EA Engineering, P.C.
EA Science and Technology

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Syracuse, New York 13202
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19 September 2019

MEMORANDUM

TO: Payson Long, NYSDEC

FROM: Megan Miller, E.I.T.

SUBJECT: Emerging Contaminants – August 2019 Sampling
Suffolk County Water Authority Production Well Sampling
National Heatset Printing Site
1 Adams Boulevard
Babylon, New York
Contract/WA No: D007624-16

EA Engineering, P.C., and its affiliate EA Science and Technology (EA) were tasked by the New York State Department of Environmental Conservation (NYSDEC) under Work Assignment Number (No.) D007624-16 to collect drinking water samples for emerging contaminants analysis at the National Heatset Printing Co. State Superfund Site (Site). Three samples were collected from public water supply wells in the vicinity of the Site and were analyzed via U.S. Environmental Protection Agency (EPA) Method 522 for 1,4-dioxane by ALS Environmental and by EPA Method 537 for per- and polyfluorinated alkyl substances (PFAS) by Con-Test Analytical Laboratories.

Sampling occurred for the Suffolk County Water Authority (SCWA) production wells on 1 August 2019. EA has prepared this memorandum to serve as a summary for the sampling event.

SITE DESCRIPTION

The National Heatset Printing Co. Site is currently a Class 2 Site listed on the NYSDEC Registry of Inactive Hazardous Waste Sites (Site No. 152140). The Site is located at 1 Adams Boulevard in the Hamlet of Farmingdale, Town of Babylon, Suffolk County, New York, and is identified as Block 1.00 and Lot 20.001 on the Town of Babylon Tax Map No. 132.20-1-3.2. The Site is currently owned by 1 Adams Boulevard Realty Corporation, managed by Finklestein Realty and leased by various tenants. A site location map is provided in **Figure 1**.

TASK – GROUNDWATER SAMPLING

EA collected samples at the three Albany Avenue Pump Station wells near the offsite system; the location of the Albany Avenue Pump Station and the three sampled production wells are provided in **Figure 1**.

SCWA production wells were sampled from a dedicated sampling tap. Production well sampling included well purging, field water quality measurements, and sample collection at each well. Groundwater samples were analyzed via EPA Method 522 by ALS Environmental of Rochester,

New York, and analyzed via EPA Method 537 by Con-Test Analytical Laboratories of East Longmeadow, Massachusetts.

Production Well Sample Collection

Samples were collected as outlined in the Letter Work Plan Memorandum (EA, 2019).

Sampling was performed with the following equipment:

- Water quality meter with turbidity and flow through cell
- High-density polyethylene sample bottles prepared with preservative prior to mobilization by laboratory.

At the water supply wells, samples were collected at a sampling valve (spigot). The valve was opened and allowed to purge for 5 minutes. The sample was collected after the 5-minute purge with one set of groundwater quality readings collected immediately after sampling. Groundwater quality parameter readings are available as **Attachment A**.

Quality Assurance Samples

One field duplicate was collected at a rate of 1 per 20 samples from parent sampling locations. Sample containers for duplicates were identified in a manner that they cannot be identified as by their parent sample by laboratory personnel. Field duplicate PW-Duplicate-8119 was collected from location PW-6-S-63205 for PFAS analysis and from location PW-4A S-111004 for 1,4-dioxane analysis.

One matrix spike/matrix spike duplicate (MS/MSD) was collected to measure potential laboratory bias and the precision of the sampling results. The MS/MSD sample was collected from location PW-5A-S-132042.

A trip blank was used to assess potential introduction of contaminant from sample containers or during transportation and storage. The trip blank was prepared by ALS Environmental and accompanied the cooler of samples sent to the laboratory for analysis.

Field blanks are used to assess potential introduction of contaminants from the field atmosphere. One field blank was collected on the date of sampling and was sent to the laboratory for analysis.

Analytical Results

Analytical results are summarized in **Table 1**. Analytical results for aqueous and associated quality assurance/quality control samples were compared to applicable EPA guidance values.

1,4-Dioxane was detected in the three Albany Avenue Pump Station wells at concentrations ranging from 0.0236 micrograms per liter (µg/L) at well PW-4A-S to 0.659 µg/L at well PW-6.

PFAS were detected in well PW-6 at concentrations ranging from 2.2 nanograms per liter (ng/L) for perfluorobutanoic acid to 9.9 ng/L for perfluoropentaoic acid. PFOA and PFOS were not detected at any of the sample locations.

Laboratory analytical result summaries are available as **Attachment B**.

If you have any questions or require additional information, please do not hesitate to contact Megan Miller at 315-565-6557.

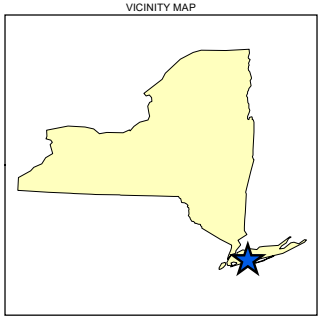
MEM/dml

Attachments

cc: D. Conan (EA)
J. Hayward (EA)

Figures

VICINITY MAP



Legend

- Suffolk County Water Authority Wells
- Albany Avenue Pump Station
- National Heatset Site Boundary
- Site Location

0 100 200 Feet

1 inch = 202 feet

N

Figure 1
Albany Avenue Pump Station
Production Well Locations
National Heatset Site (152140)
Babylon, New York
Suffolk County

NEW YORK STATE OF OPPORTUNITY Department of Environmental Conservation

G:\Projects\State&Local\NYSDEC - D007624\D007624 - Work Assignments\14907.16 - National Heatset Printing SM\GIS\Projects\EC Sample Well Locations.mxd

Tables

Table 1 - Summary of Emerging Contaminant Analysis in Off-Site Groundwater Samples - August 2019

Parameters List EPA Method 522	Sample ID	PW-4A-S-111004		PW-5A-S-132042		PW-6-S-63205		PW-Duplicate-8119		Guidance Value
	Sample Type	Groundwater		Groundwater		Groundwater		Groundwater		
	Sample Date	8/1/2019		8/1/2019		8/1/2019		8/1/2019		
1, 4-Dioxane	(µg/L)	0.0236	J	**0.366**		**0.659**		(< 0.0200)	U	0.35[1]

Parameters List EPA Method 537	Sample ID	PW-4A-S-111004		PW-5A-S-132042		PW-6-S63205		PW-Duplicate-8119		Guidance Value
	Sample Type	Groundwater		Groundwater		Groundwater		Groundwater		
	Sample Date	8/1/2019		8/1/2019		8/1/2019		8/1/2019		
Perfluorobutanoic acid (PFBA)	(ng/L)	(< 2.0)	U	(< 2.0)	U	2.2		(< 2.0)	U	
Perfluorobutanesulfonic acid (PFBS)	(ng/L)	(< 2.0)	U	(< 2.0)	U	(< 2.0)	U	(< 2.0)	U	
Perfluoropentanoic acid (PFPeA)	(ng/L)	(< 2.0)	U	(< 2.0)	U	9.9		6.5		
Perfluorohexanoic acid (PFHxA)	(ng/L)	(< 2.0)	U	(< 2.0)	U	3.5		3.1		
Perfluorohexanesulfonic acid (PFHxS)	(ng/L)	(< 2.0)	U	(< 2.0)	U	(< 2.0)	U	(< 2.0)	U	
Perfluoroheptanoic acid (PFHpA)	(ng/L)	(< 2.0)	U	(< 2.0)	U	(< 2.0)	U	(< 2.0)	U	
Perfluoroheptanesulfonic acid (PFHpS)	(ng/L)	(< 2.0)	U	(< 2.0)	U	(< 2.0)	U	(< 2.0)	U	
Perfluorooctanoic acid (PFOA)	(ng/L)	(< 2.0)	U	(< 2.0)	U	(< 2.0)	U	(< 2.0)	U	
Perfluorooctanesulfonic acid (PFOS)	(ng/L)	(< 2.0)	U	(< 2.0)	U	(< 2.0)	U	(< 2.0)	U	
Total of PFOA and PFOS	(ng/L)									70[2]
Perfluorooctanesulfonamide (FOSA)	(ng/L)	(< 2.0)	U	(< 2.0)	U	(< 2.0)	U	(< 2.0)	U	
6:2 Fluorotelomersulfonate (6:2 FTS A)	(ng/L)	(< 2.0)	U	(< 2.0)	U	(< 2.0)	U	(< 2.0)	U	
Perfluorononanoic acid (PFNA)	(ng/L)	(< 2.0)	U	(< 2.0)	U	(< 2.0)	U	(< 2.0)	U	
Perfluorodecanoic acid (PFDA)	(ng/L)	(< 2.0)	U	(< 2.0)	U	(< 2.0)	U	(< 2.0)	U	
Perfluorodecanesulfonic acid (PFDS)	(ng/L)	(< 2.0)	U	(< 2.0)	U	(< 2.0)	U	(< 2.0)	U	
N-EtFOSAA	(ng/L)	(< 2.0)	U	(< 2.0)	U	(< 2.0)	U	(< 2.0)	U	
8:2 Fluorotelomersulfonate (8:2 FTS A)	(ng/L)	(< 2.0)	U	(< 2.0)	U	(< 2.0)	U	(< 2.0)	U	
Perfluoroundecanoic acid (PFUnA)	(ng/L)	(< 2.0)	U	(< 2.0)	U	(< 2.0)	U	(< 2.0)	U	
N-MeFOSAA	(ng/L)	(< 2.0)	U	(< 2.0)	U	(< 2.0)	U	(< 2.0)	U	
Perfluorododecanoic acid (PFDoA)	(ng/L)	(< 2.0)	U	(< 2.0)	U	(< 2.0)	U	(< 2.0)	U	
Perfluorotridecanoic acid (PFTrDA)	(ng/L)	(< 2.0)	U	(< 2.0)	U	(< 2.0)	U	(< 2.0)	U	
Perfluorotetradecanoic acid (PFTA)	(ng/L)	(< 2.0)	U	(< 2.0)	U	(< 2.0)	U	(< 2.0)	U	

NOTE:
[1] U.S. Environmental Protection Agency (USEPA)'s Integrated Risk Information System for drinking water representing a 1 x 10-6 cancer risk level (2013).
[2] USEPA health advisory level for drinking water - combined concentrations of PFOA and PFAS.

EPA = U.S. Environmental Protection Agency
ID = Identification
µg/L = Micrograms per liter (parts per billion)
ng/L = Nicrograms per liter (parts per trillion)
U = Analyte not detected at the listed laboratory reporting limit.

Bold and shaded values indicate that the analyte was detected at a concentration greater than the guidance value.

PW-Duplicate-8119 was a blind field duplicate quality assurance/quality control sample of sample PW-4A-S-111004 for EPA Method 522 - 1,4-Dioxane and of sample PW-6-S63205 for EPA Method 537 - PFAS.

