August 6, 2019

Ms. Stephanie Fitzgerald
New York State Department of Environmental Conservation
Division of Environmental Remediation
625 Broadway, 11th Floor
Albany, NY 12233-7010

Consulting Engineers and Scientists

Re: Summary of Emerging Contaminant Groundwater Sampling
Former Syracuse China Facility Landfill Site No. 734053

Dear Ms. Fitzgerald:

On behalf of TPC-York, Inc. (TPC), GEI Consultants, Inc., P.C. (GEI) has prepared this letter to summarize the results of emerging contaminant (EC) groundwater sampling performed at the closed Syracuse China landfill located adjacent to Factory Avenue in Salina, NY (Site No. 734053). The work was performed in accordance with a work plan dated April 1, 2019 that was approved by the New York State Department of Environmental Conservation (NYSDEC) in an email dated April 8, 2019. The scope and results are summarized below.

1.0 FIELD ACTIVITIES

The wells targeted for EC sampling, and associated rationale, were specified in the approved work plan as follows:

Target Well	Screened Interval (ft bgs)	Depth to Water (ft)	Rationale
MW-6	5 - 15	~4	Only available upgradient site monitoring well
MW-10	5 - 15	~3	Accessible, on-property location downgradient of landfill boundary; most hydraulically downgradient well at the site
MW-2	~2 - 12	~5	Required addition per NYSDEC based on review of draft work plan

Figure 1 indicates the locations of these wells, as well as representative groundwater elevation measurements and inferred groundwater flow directions presented in prior site documents.

Groundwater sampling was performed at each of the target locations on May 1, 2019. The methods used to perform the field activities and the field quality assurance/quality control (QA/QC) procedures were consistent with the specifications of the NYSDEC-approved Work Plan.

Field quality assurance samples were collected as follows:

- One equipment blank was collected by pouring laboratory-supplied PFAS-free water over cleaned sample equipment at the site.
- One blind duplicate sample was collected and assigned a sample ID that does not correlate to the parent sample. The blind duplicate sample was collected at MW-10.

www.geiconsultants.com

GEI Consultants, Inc., P.C.
1301 Trumansburg Road, Suite N, Ithaca, NY 14850
607.216.8955 fax: 607.274.7577

- One set of matrix spike and matrix spike duplicate (MS/MSD) samples was collected for analysis of 1,4-dioxane only. MS/MSD analyses were not necessary for PFAS analyses based on the use of the isotope dilution analytical method.

Samples were packed in a cooler on ice and transported to the selected analytical laboratory under chain of custody procedures.

2.0 LABORATORY ANALYSES

The groundwater samples were sent to Alpha Analytical Laboratories in Mansfield, MA. Alpha Analytical is a NYSDEC-approved laboratory for the emerging contaminant analyses. The laboratory methods utilized were:

- **1,4 Dioxane** – 8270D SIM (selected ion monitoring); and
- **Per - and Polyfluoroalkyl (PFAS) Substances** – NY PFAAs-Isotope Dilution EPA 537 (Modified).

Appendix A contains the laboratory analytical report, including the chain of custody record for the sampling.

The NYSDEC's May 16, 2018 letter requiring the EC sampling indicated target reporting limits (RLs) for PFAS analytes of 2 ng/L or lower, and the target method detection limit (MDL) for 1,4-dioxane to not exceed 0.28 ug/L. The RLs achieved by the laboratory for PFAS compounds varied between 1.78 and 1.8 ng/L, and thus met the required specification. For 1,4-dioxane, all samples reported an MDL of 0.0314 ug/L, thus also meeting the required specification.

3.0 DATA QUALITY

The results of the equipment blank and method blank analyses are provided in Appendix A and discussed in the Data Usability Summary Report (DUSR) in Appendix B. Neither 1,4-dioxane nor PFAS compounds were detected in the method blank or equipment blank samples.

GEI performed a data review and prepared a DUSR for the laboratory packages. The DUSR is provided in Appendix B. The data was determined to be usable as reported by the laboratory, with minor qualifications. Additional detail is provided in the DUSR. The Form I report sheets reflecting qualifications from the DUSR are also included in Appendix B.

4.0 SUMMARY AND EVALUATION OF ANALYTICAL RESULTS

The laboratory analytical results for three sampled wells, a blind duplicate sample from MW-10, and the equipment blank are summarized in Table 1. Included in the table are the Initial Screening Levels (ISLs) for both Drinking Water and Groundwater provided by the NYSDEC, as well as NYSDOH recommended MCLs where applicable.

On Table 1, the detected concentrations (including estimated "J" values) are shown with bold font. Key observations from the data are summarized as follows:

- **1,4-Dioxane** – 1,4-Dioxane was not detected in any of the samples.
- **PFOS** – PFOS was detected in all three wells at concentrations ranging from 2.29 to 17.2 ng/L. The concentrations detected in well MW-10 exceed the most stringent ICL (the recommended MCL of 10 ng/L), but do not exceed other ICLs.

- **Other PFAS Compounds** – No exceedances of the ISLs for Drinking Water or Groundwater were identified for other individual PFAS compounds. No exceedances of the NYSDOH MCLs were identified for PFOA, the only individual PFAS compound for which a recommended MCL is established, other than PFOS.
- **Total PFOS and PFOA –** The combined total concentration of PFOA and PFOS marginally exceeds the NYSDEC-specified drinking water screening level of 20 ng/L at well MW-10.
- **Total NYSDEC Target PFAS List Exceedances** – The total PFAS ISL for both Drinking Water and Groundwater is 500 ng/L. No exceedances of either screening level were identified for any of the samples.

As required by the NYSDEC, the data will be submitted to the NYSDEC EIMS website at https://www.dec.ny.gov/chemical/62440.html.

5.0 PUBLIC WATER SUPPLIES

GEI also evaluated the potential presence of drinking water supply wells within ½ mile of the site at TPC's request. This evaluation included review of available well information from EDR, requesting well information from the Onondaga County Health Department (OCHD), and confirmation of the availability of public water supplies from the Onondaga County Water Authority (OCWA).

An EDR GeoCheck® Report was obtained on July 25, 2019, which indicates that one USGS well is present approximately 0.3 miles southeast of the site. Based on the groundwater flow direction (Figure 1), this well is hydraulically upgradient from the site. GEI was unable to locate this well in the USGS groundwater database (available at https://waterdata.usgs.gov/nwis/gw). No other wells, public or private, were identified in the GeoCheck® report (Attachment C).

GEI contacted OCHD on July 29, 2019. Based on a conversation between Wendy Moore (GEI) and Shawn Rush (OCHD), no private wells exist proximate to the site because the area is served by public water. According to OCHD, per Article 4, Section B, No. 1 of the Onondaga County Sanitary Code, a private water well may not be installed or used without approval from the OCHD when public water is provided.

On July 30, 2019, GEI confirmed with OCWA, that public water is available for the Site and surrounding area. Based on information provided to GEI (Wendy Moore) by OCWA (Timothy Fahrbach), public water is provided to all properties within ½ mile of the site. OCWA provided maps that confirm the presence of water supply lines to all properties within and greater than ½ mile from the site. However, for public safety reasons, OCWA could not authorize the inclusion of those drawings with this report.

Based on the above, it is concluded that there are no water supply wells within ½ mile of the site, and local ordinances preclude the installation of such wells since public water service is available.

If you have any questions or comments, please contact Jeff Holden of GEI at 607-216-8956 or Amy Reichhart of Nixon Peabody at 585-263-1322.

Sincerely,

GEI CONSULTANTS, INC., P.C.

Jeffrey S. Holden, P.E.
Senior Engineer

Daniel Kopcow, P.E., PMP
Vice President/Senior Engineer

JSH:mlr

Attachments: Table 1 – Summary of Emerging Contaminant Analytical Results
Figure 1 –Sample Locations
Attachment A – Laboratory Analytical Reports
Attachment B – DUSR and Corrected Form Is
Attachment C – Well Inventory excerpt from EDR GeoCheck® Report

c: Amy Reichhart – Nixon Peabody
Craig Bremer – TPC-York

B:\Working\NIXON PEABODY\1804308 Syracuse China Landfill Investigation\Emerging Contaminants\EC Summary Report\Emerging Contaminant Summ Rpt 8-6-19.docx

Table

Table 1. Former Syracuse China Landfill
Summary of Emerging Contaminant Analytical Results

