NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Division of Environmental Remediation
625 Broadway, 12th Floor, Albany, New York 12233-7011
P: (518) 402-9706 | F: (518) 402-9020
www.dec.ny.gov

January 23, 2020

Mr. George Meyers, Supervisor
Town of New Windsor
555 Union Avenue
New Windsor, New York 12553

Re: New Windsor Public Water Supply Well Sample Results
Kroll Well, New Windsor (T), Orange County

Dear Supervisor Meyers,

The New York State Department of Environmental Conservation (DEC) is providing you with a copy of analytical results derived from the January 17, 2020 sampling of the granular activated carbon (GAC) water treatment system by DEC representatives that was installed at the Town of New Windsor (Town) Kroll Well field at 354 Mount Airy Road by DEC representatives.

No perfluorooctanesulfonic acid (PFOS) or perfluorooctanoic acid (PFOA) was detected in the Kroll Well GAC-treated water. The U.S. Environmental Protection Agency (EPA) lifetime health advisory level (HAL) is 70 parts per trillion (ppt) for PFOA, PFOS, or the combination of PFOA and PFOS. The proposed NYS maximum contaminant levels (MCLs) are 10 ppt for PFOS and 10 ppt for PFOA.

Specifically, the samples were analyzed for a total of six and twenty-one per- and polyfluoroalkyl substances (PFAS), including PFOA and PFOS. Data received for the 6 PFAS list analysis has been summarized and also attached. However, sampling data associated with the 21 PFAS list are still pending from the lab, and will be provided to the Town under separate letter after receipt and review by DEC and the New York State Department of Health (DOH). During this event, sampling was conducted at nine locations:

- pre-treatment (raw untreated water), which has a “RAW WATER” identifier in the Client Sample ID;
- 25 % treatment – lead tank (A-25 identifier);
- 50 % treatment – lead tank (A-50 identifier);
- 75 % treatment – lead tank (A-75 identifier);
- mid-treatment (after the first GAC canister and prior to the second GAC canister), which has a “MID POINT” identifier in the Client Sample ID;
- 25 % treatment – lag tank (B-25 identifier);
- 50 % treatment – lag tank (B-50 identifier);

- 75 % treatment – lag tank (B-75 identifier); and
- post-treatment (after the entire treatment system), which has a "EFFLUENT" identifier in the Client Sample ID.

The nine locations sampled (and their associated identifiers) are depicted in Figure 1.

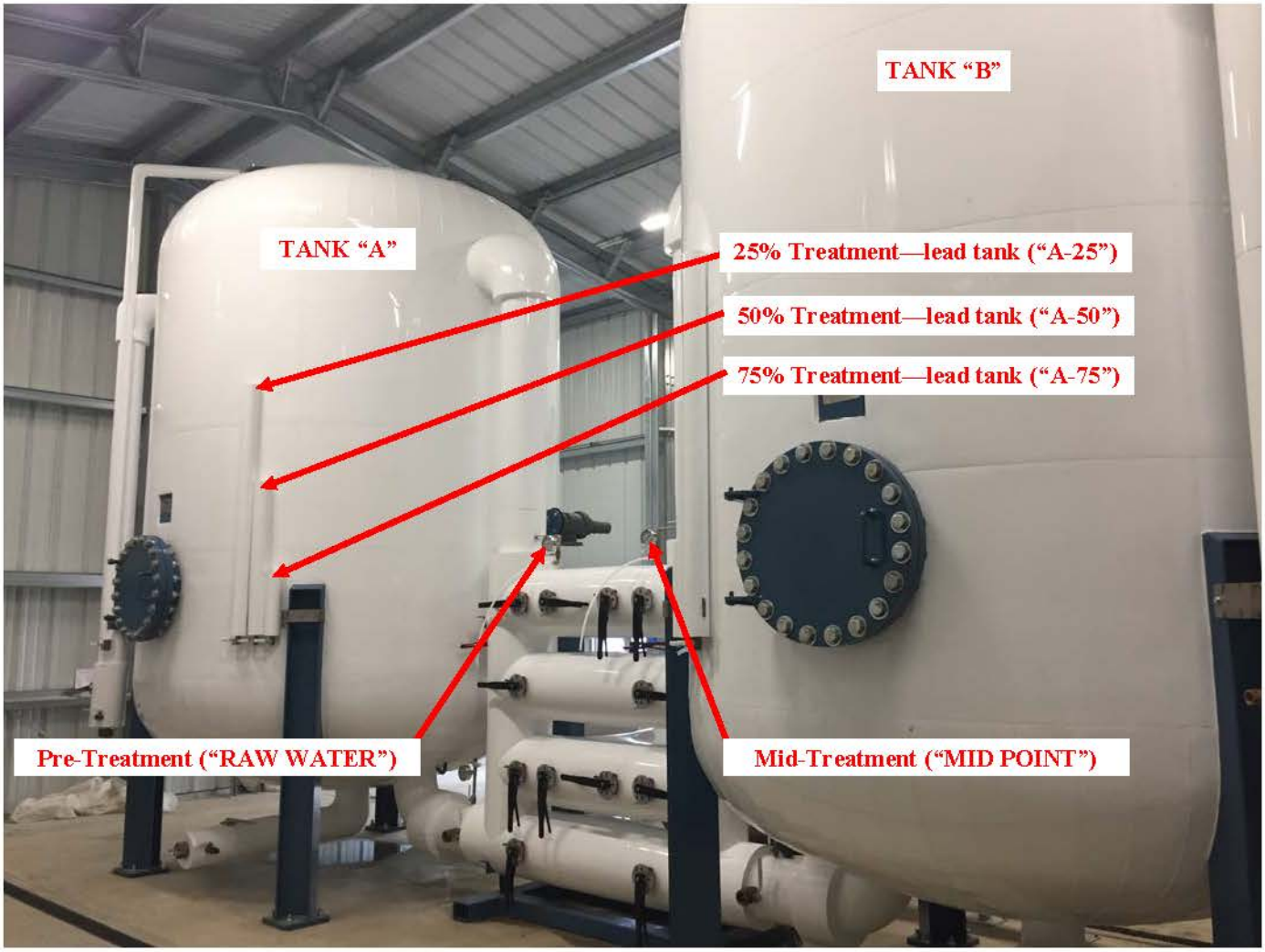
If you have any technical questions regarding the analytical results or on the operation and performance of the GAC treatment system, please feel free to contact me or Jim Hayward, EA Science and Technology (DEC's Project Engineer) at (315) 431-4610 (ext.1857) or jhayward@eaest.com . For weekday or off hour / weekend emergency repair issues, please call DEC's contractor, Steven Phelps of Precision Environmental Services at (518) 528-1427. For questions regarding site-related health concerns, please contact Steve Gagnon of the Orange County DOH at (845) 291-2331 or Dr. Min-Sook Kim of the NYSDOH Bureau of Water Supply Protection at (518) 402-7650; email: min-sook.kim@health.ny.gov .

