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ANALYTICAL REPORT

Eurofins TestAmerica, Buffalo
10 Hazelwood Drive
Amherst, NY 14228-2298
Tel: (716)691-2600

Laboratory Job ID: 480-156997-2
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

Joseph V. Giacomazza

Authorized for release by:
8/6/2019 5:24:25 PM
Joe Giacomazza, Project Management Assistant II
joe.giacomazza@testamericainc.com

Designee for

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

Kroll Well Test Results.
Samples collected 07/30/2019.

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.

Joseph V. Giacomazza

Joe Giacomazza
Project Management Assistant II
8/6/2019 5:24:25 PM

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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)

Case Narrative

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

Job ID: 480-156997-2

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Laboratory: Eurofins TestAmerica, Buffalo

Narrative

Job Narrative
480-156997-2

Receipt
The samples were received on 7/31/2019 8:00 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 3.1° C.

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

Organic Prep
Method(s) 3535: The following sample was observed to contain sediment prior to extraction: EFFLUENT (480-156997-3[MS]).
Method Code: 3535 PFC
preparation batch 320-312023

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: 480-156997-2

Client Sample ID: INFLUENT — Lab Sample ID: 480-156997-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	2.1		1.9		ng/L	1		537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	2.7		1.9		ng/L	1		537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	2.7		1.9		ng/L	1		537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	2.6		1.9		ng/L	1		537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	7.6		1.9		ng/L	1		537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	6.8		1.9		ng/L	1		537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	2.2		1.9		ng/L	1		537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	13		1.9		ng/L	1		537 (modified)	Total/NA

Client Sample ID: MID — Lab Sample ID: 480-156997-2

No Detections.

Client Sample ID: EFFLUENT — Lab Sample ID: 480-156997-3

No Detections.

Client Sample ID: DUPLICATE — Lab Sample ID: 480-156997-4

No Detections.

Client Sample ID: FIELD BLANK — Lab Sample ID: 480-156997-5

No Detections.

THESE TEST RESULTS SHOW CONTAMINANT LEVELS **BEFORE** ANY TREATMENT

This Detection Summary does not include radiochemical test results.

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

Job ID: 480-156997-2

Client Sample ID: INFLUENT
Date Collected: 07/30/19 13:30
Date Received: 07/31/19 08:00

Lab Sample ID: 480-156997-1
Matrix: Water

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**2.1**		1.9		ng/L		08/02/19 06:19	08/03/19 03:44	1
Perfluoropentanoic acid (PFPeA)	**2.7**		1.9		ng/L		08/02/19 06:19	08/03/19 03:44	1
Perfluorohexanoic acid (PFHxA)	**2.7**		1.9		ng/L		08/02/19 06:19	08/03/19 03:44	1
Perfluoroheptanoic acid (PFHpA)	**2.6**		1.9		ng/L		08/02/19 06:19	08/03/19 03:44	1
Perfluorooctanoic acid (PFOA)	**7.6**		1.9		ng/L		08/02/19 06:19	08/03/19 03:44	1
Perfluorononanoic acid (PFNA)	ND		1.9		ng/L		08/02/19 06:19	08/03/19 03:44	1
Perfluorodecanoic acid (PFDA)	ND		1.9		ng/L		08/02/19 06:19	08/03/19 03:44	1
Perfluoroundecanoic acid (PFUnA)	ND		1.9		ng/L		08/02/19 06:19	08/03/19 03:44	1
Perfluorododecanoic acid (PFDoA)	ND		1.9		ng/L		08/02/19 06:19	08/03/19 03:44	1
Perfluorotridecanoic acid (PFTriA)	ND		1.9		ng/L		08/02/19 06:19	08/03/19 03:44	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.9		ng/L		08/02/19 06:19	08/03/19 03:44	1
Perfluorobutanesulfonic acid (PFBS)	**6.8**		1.9		ng/L		08/02/19 06:19	08/03/19 03:44	1
Perfluorohexanesulfonic acid (PFHxS)	**2.2**		1.9		ng/L		08/02/19 06:19	08/03/19 03:44	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		1.9		ng/L		08/02/19 06:19	08/03/19 03:44	1
Perfluorooctanesulfonic acid (PFOS)	**13**		1.9		ng/L		08/02/19 06:19	08/03/19 03:44	1
Perfluorodecanesulfonic acid (PFDS)	ND		1.9		ng/L		08/02/19 06:19	08/03/19 03:44	1
Perfluorooctanesulfonamide (FOSA)	ND		1.9		ng/L		08/02/19 06:19	08/03/19 03:44	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		19		ng/L		08/02/19 06:19	08/03/19 03:44	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		19		ng/L		08/02/19 06:19	08/03/19 03:44	1
6:2 FTS	ND		19		ng/L		08/02/19 06:19	08/03/19 03:44	1
8:2 FTS	ND		19		ng/L		08/02/19 06:19	08/03/19 03:44	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*80*		*25 - 150*	*08/02/19 06:19*	*08/03/19 03:44*	*1*
13C5 PFPeA	*98*		*25 - 150*	*08/02/19 06:19*	*08/03/19 03:44*	*1*
13C2 PFHxA	*100*		*25 - 150*	*08/02/19 06:19*	*08/03/19 03:44*	*1*
13C4 PFHpA	*103*		*25 - 150*	*08/02/19 06:19*	*08/03/19 03:44*	*1*
13C4 PFOA	*102*		*25 - 150*	*08/02/19 06:19*	*08/03/19 03:44*	*1*
13C5 PFNA	*102*		*25 - 150*	*08/02/19 06:19*	*08/03/19 03:44*	*1*
13C2 PFDA	*109*		*25 - 150*	*08/02/19 06:19*	*08/03/19 03:44*	*1*
13C2 PFUnA	*100*		*25 - 150*	*08/02/19 06:19*	*08/03/19 03:44*	*1*
13C2 PFDoA	*101*		*25 - 150*	*08/02/19 06:19*	*08/03/19 03:44*	*1*
13C2 PFTeDA	*136*		*25 - 150*	*08/02/19 06:19*	*08/03/19 03:44*	*1*
13C3 PFBS	*102*		*25 - 150*	*08/02/19 06:19*	*08/03/19 03:44*	*1*
18O2 PFHxS	*105*		*25 - 150*	*08/02/19 06:19*	*08/03/19 03:44*	*1*
13C4 PFOS	*97*		*25 - 150*	*08/02/19 06:19*	*08/03/19 03:44*	*1*
13C8 FOSA	*96*		*25 - 150*	*08/02/19 06:19*	*08/03/19 03:44*	*1*
d3-NMeFOSAA	*92*		*25 - 150*	*08/02/19 06:19*	*08/03/19 03:44*	*1*
d5-NEtFOSAA	*90*		*25 - 150*	*08/02/19 06:19*	*08/03/19 03:44*	*1*
M2-6:2 FTS	*108*		*25 - 150*	*08/02/19 06:19*	*08/03/19 03:44*	*1*
M2-8:2 FTS	*115*		*25 - 150*	*08/02/19 06:19*	*08/03/19 03:44*	*1*