Attachment A – Groundwater Quality Readings

EA Engineering, P.C.
EA Science and Technology

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

GROUNDWATER SAMPLING PURGE FORM

Well I.D.: 152140-PW-4A-S-111004	**EA Field Personnel:** Kritika Thapa	**Client:** NYSDEC
Location: National Heatset Printing, Babylon, NY	**Measurement Reference:** N/A	**Weather:** Sunny, 86ºF
Sounding Method: N/A	**Gauge Date/Time:** N/A	**Purge Date/Time:** 8/1/2019 1215

Well Volume

A. Well Depth (ft): N/A	**D. Well Volume (ft):** N/A	**Depth/Height of Top of PVC:** N/A, sampled from spigot tap
B. Depth to Water (ft): N/A	**E. Well Volume (gal) C*D):** N/A	**Purge Method/Pump Type:** N/A
C. Liquid Depth (ft) (A-B): N/A	**F. Three Well Volumes (gal) (E3):** N/A	**Pump Intake Depth:** N/A

Water Quality Parameters

Time (hrs)	Temperature (oC)	pH (pH units)	ORP (mV)	Conductivity (S/m)	Turbidity (ntu)	DO (mg/L)	DTW (ft btoc)	Rate (Lpm)	Volume (liters)
1255	19.23	4.74	186	0.046	0.0	4.34	N/A	0.20	1

Water Quality Meter: Horiba U-52
Quantity of Water Removed (L): 1
Samplers: Kritika Thapa
Sample Type: Grab
Sampling Time/Date: 1245
Split Sample With: (Dup) MS/MSD None
Analyses: PFAS by EPA Method 537, 1,4-Dioxane by EPA Method 522 **Duplicate for 1,4-Dioxane only**
Sample ID: 152140-PW-4A-S-111004

COMMENTS AND OBSERVATIONS:
Purged from sample tap for five minutes prior to collecting parameters and sample.

Water Quality: Sheen Observed? Y (N) Odor Observed? Y (N) Appearance (color, turbidity, etc.): Clear/colorless throughout

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GROUNDWATER SAMPLING PURGE FORM

Well I.D.:	EA Field Personnel:	Client:
152140-PW-5A-S-132042	Kritika Thapa	NYSDEC
Location:	**Measurement Reference:**	**Weather:**
National Heatset Printing, Babylon, NY	N/A	Sunny, 86ºF
Sounding Method:	**Gauge Date/Time:**	**Purge Date/Time:**
N/A	N/A	8/1/2019 1315

Well Volume

A. Well Depth (ft):	D. Well Volume (ft):	Depth/Height of Top of PVC:
N/A	N/A	N/A, sampled from spigot tap
B. Depth to Water (ft):	**E. Well Volume (gal) C*D):**	**Purge Method/Pump Type:**
N/A	N/A	N/A
C. Liquid Depth (ft) (A-B):	**F. Three Well Volumes (gal) (E3):**	**Pump Intake Depth:**
N/A	N/A	N/A

Water Quality Parameters

Time (hrs)	Temperature (oC)	pH (pH units)	ORP (mV)	Conductivity (S/m)	Turbidity (ntu)	DO (mg/L)	DTW (ft btoc)	Rate (Lpm)	Volume (liters)
1340	18.79	4.70	-377	0.053	0.0	9.70	N/A	0.20	1

Water Quality Meter: Horiba U-52 **Quantity of Water Removed (L):** 1

Samplers: Kritika Thapa **Sample Type:** Grab

Sampling Time/Date: 1330 **Split Sample With:** Dup. (MS/MSD) None

Analyses: PFAS by EPA Method 537, 1,4-Dioxane by EPA Method 522

Sample ID: 152140-PW-5A-S-132042

COMMENTS AND OBSERVATIONS:

Purged from sample tap for five minutes prior to collecting parameters and sample.

Water Quality: Sheen Observed? Y (N) Odor Observed? Y (N) Appearance (color, turbidity, etc.): Clear/colorless throughout

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GROUNDWATER SAMPLING PURGE FORM

Well I.D.: 152140-PW-6-S-63205	**EA Field Personnel:** Kritika Thapa	**Client:** NYSDEC
Location: National Heatset Printing, Babylon, NY	**Measurement Reference:** N/A	**Weather:** Sunny, 86ºF
Sounding Method: N/A	**Gauge Date/Time:** N/A	**Purge Date/Time:** 8/1/2019 1330

Well Volume

A. Well Depth (ft): N/A	**D. Well Volume (ft):** N/A	**Depth/Height of Top of PVC:** N/A, sampled from spigot tap
B. Depth to Water (ft): N/A	**E. Well Volume (gal) C*D):** N/A	**Purge Method/Pump Type:** N/A
C. Liquid Depth (ft) (A-B): N/A	**F. Three Well Volumes (gal) (E3):** N/A	**Pump Intake Depth:** N/A

Water Quality Parameters

Time (hrs)	Temperature (oC)	pH (pH units)	ORP (mV)	Conductivity (S/m)	Turbidity (ntu)	DO (mg/L)	DTW (ft btoc)	Rate (Lpm)	Volume (liters)
1410	17.83	4.60	-306	0.085	0.0	10.90	N/A	0.20	1

Water Quality Meter: Horiba U-52
Quantity of Water Removed (L): 1
Samplers: Kritika Thapa
Sample Type: Grab
Sampling Time/Date: 1405
Split Sample With: (Dup) MS/MSD None
Analyses: PFAS by EPA Method 537, 1,4-Dioxane by EPA Method 522 **Duplicate for PFAS only**
Sample ID: 152140-PW-6-S-63205

COMMENTS AND OBSERVATIONS:
Purged from sample tap for five minutes prior to collecting parameters and sample.

Water Quality: Sheen Observed? Y (N) Odor Observed? Y N Appearance (color, turbidity, etc.): Clear/colorless throughout

Attachment B – Laboratory Analytical Data

Attachment B.1 – Laboratory Analytical Data for PFAS – Con-Test Analytical Laboratories

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

August 20, 2019

Megan Miller
EA Engineering, Science & Tech. - NY
269 W. Jefferson Street
Syracuse, NY 13202

Project Location: Farmingdale, NY
Client Job Number:
Project Number: 1470716
Laboratory Work Order Number: 19H0099

Enclosed are results of analyses for samples received by the laboratory on August 2, 2019. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jessica L. Hoffman
Project Manager

Table of Contents

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

EA Engineering, Science & Tech. - NY
269 W. Jefferson Street
Syracuse, NY 13202
ATTN: Megan Miller

REPORT DATE: 8/20/2019

PURCHASE ORDER NUMBER:

PROJECT NUMBER: 1470716

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 19H0099

The results of analyses performed on the following samples submitted to the CON-TEST Analytical Laboratory are found in this report.

PROJECT LOCATION: Farmingdale, NY

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
152140-PW-4A-S-111004	19H0099-01	Drinking Water		EPA 537	
152140-PW-5A-S-132042	19H0099-02	Drinking Water		EPA 537	
152140-PW-6-S-63205	19H0099-03	Drinking Water		EPA 537	
152140-Duplicate-8119	19H0099-04	Drinking Water		EPA 537	
152140-FB-8119	19H0099-05	Drinking Water		EPA 537	

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

CASE NARRATIVE SUMMARY

All reported results are within defined laboratory quality control objectives unless listed below or otherwise qualified in this report.

For Method PFAS Trace: Client confirmed sample -04 is duplicate of -03, confirming surrogate non-conformance due to matrix effects.

con-test® ANALYTICAL LABORATORY

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

EPA 537

Qualifications:

L-01

Laboratory fortified blank /laboratory control sample recovery outside of control limits. Data validation is not affected since all results are "not detected" for all samples in this batch for this compound and bias is on the high side.

Analyte & Samples(s) Qualified:

Perfluoroheptanesulfonic acid (PFl
B237245-BS1

MS-07A

Matrix spike and spike duplicate recovery is outside of control limits. Analysis is in control based on laboratory fortified blank recovery. Possiblity of matrix effects that lead to low bias or non-homogeneous sample aliquot cannot be eliminated.

Analyte & Samples(s) Qualified:

Perfluorooctanesulfonamide (FOS/
B237245-MS2, B237245-MSD2

Perfluorotetradecanoic acid (PFTA
B237245-MS2, B237245-MSD2

Perfluorotridecanoic acid (PFTrDA
B237245-MS2, B237245-MSD2

MS-12

Matrix spike recovery and matrix spike duplicate recovery outside of control limits. Possibility of sample matrix effects that lead to a high bias for reported result or non-homogeneous sample aliquots cannot be eliminated.

Analyte & Samples(s) Qualified:

6:2 Fluorotelomersulfonate (6:2 FT
B237245-MS2, B237245-MSD2

Perfluorobutanesulfonic acid (PFB
B237245-MS2, B237245-MSD2

Perfluorooctanoic acid (PFOA)
B237245-MS2, B237245-MSD2

MS-22

Either matrix spike or MS duplicate is outside of control limits, but the other is within limits. RPD between the two MS/MSD results is within method specified criteria.

Analyte & Samples(s) Qualified:

N-MeFOSAA
B237245-MS2

Perfluorohexanesulfonic acid (PFH
B237245-MSD2

Perfluorohexanoic acid (PFHxA)
B237245-MS2

Perfluoropentanoic acid (PFPeA)
B237245-MS2

MS-23

Either matrix spike or MS duplicate is outside of control limits, but the other is within limits. RPD between the two MS/MSD results is outside of the method specified criteria. Reduced precision anticipated for any reported result for this compound.

Analyte & Samples(s) Qualified:

Perfluorodecanesulfonic acid (PFD
B237245-MS2, B237245-MSD2

Perfluorododecanoic acid (PFDoA)
B237245-MS2, B237245-MSD2

R-06

Matrix spike duplicate RPD is outside of control limits. Reduced precision is anticipated for reported result for this compound in this sample.

Analyte & Samples(s) Qualified:

Perfluorotridecanoic acid (PFTrDA
B237245-MSD2

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

S-08

Duplicate analysis confirmed surrogate failure due to matrix effects.

Analyte & Samples(s) Qualified:

13C-PFDA
19H0099-03[152140-PW-6-S-63205], 19H0099-04[152140-Duplicate-8119]

d5-NEtFOSAA
19H0099-03[152140-PW-6-S-63205], 19H0099-04[152140-Duplicate-8119]

V-05

Continuing calibration verification (CCV) did not meet method specifications and was biased on the low side for this compound.

Analyte & Samples(s) Qualified:

N-MeFOSAA
S039234-CCV2

Perfluorooctanesulfonamide (FOS
S039235-CCV1, S039235-CCV2, S039235-CCV3

V-17

Internal standard area <50% of associated calibration standard internal standard area. Reanalysis yielded similar internal standard non-conformance.

Analyte & Samples(s) Qualified:

13C-PFOS
19H0099-04[152140-Duplicate-8119]

d3-NMeFOSAA
19H0099-04[152140-Duplicate-8119]

V-20

Continuing calibration verification (CCV) did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.

Analyte & Samples(s) Qualified:

6:2 Fluorotelomersulfonate (6:2 FT
S039235-CCV1, S039235-CCV2, S039235-CCV3, S039279-CCV2

8:2 Fluorotelomersulfonate (8:2 FT
S039235-CCV1, S039235-CCV2, S039279-CCV2

N-MeFOSAA
S039234-CCV1

Perfluorobutanesulfonic acid (PFB
S039235-CCV1

V-26

Opening calibration verification was within control criteria. Closing calibration verification was outside of criteria and biased on the low side. Re-analysis yielded similar non-conformance, matrix interference confirmed.