Analyte	Units	CAS No.	NY DEC Initial DW Screening Level	NY DEC Initial GW Screening Level	NY DOH Recommended MCL	Sample Name Sample Date Parent Sample MW2 5/1/2019	MW6 5/1/2019	MW10 5/1/2019	BLIND DUPLICATE 040119 5/1/2019 MW10	EQUIPMENT BLANK 5/1/2019
SVOCs	ng/L									
1,4-Dioxane		123-91-1	350	350	1000	139 U	139 U	139 U	139 U	139 U
PFAS	ng/L									
N-ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)		2991-50-6	100	100	NE	**1.18 J**	1.78 U	1.78 U	1.8 U	1.78 U
N-methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)		2355-31-9	100	100	NE	1.78 U	1.78 U	1.78 U	1.8 U	1.78 U
Perfluorobutanesulfonic acid (PFBS)		375-73-5	100	100	NE	**1.11 J**	**1.48 J**	**0.425 J**	**0.475 J**	1.78 U
Perfluorobutanoic acid (PFBA)		375-22-4	100	100	NE	**17.6**	**5.51**	**3.54**	**3.4**	1.78 U
Perfluorodecanesulfonic acid (PFDS)		335-77-3	100	100	NE	1.78 U	1.78 U	1.78 U	1.8 U	1.78 U
Perfluorodecanoic acid (PFDA)		335-76-2	100	100	NE	**0.968 J**	1.78 U	1.78 U	1.8 U	1.78 U
Perfluorododecanoic acid (PFDoA)		307-55-1	100	100	NE	1.78 U	1.78 U	1.78 U	1.8 U	1.78 U
Perfluoroheptanesulfonic acid (PFHpS)		375-92-8	100	100	NE	1.78 U	1.78 U	1.78 U	1.8 U	1.78 U
Perfluoroheptanoic acid (PFHpA)		375-85-9	100	100	NE	**13.9**	**0.854 J**	1.78 U	1.8 U	1.78 U
Perfluorohexanoic acid (PFHxA)		307-24-4	100	100	NE	**29.1**	**1.31 J**	1.78 U	1.8 U	1.78 U
Perfluorooctanesulfonamide (FOSA)		754-91-6	100	100	NE	1.78 U	1.78 U	1.78 U	1.8 U	1.78 U
Perfluoropentanoic Acid (PFPeA)		2706-90-3	100	100	NE	**56.4**	**1.22 J**	1.78 U	1.8 U	1.78 U
Perfluorotetradecanoic acid (PFTA/PFTeDA)		376-06-7	100	100	NE	1.78 U	1.78 U	1.78 U	1.8 U	1.78 U
Perfluorotridecanoic acid (PFTriA/PFTrDA)		72629-94-8	100	100	NE	1.78 U	1.78 U	1.78 U	1.8 U	1.78 U
Perfluoroundecanoic acid (PFUnA)		2058-94-8	100	100	NE	1.78 U	1.78 U	1.78 U	1.8 U	1.78 U
PFOA/PFOS, Total		TOTALPFOAPFOS	NE	NE	NE	**9.23**	**8.39**	**24.2**	**23.2**	1.78 U
Sodium 1H,1H,2H,2H-Perfluorodecane Sulfonate (8:2)		39108-34-4	100	100	NE	**1.03 J**	1.78 U	1.78 U	1.8 U	1.78 U
Sodium 1H,1H,2H,2H-Perfluorooctane Sulfonate (6:2)		27619-97-2	100	100	NE	**19.6**	**2.58**	**1.26 J**	**0.381 J**	1.78 U
Perfluorohexanesulfonic acid (PFHxS)		355-46-4	100	100	NE	1.78 U	**0.764 J**	**2.17**	**2.13**	1.78 U
Perfluorononanoic Acid (PFNA)		375-95-1	100	100	NE	**1.58 J**	1.78 U	**0.45 J**	1.8 U	1.78 U
Perfluorooctanesulfonic acid (PFOS)		1763-23-1	20	70	10	**2.29**	**4.38**	**17.2**	**16**	1.78 U
Perfluorooctanoic Acid (PFOA)		335-67-1	20	70	10	**6.94**	**4.01**	**6.98**	**7.19**	1.78 U
Total PFAS (ND=0)		TPFAS_ND0	500	500	NE	**151.698**	**22.108**	**32.025**	**29.576**	ND
Total PFAS_NY2 (ND=0)		TPFAS_NY_ND0	20	70	NE	**9.23**	**8.39**	**24.18**	**23.19**	ND

Notes:
Analytes in blue are not detected in any sample
ng/L = nanogram per liter
ND = Not Detected
PFAS = Per- and polyfluoroalkyl substances
SVOC = Semi-Volatile Organic Compound
NYSDEC New York State Department of Environmental Conservation
NYDOH Recommended MCL - New York Department of Health Recommended Maximum Contaminant Level

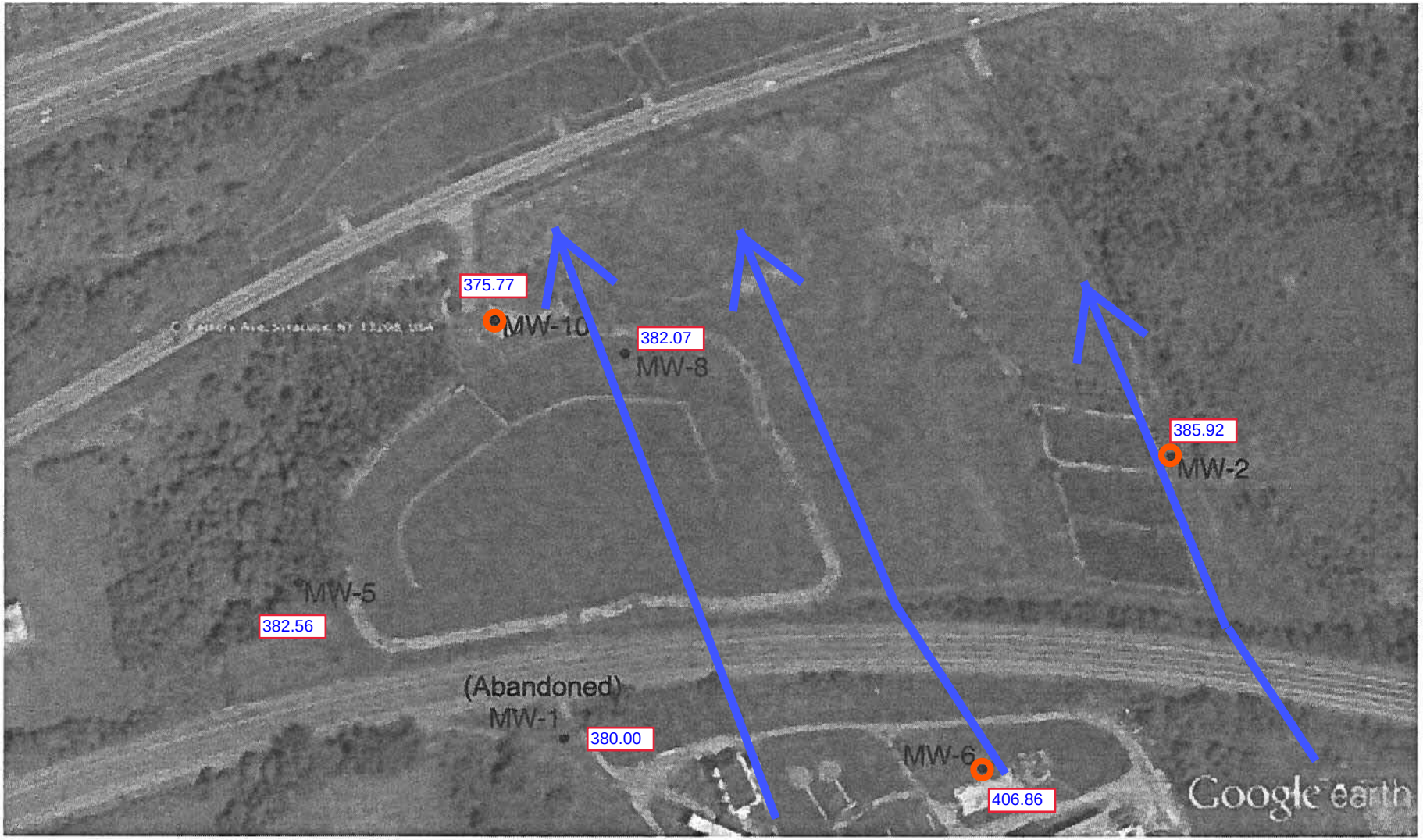
Total PFAS are calculated using detects only.
Total PFAS_NY2 are calculated using detects only and are the sum of: PFOA and PFOS.

CAS No. = Chemical Abstracts Service Number

Bolding indicates a detected result concentration
Shading and bolding indicates that the detected concentration is above the screening level it was compared to.

Validation Qualifiers:
J = The result is an estimated value.
U = The result was not detected above the reporting limit.

