SEWAGE TREATMENT PLANT #1 AREA, SWMU 117
PER- AND POLYFLUOROALKYL SUBSTANCES (PFAS)
SITE ASSESSMENT PROGRESS REPORT
KENNEDY SPACE CENTER, FLORIDA

Prepared for:

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APPENDIX A

HISTORICAL ANALYTICAL RESULTS

Table A-1. Historical Soil Analytical Results

Location ID (PFAS-)	**CAS No.**	**Screening Criteria[1,2]**	**SB0061**		**SB0062**		**SB0063**			**SB0064**	
Date			**1/26/21**	**1/26/21**	**1/26/21**	**1/26/21**	**1/26/21**	**1/26/21**	**1/26/21**	**1/26/21**	**1/26/21**
Sample Depth (ft bls)			**0 - 0.5**	**0.5 - 2**	**0 - 0.5**	**0.5 - 2**	**0 - 0.5**	**0 - 0.5***	**0.5 - 2**	**0 - 0.5**	**0.5 - 2**
PFAS with Screening Criteria (µg/kg)											
Hexafluoropropylene oxide dimer acid (HFPO-DA) [GenX][3]	13252-13-6	**23**	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5	**1900**	0.48 U	0.48 U	0.51 U	0.49 U	0.54 U	0.71 U	0.54 U	0.53 U	0.51 U
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	**130**	0.48 U	0.48 U	0.51 U	0.49 U	0.54 U	0.71 U	0.54 U	0.53 U	0.51 U
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	**19**	0.48 U	0.48 U	0.51 U	0.49 U	0.54 U	0.71 U	0.54 U	0.53 U	0.51 U
Perfluoro-n-octanoic acid (PFOA)	335-67-1	**19**	0.48 U	0.48 U	0.51 U	0.49 U	0.54 U	0.71 U	0.54 U	0.53 U	0.51 U
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	**13**	**0.36 I**	**3.1**	**3.8**	**1.7**	**1.3**	**1.2**	**1.7**	**1.2**	**2**
PFAS without Screening Criteria (µg/kg)											
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9CL-PF3ONS)	756426-58-1	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11CL-PF3OUDS)	763051-92-9	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	--	0.96 U	0.95 U	1 U	0.98 U	1.1 U	1.4 U	1.1 U	1.1 U	1 U
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	--	0.96 U	0.95 U	1 U	0.98 U	1.1 U	1.4 U	1.1 U	1.1 U	1 U
Perfluoro-n-butanoic acid (PFBA)	375-22-4	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoro-n-decanoic acid (PFDA)	335-76-2	--	0.48 U	**0.67**	0.51 U	0.49 U	0.54 U	0.71 U	0.54 U	0.53 U	0.51 U
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	--	0.48 U	0.48 U	0.51 U	0.49 U	0.54 U	0.71 U	0.54 U	0.53 U	0.51 U
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9	--	0.48 U	0.48 U	0.51 U	0.49 U	0.54 U	0.71 U	0.54 U	0.53 U	0.51 U
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	--	0.48 U	0.48 U	0.51 U	0.49 U	0.54 U	0.71 U	0.54 U	0.53 U	0.51 U
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctane sulfonamide (PFOSA)	754-91-6	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	--	0.48 U	0.48 U	0.51 U	0.49 U	0.54 U	0.71 U	0.54 U	0.53 U	0.51 U
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	--	0.48 U	0.48 U	0.51 U	0.49 U	0.54 U	0.71 U	0.54 U	0.53 U	0.51 U
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	--	0.48 U	0.48 U	0.51 U	0.49 U	0.54 U	0.71 U	0.54 U	0.53 U	0.51 U

Table A-1. Historical Soil Analytical Results

Location ID (PFAS-)	CAS No.	Screening Criteria[1,2]	SB0065		SB0066		SB0067		SB0068			SB0069	
Date			1/26/21	1/26/21	1/26/21	1/26/21	1/26/21	1/26/21	1/26/21	1/26/21	1/26/21	1/26/21	1/26/21
Sample Depth (ft bls)			0 - 0.5	0.5 - 2	0 - 0.5	0.5 - 2	0 - 0.5	0.5 - 2	0 - 0.5	0 - 0.5*	0.5 - 2	0 - 0.5	0.5 - 2
PFAS with Screening Criteria (µg/kg)													
Hexafluoropropylene oxide dimer acid (HFPO-DA) [GenX][3]	13252-13-6	**23**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5	**1900**	**0.52 I**	**0.78**	0.47 U	0.49 U	0.55 U	0.6 U	0.51 U	0.52 U	0.53 U	0.56 U	0.55 U
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	**130**	**37.8**	**14.2**	0.47 U	0.49 U	0.55 U	0.6 U	0.51 U	0.52 U	0.53 U	0.56 U	0.55 U
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	**19**	**0.95**	0.66 U	0.47 U	0.49 U	0.55 U	0.6 U	0.51 U	0.52 U	**0.49 I**	0.56 U	0.55 U
Perfluoro-n-octanoic acid (PFOA)	335-67-1	**19**	**1.4**	**0.61 I**	0.47 U	0.49 U	0.55 U	0.6 U	**0.28 I**	0.52 U	0.53 U	0.56 U	0.55 U
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	**13**	**70.6**	**27.4**	**4.1**	**6.4**	**3.9**	**3.6**	**2.3**	**2.3**	**9.5**	0.56 U	0.55 U
PFAS without Screening Criteria (µg/kg)													
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9CL-PF3ONS)	756426-58-1	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11CL-PF3OUDS)	763051-92-9	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	--	1.3 U	1.3 U	0.94 U	0.98 U	1.1 U	1.2 U	1 U	1 U	1.1 U	1.1 U	1.1 U
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	--	1.3 U	1.3 U	0.94 U	0.98 U	1.1 U	1.2 U	1 U	1 U	1.1 U	1.1 U	1.1 U
Perfluoro-n-butanoic acid (PFBA)	375-22-4	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoro-n-decanoic acid (PFDA)	335-76-2	--	0.67 U	0.66 U	0.47 U	0.49 U	0.55 U	0.6 U	0.51 U	0.52 U	**0.97**	0.56 U	0.55 U
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	--	0.67 U	0.66 U	0.47 U	0.49 U	0.55 U	0.6 U	**0.3 I**	**0.31 I**	0.53 U	0.56 U	0.55 U
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9	--	**0.79**	**0.47 I**	0.47 U	0.49 U	0.55 U	0.6 U	0.51 U	0.52 U	0.53 U	**0.38 I**	**0.33 I**
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	--	**2.1**	**2.1**	0.47 U	0.49 U	0.55 U	0.6 U	0.51 U	0.52 U	0.53 U	0.56 U	0.55 U
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctane sulfonamide (PFOSA)	754-91-6	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	--	0.67 U	0.66 U	0.47 U	0.49 U	0.55 U	0.6 U	0.51 U	0.52 U	0.53 U	0.56 U	0.55 U
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	--	0.67 U	0.66 U	0.47 U	0.49 U	0.55 U	0.6 U	0.51 U	0.52 U	0.53 U	0.56 U	0.55 U
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	--	0.67 U	0.66 U	0.47 U	0.49 U	0.55 U	0.6 U	0.51 U	0.52 U	0.53 U	0.56 U	0.55 U

All results reported in microgram per kilogram (µg/kg)

1 The USEPA Regional Screening Levels (RSLs) for HFPO-DA, PFBS, PFHxS, PFNA, PFOA, and PFOS are presented in this table.

2 The Soil RSL is cited from the USEPA Regional Screening Levels and calculated with the USEPA RSL Calculator based on a hazard quotient of 0.1 (USEPA, 2022)

3 HFPO-DA is commonly referred to as GenX

* Duplicate sample results are included in this table and labeled with asterisk

-- = No applicable screening criteria

Bolding indicates analyte was detected

Shading indicates exceedance of screening criteria

USEPA = United States Environmental Protection Agency

ft bls = feet below land surface

NA = Not Applicable; compound not analyzed

PFAS = per- and polyfluoroalkyl substances

I = Estimated result < Limit of Quantitation and ≥ Detection Limit

U = Analyte was not detected

Table A-2. Historical DPT Analytical Results

Location ID (PFAS-)	CAS No.	Screening Criteria[1,2]	DPT0059				DPT0060			
Date			11/7/2018	11/7/2018	11/7/2018	11/7/2018	11/6/2018	11/6/2018	11/6/2018	11/6/2018
Sample Depth (ft bls)			8 - 12	23 - 27	33 - 37	43 - 47	8 - 12	23 - 27	33 - 37	43 - 47
PFAS with Screening Criteria (ng/L)										
Hexafluoropropylene oxide dimer acid (HFPO-DA) [GenX][3]	13252-13-6	**6**	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5	**600**	**10**	**3.7 M**	**1.8**	0.89 UM	**0.48 JM**	1 U	0.97 U	0.95 UM
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	**39**	**87**	**22 M**	**15 M**	**2 M**	**1.5 JM**	**0.8 JM**	**0.86 JM**	**0.49 JM**
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	**5.9**	1.3 U	1.3 UM	1.3 U	1.3 U	**0.58 JM**	1.5 U	1.5 U	1.4 U
Perfluoro-n-octanoic acid (PFOA)	335-67-1	**6**	**15 M**	**3.7 M**	**7.7 M**	**0.59 JM**	**2 JM**	**2 JM**	**1.9 JM**	1.4 UM
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	**4**	**11 M**	**11**	**3.4 JM**	**7.3**	**7.8**	**3.2 J**	**2.4 J**	**1.6 JM**
PFAS without Screening Criteria (ng/L)										
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	--	NA	NA	NA	NA	NA	NA	NA	NA
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	--	NA	NA	NA	NA	NA	NA	NA	NA
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	--	NA	NA	NA	NA	NA	NA	NA	NA
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9CL-PF3ONS)	756426-58-1	--	NA	NA	NA	NA	NA	NA	NA	NA
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11CL-PF3OUDS)	763051-92-9	--	NA	NA	NA	NA	NA	NA	NA	NA
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	--	NA	NA	NA	NA	NA	NA	NA	NA
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	--	NA	NA	NA	NA	NA	NA	NA	NA
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	--	8.8 U	8.7 UM	8.7 U	8.9 UJ1	9.8 UQ	**10 UQ**	9.7 UQ	9.5 UQ
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	--	8.8 U	8.7 U	8.7 U	8.9 U	9.8 U	10 U	9.7 U	9.5 U
Perfluoro-n-butanoic acid (PFBA)	375-22-4	--	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	--	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoro-n-decanoic acid (PFDA)	335-76-2	--	0.88 U	0.87 U	0.87 U	0.89 U	0.98 U	1 U	0.97 U	0.95 U
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	--	1.3 U	1.3 U	1.3 U	1.3 U	1.5 U	1.5 U	1.5 U	1.4 U
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	--	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9	--	**16**	**4.4**	**3.2**	1.3 UM	**0.61 J**	1.5 U	1.5 U	1.4 U
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	--	**32 M**	**12**	**7.3 M**	**0.99 JM**	**0.64 JM**	**0.5 J**	**0.47 JM**	0.95 U
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	--	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctane sulfonamide (PFOSA)	754-91-6	--	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4	--	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3	--	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	--	2.7 U	2.6 U	2.6 U	2.7 U	2.9 U	3 U	2.9 U	2.9 U
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	--	2.7 U	2.6 U	2.6 U	2.7 U	2.9 U	3 U	2.9 U	2.9 U
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	--	1.3 U	1.3 UM	1.3 U	1.3 U	1.5 U	1.5 U	1.5 U	1.4 U

Table A-2. Historical DPT Analytical Results

Location ID (PFAS-)	CAS No.	Screening Criteria[1,2]	DPT0061					DPT0062				
Date			11/6/2018	11/6/2018	11/6/2018	11/6/2018	11/6/2018	11/7/2018	11/7/2018	11/7/2018	11/7/2018	11/7/2018
Sample Depth (ft bls)			8 - 12	23 - 27	33 - 37	33 - 37*	43 - 47	8 - 12	23 - 27	33 - 37	47 - 47	47 - 47*
PFAS with Screening Criteria (ng/L)												
Hexafluoropropylene oxide dimer acid (HFPO-DA) [GenX][3]	13252-13-6	**6**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5	**600**	**0.6 J**	0.98 U	0.97 U	0.95 UM	0.95 U	**6.1 M**	**1.2 JM**	**1.7 JM**	1 U	0.94 U
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	**39**	**1.8 JM**	0.98 UM	0.97 U	0.95 U	0.95 UM	**100 M**	**21 M**	**30 M**	**1.3 JM**	**0.97 JM**
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	**5.9**	1.4 U	1.5 U	1.5 U	1.4 U	1.4 U	1.4 U	**1.9 M**	1.5 U	1.5 UM	1.4 U
Perfluoro-n-octanoic acid (PFOA)	335-67-1	**6**	**1.9 JM**	1.5 UM	1.5 UM	1.4 UM	1.4 UM	**24 M**	**13 M**	**9.3 M**	**0.56 JM**	1.4 UM
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	**4**	**1.6 J**	2.9 U	2.9 UM	2.8 U	2.9 UM	**10 M**	**74**	3 U	**2.3 JM**	**2.1 JM**
PFAS without Screening Criteria (ng/L)												
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9CL-PF3ONS)	756426-58-1	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11CL-PF3OUDS)	763051-92-9	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	--	**9.7 UQM**	9.8 UQ	9.7 UQ	**9.5 UQM**	**9.5 UQM**	9.6 UM	9.6 U	10 U	10 U	9.4 UM
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	--	9.7 U	9.8 U	9.7 U	9.5 U	9.5 U	9.6 UM	9.6 UM	10 U	10 UM	9.4 U
Perfluoro-n-butanoic acid (PFBA)	375-22-4	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoro-n-decanoic acid (PFDA)	335-76-2	--	0.97 U	0.98 U	0.97 U	0.95 U	0.95 U	0.96 U	0.96 U	1 U	1 UM	0.94 U
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	--	1.4 U	1.5 U	1.5 U	1.4 U	1.4 U	1.4 U	1.4 U	1.5 U	1.5 U	1.4 U
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9	--	**0.91 J**	1.5 U	1.5 U	1.4 U	1.4 U	**20**	**5**	**12**	1.5 U	1.4 U
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	--	**0.61 JM**	0.98 UM	0.97 U	0.95 U	0.95 U	**16 M**	**3.7 M**	**11 M**	1 UM	0.94 UM
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctane sulfonamide (PFOSA)	754-91-6	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	--	2.9 U	2.9 U	2.9 U	2.8 U	2.9 U	2.9 U	2.9 U	3 U	3 U	2.8 U
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	--	2.9 U	2.9 U	2.9 U	2.8 U	2.9 U	2.9 U	2.9 U	3 U	3 U	2.8 U
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	--	1.4 U	1.5 U	1.5 U	1.4 U	1.4 U	1.4 UM	1.4 U	1.5 U	1.5 U	1.4 U

Table A-2. Historical DPT Analytical Results

Location ID (PFAS-)	CAS No.	Screening Criteria^{1,2}	DPT0064				DPT0065			
Date			11/6/2018	11/6/2018	11/6/2018	11/6/2018	11/6/2018	11/6/2018	11/6/2018	11/6/2018
Sample Depth (ft bls)			8 - 12	23 - 27	33 - 37	43 - 47	13 - 17	23 - 27	33 - 77	43 - 47
PFAS with Screening Criteria (ng/L)										
Hexafluoropropylene oxide dimer acid (HFPO-DA) [GenX]^{3}	13252-13-6	**6**	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5	**600**	**47 M**	**41 M**	**48 M**	**24 M**	**14 M**	**11 M**	**5.2 M**	**3.2 M**
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	**39**	**1200 D**	**160 M**	**220**	**75**	**290**	**45**	**20**	**16**
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	**5.9**	**7.5**	**7.5**	**6.8**	**1.2 JM**	**60**	**50**	**17**	**15 M**
Perfluoro-n-octanoic acid (PFOA)	335-67-1	**6**	**160 M**	**78**	**85 M**	**36 M**	**910 D**	**540 D**	**45 M**	**47 M**
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	**4**	**520 D**	**550 D**	**460 D**	**50**	**420 D**	**15**	**6.3**	**19**
PFAS without Screening Criteria (ng/L)										
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	--	NA	NA	NA	NA	NA	NA	NA	NA
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	--	NA	NA	NA	NA	NA	NA	NA	NA
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	--	NA	NA	NA	NA	NA	NA	NA	NA
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9CL-PF3ONS)	756426-58-1	--	NA	NA	NA	NA	NA	NA	NA	NA
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11CL-PF3OUDS)	763051-92-9	--	NA	NA	NA	NA	NA	NA	NA	NA
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	--	NA	NA	NA	NA	NA	NA	NA	NA
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	--	NA	NA	NA	NA	NA	NA	NA	NA
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	--	**9.6 UQM**	9.7 UQ	**9.7 UQM**	9.7 UQ	10 UMQ	9.6 UQ	10 UQ	10 UQ
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	--	9.6 U	9.7 U	9.7 U	9.7 U	10 U	9.6 U	10 U	10 U
Perfluoro-n-butanoic acid (PFBA)	375-22-4	--	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	--	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoro-n-decanoic acid (PFDA)	335-76-2	--	**0.74 JM**	**1.4 J**	**1.6 JM**	0.97 U	1 U	0.96 U	1 U	1 U
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	--	1.4 U	1.4 U	1.4 U	1.5 U	1.5 U	1.4 U	1.5 U	1.5 U
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	--	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9	--	**140**	**26 M**	**36 M**	**15 M**	**1100 D**	**1100 D**	**50**	**51**
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	--	**220**	**62 M**	**87 M**	**43**	**2500 DM**	**1200 D**	**110 M**	**87**
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	--	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctane sulfonamide (PFOSA)	754-91-6	--	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4	--	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3	--	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	--	2.9 U	2.9 U	2.9 U	2.9 U	3 U	2.9 U	3 U	3 U
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	--	2.9 U	2.9 U	2.9 U	2.9 U	3 U	2.9 U	3 U	3 U
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	--	1.4 U	1.4 U	1.4 U	1.5 U	1.5 U	1.4 U	1.5 U	1.5 U

Table A-2. Historical DPT Analytical Results

Location ID (PFAS-)	**CAS No.**	**Screening Criteria[1,2]**	**DPT0124**					**DPT0143**			
Date			**3/26/2019**	**3/26/2019**	**3/26/2019**	**3/26/2019**	**3/26/2019**	**3/19/2019**	**3/19/2019**	**3/19/2019**	**3/19/2019**
Sample Depth (ft bls)			**8 - 12**	**23 - 27**	**33 - 37**	**33 - 37***	**43 - 47**	**8 - 12**	**23 - 27**	**33 - 37**	**43 - 47**
PFAS with Screening Criteria (ng/L)											
Hexafluoropropylene oxide dimer acid (HFPO-DA) [GenX][3]	13252-13-6	**6**	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5	**600**	**0.63 JM**	1 UM	0.9 UM	**0.93** U	0.96 UM	**1 J**	0.91 UM	1.1 UM	0.93 UM
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	**39**	**1 JM**	**0.7 JM**	0.9 UM	**0.93** U	**0.78 JM**	**3.5 M**	**3.5**	**14 M**	**4.4 M**
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	**5.9**	1.3 U	1.6 UM	1.4 UM	**1.4** U	1.4 U	1.3 UM	1.4 U	1.6 UM	1.4 U
Perfluoro-n-octanoic acid (PFOA)	335-67-1	**6**	1.3 UM	1.6 UM	1.4 UM	**1.4** U	1.4 UM	**4.9 M**	**2.4 M**	**9.2 M**	**1.9 J**
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	**4**	**1 JM**	3.1 UM	2.7 UM	**2.8** UM	**2 JM**	**4.9 M**	2.7 UM	**120**	**3.7 J**
PFAS without Screening Criteria (ng/L)											
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	--	NA	NA	NA	**NA**	NA	NA	NA	NA	NA
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	--	NA	NA	NA	**NA**	NA	NA	NA	NA	NA
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	--	NA	NA	NA	**NA**	NA	NA	NA	NA	NA
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9CL-PF3ONS)	756426-58-1	--	NA	NA	NA	**NA**	NA	NA	NA	NA	NA
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11CL-PF3OUDS)	763051-92-9	--	NA	NA	NA	**NA**	NA	NA	NA	NA	NA
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	--	NA	NA	NA	**NA**	NA	NA	NA	NA	NA
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	--	NA	NA	NA	**NA**	NA	NA	NA	NA	NA
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	--	8.9 U	10 U	9 U	**9.3** U	9.6 U	8.6 U	9.1 U	11 U	9.3 U
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	--	8.9 U	10 U	9 U	**9.3** U	9.6 U	8.6 U	9.1 U	11 U	9.3 U
Perfluoro-n-butanoic acid (PFBA)	375-22-4	--	NA	NA	NA	**NA**	NA	NA	NA	NA	NA
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	--	NA	NA	NA	**NA**	NA	NA	NA	NA	NA
Perfluoro-n-decanoic acid (PFDA)	335-76-2	--	0.89 U	1 U	0.9 UM	**0.93** U	0.96 U	0.86 U	0.91 U	**0.82 J**	0.93 U
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	--	1.3 UM	1.6 U	1.4 UM	**1.4** U	1.4 U	1.3 U	1.4 U	1.6 U	1.4 U
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	--	NA	NA	NA	**NA**	NA	NA	NA	NA	NA
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9	--	1.3 UM	1.6 UM	1.4 U	**1.4** U	1.4 U	**2.9**	**1.3 JM**	**5**	**0.99 JM**
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	--	0.89 UM	1 UM	0.9 UM	**0.93** U	0.96 UM	**5.4**	**2.3 M**	**11 M**	**2.6 M**
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	--	NA	NA	NA	**NA**	NA	NA	NA	NA	NA
Perfluorooctane sulfonamide (PFOSA)	754-91-6	--	NA	NA	NA	**NA**	NA	NA	NA	NA	NA
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4	--	NA	NA	NA	**NA**	NA	NA	NA	NA	NA
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3	--	NA	NA	NA	**NA**	NA	NA	NA	NA	NA
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	--	2.7 U	3.1 UM	2.7 U	**2.8** U	2.9 U	2.6 U	2.7 U	3.2 U	2.8 U
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	--	2.7 U	3.1 U	2.7 U	**2.8** U	2.9 U	2.6 U	2.7 U	3.2 U	2.8 U
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	--	1.3 UM	1.6 UM	1.4 UM	**1.4** U	1.4 U	1.3 UM	1.4 U	1.6 U	1.4 U

Table A-2. Historical DPT Analytical Results

Location ID (PFAS-)	**CAS No.**	**Screening Criteria[1,2]**	**DPT0144**				**DPT0187**			
Date			**3/19/2019**	**3/19/2019**	**3/19/2019**	**3/19/2019**	**1/27/2021**	**1/27/2021**	**1/27/2021**	**1/27/2021**
Sample Depth (ft bls)			**8 - 12**	**23 - 27**	**33 - 37**	**43 - 47**	**8 - 12**	**23 - 27**	**33 - 37**	**43 - 47**
PFAS with Screening Criteria (ng/L)										
Hexafluoropropylene oxide dimer acid (HFPO-DA) [GenX][3]	13252-13-6	**6**	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5	**600**	**12**	**3.3**	**2.5 M**	0.92 U	20 U	20 U	**39.4**	**52.6**
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	**39**	**62**	**79 J1**	**26**	**5.2 M**	**68.4**	**505**	**169**	**182**
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	**5.9**	**4**	1.4 U	**1.2 JM**	1.4 U	**18.6 I**	**46.4**	**16.4 I**	50 U
Perfluoro-n-octanoic acid (PFOA)	335-67-1	**6**	**37 M**	**21 M**	**14 M**	**1.9**	**84.7**	**165**	**50.7**	**33.2 I**
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	**4**	**310 M**	**8.3 M**	**87**	**8.5**	**1580**	**4520**	**2060**	**1190**
PFAS without Screening Criteria (ng/L)										
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	--	NA	NA	NA	NA	NA	NA	NA	NA
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	--	NA	NA	NA	NA	NA	NA	NA	NA
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	--	NA	NA	NA	NA	NA	NA	NA	NA
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9CL-PF3ONS)	756426-58-1	--	NA	NA	NA	NA	NA	NA	NA	NA
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11CL-PF3OUDS)	763051-92-9	--	NA	NA	NA	NA	NA	NA	NA	NA
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	--	NA	NA	NA	NA	NA	NA	NA	NA
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	--	NA	NA	NA	NA	NA	NA	NA	NA
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	--	9.4 U	9.3 U	9.6 U	9.2 U	40 U	40 U	40 U	100 U
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	--	9.4 U	9.3 U	9.6 U	9.2 U	40 U	40 U	40 U	100 U
Perfluoro-n-butanoic acid (PFBA)	375-22-4	--	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	--	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoro-n-decanoic acid (PFDA)	335-76-2	--	0.94 U	0.93 U	**0.88 J**	0.92 U	**11.1 I**	20 U	20 U	50 U
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	--	1.4 U	1.4 U	1.4 U	1.4 U	20 U	20 U	100 U	50 U
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	--	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9	--	**12**	**12**	**5**	**0.85 J**	**37.3**	**143**	**27.3**	50 U
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	--	**17**	**12 M**	**10**	**1.8 JM**	**50.1**	**169**	**51.1**	**45.2 I**
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	--	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctane sulfonamide (PFOSA)	754-91-6	--	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4	--	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3	--	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	--	2.8 U	2.8 U	2.9 U	2.8 U	20 U	20 U	20 U	250 U
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	--	2.8 U	2.8 U	2.9 U	2.8 U	20 U	20 U	100 U	50 U
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	--	1.4 U	1.4 U	1.4 U	1.4 U	20 U	20 U	20 U	50 U

Table A-2. Historical DPT Analytical Results

Location ID (PFAS-)	CAS No.	Screening Criteria[1,2]	DPT0188				DPT0189			
Date			1/27/2021	1/27/2021	1/27/2021	1/27/2021	1/27/2021	1/27/2021	1/27/2021	1/27/2021
Sample Depth (ft bls)			8 - 12	23 - 27	33 - 37	43 - 47	8 - 12	23 - 27	33 - 37	43 - 47
PFAS with Screening Criteria (ng/L)										
Hexafluoropropylene oxide dimer acid (HFPO-DA) [GenX][3]	13252-13-6	**6**	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5	**600**	**32.6**	4 U	**36.3**	**35.7**	4 U	6.8 U	4 U	4 U
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	**39**	32 U	**5.1**	**60.5**	**59**	4 U	6.8 U	4 U	4 U
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	**5.9**	32 U	4 U	**80**	**6.1**	4 U	6.8 U	4 U	4 U
Perfluoro-n-octanoic acid (PFOA)	335-67-1	**6**	32 U	4 U	**233**	**95.1**	4 U	6.8 U	4 U	4 U
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	**4**	**71.4**	**13.7**	**84.9**	**44.8**	4 U	6.8 U	**10.3**	4 U
PFAS without Screening Criteria (ng/L)										
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	--	NA	NA	NA	NA	NA	NA	NA	NA
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	--	NA	NA	NA	NA	NA	NA	NA	NA
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	--	NA	NA	NA	NA	NA	NA	NA	NA
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9CL-PF3ONS)	756426-58-1	--	NA	NA	NA	NA	NA	NA	NA	NA
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11CL-PF3OUDS)	763051-92-9	--	NA	NA	NA	NA	NA	NA	NA	NA
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	--	NA	NA	NA	NA	NA	NA	NA	NA
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	--	NA	NA	NA	NA	NA	NA	NA	NA
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	--	320 U	8 U	80 U	48 U	40 U	68 U	8 U	8 U
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	--	320 U	8 U	80 U	48 U	40 U	68 U	8 U	8 U
Perfluoro-n-butanoic acid (PFBA)	375-22-4	--	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	--	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoro-n-decanoic acid (PFDA)	335-76-2	--	32 U	4 U	20 U	24 U	4 U	6.8 U	4 U	4 U
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	--	160 U	4 U	40 U	24 U	20 U	34 U	20 U	4 U
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	--	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9	--	32 U	**2.2 I**	**552**	**255**	4 U	6.8 U	4 U	4 U
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	--	32 U	**2.1 I**	**335**	**252**	4 U	6.8 U	4 U	4 U
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	--	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctane sulfonamide (PFOSA)	754-91-6	--	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4	--	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3	--	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	--	32 U	4 U	4 U	4.8 U	4 U	6.8 U	4 U	4 U
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	--	160 U	4 U	40 U	24 U	20 U	34 U	20 U	4 U
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	--	160 U	4 U	40 U	24 U	4 U	6.8 U	4 U	4 U

All results reported in nanogram per liter (ng/L)

1 The USEPA Regional Screening Levels (RSLs) for HFPO-DA, PFBS, PFHxS, PFNA, PFOA, and PFOS are presented in this table.

2 The Groundwater RSL is cited from the USEPA Regional Screening Levels and calculated with the USEPA RSL Calculator based on a hazard quotient of 0.1 (USEPA, 2022)

3 HFPO-DA is commonly referred to as GenX

* Duplicate sample results are included in this table and labeled with asterisk

-- = No applicable screening criteria

Bolding indicates analyte was detected

Shading indicates exceedance of screening criteria

STP1 = Sewage Treatment Plant #1

USEPA = United States Environmental Protection Agency

ft bls = feet below land surface

NA = Not Applicable; compound not analyzed

PFAS = per- and polyfluoroalkyl substances

I / J = Estimated result < Limit of Quantitation and ≥ Detection Limit

Q = Out of holding time

U = Analyte was not detected

M = Presence of material is verified but not quantified

D = Reported value is from a dilution

Note: A data quality review was performed by Tetra Tech's data manager and the results provided in this table were found to have been generated in conformance with good analytical practices. Some minor nonconformance issues were noted in the quality control elements associated with project samples, and the appropriate data qualification was applied to the affected results as needed. Additional details on data quality are included in the analytical reports provided in the Appendices.