Analyte & Samples(s) Qualified:

Perfluorooctanesulfonamide (FOS
S039279-CCV2

The results of analyses reported only relate to samples submitted to the Con-Test Analytical Laboratory for testing.
I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

Lisa A. Worthington
Technical Representative

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Farmingdale, NY | Sample Description: | Work Order: 19H0099

Date Received: 8/2/2019

Field Sample #: 152140-PW-4A-S-111004 | Sampled: 8/1/2019 12:45

Sample ID: 19H0099-01

Sample Matrix: Drinking Water

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	MCL/SMCL MA ORSG	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	ND	2.0		ng/L	1		EPA 537	8/5/19	8/14/19 22:58	BLM
Perfluorobutanesulfonic acid (PFBS)	ND	2.0		ng/L	1		EPA 537	8/5/19	8/14/19 22:58	BLM
Perfluoropentanoic acid (PFPeA)	ND	2.0		ng/L	1		EPA 537	8/5/19	8/14/19 22:58	BLM
Perfluorohexanoic acid (PFHxA)	ND	2.0		ng/L	1		EPA 537	8/5/19	8/14/19 22:58	BLM
Perfluorohexanesulfonic acid (PFHxS)	ND	2.0		ng/L	1		EPA 537	8/5/19	8/14/19 22:58	BLM
Perfluoroheptanoic acid (PFHpA)	ND	2.0		ng/L	1		EPA 537	8/5/19	8/14/19 22:58	BLM
Perfluoroheptanesulfonic acid (PFHpS)	ND	2.0		ng/L	1		EPA 537	8/5/19	8/14/19 22:58	BLM
Perfluorooctanoic acid (PFOA)	ND	2.0		ng/L	1		EPA 537	8/5/19	8/14/19 22:58	BLM
Perfluorooctanesulfonic acid (PFOS)	ND	2.0		ng/L	1		EPA 537	8/5/19	8/14/19 22:58	BLM
Perfluorooctanesulfonamide (FOSA)	ND	2.0		ng/L	1		EPA 537	8/5/19	8/14/19 22:58	BLM
6:2 Fluorotelomersulfonate (6:2 FTS A)	ND	2.0		ng/L	1		EPA 537	8/5/19	8/14/19 22:58	BLM
Perfluorononanoic acid (PFNA)	ND	2.0		ng/L	1		EPA 537	8/5/19	8/14/19 22:58	BLM
Perfluorodecanoic acid (PFDA)	ND	2.0		ng/L	1		EPA 537	8/5/19	8/14/19 22:58	BLM
Perfluorodecanesulfonic acid (PFDS)	ND	2.0		ng/L	1		EPA 537	8/5/19	8/14/19 22:58	BLM
N-EtFOSAA	ND	2.0		ng/L	1		EPA 537	8/5/19	8/14/19 22:58	BLM
8:2 Fluorotelomersulfonate (8:2 FTS A)	ND	2.0		ng/L	1		EPA 537	8/5/19	8/14/19 22:58	BLM
Perfluoroundecanoic acid (PFUnA)	ND	2.0		ng/L	1		EPA 537	8/5/19	8/14/19 22:58	BLM
N-MeFOSAA	ND	2.0		ng/L	1		EPA 537	8/5/19	8/14/19 22:58	BLM
Perfluorododecanoic acid (PFDoA)	ND	2.0		ng/L	1		EPA 537	8/5/19	8/14/19 22:58	BLM
Perfluorotridecanoic acid (PFTrDA)	ND	2.0		ng/L	1		EPA 537	8/5/19	8/14/19 22:58	BLM
Perfluorotetradecanoic acid (PFTA)	ND	2.0		ng/L	1		EPA 537	8/5/19	8/14/19 22:58	BLM

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
13C-PFHxA	126	70-130		8/14/19 22:58
13C-PFDA	95.7	70-130		8/14/19 22:58
d5-NEtFOSAA	70.6	70-130		8/14/19 22:58

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Farmingdale, NY | Sample Description: | Work Order: 19H0099

Date Received: 8/2/2019

Field Sample #: 152140-PW-5A-S-132042 | Sampled: 8/1/2019 13:30

Sample ID: 19H0099-02

Sample Matrix: Drinking Water

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	MCL/SMCL MA ORSG	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	ND	2.0		ng/L	1		EPA 537	8/5/19	8/15/19 19:26	BLM
Perfluorobutanesulfonic acid (PFBS)	ND	2.0		ng/L	1		EPA 537	8/5/19	8/15/19 19:26	BLM
Perfluoropentanoic acid (PFPeA)	ND	2.0		ng/L	1		EPA 537	8/5/19	8/15/19 19:26	BLM
Perfluorohexanoic acid (PFHxA)	ND	2.0		ng/L	1		EPA 537	8/5/19	8/15/19 19:26	BLM
Perfluorohexanesulfonic acid (PFHxS)	ND	2.0		ng/L	1		EPA 537	8/5/19	8/15/19 19:26	BLM
Perfluoroheptanoic acid (PFHpA)	ND	2.0		ng/L	1		EPA 537	8/5/19	8/15/19 19:26	BLM
Perfluoroheptanesulfonic acid (PFHpS)	ND	2.0		ng/L	1		EPA 537	8/5/19	8/15/19 19:26	BLM
Perfluorooctanoic acid (PFOA)	ND	2.0		ng/L	1		EPA 537	8/5/19	8/15/19 19:26	BLM
Perfluorooctanesulfonic acid (PFOS)	ND	2.0		ng/L	1		EPA 537	8/5/19	8/15/19 19:26	BLM
Perfluorooctanesulfonamide (FOSA)	ND	2.0		ng/L	1		EPA 537	8/5/19	8/15/19 19:26	BLM
6:2 Fluorotelomersulfonate (6:2 FTS A)	ND	2.0		ng/L	1		EPA 537	8/5/19	8/15/19 19:26	BLM
Perfluorononanoic acid (PFNA)	ND	2.0		ng/L	1		EPA 537	8/5/19	8/15/19 19:26	BLM
Perfluorodecanoic acid (PFDA)	ND	2.0		ng/L	1		EPA 537	8/5/19	8/15/19 19:26	BLM
Perfluorodecanesulfonic acid (PFDS)	ND	2.0		ng/L	1		EPA 537	8/5/19	8/15/19 19:26	BLM
N-EtFOSAA	ND	2.0		ng/L	1		EPA 537	8/5/19	8/15/19 19:26	BLM
8:2 Fluorotelomersulfonate (8:2 FTS A)	ND	2.0		ng/L	1		EPA 537	8/5/19	8/15/19 19:26	BLM
Perfluoroundecanoic acid (PFUnA)	ND	2.0		ng/L	1		EPA 537	8/5/19	8/15/19 19:26	BLM
N-MeFOSAA	ND	2.0		ng/L	1		EPA 537	8/5/19	8/15/19 19:26	BLM
Perfluorododecanoic acid (PFDoA)	ND	2.0		ng/L	1		EPA 537	8/5/19	8/15/19 19:26	BLM
Perfluorotridecanoic acid (PFTrDA)	ND	2.0		ng/L	1		EPA 537	8/5/19	8/15/19 19:26	BLM
Perfluorotetradecanoic acid (PFTA)	ND	2.0		ng/L	1		EPA 537	8/5/19	8/15/19 19:26	BLM

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
13C-PFHxA	104	70-130		8/15/19 19:26
13C-PFDA	92.3	70-130		8/15/19 19:26
d5-NEtFOSAA	87.9	70-130		8/15/19 19:26

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Farmingdale, NY | Sample Description: | Work Order: 19H0099

Date Received: 8/2/2019

Field Sample #: 152140-PW-6-S-63205 | Sampled: 8/1/2019 14:05

Sample ID: 19H0099-03

Sample Matrix: Drinking Water

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	MCL/SMCL MA ORSG	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	2.2	2.0		ng/L	1		EPA 537	8/5/19	8/15/19 18:48	BLM
Perfluorobutanesulfonic acid (PFBS)	ND	2.0		ng/L	1		EPA 537	8/5/19	8/15/19 18:48	BLM
Perfluoropentanoic acid (PFPeA)	9.9	2.0		ng/L	1		EPA 537	8/5/19	8/15/19 18:48	BLM
Perfluorohexanoic acid (PFHxA)	3.5	2.0		ng/L	1		EPA 537	8/5/19	8/15/19 18:48	BLM
Perfluorohexanesulfonic acid (PFHxS)	ND	2.0		ng/L	1		EPA 537	8/5/19	8/15/19 18:48	BLM
Perfluoroheptanoic acid (PFHpA)	ND	2.0		ng/L	1		EPA 537	8/5/19	8/15/19 18:48	BLM
Perfluoroheptanesulfonic acid (PFHpS)	ND	2.0		ng/L	1		EPA 537	8/5/19	8/15/19 18:48	BLM
Perfluorooctanoic acid (PFOA)	ND	2.0		ng/L	1		EPA 537	8/5/19	8/15/19 18:48	BLM
Perfluorooctanesulfonic acid (PFOS)	ND	2.0		ng/L	1		EPA 537	8/5/19	8/15/19 18:48	BLM
Perfluorooctanesulfonamide (FOSA)	ND	2.0		ng/L	1		EPA 537	8/5/19	8/15/19 18:48	BLM
6:2 Fluorotelomersulfonate (6:2 FTS A)	ND	2.0		ng/L	1		EPA 537	8/5/19	8/15/19 18:48	BLM
Perfluorononanoic acid (PFNA)	ND	2.0		ng/L	1		EPA 537	8/5/19	8/15/19 18:48	BLM
Perfluorodecanoic acid (PFDA)	ND	2.0		ng/L	1		EPA 537	8/5/19	8/15/19 18:48	BLM
Perfluorodecanesulfonic acid (PFDS)	ND	2.0		ng/L	1		EPA 537	8/5/19	8/15/19 18:48	BLM
N-EtFOSAA	ND	2.0		ng/L	1		EPA 537	8/5/19	8/15/19 18:48	BLM
8:2 Fluorotelomersulfonate (8:2 FTS A)	ND	2.0		ng/L	1		EPA 537	8/5/19	8/15/19 18:48	BLM
Perfluoroundecanoic acid (PFUnA)	ND	2.0		ng/L	1		EPA 537	8/5/19	8/15/19 18:48	BLM
N-MeFOSAA	ND	2.0		ng/L	1		EPA 537	8/5/19	8/15/19 18:48	BLM
Perfluorododecanoic acid (PFDoA)	ND	2.0		ng/L	1		EPA 537	8/5/19	8/15/19 18:48	BLM
Perfluorotridecanoic acid (PFTrDA)	ND	2.0		ng/L	1		EPA 537	8/5/19	8/15/19 18:48	BLM
Perfluorotetradecanoic acid (PFTA)	ND	2.0		ng/L	1		EPA 537	8/5/19	8/15/19 18:48	BLM

Surrogates	% Recovery		Recovery Limits	Flag/Qual	
13C-PFHxA	114		70-130		8/15/19 18:48
13C-PFDA	**48.8**	*	70-130	S-08	8/15/19 18:48
d5-NEtFOSAA	**42.2**	*	70-130	S-08	8/15/19 18:48

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Farmingdale, NY | Sample Description: | Work Order: 19H0099