Sincerely,

David J. Chiusano
Environmental Engineer/Project Manager
Remedial Section A, Remedial Bureau E
Division of Environmental Remediation

Enclosures

ec: w/enclosures
D. Zagon, Town of New Windsor
J. Egitto, Town of New Windsor
M. Weeks, MHE
W. Gilday, NYSDOH
Dr. Kim, NYSDOH
S. Gladding, NYSDOH
S. Gagnon, OCDOH
M. Andersen, OCDOH
J. Hayward, EA Engineering
S. Phelps, PES
M. Cruden, NYSDEC
D. Bendell, Region 3 RHWRE
D. Harrington, NYSDEC



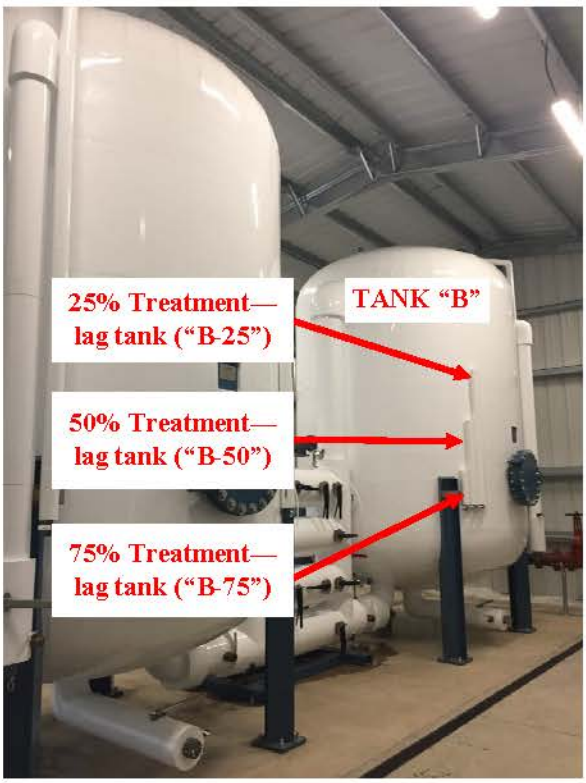


Figure 1—Kroll Well GAC Treatment System Sampling Locations

Town of New Windsor

Kroll Well GAC Operation and Maintenance PFOA and PFOS Sampling Results (Parts Per Trillion (PPT))

Date	Analyte	Result[1] Raw Water	Result A25	Result[2] A50	Result A75	Result Mid-Point	Result B25	Result B50	Result B75	Treated Effluent	USEPA Drinking Water Health Advisory Guidance Value	Proposed NYS MCLs
September 2019	PFOA	7.5	5.9	ND	ND	ND	ND	ND	ND	ND	70[4]	10[5]
	PFOS	9.2	6.4	ND	ND	ND	ND	ND	ND	ND	70[4]	10[5]
October 2019	PFOA	7.9	6.5	ND	ND	ND	ND	ND	ND	ND	70[4]	10[5]
	PFOS	13	8.7	ND	ND	ND	ND	ND	ND	ND	70[4]	10[5]
November 2019	PFOA	12	10	ND	ND	ND	ND	ND	ND	ND	70[4]	10[5]
	PFOS	10	8.4	ND	ND	ND	ND	ND	ND	ND	70[4]	10[5]
December 2019 (Based on 6 PFAS Analysis Data only)	PFOA	9.7	9.2	ND	ND	ND	ND	ND	ND	ND	70[4]	10[5]
	PFOS	8.7	6.6	ND	ND	ND	ND	ND	ND	ND	70[4]	10[5]
January 2020 (Based on 6 PFAS Analysis Data only)	PFOA	8.9	7.5	ND	ND	ND	ND	ND	ND	ND	70[4]	10[5]
	PFOS	7.8	6.7	ND	ND	ND	ND	ND	ND	ND	70[4]	10[5]

Notes:

1. PFOS and PFOA results and comparison values are reported in parts per trillion (ppt, nanograms per liter, ng/l).
2. “ND” means non-detect. The analyte was not detected in the sample.
3. MCL (Maximum Contaminant Level, mg/l) is the maximum permissible level of a contaminant in water delivered by a public water system.
4. Guidance: USEPA Drinking Water Health Advisory guidance value is currently 70 ppt.
5. The proposed NYS maximum contaminant levels (MCLs) are 10 ppt for PFOS and 10 ppt for PFOA.

How to Read Your Laboratory Reports

PFOA and PFOS Results:

- Analyte is the term used to describe what the laboratory was testing for, in this case PFOS and PFOA.
- Conc. (ng/l) is your result for PFOS and PFOA. In your case, no PFOS and PFOA were detected, thus ND or "non-detect" or <2.0 ng/l was reported. (ng/l = ppt)
- RL = reporting limit or RDL = reportable detection limit is the lowest level at which this specific testing protocol and laboratory has confidence in measuring the given analyte.
- Qualifiers are added information to help understand the quality of the data. Often, if something about the results or the calibration of the testing equipment was irregular, it would be reported here.

All other columns represent laboratory quality control information. The laboratory calibrates its equipment against a precise quantity of the chemical in order to ensure that the equipment is functioning properly. Some laboratory reports may not have all this information.

- Labeled Standard or Surrogate is the lab's specific name for an individual control sample.
- %R is the percent of the control sample that was detected by the equipment. A 100% reading represents perfect equipment alignment.
- LCL-UCL is the lower concentration limit (LCL) and upper concentration limit (UCL). The LCL represents the lowest acceptable %R value and the UCL represent the highest acceptable %R value required to ensure your result is accurate.
- Qualifiers: If a result quality control variance is noted or I the %R value of any of the control samples were outside the allowable range that would have been noted in this last column. This gives the analyst less confidence in the measured value.

The analysis for PFOS and PFOA is performed using modified EPA Method 537. The laboratory may report a detection of PFOS and PFOA down to approximately 2.0 nanograms per liter (ng/l) or parts per trillion (ppt).

Inorganic Results:

- Parameter is the same as "analyte" above – it is the chemical being tested.
- Result is the concentration of that chemical detected.
- RL/PQL is the lowest level at which the specific laboratory test can reliably quantify the concentration. Below that number, the result is considered unreliable.
- DIL is the number of times the sample was diluted (necessary because the test has a certain range that it is accurate for).
- Units: mg/l is milligrams per liter or parts per million; ug/l is micrograms per liter or parts per billion.
- DW MCL stands for drinking water (DW) and "maximum contaminant level" (MCL). All chemicals that have a "maximum contaminant level" (MCL) established for drinking water (DW) have a level reported in this column.

- Sec Goal is the EPA nomenclature for all contaminants that have regulatory levels set based on aesthetics (for example, taste or color). DOH recognizes these EPA secondary goals as primary standards and enforces its drinking water quality program accordingly.
- Date/Time represents the date and time of the analysis at the lab.
- By refers to the technician who ran the test.
- Reference indicates the EPA method used in the test.

eurofins | Environment Testing TestAmerica

ANALYTICAL REPORT

Eurofins TestAmerica, Sacramento
880 Riverside Parkway
West Sacramento, CA 95605
Tel: (916)373-5600

Laboratory Job ID: 320-57888-1
Client Project/Site: Stewart ANG Base #336089 Kroll Well

For:
New York State D.E.C.
625 Broadway
12th Floor
Albany, New York 12233-7017

Attn: Mr. Dave Chiusano

Judy Stone

Authorized for release by:
1/23/2020 2:23:10 PM

Judy Stone, Senior Project Manager
(484)685-0868
judy.stone@testamericainc.com

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed within the body of this report. Release of the data contained in this sample data package and in the electronic data deliverable has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.

Judy Stone
Senior Project Manager
1/23/2020 2:23:10 PM

Table of Contents

Definitions/Glossary

Client: New York State D.E.C.
Job ID: 320-57888-1
Project/Site: Stewart ANG Base #336089 Kroll Well

Qualifiers

LCMS

Qualifier	Qualifier Description
F1	MS and/or MSD Recovery is outside acceptance limits.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Job ID: 320-57888-1

Laboratory: Eurofins TestAmerica, Sacramento

Narrative

Job Narrative
320-57888-1

Receipt
The samples were received on 1/18/2020 9:50 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 0.3º C.