Table A-3. Historical Monitoring Well Analytical Results

Location ID	**CAS No.**	**Screening Criteria[1,2]**	**CM_S-MW0039**
Date			**6/21/2021**
Screen Interval (ft bls)			**5.5**
PFAS with Screening Criteria (ng/L)			
Hexafluoropropylene oxide dimer acid (HFPO-DA) [GenX][3]	13252-13-6	**6**	6.67 U
Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5	**600**	**1.34 I**
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	**39**	**3.05 I**
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	**5.9**	0.98 U
Perfluoro-n-octanoic acid (PFOA)	335-67-1	**6**	**4.12**
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	**4**	**1.68 I**
PFAS without Screening Criteria (ng/L)			
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	--	NA
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	--	NA
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	--	NA
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9CL-PF3ONS)	756426-58-1	--	0.9 U
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11CL-PF3OUDS)	763051-92-9	--	0.9 U
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	--	0.86 U
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	--	NA
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	--	1.58 U
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	--	0.9 U
Perfluoro-n-butanoic acid (PFBA)	375-22-4	--	NA
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	--	NA
Perfluoro-n-decanoic acid (PFDA)	335-76-2	--	1.44 U
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	--	1.3 U
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	--	NA
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9	--	**2.06 I**
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	--	**3.08 I**
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	--	NA
Perfluorooctane sulfonamide (PFOSA)	754-91-6	--	NA
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4	--	NA
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3	--	NA
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	--	1.14 U
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	--	1.23 U
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	--	1.24 U

All results reported in nanogram per liter (ng/L)

1 The USEPA Regional Screening Levels (RSLs) for HFPO-DA, PFBS, PFHxS, PFNA, PFOA, and PFOS are presented in this table.

2 The Groundwater RSL is cited from the USEPA Regional Screening Levels and calculated with the USEPA RSL Calculator based on a hazard quotient of 0.1 (USEPA, 2022)

3 HFPO-DA is commonly referred to as GenX

-- = No applicable screening criteria

Bolding indicates analyte was detected

Shading indicates exceedance of screening criteria

STP1 = Sewage Treatment Plant #1

EPA = United States Environmental Protection Agency

ft bls = feet below land surface

NA = Not Applicable; compound not analyzed

PFAS = per- and polyfluoroalkyl substances

I = Estimated result < Limit of Quantitation and ≥ Detection Limit

U = Analyte was not detected

Table A-4. Historical Surface Water Analytical Results

Location ID	**CAS No.**	**Screening Criteria[1]**	**PFAS-SW0010**	**PFAS-SW0051**	**PFAS-SW0051**	**PFAS-SW0052**	**PFAS-SW0053**	**PFAS-SW0054**	**PFAS-SW0055**	**PFAS-SW0056**
Date			**3/11/2019**	**1/27/2021**	**1/27/2021**	**1/27/2021**	**9/28/2020**	**9/28/2020**	**9/28/2020**	**9/28/2020**
Sample Depth (ft bls)			**0 - 0.5**	**0 - 0.5**	**0 - 0.5***	**0 - 0.5**	**0 - 0.5**	**0 - 0.5**	**0 - 0.5**	**0 - 0.5**
PFAS with Screening Criteria (ng/L)										
Perfluoro-n-octanoic acid (PFOA)	335-67-1	**500**	**65 M**	**4.4**	**4.3**	**64.1**	**3.3 I**	**12.9**	**6.7**	**8**
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	**10**	**520 D**	**45.1**	**39.3**	**347**	**53.1**	**131**	**45.3**	**57.5**
PFAS without Screening Critieria (ng/L)										
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	--	NA	NA	NA	NA	NA	NA	NA	NA
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	--	NA	NA	NA	NA	NA	NA	NA	NA
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	--	NA	NA	NA	NA	NA	NA	NA	NA
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9CL-PF3ONS)	756426-58-1	--	NA	NA	NA	NA	NA	NA	NA	NA
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11CL-PF3OUDS)	763051-92-9	--	NA	NA	NA	NA	NA	NA	NA	NA
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	--	NA	NA	NA	NA	NA	NA	NA	NA
Hexafluoropropylene oxide dimer acid (HFPO-DA) [GenX][2]	13252-13-6	--	NA	NA	NA	NA	NA	NA	NA	NA
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	--	NA	NA	NA	NA	NA	NA	NA	NA
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	--	9.4 U	8.3 U	8.3 U	8.3 U	8.3 U	7.7 U	8.3 U	7.7 U
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	--	9.4 U	8.3 U	8.3 U	8.3 U	8.3 U	7.7 U	8.3 U	7.7 U
Perfluoro-n-butanoic acid (PFBA)	375-22-4	--	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5	--	**27 M**	**3.6 I**	**4.1 I**	**48.5**	**4.6**	**1.9 I**	4.2 U	**2.4 I**
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	--	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoro-n-decanoic acid (PFDA)	335-76-2	--	**0.93 J**	4.2 U	4.2 U	4.2 U	4.2 U	3.8 U	4.2 U	3.8 U
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	--	1.4 U	4.2 U	4.2 U	4.2 U	4.2 U	3.8 U	4.2 U	3.8 U
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	--	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9	--	**35**	**2.7 I**	**3.3 I**	**71.4**	**5.4**	**10.7**	**5.9**	**6.5**
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	--	**76**	**3.1 I**	**3.6 I**	**127**	**6.6**	**10.7**	**6**	**11.8**
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	--	**190**	**19.3**	**18**	**284**	**23.3**	**10.1**	**7.9**	**9**
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	--	**6.4**	4.2 U	4.2 U	**3.9 I**	4.2 U	**2.8 I**	4.2 U	**2.4 I**
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	--	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctane sulfonamide (PFOSA)	754-91-6	--	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4	--	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3	--	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	--	2.8 U	4.2 U	21 U	4.2 U	4.2 U	3.8 U	4.2 U	3.8 U
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	--	2.8 U	4.2 U	4.2 U	4.2 U	4.2 U	3.8 U	4.2 U	3.8 U
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	--	1.4 U	4.2 U	4.2 U	4.2 U	4.2 U	3.8 U	4.2 U	3.8 U

Table A-4. Historical Surface Water Analytical Results

Location ID	PFAS-SW0057	PFAS-SW0058	PFAS-SW0133	S014-SW0001
Date	9/28/2020	9/28/2020	8/4/2021	2/22/2022
Sample Depth (ft bls)	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5
PFAS with Screening Criteria (ng/L)				
Perfluoro-n-octanoic acid (PFOA)	**93.6**	**3.1 I**	**16.6**	**11.7**
Perfluorooctanesulfonic acid (PFOS)	**2280**	**19.1**	**158**	**239**
PFAS without Screening Critieria (ng/L)				
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	NA	NA	NA	16 U
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	NA	NA	NA	16 U
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	NA	NA	NA	16 U
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9CL-PF3ONS)	NA	NA	16 U	NA
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11CL-PF3OUDS)	NA	NA	16 U	NA
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	NA	NA	16 U	NA
Hexafluoropropylene oxide dimer acid (HFPO-DA) [GenX][2]	NA	NA	8 U	16 U
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	NA	NA	NA	NA
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	7.7 U	7.7 U	8 U	16 U
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	7.7 U	7.7 U	8 U	16 U
Perfluoro-n-butanoic acid (PFBA)	NA	NA	NA	**13.7 J**
Perfluoro-1-butanesulfonic acid (PFBS)	**15.6**	3.8 U	**14.1**	**8.7**
Perfluoro-1-decanesulfonic acid (PFDS)	NA	NA	NA	8 U
Perfluoro-n-decanoic acid (PFDA)	**4.1**	3.8 U	4 U	8 U
Perfluoro-n-dodecanoic acid (PFDoA)	3.8 U	3.8 U	4 U	8 U
Perfluoro-1-heptanesulfonic acid (PFHpS)	NA	NA	NA	**4.5 J**
Perfluoro-n-heptanoic acid (PFHpA)	**65.8**	**2.1 I**	**20.8**	**11.5**
Perfluoro-n-hexanoic acid (PFHxA)	**113**	**6.1**	**33.8**	**20.2**
Perfluorohexanesulfonic acid (PFHxS)	**520**	**3.2 I**	**99.6**	**94.4**
Perfluoro-n-nonanoic acid (PFNA)	**19**	3.8 U	**2.6 I**	**2.3 J**
Perfluoro-1-nonanesulfonic acid (PFNS)	NA	NA	NA	8 U
Perfluorooctane sulfonamide (PFOSA)	NA	NA	NA	40 U
Perfluoro-1-pentanesulfonic acid (PFPeS)	NA	NA	NA	**9.4**
Perfluoro-n-pentanoic acid (PFPeA)	NA	NA	NA	**22.8**
Perfluoro-n-tetradecanoic acid (PFTeDA)	3.8 U	3.8 U	4 U	8 U
Perfluoro-n-tridecanoic acid (PFTrDA)	3.8 U	3.8 U	4 U	8 U
Perfluoro-n-undecanoic acid (PFUdA)	3.8 U	3.8 U	4 U	8 U

All results reported in nanogram per liter (ng/L)
1 The State of Florida human health Surface Water Screening Levels for PFOA and PFOS are presented in this table.
2 HFPO-DA is commonly referred to as GenX
* Duplicate sample results are included in this table and labeled with asterisk
-- = No applicable screening criteria
Bolding indicates analyte was detected
Shading indicates exceedance of screening criteria
STP1 = Sewage Treatment Plant #1
ft bls = feet below land surface
NA = Not Applicable; compound not analyzed
PFAS = per- and polyfluoroalkyl substances
I / J = Estimated result < Limit of Quantitation and ≥ Detection Limit
M = Presence of material is verified by not quantified
U = Analyte was not detected

Table A-5. Historical Sediment Analytical Results

Location ID (PFAS-)	**CAS No.**	**Screening Criteria**	**SD0020**	**SD0021**		**SD0022**	**SD0023**	**SD0024**		**SD0025**	**SD0026**	**SD0027**	**SD0037**
Date			**1/27/2021**	**1/27/2021**	**1/27/2021**	**9/28/2020**	**9/28/2020**	**9/28/2020**	**9/28/2020**	**9/28/2020**	**9/28/2020**	**9/28/2020**	**9/28/2020**
Sample Depth (ft bls)			**0 - 1**	**0 - 1**	**0 - 1***	**0 - 1**	**0 - 1**	**0 - 1**	**0 - 1***	**0 - 1**	**0 - 1**	**0 - 1**	**0 - 1**
PFAS without Screening Criteria (µg/kg)													
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9CL-PF3ONS)	756426-58-1	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11CL-PF3OUDS)	763051-92-9	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexafluoropropylene oxide dimer acid (HFPO-DA) [GenX][1]	13252-13-6	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	--	7 U	1.6 U	1.6 U	1 U	1.7 U	1.4 U	1.2 U	1.1 U	1 U	1.3 U	1.1 U
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	--	7 U	1.6 U	1.6 U	1 U	1.7 U	1.4 U	1.2 U	1.1 U	1 U	1.3 U	1.1 U
Perfluoro-n-butanoic acid (PFBA)	375-22-4	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5	--	3.5 U	0.82 U	0.81 U	0.51 U	0.84 U	0.69 U	0.58 U	0.55 U	0.51 U	0.67 U	0.57 U
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoro-n-decanoic acid (PFDA)	335-76-2	--	3.5 U	0.82 U	0.81 U	0.51 U	0.84 U	0.69 U	0.58 U	0.55 U	0.51 U	0.67 U	0.57 U
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	--	3.5 U	0.82 U	0.81 U	0.51 U	0.84 U	0.69 U	0.58 U	0.55 U	0.51 U	0.67 U	0.57 U
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9	--	3.5 U	0.82 U	0.81 U	0.51 U	0.84 U	0.69 U	0.58 U	0.55 U	0.51 U	0.67 U	0.57 U
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	--	3.5 U	0.82 U	0.81 U	0.51 U	0.84 U	0.69 U	0.58 U	0.55 U	0.51 U	0.67 U	0.57 U
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	--	3.5 U	0.82 U	0.81 U	0.51 U	0.84 U	0.69 U	0.58 U	0.55 U	**0.36 I**	0.67 U	0.57 U
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	--	3.5 U	0.82 U	0.81 U	0.51 U	0.84 U	0.69 U	0.58 U	0.55 U	0.51 U	0.67 U	0.57 U
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoro-n-octanoic acid (PFOA)	335-67-1	--	3.5 U	0.82 U	0.81 U	0.51 U	0.84 U	0.69 U	0.58 U	0.55 U	0.51 U	0.67 U	0.57 U
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	--	3.5 U	**0.41 I**	**0.51 I**	0.51 U	**2.7**	0.69 U	**0.59**	**0.78**	**8.6**	**0.56 I**	**2.1**
Perfluorooctane sulfonamide (PFOSA)	754-91-6	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	--	3.5 U	0.82 U	0.81 U	0.51 U	0.84 U	0.69 U	0.58 U	0.55 U	0.51 U	0.67 U	0.57 U
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	--	3.5 U	0.82 U	0.81 U	0.51 U	0.84 U	0.69 U	0.58 U	0.55 U	0.51 U	0.67 U	0.57 U
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	--	3.5 U	0.82 U	0.81 U	0.51 U	0.84 U	0.69 U	0.58 U	0.55 U	0.51 U	0.67 U	0.57 U

All results reported in microgram per kilogram (µg/kg)

1 HFPO-DA is commonly referred to as GenX

-- = No applicable screening criteria

Bolding indicates analyte was detected

USEPA = United States Environmental Protection Agency

ft bls = feet below land surface

NA = Not Applicable; compound not analyzed

PFAS = per- and polyfluoroalkyl substances

I = Estimated result < Limit of Quantitation and ≥ Detection Limit

U = Analyte was not detected

APPENDIX B

FIELD DOCUMENTATION

(Included in Electronic Copy Only)

TETRA TECH	STANDARD OPERATING PROCEDURE	Number SA-1.8	Page 1 of 15
		Effective Date 10/12/2020	Revision 6
		Applicability EGS Operating Unit	
		Prepared Earth Sciences Department	
Subject SAMPLE ACQUISITION FOR PERFLUOROALKYL AND POLYFLUOROALKYL SUBSTANCES (PFAS) ANALYSIS		Approved T. Johnston T.E. Johnston 10/12/2020	

TABLE OF CONTENTS

1.0 PURPOSE

This Standard Operating Procedure (SOP) describes the methods and protocols to be used for collecting and handling samples to be analyzed for per- and polyfluoroalkyl substances (PFAS). PFAS are present in many consumer products including some typical sampling equipment and are widely present in the environment.

Low screening criteria and high cross-contamination potential require special precautions to be implemented to avoid compromising sample integrity. Instructions are provided herein for collection of environmental samples without contaminating them. This SOP is designed to supplement but not replace existing sampling SOPs SA-1.1, SA-1.2, SA-1.3, SA-1.7, and SA-5.1. In addition, some clients and/or projects may have specific PFAS-related sampling requirements that extend beyond the procedures described in this SOP. Such additional requirements typically are documented in work plans or similar documents.

2.0 SCOPE AND APPLICABILITY

This document provides information on selection of proper sampling equipment and techniques for groundwater, surface water, sediment, soil, and water supply sampling for PFAS analysis. Sampling of air or biota is not addressed in this SOP, but similar principles would apply for those media.

3.0 BACKGROUND

PFAS have been used since the 1940s as manufacturer-applied oil and water repellants on products such as clothing, upholstery, paper, and carpets and in making fluoropolymers for non-stick cookware. They are found in textiles and leather products, mist suppressants for metal plating, materials used in the photography industry, photolithography, semi-conductors, paper and packaging, coatings, cleaning products, pesticides, and cosmetics. They have been used in well-known consumer products including Teflon, StainMaster, Scotchgard, and GoreTex. In the 1960s, aqueous film-forming foam (AFFF) containing PFASs was developed for fighting flammable liquid fires, particularly petroleum-fueled (Class B) fires (ATSDR, 2009). The two most researched and most prevalent PFAS in the environment are perfluorooctane sulfonic acid (PFOS) and perfluorooctanoic acid (PFOA) (ATSDR, 2009).

Military uses of PFAS have been primarily related to fire fighting and electroplating. AFFF meeting MIL-F-24385 specifications was developed by various manufacturers for use in extinguishing fires at military bases, airports, commercial facilities, and fire-fighting training facilities throughout the United States. Beginning in the late 1960s the United States Department of Defense (DoD) used large quantities of AFFF for shipboard and shore facility fire-suppression systems, on fire-fighting vehicles, and at fire-training facilities. AFFF concentrate that contains PFAS may still be in use at DoD facilities, and large quantities of AFFF may have been released to the environment at some facilities.

PFAS are persistent in the environment, tend to bioaccumulate, and demonstrate toxicity in laboratory animals, enough to raise concerns about their presence in the environment. Some areas where PFAS may have been released to the environment include the following:

- Fire-fighting training areas
- Areas where fire-fighting products/materials are stored (e.g., fire stations)
- Aircraft crash sites
- Refineries
- DoD sites/military bases

- Landfills (leaching from consumer products)
- Biosolids land applications
- Rail yards
- Textile/carpet manufacturing sites
- Septic systems
- Metal coating and plating facilities
- Water treatment systems and receiving water bodies
- Airport hangars and other facilities storing fire-fighting foams
- Chemical facilities, especially fluorochemical manufacturing, use, and disposal facilities

PFAS are ubiquitous in consumer products and are present in or on some materials used in environmental sampling (e.g., Teflon tubing, waterproof logbooks, and GoreTex field clothing). Laboratory detection limits are low for PFAS, and contact of sample material or sampling equipment with any one of the multitude of PFAS sources could result in detectable contamination. In addition, PFAS tend to adsorb to glass and some plastics, so certain glass or plastic sample collection containers are inappropriate for use in PFAS sample collection. Adsorption to sample containers or other materials (e.g., tubes or hoses) may result in a low bias for measured PFAS concentrations.

Collection and analysis of quality control blanks is an important aspect of verifying that samples have not been contaminated during sample collection and handling. Use of additional blanks or blanks of a different type than usual may be required, and the governing project planning documents should be consulted. Consult Section 7.7 of this SOP for instructions regarding collection of field reagent blanks (FRBs).

4.0 DEFINITIONS

AFFF – Aqueous film-forming foam.

Chemical of Emerging Concern – A chemical of emerging concern (previously called "emerging contaminant" and also called "contaminant of emerging concern" or "CEC") is a chemical or material that is characterized by a perceived, potential, or real threat to human health or the environment or by a lack of published health standards (U.S. EPA, 2014; U.S. Geological Service [USGS], 2019). A contaminant may also be of "emerging concern" because a new source or a new pathway for human exposure has been discovered or a new detection method or treatment technology has been developed (DoD, 2011).

FRB – Field Reagent Blank. A blank sample prepared in the field by transferring laboratory-supplied, chemically preserved, "PFAS-free" deionized water to an empty, laboratory-supplied, collection bottle. FRBs are typically analyzed only for PFAS and are treated as site samples in all respects, including shipment to the sampling site, exposure to sampling site conditions, storage, preservation, and all PFAS analytical procedures. The purpose of FRBs is to indicate whether PFAS measured in corresponding site samples may have been introduced during sample preservation, collection, and handling. Note that the term "FRB" may be inappropriate when sampling groundwater sources not used for drinking water. In those cases Field Blank (FB) may be more appropriate. Consult project-specific planning documents for direction.

PFAS – Per- and Polyfluoroalkyl Substances. A reference term currently in use, replacing "PFCs" in recent scientific and other technical literature. The term is inclusive of both perfluorinated chemicals like PFOA and PFOS and polyfluoroalkyl substances like fluorinated telomers. In all environmental matrices, these chemicals are CECs.

PFCs – Perfluorinated Compounds or Chemicals. PFCs are a family of man-made chemicals that have been used for commercial, industrial, and military applications because they resist thermal degradation and repel oil, stains, grease, and water.

PFOA – Perfluorooctanoic Acid. PFOA is used as an aqueous dispersion agent (surfactant) and in the manufacture of fluoropolymers (including Teflon) used in industrial components such as electrical wire casings, fire- and chemical-resistant tubing, and plumbing seal tape. PFOA is used in surface treatment products (e.g., paints) to impart oil, stain, grease, and water resistance. PFOA can also be produced by the breakdown of some fluorinated telomers.

PFOS – Perfluorooctane Sulfonic Acid. PFOS was a key ingredient in Scotchgard and used in the manufacture of Class B AFFF used per DoD military specifications. Phase out of AFFF by 3M occurred in 2002.

5.0 SAFETY PRECAUTIONS

Sample acquisition activities shall be conducted in accordance health and safety requirements identified in the project-specific Health and Safety Plan (HASP), Accident Prevention Plan (APP), and corporate health and safety policies. Alteration may be necessary to allow sample collection without cross contamination as dictated by site-specific conditions.

Caution

The use of personal protective equipment (PPE) containing PFAS (e.g., some insect repellants, sunscreens, traffic safety vests, etc.) should be avoided if possible or, if deemed necessary to control hazards, should be carefully considered as they can pose a potential cross-contamination risk for samples. Extra care (e.g., changing outer gloves) must be exercised to ensure that PFAS is not transferred directly or indirectly from PPE to samples or sample containers.

The Tetra Tech Project Manager (PM), in coordination with the Tetra Tech EGS Operating Unit Health and Safety Group, shall ensure that the development of project-specific plans balances the need to control exposure to safety hazards as well as address PFAS contamination risks.

6.0 PERSONNEL RESPONSIBILITIES, QUALIFICATIONS, AND TRAINING

Personnel implementing this SOP must read and understand this entire SOP prior to collection of samples designated for PFAS analysis.

Project Manager (PM) – The PM along with the management team are responsible for determining sampling objectives, initial sampling locations, and field procedures used in the collection of samples of environmental media. Additionally, in consultation with other project personnel (geologist, hydrogeologist, etc.), the PM is responsible for selecting and detailing the specific sampling techniques and equipment to be used and for providing detailed input in this regard to the project planning documents. The PM has the overall responsibility for ensuring that sampling activities are properly conducted by appropriately trained staff.

Site Safety and Health Officer (SSHO) – The SSHO (or a qualified designee) is responsible for providing the technical support necessary to implement the project HASP, APP, or equivalent. The SSHO or SSHO designee may also be required to advise the Field Operations Leader (FOL) on safety-related matters regarding sampling, such as measures to mitigate potential hazards, hazardous objects, or conditions.

Field Operations Leader (FOL) – This individual is primarily responsible for faithful execution of the planning document that governs sampling. This is accomplished through management of a field sampling team for the proper acquisition of samples. The FOL is responsible for the supervision of onsite activities; ensuring proper instrument calibration, care, and maintenance; sample collection and handling; the completion and accuracy of all field documentation; and making sure that custody of all samples obtained is maintained according to sample collection protocols. When appropriate and as directed by the FOL, such responsibilities may be performed by other qualified personnel (e.g., field support personnel) where credentials and time permit. The FOL is ultimately responsible for ensuring compliance with Occupational Safety and Health Administration (OSHA) regulations during these operations in accordance with the project Health and Safety Plan. The FOL person shall have significant hands-on experience with sample collection, handling, and documentation under the circumstances required for the current project.

Field Support Personnel – These individuals are responsible for the proper acquisition of samples in accordance with this SOP or other project-specific documents. In addition, these personnel are responsible for completion of all required paperwork (e.g., sample log sheets, field notebook, boring logs, container labels, custody seals, and chain-of-custody forms) associated with the collection of the samples.

General field personnel qualifications for groundwater sample collection and onsite water quality testing include the following:

- OSHA 40-hour; applicable refresher training; and, if applicable, supervisory training (HAZWOPER operations only).

- Capability of performing field work under the expected physical and environmental (i.e., weather) conditions.

- Familiarity with sampling procedures, sample handling, sample documentation, and sample packaging and shipping as documented in project specific planning documents and this SOP.

7.0 PROCEDURE

The following sampling procedure establishes requirements for collection of samples designated for PFAS analysis while minimizing potential cross contamination of the samples and other materials or loss of PFAS.

7.1 Selection of Equipment

It is important to research available equipment and materials at the project planning stage to avoid last-minute problems in the field, for example, ensuring compatibility of high-density polyethylene (HDPE) tubing with fittings for use in a pump, or ensuring that equipment (e.g., a bladder pump) does not contain Teflon.

7.1.1 Sampling Equipment:

NOTE: PFAS cross-contamination of groundwater samples can be minimized through decontamination or conditioning of equipment left in a well. Use of dedicated equipment also is helpful so that handling during decontamination is unnecessary. Pre-labeling sample bottles before sample collection minimizes the number of glove changes required to prevent contamination of samples by PFAS that may be on the labels.

- Decontamination – All reusable equipment used in sample acquisition should be adequately decontaminated prior to use. Consult Safety Data Sheets (SDSs) to verify that soaps or detergents used in decontamination do not contain fluorosurfactants. Be aware that low levels of contaminants such as PFAS may be present in a product but not listed on the SDS.

- Unless project requirements indicate otherwise, use sampling equipment made of stainless steel, acetate, silicone, or HDPE. This applies to tubing, pumps and pump components, tape for plumbing fittings, trowels, mixing bowls, or other equipment that could contact the sample media. Gasket and O-ring components of sampling equipment may also contain fluoropolymers.

NOTE: PFAS on purchased or rented items is likely to occur predominantly in newly manufactured or rented items treated with chemicals containing PFAS. Therefore, all rental equipment that will make direct contact with the material being sampled must be thoroughly decontaminated prior to use, especially if the equipment items are new. Be cognizant of the potential for continued leaching of PFAS or other chemicals — even after decontamination.

- During sample handling, mobilization, and demobilization, avoid using sampling equipment that includes or contains polyvinylidene fluoride (PVDF) or contains “fluor” in the name such as:
  - Polytetrafluoroethylene (PTFE)
  - Teflon (DuPont brand name for PTFE)
  - Fluorinated ethylene propylene (FEP)
  - Ethylene tetrafluoroethylene (ETFE).

- Use products that are not made of low-density polyethylene products (LDPE) if contamination from those products can be transferred to environmental samples or QC samples.

- For collecting drinking water samples to be analyzed for PFAS, use polypropylene sample bottles with a polypropylene screw cap; for all other samples, use HDPE containers with unlined plastic screw caps.

7.1.2 Non-Sampling Field Equipment:

- Non-waterproof loose-leaf paper or notebooks are acceptable. Avoid using waterproof field books or paper during sampling activities. Do not use plastic clipboards, binders, or spiral hard-cover notebooks that may be coated; use Masonite or aluminum clipboards instead.

- Use ballpoint pens or pencils for note taking and sample bottle labeling.

- Avoid using:
  - Post-it notes or similar removable notes.
  - Sharpies or similar indelible markers.
  - Aluminum foil.

7.1.3 Field Personnel Clothing and Protective Gear:

- Wear clothing that has been washed at least six times without fabric softener to remove possible stain-resistant coatings. Clothing made of natural fibers such as cotton is preferred to other fabrics. Protective clothing must be washed in accordance with manufacturer recommendations to ensure that the protective properties necessary to control safety hazards (e.g., fire-retardant clothing) are not compromised.

- Wear non-powdered nitrile gloves at all times while collecting and handling samples, and change gloves often. Anecdotal evidence indicates that changing gloves is one of the most effective methods of reducing or eliminating sample contamination potential; therefore, change to a new pair of gloves prior to collecting each sample.

- As necessary, use sunscreens and insect repellants that are made with 100-percent natural ingredients and that the Air Force Civil Engineer Center has identified as acceptable for use. ***These products must be used in accordance with manufacturer recommendations and in combination with***

controls in the project-specific HASP, APP, and corporate health and safety policies. Multiple re-applications of these products per work shift may be required to ensure their effectiveness.

- Sunscreens: Alba Organics Natural Sunscreen, Yes To Cucumbers, Aubrey Organics, Jason Natural Sun Block, Kiss My Face, baby sunscreens that are “free” or “natural.”

- Sunscreen and insect repellant: Avon Skin So Soft Bug Guard Plus – SPF 30 Lotion

- Insect Repellent: Jason Natural Quit Bugging Me, Repel Lemon Eucalyptus Insect Repellant, Herbal Armor, California Baby Natural Bug Spray, BabyGanics.

NOTE: The suitability of these items has not been independently verified. Products containing N-diethyl-meta-toluamide **(**DEET), picaridin, and IR3535 and some oil of lemon eucalyptus (OLE) and para-menthane-diol products are known to provide longer-lasting protection than others. One of the products recommended by the Air Force Civil Engineer Center and listed above, Repel Lemon Eucalyptus Insect Repellant, contains OLE and is most likely to be effective.

An independent study (Bartlett and Davis, 2018) of three insect repellents (Sawyer do-it-yourself permethrin treatment for clothing, Off! Deep Woods spray for clothing/skin, and Insect Shield pretreated clothing) determined that these products were free of PFAS compounds (17 PFAS compounds were tested), thus they may be suitable for use on a project-specific basis.

- During wet weather, use rain gear made from polyurethane or wax-coated materials.

- Avoid unnecessary contact with upholstery in vehicles because many such fabrics may be treated with stain-resistant materials that could contain PFAS. Typically, rental vehicles are newer and more likely to pose a contamination risk to samples. Well-washed towels or rags may be placed on the seats to prevent contact with car seats and other materials that could transfer PFAS to clothing worn by samplers. If practical, cover clothing and skin that has been in contact with such upholstery with non-fluorinated clothing.

- Avoid wearing:

  - Water-resistant (e.g., Gore-Tex or similar material) clothing or footwear (e.g., boots) immediately prior to or during sample collection and management.

  - Coated Tyvek or similar coated PPE suits.

  - Cosmetics, shampoos, hair conditioners, moisturizers, hand cream, or other similar personal care products on the day of sampling.

7.1.4 Sample Containers and Shipping Materials:

- Collect samples in clean, laboratory-supplied, plastic bottles only, typically polypropylene for drinking water or HDPE for other matrices.

- Confirm that Teflon-lined caps are not used in sample containers; unlined polypropylene screw caps must be used. It is best to segregate sample containers with Teflon components (e.g., Teflon-lined septa) from PFAS sample containers.

- Use of commercially available plastic bags (e.g., 3-mil-thick trash can liners) for lining coolers to prevent leakage and to separate potential melt water from chain-of-custody forms is allowed.

- Avoid the use of glass or LDPE sample containers, which are believed to result in loss of PFAS through adsorption to the container inner walls.

- Avoid using Blue Ice or similar items to cool samples and avoid placing such items in sample coolers for shipping. Use commercially available (e.g., from convenience stores or supermarkets) double-bagged ice instead.

Caution

Samples designated for PFAS analysis must be cooled to achieve a storage temperature of less than 6 °C. Cooling to this temperature may take several hours, and sample temperatures may not achieve 6 °C by the time they arrive at the laboratory. If sample temperatures upon arrival at the laboratory are not less than 10 °C, the laboratory may conclude that the sample integrity is compromised and may reject the samples. Therefore, place samples on ice as soon after collection as possible. On warm days, or when a representative from a nearby laboratory picks up the samples, take extra care (e.g., use more ice or delay shipment, if necessary) to ensure that sample temperatures will not exceed 10 °C when the samples arrive at the laboratory.

