



ANALYSIS REPORT

Prepared by:

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Prepared for:

PEER
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Report Date: February 17, 2020 09:23

Project: Delray Beach

Account #: 44577
Group Number: 2085897
PO Number: CHECK #40631662
State of Sample Origin: FL

Electronic Copy To PEER
Electronic Copy To PEER

Attn: Jerrel Phillips
Attn: Timothy Whitehouse

Respectfully Submitted,



Mary Kate Izzo
Project Manager

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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>
SCRWTP-Reclaim Grab Water	01/30/2020 16:25	1251441
SCRWTP-Cake-Sludge Grab Sludge	01/30/2020 16:20	1251442

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

Sample Description: SCRWTP-Reclaim Grab Water
Delray Beach

PEER
ELLE Sample #: WW 1251441
ELLE Group #: 2085897
Matrix: Water

Project Name: Delray Beach

Submission Date/Time: 02/01/2020 09:45
Collection Date/Time: 01/30/2020 16:25

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	9CI-PF3ONS ¹ 9CI-PF3ONS is the acronym for Potassium 9-chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	756426-58-1	N.D.	0.44	1.8	1
14473	11CI-PF3OUdS ¹ 11CI-PF3OUdS is the acronym for 11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	763051-92-9	N.D.	0.44	1.8	1
14473	DONA ¹ DONA is the acronym for 4,8-dioxa-3H-perfluorononanoic acid, the free acid form of ADONA.	919005-14-4	N.D.	0.44	1.8	1
14473	10:2Fluorotelomersulfonic acid	120226-60-0	N.D.	0.88	4.4	1
14473	4:2-Fluorotelomersulfonic acid	757124-72-4	N.D.	0.44	1.8	1
14473	6:2-Fluorotelomersulfonic acid	27619-97-2	N.D.	1.8	4.4	1
14473	8:2-Fluorotelomersulfonic acid	39108-34-4	N.D.	0.88	2.6	1
14473	HFPODA ¹ HFPODA is the acronym for 2,3,3,3-Tetrafluoro-2-(1,1,2,2,3,3,3-heptafluoropropoxy)-propanoic acid	13252-13-6	N.D.	0.44	2.6	1
14473	NEtFOSAA NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.	2991-50-6	N.D.	0.44	2.6	1
14473	NEtPFOSA NEtPFOSA is the acronym for N-ethylperfluoro-1-octanesulfonamide	4151-50-2	N.D.	0.88	4.4	1
14473	NEtPFOSAE NEtPFOSAE is the acronym for 2-(N-ethylperfluoro-1-octanesulfonamido)-ethanol	1691-99-2	N.D.	0.88	2.6	1
14473	NMeFOSAA NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.	2355-31-9	1.2 J	0.53	1.8	1
14473	NMePFOSA NMePFOSA is the acronym for N-methylperfluoro-1-octanesulfonamide	31506-32-8	N.D.	0.88	2.6	1
14473	NMePFOSAE NMePFOSAE is the acronym for 2-(N-methylperfluoro-1-octanesulfonamido)-ethanol	24448-09-7	N.D.	0.88	2.6	1
14473	Perfluorobutanesulfonic acid	375-73-5	7.7	0.44	1.8	1
14473	Perfluorobutanoic acid	375-22-4	7.3	1.8	4.4	1
14473	Perfluorodecanesulfonic acid	335-77-3	N.D.	0.44	1.8	1
14473	Perfluorodecanoic acid	335-76-2	1.1 J	0.44	1.8	1
14473	Perfluorododecanesulfonic acid	79780-39-5	N.D.	0.44	2.6	1
14473	Perfluorododecanoic acid	307-55-1	N.D.	0.44	1.8	1
14473	Perfluoroheptanesulfonic acid	375-92-8	N.D.	0.44	1.8	1
14473	Perfluoroheptanoic acid	375-85-9	4.0	0.44	1.8	1
14473	Perfluorohexadecanoic acid	67905-19-5	N.D.	0.88	2.6	1
14473	Perfluorohexanesulfonic acid	355-46-4	4.9	0.44	1.8	1
14473	Perfluorohexanoic acid	307-24-4	18	0.44	1.8	1
14473	Perfluorononanesulfonic acid ¹	68259-12-1	N.D.	0.44	1.8	1
14473	Perfluorononanoic acid	375-95-1	1.5 J	0.44	1.8	1