Figure



Google Earth Pro

feet 1000
meters 400

RocTerra

MONITORING WELL SUBJECT TO EMERGING CONTAMINANT SAMPLING

380.00 Groundwater elevation on 12/31/14 as reported in Periodic Review Report (RocTerra 2016)

General groundwater flow direction (Note 2)

Notes:
1. Figure Adapted from Figure 2 of "Periodic Review Report," RocTerra, December 2016
2. Groundwater flow direction based on Geraghty & Miller figure titled "Water-Level Elevations, January 5, 1995

Groundwater Monitoring Well Map

Figure 1

Attachment A

Laboratory Analytical Reports

ANALYTICAL REPORT

Lab Number:	L1918110
Client:	GEI Consultants, Inc., P.C. 1301 Trumansburg Road Suite N Ithaca, NY 14850
ATTN:	Jeffrey Holden
Phone:	(607) 216-8955
Project Name:	FORMER SYRACUSE CHINA LANDFILL
Project Number:	1804308
Report Date:	05/10/19

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: FORMER SYRACUSE CHINA LANDFILL
Project Number: 1804308

Lab Number: L1918110
Report Date: 05/10/19

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1918110-01	MW2	WATER	SYRACUSE	05/01/19 11:05	05/01/19
L1918110-02	MW10	WATER	SYRACUSE	05/01/19 13:30	05/01/19
L1918110-03	MW6	WATER	SYRACUSE	05/01/19 15:25	05/01/19
L1918110-04	EQUIPMENT BLANK	WATER	SYRACUSE	05/01/19 11:35	05/01/19
L1918110-05	BLIND DUPLICATE 040119	WATER	SYRACUSE	05/01/19 00:00	05/01/19

Project Name:	FORMER SYRACUSE CHINA LANDFILL	**Lab Number:**	L1918110
Project Number:	1804308	**Report Date:**	05/10/19

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:	FORMER SYRACUSE CHINA LANDFILL	**Lab Number:**	L1918110
Project Number:	1804308	**Report Date:**	05/10/19

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

Sample collection dates noted as 4/1/19 on the COC are reported as 5/1/19 per the client.

Perfluorinated Alkyl Acids by Isotope Dilution

WG1233881-1 and WG1233881-3: Extracted Internal Standard recoveries were outside the acceptance criteria for individual analytes. Please refer to the surrogate section of the report for details.

The WG1233881-2/-3 LCS/LCSD RPD(s), associated with L1918110-01 through -05, are above the acceptance criteria for 1h,1h,2h,2h-perfluorodecanesulfonic acid (8:2fts) (36%).

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 E O'Neil Susan O' Neil

Title: Technical Director/Representative Date: 05/10/19

ORGANICS

SEMIVOLATILES

Project Name: FORMER SYRACUSE CHINA LANDFILL
Lab Number: L1918110
Project Number: 1804308
Report Date: 05/10/19

SAMPLE RESULTS

Lab ID: L1918110-01
Client ID: MW2
Sample Location: SYRACUSE

Date Collected: 05/01/19 11:05
Date Received: 05/01/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 05/07/19 18:29
Analyst: MA

Extraction Method: EPA 3510C
Extraction Date: 05/04/19 22:10

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	34		15-110

Project Name: FORMER SYRACUSE CHINA LANDFILL **Lab Number:** L1918110

Project Number: 1804308 **Report Date:** 05/10/19

SAMPLE RESULTS

Lab ID: L1918110-01
Client ID: MW2
Sample Location: SYRACUSE

Date Collected: 05/01/19 11:05
Date Received: 05/01/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 122,537(M)
Analytical Date: 05/07/19 20:37
Analyst: AJ

Extraction Method: EPA 537
Extraction Date: 05/06/19 07:41

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	17.6		ng/l	1.78	0.333	1
Perfluoropentanoic Acid (PFPeA)	56.4		ng/l	1.78	0.414	1
Perfluorobutanesulfonic Acid (PFBS)	1.11	J	ng/l	1.78	0.339	1
Perfluorohexanoic Acid (PFHxA)	29.1		ng/l	1.78	0.439	1
Perfluoroheptanoic Acid (PFHpA)	13.9		ng/l	1.78	0.332	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.78	0.389	1
Perfluorooctanoic Acid (PFOA)	6.94		ng/l	1.78	0.411	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	19.6		ng/l	1.78	0.173	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.78	0.464	1
Perfluorononanoic Acid (PFNA)	1.58	J	ng/l	1.78	0.389	1
Perfluorooctanesulfonic Acid (PFOS)	2.29		ng/l	1.78	0.500	1
Perfluorodecanoic Acid (PFDA)	0.968	J	ng/l	1.78	0.554	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	1.03	J	ng/l	1.78	0.260	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.78	0.224	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.78	0.378	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.78	0.345	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.78	0.496	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	1.18	J	ng/l	1.78	0.333	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.78	0.528	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.78	0.280	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.78	0.882	1
PFOA/PFOS, Total	9.23		ng/l	1.78	0.411	1

Project Name: FORMER SYRACUSE CHINA LANDFILL **Lab Number:** L1918110

Project Number: 1804308 **Report Date:** 05/10/19

SAMPLE RESULTS

Lab ID: L1918110-01 Date Collected: 05/01/19 11:05

Client ID: MW2 Date Received: 05/01/19

Sample Location: SYRACUSE 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)	111		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	101		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	114		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	127		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	106		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	132		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	104		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	91		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	102		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	107		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	100		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)	73		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	100		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	53		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	56		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	82		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	70		33-143

Project Name: FORMER SYRACUSE CHINA LANDFILL
Lab Number: L1918110
Project Number: 1804308
Report Date: 05/10/19

SAMPLE RESULTS

Lab ID: L1918110-02
Client ID: MW10
Sample Location: SYRACUSE

Date Collected: 05/01/19 13:30
Date Received: 05/01/19
Field Prep: Not Specified

Sample Depth:

parent of dupe

Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 05/07/19 19:29
Analyst: MA

Extraction Method: EPA 3510C
Extraction Date: 05/04/19 22:10

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: FORMER SYRACUSE CHINA LANDFILL
Project Number: 1804308
Lab Number: L1918110
Report Date: 05/10/19

SAMPLE RESULTS

Lab ID: L1918110-02
Client ID: MW10
Sample Location: SYRACUSE

parent of dupe

Sample Depth:
Matrix: Water
Analytical Method: 122,537(M)
Analytical Date: 05/07/19 21:10
Analyst: AJ

Date Collected: 05/01/19 13:30
Date Received: 05/01/19
Field Prep: Not Specified

Extraction Method: EPA 537
Extraction Date: 05/06/19 07:41

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	3.54		ng/l	1.78	0.333	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	1.78	0.414	1
Perfluorobutanesulfonic Acid (PFBS)	0.425	J	ng/l	1.78	0.339	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	1.78	0.439	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	1.78	0.332	1
Perfluorohexanesulfonic Acid (PFHxS)	2.17		ng/l	1.78	0.389	1
Perfluorooctanoic Acid (PFOA)	6.98		ng/l	1.78	0.411	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	1.26	J	ng/l	1.78	0.173	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.78	0.464	1
Perfluorononanoic Acid (PFNA)	0.450	J	ng/l	1.78	0.389	1
Perfluorooctanesulfonic Acid (PFOS)	17.2		ng/l	1.78	0.500	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.78	0.554	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.78	0.260	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.78	0.224	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.78	0.378	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.78	0.345	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.78	0.496	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.78	0.333	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.78	0.528	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.78	0.280	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.78	0.882	1
PFOA/PFOS, Total	24.2		ng/l	1.78	0.411	1

Project Name: FORMER SYRACUSE CHINA LANDFILL **Lab Number:** L1918110

Project Number: 1804308 **Report Date:** 05/10/19

SAMPLE RESULTS

Lab ID: L1918110-02 Date Collected: 05/01/19 13:30
Client ID: MW10 Date Received: 05/01/19
Sample Location: SYRACUSE 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)	104		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	93		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	111		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	117		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	94		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	123		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	99		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	93		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	93		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	101		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)	83		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	69		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	86		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	64		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	54		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	69		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	61		33-143

Project Name: FORMER SYRACUSE CHINA LANDFILL
Lab Number: L1918110
Project Number: 1804308
Report Date: 05/10/19

SAMPLE RESULTS

Lab ID: L1918110-03
Client ID: MW6
Sample Location: SYRACUSE

Date Collected: 05/01/19 15:25
Date Received: 05/01/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 05/07/19 19:49
Analyst: MA

Extraction Method: EPA 3510C
Extraction Date: 05/04/19 22:10

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	34		15-110

Project Name: FORMER SYRACUSE CHINA LANDFILL **Lab Number:** L1918110

Project Number: 1804308 **Report Date:** 05/10/19

SAMPLE RESULTS

Lab ID: L1918110-03
Client ID: MW6
Sample Location: SYRACUSE

Date Collected: 05/01/19 15:25
Date Received: 05/01/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 122,537(M)
Analytical Date: 05/07/19 21:43
Analyst: AJ

