



08-Jul-2022

Katie O'Brien
ALS Environmental
225 Commerce Dr
Ft. Collins, CO 80524

Re: **2206585**

Work Order: **22062772**

Dear Katie,

ALS Environmental received 2 samples on 27-Jun-2022 04:00 PM for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental - Holland and for only the analyses requested.

Sample results are compliant with industry accepted practices and Quality Control results achieved laboratory specifications. Any exceptions are noted in the Case Narrative, or noted with qualifiers in the report or QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained from ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 19.

If you have any questions regarding this report, please feel free to contact me:

ADDRESS: 3352 128th Avenue, Holland, MI, USA
PHONE: +1 (616) 399-6070 FAX: +1 (616) 399-6185

Sincerely,

A handwritten signature in black ink that reads "Jodi Blouw".

Electronically approved by: Jodi Blouw

Jodi Blouw

Report of Laboratory Analysis

Certificate No: MN 026-999-449

ALS GROUP USA, CORP Part of the ALS Laboratory Group A Campbell Brothers Limited Company

Environmental 

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RIGHT SOLUTIONS RIGHT PARTNER

Client: ALS Environmental
Project: 2206585
Work Order: 22062772

Work Order Sample Summary

<u>Lab Samp ID</u>	<u>Client Sample ID</u>	<u>Matrix</u>	<u>Tag Number</u>	<u>Collection Date</u>	<u>Date Received</u>	<u>Hold</u>
22062772-01	Outfall 001A	Water		6/23/2022 14:30	6/27/2022 16:00	<input type="checkbox"/>
22062772-02	Field Blank	Water		6/23/2022 14:30	6/27/2022 16:00	<input type="checkbox"/>

Client: ALS Environmental
Project: 2206585
WorkOrder: 22062772

QUALIFIERS, ACRONYMS, UNITS

<u>Qualifier</u>	<u>Description</u>
*	Value exceeds Regulatory Limit
**	Estimated Value
a	Analyte is non-accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
Hr	BOD/CBOD - Sample was reset outside Hold Time, value should be considered estimated.
J	Analyte is present at an estimated concentration between the MDL and Report Limit
n	Analyte accreditation is not offered
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL
X	Analyte was detected in the Method Blank between the MDL and Reporting Limit, sample results may exhibit background or reagent contamination at the observed level.

<u>Acronym</u>	<u>Description</u>
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
LOD	Limit of Detection (see MDL)
LOQ	Limit of Quantitation (see PQL)
MBLK	Method Blank
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PQL	Practical Quantitation Limit
RPD	Relative Percent Difference
TDL	Target Detection Limit
TNTC	Too Numerous To Count
A	APHA Standard Methods
D	ASTM
E	EPA
SW	SW-846 Update III

<u>Units Reported</u>	<u>Description</u>
ng/L	Nanograms per Liter

Client: ALS Environmental
Project: 2206585
Work Order: 22062772

Case Narrative

Samples for the above noted Work Order were received on 06/27/2022. The attached "Sample Receipt Checklist" documents the status of custody seals, container integrity, preservation, and temperature compliance.

Samples were analyzed according to the analytical methodology previously transmitted in the "Work Order Acknowledgement". Methodologies are also documented in the "Analytical Result" section for each sample. Quality control results are listed in the "QC Report" section. Sample association for the reported quality control is located at the end of each batch summary. If applicable, results are appropriately qualified in the Analytical Result and QC Report sections. The "Qualifiers" section documents the various qualifiers, units, and acronyms utilized in reporting. A copy of the laboratory's scope of accreditation is available upon request.

With the following exceptions, all sample analyses achieved analytical criteria.

Extractable Organics:

Batch 199021, Method E537 Mod, Sample MBLK-199021: CCV01: The Continuing Calibration Verification did not meet method acceptance criteria for the following analytes, results are to be considered estimated: d7-N-MeFOSE, d3-NMeFOSA, 13C-PFHpA

Batch 199021, Method E537 Mod, Sample LCS-199021: CCV01: The Continuing Calibration Verification did not meet method acceptance criteria for the following analytes, results are to be considered estimated: d7-N-MeFOSE, d3-NMeFOSA, 13C-PFHpA

Batch 199021, Method E537 Mod, Sample Outfall 001A (22062772-01A): The extracted internal standard response was outside recovery criteria with low bias; sample results may exhibit bias. 13C-FOSA_IS, d5-NEtFOSA_IS, d9-EtFOSE_IS, d3-NMeFOSA_IS, d7-N-MeFOSE_IS

Batch 199021, Method E537 Mod, Sample Outfall 001A (22062772-01A): One or more surrogate recoveries were below the lower control limits. The sample results may be biased low. See attached QC report

Batch 199021, Method E537 Mod, Sample Field Blank (22062772-02A): One or more surrogate recoveries were below the lower control limits. The sample results may be biased low. d3-N-MeFOSA, d7-N-MeFOSE

Client: ALS Environmental
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Case Narrative

No other deviations or anomalies were noted.

