



ANALYSIS REPORT

Prepared by:

Eurofins Lancaster Laboratories Environmental
2425 New Holland Pike
Lancaster, PA 17601

Prepared for:

C. T. Male Associates
50 Century Hill Drive
Latham NY 12110

Report Date: October 16, 2018 08:29

Project: Hoosick Falls WTP

Account #: 37191
Group Number: 1995427
SDG: HOO11
PO Number: 14.4756
State of Sample Origin: NY

Electronic Copy To	C. T. Male Associates	Attn: Kirk Moline
Electronic Copy To	C. T. Male Associates	Attn: Dan Reilly
Electronic Copy To	C. T. Male Associates	Attn: Jeff Marx
Electronic Copy To	Barr Engineering Company	Attn: Lauren Brady
Electronic Copy To	Environmental Standards	Attn: St. Gobain
Electronic Copy To	Barr Engineering Company	Attn: Data Mgt

Respectfully Submitted,



Nancy Jean Bornholm
Principal Specialist

(717) 556-7250

To view our laboratory's current scopes of accreditation please go to <http://www.eurofinsus.com/environment-testing/laboratories/eurofins-lancaster-laboratories-environmental/resources/certifications/>. Historical copies may be requested through your project manager.



SAMPLE INFORMATION

<u>Client Sample Description</u>	<u>Sample Collection Date/Time</u>	<u>ELLE#</u>
LTB02-181004 Blank Water	10/04/2018	9839170
FTB02-181004 Grab Blank Water	10/04/2018 10:45	9839171
PV2-25 Grab Drinking Water	10/04/2018 10:50	9839172
PV2-50 Grab Drinking Water	10/04/2018 10:52	9839173
PV2-75 Grab Drinking Water	10/04/2018 10:54	9839174

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

Project Name: Hoosick Falls WTP
ELLE Group #: 1995427

General Comments:

See the Laboratory Sample Analysis Record section of the Analysis Report for the method references.

All QC met criteria unless otherwise noted in an Analysis Specific Comment below.

Refer to the QC Summary for specific values and acceptance criteria.

Project specific QC samples are not included in this data set.

Matrix QC may not be reported if site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

Surrogate recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in an Analysis Specific Comment below.

The samples were received at the appropriate temperature and in accordance with the chain of custody unless otherwise noted.

Analysis Specific Comments:

No additional comments are necessary.

Sample Description: LTB02-181004 Blank Water
Hoosick Falls Water Treatment Plant

C. T. Male Associates
ELLE Sample #: WW 9839170
ELLE Group #: 1995427
Matrix: Blank Water

Project Name: Hoosick Falls WTP

Submission Date/Time: 10/05/2018 10:30
Collection Date/Time: 10/04/2018
SDG#: HOO11-01TB

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
LC/MS/MS Miscellaneous EPA 537 Version 1.1			ng/l	ng/l	
14070	NEtFOSAA NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.	2991-50-6	1.8 U	1.8	1
14070	NMeFOSAA NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.	2355-31-9	1.8 U	1.8	1
14070	Perfluorobutanesulfonate	375-73-5	1.8 U	1.8	1
14070	Perfluorodecanoic acid	335-76-2	1.8 U	1.8	1
14070	Perfluorododecanoic acid	307-55-1	1.8 U	1.8	1
14070	Perfluoroheptanoic acid	375-85-9	1.8 U	1.8	1
14070	Perfluorohexanesulfonate	355-46-4	1.8 U	1.8	1
14070	Perfluorohexanoic acid	307-24-4	1.8 U	1.8	1
14070	Perfluorononanoic acid	375-95-1	1.8 U	1.8	1
14070	Perfluoro-octanesulfonate	1763-23-1	1.8 U	1.8	1
14070	Perfluorooctanoic acid	335-67-1	1.8 U	1.8	1
14070	Perfluorotetradecanoic acid	376-06-7	1.8 U	1.8	1
14070	Perfluorotridecanoic acid	72629-94-8	1.8 U	1.8	1
14070	Perfluoroundecanoic acid	2058-94-8	1.8 U	1.8	1