Extraction Method: EPA 537
Extraction Date: 05/06/19 07:42

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	5.51		ng/l	1.78	0.333	1
Perfluoropentanoic Acid (PFPeA)	1.22	J	ng/l	1.78	0.414	1
Perfluorobutanesulfonic Acid (PFBS)	1.48	J	ng/l	1.78	0.339	1
Perfluorohexanoic Acid (PFHxA)	1.31	J	ng/l	1.78	0.439	1
Perfluoroheptanoic Acid (PFHpA)	0.854	J	ng/l	1.78	0.332	1
Perfluorohexanesulfonic Acid (PFHxS)	0.764	J	ng/l	1.78	0.389	1
Perfluorooctanoic Acid (PFOA)	4.01		ng/l	1.78	0.411	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	2.58		ng/l	1.78	0.173	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.78	0.464	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.78	0.389	1
Perfluorooctanesulfonic Acid (PFOS)	4.38		ng/l	1.78	0.500	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.78	0.554	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.78	0.260	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.78	0.224	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.78	0.378	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.78	0.345	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.78	0.496	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.78	0.333	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.78	0.528	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.78	0.280	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.78	0.882	1
PFOA/PFOS, Total	8.39		ng/l	1.78	0.411	1

Project Name: FORMER SYRACUSE CHINA LANDFILL **Lab Number:** L1918110

Project Number: 1804308 **Report Date:** 05/10/19

SAMPLE RESULTS

Lab ID: L1918110-03 Date Collected: 05/01/19 15:25

Client ID: MW6 Date Received: 05/01/19

Sample Location: SYRACUSE 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)	101		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	97		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	112		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	111		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	96		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	122		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	100		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	89		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	91		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	100		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)	69		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	55		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	80		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	46		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	49		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	63		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	60		33-143

Project Name: FORMER SYRACUSE CHINA LANDFILL
Lab Number: L1918110
Project Number: 1804308
Report Date: 05/10/19

SAMPLE RESULTS

Lab ID: L1918110-04
Client ID: EQUIPMENT BLANK
Sample Location: SYRACUSE

Date Collected: 05/01/19 11:35
Date Received: 05/01/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 05/07/19 20:09
Analyst: MA

Extraction Method: EPA 3510C
Extraction Date: 05/04/19 22:10

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	34		15-110

Project Name: FORMER SYRACUSE CHINA LANDFILL **Lab Number:** L1918110

Project Number: 1804308 **Report Date:** 05/10/19

SAMPLE RESULTS

Lab ID: L1918110-04
Client ID: EQUIPMENT BLANK
Sample Location: SYRACUSE

Date Collected: 05/01/19 11:35
Date Received: 05/01/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 122,537(M)
Analytical Date: 05/07/19 19:47
Analyst: AJ

Extraction Method: EPA 537
Extraction Date: 05/06/19 07:42

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/l	1.78	0.333	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	1.78	0.414	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.78	0.339	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	1.78	0.439	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	1.78	0.332	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.78	0.389	1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.78	0.411	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	1.78	0.173	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.78	0.464	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.78	0.389	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.78	0.500	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.78	0.554	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.78	0.260	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.78	0.224	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.78	0.378	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.78	0.345	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.78	0.496	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.78	0.333	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.78	0.528	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.78	0.280	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.78	0.882	1
PFOA/PFOS, Total	ND		ng/l	1.78	0.411	1

Project Name: FORMER SYRACUSE CHINA LANDFILL **Lab Number:** L1918110

Project Number: 1804308 **Report Date:** 05/10/19

SAMPLE RESULTS

Lab ID: L1918110-04 Date Collected: 05/01/19 11:35

Client ID: EQUIPMENT BLANK Date Received: 05/01/19

Sample Location: SYRACUSE 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)	98		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	118		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	110		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	114		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	96		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	130		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	103		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	65		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	96		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	104		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	101		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	63		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	65		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	101		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	36		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	56		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	78		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	65		33-143

Project Name: FORMER SYRACUSE CHINA LANDFILL
Lab Number: L1918110
Project Number: 1804308
Report Date: 05/10/19

SAMPLE RESULTS

Lab ID: L1918110-05
Client ID: BLIND DUPLICATE 040119
Sample Location: SYRACUSE

Date Collected: 05/01/19 00:00
Date Received: 05/01/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 05/07/19 20:29
Analyst: MA

Extraction Method: EPA 3510C
Extraction Date: 05/04/19 22:10

Parent = MW10

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	41		15-110

Project Name: FORMER SYRACUSE CHINA LANDFILL **Lab Number:** L1918110

Project Number: 1804308 **Report Date:** 05/10/19

SAMPLE RESULTS

Lab ID: L1918110-05
Client ID: BLIND DUPLICATE 040119
Sample Location: SYRACUSE

Date Collected: 05/01/19 00:00
Date Received: 05/01/19
Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 122,537(M)
Analytical Date: 05/07/19 22:00
Analyst: AJ

Parent = MW10

Extraction Method: EPA 537
Extraction Date: 05/06/19 07:42

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	3.40		ng/l	1.80	0.336	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	1.80	0.417	1
Perfluorobutanesulfonic Acid (PFBS)	0.475	J	ng/l	1.80	0.342	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	1.80	0.442	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	1.80	0.334	1
Perfluorohexanesulfonic Acid (PFHxS)	2.13		ng/l	1.80	0.392	1
Perfluorooctanoic Acid (PFOA)	7.19		ng/l	1.80	0.414	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	0.381	J	ng/l	1.80	0.174	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.80	0.468	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.80	0.392	1
Perfluorooctanesulfonic Acid (PFOS)	16.0		ng/l	1.80	0.504	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.80	0.558	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.80	0.262	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.80	0.225	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.80	0.381	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.80	0.347	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.80	0.500	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.80	0.335	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.80	0.532	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.80	0.282	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.80	0.888	1
PFOA/PFOS, Total	23.2		ng/l	1.80	0.414	1

Project Name: FORMER SYRACUSE CHINA LANDFILL **Lab Number:** L1918110

Project Number: 1804308 **Report Date:** 05/10/19

SAMPLE RESULTS

Lab ID: L1918110-05 Date Collected: 05/01/19 00:00

Client ID: BLIND DUPLICATE 040119 Date Received: 05/01/19

Sample Location: SYRACUSE 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)	110		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	97		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	111		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	122		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	99		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	123		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	99		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	95		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	97		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	108		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	94		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	80		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	60		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	84		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	48		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	50		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	66		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	57		33-143

Project Name: FORMER SYRACUSE CHINA LANDFILL
Project Number: 1804308
Lab Number: L1918110
Report Date: 05/10/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D-SIM
Analytical Date: 05/07/19 17:28
Analyst: MA

Extraction Method: EPA 3510C
Extraction Date: 05/04/19 22:10

Parameter	Result	Qualifier	Units	RL	MDL
1,4 Dioxane by 8270D-SIM - Mansfield Lab for sample(s): 01-05 Batch: WG1233514-1					
1,4-Dioxane	ND		ng/l	150	33.9

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	40		15-110

Project Name: FORMER SYRACUSE CHINA LANDFILL **Lab Number:** L1918110

Project Number: 1804308 **Report Date:** 05/10/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 122,537(M)
Analytical Date: 05/07/19 18:08
Analyst: AJ

Extraction Method: EPA 537
Extraction Date: 05/06/19 07:39

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab for sample(s): 01-05 Batch: WG1233881-1					
Perfluorobutanoic Acid (PFBA)	ND		ng/l	2.00	0.373
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	2.00	0.464
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	2.00	0.380
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	2.00	0.492
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	2.00	0.372
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	2.00	0.436
Perfluorooctanoic Acid (PFOA)	ND		ng/l	2.00	0.460
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	2.00	0.194
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	2.00	0.520
Perfluorononanoic Acid (PFNA)	ND		ng/l	2.00	0.436
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	2.00	0.560
Perfluorodecanoic Acid (PFDA)	ND		ng/l	2.00	0.620
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	2.00	0.291
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	2.00	0.250
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	2.00	0.424
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	2.00	0.386
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	2.00	0.556
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	2.00	0.373
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	2.00	0.592
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	2.00	0.314
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	2.00	0.988
PFOA/PFOS, Total	ND		ng/l	2.00	0.460

Project Name: FORMER SYRACUSE CHINA LANDFILL **Lab Number:** L1918110

Project Number: 1804308 **Report Date:** 05/10/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 122,537(M)
Analytical Date: 05/07/19 18:08
Analyst: AJ

Extraction Method: EPA 537
Extraction Date: 05/06/19 07:39

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab for sample(s): 01-05 Batch: WG1233881-1					

Surrogate (Extracted Internal Standard)	%Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	116		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	112		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	118		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	135		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	115		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	129		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	107		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	70		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	96		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	101		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	98		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	66		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	76		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	103		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	**94**	Q	1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	68		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	85		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	79		33-143

Lab Control Sample Analysis

Batch Quality Control

Project Name: FORMER SYRACUSE CHINA LANDFILL

Project Number: 1804308

Lab Number: L1918110

Report Date: 05/10/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
1,4 Dioxane by 8270D-SIM - Mansfield Lab	Associated sample(s): 01-05		Batch: WG1233514-2		WG1233514-3			
1,4-Dioxane	111		112		40-140	1		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,4-Dioxane-d8	38		42		15-110

