



ANALYSIS REPORT

Prepared by:

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

Prepared for:

Merrimack Village District
2 Greens Pond Road
Merrimack NH 03054

Report Date: December 15, 2019 09:31

Project: PFC Investigation

Account #: 38083
Group Number: 2076400
PO Number: 3332
State of Sample Origin: NH

Electronic Copy To Merrimack Village District

Attn: Jill Lavoie

Respectfully Submitted,



Mary Kate Izzo
Project Manager

(717) 556-4656

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>
1531010_008 Grab Water	11/21/2019 10:59	1210356
1531010_003 Grab Water	11/21/2019 11:12	1210357
1531010_007 Grab Water	11/21/2019 11:27	1210358
1531010_009 Grab Water	11/21/2019 11:34	1210359
1531010_508 Grab Water	11/21/2019 11:38	1210360

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

Sample Description: 1531010_008 Grab Water
MVD-2(T)

Merrimack Village District
ELLE Sample #: PW 1210356
ELLE Group #: 2076400
Matrix: Water

Project Name: PFC Investigation

Submission Date/Time: 11/22/2019 10:53
Collection Date/Time: 11/21/2019 10:59

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
	LC/MS/MS Miscellaneous	T-PFAS-WI14355, Revision 11.1	ng/l	ng/l	ng/l	
14473	10:2Fluorotelomersulfonic acid ¹	120226-60-0	N.D.	0.86	4.3	1
14473	4:2-Fluorotelomersulfonic acid ¹	757124-72-4	N.D.	0.43	1.7	1
14473	6:2-Fluorotelomersulfonic acid ¹	27619-97-2	N.D.	1.7	4.3	1
14473	8:2-Fluorotelomersulfonic acid ¹	39108-34-4	N.D.	0.86	2.6	1
14473	NEtFOSAA ¹	2991-50-6	N.D.	0.43	2.6	1
	NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.					
14473	NEtPFOSA ¹	4151-50-2	N.D.	0.86	4.3	1
	NEtPFOSA is the acronym for N-ethylperfluoro-1-octanesulfonamide					
14473	NEtPFOSAE ¹	1691-99-2	N.D.	0.86	2.6	1
	NEtPFOSAE is the acronym for 2-(N-ethylperfluoro-1-octanesulfonamido)-ethanol					
14473	NMeFOSAA ¹	2355-31-9	N.D.	0.51	1.7	1
	NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.					
14473	NMePFOSA ¹	31506-32-8	N.D.	0.86	2.6	1
	NMePFOSA is the acronym for N-methylperfluoro-1-octanesulfonamide					
14473	NMePFOSAE ¹	24448-09-7	N.D.	0.86	2.6	1
	NMePFOSAE is the acronym for 2-(N-methylperfluoro-1-octanesulfonamido)-ethanol					
14473	Perfluorobutanesulfonic acid ¹	375-73-5	2.9	0.43	1.7	1
14473	Perfluorobutanoic acid ¹	375-22-4	4.9	1.7	4.3	1
14473	Perfluorodecanesulfonic acid ¹	335-77-3	N.D.	0.43	1.7	1
14473	Perfluorodecanoic acid ¹	335-76-2	N.D.	0.43	1.7	1
14473	Perfluorododecanesulfonic acid ¹	79780-39-5	N.D.	0.43	2.6	1
14473	Perfluorododecanoic acid ¹	307-55-1	N.D.	0.43	1.7	1
14473	Perfluoroheptanesulfonic acid ¹	375-92-8	N.D.	0.43	1.7	1
14473	Perfluoroheptanoic acid ¹	375-85-9	4.4	0.43	1.7	1
14473	Perfluorohexadecanoic acid ¹	67905-19-5	N.D.	0.86	2.6	1
14473	Perfluorohexanesulfonic acid ¹	355-46-4	0.91 J	0.43	1.7	1
14473	Perfluorohexanoic acid ¹	307-24-4	7.3	0.43	1.7	1
14473	Perfluorononanesulfonic acid ¹	68259-12-1	N.D.	0.43	1.7	1
14473	Perfluorononanoic acid ¹	375-95-1	0.54 J	0.43	1.7	1
14473	Perfluorooctadecanoic acid ¹	16517-11-6	N.D.	0.86	2.6	1
14473	Perfluorooctanesulfonamide ¹	754-91-6	N.D.	0.43	1.7	1
14473	Perfluorooctanesulfonic acid ¹	1763-23-1	2.2	0.43	1.7	1
14473	Perfluorooctanoic acid ¹	335-67-1	19	0.43	1.7	1
14473	Perfluoropentanesulfonate ¹	2706-91-4	N.D.	0.43	1.7	1
14473	Perfluoropentanoic acid ¹	2706-90-3	5.9	0.43	1.7	1
14473	Perfluorotetradecanoic acid ¹	376-06-7	N.D.	0.43	1.7	1
14473	Perfluorotridecanoic acid ¹	72629-94-8	N.D.	0.43	1.7	1
14473	Perfluoroundecanoic acid ¹	2058-94-8	N.D.	0.43	1.7	1