THESE TEST RESULTS SHOW CONTAMINANT LEVELS **BEFORE** ANY TREATMENT

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

Job ID: 480-156997-2

Client Sample ID: MID
Date Collected: 07/30/19 13:20
Date Received: 07/31/19 08:00

Lab Sample ID: 480-156997-2
Matrix: Water

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	ND		1.9		ng/L		08/02/19 06:19	08/03/19 03:52	1
Perfluoropentanoic acid (PFPeA)	ND		1.9		ng/L		08/02/19 06:19	08/03/19 03:52	1
Perfluorohexanoic acid (PFHxA)	ND		1.9		ng/L		08/02/19 06:19	08/03/19 03:52	1
Perfluoroheptanoic acid (PFHpA)	ND		1.9		ng/L		08/02/19 06:19	08/03/19 03:52	1
Perfluorooctanoic acid (PFOA)	ND		1.9		ng/L		08/02/19 06:19	08/03/19 03:52	1
Perfluorononanoic acid (PFNA)	ND		1.9		ng/L		08/02/19 06:19	08/03/19 03:52	1
Perfluorodecanoic acid (PFDA)	ND		1.9		ng/L		08/02/19 06:19	08/03/19 03:52	1
Perfluoroundecanoic acid (PFUnA)	ND		1.9		ng/L		08/02/19 06:19	08/03/19 03:52	1
Perfluorododecanoic acid (PFDoA)	ND		1.9		ng/L		08/02/19 06:19	08/03/19 03:52	1
Perfluorotridecanoic acid (PFTriA)	ND		1.9		ng/L		08/02/19 06:19	08/03/19 03:52	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.9		ng/L		08/02/19 06:19	08/03/19 03:52	1
Perfluorobutanesulfonic acid (PFBS)	ND		1.9		ng/L		08/02/19 06:19	08/03/19 03:52	1
Perfluorohexanesulfonic acid (PFHxS)	ND		1.9		ng/L		08/02/19 06:19	08/03/19 03:52	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		1.9		ng/L		08/02/19 06:19	08/03/19 03:52	1
Perfluorooctanesulfonic acid (PFOS)	ND		1.9		ng/L		08/02/19 06:19	08/03/19 03:52	1
Perfluorodecanesulfonic acid (PFDS)	ND		1.9		ng/L		08/02/19 06:19	08/03/19 03:52	1
Perfluorooctanesulfonamide (FOSA)	ND		1.9		ng/L		08/02/19 06:19	08/03/19 03:52	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		19		ng/L		08/02/19 06:19	08/03/19 03:52	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		19		ng/L		08/02/19 06:19	08/03/19 03:52	1
6:2 FTS	ND		19		ng/L		08/02/19 06:19	08/03/19 03:52	1
8:2 FTS	ND		19		ng/L		08/02/19 06:19	08/03/19 03:52	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*98*		*25 - 150*	*08/02/19 06:19*	*08/03/19 03:52*	*1*
13C5 PFPeA	*101*		*25 - 150*	*08/02/19 06:19*	*08/03/19 03:52*	*1*
13C2 PFHxA	*100*		*25 - 150*	*08/02/19 06:19*	*08/03/19 03:52*	*1*
13C4 PFHpA	*103*		*25 - 150*	*08/02/19 06:19*	*08/03/19 03:52*	*1*
13C4 PFOA	*108*		*25 - 150*	*08/02/19 06:19*	*08/03/19 03:52*	*1*
13C5 PFNA	*111*		*25 - 150*	*08/02/19 06:19*	*08/03/19 03:52*	*1*
13C2 PFDA	*112*		*25 - 150*	*08/02/19 06:19*	*08/03/19 03:52*	*1*
13C2 PFUnA	*106*		*25 - 150*	*08/02/19 06:19*	*08/03/19 03:52*	*1*
13C2 PFDoA	*109*		*25 - 150*	*08/02/19 06:19*	*08/03/19 03:52*	*1*
13C2 PFTeDA	*127*		*25 - 150*	*08/02/19 06:19*	*08/03/19 03:52*	*1*
13C3 PFBS	*110*		*25 - 150*	*08/02/19 06:19*	*08/03/19 03:52*	*1*
18O2 PFHxS	*106*		*25 - 150*	*08/02/19 06:19*	*08/03/19 03:52*	*1*
13C4 PFOS	*102*		*25 - 150*	*08/02/19 06:19*	*08/03/19 03:52*	*1*
13C8 FOSA	*96*		*25 - 150*	*08/02/19 06:19*	*08/03/19 03:52*	*1*
d3-NMeFOSAA	*92*		*25 - 150*	*08/02/19 06:19*	*08/03/19 03:52*	*1*
d5-NEtFOSAA	*94*		*25 - 150*	*08/02/19 06:19*	*08/03/19 03:52*	*1*
M2-6:2 FTS	*110*		*25 - 150*	*08/02/19 06:19*	*08/03/19 03:52*	*1*
M2-8:2 FTS	*106*		*25 - 150*	*08/02/19 06:19*	*08/03/19 03:52*	*1*

THESE RESULTS SHOW CONTAMINANT LEVELS **AFTER** TREATMENT THROUGH THE FIRST GRANULAR ACTIVATED CARBON (GAC) FILTER. RESULTS ARE NON-DETECT (ND), MEANING NO CONTAMINANTS WERE DETECTED.

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

Job ID: 480-156997-2

Client Sample ID: EFFLUENT
Date Collected: 07/30/19 13:05
Date Received: 07/31/19 08:00

