



ANALYSIS REPORT

Prepared by:

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

Prepared for:

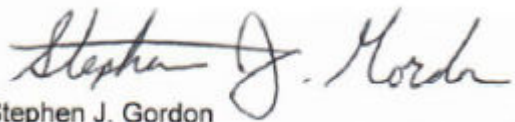
CWM Environmental
11931 State Route 85
Suite B
Kittanning PA 16201

Report Date: February 25, 2019 00:06

Project: PFAS Screening

Account #: 20413
Group Number: 2028593
State of Sample Origin: PA

Respectfully Submitted,



Stephen J. Gordon
Project Manager

(724) 597-2027

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>
RAW WATER Grab Surface Water Sample	02/06/2019 09:40	9982875
EP101 Grab Potable Water Sample	02/06/2019 10:10	9982876
FIELD BLANK Water Sample	02/06/2019	9982877

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

Sample Description: RAW WATER Grab Surface Water Sample
PFAS Screening

CWM Environmental
ELLE Sample #: WW 9982875
ELLE Group #: 2028593
Matrix: Wastewater

Project Name: PFAS Screening

Submission Date/Time: 02/07/2019 08:10
Collection Date/Time: 02/06/2019 09:40

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
LC/MS/MS Miscellaneous		EPA 537 Version 1.1 Modified	ng/l	ng/l	ng/l	
14473	10:2-fluorotelomersulfonate ¹	120226-60-0	N.D.	0.86	2.6	1
14473	4:2 fluorotelomersulfonate	757124-72-4	N.D.	0.86	2.6	1
14473	6:2 fluorotelomersulfonate	27619-97-2	N.D.	0.86	1.7	1
14473	8:2 fluorotelomersulfonate	39108-34-4	N.D.	1.7	5.1	1
14473	NEtFOSAA	2991-50-6	N.D.	0.86	2.6	1
NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.						
14473	NEtPFOSA	4151-50-2	N.D.	2.6	7.7	1
NEtPFOSA is the acronym for N-ethylperfluoro-1-octanesulfonamide						
14473	NEtPFOSAE	1691-99-2	N.D.	1.0	2.6	1
NEtPFOSAE is the acronym for 2-(N-ethylperfluoro-1-octanesulfonamido)-ethanol						
14473	NMeFOSAA	2355-31-9	N.D.	0.86	2.6	1
NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.						
14473	NMePFOSA	31506-32-8	N.D. Q7	2.6	7.7	1
NMePFOSA is the acronym for N-methylperfluoro-1-octanesulfonamide						
14473	NMePFOSAE	24448-09-7	N.D.	0.86	2.6	1
NMePFOSAE is the acronym for 2-(N-methylperfluoro-1-octanesulfonamido)-ethanol						
14473	Perfluorobutanesulfonate	375-73-5	0.40 J	0.26	0.86	1
14473	Perfluorobutanoic acid	375-22-4	N.D.	1.7	5.1	1
14473	Perfluorodecanesulfonate	335-77-3	N.D.	0.51	1.7	1
14473	Perfluorodecanoic acid	335-76-2	N.D.	0.77	1.7	1
14473	Perfluorododecanesulfonate	79780-39-5	N.D.	0.26	0.86	1
14473	Perfluorododecanoic acid	307-55-1	N.D.	0.43	1.7	1
14473	Perfluoroheptanesulfonate	375-92-8	N.D.	0.34	1.7	1
14473	Perfluoroheptanoic acid	375-85-9	0.38 J	0.34	0.86	1
14473	Perfluorohexadecanoic acid	67905-19-5	N.D.	0.26	0.86	1
14473	Perfluorohexanesulfonate	355-46-4	N.D.	0.34	1.7	1
14473	Perfluorohexanoic acid	307-24-4	0.54 J	0.34	1.7	1
14473	Perfluorononanesulfonate ¹	68259-12-1	N.D.	0.51	1.7	1
14473	Perfluorononanoic acid	375-95-1	N.D.	0.34	1.7	1
14473	Perfluorooctadecanoic acid	16517-11-6	N.D.	0.43	1.7	1
14473	Perfluorooctanesulfonamide	754-91-6	N.D.	0.43	2.6	1
14473	Perfluoro-octanesulfonate	1763-23-1	0.63 J	0.34	1.7	1
14473	Perfluorooctanoic acid	335-67-1	0.78 J	0.26	0.86	1
14473	Perfluoropentanesulfonate	2706-91-4	N.D.	0.34	1.7	1
14473	Perfluoropentanoic acid	2706-90-3	N.D.	1.7	5.1	1
14473	Perfluorotetradecanoic acid	376-06-7	N.D.	0.26	0.86	1
14473	Perfluorotridecanoic acid	72629-94-8	N.D.	0.34	0.86	1
14473	Perfluoroundecanoic acid	2058-94-8	N.D.	0.34	1.7	1