*=This limit was used in the evaluation of the final result

Sample Description: 1531010_008 Grab Water
MVD-2(T)

Merrimack Village District
ELLE Sample #: PW 1210356
ELLE Group #: 2076400
Matrix: Water

Project Name: PFC Investigation

Submittal Date/Time: 11/22/2019 10:53
Collection Date/Time: 11/21/2019 10:59

Sample Comments

¹ = This analyte was not on the laboratory's NH ELAP Scope of Accreditation at the time of analysis.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14473	32 PFAS	T-PFAS-WI14355, Revision 11.1	1	19337014	12/06/2019 16:00	Danielle D McCully	1
14091	PFAS Water Prep	T-PFAS-WI14355, Revision 11.1	1	19337014	12/03/2019 18:00	Anthony C Polaski	1

*=This limit was used in the evaluation of the final result

Sample Description: 1531010_003 Grab Water
MVD-3(T)

Merrimack Village District
ELLE Sample #: PW 1210357
ELLE Group #: 2076400
Matrix: Water

Project Name: PFC Investigation

Submission Date/Time: 11/22/2019 10:53
Collection Date/Time: 11/21/2019 11:12

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
	LC/MS/MS Miscellaneous	T-PFAS-WI14355, Revision 11.1	ng/l	ng/l	ng/l	
14473	10:2Fluorotelomersulfonic acid ¹	120226-60-0	N.D.	0.85	4.2	1
14473	4:2-Fluorotelomersulfonic acid ¹	757124-72-4	N.D.	0.42	1.7	1
14473	6:2-Fluorotelomersulfonic acid ¹	27619-97-2	N.D.	1.7	4.2	1
14473	8:2-Fluorotelomersulfonic acid ¹	39108-34-4	N.D.	0.85	2.5	1
14473	NEtFOSAA ¹	2991-50-6	N.D.	0.42	2.5	1
	NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.					
14473	NEtPFOSA ¹	4151-50-2	N.D.	0.85	4.2	1
	NEtPFOSA is the acronym for N-ethylperfluoro-1-octanesulfonamide					
14473	NEtPFOSAE ¹	1691-99-2	N.D.	0.85	2.5	1
	NEtPFOSAE is the acronym for 2-(N-ethylperfluoro-1-octanesulfonamido)-ethanol					
14473	NMeFOSAA ¹	2355-31-9	N.D.	0.51	1.7	1
	NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.					
14473	NMePFOSA ¹	31506-32-8	N.D.	0.85	2.5	1
	NMePFOSA is the acronym for N-methylperfluoro-1-octanesulfonamide					
14473	NMePFOSAE ¹	24448-09-7	N.D.	0.85	2.5	1
	NMePFOSAE is the acronym for 2-(N-methylperfluoro-1-octanesulfonamido)-ethanol					
14473	Perfluorobutanesulfonic acid ¹	375-73-5	4.9	0.42	1.7	1
14473	Perfluorobutanoic acid ¹	375-22-4	6.5	1.7	4.2	1
14473	Perfluorodecanesulfonic acid ¹	335-77-3	N.D.	0.42	1.7	1
14473	Perfluorodecanoic acid ¹	335-76-2	N.D.	0.42	1.7	1
14473	Perfluorododecanesulfonic acid ¹	79780-39-5	N.D.	0.42	2.5	1
14473	Perfluorododecanoic acid ¹	307-55-1	N.D.	0.42	1.7	1
14473	Perfluoroheptanesulfonic acid ¹	375-92-8	N.D.	0.42	1.7	1
14473	Perfluoroheptanoic acid ¹	375-85-9	5.3	0.42	1.7	1
14473	Perfluorohexadecanoic acid ¹	67905-19-5	N.D.	0.85	2.5	1
14473	Perfluorohexanesulfonic acid ¹	355-46-4	0.82 J	0.42	1.7	1
14473	Perfluorohexanoic acid ¹	307-24-4	9.8	0.42	1.7	1
14473	Perfluorononanesulfonic acid ¹	68259-12-1	N.D.	0.42	1.7	1
14473	Perfluorononanoic acid ¹	375-95-1	0.92 J	0.42	1.7	1
14473	Perfluorooctadecanoic acid ¹	16517-11-6	N.D.	0.85	2.5	1
14473	Perfluorooctanesulfonamide ¹	754-91-6	N.D.	0.42	1.7	1
14473	Perfluorooctanesulfonic acid ¹	1763-23-1	2.3	0.42	1.7	1
14473	Perfluorooctanoic acid ¹	335-67-1	25	0.42	1.7	1
14473	Perfluoropentanesulfonate ¹	2706-91-4	N.D.	0.42	1.7	1
14473	Perfluoropentanoic acid ¹	2706-90-3	9.2	0.42	1.7	1
14473	Perfluorotetradecanoic acid ¹	376-06-7	N.D.	0.42	1.7	1
14473	Perfluorotridecanoic acid ¹	72629-94-8	N.D.	0.42	1.7	1
14473	Perfluoroundecanoic acid ¹	2058-94-8	N.D.	0.42	1.7	1

