June 24, 2022

Mr. Stanley Radon, CPG
New York State Dept. of Environmental Conservation
Division of Solid and Hazardous Materials, Region 9
270 Michigan Avenue
Buffalo, New York 14203-2999

Re: Supplemental Groundwater Investigation Summary Report for Operable Unit No. 4 (OU-4)
Tecumseh Redevelopment Site #915009 – Lackawanna, NY

Dear Mr. Radon:

On behalf of Tecumseh Redevelopment, Inc., TurnKey Environmental Restoration, LLC (TurnKey) in association with Benchmark Civil/Environmental Engineering & Geology, PLLC (Benchmark) has prepared this Supplemental Groundwater Investigation Summary Report for the former Coke Plant By-Products Sub-Area of the Lackawanna, New York site.

BACKGROUND

Tecumseh and the New York State Department of Environmental Conservation (NYSDEC) executed an Order on Consent (File No. 16-55) on September 19, 2017, to implement the final groundwater remedy for OU-4 consistent with the March 31, 2017, Statement of Basis issued by the NYSDEC as well as the August 2016 Benchmark/TurnKey Engineering Report entitled "Evaluation of Groundwater Corrective Measures- Operable Unit 4". The final groundwater OU-4 remedy consists of two independent groundwater collection, conveyance, and treatment systems. The south system initially consisted of groundwater collection wells and treatment units including an oil/water separator, bag filtration, chemical feed, low-profile air stripper, flow meter with totalizer and PLC monitoring and control system. The north system consists of groundwater collection wells and treatment units including bag filtration, chemical feed, low-profile air stripper, granular activated carbon (GAC) filtration, flow meter with totalizer and PLC monitoring and control system. The treatment units are housed in a single building. Subsequent to treatment system modifications completed in July 2021, the partially treated combined effluents from both the north and south system flow through the north treatment system GAC to an infiltration gallery to recharge site groundwater.

The initial construction of OU-4 groundwater remediation facilities was substantially completed and began operation in March 2019. As required in the (April 2020) Operation, Maintenance and Monitoring (OM&M) Plan, the *2020 Annual Summary Report for OU-4 and Benzol Yard Area Source Control ICM* was initially submitted to NYSDEC in June 2020 documenting remedial systems performance during the first year of operation. There were several rounds of comments and revisions culminating the Revised 2020 Annual Report (October 2020) that was approved by the NYSDEC in November 2020. The NYSDEC final approval letter called for a *Supplemental Work Plan* which was submitted to and approved by the NYSDEC in November 2020. A Summary Report for the Supplemental Work Plan dated February 2021recommended the installation of five new recovery wells, installation of two wells that could become recovery wells, and modifying the

south treatment system so that its effluent goes through the existing north system granular activated carbon (GAC) filters before discharge to the infiltration gallery. The recommended modifications were approved by NYSDEC and completed in August 2021. The groundwater sampling results from the two wells installed adjacent to OU4PZ-6 were submitted to the NYSDEC in a September email that proposed these two wells also be converted to recovery wells that pump to the treatment system. Based upon the groundwater results from the newly installed wells the NYSDEC requested an additional supplemental work plan in an October 25, 2021 letter. A Supplemental Work Plan that recommended the installation of three wells that could become recovery wells was submitted to the NYSDEC on December 22, 2021 and approved by the NYSDEC with modified well locations on February 24, 2022.

INVESTIGATION FINDINGS

On June 8, 2022, SJB Services, Inc (drilling subcontractor) began the installation of three additional wells. A photo log documenting the field activities is provided in Attachment 1. Each boring/well was given a temporary name until given a final named based on the investigation findings and intended use going forward. The temporary names given to the boring/well to the east was B-1, with the middle location B-2, and the west location B-3 (Figure 1). The new wells were constructed using 8-1/4-inch hollow stem augers to allow construction of 6-inch diameter schedule 80 PVC wells. Each well was constructed with 5-foot-long screens installed beginning 2 feet above the bottom of the well. Well installation logs are provided in Attachment 2. A Community Air Monitor was setup and operated during all intrusive work; there were no exceedances observed and the data is provided in Attachment 3. Following the well installations, each well was developed to remove sediment in the sand pack around the well screen to improve the hydraulic connection between the well and water bearing zone. An air lift was used during well development to remove water and sediment from the well. The air lift was run for a minimum of 16 minutes removing at least 4 well volumes. Water removed from each well during development, was pumped into a portable poly tank, and then transferred to the OU-4 south treatment system for treatment. Well development was completed on June 14, 2022. Groundwater from all three wells was sampled for CP-51 list VOCs (including naphthalene), phenolic compounds, as well as the list of 21 PFAS compounds on June 15, 2022.

The groundwater analytical results are summarized in Table1 with their associated concentration and NYSDEC Groundwater Quality Standard (NYSDEC TOGS 1.1.1, Ambient Water Quality Standards and Guidance Values, June 1998) for comparison. Guidance Values are presented where Standards have not been established for a specific compound. Concentrations exceeding NYSDEC Groundwater Quality Standards/Guidance Values (GWQS/GV) are shaded. Generally, the groundwater concentrations at the new wells exceed GWQS/GV for BTEX compounds, phenolic compounds, and naphthalene. The laboratory analytical data is provided in Appendix 4. Significant groundwater impacts were observed at the three new well locations.

RECOMMENDATIONS

We recommend connecting these new wells to the treatment system. Based in this recommendation we have renamed B-1 as RWN-30, B-2 as RWN-31, and B-3 as RWN-32. We further recommend additional wells be installed further to the north as depicted on Figure 1 as proposed wells. These proposed monitoring wells will be constructed like recovery wells but will not be fitted with pumps and controls nor connected to the existing groundwater collection at this time. The groundwater

from these wells will be sampled for CP-51 list VOCs (including naphthalene), phenolic compounds, as well as the list of 21 PFAS compounds. The groundwater results will be summarized in a report with recommendations for addition actions including weather to connect any of these wells to the treatment system.

We request to wait to connect the recovery wells until we have found the limits of the impacted groundwater and all recovery wells are installed. Adding wells to the existing system requires balancing the electrical load which can only be done properly after we know how many wells need to be added and where they are located. Delaying the connection will also facilitate appropriate conveyance pipe routing and sizing.

SCHEDULE

We intend on completing the installation and sampling of the four proposed additional wells including submittal of the summary report within 120 days of the NYSDEC's approval of this Supplemental Work Plan. If significant delays are encountered, we will notify the NYSDEC and modify this schedule.

Please contact us if you have any questions or require additional information.

Sincerely,
TurnKey Environmental Restoration, LLC

Brock Greene
Project Environmental Scientist

EC	S. Moeller	A. Zwack	B. Rung	S. Bogardus
	K. Nagel	P. Werthman	L. Riker	T. Forbes

TABLES

TABLE 1

GROUNDWATER ANALYTICAL SUMMARY

OU4 REPORT
Tecumseh Redevelopment Inc.
Lackawann, New York

PARAMETER [1]	GWQS/GV [2]	Units	Monitoring Well Location and Sample Date		
			B-1/RWN-30 — Slag/Fill	B-2/RWN-31 — Slag/Fill	B-3/RWN-32 — Slag/Fill
			Jun-2022	Jun-2022	Jun-2022
VOCs (Method 8260B) - ug/L					
1,2,4-Trimethylbenzene	**5**	**ug/l**	**80 DJ**	ND	**92 DJ**
Benzene	**1**	**ug/l**	**1100 D**	**2700 D**	**4500 D**
Ethylbenzene	**5**	**ug/l**	**110 DJ**	ND	ND
Toluene	**5**	**ug/l**	ND	**1200 D**	**440 D**
Xylenes, Total	**5**	**ug/l**	**120 D**	**610 DJ**	**360 DJ**
TOTAL BTEX	**NA**	**ug/l**	**1330 DJ**	**3310 DJ**	**4860 DJ**
SVOCs (Method 8270D) - ug/L					
2,4-Dimethylphenol	**See Note 4**	**ug/l**	59	1200 D	33000 D
2-Methylphenol	**See Note 4**	**ug/l**	28	1500 D	32000 D
3,4 -Methylphenol (m,p-Cresol)	**See Note 4**	**ug/l**	31	3500 D	81000 D
Naphthalene	**10**	**ug/l**	**3000 D**	**12000 D**	**78000 D**
Phenol	**See Note 4**	**ug/l**	16	2000 D	49000 D
Total Phenolic Compounds - ug/L					
Phenolic compounds (total phenols) [3,5]	**1**	**ug/l**	**3134 D**	**20200 D**	**273000 D**
Perfluorinated Alkyl Acids (Modified 537) - ng/L					
Perfluorobutanoic Acid (PFBA)	**-**	-	16.7	26.8	47.2
Perfluoropentanoic Acid (PFPeA)	**-**	-	9.36	14.9	56
Perfluorobutanesulfonic Acid (PFBS)	**-**	-	ND	ND	ND
Perfluorohexanoic Acid (PFHxA)	**-**	-	2.06 F	2.84	4.54
Perfluoroheptanoic Acid (PFHpA)	**-**	-	2.56	2.64	4.92
Perfluorohexanesulfonic Acid (PFHxS)	**-**	-	ND	ND	ND
Perfluorooctanoic Acid (PFOA)	**10**	**ng/L**	7.18	7.53	**31.5**
Perfluorononanoic Acid (PFNA)	**-**	-	0.766 J	0.633 J	1 J
Perfluorooctanesulfonic Acid (PFOS)	**10**	**ng/L**	5.1	6.94 F	7.01
Perfluorodecanoic Acid (PFDA)	**-**	-	ND	ND	0.542 J
PFOA/PFOS, Total	**70**	**ng/L**	12.28	14.47	38.51
PFAS, Total	**500**	**ng/L**	56.006	76.753	191.222
Field Measurements					
Dissolved Oxygen (mg/L)	**-**	**MG/L**	0.7	0.43	1.33
Field pH (S.U.)	**12.50**	**S.U**	7.67	7.70	9.28
Redox Potential (mV)	**-**	**mV**	-199	-228	-75
Specific Conductance (umhos/cm)	**-**	**UMHOS/CM**	1134	1634	1206
Temperature (deg C)	**-**	**DEG C**	15.6	14.4	16.2
Turbidity (NTU)	**-**	**NTU**	23.3	20.5	82.4

Notes:

1. Only those compounds detected above the method detection limit at a minimum of one sample location are reported in this table.
2. Groundwater Quality Standards/Guidance Values (GWQS/GV) as per Divison of Water Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations - Class GA (TOGS 1.1.1)
3. Phenolic compounds analyzed using EPA Method 8270D, "Semivolatile Organic Copounds by Gas Chromatography/Mass Spectometry (GC/MS)."
4. Refer to GWQS/GV for "Phenolic compounds (total phenols)."
5. GWQS/GV for Phenolic compounds (total phenols) applies to sum of these substances.

Definitions:

SVOCs =Semivolatile Organic Compounds
VOCs = Volatile Organic Compounds
- = Parameter was not analyzed for.
D = Concentration of analyte was quantified from diluted analysis.
F = The ratio of quantifier ion response to quantifier ion falls outside laboratory criteria. Results should be considered an estimated maximum concentration.
J = Estimated value.
ND = Not detected at the method detection limit.

Color Code:

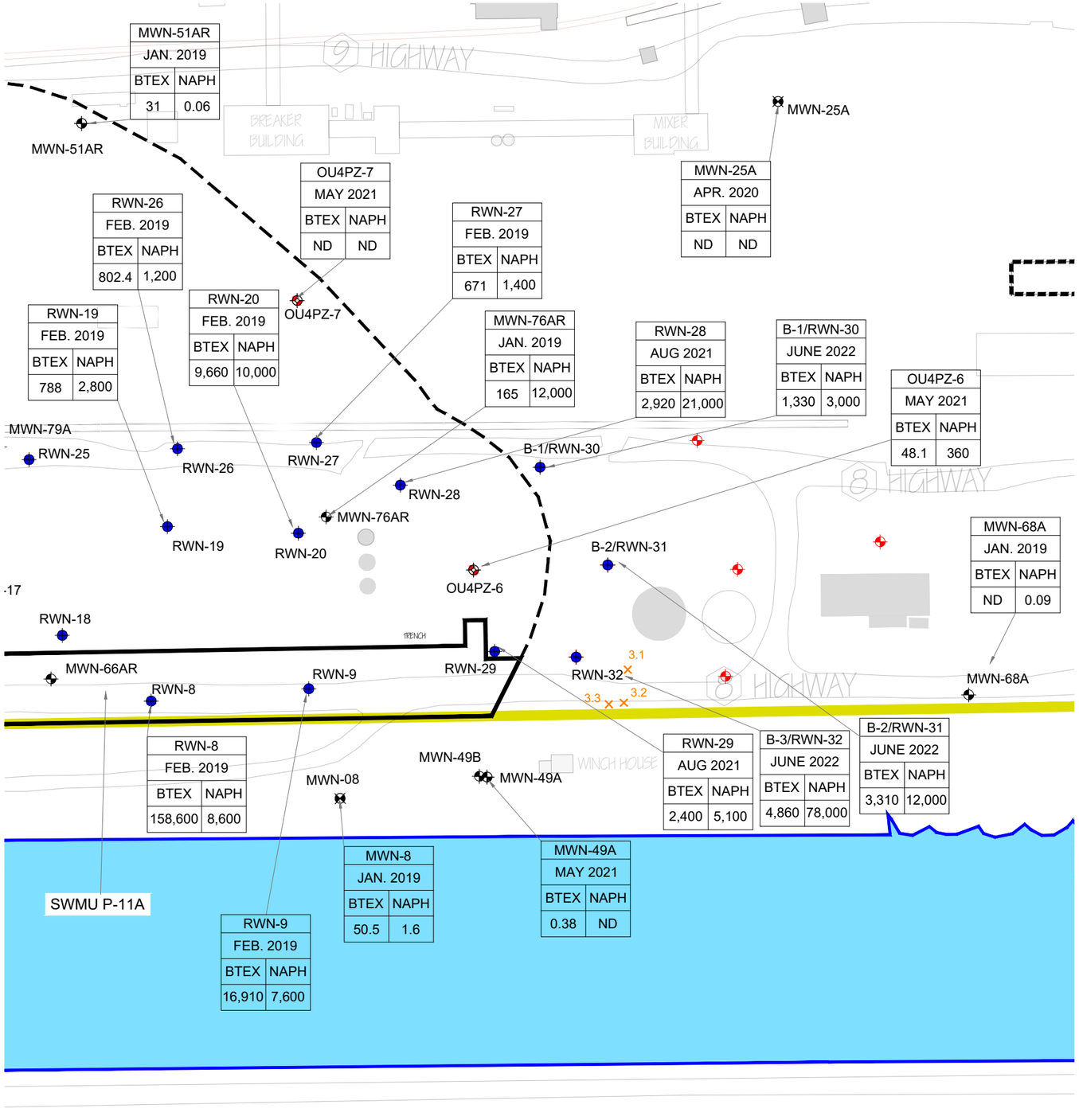
	= concentration is less than or equal to the GWQS/GV (includes non-detect)
Bold	= concentration exceeds the GWQS/GV, but is less than 10 times the GWQS/GV
Bold	= concentration exceeds 10 times the GWQS/GV, but is less than 100 times the GWQS/GV
Bold	= concentration exceeds 100 times the GWQS/GV
Bold	= pH exceeds 12.5

FIGURES

LEGEND:

- EXISTING STRUCTURE
- OU-4 BOUNDARY
- SWMU BOUNDARY ONLY P-11 AND P-11A SHOWN
- RWS-2 — GROUNDWATER RECOVERY WELL
- MWN-73A — GROUNDWATER MONITORING WELL
- RWN-20 / FEB. 2019 / 9,660 | 10,000 — WELL NUMBER; GROUNDWATER COLLECTION DATE; NAPHTHALENE CONCENTRATION; BTEX CONCENTRATION
- OU4PZ-1 — CMS - OU-4 PIEZOMETER
- PROPOSED NEW WELLS
- 3.1 × — ATTEMPTED BORING/MONITORING WELL LOCATION

NOTES:
1. CONCENTRATIONS IN PARTS PER BILLION (MICROGRAMS PER LITER).
2. BTEX=SUM OF BENZENE, TOLUENE, ETHYLBENZENE AND TOTAL XYLENES.



N

100' 0' 100' 200'

SCALE: 1 INCH = 100 FEET
SCALE IN FEET
(approximate)

DATE: JUNE 2022
DRAFTED BY: CMC

TurnKey Environmental Restoration, LLC
In Association With
Benchmark
2558 HAMBURG TURNPIKE, SUITE 300, BUFFALO, NY 14218,
(716) 856-0599

JOB NO.: T0071-021-912

OU-4 BORING/WELL LOCATIONS

SUPPLEMENTAL GROUNDWATER INVESTIGATION SUMMARY REPORT
FORMER BETHLEHEM STEEL SITE
LACKAWANNA, NEW YORK
PREPARED FOR
TECUMSEH REDEVELOPMENT INC.

FIGURE 1

ATTACHMENT 1

PHOTO LOG

PHOTOGRAPHIC LOG

Client Name:	Site Location:	Project No.:
Tecumseh Redevelopment Inc.	Tecumseh Site (OU-4) - Lackawanna, NY	0071-022-911

Photo No.	Date
1	06/08/22

Direction Photo Taken:
West Northwest

Description:
Setting up the drill rig at B-1/RWN-30 looking west northwest.

Photo No.	Date
2	06/08/22

Direction Photo Taken:
Southwest

Description:
Split spoon collected from 15-17' at B-1/RWN-30.

Prepared By: BMG

PHOTOGRAPHIC LOG

Client Name:	Site Location:	Project No.:
Tecumseh Redevelopment Inc.	Tecumseh Site (OU-4) - Lackawanna, NY	0071-022-911

Photo No.	Date
3	06/08/22

Direction Photo Taken:
Northeast

Description:
Drill rig set up at B-2/RWN-31 looking northeast.