LCMS
Method WS-LC-0025 Att1: The matrix spike (MS) recovery for preparation batch 320-351957 and analytical batch 320-352015 was outside control limit for Perfluorooctanesulfonic acid (PFOS). Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method WS-LC-0025 Att1: The matrix spike duplicate (MSD) recovery for preparation batch 320-351957 and analytical batch 320-352015 was outside control limit for Perfluorononanoic acid (PFNA). Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Organic Prep
Method PFAS Prep: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 320-352064.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Detection Summary

Client: New York State D.E.C.
Project/Site: Stewart ANG Base #336089 Kroll Well

Job ID: 320-57888-1

Client Sample ID: Effluent — Lab Sample ID: 320-57888-1

No Detections.

Client Sample ID: Mid Point — Lab Sample ID: 320-57888-2

No Detections.

Client Sample ID: Raw Water — Lab Sample ID: 320-57888-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanesulfonic acid (PFBS)	5.3		2.0		ng/L	1		WS-LC-0025 Att1	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	2.1		2.0		ng/L	1		WS-LC-0025 Att1	Total/NA
Perfluoroheptanoic acid (PFHpA)	3.0		2.0		ng/L	1		WS-LC-0025 Att1	Total/NA
Perfluorooctanoic acid (PFOA)	8.9		2.0		ng/L	1		WS-LC-0025 Att1	Total/NA
Perfluorooctanesulfonic acid (PFOS)	7.8		2.0		ng/L	1		WS-LC-0025 Att1	Total/NA

Client Sample ID: Duplicate — Lab Sample ID: 320-57888-4

No Detections.

Client Sample ID: A-25 — Lab Sample ID: 320-57888-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanesulfonic acid (PFBS)	5.1		2.0		ng/L	1		WS-LC-0025 Att1	Total/NA
Perfluoroheptanoic acid (PFHpA)	3.0		2.0		ng/L	1		WS-LC-0025 Att1	Total/NA
Perfluorooctanoic acid (PFOA)	7.5		2.0		ng/L	1		WS-LC-0025 Att1	Total/NA
Perfluorooctanesulfonic acid (PFOS)	6.7		2.0		ng/L	1		WS-LC-0025 Att1	Total/NA

Client Sample ID: A-50 — Lab Sample ID: 320-57888-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanesulfonic acid (PFBS)	2.0		2.0		ng/L	1		WS-LC-0025 Att1	Total/NA

Client Sample ID: A-75 — Lab Sample ID: 320-57888-7

No Detections.

Client Sample ID: B-25 — Lab Sample ID: 320-57888-8

No Detections.

Client Sample ID: B-50 — Lab Sample ID: 320-57888-9

No Detections.

Client Sample ID: B-75 — Lab Sample ID: 320-57888-10

No Detections.

This Detection Summary does not include radiochemical test results.

Client: New York State D.E.C.
Job ID: 320-57888-1
Project/Site: Stewart ANG Base #336089 Kroll Well

Client Sample ID: Effluent
Lab Sample ID: 320-57888-1
Date Collected: 01/17/20 11:00
Matrix: Water
Date Received: 01/18/20 09:50

Method: WS-LC-0025 Att1 - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanesulfonic acid (PFBS)	ND		2.0		ng/L		01/20/20 16:37	01/21/20 16:58	1
Perfluorohexanesulfonic acid (PFHxS)	ND		2.0		ng/L		01/20/20 16:37	01/21/20 16:58	1
Perfluoroheptanoic acid (PFHpA)	ND		2.0		ng/L		01/20/20 16:37	01/21/20 16:58	1
Perfluorooctanoic acid (PFOA)	ND		2.0		ng/L		01/20/20 16:37	01/21/20 16:58	1
Perfluorooctanesulfonic acid (PFOS)	ND	F1	2.0		ng/L		01/20/20 16:37	01/21/20 16:58	1
Perfluorononanoic acid (PFNA)	ND	F1	2.0		ng/L		01/20/20 16:37	01/21/20 16:58	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
18O2 PFHxS	*114*		*25 - 150*	*01/20/20 16:37*	*01/21/20 16:58*	*1*
13C4 PFHpA	*115*		*25 - 150*	*01/20/20 16:37*	*01/21/20 16:58*	*1*
13C4 PFOA	*108*		*70 - 130*	*01/20/20 16:37*	*01/21/20 16:58*	*1*
13C4 PFOS	*109*		*70 - 130*	*01/20/20 16:37*	*01/21/20 16:58*	*1*
13C5 PFNA	*101*		*25 - 150*	*01/20/20 16:37*	*01/21/20 16:58*	*1*
13C3 PFBS	*118*		*25 - 150*	*01/20/20 16:37*	*01/21/20 16:58*	*1*

Client Sample ID: Mid Point
Lab Sample ID: 320-57888-2
Date Collected: 01/17/20 11:30
Matrix: Water
Date Received: 01/18/20 09:50

Method: WS-LC-0025 Att1 - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanesulfonic acid (PFBS)	ND		2.0		ng/L		01/20/20 16:37	01/21/20 17:53	1
Perfluorohexanesulfonic acid (PFHxS)	ND		2.0		ng/L		01/20/20 16:37	01/21/20 17:53	1
Perfluoroheptanoic acid (PFHpA)	ND		2.0		ng/L		01/20/20 16:37	01/21/20 17:53	1
Perfluorooctanoic acid (PFOA)	ND		2.0		ng/L		01/20/20 16:37	01/21/20 17:53	1
Perfluorooctanesulfonic acid (PFOS)	ND		2.0		ng/L		01/20/20 16:37	01/21/20 17:53	1
Perfluorononanoic acid (PFNA)	ND		2.0		ng/L		01/20/20 16:37	01/21/20 17:53	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
18O2 PFHxS	*119*		*25 - 150*	*01/20/20 16:37*	*01/21/20 17:53*	*1*
13C4 PFHpA	*115*		*25 - 150*	*01/20/20 16:37*	*01/21/20 17:53*	*1*
13C4 PFOA	*112*		*70 - 130*	*01/20/20 16:37*	*01/21/20 17:53*	*1*
13C4 PFOS	*110*		*70 - 130*	*01/20/20 16:37*	*01/21/20 17:53*	*1*
13C5 PFNA	*105*		*25 - 150*	*01/20/20 16:37*	*01/21/20 17:53*	*1*
13C3 PFBS	*117*		*25 - 150*	*01/20/20 16:37*	*01/21/20 17:53*	*1*

Client Sample ID: Raw Water
Lab Sample ID: 320-57888-3
Date Collected: 01/17/20 11:50
Matrix: Water
Date Received: 01/18/20 09:50

Method: WS-LC-0025 Att1 - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanesulfonic acid (PFBS)	**5.3**		2.0		ng/L		01/20/20 16:37	01/21/20 18:12	1
Perfluorohexanesulfonic acid (PFHxS)	**2.1**		2.0		ng/L		01/20/20 16:37	01/21/20 18:12	1
Perfluoroheptanoic acid (PFHpA)	**3.0**		2.0		ng/L		01/20/20 16:37	01/21/20 18:12	1
Perfluorooctanoic acid (PFOA)	**8.9**		2.0		ng/L		01/20/20 16:37	01/21/20 18:12	1
Perfluorooctanesulfonic acid (PFOS)	**7.8**		2.0		ng/L		01/20/20 16:37	01/21/20 18:12	1
Perfluorononanoic acid (PFNA)	ND		2.0		ng/L		01/20/20 16:37	01/21/20 18:12	1