*=This limit was used in the evaluation of the final result

Sample Description: 1531010_003 Grab Water
MVD-3(T)

Merrimack Village District
ELLE Sample #: PW 1210357
ELLE Group #: 2076400
Matrix: Water

Project Name: PFC Investigation

Submittal Date/Time: 11/22/2019 10:53
Collection Date/Time: 11/21/2019 11:12

Sample Comments

¹ = This analyte was not on the laboratory's NH ELAP Scope of Accreditation at the time of analysis.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14473	32 PFAS	T-PFAS-WI14355, Revision 11.1	1	19337014	12/06/2019 16:09	Danielle D McCully	1
14091	PFAS Water Prep	T-PFAS-WI14355, Revision 11.1	1	19337014	12/03/2019 18:00	Anthony C Polaski	1

*=This limit was used in the evaluation of the final result

Sample Description: 1531010_007 Grab Water
MVD-7(R)

Merrimack Village District
ELLE Sample #: PW 1210358
ELLE Group #: 2076400
Matrix: Water

Project Name: PFC Investigation

Submission Date/Time: 11/22/2019 10:53
Collection Date/Time: 11/21/2019 11:27

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
	LC/MS/MS Miscellaneous	T-PFAS-WI14355, Revision 11.1	ng/l	ng/l	ng/l	
14473	10:2Fluorotelomersulfonic acid ¹	120226-60-0	N.D.	0.86	4.3	1
14473	4:2-Fluorotelomersulfonic acid ¹	757124-72-4	N.D.	0.43	1.7	1
14473	6:2-Fluorotelomersulfonic acid ¹	27619-97-2	N.D.	1.7	4.3	1
14473	8:2-Fluorotelomersulfonic acid ¹	39108-34-4	N.D.	0.86	2.6	1
14473	NEtFOSAA ¹	2991-50-6	N.D.	0.43	2.6	1
	NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.					
14473	NEtPFOSA ¹	4151-50-2	N.D.	0.86	4.3	1
	NEtPFOSA is the acronym for N-ethylperfluoro-1-octanesulfonamide					
14473	NEtPFOSAE ¹	1691-99-2	N.D.	0.86	2.6	1
	NEtPFOSAE is the acronym for 2-(N-ethylperfluoro-1-octanesulfonamido)-ethanol					
14473	NMeFOSAA ¹	2355-31-9	N.D.	0.51	1.7	1
	NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.					
14473	NMePFOSA ¹	31506-32-8	N.D.	0.86	2.6	1
	NMePFOSA is the acronym for N-methylperfluoro-1-octanesulfonamide					
14473	NMePFOSAE ¹	24448-09-7	N.D.	0.86	2.6	1
	NMePFOSAE is the acronym for 2-(N-methylperfluoro-1-octanesulfonamido)-ethanol					
14473	Perfluorobutanesulfonic acid ¹	375-73-5	1.8	0.43	1.7	1
14473	Perfluorobutanoic acid ¹	375-22-4	2.8 J	1.7	4.3	1
14473	Perfluorodecanesulfonic acid ¹	335-77-3	N.D.	0.43	1.7	1
14473	Perfluorodecanoic acid ¹	335-76-2	N.D.	0.43	1.7	1
14473	Perfluorododecanesulfonic acid ¹	79780-39-5	N.D.	0.43	2.6	1
14473	Perfluorododecanoic acid ¹	307-55-1	N.D.	0.43	1.7	1
14473	Perfluoroheptanesulfonic acid ¹	375-92-8	N.D.	0.43	1.7	1
14473	Perfluoroheptanoic acid ¹	375-85-9	2.9	0.43	1.7	1
14473	Perfluorohexadecanoic acid ¹	67905-19-5	N.D.	0.86	2.6	1
14473	Perfluorohexanesulfonic acid ¹	355-46-4	1.4 J	0.43	1.7	1
14473	Perfluorohexanoic acid ¹	307-24-4	2.8	0.43	1.7	1
14473	Perfluorononanesulfonic acid ¹	68259-12-1	N.D.	0.43	1.7	1
14473	Perfluorononanoic acid ¹	375-95-1	0.65 J	0.43	1.7	1
14473	Perfluorooctadecanoic acid ¹	16517-11-6	N.D.	0.86	2.6	1
14473	Perfluorooctanesulfonamide ¹	754-91-6	N.D.	0.43	1.7	1
14473	Perfluorooctanesulfonic acid ¹	1763-23-1	2.6	0.43	1.7	1
14473	Perfluorooctanoic acid ¹	335-67-1	24	0.43	1.7	1
14473	Perfluoropentanesulfonate ¹	2706-91-4	N.D.	0.43	1.7	1
14473	Perfluoropentanoic acid ¹	2706-90-3	2.5	0.43	1.7	1
14473	Perfluorotetradecanoic acid ¹	376-06-7	N.D.	0.43	1.7	1
14473	Perfluorotridecanoic acid ¹	72629-94-8	N.D.	0.43	1.7	1
14473	Perfluoroundecanoic acid ¹	2058-94-8	N.D.	0.43	1.7	1