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
LC/MS/MS Miscellaneous EPA 537 Version 1.1 Modified			ng/l	ng/l	
14473	6:2 fluorotelomersulfonate	27619-97-2	1.8 U	1.8	1
14473	8:2 fluorotelomersulfonate	39108-34-4	5.3 U	5.3	1
14473	Perfluorobutanoic acid	375-22-4	5.3 U	5.3	1
14473	Perfluorodecanesulfonate	335-77-3	1.8 U	1.8	1
14473	Perfluoroheptanesulfonate	375-92-8	1.8 U	1.8	1
14473	Perfluorooctanesulfonamide	754-91-6	2.7 U	2.7	1
14473	Perfluoropentanoic acid	2706-90-3	5.3 U	5.3	1

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14070	14 PFAS Drinking Water List	EPA 537 Version 1.1	1	18282007	10/10/2018 18:13	Marissa C Drexinger	1
14473	7 PFAS Compounds	EPA 537 Version 1.1 Modified	1	18281011	10/10/2018 00:30	Christine E Dolman	1
14381	DW PFAS Prep	EPA 537 Version 1.1	1	18282007	10/09/2018 14:00	Anthony C Polaski	1
14091	PFAS Water Prep	EPA 537 Version 1.1 Modified	1	18281011	10/08/2018 16:00	Anthony C Polaski	1

Sample Description: FTB02-181004 Grab Blank Water
Hoosick Falls Water Treatment Plant

C. T. Male Associates
ELLE Sample #: WW 9839171
ELLE Group #: 1995427
Matrix: Blank Water

Project Name: Hoosick Falls WTP

Submittal Date/Time: 10/05/2018 10:30
Collection Date/Time: 10/04/2018 10:45
SDG#: HOO11-02FB

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
LC/MS/MS Miscellaneous EPA 537 Version 1.1			ng/l	ng/l	
14070	NEtFOSAA NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.	2991-50-6	1.9 U	1.9	1
14070	NMeFOSAA NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.	2355-31-9	1.9 U	1.9	1
14070	Perfluorobutanesulfonate	375-73-5	1.9 U	1.9	1
14070	Perfluorodecanoic acid	335-76-2	1.9 U	1.9	1
14070	Perfluorododecanoic acid	307-55-1	1.9 U	1.9	1
14070	Perfluoroheptanoic acid	375-85-9	1.9 U	1.9	1
14070	Perfluorohexanesulfonate	355-46-4	1.9 U	1.9	1
14070	Perfluorohexanoic acid	307-24-4	1.9 U	1.9	1
14070	Perfluorononanoic acid	375-95-1	1.9 U	1.9	1
14070	Perfluoro-octanesulfonate	1763-23-1	1.9 U	1.9	1
14070	Perfluorooctanoic acid	335-67-1	1.9 U	1.9	1
14070	Perfluorotetradecanoic acid	376-06-7	1.9 U	1.9	1
14070	Perfluorotridecanoic acid	72629-94-8	1.9 U	1.9	1
14070	Perfluoroundecanoic acid	2058-94-8	1.9 U	1.9	1

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
LC/MS/MS Miscellaneous EPA 537 Version 1.1 Modified			ng/l	ng/l	
14473	6:2 fluorotelomersulfonate	27619-97-2	1.8 U	1.8	1
14473	8:2 fluorotelomersulfonate	39108-34-4	5.4 U	5.4	1
14473	Perfluorobutanoic acid	375-22-4	5.4 U	5.4	1
14473	Perfluorodecanesulfonate	335-77-3	1.8 U	1.8	1
14473	Perfluoroheptanesulfonate	375-92-8	1.8 U	1.8	1
14473	Perfluorooctanesulfonamide	754-91-6	2.7 U	2.7	1
14473	Perfluoropentanoic acid	2706-90-3	5.4 U	5.4	1