Photo No.	Date
4	06/08/22

Direction Photo Taken:
East

Description:
Split spoon collected from 11-13' at B-2/RWN-31.

Prepared By: *BMG*

PHOTOGRAPHIC LOG

Client Name:	Site Location:	Project No.:
Tecumseh Redevelopment Inc.	Tecumseh Site (OU-4) - Lackawanna, NY	0071-022-911

Photo No.	Date
5	06/09/22

Direction Photo Taken:
West

Description:
Drill rig set up at B-3/RWN-32 looking west.

Photo No.	Date
6	06/09/22

Direction Photo Taken:
East South East

Description:
Top Split spoon collected from 11-13' at B-3/RWN-32. Bottom split spoon collected from 9-11'.

Prepared By: *BMG*

PHOTOGRAPHIC LOG

Client Name:	Site Location:	Project No.:
Tecumseh Redevelopment Inc.	Tecumseh Site (OU-4) - Lackawanna, NY	0071-022-911

Photo No.	Date
7	06/10/22

Direction Photo Taken:
South

Description:
Typical PVC well construction showing 2-foot sump below a 5-foot screened section.

Photo No.	Date
8	06/14/22

Direction Photo Taken:
Northwest

Description:
Well development activities using an air lift.

Prepared By: *BMG*

ATTACHMENT 2

WELL INSTALLATION LOGS

BOREHOLE/WELL INSTALLATION LOG

Project Name:	Operable Unit 4 (OU-4)	**LOCATION I.D.:**	**B-1/RWN-30**
Project Number:	T0071-022-911	**Well Type:**	☑ Stick-up ☐ Flush-mount
Client:	Tecumseh Redevelopment	**Start Date:**	06/08/22
Drilling Company:	SJB Drilling, Inc.	**End Date:**	06/08/22
Driller:	Randy	**Logged By:**	BMG
Helper:	Matt	**Drilling Method:**	Hollow Stem Auger
Rig Type:	CME-Truck Mounted	**Sampling Method:**	Split spoon (2')

Elevation (fmsl)	Depth (fbgs)	Sample No.	Recovery (feet)	SAMPLE DESCRIPTION (Visual-Manual Method) Color, Moisture Condition, Primary Soil Type, Secondary Soil Type (<5% Trace, 5-10% Few, 15-25% Little, 30-45% Some), Structure (varved, stratified, thinly bedded, bedded, thickly bedded, laminated, fissured, blocky, lensed, massive), Consistency/Density (Standard Penetration Test, SPT), Weathering/Fracturing, Odor, Fill Materials (if present), Other	PID Scan (ppm)	Blow Counts	Well Construction Details
582	0			0.0 - 8' Black, moist, sand (medium) and slag, loose when distrurbed	NA	NA	SOIL CUTTINGS (7-0')
580	2						RISER (11-0')
578	4						
576	6	S1	0.9		63.0	4,8, 6,6	
574	8	S2	0.9	8.0-9.0' Brown, moist, peat with wood remnants and few low plastic fines	4.5	6,2, 1,4	SEAL
572	10	S3	0.5	9.0-10.0' Dark brown, wet, sand (large) and rounded gravel, loose, no odor 10.0 - 11.0' Brownish gray, moist, lean clay with little fine sand and little low plastic fines, no odor	0.0	1,1 1,1,	SAND PACK (18-9')
570	12	S4	1.3	11.0-15.75' Dark brown, wet, sand (large) and rounded gravel, loose, no odor	6.5	2,2 3,3	SCREEN (16-11')
568	14	S5	0.0		NA	1,2, 2,3	
566	16	S6	1.3	15.75-16.75' Brown, moist, peat with wood remnants and little low plastic fines, no odor	17.0 54.0	1,2, 2,1	Sump (18-16'
564	18	S7	1.6	16.75-18.7' Brown, moist, lean clay, low plastic fines with few fine sand, no odor 18.7-19.0' Brown, moist, peat with wood remnants and little low plastic fines, no odor	54.0	WH/12 2,2	9-7'
562	20			End of Boring at 19.0 fbgs			

BOREHOLE/WELL INSTALLATION LOG

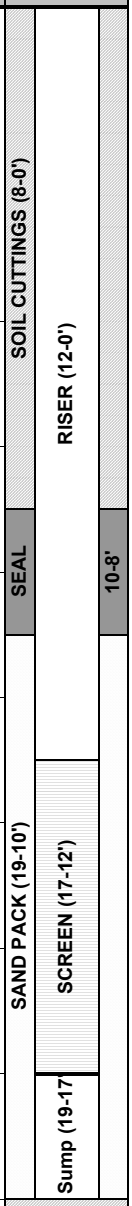
Project Name:	Operable Unit 4 (OU-4)	**LOCATION I.D.:**	**B-2/RWN-31**
Project Number:	T0071-022-911	**Well Type:**	☑ Stick-up ☐ Flush-mount
Client:	Tecumseh Redevelopment	**Start Date:**	06/08/22
Drilling Company:	SJB Drilling, Inc.	**End Date:**	06/09/22
Driller:	Randy	**Logged By:**	BMG
Helper:	Matt	**Drilling Method:**	Hollow Stem Auger
Rig Type:	CME-Truck Mounted	**Sampling Method:**	Split spoon (2')

Elevation (fmsl)	Depth (fbgs)	Sample No.	Recovery (feet)	SAMPLE DESCRIPTION (Visual-Manual Method) Color, Moisture Condition, Primary Soil Type, Secondary Soil Type (<5% Trace, 5-10% Few, 15-25% Little, 30-45% Some), Structure (varved, stratified, thinly bedded, bedded, thickly bedded, laminated, fissured, blocky, lensed, massive), Consistency/Density (Standard Penetration Test, SPT), Weathering/Fracturing, Odor, Fill Materials (if present), Other	PID Scan (ppm)	Blow Counts	Well Construction Details
582.1	0			0.0 - 3' Black, moist, sand (medium) and slag, loose when distrurbed	NA	NA	SOIL CUTTINGS (7-0')
580.1	2						
				3.0-6.5' Brown, wet, sand (medium), loose, no odor			
578.1	4						
576.1	6	S1	1.1	6.5-6.7' Brown, wet, sand (medium) with some rounded gravel, loose, no odor	0.0	2,4, 6,8	
574.1	8	S2	1.5	7.0-7.5' Dark brown, moist, lean clay, low plastic fines with few fine sand and few sticks 7.5-11.0' Black, wet, sand (medium) and rounded gravel with few non-plastic fines, loose, no odor	2.5	4,4, 8,5	SEAL
572.1	10	S3	1.9		19.8	1,4, 10,10	SAND PACK (18-9')
570.1	12	S4	2.0	11.0-15.0' Same as above, slight odor	34.0	WH/12 3,7	RISER (11-0') / SCREEN (16-11')
568.1	14	S5	0.9		14.3	1,2, 1,2	
566.1	16	S6	1.8	15.0-15.7' Dark brown, moist, peat with wood remnants and little low plastic fines, slight odor 15.7-17.0' Dark brown, moist, lean clay, low plastic fines with trace fine sand	18.0 0.0	WH/12 1,2	Sump (18-16')
564.1	18	S7	1.8	17.0-17.8' Black, wet, sand (medium)with few non-plastic fines, loose 17.8-19.0' Dark brown, moist, peat with wood remnants and little low plastic fines, no odor	9.0	WH,1, 2,2	9-7'
562.1	20			End of Boring at 19.0 fbgs			

BOREHOLE/WELL INSTALLATION LOG

Project Name:	Operable Unit 4 (OU-4)	**LOCATION I.D.:**	**B-3/RWN-32**
Project Number:	T0071-022-911	**Well Type:**	☑ Stick-up ☐ Flush-mount
Client:	Tecumseh Redevelopment	**Start Date:**	06/09/22
Drilling Company:	SJB Drilling, Inc.	**End Date:**	06/10/22
Driller:	Randy	**Logged By:**	BMG
Helper:	Matt	**Drilling Method:**	Hollow Stem Auger
Rig Type:	CME-Truck Mounted	**Sampling Method:**	Split spoon (2')

Elevation (fmsl)	Depth (fbgs)	Sample No.	Recovery (feet)	SAMPLE DESCRIPTION (Visual-Manual Method)	PID Scan (ppm)	Blow Counts
583.2	0			0.0 - 5' Black, moist, Fill, coarse to fine sand with some angular slag and trace brick, loose when disturbed	NA	NA
581.2	2					
579.2	4					
577.2	6	S1	1.3	5.0-7.0' Black, wet, Fill, coarse to fine sand with some angular slag and trace brick, loose when disturbed, moderate odor	198.0	1,1 2,2
575.2	8	S2	1.6	7.0-9.0' Same as above with no brick	278.1	1,1, 2,3
573.2	10	S3	1.2	9.0-11.5' Same as above with more slag and sheen on water in split spoon	178.0	1,2, 4,7
571.2	12	S4	1.3	11.5-13.5' Black, wet, coarse to fine sand with little non-plastic fines, slight odor, sheen and tar like material enbedded in sample	195.0	1,2, 2,2
569.2	14	S5	1.0	13.5-15.0' Gray, wet, coarse to fine sand with some non-plastic fines, trace rounded gravel, loose, slight odor, no tar like material, no sheen in sample	136.0	WH/18 1
567.2	16	S6	0.8	15.0-15.5' Brown, moist, wood fragments with little sand and few gravel 15.5-16.8' Gray, wet, coarse to fine sand with some non-plastic fines, trace rounded gravel, loose, slight odor, no tar like material, no sheen in sample 16.8-17.0' Brown, moist, peat with wood remnants and few fine to medium sand	37.0	1,1, 1,1
565.2	18	S7	1.6	17.0-18.8' Gray, wet, coarse to fine sand with some non-plastic fines, trace rounded gravel, loose, slight odor, no tar like material, no sheen in sample 18.8-21.0' Brown, moist, peat with wood remnants and few fine to medium sand	30.6	WH/12 1,1
563.2	20	S8			44.3	
561.2	22			End of Boring at 21.0 fbgs		



ATTACHMENT 3

COMMUNITY AIR MONITORING DATA

Device	Thiamis-1000 0B052904	RAE RS232(A) 0	DustTrak RS232(C) 0B052904		
Timestamp (America/New_York)	Location	VOC (ppm)	Mass Conc. Total (mg/m³)	Mass Conc. Total (AVG 15m) (mg/m³)	VOC ppm AVG 15m (ppm)
6/8/2022 8:25			0.011	0.011	
6/8/2022 8:26		0	0.008	0.0095	0
6/8/2022 8:27		0	0.006	0.0083	0
6/8/2022 8:28		0	0.005	0.0075	0
6/8/2022 8:29		0	0.004	0.0068	0
6/8/2022 8:30	42.82663;-78.86042	0	0.004	0.0063	0
6/8/2022 8:31		0	0.003	0.0059	0
6/8/2022 8:32		0	0.002	0.0054	0
6/8/2022 8:33		0	0.002	0.005	0
6/8/2022 8:34		0.002	0.002	0.0047	0.0002
6/8/2022 8:35	42.82661;-78.8604	0	0.001	0.0044	0.0002
6/8/2022 8:36		0	0.001	0.0041	0.0002
6/8/2022 8:37		0	0.001	0.0038	0.0002
6/8/2022 8:38		0	0.001	0.0036	0.0002
6/8/2022 8:39		0	0	0.0034	0.0001
6/8/2022 8:40	42.82663;-78.8604	0	0	0.0027	0.0001
6/8/2022 8:41		0	0	0.0021	0.0001
6/8/2022 8:42		0	0	0.0017	0.0001
6/8/2022 8:43		0	0	0.0014	0.0001
6/8/2022 8:44		0	0	0.0011	0.0001
6/8/2022 8:45		0	0	0.0009	0.0001
6/8/2022 8:46		0	0	0.0007	0.0001
6/8/2022 8:47		0	0	0.0005	0.0001
6/8/2022 8:48		0	0	0.0004	0.0001
6/8/2022 8:49		0	0	0.0003	0
6/8/2022 8:50		0	0	0.0002	0
6/8/2022 8:51		0	0	0.0001	0
6/8/2022 8:52		0	0	0.0001	0
6/8/2022 8:53		0	0	0	0
6/8/2022 8:54		0	0	0	0
6/8/2022 8:55	42.82665;-78.86044	0	0	0	0
6/8/2022 8:56		0	0	0	0
6/8/2022 8:57		0.002	0	0	0.0001
6/8/2022 8:58		0	0	0	0.0001
6/8/2022 8:59		0	0	0	0.0001
6/8/2022 9:00	42.82662;-78.8604	0	0	0	0.0001
6/8/2022 9:01		0	0	0	0.0001
6/8/2022 9:02		0	0	0	0.0001
6/8/2022 9:03		0	0	0	0.0001
6/8/2022 9:04		0	0	0	0.0001
6/8/2022 9:05	42.82664;-78.86042	0	0	0	0.0001
6/8/2022 9:06		0	0	0	0.0001
6/8/2022 9:07		0	0	0	0.0001
6/8/2022 9:08		0	0	0	0.0001
6/8/2022 9:09		0	0	0	0.0001
6/8/2022 9:10	42.82666;-78.86044	0	0	0	0.0001
6/8/2022 9:11		0	0	0	0.0001
6/8/2022 9:12		0	0	0	0
6/8/2022 9:13		0	0	0	0
6/8/2022 9:14		0	0	0	0
6/8/2022 9:15	42.82665;-78.86044	0	0	0	0
6/8/2022 9:16		0	0	0	0
6/8/2022 9:17		0	0	0	0
6/8/2022 9:18		0	0	0	0
6/8/2022 9:19		0	0	0	0
6/8/2022 9:20	42.82665;-78.86044	0	0	0	0
6/8/2022 9:21		0	0	0	0
6/8/2022 9:22		0	0	0	0
6/8/2022 9:23		0	0	0	0
6/8/2022 9:24		0	0	0	0
6/8/2022 9:25	42.82666;-78.86042	0	0	0	0
6/8/2022 9:26		0	0	0	0
6/8/2022 9:27		0	0	0	0
6/8/2022 9:28		0	0	0	0
6/8/2022 9:29		0	0	0	0
6/8/2022 9:30	42.82668;-78.8604	0	0	0	0
6/8/2022 9:31		0	0	0	0
6/8/2022 9:32		0	0	0	0
6/8/2022 9:33		0	0	0	0
6/8/2022 9:34		0	0	0	0
6/8/2022 9:35	42.82668;-78.86042	0	0	0	0
6/8/2022 9:36		0	0	0	0
6/8/2022 9:37		0	0	0	0

6/8/2022 9:38		0	0	0	0
6/8/2022 9:39		0	0	0	0
6/8/2022 9:40	42.82666;-78.86044	0	0	0	0
6/8/2022 9:41		0	0	0	0
6/8/2022 9:42		0	0	0	0
6/8/2022 9:43		0	0	0	0
6/8/2022 9:44		0	0	0	0
6/8/2022 9:45	42.82665;-78.86044	0	0	0	0
6/8/2022 9:46		0	0	0	0
6/8/2022 9:47		0	0	0	0
6/8/2022 9:48		0	0	0	0
6/8/2022 9:49		0	0	0	0
6/8/2022 9:50	42.82666;-78.86044	0	0	0	0
6/8/2022 9:51		0	0	0	0
6/8/2022 9:52		0	0	0	0
6/8/2022 9:53		0	0	0	0
6/8/2022 9:54		0	0	0	0
6/8/2022 9:55	42.82669;-78.86044	0	0	0	0
6/8/2022 9:56		0	0	0	0
6/8/2022 9:57		0	0	0	0
6/8/2022 9:58		0	0	0	0
6/8/2022 9:59		0	0	0	0
6/8/2022 10:00	42.82671;-78.86042	0	0	0	0
6/8/2022 10:01		0.003	0	0	0.0002
6/8/2022 10:02		0	0	0	0.0002
6/8/2022 10:03		0.003	0	0	0.0004
6/8/2022 10:04		0	0	0	0.0004
6/8/2022 10:05	42.82671;-78.86042	0	0	0	0.0004
6/8/2022 10:06		0.001	0	0	0.0005
6/8/2022 10:07		0	0	0	0.0005
6/8/2022 10:08		0	0	0	0.0005
6/8/2022 10:09		0	0	0	0.0005
6/8/2022 10:10	42.82673;-78.86044	0	0	0	0.0005
6/8/2022 10:11		0	0	0	0.0005
6/8/2022 10:12		0	0	0	0.0005
6/8/2022 10:13		0	0	0	0.0005
6/8/2022 10:14		0	0	0	0.0005
6/8/2022 10:15	42.82673;-78.86047	0	0	0	0.0005
6/8/2022 10:16		0	0	0	0.0003
6/8/2022 10:17		0	0	0	0.0003
6/8/2022 10:18		0	0	0	0.0001
6/8/2022 10:19		0	0	0	0.0001
6/8/2022 10:20	42.82671;-78.86047	0	0	0	0.0001
6/8/2022 10:21		0	0	0	0
6/8/2022 10:22		0	0	0	0
6/8/2022 10:23		0	0	0	0
6/8/2022 10:24		0	0	0	0
6/8/2022 10:25	42.82671;-78.86047	0	0	0	0
6/8/2022 10:26		0	0	0	0
6/8/2022 10:27		0	0	0	0
6/8/2022 10:28		0	0	0	0
6/8/2022 10:29		0	0	0	0
6/8/2022 10:30	42.82673;-78.86048	0	0	0	0
6/8/2022 10:31		0.007	0	0	0.0005
6/8/2022 10:32		0	0	0	0.0005
6/8/2022 10:33		0.01	0	0	0.0011
6/8/2022 10:34		0.033	0	0	0.0033
6/8/2022 10:35	42.82671;-78.86047	0	0	0	0.0033
6/8/2022 10:36		0	0	0	0.0033
6/8/2022 10:37		0.018	0	0	0.0045
6/8/2022 10:38		0.007	0	0	0.005
6/8/2022 10:39		0	0	0	0.005
6/8/2022 10:40	42.82669;-78.86047	0.001	0	0	0.0051
6/8/2022 10:41			0.003	0.0002	
6/8/2022 10:42			0.008	0.0007	
6/8/2022 10:43			0.006	0.0011	
6/8/2022 10:44		0	0.004	0.0014	0.0063
6/8/2022 10:45	42.82668;-78.86047	0	0.004	0.0017	0.0063
6/8/2022 10:46		0	0.003	0.0019	0.0058
6/8/2022 10:47		0	0.002	0.002	0.0058
6/8/2022 10:48		0.003	0.002	0.0021	0.0052
6/8/2022 10:49		0	0.001	0.0022	0.0024
6/8/2022 10:50	42.82667;-78.86048	0	0.001	0.0023	0.0024
6/8/2022 10:51		0.022	0.001	0.0023	0.0042
6/8/2022 10:52		0	0.001	0.0024	0.0028