ALS Group USA, Corp

Date: 08-Jul-22

CLIENT: ALS Environmental
Project: 2206585

Work Order: 22062772

Lab ID: 22062772-01A

Collection Date: 6/23/2022 2:30:00 PM

Client Sample ID: Outfall 001A

Matrix: WATER

Analyses	Result	Report Limit	MDL	Qual	Units	Dilution Factor	Date Analyzed
PFAS BY EPA 537 MODIFIED		E537 MOD		Analyst: ENS			
Fluorotelomer Sulphonic Acid 4:2 (FtS 4:2)	U	4.4	0.83		ng/L	1	7/1/2022 11:14 PM
Fluorotelomer Sulphonic Acid 6:2 (FtS 6:2)	U	4.4	1.7		ng/L	1	7/1/2022 11:14 PM
Fluorotelomer Sulphonic Acid 8:2 (FtS 8:2)	U	4.4	1.0		ng/L	1	7/1/2022 11:14 PM
Fluorotelomer Sulphonic Acid 10:2 (FtS 10:2)	U	4.4	2.1		ng/L	1	7/1/2022 11:14 PM
Perfluorobutanesulfonic Acid (PFBS)	U	4.4	0.31		ng/L	1	7/1/2022 11:14 PM
Perfluorobutanoic Acid (PFBA)	U	4.4	2.3		ng/L	1	7/1/2022 11:14 PM
Perfluorodecanesulfonic Acid (PFDS)	U	4.4	1.2		ng/L	1	7/1/2022 11:14 PM
Perfluorodecanoic Acid (PFDA)	U	4.4	1.1		ng/L	1	7/1/2022 11:14 PM
Perfluorododecanesulfonic Acid (PFDoS)	U	4.4	0.55		ng/L	1	7/1/2022 11:14 PM
Perfluorododecanoic Acid (PFDoA)	U	4.4	0.61		ng/L	1	7/1/2022 11:14 PM
Perfluoroheptanesulfonic Acid (PFHpS)	U	4.4	0.50		ng/L	1	7/1/2022 11:14 PM
Perfluoroheptanoic Acid (PFHpA)	U	4.4	1.5		ng/L	1	7/1/2022 11:14 PM
Perfluorohexadecanoic Acid (PFHxDA)	U	4.4	1.6		ng/L	1	7/1/2022 11:14 PM
Perfluorohexanesulfonic Acid (PFHxS)	U	4.4	0.80		ng/L	1	7/1/2022 11:14 PM
Perfluorohexanoic Acid (PFHxA)	U	4.4	1.1		ng/L	1	7/1/2022 11:14 PM
Perfluorononanesulfonic Acid (PFNS)	0.88	4.4	0.44	J	ng/L	1	7/1/2022 11:14 PM
Perfluorononanoic Acid (PFNA)	U	4.4	0.77		ng/L	1	7/1/2022 11:14 PM
Perfluorooctadecanoic Acid (PFODA)	U	4.4	0.57		ng/L	1	7/1/2022 11:14 PM
Perfluorooctanesulfonamide (PFOS/	U	4.4	0.63		ng/L	1	7/1/2022 11:14 PM
Perfluorooctanesulfonic Acid (PFOS)	1.2	1.8	0.79	J	ng/L	1	7/1/2022 11:14 PM
Perfluorooctanoic Acid (PFOA)	U	1.8	0.56		ng/L	1	7/1/2022 11:14 PM
Perfluoropentanesulfonic Acid (PFPeS)	U	4.4	0.49		ng/L	1	7/1/2022 11:14 PM
Perfluoropentanoic Acid (PFPeA)	U	4.4	1.1		ng/L	1	7/1/2022 11:14 PM
Perfluorotetradecanoic Acid (PFTeA)	U	4.4	2.3		ng/L	1	7/1/2022 11:14 PM
Perfluorotridecanoic Acid (PFTriA)	U	4.4	1.7		ng/L	1	7/1/2022 11:14 PM
Perfluoroundecanoic Acid (PFUnA)	U	4.4	0.86		ng/L	1	7/1/2022 11:14 PM
N-ethylperfluoro-1-octanesulfonamid	U	4.4	1.0		ng/L	1	7/1/2022 11:14 PM
N-Ethylperfluorooctanesulfonamidoacetic Acid	1.5	4.4	1.4	J	ng/L	1	7/1/2022 11:14 PM

Qualifiers: U - Analyzed for but Not Detected
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits
P - Dual Column results RPD > 40%
E - Value above quantitation range
H - Analyzed outside of Hold Time

ALS Group USA, Corp

Date: 08-Jul-22

CLIENT: ALS Environmental
Project: 2206585

Work Order: 22062772

N-Ethylperfluorooctanesulfonamidoethanol	1.2	4.4	0.93	J	ng/L	1	7/1/2022 11:14 PM
N-methylperfluoro-1-octanesulfonamide	U	4.4	0.70		ng/L	1	7/1/2022 11:14 PM
N-Methylperfluorooctanesulfonamidoacetic Acid	U	4.4	0.57		ng/L	1	7/1/2022 11:14 PM
N-Methylperfluorooctanesulfonamidoethanol	U	4.4	1.3		ng/L	1	7/1/2022 11:14 PM
Hexafluoropropylene oxide dimer acid (HFPO-DA)	2.6	4.4	1.0	J	ng/L	1	7/1/2022 11:14 PM
4,8-Dioxa-3H-perfluorononanoic Acid (DONA)	U	4.4	0.50		ng/L	1	7/1/2022 11:14 PM
11Cl-Pf3OUdS	0.85	4.4	0.41	J	ng/L	1	7/1/2022 11:14 PM
9Cl-PF3ONS	U	4.4	0.40		ng/L	1	7/1/2022 11:14 PM
Surr: 13C2-FtS 4:2	75.7	50-150	0		%REC	1	7/1/2022 11:14 PM
Surr: 13C2-FtS 6:2	73.1	50-150	0		%REC	1	7/1/2022 11:14 PM
Surr: 13C2-FtS 8:2	49.2	50-150	0	S	%REC	1	7/1/2022 11:14 PM
Surr: 13C2-PFDA	55.1	50-150	0		%REC	1	7/1/2022 11:14 PM
Surr: 13C2-PFDoA	49.9	50-150	0	S	%REC	1	7/1/2022 11:14 PM
Surr: 13C2-PFHxA	72.6	50-150	0		%REC	1	7/1/2022 11:14 PM
Surr: 13C2-PFHxDA	52.3	50-150	0		%REC	1	7/1/2022 11:14 PM
Surr: 13C2-PFTeA	50.8	50-150	0		%REC	1	7/1/2022 11:14 PM
Surr: 13C2-PFUnA	67.1	50-150	0		%REC	1	7/1/2022 11:14 PM
Surr: 13C3-HFPO-DA	50.7	50-150	0		%REC	1	7/1/2022 11:14 PM
Surr: 13C3-PFBS	58.8	50-150	0		%REC	1	7/1/2022 11:14 PM
Surr: 13C4-PFBA	66.4	50-150	0		%REC	1	7/1/2022 11:14 PM
Surr: 13C4-PFHpA	50.6	50-150	0		%REC	1	7/1/2022 11:14 PM
Surr: 13C4-PFOA	53.5	50-150	0		%REC	1	7/1/2022 11:14 PM
Surr: 13C4-PFOS	61.7	50-150	0		%REC	1	7/1/2022 11:14 PM
Surr: 13C5-PFNA	78.7	50-150	0		%REC	1	7/1/2022 11:14 PM
Surr: 13C5-PFPeA	57.3	50-150	0		%REC	1	7/1/2022 11:14 PM
Surr: 13C8-FOSA	37.0	50-150	0	S	%REC	1	7/1/2022 11:14 PM
Surr: 18O2-PFHxS	69.4	50-150	0		%REC	1	7/1/2022 11:14 PM
Surr: d5-N-EtFOSA	35.2	50-150	0	S	%REC	1	7/1/2022 11:14 PM
Surr: d5-N-EtFOSAA	49.4	50-150	0	S	%REC	1	7/1/2022 11:14 PM
Surr: d9-N-EtFOSE	33.2	50-150	0	S	%REC	1	7/1/2022 11:14 PM
Surr: d3-N-MeFOSA	28.3	50-150	0	S	%REC	1	7/1/2022 11:14 PM
Surr: d3-N-MeFOSAA	45.1	50-150	0	S	%REC	1	7/1/2022 11:14 PM
Surr: d7-N-MeFOSE	31.2	50-150	0	S	%REC	1	7/1/2022 11:14 PM