Lab Control Sample Analysis

Batch Quality Control

Project Name: FORMER SYRACUSE CHINA LANDFILL

Project Number: 1804308

Lab Number: L1918110

Report Date: 05/10/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-05 Batch: WG1233881-2 WG1233881-3								
Perfluorobutanoic Acid (PFBA)	97		101		67-148	4		30
Perfluoropentanoic Acid (PFPeA)	94		100		63-161	6		30
Perfluorobutanesulfonic Acid (PFBS)	92		96		65-157	4		30
Perfluorohexanoic Acid (PFHxA)	108		112		69-168	4		30
Perfluoroheptanoic Acid (PFHpA)	102		107		58-159	5		30
Perfluorohexanesulfonic Acid (PFHxS)	98		99		69-177	1		30
Perfluorooctanoic Acid (PFOA)	104		106		63-159	2		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	88		100		49-187	13		30
Perfluoroheptanesulfonic Acid (PFHpS)	108		116		61-179	7		30
Perfluorononanoic Acid (PFNA)	110		117		68-171	6		30
Perfluorooctanesulfonic Acid (PFOS)	86		95		52-151	10		30
Perfluorodecanoic Acid (PFDA)	109		110		63-171	1		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	77		111		56-173	**36**	Q	30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	107		100		60-166	7		30
Perfluoroundecanoic Acid (PFUnA)	100		100		60-153	0		30
Perfluorodecanesulfonic Acid (PFDS)	119		129		38-156	8		30
Perfluorooctanesulfonamide (FOSA)	92		97		46-170	5		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	116		108		45-170	7		30
Perfluorododecanoic Acid (PFDoA)	103		103		67-153	0		30
Perfluorotridecanoic Acid (PFTrDA)	102		105		48-158	3		30
Perfluorotetradecanoic Acid (PFTA)	117		124		59-182	6		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: FORMER SYRACUSE CHINA LANDFILL

Project Number: 1804308

Lab Number: L1918110

Report Date: 05/10/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-05 Batch: WG1233881-2 WG1233881-3								

Surrogate (Extracted Internal Standard)	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	120		112		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	113		105		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	124		125		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	135		126		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	117		113		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	131		138		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	106		104		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	77		77		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	96		94		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	107		108		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	99		99		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	82		70		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	77		83		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	98		95		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	87		**94**	Q	1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	64		71		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	90		86		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	84		75		33-143

Matrix Spike Analysis

Batch Quality Control

Project Name: FORMER SYRACUSE CHINA LANDFILL

Project Number: 1804308

Lab Number: L1918110

Report Date: 05/10/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
1,4 Dioxane by 8270D-SIM - Mansfield Lab	Associated sample(s): 01-05		QC Batch ID: WG1233514-4			WG1233514-5		QC Sample: L1918110-01		Client ID: MW2		
1,4-Dioxane	ND	4630	5230	113		5050	109		40-140	4		30

Surrogate	MS % Recovery	MS Qualifier	MSD % Recovery	MSD Qualifier	Acceptance Criteria
1,4-Dioxane-d8	37		36		15-110

Matrix Spike Analysis

Batch Quality Control

Project Name: FORMER SYRACUSE CHINA LANDFILL

Project Number: 1804308

Lab Number: L1918110

Report Date: 05/10/19

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): 01-05 QC Batch ID: WG1233881-4 QC Sample: L1918110-01 Client ID: MW2												
Perfluorobutanoic Acid (PFBA)	17.6	35.8	52.1	96		-	-		67-148	-		30
Perfluoropentanoic Acid (PFPeA)	56.4	35.8	89.5	92		-	-		63-161	-		30
Perfluorobutanesulfonic Acid (PFBS)	1.11J	35.8	35.1	98		-	-		65-157	-		30
Perfluorohexanoic Acid (PFHxA)	29.1	35.8	68.6	110		-	-		69-168	-		30
Perfluoroheptanoic Acid (PFHpA)	13.9	35.8	50.6	102		-	-		58-159	-		30
Perfluorohexanesulfonic Acid (PFHxS)	ND	35.8	33.0	92		-	-		69-177	-		30
Perfluorooctanoic Acid (PFOA)	6.94	35.8	44.2	104		-	-		63-159	-		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	19.6	35.8	50.4	86		-	-		49-187	-		30
Perfluoroheptanesulfonic Acid (PFHpS)	ND	35.8	40.4	113		-	-		61-179	-		30
Perfluorononanoic Acid (PFNA)	1.58J	35.8	39.8	111		-	-		68-171	-		30
Perfluorooctanesulfonic Acid (PFOS)	2.29	35.8	34.7	90		-	-		52-151	-		30
Perfluorodecanoic Acid (PFDA)	0.968J	35.8	37.3	104		-	-		63-171	-		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	1.03J	35.8	31.6	88		-	-		56-173	-		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND	35.8	29.8	83		-	-		60-166	-		30
Perfluoroundecanoic Acid (PFUnA)	ND	35.8	33.1	92		-	-		60-153	-		30
Perfluorodecanesulfonic Acid (PFDS)	ND	35.8	36.6	102		-	-		38-156	-		30
Perfluorooctanesulfonamide (FOSA)	ND	35.8	35.5	99		-	-		46-170	-		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	1.18J	35.8	37.2	104		-	-		45-170	-		30
Perfluorododecanoic Acid (PFDoA)	ND	35.8	35.7	100		-	-		67-153	-		30
Perfluorotridecanoic Acid (PFTrDA)	ND	35.8	34.7	97		-	-		48-158	-		30
Perfluorotetradecanoic Acid (PFTA)	ND	35.8	40.6	113		-	-		59-182	-		30

Matrix Spike Analysis

Batch Quality Control

Project Name: FORMER SYRACUSE CHINA LANDFILL

Project Number: 1804308

Lab Number: L1918110

Report Date: 05/10/19

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): 01-05 QC Batch ID: WG1233881-4 QC Sample: L1918110-01 Client ID: MW2												

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)	78				7-170
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	94				1-244
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	57				23-146
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	75				1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	97				40-144
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	102				38-144
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	119				21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	104				30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	132				47-153
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	80				24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	67				33-143
Perfluoro[13C4]Butanoic Acid (MPFBA)	109				2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	99				16-173
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	55				1-87
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	106				42-146
Perfluoro[13C8]Octanoic Acid (M8PFOA)	102				36-149
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	97				34-146
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	115				31-159

Lab Duplicate Analysis
Batch Quality Control

Project Name: FORMER SYRACUSE CHINA LANDFILL
Project Number: 1804308

Lab Number: L1918110
Report Date: 05/10/19

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-05 QC Batch ID: WG1233881-5 QC Sample: L1918110-02 Client ID: MW10						
Perfluorobutanoic Acid (PFBA)	3.54	3.36	ng/l	5		30
Perfluoropentanoic Acid (PFPeA)	ND	ND	ng/l	NC		30
Perfluorobutanesulfonic Acid (PFBS)	0.425J	0.449J	ng/l	NC		30
Perfluorohexanoic Acid (PFHxA)	ND	ND	ng/l	NC		30
Perfluoroheptanoic Acid (PFHpA)	ND	ND	ng/l	NC		30
Perfluorohexanesulfonic Acid (PFHxS)	2.17	2.14	ng/l	1		30
Perfluorooctanoic Acid (PFOA)	6.98	6.79	ng/l	3		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	1.26J	1.23J	ng/l	NC		30
Perfluoroheptanesulfonic Acid (PFHpS)	ND	0.819J	ng/l	NC		30
Perfluorononanoic Acid (PFNA)	0.450J	0.408J	ng/l	NC		30
Perfluorooctanesulfonic Acid (PFOS)	17.2	16.7	ng/l	3		30
Perfluorodecanoic Acid (PFDA)	ND	ND	ng/l	NC		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	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
Perfluorooctanesulfonamide (FOSA)	ND	ND	ng/l	NC		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND	ND	ng/l	NC		30
Perfluorododecanoic Acid (PFDoA)	ND	ND	ng/l	NC		30
Perfluorotridecanoic Acid (PFTrDA)	ND	ND	ng/l	NC		30

Lab Duplicate Analysis
Batch Quality Control

Project Name: FORMER SYRACUSE CHINA LANDFILL
Project Number: 1804308

Lab Number: L1918110
Report Date: 05/10/19

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-05 QC Batch ID: WG1233881-5 QC Sample: L1918110-02 Client ID: MW10						
Perfluorotetradecanoic Acid (PFTA)	ND	ND	ng/l	NC		30
PFOA/PFOS, Total	24.2	23.5	ng/l	0		30

Surrogate (Extracted Internal Standard)	%Recovery	Qualifier	%Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	104		109		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	93		96		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	111		109		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	117		122		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	94		94		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	123		122		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	99		102		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	93		96		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	93		94		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	101		102		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	88		93		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	83		83		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	69		70		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	86		88		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	64		64		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	54		63		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	69		71		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	61		63		33-143