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

Sample Description: SCRWTP-Reclaim Grab Water
Delray Beach

PEER
ELLE Sample #: WW 1251441
ELLE Group #: 2085897
Matrix: Water

Project Name: Delray Beach

Submittal Date/Time: 02/01/2020 09:45
Collection Date/Time: 01/30/2020 16:25

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	Perfluorooctadecanoic acid	16517-11-6	N.D.	0.88	2.6	1
14473	Perfluorooctanesulfonamide	754-91-6	N.D.	0.44	1.8	1
14473	Perfluorooctanesulfonic acid	1763-23-1	16	0.44	1.8	1
14473	Perfluorooctanoic acid	335-67-1	11	0.44	1.8	1
14473	Perfluoropentanesulfonate	2706-91-4	0.66 J	0.44	1.8	1
14473	Perfluoropentanoic acid	2706-90-3	12	0.44	1.8	1
14473	Perfluorotetradecanoic acid	376-06-7	N.D.	0.44	1.8	1
14473	Perfluorotridecanoic acid	72629-94-8	N.D.	0.44	1.8	1
14473	Perfluoroundecanoic acid	2058-94-8	N.D.	0.44	1.8	1

The recovery for injection and several extraction standards is outside of the QC acceptance limits as noted on the QC Summary. The following action was taken:
The sample was re-extracted within the method holding time and the recovery for injection and several extraction standards was again outside of the QC acceptance limits.

Sample Comments

State of Florida Lab Certification No. E87997

¹ = This analyte was not on the laboratory's FL DOH 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	36 PFAS Cpds	EPA 537 Version 1.1 Modified	1	20043017	02/13/2020 17:50	Jason W Knight	1
14091	PFAS Water Prep	EPA 537 Version 1.1 Modified	2	20043017	02/12/2020 16:00	Eric Hockley	1