Client Sample ID: Raw Water
Lab Sample ID: 320-57888-3

Date Collected: 01/17/20 11:50
Matrix: Water
Date Received: 01/18/20 09:50

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
18O2 PFHxS	*118*		*25 - 150*	*01/20/20 16:37*	*01/21/20 18:12*	*1*
13C4 PFHpA	*119*		*25 - 150*	*01/20/20 16:37*	*01/21/20 18:12*	*1*
13C4 PFOA	*109*		*70 - 130*	*01/20/20 16:37*	*01/21/20 18:12*	*1*
13C4 PFOS	*112*		*70 - 130*	*01/20/20 16:37*	*01/21/20 18:12*	*1*
13C5 PFNA	*103*		*25 - 150*	*01/20/20 16:37*	*01/21/20 18:12*	*1*
13C3 PFBS	*121*		*25 - 150*	*01/20/20 16:37*	*01/21/20 18:12*	*1*

Client Sample ID: Duplicate
Lab Sample ID: 320-57888-4

Date Collected: 01/17/20 00:00
Matrix: Water
Date Received: 01/18/20 09:50

Method: WS-LC-0025 Att1 - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanesulfonic acid (PFBS)	ND		2.0		ng/L		01/21/20 11:58	01/22/20 02:48	1
Perfluorohexanesulfonic acid (PFHxS)	ND		2.0		ng/L		01/21/20 11:58	01/22/20 02:48	1
Perfluoroheptanoic acid (PFHpA)	ND		2.0		ng/L		01/21/20 11:58	01/22/20 02:48	1
Perfluorooctanoic acid (PFOA)	ND		2.0		ng/L		01/21/20 11:58	01/22/20 02:48	1
Perfluorooctanesulfonic acid (PFOS)	ND		2.0		ng/L		01/21/20 11:58	01/22/20 02:48	1
Perfluorononanoic acid (PFNA)	ND		2.0		ng/L		01/21/20 11:58	01/22/20 02:48	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
18O2 PFHxS	*112*		*25 - 150*	*01/21/20 11:58*	*01/22/20 02:48*	*1*
13C4 PFHpA	*111*		*25 - 150*	*01/21/20 11:58*	*01/22/20 02:48*	*1*
13C4 PFOA	*103*		*70 - 130*	*01/21/20 11:58*	*01/22/20 02:48*	*1*
13C4 PFOS	*103*		*70 - 130*	*01/21/20 11:58*	*01/22/20 02:48*	*1*
13C5 PFNA	*101*		*25 - 150*	*01/21/20 11:58*	*01/22/20 02:48*	*1*
13C3 PFBS	*116*		*25 - 150*	*01/21/20 11:58*	*01/22/20 02:48*	*1*

Client Sample ID: A-25
Lab Sample ID: 320-57888-5

Date Collected: 01/17/20 11:45
Matrix: Water
Date Received: 01/18/20 09:50

Method: WS-LC-0025 Att1 - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanesulfonic acid (PFBS)	**5.1**		2.0		ng/L		01/20/20 16:37	01/21/20 18:30	1
Perfluorohexanesulfonic acid (PFHxS)	ND		2.0		ng/L		01/20/20 16:37	01/21/20 18:30	1
Perfluoroheptanoic acid (PFHpA)	**3.0**		2.0		ng/L		01/20/20 16:37	01/21/20 18:30	1
Perfluorooctanoic acid (PFOA)	**7.5**		2.0		ng/L		01/20/20 16:37	01/21/20 18:30	1
Perfluorooctanesulfonic acid (PFOS)	**6.7**		2.0		ng/L		01/20/20 16:37	01/21/20 18:30	1
Perfluorononanoic acid (PFNA)	ND		2.0		ng/L		01/20/20 16:37	01/21/20 18:30	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
18O2 PFHxS	*115*		*25 - 150*	*01/20/20 16:37*	*01/21/20 18:30*	*1*
13C4 PFHpA	*112*		*25 - 150*	*01/20/20 16:37*	*01/21/20 18:30*	*1*
13C4 PFOA	*113*		*70 - 130*	*01/20/20 16:37*	*01/21/20 18:30*	*1*
13C4 PFOS	*108*		*70 - 130*	*01/20/20 16:37*	*01/21/20 18:30*	*1*
13C5 PFNA	*105*		*25 - 150*	*01/20/20 16:37*	*01/21/20 18:30*	*1*
13C3 PFBS	*120*		*25 - 150*	*01/20/20 16:37*	*01/21/20 18:30*	*1*

Client Sample ID: A-50
Lab Sample ID: 320-57888-6
Date Collected: 01/17/20 11:40
Matrix: Water
Date Received: 01/18/20 09:50

Method: WS-LC-0025 Att1 - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanesulfonic acid (PFBS)	**2.0**		2.0		ng/L		01/20/20 16:37	01/21/20 18:49	1
Perfluorohexanesulfonic acid (PFHxS)	ND		2.0		ng/L		01/20/20 16:37	01/21/20 18:49	1
Perfluoroheptanoic acid (PFHpA)	ND		2.0		ng/L		01/20/20 16:37	01/21/20 18:49	1
Perfluorooctanoic acid (PFOA)	ND		2.0		ng/L		01/20/20 16:37	01/21/20 18:49	1
Perfluorooctanesulfonic acid (PFOS)	ND		2.0		ng/L		01/20/20 16:37	01/21/20 18:49	1
Perfluorononanoic acid (PFNA)	ND		2.0		ng/L		01/20/20 16:37	01/21/20 18:49	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
18O2 PFHxS	*118*		*25 - 150*	*01/20/20 16:37*	*01/21/20 18:49*	*1*
13C4 PFHpA	*120*		*25 - 150*	*01/20/20 16:37*	*01/21/20 18:49*	*1*
13C4 PFOA	*111*		*70 - 130*	*01/20/20 16:37*	*01/21/20 18:49*	*1*
13C4 PFOS	*104*		*70 - 130*	*01/20/20 16:37*	*01/21/20 18:49*	*1*
13C5 PFNA	*105*		*25 - 150*	*01/20/20 16:37*	*01/21/20 18:49*	*1*
13C3 PFBS	*123*		*25 - 150*	*01/20/20 16:37*	*01/21/20 18:49*	*1*

Client Sample ID: A-75
Lab Sample ID: 320-57888-7
Date Collected: 01/17/20 11:35
Matrix: Water
Date Received: 01/18/20 09:50

Method: WS-LC-0025 Att1 - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanesulfonic acid (PFBS)	ND		2.0		ng/L		01/20/20 16:37	01/21/20 19:07	1
Perfluorohexanesulfonic acid (PFHxS)	ND		2.0		ng/L		01/20/20 16:37	01/21/20 19:07	1
Perfluoroheptanoic acid (PFHpA)	ND		2.0		ng/L		01/20/20 16:37	01/21/20 19:07	1
Perfluorooctanoic acid (PFOA)	ND		2.0		ng/L		01/20/20 16:37	01/21/20 19:07	1
Perfluorooctanesulfonic acid (PFOS)	ND		2.0		ng/L		01/20/20 16:37	01/21/20 19:07	1
Perfluorononanoic acid (PFNA)	ND		2.0		ng/L		01/20/20 16:37	01/21/20 19:07	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
18O2 PFHxS	*120*		*25 - 150*	*01/20/20 16:37*	*01/21/20 19:07*	*1*
13C4 PFHpA	*116*		*25 - 150*	*01/20/20 16:37*	*01/21/20 19:07*	*1*
13C4 PFOA	*108*		*70 - 130*	*01/20/20 16:37*	*01/21/20 19:07*	*1*
13C4 PFOS	*111*		*70 - 130*	*01/20/20 16:37*	*01/21/20 19:07*	*1*
13C5 PFNA	*101*		*25 - 150*	*01/20/20 16:37*	*01/21/20 19:07*	*1*
13C3 PFBS	*121*		*25 - 150*	*01/20/20 16:37*	*01/21/20 19:07*	*1*