Project Name: FORMER SYRACUSE CHINA LANDFILL
Project Number: 1804308

Lab Number: L1918110
Report Date: 05/10/19

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(*)
L1918110-01A	Amber 250ml unpreserved	B	7	7	4.1	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L1918110-01B	Amber 250ml unpreserved	B	7	7	4.1	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L1918110-01C	Amber 250ml unpreserved	B	7	7	4.1	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L1918110-01D	Amber 250ml unpreserved	B	7	7	4.1	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L1918110-01E	Amber 250ml unpreserved	B	7	7	4.1	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L1918110-01F	Amber 250ml unpreserved	B	7	7	4.1	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L1918110-01G	2 Plastic/1 Plastic/1 H20 Plastic	A	NA		3.2	Y	Absent		A2-NY-537-ISOTOPE(14)
L1918110-01H	2 Plastic/1 Plastic/1 H20 Plastic	A	NA		3.2	Y	Absent		A2-NY-537-ISOTOPE(14)
L1918110-01I	2 Plastic/1 Plastic/1 H20 Plastic	A	NA		3.2	Y	Absent		-
L1918110-01J	2 Plastic/1 Plastic/1 H20 Plastic	A	NA		3.2	Y	Absent		-
L1918110-01K	2 Plastic/1 Plastic/1 H20 Plastic	A	NA		3.2	Y	Absent		-
L1918110-01L	2 Plastic/1 Plastic/1 H20 Plastic	A	NA		3.2	Y	Absent		-
L1918110-02A	Amber 250ml unpreserved	B	7	7	4.1	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L1918110-02B	Amber 250ml unpreserved	B	7	7	4.1	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L1918110-02C	2 Plastic/1 Plastic/1 H20 Plastic	A	NA		3.2	Y	Absent		A2-NY-537-ISOTOPE(14)
L1918110-02D	2 Plastic/1 Plastic/1 H20 Plastic	A	NA		3.2	Y	Absent		A2-NY-537-ISOTOPE(14)
L1918110-03A	Amber 250ml unpreserved	B	7	7	4.1	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L1918110-03B	Amber 250ml unpreserved	B	7	7	4.1	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L1918110-03C	2 Plastic/1 Plastic/1 H20 Plastic	A	NA		3.2	Y	Absent		A2-NY-537-ISOTOPE(14)
L1918110-03D	2 Plastic/1 Plastic/1 H20 Plastic	A	NA		3.2	Y	Absent		A2-NY-537-ISOTOPE(14)
L1918110-04A	Amber 250ml unpreserved	B	7	7	4.1	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L1918110-04B	Amber 250ml unpreserved	B	7	7	4.1	Y	Absent		A2-1,4-DIOXANE-SIM(7)

*Values in parentheses indicate holding time in days

Project Name: FORMER SYRACUSE CHINA LANDFILL
Project Number: 1804308

Lab Number: L1918110
Report Date: 05/10/19

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1918110-04C	2 Plastic/1 Plastic/1 H20 Plastic	A	NA		3.2	Y	Absent		A2-NY-537-ISOTOPE(14)
L1918110-04D	2 Plastic/1 Plastic/1 H20 Plastic	A	NA		3.2	Y	Absent		A2-NY-537-ISOTOPE(14)
L1918110-05A	Amber 250ml unpreserved	B	7	7	4.1	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L1918110-05B	Amber 250ml unpreserved	B	7	7	4.1	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L1918110-05C	2 Plastic/1 Plastic/1 H20 Plastic	A	NA		3.2	Y	Absent		A2-NY-537-ISOTOPE(14)
L1918110-05D	2 Plastic/1 Plastic/1 H20 Plastic	A	NA		3.2	Y	Absent		A2-NY-537-ISOTOPE(14)

*Values in parentheses indicate holding time in days

Project Name:	FORMER SYRACUSE CHINA LANDFILL	**Lab Number:**	L1918110
Project Number:	1804308	**Report Date:**	05/10/19

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:	FORMER SYRACUSE CHINA LANDFILL	**Lab Number:**	L1918110
Project Number:	1804308	**Report Date:**	05/10/19

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.

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:	FORMER SYRACUSE CHINA LANDFILL	**Lab Number:**	L1918110
Project Number:	1804308	**Report Date:**	05/10/19

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IV, 2007.

122 Determination of Selected Perfluorintated 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 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
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, SM4500Cl-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.

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: 5/2/19

ALPHA Job #: L1918110

Client Information

Client: GEI Consultants
Address: 1301 Trumansburg Rd Suite N Ithaca, NY 14850
Phone: 607 216 8955
Fax:
Email: jholden@geiconsultants.com

Project Information

Project Name: Former Syracuse China Landfill
Project Location: Syracuse
Project #
(Use Project name as Project #) ☐
Project Manager: Jeffrey Holden
ALPHAQuote #: 20181015R1

Turn-Around Time

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

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:

These samples have been previously analyzed by Alpha ☐

Other project specific requirements/comments:

Please send EDD to datagroup@geiconsultants.com

Please specify Metals or TAL.

ANALYSIS

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

Sample Specific Comments

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	PFOA/PFAS 24 537	1,4-dioxane 8270 SIM	Total Bottle
91810-01	MW2	4/1/19	1105	Water	JP	X	X	
-01	MS-MW2	4/1/19	1110	Water	JP		X	
-01	MSD-MW2	4/1/19	1115	Water	JP		X	
-02	MW10	4/1/19	1330	Water	JP	X	X	
-03	MW6	4/1/19	1525	Water	JP	X	X	
-04	Equipment Blank	4/1/19	1135	Water	JP	X	X	
-05	Blind Duplicate 040119	4/1/19	N/A	Water	JP	X	X	

5/6/19

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

Container Type	Plastic	Glass									
Preservative	HS	NO									

Relinquished By:	Date/Time	Received By:	Date/Time
Jessy Peake	4/1/19 1645		
	5/1/19 1940		5/1/19 1940
	5/2/19 0625		5/2/19 0626

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. (See reverse side.)

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

Attachment B

Data Usability Summary Report (DUSR) and Corrected Form Is

Site: Former Syracuse China Landfill, Syracuse, NY
Laboratory: Alpha Analytical, Mansfield, MA
Report No.: L1918110
Reviewer: Lorie MacKinnon/GEI Consultants
Date: June 2, 2019

Samples Reviewed and Evaluation Summary

FIELD ID	LAB ID	FRACTIONS VALIDATED
MW2	L1918110-01	PFAAs, 1,4-Dioxane
MW10	L1918110-02	PFAAs, 1,4-Dioxane
MW6	L1918110-03	PFAAs, 1,4-Dioxane
Equipment Blank	L1918110-04	PFAAs, 1,4-Dioxane
Blind Duplicate 040119	L1918110-05	PFAAs, 1,4-Dioxane

Associated QC Samples:
Field Blanks: Equipment Blank
Field Duplicate pair: MW10/Blind Duplicate 040119

The above-listed aqueous samples and equipment blank sample were collected on May 1, 2019 and analyzed for per- and polyfluorinated alkyl acids (PFAAs) by modified Method 537 Isotope dilution and 1,4-dioxane by SW-846 method 8270D selective ion monitoring (SIM). The data validation was performed based on the USEPA Region 2 SOP HW-35 (Revision 2) *Semivolatile Data Validation* (March 2013), modified for the methods referenced and professional and technical judgment.

The data were evaluated based on the following parameters:

- Data Completeness
- Holding Times and Sample Preservation
- Initial and Continuing Calibrations
- Blanks
- Surrogate and Isotope Dilution Analyte (IDA) Recoveries
- Matrix Spike/Matrix Spike Duplicate (MS/MSD) Results
- Laboratory Duplicate Results
- Laboratory Control Sample (LCS) Results
- Internal Standards
- Field Duplicate Results
- Quantitation Limits
- Sample Quantitation and Compound Identification

In general, the data appear usable as reported or usable with minor qualification due to sample matrix or laboratory quality control outliers.

The validation findings were based on the following information.

Data Completeness

The data package was found to be complete as received by the laboratory. It should be noted that the sample collection date was recorded as 04/01/19 on the chain of custody, but samples were collected on 05/01/19.

Holding Times and Sample Preservation

All criteria were met.

Initial and Continuing Calibrations

All initial and continuing calibration criteria were met.

Blanks

Contaminants were not detected in the associated method blanks or equipment blank sample.

Surrogate and Isotope Dilution Analyte (IDA) Recoveries

1,4-Dioxane

All surrogate recovery criteria were met.

PFAAs

All isotope dilution analytes recovered within the laboratory control limits.

MS/MSD Results

MS/MSD analyses were performed on sample MW2 for 1,4-dioxane. An MS was performed on sample MW2 for PFAAs. Recovery and precision criteria were met.