Date Received: 8/2/2019

Field Sample #: 152140-Duplicate-8119 | Sampled: 8/1/2019 00:00

Sample ID: 19H0099-04

Sample Matrix: Drinking Water

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	MCL/SMCL MA ORSG	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	ND	2.0		ng/L	1		EPA 537	8/5/19	8/15/19 19:01	BLM
Perfluorobutanesulfonic acid (PFBS)	ND	2.0		ng/L	1		EPA 537	8/5/19	8/15/19 19:01	BLM
Perfluoropentanoic acid (PFPeA)	6.5	2.0		ng/L	1		EPA 537	8/5/19	8/15/19 19:01	BLM
Perfluorohexanoic acid (PFHxA)	3.1	2.0		ng/L	1		EPA 537	8/5/19	8/15/19 19:01	BLM
Perfluorohexanesulfonic acid (PFHxS)	ND	2.0		ng/L	1		EPA 537	8/5/19	8/15/19 19:01	BLM
Perfluoroheptanoic acid (PFHpA)	ND	2.0		ng/L	1		EPA 537	8/5/19	8/15/19 19:01	BLM
Perfluoroheptanesulfonic acid (PFHpS)	ND	2.0		ng/L	1		EPA 537	8/5/19	8/15/19 19:01	BLM
Perfluorooctanoic acid (PFOA)	ND	2.0		ng/L	1		EPA 537	8/5/19	8/15/19 19:01	BLM
Perfluorooctanesulfonic acid (PFOS)	ND	2.0		ng/L	1		EPA 537	8/5/19	8/15/19 19:01	BLM
Perfluorooctanesulfonamide (FOSA)	ND	2.0		ng/L	1		EPA 537	8/5/19	8/15/19 19:01	BLM
6:2 Fluorotelomersulfonate (6:2 FTS A)	ND	2.0		ng/L	1		EPA 537	8/5/19	8/15/19 19:01	BLM
Perfluorononanoic acid (PFNA)	ND	2.0		ng/L	1		EPA 537	8/5/19	8/15/19 19:01	BLM
Perfluorodecanoic acid (PFDA)	ND	2.0		ng/L	1		EPA 537	8/5/19	8/15/19 19:01	BLM
Perfluorodecanesulfonic acid (PFDS)	ND	2.0		ng/L	1		EPA 537	8/5/19	8/15/19 19:01	BLM
N-EtFOSAA	ND	2.0		ng/L	1		EPA 537	8/5/19	8/15/19 19:01	BLM
8:2 Fluorotelomersulfonate (8:2 FTS A)	ND	2.0		ng/L	1		EPA 537	8/5/19	8/15/19 19:01	BLM
Perfluoroundecanoic acid (PFUnA)	ND	2.0		ng/L	1		EPA 537	8/5/19	8/15/19 19:01	BLM
N-MeFOSAA	ND	2.0		ng/L	1		EPA 537	8/5/19	8/15/19 19:01	BLM
Perfluorododecanoic acid (PFDoA)	ND	2.0		ng/L	1		EPA 537	8/5/19	8/15/19 19:01	BLM
Perfluorotridecanoic acid (PFTrDA)	ND	2.0		ng/L	1		EPA 537	8/5/19	8/15/19 19:01	BLM
Perfluorotetradecanoic acid (PFTA)	ND	2.0		ng/L	1		EPA 537	8/5/19	8/15/19 19:01	BLM

Surrogates	% Recovery		Recovery Limits	Flag/Qual	
13C-PFHxA	128		70-130		8/15/19 19:01
13C-PFDA	**37.5**	*	70-130	S-08	8/15/19 19:01
d5-NEtFOSAA	**48.1**	*	70-130	S-08	8/15/19 19:01

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Farmingdale, NY | Sample Description: | Work Order: 19H0099

Date Received: 8/2/2019

Field Sample #: 152140-FB-8119 | Sampled: 8/1/2019 12:23

Sample ID: 19H0099-05

Sample Matrix: Drinking Water

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	MCL/SMCL MA ORSG	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	ND	2.0		ng/L	1		EPA 537	8/5/19	8/15/19 19:14	BLM
Perfluorobutanesulfonic acid (PFBS)	ND	2.0		ng/L	1		EPA 537	8/5/19	8/15/19 19:14	BLM
Perfluoropentanoic acid (PFPeA)	ND	2.0		ng/L	1		EPA 537	8/5/19	8/15/19 19:14	BLM
Perfluorohexanoic acid (PFHxA)	ND	2.0		ng/L	1		EPA 537	8/5/19	8/15/19 19:14	BLM
Perfluorohexanesulfonic acid (PFHxS)	ND	2.0		ng/L	1		EPA 537	8/5/19	8/15/19 19:14	BLM
Perfluoroheptanoic acid (PFHpA)	ND	2.0		ng/L	1		EPA 537	8/5/19	8/15/19 19:14	BLM
Perfluoroheptanesulfonic acid (PFHpS)	ND	2.0		ng/L	1		EPA 537	8/5/19	8/15/19 19:14	BLM
Perfluorooctanoic acid (PFOA)	ND	2.0		ng/L	1		EPA 537	8/5/19	8/15/19 19:14	BLM
Perfluorooctanesulfonic acid (PFOS)	ND	2.0		ng/L	1		EPA 537	8/5/19	8/15/19 19:14	BLM
Perfluorooctanesulfonamide (FOSA)	ND	2.0		ng/L	1		EPA 537	8/5/19	8/15/19 19:14	BLM
6:2 Fluorotelomersulfonate (6:2 FTS A)	ND	2.0		ng/L	1		EPA 537	8/5/19	8/15/19 19:14	BLM
Perfluorononanoic acid (PFNA)	ND	2.0		ng/L	1		EPA 537	8/5/19	8/15/19 19:14	BLM
Perfluorodecanoic acid (PFDA)	ND	2.0		ng/L	1		EPA 537	8/5/19	8/15/19 19:14	BLM
Perfluorodecanesulfonic acid (PFDS)	ND	2.0		ng/L	1		EPA 537	8/5/19	8/15/19 19:14	BLM
N-EtFOSAA	ND	2.0		ng/L	1		EPA 537	8/5/19	8/15/19 19:14	BLM
8:2 Fluorotelomersulfonate (8:2 FTS A)	ND	2.0		ng/L	1		EPA 537	8/5/19	8/15/19 19:14	BLM
Perfluoroundecanoic acid (PFUnA)	ND	2.0		ng/L	1		EPA 537	8/5/19	8/15/19 19:14	BLM
N-MeFOSAA	ND	2.0		ng/L	1		EPA 537	8/5/19	8/15/19 19:14	BLM
Perfluorododecanoic acid (PFDoA)	ND	2.0		ng/L	1		EPA 537	8/5/19	8/15/19 19:14	BLM
Perfluorotridecanoic acid (PFTrDA)	ND	2.0		ng/L	1		EPA 537	8/5/19	8/15/19 19:14	BLM
Perfluorotetradecanoic acid (PFTA)	ND	2.0		ng/L	1		EPA 537	8/5/19	8/15/19 19:14	BLM

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
13C-PFHxA	112	70-130		8/15/19 19:14
13C-PFDA	102	70-130		8/15/19 19:14
d5-NEtFOSAA	81.6	70-130		8/15/19 19:14

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Sample Extraction Data

Prep Method: EPA 537-EPA 537

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
19H0099-01 [152140-PW-4A-S-111004]	B237245	250	1.00	08/05/19
19H0099-02 [152140-PW-5A-S-132042]	B237245	250	1.00	08/05/19
19H0099-03 [152140-PW-6-S-63205]	B237245	250	1.00	08/05/19
19H0099-04 [152140-Duplicate-8119]	B237245	250	1.00	08/05/19
19H0099-05 [152140-FB-8119]	B237245	250	1.00	08/05/19

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

QUALITY CONTROL

Semivolatile Organic Compounds by - LC/MS-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC		%REC Limits	RPD	RPD Limit	Notes
Batch B237245 - EPA 537											
Blank (B237245-BLK1)				Prepared: 08/05/19 Analyzed: 08/13/19							
Perfluorobutanoic acid (PFBA)	ND	2.0	ng/L								
Perfluorobutanesulfonic acid (PFBS)	ND	2.0	ng/L								
Perfluoropentanoic acid (PFPeA)	ND	2.0	ng/L								
Perfluorohexanoic acid (PFHxA)	ND	2.0	ng/L								
Perfluorohexanesulfonic acid (PFHxS)	ND	2.0	ng/L								
Perfluoroheptanoic acid (PFHpA)	ND	2.0	ng/L								
Perfluoroheptanesulfonic acid (PFHpS)	ND	2.0	ng/L								
Perfluorooctanoic acid (PFOA)	ND	2.0	ng/L								
Perfluorooctanesulfonic acid (PFOS)	ND	2.0	ng/L								
Perfluorooctanesulfonamide (FOSA)	ND	2.0	ng/L								
6:2 Fluorotelomersulfonate (6:2 FTS A)	ND	2.0	ng/L								
Perfluorononanoic acid (PFNA)	ND	2.0	ng/L								
Perfluorodecanoic acid (PFDA)	ND	2.0	ng/L								
Perfluorodecanesulfonic acid (PFDS)	ND	2.0	ng/L								
N-EtFOSAA	ND	2.0	ng/L								
8:2 Fluorotelomersulfonate (8:2 FTS A)	ND	2.0	ng/L								
Perfluoroundecanoic acid (PFUnA)	ND	2.0	ng/L								
N-MeFOSAA	ND	2.0	ng/L								
Perfluorododecanoic acid (PFDoA)	ND	2.0	ng/L								
Perfluorotridecanoic acid (PFTrDA)	ND	2.0	ng/L								
Perfluorotetradecanoic acid (PFTA)	ND	2.0	ng/L								
Surrogate: 13C-PFHxA	*44.3*		ng/L	40.0		111		70-130			
Surrogate: 13C-PFDA	*49.9*		ng/L	40.0		125		70-130			
Surrogate: d5-NEtFOSAA	*168*		ng/L	160		105		70-130			
LCS (B237245-BS1)				Prepared: 08/05/19 Analyzed: 08/13/19							
Perfluorobutanoic acid (PFBA)	2.20	2.0	ng/L	2.00		110		70-130			
Perfluorobutanesulfonic acid (PFBS)	1.30	2.0	ng/L	1.77		73.6		50-150			
Perfluoropentanoic acid (PFPeA)	2.86	2.0	ng/L	2.00		143		50-150			
Perfluorohexanoic acid (PFHxA)	2.59	2.0	ng/L	2.00		129		50-150			
Perfluorohexanesulfonic acid (PFHxS)	1.64	2.0	ng/L	1.82		90.0		50-150			
Perfluoroheptanoic acid (PFHpA)	1.56	2.0	ng/L	2.00		78.1		50-150			
Perfluoroheptanesulfonic acid (PFHpS)	3.04	2.0	ng/L	1.90		**160**	*	50-150			L-01
Perfluorooctanoic acid (PFOA)	2.05	2.0	ng/L	2.00		103		50-150			
Perfluorooctanesulfonic acid (PFOS)	1.62	2.0	ng/L	1.85		87.5		50-150			
Perfluorooctanesulfonamide (FOSA)	1.42	2.0	ng/L	2.00		71.1		50-150			
6:2 Fluorotelomersulfonate (6:2 FTS A)	1.15	2.0	ng/L	1.90		60.7		50-150			
Perfluorononanoic acid (PFNA)	1.61	2.0	ng/L	2.00		80.5		50-150			
Perfluorodecanoic acid (PFDA)	2.14	2.0	ng/L	2.00		107		50-150			
Perfluorodecanesulfonic acid (PFDS)	2.37	2.0	ng/L	1.93		123		50-150			
N-EtFOSAA	2.33	2.0	ng/L	2.00		116		50-150			
8:2 Fluorotelomersulfonate (8:2 FTS A)	2.58	2.0	ng/L	1.92		135		50-150			
Perfluoroundecanoic acid (PFUnA)	1.75	2.0	ng/L	2.00		87.5		50-150			
N-MeFOSAA	1.34	2.0	ng/L	2.00		67.1		50-150			
Perfluorododecanoic acid (PFDoA)	1.91	2.0	ng/L	2.00		95.4		50-150			
Perfluorotridecanoic acid (PFTrDA)	1.94	2.0	ng/L	2.00		96.8		50-150			
Perfluorotetradecanoic acid (PFTA)	2.40	2.0	ng/L	2.00		120		50-150			
Surrogate: 13C-PFHxA	*32.4*		ng/L	40.0		81.0		70-130			
Surrogate: 13C-PFDA	*36.9*		ng/L	40.0		92.3		70-130			
Surrogate: d5-NEtFOSAA	*129*		ng/L	160		80.9		70-130			