7.2 Other Precautions for Sample Handling

- Wash hands thoroughly before sampling and after handling fast food, carryout food, snacks, food wrappers, or other items that may contain PFAS. Do not carry pre-packaged food items such as candy bars or microwave popcorn into sampling areas.

- Assume that shipping tape used for securing coolers could contain PFAS; therefore, take care not to transfer PFAS from tape to samples.

- Minimize exposure of samples to light. This can be done by placing the collected samples into a cooler (with ice) and closing the cooler lid.

- If in doubt about a particular product or item that comes into contact with environmental media to be sampled or is near to sampling operations, consider collecting and analyzing a rinsate blank using laboratory-supplied PFAS-free water to test the item for contamination potential. Consult the Tetra Tech PM in these cases to verify whether collection of additional blanks is warranted.

- Support personnel that are within 3 meters of the sample processing area are considered subject to the same restrictions related to precautionary measures for clothing and food as applied to sampling personnel.

These precautions must be observed during sampling activities, especially during water sample collection (groundwater, water supply, and surface water), given the high solubilities of PFAS in water. Examples of how these precautions may be applied to sampling of specific media are provided in the following sections.

7.3 Groundwater Sample Acquisition

The precautions and requirements identified in Sections 7.1 and 7.2 must be observed for groundwater sampling. Do not proceed any further without reviewing each of those precautions and requirements.

- Collect groundwater samples for PFAS analyses in accordance with this SOP, SOP SA-1.1, and/or project- or client-specific requirements.

- If non-dedicated non-disposable equipment is used between sampling locations, it should be decontaminated with Alconox or Liquinox, unless 1,4-dioxane (a potential component of Liquinox) is also a contaminant of concern. In that case, Liquinox should not be used. Products such as Decon 90, which contains fluorosurfactants, shall not be used. Alconox or Liquinox rinses should be followed by a potable water rinse then deionized water rinse. The final decontamination rinse for DoD projects must be with water certified by the laboratory to be PFAS-free.

- If sampling for multiple analytes using PFAS-appropriate equipment, collect samples for PFAS analysis last to ensure adequate purging and conditioning of sampling equipment. If practical to do so, suitable PPE (especially gloves) may also be changed out for PFAS sampling. For example, purge and sample a monitoring well for volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), and metals using a peristaltic pump with HDPE and silicone tubing, then collect the sample for PFAS analysis. If either the proper sampling sequence or proper equipment is unclear, consult the FOL or Tetra Tech PM and record the actual sequence in the field notes.

- If sampling wells that have or had dedicated Teflon or FEP tubing that potentially contained PFAS, remove the dedicated tubing and, using silicone or HDPE tubing, remove at least one well volume from the target sampling interval prior to sampling. Accomplish this removal in a manner that is rigorous enough to remove the entire water column from the well and not just a limited vertical interval of the water column. This will minimize the potential for collecting a sample that was in contact with the Teflon/FEP tubing.

- The use of detergents must be avoided during decontamination of drilling or other heavy equipment. All equipment must be scrubbed with a plastic brush or steam cleaned with potable water, and rinsed thoroughly in potable water to clean away any debris or material on exposed surfaces.

- Sample(s) representing any water collected at the point of use (e.g., a water truck or tank on site) used by the driller for drilling purposes may require analysis for PFAS. Check the governing planning document for guidance and see Section 7.8 of this SOP for guidance on waste management.

- Collect drinking water samples to be analyzed for PFAS in clean polypropylene sample bottles with a polypropylene screw cap; for all other samples, use clean, laboratory-supplied, HDPE bottles with unlined plastic screw caps.

- Pre-label all sample bottles with the correct sample identifier prior to sampling and, for each bottle at the time of sampling:

    - Verify that the correct bottle is being used.
    - Fill the bottle to slightly below the shoulder of the bottle.
    - Tightly close the bottle with the appropriate cap.
    - Repeat this process for subsequent sample bottles.

7.4 Soil Sample Acquisition

The precautions and requirements identified in Sections 7.1 and 7.2 must be observed for soil sampling. Do not proceed any further without reviewing each of those precautions and requirements.

- Collect soil samples for PFAS analyses in accordance with this SOP, SOP SA-1.3, and/or project- or client-specific requirements. Review client–specific (e.g., DoD component) guidance or previously approved Sampling and Analysis Plans (SAPs).

- Soil sampling equipment should not be constructed of or contain Teflon or other materials likely to contain or be coated with PFAS. Acceptable materials for sampling include stainless steel, acetate plastic, and HDPE.

- If non-dedicated non-disposable equipment is used between sampling locations, it should be decontaminated with Alconox or Liquinox, unless 1,4-dioxane (a potential component of Liquinox) is also a contaminant of concern. In that case, Liquinox should not be used. Products such as Decon 90, which contains fluorosurfactants, shall not be used. Alconox or Liquinox rinses should be followed by a potable water rinse then deionized water rinse. The final decontamination rinse for DoD projects must be with water certified by the laboratory to be PFAS-free.

- Collect samples in laboratory-provided HDPE containers specifically designated for PFAS analysis. Do not use glass jars typically used for soil sample collection because some PFAS may irreversibly adsorb to the glass and could create a negative bias (i.e., artificially low concentrations) in the measured PFAS concentrations.

- Pre-label all sample containers with the correct sample identifier prior to sampling and, for each container at the time of sampling:

  - Verify that the correct container is being used.
  - Fill the container to the appropriate level.
  - Tightly close the container with the proper cap.
  - Repeat this process for subsequent sample containers.

7.5 Surface Water and Sediment Sample Acquisition

The precautions and requirements identified in Sections 7.1 and 7.2 must be observed for surface water and sediment sampling. Do not proceed any further without reviewing each of those precautions and requirements.

- Collect surface water and sediment samples for PFAS analysis in accordance with this SOP, SOP SA-1.2, and/or project- or client-specific requirements.

- Surface water and sediment sampling equipment should not be constructed of or contain Teflon or LDPE materials. Acceptable materials for sampling include HDPE, silicone, stainless steel, and acetate plastic. Do not use glass. The bottleware should be supplied clean by the laboratory and specifically designated for PFAS analysis. If transfer bottles are required for collection of surface water samples, the transfer bottles used should be of the same material as the containers designated for submission to the laboratory.

- For surface water sample collection, invert the capped sample bottle, with the opening pointing downward, at least 10 cm below the water surface, at least 10 cm above the bottom of the water body, and as close to the center of the channel or water body as practical. To collect the sample, uncap the bottle underneath the water surface and point the bottle upward so that gloved hands, sample container, and sampler are downstream of where the sample is being collected.

- For aquatic samples collected from the shoreline or via wading, ensure that waders are constructed of fabric that has not been treated with waterproofing coatings, and stand downstream of the sample bottle during sample collection.

- Pre-label all sample bottles with the correct sample identifier prior to sampling and, for each bottle at the time of sampling:

    - Verify that the correct container is being used.
    - Fill the container to the appropriate level.
    - Tightly close the container with the proper cap.
    - Repeat this process for subsequent sample containers.

- If non-dedicated non-disposable sampling equipment is used between sampling locations, it should be decontaminated with Alconox or Liquinox, unless 1,4-dioxane (a potential component of Liquinox) is also a contaminant of concern. In that case, Liquinox should not be used. Products such as Decon 90, which contains fluorosurfactants, shall not be used. Alconox or Liquinox rinses should be followed by a potable water rinse then deionized water rinse. The final decontamination rinse for DoD projects must be with water certified by the laboratory to be PFAS-free.

- Avoid reusing non-stainless-steel equipment (e.g., porewater observation devices consisting of slotted PVC pipe and silicone tubing) when collecting porewater samples.

7.6 Water Supply Sampling

This section applies to sampling from taps, spigots, faucets, or similar devices for PFAS analysis. The precautions and requirements identified in Sections 7.1 and 7.2 must be observed for water supply sampling. Do not proceed any further without reviewing each of those precautions and requirements.

Caution

Do not use filters when collecting samples because the filters may introduce PFAS contamination or absorb/adsorb PFAS and thus reduce PFAS concentrations in the samples.

- Collect water supply samples for PFAS analysis in accordance with applicable portions of SOP SA-1.7 and/or project- or client-specific requirements.

- Water supply sampling equipment (if needed) should not be constructed of or contain Teflon or LDPE materials. Acceptable materials for sampling include HDPE, polypropylene (drinking water sampling only), small amounts of silicone (e.g., short runs of silicone tubing used in peristaltic pumps), stainless steel, and acetate plastic. Non-drinking water supply samples should be collected in clean, laboratory-supplied, HDPE bottleware specifically designated for PFAS analysis (not glass). Collect drinking water samples in clean polypropylene bottles supplied by the laboratory.

- Ensure that sample bottles used to collect chlorinated water samples contain the proper Trizma preservative (5 g/L to remove chlorine). Non-chlorinated water does not require chemical preservatives designed to remove chlorine; however, some projects may require the use of Trizma regardless of whether the water is chlorinated.

- Locate the sampling point. If a specific sampling point has already been designated (e.g., a kitchen tap or well head), plan to collect the sample from that point. Otherwise, identify a location in the water supply line that is as close as possible to the water's point of origination (e.g., a well or other water source) and upstream of any local water treatment unit(s) that could affect PFAS levels (e.g., water softeners, activated carbon, or reverse osmosis treatment units). If a treatment unit is in use, a post-treatment sample may also be required in some cases, per project requirements.

  NOTE: If treatment that could affect PFAS levels (e.g., carbon filtration or reverse osmosis) is part of the water distribution system, often a spigot will be present in the plumbing line between the water source and the treatment unit, and this spigot should be used for sample collection. If no local treatment is applied to the water, a convenient sampling point for private water supplies is often the cold water tap located at the point of use. If a sample cannot be collected from the planned location, collect the sample from an alternate, but equally representative sampling point, document the deviation in the field notes, and alert the project manager.

- Remove any aerator/diffuser from the faucet, if possible. If removal is not possible, record this observation in the field notes.

- Allow the water to run freely from the tap until project-specific requirements are achieved. This will often require purging for 3 to 5 minutes or may require monitoring of water quality parameters (e.g., temperature) until they stabilize.

- Reduce the water flow rate to minimize aeration of the sample. The water stream should be no wider than the diameter of a pencil.

- Pre-label all sample bottles with the correct sample identifier prior to sampling and, for each bottle at the time of sampling:

  - Verify that the correct bottle is being used
  - Fill the sample bottle directly from the tap to a point slightly below the shoulder of the bottle.
  - Cap the bottle tightly with the proper cap.
  - Repeat this process for subsequent sample bottles.

- After collecting the sample, ensure the bottle is capped tightly and, if solid chemical preservative is included, agitate by hand until the preservative is dissolved.

7.7 Field Reagent Blank Collection

NOTE: If PFAS are detected in site samples, FRBs may be analyzed to assess whether PFAS in site samples could be non-site-related contamination and whether resampling is necessary. U.S. EPA Method 537.1, and modifications or derivatives thereof for PFAS analysis in drinking water typically require an FRB to be handled along with each sample set. A sample set is described as samples collected from the same sample site and at the same time, but "sample site" and "same time" may not be precisely defined. Therefore, it is important to verify that the correct number of FRBs will be collected. The intent is to be able to verify whether samples have been contaminated and to help identify the source of contamination. In general, collecting one FRB at each sampling point is recommended when sampling drinking water; fewer

FRBs are recommended when sampling non-drinking water matrices. The actual number will depend on project needs. *Collection of an FRB at every non-drinking water sampling point* ***may*** *be required.*

- Verify the number of FRBs to be collected for the project and where those samples must be collected. This should be described in the governing project planning documents such as work plans or SAPs. If it is not, consult the PM. FRBs are commonly collected in pairs of sample bottles, similar to corresponding site samples.

NOTE: Chemical preservative may not be included in FRBs that are used when sampling non-drinking water matrices. In these cases the FRBs are more appropriately called Field Blanks (FBs) but the water transfers described below will be similar.

NOTE: It is important that FRB collection emulate as closely as possible the conditions surrounding collection of site samples. For example, when collecting FRBs from taps or spigots, collect each FRB either immediately before or after the corresponding site sample collection **without interrupting the water flow** until both the site sample and FRB have been collected.

- At the sampling site, when ready to collect an FRB, open the bottle of chemically preserved FRB reagent water provided by the laboratory and a corresponding clean empty bottle, also provided by the laboratory.

- Pour the preserved FRB reagent water into the empty sample bottle, close the cap, and label this filled bottle as the FRB.

- Pack and ship the FRB along with site samples and required documentation (e.g., chain-of-custody form) to the laboratory.

NOTE: Although chain-of-custody forms will indicate that FRBs must be analyzed for PFAS, analysis of an FRB will be required only if site samples contain PFAS greater than a certain concentration. If an FRB is analyzed and any PFAS concentration in the FRB exceeds one-third of the laboratory minimum reporting limit (or equivalent), all samples collected with that FRB may be considered invalid and may require recollection and reanalysis. Consult the project planning documents governing sample collection for specifics as to whether resampling is necessary. Care in collection and handling of site samples and FRBs in a way that avoids contamination cannot be overemphasized.

NOTE: It will be necessary to associate individual FRBs with corresponding site samples; otherwise, decisions about which samples to recollect (if recollection is indicated) could be compromised. Associations between FRBs and corresponding site samples may be accomplished by marking chain-of-custody forms with the associations, but other methods also may be useful. Consult the governing planning document or the PM for guidance, if necessary.

7.8 Disposal of Investigation-Derived Waste Potentially Containing PFAS

PFAS are not hazardous wastes as defined in the Resource Conservation and Recovery Act and Comprehensive Environmental Response, Compensation, and Liability Act. It may be possible to dispose of PFAS-containing solid waste as non-hazardous, but sampling solid waste material for PFAS analysis is not advised. Consult the client PM or on-site point of contact to verify their current disposal acceptance criteria and indicate on waste manifests that the waste potentially contains PFAS. Solid waste potentially containing PFAS should be identified as such on waste manifests. Wastewater potentially containing PFAS should be analyzed for PFAS to determine the appropriate disposal option. If the sum of PFOA and PFOS concentrations is less than the applicable criterion (e.g., 70 ng/L) the water may be disposed of without special handling if no other enforceable regulations apply; otherwise, the water should be treated to reduce the PFOA + PFOS concentration to an acceptable level or should be directed to an appropriate treatment facility for disposal. On-site treatment (e.g., granular activated carbon filtration) may be appropriate. Consult the client PM or on-site point of contact for direction regarding disposal.

NOTE: If aqueous investigation-derived waste (IDW) is expected to contain PFAS greater than the applicable criterion (e.g., captured residual AFFF or AFFF concentrate from an accidental release in a hangar), special actions may be necessary and the client PM should be consulted. For wastes that are dewatered and potentially contain PFAS, containerize the wastewater and analyze it for PFAS prior to disposal.

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Tetra Tech, Inc.

BORING LOG

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PROJECT NAME: NASA PFAS
PROJECT NUMBER: 112G09237
DRILLING COMPANY: Groundwater Protection
DRILLING RIG: Geoprobe 8140LS

BORING No.: STP1-SB0001
DATE: 12-9-2021
GEOLOGIST: Anderson, Rogers
DRILLER: Dave Leagrae

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION			USCS*	Remarks	PID/FID Reading (ppm)			
					Soil Density/ Consistency or Rock Hardness	Color	Material Classification			Sample	Sampler BZ	Borehole**	Driller BZ**
							Loose, Dark Brown to Black						
							fine sands						
							- organic rich						
	1						- trace silt (some form but easy						
							crumble)						
							- Possibly finely laminated layers						
							dark brown/Black in lower						
							2-3 feet (7-10' BGS)						
	10			10 L1									
							Similar to above but less black						
							and organics. Generally a brown/reddish						
							- trace to minor silts						
	2						* less red & more brown with						
							depth						
							- laminated @ 16-19, gray & brown						
							- grades to gray fine sands						
	20												
				22 LB									
	3			L2			Gray, loose fine sands with						
							minor shell frags.						
							- crushed shells, <1-2 mm						

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Remarks:

Drilling Area Background (ppm): 0

Converted to Well: Yes ☐ No ☒ Well I.D. #:

Tetra Tech, Inc.

BORING LOG

Page 2 of 3

PROJECT NAME: NASA PFAS
PROJECT NUMBER: 112G09237
DRILLING COMPANY: Groundwater Protection
DRILLING RIG: Geoprobe 8140LS

BORING No.: STP1-SB0001
DATE: 12-9-2021
GEOLOGIST: Anderson, Rogers
DRILLER: Dave Longino

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION			USCS *	Remarks	PID/FID Reading (ppm)			
					Soil Density/ Consistency or Rock Hardness	Color	Material Classification			Sample	Sampler BZ	Borehole**	Driller BZ**
	③						Gray fine sand with shells - increasing shell content and sizes with depth						
	30			30 L2									
							Gray, loose (very) f sands and crushed shells (about 1/3 bulk) - trace silts						
	④						- some larger shells ≥2 inches						
	40						- as above but some areas (2-3 inches) of clayey silts & shells						
				44 L3									
	⑤			L4 46			Gray, dense plastic clay with trace shell, silts						
				L3B			Gray fine sands with clays and silts. more silt with depth, less sand. Some ≥2" shells						
	50			50									

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Remarks:

Drilling Area Background (ppm): 0

Converted to Well: Yes ____ No X

Well I.D. #:

Tetra Tech, Inc.

BORING LOG

Page 3 of 3

PROJECT NAME: NASA PFAS
PROJECT NUMBER: 112G09237
DRILLING COMPANY: Groundwater Protection
DRILLING RIG: Geoprobe 8140LS
BORING No.: STP1-SB0001
DATE: 12-9-2021
GEOLOGIST: Anderson, Rogers
DRILLER: Dave Longino

	Sample No. and Type or RQD	Depth (Ft.) ~~or~~ Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS *	Remarks	PID/FID Reading (ppm) Sample	Sampler BZ	Borehole**	Driller BZ**
50								Gray loose silt with trace f						
					L3B			sands & clay.						
								-some portions clayey silt.						
					54									
		⑥						Light gray fine sandy shells to						
								shelly sands. Increasing						
								shell content with depth						
								-trace clays & silts						
60					L5			- fine sandy shells with trace						
								silts						
								-crushed shells, most <2mm						
		⑦			66									
								Olive green clayey silt with						
								shells (<25%)						
								-more silts than clay but						
								similar						
70														
								EOB						

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Remarks:

Drilling Area Background (ppm): 0

Converted to Well: Yes ______ No X Well I.D. #:

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Tetra Tech, Inc.

DPT GROUNDWATER SAMPLE LOG SHEET

Project Site Name: Sewage Treatment Plant Number 1 (STP1)
Project No.: 112G09581
Date: 02/17/2022

Sample ID: STP1-DPT0001
Location: 27
Sampled By: Chuck Sorden

DPT SAMPLING DATA

LOCATION ID	LOCATION	DATE	TIME	DEPTH	ODOR	COLOR	COMMENTS
STP1-DPT0001	27	02/17/2022	0915	5'	Organic	Brown	
STP1-DPT0001	27	02/17/2022	0940	10'	Organic	Brown	
STP1-DPT0001	27	02/17/2022	1005	17'	Organic	Brown	
STP1-DPT0001	27	02/17/2022	1030	23'	None	Gray	
STP1-DPT0001	27	02/17/2022	1100	33'	None	Gray	
STP1-DPT0001	27	02/17/2022	1130	42'	None	Gray	

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Collected
PFAS QSM Table B-15	**None**	**2 250mL HDPE Bottles**	**X**

OBSERVATIONS / NOTES

All intervals purged a minimum of five (5) screen volumes (1.5 L) prior to sample collection.

Hand auger five feet to clear utilities

Borehole abandoned via pressure grouting through boring rods

Rig, Rods, and associated tooling decon'd with pressurized steam

Circle if Applicable:

MS/MSD	Duplicate ID No.:

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Tetra Tech, Inc.

DPT GROUNDWATER SAMPLE LOG SHEET

Project Site Name: Sewage Treatment Plant Number 1 (STP1)

Project No.: 112G09581

Date: 02/17/2022

Sample ID: STP1-DPT0002

Location: 17

Sampled By: Chuck Sorden

DPT SAMPLING DATA

LOCATION ID	LOCATION	DATE	TIME	DEPTH	ODOR	COLOR	COMMENTS
STP1-DPT0002	17	02/17/2022	1235	5'	Organic	Brown	
STP1-DPT0002	17	02/17/2022	1300	10'	Organic	Brown	
STP1-DPT0002	17	02/17/2022	1330	17'	Organic	Brown	
STP1-DPT0002	17	02/17/2022	1355	23'	None	Gray	
STP1-DPT0002	17	02/17/2022	1420	33'	None	Gray	
STP1-DPT0002	17	02/17/2022	1450	42'	None	Gray	

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Collected
PFAS QSM Table B-15	**None**	**2 250mL HDPE Bottles**	**X**

OBSERVATIONS / NOTES

All intervals purged a minimum of five (5) screen volumes (1.5 L) prior to sample collection.

Hand auger five feet to clear utilities

Borehole abandoned via pressure grouting through boring rods

Rig, Rods, and associated tooling decon'd with pressurized steam

Circle if Applicable:

MS/MSD

Duplicate ID No.:

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Tetra Tech, Inc.

DPT GROUNDWATER SAMPLE LOG SHEET

Project Site Name: Sewage Treatment Plant Number 1 (STP1)
Project No.: 112G09581
Date: 02/21/2022

Sample ID: STP1-DPT0003
Location: 39
Sampled By: Chuck Sorden

DPT SAMPLING DATA

LOCATION ID	LOCATION	DATE	TIME	DEPTH	ODOR	COLOR	COMMENTS
STP1-DPT0003	39	02/21/2022	NA	5'	NA	NA	No sample; water table too deep
STP1-DPT0003	39	02/21/2022	1120	10'	Organic	Brown	
STP1-DPT0003	39	02/21/2022	1145	17'	Organic	Brown	
STP1-DPT0003	39	02/21/2022	1210	23'	None	Gray	
STP1-DPT0003	39	02/21/2022	1235	33'	None	Gray	
STP1-DPT0003	39	02/21/2022	1300	42'	None	Gray	

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Collected
PFAS QSM Table B-15	**None**	**2 250mL HDPE Bottles**	**X**

OBSERVATIONS / NOTES

All intervals purged a minimum of five (5) screen volumes (1.5 L) prior to sample collection.

Hand auger five feet to clear utilities

Borehole abandoned via pressure grouting through boring rods

Rig, Rods, and associated tooling decon'd with pressurized steam

Circle if Applicable:

MS/MSD

Duplicate ID No.:
STP1-FD-20220221-01 - DUP of STP1-DPT0003-010.0

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Tetra Tech, Inc.

DPT GROUNDWATER SAMPLE LOG SHEET

Project Site Name: Sewage Treatment Plant Number 1 (STP1)
Project No.: 112G09581
Date: 02/21/2022

Sample ID: STP1-DPT0004
Location: 99
Sampled By: Chuck Sorden

DPT SAMPLING DATA

LOCATION ID	LOCATION	DATE	TIME	DEPTH	ODOR	COLOR	COMMENTS
STP1-DPT0004	99	02/21/2022	NA	5'	NA	NA	No sample; water table too deep
STP1-DPT0004	99	02/21/2022	1415	10'	Organic	Brown	
STP1-DPT0004	99	02/21/2022	1435	17'	Organic	Brown	
STP1-DPT0004	99	02/21/2022	1505	23'	None	Gray	
STP1-DPT0004	99	02/21/2022	1530	33'	None	Gray	
STP1-DPT0004	99	02/21/2022	1555	42'	None	Gray	

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Collected
PFAS QSM Table B-15	**None**	**2 250mL HDPE Bottles**	**X**

OBSERVATIONS / NOTES

All intervals purged a minimum of five (5) screen volumes (1.5 L) prior to sample collection.

Hand auger five feet to clear utilities

Borehole abandoned via pressure grouting through boring rods

Rig, Rods, and associated tooling decon'd with pressurized steam

Circle if Applicable:

MS/MSD	Duplicate ID No.:
YES	STP1-FD-20220221-02 - DUP of STP1-DPT0004-016.0

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Tetra Tech, Inc.

DPT GROUNDWATER SAMPLE LOG SHEET

Project Site Name: Sewage Treatment Plant Number 1 (STP1)
Project No.: 112G09581
Date: 02/22/2022

Sample ID: STP1-DPT0005
Location: 42
Sampled By: Chuck Sorden

DPT SAMPLING DATA

LOCATION ID	LOCATION	DATE	TIME	DEPTH	ODOR	COLOR	COMMENTS
STP1-DPT0005	42	02/22/2022	NA	5'	NA	NA	No sample; water table too deep
STP1-DPT0005	42	02/22/2022	0715	10'	Organic	Brown	
STP1-DPT0005	42	02/22/2022	0735	17'	Organic	Brown	
STP1-DPT0005	42	02/22/2022	0755	23'	None	Gray	
STP1-DPT0005	42	02/22/2022	0835	33'	None	Gray	
STP1-DPT0005	42	02/22/2022	0900	42'	None	Gray	

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Collected
PFAS QSM Table B-15	**None**	**2 250mL HDPE Bottles**	**X**

OBSERVATIONS / NOTES

All intervals purged a minimum of five (5) screen volumes (1.5 L) prior to sample collection.
Hand auger five feet to clear utilities
Borehole abandoned via pressure grouting through boring rods
Rig, Rods, and associated tooling decon'd with pressurized steam

Circle if Applicable:

MS/MSD	Duplicate ID No.:

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Tetra Tech, Inc.

DPT GROUNDWATER SAMPLE LOG SHEET

Project Site Name: Sewage Treatment Plant Number 1 (STP1)
Project No.: 112G09581
Date: 02/22/2022

Sample ID: STP1-DPT0006
Location: 47
Sampled By: Chuck Sorden

DPT SAMPLING DATA

LOCATION ID	LOCATION	DATE	TIME	DEPTH	ODOR	COLOR	COMMENTS
STP1-DPT0006	47	02/22/2022	NA	5'	NA	NA	No sample; water table too deep
STP1-DPT0006	47	02/22/2022	1000	10'	Organic	Brown	
STP1-DPT0006	47	02/22/2022	1030	17'	Organic	Brown	
STP1-DPT0006	47	02/22/2022	1055	23'	None	Gray	
STP1-DPT0006	47	02/22/2022	1120	33'	None	Gray	
STP1-DPT0006	47	02/22/2022	1145	42'	None	Gray	

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Collected
PFAS QSM Table B-15	**None**	**2 250mL HDPE Bottles**	**X**

OBSERVATIONS / NOTES

All intervals purged a minimum of five (5) screen volumes (1.5 L) prior to sample collection.

Hand auger five feet to clear utilities

Borehole abandoned via pressure grouting through boring rods

Rig, Rods, and associated tooling decon'd with pressurized steam

Circle if Applicable:

MS/MSD

Duplicate ID No.:

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Tetra Tech, Inc.

DPT GROUNDWATER SAMPLE LOG SHEET

Project Site Name: Sewage Treatment Plant Number 1 (STP1)
Project No.: 112G09581
Date: 02/22/2022

Sample ID: STP1-DPT0007
Location: 38
Sampled By: Chuck Sorden

DPT SAMPLING DATA

LOCATION ID	LOCATION	DATE	TIME	DEPTH	ODOR	COLOR	COMMENTS
STP1-DPT0007	38	02/22/2022	1310	5'	Organic	Brown	
STP1-DPT0007	38	02/22/2022	1335	10'	Organic	Brown	
STP1-DPT0007	38	02/22/2022	1405	17'	Organic	Brown	
STP1-DPT0007	38	02/22/2022	1430	23'	None	Gray	
STP1-DPT0007	38	02/22/2022	1500	33'	None	Gray	
STP1-DPT0007	38	02/22/2022	1530	42'	None	Gray	

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Collected
PFAS QSM Table B-15	**None**	**2 250mL HDPE Bottles**	**X**

OBSERVATIONS / NOTES

All intervals purged a minimum of five (5) screen volumes (1.5 L) prior to sample collection.

Hand auger five feet to clear utilities

Borehole abandoned via pressure grouting through boring rods

Rig, Rods, and associated tooling decon'd with pressurized steam

Circle if Applicable:

MS/MSD

Duplicate ID No.:

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Tetra Tech, Inc.

DPT GROUNDWATER SAMPLE LOG SHEET

Project Site Name: Sewage Treatment Plant Number 1 (STP1)
Project No.: 112G09581
Date: 02/23/2022

Sample ID: STP1-DPT0008
Location: 31
Sampled By: Chuck Sorden

DPT SAMPLING DATA

LOCATION ID	LOCATION	DATE	TIME	DEPTH	ODOR	COLOR	COMMENTS
STP1-DPT0008	31	02/23/2022	0735	5'	Organic	Brown	
STP1-DPT0008	31	02/23/2022	0800	10'	Organic	Brown	
STP1-DPT0008	31	02/23/2022	0820	17'	Organic	Brown	
STP1-DPT0008	31	02/23/2022	0850	23'	None	Gray	
STP1-DPT0008	31	02/23/2022	0925	33'	None	Gray	
STP1-DPT0008	31	02/23/2022	0955	42'	None	Gray	

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Collected
PFAS QSM Table B-15	**None**	**2 250mL HDPE Bottles**	**X**

OBSERVATIONS / NOTES

All intervals purged a minimum of five (5) screen volumes (1.5 L) prior to sample collection.

Hand auger five feet to clear utilities

Borehole abandoned via pressure grouting through boring rods

Rig, Rods, and associated tooling decon'd with pressurized steam

Circle if Applicable:

MS/MSD	Duplicate ID No.:
YES	STP1-FD-20220223-01 - DUP of STP1-DPT0008-005.0

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Tetra Tech, Inc.

DPT GROUNDWATER SAMPLE LOG SHEET

Project Site Name: Sewage Treatment Plant Number 1 (STP1)
Project No.: 112G09581
Date: 02/23/2022
Sample ID: STP1-DPT0009
Location: 29
Sampled By: Chuck Sorden

DPT SAMPLING DATA

LOCATION ID	LOCATION	DATE	TIME	DEPTH	ODOR	COLOR	COMMENTS
STP1-DPT0009	29	02/23/2022	1115	5'	Organic	Brown	
STP1-DPT0009	29	02/23/2022	1140	10'	Organic	Brown	
STP1-DPT0009	29	02/23/2022	1205	17'	Organic	Brown	
STP1-DPT0009	29	02/23/2022	1230	23'	None	Gray	
STP1-DPT0009	29	02/23/2022	1305	33'	None	Gray	
STP1-DPT0009	29	02/23/2022	1335	42'	None	Gray	

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Collected
PFAS QSM Table B-15	**None**	**2 250mL HDPE Bottles**	**X**

OBSERVATIONS / NOTES

All intervals purged a minimum of five (5) screen volumes (1.5 L) prior to sample collection.