*=This limit was used in the evaluation of the final result

Sample Description: 1531010_007 Grab Water
MVD-7(R)

Merrimack Village District
ELLE Sample #: PW 1210358
ELLE Group #: 2076400
Matrix: Water

Project Name: PFC Investigation

Submittal Date/Time: 11/22/2019 10:53
Collection Date/Time: 11/21/2019 11:27

Sample Comments

¹ = This analyte was not on the laboratory's NH ELAP Scope of Accreditation at the time of analysis.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14473	32 PFAS	T-PFAS-WI14355, Revision 11.1	1	19337014	12/06/2019 16:18	Danielle D McCully	1
14091	PFAS Water Prep	T-PFAS-WI14355, Revision 11.1	1	19337014	12/03/2019 18:00	Anthony C Polaski	1

*=This limit was used in the evaluation of the final result

Sample Description: 1531010_009 Grab Water
MVD-8(R)

Merrimack Village District
ELLE Sample #: PW 1210359
ELLE Group #: 2076400
Matrix: Water

Project Name: PFC Investigation

Submission Date/Time: 11/22/2019 10:53
Collection Date/Time: 11/21/2019 11:34

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
	LC/MS/MS Miscellaneous	T-PFAS-WI14355, Revision 11.1	ng/l	ng/l	ng/l	
14473	10:2Fluorotelomersulfonic acid ¹	120226-60-0	N.D.	0.85	4.3	1
14473	4:2-Fluorotelomersulfonic acid ¹	757124-72-4	N.D.	0.43	1.7	1
14473	6:2-Fluorotelomersulfonic acid ¹	27619-97-2	N.D.	1.7	4.3	1
14473	8:2-Fluorotelomersulfonic acid ¹	39108-34-4	N.D.	0.85	2.6	1
14473	NEtFOSAA ¹	2991-50-6	N.D.	0.43	2.6	1
	NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.					
14473	NEtPFOSA ¹	4151-50-2	N.D.	0.85	4.3	1
	NEtPFOSA is the acronym for N-ethylperfluoro-1-octanesulfonamide					
14473	NEtPFOSAE ¹	1691-99-2	N.D.	0.85	2.6	1
	NEtPFOSAE is the acronym for 2-(N-ethylperfluoro-1-octanesulfonamido)-ethanol					
14473	NMeFOSAA ¹	2355-31-9	N.D.	0.51	1.7	1
	NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.					
14473	NMePFOSA ¹	31506-32-8	N.D.	0.85	2.6	1
	NMePFOSA is the acronym for N-methylperfluoro-1-octanesulfonamide					
14473	NMePFOSAE ¹	24448-09-7	N.D.	0.85	2.6	1
	NMePFOSAE is the acronym for 2-(N-methylperfluoro-1-octanesulfonamido)-ethanol					
14473	Perfluorobutanesulfonic acid ¹	375-73-5	1.4 J	0.43	1.7	1
14473	Perfluorobutanoic acid ¹	375-22-4	2.2 J	1.7	4.3	1
14473	Perfluorodecanesulfonic acid ¹	335-77-3	N.D.	0.43	1.7	1
14473	Perfluorodecanoic acid ¹	335-76-2	N.D.	0.43	1.7	1
14473	Perfluorododecanesulfonic acid ¹	79780-39-5	N.D.	0.43	2.6	1
14473	Perfluorododecanoic acid ¹	307-55-1	N.D.	0.43	1.7	1
14473	Perfluoroheptanesulfonic acid ¹	375-92-8	N.D.	0.43	1.7	1
14473	Perfluoroheptanoic acid ¹	375-85-9	2.3	0.43	1.7	1
14473	Perfluorohexadecanoic acid ¹	67905-19-5	N.D.	0.85	2.6	1
14473	Perfluorohexanesulfonic acid ¹	355-46-4	1.0 J	0.43	1.7	1
14473	Perfluorohexanoic acid ¹	307-24-4	2.5	0.43	1.7	1
14473	Perfluorononanesulfonic acid ¹	68259-12-1	N.D.	0.43	1.7	1
14473	Perfluorononanoic acid ¹	375-95-1	N.D.	0.43	1.7	1
14473	Perfluorooctadecanoic acid ¹	16517-11-6	N.D.	0.85	2.6	1
14473	Perfluorooctanesulfonamide ¹	754-91-6	N.D.	0.43	1.7	1
14473	Perfluorooctanesulfonic acid ¹	1763-23-1	1.4 J	0.43	1.7	1
14473	Perfluorooctanoic acid ¹	335-67-1	18	0.43	1.7	1
14473	Perfluoropentanesulfonate ¹	2706-91-4	N.D.	0.43	1.7	1
14473	Perfluoropentanoic acid ¹	2706-90-3	2.1	0.43	1.7	1
14473	Perfluorotetradecanoic acid ¹	376-06-7	N.D.	0.43	1.7	1
14473	Perfluorotridecanoic acid ¹	72629-94-8	N.D.	0.43	1.7	1
14473	Perfluoroundecanoic acid ¹	2058-94-8	N.D.	0.43	1.7	1