Lab Sample ID: 480-156997-3
Matrix: Water

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	ND		1.9		ng/L		08/02/19 06:19	08/03/19 03:59	1
Perfluoropentanoic acid (PFPeA)	ND		1.9		ng/L		08/02/19 06:19	08/03/19 03:59	1
Perfluorohexanoic acid (PFHxA)	ND		1.9		ng/L		08/02/19 06:19	08/03/19 03:59	1
Perfluoroheptanoic acid (PFHpA)	ND		1.9		ng/L		08/02/19 06:19	08/03/19 03:59	1
Perfluorooctanoic acid (PFOA)	ND		1.9		ng/L		08/02/19 06:19	08/03/19 03:59	1
Perfluorononanoic acid (PFNA)	ND		1.9		ng/L		08/02/19 06:19	08/03/19 03:59	1
Perfluorodecanoic acid (PFDA)	ND		1.9		ng/L		08/02/19 06:19	08/03/19 03:59	1
Perfluoroundecanoic acid (PFUnA)	ND		1.9		ng/L		08/02/19 06:19	08/03/19 03:59	1
Perfluorododecanoic acid (PFDoA)	ND		1.9		ng/L		08/02/19 06:19	08/03/19 03:59	1
Perfluorotridecanoic acid (PFTriA)	ND		1.9		ng/L		08/02/19 06:19	08/03/19 03:59	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.9		ng/L		08/02/19 06:19	08/03/19 03:59	1
Perfluorobutanesulfonic acid (PFBS)	ND		1.9		ng/L		08/02/19 06:19	08/03/19 03:59	1
Perfluorohexanesulfonic acid (PFHxS)	ND		1.9		ng/L		08/02/19 06:19	08/03/19 03:59	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		1.9		ng/L		08/02/19 06:19	08/03/19 03:59	1
Perfluorooctanesulfonic acid (PFOS)	ND		1.9		ng/L		08/02/19 06:19	08/03/19 03:59	1
Perfluorodecanesulfonic acid (PFDS)	ND		1.9		ng/L		08/02/19 06:19	08/03/19 03:59	1
Perfluorooctanesulfonamide (FOSA)	ND		1.9		ng/L		08/02/19 06:19	08/03/19 03:59	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		19		ng/L		08/02/19 06:19	08/03/19 03:59	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		19		ng/L		08/02/19 06:19	08/03/19 03:59	1
6:2 FTS	ND		19		ng/L		08/02/19 06:19	08/03/19 03:59	1
8:2 FTS	ND		19		ng/L		08/02/19 06:19	08/03/19 03:59	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*93*		*25 - 150*	*08/02/19 06:19*	*08/03/19 03:59*	*1*
13C5 PFPeA	*94*		*25 - 150*	*08/02/19 06:19*	*08/03/19 03:59*	*1*
13C2 PFHxA	*99*		*25 - 150*	*08/02/19 06:19*	*08/03/19 03:59*	*1*
13C4 PFHpA	*101*		*25 - 150*	*08/02/19 06:19*	*08/03/19 03:59*	*1*
13C4 PFOA	*100*		*25 - 150*	*08/02/19 06:19*	*08/03/19 03:59*	*1*
13C5 PFNA	*101*		*25 - 150*	*08/02/19 06:19*	*08/03/19 03:59*	*1*
13C2 PFDA	*101*		*25 - 150*	*08/02/19 06:19*	*08/03/19 03:59*	*1*
13C2 PFUnA	*100*		*25 - 150*	*08/02/19 06:19*	*08/03/19 03:59*	*1*
13C2 PFDoA	*98*		*25 - 150*	*08/02/19 06:19*	*08/03/19 03:59*	*1*
13C2 PFTeDA	*113*		*25 - 150*	*08/02/19 06:19*	*08/03/19 03:59*	*1*
13C3 PFBS	*99*		*25 - 150*	*08/02/19 06:19*	*08/03/19 03:59*	*1*
18O2 PFHxS	*100*		*25 - 150*	*08/02/19 06:19*	*08/03/19 03:59*	*1*
13C4 PFOS	*94*		*25 - 150*	*08/02/19 06:19*	*08/03/19 03:59*	*1*
13C8 FOSA	*93*		*25 - 150*	*08/02/19 06:19*	*08/03/19 03:59*	*1*
d3-NMeFOSAA	*92*		*25 - 150*	*08/02/19 06:19*	*08/03/19 03:59*	*1*
d5-NEtFOSAA	*91*		*25 - 150*	*08/02/19 06:19*	*08/03/19 03:59*	*1*
M2-6:2 FTS	*101*		*25 - 150*	*08/02/19 06:19*	*08/03/19 03:59*	*1*
M2-8:2 FTS	*103*		*25 - 150*	*08/02/19 06:19*	*08/03/19 03:59*	*1*

THESE RESULTS SHOW CONTAMINANT LEVELS **AFTER** TREATMENT THROUGH THE **SECOND** GRANULAR ACTIVATED CARBON (GAC) FILTER. THIS IS THE WATER THAT NEXT ENTERS THE DISTRIBUTION SYSTEM FOR CUSTOMER USE. RESULTS ARE NON-DETECT (ND), MEANING NO CONTAMINANTS WERE DETECTED.

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

Job ID: 480-156997-2

Client Sample ID: DUPLICATE
Date Collected: 07/30/19 13:40
Date Received: 07/31/19 08:00

Lab Sample ID: 480-156997-4
Matrix: Water

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	ND		1.9		ng/L		08/02/19 06:19	08/03/19 04:23	1
Perfluoropentanoic acid (PFPeA)	ND		1.9		ng/L		08/02/19 06:19	08/03/19 04:23	1
Perfluorohexanoic acid (PFHxA)	ND		1.9		ng/L		08/02/19 06:19	08/03/19 04:23	1
Perfluoroheptanoic acid (PFHpA)	ND		1.9		ng/L		08/02/19 06:19	08/03/19 04:23	1
Perfluorooctanoic acid (PFOA)	ND		1.9		ng/L		08/02/19 06:19	08/03/19 04:23	1
Perfluorononanoic acid (PFNA)	ND		1.9		ng/L		08/02/19 06:19	08/03/19 04:23	1
Perfluorodecanoic acid (PFDA)	ND		1.9		ng/L		08/02/19 06:19	08/03/19 04:23	1
Perfluoroundecanoic acid (PFUnA)	ND		1.9		ng/L		08/02/19 06:19	08/03/19 04:23	1
Perfluorododecanoic acid (PFDoA)	ND		1.9		ng/L		08/02/19 06:19	08/03/19 04:23	1
Perfluorotridecanoic acid (PFTriA)	ND		1.9		ng/L		08/02/19 06:19	08/03/19 04:23	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.9		ng/L		08/02/19 06:19	08/03/19 04:23	1
Perfluorobutanesulfonic acid (PFBS)	ND		1.9		ng/L		08/02/19 06:19	08/03/19 04:23	1
Perfluorohexanesulfonic acid (PFHxS)	ND		1.9		ng/L		08/02/19 06:19	08/03/19 04:23	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		1.9		ng/L		08/02/19 06:19	08/03/19 04:23	1
Perfluorooctanesulfonic acid (PFOS)	ND		1.9		ng/L		08/02/19 06:19	08/03/19 04:23	1
Perfluorodecanesulfonic acid (PFDS)	ND		1.9		ng/L		08/02/19 06:19	08/03/19 04:23	1
Perfluorooctanesulfonamide (FOSA)	ND		1.9		ng/L		08/02/19 06:19	08/03/19 04:23	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		19		ng/L		08/02/19 06:19	08/03/19 04:23	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		19		ng/L		08/02/19 06:19	08/03/19 04:23	1
6:2 FTS	ND		19		ng/L		08/02/19 06:19	08/03/19 04:23	1
8:2 FTS	ND		19		ng/L		08/02/19 06:19	08/03/19 04:23	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*96*		*25 - 150*	*08/02/19 06:19*	*08/03/19 04:23*	*1*
13C5 PFPeA	*100*		*25 - 150*	*08/02/19 06:19*	*08/03/19 04:23*	*1*
13C2 PFHxA	*97*		*25 - 150*	*08/02/19 06:19*	*08/03/19 04:23*	*1*
13C4 PFHpA	*101*		*25 - 150*	*08/02/19 06:19*	*08/03/19 04:23*	*1*
13C4 PFOA	*103*		*25 - 150*	*08/02/19 06:19*	*08/03/19 04:23*	*1*
13C5 PFNA	*106*		*25 - 150*	*08/02/19 06:19*	*08/03/19 04:23*	*1*
13C2 PFDA	*107*		*25 - 150*	*08/02/19 06:19*	*08/03/19 04:23*	*1*
13C2 PFUnA	*101*		*25 - 150*	*08/02/19 06:19*	*08/03/19 04:23*	*1*
13C2 PFDoA	*105*		*25 - 150*	*08/02/19 06:19*	*08/03/19 04:23*	*1*
13C2 PFTeDA	*124*		*25 - 150*	*08/02/19 06:19*	*08/03/19 04:23*	*1*
13C3 PFBS	*100*		*25 - 150*	*08/02/19 06:19*	*08/03/19 04:23*	*1*
18O2 PFHxS	*101*		*25 - 150*	*08/02/19 06:19*	*08/03/19 04:23*	*1*
13C4 PFOS	*97*		*25 - 150*	*08/02/19 06:19*	*08/03/19 04:23*	*1*
13C8 FOSA	*93*		*25 - 150*	*08/02/19 06:19*	*08/03/19 04:23*	*1*
d3-NMeFOSAA	*93*		*25 - 150*	*08/02/19 06:19*	*08/03/19 04:23*	*1*
d5-NEtFOSAA	*95*		*25 - 150*	*08/02/19 06:19*	*08/03/19 04:23*	*1*
M2-6:2 FTS	*106*		*25 - 150*	*08/02/19 06:19*	*08/03/19 04:23*	*1*
M2-8:2 FTS	*106*		*25 - 150*	*08/02/19 06:19*	*08/03/19 04:23*	*1*