Qualifiers:
U - Analyzed for but Not Detected
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits
P - Dual Column results RPD > 40%
E - Value above quantitation range
H - Analyzed outside of Hold Time

ALS Group USA, Corp

Date: 08-Jul-22

CLIENT: ALS Environmental
Project: 2206585

Work Order: 22062772

Lab ID: 22062772-02A

Collection Date: 6/23/2022 2:30:00 PM

Client Sample ID: Field Blank

Matrix: WATER

Analyses	Result	Report Limit	MDL	Qual	Units	Dilution Factor	Date Analyzed
PFAS BY EPA 537 MODIFIED		E537 MOD		Analyst: ENS			
Fluorotelomer Sulphonic Acid 4:2 (FtS 4:2)	U	4.8	0.89		ng/L	1	7/1/2022 11:23 PM
Fluorotelomer Sulphonic Acid 6:2 (FtS 6:2)	U	4.8	1.8		ng/L	1	7/1/2022 11:23 PM
Fluorotelomer Sulphonic Acid 8:2 (FtS 8:2)	U	4.8	1.1		ng/L	1	7/1/2022 11:23 PM
Fluorotelomer Sulphonic Acid 10:2 (FtS 10:2)	U	4.8	2.2		ng/L	1	7/1/2022 11:23 PM
Perfluorobutanesulfonic Acid (PFBS)	U	4.8	0.33		ng/L	1	7/1/2022 11:23 PM
Perfluorobutanoic Acid (PFBA)	U	4.8	2.5		ng/L	1	7/1/2022 11:23 PM
Perfluorodecanesulfonic Acid (PFDS)	U	4.8	1.3		ng/L	1	7/1/2022 11:23 PM
Perfluorodecanoic Acid (PFDA)	U	4.8	1.2		ng/L	1	7/1/2022 11:23 PM
Perfluorododecanesulfonic Acid (PFDoS)	U	4.8	0.59		ng/L	1	7/1/2022 11:23 PM
Perfluorododecanoic Acid (PFDoA)	U	4.8	0.66		ng/L	1	7/1/2022 11:23 PM
Perfluoroheptanesulfonic Acid (PFHpS)	U	4.8	0.54		ng/L	1	7/1/2022 11:23 PM
Perfluoroheptanoic Acid (PFHpA)	U	4.8	1.6		ng/L	1	7/1/2022 11:23 PM
Perfluorohexadecanoic Acid (PFHxDA)	U	4.8	1.7		ng/L	1	7/1/2022 11:23 PM
Perfluorohexanesulfonic Acid (PFHxS)	U	4.8	0.86		ng/L	1	7/1/2022 11:23 PM
Perfluorohexanoic Acid (PFHxA)	U	4.8	1.1		ng/L	1	7/1/2022 11:23 PM
Perfluorononanesulfonic Acid (PFNS)	0.94	4.8	0.47	J	ng/L	1	7/1/2022 11:23 PM
Perfluorononanoic Acid (PFNA)	U	4.8	0.83		ng/L	1	7/1/2022 11:23 PM
Perfluorooctadecanoic Acid (PFODA)	U	4.8	0.62		ng/L	1	7/1/2022 11:23 PM
Perfluorooctanesulfonamide (PFOS/	U	4.8	0.68		ng/L	1	7/1/2022 11:23 PM
Perfluorooctanesulfonic Acid (PFOS)	1.3	1.9	0.85	J	ng/L	1	7/1/2022 11:23 PM
Perfluorooctanoic Acid (PFOA)	U	1.9	0.60		ng/L	1	7/1/2022 11:23 PM
Perfluoropentanesulfonic Acid (PFPeS)	U	4.8	0.53		ng/L	1	7/1/2022 11:23 PM
Perfluoropentanoic Acid (PFPeA)	U	4.8	1.2		ng/L	1	7/1/2022 11:23 PM
Perfluorotetradecanoic Acid (PFTeA)	U	4.8	2.5		ng/L	1	7/1/2022 11:23 PM
Perfluorotridecanoic Acid (PFTriA)	U	4.8	1.8		ng/L	1	7/1/2022 11:23 PM
Perfluoroundecanoic Acid (PFUnA)	U	4.8	0.93		ng/L	1	7/1/2022 11:23 PM
N-ethylperfluoro-1-octanesulfonamid	U	4.8	1.1		ng/L	1	7/1/2022 11:23 PM
N-Ethylperfluorooctanesulfonamidoaceti c Acid	U	4.8	1.5		ng/L	1	7/1/2022 11:23 PM