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14070	14 PFAS Drinking Water List	EPA 537 Version 1.1	1	18282007	10/10/2018 18:24	Marissa C Drexinger	1
14473	7 PFAS Compounds	EPA 537 Version 1.1 Modified	1	18281011	10/10/2018 00:39	Christine E Dolman	1
14381	DW PFAS Prep	EPA 537 Version 1.1	1	18282007	10/09/2018 14:00	Anthony C Polaski	1
14091	PFAS Water Prep	EPA 537 Version 1.1 Modified	1	18281011	10/08/2018 16:00	Anthony C Polaski	1

Sample Description: PV2-25 Grab Drinking Water
Hoosick Falls Water Treatment Plant

C. T. Male Associates
ELLE Sample #: PW 9839172
ELLE Group #: 1995427
Matrix: Drinking Water

Project Name: Hoosick Falls WTP

Submission Date/Time: 10/05/2018 10:30
Collection Date/Time: 10/04/2018 10:50
SDG#: HOO11-03

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
LC/MS/MS Miscellaneous EPA 537 Version 1.1					
			ng/l	ng/l	
14070	NEtFOSAA NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.	2991-50-6	1.9 U	1.9	1
14070	NMeFOSAA NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.	2355-31-9	1.9 U	1.9	1
14070	Perfluorobutanesulfonate	375-73-5	1.9 U	1.9	1
14070	Perfluorodecanoic acid	335-76-2	1.9 U	1.9	1
14070	Perfluorododecanoic acid	307-55-1	1.9 U	1.9	1
14070	Perfluoroheptanoic acid	375-85-9	7.4	1.9	1
14070	Perfluorohexanesulfonate	355-46-4	1.9 U	1.9	1
14070	Perfluorohexanoic acid	307-24-4	11	1.9	1
14070	Perfluorononanoic acid	375-95-1	1.9 U	1.9	1
14070	Perfluoro-octanesulfonate	1763-23-1	1.9 U	1.9	1
14070	Perfluorooctanoic acid	335-67-1	170	19	10
14070	Perfluorotetradecanoic acid	376-06-7	1.9 U	1.9	1
14070	Perfluorotridecanoic acid	72629-94-8	1.9 U	1.9	1
14070	Perfluoroundecanoic acid	2058-94-8	1.9 U	1.9	1

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
LC/MS/MS Miscellaneous EPA 537 Version 1.1 Modified							
14473	6:2 fluorotelomersulfonate	27619-97-2	1.8 U	1.8	1		
14473	8:2 fluorotelomersulfonate	39108-34-4	5.5 U	5.5	1		
14473	Perfluorobutanoic acid	375-22-4	5.5 U	5.5	1		
14473	Perfluorodecanesulfonate	335-77-3	1.8 U	1.8	1		
14473	Perfluoroheptanesulfonate	375-92-8	1.8 U	1.8	1		
14473	Perfluorooctanesulfonamide	754-91-6	2.8 U	2.8	1		
14473	Perfluoropentanoic acid	2706-90-3	5.5 U	5.5	1		

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14070	14 PFAS Drinking Water List	EPA 537 Version 1.1	1	18282007	10/10/2018 18:47	Marissa C Drexinger	1
14070	14 PFAS Drinking Water List	EPA 537 Version 1.1	1	18282007	10/11/2018 20:47	Marissa C Drexinger	10
14473	7 PFAS Compounds	EPA 537 Version 1.1 Modified	1	18281011	10/10/2018 00:48	Christine E Dolman	1
14381	DW PFAS Prep	EPA 537 Version 1.1	1	18282007	10/09/2018 14:00	Anthony C Polaski	1
14091	PFAS Water Prep	EPA 537 Version 1.1 Modified	1	18281011	10/08/2018 16:00	Anthony C Polaski	1

Sample Description: PV2-50 Grab Drinking Water
Hoosick Falls Water Treatment Plant

C. T. Male Associates
ELLE Sample #: PW 9839173
ELLE Group #: 1995427
Matrix: Drinking Water

Project Name: Hoosick Falls WTP

Submission Date/Time: 10/05/2018 10:30
Collection Date/Time: 10/04/2018 10:52
SDG#: HOO11-04