Client Sample ID: B-25
Lab Sample ID: 320-57888-8
Date Collected: 01/17/20 11:25
Matrix: Water
Date Received: 01/18/20 09:50

Method: WS-LC-0025 Att1 - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanesulfonic acid (PFBS)	ND		2.0		ng/L		01/20/20 16:37	01/21/20 19:44	1
Perfluorohexanesulfonic acid (PFHxS)	ND		2.0		ng/L		01/20/20 16:37	01/21/20 19:44	1
Perfluoroheptanoic acid (PFHpA)	ND		2.0		ng/L		01/20/20 16:37	01/21/20 19:44	1
Perfluorooctanoic acid (PFOA)	ND		2.0		ng/L		01/20/20 16:37	01/21/20 19:44	1
Perfluorooctanesulfonic acid (PFOS)	ND		2.0		ng/L		01/20/20 16:37	01/21/20 19:44	1
Perfluorononanoic acid (PFNA)	ND		2.0		ng/L		01/20/20 16:37	01/21/20 19:44	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
18O2 PFHxS	*122*		*25 - 150*	*01/20/20 16:37*	*01/21/20 19:44*	*1*
13C4 PFHpA	*119*		*25 - 150*	*01/20/20 16:37*	*01/21/20 19:44*	*1*

Client Sample ID: B-25
Lab Sample ID: 320-57888-8
Date Collected: 01/17/20 11:25
Matrix: Water
Date Received: 01/18/20 09:50

Method: WS-LC-0025 Att1 - Fluorinated Alkyl Substances (Continued)

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFOA	*112*		*70 - 130*	*01/20/20 16:37*	*01/21/20 19:44*	*1*
13C4 PFOS	*111*		*70 - 130*	*01/20/20 16:37*	*01/21/20 19:44*	*1*
13C5 PFNA	*108*		*25 - 150*	*01/20/20 16:37*	*01/21/20 19:44*	*1*
13C3 PFBS	*122*		*25 - 150*	*01/20/20 16:37*	*01/21/20 19:44*	*1*

Client Sample ID: B-50
Lab Sample ID: 320-57888-9
Date Collected: 01/17/20 11:20
Matrix: Water
Date Received: 01/18/20 09:50

Method: WS-LC-0025 Att1 - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanesulfonic acid (PFBS)	ND		2.0		ng/L		01/20/20 16:37	01/21/20 20:02	1
Perfluorohexanesulfonic acid (PFHxS)	ND		2.0		ng/L		01/20/20 16:37	01/21/20 20:02	1
Perfluoroheptanoic acid (PFHpA)	ND		2.0		ng/L		01/20/20 16:37	01/21/20 20:02	1
Perfluorooctanoic acid (PFOA)	ND		2.0		ng/L		01/20/20 16:37	01/21/20 20:02	1
Perfluorooctanesulfonic acid (PFOS)	ND		2.0		ng/L		01/20/20 16:37	01/21/20 20:02	1
Perfluorononanoic acid (PFNA)	ND		2.0		ng/L		01/20/20 16:37	01/21/20 20:02	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
18O2 PFHxS	*112*		*25 - 150*	*01/20/20 16:37*	*01/21/20 20:02*	*1*
13C4 PFHpA	*114*		*25 - 150*	*01/20/20 16:37*	*01/21/20 20:02*	*1*
13C4 PFOA	*110*		*70 - 130*	*01/20/20 16:37*	*01/21/20 20:02*	*1*
13C4 PFOS	*108*		*70 - 130*	*01/20/20 16:37*	*01/21/20 20:02*	*1*
13C5 PFNA	*106*		*25 - 150*	*01/20/20 16:37*	*01/21/20 20:02*	*1*
13C3 PFBS	*121*		*25 - 150*	*01/20/20 16:37*	*01/21/20 20:02*	*1*

Client Sample ID: B-75
Lab Sample ID: 320-57888-10
Date Collected: 01/17/20 11:15
Matrix: Water
Date Received: 01/18/20 09:50

Method: WS-LC-0025 Att1 - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanesulfonic acid (PFBS)	ND		2.0		ng/L		01/20/20 16:37	01/21/20 20:21	1
Perfluorohexanesulfonic acid (PFHxS)	ND		2.0		ng/L		01/20/20 16:37	01/21/20 20:21	1
Perfluoroheptanoic acid (PFHpA)	ND		2.0		ng/L		01/20/20 16:37	01/21/20 20:21	1
Perfluorooctanoic acid (PFOA)	ND		2.0		ng/L		01/20/20 16:37	01/21/20 20:21	1
Perfluorooctanesulfonic acid (PFOS)	ND		2.0		ng/L		01/20/20 16:37	01/21/20 20:21	1
Perfluorononanoic acid (PFNA)	ND		2.0		ng/L		01/20/20 16:37	01/21/20 20:21	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
18O2 PFHxS	*122*		*25 - 150*	*01/20/20 16:37*	*01/21/20 20:21*	*1*
13C4 PFHpA	*116*		*25 - 150*	*01/20/20 16:37*	*01/21/20 20:21*	*1*
13C4 PFOA	*111*		*70 - 130*	*01/20/20 16:37*	*01/21/20 20:21*	*1*
13C4 PFOS	*114*		*70 - 130*	*01/20/20 16:37*	*01/21/20 20:21*	*1*
13C5 PFNA	*107*		*25 - 150*	*01/20/20 16:37*	*01/21/20 20:21*	*1*
13C3 PFBS	*123*		*25 - 150*	*01/20/20 16:37*	*01/21/20 20:21*	*1*

Isotope Dilution Summary

Client: New York State D.E.C.
Job ID: 320-57888-1
Project/Site: Stewart ANG Base #336089 Kroll Well

Method: WS-LC-0025 Att1 - Fluorinated Alkyl Substances

Matrix: Water
Prep Type: Total/NA

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFHxS (25-150)	PFHpA (25-150)	PFOA (70-130)	PFOS (70-130)	PFNA (25-150)	3C3-PFBS (25-150)		
320-57888-1	Effluent	114	115	108	109	101	118		
320-57888-1 MS	Effluent	114	112	108	111	103	120		
320-57888-1 MSD	Effluent	120	120	115	109	107	121		
320-57888-2	Mid Point	119	115	112	110	105	117		
320-57888-3	Raw Water	118	119	109	112	103	121		
320-57888-4	Duplicate	112	111	103	103	101	116		
320-57888-5	A-25	115	112	113	108	105	120		
320-57888-6	A-50	118	120	111	104	105	123		
320-57888-7	A-75	120	116	108	111	101	121		
320-57888-8	B-25	122	119	112	111	108	122		
320-57888-9	B-50	112	114	110	108	106	121		
320-57888-10	B-75	122	116	111	114	107	123		
LCS 320-351957/2-A	Lab Control Sample	104	104	98	100	92	106		
LCS 320-352064/2-A	Lab Control Sample	107	107	107	106	101	116		
LCSD 320-352064/3-A	Lab Control Sample Dup	110	103	100	103	98	111		
MB 320-351957/1-A	Method Blank	116	117	109	114	103	117		
MB 320-352064/1-A	Method Blank	108	108	102	104	95	110		