Hand auger five feet to clear utilities

Borehole abandoned via pressure grouting through boring rods

Rig, Rods, and associated tooling decon'd with pressurized steam

Circle if Applicable:

MS/MSD	Duplicate ID No.:
YES	STP1-FD-20220223-02 - DUP of STP1-DPT0009-023.0

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Tetra Tech, Inc.

DPT GROUNDWATER SAMPLE LOG SHEET

Project Site Name: Sewage Treatment Plant Number 1 (STP1)
Project No.: 112G09581
Date: 02/23/2022

Sample ID: STP1-DPT0010
Location: 28
Sampled By: Chuck Sorden

DPT SAMPLING DATA

LOCATION ID	LOCATION	DATE	TIME	DEPTH	ODOR	COLOR	COMMENTS
STP1-DPT0010	28	02/23/2022	1440	5'	Organic	Brown	
STP1-DPT0010	28	02/23/2022	1500	10'	Organic	Brown	
STP1-DPT0010	28	02/23/2022	1525	17'	Organic	Brown	
STP1-DPT0010	28	02/23/2022	1545	23'	None	Gray	
STP1-DPT0010	28	02/23/2022	1610	33'	None	Gray	
STP1-DPT0010	28	02/23/2022	1635	42'	None	Gray	

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Collected
PFAS QSM Table B-15	**None**	**2 250mL HDPE Bottles**	**X**

OBSERVATIONS / NOTES

All intervals purged a minimum of five (5) screen volumes (1.5 L) prior to sample collection.

Hand auger five feet to clear utilities

Borehole abandoned via pressure grouting through boring rods

Rig, Rods, and associated tooling decon'd with pressurized steam

Circle if Applicable:

MS/MSD

Duplicate ID No.:
STP1-FD-20220223-03 - DUP of STP1-DPT0010-033.0

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Tetra Tech, Inc.

DPT GROUNDWATER SAMPLE LOG SHEET

Project Site Name: Sewage Treatment Plant Number 1 (STP1)

Project No.: 112G09581

Date: 02/24/2022

Sample ID: STP1-DPT0011

Location: 25

Sampled By: Chuck Sorden

DPT SAMPLING DATA

LOCATION ID	LOCATION	DATE	TIME	DEPTH	ODOR	COLOR	COMMENTS
STP1-DPT0011	25	02/24/2022	0725	5'	Organic	Brown	
STP1-DPT0011	25	02/24/2022	0745	10'	Organic	Brown	
STP1-DPT0011	25	02/24/2022	0805	17'	Organic	Brown	
STP1-DPT0011	25	02/24/2022	0840	23'	None	Gray	
STP1-DPT0011	25	02/24/2022	0905	33'	None	Gray	
STP1-DPT0011	25	02/24/2022	0935	42'	None	Gray	

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Collected
PFAS QSM Table B-15	**None**	**2 250mL HDPE Bottles**	**X**

OBSERVATIONS / NOTES

All intervals purged a minimum of five (5) screen volumes (1.5 L) prior to sample collection.

Hand auger five feet to clear utilities

Borehole abandoned via pressure grouting through boring rods

Rig, Rods, and associated tooling decon'd with pressurized steam

Circle if Applicable:

MS/MSD

Duplicate ID No.:

STP1-FD-20220224-01 - DUP of STP1-DPT0011-042.0

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Tetra Tech, Inc.

DPT GROUNDWATER SAMPLE LOG SHEET

Project Site Name: Sewage Treatment Plant Number 1 (STP1)
Project No.: 112G09581
Date: 02/24/2022

Sample ID: STP1-DPT0012
Location: 26
Sampled By: Chuck Sorden

DPT SAMPLING DATA

LOCATION ID	LOCATION	DATE	TIME	DEPTH	ODOR	COLOR	COMMENTS
STP1-DPT0012	26	02/24/2022	1030	5'	Organic	Brown	
STP1-DPT0012	26	02/24/2022	1050	10'	Organic	Brown	
STP1-DPT0012	26	02/24/2022	1115	17'	Organic	Brown	
STP1-DPT0012	26	02/24/2022	1140	23'	None	Gray	
STP1-DPT0012	26	02/24/2022	1215	33'	None	Gray	
STP1-DPT0012	26	02/24/2022	1245	42'	None	Gray	

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Collected
PFAS QSM Table B-15	**None**	**2 250mL HDPE Bottles**	**X**

OBSERVATIONS / NOTES

All intervals purged a minimum of five (5) screen volumes (1.5 L) prior to sample collection.
Hand auger five feet to clear utilities
Borehole abandoned via pressure grouting through boring rods
Rig, Rods, and associated tooling decon'd with pressurized steam

Circle if Applicable:

MS/MSD	Duplicate ID No.:
YES	STP1-FD-20220224-02 - DUP of STP1-DPT0012-010.0

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Tetra Tech, Inc.

DPT GROUNDWATER SAMPLE LOG SHEET

Project Site Name: Sewage Treatment Plant Number 1 (STP1)
Project No.: 112G09581
Date: 02/24/2022

Sample ID: STP1-DPT0013
Location: 35
Sampled By: Chuck Sorden

DPT SAMPLING DATA

LOCATION ID	LOCATION	DATE	TIME	DEPTH	ODOR	COLOR	COMMENTS
STP1-DPT0013	35	02/24/2022	1335	5'	Organic	Brown	
STP1-DPT0013	35	02/24/2022	1405	10'	Organic	Brown	
STP1-DPT0013	35	02/24/2022	1425	17'	Organic	Brown	
STP1-DPT0013	35	02/24/2022	1450	23'	None	Gray	
STP1-DPT0013	35	02/24/2022	1520	33'	None	Gray	
STP1-DPT0013	35	02/24/2022	1550	42'	None	Gray	

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Collected
PFAS QSM Table B-15	**None**	**2 250mL HDPE Bottles**	**X**

OBSERVATIONS / NOTES

All intervals purged a minimum of five (5) screen volumes (1.5 L) prior to sample collection.
Hand auger five feet to clear utilities
Borehole abandoned via pressure grouting through boring rods
Rig, Rods, and associated tooling decon'd with pressurized steam

Circle if Applicable:

MS/MSD	Duplicate ID No.:
YES	STP1-FD-20220224-02 - DUP of STP1-DPT0012-010.0

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Tetra Tech, Inc.

DPT GROUNDWATER SAMPLE LOG SHEET

Project Site Name: Sewage Treatment Plant Number 1 (STP1)
Project No.: 112G09581
Date: 02/25/2022

Sample ID: STP1-DPT0014
Location: 36
Sampled By: Chuck Sorden

DPT SAMPLING DATA

LOCATION ID	LOCATION	DATE	TIME	DEPTH	ODOR	COLOR	COMMENTS
STP1-DPT0014	36	02/25/2022	0735	5'	Organic	Brown	
STP1-DPT0014	36	02/25/2022	0800	10'	Organic	Brown	
STP1-DPT0014	36	02/25/2022	0825	17'	Organic	Brown	
STP1-DPT0014	36	02/25/2022	0845	23'	None	Gray	
STP1-DPT0014	36	02/25/2022	0910	33'	None	Gray	
STP1-DPT0014	36	02/25/2022	0945	42'	None	Gray	

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Collected
PFAS QSM Table B-15	**None**	**2 250mL HDPE Bottles**	**X**

OBSERVATIONS / NOTES

All intervals purged a minimum of five (5) screen volumes (1.5 L) prior to sample collection.

Hand auger five feet to clear utilities

Borehole abandoned via pressure grouting through boring rods

Rig, Rods, and associated tooling decon'd with pressurized steam

Circle if Applicable:

MS/MSD	Duplicate ID No.:
YES	STP1-FD-20220224-01 - DUP of STP1-DPT0014-023.0

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Tetra Tech, Inc.

DPT GROUNDWATER SAMPLE LOG SHEET

Project Site Name: Sewage Treatment Plant Number 1 (STP1)
Project No.: 112G09581
Date: 02/25/2022
Sample ID: STP1-DPT0015
Location: 37
Sampled By: Chuck Sorden

DPT SAMPLING DATA

LOCATION ID	LOCATION	DATE	TIME	DEPTH	ODOR	COLOR	COMMENTS
STP1-DPT0015	37	02/25/2022	NA	5'	NA	NA	No water
STP1-DPT0015	37	02/25/2022	1105	10'	Organic	Brown	
STP1-DPT0015	37	02/25/2022	1130	17'	Organic	Brown	
STP1-DPT0015	37	02/25/2022	1155	23'	None	Gray	
STP1-DPT0015	37	02/25/2022	1220	33'	None	Gray	
STP1-DPT0015	37	02/25/2022	1245	42'	None	Gray	

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Collected
PFAS QSM Table B-15	**None**	**2 250mL HDPE Bottles**	**X**

OBSERVATIONS / NOTES

All intervals purged a minimum of five (5) screen volumes (1.5 L) prior to sample collection.
Hand auger five feet to clear utilities
Borehole abandoned via pressure grouting through boring rods
Rig, Rods, and associated tooling decon'd with pressurized steam

Circle if Applicable:

MS/MSD

Duplicate ID No.:

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Tetra Tech, Inc.

DPT GROUNDWATER SAMPLE LOG SHEET

Project Site Name: Sewage Treatment Plant Number 1 (STP1)
Project No.: 112G09581
Date: 03/14/2022

Sample ID: STP1-DPT0016
Location: 34
Sampled By: Chuck Sorden

DPT SAMPLING DATA

LOCATION ID	LOCATION	DATE	TIME	DEPTH	ODOR	COLOR	COMMENTS
STP1-DPT0016	34	03/14/2022	1455	5'	Organic	Gray	
STP1-DPT0016	34	03/14/2022	1515	10'	Organic	Brown	
STP1-DPT0016	34	03/14/2022	1535	17'	Organic	Brown	
STP1-DPT0016	34	03/14/2022	1555	23'	None	Gray	
STP1-DPT0016	34	03/14/2022	1615	33'	None	Gray	
STP1-DPT0016	34	03/14/2022	1635	42'	None	Gray	

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Collected
PFAS QSM Table B-15	**None**	**2 250mL HDPE Bottles**	**X**

OBSERVATIONS / NOTES

All intervals purged a minimum of five (5) screen volumes (1.5 L) prior to sample collection.

Hand auger five feet to clear utilities

Borehole abandoned via pressure grouting through boring rods

Rig, Rods, and associated tooling decon'd with pressurized steam

Circle if Applicable:

MS/MSD

Duplicate ID No.:

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Tetra Tech, Inc.

DPT GROUNDWATER SAMPLE LOG SHEET

Project Site Name: Sewage Treatment Plant Number 1 (STP1)
Project No.: 112G09581
Date: 03/14/2022

Sample ID: STP1-DPT0017
Location: 32
Sampled By: Chuck Sorden

DPT SAMPLING DATA

LOCATION ID	LOCATION	DATE	TIME	DEPTH	ODOR	COLOR	COMMENTS
STP1-DPT0017	32	03/14/2022	0935	5'	Organic	Brown	
STP1-DPT0017	32	03/14/2022	0955	10'	Organic	Brown	
STP1-DPT0017	32	03/14/2022	1015	17'	Organic	Brown	
STP1-DPT0017	32	03/14/2022	1035	23'	None	Gray	
STP1-DPT0017	32	03/14/2022	1105	33'	None	Gray	
STP1-DPT0017	32	03/14/2022	1145	42'	None	Gray	

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Collected
PFAS QSM Table B-15	**None**	**2 250mL HDPE Bottles**	**X**

OBSERVATIONS / NOTES

All intervals purged a minimum of five (5) screen volumes (1.5 L) prior to sample collection.
Hand auger five feet to clear utilities
Borehole abandoned via pressure grouting through boring rods
Rig, Rods, and associated tooling decon'd with pressurized steam

Circle if Applicable:

MS/MSD	Duplicate ID No.:
YES	STP1-FD-20220315-01 - DUP of DPT0017-010.0

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Tetra Tech, Inc.

DPT GROUNDWATER SAMPLE LOG SHEET

Project Site Name: Sewage Treatment Plant Number 1 (STP1)
Project No.: 112G09581
Date: 03/14/2022

Sample ID: STP1-DPT0018
Location: 33
Sampled By: Chuck Sorden

DPT SAMPLING DATA

LOCATION ID	LOCATION	DATE	TIME	DEPTH	ODOR	COLOR	COMMENTS
STP1-DPT0018	33	03/14/2022	1410	5'	Organic	Brown	
STP1-DPT0018	33	03/14/2022	1430	10'	Organic	Brown	
STP1-DPT0018	33	03/14/2022	1450	17'	Organic	Brown	
STP1-DPT0018	33	03/14/2022	1510	23'	None	Gray	
STP1-DPT0018	33	03/14/2022	1530	33'	None	Gray	
STP1-DPT0018	33	03/14/2022	1550	42'	None	Gray	

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Collected
PFAS QSM Table B-15	**None**	**2 250mL HDPE Bottles**	**X**

OBSERVATIONS / NOTES

All intervals purged a minimum of five (5) screen volumes (1.5 L) prior to sample collection.
Hand auger five feet to clear utilities
Borehole abandoned via pressure grouting through boring rods
Rig, Rods, and associated tooling decon'd with pressurized steam

Circle if Applicable:

MS/MSD

Duplicate ID No.:
STP1-FD-20220315-02 - DUP of DPT0018-023.0

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Tetra Tech, Inc.

DPT GROUNDWATER SAMPLE LOG SHEET

Project Site Name: KSC-SW3
Project No.: 112G09020
Date: 11/02/2021

Sample ID: SW3-DPT0144 (aka DPT0132)
Location: A
Sampled By: R. Seigel, K. Kercher

DPT SAMPLING DATA

LOCATION ID	LOCATION	DATE	TIME	DEPTH	ODOR	COLOR	COMMENTS
SW3-DPT0144 (aka DPT0132)	A	11/02/2021	1200	12'	None	Dark Brown	VOC and PFAS
SW3-DPT0144 (aka DPT0132)	A	11/02/2021	1220	17'	None	Dark Brown	
SW3-DPT0144 (aka DPT0132)	A	11/02/2021	1235	22'	None	Dark Brown	VOC and PFAS
SW3-DPT0144 (aka DPT0132)	A	11/02/2021	1255	27'	None	Grey	
SW3-DPT0144 (aka DPT0132)	A	11/02/2021	1310	32'	None	Cloudy White	VOC and PFAS
SW3-DPT0144 (aka DPT0132)	A	11/02/2021	1335	37'	None	Cloudy White	
SW3-DPT0144 (aka DPT0132)	A	11/02/2021	1355	42'	None	Cloudy White	VOC and PFAS
SW3-DPT0144 (aka DPT0132)	A	11/02/2021	1430	47'	None	Light Grey	
SW3-DPT0144 (aka DPT0132)	A	11/02/2021	1500	52'	None	Grey	

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Collected
SW-846 8260B VOCs	**None**	**Two (2) - 40 mL vials delivered to Mobile Lab**	**X**
PFAS QSM Table B-15	**None**	**Two (2) - 250 mL bottles shipped to lab**	**X**

OBSERVATIONS / NOTES

All intervals purged a minimum of five (5) screen volumes (1.5 L) prior to sample collection.
Hand auger five feet to clear utilities
Borehole abandoned via pressure grouting through boring rods
Rig, Rods, and associated tooling decon'd with pressurized steam

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Tetra Tech, Inc.

DPT GROUNDWATER SAMPLE LOG SHEET

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Project Site Name: KSC-SW3
Project No.: 112G09020
Date: 11/02/2021

Sample ID: SW3-DPT0143 (aka DPT0131)
Location: G
Sampled By: R. Seigel, K. Kercher

DPT SAMPLING DATA

LOCATION ID	LOCATION	DATE	TIME	DEPTH	ODOR	COLOR	COMMENTS
SW3-DPT0143 (aka DPT0131)	G	11/02/2021	0745	12'	Sulphur	Brown	VOC and PFAS
SW3-DPT0143 (aka DPT0131)	G	11/02/2021	0800	17'	None	Dark Brown	
SW3-DPT0143 (aka DPT0131)	G	11/02/2021	0815	22'	None	Pale Brown	VOC and PFAS
SW3-DPT0143 (aka DPT0131)	G	11/02/2021	0835	27'	None	Light Grey	
SW3-DPT0143 (aka DPT0131)	G	11/02/2021	0850	32'	None	Pale Brown	VOC and PFAS
SW3-DPT0143 (aka DPT0131)	G	11/02/2021	0930	37'	None	Grey	
SW3-DPT0143 (aka DPT0131)	G	11/02/2021	0945	42'	None	Cloudy	VOC and PFAS
SW3-DPT0143 (aka DPT0131)	G	11/02/2021	1030	47'	None	Pale Brown	
SW3-DPT0143 (aka DPT0131)	G	11/02/2021	1045	52'	None	Cloudy	

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Collected
SW-846 8260B VOCs	**None**	**Two (2) - 40 mL vials delivered to Mobile Lab**	**X**
PFAS QSM Table B-15	**None**	**Two (2) - 250 mL bottles shipped to lab**	**X**

OBSERVATIONS / NOTES

All intervals purged a minimum of five (5) screen volumes (1.5 L) prior to sample collection.
Hand auger five feet to clear utilities
Borehole abandoned via pressure grouting through boring rods
Rig, Rods, and associated tooling decon'd with pressurized steam

Circle if Applicable:

MS/MSD	Duplicate ID No.:

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Tetra Tech, Inc.

DPT GROUNDWATER SAMPLE LOG SHEET

Project Site Name: KSC-POL
Project No.: 112G09020
Date: 10/28/2021

Sample ID: POL-DPT0136 (aka DPT1476)
Location: C
Sampled By: S. Rogers, K. Kercher

DPT SAMPLING DATA

LOCATION ID	LOCATION	DATE	TIME	DEPTH	ODOR	COLOR	COMMENTS
POL-DPT0136 (aka DPT1476)	C	10/28/2021	1010	12'	None	Dark Brown	VOCs / PFAS
POL-DPT0136 (aka DPT1476)	C	10/28/2021	1025	17'	None	Brown	
POL-DPT0136 (aka DPT1476)	C	10/28/2021	1035	22'	None	Grey	VOCs / PFAS
POL-DPT0136 (aka DPT1476)	C	10/28/2021	1045	27'	None	Grey	
POL-DPT0136 (aka DPT1476)	C	10/28/2021	1110	32'	None	Tannish Grey	VOCs / PFAS
POL-DPT0136 (aka DPT1476)	C	10/28/2021	1145	37'	None	Tannish Grey	
POL-DPT0136 (aka DPT1476)	C	10/28/2021	1305	42'	None	Tannish Grey	VOCs / PFAS

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Collected
SW-846 8260B VOCs	None	Two (2) - 40 mL vials delivered to Mobile Lab	X

OBSERVATIONS / NOTES

All intervals purged a minimum of five (5) screen volumes (1.5 L) prior to sample collection.
Hand auger five feet to clear utilities
Borehole abandoned via pressure grouting through boring rods
Rig, Rods, and associated tooling decon'd with pressurized steam

Circle if Applicable:

MS/MSD

Duplicate ID No.:

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Tetra Tech, Inc.

DPT GROUNDWATER SAMPLE LOG SHEET

Project Site Name: KSC-POL
Project No.: 112G09020
Date: 10/26/2021 10/28/2021

Sample ID: POL-DPT0135 (aka DPT1475)
Location: A
Sampled By: R. Seigel, K. Kercher

DPT SAMPLING DATA

LOCATION ID	LOCATION	DATE	TIME	DEPTH	ODOR	COLOR	COMMENTS
POL-DPT0135 (aka DPT1475)	A	10/26/2021	1335	12'	Odd Odor	Pale Brown	VOC and PFAS
POL-DPT0135 (aka DPT1475)	A	10/26/2021	1355	17'	None	Olive	
POL-DPT0135 (aka DPT1475)	A	10/26/2021	1410	22'	Weak Sulphur	Grey	VOC and PFAS
POL-DPT0135 (aka DPT1475)	A	10/26/2021	1430	27'	None	Cloudy White	
POL-DPT0135 (aka DPT1475)	A	10/26/2021	1450	32'	None	Cloudy White	VOC and PFAS
POL-DPT0135 (aka DPT1475)	A	10/26/2021	1535	37'	None	Cloudy White	
POL-DPT0135 (aka DPT1475)	A	10/26/2021	1555	42'	None	Light Grey	VOC and PFAS
POL-DPT0135 (aka DPT1475)	A	10/26/2021	1620	47'	None	Cloudy White	
POL-DPT0135 (aka DPT1475)	A	10/28/2021	0900	52'	None	Clear	

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Collected
SW-846 8260B VOCs	**None**	**Two (2) - 40 mL vials delivered to Mobile Lab**	**X**
PFAS QSM Table B-15	**None**	**Two (2) - 250 mL bottles shipped to lab**	**X**

OBSERVATIONS / NOTES

All intervals purged a minimum of five (5) screen volumes (1.5 L) prior to sample collection.
Hand auger five feet to clear utilities
Borehole abandoned via pressure grouting through boring rods
Rig, Rods, and associated tooling decon'd with pressurized steam

Circle if Applicable:

MS/MSD	Duplicate ID No.:

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Tetra Tech, Inc.

DPT GROUNDWATER SAMPLE LOG SHEET

Project Site Name: KSC-POL
Project No.: 112G09020
Date: 10/26/2021

Sample ID: POL-DPT0134 (aka DPT1474)
Location: E
Sampled By: R. Seigel, K. Kercher

DPT SAMPLING DATA

LOCATION ID	LOCATION	DATE	TIME	DEPTH	ODOR	COLOR	COMMENTS
POL-DPT0134 (aka DPT1474)	E	10/26/2021	1010	12'	None	Light Grey	VOC / PFAS
POL-DPT0134 (aka DPT1474)	E	10/26/2021	1030	17'	None	Grey	
POL-DPT0134 (aka DPT1474)	E	10/26/2021	1045	22'	None	Light Grey	VOC / PFAS
POL-DPT0134 (aka DPT1474)	E	10/26/2021	1110	27'	None	Light Grey	
POL-DPT0134 (aka DPT1474)	E	10/26/2021	1125	32'	None	Grey	VOC / PFAS
POL-DPT0134 (aka DPT1474)	E	10/26/2021	1150	37'	None	Light Grey	
POL-DPT0134 (aka DPT1474)	E	10/26/2021	1205	42'	None	Cloudy White	VOC / PFAS
POL-DPT0134 (aka DPT1474)	E	10/26/2021	1230	47'	None	Clear	

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Collected
SW-846 8260B VOCs	**None**	**Two (2) - 40 mL vials delivered to Mobile Lab**	**X**

OBSERVATIONS / NOTES

All intervals purged a minimum of five (5) screen volumes (1.5 L) prior to sample collection.
Hand auger five feet to clear utilities
Borehole abandoned via pressure grouting through boring rods
Rig, Rods, and associated tooling decon'd with pressurized steam

Circle if Applicable:

MS/MSD	Duplicate ID No.:

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Tetra Tech, Inc.

DPT GROUNDWATER SAMPLE LOG SHEET

Project Site Name: KSC-POL
Project No.: 112G09020
Date: 10/22/2021

Sample ID: POL-DPT0129 (aka DPT1469)
Location: I
Sampled By: R. Seigel, K. Kercher

DPT SAMPLING DATA

LOCATION ID	LOCATION	DATE	TIME	DEPTH	ODOR	COLOR	COMMENTS
POL-DPT0129 (aka DPT1469)	I	10/22/2021	0745	12'	None	Dark brown	VOC and PFAS
POL-DPT0129 (aka DPT1469)	I	10/22/2021	0810	17'	None	Grey	
POL-DPT0129 (aka DPT1469)	I	10/22/2021	0825	22'	None	Grey	VOC and PFAS
POL-DPT0129 (aka DPT1469)	I	10/22/2021	0845	27'	None	Light Olive	
POL-DPT0129 (aka DPT1469)	I	10/22/2021	0900	32'	None	Grey	VOC and PFAS
POL-DPT0129 (aka DPT1469)	I	10/22/2021	0925	37'	None	Pale Brown	
POL-DPT0129 (aka DPT1469)	I	10/22/2021	0945	42'	None	Grey	VOC and PFAS
POL-DPT0129 (aka DPT1469)	I	10/22/2021	1015	47'	None	Grey	
POL-DPT0129 (aka DPT1469)	I	10/22/2021	1100	52'	None	Grey	

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Collected
SW-846 8260B VOCs	**None**	**Two (2) - 40 mL vials delivered to Mobile Lab**	**X**
PFAS QSM Table B-15	**None**	**Two (2) - 250 mL bottles shipped to lab**	**X**

OBSERVATIONS / NOTES

All intervals purged a minimum of five (5) screen volumes (1.5 L) prior to sample collection.
Hand auger five feet to clear utilities
Borehole abandoned via pressure grouting through boring rods
Rig, Rods, and associated tooling decon'd with pressurized steam

Circle if Applicable:

MS/MSD

Duplicate ID No.:

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Tetra Tech, Inc.

DPT GROUNDWATER SAMPLE LOG SHEET

Project Site Name: KSC-POL
Project No.: 112G09020
Date: 10/20/2021

Sample ID: POL-DPT0127 (aka DPT1467)
Location: K
Sampled By: R. Seigel, K. Kercher

DPT SAMPLING DATA

LOCATION ID	LOCATION	DATE	TIME	DEPTH	ODOR	COLOR	COMMENTS
POL-DPT0127 (aka DPT1467)	K	10/20/2021	0950	12'	None	Clear	VOC and PFAS
POL-DPT0127 (aka DPT1467)	K	10/20/2021	1000	17'	None	Light olive	
POL-DPT0127 (aka DPT1467)	K	10/20/2021	1015	22'	None	Olive	VOC and PFAS
POL-DPT0127 (aka DPT1467)	K	10/20/2021	1030	27'	None	Olive	
POL-DPT0127 (aka DPT1467)	K	10/20/2021	1110	32'	None	Pale brown	VOC and PFAS
POL-DPT0127 (aka DPT1467)	K	10/20/2021	1150	37'	None	Cloudy white	
POL-DPT0127 (aka DPT1467)	K	10/20/2021	1210	42'	None	Cloudy white	VOC and PFAS
POL-DPT0127 (aka DPT1467)	K	10/20/2021	1235	47'	None	Cloudy white	
POL-DPT0127 (aka DPT1467)	K	10/20/2021	1255	52'	None	Cloudy white	

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Collected
SW-846 8260B VOCs	**None**	**Two (2) - 40 mL vials delivered to Mobile Lab**	**X**
PFAS QSM Table B-15	**None**	**Two (2) - 250 mL bottles shipped to lab**	**X**

OBSERVATIONS / NOTES

All intervals purged a minimum of five (5) screen volumes (1.5 L) prior to sample collection.
Hand auger five feet to clear utilities
Borehole abandoned via pressure grouting through boring rods
Rig, Rods, and associated tooling decon'd with pressurized steam

Circle if Applicable:

MS/MSD

Duplicate ID No.:

04/21/2020 POL 112G-09020

Personnel : Chuck Sorden (CS) Geologist TT
Weather : Sunny 76°F
PPE : Level D
Objective : Begin PFAS/Baseline Sampling @ POL

0900 CS on Base; Gathering Equip/Supplies, Calibrating
1035 Purging POL-MW00415I, well contained Teflon tubing; Purging 3 well volumes prior to sampling
1110 Purging Complete
1115 Sample Collected POL-MW00415I-020.5-20200421 PFAS/8260DTCL
1145 Purging POL-MW0008S-Teflon present
1210 ~~Purging Complete~~ Purging POL-MW0008I
~~Sample Collected~~
1235 Purging Complete on POL-MW0008S
1240 Sample Collected POL-MW0008S-~~020.5~~ 009.3-20200421 PFAS/8260TCL
1255 Purging Complete on POL-MW0008I
1300 Sample Collected POL-MW0008I-027.5-20200421 PFAS/8260TCL
1325 Purging POL-MW0036SI
1330 Purging ~~Complete~~ POL-MW0036I
1400 Purging Complete on POL-MW0036SI
1405 Sample Collected POL-MW0036SI-020.5-20200421 PFAS/8260D
1420 Purging Complete on POL-MW0036I
1425 Sample Collected POL-MW0036I-027.5-20200421 PFAS/8260D
-Manage IDW
1500 Purging POL-MW0042SI
1515 Purging Complete
1520 Sample Collected POL-MW0042SI-020.5-20200421 8260D
1615 Offsite.

04/22/2020 POL 112809080

Personnel : Chris Seran (CS) [illegible]

Weather : Sunny 71°F

PPE : Level D

Objective : Comm. Baseline / PFAS Sampling

0800 CS on Base, getting equip/supplies
1010 Purging POL-MW0047I
1025 Purge Complete
1030 Sample Collected POL-MW0047I 025.0 20200422 PFAS/8260D
1045 Purging POL-MW0047D
1050 Sample Collected POL-FRB-20200422-01 PFAS
1100 Purging Complete
1105 Sample Collected POL-MW0047D-035.0-20200422 PFAS/8260D
- NOTE, FRB Collected Downwind of active Construction Site
1115 Purge POL-MW0047DD
1145 Purging Complete
1150 Sample Collected POL-MW0047DD-045.0-20200422 PFAS/8260D
1205 Purge POL-MW0046D
1220 Purging Complete
1225 Sample Collected POL-MW0046D-035.0-20200422 PFAS/8260D
1235 Purge POL-MW0046DD
1255 Purging Complete
1300 Sample Collected POL-MW0046DD-045.0-20200422 PFAS/8260D
1325 Purge POL-MW0045S
1340 Purging Complete
1345 Sample Collected POL-MW0045S-015.0-20200422 PFAS/8260D
1415 Purge POL-MW0045I
1430 Purge Complete
1435 Sample Collected POL-MW0045I-025.0-20200422 PFAS/8260D
1445 Purge POL-MW0045D
1500 Purge Complete
1505 Sample Collected POL-MW0045D-035.0-20200422 PFAS/8260D
1535 Purge POL-MW0043S
1550 Purge Complete
1555 Sample Collected POL-MW0043S-025.0-20200422 PFAS/8260D
1630 CS off

112009020 POL 04/23/2020

Personnel : Chuck Sorden (CS) Georges Jr

Weather : Sunny, Hi ~ 71°C

PPE : Level D

1/c Objective : Complete PFAS/Baseline Sampling

0800 CS on site; Gathering Equip/Supplies; Calibrating

0915 Sample Collected POL-EB-20200423-01 PFAS

- Collected through Sample Tubing (3/16")

0925 Sample Collected POL-EB-20200423-02 PFAS

- Collected through Sample Tubing (1/4")

0930 Purge POL-MW0043I

0945 Purge Complete

0950 Sample Collected POL-MW0043I-025.0-20200423 PFAS/8260

1000 Purge POL-MW0043D

1015 Purge Complete

1020 Sample Collected POL-MW0043D-035.0-20200423 PFAS/8260

1050 Purge POL-MW0011S

1105 Purge POL-MW0011I

1130 Purge Complete on POL-MW0011S

35 Sample Collected POL-MW0011S-~~010.0~~ 012.5-20200423 PFAS/8260

1200 Purge Complete on POL-MW0011I

1205 Sample Collected POL-MW0011I-027.5-20200423 PFAS/8260

1225 Purge POL-MW0044I

1240 Purge Complete

1245 Sample Collected POL-MW0044I-025.0-20200423 PFAS/8260

1300 Purge POL-MW0044D

1315 Purge Complete

1320 Sample Collected POL-MW0044D-035.0-20200423 PFAS/8260

1340 Purge SW3-MW0027

1405 Purge Complete

1410 Sample Collected SW3-MW0027-030.0-20200423 PFAS

1420 Purge SW3-MW0028

1445 Purge Complete

1450 Sample Collected SW3-MW0028-032.0-20200423 PFAS

1500 Purge POL-MW0018D

1515 Purge Complete

1520 Sample Collected POL-MW0018D-042.5-20200423 8260

1530 Purge POL-MW0018S

1545 Purge Complete

1550 Sample Collected POL-MW0018S-013.5-20200423 8260

1605 Purge POL-MW0018I

1615 Purge Complete

Scale: 1 square = ________

01/23/2020 CO- [illegible]

1620 Sample Collected FD-[illegible] [illegible]

-Prepping Samples For Shipment (PFAS)

1745 CS Offsite to [illegible]

Tetra Tech, Inc.