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QUALITY CONTROL

Semivolatile Organic Compounds by - LC/MS-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC		%REC Limits	RPD		RPD Limit	Notes
Batch B237245 - EPA 537												
Matrix Spike (B237245-MS2)	**Source: 19H0099-02**			Prepared: 08/05/19 Analyzed: 08/14/19								
Perfluorobutanoic acid (PFBA)	10.1	2.0	ng/L	10.0	ND	101		70-130				
Perfluorobutanesulfonic acid (PFBS)	15.9	2.0	ng/L	8.85	ND	**179**	*	70-130				MS-12
Perfluoropentanoic acid (PFPeA)	15.9	2.0	ng/L	10.0	ND	**159**	*	70-130				MS-22
Perfluorohexanoic acid (PFHxA)	13.8	2.0	ng/L	10.0	ND	**138**	*	70-130				MS-22
Perfluorohexanesulfonic acid (PFHxS)	11.0	2.0	ng/L	9.10	ND	121		70-130				
Perfluoroheptanoic acid (PFHpA)	12.5	2.0	ng/L	10.0	ND	125		70-130				
Perfluoroheptanesulfonic acid (PFHpS)	9.57	2.0	ng/L	9.50	ND	101		70-130				
Perfluorooctanoic acid (PFOA)	14.3	2.0	ng/L	10.0	ND	**143**	*	70-130				MS-12
Perfluorooctanesulfonic acid (PFOS)	8.80	2.0	ng/L	9.25	ND	95.1		70-130				
Perfluorooctanesulfonamide (FOSA)	2.11	2.0	ng/L	10.0	ND	**21.1**	*	30-110				MS-07A
6:2 Fluorotelomersulfonate (6:2 FTS A)	19.9	2.0	ng/L	9.50	ND	**210**	*	70-130				MS-12
Perfluorononanoic acid (PFNA)	10.4	2.0	ng/L	10.0	ND	104		70-130				
Perfluorodecanoic acid (PFDA)	8.39	2.0	ng/L	10.0	ND	83.9		70-130				
Perfluorodecanesulfonic acid (PFDS)	5.04	2.0	ng/L	9.65	ND	**52.2**	*	70-130				MS-23
N-EtFOSAA	9.46	2.0	ng/L	10.0	ND	94.6		70-130				
8:2 Fluorotelomersulfonate (8:2 FTS A)	11.5	2.0	ng/L	9.60	ND	120		70-130				
Perfluoroundecanoic acid (PFUnA)	7.38	2.0	ng/L	10.0	ND	73.8		70-130				
N-MeFOSAA	6.96	2.0	ng/L	10.0	ND	**69.6**	*	70-130				MS-22
Perfluorododecanoic acid (PFDoA)	5.31	2.0	ng/L	10.0	ND	**53.1**	*	70-130				MS-23
Perfluorotridecanoic acid (PFTrDA)	2.61	2.0	ng/L	10.0	ND	**26.1**	*	70-130				MS-07A
Perfluorotetradecanoic acid (PFTA)	ND	2.0	ng/L	10.0	ND		*	70-130				MS-07A
Surrogate: 13C-PFHxA	*49.4*		ng/L	40.0		124		70-130				
Surrogate: 13C-PFDA	*36.1*		ng/L	40.0		90.4		70-130				
Surrogate: d5-NEtFOSAA	*152*		ng/L	160		95.2		70-130				
Matrix Spike Dup (B237245-MSD2)	**Source: 19H0099-02**			Prepared: 08/05/19 Analyzed: 08/14/19								
Perfluorobutanoic acid (PFBA)	10.3	2.0	ng/L	10.0	ND	103		70-130	1.90		30	
Perfluorobutanesulfonic acid (PFBS)	15.7	2.0	ng/L	8.85	ND	**177**	*	70-130	1.29		30	MS-12
Perfluoropentanoic acid (PFPeA)	12.0	2.0	ng/L	10.0	ND	120		70-130	27.3		30	
Perfluorohexanoic acid (PFHxA)	11.5	2.0	ng/L	10.0	ND	115		70-130	18.2		30	
Perfluorohexanesulfonic acid (PFHxS)	11.9	2.0	ng/L	9.10	ND	**131**	*	70-130	7.72		30	MS-22
Perfluoroheptanoic acid (PFHpA)	11.1	2.0	ng/L	10.0	ND	111		70-130	11.8		30	
Perfluoroheptanesulfonic acid (PFHpS)	10.3	2.0	ng/L	9.50	ND	109		70-130	7.49		30	
Perfluorooctanoic acid (PFOA)	17.2	2.0	ng/L	10.0	ND	**172**	*	70-130	18.5		30	MS-12
Perfluorooctanesulfonic acid (PFOS)	9.86	2.0	ng/L	9.25	ND	107		70-130	11.4		30	
Perfluorooctanesulfonamide (FOSA)	ND	2.0	ng/L	10.0	ND		*	30-110			30	MS-07A
6:2 Fluorotelomersulfonate (6:2 FTS A)	19.5	2.0	ng/L	9.50	ND	**205**	*	70-130	2.17		30	MS-12
Perfluorononanoic acid (PFNA)	12.8	2.0	ng/L	10.0	ND	128		70-130	20.8		30	
Perfluorodecanoic acid (PFDA)	9.44	2.0	ng/L	10.0	ND	94.4		70-130	11.7		30	
Perfluorodecanesulfonic acid (PFDS)	8.03	2.0	ng/L	9.65	ND	83.2		70-130	**45.8**	*	30	MS-23
N-EtFOSAA	9.08	2.0	ng/L	10.0	ND	90.8		70-130	4.01		30	
8:2 Fluorotelomersulfonate (8:2 FTS A)	18.7	2.0	ng/L	9.60	ND	**195**	*	70-130	**47.6**	*	30	
Perfluoroundecanoic acid (PFUnA)	8.11	2.0	ng/L	10.0	ND	81.1		70-130	9.47		30	
N-MeFOSAA	7.16	2.0	ng/L	10.0	ND	71.6		70-130	2.88		30	
Perfluorododecanoic acid (PFDoA)	7.55	2.0	ng/L	10.0	ND	75.5		70-130	**34.8**	*	30	MS-23
Perfluorotridecanoic acid (PFTrDA)	6.13	2.0	ng/L	10.0	ND	**61.3**	*	70-130	**80.4**	*	30	MS-07A, R-06
Perfluorotetradecanoic acid (PFTA)	3.91	2.0	ng/L	10.0	ND	**39.1**	*	70-130			30	MS-07A
Surrogate: 13C-PFHxA	*45.8*		ng/L	40.0		114		70-130				
Surrogate: 13C-PFDA	*39.9*		ng/L	40.0		99.8		70-130				
Surrogate: d5-NEtFOSAA	*114*		ng/L	160		71.4		70-130				

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

FLAG/QUALIFIER SUMMARY

*	QC result is outside of established limits.
†	Wide recovery limits established for difficult compound.
‡	Wide RPD limits established for difficult compound.
#	Data exceeded client recommended or regulatory level
ND	Not Detected
RL	Reporting Limit is at the level of quantitation (LOQ)
DL	Detection Limit is the lower limit of detection determined by the MDL study
MCL	Maximum Contaminant Level
	Percent recoveries and relative percent differences (RPDs) are determined by the software using values in the calculation which have not been rounded.
	No results have been blank subtracted unless specified in the case narrative section.

L-01	Laboratory fortified blank /laboratory control sample recovery outside of control limits. Data validation is not affected since all results are "not detected" for all samples in this batch for this compound and bias is on the high side.
MS-07A	Matrix spike and spike duplicate recovery is outside of control limits. Analysis is in control based on laboratory fortified blank recovery. Possiblity of matrix effects that lead to low bias or non-homogeneous sample aliquot cannot be eliminated.
MS-12	Matrix spike recovery and matrix spike duplicate recovery outside of control limits. Possibility of sample matrix effects that lead to a high bias for reported result or non-homogeneous sample aliquots cannot be eliminated.
MS-22	Either matrix spike or MS duplicate is outside of control limits, but the other is within limits. RPD between the two MS/MSD results is within method specified criteria.
MS-23	Either matrix spike or MS duplicate is outside of control limits, but the other is within limits. RPD between the two MS/MSD results is outside of the method specified criteria. Reduced precision anticipated for any reported result for this compound.
R-06	Matrix spike duplicate RPD is outside of control limits. Reduced precision is anticipated for reported result for this compound in this sample.
S-08	Duplicate analysis confirmed surrogate failure due to matrix effects.
V-05	Continuing calibration verification (CCV) did not meet method specifications and was biased on the low side for this compound.
V-17	Internal standard area <50% of associated calibration standard internal standard area. Reanalysis yielded similar internal standard non-conformance.
V-20	Continuing calibration verification (CCV) did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.
V-26	Opening calibration verification was within control criteria. Closing calibration verification was outside of criteria and biased on the low side. Re-analysis yielded similar non-conformance, matrix interference confirmed.

