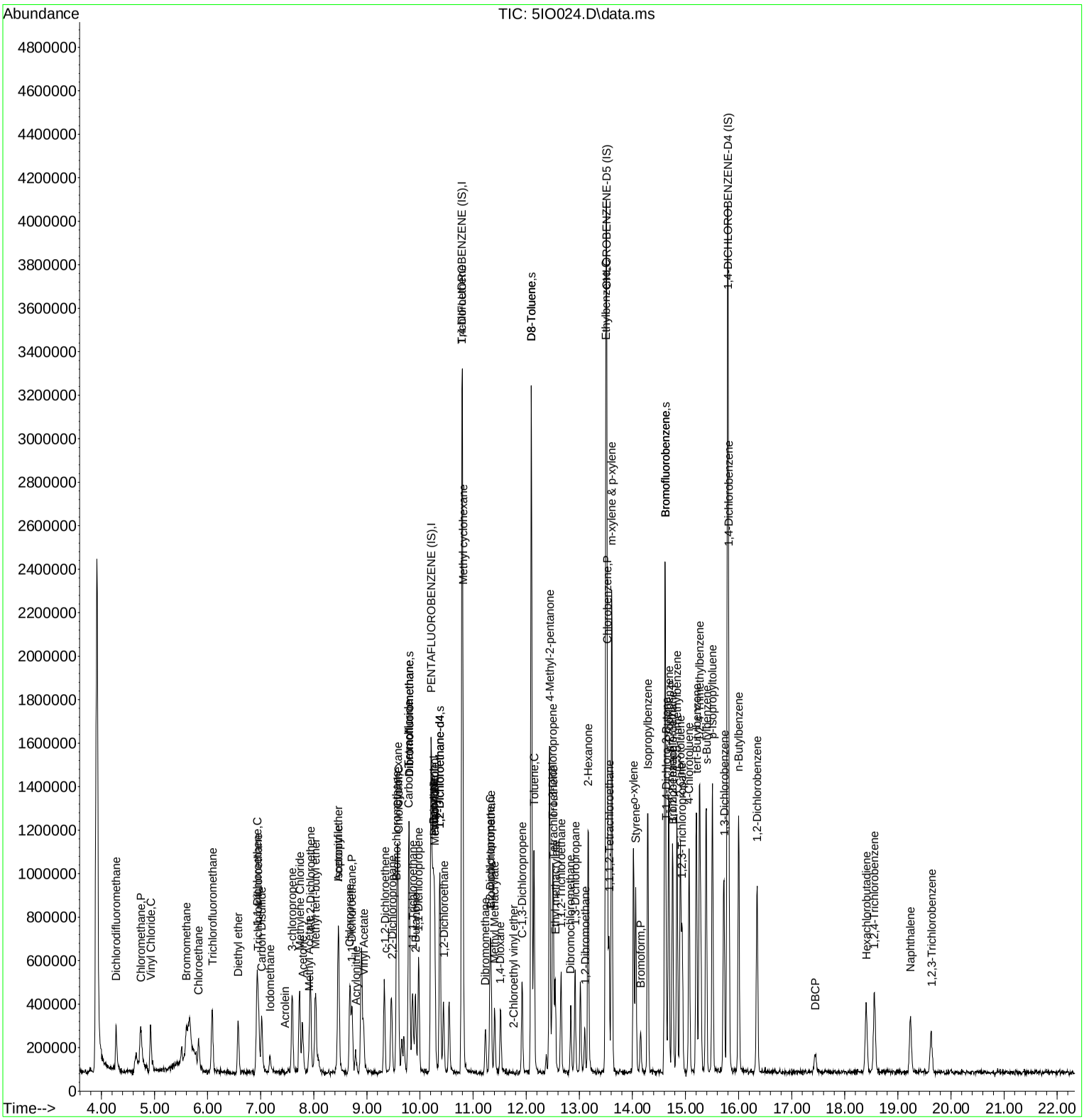
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
45) Trichloroethene	10.791	130	190421	21.57 ug/L	95
46) Methyl cyclohexane	10.808	83	286334	21.79 ug/L	97
47) Dibromomethane	11.231	93	79246	18.91 ug/L	96
48) 1,2-Dichloropropane	11.320	63	174776	18.13 ug/L	94
49) Bromodichloromethane	11.337	83	170930	22.14 ug/L	94
50) Methyl Methacrylate	11.402	69	84325	17.19 ug/L	92
51) 1,4-Dioxane	11.508	88	29250	236.89 ug/L	98
52) 2-Chloroethyl vinyl ether	11.760	63	1743	0.93 ug/L #	1
53) C-1,3-Dichloropropene	11.919	75	183887	17.08 ug/L	94
55) D8-Toluene	12.095	98	1921228	51.43 ug/L #	91
56) 4-Methyl-2-pentanone	12.442	100	116354	83.16 ug/L	93
58) Toluene	12.148	92	380654	20.17 ug/L	96
59) T-1,3-Dichloropropene	12.501	75	188209	20.78 ug/L	97
60) Tetrachloroethene	12.512	164	152684	22.44 ug/L	94
61) Ethyl methacrylate	12.548	69	161186	17.00 ug/L	97
62) 1,1,2-Trichloroethane	12.659	97	132911	20.62 ug/L	94
63) Dibromochloromethane	12.835	129	130551	19.65 ug/L	93
64) 1,3-Dichloropropane	12.924	76	209685	20.28 ug/L	95
65) 1,2-Dibromoethane	13.106	107	129653	18.73 ug/L	96
66) 2-Hexanone	13.164	43	824597	97.48 ug/L	99
67) Ethylbenzene	13.499	106	258804	19.44 ug/L	92
68) Chlorobenzene	13.529	112	457368	20.67 ug/L	98
69) 1,1,1,2-Tetrachloroethane	13.558	131	159064	21.34 ug/L	99
70) m-xylene & p-xylene	13.611	106	619518	36.90 ug/L	94
71) o-xylene	14.022	106	295601	18.87 ug/L	94
72) Styrene	14.063	104	408290	14.95 ug/L	97
73) Bromoform	14.157	173	85339	16.36 ug/L	95
74) Isopropylbenzene	14.287	105	813239	20.44 ug/L	99
76) Bromofluorobenzene	14.616	95	733436	52.19 ug/L	95
77) n-Propylbenzene	14.686	91	1006016	21.23 ug/L	99
78) 1,1,2,2-Tetrachloroethane	14.751	83	197187	20.34 ug/L	98
79) 1,2,3-Trichloropropane	14.933	61	79362	21.15 ug/L	93
80) T-1,4-Dichloro-2-Butene	14.633	53	94460	17.52 ug/L #	62
82) Bromobenzene	14.763	156	205010	20.49 ug/L	95
83) 1,2,4-Trimethylbenzene	15.262	105	726971	18.74 ug/L	100
84) 2-Chlorotoluene	14.904	91	555833	21.66 ug/L	98
85) 4-Chlorotoluene	15.068	91	606266	22.85 ug/L	98
86) tert-Butylbenzene	15.209	119	701675	20.33 ug/L	98
87) 1,3,5-Trimethylbenzene	14.839	105	666383	20.16 ug/L	97
88) p-Isopropyltoluene	15.509	119	894199	20.04 ug/L	99
89) s-Butylbenzene	15.391	105	977150	20.29 ug/L	98
90) 1,3-Dichlorobenzene	15.726	146	456673	22.10 ug/L	96
91) 1,4-Dichlorobenzene	15.814	146	503000	21.77 ug/L #	88
92) n-Butylbenzene	16.002	91	746831	20.58 ug/L	99
93) 1,2-Dichlorobenzene	16.349	146	418247	19.83 ug/L	99
94) DBCP	17.436	157	31290	14.21 ug/L	92
95) Hexachlorobutadiene	18.405	225	81757	19.05 ug/L	96
96) 1,2,4-Trichlorobenzene	18.552	180	160047	16.58 ug/L	92
97) Naphthalene	19.240	128	322428	21.86 ug/L #	95
98) 1,2,3-Trichlorobenzene	19.628	180	94971	25.35 ug/L	98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\092016\
Data File : 5IO024.D
Acq On : 20 Sep 2016 7:07 pm
Operator : KKW
InstName : OVGCMS5
Sample : 6I20014-MSD1
Misc :
ALS Vial : 23 Sample Multiplier: 1

Quant Time: Sep 21 07:41:48 2016
Quant Method : C:\msdchem\1\methods\091616.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Mon Sep 19 08:51:53 2016
Response via : Initial Calibration



ANALYSIS SEQUENCE

AA40502

Instrument: OVGCMS5

Calibration ID: 1609060

Printed: 9/19/2016 11:30:21AM

Lab Number	Analysis	Container	Order	Position	STD ID	ISTD ID	Client	Comments
AA40502-TUN1	QC		1		A6I0391			
AA40502-CAL1	QC		2		A6I0635	A6H1179		
AA40502-CAL2	QC		3		A6I0636	A6H1179		
AA40502-CAL3	QC		4		A6I0637	A6H1179		
AA40502-CAL4	QC		5		A6I0638	A6H1179		
AA40502-CAL5	QC		6		A6I0639	A6H1179		
AA40502-CAL6	QC		7		A6I0640	A6H1179		
AA40502-CAL7	QC		8		A6I0641	A6H1179		
AA40502-SCV1	QC		9		A6I0486	A6H1179		

Samples Loaded By Date

Data Processed By Date

Method Path : C:\msdchem\1\methods\
Method File : 091616.M
Title : ENCO SOP VGCMS05; Element Cal
Last Update : Mon Sep 19 08:51:53 2016
Response Via : Initial Calibration

Total Cpnds : 98

PK#		Compound Name	QIon	Exp_RT	Rel_RT	Cal	#Qual	A/H	ID
1	I	PENTAFLUOROBENZENE (IS)	168	10.209	1.000	A	3	A	B
2		Dichlorodifluoromethane	85	4.275	0.419	A	2	A	B
3	P	Chloromethane	50	4.733	0.464	BO	1	A	B
4	C	Vinyl Chloride	62	4.927	0.483	A	1	A	B
5		Bromomethane	94	5.597	0.548	QO	2	A	B
6		Chloroethane	64	5.797	0.568	QO	2	A	B
7		Trichlorofluoromethane	101	6.067	0.594	BO	2	A	B
8		Diethyl ether	59	6.578	0.644	BO	2	A	B
9	C	1,1-Dichloroethene	96	6.925	0.678	A	2	A	B
10		Trichlorotrifluoroethane	151	6.948	0.681	BO	2	A	B
11		Acrolein	56	7.412	0.726	A	1	A	B
12		Iodomethane	142	7.172	0.702	BO	2	A	B
13		Carbon Disulfide	76	7.013	0.687	BO	2	A	B
14		3-chloropropene	41	7.589	0.743	A	2	A	B
15		Acetone	43	7.794	0.763	BO	1	A	B
16		Methylene Chloride	84	7.730	0.757	BO	1	A	B
17		Methyl Acetate	43	7.912	0.775	BO	2	A	B
18		t-1,2-Dichloroethene	96	7.935	0.777	BO	2	A	B
19		Methyl tert-butyl ether	73	8.029	0.787	BO	2	A	B
20		Acetonitrile	41	8.423	0.825	A	2	A	B
21		Isopropyl ether	45	8.464	0.829	A	2	A	B
22		Chloroprene	88	8.682	0.850	BO	2	A	B
23	P	1,1-Dichloroethane	63	8.717	0.854	A	3	A	B
24		Acrylonitrile	53	8.787	0.861	A	2	A	B
25		Vinyl Acetate	43	8.934	0.875	BO	1	A	B
26		c-1,2-Dichloroethene	96	9.328	0.914	BO	2	A	B
27		2,2-Dichloropropane	77	9.457	0.926	BO	2	A	B
28		Bromochloromethane	128	9.551	0.936	BO	1	A	B
29		Cyclohexane	56	9.569	0.937	BO	2	A	B
30	C	Chloroform	83	9.586	0.939	A	2	A	B
31	S	Dibromofluoromethane	113	9.792	0.959	BO	2	A	B
32		Dibromofluoromethane	113	9.804	0.960	BO	2	A	B
33		2-Butanone	72	9.915	0.971	A	1	A	B
34		1,1,1-Trichloroethane	97	9.857	0.965	BO	2	A	B
35		1,1-Dichloropropene	75	9.974	0.977	BO	2	A	B
36		Propionitrile	54	10.262	1.005	BO	2	A	B
37		Methacrylonitrile	41	10.274	1.006	A	1	A	B
38		Isobutyl Alcohol	43	10.286	1.008	BO	2	A	B
39	I	1,4-DIFLUOROBENZENE (IS)	114	10.791	1.000	A	2	A	B
40		Carbon Tetrachloride	117	9.786	0.907	A	2	A	B
41		Benzene	78	10.245	0.949	A	1	A	B
42	S	1,2-Dichloroethane-d4	65	10.374	0.961	A	2	A	B
43		1,2-Dichloroethane-d4	65	10.380	0.962	A	2	A	B
44		1,2-Dichloroethane	62	10.438	0.967	BO	2	A	B
45		Trichloroethene	130	10.791	1.000	A	2	A	B
46		Methyl cyclohexane	83	10.803	1.001	BO	2	A	B
47		Dibromomethane	93	11.232	1.041	BO	2	A	B
48	C	1,2-Dichloropropane	63	11.320	1.049	BO	2	A	B
49		Bromodichloromethane	83	11.343	1.051	A	2	A	B
50		Methyl Methacrylate	69	11.402	1.057	A	2	A	B
51		1,4-Dioxane	88	11.520	1.068	BO	1	A	B
52		2-Chloroethyl vinyl ether	63	11.807	1.094	BO	2	A	B
53		C-1,3-Dichloropropene	75	11.925	1.105	BO	2	A	B
54	S	D8-Toluene	98	12.095	1.121	BO	2	A	B
55		D8-Toluene	98	12.107	1.122	BO	2	A	B

56		4-Methyl-2-pentanone	100	12.436	1.152	LO	2	A	B
57	I	CHLOROBENZENE-D5 (IS)	82	13.511	1.000	A	2	A	B
58	C	Toluene	92	12.148	0.899	A	2	A	B
59		T-1,3-Dichloropropene	75	12.495	0.925	LO	2	A	B
60		Tetrachloroethene	164	12.507	0.926	A	2	A	B
61		Ethyl methacrylate	69	12.548	0.929	LO	2	A	B
62		1,1,2-Trichloroethane	97	12.654	0.937	LO	2	A	B
63		Dibromochloromethane	129	12.842	0.950	A	2	A	B
64		1,3-Dichloropropane	76	12.918	0.956	A	2	A	B
65		1,2-Dibromoethane	107	13.100	0.970	LO	2	A	B
66		2-Hexanone	43	13.165	0.974	A	2	A	B
67	C	Ethylbenzene	106	13.494	0.999	LO	2	A	B
68	P	Chlorobenzene	112	13.523	1.001	A	1	A	B
69		1,1,1,2-Tetrachloroethane	131	13.558	1.003	A	2	A	B
70		m-xylene & p-xylene	106	13.611	1.007	LO	1	A	B
71		o-xylene	106	14.023	1.038	LO	1	A	B
72		Styrene	104	14.064	1.041	LO	2	A	B
73	P	Bromoform	173	14.158	1.048	LO	1	A	B
74		Isopropylbenzene	105	14.293	1.058	LO	2	A	B
75	S	Bromofluorobenzene	95	14.616	1.082	LO	2	A	B
76		Bromofluorobenzene	95	14.628	1.083	LO	2	A	B
77		n-Propylbenzene	91	14.686	1.087	LO	2	A	B
78	P	1,1,2,2-Tetrachloroethane	83	14.751	1.092	LO	3	A	B
79		1,2,3-Trichloropropane	61	14.939	1.106	A	2	A	B
80		T-1,4-Dichloro-2-Butene	53	14.639	1.083	LO	2	A	B
81	I	1,4-DICHLOROBENZENE-D4 (IS)	152	15.797	1.000	A	3	A	B
82		Bromobenzene	156	14.763	0.935	A	2	A	B
83		1,2,4-Trimethylbenzene	105	15.262	0.966	LO	2	A	B
84		2-Chlorotoluene	91	14.904	0.943	A	2	A	B
85		4-Chlorotoluene	91	15.063	0.954	A	2	A	R
86		tert-Butylbenzene	119	15.204	0.962	LO	2	A	B
87		1,3,5-Trimethylbenzene	105	14.839	0.939	A	2	A	B
88		p-Isopropyltoluene	119	15.509	0.982	LO	2	A	B
89		s-Butylbenzene	105	15.392	0.974	LO	2	A	B
90		1,3-Dichlorobenzene	146	15.721	0.995	A	2	A	R
91		1,4-Dichlorobenzene	146	15.815	1.001	LO	2	A	R
92		n-Butylbenzene	91	16.003	1.013	LO	2	A	B
93		1,2-Dichlorobenzene	146	16.349	1.035	LO	2	A	B
94		DBCP	157	17.448	1.105	LO	1	A	B
95		Hexachlorobutadiene	225	18.400	1.165	LO	2	A	B
96		1,2,4-Trichlorobenzene	180	18.558	1.175	LO	2	A	B
97		Naphthalene	128	19.234	1.218	QO	2	A	B
98		1,2,3-Trichlorobenzene	180	19.622	1.242	QO	2	A	B

Cal A = Average L = Linear LO = Linear w/origin Q = Quad QO = Quad w/origin
#Qual = number of qualifiers
A/H = Area or Height
ID R = R.T. B = R.T. & Q Q = Qvalue L = Largest A = All

Compound Name Duplication Report

Quant Method: C:\msdchem\1\methods\091616.M
Number of Compounds: 98

31	Dibromofluoromethane	=	32 Dibromofluoromethane
42	1,2-Dichloroethane-d4	=	43 1,2-Dichloroethane-d4
54	D8-Toluene	=	55 D8-Toluene
75	Bromofluorobenzene	=	76 Bromofluorobenzene

4 Duplicate Names Detected!!!

Method Path : C:\msdchem\1\methods\
Method File : 091616.M
Title : ENCO SOP VGCMS05; Element Cal
Last Update : Mon Sep 19 08:51:53 2016
Response Via : Initial Calibration

Calibration Files
1 =5IK013.D 2 =5IK014.D 5 =5IK015.D 20 =5IK016.D 100 =5IK019.D 50 =5IK017.D 80

		Compound	1	2	5	20	100	50	80	Avg	%RSD
1)	I	PENTAFLUOROBENZENE...	ISTD								
2)		Dichlorodifluo...	0.436	0.324	0.340	0.338	0.398	0.398	0.409	0.378	11.40
3)	P	Chloromethane	0.959	0.803	0.608	0.692	0.827	0.682	0.775	0.764	15.13
4)	C	Vinyl Chloride	0.586	0.499	0.473	0.518	0.626	0.573	0.592	0.553	10.15
5)		Bromomethane	0.189	0.159	0.142	0.101	0.224	0.171	0.211	0.171	24.59
6)		Chloroethane	0.395	0.402	0.268	0.312	0.226	0.306	0.248	0.308	22.34
7)		Trichlorofluor...	0.698	0.451	0.443	0.509	0.602	0.564	0.598	0.552	16.52
8)		Diethyl ether	0.485	0.366	0.287	0.341	0.414	0.389	0.411	0.385	16.27
9)	C	1,1-Dichloroet...	0.361	0.238	0.278	0.260	0.325	0.288	0.315	0.295	14.18
10)		Trichlorotrifl...	0.348	0.161	0.246	0.242	0.298	0.274	0.290	0.265	21.92
11)		Acrolein	0.062	0.049	0.060	0.063	0.074	0.068	0.071	0.064#	13.17
12)		Iodomethane	0.135	0.166	0.195	0.280	0.357	0.338	0.348	0.260	35.96
13)		Carbon Disulfide	0.704	0.591	0.653	0.800	0.974	0.953	0.952	0.804	19.75
14)		3-chloropropene	0.790	0.635	0.534	0.696	0.754	0.777	0.756	0.706	13.15
15)		Acetone	0.284	0.186	0.170	0.151	0.166	0.168	0.165	0.184	24.54
16)		Methylene Chlo...	0.486	0.332	0.268	0.331	0.331	0.320	0.319	0.341	19.85
17)		Methyl Acetate	0.884	0.615	0.475	0.473	0.527	0.504	0.510	0.570	25.72
18)		t-1,2-Dichloro...	0.372	0.218	0.256	0.272	0.374	0.324	0.347	0.309	19.73
19)		Methyl tert-bu...	1.117	0.626	0.598	0.750	0.879	0.819	0.832	0.803	21.68
20)		Acetonitrile	0.092	0.067	0.070	0.066	0.077	0.082	0.083	0.077#	12.70
21)		Isopropyl ether	1.703	1.335	1.279	1.572	1.861	1.762	1.771	1.612	14.03
22)		Chloroprene	0.224	0.211	0.217	0.262	0.332	0.326	0.323	0.271	20.44
23)	P	1,1-Dichloroet...	0.963	0.736	0.606	0.703	0.815	0.766	0.773	0.766	14.28
24)		Acrylonitrile	0.271	0.193	0.244	0.245	0.269	0.254	0.261	0.248	10.65
25)		Vinyl Acetate	1.037	0.840	1.006	1.211	1.271	1.301	1.264	1.133	15.38
26)		c-1,2-Dichloro...	0.574	0.337	0.276	0.336	0.398	0.373	0.392	0.384	24.40
27)		2,2-Dichloropr...	0.464	0.297	0.299	0.364	0.408	0.390	0.388	0.373	15.95
28)		Bromochloromet...	0.256	0.157	0.172	0.167	0.153	0.171	0.159	0.176	20.30
29)		Cyclohexane	0.688	0.525	0.621	0.781	1.017	0.898	1.005	0.790	24.16
30)	C	Chloroform	0.578	0.502	0.530	0.568	0.600	0.559	0.574	0.559	5.84
31)	s	Dibromofluorom...	0.302	0.341	0.381	0.437	0.447	0.434	0.452	0.399	14.75
32)		Dibromofluorom...	0.302	0.341	0.381	0.437	0.447	0.434	0.452	0.399	14.75
33)		2-Butanone	0.042	0.034	0.045	0.044	0.050	0.047	0.049	0.045#	12.10
34)		1,1,1-Trichlor...	0.671	0.420	0.427	0.471	0.528	0.478	0.504	0.500	16.96
35)		1,1-Dichloropr...	0.531	0.338	0.342	0.414	0.502	0.453	0.474	0.436	17.27
36)		Propionitrile	0.093	0.074	0.075	0.088	0.106	0.096	0.103	0.091#	13.93
37)		Methacrylonitrile	0.405	0.305	0.347	0.374	0.396	0.401	0.391	0.374	9.69
38)		Isobutyl Alcohol	0.062	0.037	0.039	0.045	0.059	0.051	0.055	0.050#	19.72
39)	I	1,4-DIFLUOROBENZEN...	ISTD								
40)		Carbon Tetrach...	0.291	0.250	0.257	0.259	0.306	0.274	0.297	0.276	7.94
41)		Benzene	1.025	0.818	0.693	0.734	0.879	0.807	0.840	0.828	13.00
42)	s	1,2-Dichloroet...	0.279	0.329	0.369	0.363	0.334	0.355	0.358	0.341	9.08
43)		1,2-Dichloroet...	0.279	0.329	0.369	0.363	0.334	0.355	0.358	0.341	9.08
44)		1,2-Dichloroet...	0.548	0.429	0.294	0.330	0.325	0.329	0.323	0.368	24.39
45)		Trichloroethene	0.276	0.266	0.232	0.237	0.278	0.247	0.267	0.258	7.27
46)		Methyl cyclohe...	1.123	0.640	0.388	0.324	0.393	0.349	0.386	0.515	55.93
47)		Dibromomethane	0.187	0.136	0.099	0.126	0.124	0.116	0.122	0.130	21.02
48)	C	1,2-Dichloropr...	0.357	0.271	0.234	0.236	0.289	0.260	0.281	0.275	15.17
49)		Bromodichlorom...	0.274	0.190	0.204	0.212	0.242	0.222	0.235	0.225	12.28
50)		Methyl Methacr...	0.175	0.147	0.126	0.113	0.156	0.136	0.149	0.143	14.13
51)		1,4-Dioxane	0.010	0.004	0.003	0.003	0.004	0.003	0.004	0.004#	55.64
52)		2-Chloroethyl ...	0.042	0.031	0.035	0.047	0.056	0.052	0.054	0.045#	21.54
53)		C-1,3-Dichloro...	0.157	0.219	0.204	0.265	0.323	0.298	0.311	0.254	24.50

54)	s	D8-Toluene	0.761	0.896	1.036	1.078	1.122	1.076	1.108	1.011	13.21
55)		D8-Toluene	0.761	0.896	1.036	1.078	1.122	1.076	1.108	1.011	13.21
56)		4-Methyl-2-pen...	0.041	0.020	0.034	0.035	0.042	0.039	0.041	0.036#	21.45
57)		CHLOROBENZENE-D5 (IS)	ISTD								
58)	C	Toluene	1.429	0.999	1.052	1.150	1.362	1.169	1.233	1.199	13.00
59)		T-1,3-Dichloro...	0.698	0.378	0.352	0.500	0.597	0.530	0.565	0.517	23.47
60)		Tetrachloroethene	0.475	0.420	0.403	0.385	0.474	0.411	0.458	0.432	8.40
61)		Ethyl methacry...	0.691	0.406	0.495	0.521	0.628	0.573	0.580	0.556	16.69
62)		1,1,2-Trichlor...	0.506	0.286	0.361	0.353	0.423	0.392	0.400	0.389	17.45
63)		Dibromochlorom...	0.458	0.396	0.362	0.375	0.478	0.436	0.450	0.422	10.54
64)		1,3-Dichloropr...	0.812	0.643	0.533	0.617	0.697	0.626	0.670	0.657	13.01
65)		1,2-Dibromoethane	0.619	0.363	0.381	0.429	0.451	0.417	0.432	0.442	18.98
66)		2-Hexanone	0.539	0.413	0.471	0.548	0.628	0.570	0.593	0.537	13.67
67)	C	Ethylbenzene	1.039	0.638	0.655	0.707	0.874	0.775	0.840	0.790	17.94
68)	P	Chlorobenzene	1.766	1.177	1.273	1.313	1.554	1.356	1.404	1.406	14.00
69)		1,1,1,2-Tetrac...	0.581	0.416	0.410	0.425	0.533	0.460	0.490	0.474	13.67
70)		m-xylene & p-x...	1.113	0.683	0.813	0.908	1.111	0.969	1.047	0.949	16.88
71)		o-xylene	0.948	0.750	0.713	0.832	1.035	0.920	0.974	0.882	13.58
72)		Styrene	1.197	1.012	1.197	1.331	1.844	1.616	1.538	1.405	21.32
73)	P	Bromoform	0.248	0.213	0.190	0.236	0.351	0.303	0.318	0.266	22.30
74)		Isopropylbenzene	2.265	1.840	1.751	2.101	2.641	2.308	2.467	2.196	14.66
75)	s	Bromofluoroben...	0.607	0.747	0.836	0.845	0.944	0.869	0.900	0.821	13.71
76)		Bromofluoroben...	0.607	0.747	0.836	0.845	0.944	0.869	0.900	0.821	13.71
77)		n-Propylbenzene	2.579	2.284	2.181	2.489	3.136	2.748	2.956	2.625	13.20
78)	P	1,1,2,2-Tetrac...	0.787	0.438	0.552	0.563	0.642	0.584	0.591	0.594	17.77
79)		1,2,3-Trichlor...	0.251	0.178	0.232	0.235	0.269	0.252	0.252	0.238	12.30
80)		T-1,4-Dichloro...	0.465	0.203	0.310	0.301	0.352	0.330	0.336	0.328	23.68
81)		1,4-DICHLOROBENZEN...	ISTD								
82)		Bromobenzene	0.513	0.421	0.391	0.458	0.499	0.472	0.475	0.461	9.27
83)		1,2,4-Trimethy...	1.328	1.152	1.301	1.614	1.831	1.705	1.768	1.529	17.33
84)		2-Chlorotoluene	1.128	1.098	1.038	1.173	1.315	1.242	1.291	1.183	8.74
85)		4-Chlorotoluene	1.350	0.993	1.010	1.194	1.376	1.309	1.333	1.224	13.26
86)		tert-Butylbenzene	1.036	0.968	1.138	1.336	1.633	1.507	1.578	1.314	20.53
87)		1,3,5-Trimethy...	1.503	1.205	1.262	1.519	1.776	1.647	1.756	1.524	14.75
88)		p-Isopropyltol...	1.409	1.257	1.316	1.710	2.113	1.947	2.039	1.684	21.31
89)		s-Butylbenzene	1.578	1.433	1.607	1.786	2.273	2.067	2.228	1.853	18.17
90)		1,3-Dichlorobe...	1.059	0.864	0.807	0.888	1.041	0.999	1.011	0.953	10.34
91)		1,4-Dichlorobe...	1.440	1.012	0.887	0.991	1.078	1.040	1.060	1.073	16.18
92)		n-Butylbenzene	1.349	1.041	1.050	1.376	1.728	1.536	1.563	1.392	19.68
93)		1,2-Dichlorobe...	1.095	0.725	0.724	0.871	0.996	0.956	0.950	0.902	15.36
94)		DBCP	0.130	0.056	0.063	0.073	0.105	0.091	0.102	0.088#	29.60
95)		Hexachlorobuta...	0.217	0.090	0.112	0.157	0.211	0.166	0.193	0.164	29.62
96)		1,2,4-Trichlor...	0.237	0.152	0.249	0.335	0.474	0.392	0.428	0.324	35.86
97)		Naphthalene	0.471	0.505	0.427	0.629	1.133	0.857	1.018	0.720	39.32
98)		1,2,3-Trichlor...	0.100	0.191	0.198	0.162	0.302	0.219	0.261	0.205	32.02

(#) = Out of Range

091616.M Mon Sep 19 09:13:23 2016

VOLATILES GC/MS LOGBOOK
Volatiles
EPA Method 624
SW-846 Method 8260

Tune Start Date/Time: 09/16/14
Sequence: AA40502 / AA40503
Batch: ~~AA40502~~ GI16043
Method: 8260 KW 09/16/14

Surrogate ID: A6I0390
Internal ID: A6H1178
LCS Mix 2⁰: A6I0392
LCS Acrolein 2⁰: ~~A6I~~ A6H1092
LCS Gas 2⁰: A6I0348

8260 Mix: A6I0451
8260 Add: A6I0316
8260 Ac/Ac: A6H1172
8260 Gases: A6I0450
Instrument #: M95

Filename	ENCO No.	Vial #	Dilution Factor	Pos.	pH (<2)	RC (Y/N)	Comments	LIMS
SIK001	Tun			1			↑174 ↓175 ↓176	
SIK002	Tun			1			↑174	
SIK003	Tun			1			↑174	
SIK004	Tun			1			↑174 ↓175	
SIK005	Tun			1			↑174	
SIK006	Tun			1			↑174 ↓175	
SIK007	Tun			1			↑174	
SIK008	Tun			1			↑174 ↓175 retune	
SIK009	TUN			1a			↑174 ↓175 ↓176 ed.t targets retune	
SIK010	TUN						↓176	
SIK011	TUN			1			~~↓174~~ ↓175 ↓176 ed.t RLR 219 ↑	
SIK012	Tun			1			Acetone	
SIK013	CAL1			2			✓	
SIK014	CAL2			3			✓	
SIK015	CAL3			4			✓	
SIK016	CAL4			5			✓	
SIK017	CAL5			6			✓	
SIK018	CAL6			7				
SIK019	CAL7		KW 09/16/14	8		KW 09/16/14	✓	
SIK030	rinse			9			✓	

Analyst: KW

VOLATILES GC/MS LOGBOOK
Volatiles
EPA Method 624
SW-846 Method 8260

Tune Start Date/Time:	Surrogate ID:	8260 Mix:
Sequence:	Internal ID:	8260 Add:
Batch:	LCS Mix 2⁰: See Pg 16 KW 09/16/14	8260 Ac/Ac:
Method:	LCS Acrolein 2⁰:	8260 Gases:
	LCS Gas 2⁰:	Instrument #: MS-5

Filename	ENCO No.	Vial #	Dilution Factor	Pos.	pH (<2)	RC (Y/N)	Comments	LIMS
5IK021	rinse			10				
5IK022	SCV1			11			✓	
5IK023	rinse			12				
5IK024	BS1			13			✓	
5IK025	BSD1			14			✓	
5IK026	rinse		KW 09/16/14	15				
5IK027	rinse			16		KW 09/16/14		
5IK028	BLK1			17			✓	
5IK029	A206380-01	F	1	18	✓	N	✓	

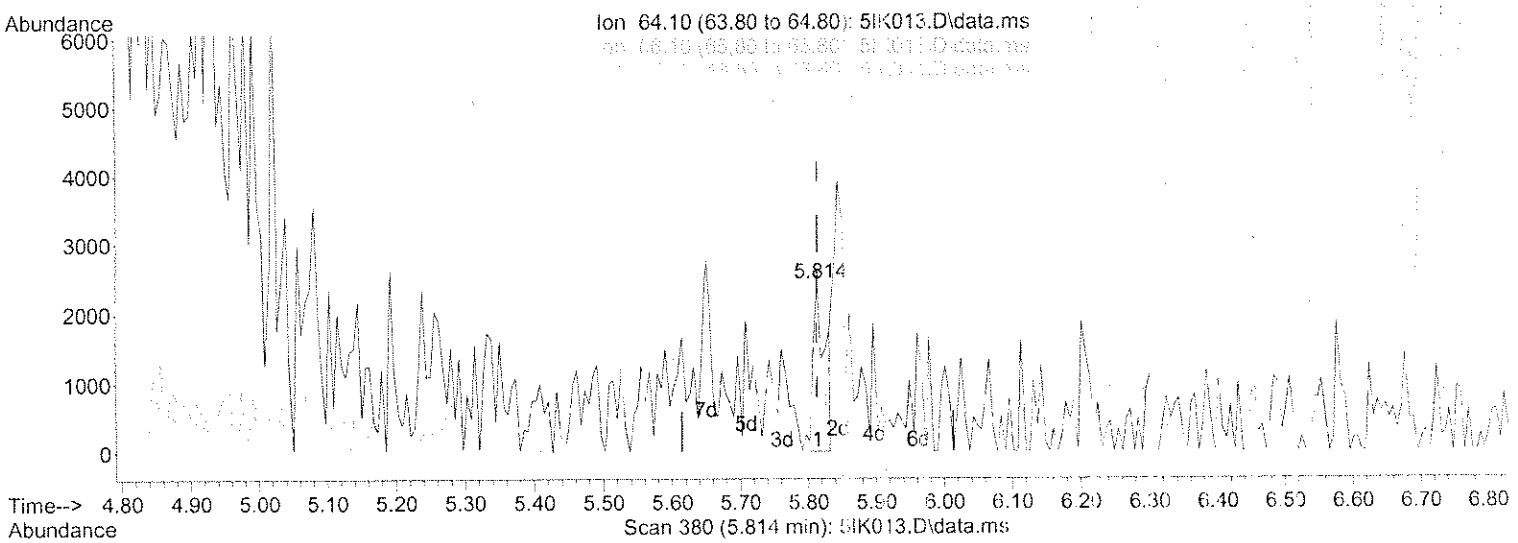
KW 09/16/14

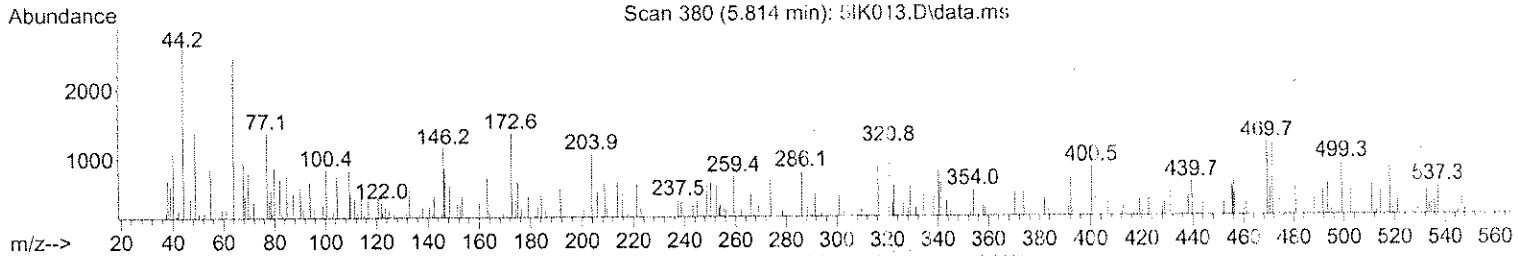
Analyst: KW

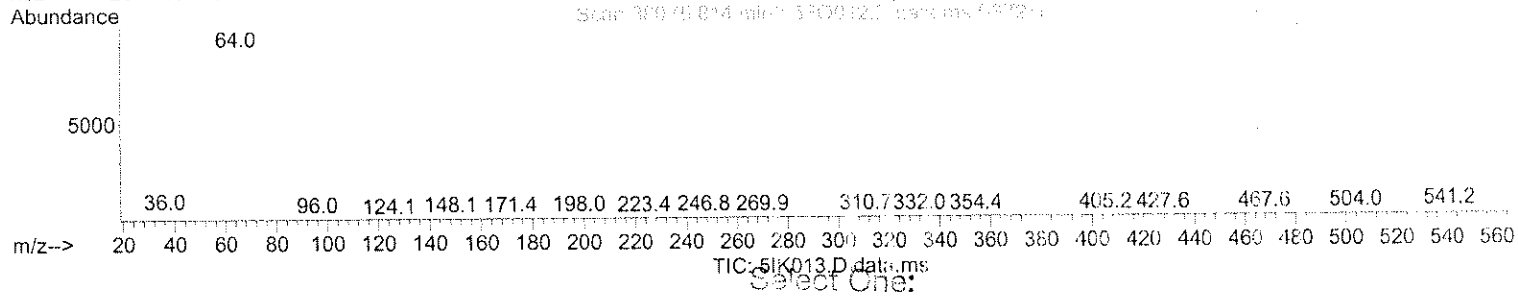
Quantitation Repo t (Qedit)

Data Path : C:\msdchem\1\data\091616\
Data File : 5IK013.D
Acq On : 16 Sep 2016 1:59 pm
Operator : KKW
InstName : OVGCMS5
Sample : CAL1
Misc :
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Sep 16 14:40:59 2016
Quant Method : C:\msdchem\1\methods\091616.M
Quant Title : ENCO SOP VGCMS05; Element Cal 160606:1
QLast Update : Fri Aug 05 08:49:48 2016
Response via : Initial Calibration







TIC: 5IK013.D\data.ms

(6) Chloroethane

5.814min (+ 0.000) 0.75 ug/L

response 3132

Ion	Exp%	Act%
64.10	100.00	100.00
66.10	30.90	49.11#
49.10	31.40	0.00#
0.00	0.00	0.00

Select One:

~~[X]~~ Original Integration [ ] Manual Integration

Select reason for manual integration:

[ ] Poor integration (peak tailing, baseline selection)

~~[X]~~ Incorrect peak selection/Peak not found

[ ] Hump integration

[ ] Baseline drop for split peaks

[ ] ISTD reintegration

[ ] Other:

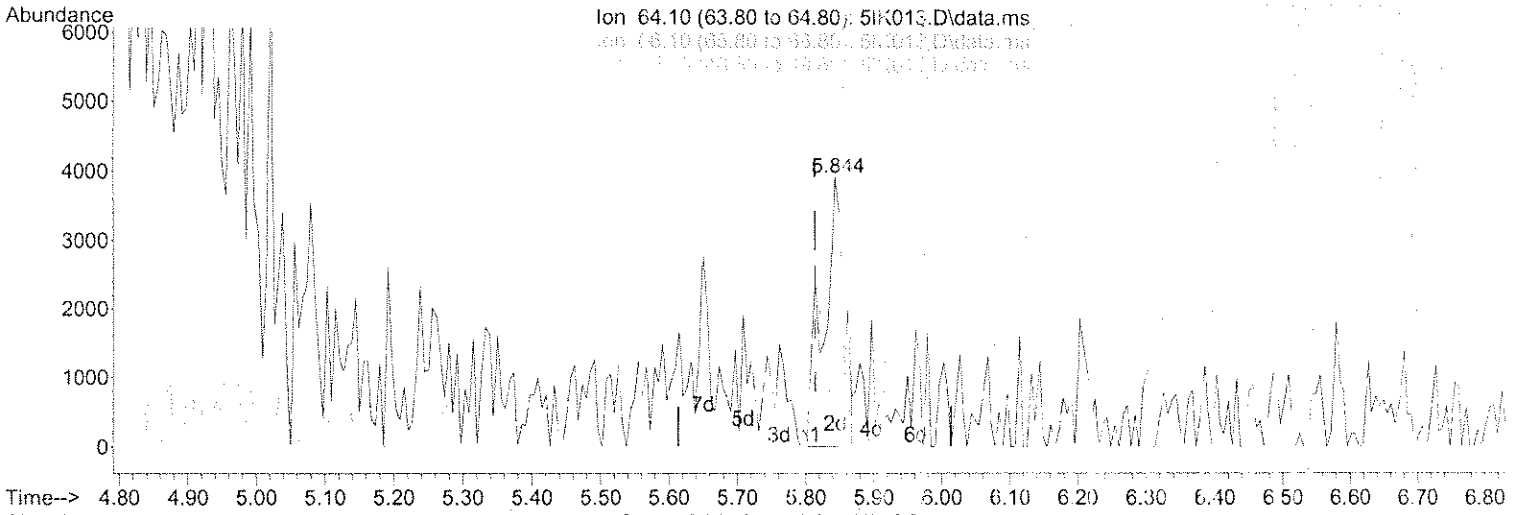
Review by/Date: KW 09/19/16

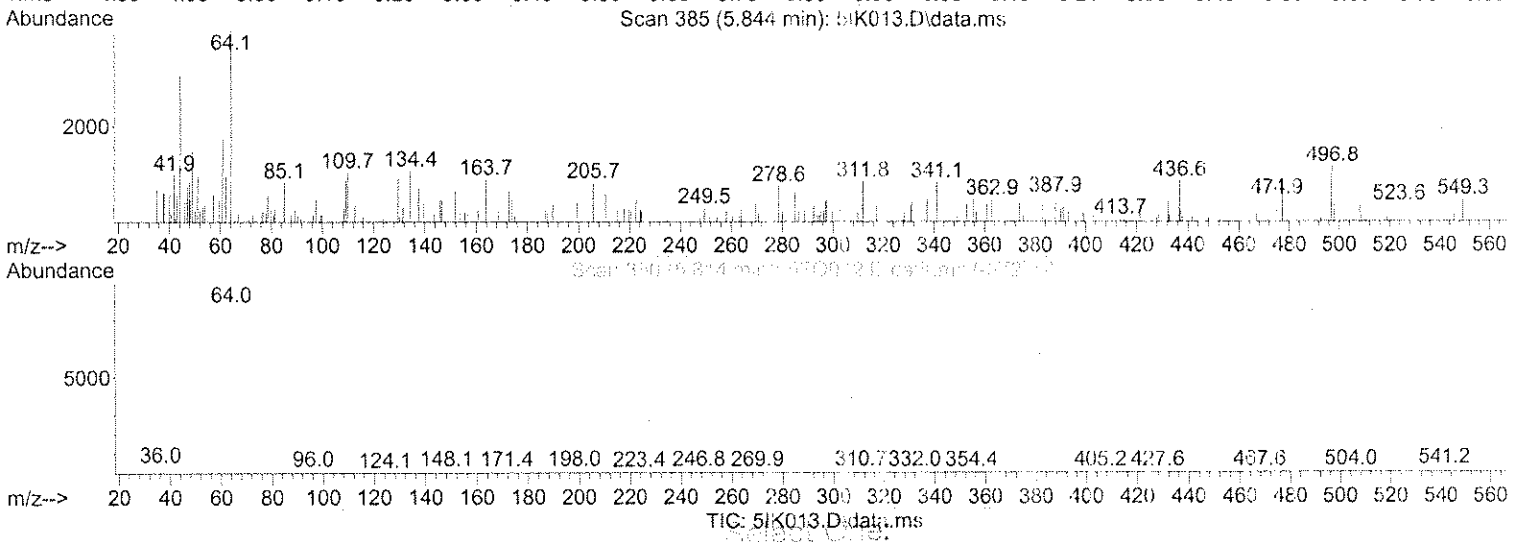
Review by/Date: R 9/19/16

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\091616\
Data File : 5IK013.D
Acq On : 16 Sep 2016 1:59 pm
Operator : KKW
InstName : OVGCMS5
Sample : CAL1
Misc :
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Sep 16 14:40:59 2016
Quant Method : C:\msdchem\1\methods\091616.M
Quant Title : ENCO SOP VGCMS05; Element Cal 1606061
QLast Update : Fri Aug 05 08:49:48 2016
Response via : Initial Calibration





TIC: 5IK013.D\data.ms

(6) Chloroethane

5.844min (+ 0.029) 1.88 ug/L m

response 7842

Ion	Exp%	Act%
64.10	100.00	100.00
66.10	30.90	19.61#
49.10	31.40	0.00#
0.00	0.00	0.00

Select One:

[ ] Original Integration [X] Manual Integration

Select reason for manual integration:

[ ] Poor integration (peak tailing, baseline selection)

[X] Incorrect peak selection/Peak not found

[ ] Hump integration

[ ] Baseline drop for split peaks

[ ] ISTD reintegration

[ ] Other:

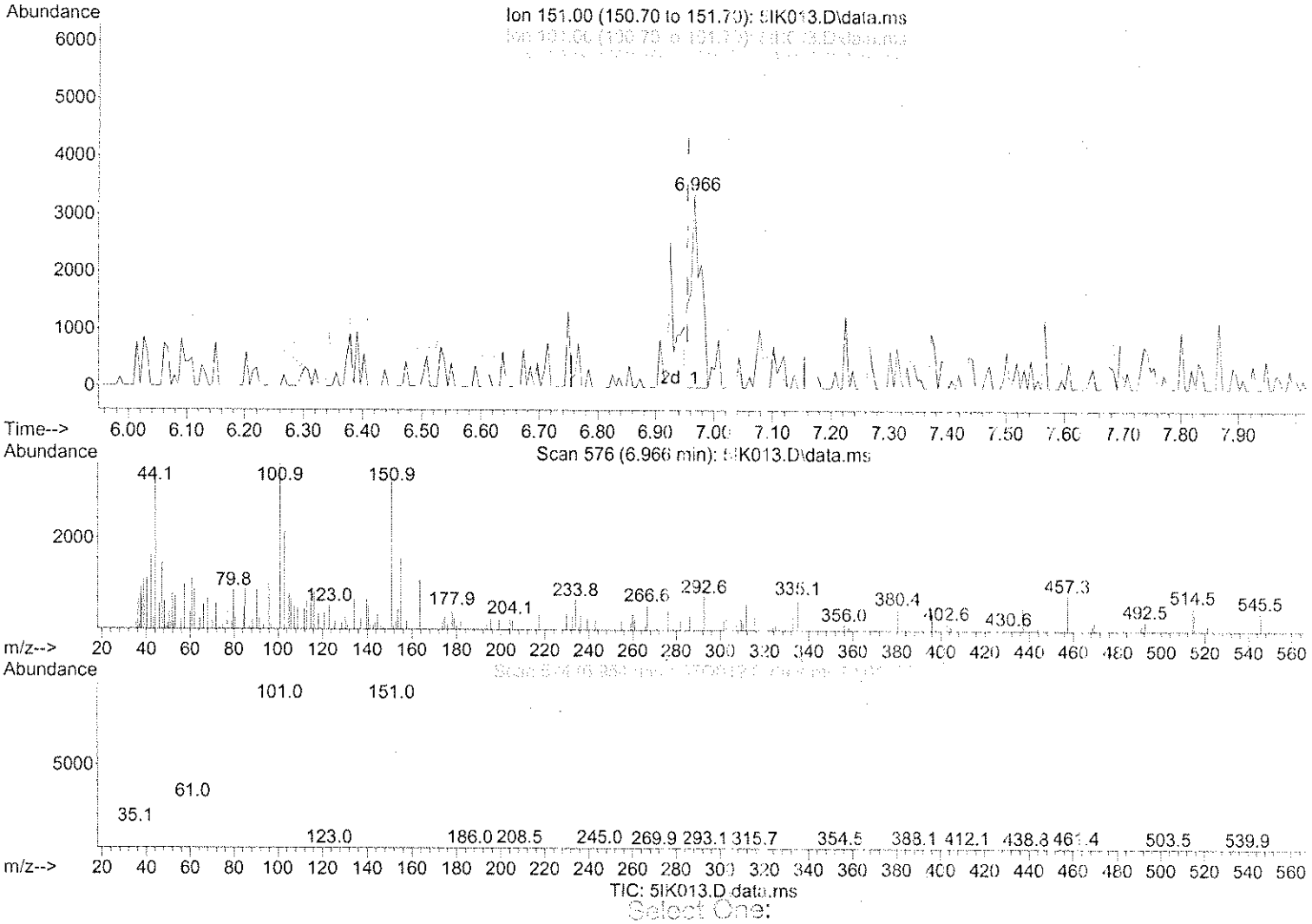
Review by/Date KW 09/19/16

Review by/Date: [illegible] 9/19/16

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\091616\
Data File : 5IK013.D
Acq On : 16 Sep 2016 1:59 pm
Operator : KKW
InstName : OVGCMS5
Sample : CAL1
Misc :
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Sep 16 14:40:59 2016
Quant Method : C:\msdchem\1\methods\091616.M
Quant Title : ENCO SOP VGCMS05; Element Cal 1606061
QLast Update : Fri Aug 05 08:49:48 2016
Response via : Initial Calibration



(10) Trichlorotrifluoroethane

6.966min (+ 0.012) 0.69 ug/L

response 4750

Ion	Exp%	Act%
151.00	100.00	100.00
101.00	101.40	196.38#
153.00	64.60	68.76
0.00	0.00	0.00

Select One:

[x] Original Integration [ ] Manual Integration

Select reason for manual integration:

[x] Poor integration (peak tailing, baseline selection)

[ ] Incorrect peak selection/Peak not found

[ ] Hump integration

[ ] Baseline drop for split peaks

[ ] ISTD reintegration

[ ] Other:

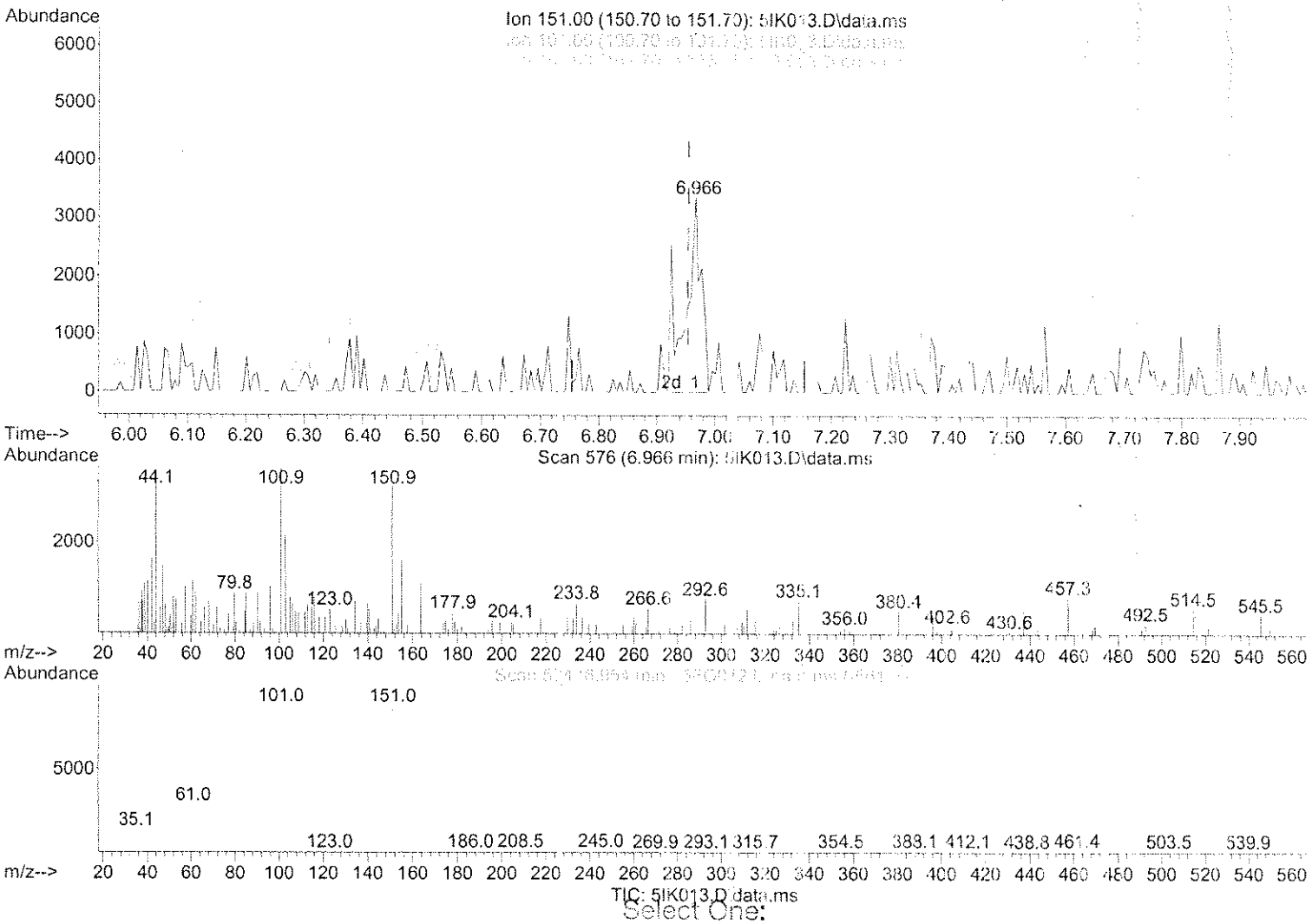
Review by/Date KW 09/19/16

Review by/Date: RJ 9/19/16

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\091616\
Data File : 5IK013.D
Acq On : 16 Sep 2016 1:59 pm
Operator : KKW
InstName : OVGCMS5
Sample : CAL1
Misc :
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Sep 16 14:40:59 2016
Quant Method : C:\msdchem\1\methods\091616.M
Quant Title : ENCO SOP VGCMS05; Element Cal 16060e1
QLast Update : Fri Aug 05 08:49:48 2016
Response via : Initial Calibration



(10) Trichlorotrifluoroethane

6.966min (+ 0.012) 1.00 ug/L m

response 6907

Ion	Exp%	Act%
151.00	100.00	100.00
101.00	101.40	135.05#
153.00	64.60	47.29#
0.00	0.00	0.00

Select One:

[ ] Original Integration [ ] Manual Integration

Select reason for manual integration:

[ ] Poor integration (peak tailing, baseline selection)

[ ] Incorrect peak selection/Peak not found

[ ] Hump integration

[ ] Baseline drop for split peaks

[ ] ISTD reintegration

[ ] Other:

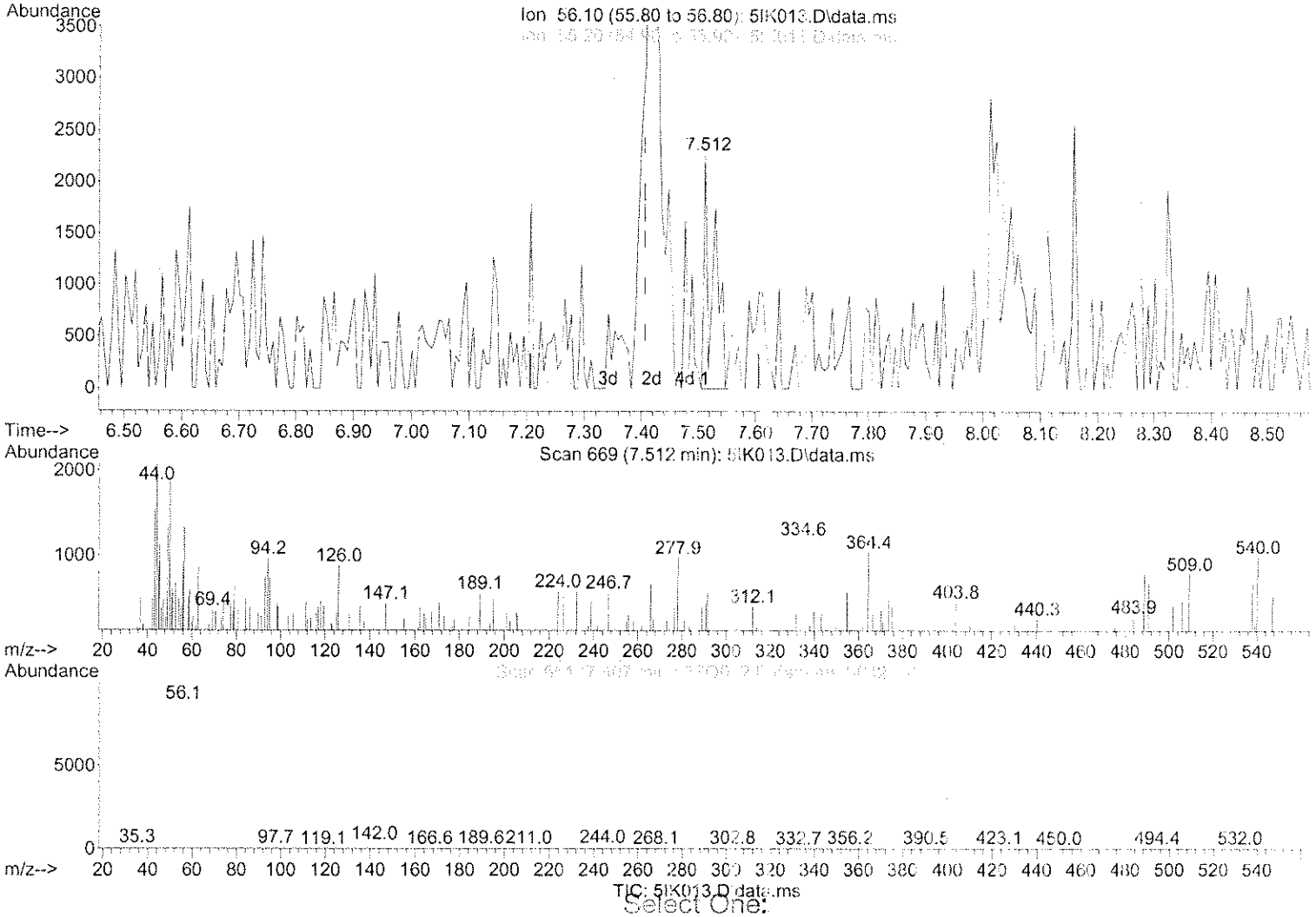
Review by/Date KKW 09/19/16

Review by/Date: 09/19/16

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\091616\
Data File : 5IK013.D
Acq On : 16 Sep 2016 1:59 pm
Operator : KKW
InstName : OVGCMS5
Sample : CAL1
Misc :
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Sep 16 14:40:59 2016
Quant Method : C:\msdchem\1\methods\091616.M
Quant Title : ENCO SOP VGCMS05; Element Cal 1606061
QLast Update : Fri Aug 05 08:49:48 2016
Response via : Initial Calibration



TIC: 5IK013.D\data.ms

(11) Acrolein

7.512min (+ 0.106) 5.62 ug/L

response 2975

Ion	Exp%	Act%
56.10	100.00	100.00
55.20	66.70	53.48
0.00	0.00	0.00
0.00	0.00	0.00

Select One:

[X] Original Integration [ ] Manual Integration

Select reason for manual integration:

[ ] Poor integration (peak tailing, baseline selection)

[ ] Incorrect peak selection/Peak not found

[ ] Hump integration

[ ] Baseline drop for split peaks

[ ] ISTD reintegration

[ ] Other:

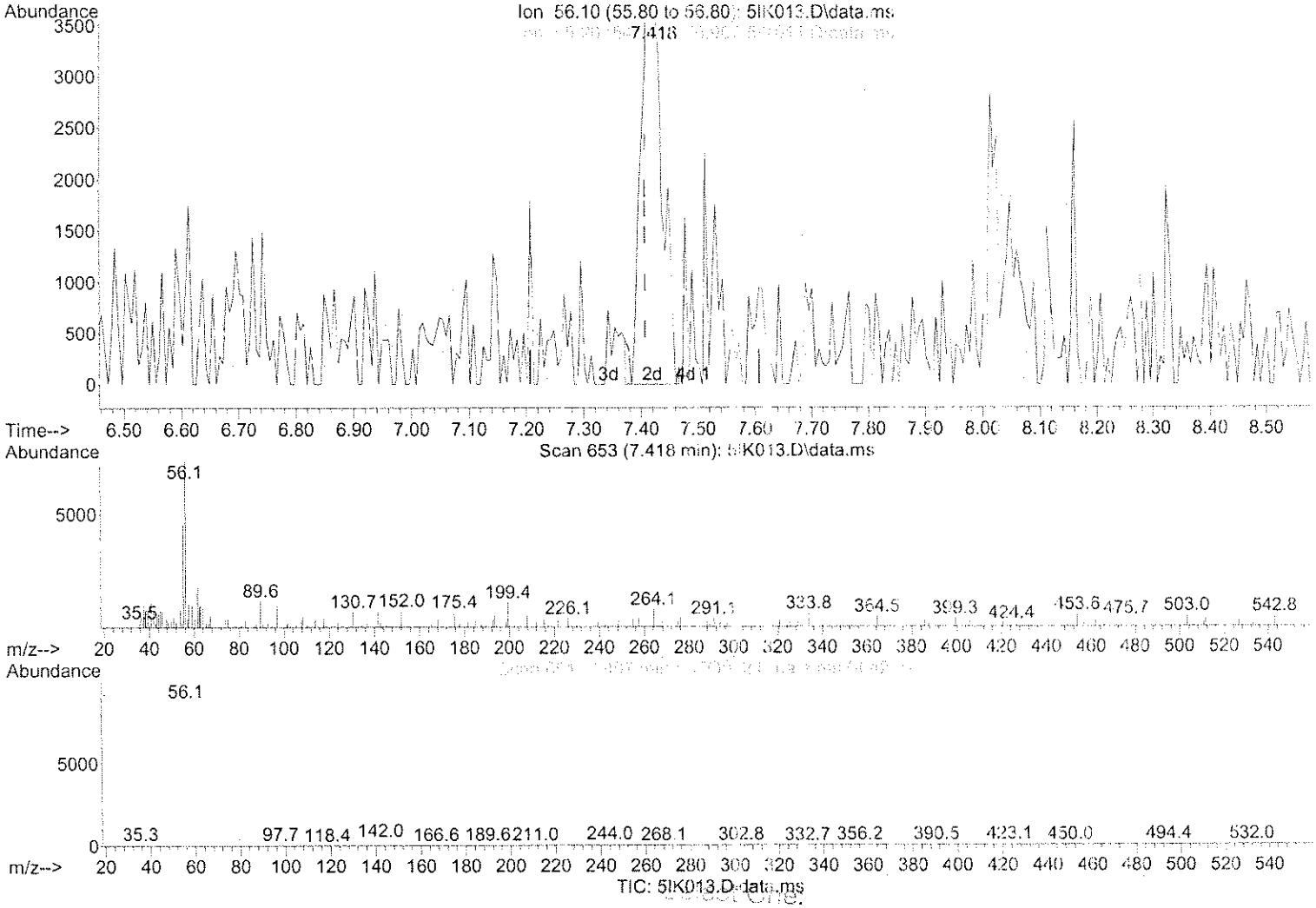
Review by/Date KK 09/19/16

Review by/Date: KK 9/19/16

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\091616\
Data File : 5IK013.D
Acq On : 16 Sep 2016 1:59 pm
Operator : KKW
InstName : OVGCMS5
Sample : CAL1
Misc :
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Sep 16 14:40:59 2016
Quant Method : C:\msdchem\1\methods\091616.M
Quant Title : ENCO SOP VGCMS05; Element Cal 1606061
QLast Update : Fri Aug 05 08:49:48 2016
Response via : Initial Calibration



(11) Acrolein

7.418min (+ 0.012) 23.22 ug/L m

response 12280

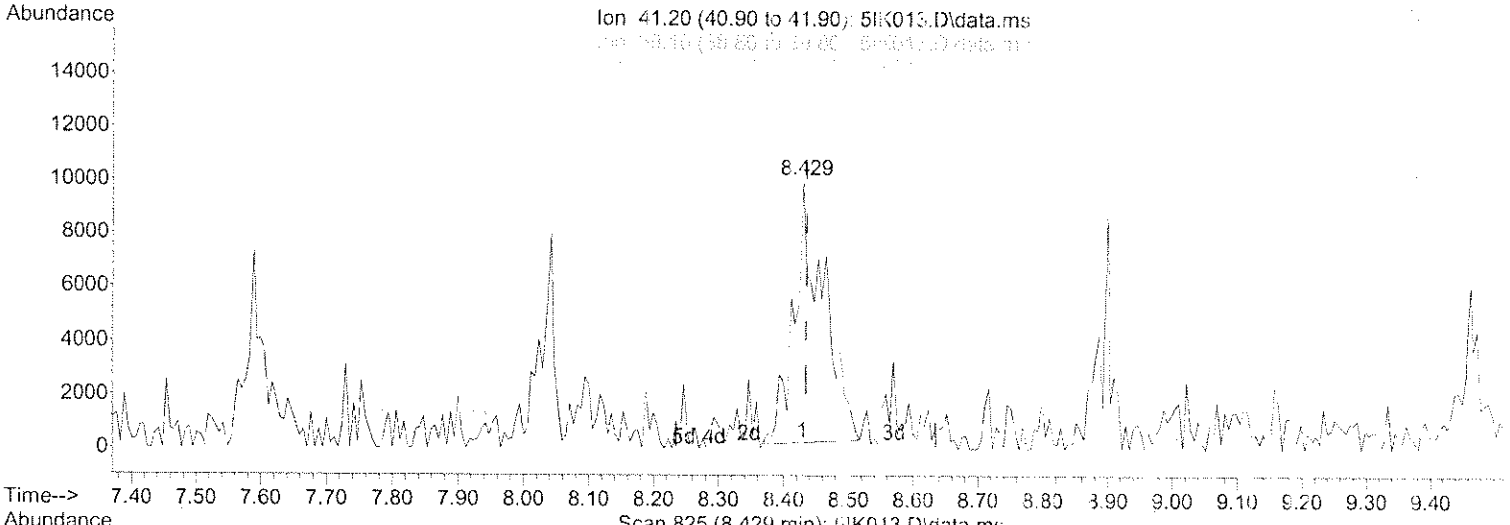
Ion	Exp%	Act%
56.10	100.00	100.00
55.20	66.70	12.96#
0.00	0.00	0.00
0.00	0.00	0.00

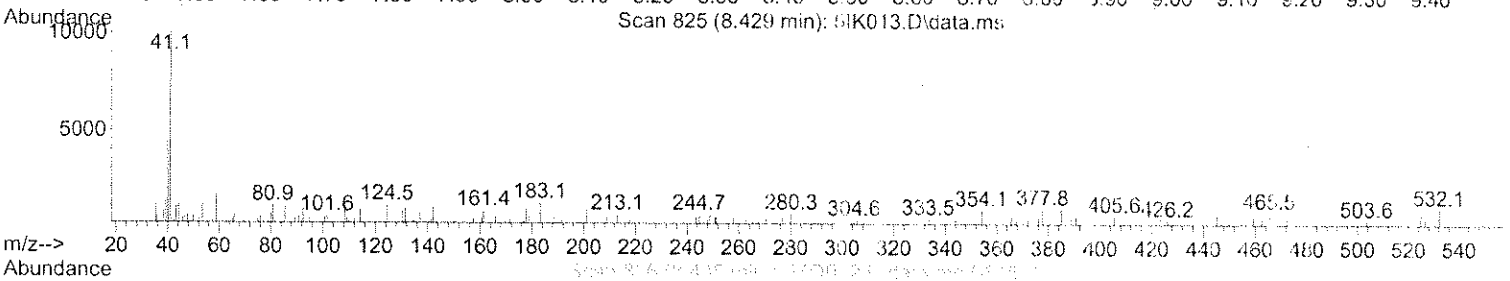
[ ] Original Integration [ ] Manual Integration
Select reason for manual integration:
[ ] Poor integration (peak tailing, baseline selection)
[ ] Incorrect peak selection/Peak not found
[ ] Hump integration
[ ] Baseline drop for split peaks
[ ] ISTD reintegration
[ ] Other:
Review by/Date KK 09/19/16
Review by/Date: [illegible] 9/19/16

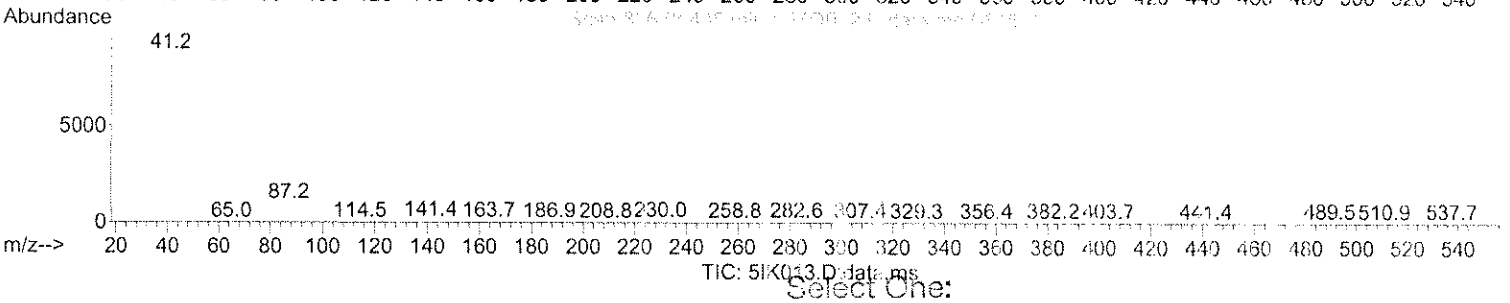
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\091616\
Data File : 5IK013.D
Acq On : 16 Sep 2016 1:59 pm
Operator : KKW
InstName : OVGCMS5
Sample : CAL1
Misc :
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Sep 16 14:40:59 2016
Quant Method : C:\msdchem\1\methods\091616.M
Quant Title : ENCO SOP VGCMS05; Element Cal 160606.1
QLast Update : Fri Aug 05 08:49:48 2016
Response via : Initial Calibration







TIC: 5IK013.D\data.ms

(20) Acetonitrile

8.429min (-0.006) 33.52 ug/L

response 30725

Ion	Exp%	Act%
41.20	100.00	100.00
39.10	48.30	6.67#
38.20	15.00	0.00#
0.00	0.00	0.00

Select One:

[X] Original Integration [ ] Manual Integration

Select reason for manual integration:

[ ] Poor integration (peak tailing, baseline selection)

[ ] Incorrect peak selection/Peak not found

[ ] Hump integration

[ ] Baseline drop for split peaks

[ ] ISTD reintegration

[ ] Other:

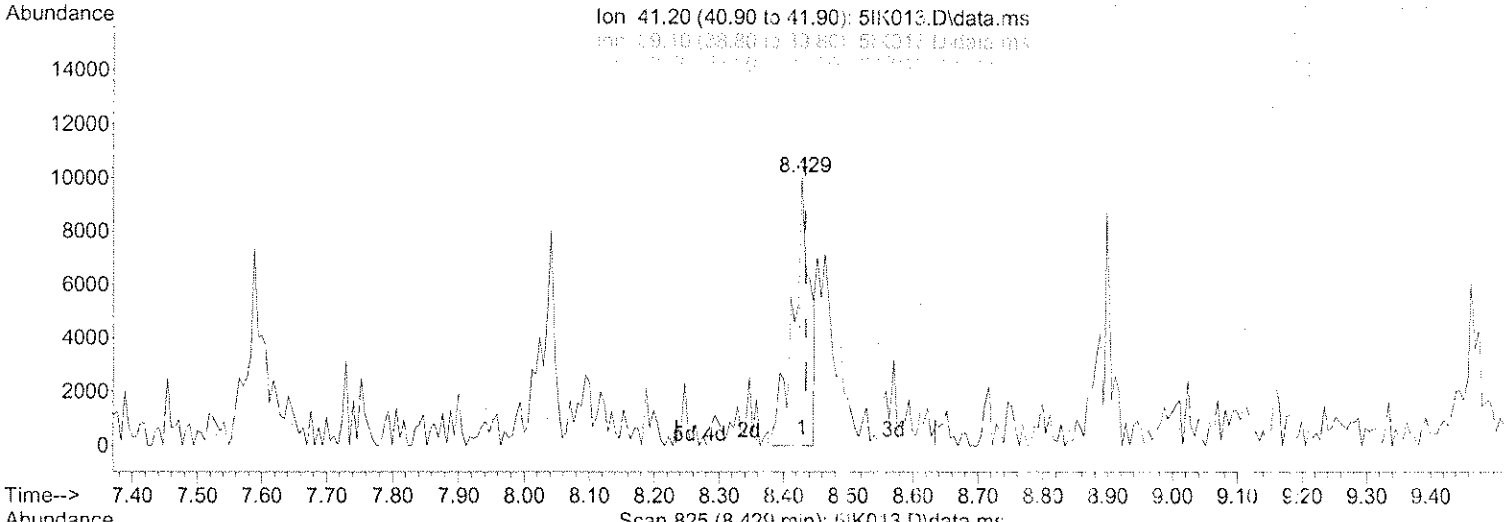
Review by/Date KW 09/19/16

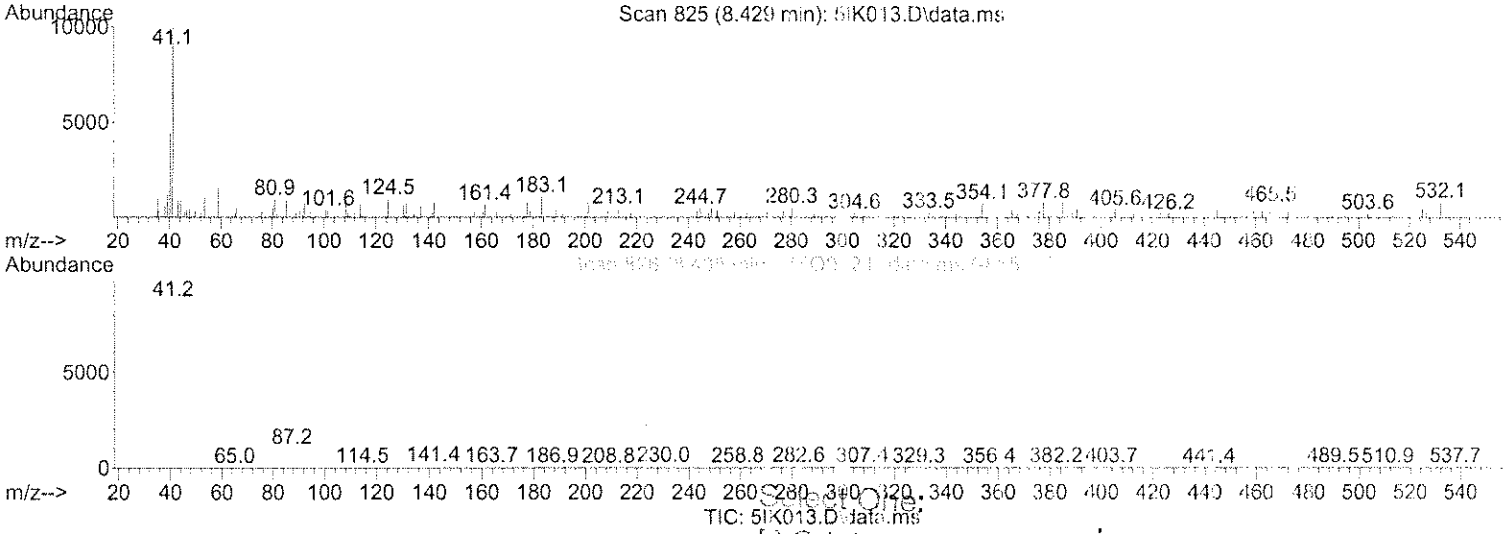
Review by/Date: 9/19/16

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\091616\
Data File : 5IK013.D
Acq On : 16 Sep 2016 1:59 pm
Operator : KKW
InstName : OVGCMS5
Sample : CAL1
Misc :
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Sep 16 14:40:59 2016
Quant Method : C:\msdchem\1\methods\091616.M
Quant Title : ENCO SOP VGCMS05; Element Cal 160605.1
QLast Update : Fri Aug 05 08:49:48 2016
Response via : Initial Calibration





TIC: 5IK013.D\data.ms

(20) Acetonitrile

8.429min (-0.006) 19.96 ug/L m

response 18295

Ion	Exp%	Act%
41.20	100.00	100.00
39.10	48.30	11.19#
38.20	15.00	0.00#
0.00	0.00	0.00

Select One:

[] Original Integration [] Manual Integration

Select reason for manual integration:

[] Poor integration (peak tailing, baseline selection)

[] Incorrect peak selection/Peak not found

[] Hump integration

[] Baseline drop for split peaks

[] ISTD reintegration

[] Other:

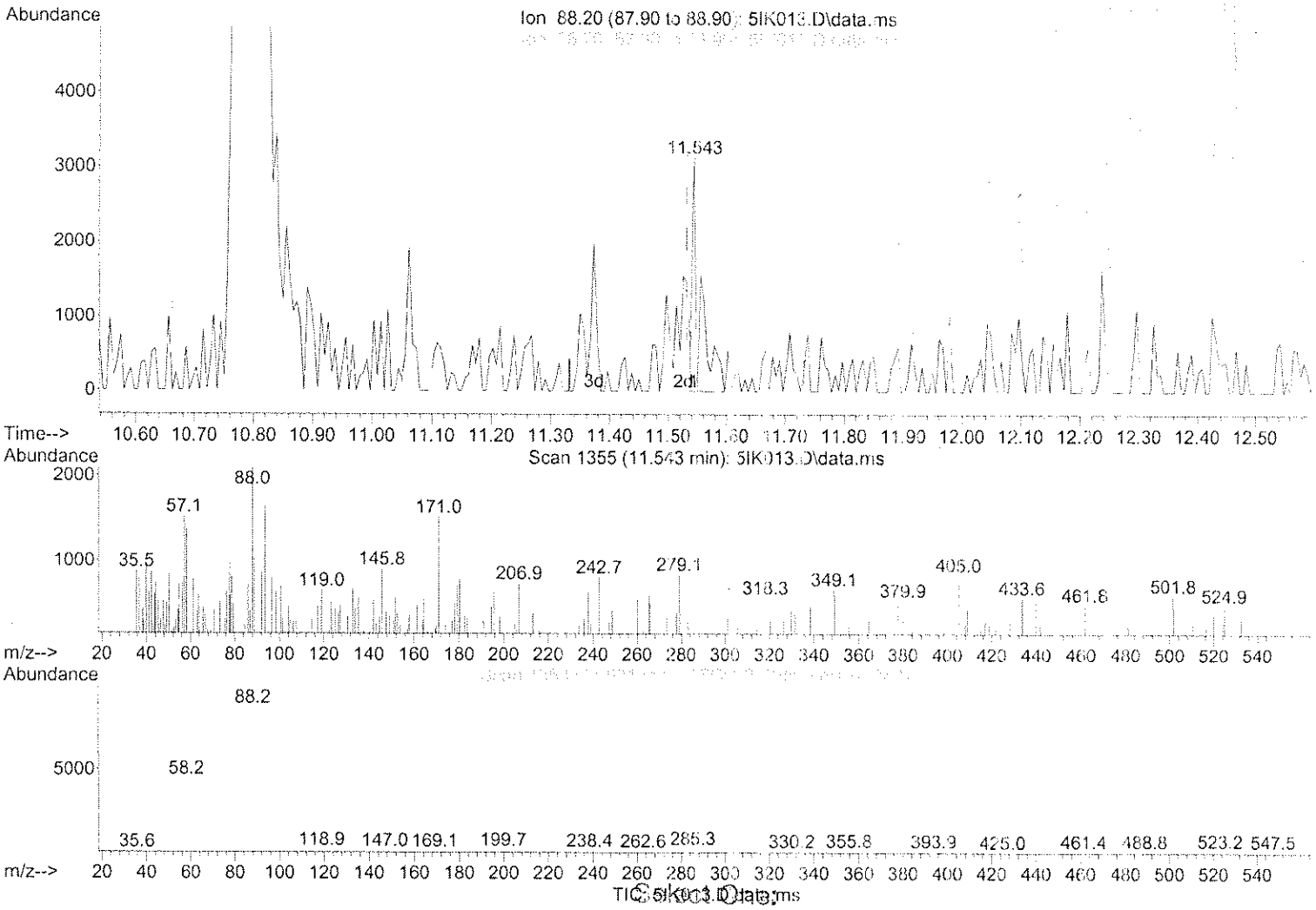
Review by/Date KKW 09/19/16

Review by/Date: 09/19/16

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\091616\
Data File : 5IK013.D
Acq On : 16 Sep 2016 1:59 pm
Operator : KKW
InstName : OVGCMS5
Sample : CAL1
Misc :
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Sep 16 14:40:59 2016
Quant Method : C:\msdchem\1\methods\091616.M
Quant Title : ENCO SOP VGCMS05; Element Cal 1606061
QLast Update : Fri Aug 05 08:49:48 2016
Response via : Initial Calibration



TIC: 5IK013.D\data.ms

(51) 1,4-Dioxane

11.543min (+ 0.012) 30.65 ug/L

response 2865

Ion	Exp%	Act%
88.20	100.00	100.00
58.20	68.60	37.14#
0.00	0.00	0.00
0.00	0.00	0.00

[N] Original Integration [ ] Manual Integration

Select reason for manual integration:

[N] Poor integration (peak tailing, baseline selection)

[ ] Incorrect peak selection/Peak not found

[ ] Hump integration

[ ] Baseline drop for split peaks

[ ] ISTD reintegration

[ ] Other:

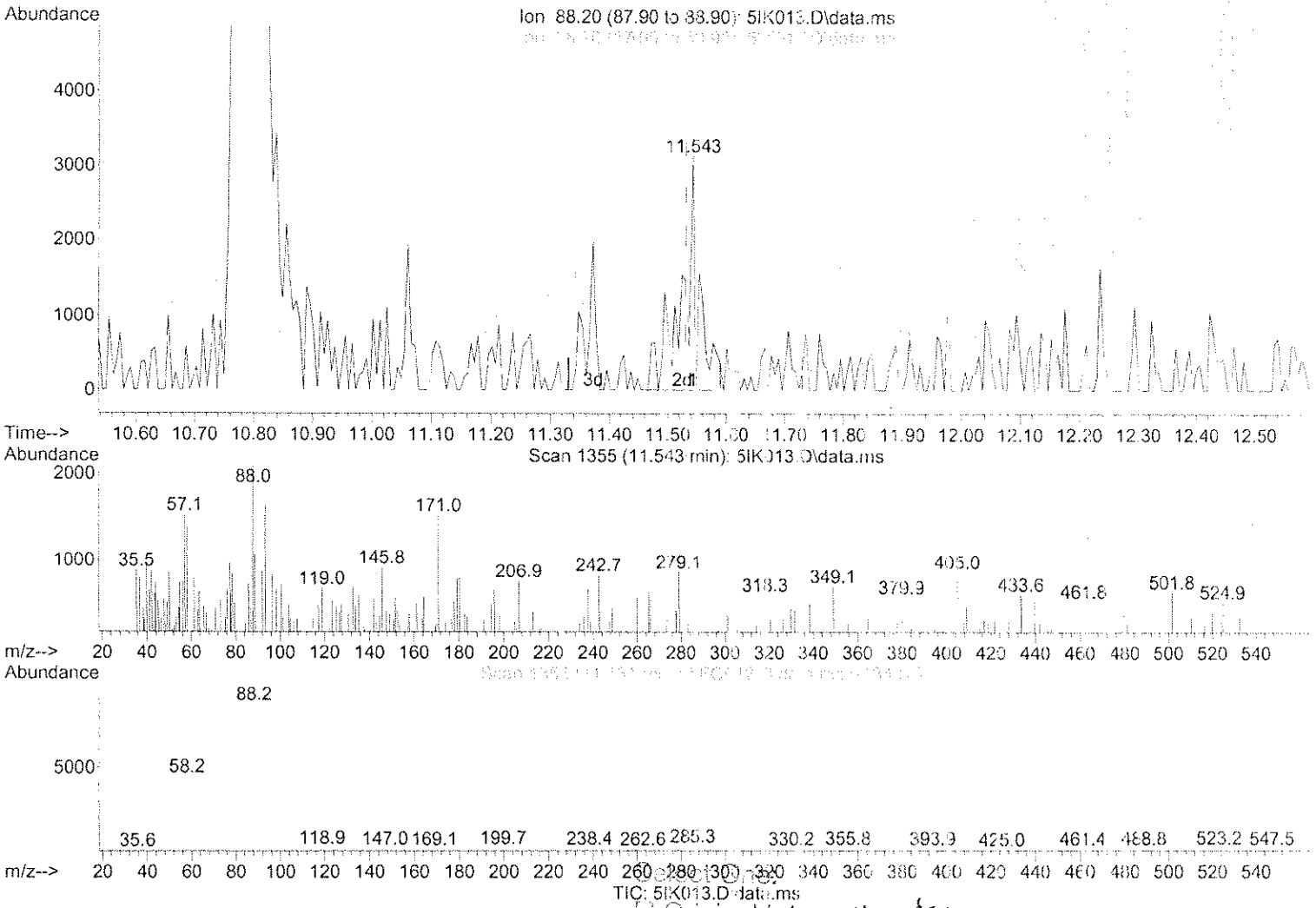
Review by/Date KW 09/19/16

Review by/Date: [illegible] 9/19/16

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\091616\
Data File : 5IK013.D
Acq On : 16 Sep 2016 1:59 pm
Operator : KKW
InstName : OVGCMS5
Sample : CAL1
Misc :
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Sep 16 14:40:59 2016
Quant Method : C:\msdchem\1\methods\091616.M
Quant Title : ENCO SOP VGCMS05; Element Cal 1606061
QLast Update : Fri Aug 05 08:49:48 2016
Response via : Initial Calibration



TIC: 5IK013.D\data.ms

(51) 1,4-Dioxane

11.543min (+ 0.012) 66.06 ug/L m

response 6175

Ion	Exp%	Act%
88.20	100.00	100.00
58.20	68.60	17.23#
0.00	0.00	0.00
0.00	0.00	0.00

[ ] Original Integration [X] Manual Integration

Select reason for manual integration:

[X] Poor integration (peak tailing, baseline selection)

[ ] Incorrect peak selection/Peak not found

[ ] Hump integration

[ ] Baseline drop for split peaks

[ ] ISTD reintegration

[ ] Other:

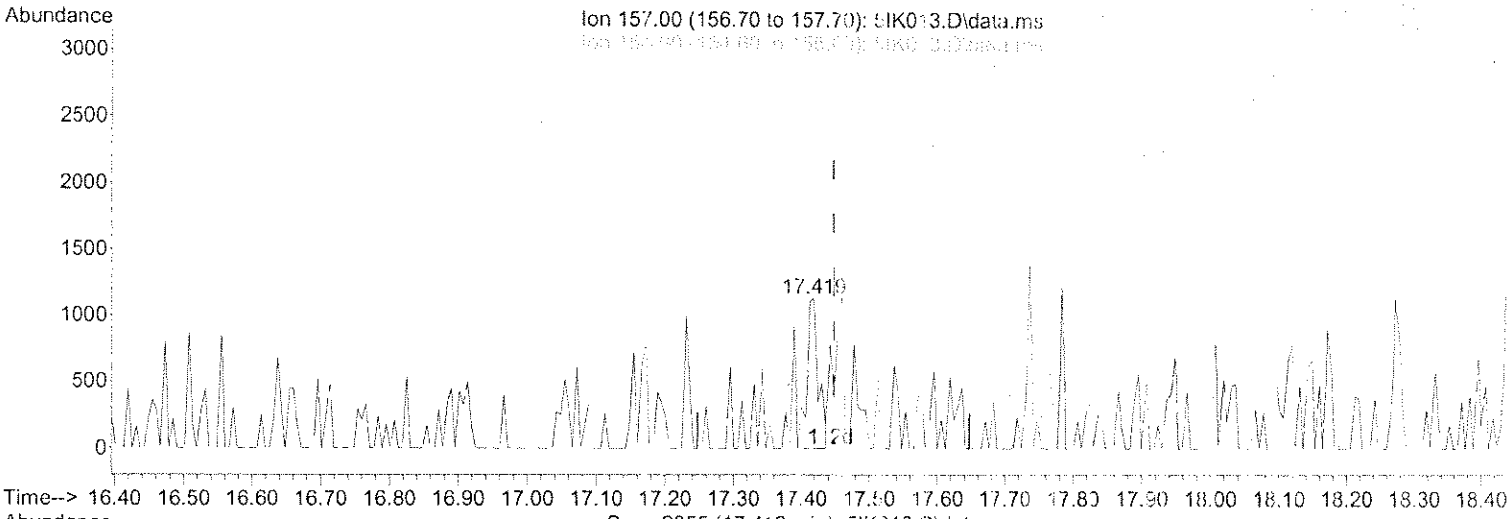
Review by/Date KKW 09/19/16

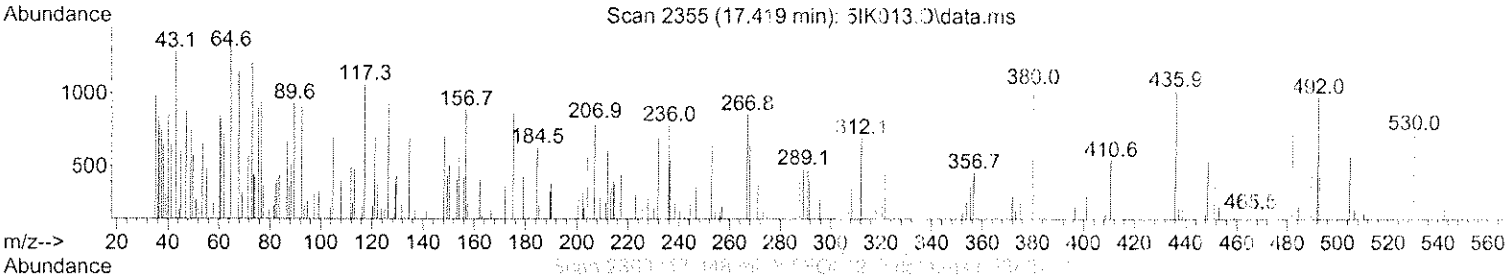
Review by/Date: 09/19/16

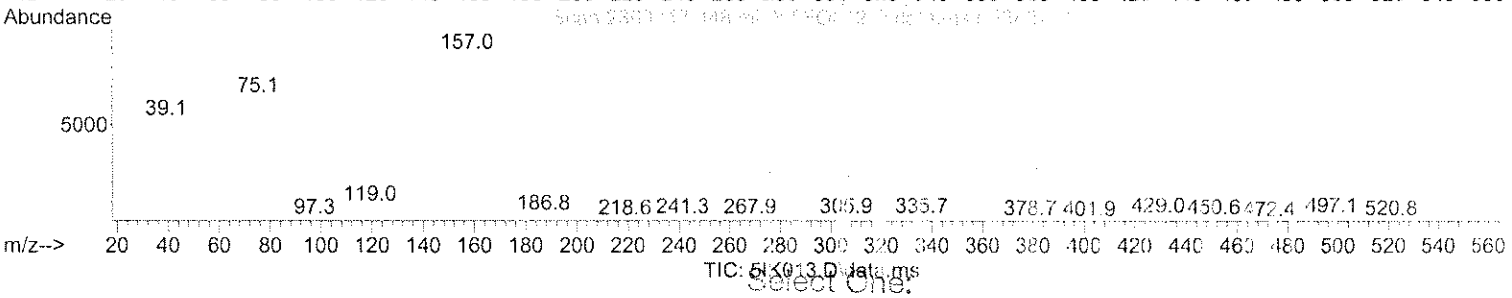
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\091616\
Data File : 5IK013.D
Acq On : 16 Sep 2016 1:59 pm
Operator : KKW
InstName : OVGCMS5
Sample : CAL1
Misc :
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Sep 16 14:40:59 2016
Quant Method : C:\msdchem\1\methods\091616.M
Quant Title : ENCO SOP VGCMS05; Element Cal 1606061
QLast Update : Fri Aug 05 08:49:48 2016
Response via : Initial Calibration







TIC: 5IK013.D\data.ms

(94) DBCP		
17.419min (-0.029)	0.97 ug/L	
response	1349	
Ion	Exp%	Act%
157.00	100.00	100.00
154.90	83.40	116.31#
0.00	0.00	0.00
0.00	0.00	0.00