THE RESULTS SHOW CONTAMINANT LEVELS ON A SECOND/DUPLICATE SAMPLE OF WATER TAKEN **AFTER** TREATMENT THROUGH THE **SECOND** GRANULAR ACTIVATED CARBON (GAC) FILTER. RESULTS ARE NON-DETECT (ND), MEANING NO CONTAMINANTS WERE DETECTED.

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

Job ID: 480-156997-2

Client Sample ID: FIELD BLANK
Date Collected: 07/30/19 13:40
Date Received: 07/31/19 08:00

Lab Sample ID: 480-156997-5
Matrix: Water

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	ND		1.9		ng/L		08/02/19 06:19	08/03/19 04:31	1
Perfluoropentanoic acid (PFPeA)	ND		1.9		ng/L		08/02/19 06:19	08/03/19 04:31	1
Perfluorohexanoic acid (PFHxA)	ND		1.9		ng/L		08/02/19 06:19	08/03/19 04:31	1
Perfluoroheptanoic acid (PFHpA)	ND		1.9		ng/L		08/02/19 06:19	08/03/19 04:31	1
Perfluorooctanoic acid (PFOA)	ND		1.9		ng/L		08/02/19 06:19	08/03/19 04:31	1
Perfluorononanoic acid (PFNA)	ND		1.9		ng/L		08/02/19 06:19	08/03/19 04:31	1
Perfluorodecanoic acid (PFDA)	ND		1.9		ng/L		08/02/19 06:19	08/03/19 04:31	1
Perfluoroundecanoic acid (PFUnA)	ND		1.9		ng/L		08/02/19 06:19	08/03/19 04:31	1
Perfluorododecanoic acid (PFDoA)	ND		1.9		ng/L		08/02/19 06:19	08/03/19 04:31	1
Perfluorotridecanoic acid (PFTriA)	ND		1.9		ng/L		08/02/19 06:19	08/03/19 04:31	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.9		ng/L		08/02/19 06:19	08/03/19 04:31	1
Perfluorobutanesulfonic acid (PFBS)	ND		1.9		ng/L		08/02/19 06:19	08/03/19 04:31	1
Perfluorohexanesulfonic acid (PFHxS)	ND		1.9		ng/L		08/02/19 06:19	08/03/19 04:31	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		1.9		ng/L		08/02/19 06:19	08/03/19 04:31	1
Perfluorooctanesulfonic acid (PFOS)	ND		1.9		ng/L		08/02/19 06:19	08/03/19 04:31	1
Perfluorodecanesulfonic acid (PFDS)	ND		1.9		ng/L		08/02/19 06:19	08/03/19 04:31	1
Perfluorooctanesulfonamide (FOSA)	ND		1.9		ng/L		08/02/19 06:19	08/03/19 04:31	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		19		ng/L		08/02/19 06:19	08/03/19 04:31	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		19		ng/L		08/02/19 06:19	08/03/19 04:31	1
6:2 FTS	ND		19		ng/L		08/02/19 06:19	08/03/19 04:31	1
8:2 FTS	ND		19		ng/L		08/02/19 06:19	08/03/19 04:31	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*93*		*25 - 150*	*08/02/19 06:19*	*08/03/19 04:31*	*1*
13C5 PFPeA	*96*		*25 - 150*	*08/02/19 06:19*	*08/03/19 04:31*	*1*
13C2 PFHxA	*98*		*25 - 150*	*08/02/19 06:19*	*08/03/19 04:31*	*1*
13C4 PFHpA	*99*		*25 - 150*	*08/02/19 06:19*	*08/03/19 04:31*	*1*
13C4 PFOA	*102*		*25 - 150*	*08/02/19 06:19*	*08/03/19 04:31*	*1*
13C5 PFNA	*103*		*25 - 150*	*08/02/19 06:19*	*08/03/19 04:31*	*1*
13C2 PFDA	*112*		*25 - 150*	*08/02/19 06:19*	*08/03/19 04:31*	*1*
13C2 PFUnA	*102*		*25 - 150*	*08/02/19 06:19*	*08/03/19 04:31*	*1*
13C2 PFDoA	*103*		*25 - 150*	*08/02/19 06:19*	*08/03/19 04:31*	*1*
13C2 PFTeDA	*117*		*25 - 150*	*08/02/19 06:19*	*08/03/19 04:31*	*1*
13C3 PFBS	*101*		*25 - 150*	*08/02/19 06:19*	*08/03/19 04:31*	*1*
18O2 PFHxS	*98*		*25 - 150*	*08/02/19 06:19*	*08/03/19 04:31*	*1*
13C4 PFOS	*95*		*25 - 150*	*08/02/19 06:19*	*08/03/19 04:31*	*1*
13C8 FOSA	*94*		*25 - 150*	*08/02/19 06:19*	*08/03/19 04:31*	*1*
d3-NMeFOSAA	*91*		*25 - 150*	*08/02/19 06:19*	*08/03/19 04:31*	*1*
d5-NEtFOSAA	*93*		*25 - 150*	*08/02/19 06:19*	*08/03/19 04:31*	*1*
M2-6:2 FTS	*107*		*25 - 150*	*08/02/19 06:19*	*08/03/19 04:31*	*1*
M2-8:2 FTS	*104*		*25 - 150*	*08/02/19 06:19*	*08/03/19 04:31*	*1*

THIS PAGE SHOWS TEST RESULTS ON A SAMPLE OF CONTAMINANT FREE WATER (A/K/A FIELD BLANK) PROVIDED BY THE LAB TO ENSURE PROPER HANDLING AND PROCEDURAL TECHNIQUES DURING COLLECTION.