Qualifiers: U - Analyzed for but Not Detected

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

P - Dual Column results RPD > 40%

E - Value above quantitation range

H - Analyzed outside of Hold Time

ALS Group USA, Corp

Date: 08-Jul-22

CLIENT: ALS Environmental
Project: 2206585

Work Order: 22062772

N-Ethylperfluorooctanesulfonamidoethanol	1.1	4.8	1.0	J	ng/L	1	7/1/2022 11:23 PM
N-methylperfluoro-1-octanesulfonamide	U	4.8	0.76		ng/L	1	7/1/2022 11:23 PM
N-Methylperfluorooctanesulfonamidoacetic Acid	U	4.8	0.61		ng/L	1	7/1/2022 11:23 PM
N-Methylperfluorooctanesulfonamidoethanol	2.2	4.8	1.4	J	ng/L	1	7/1/2022 11:23 PM
Hexafluoropropylene oxide dimer acid (HFPO-DA)	1.9	4.8	1.1	J	ng/L	1	7/1/2022 11:23 PM
4,8-Dioxa-3H-perfluorononanoic Acid (DONA)	U	4.8	0.54		ng/L	1	7/1/2022 11:23 PM
11Cl-Pf3OUdS	U	4.8	0.44		ng/L	1	7/1/2022 11:23 PM
9Cl-PF3ONS	U	4.8	0.43		ng/L	1	7/1/2022 11:23 PM
Surr: 13C2-FtS 4:2	75.3	50-150	0		%REC	1	7/1/2022 11:23 PM
Surr: 13C2-FtS 6:2	61.0	50-150	0		%REC	1	7/1/2022 11:23 PM
Surr: 13C2-FtS 8:2	74.9	50-150	0		%REC	1	7/1/2022 11:23 PM
Surr: 13C2-PFDA	80.0	50-150	0		%REC	1	7/1/2022 11:23 PM
Surr: 13C2-PFDoA	82.9	50-150	0		%REC	1	7/1/2022 11:23 PM
Surr: 13C2-PFHxA	80.4	50-150	0		%REC	1	7/1/2022 11:23 PM
Surr: 13C2-PFHxDA	65.6	50-150	0		%REC	1	7/1/2022 11:23 PM
Surr: 13C2-PFTeA	71.3	50-150	0		%REC	1	7/1/2022 11:23 PM
Surr: 13C2-PFUnA	83.9	50-150	0		%REC	1	7/1/2022 11:23 PM
Surr: 13C3-HFPO-DA	63.3	50-150	0		%REC	1	7/1/2022 11:23 PM
Surr: 13C3-PFBS	69.2	50-150	0		%REC	1	7/1/2022 11:23 PM
Surr: 13C4-PFBA	72.6	50-150	0		%REC	1	7/1/2022 11:23 PM
Surr: 13C4-PFHpA	66.8	50-150	0		%REC	1	7/1/2022 11:23 PM
Surr: 13C4-PFOA	72.3	50-150	0		%REC	1	7/1/2022 11:23 PM
Surr: 13C4-PFOS	85.5	50-150	0		%REC	1	7/1/2022 11:23 PM
Surr: 13C5-PFNA	77.1	50-150	0		%REC	1	7/1/2022 11:23 PM
Surr: 13C5-PFPeA	66.0	50-150	0		%REC	1	7/1/2022 11:23 PM
Surr: 13C8-FOSA	63.3	50-150	0		%REC	1	7/1/2022 11:23 PM
Surr: 18O2-PFHxS	88.7	50-150	0		%REC	1	7/1/2022 11:23 PM
Surr: d5-N-EtFOSA	53.5	50-150	0		%REC	1	7/1/2022 11:23 PM
Surr: d5-N-EtFOSAA	56.8	50-150	0		%REC	1	7/1/2022 11:23 PM
Surr: d9-N-EtFOSE	59.1	50-150	0		%REC	1	7/1/2022 11:23 PM
Surr: d3-N-MeFOSA	43.1	50-150	0	S	%REC	1	7/1/2022 11:23 PM
Surr: d3-N-MeFOSAA	54.5	50-150	0		%REC	1	7/1/2022 11:23 PM
Surr: d7-N-MeFOSE	44.5	50-150	0	S	%REC	1	7/1/2022 11:23 PM

Qualifiers: U - Analyzed for but Not Detected

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

P - Dual Column results RPD > 40%

E - Value above quantitation range

H - Analyzed outside of Hold Time

Client: ALS Environmental
Work Order: 22062772
Project: 2206585

QC BATCH REPORT

Batch ID: **199021** Instrument ID **LCMS2** Method: **E537 Mod**

MBLK		Sample ID: MBLK-199021-199021				Units: ng/L		Analysis Date: 7/6/2022 06:42 AM			
Client ID:		Run ID: LCMS2_220705B				SeqNo: 8592144		Prep Date: 7/1/2022		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Fluorotelomer Sulphonic Acid	U	0.94	5.0								
Fluorotelomer Sulphonic Acid	U	1.9	5.0								
Fluorotelomer Sulphonic Acid	U	1.1	5.0								
Fluorotelomer Sulphonic Acid	U	2.4	5.0								
Perfluorobutanesulfonic Acid (	U	0.35	5.0								
Perfluorobutanoic Acid (PFBA	U	2.6	5.0								
Perfluorodecanesulfonic Acid (	U	1.4	5.0								
Perfluorodecanoic Acid (PFDA	U	1.2	5.0								
Perfluorododecanesulfonic Aci	U	0.62	5.0								
Perfluorododecanoic Acid (PFI	U	0.69	5.0								
Perfluoroheptanesulfonic Acid	U	0.57	5.0								
Perfluoroheptanoic Acid (PFH	U	1.7	5.0								
Perfluorohexadecanoic Acid (F	U	1.8	5.0								
Perfluorohexanesulfonic Acid (	U	0.9	5.0								
Perfluorohexanoic Acid (PFHx	U	1.2	5.0								
Perfluorononanesulfonic Acid (	U	0.5	5.0								
Perfluorononanoic Acid (PFNA	U	0.87	5.0								
Perfluorooctadecanoic Acid (P	U	0.65	5.0								
Perfluorooctanesulfonamide (F	U	0.71	5.0								
Perfluorooctanesulfonic Acid (I	1.158	0.89	2.0								J
Perfluorooctanoic Acid (PFOA	U	0.63	2.0								
Perfluoropentanesulfonic Acid	U	0.56	5.0								
Perfluoropentanoic Acid (PFPe	U	1.3	5.0								
Perfluorotetradecanoic Acid (F	U	2.6	5.0								
Perfluorotridecanoic Acid (PFT	U	1.9	5.0								
Perfluoroundecanoic Acid (PFI	U	0.97	5.0								
N-ethylperfluoro-1-octanesulfo	U	1.2	5.0								
N-Ethylperfluorooctanesulfona	U	1.5	5.0								
N-Ethylperfluorooctanesulfona	U	1	5.0								
N-methylperfluoro-1-octanesul	U	0.79	5.0								
N-Methylperfluorooctanesulfor	U	0.64	5.0								
N-Methylperfluorooctanesulfor	U	1.5	5.0								
Hexafluoropropylene oxide din	U	1.2	5.0								
4,8-Dioxa-3H-perfluorononano	U	0.56	5.0								
11Cl-Pf3OUdS	U	0.47	5.0								
9Cl-PF3ONS	U	0.45	5.0								
Surr: 13C2-FtS 4:2	138.3	0	0	149.4	0	92.6	50-150	0			
Surr: 13C2-FtS 6:2	137.1	0	0	152	0	90.2	50-150	0			
Surr: 13C2-FtS 8:2	127.9	0	0	153.3	0	83.4	50-150	0			
Surr: 13C2-PFDA	123.1	0	0	160	0	76.9	50-150	0			
Surr: 13C2-PFDoA	113.4	0	0	160	0	70.9	50-150	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: ALS Environmental
Work Order: 22062772
Project: 2206585