The recovery for the labeled compound used as extraction standards is outside the QC acceptance limits as noted on the QC Summary. The

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

Sample Description: RAW WATER Grab Surface Water Sample
PFAS Screening

CWM Environmental
ELLE Sample #: WW 9982875
ELLE Group #: 2028593
Matrix: Wastewater

Project Name: PFAS Screening

Submittal Date/Time: 02/07/2019 08:10
Collection Date/Time: 02/06/2019 09:40

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
	following corrective action was taken: The sample was reextracted within holding time. The data is reported from the original extraction. Both sets of data are included in the data package.					

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/20.

¹ = This analyte was not on the laboratory's PA DEP 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 compounds by EPA 537 mod	EPA 537 Version 1.1 Modified	1	19043004	02/14/2019 17:09	Jason W Knight	1
14091	PFAS Water Prep	EPA 537 Version 1.1 Modified	1	19043004	02/12/2019 08:05	Courtney J Fatta	1

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

Sample Description: EP101 Grab Potable Water Sample
PFAS Screening

CWM Environmental
ELLE Sample #: PW 9982876
ELLE Group #: 2028593
Matrix: Potable Water

Project Name: PFAS Screening

Submission Date/Time: 02/07/2019 08:10
Collection Date/Time: 02/06/2019 10:10

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
LC/MS/MS Miscellaneous EPA 537 Version 1.1						
14070	NEtFOSAA	2991-50-6	N.D.	0.43	1.7	1
	NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.					
14070	NMeFOSAA	2355-31-9	N.D.	0.43	1.7	1
	NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.					
14070	Perfluorobutanesulfonate	375-73-5	0.44 J	0.43	1.7	1
14070	Perfluorodecanoic acid	335-76-2	N.D.	0.43	1.7	1
14070	Perfluorododecanoic acid	307-55-1	N.D.	0.43	1.7	1
14070	Perfluoroheptanoic acid	375-85-9	N.D.	0.43	1.7	1
14070	Perfluorohexanesulfonate	355-46-4	N.D.	0.43	1.7	1
14070	Perfluorohexanoic acid	307-24-4	0.55 J	0.43	1.7	1
14070	Perfluorononanoic acid	375-95-1	N.D.	0.43	1.7	1
14070	Perfluoro-octanesulfonate	1763-23-1	0.78 J	0.43	1.7	1
14070	Perfluorooctanoic acid	335-67-1	0.75 J	0.43	1.7	1
14070	Perfluorotetradecanoic acid	376-06-7	N.D.	0.43	1.7	1
14070	Perfluorotridecanoic acid	72629-94-8	N.D.	0.43	1.7	1
14070	Perfluoroundecanoic acid	2058-94-8	N.D.	0.43	1.7	1

A field reagent blank was not submitted with this sample.

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/20.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14070	14 compounds in drinking water	EPA 537 Version 1.1	1	19042001	02/13/2019 19:35	Marissa C Drexinger	1
14381	DW PFAS Prep	EPA 537 Version 1.1	1	19042001	02/11/2019 16:00	Anthony C Polaski	1

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

Sample Description: FIELD BLANK Water Sample
PFAS Screening

CWM Environmental
ELLE Sample #: WW 9982877
ELLE Group #: 2028593
Matrix: Wastewater

Project Name: PFAS Screening

Submission Date/Time: 02/07/2019 08:10
Collection Date/Time: 02/06/2019

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
LC/MS/MS Miscellaneous		EPA 537 Version 1.1 Modified	ng/l	ng/l	ng/l	
14473	10:2-fluorotelomersulfonate ¹	120226-60-0	N.D.	0.88	2.7	1
14473	4:2 fluorotelomersulfonate	757124-72-4	N.D.	0.88	2.7	1
14473	6:2 fluorotelomersulfonate	27619-97-2	N.D.	0.88	1.8	1
14473	8:2 fluorotelomersulfonate	39108-34-4	N.D.	1.8	5.3	1
14473	NEtFOSAA	2991-50-6	N.D.	0.88	2.7	1
	NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.					
14473	NEtPFOSA	4151-50-2	N.D.	2.7	8.0	1
	NEtPFOSA is the acronym for N-ethylperfluoro-1-octanesulfonamide					
14473	NEtPFOSAE	1691-99-2	N.D.	1.1	2.7	1
	NEtPFOSAE is the acronym for 2-(N-ethylperfluoro-1-octanesulfonamido)-ethanol					
14473	NMeFOSAA	2355-31-9	N.D.	0.88	2.7	1
	NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.					
14473	NMePFOSA	31506-32-8	N.D. Q7	2.7	8.0	1
	NMePFOSA is the acronym for N-methylperfluoro-1-octanesulfonamide					
14473	NMePFOSAE	24448-09-7	N.D.	0.88	2.7	1
	NMePFOSAE is the acronym for 2-(N-methylperfluoro-1-octanesulfonamido)-ethanol					
14473	Perfluorobutanesulfonate	375-73-5	N.D.	0.27	0.88	1
14473	Perfluorobutanoic acid	375-22-4	N.D.	1.8	5.3	1
14473	Perfluorodecanesulfonate	335-77-3	N.D.	0.53	1.8	1
14473	Perfluorodecanoic acid	335-76-2	N.D.	0.80	1.8	1
14473	Perfluorododecanesulfonate	79780-39-5	N.D.	0.27	0.88	1
14473	Perfluorododecanoic acid	307-55-1	N.D.	0.44	1.8	1
14473	Perfluoroheptanesulfonate	375-92-8	N.D.	0.35	1.8	1
14473	Perfluoroheptanoic acid	375-85-9	N.D.	0.35	0.88	1
14473	Perfluorohexadecanoic acid	67905-19-5	N.D.	0.27	0.88	1
14473	Perfluorohexanesulfonate	355-46-4	N.D.	0.35	1.8	1
14473	Perfluorohexanoic acid	307-24-4	N.D.	0.35	1.8	1
14473	Perfluorononanesulfonate ¹	68259-12-1	N.D.	0.53	1.8	1
14473	Perfluorononanoic acid	375-95-1	N.D.	0.35	1.8	1
14473	Perfluorooctadecanoic acid	16517-11-6	N.D.	0.44	1.8	1
14473	Perfluorooctanesulfonamide	754-91-6	N.D.	0.44	2.7	1
14473	Perfluoro-octanesulfonate	1763-23-1	N.D.	0.35	1.8	1
14473	Perfluorooctanoic acid	335-67-1	N.D.	0.27	0.88	1
14473	Perfluoropentanesulfonate	2706-91-4	N.D.	0.35	1.8	1
14473	Perfluoropentanoic acid	2706-90-3	N.D.	1.8	5.3	1
14473	Perfluorotetradecanoic acid	376-06-7	N.D.	0.27	0.88	1
14473	Perfluorotridecanoic acid	72629-94-8	N.D.	0.35	0.88	1
14473	Perfluoroundecanoic acid	2058-94-8	N.D.	0.35	1.8	1

The recovery for the labeled compound used as extraction standards is outside the QC acceptance limits as noted on the QC Summary. The

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Sample Description: FIELD BLANK Water Sample
PFAS Screening

CWM Environmental
ELLE Sample #: WW 9982877
ELLE Group #: 2028593
Matrix: Wastewater

Project Name: PFAS Screening

Submittal Date/Time: 02/07/2019 08:10
Collection Date/Time: 02/06/2019

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
	following corrective action was taken: The sample is reported, as sufficient sample was not remaining to perform a reanalysis.					

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/20.

¹ = This analyte was not on the laboratory's PA DEP 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 compounds by EPA 537 mod	EPA 537 Version 1.1 Modified	1	19043004	02/14/2019 17:18	Jason W Knight	1
14091	PFAS Water Prep	EPA 537 Version 1.1 Modified	1	19043004	02/12/2019 08:05	Courtney J Fatta	1

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

Quality Control Summary

Client Name: CWM Environmental
Reported: 02/25/2019 00:06

Group Number: 2028593

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: 19042001	Sample number(s): 9982876		
NEtFOSAA	N.D.	0.50	2.0
NMeFOSAA	N.D.	0.50	2.0
Perfluorobutanesulfonate	N.D.	0.50	2.0
Perfluorodecanoic acid	N.D.	0.50	2.0
Perfluorododecanoic acid	N.D.	0.50	2.0
Perfluoroheptanoic acid	N.D.	0.50	2.0
Perfluorohexanesulfonate	N.D.	0.50	2.0
Perfluorohexanoic acid	N.D.	0.50	2.0
Perfluorononanoic acid	N.D.	0.50	2.0
Perfluoro-octanesulfonate	N.D.	0.50	2.0
Perfluorooctanoic 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
Batch number: 19043004	Sample number(s): 9982875,9982877		
10:2-fluorotelomersulfonate	N.D.	1.0	3.0
4:2 fluorotelomersulfonate	N.D.	1.0	3.0
6:2 fluorotelomersulfonate	N.D.	1.0	2.0
8:2 fluorotelomersulfonate	N.D.	2.0	6.0
NEtFOSAA	N.D.	1.0	3.0
NEtPFOSA	N.D.	3.0	9.0
NEtPFOSAE	N.D.	1.2	3.0
NMeFOSAA	N.D.	1.0	3.0
NMePFOSA	N.D.	3.0	9.0
NMePFOSAE	N.D.	1.0	3.0
Perfluorobutanesulfonate	N.D.	0.30	1.0
Perfluorobutanoic acid	N.D.	2.0	6.0
Perfluorodecanesulfonate	N.D.	0.60	2.0
Perfluorodecanoic acid	N.D.	0.90	2.0
Perfluorododecanesulfonate	N.D.	0.30	1.0
Perfluorododecanoic acid	N.D.	0.50	2.0
Perfluoroheptanesulfonate	N.D.	0.40	2.0
Perfluoroheptanoic acid	N.D.	0.40	1.0
Perfluorohexadecanoic acid	N.D.	0.30	1.0
Perfluorohexanesulfonate	N.D.	0.40	2.0
Perfluorohexanoic acid	N.D.	0.40	2.0
Perfluorononanesulfonate	N.D.	0.60	2.0
Perfluorononanoic acid	N.D.	0.40	2.0

*- 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: CWM Environmental
Reported: 02/25/2019 00:06

Group Number: 2028593

Method Blank (continued)

Analysis Name	Result	MDL**	LOQ
	ng/l	ng/l	ng/l
Perfluorooctadecanoic acid	N.D.	0.50	2.0
Perfluorooctanesulfonamide	N.D.	0.50	3.0
Perfluoro-octanesulfonate	N.D.	0.40	2.0
Perfluorooctanoic acid	N.D.	0.30	1.0
Perfluoropentanesulfonate	N.D.	0.40	2.0
Perfluoropentanoic acid	N.D.	2.0	6.0
Perfluorotetradecanoic acid	N.D.	0.30	1.0
Perfluorotridecanoic acid	N.D.	0.40	1.0
Perfluoroundecanoic acid	N.D.	0.40	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: 19042001	Sample number(s): 9982876								
NEtFOSAA	4.00	4.79	4.00	4.55	120	114	70-130	5	30
NMeFOSAA	4.00	5.19	4.00	4.76	130	119	70-130	9	30
Perfluorobutanesulfonate	3.54	4.12	3.54	4.13	116	117	70-130	0	30
Perfluorodecanoic acid	4.00	4.52	4.00	4.54	113	113	70-130	0	30
Perfluorododecanoic acid	4.00	4.23	4.00	4.13	106	103	70-130	3	30
Perfluoroheptanoic acid	4.00	4.98	4.00	4.89	125	122	70-130	2	30
Perfluorohexanesulfonate	3.78	4.31	3.78	4.23	114	112	70-130	2	30
Perfluorohexanoic acid	4.00	4.84	4.00	4.59	121	115	70-130	5	30
Perfluorononanoic acid	4.00	4.86	4.00	4.73	122	118	70-130	3	30
Perfluoro-octanesulfonate	3.82	4.26	3.82	3.95	111	103	70-130	8	30
Perfluorooctanoic acid	4.00	4.70	4.00	4.39	118	110	70-130	7	30
Perfluorotetradecanoic acid	4.00	4.40	4.00	4.49	110	112	70-130	2	30
Perfluorotridecanoic acid	4.00	4.31	4.00	4.25	108	106	70-130	2	30
Perfluoroundecanoic acid	4.00	4.65	4.00	4.45	116	111	70-130	4	30
Batch number: 19043004	Sample number(s): 9982875,9982877								
10:2-fluorotelomersulfonate	15.42	14.51	15.42	14.27	94	93	49-186	2	30
4:2 fluorotelomersulfonate	14.94	13.32	14.94	12.55	89	84	82-152	6	30
6:2 fluorotelomersulfonate	15.17	12.83	15.17	12.54	85	83	66-155	2	30
8:2 fluorotelomersulfonate	15.33	12.45	15.33	13.63	81	89	66-148	9	30
NEtFOSAA	5.44	4.90	5.44	4.50	90	83	55-169	9	30
NEtPFOSA	5.44	4.57	5.44	4.82	84	89	70-130	5	30
NEtPFOSAE	5.44	4.73	5.44	4.60	87	85	70-130	3	30
NMeFOSAA	5.44	4.71	5.44	4.40	87	81	44-147	7	30
NMePFOSA	5.44	6.36	5.44	4.60	117	85	70-130	32*	30
NMePFOSAE	5.44	4.35	5.44	4.73	80	87	70-130	8	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: CWM Environmental
Reported: 02/25/2019 00:06

Group Number: 2028593

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
Perfluorobutanesulfonate	4.81	4.72	4.81	4.57	98	95	73-128	3	30
Perfluorobutanoic acid	5.44	5.43	5.44	5.41	100	99	74-142	0	30
Perfluorodecanesulfonate	5.24	4.79	5.24	5.09	91	97	60-135	6	30
Perfluorodecanoic acid	5.44	4.33	5.44	4.87	80	90	69-148	12	30
Perfluorododecanesulfonate	5.26	4.86	5.26	4.67	92	89	70-130	4	30
Perfluorododecanoic acid	5.44	5.57	5.44	5.35	102	98	75-136	4	30
Perfluoroheptanesulfonate	5.18	5.00	5.18	5.05	97	98	64-135	1	30
Perfluoroheptanoic acid	5.44	5.48	5.44	5.16	101	95	76-140	6	30
Perfluorohexadecanoic acid	5.44	5.74	5.44	5.33	106	98	21-151	8	30
Perfluorohexanesulfonate	5.14	4.74	5.14	4.38	92	85	71-131	8	30
Perfluorohexanoic acid	5.44	5.21	5.44	5.09	96	94	75-135	2	30
Perfluorononanesulfonate	5.22	4.92	5.22	5.56	94	106	66-133	12	30
Perfluorononanoic acid	5.44	5.39	5.44	5.22	99	96	72-148	3	30
Perfluorooctadecanoic acid	5.44	5.66	5.44	5.16	104	95	70-130	9	30
Perfluorooctanesulfonamide	5.44	4.84	5.44	5.22	89	96	65-164	8	30
Perfluoro-octanesulfonate	5.20	4.08	5.20	4.09	78	79	67-138	0	30
Perfluorooctanoic acid	5.44	5.10	5.44	5.34	94	98	72-138	5	30
Perfluoropentanesulfonate	5.10	5.31	5.10	5.16	104	101	76-127	3	30
Perfluoropentanoic acid	5.44	5.56	5.44	5.49	102	101	74-134	1	30
Perfluorotetradecanoic acid	5.44	5.36	5.44	5.08	98	93	74-135	5	30
Perfluorotridecanoic acid	5.44	5.47	5.44	5.12	101	94	61-145	7	30
Perfluoroundecanoic acid	5.44	5.36	5.44	5.53	98	102	75-146	3	30

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: 14 compounds in drinking water
Batch number: 19042001

	13C2-PFHxA	13C2-PFDA	D5-NetFOSAA
9982876	80	95	86
Blank	94	99	84
LCS	95	99	85
LCSD	98	100	91
Limits:	70-130	70-130	70-130

Analysis Name: 32 compounds by EPA 537 mod
Batch number: 19043004

*- 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: CWM Environmental
Reported: 02/25/2019 00:06

Group Number: 2028593

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 compounds by EPA 537 mod
Batch number: 19043004

	13C4-PFBA	13C5-PFPeA	13C3-PFBS	13C2-4:2-FTS	13C5-PFHxA	13C3-PFHxS
9982875	90	112	147	261*	83	96
9982877	87	87	88	105	86	74
Blank	90	88	90	87	89	90
LCS	82	83	83	90	84	90
LCSD	91	88	90	102	97	99
Limits:	33-123	31-157	26-148	21-182	35-138	34-126
	13C4-PFHpA	13C2-6:2-FTS	13C8-PFOA	13C8-PFOS	13C9-PFNA	13C6-PFDA
9982875	87	146	85	88	94	90
9982877	62	113	86	84	81	83
Blank	92	109	92	89	86	88
LCS	82	102	83	89	86	93
LCSD	93	110	91	97	94	103
Limits:	35-126	32-170	48-122	50-121	41-144	47-125
	13C2-8:2-FTS	d3-NMeFOSAA	13C7-PFUnDA	d5-NEIFOSAA	13C2-PFDoDA	13C2-PFTeDA
9982875	130	97	90	101	85	83
9982877	105	82	81	88	76	75
Blank	95	89	88	97	90	85
LCS	99	90	92	87	80	77
LCSD	113	105	105	106	99	95
Limits:	27-164	30-127	30-128	30-142	39-130	26-119
	13C8-PFOSA	d7-NMePFOSAE	d3-NMePFOSA	d9-NEIPFOSAE	d5-NEIPFOSA	
9982875	41	26	7*	25	8*	
9982877	36	22	7*	22	8*	
Blank	78	70	54	72	52	
LCS	61	41	10	39	12	
LCSD	86	81	73	85	69	
Limits:	11-127	10-128	10-104	10-121	10-106	

*- 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.

Environmental Analysis Request/Chain of Custody



Lancaster Laboratories
Environmental

For Eurofins Lancaster Laboratories Environmental use only

Acct. # 20413 Group # 2028593 Sample # 9982875-77

COC # 573068

Client Information				Matrix				Analysis Requested								For Lab Use Only																													
Client: <u>PWSA - CWM Environmental</u>				Acct. #: <u>20413</u>				Preservation and Filtration Codes								FSC: <u>237707</u>																													
Project Name/#: <u>PFA's Screening</u>				PWSID #: <u>N/A: Non Reportable</u>				<table border="1"> <tr> <th>0</th> <th>None</th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table>								0	None																											SCR#: <u>237707</u>	
0	None																																												
Project Manager: <u>Ryan Shafer</u>				P.O. #: <u></u>				14 Compounds (Trisens) 32 Compounds by EPA 537								Preservation Codes H=HCl T=Thiosulfate N=HNO ₃ B=NaOH S=H ₂ SO ₄ P=H ₃ PO ₄ F=Field Filtered O=Other																													
Sampler: <u>Frank Davis</u>				Quote #: <u></u>												Remarks																													
State where samples were collected: <u>PA</u>		For Compliance: Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		Soil <input type="checkbox"/>	Sediment <input type="checkbox"/>	Tissue <input type="checkbox"/>	Potable <input type="checkbox"/>	Ground <input type="checkbox"/>	Surface <input type="checkbox"/>	Water <input type="checkbox"/>	NPDES <input type="checkbox"/>	Other: <u></u>	Total # of Containers																																
Sample Identification		Collected												Grab	Composite																														
Date	Time																																												
<u>RAW WATER</u>	<u>02.06.19 09:40</u>	<u>X</u>					<u>Surface</u>						<u>2</u>	<u>1</u>	<u>1</u>																														
<u>EP 101</u>	<u>02.06.19 10:10</u>	<u>X</u>					<u>Potable</u>						<u>3</u>	<u>1</u>	<u>2</u>																														
<u>FIELD BLANK</u>																																													
Turnaround Time (TAT) Requested (please circle)				Relinquished by <u>Ryan Shafer</u>				Date	Time	Received by <u>J. Stiles</u>				Date	Time																														
(Standard) <u>Standard</u> (Rush) (Rush TAT is subject to laboratory approval and surcharge.)				Relinquished by <u>J. Stiles</u>				<u>2/5/19</u>	<u>0900</u>	Received by <u>Frank Davis</u>				<u>02.06.19</u>	<u>08:00</u>																														
Requested TAT in business days: <u></u>				Relinquished by <u>Frank Davis</u>				<u>02.06.19</u>	<u>10:45</u>	Received by <u>J. Stiles</u>				<u>2-6-19</u>	<u>1045</u>																														
E-mail address: <u>rshafer@cwmenvironmental.com</u>				Relinquished by <u>J. Stiles</u>				<u>2-6-19</u>	<u>1157</u>	Received by <u></u>																																			
Data Package Options (circle if required) Type I (EPA Level 3 Equivalent/non-CLP) Type III (Reduced non-CLP) NYSDEC Category A or B				Type VI (Raw Data Only) NJ DKQP TX TRRP-13 MA MCP CT RCP				EDD Required? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> If yes, format: <u></u>				Relinquished by Commercial Carrier: UPS <input checked="" type="checkbox"/> FedEx <input type="checkbox"/> Other <input type="checkbox"/>				Temperature upon receipt <u>5.0</u> °C																													
Site-Specific QC (MS/MSD/Dup)? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> (If yes, indicate QC sample and submit triplicate sample volume.)																																													



Client: PWSA-CWM Environmental

PFA's Screening

Delivery and Receipt Information

Delivery Method:	<u>UPS</u>	Arrival Timestamp:	<u>02/07/2019 8:10</u>
Number of Packages:	<u>1</u>	Number of Projects:	<u>1</u>
State/Province of Origin:	<u>PA</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:	0
Paperwork Enclosed:	Yes	Air Quality Samples Present:	No
Samples Intact:	Yes		
Missing Samples:	No		
Extra Samples:	No		
Discrepancy in Container Qty on COC:	No		

Unpacked by Nicole Reiff (25684) at 16:19 on 02/07/2019

Samples Chilled Details: PFA's Screening

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	DT146	5.8	DT	Wet	Y	Bagged	N

General Comments: Received a 'PFC Blank Water' not on COC.

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
B	Detection in the Blank
Q0	LCS/LCSD Low
Q1	LCS/LCSD High
Q2	MS/MSD Low
Q3	MS/MSD High
Q7	LCS/LCSD RPD
Q8	DUP RPD
Q9	MS/MSD RPD

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.