Select One:

[X] Original Integration [ ] Manual Integration

Select reason for manual integration:

[X] Poor integration (peak tailing, baseline selection)

[ ] Incorrect peak selection/Peak not found

[ ] Hump integration

[ ] Baseline drop for split peaks

[ ] ISTD reintegration

[ ] Other:

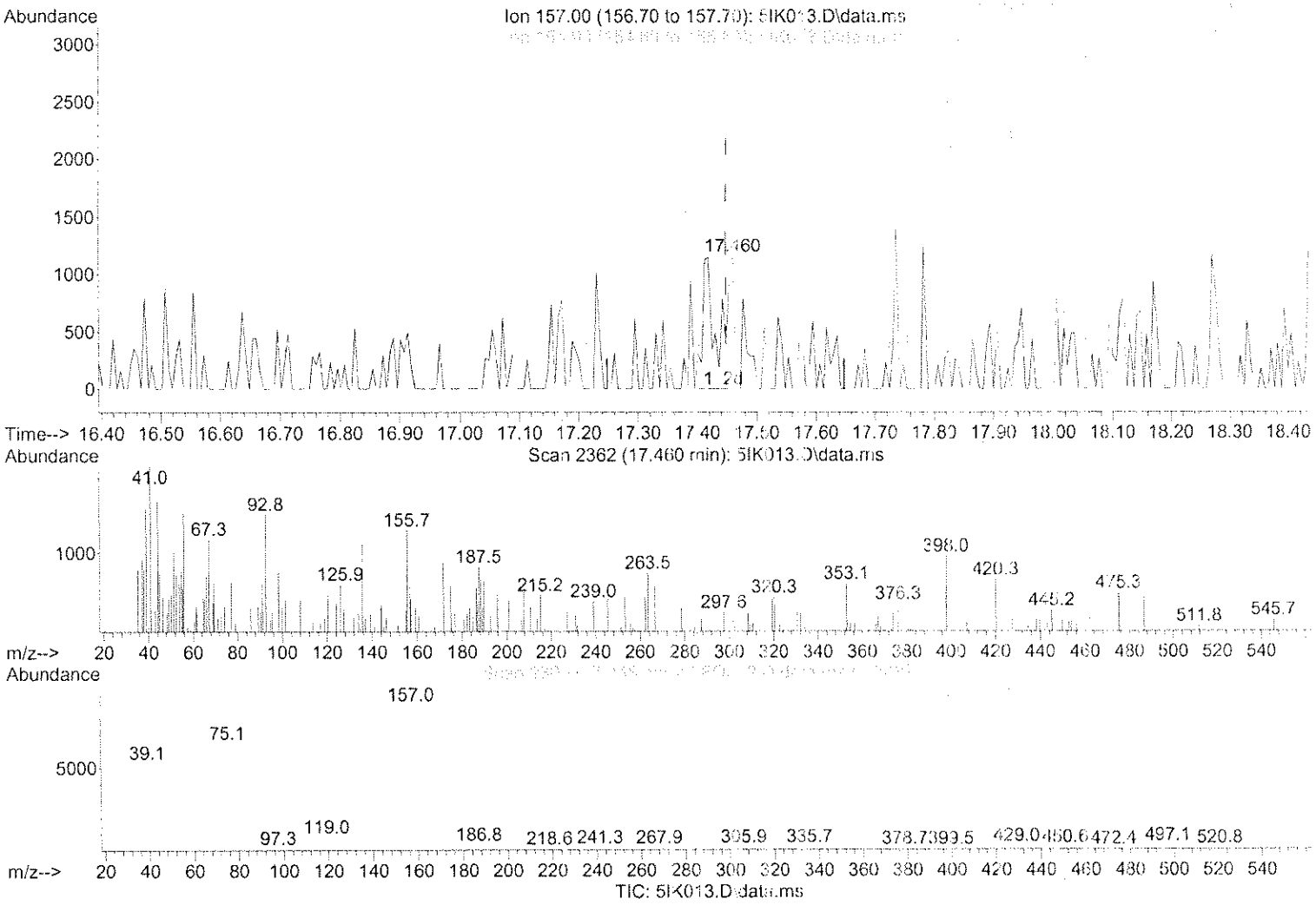
Review by/Date KW 09/19/16

Review by/Date: KW 9/19/16

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\091616\
Data File : 5IK013.D
Acq On : 16 Sep 2016 1:59 pm
Operator : KKW
InstName : OVGCMS5
Sample : CAL1
Misc :
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Sep 16 14:40:59 2016
Quant Method : C:\msdchem\1\methods\091616.M
Quant Title : ENCO SOP VGCMS05; Element Cal 1606061
QLast Update : Fri Aug 05 08:49:48 2016
Response via : Initial Calibration



(94) DBCP

17.460min (+ 0.012) 1.82 ug/L m

response 2519

Ion	Exp%	Act%
157.00	100.00	100.00
154.90	83.40	62.29#
0.00	0.00	0.00
0.00	0.00	0.00

Select One:

[ ] Original Integration [ ] Manual Integration

Select reason for manual integration:

[X] Poor integration (peak tailing, baseline selection)

[ ] Incorrect peak selection/Peak not found

[ ] Hump integration

[ ] Baseline drop for split peaks

[ ] ISTD reintegration

[ ] Other:

Review by/Date: KW 09/19/16

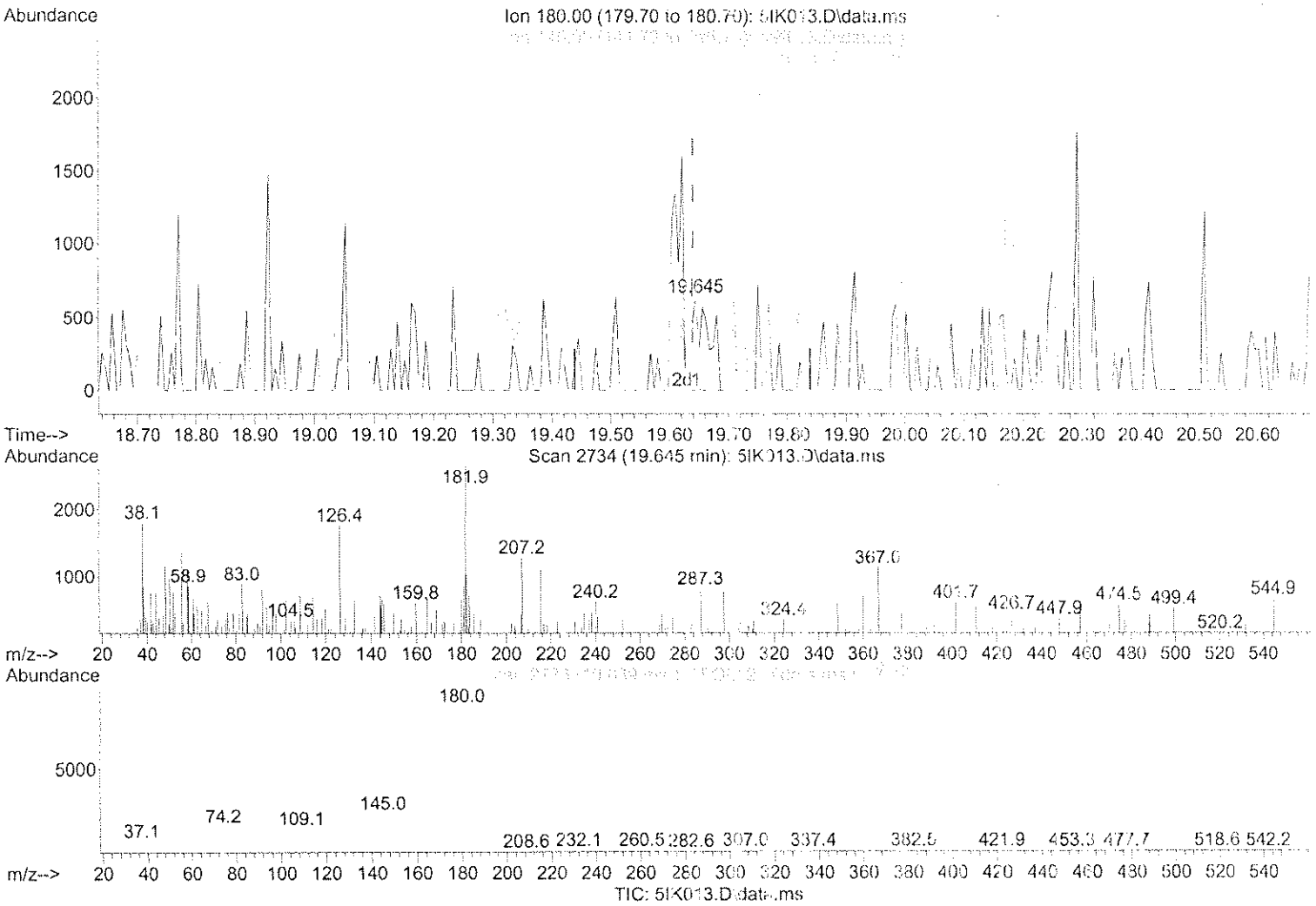
Review by/Date: 9/19/16

091616.M Fri Sep 16 14:44:49 2016 Page: 1

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\091616\
Data File : 5IK013.D
Acq On : 16 Sep 2016 1:59 pm
Operator : KKW
InstName : OVGCMS5
Sample : CAL1
Misc :
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Sep 16 14:40:59 2016
Quant Method : C:\msdchem\1\methods\091616.M
Quant Title : ENCO SOP VGCMS05; Element Cal 160603
QLast Update : Fri Aug 05 08:49:48 2016
Response via : Initial Calibration



(98) 1,2,3-Trichlorobenzene

19.645min (+ 0.006) 0.29 ug/L

response 1241

Ion	Exp%	Act%
180.00	100.00	100.00
145.00	31.80	0.00#
109.10	24.10	0.00#
0.00	0.00	0.00

Select One:

[X] Original Integration [ ] Manual Integration

Select reason for manual integration:

[ ] Poor integration (peak tailing, baseline selection)

[ ] Incorrect peak selection/Peak not found

[ ] Hump integration

[ ] Baseline drop for split peaks

[ ] ISTD reintegration

[ ] Other:

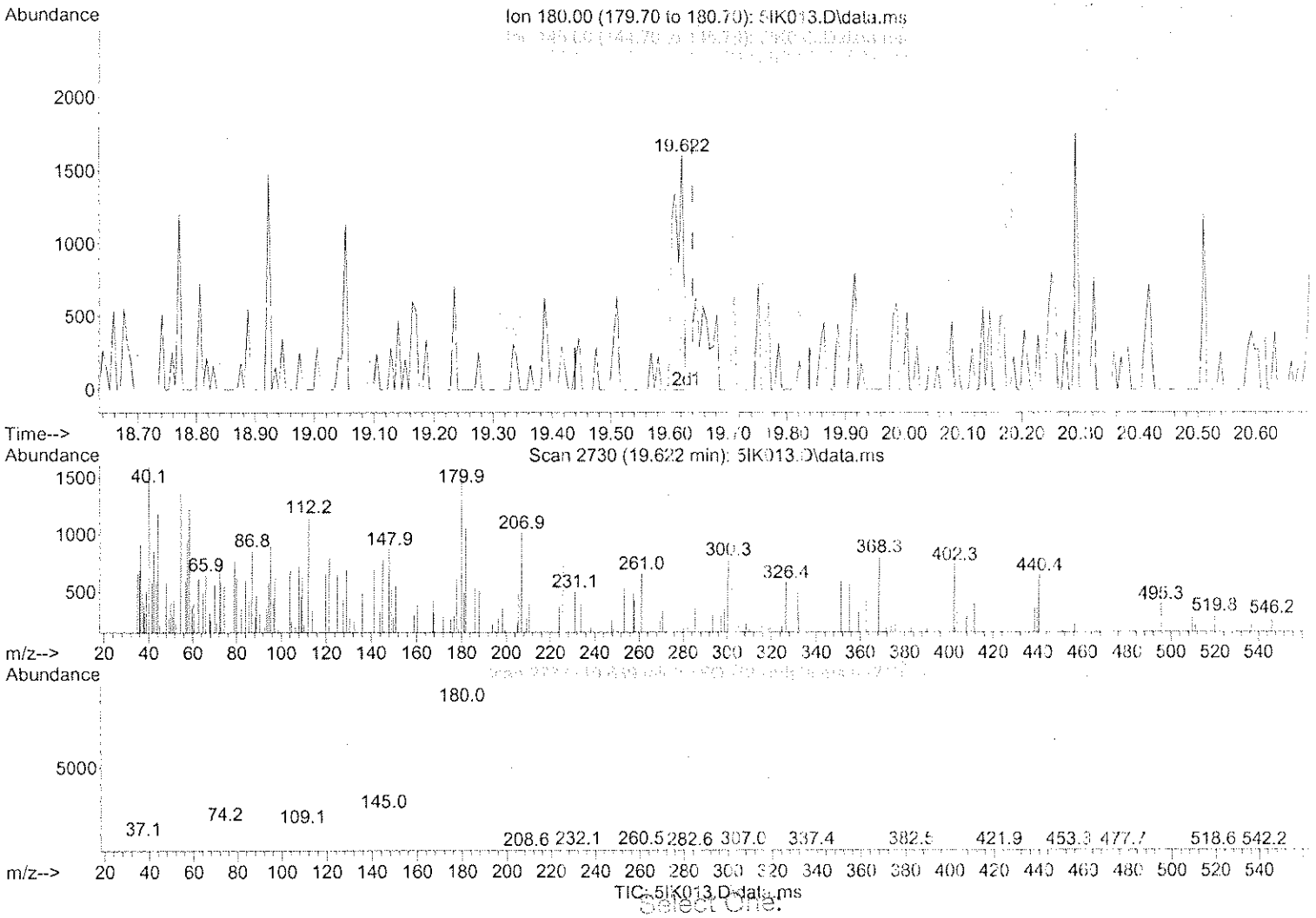
Review by/Date KW 09/19/16

Review by/Date: 09/19/16

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\091616\
Data File : 5IK013.D
Acq On : 16 Sep 2016 1:59 pm
Operator : KKW
InstName : OVGCMS5
Sample : CAL1
Misc :
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Sep 16 14:40:59 2016
Quant Method : C:\msdchem\1\methods\091616.M
Quant Title : ENCO SOP VGCMS05; Element Cal 16060[illegible]1
QLast Update : Fri Aug 05 08:49:48 2016
Response via : Initial Calibration



TIC: 5IK013.D\data.ms

(98) 1,2,3-Trichlorobenzene

19.622min (-0.018) 0.45 ug/L m

response 1939

Ion	Exp%	Act%
180.00	100.00	100.00
145.00	31.80	0.00#
109.10	24.10	0.00#
0.00	0.00	0.00

Select One:

[] Original Integration [X] Manual Integration

Select reason for manual integration:

[X] Poor integration (peak tailing, baseline selection)

[] Incorrect peak selection/Peak not found

[] Hump integration

[] Baseline drop for split peaks

[] ISTD reintegration

[] Other:

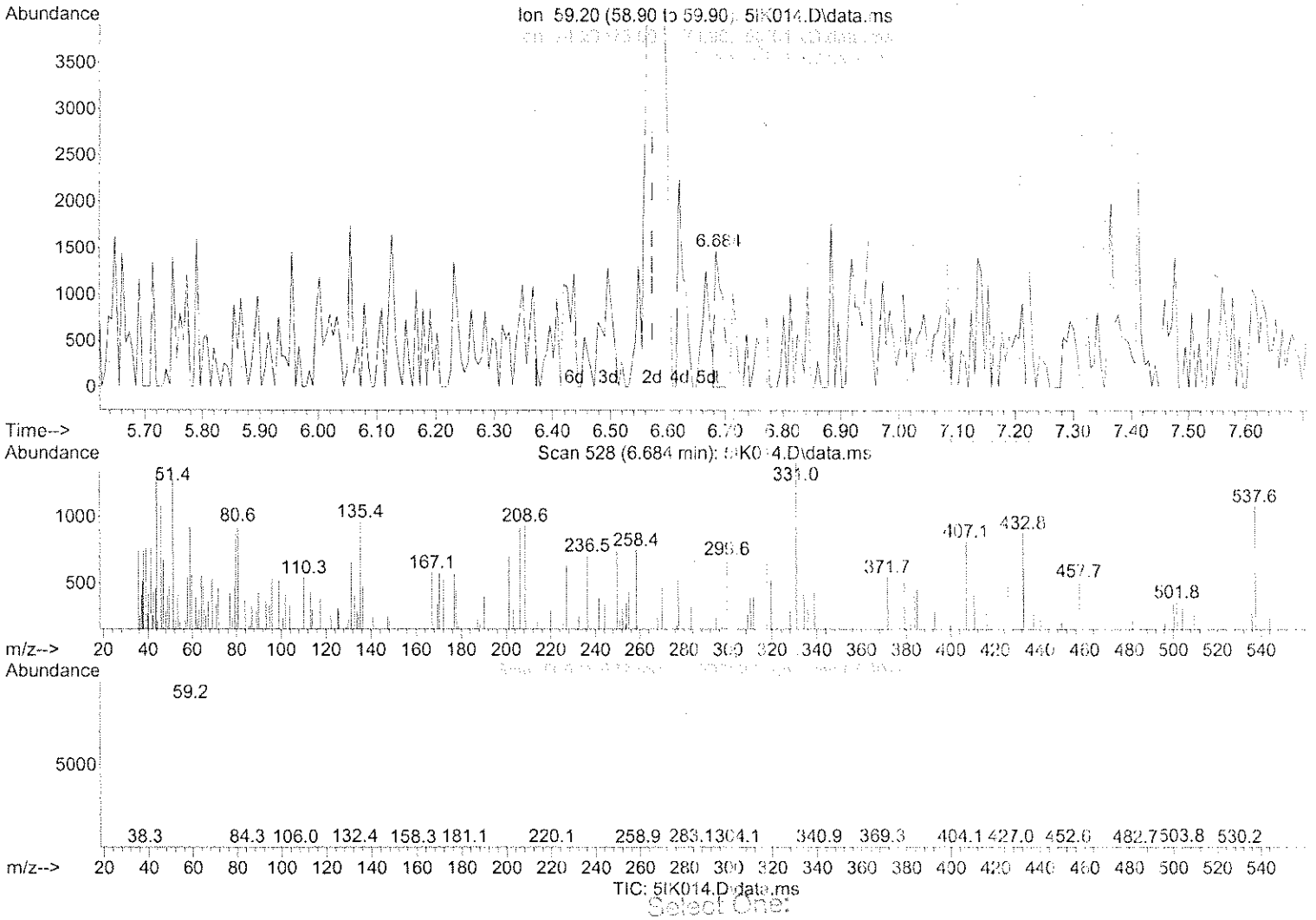
Review by/Date KW 09/19/16

Review by/Date: 9/19/16

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\091616\
Data File : 5IK014.D
Acq On : 16 Sep 2016 2:29 pm
Operator : KKW
InstName : OVGCMS5
Sample : CAL2
Misc :
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Sep 16 14:52:02 2016
Quant Method : C:\msdchem\1\methods\091616.M
Quant Title : ENCO SOP VGCMS05; Element Cal 1606061
QLast Update : Fri Aug 05 08:49:48 2016
Response via : Initial Calibration



TIC: 5IK014.D\data.ms

(8) Diethyl ether

6.684min (+ 0.112) 0.24 ug/L

response 1382

Ion	Exp%	Act%
59.20	100.00	100.00
74.20	66.90	78.00
45.10	80.90	94.14
0.00	0.00	0.00

Select One:

[X] Original Integration [ ] Manual Integration

Select reason for manual integration:

[ ] Poor integration (peak tailing, baseline selection)

[X] Incorrect peak selection/Peak not found

[ ] Hump integration

[ ] Baseline drop for split peaks

[ ] ISTD reintegration

[ ] Other:

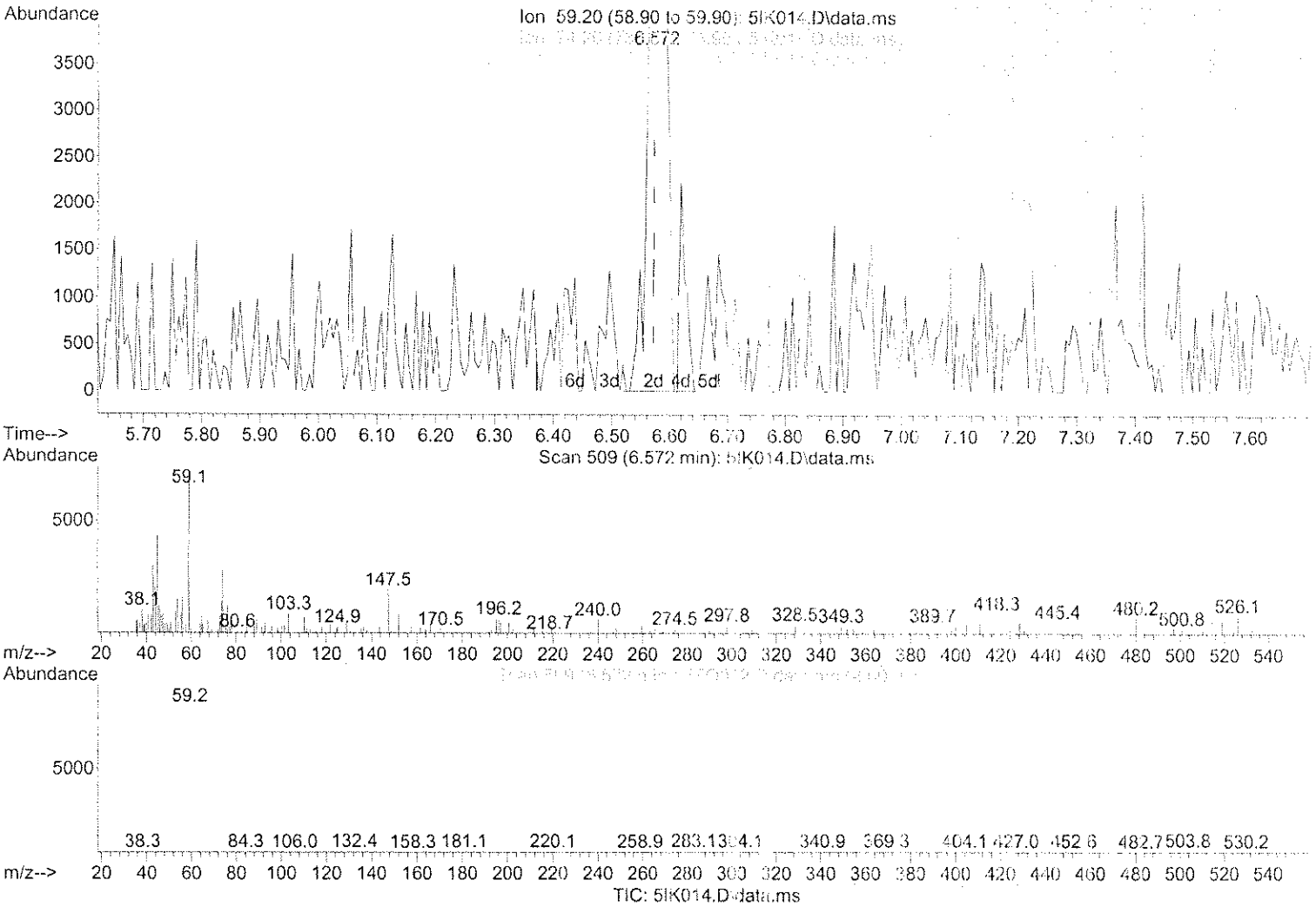
Review by/Date KKW 09/19/16

Review by/Date: 09/19/16

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\091616\
Data File : 5IK014.D
Acq On : 16 Sep 2016 2:29 pm
Operator : KKW
InstName : OVGCMS5
Sample : CAL2
Misc :
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Sep 16 14:52:02 2016
Quant Method : C:\msdchem\1\methods\091616.M
Quant Title : ENCO SOP VGCMS05; Element Cal 1606061
QLast Update : Fri Aug 05 08:49:48 2016
Response via : Initial Calibration



(8) Diethyl ether

6.572min (-0.000) 2.68 ug/L m

response 15130

Ion	Exp%	Act%
59.20	100.00	100.00
74.20	66.90	7.12#
45.10	80.90	8.60#
0.00	0.00	0.00

Select One:

[ ] Original Integration [ ] Manual Integration

Select reason for manual integration:

[ ] Poor integration (peak tailing, baseline selection)

[X] Incorrect peak selection/Peak not found

[ ] Hump integration

[ ] Baseline drop for split peaks

[ ] ISTD reintegration

[ ] Other:

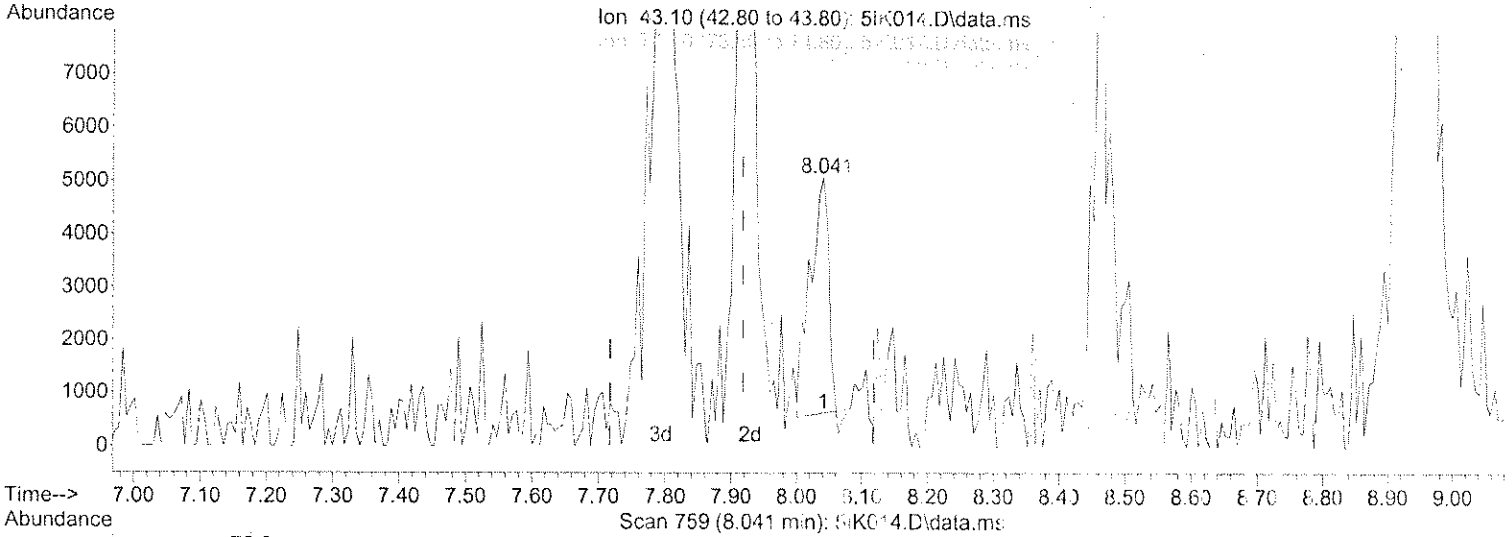
Review by/Date KKW 09/19/16

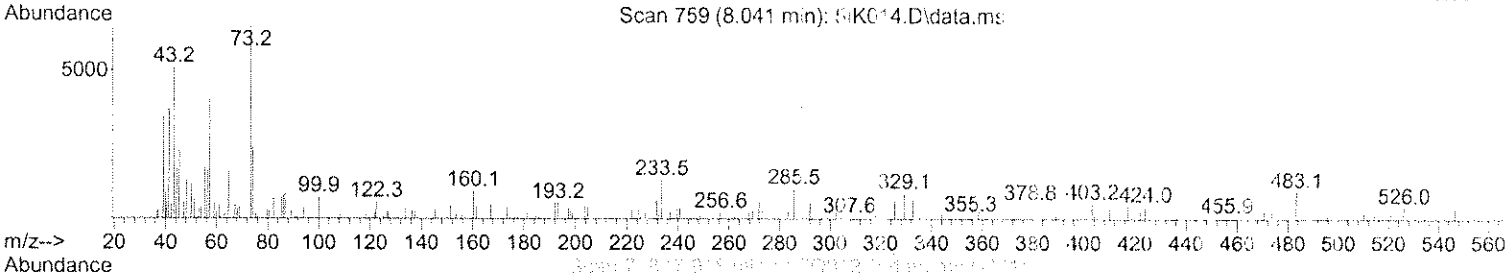
Review by/Date: 09/19/16

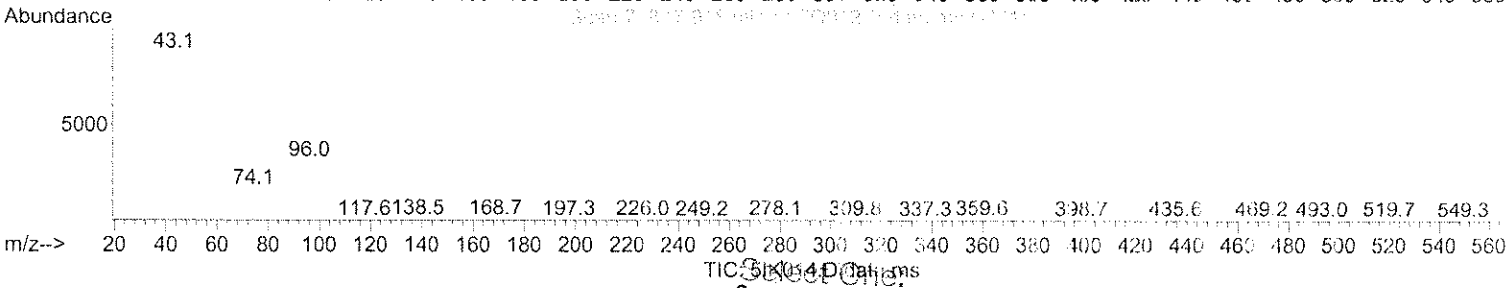
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\091616\
Data File : 5IK014.D
Acq On : 16 Sep 2016 2:29 pm
Operator : KKW
InstName : OVGCMS5
Sample : CAL2
Misc :
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Sep 16 14:52:02 2016
Quant Method : C:\msdchem\1\methods\091616.M
Quant Title : ENCO SOP VGCMS05; Element Cal 16060[illegible]1
QLast Update : Fri Aug 05 08:49:48 2016
Response via : Initial Calibration







TIC: 5IK014.D\data.ms

(17) Methyl Acetate

8.041min (+ 0.123) 1.29 ug/L

response 8768

Ion	Exp%	Act%
43.10	100.00	100.00
74.10	17.10	15.44
59.20	14.70	11.95
0.00	0.00	0.00

Select One:

[x] Original Integration [ ] Manual Integration

Select reason for manual integration:

[ ] Poor integration (peak tailing, baseline selection)

[x] Incorrect peak selection/Peak not found

[ ] Hump integration

[ ] Baseline drop for split peaks

[ ] ISTD reintegration

[ ] Other:

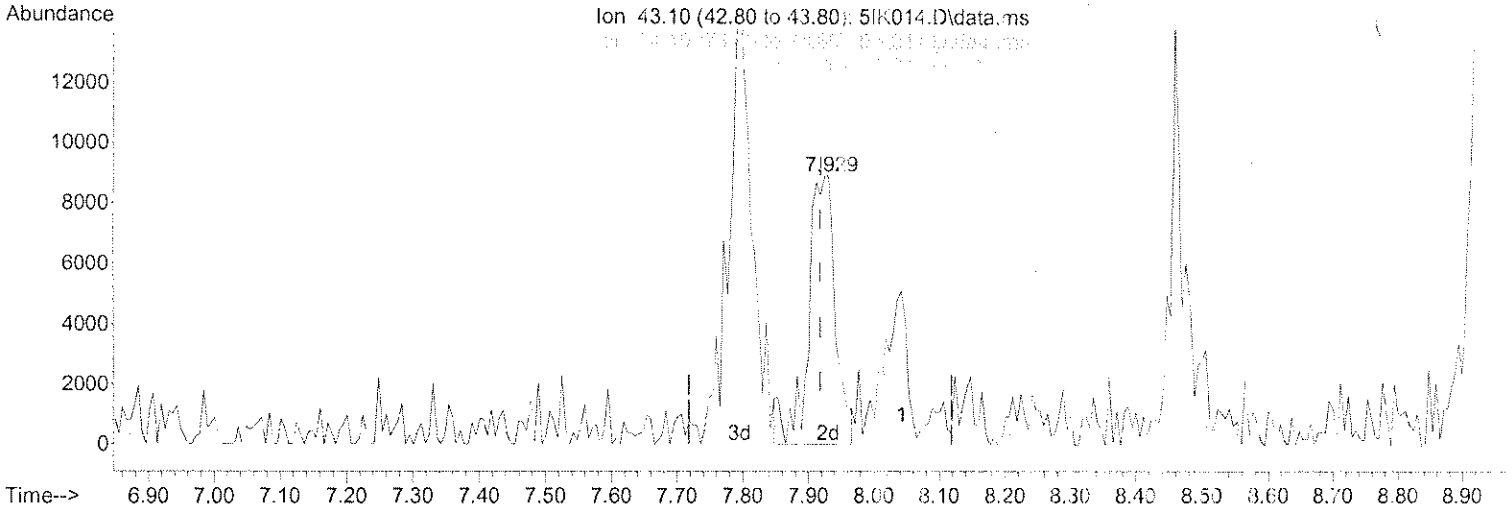
Review by/Date KW 09/19/16

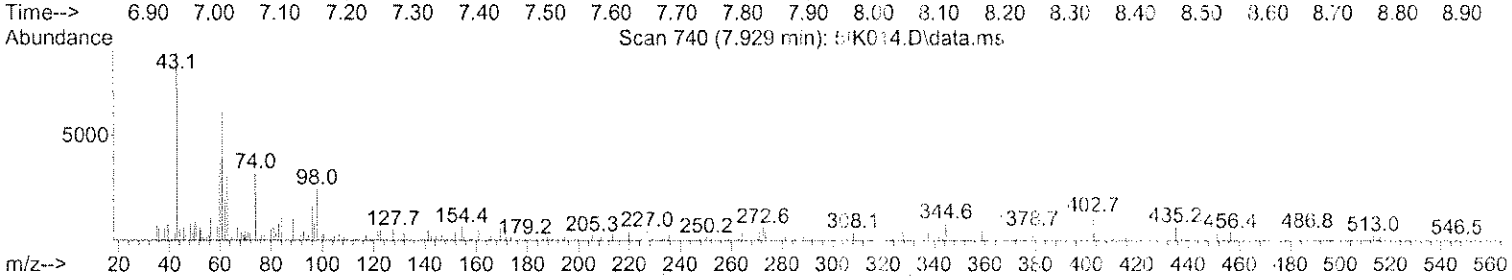
Review by/Date: 09/19/16

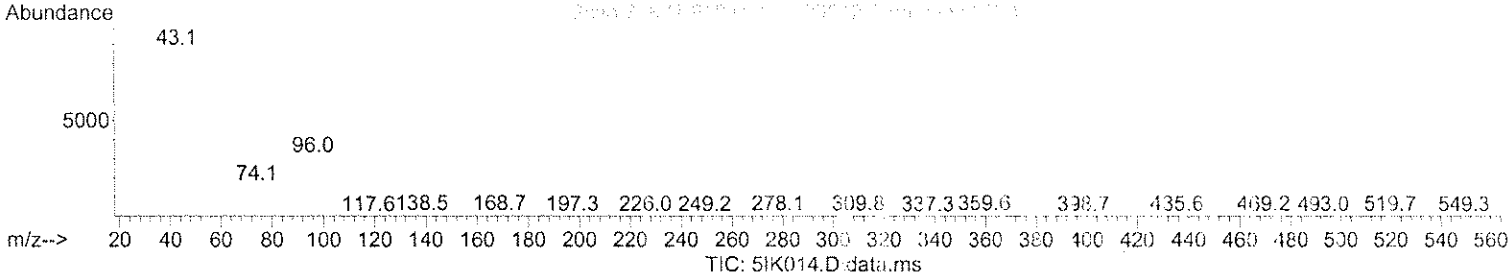
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\091616\
Data File : 5IK014.D
Acq On : 16 Sep 2016 2:29 pm
Operator : KKW
InstName : OVGCMS5
Sample : CAL2
Misc :
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Sep 16 14:52:02 2016
Quant Method : C:\msdchem\1\methods\091616.M
Quant Title : ENCO SOP VGCMS05; Element Cal 1606061
QLast Update : Fri Aug 05 08:49:48 2016
Response via : Initial Calibration







TIC: 5IK014.D\data.ms

(17) Methyl Acetate

7.929min (+ 0.012) 3.76 ug/L m

response 25435

Ion	Exp%	Act%
43.10	100.00	100.00
74.10	17.10	5.32#
59.20	14.70	4.12#
0.00	0.00	0.00

Select One:

[ ] Original Integration [X] Manual Integration

Select reason for manual integration:

[ ] Poor integration (peak tailing, baseline selection)

[X] Incorrect peak selection/Peak not found

[ ] Hump integration

[ ] Baseline drop for split peaks

[ ] ISTD reintegration

[ ] Other:

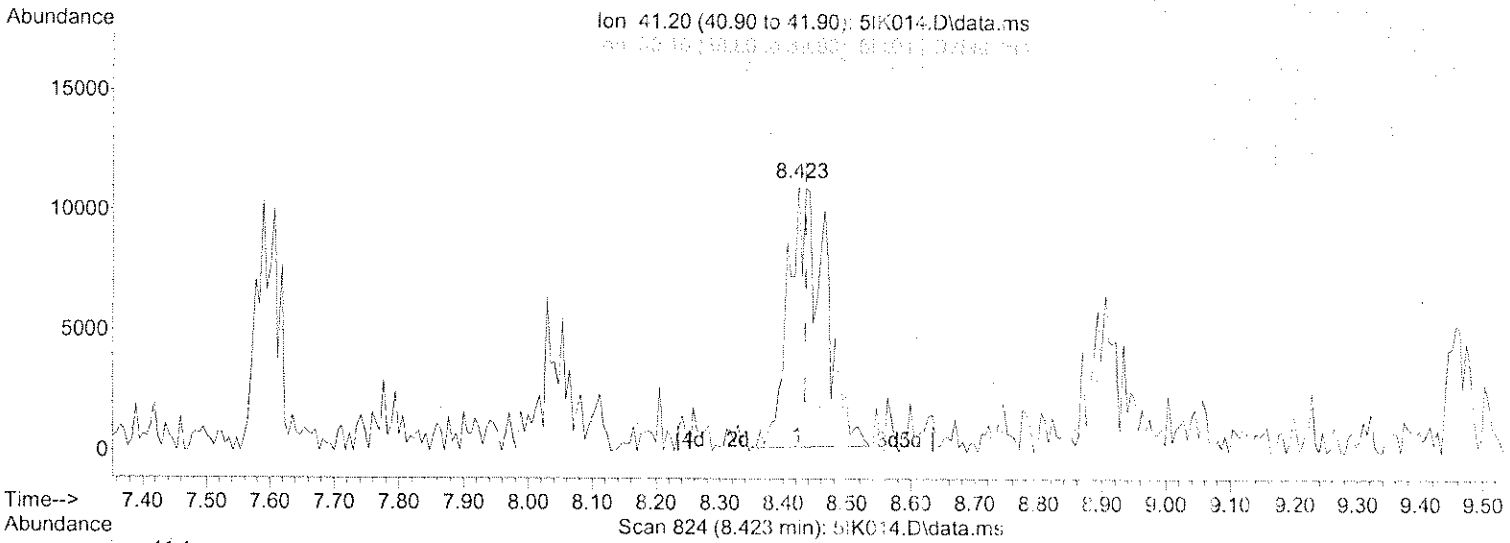
Review by/Date KW 09/19/16

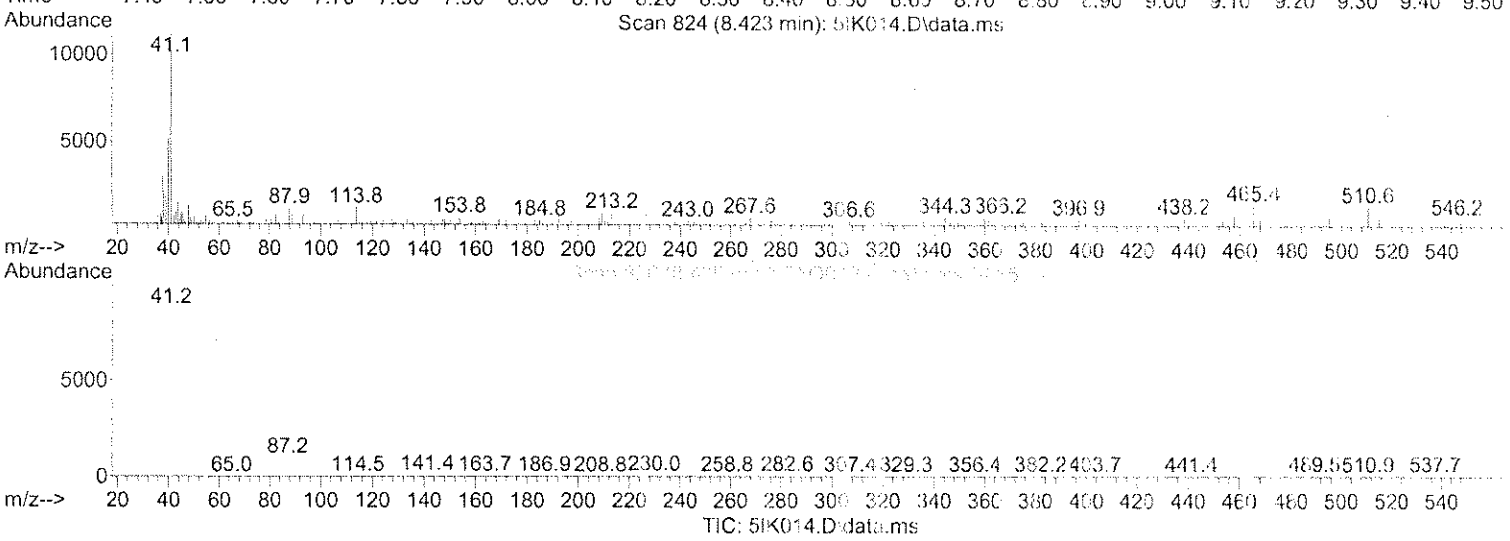
Review by/Date: 09/19/16

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\091616\
Data File : 5IK014.D
Acq On : 16 Sep 2016 2:29 pm
Operator : KKW
InstName : OVGCMS5
Sample : CAL2
Misc :
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Sep 16 14:52:02 2016
Quant Method : C:\msdchem\1\methods\091616.M
Quant Title : ENCO SOP VGCMS05; Element Cal 1606061
QLast Update : Fri Aug 05 08:49:48 2016
Response via : Initial Calibration





(20) Acetonitrile

8.423min (-0.012) 45.97 ug/L

response 43844

Ion	Exp%	Act%
41.20	100.00	100.00
39.10	48.30	10.82#
38.20	15.00	8.76#
0.00	0.00	0.00

Select One:

[ ] Original Integration [ ] Manual Integration

Select reason for manual integration:

[ ] Poor integration (peak tailing, baseline selection)

[ ] Incorrect peak selection/Peak not found

[ ] Hump integration

[ ] Baseline drop for split peaks

[ ] ISTD reintegration

[ ] Other:

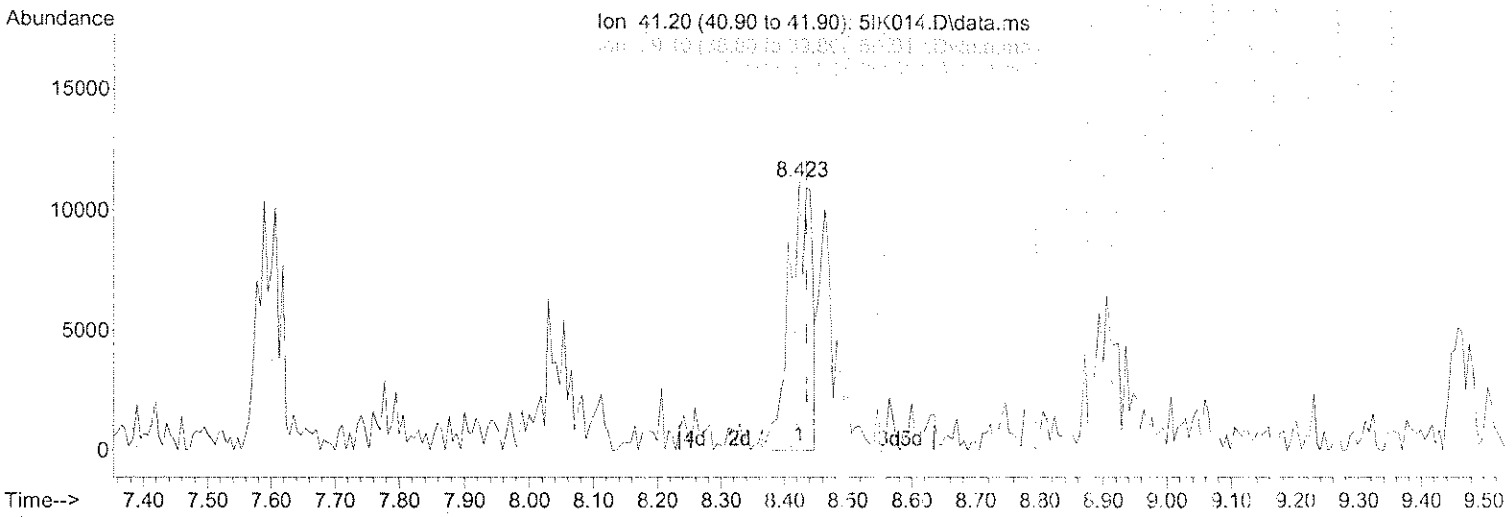
Review by/Date KW 09/19/16

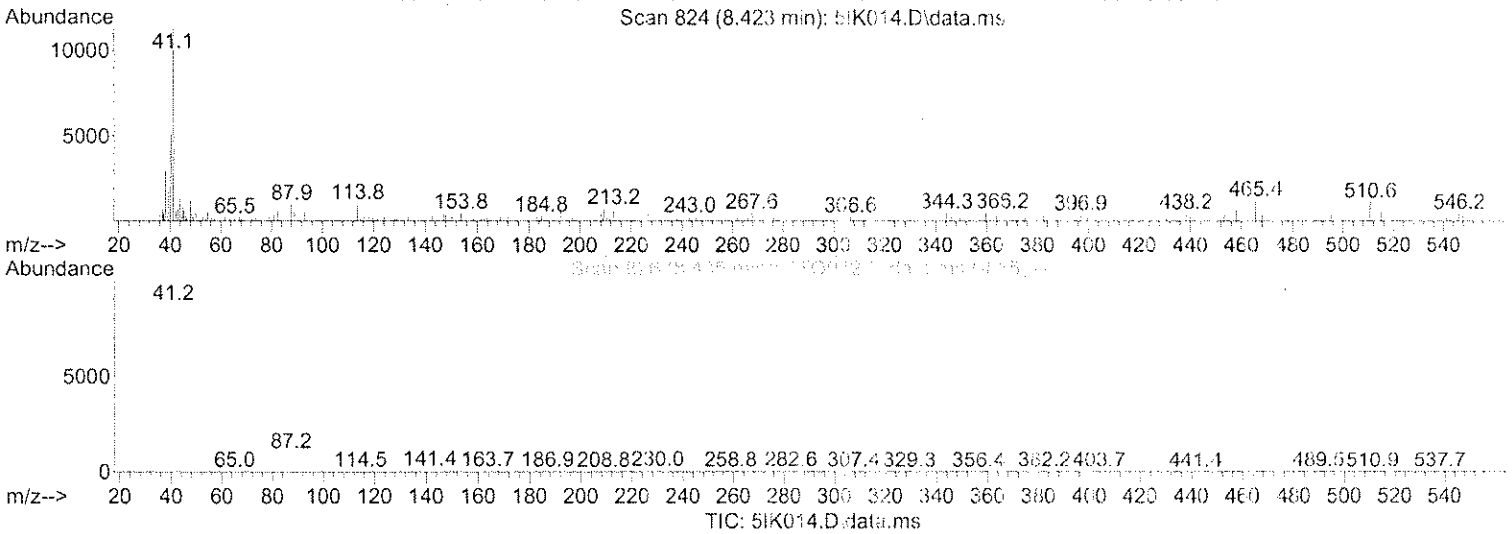
Review by/Date: 09/19/16

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\091616\
Data File : 5IK014.D
Acq On : 16 Sep 2016 2:29 pm
Operator : KKW
InstName : OVGCMS5
Sample : CAL2
Misc :
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Sep 16 14:52:02 2016
Quant Method : C:\msdchem\1\methods\091616.M
Quant Title : ENCO SOP VGCMS05; Element Cal 1606061
QLast Update : Fri Aug 05 08:49:48 2016
Response via : Initial Calibration