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
LC/MS/MS Miscellaneous EPA 537 Version 1.1					
			ng/l	ng/l	
14070	NEtFOSAA NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.	2991-50-6	1.9 U	1.9	1
14070	NMeFOSAA NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.	2355-31-9	1.9 U	1.9	1
14070	Perfluorobutanesulfonate	375-73-5	1.9 U	1.9	1
14070	Perfluorodecanoic acid	335-76-2	1.9 U	1.9	1
14070	Perfluorododecanoic acid	307-55-1	1.9 U	1.9	1
14070	Perfluoroheptanoic acid	375-85-9	1.9 U	1.9	1
14070	Perfluorohexanesulfonate	355-46-4	1.9 U	1.9	1
14070	Perfluorohexanoic acid	307-24-4	3.9	1.9	1
14070	Perfluorononanoic acid	375-95-1	1.9 U	1.9	1
14070	Perfluoro-octanesulfonate	1763-23-1	1.9 U	1.9	1
14070	Perfluorooctanoic acid	335-67-1	3.4	1.9	1
14070	Perfluorotetradecanoic acid	376-06-7	1.9 U	1.9	1
14070	Perfluorotridecanoic acid	72629-94-8	1.9 U	1.9	1
14070	Perfluoroundecanoic acid	2058-94-8	1.9 U	1.9	1

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
LC/MS/MS Miscellaneous EPA 537 Version 1.1 Modified							
					ng/l		
14473	6:2 fluorotelomersulfonate	EPA 537 Version 1.1	1	18282007	10/10/2018 18:59	Marissa C Drexinger	1
14473	8:2 fluorotelomersulfonate	EPA 537 Version 1.1	1	18281011	10/10/2018 00:57	Christine E Dolman	1
14473	Perfluorobutanoic acid	Modified					
14473	Perfluorodecanesulfonate	EPA 537 Version 1.1	1	18282007	10/09/2018 14:00	Anthony C Polaski	1
14473	Perfluoroheptanesulfonate	EPA 537 Version 1.1	1	18281011	10/08/2018 16:00	Anthony C Polaski	1
14473	Perfluorooctanesulfonamide	Modified					
14473	Perfluoropentanoic acid	EPA 537 Version 1.1	1	18282007	10/09/2018 14:00	Anthony C Polaski	1

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14070	14 PFAS Drinking Water List	EPA 537 Version 1.1	1	18282007	10/10/2018 18:59	Marissa C Drexinger	1
14473	7 PFAS Compounds	EPA 537 Version 1.1 Modified	1	18281011	10/10/2018 00:57	Christine E Dolman	1
14381	DW PFAS Prep	EPA 537 Version 1.1	1	18282007	10/09/2018 14:00	Anthony C Polaski	1
14091	PFAS Water Prep	EPA 537 Version 1.1 Modified	1	18281011	10/08/2018 16:00	Anthony C Polaski	1

Sample Description: PV2-75 Grab Drinking Water
Hoosick Falls Water Treatment Plant

C. T. Male Associates
ELLE Sample #: PW 9839174
ELLE Group #: 1995427
Matrix: Drinking Water

Project Name: Hoosick Falls WTP

Submittal Date/Time: 10/05/2018 10:30
Collection Date/Time: 10/04/2018 10:54
SDG#: HOO11-05

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
LC/MS/MS Miscellaneous EPA 537 Version 1.1			ng/l	ng/l	
14070	NEtFOSAA NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.	2991-50-6	1.8 U	1.8	1
14070	NMeFOSAA NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.	2355-31-9	1.8 U	1.8	1
14070	Perfluorobutanesulfonate	375-73-5	1.8 U	1.8	1
14070	Perfluorodecanoic acid	335-76-2	1.8 U	1.8	1
14070	Perfluorododecanoic acid	307-55-1	1.8 U	1.8	1
14070	Perfluoroheptanoic acid	375-85-9	1.8 U	1.8	1
14070	Perfluorohexanesulfonate	355-46-4	1.8 U	1.8	1
14070	Perfluorohexanoic acid	307-24-4	1.8 U	1.8	1
14070	Perfluorononanoic acid	375-95-1	1.8 U	1.8	1
14070	Perfluoro-octanesulfonate	1763-23-1	1.8 U	1.8	1
14070	Perfluorooctanoic acid	335-67-1	1.8 U	1.8	1
14070	Perfluorotetradecanoic acid	376-06-7	1.8 U	1.8	1
14070	Perfluorotridecanoic acid	72629-94-8	1.8 U	1.8	1
14070	Perfluoroundecanoic acid	2058-94-8	1.8 U	1.8	1