QC BATCH REPORT

Batch ID: 199021		Instrument ID LCMS2		Method: E537 Mod					
<i>Surr: 13C2-PFHxA</i>	<i>130.6</i>	<i>0</i>	<i>0</i>	<i>160</i>	<i>0</i>	<i>81.6</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: 13C2-PFHxDA</i>	<i>115.1</i>	<i>0</i>	<i>0</i>	<i>160</i>	<i>0</i>	<i>71.9</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: 13C2-PFTeA</i>	<i>102.5</i>	<i>0</i>	<i>0</i>	<i>160</i>	<i>0</i>	<i>64.1</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: 13C2-PFUnA</i>	<i>126.1</i>	<i>0</i>	<i>0</i>	<i>160</i>	<i>0</i>	<i>78.8</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: 13C3-HFPO-DA</i>	<i>111.6</i>	<i>0</i>	<i>0</i>	<i>160</i>	<i>0</i>	<i>69.7</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: 13C3-PFBS</i>	<i>105.7</i>	<i>0</i>	<i>0</i>	<i>148.8</i>	<i>0</i>	<i>71.1</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: 13C4-PFBA</i>	<i>119.3</i>	<i>0</i>	<i>0</i>	<i>160</i>	<i>0</i>	<i>74.5</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: 13C4-PFHpA</i>	<i>120.7</i>	<i>0</i>	<i>0</i>	<i>160</i>	<i>0</i>	<i>75.4</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: 13C4-PFOA</i>	<i>106.7</i>	<i>0</i>	<i>0</i>	<i>160</i>	<i>0</i>	<i>66.7</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: 13C4-PFOS</i>	<i>117.5</i>	<i>0</i>	<i>0</i>	<i>152.8</i>	<i>0</i>	<i>76.9</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: 13C5-PFNA</i>	<i>140.1</i>	<i>0</i>	<i>0</i>	<i>160</i>	<i>0</i>	<i>87.6</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: 13C5-PFPeA</i>	<i>112.8</i>	<i>0</i>	<i>0</i>	<i>160</i>	<i>0</i>	<i>70.5</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: 13C8-FOSA</i>	<i>112.2</i>	<i>0</i>	<i>0</i>	<i>160</i>	<i>0</i>	<i>70.1</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: 18O2-PFHxS</i>	<i>90.4</i>	<i>0</i>	<i>0</i>	<i>151.2</i>	<i>0</i>	<i>59.8</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: d5-N-EtFOSA</i>	<i>88.22</i>	<i>0</i>	<i>0</i>	<i>160</i>	<i>0</i>	<i>55.1</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: d5-N-EtFOSAA</i>	<i>113.7</i>	<i>0</i>	<i>0</i>	<i>160</i>	<i>0</i>	<i>71.1</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: d9-N-EtFOSE</i>	<i>105.1</i>	<i>0</i>	<i>0</i>	<i>160</i>	<i>0</i>	<i>65.7</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: d3-N-MeFOSA</i>	<i>85.27</i>	<i>0</i>	<i>0</i>	<i>160</i>	<i>0</i>	<i>53.3</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: d3-N-MeFOSAA</i>	<i>124.4</i>	<i>0</i>	<i>0</i>	<i>160</i>	<i>0</i>	<i>77.8</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: d7-N-MeFOSE</i>	<i>83.3</i>	<i>0</i>	<i>0</i>	<i>160</i>	<i>0</i>	<i>52.1</i>	<i>50-150</i>	<i>0</i>	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: ALS Environmental

Work Order: 22062772

Project: 2206585

QC BATCH REPORT

Batch ID: 199021

Instrument ID LCMS2

Method: E537 Mod

LCS		Sample ID: LCS-199021-199021				Units: ng/L			Analysis Date: 7/1/2022 07:23 PM		
Client ID:		Run ID: LCMS2_220701B				SeqNo: 8591229			Prep Date: 7/1/2022		DF: 1
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Fluorotelomer Sulphonic Acid (FSA)	41.77	1.9	5.0	30.3	0	138	63-162	0			
Fluorotelomer Sulphonic Acid (FSA)	40.16	1.1	5.0	30.7	0	131	61-165	0			
Perfluorobutanoic Acid (PFBA)	37.11	2.6	5.0	32	0	116	73-129	0			
Perfluorodecanesulfonic Acid (PFDA)	27.79	1.4	5.0	30.8	0	90.2	53-142	0			
Perfluorodecanoic Acid (PFDA)	37.4	1.2	5.0	32	0	117	71-129	0			
Perfluorododecanesulfonic Acid (PFDS)	22.76	0.62	5.0	31	0	73.4	69-134	0			
Perfluorododecanoic Acid (PFDA)	39.25	0.69	5.0	32	0	123	72-134	0			
Perfluorohexanoic Acid (PFHxA)	37.29	1.2	5.0	32	0	117	72-129	0			
Perfluorononanesulfonic Acid (PFNS)	30.78	0.5	5.0	30.7	0	100	69-127	0			
Perfluorononanoic Acid (PFNA)	33.07	0.87	5.0	32	0	103	69-130	0			
Perfluorooctanesulfonic Acid (PFOS)	30.28	0.89	2.0	29.7	0	102	65-140	0			
Perfluorooctanoic Acid (PFOA)	35.99	0.63	2.0	32	0	112	71-133	0			
Perfluorotetradecanoic Acid (PFTrDA)	40.45	2.6	5.0	32	0	126	71-132	0			
Perfluorotridecanoic Acid (PFTrDA)	37.96	1.9	5.0	32	0	119	65-144	0			
Perfluoroundecanoic Acid (PFUdA)	39.43	0.97	5.0	32	0	123	69-133	0			
N-ethylperfluoro-1-octanesulfonate (N-EtPFOS)	29.89	1.2	5.0	32	0	93.4	70-130	0			
N-Ethylperfluorooctanesulfonate (N-EtPFOS)	36.27	1.5	5.0	32	0	113	61-135	0			
N-Ethylperfluorooctanesulfonate (N-EtPFOS)	35.96	1	5.0	32	0	112	70-130	0			
4,8-Dioxa-3H-perfluorononanoic Acid (PFNOA)	37.43	0.56	5.0	30.1	0	124	70-130	0			
11Cl-Pf3OUdS	23.07	0.47	5.0	30.1	0	76.6	70-130	0			
9Cl-PF3ONS	26.16	0.45	5.0	29.8	0	87.8	70-130	0			
Surr: 13C2-FtS 4:2	94.42	0	0	149.4	0	63.2	50-150	0			
Surr: 13C2-FtS 6:2	95.84	0	0	152	0	63.1	50-150	0			
Surr: 13C2-FtS 8:2	87.03	0	0	153.3	0	56.8	50-150	0			
Surr: 13C2-PFDA	98.33	0	0	160	0	61.5	50-150	0			
Surr: 13C2-PFDoA	87.52	0	0	160	0	54.7	50-150	0			
Surr: 13C2-PFHxA	107.3	0	0	160	0	67.1	50-150	0			
Surr: 13C2-PFTrA	85.53	0	0	160	0	53.5	50-150	0			
Surr: 13C2-PFUnA	124.2	0	0	160	0	77.7	50-150	0			
Surr: 13C3-HFPO-DA	84.07	0	0	160	0	52.5	50-150	0			
Surr: 13C3-PFBS	84.79	0	0	148.8	0	57	50-150	0			
Surr: 13C4-PFBA	104.2	0	0	160	0	65.1	50-150	0			
Surr: 13C4-PFOS	117.5	0	0	152.8	0	76.9	50-150	0			
Surr: 13C5-PFNA	117	0	0	160	0	73.1	50-150	0			
Surr: 13C5-PFPeA	88.83	0	0	160	0	55.5	50-150	0			
Surr: 13C8-FOSA	83.88	0	0	160	0	52.4	50-150	0			
Surr: d5-N-EtFOSAA	97.4	0	0	160	0	60.9	50-150	0			
Surr: d9-N-EtFOSE	86.42	0	0	160	0	54	50-150	0			
Surr: d3-N-MeFOSAA	83.96	0	0	160	0	52.5	50-150	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: ALS Environmental
 Work Order: 22062772
 Project: 2206585