CHAIN OF CUSTODY

NUMBER No. 1298

PAGE 1 OF 2

PROJECT NO: 112G09020

FACILITY: KSC-POL/Sw3 Atc

PROJECT MANAGER: Mark Jonnet

PHONE NUMBER: (412) 921-8622

LABORATORY NAME AND CONTACT: Battelle — Jon Thorn

SAMPLERS (SIGNATURE): Chuck Sorden

FIELD OPERATIONS LEADER: Chuck Sorden

PHONE NUMBER: (321) 591-7580

ADDRESS: 141 Longwater Dr. Suite 202

CARRIER/WAYBILL NUMBER:

CITY, STATE: Norwell, MA

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

CONTAINER TYPE PLASTIC (P) or GLASS (G): P

PRESERVATIVE USED: 4°C

DATE YEAR 2020	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 EPA 537 MOD PFAS								COMMENTS
04/21	1115	POL-MW0041SI-020.5-20200421		18	23	GW	G	2	X								
	1240	POL-MW0008S-009.3-20200421		8.6	10												
	1300	POL-MW0008I-027.5-20200421		25	30												
	1405	POL-MW0036SI-020.5-20200421		18	23												
04/21	1425	POL-MW0036I-027.5-20200421		25	30												
04/22	1030	POL-MW0047I-025.0-20200422		26	30	GW											
	1050	POL-FRB-20200422-01		—	—	QC											
	1105	POL-MW0047D-035.0-20200422		30	40	GW											
	1150	POL-MW0047DD-045.0-20200422		40	50												
	1225	POL-MW0046D-035.0-20200422		30	40												
	1255	POL-MW0046DD-045.0-20200422		40	50												
	1345	POL-MW0045S-015.0-20200422		10	20												
04/22	1435	POL-MW0045I-025.0-20200422		20	30	GW	G	2	X								

1. RELINQUISHED BY	DATE 04/23/2020	TIME 1700	1. RECEIVED BY	DATE	TIME
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 CCPY)

4/02R
FORM NO. TtNUS-001

Tetra Tech, Inc. CHAIN OF CUSTODY | NUMBER No. 1298 | PAGE 1 OF 2

PROJECT NO: 112G09020
FACILITY: KSC-POL/SWMU
PROJECT MANAGER: Mark Jonnet
PHONE NUMBER: (412) 921-8622
LABORATORY NAME AND CONTACT: Battelle — Jon Thorn

SAMPLERS (SIGNATURE): Chris Sorden
FIELD OPERATIONS LEADER: Chris Sorden
PHONE NUMBER: (321) 591-7580
ADDRESS: 141 Longwater Dr. Suite 202

CARRIER/WAYBILL NUMBER:
CITY, STATE: Norwell, MA

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

CONTAINER TYPE PLASTIC (P) or GLASS (G): P
PRESERVATIVE USED: 4°C
TYPE OF ANALYSIS: EPA 537 MOD PFAS

DATE YEAR 2020	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	EPA 537 MOD PFAS								COMMENTS
04/21	1115	POL-MW0041SI-020.5-2020	0421	18	23	GW	G	2	X								
	1240	POL-MW0041S-009.3-2020	0421	8.6	10												
	1300	POL-MW0038I-027.5-202	0421	25	30												
	1405	POL-MW0036SI-020.5-2	020421	18	23												
04/21	1425	POL-MW0035I-027.5-202	00421	25	30												
04/22	1030	POL-MW0047SI-025.0-202	00422	20	30	GW											
	1050	POL-FRB-20200422-	01	—	—	QC											
	1105	POL-MW0047D-035.0-202	0422	30	40	GW											
	1150	POL-MW0047DD-045.0-202	00422	40	50												
	1225	POL-MW0046D-035.0-202	00422	30	40												
	1255	POL-MW0046DD-045.0-202	00422	40	50												
	1345	POL-MW0045S-015.0-202	00422	10	20												
04/22	1435	POL-MW0045I-025.0-20	200422	20	30	GW	G	2	X								

1. RELINQUISHED BY	DATE 04/23/2020	TIME 1200	1. RECEIVED BY	DATE	TIME
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. 1312 | **PAGE** 2 **OF** 2

PROJECT NO: 112G09020
FACILITY: KSC-POL/SW3
PROJECT MANAGER Mark Sonnet
PHONE NUMBER (412) 921-8622
LABORATORY NAME AND CONTACT: Battelle — Jon Thorn
SAMPLERS (SIGNATURE) Chuck Serda
FIELD OPERATIONS LEADER Chuck Serda
PHONE NUMBER (321) 591-7580
ADDRESS 141 Longwater Dr. Ste. 202
CARRIER/WAYBILL NUMBER
CITY, STATE Norwell, MA

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

CONTAINER TYPE PLASTIC (P) or GLASS (G): P
PRESERVATIVE USED: 4°C
TYPE OF ANALYSIS: EPA 537 MOD PFAS

DATE YEAR 2020	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	EPA 537 MOD PFAS								COMMENTS
04/22	1505	POL-MW0045I-035.0-20200422		30	40	GW	G	2	X								
04/22	1555	POL-MW0043S-015.0-20200422		10	20												
04/23	0915	POL-EB-20200423-01	—	—	—	QC											
	0925	POL-EB-20200423-02	—	—	—	QC											
	0950	POL-MW0043I-025.0-20200423		20	30	GW											
	1020	POL-MW0043D-035.0-20200423		30	40												
	1135	POL-MW0011S-012.5-20200423		10	15												
	1205	POL-MW0011I-027.5-20200423		25	30												
	1245	POL-MW0044I-025.0-20200423		20	30												
	1320	POL-MW0044D-035.0-20200423		30	40												
	1410	SW3-MW0027-032.0-20200423		27	37												
04/23	1450	SW3-MW0028-032.0-20200423		27	37	GW	G	2	X								

1. RELINQUISHED BY	DATE 04/23/2020	TIME 1700	1. RECEIVED BY	DATE	TIME
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. 1312 | **PAGE** 2 **OF** 2

PROJECT NO: 112G09020	**FACILITY:** KSC-POL/SL	**PROJECT MANAGER** Mark Johnson	**PHONE NUMBER** (412) 921-8622	**LABORATORY NAME AND CONTACT:** Battelle — Jon Thorn
SAMPLERS (SIGNATURE) Chris Sorden		**FIELD OPERATIONS LEADER** Chris Sorden	**PHONE NUMBER** (321) 591-7580	**ADDRESS** 141 Longwater Dr. Ste. 202
		CARRIER/WAYBILL NUMBER		**CITY, STATE** Norwell, MA

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

CONTAINER TYPE PLASTIC (P) or GLASS (G) P
PRESERVATIVE USED 4°C

DATE YEAR 2020	**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** EPA 537 Mod PFAS								**COMMENTS**
04/22	1505	POL-MW0045I-035.0-20200422		30	40	GW	G	2	X								
04/22	1555	POL-MW0043S-015.0-20200422		10	20	|	|	|	|								
04/23	0915	POL-EB-20200423-0	—	—	—	QC	|	|	|								
|	0925	POL-EB-20200423-02	—	—	—	QC	|	|	|								
|	0950	POL-MW0043S-025.0-20200423		20	30	GW	|	|	|								
|	1020	POL-MW0043D-035.0-20200423		30	40	|	|	|	|								
|	1135	POL-MW0011S-013.5-20200423		10	15	|	|	|	|								
|	1205	POL-MW0011I-027.5-20200423		25	30	|	|	|	|								
|	1245	POL-MW0044I-025.0-20200423		20	30	|	|	|	|								
|	1320	POL-MW0044D-035.0-20200423		30	40	|	|	|	|								
|	1410	SLC3-MW0027-032.0-20200423		27	37	|	|	|	|								
04/23	1450	SLC3-MW0028-032.0-20200423		27	37	GW	G	2	X								

1. RELINQUISHED BY	DATE 04/23/2020	TIME 1700	1. RECEIVED BY	DATE	TIME
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. TINUS-001

Tetra Tech, Inc.

CHAIN OF CUSTODY | **NUMBER** No. 1296 | **PAGE** 1 **OF** 2

PROJECT NO: 112G09020

FACILITY: KSL-POL/SW3

PROJECT MANAGER Mark Sonnett

PHONE NUMBER (412) 921-8622

LABORATORY NAME AND CONTACT: ENCO — Kaitlin Dylnicki

SAMPLERS (SIGNATURE) Chuck Sorden

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

CONTAINER TYPE PLASTIC (P) or GLASS (G) G

PRESERVATIVE USED Hcl

TYPE OF ANALYSIS

DATE YEAR 2020	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	8260D TCL SOM01.2 CLP-LIKE							COMMENTS
04/21	1115	POL-MW0041SI-020.5-20200421		18	23	GW	G	3	X							
	1240	POL-MW0008S-~~[illegible]~~ 009.3-20200421		8.6	10											
	1300	POL-MW0008I-027.5-20200421		25	30											
	1405	POL-MW0036SI-020.5-20200421		18	23											
	1425	POL-MW0036I-027.5-20200421		25	30											
04/21	1520	POL-MW0042SI-020.5-20200421		18	23											
04/22	1030	POL-MW0047I-025.0-20200422		20	30											
	1105	POL-MW0047D-035.0-20200422		30	40											
	1150	POL-MW0047DD-045.0-20200422		40	50											
	1225	POL-MW0046D-035.0-20200422		30	40											
	1255	POL-MW0046DD-045.0-20200422		40	50											
	1345	POL-MW0045S-015.0-20200422		10	20											
04/22	1435	POL-MW0045I-025.0-20200422		20	30	GW	G	3	X							

1. RELINQUISHED BY	DATE 04/24/2020	TIME 0915	1. RECEIVED BY Kofa Marvel	DATE 04/24/20	TIME 09:15
2. RELINQUISHED BY	DATE	TIME	2. RECEIVED BY	DATE	TIME
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME

COMMENTS LJ-451 0.2°C

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

4/02R
FORM NO. TtNUS-001

Tetra Tech, Inc.

CHAIN OF CUSTODY | NUMBER No. 1296 | PAGE 1 OF 2

PROJECT NO: 112G09020
FACILITY: KSC-POL/Sw
PROJECT MANAGER: Mark Sonnet
PHONE NUMBER: (412) 921-8622
LABORATORY NAME AND CONTACT: ENCO — Kami Dybeck
SAMPLERS (SIGNATURE): Chuck Sordan
FIELD OPERATIONS LEADER: Chuck Sordan
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

CONTAINER TYPE PLASTIC (P) or GLASS (G): G
PRESERVATIVE USED: HCl
TYPE OF ANALYSIS: 8260DICL SOM01.3 CLP LIKE

DATE YEAR 2020	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	8260DICL SOM01.3 CLP LIKE								COMMENTS
04/21	1115	POL-MW0041SI-020.5-202	00421	18	23	GW	G	3	X								
|	1240	POL-MW00RI-004.3-2020	0421	86	10	|	|	|	|								
|	1300	POL-MW00RI-027.5-202	0421	25	30	|	|	|	|								
|	1405	POL-MW0036SI-020.5-202	00421	18	23	|	|	|	|								
|	1425	POL-MW0036I-027.5-202	00421	25	30	|	|	|	|								
04/21	1520	POL-MW0042SI-020.5-202	00421	18	23	|	|	|	|								
04/22	1030	POL-MW0049I-025.0-202	00422	20	30	|	|	|	|								
|	1105	POL-MW0047D-035.0-202	00422	30	40	|	|	|	|								
|	1150	POL-MW0047DD-045.0-20	20422	40	50	|	|	|	|								
|	1225	POL-MW0046D-035.0-202	00422	30	40	|	|	|	|								
|	1255	POL-MW0046DD-045.0-202	00422	40	50	|	|	|	|								
|	1345	POL-MW0045S-015.0-202	00422	10	20	|	|	|	|								
04/22	1435	POL-MW0045I-025.0-202	00422	20	30	GW	G	3	X								

1. RELINQUISHED BY	DATE 04/24/2020	TIME 0915	1. RECEIVED BY Kola Manuel	DATE 04/24/20	TIME 09:15
2. RELINQUISHED BY	DATE	TIME	2. RECEIVED BY	DATE	TIME
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME

COMMENTS Ly-451 0.2°

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

4/02R
FORM NO. TtNUS-001

Tetra Tech, Inc. CHAIN OF CUSTODY | NUMBER No. 1313 | PAGE 2 OF 2

PROJECT NO: 112G09020
FACILITY: KSC-PO2
PROJECT MANAGER Mark Jonnet ~~(321) 591-758~~
PHONE NUMBER (412) 921-8622
LABORATORY NAME AND CONTACT: ENCO — Kaitlin Dylnicki
SAMPLERS (SIGNATURE) Chuck Sorden
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

CONTAINER TYPE PLASTIC (P) or GLASS (G): G
PRESERVATIVE USED: HCl

DATE YEAR 2020	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 8260D TCL SGM01.2 LLP-LSKE								COMMENTS
04/22	1505	POL-MW0045D-035.0-20200422		30	40	GW	G	3	X								
04/22	1555	POL-MW0043S-015.0-20200422		10	20	│	│	│	│								
04/23	0950	POL-MW0043I-025.0-20200423		20	30	│	│	│	│								
│	1020	POL-MW0043D-035.0-20200423		30	40	│	│	│	│								
│	1135	POL-MW0011S-012.5-20200423		10	15	│	│	│	│								
│	1205	POL-MW0011I-027.5-20200423		25	30	│	│	│	│								
│	1245	POL-MW0044I-025.0-20200423		20	30	│	│	│	│								
│	1320	POL-MW0044D-035.0-20200423		30	40	│	│	│	│								
│	~~1520~~	~~POL-MW0018S-010.5-20200423~~ 18I CS		~~8~~	~~13~~	│	│	│	│								
│	~~1520~~	~~POL-MW0018I-027.5-20200423~~ CS		~~25~~	~~30~~	│	│	│	│								
│	1520	POL-MW0018D-040.5-20200423		38	43	│	│	│	│								
│	1550	POL-MW0018S-010.5-20200423		8	13	│	│	│	│								
04/23	1620	POL-MW0018I-027.5-20200423		25	30	GW	G	3	X								

1. RELINQUISHED BY	DATE 04/24/2020	TIME 0915	1. RECEIVED BY Koja Maival	DATE 04/24/20	TIME 09:15
2. RELINQUISHED BY	DATE	TIME	2. RECEIVED BY	DATE	TIME
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME

COMMENTS Lg 451 0.2°C

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

4/02R
FORM NO. TtNUS-001

Tetra Tech, Inc. CHAIN OF CUSTODY | NUMBER No. 1313 | PAGE 2 OF 2

PROJECT NO: 112G09020

FACILITY: KSC-POL

PROJECT MANAGER Mark Jonnet ~~(321) 591-758~~

PHONE NUMBER (412) 921-8622

LABORATORY NAME AND CONTACT: ENCO — Kaitlin Dolnicki

SAMPLERS (SIGNATURE) Chuck Sorden

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

CONTAINER TYPE PLASTIC (P) or GLASS (G): G

PRESERVATIVE USED: HCl

TYPE OF ANALYSIS: 8260 TCL Sublist 1,4-Dioxane

DATE YEAR 2020	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	8260 TCL Sublist 1,4-Dioxane							COMMENTS
04/22	1505	POL-MW0045D-035.0-2020	0422	30	40	GW	G	3	X							
04/22	1555	POL-MW0043S-015.0-2020	0422	10	20											
04/23	0950	POL-MW0043I-025.0-2020	0423	20	30											
	1020	POL-MW0043D-035.0-2020	0423	30	40											
	1155	POL-MW0011S-012.5-2020	0423	10	15											
	1205	POL-MW0011I-027.5-2020	0423	25	30											
	1245	POL-MW0044I-025.0-2020	0423	20	30											
	1320	POL-MW0044D-035.0-2020	0423	30	40											
	~~1520~~	~~POL-MW0018S-010.5-2020~~	~~0423~~	~~8~~	~~13~~											
	~~1620~~	~~POL-MW0018I-027.5-2020~~	~~0423~~	~~25~~	~~30~~											
	1520	POL-MW0018D-040.5-2020	0423	38	43											
	1550	POL-MW0018S-010.5-202	0423	8	13											
04/23	1620	POL-MW0018I-027.5-202	0423	25	30	GW	G	3	X							

1. RELINQUISHED BY	DATE 04/24/2020	TIME 0915	1. RECEIVED BY Kara Harval	DATE 04/24/20	TIME 09:15
2. RELINQUISHED BY	DATE	TIME	2. RECEIVED BY	DATE	TIME
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME

COMMENTS 25491 0.2°c

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

4/02R
FORM NO. TtNUS-001

Calibration Report

Instrument	Aqua TROLL 600 Vented
Serial Number	613901
Created	4/22/2020

Sensor	**pH/ORP**
Serial Number	598349
Last Calibrated	4/22/2020

Calibration Details

Calibration Point 1

pH of Buffer	7.00 pH
pH mV	5.2 mV
Temperature	21.69 °C

Pre Measurement

pH	7.05 pH
pH mV	5.3 mV

Post Measurement

pH	7.00 pH
pH mV	5.2 mV

Slope and Offset 1

Slope	-58.5 mV/pH
Offset	5.2 mV

ORP

ORP Solution	Quick-Cal
Offset	-79.2 mV
Temperature	21.69 °C
Pre Measurement	228.0 mV
Post Measurement	228.5 mV

Sensor	**Turbidity**
Serial Number	684704
Last Calibrated	4/22/2020

Calibration Details

TSS Conversion Factor (mg/L)	0
Slope	1
Offset	-2.48 NTU

Calibration Point 1

Pre Measurement	2.47 NTU
Post Measurement	0.00 NTU

Sensor	**RDO**
Serial Number	685525
Last Calibrated	4/22/2020

Calibration Details

Slope	1.047531
Offset	0.00 mg/L

Calibration point 100%

Concentration	8.74 mg/L
Pre Measurement	100.04 %Sat
Post Measurement	100.00 %Sat
Temperature	22.93 °C
Barometric Pressure	1,077.9 mbar

Sensor	**Conductivity**
Serial Number	613007
Last Calibrated	4/22/2020

Calibration Details

TDS Conversion Factor (ppm)	0.65
Cell Constant	1.009
Reference Temperature	25.00 °C

Pre Measurement

Actual Conductivity	7,396.2 µS/cm
Specific Conductivity	7,895.6 µS/cm

Post Measurement

Actual Conductivity	7,494.0 µS/cm
Specific Conductivity	8,000.0 µS/cm

Sensor	**Barometric Pressure**
Serial Number	613901
Last Calibrated	Factory Defaults

Sensor	**Pressure**
Serial Number	609814
Last Calibrated	Factory Defaults

Calibration Report

Instrument	Aqua TROLL 600 Vented
Serial Number	613901
Created	4/21/2020

Sensor	**pH/ORP**
Serial Number	598349
Last Calibrated	4/21/2020

Calibration Details

Calibration Point 1

pH of Buffer	7.00 pH
pH mV	8.1 mV
Temperature	22.86 °C

Pre Measurement

pH	6.84 pH
pH mV	8.3 mV

Post Measurement

pH	7.00 pH
pH mV	8.1 mV

Slope and Offset 1

Slope	-58.74 mV/pH
Offset	8.1 mV

ORP

ORP Solution	Quick-Cal
Offset	-79.2 mV
Temperature	22.86 °C
Pre Measurement	237.0 mV
Post Measurement	226.7 mV

Sensor	**Turbidity**
Serial Number	684704
Last Calibrated	4/21/2020

Calibration Details

TSS Conversion Factor (mg/L)	0
Slope	1
Offset	-4.77 NTU

Calibration Point 1

Pre Measurement	2.82 NTU
Post Measurement	1.00 NTU

Sensor	**RDO**
Serial Number	685525
Last Calibrated	4/21/2020

Calibration Details

Slope	1.052618
Offset	0.00 mg/L

Calibration point 100%

Concentration	8.47 mg/L
Pre Measurement	98.80 %Sat
Post Measurement	100.00 %Sat
Temperature	23.94 °C
Barometric Pressure	1,070.0 mbar

Sensor	**Conductivity**
Serial Number	613007
Last Calibrated	4/21/2020

Calibration Details

TDS Conversion Factor (ppm)	0.65
Cell Constant	0.997
Reference Temperature	25.00 °C

Pre Measurement

Actual Conductivity	7,711.1 µS/cm
Specific Conductivity	8,039.5 µS/cm

Post Measurement

Actual Conductivity	7,673.2 µS/cm
Specific Conductivity	8,000.0 µS/cm

Sensor	**Barometric Pressure**
Serial Number	613901
Last Calibrated	Factory Defaults

Sensor	**Pressure**
Serial Number	609814
Last Calibrated	Factory Defaults

Calibration Report

Instrument	Aqua TROLL 600 Vented
Serial Number	613901
Created	4/23/2020

Sensor	**pH/ORP**
Serial Number	598349
Last Calibrated	4/23/2020

Calibration Details

Calibration Point 1

pH of Buffer	7.00 pH
pH mV	3.7 mV
Temperature	23.36 °C

Pre Measurement

pH	7.03 pH
pH mV	3.7 mV

Post Measurement

pH	7.00 pH
pH mV	3.7 mV

Slope and Offset 1

Slope	-58.83 mV/pH
Offset	3.7 mV

ORP

ORP Solution	Quick-Cal
Offset	-64.6 mV
Temperature	23.36 °C
Pre Measurement	210.6 mV
Post Measurement	226.0 mV

Sensor	**Turbidity**
Serial Number	684704
Last Calibrated	4/23/2020

Calibration Details

TSS Conversion Factor (mg/L)	0
Slope	1
Offset	-1.57 NTU

Calibration Point 1

Pre Measurement	2.62 NTU
Post Measurement	1.00 NTU

Sensor	**RDO**
Serial Number	685525
Last Calibrated	4/23/2020

Calibration Details

Slope	1.053667
Offset	0.00 mg/L

Calibration point 100%

Concentration	8.49 mg/L
Pre Measurement	99.18 %Sat
Post Measurement	100.00 %Sat
Temperature	24.36 °C
Barometric Pressure	1,081.7 mbar

Sensor	**Conductivity**
Serial Number	613007
Last Calibrated	4/23/2020

Calibration Details

TDS Conversion Factor (ppm)	0.65
Cell Constant	1.003
Reference Temperature	25.00 °C

Pre Measurement

Actual Conductivity	7,792.5 µS/cm
Specific Conductivity	8,044.3 µS/cm

Post Measurement

Actual Conductivity	7,749.6 µS/cm
Specific Conductivity	8,000.0 µS/cm

Sensor	**Barometric Pressure**
Serial Number	613901
Last Calibrated	Factory Defaults

Sensor	**Pressure**
Serial Number	609814
Last Calibrated	Factory Defaults

Tetra Tech NUS / FDEP Groundwater Sampling Sheet

SITE NAME: **Paint and Oil Locker (POL)**

SITE LOCATION: **Kennedy Space Center (KSC), FL**

LOCATION ID: **POL- MW0008S**

SAMPLE ID: **POL-MW0008S-~~005.0~~ 009.3 -202004** 21

Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)

DATE: **2020 / 04 /** 21

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 5.90

CASING HEIGHT (feet als): -0.4

STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als): 6.30

WELL SCREEN INTERVAL DEPTH (feet bls): **5 to 10**

WELL DIAMETER (inches): 2

TUBING DIAMETER (inches): ~~3/16~~ 1/4

PURGE PUMP TYPE OR BAILER: **Peristaltic Pump**

TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): 6.30

BOTTOM DEPTH (feet bls): **10**

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

2.25 Liters (10 - 6.30) x 0.61 = 2.25

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

_________ Liters

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 6.3

FINAL PUMP OR TUBING DEPTH IN WELL (feet): ~~8.6~~ 9.3

PURGING INITIATED AT: 1145

PURGING ENDED AT: 1235

TOTAL VOLUME PURGED (Liters): 12.5

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)
1210	9.0	9.0	~~225~~ 360	7.76	3.98	24.57	225.06	0.20	3.55	-88.7	Yellow
1220	2.0	11.0	200	8.05	4.01	24.71	225.72	0.16	4.42	-83.0	Yellow
1230	1.0	12.0	~~200~~ 280	8.19	4.02	24.90	227.22	0.19	2.44	-80.9	Yellow
1232	0.2	12.2	100	8.21	4.03	24.87	227.20	0.19	4.87	-78.5	Yellow
1235	0.3	12.5	100	8.21							
1240	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" = 0.09

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: C. Sorden /Tt

SAMPLER(S) SIGNATURES:

SAMPLING INITIATED AT: 1240

SAMPLING ENDED AT: 1250

PUMP OR TUBING DEPTH IN WELL (feet): ~~8.6~~ 9.3

SAMPLE PUMP FLOW RATE (mL per minute): 100

TUBING MATERIAL CODE: ~~Teflon~~ HDPE

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	2	HDPE	250 mL	N/A	N/A	N/A	EPA MOD 537 PFAS	APP
2	3	CG	40 mL	HCl	N/A	<2	8260D TCL SOM01.2 CLP-LIKE	APP

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)

1.4 3.7 Well Contained Teflon Tubing
Purge well volumes prior to Sampling

Tetra Tech NUS / FDEP Groundwater Sampling Sheet

SITE NAME: **Paint and Oil Locker (POL)**

SITE LOCATION: **Kennedy Space Center (KSC), FL**

LOCATION ID: **POL- MW0008I**

SAMPLE ID: **POL-MW0008I-027.5 -202004** 21
Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)

DATE: **2020 / 04 /** 21

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 6.35

CASING HEIGHT (feet als): -0.4

STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als): ~~NA~~ 6.75

WELL SCREEN INTERVAL DEPTH (feet bls): **25 to 30**

WELL DIAMETER (inches): 2

TUBING DIAMETER (inches): ~~3/16~~ 1/4

PURGE PUMP TYPE OR BAILER: **Peristaltic Pump**

TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): 25

BOTTOM DEPTH (feet bls): **30**

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
14.2 Liters (30 - 6.75) x 0.61 = 14.2

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

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 27.5

FINAL PUMP OR TUBING DEPTH IN WELL (feet): 27.5

PURGING INITIATED AT: 1210

PURGING ENDED AT: 1255

TOTAL VOLUME PURGED (Liters): 18.0

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)
1250	16.0	16.0	400	6.63	6.87	26.19	2181.2	0.11	9.09	-172.0	Clear
1252	0.8	16.8	400	6.63	6.87	26.32	2148.8	0.11	5.48	-174.6	Clear
1255	1.2	18.0	400	6.63	6.85	26.36	2144.3	0.13	6.10	-175.9	Clear
1300	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" = 0.09**

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: C. Sorden /Tt

SAMPLER(S) SIGNATURES:

SAMPLING INITIATED AT: 1300

SAMPLING ENDED AT: 1305

PUMP OR TUBING DEPTH IN WELL (feet): 27.5

SAMPLE PUMP FLOW RATE (mL per minute): 400

TUBING MATERIAL CODE: ~~Teflon~~ HDPE

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	2	HDPE	250 mL	N/A	N/A	N/A	EPA MOD 537 PFAS	APP
2	3	CG	40 mL	HCl	N/A	<2	8260D TCL SOM01.2 CLP-LIKE	APP

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)

Teflon in well; purge 1 well
volume prior to readings

Tetra Tech NUS / FDEP Groundwater Sampling Sheet

SITE NAME: **Paint and Oil Locker (POL)**

SITE LOCATION: **Kennedy Space Center (KSC), FL**

LOCATION ID: **POL- MW0011S**

SAMPLE ID: **POL-MW0011S-** ~~010.0~~ 012.5 **-202004**23
Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)

DATE: **2020 / 04 /** 23

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 7.02

CASING HEIGHT (feet als): 0

STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als): 7.02

WELL SCREEN INTERVAL DEPTH (feet bls): **10 to 15**

WELL DIAMETER (inches): 2

TUBING DIAMETER (inches): ~~3/16~~ 1/4

PURGE PUMP TYPE OR BAILER: **Peristaltic Pump**

TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls):

BOTTOM DEPTH (feet bls): **15**

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
4.86 Liters (15 - 7.02) x 0.61 = 4.86

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

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): ~~10~~ 12.5

FINAL PUMP OR TUBING DEPTH IN WELL (feet): 10 12.5

PURGING INITIATED AT: 1050

PURGING ENDED AT: 1130

TOTAL VOLUME PURGED (Liters): 16.0

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)
1125	14.0	14.0	400	8.02	4.49	25.10	157.09	0.04	8.06	-136.0	tanic
1127	0.8	14.8	400	8.02	4.50	25.12	156.50	0.04	6.00	-136.2	tanic
1130	1.2	16.0	400	8.02	4.49	25.15	155.67	0.04	6.26	-142.7	tanic
1135	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" = 0.09**