Method: 537 (modified) - Fluorinated Alkyl Substances

Lab Sample ID: MB 320-312023/1-A
Matrix: Water
Analysis Batch: 312292

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 312023

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	ND		2.0		ng/L		08/02/19 06:19	08/03/19 03:19	1
Perfluoropentanoic acid (PFPeA)	ND		2.0		ng/L		08/02/19 06:19	08/03/19 03:19	1
Perfluorohexanoic acid (PFHxA)	ND		2.0		ng/L		08/02/19 06:19	08/03/19 03:19	1
Perfluoroheptanoic acid (PFHpA)	ND		2.0		ng/L		08/02/19 06:19	08/03/19 03:19	1
Perfluorooctanoic acid (PFOA)	ND		2.0		ng/L		08/02/19 06:19	08/03/19 03:19	1
Perfluorononanoic acid (PFNA)	ND		2.0		ng/L		08/02/19 06:19	08/03/19 03:19	1
Perfluorodecanoic acid (PFDA)	ND		2.0		ng/L		08/02/19 06:19	08/03/19 03:19	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0		ng/L		08/02/19 06:19	08/03/19 03:19	1
Perfluorododecanoic acid (PFDoA)	ND		2.0		ng/L		08/02/19 06:19	08/03/19 03:19	1
Perfluorotridecanoic acid (PFTriA)	ND		2.0		ng/L		08/02/19 06:19	08/03/19 03:19	1
Perfluorotetradecanoic acid (PFTeA)	ND		2.0		ng/L		08/02/19 06:19	08/03/19 03:19	1
Perfluorobutanesulfonic acid (PFBS)	ND		2.0		ng/L		08/02/19 06:19	08/03/19 03:19	1
Perfluorohexanesulfonic acid (PFHxS)	ND		2.0		ng/L		08/02/19 06:19	08/03/19 03:19	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		2.0		ng/L		08/02/19 06:19	08/03/19 03:19	1
Perfluorooctanesulfonic acid (PFOS)	ND		2.0		ng/L		08/02/19 06:19	08/03/19 03:19	1
Perfluorodecanesulfonic acid (PFDS)	ND		2.0		ng/L		08/02/19 06:19	08/03/19 03:19	1
Perfluorooctanesulfonamide (FOSA)	ND		2.0		ng/L		08/02/19 06:19	08/03/19 03:19	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		20		ng/L		08/02/19 06:19	08/03/19 03:19	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		20		ng/L		08/02/19 06:19	08/03/19 03:19	1
6:2 FTS	ND		20		ng/L		08/02/19 06:19	08/03/19 03:19	1
8:2 FTS	ND		20		ng/L		08/02/19 06:19	08/03/19 03:19	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*93*		*25 - 150*	*08/02/19 06:19*	*08/03/19 03:19*	*1*
13C5 PFPeA	*97*		*25 - 150*	*08/02/19 06:19*	*08/03/19 03:19*	*1*
13C2 PFHxA	*96*		*25 - 150*	*08/02/19 06:19*	*08/03/19 03:19*	*1*
13C4 PFHpA	*99*		*25 - 150*	*08/02/19 06:19*	*08/03/19 03:19*	*1*
13C4 PFOA	*105*		*25 - 150*	*08/02/19 06:19*	*08/03/19 03:19*	*1*
13C5 PFNA	*103*		*25 - 150*	*08/02/19 06:19*	*08/03/19 03:19*	*1*
13C2 PFDA	*108*		*25 - 150*	*08/02/19 06:19*	*08/03/19 03:19*	*1*
13C2 PFUnA	*102*		*25 - 150*	*08/02/19 06:19*	*08/03/19 03:19*	*1*
13C2 PFDoA	*105*		*25 - 150*	*08/02/19 06:19*	*08/03/19 03:19*	*1*
13C2 PFTeDA	*112*		*25 - 150*	*08/02/19 06:19*	*08/03/19 03:19*	*1*
13C3 PFBS	*99*		*25 - 150*	*08/02/19 06:19*	*08/03/19 03:19*	*1*
18O2 PFHxS	*98*		*25 - 150*	*08/02/19 06:19*	*08/03/19 03:19*	*1*
13C4 PFOS	*97*		*25 - 150*	*08/02/19 06:19*	*08/03/19 03:19*	*1*
13C8 FOSA	*90*		*25 - 150*	*08/02/19 06:19*	*08/03/19 03:19*	*1*
d3-NMeFOSAA	*92*		*25 - 150*	*08/02/19 06:19*	*08/03/19 03:19*	*1*
d5-NEtFOSAA	*93*		*25 - 150*	*08/02/19 06:19*	*08/03/19 03:19*	*1*
M2-6:2 FTS	*109*		*25 - 150*	*08/02/19 06:19*	*08/03/19 03:19*	*1*
M2-8:2 FTS	*102*		*25 - 150*	*08/02/19 06:19*	*08/03/19 03:19*	*1*

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: LCS 320-312023/2-A
Matrix: Water
Analysis Batch: 312292

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 312023

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorobutanoic acid (PFBA)	40.0	40.2		ng/L		101	70 - 130
Perfluoropentanoic acid (PFPeA)	40.0	39.6		ng/L		99	66 - 126
Perfluorohexanoic acid (PFHxA)	40.0	39.5		ng/L		99	66 - 126
Perfluoroheptanoic acid (PFHpA)	40.0	38.5		ng/L		96	66 - 126
Perfluorooctanoic acid (PFOA)	40.0	37.0		ng/L		93	64 - 124
Perfluorononanoic acid (PFNA)	40.0	38.0		ng/L		95	68 - 128
Perfluorodecanoic acid (PFDA)	40.0	38.4		ng/L		96	69 - 129
Perfluoroundecanoic acid (PFUnA)	40.0	37.5		ng/L		94	60 - 120
Perfluorododecanoic acid (PFDoA)	40.0	39.4		ng/L		98	71 - 131
Perfluorotridecanoic acid (PFTriA)	40.0	40.8		ng/L		102	72 - 132
Perfluorotetradecanoic acid (PFTeA)	40.0	36.4		ng/L		91	68 - 128
Perfluorobutanesulfonic acid (PFBS)	35.4	35.4		ng/L		100	73 - 133
Perfluorohexanesulfonic acid (PFHxS)	36.4	34.1		ng/L		94	63 - 123
Perfluoroheptanesulfonic Acid (PFHpS)	38.1	37.3		ng/L		98	68 - 128
Perfluorooctanesulfonic acid (PFOS)	37.1	35.0		ng/L		94	67 - 127
Perfluorodecanesulfonic acid (PFDS)	38.6	37.7		ng/L		98	68 - 128
Perfluorooctanesulfonamide (FOSA)	40.0	39.0		ng/L		97	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	40.0	39.9		ng/L		100	67 - 127
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	40.0	39.2		ng/L		98	65 - 125
6:2 FTS	37.9	36.3		ng/L		96	66 - 126
8:2 FTS	38.3	38.1		ng/L		99	67 - 127