*=This limit was used in the evaluation of the final result

Sample Description: 1531010_009 Grab Water
MVD-8(R)

Merrimack Village District
ELLE Sample #: PW 1210359
ELLE Group #: 2076400
Matrix: Water

Project Name: PFC Investigation

Submittal Date/Time: 11/22/2019 10:53
Collection Date/Time: 11/21/2019 11:34

Sample Comments

¹ = This analyte was not on the laboratory's NH ELAP Scope of Accreditation at the time of analysis.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14473	32 PFAS	T-PFAS-WI14355, Revision 11.1	1	19337014	12/06/2019 16:27	Danielle D McCully	1
14091	PFAS Water Prep	T-PFAS-WI14355, Revision 11.1	1	19337014	12/03/2019 18:00	Anthony C Polaski	1

*=This limit was used in the evaluation of the final result

Sample Description: 1531010_508 Grab Water
MVD-TP

Merrimack Village District
ELLE Sample #: PW 1210360
ELLE Group #: 2076400
Matrix: Water

Project Name: PFC Investigation

Submission Date/Time: 11/22/2019 10:53
Collection Date/Time: 11/21/2019 11:38

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
	LC/MS/MS Miscellaneous	T-PFAS-WI14355, Revision 11.1	ng/l	ng/l	ng/l	
14473	10:2Fluorotelomersulfonic acid ¹	120226-60-0	N.D.	0.86	4.3	1
14473	4:2-Fluorotelomersulfonic acid ¹	757124-72-4	N.D.	0.43	1.7	1
14473	6:2-Fluorotelomersulfonic acid ¹	27619-97-2	N.D.	1.7	4.3	1
14473	8:2-Fluorotelomersulfonic acid ¹	39108-34-4	N.D.	0.86	2.6	1
14473	NEtFOSAA ¹	2991-50-6	N.D.	0.43	2.6	1
	NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.					
14473	NEtPFOSA ¹	4151-50-2	N.D.	0.86	4.3	1
	NEtPFOSA is the acronym for N-ethylperfluoro-1-octanesulfonamide					
14473	NEtPFOSAE ¹	1691-99-2	N.D.	0.86	2.6	1
	NEtPFOSAE is the acronym for 2-(N-ethylperfluoro-1-octanesulfonamido)-ethanol					
14473	NMeFOSAA ¹	2355-31-9	N.D.	0.52	1.7	1
	NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.					
14473	NMePFOSA ¹	31506-32-8	N.D.	0.86	2.6	1
	NMePFOSA is the acronym for N-methylperfluoro-1-octanesulfonamide					
14473	NMePFOSAE ¹	24448-09-7	N.D.	0.86	2.6	1
	NMePFOSAE is the acronym for 2-(N-methylperfluoro-1-octanesulfonamido)-ethanol					
14473	Perfluorobutanesulfonic acid ¹	375-73-5	1.7 J	0.43	1.7	1
14473	Perfluorobutanoic acid ¹	375-22-4	2.6 J	1.7	4.3	1
14473	Perfluorodecanesulfonic acid ¹	335-77-3	N.D.	0.43	1.7	1
14473	Perfluorodecanoic acid ¹	335-76-2	N.D.	0.43	1.7	1
14473	Perfluorododecanesulfonic acid ¹	79780-39-5	N.D.	0.43	2.6	1
14473	Perfluorododecanoic acid ¹	307-55-1	N.D.	0.43	1.7	1
14473	Perfluoroheptanesulfonic acid ¹	375-92-8	N.D.	0.43	1.7	1
14473	Perfluoroheptanoic acid ¹	375-85-9	2.5	0.43	1.7	1
14473	Perfluorohexadecanoic acid ¹	67905-19-5	N.D.	0.86	2.6	1
14473	Perfluorohexanesulfonic acid ¹	355-46-4	1.2 J	0.43	1.7	1
14473	Perfluorohexanoic acid ¹	307-24-4	2.6	0.43	1.7	1
14473	Perfluorononanesulfonic acid ¹	68259-12-1	N.D.	0.43	1.7	1
14473	Perfluorononanoic acid ¹	375-95-1	0.48 J	0.43	1.7	1
14473	Perfluorooctadecanoic acid ¹	16517-11-6	N.D.	0.86	2.6	1
14473	Perfluorooctanesulfonamide ¹	754-91-6	N.D.	0.43	1.7	1
14473	Perfluorooctanesulfonic acid ¹	1763-23-1	2.1	0.43	1.7	1
14473	Perfluorooctanoic acid ¹	335-67-1	21	0.43	1.7	1
14473	Perfluoropentanesulfonate ¹	2706-91-4	N.D.	0.43	1.7	1
14473	Perfluoropentanoic acid ¹	2706-90-3	2.1	0.43	1.7	1
14473	Perfluorotetradecanoic acid ¹	376-06-7	N.D.	0.43	1.7	1
14473	Perfluorotridecanoic acid ¹	72629-94-8	N.D.	0.43	1.7	1
14473	Perfluoroundecanoic acid ¹	2058-94-8	N.D.	0.43	1.7	1