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
LC/MS/MS Miscellaneous EPA 537 Version 1.1 Modified					ng/l		
14473	6:2 fluorotelomersulfonate	27619-97-2	1.9 U	1.9	1		
14473	8:2 fluorotelomersulfonate	39108-34-4	5.7 U	5.7	1		
14473	Perfluorobutanoic acid	375-22-4	7.8	5.7	1		
14473	Perfluorodecanesulfonate	335-77-3	1.9 U	1.9	1		
14473	Perfluoroheptanesulfonate	375-92-8	1.9 U	1.9	1		
14473	Perfluorooctanesulfonamide	754-91-6	2.9 U	2.9	1		
14473	Perfluoropentanoic acid	2706-90-3	5.7 U	5.7	1		

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14070	14 PFAS Drinking Water List	EPA 537 Version 1.1	1	18282007	10/10/2018 19:10	Marissa C Drexinger	1
14473	7 PFAS Compounds	EPA 537 Version 1.1 Modified	1	18281011	10/10/2018 01:06	Christine E Dolman	1
14381	DW PFAS Prep	EPA 537 Version 1.1	1	18282007	10/09/2018 14:00	Anthony C Polaski	1
14091	PFAS Water Prep	EPA 537 Version 1.1 Modified	1	18281011	10/08/2018 16:00	Anthony C Polaski	1

Quality Control Summary

Client Name: C. T. Male Associates
Reported: 10/16/2018 08:29

Group Number: 1995427

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

Method Blank

Analysis Name	Result	LOQ
	ng/l	ng/l
Batch number: 18281011	Sample number(s): 9839170-9839174	
6:2 fluorotelomersulfonate	2.0 U	2.0
8:2 fluorotelomersulfonate	6.0 U	6.0
Perfluorobutanoic acid	6.0 U	6.0
Perfluorodecanesulfonate	2.0 U	2.0
Perfluoroheptanesulfonate	2.0 U	2.0
Perfluorooctanesulfonamide	3.0 U	3.0
Perfluoropentanoic acid	6.0 U	6.0
Batch number: 18282007	Sample number(s): 9839170-9839174	
NETFOSAA	2.0 U	2.0
NMeFOSAA	2.0 U	2.0
Perfluorobutanesulfonate	2.0 U	2.0
Perfluorodecanoic acid	2.0 U	2.0
Perfluorododecanoic acid	2.0 U	2.0
Perfluoroheptanoic acid	2.0 U	2.0
Perfluorohexanesulfonate	2.0 U	2.0
Perfluorohexanoic acid	2.0 U	2.0
Perfluorononanoic acid	2.0 U	2.0
Perfluoro-octanesulfonate	2.0 U	2.0
Perfluorooctanoic acid	2.0 U	2.0
Perfluorotetradecanoic acid	2.0 U	2.0
Perfluorotridecanoic acid	2.0 U	2.0
Perfluoroundecanoic acid	2.0 U	2.0

LCS/LCSD

Analysis Name	LCS Spike Added	LCS Conc	LCSD Spike Added	LCSD Conc	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
	ng/l	ng/l	ng/l	ng/l					
Batch number: 18281011	Sample number(s): 9839170-9839174								
6:2 fluorotelomersulfonate	15.17	14.47	15.17	15.65	95	103	66-155	8	30
8:2 fluorotelomersulfonate	15.33	14.67	15.33	13.89	96	91	66-148	5	30
Perfluorobutanoic acid	5.44	5.70	5.44	5.80	105	107	74-142	2	30
Perfluorodecanesulfonate	5.24	5.37	5.24	5.57	102	106	60-135	4	30
Perfluoroheptanesulfonate	5.18	5.03	5.18	5.15	97	100	64-135	2	30
Perfluorooctanesulfonamide	5.44	5.62	5.44	5.47	103	101	65-164	3	30

*- Outside of specification

(1) The result for one or both determinations was less than five times the LOQ.