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C4 PFBA	*96*		*25 - 150*
13C5 PFPeA	*96*		*25 - 150*
13C2 PFHxA	*98*		*25 - 150*
13C4 PFHpA	*98*		*25 - 150*
13C4 PFOA	*102*		*25 - 150*
13C5 PFNA	*105*		*25 - 150*
13C2 PFDA	*105*		*25 - 150*
13C2 PFUnA	*101*		*25 - 150*
13C2 PFDoA	*102*		*25 - 150*
13C2 PFTeDA	*118*		*25 - 150*
13C3 PFBS	*98*		*25 - 150*
18O2 PFHxS	*102*		*25 - 150*
13C4 PFOS	*100*		*25 - 150*
13C8 FOSA	*94*		*25 - 150*
d3-NMeFOSAA	*93*		*25 - 150*
d5-NEtFOSAA	*92*		*25 - 150*

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: LCS 320-312023/2-A
Matrix: Water
Analysis Batch: 312292

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 312023

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
M2-6:2 FTS	104		25 - 150
M2-8:2 FTS	95		25 - 150

Lab Sample ID: 480-156997-3 MS
Matrix: Water
Analysis Batch: 312292

Client Sample ID: EFFLUENT
Prep Type: Total/NA
Prep Batch: 312023

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorobutanoic acid (PFBA)	ND		36.9	37.9		ng/L		103	70 - 130
Perfluoropentanoic acid (PFPeA)	ND		36.9	34.4		ng/L		93	66 - 126
Perfluorohexanoic acid (PFHxA)	ND		36.9	35.6		ng/L		96	66 - 126
Perfluoroheptanoic acid (PFHpA)	ND		36.9	35.3		ng/L		96	66 - 126
Perfluorooctanoic acid (PFOA)	ND		36.9	32.5		ng/L		88	64 - 124
Perfluorononanoic acid (PFNA)	ND		36.9	33.3		ng/L		90	68 - 128
Perfluorodecanoic acid (PFDA)	ND		36.9	34.7		ng/L		94	69 - 129
Perfluoroundecanoic acid (PFUnA)	ND		36.9	34.6		ng/L		94	60 - 120
Perfluorododecanoic acid (PFDoA)	ND		36.9	34.6		ng/L		94	71 - 131
Perfluorotridecanoic acid (PFTriA)	ND		36.9	39.6		ng/L		107	72 - 132
Perfluorotetradecanoic acid (PFTeA)	ND		36.9	32.9		ng/L		89	68 - 128
Perfluorobutanesulfonic acid (PFBS)	ND		32.6	30.5		ng/L		93	73 - 133
Perfluorohexanesulfonic acid (PFHxS)	ND		33.6	32.9		ng/L		97	63 - 123
Perfluoroheptanesulfonic Acid (PFHpS)	ND		35.2	38.2		ng/L		109	68 - 128
Perfluorooctanesulfonic acid (PFOS)	ND		34.3	32.6		ng/L		95	67 - 127
Perfluorodecanesulfonic acid (PFDS)	ND		35.6	37.2		ng/L		104	68 - 128
Perfluorooctanesulfonamide (FOSA)	ND		36.9	38.0		ng/L		103	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		36.9	38.4		ng/L		104	67 - 127
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		36.9	35.1		ng/L		95	65 - 125
6:2 FTS	ND		35.0	32.1		ng/L		92	66 - 126
8:2 FTS	ND		35.4	33.9		ng/L		96	67 - 127

Isotope Dilution	MS %Recovery	MS Qualifier	Limits
13C4 PFBA	93		25 - 150
13C5 PFPeA	100		25 - 150
13C2 PFHxA	98		25 - 150
13C4 PFHpA	100		25 - 150
13C4 PFOA	104		25 - 150
13C5 PFNA	106		25 - 150
13C2 PFDA	103		25 - 150
13C2 PFUnA	104		25 - 150
13C2 PFDoA	98		25 - 150

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: 480-156997-3 MS
Matrix: Water
Analysis Batch: 312292

Client Sample ID: EFFLUENT
Prep Type: Total/NA
Prep Batch: 312023

Isotope Dilution	MS %Recovery	MS Qualifier	Limits
13C2 PFTeDA	108		25 - 150
13C3 PFBS	100		25 - 150
18O2 PFHxS	98		25 - 150
13C4 PFOS	89		25 - 150
13C8 FOSA	89		25 - 150
d3-NMeFOSAA	97		25 - 150
d5-NEtFOSAA	102		25 - 150
M2-6:2 FTS	127		25 - 150
M2-8:2 FTS	109		25 - 150

Lab Sample ID: 480-156997-3 MSD
Matrix: Water
Analysis Batch: 312292

Client Sample ID: EFFLUENT
Prep Type: Total/NA
Prep Batch: 312023

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluorobutanoic acid (PFBA)	ND		37.6	37.9		ng/L		101	70 - 130	0	30
Perfluoropentanoic acid (PFPeA)	ND		37.6	36.3		ng/L		97	66 - 126	5	30
Perfluorohexanoic acid (PFHxA)	ND		37.6	34.8		ng/L		93	66 - 126	2	30
Perfluoroheptanoic acid (PFHpA)	ND		37.6	36.4		ng/L		97	66 - 126	3	30
Perfluorooctanoic acid (PFOA)	ND		37.6	32.8		ng/L		87	64 - 124	1	30
Perfluorononanoic acid (PFNA)	ND		37.6	35.6		ng/L		95	68 - 128	7	30
Perfluorodecanoic acid (PFDA)	ND		37.6	35.2		ng/L		94	69 - 129	1	30
Perfluoroundecanoic acid (PFUnA)	ND		37.6	32.8		ng/L		87	60 - 120	5	30
Perfluorododecanoic acid (PFDoA)	ND		37.6	36.6		ng/L		97	71 - 131	6	30
Perfluorotridecanoic acid (PFTriA)	ND		37.6	41.0		ng/L		109	72 - 132	3	30
Perfluorotetradecanoic acid (PFTeA)	ND		37.6	33.9		ng/L		90	68 - 128	3	30
Perfluorobutanesulfonic acid (PFBS)	ND		33.2	31.3		ng/L		94	73 - 133	2	30
Perfluorohexanesulfonic acid (PFHxS)	ND		34.2	31.7		ng/L		92	63 - 123	4	30
Perfluoroheptanesulfonic Acid (PFHpS)	ND		35.8	38.1		ng/L		106	68 - 128	0	30
Perfluorooctanesulfonic acid (PFOS)	ND		34.9	33.6		ng/L		96	67 - 127	3	30
Perfluorodecanesulfonic acid (PFDS)	ND		36.2	36.2		ng/L		100	68 - 128	3	30
Perfluorooctanesulfonamide (FOSA)	ND		37.6	36.5		ng/L		97	70 - 130	4	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		37.6	36.1		ng/L		96	67 - 127	6	30
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		37.6	35.6		ng/L		95	65 - 125	2	30
6:2 FTS	ND		35.6	35.4		ng/L		99	66 - 126	10	30
8:2 FTS	ND		36.0	33.0		ng/L		92	67 - 127	3	30

Isotope Dilution	MSD %Recovery	MSD Qualifier	Limits
13C4 PFBA	95		25 - 150
13C5 PFPeA	97		25 - 150

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: 480-156997-3 MSD
Matrix: Water
Analysis Batch: 312292

Client Sample ID: EFFLUENT
Prep Type: Total/NA
Prep Batch: 312023

Isotope Dilution	MSD %Recovery	MSD Qualifier	Limits
13C2 PFHxA	99		25 - 150
13C4 PFHpA	99		25 - 150
13C4 PFOA	102		25 - 150
13C5 PFNA	102		25 - 150
13C2 PFDA	108		25 - 150
13C2 PFUnA	102		25 - 150
13C2 PFDoA	106		25 - 150
13C2 PFTeDA	131		25 - 150
13C3 PFBS	104		25 - 150
18O2 PFHxS	99		25 - 150
13C4 PFOS	93		25 - 150
13C8 FOSA	96		25 - 150
d3-NMeFOSAA	96		25 - 150
d5-NEtFOSAA	97		25 - 150
M2-6:2 FTS	106		25 - 150
M2-8:2 FTS	110		25 - 150

QC Association Summary

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

Job ID: 480-156997-2

LCMS

Prep Batch: 312023

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-156997-1	INFLUENT	Total/NA	Water	3535	
480-156997-2	MID	Total/NA	Water	3535	
480-156997-3	EFFLUENT	Total/NA	Water	3535	
480-156997-4	DUPLICATE	Total/NA	Water	3535	
480-156997-5	FIELD BLANK	Total/NA	Water	3535	
MB 320-312023/1-A	Method Blank	Total/NA	Water	3535	
LCS 320-312023/2-A	Lab Control Sample	Total/NA	Water	3535	
480-156997-3 MS	EFFLUENT	Total/NA	Water	3535	
480-156997-3 MSD	EFFLUENT	Total/NA	Water	3535	

Analysis Batch: 312292

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-156997-1	INFLUENT	Total/NA	Water	537 (modified)	312023
480-156997-2	MID	Total/NA	Water	537 (modified)	312023
480-156997-3	EFFLUENT	Total/NA	Water	537 (modified)	312023
480-156997-4	DUPLICATE	Total/NA	Water	537 (modified)	312023
480-156997-5	FIELD BLANK	Total/NA	Water	537 (modified)	312023
MB 320-312023/1-A	Method Blank	Total/NA	Water	537 (modified)	312023
LCS 320-312023/2-A	Lab Control Sample	Total/NA	Water	537 (modified)	312023
480-156997-3 MS	EFFLUENT	Total/NA	Water	537 (modified)	312023
480-156997-3 MSD	EFFLUENT	Total/NA	Water	537 (modified)	312023

Lab Chronicle

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

Job ID: 480-156997-2

Client Sample ID: INFLUENT

Date Collected: 07/30/19 13:30
Date Received: 07/31/19 08:00

Lab Sample ID: 480-156997-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			312023	08/02/19 06:19	MYV	TAL SAC
Total/NA	Analysis	537 (modified)		1	312292	08/03/19 03:44	GMK	TAL SAC

Client Sample ID: MID

Date Collected: 07/30/19 13:20
Date Received: 07/31/19 08:00

Lab Sample ID: 480-156997-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			312023	08/02/19 06:19	MYV	TAL SAC
Total/NA	Analysis	537 (modified)		1	312292	08/03/19 03:52	GMK	TAL SAC

Client Sample ID: EFFLUENT

Date Collected: 07/30/19 13:05
Date Received: 07/31/19 08:00

Lab Sample ID: 480-156997-3
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			312023	08/02/19 06:19	MYV	TAL SAC
Total/NA	Analysis	537 (modified)		1	312292	08/03/19 03:59	GMK	TAL SAC

Client Sample ID: DUPLICATE

Date Collected: 07/30/19 13:40
Date Received: 07/31/19 08:00

Lab Sample ID: 480-156997-4
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			312023	08/02/19 06:19	MYV	TAL SAC
Total/NA	Analysis	537 (modified)		1	312292	08/03/19 04:23	GMK	TAL SAC

Client Sample ID: FIELD BLANK

Date Collected: 07/30/19 13:40
Date Received: 07/31/19 08:00

Lab Sample ID: 480-156997-5
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			312023	08/02/19 06:19	MYV	TAL SAC
Total/NA	Analysis	537 (modified)		1	312292	08/03/19 04:31	GMK	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: 480-156997-2
Project/Site: Stewart ANG Base #336089 Kroll Well

Laboratory: Eurofins TestAmerica, Buffalo

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

Authority	Program	EPA Region	Identification Number	Expiration Date
New York	NELAP	2	10026	03-31-20

Laboratory: Eurofins TestAmerica, Sacramento

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

Authority	Program	EPA Region	Identification Number	Expiration Date
New York	NELAP	2	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
537 (modified)	3535	Water	6:2 FTS
537 (modified)	3535	Water	8:2 FTS
537 (modified)	3535	Water	N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)
537 (modified)	3535	Water	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)
537 (modified)	3535	Water	Perfluorobutanesulfonic acid (PFBS)
537 (modified)	3535	Water	Perfluorobutanoic acid (PFBA)
537 (modified)	3535	Water	Perfluorodecanesulfonic acid (PFDS)
537 (modified)	3535	Water	Perfluorodecanoic acid (PFDA)
537 (modified)	3535	Water	Perfluorododecanoic acid (PFDoA)
537 (modified)	3535	Water	Perfluoroheptanesulfonic Acid (PFHpS)
537 (modified)	3535	Water	Perfluoroheptanoic acid (PFHpA)
537 (modified)	3535	Water	Perfluorohexanesulfonic acid (PFHxS)
537 (modified)	3535	Water	Perfluorohexanoic acid (PFHxA)
537 (modified)	3535	Water	Perfluorononanoic acid (PFNA)
537 (modified)	3535	Water	Perfluorooctanesulfonamide (FOSA)
537 (modified)	3535	Water	Perfluorooctanesulfonic acid (PFOS)
537 (modified)	3535	Water	Perfluorooctanoic acid (PFOA)
537 (modified)	3535	Water	Perfluoropentanoic acid (PFPeA)
537 (modified)	3535	Water	Perfluorotetradecanoic acid (PFTeA)
537 (modified)	3535	Water	Perfluorotridecanoic acid (PFTriA)
537 (modified)	3535	Water	Perfluoroundecanoic acid (PFUnA)

Method Summary

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

Job ID: 480-156997-2

Method	Method Description	Protocol	Laboratory
537 (modified)	Fluorinated Alkyl Substances	EPA	TAL SAC
3535	Solid-Phase Extraction (SPE)	SW846	TAL SAC

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

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.
Project/Site: Stewart ANG Base #336089 Kroll Well

Job ID: 480-156997-2

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
480-156997-1	INFLUENT	Water	07/30/19 13:30	07/31/19 08:00	
480-156997-2	MID	Water	07/30/19 13:20	07/31/19 08:00	
480-156997-3	EFFLUENT	Water	07/30/19 13:05	07/31/19 08:00	
480-156997-4	DUPLICATE	Water	07/30/19 13:40	07/31/19 08:00	
480-156997-5	FIELD BLANK	Water	07/30/19 13:40	07/31/19 08:00	

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: Pat Sakulawski	Lab PM: Stone, Judy L	Carrier Tracking No(s):	COC No: 480-133395-30040.1
Client Contact: Stephen Phelps	Phone: ~~[illegible]~~ 518-858-0599	E-Mail: judy.stone@testamericainc.com		Page: Page 1 of 2
Company: Precision Environmental Services Inc.				Job #:
Address: 831 State Route 67 Ste 38	Due Date Requested: ASAP			Preservation Codes: A - HCL, M - Hexane, B - NaOH, N - [illegible]
City: Ballston Spa	TAT Requested (days): ASAP			
State, Zip: NY, 12020				
Phone: 518-402-9814(Tel)	PO #: Callout ID: 137132			
Email: sphelps@pesnyinc.com	WO #:			
Project Name: Stewart ANG Base #336089 Kroll Well	Project #: 48020467			
Site:	SSOW#:			

480-156997 Chain of Custody

Analysis Requested

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	PFAS_DI_DW - PFAS, UCMR List	PFC_IDA - PFAS, Standard List (21 Analytes)	200.8 - As, Pb - rush	Total Number of co	Special Instructions/Note:
			Preservation Code:				N	N	D		
Influent	7-30-19	1330	Grab	Water			X	X	X	5	
Mid		1320		Water			X	X		4	
Effluent		1305		Water		X	X	X	X	9	
Duplicate		1340		Water			X	X	X	5	
Field Blank		1340		Water				X	X	3	
				Water							
				Water							
				Water							
				Water							
				Water							

7-30-19

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)

Special Instructions/QC Requirements:

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

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1	[signature]	7-30-19 / 1657	PES	[signature]	7-30-19 1657	EUROFINS
2	[signature]	7-30-19 1740	EUROFINS	[signature]	7/31/19 0900	TAS
3	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: #1 3.1

Ver: 01/16/2019

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8/6/2019

Login Sample Receipt Checklist

Client: New York State D.E.C.

Job Number: 480-156997-2

Login Number: 156997
List Number: 1
Creator: Wallace, Cameron

List Source: Eurofins TestAmerica, Buffalo

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	
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	True	
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.	N/A	
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	

Login Sample Receipt Checklist

Client: New York State D.E.C.

Job Number: 480-156997-2

Login Number: 156997
List Number: 2
Creator: Onishi, Marc

List Source: Eurofins TestAmerica, Sacramento
List Creation: 07/31/19 03:27 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	1130912
Sample custody seals, if present, are intact.	N/A	
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	0.8c
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?	N/A	Received project as a subcontract.
There are no discrepancies between the containers received 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	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Isotope Dilution Summary

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

Job ID: 480-156997-2

Method: 537 (modified) - Fluorinated Alkyl Substances

Matrix: Water

Prep Type: Total/NA

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFBA (25-150)	PFPeA (25-150)	PFHxA (25-150)	PFHpA (25-150)	PFOA (25-150)	PFNA (25-150)	PFDA (25-150)	PFUnA (25-150)
480-156997-1	INFLUENT	80	98	100	103	102	102	109	100
480-156997-2	MID	98	101	100	103	108	111	112	106
480-156997-3	EFFLUENT	93	94	99	101	100	101	101	100
480-156997-3 MS	EFFLUENT	93	100	98	100	104	106	103	104
480-156997-3 MSD	EFFLUENT	95	97	99	99	102	102	108	102
480-156997-4	DUPLICATE	96	100	97	101	103	106	107	101
480-156997-5	FIELD BLANK	93	96	98	99	102	103	112	102
LCS 320-312023/2-A	Lab Control Sample	96	96	98	98	102	105	105	101
MB 320-312023/1-A	Method Blank	93	97	96	99	105	103	108	102

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFDoA (25-150)	PFTDA (25-150)	13C3-PFBS (25-150)	PFHxS (25-150)	PFOS (25-150)	PFOSA (25-150)	I-NMeFOSA (25-150)	5-NEtFOSA (25-150)
480-156997-1	INFLUENT	101	136	102	105	97	96	92	90
480-156997-2	MID	109	127	110	106	102	96	92	94
480-156997-3	EFFLUENT	98	113	99	100	94	93	92	91
480-156997-3 MS	EFFLUENT	98	108	100	98	89	89	97	102
480-156997-3 MSD	EFFLUENT	106	131	104	99	93	96	96	97
480-156997-4	DUPLICATE	105	124	100	101	97	93	93	95
480-156997-5	FIELD BLANK	103	117	101	98	95	94	91	93
LCS 320-312023/2-A	Lab Control Sample	102	118	98	102	100	94	93	92
MB 320-312023/1-A	Method Blank	105	112	99	98	97	90	92	93

		Percent Isotope Dilution Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	M262FTS (25-150)	M282FTS (25-150)
480-156997-1	INFLUENT	108	115
480-156997-2	MID	110	106
480-156997-3	EFFLUENT	101	103
480-156997-3 MS	EFFLUENT	127	109
480-156997-3 MSD	EFFLUENT	106	110
480-156997-4	DUPLICATE	106	106
480-156997-5	FIELD BLANK	107	104
LCS 320-312023/2-A	Lab Control Sample	104	95
MB 320-312023/1-A	Method Blank	109	102

Surrogate Legend

PFBA = 13C4 PFBA
PFPeA = 13C5 PFPeA
PFHxA = 13C2 PFHxA
PFHpA = 13C4 PFHpA
PFOA = 13C4 PFOA
PFNA = 13C5 PFNA
PFDA = 13C2 PFDA
PFUnA = 13C2 PFUnA
PFDoA = 13C2 PFDoA
PFTDA = 13C2 PFTeDA
13C3-PFBS = 13C3 PFBS
PFHxS = 18O2 PFHxS
PFOS = 13C4 PFOS
PFOSA = 13C8 FOSA

Isotope Dilution Summary

Client: New York State D.E.C.

Job ID: 480-156997-2

Project/Site: Stewart ANG Base #336089 Kroll Well

d3-NMeFOSAA = d3-NMeFOSAA

d5-NEtFOSAA = d5-NEtFOSAA

M262FTS = M2-6:2 FTS

M282FTS = M2-8:2 FTS