*=This limit was used in the evaluation of the final result

Sample Description: 1531010_508 Grab Water
MVD-TP

Merrimack Village District
ELLE Sample #: PW 1210360
ELLE Group #: 2076400
Matrix: Water

Project Name: PFC Investigation

Submittal Date/Time: 11/22/2019 10:53
Collection Date/Time: 11/21/2019 11:38

Sample Comments

¹ = This analyte was not on the laboratory's NH ELAP Scope of Accreditation at the time of analysis.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14473	32 PFAS	T-PFAS-WI14355, Revision 11.1	1	19337014	12/06/2019 16:36	Danielle D McCully	1
14091	PFAS Water Prep	T-PFAS-WI14355, Revision 11.1	1	19337014	12/03/2019 18:00	Anthony C Polaski	1

*=This limit was used in the evaluation of the final result

Quality Control Summary

Client Name: Merrimack Village District
Reported: 12/15/2019 09:31

Group Number: 2076400

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	MDL**	LOQ
	ng/l	ng/l	ng/l
Batch number: 19337014	Sample number(s): 1210356-1210360		
10:2-Fluorotelomersulfonic acid	N.D.	1.0	5.0
4:2-Fluorotelomersulfonic acid	N.D.	0.50	2.0
6:2-Fluorotelomersulfonic acid	N.D.	2.0	5.0
8:2-Fluorotelomersulfonic acid	N.D.	1.0	3.0
NEtFOSAA	N.D.	0.50	3.0
NEtPFOSA	N.D.	1.0	5.0
NEtPFOSAE	N.D.	1.0	3.0
NMeFOSAA	N.D.	0.60	2.0
NMePFOSA	N.D.	1.0	3.0
NMePFOSAE	N.D.	1.0	3.0
Perfluorobutanesulfonic acid	N.D.	0.50	2.0
Perfluorobutanoic acid	N.D.	2.0	5.0
Perfluorodecanesulfonic acid	N.D.	0.50	2.0
Perfluorodecanoic acid	N.D.	0.50	2.0
Perfluorododecanesulfonic acid	N.D.	0.50	3.0
Perfluorododecanoic acid	N.D.	0.50	2.0
Perfluoroheptanesulfonic acid	N.D.	0.50	2.0
Perfluoroheptanoic acid	N.D.	0.50	2.0
Perfluorohexadecanoic acid	N.D.	1.0	3.0
Perfluorohexanesulfonic acid	N.D.	0.50	2.0
Perfluorohexanoic acid	N.D.	0.50	2.0
Perfluorononanesulfonic acid	N.D.	0.50	2.0
Perfluorononanoic acid	N.D.	0.50	2.0
Perfluorooctadecanoic acid	N.D.	1.0	3.0
Perfluorooctanesulfonamide	N.D.	0.50	2.0
Perfluorooctanesulfonic acid	N.D.	0.50	2.0
Perfluorooctanoic acid	N.D.	0.50	2.0
Perfluoropentanesulfonate	N.D.	0.50	2.0
Perfluoropentanoic acid	N.D.	0.50	2.0
Perfluorotetradecanoic acid	N.D.	0.50	2.0
Perfluorotridecanoic acid	N.D.	0.50	2.0
Perfluoroundecanoic acid	N.D.	0.50	2.0

LCS/LCSD

*- Outside of specification

** - This limit was used in the evaluation of the final result for the blank

(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.