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
EPA 537 in Drinking Water	
Perfluorobutanoic acid (PFBA)	NH
Perfluorobutanesulfonic acid (PFBS)	NH,ME,RI,NJ,CT,PA
Perfluorohexanoic acid (PFHxA)	NH,ME,RI,NJ,CT,PA
Perfluorohexanesulfonic acid (PFHxS)	NH,ME,RI,NJ,CT,PA
Perfluoroheptanoic acid (PFHpA)	NH,ME,RI,NJ,CT,PA
Perfluorooctanoic acid (PFOA)	NH,NY,ME,RI,NJ,CT,PA
Perfluorooctanesulfonic acid (PFOS)	NH,NY,ME,RI,NJ,CT,PA
Perfluorononanoic acid (PFNA)	NH,ME,RI,NJ,CT,PA
Perfluorodecanoic acid (PFDA)	NH,ME,RI,NJ,CT,PA
N-EtFOSAA	NH,RI,NJ,CT,PA
Perfluoroundecanoic acid (PFUnA)	NH,ME,RI,NJ,CT,PA
N-MeFOSAA	NH,RI,NJ,CT,PA
Perfluorododecanoic acid (PFDoA)	NH,ME,RI,NJ,CT,PA
Perfluorotridecanoic acid (PFTrDA)	NH,ME,RI,NJ,CT,PA
Perfluorotetradecanoic acid (PFTA)	ME,RI,NJ,CT,PA

The CON-TEST Environmental Laboratory operates under the following certifications and accreditations:

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC - ISO17025:2005	100033	03/1/2020
MA	Massachusetts DEP	M-MA100	06/30/2020
CT	Connecticut Department of Publilc Health	PH-0567	09/30/2019
NY	New York State Department of Health	10899 NELAP	04/1/2020
NH-S	New Hampshire Environmental Lab	2516 NELAP	02/5/2020
RI	Rhode Island Department of Health	LAO00112	12/30/2019
NC	North Carolina Div. of Water Quality	652	12/31/2019
NJ	New Jersey DEP	MA007 NELAP	06/30/2020
FL	Florida Department of Health	E871027 NELAP	06/30/2020
VT	Vermont Department of Health Lead Laboratory	LL015036	07/30/2020
ME	State of Maine	2011028	06/9/2021
VA	Commonwealth of Virginia	460217	12/14/2019
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2019
VT-DW	Vermont Department of Health Drinking Water	VT-255716	06/12/2020
NC-DW	North Carolina Department of Health	25703	07/31/2020
PA	Commonwealth of Pennsylvania DEP	68-05812	06/30/2020

con-test ANALYTICAL LABORATORY

JLH

19H0099

Phone: 413-525-2332
Fax: 413-525-6405
Email: info@contestlabs.com

CHAIN OF CUSTODY RECORD (New York)

39 Spruce Street
East Longmeadow, MA 01028

Page _____ of _____

Company Name:
Address: EA ENGINEERING, SCIENCE & TECHNOLOGY, 269 W. JEFFERSON ST, SYRACUSE, NY 13202
Phone: 315-431-4610
Project Name: NYDEC NATIONAL HEATSET
Project Location: FARMINGDALE, NY
Project Number: 470716
Project Manager: MEGAN MILLER
Con-Test Quote Name/Number:
Invoice Recipient: northeastap@eaest.com
Sampled By: KRTILA THAPA

Requested Turnaround Time
7-Day ☐ 10-Day ☒
Due Date:

Rush Approval Required
1-Day ☐ 3-Day ☐
2-Day ☐ 4-Day ☐

Data Delivery
Format: PDF ☒ EXCEL ☒
Other: ASP CAT B
CLP Like Data Pkg Required: ☐
Email To: mmillere@eaest.com
Fax To #:

ANALYSIS REQUESTED

Con-Test Work Order#	Client Sample ID / Description	Beginning Date/Time	Ending Date/Time	Composite	Grab	[1]Matrix Code	Conc Code	PFAS EPA METHOD 537	# of Containers	[2] Preservation Code	[3] Container Code
1	152140-PW-4A-S-111004	8/1/19	1245		X	DW	C	X			
2	152140-PW-5A-S-132048	8/1/19	1330		X	DW	C	X			
3	152140-PW-6-S-69205	8/1/19	1405		X	DW	C	X			
4	152140-DUPLICATE-8119	8/1/19	—		X	DW	C	X			
	152140-MS-8119	8/1/19	1332		X	DW	C	X			
	152140-MSD-8119	8/1/19	1332		X	DW	C	X			
5	152140-FB-8119	8/1/19	1223		X	DW	C	X			

Parent sample is 5A per client. JLH 8/5/19

Dissolved Metals Samples
☐ Field Filtered
☐ Lab to Filter

Non-Aqueous Samples
☐ Field Filtered
☐ Lab to Filter

[1] Matrix Codes:
GW = Ground Water
WW = Waste Water
DW = Drinking Water
A = Air
S = Soil
SL = Sludge
SOL = Solid
O = Other (please define)

[2] Preservation Codes:
I = Iced
H = HCL
M = Methanol
N = Nitric Acid
S = Sulfuric Acid
B = Sodium Bisulfate
X = Sodium Hydroxide
T = Sodium Thiosulfate
O = Other (please define)
TRIZMA

[3] Container Codes:
A = Amber Glass
G = Glass
P = Plastic
ST = Sterile
V = Vial
S = Summa Canister
T = Tedlar Bag
O = Other (please define)

Comments:

Please use the following codes to indicate possible sample concentration within the **Conc Code** column above:
H - High; M - Medium; L - Low; C - Clean; U - Unknown

	Date/Time:
Relinquished by: (signature)	8/1/19 1630
Received by: (signature)	8/2/19 945
Relinquished by: (signature)	Date/Time:
Received by: (signature)	Date/Time:
Relinquished by: (signature)	Date/Time:
Received by: (signature)	Date/Time:

Program & Regulatory Information
☐ AWQ STDS ☐ NY TOGS
☐ NYC Sewer Discharge ☐ NY CP-51
☐ Part 360 GW (Landfill)
☐ NY Restricted Use
☐ NY Unrestricted Use
☐ NY Part 375
USEPA HEALTH ADVISORY

Deliverables
☐ Enhanced Data Package
☒ NYSDEC EQuIS EDD
☐ EQuIS (Standard) EDD
☐ NY Regulatory EDD
☐ NY Regs Hits-Only EDD

Other
NELAC and AIHA-LAP, LLC Accredited

Project Entity
☒ Government ☐ Municipality ☐ MWRA ☐ WRTA
☐ Federal ☐ 21 J ☐ School
☐ City ☐ Brownfield ☐ MBTA

Other
☐ Chromatogram
☐ *AIHA-LAP, LLC*

PCB ONLY
☐ Soxhlet
☐ Non Soxhlet

Table of Contents

Tracking Details

1ZF027480194506703

Updated: 08/02/2019 12:51 P.M. EST

Delivered

Delivered On

Friday
08/02/2019

Delivery Time

at 9:45 A.M.

Send Updates

Delivered To
EAST LONGMEADOW, MA, US

Left At: Inside Delivery

Received By: MALONE

Proof of Delivery

We care about the security of your package. Log in () to get more details about your delivery.

Ask UPS

I Have Not Confirmed Sample Container Numbers With Lab Staff Before Relinquishing Over Samples_____

con-test® ANALYTICAL LABORATORY

Doc# 277 Rev 5 2017

Login Sample Receipt Checklist - (Rejection Criteria Listing - Using Acceptance Policy) Any False Statement will be brought to the attention of the Client - State True or False

Client EA

Received By MP Date 8/12/19 Time 9:45

How were the samples received? In Cooler T No Cooler _____ On Ice T No Ice _____ Direct from Sampling _____ Ambient _____ Melted Ice _____

Were samples within Temperature? 2-6°C T By Gun # 1 Actual Temp - 4.6 By Blank # _____ Actual Temp - _____

Was Custody Seal Intact? ~~NA~~ T Were Samples Tampered with? ~~NA~~ F

Was COC Relinquished ? T Does Chain Agree With Samples? T

Are there broken/leaking/loose caps on any samples? F

Is COC in ink/ Legible? T Were samples received within holding time? T

Did COC include all pertinent Information? Client T Analysis T Sampler Name T Project T ID's T Collection Dates/Times T

Are Sample labels filled out and legible? T

Are there Lab to Filters? F Who was notified? _____

Are there Rushes? F Who was notified? _____

Are there Short Holds? F Who was notified? _____

Is there enough Volume? T

Is there Headspace where applicable? N/A MS/MSD? T

Proper Media/Containers Used? T Is splitting samples required? F

Were trip blanks received? F On COC? F

Do all samples have the proper pH? N/A Acid _____ Base _____

Vials	#	Containers:	#		#		#
Unp-		1 Liter Amb.		1 Liter Plastic		16 oz Amb.	
HCL-		500 mL Amb.		500 mL Plastic		8oz Amb/Clear	
Meoh-		250 mL Amb.		250 mL Plastic	14	4oz Amb/Clear	
Bisulfate-		Flashpoint		Col./Bacteria		2oz Amb/Clear	
DI-		Other Glass		Other Plastic		Encore	
Thiosulfate-		SOC Kit		Plastic Bag		Frozen:	
Sulfuric-		Perchlorate		Ziplock			

Unused Media

Vials	#	Containers:	#		#		#
Unp-		1 Liter Amb.		1 Liter Plastic		16 oz Amb.	
HCL-		500 mL Amb.		500 mL Plastic		8oz Amb/Clear	
Meoh-		250 mL Amb.		250 mL Plastic	7 ✱	4oz Amb/Clear	
Bisulfate-		Col./Bacteria		Flashpoint		2oz Amb/Clear	
DI-		Other Plastic		Other Glass		Encore	
Thiosulfate-		SOC Kit		Plastic Bag		Frozen:	
Sulfuric-		Perchlorate		Ziplock			

Comments:

Client sent back 6 unused trizma 250 mL plastics w/ 1 DI field blank. ✱

Chain marked with MS/MSD but not a sample it goes to, no matching ID or time

Attachment B.2 – Laboratory Analytical Data for 1,4-Dioxane – ALS Environmental

August 15, 2019 Service Request No:R1907285

Ms. Megan Miller
EA Engineering, Science, and Technology
6731 Collamer Road
Suite 2
East Syracuse, NY 13057

Laboratory Results for: NYSDEC National Heatset Printing Site

Dear Ms.Miller,

Enclosed are the results of the sample(s) submitted to our laboratory August 02, 2019
For your reference, these analyses have been assigned our service request number **R1907285.**

All testing was performed according to our laboratory's quality assurance program and met the requirements of the TNI standards except as noted in the case narrative report. Any testing not included in the lab's accreditation is identified on a Non-Certified Analytes report. All results are intended to be considered in their entirety. ALS Environmental is not responsible for use of less than the complete report. Results apply only to the individual samples submitted to the lab for analysis, as listed in the report. The measurement uncertainty of the results included in this report is within that expected when using the prescribed method(s), and represented by Laboratory Control Sample control limits. Any events, such as QC failures or Holding Time exceedances, which may add to the uncertainty are explained in the report narrative or are flagged with qualifiers. The flags are explained in the Report Qualifiers and Definitions page of this report.

Please contact me if you have any questions. My extension is 7475. You may also contact me via email at Meghan.Pedro@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Meghan Pedro
Project Manager

ADDRESS 1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
PHONE +1 585 288 5380 | FAX +1 585 288 8475
ALS Group USA, Corp.
dba ALS Environmental

Narrative Documents

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

ALS Environmental

Client: EA Engineering, Science, and Technology (EAEST)
Project: NYSDEC National Heatset Printing Site
Sample Matrix: Water

Service Request: R1907285
Date Received: 08/02/2019

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples for the Tier level IV requested by the client.

Sample Receipt:

Six water samples were received for analysis at ALS Environmental on 08/02/2019. Any discrepancies upon initial sample inspection are annotated on the sample receipt and preservation form included within this report. The samples were stored at minimum in accordance with the analytical method requirements.

Semivolatiles by GC/MS:

No significant anomalies were noted with this analysis.