TIC: 5IK014.D\data.ms

(20) Acetonitrile

8.423min (-0.012) 28.96 ug/L m

response 27618

Ion	Exp%	Act%
41.20	100.00	100.00
39.10	48.30	17.17#
38.20	15.00	13.90
0.00	0.00	0.00

Select One:

[ ] Original Integration [X] Manual Integration

Select reason for manual integration:

[X] Poor integration (peak tailing, baseline selection)

[ ] Incorrect peak selection/Peak not found

[ ] Hump integration

[ ] Baseline drop for split peaks

[ ] ISTD reintegration

[ ] Other:

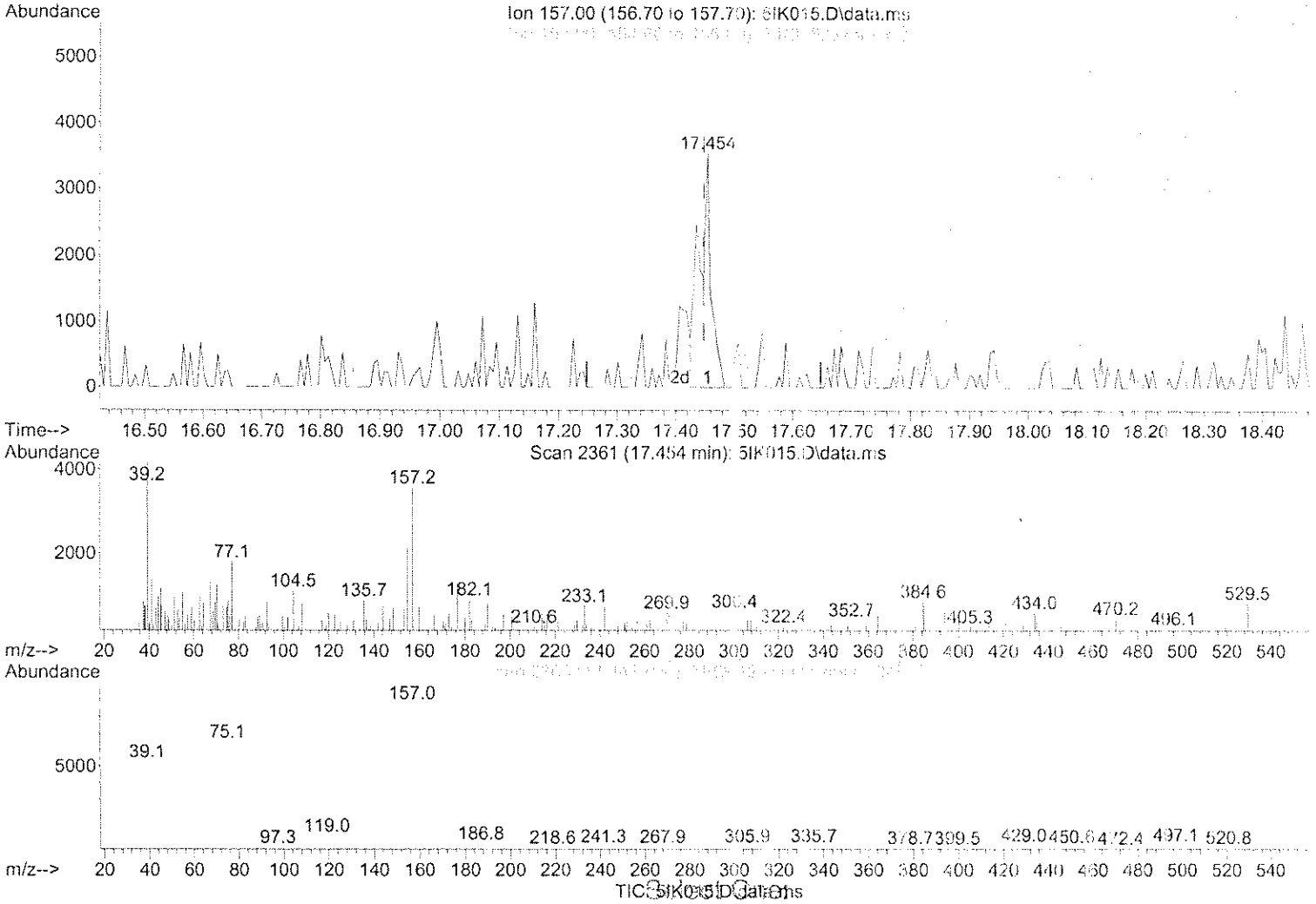
Review by/Date KKW 09/19/16

Review by/Date: 09/19/16

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\091616\
Data File : 5IK015.D
Acq On : 16 Sep 2016 2:59 pm
Operator : KKW
InstName : OVGCMS5
Sample : CAL3
Misc :
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Sep 17 16:49:01 2016
Quant Method : C:\msdchem\1\methods\091616.M
Quant Title : ENCO SOP VGCMS05; Element Cal 1606061
QLast Update : Fri Aug 05 08:49:48 2016
Response via : Initial Calibration



TIC: 5IK015.D\data.ms

(94) DBCP

17.454min (+ 0.006) 3.33 ug/L

response 5042

Ion	Exp%	Act%
157.00	100.00	100.00
154.90	83.40	121.96#
0.00	0.00	0.00
0.00	0.00	0.00

[X] Original Integration [ ] Manual Integration

Select reason for manual integration:

[X] Poor integration (peak tailing, baseline selection)

[ ] Incorrect peak selection/Peak not found

[ ] Hump integration

[ ] Baseline drop for split peaks

[ ] ISTD reintegration

[ ] Other:

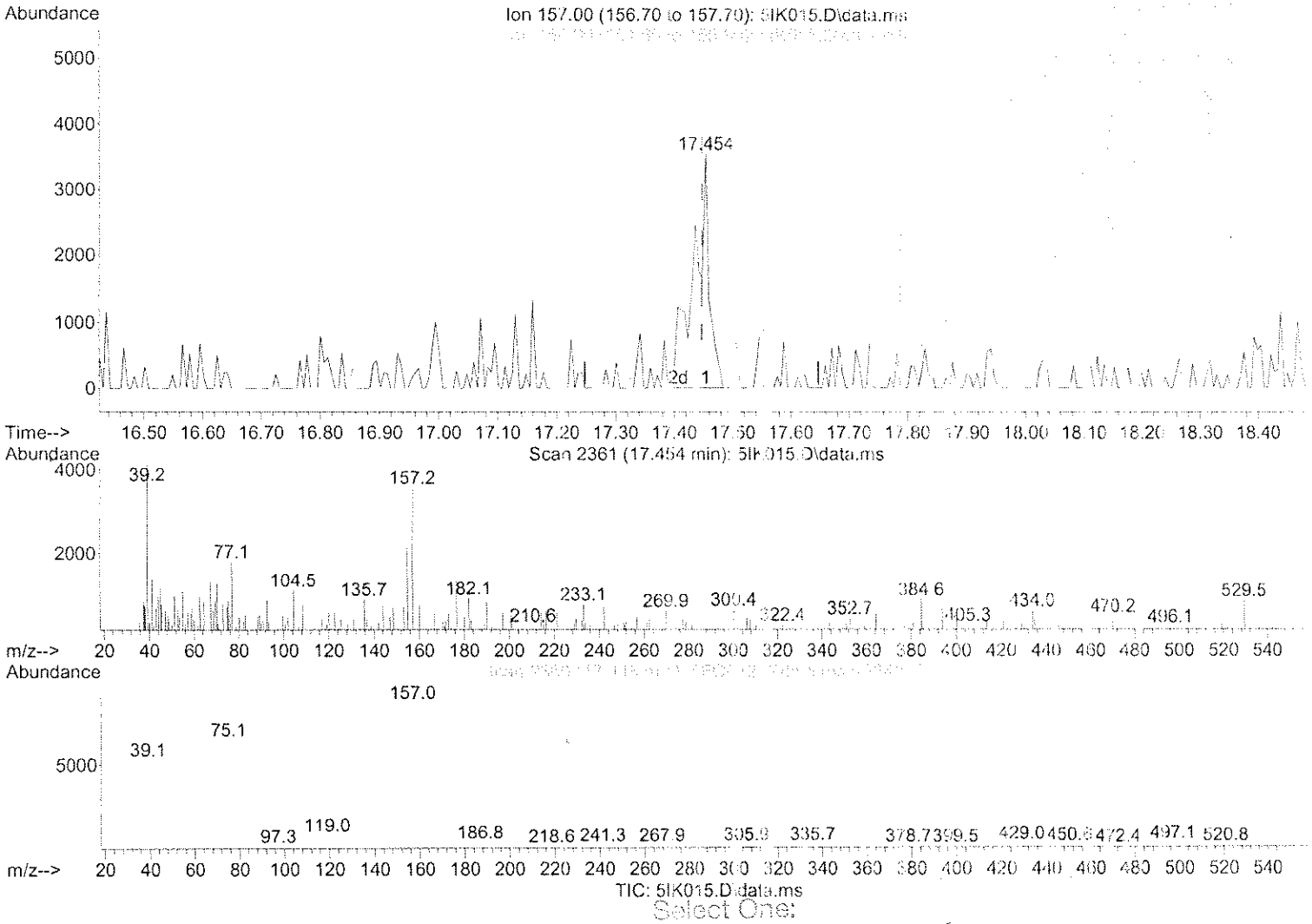
Review by/Date: KW 09/19/16

Review by/Date: RG 9/19/16

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\091616\
Data File : 5IK015.D
Acq On : 16 Sep 2016 2:59 pm
Operator : KKW
InstName : OVGCMS5
Sample : CAL3
Misc :
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Sep 17 16:49:01 2016
Quant Method : C:\msdchem\1\methods\091616.M
Quant Title : ENCO SOP VGCMS05; Element Cal 160601
QLast Update : Fri Aug 05 08:49:48 2016
Response via : Initial Calibration



TIC: 5IK015.D\data.ms

(94) DBCP

17.454min (+ 0.006) 4.43 ug/L m

response 6702

Ion	Exp%	Act%
157.00	100.00	100.00
154.90	83.40	91.75
0.00	0.00	0.00
0.00	0.00	0.00

Select One:

[ ] Original Integration [X] Manual Integration

Select reason for manual integration:

[X] Poor integration (peak tailing, baseline selection)

[ ] Incorrect peak selection/Peak not found

[ ] Hump integration

[ ] Baseline drop for split peaks

[ ] ISTD reintegration

[ ] Other:

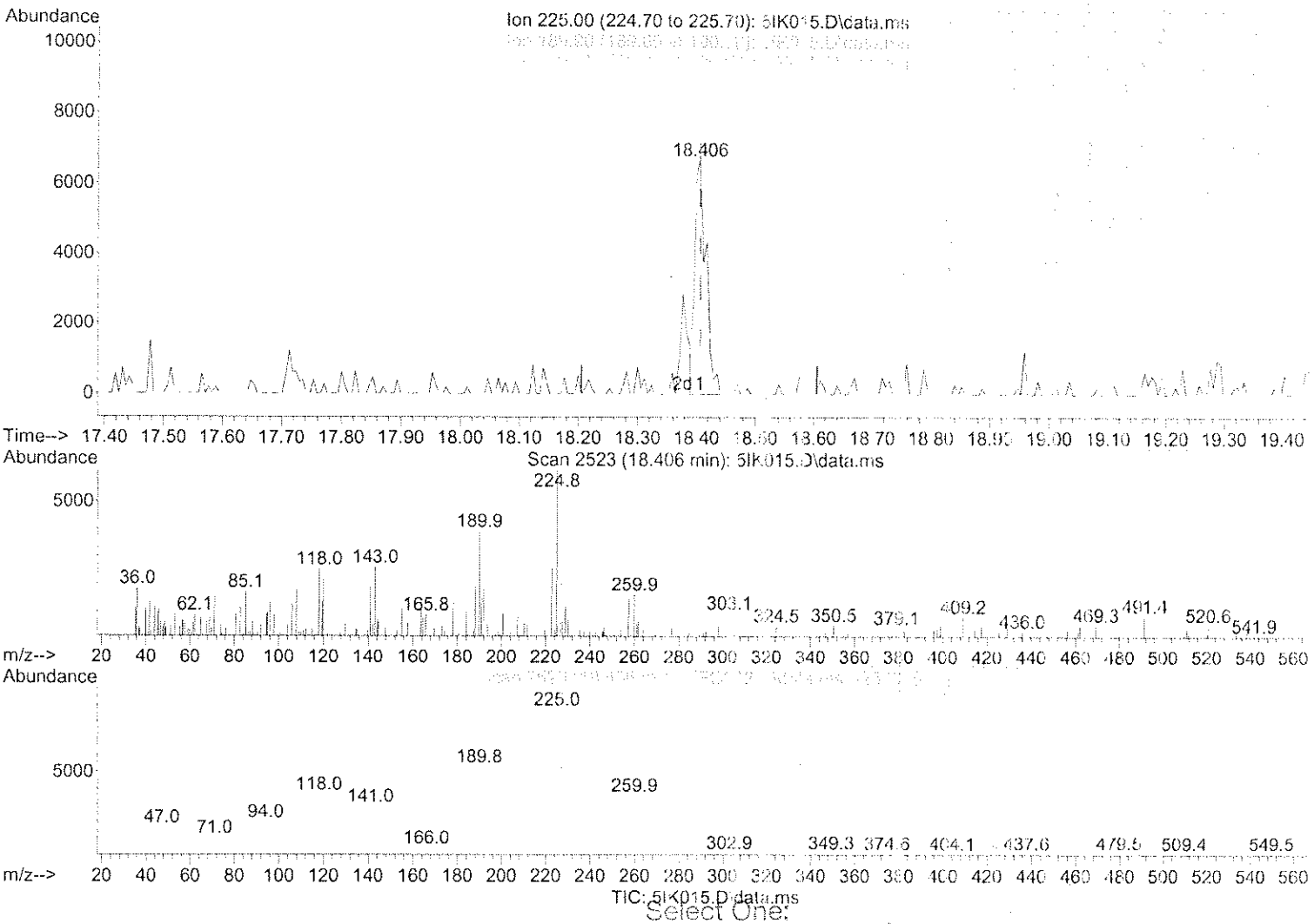
Review by/Date KW 09/19/16

Review by/Date: 09/19/16

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\091616\
Data File : 5IK015.D
Acq On : 16 Sep 2016 2:59 pm
Operator : KKW
InstName : OVGCMS5
Sample : CAL3
Misc :
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Sep 17 16:49:01 2016
Quant Method : C:\msdchem\1\methods\091616.M
Quant Title : ENCO SOP VGCMS05; Element Cal 1606061
QLast Update : Fri Aug 05 08:49:48 2016
Response via : Initial Calibration



(95) Hexachlorobutadiene

18.406min (-0.000) 2.10 ug/L

response 9145

Ion	Exp%	Act%
225.00	100.00	100.00
189.90	45.90	71.44#
259.90	28.30	39.66#
0.00	0.00	0.00

Select One:

[X] Original Integration [ ] Manual Integration

Select reason for manual integration:

[ ] Poor integration (peak tailing, baseline selection)

[ ] Incorrect peak selection/Peak not found

[ ] Hump integration

[ ] Baseline drop for split peaks

[ ] ISTD reintegration

[ ] Other:

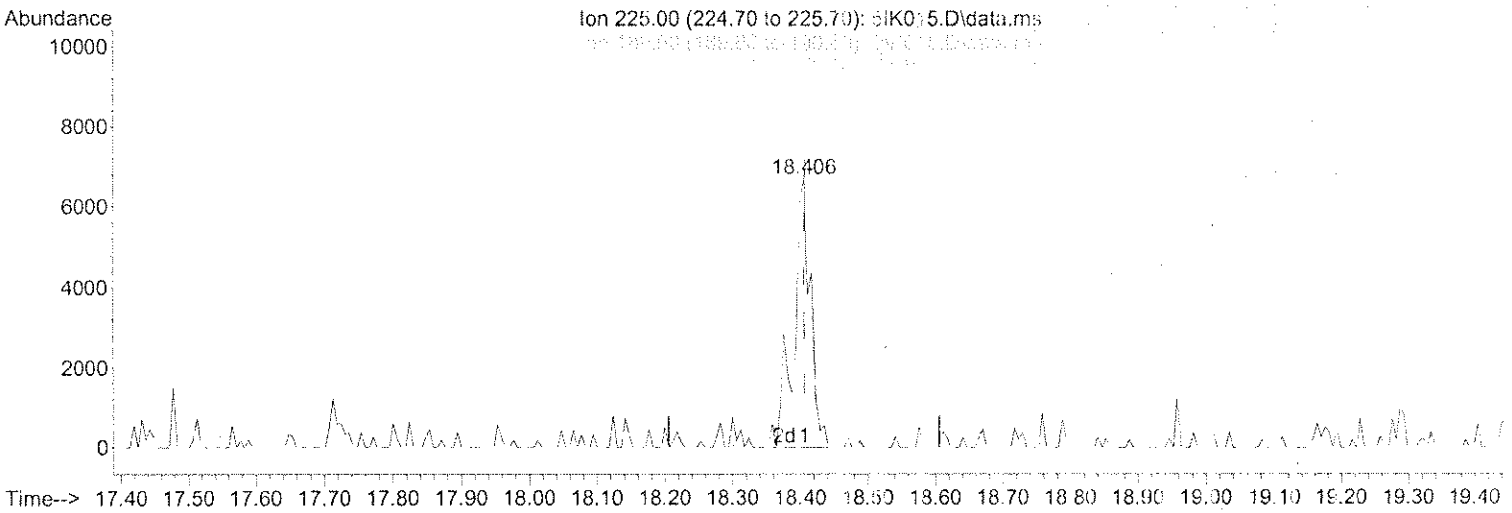
Review by/Date KKW 09/19/16

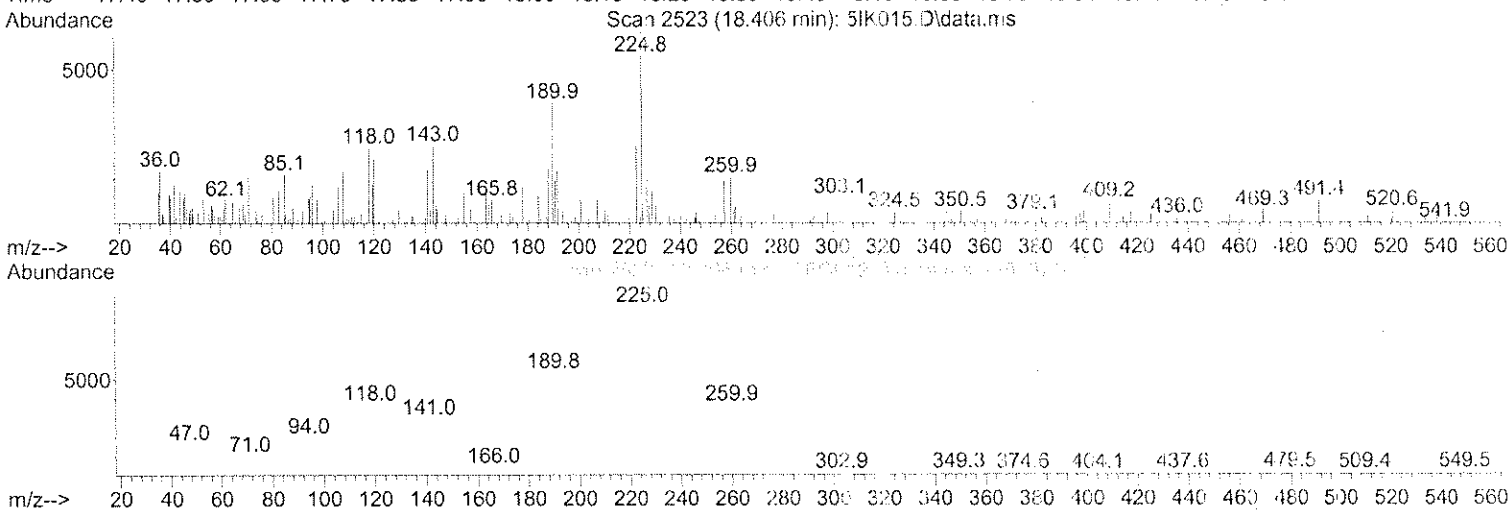
Review by/Date: R 9/19/16

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\091616\
Data File : 5IK015.D
Acq On : 16 Sep 2016 2:59 pm
Operator : KKW
InstName : OVGCMS5
Sample : CAL3
Misc :
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Sep 17 16:49:01 2016
Quant Method : C:\msdchem\1\methods\091616.M
Quant Title : ENCO SOP VGCMS05; Element Cal 1606061
QLast Update : Fri Aug 05 08:49:48 2016
Response via : Initial Calibration





TIC: 5IK015.D\data.ms

(95) Hexachlorobutadiene

18.406min (-0.000) 2.73 ug/L m

response 11848

Ion	Exp%	Act%
225.00	100.00	100.00
189.90	45.90	55.14#
259.90	28.30	30.61
0.00	0.00	0.00

Select One:

[ ] Original Integration [X] Manual Integration

Select reason for manual integration:

[X] Poor integration (peak tailing, baseline selection)

[ ] Incorrect peak selection/Peak not found

[ ] Hump integration

[ ] Baseline drop for split peaks

[ ] ISTD reintegration

[ ] Other:

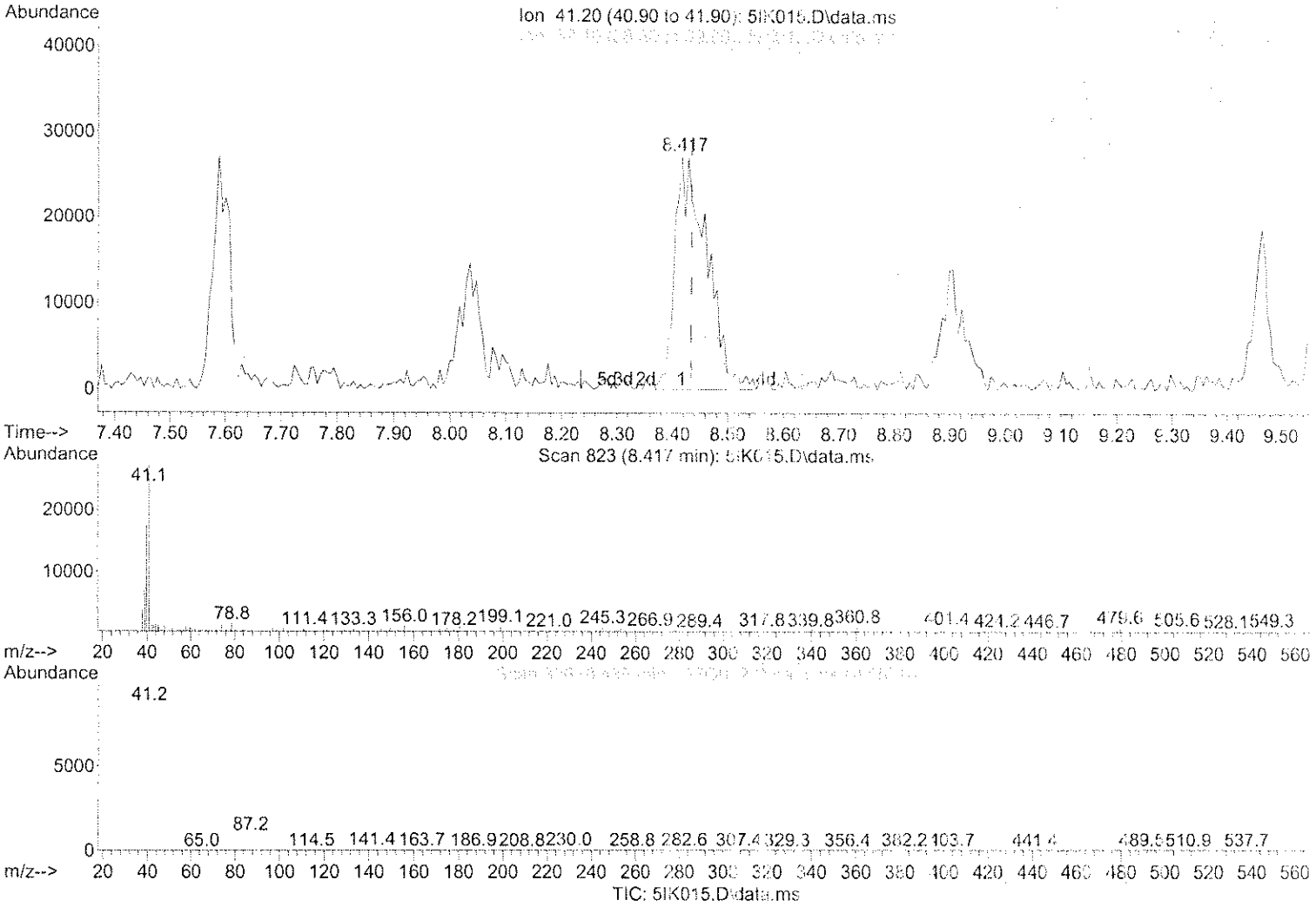
Review by/Date KKW 09/19/16

Review by/Date: 09/19/16

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\091616\
Data File : 5IK015.D
Acq On : 16 Sep 2016 2:59 pm
Operator : KKW
InstName : OVGCMS5
Sample : CAL3
Misc :
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Sep 17 16:49:01 2016
Quant Method : C:\msdchem\1\methods\091616.M
Quant Title : ENCO SOP VGCMS05; Element Cal 1606061
QLast Update : Fri Aug 05 08:49:48 2016
Response via : Initial Calibration



TIC: 5IK015.D\data.ms

(20) Acetonitrile

8.417min (-0.018) 109.56 ug/L

response 109612

Ion	Exp%	Act%
41.20	100.00	100.00
39.10	48.30	9.19#
38.20	15.00	9.18#
0.00	0.00	0.00

Select One:

[X] Original Integration [ ] Manual Integration

Select reason for manual integration:

[X] Poor integration (peak tailing, baseline selection)

[ ] Incorrect peak selection/Peak not found

[ ] Hump integration

[ ] Baseline drop for split peaks

[ ] ISTD reintegration

[ ] Other:

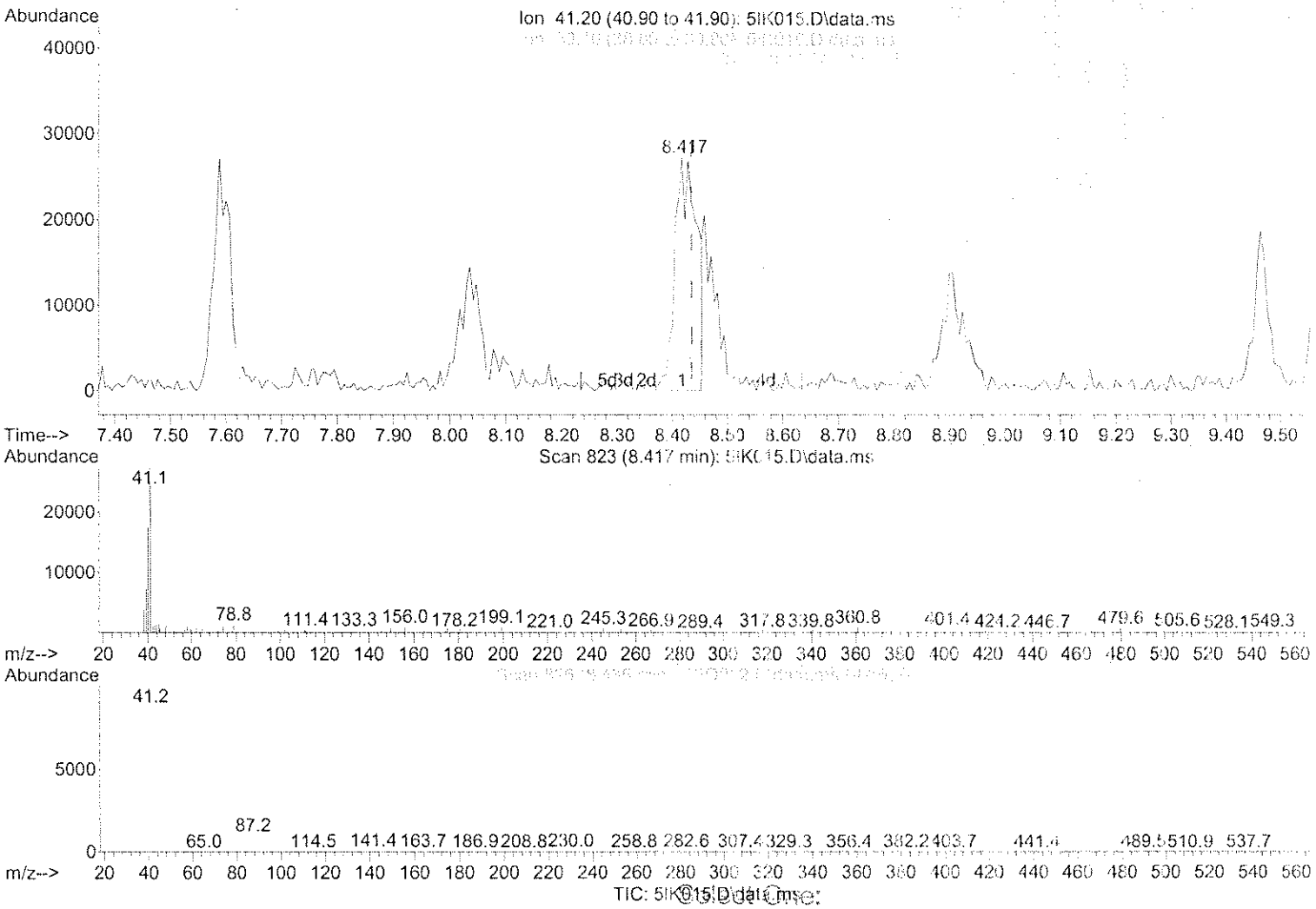
Review by/Date KKW 09/19/16

Review by/Date: [illegible] 9/19/16

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\091616\
Data File : 5IK015.D
Acq On : 16 Sep 2016 2:59 pm
Operator : KKW
InstName : OVGCMS5
Sample : CAL3
Misc :
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Sep 17 16:49:01 2016
Quant Method : C:\msdchem\1\methods\091616.M
Quant Title : ENCO SOP VGCMS05; Element Cal 160601
QLast Update : Fri Aug 05 08:49:48 2016
Response via : Initial Calibration



TIC: 5IK015.D\data.ms

(20) Acetonitrile

8.417min (-0.018) 75.76 ug/L m

response 75795

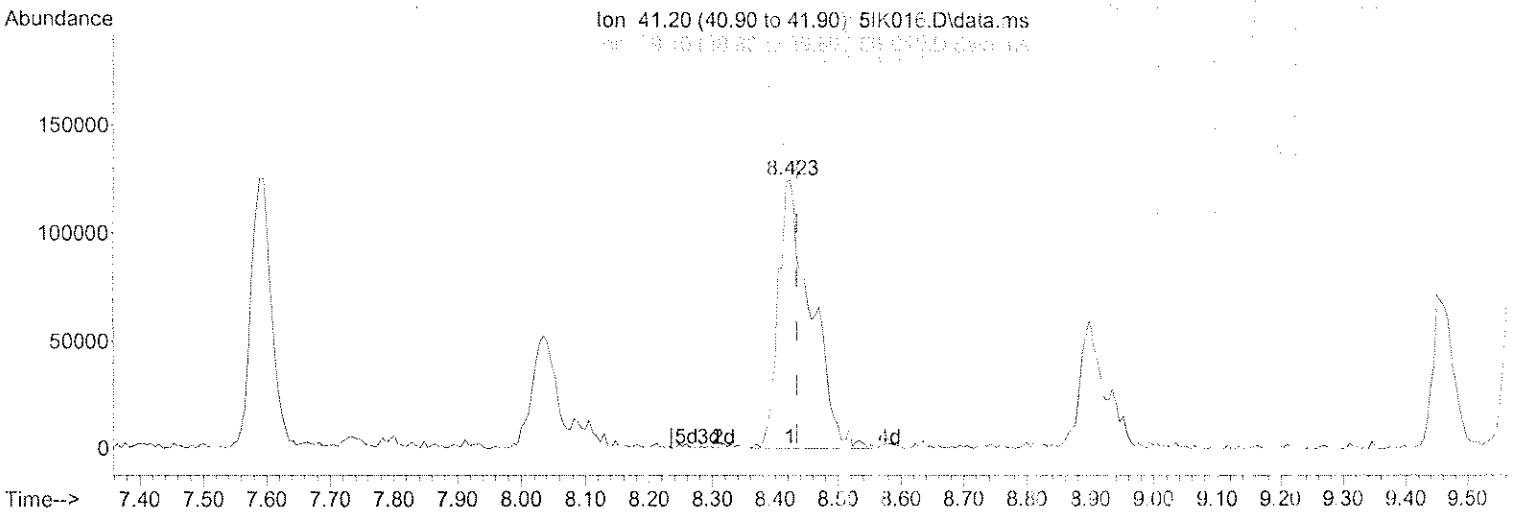
Ion	Exp%	Act%
41.20	100.00	100.00
39.10	48.30	13.29#
38.20	15.00	13.27
0.00	0.00	0.00

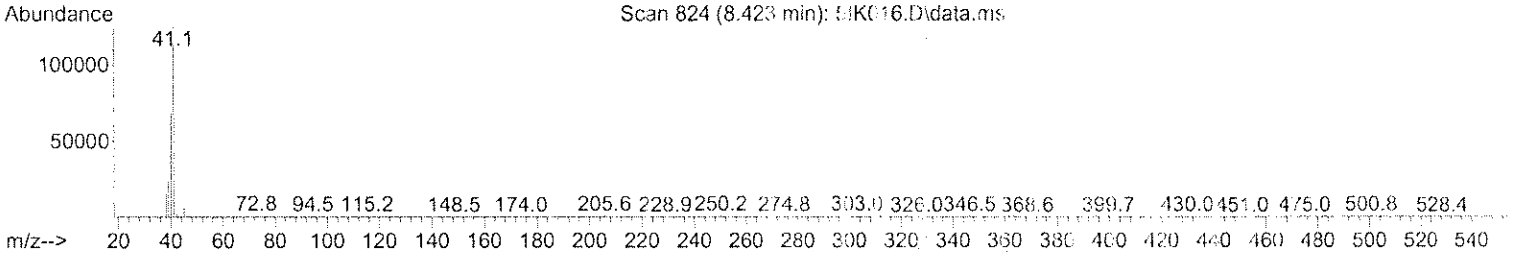
[ ] Original Integration [X] Manual Integration
Select reason for manual integration:
[ ] Poor integration (peak tailing, baseline selection)
[ ] Incorrect peak selection/Peak not found
[ ] Hump integration
[ ] Baseline drop for split peaks
[ ] ISTD reintegration
[ ] Other:
Review by/Date KKW 09/19/16
Review by/Date: 09/19/16

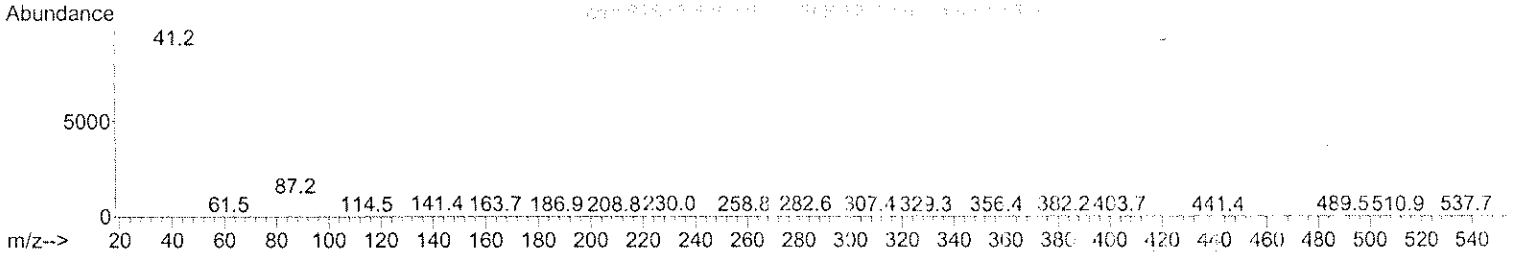
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\091616\
Data File : 5IK016.D
Acq On : 16 Sep 2016 3:29 pm
Operator : KKW
InstName : OVGCMS5
Sample : CAL4
Misc :
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Sep 17 16:49:08 2016
Quant Method : C:\msdchem\1\methods\091616.M
Quant Title : ENCO SOP VGCMS05; Element Cal 1606061
QLast Update : Fri Aug 05 08:49:48 2016
Response via : Initial Calibration







TIC: 5IK016.D\data.ms

(20) Acetonitrile

8.423min (-0.012) 470.17 ug/L

response 455755

Ion	Exp%	Act%
41.20	100.00	100.00
39.10	48.30	26.90#
38.20	15.00	11.66#
0.00	0.00	0.00

Select O/S:

[x] Original Integration [ ] Manual Integration

Select reason for manual integration:

[ ] Poor integration (peak tailing, baseline selection)

[ ] Incorrect peak selection/Peak not found

[ ] Hump integration

[ ] Baseline drop for split peaks

[ ] ISTD reintegration

[ ] Other:

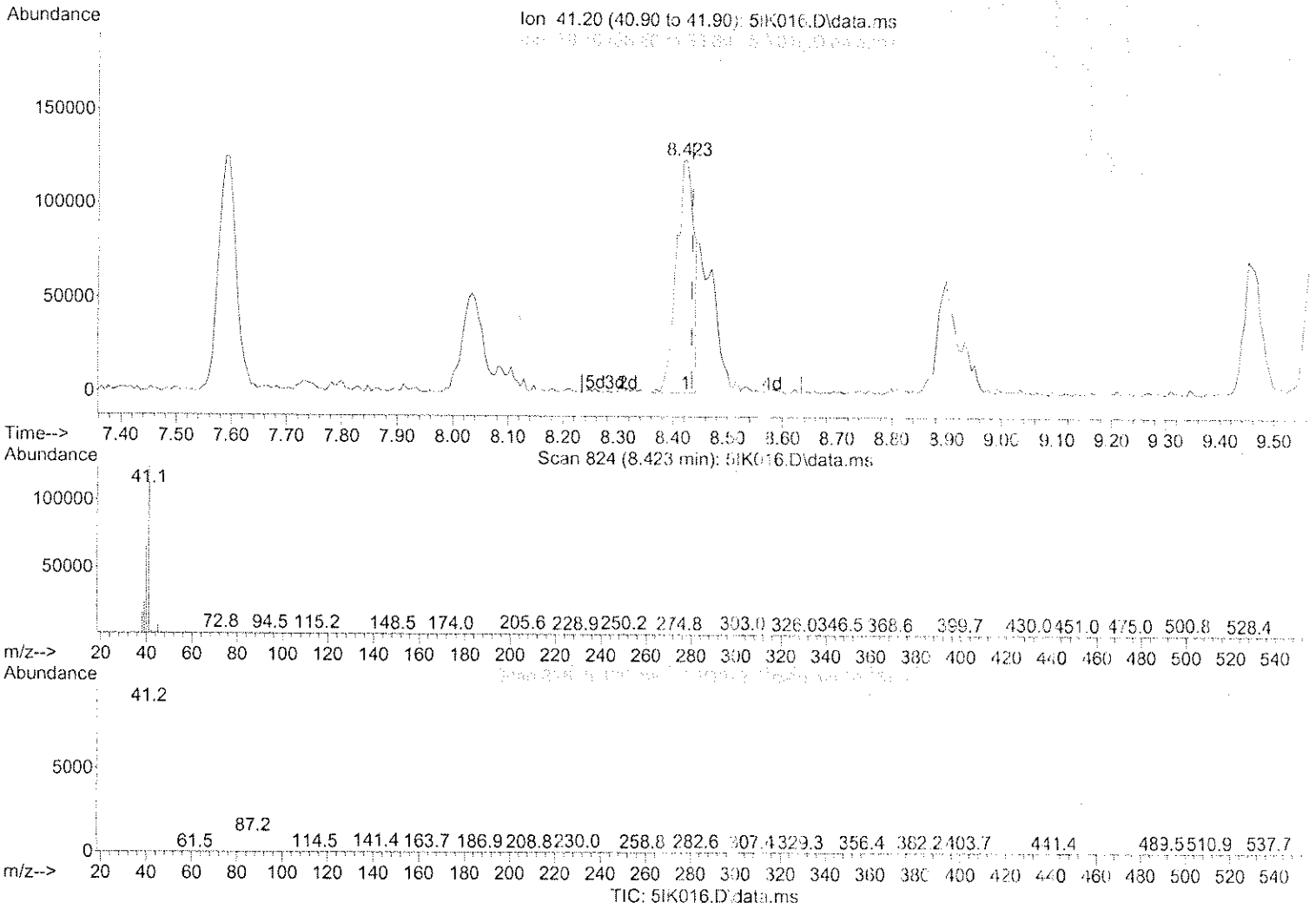
Review by/Date KKW 09/19/16

Review by/Date: KS 9/19/16

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\091616\
Data File : 5IK016.D
Acq On : 16 Sep 2016 3:29 pm
Operator : KKW
InstName : OVGCMS5
Sample : CAL4
Misc :
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Sep 17 16:49:08 2016
Quant Method : C:\msdchem\1\methods\091616.M
Quant Title : ENCO SOP VGCMS05; Element Cal 1606061
QLast Update : Fri Aug 05 08:49:48 2016
Response via : Initial Calibration



TIC: 5IK016.D\data.ms

(20) Acetonitrile

8.423min (-0.012) 285.03 ug/L m

response 276291

Ion	Exp%	Act%
41.20	100.00	100.00
39.10	48.30	44.36
38.20	15.00	19.23#
0.00	0.00	0.00

Select One:

[ ] Original Integration [X] Manual Integration

Select reason for manual integration:

[X] Poor integration (peak tailing, baseline selection)

[ ] Incorrect peak selection/Peak not found

[ ] Hump integration

[ ] Baseline drop for split peaks

[ ] ISTD reintegration

[ ] Other:

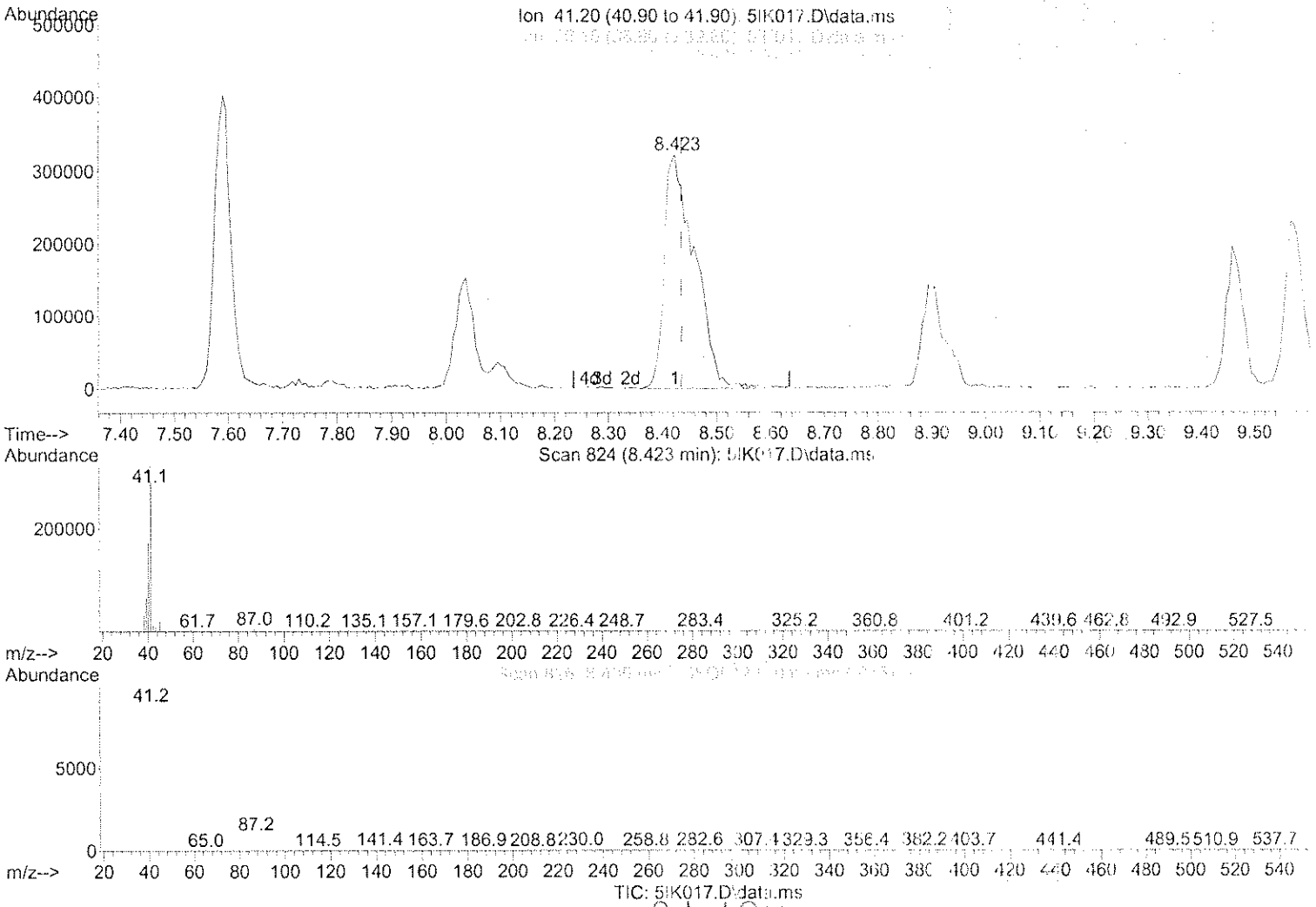
Review by/Date KKW 09/19/16

Review by/Date: 09/19/16

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\091616\
Data File : 5IK017.D
Acq On : 16 Sep 2016 3:58 pm
Operator : KKW
InstName : OVGCMS5
Sample : CAL5
Misc :
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Sep 17 16:49:14 2016
Quant Method : C:\msdchem\1\methods\091616.M
Quant Title : ENCO SOP VGCMS05; Element Cal 160606.1
QLast Update : Fri Aug 05 08:49:48 2016
Response via : Initial Calibration



TIC: 5IK017.D\data.ms

(20) Acetonitrile

8.423min (-0.012) 1237.80 ug/L

response 1281677

Ion	Exp%	Act%
41.20	100.00	100.00
39.10	48.30	28.73#
38.20	15.00	9.50#
0.00	0.00	0.00

Select One:

[X] Original Integration [ ] Manual Integration

Select reason for manual integration:

[X] Poor integration (peak tailing, baseline selection)

[ ] Incorrect peak selection/Peak not found

[ ] Hump integration

[ ] Baseline drop for split peaks

[ ] ISTD reintegration

[ ] Other:

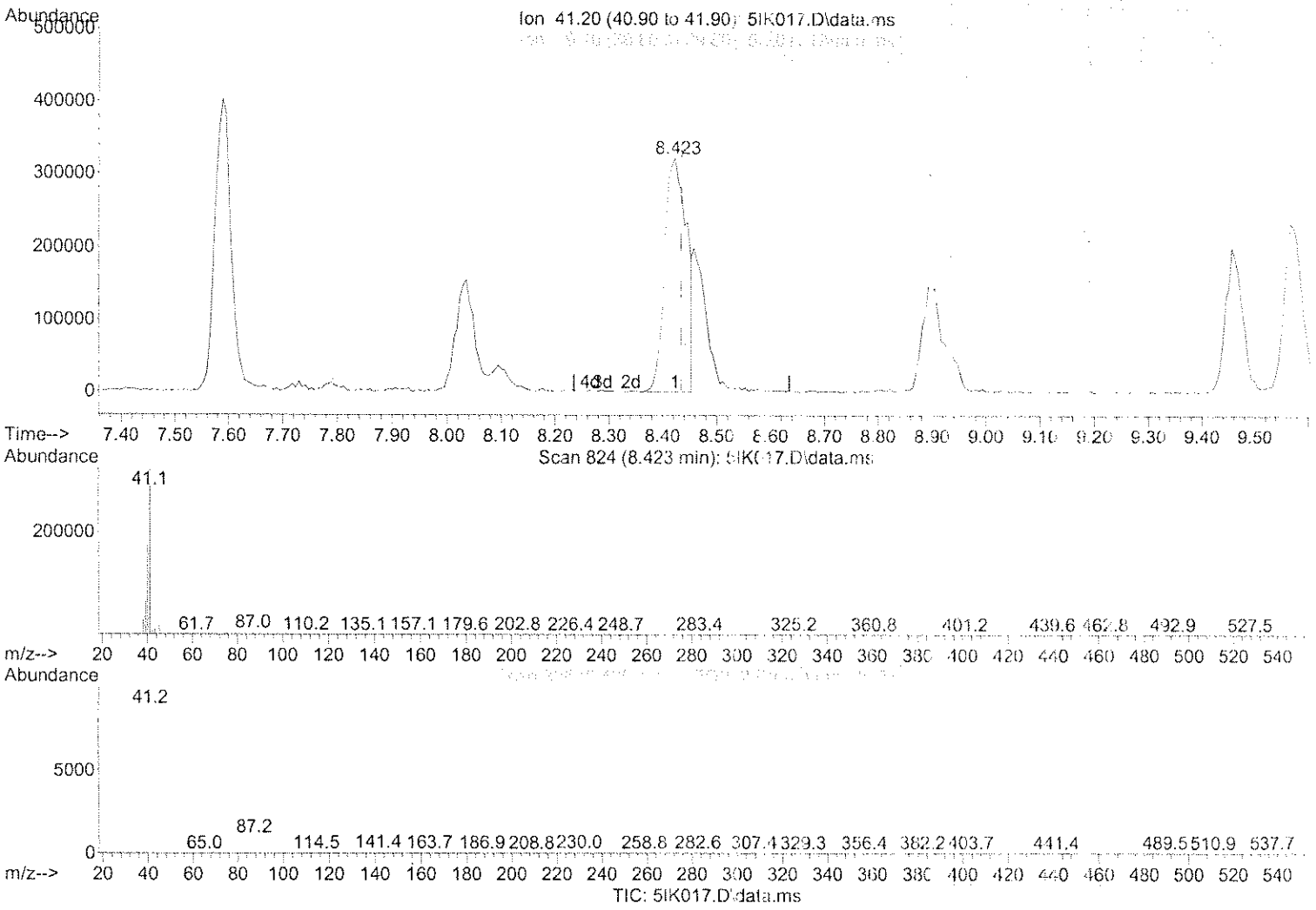
Review by/Date: KKW 09/18/16

Review by/Date: [illegible] 9/19/16

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\091616\
Data File : 5IK017.D
Acq On : 16 Sep 2016 3:58 pm
Operator : KKW
InstName : OVGCMS5
Sample : CAL5
Misc :
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Sep 17 16:49:14 2016
Quant Method : C:\msdchem\1\methods\091616.M
Quant Title : ENCO SOP VGCMS05; Element Cal 1606061
QLast Update : Fri Aug 05 08:49:48 2016
Response via : Initial Calibration



TIC: 5IK017.D\data.ms

(20) Acetonitrile

8.423min (-0.012) 892.11 ug/L m

response 923733

Ion	Exp%	Act%
41.20	100.00	100.00
39.10	48.30	39.86
38.20	15.00	13.18
0.00	0.00	0.00

Select One:

[ ] Original Integration [X] Manual Integration

Select reason for manual integration:

[X] Poor integration (peak tailing, baseline selection)

[ ] Incorrect peak selection/Peak not found

[ ] Hump integration

[ ] Baseline drop for split peaks

[ ] ISTD reintegration

[ ] Other:

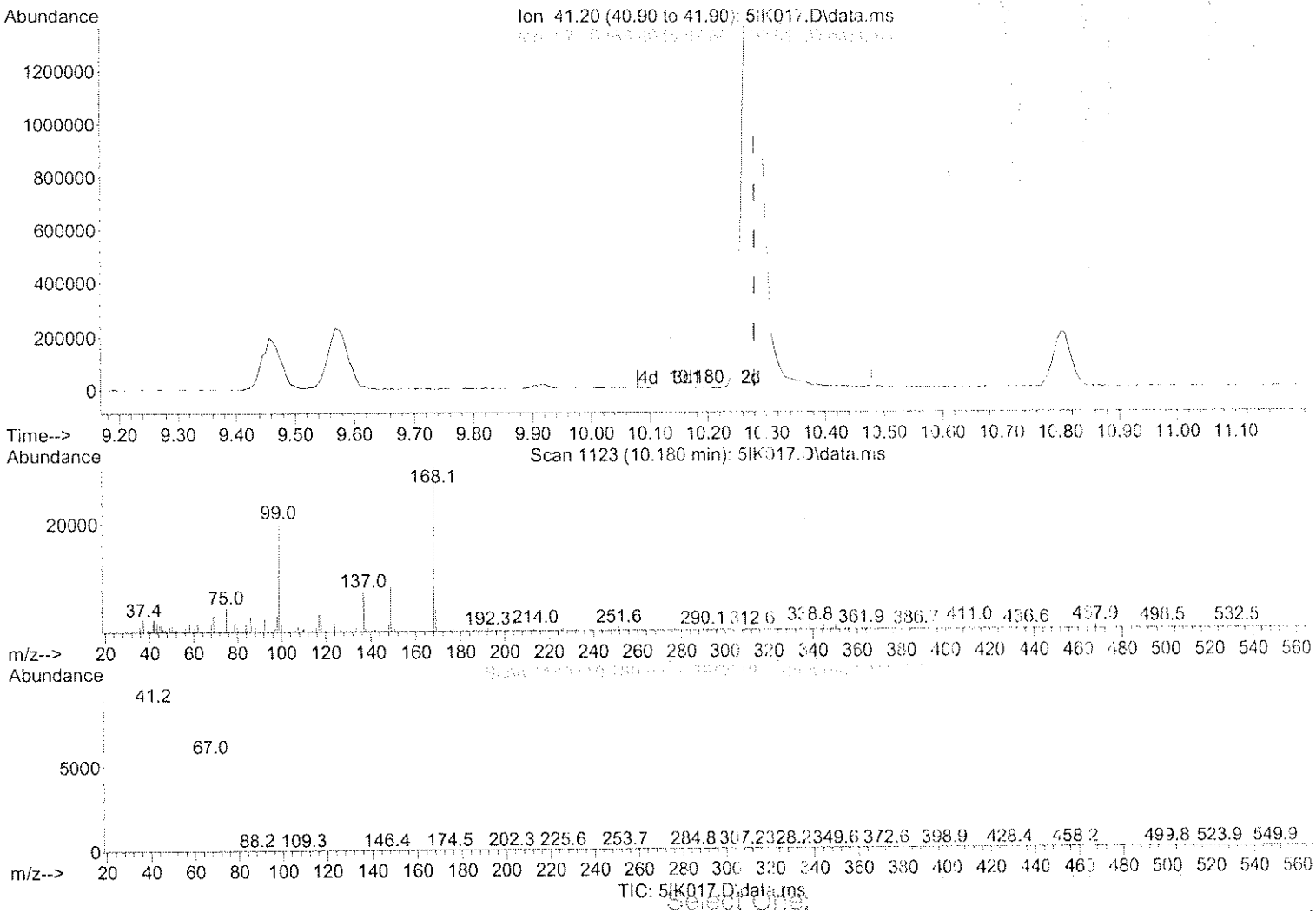
Review by/Date KKW 09/19/16

Review by/Date: 09/19/16

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\091616\
Data File : 5IK017.D
Acq On : 16 Sep 2016 3:58 pm
Operator : KKW
InstName : OVGCMS5
Sample : CAL5
Misc :
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Sep 17 16:49:14 2016
Quant Method : C:\msdchem\1\methods\091616.M
Quant Title : ENCO SOP VGCMS05; Element Cal 160606.1
QLast Update : Fri Aug 05 08:49:48 2016
Response via : Initial Calibration



(37) Methacrylonitrile

10.180min (-0.100) 0.40 ug/L

response 2135

Ion	Exp%	Act%
41.20	100.00	100.00
67.10	50.90	55.08
0.00	0.00	0.00
0.00	0.00	0.00

Select One:

[X] Original Integration [ ] Manual Integration

Select reason for manual integration:

[ ] Poor integration (peak tailing, baseline selection)

[X] Incorrect peak selection/Peak not found

[ ] Hump integration

[ ] Baseline drop for split peaks

[ ] ISTD reintegration

[ ] Other:

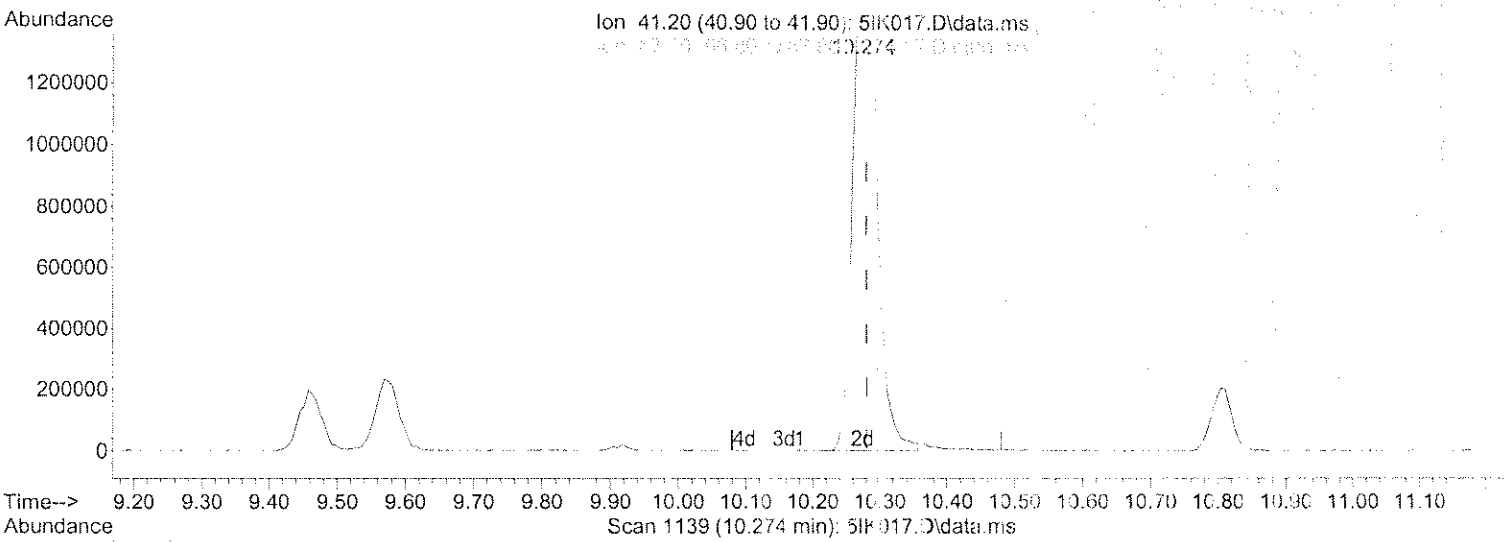
Review by/Date KKW 09/19/16

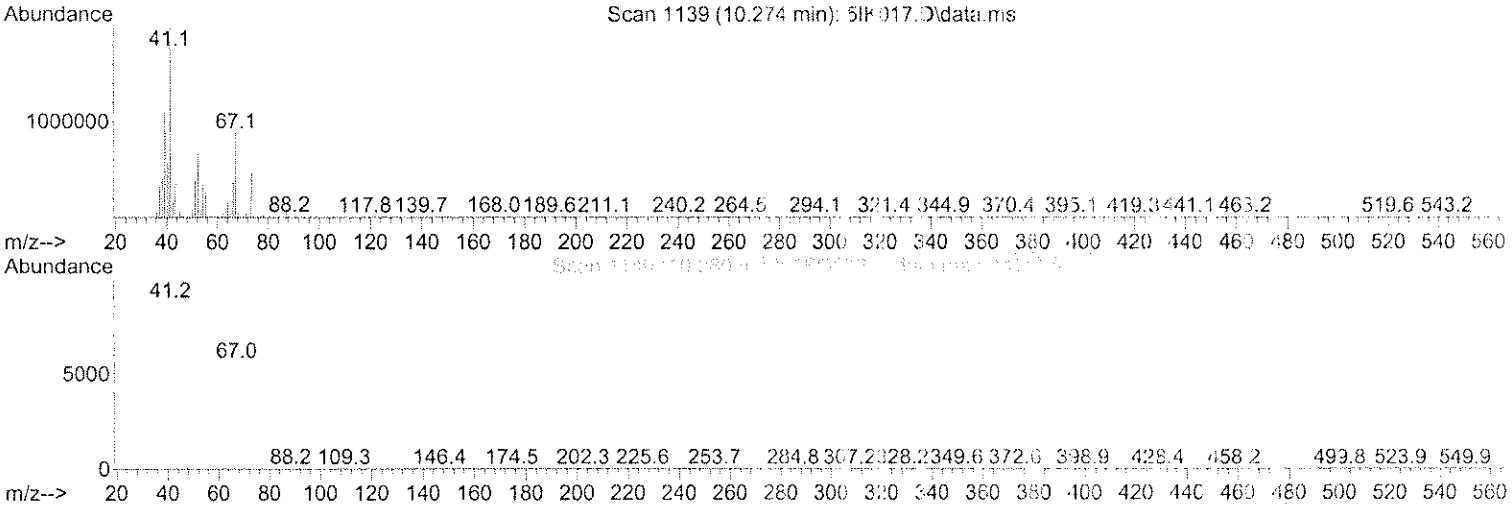
Review by/Date: [illegible] 9/19/16

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\091616\
Data File : 5IK017.D
Acq On : 16 Sep 2016 3:58 pm
Operator : KKW
InstName : OVGCMS5
Sample : CAL5
Misc :
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Sep 17 16:49:14 2016
Quant Method : C:\msdchem\1\methods\091616.M
Quant Title : ENCO SOP VGCMS05; Element Cal 160606.1
QLast Update : Fri Aug 05 08:49:48 2016
Response via : Initial Calibration





TIC: 5IK017.D\data.ms

(37) Methacrylonitrile

10.274min (-0.006) 847.72 ug/L m

response 4495820

Ion	Exp%	Act%
41.20	100.00	100.00
67.10	50.90	0.03#
0.00	0.00	0.00
0.00	0.00	0.00

Select One:

[] Original Integration [X] Manual Integration

Select reason for manual integration:

[] Poor integration (peak tailing, baseline selection)

[X] Incorrect peak selection/Peak not found

[] Hump integration

[] Baseline drop for split peaks

[] ISTD reintegration

[] Other:

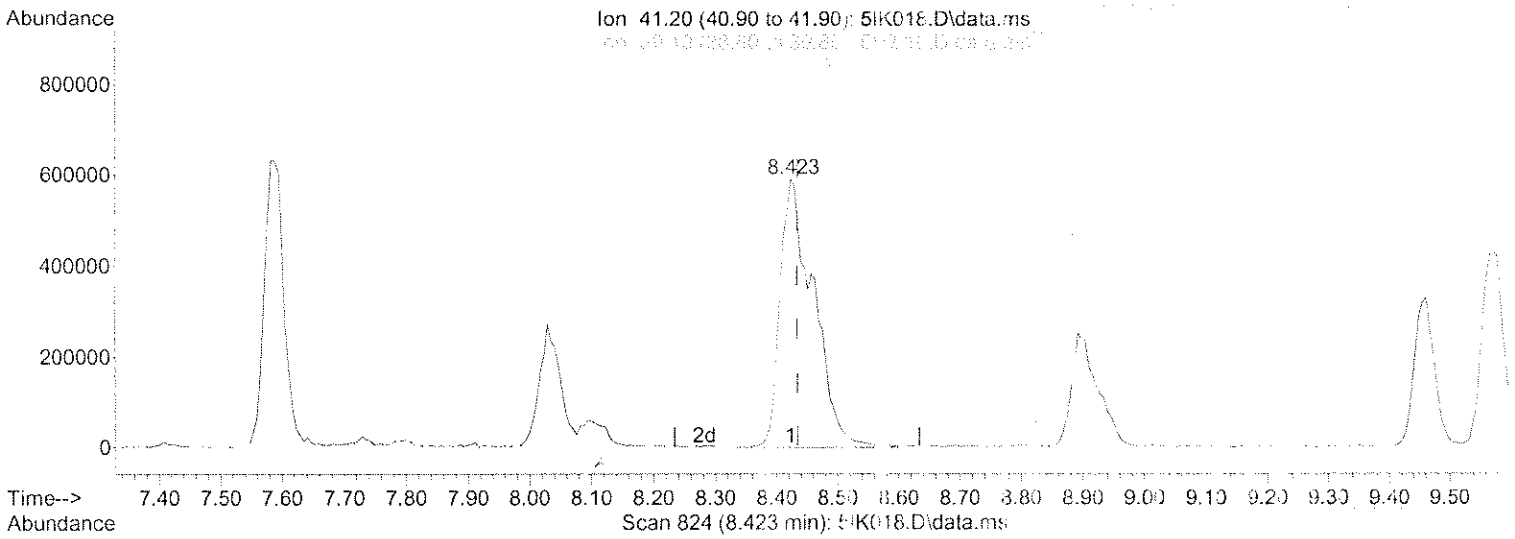
Review by/Date KKW 09/19/16

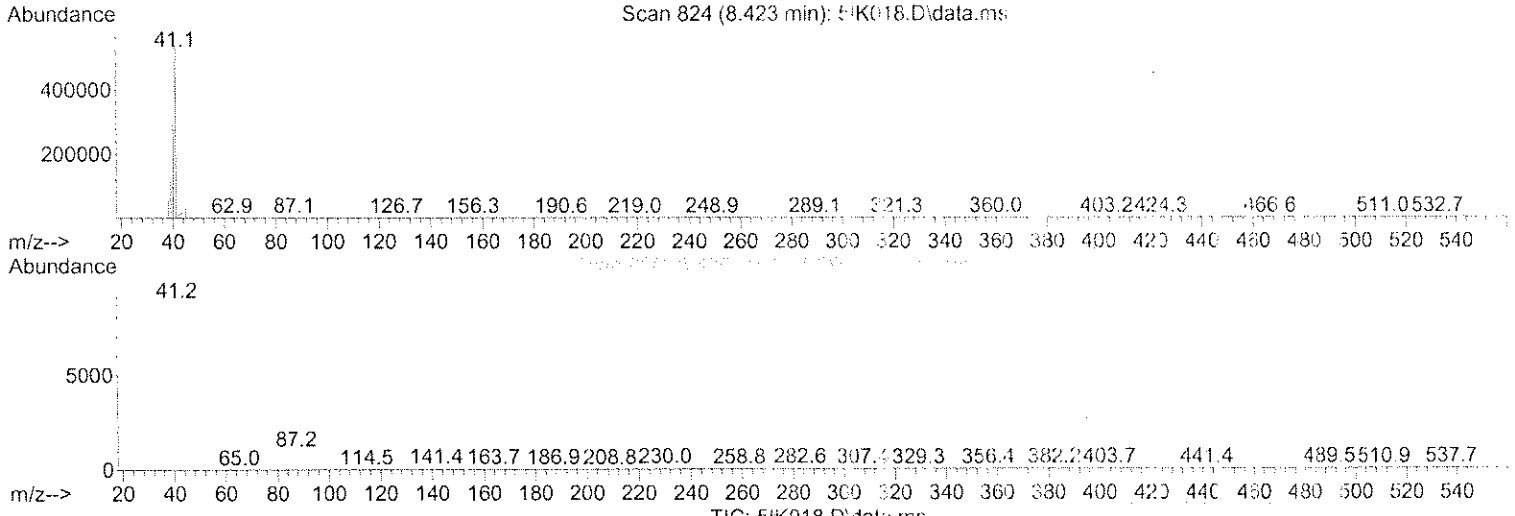
Review by/Date: 09/19/16

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\091616\
Data File : 5IK018.D
Acq On : 16 Sep 2016 4:28 pm
Operator : KKW
InstName : OVGCMS5
Sample : CAL6
Misc :
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Sep 17 16:49:19 2016
Quant Method : C:\msdchem\1\methods\091616.M
Quant Title : ENCO SOP VGCMS05; Element Cal 1606061
QLast Update : Fri Aug 05 08:49:48 2016
Response via : Initial Calibration





TIC: 5IK018.D\data.ms

(20) Acetonitrile

8.423min (-0.012) 2047.05 ug/L

response 2268559

Ion	Exp%	Act%
41.20	100.00	100.00
39.10	48.30	27.23#
38.20	15.00	9.65#
0.00	0.00	0.00

Select One:

[X] Original Integration [ ] Manual Integration

Select reason for manual integration:

[X] Poor integration (peak tailing, baseline selection)

[ ] Incorrect peak selection/Peak not found

[ ] Hump integration

[ ] Baseline drop for split peaks

[ ] ISTD reintegration

[ ] Other:

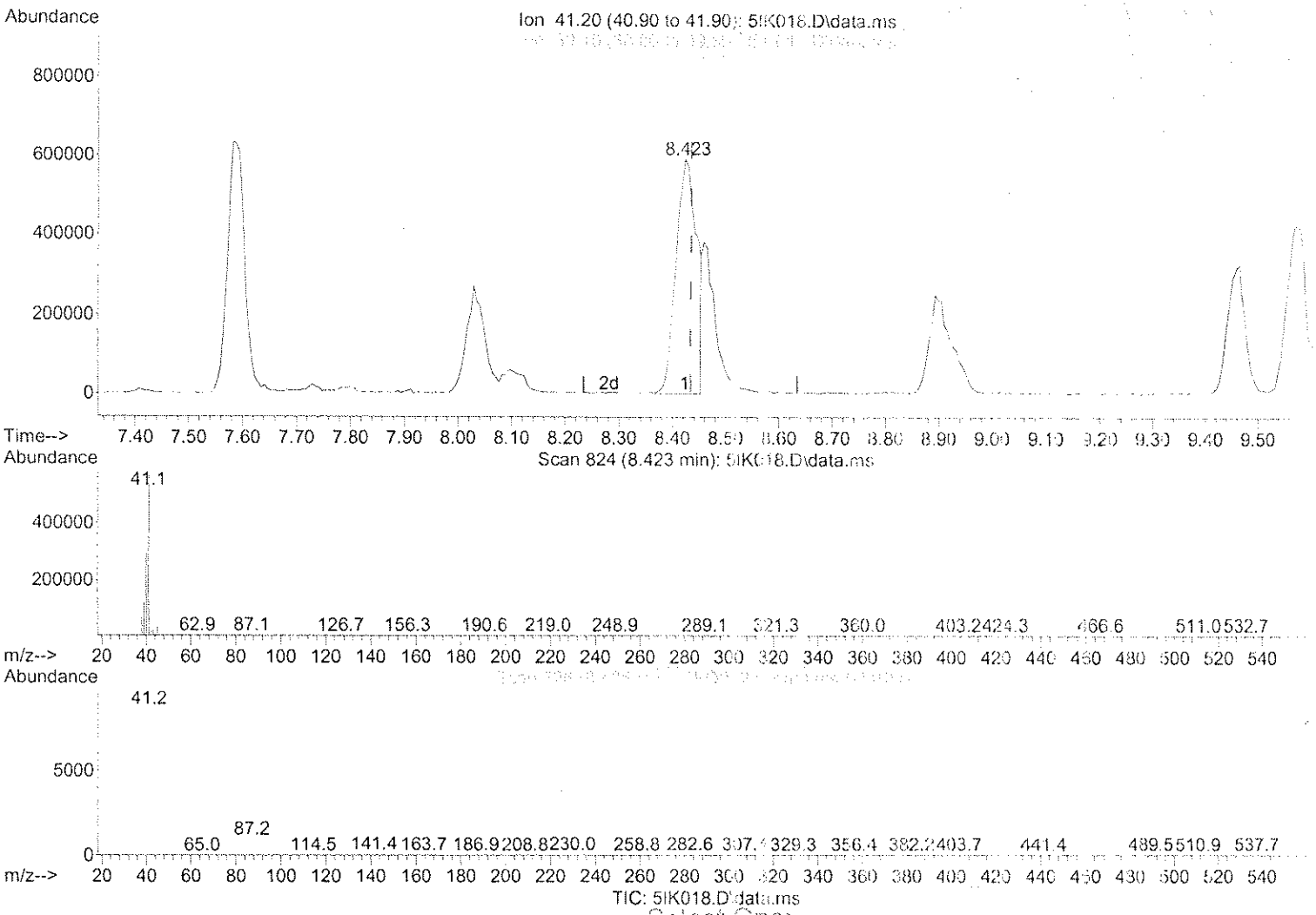
Review by/Date KKW 09/19/16

Review by/Date: [illegible] 9/19/16

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\091616\
Data File : 5IK018.D
Acq On : 16 Sep 2016 4:28 pm
Operator : KKW
InstName : OVGCMS5
Sample : CAL6
Misc :
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Sep 17 16:49:19 2016
Quant Method : C:\msdchem\1\methods\091616.M
Quant Title : ENCO SOP VGCMS05; Element Cal 1606061
QLast Update : Fri Aug 05 08:49:48 2016
Response via : Initial Calibration



(20) Acetonitrile

8.423min (-0.012) 1432.13 ug/L m

response 1587098

Ion	Exp%	Act%
41.20	100.00	100.00
39.10	48.30	38.92
38.20	15.00	13.79
0.00	0.00	0.00

Select One:

[ ] Original Integration [X] Manual Integration

Select reason for manual integration:

[X] Poor integration (peak tailing, baseline selection)

[ ] Incorrect peak selection/Peak not found

[ ] Hump integration

[ ] Baseline drop for split peaks

[ ] ISTD reintegration

[ ] Other:

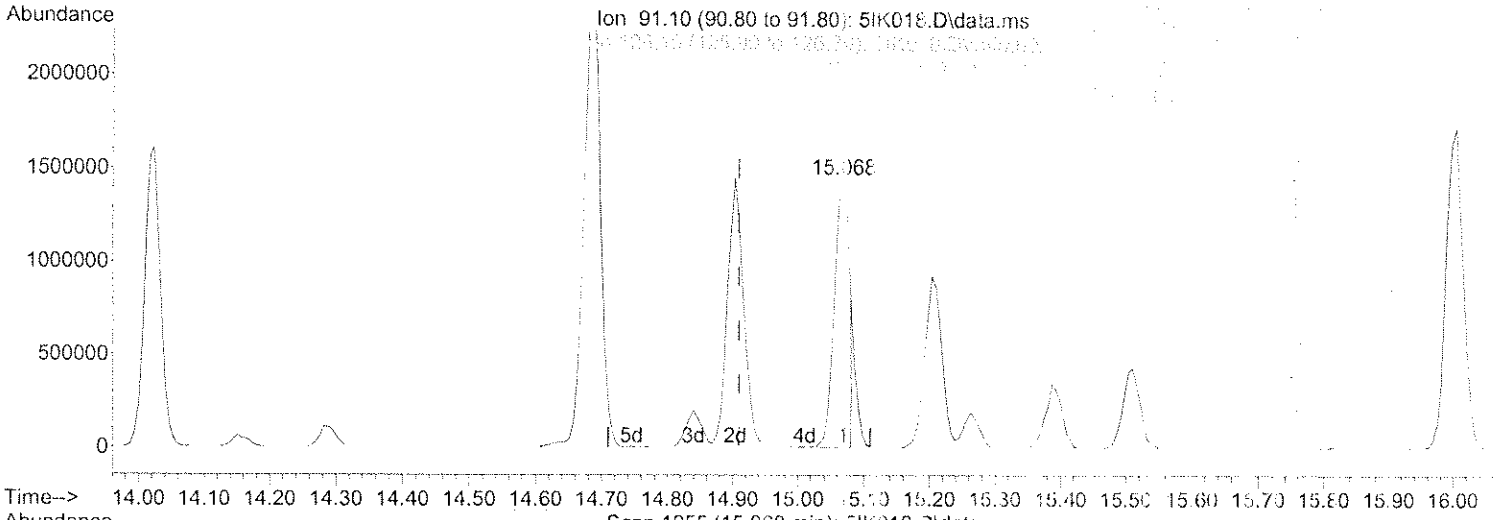
Review by/Date KKW 09/18/16

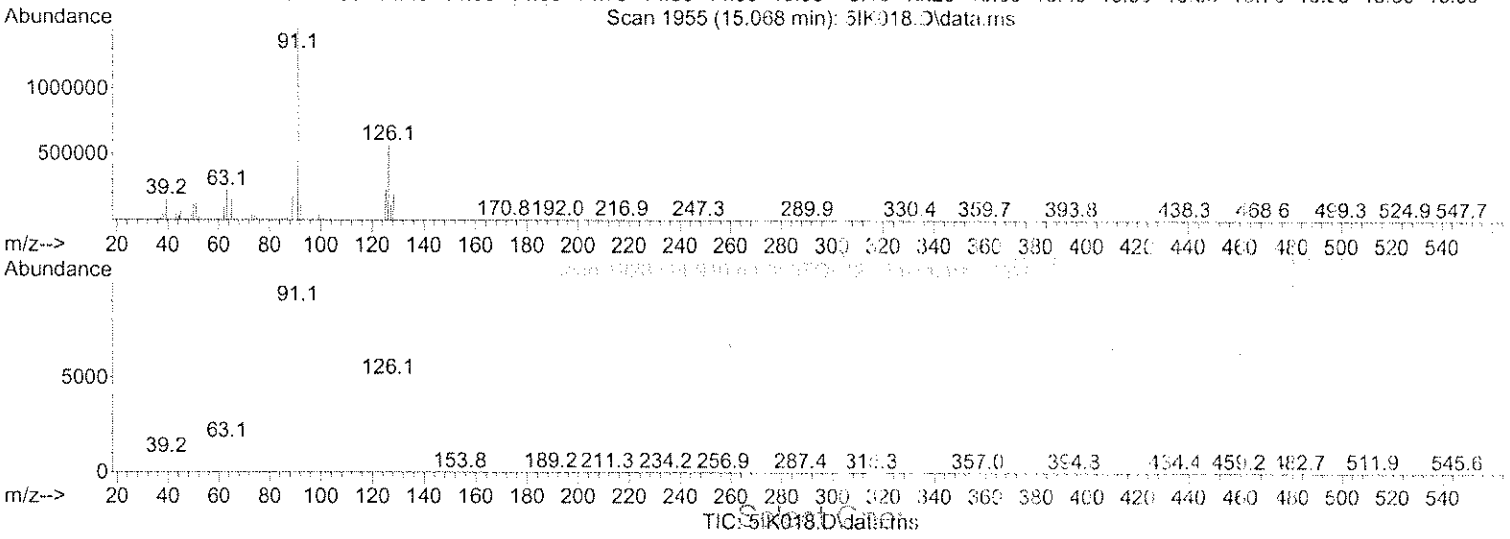
Review by/Date: CR 9/19/16

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\091616\
Data File : 5IK018.D
Acq On : 16 Sep 2016 4:28 pm
Operator : KKW
InstName : OVGCMS5
Sample : CAL6
Misc :
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Sep 17 16:49:19 2016
Quant Method : C:\msdchem\1\methods\091616.M
Quant Title : ENCO SOP VGCMS05; Element Cal 1606061
QLast Update : Fri Aug 05 08:49:48 2016
Response via : Initial Calibration





TIC: 5IK018.D\data.ms

(84) 2-Chlorotoluene

15.068min (+ 0.159) 91.30 ug/L

response 2357879

Ion	Exp%	Act%
91.10	100.00	100.00
126.10	44.80	39.52
63.10	13.20	15.46
0.00	0.00	0.00

[X] Original Integration [ ] Manual Integration

Select reason for manual integration:

[ ] Poor integration (peak tailing, baseline selection)

[X] Incorrect peak selection/Peak not found

[ ] Hump integration

[ ] Baseline drop for split peaks

[ ] ISTD reintegration

[ ] Other:

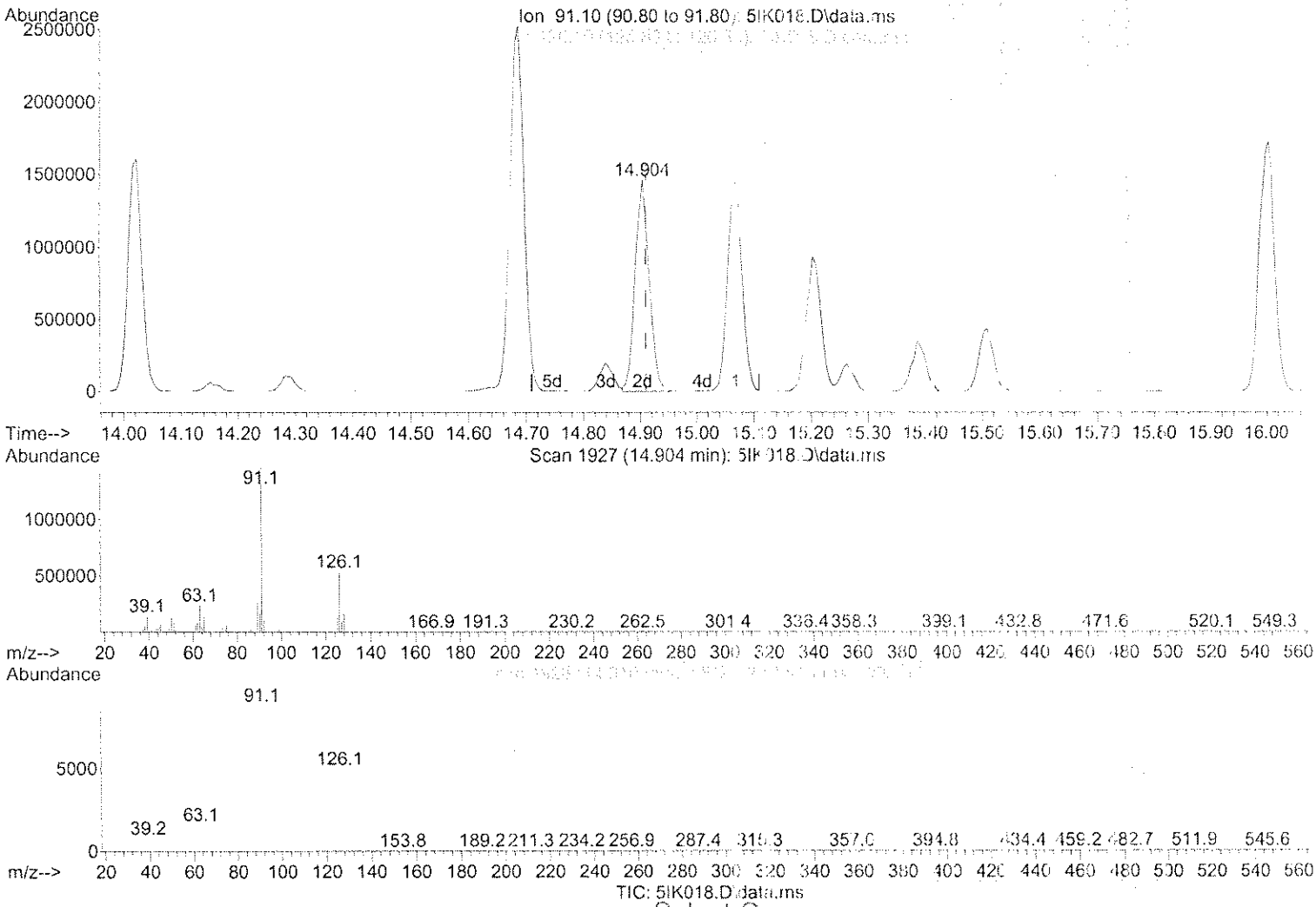
Review by/Date KKW 09/19/16

Review by/Date: AJ 9/19/16

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\091616\
Data File : 5IK018.D
Acq On : 16 Sep 2016 4:28 pm
Operator : KKW
InstName : OVGCMS5
Sample : CAL6
Misc :
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Sep 17 16:49:19 2016
Quant Method : C:\msdchem\1\methods\091616.M
Quant Title : ENCO SOP VGCMS05; Element Cal 1606061
QLast Update : Fri Aug 05 08:49:48 2016
Response via : Initial Calibration



TIC: 5IK018.D\data.ms

(84) 2-Chlorotoluene

14.904min (-0.006) 98.24 ug/L m

response 2537310

Ion	Exp%	Act%
91.10	100.00	100.00
126.10	44.80	36.73
63.10	13.20	14.36
0.00	0.00	0.00

Select One:

[ ] Original Integration [X] Manual Integration

Select reason for manual integration:

[ ] Poor integration (peak tailing, baseline selection)

[X] Incorrect peak selection/Peak not found

[ ] Hump integration

[ ] Baseline drop for split peaks

[ ] ISTD reintegration

[ ] Other:

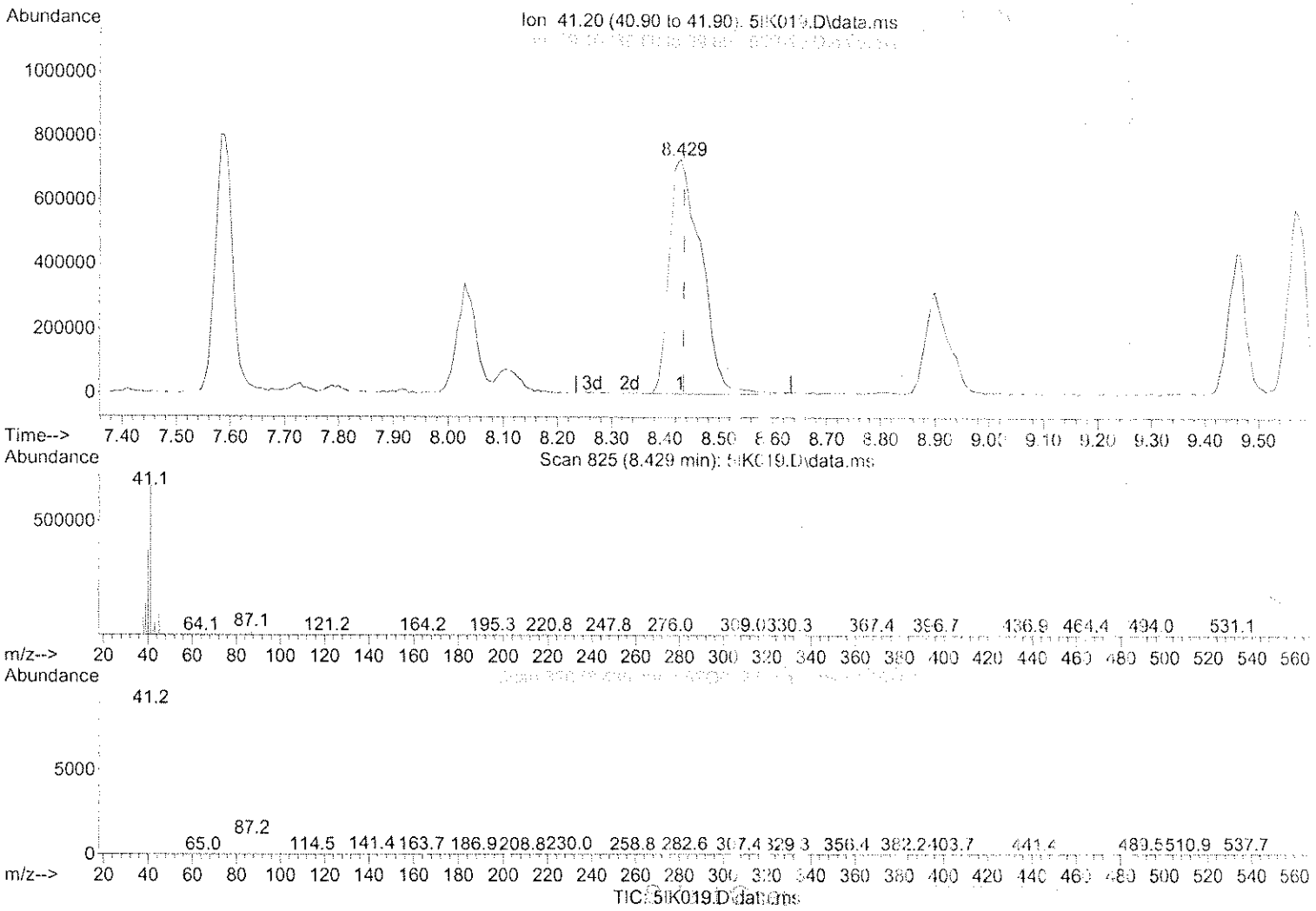
Review by/Date: KW 09/19/16

Review by/Date: 09/19/16

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\091616\
Data File : 5IK019.D
Acq On : 16 Sep 2016 4:58 pm
Operator : KKW
InstName : OVGCMS5
Sample : CAL7
Misc :
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Sep 17 16:49:27 2016
Quant Method : C:\msdchem\1\methods\091616.M
Quant Title : ENCO SOP VGCMS05; Element Cal 160601
QLast Update : Fri Aug 05 08:49:48 2016
Response via : Initial Calibration



(20) Acetonitrile

8.429min (-0.006) 2651.51 ug/L

response 3042099

Ion	Exp%	Act%
41.20	100.00	100.00
39.10	48.30	24.95#
38.20	15.00	9.75#
0.00	0.00	0.00

[X] Original Integration [ ] Manual Integration

Select reason for manual integration:

[X] Poor integration (peak tailing, baseline selection)

[ ] Incorrect peak selection/Peak not found

[ ] Hump integration

[ ] Baseline drop for split peaks

[ ] ISTD reintegration

[ ] Other:

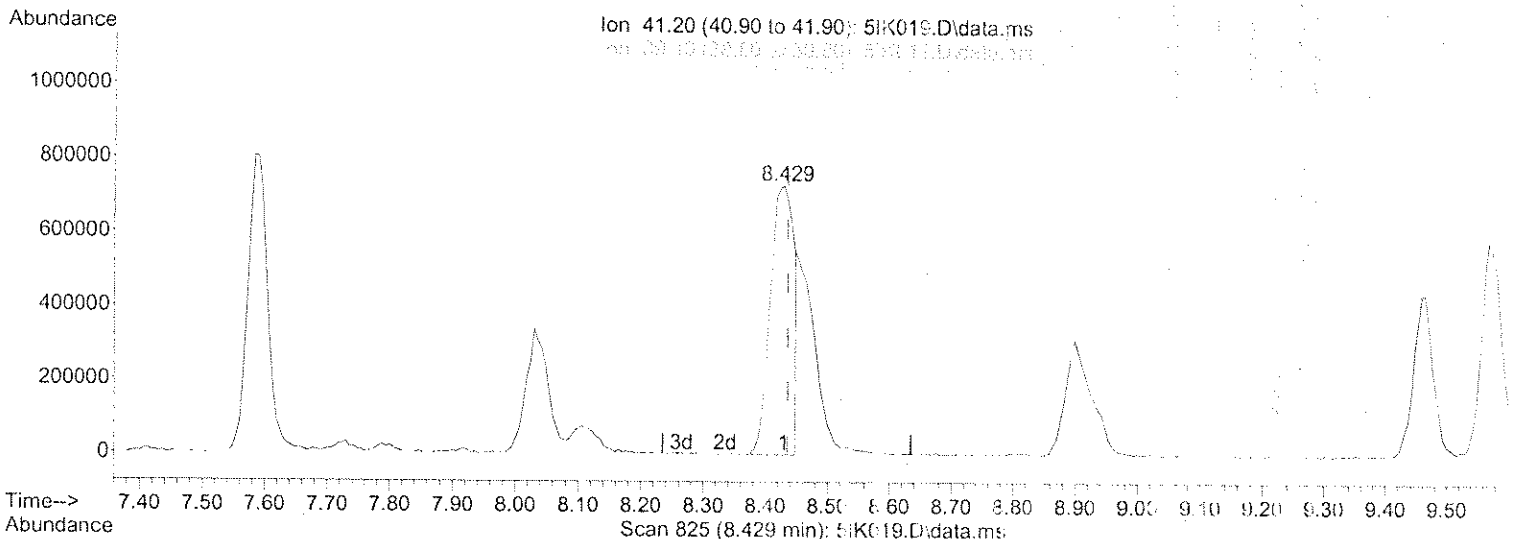
Review by/Date KKW 09/19/16

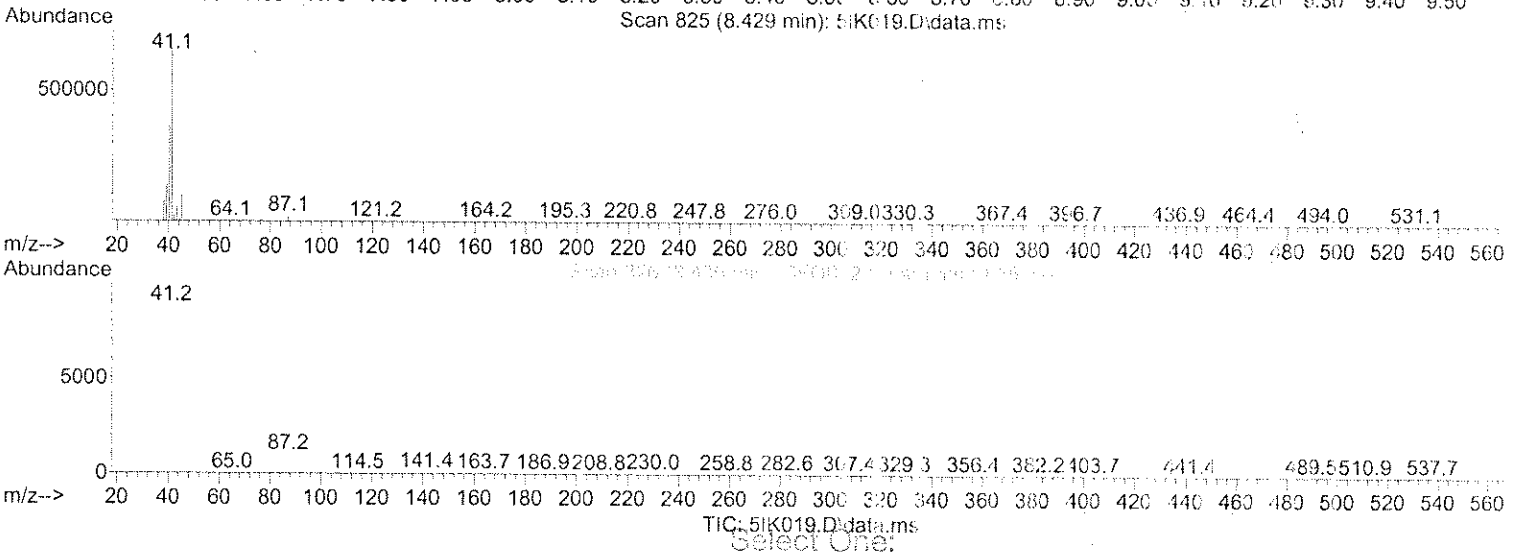
Review by/Date: 09/19/16

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\091616\
Data File : 5IK019.D
Acq On : 16 Sep 2016 4:58 pm
Operator : KKW
InstName : OVGCMS5
Sample : CAL7
Misc :
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Sep 17 16:49:27 2016
Quant Method : C:\msdchem\1\methods\091616.M
Quant Title : ENCO SOP VGCMS05; Element Cal 1606001
QLast Update : Fri Aug 05 08:49:48 2016
Response via : Initial Calibration





(20) Acetonitrile

8.429min (-0.006) 1659.75 ug/L m

response 1904249

Ion	Exp%	Act%
41.20	100.00	100.00
39.10	48.30	39.85
38.20	15.00	15.58
0.00	0.00	0.00

Select One:

[ ] Original Integration [X] Manual Integration

Select reason for manual integration:

[X] Poor integration (peak tailing, baseline selection)

[ ] Incorrect peak selection/Peak not found

[ ] Hump integration

[ ] Baseline drop for split peaks

[ ] STD reintegration

[ ] Other:

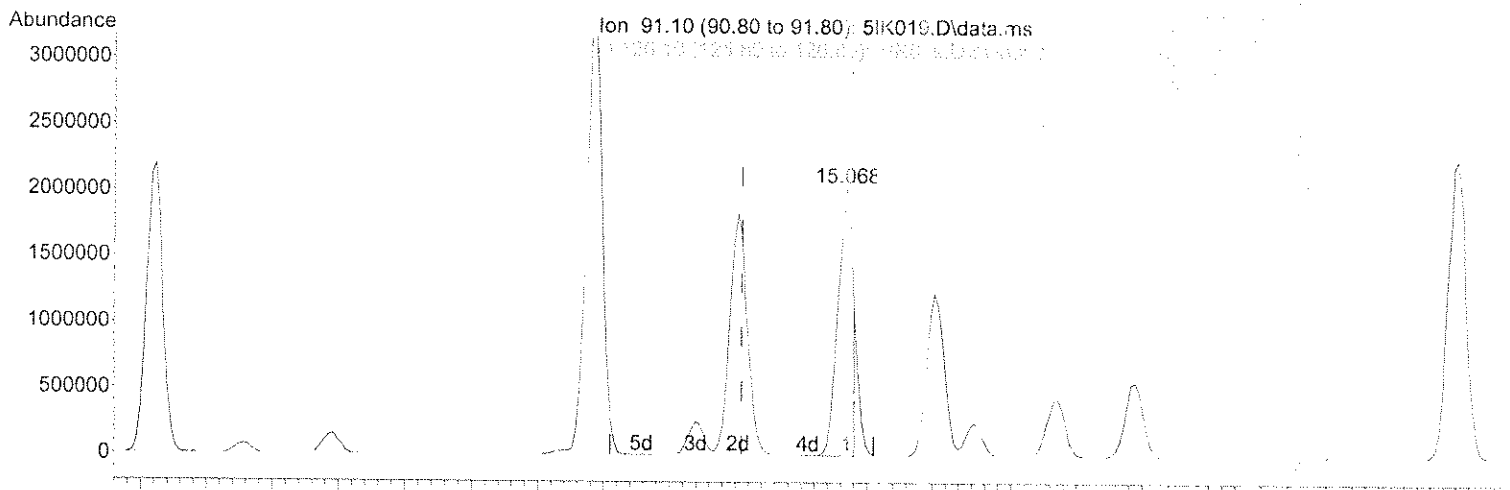
Review by/Date KW 09/19/16

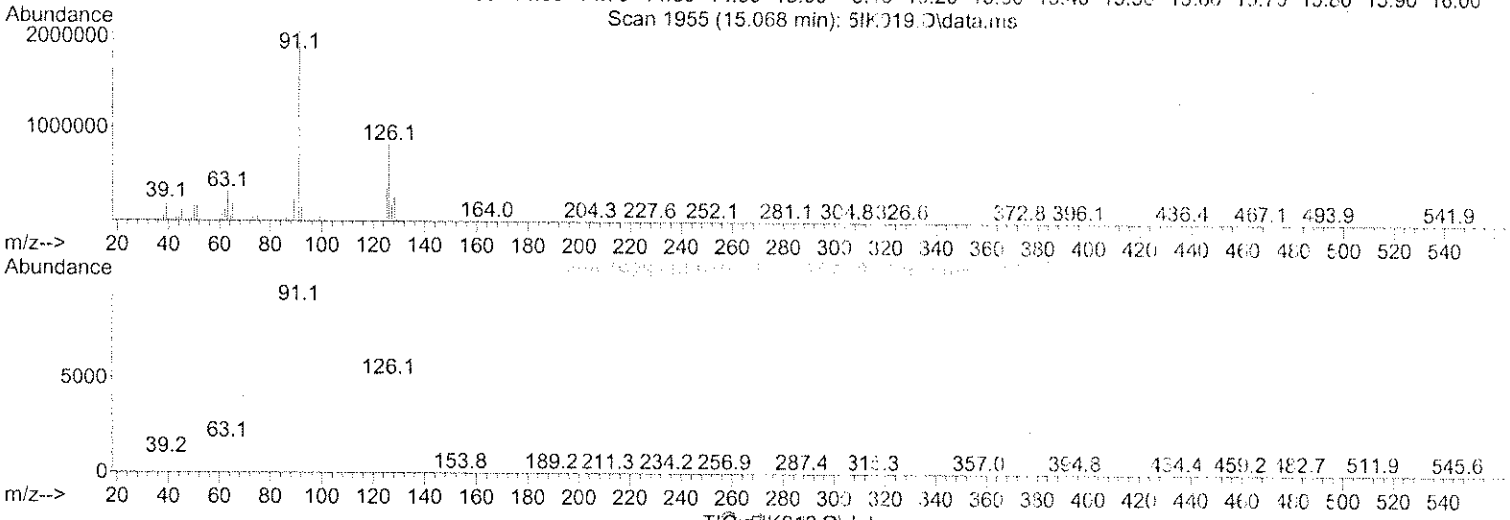
Review by/Date: [illegible] 9/19/16

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\091616\
Data File : 5IK019.D
Acq On : 16 Sep 2016 4:58 pm
Operator : KKW
InstName : OVGCMS5
Sample : CAL7
Misc :
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Sep 17 16:49:27 2016
Quant Method : C:\msdchem\1\methods\091616.M
Quant Title : ENCO SOP VGCMS05; Element Cal 160606.1
QLast Update : Fri Aug 05 08:49:48 2016
Response via : Initial Calibration





TIC: 5IK019.D\data.ms

(84) 2-Chlorotoluene

15.068min (+ 0.159) 117.35 ug/L

response 3172664

Ion	Exp%	Act%
91.10	100.00	100.00
126.10	44.80	39.44
63.10	13.20	15.50
0.00	0.00	0.00

Select One:

[ ] Original Integration [ ] Manual Integration

Select reason for manual integration:

[ ] Poor integration (peak tailing, baseline selection)

[ ] Incorrect peak selection/Peak not found

[ ] Hump integration

[ ] Baseline drop for split peaks

[ ] ISTD reintegration

[ ] Other:

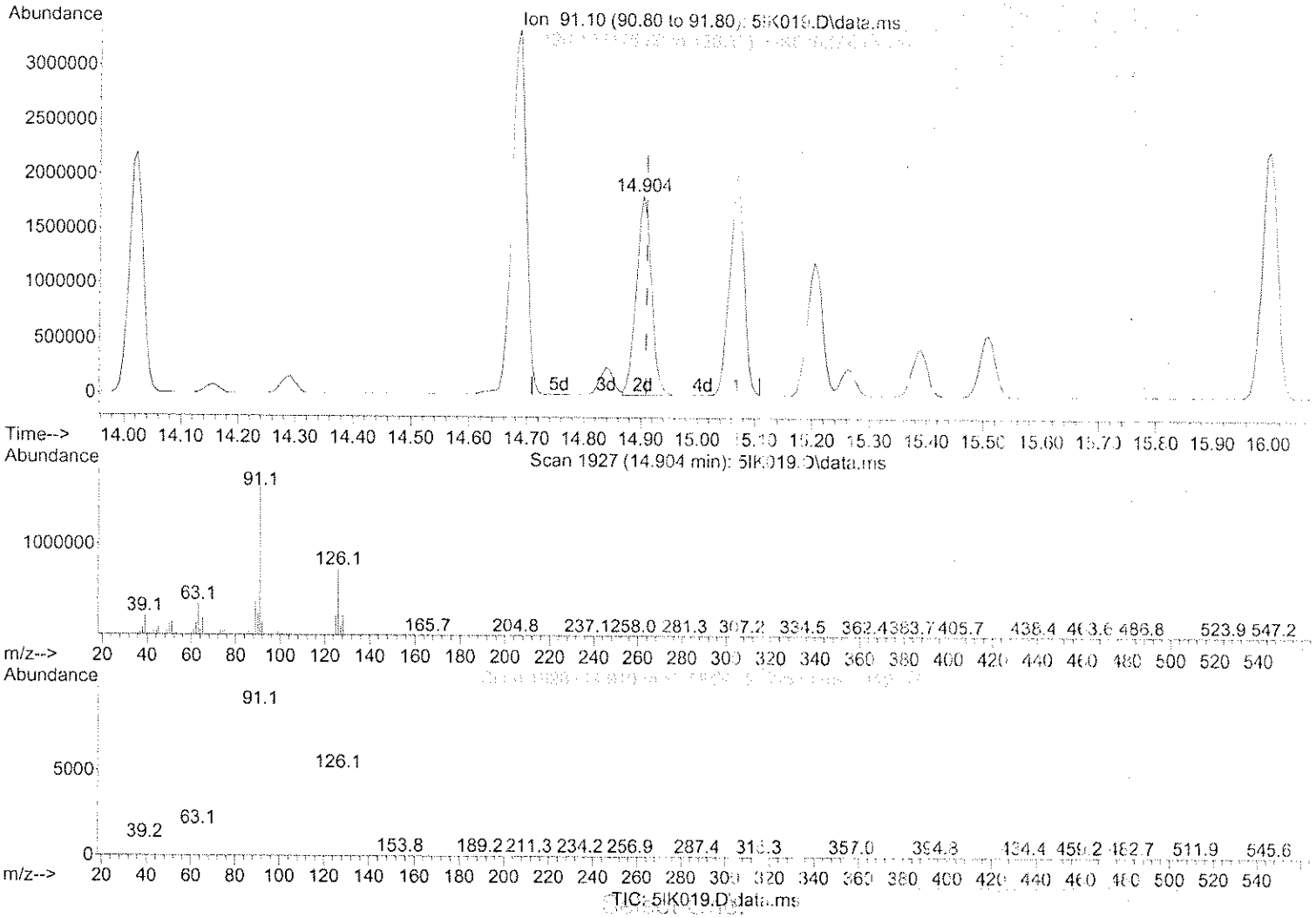
Review by/Date: KKW 9/19/16

Review by/Date: AG 9/19/16

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\091616\
Data File : 5IK019.D
Acq On : 16 Sep 2016 4:58 pm
Operator : KKW
InstName : OVGCMS5
Sample : CAL7
Misc :
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Sep 17 16:49:27 2016
Quant Method : C:\msdchem\1\methods\091616.M
Quant Title : ENCO SOP VGCMS05; Element Cal 1606061
QLast Update : Fri Aug 05 08:49:48 2016
Response via : Initial Calibration



TIC: 5IK019.D\data.ms

(84) 2-Chlorotoluene

14.904min (-0.006) 125.05 ug/L m

response 3380851

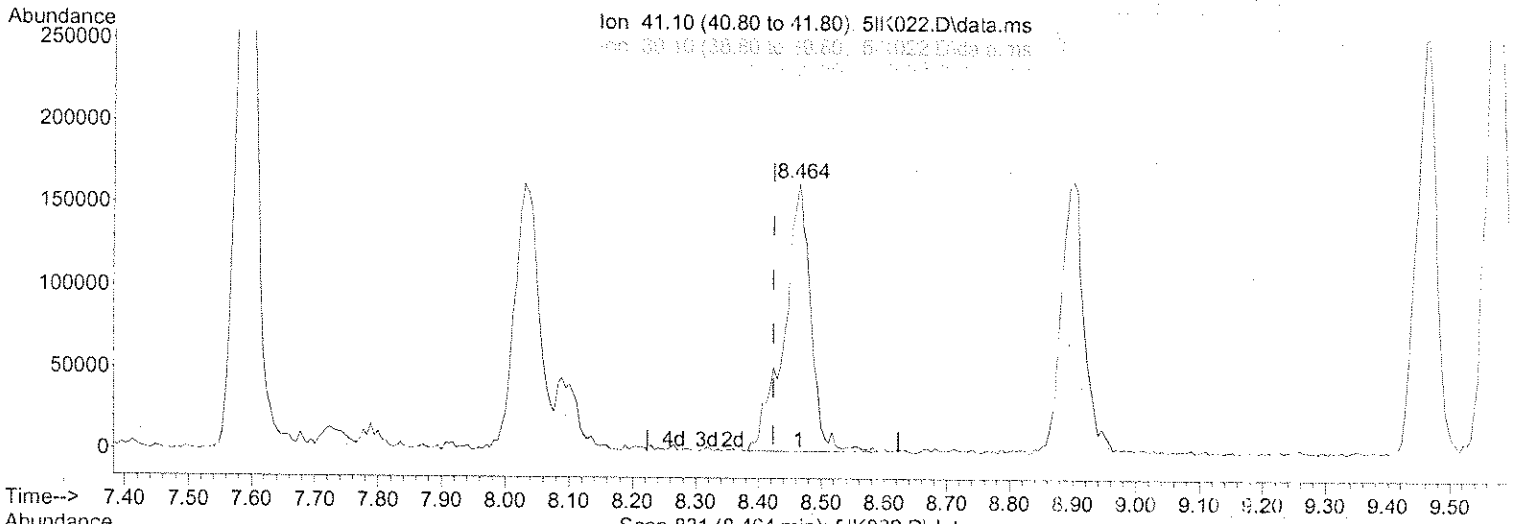
Ion	Exp%	Act%
91.10	100.00	100.00
126.10	44.80	37.01
63.10	13.20	14.55
0.00	0.00	0.00

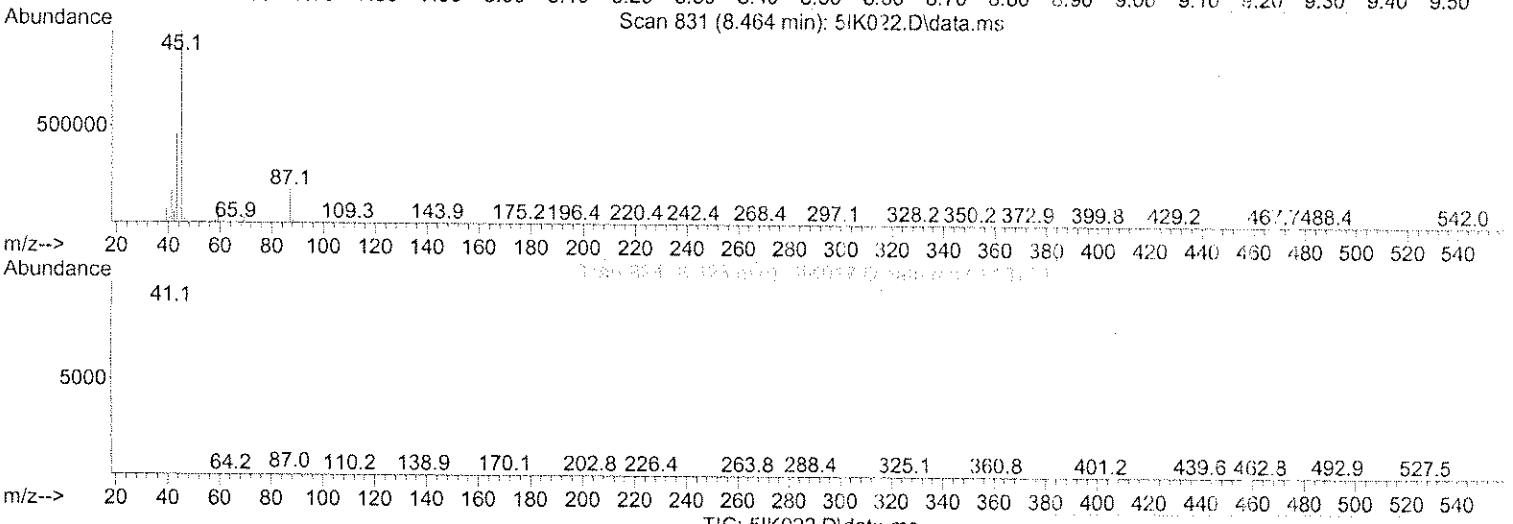
[ ] Original Integration [ ] Manual Integration
Select reason for manual integration:
[ ] Poor integration (peak tailing, baseline selection)
[X] Incorrect peak selection/Peak not found
[ ] Hump integration
[ ] Baseline drop for split peaks
[ ] ISTD reintegration
[ ] Other:
Review by/Date KKW 09/19/16
Review by/Date: [illegible] 9/19/16

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\091616\
Data File : 5IK022.D
Acq On : 16 Sep 2016 6:27 pm
Operator : KKW
InstName : OVGCMS5
Sample : SCV1
Misc :
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Sep 19 08:52:47 2016
Quant Method : C:\msdchem\1\methods\091616.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Mon Sep 19 08:51:53 2016
Response via : Initial Calibration





TIC: 5IK022.D\data.ms

(20) Acetonitrile

8.464min (+ 0.041) 255.27 ug/L

response 487163

Ion	Exp%	Act%
41.10	100.00	100.00
39.10	39.90	41.35
38.10	13.20	2.12#
0.00	0.00	0.00

Select One:

[X] Original Integration [ ] Manual Integration

Select reason for manual integration:

[ ] Poor integration (peak tailing, baseline selection)

[ ] Incorrect peak selection/Peak not found

[ ] Hump integration

[ ] Baseline drop for split peaks

[ ] ISTD reintegration

[ ] Other:

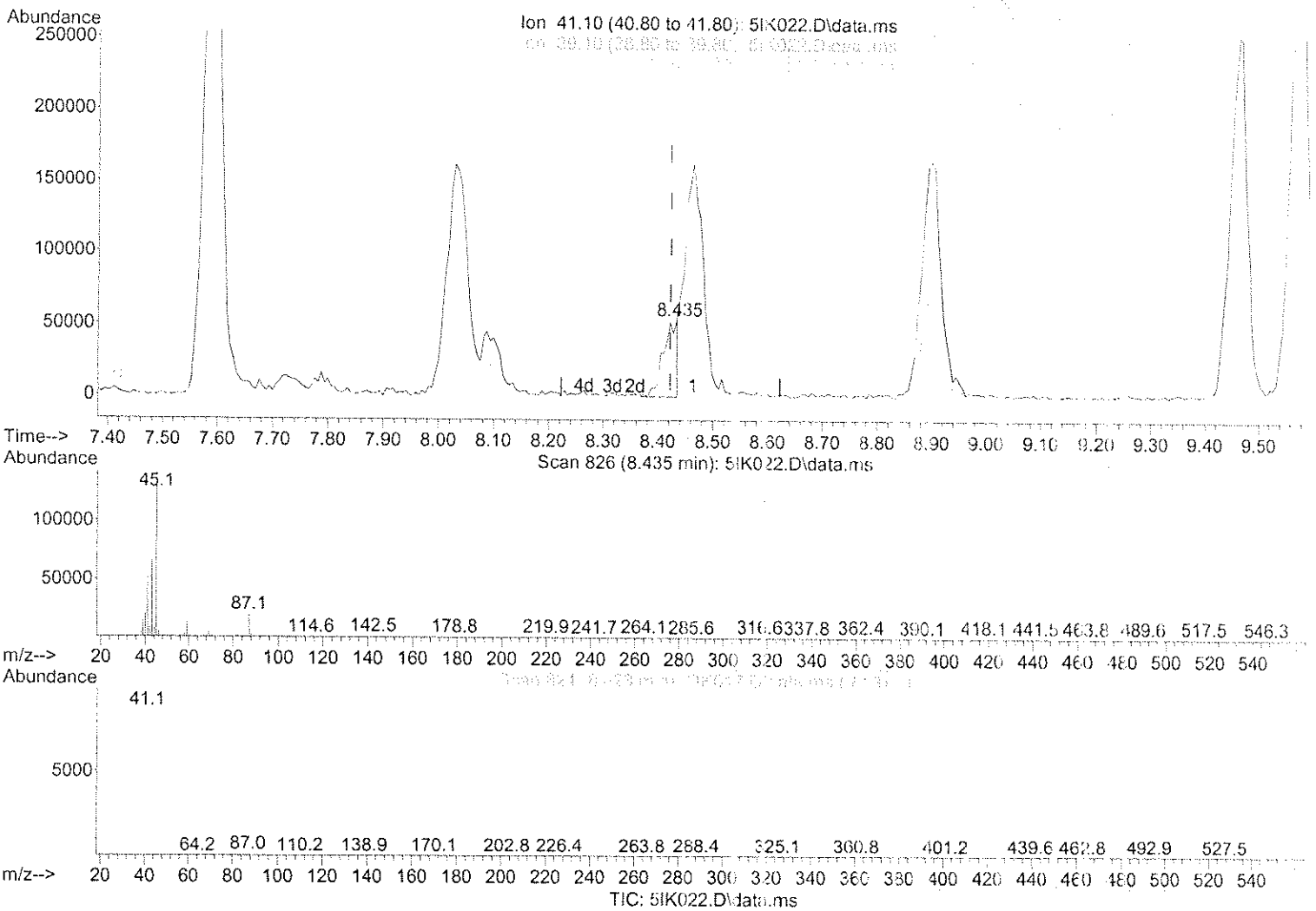
Review by/Date: KKW 09/19/16

Review by/Date: [illegible] 9/19/16

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\091616\
Data File : 5IK022.D
Acq On : 16 Sep 2016 6:27 pm
Operator : KKW
InstName : OVGCMS5
Sample : SCV1
Misc :
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Sep 19 08:52:47 2016
Quant Method : C:\msdchem\1\methods\091616.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Mon Sep 19 08:51:53 2016
Response via : Initial Calibration



TIC: 5IK022.D\data.ms

(20) Acetonitrile		
8.435min (+ 0.012)	49.79 ug/L m	
response	95031	
Ion	Exp%	Act%
41.10	100.00	100.00
39.10	39.90	211.97#
38.10	13.20	10.86
0.00	0.00	0.00

Select One:

[ ] Original Integration [X] Manual Integration

Select reason for manual integration:

[X] Poor integration (peak tailing, baseline selection)

[ ] Incorrect peak selection/Peak not found

[ ] Hump integration

[ ] Baseline drop for split peaks

[ ] RTD reintegration

[ ] Other:

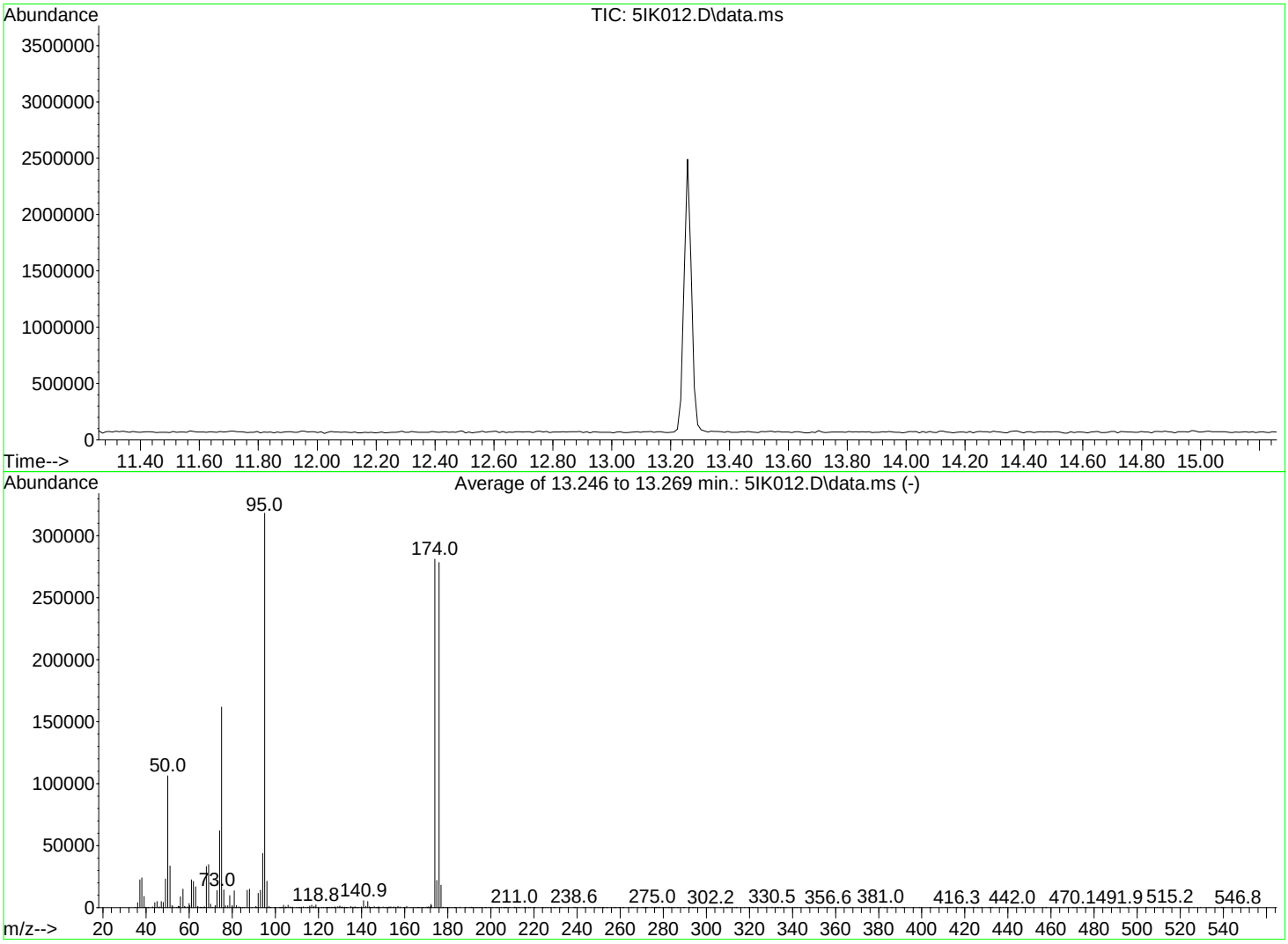
Review by/Date: KW 09/19/16

Review by/Date: KW 9/19/16

Data Path : C:\msdchem\1\data\091616\
Data File : 5IK012.D
Acq On : 16 Sep 2016 1:29 pm
Operator : KKW
InstName : OVGCMS5
Sample : TUN1
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\methods\091616.M
Title : ENCO SOP VGCMS05; Element Cal
Last Update : Mon Sep 19 08:51:53 2016



AutoFind: Scans 847, 848, 849; Background Corrected with Scan 838

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	33.4	106229	PASS
75	95	30	60	50.8	161877	PASS
95	95	100	100	100.0	318402	PASS
96	95	5	9	6.7	21333	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	88.3	281280	PASS
175	174	5	9	7.8	22013	PASS
176	174	95	101	99.0	278464	PASS
177	176	5	9	6.5	18117	PASS

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\091616\
Data File : 5IK013.D
Acq On : 16 Sep 2016 1:59 pm
Operator : KKW
InstName : OVGCMS5
Sample : CAL1
Misc :
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Sep 16 14:40:59 2016
Quant Method : C:\msdchem\1\methods\091616.M
Quant Title : ENCO SOP VGCMS05; Element Cal 1606061
QLast Update : Fri Aug 05 08:49:48 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) PENTAFLUOROBENZENE (IS)	10.209	168	993483	50.00	ug/L		0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.797	114	1563495	50.00	ug/L	#	0.00
57) CHLOROBENZENE-D5 (IS)	13.511	82	703472	50.00	ug/L	#	0.00
81) 1,4-DICHLOROBENZENE-D4...	15.797	152	971966	50.00	ug/L	#	0.00
System Monitoring Compounds							
31) Dibromofluoromethane	9.786	113	60047	7.22	ug/L		-0.01
Spiked Amount 50.000	Range 72 - 133		Recovery = 14.44%#				
42) 1,2-Dichloroethane-d4	10.380	65	87345	9.85	ug/L		0.00
Spiked Amount 50.000	Range 70 - 120		Recovery = 19.70%#				
54) D8-Toluene	12.101	98	237907	6.92	ug/L		0.00
Spiked Amount 50.000	Range 85 - 120		Recovery = 13.84%#				
75) Bromofluorobenzene	14.622	95	85335	7.13	ug/L		0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 14.26%#				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	4.281	85	8672	1.15	ug/L	#	70
3) Chloromethane	4.739	50	19056	2.20	ug/L	#	59
4) Vinyl Chloride	4.933	62	11650	1.55	ug/L	#	39
5) Bromomethane	5.597	94	3755	1.31	ug/L	#	1
6) Chloroethane	5.844	64	7842m	1.88	ug/L		
7) Trichlorofluoromethane	6.102	101	13869	1.43	ug/L	#	34
8) Diethyl ether	6.566	59	9639	1.77	ug/L		93
9) 1,1-Dichloroethene	6.937	96	7171	1.11	ug/L	#	58
10) Trichlorotrifluoroethane	6.966	151	6907m	1.00	ug/L		
11) Acrolein	7.418	56	12280m	23.22	ug/L		
12) Iodomethane	7.183	142	13405	2.14	ug/L	#	75
13) Carbon Disulfide	7.013	76	69945	7.58	ug/L	#	85
14) 3-chloropropene	7.589	41	15691	1.83	ug/L	#	92
15) Acetone	7.788	43	28258	14.10	ug/L	#	59
16) Methylene Chloride	7.730	84	9651	1.54	ug/L	#	2
17) Methyl Acetate	7.918	43	17572	2.70	ug/L	#	91
18) t-1,2-Dichloroethene	7.929	96	7393	1.02	ug/L	#	55
19) Methyl tert-butyl ether	8.029	73	22190	1.55	ug/L		96
20) Acetonitrile	8.429	41	18295m	19.96	ug/L		
21) Isopropyl ether	8.464	45	33844	1.44	ug/L	#	88
22) Chloroprene	8.693	88	4445	0.86	ug/L	#	1
23) 1,1-Dichloroethane	8.717	63	19144	1.71	ug/L	#	89
24) Acrylonitrile	8.787	53	53809	19.53	ug/L	#	89
25) Vinyl Acetate	8.940	43	102984	7.47	ug/L		96
26) c-1,2-Dichloroethene	9.328	96	11399	1.51	ug/L	#	68
27) 2,2-Dichloropropane	9.463	77	9213	1.15	ug/L	#	61
28) Bromochloromethane	9.551	128	5079	1.26	ug/L		96
29) Cyclohexane	9.575	56	13669	0.97	ug/L	#	70
30) Chloroform	9.598	83	11477	0.94	ug/L	#	82
32) Dibromofluoromethane	9.786	113	60047	7.22	ug/L		91
33) 2-Butanone	9.921	72	4169	5.41	ug/L	#	16
34) 1,1,1-Trichloroethane	9.857	97	13336	1.36	ug/L	#	66
35) 1,1-Dichloropropene	9.974	75	10553	1.27	ug/L	#	84
36) Propionitrile	10.262	54	18475	16.03	ug/L	#	80
37) Methacrylonitrile	10.274	41	80421	17.13	ug/L	#	77
38) Isobutyl Alcohol	10.286	43	24787	40.27	ug/L	#	70
40) Carbon Tetrachloride	9.786	117	9085	1.03	ug/L	#	80
41) Benzene	10.250	78	32066	1.30	ug/L	#	87
43) 1,2-Dichloroethane-d4	10.380	65	87345	9.85	ug/L	#	82
44) 1,2-Dichloroethane	10.444	62	17147	2.17	ug/L	#	75

Data Path : C:\msdchem\1\data\091616\
Data File : 5IK013.D
Acq On : 16 Sep 2016 1:59 pm
Operator : KKW
InstName : OVGCMS5
Sample : CAL1
Misc :
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Sep 16 14:40:59 2016
Quant Method : C:\msdchem\1\methods\091616.M
Quant Title : ENCO SOP VGCMS05; Element Cal 1606061
QLast Update : Fri Aug 05 08:49:48 2016
Response via : Initial Calibration

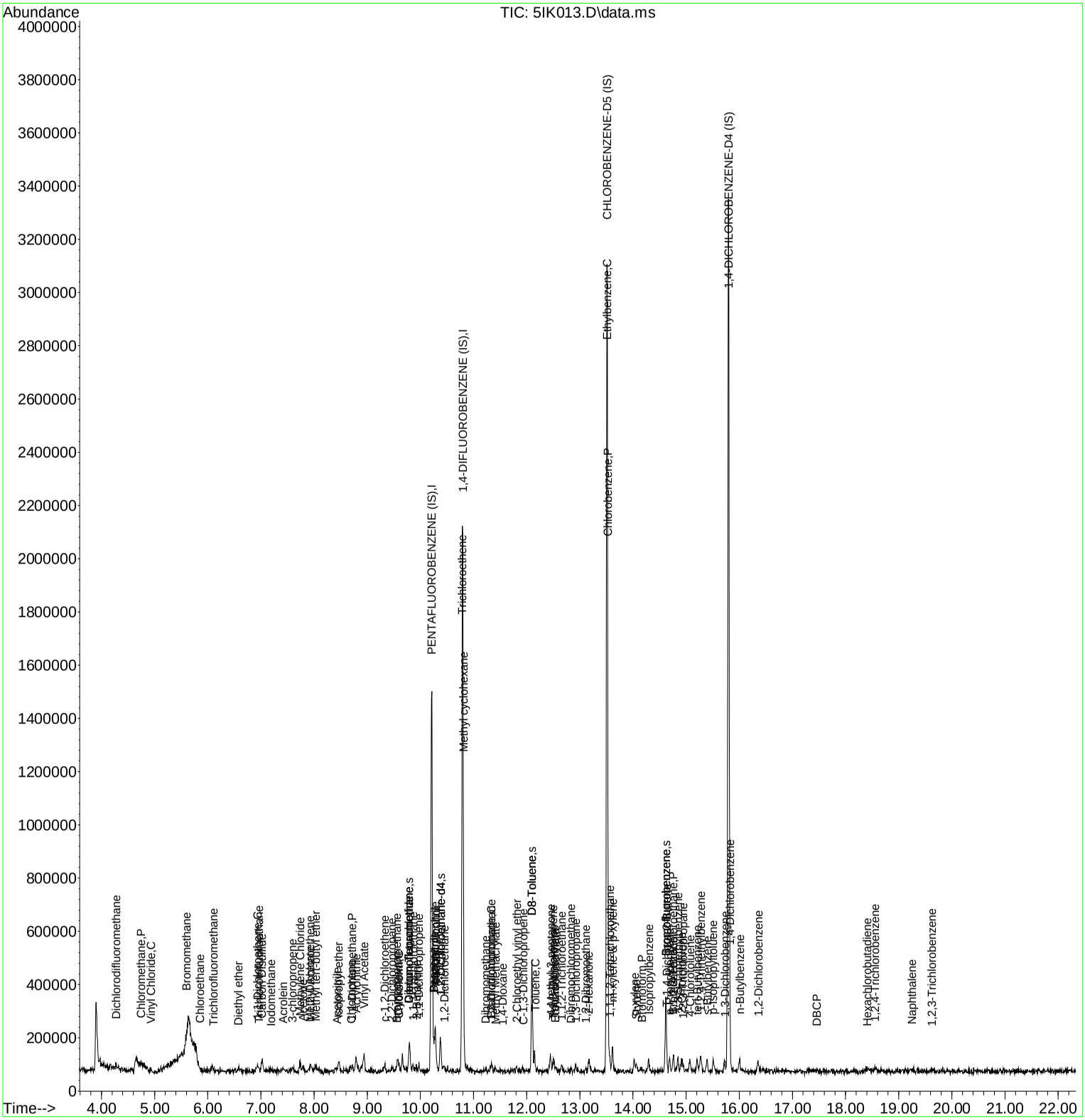
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
45) Trichloroethene	10.785	130	8633	0.86	ug/L	#	1
46) Methyl cyclohexane	10.809	83	35125	2.62	ug/L	#	76
47) Dibromomethane	11.226	93	5834	1.66	ug/L	#	64
48) 1,2-Dichloropropane	11.331	63	11173	1.68	ug/L	#	66
49) Bromodichloromethane	11.337	83	8555	1.12	ug/L	#	33
50) Methyl Methacrylate	11.414	69	5480	1.43	ug/L	#	66
51) 1,4-Dioxane	11.543	88	6175m	66.06	ug/L		
52) 2-Chloroethyl vinyl ether	11.807	63	6619	6.80	ug/L	#	74
53) C-1,3-Dichloropropene	11.931	75	4904	0.66	ug/L	#	1
55) D8-Toluene	12.101	98	237907	6.92	ug/L	#	86
56) 4-Methyl-2-pentanone	12.454	100	6359	5.64	ug/L	#	69
58) Toluene	12.154	92	20102	1.20	ug/L	#	89
59) T-1,3-Dichloropropene	12.495	75	9817	1.43	ug/L		94
60) Tetrachloroethene	12.524	164	6686	0.99	ug/L	#	4
61) Ethyl methacrylate	12.542	69	9718	1.59	ug/L	#	77
62) 1,1,2-Trichloroethane	12.659	97	7122	1.33	ug/L	#	82
63) Dibromochloromethane	12.836	129	6448	0.99	ug/L		86
64) 1,3-Dichloropropane	12.924	76	11426	1.42	ug/L	#	43
65) 1,2-Dibromoethane	13.112	107	8708	1.47	ug/L	#	95
66) 2-Hexanone	13.171	43	37934	7.99	ug/L		93
67) Ethylbenzene	13.505	106	14624	1.20	ug/L	#	90
68) Chlorobenzene	13.523	112	24841	1.17	ug/L		96
69) 1,1,1,2-Tetrachloroethane	13.570	131	8170	1.13	ug/L	#	90
70) m-xylene & p-xylene	13.617	106	31306	2.02	ug/L		89
71) o-xylene	14.028	106	13343	0.93	ug/L		89
72) Styrene	14.064	104	16840	0.79	ug/L	#	78
73) Bromoform	14.163	173	3491	0.81	ug/L	#	30
74) Isopropylbenzene	14.293	105	31864	0.99	ug/L	#	90
76) Bromofluorobenzene	14.622	95	85335	7.13	ug/L		94
77) n-Propylbenzene	14.686	91	36279	0.94	ug/L	#	85
78) 1,1,2,2-Tetrachloroethane	14.751	83	11073	1.48	ug/L	#	56
79) 1,2,3-Trichloropropane	14.939	61	3535	1.40	ug/L	#	65
80) T-1,4-Dichloro-2-Butene	14.639	53	6542	2.32	ug/L	#	95
82) Bromobenzene	14.751	156	9981	1.04	ug/L	#	54
83) 1,2,4-Trimethylbenzene	15.274	105	25821	0.92	ug/L	#	90
84) 2-Chlorotoluene	14.916	91	21924	1.07	ug/L	#	85
85) 4-Chlorotoluene	15.074	91	26244	1.21	ug/L	#	73
86) tert-Butylbenzene	15.203	119	20147	0.70	ug/L	#	65
87) 1,3,5-Trimethylbenzene	14.851	105	29208	1.04	ug/L	#	87
88) p-Isopropyltoluene	15.509	119	27390	0.74	ug/L	#	82
89) s-Butylbenzene	15.391	105	30666	0.89	ug/L	#	88
90) 1,3-Dichlorobenzene	15.732	146	20589	1.09	ug/L	#	90
91) 1,4-Dichlorobenzene	15.826	146	27992	1.44	ug/L	#	1
92) n-Butylbenzene	16.008	91	26229	1.00	ug/L	#	75
93) 1,2-Dichlorobenzene	16.355	146	21286	1.22	ug/L		89
94) DBCP	17.460	157	2519m	1.82	ug/L		
95) Hexachlorobutadiene	18.412	225	4222	1.06	ug/L	#	61
96) 1,2,4-Trichlorobenzene	18.553	180	4604	0.58	ug/L	#	83
97) Naphthalene	19.252	128	9151	1.00	ug/L	#	67
98) 1,2,3-Trichlorobenzene	19.622	180	1939m	0.45	ug/L		