Quality Control Summary

Client Name: Merrimack Village District
Reported: 12/15/2019 09:31

Group Number: 2076400

LCS/LCSD

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
Batch number: 19337014	Sample number(s): 1210356-1210360								
10:2Fluorotelomersulfonic acid	24.68	24.38	24.68	21.29	99	86	45-143	14	30
4:2-Fluorotelomersulfonic acid	23.92	19.44	23.92	19.48	81	81	61-131	0	30
6:2-Fluorotelomersulfonic acid	24.28	24.51	24.28	23.82	101	98	56-140	3	30
8:2-Fluorotelomersulfonic acid	24.52	23.65	24.52	23.89	96	97	58-143	1	30
NEtFOSAA	25.6	28.32	25.6	23.3	111	91	53-140	19	30
NEtPFOSA	25.6	22.34	25.6	26.46	87	103	56-136	17	30
NEtPFOSAE	25.6	24.01	25.6	26.33	94	103	56-130	9	30
NMeFOSAA	25.6	26.56	25.6	25.78	104	101	59-141	3	30
NMePFOSA	25.6	26.79	25.6	28.18	105	110	49-134	5	30
NMePFOSAE	25.6	27.04	25.6	26.14	106	102	61-133	3	30
Perfluorobutanesulfonic acid	22.64	21.99	22.64	21.32	97	94	67-135	3	30
Perfluorobutanoic acid	25.6	27.25	25.6	27.24	106	106	63-160	0	30
Perfluorodecanesulfonic acid	24.64	24.82	24.64	22.58	101	92	62-135	9	30
Perfluorodecanoic acid	25.6	26.29	25.6	27.27	103	107	66-141	4	30
Perfluorododecanesulfonic acid	24.8	21.28	24.8	19.73	86	80	57-134	8	30
Perfluorododecanoic acid	25.6	27.16	25.6	27.73	106	108	65-143	2	30
Perfluoroheptanesulfonic acid	24.36	27.16	24.36	25.05	111	103	67-138	8	30
Perfluoroheptanoic acid	25.6	23.27	25.6	22.67	91	89	69-144	3	30
Perfluorohexadecanoic acid	25.6	31.46	25.6	35.38	123	138	60-148	12	30
Perfluorohexanesulfonic acid	24.2	23.19	24.2	21.9	96	91	63-132	6	30
Perfluorohexanoic acid	25.6	26.84	25.6	23.36	105	91	69-139	14	30
Perfluorononanesulfonic acid	24.56	26.25	24.56	27.11	107	110	70-137	3	30
Perfluorononanoic acid	25.6	25.67	25.6	24.87	100	97	66-144	3	30
Perfluorooctadecanoic acid	25.6	30.95	25.6	37.42	121	146	47-159	19	30
Perfluorooctanesulfonamide	25.6	23.42	25.6	20.79	91	81	67-126	12	30
Perfluorooctanesulfonic acid	24.48	21.37	24.48	21.05	87	86	53-129	2	30
Perfluorooctanoic acid	25.6	25.91	25.6	26.23	101	102	67-139	1	30
Perfluoropentanesulfonate	24	25.5	24	24.97	106	104	73-134	2	30
Perfluoropentanoic acid	25.6	30.97	25.6	27.6	121	108	73-135	12	30
Perfluorotetradecanoic acid	25.6	26.73	25.6	25.6	104	100	69-141	4	30
Perfluorotridecanoic acid	25.6	21.68	25.6	21.1	85	82	66-146	3	30
Perfluoroundecanoic acid	25.6	27.4	25.6	24.22	107	95	66-140	12	30

*- Outside of specification

** - This limit was used in the evaluation of the final result for the blank

(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.

Quality Control Summary

Client Name: Merrimack Village District
Reported: 12/15/2019 09:31

Group Number: 2076400

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: 32 PFAS
Batch number: 19337014

	13C4-PFBA	13C5-PFPeA	13C3-PFBS	13C2-4:2-FTS	13C5-PFHxA	13C3-PFHxS
1210356	93	94	100	109	83	93
1210357	84	87	98	118	76	83
1210358	98	109	125	149	99	108
1210359	94	100	111	142	88	101
1210360	89	101	110	135	93	101
Blank	100	96	88	113	102	110
LCS	91	81	87	113	96	101
LCSD	91	88	89	113	105	109
Limits:	43-130	38-150	23-175	22-169	36-137	35-143

	13C4-PFHpA	13C2-6:2-FTS	13C8-PFOA	13C8-PFOS	13C9-PFNA	13C6-PFDA
1210356	89	102	93	93	97	92
1210357	90	105	79	83	83	76
1210358	106	132	98	97	95	101
1210359	97	122	93	88	88	86
1210360	102	121	94	90	91	87
Blank	106	124	101	101	100	104
LCS	98	109	98	97	88	97
LCSD	100	107	94	96	94	88
Limits:	33-140	29-182	52-124	52-121	48-130	50-124