Approved by Meghan Pedro Date 08/15/2019

SAMPLE DETECTION SUMMARY

CLIENT ID: 152140-PW-4A-S-111004			Lab ID: R1907285-001			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
1,4-Dioxane	0.0236	J	0.0200	0.0400	ug/L	522

CLIENT ID: 152140-PW-5A-S-132042			Lab ID: R1907285-002			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
1,4-Dioxane	0.366		0.0200	0.0400	ug/L	522

CLIENT ID: 152140-PW-6--S63205			Lab ID: R1907285-003			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
1,4-Dioxane	0.659		0.0200	0.0400	ug/L	522

Sample Receipt Information

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
R1907285-001	152140-PW-4A-S-111004	8/1/2019	1259
R1907285-002	152140-PW-5A-S-132042	8/1/2019	1348
R1907285-003	152140-PW-6--S63205	8/1/2019	1415
R1907285-004	152140-PW-Duplicate-8119	8/1/2019	
R1907285-005	152140-PW-FB-8119	8/1/2019	1256
R1907285-006	152140-Tripblank-8119	8/1/2019	0745

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM 58009

1565 Jefferson Road, Building 300, Suite 360 • Rochester, NY 14623 | +1 585 288 5380 +1 585 288 8475 (fax) PAGE 1 OF 1

Project Name: NYSDEC NATIONAL HEATSET	Project Number: 1490716
Project Manager: MEGAN MILLER	Report CC: MEGAN MILLER mmiller@eaest.com
Company/Address: 269 WEST JEFFERSON STREET, SYRACUSE, NY 13202	
Phone #: 315-565-6557	Email:
Sampler's Signature:	Sampler's Printed Name: KRITIKA THAPA

ANALYSIS REQUESTED (Include Method Number and Container Preservative)

CLIENT SAMPLE ID	FOR OFFICE USE ONLY LAB ID	SAMPLING DATE	SAMPLING TIME	MATRIX	NUMBER OF CONTAINERS	PRESERVATIVE	GC/MS VOAs ◦ 8260 ◦ 624 ◦ CLP	GC/MS SVOAs ◦ 8270 ◦ 625	GC VOAs ◦ 8021 ◦ 601/602	PESTICIDES ◦ 8081 ◦ 608	PCBs ◦ 8082 ◦ 608	METALS, TOTAL (List in comments below)	METALS, DISSOLVED (List in comments below)	1,4 DIOXANE (EPA METHOD 522)	REMARKS/ ALTERNATE DESCRIPTION
152140-PW-SA-S-111004		8/1/19	1259	DRINKING WATER	1									X	
152140-PW-SA-S-132042		8/1/19	1348		1									X	
152140-PW-6-S-632205		8/1/19	1415		1									X	
152140-DUPLICATE-8119		8/1/19	"		1									X	
152140-MS/MSD-8119		8/1/19	1348	↓	2									X	
152140-FB-8119		8/1/19	1256	WATER	1									X	
152140-TRIPBLANK-8119		~~8/1/19~~ 7/25/19	0745	WATER	2									X	

Preservative Key: 0. NONE; 1. HCL; 2. HNO_3; 3. H_2SO_4; 4. NaOH; 5. Zn. Acetate; 6. MeOH; 7. $NaHSO_4$; 8. Other Na_2SO_3

SPECIAL INSTRUCTIONS/COMMENTS
Metals

See QAPP ☐

STATE WHERE SAMPLES WERE COLLECTED

TURNAROUND REQUIREMENTS
____ RUSH (SURCHARGES APPLY)
____ 1 day ____ 2 day ____ 3 day
____ 4 day ____ 5 day
X Standard (10 business days-No Surcharge)
REQUESTED REPORT DATE: _____

REPORT REQUIREMENTS
____ I. Results Only
NYSDEC ASP CAT B
____ II. Results + QC Summaries (LCS, DUP, MS/MSD as required)
____ III. Results + QC and Calibration Summaries
____ IV. Data Validation Report with Raw Data
NYSDEC EQUIS EDD
Edata ____ Yes ____ No

INVOICE INFORMATION
PO #:
BILL TO: northeastap@eaest.com

RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY
Signature:	Signature:	Signature:	Signature:	Signature:	
Printed Name: KRITIKA THAPA	Printed Name:	Printed Name:	Printed Name:	Printed Name:	
Firm: EA ENGINEERING	Firm:	Firm:	Firm:	Firm:	
Date/Time: 8/1/19 1530	Date/Time: 8/2/19 0940	Date/Time:	Date/Time:	Date/Time:	

R1907285 5
EA Engineering, Science, and Technology
NYSDEC National Heatset Printing Site

Distribution: White - Lab Copy; Yellow - Return to Originator

R1907285 5
EA Engineering, Science, and Technology
NYSDEC National Heatset Printing Site

Cooler Receipt and Preservation Check Form

Project/Client EA Engineers Folder Number _____.

Cooler received on 8/2/19 by: @ **COURIER:** ALS (UPS) FEDEX VELOCITY CLIENT

1	Were **Custody seals** on outside of cooler?	(Y) N	5a	**Perchlorate** samples have required headspace?	Y N (NA)
2	**Custody papers** properly completed (ink, signed)?	(Y) N	5b	Did VOA vials, Alk,or Sulfide have sig* **bubbles**?	Y N (NA)
3	Did all bottles arrive in good **condition** (unbroken)?	(Y) N	6	Where did the bottles originate?	(ALS/ROC) CLIENT
4	Circle: (**Wet Ice**) **Dry Ice** **Gel packs** present?	(Y) N	7	Soil VOA received as: Bulk Encore 5035set	(NA)

8. Temperature Readings Date: 8/2/19 Time: 1026 ID: IR#7 (IR#10) From: (Temp Blank) Sample Bottle

Observed Temp (°C)	3.9						
Correction Factor (°C)	+0.3						
Corrected Temp (°C)	4.2						
Temp from:Type of bottle	Cent tube						
Within 0-6°C?	(Y) N	Y N	Y N	Y N	Y N	Y N	Y N
If <0°C, were samples frozen?	Y N	Y N	Y N	Y N	Y N	Y N	Y N

If out of Temperature, note packing/ice condition: _____ Ice melted Poorly Packed (described below) Same Day Rule

&Client Approval to Run Samples: _____ Standing Approval Client aware at drop-off Client notified by: _____

All samples held in storage location: R-002 by @ on 8/2/19 at 1032
5035 samples placed in storage location: _____ by _____ on _____ at _____

Cooler Breakdown/Preservation Check**: Date: 8/2/19 Time: 1802 by: @

9. Were all bottle labels complete (*i.e.* analysis, preservation, etc.)? (YES) NO
10. Did all bottle labels and tags agree with custody papers? (YES) NO
11. Were correct containers used for the tests indicated? (YES) NO
12. Were 5035 vials acceptable (no extra labels, not leaking)? YES NO (N/A)
13. Air Samples: Cassettes / Tubes Intact with MS? Canisters Pressurized Tedlar® Bags Inflated (N/A)

pH	Lot of test paper	Reagent	Preserved? Yes	Preserved? No	Lot Received	Exp	Sample ID Adjusted	Vol. Added	Lot Added	Final pH
≥12		NaOH								
≤2		HNO_3								
≤2		H_2SO_4								
<4	230018	$NaHSO_4$	✓		B280DC	4/20				
5-9		For 608pest			No=Notify for 3day					
Residual Chlorine (-)		For CN, Phenol, 625, 608pest, (522)	✓		If +, contact PM to add $Na_2S_2O_3$ (625, 608, CN), ascorbic (phenol).					
		$Na_2S_2O_3$								
		ZnAcetate	-	-			**VOAs and 1664 Not to be tested before analysis. Otherwise, all bottles of all samples with chemical preservatives are checked (not just representatives).			
		HCl	**	**						

Bottle lot numbers: 060319-1BMC

Explain all Discrepancies/ Other Comments:

CLRES	BULK
DO	FLDT
HPROD	HGFB
HTR	LL3541
PH	SUB
SO3	MARRS
ALS	REV

Labels secondary reviewed by: @

PC Secondary Review: Up

*significant air bubbles: VOA > 5-6 mm : WC >1 in. diameter

Miscellaneous Forms

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REPORT QUALIFIERS AND DEFINITIONS

U	Analyte was analyzed for but not detected. The sample quantitation limit has been corrected for dilution and for percent moisture, unless otherwise noted in the case narrative.
J	Estimated value due to either being a Tentatively Identified Compound (TIC) or that the concentration is between the MRL and the MDL. Concentrations are not verified within the linear range of the calibration. For DoD: concentration >40% difference between two GC columns (pesticides/Arclors).
B	Analyte was also detected in the associated method blank at a concentration that may have contributed to the sample result.
E	Inorganics- Concentration is estimated due to the serial dilution was outside control limits.
E	Organics- Concentration has exceeded the calibration range for that specific analysis.
D	Concentration is a result of a dilution, typically a secondary analysis of the sample due to exceeding the calibration range or that a surrogate has been diluted out of the sample and cannot be assessed.
*	Indicates that a quality control parameter has exceeded laboratory limits. Under the "Notes" column of the Form I, this qualifier denotes analysis was performed out of Holding Time.
H	Analysis was performed out of hold time for tests that have an "immediate" hold time criteria.
#	Spike was diluted out.
+	Correlation coefficient for MSA is <0.995.
N	Inorganics- Matrix spike recovery was outside laboratory limits.
N	Organics- Presumptive evidence of a compound (reported as a TIC) based on the MS library search.
S	Concentration has been determined using Method of Standard Additions (MSA).
W	Post-Digestion Spike recovery is outside control limits and the sample absorbance is <50% of the spike absorbance.
P	Concentration >40% difference between the two GC columns.
C	Confirmed by GC/MS
Q	DoD reports: indicates a pesticide/Aroclor is not confirmed (≥100% Difference between two GC columns).
X	See Case Narrative for discussion.
MRL LOQ	Method Reporting Limit. Also known as: Limit of Quantitation (LOQ) The lowest concentration at which the method analyte may be reliably quantified under the method conditions.
MDL	Method Detection Limit. A statistical value derived from a study designed to provide the lowest concentration that will be detected 99% of the time. Values between the MDL and MRL are estimated (see J qualifier).
LOD	Limit of Detection. A value at or above the MDL which has been verified to be detectable.
ND	Non-Detect. Analyte was not detected at the concentration listed. Same as U qualifier.