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\091616\
Data File : 5IK013.D
Acq On : 16 Sep 2016 1:59 pm
Operator : KKW
InstName : OVGCMS5
Sample : CAL1
Misc :
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Sep 16 14:40:59 2016
Quant Method : C:\msdchem\1\methods\091616.M
Quant Title : ENCO SOP VGCMS05; Element Cal 1606061
QLast Update : Fri Aug 05 08:49:48 2016
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\091616\
Data File : 5IK014.D
Acq On : 16 Sep 2016 2:29 pm
Operator : KKW
InstName : OVGCMS5
Sample : CAL2
Misc :
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Sep 16 14:52:02 2016
Quant Method : C:\msdchem\1\methods\091616.M
Quant Title : ENCO SOP VGCMS05; Element Cal 1606061
QLast Update : Fri Aug 05 08:49:48 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) PENTAFLUOROBENZENE (IS)	10.209	168	1033903	50.00	ug/L		0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.791	114	1585423	50.00	ug/L	#	0.00
57) CHLOROBENZENE-D5 (IS)	13.511	82	736735	50.00	ug/L	#	0.00
81) 1,4-DICHLOROBENZENE-D4...	15.797	152	971570	50.00	ug/L	#	0.00
System Monitoring Compounds							
31) Dibromofluoromethane	9.798	113	141012	16.29	ug/L		0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 32.58%#				
42) 1,2-Dichloroethane-d4	10.380	65	208447	23.17	ug/L		0.00
Spiked Amount 50.000	Range 70 - 120		Recovery = 46.34%#				
54) D8-Toluene	12.095	98	568113	16.29	ug/L		0.00
Spiked Amount 50.000	Range 85 - 120		Recovery = 32.58%#				
75) Bromofluorobenzene	14.616	95	219995	17.55	ug/L		0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 35.10%#				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	4.281	85	13379	1.70	ug/L	#	78
3) Chloromethane	4.745	50	33192	3.68	ug/L		98
4) Vinyl Chloride	4.915	62	20645	2.64	ug/L	#	65
5) Bromomethane	5.603	94	6585	2.19	ug/L	#	72
6) Chloroethane	5.832	64	16634	3.83	ug/L	#	74
7) Trichlorofluoromethane	6.079	101	18664	1.85	ug/L	#	33
8) Diethyl ether	6.572	59	15130m	2.68	ug/L		
9) 1,1-Dichloroethene	6.925	96	9839	1.47	ug/L	#	70
10) Trichlorotrifluoroethane	6.954	151	6657	0.92	ug/L	#	56
11) Acrolein	7.412	56	20118	36.55	ug/L		90
12) Iodomethane	7.166	142	34312	5.27	ug/L	#	92
13) Carbon Disulfide	7.013	76	122194	12.72	ug/L	#	79
14) 3-chloropropene	7.589	41	26249	2.94	ug/L		87
15) Acetone	7.794	43	38454	18.44	ug/L	#	63
16) Methylene Chloride	7.735	84	13723	2.10	ug/L	#	9
17) Methyl Acetate	7.929	43	25435m	3.76	ug/L		
18) t-1,2-Dichloroethene	7.935	96	9021	1.19	ug/L	#	18
19) Methyl tert-butyl ether	8.035	73	25873	1.74	ug/L	#	69
20) Acetonitrile	8.423	41	27618m	28.96	ug/L		
21) Isopropyl ether	8.464	45	55212	2.26	ug/L		93
22) Chloroprene	8.670	88	8711	1.62	ug/L	#	62
23) 1,1-Dichloroethane	8.711	63	30443	2.61	ug/L	#	95
24) Acrylonitrile	8.793	53	79942	27.88	ug/L	#	97
25) Vinyl Acetate	8.940	43	173610	12.09	ug/L	#	89
26) c-1,2-Dichloroethene	9.334	96	13935	1.77	ug/L	#	90
27) 2,2-Dichloropropane	9.463	77	12274	1.47	ug/L	#	60
28) Bromochloromethane	9.563	128	6478	1.55	ug/L		89
29) Cyclohexane	9.586	56	21694	1.48	ug/L	#	73
30) Chloroform	9.586	83	20756	1.64	ug/L	#	54
32) Dibromofluoromethane	9.798	113	141012	16.29	ug/L		92
33) 2-Butanone	9.921	72	7078	8.83	ug/L	#	59
34) 1,1,1-Trichloroethane	9.857	97	17375	1.70	ug/L	#	89
35) 1,1-Dichloropropene	9.986	75	13976	1.61	ug/L	#	78
36) Propionitrile	10.268	54	30417	25.36	ug/L		98
37) Methacrylonitrile	10.285	41	126138	25.82	ug/L		86
38) Isobutyl Alcohol	10.285	43	30427	47.50	ug/L	#	76
40) Carbon Tetrachloride	9.786	117	15870	1.77	ug/L	#	77
41) Benzene	10.238	78	51851	2.08	ug/L		99
43) 1,2-Dichloroethane-d4	10.380	65	208447	23.17	ug/L	#	76
44) 1,2-Dichloroethane	10.438	62	27195	3.40	ug/L	#	95

Data Path : C:\msdchem\1\data\091616\
Data File : 5IK014.D
Acq On : 16 Sep 2016 2:29 pm
Operator : KKW
InstName : OVGCMS5
Sample : CAL2
Misc :
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Sep 16 14:52:02 2016
Quant Method : C:\msdchem\1\methods\091616.M
Quant Title : ENCO SOP VGCMS05; Element Cal 1606061
QLast Update : Fri Aug 05 08:49:48 2016
Response via : Initial Calibration

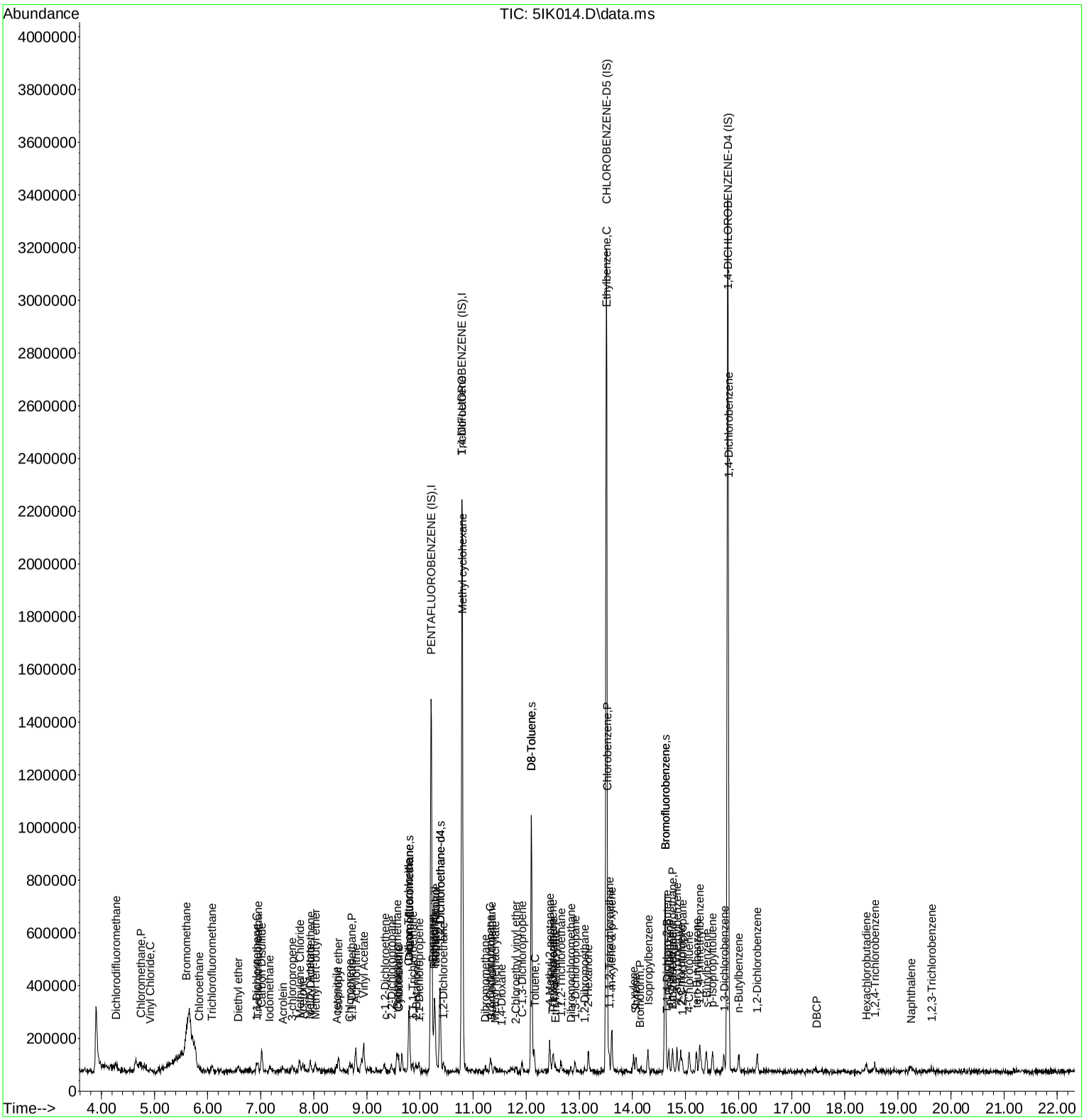
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
45) Trichloroethene	10.791	130	16881	1.66	ug/L	#	1
46) Methyl cyclohexane	10.803	83	40614	2.98	ug/L	#	78
47) Dibromomethane	11.226	93	8602	2.41	ug/L	#	62
48) 1,2-Dichloropropane	11.320	63	17179	2.54	ug/L	#	91
49) Bromodichloromethane	11.343	83	12045	1.55	ug/L	#	73
50) Methyl Methacrylate	11.408	69	9296	2.40	ug/L		89
51) 1,4-Dioxane	11.531	88	4727	49.87	ug/L		92
52) 2-Chloroethyl vinyl ether	11.801	63	9735	9.86	ug/L	#	80
53) C-1,3-Dichloropropene	11.925	75	13875	1.84	ug/L	#	49
55) D8-Toluene	12.095	98	568113	16.29	ug/L	#	85
56) 4-Methyl-2-pentanone	12.448	100	6298	5.51	ug/L	#	1
58) Toluene	12.154	92	29432	1.67	ug/L		78
59) T-1,3-Dichloropropene	12.495	75	11149	1.55	ug/L	#	72
60) Tetrachloroethene	12.512	164	12385	1.75	ug/L	#	88
61) Ethyl methacrylate	12.553	69	11953	1.87	ug/L	#	86
62) 1,1,2-Trichloroethane	12.659	97	8439	1.51	ug/L	#	77
63) Dibromochloromethane	12.847	129	11661	1.72	ug/L	#	86
64) 1,3-Dichloropropane	12.918	76	18956	2.26	ug/L	#	76
65) 1,2-Dibromoethane	13.094	107	10694	1.73	ug/L	#	99
66) 2-Hexanone	13.165	43	60839	12.24	ug/L	#	85
67) Ethylbenzene	13.505	106	18789	1.47	ug/L	#	68
68) Chlorobenzene	13.529	112	34694	1.56	ug/L	#	88
69) 1,1,1,2-Tetrachloroethane	13.558	131	12268	1.62	ug/L	#	96
70) m-xylene & p-xylene	13.605	106	40254	2.48	ug/L	#	60
71) o-xylene	14.022	106	22099	1.48	ug/L		91
72) Styrene	14.063	104	29821	1.33	ug/L	#	73
73) Bromoform	14.146	173	6285	1.39	ug/L	#	88
74) Isopropylbenzene	14.293	105	54217	1.62	ug/L	#	88
76) Bromofluorobenzene	14.616	95	219995	17.55	ug/L		93
77) n-Propylbenzene	14.686	91	67304	1.67	ug/L	#	92
78) 1,1,2,2-Tetrachloroethane	14.751	83	12905	1.65	ug/L	#	85
79) 1,2,3-Trichloropropane	14.939	61	5251	1.99	ug/L		90
80) T-1,4-Dichloro-2-Butene	14.645	53	5971	2.02	ug/L	#	1
82) Bromobenzene	14.763	156	16374	1.71	ug/L	#	53
83) 1,2,4-Trimethylbenzene	15.262	105	44782	1.59	ug/L	#	91
84) 2-Chlorotoluene	14.910	91	42656	2.09	ug/L	#	81
85) 4-Chlorotoluene	15.056	91	38594	1.78	ug/L	#	91
86) tert-Butylbenzene	15.203	119	37635	1.31	ug/L	#	75
87) 1,3,5-Trimethylbenzene	14.839	105	46822	1.66	ug/L	#	87
88) p-Isopropyltoluene	15.509	119	48850	1.33	ug/L	#	82
89) s-Butylbenzene	15.391	105	55687	1.62	ug/L	#	88
90) 1,3-Dichlorobenzene	15.726	146	33569	1.78	ug/L	#	90
91) 1,4-Dichlorobenzene	15.809	146	39338	2.02	ug/L	#	1
92) n-Butylbenzene	15.997	91	40443	1.55	ug/L	#	77
93) 1,2-Dichlorobenzene	16.343	146	28166	1.61	ug/L	#	80
94) DBCP	17.465	157	2175	1.57	ug/L	#	74
95) Hexachlorobutadiene	18.400	225	3503	0.88	ug/L	#	30
96) 1,2,4-Trichlorobenzene	18.564	180	5920	0.75	ug/L	#	83
97) Naphthalene	19.246	128	19611	2.13	ug/L	#	70
98) 1,2,3-Trichlorobenzene	19.628	180	7422	1.72	ug/L	#	61

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\091616\
Data File : 5IK014.D
Acq On : 16 Sep 2016 2:29 pm
Operator : KKW
InstName : OVGCMS5
Sample : CAL2
Misc :
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Sep 16 14:52:02 2016
Quant Method : C:\msdchem\1\methods\091616.M
Quant Title : ENCO SOP VGCMS05; Element Cal 1606061
QLast Update : Fri Aug 05 08:49:48 2016
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\091616\
Data File : 5IK015.D
Acq On : 16 Sep 2016 2:59 pm
Operator : KKW
InstName : OVGCMS5
Sample : CAL3
Misc :
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Sep 17 16:49:01 2016
Quant Method : C:\msdchem\1\methods\091616.M
Quant Title : ENCO SOP VGCMS05; Element Cal 1606061
QLast Update : Fri Aug 05 08:49:48 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) PENTAFLUOROBENZENE (IS)	10.209	168	1084542	50.00	ug/L		0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.791	114	1650017	50.00	ug/L	#	0.00
57) CHLOROBENZENE-D5 (IS)	13.511	82	767038	50.00	ug/L	#	0.00
81) 1,4-DICHLOROBENZENE-D4...	15.797	152	1061042	50.00	ug/L	#	0.00
System Monitoring Compounds							
31) Dibromofluoromethane	9.792	113	248120	27.33	ug/L		0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 54.66%#				
42) 1,2-Dichloroethane-d4	10.374	65	365516	39.04	ug/L		0.00
Spiked Amount 50.000	Range 70 - 120		Recovery = 78.08%				
54) D8-Toluene	12.095	98	1026032	28.26	ug/L		0.00
Spiked Amount 50.000	Range 85 - 120		Recovery = 56.52%#				
75) Bromofluorobenzene	14.616	95	384749	29.47	ug/L		0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 58.94%#				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	4.275	85	36901	4.47	ug/L		97
3) Chloromethane	4.739	50	65886	6.96	ug/L		100
4) Vinyl Chloride	4.927	62	51350	6.26	ug/L	#	1
5) Bromomethane	5.597	94	15441	4.82	ug/L	#	74
6) Chloroethane	5.826	64	29040	6.37	ug/L		97
7) Trichlorofluoromethane	6.079	101	48065	4.53	ug/L		92
8) Diethyl ether	6.572	59	31107	5.25	ug/L	#	90
9) 1,1-Dichloroethene	6.937	96	30139	4.29	ug/L		85
10) Trichlorotrifluoroethane	6.960	151	26689	3.53	ug/L		92
11) Acrolein	7.412	56	65290	113.07	ug/L		85
12) Iodomethane	7.177	142	105660	15.46	ug/L		99
13) Carbon Disulfide	7.019	76	354110	35.15	ug/L	#	89
14) 3-chloropropene	7.589	41	57888	6.19	ug/L		86
15) Acetone	7.794	43	92068	42.10	ug/L	#	70
16) Methylene Chloride	7.736	84	29053	4.24	ug/L	#	12
17) Methyl Acetate	7.918	43	51560	7.26	ug/L	#	83
18) t-1,2-Dichloroethene	7.929	96	27772	3.50	ug/L	#	59
19) Methyl tert-butyl ether	8.035	73	64805	4.15	ug/L	#	82
20) Acetonitrile	8.417	41	75795m	75.76	ug/L		
21) Isopropyl ether	8.470	45	138754	5.42	ug/L	#	86
22) Chloroprene	8.687	88	23502	4.17	ug/L	#	51
23) 1,1-Dichloroethane	8.711	63	65721	5.37	ug/L	#	86
24) Acrylonitrile	8.787	53	265078	88.14	ug/L		92
25) Vinyl Acetate	8.940	43	545435	36.22	ug/L	#	93
26) c-1,2-Dichloroethene	9.345	96	29891	3.63	ug/L	#	60
27) 2,2-Dichloropropane	9.469	77	32481	3.71	ug/L	#	75
28) Bromochloromethane	9.557	128	18611	4.24	ug/L		89
29) Cyclohexane	9.581	56	67325	4.39	ug/L	#	78
30) Chloroform	9.598	83	57521	4.33	ug/L	#	93
32) Dibromofluoromethane	9.792	113	248120	27.33	ug/L		93
33) 2-Butanone	9.915	72	24657	29.32	ug/L		91
34) 1,1,1-Trichloroethane	9.863	97	46296	4.33	ug/L	#	89
35) 1,1-Dichloropropene	9.974	75	37067	4.08	ug/L	#	87
36) Propionitrile	10.268	54	81773	64.99	ug/L		95
37) Methacrylonitrile	10.274	41	376595	73.49	ug/L	#	76
38) Isobutyl Alcohol	10.274	43	85555	127.32	ug/L	#	46
40) Carbon Tetrachloride	9.780	117	42431	4.56	ug/L	#	90
41) Benzene	10.244	78	114297	4.40	ug/L	#	87
43) 1,2-Dichloroethane-d4	10.374	65	365516	39.04	ug/L	#	79
44) 1,2-Dichloroethane	10.438	62	48573	5.83	ug/L		91

Data Path : C:\msdchem\1\data\091616\
Data File : 5IK015.D
Acq On : 16 Sep 2016 2:59 pm
Operator : KKW
InstName : OVGCMS5
Sample : CAL3
Misc :
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Sep 17 16:49:01 2016
Quant Method : C:\msdchem\1\methods\091616.M
Quant Title : ENCO SOP VGCMS05; Element Cal 1606061
QLast Update : Fri Aug 05 08:49:48 2016
Response via : Initial Calibration

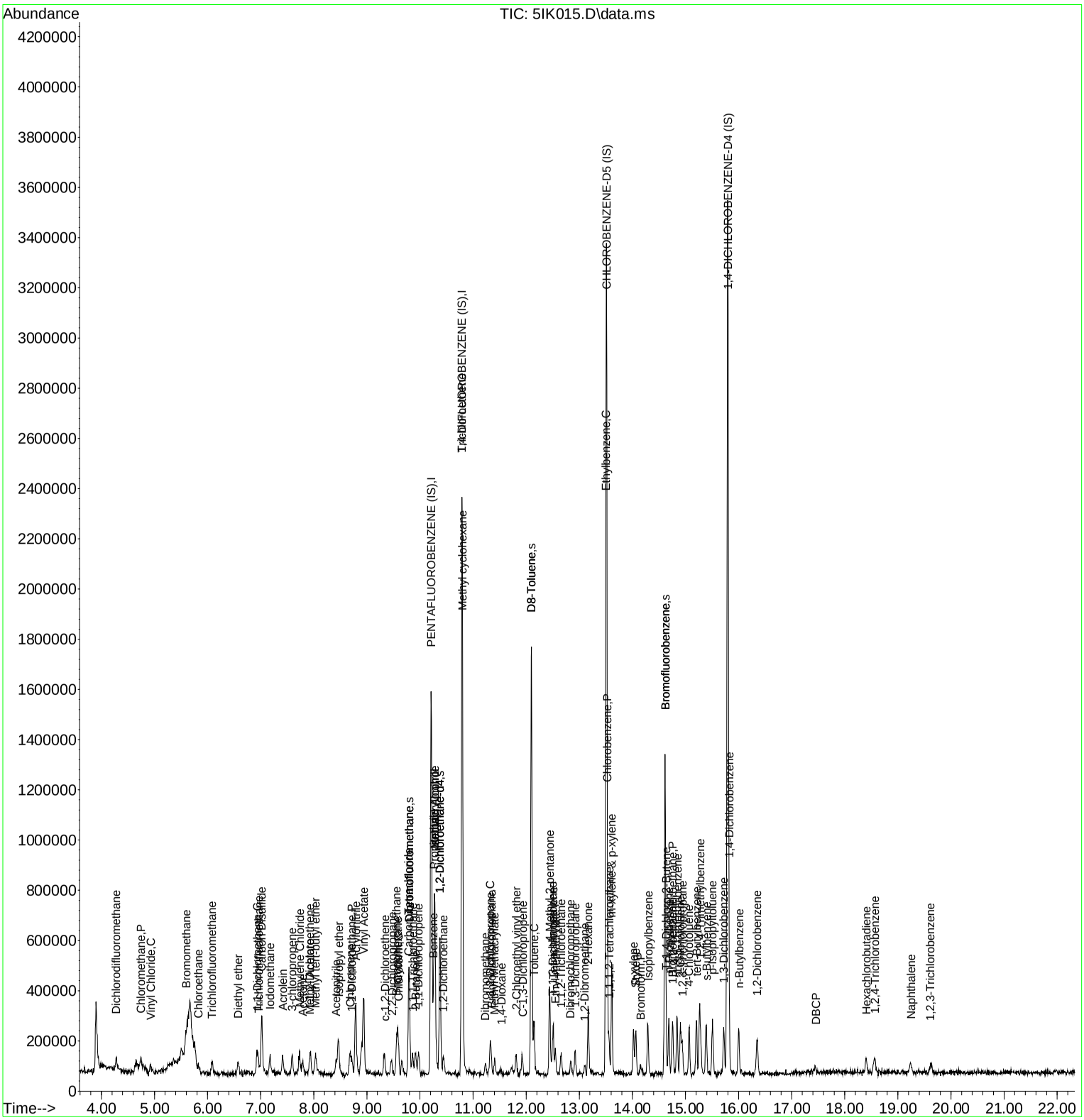
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
45) Trichloroethene	10.791	130	38356	3.61	ug/L	#	1
46) Methyl cyclohexane	10.803	83	63981	4.52	ug/L	#	71
47) Dibromomethane	11.226	93	16416	4.43	ug/L	#	76
48) 1,2-Dichloropropane	11.326	63	38593	5.49	ug/L	#	89
49) Bromodichloromethane	11.343	83	33640	4.16	ug/L	#	71
50) Methyl Methacrylate	11.402	69	20861	5.17	ug/L		88
51) 1,4-Dioxane	11.531	88	11203	113.56	ug/L	#	56
52) 2-Chloroethyl vinyl ether	11.813	63	28583	27.81	ug/L	#	85
53) C-1,3-Dichloropropene	11.931	75	33726	4.30	ug/L	#	53
55) D8-Toluene	12.095	98	1026032	28.26	ug/L	#	87
56) 4-Methyl-2-pentanone	12.442	100	27738	23.31	ug/L	#	65
58) Toluene	12.142	92	80665	4.41	ug/L	#	98
59) T-1,3-Dichloropropene	12.495	75	26981	3.60	ug/L	#	71
60) Tetrachloroethene	12.512	164	30926	4.19	ug/L		98
61) Ethyl methacrylate	12.548	69	37957	5.71	ug/L		95
62) 1,1,2-Trichloroethane	12.659	97	27702	4.75	ug/L	#	84
63) Dibromochloromethane	12.836	129	27772	3.92	ug/L	#	96
64) 1,3-Dichloropropane	12.918	76	40920	4.68	ug/L	#	59
65) 1,2-Dibromoethane	13.094	107	29255	4.53	ug/L	#	90
66) 2-Hexanone	13.171	43	180655	34.91	ug/L		91
67) Ethylbenzene	13.500	106	50226	3.76	ug/L	#	73
68) Chlorobenzene	13.529	112	97618	4.22	ug/L		97
69) 1,1,1,2-Tetrachloroethane	13.564	131	31456	4.00	ug/L	#	96
70) m-xylene & p-xylene	13.611	106	124697	7.37	ug/L		84
71) o-xylene	14.022	106	54728	3.52	ug/L		78
72) Styrene	14.064	104	91806	3.93	ug/L	#	84
73) Bromoform	14.158	173	14588	3.11	ug/L	#	78
74) Isopropylbenzene	14.293	105	134346	3.85	ug/L	#	91
76) Bromofluorobenzene	14.616	95	384749	29.47	ug/L		93
77) n-Propylbenzene	14.686	91	167289	3.98	ug/L		95
78) 1,1,2,2-Tetrachloroethane	14.751	83	42351	5.20	ug/L	#	91
79) 1,2,3-Trichloropropane	14.939	61	17764	6.46	ug/L	#	72
80) T-1,4-Dichloro-2-Butene	14.639	53	23773	7.74	ug/L	#	5
82) Bromobenzene	14.757	156	41498	3.96	ug/L	#	52
83) 1,2,4-Trimethylbenzene	15.268	105	138019	4.50	ug/L		93
84) 2-Chlorotoluene	14.904	91	110108	4.93	ug/L	#	82
85) 4-Chlorotoluene	15.062	91	107211	4.53	ug/L	#	87
86) tert-Butylbenzene	15.203	119	120754	3.85	ug/L	#	82
87) 1,3,5-Trimethylbenzene	14.845	105	133944	4.35	ug/L	#	88
88) p-Isopropyltoluene	15.509	119	139619	3.48	ug/L	#	92
89) s-Butylbenzene	15.391	105	170494	4.54	ug/L		94
90) 1,3-Dichlorobenzene	15.720	146	85587	4.17	ug/L	#	90
91) 1,4-Dichlorobenzene	15.820	146	94158	4.43	ug/L	#	1
92) n-Butylbenzene	16.008	91	111373	3.90	ug/L	#	93
93) 1,2-Dichlorobenzene	16.343	146	76831	4.03	ug/L	#	89
94) DBCP	17.454	157	6702m	4.43	ug/L		
95) Hexachlorobutadiene	18.406	225	11848m	2.73	ug/L		
96) 1,2,4-Trichlorobenzene	18.558	180	26405	3.06	ug/L	#	82
97) Naphthalene	19.246	128	45331	4.45	ug/L	#	94
98) 1,2,3-Trichlorobenzene	19.610	180	21047	4.46	ug/L	#	86

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\091616\
Data File : 5IK015.D
Acq On : 16 Sep 2016 2:59 pm
Operator : KKW
InstName : OVGCMS5
Sample : CAL3
Misc :
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Sep 17 16:49:01 2016
Quant Method : C:\msdchem\1\methods\091616.M
Quant Title : ENCO SOP VGCMS05; Element Cal 1606061
QLast Update : Fri Aug 05 08:49:48 2016
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\091616\
Data File : 5IK016.D
Acq On : 16 Sep 2016 3:29 pm
Operator : KKW
InstName : OVGCMS5
Sample : CAL4
Misc :
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Sep 17 16:49:08 2016
Quant Method : C:\msdchem\1\methods\091616.M
Quant Title : ENCO SOP VGCMS05; Element Cal 1606061
QLast Update : Fri Aug 05 08:49:48 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) PENTAFLUOROBENZENE (IS)	10.209	168	1050771	50.00	ug/L		0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.791	114	1730261	50.00	ug/L	#	0.00
57) CHLOROBENZENE-D5 (IS)	13.505	82	788160	50.00	ug/L	#	0.00
81) 1,4-DICHLOROBENZENE-D4...	15.791	152	1040185	50.00	ug/L	#	-0.01
System Monitoring Compounds							
31) Dibromofluoromethane	9.792	113	367236	41.75	ug/L		0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 83.50%				
42) 1,2-Dichloroethane-d4	10.374	65	501904	51.12	ug/L		0.00
Spiked Amount 50.000	Range 70 - 120		Recovery = 102.24%				
54) D8-Toluene	12.095	98	1491779	39.19	ug/L		0.00
Spiked Amount 50.000	Range 85 - 120		Recovery = 78.38%#				
75) Bromofluorobenzene	14.616	95	532648	39.71	ug/L		0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 79.42%				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	4.281	85	142254	17.78	ug/L		95
3) Chloromethane	4.745	50	290729	31.71	ug/L		92
4) Vinyl Chloride	4.927	62	217522	27.37	ug/L		96
5) Bromomethane	5.603	94	42531	12.99	ug/L	#	68
6) Chloroethane	5.814	64	131135	29.68	ug/L		95
7) Trichlorofluoromethane	6.085	101	213862	20.81	ug/L		95
8) Diethyl ether	6.572	59	143260	24.93	ug/L	#	86
9) 1,1-Dichloroethene	6.925	96	109163	16.04	ug/L	#	69
10) Trichlorotrifluoroethane	6.954	151	101580	13.86	ug/L	#	87
11) Acrolein	7.412	56	264189	472.24	ug/L		90
12) Iodomethane	7.172	142	588355	88.85	ug/L		95
13) Carbon Disulfide	7.019	76	1680595	172.18	ug/L	#	91
14) 3-chloropropene	7.595	41	292666	32.29	ug/L	#	93
15) Acetone	7.794	43	317738	149.95	ug/L	#	58
16) Methylene Chloride	7.736	84	139017	20.92	ug/L	#	50
17) Methyl Acetate	7.912	43	198966	28.90	ug/L		96
18) t-1,2-Dichloroethene	7.941	96	114436	14.87	ug/L	#	45
19) Methyl tert-butyl ether	8.029	73	315352	20.83	ug/L	#	82
20) Acetonitrile	8.423	41	276291m	285.03	ug/L		
21) Isopropyl ether	8.464	45	660830	26.62	ug/L		93
22) Chloroprene	8.682	88	110236	20.16	ug/L	#	59
23) 1,1-Dichloroethane	8.717	63	295662	24.91	ug/L	#	95
24) Acrylonitrile	8.781	53	1029474	353.32	ug/L		95
25) Vinyl Acetate	8.934	43	2545884	174.49	ug/L	#	93
26) c-1,2-Dichloroethene	9.328	96	141380	17.71	ug/L	#	77
27) 2,2-Dichloropropane	9.457	77	152916	18.04	ug/L	#	92
28) Bromochloromethane	9.557	128	70343	16.55	ug/L		97
29) Cyclohexane	9.569	56	328060	22.06	ug/L	#	78
30) Chloroform	9.586	83	238627	18.56	ug/L	#	89
32) Dibromofluoromethane	9.792	113	367236	41.75	ug/L		94
33) 2-Butanone	9.915	72	92022	112.95	ug/L	#	59
34) 1,1,1-Trichloroethane	9.857	97	197874	19.08	ug/L	#	87
35) 1,1-Dichloropropene	9.974	75	173997	19.75	ug/L	#	80
36) Propionitrile	10.262	54	367784	301.71	ug/L		94
37) Methacrylonitrile	10.274	41	1572735	316.78	ug/L	#	84
38) Isobutyl Alcohol	10.286	43	374318	574.96	ug/L	#	60
40) Carbon Tetrachloride	9.792	117	178945	18.33	ug/L		92
41) Benzene	10.244	78	507729	18.65	ug/L		94
43) 1,2-Dichloroethane-d4	10.374	65	501904	51.12	ug/L	#	79
44) 1,2-Dichloroethane	10.444	62	228246	26.11	ug/L	#	91

Data Path : C:\msdchem\1\data\091616\
Data File : 5IK016.D
Acq On : 16 Sep 2016 3:29 pm
Operator : KKW
InstName : OVGCMS5
Sample : CAL4
Misc :
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Sep 17 16:49:08 2016
Quant Method : C:\msdchem\1\methods\091616.M
Quant Title : ENCO SOP VGCMS05; Element Cal 1606061
QLast Update : Fri Aug 05 08:49:48 2016
Response via : Initial Calibration

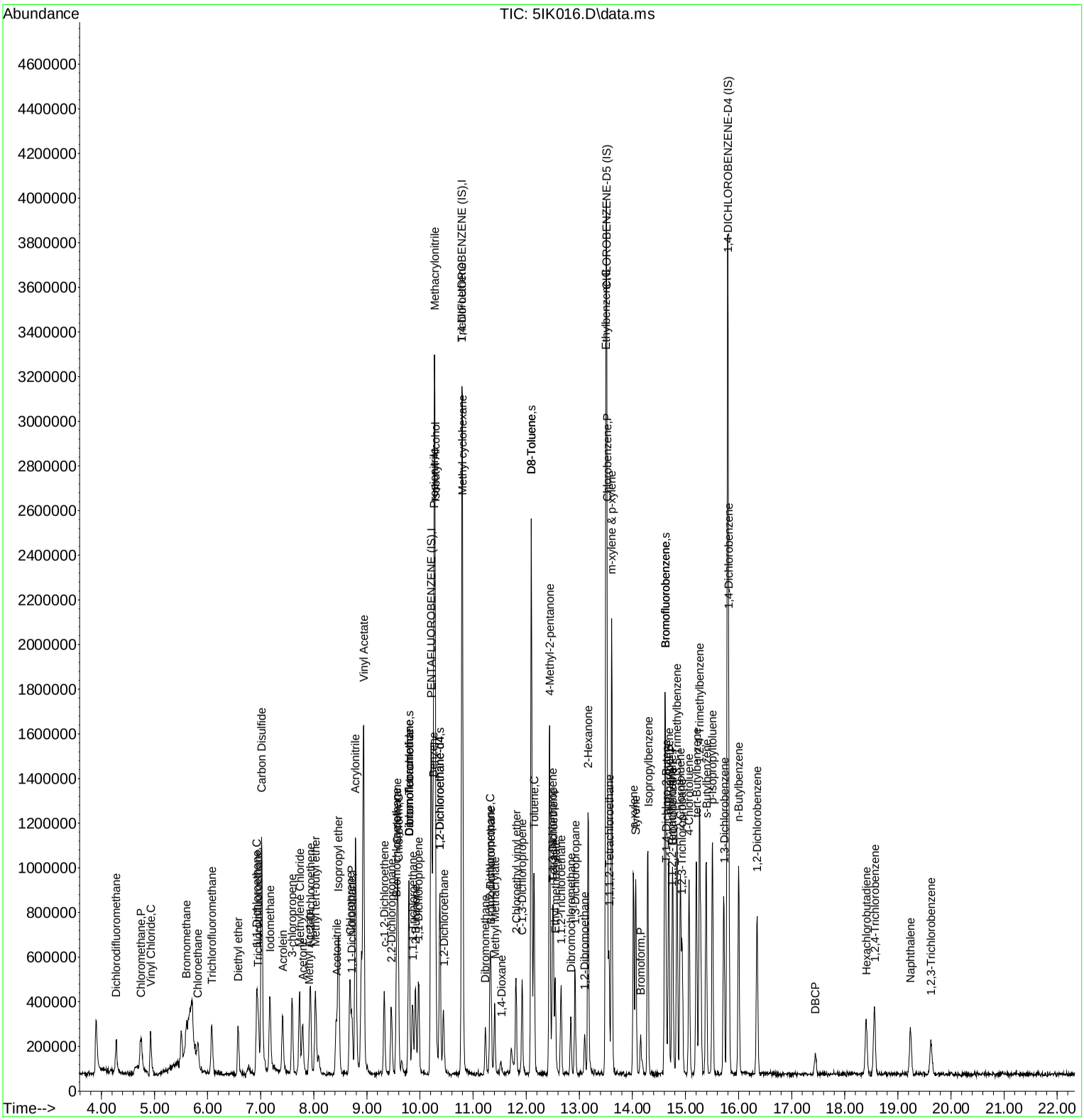
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
45) Trichloroethene	10.791	130	164058	14.74	ug/L	#	65
46) Methyl cyclohexane	10.803	83	224439	15.11	ug/L	#	64
47) Dibromomethane	11.232	93	87327	22.46	ug/L	#	68
48) 1,2-Dichloropropane	11.320	63	163181	22.12	ug/L		98
49) Bromodichloromethane	11.337	83	146456	17.27	ug/L	#	81
50) Methyl Methacrylate	11.408	69	78372	18.51	ug/L	#	62
51) 1,4-Dioxane	11.525	88	43945	424.80	ug/L	#	68
52) 2-Chloroethyl vinyl ether	11.807	63	163711	151.89	ug/L	#	86
53) C-1,3-Dichloropropene	11.925	75	183609	22.34	ug/L	#	72
55) D8-Toluene	12.095	98	1491779	39.19	ug/L	#	92
56) 4-Methyl-2-pentanone	12.436	100	119685	95.91	ug/L	#	56
58) Toluene	12.148	92	362504	19.27	ug/L		97
59) T-1,3-Dichloropropene	12.495	75	157680	20.48	ug/L	#	89
60) Tetrachloroethene	12.512	164	121245	15.97	ug/L		94
61) Ethyl methacrylate	12.548	69	164362	24.07	ug/L		96
62) 1,1,2-Trichloroethane	12.653	97	111326	18.58	ug/L	#	77
63) Dibromochloromethane	12.841	129	118210	16.26	ug/L	#	90
64) 1,3-Dichloropropane	12.918	76	194615	21.65	ug/L	#	67
65) 1,2-Dibromoethane	13.100	107	135395	20.42	ug/L	#	89
66) 2-Hexanone	13.165	43	863381	162.36	ug/L	#	95
67) Ethylbenzene	13.500	106	222825	16.25	ug/L	#	83
68) Chlorobenzene	13.523	112	413874	17.41	ug/L		98
69) 1,1,1,2-Tetrachloroethane	13.558	131	134052	16.58	ug/L		96
70) m-xylene & p-xylene	13.611	106	572216	32.91	ug/L		81
71) o-xylene	14.017	106	262353	16.41	ug/L		79
72) Styrene	14.064	104	419763	17.48	ug/L	#	81
73) Bromoform	14.152	173	74519	15.45	ug/L	#	81
74) Isopropylbenzene	14.293	105	662393	18.46	ug/L		93
76) Bromofluorobenzene	14.616	95	532648	39.71	ug/L		95
77) n-Propylbenzene	14.686	91	784807	18.18	ug/L	#	90
78) 1,1,2,2-Tetrachloroethane	14.745	83	177433	21.20	ug/L	#	90
79) 1,2,3-Trichloropropane	14.933	61	73969	26.19	ug/L	#	76
80) T-1,4-Dichloro-2-Butene	14.634	53	94740	30.03	ug/L	#	90
82) Bromobenzene	14.763	156	190603	18.56	ug/L	#	68
83) 1,2,4-Trimethylbenzene	15.262	105	671746	22.33	ug/L		89
84) 2-Chlorotoluene	14.904	91	487903	22.30	ug/L	#	92
85) 4-Chlorotoluene	15.068	91	496685	21.39	ug/L		92
86) tert-Butylbenzene	15.203	119	555747	18.07	ug/L		94
87) 1,3,5-Trimethylbenzene	14.839	105	631848	20.94	ug/L		92
88) p-Isopropyltoluene	15.503	119	711432	18.07	ug/L		96
89) s-Butylbenzene	15.391	105	742928	20.17	ug/L		95
90) 1,3-Dichlorobenzene	15.726	146	369266	18.34	ug/L	#	93
91) 1,4-Dichlorobenzene	15.814	146	412380	19.78	ug/L	#	79
92) n-Butylbenzene	16.003	91	572524	20.43	ug/L		91
93) 1,2-Dichlorobenzene	16.349	146	362377	19.37	ug/L		96
94) DBCP	17.436	157	30169	20.35	ug/L		92
95) Hexachlorobutadiene	18.406	225	65386	15.34	ug/L		99
96) 1,2,4-Trichlorobenzene	18.558	180	139183	16.46	ug/L	#	93
97) Naphthalene	19.234	128	261771	23.57	ug/L	#	97
98) 1,2,3-Trichlorobenzene	19.622	180	67527	14.58	ug/L	#	87

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\091616\
Data File : 5IK016.D
Acq On : 16 Sep 2016 3:29 pm
Operator : KKW
InstName : OVGCMS5
Sample : CAL4
Misc :
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Sep 17 16:49:08 2016
Quant Method : C:\msdchem\1\methods\091616.M
Quant Title : ENCO SOP VGCMS05; Element Cal 1606061
QLast Update : Fri Aug 05 08:49:48 2016
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\091616\
Data File : 5IK017.D
Acq On : 16 Sep 2016 3:58 pm
Operator : KKW
InstName : OVGCMS5
Sample : CAL5
Misc :
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Sep 17 16:49:14 2016
Quant Method : C:\msdchem\1\methods\091616.M
Quant Title : ENCO SOP VGCMS05; Element Cal 1606061
QLast Update : Fri Aug 05 08:49:48 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) PENTAFLUOROBENZENE (IS)	10.209	168	1122443	50.00	ug/L		0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.791	114	1890598	50.00	ug/L	#	0.00
57) CHLOROBENZENE-D5 (IS)	13.511	82	875986	50.00	ug/L	#	0.00
81) 1,4-DICHLOROBENZENE-D4...	15.797	152	1135498	50.00	ug/L	#	0.00
System Monitoring Compounds							
31) Dibromofluoromethane	9.792	113	486805	51.80	ug/L		0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 103.60%				
42) 1,2-Dichloroethane-d4	10.374	65	670751	62.53	ug/L		0.00
Spiked Amount 50.000	Range 70 - 120		Recovery = 125.06%#				
54) D8-Toluene	12.095	98	2033476	48.89	ug/L		0.00
Spiked Amount 50.000	Range 85 - 120		Recovery = 97.78%				
75) Bromofluorobenzene	14.616	95	761327	51.07	ug/L		0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 102.14%				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	4.275	85	447065	52.31	ug/L		97
3) Chloromethane	4.733	50	765425	78.16	ug/L		95
4) Vinyl Chloride	4.927	62	642789	75.71	ug/L		92
5) Bromomethane	5.597	94	192165	45.57	ug/L		95
6) Chloroethane	5.797	64	343346	72.75	ug/L		98
7) Trichlorofluoromethane	6.067	101	632853	57.66	ug/L		97
8) Diethyl ether	6.578	59	436464	71.12	ug/L	#	87
9) 1,1-Dichloroethene	6.925	96	322752	44.40	ug/L	#	65
10) Trichlorotrifluoroethane	6.948	151	307265	39.25	ug/L	#	84
11) Acrolein	7.412	56	766059	1281.89	ug/L		92
12) Iodomethane	7.172	142	1898476	268.38	ug/L		96
13) Carbon Disulfide	7.013	76	5350250	513.13	ug/L	#	93
14) 3-chloropropene	7.589	41	872236	90.09	ug/L	#	92
15) Acetone	7.794	43	944928	417.46	ug/L	#	61
16) Methylene Chloride	7.730	84	359482	50.64	ug/L	#	32
17) Methyl Acetate	7.912	43	566045	76.98	ug/L		95
18) t-1,2-Dichloroethene	7.935	96	363871	44.25	ug/L	#	62
19) Methyl tert-butyl ether	8.029	73	918749	56.82	ug/L	#	84
20) Acetonitrile	8.423	41	923733m	892.11	ug/L		
21) Isopropyl ether	8.464	45	1978237	74.61	ug/L	#	91
22) Chloroprene	8.682	88	365864	62.65	ug/L	#	68
23) 1,1-Dichloroethane	8.717	63	859460	67.80	ug/L	#	93
24) Acrylonitrile	8.787	53	2853678	916.87	ug/L		97
25) Vinyl Acetate	8.934	43	7301088	468.44	ug/L		95
26) c-1,2-Dichloroethene	9.328	96	419047	49.14	ug/L	#	73
27) 2,2-Dichloropropane	9.457	77	437500	48.31	ug/L	#	95
28) Bromochloromethane	9.551	128	191555	42.19	ug/L		99
29) Cyclohexane	9.569	56	1007443	63.42	ug/L	#	81
30) Chloroform	9.586	83	627078	45.65	ug/L	#	85
32) Dibromofluoromethane	9.792	113	486805	51.80	ug/L		93
33) 2-Butanone	9.915	72	264596	304.03	ug/L	#	62
34) 1,1,1-Trichloroethane	9.857	97	537077	48.48	ug/L	#	87
35) 1,1-Dichloropropene	9.974	75	508000	53.99	ug/L	#	85
36) Propionitrile	10.262	54	1081847	830.81	ug/L		92
37) Methacrylonitrile	10.274	41	4495820m	847.72	ug/L		
38) Isobutyl Alcohol	10.286	43	1151810	1656.25	ug/L	#	60
40) Carbon Tetrachloride	9.786	117	518702	48.62	ug/L		89
41) Benzene	10.245	78	1524830	51.27	ug/L		99
43) 1,2-Dichloroethane-d4	10.374	65	671368	62.59	ug/L	#	82
44) 1,2-Dichloroethane	10.438	62	622528	65.18	ug/L	#	92

Data Path : C:\msdchem\1\data\091616\
Data File : 5IK017.D
Acq On : 16 Sep 2016 3:58 pm
Operator : KKW
InstName : OVGCMS5
Sample : CAL5
Misc :
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Sep 17 16:49:14 2016
Quant Method : C:\msdchem\1\methods\091616.M
Quant Title : ENCO SOP VGCMS05; Element Cal 1606061
QLast Update : Fri Aug 05 08:49:48 2016
Response via : Initial Calibration