(2) The unspiked result was more than four times the spike added.

P##### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

Quality Control Summary

Client Name: C. T. Male Associates
Reported: 10/16/2018 08:29

Group Number: 1995427

LCS/LCSD (continued)

Analysis Name	LCS Spike Added ng/l	LCS Conc ng/l	LCSD Spike Added ng/l	LCSD Conc ng/l	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Perfluoropentanoic acid	5.44	5.65	5.44	6.10	104	112	74-134	8	30
Batch number: 18282007	Sample number(s): 9839170-9839174								
NEtFOSAA	80	93.6	80	93.07	117	116	70-130	1	30
NMeFOSAA	80	87.39	80	94.35	109	118	70-130	8	30
Perfluorobutanesulfonate	70.76	67.88	70.76	70.21	96	99	70-130	3	30
Perfluorodecanoic acid	80	92	80	89.95	115	112	70-130	2	30
Perfluorododecanoic acid	80	84.44	80	83.89	106	105	70-130	1	30
Perfluoroheptanoic acid	80	85.42	80	84.09	107	105	70-130	2	30
Perfluorohexanesulfonate	75.64	75.01	75.64	73.81	99	98	70-130	2	30
Perfluorohexanoic acid	80	82.31	80	79.09	103	99	70-130	4	30
Perfluorononanoic acid	80	81.06	80	79.65	101	100	70-130	2	30
Perfluoro-octanesulfonate	76.48	69.22	76.48	70.79	91	93	70-130	2	30
Perfluorooctanoic acid	80	82.83	80	80.03	104	100	70-130	3	30
Perfluorotetradecanoic acid	80	73.65	80	71.91	92	90	70-130	2	30
Perfluorotridecanoic acid	80	71.8	80	72.71	90	91	70-130	1	30
Perfluoroundecanoic acid	80	77.53	80	76.86	97	96	70-130	1	30

Labeled Isotope Quality Control

Labeled isotope recoveries which are outside of the QC window are confirmed unless otherwise noted on the analysis report.

Analysis Name: 7 PFAS Compounds
Batch number: 18281011

	13C4-PFBA	13C5-PFPeA	13C3-PFHxS	13C2-6:2-FTS	13C8-PFOS	13C2-8:2-FTS
9839170	77	78	75	97	78	99
9839171	81	77	74	98	75	102
9839172	85	86	88	100	84	116
9839173	81	79	76	96	79	100
9839174	81	76	75	95	86	107
Blank	79	77	71	106	77	113
LCS	78	75	72	97	78	101
LCSD	85	81	74	94	82	109
Limits:	33-123	31-157	34-126	32-170	50-121	27-164

13C8-PFOSA

9839170	70
9839171	72
9839172	76
9839173	74

*- Outside of specification

(1) The result for one or both determinations was less than five times the LOQ.

(2) The unspiked result was more than four times the spike added.

P##### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

Quality Control Summary

Client Name: C. T. Male Associates
Reported: 10/16/2018 08:29

Group Number: 1995427

Labeled Isotope Quality Control (continued)

Labeled isotope recoveries which are outside of the QC window are confirmed unless otherwise noted on the analysis report.

Analysis Name: 7 PFAS Compounds
Batch number: 18281011

	13C8-PFOSA
9839174	37
Blank	66
LCS	61
LCSD	69

Limits: 11-127

Analysis Name: 14 PFAS Drinking Water List
Batch number: 18282007

	13C2-PFHxA	13C2-PFDA	D5-NetFOSAA
9839170	109	109	107
9839171	108	109	99
9839172	108	109	98
9839173	106	112	102
9839174	106	109	102
Blank	107	107	110
LCS	111	113	104
LCSD	107	111	112

Limits: 70-130 70-130 70-130

*- Outside of specification

(1) The result for one or both determinations was less than five times the LOQ.