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: C. Sorden /Tt

SAMPLER(S) SIGNATURES:

SAMPLING INITIATED AT: 1135

SAMPLING ENDED AT: 1140

PUMP OR TUBING DEPTH IN WELL (feet): 12.5

SAMPLE PUMP FLOW RATE (mL per minute): 250

TUBING MATERIAL CODE: ~~Teflon~~ HDPE

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	2	HDPE	250 mL	N/A	N/A	N/A	EPA MOD 537 PFAS	APP
2	3	CG	40 mL	HCl	N/A	<2	8260D TCL SOM01.2 CLP-LIKE	APP

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)

well Contained Teflon Tubing
Purge well volumes prior to sampling

Tetra Tech NUS / FDEP Groundwater Sampling Sheet

SITE NAME: **Paint and Oil Locker (POL)**

SITE LOCATION: **Kennedy Space Center (KSC), FL**

LOCATION ID: **POL- MW0011I**

SAMPLE ID: **POL-MW0011I-027.5 -202004**23

Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)

DATE: **2020 / 04 /**23

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 7.04

CASING HEIGHT (feet als): -0.1

STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als): **NA**

WELL SCREEN INTERVAL DEPTH (feet bls): **25 to 30**

WELL DIAMETER (inches): 2

TUBING DIAMETER (inches): 1/4 ~~3/16~~

PURGE PUMP TYPE OR BAILER: **Peristaltic Pump**

TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls):

BOTTOM DEPTH (feet bls): **30**

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

13.9 Liters (30-7.20) x0.61 =13.9

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

______ Liters

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 27.5

FINAL PUMP OR TUBING DEPTH IN WELL (feet): 27.5

PURGING INITIATED AT: 1105

PURGING ENDED AT: 1200

TOTAL VOLUME PURGED (Liters): 22.0

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)
1155	20.0	20.0	400	7.22	6.48	26.00	660.02	0.05	2.12	-183.4	Clr
1157	0.8	20.8	400	7.22	6.47	26.20	662.63	0.03	4.34	-197.1	Clr
1200	1.2	22.0	400	7.22	6.48	26.15	660.33	0.04	3.68	-199.7	Clr
1205	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"** = 0.09

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: C. Sorden /Tt

SAMPLER(S) SIGNATURES:

SAMPLING INITIATED AT: 1205

SAMPLING ENDED AT: 1210

PUMP OR TUBING DEPTH IN WELL (feet): 27.5

SAMPLE PUMP FLOW RATE (mL per minute): 250

TUBING MATERIAL CODE: ~~Teflon~~ HDPE

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	2	HDPE	250 mL	N/A	N/A	N/A	EPA MOD 537 PFAS	APP
2	3	CG	40 mL	HCl	N/A	<2	8260D TCL SOM01.2 CLP-LIKE	APP

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)

Well Contained Teflon Tubing
Purged well volumes

Tetra Tech NUS / FDEP Groundwater Sampling Sheet

SITE NAME: **Paint and Oil Locker (POL)**

SITE LOCATION: **Kennedy Space Center (KSC), FL**

LOCATION ID: **POL-MW0036SI**

SAMPLE ID: **POL-MW0036SI- 020.5 -20200421**
Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)

DATE: **2020 / 04 / 21**

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 10.49

CASING HEIGHT (feet als): 3.0

STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als): 7.49

WELL SCREEN INTERVAL DEPTH (feet bls) **18 to 23**

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):

BOTTOM DEPTH (feet bls): **23**

WELL VOLUME PURGE: **1 WELL VOLUME =** (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
2.30 Liters (23-7.49)=15.51 X 0.15 =2.32

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

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 20.5

FINAL PUMP OR TUBING DEPTH IN WELL (feet): 20.5

PURGING INITIATED AT: 1325

PURGING ENDED AT: 1400

TOTAL VOLUME PURGED (Liters): 14.0

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)
1355	12.0	12.0	~~200~~ 400	10.68	4.98	24.77	173.47	0.09	11.92	-213.3	~~st~~ Yellow
1357	0.8	12.8	400	10.68	4.97	24.72	172.08	0.09	13.69	-212.6	Yellow
1400	1.2	14.0	400	10.68	4.97	24.70	171.78	0.07	12.33	-214.9	Yellow
1405	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"** = 0.09

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: C. Sorden /Tt

SAMPLER(S) SIGNATURES:

SAMPLING INITIATED AT: ~~1400~~ 1405

SAMPLING ENDED AT: ~~1405~~ 1410

PUMP OR TUBING DEPTH IN WELL (feet): 20.5

SAMPLE PUMP FLOW RATE (mL per minute): 400

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	2	HDPE	250 mL	N/A	N/A	N/A	EPA MOD 537 PFAS	APP
2	3	CG	40 mL	HCl	N/A	<2	8260D TCL SOM01.2 CLP-LIKE	APP

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)

Well Contained Teflon Tubing
Replaced w/ HDPE ; purge well volumes

Tetra Tech NUS / FDEP Groundwater Sampling Sheet

SITE NAME: **Paint and Oil Locker (POL)**	SITE LOCATION: **Kennedy Space Center (KSC), FL**

LOCATION ID: **POL- MW0036I**	SAMPLE ID: **POL-MW0036I- 027.5 -20200421** Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: **2020 / 04 / 21**

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 10.93	CASING HEIGHT (feet als): 3.5	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als): 7.93	WELL SCREEN INTERVAL DEPTH (feet bls): **25 to 30**

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):	BOTTOM DEPTH (feet bls): **30**

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
3.31 Liters (30 -7.93) X 0.15 = 3.31

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

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 27.5	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 27.5	PURGING INITIATED AT: 1330	PURGING ENDED AT: 1420	TOTAL VOLUME PURGED (Liters): 20.0

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)
1415	18.0	18.0	400	11.65	6.73	25.60	625.35	0.14	6.31	-181.8	Clear
1417	0.8	18.8	400	11.65	6.62	25.55	625.47	0.18	5.14	-181.8	Clear
1420	1.2	20.0	400	11.65	6.65	25.43	626.36	0.14	7.49	-183.1	Clear
1425	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"** = 0.09

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: C. Sorden /Tt	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 1425	SAMPLING ENDED AT: 1430
PUMP OR TUBING DEPTH IN WELL (feet): 27.5	SAMPLE PUMP FLOW RATE (mL per minute): 400	TUBING MATERIAL CODE: ~~Teflon~~ → HDPE	
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	2	HDPE	250 mL	N/A	N/A	N/A	EPA MOD 537 PFAS	APP
2	3	CG	40 mL	HCl	N/A	<2	8260D TCL SOM01.2 CLP-LIKE	APP

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)

Well Contained Teflon Tubing; replaced w/ HDPE and purged well volumes

Tetra Tech NUS / FDEP Groundwater Sampling Sheet

SITE NAME: **Paint and Oil Locker (POL)**

SITE LOCATION: **Kennedy Space Center (KSC), FL**

LOCATION ID: POL-MW0041SI

SAMPLE ID: **POL-MW0041SI-020.5 -202004 21**
Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)

DATE: **2020 / 04 / 21**

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 10.15

CASING HEIGHT (feet als): 3.0

STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als): ~~NA~~ 7.15

WELL SCREEN INTERVAL DEPTH (feet bls): **18 to 23**

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): 18

BOTTOM DEPTH (feet bls): **23**

WELL VOLUME PURGE: **1 WELL VOLUME =** (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
2.37 Liters (23-7.15)X 0.15 =2.37

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

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 20.5

FINAL PUMP OR TUBING DEPTH IN WELL (feet): 20.5

PURGING INITIATED AT: 1035

PURGING ENDED AT: 1110

TOTAL VOLUME PURGED (Liters): 14

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	12.0	12.0	400	10.35	4.89	25.07	182.05	0.14	9.40	-195.2	Tanic
1107	0.8	12.8	400	10.35	4.91	25.10	184.83	0.13	8.56	-199.3	tanic
1110	1.2	14.0	400	10.35	4.95	25.05	185.34	0.13	7.41	-201.4	Tanic
1115	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"** = 0.09

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: C. Sorden /Tt

SAMPLER(S) SIGNATURES:

SAMPLING INITIATED AT: 1115

SAMPLING ENDED AT: 1120

PUMP OR TUBING DEPTH IN WELL (feet): 20.5

SAMPLE PUMP FLOW RATE (mL per minute): 250

TUBING MATERIAL CODE: ~~Teflon~~ HDPE

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	2	HDPE	250 mL	N/A	N/A	N/A	EPA MOD 537 PFAS	APP
2	3	CG	40 mL	HCl	N/A	<2	8260D TCL SOM01.2 CLP-LIKE	APP

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)

Well Contained Teflon Tubing; evacuating
5 well volumes prior TO Sampling

Tetra Tech NUS / FDEP Groundwater Sampling Sheet

SITE NAME: **Paint and Oil Locker (POL)**

SITE LOCATION: **Kennedy Space Center (KSC), FL**

LOCATION ID: **POL- MW0043S**

SAMPLE ID: **POL-MW0043S- 015.0 -20200422**

Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)

DATE: **2020 / 04 / 22**

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 11.39

CASING HEIGHT (feet als): B

STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als): NA

WELL SCREEN INTERVAL DEPTH (feet bls): **10 to 20**

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):

BOTTOM DEPTH (feet bls): **20**

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): 15

FINAL PUMP OR TUBING DEPTH IN WELL (feet): 15

PURGING INITIATED AT: 1535

PURGING ENDED AT: 1550

TOTAL VOLUME PURGED (Liters): 3.0

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)
1545	2.0	2.0	200	11.58	4.57	24.85	143.26	0.11	4.79	-173.0	Tanic
1547	0.4	2.4	200	11.58	4.50	24.66	142.72	0.10	4.45	-174.4	Tanic
1550	0.6	3.0	200	11.58	4.53	24.70	141.88	0.09	5.86	-176.1	Tanic
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"** = 0.09

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: C. Sorden /Tt

SAMPLER(S) SIGNATURES:

SAMPLING INITIATED AT: 1555

SAMPLING ENDED AT: 1600

PUMP OR TUBING DEPTH IN WELL (feet): 15

SAMPLE PUMP FLOW RATE (mL per minute): 200

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	2	HDPE	250 mL	N/A	N/A	N/A	EPA MOD 537 PFAS	APP
2	3	CG	40 mL	HCl	N/A	<2	8260D TCL SOM01.2 CLP-LIKE	APP

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: **Paint and Oil Locker (POL)**

SITE LOCATION: **Kennedy Space Center (KSC), FL**

LOCATION ID: **POL- MW0043I**

SAMPLE ID: **POL-MW0043I-025.0 -202004**23
Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)

DATE: **2020 / 04 /**23

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 11.36

CASING HEIGHT (feet als): NA

STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als): **NA**

WELL SCREEN INTERVAL DEPTH (feet bls): **20 to 30**

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):

BOTTOM DEPTH (feet bls): **30**

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)

0.68 Liters (0.005 x 40) + 0.475 = 0.68

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 25

FINAL PUMP OR TUBING DEPTH IN WELL (feet): 25

PURGING INITIATED AT: 0930

PURGING ENDED AT: 0945

TOTAL VOLUME PURGED (Liters): 3.0

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)
0940	2.0	2.0	200	11.44	5.95	24.42	572.25	0.18	7.87	-202.3	Clr
0942	0.4	2.4	200	11.44	6.02	24.46	580.34	0.17	6.68	-205.1	Clr
0945	0.6	3.0	200	11.44	6.03	24.42	587.27	0.17	5.31	-209.5	Clr
0950	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" = 0.09**

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: C. Sorden /Tt

SAMPLER(S) SIGNATURES:

SAMPLING INITIATED AT: 0950

SAMPLING ENDED AT: 0955

PUMP OR TUBING DEPTH IN WELL (feet): 25

SAMPLE PUMP FLOW RATE (mL per minute): 200

TUBING MATERIAL CODE: ~~Teflon~~ HDPE

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	2	HDPE	250 mL	N/A	N/A	N/A	EPA MOD 537 PFAS	APP
2	3	CG	40 mL	HCl	N/A	<2	8260D TCL SOM01.2 CLP-LIKE	APP

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: **Paint and Oil Locker (POL)**	SITE LOCATION: **Kennedy Space Center (KSC), FL**	
LOCATION ID: POL- MW0043D	SAMPLE ID: **POL-MW0043D-035.0 -20200423** Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: **2020 / 04 /23**

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 11.23	CASING HEIGHT (feet als): ~~0.3~~ NA	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als): **NA**	WELL SCREEN INTERVAL DEPTH (feet bls): **30 to 40**

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):	BOTTOM DEPTH (feet bls): **40**

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 (0.005X50) +0.475 =0.73

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 35	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 35	PURGING INITIATED AT: 1000	PURGING ENDED AT: 1015	TOTAL VOLUME PURGED (Liters): 3.0

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)
1010	2.0	2.0	200	11.37	6.36	24.87	2069.4	0.15	5.71	-166.5	Clr
1012	0.4	2.4	200	11.37	6.38	24.76	2044.1	0.11	4.07	-170.5	Clr
1015	0.6	3.0	200	11.37	6.37	24.70	2048.3	0.11	4.76	-171.0	Clr
1020	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"** = 0.09

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: C. Sorden /Tt	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 1020	SAMPLING ENDED AT: 1025
PUMP OR TUBING DEPTH IN WELL (feet): 35	SAMPLE PUMP FLOW RATE (mL per minute): 200	TUBING MATERIAL CODE: ~~Teflon~~ HDPE	
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	2	HDPE	250 mL	N/A	N/A	N/A	EPA MOD 537 PFAS	APP
2	3	CG	40 mL	HCl	N/A	<2	8260D TCL SOM01.2 CLP-LIKE	APP

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: **Paint and Oil Locker (POL)**

SITE LOCATION: **Kennedy Space Center (KSC), FL**

LOCATION ID: **POL- MW0044I**

SAMPLE ID: **POL-MW0044I- 025.0 -20200423**

Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)

DATE: **2020 / 04 / 23**

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 11.37

CASING HEIGHT (feet als): 3

STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als): N/A

WELL SCREEN INTERVAL DEPTH (feet bls): **20 to 30**

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):

BOTTOM DEPTH (feet bls): **30**

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)

0.68 Liters (0.005 X 40) + 0.475 = 0.68

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 25

FINAL PUMP OR TUBING DEPTH IN WELL (feet): 25

PURGING INITIATED AT: 1225

PURGING ENDED AT: 1240

TOTAL VOLUME PURGED (Liters): 3.0

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)
1235	2.0	2.0	200	11.49	5.65	25.26	412.57	0.14	9.25	-215.6	~~clear~~ tan
1237	0.4	2.4	200	11.49	5.68	25.28	413.47	0.13	8.58	-219.3	~~clear~~ tan
1240	0.6	3.0	200	11.49	5.70	25.29	414.38	0.13	7.23	-223.7	~~clear~~ tan
1245	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"** = 0.09

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: C. Sorden /Tt

SAMPLER(S) SIGNATURES:

SAMPLING INITIATED AT: 1245

SAMPLING ENDED AT: 1250

PUMP OR TUBING DEPTH IN WELL (feet): 25

SAMPLE PUMP FLOW RATE (mL per minute): 200

TUBING MATERIAL CODE: ~~Teflon~~ HDPE

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	2	HDPE	250 mL	N/A	N/A	N/A	EPA MOD 537 PFAS	APP
2	3	CG	40 mL	HCl	N/A	<2	8260D TCL SOM01.2 CLP-LIKE	APP

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: **Paint and Oil Locker (POL)**

SITE LOCATION: **Kennedy Space Center (KSC), FL**

LOCATION ID: POL- **MW0044D**

SAMPLE ID: **POL-MW0044D-035.0** **-202004**23
Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)

DATE: **2020 / 04 /** 23

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 11.33

CASING HEIGHT (feet als): 3.0

STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als): NA

WELL SCREEN INTERVAL DEPTH (feet bls): **30 to 40**

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):

BOTTOM DEPTH (feet bls): **40**

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 (0.005x 50)+0.475=0.74

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 35

FINAL PUMP OR TUBING DEPTH IN WELL (feet): 35

PURGING INITIATED AT: 1300

PURGING ENDED AT: 1315

TOTAL VOLUME PURGED (Liters): 3.0

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)
1310	2.0	2.0	200	11.41	6.42	25.78	2327.7	0.10	9.28	-171.9	Clear
1312	0.4	2.4	200	11.41	6.42	25.68	2328.8	0.09	5.82	-173.3	Clear
1315	0.6	3.0	200	11.41	6.37	25.69	2326.6	0.09	8.48	-176.1	Clear
1320	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"** = 0.09

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: C. Sorden /Tt

SAMPLER(S) SIGNATURES:

SAMPLING INITIATED AT: 1320

SAMPLING ENDED AT: 1325

PUMP OR TUBING DEPTH IN WELL (feet): 35

SAMPLE PUMP FLOW RATE (mL per minute): 200

TUBING MATERIAL CODE: ~~Teflon~~ HDPE

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	2	HDPE	250 mL	N/A	N/A	N/A	EPA MOD 537 PFAS	APP
2	3	CG	40 mL	HCl	N/A	<2	8260D TCL SOM01.2 CLP-LIKE	APP

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: **Paint and Oil Locker (POL)**		SITE LOCATION: **Kennedy Space Center (KSC), FL**
LOCATION ID: **POL- MW0045S**	SAMPLE ID: **POL-MW0045S-** 015.0 **-202004**22 Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: **2020 / 04 /** 22

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 11.13	CASING HEIGHT (feet als): 3.0	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als): 8.13	WELL SCREEN INTERVAL DEPTH (feet bls): 10 to 20

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):	BOTTOM DEPTH (feet bls): **20**

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 X30) +0.475 = 0.63

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 15	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 15	PURGING INITIATED AT: 1325	PURGING ENDED AT: 1340	TOTAL VOLUME PURGED (Liters): 3.0

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)
1335	2.0	2.0	200	11.26	4.41 ~~25.88~~	25.87	195.52	0.12	6.17	-158.5	tanic
1337	6.4	2.4	200	11.26	4.39	25.81	195.13	0.09	4.47	-158.1	Tanic
1340	6.6	3.0	200	11.26	4.36	25.79	196.22	0.08	3.39	-161.4	tanic
1345	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"** = 0.09

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: C. Sorden /Tt	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 1345	SAMPLING ENDED AT: 1350
PUMP OR TUBING DEPTH IN WELL (feet): 15	SAMPLE PUMP FLOW RATE (mL per minute): 200	TUBING MATERIAL CODE: ~~Teflon~~ HDPE	
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	2	HDPE	250 mL	N/A	N/A	N/A	EPA MOD 537 PFAS	APP
2	3	CG	40 mL	HCl	N/A	<2	8260D TCL SOM01.2 CLP-LIKE	APP

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: Paint and Oil Locker (POL)

SITE LOCATION: Kennedy Space Center (KSC), FL

LOCATION ID: POL- MW0045I

SAMPLE ID: POL-MW0045I- 025.0 -20200422
Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)

DATE: 2020 / 04 / 22

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 11.28

CASING HEIGHT (feet als):

STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als):

WELL SCREEN INTERVAL DEPTH (feet bls): 20 to 30

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):

BOTTOM DEPTH (feet bls): 30

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)
0.65 Liters (0.005 x 40)+0.475 =0.65

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 25

FINAL PUMP OR TUBING DEPTH IN WELL (feet): 25

PURGING INITIATED AT: 1415

PURGING ENDED AT: 1430

TOTAL VOLUME PURGED (Liters): 3.0

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)
1425	2.0	2.0	200	11.33	6.22	25.68	582.64	0.13	3.83	-266.0	clr
1427	0.4	2.4	200	11.33	6.23	25.58	579.52	0.11	5.61	-273.0	clr
1430	6.6	3.0	200	11.33	6.24	25.68	584.76	0.10	6.59	-272.1	clr
1435	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"** = 0.09

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: C. Sorden /Tt

SAMPLER(S) SIGNATURES:

SAMPLING INITIATED AT: 1435

SAMPLING ENDED AT: 1440

PUMP OR TUBING DEPTH IN WELL (feet): 25

SAMPLE PUMP FLOW RATE (mL per minute): 200

TUBING MATERIAL CODE: ~~Teflon~~ HDPE

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	2	HDPE	250 mL	N/A	N/A	N/A	EPA MOD 537 PFAS	APP
2	3	CG	40 mL	HCl	N/A	<2	8260D TCL SOM01.2 CLP-LIKE	APP

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: **Paint and Oil Locker (POL)**

SITE LOCATION: **Kennedy Space Center (KSC), FL**

LOCATION ID: **POL- MW0045D**

SAMPLE ID: **POL-MW0045D- 035.0 -20200422**

Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)

DATE: **2020 / 04 / 22**

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 11.37

CASING HEIGHT (feet als):

STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als):

WELL SCREEN INTERVAL DEPTH (feet bls): 30 to 40

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):

BOTTOM DEPTH (feet bls): **40**

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 (0.005 x 50) + 0.475 = 0.73

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): ~~43~~ 35

FINAL PUMP OR TUBING DEPTH IN WELL (feet): 35

PURGING INITIATED AT: 1445

PURGING ENDED AT: 1500

TOTAL VOLUME PURGED (Liters): 3.0

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)
1455	2.0	2.0	200	11.45	6.54	26.22	2154.4	0.14	3.24	-160.4	Clear
1457	0.4	2.4	200	11.45	6.54	26.24	2151.7	0.13	5.53	-161.1	Clear
1500	0.6	3.0	200	11.45	6.57	26.12	2146.5	0.13	2.86	-163.7	Clear
1505	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"** = 0.09

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: C. Sorden /Tt

SAMPLER(S) SIGNATURES:

SAMPLING INITIATED AT: 1505

SAMPLING ENDED AT: 1510

PUMP OR TUBING DEPTH IN WELL (feet): 35

SAMPLE PUMP FLOW RATE (mL per minute): 200

TUBING MATERIAL CODE: ~~Teflon~~ HDPE

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	2	HDPE	250 mL	N/A	N/A	N/A	EPA MOD 537 PFAS	APP
2	3	CG	40 mL	HCl	N/A	<2	8260D TCL SOM01.2 CLP-LIKE	APP

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: **Paint and Oil Locker (POL)**

SITE LOCATION: **Kennedy Space Center (KSC), FL**

LOCATION ID: **POL- MW0046D**

SAMPLE ID: **POL-MW0046D- 035.0 -20200422**

Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)

DATE: **2020 / 04 /** 22

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 10.30

CASING HEIGHT (feet als): 3

STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als): NA

WELL SCREEN INTERVAL DEPTH (feet bls): 30 to 40

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):

BOTTOM DEPTH (feet bls): **40**

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 (0.005 X 50) + 0.475 = 0.73

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 35

FINAL PUMP OR TUBING DEPTH IN WELL (feet): 35

PURGING INITIATED AT: 1205

PURGING ENDED AT: 1220

TOTAL VOLUME PURGED (Liters): 3.0

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)
1215	2.0	2.0	200	10.33	6.49	24.95	785.42	0.19	5.13	-119.3	Clr
1217	0.4	2.4	200	10.33	6.53	24.93	791.63	0.17	8.26	-123.8	Clr
1220	0.6	3.0	200	10.33	6.56	24.82	789.19	0.17	6.16	-125.7	Clr
1225	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"** = 0.09

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: C. Sorden /Tt

SAMPLER(S) SIGNATURES:

SAMPLING INITIATED AT: 1225

SAMPLING ENDED AT: 1230

PUMP OR TUBING DEPTH IN WELL (feet): 35

SAMPLE PUMP FLOW RATE (mL per minute): 200

TUBING MATERIAL CODE: ~~Teflon~~ HDPE

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	2	HDPE	250 mL	N/A	N/A	N/A	EPA MOD 537 PFAS	APP
2	3	CG	40 mL	HCl	N/A	<2	8260D TCL SOM01.2 CLP-LIKE	APP

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: **Paint and Oil Locker (POL)**

SITE LOCATION: **Kennedy Space Center (KSC), FL**

LOCATION ID: **POL-MW0046DD**

SAMPLE ID: **POL-MW0046DD- 045.0 -20200422**

Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)

DATE: **2020 / 04 / 22**

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 10.42

CASING HEIGHT (feet als): 3

STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als): NA

WELL SCREEN INTERVAL DEPTH (feet bls): 40 to 50

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):

BOTTOM DEPTH (feet bls): **50**

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)

0.78 Liters (0.005x60)+0.475=0.78

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 45

FINAL PUMP OR TUBING DEPTH IN WELL (feet): 45

PURGING INITIATED AT: 1235

PURGING ENDED AT: 1250

TOTAL VOLUME PURGED (Liters): 3.0

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)
1245	2.0	2.0	200	10.51	6.80	25.14	2698.8	0.18	8.75	-138.7	Clr
1247	0.4	2.4	200	10.51	6.82	25.30	2683.6	0.16	8.93	-142.6	Clr
1250	0.6	3.0	200	10.51	6.84	25.22	2623	0.13	8.07	-150.6	Clr
1255	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"** = 0.09

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: C. Sorden /Tt

SAMPLER(S) SIGNATURES:

SAMPLING INITIATED AT: 1255

SAMPLING ENDED AT: 1300

PUMP OR TUBING DEPTH IN WELL (feet): 45

SAMPLE PUMP FLOW RATE (mL per minute): 200

TUBING MATERIAL CODE: ~~Teflon~~ HDPE

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	2	HDPE	250 mL	N/A	N/A	N/A	EPA MOD 537 PFAS	APP
2	3	CG	40 mL	HCl	N/A	<2	8260D TCL SOM01.2 CLP-LIKE	APP

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: **Paint and Oil Locker (POL)**
SITE LOCATION: **Kennedy Space Center (KSC), FL**

LOCATION ID: **POL- MW0047I**
SAMPLE ID: **POL-MW0047I-025.0 -2020042**2
Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)
DATE: **2020 / 04 /** 22

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 9.33
CASING HEIGHT (feet als): 3.0
STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als): NA
WELL SCREEN INTERVAL DEPTH (feet bls): 20 to 30

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): 20
BOTTOM DEPTH (feet bls): 30

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)
0.65 Liters (0.005 x40)+0.475= 0.65

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 25
FINAL PUMP OR TUBING DEPTH IN WELL (feet): 25
PURGING INITIATED AT: 1010
PURGING ENDED AT: 1025
TOTAL VOLUME PURGED (Liters): 3.0

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)
1020	2.0	2.0	200	9.42	6.65	23.88	768.70	0.15	1.77	-186.9	Clr
1022	0.4	2.4	200	9.42	6.69	23.94	767.70	0.14	1.96	-191.8	Clr
1025	0.6	3.0	200	9.42	6.71	23.89	765.05	0.14	2.48	-192.6	Clr
1030	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"** = 0.09

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: C. Sorden /Tt
SAMPLER(S) SIGNATURES:
SAMPLING INITIATED AT: 1030
SAMPLING ENDED AT: 1035
PUMP OR TUBING DEPTH IN WELL (feet): 25
SAMPLE PUMP FLOW RATE (mL per minute): 200
TUBING MATERIAL CODE: ~~Teflon~~ HDPE
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	2	HDPE	250 mL	N/A	N/A	N/A	EPA MOD 537 PFAS	APP
2	3	CG	40 mL	HCl	N/A	<2	8260D TCL SOM01.2 CLP-LIKE	APP

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: **Paint and Oil Locker (POL)**

SITE LOCATION: **Kennedy Space Center (KSC), FL**

LOCATION ID: **POL- MW0047D**

SAMPLE ID: **POL-MW0047D- 035.0 -20200422**
Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)

DATE: **2020 / 04 / 22**

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 9.36

CASING HEIGHT (feet als): 3

STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als): NA

WELL SCREEN INTERVAL DEPTH (feet bls): 30 to 40

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): 30

BOTTOM DEPTH (feet bls): **40**

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 (0.005 x 50) + 0.475 = 0.73

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 35

FINAL PUMP OR TUBING DEPTH IN WELL (feet): 35

PURGING INITIATED AT: ~~0445~~ 1045

PURGING ENDED AT: 1100

TOTAL VOLUME PURGED (Liters): 3.0

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)
1055	2.0	2.0	200	9.39	6.67	23.98	1225.9	0.18	5.44	-147.9	Clr
1057	0.4	2.4	200	9.39	6.72	24.03	1207.4	0.15	6.68	-151.7	Clr
1100	0.6	3.0	200	9.39	6.75	24.01	1213.0	0.15	4.40	-153.1	Clr
1105	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"** = 0.09

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: C. Sorden /Tt

SAMPLER(S) SIGNATURES:

SAMPLING INITIATED AT: 1105

SAMPLING ENDED AT: 1110

PUMP OR TUBING DEPTH IN WELL (feet): 35

SAMPLE PUMP FLOW RATE (mL per minute): 200

TUBING MATERIAL CODE: ~~Teflon~~ HDPE

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	2	HDPE	250 mL	N/A	N/A	N/A	EPA MOD 537 PFAS	APP
2	3	CG	40 mL	HCl	N/A	<2	8260D TCL SOM01.2 CLP-LIKE	APP

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: **Paint and Oil Locker (POL)**

SITE LOCATION: **Kennedy Space Center (KSC), FL**

LOCATION ID: **POL-MW0047DD**

SAMPLE ID: **POL-MW0047DD- 045.0 -202004**22

Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)

DATE: **2020 / 04 /**22

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 9.45

CASING HEIGHT (feet als): 3

STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als): NA

WELL SCREEN INTERVAL DEPTH (feet bls): 40 to 50

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):

BOTTOM DEPTH (feet bls): **50**

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)

0.78 Liters (0.005x ~~50~~ 60) +0.475=0.78

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 45

FINAL PUMP OR TUBING DEPTH IN WELL (feet): 45

PURGING INITIATED AT: 1115

PURGING ENDED AT: 1145

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)
~~1125~~	~~2.0~~	~~2.0~~	~~200~~	~~9.58~~	~~6.40~~	~~24.42~~	~~2107~~	Sensor Issues			
1140	5.0	5.0	200	9.58	6.96	24.59	2897.2	0.31	3.60	738.2	Clr
1142	0.4	5.4	200	9.58	6.95	24.60	2907.3	0.23	6.26	-144.8	Clr
1145	0.6	~~3.0~~ 60	200	9.58	6.98	24.78	2907.4	0.19	7.30	-146.0	Clr
1150	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"** = 0.09

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: C. Sorden /Tt

SAMPLER(S) SIGNATURES:

SAMPLING INITIATED AT: 1150

SAMPLING ENDED AT: 1155

PUMP OR TUBING DEPTH IN WELL (feet): 45

SAMPLE PUMP FLOW RATE (mL per minute): 200

TUBING MATERIAL CODE: ~~Teflon~~ HDPE

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	2	HDPE	250 mL	N/A	N/A	N/A	EPA MOD 537 PFAS	APP
2	3	CG	40 mL	HCl	N/A	<2	8260D TCL SOM01.2 CLP-LIKE	APP

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-MW0027-032.0-2020 0423 Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: 04 / 23 / 2020

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 9.96	CASING HEIGHT (feet als): NA 2.5	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):	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): 37	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)
4.43 Liters (37-7.46) x0.15 =4.43

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

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 32	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 32	PURGING INITIATED AT: 1340	PURGING ENDED AT: 1405	TOTAL VOLUME PURGED (Liters): 10.0

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)
1400	8.0	8.0	400	10.11	6.53	26.35	2248.2	0.11	7.40	-112.8	Clr
1402	0.8	8.8	400	10.11	6.55	26.34	2248.4	0.09	5.14	-114.5	Clr
1405	1.2	10.0	400	10.11	6.55	26.36	2251.6	0.08	5.49	-115.7	Clr
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 Sader /Tetra Tech	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 1410	SAMPLING ENDED AT: 1415
PUMP OR TUBING DEPTH IN WELL (feet): 32	SAMPLE PUMP ~~SM~~ FLOW RATE (mL per minute): ~~400~~ 200	TUBING MATERIAL CODE: ~~Teflon~~ HDPE	
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	2	HDPE	250 mL	N/A	N/A	N/A	EPA MOD 537 PFAS	APP

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)

Well Contained Teflon Tubing
well volumes purged

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-MW0028-032.0-2020** 0423
Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)

DATE: **04** / 23 / **2020**

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 10.04

CASING HEIGHT (feet als): 3.0

STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als): 7.04

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): **37**

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)
4.49 Liters (37 - 7.04) X 0.15 = 4.49

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

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 32

FINAL PUMP OR TUBING DEPTH IN WELL (feet): 32

PURGING INITIATED AT: 1420

PURGING ENDED AT: 1445

TOTAL VOLUME PURGED (Liters): 10.0

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)
1440	8.0	8.0	~~8~~400	10.06	6.44	26.28	2927.4	0.06	4.97	-154.4	clear
1442	6.8	8.8	400	10.06	6.44	26.24	2921.3	0.07	7.01	-157.4	clear
1445	1.2	10.0	400	10.06	6.44	26.25	2915.7	0.07	8.03	-158.1	clear
1450	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 Sadler /Tetra Tech

SAMPLER(S) SIGNATURES:

SAMPLING INITIATED AT: 1450

SAMPLING ENDED AT: 1455

PUMP OR TUBING DEPTH IN WELL (feet):

~~SAMPLE PUMP SM~~ FLOW RATE (mL per minute): ~~100~~ 200

TUBING MATERIAL CODE: ~~Teflon~~ HDPE

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	2	HDPE	250 mL	N/A	N/A	N/A	EPA MOD 537 PFAS	APP

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)

well Contained Teflon Tubing;
Replaced; purging well volumes

Tetra Tech NUS / FDEP Groundwater Sampling Sheet

SITE NAME: **Paint and Oil Locker (POL)**

SITE LOCATION: **Kennedy Space Center (KSC), FL**

LOCATION ID: **POL- MW0011S**

SAMPLE ID: **POL-MW0011S-012.5-20210826**
Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)

DATE: **2021 / 08 / 26**

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 7.66

CASING HEIGHT (feet als):

STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als):

WELL SCREEN INTERVAL DEPTH (feet bls): **10 to 15**

WELL DIAMETER (inches): 2

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):

BOTTOM DEPTH (feet bls): **15**

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)
0.72 Liters. (0.0098 x 25) + 0.475 = 0.72

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 12.5

FINAL PUMP OR TUBING DEPTH IN WELL (feet): 12.5

PURGING INITIATED AT: 1355

PURGING ENDED AT: 1440

TOTAL VOLUME PURGED (Liters): 5.5

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (^{O}C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
1405	2.0	2.0	200	7.81	4.28	31.19	2099.1	4.11	10.10	389.0	Clear
1415	1.0	3.0	100	7.75	4.27	31.24	2101.8	4.10	9.51	388.4	Clear
1435	2.0	5.0	100	7.75	4.28	31.30	2104.5	4.12	9.43	389.0	Clear
1440	0.5	5.5	100	7.75	4.27	31.38	2107.2	4.10	6.72	388.5	Clear
1445	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"** = 0.09

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: C. Sorden /Tt

SAMPLER(S) SIGNATURES:

SAMPLING INITIATED AT: 1445

SAMPLING ENDED AT: 1455

PUMP OR TUBING DEPTH IN WELL (feet): 12.5

SAMPLE PUMP FLOW RATE (mL per minute): 200

TUBING MATERIAL CODE: HDPE

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	2	HDPE	250 mL	N/A	N/A	N/A	EPA MOD 537 PFAS	APP
2	3	CG	40 mL	HCl	N/A	<2	8260D TCL SOM01.2 CLP-LIKE	APP

REMARKS: High D.O. from air sparging. All parameters stable. Sampled per FS2212.

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: **Paint and Oil Locker (POL)**

SITE LOCATION: **Kennedy Space Center (KSC), FL**

LOCATION ID: **POL- MW0011I**

SAMPLE ID: **POL-MW0011I-027.5 -20210826**
Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)

DATE: **2021 / 08 / 26**

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 7.52

CASING HEIGHT (feet als): NA

STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als): **NA**

WELL SCREEN INTERVAL DEPTH (feet bls): **25 to 30**

WELL DIAMETER (inches): 2

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):

BOTTOM DEPTH (feet bls): **30**

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)
0.87 Liters. (0.0098 x 40) + 0.475 = 0.87

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 27.5

FINAL PUMP OR TUBING DEPTH IN WELL (feet): 27.5

PURGING INITIATED AT: 1155

PURGING ENDED AT: 1330

TOTAL VOLUME PURGED (Liters): 9.5

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (^{O}C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
1225	3.0	3.0	100	7.66	4.82	29.85	3472.7	7.81	249.08	236.1	Cloudy
1255	3.0	6.0	100	7.66	4.77	30.74	3495.2	8.46	643.96	288.2	Cloudy
1325	3.0	9.0	100	7.66	4.75	31.00	3414.9	8.26	1298.95	329.1	Cloudy
1327	0.2	9.2	100	7.66	4.70	31.02	3389.9	8.12	1312.8	335.1	Cloudy
1330	0.3	9.5	100	7.66	4.71	31.02	3374.9	8.10	1315.9	336.6	Cloudy
1335	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"** = 0.09

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: C. Sorden /Tt

SAMPLER(S) SIGNATURES:

SAMPLING INITIATED AT: 1335

SAMPLING ENDED AT: 1345

PUMP OR TUBING DEPTH IN WELL (feet): 27.5

SAMPLE PUMP FLOW RATE (mL per minute): 100

TUBING MATERIAL CODE: HDPE

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	2	HDPE	250 mL	N/A	N/A	N/A	EPA MOD 537 PFAS	APP
2	3	CG	40 mL	HCl	N/A	<2	8260D TCL SOM01.2 CLP-LIKE	APP

REMARKS: Unable to achieve turbidity <20NTU and D.O. <20% saturation due to air sparging. Sampled per FS2212.

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, Inc.

SURFACE WATER SAMPLE LOG SHEET

Page 1 of 1

Project Site Name: Sewage Treatment Plant #1 (STP1)
Project No.: 112G09581

Sample ID No.: STP1-SW0001-000.5-20220308
Sample Location: Location
Sampled By: Chuck Sorden and Kyle Hoard
C.O.C. No.:

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

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

SAMPLING DATA:

		Color	pH	Cond.	Temp.	Turbidity	DO	ORP	Salinity
Date:	3/8/2022								
Time:	1545	(Visual)	(S.U.)	(µS/cm)	(^{0}C)	(NTU)	(mg/l)	(mV)	(ppt)
Depth:	0-0.5	Clear	7	274.91	24.32	0.34	4.15	134.1	0.13
Method:	Grab								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
PFAS QSM Table B-15	None/4 deg C	2 - 250 mL HDPE Bottlesw	X

OBSERVATIONS / NOTES:

MAP:

See figure

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s):

Tetra Tech, Inc.

SURFACE WATER SAMPLE LOG SHEET

Page 1 of 1

Project Site Name: Sewage Treatment Plant #1 (STP1)
Project No.: 112G09581

[ ] Stream
[ ] Spring
[ ] Pond

[X] Other: Canal
[ ] QA Sample Type:

Sample ID No.: STP1-SW0002-000.5-20220309
Sample Location: Location 15
Sampled By: Chuck Sorden and Kyle Hoard
C.O.C. No.:

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

SAMPLING DATA:

		Color	pH	Cond.	Temp.	Turbidity	DO	ORP	Salinity
Date:	3/9/2022	(Visual)	(S.U.)	(µS/cm)	(^{0}C)	(NTU)	(mg/l)	(mV)	(ppt)
Time:	910								
Depth:	0-0.5	Clear	6.93	440.41	23.79	0.89	3.58	191.1	0.22
Method:	Grab								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
PFAS QSM Table B-15	None/4 deg C	2 - 250 mL HDPE Bottlesw	X

OBSERVATIONS / NOTES:

MAP:

See figure

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s):

Tetra Tech, Inc.

SURFACE WATER SAMPLE LOG SHEET

Page 1 of 1

Project Site Name: Sewage Treatment Plant #1 (STP1)
Project No.: 112G09581

Sample ID No.: STP1-SW0003-000.5-20220309
Sample Location: Location 17
Sampled By: Chuck Sorden and Kyle Hoard
C.O.C. No.:

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

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

SAMPLING DATA:

		Color	pH	Cond.	Temp.	Turbidity	DO	ORP	Salinity
Date:	3/9/2022	(Visual)	(S.U.)	(µS/cm)	(^{0}C)	(NTU)	(mg/l)	(mV)	(ppt)
Time:	955								
Depth:	0-0.5	Clear	6.74	336.16	24.41	0.26	1.49	172.4	0.16
Method:	Grab								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
PFAS QSM Table B-15	None/4 deg C	2 - 250 mL HDPE Bottlesw	X

OBSERVATIONS / NOTES:

MAP:

See figure

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s):

Tetra Tech, Inc.

SURFACE WATER SAMPLE LOG SHEET

Page 1 of 1

Project Site Name: Sewage Treatment Plant #1 (STP1)
Project No.: 112G09581

Sample ID No.: STP1-SW0004-000.5-20220309
Sample Location: Location 18
Sampled By: Chuck Sorden and Kyle Hoard
C.O.C. No.:

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

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

SAMPLING DATA:

		Color (Visual)	pH (S.U.)	Cond. (µS/cm)	Temp. (^{0}C)	Turbidity (NTU)	DO (mg/l)	ORP (mV)	Salinity (ppt)
Date:	3/9/2022								
Time:	1025								
Depth:	0-0.5	Clear	6.82	386.55	24.36	5.77	2.03	175.6	0.19
Method:	Grab								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
PFAS QSM Table B-15	None/4 deg C	2 - 250 mL HDPE Bottlesw	X

OBSERVATIONS / NOTES:

MAP:

See figure

Circle if Applicable:

MS/MSD

Duplicate ID No.:

Signature(s):

Tetra Tech, Inc.

SURFACE WATER SAMPLE LOG SHEET

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Project Site Name: Sewage Treatment Plant #1 (STP1)
Project No.: 112G09581

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

Sample ID No.: STP1-SW0005-000.5-20220309
Sample Location: Location 19
Sampled By: Chuck Sorden and Kyle Hoard
C.O.C. No.:

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

SAMPLING DATA:

Date:	3/9/2022	**Color**	**pH**	**Cond.**	**Temp.**	**Turbidity**	**DO**	**ORP**	Salinity
Time:	1050	(Visual)	(S.U.)	(µS/cm)	(^{0}C)	(NTU)	(mg/l)	(mV)	(ppt)
Depth:	0-0.5	**Clear**	**6.84**	**748.5**	**25.16**	**1.46**	**2.72**	**183.1**	**0.37**
Method:	Grab								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
PFAS QSM Table B-15	None/4 deg C	2 - 250 mL HDPE Bottlesw	X

OBSERVATIONS / NOTES:

MAP:

See figure

Circle if Applicable:

MS/MSD	**Duplicate ID No.:**

Signature(s):

Tetra Tech, Inc.

SURFACE WATER SAMPLE LOG SHEET

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Project Site Name: Sewage Treatment Plant #1 (STP1)
Project No.: 112G09581

Sample ID No.: STP1-SW0006-000.5-20220309
Sample Location: Location 24
Sampled By: Chuck Sorden and Kyle Hoard
C.O.C. No.:

☐ Stream
☐ Spring
☐ Pond
☐ Lake
☒ Other: Canal
☐ QA Sample Type:

Type of Sample:
☒ Low Concentration
☐ High Concentration

SAMPLING DATA:

Date:	3/9/2022	Color	pH	Cond.	Temp.	Turbidity	DO	ORP	Salinity
Time:	1115	(Visual)	(S.U.)	(µS/cm)	(^{0}C)	(NTU)	(mg/l)	(mV)	(ppt)
Depth:	0-0.5	**Clear**	**7.77**	**608.77**	**25.71**	**8.61**	**7.1**	**160.2**	**0.29**
Method:	Grab								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
PFAS QSM Table B-15	None/4 deg C	2 - 250 mL HDPE Bottlesw	X

OBSERVATIONS / NOTES:

MAP:

See figure

Circle if Applicable:

MS/MSD

Duplicate ID No.: STP1-FD-20220309-01

Signature(s):

Tetra Tech, Inc.

SURFACE WATER SAMPLE LOG SHEET

Page 1 of 1

Project Site Name: Sewage Treatment Plant #1 (STP1)
Project No.: 112G09581

Sample ID No.: STP1-SW0007-000.5-20220309
Sample Location: Location 23
Sampled By: Chuck Sorden and Kyle Hoard
C.O.C. No.:

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

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

SAMPLING DATA:

		Color (Visual)	pH (S.U.)	Cond. (µS/cm)	Temp. (^0C)	Turbidity (NTU)	DO (mg/l)	ORP (mV)	Salinity (ppt)
Date:	3/9/2022	Clear	6.91	547.85	25.54	1.26	2.95	172.4	0.26
Time:	1115								
Depth:	0-0.5								
Method:	Grab								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
PFAS QSM Table B-15	None/4 deg C	2 - 250 mL HDPE Bottlesw	X

OBSERVATIONS / NOTES:

MAP:

See figure

Circle if Applicable:

MS/MSD

Duplicate ID No.: STP1-FD-20220309-01

Signature(s):

Tetra Tech, Inc.

SURFACE WATER SAMPLE LOG SHEET

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Project Site Name: Sewage Treatment Plant #1 (STP1)
Project No.: 112G09581

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

Sample ID No.: STP1-SW0008-000.5-20220309
Sample Location: Location 22
Sampled By: Chuck Sorden and Kyle Hoard
C.O.C. No.:

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

SAMPLING DATA:

		Color	pH	Cond.	Temp.	Turbidity	DO	ORP	Salinity
Date:	3/9/2022	(Visual)	(S.U.)	(µS/cm)	(^{0}C)	(NTU)	(mg/l)	(mV)	(ppt)
Time:	1330								
Depth:	0-0.5	**Clear**	**6.71**	**286.73**	**25.65**	**0.99**	**1.65**	**170**	**0.14**
Method:	Grab								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
PFAS QSM Table B-15	None/4 deg C	2 - 250 mL HDPE Bottlesw	X

OBSERVATIONS / NOTES:

MAP:

See figure

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s):

Tetra Tech, Inc.

SURFACE WATER SAMPLE LOG SHEET

Page 1 of 1

Project Site Name: Sewage Treatment Plant #1 (STP1)
Project No.: 112G09581

Sample ID No.: STP1-SW0009-000.5-20220309
Sample Location: Location 21
Sampled By: Chuck Sorden and Kyle Hoard
C.O.C. No.:

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

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

SAMPLING DATA:

		Color	pH	Cond.	Temp.	Turbidity	DO	ORP	Salinity
Date:	3/9/2022	(Visual)	(S.U.)	(µS/cm)	(^{0}C)	(NTU)	(mg/l)	(mV)	(ppt)
Time:	1330								
Depth:	0-0.5	**Yellow**	**6.82**	**303.7**	**28.01**	**17.79**	**4.98**	**175.5**	**0.14**
Method:	Grab								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
PFAS QSM Table B-15	None/4 deg C	2 - 250 mL HDPE Bottlesw	X

OBSERVATIONS / NOTES:

MAP:

See figure

Circle if Applicable:

MS/MSD

Duplicate ID No.:

Signature(s):

Tetra Tech, Inc.

SURFACE WATER SAMPLE LOG SHEET

Page __1_ of __1_

Project Site Name: Sewage Treatment Plant #1 (STP1)
Project No.: 112G09581

Sample ID No.: STP1-SW001p-000.5-20220310
Sample Location: Location 20
Sampled By: Chuck Sorden and Kyle Hoard
C.O.C. No.:

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

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

SAMPLING DATA:

		Color	pH	Cond.	Temp.	Turbidity	DO	ORP	Salinity
Date:	3/10/2022	(Visual)	(S.U.)	(µS/cm)	(^{0}C)	(NTU)	(mg/l)	(mV)	(ppt)
Time:	805								
Depth:	0-0.5	Yellow	6.47	315.51	22.15	0.14	0.8	192.3	0.16
Method:	Grab								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
PFAS QSM Table B-15	None/4 deg C	2 - 250 mL HDPE Bottlesw	X

OBSERVATIONS / NOTES:

MAP:

See figure

Circle if Applicable:

MS/MSD	Duplicate ID No.:
YES	STP1-FD-20220310-01

Signature(s):

Tetra Tech, Inc.

SURFACE WATER SAMPLE LOG SHEET

Page 1 of 1

Project Site Name: Sewage Treatment Plant #1 (STP1)
Project No.: 112G09581

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

Sample ID No.: STP1-SW0011-000.5-20220310
Sample Location: Location 14
Sampled By: Chuck Sorden and Kyle Hoard
C.O.C. No.:

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

SAMPLING DATA:

		Color	pH	Cond.	Temp.	Turbidity	DO	ORP	Salinity
Date:	3/10/2022	(Visual)	(S.U.)	(µS/cm)	(^{0}C)	(NTU)	(mg/l)	(mV)	(ppt)
Time:	910								
Depth:	0-0.5	Yellow	6.51	117.75	21.9	1.3	2.87	145.3	0.06
Method:	Grab								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
PFAS QSM Table B-15	None/4 deg C	2 - 250 mL HDPE Bottlesw	X

OBSERVATIONS / NOTES:

MAP:

See figure

Circle if Applicable:

MS/MSD	Duplicate ID No.:
YES	STP1-FD-20220310-01

Signature(s):

Tetra Tech, Inc.

SURFACE WATER SAMPLE LOG SHEET

Page 1 of 1

Project Site Name: Fire Station Number 1 (FS1)
Project No.: 112G09581

Sample ID No.: FS1-SW0001-000.5-20220310
Sample Location: Location 09
Sampled By: Chuck Sorden and Kyle Hoard
C.O.C. No.:

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

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

SAMPLING DATA:

		Color	**pH**	**Cond.**	**Temp.**	**Turbidity**	**DO**	**ORP**	Salinity
Date:	3/10/2022	(Visual)	(S.U.)	(µS/cm)	(^{0}C)	(NTU)	(mg/l)	(mV)	(ppt)
Time:	845								
Depth:	0-0.5	**Clear**	**6.62**	**236.18**	**22.79**	**2.49**	**1.77**	**92.6**	**0.12**
Method:	Grab								

SAMPLE COLLECTION INFORMATION:

Analysis	**Preservative**	**Container Requirements**	**Collected**
PFAS QSM Table B-15	None/4 deg C	2 - 250 mL HDPE Bottlesw	X

OBSERVATIONS / NOTES:

MAP:

See figure

Circle if Applicable:

MS/MSD	**Duplicate ID No.:**
YES	STP1-FD-20220310-01

Signature(s):

Tetra Tech, Inc.

SURFACE WATER SAMPLE LOG SHEET

Page 1 of 1

Project Site Name: Sewage Treatment Plant #1 (STP1)
Project No.: 112G09581

Sample ID No.: STP1-SW0012-000.5-20220310
Sample Location: Location 12
Sampled By: Chuck Sorden and Kyle Hoard
C.O.C. No.:

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

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

SAMPLING DATA:

		Color (Visual)	pH (S.U.)	Cond. (µS/cm)	Temp. (^0C)	Turbidity (NTU)	DO (mg/l)	ORP (mV)	Salinity (ppt)
Date:	3/10/2022	Clear	6.79	205.38	21.75	6.31	4.62	173.4	0.1
Time:	1035								
Depth:	0-0.5								
Method:	Grab								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
PFAS QSM Table B-15	None/4 deg C	2 - 250 mL HDPE Bottlesw	X

OBSERVATIONS / NOTES:

MAP:

See figure

Circle if Applicable:

MS/MSD	Duplicate ID No.:
YES	STP1-FD-20220310-01

Signature(s):

Tetra Tech, Inc.

SURFACE WATER SAMPLE LOG SHEET

Page 1 of 1

Project Site Name: Sewage Treatment Plant #1 (STP1)
Project No.: 112G09581

Sample ID No.: STP1-SW0013-000.5-20220310
Sample Location: Location 11
Sampled By: Chuck Sorden and Kyle Hoard
C.O.C. No.:

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

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

SAMPLING DATA:

		Color (Visual)	pH (S.U.)	Cond. (µS/cm)	Temp. (^{0}C)	Turbidity (NTU)	DO (mg/l)	ORP (mV)	Salinity (ppt)
Date:	3/10/2022	Clear	8.21	220.32	23.45	4.74	11.02	150.6	0.11
Time:	1110								
Depth:	0-0.5								
Method:	Grab								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
PFAS QSM Table B-15	None/4 deg C	2 - 250 mL HDPE Bottlesw	X

OBSERVATIONS / NOTES:

MAP:

See figure

Circle if Applicable:

MS/MSD	Duplicate ID No.:
YES	STP1-FD-20220310-01

Signature(s):

Tetra Tech, Inc.

SURFACE WATER SAMPLE LOG SHEET

Page 1 of 1

Project Site Name: Sewage Treatment Plant #1 (STP1)
Project No.: 112G09581

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

Sample ID No.: STP1-SW0014-000.5-20220310
Sample Location: Location 10
Sampled By: Chuck Sorden and Kyle Hoard
C.O.C. No.:

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

SAMPLING DATA:

		Color	pH	Cond.	Temp.	Turbidity	DO	ORP	Salinity
Date:	3/10/2022	(Visual)	(S.U.)	(µS/cm)	(^{0}C)	(NTU)	(mg/l)	(mV)	(ppt)
Time:	1120								
Depth:	0-0.5	Clear	8.66	162.32	23.76	1	10.7	134.2	0.08
Method:	Grab								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
PFAS QSM Table B-15	None/4 deg C	2 - 250 mL HDPE Bottlesw	X

OBSERVATIONS / NOTES:

MAP:

See figure

Circle if Applicable:

MS/MSD
YES

Duplicate ID No.:
STP1-FD-20220310-01

Signature(s):

Tetra Tech, Inc.

SURFACE WATER SAMPLE LOG SHEET

Page 1 of 1

Project Site Name: Sewage Treatment Plant #1 (STP1)
Project No.: 112G09581

Sample ID No.: STP1-SW0015-000.5-20220310
Sample Location: Location 13
Sampled By: Chuck Sorden and Kyle Hoard
C.O.C. No.:

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

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

SAMPLING DATA:

		Color (Visual)	pH (S.U.)	Cond. (µS/cm)	Temp. (^{0}C)	Turbidity (NTU)	DO (mg/l)	ORP (mV)	Salinity (ppt)
Date:	3/10/2022	Clear	8.57	274.86	24.01	0.61	9.93	134.8	0.13
Time:	1145								
Depth:	0-0.5								
Method:	Grab								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
PFAS QSM Table B-15	None/4 deg C	2 - 250 mL HDPE Bottlesw	X

OBSERVATIONS / NOTES:

MAP:

See figure

Circle if Applicable:

MS/MSD	**Duplicate ID No.:**
YES	STP1-FD-20220310-01

Signature(s):

APPENDIX D

PHOTOGRAPHIC LOG

Photographic Log

Sewage Treatment Plant #1 – LOC 20

NASA PFAS Assessments

Kennedy Space Center, Florida

PHOTO 1

DATE:
12/09/2021

DIRECTION:
North

TAKEN BY:
S. Damphousse

DESCRIPTION:
View of east side of STP, facing north

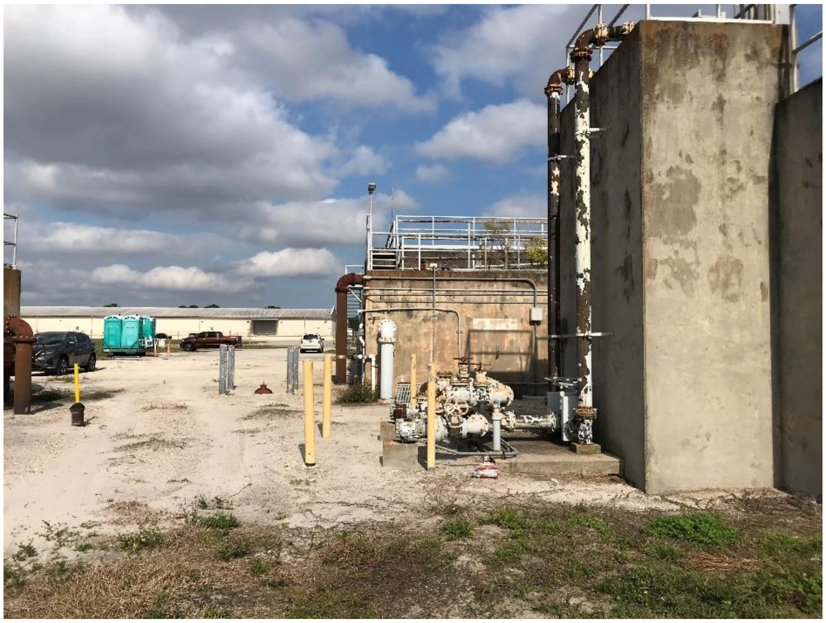


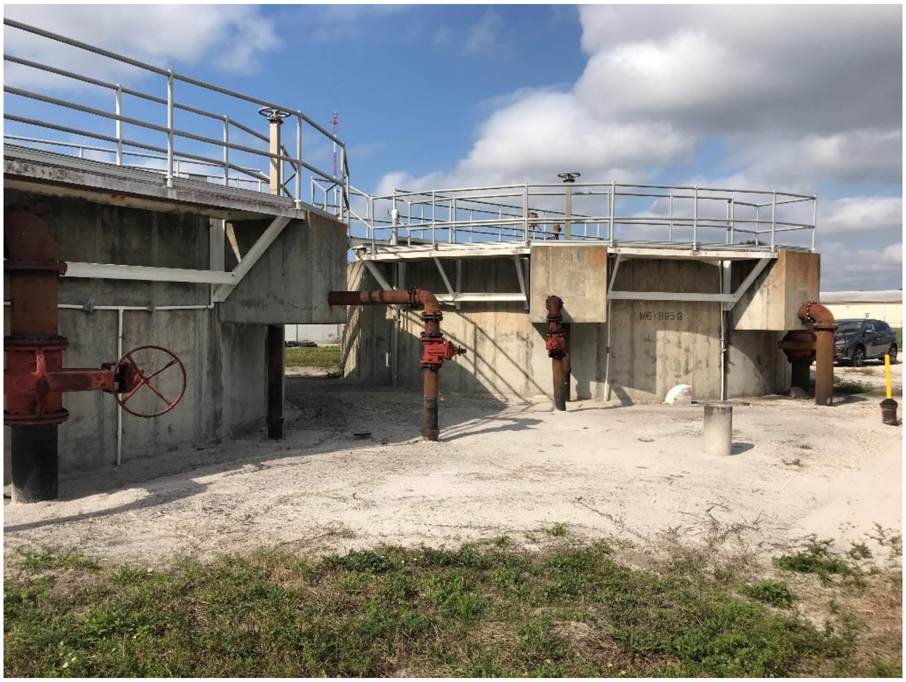
PHOTO 2

DATE:
12/09/2021

DIRECTION:
Northwest

TAKEN BY:
S. Damphousse

DESCRIPTION:
View of clarifiers, facing northwest

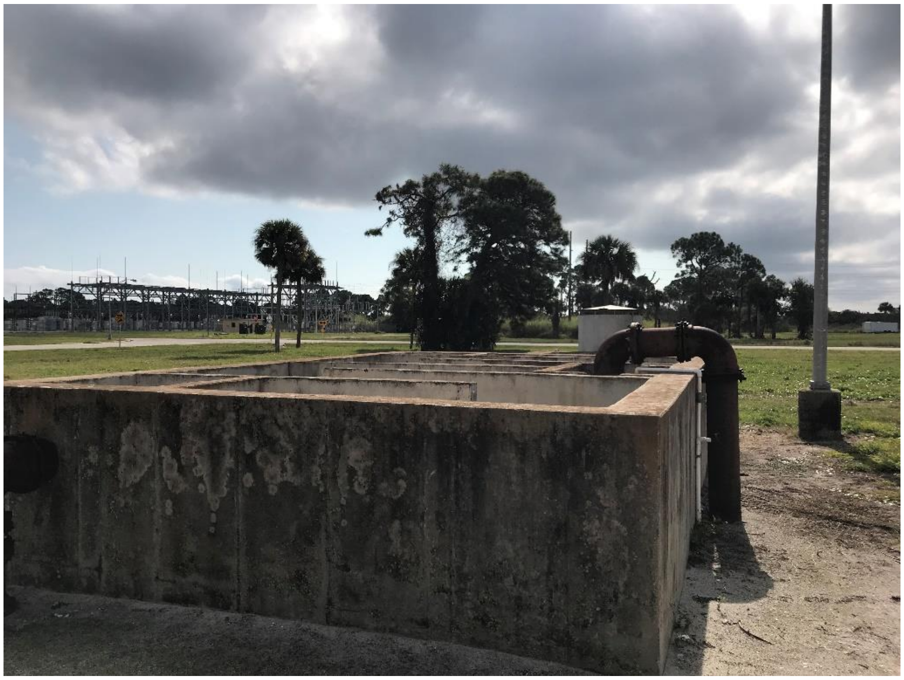
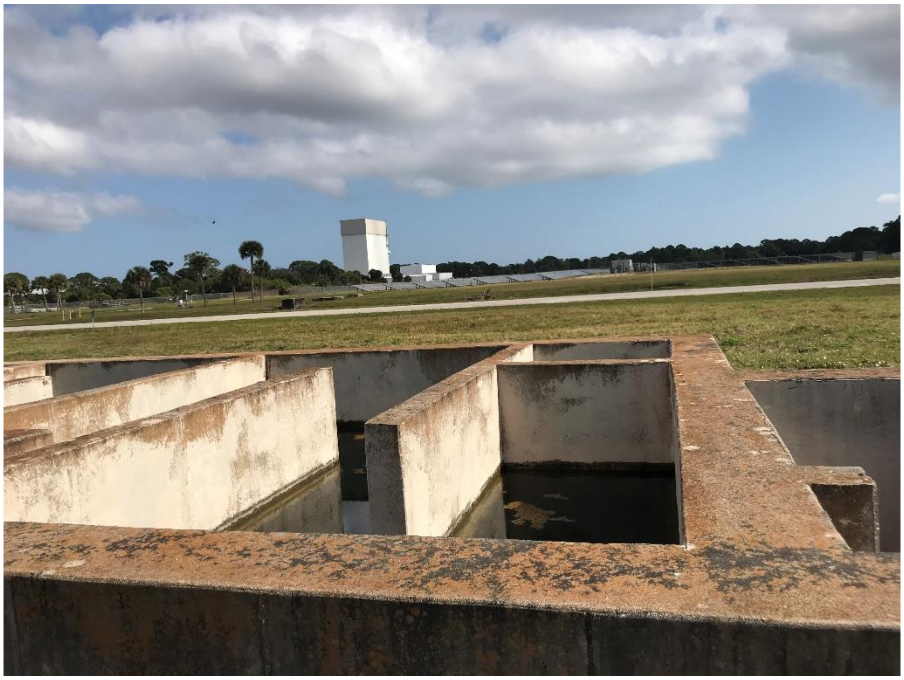


