

September 17, 2019

Mr. Maurice Moore
NYSDEC Division of Environmental Remediation
270 Michigan Avenue
Buffalo, NY 14203

Re: Emerging Contaminants Groundwater Sampling Results
1176 South Park Site 3, Buffalo, NY (Site)
NYSDEC Site No. 915301

Dear Mr. Moore:

On behalf of our client, John W Danforth Construction, LLC (JWD), Benchmark Environmental Engineering and Science, PLLC (Benchmark) has prepared this emerging contaminant groundwater sampling results letter for the above referenced Site. On March 30, 2018, JWD received a letter from the New York State Department of Environmental Conservation (NYSDEC) requiring the Site be sampled for 1,4-dioxane and per- and polyfluoroalkyl substances (PFAS) as part of the State-wide initiative to better understand the risk posed by these compounds.

Benchmark completed the emerging contaminant sampling on May 31, 2019. The emerging contaminants sampling was completed on three (3) monitoring wells at the Site, MW-1 (upgradient location), MW-3 and MW-5 (downgradient locations), see attached Figure 1, in accordance with the NYSDEC-approved work plan dated March 23, 2019.

Sample Analysis

Groundwater samples collected for 1,4-dioxane analysis were analyzed via EPA Method 8270 Selective Ion Monitoring (SIM) mode. The samples collected for PFAS were analyzed via a modified EPA Method 537.

In addition to sampling the three (3) monitoring wells, one (1) equipment blank sample, one (1) duplicate sample, one (1) matrix spike and one (1) matrix spike duplicate sample were also collected and analyzed for 1,4-dioxane and PFAS.

The groundwater samples were analyzed by Alpha Analytical, an Environmental Laboratory Accreditation Program (ELAP) certified laboratory, which provided a Category B deliverable package to allow for the preparation of a Data Validation Usability Summary Report (DUSR) which was completed by Data Validation Services.

Sample Results

The sample results are tabulated on the attached Table 1. The analytical report is included in Attachment 1 and the DUSR is included in Attachment 2. The analyses were conducted in compliance with the required analytical protocols. The results of the samples are usable either as reported or with minor qualification as estimated concentrations.

Strong Advocates, Effective Solutions, Integrated Implementation

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BENCHMARK
ENVIRONMENTAL
ENGINEERING &
SCIENCE, PLLC

TABLE

TABLE 1

SUMMARY OF EMERGENT CONTAMINANTS GROUNDWATER ANALYTICAL RESULTS
1176 SOUTH PARK SITE 3
BUFFALO, NEW YORK

PARAMETERS ¹	NYSDEC Emergent Contaminant Threshold ²						
		RI-MW-1	RI-MW-3	RI-MW-5	Blind Dup ³	Field Blank	Equipment Blank
		5/31/2019	5/31/2019	5/31/2019	5/31/2019	5/31/2019	5/31/2019
1,4 Dioxane - ng/l							
1,4 Dioxane	350	<31.4	<31.4	<31.4	<31.4	NT	NT
Perfluorinated Alkyl Acids - ng/L							
Perfluorobutanoic acid (PFBA)	--	3.12	3.96	0.374 J	<0.358	<0.378	<0.459
Perfluroropentanoic acid (PFPeA)	--	2.1	1.44 J	<0.346	<0.347	<0.367	<0.446
Perfluorobutanesulfonic acid (PFBS)	--	1.02 J	0.792 J	<0.208	<0.209	<0.220	<0.268
Perflurorohexanoic acid (PFHxA)	--	1.59 J	1.74 J	<0.287	<0.288	<0.304	<0.369
Perfluroroheptanoic acid (PFHpA)	--	0.896 J	1.04 J	0.213 J	<0.198	<0.208	<0.254
Perfluorohexanesulfonic acid (PFHxS)	--	0.619 J	1 J	<0.329	<0.330	<0.348	<0.423
Perfluorooctanoic acid (PFOA)	--	2.36	4	<0.206	<0.207	<0.218	<0.266
1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2FTS)	--	<1.20	<1.36	<1.16	<1.17	<1.23	<1.50
Perfluoroheptanesulfonic acid (PFHpS)	--	<0.28	<0.702	<0.601	<0.604	<0.637	<0.775
Perfluorononanoic acid (PFNA)	--	<0.619	0.322 J	<0.273	<0.274	<0.289	<0.351
Perfluorooctanesulfonic acid (PFOS)	--	1.36 J	1.75 J	<0.440	<0.442	<0.467	<0.568
Perfluorodecanoic acid (PFDA)	--	<0.273	<0.310	<0.266	<0.267	<0.281	<0.342
1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2FTS)	--	<1.09	<1.36	<1.06	<1.06	<1.12	<1.36
N-Methyl Perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	--	<0.583	<0.661	<0.566	<0.568	<0.600	<0.730
Perfluoroundecanoic Acid (PFUnA)	--	<0.234	<0.265	<0.227	<0.288	<0.241	<0.293
Perfluorodecanesulfonic acid (PFDS)	--	<0.881	<1.0	<0.857	<0.860	<0.907	<1.10
Perfluorooctanesulfonamide (FOSA)	--	<0.522	<0.592	<0.507	<0.509	<0.537	<0.653
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	--	<0.723	<.820	<0.703	<0.705	<0.744	<0.905
Perfluorododecanoic Acid (PFDoA)	--	<0.334	<0.380	<0.325	<0.326	<0.344	<0.419
Perfluorotridecanoic Acid (PFTTrDA)	--	<0.294	<0.334	<0.286	<0.287	<0.303	<0.368
Perfluorotetradecanoic acid (PFTA)	--	<0.223	<0.253	<0.217	<0.218	<.230	<0.279
Total PFOA and PFOS	70	3.72	5.75	0	0	0	0
Total PFAS	500	11.71	13.97	0.59	0	0	0

Notes:

1. Only parameters detected at a minimum of one sample location are presented in this table; all other compounds were reported as non-detect.
2. Contaminant threshold values per NYSDEC Emergent Contaminant Initial Site Sampling Results Checklist.
3. Blind Dup was collected at RI-MW-5.
4. MS/MSD was collected at RI-MW-3.

Definitions:

ng/l = nanograms per liter.

"--" = No contaminant threshold value available for the parameter.

NT = Sample not analyzed for parameter.

< = compound not detected above the associated method detection limit.

J = Estimated Value - The target analyte concentration is below the quantitation limit (RL), but above the the Method Detection Limit (MDL)

BOLD

= Result exceeds NYSDEC Emergent Contaminant Threshold.

FIGURE

LEGEND:

- BCP SITE BOUNDARY
- - - PROPERTY BOUNDARY
- ◆ RI-MW-4 (574.6) MONITORING WELL WITH GROUNDWATER ELEVATION (NAVD 88)
- - - 576 GROUNDWATER CONTOUR (DASHED WHERE INFERRED)
- ➔ GROUNDWATER FLOW DIRECTION

NOTE: DEPTH TO WATER MEASUREMENTS BY BENCHMARK ON MAY 31, 2019



SCALE: 1 INCH = 200 FEET
SCALE IN FEET
(approximate)



2558 HAMBURG TURNPIKE
SUITE 300
BUFFALO, NY 14218
(716) 856-0599

PROJECT NO.: 0413-019-001

DATE: SEPTEMBER 2019

DRAFTED BY: CMC

GROUNDWATER ISOPOTENTIAL MAP (MAY 2019)

EMERGENT CONTAMINANT SAMPLING

SOUTH PARK AVENUE SITE 3
BCP SITE NO. C915301
BUFFALO, NEW YORK

PREPARED FOR
JOHN W. DANFORTH CONSTRUCTION, LLC

FIGURE 1

DISCLAIMER:
PROPERTY OF BENCHMARK ENVIRONMENTAL ENGINEERING & SCIENCE, PLLC. IMPORTANT: THIS DRAWING PRINT IS LOANED FOR MUTUAL ASSISTANCE AND AS SUCH IS SUBJECT TO RECALL AT ANY TIME. INFORMATION CONTAINED HEREON IS NOT TO BE DISCLOSED OR REPRODUCED IN ANY FORM FOR THE BENEFIT OF PARTIES OTHER THAN NECESSARY SUBCONTRACTORS & SUPPLIERS WITHOUT THE WRITTEN CONSENT OF BENCHMARK ENVIRONMENTAL ENGINEERING & SCIENCE, PLLC.

ATTACHMENT 1

ANALYTICAL REPORT



ANALYTICAL REPORT

Lab Number:	L1923181
Client:	Benchmark & Turnkey Companies 2558 Hamburg Turnpike Suite 300 Buffalo, NY 14218
ATTN:	Chris Boron
Phone:	(716) 856-0599
Project Name:	1175 SOUTH PARK
Project Number:	B0413-019-001-002
Report Date:	06/12/19

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

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).

320 Forbes Boulevard, Mansfield, MA 02048-1806
508-822-9300 (Fax) 508-822-3288 800-624-9220 - www.alphalab.com



Project Name: 1175 SOUTH PARK
Project Number: B0413-019-001-002

Lab Number: L1923181
Report Date: 06/12/19

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1923181-01	RI-MW-1	WATER	BUFFALO, NY	05/31/19 12:05	05/31/19
L1923181-02	RI-MW-3 (MS/MSD)	WATER	BUFFALO, NY	05/31/19 14:10	05/31/19
L1923181-03	RI-MW-5	WATER	BUFFALO, NY	05/31/19 13:15	05/31/19
L1923181-04	BLIND DUP	WATER	BUFFALO, NY	05/31/19 12:00	05/31/19
L1923181-05	EQ BLANK	WATER	BUFFALO, NY	05/31/19 09:41	05/31/19
L1923181-06	FIELD BLANK	WATER	BUFFALO, NY	05/31/19 09:38	05/31/19

Project Name: 1175 SOUTH PARK
Project Number: B0413-019-001-002

Lab Number: L1923181
Report Date: 06/12/19

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: 1175 SOUTH PARK
Project Number: B0413-019-001-002

Lab Number: L1923181
Report Date: 06/12/19

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.

Sample Receipt

L1923181: The containers for the Perfluorinated Alkyl Acids by Isotope Dilution analysis were received on June 3, 2019.

Perfluorinated Alkyl Acids by Isotope Dilution

WG1246772-2 and WG1246772-3: Extracted Internal Standard recoveries were outside the acceptance criteria for individual analytes. Please refer to the surrogate section of the report for details.

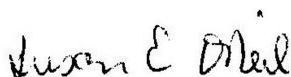
WG1247303-1: The continuing calibration standard, associated with L192318 and QC, had the response for the extracted internal standard Perfluoro[2,3,4-¹³C₃]Butanesulfonic Acid (M3PFBS) and Perfluoro[1,2-¹³C₂]Tetradecanoic Acid (M2PFTEDA) outside the acceptance criteria for the method. The associated target analytes were within acceptance criteria; therefore, no further action was taken.

WG1247303-1: The continuing calibration standard, associated with L192318 and QC, had the response for Perfluorooctanesulfonic Acid-Branched (br-PFOS) outside of acceptance criteria. The response for Perfluorooctanesulfonic Acid (PFOS) was within acceptance criteria; therefore, no further action was taken.

WG1247303-2: The continuing calibration standard, associated with L192318 and QC, had the response for the extracted internal standard Perfluoro[¹³C₈]Octanesulfonamide (M8FOSA) outside the acceptance criteria for the method. The associated target analytes were within acceptance criteria; therefore, no further action was taken.

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:



Susan O'Neil

Title: Technical Director/Representative

Date: 06/12/19

ORGANICS

SEMIVOLATILES

Project Name: 1175 SOUTH PARK
Project Number: B0413-019-001-002

Lab Number: L1923181
Report Date: 06/12/19

SAMPLE RESULTS

Lab ID: L1923181-01
 Client ID: RI-MW-1
 Sample Location: BUFFALO, NY

Date Collected: 05/31/19 12:05
 Date Received: 05/31/19
 Field Prep: Not Specified

Sample Depth:
 Matrix: Water
 Analytical Method: 1,8270D-SIM
 Analytical Date: 06/06/19 04:27
 Analyst: MA

Extraction Method: EPA 3510C
 Extraction Date: 06/04/19 22:35

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	ND		ng/l	139	31.4	1
Surrogate	% Recovery		Qualifier	Acceptance Criteria		
1,4-Dioxane-d8	39			15-110		

Project Name: 1175 SOUTH PARK
Project Number: B0413-019-001-002

Lab Number: L1923181
Report Date: 06/12/19

SAMPLE RESULTS

Lab ID: L1923181-01
Client ID: RI-MW-1
Sample Location: BUFFALO, NY

Date Collected: 05/31/19 12:05
Date Received: 05/31/19
Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 122,537(M)
Analytical Date: 06/12/19 10:40
Analyst: AJ

Extraction Method: EPA 537
Extraction Date: 06/11/19 07:17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	3.12		ng/l	1.80	0.367	1
Perfluoropentanoic Acid (PFPeA)	2.10		ng/l	1.80	0.356	1
Perfluorobutanesulfonic Acid (PFBS)	1.02	J	ng/l	1.80	0.214	1
Perfluorohexanoic Acid (PFHxA)	1.59	J	ng/l	1.80	0.295	1
Perfluoroheptanoic Acid (PFHpA)	0.896	J	ng/l	1.80	0.202	1
Perfluorohexanesulfonic Acid (PFHxS)	0.619	J	ng/l	1.80	0.338	1
Perfluorooctanoic Acid (PFOA)	2.36		ng/l	1.80	0.212	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	1.80	1.20	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.80	0.619	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.80	0.280	1
Perfluorooctanesulfonic Acid (PFOS)	1.36	J	ng/l	1.80	0.453	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.80	0.273	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.80	1.09	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.80	0.583	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.80	0.234	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.80	0.881	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.80	0.522	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.80	0.723	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.80	0.334	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.80	0.294	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.80	0.223	1
PFOA/PFOS, Total	3.72	J	ng/l	1.80	0.212	1

Project Name: 1175 SOUTH PARK**Lab Number:** L1923181**Project Number:** B0413-019-001-002**Report Date:** 06/12/19**SAMPLE RESULTS****Lab ID:** L1923181-01**Date Collected:** 05/31/19 12:05**Client ID:** RI-MW-1**Date Received:** 05/31/19**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)	96		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	88		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	128		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	108		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	94		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	112		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	87		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	89		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	83		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	95		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	89		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	79		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	61		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	88		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	52		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	43		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	69		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	44		33-143

Project Name: 1175 SOUTH PARK
Project Number: B0413-019-001-002

Lab Number: L1923181
Report Date: 06/12/19

SAMPLE RESULTS

Lab ID: L1923181-02
Client ID: RI-MW-3 (MS/MSD)
Sample Location: BUFFALO, NY

Date Collected: 05/31/19 14:10
Date Received: 05/31/19
Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 06/06/19 04:47
Analyst: MA

Extraction Method: EPA 3510C
Extraction Date: 06/04/19 22:35

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	ND		ng/l	139	31.4	1
Surrogate	% Recovery		Qualifier	Acceptance Criteria		
1,4-Dioxane-d8	37			15-110		

Project Name: 1175 SOUTH PARK**Lab Number:** L1923181**Project Number:** B0413-019-001-002**Report Date:** 06/12/19**SAMPLE RESULTS**

Lab ID: L1923181-02
 Client ID: RI-MW-3 (MS/MSD)
 Sample Location: BUFFALO, NY

Date Collected: 05/31/19 14:10
 Date Received: 05/31/19
 Field Prep: Not Specified

Sample Depth:

Matrix: Water
 Analytical Method: 122,537(M)
 Analytical Date: 06/12/19 10:57
 Analyst: AJ

Extraction Method: EPA 537
 Extraction Date: 06/11/19 07:17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	3.96		ng/l	2.04	0.416	1
Perfluoropentanoic Acid (PFPeA)	1.44	J	ng/l	2.04	0.404	1
Perfluorobutanesulfonic Acid (PFBS)	0.792	J	ng/l	2.04	0.243	1
Perfluorohexanoic Acid (PFHxA)	1.74	J	ng/l	2.04	0.335	1
Perfluoroheptanoic Acid (PFHpA)	1.04	J	ng/l	2.04	0.230	1
Perfluorohexanesulfonic Acid (PFHxS)	1.00	J	ng/l	2.04	0.384	1
Perfluorooctanoic Acid (PFOA)	4.00		ng/l	2.04	0.241	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	2.04	1.36	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	2.04	0.702	1
Perfluorononanoic Acid (PFNA)	0.322	J	ng/l	2.04	0.318	1
Perfluorooctanesulfonic Acid (PFOS)	1.75	J	ng/l	2.04	0.514	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	2.04	0.310	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	2.04	1.24	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	2.04	0.661	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	2.04	0.265	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	2.04	1.00	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	2.04	0.592	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	2.04	0.820	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	2.04	0.380	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	2.04	0.334	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	2.04	0.253	1
PFOA/PFOS, Total	5.75	J	ng/l	2.04	0.241	1

Project Name: 1175 SOUTH PARK**Lab Number:** L1923181**Project Number:** B0413-019-001-002**Report Date:** 06/12/19**SAMPLE RESULTS****Lab ID:** L1923181-02**Date Collected:** 05/31/19 14:10**Client ID:** RI-MW-3 (MS/MSD)**Date Received:** 05/31/19**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)	92		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	74		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	124		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	93		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	83		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	107		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	86		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	97		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	83		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	106		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	87		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	75		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	62		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	84		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	49		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	43		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	63		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	50		33-143

Project Name: 1175 SOUTH PARK
Project Number: B0413-019-001-002

Lab Number: L1923181
Report Date: 06/12/19

SAMPLE RESULTS

Lab ID: L1923181-03
Client ID: RI-MW-5
Sample Location: BUFFALO, NY

Date Collected: 05/31/19 13:15
Date Received: 05/31/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 06/06/19 05:44
Analyst: MA

Extraction Method: EPA 3510C
Extraction Date: 06/04/19 22:35

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	ND		ng/l	139	31.4	1
Surrogate	% Recovery		Qualifier	Acceptance Criteria		
1,4-Dioxane-d8	39			15-110		

Project Name: 1175 SOUTH PARK
Project Number: B0413-019-001-002

Lab Number: L1923181
Report Date: 06/12/19

SAMPLE RESULTS

Lab ID: L1923181-03
Client ID: RI-MW-5
Sample Location: BUFFALO, NY

Date Collected: 05/31/19 13:15
Date Received: 05/31/19
Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 122,537(M)
Analytical Date: 06/12/19 11:46
Analyst: AJ

Extraction Method: EPA 537
Extraction Date: 06/11/19 07:18

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	0.374	J	ng/l	1.75	0.357	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	1.75	0.346	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.75	0.208	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	1.75	0.287	1
Perfluoroheptanoic Acid (PFHpA)	0.213	J	ng/l	1.75	0.197	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.75	0.329	1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.75	0.206	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	1.75	1.16	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.75	0.601	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.75	0.273	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.75	0.440	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.75	0.266	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.75	1.06	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.75	0.566	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.75	0.227	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.75	0.857	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.75	0.507	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.75	0.703	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.75	0.325	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.75	0.286	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.75	0.217	1
PFOA/PFOS, Total	ND		ng/l	1.75	0.206	1

Project Name: 1175 SOUTH PARK**Lab Number:** L1923181**Project Number:** B0413-019-001-002**Report Date:** 06/12/19**SAMPLE RESULTS****Lab ID:** L1923181-03**Date Collected:** 05/31/19 13:15**Client ID:** RI-MW-5**Date Received:** 05/31/19**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)	91		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	74		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	117		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	93		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	90		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	105		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	88		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	74		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	81		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	97		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	84		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	60		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	46		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	77		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	52		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	34		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	61		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	44		33-143

Project Name: 1175 SOUTH PARK
Project Number: B0413-019-001-002

Lab Number: L1923181
Report Date: 06/12/19

SAMPLE RESULTS

Lab ID: L1923181-04
Client ID: BLIND DUP
Sample Location: BUFFALO, NY

Date Collected: 05/31/19 12:00
Date Received: 05/31/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 06/06/19 06:03
Analyst: MA

Extraction Method: EPA 3510C
Extraction Date: 06/04/19 22:35

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	ND		ng/l	139	31.4	1
Surrogate	% Recovery		Qualifier	Acceptance Criteria		
1,4-Dioxane-d8	30			15-110		

Project Name: 1175 SOUTH PARK
Project Number: B0413-019-001-002

Lab Number: L1923181
Report Date: 06/12/19

SAMPLE RESULTS

Lab ID: L1923181-04
Client ID: BLIND DUP
Sample Location: BUFFALO, NY

Date Collected: 05/31/19 12:00
Date Received: 05/31/19
Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 122,537(M)
Analytical Date: 06/12/19 12:03
Analyst: AJ

Extraction Method: EPA 537
Extraction Date: 06/11/19 07:18

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/l	1.75	0.358	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	1.75	0.347	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.75	0.209	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	1.75	0.288	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	1.75	0.198	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.75	0.330	1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.75	0.207	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	1.75	1.17	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.75	0.604	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.75	0.274	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.75	0.442	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.75	0.267	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.75	1.06	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.75	0.568	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.75	0.228	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.75	0.860	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.75	0.509	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.75	0.705	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.75	0.326	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.75	0.287	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.75	0.218	1
PFOA/PFOS, Total	ND		ng/l	1.75	0.207	1

Project Name: 1175 SOUTH PARK**Lab Number:** L1923181**Project Number:** B0413-019-001-002**Report Date:** 06/12/19**SAMPLE RESULTS****Lab ID:** L1923181-04**Date Collected:** 05/31/19 12:00**Client ID:** BLIND DUP**Date Received:** 05/31/19**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)	93		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	76		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	125		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	94		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	91		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	112		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	87		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	85		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	78		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	106		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	88		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	67		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	47		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	85		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	56		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	37		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	65		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	50		33-143

Project Name: 1175 SOUTH PARK
Project Number: B0413-019-001-002

Lab Number: L1923181
Report Date: 06/12/19

SAMPLE RESULTS

Lab ID: L1923181-05
Client ID: EQ BLANK
Sample Location: BUFFALO, NY

Date Collected: 05/31/19 09:41
Date Received: 05/31/19
Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 122,537(M)
Analytical Date: 06/12/19 10:07
Analyst: AJ

Extraction Method: EPA 537
Extraction Date: 06/11/19 07:18

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/l	2.25	0.459	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	2.25	0.446	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	2.25	0.268	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	2.25	0.369	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	2.25	0.254	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	2.25	0.423	1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	2.25	0.266	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	2.25	1.50	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	2.25	0.775	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	2.25	0.351	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	2.25	0.568	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	2.25	0.342	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	2.25	1.36	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	2.25	0.730	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	2.25	0.293	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	2.25	1.10	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	2.25	0.653	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	2.25	0.905	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	2.25	0.419	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	2.25	0.368	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	2.25	0.279	1
PFOA/PFOS, Total	ND		ng/l	2.25	0.266	1

Project Name: 1175 SOUTH PARK**Lab Number:** L1923181**Project Number:** B0413-019-001-002**Report Date:** 06/12/19**SAMPLE RESULTS****Lab ID:** L1923181-05**Date Collected:** 05/31/19 09:41**Client ID:** EQ BLANK**Date Received:** 05/31/19**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)	73		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	92		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	154		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	106		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	85		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	121		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	86		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	82		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	86		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	108		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	92		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	76		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	66		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	104		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	23		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	48		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	86		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	58		33-143

Project Name: 1175 SOUTH PARK
Project Number: B0413-019-001-002

Lab Number: L1923181
Report Date: 06/12/19

SAMPLE RESULTS

Lab ID: L1923181-06
Client ID: FIELD BLANK
Sample Location: BUFFALO, NY

Date Collected: 05/31/19 09:38
Date Received: 05/31/19
Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 122,537(M)
Analytical Date: 06/12/19 10:24
Analyst: AJ

Extraction Method: EPA 537
Extraction Date: 06/11/19 07:18

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/l	1.85	0.378	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	1.85	0.367	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.85	0.220	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	1.85	0.304	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	1.85	0.208	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.85	0.348	1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.85	0.218	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	1.85	1.23	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.85	0.637	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.85	0.289	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.85	0.467	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.85	0.281	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.85	1.12	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.85	0.600	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.85	0.241	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.85	0.907	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.85	0.537	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.85	0.744	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.85	0.344	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.85	0.303	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.85	0.230	1
PFOA/PFOS, Total	ND		ng/l	1.85	0.218	1

Project Name: 1175 SOUTH PARK**Lab Number:** L1923181**Project Number:** B0413-019-001-002**Report Date:** 06/12/19**SAMPLE RESULTS****Lab ID:** L1923181-06**Date Collected:** 05/31/19 09:38**Client ID:** FIELD BLANK**Date Received:** 05/31/19**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)	87		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	98		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	147		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	114		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	100		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	120		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	89		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	64		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	81		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	97		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	89		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	61		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	67		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	90		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	29		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	52		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	75		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	55		33-143

Project Name: 1175 SOUTH PARK
Project Number: B0413-019-001-002

Lab Number: L1923181
Report Date: 06/12/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D-SIM
 Analytical Date: 06/06/19 00:01
 Analyst: MA

Extraction Method: EPA 3510C
 Extraction Date: 06/04/19 22:35

Parameter	Result	Qualifier	Units	RL	MDL
1,4 Dioxane by 8270D-SIM - Mansfield Lab for sample(s): 01-04 Batch: WG1244565-1					
1,4-Dioxane	ND		ng/l	150	33.9

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	34		15-110

Project Name: 1175 SOUTH PARK
Project Number: B0413-019-001-002

Lab Number: L1923181
Report Date: 06/12/19

Method Blank Analysis Batch Quality Control

Analytical Method: 122,537(M)
Analytical Date: 06/12/19 08:44
Analyst: AJ

Extraction Method: EPA 537
Extraction Date: 06/11/19 07:14

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab for sample(s): 01-06 Batch: WG1246772-1					
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 (PFTTrDA)	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: 1175 SOUTH PARK
Project Number: B0413-019-001-002

Lab Number: L1923181
Report Date: 06/12/19

Method Blank Analysis Batch Quality Control

Analytical Method: 122,537(M)
 Analytical Date: 06/12/19 08:44
 Analyst: AJ

Extraction Method: EPA 537
 Extraction Date: 06/11/19 07:14

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab for sample(s): 01-06 Batch: WG1246772-1					

Surrogate (Extracted Internal Standard)	%Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	106		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	99		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	159		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	136		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	119		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	123		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	101		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	78		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	89		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	92		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	89		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	78		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	78		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	86		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	43		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	56		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	70		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	55		33-143

Lab Control Sample Analysis

Batch Quality Control

Project Name: 1175 SOUTH PARK
Project Number: B0413-019-001-002

Lab Number: L1923181
Report Date: 06/12/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
1,4 Dioxane by 8270D-SIM - Mansfield Lab Associated sample(s): 01-04 Batch: WG1244565-2 WG1244565-3								
1,4-Dioxane	97		92		40-140	5		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,4-Dioxane-d8	41		38		15-110

Lab Control Sample Analysis

Batch Quality Control

Project Name: 1175 SOUTH PARK
Project Number: B0413-019-001-002

Lab Number: L1923181
Report Date: 06/12/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-06 Batch: WG1246772-2 WG1246772-3								
Perfluorobutanoic Acid (PFBA)	104		108		67-148	4		30
Perfluoropentanoic Acid (PFPeA)	105		108		63-161	3		30
Perfluorobutanesulfonic Acid (PFBS)	111		114		65-157	3		30
Perfluorohexanoic Acid (PFHxA)	119		126		69-168	6		30
Perfluoroheptanoic Acid (PFHpA)	108		114		58-159	5		30
Perfluorohexanesulfonic Acid (PFHxS)	114		114		69-177	0		30
Perfluorooctanoic Acid (PFOA)	111		108		63-159	3		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	99		92		49-187	7		30
Perfluoroheptanesulfonic Acid (PFHpS)	134		133		61-179	1		30
Perfluorononanoic Acid (PFNA)	116		124		68-171	7		30
Perfluorooctanesulfonic Acid (PFOS)	96		96		52-151	0		30
Perfluorodecanoic Acid (PFDA)	116		115		63-171	1		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	102		89		56-173	14		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	97		98		60-166	1		30
Perfluoroundecanoic Acid (PFUnA)	96		100		60-153	4		30
Perfluorodecanesulfonic Acid (PFDS)	101		90		38-156	12		30
Perfluorooctanesulfonamide (FOSA)	112		116		46-170	4		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	120		110		45-170	9		30
Perfluorododecanoic Acid (PFDoA)	109		120		67-153	10		30
Perfluorotridecanoic Acid (PFTTrDA)	110		118		48-158	7		30
Perfluorotetradecanoic Acid (PFTA)	122		129		59-182	6		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: 1175 SOUTH PARK
Project Number: B0413-019-001-002

Lab Number: L1923181
Report Date: 06/12/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-06 Batch: WG1246772-2 WG1246772-3								

Surrogate (Extracted Internal Standard)	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	107		104		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	104		102		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	178	Q	175	Q	31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	134		134		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	115		115		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	138		137		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	96		99		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	84		86		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	87		86		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	113		116		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	99		93		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	72		86		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	73		72		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	96		85		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	52		47		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	60		56		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	79		71		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	54		55		33-143

Matrix Spike Analysis

Batch Quality Control

Project Name: 1175 SOUTH PARK
Project Number: B0413-019-001-002

Lab Number: L1923181
Report Date: 06/12/19

<i>Parameter</i>	<i>Native Sample</i>	<i>MS Added</i>	<i>MS Found</i>	<i>MS %Recovery</i>	<i>Qual</i>	<i>MSD Found</i>	<i>MSD %Recovery</i>	<i>Qual</i>	<i>Recovery Limits</i>	<i>RPD</i>	<i>Qual</i>	<i>RPD Limits</i>
1,4 Dioxane by 8270D-SIM - Mansfield Lab MW-3 (MS/MSD) Associated sample(s): 01-04 QC Batch ID: WG1244565-4 WG1244565-5 QC Sample: L1923181-02 Client ID: RI-												
1,4-Dioxane	ND	4630	4030	87		3960	86		40-140	2		30

<i>Surrogate</i>	<i>MS % Recovery</i>	<i>Qualifier</i>	<i>MSD % Recovery</i>	<i>Qualifier</i>	<i>Acceptance Criteria</i>
1,4-Dioxane-d8	38		41		15-110

Matrix Spike Analysis

Batch Quality Control

Project Name: 1175 SOUTH PARK
Project Number: B0413-019-001-002

Lab Number: L1923181
Report Date: 06/12/19

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): 01-06 QC Batch ID: WG1246772-4 WG1246772-5 QC Sample: L1923181-02 Client ID: RI-MW-3 (MS/MSD)												
Perfluorobutanoic Acid (PFBA)	3.96	40	46.1	105		45.4	100		67-148	2		30
Perfluoropentanoic Acid (PFPeA)	1.44J	40	42.9	107		42.0	101		63-161	2		30
Perfluorobutanesulfonic Acid (PFBS)	0.792J	40	45.4	114		43.7	105		65-157	4		30
Perfluorohexanoic Acid (PFHxA)	1.74J	40	49.1	123		49.7	120		69-168	1		30
Perfluoroheptanoic Acid (PFHpA)	1.04J	40	46.0	115		45.0	108		58-159	2		30
Perfluorohexanesulfonic Acid (PFHxS)	1.00J	40	48.8	122		47.6	115		69-177	2		30
Perfluorooctanoic Acid (PFOA)	4.00	40	47.7	109		47.6	105		63-159	0		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND	40	37.2	93		41.0	99		49-187	10		30
Perfluoroheptanesulfonic Acid (PFHpS)	ND	40	52.8	132		47.7	115		61-179	10		30
Perfluorononanoic Acid (PFNA)	0.322J	40	48.2	121		45.4	109		68-171	6		30
Perfluorooctanesulfonic Acid (PFOS)	1.75J	40	40.9	102		37.8	91		52-151	8		30
Perfluorodecanoic Acid (PFDA)	ND	40	44.8	112		43.2	104		63-171	4		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND	40	34.8	87		44.5	107		56-173	24		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND	40	37.5	94		33.5	81		60-166	11		30
Perfluoroundecanoic Acid (PFUnA)	ND	40	41.3	103		37.6	91		60-153	9		30
Perfluorodecanesulfonic Acid (PFDS)	ND	40	42.3	106		36.7	88		38-156	14		30
Perfluorooctanesulfonamide (FOSA)	ND	40	44.9	112		42.3	102		46-170	6		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND	40	47.2	118		35.4	85		45-170	29		30
Perfluorododecanoic Acid (PFDoA)	ND	40	42.4	106		36.8	89		67-153	14		30
Perfluorotridecanoic Acid (PFTrDA)	ND	40	45.0	113		42.3	102		48-158	6		30
Perfluorotetradecanoic Acid (PFTA)	ND	40	48.1	120		47.9	115		59-182	0		30

Matrix Spike Analysis

Batch Quality Control

Project Name: 1175 SOUTH PARK
Project Number: B0413-019-001-002

Lab Number: L1923181
Report Date: 06/12/19

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): 01-06 QC Batch ID: WG1246772-4 WG1246772-5 QC Sample: L1923181-02 Client ID: RI-MW-3 (MS/MSD)												

Surrogate (Extracted Internal Standard)	MS		MSD		Acceptance Criteria
	% Recovery	Qualifier	% Recovery	Qualifier	
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	101		62		7-170
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	119		93		1-244
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	45		46		23-146
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	62		50		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	85		75		40-144
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	92		82		38-144
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	92		97		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	84		88		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	108		91		47-153
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	68		63		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	52		49		33-143
Perfluoro[13C4]Butanoic Acid (MPFBA)	98		98		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	78		82		16-173
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	62		42		1-87
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	101		85		42-146
Perfluoro[13C8]Octanoic Acid (M8PFOA)	86		87		36-149
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	82		80		34-146
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	123		109		31-159

Project Name: 1175 SOUTH PARK**Lab Number:** L1923181**Project Number:** B0413-019-001-002**Report Date:** 06/12/19**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(*)
L1923181-01A	Amber 250ml unpreserved	A	7	7	3.7	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L1923181-01B	Amber 250ml unpreserved	A	7	7	3.7	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L1923181-01C	2 Plastic/1 Plastic/1 H2O Plastic	B	NA		2.9	Y	Absent		A2-NY-537-ISOTOPE(14)
L1923181-01D	2 Plastic/1 Plastic/1 H2O Plastic	B	NA		2.9	Y	Absent		A2-NY-537-ISOTOPE(14)
L1923181-02A	Amber 250ml unpreserved	A	7	7	3.7	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L1923181-02B	Amber 250ml unpreserved	A	7	7	3.7	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L1923181-02C	Amber 250ml unpreserved	A	7	7	3.7	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L1923181-02D	Amber 250ml unpreserved	A	7	7	3.7	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L1923181-02E	Amber 250ml unpreserved	A	7	7	3.7	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L1923181-02F	Amber 250ml unpreserved	A	7	7	3.7	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L1923181-02G	2 Plastic/1 Plastic/1 H2O Plastic	B	NA		2.9	Y	Absent		A2-NY-537-ISOTOPE(14)
L1923181-02H	2 Plastic/1 Plastic/1 H2O Plastic	B	NA		2.9	Y	Absent		A2-NY-537-ISOTOPE(14)
L1923181-02I	2 Plastic/1 Plastic/1 H2O Plastic	B	NA		2.9	Y	Absent		A2-NY-537-ISOTOPE(14)
L1923181-02J	2 Plastic/1 Plastic/1 H2O Plastic	B	NA		2.9	Y	Absent		A2-NY-537-ISOTOPE(14)
L1923181-02K	2 Plastic/1 Plastic/1 H2O Plastic	B	NA		2.9	Y	Absent		A2-NY-537-ISOTOPE(14)
L1923181-02L	2 Plastic/1 Plastic/1 H2O Plastic	B	NA		2.9	Y	Absent		A2-NY-537-ISOTOPE(14)
L1923181-03A	Amber 250ml unpreserved	A	7	7	3.7	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L1923181-03B	Amber 250ml unpreserved	A	7	7	3.7	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L1923181-03C	2 Plastic/1 Plastic/1 H2O Plastic	B	NA		2.9	Y	Absent		A2-NY-537-ISOTOPE(14)
L1923181-03D	2 Plastic/1 Plastic/1 H2O Plastic	B	NA		2.9	Y	Absent		A2-NY-537-ISOTOPE(14)
L1923181-04A	Amber 250ml unpreserved	A	7	7	3.7	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L1923181-04B	Amber 250ml unpreserved	A	7	7	3.7	Y	Absent		A2-1,4-DIOXANE-SIM(7)

Project Name: 1175 SOUTH PARK
Project Number: B0413-019-001-002

Serial_No:06121914:21
Lab Number: L1923181
Report Date: 06/12/19

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1923181-04C	2 Plastic/1 Plastic/1 H2O Plastic	B	NA		2.9	Y	Absent		A2-NY-537-ISOTOPE(14)
L1923181-04D	2 Plastic/1 Plastic/1 H2O Plastic	B	NA		2.9	Y	Absent		A2-NY-537-ISOTOPE(14)
L1923181-05A	2 Plastic/1 Plastic/1 H2O Plastic	B	NA		2.9	Y	Absent		A2-NY-537-ISOTOPE(14)
L1923181-05B	2 Plastic/1 Plastic/1 H2O Plastic	B	NA		2.9	Y	Absent		A2-NY-537-ISOTOPE(14)
L1923181-06A	2 Plastic/1 Plastic/1 H2O Plastic	B	NA		2.9	Y	Absent		A2-NY-537-ISOTOPE(14)

Project Name: 1175 SOUTH PARK
Project Number: B0413-019-001-002

Lab Number: L1923181
Report Date: 06/12/19

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.
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.

Footnotes

Report Format: DU Report with 'J' Qualifiers



Project Name: 1175 SOUTH PARK
Project Number: B0413-019-001-002

Lab Number: L1923181
Report Date: 06/12/19

- 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.

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. If a 'Total' result is requested, the results of its individual components will also be reported.

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 Condensation Product".
- 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.
- 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.
- 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.

Report Format: DU Report with 'J' Qualifiers



Project Name: 1175 SOUTH PARK
Project Number: B0413-019-001-002

Lab Number: L1923181
Report Date: 06/12/19

REFERENCES

- 1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IV, 2007.
- 122 Determination of Selected Perfluorinated Alkyl Acids in Drinking Water by Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS). EPA Method 537, EPA/600/R-08/092. Version 1.1, September 2009.

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 its 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.



Alpha Analytical, Inc.Facility: **Company-wide**Department: **Quality Assurance**Title: **Certificate/Approval Program Summary**ID No.: **17873**Revision **12**

Published Date: 10/9/2018 4:58:19 PM

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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**EPA 8260C:** NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), Methyl methacrylate, 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.**EPA 8270D:** NPW: Dimethylnaphthalene, 1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene, 1,4-Diphenylhydrazine.**EPA 6860:** SCM: Perchlorate**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, SM4500CI-D, SM2320B, SM2540C, SM4500H-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.****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.****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.

PHA Job# 21923181

5/31/19	14:25
6/03/19	15:55
6/4/19	01:00
6/4/19	06:5

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ATTACHMENT 2

DATA USABILITY SUMMARY REPORT

Data Validation Services

120 Cobble Creek Road P. O. Box 208

North Creek, NY 12853

Phone (518) 251-4429

harry@frontiernet.net

September 16, 2019

Christopher Boron
Turnkey Environmental Restoration
2558 Hamburg Turnpike Suite 300
Buffalo, NY 14218

RE: **Data Usability Summary Report (DUSR)** for the 1176 South Park Site
Alpha Analytical SDG No. L1923181

Dear Mr. Boron:

Review has been completed for the analytical data packages noted above, generated by Alpha Analytical, that pertains to samples collected 05/31/19 at the 1176 South Park site. Three aqueous and a field duplicate were processed for per- and polyfluoroalkyl substances (PFAS) by a modified EPA method 537 and 1,4-dioxane by Selective Ion Monitoring (SIM). Sample matrix spikes and field and equipment blanks were also processed.

The data packages submitted contain full deliverables for validation, and this DUSR is generated from review of the summary form information, with full validation review of sample raw data, and limited review of associated QC raw data. The reported summary forms have been reviewed for application of validation qualifiers, using guidance from the USEPA Region 2 validation SOPs, the USEPA CLP National Functional Guidelines for Organic Data Review, the specific laboratory methodologies, and professional judgment. The following items were reviewed:

- * Laboratory Narrative Discussion
- * Custody Documentation
- * Holding Times
- * Surrogate/Isotopic Dilution, and Internal Standard Recoveries
- * Matrix Spike Recoveries/Duplicate Correlations
- * Field Duplicate Correlations
- * Preparation/Equipment/Field Blanks
- * Laboratory Control Samples (LCSs)
- * Instrumental Tunes
- * Calibration Standards
- * Instrument IDLs
- * Sample Result Verification

The data review includes evaluation of the specific items noted in The NYS DER-10 Appendix B section 2.0 (c). The items listed above that show deficiencies are discussed within the text of this narrative. The laboratory QC forms illustrating the excursions can be found within the laboratory data packages.

In summary, analyses were conducted in compliance with the required analytical protocols. Results for the samples are usable either as reported or with minor qualification as estimated.

The laboratory modifications to the USEPA method 537 are significant, including acceptance ranges, consistent in many respects to the advances in the available monitoring compounds. Validation actions are based on the laboratory procedures, in consideration that the laboratory undergoes NYS DOH and ELAP certifications.

Copies of the sample identification summaries are attached to this text. Also included with the report are validation qualifier definitions and laboratory EQuIS EDDs that are annotated in red to reflect the qualifications recommended within this report.

The following text discusses quality issues of concern.

Blind Duplicate Evaluations

The blind field duplicate was collected at RI-MW-5. Correlations are within validation guidelines.

1,4-Dioxane by EPA 8270D SIM

Holding times of were met. Blanks show no contamination. Calibration standards showed acceptable responses.

Surrogate standard recoveries are within laboratory acceptance ranges and internal standard recoveries are within protocol limits.

Matrix spikes performed on RI-MW-3 show acceptable recoveries and correlations. LCS recoveries are compliant.

PFAS by Modified EPA Method 537

PFAS compounds are identified by their common acronyms in this report. The report forms reference both the technical names and the acronyms.

The detected results for PFOS in RI-MW-1 And RI-MW-3 have been qualified as estimated, with a marginally elevated bias, due to a high response for the branched isomers of that analyte in the associated calibration standard.

The matrix spikes of RI-MW-3 show recoveries within laboratory acceptance ranges.

Holding times were met, and LCS recoveries are compliant. Blanks show no contamination.

Please do not hesitate to contact me if you have comments or questions regarding this report.

Very truly yours,

A handwritten signature in cursive script that reads "Judy Harry".

Judy Harry

Att: Validation Qualified Definitions
Sample Identifications
Qualified Client EDD

VALIDATION DATA QUALIFIER DEFINITIONS

U	The analyte was analyzed for, but was not detected above the level of the associated reported quantitation limit.
J	The analyte was positively identified; the associated numerical value is an approximate concentration of the analyte in the sample.
J-	The analyte was positively identified; the associated numerical value is an estimated quantity that may be biased low.
J+	The analyte was positively identified; the associated numerical value is an estimated quantity that may be biased high.
UJ	The analyte was analyzed for, but was not detected. The associated reported quantitation limit is approximate and may be inaccurate or imprecise.
NJ	The detection is tentative in identification and estimated in value. Although there is presumptive evidence of the analyte, the result should be used with caution as a potential false positive and/or elevated quantitative value.
R	The data are unusable. The sample results are rejected due to serious deficiencies in meeting Quality Control limits. The analyte may or may not be present.
EMPC	The results do not meet all criteria for a confirmed identification. The quantitative value represents the Estimated Maximum Possible Concentration of the analyte in the sample.

Sample Summaries

Project Name: 1175 SOUTH PARK
Project Number: B0413-019-001-002

Lab Number: L1923181
Report Date: 06/12/19

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1923181-01	RI-MW-1	WATER	BUFFALO, NY	05/31/19 12:05	05/31/19
L1923181-02	RI-MW-3 (MS/MSD)	WATER	BUFFALO, NY	05/31/19 14:10	05/31/19
L1923181-03	RI-MW-5	WATER	BUFFALO, NY	05/31/19 13:15	05/31/19
L1923181-04	BLIND DUP	WATER	BUFFALO, NY	05/31/19 12:00	05/31/19
L1923181-05	EQ BLANK	WATER	BUFFALO, NY	05/31/19 09:41	05/31/19
L1923181-06	FIELD BLANK	WATER	BUFFALO, NY	05/31/19 09:38	05/31/19