	13C2-8:2-FTS	d3-NMeFOSAA	13C7-PFUnDA	d5-NEiFOSAA	13C2-PFDoDA	13C2-PFTeDA
1210356	121	83	80	95	75	54
1210357	94	78	80	91	75	53
1210358	125	120	96	108	79	57
1210359	113	97	86	101	81	50
1210360	120	93	84	89	76	57
Blank	126	108	101	112	101	68
LCS	111	115	95	108	95	69
LCSD	108	105	87	98	81	58
Limits:	37-169	36-143	44-128	42-149	36-127	21-134

	13C8-PFOSA	d7-NMePFOSAE	d3-NMePFOSA	d9-NEiPFOSAE	d5-NEiPFOSA
1210356	70	43	10	45	12
1210357	67	44	20	40	16
1210358	60	26	15	25	14
1210359	45	20	11	18	10
1210360	78	50	14	45	13

*- Outside of specification

** - This limit was used in the evaluation of the final result for the blank

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

Quality Control Summary

Client Name: Merrimack Village District
Reported: 12/15/2019 09:31

Group Number: 2076400

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: 32 PFAS

Batch number: 19337014

	13C8-PFOSA	d7-NMePFOSAE	d3-NMePFOSA	d9-NEiPFOSAE	d5-NEiPFOSA
Blank	99	64	44	64	38
LCS	93	62	37	61	37
LCSD	82	47	22	45	21
Limits:	10-134	10-137	10-107	10-135	10-107

*- Outside of specification

** - This limit was used in the evaluation of the final result for the blank

(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.



Drinking Water and Groundwater Bureau

A-38083
G-2076400
S-1210356-60

October 14, 2019

Page 1 of 1

GENERAL SYSTEM EVALUATION SAMPLES ONLY ***

Questions: (603) 271-2513

PWS ID: 1531010

Collected By: Ronald Miner

System Name: MERRIMACK VILLAGE DIST

Signature: Ronald Miner
(Print Name)

I certify that all samples taken are from the site(s) listed below and all information provided on this form to the lab is valid.

PWS Town: MERRIMACK

Phone Number: (603) 424 9241 x107

Sample Type: Treatment Evaluation Other

If sample is chlorinated, please fill in Chlorine Residual (mg/L) column.

Sample Purpose/Comments:

Analysis Requested

Sample Site Location	Date & Time Sample Collected	Lab Sample ID	# of Containers	Parameters Requested	Free/Total (circle one) Chlorine Residual (mg/L)
MVD-2(R)/1531010-008	11/21/19 10:59am		2	PFAS by isotope detection 32 Compounds	
MVD-3(R)/1531010-003	11/21/19 11:12am		2		
MVD-7(R)/1531010-007	11/21/19 11:27am		2		
MVD-8(R)/1531010-009	11/21/19 11:34am		2		
MVD-TP/1531010-508	11/21/19 11:38		2		

NOTE: Samples collected for NITRATE/NITRITE analysis NEED to be collected prior to chlorination. Check with Lab. CYANIDE samples NEED to be collected prior to chlorination. Check with Lab.

*** Samples that are representative of water being consumed, and indicate the presence of acute contaminants exceeding the MCL, shall be used for compliance purposes.

FOR LAB USE: Temp_C (upon receipt): _____ On Ice? Y/N _____ Batch ID (if different than sample ID prefix): _____ List QUALIFIERS (if any): _____

Relinquished by: Ronald Miner 11/21/19 (12:30) Received by: _____ Date/Time: _____

Relinquished by: _____ Received at Lab by: [Signature] Date/Time: 11/22/19 1053

Lab Conducting Analysis: _____ Signature: _____ Lab Accred. ID: _____ Phone: _____

Reporting Lab (if different): _____ Signature: _____ Lab Accred. ID: _____ Phone: _____

NOTE: If acute contaminants are present/exceeded, results must be reported to DES within 24 hours.



Client: MERRIMACK VILLAGE DIST.

Delivery and Receipt Information

Delivery Method:	<u>Fed Ex</u>	Arrival Date:	<u>11/22/2019</u>
Number of Packages:	<u>1</u>	Number of Projects:	<u>1</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	Total Trip Blank Qty:	0
Samples Chilled:	Yes	Air Quality Samples Present:	No
Paperwork Enclosed:	Yes		
Samples Intact:	Yes		
Missing Samples:	No		
Extra Samples:	No		
Discrepancy in Container Qty on COC:	No		

Unpacked by Julissa Rivera-Santa

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	192050133	2.8	IR	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.