Laboratory Duplicate Results

A laboratory duplicate analysis was performed on sample MW10 for PFAAs. Precision criteria were met.

LCS Results

1,4-Dioxane

All criteria were met.

PFAAs

The relative percent difference for 1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS) was above the acceptance limit of 30 at 36% in LCS/LCSD WG1233881-2/3 which was associated with all samples. The positive result for 8:2 FTS in sample MW2 was qualified as estimated (J). The direction of the bias cannot be determined from this nonconformance. Validation actions were not required for the remaining samples as the associated results for 8:2 FTS were nondetect.

Internal Standards

All criteria were met.

Field Duplicate Results

Samples MW10 and Blind Duplicate 040119 were submitted as the field duplicate pair with this sample group. The following table summarizes the RPDs of the detected analytes, which were within the acceptance criteria.

Analyte	MW10 (ng/L)	Blind Duplicate 040119 (ng/L)	RPD (%)
Perfluorobutanoic acid (PFBA)	3.54	3.40	4.0
Perfluorobutanesulfonic acid (PFBS)	0.425 J	0.475 J	9.0
Perfluorohexanesulfonic acid (PFHxS)	2.17	2.13	1.9
Perfluorooctanoic acid (PFOA)	6.98	7.19	3.0
1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTS)	1.26 J	0.381 J	107, Within the RL
Perfluorononanoic Acid (PFNA)	0.45 J	1.80 U	NC, Within the RL
Perfluorooctanesulfonic Acid (PFOS)	17.2	16.0	7.2
Total PFOA/PFOS	24.2	23.2	4.2

NC – Not calculable
Criteria: When both results are ≥5x the RL, RPDs must be <30%.
Results < 5xRL, professional judgment was taken to qualify results if the absolute difference between the original and field duplicate > RL.

Quantitation Limits

Results were reported which were below the reporting limit (RL)/quantitation limit (QL) and above the method detection limit (MDL). These results were qualified as estimated (J) by the laboratory.

Dilutions were not required.

Sample Quantitation and Compound Identification

Calculations were spot-checked; no discrepancies were noted.

DATA VALIDATION QUALIFIERS

U - The analyte was analyzed for, but due to blank contamination was flagged as nondetect (U). The result is usable as a nondetect.

J - Data are flagged (J) when a QC analysis fails outside the primary acceptance limits. The qualified "J" data are not excluded from further review or consideration. However, only one flag (J) is applied to a sample result, even though several associated QC analyses may fail. The 'J' data may be biased high or low or the direction of the bias may be indeterminable.

UJ - The analyte was not detected above the reported sample quantitation limit. Data are flagged (UJ) when a QC analysis fails outside the primary acceptance limits. The qualified "UJ" data are not excluded from further review or consideration. However, only one flag is applied to a sample result, even though several associated QC analyses may fail. The 'UJ' data may be biased low.

JN - The analysis indicates the presence of a compound that has been "tentatively identified" (N) and the associated numerical value represents its approximate (J) concentration.

R - Data rejected (R) on the basis of an unacceptable QC analysis should be excluded from further review or consideration. Data are rejected when associated QC analysis results exceed the expanded control limits of the QC criteria. The rejected data are known to contain significant errors based on documented information. The data user must not use the rejected data to make environmental decisions. The presence or absence of the analyte cannot be verified.

Project Name: FORMER SYRACUSE CHINA LANDFILL
Project Number: 1804308
Lab Number: L1918110
Report Date: 05/10/19

SAMPLE RESULTS

Lab ID: L1918110-01
Client ID: MW2
Sample Location: SYRACUSE

Date Collected: 05/01/19 11:05
Date Received: 05/01/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 05/07/19 18:29
Analyst: MA

Extraction Method: EPA 3510C
Extraction Date: 05/04/19 22:10

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	34		15-110

ALPHA

dam 5/9/19

Project Name: FORMER SYRACUSE CHINA LANDFILL
Project Number: 1804308

Lab Number: L1918110
Report Date: 05/10/19

SAMPLE RESULTS

Lab ID: L1918110-02
Client ID: MW10
Sample Location: SYRACUSE

Date Collected: 05/01/19 13:30
Date Received: 05/01/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 05/07/19 19:29
Analyst: MA

Extraction Method: EPA 3510C
Extraction Date: 05/04/19 22:10

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: FORMER SYRACUSE CHINA LANDFILL
Project Number: 1804308
Lab Number: L1918110
Report Date: 05/10/19

SAMPLE RESULTS

Lab ID: L1918110-03
Client ID: MW6
Sample Location: SYRACUSE

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 05/07/19 19:49
Analyst: MA

Date Collected: 05/01/19 15:25
Date Received: 05/01/19
Field Prep: Not Specified

Extraction Method: EPA 3510C
Extraction Date: 05/04/19 22:10

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	34		15-110

Project Name: FORMER SYRACUSE CHINA LANDFILL
Project Number: 1804308
Lab Number: L1918110
Report Date: 05/10/19

SAMPLE RESULTS

Lab ID: L1918110-04
Client ID: EQUIPMENT BLANK
Sample Location: SYRACUSE

Date Collected: 05/01/19 11:35
Date Received: 05/01/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 05/07/19 20:09
Analyst: MA

Extraction Method: EPA 3510C
Extraction Date: 05/04/19 22:10

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	34		15-110

Project Name: FORMER SYRACUSE CHINA LANDFILL
Project Number: 1804308
Lab Number: L1918110
Report Date: 05/10/19

SAMPLE RESULTS

Lab ID: L1918110-05
Client ID: BLIND DUPLICATE 040119
Sample Location: SYRACUSE

Date Collected: 05/01/19 00:00
Date Received: 05/01/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 05/07/19 20:29
Analyst: MA

Extraction Method: EPA 3510C
Extraction Date: 05/04/19 22:10

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	41		15-110

Project Name: FORMER SYRACUSE CHINA LANDFILL
Project Number: 1804308

Lab Number: L1918110
Report Date: 05/10/19

SAMPLE RESULTS

Lab ID: L1918110-01
Client ID: MW2
Sample Location: SYRACUSE

Date Collected: 05/01/19 11:05
Date Received: 05/01/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 122,537(M)
Analytical Date: 05/07/19 20:37
Analyst: AJ

Extraction Method: EPA 537
Extraction Date: 05/06/19 07:41

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	17.6		ng/l	1.78	0.333	1
Perfluoropentanoic Acid (PFPeA)	56.4		ng/l	1.78	0.414	1
Perfluorobutanesulfonic Acid (PFBS)	1.11	J	ng/l	1.78	0.339	1
Perfluorohexanoic Acid (PFHxA)	29.1		ng/l	1.78	0.439	1
Perfluoroheptanoic Acid (PFHpA)	13.9		ng/l	1.78	0.332	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.78	0.389	1
Perfluorooctanoic Acid (PFOA)	6.94		ng/l	1.78	0.411	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	19.6		ng/l	1.78	0.173	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.78	0.464	1
Perfluorononanoic Acid (PFNA)	1.58	J	ng/l	1.78	0.389	1
Perfluorooctanesulfonic Acid (PFOS)	2.29		ng/l	1.78	0.500	1
Perfluorodecanoic Acid (PFDA)	0.968	J	ng/l	1.78	0.554	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	1.03	J	ng/l	1.78	0.260	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.78	0.224	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.78	0.378	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.78	0.345	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.78	0.496	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	1.18	J	ng/l	1.78	0.333	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.78	0.528	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.78	0.280	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.78	0.882	1
PFOA/PFOS, Total	9.23		ng/l	1.78	0.411	1

Project Name: FORMER SYRACUSE CHINA LANDFILL
Project Number: 1804308
Lab Number: L1918110
Report Date: 05/10/19

SAMPLE RESULTS

Lab ID: L1918110-02
Client ID: MW10
Sample Location: SYRACUSE

Date Collected: 05/01/19 13:30
Date Received: 05/01/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 122,537(M)
Analytical Date: 05/07/19 21:10
Analyst: AJ

Extraction Method: EPA 537
Extraction Date: 05/06/19 07:41

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	3.54		ng/l	1.78	0.333	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	1.78	0.414	1
Perfluorobutanesulfonic Acid (PFBS)	0.425	J	ng/l	1.78	0.339	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	1.78	0.439	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	1.78	0.332	1
Perfluorohexanesulfonic Acid (PFHxS)	2.17		ng/l	1.78	0.389	1
Perfluorooctanoic Acid (PFOA)	6.98		ng/l	1.78	0.411	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	1.26	J	ng/l	1.78	0.173	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.78	0.464	1
Perfluorononanoic Acid (PFNA)	0.450	J	ng/l	1.78	0.389	1
Perfluorooctanesulfonic Acid (PFOS)	17.2		ng/l	1.78	0.500	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.78	0.554	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.78	0.260	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.78	0.224	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.78	0.378	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.78	0.345	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.78	0.496	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.78	0.333	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.78	0.528	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.78	0.280	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.78	0.882	1
PFOA/PFOS, Total	24.2		ng/l	1.78	0.411	1