Surrogate Legend

PFHxS = 18O2 PFHxS
PFHpA = 13C4 PFHpA
PFOA = 13C4 PFOA
PFOS = 13C4 PFOS
PFNA = 13C5 PFNA
13C3-PFBS = 13C3 PFBS

Method: WS-LC-0025 Att1 - Fluorinated Alkyl Substances

Lab Sample ID: MB 320-351957/1-A
Matrix: Water
Analysis Batch: 352015

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 351957

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanesulfonic acid (PFBS)	ND		2.0		ng/L		01/20/20 16:37	01/21/20 16:21	1
Perfluorohexanesulfonic acid (PFHxS)	ND		2.0		ng/L		01/20/20 16:37	01/21/20 16:21	1
Perfluoroheptanoic acid (PFHpA)	ND		2.0		ng/L		01/20/20 16:37	01/21/20 16:21	1
Perfluorooctanoic acid (PFOA)	ND		2.0		ng/L		01/20/20 16:37	01/21/20 16:21	1
Perfluorooctanesulfonic acid (PFOS)	ND		2.0		ng/L		01/20/20 16:37	01/21/20 16:21	1
Perfluorononanoic acid (PFNA)	ND		2.0		ng/L		01/20/20 16:37	01/21/20 16:21	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
18O2 PFHxS	*116*		*25 - 150*	*01/20/20 16:37*	*01/21/20 16:21*	*1*
13C4 PFHpA	*117*		*25 - 150*	*01/20/20 16:37*	*01/21/20 16:21*	*1*
13C4 PFOA	*109*		*70 - 130*	*01/20/20 16:37*	*01/21/20 16:21*	*1*
13C4 PFOS	*114*		*70 - 130*	*01/20/20 16:37*	*01/21/20 16:21*	*1*
13C5 PFNA	*103*		*25 - 150*	*01/20/20 16:37*	*01/21/20 16:21*	*1*
13C3 PFBS	*117*		*25 - 150*	*01/20/20 16:37*	*01/21/20 16:21*	*1*

Lab Sample ID: LCS 320-351957/2-A
Matrix: Water
Analysis Batch: 352015

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 351957

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorobutanesulfonic acid (PFBS)	17.7	14.0		ng/L		79	72 - 151
Perfluorohexanesulfonic acid (PFHxS)	18.2	14.5		ng/L		80	73 - 157
Perfluoroheptanoic acid (PFHpA)	20.0	16.3		ng/L		81	71 - 138
Perfluorooctanoic acid (PFOA)	20.0	16.0		ng/L		80	70 - 130
Perfluorooctanesulfonic acid (PFOS)	18.6	14.0		ng/L		75	70 - 130
Perfluorononanoic acid (PFNA)	20.0	16.0		ng/L		80	73 - 147

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
18O2 PFHxS	*104*		*25 - 150*
13C4 PFHpA	*104*		*25 - 150*
13C4 PFOA	*98*		*70 - 130*
13C4 PFOS	*100*		*70 - 130*
13C5 PFNA	*92*		*25 - 150*
13C3 PFBS	*106*		*25 - 150*

Lab Sample ID: 320-57888-1 MS
Matrix: Water
Analysis Batch: 352015

Client Sample ID: Effluent
Prep Type: Total/NA
Prep Batch: 351957

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorobutanesulfonic acid (PFBS)	ND		16.1	12.4		ng/L		77	72 - 151
Perfluorohexanesulfonic acid (PFHxS)	ND		16.6	13.1		ng/L		79	73 - 157
Perfluoroheptanoic acid (PFHpA)	ND		18.2	14.8		ng/L		81	71 - 138
Perfluorooctanoic acid (PFOA)	ND		18.2	14.2		ng/L		78	70 - 130

Method: WS-LC-0025 Att1 - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: 320-57888-1 MS
Matrix: Water
Analysis Batch: 352015

Client Sample ID: Effluent
Prep Type: Total/NA
Prep Batch: 351957

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorooctanesulfonic acid (PFOS)	ND	F1	16.9	11.4	F1	ng/L		67	70 - 130
Perfluorononanoic acid (PFNA)	ND	F1	18.2	13.3		ng/L		73	73 - 147

Isotope Dilution	*MS %Recovery*	*MS Qualifier*	*Limits*
18O2 PFHxS	*114*		*25 - 150*
13C4 PFHpA	*112*		*25 - 150*
13C4 PFOA	*108*		*70 - 130*
13C4 PFOS	*111*		*70 - 130*
13C5 PFNA	*103*		*25 - 150*
13C3 PFBS	*120*		*25 - 150*

Lab Sample ID: 320-57888-1 MSD
Matrix: Water
Analysis Batch: 352015

Client Sample ID: Effluent
Prep Type: Total/NA
Prep Batch: 351957

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluorobutanesulfonic acid (PFBS)	ND		16.7	12.9		ng/L		77	72 - 151	3	30
Perfluorohexanesulfonic acid (PFHxS)	ND		17.1	13.7		ng/L		80	73 - 157	4	30
Perfluoroheptanoic acid (PFHpA)	ND		18.8	14.2		ng/L		75	71 - 138	4	30
Perfluorooctanoic acid (PFOA)	ND		18.8	14.4		ng/L		76	70 - 130	1	20
Perfluorooctanesulfonic acid (PFOS)	ND	F1	17.5	12.2		ng/L		70	70 - 130	7	20
Perfluorononanoic acid (PFNA)	ND	F1	18.8	13.2	F1	ng/L		70	73 - 147	1	30

Isotope Dilution	*MSD %Recovery*	*MSD Qualifier*	*Limits*
18O2 PFHxS	*120*		*25 - 150*
13C4 PFHpA	*120*		*25 - 150*
13C4 PFOA	*115*		*70 - 130*
13C4 PFOS	*109*		*70 - 130*
13C5 PFNA	*107*		*25 - 150*
13C3 PFBS	*121*		*25 - 150*

Lab Sample ID: MB 320-352064/1-A
Matrix: Water
Analysis Batch: 352121

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 352064

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanesulfonic acid (PFBS)	ND		2.0		ng/L		01/21/20 11:58	01/22/20 01:53	1
Perfluorohexanesulfonic acid (PFHxS)	ND		2.0		ng/L		01/21/20 11:58	01/22/20 01:53	1
Perfluoroheptanoic acid (PFHpA)	ND		2.0		ng/L		01/21/20 11:58	01/22/20 01:53	1
Perfluorooctanoic acid (PFOA)	ND		2.0		ng/L		01/21/20 11:58	01/22/20 01:53	1
Perfluorooctanesulfonic acid (PFOS)	ND		2.0		ng/L		01/21/20 11:58	01/22/20 01:53	1
Perfluorononanoic acid (PFNA)	ND		2.0		ng/L		01/21/20 11:58	01/22/20 01:53	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
18O2 PFHxS	*108*		*25 - 150*	*01/21/20 11:58*	*01/22/20 01:53*	*1*
13C4 PFHpA	*108*		*25 - 150*	*01/21/20 11:58*	*01/22/20 01:53*	*1*

Method: WS-LC-0025 Att1 - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: MB 320-352064/1-A
Matrix: Water
Analysis Batch: 352121

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 352064

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFOA	102		70 - 130	01/21/20 11:58	01/22/20 01:53	1
13C4 PFOS	104		70 - 130	01/21/20 11:58	01/22/20 01:53	1
13C5 PFNA	95		25 - 150	01/21/20 11:58	01/22/20 01:53	1
13C3 PFBS	110		25 - 150	01/21/20 11:58	01/22/20 01:53	1

