



## 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: January 11, 2019 11:15

### Project: Hoosick Falls WTP

Account #: 37191  
Group Number: 2024055  
SDG: HOO23  
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

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To view our laboratory's current scopes of accreditation please go to <https://www.eurofinsus.com/environment-testing/laboratories/eurofins-lancaster-laboratories-environmental/certifications-and-accreditations-eurofins-lancaster-laboratories-environmental/> . 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>
LTB01-190107 Blank Water	01/07/2019	9962785
FTB01-190107 Grab Blank Water	01/07/2019 07:11	9962786
GAC Influent Grab Drinking Water	01/07/2019 07:05	9962787
GAC Midfluent Grab Drinking Water	01/07/2019 07:07	9962788
GAC Effluent Grab Drinking Water	01/07/2019 07:09	9962789

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 #: 2024055

**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:** LTB01-190107 Blank Water  
Hoosick Falls Water Treatment Plant

**C. T. Male Associates**  
**ELLE Sample #:** WW 9962785  
**ELLE Group #:** 2024055  
**Matrix:** Blank Water

**Project Name:** Hoosick Falls WTP

**Submission Date/Time:** 01/08/2019 10:00  
**Collection Date/Time:** 01/07/2019  
**SDG#:** HOO23-01TB

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
<b>LC/MS/MS Miscellaneous EPA 537 Version 1.1</b>			<b>ng/l</b>	<b>ng/l</b>	
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
<b>LC/MS/MS Miscellaneous EPA 537 Version 1.1 Modified</b>			<b>ng/l</b>	<b>ng/l</b>	
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	19009013	01/10/2019 14:27	Marissa C Drexinger	1
14473	7 PFAS Compounds	EPA 537 Version 1.1 Modified	1	19009010	01/10/2019 14:38	Devon M Whooley	1
14381	DW PFAS Prep	EPA 537 Version 1.1	1	19009013	01/09/2019 16:00	Anthony C Polaski	1
14091	PFAS Water Prep	EPA 537 Version 1.1 Modified	1	19009010	01/09/2019 14:55	Danielle D McCully	1

**Sample Description:** FTB01-190107 Grab Blank Water  
Hoosick Falls Water Treatment Plant

**C. T. Male Associates**  
**ELLE Sample #:** WW 9962786  
**ELLE Group #:** 2024055  
**Matrix:** Blank Water

**Project Name:** Hoosick Falls WTP

**Submittal Date/Time:** 01/08/2019 10:00  
**Collection Date/Time:** 01/07/2019 07:11  
**SDG#:** HOO23-02FB

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
<b>LC/MS/MS Miscellaneous EPA 537 Version 1.1</b>			<b>ng/l</b>	<b>ng/l</b>	
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
<b>LC/MS/MS Miscellaneous EPA 537 Version 1.1 Modified</b>			<b>ng/l</b>	<b>ng/l</b>	
14473	6:2 fluorotelomersulfonate	27619-97-2	1.7 U	1.7	1
14473	8:2 fluorotelomersulfonate	39108-34-4	5.1 U	5.1	1
14473	Perfluorobutanoic acid	375-22-4	5.1 U	5.1	1
14473	Perfluorodecanesulfonate	335-77-3	1.7 U	1.7	1
14473	Perfluoroheptanesulfonate	375-92-8	1.7 U	1.7	1
14473	Perfluorooctanesulfonamide	754-91-6	2.6 U	2.6	1
14473	Perfluoropentanoic acid	2706-90-3	5.1 U	5.1	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	19009013	01/10/2019 14:38	Marissa C Drexinger	1
14473	7 PFAS Compounds	EPA 537 Version 1.1 Modified	1	19009010	01/10/2019 14:47	Devon M Whooley	1
14381	DW PFAS Prep	EPA 537 Version 1.1	1	19009013	01/09/2019 16:00	Anthony C Polaski	1
14091	PFAS Water Prep	EPA 537 Version 1.1 Modified	1	19009010	01/09/2019 14:55	Danielle D McCully	1