Rochester Lab ID # for State Certifications[1]

Connecticut ID # PH0556	Maine ID #NY0032	Pennsylvania ID# 68-786
Delaware Approved	New Hampshire ID # 2941	Rhode Island ID # 158
DoD ELAP #65817	New York ID # 10145	Virginia #460167
Florida ID # E87674	North Carolina #676	

[1] Analyses were performed according to our laboratory's NELAP-approved quality assurance program and any applicable state or agency requirements. The test results meet requirements of the current NELAP/TNI standards or state or agency requirements, where applicable, except as noted in the case narrative. Since not all analyte/method/matrix combinations are offered for state/NELAC accreditation, this report may contain results which are not accredited. For a specific list of accredited analytes, contact the laboratory or go to https://www.alsglobal.com/locations/americas/north-america/usa/new-york/rochester-environmental

ALS Laboratory Group

Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

Client: EA Engineering, Science, and Technology (EAEST) **Service Request:** R1907285
Project: NYSDEC National Heatset Printing Site/1490716

Non-Certified Analytes

Certifying Agency: New York Department of Health

Method	Matrix	Analyte
522	Water	1,4-Dioxane

Client: EA Engineering, Science, and Technology (EAEST) **Service Request:** R1907285
Project: NYSDEC National Heatset Printing Site/1490716

Sample Name: 152140-PW-4A-S-111004 **Date Collected:** 08/1/19
Lab Code: R1907285-001 **Date Received:** 08/2/19
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
522	JMISIUREWICZ	JMISIUREWICZ

Sample Name: 152140-PW-5A-S-132042 **Date Collected:** 08/1/19
Lab Code: R1907285-002 **Date Received:** 08/2/19
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
522	JMISIUREWICZ	JMISIUREWICZ

Sample Name: 152140-PW-6--S63205 **Date Collected:** 08/1/19
Lab Code: R1907285-003 **Date Received:** 08/2/19
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
522	JMISIUREWICZ	JMISIUREWICZ

Sample Name: 152140-PW-Duplicate-8119 **Date Collected:** 08/1/19
Lab Code: R1907285-004 **Date Received:** 08/2/19
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
522	JMISIUREWICZ	JMISIUREWICZ

Sample Name: 152140-PW-FB-8119 **Date Collected:** 08/1/19
Lab Code: R1907285-005 **Date Received:** 08/2/19
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
522	JMISIUREWICZ	JMISIUREWICZ

Client:	EA Engineering, Science, and Technology (EAEST)	**Service Request:**	R1907285
Project:	NYSDEC National Heatset Printing Site/1490716		

Sample Name:	152140-Tripblank-8119	**Date Collected:**	08/1/19
Lab Code:	R1907285-006	**Date Received:**	08/2/19
Sample Matrix:	Water		

Analysis Method	Extracted/Digested By	Analyzed By
522	JMISIUREWICZ	JMISIUREWICZ

The preparation methods associated with this report are found in these tables unless discussed in the case narrative.

Water/Liquid Matrix

Analytical Method	Preparation Method
200.7	200.2
200.8	200.2
6010C	3005A/3010A
6020A	ILM05.3
9014 Cyanide Reactivity	SW846 Ch7, 7.3.4.2
9034 Sulfide Reactivity	SW846 Ch7, 7.3.4.2
9034 Sulfide Acid Soluble	9030B
9056A Bomb (Halogens)	5050A
9066 Manual Distillation	9065
SM 4500-CN-E Residual Cyanide	SM 4500-CN-G
SM 4500-CN-E WAD Cyanide	SM 4500-CN-I

Solid/Soil/Non-Aqueous Matrix

Analytical Method	Preparation Method
6010C	3050B
6020A	3050B
6010C TCLP (1311) extract	3005A/3010A
6010 SPLP (1312) extract	3005A/3010A
7196A	3060A
7199	3060A
9056A Halogens/Halides	5050
300.0 Anions/ 350.1/ 353.2/ SM 2320B/ SM 5210B/ 9056A Anions	DI extraction

For analytical methods not listed, the preparation method is the same as the analytical method reference.

Sample Results

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
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Semivolatile Organic Compounds by GC/MS

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www.alsglobal.com

Analytical Report

Client:	EA Engineering, Science, and Technology (EAEST)	**Service Request:**	R1907285
Project:	NYSDEC National Heatset Printing Site/1490716	**Date Collected:**	08/01/19 12:59
Sample Matrix:	Water	**Date Received:**	08/02/19 10:30
Sample Name:	152140-PW-4A-S-111004	**Units:**	ug/L
Lab Code:	R1907285-001	**Basis:**	As Received

1,4-Dioxane by Solid Phase Extraction and GC/MS With Selected Ion Monitoring

Analysis Method: 522
Prep Method: Method

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
1,4-Dioxane	**0.0236 J**	0.0400	0.0200	1	08/13/19 15:38	8/13/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,4-Dioxane-d8	85	70 - 130	08/13/19 15:38	

Analytical Report

Client:	EA Engineering, Science, and Technology (EAEST)	**Service Request:**	R1907285
Project:	NYSDEC National Heatset Printing Site/1490716	**Date Collected:**	08/01/19 13:48
Sample Matrix:	Water	**Date Received:**	08/02/19 10:30
Sample Name:	152140-PW-5A-S-132042	**Units:**	ug/L
Lab Code:	R1907285-002	**Basis:**	As Received

1,4-Dioxane by Solid Phase Extraction and GC/MS With Selected Ion Monitoring

Analysis Method: 522
Prep Method: Method

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
1,4-Dioxane	**0.366**	0.0400	0.0200	1	08/13/19 15:56	8/13/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,4-Dioxane-d8	87	70 - 130	08/13/19 15:56	

Analytical Report

Client:	EA Engineering, Science, and Technology (EAEST)	**Service Request:**	R1907285
Project:	NYSDEC National Heatset Printing Site/1490716	**Date Collected:**	08/01/19 14:15
Sample Matrix:	Water	**Date Received:**	08/02/19 10:30
Sample Name:	152140-PW-6--S63205	**Units:**	ug/L
Lab Code:	R1907285-003	**Basis:**	As Received

1,4-Dioxane by Solid Phase Extraction and GC/MS With Selected Ion Monitoring

Analysis Method: 522
Prep Method: Method

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
1,4-Dioxane	**0.659**	0.0400	0.0200	1	08/13/19 17:10	8/13/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,4-Dioxane-d8	91	70 - 130	08/13/19 17:10	

Analytical Report

Client:	EA Engineering, Science, and Technology (EAEST)	**Service Request:**	R1907285
Project:	NYSDEC National Heatset Printing Site/1490716	**Date Collected:**	08/01/19
Sample Matrix:	Water	**Date Received:**	08/02/19 10:30
Sample Name:	152140-PW-Duplicate-8119	**Units:**	ug/L
Lab Code:	R1907285-004	**Basis:**	As Received

1,4-Dioxane by Solid Phase Extraction and GC/MS With Selected Ion Monitoring

Analysis Method: 522
Prep Method: Method

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
1,4-Dioxane	0.0200 U	0.0400	0.0200	1	08/13/19 17:29	8/13/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,4-Dioxane-d8	92	70 - 130	08/13/19 17:29	

Analytical Report

Client:	EA Engineering, Science, and Technology (EAEST)	**Service Request:**	R1907285
Project:	NYSDEC National Heatset Printing Site/1490716	**Date Collected:**	08/01/19 12:56
Sample Matrix:	Water	**Date Received:**	08/02/19 10:30
Sample Name:	152140-PW-FB-8119	**Units:**	ug/L
Lab Code:	R1907285-005	**Basis:**	As Received

1,4-Dioxane by Solid Phase Extraction and GC/MS With Selected Ion Monitoring

Analysis Method: 522
Prep Method: Method

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
1,4-Dioxane	0.0200 U	0.0400	0.0200	1	08/13/19 17:47	8/13/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,4-Dioxane-d8	85	70 - 130	08/13/19 17:47	

Analytical Report

Client:	EA Engineering, Science, and Technology (EAEST)	**Service Request:**	R1907285
Project:	NYSDEC National Heatset Printing Site/1490716	**Date Collected:**	08/01/19 07:45
Sample Matrix:	Water	**Date Received:**	08/02/19 10:30
Sample Name:	152140-Tripblank-8119	**Units:**	ug/L
Lab Code:	R1907285-006	**Basis:**	As Received

1,4-Dioxane by Solid Phase Extraction and GC/MS With Selected Ion Monitoring

Analysis Method: 522
Prep Method: Method

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
1,4-Dioxane	0.0200 U	0.0400	0.0200	1	08/13/19 18:06	8/13/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,4-Dioxane-d8	87	70 - 130	08/13/19 18:06	

QC Summary Forms

ALS Environmental—Rochester Laboratory
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Semivolatile Organic Compounds by GC/MS

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Client: EA Engineering, Science, and Technology (EAEST) **Service Request:** R1907285
Project: NYSDEC National Heatset Printing Site/1490716
Sample Matrix: Water

SURROGATE RECOVERY SUMMARY

1,4-Dioxane by Solid Phase Extraction and GC/MS With Selected Ion Monitoring

Analysis Method: 522
Extraction Method: Method

Sample Name	Lab Code	1,4-Dioxane-d8 70-130
152140-PW-4A-S-111004	R1907285-001	85
152140-PW-5A-S-132042	R1907285-002	87
152140-PW-6--S63205	R1907285-003	91
152140-PW-Duplicate-8119	R1907285-004	92
152140-PW-FB-8119	R1907285-005	85
152140-Tripblank-8119	R1907285-006	87
Method Blank	RQ1908698-01	82
Lab Control Sample	RQ1908698-02	80
Duplicate Lab Control Sample	RQ1908698-03	81
Lab Control Sample	RQ1908698-04	81
152140-PW-5A-S-132042 MS	RQ1908698-06	89
152140-PW-5A-S-132042 DMS	RQ1908698-07	90

Client:	EA Engineering, Science, and Technology (EAEST)	**Service Request:**	R1907285
Project:	NYSDEC National Heatset Printing Site/1490716	**Date Collected:**	08/01/19
Sample Matrix:	Water	**Date Received:**	08/02/19
		Date Analyzed:	08/13/19
		Date Extracted:	08/13/19

Duplicate Matrix Spike Summary
1,4-Dioxane by Solid Phase Extraction and GC/MS With Selected Ion Monitoring

Sample Name:	152140-PW-5A-S-132042	**Units:**	ug/L
Lab Code:	R1907285-002	**Basis:**	As Received
Analysis Method:	522		
Prep Method:	Method		

		Matrix Spike RQ1908698-06			Duplicate Matrix Spike RQ1908698-07					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
1,4-Dioxane	0.366	9.40	10.1	89	9.57	10.1	91	70-130	2	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Analytical Report

Client:	EA Engineering, Science, and Technology (EAEST)	**Service Request:**	R1907285
Project:	NYSDEC National Heatset Printing Site/1490716	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	RQ1908698-01	**Basis:**	As Received

1,4-Dioxane by Solid Phase Extraction and GC/MS With Selected Ion Monitoring

Analysis Method: 522
Prep Method: Method

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
1,4-Dioxane	0.0200 U	0.0400	0.0200	1	08/13/19 09:26	8/13/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,4-Dioxane-d8	82	70 - 130	08/13/19 09:26	

Client: EA Engineering, Science, and Technology (EAEST)
Project: NYSDEC National Heatset Printing Site/1490716
Sample Matrix: Water

Service Request: R1907285
Date Analyzed: 08/14/19

Lab Control Sample Summary
1,4-Dioxane by Solid Phase Extraction and GC/MS With Selected Ion Monitoring

Units: ug/L
Basis: As Received

Lab Control Sample
RQ1908698-04

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
1,4-Dioxane	522	0.0468	0.0406	115	70-130

Client: EA Engineering, Science, and Technology (EAEST)
Project: NYSDEC National Heatset Printing Site/1490716
Sample Matrix: Water

Service Request: R1907285
Date Analyzed: 08/13/19

Duplicate Lab Control Sample Summary
1,4-Dioxane by Solid Phase Extraction and GC/MS With Selected Ion Monitoring

Units: ug/L
Basis: As Received

		Lab Control Sample			Duplicate Lab Control Sample					
		RQ1908698-02			RQ1908698-03					
Analyte Name	**Analytical Method**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
1,4-Dioxane	522	8.44	10.1	83	8.50	10.1	84	70-130	<1	30