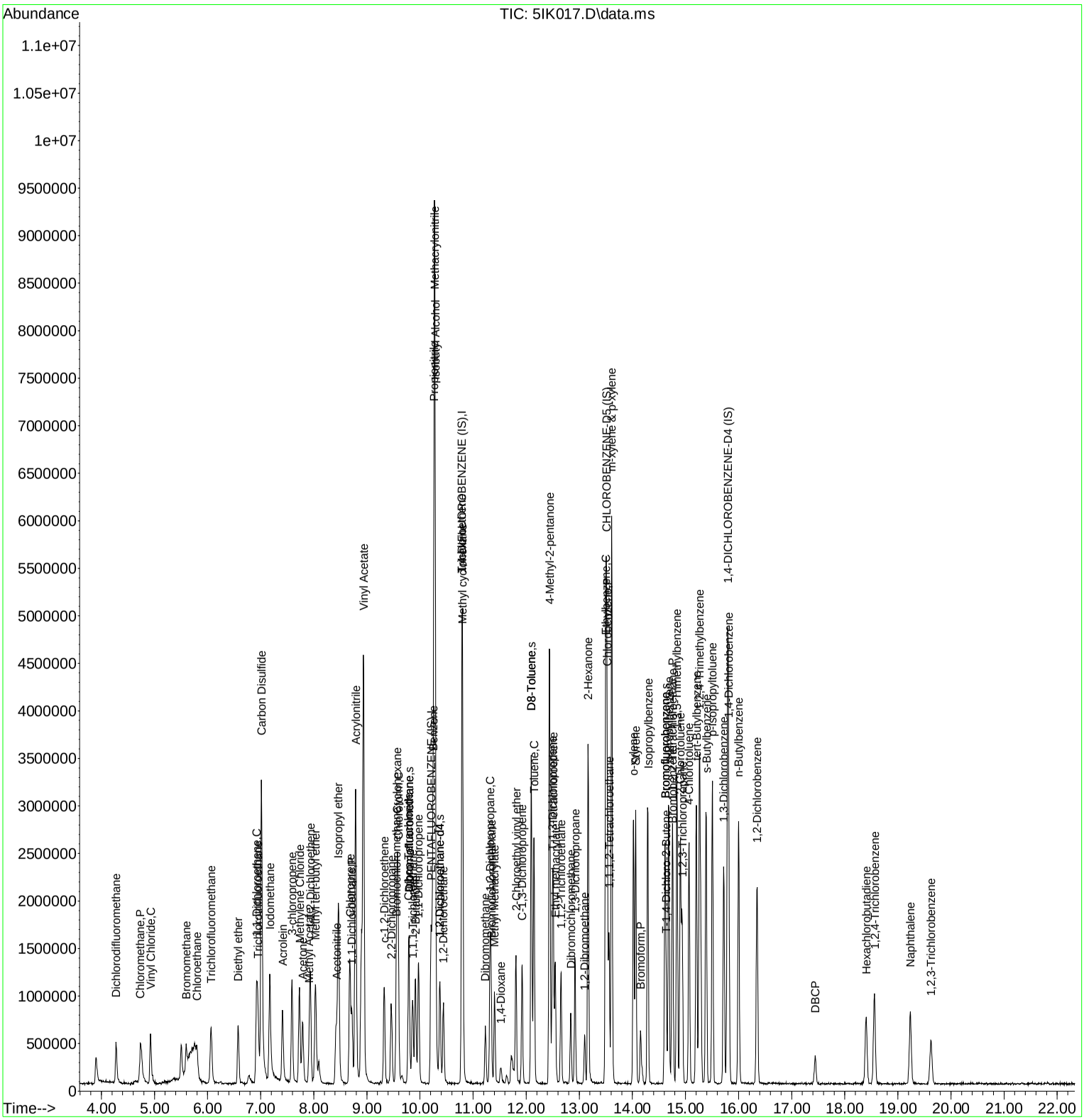
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
45) Trichloroethene	10.791	130	466420	38.36	ug/L	#	78
46) Methyl cyclohexane	10.803	83	658940	40.59	ug/L	#	64
47) Dibromomethane	11.232	93	218857	51.51	ug/L	#	82
48) 1,2-Dichloropropane	11.320	63	491669	61.00	ug/L		93
49) Bromodichloromethane	11.343	83	420550	45.40	ug/L	#	83
50) Methyl Methacrylate	11.402	69	257786	55.71	ug/L	#	76
51) 1,4-Dioxane	11.520	88	117231	1037.12	ug/L	#	54
52) 2-Chloroethyl vinyl ether	11.807	63	493313	418.88	ug/L	#	88
53) C-1,3-Dichloropropene	11.925	75	564139	62.81	ug/L	#	80
55) D8-Toluene	12.095	98	2033476	48.89	ug/L	#	91
56) 4-Methyl-2-pentanone	12.436	100	367812	269.75	ug/L	#	56
58) Toluene	12.148	92	1023653	48.95	ug/L		98
59) T-1,3-Dichloropropene	12.495	75	464019	54.22	ug/L	#	83
60) Tetrachloroethene	12.507	164	360370	42.72	ug/L		95
61) Ethyl methacrylate	12.548	69	502131	66.16	ug/L		94
62) 1,1,2-Trichloroethane	12.654	97	343087	51.53	ug/L	#	88
63) Dibromochloromethane	12.842	129	382135	47.29	ug/L	#	86
64) 1,3-Dichloropropane	12.918	76	548216	54.88	ug/L	#	72
65) 1,2-Dibromoethane	13.100	107	365537	49.61	ug/L		99
66) 2-Hexanone	13.165	43	2497298	422.53	ug/L	#	95
67) Ethylbenzene	13.494	106	678700	44.54	ug/L	#	84
68) Chlorobenzene	13.523	112	1187603	44.96	ug/L		96
69) 1,1,1,2-Tetrachloroethane	13.558	131	402725	44.81	ug/L		97
70) m-xylene & p-xylene	13.611	106	1697171	87.82	ug/L		83
71) o-xylene	14.023	106	805499	45.32	ug/L		86
72) Styrene	14.064	104	1415523	53.04	ug/L	#	90
73) Bromoform	14.158	173	265719	49.58	ug/L	#	89
74) Isopropylbenzene	14.293	105	2021653	50.68	ug/L		93
76) Bromofluorobenzene	14.616	95	761327	51.07	ug/L		95
77) n-Propylbenzene	14.686	91	2406947	50.16	ug/L		92
78) 1,1,2,2-Tetrachloroethane	14.751	83	511138	54.94	ug/L	#	88
79) 1,2,3-Trichloropropane	14.939	61	221143	70.46	ug/L	#	76
80) T-1,4-Dichloro-2-Butene	14.639	53	289199	82.48	ug/L	#	90
82) Bromobenzene	14.763	156	536048	47.81	ug/L	#	66
83) 1,2,4-Trimethylbenzene	15.262	105	1936099	58.97	ug/L		91
84) 2-Chlorotoluene	14.904	91	1410353	59.06	ug/L	#	90
85) 4-Chlorotoluene	15.063	91	1486002	58.61	ug/L	#	90
86) tert-Butylbenzene	15.204	119	1710942	50.97	ug/L		90
87) 1,3,5-Trimethylbenzene	14.839	105	1870209	56.79	ug/L		93
88) p-Isopropyltoluene	15.509	119	2211184	51.46	ug/L		95
89) s-Butylbenzene	15.392	105	2347017	58.39	ug/L	#	93
90) 1,3-Dichlorobenzene	15.721	146	1134924	51.63	ug/L	#	94
91) 1,4-Dichlorobenzene	15.815	146	1181394	51.90	ug/L		96
92) n-Butylbenzene	16.003	91	1744474	57.03	ug/L		92
93) 1,2-Dichlorobenzene	16.349	146	1085571	53.16	ug/L		97
94) DBCP	17.448	157	102952	63.61	ug/L		99
95) Hexachlorobutadiene	18.400	225	188293	40.47	ug/L	#	88
96) 1,2,4-Trichlorobenzene	18.558	180	445304	48.25	ug/L		96
97) Naphthalene	19.234	128	973049	65.65	ug/L		96
98) 1,2,3-Trichlorobenzene	19.622	180	248548	49.16	ug/L		99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\091616\
Data File : 5IK017.D
Acq On : 16 Sep 2016 3:58 pm
Operator : KKW
InstName : OVGCMS5
Sample : CAL5
Misc :
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Sep 17 16:49:14 2016
Quant Method : C:\msdchem\1\methods\091616.M
Quant Title : ENCO SOP VGCMS05; Element Cal 1606061
QLast Update : Fri Aug 05 08:49:48 2016
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\091616\
Data File : 5IK018.D
Acq On : 16 Sep 2016 4:28 pm
Operator : KKW
InstName : OVGCMS5
Sample : CAL6
Misc :
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Sep 17 16:49:19 2016
Quant Method : C:\msdchem\1\methods\091616.M
Quant Title : ENCO SOP VGCMS05; Element Cal 1606061
QLast Update : Fri Aug 05 08:49:48 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) PENTAFLUOROBENZENE (IS)	10.209	168	1201314	50.00	ug/L		0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.791	114	2005053	50.00	ug/L	#	0.00
57) CHLOROBENZENE-D5 (IS)	13.511	82	921274	50.00	ug/L	#	0.00
81) 1,4-DICHLOROBENZENE-D4...	15.797	152	1228128	50.00	ug/L	#	0.00
System Monitoring Compounds							
31) Dibromofluoromethane	9.786	113	651614	64.79	ug/L		-0.01
Spiked Amount 50.000	Range 72 - 133		Recovery = 129.58%				
42) 1,2-Dichloroethane-d4	10.374	65	862828	75.84	ug/L		0.00
Spiked Amount 50.000	Range 70 - 120		Recovery = 151.68%#				
54) D8-Toluene	12.095	98	2666962	60.46	ug/L		0.00
Spiked Amount 50.000	Range 85 - 120		Recovery = 120.92%#				
75) Bromofluorobenzene	14.610	95	995287	63.48	ug/L		-0.01
Spiked Amount 50.000	Range 75 - 120		Recovery = 126.96%#				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	4.275	85	785428	85.87	ug/L		98
3) Chloromethane	4.739	50	1489157	142.08	ug/L		94
4) Vinyl Chloride	4.927	62	1138818	125.32	ug/L		94
5) Bromomethane	5.597	94	406127	77.22	ug/L	#	93
6) Chloroethane	5.797	64	476704	94.38	ug/L		99
7) Trichlorofluoromethane	6.049	101	1149480	97.85	ug/L		95
8) Diethyl ether	6.578	59	789581	120.20	ug/L	#	89
9) 1,1-Dichloroethene	6.919	96	606168	77.92	ug/L	#	66
10) Trichlorotrifluoroethane	6.942	151	556547	66.43	ug/L	#	82
11) Acrolein	7.412	56	1363562	2131.92	ug/L		90
12) Iodomethane	7.171	142	3347025	442.09	ug/L		98
13) Carbon Disulfide	7.013	76	9144650	819.46	ug/L		94
14) 3-chloropropene	7.583	41	1452682	140.19	ug/L		92
15) Acetone	7.788	43	1590102	656.38	ug/L	#	61
16) Methylene Chloride	7.730	84	613314	80.73	ug/L	#	24
17) Methyl Acetate	7.912	43	981014	124.65	ug/L		94
18) t-1,2-Dichloroethene	7.935	96	667748	75.87	ug/L	#	64
19) Methyl tert-butyl ether	8.035	73	1598877	92.39	ug/L	#	83
20) Acetonitrile	8.423	41	1587098m	1432.13	ug/L		
21) Isopropyl ether	8.464	45	3404564	119.97	ug/L	#	92
22) Chloroprene	8.676	88	620293	99.25	ug/L	#	73
23) 1,1-Dichloroethane	8.717	63	1485802	109.52	ug/L	#	93
24) Acrylonitrile	8.787	53	5011288	1504.39	ug/L		99
25) Vinyl Acetate	8.934	43	12145452	728.10	ug/L		95
26) c-1,2-Dichloroethene	9.328	96	753897	82.61	ug/L	#	76
27) 2,2-Dichloropropane	9.457	77	744833	76.85	ug/L	#	93
28) Bromochloromethane	9.557	128	304941	62.76	ug/L		95
29) Cyclohexane	9.575	56	1931953	113.63	ug/L	#	81
30) Chloroform	9.592	83	1103109	75.03	ug/L	#	85
32) Dibromofluoromethane	9.786	113	651614	64.79	ug/L	#	95
33) 2-Butanone	9.915	72	468737	503.24	ug/L		65
34) 1,1,1-Trichloroethane	9.857	97	969076	81.74	ug/L	#	88
35) 1,1-Dichloropropene	9.974	75	910574	90.42	ug/L		87
36) Propionitrile	10.262	54	1980757	1421.27	ug/L		87
37) Methacrylonitrile	10.280	41	7519767	1324.82	ug/L	#	85
38) Isobutyl Alcohol	10.285	43	2115030	2841.64	ug/L	#	87
40) Carbon Tetrachloride	9.786	117	953833	84.30	ug/L		95
41) Benzene	10.238	78	2695299	85.46	ug/L		98
43) 1,2-Dichloroethane-d4	10.374	65	860589	75.65	ug/L	#	82
44) 1,2-Dichloroethane	10.444	62	1036732	102.35	ug/L	#	93

Data Path : C:\msdchem\1\data\091616\
Data File : 5IK018.D
Acq On : 16 Sep 2016 4:28 pm
Operator : KKW
InstName : OVGCMS5
Sample : CAL6
Misc :
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Sep 17 16:49:19 2016
Quant Method : C:\msdchem\1\methods\091616.M
Quant Title : ENCO SOP VGCMS05; Element Cal 1606061
QLast Update : Fri Aug 05 08:49:48 2016
Response via : Initial Calibration

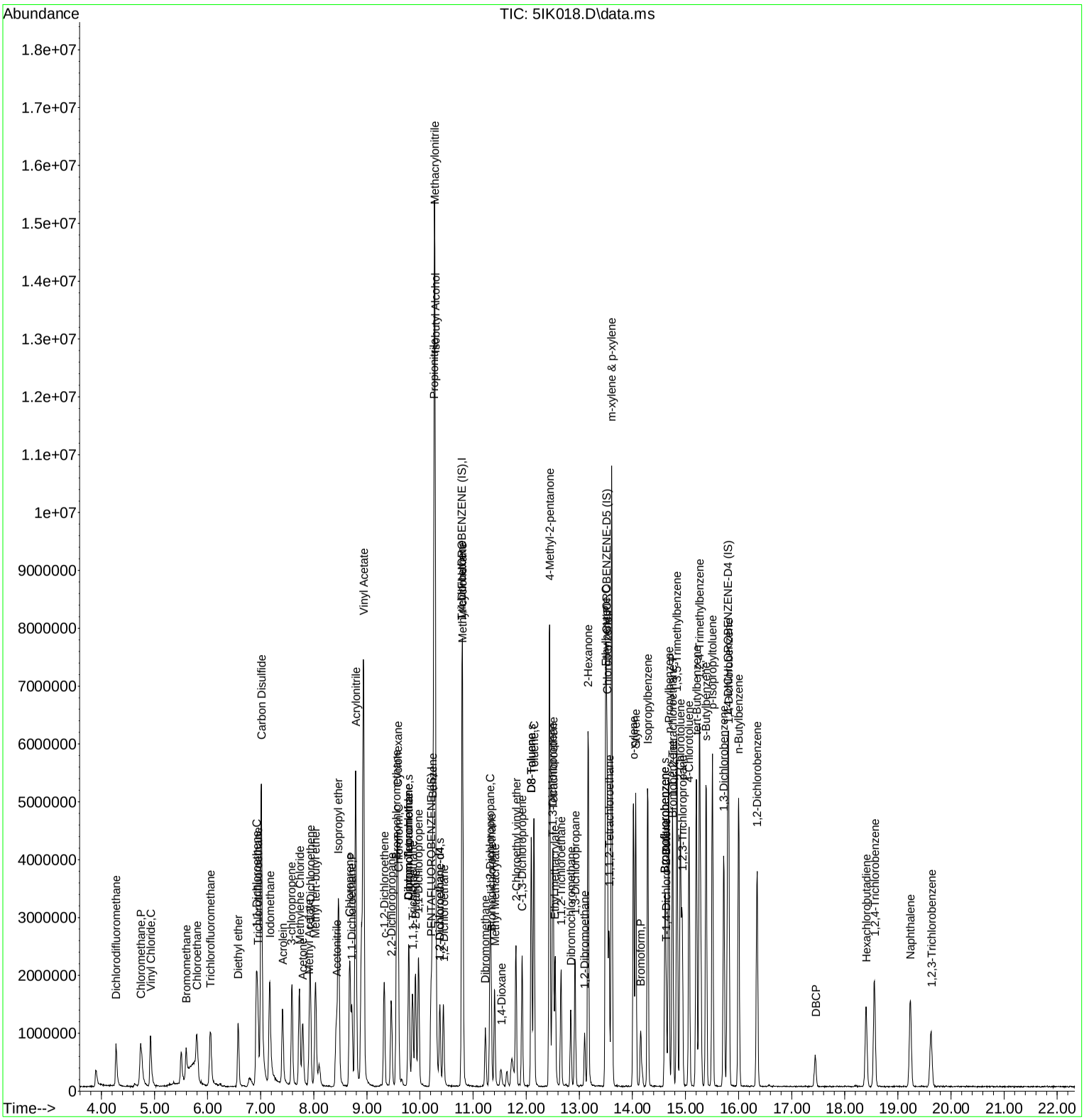
Compound	R.T.	QIon	Response	Conc Units		Dev(Min)
45) Trichloroethene	10.791	130	857684	66.51 ug/L	#	86
46) Methyl cyclohexane	10.803	83	1239859	72.02 ug/L	#	68
47) Dibromomethane	11.231	93	391617	86.91 ug/L	#	80
48) 1,2-Dichloropropane	11.320	63	900983	105.40 ug/L		93
49) Bromodichloromethane	11.343	83	752887	76.63 ug/L	#	85
50) Methyl Methacrylate	11.408	69	476502	97.10 ug/L		84
51) 1,4-Dioxane	11.525	88	236320	1971.33 ug/L	#	69
52) 2-Chloroethyl vinyl ether	11.807	63	866326	693.62 ug/L	#	86
53) C-1,3-Dichloropropene	11.925	75	996186	104.58 ug/L	#	82
55) D8-Toluene	12.095	98	2666962	60.46 ug/L	#	93
56) 4-Methyl-2-pentanone	12.442	100	652431	451.18 ug/L	#	62
58) Toluene	12.148	92	1817745	82.65 ug/L		97
59) T-1,3-Dichloropropene	12.495	75	832886	92.53 ug/L	#	86
60) Tetrachloroethene	12.506	164	674555	76.03 ug/L		99
61) Ethyl methacrylate	12.542	69	854990	107.12 ug/L		97
62) 1,1,2-Trichloroethane	12.659	97	589607	84.20 ug/L	#	87
63) Dibromochloromethane	12.841	129	662757	77.98 ug/L	#	92
64) 1,3-Dichloropropane	12.918	76	988115	94.05 ug/L	#	80
65) 1,2-Dibromoethane	13.100	107	636956	82.19 ug/L		98
66) 2-Hexanone	13.164	43	4373625	703.62 ug/L	#	97
67) Ethylbenzene	13.494	106	1238595	77.29 ug/L		85
68) Chlorobenzene	13.523	112	2069873	74.51 ug/L		100
69) 1,1,1,2-Tetrachloroethane	13.558	131	722013	76.38 ug/L		97
70) m-xylene & p-xylene	13.611	106	3086428	151.86 ug/L		86
71) o-xylene	14.022	106	1435022	76.77 ug/L		82
72) Styrene	14.063	104	2414359	86.02 ug/L	#	89
73) Bromoform	14.157	173	468623	83.15 ug/L		93
74) Isopropylbenzene	14.287	105	3636156	86.68 ug/L		94
76) Bromofluorobenzene	14.610	95	995287	63.48 ug/L		95
77) n-Propylbenzene	14.686	91	4357647	86.36 ug/L		93
78) 1,1,2,2-Tetrachloroethane	14.751	83	871767	89.09 ug/L	#	87
79) 1,2,3-Trichloropropane	14.939	61	371334	112.49 ug/L	#	77
80) T-1,4-Dichloro-2-Butene	14.639	53	495370	134.34 ug/L	#	86
82) Bromobenzene	14.763	156	933089	76.95 ug/L	#	65
83) 1,2,4-Trimethylbenzene	15.262	105	3474852	97.85 ug/L		93
84) 2-Chlorotoluene	14.904	91	2537310m	98.24 ug/L		
85) 4-Chlorotoluene	15.068	91	2620238	95.55 ug/L		91
86) tert-Butylbenzene	15.203	119	3099842	85.38 ug/L		93
87) 1,3,5-Trimethylbenzene	14.839	105	3450096	96.86 ug/L		92
88) p-Isopropyltoluene	15.509	119	4006021	86.20 ug/L		97
89) s-Butylbenzene	15.385	105	4378922	100.72 ug/L		94
90) 1,3-Dichlorobenzene	15.720	146	1986453	83.55 ug/L	#	96
91) 1,4-Dichlorobenzene	15.814	146	2082715	84.59 ug/L		100
92) n-Butylbenzene	16.002	91	3267964	98.77 ug/L		93
93) 1,2-Dichlorobenzene	16.349	146	1867734	84.56 ug/L	#	95
94) DBCP	17.454	157	200726	114.67 ug/L		89
95) Hexachlorobutadiene	18.400	225	380159	75.54 ug/L		95
96) 1,2,4-Trichlorobenzene	18.558	180	841387	84.30 ug/L	#	93
97) Naphthalene	19.228	128	2001279	106.19 ug/L		98
98) 1,2,3-Trichlorobenzene	19.628	180	511952	93.63 ug/L		96

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\091616\
Data File : 5IK018.D
Acq On : 16 Sep 2016 4:28 pm
Operator : KKW
InstName : OVGCMS5
Sample : CAL6
Misc :
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Sep 17 16:49:19 2016
Quant Method : C:\msdchem\1\methods\091616.M
Quant Title : ENCO SOP VGCMS05; Element Cal 1606061
QLast Update : Fri Aug 05 08:49:48 2016
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\091616\
Data File : 5IK019.D
Acq On : 16 Sep 2016 4:58 pm
Operator : KKW
InstName : OVGCMS5
Sample : CAL7
Misc :
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Sep 17 16:49:27 2016
Quant Method : C:\msdchem\1\methods\091616.M
Quant Title : ENCO SOP VGCMS05; Element Cal 1606061
QLast Update : Fri Aug 05 08:49:48 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) PENTAFLUOROBENZENE (IS)	10.209	168	1243698	50.00	ug/L		0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.791	114	2086773	50.00	ug/L	#	0.00
57) CHLOROBENZENE-D5 (IS)	13.511	82	925907	50.00	ug/L	#	0.00
81) 1,4-DICHLOROBENZENE-D4...	15.797	152	1285642	50.00	ug/L	#	0.00
System Monitoring Compounds							
31) Dibromofluoromethane	9.792	113	778379	74.76	ug/L		0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 149.52%#				
42) 1,2-Dichloroethane-d4	10.374	65	975009	82.35	ug/L		0.00
Spiked Amount 50.000	Range 70 - 120		Recovery = 164.70%#				
54) D8-Toluene	12.095	98	3277896	71.40	ug/L		0.00
Spiked Amount 50.000	Range 85 - 120		Recovery = 142.80%#				
75) Bromofluorobenzene	14.616	95	1223311	77.63	ug/L		0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 155.26%#				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	4.275	85	989411	104.48	ug/L		99
3) Chloromethane	4.739	50	2057203	189.59	ug/L		96
4) Vinyl Chloride	4.927	62	1557568	165.56	ug/L		89
5) Bromomethane	5.591	94	558293	94.97	ug/L	#	89
6) Chloroethane	5.791	64	561112	107.31	ug/L		95
7) Trichlorofluoromethane	6.049	101	1496714	123.06	ug/L		98
8) Diethyl ether	6.578	59	1030132	151.48	ug/L	#	87
9) 1,1-Dichloroethene	6.919	96	807453	100.25	ug/L	#	67
10) Trichlorotrifluoroethane	6.948	151	740341	85.35	ug/L	#	84
11) Acrolein	7.412	56	1842576	2782.68	ug/L		90
12) Iodomethane	7.166	142	4435572	565.90	ug/L		99
13) Carbon Disulfide	7.007	76	12115082	1048.65	ug/L		96
14) 3-chloropropene	7.583	41	1874933	174.77	ug/L		90
15) Acetone	7.794	43	2061063	821.79	ug/L	#	58
16) Methylene Chloride	7.724	84	823240	104.66	ug/L	#	31
17) Methyl Acetate	7.912	43	1309977	160.78	ug/L		93
18) t-1,2-Dichloroethene	7.929	96	930684	102.15	ug/L	#	66
19) Methyl tert-butyl ether	8.029	73	2185951	122.01	ug/L	#	85
20) Acetonitrile	8.429	41	1904249m	1659.75	ug/L		
21) Isopropyl ether	8.464	45	4628342	157.54	ug/L	#	92
22) Chloroprene	8.676	88	826713	127.77	ug/L	#	71
23) 1,1-Dichloroethane	8.717	63	2026052	144.25	ug/L	#	94
24) Acrylonitrile	8.787	53	6701228	1943.15	ug/L		98
25) Vinyl Acetate	8.934	43	15810457	915.51	ug/L		96
26) c-1,2-Dichloroethene	9.328	96	989612	104.74	ug/L	#	74
27) 2,2-Dichloropropane	9.457	77	1013654	101.03	ug/L	#	95
28) Bromochloromethane	9.557	128	380215	75.58	ug/L		100
29) Cyclohexane	9.569	56	2529333	143.70	ug/L	#	82
30) Chloroform	9.592	83	1491563	98.00	ug/L	#	89
32) Dibromofluoromethane	9.792	113	778379	74.76	ug/L		92
33) 2-Butanone	9.915	72	627783	651.02	ug/L		65
34) 1,1,1-Trichloroethane	9.862	97	1313019	106.97	ug/L	#	90
35) 1,1-Dichloropropene	9.974	75	1247900	119.69	ug/L		88
36) Propionitrile	10.268	54	2631720	1824.01	ug/L		87
37) Methacrylonitrile	10.280	41	9840406	1674.58	ug/L		87
38) Isobutyl Alcohol	10.297	43	2940217	3815.69	ug/L	#	87
40) Carbon Tetrachloride	9.786	117	1276763	108.42	ug/L		97
41) Benzene	10.238	78	3667859	111.74	ug/L		99
43) 1,2-Dichloroethane-d4	10.374	65	975009	82.35	ug/L	#	73
44) 1,2-Dichloroethane	10.438	62	1357426	128.77	ug/L	#	91

Data Path : C:\msdchem\1\data\091616\
Data File : 5IK019.D
Acq On : 16 Sep 2016 4:58 pm
Operator : KKW
InstName : OVGCMS5
Sample : CAL7
Misc :
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Sep 17 16:49:27 2016
Quant Method : C:\msdchem\1\methods\091616.M
Quant Title : ENCO SOP VGCMS05; Element Cal 1606061
QLast Update : Fri Aug 05 08:49:48 2016
Response via : Initial Calibration

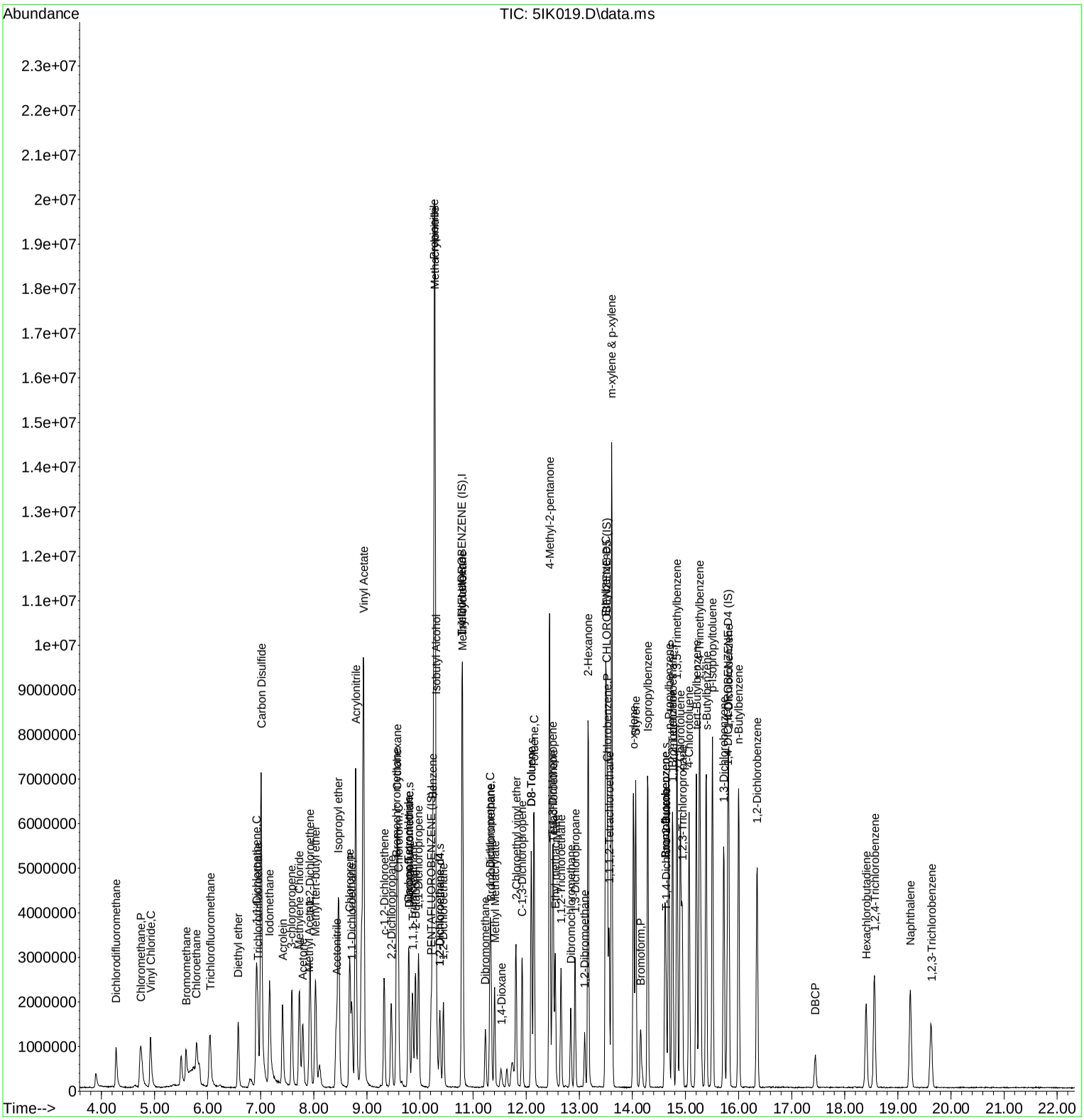
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
45) Trichloroethene	10.791	130	1160874	86.49	ug/L	#	86
46) Methyl cyclohexane	10.803	83	1639427	91.50	ug/L	#	68
47) Dibromomethane	11.231	93	517855	110.42	ug/L	#	79
48) 1,2-Dichloropropane	11.320	63	1207125	135.68	ug/L		94
49) Bromodichloromethane	11.337	83	1009205	98.70	ug/L	#	88
50) Methyl Methacrylate	11.408	69	651015	127.46	ug/L		86
51) 1,4-Dioxane	11.525	88	308687	2474.17	ug/L	#	63
52) 2-Chloroethyl vinyl ether	11.807	63	1161840	893.79	ug/L	#	88
53) C-1,3-Dichloropropene	11.919	75	1348687	136.04	ug/L	#	84
55) D8-Toluene	12.095	98	3277896	71.40	ug/L	#	92
56) 4-Methyl-2-pentanone	12.442	100	870625	578.49	ug/L	#	60
58) Toluene	12.148	92	2522564	114.12	ug/L		100
59) T-1,3-Dichloropropene	12.495	75	1105579	122.21	ug/L	#	88
60) Tetrachloroethene	12.512	164	877363	98.40	ug/L		98
61) Ethyl methacrylate	12.548	69	1162618	144.93	ug/L		93
62) 1,1,2-Trichloroethane	12.653	97	782851	111.24	ug/L	#	85
63) Dibromochloromethane	12.841	129	884456	103.55	ug/L	#	92
64) 1,3-Dichloropropane	12.918	76	1290729	122.24	ug/L	#	77
65) 1,2-Dibromoethane	13.100	107	835524	107.27	ug/L	#	98
66) 2-Hexanone	13.164	43	5813531	930.59	ug/L	#	98
67) Ethylbenzene	13.499	106	1618001	100.45	ug/L	#	81
68) Chlorobenzene	13.529	112	2877304	103.05	ug/L		97
69) 1,1,1,2-Tetrachloroethane	13.558	131	987873	103.98	ug/L		97
70) m-xylene & p-xylene	13.611	106	4114827	201.44	ug/L		83
71) o-xylene	14.022	106	1917005	102.04	ug/L		79
72) Styrene	14.063	104	3415204	121.06	ug/L	#	91
73) Bromoform	14.152	173	650368	114.82	ug/L	#	89
74) Isopropylbenzene	14.287	105	4890986	116.01	ug/L		93
76) Bromofluorobenzene	14.616	95	1223311	77.63	ug/L		94
77) n-Propylbenzene	14.686	91	5807255	114.51	ug/L		93
78) 1,1,2,2-Tetrachloroethane	14.751	83	1189222	120.93	ug/L	#	87
79) 1,2,3-Trichloropropane	14.939	61	497746	150.04	ug/L	#	76
80) T-1,4-Dichloro-2-Butene	14.633	53	651564	175.82	ug/L	#	97
82) Bromobenzene	14.757	156	1282911	101.06	ug/L	#	70
83) 1,2,4-Trimethylbenzene	15.262	105	4708387	126.65	ug/L		92
84) 2-Chlorotoluene	14.904	91	3380851m	125.05	ug/L		
85) 4-Chlorotoluene	15.068	91	3538385	123.27	ug/L		91
86) tert-Butylbenzene	15.203	119	4198733	110.48	ug/L		93
87) 1,3,5-Trimethylbenzene	14.839	105	4566192	122.45	ug/L		92
88) p-Isopropyltoluene	15.509	119	5432586	111.67	ug/L		97
89) s-Butylbenzene	15.391	105	5844129	128.40	ug/L		94
90) 1,3-Dichlorobenzene	15.720	146	2676734	107.55	ug/L	#	96
91) 1,4-Dichlorobenzene	15.814	146	2772773	107.58	ug/L		99
92) n-Butylbenzene	16.002	91	4444183	128.31	ug/L		93
93) 1,2-Dichlorobenzene	16.349	146	2559950	110.72	ug/L		97
94) DBCP	17.436	157	270450	147.59	ug/L		94
95) Hexachlorobutadiene	18.405	225	541483	102.79	ug/L		99
96) 1,2,4-Trichlorobenzene	18.558	180	1219805	116.74	ug/L		95
97) Naphthalene	19.234	128	2912923	133.95	ug/L		98
98) 1,2,3-Trichlorobenzene	19.628	180	775605	135.50	ug/L		99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\091616\
Data File : 5IK019.D
Acq On : 16 Sep 2016 4:58 pm
Operator : KKW
InstName : OVGCMS5
Sample : CAL7
Misc :
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Sep 17 16:49:27 2016
Quant Method : C:\msdchem\1\methods\091616.M
Quant Title : ENCO SOP VGCMS05; Element Cal 1606061
QLast Update : Fri Aug 05 08:49:48 2016
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\091616\
Data File : 5IK022.D
Acq On : 16 Sep 2016 6:27 pm
Operator : KKW
InstName : OVGCMS5
Sample : SCV1
Misc :
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Sep 19 08:52:47 2016
Quant Method : C:\msdchem\1\methods\091616.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Mon Sep 19 08:51:53 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) PENTAFLUOROBENZENE (IS)	10.209	168	1246420	50.00	ug/L		0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.791	114	2024709	50.00	ug/L		0.00
57) CHLOROBENZENE-D5 (IS)	13.511	82	916907	50.00	ug/L		0.00
81) 1,4-DICHLOROBENZENE-D4...	15.797	152	1238227	50.00	ug/L		0.00
System Monitoring Compounds							
31) Dibromofluoromethane	9.798	113	529258	48.64	ug/L		0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 97.28%				
42) 1,2-Dichloroethane-d4	10.374	65	721449	52.26	ug/L		0.00
Spiked Amount 50.000	Range 70 - 120		Recovery = 104.52%				
54) D8-Toluene	12.095	98	2227517	50.44	ug/L		0.00
Spiked Amount 50.000	Range 85 - 120		Recovery = 100.88%				
75) Bromofluorobenzene	14.616	95	854302	52.17	ug/L		0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 104.34%				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	4.281	85	544122	57.80	ug/L		96
3) Chloromethane	4.739	50	945363	48.13	ug/L		99
4) Vinyl Chloride	4.927	62	697199	50.62	ug/L		93
5) Bromomethane	5.597	94	171197	42.56	ug/L	#	81
6) Chloroethane	5.802	64	387357	53.84	ug/L		99
7) Trichlorofluoromethane	6.067	101	739067	49.96	ug/L		100
8) Diethyl ether	6.578	59	567991	55.84	ug/L		97
9) 1,1-Dichloroethene	6.925	96	411017	55.92	ug/L		98
10) Trichlorotrifluoroethane	6.948	151	387107	53.43	ug/L		94
11) Acrolein	7.407	56	526372	330.83	ug/L		99
12) Iodomethane	7.172	142	465972	53.46	ug/L		98
13) Carbon Disulfide	7.013	76	1268615	53.02	ug/L		99
14) 3-chloropropene	7.589	41	930266	52.87	ug/L		98
15) Acetone	7.788	43	1041468	252.15	ug/L		98
16) Methylene Chloride	7.730	84	413384	50.93	ug/L		97
17) Methyl Acetate	7.912	43	607296	47.10	ug/L		97
18) t-1,2-Dichloroethene	7.935	96	440105	49.52	ug/L		99
19) Methyl tert-butyl ether	8.035	73	1104415	51.98	ug/L		99
20) Acetonitrile	8.435	41	95031m	49.79	ug/L		
21) Isopropyl ether	8.464	45	2349540	58.47	ug/L		99
22) Chloroprene	8.682	88	424328	52.10	ug/L		97
23) 1,1-Dichloroethane	8.717	63	1015967	53.20	ug/L		99
24) Acrylonitrile	8.787	53	318358	51.44	ug/L	#	97
25) Vinyl Acetate	8.940	43	1495987	47.22	ug/L		96
26) c-1,2-Dichloroethene	9.322	96	485244	49.74	ug/L		95
27) 2,2-Dichloropropane	9.457	77	558222	56.33	ug/L		99
28) Bromochloromethane	9.551	128	233980	59.63	ug/L		99
29) Cyclohexane	9.575	56	1285456	51.98	ug/L		96
30) Chloroform	9.586	83	769930	55.30	ug/L		97
32) Dibromofluoromethane	9.798	113	529258	48.64	ug/L		88
33) 2-Butanone	9.915	72	297306	267.71	ug/L		98
34) 1,1,1-Trichloroethane	9.863	97	669951	52.46	ug/L		97
35) 1,1-Dichloropropene	9.974	75	635968	52.71	ug/L		97
36) Propionitrile	10.274	54	138890	53.96	ug/L	#	1
37) Methacrylonitrile	10.274	41	699929	75.06	ug/L	#	100
38) Isobutyl Alcohol	10.274	43	624998	444.45	ug/L	#	97
40) Carbon Tetrachloride	9.786	117	637644	56.99	ug/L		83
41) Benzene	10.239	78	1811650	54.04	ug/L		99
43) 1,2-Dichloroethane-d4	10.374	65	721449	52.26	ug/L	#	80
44) 1,2-Dichloroethane	10.444	62	692179	52.57	ug/L		97

Data Path : C:\msdchem\1\data\091616\
Data File : 5IK022.D
Acq On : 16 Sep 2016 6:27 pm
Operator : KKW
InstName : OVGCMS5
Sample : SCV1
Misc :
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Sep 19 08:52:47 2016
Quant Method : C:\msdchem\1\methods\091616.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Mon Sep 19 08:51:53 2016
Response via : Initial Calibration

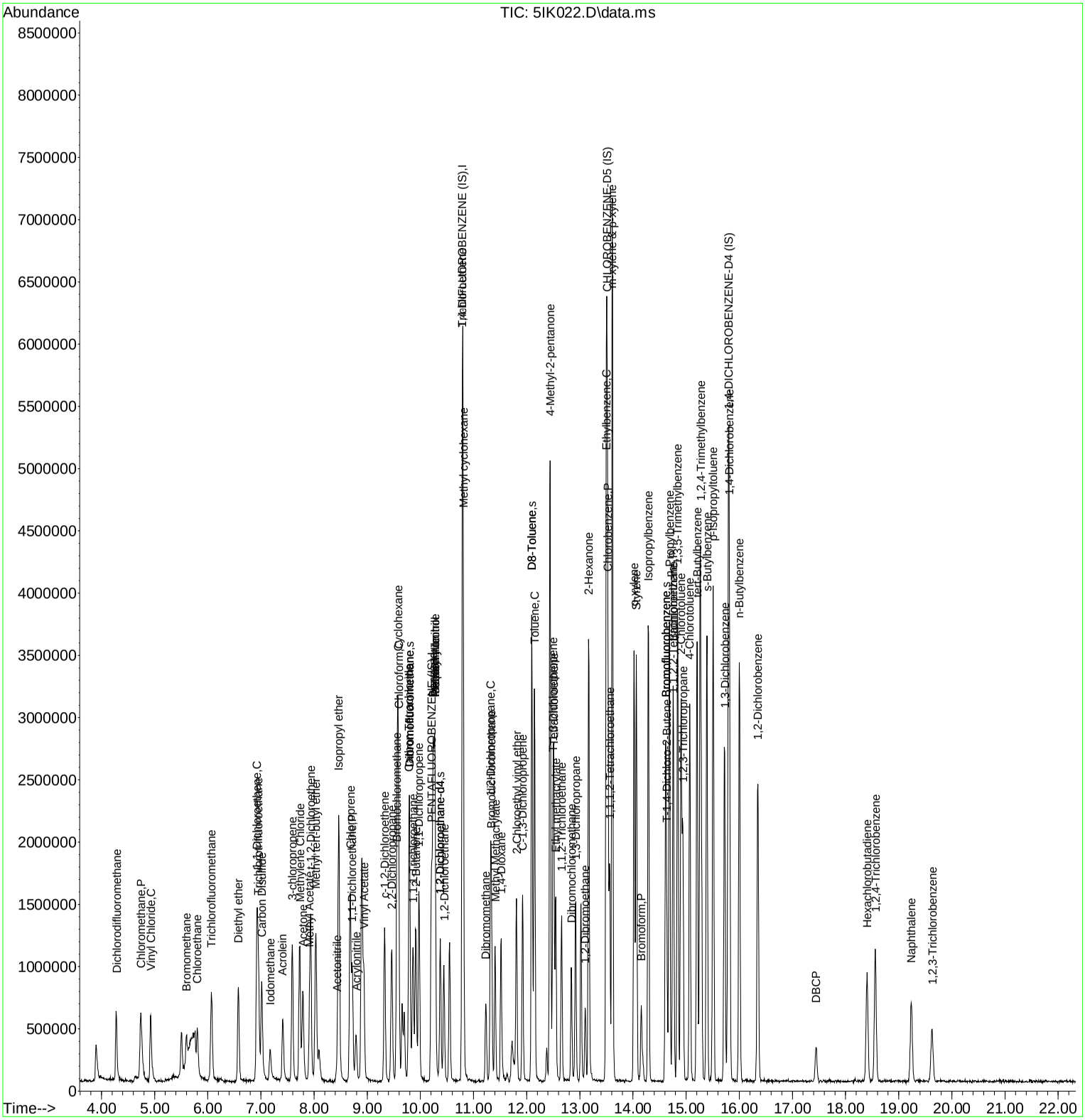
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
45) Trichloroethene	10.791	130	581676	55.74	ug/L		93
46) Methyl cyclohexane	10.808	83	875100	56.33	ug/L		98
47) Dibromomethane	11.232	93	268872	54.27	ug/L		92
48) 1,2-Dichloropropane	11.326	63	586782	51.48	ug/L		97
49) Bromodichloromethane	11.337	83	517153	56.65	ug/L		95
50) Methyl Methacrylate	11.408	69	313190	54.01	ug/L		90
51) 1,4-Dioxane	11.519	88	165474	1133.53	ug/L		90
52) 2-Chloroethyl vinyl ether	11.807	63	519725	235.64	ug/L		98
53) C-1,3-Dichloropropene	11.925	75	673135	52.87	ug/L		98
55) D8-Toluene	12.095	98	2227517	50.44	ug/L	#	89
56) 4-Methyl-2-pentanone	12.442	100	390378	236.00	ug/L		97
58) Toluene	12.148	92	1257327	57.18	ug/L		100
59) T-1,3-Dichloropropene	12.495	75	576585	54.65	ug/L		93
60) Tetrachloroethene	12.512	164	431771	54.47	ug/L		96
61) Ethyl methacrylate	12.548	69	577393	52.26	ug/L		98
62) 1,1,2-Trichloroethane	12.659	97	389182	51.81	ug/L		97
63) Dibromochloromethane	12.841	129	451155	58.29	ug/L		97
64) 1,3-Dichloropropane	12.918	76	662999	55.03	ug/L		92
65) 1,2-Dibromoethane	13.100	107	425506	52.74	ug/L		96
66) 2-Hexanone	13.165	43	2574934	261.25	ug/L		99
67) Ethylbenzene	13.494	106	814855	52.52	ug/L		96
68) Chlorobenzene	13.529	112	1422782	55.18	ug/L		96
69) 1,1,1,2-Tetrachloroethane	13.558	131	461763	53.17	ug/L		99
70) m-xylene & p-xylene	13.611	106	2027683	103.66	ug/L		98
71) o-xylene	14.022	106	965161	52.89	ug/L		90
72) Styrene	14.064	104	1738612	54.65	ug/L		97
73) Bromoform	14.158	173	283742	46.69	ug/L		99
74) Isopropylbenzene	14.287	105	2570568	55.45	ug/L		99
76) Bromofluorobenzene	14.616	95	854302	52.17	ug/L		94
77) n-Propylbenzene	14.686	91	3049018	55.21	ug/L		99
78) 1,1,2,2-Tetrachloroethane	14.751	83	562116	49.76	ug/L		98
79) 1,2,3-Trichloropropane	14.939	61	249995	57.18	ug/L		98
80) T-1,4-Dichloro-2-Butene	14.633	53	314311	50.02	ug/L		99
82) Bromobenzene	14.757	156	635866	55.65	ug/L		98
83) 1,2,4-Trimethylbenzene	15.268	105	2428192	54.82	ug/L		99
84) 2-Chlorotoluene	14.904	91	1702373	58.09	ug/L		97
85) 4-Chlorotoluene	15.068	91	1801131	59.44	ug/L		99
86) tert-Butylbenzene	15.209	119	2117353	53.73	ug/L		97
87) 1,3,5-Trimethylbenzene	14.839	105	2200845	58.32	ug/L		99
88) p-Isopropyltoluene	15.509	119	2720684	53.40	ug/L		99
89) s-Butylbenzene	15.391	105	2907360	52.87	ug/L		98
90) 1,3-Dichlorobenzene	15.726	146	1323535	56.10	ug/L		96
91) 1,4-Dichlorobenzene	15.814	146	1359955	51.55	ug/L		98
92) n-Butylbenzene	16.002	91	2197836	53.03	ug/L		99
93) 1,2-Dichlorobenzene	16.349	146	1286725	53.42	ug/L		98
94) DBCP	17.448	157	101182	40.23	ug/L		96
95) Hexachlorobutadiene	18.406	225	232175	47.38	ug/L		95
96) 1,2,4-Trichlorobenzene	18.564	180	508425	46.12	ug/L		96
97) Naphthalene	19.228	128	867985	43.49	ug/L		100
98) 1,2,3-Trichlorobenzene	19.628	180	219579	43.54	ug/L	#	93

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\091616\
Data File : 5IK022.D
Acq On : 16 Sep 2016 6:27 pm
Operator : KKW
InstName : OVGCMS5
Sample : SCV1
Misc :
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Sep 19 08:52:47 2016
Quant Method : C:\msdchem\1\methods\091616.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Mon Sep 19 08:51:53 2016
Response via : Initial Calibration



TETRA TECH ISG
TtNUS, Information Systems Group

Completion Ticket

On 9/21/2016 at 9:41 AM the following files were submitted to Tetra Tech by kdylnicki@encolabs.com with ENCO:

TE016AZ06090A1.txt, TE016AZ06090A3.txt

If you need to identify this session at a later date refer to Ticket Key:

2016921_349167225_ledd_ENCO

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