**Sample Description:** GAC Influent Grab Drinking Water  
Hoosick Falls Water Treatment Plant

**C. T. Male Associates**  
**ELLE Sample #:** PW 9962787  
**ELLE Group #:** 2024055  
**Matrix:** Drinking Water

**Project Name:** Hoosick Falls WTP

**Submission Date/Time:** 01/08/2019 10:00  
**Collection Date/Time:** 01/07/2019 07:05  
**SDG#:** HOO23-03

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
<b>LC/MS/MS Miscellaneous EPA 537 Version 1.1</b>					
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	<b>Perfluorobutanesulfonate</b>	375-73-5	<b>1.8</b>	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	<b>Perfluoroheptanoic acid</b>	375-85-9	<b>14</b>	1.8	1
14070	Perfluorohexanesulfonate	355-46-4	1.8 U	1.8	1
14070	<b>Perfluorohexanoic acid</b>	307-24-4	<b>15</b>	1.8	1
14070	Perfluorononanoic acid	375-95-1	1.8 U	1.8	1
14070	<b>Perfluoro-octanesulfonate</b>	1763-23-1	<b>3.0</b>	1.8	1
14070	<b>Perfluorooctanoic acid</b>	335-67-1	<b>500</b>	18	10
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
<b>LC/MS/MS Miscellaneous EPA 537 Version 1.1 Modified</b>							
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	<b>Perfluoropentanoic acid</b>	2706-90-3	<b>5.8</b>		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	19009013	01/10/2019 14:50	Marissa C Drexinger	1
14070	14 PFAS Drinking Water List	EPA 537 Version 1.1	1	19009013	01/10/2019 20:50	Marissa C Drexinger	10
14473	7 PFAS Compounds	EPA 537 Version 1.1 Modified	1	19009010	01/10/2019 15:05	Devon M Whooley	1
14381	DW PFAS Prep	EPA 537 Version 1.1	1	19009013	01/09/2019 16:00	Anthony C Polaski	1
14091	PFAS Water Prep	EPA 537 Version 1.1 Modified	1	19009010	01/09/2019 14:55	Danielle D McCully	1

**Sample Description:** GAC Midfluent Grab Drinking Water  
Hoosick Falls Water Treatment Plant

**C. T. Male Associates**  
**ELLE Sample #:** PW 9962788  
**ELLE Group #:** 2024055  
**Matrix:** Drinking Water

**Project Name:** Hoosick Falls WTP

**Submittal Date/Time:** 01/08/2019 10:00  
**Collection Date/Time:** 01/07/2019 07:07  
**SDG#:** HOO23-04

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
<b>LC/MS/MS Miscellaneous EPA 537 Version 1.1</b>			<b>ng/l</b>	<b>ng/l</b>	
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
<b>LC/MS/MS Miscellaneous EPA 537 Version 1.1 Modified</b>			<b>ng/l</b>	<b>ng/l</b>	
14473	6:2 fluorotelomersulfonate	27619-97-2	1.7 U	1.7	1
14473	8:2 fluorotelomersulfonate	39108-34-4	5.2 U	5.2	1
14473	<b>Perfluorobutanoic acid</b>	375-22-4	<b>8.9</b>	5.2	1
14473	Perfluorodecanesulfonate	335-77-3	1.7 U	1.7	1
14473	Perfluoroheptanesulfonate	375-92-8	1.7 U	1.7	1
14473	Perfluorooctanesulfonamide	754-91-6	2.6 U	2.6	1
14473	Perfluoropentanoic acid	2706-90-3	5.2 U	5.2	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	19009013	01/10/2019 15:02	Marissa C Drexinger	1
14473	7 PFAS Compounds	EPA 537 Version 1.1 Modified	1	19009010	01/10/2019 15:14	Devon M Whooley	1
14381	DW PFAS Prep	EPA 537 Version 1.1	1	19009013	01/09/2019 16:00	Anthony C Polaski	1
14091	PFAS Water Prep	EPA 537 Version 1.1 Modified	1	19009010	01/09/2019 14:55	Danielle D McCully	1

**Sample Description:** GAC Effluent Grab Drinking Water  
Hoosick Falls Water Treatment Plant

**C. T. Male Associates**  
**ELLE Sample #:** PW 9962789  
**ELLE Group #:** 2024055  
**Matrix:** Drinking Water

**Project Name:** Hoosick Falls WTP

**Submission Date/Time:** 01/08/2019 10:00  
**Collection Date/Time:** 01/07/2019 07:09  
**SDG#:** HOO23-05

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
<b>LC/MS/MS Miscellaneous EPA 537 Version 1.1</b>			<b>ng/l</b>	<b>ng/l</b>	
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
<b>LC/MS/MS Miscellaneous EPA 537 Version 1.1 Modified</b>			<b>ng/l</b>	<b>ng/l</b>	
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	19009013	01/10/2019 15:13	Marissa C Drexinger	1
14473	7 PFAS Compounds	EPA 537 Version 1.1 Modified	1	19009010	01/10/2019 15:23	Devon M Whooley	1
14381	DW PFAS Prep	EPA 537 Version 1.1	1	19009013	01/09/2019 16:00	Anthony C Polaski	1
14091	PFAS Water Prep	EPA 537 Version 1.1 Modified	1	19009010	01/09/2019 14:55	Danielle D McCully	1



## Quality Control Summary

Client Name: C. T. Male Associates  
Reported: 01/11/2019 11:15

Group Number: 2024055

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: 19009010	Sample number(s): 9962785-9962789	
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: 19009013	Sample number(s): 9962785-9962789	
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: 19009010	Sample number(s): 9962785-9962789								
6:2 fluorotelomersulfonate	15.17	13.82	15.17	14.58	91	96	66-155	5	30
8:2 fluorotelomersulfonate	15.33	12.15	15.33	12.59	79	82	66-148	4	30
Perfluorobutanoic acid	5.44	5.63	5.44	5.36	104	99	74-142	5	30
Perfluorodecanesulfonate	5.24	5.03	5.24	4.09	96	78	60-135	21	30
Perfluoroheptanesulfonate	5.18	4.86	5.18	5.41	94	105	64-135	11	30
Perfluorooctanesulfonamide	5.44	4.55	5.44	5.04	84	93	65-164	10	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: 01/11/2019 11:15