QC BATCH REPORT

Batch ID: **199021** Instrument ID **LCMS2** Method: **E537 Mod**

LCS		Sample ID: LCS-199021-199021				Units: ng/L		Analysis Date: 7/6/2022 06:50 AM			
Client ID:		Run ID: LCMS2_220705B				SeqNo: 8592145		Prep Date: 7/1/2022		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Perfluorohexanesulfonic Acid (	36.65	0.9	5.0	29.1	0	126	68-131	0			
N-methylperfluoro-1-octanesul	36.12	0.79	5.0	32	0	113	70-130	0			
N-Methylperfluorooctanesulfor	34.89	1.5	5.0	32	0	109	68-141	0			
Surr: 13C2-PFHxDA	86.9	0	0	160	0	54.3	50-150	0			
Surr: 13C4-PFHpA	93.57	0	0	160	0	58.5	50-150	0			
Surr: 13C4-PFOA	89.14	0	0	160	0	55.7	50-150	0			
Surr: 18O2-PFHxS	79.77	0	0	151.2	0	52.8	50-150	0			
Surr: d3-N-MeFOSA	84.04	0	0	160	0	52.5	50-150	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: ALS Environmental
 Work Order: 22062772
 Project: 2206585

QC BATCH REPORT

Batch ID: 199021 Instrument ID LCMS2 Method: E537 Mod

MS Sample ID: 22061651-02A MS					Units: ng/L			Analysis Date: 7/1/2022 09:19 PM			
Client ID:		Run ID: LCMS2_220701B			SeqNo: 8591241		Prep Date: 7/1/2022		DF: 1		
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Fluorotelomer Sulphonic Acid (F)	37.22	0.95	5.1	30.48	0	122	63-143	0			
Fluorotelomer Sulphonic Acid (F)	31.49	2	5.1	30.89	0	102	63-162	0			
Fluorotelomer Sulphonic Acid (F)	35.67	1.2	5.1	31.3	0	114	61-165	0			
Fluorotelomer Sulphonic Acid (F)	46.55	2.4	5.1	31.4	0	148	40-160	0			
Perfluorobutanesulfonic Acid (PFBS)	31.96	0.36	5.1	28.85	0.4848	109	72-130	0			
Perfluorobutanoic Acid (PFBA)	34.75	2.7	5.1	32.62	0	107	73-129	0			
Perfluorodecanesulfonic Acid (PFDS)	24.11	1.4	5.1	31.4	0	76.8	53-142	0			
Perfluorodecanoic Acid (PFDA)	35.64	1.3	5.1	32.62	0	109	71-129	0			
Perfluorododecanoic Acid (PFDA)	35.07	0.7	5.1	32.62	0	108	72-134	0			
Perfluoroheptanesulfonic Acid (PFHS)	24.95	0.58	5.1	31.1	0.61	78.3	69-134	0			
Perfluoroheptanoic Acid (PFHx)	38.84	1.8	5.1	32.62	0	119	72-130	0			
Perfluorohexadecanoic Acid (PFHx)	39.36	1.8	5.1	32.62	0	121	70-130	0			
Perfluorohexanesulfonic Acid (PFHS)	32.89	0.92	5.1	29.67	0	111	68-131	0			
Perfluorohexanoic Acid (PFHx)	35.42	1.2	5.1	32.62	0	109	72-129	0			
Perfluorononanesulfonic Acid (PFNS)	31.48	0.51	5.1	31.3	0	101	69-127	0			
Perfluorononanoic Acid (PFNA)	31.34	0.89	5.1	32.62	0	96.1	69-130	0			
Perfluorooctadecanoic Acid (PFDA)	26.54	0.66	5.1	32.62	0	81.4	70-130	0			
Perfluorooctanesulfonamide (PFOS)	41.35	0.72	5.1	32.62	0	127	67-137	0			
Perfluorooctanesulfonic Acid (PFOS)	30.72	0.91	2.0	30.28	1.294	97.2	65-140	0			
Perfluorooctanoic Acid (PFOA)	31.79	0.64	2.0	32.62	0	97.5	71-133	0			
Perfluoropentanesulfonic Acid (PFPS)	28.23	0.57	5.1	30.59	0	92.3	71-127	0			
Perfluoropentanoic Acid (PFPA)	40.85	1.3	5.1	32.62	0	125	72-129	0			
Perfluorotetradecanoic Acid (PFDA)	34.96	2.7	5.1	32.62	0	107	71-132	0			
Perfluorotridecanoic Acid (PFTA)	32.78	2	5.1	32.62	0	100	65-144	0			
Perfluoroundecanoic Acid (PFDA)	36.68	0.99	5.1	32.62	0	112	69-133	0			
N-ethylperfluoro-1-octanesulfonate (PFOS)	24.22	1.2	5.1	32.62	0	74.2	70-130	0			
N-Ethylperfluorooctanesulfonate (PFOS)	41.22	1.6	5.1	32.62	0	126	61-135	0			
N-Ethylperfluorooctanesulfonate (PFOS)	26.64	1.1	5.1	32.62	0	81.7	70-130	0			
N-methylperfluoro-1-octanesulfonate (PFOS)	33.2	0.81	5.1	32.62	0	102	70-130	0			
N-Methylperfluorooctanesulfonate (PFOS)	40.34	0.66	5.1	32.62	0	124	65-136	0			
N-Methylperfluorooctanesulfonate (PFOS)	32.69	1.5	5.1	32.62	1.782	94.7	68-141	0			
Hexafluoropropylene oxide dimer (PFOS)	37.67	1.2	5.1	32.62	0	115	70-130	0			
4,8-Dioxo-3H-perfluorononanoic acid (PFDA)	35.81	0.57	5.1	30.69	0	117	70-130	0			
11Cl-Pf3OUdS	21.63	0.48	5.1	30.69	0	70.5	70-130	0			
9Cl-PF3ONS	26.42	0.46	5.1	30.38	0	87	70-130	0			
Surr: 13C2-FtS 4:2	123.1	0	0	152.4	0	80.8	50-150	0			
Surr: 13C2-FtS 6:2	105.5	0	0	155	0	68.1	50-150	0			
Surr: 13C2-FtS 8:2	113.6	0	0	156.3	0	72.7	50-150	0			
Surr: 13C2-PFDA	116.7	0	0	163.1	0	71.5	50-150	0			
Surr: 13C2-PFDoA	108.3	0	0	163.1	0	66.4	50-150	0			
Surr: 13C2-PFHxA	118.8	0	0	163.1	0	72.8	50-150	0			
Surr: 13C2-PFHxDA	56.75	0	0	163.1	0	34.8	50-150	0			S
Surr: 13C2-PFTeA	83.49	0	0	163.1	0	51.2	50-150	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: ALS Environmental
Work Order: 22062772
Project: 2206585