(2) The unspiked result was more than four times the spike added.

P##### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.



Client: C.T Male

Delivery and Receipt Information

Delivery Method: Fed Ex Arrival Timestamp: 10/05/2018 10:30
 Number of Packages: 1 Number of Projects: 2
 State/Province of Origin: NY

Arrival Condition Summary

Shipping Container Sealed:	Yes	Sample IDs on COC match Containers:	Yes
Custody Seal Present:	Yes	Sample Date/Times match COC:	Yes
Custody Seal Intact:	Yes	VOA Vial Headspace ≥ 6mm:	N/A
Samples Chilled:	Yes	Total Trip Blank Qty:	4
Paperwork Enclosed:	Yes	Trip Blank Type:	See Below
Samples Intact:	Yes	Air Quality Samples Present:	No
Missing Samples:	No		
Extra Samples:	No		
Discrepancy in Container Qty on COC:	No		

Trip Blank Type(s): 2 Unpreserved (173) 2 Trizma (201)

Unpacked by Christopher Stief (12429) at 15:10 on 10/05/2018

Samples Chilled Details

Thermometer Types: DT = Digital (Temp. Bottle) IR = Infrared (Surface Temp) All Temperatures in °C.

Cooler #	Thermometer ID	Corrected Temp	Therm. Type	Ice Type	Ice Present?	Ice Container	Elevated Temp?
1	DT42-03	0.4	DT	Wet	Y	Bagged	N

Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

BMQL	Below Minimum Quantitation Level	mL	milliliter(s)
C	degrees Celsius	MPN	Most Probable Number
cfu	colony forming units	N.D.	non-detect
CP Units	cobalt-chloroplatinate units	ng	nanogram(s)
F	degrees Fahrenheit	NTU	nephelometric turbidity units
g	gram(s)	pg/L	picogram/liter
IU	International Units	RL	Reporting Limit
kg	kilogram(s)	TNTC	Too Numerous To Count
L	liter(s)	µg	microgram(s)
lb.	pound(s)	µL	microliter(s)
m3	cubic meter(s)	umhos/cm	micromhos/cm
meq	milliequivalents	MCL	Maximum Contamination Limit
mg	milligram(s)		
<	less than		
>	greater than		
ppm	parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg) or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter per liter of gas.		
ppb	parts per billion		
Dry weight basis	Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.		

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff.

This report shall not be reproduced except in full, without the written approval of the laboratory.

Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" are not performed within 15 minutes.

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Data Qualifiers

Qualifier	Definition
C	Result confirmed by reanalysis
D1	Indicates for dual column analyses that the result is reported from column 1
D2	Indicates for dual column analyses that the result is reported from column 2
E	Concentration exceeds the calibration range
K1	Initial Calibration Blank is above the QC limit and the sample result is ND
K2	Continuing Calibration Blank is above the QC limit and the sample result is ND
K3	Initial Calibration Verification is above the QC limit and the sample result is ND
K4	Continuing Calibration Verification is above the QC limit and the sample result is ND
J (or G, I, X)	Estimated value \geq the Method Detection Limit (MDL or DL) and $<$ the Limit of Quantitation (LOQ or RL)
P	Concentration difference between the primary and confirmation column $>40\%$. The lower result is reported.
P^	Concentration difference between the primary and confirmation column $> 40\%$. The higher result is reported.
U	Analyte was not detected at the value indicated
V	Concentration difference between the primary and confirmation column $>100\%$. The reporting limit is raised due to this disparity and evident interference.
W	The dissolved oxygen uptake for the unseeded blank is greater than 0.20 mg/L.
Z	Laboratory Defined - see analysis report

Additional Organic and Inorganic CLP qualifiers may be used with Form 1 reports as defined by the CLP methods. Qualifiers specific to Dioxin/Furans and PCB Congeners are detailed on the individual Analysis Report.