Photographic Log

Sewage Treatment Plant #1 – LOC 20

NASA PFAS Assessments

Kennedy Space Center, Florida

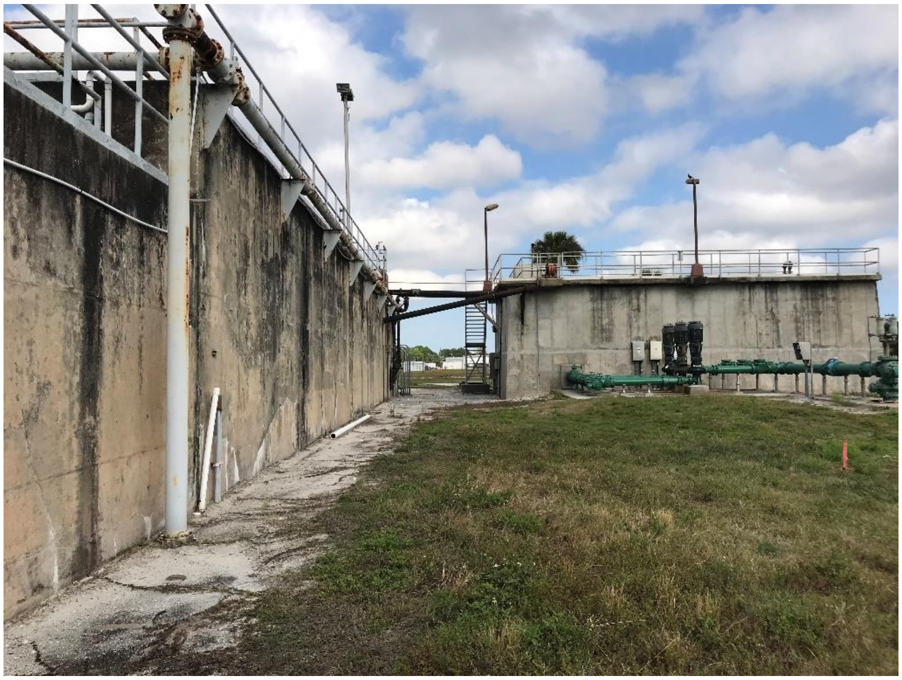
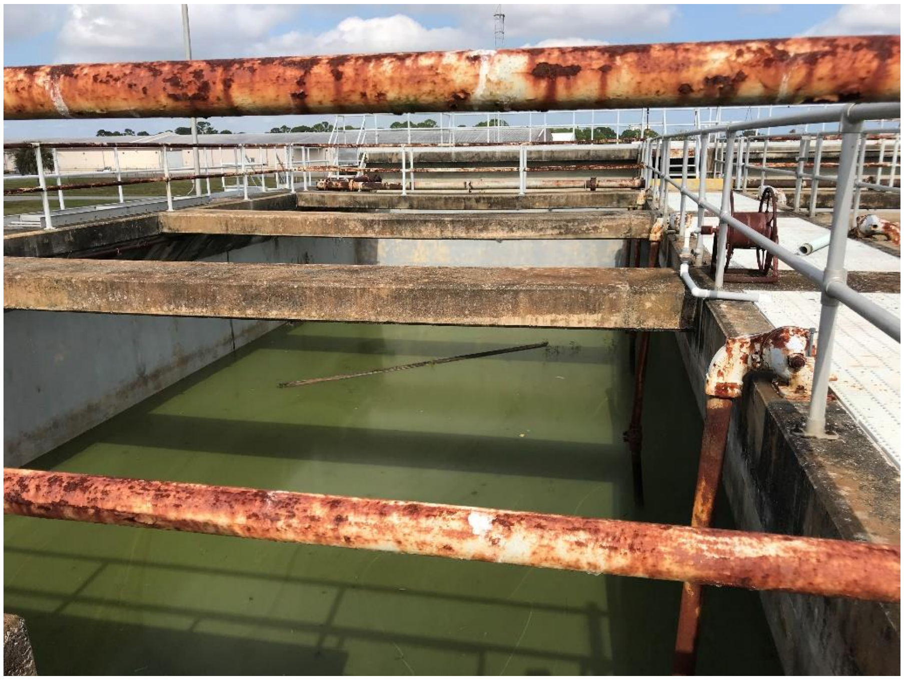
PHOTO 3	
DATE: 12/09/2021	
DIRECTION: South	
TAKEN BY: S. Damphousse	
DESCRIPTION: View of chlorine contact chamber	
PHOTO 4	
DATE: 12/09/2021	
DIRECTION: East	
TAKEN BY: S. Damphousse	
DESCRIPTION: View of water in chlorine contact chamber	

Photographic Log

Sewage Treatment Plant #1 – LOC 20

NASA PFAS Assessments

Kennedy Space Center, Florida

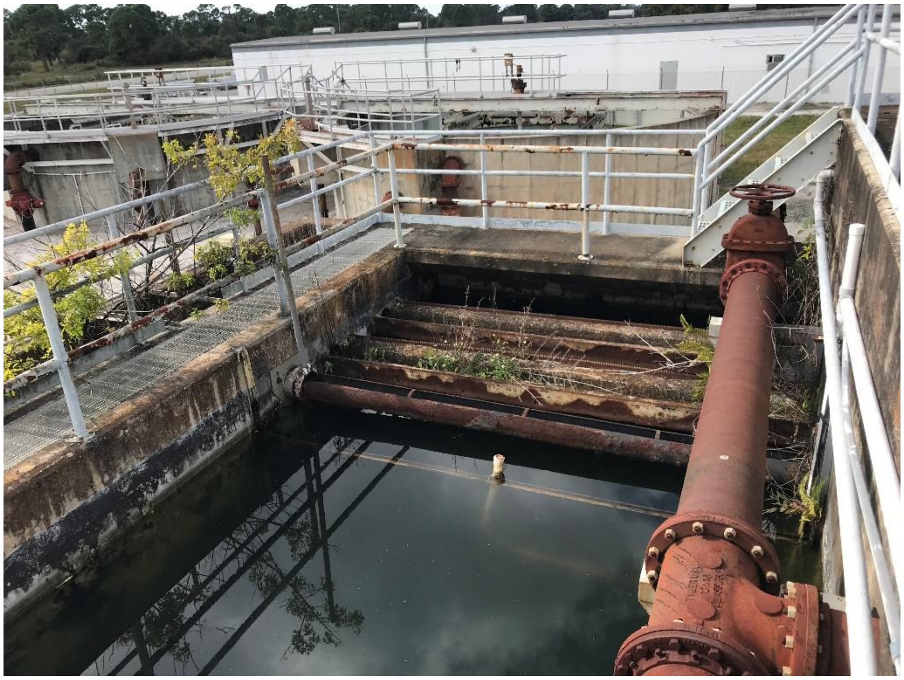
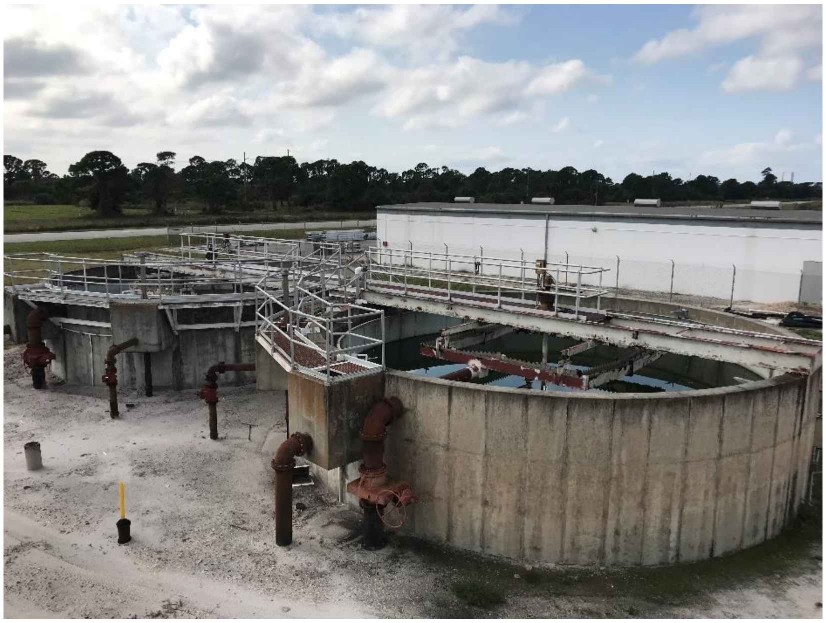
PHOTO 5	
DATE: 12/09/2021	
DIRECTION: North	
TAKEN BY: S. Damphousse	
DESCRIPTION: View of sewage treatment plant on left and aerated surge tank on right	
PHOTO 6	
DATE: 12/09/2021	
DIRECTION: North	
TAKEN BY: S. Damphousse	
DESCRIPTION: View from top of sewage treatment plant	

Photographic Log

Sewage Treatment Plant #1 – LOC 20

NASA PFAS Assessments

Kennedy Space Center, Florida

PHOTO 7 **DATE:** 12/09/2021 **DIRECTION:** Southwest **TAKEN BY:** S. Damphousse **DESCRIPTION:** View from top of sewage treatment plant	
PHOTO 8 **DATE:** 12/09/2021 **DIRECTION:** Southwest **TAKEN BY:** S. Damphousse **DESCRIPTION:** View from top of sewage treatment plant looking down at clarifiers	

Photographic Log
Sewage Treatment Plant #1 – LOC 20
NASA PFAS Assessments
Kennedy Space Center, Florida

PHOTO 9

DATE:
12/09/2021

DIRECTION:
Southwest

TAKEN BY:
S. Damphousse

DESCRIPTION:
View of north side of sewage treatment plant

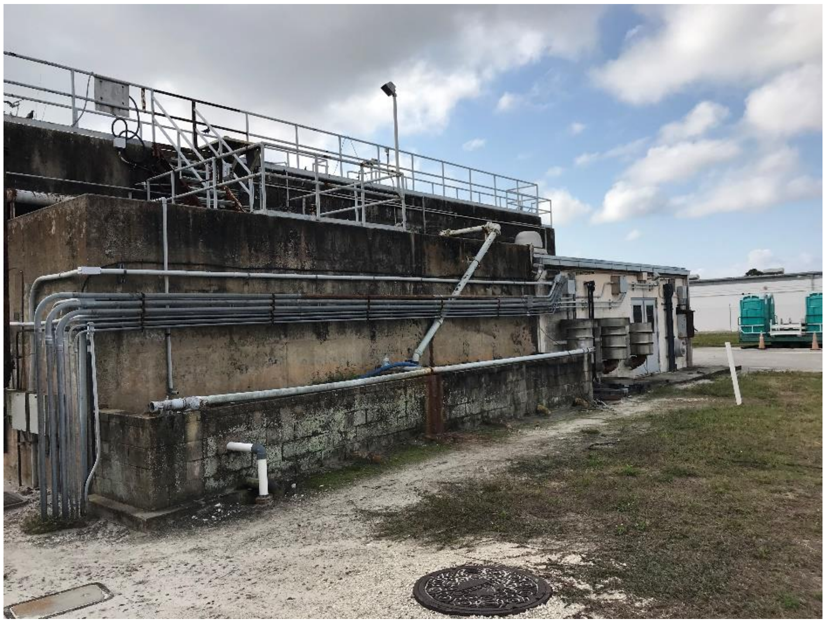


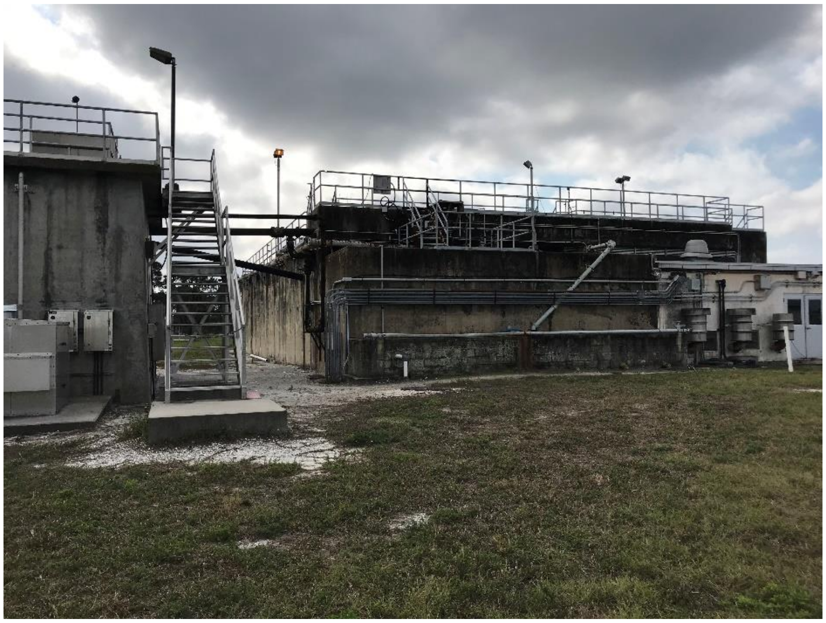
PHOTO 10

DATE:
12/09/2021

DIRECTION:
South

TAKEN BY:
S. Damphousse

DESCRIPTION:
View of southeast corner of north side of sewage treatment plant on right and aerated surge tank on left



Photographic Log
Sewage Treatment Plant #1 – LOC 20
NASA PFAS Assessments
Kennedy Space Center, Florida

PHOTO 11

DATE:
12/09/2021

DIRECTION:
South

TAKEN BY:
S. Damphousse

DESCRIPTION:
View of the north side of the aerated surge tank

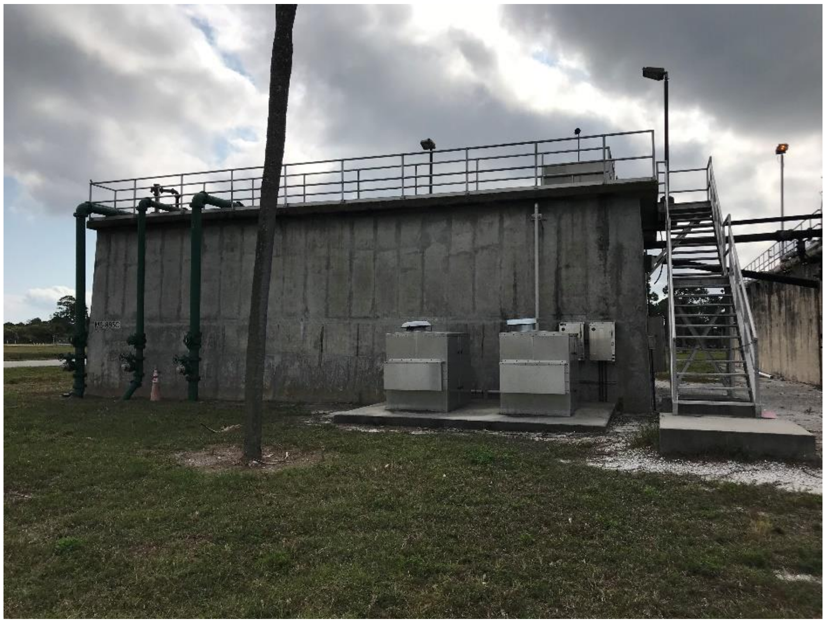


PHOTO 12

DATE:
12/09/2021

DIRECTION:
East

TAKEN BY:
S. Damphousse

DESCRIPTION:
View from top of aerated surge tank

Photographic Log

Sewage Treatment Plant #1 – LOC 20

NASA PFAS Assessments

Kennedy Space Center, Florida

PHOTO 13

DATE:
March 2022

DIRECTION:
South

TAKEN BY:
C. Sorden

DESCRIPTION:
Surface water sampling in ditch using pole to place tubing in water

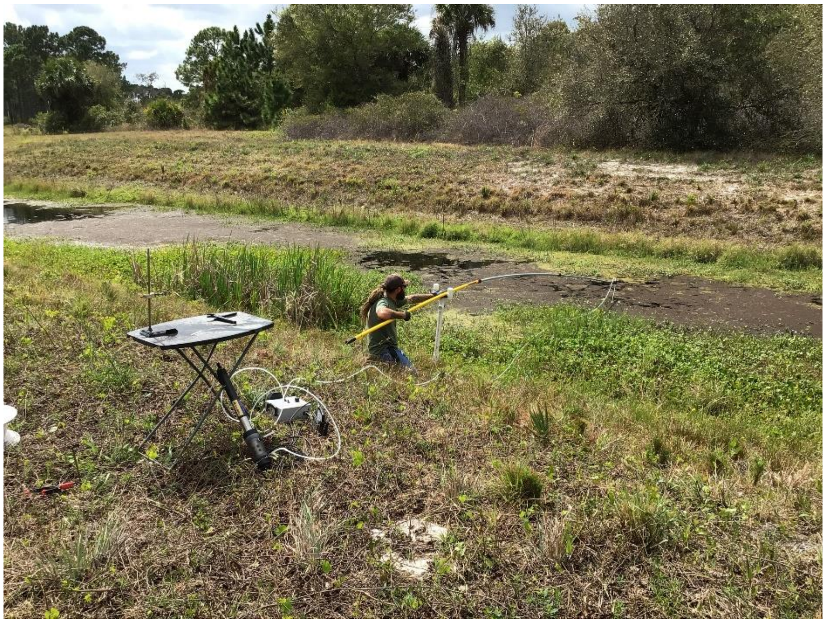


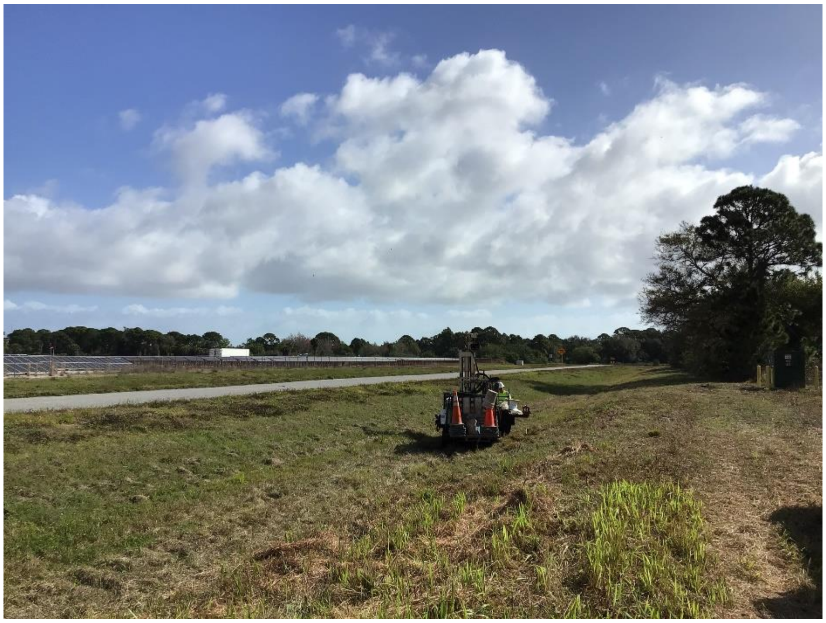
PHOTO 14

DATE:
March 2021

DIRECTION:
East

TAKEN BY:
C. Sorden

DESCRIPTION:
DPT sampling along 5th Street SE



APPENDIX E

KSCRT MEETING MINUTES AND ACTION ITEM – OCTOBER 2022

Revision 0 Meeting Minutes for October 5th and 6th, 2022

Attendees:

1. Bruce Moore/FDEP
2. Mike Deliz/NASA
3. Ryan O’Meara/NASA
4. Deda Johansen/NASA
5. Anne Chrest/NASA
6. Natasha Darre/NASA
7. Chris Adkison/NASA
8. Tim Appleman/NASA
9. Michelle Moore/NEMCON
10. Mark Jonnet/Tetra Tech
11. Alex Murphy/Tetra Tech
12. Chris Pike/ Tetra Tech
13. Mark Speranza/Tetra Tech
14. Andrew Walters/Tetra Tech
15. Jennifer Gootee/AECOM
16. Linnea King Clark/AECOM
17. Richard Smith/HGL
18. Howard Fowler/HGL
19. James (Jim) Montague/HGL

2210-M01 Bruce Moore/FDEP

Program Update

Discussion: The #1 issue at the Florida Department of Environmental Protection (FDEP) is the staffing situation. There are fourteen positions in the federal facilities program currently available. Some hires are imminent. Environmental Administrator Laura Barrett resigned. The goal is to fill the Environmental Administrator position by the end of October. Billy Hessman joined in May as a professional geologist (PG) II position. A variety of positions are open and need to be filled. If there is an urgent matter, please call Bruce directly and he can talk in the moment about it. The routine review process may take a while.

NASA inquired if funding was the issue or just not enough people were applying. FDEP stated it has been hard to attract and retain staff. FDEP is still using the three contractors for outside review and will lean heavily on them in the short term.

samples will be collected from drainage ditches. Additional DPT groundwater samples will be collected, and more monitoring wells installed and sampled.

NASA is preparing to notify nearby residents of potential off-site migration. Information sessions are being planned for early 2023. discussed the process for getting authorization for possible sampling on neighboring property. FDEP asked whether NASA has reached out to the Department of Health yet? NASA has not. FDEP will initiate contact at the State level.

2210-M08 Mark Jonnet/ Tetra Tech

Fire Station #1 (SWMU #116), Sewage Treatment Plant #1 and Sludge Disposal Area (SWMU #117) PFAS Sites Assessment Update

Objective:

Present results to date for per- and polyfluorinated alkyl substances (PFAS) soil evaluation, soil cores, PFAS sediment evaluation, PFAS groundwater evaluation, PFAS surface water evaluation and path forward.

Discussion:

Fire Station #1(FS1) was constructed in 1964, housed crews and served as a maintenance and storage location for spent or expired fire extinguishers. It was formerly known as Fire Station #4. The Sewage Treatment Plant #1 (STP1) encompasses approximately 40 acres and includes STP1, Former Polishing Pond, Former Sludge Disposal Area, Former Spray Field, and the Paint and Oil Locker (POL) SWMU 067.

Tetra Tech presented the PFAS sampling results to date of the Fire Station #1, STP #1 and Sludge Disposal Area sites. Data for the Base Support Building (SWMU #014) was included since the PFAS plumes appear to be commingled.

Data generated by Site Assessment activities to date and prior results were screened against EPA's May 2022 tap water Regional Screening Levels (RSLs) for groundwater, resident RSL for soil, and against the State of Florida human health Surface Water Screening Levels for surface water. There are currently no screening criteria for sediment. RSLs are available for 6 PFAS compounds: perfluorooctanoic acid (PFOA), perfluorooctane sulfonic acid (PFOS), perfluoronanoic acid (PFNA), perfluorobutanesulfonic acid (PFBS), perfluorohexane sulfonic acid (PFHxS) and hexafluoropropylene oxide dimer acid (HFPO-DA; trade name GenX).

Data summaries include all samples collected to date in the area of FS1 and STP1. Samples collected prior to 12/2021 were collected by others. Field activities were performed in accordance with FDEP Standard Operating Procedures, PFAS sampling guidelines (Michigan Department of Environmental Quality) and the KSC Sampling and Analysis Plan. Global Positioning System coordinates were collected for each sample location. Quality assurance/quality control samples were collected due to the ubiquitous nature of PFAS. Pace Analytical Services analyzed PFAS samples and reported 28 PFAS compounds.

Shallow soil samples (0-0.5 and 0.5-2 feet below land surface [ft. bls]) were collected at five locations at FS1 and nine STP1/Sludge Disposal locations. Results exceeded the residential PFOS RSL in 6 of the 28 samples. Deeper soil samples were collected from one soil boring each at FS1 and STP1. Two intervals at FS1 had PFOS detections exceeding the residential RSL. Results from the STP1 boring were less than the residential RSL. There are no soil results with a PFAS result greater than the commercial RSL. The lithologic descriptions from the soil cores were used in selection of depth intervals for direct push technology (DPT) groundwater sampling.

Sediment samples were collected from nine locations at STP1/ Sludge Disposal Area and one location in the Region 1 (Industrial Area) Stormwater Pond (also called the Gator Pond). There were detections of PFOS in seven of the ten samples, and one detection of PFHxS. There are currently no State or Federal screening criteria for sediment.

For FS1, of the 126 groundwater samples from varying depths, 44 detected results were greater than the PFOA RSL, 60 detected results exceeded the PFOS RSL, 17 detected results exceeded the PFNA RSL, 13 detected results exceeded the PFBS RSL, and 38 detected results exceeded the PFHxS RSL. Seventy-six samples were analyzed for HFPO-DA and there were no detections.

For STP1/Sludge Disposal Area, of the 218 groundwater samples from varying depths, 115 detected results exceeded the PFOA RSL, 122 detected results exceeded the PFOS RSL, 41 detected results exceeded the PFNA RSL, 2 detected results exceeded the PFBS RSL, and 86 detected results exceeded the PFHxS RSL. One hundred seventy-six samples were analyzed for HFPO-DA and there were no detections.

Twenty-four surface water samples were collected from stormwater ditches around FS1, STP1 and the Sludge Disposal Area. A sample was collected at the northwest corner of the Gator Pond in both August 2021 and March 2022. PFOA, PFOS and PFHxS were detected in all 26 samples, PFBS was detected in 24 samples, and PFNA in 18 samples. HFPO-DA was analyzed in 19 samples and detected in none. The State of Florida has surface water screening levels (SWSLs) for PFOA and PFOS. One PFOA sample result exceeded its SWSL (500 ng/L) and 24 PFOS results exceeded its SWSL (10 ng/L). The two results for the Gator Pond did not indicate a significant seasonal difference.

The Site Assessment for FS1 and STP1 will continue in phases. The upcoming phase emphasizes understanding groundwater and surface water interaction, as well as the extent of PFAS-affected groundwater. Potential human health risk by exposure to PFAS-affected soil is being managed by interim Land Use Control Implementation Plans (LUCIPs).

To show the correlation between proposed groundwater and surface water sampling locations, the image on Slide 34 displays PFOS groundwater sample locations less than 10 ft bls compared to PFOS RSL and surface water PFOS results compared to PFOS SWSL. The Team will continue plume delineation using DPT groundwater sampling based on RSLs. Monitoring wells will be installed adjacent to surface water locations with staff gauges. The co-located wells and surface water points will be sampled periodically. Groundwater level measurements and staff gauges will be read, and data evaluated to determine discharge from groundwater to surface water or from surface water to groundwater.

The image on Slide 35 displays surface water PFOS results. Future sampling will be focused on the flow path for Region 1 stormwater to discharge to the Banana River Lagoon and nearby points in the lagoon. Sample locations will include influent into the Gator Pond, effluent from the Gator Pond, associated borrow pits that are part of the stormwater management system, tributaries into Buck Creek, locations within Buck Creek, junction of Buck Creek and Banana River Lagoon with offsets north and south, isolated borrow pits northeast of Gator Pond to determine impacts, and four locations along Banana River Lagoon that will correspond to DPT locations on the shore.

Tetra Tech will email FDEP the drawing showing the proposed monitoring well locations **(2210-A06).**

Results: Action Item 2210-A06

DAY 2

2210-M09 Michelle Moore/NEMCON

Meeting Minutes and Miscellaneous Items

Team consensus was reached that Revision 1 of the meeting minutes and action/decision items for the September 2022 Team meeting will become final. Team members acknowledged and did not object to the fact that these meeting minutes may become public as part of a final report at a later date **(2210-D12).**

Open action items were reviewed and closed at the October 2022 KSCRT meeting:

Launch Complex 39B (LC39B) (SWMU 009) - Revisit Team consensus (Decision 1810-D13) on weir installation based on permits date expiration and Year 2 performance monitoring results. Team consensus had been reached to suspend the weir installation since chlorinated volatile organic compound (CVOC) concentrations adjacent to the pond were below their respective groundwater cleanup target levels (GCTLs) and to re-evaluate the need for the weir prior to expiration of permits from the St. Johns River Water Management District (SJRWMD) and U.S. Army Corps of Engineers (USACE)on 11 July 2023.

KSCRT Status of Open Action Items

Action Item No.	Minutes Reference	Responsible Team Member	Action item	Status
2210-A06	2210-M08	NASA	**Fire Station #1 (SWMU #116), Sewage Treatment Plant #1 and Sludge Disposal Area (SWMU #117) PFAS Sites Assessment Update:** The image on Slide 35 displays surface water PFOS results. Future sampling will be focused on influent into the Gator Pond, effluent from the gator pond, associated borrow pits that are part of the stormwater management system, tributaries into Buck Creek, locations within Buck Creek, junction of Buck Creek and Banana River with offsets north and south, isolated borrow pits northeast of gator pond to determine impacts, and four locations along Banana River that will correspond to DPT locations. Tetra Tech will email FDEP the locations of the proposed monitoring well locations.	Open