Project Name: FORMER SYRACUSE CHINA LANDFILL
Project Number: 1804308
Lab Number: L1918110
Report Date: 05/10/19

SAMPLE RESULTS

Lab ID: L1918110-03
Client ID: MW6
Sample Location: SYRACUSE

Date Collected: 05/01/19 15:25
Date Received: 05/01/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 122,537(M)
Analytical Date: 05/07/19 21:43
Analyst: AJ

Extraction Method: EPA 537
Extraction Date: 05/06/19 07:42

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	5.51		ng/l	1.78	0.333	1
Perfluoropentanoic Acid (PFPeA)	1.22	J	ng/l	1.78	0.414	1
Perfluorobutanesulfonic Acid (PFBS)	1.48	J	ng/l	1.78	0.339	1
Perfluorohexanoic Acid (PFHxA)	1.31	J	ng/l	1.78	0.439	1
Perfluoroheptanoic Acid (PFHpA)	0.854	J	ng/l	1.78	0.332	1
Perfluorohexanesulfonic Acid (PFHxS)	0.764	J	ng/l	1.78	0.389	1
Perfluorooctanoic Acid (PFOA)	4.01		ng/l	1.78	0.411	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	2.58		ng/l	1.78	0.173	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.78	0.464	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.78	0.389	1
Perfluorooctanesulfonic Acid (PFOS)	4.38		ng/l	1.78	0.500	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.78	0.554	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.78	0.260	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.78	0.224	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.78	0.378	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.78	0.345	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.78	0.496	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.78	0.333	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.78	0.528	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.78	0.280	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.78	0.882	1
PFOA/PFOS, Total	8.39		ng/l	1.78	0.411	1

Project Name: FORMER SYRACUSE CHINA LANDFILL
Project Number: 1804308
Lab Number: L1918110
Report Date: 05/10/19

SAMPLE RESULTS

Lab ID: L1918110-04
Client ID: EQUIPMENT BLANK
Sample Location: SYRACUSE

Date Collected: 05/01/19 11:35
Date Received: 05/01/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 122,537(M)
Analytical Date: 05/07/19 19:47
Analyst: AJ

Extraction Method: EPA 537
Extraction Date: 05/06/19 07:42

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/l	1.78	0.333	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	1.78	0.414	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.78	0.339	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	1.78	0.439	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	1.78	0.332	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.78	0.389	1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.78	0.411	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	1.78	0.173	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.78	0.464	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.78	0.389	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.78	0.500	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.78	0.554	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.78	0.260	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.78	0.224	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.78	0.378	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.78	0.345	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.78	0.496	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.78	0.333	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.78	0.528	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.78	0.280	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.78	0.882	1
PFOA/PFOS, Total	ND		ng/l	1.78	0.411	1

Project Name: FORMER SYRACUSE CHINA LANDFILL
Project Number: 1804308
Lab Number: L1918110
Report Date: 05/10/19

SAMPLE RESULTS

Lab ID: L1918110-05
Client ID: BLIND DUPLICATE 040119
Sample Location: SYRACUSE

Date Collected: 05/01/19 00:00
Date Received: 05/01/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 122,537(M)
Analytical Date: 05/07/19 22:00
Analyst: AJ

Extraction Method: EPA 537
Extraction Date: 05/06/19 07:42

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	3.40		ng/l	1.80	0.336	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	1.80	0.417	1
Perfluorobutanesulfonic Acid (PFBS)	0.475	J	ng/l	1.80	0.342	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	1.80	0.442	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	1.80	0.334	1
Perfluorohexanesulfonic Acid (PFHxS)	2.13		ng/l	1.80	0.392	1
Perfluorooctanoic Acid (PFOA)	7.19		ng/l	1.80	0.414	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	0.381	J	ng/l	1.80	0.174	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.80	0.468	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.80	0.392	1
Perfluorooctanesulfonic Acid (PFOS)	16.0		ng/l	1.80	0.504	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.80	0.558	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.80	0.262	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.80	0.225	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.80	0.381	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.80	0.347	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.80	0.500	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.80	0.335	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.80	0.532	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.80	0.282	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.80	0.888	1
PFOA/PFOS, Total	23.2		ng/l	1.80	0.414	1

NEW YORK CHAIN OF CUSTODY

ALPHA

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: 5/2/19

ALPHA Job #: L1918110

Project Information

Project Name: Former Syracuse China Landfill
Project Location: Syracuse
Project #
(Use Project name as Project #) ☐
Project Manager: Jeffrey Holden
ALPHAQuote #: 2018105R1

Turn-Around Time

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

Client Information

Client: GEI Consultants
Address: 1301 Trumansburg Rd Suite N, Ithaca, NY 14850
Phone: 607 216 8955
Fax:
Email: jholden@geiconsultants.com

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:

These samples have been previously analyzed by Alpha ☐

Other project specific requirements/comments:

Please send EDD to datagroup@geiconsultants.com

Please specify Metals or TAL.

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

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	ANALYSIS: PFOA/PFAS AL 537	1,4 dioxane 8270 SIM	Sample Specific Comments
91810-01	MW2	4/1/19	1105	Water	JP	X	X	
-01	MS-MW2	4/1/19	1110	Water	JP		X	
-01	MSD-MW2	4/1/19	1115	Water	JP		X	
-02	MW10	4/1/19	1300	Water	JP	X	X	
-03	MW6	4/1/19	1525	Water	JP	X	X	
-04	Equipment Blank	4/1/19	1135	Water	JP	X	X	5/6/19
-05	Blind Duplicate 040119	4/1/19	N/A	Water	JP	X	X	

Collection date 5/1/19 Jam 5/29/19

	PFOA/PFAS	1,4 dioxane
Container Type	Plastic	Glass
Preservative	Yes	No

Preservative Code	Container Code
A = None	P = Plastic
B = HCl	A = Amber Glass
C = HNO_3	V = Vial
D = H_2SO_4	G = Glass
E = NaOH	B = Bacteria Cup
F = MeOH	C = Cube
G = $NaHSO_4$	O = Other
H = $Na_2S_2O_3$	E = Encore
K/E = Zn Ac/NaOH	D = BOD Bottle
O = Other	

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

Relinquished By:	Date/Time	Received By:	Date/Time
[signature]	5/1/19 1940	[signature]	5/1/19 1940
[signature]	5/2/19 0625	[signature]	5/2/19 0126
		[signature]	5/2/19 06:25

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. (See reverse side.)

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

Attachment C

Well Inventory excerpt from EDR GeoCheck Report

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

WELL SEARCH DISTANCE INFORMATION

DATABASE	SEARCH DISTANCE (miles)
Federal USGS	0.500
Federal FRDS PWS	0.500
State Database	0.500

FEDERAL USGS WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
1	USGS40000870968	1/4 - 1/2 Mile SSE

FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
No PWS System Found		

Note: PWS System location is not always the same as well location.

STATE DATABASE WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
No Wells Found		

PHYSICAL SETTING SOURCE MAP - 5729371.1s

- County Boundary
- Major Roads
- Contour Lines
- Airports
- Earthquake epicenter, Richter 5 or greater
- Water Wells
- Public Water Supply Wells
- Cluster of Multiple Icons
- Groundwater Flow Direction
- GI Indeterminate Groundwater Flow at Location
- GV Groundwater Flow Varies at Location
- HD Closest Hydrogeological Data
- Oil, gas or related wells
- 100-year flood zone
- 500-year flood zone
- National Wetland Inventory

SITE NAME:	Former Syracuse China Landfill	CLIENT:	GEI Consultants, Inc
ADDRESS:	Former Syracuse China Landfill Syracuse NY 13208	CONTACT:	WENDY L. MOORE
LAT/LONG:	43.090278 / 76.131111	INQUIRY #:	5729371.1s
		DATE:	July 25, 2019 4:04 pm

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation | Database | EDR ID Number

1
SSE **FED USGS** **USGS40000870968**
1/4 - 1/2 Mile
Higher

Organization ID:	USGS-NY	Organization Name:	USGS New York Water Science Center
Monitor Location:	OD 283	Type:	Well
Description:	Not Reported	HUC:	04140201
Drainage Area:	Not Reported	Drainage Area Units:	Not Reported
Contrib Drainage Area:	Not Reported	Contrib Drainage Area Unts:	Not Reported
Aquifer:	New York and New England carbonate-rock aquifers		
Formation Type:	Silurian, Upper	Aquifer Type:	Not Reported
Construction Date:	Not Reported	Well Depth:	300
Well Depth Units:	ft	Well Hole Depth:	Not Reported
Well Hole Depth Units:	Not Reported		

Ground water levels,Number of Measurements:	1	Level reading date:	1941-01-01
Feet below surface:	100.00	Feet to sea level:	Not Reported
Note:	Not Reported		