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

Sample Description: SCRWTP-Cake-Sludge Grab Sludge
Delray Beach

PEER
ELLE Sample #: SW 1251442
ELLE Group #: 2085897
Matrix: Sludge

Project Name: Delray Beach

Submission Date/Time: 02/01/2020 09:45
Collection Date/Time: 01/30/2020 16:20

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
LC/MS/MS Miscellaneous		EPA 537 Version 1.1 Modified	ng/g	ng/g	ng/g	
14027	9CI-PF3ONS ¹ 9CI-PF3ONS is the acronym for Potassium 9-chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	756426-58-1	N.D.	0.56	5.6	1
14027	11CI-PF3OUdS ¹ 11CI-PF3OUdS is the acronym for 11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid	763051-92-9	N.D.	0.56	1.7	1
14027	DONA ¹ DONA is the acronym for 4,8-dioxa-3H-perfluorononanoic acid, the free acid form of ADONA.	919005-14-4	N.D.	0.56	1.7	1
14027	10:2Fluorotelomersulfonic acid	120226-60-0	N.D.	1.7	5.6	1
14027	4:2-Fluorotelomersulfonic acid	757124-72-4	N.D.	1.7	5.6	1
14027	6:2-Fluorotelomersulfonic acid	27619-97-2	N.D.	1.7	5.6	1
14027	8:2-Fluorotelomersulfonic acid	39108-34-4	N.D.	1.7	8.4	1
14027	HFPODA ¹ HFPODA is the acronym for 2,3,3,3-Tetrafluoro-2-(1,1,2,2,3,3,3-heptafluoropropoxy)-propanoic acid	13252-13-6	N.D.	1.1	8.4	1
14027	NEtFOSAA NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.	2991-50-6	2.6 J	0.56	5.6	1
14027	NEtPFOSA NEtPFOSA is the acronym for N-ethylperfluoro-1-octanesulfonamide	4151-50-2	N.D.	1.4	5.6	1
14027	NEtPFOSAE NEtPFOSAE is the acronym for 2-(N-ethylperfluoro-1-octanesulfonamido)-ethanol	1691-99-2	N.D.	1.4	5.6	1
14027	NMeFOSAA NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.	2355-31-9	7.7	0.56	5.6	1
14027	NMePFOSA NMePFOSA is the acronym for N-methylperfluoro-1-octanesulfonamide	31506-32-8	N.D.	1.4	5.6	1
14027	NMePFOSAE NMePFOSAE is the acronym for 2-(N-methylperfluoro-1-octanesulfonamido)-ethanol	24448-09-7	N.D.	1.4	5.6	1
14027	Perfluorobutanesulfonic acid	375-73-5	N.D.	1.1	5.6	1
14027	Perfluorobutanoic acid	375-22-4	5.8	2.2	5.6	1
14027	Perfluorodecanesulfonic acid	335-77-3	N.D.	0.56	1.7	1
14027	Perfluorodecanoic acid	335-76-2	4.1	0.56	1.7	1
14027	Perfluorododecanesulfonic acid	79780-39-5	N.D.	0.56	5.6	1
14027	Perfluorododecanoic acid	307-55-1	2.5	0.56	1.7	1
14027	Perfluoroheptanesulfonic acid	375-92-8	N.D.	0.56	1.7	1
14027	Perfluoroheptanoic acid	375-85-9	N.D.	0.56	1.7	1
14027	Perfluorohexadecanoic acid	67905-19-5	N.D.	0.56	1.7	1
14027	Perfluorohexanesulfonic acid	355-46-4	0.71 J	0.56	1.7	1
14027	Perfluorohexanoic acid	307-24-4	1.1 J	0.56	1.7	1
14027	Perfluorononanesulfonic acid ¹	68259-12-1	N.D.	0.56	1.7	1
14027	Perfluorononanoic acid	375-95-1	0.75 J	0.56	1.7	1

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

Sample Description: SCRWTP-Cake-Sludge Grab Sludge
Delray Beach

PEER
ELLE Sample #: SW 1251442
ELLE Group #: 2085897
Matrix: Sludge

Project Name: Delray Beach

Submittal Date/Time: 02/01/2020 09:45
Collection Date/Time: 01/30/2020 16:20

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
LC/MS/MS Miscellaneous EPA 537 Version 1.1 Modified			ng/g	ng/g	ng/g	
14027	Perfluorooctadecanoic acid	16517-11-6	N.D.	0.56	1.7	1
14027	Perfluorooctanesulfonamide	754-91-6	N.D.	0.56	1.7	1
14027	Perfluorooctanesulfonic acid	1763-23-1	24	0.56	1.7	1
14027	Perfluorooctanoic acid	335-67-1	1.5 J	0.56	1.7	1
14027	Perfluoropentanesulfonate	2706-91-4	N.D.	0.56	1.7	1
14027	Perfluoropentanoic acid	2706-90-3	N.D.	0.56	1.7	1
14027	Perfluorotetradecanoic acid	376-06-7	0.57 J	0.56	1.7	1
14027	Perfluorotridecanoic acid	72629-94-8	N.D.	0.56	1.7	1
14027	Perfluoroundecanoic acid	2058-94-8	0.97 J	0.56	1.7	1

Due to the matrix of this sample, the QC acceptance limits should be considered advisory.

Wet Chemistry		SM 2540 G-2011 %Moisture Calc	%	%	%	
00111	Moisture ¹	n.a.	82.3	0.50	0.50	1

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

Sample Comments

State of Florida Lab Certification No. E87997

¹ = This analyte was not on the laboratory's FL DOH 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
14027	36 PFAS Cpds	EPA 537 Version 1.1 Modified	1	20036010	02/08/2020 19:15	Katie Renfro	1
14090	PFAS Solid Prep	EPA 537 Version 1.1 Modified	1	20036010	02/05/2020 08:10	Katherine Mora	1
00111	Moisture	SM 2540 G-2011 %Moisture Calc	1	20034820003A	02/04/2020 09:49	William C Schwebel	1

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

Quality Control Summary

Client Name: PEER
Reported: 02/17/2020 09:23

Group Number: 2085897

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/g	ng/g	ng/g
Batch number: 20036010	Sample number(s): 1251442		
9CI-PF3ONS	N.D.	0.10	1.0
11CI-PF3OUdS	N.D.	0.10	0.30
DONA	N.D.	0.10	0.30
10:2Fluorotelomersulfonic acid	N.D.	0.30	1.0
4:2-Fluorotelomersulfonic acid	N.D.	0.30	1.0
6:2-Fluorotelomersulfonic acid	N.D.	0.30	1.0
8:2-Fluorotelomersulfonic acid	N.D.	0.30	1.5
HFPODA	N.D.	0.20	1.5
NEtFOSAA	N.D.	0.10	1.0
NEtPFOSA	N.D.	0.25	1.0
NEtPFOSAE	N.D.	0.25	1.0
NMeFOSAA	N.D.	0.10	1.0
NMePFOSA	N.D.	0.25	1.0
NMePFOSAE	N.D.	0.25	1.0
Perfluorobutanesulfonic acid	N.D.	0.20	1.0
Perfluorobutanoic acid	N.D.	0.40	1.0
Perfluorodecanesulfonic acid	N.D.	0.10	0.30
Perfluorodecanoic acid	N.D.	0.10	0.30
Perfluorododecanesulfonic acid	N.D.	0.10	1.0
Perfluorododecanoic acid	N.D.	0.10	0.30
Perfluoroheptanesulfonic acid	N.D.	0.10	0.30
Perfluoroheptanoic acid	N.D.	0.10	0.30
Perfluorohexadecanoic acid	N.D.	0.10	0.30
Perfluorohexanesulfonic acid	N.D.	0.10	0.30
Perfluorohexanoic acid	N.D.	0.10	0.30
Perfluorononanesulfonic acid	N.D.	0.10	0.30
Perfluorononanoic acid	N.D.	0.10	0.30
Perfluorooctadecanoic acid	N.D.	0.10	0.30
Perfluorooctanesulfonamide	N.D.	0.10	0.30
Perfluorooctanesulfonic acid	N.D.	0.10	0.30
Perfluorooctanoic acid	N.D.	0.10	0.30
Perfluoropentanesulfonate	N.D.	0.10	0.30
Perfluoropentanoic acid	N.D.	0.10	0.30
Perfluorotetradecanoic acid	N.D.	0.10	0.30
Perfluorotridecanoic acid	N.D.	0.10	0.30
Perfluoroundecanoic acid	N.D.	0.10	0.30
	ng/l	ng/l	ng/l
Batch number: 20043017	Sample number(s): 1251441		

*- 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: PEER
Reported: 02/17/2020 09:23

Group Number: 2085897

Method Blank (continued)

Analysis Name	Result	MDL**	LOQ
	ng/l	ng/l	ng/l
9CI-PF3ONS	N.D.	0.50	2.0
11CI-PF3OUdS	N.D.	0.50	2.0
DONA	N.D.	0.50	2.0
10:2Fluorotelomersulfonic 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
HFPODA	N.D.	0.50	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

Analysis Name	LCS Spike Added ng/g	LCS Conc ng/g	LCSD Spike Added ng/g	LCSD Conc ng/g	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max

*- 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: PEER
Reported: 02/17/2020 09:23

Group Number: 2085897

LCS/LCSD

Analysis Name	LCS Spike Added ng/g	LCS Conc ng/g	LCSD Spike Added ng/g	LCSD Conc ng/g	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: 20036010	Sample number(s): 1251442								
9CI-PF3ONS	23.26	21.12	23.26	21.89	91	94	48-156	4	30
11CI-PF3OUdS	23.51	20.24	23.51	20.12	86	86	49-152	1	30
DONA	23.51	23.43	23.51	23.82	100	101	60-142	2	30
10:2Fluorotelomersulfonic acid	24.06	18.05	24.06	19.71	75	82	45-147	9	30
4:2-Fluorotelomersulfonic acid	23.31	20.6	23.31	19.45	88	83	58-134	6	30
6:2-Fluorotelomersulfonic acid	23.66	21.18	23.66	20.4	89	86	51-144	4	30
8:2-Fluorotelomersulfonic acid	23.91	22.82	23.91	23.18	95	97	54-152	2	30
HFPODA	24.96	23.56	24.96	25.6	94	103	36-163	8	30
NEtFOSAA	24.96	22.92	24.96	21.17	92	85	51-145	8	30
NEtPFOSA	24.96	26.4	24.96	23.74	106	95	52-134	11	30
NEtPFOSAE	24.96	23.04	24.96	20.13	92	81	52-141	13	30
NMeFOSAA	24.96	23.9	24.96	23.68	96	95	55-152	1	30
NMePFOSA	24.96	24.68	24.96	24.94	99	100	40-132	1	30
NMePFOSAE	24.96	26.32	24.96	26.13	105	105	56-144	1	30
Perfluorobutanesulfonic acid	22.08	21.78	22.08	21.09	99	96	63-139	3	30
Perfluorobutanoic acid	24.96	24.78	24.96	23.77	99	95	56-188	4	30
Perfluorodecanesulfonic acid	24.04	22.96	24.04	24.01	96	100	60-142	4	30
Perfluorodecanoic acid	24.96	24.01	24.96	24.75	96	99	65-144	3	30
Perfluorododecanesulfonic acid	24.16	21.15	24.16	22.87	88	95	50-146	8	30
Perfluorododecanoic acid	24.96	22.92	24.96	23.45	92	94	62-150	2	30
Perfluoroheptanesulfonic acid	23.75	25.05	23.75	23.93	105	101	67-139	5	30
Perfluoroheptanoic acid	24.96	25.15	24.96	25.06	101	100	65-153	0	30
Perfluorohexadecanoic acid	24.96	12.73	24.96	16.27	51	65	46-164	24	30
Perfluorohexanesulfonic acid	23.6	22.49	23.6	21.71	95	92	59-139	4	30
Perfluorohexanoic acid	24.96	25.16	24.96	23.75	101	95	64-149	6	30
Perfluorononanesulfonic acid	23.96	24.11	23.96	23.05	101	96	62-145	5	30
Perfluorononanoic acid	24.96	22.8	24.96	24.26	91	97	64-151	6	30
Perfluorooctadecanoic acid	24.96	4.09	24.96	6.05	16*	24*	27-171	39*	30
Perfluorooctanesulfonamide	24.96	24.73	24.96	24.8	99	99	61-133	0	30
Perfluorooctanesulfonic acid	23.86	19.68	23.86	19.31	82	81	54-132	2	30
Perfluorooctanoic acid	24.96	25.03	24.96	23.4	100	94	65-147	7	30
Perfluoropentanesulfonate	23.41	25.47	23.41	22.44	109	96	64-144	13	30
Perfluoropentanoic acid	24.96	26.56	24.96	26.12	106	105	71-139	2	30
Perfluorotetradecanoic acid	24.96	24.97	24.96	24.83	100	99	66-147	1	30
Perfluorotridecanoic acid	24.96	22.72	24.96	21.4	91	86	63-152	6	30
Perfluoroundecanoic acid	24.96	21.21	24.96	21.06	85	84	65-146	1	30
	ng/l	ng/l	ng/l	ng/l					
Batch number: 20043017	Sample number(s): 1251441								
9CI-PF3ONS	23.84	18.28	23.84	21.4	77	90	52-147	16	30
11CI-PF3OUdS	24.12	17.35	24.12	20.94	72	87	47-145	19	30
DONA	24.12	19.14	24.12	18.83	79	78	52-160	2	30
10:2Fluorotelomersulfonic acid	24.68	25.41	24.68	27.83	103	113	45-143	9	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: PEER
Reported: 02/17/2020 09:23

Group Number: 2085897

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
4:2-Fluorotelomersulfonic acid	23.92	19.45	23.92	21.48	81	90	61-131	10	30
6:2-Fluorotelomersulfonic acid	24.28	19.46	24.28	18.95	80	78	56-140	3	30
8:2-Fluorotelomersulfonic acid	24.52	23.65	24.52	26.08	96	106	58-143	10	30
HFPDA	25.6	19.28	25.6	17.15	75	67	38-151	12	30
NEtFOSAA	25.6	21.42	25.6	22.68	84	89	53-140	6	30
NEtPFOSA	25.6	24.85	25.6	28.54	97	111	56-136	14	30
NEtPFOSAE	25.6	21.56	25.6	24.34	84	95	56-130	12	30
NMeFOSAA	25.6	24.59	25.6	28.06	96	110	59-141	13	30
NMePFOSA	25.6	25.26	25.6	24.6	99	96	49-134	3	30
NMePFOSAE	25.6	21.89	25.6	24.13	85	94	61-133	10	30
Perfluorobutanesulfonic acid	22.64	17.18	22.64	18.02	76	80	67-135	5	30
Perfluorobutanoic acid	25.6	21.27	25.6	22.1	83	86	63-160	4	30
Perfluorodecanesulfonic acid	24.64	19.89	24.64	21	81	85	62-135	5	30
Perfluorodecanoic acid	25.6	21.01	25.6	19.77	82	77	66-141	6	30
Perfluorododecanesulfonic acid	24.8	19	24.8	18.44	77	74	57-134	3	30
Perfluorododecanoic acid	25.6	22.11	25.6	21.64	86	85	65-143	2	30
Perfluoroheptanesulfonic acid	24.36	21.49	24.36	21.01	88	86	67-138	2	30
Perfluoroheptanoic acid	25.6	21.85	25.6	23.34	85	91	69-144	7	30
Perfluorohexadecanoic acid	25.6	22.99	25.6	23.82	90	93	60-148	4	30
Perfluorohexanesulfonic acid	24.2	21.19	24.2	20.69	88	85	63-132	2	30
Perfluorohexanoic acid	25.6	22.14	25.6	22.99	86	90	69-139	4	30
Perfluorononanesulfonic acid	24.56	20.99	24.56	21.81	85	89	70-137	4	30
Perfluorononanoic acid	25.6	21.52	25.6	20.12	84	79	66-144	7	30
Perfluorooctadecanoic acid	25.6	26.89	25.6	28.27	105	110	47-159	5	30
Perfluorooctanesulfonamide	25.6	23.61	25.6	23.44	92	92	67-126	1	30
Perfluorooctanesulfonic acid	24.48	17.43	24.48	18.19	71	74	53-129	4	30
Perfluorooctanoic acid	25.6	21.34	25.6	21.69	83	85	67-139	2	30
Perfluoropentanesulfonate	24	19.6	24	21.66	82	90	73-134	10	30
Perfluoropentanoic acid	25.6	21.88	25.6	22.99	85	90	73-135	5	30
Perfluorotetradecanoic acid	25.6	22.75	25.6	23.23	89	91	69-141	2	30
Perfluorotridecanoic acid	25.6	20.83	25.6	20.68	81	81	66-146	1	30
Perfluoroundecanoic acid	25.6	18.79	25.6	19.13	73	75	66-140	2	30
	%	%	%	%					
Batch number: 20034820003A	Sample number(s): 1251442								
Moisture	89.5	89.43			100		99-101		

*- Outside of specification

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

Quality Control Summary

Client Name: PEER
Reported: 02/17/2020 09:23

Group Number: 2085897

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: 36 PFAS Cpds
Batch number: 20036010

	13C4-PFBA	13C5-PFPeA	13C3-PFBS	13C2-4:2-FTS	13C5-PFHxA	13C3-PFHxS
1251442	93	107	120	162*	93	90
Blank	102	107	102	113	108	107
LCS	101	101	101	116	107	108
LCSD	104	98	99	117	106	104
Limits:	40-117	38-118	38-120	28-137	36-120	38-124

	13C4-PFHpA	13C2-6:2-FTS	13C8-PFOA	13C8-PFOS	13C9-PFNA	13C6-PFDA
1251442	96	200*	93	92	101	97
Blank	101	128	106	106	98	101
LCS	106	122	105	105	102	103
LCSD	102	116	100	102	94	101
Limits:	39-120	25-154	44-115	45-118	39-123	43-118

	13C2-8:2-FTS	d3-NMeFOSAA	13C7-PFUnDA	d5-NEIFOSAA	13C2-PFDoDA	13C2-PFTeDA
1251442	179*	102	90	100	72	78
Blank	121	98	99	89	98	66
LCS	115	101	110	98	98	81
LCSD	111	104	114	110	106	92
Limits:	26-155	10-152	34-124	10-156	28-126	26-125

	13C8-PFOSA	d7-NMePFOSAE	d9-NEIPFOSAE	d5-NEIPFOSA	d3-NMePFOSA	13C3-HFPODA
1251442	79	33	30	29	39	81
Blank	100	31	28	56	62	102
LCS	104	50	46	67	78	112
LCSD	107	52	53	69	74	99
Limits:	31-127	10-142	10-150	10-145	10-141	33-139

Analysis Name: 36 PFAS Cpds
Batch number: 20043017

	13C4-PFBA	13C5-PFPeA	13C3-PFBS	13C2-4:2-FTS	13C5-PFHxA	13C3-PFHxS
1251441	101	196*	254*	173*	71	80
Blank	119	122	119	144	116	103
LCS	115	120	116	140	106	99
LCSD	110	111	105	141	111	104
Limits:	43-130	38-150	23-175	22-169	36-137	35-143

*- Outside of specification

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

Quality Control Summary

Client Name: PEER
Reported: 02/17/2020 09:23

Group Number: 2085897

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: 36 PFAS Cpds
Batch number: 20043017

	13C4-PFHpA	13C2-6:2-FTS	13C8-PFOA	13C8-PFOS	13C9-PFNA	13C6-PFDA
1251441	97	236*	105	102	131*	96
Blank	115	155	120	123*	130	120
LCS	113	141	118	119	130	120
LCSD	115	150	119	109	130	115
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
1251441	160	89	97	98	80	46
Blank	135	119	133*	140	124	114
LCS	140	130	129*	139	126	110
LCSD	120	110	116	117	113	100
Limits:	37-169	36-143	44-128	42-149	36-127	21-134
	13C8-PFOSA	d7-NMePFOSAE	d3-NMePFOSA	d9-NEIPFOSAE	d5-NEIPFOSA	13C3-HFPODA
1251441	37	17	6*	17	4*	53
Blank	105	88	75	90	72	99
LCS	108	81	52	79	44	106
LCSD	94	73	27	67	24	129
Limits:	10-134	10-137	10-107	10-135	10-107	24-147

*- Outside of specification

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



Client: FLORIDA PEER

Delivery and Receipt Information

Delivery Method: Fed Ex Arrival Date: 02/01/2020
 Number of Packages: 1 Number of Projects: 1

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.*

Cooler #	Thermometer ID	Corrected Temp	Therm. Type	Ice Type	Ice Present?	Ice Container	Elevated Temp?
1	46730060WS	2.2	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.