Group Number: 2024055

### 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	5.54	5.44	5.55	102	102	74-134	0	30
Batch number: 19009013	Sample number(s): 9962785-9962789								
NEtFOSAA	80	89.18	80	81.15	111	101	70-130	9	30
NMeFOSAA	80	93.24	80	83.21	117	104	70-130	11	30
Perfluorobutanesulfonate	70.76	71.53	70.76	64.72	101	91	70-130	10	30
Perfluorodecanoic acid	80	84.06	80	79.97	105	100	70-130	5	30
Perfluorododecanoic acid	80	80.42	80	71.85	101	90	70-130	11	30
Perfluoroheptanoic acid	80	79.25	80	75.79	99	95	70-130	4	30
Perfluorohexanesulfonate	75.64	79.23	75.64	70.72	105	93	70-130	11	30
Perfluorohexanoic acid	80	79.18	80	70.19	99	88	70-130	12	30
Perfluorononanoic acid	80	82.24	80	76.3	103	95	70-130	7	30
Perfluoro-octanesulfonate	76.48	72.51	76.48	69.11	95	90	70-130	5	30
Perfluorooctanoic acid	80	79.93	80	75.95	100	95	70-130	5	30
Perfluorotetradecanoic acid	80	73.8	80	69.9	92	87	70-130	5	30
Perfluorotridecanoic acid	80	76.11	80	69.76	95	87	70-130	9	30
Perfluoroundecanoic acid	80	83.57	80	77.53	104	97	70-130	8	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: 19009010

	13C4-PFBA	13C5-PFPeA	13C3-PFHxS	13C2-6:2-FTS	13C8-PFOS	13C2-8:2-FTS
9962785	71	76	67	94	71	95
9962786	81	78	72	101	77	90
9962787	80	86	95	89	80	80
9962788	82	79	78	105	76	92
9962789	83	84	75	107	76	94
Blank	82	82	75	105	76	107
LCS	81	80	77	108	73	94
LCSD	77	72	71	91	78	96
Limits:	33-123	31-157	34-126	32-170	50-121	27-164
	13C8-PFOSA					
9962785	68					
9962786	75					
9962787	63					
9962788	70					

\*- 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: 01/11/2019 11:15

Group Number: 2024055

### 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: 19009010

13C8-PFOSA

9962789	83
Blank	82
LCS	74
LCSD	75

Limits: 11-127

Analysis Name: 14 PFAS Drinking Water List

Batch number: 19009013

13C2-PFHxA

13C2-PFDA

D5-NetFOSAA

9962785	90	102	97
9962786	88	101	92
9962787	100	114	96
9962788	93	97	89
9962789	89	96	95
Blank	99	108	103
LCS	102	109	108
LCSD	96	105	95

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 Assoc.

**Delivery and Receipt Information**

Delivery Method:	<u>Fed Ex</u>	Arrival Timestamp:	<u>01/08/2019 10:00</u>
Number of Packages:	<u>1</u>	Number of Projects:	<u>1</u>
State/Province of Origin:	<u>NY</u>		

**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 $\geq$ 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): Unpreserved

*Unpacked by Nicole Reiff (25684) at 15:07 on 01/08/2019*

**Samples Chilled Details**

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

<u>Cooler #</u>	<u>Thermometer ID</u>	<u>Corrected Temp</u>	<u>Therm. Type</u>	<u>Ice Type</u>	<u>Ice Present?</u>	<u>Ice Container</u>	<u>Elevated Temp?</u>
1	DT146	2.4	DT	Wet	Y	Bagged	N

# Explanation of Symbols and Abbreviations

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

<b>BMQL</b>	Below Minimum Quantitation Level	<b>mL</b>	milliliter(s)
<b>C</b>	degrees Celsius	<b>MPN</b>	Most Probable Number
<b>cfu</b>	colony forming units	<b>N.D.</b>	non-detect
<b>CP Units</b>	cobalt-chloroplatinate units	<b>ng</b>	nanogram(s)
<b>F</b>	degrees Fahrenheit	<b>NTU</b>	nephelometric turbidity units
<b>g</b>	gram(s)	<b>pg/L</b>	picogram/liter
<b>IU</b>	International Units	<b>RL</b>	Reporting Limit
<b>kg</b>	kilogram(s)	<b>TNTC</b>	Too Numerous To Count
<b>L</b>	liter(s)	<b>µg</b>	microgram(s)
<b>lb.</b>	pound(s)	<b>µL</b>	microliter(s)
<b>m3</b>	cubic meter(s)	<b>umhos/cm</b>	micromhos/cm
<b>meq</b>	milliequivalents	<b>MCL</b>	Maximum Contamination Limit
<b>mg</b>	milligram(s)		
<b>&lt;</b>	less than		
<b>&gt;</b>	greater than		
<b>ppm</b>	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.		
<b>ppb</b>	parts per billion		
<b>Dry weight basis</b>	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.