QC BATCH REPORT

Batch ID: 199021		Instrument ID LCMS2		Method: E537 Mod					
<i>Surr: 13C2-PFUnA</i>	<i>109.6</i>	<i>0</i>	<i>0</i>	<i>163.1</i>	<i>0</i>	<i>67.2</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: 13C3-HFPO-DA</i>	<i>109.7</i>	<i>0</i>	<i>0</i>	<i>163.1</i>	<i>0</i>	<i>67.2</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: 13C3-PFBS</i>	<i>104.6</i>	<i>0</i>	<i>0</i>	<i>151.7</i>	<i>0</i>	<i>69</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: 13C4-PFBA</i>	<i>110.4</i>	<i>0</i>	<i>0</i>	<i>163.1</i>	<i>0</i>	<i>67.7</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: 13C4-PFHpA</i>	<i>124.3</i>	<i>0</i>	<i>0</i>	<i>163.1</i>	<i>0</i>	<i>76.2</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: 13C4-PFOA</i>	<i>108.9</i>	<i>0</i>	<i>0</i>	<i>163.1</i>	<i>0</i>	<i>66.8</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: 13C4-PFOS</i>	<i>107.4</i>	<i>0</i>	<i>0</i>	<i>155.8</i>	<i>0</i>	<i>68.9</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: 13C5-PFNA</i>	<i>107</i>	<i>0</i>	<i>0</i>	<i>163.1</i>	<i>0</i>	<i>65.6</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: 13C5-PFPeA</i>	<i>108.8</i>	<i>0</i>	<i>0</i>	<i>163.1</i>	<i>0</i>	<i>66.7</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: 13C8-FOSA</i>	<i>96.72</i>	<i>0</i>	<i>0</i>	<i>163.1</i>	<i>0</i>	<i>59.3</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: 18O2-PFHxS</i>	<i>114</i>	<i>0</i>	<i>0</i>	<i>154.2</i>	<i>0</i>	<i>74</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: d5-N-EtFOSA</i>	<i>88.05</i>	<i>0</i>	<i>0</i>	<i>163.1</i>	<i>0</i>	<i>54</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: d5-N-EtFOSAA</i>	<i>93.25</i>	<i>0</i>	<i>0</i>	<i>163.1</i>	<i>0</i>	<i>57.2</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: d9-N-EtFOSE</i>	<i>97.42</i>	<i>0</i>	<i>0</i>	<i>163.1</i>	<i>0</i>	<i>59.7</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: d3-N-MeFOSA</i>	<i>71.78</i>	<i>0</i>	<i>0</i>	<i>163.1</i>	<i>0</i>	<i>44</i>	<i>50-150</i>	<i>0</i>	S
<i>Surr: d3-N-MeFOSAA</i>	<i>88.22</i>	<i>0</i>	<i>0</i>	<i>163.1</i>	<i>0</i>	<i>54.1</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: d7-N-MeFOSE</i>	<i>56.59</i>	<i>0</i>	<i>0</i>	<i>163.1</i>	<i>0</i>	<i>34.7</i>	<i>50-150</i>	<i>0</i>	S

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: ALS Environmental
 Work Order: 22062772
 Project: 2206585

QC BATCH REPORT

Batch ID: 199021 Instrument ID LCMS2 Method: E537 Mod

DUP Sample ID: 22062797-01A DUP					Units: ng/L			Analysis Date: 7/1/2022 09:27 PM			
Client ID:		Run ID: LCMS2_220701B			SeqNo: 8591242		Prep Date: 7/1/2022		DF: 1		
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Fluorotelomer Sulphonic Acid (F)	U	0.86	4.6	0	0	0	0-0	0	0	30	
Fluorotelomer Sulphonic Acid (F)	U	1.8	4.6	0	0	0	0-0	0	0	30	
Fluorotelomer Sulphonic Acid (F)	U	1	4.6	0	0	0	0-0	0	0	30	
Fluorotelomer Sulphonic Acid (F)	U	2.2	4.6	0	0	0	0-0	0	0	30	
Perfluorobutanesulfonic Acid (PFBS)	U	0.32	4.6	0	0	0	0-0	0	0	30	
Perfluorobutanoic Acid (PFBA)	U	2.4	4.6	0	0	0	0-0	0	0	30	
Perfluorodecanesulfonic Acid (PFDS)	U	1.3	4.6	0	0	0	0-0	0	0	30	
Perfluorodecanoic Acid (PFDA)	U	1.1	4.6	0	0	0	0-0	0.08309	0	30	
Perfluorododecanesulfonic Acid (PFDS)	1.668	0.57	4.6	0	0	0	0-0	1.692	0	30	J
Perfluorododecanoic Acid (PFDA)	U	0.64	4.6	0	0	0	0-0	0.2593	0	30	
Perfluoroheptanesulfonic Acid (PFHS)	U	0.52	4.6	0	0	0	0-0	0	0	30	
Perfluoroheptanoic Acid (PFHx)	U	1.6	4.6	0	0	0	0-0	0	0	30	
Perfluorohexadecanoic Acid (PFHx)	U	1.7	4.6	0	0	0	0-0	1.107	0	30	
Perfluorohexanesulfonic Acid (PFHS)	U	0.83	4.6	0	0	0	0-0	0.1762	0	30	
Perfluorohexanoic Acid (PFHx)	U	1.1	4.6	0	0	0	0-0	0	0	30	
Perfluorononanesulfonic Acid (PFNS)	U	0.46	4.6	0	0	0	0-0	1.087	0	30	
Perfluorononanoic Acid (PFNA)	U	0.8	4.6	0	0	0	0-0	0	0	30	
Perfluorooctadecanoic Acid (PFDA)	U	0.6	4.6	0	0	0	0-0	0.2958	0	30	
Perfluorooctanesulfonamide (PFOS)	U	0.65	4.6	0	0	0	0-0	0.359	0	30	
Perfluorooctanesulfonic Acid (PFOS)	1.571	0.82	1.8	0	0	0	0-0	1.383	0	30	J
Perfluorooctanoic Acid (PFOA)	U	0.58	1.8	0	0	0	0-0	0	0	30	
Perfluoropentanesulfonic Acid (PFPS)	U	0.51	4.6	0	0	0	0-0	0	0	30	
Perfluoropentanoic Acid (PFPA)	U	1.2	4.6	0	0	0	0-0	0.4221	0	30	
Perfluorotetradecanoic Acid (PFDA)	U	2.4	4.6	0	0	0	0-0	0.4121	0	30	
Perfluorotridecanoic Acid (PFTA)	U	1.8	4.6	0	0	0	0-0	0	0	30	
Perfluoroundecanoic Acid (PFUA)	U	0.9	4.6	0	0	0	0-0	0	0	30	
N-ethylperfluoro-1-octanesulfo	U	1.1	4.6	0	0	0	0-0	1.087	0	30	
N-Ethylperfluorooctanesulfona	3.634	1.4	4.6	0	0	0	0-0	3.291	0	30	J
N-Ethylperfluorooctanesulfona	1.674	0.96	4.6	0	0	0	0-0	1.639	0	30	J
N-methylperfluoro-1-octanesul	U	0.73	4.6	0	0	0	0-0	0.6947	0	30	
N-Methylperfluorooctanesulfor	U	0.59	4.6	0	0	0	0-0	0.05318	0	30	
N-Methylperfluorooctanesulfor	2.036	1.4	4.6	0	0	0	0-0	2.699	0	30	J
Hexafluoropropylene oxide din	2.2891	1.1	4.6	0	0	0	0-0	2.556	0	30	J
4,8-Dioxa-3H-perfluorononano	U	0.52	4.6	0	0	0	0-0	0	0	30	
11Cl-Pf3OUdS	0.865	0.43	4.6	0	0	0	0-0	0	0	30	J
9Cl-Pf3ONS	0.9709	0.41	4.6	0	0	0	0-0	1.074	0	30	J
Surr: 13C2-FtS 4:2	97.39	0	0	137.4	0	70.9	50-150	126.8	26.2	30	
Surr: 13C2-FtS 6:2	80.28	0	0	139.8	0	57.4	50-150	117.3	37.5	30	R
Surr: 13C2-FtS 8:2	78.28	0	0	140.9	0	55.5	50-150	127.4	47.7	30	R
Surr: 13C2-PFDA	98.5	0	0	147.1	0	67	50-150	144.7	38	30	R
Surr: 13C2-PFDoA	75.03	0	0	147.1	0	51	50-150	126.8	51.3	30	R
Surr: 13C2-PFHxA	130.1	0	0	147.1	0	88.4	50-150	161	21.2	30	
Surr: 13C2-PFHxDA	35.9	0	0	147.1	0	24.4	50-150	82.48	78.7	30	SR