Lab Sample ID: LCS 320-352064/2-A
Matrix: Water
Analysis Batch: 352121

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 352064

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorobutanesulfonic acid (PFBS)	17.7	14.1		ng/L		80	72 - 151
Perfluorohexanesulfonic acid (PFHxS)	18.2	14.8		ng/L		81	73 - 157
Perfluoroheptanoic acid (PFHpA)	20.0	17.0		ng/L		85	71 - 138
Perfluorooctanoic acid (PFOA)	20.0	17.7		ng/L		88	70 - 130
Perfluorooctanesulfonic acid (PFOS)	18.6	13.8		ng/L		75	70 - 130
Perfluorononanoic acid (PFNA)	20.0	15.0		ng/L		75	73 - 147

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
18O2 PFHxS	107		25 - 150
13C4 PFHpA	107		25 - 150
13C4 PFOA	107		70 - 130
13C4 PFOS	106		70 - 130
13C5 PFNA	101		25 - 150
13C3 PFBS	116		25 - 150

Lab Sample ID: LCSD 320-352064/3-A
Matrix: Water
Analysis Batch: 352121

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 352064

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluorobutanesulfonic acid (PFBS)	17.7	15.6		ng/L		88	72 - 151	10	30
Perfluorohexanesulfonic acid (PFHxS)	18.2	16.0		ng/L		88	73 - 157	8	30
Perfluoroheptanoic acid (PFHpA)	20.0	17.7		ng/L		89	71 - 138	4	30
Perfluorooctanoic acid (PFOA)	20.0	17.1		ng/L		86	70 - 130	3	20
Perfluorooctanesulfonic acid (PFOS)	18.6	14.7		ng/L		79	70 - 130	6	20
Perfluorononanoic acid (PFNA)	20.0	15.5		ng/L		78	73 - 147	3	30

Isotope Dilution	LCSD %Recovery	LCSD Qualifier	Limits
18O2 PFHxS	110		25 - 150
13C4 PFHpA	103		25 - 150
13C4 PFOA	100		70 - 130
13C4 PFOS	103		70 - 130
13C5 PFNA	98		25 - 150
13C3 PFBS	111		25 - 150

LCMS

Prep Batch: 351957

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-57888-1	Effluent	Total/NA	Water	PFAS Prep	
320-57888-2	Mid Point	Total/NA	Water	PFAS Prep	
320-57888-3	Raw Water	Total/NA	Water	PFAS Prep	
320-57888-5	A-25	Total/NA	Water	PFAS Prep	
320-57888-6	A-50	Total/NA	Water	PFAS Prep	
320-57888-7	A-75	Total/NA	Water	PFAS Prep	
320-57888-8	B-25	Total/NA	Water	PFAS Prep	
320-57888-9	B-50	Total/NA	Water	PFAS Prep	
320-57888-10	B-75	Total/NA	Water	PFAS Prep	
MB 320-351957/1-A	Method Blank	Total/NA	Water	PFAS Prep	
LCS 320-351957/2-A	Lab Control Sample	Total/NA	Water	PFAS Prep	
320-57888-1 MS	Effluent	Total/NA	Water	PFAS Prep	
320-57888-1 MSD	Effluent	Total/NA	Water	PFAS Prep	

Analysis Batch: 352015

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-57888-1	Effluent	Total/NA	Water	WS-LC-0025 Att1	351957
320-57888-2	Mid Point	Total/NA	Water	WS-LC-0025 Att1	351957
320-57888-3	Raw Water	Total/NA	Water	WS-LC-0025 Att1	351957
320-57888-5	A-25	Total/NA	Water	WS-LC-0025 Att1	351957
320-57888-6	A-50	Total/NA	Water	WS-LC-0025 Att1	351957
320-57888-7	A-75	Total/NA	Water	WS-LC-0025 Att1	351957
320-57888-8	B-25	Total/NA	Water	WS-LC-0025 Att1	351957
320-57888-9	B-50	Total/NA	Water	WS-LC-0025 Att1	351957
320-57888-10	B-75	Total/NA	Water	WS-LC-0025 Att1	351957
MB 320-351957/1-A	Method Blank	Total/NA	Water	WS-LC-0025 Att1	351957
LCS 320-351957/2-A	Lab Control Sample	Total/NA	Water	WS-LC-0025 Att1	351957
320-57888-1 MS	Effluent	Total/NA	Water	WS-LC-0025 Att1	351957
320-57888-1 MSD	Effluent	Total/NA	Water	WS-LC-0025 Att1	351957

Prep Batch: 352064

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-57888-4	Duplicate	Total/NA	Water	PFAS Prep	
MB 320-352064/1-A	Method Blank	Total/NA	Water	PFAS Prep	
LCS 320-352064/2-A	Lab Control Sample	Total/NA	Water	PFAS Prep	
LCSD 320-352064/3-A	Lab Control Sample Dup	Total/NA	Water	PFAS Prep	

Analysis Batch: 352121

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-57888-4	Duplicate	Total/NA	Water	WS-LC-0025 Att1	352064

LCMS (Continued)

Analysis Batch: 352121 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 320-352064/1-A	Method Blank	Total/NA	Water	WS-LC-0025 Att1	352064
LCS 320-352064/2-A	Lab Control Sample	Total/NA	Water	WS-LC-0025 Att1	352064
LCSD 320-352064/3-A	Lab Control Sample Dup	Total/NA	Water	WS-LC-0025 Att1	352064

Lab Chronicle

Client: New York State D.E.C.
Job ID: 320-57888-1
Project/Site: Stewart ANG Base #336089 Kroll Well

Client Sample ID: Effluent
Lab Sample ID: 320-57888-1
Date Collected: 01/17/20 11:00
Matrix: Water
Date Received: 01/18/20 09:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PFAS Prep			1.00 mL	1.66 mL	351957	01/20/20 16:37	LN	TAL SAC
Total/NA	Analysis	WS-LC-0025 Att1		1			352015	01/21/20 16:58	P1N	TAL SAC

Client Sample ID: Mid Point
Lab Sample ID: 320-57888-2
Date Collected: 01/17/20 11:30
Matrix: Water
Date Received: 01/18/20 09:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PFAS Prep			1.00 mL	1.66 mL	351957	01/20/20 16:37	LN	TAL SAC
Total/NA	Analysis	WS-LC-0025 Att1		1			352015	01/21/20 17:53	P1N	TAL SAC

Client Sample ID: Raw Water
Lab Sample ID: 320-57888-3
Date Collected: 01/17/20 11:50
Matrix: Water
Date Received: 01/18/20 09:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PFAS Prep			1.00 mL	1.66 mL	351957	01/20/20 16:37	LN	TAL SAC
Total/NA	Analysis	WS-LC-0025 Att1		1			352015	01/21/20 18:12	P1N	TAL SAC

Client Sample ID: Duplicate
Lab Sample ID: 320-57888-4
Date Collected: 01/17/20 00:00
Matrix: Water
Date Received: 01/18/20 09:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PFAS Prep			1.00 mL	1.66 mL	352064	01/21/20 11:58	SAD	TAL SAC
Total/NA	Analysis	WS-LC-0025 Att1		1			352121	01/22/20 02:48	MNV	TAL SAC

Client Sample ID: A-25
Lab Sample ID: 320-57888-5
Date Collected: 01/17/20 11:45
Matrix: Water
Date Received: 01/18/20 09:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PFAS Prep			1.00 mL	1.66 mL	351957	01/20/20 16:37	LN	TAL SAC
Total/NA	Analysis	WS-LC-0025 Att1		1			352015	01/21/20 18:30	P1N	TAL SAC

Client Sample ID: A-50
Lab Sample ID: 320-57888-6
Date Collected: 01/17/20 11:40
Matrix: Water
Date Received: 01/18/20 09:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PFAS Prep			1.00 mL	1.66 mL	351957	01/20/20 16:37	LN	TAL SAC
Total/NA	Analysis	WS-LC-0025 Att1		1			352015	01/21/20 18:49	P1N	TAL SAC

Lab Chronicle

Client: New York State D.E.C.
Job ID: 320-57888-1
Project/Site: Stewart ANG Base #336089 Kroll Well

Client Sample ID: A-75
Lab Sample ID: 320-57888-7
Date Collected: 01/17/20 11:35
Matrix: Water
Date Received: 01/18/20 09:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PFAS Prep			1.00 mL	1.66 mL	351957	01/20/20 16:37	LN	TAL SAC
Total/NA	Analysis	WS-LC-0025 Att1		1			352015	01/21/20 19:07	P1N	TAL SAC

Client Sample ID: B-25
Lab Sample ID: 320-57888-8
Date Collected: 01/17/20 11:25
Matrix: Water
Date Received: 01/18/20 09:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PFAS Prep			1.00 mL	1.66 mL	351957	01/20/20 16:37	LN	TAL SAC
Total/NA	Analysis	WS-LC-0025 Att1		1			352015	01/21/20 19:44	P1N	TAL SAC

Client Sample ID: B-50
Lab Sample ID: 320-57888-9
Date Collected: 01/17/20 11:20
Matrix: Water
Date Received: 01/18/20 09:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PFAS Prep			1.00 mL	1.66 mL	351957	01/20/20 16:37	LN	TAL SAC
Total/NA	Analysis	WS-LC-0025 Att1		1			352015	01/21/20 20:02	P1N	TAL SAC

Client Sample ID: B-75
Lab Sample ID: 320-57888-10
Date Collected: 01/17/20 11:15
Matrix: Water
Date Received: 01/18/20 09:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PFAS Prep			1.00 mL	1.66 mL	351957	01/20/20 16:37	LN	TAL SAC
Total/NA	Analysis	WS-LC-0025 Att1		1			352015	01/21/20 20:21	P1N	TAL SAC

Laboratory References:

TAL SAC = Eurofins TestAmerica, Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Accreditation/Certification Summary

Client: New York State D.E.C. Job ID: 320-57888-1
Project/Site: Stewart ANG Base #336089 Kroll Well

Laboratory: Eurofins TestAmerica, Sacramento

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
New York	NELAP	11666	04-01-20

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
WS-LC-0025 Att1	PFAS Prep	Water	Perfluorobutanesulfonic acid (PFBS)
WS-LC-0025 Att1	PFAS Prep	Water	Perfluoroheptanoic acid (PFHpA)
WS-LC-0025 Att1	PFAS Prep	Water	Perfluorohexanesulfonic acid (PFHxS)
WS-LC-0025 Att1	PFAS Prep	Water	Perfluorononanoic acid (PFNA)

Laboratory: Eurofins TestAmerica, Buffalo

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
New York	NELAP	10026	04-01-20 *

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: New York State D.E.C.
Job ID: 320-57888-1
Project/Site: Stewart ANG Base #336089 Kroll Well

Method	Method Description	Protocol	Laboratory
WS-LC-0025 Att1	Fluorinated Alkyl Substances	TAL-SAC	TAL SAC
PFAS Prep	Preparation, Direct Inject PFAS	TAL-SAC	TAL SAC

Protocol References:

TAL-SAC = TestAmerica Laboratories, West Sacramento, Facility Standard Operating Procedure.

Laboratory References:

TAL SAC = Eurofins TestAmerica, Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Sample Summary

Client: New York State D.E.C.
Job ID: 320-57888-1
Project/Site: Stewart ANG Base #336089 Kroll Well

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
320-57888-1	Effluent	Water	01/17/20 11:00	01/18/20 09:50	
320-57888-2	Mid Point	Water	01/17/20 11:30	01/18/20 09:50	
320-57888-3	Raw Water	Water	01/17/20 11:50	01/18/20 09:50	
320-57888-4	Duplicate	Water	01/17/20 00:00	01/18/20 09:50	
320-57888-5	A-25	Water	01/17/20 11:45	01/18/20 09:50	
320-57888-6	A-50	Water	01/17/20 11:40	01/18/20 09:50	
320-57888-7	A-75	Water	01/17/20 11:35	01/18/20 09:50	
320-57888-8	B-25	Water	01/17/20 11:25	01/18/20 09:50	
320-57888-9	B-50	Water	01/17/20 11:20	01/18/20 09:50	
320-57888-10	B-75	Water	01/17/20 11:15	01/18/20 09:50	

Eurofins TestAmerica, Sacramento
880 Riverside Parkway
West Sacramento, CA 95605
Phone: 916-373-5600 Fax: 916-372-1059

Chain of Custody Record

Albany #224

eurofins | Environment Testing TestAmerica

Client Information	Sampler: Patrick Sokolaski	Lab PM: Stone, Judy L	Carrier Tracking No(s):	COC No: 480-140158-31042.1
Client Contact: Stephen Phelps	Phone: 518-858-0595	E-Mail: judy.stone@testamericainc.com		Page: Page 1 of 1
Company: Precision Environmental Services Inc.				Job #:
Address: 831 State Route 67 Ste 38	Due Date Requested:			
City: Ballston Spa	TAT Requested (days): * 3 Day			
State, Zip: NY, 12020				
Phone: 518-402-9813(Tel)	PO #: Callout ID: 137132			
Email: sphelps@pesnyinc.com	WO #:			
Project Name: Stewart ANG Base #336089 Kroll Well	Project #: 48020467			
Site:	SSOW#:			

Analysis Requested

320-57888 Chain of Custody

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (Wewater, Ssolid, Owaste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	PFAS_DI_DW - PFAS, UCMR List - Sacramento	Total Number of containers	Special Instructions/Note:
			Preservation Code:				N		
Effluent	1-17-20	1100	Grab	Water		Yes	X	6	
Mid Point		1130		Water				2	
Raw Water		1150		Water				2	
Duplicate				Water				2	
A-25		1145		Water				2	
A-50		1140		Water				2	
A-75		1135		Water				2	
B-25		1125		Water				2	
B-50		1120		Water				2	
B-75		1115		Water				2	
~~MS~~				Water					

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☒ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify) Cat B Deliverables

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by	Date/Time	Company	Received by	Date/Time	Company
		1-17-20 / 1430	PES	Karl Fadu	1-17-20 1430	Eurofins
*	Relinquished by:	Date/Time:	Company	Received by:	Date/Time: 1/18/20 950	Company: ETAS
	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 0-3

Ver: 01/16/2019

* COC Not Relinquished. DH 1/19/20

Login Sample Receipt Checklist

Client: New York State D.E.C. Job Number: 320-57888-1

Login Number: 57888 **List Source: Eurofins TestAmerica, Sacramento**
List Number: 1
Creator: Thompson, Sarah W

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, is intact.	True	1138142
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time (Excluding tests with immediate HTs)..	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Sampling Company provided.	True	
Samples received within 48 hours of sampling.	True	
Samples requiring field filtration have been filtered in the field.	True	
Chlorine Residual checked.	N/A	