6/8/2022 10:53		0	0.001	0.0025	0.0022
6/8/2022 10:54		0	0	0.0025	0.0022
6/8/2022 10:55	42.82667;-78.86047	0	0	0.0025	0.0021
6/8/2022 10:56		0	0	0.0023	0.0019
6/8/2022 10:57		0	0	0.0017	0.0018
6/8/2022 10:58		0	0	0.0013	0.0017
6/8/2022 10:59		0	0	0.0011	0.0017
6/8/2022 11:00	42.82667;-78.86047	0.045	0	0.0008	0.0047
6/8/2022 11:01		0.007	0	0.0006	0.0051
6/8/2022 11:02		0.003	0	0.0005	0.0053
6/8/2022 11:03		0	0	0.0003	0.0051
6/8/2022 11:04		0.025	0	0.0003	0.0068
6/8/2022 11:05	42.82668;-78.86047	0	0	0.0002	0.0068
6/8/2022 11:06		0.001	0	0.0001	0.0054
6/8/2022 11:07		0	0	0.0001	0.0054
6/8/2022 11:08		0	0	0	0.0054
6/8/2022 11:09		0.001	0	0	0.0055
6/8/2022 11:10	42.82668;-78.86047	0.001	0	0	0.0055
6/8/2022 11:11		0	0	0	0.0055
6/8/2022 11:12		0	0	0	0.0055
6/8/2022 11:13		0	0	0	0.0055
6/8/2022 11:14		0	0	0	0.0055
6/8/2022 11:15	42.82667;-78.86047	0	0	0	0.0025
6/8/2022 11:16		0	0	0	0.0021
6/8/2022 11:17		0	0	0	0.0019
6/8/2022 11:18		0	0	0	0.0019
6/8/2022 11:19		0	0	0	0.0002
6/8/2022 11:20	42.82666;-78.86044	0	0	0	0.0002
6/8/2022 11:21		0	0	0	0.0001
6/8/2022 11:22		0	0	0	0.0001
6/8/2022 11:23		0	0	0	0.0001
6/8/2022 11:24		0	0	0	0.0001
6/8/2022 11:25	42.82666;-78.86047	0	0	0	0
6/8/2022 11:26		0	0	0	0
6/8/2022 11:27		0	0	0	0
6/8/2022 11:28		0	0	0	0
6/8/2022 11:29		0	0	0	0
6/8/2022 11:30	42.82667;-78.86047	0	0	0	0
6/8/2022 11:31		0	0	0	0
6/8/2022 11:32		0	0	0	0
6/8/2022 11:33		0	0	0	0
6/8/2022 11:34		0	0	0	0
6/8/2022 11:35	42.82667;-78.86044	0	0	0	0
6/8/2022 11:36		0	0	0	0
6/8/2022 11:37		0	0	0	0
6/8/2022 11:38		0	0	0	0
6/8/2022 11:39		0	0	0	0
6/8/2022 11:40	42.82667;-78.86047	0	0	0	0
6/8/2022 11:41		0	0	0	0
6/8/2022 11:42		0	0	0	0
6/8/2022 11:43		0	0	0	0
6/8/2022 11:44		0	0	0	0
6/8/2022 11:45	42.82666;-78.86044	0	0	0	0
6/8/2022 11:46		0	0	0	0
6/8/2022 11:47		0	0	0	0
6/8/2022 11:48		0	0	0	0
6/8/2022 11:49		0	0	0	0
6/8/2022 11:50	42.82666;-78.86042	0	0	0	0
6/8/2022 11:51		0	0	0	0
6/8/2022 11:52		0	0	0	0
6/8/2022 11:53		0	0	0	0
6/8/2022 11:54		0	0	0	0
6/8/2022 11:55	42.82667;-78.86044	0	0	0	0
6/8/2022 11:56		0	0	0	0
6/8/2022 11:57		0	0	0	0
6/8/2022 11:58		0	0	0	0
6/8/2022 11:59		0	0	0	0
6/8/2022 12:00	42.82667;-78.86042	0	0	0	0
6/8/2022 12:01		0	0	0	0
6/8/2022 12:02		0	0	0	0
6/8/2022 12:03		0	0	0	0
6/8/2022 12:04		0	0	0	0
6/8/2022 12:05	42.82667;-78.8604	0	0	0	0
6/8/2022 12:06		0	0	0	0
6/8/2022 12:07		0	0	0	0

6/8/2022 12:08		0	0	0	0
6/8/2022 12:09		0	0	0	0
6/8/2022 12:10	42.82667;-78.86042	0	0	0	0
6/8/2022 12:11		0	0	0	0
6/8/2022 12:12		0	0	0	0
6/8/2022 12:13		0	0	0	0
6/8/2022 12:14		0	0	0	0
6/8/2022 12:15	42.82668;-78.8604	0	0	0	0
6/8/2022 12:16		0	0	0	0
6/8/2022 12:17		0	0	0	0
6/8/2022 12:18		0	0	0	0
6/8/2022 12:19		0	0	0	0
6/8/2022 12:20	42.82667;-78.8604	0	0	0	0
6/8/2022 12:21		0	0	0	0
6/8/2022 12:22		0	0	0	0
6/8/2022 12:23		0	0	0	0
6/8/2022 12:24		0	0	0	0
6/8/2022 12:25	42.82668;-78.8604	0	0	0	0
6/8/2022 12:26		0	0	0	0
6/8/2022 12:27		0	0	0	0
6/8/2022 12:28		0	0	0	0
6/8/2022 12:29		0	0	0	0
6/8/2022 12:30	42.82669;-78.86036	0	0	0	0
6/8/2022 12:31		0	0	0	0
6/8/2022 12:32		0	0	0	0
6/8/2022 12:33		0	0	0	0
6/8/2022 12:34		0	0	0	0
6/8/2022 12:35	42.82667;-78.86038	0.001	0	0	0.0001
6/8/2022 12:36			0.003	0.0002	
6/8/2022 12:37			0.008	0.0007	
6/8/2022 12:38			0.005	0.0011	
6/8/2022 12:39		0	0.004	0.0013	0.0001
6/8/2022 12:40	42.82665;-78.86036	0	0.003	0.0015	0.0001
6/8/2022 12:41		0	0.003	0.0017	0.0001
6/8/2022 12:42		0	0.002	0.0019	0.0001
6/8/2022 12:43		0	0.002	0.002	0.0001
6/8/2022 12:44		0	0.002	0.0021	0.0001
6/8/2022 12:45	42.8267;-78.86038	0	0.001	0.0022	0.0001
6/8/2022 12:46		0	0.001	0.0023	0.0001
6/8/2022 12:47		0	0.001	0.0023	0.0001
6/8/2022 12:48		0	0.005	0.0027	0.0001
6/8/2022 12:49		0	0.004	0.0029	0.0001
6/8/2022 12:50	42.82669;-78.86042	0	0.003	0.0031	0
6/8/2022 12:51		0	0.002	0.0031	0
6/8/2022 12:52		0	0.002	0.0027	0
6/8/2022 12:53		0	0.001	0.0024	0
6/8/2022 12:54		0	0.001	0.0022	0
6/8/2022 12:55	42.82668;-78.86044	0	0.001	0.0021	0
6/8/2022 12:56		0	0.001	0.0019	0
6/8/2022 12:57		0	0	0.0018	0
6/8/2022 12:58		0	0	0.0017	0
6/8/2022 12:59		0	0	0.0015	0
6/8/2022 13:00	42.82669;-78.86042	0	0	0.0015	0
6/8/2022 13:01		0	0	0.0014	0
6/8/2022 13:02		0	0	0.0013	0
6/8/2022 13:03		0	0	0.001	0
6/8/2022 13:04		0	0	0.0007	0
6/8/2022 13:05	42.82669;-78.86042	0	0	0.0005	0
6/8/2022 13:06		0	0	0.0004	0
6/8/2022 13:07		0	0	0.0003	0
6/8/2022 13:08		0	0	0.0002	0
6/8/2022 13:09		0	0	0.0001	0
6/8/2022 13:10	42.8267;-78.86044	0	0	0.0001	0
6/8/2022 13:11		0	0	0	0
6/8/2022 13:12		0	0	0	0
6/8/2022 13:13		0	0	0	0
6/8/2022 13:14		0	0	0	0
6/8/2022 13:15	42.82669;-78.86042	0	0	0	0
6/8/2022 13:16		0	0	0	0
6/8/2022 13:17		0	0	0	0
6/8/2022 13:18		0	0	0	0
6/8/2022 13:19		0	0	0	0
6/8/2022 13:20	42.82668;-78.8604	0	0	0	0
6/8/2022 13:21		0	0	0	0
6/8/2022 13:22		0	0	0	0

6/8/2022 13:23		0	0	0	0
6/8/2022 13:24		0	0	0	0
6/8/2022 13:25	42.82665;-78.8604	0	0	0	0
6/8/2022 13:26		0	0	0	0
6/8/2022 13:27		0	0	0	0
6/8/2022 13:28		0	0	0	0
6/8/2022 13:29		0	0	0	0
6/8/2022 13:30	42.82665;-78.8604	0	0	0	0
6/8/2022 13:31		0	0	0	0
6/8/2022 13:32		0	0	0	0
6/8/2022 13:33		0	0	0	0
6/8/2022 13:34		0	0	0	0
6/8/2022 13:35	42.82663;-78.86038	0	0	0	0
6/8/2022 13:36		0	0	0	0
6/8/2022 13:37		0	0	0	0
6/8/2022 13:38		0	0	0	0
6/8/2022 13:39		0	0	0	0
6/8/2022 13:40	42.82662;-78.86036	0	0	0	0
6/8/2022 13:41		0	0	0	0
6/8/2022 13:42		0	0	0	0
6/8/2022 13:43		0	0	0	0
6/8/2022 13:44		0	0	0	0
6/8/2022 13:45	42.82664;-78.86038	0	0	0	0
6/8/2022 13:46		0	0	0	0
6/8/2022 13:47		0	0	0	0
6/8/2022 13:48		0	0	0	0
6/8/2022 13:49		0	0	0	0
6/8/2022 13:50	42.82666;-78.86042	0	0	0	0
6/8/2022 13:51		0	0	0	0
6/8/2022 13:52		0	0	0	0
6/8/2022 13:53		0	0	0	0
6/8/2022 13:54		0	0	0	0
6/8/2022 13:55	42.82666;-78.86042	0	0	0	0
6/8/2022 13:56		0	0	0	0
6/8/2022 13:57		0	0	0	0
6/8/2022 13:58		0	0	0	0
6/8/2022 13:59		0	0	0	0
6/8/2022 14:00	42.82669;-78.86042	0	0	0	0
6/8/2022 14:01		0	0	0	0
6/8/2022 14:02		0	0	0	0
6/8/2022 14:03		0	0	0	0
6/8/2022 14:04		0	0	0	0
6/8/2022 14:05	42.82666;-78.86042	0	0	0	0
6/8/2022 14:06		0	0	0	0
6/8/2022 14:07		0	0	0	0
6/8/2022 14:08		0	0	0	0
6/8/2022 14:09		0	0	0	0
6/8/2022 14:10	42.82663;-78.86044	0	0	0	0
6/8/2022 14:11		0	0	0	0
6/8/2022 14:12		0	0	0	0
6/8/2022 14:13		0	0	0	0
6/8/2022 14:14		0	0	0	0
6/8/2022 14:15	42.82662;-78.86044	0	0	0	0
6/8/2022 14:16		0	0	0	0
6/8/2022 14:17		0	0	0	0
6/8/2022 14:18		0	0	0	0
6/8/2022 14:19		0	0	0	0
6/8/2022 14:20	42.82661;-78.86044	0	0	0	0
6/8/2022 14:21		0	0	0	0
6/8/2022 14:22		0	0	0	0
6/8/2022 14:23		0	0	0	0
6/8/2022 14:24		0	0	0	0
6/8/2022 14:25	42.8266;-78.86044	0	0	0	0
6/8/2022 14:26		0	0	0	0
6/8/2022 14:27		0	0	0	0
6/8/2022 14:28		0	0	0	0
6/8/2022 14:29		0	0	0	0
6/8/2022 14:30	42.82661;-78.86047	0	0	0	0
6/8/2022 14:31		0	0	0	0
6/8/2022 14:32		0	0	0	0
6/8/2022 14:33		0	0	0	0
6/8/2022 14:34		0	0	0	0
6/8/2022 14:35	42.82664;-78.86047	0	0	0	0
6/8/2022 14:36		0	0	0	0
6/8/2022 14:37		0	0	0	0

6/8/2022 14:38		0	0	0	0
6/8/2022 14:39		0	0	0	0
6/8/2022 14:40	42.82666;-78.86047	0	0	0	0
6/8/2022 14:41		0	0	0	0
6/8/2022 14:42		0	0	0	0
6/8/2022 14:43		0	0	0	0
6/8/2022 14:44		0	0	0	0
6/8/2022 14:45	42.82666;-78.86048	0	0	0	0
6/8/2022 14:46		0	0	0	0
6/8/2022 14:47		0	0	0	0
6/8/2022 14:48		0	0	0	0
6/8/2022 14:49		0	0	0	0
6/8/2022 14:50	42.82664;-78.86047	0	0	0	0
6/8/2022 14:51		0	0	0	0
6/8/2022 14:52		0	0	0	0
6/8/2022 14:53		0	0	0	0
6/8/2022 14:54		0	0	0	0
6/8/2022 14:55	42.82666;-78.86047	0	0	0	0
6/8/2022 14:56		0	0	0	0
6/8/2022 14:57		0	0	0	0
6/8/2022 14:58		0	0	0	0
6/8/2022 14:59		0	0	0	0
6/8/2022 15:00	42.82668;-78.86047	0	0	0	0
6/8/2022 15:01		0	0	0	0
6/8/2022 15:02		0	0	0	0
6/8/2022 15:03		0	0	0	0
6/8/2022 15:04		0	0	0	0
6/8/2022 15:05	42.82668;-78.8605	0	0	0	0
6/8/2022 15:06		0	0	0	0
6/8/2022 15:07		0	0	0	0
6/8/2022 15:08		0	0	0	0
6/8/2022 15:09		0	0	0	0
6/8/2022 15:10	42.82666;-78.86047	0	0	0	0
6/8/2022 15:11		0	0	0	0
6/8/2022 15:12		0	0	0	0
6/8/2022 15:13		0	0	0	0
6/8/2022 15:14		0	0	0	0
6/8/2022 15:15	42.82668;-78.86048	0	0	0	0
6/8/2022 15:16		0	0	0	0
6/8/2022 15:17		0	0	0	0
6/8/2022 15:18		0	0	0	0
6/8/2022 15:19		0	0	0	0
6/8/2022 15:20	42.82667;-78.86048	0	0	0	0
6/8/2022 15:21		0	0	0	0
6/8/2022 15:22		0	0	0	0
6/8/2022 15:23		0	0	0	0
6/8/2022 15:24		0	0.004	0.0003	0

Device	Thiamis-1000 0B052904	RAE RS232(A) 0	DustTrak RS232(C) 0B052904		
Timestamp (America/New_York)	Location	VOC (ppm)	Mass Conc. Total (mg/m³)	Mass Conc. Total (AVG 15m) (mg/m³)	VOC ppm AVG 15m (ppm)
6/9/2022 9:09			0.009	0.009	
6/9/2022 9:10		0	0.013	0.011	0
6/9/2022 9:11		0	0.007	0.0097	0
6/9/2022 9:12		0	0.007	0.009	0
6/9/2022 9:13		0	0.007	0.0086	0
6/9/2022 9:14		0	0.007	0.0083	0
6/9/2022 9:15	42.82615;-78.86057	0	0.012	0.0089	0
6/9/2022 9:16		0	0.008	0.0088	0
6/9/2022 9:17		0	0.008	0.0087	0
6/9/2022 9:18		0	0.01	0.0088	0
6/9/2022 9:19		0	0.009	0.0088	0
6/9/2022 9:20	42.82611;-78.86057	0	0.01	0.0089	0
6/9/2022 9:21		0	0.01	0.009	0
6/9/2022 9:22		0	0.009	0.009	0
6/9/2022 9:23		0	0.016	0.0095	0
6/9/2022 9:24		0	0.046	0.0119	0
6/9/2022 9:25	42.82615;-78.86055	0	0.037	0.0135	0
6/9/2022 9:26		0	0.021	0.0145	0
6/9/2022 9:27		0	0.017	0.0151	0
6/9/2022 9:28		0	0.009	0.0153	0
6/9/2022 9:29		0	0.011	0.0155	0
6/9/2022 9:30	42.82613;-78.86059	0	0.036	0.0171	0
6/9/2022 9:31		0	0.073	0.0215	0
6/9/2022 9:32		0	0.009	0.0215	0
6/9/2022 9:33		0	0.017	0.022	0
6/9/2022 9:34		0	0.012	0.0222	0

6/9/2022 9:35	42.82612;-78.86055	0	0.014	0.0225	0
6/9/2022 9:36		0	0.01	0.0225	0
6/9/2022 9:37		0	0.016	0.0229	0
6/9/2022 9:38		0	0.014	0.0228	0
6/9/2022 9:39		0	0.012	0.0205	0
6/9/2022 9:40	42.82611;-78.8605	0	0.013	0.0189	0
6/9/2022 9:41		0	0.013	0.0184	0
6/9/2022 9:42		0	0.013	0.0181	0
6/9/2022 9:43		0	0.01	0.0182	0
6/9/2022 9:44		0	0.007	0.0179	0
6/9/2022 9:45	42.8261;-78.86053	0	0.01	0.0162	0
6/9/2022 9:46		0	0.031	0.0134	0
6/9/2022 9:47		0	0.013	0.0137	0
6/9/2022 9:48		0	0.007	0.013	0
6/9/2022 9:49		0	0.006	0.0126	0
6/9/2022 9:50	42.82615;-78.86057	0	0.006	0.0121	0
6/9/2022 9:51		0	0.006	0.0118	0
6/9/2022 9:52		0	0.008	0.0113	0
6/9/2022 9:53		0	0.009	0.0109	0
6/9/2022 9:54		0	0.006	0.0105	0
6/9/2022 9:55	42.82618;-78.86059	0	0.013	0.0105	0
6/9/2022 9:56		0	0.015	0.0107	0
6/9/2022 9:57		0	0.007	0.0103	0
6/9/2022 9:58		0	0.006	0.01	0
6/9/2022 9:59		0	0.007	0.01	0
6/9/2022 10:00	42.8262;-78.86059	0	0.009	0.0099	0
6/9/2022 10:01		0	0.007	0.0083	0
6/9/2022 10:02		0	0.006	0.0079	0
6/9/2022 10:03		0	0.006	0.0078	0
6/9/2022 10:04		0	0.006	0.0078	0
6/9/2022 10:05	42.82619;-78.86059	0	0.007	0.0079	0
6/9/2022 10:06		0	0.008	0.008	0
6/9/2022 10:07		0	0.01	0.0081	0
6/9/2022 10:08		0	0.009	0.0081	0
6/9/2022 10:09		0	0.008	0.0083	0
6/9/2022 10:10	42.8262;-78.86061	0	0.008	0.0079	0
6/9/2022 10:11		0	0.007	0.0074	0
6/9/2022 10:12		0	0.008	0.0075	0
6/9/2022 10:13		0	0.008	0.0076	0
6/9/2022 10:14		0	0.007	0.0076	0
6/9/2022 10:15	42.8262;-78.86059	0	0.007	0.0075	0
6/9/2022 10:16		0	0.007	0.0075	0
6/9/2022 10:17		0	0.007	0.0075	0
6/9/2022 10:18		0	0.007	0.0076	0
6/9/2022 10:19		0	0.012	0.008	0
6/9/2022 10:20	42.82619;-78.86059	0	0.014	0.0085	0
6/9/2022 10:21		0	0.011	0.0087	0
6/9/2022 10:22		0	0.007	0.0085	0
6/9/2022 10:23		0	0.009	0.0085	0
6/9/2022 10:24		0	0.009	0.0085	0
6/9/2022 10:25	42.82618;-78.86057	0	0.008	0.0085	0
6/9/2022 10:26		0	0.007	0.0085	0
6/9/2022 10:27		0	0.007	0.0085	0
6/9/2022 10:28		0	0.007	0.0084	0
6/9/2022 10:29		0	0.007	0.0084	0
6/9/2022 10:30	42.8262;-78.86061	0	0.007	0.0084	0
6/9/2022 10:31		0	0.007	0.0084	0
6/9/2022 10:32		0	0.007	0.0084	0
6/9/2022 10:33		0	0.007	0.0084	0
6/9/2022 10:34		0	0.007	0.0081	0
6/9/2022 10:35	42.8262;-78.86059	0	0.007	0.0076	0
6/9/2022 10:36		0	0.008	0.0074	0
6/9/2022 10:37		0	0.01	0.0076	0
6/9/2022 10:38		0	0.008	0.0075	0
6/9/2022 10:39		0	0.01	0.0076	0
6/9/2022 10:40	42.82619;-78.86061	0	0.015	0.0081	0
6/9/2022 10:41		0	0.009	0.0082	0
6/9/2022 10:42		0	0.011	0.0085	0
6/9/2022 10:43		0	0.007	0.0085	0
6/9/2022 10:44		0	0.011	0.0087	0
6/9/2022 10:45	42.82617;-78.86063	0	0.008	0.0088	0
6/9/2022 10:46		0	0.008	0.0089	0
6/9/2022 10:47		0	0.008	0.0089	0
6/9/2022 10:48		0	0.008	0.009	0
6/9/2022 10:49		0	0.009	0.0091	0

6/9/2022 10:50	42.82613;-78.86061	0	0.021	0.0101	0
6/9/2022 10:51		0	0.013	0.0104	0
6/9/2022 10:52		0	0.01	0.0104	0
6/9/2022 10:53		0	0.006	0.0103	0
6/9/2022 10:54		0	0.009	0.0102	0
6/9/2022 10:55	42.82612;-78.86059	0	0.007	0.0097	0
6/9/2022 10:56		0	0.007	0.0095	0
6/9/2022 10:57		0	0.006	0.0092	0
6/9/2022 10:58		0	0.007	0.0092	0
6/9/2022 10:59		0	0.006	0.0089	0
6/9/2022 11:00	42.82611;-78.86061	0	0.006	0.0087	0
6/9/2022 11:01		0	0.007	0.0087	0
6/9/2022 11:02		0	0.007	0.0086	0
6/9/2022 11:03		0	0.008	0.0086	0
6/9/2022 11:04		0	0.007	0.0085	0
6/9/2022 11:05	42.82613;-78.86061	0	0.008	0.0076	0
6/9/2022 11:06		0	0.014	0.0077	0
6/9/2022 11:07		0	0.017	0.0081	0
6/9/2022 11:08		0	0.01	0.0084	0
6/9/2022 11:09		0	0.01	0.0085	0
6/9/2022 11:10	42.82616;-78.86059	0	0.47	0.0393	0
6/9/2022 11:11		0	0.022	0.0403	0
6/9/2022 11:12		0	0.013	0.0408	0
6/9/2022 11:13		0	0.015	0.0413	0
6/9/2022 11:14		0	0.017	0.0421	0
6/9/2022 11:15	42.82615;-78.86057	0	0.013	0.0425	0
6/9/2022 11:16		0	0.019	0.0433	0
6/9/2022 11:17		0	0.01	0.0435	0
6/9/2022 11:18		0	0.008	0.0435	0
6/9/2022 11:19		0	0.01	0.0437	0
6/9/2022 11:20	42.82613;-78.86057	0	0.015	0.0442	0
6/9/2022 11:21		0	0.008	0.0438	0
6/9/2022 11:22		0	0.009	0.0433	0
6/9/2022 11:23		0	0.009	0.0432	0
6/9/2022 11:24			0.008	0.0431	
6/9/2022 11:25	42.82615;-78.86057		0.008	0.0123	
6/9/2022 11:26			0.008	0.0113	
6/9/2022 11:27		0	0.009	0.0111	0
6/9/2022 11:28		0	0.008	0.0106	0
6/9/2022 11:29		0	0.007	0.0099	0
6/9/2022 11:30	42.82616;-78.86059	0	0.008	0.0096	0
6/9/2022 11:31		0	0.009	0.0089	0
6/9/2022 11:32		0	0.008	0.0088	0
6/9/2022 11:33		0	0.009	0.0089	0
6/9/2022 11:34		0	0.012	0.009	0
6/9/2022 11:35	42.82616;-78.86059	0	0.009	0.0086	0
6/9/2022 11:36		0	0.011	0.0088	0
6/9/2022 11:37		0	0.013	0.0091	0
6/9/2022 11:38		0	0.01	0.0091	0
6/9/2022 11:39		0	0.009	0.0092	0
6/9/2022 11:40	42.82615;-78.86059	0	0.01	0.0093	0
6/9/2022 11:41		0	0.011	0.0095	0
6/9/2022 11:42		0	0.009	0.0095	0
6/9/2022 11:43		0	0.009	0.0096	0
6/9/2022 11:44		0	0.009	0.0097	0
6/9/2022 11:45	42.82615;-78.86057	0	0.011	0.0099	0
6/9/2022 11:46		0	0.01	0.01	0
6/9/2022 11:47		0	0.009	0.0101	0
6/9/2022 11:48		0	0.009	0.0101	0
6/9/2022 11:49		0	0.009	0.0099	0
6/9/2022 11:50	42.82615;-78.86057	0	0.01	0.0099	0
6/9/2022 11:51		0	0.01	0.0099	0
6/9/2022 11:52		0	0.01	0.0097	0
6/9/2022 11:53		0	0.01	0.0097	0
6/9/2022 11:54		0	0.01	0.0097	0
6/9/2022 11:55	42.82615;-78.86057	0	0.01	0.0097	0
6/9/2022 11:56		0	0.01	0.0097	0
6/9/2022 11:57		0	0.011	0.0098	0
6/9/2022 11:58		0	0.01	0.0099	0
6/9/2022 11:59		0	0.01	0.0099	0
6/9/2022 12:00	42.82616;-78.86055	0	0.01	0.0099	0
6/9/2022 12:01		0	0.01	0.0099	0
6/9/2022 12:02		0	0.01	0.0099	0
6/9/2022 12:03		0	0.01	0.01	0
6/9/2022 12:04		0	0.01	0.0101	0

6/9/2022 12:05	42.82616;-78.86055	0	0.01	0.0101	0
6/9/2022 12:06		0	0.01	0.0101	0
6/9/2022 12:07		0	0.01	0.0101	0
6/9/2022 12:08		0	0.01	0.0101	0
6/9/2022 12:09		0	0.01	0.0101	0
6/9/2022 12:10	42.82615;-78.86055	0	0.011	0.0101	0
6/9/2022 12:11		0	0.01	0.0101	0
6/9/2022 12:12		0	0.01	0.0101	0
6/9/2022 12:13		0	0.01	0.0101	0
6/9/2022 12:14		0	0.01	0.0101	0
6/9/2022 12:15	42.82613;-78.86053	0	0.01	0.0101	0
6/9/2022 12:16		0	0.01	0.0101	0
6/9/2022 12:17		0	0.01	0.0101	0
6/9/2022 12:18		0	0.01	0.0101	0
6/9/2022 12:19		0	0.01	0.0101	0
6/9/2022 12:20	42.82615;-78.86055	0	0.011	0.0101	0
6/9/2022 12:21		0	0.011	0.0102	0
6/9/2022 12:22		0	0.011	0.0103	0
6/9/2022 12:23		0	0.011	0.0103	0
6/9/2022 12:24		0	0.011	0.0104	0
6/9/2022 12:25	42.82616;-78.8605	0	0.011	0.0104	0
6/9/2022 12:26		0	0.011	0.0105	0
6/9/2022 12:27		0	0.011	0.0105	0
6/9/2022 12:28		0	0.011	0.0106	0
6/9/2022 12:29		0	0.011	0.0107	0
6/9/2022 12:30	42.82615;-78.86053	0	0.012	0.0108	0
6/9/2022 12:31		0	0.013	0.011	0
6/9/2022 12:32		0	0.013	0.0112	0
6/9/2022 12:33		0	0.013	0.0114	0
6/9/2022 12:34		0	0.013	0.0116	0
6/9/2022 12:35	42.82613;-78.86057	0	0.012	0.0117	0
6/9/2022 12:36		0	0.012	0.0117	0
6/9/2022 12:37		0	0.012	0.0118	0
6/9/2022 12:38		0	0.012	0.0119	0
6/9/2022 12:39		0	0.012	0.0119	0
6/9/2022 12:40	42.82622;-78.86059	0	0.011	0.0119	0
6/9/2022 12:41		0	0.011	0.0119	0
6/9/2022 12:42		0	0.012	0.012	0
6/9/2022 12:43		0	0.011	0.012	0
6/9/2022 12:44		0	0.011	0.012	0
6/9/2022 12:45	42.82624;-78.86059	0	0.011	0.0119	0
6/9/2022 12:46		0	0.012	0.0119	0
6/9/2022 12:47		0	0.012	0.0118	0
6/9/2022 12:48		0	0.012	0.0117	0
6/9/2022 12:49		0	0.012	0.0117	0
6/9/2022 12:50	42.82624;-78.86063	0	0.013	0.0117	0
6/9/2022 12:51		0	0.014	0.0119	0
6/9/2022 12:52		0	0.014	0.012	0
6/9/2022 12:53		0	0.014	0.0121	0
6/9/2022 12:54		0	0.014	0.0123	0
6/9/2022 12:55	42.82625;-78.86061	0	0.014	0.0125	0
6/9/2022 12:56		0	0.015	0.0127	0
6/9/2022 12:57		0	0.016	0.013	0
6/9/2022 12:58		0	0.017	0.0134	0
6/9/2022 12:59		0	0.018	0.0139	0
6/9/2022 13:00	42.82623;-78.86059	0	0.019	0.0144	0
6/9/2022 13:01		0	0.019	0.0149	0
6/9/2022 13:02		0	0.018	0.0153	0
6/9/2022 13:03		0	0.019	0.0157	0
6/9/2022 13:04		0	0.019	0.0162	0
6/9/2022 13:05	42.82623;-78.86061	0	0.02	0.0167	0
6/9/2022 13:06		0	0.02	0.0171	0
6/9/2022 13:07		0	0.021	0.0175	0
6/9/2022 13:08		0	0.021	0.018	0
6/9/2022 13:09		0	0.02	0.0184	0
6/9/2022 13:10	42.8262;-78.86059	0	0.019	0.0187	0
6/9/2022 13:11		0	0.018	0.0189	0
6/9/2022 13:12		0	0.018	0.0191	0
6/9/2022 13:13		0	0.018	0.0191	0
6/9/2022 13:14		0	0.017	0.0191	0
6/9/2022 13:15	42.8262;-78.86057	0	0.017	0.0189	0
6/9/2022 13:16		0	0.016	0.0187	0
6/9/2022 13:17		0	0.014	0.0185	0
6/9/2022 13:18		0	0.015	0.0182	0
6/9/2022 13:19		0	0.015	0.0179	0

6/9/2022 13:20	42.8262;-78.86057	0	0.016	0.0177	0
6/9/2022 13:21		0	0.016	0.0174	0
6/9/2022 13:22		0	0.018	0.0172	0
6/9/2022 13:23		0	0.018	0.017	0
6/9/2022 13:24		0	0.018	0.0169	0
6/9/2022 13:25	42.82619;-78.86057	0	0.017	0.0167	0
6/9/2022 13:26		0	0.017	0.0167	0
6/9/2022 13:27		0	0.017	0.0166	0
6/9/2022 13:28		0	0.017	0.0165	0
6/9/2022 13:29		0	0.017	0.0165	0
6/9/2022 13:30	42.82619;-78.86057	0	0.017	0.0165	0
6/9/2022 13:31		0	0.017	0.0166	0
6/9/2022 13:32		0	0.016	0.0167	0
6/9/2022 13:33		0	0.016	0.0168	0
6/9/2022 13:34		0	0.015	0.0168	0
6/9/2022 13:35	42.82619;-78.86057	0	0.015	0.0167	0
6/9/2022 13:36		0	0.015	0.0167	0
6/9/2022 13:37		0	0.015	0.0165	0
6/9/2022 13:38		0	0.015	0.0163	0
6/9/2022 13:39		0	0.016	0.0161	0
6/9/2022 13:40	42.82619;-78.86057	0	0.017	0.0161	0
6/9/2022 13:41		0	0.018	0.0162	0
6/9/2022 13:42		0	0.018	0.0163	0
6/9/2022 13:43		0	0.017	0.0163	0
6/9/2022 13:44		0	0.016	0.0162	0
6/9/2022 13:45	42.82617;-78.86057	0	0.015	0.0161	0
6/9/2022 13:46		0	0.016	0.016	0
6/9/2022 13:47		0	0.016	0.016	0
6/9/2022 13:48		0	0.015	0.0159	0
6/9/2022 13:49		0	0.015	0.0159	0
6/9/2022 13:50	42.82615;-78.86057	0	0.015	0.0159	0
6/9/2022 13:51		0	0.014	0.0159	0
6/9/2022 13:52		0	0.014	0.0158	0
6/9/2022 13:53		0	0.014	0.0157	0
6/9/2022 13:54		0	0.014	0.0156	0
6/9/2022 13:55	42.82616;-78.86057	0	0.014	0.0154	0
6/9/2022 13:56		0	0.014	0.0151	0
6/9/2022 13:57		0	0.014	0.0149	0
6/9/2022 13:58		0	0.014	0.0147	0
6/9/2022 13:59		0	0.014	0.0145	0
6/9/2022 14:00	42.82613;-78.86059	0	0.014	0.0145	0
6/9/2022 14:01		0	0.014	0.0143	0
6/9/2022 14:02		0	0.013	0.0141	0
6/9/2022 14:03		0	0.013	0.014	0
6/9/2022 14:04		0	0.014	0.0139	0
6/9/2022 14:05	42.82612;-78.86055	0	0.014	0.0139	0
6/9/2022 14:06		0	0.014	0.0139	0
6/9/2022 14:07		0	0.014	0.0139	0
6/9/2022 14:08		0	0.014	0.0139	0
6/9/2022 14:09		0	0.014	0.0139	0
6/9/2022 14:10	42.8261;-78.86059	0	0.014	0.0139	0
6/9/2022 14:11		0	0.014	0.0139	0
6/9/2022 14:12		0	0.014	0.0139	0
6/9/2022 14:13		0	0.013	0.0138	0
6/9/2022 14:14		0	0.013	0.0137	0
6/9/2022 14:15	42.82619;-78.86059	0	0.013	0.0137	0
6/9/2022 14:16		0	0.012	0.0135	0
6/9/2022 14:17		0	0.012	0.0135	0
6/9/2022 14:18		0	0.012	0.0134	0
6/9/2022 14:19			0.014	0.0134	
6/9/2022 14:20	42.82616;-78.86055		0.012	0.0133	
6/9/2022 14:21			0.012	0.0131	
6/9/2022 14:22		0	0.015	0.0132	0
6/9/2022 14:23		0	0.015	0.0133	0
6/9/2022 14:24		0	0.013	0.0132	0
6/9/2022 14:25	42.82642;-78.86021	0	0.015	0.0133	0
6/9/2022 14:26		0	0.014	0.0133	0
6/9/2022 14:27		0	0.014	0.0133	0
6/9/2022 14:28		0	0.014	0.0133	0
6/9/2022 14:29		0	0.014	0.0134	0
6/9/2022 14:30	42.82641;-78.86023	0	0.013	0.0134	0
6/9/2022 14:31		0	0.013	0.0135	0
6/9/2022 14:32		0	0.013	0.0135	0
6/9/2022 14:33		0	0.013	0.0136	0
6/9/2022 14:34		0	0.013	0.0135	0

6/9/2022 14:35	42.82645;-78.86021	0	0.013	0.0136	0
6/9/2022 14:36		0	0.014	0.0137	0
6/9/2022 14:37		0	0.012	0.0135	0
6/9/2022 14:38		0	0.012	0.0133	0
6/9/2022 14:39		0	0.013	0.0133	0
6/9/2022 14:40	42.82645;-78.86021	0	0.013	0.0132	0
6/9/2022 14:41		0	0.012	0.0131	0
6/9/2022 14:42		0	0.012	0.0129	0
6/9/2022 14:43		0	0.014	0.0129	0
6/9/2022 14:44		0	0.014	0.0129	0
6/9/2022 14:45	42.82642;-78.86018	0	0.012	0.0129	0
6/9/2022 14:46		0	0.013	0.0129	0
6/9/2022 14:47		0	0.013	0.0129	0
6/9/2022 14:48		0	0.018	0.0132	0
6/9/2022 14:49		0	0.013	0.0132	0
6/9/2022 14:50	42.82647;-78.86023	0	0.014	0.0133	0
6/9/2022 14:51		0	0.015	0.0133	0
6/9/2022 14:52		0	0.014	0.0135	0
6/9/2022 14:53		0	0.015	0.0137	0
6/9/2022 14:54		0	0.016	0.0139	0
6/9/2022 14:55	42.82645;-78.86023	0	0.017	0.0141	0
6/9/2022 14:56		0	0.015	0.0143	0
6/9/2022 14:57		0	0.015	0.0145	0
6/9/2022 14:58		0	0.014	0.0145	0
6/9/2022 14:59		0	0.015	0.0146	0
6/9/2022 15:00	42.82647;-78.86024	0	0.018	0.015	0
6/9/2022 15:01		0	0.016	0.0152	0
6/9/2022 15:02		0	0.016	0.0154	0
6/9/2022 15:03		0	0.015	0.0152	0
6/9/2022 15:04		0	0.015	0.0153	0
6/9/2022 15:05	42.82647;-78.86027	0	0.014	0.0153	0
6/9/2022 15:06		0	0.014	0.0153	0
6/9/2022 15:07		0	0.016	0.0154	0
6/9/2022 15:08		0	0.014	0.0153	0
6/9/2022 15:09		0	0.012	0.0151	0
6/9/2022 15:10	42.82647;-78.86024	0	0.013	0.0148	0
6/9/2022 15:11		0	0.013	0.0147	0
6/9/2022 15:12		0	0.013	0.0145	0
6/9/2022 15:13		0	0.012	0.0144	0
6/9/2022 15:14		0	0.012	0.0142	0
6/9/2022 15:15	42.82645;-78.86023	0	0.015	0.014	0
6/9/2022 15:16		0	0.012	0.0137	0
6/9/2022 15:17		0	0.016	0.0137	0
6/9/2022 15:18		0	0.012	0.0135	0
6/9/2022 15:19		0	0.013	0.0134	0
6/9/2022 15:20	42.82639;-78.86021	0	0.01	0.0131	0
6/9/2022 15:21		0	0.012	0.013	0
6/9/2022 15:22		0	0.009	0.0125	0
6/9/2022 15:23		0	0.009	0.0122	0
6/9/2022 15:24		0	0.008	0.0119	0
6/9/2022 15:25	42.82642;-78.86021	0	0.008	0.0116	0
6/9/2022 15:26		0	0.007	0.0112	0
6/9/2022 15:27		0	0.008	0.0109	0
6/9/2022 15:28		0	0.009	0.0107	0
6/9/2022 15:29		0	0.008	0.0104	0
6/9/2022 15:30	42.82645;-78.86021	0	0.008	0.0099	0
6/9/2022 15:31		0	0.008	0.0097	0
6/9/2022 15:32		0	0.009	0.0092	0
6/9/2022 15:33		0	0.008	0.0089	0
6/9/2022 15:34		0	0.008	0.0086	0
6/9/2022 15:35	42.82648;-78.86024	0	0.007	0.0084	0
6/9/2022 15:36		0	0.008	0.0081	0
6/9/2022 15:37		0	0.008	0.0081	0
6/9/2022 15:38		0	0.007	0.0079	0
6/9/2022 15:39		0	0.009	0.008	0
6/9/2022 15:40	42.82648;-78.86024	0	0.008	0.008	0
6/9/2022 15:41		0	0.008	0.0081	0
6/9/2022 15:42		0	0.008	0.0081	0
6/9/2022 15:43		0	0.008	0.008	0
6/9/2022 15:44		0	0.008	0.008	0
6/9/2022 15:45	42.82647;-78.86021	0	0.007	0.0079	0
6/9/2022 15:46		0	0.008	0.0079	0
6/9/2022 15:47		0	0.008	0.0079	0
6/9/2022 15:48		0	0.008	0.0079	0
6/9/2022 15:49		0	0.008	0.0079	0

6/9/2022 15:50	42.82645;-78.86018	0	0.009	0.008	0
6/9/2022 15:51		0	0.008	0.008	0
6/9/2022 15:52		0	0.009	0.0081	0
6/9/2022 15:53		0	0.008	0.0081	0
6/9/2022 15:54		0	0.009	0.0081	0
6/9/2022 15:55	42.82648;-78.86018	0	0.008	0.0081	0
6/9/2022 15:56		0	0.008	0.0081	0
6/9/2022 15:57		0	0.008	0.0081	0
6/9/2022 15:58		0	0.008	0.0081	0
6/9/2022 15:59		0	0.008	0.0081	0
6/9/2022 16:00	42.8265;-78.86024	0	0.009	0.0083	0
6/9/2022 16:01		0	0.008	0.0083	0

Device	Thiamis-1000 0B052904	RAE RS232(A) 0	DustTrak RS232(C) 0B052904		
Timestamp (America/New_York)	Location	VOC (ppm)	Mass Conc. Total (mg/m³)	Mass Conc. Total (AVG 15m) (mg/m³)	VOC ppm AVG 15m (ppm)
6/10/2022 8:29			0.038	0.038	
6/10/2022 8:30		0	0.006	0.022	0
6/10/2022 8:31		0	0.005	0.0163	0
6/10/2022 8:32		0	0.005	0.0135	0
6/10/2022 8:33		0	0.006	0.012	0
6/10/2022 8:34		0	0.005	0.0108	0
6/10/2022 8:35	42.82639;-78.86023	0	0.006	0.0101	0
6/10/2022 8:36		0	0.006	0.0096	0
6/10/2022 8:37		0	0.007	0.0093	0
6/10/2022 8:38		0	0.005	0.0089	0
6/10/2022 8:39		0	0.006	0.0086	0
6/10/2022 8:40	42.82637;-78.86024	0	0.005	0.0083	0
6/10/2022 8:41		0	0.006	0.0082	0
6/10/2022 8:42		0	0.006	0.008	0
6/10/2022 8:43		0	0.006	0.0079	0
6/10/2022 8:44		0	0.006	0.0057	0
6/10/2022 8:45	42.82638;-78.86027	0	0.006	0.0057	0
6/10/2022 8:46		0	0.005	0.0057	0
6/10/2022 8:47		0	0.006	0.0058	0
6/10/2022 8:48		0	0.006	0.0058	0
6/10/2022 8:49		0	0.006	0.0059	0
6/10/2022 8:50	42.82639;-78.86027	0	0.007	0.0059	0
6/10/2022 8:51		0	0.006	0.0059	0
6/10/2022 8:52		0	0.008	0.006	0
6/10/2022 8:53		0	0.007	0.0061	0
6/10/2022 8:54		0	0.008	0.0063	0
6/10/2022 8:55	42.82641;-78.86029	0	0.006	0.0063	0
6/10/2022 8:56		0	0.006	0.0063	0
6/10/2022 8:57		0	0.007	0.0064	0
6/10/2022 8:58		0	0.006	0.0064	0
6/10/2022 8:59		0	0.008	0.0065	0
6/10/2022 9:00	42.82644;-78.86029	0	0.006	0.0065	0
6/10/2022 9:01		0	0.006	0.0066	0
6/10/2022 9:02		0	0.006	0.0066	0
6/10/2022 9:03		0	0.006	0.0066	0
6/10/2022 9:04		0	0.01	0.0069	0
6/10/2022 9:05	42.82645;-78.86029	0	0.007	0.0069	0
6/10/2022 9:06		0	0.009	0.0071	0
6/10/2022 9:07		0	0.005	0.0069	0
6/10/2022 9:08		0	0.006	0.0068	0
6/10/2022 9:09		0	0.007	0.0067	0
6/10/2022 9:10	42.82647;-78.86027	0	0.005	0.0067	0
6/10/2022 9:11		0	0.007	0.0067	0
6/10/2022 9:12		0	0.006	0.0067	0
6/10/2022 9:13		0	0.009	0.0069	0
6/10/2022 9:14		0	0.008	0.0069	0
6/10/2022 9:15	42.8265;-78.86024	0	0.006	0.0069	0
6/10/2022 9:16		0	0.006	0.0069	0
6/10/2022 9:17		0	0.005	0.0068	0
6/10/2022 9:18		0	0.005	0.0067	0
6/10/2022 9:19		0	0.008	0.0066	0
6/10/2022 9:20	42.8265;-78.86024	0	0.007	0.0066	0
6/10/2022 9:21		0	0.007	0.0065	0
6/10/2022 9:22		0	0.007	0.0066	0
6/10/2022 9:23		0	0.006	0.0066	0
6/10/2022 9:24		0	0.007	0.0066	0
6/10/2022 9:25	42.82649;-78.86024	0	0.007	0.0067	0
6/10/2022 9:26		0	0.008	0.0068	0
6/10/2022 9:27		0	0.01	0.0071	0
6/10/2022 9:28		0	0.009	0.0071	0
6/10/2022 9:29		0	0.009	0.0071	0

6/10/2022 9:30	42.82649;-78.86027	0	0.008	0.0073	0
6/10/2022 9:31		0	0.009	0.0075	0
6/10/2022 9:32		0	0.007	0.0076	0
6/10/2022 9:33		0	0.01	0.0079	0
6/10/2022 9:34		0	0.008	0.0079	0
6/10/2022 9:35	42.82649;-78.86027	0	0.012	0.0083	0
6/10/2022 9:36		0	0.009	0.0084	0
6/10/2022 9:37		0	0.008	0.0085	0
6/10/2022 9:38		0	0.011	0.0088	0
6/10/2022 9:39		0	0.008	0.0089	0
6/10/2022 9:40	42.82647;-78.86027	0	0.009	0.009	0
6/10/2022 9:41		0	0.011	0.0092	0
6/10/2022 9:42		0	0.01	0.0092	0
6/10/2022 9:43			0.011	0.0093	
6/10/2022 9:44			0.014	0.0097	
6/10/2022 9:45	42.8265;-78.86027		0.009	0.0097	
6/10/2022 9:46		0	0.011	0.0099	0
6/10/2022 9:47		0	0.01	0.0101	0
6/10/2022 9:48		0	0.009	0.01	0
6/10/2022 9:49		0	0.011	0.0102	0
6/10/2022 9:50	42.82651;-78.86027	0	0.009	0.01	0
6/10/2022 9:51		0	0.009	0.01	0
6/10/2022 9:52		0	0.009	0.0101	0
6/10/2022 9:53		0	0.007	0.0098	0
6/10/2022 9:54		0	0.008	0.0098	0
6/10/2022 9:55	42.82651;-78.86027	0	0.007	0.0097	0
6/10/2022 9:56		0	0.007	0.0094	0
6/10/2022 9:57		0	0.007	0.0092	0
6/10/2022 9:58		0	0.007	0.0089	0
6/10/2022 9:59		0	0.007	0.0085	0
6/10/2022 10:00	42.82652;-78.86029	0	0.007	0.0083	0
6/10/2022 10:01		0	0.007	0.0081	0
6/10/2022 10:02		0	0.007	0.0079	0
6/10/2022 10:03		0	0.007	0.0077	0
6/10/2022 10:04		0	0.007	0.0075	0
6/10/2022 10:05	42.82654;-78.86029	0	0.007	0.0073	0
6/10/2022 10:06		0	0.012	0.0075	0
6/10/2022 10:07		0	0.007	0.0074	0
6/10/2022 10:08		0	0.007	0.0074	0
6/10/2022 10:09		0	0.007	0.0073	0
6/10/2022 10:10	42.82655;-78.86031	0	0.007	0.0073	0
6/10/2022 10:11		0	0.007	0.0073	0
6/10/2022 10:12		0	0.006	0.0073	0
6/10/2022 10:13		0	0.007	0.0073	0
6/10/2022 10:14		0	0.006	0.0072	0
6/10/2022 10:15	42.82654;-78.86031	0	0.007	0.0072	0
6/10/2022 10:16		0	0.007	0.0072	0
6/10/2022 10:17		0	0.007	0.0072	0
6/10/2022 10:18		0	0.006	0.0071	0
6/10/2022 10:19		0	0.006	0.0071	0
6/10/2022 10:20	42.82654;-78.86031	0	0.006	0.007	0
6/10/2022 10:21		0	0.006	0.0066	0
6/10/2022 10:22		0	0.006	0.0065	0
6/10/2022 10:23			0.007	0.0065	

ATTACHMENT 4

LABORATORY ANALYTICAL DATA

ANALYTICAL REPORT

Lab Number:	L2231847
Client:	Benchmark & Turnkey Companies 2558 Hamburg Turnpike Suite 300 Buffalo, NY 14218
ATTN:	Brock Greene
Phone:	(716) 856-0599
Project Name:	OU-4 SYSTEM
Project Number:	T0071-022-910
Report Date:	06/20/22

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-17-00196).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Project Name: OU-4 SYSTEM
Project Number: T0071-022-910

Lab Number: L2231847
Report Date: 06/20/22

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2231847-01	B-1	WATER	BUFFALO, NY	06/15/22 12:45	06/15/22
L2231847-02	B-2	WATER	BUFFALO, NY	06/15/22 13:55	06/15/22
L2231847-03	B-3	WATER	BUFFALO, NY	06/15/22 15:05	06/15/22
L2231847-04	FIELD BLANK	WATER	BUFFALO, NY	06/15/22 15:27	06/15/22

Project Name:	OU-4 SYSTEM	**Lab Number:**	L2231847
Project Number:	T0071-022-910	**Report Date:**	06/20/22

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name:	OU-4 SYSTEM	**Lab Number:**	L2231847
Project Number:	T0071-022-910	**Report Date:**	06/20/22

Case Narrative (continued)

Report Submission

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

Semivolatile Organics

L2231847-02D: The sample has elevated detection limits due to the dilution required by the sample matrix.

L2231847-02D and -03D: The surrogate recoveries are below the acceptance criteria for 2-fluorophenol (0%), phenol-d6 (0%), nitrobenzene-d5 (0%), 2-fluorobiphenyl (0%), 2,4,6-tribromophenol (0%) and 4-terphenyl-d14 (0%) due to the dilution required to quantitate the sample. Re-extraction was not required; therefore, the results of the original analysis are reported.

Perfluorinated Alkyl Acids by Isotope Dilution

L2231847-03: The sample was centrifuged and decanted prior to extraction due to sample matrix.

L2231847-01 through -03: Extracted Internal Standard recoveries were outside the acceptance criteria for individual analytes. Please refer to the surrogate section of the report for details.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Tiffani Morrissey - Tiffani Morrissey

Title: Technical Director/Representative Date: 06/20/22

ORGANICS

VOLATILES

Project Name: OU-4 SYSTEM
Project Number: T0071-022-910
Lab Number: L2231847
Report Date: 06/20/22

SAMPLE RESULTS

Lab ID: L2231847-01 D
Client ID: B-1
Sample Location: BUFFALO, NY

Date Collected: 06/15/22 12:45
Date Received: 06/15/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 06/17/22 18:58
Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Benzene	1100		ug/l	25	8.0	50
Toluene	ND		ug/l	120	35.	50
Ethylbenzene	110	J	ug/l	120	35.	50
Methyl tert butyl ether	ND		ug/l	120	35.	50
p/m-Xylene	120		ug/l	120	35.	50
o-Xylene	ND		ug/l	120	35.	50
n-Butylbenzene	ND		ug/l	120	35.	50
sec-Butylbenzene	ND		ug/l	120	35.	50
tert-Butylbenzene	ND		ug/l	120	35.	50
Isopropylbenzene	ND		ug/l	120	35.	50
p-Isopropyltoluene	ND		ug/l	120	35.	50
n-Propylbenzene	ND		ug/l	120	35.	50
1,3,5-Trimethylbenzene	ND		ug/l	120	35.	50
1,2,4-Trimethylbenzene	80	J	ug/l	120	35.	50

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	94		70-130
Toluene-d8	94		70-130
4-Bromofluorobenzene	89		70-130
Dibromofluoromethane	109		70-130

Project Name: OU-4 SYSTEM
Project Number: T0071-022-910
Lab Number: L2231847
Report Date: 06/20/22

SAMPLE RESULTS

Lab ID: L2231847-02 D
Client ID: B-2
Sample Location: BUFFALO, NY

Date Collected: 06/15/22 13:55
Date Received: 06/15/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 06/17/22 19:17
Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Benzene	2700		ug/l	50	16.	100
Toluene	1200		ug/l	250	70.	100
Ethylbenzene	ND		ug/l	250	70.	100
Methyl tert butyl ether	ND		ug/l	250	70.	100
p/m-Xylene	450		ug/l	250	70.	100
o-Xylene	160	J	ug/l	250	70.	100
n-Butylbenzene	ND		ug/l	250	70.	100
sec-Butylbenzene	ND		ug/l	250	70.	100
tert-Butylbenzene	ND		ug/l	250	70.	100
Isopropylbenzene	ND		ug/l	250	70.	100
p-Isopropyltoluene	ND		ug/l	250	70.	100
n-Propylbenzene	ND		ug/l	250	70.	100
1,3,5-Trimethylbenzene	ND		ug/l	250	70.	100
1,2,4-Trimethylbenzene	ND		ug/l	250	70.	100

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	93		70-130
Toluene-d8	94		70-130
4-Bromofluorobenzene	92		70-130
Dibromofluoromethane	108		70-130

Project Name: OU-4 SYSTEM
Project Number: T0071-022-910
Lab Number: L2231847
Report Date: 06/20/22

SAMPLE RESULTS

Lab ID: L2231847-03 D
Client ID: B-3
Sample Location: BUFFALO, NY
Date Collected: 06/15/22 15:05
Date Received: 06/15/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 06/17/22 19:36
Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Benzene	4500		ug/l	50	16.	100
Toluene	440		ug/l	250	70.	100
Ethylbenzene	ND		ug/l	250	70.	100
Methyl tert butyl ether	ND		ug/l	250	70.	100
p/m-Xylene	240	J	ug/l	250	70.	100
o-Xylene	120	J	ug/l	250	70.	100
n-Butylbenzene	ND		ug/l	250	70.	100
sec-Butylbenzene	ND		ug/l	250	70.	100
tert-Butylbenzene	ND		ug/l	250	70.	100
Isopropylbenzene	ND		ug/l	250	70.	100
p-Isopropyltoluene	ND		ug/l	250	70.	100
n-Propylbenzene	ND		ug/l	250	70.	100
1,3,5-Trimethylbenzene	ND		ug/l	250	70.	100
1,2,4-Trimethylbenzene	92	J	ug/l	250	70.	100

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	95		70-130
Toluene-d8	94		70-130
4-Bromofluorobenzene	89		70-130
Dibromofluoromethane	109		70-130

Project Name: OU-4 SYSTEM
Project Number: T0071-022-910
Lab Number: L2231847
Report Date: 06/20/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 06/17/22 17:59
Analyst: TMS

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01-03 Batch: WG1652639-5					
Benzene	ND		ug/l	0.50	0.16
Toluene	ND		ug/l	2.5	0.70
Ethylbenzene	ND		ug/l	2.5	0.70
Methyl tert butyl ether	ND		ug/l	2.5	0.70
p/m-Xylene	ND		ug/l	2.5	0.70
o-Xylene	ND		ug/l	2.5	0.70
n-Butylbenzene	ND		ug/l	2.5	0.70
sec-Butylbenzene	ND		ug/l	2.5	0.70
tert-Butylbenzene	ND		ug/l	2.5	0.70
Isopropylbenzene	ND		ug/l	2.5	0.70
p-Isopropyltoluene	ND		ug/l	2.5	0.70
n-Propylbenzene	ND		ug/l	2.5	0.70
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.70
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.70

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	97		70-130
Toluene-d8	95		70-130
4-Bromofluorobenzene	92		70-130
Dibromofluoromethane	110		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: OU-4 SYSTEM

Project Number: T0071-022-910

Lab Number: L2231847

Report Date: 06/20/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-03 Batch: WG1652639-3 WG1652639-4								
Benzene	96		94		70-130	2		20
Toluene	93		91		70-130	2		20
Ethylbenzene	96		94		70-130	2		20
Methyl tert butyl ether	88		95		63-130	8		20
p/m-Xylene	100		100		70-130	0		20
o-Xylene	100		95		70-130	5		20
n-Butylbenzene	91		91		53-136	0		20
sec-Butylbenzene	94		95		70-130	1		20
tert-Butylbenzene	94		95		70-130	1		20
Isopropylbenzene	93		94		70-130	1		20
p-Isopropyltoluene	94		96		70-130	2		20
n-Propylbenzene	92		92		69-130	0		20
1,3,5-Trimethylbenzene	90		90		64-130	0		20
1,2,4-Trimethylbenzene	89		91		70-130	2		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	94		94		70-130
Toluene-d8	96		95		70-130
4-Bromofluorobenzene	92		93		70-130
Dibromofluoromethane	107		105		70-130

SEMIVOLATILES

Project Name: OU-4 SYSTEM
Project Number: T0071-022-910

Lab Number: L2231847
Report Date: 06/20/22

SAMPLE RESULTS

Lab ID: L2231847-01
Client ID: B-1
Sample Location: BUFFALO, NY

Date Collected: 06/15/22 12:45
Date Received: 06/15/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D
Analytical Date: 06/17/22 18:43
Analyst: CMM

Extraction Method: EPA 3510C
Extraction Date: 06/17/22 00:55

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	2000	E	ug/l	2.0	0.46	1
2,4,6-Trichlorophenol	ND		ug/l	5.0	0.61	1
p-Chloro-m-cresol	ND		ug/l	2.0	0.35	1
2-Chlorophenol	ND		ug/l	2.0	0.48	1
2,4-Dichlorophenol	ND		ug/l	5.0	0.41	1
2,4-Dimethylphenol	59.		ug/l	5.0	1.8	1
2-Nitrophenol	ND		ug/l	10	0.85	1
4-Nitrophenol	ND		ug/l	10	0.67	1
2,4-Dinitrophenol	ND		ug/l	20	6.6	1
4,6-Dinitro-o-cresol	ND		ug/l	10	1.8	1
Pentachlorophenol	ND		ug/l	10	1.8	1
Phenol	16.		ug/l	5.0	0.57	1
2-Methylphenol	28.		ug/l	5.0	0.49	1
3-Methylphenol/4-Methylphenol	31.		ug/l	5.0	0.48	1
2,4,5-Trichlorophenol	ND		ug/l	5.0	0.77	1
Benzyl Alcohol	ND		ug/l	2.0	0.59	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	48		21-120
Phenol-d6	42		10-120
Nitrobenzene-d5	49		23-120
2-Fluorobiphenyl	46		15-120
2,4,6-Tribromophenol	65		10-120
4-Terphenyl-d14	50		41-149

Project Name: OU-4 SYSTEM
Project Number: T0071-022-910

Lab Number: L2231847
Report Date: 06/20/22

SAMPLE RESULTS

Lab ID: L2231847-01
Client ID: B-1
Sample Location: BUFFALO, NY

Date Collected: 06/15/22 12:45
Date Received: 06/15/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 134,LCMSMS-ID
Analytical Date: 06/19/22 11:36
Analyst: SG

Extraction Method: ALPHA 23528
Extraction Date: 06/17/22 04:04

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	16.7		ng/l	1.84	0.376	1
Perfluoropentanoic Acid (PFPeA)	9.36		ng/l	1.84	0.365	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.84	0.219	1
Perfluorohexanoic Acid (PFHxA)	2.06	F	ng/l	1.84	0.302	1
Perfluoroheptanoic Acid (PFHpA)	2.56		ng/l	1.84	0.207	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.84	0.346	1
Perfluorooctanoic Acid (PFOA)	7.18		ng/l	1.84	0.217	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	1.84	1.23	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.84	0.634	1
Perfluorononanoic Acid (PFNA)	0.766	J	ng/l	1.84	0.287	1
Perfluorooctanesulfonic Acid (PFOS)	5.10		ng/l	1.84	0.464	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.84	0.280	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.84	1.12	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.84	0.597	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.84	0.239	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.84	0.902	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.84	0.534	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.84	0.740	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.84	0.342	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.84	0.301	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.84	0.228	1
PFOA/PFOS, Total	12.3		ng/l	1.84	0.217	1

Project Name: OU-4 SYSTEM **Lab Number:** L2231847

Project Number: T0071-022-910 **Report Date:** 06/20/22

SAMPLE RESULTS

Lab ID: L2231847-01 Date Collected: 06/15/22 12:45

Client ID: B-1 Date Received: 06/15/22

Sample Location: BUFFALO, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	83		58-132
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	85		62-163
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	94		70-131
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	69		57-129
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	76		60-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	80		71-134
Perfluoro[13C8]Octanoic Acid (M8PFOA)	78		62-129
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	**224**	Q	14-147
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	73		59-139
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	73		69-131
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	69		62-124
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	**182**	Q	10-162
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	71		24-116
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	74		55-137
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	24		10-112
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	87		27-126
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	62		48-131
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	45		22-136

Project Name: OU-4 SYSTEM
Project Number: T0071-022-910

Lab Number: L2231847
Report Date: 06/20/22

SAMPLE RESULTS

Lab ID: L2231847-01 D
Client ID: B-1
Sample Location: BUFFALO, NY

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D
Analytical Date: 06/19/22 13:36
Analyst: CMM

Date Collected: 06/15/22 12:45
Date Received: 06/15/22
Field Prep: Not Specified

Extraction Method: EPA 3510C
Extraction Date: 06/17/22 00:55

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	3000		ug/l	100	23.	50

Project Name: OU-4 SYSTEM
Project Number: T0071-022-910

Lab Number: L2231847
Report Date: 06/20/22

SAMPLE RESULTS

Lab ID: L2231847-02
Client ID: B-2
Sample Location: BUFFALO, NY

Date Collected: 06/15/22 13:55
Date Received: 06/15/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 134,LCMSMS-ID
Analytical Date: 06/19/22 11:53
Analyst: SG

Extraction Method: ALPHA 23528
Extraction Date: 06/17/22 04:04

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	26.8		ng/l	1.81	0.369	1
Perfluoropentanoic Acid (PFPeA)	14.9		ng/l	1.81	0.358	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.81	0.215	1
Perfluorohexanoic Acid (PFHxA)	2.84		ng/l	1.81	0.296	1
Perfluoroheptanoic Acid (PFHpA)	2.64		ng/l	1.81	0.204	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.81	0.340	1
Perfluorooctanoic Acid (PFOA)	7.53		ng/l	1.81	0.213	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	1.81	1.20	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.81	0.622	1
Perfluorononanoic Acid (PFNA)	0.633	J	ng/l	1.81	0.282	1
Perfluorooctanesulfonic Acid (PFOS)	6.94	F	ng/l	1.81	0.456	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.81	0.275	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.81	1.10	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.81	0.586	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.81	0.235	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.81	0.886	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.81	0.524	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.81	0.727	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.81	0.336	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.81	0.296	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.81	0.224	1
PFOA/PFOS, Total	14.5		ng/l	1.81	0.213	1

Project Name: OU-4 SYSTEM
Project Number: T0071-022-910
Lab Number: L2231847
Report Date: 06/20/22

SAMPLE RESULTS

Lab ID: L2231847-02
Client ID: B-2
Sample Location: BUFFALO, NY
Date Collected: 06/15/22 13:55
Date Received: 06/15/22
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	74		58-132
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	83		62-163
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	102		70-131
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	70		57-129
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	77		60-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	**66**	Q	71-134
Perfluoro[13C8]Octanoic Acid (M8PFOA)	74		62-129
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	**195**	Q	14-147
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	79		59-139
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	**65**	Q	69-131
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	68		62-124
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	151		10-162
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	71		24-116
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	70		55-137
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	33		10-112
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	73		27-126
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	66		48-131
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	44		22-136

Project Name: OU-4 SYSTEM
Project Number: T0071-022-910

Lab Number: L2231847
Report Date: 06/20/22

SAMPLE RESULTS

Lab ID: L2231847-02 D
Client ID: B-2
Sample Location: BUFFALO, NY

Date Collected: 06/15/22 13:55
Date Received: 06/15/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D
Analytical Date: 06/19/22 14:00
Analyst: CMM

Extraction Method: EPA 3510C
Extraction Date: 06/17/22 00:55

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	12000		ug/l	200	46.	100
2,4,6-Trichlorophenol	ND		ug/l	500	61.	100
p-Chloro-m-cresol	ND		ug/l	200	35.	100
2-Chlorophenol	ND		ug/l	200	48.	100
2,4-Dichlorophenol	ND		ug/l	500	41.	100
2,4-Dimethylphenol	1200		ug/l	500	180	100
2-Nitrophenol	ND		ug/l	1000	85.	100
4-Nitrophenol	ND		ug/l	1000	67.	100
2,4-Dinitrophenol	ND		ug/l	2000	660	100
4,6-Dinitro-o-cresol	ND		ug/l	1000	180	100
Pentachlorophenol	ND		ug/l	1000	180	100
Phenol	2000		ug/l	500	57.	100
2-Methylphenol	1500		ug/l	500	49.	100
3-Methylphenol/4-Methylphenol	3500		ug/l	500	48.	100
2,4,5-Trichlorophenol	ND		ug/l	500	77.	100
Benzyl Alcohol	ND		ug/l	200	59.	100

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	**0**	Q	21-120
Phenol-d6	**0**	Q	10-120
Nitrobenzene-d5	**0**	Q	23-120
2-Fluorobiphenyl	**0**	Q	15-120
2,4,6-Tribromophenol	**0**	Q	10-120
4-Terphenyl-d14	**0**	Q	41-149

Project Name: OU-4 SYSTEM
Project Number: T0071-022-910
Lab Number: L2231847
Report Date: 06/20/22

SAMPLE RESULTS

Lab ID: L2231847-03
Client ID: B-3
Sample Location: BUFFALO, NY

Date Collected: 06/15/22 15:05
Date Received: 06/15/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 134,LCMSMS-ID
Analytical Date: 06/19/22 12:09
Analyst: SG

Extraction Method: ALPHA 23528
Extraction Date: 06/17/22 04:04

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	47.2		ng/l	1.84	0.376	1
Perfluoropentanoic Acid (PFPeA)	56.0		ng/l	1.84	0.365	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.84	0.219	1
Perfluorohexanoic Acid (PFHxA)	4.54		ng/l	1.84	0.302	1
Perfluoroheptanoic Acid (PFHpA)	4.92		ng/l	1.84	0.207	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.84	0.346	1
Perfluorooctanoic Acid (PFOA)	31.5		ng/l	1.84	0.217	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	1.84	1.23	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.84	0.634	1
Perfluorononanoic Acid (PFNA)	1.00	J	ng/l	1.84	0.287	1
Perfluorooctanesulfonic Acid (PFOS)	7.01		ng/l	1.84	0.464	1
Perfluorodecanoic Acid (PFDA)	0.542	J	ng/l	1.84	0.280	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.84	1.12	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.84	0.597	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.84	0.240	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.84	0.903	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.84	0.534	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	2.36		ng/l	1.84	0.741	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.84	0.343	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.84	0.301	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.84	0.228	1
PFOA/PFOS, Total	38.5		ng/l	1.84	0.217	1

Project Name: OU-4 SYSTEM **Lab Number:** L2231847

Project Number: T0071-022-910 **Report Date:** 06/20/22

SAMPLE RESULTS

Lab ID: L2231847-03 Date Collected: 06/15/22 15:05

Client ID: B-3 Date Received: 06/15/22

Sample Location: BUFFALO, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	67		58-132
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	64		62-163
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	77		70-131
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	63		57-129
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	**59**	Q	60-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	**64**	Q	71-134
Perfluoro[13C8]Octanoic Acid (M8PFOA)	69		62-129
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	**284**	Q	14-147
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	67		59-139
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	69		69-131
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	**61**	Q	62-124
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	**259**	Q	10-162
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	62		24-116
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	65		55-137
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	24		10-112
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	58		27-126
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	55		48-131
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	28		22-136

Project Name: OU-4 SYSTEM
Project Number: T0071-022-910

Lab Number: L2231847
Report Date: 06/20/22

SAMPLE RESULTS

Lab ID: L2231847-03 D2
Client ID: B-3
Sample Location: BUFFALO, NY

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D
Analytical Date: 06/20/22 11:46
Analyst: CMM

Date Collected: 06/15/22 15:05
Date Received: 06/15/22
Field Prep: Not Specified

Extraction Method: EPA 3510C
Extraction Date: 06/17/22 00:55

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	78000		ug/l	4000	930	2000
Phenol	49000		ug/l	10000	1100	2000
2-Methylphenol	32000		ug/l	10000	980	2000
3-Methylphenol/4-Methylphenol	81000		ug/l	10000	960	2000

Project Name: OU-4 SYSTEM
Project Number: T0071-022-910

Lab Number: L2231847
Report Date: 06/20/22

SAMPLE RESULTS

Lab ID: L2231847-03 D
Client ID: B-3
Sample Location: BUFFALO, NY

Date Collected: 06/15/22 15:05
Date Received: 06/15/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D
Analytical Date: 06/19/22 14:24
Analyst: CMM

Extraction Method: EPA 3510C
Extraction Date: 06/17/22 00:55

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	100000	E	ug/l	400	93.	200
2,4,6-Trichlorophenol	ND		ug/l	1000	120	200
p-Chloro-m-cresol	ND		ug/l	400	70.	200
2-Chlorophenol	ND		ug/l	400	96.	200
2,4-Dichlorophenol	ND		ug/l	1000	82.	200
2,4-Dimethylphenol	33000		ug/l	1000	360	200
2-Nitrophenol	ND		ug/l	2000	170	200
4-Nitrophenol	ND		ug/l	2000	130	200
2,4-Dinitrophenol	ND		ug/l	4000	1300	200
4,6-Dinitro-o-cresol	ND		ug/l	2000	360	200
Pentachlorophenol	ND		ug/l	2000	360	200
Phenol	63000	E	ug/l	1000	110	200
2-Methylphenol	42000	E	ug/l	1000	98.	200
3-Methylphenol/4-Methylphenol	100000	E	ug/l	1000	96.	200
2,4,5-Trichlorophenol	ND		ug/l	1000	150	200
Benzyl Alcohol	ND		ug/l	400	120	200

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	**0**	Q	21-120
Phenol-d6	**0**	Q	10-120
Nitrobenzene-d5	**0**	Q	23-120
2-Fluorobiphenyl	**0**	Q	15-120
2,4,6-Tribromophenol	**0**	Q	10-120
4-Terphenyl-d14	**0**	Q	41-149

Project Name: OU-4 SYSTEM
Project Number: T0071-022-910

Lab Number: L2231847
Report Date: 06/20/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 06/17/22 17:13
Analyst: CMM

Extraction Method: EPA 3510C
Extraction Date: 06/16/22 08:18

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01-03 Batch: WG1651333-1					
Naphthalene	ND		ug/l	2.0	0.46
2,4,6-Trichlorophenol	ND		ug/l	5.0	0.61
p-Chloro-m-cresol	ND		ug/l	2.0	0.35
2-Chlorophenol	ND		ug/l	2.0	0.48
2,4-Dichlorophenol	ND		ug/l	5.0	0.41
2,4-Dimethylphenol	ND		ug/l	5.0	1.8
2-Nitrophenol	ND		ug/l	10	0.85
4-Nitrophenol	ND		ug/l	10	0.67
2,4-Dinitrophenol	ND		ug/l	20	6.6
4,6-Dinitro-o-cresol	ND		ug/l	10	1.8
Pentachlorophenol	ND		ug/l	10	1.8
Phenol	ND		ug/l	5.0	0.57
2-Methylphenol	ND		ug/l	5.0	0.49
3-Methylphenol/4-Methylphenol	ND		ug/l	5.0	0.48
2,4,5-Trichlorophenol	ND		ug/l	5.0	0.77
Benzyl Alcohol	ND		ug/l	2.0	0.59

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	66		21-120
Phenol-d6	52		10-120
Nitrobenzene-d5	74		23-120
2-Fluorobiphenyl	79		15-120
2,4,6-Tribromophenol	81		10-120
4-Terphenyl-d14	75		41-149

Project Name: OU-4 SYSTEM
Project Number: T0071-022-910

Lab Number: L2231847
Report Date: 06/20/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 134,LCMSMS-ID
Analytical Date: 06/19/22 09:57
Analyst: SG

Extraction Method: ALPHA 23528
Extraction Date: 06/17/22 04:04

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab for sample(s): 01-03 Batch: WG1651805-1					
Perfluorobutanoic Acid (PFBA)	ND		ng/l	2.00	0.408
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	2.00	0.396
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	2.00	0.238
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	2.00	0.328
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	2.00	0.225
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	2.00	0.376
Perfluorooctanoic Acid (PFOA)	ND		ng/l	2.00	0.236
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	2.00	1.33
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	2.00	0.688
Perfluorononanoic Acid (PFNA)	ND		ng/l	2.00	0.312
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	2.00	0.504
Perfluorodecanoic Acid (PFDA)	ND		ng/l	2.00	0.304
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	2.00	1.21
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	2.00	0.648
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	2.00	0.260
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	2.00	0.980
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	2.00	0.580
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	2.00	0.804
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	2.00	0.372
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	2.00	0.327
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	2.00	0.248
PFOA/PFOS, Total	ND		ng/l	2.00	0.236

Project Name: OU-4 SYSTEM
Project Number: T0071-022-910

Lab Number: L2231847
Report Date: 06/20/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 134,LCMSMS-ID
Analytical Date: 06/19/22 09:57
Analyst: SG

Extraction Method: ALPHA 23528
Extraction Date: 06/17/22 04:04

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab for sample(s): 01-03 Batch: WG1651805-1					

Surrogate (Extracted Internal Standard)	%Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	85		58-132
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	97		62-163
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	86		70-131
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	92		57-129
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	93		60-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	85		71-134
Perfluoro[13C8]Octanoic Acid (M8PFOA)	85		62-129
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	71		14-147
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	83		59-139
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	80		69-131
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	83		62-124
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	69		10-162
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	71		24-116
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	91		55-137
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	42		10-112
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	67		27-126
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	82		48-131
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	61		22-136

Lab Control Sample Analysis
Batch Quality Control

Project Name: OU-4 SYSTEM
Project Number: T0071-022-910

Lab Number: L2231847
Report Date: 06/20/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-03 Batch: WG1651333-2 WG1651333-3								
Naphthalene	70		80		40-140	13		30
2,4,6-Trichlorophenol	84		90		30-130	7		30
p-Chloro-m-cresol	82		89		23-97	8		30
2-Chlorophenol	76		90		27-123	17		30
2,4-Dichlorophenol	83		91		30-130	9		30
2,4-Dimethylphenol	77		88		30-130	13		30
2-Nitrophenol	84		97		30-130	14		30
4-Nitrophenol	76		70		10-80	8		30
2,4-Dinitrophenol	75		72		20-130	4		30
4,6-Dinitro-o-cresol	75		76		20-164	1		30
Pentachlorophenol	81		80		9-103	1		30
Phenol	54		66		12-110	20		30
2-Methylphenol	77		84		30-130	9		30
3-Methylphenol/4-Methylphenol	75		86		30-130	14		30
2,4,5-Trichlorophenol	86		90		30-130	5		30
Benzyl Alcohol	70		77		26-116	10		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: OU-4 SYSTEM

Project Number: T0071-022-910

Lab Number: L2231847

Report Date: 06/20/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-03 Batch: WG1651333-2 WG1651333-3								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	70		74		21-120
Phenol-d6	58		65		10-120
Nitrobenzene-d5	79		89		23-120
2-Fluorobiphenyl	77		84		15-120
2,4,6-Tribromophenol	84		86		10-120
4-Terphenyl-d14	75		76		41-149

Lab Control Sample Analysis
Batch Quality Control

Project Name: OU-4 SYSTEM
Project Number: T0071-022-910

Lab Number: L2231847
Report Date: 06/20/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-03 Batch: WG1651805-2								
Perfluorobutanoic Acid (PFBA)	106		-		67-148	-		30
Perfluoropentanoic Acid (PFPeA)	106		-		63-161	-		30
Perfluorobutanesulfonic Acid (PFBS)	110		-		65-157	-		30
Perfluorohexanoic Acid (PFHxA)	106		-		69-168	-		30
Perfluoroheptanoic Acid (PFHpA)	106		-		58-159	-		30
Perfluorohexanesulfonic Acid (PFHxS)	120		-		69-177	-		30
Perfluorooctanoic Acid (PFOA)	110		-		63-159	-		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	113		-		49-187	-		30
Perfluoroheptanesulfonic Acid (PFHpS)	116		-		61-179	-		30
Perfluorononanoic Acid (PFNA)	119		-		68-171	-		30
Perfluorooctanesulfonic Acid (PFOS)	126		-		52-151	-		30
Perfluorodecanoic Acid (PFDA)	118		-		63-171	-		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	108		-		56-173	-		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	119		-		60-166	-		30
Perfluoroundecanoic Acid (PFUnA)	104		-		60-153	-		30
Perfluorodecanesulfonic Acid (PFDS)	118		-		38-156	-		30
Perfluorooctanesulfonamide (FOSA)	112		-		46-170	-		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	102		-		45-170	-		30
Perfluorododecanoic Acid (PFDoA)	112		-		67-153	-		30
Perfluorotridecanoic Acid (PFTrDA)	147		-		48-158	-		30
Perfluorotetradecanoic Acid (PFTA)	153		-		59-182	-		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: OU-4 SYSTEM
Project Number: T0071-022-910

Lab Number: L2231847
Report Date: 06/20/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-03 Batch: WG1651805-2								

Surrogate (Extracted Internal Standard)	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	85				58-132
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	97				62-163
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	84				70-131
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	90				57-129
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	89				60-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	84				71-134
Perfluoro[13C8]Octanoic Acid (M8PFOA)	84				62-129
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	78				14-147
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	79				59-139
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	78				69-131
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	79				62-124
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	69				10-162
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	77				24-116
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	85				55-137
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	51				10-112
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	75				27-126
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	85				48-131
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	59				22-136

Matrix Spike Analysis

Batch Quality Control

Project Name: OU-4 SYSTEM

Project Number: T0071-022-910

Lab Number: L2231847

Report Date: 06/20/22

Parameter	*Native Sample*	*MS Added*	*MS Found*	*MS %Recovery*	*Qual*	*MSD Found*	*MSD %Recovery*	*Qual*	*Recovery Limits*	*RPD*	*Qual*	*RPD Limits*
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-03 QC Batch ID: WG1651805-3 QC Sample: L2231111-09 Client ID: MS Sample												
Perfluorobutanoic Acid (PFBA)	8.26	39.6	50.3	106		-	-		67-148	-		30
Perfluoropentanoic Acid (PFPeA)	13.7	39.6	54.9	104		-	-		63-161	-		30
Perfluorobutanesulfonic Acid (PFBS)	7.58	35.2	44.4	105		-	-		65-157	-		30
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND	37.1	42.2	114		-	-		37-219	-		30
Perfluorohexanoic Acid (PFHxA)	14.0	39.6	55.2	104		-	-		69-168	-		30
Perfluoropentanesulfonic Acid (PFPeS)	9.72	37.3	50.4	109		-	-		52-156	-		30
Perfluoroheptanoic Acid (PFHpA)	11.7	39.6	52.7	104		-	-		58-159	-		30
Perfluorohexanesulfonic Acid (PFHxS)	90.6	36.2	139	134		-	-		69-177	-		30
Perfluorooctanoic Acid (PFOA)	37.3	39.6	79.8	107		-	-		63-159	-		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND	37.7	42.4	113		-	-		49-187	-		30
Perfluoroheptanesulfonic Acid (PFHpS)	1.95	37.8	46.7	118		-	-		61-179	-		30
Perfluorononanoic Acid (PFNA)	2.64	39.6	48.8	117		-	-		68-171	-		30
Perfluorooctanesulfonic Acid (PFOS)	43.7	36.7	89.8	125		-	-		52-151	-		30
Perfluorodecanoic Acid (PFDA)	0.912J	39.6	45.0	111		-	-		63-171	-		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND	38	40.6	107		-	-		56-173	-		30
Perfluorononanesulfonic Acid (PFNS)	ND	38.1	42.6	112		-	-		48-150	-		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND	39.6	47.4	120		-	-		60-166	-		30
Perfluoroundecanoic Acid (PFUnA)	ND	39.6	37.8	96		-	-		60-153	-		30
Perfluorodecanesulfonic Acid (PFDS)	ND	38.2	38.3	100		-	-		38-156	-		30
Perfluorooctanesulfonamide (FOSA)	ND	39.6	44.8	113		-	-		46-170	-		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND	39.6	43.1	109		-	-		45-170	-		30
Perfluorododecanoic Acid (PFDoA)	ND	39.6	45.6	115		-	-		67-153	-		30

Matrix Spike Analysis

Batch Quality Control

Project Name: OU-4 SYSTEM

Project Number: T0071-022-910

Lab Number: L2231847

Report Date: 06/20/22

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-03 QC Batch ID: WG1651805-3 QC Sample: L2231111-09 Client ID: MS Sample												
Perfluorotridecanoic Acid (PFTrDA)	ND	39.6	58.5	148		-	-		48-158	-		30
Perfluorotetradecanoic Acid (PFTA)	ND	39.6	59.8	151		-	-		59-182	-		30

Surrogate (Extracted Internal Standard)	MS % Recovery	MS Qualifier	MSD % Recovery	MSD Qualifier	Acceptance Criteria
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	136				10-162
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	**259**	Q			12-142
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	**223**	Q			14-147
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	69				27-126
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	60				24-116
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	70				55-137
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	71				62-124
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	71				57-129
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	79				60-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	78				71-134
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	57				48-131
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	40				22-136
Perfluoro[13C4]Butanoic Acid (MPFBA)	79				58-132
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	77				62-163
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	19				10-112
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	75				69-131
Perfluoro[13C8]Octanoic Acid (M8PFOA)	81				62-129
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	76				59-139
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	80				70-131

Lab Duplicate Analysis
Batch Quality Control

Project Name: OU-4 SYSTEM
Project Number: T0071-022-910

Lab Number: L2231847
Report Date: 06/20/22

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-03 QC Batch ID: WG1651805-4 QC Sample: L2231111-10 Client ID: DUP Sample						
Perfluorobutanoic Acid (PFBA)	6.46	6.48	ng/l	0		30
Perfluoropentanoic Acid (PFPeA)	7.01	7.24	ng/l	3		30
Perfluorobutanesulfonic Acid (PFBS)	4.81	4.79	ng/l	0		30
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND	ND	ng/l	NC		30
Perfluorohexanoic Acid (PFHxA)	5.72	5.68	ng/l	1		30
Perfluoropentanesulfonic Acid (PFPeS)	1.04J	1.37J	ng/l	NC		30
Perfluoroheptanoic Acid (PFHpA)	3.60	3.54	ng/l	2		30
Perfluorohexanesulfonic Acid (PFHxS)	5.34	6.10	ng/l	13		30
Perfluorooctanoic Acid (PFOA)	13.5	13.6	ng/l	1		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND	ND	ng/l	NC		30
Perfluoroheptanesulfonic Acid (PFHpS)	ND	ND	ng/l	NC		30
Perfluorononanoic Acid (PFNA)	0.706J	0.675J	ng/l	NC		30
Perfluorooctanesulfonic Acid (PFOS)	8.68	9.16	ng/l	5		30
Perfluorodecanoic Acid (PFDA)	ND	ND	ng/l	NC		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND	ND	ng/l	NC		30
Perfluorononanesulfonic Acid (PFNS)	ND	ND	ng/l	NC		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND	ND	ng/l	NC		30
Perfluoroundecanoic Acid (PFUnA)	ND	ND	ng/l	NC		30
Perfluorodecanesulfonic Acid (PFDS)	ND	ND	ng/l	NC		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND	ND	ng/l	NC		30

Lab Duplicate Analysis
Batch Quality Control

Project Name: OU-4 SYSTEM
Project Number: T0071-022-910

Lab Number: L2231847
Report Date: 06/20/22

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-03 QC Batch ID: WG1651805-4 QC Sample: L2231111-10 Client ID: DUP Sample						
Perfluorododecanoic Acid (PFDoA)	ND	ND	ng/l	NC		30
Perfluorotridecanoic Acid (PFTrDA)	ND	ND	ng/l	NC		30
Perfluorotetradecanoic Acid (PFTA)	ND	ND	ng/l	NC		30

Surrogate (Extracted Internal Standard)	%Recovery	Qualifier	%Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	72		73		58-132
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	82		84		62-163
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	82		81		70-131
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	147	Q	134		12-142
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	71		76		57-129
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	75		81		60-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	83		81		71-134
Perfluoro[13C8]Octanoic Acid (M8PFOA)	70		76		62-129
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	92		89		14-147
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	64		68		59-139
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	75		74		69-131
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	66		69		62-124
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	63		58		10-162
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	49		58		24-116
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	77		80		55-137
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	53		57		27-126
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	68		66		48-131
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	48		48		22-136

Project Name: OU-4 SYSTEM
Project Number: T0071-022-910

Lab Number: L2231847
Report Date: 06/20/22

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent
B	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2231847-01A	Vial HCl preserved	A	NA		3.9	Y	Absent		NYCP51-8260(14)
L2231847-01B	Vial HCl preserved	A	NA		3.9	Y	Absent		NYCP51-8260(14)
L2231847-01C	Vial HCl preserved	A	NA		3.9	Y	Absent		NYCP51-8260(14)
L2231847-01D	Amber 250ml unpreserved	A	7	7	3.9	Y	Absent		NYTCL-8270-LVI(7)
L2231847-01E	Amber 250ml unpreserved	A	7	7	3.9	Y	Absent		NYTCL-8270-LVI(7)
L2231847-01F	Plastic 250ml unpreserved	A	NA		3.9	Y	Absent		A2-NY-537-ISOTOPE(14)
L2231847-01G	Plastic 250ml unpreserved	A	NA		3.9	Y	Absent		A2-NY-537-ISOTOPE(14)
L2231847-02A	Vial HCl preserved	A	NA		3.9	Y	Absent		NYCP51-8260(14)
L2231847-02B	Vial HCl preserved	A	NA		3.9	Y	Absent		NYCP51-8260(14)
L2231847-02C	Vial HCl preserved	A	NA		3.9	Y	Absent		NYCP51-8260(14)
L2231847-02D	Amber 250ml unpreserved	A	7	7	3.9	Y	Absent		NYTCL-8270-LVI(7)
L2231847-02E	Amber 250ml unpreserved	A	7	7	3.9	Y	Absent		NYTCL-8270-LVI(7)
L2231847-02F	Plastic 250ml unpreserved	A	NA		3.9	Y	Absent		A2-NY-537-ISOTOPE(14)
L2231847-02G	Plastic 250ml unpreserved	A	NA		3.9	Y	Absent		A2-NY-537-ISOTOPE(14)
L2231847-03A	Vial HCl preserved	A	NA		3.9	Y	Absent		NYCP51-8260(14)
L2231847-03B	Vial HCl preserved	A	NA		3.9	Y	Absent		NYCP51-8260(14)
L2231847-03C	Vial HCl preserved	A	NA		3.9	Y	Absent		NYCP51-8260(14)
L2231847-03D	Amber 250ml unpreserved	A	7	7	3.9	Y	Absent		NYTCL-8270-LVI(7)
L2231847-03E	Amber 250ml unpreserved	A	7	7	3.9	Y	Absent		NYTCL-8270-LVI(7)
L2231847-03F	Plastic 250ml unpreserved	A	NA		3.9	Y	Absent		A2-NY-537-ISOTOPE(14)
L2231847-03G	Plastic 250ml unpreserved	A	NA		3.9	Y	Absent		A2-NY-537-ISOTOPE(14)
L2231847-04A	2 Plastic Trizma/1 Plastic/1 H20+Trizma	B	NA		5.6	Y	Absent		HOLD-537(14)

*Values in parentheses indicate holding time in days

Project Name: OU-4 SYSTEM
Project Number: T0071-022-910

Lab Number: L2231847
Report Date: 06/20/22

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)

*Values in parentheses indicate holding time in days

Project Name: OU-4 SYSTEM
Project Number: T0071-022-910

Lab Number: L2231847
Report Date: 06/20/22

PFAS PARAMETER SUMMARY

Parameter	Acronym	CAS Number
PERFLUOROALKYL CARBOXYLIC ACIDS (PFCAs)		
Perfluorooctadecanoic Acid	PFODA	16517-11-6
Perfluorohexadecanoic Acid	PFHxDA	67905-19-5
Perfluorotetradecanoic Acid	PFTA	376-06-7
Perfluorotridecanoic Acid	PFTrDA	72629-94-8
Perfluorododecanoic Acid	PFDoA	307-55-1
Perfluoroundecanoic Acid	PFUnA	2058-94-8
Perfluorodecanoic Acid	PFDA	335-76-2
Perfluorononanoic Acid	PFNA	375-95-1
Perfluorooctanoic Acid	PFOA	335-67-1
Perfluoroheptanoic Acid	PFHpA	375-85-9
Perfluorohexanoic Acid	PFHxA	307-24-4
Perfluoropentanoic Acid	PFPeA	2706-90-3
Perfluorobutanoic Acid	PFBA	375-22-4
PERFLUOROALKYL SULFONIC ACIDS (PFSAs)		
Perfluorododecanesulfonic Acid	PFDoDS	79780-39-5
Perfluorodecanesulfonic Acid	PFDS	335-77-3
Perfluorononanesulfonic Acid	PFNS	68259-12-1
Perfluorooctanesulfonic Acid	PFOS	1763-23-1
Perfluoroheptanesulfonic Acid	PFHpS	375-92-8
Perfluorohexanesulfonic Acid	PFHxS	355-46-4
Perfluoropentanesulfonic Acid	PFPeS	2706-91-4
Perfluorobutanesulfonic Acid	PFBS	375-73-5
FLUOROTELOMERS		
1H,1H,2H,2H-Perfluorododecanesulfonic Acid	10:2FTS	120226-60-0
1H,1H,2H,2H-Perfluorodecanesulfonic Acid	8:2FTS	39108-34-4
1H,1H,2H,2H-Perfluorooctanesulfonic Acid	6:2FTS	27619-97-2
1H,1H,2H,2H-Perfluorohexanesulfonic Acid	4:2FTS	757124-72-4
PERFLUOROALKANE SULFONAMIDES (FASAs)		
Perfluorooctanesulfonamide	FOSA	754-91-6
N-Ethyl Perfluorooctane Sulfonamide	NEtFOSA	4151-50-2
N-Methyl Perfluorooctane Sulfonamide	NMeFOSA	31506-32-8
PERFLUOROALKANE SULFONYL SUBSTANCES		
N-Ethyl Perfluorooctanesulfonamido Ethanol	NEtFOSE	1691-99-2
N-Methyl Perfluorooctanesulfonamido Ethanol	NMeFOSE	24448-09-7
N-Ethyl Perfluorooctanesulfonamidoacetic Acid	NEtFOSAA	2991-50-6
N-Methyl Perfluorooctanesulfonamidoacetic Acid	NMeFOSAA	2355-31-9
PER- and POLYFLUOROALKYL ETHER CARBOXYLIC ACIDS		
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid	HFPO-DA	13252-13-6
4,8-Dioxa-3h-Perfluorononanoic Acid	ADONA	919005-14-4
CHLORO-PERFLUOROALKYL SULFONIC ACIDS		
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid	11Cl-PF3OUdS	763051-92-9
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid	9Cl-PF3ONS	756426-58-1
PERFLUOROETHER SULFONIC ACIDS (PFESAs)		
Perfluoro(2-Ethoxyethane)Sulfonic Acid	PFEESA	113507-82-7
PERFLUOROETHER/POLYETHER CARBOXYLIC ACIDS (PFPCAs)		
Perfluoro-3-Methoxypropanoic Acid	PFMPA	377-73-1
Perfluoro-4-Methoxybutanoic Acid	PFMBA	863090-89-5
Nonafluoro-3,6-Dioxaheptanoic Acid	NFDHA	151772-58-6

Project Name:	OU-4 SYSTEM	**Lab Number:**	L2231847
Project Number:	T0071-022-910	**Report Date:**	06/20/22

GLOSSARY

Acronyms

DL	- Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EMPC	- Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LOD	- Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
LOQ	- Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.) Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
NR	- No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TEF	- Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.
TEQ	- Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: DU Report with 'J' Qualifiers

Project Name:	OU-4 SYSTEM	**Lab Number:**	L2231847
Project Number:	T0071-022-910	**Report Date:**	06/20/22

Footnotes

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: If a 'Total' result is requested, the results of its individual components will also be reported.

The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

Report Format: DU Report with 'J' Qualifiers

Project Name:	OU-4 SYSTEM	**Lab Number:**	L2231847
Project Number:	T0071-022-910	**Report Date:**	06/20/22

Data Qualifiers

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

V - The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Z - The batch matrix spike and/or duplicate associated with this target analyte has a recovery/RPD outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Report Format: DU Report with 'J' Qualifiers

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - VI, 2018.

134 Determination of Selected Perfluorinated Alkyl Acids in Drinking Water by Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS) using Isotope Dilution. Alpha SOP 23528.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624/624.1: m/p-xylene, o-xylene, Naphthalene
EPA 625/625.1: alpha-Terpineol
EPA 8260C/8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D/8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N, **SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603, SM9222D.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522, EPA 537.1.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb, As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

NEW YORK CHAIN OF CUSTODY

ALPHA ANALYTICAL

Westborough, MA 01581
8 Walkup Dr.
TEL: 508-898-9220
FAX: 508-898-9193

Mansfield, MA 02048
320 Forbes Blvd
TEL: 508-822-9300
FAX: 508-822-3288

Service Centers
Mahwah, NJ 07430: 35 Whitney Rd, Suite 5
Albany, NY 12205: 14 Walker Way
Tonawanda, NY 14150: 275 Cooper Ave, Suite 105

Page 1 of 1

Date Rec'd in Lab: 6/16/22

ALPHA Job #: L2231847

Client Information

Client: Benchmark Environmental
Address: 2558 Hamburg Turnpike, Ste300
Buffalo, NY 14218
Phone: 716-856-0599
Fax:
Email: bgmenee@benmrk.com

Project Information

Project Name: OU-4 System
Project Location: Buffalo, NY
Project #: T0071-022-910
(Use Project name as Project #) ☐
Project Manager: Brock Greene
ALPHAQuote #:

Turn-Around Time

Standard ☐ Due Date:
Rush (only if pre approved) ☒ 3 day # of Days:

These samples have been previously analyzed by Alpha ☑

Other project specific requirements/comments:

Email results to:

Please specify Metals or TAL.

Deliverables

☐ ASP-A ☐ ASP-B
☐ EQuIS (1 File) ☐ EQuIS (4 File)
☐ Other

Regulatory Requirement

☐ NY TOGS ☐ NY Part 375
☐ AWQ Standards ☐ NY CP-51
☐ NY Restricted Use ☐ Other
☐ NY Unrestricted Use
☐ NYC Sewer Discharge

Billing Information

☑ Same as Client Info
PO #

Disposal Site Information

Please identify below location of applicable disposal facilities.

Disposal Facility:
☐ NJ ☐ NY
☐ Other: NA

ANALYSIS

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	NYTCL-8260 CP-51 list	TCL-8270 Phenol+Naphth	PFAS (list of 21)	Sample Filtration / Preservation	Sample Specific Comments	Total Bottles
31547-01	TB-1	6-15-22	1245	Water	BMG	X	X	X			7
02	TB-2		1355	Water		X	X	X			7
03	TB-3		1505	Water		X	X	X			7
04	Field Blank		1527	Water				X		Hold	2

Sample Filtration: ☐ Done ☐ Lab to do
Preservation: ☐ Lab to do
(Please Specify below)

Container Type	V	A	P
Preservative	B	A	A

Preservative Code:
A = None
B = HCl
C = HNO_3
D = H_2SO_4
E = NaOH
F = MeOH
G = $NaHSO_4$
H = $Na_2S_2O_3$
K/E = Zn Ac/NaOH
O = Other

Container Code
P = Plastic
A = Amber Glass
V = Vial
G = Glass
B = Bacteria Cup
C = Cube
O = Other
E = Encore
D = BOD Bottle

Westboro: Certification No: MA935
Mansfield: Certification No: MA015

Relinquished By:	Date/Time	Received By:	Date/Time
Brock Greene	6-15-22/16:00	Jon AL AAL	6/15/22 16:00
Jon AL AAL	6/15/22 16:45		6/16/22 0820

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY ALPHA'S TERMS & CONDITIONS.

Form No: 01-25 (rev. 30-Sept-2013)

ATTACHMENT 5

GROUNDWATER SAMPLING FIELD SHEETS

GROUNDWATER FIELD FORM

Project Name: OU-4 Sep GWM Date: 6-15-22

Location: OU4 Project No.: T0071-022-011 Field Team: BMG

Well No. B-1			Diameter (inches): 6"			Sample Date / Time: 6-15-22 / 1245			
Product Depth (fbTOR): ND			Water Column (ft): 14.03			DTW when sampled: 8.0			
DTW (static) (fbTOR): 5.82			One Well Volume (gal): 20.6			Purpose: ☐ Development ☐ Sample ☑ Purge & Sample			
Total Depth (fbTOR): 19.85			Total Volume Purged (gal): 41			Purge Method: Bailer			
Time	Water Level (fbTOR)	Acc. Volume (gallons)	pH (units)	Temp. (deg. C)	SC (uS)	Turbidity (NTU)	DO (mg/L)	ORP (mV)	Appearance & Odor
1145	0 Initial	0.25	7.15	17.6	1161	335	3.82	152	clear, No odor
1151	1 8.10	5.0	7.96	14.9	1149	173	3.54	107	" "
1158	2 8.60	10.0	7.97	15.5	1143	164	3.44	-17	" "
1204	3 8.75	15.0	7.86	14.2	1154	118	2.24	-135	" "
1211	4 8.65	20.0	7.77	14.9	1151	77.7	1.51	-169	" "
1217	5 8.85	25.0	7.71	14.9	1148	54.4	1.19	-183	" "
1224	6 8.75	30.00	7.67	15.8	1149	39.3	0.98	-191	" "
1232	7 9.10	35.00	7.67	15.7	1138	34.8	0.85	-200	" "
	8								
	9								
	10								
Sample Information:									
1239	S1 9.10	40	7.67	15.6	1134	23.8	0.70	-199	" "
1253	S2 6.45	41	7.69	15.7	1120	28.8	0.64	-185	" "

Well No. B-2			Diameter (inches): 6"			Sample Date / Time: 6-15-22 / 1355			
Product Depth (fbTOR): ND			Water Column (ft): 12.96			DTW when sampled: 7.5			
DTW (static) (fbTOR): 6.84			One Well Volume (gal): 19.04			Purpose: ☐ Development ☐ Sample ☑ Purge & Sample			
Total Depth (fbTOR): 19.80'			Total Volume Purged (gal): 31.			Purge Method: Bailer			
Time	Water Level (fbTOR)	Acc. Volume (gallons)	pH (units)	Temp. (deg. C)	SC (uS)	Turbidity (NTU)	DO (mg/L)	ORP (mV)	Appearance & Odor
1314	0 Initial	0.5	7.49	17.9	1569	103	0.68	-209	clear, faint odor
1319	1 7.64	5.0	7.89	16.2	1556	90.5	0.68	-215	" "
1325	2 7.78	10.0	7.87	16.2	1539	80.2	0.64	-214	" "
1332	3 7.90	15.0	7.82	14.6	1557	63.0	0.62	-213	" "
1338	4 7.90	20.0	7.77	14.9	1596	46.3	0.49	-216	" "
1344	5 7.78	25.0	7.74	14.1	1613	32.4	0.54	-221	" "
	6								
	7								
	8								
	9								
	10								
Sample Information:									
1351	S1 7.68	30.0	7.70	14.4	1634	20.5	0.43	-228	" "
1405	S2 7.02	31.0	7.71	15.0	1638	21.3	0.32	-225	" "

REMARKS:

Note: All measurements are in feet, distance from top of riser.

Volume Calculation

Diam.	Vol. (g/ft)
1"	0.041
2"	0.163
4"	0.653
6"	1.469

Stabilization Criteria

Parameter	Criteria
pH	± 0.1 unit
SC	± 3%
Turbidity	± 10%
DO	± 0.3 mg/L
ORP	± 10 mV

PREPARED BY: BMG

GROUNDWATER FIELD FORM

Project Name: OU-4 Sup GWM Date: 6-15-22

Location: OU-4 Project No.: T0078-022-911 Field Team: BMB

Well No. R-3			Diameter (inches): 6.0			Sample Date / Time: 6-15-22 / 1505			
Product Depth (fbTOR): ND			Water Column (ft): 13.98			DTW when sampled: 9.0			
DTW (static) (fbTOR): 9.02			One Well Volume (gal): 20.4			Purpose: ☐ Development ☐ Sample ☑ Purge & Sample			
Total Depth (fbTOR): 22.0			Total Volume Purged (gal): 26			Purge Method: Bailer			
Time	Water Level (fbTOR)	Acc. Volume (gallons)	pH (units)	Temp. (deg. C)	SC (uS)	Turbidity (NTU)	DO (mg/L)	ORP (mV)	Appearance & Odor
1423	0 Initial	1.0	9.23	17.7	1218	89.3	2.19	-136	Tea color, Faint odor
1428	1 9.45	5.0	9.29	16.2	1220	89.2	1.50	-91	" " foamy
1435	2 9.80	15.0	9.30	15.8	1213	86.9	1.50	-70	" " "
1441	3 10.02	15.0	9.28	15.5	1207	86.7	1.50	-70	" " "
1448	4 10.18	20.0	9.29	15.4	1204	86.8	1.32	-72	" " "
	5								
	6								
	7								
	8								
	9								
	10								
Sample Information:									
1454	S1 10.18	25.0	9.28	16.2	1206	82.4	1.33	-75	Tea Color, Faint odor, foam
1501	S2 8.74	26.0	9.29	16.0	1202	89.1	1.31	-50	" " "

Well No.			Diameter (inches):			Sample Date / Time:			
Product Depth (fbTOR):			Water Column (ft):			DTW when sampled:			
DTW (static) (fbTOR):			One Well Volume (gal):			Purpose: ☐ Development ☐ Sample ☐ Purge & Sample			
Total Depth (fbTOR):			Total Volume Purged (gal):			Purge Method:			
Time	Water Level (fbTOR)	Acc. Volume (gallons)	pH (units)	Temp. (deg. C)	SC (uS)	Turbidity (NTU)	DO (mg/L)	ORP (mV)	Appearance & Odor
	0 Initial								
	1								
	2								
	3								
	4								
	5								
	6								
	7								
	8								
	9								
	10								
Sample Information:									
	S1								
	S2								

REMARKS: B-3 water created foam when poured into bucket.

Note: All measurements are in feet, distance from top of riser.

Volume Calculation

Diam.	Vol. (g/ft)
1"	0.041
2"	0.163
4"	0.653
6"	1.469

Stabilization Criteria

Parameter	Criteria
pH	± 0.1 unit
SC	± 3%
Turbidity	± 10%
DO	± 0.3 mg/L
ORP	± 10 mV

PREPARED BY: BMB

TurnKey Environmental Restoration LLC

EQUIPMENT CALIBRATION LOG

PROJECT INFORMATION:

Project Name: Old Supp GW
Project No.: T0071-022-911
Client: Tecumseh

Date: 6-15-22

Instrument Source: ☑ BM ☐ Rental

METER TYPE	UNITS	TIME	MAKE/MODEL	SERIAL NUMBER	CAL. BY	STANDARD	POST CAL. READING	SETTINGS
☑ pH meter	units	911	Myron L Company Ultra Meter 6P	6213516 ☐ 6243084 ☐ 6212375 ☐ 6243003 ☐ 6223973 ☑	BMB	4.00 7.00 10.01	4.00 7.02 10.00	
☑ Turbidity meter	NTU	915	Hach 2100P or 2100Q Turbidimeter	06120C020523 (P) ☐ 13120C030432 (Q) ☐ 17110C062619 (Q) ☑	BMB	10 NTU verification <0.4 20 100 800	10 NA 18.9 99.8 813	
☑ Sp. Cond. meter	uS mS	913	Myron L Company Ultra Meter 6P	6213516 ☐ 6243084 ☐ 6212375 ☐ 6243003 ☐ 6223973 ☑	BMB	7000 mS @ 25 °C	7007	
☐ PID	ppm		MinRAE 2000			open air zero ____ ppm Iso. Gas		MIBK response factor = 1.0
☑ Dissolved Oxygen	ppm	925	HACH Model HQ30d	080700023281 ☐ 100500041867 ☑ 140200100319 ☐	BMB	100% Satuartion	100%	
☐ Particulate meter	mg/m^3					zero air		
☐ Radiation Meter	uR/H					background area		

ADDITIONAL REMARKS:

PREPARED BY: BMB **DATE:** 6-15-22