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Client: ALS Environmental
Work Order: 22062772
Project: 2206585

QC BATCH REPORT

Batch ID: 199021		Instrument ID LCMS2		Method: E537 Mod								
<i>Surr: 13C2-PFTeA</i>	43.25	0	0	147.1	0	29.4	50-150	79.01	58.5	30	SR	
<i>Surr: 13C2-PFUnA</i>	78.27	0	0	147.1	0	53.2	50-150	132.7	51.6	30	R	
<i>Surr: 13C3-HFPO-DA</i>	97.7	0	0	147.1	0	66.4	50-150	127.5	26.4	30		
<i>Surr: 13C3-PFBS</i>	90.22	0	0	136.8	0	65.9	50-150	116.8	25.7	30		
<i>Surr: 13C4-PFBA</i>	110.1	0	0	147.1	0	74.8	50-150	144.9	27.3	30		
<i>Surr: 13C4-PFHpA</i>	110.3	0	0	147.1	0	75	50-150	142.3	25.3	30		
<i>Surr: 13C4-PFOA</i>	117.5	0	0	147.1	0	79.8	50-150	128.3	8.79	30		
<i>Surr: 13C4-PFOS</i>	94.16	0	0	140.5	0	67	50-150	129.3	31.4	30	R	
<i>Surr: 13C5-PFNA</i>	101.5	0	0	147.1	0	69	50-150	143.9	34.6	30	R	
<i>Surr: 13C5-PFPeA</i>	93.38	0	0	147.1	0	63.5	50-150	118.9	24	30		
<i>Surr: 13C8-FOSA</i>	71.64	0	0	147.1	0	48.7	50-150	120.7	51	30	SR	
<i>Surr: 18O2-PFHxS</i>	110.2	0	0	139	0	79.3	50-150	119.9	8.41	30		
<i>Surr: d5-N-EtFOSA</i>	61.02	0	0	147.1	0	41.5	50-150	102.5	50.7	30	SR	
<i>Surr: d5-N-EtFOSAA</i>	59.76	0	0	147.1	0	40.6	50-150	104.1	54.1	30	SR	
<i>Surr: d9-N-EtFOSE</i>	69.28	0	0	147.1	0	47.1	50-150	112.6	47.7	30	SR	
<i>Surr: d3-N-MeFOSA</i>	60.86	0	0	147.1	0	41.4	50-150	109.2	56.9	30	SR	
<i>Surr: d3-N-MeFOSAA</i>	58.85	0	0	147.1	0	40	50-150	111	61.4	30	SR	
<i>Surr: d7-N-MeFOSE</i>	54.56	0	0	147.1	0	37.1	50-150	102.5	61.1	30	SR	

The following samples were analyzed in this batch:

22062772-01A 22062772-02A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

ALS Environmental

225 Commerce Drive, Fort Collins, Colorado 80524

TF: (800) 443-1511 w PH: (970) 490-1511 w FX: (970) 490-1522

Chain-of-Custody

[illegible]

Sample Receipt Checklist

Client Name: ALS - FORT COLLINS

Date/Time Received: 27-Jun-22 16:00

Work Order: 22062772

Received by: JD

Checklist completed by Jason Delinger
eSignature

30-Jun-22
Date

Reviewed by: Jodi Blum
eSignature

01-Jul-22
Date

Matrices: water

Carrier name: FedEx

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on shipping container/cooler?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Custody seals intact on sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Container/Temp Blank temperature in compliance?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Sample(s) received on ice?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Temperature(s)/Thermometer(s):	<u>20.2/21.2 C</u>		<u>IR3</u>
Cooler(s)/Kit(s):	<u></u>		
Date/Time sample(s) sent to storage:	<u>6/30/2022 8:36:04 AM</u>		
Water - VOA vials have zero headspace?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input checked="" type="checkbox"/>
Water - pH acceptable upon receipt?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
pH adjusted?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
pH adjusted by:	<u>-</u>		

Login Notes: Melted Ice

Client Contacted:

Date Contacted:

Person Contacted:

Contacted By:

Regarding:

Comments:

CorrectiveAction: