NAVFAC
Naval Facilities Engineering Command

Groundwater Sample Results, Level 2 Laboratory Report, Level 4 Laboratory Report, Electronic Data Deliverable, Data Validation Report, and the Sample Location Report, SDG 1701758

Marine Corps Base Camp Lejeune
North Carolina

July 2019

December 18, 2017

Vista Work Order No. 1701758

Ms. Jaclyn D'Onofrio
CH2M Hill
2411 Dulles Corner Park, Suite 500
Herndon, VA 20171

Dear Ms. D'Onofrio,

Enclosed are the amended results for the sample set received at Vista Analytical Laboratory on November 28, 2017. This sample set was analyzed on a rush turn-around time, under your Project Name 'PFAS'.

Vista Analytical Laboratory is committed to serving you effectively. If you require additional information, please contact me at 916-673-1520 or by email at mmaier@vista-analytical.com.

Thank you for choosing Vista as part of your analytical support team.

Sincerely,

Karen J. Volpenesta for

Martha Maier
Laboratory Director

Vista Work Order No. 1701758
Case Narrative

Sample Condition on Receipt:

Twenty aqueous samples were received in good condition and within the method temperature requirements. The samples were received and stored securely in accordance with Vista standard operating procedures and EPA methodology. As requested, the sample collection time for sample "IR54-IDW-AQ-111917" changed from 14:00 to 14:30. As directed, sample "IR54-IDW-AQ-111917" was added to the Work Order. This sample was received on November 28, 2017.

This report was amended on December 18, 2017 to make the following correction in the case narrative: "The result for PFHxS in sample "IR86-GW59-17D"" to "The result for PFHxS in sample "IR54-GW16-17D"".

Analytical Notes:

Modified EPA Method 537

The following samples contained particulate and were centrifuged prior to extraction:

Laboratory ID	Sample Name
1701758-01	IR86-GW27-17D
1701758-02	IR86-GW59-17D
1701758-03	IR86-GW48-17D
1701758-04	IR86-GW61-17D
1701758-08	IR86-GW53-17D
1701758-09	IR86-GW53D-17D
1701758-10	USTAS4141-GW17-17D
1701758-20	IR54-IDW-AQ-111917

The samples were extracted and analyzed for a selected list of PFAS using Modified EPA Method 537.

Holding Times

The samples were extracted and analyzed within the method hold times.

Quality Control

The Initial Calibration and Continuing Calibration Verifications met the method acceptance criteria.

A Method Blank and Ongoing Precision and Recovery (OPR) sample were extracted and analyzed with the preparation batch. No analytes were detected in the Method Blank above 1/2 the LOQ. The OPR recoveries were within the method acceptance criteria

All extracts except for "IR86-FB-111717", as well as the Method Blank, OPR and Matrix Spike Duplicate for

sample "IR54-GW17-17D", were re-injected because one or more Injection Internal Standard Analyte response areas were outside of criteria. The results were similar in the second injections. The results from the original injections have been reported.

The extracts of samples "IR86-GW59-17D", "IR86-GW61-17D" and "IR54-FB-111917" were re-injected because they followed an extract with an analyte with a concentration greater than the concentration of the standard analyzed to test for possible carry-over. The results from the re-injections have been reported.

The result for PFHxS in sample "IR54-GW16-17D" was flagged with an "E" to indicate that the reported concentration was above the highest standard in the calibration curve. The result was taken from a 1:40 dilution of the extract; a further dilution could not be analyzed.

The labeled standard recoveries outside the acceptance criteria are listed in the table below.

As requested, MS/MSDs were performed on samples "USTAS4141-GW17-17D" and "IR54-GW17-17D". The MS/MSD recoveries and/or RPDs were out of the criteria for PFOS and PFDoA for "USTAS4141-GW17-17D" and for PFHxA, PFHpA, PFHxS, PFOA, PFOS and MeFOSAA in "IR54-GW17-17D".

QC Anomalies

LabNumber	SampleName	Analysis	Analyte	Flag	%Rec
1701758-15	IR54-GW16-17D	Modified EPA Method 537	13C2-PFHxA	H	166
1701758-15	IR54-GW16-17D	Modified EPA Method 537	13C8-PFOS	H	48.0
1701758-16	IR54-FB-111917	Modified EPA Method 537	13C2-PFTeDA	H	46.4

H = Recovery was outside laboratory acceptance criteria.

TABLE OF CONTENTS

Sample Inventory Report

Vista Sample ID	Client Sample ID		Sampled	Received	Components/Containers
1701758-01	IR86-GW27-17D		16-Nov-17 19:30	28-Nov-17 09:36	HDPE Bottle, 125 mL
					HDPE Bottle, 125 mL
1701758-02	IR86-GW59-17D		16-Nov-17 17:05	28-Nov-17 09:36	HDPE Bottle, 125 mL
					HDPE Bottle, 125 mL
1701758-03	IR86-GW48-17D		16-Nov-17 19:10	28-Nov-17 09:36	HDPE Bottle, 125 mL
					HDPE Bottle, 125 mL
1701758-04	IR86-GW61-17D		16-Nov-17 15:45	28-Nov-17 09:36	HDPE Bottle, 125 mL
					HDPE Bottle, 125 mL
1701758-05	IR86-GW58-17D		16-Nov-17 17:55	28-Nov-17 09:36	HDPE Bottle, 125 mL
					HDPE Bottle, 125 mL
1701758-06	IR86-GW47-17D		17-Nov-17 17:10	28-Nov-17 09:36	HDPE Bottle, 125 mL
					HDPE Bottle, 125 mL
1701758-07	USTAS4141-GW13-17D		17-Nov-17 09:40	28-Nov-17 09:36	HDPE Bottle, 125 mL
					HDPE Bottle, 125 mL
1701758-08	IR86-GW53-17D		17-Nov-17 11:30	28-Nov-17 09:36	HDPE Bottle, 125 mL
					HDPE Bottle, 125 mL
1701758-09	IR86-GW53D-17D		17-Nov-17 11:35	28-Nov-17 09:36	HDPE Bottle, 125 mL
					HDPE Bottle, 125 mL
1701758-10	USTAS4141-GW17-17D	MS/MSD	17-Nov-17 17:45	28-Nov-17 09:36	HDPE Bottle, 125 mL
					HDPE Bottle, 125 mL
					HDPE Bottle, 125 mL
					HDPE Bottle, 125 mL
					HDPE Bottle, 125 mL
					HDPE Bottle, 125 mL
1701758-11	IR54-GW17-17D	MS/MSD	19-Nov-17 12:25	28-Nov-17 09:36	HDPE Bottle, 125 mL
					HDPE Bottle, 125 mL
					HDPE Bottle, 125 mL
					HDPE Bottle, 125 mL
					HDPE Bottle, 125 mL
					HDPE Bottle, 125 mL
1701758-12	IR54-GW15-17D		19-Nov-17 13:25	28-Nov-17 09:36	HDPE Bottle, 125 mL
					HDPE Bottle, 125 mL
1701758-13	IR54-GW15D-17D		19-Nov-17 13:30	28-Nov-17 09:36	HDPE Bottle, 125 mL
					HDPE Bottle, 125 mL
1701758-14	IR54-GW14-17D		19-Nov-17 13:40	28-Nov-17 09:36	HDPE Bottle, 125 mL
					HDPE Bottle, 125 mL
1701758-15	IR54-GW16-17D		19-Nov-17 12:15	28-Nov-17 09:36	HDPE Bottle, 125 mL
					HDPE Bottle, 125 mL
1701758-16	IR54-FB-111917		19-Nov-17 11:50	28-Nov-17 09:36	HDPE Bottle, 125 mL

Vista Project: 1701758

Client Project: PFAS

Sample Inventory Report

Vista Sample ID	Client Sample ID	Sampled	Received	Components/Containers
1701758-16	IR54-FB-111917	19-Nov-17 11:50	28-Nov-17 09:36	HDPE Bottle, 125 mL
1701758-17	IR54-EB-111917	19-Nov-17 12:00	28-Nov-17 09:36	HDPE Bottle, 125 mL
				HDPE Bottle, 125 mL
1701758-18	IR86-EB-111917	19-Nov-17 12:10	28-Nov-17 09:36	HDPE Bottle, 125 mL
				HDPE Bottle, 125 mL
1701758-19	IR86-FB-111717	17-Nov-17 17:30	28-Nov-17 09:36	HDPE Bottle, 125 mL
				HDPE Bottle, 125 mL
1701758-20	IR54-IDW-AQ-111917	19-Nov-17 14:30	28-Nov-17 09:36	HDPE Bottle, 125 mL
				HDPE Bottle, 125 mL

ANALYTICAL RESULTS

Sample ID: Method Blank — **Modified EPA Method 537**

Client Data

Name: CH2M Hill
Project: PFAS
Matrix: Aqueous

Laboratory Data

Lab Sample: B7K0195-BLK1
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	1.79	5.00	8.00		B7K0195	30-Nov-17	0.125 L	10-Dec-17 16:10	1
PFHxA	ND	2.18	5.00	8.00		B7K0195	30-Nov-17	0.125 L	10-Dec-17 16:10	1
PFHpA	ND	0.591	5.00	8.00		B7K0195	30-Nov-17	0.125 L	10-Dec-17 16:10	1
PFHxS	ND	0.947	5.00	8.00		B7K0195	30-Nov-17	0.125 L	10-Dec-17 16:10	1
PFOA	ND	0.651	5.00	8.00		B7K0195	30-Nov-17	0.125 L	10-Dec-17 16:10	1
PFOS	ND	0.807	5.00	8.00		B7K0195	30-Nov-17	0.125 L	10-Dec-17 16:10	1
PFNA	ND	0.810	5.00	8.00		B7K0195	30-Nov-17	0.125 L	10-Dec-17 16:10	1
PFDA	ND	1.49	5.00	8.00		B7K0195	30-Nov-17	0.125 L	10-Dec-17 16:10	1
MeFOSAA	ND	1.65	5.00	8.00		B7K0195	30-Nov-17	0.125 L	10-Dec-17 16:10	1
PFUnA	ND	1.05	5.00	8.00		B7K0195	30-Nov-17	0.125 L	10-Dec-17 16:10	1
EtFOSAA	ND	1.37	5.00	8.00		B7K0195	30-Nov-17	0.125 L	10-Dec-17 16:10	1
PFDoA	ND	0.792	5.00	8.00		B7K0195	30-Nov-17	0.125 L	10-Dec-17 16:10	1
PFTrDA	ND	0.494	5.00	8.00		B7K0195	30-Nov-17	0.125 L	10-Dec-17 16:10	1
PFTeDA	ND	0.755	5.00	8.00		B7K0195	30-Nov-17	0.125 L	10-Dec-17 16:10	1
Combined PFOA/PFOS	ND	0.807	5.00	8.00		B7K0195	30-Nov-17	0.125 L	10-Dec-17 16:10	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	104	50 - 150		B7K0195	30-Nov-17	0.125 L	10-Dec-17 16:10	1
13C2-PFHxA	IS	101	50 - 150		B7K0195	30-Nov-17	0.125 L	10-Dec-17 16:10	1
13C4-PFHpA	IS	101	50 - 150		B7K0195	30-Nov-17	0.125 L	10-Dec-17 16:10	1
18O2-PFHxS	IS	107	50 - 150		B7K0195	30-Nov-17	0.125 L	10-Dec-17 16:10	1
13C2-PFOA	IS	90.7	50 - 150		B7K0195	30-Nov-17	0.125 L	10-Dec-17 16:10	1
13C8-PFOS	IS	77.1	50 - 150		B7K0195	30-Nov-17	0.125 L	10-Dec-17 16:10	1
13C5-PFNA	IS	83.4	50 - 150		B7K0195	30-Nov-17	0.125 L	10-Dec-17 16:10	1
13C2-PFDA	IS	58.6	50 - 150		B7K0195	30-Nov-17	0.125 L	10-Dec-17 16:10	1
d3-MeFOSAA	IS	78.2	50 - 150		B7K0195	30-Nov-17	0.125 L	10-Dec-17 16:10	1
13C2-PFUnA	IS	61.2	50 - 150		B7K0195	30-Nov-17	0.125 L	10-Dec-17 16:10	1
d5-EtFOSAA	IS	76.6	50 - 150		B7K0195	30-Nov-17	0.125 L	10-Dec-17 16:10	1
13C2-PFDoA	IS	63.3	50 - 150		B7K0195	30-Nov-17	0.125 L	10-Dec-17 16:10	1
13C2-PFTeDA	IS	81.1	50 - 150		B7K0195	30-Nov-17	0.125 L	10-Dec-17 16:10	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation
LCL-UCL- Lower control limit - upper control limit
Results reported to the DL.
When reported, PFHxS, PFOA and PFOS include both linear and branched isomers.
Only the linear isomer is reported for all other analytes.

Sample ID: OPR **Modified EPA Method 537**

Client Data

Name: CH2M Hill
Project: PFAS

Matrix: Aqueous

Laboratory Data

Lab Sample: B7K0195-BS1 Column: BEH C18

Analyte	Amt Found (ng/L)	Spike Amt	% Rec	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	82.0	80.0	102	70-130		B7K0195	30-Nov-17	0.125 L	10-Dec-17 15:48	1
PFHxA	81.6	80.0	102	70-130		B7K0195	30-Nov-17	0.125 L	10-Dec-17 15:48	1
PFHpA	70.3	80.0	87.9	70-130		B7K0195	30-Nov-17	0.125 L	10-Dec-17 15:48	1
PFHxS	73.2	80.0	91.5	70-130		B7K0195	30-Nov-17	0.125 L	10-Dec-17 15:48	1
PFOA	95.9	80.0	120	70-130		B7K0195	30-Nov-17	0.125 L	10-Dec-17 15:48	1
PFOS	59.3	80.0	74.1	70-130		B7K0195	30-Nov-17	0.125 L	10-Dec-17 15:48	1
PFNA	65.6	80.0	82.0	70-130		B7K0195	30-Nov-17	0.125 L	10-Dec-17 15:48	1
PFDA	91.8	80.0	115	70-130		B7K0195	30-Nov-17	0.125 L	10-Dec-17 15:48	1
MeFOSAA	77.7	80.0	97.2	70-130		B7K0195	30-Nov-17	0.125 L	10-Dec-17 15:48	1
PFUnA	80.0	80.0	100	70-130		B7K0195	30-Nov-17	0.125 L	10-Dec-17 15:48	1
EtFOSAA	85.5	80.0	107	70-130		B7K0195	30-Nov-17	0.125 L	10-Dec-17 15:48	1
PFDoA	83.5	80.0	104	70-130		B7K0195	30-Nov-17	0.125 L	10-Dec-17 15:48	1
PFTrDA	83.7	80.0	105	60-130		B7K0195	30-Nov-17	0.125 L	10-Dec-17 15:48	1
PFTeDA	88.4	80.0	110	70-130		B7K0195	30-Nov-17	0.125 L	10-Dec-17 15:48	1

Labeled Standards	Type	% Rec	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	103	50- 150		B7K0195	30-Nov-17	0.125 L	10-Dec-17 15:48	1
13C2-PFHxA	IS	105	50- 150		B7K0195	30-Nov-17	0.125 L	10-Dec-17 15:48	1
13C4-PFHpA	IS	105	50- 150		B7K0195	30-Nov-17	0.125 L	10-Dec-17 15:48	1
18O2-PFHxS	IS	100	50- 150		B7K0195	30-Nov-17	0.125 L	10-Dec-17 15:48	1
13C2-PFOA	IS	77.3	50- 150		B7K0195	30-Nov-17	0.125 L	10-Dec-17 15:48	1
13C8-PFOS	IS	109	50- 150		B7K0195	30-Nov-17	0.125 L	10-Dec-17 15:48	1
13C5-PFNA	IS	85.5	50- 150		B7K0195	30-Nov-17	0.125 L	10-Dec-17 15:48	1
13C2-PFDA	IS	90.1	50- 150		B7K0195	30-Nov-17	0.125 L	10-Dec-17 15:48	1
d3-MeFOSAA	IS	76.8	50- 150		B7K0195	30-Nov-17	0.125 L	10-Dec-17 15:48	1
13C2-PFUnA	IS	81.6	50- 150		B7K0195	30-Nov-17	0.125 L	10-Dec-17 15:48	1
d5-EtFOSAA	IS	79.4	50- 150		B7K0195	30-Nov-17	0.125 L	10-Dec-17 15:48	1
13C2-PFDoA	IS	73.1	50- 150		B7K0195	30-Nov-17	0.125 L	10-Dec-17 15:48	1
13C2-PFTeDA	IS	83.3	50- 150		B7K0195	30-Nov-17	0.125 L	10-Dec-17 15:48	1

Sample ID: IR86-GW27-17D

Modified EPA Method 537

Client Data

Name: CH2M Hill
Project: PFAS
Matrix: Aqueous
Date Collected: 16-Nov-17 19:30

Laboratory Data

Lab Sample: 1701758-01
Date Received: 28-Nov-17 09:36
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	612	2.05	5.73	9.18		B7K0195	30-Nov-17	0.109 L	10-Dec-17 18:02	1
PFHxA	1810	2.50	5.73	9.18		B7K0195	30-Nov-17	0.109 L	10-Dec-17 18:02	1
PFHpA	428	0.678	5.73	9.18		B7K0195	30-Nov-17	0.109 L	10-Dec-17 18:02	1
PFHxS	11800	10.9	57.3	91.8	D	B7K0195	30-Nov-17	0.109 L	12-Dec-17 18:44	10
PFOA	1030	0.747	5.73	9.18		B7K0195	30-Nov-17	0.109 L	10-Dec-17 18:02	1
PFOS	22100	9.26	57.3	91.8	D	B7K0195	30-Nov-17	0.109 L	12-Dec-17 18:44	10
PFNA	110	0.929	5.73	9.18		B7K0195	30-Nov-17	0.109 L	10-Dec-17 18:02	1
PFDA	6.43	1.71	5.73	9.18	J	B7K0195	30-Nov-17	0.109 L	10-Dec-17 18:02	1
MeFOSAA	ND	1.89	5.73	9.18		B7K0195	30-Nov-17	0.109 L	10-Dec-17 18:02	1
PFUnA	ND	1.20	5.73	9.18		B7K0195	30-Nov-17	0.109 L	10-Dec-17 18:02	1
EtFOSAA	ND	1.57	5.73	9.18		B7K0195	30-Nov-17	0.109 L	10-Dec-17 18:02	1
PFDoA	ND	0.909	5.73	9.18		B7K0195	30-Nov-17	0.109 L	10-Dec-17 18:02	1
PFTrDA	ND	0.567	5.73	9.18		B7K0195	30-Nov-17	0.109 L	10-Dec-17 18:02	1
PFTeDA	ND	0.866	5.73	9.18		B7K0195	30-Nov-17	0.109 L	10-Dec-17 18:02	1
Combined PFOA/PFOS	23100	0.926	5.73	9.18		B7K0195	30-Nov-17	0.109 L	10-Dec-17 18:02	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	114	50 - 150		B7K0195	30-Nov-17	0.109 L	10-Dec-17 18:02	1
13C2-PFHxA	IS	99.3	50 - 150		B7K0195	30-Nov-17	0.109 L	10-Dec-17 18:02	1
13C4-PFHpA	IS	94.8	50 - 150		B7K0195	30-Nov-17	0.109 L	10-Dec-17 18:02	1
18O2-PFHxS	IS	81.0	50 - 150	D	B7K0195	30-Nov-17	0.109 L	12-Dec-17 18:44	10
13C2-PFOA	IS	80.6	50 - 150		B7K0195	30-Nov-17	0.109 L	10-Dec-17 18:02	1
13C8-PFOS	IS	106	50 - 150	D	B7K0195	30-Nov-17	0.109 L	12-Dec-17 18:44	10
13C5-PFNA	IS	98.5	50 - 150		B7K0195	30-Nov-17	0.109 L	10-Dec-17 18:02	1
13C2-PFDA	IS	86.2	50 - 150		B7K0195	30-Nov-17	0.109 L	10-Dec-17 18:02	1
d3-MeFOSAA	IS	105	50 - 150		B7K0195	30-Nov-17	0.109 L	10-Dec-17 18:02	1
13C2-PFUnA	IS	85.9	50 - 150		B7K0195	30-Nov-17	0.109 L	10-Dec-17 18:02	1
d5-EtFOSAA	IS	102	50 - 150		B7K0195	30-Nov-17	0.109 L	10-Dec-17 18:02	1
13C2-PFDoA	IS	90.5	50 - 150		B7K0195	30-Nov-17	0.109 L	10-Dec-17 18:02	1
13C2-PFTeDA	IS	92.8	50 - 150		B7K0195	30-Nov-17	0.109 L	10-Dec-17 18:02	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation
LCL-UCL- Lower control limit - upper control limit
Results reported to the DL.
When reported, PFHxS, PFOA and PFOS include both linear and branched isomers.
Only the linear isomer is reported for all other analytes.

Sample ID: IR86-GW59-17D

Modified EPA Method 537

Client Data

Name: CH2M Hill
Project: PFAS
Matrix: Aqueous
Date Collected: 16-Nov-17 17:05

Laboratory Data

Lab Sample: 1701758-02
Date Received: 28-Nov-17 09:36
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	221	2.05	5.73	9.16		B7K0195	30-Nov-17	0.109 L	12-Dec-17 21:10	1
PFHxA	302	2.50	5.73	9.16		B7K0195	30-Nov-17	0.109 L	12-Dec-17 21:10	1
PFHpA	82.2	0.677	5.73	9.16		B7K0195	30-Nov-17	0.109 L	12-Dec-17 21:10	1
PFHxS	1320	1.08	5.73	9.16		B7K0195	30-Nov-17	0.109 L	12-Dec-17 21:10	1
PFOA	164	0.745	5.73	9.16		B7K0195	30-Nov-17	0.109 L	12-Dec-17 21:10	1
PFOS	2770	4.62	28.7	45.8	D	B7K0195	30-Nov-17	0.109 L	12-Dec-17 18:56	5
PFNA	3.21	0.927	5.73	9.16	J	B7K0195	30-Nov-17	0.109 L	12-Dec-17 21:10	1
PFDA	ND	1.71	5.73	9.16		B7K0195	30-Nov-17	0.109 L	12-Dec-17 21:10	1
MeFOSAA	ND	1.89	5.73	9.16		B7K0195	30-Nov-17	0.109 L	12-Dec-17 21:10	1
PFUnA	ND	1.20	5.73	9.16		B7K0195	30-Nov-17	0.109 L	12-Dec-17 21:10	1
EtFOSAA	ND	1.57	5.73	9.16		B7K0195	30-Nov-17	0.109 L	12-Dec-17 21:10	1
PFDoA	ND	0.907	5.73	9.16		B7K0195	30-Nov-17	0.109 L	12-Dec-17 21:10	1
PFTrDA	ND	0.566	5.73	9.16		B7K0195	30-Nov-17	0.109 L	12-Dec-17 21:10	1
PFTeDA	ND	0.864	5.73	9.16		B7K0195	30-Nov-17	0.109 L	12-Dec-17 21:10	1
Combined PFOA/PFOS	2930	0.924	5.73	9.16		B7K0195	30-Nov-17	0.109 L	12-Dec-17 21:10	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	80.8	50 - 150		B7K0195	30-Nov-17	0.109 L	12-Dec-17 21:10	1
13C2-PFHxA	IS	82.4	50 - 150		B7K0195	30-Nov-17	0.109 L	12-Dec-17 21:10	1
13C4-PFHpA	IS	87.6	50 - 150		B7K0195	30-Nov-17	0.109 L	12-Dec-17 21:10	1
18O2-PFHxS	IS	87.5	50 - 150		B7K0195	30-Nov-17	0.109 L	12-Dec-17 21:10	1
13C2-PFOA	IS	76.1	50 - 150		B7K0195	30-Nov-17	0.109 L	12-Dec-17 21:10	1
13C8-PFOS	IS	76.3	50 - 150	D	B7K0195	30-Nov-17	0.109 L	12-Dec-17 18:56	5
13C5-PFNA	IS	66.5	50 - 150		B7K0195	30-Nov-17	0.109 L	12-Dec-17 21:10	1
13C2-PFDA	IS	61.5	50 - 150		B7K0195	30-Nov-17	0.109 L	12-Dec-17 21:10	1
d3-MeFOSAA	IS	63.1	50 - 150		B7K0195	30-Nov-17	0.109 L	12-Dec-17 21:10	1
13C2-PFUnA	IS	79.0	50 - 150		B7K0195	30-Nov-17	0.109 L	12-Dec-17 21:10	1
d5-EtFOSAA	IS	55.4	50 - 150		B7K0195	30-Nov-17	0.109 L	12-Dec-17 21:10	1
13C2-PFDoA	IS	94.9	50 - 150		B7K0195	30-Nov-17	0.109 L	12-Dec-17 21:10	1
13C2-PFTeDA	IS	97.7	50 - 150		B7K0195	30-Nov-17	0.109 L	12-Dec-17 21:10	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation
LCL-UCL- Lower control limit - upper control limit
Results reported to the DL.
When reported, PFHxS, PFOA and PFOS include both linear and branched isomers.
Only the linear isomer is reported for all other analytes.

Sample ID: IR86-GW48-17D

Modified EPA Method 537

Client Data

Name: CH2M Hill
Project: PFAS
Matrix: Aqueous
Date Collected: 16-Nov-17 19:10

Laboratory Data

Lab Sample: 1701758-03
Date Received: 28-Nov-17 09:36
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	6560	39.5	111	177	D	B7K0195	30-Nov-17	0.113 L	12-Dec-17 19:07	20
PFHxA	5060	48.2	111	177	D	B7K0195	30-Nov-17	0.113 L	12-Dec-17 19:07	20
PFHpA	1070	0.653	5.53	8.84		B7K0195	30-Nov-17	0.113 L	10-Dec-17 18:25	1
PFHxS	26100	20.9	111	177	D	B7K0195	30-Nov-17	0.113 L	12-Dec-17 19:07	20
PFOA	1620	0.719	5.53	8.84		B7K0195	30-Nov-17	0.113 L	10-Dec-17 18:25	1
PFOS	6600	17.8	111	177	D	B7K0195	30-Nov-17	0.113 L	12-Dec-17 19:07	20
PFNA	22.7	0.895	5.53	8.84		B7K0195	30-Nov-17	0.113 L	10-Dec-17 18:25	1
PFDA	ND	1.65	5.53	8.84		B7K0195	30-Nov-17	0.113 L	10-Dec-17 18:25	1
MeFOSAA	ND	1.82	5.53	8.84		B7K0195	30-Nov-17	0.113 L	10-Dec-17 18:25	1
PFUnA	ND	1.16	5.53	8.84		B7K0195	30-Nov-17	0.113 L	10-Dec-17 18:25	1
EtFOSAA	ND	1.51	5.53	8.84		B7K0195	30-Nov-17	0.113 L	10-Dec-17 18:25	1
PFDoA	ND	0.875	5.53	8.84		B7K0195	30-Nov-17	0.113 L	10-Dec-17 18:25	1
PFTrDA	ND	0.546	5.53	8.84		B7K0195	30-Nov-17	0.113 L	10-Dec-17 18:25	1
PFTeDA	ND	0.834	5.53	8.84		B7K0195	30-Nov-17	0.113 L	10-Dec-17 18:25	1
Combined PFOA/PFOS	8220	0.891	5.53	8.84		B7K0195	30-Nov-17	0.113 L	10-Dec-17 18:25	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	110	50 - 150	D	B7K0195	30-Nov-17	0.113 L	12-Dec-17 19:07	20
13C2-PFHxA	IS	121	50 - 150	D	B7K0195	30-Nov-17	0.113 L	12-Dec-17 19:07	20
13C4-PFHpA	IS	124	50 - 150		B7K0195	30-Nov-17	0.113 L	10-Dec-17 18:25	1
18O2-PFHxS	IS	91.5	50 - 150	D	B7K0195	30-Nov-17	0.113 L	12-Dec-17 19:07	20
13C2-PFOA	IS	96.0	50 - 150		B7K0195	30-Nov-17	0.113 L	10-Dec-17 18:25	1
13C8-PFOS	IS	107	50 - 150	D	B7K0195	30-Nov-17	0.113 L	12-Dec-17 19:07	20
13C5-PFNA	IS	91.9	50 - 150		B7K0195	30-Nov-17	0.113 L	10-Dec-17 18:25	1
13C2-PFDA	IS	98.4	50 - 150		B7K0195	30-Nov-17	0.113 L	10-Dec-17 18:25	1
d3-MeFOSAA	IS	110	50 - 150		B7K0195	30-Nov-17	0.113 L	10-Dec-17 18:25	1
13C2-PFUnA	IS	91.4	50 - 150		B7K0195	30-Nov-17	0.113 L	10-Dec-17 18:25	1
d5-EtFOSAA	IS	108	50 - 150		B7K0195	30-Nov-17	0.113 L	10-Dec-17 18:25	1
13C2-PFDoA	IS	114	50 - 150		B7K0195	30-Nov-17	0.113 L	10-Dec-17 18:25	1
13C2-PFTeDA	IS	112	50 - 150		B7K0195	30-Nov-17	0.113 L	10-Dec-17 18:25	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation
LCL-UCL- Lower control limit - upper control limit
Results reported to the DL.
When reported, PFHxS, PFOA and PFOS include both linear and branched isomers.
Only the linear isomer is reported for all other analytes.

Sample ID: IR86-GW61-17D

Modified EPA Method 537

Client Data

Name: CH2M Hill
Project: PFAS
Matrix: Aqueous
Date Collected: 16-Nov-17 15:45

Laboratory Data

Lab Sample: 1701758-04
Date Received: 28-Nov-17 09:36
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	164	1.91	5.34	8.55		B7K0195	30-Nov-17	0.117 L	12-Dec-17 21:32	1
PFHxA	199	2.33	5.34	8.55		B7K0195	30-Nov-17	0.117 L	12-Dec-17 21:32	1
PFHpA	41.1	0.632	5.34	8.55		B7K0195	30-Nov-17	0.117 L	12-Dec-17 21:32	1
PFHxS	471	1.01	5.34	8.55		B7K0195	30-Nov-17	0.117 L	12-Dec-17 21:32	1
PFOA	81.4	0.696	5.34	8.55		B7K0195	30-Nov-17	0.117 L	12-Dec-17 21:32	1
PFOS	33.8	0.862	5.34	8.55		B7K0195	30-Nov-17	0.117 L	12-Dec-17 21:32	1
PFNA	ND	0.866	5.34	8.55		B7K0195	30-Nov-17	0.117 L	12-Dec-17 21:32	1
PFDA	ND	1.59	5.34	8.55		B7K0195	30-Nov-17	0.117 L	12-Dec-17 21:32	1
MeFOSAA	ND	1.76	5.34	8.55		B7K0195	30-Nov-17	0.117 L	12-Dec-17 21:32	1
PFUnA	ND	1.12	5.34	8.55		B7K0195	30-Nov-17	0.117 L	12-Dec-17 21:32	1
EtFOSAA	ND	1.46	5.34	8.55		B7K0195	30-Nov-17	0.117 L	12-Dec-17 21:32	1
PFDoA	ND	0.846	5.34	8.55		B7K0195	30-Nov-17	0.117 L	12-Dec-17 21:32	1
PFTrDA	ND	0.528	5.34	8.55		B7K0195	30-Nov-17	0.117 L	12-Dec-17 21:32	1
PFTeDA	ND	0.807	5.34	8.55		B7K0195	30-Nov-17	0.117 L	12-Dec-17 21:32	1
Combined PFOA/PFOS	115	0.862	5.34	8.55		B7K0195	30-Nov-17	0.117 L	12-Dec-17 21:32	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	98.9	50 - 150		B7K0195	30-Nov-17	0.117 L	12-Dec-17 21:32	1
13C2-PFHxA	IS	109	50 - 150		B7K0195	30-Nov-17	0.117 L	12-Dec-17 21:32	1
13C4-PFHpA	IS	115	50 - 150		B7K0195	30-Nov-17	0.117 L	12-Dec-17 21:32	1
18O2-PFHxS	IS	115	50 - 150		B7K0195	30-Nov-17	0.117 L	12-Dec-17 21:32	1
13C2-PFOA	IS	110	50 - 150		B7K0195	30-Nov-17	0.117 L	12-Dec-17 21:32	1
13C8-PFOS	IS	95.0	50 - 150		B7K0195	30-Nov-17	0.117 L	12-Dec-17 21:32	1
13C5-PFNA	IS	91.7	50 - 150		B7K0195	30-Nov-17	0.117 L	12-Dec-17 21:32	1
13C2-PFDA	IS	102	50 - 150		B7K0195	30-Nov-17	0.117 L	12-Dec-17 21:32	1
d3-MeFOSAA	IS	98.9	50 - 150		B7K0195	30-Nov-17	0.117 L	12-Dec-17 21:32	1
13C2-PFUnA	IS	126	50 - 150		B7K0195	30-Nov-17	0.117 L	12-Dec-17 21:32	1
d5-EtFOSAA	IS	84.1	50 - 150		B7K0195	30-Nov-17	0.117 L	12-Dec-17 21:32	1
13C2-PFDoA	IS	131	50 - 150		B7K0195	30-Nov-17	0.117 L	12-Dec-17 21:32	1
13C2-PFTeDA	IS	141	50 - 150		B7K0195	30-Nov-17	0.117 L	12-Dec-17 21:32	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation
LCL-UCL- Lower control limit - upper control limit
Results reported to the DL.
When reported, PFHxS, PFOA and PFOS include both linear and branched isomers.
Only the linear isomer is reported for all other analytes.

Sample ID: IR86-GW58-17D

Modified EPA Method 537

Client Data

Name: CH2M Hill
Project: PFAS
Matrix: Aqueous
Date Collected: 16-Nov-17 17:55

Laboratory Data

Lab Sample: 1701758-05
Date Received: 28-Nov-17 09:36
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	92.5	1.91	5.34	8.52		B7K0195	30-Nov-17	0.117 L	10-Dec-17 18:47	1
PFHxA	156	2.32	5.34	8.52		B7K0195	30-Nov-17	0.117 L	10-Dec-17 18:47	1
PFHpA	29.4	0.630	5.34	8.52		B7K0195	30-Nov-17	0.117 L	10-Dec-17 18:47	1
PFHxS	856	1.01	5.34	8.52		B7K0195	30-Nov-17	0.117 L	10-Dec-17 18:47	1
PFOA	61.2	0.693	5.34	8.52		B7K0195	30-Nov-17	0.117 L	10-Dec-17 18:47	1
PFOS	800	0.860	5.34	8.52		B7K0195	30-Nov-17	0.117 L	10-Dec-17 18:47	1
PFNA	2.45	0.863	5.34	8.52	J	B7K0195	30-Nov-17	0.117 L	10-Dec-17 18:47	1
PFDA	ND	1.59	5.34	8.52		B7K0195	30-Nov-17	0.117 L	10-Dec-17 18:47	1
MeFOSAA	ND	1.76	5.34	8.52		B7K0195	30-Nov-17	0.117 L	10-Dec-17 18:47	1
PFUnA	ND	1.12	5.34	8.52		B7K0195	30-Nov-17	0.117 L	10-Dec-17 18:47	1
EtFOSAA	ND	1.46	5.34	8.52		B7K0195	30-Nov-17	0.117 L	10-Dec-17 18:47	1
PFDoA	ND	0.844	5.34	8.52		B7K0195	30-Nov-17	0.117 L	10-Dec-17 18:47	1
PFTrDA	ND	0.526	5.34	8.52		B7K0195	30-Nov-17	0.117 L	10-Dec-17 18:47	1
PFTeDA	ND	0.804	5.34	8.52		B7K0195	30-Nov-17	0.117 L	10-Dec-17 18:47	1
Combined PFOA/PFOS	861	0.860	5.34	8.52		B7K0195	30-Nov-17	0.117 L	10-Dec-17 18:47	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	105	50 - 150		B7K0195	30-Nov-17	0.117 L	10-Dec-17 18:47	1
13C2-PFHxA	IS	98.4	50 - 150		B7K0195	30-Nov-17	0.117 L	10-Dec-17 18:47	1
13C4-PFHpA	IS	107	50 - 150		B7K0195	30-Nov-17	0.117 L	10-Dec-17 18:47	1
18O2-PFHxS	IS	95.6	50 - 150		B7K0195	30-Nov-17	0.117 L	10-Dec-17 18:47	1
13C2-PFOA	IS	77.8	50 - 150		B7K0195	30-Nov-17	0.117 L	10-Dec-17 18:47	1
13C8-PFOS	IS	113	50 - 150		B7K0195	30-Nov-17	0.117 L	10-Dec-17 18:47	1
13C5-PFNA	IS	120	50 - 150		B7K0195	30-Nov-17	0.117 L	10-Dec-17 18:47	1
13C2-PFDA	IS	95.4	50 - 150		B7K0195	30-Nov-17	0.117 L	10-Dec-17 18:47	1
d3-MeFOSAA	IS	93.2	50 - 150		B7K0195	30-Nov-17	0.117 L	10-Dec-17 18:47	1
13C2-PFUnA	IS	79.4	50 - 150		B7K0195	30-Nov-17	0.117 L	10-Dec-17 18:47	1
d5-EtFOSAA	IS	97.0	50 - 150		B7K0195	30-Nov-17	0.117 L	10-Dec-17 18:47	1
13C2-PFDoA	IS	83.9	50 - 150		B7K0195	30-Nov-17	0.117 L	10-Dec-17 18:47	1
13C2-PFTeDA	IS	88.0	50 - 150		B7K0195	30-Nov-17	0.117 L	10-Dec-17 18:47	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation
LCL-UCL- Lower control limit - upper control limit
Results reported to the DL.
When reported, PFHxS, PFOA and PFOS include both linear and branched isomers.
Only the linear isomer is reported for all other analytes.

Sample ID: IR86-GW47-17D

Modified EPA Method 537

Client Data

Name: CH2M Hill
Project: PFAS
Matrix: Aqueous
Date Collected: 17-Nov-17 17:10

Laboratory Data

Lab Sample: 1701758-06
Date Received: 28-Nov-17 09:36
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	111	1.93	5.39	8.63		B7K0195	30-Nov-17	0.116 L	10-Dec-17 18:58	1
PFHxA	271	2.35	5.39	8.63		B7K0195	30-Nov-17	0.116 L	10-Dec-17 18:58	1
PFHpA	61.6	0.638	5.39	8.63		B7K0195	30-Nov-17	0.116 L	10-Dec-17 18:58	1
PFHxS	1000	1.02	5.39	8.63		B7K0195	30-Nov-17	0.116 L	10-Dec-17 18:58	1
PFOA	116	0.703	5.39	8.63		B7K0195	30-Nov-17	0.116 L	10-Dec-17 18:58	1
PFOS	661	0.871	5.39	8.63		B7K0195	30-Nov-17	0.116 L	10-Dec-17 18:58	1
PFNA	3.00	0.874	5.39	8.63	J	B7K0195	30-Nov-17	0.116 L	10-Dec-17 18:58	1
PFDA	ND	1.61	5.39	8.63		B7K0195	30-Nov-17	0.116 L	10-Dec-17 18:58	1
MeFOSAA	ND	1.78	5.39	8.63		B7K0195	30-Nov-17	0.116 L	10-Dec-17 18:58	1
PFUnA	ND	1.13	5.39	8.63		B7K0195	30-Nov-17	0.116 L	10-Dec-17 18:58	1
EtFOSAA	ND	1.48	5.39	8.63		B7K0195	30-Nov-17	0.116 L	10-Dec-17 18:58	1
PFDoA	ND	0.855	5.39	8.63		B7K0195	30-Nov-17	0.116 L	10-Dec-17 18:58	1
PFTrDA	ND	0.533	5.39	8.63		B7K0195	30-Nov-17	0.116 L	10-Dec-17 18:58	1
PFTeDA	ND	0.815	5.39	8.63		B7K0195	30-Nov-17	0.116 L	10-Dec-17 18:58	1
Combined PFOA/PFOS	777	0.871	5.39	8.63		B7K0195	30-Nov-17	0.116 L	10-Dec-17 18:58	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	102	50 - 150		B7K0195	30-Nov-17	0.116 L	10-Dec-17 18:58	1
13C2-PFHxA	IS	97.3	50 - 150		B7K0195	30-Nov-17	0.116 L	10-Dec-17 18:58	1
13C4-PFHpA	IS	90.9	50 - 150		B7K0195	30-Nov-17	0.116 L	10-Dec-17 18:58	1
18O2-PFHxS	IS	109	50 - 150		B7K0195	30-Nov-17	0.116 L	10-Dec-17 18:58	1
13C2-PFOA	IS	88.6	50 - 150		B7K0195	30-Nov-17	0.116 L	10-Dec-17 18:58	1
13C8-PFOS	IS	86.6	50 - 150		B7K0195	30-Nov-17	0.116 L	10-Dec-17 18:58	1
13C5-PFNA	IS	110	50 - 150		B7K0195	30-Nov-17	0.116 L	10-Dec-17 18:58	1
13C2-PFDA	IS	105	50 - 150		B7K0195	30-Nov-17	0.116 L	10-Dec-17 18:58	1
d3-MeFOSAA	IS	90.8	50 - 150		B7K0195	30-Nov-17	0.116 L	10-Dec-17 18:58	1
13C2-PFUnA	IS	103	50 - 150		B7K0195	30-Nov-17	0.116 L	10-Dec-17 18:58	1
d5-EtFOSAA	IS	89.8	50 - 150		B7K0195	30-Nov-17	0.116 L	10-Dec-17 18:58	1
13C2-PFDoA	IS	73.1	50 - 150		B7K0195	30-Nov-17	0.116 L	10-Dec-17 18:58	1
13C2-PFTeDA	IS	91.4	50 - 150		B7K0195	30-Nov-17	0.116 L	10-Dec-17 18:58	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation
LCL-UCL- Lower control limit - upper control limit
Results reported to the DL.
When reported, PFHxS, PFOA and PFOS include both linear and branched isomers.
Only the linear isomer is reported for all other analytes.

Sample ID: USTAS4141-GW13-17D

Modified EPA Method 537

Client Data

Name: CH2M Hill
Project: PFAS
Matrix: Aqueous
Date Collected: 17-Nov-17 09:40

Laboratory Data

Lab Sample: 1701758-07
Date Received: 28-Nov-17 09:36
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	86.0	2.02	5.63	9.05		B7K0195	30-Nov-17	0.111 L	10-Dec-17 19:09	1
PFHxA	273	2.47	5.63	9.05		B7K0195	30-Nov-17	0.111 L	10-Dec-17 19:09	1
PFHpA	116	0.668	5.63	9.05		B7K0195	30-Nov-17	0.111 L	10-Dec-17 19:09	1
PFHxS	1710	1.07	5.63	9.05		B7K0195	30-Nov-17	0.111 L	10-Dec-17 19:09	1
PFOA	170	0.736	5.63	9.05		B7K0195	30-Nov-17	0.111 L	10-Dec-17 19:09	1
PFOS	314	0.913	5.63	9.05		B7K0195	30-Nov-17	0.111 L	10-Dec-17 19:09	1
PFNA	3.32	0.916	5.63	9.05	J	B7K0195	30-Nov-17	0.111 L	10-Dec-17 19:09	1
PFDA	ND	1.69	5.63	9.05		B7K0195	30-Nov-17	0.111 L	10-Dec-17 19:09	1
MeFOSAA	ND	1.87	5.63	9.05		B7K0195	30-Nov-17	0.111 L	10-Dec-17 19:09	1
PFUnA	ND	1.19	5.63	9.05		B7K0195	30-Nov-17	0.111 L	10-Dec-17 19:09	1
EtFOSAA	ND	1.55	5.63	9.05		B7K0195	30-Nov-17	0.111 L	10-Dec-17 19:09	1
PFDoA	ND	0.896	5.63	9.05		B7K0195	30-Nov-17	0.111 L	10-Dec-17 19:09	1
PFTrDA	ND	0.559	5.63	9.05		B7K0195	30-Nov-17	0.111 L	10-Dec-17 19:09	1
PFTeDA	ND	0.854	5.63	9.05		B7K0195	30-Nov-17	0.111 L	10-Dec-17 19:09	1
Combined PFOA/PFOS	484	0.913	5.63	9.05		B7K0195	30-Nov-17	0.111 L	10-Dec-17 19:09	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	115	50 - 150		B7K0195	30-Nov-17	0.111 L	10-Dec-17 19:09	1
13C2-PFHxA	IS	108	50 - 150		B7K0195	30-Nov-17	0.111 L	10-Dec-17 19:09	1
13C4-PFHpA	IS	108	50 - 150		B7K0195	30-Nov-17	0.111 L	10-Dec-17 19:09	1
18O2-PFHxS	IS	99.2	50 - 150		B7K0195	30-Nov-17	0.111 L	10-Dec-17 19:09	1
13C2-PFOA	IS	84.5	50 - 150		B7K0195	30-Nov-17	0.111 L	10-Dec-17 19:09	1
13C8-PFOS	IS	89.4	50 - 150		B7K0195	30-Nov-17	0.111 L	10-Dec-17 19:09	1
13C5-PFNA	IS	81.4	50 - 150		B7K0195	30-Nov-17	0.111 L	10-Dec-17 19:09	1
13C2-PFDA	IS	86.5	50 - 150		B7K0195	30-Nov-17	0.111 L	10-Dec-17 19:09	1
d3-MeFOSAA	IS	108	50 - 150		B7K0195	30-Nov-17	0.111 L	10-Dec-17 19:09	1
13C2-PFUnA	IS	103	50 - 150		B7K0195	30-Nov-17	0.111 L	10-Dec-17 19:09	1
d5-EtFOSAA	IS	116	50 - 150		B7K0195	30-Nov-17	0.111 L	10-Dec-17 19:09	1
13C2-PFDoA	IS	123	50 - 150		B7K0195	30-Nov-17	0.111 L	10-Dec-17 19:09	1
13C2-PFTeDA	IS	114	50 - 150		B7K0195	30-Nov-17	0.111 L	10-Dec-17 19:09	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation
LCL-UCL- Lower control limit - upper control limit
Results reported to the DL.
When reported, PFHxS, PFOA and PFOS include both linear and branched isomers.
Only the linear isomer is reported for all other analytes.

Sample ID: IR86-GW53-17D

Modified EPA Method 537

Client Data

Name: CH2M Hill
Project: PFAS
Matrix: Aqueous
Date Collected: 17-Nov-17 11:30

Laboratory Data

Lab Sample: 1701758-08
Date Received: 28-Nov-17 09:36
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	118	1.99	5.53	8.88		B7K0195	30-Nov-17	0.113 L	10-Dec-17 19:21	1
PFHxA	153	2.42	5.53	8.88		B7K0195	30-Nov-17	0.113 L	10-Dec-17 19:21	1
PFHpA	22.8	0.656	5.53	8.88		B7K0195	30-Nov-17	0.113 L	10-Dec-17 19:21	1
PFHxS	844	1.05	5.53	8.88		B7K0195	30-Nov-17	0.113 L	10-Dec-17 19:21	1
PFOA	63.7	0.722	5.53	8.88		B7K0195	30-Nov-17	0.113 L	10-Dec-17 19:21	1
PFOS	253	0.895	5.53	8.88		B7K0195	30-Nov-17	0.113 L	10-Dec-17 19:21	1
PFNA	ND	0.899	5.53	8.88		B7K0195	30-Nov-17	0.113 L	10-Dec-17 19:21	1
PFDA	ND	1.65	5.53	8.88		B7K0195	30-Nov-17	0.113 L	10-Dec-17 19:21	1
MeFOSAA	ND	1.83	5.53	8.88		B7K0195	30-Nov-17	0.113 L	10-Dec-17 19:21	1
PFUnA	ND	1.17	5.53	8.88		B7K0195	30-Nov-17	0.113 L	10-Dec-17 19:21	1
EtFOSAA	ND	1.52	5.53	8.88		B7K0195	30-Nov-17	0.113 L	10-Dec-17 19:21	1
PFDoA	ND	0.879	5.53	8.88		B7K0195	30-Nov-17	0.113 L	10-Dec-17 19:21	1
PFTrDA	ND	0.548	5.53	8.88		B7K0195	30-Nov-17	0.113 L	10-Dec-17 19:21	1
PFTeDA	ND	0.838	5.53	8.88		B7K0195	30-Nov-17	0.113 L	10-Dec-17 19:21	1
Combined PFOA/PFOS	317	0.895	5.53	8.88		B7K0195	30-Nov-17	0.113 L	10-Dec-17 19:21	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	120	50 - 150		B7K0195	30-Nov-17	0.113 L	10-Dec-17 19:21	1
13C2-PFHxA	IS	113	50 - 150		B7K0195	30-Nov-17	0.113 L	10-Dec-17 19:21	1
13C4-PFHpA	IS	113	50 - 150		B7K0195	30-Nov-17	0.113 L	10-Dec-17 19:21	1
18O2-PFHxS	IS	93.9	50 - 150		B7K0195	30-Nov-17	0.113 L	10-Dec-17 19:21	1
13C2-PFOA	IS	96.0	50 - 150		B7K0195	30-Nov-17	0.113 L	10-Dec-17 19:21	1
13C8-PFOS	IS	84.6	50 - 150		B7K0195	30-Nov-17	0.113 L	10-Dec-17 19:21	1
13C5-PFNA	IS	79.8	50 - 150		B7K0195	30-Nov-17	0.113 L	10-Dec-17 19:21	1
13C2-PFDA	IS	84.4	50 - 150		B7K0195	30-Nov-17	0.113 L	10-Dec-17 19:21	1
d3-MeFOSAA	IS	87.3	50 - 150		B7K0195	30-Nov-17	0.113 L	10-Dec-17 19:21	1
13C2-PFUnA	IS	108	50 - 150		B7K0195	30-Nov-17	0.113 L	10-Dec-17 19:21	1
d5-EtFOSAA	IS	85.8	50 - 150		B7K0195	30-Nov-17	0.113 L	10-Dec-17 19:21	1
13C2-PFDoA	IS	113	50 - 150		B7K0195	30-Nov-17	0.113 L	10-Dec-17 19:21	1
13C2-PFTeDA	IS	99.0	50 - 150		B7K0195	30-Nov-17	0.113 L	10-Dec-17 19:21	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation
LCL-UCL- Lower control limit - upper control limit
Results reported to the DL.
When reported, PFHxS, PFOA and PFOS include both linear and branched isomers.
Only the linear isomer is reported for all other analytes.

Sample ID: IR86-GW53D-17D

Modified EPA Method 537

Client Data

Name: CH2M Hill
Project: PFAS
Matrix: Aqueous
Date Collected: 17-Nov-17 11:35

Laboratory Data

Lab Sample: 1701758-09
Date Received: 28-Nov-17 09:36
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	120	2.00	5.58	8.96		B7K0195	30-Nov-17	0.112 L	10-Dec-17 19:32	1
PFHxA	162	2.44	5.58	8.96		B7K0195	30-Nov-17	0.112 L	10-Dec-17 19:32	1
PFHpA	24.2	0.662	5.58	8.96		B7K0195	30-Nov-17	0.112 L	10-Dec-17 19:32	1
PFHxS	797	1.06	5.58	8.96		B7K0195	30-Nov-17	0.112 L	10-Dec-17 19:32	1
PFOA	74.1	0.729	5.58	8.96		B7K0195	30-Nov-17	0.112 L	10-Dec-17 19:32	1
PFOS	244	0.904	5.58	8.96		B7K0195	30-Nov-17	0.112 L	10-Dec-17 19:32	1
PFNA	ND	0.907	5.58	8.96		B7K0195	30-Nov-17	0.112 L	10-Dec-17 19:32	1
PFDA	ND	1.67	5.58	8.96		B7K0195	30-Nov-17	0.112 L	10-Dec-17 19:32	1
MeFOSAA	ND	1.85	5.58	8.96		B7K0195	30-Nov-17	0.112 L	10-Dec-17 19:32	1
PFUnA	ND	1.18	5.58	8.96		B7K0195	30-Nov-17	0.112 L	10-Dec-17 19:32	1
EtFOSAA	ND	1.53	5.58	8.96		B7K0195	30-Nov-17	0.112 L	10-Dec-17 19:32	1
PFDoA	ND	0.887	5.58	8.96		B7K0195	30-Nov-17	0.112 L	10-Dec-17 19:32	1
PFTrDA	ND	0.553	5.58	8.96		B7K0195	30-Nov-17	0.112 L	10-Dec-17 19:32	1
PFTeDA	ND	0.845	5.58	8.96		B7K0195	30-Nov-17	0.112 L	10-Dec-17 19:32	1
Combined PFOA/PFOS	318	0.904	5.58	8.96		B7K0195	30-Nov-17	0.112 L	10-Dec-17 19:32	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	119	50 - 150		B7K0195	30-Nov-17	0.112 L	10-Dec-17 19:32	1
13C2-PFHxA	IS	106	50 - 150		B7K0195	30-Nov-17	0.112 L	10-Dec-17 19:32	1
13C4-PFHpA	IS	103	50 - 150		B7K0195	30-Nov-17	0.112 L	10-Dec-17 19:32	1
18O2-PFHxS	IS	114	50 - 150		B7K0195	30-Nov-17	0.112 L	10-Dec-17 19:32	1
13C2-PFOA	IS	100	50 - 150		B7K0195	30-Nov-17	0.112 L	10-Dec-17 19:32	1
13C8-PFOS	IS	88.9	50 - 150		B7K0195	30-Nov-17	0.112 L	10-Dec-17 19:32	1
13C5-PFNA	IS	99.9	50 - 150		B7K0195	30-Nov-17	0.112 L	10-Dec-17 19:32	1
13C2-PFDA	IS	92.3	50 - 150		B7K0195	30-Nov-17	0.112 L	10-Dec-17 19:32	1
d3-MeFOSAA	IS	67.9	50 - 150		B7K0195	30-Nov-17	0.112 L	10-Dec-17 19:32	1
13C2-PFUnA	IS	90.4	50 - 150		B7K0195	30-Nov-17	0.112 L	10-Dec-17 19:32	1
d5-EtFOSAA	IS	87.4	50 - 150		B7K0195	30-Nov-17	0.112 L	10-Dec-17 19:32	1
13C2-PFDoA	IS	94.5	50 - 150		B7K0195	30-Nov-17	0.112 L	10-Dec-17 19:32	1
13C2-PFTeDA	IS	93.2	50 - 150		B7K0195	30-Nov-17	0.112 L	10-Dec-17 19:32	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation
LCL-UCL- Lower control limit - upper control limit
Results reported to the DL.
When reported, PFHxS, PFOA and PFOS include both linear and branched isomers.
Only the linear isomer is reported for all other analytes.

Sample ID: USTAS4141-GW17-17D

Modified EPA Method 537

Client Data

Name: CH2M Hill
Project: PFAS
Matrix: Aqueous
Date Collected: 17-Nov-17 17:45

Laboratory Data

Lab Sample: 1701758-10
Date Received: 28-Nov-17 09:36
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	5.70	2.02	5.63	9.05	J	B7K0195	30-Nov-17	0.111 L	10-Dec-17 19:43	1
PFHxA	11.2	2.46	5.63	9.05		B7K0195	30-Nov-17	0.111 L	10-Dec-17 19:43	1
PFHpA	4.20	0.668	5.63	9.05	J	B7K0195	30-Nov-17	0.111 L	10-Dec-17 19:43	1
PFHxS	39.7	1.07	5.63	9.05		B7K0195	30-Nov-17	0.111 L	10-Dec-17 19:43	1
PFOA	4.74	0.736	5.63	9.05	J	B7K0195	30-Nov-17	0.111 L	10-Dec-17 19:43	1
PFOS	86.0	0.912	5.63	9.05		B7K0195	30-Nov-17	0.111 L	10-Dec-17 19:43	1
PFNA	ND	0.916	5.63	9.05		B7K0195	30-Nov-17	0.111 L	10-Dec-17 19:43	1
PFDA	ND	1.68	5.63	9.05		B7K0195	30-Nov-17	0.111 L	10-Dec-17 19:43	1
MeFOSAA	ND	1.87	5.63	9.05		B7K0195	30-Nov-17	0.111 L	10-Dec-17 19:43	1
PFUnA	ND	1.19	5.63	9.05		B7K0195	30-Nov-17	0.111 L	10-Dec-17 19:43	1
EtFOSAA	ND	1.55	5.63	9.05		B7K0195	30-Nov-17	0.111 L	10-Dec-17 19:43	1
PFDoA	ND	0.896	5.63	9.05		B7K0195	30-Nov-17	0.111 L	10-Dec-17 19:43	1
PFTrDA	ND	0.559	5.63	9.05		B7K0195	30-Nov-17	0.111 L	10-Dec-17 19:43	1
PFTeDA	ND	0.854	5.63	9.05		B7K0195	30-Nov-17	0.111 L	10-Dec-17 19:43	1
Combined PFOA/PFOS	90.7	0.912	5.63	9.05		B7K0195	30-Nov-17	0.111 L	10-Dec-17 19:43	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	109	50 - 150		B7K0195	30-Nov-17	0.111 L	10-Dec-17 19:43	1
13C2-PFHxA	IS	102	50 - 150		B7K0195	30-Nov-17	0.111 L	10-Dec-17 19:43	1
13C4-PFHpA	IS	106	50 - 150		B7K0195	30-Nov-17	0.111 L	10-Dec-17 19:43	1
18O2-PFHxS	IS	107	50 - 150		B7K0195	30-Nov-17	0.111 L	10-Dec-17 19:43	1
13C2-PFOA	IS	107	50 - 150		B7K0195	30-Nov-17	0.111 L	10-Dec-17 19:43	1
13C8-PFOS	IS	123	50 - 150		B7K0195	30-Nov-17	0.111 L	10-Dec-17 19:43	1
13C5-PFNA	IS	101	50 - 150		B7K0195	30-Nov-17	0.111 L	10-Dec-17 19:43	1
13C2-PFDA	IS	88.9	50 - 150		B7K0195	30-Nov-17	0.111 L	10-Dec-17 19:43	1
d3-MeFOSAA	IS	96.3	50 - 150		B7K0195	30-Nov-17	0.111 L	10-Dec-17 19:43	1
13C2-PFUnA	IS	108	50 - 150		B7K0195	30-Nov-17	0.111 L	10-Dec-17 19:43	1
d5-EtFOSAA	IS	95.2	50 - 150		B7K0195	30-Nov-17	0.111 L	10-Dec-17 19:43	1
13C2-PFDoA	IS	112	50 - 150		B7K0195	30-Nov-17	0.111 L	10-Dec-17 19:43	1
13C2-PFTeDA	IS	115	50 - 150		B7K0195	30-Nov-17	0.111 L	10-Dec-17 19:43	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation
LCL-UCL- Lower control limit - upper control limit
Results reported to the DL.
When reported, PFHxS, PFOA and PFOS include both linear and branched isomers.
Only the linear isomer is reported for all other analytes.

Sample ID: USTAS4141-GW17-17D **Modified EPA Method 537**

Name:	CH2M Hill	Lab Sample:	B7K0195-MS1/B7K0195-MSD1	Source Lab Sample:	1701758-10
Project:	PFAS	QC Batch:	B7K0195	Date Extracted:	30-Nov-17
Matrix:	Aqueous	Samp Size:	0.115/0.119 L	Column:	BEH C18

Analyte	Sample (ng/L)	MS (ng/L)	MS Spike Amt	MS % Rec	MS Quals	MSD (ng/L)	MSD Spike Amt	MSD % Rec	RPD	MSD Quals	%Rec Limits	RPD Limits	MS Analyzed	MS Dil	MSD Analyzed	MSD Dil
PFBS	5.70	85.2	86.7	91.7		84.6	84.3	93.6	2.05		70-130	30	10-Dec-17 16:33	1	10-Dec-17 16:44	1
PFHxA	11.2	111	86.7	115		100	84.3	106	8.14		70-130	30	10-Dec-17 16:33	1	10-Dec-17 16:44	1
PFHpA	4.20	96.6	86.7	107		78.2	84.3	87.8	19.7		70-130	30	10-Dec-17 16:33	1	10-Dec-17 16:44	1
PFHxS	39.7	120	86.7	92.3		111	84.3	84.5	8.82		70-130	30	10-Dec-17 16:33	1	10-Dec-17 16:44	1
PFOA	4.74	90.8	86.7	99.3		85.8	84.3	96.1	3.28		70-130	30	10-Dec-17 16:33	1	10-Dec-17 16:44	1
PFOS	86.0	181	86.7	110		147	84.3	72.3	41.4	H	70-130	30	10-Dec-17 16:33	1	10-Dec-17 16:44	1
PFNA	ND	86.3	86.7	99.0		81.8	84.3	96.4	2.66		70-130	30	10-Dec-17 16:33	1	10-Dec-17 16:44	1
PFDA	ND	61.4	86.7	70.8		76.5	84.3	90.7	24.6		70-130	30	10-Dec-17 16:33	1	10-Dec-17 16:44	1
MeFOSAA	ND	75.8	86.7	87.5		70.7	84.3	83.9	4.20		70-130	30	10-Dec-17 16:33	1	10-Dec-17 16:44	1
PFUnA	ND	94.7	86.7	109		78.1	84.3	92.6	16.3		70-130	30	10-Dec-17 16:33	1	10-Dec-17 16:44	1
EtFOSAA	ND	111	86.7	128		90.2	84.3	107	17.9		70-130	30	10-Dec-17 16:33	1	10-Dec-17 16:44	1
PFDoA	ND	70.2	86.7	80.9		94.4	84.3	112	32.2	H	70-130	30	10-Dec-17 16:33	1	10-Dec-17 16:44	1
PFTrDA	ND	90.6	86.7	104		97.8	84.3	116	10.9		60-130	30	10-Dec-17 16:33	1	10-Dec-17 16:44	1
PFTeDA	ND	78.2	86.7	90.2		86.4	84.3	103	13.3		70-130	30	10-Dec-17 16:33	1	10-Dec-17 16:44	1

Labeled Standards	Type	MS % Rec	MS Quals	MSD % Rec	MSD Quals	Limits	MS Analyzed	MS Dil	MSD Analyzed	MSD Dil
13C3-PFBS	IS	114		116		50-150	10-Dec-17 16:33	1	10-Dec-17 16:44	1
13C2-PFHxA	IS	96.5		112		50-150	10-Dec-17 16:33	1	10-Dec-17 16:44	1
13C4-PFHpA	IS	105		115		50-150	10-Dec-17 16:33	1	10-Dec-17 16:44	1
18O2-PFHxS	IS	101		109		50-150	10-Dec-17 16:33	1	10-Dec-17 16:44	1
13C2-PFOA	IS	110		90.1		50-150	10-Dec-17 16:33	1	10-Dec-17 16:44	1
13C8-PFOS	IS	96.9		111		50-150	10-Dec-17 16:33	1	10-Dec-17 16:44	1
13C5-PFNA	IS	112		91.4		50-150	10-Dec-17 16:33	1	10-Dec-17 16:44	1
13C2-PFDA	IS	89.6		99.6		50-150	10-Dec-17 16:33	1	10-Dec-17 16:44	1
d3-MeFOSAA	IS	98.5		106		50-150	10-Dec-17 16:33	1	10-Dec-17 16:44	1
13C2-PFUnA	IS	91.0		100		50-150	10-Dec-17 16:33	1	10-Dec-17 16:44	1
d5-EtFOSAA	IS	76.3		101		50-150	10-Dec-17 16:33	1	10-Dec-17 16:44	1
13C2-PFDoA	IS	100		87.6		50-150	10-Dec-17 16:33	1	10-Dec-17 16:44	1
13C2-PFTeDA	IS	104		117		50-150	10-Dec-17 16:33	1	10-Dec-17 16:44	1

Sample ID: IR54-GW17-17D

Modified EPA Method 537

Client Data

Name: CH2M Hill
Project: PFAS
Matrix: Aqueous
Date Collected: 19-Nov-17 12:25

Laboratory Data

Lab Sample: 1701758-11
Date Received: 28-Nov-17 09:36
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	585	1.93	5.39	8.63		B7K0195	30-Nov-17	0.116 L	10-Dec-17 20:28	1
PFHxA	1730	2.35	5.39	8.63		B7K0195	30-Nov-17	0.116 L	10-Dec-17 20:28	1
PFHpA	386	0.637	5.39	8.63		B7K0195	30-Nov-17	0.116 L	10-Dec-17 20:28	1
PFHxS	5810	10.2	53.9	86.3	D	B7K0195	30-Nov-17	0.116 L	12-Dec-17 19:18	10
PFOA	2840	7.02	53.9	86.3	D	B7K0195	30-Nov-17	0.116 L	12-Dec-17 19:18	10
PFOS	9680	8.70	53.9	86.3	D	B7K0195	30-Nov-17	0.116 L	12-Dec-17 19:18	10
PFNA	66.4	0.874	5.39	8.63		B7K0195	30-Nov-17	0.116 L	10-Dec-17 20:28	1
PFDA	8.47	1.61	5.39	8.63	J	B7K0195	30-Nov-17	0.116 L	10-Dec-17 20:28	1
MeFOSAA	ND	1.78	5.39	8.63		B7K0195	30-Nov-17	0.116 L	10-Dec-17 20:28	1
PFUnA	ND	1.13	5.39	8.63		B7K0195	30-Nov-17	0.116 L	10-Dec-17 20:28	1
EtFOSAA	ND	1.48	5.39	8.63		B7K0195	30-Nov-17	0.116 L	10-Dec-17 20:28	1
PFDoA	ND	0.854	5.39	8.63		B7K0195	30-Nov-17	0.116 L	10-Dec-17 20:28	1
PFTrDA	ND	0.533	5.39	8.63		B7K0195	30-Nov-17	0.116 L	10-Dec-17 20:28	1
PFTeDA	ND	0.814	5.39	8.63		B7K0195	30-Nov-17	0.116 L	10-Dec-17 20:28	1
Combined PFOA/PFOS	12500	0.870	5.39	8.63		B7K0195	30-Nov-17	0.116 L	10-Dec-17 20:28	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	99.7	50 - 150		B7K0195	30-Nov-17	0.116 L	10-Dec-17 20:28	1
13C2-PFHxA	IS	95.5	50 - 150		B7K0195	30-Nov-17	0.116 L	10-Dec-17 20:28	1
13C4-PFHpA	IS	106	50 - 150		B7K0195	30-Nov-17	0.116 L	10-Dec-17 20:28	1
18O2-PFHxS	IS	76.7	50 - 150	D	B7K0195	30-Nov-17	0.116 L	12-Dec-17 19:18	10
13C2-PFOA	IS	128	50 - 150	D	B7K0195	30-Nov-17	0.116 L	12-Dec-17 19:18	10
13C8-PFOS	IS	104	50 - 150	D	B7K0195	30-Nov-17	0.116 L	12-Dec-17 19:18	10
13C5-PFNA	IS	105	50 - 150		B7K0195	30-Nov-17	0.116 L	10-Dec-17 20:28	1
13C2-PFDA	IS	83.4	50 - 150		B7K0195	30-Nov-17	0.116 L	10-Dec-17 20:28	1
d3-MeFOSAA	IS	102	50 - 150		B7K0195	30-Nov-17	0.116 L	10-Dec-17 20:28	1
13C2-PFUnA	IS	117	50 - 150		B7K0195	30-Nov-17	0.116 L	10-Dec-17 20:28	1
d5-EtFOSAA	IS	92.9	50 - 150		B7K0195	30-Nov-17	0.116 L	10-Dec-17 20:28	1
13C2-PFDoA	IS	101	50 - 150		B7K0195	30-Nov-17	0.116 L	10-Dec-17 20:28	1
13C2-PFTeDA	IS	109	50 - 150		B7K0195	30-Nov-17	0.116 L	10-Dec-17 20:28	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation
LCL-UCL- Lower control limit - upper control limit
Results reported to the DL.
When reported, PFHxS, PFOA and PFOS include both linear and branched isomers.
Only the linear isomer is reported for all other analytes.

Sample ID: IR54-GW17-17D **Modified EPA Method 537**

Name:	CH2M Hill	Lab Sample:	B7K0195-MS2/B7K0195-MSD2	Source Lab Sample:	1701758-11
Project:	PFAS	QC Batch:	B7K0195	Date Extracted:	30-Nov-17
Matrix:	Aqueous	Samp Size:	0.114/0.105 L	Column:	BEH C18

Analyte	Sample (ng/L)	MS (ng/L)	MS Spike Amt	MS % Rec	MS Quals	MSD (ng/L)	MSD Spike Amt	MSD % Rec	RPD	MSD Quals	%Rec Limits	RPD Limits	MS Analyzed	MS Dil	MSD Analyzed	MSD Dil
PFBS	585	669	88.0	95.7		666	95.3	85.2	11.6		70-130	30	10-Dec-17 16:55	1	10-Dec-17 17:06	1
PFHxA	1730	1840	88.0	118		1670	95.3	-70.2	787	H	70-130	30	10-Dec-17 16:55	1	10-Dec-17 17:06	1
PFHpA	386	496	88.0	125		543	95.3	165	27.6	H	70-130	30	10-Dec-17 16:55	1	10-Dec-17 17:06	1
PFHxS	5810	5860	880	5.94	D, H	4710	953	-116	222	D, H	70-130	30	12-Dec-17 18:22	10	12-Dec-17 18:33	10
PFOA	2840	3140	880	34.0	D, H	3150	953	32.0	6.06	D, H	70-130	30	12-Dec-17 18:22	10	12-Dec-17 18:33	10
PFOS	9680	7940	880	-198	D, H	9940	953	26.6	262	D, H	70-130	30	12-Dec-17 18:22	10	12-Dec-17 18:33	10
PFNA	66.4	153	88.0	98.7		162	95.3	100	1.31		70-130	30	10-Dec-17 16:55	1	10-Dec-17 17:06	1
PFDA	8.47	72.1	88.0	72.4		97.4	95.3	93.3	25.2		70-130	30	10-Dec-17 16:55	1	10-Dec-17 17:06	1
MeFOSAA	ND	70.4	88.0	80.0		113	95.3	118	38.4	H	70-130	30	10-Dec-17 16:55	1	10-Dec-17 17:06	1
PFUnA	ND	83.5	88.0	94.9		85.6	95.3	89.8	5.52		70-130	30	10-Dec-17 16:55	1	10-Dec-17 17:06	1
EtFOSAA	ND	77.3	88.0	87.8		106	95.3	111	23.3		70-130	30	10-Dec-17 16:55	1	10-Dec-17 17:06	1
PFDoA	ND	74.9	88.0	85.1		86.3	95.3	90.6	6.26		70-130	30	10-Dec-17 16:55	1	10-Dec-17 17:06	1
PFTrDA	ND	68.0	88.0	77.3		91.4	95.3	95.9	21.5		60-130	30	10-Dec-17 16:55	1	10-Dec-17 17:06	1
PFTeDA	ND	96.8	88.0	110		96.1	95.3	101	8.53		70-130	30	10-Dec-17 16:55	1	10-Dec-17 17:06	1

Labeled Standards	Type	MS % Rec	MS Quals	MSD % Rec	MSD Quals	Limits	MS Analyzed	MS Dil	MSD Analyzed	MSD Dil
13C3-PFBS	IS	102		110		50-150	10-Dec-17 16:55	1	10-Dec-17 17:06	1
13C2-PFHxA	IS	93.6		108		50-150	10-Dec-17 16:55	1	10-Dec-17 17:06	1
13C4-PFHpA	IS	94.6		108		50-150	10-Dec-17 16:55	1	10-Dec-17 17:06	1
18O2-PFHxS	IS	89.1	D	94.7	D	50-150	12-Dec-17 18:22	10	12-Dec-17 18:33	10
13C2-PFOA	IS	88.8	D	105	D	50-150	12-Dec-17 18:22	10	12-Dec-17 18:33	10
13C8-PFOS	IS	82.0	D	122	D	50-150	12-Dec-17 18:22	10	12-Dec-17 18:33	10
13C5-PFNA	IS	96.3		80.7		50-150	10-Dec-17 16:55	1	10-Dec-17 17:06	1
13C2-PFDA	IS	78.5		75.5		50-150	10-Dec-17 16:55	1	10-Dec-17 17:06	1
d3-MeFOSAA	IS	97.5		87.1		50-150	10-Dec-17 16:55	1	10-Dec-17 17:06	1
13C2-PFUnA	IS	88.6		109		50-150	10-Dec-17 16:55	1	10-Dec-17 17:06	1
d5-EtFOSAA	IS	95.0		100		50-150	10-Dec-17 16:55	1	10-Dec-17 17:06	1
13C2-PFDoA	IS	116		100		50-150	10-Dec-17 16:55	1	10-Dec-17 17:06	1
13C2-PFTeDA	IS	76.6		99.3		50-150	10-Dec-17 16:55	1	10-Dec-17 17:06	1

Sample ID: IR54-GW15-17D

Modified EPA Method 537

Client Data

Name: CH2M Hill
Project: PFAS
Matrix: Aqueous
Date Collected: 19-Nov-17 13:25

Laboratory Data

Lab Sample: 1701758-12
Date Received: 28-Nov-17 09:36
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	244	2.01	5.58	8.97		B7K0195	30-Nov-17	0.112 L	10-Dec-17 20:39	1
PFHxA	1430	2.44	5.58	8.97		B7K0195	30-Nov-17	0.112 L	10-Dec-17 20:39	1
PFHpA	320	0.663	5.58	8.97		B7K0195	30-Nov-17	0.112 L	10-Dec-17 20:39	1
PFHxS	4170	10.6	55.8	89.7	D	B7K0195	30-Nov-17	0.112 L	12-Dec-17 19:29	10
PFOA	2820	7.30	55.8	89.7	D	B7K0195	30-Nov-17	0.112 L	12-Dec-17 19:29	10
PFOS	5150	9.05	55.8	89.7	D	B7K0195	30-Nov-17	0.112 L	12-Dec-17 19:29	10
PFNA	72.6	0.908	5.58	8.97		B7K0195	30-Nov-17	0.112 L	10-Dec-17 20:39	1
PFDA	ND	1.67	5.58	8.97		B7K0195	30-Nov-17	0.112 L	10-Dec-17 20:39	1
MeFOSAA	ND	1.85	5.58	8.97		B7K0195	30-Nov-17	0.112 L	10-Dec-17 20:39	1
PFUnA	ND	1.18	5.58	8.97		B7K0195	30-Nov-17	0.112 L	10-Dec-17 20:39	1
EtFOSAA	ND	1.54	5.58	8.97		B7K0195	30-Nov-17	0.112 L	10-Dec-17 20:39	1
PFDoA	ND	0.888	5.58	8.97		B7K0195	30-Nov-17	0.112 L	10-Dec-17 20:39	1
PFTrDA	ND	0.554	5.58	8.97		B7K0195	30-Nov-17	0.112 L	10-Dec-17 20:39	1
PFTeDA	ND	0.846	5.58	8.97		B7K0195	30-Nov-17	0.112 L	10-Dec-17 20:39	1
Combined PFOA/PFOS	7970	0.905	5.58	8.97		B7K0195	30-Nov-17	0.112 L	10-Dec-17 20:39	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	119	50 - 150		B7K0195	30-Nov-17	0.112 L	10-Dec-17 20:39	1
13C2-PFHxA	IS	104	50 - 150		B7K0195	30-Nov-17	0.112 L	10-Dec-17 20:39	1
13C4-PFHpA	IS	106	50 - 150		B7K0195	30-Nov-17	0.112 L	10-Dec-17 20:39	1
18O2-PFHxS	IS	94.7	50 - 150	D	B7K0195	30-Nov-17	0.112 L	12-Dec-17 19:29	10
13C2-PFOA	IS	82.8	50 - 150	D	B7K0195	30-Nov-17	0.112 L	12-Dec-17 19:29	10
13C8-PFOS	IS	103	50 - 150	D	B7K0195	30-Nov-17	0.112 L	12-Dec-17 19:29	10
13C5-PFNA	IS	84.0	50 - 150		B7K0195	30-Nov-17	0.112 L	10-Dec-17 20:39	1
13C2-PFDA	IS	90.4	50 - 150		B7K0195	30-Nov-17	0.112 L	10-Dec-17 20:39	1
d3-MeFOSAA	IS	94.4	50 - 150		B7K0195	30-Nov-17	0.112 L	10-Dec-17 20:39	1
13C2-PFUnA	IS	90.6	50 - 150		B7K0195	30-Nov-17	0.112 L	10-Dec-17 20:39	1
d5-EtFOSAA	IS	101	50 - 150		B7K0195	30-Nov-17	0.112 L	10-Dec-17 20:39	1
13C2-PFDoA	IS	84.5	50 - 150		B7K0195	30-Nov-17	0.112 L	10-Dec-17 20:39	1
13C2-PFTeDA	IS	89.6	50 - 150		B7K0195	30-Nov-17	0.112 L	10-Dec-17 20:39	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation
LCL-UCL- Lower control limit - upper control limit
Results reported to the DL.
When reported, PFHxS, PFOA and PFOS include both linear and branched isomers.
Only the linear isomer is reported for all other analytes.

Sample ID: IR54-GW15D-17D

Modified EPA Method 537

Client Data

Name: CH2M Hill
Project: PFAS
Matrix: Aqueous
Date Collected: 19-Nov-17 13:30

Laboratory Data

Lab Sample: 1701758-13
Date Received: 28-Nov-17 09:36
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	268	1.97	5.48	8.79		B7K0195	30-Nov-17	0.114 L	10-Dec-17 20:50	1
PFHxA	1590	2.40	5.48	8.79		B7K0195	30-Nov-17	0.114 L	10-Dec-17 20:50	1
PFHpA	325	0.649	5.48	8.79		B7K0195	30-Nov-17	0.114 L	10-Dec-17 20:50	1
PFHxS	4400	10.4	54.8	87.9	D	B7K0195	30-Nov-17	0.114 L	12-Dec-17 19:40	10
PFOA	2850	7.15	54.8	87.9	D	B7K0195	30-Nov-17	0.114 L	12-Dec-17 19:40	10
PFOS	4830	8.87	54.8	87.9	D	B7K0195	30-Nov-17	0.114 L	12-Dec-17 19:40	10
PFNA	64.9	0.890	5.48	8.79		B7K0195	30-Nov-17	0.114 L	10-Dec-17 20:50	1
PFDA	ND	1.64	5.48	8.79		B7K0195	30-Nov-17	0.114 L	10-Dec-17 20:50	1
MeFOSAA	ND	1.81	5.48	8.79		B7K0195	30-Nov-17	0.114 L	10-Dec-17 20:50	1
PFUnA	ND	1.15	5.48	8.79		B7K0195	30-Nov-17	0.114 L	10-Dec-17 20:50	1
EtFOSAA	ND	1.51	5.48	8.79		B7K0195	30-Nov-17	0.114 L	10-Dec-17 20:50	1
PFDoA	ND	0.870	5.48	8.79		B7K0195	30-Nov-17	0.114 L	10-Dec-17 20:50	1
PFTrDA	ND	0.543	5.48	8.79		B7K0195	30-Nov-17	0.114 L	10-Dec-17 20:50	1
PFTeDA	ND	0.830	5.48	8.79		B7K0195	30-Nov-17	0.114 L	10-Dec-17 20:50	1
Combined PFOA/PFOS	7680	0.887	5.48	8.79		B7K0195	30-Nov-17	0.114 L	10-Dec-17 20:50	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	114	50 - 150		B7K0195	30-Nov-17	0.114 L	10-Dec-17 20:50	1
13C2-PFHxA	IS	101	50 - 150		B7K0195	30-Nov-17	0.114 L	10-Dec-17 20:50	1
13C4-PFHpA	IS	110	50 - 150		B7K0195	30-Nov-17	0.114 L	10-Dec-17 20:50	1
18O2-PFHxS	IS	94.6	50 - 150	D	B7K0195	30-Nov-17	0.114 L	12-Dec-17 19:40	10
13C2-PFOA	IS	100	50 - 150	D	B7K0195	30-Nov-17	0.114 L	12-Dec-17 19:40	10
13C8-PFOS	IS	112	50 - 150	D	B7K0195	30-Nov-17	0.114 L	12-Dec-17 19:40	10
13C5-PFNA	IS	97.8	50 - 150		B7K0195	30-Nov-17	0.114 L	10-Dec-17 20:50	1
13C2-PFDA	IS	73.2	50 - 150		B7K0195	30-Nov-17	0.114 L	10-Dec-17 20:50	1
d3-MeFOSAA	IS	104	50 - 150		B7K0195	30-Nov-17	0.114 L	10-Dec-17 20:50	1
13C2-PFUnA	IS	89.5	50 - 150		B7K0195	30-Nov-17	0.114 L	10-Dec-17 20:50	1
d5-EtFOSAA	IS	109	50 - 150		B7K0195	30-Nov-17	0.114 L	10-Dec-17 20:50	1
13C2-PFDoA	IS	103	50 - 150		B7K0195	30-Nov-17	0.114 L	10-Dec-17 20:50	1
13C2-PFTeDA	IS	102	50 - 150		B7K0195	30-Nov-17	0.114 L	10-Dec-17 20:50	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation
LCL-UCL- Lower control limit - upper control limit
Results reported to the DL.
When reported, PFHxS, PFOA and PFOS include both linear and branched isomers.
Only the linear isomer is reported for all other analytes.

Sample ID: IR54-GW14-17D

Modified EPA Method 537

Client Data

Name: CH2M Hill
Project: PFAS
Matrix: Aqueous
Date Collected: 19-Nov-17 13:40

Laboratory Data

Lab Sample: 1701758-14
Date Received: 28-Nov-17 09:36
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	2440	19.3	53.9	86.2	D	B7K0195	30-Nov-17	0.116 L	12-Dec-17 19:52	10
PFHxA	12100	23.5	53.9	86.2	D	B7K0195	30-Nov-17	0.116 L	12-Dec-17 19:52	10
PFHpA	3310	6.37	53.9	86.2	D	B7K0195	30-Nov-17	0.116 L	12-Dec-17 19:52	10
PFHxS	17900	10.2	53.9	86.2	D	B7K0195	30-Nov-17	0.116 L	12-Dec-17 19:52	10
PFOA	9120	7.02	53.9	86.2	D	B7K0195	30-Nov-17	0.116 L	12-Dec-17 19:52	10
PFOS	4010	8.70	53.9	86.2	D	B7K0195	30-Nov-17	0.116 L	12-Dec-17 19:52	10
PFNA	155	0.873	5.39	8.62		B7K0195	30-Nov-17	0.116 L	10-Dec-17 21:01	1
PFDA	ND	1.61	5.39	8.62		B7K0195	30-Nov-17	0.116 L	10-Dec-17 21:01	1
MeFOSAA	ND	1.78	5.39	8.62		B7K0195	30-Nov-17	0.116 L	10-Dec-17 21:01	1
PFUnA	ND	1.13	5.39	8.62		B7K0195	30-Nov-17	0.116 L	10-Dec-17 21:01	1
EtFOSAA	ND	1.48	5.39	8.62		B7K0195	30-Nov-17	0.116 L	10-Dec-17 21:01	1
PFDoA	ND	0.854	5.39	8.62		B7K0195	30-Nov-17	0.116 L	10-Dec-17 21:01	1
PFTrDA	ND	0.532	5.39	8.62		B7K0195	30-Nov-17	0.116 L	10-Dec-17 21:01	1
PFTeDA	ND	0.814	5.39	8.62		B7K0195	30-Nov-17	0.116 L	10-Dec-17 21:01	1
Combined PFOA/PFOS	13100	0.870	5.39	8.62		B7K0195	30-Nov-17	0.116 L	10-Dec-17 21:01	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	120	50 - 150	D	B7K0195	30-Nov-17	0.116 L	12-Dec-17 19:52	10
13C2-PFHxA	IS	136	50 - 150	D	B7K0195	30-Nov-17	0.116 L	12-Dec-17 19:52	10
13C4-PFHpA	IS	111	50 - 150	D	B7K0195	30-Nov-17	0.116 L	12-Dec-17 19:52	10
18O2-PFHxS	IS	139	50 - 150	D	B7K0195	30-Nov-17	0.116 L	12-Dec-17 19:52	10
13C2-PFOA	IS	118	50 - 150	D	B7K0195	30-Nov-17	0.116 L	12-Dec-17 19:52	10
13C8-PFOS	IS	99.9	50 - 150	D	B7K0195	30-Nov-17	0.116 L	12-Dec-17 19:52	10
13C5-PFNA	IS	117	50 - 150		B7K0195	30-Nov-17	0.116 L	10-Dec-17 21:01	1
13C2-PFDA	IS	103	50 - 150		B7K0195	30-Nov-17	0.116 L	10-Dec-17 21:01	1
d3-MeFOSAA	IS	103	50 - 150		B7K0195	30-Nov-17	0.116 L	10-Dec-17 21:01	1
13C2-PFUnA	IS	120	50 - 150		B7K0195	30-Nov-17	0.116 L	10-Dec-17 21:01	1
d5-EtFOSAA	IS	112	50 - 150		B7K0195	30-Nov-17	0.116 L	10-Dec-17 21:01	1
13C2-PFDoA	IS	114	50 - 150		B7K0195	30-Nov-17	0.116 L	10-Dec-17 21:01	1
13C2-PFTeDA	IS	111	50 - 150		B7K0195	30-Nov-17	0.116 L	10-Dec-17 21:01	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation
LCL-UCL- Lower control limit - upper control limit
Results reported to the DL.
When reported, PFHxS, PFOA and PFOS include both linear and branched isomers.
Only the linear isomer is reported for all other analytes.

Sample ID: IR54-GW16-17D

Modified EPA Method 537

Client Data

Name: CH2M Hill
Project: PFAS
Matrix: Aqueous
Date Collected: 19-Nov-17 12:15

Laboratory Data

Lab Sample: 1701758-15
Date Received: 28-Nov-17 09:36
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	16200	18.8	52.5	84.2	D	B7K0195	30-Nov-17	0.119 L	12-Dec-17 20:14	10
PFHxA	30100	91.8	210	337	D	B7K0195	30-Nov-17	0.119 L	15-Dec-17 23:15	40
PFHpA	7040	6.22	52.5	84.2	D	B7K0195	30-Nov-17	0.119 L	12-Dec-17 20:14	10
PFHxS	101000	39.9	210	337	E, D	B7K0195	30-Nov-17	0.119 L	15-Dec-17 23:15	40
PFOA	25100	27.4	210	337	D	B7K0195	30-Nov-17	0.119 L	15-Dec-17 23:15	40
PFOS	30000	34.0	210	337	D	B7K0195	30-Nov-17	0.119 L	15-Dec-17 23:15	40
PFNA	206	0.853	5.25	8.42		B7K0195	30-Nov-17	0.119 L	10-Dec-17 21:12	1
PFDA	3.69	1.57	5.25	8.42	J	B7K0195	30-Nov-17	0.119 L	10-Dec-17 21:12	1
MeFOSAA	ND	1.74	5.25	8.42		B7K0195	30-Nov-17	0.119 L	10-Dec-17 21:12	1
PFUnA	ND	1.11	5.25	8.42		B7K0195	30-Nov-17	0.119 L	10-Dec-17 21:12	1
EtFOSAA	ND	1.44	5.25	8.42		B7K0195	30-Nov-17	0.119 L	10-Dec-17 21:12	1
PFDoA	ND	0.834	5.25	8.42		B7K0195	30-Nov-17	0.119 L	10-Dec-17 21:12	1
PFTrDA	ND	0.520	5.25	8.42		B7K0195	30-Nov-17	0.119 L	10-Dec-17 21:12	1
PFTeDA	ND	0.795	5.25	8.42		B7K0195	30-Nov-17	0.119 L	10-Dec-17 21:12	1
Combined PFOA/PFOS	55100	0.849	5.25	8.42		B7K0195	30-Nov-17	0.119 L	10-Dec-17 21:12	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	115	50 - 150	D	B7K0195	30-Nov-17	0.119 L	12-Dec-17 20:14	10
13C2-PFHxA	IS	166	50 - 150	D, H	B7K0195	30-Nov-17	0.119 L	15-Dec-17 23:15	40
13C4-PFHpA	IS	138	50 - 150	D	B7K0195	30-Nov-17	0.119 L	12-Dec-17 20:14	10
18O2-PFHxS	IS	85.0	50 - 150	D	B7K0195	30-Nov-17	0.119 L	15-Dec-17 23:15	40
13C2-PFOA	IS	128	50 - 150	D	B7K0195	30-Nov-17	0.119 L	15-Dec-17 23:15	40
13C8-PFOS	IS	48.0	50 - 150	D, H	B7K0195	30-Nov-17	0.119 L	15-Dec-17 23:15	40
13C5-PFNA	IS	101	50 - 150		B7K0195	30-Nov-17	0.119 L	10-Dec-17 21:12	1
13C2-PFDA	IS	73.4	50 - 150		B7K0195	30-Nov-17	0.119 L	10-Dec-17 21:12	1
d3-MeFOSAA	IS	109	50 - 150		B7K0195	30-Nov-17	0.119 L	10-Dec-17 21:12	1
13C2-PFUnA	IS	86.0	50 - 150		B7K0195	30-Nov-17	0.119 L	10-Dec-17 21:12	1
d5-EtFOSAA	IS	92.4	50 - 150		B7K0195	30-Nov-17	0.119 L	10-Dec-17 21:12	1
13C2-PFDoA	IS	106	50 - 150		B7K0195	30-Nov-17	0.119 L	10-Dec-17 21:12	1
13C2-PFTeDA	IS	87.4	50 - 150		B7K0195	30-Nov-17	0.119 L	10-Dec-17 21:12	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation
LCL-UCL- Lower control limit - upper control limit
Results reported to the DL.
When reported, PFHxS, PFOA and PFOS include both linear and branched isomers.
Only the linear isomer is reported for all other analytes.

Sample ID: IR54-FB-111917

Modified EPA Method 537

Client Data

Name: CH2M Hill
Project: PFAS
Matrix: Aqueous
Date Collected: 19-Nov-17 11:50

Laboratory Data

Lab Sample: 1701758-16
Date Received: 28-Nov-17 09:36
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	1.89	5.30	8.46		B7K0195	30-Nov-17	0.118 L	15-Dec-17 23:26	1
PFHxA	ND	2.31	5.30	8.46		B7K0195	30-Nov-17	0.118 L	15-Dec-17 23:26	1
PFHpA	ND	0.625	5.30	8.46		B7K0195	30-Nov-17	0.118 L	15-Dec-17 23:26	1
PFHxS	ND	1.00	5.30	8.46		B7K0195	30-Nov-17	0.118 L	15-Dec-17 23:26	1
PFOA	ND	0.689	5.30	8.46		B7K0195	30-Nov-17	0.118 L	15-Dec-17 23:26	1
PFOS	ND	0.853	5.30	8.46		B7K0195	30-Nov-17	0.118 L	15-Dec-17 23:26	1
PFNA	ND	0.857	5.30	8.46		B7K0195	30-Nov-17	0.118 L	15-Dec-17 23:26	1
PFDA	ND	1.58	5.30	8.46		B7K0195	30-Nov-17	0.118 L	15-Dec-17 23:26	1
MeFOSAA	ND	1.75	5.30	8.46		B7K0195	30-Nov-17	0.118 L	15-Dec-17 23:26	1
PFUnA	ND	1.11	5.30	8.46		B7K0195	30-Nov-17	0.118 L	15-Dec-17 23:26	1
EtFOSAA	ND	1.45	5.30	8.46		B7K0195	30-Nov-17	0.118 L	15-Dec-17 23:26	1
PFDoA	ND	0.838	5.30	8.46		B7K0195	30-Nov-17	0.118 L	15-Dec-17 23:26	1
PFTrDA	ND	0.522	5.30	8.46		B7K0195	30-Nov-17	0.118 L	15-Dec-17 23:26	1
PFTeDA	ND	0.799	5.30	8.46		B7K0195	30-Nov-17	0.118 L	15-Dec-17 23:26	1
Combined PFOA/PFOS	ND	0.853	5.30	8.46		B7K0195	30-Nov-17	0.118 L	15-Dec-17 23:26	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	96.8	50 - 150		B7K0195	30-Nov-17	0.118 L	15-Dec-17 23:26	1
13C2-PFHxA	IS	84.3	50 - 150		B7K0195	30-Nov-17	0.118 L	15-Dec-17 23:26	1
13C4-PFHpA	IS	97.2	50 - 150		B7K0195	30-Nov-17	0.118 L	15-Dec-17 23:26	1
18O2-PFHxS	IS	92.6	50 - 150		B7K0195	30-Nov-17	0.118 L	15-Dec-17 23:26	1
13C2-PFOA	IS	89.3	50 - 150		B7K0195	30-Nov-17	0.118 L	15-Dec-17 23:26	1
13C8-PFOS	IS	92.7	50 - 150		B7K0195	30-Nov-17	0.118 L	15-Dec-17 23:26	1
13C5-PFNA	IS	71.1	50 - 150		B7K0195	30-Nov-17	0.118 L	15-Dec-17 23:26	1
13C2-PFDA	IS	69.0	50 - 150		B7K0195	30-Nov-17	0.118 L	15-Dec-17 23:26	1
d3-MeFOSAA	IS	67.2	50 - 150		B7K0195	30-Nov-17	0.118 L	15-Dec-17 23:26	1
13C2-PFUnA	IS	69.1	50 - 150		B7K0195	30-Nov-17	0.118 L	15-Dec-17 23:26	1
d5-EtFOSAA	IS	60.6	50 - 150		B7K0195	30-Nov-17	0.118 L	15-Dec-17 23:26	1
13C2-PFDoA	IS	69.8	50 - 150		B7K0195	30-Nov-17	0.118 L	15-Dec-17 23:26	1
13C2-PFTeDA	IS	46.4	50 - 150	H	B7K0195	30-Nov-17	0.118 L	15-Dec-17 23:26	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation
LCL-UCL- Lower control limit - upper control limit
Results reported to the DL.
When reported, PFHxS, PFOA and PFOS include both linear and branched isomers.
Only the linear isomer is reported for all other analytes.

Sample ID: IR54-EB-111917

Modified EPA Method 537

Client Data

Name: CH2M Hill
Project: PFAS
Matrix: Aqueous
Date Collected: 19-Nov-17 12:00

Laboratory Data

Lab Sample: 1701758-17
Date Received: 28-Nov-17 09:36
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	2.01	5.63	8.99		B7K0195	30-Nov-17	0.111 L	10-Dec-17 21:35	1
PFHxA	ND	2.45	5.63	8.99		B7K0195	30-Nov-17	0.111 L	10-Dec-17 21:35	1
PFHpA	ND	0.664	5.63	8.99		B7K0195	30-Nov-17	0.111 L	10-Dec-17 21:35	1
PFHxS	ND	1.06	5.63	8.99		B7K0195	30-Nov-17	0.111 L	10-Dec-17 21:35	1
PFOA	ND	0.731	5.63	8.99		B7K0195	30-Nov-17	0.111 L	10-Dec-17 21:35	1
PFOS	ND	0.906	5.63	8.99		B7K0195	30-Nov-17	0.111 L	10-Dec-17 21:35	1
PFNA	ND	0.910	5.63	8.99		B7K0195	30-Nov-17	0.111 L	10-Dec-17 21:35	1
PFDA	ND	1.67	5.63	8.99		B7K0195	30-Nov-17	0.111 L	10-Dec-17 21:35	1
MeFOSAA	ND	1.85	5.63	8.99		B7K0195	30-Nov-17	0.111 L	10-Dec-17 21:35	1
PFUnA	ND	1.18	5.63	8.99		B7K0195	30-Nov-17	0.111 L	10-Dec-17 21:35	1
EtFOSAA	ND	1.54	5.63	8.99		B7K0195	30-Nov-17	0.111 L	10-Dec-17 21:35	1
PFDoA	ND	0.890	5.63	8.99		B7K0195	30-Nov-17	0.111 L	10-Dec-17 21:35	1
PFTrDA	ND	0.555	5.63	8.99		B7K0195	30-Nov-17	0.111 L	10-Dec-17 21:35	1
PFTeDA	ND	0.848	5.63	8.99		B7K0195	30-Nov-17	0.111 L	10-Dec-17 21:35	1
Combined PFOA/PFOS	ND	0.906	5.63	8.99		B7K0195	30-Nov-17	0.111 L	10-Dec-17 21:35	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	108	50 - 150		B7K0195	30-Nov-17	0.111 L	10-Dec-17 21:35	1
13C2-PFHxA	IS	102	50 - 150		B7K0195	30-Nov-17	0.111 L	10-Dec-17 21:35	1
13C4-PFHpA	IS	99.8	50 - 150		B7K0195	30-Nov-17	0.111 L	10-Dec-17 21:35	1
18O2-PFHxS	IS	100	50 - 150		B7K0195	30-Nov-17	0.111 L	10-Dec-17 21:35	1
13C2-PFOA	IS	89.7	50 - 150		B7K0195	30-Nov-17	0.111 L	10-Dec-17 21:35	1
13C8-PFOS	IS	83.9	50 - 150		B7K0195	30-Nov-17	0.111 L	10-Dec-17 21:35	1
13C5-PFNA	IS	80.0	50 - 150		B7K0195	30-Nov-17	0.111 L	10-Dec-17 21:35	1
13C2-PFDA	IS	62.1	50 - 150		B7K0195	30-Nov-17	0.111 L	10-Dec-17 21:35	1
d3-MeFOSAA	IS	85.9	50 - 150		B7K0195	30-Nov-17	0.111 L	10-Dec-17 21:35	1
13C2-PFUnA	IS	66.6	50 - 150		B7K0195	30-Nov-17	0.111 L	10-Dec-17 21:35	1
d5-EtFOSAA	IS	84.0	50 - 150		B7K0195	30-Nov-17	0.111 L	10-Dec-17 21:35	1
13C2-PFDoA	IS	80.1	50 - 150		B7K0195	30-Nov-17	0.111 L	10-Dec-17 21:35	1
13C2-PFTeDA	IS	90.9	50 - 150		B7K0195	30-Nov-17	0.111 L	10-Dec-17 21:35	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation
LCL-UCL- Lower control limit - upper control limit
Results reported to the DL.
When reported, PFHxS, PFOA and PFOS include both linear and branched isomers.
Only the linear isomer is reported for all other analytes.

Sample ID: IR86-EB-111917

Modified EPA Method 537

Client Data

Name: CH2M Hill
Project: PFAS
Matrix: Aqueous
Date Collected: 19-Nov-17 12:10

Laboratory Data

Lab Sample: 1701758-18
Date Received: 28-Nov-17 09:36
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	1.95	5.43	8.72		B7K0195	30-Nov-17	0.115 L	10-Dec-17 21:46	1
PFHxA	ND	2.38	5.43	8.72		B7K0195	30-Nov-17	0.115 L	10-Dec-17 21:46	1
PFHpA	ND	0.644	5.43	8.72		B7K0195	30-Nov-17	0.115 L	10-Dec-17 21:46	1
PFHxS	ND	1.03	5.43	8.72		B7K0195	30-Nov-17	0.115 L	10-Dec-17 21:46	1
PFOA	ND	0.710	5.43	8.72		B7K0195	30-Nov-17	0.115 L	10-Dec-17 21:46	1
PFOS	ND	0.880	5.43	8.72		B7K0195	30-Nov-17	0.115 L	10-Dec-17 21:46	1
PFNA	ND	0.883	5.43	8.72		B7K0195	30-Nov-17	0.115 L	10-Dec-17 21:46	1
PFDA	ND	1.62	5.43	8.72		B7K0195	30-Nov-17	0.115 L	10-Dec-17 21:46	1
MeFOSAA	ND	1.80	5.43	8.72		B7K0195	30-Nov-17	0.115 L	10-Dec-17 21:46	1
PFUnA	ND	1.14	5.43	8.72		B7K0195	30-Nov-17	0.115 L	10-Dec-17 21:46	1
EtFOSAA	ND	1.49	5.43	8.72		B7K0195	30-Nov-17	0.115 L	10-Dec-17 21:46	1
PFDoA	ND	0.864	5.43	8.72		B7K0195	30-Nov-17	0.115 L	10-Dec-17 21:46	1
PFTrDA	ND	0.539	5.43	8.72		B7K0195	30-Nov-17	0.115 L	10-Dec-17 21:46	1
PFTeDA	ND	0.823	5.43	8.72		B7K0195	30-Nov-17	0.115 L	10-Dec-17 21:46	1
Combined PFOA/PFOS	ND	0.880	5.43	8.72		B7K0195	30-Nov-17	0.115 L	10-Dec-17 21:46	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	108	50 - 150		B7K0195	30-Nov-17	0.115 L	10-Dec-17 21:46	1
13C2-PFHxA	IS	111	50 - 150		B7K0195	30-Nov-17	0.115 L	10-Dec-17 21:46	1
13C4-PFHpA	IS	108	50 - 150		B7K0195	30-Nov-17	0.115 L	10-Dec-17 21:46	1
18O2-PFHxS	IS	121	50 - 150		B7K0195	30-Nov-17	0.115 L	10-Dec-17 21:46	1
13C2-PFOA	IS	103	50 - 150		B7K0195	30-Nov-17	0.115 L	10-Dec-17 21:46	1
13C8-PFOS	IS	97.4	50 - 150		B7K0195	30-Nov-17	0.115 L	10-Dec-17 21:46	1
13C5-PFNA	IS	89.6	50 - 150		B7K0195	30-Nov-17	0.115 L	10-Dec-17 21:46	1
13C2-PFDA	IS	72.8	50 - 150		B7K0195	30-Nov-17	0.115 L	10-Dec-17 21:46	1
d3-MeFOSAA	IS	109	50 - 150		B7K0195	30-Nov-17	0.115 L	10-Dec-17 21:46	1
13C2-PFUnA	IS	91.6	50 - 150		B7K0195	30-Nov-17	0.115 L	10-Dec-17 21:46	1
d5-EtFOSAA	IS	98.3	50 - 150		B7K0195	30-Nov-17	0.115 L	10-Dec-17 21:46	1
13C2-PFDoA	IS	79.5	50 - 150		B7K0195	30-Nov-17	0.115 L	10-Dec-17 21:46	1
13C2-PFTeDA	IS	62.5	50 - 150		B7K0195	30-Nov-17	0.115 L	10-Dec-17 21:46	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation
LCL-UCL- Lower control limit - upper control limit
Results reported to the DL.
When reported, PFHxS, PFOA and PFOS include both linear and branched isomers.
Only the linear isomer is reported for all other analytes.

Sample ID: IR86-FB-111717

Modified EPA Method 537

Client Data

Name: CH2M Hill
Project: PFAS
Matrix: Aqueous
Date Collected: 17-Nov-17 17:30

Laboratory Data

Lab Sample: 1701758-19
Date Received: 28-Nov-17 09:36
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	1.90	5.30	8.49		B7K0195	30-Nov-17	0.118 L	10-Dec-17 21:57	1
PFHxA	ND	2.31	5.30	8.49		B7K0195	30-Nov-17	0.118 L	10-Dec-17 21:57	1
PFHpA	ND	0.627	5.30	8.49		B7K0195	30-Nov-17	0.118 L	10-Dec-17 21:57	1
PFHxS	ND	1.01	5.30	8.49		B7K0195	30-Nov-17	0.118 L	10-Dec-17 21:57	1
PFOA	ND	0.691	5.30	8.49		B7K0195	30-Nov-17	0.118 L	10-Dec-17 21:57	1
PFOS	ND	0.856	5.30	8.49		B7K0195	30-Nov-17	0.118 L	10-Dec-17 21:57	1
PFNA	ND	0.860	5.30	8.49		B7K0195	30-Nov-17	0.118 L	10-Dec-17 21:57	1
PFDA	ND	1.58	5.30	8.49		B7K0195	30-Nov-17	0.118 L	10-Dec-17 21:57	1
MeFOSAA	ND	1.75	5.30	8.49		B7K0195	30-Nov-17	0.118 L	10-Dec-17 21:57	1
PFUnA	ND	1.11	5.30	8.49		B7K0195	30-Nov-17	0.118 L	10-Dec-17 21:57	1
EtFOSAA	ND	1.45	5.30	8.49		B7K0195	30-Nov-17	0.118 L	10-Dec-17 21:57	1
PFDoA	ND	0.841	5.30	8.49		B7K0195	30-Nov-17	0.118 L	10-Dec-17 21:57	1
PFTrDA	ND	0.524	5.30	8.49		B7K0195	30-Nov-17	0.118 L	10-Dec-17 21:57	1
PFTeDA	ND	0.801	5.30	8.49		B7K0195	30-Nov-17	0.118 L	10-Dec-17 21:57	1
Combined PFOA/PFOS	ND	0.856	5.30	8.49		B7K0195	30-Nov-17	0.118 L	10-Dec-17 21:57	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	109	50 - 150		B7K0195	30-Nov-17	0.118 L	10-Dec-17 21:57	1
13C2-PFHxA	IS	105	50 - 150		B7K0195	30-Nov-17	0.118 L	10-Dec-17 21:57	1
13C4-PFHpA	IS	103	50 - 150		B7K0195	30-Nov-17	0.118 L	10-Dec-17 21:57	1
18O2-PFHxS	IS	94.3	50 - 150		B7K0195	30-Nov-17	0.118 L	10-Dec-17 21:57	1
13C2-PFOA	IS	89.8	50 - 150		B7K0195	30-Nov-17	0.118 L	10-Dec-17 21:57	1
13C8-PFOS	IS	104	50 - 150		B7K0195	30-Nov-17	0.118 L	10-Dec-17 21:57	1
13C5-PFNA	IS	90.8	50 - 150		B7K0195	30-Nov-17	0.118 L	10-Dec-17 21:57	1
13C2-PFDA	IS	80.0	50 - 150		B7K0195	30-Nov-17	0.118 L	10-Dec-17 21:57	1
d3-MeFOSAA	IS	101	50 - 150		B7K0195	30-Nov-17	0.118 L	10-Dec-17 21:57	1
13C2-PFUnA	IS	84.8	50 - 150		B7K0195	30-Nov-17	0.118 L	10-Dec-17 21:57	1
d5-EtFOSAA	IS	88.0	50 - 150		B7K0195	30-Nov-17	0.118 L	10-Dec-17 21:57	1
13C2-PFDoA	IS	93.7	50 - 150		B7K0195	30-Nov-17	0.118 L	10-Dec-17 21:57	1
13C2-PFTeDA	IS	64.7	50 - 150		B7K0195	30-Nov-17	0.118 L	10-Dec-17 21:57	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation
LCL-UCL- Lower control limit - upper control limit
Results reported to the DL.
When reported, PFHxS, PFOA and PFOS include both linear and branched isomers.
Only the linear isomer is reported for all other analytes.

Sample ID: IR54-IDW-AQ-111917

Modified EPA Method 537

Client Data

Name: CH2M Hill
Project: PFAS
Matrix: Aqueous
Date Collected: 19-Nov-17 14:30

Laboratory Data

Lab Sample: 1701758-20
Date Received: 28-Nov-17 09:36
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	1780	1.96	5.48	8.78		B7K0195	30-Nov-17	0.114 L	10-Dec-17 22:08	1
PFHxA	7400	23.9	54.8	87.8	D	B7K0195	30-Nov-17	0.114 L	12-Dec-17 20:25	10
PFHpA	1390	0.649	5.48	8.78		B7K0195	30-Nov-17	0.114 L	10-Dec-17 22:08	1
PFHxS	16600	10.4	54.8	87.8	D	B7K0195	30-Nov-17	0.114 L	12-Dec-17 20:25	10
PFOA	6450	7.14	54.8	87.8	D	B7K0195	30-Nov-17	0.114 L	12-Dec-17 20:25	10
PFOS	5980	8.86	54.8	87.8	D	B7K0195	30-Nov-17	0.114 L	12-Dec-17 20:25	10
PFNA	100	0.889	5.48	8.78		B7K0195	30-Nov-17	0.114 L	10-Dec-17 22:08	1
PFDA	5.36	1.64	5.48	8.78	J	B7K0195	30-Nov-17	0.114 L	10-Dec-17 22:08	1
MeFOSAA	ND	1.81	5.48	8.78		B7K0195	30-Nov-17	0.114 L	10-Dec-17 22:08	1
PFUnA	ND	1.15	5.48	8.78		B7K0195	30-Nov-17	0.114 L	10-Dec-17 22:08	1
EtFOSAA	ND	1.50	5.48	8.78		B7K0195	30-Nov-17	0.114 L	10-Dec-17 22:08	1
PFDoA	ND	0.869	5.48	8.78		B7K0195	30-Nov-17	0.114 L	10-Dec-17 22:08	1
PFTrDA	ND	0.542	5.48	8.78		B7K0195	30-Nov-17	0.114 L	10-Dec-17 22:08	1
PFTeDA	ND	0.829	5.48	8.78		B7K0195	30-Nov-17	0.114 L	10-Dec-17 22:08	1
Combined PFOA/PFOS	12400	0.886	5.48	8.78		B7K0195	30-Nov-17	0.114 L	10-Dec-17 22:08	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	125	50 - 150		B7K0195	30-Nov-17	0.114 L	10-Dec-17 22:08	1
13C2-PFHxA	IS	105	50 - 150	D	B7K0195	30-Nov-17	0.114 L	12-Dec-17 20:25	10
13C4-PFHpA	IS	110	50 - 150		B7K0195	30-Nov-17	0.114 L	10-Dec-17 22:08	1
18O2-PFHxS	IS	93.3	50 - 150	D	B7K0195	30-Nov-17	0.114 L	12-Dec-17 20:25	10
13C2-PFOA	IS	114	50 - 150	D	B7K0195	30-Nov-17	0.114 L	12-Dec-17 20:25	10
13C8-PFOS	IS	129	50 - 150	D	B7K0195	30-Nov-17	0.114 L	12-Dec-17 20:25	10
13C5-PFNA	IS	85.7	50 - 150		B7K0195	30-Nov-17	0.114 L	10-Dec-17 22:08	1
13C2-PFDA	IS	88.0	50 - 150		B7K0195	30-Nov-17	0.114 L	10-Dec-17 22:08	1
d3-MeFOSAA	IS	82.8	50 - 150		B7K0195	30-Nov-17	0.114 L	10-Dec-17 22:08	1
13C2-PFUnA	IS	72.1	50 - 150		B7K0195	30-Nov-17	0.114 L	10-Dec-17 22:08	1
d5-EtFOSAA	IS	73.8	50 - 150		B7K0195	30-Nov-17	0.114 L	10-Dec-17 22:08	1
13C2-PFDoA	IS	92.3	50 - 150		B7K0195	30-Nov-17	0.114 L	10-Dec-17 22:08	1
13C2-PFTeDA	IS	77.0	50 - 150		B7K0195	30-Nov-17	0.114 L	10-Dec-17 22:08	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation
LCL-UCL- Lower control limit - upper control limit
Results reported to the DL.
When reported, PFHxS, PFOA and PFOS include both linear and branched isomers.
Only the linear isomer is reported for all other analytes.

DATA QUALIFIERS & ABBREVIATIONS

B	**This compound was also detected in the method blank.**
D	**Dilution**
E	**The associated compound concentration exceeded the calibration range of the instrument.**
H	**Recovery and/or RPD was outside laboratory acceptance limits.**
I	**Chemical Interference**
J	**The amount detected is below the Reporting Limit/LOQ.**
M	**Estimated Maximum Possible Concentration. (CA Region 2 projects only)**
*****	**See Cover Letter**
Conc.	**Concentration**
NA	**Not applicable**
ND	**Not Detected**
TEQ	**Toxic Equivalency**
U	**Not Detected (specific projects only)**

Unless otherwise noted, solid sample results are reported in dry weight. Tissue samples are reported in wet weight.

CERTIFICATIONS

Accrediting Authority	Certificate Number
Arkansas Department of Environmental Quality	17-015-0
California Department of Health – ELAP	2892
DoD ELAP - A2LA Accredited - ISO/IEC 17025:2005	3091.01
Florida Department of Health	E87777-18
Hawaii Department of Health	N/A
Louisiana Department of Environmental Quality	01977
Maine Department of Health	2016026
Minnesota Department of Health	1175673
New Hampshire Environmental Accreditation Program	207716
New Jersey Department of Environmental Protection	CA003
New York Department of Health	11411
Oregon Laboratory Accreditation Program	4042-008
Pennsylvania Department of Environmental Protection	013
Texas Commission on Environmental Quality	T104704189-17-8
Virginia Department of General Services	8621
Washington Department of Ecology	C584
Wisconsin Department of Natural Resources	998036160

Current certificates and lists of licensed parameters are located in the Quality Assurance office and are available upon request.

NELAP Accredited Test Methods

MATRIX: Air	
Description of Test	**Method**
Determination of Polychlorinated p-Dioxins & Polychlorinated Dibenzofurans	EPA 23

MATRIX: Biological Tissue	
Description of Test	**Method**
Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope Dilution GC/HRMS	EPA 1613B
Brominated Diphenyl Ethers by HRGC/HRMS	EPA 1614A
Chlorinated Biphenyl Congeners in Water, Soil, Sediment, and Tissue by GC/HRMS	EPA 1668A/C
Pesticides in Water, Soil, Sediment, Biosolids, and Tissue by HRGC/HRMS	EPA 1699
Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS	EPA 537
Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans by GC/HRMS	EPA 8280A/B
Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated Dibenzofurans (PCDFs) by GC/HRMS	EPA 8290/8290A

MATRIX: Drinking Water	
Description of Test	**Method**
2,3,7,8-Tetrachlorodibenzo- p-dioxin (2,3,7,8-TCDD) GC/HRMS	EPA 1613
Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS	EPA 537

MATRIX: Non-Potable Water	
Description of Test	**Method**
Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope Dilution GC/HRMS	EPA 1613B
Brominated Diphenyl Ethers by HRGC/HRMS	EPA 1614A
Chlorinated Biphenyl Congeners in Water, Soil, Sediment, and Tissue by GC/HRMS	EPA 1668A/C
Pesticides in Water, Soil, Sediment, Biosolids, and Tissue by HRGC/HRMS	EPA 1699
Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS	EPA 537
Dioxin by GC/HRMS	EPA 613
Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans by GC/HRMS	EPA 8280A/B
Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated Dibenzofurans (PCDFs) by GC/HRMS	EPA 8290/8290A

MATRIX: Solids	
Description of Test	**Method**
Tetra-Octa Chlorinated Dioxins and Furans by Isotope Dilution GC/HRMS	EPA 1613
Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope	EPA 1613B

Dilution GC/HRMS	
Brominated Diphenyl Ethers by HRGC/HRMS	EPA 1614A
Chlorinated Biphenyl Congeners in Water, Soil, Sediment, and Tissue by GC/HRMS	EPA 1668A/C
Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS	EPA 537
Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans by GC/HRMS	EPA 8280A/B
Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated Dibenzofurans (PCDFs) by GC/HRMS	EPA 8290/8290A

EMPIRICAL LABORATORIES, LLC - CHAIN OF CUSTODY RECORD

SHIP TO: 621 Mainstream Drive, Suite 270 ♦ Nashville, TN 37228 ♦ 615-345-1115 ♦ (fax) 615-846-5426

19891

Send Results to:	Send Invoice to:
Name Bianca Grange	Name
Company CH2M	Company
Address	Address
City	City
State, Zip	State, Zip
Phone	Phone
Fax	Fax
E-mail Bianca.grangera@CH2M.com	E-mail
Project No./Name: PFAS	**Sampler's (Signature):** Matt

Analysis Requirements: select PFCs — 1701758 — 0.1°C

Lab Use Only:

VOA Headspace	Y	N	NA
Field Filtered	Y	N	NA
Correct Containers	Y	N	NA
Discrepancies	Y	N	NA
Cust. Seals Intact	Y	N	NA
Containers Intact	Y	N	NA

Airbill #:

CAR #:

Lab Use Only Lab #	Date/Time Sampled	Sample Description	Sample Matrix	select PFCs	Comments	No. of Bottles	Lab Use Only Containers/Pres.
	11-16-17 1930	☆-GW27-17D	AQ	X		2	
	11-16-17 1705	☆-GW59-17D	AQ	X		2	
	11-16-17 1910	☆-GW48-17D	AQ	X		2	
	11-16-17 1545	☆-GW61-17D	AQ	X		2	
	11-16-17 1755	☆-GW58-17D	AQ	X		2	
	11-17-17 1710	☆-GW47-17D	AQ	X		2	
	11-17-17 0940	USTAS4141-GW13-17D	AQ	X		2	
	11-17-17 1130	☆-GW53-17D	AQ	X		2	
	11-17-17 1135	☆-GW53D-17D	AQ	X		2	
	11-17-17 1745	USTAS4141-GW17-17D	AQ	X		2	
	11-17-17 1745	USTAS4141-GW17-17D-MS	AQ	X		2	
	11-17-17 1745	USTAS4141-GW17-17D-SD	AQ	X		2	

	Date/Time	Received By: (Signature)
Sample Kit Prep'd by: (Signature)		
Relinquished by: (Signature) Matt	11-20-17 1400	Received By: (Signature) 11/22/17 0925
Relinquished by: (Signature)	Date/Time	Received By: (Signature)
Received for Laboratory by: (Signature)	Date/Time	*Temperature*

REMARKS:

☆ = IR86

Details:

Page 1 of 2

Cooler No. 1 of 1

Date Shipped 11-20-17

Shipped By Matt

Turnaround per SOW

Distribution: Original and yellow copies accompany sample shipment to laboratory; Pink retained by samplers.

EMPIRICAL LABORATORIES, LLC - CHAIN OF CUSTODY RECORD

SHIP TO: 621 Mainstream Drive, Suite 270 ♦ Nashville, TN 37228 ♦ 615-345-1115 ♦ (fax) 615-846-5426

19890

Send Results to:	Send Invoice to:
Name Bianca Granger	Name
Company Citrin	Company
Address	Address
City	City
State, Zip	State, Zip
Phone	Phone
Fax	Fax
E-mail Bianca.Granger@citrin.com	E-mail
Project No./Name: PFAS	**Sampler's (Signature):** Matt

Analysis Requirements: Select PFCs; PFAS & PFOA

1701758

Lab Use Only:

VOA Headspace	Y	N	NA
Field Filtered	Y	N	NA
Correct Containers	Y	N	NA
Discrepancies	Y	N	NA
Cust. Seals Intact	Y	N	NA
Containers Intact	Y	N	NA

Airbill #:

CAR #:

Lab Use Only Lab #	Date/Time Sampled	Sample Description	Sample Matrix	Comments	No. of Bottles	Lab Use Only Containers/Pres.
	11-19-17 1225	IR54-GW17-17D	AQ		2	
	11-19-17 1225	IR54-GW17-17D-MS	AQ		2	
	11-19-17 1225	IR54-GW17-17D-SD	AQ		2	
	11-19-17 1325	IR54-GW15-17D	AQ		2	
	11-19-17 1330	IR54-GW15D-17D	AQ		2	
	11-19-17 1340	IR54-GW14-17D	AQ		2	
	11-19-17 1215	IR54-GW16-17D	AQ		2	
	11-19-17 1150	IR54-FB-111917	AQ		2	
	11-19-17 1200	IR54-EB-111917	AQ		2	
	11-19-17 1210	IR86-EB-111917	AQ		2	
	11-17-17 1730	IR86-FB-111717	AQ		2	
	11-19-17 1400	IR54-IDW-AQ-111917	AQ		2	

	Date/Time	Received By: (Signature)
Sample Kit Prep'd by: (Signature)		
Relinquished by: (Signature) Matt	11-20-17 1400	Received By: (Signature) Beth Benedict 11/22/17 0925
Relinquished by: (Signature)	Date/Time	Received By: (Signature)
Received for Laboratory by: (Signature)	Date/Time	*Temperature*

REMARKS:

Details:

Page 2 of 2

Cooler No. 1 of 1

Date Shipped 11-20-17

Shipped By Matt

Turnaround

Distribution: Original and yellow copies accompany sample shipment to laboratory; Pink retained by samplers.

Vista Analytical Laboratory

Sample Log-in Checklist

Vista Work Order #: 1701758 **TAT** Std

Samples Arrival:	**Date/Time** 11/21/17 1013	**Initials:** GBB	**Location:** WR-2 **Shelf/Rack:** NA
Logged In:	**Date/Time** 11/22/17 0911	**Initials:** GBB	**Location:** WR-2 **Shelf/Rack:** B6

Delivered By:	(FedEx)	UPS	On Trac	GSO	DHL	Hand Delivered	Other
Preservation:	(Ice)		Blue Ice		Dry Ice		None

Temp °C: 0.1 (uncorrected)	**Time:** 0928 11/22/17	**Thermometer ID:** ~~IR-1~~ DT3 11/21/17 GBB
Temp °C: 0.1 (corrected)	**Probe used:** Yes☑ No☐	

	YES	NO	NA
Adequate Sample Volume Received?	✓		
Holding Time Acceptable?	✓		
Shipping Container(s) Intact?	✓		
Shipping Custody Seals Intact?	✓		
Shipping Documentation Present?	✓		
Airbill — Trk # 7885 3378 9864	✓		
Sample Container Intact?	✓		
Sample Custody Seals Intact?			✓
Chain of Custody / Sample Documentation Present?	✓		
COC Anomaly/Sample Acceptance Form completed?	✓		

If Chlorinated or Drinking Water Samples, Acceptable Preservation?							✓
Preservation Documented:	$Na_2S_2O_3$	Trizma	None		Yes	No	(NA)
Shipping Container	Vista	(Client)	Retain	(Return)		Dispose	

Comments: Some Sample labels the ink ran from sitting in the water. See sample pictures

Sample "1R54-1DW-AQ-111917" listed on COC; not received.

Chain of Custody Anomaly/Sample Acceptance Form

Vista Analytical Laboratory

Client:	CH2M Hill	Workorder Number:	1701758
Contact:	Bianca Kleist Granger	Date Received:	21-Nov-17 10:13
Email:	Bianca.Granger@ch2m.com	Documented by/date:	B.Benedict 11/22/2017
Phone:	(704) 543-3274		

Please review the following information and complete the Client Authorization section. To comply with NELAC regulations, we must receive authorization before proceeding with sample analysis.

Thank you,

Martha Maier
mmaier@vista-analytical.com
916-673-1520

The following information or item is needed to proceed with analysis:

- [ ] Complete Chain-of-Custody
- [ ] Test Method Requested
- [ ] Analyte List Requested
- [X] Other: sample "IR54-IDW-AQ-111917" Listed on the COC, but not received.
- [ ] Preservative
- [X] Sample Identification: **see comments**
- [ ] Sample Collection Date and/or Time
- [ ] Collector's Name
- [ ] Sample Type
- [ ] Sample Location

The following anomalies were noted. Authorization is needed to proceed with analysis.

- [ ] Temperature outside < 6°C Range — Samples Affected: ________

Temperature ________°C Ice Present? Yes No Melted

- [ ] Sample ID Discrepancy
- [ ] Sample Holding Time Missed
- [ ] Custody Seals Broken
- [ ] Insufficient Sample Size
- [ ] Sample Container(s) Broken
- [ ] Incorrect Container Type

Comments: ink ran on some of the labels.

Client Authorization

Proceed with Analysis: (YES) NO Signature and Date [signature] 11/29/17

Client Comments/Instructions sample was received on 11/28/17 without a COC. Sample is logged in as sample -20.

Vista Analytical Laboratory

Sample Log-in Checklist

Vista Work Order #: 1701758 **TAT** STD

Samples Arrival:	**Date/Time** 11/28/17 0936	**Initials:** JBB	**Location:** WR-2 **Shelf/Rack:** NA
Logged In:	**Date/Time** 11/28/17 1146	**Initials:** JBB	**Location:** WR-2 **Shelf/Rack:** B6

Delivered By:	(FedEx)	UPS	On Trac	GSO	DHL	Hand Delivered	Other
Preservation:	(Ice)		Blue Ice		Dry Ice		None
Temp °C: 1.3 (uncorrected)	**Time:** 0939					
Temp °C: 1.4 (corrected)	**Probe used:** Yes☐ No☑		**Thermometer ID:** IR-1			

	YES	NO	NA
Adequate Sample Volume Received? A/B	✓		
Holding Time Acceptable?	✓		
Shipping Container(s) Intact?	✓		
Shipping Custody Seals Intact?			✓
Shipping Documentation Present?	✓		
Airbill Trk # 4144 3782 1896	✓		
Sample Container Intact?	✓		
Sample Custody Seals Intact?			✓
Chain of Custody / Sample Documentation Present? See Comment		✓	
COC Anomaly/Sample Acceptance Form completed?		✓	✓

If Chlorinated or Drinking Water Samples, Acceptable Preservation?						✓
Preservation Documented:	$Na_2S_2O_3$	Trizma	(None)	(Yes)	No	NA
Shipping Container	Vista	Client	Retain	Return	Dispose	

Comments: Sample not received under Chain of Custody. Signed documentation received; email.

Sample ID: IR86-IDW-AQ-111917 not rec'd in shipment

December 18, 2017

Vista Work Order No. 1701758

Ms. Jaclyn D'Onofrio
CH2M Hill
2411 Dulles Corner Park, Suite 500
Herndon, VA 20171

Dear Ms. D'Onofrio,

Enclosed are the amended results for the sample set received at Vista Analytical Laboratory on November 28, 2017. This sample set was analyzed on a rush turn-around time, under your Project Name 'PFAS'.

Vista Analytical Laboratory is committed to serving you effectively. If you require additional information, please contact me at 916-673-1520 or by email at mmaier@vista-analytical.com.

Thank you for choosing Vista as part of your analytical support team.

Sincerely,

Karen J. Volpendesta for

Martha Maier
Laboratory Director

Vista Analytical Laboratory certifies that the report herein meets all the requirements set forth by NELAP for those applicable test methods. Results relate only to the samples as received by the laboratory. This report should not be reproduced except in full without the written approval of Vista.

Vista Work Order No. 1701758
Case Narrative

Sample Condition on Receipt:

Twenty aqueous samples were received in good condition and within the method temperature requirements. The samples were received and stored securely in accordance with Vista standard operating procedures and EPA methodology. As requested, the sample collection time for sample "IR54-IDW-AQ-111917" changed from 14:00 to 14:30. As directed, sample "IR54-IDW-AQ-111917" was added to the Work Order. This sample was received on November 28, 2017.

This report was amended on December 18, 2017 to make the following correction in the case narrative: "The result for PFHxS in sample "IR86-GW59-17D"" to "The result for PFHxS in sample "IR54-GW16-17D"".

Analytical Notes:

Modified EPA Method 537

The following samples contained particulate and were centrifuged prior to extraction:

Laboratory ID	Sample Name
1701758-01	IR86-GW27-17D
1701758-02	IR86-GW59-17D
1701758-03	IR86-GW48-17D
1701758-04	IR86-GW61-17D
1701758-08	IR86-GW53-17D
1701758-09	IR86-GW53D-17D
1701758-10	USTAS4141-GW17-17D
1701758-20	IR54-IDW-AQ-111917

The samples were extracted and analyzed for a selected list of PFAS using Modified EPA Method 537.

Holding Times

The samples were extracted and analyzed within the method hold times.

Quality Control

The Initial Calibration and Continuing Calibration Verifications met the method acceptance criteria.

A Method Blank and Ongoing Precision and Recovery (OPR) sample were extracted and analyzed with the preparation batch. No analytes were detected in the Method Blank above 1/2 the LOQ. The OPR recoveries were within the method acceptance criteria

All extracts except for "IR86-FB-111717", as well as the Method Blank, OPR and Matrix Spike Duplicate for

sample "IR54-GW17-17D", were re-injected because one or more Injection Internal Standard Analyte response areas were outside of criteria. The results were similar in the second injections. The results from the original injections have been reported.

The extracts of samples "IR86-GW59-17D", "IR86-GW61-17D" and "IR54-FB-111917" were re-injected because they followed an extract with an analyte with a concentration greater than the concentration of the standard analyzed to test for possible carry-over. The results from the re-injections have been reported.

The result for PFHxS in sample "IR54-GW16-17D" was flagged with an "E" to indicate that the reported concentration was above the highest standard in the calibration curve. The result was taken from a 1:40 dilution of the extract; a further dilution could not be analyzed.

The labeled standard recoveries outside the acceptance criteria are listed in the table below.

As requested, MS/MSDs were performed on samples "USTAS4141-GW17-17D" and "IR54-GW17-17D". The MS/MSD recoveries and/or RPDs were out of the criteria for PFOS and PFDoA for "USTAS4141-GW17-17D" and for PFHxA, PFHpA, PFHxS, PFOA, PFOS and MeFOSAA in "IR54-GW17-17D".

QC Anomalies

LabNumber	SampleName	Analysis	Analyte	Flag	%Rec
1701758-15	IR54-GW16-17D	Modified EPA Method 537	13C2-PFHxA	H	166
1701758-15	IR54-GW16-17D	Modified EPA Method 537	13C8-PFOS	H	48.0
1701758-16	IR54-FB-111917	Modified EPA Method 537	13C2-PFTeDA	H	46.4

H = Recovery was outside laboratory acceptance criteria.

TABLE OF CONTENTS

Sample Inventory Report

Vista Sample ID	Client Sample ID		Sampled	Received	Components/Containers
1701758-01	IR86-GW27-17D		16-Nov-17 19:30	28-Nov-17 09:36	HDPE Bottle, 125 mL
					HDPE Bottle, 125 mL
1701758-02	IR86-GW59-17D		16-Nov-17 17:05	28-Nov-17 09:36	HDPE Bottle, 125 mL
					HDPE Bottle, 125 mL
1701758-03	IR86-GW48-17D		16-Nov-17 19:10	28-Nov-17 09:36	HDPE Bottle, 125 mL
					HDPE Bottle, 125 mL
1701758-04	IR86-GW61-17D		16-Nov-17 15:45	28-Nov-17 09:36	HDPE Bottle, 125 mL
					HDPE Bottle, 125 mL
1701758-05	IR86-GW58-17D		16-Nov-17 17:55	28-Nov-17 09:36	HDPE Bottle, 125 mL
					HDPE Bottle, 125 mL
1701758-06	IR86-GW47-17D		17-Nov-17 17:10	28-Nov-17 09:36	HDPE Bottle, 125 mL
					HDPE Bottle, 125 mL
1701758-07	USTAS4141-GW13-17D		17-Nov-17 09:40	28-Nov-17 09:36	HDPE Bottle, 125 mL
					HDPE Bottle, 125 mL
1701758-08	IR86-GW53-17D		17-Nov-17 11:30	28-Nov-17 09:36	HDPE Bottle, 125 mL
					HDPE Bottle, 125 mL
1701758-09	IR86-GW53D-17D		17-Nov-17 11:35	28-Nov-17 09:36	HDPE Bottle, 125 mL
					HDPE Bottle, 125 mL
1701758-10	USTAS4141-GW17-17D	MS/MSD	17-Nov-17 17:45	28-Nov-17 09:36	HDPE Bottle, 125 mL
					HDPE Bottle, 125 mL
					HDPE Bottle, 125 mL
					HDPE Bottle, 125 mL
					HDPE Bottle, 125 mL
					HDPE Bottle, 125 mL
1701758-11	IR54-GW17-17D	MS/MSD	19-Nov-17 12:25	28-Nov-17 09:36	HDPE Bottle, 125 mL
					HDPE Bottle, 125 mL
					HDPE Bottle, 125 mL
					HDPE Bottle, 125 mL
					HDPE Bottle, 125 mL
					HDPE Bottle, 125 mL
1701758-12	IR54-GW15-17D		19-Nov-17 13:25	28-Nov-17 09:36	HDPE Bottle, 125 mL
					HDPE Bottle, 125 mL
1701758-13	IR54-GW15D-17D		19-Nov-17 13:30	28-Nov-17 09:36	HDPE Bottle, 125 mL
					HDPE Bottle, 125 mL
1701758-14	IR54-GW14-17D		19-Nov-17 13:40	28-Nov-17 09:36	HDPE Bottle, 125 mL
					HDPE Bottle, 125 mL
1701758-15	IR54-GW16-17D		19-Nov-17 12:15	28-Nov-17 09:36	HDPE Bottle, 125 mL
					HDPE Bottle, 125 mL
1701758-16	IR54-FB-111917		19-Nov-17 11:50	28-Nov-17 09:36	HDPE Bottle, 125 mL

Vista Project: 1701758

Client Project: PFAS

Sample Inventory Report

Vista Sample ID	Client Sample ID	Sampled	Received	Components/Containers
1701758-16	IR54-FB-111917	19-Nov-17 11:50	28-Nov-17 09:36	HDPE Bottle, 125 mL
1701758-17	IR54-EB-111917	19-Nov-17 12:00	28-Nov-17 09:36	HDPE Bottle, 125 mL
				HDPE Bottle, 125 mL
1701758-18	IR86-EB-111917	19-Nov-17 12:10	28-Nov-17 09:36	HDPE Bottle, 125 mL
				HDPE Bottle, 125 mL
1701758-19	IR86-FB-111717	17-Nov-17 17:30	28-Nov-17 09:36	HDPE Bottle, 125 mL
				HDPE Bottle, 125 mL
1701758-20	IR54-IDW-AQ-111917	19-Nov-17 14:30	28-Nov-17 09:36	HDPE Bottle, 125 mL
				HDPE Bottle, 125 mL

ANALYTICAL RESULTS

Sample ID: Method Blank

Modified EPA Method 537

Client Data

Name: CH2M Hill
Project: PFAS
Matrix: Aqueous

Laboratory Data

Lab Sample: B7K0195-BLK1
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	1.79	5.00	8.00		B7K0195	30-Nov-17	0.125 L	10-Dec-17 16:10	1
PFHxA	ND	2.18	5.00	8.00		B7K0195	30-Nov-17	0.125 L	10-Dec-17 16:10	1
PFHpA	ND	0.591	5.00	8.00		B7K0195	30-Nov-17	0.125 L	10-Dec-17 16:10	1
PFHxS	ND	0.947	5.00	8.00		B7K0195	30-Nov-17	0.125 L	10-Dec-17 16:10	1
PFOA	ND	0.651	5.00	8.00		B7K0195	30-Nov-17	0.125 L	10-Dec-17 16:10	1
PFOS	ND	0.807	5.00	8.00		B7K0195	30-Nov-17	0.125 L	10-Dec-17 16:10	1
PFNA	ND	0.810	5.00	8.00		B7K0195	30-Nov-17	0.125 L	10-Dec-17 16:10	1
PFDA	ND	1.49	5.00	8.00		B7K0195	30-Nov-17	0.125 L	10-Dec-17 16:10	1
MeFOSAA	ND	1.65	5.00	8.00		B7K0195	30-Nov-17	0.125 L	10-Dec-17 16:10	1
PFUnA	ND	1.05	5.00	8.00		B7K0195	30-Nov-17	0.125 L	10-Dec-17 16:10	1
EtFOSAA	ND	1.37	5.00	8.00		B7K0195	30-Nov-17	0.125 L	10-Dec-17 16:10	1
PFDoA	ND	0.792	5.00	8.00		B7K0195	30-Nov-17	0.125 L	10-Dec-17 16:10	1
PFTrDA	ND	0.494	5.00	8.00		B7K0195	30-Nov-17	0.125 L	10-Dec-17 16:10	1
PFTeDA	ND	0.755	5.00	8.00		B7K0195	30-Nov-17	0.125 L	10-Dec-17 16:10	1
Combined PFOA/PFOS	ND	0.807	5.00	8.00		B7K0195	30-Nov-17	0.125 L	10-Dec-17 16:10	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	104	50 - 150		B7K0195	30-Nov-17	0.125 L	10-Dec-17 16:10	1
13C2-PFHxA	IS	101	50 - 150		B7K0195	30-Nov-17	0.125 L	10-Dec-17 16:10	1
13C4-PFHpA	IS	101	50 - 150		B7K0195	30-Nov-17	0.125 L	10-Dec-17 16:10	1
18O2-PFHxS	IS	107	50 - 150		B7K0195	30-Nov-17	0.125 L	10-Dec-17 16:10	1
13C2-PFOA	IS	90.7	50 - 150		B7K0195	30-Nov-17	0.125 L	10-Dec-17 16:10	1
13C8-PFOS	IS	77.1	50 - 150		B7K0195	30-Nov-17	0.125 L	10-Dec-17 16:10	1
13C5-PFNA	IS	83.4	50 - 150		B7K0195	30-Nov-17	0.125 L	10-Dec-17 16:10	1
13C2-PFDA	IS	58.6	50 - 150		B7K0195	30-Nov-17	0.125 L	10-Dec-17 16:10	1
d3-MeFOSAA	IS	78.2	50 - 150		B7K0195	30-Nov-17	0.125 L	10-Dec-17 16:10	1
13C2-PFUnA	IS	61.2	50 - 150		B7K0195	30-Nov-17	0.125 L	10-Dec-17 16:10	1
d5-EtFOSAA	IS	76.6	50 - 150		B7K0195	30-Nov-17	0.125 L	10-Dec-17 16:10	1
13C2-PFDoA	IS	63.3	50 - 150		B7K0195	30-Nov-17	0.125 L	10-Dec-17 16:10	1
13C2-PFTeDA	IS	81.1	50 - 150		B7K0195	30-Nov-17	0.125 L	10-Dec-17 16:10	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation
LCL-UCL- Lower control limit - upper control limit
Results reported to the DL.
When reported, PFHxS, PFOA and PFOS include both linear and branched isomers.
Only the linear isomer is reported for all other analytes.

Sample ID: OPR **Modified EPA Method 537**

Client Data

Name: CH2M Hill
Project: PFAS

Matrix: Aqueous

Laboratory Data

Lab Sample: B7K0195-BS1 Column: BEH C18

Analyte	Amt Found (ng/L)	Spike Amt	% Rec	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	82.0	80.0	102	70-130		B7K0195	30-Nov-17	0.125 L	10-Dec-17 15:48	1
PFHxA	81.6	80.0	102	70-130		B7K0195	30-Nov-17	0.125 L	10-Dec-17 15:48	1
PFHpA	70.3	80.0	87.9	70-130		B7K0195	30-Nov-17	0.125 L	10-Dec-17 15:48	1
PFHxS	73.2	80.0	91.5	70-130		B7K0195	30-Nov-17	0.125 L	10-Dec-17 15:48	1
PFOA	95.9	80.0	120	70-130		B7K0195	30-Nov-17	0.125 L	10-Dec-17 15:48	1
PFOS	59.3	80.0	74.1	70-130		B7K0195	30-Nov-17	0.125 L	10-Dec-17 15:48	1
PFNA	65.6	80.0	82.0	70-130		B7K0195	30-Nov-17	0.125 L	10-Dec-17 15:48	1
PFDA	91.8	80.0	115	70-130		B7K0195	30-Nov-17	0.125 L	10-Dec-17 15:48	1
MeFOSAA	77.7	80.0	97.2	70-130		B7K0195	30-Nov-17	0.125 L	10-Dec-17 15:48	1
PFUnA	80.0	80.0	100	70-130		B7K0195	30-Nov-17	0.125 L	10-Dec-17 15:48	1
EtFOSAA	85.5	80.0	107	70-130		B7K0195	30-Nov-17	0.125 L	10-Dec-17 15:48	1
PFDoA	83.5	80.0	104	70-130		B7K0195	30-Nov-17	0.125 L	10-Dec-17 15:48	1
PFTrDA	83.7	80.0	105	60-130		B7K0195	30-Nov-17	0.125 L	10-Dec-17 15:48	1
PFTeDA	88.4	80.0	110	70-130		B7K0195	30-Nov-17	0.125 L	10-Dec-17 15:48	1

Labeled Standards	Type	% Rec	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	103	50- 150		B7K0195	30-Nov-17	0.125 L	10-Dec-17 15:48	1
13C2-PFHxA	IS	105	50- 150		B7K0195	30-Nov-17	0.125 L	10-Dec-17 15:48	1
13C4-PFHpA	IS	105	50- 150		B7K0195	30-Nov-17	0.125 L	10-Dec-17 15:48	1
18O2-PFHxS	IS	100	50- 150		B7K0195	30-Nov-17	0.125 L	10-Dec-17 15:48	1
13C2-PFOA	IS	77.3	50- 150		B7K0195	30-Nov-17	0.125 L	10-Dec-17 15:48	1
13C8-PFOS	IS	109	50- 150		B7K0195	30-Nov-17	0.125 L	10-Dec-17 15:48	1
13C5-PFNA	IS	85.5	50- 150		B7K0195	30-Nov-17	0.125 L	10-Dec-17 15:48	1
13C2-PFDA	IS	90.1	50- 150		B7K0195	30-Nov-17	0.125 L	10-Dec-17 15:48	1
d3-MeFOSAA	IS	76.8	50- 150		B7K0195	30-Nov-17	0.125 L	10-Dec-17 15:48	1
13C2-PFUnA	IS	81.6	50- 150		B7K0195	30-Nov-17	0.125 L	10-Dec-17 15:48	1
d5-EtFOSAA	IS	79.4	50- 150		B7K0195	30-Nov-17	0.125 L	10-Dec-17 15:48	1
13C2-PFDoA	IS	73.1	50- 150		B7K0195	30-Nov-17	0.125 L	10-Dec-17 15:48	1
13C2-PFTeDA	IS	83.3	50- 150		B7K0195	30-Nov-17	0.125 L	10-Dec-17 15:48	1

Sample ID: IR86-GW27-17D

Modified EPA Method 537

Client Data

Name: CH2M Hill
Project: PFAS
Matrix: Aqueous
Date Collected: 16-Nov-17 19:30

Laboratory Data

Lab Sample: 1701758-01
Date Received: 28-Nov-17 09:36
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	612	2.05	5.73	9.18		B7K0195	30-Nov-17	0.109 L	10-Dec-17 18:02	1
PFHxA	1810	2.50	5.73	9.18		B7K0195	30-Nov-17	0.109 L	10-Dec-17 18:02	1
PFHpA	428	0.678	5.73	9.18		B7K0195	30-Nov-17	0.109 L	10-Dec-17 18:02	1
PFHxS	11800	10.9	57.3	91.8	D	B7K0195	30-Nov-17	0.109 L	12-Dec-17 18:44	10
PFOA	1030	0.747	5.73	9.18		B7K0195	30-Nov-17	0.109 L	10-Dec-17 18:02	1
PFOS	22100	9.26	57.3	91.8	D	B7K0195	30-Nov-17	0.109 L	12-Dec-17 18:44	10
PFNA	110	0.929	5.73	9.18		B7K0195	30-Nov-17	0.109 L	10-Dec-17 18:02	1
PFDA	6.43	1.71	5.73	9.18	J	B7K0195	30-Nov-17	0.109 L	10-Dec-17 18:02	1
MeFOSAA	ND	1.89	5.73	9.18		B7K0195	30-Nov-17	0.109 L	10-Dec-17 18:02	1
PFUnA	ND	1.20	5.73	9.18		B7K0195	30-Nov-17	0.109 L	10-Dec-17 18:02	1
EtFOSAA	ND	1.57	5.73	9.18		B7K0195	30-Nov-17	0.109 L	10-Dec-17 18:02	1
PFDoA	ND	0.909	5.73	9.18		B7K0195	30-Nov-17	0.109 L	10-Dec-17 18:02	1
PFTrDA	ND	0.567	5.73	9.18		B7K0195	30-Nov-17	0.109 L	10-Dec-17 18:02	1
PFTeDA	ND	0.866	5.73	9.18		B7K0195	30-Nov-17	0.109 L	10-Dec-17 18:02	1
Combined PFOA/PFOS	23100	0.926	5.73	9.18		B7K0195	30-Nov-17	0.109 L	10-Dec-17 18:02	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	114	50 - 150		B7K0195	30-Nov-17	0.109 L	10-Dec-17 18:02	1
13C2-PFHxA	IS	99.3	50 - 150		B7K0195	30-Nov-17	0.109 L	10-Dec-17 18:02	1
13C4-PFHpA	IS	94.8	50 - 150		B7K0195	30-Nov-17	0.109 L	10-Dec-17 18:02	1
18O2-PFHxS	IS	81.0	50 - 150	D	B7K0195	30-Nov-17	0.109 L	12-Dec-17 18:44	10
13C2-PFOA	IS	80.6	50 - 150		B7K0195	30-Nov-17	0.109 L	10-Dec-17 18:02	1
13C8-PFOS	IS	106	50 - 150	D	B7K0195	30-Nov-17	0.109 L	12-Dec-17 18:44	10
13C5-PFNA	IS	98.5	50 - 150		B7K0195	30-Nov-17	0.109 L	10-Dec-17 18:02	1
13C2-PFDA	IS	86.2	50 - 150		B7K0195	30-Nov-17	0.109 L	10-Dec-17 18:02	1
d3-MeFOSAA	IS	105	50 - 150		B7K0195	30-Nov-17	0.109 L	10-Dec-17 18:02	1
13C2-PFUnA	IS	85.9	50 - 150		B7K0195	30-Nov-17	0.109 L	10-Dec-17 18:02	1
d5-EtFOSAA	IS	102	50 - 150		B7K0195	30-Nov-17	0.109 L	10-Dec-17 18:02	1
13C2-PFDoA	IS	90.5	50 - 150		B7K0195	30-Nov-17	0.109 L	10-Dec-17 18:02	1
13C2-PFTeDA	IS	92.8	50 - 150		B7K0195	30-Nov-17	0.109 L	10-Dec-17 18:02	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation
LCL-UCL- Lower control limit - upper control limit
Results reported to the DL.
When reported, PFHxS, PFOA and PFOS include both linear and branched isomers.
Only the linear isomer is reported for all other analytes.

Sample ID: IR86-GW59-17D

Modified EPA Method 537

Client Data

Name: C2 HM 2 ill
Project: PFAS

Matrix: Aqueous
Date Collected: 16-Nov-17 17:05

Laboratory Data

Lab Sample: 1701758-0H
Date 9 eceived: H8-Nov-17 03:R6

Column: BE2 C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	HHl	H05	5.7R	3.16		B7K0135	R0-Nov-17	0.103 L	1H-Dec-17 Hl:10	1
PF2 xA	R0H	H50	5.7R	3.16		B7K0135	R0-Nov-17	0.103 L	1H-Dec-17 Hl:10	1
PF2 pA	8HH	0.677	5.7R	3.16		B7K0135	R0-Nov-17	0.103 L	1H-Dec-17 Hl:10	1
PF2 xS	1RH0	1.08	5.7R	3.16		B7K0135	R0-Nov-17	0.103 L	1H-Dec-17 Hl:10	1
PF4 A	16O	0.7O5	5.7R	3.16		B7K0135	R0-Nov-17	0.103 L	1H-Dec-17 Hl:10	1
PF4 S	H770	O6H	H8.7	O5.8	D	B7K0135	R0-Nov-17	0.103 L	1H-Dec-17 18:56	5
PFNA	RHl	0.3H7	5.7R	3.16	J	B7K0135	R0-Nov-17	0.103 L	1H-Dec-17 Hl:10	1
PFDA	ND	1.71	5.7R	3.16		B7K0135	R0-Nov-17	0.103 L	1H-Dec-17 Hl:10	1
MeF4 SAA	ND	1.83	5.7R	3.16		B7K0135	R0-Nov-17	0.103 L	1H-Dec-17 Hl:10	1
PFUnA	ND	1.H0	5.7R	3.16		B7K0135	R0-Nov-17	0.103 L	1H-Dec-17 Hl:10	1
EtF4 SAA	ND	1.57	5.7R	3.16		B7K0135	R0-Nov-17	0.103 L	1H-Dec-17 Hl:10	1
PFDoA	ND	0.307	5.7R	3.16		B7K0135	R0-Nov-17	0.103 L	1H-Dec-17 Hl:10	1
PFTrDA	ND	0.566	5.7R	3.16		B7K0135	R0-Nov-17	0.103 L	1H-Dec-17 Hl:10	1
PFTeDA	ND	0.86O	5.7R	3.16		B7K0135	R0-Nov-17	0.103 L	1H-Dec-17 Hl:10	1
Combined PF4 A/PF4 S	HBR0	0.3HO	5.7R	3.16		B7K0135	R0-Nov-17	0.103 L	1H-Dec-17 Hl:10	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
1RCR-PFBS	IS	80.8	50 - 150		B7K0135	R0-Nov-17	0.103 L	1H-Dec-17 Hl:10	1
1RCH-PF2 xA	IS	8HO	50 - 150		B7K0135	R0-Nov-17	0.103 L	1H-Dec-17 Hl:10	1
1RCO-PF2 pA	IS	87.6	50 - 150		B7K0135	R0-Nov-17	0.103 L	1H-Dec-17 Hl:10	1
184 H-PF2 xS	IS	87.5	50 - 150		B7K0135	R0-Nov-17	0.103 L	1H-Dec-17 Hl:10	1
1RCH-PF4 A	IS	76.1	50 - 150		B7K0135	R0-Nov-17	0.103 L	1H-Dec-17 Hl:10	1
1RC8-PF4 S	IS	76.R	50 - 150	D	B7K0135	R0-Nov-17	0.103 L	1H-Dec-17 18:56	5
1RC5-PFNA	IS	66.5	50 - 150		B7K0135	R0-Nov-17	0.103 L	1H-Dec-17 Hl:10	1
1RCH-PFDA	IS	61.5	50 - 150		B7K0135	R0-Nov-17	0.103 L	1H-Dec-17 Hl:10	1
dR-MeF4 SAA	IS	6R1	50 - 150		B7K0135	R0-Nov-17	0.103 L	1H-Dec-17 Hl:10	1
1RCH-PFUnA	IS	73.0	50 - 150		B7K0135	R0-Nov-17	0.103 L	1H-Dec-17 Hl:10	1
d5-EtF4 SAA	IS	55.O	50 - 150		B7K0135	R0-Nov-17	0.103 L	1H-Dec-17 Hl:10	1
1RCH-PFDoA	IS	3O3	50 - 150		B7K0135	R0-Nov-17	0.103 L	1H-Dec-17 Hl:10	1
1RCH-PFTeDA	IS	37.7	50 - 150		B7K0135	R0-Nov-17	0.103 L	1H-Dec-17 Hl:10	1

DL - Detection Limit
L4 D - Limit of Detection
L4 Q - Limit of quantitation
LCL-UCL- Lower control limit - upper control limit
9 esults reported to the DL.
When reported, PF2 xS, PF4 A and PF4 S include both linear and branched isomers.
4 nly the linear isomer is reported for all other analytes.

Sample ID: IR86-GW48-17D | **Modified EPA Method 537**

Client Data

Name: S2u A2pMM

Project: PxLb

atrpl : Lsneon.

FateASoMMctei : 0DCNo6C01A03:09

Laboratory Data

Ba7AbamKMt: 019015-C9H

FateAvecep6ei :AA u-CNo6C01A93:HD

SoMmE: 8q2AS0-

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
Px8b	D5D9	HB45	000	011	F	81O9035	H9CNo6C01	940HAB	0uCFecC01A03:91	u9
Px21L	59D9	U-4u	000	011	F	81O9035	H9CNo6C01	940HAB	0uCFecC01A03:91	u9
Px2KL	0919	94D5H	545H	-4U		81O9035	H9CNo6C01	940HAB	09CFecC01A0-:u5	0
Px21b	uD099	u943	000	011	F	81O9035	H9CNo6C01	940HAB	0uCFecC01A03:91	u9
PxTL	0Du9	94103	545H	-4U		81O9035	H9CNo6C01	940HAB	09CFecC01A0-:u5	0
PxTb	DD99	014	000	011	F	81O9035	H9CNo6C01	940HAB	0uCFecC01A03:91	u9
PxNL	uu4l	9435	545H	-4U		81O9035	H9CNo6C01	940HAB	09CFecC01A0-:u5	0
PxFL	NF	04D5	545H	-4U		81O9035	H9CNo6C01	940HAB	09CFecC01A0-:u5	0
exTbLL	NF	04u	545H	-4U		81O9035	H9CNo6C01	940HAB	09CFecC01A0-:u5	0
PxdEL	NF	040D	545H	-4U		81O9035	H9CNo6C01	940HAB	09CFecC01A0-:u5	0
qtxTbLL	NF	0450	545H	-4U		81O9035	H9CNo6C01	940HAB	09CFecC01A0-:u5	0
PxFoL	NF	9415	545H	-4U		81O9035	H9CNo6C01	940HAB	09CFecC01A0-:u5	0
Px/rFL	NF	945UD	545H	-4U		81O9035	H9CNo6C01	940HAB	09CFecC01A0-:u5	0
Px/eFL	NF	94HU	545H	-4U		81O9035	H9CNo6C01	940HAB	09CFecC01A0-:u5	0
Som7pEei APxTLIPxTb	-uu9	9430	545H	-4U		81O9035	H9CNo6C01	940HAB	09CFecC01A0-:u5	0

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
0HSHCPx8b	vb	009	A59ACA059	F	81O9035	H9CNo6C01	940HAB	0uCFecC01A03:91	u9
0HSuCPx21L	vb	0u0	A59ACA059	F	81O9035	H9CNo6C01	940HAB	0uCFecC01A03:91	u9
0HSUCPx2KL	vb	0uU	A59ACA059		81O9035	H9CNo6C01	940HAB	09CFecC01A0-:u5	0
0-TuCPx21b	vb	3045	A59ACA059	F	81O9035	H9CNo6C01	940HAB	0uCFecC01A03:91	u9
0HSuCPxTL	vb	3D49	A59ACA059		81O9035	H9CNo6C01	940HAB	09CFecC01A0-:u5	0
0HS-CPxTb	vb	091	A59ACA059	F	81O9035	H9CNo6C01	940HAB	0uCFecC01A03:91	u9
0HS5CPxNL	vb	3043	A59ACA059		81O9035	H9CNo6C01	940HAB	09CFecC01A0-:u5	0
0HSuCPxFL	vb	3-4U	A59ACA059		81O9035	H9CNo6C01	940HAB	09CFecC01A0-:u5	0
iHC exTbLL	vb	009	A59ACA059		81O9035	H9CNo6C01	940HAB	09CFecC01A0-:u5	0
0HSuCPxdEL	vb	304U	A59ACA059		81O9035	H9CNo6C01	940HAB	09CFecC01A0-:u5	0
i5CqtxTbLL	vb	09-	A59ACA059		81O9035	H9CNo6C01	940HAB	09CFecC01A0-:u5	0
0HSuCPxFoL	vb	00U	A59ACA059		81O9035	H9CNo6C01	940HAB	09CFecC01A0-:u5	0
0HSuCPx/eFL	vb	00u	A59ACA059		81O9035	H9CNo6C01	940HAB	09CFecC01A0-:u5	0

FBACFetectpoEABmptA BTFACBmptAofFetectpoEA BSBCiSBCABoRerAoEtroMpmptACnKKerAoEtroMpmptA WheEAeKortei ,APx21b,APxTLAEi APxTbAEcMi eAothAfearAEi AraEchei Apomer.4

BTQACBmptAofAnaEtptatpoEA v e.nMAeKortei AoAheAFB4 TEMAheAfearApomerApAeKortei AorANtotherAEaMte.4

Sample ID: IR86-GW61-17D	Modified EPA Method 537

Client Data				Laboratory Data			
Name:	S2u A2pMM	atrpl :	Lsneon.	Ba7AbamKMt:	019015-C9H	SoMmE:	8q2AS0-
Project:	PxLb	FateASoMMctei :	0DCNo6C01A05:H5	FateASecep6ei :AA	u-CNo6C01A9v:4D		

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
Px8b	0DH	0C90	5C4H	-C55		81U90v5	49CNo6C01	9C001AB	0uCFecC01Au0:4u	0
Px21L	0vv	uC44	5C4H	-C55		81U90v5	49CNo6C01	9C001AB	0uCFecC01Au0:4u	0
Px2KL	H0C0	9C0D4u	5C4H	-C55		81U90v5	49CNo6C01	9C001AB	0uCFecC01Au0:4u	0
Px21b	H10	0C90	5C4H	-C55		81U90v5	49CNo6C01	9C001AB	0uCFecC01Au0:4u	0
PxTL	-00CH	9C0DvD	5C4H	-C55		81U90v5	49CNo6C01	9C001AB	0uCFecC01Au0:4u	0
PxTb	44C9	9C9Du	5C4H	-C55		81U90v5	49CNo6C01	9C001AB	0uCFecC01Au0:4u	0
PxNL	NF	9C9DD	5C4H	-C55		81U90v5	49CNo6C01	9C001AB	0uCFecC01Au0:4u	0
PxFL	NF	0C5v	5C4H	-C55		81U90v5	49CNo6C01	9C001AB	0uCFecC01Au0:4u	0
exTbLL	NF	0C0D	5C4H	-C55		81U90v5	49CNo6C01	9C001AB	0uCFecC01Au0:4u	0
PxdEL	NF	0C0u	5C4H	-C55		81U90v5	49CNo6C01	9C001AB	0uCFecC01Au0:4u	0
qtxTbLL	NF	0C0HD	5C4H	-C55		81U90v5	49CNo6C01	9C001AB	0uCFecC01Au0:4u	0
PxFoL	NF	9C9HD	5C4H	-C55		81U90v5	49CNo6C01	9C001AB	0uCFecC01Au0:4u	0
Px/rFL	NF	9C5u-	5C4H	-C55		81U90v5	49CNo6C01	9C001AB	0uCFecC01Au0:4u	0
Px/eFL	NF	9C991	5C4H	-C55		81U90v5	49CNo6C01	9C001AB	0uCFecC01Au0:4u	0
Som7pEei APxTLIPxTb	005	9C9Du	5C4H	-C55		81U90v5	49CNo6C01	9C001AB	0uCFecC01Au0:4u	0

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
04S4CPx8b	vb	v-C9	A59ACA059		81U90v5	49CNo6C01	9C001AB	0uCFecC01Au0:4u	0
04SuCPx21L	vb	09v	A59ACA059		81U90v5	49CNo6C01	9C001AB	0uCFecC01Au0:4u	0
04SHCPx2KL	vb	005	A59ACA059		81U90v5	49CNo6C01	9C001AB	0uCFecC01Au0:4u	0
0-TuCPx21b	vb	005	A59ACA059		81U90v5	49CNo6C01	9C001AB	0uCFecC01Au0:4u	0
04SuCPxTL	vb	009	A59ACA059		81U90v5	49CNo6C01	9C001AB	0uCFecC01Au0:4u	0
04S-CPxTb	vb	v5C9	A59ACA059		81U90v5	49CNo6C01	9C001AB	0uCFecC01Au0:4u	0
04S5CPxNL	vb	v0C0	A59ACA059		81U90v5	49CNo6C01	9C001AB	0uCFecC01Au0:4u	0
04SuCPxFL	vb	09u	A59ACA059		81U90v5	49CNo6C01	9C001AB	0uCFecC01Au0:4u	0
i4C exTbLL	vb	v-C9	A59ACA059		81U90v5	49CNo6C01	9C001AB	0uCFecC01Au0:4u	0
04SuCPxdEL	vb	0uD	A59ACA059		81U90v5	49CNo6C01	9C001AB	0uCFecC01Au0:4u	0
i5CqtxTbLL	vb	-H0	A59ACA059		81U90v5	49CNo6C01	9C001AB	0uCFecC01Au0:4u	0
04SuCPxFoL	vb	040	A59ACA059		81U90v5	49CNo6C01	9C001AB	0uCFecC01Au0:4u	0
04SuCPx/eFL	vb	0H0	A59ACA059		81U90v5	49CNo6C01	9C001AB	0uCFecC01Au0:4u	0

FBACAFetectpoEABpmpt
BTFACABpmptAofAFetectpoEA
BTQACABpmptAofAnaEtptatpoEA
BSBCdSBCABoRerAoEtroMpmptAChKKerAoEtroMpmptA
3e.nMAeKortei AoAheAFBOA
WheEAeKortei ,APx21b,APxTLAEi APxTbAEcMi eAothApEearAEi ATraEchei Apomer.
TEMAheApEearApomerAp AeKortei AorAMotherAEaMte.

Sample ID: IR86-GW18-7LD

d rf iLief PAh d et5rf 13L

Client Data

Name: CH2M Hill
Project: PFAS

Matrix: Aqueous
Date Collected: 16-Nov-17 17:55

baoryatryMData

Lab Sample: 1701758-05
Date 9eceived: 28-Nov-17 03:R6

Column: BEH C18

h nalMe	Crnc. (ng/b)	Db	bOD	bOQ	QualiLeys	Batc5	Pxtyactef	Samp Size	h nalMef	Dilutirn
PFBS	32.5	1.31	5.RK	8.52		B74 0135	R0-Nov-17	0.117 L	10-Dec-17 18:K7	1
PFHxA	156	2.R2	5.RK	8.52		B74 0135	R0-Nov-17	0.117 L	10-Dec-17 18:K7	1
PFHpA	23.K	0.6R0	5.RK	8.52		B74 0135	R0-Nov-17	0.117 L	10-Dec-17 18:K7	1
PFHxS	856	1.01	5.RK	8.52		B74 0135	R0-Nov-17	0.117 L	10-Dec-17 18:K7	1
PFOA	61.2	0.63R	5.RK	8.52		B74 0135	R0-Nov-17	0.117 L	10-Dec-17 18:K7	1
PFOS	800	0.860	5.RK	8.52		B74 0135	R0-Nov-17	0.117 L	10-Dec-17 18:K7	1
PFNA	2.K5	0.86R	5.RK	8.52	J	B74 0135	R0-Nov-17	0.117 L	10-Dec-17 18:K7	1
PFDA	ND	1.53	5.RK	8.52		B74 0135	R0-Nov-17	0.117 L	10-Dec-17 18:K7	1
MeFOSAA	ND	1.76	5.RK	8.52		B74 0135	R0-Nov-17	0.117 L	10-Dec-17 18:K7	1
PFUnA	ND	1.12	5.RK	8.52		B74 0135	R0-Nov-17	0.117 L	10-Dec-17 18:K7	1
EtFOSAA	ND	1.K6	5.RK	8.52		B74 0135	R0-Nov-17	0.117 L	10-Dec-17 18:K7	1
PFDoA	ND	0.8KK	5.RK	8.52		B74 0135	R0-Nov-17	0.117 L	10-Dec-17 18:K7	1
PFTrDA	ND	0.526	5.RK	8.52		B74 0135	R0-Nov-17	0.117 L	10-Dec-17 18:K7	1
PFTeDA	ND	0.80K	5.RK	8.52		B74 0135	R0-Nov-17	0.117 L	10-Dec-17 18:K7	1
Combined PFOA/PFOS	861	0.860	5.RK	8.52		B74 0135	R0-Nov-17	0.117 L	10-Dec-17 18:K7	1

baoelef Stanf ayf s	TMpe	% RecrveyM	bimits	QualiLeys	Batc5	Pxtyactef	Samp Size	h nalMef	Dilutirn
1RCR-PFBS	IS	105	50 - 150		B74 0135	R0-Nov-17	0.117 L	10-Dec-17 18:K7	1
1RC2-PFHxA	IS	38.K	50 - 150		B74 0135	R0-Nov-17	0.117 L	10-Dec-17 18:K7	1
1RCK-PFHpA	IS	107	50 - 150		B74 0135	R0-Nov-17	0.117 L	10-Dec-17 18:K7	1
18O2-PFHxS	IS	35.6	50 - 150		B74 0135	R0-Nov-17	0.117 L	10-Dec-17 18:K7	1
1RC2-PFOA	IS	77.8	50 - 150		B74 0135	R0-Nov-17	0.117 L	10-Dec-17 18:K7	1
1RC8-PFOS	IS	11R	50 - 150		B74 0135	R0-Nov-17	0.117 L	10-Dec-17 18:K7	1
1RC5-PFNA	IS	120	50 - 150		B74 0135	R0-Nov-17	0.117 L	10-Dec-17 18:K7	1
1RC2-PFDA	IS	35.K	50 - 150		B74 0135	R0-Nov-17	0.117 L	10-Dec-17 18:K7	1
dR-MeFOSAA	IS	3R2	50 - 150		B74 0135	R0-Nov-17	0.117 L	10-Dec-17 18:K7	1
1RC2-PFUnA	IS	73.K	50 - 150		B74 0135	R0-Nov-17	0.117 L	10-Dec-17 18:K7	1
d5-EtFOSAA	IS	37.0	50 - 150		B74 0135	R0-Nov-17	0.117 L	10-Dec-17 18:K7	1
1RC2-PFDoA	IS	8R3	50 - 150		B74 0135	R0-Nov-17	0.117 L	10-Dec-17 18:K7	1
1RC2-PFTeDA	IS	88.0	50 - 150		B74 0135	R0-Nov-17	0.117 L	10-Dec-17 18:K7	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation
LCL-UCL- Lower control limit - upper control limit
9esults reported to the DL.

When reported, PFHxS, PFOA and PFOS include both linear and branched isomers.
Only the linear isomer is reported for all other analytes.

Sample ID: IR86-GW41-71D

Modified EPA Method 531

Client Data

Name: C2 uM 2 ill
Project: PFAS
Matrix: Asneon6
Date Collected: 17-Nov-17 17:10

Laboratory Data

Lab Sample: 1701758-0H
Date 9eceived: u8-Nov-17 03:RH
ColnmB: Eq2 C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFES	111	1.3R	5.R3	8.HR		E7K0135	R0-Nov-17	0.11HL	10-Dec-17 18:58	1
PF2 xA	u71	u.R5	5.R3	8.HR		E7K0135	R0-Nov-17	0.11HL	10-Dec-17 18:58	1
PF2 pA	Hl.H	0.HR8	5.R3	8.HR		E7K0135	R0-Nov-17	0.11HL	10-Dec-17 18:58	1
PF2 xS	1000	1.0u	5.R3	8.HR		E7K0135	R0-Nov-17	0.11HL	10-Dec-17 18:58	1
PF4 A	11H	0.70R	5.R3	8.HR		E7K0135	R0-Nov-17	0.11HL	10-Dec-17 18:58	1
PF4 S	HHl	0.871	5.R3	8.HR		E7K0135	R0-Nov-17	0.11HL	10-Dec-17 18:58	1
PFNA	R.00	0.87O	5.R3	8.HR	J	E7K0135	R0-Nov-17	0.11HL	10-Dec-17 18:58	1
PFDA	ND	1.Hl	5.R3	8.HR		E7K0135	R0-Nov-17	0.11HL	10-Dec-17 18:58	1
MeF4 SAA	ND	1.78	5.R3	8.HR		E7K0135	R0-Nov-17	0.11HL	10-Dec-17 18:58	1
PFUBA	ND	1.1R	5.R3	8.HR		E7K0135	R0-Nov-17	0.11HL	10-Dec-17 18:58	1
qtF4 SAA	ND	1.O8	5.R3	8.HR		E7K0135	R0-Nov-17	0.11HL	10-Dec-17 18:58	1
PFDoA	ND	0.855	5.R3	8.HR		E7K0135	R0-Nov-17	0.11HL	10-Dec-17 18:58	1
PFTrDA	ND	0.5RR	5.R3	8.HR		E7K0135	R0-Nov-17	0.11HL	10-Dec-17 18:58	1
PFTeDA	ND	0.815	5.R3	8.HR		E7K0135	R0-Nov-17	0.11HL	10-Dec-17 18:58	1
CombiBed PF4 A/PF4 S	777	0.871	5.R3	8.HR		E7K0135	R0-Nov-17	0.11HL	10-Dec-17 18:58	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
1RCR-PFES	IS	10u	50 - 150		E7K0135	R0-Nov-17	0.11HL	10-Dec-17 18:58	1
1RCu-PF2 xA	IS	37.R	50 - 150		E7K0135	R0-Nov-17	0.11HL	10-Dec-17 18:58	1
1RCO-PF2 pA	IS	30.3	50 - 150		E7K0135	R0-Nov-17	0.11HL	10-Dec-17 18:58	1
184 u-PF2 xS	IS	103	50 - 150		E7K0135	R0-Nov-17	0.11HL	10-Dec-17 18:58	1
1RCu-PF4 A	IS	88.H	50 - 150		E7K0135	R0-Nov-17	0.11HL	10-Dec-17 18:58	1
1RC8-PF4 S	IS	8HH	50 - 150		E7K0135	R0-Nov-17	0.11HL	10-Dec-17 18:58	1
1RC5-PFNA	IS	110	50 - 150		E7K0135	R0-Nov-17	0.11HL	10-Dec-17 18:58	1
1RCu-PFDA	IS	105	50 - 150		E7K0135	R0-Nov-17	0.11HL	10-Dec-17 18:58	1
dR-MeF4 SAA	IS	30.8	50 - 150		E7K0135	R0-Nov-17	0.11HL	10-Dec-17 18:58	1
1RCu-PFUBA	IS	10R	50 - 150		E7K0135	R0-Nov-17	0.11HL	10-Dec-17 18:58	1
d5-qtF4 SAA	IS	83.8	50 - 150		E7K0135	R0-Nov-17	0.11HL	10-Dec-17 18:58	1
1RCu-PFDoA	IS	7R.1	50 - 150		E7K0135	R0-Nov-17	0.11HL	10-Dec-17 18:58	1
1RCu-PFTeDA	IS	31.O	50 - 150		E7K0135	R0-Nov-17	0.11HL	10-Dec-17 18:58	1

DL - DetectioB Limit
L4 D - Limit of DetectioB
L4 Q - Limit of snaBtitatioB
LCL-UCL- Lower coBtrol limit - npper coBtrol limit
9e6nlt6 reported to the DL.
WheB reported, PF2 xS, PF4 A aBd PF4 S iBclnde both liBear aBd braBched i6omer6.
4Bly the liBear i6omer i6 reported for all other aBalyte6.

Sample ID: USTAS4141-GW13-17D

Modified EPA Method 537

Client Data

Name: CH2M Hill
Project: PFAS

Matrix: Aqueous
Date Collected: 17-No6-17 0v:90

Laboratory Data

Lab Sample: 1701758-07
Date 3 ecei6ed: 28-No6-17 0v:R

Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	8. K0	2K02	5KR	vK05		B74 01v5	R0-No6-17	0K11 L	10-Dec-17 1v:0v	1
PFHxA	27R	2K07	5KR	vK05		B74 01v5	R0-No6-17	0K11 L	10-Dec-17 1v:0v	1
PFHpA	11.	0K. 8	5KR	vK05		B74 01v5	R0-No6-17	0K11 L	10-Dec-17 1v:0v	1
PFHxS	1710	1K07	5KR	vK05		B74 01v5	R0-No6-17	0K11 L	10-Dec-17 1v:0v	1
PFOA	170	0K7R	5KR	vK05		B74 01v5	R0-No6-17	0K11 L	10-Dec-17 1v:0v	1
PFOS	R19	0Kv1R	5KR	vK05		B74 01v5	R0-No6-17	0K11 L	10-Dec-17 1v:0v	1
PFNA	RK2	0Kv1.	5KR	vK05	J	B74 01v5	R0-No6-17	0K11 L	10-Dec-17 1v:0v	1
PFDA	ND	1Kv	5KR	vK05		B74 01v5	R0-No6-17	0K11 L	10-Dec-17 1v:0v	1
MeFOSAA	ND	1K7	5KR	vK05		B74 01v5	R0-No6-17	0K11 L	10-Dec-17 1v:0v	1
PFUnA	ND	1Kv	5KR	vK05		B74 01v5	R0-No6-17	0K11 L	10-Dec-17 1v:0v	1
EtFOSAA	ND	1K5	5KR	vK05		B74 01v5	R0-No6-17	0K11 L	10-Dec-17 1v:0v	1
PFDoA	ND	0K8v.	5KR	vK05		B74 01v5	R0-No6-17	0K11 L	10-Dec-17 1v:0v	1
PFTrDA	ND	0K55v	5KR	vK05		B74 01v5	R0-No6-17	0K11 L	10-Dec-17 1v:0v	1
PFTeDA	ND	0K859	5KR	vK05		B74 01v5	R0-No6-17	0K11 L	10-Dec-17 1v:0v	1
Combined PFOA/PFOS	989	0Kv1R	5KR	vK05		B74 01v5	R0-No6-17	0K11 L	10-Dec-17 1v:0v	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
1RCR-PFBS	IS	115	50 - 150		B74 01v5	R0-No6-17	0K11 L	10-Dec-17 1v:0v	1
1RC2-PFHxA	IS	108	50 - 150		B74 01v5	R0-No6-17	0K11 L	10-Dec-17 1v:0v	1
1RC9-PFHpA	IS	108	50 - 150		B74 01v5	R0-No6-17	0K11 L	10-Dec-17 1v:0v	1
18O2-PFHxS	IS	vvK2	50 - 150		B74 01v5	R0-No6-17	0K11 L	10-Dec-17 1v:0v	1
1RC2-PFOA	IS	89K5	50 - 150		B74 01v5	R0-No6-17	0K11 L	10-Dec-17 1v:0v	1
1RC8-PFOS	IS	8vK9	50 - 150		B74 01v5	R0-No6-17	0K11 L	10-Dec-17 1v:0v	1
1RC5-PFNA	IS	81K9	50 - 150		B74 01v5	R0-No6-17	0K11 L	10-Dec-17 1v:0v	1
1RC2-PFDA	IS	8. K5	50 - 150		B74 01v5	R0-No6-17	0K11 L	10-Dec-17 1v:0v	1
dR-MeFOSAA	IS	108	50 - 150		B74 01v5	R0-No6-17	0K11 L	10-Dec-17 1v:0v	1
1RC2-PFUnA	IS	10R	50 - 150		B74 01v5	R0-No6-17	0K11 L	10-Dec-17 1v:0v	1
d5-EtFOSAA	IS	11.	50 - 150		B74 01v5	R0-No6-17	0K11 L	10-Dec-17 1v:0v	1
1RC2-PFDoA	IS	12R	50 - 150		B74 01v5	R0-No6-17	0K11 L	10-Dec-17 1v:0v	1
1RC2-PFTeDA	IS	119	50 - 150		B74 01v5	R0-No6-17	0K11 L	10-Dec-17 1v:0v	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation
LCL-UCL- Lower control limit - upper control limit
3 esults reported to the DLK
When reported, PFHxS, PFOA and PFOS include both linear and branched isomersK
Only the linear isomer is reported for all other analytesK

Sample ID: IR86-GW17-LbD f yEiHeE Ah5 f et3yE 17b

Client Data				o ar yMtyM Data			
Name:	SH2 AHpMM	atrpl :	Lqueous	Ba7AbamKMe:	019015-C9-	SoMmn:	E8HAS0-
Project:	PxLb	FateASoMMctei :	01CNo. C01A00:D9	FateA6ecep ei :AA	2-CNo. C01A93:Dv		

5 naldte	Cync. (ng/o)	Do	o OD	o OQ	QualiHeMs	Batc3	AxtMcteE	Samp Size	5 naldzeE	Dilutiyn
PxEb	00-	0433	545D	-4-		E1O9035	D9CNo. C01	9400DAB	09CFecC01A03:20	0
PxHlL	05D	24U2	545D	-4-		E1O9035	D9CNo. C01	9400DAB	09CFecC01A03:20	0
PxHKL	224	94v5v	545D	-4-		E1O9035	D9CNo. C01	9400DAB	09CFecC01A03:20	0
PxHlb	-UU	0495	545D	-4-		E1O9035	D9CNo. C01	9400DAB	09CFecC01A03:20	0
PxTL	vD4	94122	545D	-4-		E1O9035	D9CNo. C01	9400DAB	09CFecC01A03:20	0
PxTb	25D	9435	545D	-4-		E1O9035	D9CNo. C01	9400DAB	09CFecC01A03:20	0
PxNL	NF	9433	545D	-4-		E1O9035	D9CNo. C01	9400DAB	09CFecC01A03:20	0
PxFL	NF	04v5	545D	-4-		E1O9035	D9CNo. C01	9400DAB	09CFecC01A03:20	0
exTbLL	NF	04D	545D	-4-		E1O9035	D9CNo. C01	9400DAB	09CFecC01A03:20	0
PxdnL	NF	0401	545D	-4-		E1O9035	D9CNo. C01	9400DAB	09CFecC01A03:20	0
8txTbLL	NF	0452	545D	-4-		E1O9035	D9CNo. C01	9400DAB	09CFecC01A03:20	0
PxFoL	NF	9413	545D	-4-		E1O9035	D9CNo. C01	9400DAB	09CFecC01A03:20	0
Px/rFL	NF	945U-	545D	-4-		E1O9035	D9CNo. C01	9400DAB	09CFecC01A03:20	0
Px/eFL	NF	94D-	545D	-4-		E1O9035	D9CNo. C01	9400DAB	09CFecC01A03:20	0
Som7pnei APxTLlPxTb	D01	9435	545D	-4-		E1O9035	D9CNo. C01	9400DAB	09CFecC01A03:20	0

o ar eleE StanEaMs	Tdpe	% RecyveMd	o imits	QualiHeMs	Batc3	AxtMcteE	Samp Size	5 naldzeE	Dilutiyn
0DSDCPxEb	vb	029	A59ACA059		E1O9035	D9CNo. C01	9400DAB	09CFecC01A03:20	0
0DS2CPxHlL	vb	00D	A59ACA059		E1O9035	D9CNo. C01	9400DAB	09CFecC01A03:20	0
0DSUCPxHKL	vb	00D	A59ACA059		E1O9035	D9CNo. C01	9400DAB	09CFecC01A03:20	0
0-T2CPxHlb	vb	3D43	A59ACA059		E1O9035	D9CNo. C01	9400DAB	09CFecC01A03:20	0
0DS2CPxTL	vb	3v49	A59ACA059		E1O9035	D9CNo. C01	9400DAB	09CFecC01A03:20	0
0DS-CPxTb	vb	-U4v	A59ACA059		E1O9035	D9CNo. C01	9400DAB	09CFecC01A03:20	0
0DS5CPxNL	vb	134	A59ACA059		E1O9035	D9CNo. C01	9400DAB	09CFecC01A03:20	0
0DS2CPxFL	vb	-U4U	A59ACA059		E1O9035	D9CNo. C01	9400DAB	09CFecC01A03:20	0
iDC exTbLL	vb	-14D	A59ACA059		E1O9035	D9CNo. C01	9400DAB	09CFecC01A03:20	0
0DS2CPxdnL	vb	09-	A59ACA059		E1O9035	D9CNo. C01	9400DAB	09CFecC01A03:20	0
i5C8txTbLL	vb	-54	A59ACA059		E1O9035	D9CNo. C01	9400DAB	09CFecC01A03:20	0
0DS2CPxFoL	vb	00D	A59ACA059		E1O9035	D9CNo. C01	9400DAB	09CFecC01A03:20	0
0DS2CPx/eFL	vb	3349	A59ACA059		E1O9035	D9CNo. C01	9400DAB	09CFecC01A03:20	0

FBACAFetectponABpmpt BTFACABpmptAofAFetectponA BSBCd SBCABoRerAcontroMApmptACAKerAcontroMApmptA WhenAeKortei ,APxHlb,APxTLAani APxTbAncMi eAothApheaAani Atranchei Apsomers4
BTQACABpmptAofAquantptatponA 6esuMsAeKortei AoAheAFB4 TnMAheAphearApsomerApsAeKortei AorAMAotherAanaMtes4

Sample ID: IR86-GW17D-LbD

f yEiIleE Ah5 f et3yE 17b

Client Data				**o ar yMatyMl Data**			
Name:	S2u A2pMM	atrpl :	Lsneon.	Ba7AbamKMe:	019015-C9H	SoMmE:	8q2 AS0-
Project:	PxLb	FateASoMlActei :	01CNoDC01A00:65	FateASecepDei :AA	u-CNoDC01A9H6v		

5 naldte	Cync. (ng/o)	Do	o OD	o OQ	QualiIleMl	Batc3	AxtMlcteE	Samp Size	5 naldzeE	Dilutiyn
Px8b	0u9	u499	545-	-4Hv		81O90H5	69CNoDC01	9400uAB	09CFecC01A0H6u	0
Px21L	0vu	u4UU	545-	-4Hv		81O90H5	69CNoDC01	9400uAB	09CFecC01A0H6u	0
Px2KL	uU4u	94vvu	545-	-4Hv		81O90H5	69CNoDC01	9400uAB	09CFecC01A0H6u	0
Px21b	1HI	049v	545-	-4Hv		81O90H5	69CNoDC01	9400uAB	09CFecC01A0H6u	0
PxTL	1U40	941uH	545-	-4Hv		81O90H5	69CNoDC01	9400uAB	09CFecC01A0H6u	0
PxTb	uUU	94H9U	545-	-4Hv		81O90H5	69CNoDC01	9400uAB	09CFecC01A0H6u	0
PxNL	NF	94H91	545-	-4Hv		81O90H5	69CNoDC01	9400uAB	09CFecC01A0H6u	0
PxFL	NF	04v1	545-	-4Hv		81O90H5	69CNoDC01	9400uAB	09CFecC01A0H6u	0
exTbLL	NF	045	545-	-4Hv		81O90H5	69CNoDC01	9400uAB	09CFecC01A0H6u	0
PxdEL	NF	040-	545-	-4Hv		81O90H5	69CNoDC01	9400uAB	09CFecC01A0H6u	0
qtxTbLL	NF	0456	545-	-4Hv		81O90H5	69CNoDC01	9400uAB	09CFecC01A0H6u	0
PxFoL	NF	94-1	545-	-4Hv		81O90H5	69CNoDC01	9400uAB	09CFecC01A0H6u	0
Px/ rFL	NF	94556	545-	-4Hv		81O90H5	69CNoDC01	9400uAB	09CFecC01A0H6u	0
Px/ eFL	NF	94U5	545-	-4Hv		81O90H5	69CNoDC01	9400uAB	09CFecC01A0H6u	0
Som7pEei APxTLIPxTb	60-	94H9U	545-	-4Hv		81O90H5	69CNoDC01	9400uAB	09CFecC01A0H6u	0

o ar eleE StanEaMls	Tdpe	% RecyveMl	o imits	QualiIleMl	Batc3	AxtMlcteE	Samp Size	5 naldzeE	Dilutiyn
06S6CPx8b	vb	00H	A59ACA059		81O90H5	69CNoDC01	9400uAB	09CFecC01A0H6u	0
06SuCPx21L	vb	09v	A59ACA059		81O90H5	69CNoDC01	9400uAB	09CFecC01A0H6u	0
06SUCPx2KL	vb	096	A59ACA059		81O90H5	69CNoDC01	9400uAB	09CFecC01A0H6u	0
0-TuCPx21b	vb	00U	A59ACA059		81O90H5	69CNoDC01	9400uAB	09CFecC01A0H6u	0
06SuCPxTL	vb	099	A59ACA059		81O90H5	69CNoDC01	9400uAB	09CFecC01A0H6u	0
06S-CPxTb	vb	--4H	A59ACA059		81O90H5	69CNoDC01	9400uAB	09CFecC01A0H6u	0
06S5CPxNL	vb	HH4H	A59ACA059		81O90H5	69CNoDC01	9400uAB	09CFecC01A0H6u	0
06SuCPxFL	vb	Hu46	A59ACA059		81O90H5	69CNoDC01	9400uAB	09CFecC01A0H6u	0
i6C exTbLL	vb	v14H	A59ACA059		81O90H5	69CNoDC01	9400uAB	09CFecC01A0H6u	0
06SuCPxdEL	vb	H94U	A59ACA059		81O90H5	69CNoDC01	9400uAB	09CFecC01A0H6u	0
i5CqtxTbLL	vb	-14U	A59ACA059		81O90H5	69CNoDC01	9400uAB	09CFecC01A0H6u	0
06SuCPxFoL	vb	HU45	A59ACA059		81O90H5	69CNoDC01	9400uAB	09CFecC01A0H6u	0
06SuCPx/ eFL	vb	H64u	A59ACA059		81O90H5	69CNoDC01	9400uAB	09CFecC01A0H6u	0

FBACAFetectpoEABpmptA BTFACABpmptAofAFetectpoEA BSBCd SBCABoRerAtoEtroMApmptAChKKerAtoEtroMApmptA WheEAteKortei ,APx21b,APxTLAEi APxTbAEcMi eAToth AEearAEi ATraEchei Ap omer. 4

BTQACABpmptAofAnaEtptatpoEA 3e.nMAteKortei AtoAtheAFB4 TEMAtheAEearAp omerAp AteKortei AtorAtMotherAEaMte. 4

Sample ID: USTAS4141-GW13-13D y bMdeMf EA y etPbMh53

Client Data

Name: CH2M Hill
Project: PFAS

Matrix: Aqueous
Date Collected: 17-No6-17 17:v5

7 aLboatbor Data

Lab Sample: 1701758-10
Date 9 ecei6ed: 28-No6-17 03:R

Column: BEH C18

Analrte	Cbnc. (ng/7)	D7	7 OD	7 OQ	Qualideos	BatcP	f xtoacteM	Samp Size	AnalrzeM	Dilutibn
PFBS	5K0	2K02	5KR	3K05	4	B7O0135	R0-No6-17	0K11 L	10-Dec-17 13:vR	1
PFHxA	11K2	2Kv.	5KR	3K05		B7O0135	R0-No6-17	0K11 L	10-Dec-17 13:vR	1
PFHpA	vK20	0K. 8	5KR	3K05	4	B7O0135	R0-No6-17	0K11 L	10-Dec-17 13:vR	1
PFHxS	R3K7	1K07	5KR	3K05		B7O0135	R0-No6-17	0K11 L	10-Dec-17 13:vR	1
PFJ A	vK7v	0K7R	5KR	3K05	4	B7O0135	R0-No6-17	0K11 L	10-Dec-17 13:vR	1
PFJ S	8. K0	0K312	5KR	3K05		B7O0135	R0-No6-17	0K11 L	10-Dec-17 13:vR	1
PFNA	ND	0K31.	5KR	3K05		B7O0135	R0-No6-17	0K11 L	10-Dec-17 13:vR	1
PFDA	ND	1K.8	5KR	3K05		B7O0135	R0-No6-17	0K11 L	10-Dec-17 13:vR	1
MeFJ SAA	ND	1K87	5KR	3K05		B7O0135	R0-No6-17	0K11 L	10-Dec-17 13:vR	1
PFUnA	ND	1K13	5KR	3K05		B7O0135	R0-No6-17	0K11 L	10-Dec-17 13:vR	1
EtFJ SAA	ND	1K55	5KR	3K05		B7O0135	R0-No6-17	0K11 L	10-Dec-17 13:vR	1
PFDoA	ND	0K83.	5KR	3K05		B7O0135	R0-No6-17	0K11 L	10-Dec-17 13:vR	1
PFTrDA	ND	0K553	5KR	3K05		B7O0135	R0-No6-17	0K11 L	10-Dec-17 13:vR	1
PFTeDA	ND	0K85v	5KR	3K05		B7O0135	R0-No6-17	0K11 L	10-Dec-17 13:vR	1
Combined PFJ A/PFJ S	30K7	0K312	5KR	3K05		B7O0135	R0-No6-17	0K11 L	10-Dec-17 13:vR	1

7 aLeleMStanMioM	Trpe	% Recbveor	7 imits	Qualideos	BatcP	f xtoacteM	Samp Size	AnalrzeM	Dilutibn
1RCR-PFBS	IS	103	50 - 150		B7O0135	R0-No6-17	0K11 L	10-Dec-17 13:vR	1
1RC2-PFHxA	IS	102	50 - 150		B7O0135	R0-No6-17	0K11 L	10-Dec-17 13:vR	1
1RCv-PFHpA	IS	10.	50 - 150		B7O0135	R0-No6-17	0K11 L	10-Dec-17 13:vR	1
18J 2-PFHxS	IS	107	50 - 150		B7O0135	R0-No6-17	0K11 L	10-Dec-17 13:vR	1
1RC2-PFJ A	IS	107	50 - 150		B7O0135	R0-No6-17	0K11 L	10-Dec-17 13:vR	1
1RC8-PFJ S	IS	12R	50 - 150		B7O0135	R0-No6-17	0K11 L	10-Dec-17 13:vR	1
1RC5-PFNA	IS	101	50 - 150		B7O0135	R0-No6-17	0K11 L	10-Dec-17 13:vR	1
1RC2-PFDA	IS	88K3	50 - 150		B7O0135	R0-No6-17	0K11 L	10-Dec-17 13:vR	1
dR-MeFJ SAA	IS	3. KR	50 - 150		B7O0135	R0-No6-17	0K11 L	10-Dec-17 13:vR	1
1RC2-PFUnA	IS	108	50 - 150		B7O0135	R0-No6-17	0K11 L	10-Dec-17 13:vR	1
d5-EtFJ SAA	IS	35K2	50 - 150		B7O0135	R0-No6-17	0K11 L	10-Dec-17 13:vR	1
1RC2-PFDoA	IS	112	50 - 150		B7O0135	R0-No6-17	0K11 L	10-Dec-17 13:vR	1
1RC2-PFTeDA	IS	115	50 - 150		B7O0135	R0-No6-17	0K11 L	10-Dec-17 13:vR	1

DL - Detection Limit
LJ D - Limit of Detection
LJ Q - Limit of quantitation
LCL-UCL- Lower control limit - upper control limit
9 esults reported to the DLK
When reported, PFHxS, PFJ A and PFJ S include both linear and branched isomersK
J nly the linear isomer is reported for all other analytesK

Sample ID: USTAS4141-GW17-17D **Modified EPA Method 537**

Name:	CH2M Hill	Lab Sample:	B7K0195-MS1/B7K0195-MSD1	Source Lab Sample:	1701758-10
Project:	PFAS	QC Batch:	B7K0195	Date Extracted:	30-Nov-17
Matrix:	Aqueous	Samp Size:	0.115/0.119 L	Column:	BEH C18

Analyte	Sample (ng/L)	MS (ng/L)	MS Spike Amt	MS % Rec	MS Quals	MSD (ng/L)	MSD Spike Amt	MSD % Rec	RPD	MSD Quals	%Rec Limits	RPD Limits	MS Analyzed	MS Dil	MSD Analyzed	MSD Dil
PFBS	5.70	85.2	86.7	91.7		84.6	84.3	93.6	2.05		70-130	30	10-Dec-17 16:33	1	10-Dec-17 16:44	1
PFHxA	11.2	111	86.7	115		100	84.3	106	8.14		70-130	30	10-Dec-17 16:33	1	10-Dec-17 16:44	1
PFHpA	4.20	96.6	86.7	107		78.2	84.3	87.8	19.7		70-130	30	10-Dec-17 16:33	1	10-Dec-17 16:44	1
PFHxS	39.7	120	86.7	92.3		111	84.3	84.5	8.82		70-130	30	10-Dec-17 16:33	1	10-Dec-17 16:44	1
PFOA	4.74	90.8	86.7	99.3		85.8	84.3	96.1	3.28		70-130	30	10-Dec-17 16:33	1	10-Dec-17 16:44	1
PFOS	86.0	181	86.7	110		147	84.3	72.3	41.4	H	70-130	30	10-Dec-17 16:33	1	10-Dec-17 16:44	1
PFNA	ND	86.3	86.7	99.0		81.8	84.3	96.4	2.66		70-130	30	10-Dec-17 16:33	1	10-Dec-17 16:44	1
PFDA	ND	61.4	86.7	70.8		76.5	84.3	90.7	24.6		70-130	30	10-Dec-17 16:33	1	10-Dec-17 16:44	1
MeFOSAA	ND	75.8	86.7	87.5		70.7	84.3	83.9	4.20		70-130	30	10-Dec-17 16:33	1	10-Dec-17 16:44	1
PFUnA	ND	94.7	86.7	109		78.1	84.3	92.6	16.3		70-130	30	10-Dec-17 16:33	1	10-Dec-17 16:44	1
EtFOSAA	ND	111	86.7	128		90.2	84.3	107	17.9		70-130	30	10-Dec-17 16:33	1	10-Dec-17 16:44	1
PFDoA	ND	70.2	86.7	80.9		94.4	84.3	112	32.2	H	70-130	30	10-Dec-17 16:33	1	10-Dec-17 16:44	1
PFTrDA	ND	90.6	86.7	104		97.8	84.3	116	10.9		60-130	30	10-Dec-17 16:33	1	10-Dec-17 16:44	1
PFTeDA	ND	78.2	86.7	90.2		86.4	84.3	103	13.3		70-130	30	10-Dec-17 16:33	1	10-Dec-17 16:44	1

Labeled Standards	Type	MS % Rec	MS Quals	MSD % Rec	MSD Quals	Limits	MS Analyzed	MS Dil	MSD Analyzed	MSD Dil
13C3-PFBS	IS	114		116		50-150	10-Dec-17 16:33	1	10-Dec-17 16:44	1
13C2-PFHxA	IS	96.5		112		50-150	10-Dec-17 16:33	1	10-Dec-17 16:44	1
13C4-PFHpA	IS	105		115		50-150	10-Dec-17 16:33	1	10-Dec-17 16:44	1
18O2-PFHxS	IS	101		109		50-150	10-Dec-17 16:33	1	10-Dec-17 16:44	1
13C2-PFOA	IS	110		90.1		50-150	10-Dec-17 16:33	1	10-Dec-17 16:44	1
13C8-PFOS	IS	96.9		111		50-150	10-Dec-17 16:33	1	10-Dec-17 16:44	1
13C5-PFNA	IS	112		91.4		50-150	10-Dec-17 16:33	1	10-Dec-17 16:44	1
13C2-PFDA	IS	89.6		99.6		50-150	10-Dec-17 16:33	1	10-Dec-17 16:44	1
d3-MeFOSAA	IS	98.5		106		50-150	10-Dec-17 16:33	1	10-Dec-17 16:44	1
13C2-PFUnA	IS	91.0		100		50-150	10-Dec-17 16:33	1	10-Dec-17 16:44	1
d5-EtFOSAA	IS	76.3		101		50-150	10-Dec-17 16:33	1	10-Dec-17 16:44	1
13C2-PFDoA	IS	100		87.6		50-150	10-Dec-17 16:33	1	10-Dec-17 16:44	1
13C2-PFTeDA	IS	104		117		50-150	10-Dec-17 16:33	1	10-Dec-17 16:44	1

Sample ID: IR54-GW17-17D

Modified EPA Method 537

Client Data

Name: CH2M Hill
Project: PFAS
Matrix: Aqueous
Date Collected: 16-Nov-17 12:25

Laboratory Data

Lab Sample: 1701758-11
Date 9 eceived: 28-Nov-17 06:3R
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	585	1.63	5.36	8.R3		B7K0165	30-Nov-17	0.11RL	10-Dec-17 20:28	1
PFHxA	1730	2.35	5.36	8.R3		B7K0165	30-Nov-17	0.11RL	10-Dec-17 20:28	1
PFHpA	38R	0.R37	5.36	8.R3		B7K0165	30-Nov-17	0.11RL	10-Dec-17 20:28	1
PFHxS	5810	10.2	53.6	8R.3	D	B7K0165	30-Nov-17	0.11RL	12-Dec-17 16:18	10
PF4 A	28O0	7.02	53.6	8R.3	D	B7K0165	30-Nov-17	0.11RL	12-Dec-17 16:18	10
PF4 S	6R80	8.70	53.6	8R.3	D	B7K0165	30-Nov-17	0.11RL	12-Dec-17 16:18	10
PFNA	RR.O	0.87O	5.36	8.R3		B7K0165	30-Nov-17	0.11RL	10-Dec-17 20:28	1
PFDA	8.O7	1.R1	5.36	8.R3	J	B7K0165	30-Nov-17	0.11RL	10-Dec-17 20:28	1
MeF4 SAA	ND	1.78	5.36	8.R3		B7K0165	30-Nov-17	0.11RL	10-Dec-17 20:28	1
PFUnA	ND	1.13	5.36	8.R3		B7K0165	30-Nov-17	0.11RL	10-Dec-17 20:28	1
EtF4 SAA	ND	1.O8	5.36	8.R3		B7K0165	30-Nov-17	0.11RL	10-Dec-17 20:28	1
PFDoA	ND	0.85O	5.36	8.R3		B7K0165	30-Nov-17	0.11RL	10-Dec-17 20:28	1
PFTrDA	ND	0.533	5.36	8.R3		B7K0165	30-Nov-17	0.11RL	10-Dec-17 20:28	1
PFTeDA	ND	0.81O	5.36	8.R3		B7K0165	30-Nov-17	0.11RL	10-Dec-17 20:28	1
Combined PF4 A/PF4 S	12500	0.870	5.36	8.R3		B7K0165	30-Nov-17	0.11RL	10-Dec-17 20:28	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	66.7	50 - 150		B7K0165	30-Nov-17	0.11RL	10-Dec-17 20:28	1
13C2-PFHxA	IS	65.5	50 - 150		B7K0165	30-Nov-17	0.11RL	10-Dec-17 20:28	1
13CO-PFHpA	IS	10R	50 - 150		B7K0165	30-Nov-17	0.11RL	10-Dec-17 20:28	1
184 2-PFHxS	IS	7R.7	50 - 150	D	B7K0165	30-Nov-17	0.11RL	12-Dec-17 16:18	10
13C2-PF4 A	IS	128	50 - 150	D	B7K0165	30-Nov-17	0.11RL	12-Dec-17 16:18	10
13C8-PF4 S	IS	10O	50 - 150	D	B7K0165	30-Nov-17	0.11RL	12-Dec-17 16:18	10
13C5-PFNA	IS	105	50 - 150		B7K0165	30-Nov-17	0.11RL	10-Dec-17 20:28	1
13C2-PFDA	IS	83.O	50 - 150		B7K0165	30-Nov-17	0.11RL	10-Dec-17 20:28	1
d3-MeF4 SAA	IS	102	50 - 150		B7K0165	30-Nov-17	0.11RL	10-Dec-17 20:28	1
13C2-PFUnA	IS	117	50 - 150		B7K0165	30-Nov-17	0.11RL	10-Dec-17 20:28	1
d5-EtF4 SAA	IS	62.6	50 - 150		B7K0165	30-Nov-17	0.11RL	10-Dec-17 20:28	1
13C2-PFDoA	IS	101	50 - 150		B7K0165	30-Nov-17	0.11RL	10-Dec-17 20:28	1
13C2-PFTeDA	IS	106	50 - 150		B7K0165	30-Nov-17	0.11RL	10-Dec-17 20:28	1

DL - Detection Limit
L4 D - Limit of Detection
L4 Q - Limit of quantitation
LCL-UCL- Lower control limit - upper control limit
9 esults reported to the DL.
When reported, PFHxS, PF4 A and PF4 S include both linear and branched isomers.
4 nly the linear isomer is reported for all other analytes.

Sample ID: IR54-GW17-17D **Modified EPA Method 537**

Name:	CH2M Hill	Lab Sample:	B7K0195-MS2/B7K0195-MSD2	Source Lab Sample:	1701758-11
Project:	PFAS	QC Batch:	B7K0195	Date Extracted:	30-Nov-17
Matrix:	Aqueous	Samp Size:	0.114/0.105 L	Column:	BEH C18

Analyte	Sample (ng/L)	MS (ng/L)	MS Spike Amt	MS % Rec	MS Quals	MSD (ng/L)	MSD Spike Amt	MSD % Rec	RPD	MSD Quals	%Rec Limits	RPD Limits	MS Analyzed	MS Dil	MSD Analyzed	MSD Dil
PFBS	585	669	88.0	95.7		666	95.3	85.2	11.6		70-130	30	10-Dec-17 16:55	1	10-Dec-17 17:06	1
PFHxA	1730	1840	88.0	118		1670	95.3	-70.2	787	H	70-130	30	10-Dec-17 16:55	1	10-Dec-17 17:06	1
PFHpA	386	496	88.0	125		543	95.3	165	27.6	H	70-130	30	10-Dec-17 16:55	1	10-Dec-17 17:06	1
PFHxS	5810	5860	880	5.94	D, H	4710	953	-116	222	D, H	70-130	30	12-Dec-17 18:22	10	12-Dec-17 18:33	10
PFOA	2840	3140	880	34.0	D, H	3150	953	32.0	6.06	D, H	70-130	30	12-Dec-17 18:22	10	12-Dec-17 18:33	10
PFOS	9680	7940	880	-198	D, H	9940	953	26.6	262	D, H	70-130	30	12-Dec-17 18:22	10	12-Dec-17 18:33	10
PFNA	66.4	153	88.0	98.7		162	95.3	100	1.31		70-130	30	10-Dec-17 16:55	1	10-Dec-17 17:06	1
PFDA	8.47	72.1	88.0	72.4		97.4	95.3	93.3	25.2		70-130	30	10-Dec-17 16:55	1	10-Dec-17 17:06	1
MeFOSAA	ND	70.4	88.0	80.0		113	95.3	118	38.4	H	70-130	30	10-Dec-17 16:55	1	10-Dec-17 17:06	1
PFUnA	ND	83.5	88.0	94.9		85.6	95.3	89.8	5.52		70-130	30	10-Dec-17 16:55	1	10-Dec-17 17:06	1
EtFOSAA	ND	77.3	88.0	87.8		106	95.3	111	23.3		70-130	30	10-Dec-17 16:55	1	10-Dec-17 17:06	1
PFDoA	ND	74.9	88.0	85.1		86.3	95.3	90.6	6.26		70-130	30	10-Dec-17 16:55	1	10-Dec-17 17:06	1
PFTrDA	ND	68.0	88.0	77.3		91.4	95.3	95.9	21.5		60-130	30	10-Dec-17 16:55	1	10-Dec-17 17:06	1
PFTeDA	ND	96.8	88.0	110		96.1	95.3	101	8.53		70-130	30	10-Dec-17 16:55	1	10-Dec-17 17:06	1

Labeled Standards	Type	MS % Rec	MS Quals	MSD % Rec	MSD Quals	Limits	MS Analyzed	MS Dil	MSD Analyzed	MSD Dil
13C3-PFBS	IS	102		110		50-150	10-Dec-17 16:55	1	10-Dec-17 17:06	1
13C2-PFHxA	IS	93.6		108		50-150	10-Dec-17 16:55	1	10-Dec-17 17:06	1
13C4-PFHpA	IS	94.6		108		50-150	10-Dec-17 16:55	1	10-Dec-17 17:06	1
18O2-PFHxS	IS	89.1	D	94.7	D	50-150	12-Dec-17 18:22	10	12-Dec-17 18:33	10
13C2-PFOA	IS	88.8	D	105	D	50-150	12-Dec-17 18:22	10	12-Dec-17 18:33	10
13C8-PFOS	IS	82.0	D	122	D	50-150	12-Dec-17 18:22	10	12-Dec-17 18:33	10
13C5-PFNA	IS	96.3		80.7		50-150	10-Dec-17 16:55	1	10-Dec-17 17:06	1
13C2-PFDA	IS	78.5		75.5		50-150	10-Dec-17 16:55	1	10-Dec-17 17:06	1
d3-MeFOSAA	IS	97.5		87.1		50-150	10-Dec-17 16:55	1	10-Dec-17 17:06	1
13C2-PFUnA	IS	88.6		109		50-150	10-Dec-17 16:55	1	10-Dec-17 17:06	1
d5-EtFOSAA	IS	95.0		100		50-150	10-Dec-17 16:55	1	10-Dec-17 17:06	1
13C2-PFDoA	IS	116		100		50-150	10-Dec-17 16:55	1	10-Dec-17 17:06	1
13C2-PFTeDA	IS	76.6		99.3		50-150	10-Dec-17 16:55	1	10-Dec-17 17:06	1

Sample ID: IR54-GW15-17D **Modified EPA Method 537**

Client Data				Laboratory Data			
Name:	S2H A2pMI	atrpl :	Lqueous	Ba7AbamKNe:	019015-C0H	SoMmn:	E82AS0-
Project:	PxLb	FateAS oMActei :	0.CNoDC01A06:H5	FateAS ecepDei :AA	H-CNoDC01A9.:6v		

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PxEb	HOO	H490	545-	-41		E1U90.5	69CNoDC01	940OHAB	09CF ecC01AH9:6.	0
Px21L	0C69	H4OO	545-	-41		E1U90.5	69CNoDC01	940OHAB	09CF ecC01AH9:6.	0
Px2KL	6H9	94vv6	545-	-41		E1U90.5	69CNoDC01	940OHAB	09CF ecC01AH9:6.	0
Px21b	C019	094v	554	-.41	F	E1U90.5	69CNoDC01	940OHAB	0HCF ecC01A0.:H	09
PxTL	H-H9	1469	554	-.41	F	E1U90.5	69CNoDC01	940OHAB	0HCF ecC01A0.:H	09
PxTb	5059	.495	554	-.41	F	E1U90.5	69CNoDC01	940OHAB	0HCF ecC01A0.:H	09
PxNL	1H4v	949-	545-	-41		E1U90.5	69CNoDC01	940OHAB	09CF ecC01AH9:6.	0
PxFL	NF	04v1	545-	-41		E1U90.5	69CNoDC01	940OHAB	09CF ecC01AH9:6.	0
exTbLL	NF	045	545-	-41		E1U90.5	69CNoDC01	940OHAB	09CF ecC01AH9:6.	0
PxdnL	NF	040-	545-	-41		E1U90.5	69CNoDC01	940OHAB	09CF ecC01AH9:6.	0
8txTbLL	NF	045O	545-	-41		E1U90.5	69CNoDC01	940OHAB	09CF ecC01AH9:6.	0
PxFoL	NF	94--	545-	-41		E1U90.5	69CNoDC01	940OHAB	09CF ecC01AH9:6.	0
Px/rFL	NF	9455O	545-	-41		E1U90.5	69CNoDC01	940OHAB	09CF ecC01AH9:6.	0
Px/eFL	NF	94Ov	545-	-41		E1U90.5	69CNoDC01	940OHAB	09CF ecC01AH9:6.	0
Som7pnei APxTLIPxTb	1.19	9495	545-	-41		E1U90.5	69CNoDC01	940OHAB	09CF ecC01AH9:6.	0

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
06S6CPxEb	wb	00.	AS9ACA059		E1U90.5	69CNoDC01	940OHAB	09CF ecC01AH9:6.	0
06SHCPx21L	wb	09O	AS9ACA059		E1U90.5	69CNoDC01	940OHAB	09CF ecC01AH9:6.	0
06SOCPx2KL	wb	09v	AS9ACA059		E1U90.5	69CNoDC01	940OHAB	09CF ecC01AH9:6.	0
0-THCPx21b	wb	.O4l	AS9ACA059	F	E1U90.5	69CNoDC01	940OHAB	0HCF ecC01A0.:H	09
06SHCPxTL	wb	-H4	AS9ACA059	F	E1U90.5	69CNoDC01	940OHAB	0HCF ecC01A0.:H	09
06S-CPxTb	wb	096	AS9ACA059	F	E1U90.5	69CNoDC01	940OHAB	0HCF ecC01A0.:H	09
06S5CPxNL	wb	-O49	AS9ACA059		E1U90.5	69CNoDC01	940OHAB	09CF ecC01AH9:6.	0
06SHCPxFL	wb	.94O	AS9ACA059		E1U90.5	69CNoDC01	940OHAB	09CF ecC01AH9:6.	0
i6C exTbLL	wb	.O4O	AS9ACA059		E1U90.5	69CNoDC01	940OHAB	09CF ecC01AH9:6.	0
06SHCPxdnL	wb	.94v	AS9ACA059		E1U90.5	69CNoDC01	940OHAB	09CF ecC01AH9:6.	0
i5C8txTbLL	wb	090	AS9ACA059		E1U90.5	69CNoDC01	940OHAB	09CF ecC01AH9:6.	0
06SHCPxFoL	wb	-O45	AS9ACA059		E1U90.5	69CNoDC01	940OHAB	09CF ecC01AH9:6.	0
06SHCPx/eFL	wb	-.4v	AS9ACA059		E1U90.5	69CNoDC01	940OHAB	09CF ecC01AH9:6.	0

FBACAF etectpon ABpmpt AAAAAAAAAAAAAAAAAAAA BTF ACBpmpt Aof AF etectpon AAAAAAAAAAAAAAAA BSBCd SBCABoRer AcontroMApmpt ACuKKer AcontroMApmpt A WhenAeKortei ,APx21b, APxTL Ani APxTb AncMi eAToth AlpnearAni ATranchei Asomers4AAAAAAAAAA

BTQACBpmpt Aof Aquantptatpon AAAAAAAAAAAAAAAA 3esuMsAeKortei AoAheAF B4AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA TnMAheAlpnearAsomerAsAeKortei AorAMAotherAnaMtes4AAAAAAAAAAAAAAAAAAAAAAAAAAAAAA

Sample ID: IR54-GW15D-17D | Modified EPA Method 537

Client Data				Laboratory Data			
Name:	S2u A2pMM	atrpl :	Lsneon.	Ba7AbamKMt:	019015-C0H	SoMmE:	8q2AS0-
Project:	PxLb	FateASoMMctei :	0DCNo6C01A0HH9	FateASecep6ei :AA	u-CNo6C01A9D.Hv		

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
Px8b	uv-	04D1	54O-	-41D		81U90D5	H9CNo6C01	9400OAB	09CFecC01Au9:59	0
Px21L	05D9	u4O9	54O-	-41D		81U90D5	H9CNo6C01	9400OAB	09CFecC01Au9:59	0
Px2KL	Hu5	94vOD	54O-	-41D		81U90D5	H9CNo6C01	9400OAB	09CFecC01Au9:59	0
Px21b	OO99	094O	5O4	-14D	F	81U90D5	H9CNo6C01	9400OAB	0uCFecC01A0D.O9	09
PxTL	u-59	1405	5O4	-14D	F	81U90D5	H9CNo6C01	9400OAB	0uCFecC01A0D.O9	09
PxTb	O-H9	-41	5O4	-14D	F	81U90D5	H9CNo6C01	9400OAB	0uCFecC01A0D.O9	09
PxNL	vO4D	94D9	54O-	-41D		81U90D5	H9CNo6C01	9400OAB	09CFecC01Au9:59	0
PxFL	NF	04vO	54O-	-41D		81U90D5	H9CNo6C01	9400OAB	09CFecC01Au9:59	0
exTbLL	NF	040	54O-	-41D		81U90D5	H9CNo6C01	9400OAB	09CFecC01Au9:59	0
PxdEL	NF	0405	54O-	-41D		81U90D5	H9CNo6C01	9400OAB	09CFecC01Au9:59	0
qtxTbLL	NF	0450	54O-	-41D		81U90D5	H9CNo6C01	9400OAB	09CFecC01Au9:59	0
PxFoL	NF	9419	54O-	-41D		81U90D5	H9CNo6C01	9400OAB	09CFecC01Au9:59	0
Px/rFL	NF	945OH	54O-	-41D		81U90D5	H9CNo6C01	9400OAB	09CFecC01Au9:59	0
Px/eFL	NF	94H9	54O-	-41D		81U90D5	H9CNo6C01	9400OAB	09CFecC01Au9:59	0
Som7pEei APxTLIPxTb	1v-9	94-1	54O-	-41D		81U90D5	H9CNo6C01	9400OAB	09CFecC01Au9:59	0

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
0HSHCPx8b	wb	00O	A59ACA059		81U90D5	H9CNo6C01	9400OAB	09CFecC01Au9:59	0
0HSuCPx21L	wb	090	A59ACA059		81U90D5	H9CNo6C01	9400OAB	09CFecC01Au9:59	0
0HSOCPx2KL	wb	009	A59ACA059		81U90D5	H9CNo6C01	9400OAB	09CFecC01Au9:59	0
0-TuCPx21b	wb	DO4v	A59ACA059	F	81U90D5	H9CNo6C01	9400OAB	0uCFecC01A0D.O9	09
0HSuCPxTL	wb	099	A59ACA059	F	81U90D5	H9CNo6C01	9400OAB	0uCFecC01A0D.O9	09
0HS-CPxTb	wb	00u	A59ACA059	F	81U90D5	H9CNo6C01	9400OAB	0uCFecC01A0D.O9	09
0HS5CPxNL	wb	D14	A59ACA059		81U90D5	H9CNo6C01	9400OAB	09CFecC01Au9:59	0
0HSuCPxFL	wb	1H4u	A59ACA059		81U90D5	H9CNo6C01	9400OAB	09CFecC01Au9:59	0
iHC exTbLL	wb	09O	A59ACA059		81U90D5	H9CNo6C01	9400OAB	09CFecC01Au9:59	0
0HSuCPxdEL	wb	-D45	A59ACA059		81U90D5	H9CNo6C01	9400OAB	09CFecC01Au9:59	0
i5CqtxTbLL	wb	09D	A59ACA059		81U90D5	H9CNo6C01	9400OAB	09CFecC01Au9:59	0
0HSuCPxFoL	wb	09H	A59ACA059		81U90D5	H9CNo6C01	9400OAB	09CFecC01Au9:59	0
0HSuCPx/eFL	wb	09u	A59ACA059		81U90D5	H9CNo6C01	9400OAB	09CFecC01Au9:59	0

FBACFetectpoEABpmptA BTFACBpmptAofAFetectpoEA BSBCdSBCABoRerAoEtroMApmptAChKKerAoEtroMApmptA WheEAteKortei ,APx21b,APxTLAEi APxTbAEcMi eAToth AyEearAEi ATraEchei Ap omer. 4A
BTQACBpmptAofAnaEtptatpoEA 3e.nMAteKortei AoAheAFB4A TEMAheAyEearAp omerAp AteKortei AorANNotherAEaMte. 4A

Sample ID: IR54-GW14-17D | Modified EPA Method 537

Client Data				Laboratory Data			
Name:	S2u A2pMM	atrp1 :	Lsneon.	Ba7AbamKMe:	019015-C0H	SoMmE:	8q2AS0-
Project:	PxLb	FateASoMActei :	0DCNo6C01A03:H9	FateAvecep6ei :AA	u-CNo6C01A9D34		

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
Px8b	uHH9	0DC3	530D	-40u	F	81U90D5	39CNo6C01	90004AB	0uCFecC01A0D5u	09
Px21L	0u099	u3C5	530D	-40u	F	81U90D5	39CNo6C01	90004AB	0uCFecC01A0D5u	09
Px2KL	3309	4C31	530D	-40u	F	81U90D5	39CNo6C01	90004AB	0uCFecC01A0D5u	09
Px21b	01D99	090u	530D	-40u	F	81U90D5	39CNo6C01	90004AB	0uCFecC01A0D5u	09
PxTL	D0u9	1C9u	530D	-40u	F	81U90D5	39CNo6C01	90004AB	0uCFecC01A0D5u	09
PxTb	H909	-C09	530D	-40u	F	81U90D5	39CNo6C01	90004AB	0uCFecC01A0D5u	09
PxNL	055	9C013	5C3D	-C4u		81U90D5	39CNo6C01	90004AB	09CFecC01Au0:90	0
PxFL	NF	0C40	5C3D	-C4u		81U90D5	39CNo6C01	90004AB	09CFecC01Au0:90	0
exTbLL	NF	0C0-	5C3D	-C4u		81U90D5	39CNo6C01	90004AB	09CFecC01Au0:90	0
PxdEL	NF	0C03	5C3D	-C4u		81U90D5	39CNo6C01	90004AB	09CFecC01Au0:90	0
qtxTbLL	NF	0C0H	5C3D	-C4u		81U90D5	39CNo6C01	90004AB	09CFecC01Au0:90	0
PxFoL	NF	9C05H	5C3D	-C4u		81U90D5	39CNo6C01	90004AB	09CFecC01Au0:90	0
Px/rFL	NF	9C53u	5C3D	-C4u		81U90D5	39CNo6C01	90004AB	09CFecC01Au0:90	0
Px/eFL	NF	9C00H	5C3D	-C4u		81U90D5	39CNo6C01	90004AB	09CFecC01Au0:90	0
Som7pEei APxTLIPxTb	03099	9C019	5C3D	-C4u		81U90D5	39CNo6C01	90004AB	09CFecC01Au0:90	0

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
03S3CPx8b	vb	0u9	A59ACA059	F	81U90D5	39CNo6C01	90004AB	0uCFecC01A0D5u	09
03SuCPx21L	vb	034	A59ACA059	F	81U90D5	39CNo6C01	90004AB	0uCFecC01A0D5u	09
03SHCPx2KL	vb	000	A59ACA059	F	81U90D5	39CNo6C01	90004AB	0uCFecC01A0D5u	09
0-TuCPx21b	vb	03D	A59ACA059	F	81U90D5	39CNo6C01	90004AB	0uCFecC01A0D5u	09
03SuCPxTL	vb	00-	A59ACA059	F	81U90D5	39CNo6C01	90004AB	0uCFecC01A0D5u	09
03S-CPxTb	vb	DD0D	A59ACA059	F	81U90D5	39CNo6C01	90004AB	0uCFecC01A0D5u	09
03S5CPxNL	vb	001	A59ACA059		81U90D5	39CNo6C01	90004AB	09CFecC01Au0:90	0
03SuCPxFL	vb	093	A59ACA059		81U90D5	39CNo6C01	90004AB	09CFecC01Au0:90	0
i3C exTbLL	vb	093	A59ACA059		81U90D5	39CNo6C01	90004AB	09CFecC01Au0:90	0
03SuCPxdEL	vb	0u9	A59ACA059		81U90D5	39CNo6C01	90004AB	09CFecC01Au0:90	0
i5CqtxTbLL	vb	00u	A59ACA059		81U90D5	39CNo6C01	90004AB	09CFecC01Au0:90	0
03SuCPxFoL	vb	00H	A59ACA059		81U90D5	39CNo6C01	90004AB	09CFecC01Au0:90	0
03SuCPx/eFL	vb	000	A59ACA059		81U90D5	39CNo6C01	90004AB	09CFecC01Au0:90	0

FBACFetectpEABpmptA BTFACBpmptAofAFetectpEA BSBCISBCABoRerAoEtroMpmptACnKKerAoEtroMpmptA WheEAteKortei ,APx21b,APxTLAEi APxTbAEcMi eAothAyEearAEi AraEchei Aomer. CA

BTQACBpmptAofAnaEtptatpEA v e.nMAteKortei AoAheAFBCA TEMAheAyEearApomerApAteKortei AorANotherAEaMte. CA

Sample ID: IR54-GW16-17D

Modified EPA Method 537

Client Data

Name: CH2M Hill
Project: PFAS

Matrix: Aqueous
Date Collected: 16-Nov-17 12:15

Laboratory Data

Lab Sample: 1701758-15
Date 9 eceived: 28-Nov-17 06:3R

Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	1R200	18.8	52.5	8K2	D	B74 0165	30-Nov-17	0.116 L	12-Dec-17 20:1K	10
PFHxA	30100	61.8	210	337	D	B74 0165	30-Nov-17	0.116 L	15-Dec-17 23:15	K0
PFHpA	70K0	R22	52.5	8K2	D	B74 0165	30-Nov-17	0.116 L	12-Dec-17 20:1K	10
PFHxS	101000	36.6	210	337	EOD	B74 0165	30-Nov-17	0.116 L	15-Dec-17 23:15	K0
PFJ A	25100	27.K	210	337	D	B74 0165	30-Nov-17	0.116 L	15-Dec-17 23:15	K0
PFJ S	30000	3K.0	210	337	D	B74 0165	30-Nov-17	0.116 L	15-Dec-17 23:15	K0
PFNA	20R	0.853	5.25	8.K2		B74 0165	30-Nov-17	0.116 L	10-Dec-17 21:12	1
PFDA	3.R6	1.57	5.25	8.K2	U	B74 0165	30-Nov-17	0.116 L	10-Dec-17 21:12	1
MeFJ SAA	ND	1.7K	5.25	8.K2		B74 0165	30-Nov-17	0.116 L	10-Dec-17 21:12	1
PFT nA	ND	1.11	5.25	8.K2		B74 0165	30-Nov-17	0.116 L	10-Dec-17 21:12	1
EtFJ SAA	ND	1.KK	5.25	8.K2		B74 0165	30-Nov-17	0.116 L	10-Dec-17 21:12	1
PFDoA	ND	0.83K	5.25	8.K2		B74 0165	30-Nov-17	0.116 L	10-Dec-17 21:12	1
PF/ rDA	ND	0.520	5.25	8.K2		B74 0165	30-Nov-17	0.116 L	10-Dec-17 21:12	1
PF/ eDA	ND	0.765	5.25	8.K2		B74 0165	30-Nov-17	0.116 L	10-Dec-17 21:12	1
Combined PFJ AIPFJ S	55100	0.8K6	5.25	8.K2		B74 0165	30-Nov-17	0.116 L	10-Dec-17 21:12	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	vS	115	50 - 150	D	B74 0165	30-Nov-17	0.116 L	12-Dec-17 20:1K	10
13C2-PFHxA	vS	1RR	50 - 150	DOH	B74 0165	30-Nov-17	0.116 L	15-Dec-17 23:15	K0
13CK-PFHpA	vS	138	50 - 150	D	B74 0165	30-Nov-17	0.116 L	12-Dec-17 20:1K	10
18J 2-PFHxS	vS	85.0	50 - 150	D	B74 0165	30-Nov-17	0.116 L	15-Dec-17 23:15	K0
13C2-PFJ A	vS	128	50 - 150	D	B74 0165	30-Nov-17	0.116 L	15-Dec-17 23:15	K0
13C8-PFJ S	vS	K8.0	50 - 150	DOH	B74 0165	30-Nov-17	0.116 L	15-Dec-17 23:15	K0
13C5-PFNA	vS	101	50 - 150		B74 0165	30-Nov-17	0.116 L	10-Dec-17 21:12	1
13C2-PFDA	vS	73.K	50 - 150		B74 0165	30-Nov-17	0.116 L	10-Dec-17 21:12	1
d3-MeFJ SAA	vS	106	50 - 150		B74 0165	30-Nov-17	0.116 L	10-Dec-17 21:12	1
13C2-PFT nA	vS	8R.0	50 - 150		B74 0165	30-Nov-17	0.116 L	10-Dec-17 21:12	1
d5-EtFJ SAA	vS	62.K	50 - 150		B74 0165	30-Nov-17	0.116 L	10-Dec-17 21:12	1
13C2-PFDoA	vS	10R	50 - 150		B74 0165	30-Nov-17	0.116 L	10-Dec-17 21:12	1
13C2-PF/ eDA	vS	87.K	50 - 150		B74 0165	30-Nov-17	0.116 L	10-Dec-17 21:12	1

DL - Detection Limit
LJ D - Limit of Detection
LJ Q - Limit of quantitation
LCL-T CL- Loh er control limit - upper control limit
9 esults reported to tWe DL.
, Wen reportedOPFHxSOPFJ A and PFJ S include botWinear and brancWed isomers.
J nly tWe linear isomer is reported for all otWer analytes.

Sample ID: IR54-FB-111917 — Modified EPA Method 537

Client Data				Laboratory Data			
Name:	S2u A2 pMM	atrpl :	Lsneon.	Ba7AbamKMe:	019015-C0H	SoMmE:	8q2 AS0-
Project:	PxLb	FateASoMActei :	0DCNo6C01A00:59	FateASecep6ei :AA	u-CNo6C01A9D.vH		

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
Px8b	NF	04D	54v9	-40H		81U90D5	v9CNo6C01	9400-AB	05CFecC01Av:uH	0
Px21L	NF	u4v0	54v9	-40H		81U90D5	v9CNo6C01	9400-AB	05CFecC01Av:uH	0
Px2KL	NF	94Hu5	54v9	-40H		81U90D5	v9CNo6C01	9400-AB	05CFecC01Av:uH	0
Px21b	NF	0499	54v9	-40H		81U90D5	v9CNo6C01	9400-AB	05CFecC01Av:uH	0
PxTL	NF	94H-D	54v9	-40H		81U90D5	v9CNo6C01	9400-AB	05CFecC01Av:uH	0
PxTb	NF	945v	54v9	-40H		81U90D5	v9CNo6C01	9400-AB	05CFecC01Av:uH	0
PxNL	NF	9451	54v9	-40H		81U90D5	v9CNo6C01	9400-AB	05CFecC01Av:uH	0
PxFL	NF	045-	54v9	-40H		81U90D5	v9CNo6C01	9400-AB	05CFecC01Av:uH	0
exTbLL	NF	0415	54v9	-40H		81U90D5	v9CNo6C01	9400-AB	05CFecC01Av:uH	0
PxdEL	NF	0400	54v9	-40H		81U90D5	v9CNo6C01	9400-AB	05CFecC01Av:uH	0
qtxTbLL	NF	0405	54v9	-40H		81U90D5	v9CNo6C01	9400-AB	05CFecC01Av:uH	0
PxFoL	NF	94v-	54v9	-40H		81U90D5	v9CNo6C01	9400-AB	05CFecC01Av:uH	0
Px/rFL	NF	945uu	54v9	-40H		81U90D5	v9CNo6C01	9400-AB	05CFecC01Av:uH	0
Px/eFL	NF	941DD	54v9	-40H		81U90D5	v9CNo6C01	9400-AB	05CFecC01Av:uH	0
Som7pEei APxTLIPxTb	NF	945v	54v9	-40H		81U90D5	v9CNo6C01	9400-AB	05CFecC01Av:uH	0

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
0vSvCPx8b	vb	DH4	A59ACA059		81U90D5	v9CNo6C01	9400-AB	05CFecC01Av:uH	0
0vSuCPx21L	vb	-O4v	A59ACA059		81U90D5	v9CNo6C01	9400-AB	05CFecC01Av:uH	0
0vSOCPx2KL	vb	D14u	A59ACA059		81U90D5	v9CNo6C01	9400-AB	05CFecC01Av:uH	0
0-TuCPx21b	vb	Du4H	A59ACA059		81U90D5	v9CNo6C01	9400-AB	05CFecC01Av:uH	0
0vSuCPxTL	vb	-D4v	A59ACA059		81U90D5	v9CNo6C01	9400-AB	05CFecC01Av:uH	0
0vS-CPxTb	vb	Du4l	A59ACA059		81U90D5	v9CNo6C01	9400-AB	05CFecC01Av:uH	0
0vS5CPxNL	vb	1040	A59ACA059		81U90D5	v9CNo6C01	9400-AB	05CFecC01Av:uH	0
0vSuCPxFL	vb	HD49	A59ACA059		81U90D5	v9CNo6C01	9400-AB	05CFecC01Av:uH	0
ivC exTbLL	vb	H14u	A59ACA059		81U90D5	v9CNo6C01	9400-AB	05CFecC01Av:uH	0
0vSuCPxdEL	vb	HD40	A59ACA059		81U90D5	v9CNo6C01	9400-AB	05CFecC01Av:uH	0
i5CqtxTbLL	vb	H94H	A59ACA059		81U90D5	v9CNo6C01	9400-AB	05CFecC01Av:uH	0
0vSuCPxFoL	vb	HD4	A59ACA059		81U90D5	v9CNo6C01	9400-AB	05CFecC01Av:uH	0
0vSuCPx/eFL	vb	OH4O	A59ACA059	2	81U90D5	v9CNo6C01	9400-AB	05CFecC01Av:uH	0

FBACFetectpoEABpmptAWWWWWWWWWWWWW BTFACBpmptAofAFetectpoEAWWWWWWWWWWWW BSBCdSBCABoRerAoEtroMpmptAChKKerAoEtroMpmptA WheEAeKortei ,APx21b,APxTLAEi APxTbAEcMi eAothApEearAEi ArnaEchei Ap omer. 4WWWWWWWW

BTQACBpmptAofAnaEtptatpoEAWWWWWWWWWWWW 3e.nMAeKortei AoAheAFB4WWWWWWWWWWWWWWWWWWWWWWWWWWWWWW TEMAheApEearAp omerAp AeKortei AorANMotherAEaMte. 4WWWWWWWWWWWWWWWWWWWWWWWW

Sample ID: IR54-EB-111917 | **Modified EPA Method 537**

Client Data

Name: SH2 AHpMM
Project: PxLb
atrpl : Lqueous
FateASoMActei : 0. CNoDC01A02:99

Laboratory Data

Ba7AbamKNe: 019015-C01
FateA6ecepDei :AA 2-CNoDC01A9. :3v
SoMmn: E8HAS0-

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PxEb	NF	24-90	54v3	-4 .		E1O90. 5	39CNoDC01	9400AB	09CFecC01A20:35	0
PxHl L	NF	24U5	54v3	-4 .		E1O90. 5	39CNoDC01	9400AB	09CFecC01A20:35	0
PxHKL	NF	94vvU	54v3	-4 .		E1O90. 5	39CNoDC01	9400AB	09CFecC01A20:35	0
PxHl b	NF	049v	54v3	-4 .		E1O90. 5	39CNoDC01	9400AB	09CFecC01A20:35	0
PxTL	NF	94130	54v3	-4 .		E1O90. 5	39CNoDC01	9400AB	09CFecC01A20:35	0
PxTb	NF	94 9v	54v3	-4 .		E1O90. 5	39CNoDC01	9400AB	09CFecC01A20:35	0
PxNL	NF	94 09	54v3	-4 .		E1O90. 5	39CNoDC01	9400AB	09CFecC01A20:35	0
PxFL	NF	04v1	54v3	-4 .		E1O90. 5	39CNoDC01	9400AB	09CFecC01A20:35	0
exTbLL	NF	04-5	54v3	-4 .		E1O90. 5	39CNoDC01	9400AB	09CFecC01A20:35	0
Pxd nL	NF	040-	54v3	-4 .		E1O90. 5	39CNoDC01	9400AB	09CFecC01A20:35	0
8txTbLL	NF	045U	54v3	-4 .		E1O90. 5	39CNoDC01	9400AB	09CFecC01A20:35	0
PxFoL	NF	94-. 9	54v3	-4 .		E1O90. 5	39CNoDC01	9400AB	09CFecC01A20:35	0
Px/ rFL	NF	94555	54v3	-4 .		E1O90. 5	39CNoDC01	9400AB	09CFecC01A20:35	0
Px/ eFL	NF	94-U-	54v3	-4 .		E1O90. 5	39CNoDC01	9400AB	09CFecC01A20:35	0
Som7pmei APxTLIPxTb	NF	94 9v	54v3	-4 .		E1O90. 5	39CNoDC01	9400AB	09CFecC01A20:35	0

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
03S3CPxEb	wb	09-	A59ACA059		E1O90. 5	39CNoDC01	9400AB	09CFecC01A20:35	0
03S2CPxHl L	wb	092	A59ACA059		E1O90. 5	39CNoDC01	9400AB	09CFecC01A20:35	0
03SUCPxHKL	wb	. . 4	A59ACA059		E1O90. 5	39CNoDC01	9400AB	09CFecC01A20:35	0
0-T2CPxHl b	wb	099	A59ACA059		E1O90. 5	39CNoDC01	9400AB	09CFecC01A20:35	0
03S2CPxTL	wb	-. 41	A59ACA059		E1O90. 5	39CNoDC01	9400AB	09CFecC01A20:35	0
03S-CPxTb	wb	-34	A59ACA059		E1O90. 5	39CNoDC01	9400AB	09CFecC01A20:35	0
03S5CPxNL	wb	-949	A59ACA059		E1O90. 5	39CNoDC01	9400AB	09CFecC01A20:35	0
03S2CPxFL	wb	v240	A59ACA059		E1O90. 5	39CNoDC01	9400AB	09CFecC01A20:35	0
i 3C exTbLL	wb	-54	A59ACA059		E1O90. 5	39CNoDC01	9400AB	09CFecC01A20:35	0
03S2CPxd nL	wb	vv4v	A59ACA059		E1O90. 5	39CNoDC01	9400AB	09CFecC01A20:35	0
i 5C8txTbLL	wb	-U49	A59ACA059		E1O90. 5	39CNoDC01	9400AB	09CFecC01A20:35	0
03S2CPxFoL	wb	-940	A59ACA059		E1O90. 5	39CNoDC01	9400AB	09CFecC01A20:35	0
03S2CPx/ eFL	wb	. 94	A59ACA059		E1O90. 5	39CNoDC01	9400AB	09CFecC01A20:35	0

FBACFAetectponABmptAAAAAAAAAAAAAAAAAAAAAAAAA BTFACBmptAofAFetectponAAAAAAAAAAAAAAAAAAAAAAAAA BSBCdSBCBoRerAcontroMApmptACuKKerAcontroMApmptA WhenAeKortei ,APxHl b,APxTLAani APxTbAncMi eAothAlpnearAani Aranchei Asomers4AAAAAAAAAAAAAA

BTQACBmptAofAquantptatponAAAAAAAAAAAAAAAAAAAAAAAA 6esuMsAeKortei AoAheAFB4AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA TnMAheAlpnearAsomerAsAeKortei AorAMAotherAanaMtes4AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA

Sample ID: IR86-EB-111917 **Modified EPA Method 537**

Client Data				Laboratory Data			
Name:	SH2 AHpMM	atrpl :	Lqueous	Ba7AbamKMe:	019015-C0-	SoMmn:	E8HAS0-
Project:	PxLb	FateASoMMctei :	0. CNoDC01A02:09	FateA6ecepDei :AA	2-CNoDC01A9. :3v		

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PxEb	NF	04 5	54C3	-4l2		E1U90. 5	39CNoDC01	94005AB	09CF ecC01A20:Ov	0
PxHl L	NF	24B-	54C3	-4l2		E1U90. 5	39CNoDC01	94005AB	09CF ecC01A20:Ov	0
PxHKL	NF	94vCO	54C3	-4l2		E1U90. 5	39CNoDC01	94005AB	09CF ecC01A20:Ov	0
PxHl b	NF	0493	54C3	-4l2		E1U90. 5	39CNoDC01	94005AB	09CF ecC01A20:Ov	0
PxTL	NF	94l09	54C3	-4l2		E1U90. 5	39CNoDC01	94005AB	09CF ecC01A20:Ov	0
PxTb	NF	94-9	54C3	-4l2		E1U90. 5	39CNoDC01	94005AB	09CF ecC01A20:Ov	0
PxNL	NF	94-3	54C3	-4l2		E1U90. 5	39CNoDC01	94005AB	09CF ecC01A20:Ov	0
PxFL	NF	04v2	54C3	-4l2		E1U90. 5	39CNoDC01	94005AB	09CF ecC01A20:Ov	0
exTbLL	NF	04 9	54C3	-4l2		E1U90. 5	39CNoDC01	94005AB	09CF ecC01A20:Ov	0
Pxd nL	NF	040O	54C3	-4l2		E1U90. 5	39CNoDC01	94005AB	09CF ecC01A20:Ov	0
8txTbLL	NF	04O.	54C3	-4l2		E1U90. 5	39CNoDC01	94005AB	09CF ecC01A20:Ov	0
PxFoL	NF	94 vO	54C3	-4l2		E1U90. 5	39CNoDC01	94005AB	09CF ecC01A20:Ov	0
Px/ rFL	NF	9453.	54C3	-4l2		E1U90. 5	39CNoDC01	94005AB	09CF ecC01A20:Ov	0
Px/ eFL	NF	94 23	54C3	-4l2		E1U90. 5	39CNoDC01	94005AB	09CF ecC01A20:Ov	0
Som7pmei APxTLIPxTb	NF	94-9	54C3	-4l2		E1U90. 5	39CNoDC01	94005AB	09CF ecC01A20:Ov	0

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
03S3CPxEb	vb	09-	A59ACA059		E1U90. 5	39CNoDC01	94005AB	09CF ecC01A20:Ov	0
03S2CPxHl L	vb	000	A59ACA059		E1U90. 5	39CNoDC01	94005AB	09CF ecC01A20:Ov	0
03SOCPxHKL	vb	09-	A59ACA059		E1U90. 5	39CNoDC01	94005AB	09CF ecC01A20:Ov	0
0-T2CPxHl b	vb	020	A59ACA059		E1U90. 5	39CNoDC01	94005AB	09CF ecC01A20:Ov	0
03S2CPxTL	vb	093	A59ACA059		E1U90. 5	39CNoDC01	94005AB	09CF ecC01A20:Ov	0
03S-CPxTb	vb	. 14O	A59ACA059		E1U90. 5	39CNoDC01	94005AB	09CF ecC01A20:Ov	0
03S5CPxNL	vb	-. 4v	A59ACA059		E1U90. 5	39CNoDC01	94005AB	09CF ecC01A20:Ov	0
03S2CPxFL	vb	124	A59ACA059		E1U90. 5	39CNoDC01	94005AB	09CF ecC01A20:Ov	0
i 3C exTbLL	vb	09.	A59ACA059		E1U90. 5	39CNoDC01	94005AB	09CF ecC01A20:Ov	0
03S2CPxd nL	vb	. 04v	A59ACA059		E1U90. 5	39CNoDC01	94005AB	09CF ecC01A20:Ov	0
i 5C8txTbLL	vb	. -4B	A59ACA059		E1U90. 5	39CNoDC01	94005AB	09CF ecC01A20:Ov	0
03S2CPxFoL	vb	1. 45	A59ACA059		E1U90. 5	39CNoDC01	94005AB	09CF ecC01A20:Ov	0
03S2CPx/ eFL	vb	v245	A59ACA059		E1U90. 5	39CNoDC01	94005AB	09CF ecC01A20:Ov	0

FBACF etectponABpmpt BTFACBpmptAofAF etectponA BSBCl SBCBoRerAcontroMApmptACuKKerAcontroMApmptA WhenAeKortei ,APxHl b,APxTLAni APxTbAncMi eAothApnearAni Aranchei Apsomers4

BTQACBpmptAofAquantptatponA 6esuMsAeKortei AoAheAF B4 TnMAheApnearAsomerAsAeKortei AorAN6otherAnaMtes4

Vista Analytical Laboratory

Sample ID: IR86-FB-111717 | **Modified EPA Method 537**

Client Data				**Laboratory Data**			
Name:	S2u A2pMM	atrpl :	Lsneon.	Ba7AbamKMe:	019015-C0H	SoMmE:	8q2 AS0-
Project:	PxLb	FateASoMMctei :	01CNoDC01A01:69	FateAS ecepDei :AA	u-CNoDC01A0H6v		

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
Px8b	NF	04H9	5469	-40H		81U90H5	69CNoDC01	940-AB	09CFecC01Au0:51	0
Px21L	NF	u460	5469	-40H		81U90H5	69CNoDC01	940-AB	09CFecC01Au0:51	0
Px2KL	NF	94vu1	5469	-40H		81U90H5	69CNoDC01	940-AB	09CFecC01Au0:51	0
Px21b	NF	0490	5469	-40H		81U90H5	69CNoDC01	940-AB	09CFecC01Au0:51	0
PxTL	NF	94vH0	5469	-40H		81U90H5	69CNoDC01	940-AB	09CFecC01Au0:51	0
PxTb	NF	94 5v	5469	-40H		81U90H5	69CNoDC01	940-AB	09CFecC01Au0:51	0
PxNL	NF	94 v9	5469	-40H		81U90H5	69CNoDC01	940-AB	09CFecC01Au0:51	0
PxFL	NF	045-	5469	-40H		81U90H5	69CNoDC01	940-AB	09CFecC01Au0:51	0
exTbLL	NF	0415	5469	-40H		81U90H5	69CNoDC01	940-AB	09CFecC01Au0:51	0
PxdEL	NF	0400	5469	-40H		81U90H5	69CNoDC01	940-AB	09CFecC01Au0:51	0
qtxTbLL	NF	0405	5469	-40H		81U90H5	69CNoDC01	940-AB	09CFecC01Au0:51	0
PxFoL	NF	94 C0	5469	-40H		81U90H5	69CNoDC01	940-AB	09CFecC01Au0:51	0
Px/rFL	NF	945uO	5469	-40H		81U90H5	69CNoDC01	940-AB	09CFecC01Au0:51	0
Px/eFL	NF	94 90	5469	-40H		81U90H5	69CNoDC01	940-AB	09CFecC01Au0:51	0
Som7pEei APxTLIPxTb	NF	94 5v	5469	-40H		81U90H5	69CNoDC01	940-AB	09CFecC01Au0:51	0

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
06S6CPx8b	vb	09H	A59ACA059		81U90H5	69CNoDC01	940-AB	09CFecC01Au0:51	0
06SuCPx21L	vb	095	A59ACA059		81U90H5	69CNoDC01	940-AB	09CFecC01Au0:51	0
06SOCPx2KL	vb	096	A59ACA059		81U90H5	69CNoDC01	940-AB	09CFecC01Au0:51	0
0-TuCPx21b	vb	H046	A59ACA059		81U90H5	69CNoDC01	940-AB	09CFecC01Au0:51	0
06SuCPxTL	vb	-H4	A59ACA059		81U90H5	69CNoDC01	940-AB	09CFecC01Au0:51	0
06S-CPxTb	vb	09O	A59ACA059		81U90H5	69CNoDC01	940-AB	09CFecC01Au0:51	0
06S5CPxNL	vb	H94	A59ACA059		81U90H5	69CNoDC01	940-AB	09CFecC01Au0:51	0
06SuCPxFL	vb	-949	A59ACA059		81U90H5	69CNoDC01	940-AB	09CFecC01Au0:51	0
i6C exTbLL	vb	090	A59ACA059		81U90H5	69CNoDC01	940-AB	09CFecC01Au0:51	0
06SuCPxdEL	vb	-O4	A59ACA059		81U90H5	69CNoDC01	940-AB	09CFecC01Au0:51	0
i5CqtxTbLL	vb	--49	A59ACA059		81U90H5	69CNoDC01	940-AB	09CFecC01Au0:51	0
06SuCPxFoL	vb	H64	A59ACA059		81U90H5	69CNoDC01	940-AB	09CFecC01Au0:51	0
06SuCPx/eFL	vb	vO4	A59ACA059		81U90H5	69CNoDC01	940-AB	09CFecC01Au0:51	0

FBACFetectpoEABmpmtA BTFACBmpmtAofAFetectpoEA BSBCISBCABoRerAsoEtroMApmptACAKKerAsoEtroMApmptA WheEAteKortei ,APx21b,APxTLAEi APxTbAEcMi eAToth ApEearAEi ATraEchei Apomer. 4
BTQACBmpmtAofAnaEtptatpoEA 3e.nMAteKortei AoAheAFB4 TEMAheApEearApomerApAteKortei AorANAotherAEaMte. 4

Sample ID: IR54-IDW-AQ-111917

Modified EPA Method 537

Client Data

Name: C2 HM 2 ill
Project: PFAS

Matrix: Aqueous
Date Collected: 16-Nov-17 19:30

Laboratory Data

Lab Sample: 1701758-H0
Date Received: H8-Nov-17 06:3.

Column: BE2 C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	1780	1K6.	5K28	8K78		B74 0165	30-Nov-17	0K19 L	10-Dec-17 HH08	1
PF2 xA	7900	HBK6	59K8	87K8	D	B74 0165	30-Nov-17	0K19 L	1H-Dec-17 H0:H5	10
PF2 pA	1360	0K96	5K28	8K78		B74 0165	30-Nov-17	0K19 L	10-Dec-17 HH08	1
PF2 xS	1. . 00	10K9	59K8	87K8	D	B74 0165	30-Nov-17	0K19 L	1H-Dec-17 H0:H5	10
PFOA	. 950	7K19	59K8	87K8	D	B74 0165	30-Nov-17	0K19 L	1H-Dec-17 H0:H5	10
PFOS	5680	8K8.	59K8	87K8	D	B74 0165	30-Nov-17	0K19 L	1H-Dec-17 H0:H5	10
PFNA	100	0K886	5K28	8K78		B74 0165	30-Nov-17	0K19 L	10-Dec-17 HH08	1
PFDA	5K3.	1K.9	5K28	8K78	J	B74 0165	30-Nov-17	0K19 L	10-Dec-17 HH08	1
MeFOSAA	ND	1K81	5K28	8K78		B74 0165	30-Nov-17	0K19 L	10-Dec-17 HH08	1
PFUnA	ND	1K15	5K28	8K78		B74 0165	30-Nov-17	0K19 L	10-Dec-17 HH08	1
EtFOSAA	ND	1K50	5K28	8K78		B74 0165	30-Nov-17	0K19 L	10-Dec-17 HH08	1
PFDoA	ND	0K8. 6	5K28	8K78		B74 0165	30-Nov-17	0K19 L	10-Dec-17 HH08	1
PFTrDA	ND	0K59H	5K28	8K78		B74 0165	30-Nov-17	0K19 L	10-Dec-17 HH08	1
PFTeDA	ND	0K8H6	5K28	8K78		B74 0165	30-Nov-17	0K19 L	10-Dec-17 HH08	1
Combined PFOA/PFOS	1H900	0K88.	5K28	8K78		B74 0165	30-Nov-17	0K19 L	10-Dec-17 HH08	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	1H5	50 - 150		B74 0165	30-Nov-17	0K19 L	10-Dec-17 HH08	1
13CH-PF2 xA	IS	105	50 - 150	D	B74 0165	30-Nov-17	0K19 L	1H-Dec-17 H0:H5	10
13C9-PF2 pA	IS	110	50 - 150		B74 0165	30-Nov-17	0K19 L	10-Dec-17 HH08	1
18OH-PF2 xS	IS	63K3	50 - 150	D	B74 0165	30-Nov-17	0K19 L	1H-Dec-17 H0:H5	10
13CH-PFOA	IS	119	50 - 150	D	B74 0165	30-Nov-17	0K19 L	1H-Dec-17 H0:H5	10
13C8-PFOS	IS	1H6	50 - 150	D	B74 0165	30-Nov-17	0K19 L	1H-Dec-17 H0:H5	10
13C5-PFNA	IS	85K7	50 - 150		B74 0165	30-Nov-17	0K19 L	10-Dec-17 HH08	1
13CH-PFDA	IS	88K0	50 - 150		B74 0165	30-Nov-17	0K19 L	10-Dec-17 HH08	1
d3-MeFOSAA	IS	8HK8	50 - 150		B74 0165	30-Nov-17	0K19 L	10-Dec-17 HH08	1
13CH-PFUnA	IS	7HK1	50 - 150		B74 0165	30-Nov-17	0K19 L	10-Dec-17 HH08	1
d5-EtFOSAA	IS	73K8	50 - 150		B74 0165	30-Nov-17	0K19 L	10-Dec-17 HH08	1
13CH-PFDoA	IS	6HK3	50 - 150		B74 0165	30-Nov-17	0K19 L	10-Dec-17 HH08	1
13CH-PFTeDA	IS	77K0	50 - 150		B74 0165	30-Nov-17	0K19 L	10-Dec-17 HH08	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation
LCL-UCL- Lower control limit - upper control limit
Results reported to the DLK
When reported, PF2 xS, PFOA and PFOS include both linear and branched isomersK
Only the linear isomer is reported for all other analytesK

| Contract_ID | DO_CTO_Number | Phase | Installation_ID | Sample_Name | CHOM_Code | Analysis_Group | Analytical_Method | PRC_Code | Lab_Code | Lab_Name | Leachate_Method | Sample_Basis | Extraction_Method | Result_Type | Lab_QC_Type | Sample_Medium | QC_Level | Date/Time_Collected | Date_Received | Leachate_Date | Leachate_Time | Extraction_Date | Extraction_Time | Analysis_Date | Analysis_Time | Lab_Sample_ID | Dilution | Run_Number | Percent_Moisture | Percent_Lipid | Chem_Name | Analyte_ID | Analyte_Value | Original_Analyte_Value | Result_Units | Lab_Qualifier | Validator_Qualifier | QC_Column_Type | Analysis_Result_Type | Result_Narrative | QC_Control_Limit_Code | QC_Accuracy_Lower | QC_Accuracy_Lower | Control_Limit_Date | QC_Narrative | MDL | Detection_Limit | DOM_Version | DL | LOD | LOQ | EDQ | Analysis_Batch | Validator_Name | Val_Date |
|---|---|---

Contract_ID	DOI_CTO_Number	Phase	Installation_ID	Sample_Name	QVOM_Code	Analysis_Group	Analytical_Method	PRG_Code	Lab_Code	Lab_Name	Leachate_Method	Sample_Basis	Extraction_Method	Result_Type	Lab_QC_Type	Sample_Medium	SC_Level	Date/Time_Collected	Date_Received	Leachate_Date	Leachate_Time	Extraction_Date	Extraction_Time	Analysis_Date	Analysis_Time	Lab_Sample_ID	Dilution	Run_Number	Percent_Moisture	Percent_Lipid	Chem_Name	Analyte_ID	Analyte_Value	Original_Analyte_Value	Result_Units	Lab_Qualifier	Validator_Qualifier	QC_Column_Type	Analysis_Result_Type	Result_Narrative	QC_Control_Limit_Code	QC_Accuracy_Lower	QC_Accuracy_Lower	Control_Limit_Date	QC_Narrative	MDL	Detection_Limit	DQM_Version	DL	LOD	LOQ	EDQ	Analysis_Batch	Validator_Name	Val_Date
962470160000	W037		CAMP_LEJEUNE_MCB_	USTA54141-GW13	NONS	SVOA	537_MOD	ORG	MSTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W		11/7/2017 09:40	11/28/2017			11/28/2017		12/7/2017	12:42:00	20171210	19:09:00	17017587-07	1	999			13CB-PFOS	13CB-PFOS	89.4		PCT_REC			PR	S	SLSA	150	50																	17017587	57U0027		
962470160000	W037		CAMP_LEJEUNE_MCB_	USTA54141-GW13	NONS	SVOA	537_MOD	ORG	MSTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W		11/7/2017 09:40	11/28/2017			11/28/2017		12/7/2017	12:42:00	20171210	19:09:00	17017587-07	1	999			13C5-PFNA	13C5-PFNA	81.4		PCT_REC			PR	S	SLSA	150	50																	17017587	57U0027		
962470160000	W037		CAMP_LEJEUNE_MCB_	USTA54141-GW13	NONS	SVOA	537_MOD	ORG	MSTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W		11/7/2017 09:40	11/28/2017			11/28/2017		12/7/2017	12:42:00	20171210	19:09:00	17017587-07	1	999			13C2-PFDA	13C2-PFDA	86.5		PCT_REC			PR	S	SLSA	150	50																	17017587	57U0027		
962470160000	W037		CAMP_LEJEUNE_MCB_	USTA54141-GW13	NONS	SVOA	537_MOD	ORG	MSTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W		11/7/2017 09:40	11/28/2017			11/28/2017		12/7/2017	12:42:00	20171210	19:09:00	17017587-07	1	999			4:4MeFOSAA	4:4MeFOSAA	108		PCT_REC			PR	S	SLSA	150	50																	17017587	57U0027		
962470160000	W037		CAMP_LEJEUNE_MCB_	USTA54141-GW13	NONS	SVOA	537_MOD	ORG	MSTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W		11/7/2017 09:40	11/28/2017			11/28/2017		12/7/2017	12:42:00	20171210	19:09:00	17017587-07	1	999			13C4-PFHpA	13C4-PFHpA	103		PCT_REC			PR	S	SLSA	150	50																	17017587	57U0027		
962470160000	W037		CAMP_LEJEUNE_MCB_	USTA54141-GW13	NONS	SVOA	537_MOD	ORG	MSTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W		11/7/2017 09:40	11/28/2017			11/28/2017		12/7/2017	12:42:00	20171210	19:09:00	17017587-07	1	999			4:4MeFOSAA	4:4MeFOSAA	116		PCT_REC			PR	S	SLSA	150	50																	17017587	57U0027		
962470160000	W037		CAMP_LEJEUNE_MCB_	USTA54141-GW13	NONS	SVOA	537_MOD	ORG	MSTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W		11/7/2017 09:40	11/28/2017			11/28/2017		12/7/2017	12:42:00	20171210	19:09:00	17017587-07	1	999			13C2-PFDoA	13C2-PFDoA	123		PCT_REC			PR	S	SLSA	150	50																	17017587	57U0027		
962470160000	W037		CAMP_LEJEUNE_MCB_	USTA54141-GW13	NONS	SVOA	537_MOD	ORG	MSTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W		11/7/2017 09:40	11/28/2017			11/28/2017		12/7/2017	12:42:00	20171210	19:09:00	17017587-07	1	999			13C2-PFTeDA	13C2-PFTeDA	114		PCT_REC			PR	S	SLSA	150	50																	17017587	57U0027		
962470160000	W037		CAMP_LEJEUNE_MCB_	R66-GWS3-170	NONS	SVOA	537_MOD	ORG	MSTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W		11/3/2017 11:30	11/28/2017			11/28/2017		12/7/2017	12:42:00	20171210	19:21:00	17017587-08	1	999			Perfluorobutanesulfonic acid (PFBS)	375-73-5	118		NG_L			PR	TRG																			17017587	57U0027		
962470160000	W037		CAMP_LEJEUNE_MCB_	R66-GWS3-170	NONS	SVOA	537_MOD	ORG	MSTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W		11/3/2017 11:30	11/28/2017			11/28/2017		12/7/2017	12:42:00	20171210	19:21:00	17017587-08	1	999			PFHxA	307-24-4	153		NG_L			PR	TRG																			17017587	57U0027		
962470160000	W037		CAMP_LEJEUNE_MCB_	R66-GWS3-170	NONS	SVOA	537_MOD	ORG	MSTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W		11/3/2017 11:30	11/28/2017			11/28/2017		12/7/2017	12:42:00	20171210	19:21:00	17017587-08	1	999			Perfluoroheptanoic acid (PFHpA)	375-85-9	22.8		NG_L			PR	TRG																			17017587	57U0027		
962470160000	W037		CAMP_LEJEUNE_MCB_	R66-GWS3-170	NONS	SVOA	537_MOD	ORG	MSTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W		11/3/2017 11:30	11/28/2017			11/28/2017		12/7/2017	12:42:00	20171210	19:21:00	17017587-08	1	999			Perfluoroheptanesulfonic acid (PFHpS)	355-46-4	844		NG_L			PR	TRG																			17017587	57U0027		
962470160000	W037		CAMP_LEJEUNE_MCB_	R66-GWS3-170	NONS	SVOA	537_MOD	ORG	MSTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W		11/3/2017 11:30	11/28/2017			11/28/2017		12/7/2017	12:42:00	20171210	19:21:00	17017587-08	1	999			PFHpA	375-85-9	83.7		NG_L			PR	TRG																			17017587	57U0027		
962470160000	W037		CAMP_LEJEUNE_MCB_	R66-GWS3-170	NONS	SVOA	537_MOD	ORG	MSTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W		11/3/2017 11:30	11/28/2017			11/28/2017		12/7/2017	12:42:00	20171210	19:21:00	17017587-08	1	999			Perfluorooctanesulfonic acid (PFOS)	1763-23-1	253		NG_L			PR	TRG																			17017587	57U0027		
962470160000	W037		CAMP_LEJEUNE_MCB_	R66-GWS3-170	NONS	SVOA	537_MOD	ORG	MSTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W		11/3/2017 11:30	11/28/2017			11/28/2017		12/7/2017	12:42:00	20171210	19:21:00	17017587-08	1	999			Perfluorononanoic acid (PFNA)	375-95-1	5.53		NG_L	J2		PR	TRG																			17017587	57U0027		
962470160000	W037		CAMP_LEJEUNE_MCB_	R66-GWS3-170	NONS	SVOA	537_MOD	ORG	MSTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W		11/3/2017 11:30	11/28/2017			11/28/2017		12/7/2017	12:42:00	20171210	19:21:00	17017587-08	1	999			PFOA	335-76-2	5.53		NG_L	J2		PR	TRG																			17017587	57U0027		
962470160000	W037		CAMP_LEJEUNE_MCB_	R66-GWS3-170	NONS	SVOA	537_MOD	ORG	MSTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W		11/3/2017 11:30	11/28/2017			11/28/2017		12/7/2017	12:42:00	20171210	19:21:00	17017587-08	1	999			MeFOSAA	2355-31-9	5.53		NG_L	J2		PR	TRG																			17017587	57U0027		
962470160000	W037		CAMP_LEJEUNE_MCB_	R66-GWS3-170	NONS	SVOA	537_MOD	ORG	MSTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W		11/3/2017 11:30	11/28/2017			11/28/2017		12/7/2017	12:42:00	20171210	19:21:00	17017587-08	1	999			PFUnA	2058-94-8	5.53		NG_L	J2		PR	TRG																			17017587	57U0027		
962470160000	W037		CAMP_LEJEUNE_MCB_	R66-GWS3-170	NONS	SVOA	537_MOD	ORG	MSTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W		11/3/2017 11:30	11/28/2017			11/28/2017		12/7/2017	12:42:00	20171210	19:21:00	17017587-08	1	999			EtFOSAA	2991-50-6	5.53		NG_L	J2		PR	TRG																			17017587	57U0027		
962470160000	W037		CAMP_LEJEUNE_MCB_	R66-GWS3-170	NONS	SVOA	537_MOD	ORG	MSTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W		11/3/2017 11:30	11/28/2017			11/28/2017		12/7/2017	12:42:00	20171210	19:21:00	17017587-08	1	999			PFDoA	307-55-1	5.53		NG_L	J2		PR	TRG																			17017587	57U0027		
962470160000	W037		CAMP_LEJEUNE_MCB_	R66-GWS3-170	NONS	SVOA	537_MOD	ORG	MSTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W		11/3/2017 11:30	11/28/2017			11/28/2017		12/7/2017	12:42:00	20171210	19:21:00	17017587-08	1	999			PFTeDA	72629-94-8	5.53		NG_L	J2		PR	TRG																			17017587	57U0027		
962470160000	W037		CAMP_LEJEUNE_MCB_	R66-GWS3-170	NONS	SVOA	537_MOD	ORG	MSTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W		11/3/2017 11:30	11/28/2017			11/28/2017		12/7/2017	12:42:00	20171210	19:21:00	17017587-08	1	999			PFTeDA	376-06-7	5.53		NG_L	J2		PR	TRG																			17017587	57U0027		
962470160000	W037		CAMP_LEJEUNE_MCB_	R66-GWS3-170	NONS	SVOA	537_MOD	ORG	MSTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W		11/3/2017 11:30	11/28/2017			11/28/2017		12/7/2017	12:42:00	20171210	19:21:00	17017587-08	1	999			Combined PFOA/PFOS	335-67-1	5.53		NG_L	J2		PR	TRG																			17017587	57U0027		
962470160000	W037		CAMP_LEJEUNE_MCB_	R66-GWS3-170	NONS	SVOA	537_MOD	ORG	MSTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W		11/3/2017 11:30	11/28/2017			11/28/2017		12/7/2017	12:42:00	20171210	19:21:00	17017587-08	1	999			PFDoA	307-55-1	5.53		NG_L	J2		PR	TRG																			17017587	57U0027		
962470160000	W037		CAMP_LEJEUNE_MCB_	R66-GWS3-170	NONS	SVOA	537_MOD	ORG	MSTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W		11/3/2017 11:30	11/28/2017			11/28/2017		12/7/2017	12:42:00	20171210	19:21:00	17017587-08	1	999			PFUnA	2058-94-8	5.53		NG_L	J2		PR	TRG																			17017587	57U0027		
962470160000	W037		CAMP_LEJEUNE_MCB_	R66-GWS3-170	NONS	SVOA	537_MOD	ORG	MSTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W		11/3/2017 11:30	11/28/2017			11/28/2017		12/7/2017	12:42:00	20171210	19:21:00	17017587-08	1	999			PFOSAA	2058-09-7	5.53		NG_L	J2		PR	TRG																			17017587	57U0027		
962470160000	W037		CAMP_LEJEUNE_MCB_	R66-GWS3-170	NONS	SVOA	537_MOD	ORG	MSTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W		11/3/2017 11:30	11/28/2017			11/28/2017		12/7/2017	12:42:00	20171210	19:21:00	17017587-08	1	999			PFDoA	307-55-1	5.53		NG_L	J2		PR	TRG																			17017587	57U0027		
962470160000	W037		CAMP_LEJEUNE_MCB_	R66-GWS3-170	NONS	SVOA	537_MOD	ORG	MSTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W		11/3/2017 11:30	11/28/2017			11/28/2017		12/7/2017	12:42:00	20171210	19:21:00	17017587-08	1	999			PFTeDA	72629-94-8	5.53		NG_L	J2		PR	TRG																			17017587	57U0027		
962470160000	W037		CAMP_LEJEUNE_MCB_	R66-GWS3-170	NONS	SVOA	537_MOD	ORG	MSTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W		11/3/2017 11:30	11/28/2017			11/28/2017		12/7/2017	12:42:00	20171210	19:21:00	17017587-08	1	999			PFTeDA	376-06-7	5.53		NG_L	J2		PR	TRG																			17017587	57U0027		
962470160000	W037		CAMP_LEJEUNE_MCB_	R66-GWS3-170	NONS	SVOA	537_MOD	ORG	MSTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W		11/3/2017 11:30	11/28/2017			11/28/2017		12/7/2017	12:42:00	20171210	19:21:00	17017587-08	1	999			Combined PFOA/PFOS	335-67-1	96.7		NG_L	J2		PR	TRG																			17017587	57U0027		
962470160000	W037		CAMP_LEJEUNE_MCB_	R66-GWS3-170	NONS	SVOA	537_MOD	ORG	MSTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W		11/3/2017 11:30	11/28/2017			11/28/2017		12/7/2017	12:42:00	20171210	19:21:00	17017587-08	1	999			13C3-PFBS	13C3-PFBS	109		PCT_REC			PR	S	SLSA	150	50																	17017587	57U0027		
962470160000	W037		CAMP_LEJEUNE_MCB_	R66-GWS3-170	NONS	SVOA	537_MOD	ORG	MSTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W		11/3/2017 11:30	11/28/2017			11/28/2017		12/7/2017	12:42:00	20171210	19:21:00	17017587-08	1	999			13C4-PFHpA	13C4-PFHpA	113		PCT_REC			PR	S	SLSA	150	50																	17017587	57U0027		
962470160000	W037		CAMP_LEJEUNE_MCB_	R66-GWS3-170	NONS	SVOA	537_MOD	ORG	MSTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W		11/3/2017 11:30	11/28/2017			11/28/2017		12/7/2017	12:42:00	20171210	19:21:00	17017587-08	1	999			13C4-PFHpA	13C4-PFHpA	113		PCT_REC			PR	S	SLSA	150	50																	17017587	57U0027		
962470160000	W037		CAMP_LEJEUNE_MCB_	R66-GWS3-170	NONS	SVOA	537_MOD	ORG	MSTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W		11/3/2017 11:30	11/28/2017			11/28/2017		12/7/2017	12:42:00	20171210	19:21:00	17017587-08	1	999			13C4-PFOA	13C4-PFOA	96.0		PCT_REC			PR	S	SLSA	150	50																	17017587	57U0027		
962470160000	W037		CAMP_LEJEUNE_MCB_	R66-GWS3-170	NONS	SVOA	537_MOD	ORG	MSTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W		11/3/2017 11:30	11/28/2017			11/28/2017		12/7/2017	12:42:00	20171210	19:21:00	17017587-08	1	999			Combined PFOA/PFOS	335-67-1	96.7		NG_L	J2		PR	TRG																			17017587	57U0027		
962470160000	W037		CAMP_LEJEUNE_MCB_	R66-GWS3-170	NONS	SVOA	537_MOD	ORG	MSTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W		11/3/2017 11:30	11/28/2017			11/28/2017		12/7/2017	12:42:00	20171210	19:21:00	17017587-08	1	999			13C8-PFOS	13C8-PFOS	94.6		PCT_REC			PR	S	SLSA	150	50																	17017587	57U0027		
962470160000	W037		CAMP_LEJEUNE_MCB_	R66-GWS3-170	NONS	SVOA	537_MOD	ORG	MSTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W		11/3/2017 11:30	11/28/2017			11/28/2017		12/7/2017	12:42:00	20171210	19:21:00	17017587-08	1	999			13C2-PFUnA	13C2-PFUnA	102		PCT_REC			PR	S	SLSA	150	50																	17017587	57U0027		
962470160000	W037		CAMP_LEJEUNE_MCB_	R66-GWS3-170	NONS	SVOA	537_MOD	ORG	MSTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W		11/3/2017 11:30	11/28/2017			11/28/2017		12/7/2017	12:42:00	20171210	19:21:00	17017587-08	1	999			13C5-PFNA	13C5-PFNA	105		PCT_REC			PR	S	SLSA	150	50																	17017587	57U0027		
962470160000	W037		CAMP_LEJEUNE_MCB_	R66-GWS3-170	NONS	SVOA	537_MOD	ORG	MSTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W		11/3/2017 11:30	11/28/2017			11/28/2017		12/7/2017	12:42:00	20171210	19:21:00	17017587-08	1	999			13C2-PFDA	13C2-PFDA	93.4		PCT_REC			PR	S	SLSA	150	50																	17017587	57U0027		
962470160000	W037		CAMP_LEJEUNE_MCB_	R66-GWS3-170	NONS	SVOA	537_MOD	ORG	MSTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W		11/3/2017 11:30	11/28/2017			11/28/2017		12/7/2017	12:42:00	20171210	19:21:00	17017587-08	1	999			d3-MeFOSAA	2355-31-9	102		PCT_REC			PR	S	SLSA	150	50																	17017587	57U0027		
962470160000	W037		CAMP_LEJEUNE_MCB_	R66-GWS3-170	NONS	SVOA	537_MOD	ORG	MSTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W		11/3/2017 11:30	11/28/2017			11/28/2017		12/7/2017	12:42:00	20171210	19:21:00	17017587-08	1	999			d5-EtFOSAA	2991-50-6	117		PCT_REC			PR	S	SLSA	150	50																	17017587	57U0027		
962470160000	W037		CAMP_LEJEUNE_MCB_	R66-GWS3-170	NONS	SVOA	537_MOD	ORG	MSTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W		11/3/2017 11:30	11/28/2017			11/28/2017		12/7/2017	12:42:00	20171210	19:21:00	17017587-08	1	999			d3-PFHxS	362-07-2	92.9		PCT_REC			PR	S	SLSA	150	50																	17017587	57U0027		
962470160000	W037		CAMP_LEJEUNE_MCB_	R66-GWS3-170	NONS	SVOA	537_MOD	ORG	MSTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W		11/3/2017 11:30	11/28/2017			11/28/2017		12/7/2017	12:42:00	20171210	19:21:00	17017587-08	1	999			13C4-PFHpA	13C4-PFHpA	113		PCT_REC			PR	S	SLSA	150	50																	17017587	57U0027		
962470160000	W037		CAMP_LEJEUNE_MCB_	R66-GWS3-170	NONS	SVOA	537_MOD	ORG	MSTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W		11/3/2017 11:30	11/28/2017			11/28/2017		12/7/2017	12:42:00	20171210	19:21:00	17017587-08	1	999			13C5-PFNA	13C5-PFNA	120		PCT_REC			PR	S	SLSA	150	50																	17017587	57U0027		
962470160000	W037		CAMP_LEJEUNE_MCB_	R66-GWS3-170	NONS	SVOA	537_MOD	ORG	MSTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W		11/3/2017 11:30	11/28/2017			11/28/2017		12/7/2017	12:42:00	20171210	19:21:00	17017587-08	1	999			13C2-PFHxS	13C2-PFHxS	109		PCT_REC			PR	S	SLSA	150	50																	17017587	57U0027		
962470160000	W037		CAMP_LEJEUNE_MCB_	R66-GWS3-170	NONS	SVOA	537_MOD	ORG	MSTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W		11/3/2017 11:30	11/28/2017			11/28/2017		12/7/2017	12:42:00	20171210	19:21:00	17017587-08	1	999			13C4-PFOA	13C4-PFOA	107		PCT_REC			PR	S	SLSA	150	50																	17017587	57U0027		
962470160000	W037		CAMP_LEJEUNE_MCB_	R66-GWS3-170	NONS	SVOA	537_MOD	ORG	MSTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W		11/3/2017 11:30	11/28/2017			11/28/2017		12/7/2017	12:42:00	20171210	19:21:00	17017587-08	1	999			13C2-PFDoA	13C2-PFDoA	107		PCT_REC			PR	S	SLSA	150	50																	17017587	57U0027		
962470160000	W037		CAMP_LEJEUNE_MCB_	R66-GWS3-170	NONS	SVOA	537_MOD	ORG	MSTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W		11/3/2017 11:30	11/28/2017			11/28/2017		12/7/2017	12:42:00	20171210	19:21:00	17017587-08	1	999			13C2-PFUnA	13C2-PFUnA	101		PCT_REC			PR	S	SLSA	150	50																	17017587	57U0027		
962470160000	W037		CAMP_LEJEUNE_MCB_	R66-GWS3-170	NONS	SVOA	537_MOD	ORG	MSTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W		11/3/2017 11:30	11/28/2017			11/28/2017		12/7/2017	12:42:00	20171210	19:21:00	17017587-08	1	999			13C5-PFNA	13C5-PFNA	120		PCT_REC			PR	S	SLSA	150	50																	17017587	57U0027		
962470160000	W037		CAMP_LEJEUNE_MCB_	R66-GWS3-170	NONS	SVOA	537_MOD	ORG	MSTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W		11/3/2017 11:30	11/28/2017			11/28/2017		12/7/2017	12:42:00	20171210	19:21:00	17017587-08	1	999			13C2-PFDA	13C2-PFDA	88.9		PCT_REC			PR	S	SLSA	150	50																	17017587	57U0027		
962470160000	W037		CAMP_LEJEUNE_MCB_	R66-GWS3-170	NONS	SVOA	537_MOD	ORG	MSTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W		11/3/2017 11:30	11/28/2017			11/28/2017		12/7/2017	12:42:00	20171210	19:21:00	17017587-08	1	999			13C4-PFOA	13C4-PFOA	96.0		PCT_REC			PR	S	SLSA	150	50																	17017587	57U0027		
962470160000	W037		CAMP_LEJEUNE_MCB_	R66-GWS3-170	NONS	SVOA	537_MOD	ORG	MSTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W		11/3/2017 11:30	11/28/2017			11/28/2017		12/7/2017	12:42:00	20171210	19:21:00	17017587-08	1	999			Combined PFOA/PFOS	335-67-1	96.7		NG_L	J2		PR	TRG																			17017587	57U0027		
962470160000	W037		CAMP_LEJEUNE_MCB_	R66-GWS3-170	NONS	SVOA	537_MOD	ORG	MSTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W		11/3/2017 11:30	11/28/2017			11/28/2017		12/7/2017	12:42:00	20171210	19:21:00	17017587-08	1	999			13C3-PFBS	13C3-PFBS	109		PCT_REC			PR	S	SLSA	150	50																	17017587	57U0027		
962470160000	W037		CAMP_LEJEUNE_MCB_	R66-GWS3-170	NONS	SVOA	537_MOD	ORG	MSTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W		11/3/2017 11:30	11/28/2017			11/28/2017		12/7/2017	12:42:00	20171210	19:21:00	17017587-08	1	999			13C4-PFHpA	13C4-PFHpA	113		PCT_REC			PR	S	SLSA	150	50																	17017587	57U0027		
962470160000	W037		CAMP_LEJEUNE_MCB_	R66-GWS3-170	NONS	SVOA	537_MOD	ORG	MSTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W		11/3/2017 11:30	11/28/2017			11/28/2017		12/7/2017	12:42:00	20171210	19:21:00	17017587-08	1	999			13C4-PFOA	13C4-PFOA	96.0		PCT_REC			PR	S	SLSA	150	50																	17017587	57U0027		
962470160000	W037		CAMP_LEJEUNE_MCB_	R66-GWS3-170	NONS	SVOA	537_MOD	ORG	MSTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W		11/3/2017 11:30	11/28/2017			11/28/2017		12/7/2017	12:42:00	20171210	19:21:00	17017587-08

Contract_ID	DO_CTO_Number	Phase	Installation_ID	Sample_Name	CHOM_Code	Analysis_Group	Analytical_Method	PRG_Code	Lab_Code	Lab_Name	Leachate_Method	Sample_Basis	Extraction_Method	Result_Type	Lab_QC_Type	Sample_Medium	QC_Level	Date/Time_Collected	Date_Received	Leachate_Date	Leachate_Time	Extraction_Date	Extraction_Time	Analysis_Date	Analysis_Time	Lab_Sample_ID	Dilution	Run_Number	Percent_Moisture	Percent_Lipid	Chem_Name	Analyte_ID	Analyte_Value	Original_Analyte_Value	Result_Units	Lab_Qualifier	Validator_Qualifier	QC_Column_Type	Analysis_Result_Type	Result_Narrative	QC_Control_Limit_Code	QC_Accuracy_Lower	QC_Accuracy_Lower	Control_Limit_Date	QC_Narrative	MDL	Detection_Limit	ZAM_Version	DL	LOD	LOQ	EDQ	Analysis_Batch	Validator_Name	Val_Date
9624-701600000	W037		CAMP_LEJEUNE_MCB_	854-GW-0170	NONS	SVOA	537_MOD	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W		11/28/2017 13:40	11/28/2017			20171130	12:42:00	20171210	21:03:00	17071758-14	1	999			PFTeDA	376-06-7	5.39		NG_L	U		PR	TRG											5.3	0.532	5.39	8.62	17071758	57U0027		
9624-701600000	W037		CAMP_LEJEUNE_MCB_	854-GW-0170	NONS	SVOA	537_MOD	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W		11/28/2017 13:40	11/28/2017			20171130	12:42:00	20171210	21:03:00	17071758-14	1	999			Combined PFOA/PFOS	11030	5.39		NG_L	U		PR	TRG											5.3	0.870	5.39	8.62	17071758	57U0027		
9624-701600000	W037		CAMP_LEJEUNE_MCB_	854-GW-0170	NONS	SVOA	537_MOD	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	DL1	REG	W		11/28/2017 13:40	11/28/2017			20171211	12:42:00	20171212	19:52:00	17071758-14	10	999			13C5-PFBS	13C5-PFBS	120		PCT_REC	D		PR	S		SLSA	150	50						5.1				17071758	57U0027		
9624-701600000	W037		CAMP_LEJEUNE_MCB_	854-GW-0170	NONS	SVOA	537_MOD	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	DL1	REG	W		11/28/2017 13:40	11/28/2017			20171211	12:42:00	20171212	19:52:00	17071758-14	10	999			13C4-PFHpA	13C4-PFHpA	106		PCT_REC	D		PR	S		SLSA	150	50						5.1				17071758	57U0027		
9624-701600000	W037		CAMP_LEJEUNE_MCB_	854-GW-0170	NONS	SVOA	537_MOD	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	DL1	REG	W		11/28/2017 13:40	11/28/2017			20171211	12:42:00	20171212	19:52:00	17071758-14	10	999			13C4-PFHpA	13C4-PFHpA	111		PCT_REC	D		PR	S		SLSA	150	50						5.1				17071758	57U0027		
9624-701600000	W037		CAMP_LEJEUNE_MCB_	854-GW-0170	NONS	SVOA	537_MOD	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	DL1	REG	W		11/28/2017 13:40	11/28/2017			20171211	12:42:00	20171212	19:52:00	17071758-14	10	999			13C2-PFDA	13C2-PFDA	118		PCT_REC	D		PR	S		SLSA	150	50						5.1				17071758	57U0027		
9624-701600000	W037		CAMP_LEJEUNE_MCB_	854-GW-0170	NONS	SVOA	537_MOD	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	DL1	REG	W		11/28/2017 13:40	11/28/2017			20171211	12:42:00	20171212	19:52:00	17071758-14	10	999			13C8-PFOS	13C8-PFOS	99.9		PCT_REC	D		PR	S		SLSA	150	50						5.1				17071758	57U0027		
9624-701600000	W037		CAMP_LEJEUNE_MCB_	854-GW-0170	NONS	SVOA	537_MOD	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W		11/28/2017 13:40	11/28/2017			20171210	12:42:00	20171210	21:03:00	17071758-14	1	999			13C5-PFNA	13C5-PFNA	117		PCT_REC	D		PR	S		SLSA	150	50						5.1				17071758	57U0027		
9624-701600000	W037		CAMP_LEJEUNE_MCB_	854-GW-0170	NONS	SVOA	537_MOD	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W		11/28/2017 13:40	11/28/2017			20171210	12:42:00	20171210	21:03:00	17071758-14	1	999			13C2-PFDA	13C2-PFDA	109		PCT_REC	D		PR	S		SLSA	150	50						5.1				17071758	57U0027		
9624-701600000	W037		CAMP_LEJEUNE_MCB_	854-GW-0170	NONS	SVOA	537_MOD	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W		11/28/2017 13:40	11/28/2017			20171210	12:42:00	20171210	21:03:00	17071758-14	1	999			4:2 FTS	757124-72-4	103		PCT_REC	D		PR	S		SLSA	150	50						5.1				17071758	57U0027		
9624-701600000	W037		CAMP_LEJEUNE_MCB_	854-GW-0170	NONS	SVOA	537_MOD	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W		11/28/2017 13:40	11/28/2017			20171210	12:42:00	20171210	21:03:00	17071758-14	1	999			6:2 FTS	27619-97-2	120		PCT_REC	D		PR	S		SLSA	150	50						5.1				17071758	57U0027		
9624-701600000	W037		CAMP_LEJEUNE_MCB_	854-GW-0170	NONS	SVOA	537_MOD	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W		11/28/2017 13:40	11/28/2017			20171210	12:42:00	20171210	21:03:00	17071758-14	1	999			8:2 FTS	39108-34-4	112		PCT_REC	D		PR	S		SLSA	150	50						5.1				17071758	57U0027		
9624-701600000	W037		CAMP_LEJEUNE_MCB_	854-GW-0170	NONS	SVOA	537_MOD	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W		11/28/2017 13:40	11/28/2017			20171210	12:42:00	20171210	21:03:00	17071758-14	1	999			13C2-PFDoA	13C2-PFDoA	114		PCT_REC	D		PR	S		SLSA	150	50						5.1				17071758	57U0027		
9624-701600000	W037		CAMP_LEJEUNE_MCB_	854-GW-0170	NONS	SVOA	537_MOD	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W		11/28/2017 13:40	11/28/2017			20171210	12:42:00	20171210	21:03:00	17071758-14	1	999			13C2-PFTeDA	13C2-PFTeDA	113		PCT_REC	D		PR	S		SLSA	150	50						5.1				17071758	57U0027		
9624-701600000	W037		CAMP_LEJEUNE_MCB_	854-GW-0170	NONS	SVOA	537_MOD	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W		11/28/2017 13:40	11/28/2017			20171130	12:42:00	20171210	21:03:00	17071758-14	1	999			PFTeDA	376-06-7	5.39		NG_L	U		PR	TRG											5.1	0.532	5.39	8.62	17071758	57U0027		
9624-701600000	W037		CAMP_LEJEUNE_MCB_	854-GW-0170	NONS	SVOA	537_MOD	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	REG	W		11/28/2017 13:40	11/28/2017			20171130	12:42:00	20171210	21:03:00	17071758-14	1	999			Combined PFOA/PFOS	11030	5.39		NG_L	U		PR	TRG											5.1

| Contract_ID | DO_CTO_Number | Phase | Installation_ID | Sample_Name | CHOM_Code | Analysis_Group | Analytical_Method | PRC_Code | Lab_Code | Lab_Name | Leachate_Method | Sample_Basis | Extraction_Method | Result_Type | Lab_QC_Type | Sample_Medium | QC_Level | Date/Time_Collected | Date_Received | Leachate_Date | Leachate_Time | Extraction_Date | Extraction_Time | Analysis_Date | Analysis_Time | Lab_Sample_ID | Dilution | Run_Number | Percent_Moisture | Percent_Lipid | Chem_Name | Analyte_ID | Analyte_Value | Original_Analyte_Value | Result_Units | Lab_Qualifier | Validator_Qualifier | QC_Column_Type | Analysis_Result_Type | Result_Narrative | QC_Control_Limit_Code | QC_Accuracy_Lower | QC_Accuracy_Lower | Control_Limit_Date | QC_Narrative | MDL | Detection_Limit | SDM_Version | DL | LOD | LOQ | EDQ | Analysis_Batch | Validator_Name | Val_Date |
|---|---|---

ENVIRONMENTAL
Data Services, Inc.

DATA VALIDATION SUMMARY REPORT
MCB CAMP LEJEUNE, NORTH CAROLINA

Client: CH2M HILL, Inc., Virginia Beach, Virginia
SDG: 1701758
Laboratory: Vista Analytical Laboratory, El Dorado Hills, California
Site: MCB Camp Lejeune, CTO-WE37
Date: January 18, 2018

PFCs			
EDS ID	Client Sample ID	Laboratory Sample ID	Matrix
1	IR86-GW27-17D	1701758-01	Water
2	IR86-GW59-17D	1701758-02	Water
3	IR86-GW48-17D	1701758-03	Water
4	IR86-GW61-17D	1701758-04	Water
5	IR86-GW58-17D	1701758-05	Water
6	IR86-GW47-17D	1701758-06	Water
7	USTAS4141-GW13-17D	1701758-07	Water
8	IR86-GW53-17D	1701758-08	Water
9	IR86-GW53D-17D	1701758-09	Water
10	USTAS4141-GW17-17D	1701758-10	Water
10MS	USTAS4141-GW17-17DMS	1701758-10MS	Water
10MSD	USTAS4141-GW17-17DMSD	1701758-10MSD	Water
11	IR54-GW17-17D	1701758-11	Water
11MS	IR54-GW17-17DMS	1701758-11MS	Water
11MSD	IR54-GW17-17DMSD	1701758-11MSD	Water
12	IR54-GW15-17D	1701758-12	Water
13	IR54-GW15D-17D	1701758-13	Water
14	IR54-GW14-17D	1701758-14	Water
15	IR54-GW16-17D	1701758-15	Water
16	IR54-FB-111917	1701758-16	Water
17	IR54-EB-111917	1701758-17	Water
18	IR86-EB-111917	1701758-18	Water
19	IR86-FB-111717	1701758-19	Water

A full data validation was performed on the analytical data for fifteen water samples, two aqueous equipment blank samples, and two aqueous field blank samples collected on November 16-19, 2017 by CH2M HILL at the MCB Camp Lejeune site in North Carolina. The samples were analyzed under the EPA Method "Determination of Selected Perfluorinated Alkyl Acids in Drinking Water by Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS)".

Specific method references are as follows:

Analysis	*Method References*
PFCs	USEPA Method 537 Modified

The data have been validated according to the protocols and quality control (QC) requirements of the analytical method, and the U.S. Department of Defense (DoD) Quality Systems Manual (QSM), Version 5.0 (July 2013) and the USEPA National Functional Guidelines for Organic Data Review as follows:

- The USEPA "Contract Laboratories Program National Functional Guidelines for Superfund Organic Methods Data Review," January 2017;
- and the reviewer's professional judgment.

The following data quality indicators were reviewed for this report:

Organics

- Date Completeness, Case Narrative & Custody Documentation
- Holding times
- Liquid Chromatography/Mass Spectrometry (LC/MS) Tuning
- Initial and continuing calibration summaries
- Method blank and field QC blank contamination
- Matrix Spike/Matrix Spike Duplicate (MS/MSD) recoveries
- Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD) recoveries
- Internal standard area and retention time summary forms
- Target Compound Identification
- Compound Quantitation
- Field Duplicate sample precision

A full (Level IV) data validation was performed with this review including a recalculation of 10% of the detected results in the samples.

Data Usability Assessment

There were no rejections of data.

Overall the data is acceptable for the intended purposes as qualified for the data quality indicator criteria as detailed in this report.

Please note that any results qualified (U) due to blank contamination may be then qualified (J) due to another action. Therefore, the results may be qualified (UJ) due to the culmination of the blank contaminations and actions from other exceedances of QC criteria.

Perfluorinated Compounds (PFCs)

Data Completeness, Case Narrative & Custody Documentation

- The case narrative and chain-of-custody documentation were included in the data package as required. All criteria were met.

Holding Times

- All samples were extracted within 14 days for water samples and analyzed within 28 days.

LC/MS Tuning

- All criteria were met.

Initial Calibration

- All correlation coefficient and/or percent recovery (%R) criteria were met.

Continuing Calibration

- All percent recovery (%R) criteria were met.

Method Blank

- The method blanks were free of contamination.

Field QC Blank

- Field QC samples were free of contamination.

Blank ID	Compound	Conc. ng/L	Qualifier	Affected Samples
IR54-FB-111917	None - ND	-	-	-
IR54-EB-111917	None - ND	-	-	-
IR86-EB-111917	None - ND	-	-	-
IR86-FB-111717	None - ND	-	-	-

Matrix Spike/Matrix Spike Duplicate (MS/MSD) Recoveries

- The MS/MSD samples exhibited acceptable percent recoveries (%R) and RPD values except for the following.

MS/MSD Sample ID	Compound	MS %R/MSD %R/ RPD	Qualifier	Affected Samples
10	PFOS	OK/OK/41.4	None	For RPD Alone
	PFDoA	OK/OK/32.2	None	
11	PFHxA	OK/-70.2%/787	None	4X Rule
	PFHpA	OK/165%/OK	None	
	PFHxS	5.94%/-116%/222	None	
	PFOA	34.0%/32.0%/OK	None	10X Dilution
	PFOS	-198%/26.6%/262	None	4X Rule
	MeFOSSA	OK/OK/38.4	None	For RPD Alone

Laboratory Control Samples

- The LCS samples exhibited acceptable percent recoveries (%R).

Internal Standard (IS) Area Performance

- All internal standards met response and retention time (RT) criteria.

Target Compound Identification

- All mass spectra and quantitation criteria were met.

Compound Quantitation

- Several samples were analyzed at various dilutions for specific compounds due to high concentrations. The report limits were adjusted accordingly. No action was required.
- EDS Sample 15 exhibited a high concentration of PFHxS exceeding the calibration range of the instrument and was flagged (E) by the laboratory. The laboratory did not dilute and reanalyze the sample and this result has been qualified as estimated (J).
- EDS Samples 2, 4, and 16 were re-injected because they followed samples with high concentrations of target compounds and the laboratory was concerned with carry over. The re-injected results were reported. No action was taken on this basis.

Field Duplicate Sample Precision

- Field duplicate results are summarized below. The precision was acceptable.

Compound	IR86-GW53-17D ng/L	IR86-GW53D-17D ng/L	RPD	Qualifier
PFBS	118	120	2%	None
PFHxA	153	162	6%	
PFHpA	22.8	24.2	6%	
PFHxS	844	797	6%	
PFOA	63.7	74.1	15%	
PFOS	253	244	4%	
Combined PFOA/PFOS	317	318	0%	

Compound	IR54-GW15-17D ng/L	IR54-GW15D-17D ng/L	RPD	Qualifier
PFBS	244	268	9%	None
PFHxA	1430	1590	11%	
PFHpA	320	325	2%	
PFHxS	4170	4400	5%	
PFOA	2820	2850	1%	
PFOS	5150	4830	6%	
PFNA	72.6	64.9	11%	
Combined PFOA/PFOS	7970	7680	4%	

Please contact the undersigned at (757) 564-0090 if you have any questions or need further information.

Signed: Nancy Weaver Dated: 1/18/18

Nancy Weaver
Senior Chemist

Data Qualifier	Definition
U	The analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit.
J	The analyte is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
NJ	The analysis has been "tentatively identified" or "presumptively" as present and the associated numerical value is the estimated concentration in the samples.
UJ	The analyte was analyzed for but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.
R	The data are unusable. The sample results are rejected due to serious deficiencies in meeting QC criteria. The analyte may or may not be present in the samples.

Sample ID: IR86-GW27-17D — **Modified EPA Method 537**

Client Data

Name: CH2M Hill
Project: PFAS
Matrix: Aqueous
Date Collected: 16-Nov-17 19:30

Laboratory Data

Lab Sample: 1701758-01
Date Received: 28-Nov-17 09:36
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	612	2.05	5.73	9.18		B7K0195	30-Nov-17	0.109 L	10-Dec-17 18:02	1
PFHxA	1810	2.50	5.73	9.18		B7K0195	30-Nov-17	0.109 L	10-Dec-17 18:02	1
PFHpA	428	0.678	5.73	9.18		B7K0195	30-Nov-17	0.109 L	10-Dec-17 18:02	1
PFHxS	11800	10.9	57.3	91.8	D	B7K0195	30-Nov-17	0.109 L	12-Dec-17 18:44	10
PFOA	1030	0.747	5.73	9.18		B7K0195	30-Nov-17	0.109 L	10-Dec-17 18:02	1
PFOS	22100	9.26	57.3	91.8	D	B7K0195	30-Nov-17	0.109 L	12-Dec-17 18:44	10
PFNA	110	0.929	5.73	9.18		B7K0195	30-Nov-17	0.109 L	10-Dec-17 18:02	1
PFDA	6.43	1.71	5.73	9.18	J	B7K0195	30-Nov-17	0.109 L	10-Dec-17 18:02	1
MeFOSAA	ND	1.89	5.73	9.18		B7K0195	30-Nov-17	0.109 L	10-Dec-17 18:02	1
PFUnA	ND	1.20	5.73	9.18		B7K0195	30-Nov-17	0.109 L	10-Dec-17 18:02	1
EtFOSAA	ND	1.57	5.73	9.18		B7K0195	30-Nov-17	0.109 L	10-Dec-17 18:02	1
PFDoA	ND	0.909	5.73	9.18		B7K0195	30-Nov-17	0.109 L	10-Dec-17 18:02	1
PFTrDA	ND	0.567	5.73	9.18		B7K0195	30-Nov-17	0.109 L	10-Dec-17 18:02	1
PFTeDA	ND	0.866	5.73	9.18		B7K0195	30-Nov-17	0.109 L	10-Dec-17 18:02	1
Combined PFOA/PFOS	23100	0.926	5.73	9.18		B7K0195	30-Nov-17	0.109 L	10-Dec-17 18:02	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	114	50 - 150		B7K0195	30-Nov-17	0.109 L	10-Dec-17 18:02	1
13C2-PFHxA	IS	99.3	50 - 150		B7K0195	30-Nov-17	0.109 L	10-Dec-17 18:02	1
13C4-PFHpA	IS	94.8	50 - 150		B7K0195	30-Nov-17	0.109 L	10-Dec-17 18:02	1
18O2-PFHxS	IS	81.0	50 - 150	D	B7K0195	30-Nov-17	0.109 L	12-Dec-17 18:44	10
13C2-PFOA	IS	80.6	50 - 150		B7K0195	30-Nov-17	0.109 L	10-Dec-17 18:02	1
13C8-PFOS	IS	106	50 - 150	D	B7K0195	30-Nov-17	0.109 L	12-Dec-17 18:44	10
13C5-PFNA	IS	98.5	50 - 150		B7K0195	30-Nov-17	0.109 L	10-Dec-17 18:02	1
13C2-PFDA	IS	86.2	50 - 150		B7K0195	30-Nov-17	0.109 L	10-Dec-17 18:02	1
d3-MeFOSAA	IS	105	50 - 150		B7K0195	30-Nov-17	0.109 L	10-Dec-17 18:02	1
13C2-PFUnA	IS	85.9	50 - 150		B7K0195	30-Nov-17	0.109 L	10-Dec-17 18:02	1
d5-EtFOSAA	IS	102	50 - 150		B7K0195	30-Nov-17	0.109 L	10-Dec-17 18:02	1
13C2-PFDoA	IS	90.5	50 - 150		B7K0195	30-Nov-17	0.109 L	10-Dec-17 18:02	1
13C2-PFTeDA	IS	92.8	50 - 150		B7K0195	30-Nov-17	0.109 L	10-Dec-17 18:02	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation
LCL-UCL- Lower control limit - upper control limit
Results reported to the DL.
When reported, PFHxS, PFOA and PFOS include both linear and branched isomers.
Only the linear isomer is reported for all other analytes.

12/1/17/18

Vista Analytical Laboratory 2

Sample ID: IR86-GW59-17D — **Modified EPA Method 537**

Client Data

Name: CH2M Hill
Project: PFAS
Matrix: Aqueous
Date Collected: 16-Nov-17 17:05

Laboratory Data

Lab Sample: 1701758-02
Date Received: 28-Nov-17 09:36
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	221	2.05	5.73	9.16		B7K0195	30-Nov-17	0.109 L	12-Dec-17 21:10	1
PFHxA	302	2.50	5.73	9.16		B7K0195	30-Nov-17	0.109 L	12-Dec-17 21:10	1
PFHpA	82.2	0.677	5.73	9.16		B7K0195	30-Nov-17	0.109 L	12-Dec-17 21:10	1
PFHxS	1320	1.08	5.73	9.16		B7K0195	30-Nov-17	0.109 L	12-Dec-17 21:10	1
PFOA	164	0.745	5.73	9.16		B7K0195	30-Nov-17	0.109 L	12-Dec-17 21:10	1
PFOS	2770	4.62	28.7	45.8	D	B7K0195	30-Nov-17	0.109 L	12-Dec-17 18:56	5
PFNA	3.21	0.927	5.73	9.16	J	B7K0195	30-Nov-17	0.109 L	12-Dec-17 21:10	1
PFDA	ND	1.71	5.73	9.16		B7K0195	30-Nov-17	0.109 L	12-Dec-17 21:10	1
MeFOSAA	ND	1.89	5.73	9.16		B7K0195	30-Nov-17	0.109 L	12-Dec-17 21:10	1
PFUnA	ND	1.20	5.73	9.16		B7K0195	30-Nov-17	0.109 L	12-Dec-17 21:10	1
EtFOSAA	ND	1.57	5.73	9.16		B7K0195	30-Nov-17	0.109 L	12-Dec-17 21:10	1
PFDoA	ND	0.907	5.73	9.16		B7K0195	30-Nov-17	0.109 L	12-Dec-17 21:10	1
PFTrDA	ND	0.566	5.73	9.16		B7K0195	30-Nov-17	0.109 L	12-Dec-17 21:10	1
PFTeDA	ND	0.864	5.73	9.16		B7K0195	30-Nov-17	0.109 L	12-Dec-17 21:10	1
Combined PFOA/PFOS	2930	0.924	5.73	9.16		B7K0195	30-Nov-17	0.109 L	12-Dec-17 21:10	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	80.8	50 - 150		B7K0195	30-Nov-17	0.109 L	12-Dec-17 21:10	1
13C2-PFHxA	IS	82.4	50 - 150		B7K0195	30-Nov-17	0.109 L	12-Dec-17 21:10	1
13C4-PFHpA	IS	87.6	50 - 150		B7K0195	30-Nov-17	0.109 L	12-Dec-17 21:10	1
18O2-PFHxS	IS	87.5	50 - 150		B7K0195	30-Nov-17	0.109 L	12-Dec-17 21:10	1
13C2-PFOA	IS	76.1	50 - 150		B7K0195	30-Nov-17	0.109 L	12-Dec-17 21:10	1
13C8-PFOS	IS	76.3	50 - 150	D	B7K0195	30-Nov-17	0.109 L	12-Dec-17 18:56	5
13C5-PFNA	IS	66.5	50 - 150		B7K0195	30-Nov-17	0.109 L	12-Dec-17 21:10	1
13C2-PFDA	IS	61.5	50 - 150		B7K0195	30-Nov-17	0.109 L	12-Dec-17 21:10	1
d3-MeFOSAA	IS	63.1	50 - 150		B7K0195	30-Nov-17	0.109 L	12-Dec-17 21:10	1
13C2-PFUnA	IS	79.0	50 - 150		B7K0195	30-Nov-17	0.109 L	12-Dec-17 21:10	1
d5-EtFOSAA	IS	55.4	50 - 150		B7K0195	30-Nov-17	0.109 L	12-Dec-17 21:10	1
13C2-PFDoA	IS	94.9	50 - 150		B7K0195	30-Nov-17	0.109 L	12-Dec-17 21:10	1
13C2-PFTeDA	IS	97.7	50 - 150		B7K0195	30-Nov-17	0.109 L	12-Dec-17 21:10	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation
LCL-UCL- Lower control limit - upper control limit
Results reported to the DL.
When reported, PFHxS, PFOA and PFOS include both linear and branched isomers.
Only the linear isomer is reported for all other analytes.

NW 11/7/18

Vista Analytical Laboratory 3

Sample ID: IR86-GW48-17D

Modified EPA Method 537

Client Data

Name: CH2M Hill
Project: PFAS
Matrix: Aqueous
Date Collected: 16-Nov-17 19:10

Laboratory Data

Lab Sample: 1701758-03
Date Received: 28-Nov-17 09:36
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	6560	39.5	111	177	D	B7K0195	30-Nov-17	0.113 L	12-Dec-17 19:07	20
PFHxA	5060	48.2	111	177	D	B7K0195	30-Nov-17	0.113 L	12-Dec-17 19:07	20
PFHpA	1070	0.653	5.53	8.84		B7K0195	30-Nov-17	0.113 L	10-Dec-17 18:25	1
PFHxS	26100	20.9	111	177	D	B7K0195	30-Nov-17	0.113 L	12-Dec-17 19:07	20
PFOA	1620	0.719	5.53	8.84		B7K0195	30-Nov-17	0.113 L	10-Dec-17 18:25	1
PFOS	6600	17.8	111	177	D	B7K0195	30-Nov-17	0.113 L	12-Dec-17 19:07	20
PFNA	22.7	0.895	5.53	8.84		B7K0195	30-Nov-17	0.113 L	10-Dec-17 18:25	1
PFDA	ND	1.65	5.53	8.84		B7K0195	30-Nov-17	0.113 L	10-Dec-17 18:25	1
MeFOSAA	ND	1.82	5.53	8.84		B7K0195	30-Nov-17	0.113 L	10-Dec-17 18:25	1
PFUnA	ND	1.16	5.53	8.84		B7K0195	30-Nov-17	0.113 L	10-Dec-17 18:25	1
EtFOSAA	ND	1.51	5.53	8.84		B7K0195	30-Nov-17	0.113 L	10-Dec-17 18:25	1
PFDoA	ND	0.875	5.53	8.84		B7K0195	30-Nov-17	0.113 L	10-Dec-17 18:25	1
PFTrDA	ND	0.546	5.53	8.84		B7K0195	30-Nov-17	0.113 L	10-Dec-17 18:25	1
PFTeDA	ND	0.834	5.53	8.84		B7K0195	30-Nov-17	0.113 L	10-Dec-17 18:25	1
Combined PFOA/PFOS	8220	0.891	5.53	8.84		B7K0195	30-Nov-17	0.113 L	10-Dec-17 18:25	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	110	50 - 150	D	B7K0195	30-Nov-17	0.113 L	12-Dec-17 19:07	20
13C2-PFHxA	IS	121	50 - 150	D	B7K0195	30-Nov-17	0.113 L	12-Dec-17 19:07	20
13C4-PFHpA	IS	124	50 - 150		B7K0195	30-Nov-17	0.113 L	10-Dec-17 18:25	1
18O2-PFHxS	IS	91.5	50 - 150	D	B7K0195	30-Nov-17	0.113 L	12-Dec-17 19:07	20
13C2-PFOA	IS	96.0	50 - 150		B7K0195	30-Nov-17	0.113 L	10-Dec-17 18:25	1
13C8-PFOS	IS	107	50 - 150	D	B7K0195	30-Nov-17	0.113 L	12-Dec-17 19:07	20
13C5-PFNA	IS	91.9	50 - 150		B7K0195	30-Nov-17	0.113 L	10-Dec-17 18:25	1
13C2-PFDA	IS	98.4	50 - 150		B7K0195	30-Nov-17	0.113 L	10-Dec-17 18:25	1
d3-MeFOSAA	IS	110	50 - 150		B7K0195	30-Nov-17	0.113 L	10-Dec-17 18:25	1
13C2-PFUnA	IS	91.4	50 - 150		B7K0195	30-Nov-17	0.113 L	10-Dec-17 18:25	1
d5-EtFOSAA	IS	108	50 - 150		B7K0195	30-Nov-17	0.113 L	10-Dec-17 18:25	1
13C2-PFDoA	IS	114	50 - 150		B7K0195	30-Nov-17	0.113 L	10-Dec-17 18:25	1
13C2-PFTeDA	IS	112	50 - 150		B7K0195	30-Nov-17	0.113 L	10-Dec-17 18:25	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation
LCL-UCL- Lower control limit - upper control limit
Results reported to the DL

When reported, PFHxS, PFOA and PFOS include both linear and branched isomers
Only the linear isomer is reported for all other analytes

nw 1/17/18

Vista Analytical Laboratory 4

Sample ID: IR86-GW61-17D

Modified EPA Method 537

Client Data

Name: CH2M Hill
Project: PFAS
Matrix: Aqueous
Date Collected: 16-Nov-17 15:45

Laboratory Data

Lab Sample: 1701758-04
Date Received: 28-Nov-17 09:36
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	164	1.91	5.34	8.55		B7K0195	30-Nov-17	0.117 L	12-Dec-17 21:32	1
PFHxA	199	2.33	5.34	8.55		B7K0195	30-Nov-17	0.117 L	12-Dec-17 21:32	1
PFHpA	41.1	0.632	5.34	8.55		B7K0195	30-Nov-17	0.117 L	12-Dec-17 21:32	1
PFHxS	471	1.01	5.34	8.55		B7K0195	30-Nov-17	0.117 L	12-Dec-17 21:32	1
PFOA	81.4	0.696	5.34	8.55		B7K0195	30-Nov-17	0.117 L	12-Dec-17 21:32	1
PFOS	33.8	0.862	5.34	8.55		B7K0195	30-Nov-17	0.117 L	12-Dec-17 21:32	1
PFNA	ND	0.866	5.34	8.55		B7K0195	30-Nov-17	0.117 L	12-Dec-17 21:32	1
PFDA	ND	1.59	5.34	8.55		B7K0195	30-Nov-17	0.117 L	12-Dec-17 21:32	1
MeFOSAA	ND	1.76	5.34	8.55		B7K0195	30-Nov-17	0.117 L	12-Dec-17 21:32	1
PFUnA	ND	1.12	5.34	8.55		B7K0195	30-Nov-17	0.117 L	12-Dec-17 21:32	1
EtFOSAA	ND	1.46	5.34	8.55		B7K0195	30-Nov-17	0.117 L	12-Dec-17 21:32	1
PFDoA	ND	0.846	5.34	8.55		B7K0195	30-Nov-17	0.117 L	12-Dec-17 21:32	1
PFTrDA	ND	0.528	5.34	8.55		B7K0195	30-Nov-17	0.117 L	12-Dec-17 21:32	1
PFTeDA	ND	0.807	5.34	8.55		B7K0195	30-Nov-17	0.117 L	12-Dec-17 21:32	1
Combined PFOA/PFOS	115	0.862	5.34	8.55		B7K0195	30-Nov-17	0.117 L	12-Dec-17 21:32	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	98.9	50 - 150		B7K0195	30-Nov-17	0.117 L	12-Dec-17 21:32	1
13C2-PFHxA	IS	109	50 - 150		B7K0195	30-Nov-17	0.117 L	12-Dec-17 21:32	1
13C4-PFHpA	IS	115	50 - 150		B7K0195	30-Nov-17	0.117 L	12-Dec-17 21:32	1
18O2-PFHxS	IS	115	50 - 150		B7K0195	30-Nov-17	0.117 L	12-Dec-17 21:32	1
13C2-PFOA	IS	110	50 - 150		B7K0195	30-Nov-17	0.117 L	12-Dec-17 21:32	1
13C8-PFOS	IS	95.0	50 - 150		B7K0195	30-Nov-17	0.117 L	12-Dec-17 21:32	1
13C5-PFNA	IS	91.7	50 - 150		B7K0195	30-Nov-17	0.117 L	12-Dec-17 21:32	1
13C2-PFDA	IS	102	50 - 150		B7K0195	30-Nov-17	0.117 L	12-Dec-17 21:32	1
d3-MeFOSAA	IS	98.9	50 - 150		B7K0195	30-Nov-17	0.117 L	12-Dec-17 21:32	1
13C2-PFUnA	IS	126	50 - 150		B7K0195	30-Nov-17	0.117 L	12-Dec-17 21:32	1
d5-EtFOSAA	IS	84.1	50 - 150		B7K0195	30-Nov-17	0.117 L	12-Dec-17 21:32	1
13C2-PFDoA	IS	131	50 - 150		B7K0195	30-Nov-17	0.117 L	12-Dec-17 21:32	1
13C2-PFTeDA	IS	141	50 - 150		B7K0195	30-Nov-17	0.117 L	12-Dec-17 21:32	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation
LCL-UCL- Lower control limit - upper control limit
Results reported to the DL
When reported, PFHxS, PFOA and PFOS include both linear and branched isomers.
Only the linear isomer is reported for all other analytes.

nw 1.7.18

Vista Analytical Laboratory 5

Sample ID: IR86-GW58-17D — **Modified EPA Method 537**

Client Data

Name: CH2M Hill
Project: PFAS
Matrix: Aqueous
Date Collected: 16-Nov-17 17:55

Laboratory Data

Lab Sample: 1701758-05
Date Received: 28-Nov-17 09:36
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	92.5	1.91	5.34	8.52		B7K0195	30-Nov-17	0.117 L	10-Dec-17 18:47	1
PFHxA	156	2.32	5.34	8.52		B7K0195	30-Nov-17	0.117 L	10-Dec-17 18:47	1
PFHpA	29.4	0.630	5.34	8.52		B7K0195	30-Nov-17	0.117 L	10-Dec-17 18:47	1
PFHxS	856	1.01	5.34	8.52		B7K0195	30-Nov-17	0.117 L	10-Dec-17 18:47	1
PFOA	61.2	0.693	5.34	8.52		B7K0195	30-Nov-17	0.117 L	10-Dec-17 18:47	1
PFOS	800	0.860	5.34	8.52		B7K0195	30-Nov-17	0.117 L	10-Dec-17 18:47	1
PFNA	2.45	0.863	5.34	8.52	J	B7K0195	30-Nov-17	0.117 L	10-Dec-17 18:47	1
PFDA	ND	1.59	5.34	8.52		B7K0195	30-Nov-17	0.117 L	10-Dec-17 18:47	1
MeFOSAA	ND	1.76	5.34	8.52		B7K0195	30-Nov-17	0.117 L	10-Dec-17 18:47	1
PFUnA	ND	1.12	5.34	8.52		B7K0195	30-Nov-17	0.117 L	10-Dec-17 18:47	1
EtFOSAA	ND	1.46	5.34	8.52		B7K0195	30-Nov-17	0.117 L	10-Dec-17 18:47	1
PFDoA	ND	0.844	5.34	8.52		B7K0195	30-Nov-17	0.117 L	10-Dec-17 18:47	1
PFTrDA	ND	0.526	5.34	8.52		B7K0195	30-Nov-17	0.117 L	10-Dec-17 18:47	1
PFTeDA	ND	0.804	5.34	8.52		B7K0195	30-Nov-17	0.117 L	10-Dec-17 18:47	1
Combined PFOA/PFOS	861	0.860	5.34	8.52		B7K0195	30-Nov-17	0.117 L	10-Dec-17 18:47	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	105	50 - 150		B7K0195	30-Nov-17	0.117 L	10-Dec-17 18:47	1
13C2-PFHxA	IS	98.4	50 - 150		B7K0195	30-Nov-17	0.117 L	10-Dec-17 18:47	1
13C4-PFHpA	IS	107	50 - 150		B7K0195	30-Nov-17	0.117 L	10-Dec-17 18:47	1
18O2-PFHxS	IS	95.6	50 - 150		B7K0195	30-Nov-17	0.117 L	10-Dec-17 18:47	1
13C2-PFOA	IS	77.8	50 - 150		B7K0195	30-Nov-17	0.117 L	10-Dec-17 18:47	1
13C8-PFOS	IS	113	50 - 150		B7K0195	30-Nov-17	0.117 L	10-Dec-17 18:47	1
13C5-PFNA	IS	120	50 - 150		B7K0195	30-Nov-17	0.117 L	10-Dec-17 18:47	1
13C2-PFDA	IS	95.4	50 - 150		B7K0195	30-Nov-17	0.117 L	10-Dec-17 18:47	1
d3-MeFOSAA	IS	93.2	50 - 150		B7K0195	30-Nov-17	0.117 L	10-Dec-17 18:47	1
13C2-PFUnA	IS	79.4	50 - 150		B7K0195	30-Nov-17	0.117 L	10-Dec-17 18:47	1
d5-EtFOSAA	IS	97.0	50 - 150		B7K0195	30-Nov-17	0.117 L	10-Dec-17 18:47	1
13C2-PFDoA	IS	83.9	50 - 150		B7K0195	30-Nov-17	0.117 L	10-Dec-17 18:47	1
13C2-PFTeDA	IS	88.0	50 - 150		B7K0195	30-Nov-17	0.117 L	10-Dec-17 18:47	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation
LCL-UCL- Lower control limit - upper control limit
Results reported to the DL
When reported, PFHxS, PFOA and PFOS include both linear and branched isomers.
Only the linear isomer is reported for all other analytes.

12/17/18

Vista Analytical Laboratory 6

Sample ID: IR86-GW47-17D — **Modified EPA Method 537**

Client Data

Name: CH2M Hill
Project: PFAS
Matrix: Aqueous
Date Collected: 17-Nov-17 17:10

Laboratory Data

Lab Sample: 1701758-06
Date Received: 28-Nov-17 09:36
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	111	1.93	5.39	8.63		B7K0195	30-Nov-17	0.116 L	10-Dec-17 18:58	1
PFHxA	271	2.35	5.39	8.63		B7K0195	30-Nov-17	0.116 L	10-Dec-17 18:58	1
PFHpA	61.6	0.638	5.39	8.63		B7K0195	30-Nov-17	0.116 L	10-Dec-17 18:58	1
PFHxS	1000	1.02	5.39	8.63		B7K0195	30-Nov-17	0.116 L	10-Dec-17 18:58	1
PFOA	116	0.703	5.39	8.63		B7K0195	30-Nov-17	0.116 L	10-Dec-17 18:58	1
PFOS	661	0.871	5.39	8.63		B7K0195	30-Nov-17	0.116 L	10-Dec-17 18:58	1
PFNA	3.00	0.874	5.39	8.63	J	B7K0195	30-Nov-17	0.116 L	10-Dec-17 18:58	1
PFDA	ND	1.61	5.39	8.63		B7K0195	30-Nov-17	0.116 L	10-Dec-17 18:58	1
MeFOSAA	ND	1.78	5.39	8.63		B7K0195	30-Nov-17	0.116 L	10-Dec-17 18:58	1
PFUnA	ND	1.13	5.39	8.63		B7K0195	30-Nov-17	0.116 L	10-Dec-17 18:58	1
EtFOSAA	ND	1.48	5.39	8.63		B7K0195	30-Nov-17	0.116 L	10-Dec-17 18:58	1
PFDoA	ND	0.855	5.39	8.63		B7K0195	30-Nov-17	0.116 L	10-Dec-17 18:58	1
PFTrDA	ND	0.533	5.39	8.63		B7K0195	30-Nov-17	0.116 L	10-Dec-17 18:58	1
PFTeDA	ND	0.815	5.39	8.63		B7K0195	30-Nov-17	0.116 L	10-Dec-17 18:58	1
Combined PFOA/PFOS	777	0.871	5.39	8.63		B7K0195	30-Nov-17	0.116 L	10-Dec-17 18:58	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	102	50 - 150		B7K0195	30-Nov-17	0.116 L	10-Dec-17 18:58	1
13C2-PFHxA	IS	97.3	50 - 150		B7K0195	30-Nov-17	0.116 L	10-Dec-17 18:58	1
13C4-PFHpA	IS	90.9	50 - 150		B7K0195	30-Nov-17	0.116 L	10-Dec-17 18:58	1
18O2-PFHxS	IS	109	50 - 150		B7K0195	30-Nov-17	0.116 L	10-Dec-17 18:58	1
13C2-PFOA	IS	88.6	50 - 150		B7K0195	30-Nov-17	0.116 L	10-Dec-17 18:58	1
13C8-PFOS	IS	86.6	50 - 150		B7K0195	30-Nov-17	0.116 L	10-Dec-17 18:58	1
13C5-PFNA	IS	110	50 - 150		B7K0195	30-Nov-17	0.116 L	10-Dec-17 18:58	1
13C2-PFDA	IS	105	50 - 150		B7K0195	30-Nov-17	0.116 L	10-Dec-17 18:58	1
d3-MeFOSAA	IS	90.8	50 - 150		B7K0195	30-Nov-17	0.116 L	10-Dec-17 18:58	1
13C2-PFUnA	IS	103	50 - 150		B7K0195	30-Nov-17	0.116 L	10-Dec-17 18:58	1
d5-EtFOSAA	IS	89.8	50 - 150		B7K0195	30-Nov-17	0.116 L	10-Dec-17 18:58	1
13C2-PFDoA	IS	73.1	50 - 150		B7K0195	30-Nov-17	0.116 L	10-Dec-17 18:58	1
13C2-PFTeDA	IS	91.4	50 - 150		B7K0195	30-Nov-17	0.116 L	10-Dec-17 18:58	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation
LCL-UCL- Lower control limit - upper control limit
Results reported to the DL
When reported, PFHxS, PFOA and PFOS include both linear and branched isomers.
Only the linear isomer is reported for all other analytes.

Nov 17 7 18

Vista Analytical Laboratory 7

Sample ID: USTAS4141-GW13-17D **Modified EPA Method 537**

Client Data

Name: CH2M Hill
Project: PFAS
Matrix: Aqueous
Date Collected: 17-Nov-17 09:40

Laboratory Data

Lab Sample: 1701758-07
Date Received: 28-Nov-17 09:36
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	86.0	2.02	5.63	9.05		B7K0195	30-Nov-17	0.111 L	10-Dec-17 19:09	1
PFHxA	273	2.47	5.63	9.05		B7K0195	30-Nov-17	0.111 L	10-Dec-17 19:09	1
PFHpA	116	0.668	5.63	9.05		B7K0195	30-Nov-17	0.111 L	10-Dec-17 19:09	1
PFHxS	1710	1.07	5.63	9.05		B7K0195	30-Nov-17	0.111 L	10-Dec-17 19:09	1
PFOA	170	0.736	5.63	9.05		B7K0195	30-Nov-17	0.111 L	10-Dec-17 19:09	1
PFOS	314	0.913	5.63	9.05		B7K0195	30-Nov-17	0.111 L	10-Dec-17 19:09	1
PFNA	3.32	0.916	5.63	9.05	J	B7K0195	30-Nov-17	0.111 L	10-Dec-17 19:09	1
PFDA	ND	1.69	5.63	9.05		B7K0195	30-Nov-17	0.111 L	10-Dec-17 19:09	1
MeFOSAA	ND	1.87	5.63	9.05		B7K0195	30-Nov-17	0.111 L	10-Dec-17 19:09	1
PFUnA	ND	1.19	5.63	9.05		B7K0195	30-Nov-17	0.111 L	10-Dec-17 19:09	1
EtFOSAA	ND	1.55	5.63	9.05		B7K0195	30-Nov-17	0.111 L	10-Dec-17 19:09	1
PFDoA	ND	0.896	5.63	9.05		B7K0195	30-Nov-17	0.111 L	10-Dec-17 19:09	1
PFTrDA	ND	0.559	5.63	9.05		B7K0195	30-Nov-17	0.111 L	10-Dec-17 19:09	1
PFTeDA	ND	0.854	5.63	9.05		B7K0195	30-Nov-17	0.111 L	10-Dec-17 19:09	1
Combined PFOA/PFOS	484	0.913	5.63	9.05		B7K0195	30-Nov-17	0.111 L	10-Dec-17 19:09	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	115	50 - 150		B7K0195	30-Nov-17	0.111 L	10-Dec-17 19:09	1
13C2-PFHxA	IS	108	50 - 150		B7K0195	30-Nov-17	0.111 L	10-Dec-17 19:09	1
13C4-PFHpA	IS	108	50 - 150		B7K0195	30-Nov-17	0.111 L	10-Dec-17 19:09	1
18O2-PFHxS	IS	99.2	50 - 150		B7K0195	30-Nov-17	0.111 L	10-Dec-17 19:09	1
13C2-PFOA	IS	84.5	50 - 150		B7K0195	30-Nov-17	0.111 L	10-Dec-17 19:09	1
13C8-PFOS	IS	89.4	50 - 150		B7K0195	30-Nov-17	0.111 L	10-Dec-17 19:09	1
13C5-PFNA	IS	81.4	50 - 150		B7K0195	30-Nov-17	0.111 L	10-Dec-17 19:09	1
13C2-PFDA	IS	86.5	50 - 150		B7K0195	30-Nov-17	0.111 L	10-Dec-17 19:09	1
d3-MeFOSAA	IS	108	50 - 150		B7K0195	30-Nov-17	0.111 L	10-Dec-17 19:09	1
13C2-PFUnA	IS	103	50 - 150		B7K0195	30-Nov-17	0.111 L	10-Dec-17 19:09	1
d5-EtFOSAA	IS	116	50 - 150		B7K0195	30-Nov-17	0.111 L	10-Dec-17 19:09	1
13C2-PFDoA	IS	123	50 - 150		B7K0195	30-Nov-17	0.111 L	10-Dec-17 19:09	1
13C2-PFTeDA	IS	114	50 - 150		B7K0195	30-Nov-17	0.111 L	10-Dec-17 19:09	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation
LCL-UCL- Lower control limit - upper control limit
Results reported to the DL
When reported, PFHxS, PFOA and PFOS include both linear and branched isomers.
Only the linear isomer is reported for all other analytes.

Rev 1: 7/18

Sample ID: IR86-GW53-17D — **Modified EPA Method 537**

Client Data

Name: CH2M Hill
Project: PFAS
Matrix: Aqueous
Date Collected: 17-Nov-17 11:30

Laboratory Data

Lab Sample: 1701758-08
Date Received: 28-Nov-17 09:36
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	118	1.99	5.53	8.88		B7K0195	30-Nov-17	0.113 L	10-Dec-17 19:21	1
PFHxA	153	2.42	5.53	8.88		B7K0195	30-Nov-17	0.113 L	10-Dec-17 19:21	1
PFHpA	22.8	0.656	5.53	8.88		B7K0195	30-Nov-17	0.113 L	10-Dec-17 19:21	1
PFHxS	844	1.05	5.53	8.88		B7K0195	30-Nov-17	0.113 L	10-Dec-17 19:21	1
PFOA	63.7	0.722	5.53	8.88		B7K0195	30-Nov-17	0.113 L	10-Dec-17 19:21	1
PFOS	253	0.895	5.53	8.88		B7K0195	30-Nov-17	0.113 L	10-Dec-17 19:21	1
PFNA	ND	0.899	5.53	8.88		B7K0195	30-Nov-17	0.113 L	10-Dec-17 19:21	1
PFDA	ND	1.65	5.53	8.88		B7K0195	30-Nov-17	0.113 L	10-Dec-17 19:21	1
MeFOSAA	ND	1.83	5.53	8.88		B7K0195	30-Nov-17	0.113 L	10-Dec-17 19:21	1
PFUnA	ND	1.17	5.53	8.88		B7K0195	30-Nov-17	0.113 L	10-Dec-17 19:21	1
EtFOSAA	ND	1.52	5.53	8.88		B7K0195	30-Nov-17	0.113 L	10-Dec-17 19:21	1
PFDoA	ND	0.879	5.53	8.88		B7K0195	30-Nov-17	0.113 L	10-Dec-17 19:21	1
PFTrDA	ND	0.548	5.53	8.88		B7K0195	30-Nov-17	0.113 L	10-Dec-17 19:21	1
PFTeDA	ND	0.838	5.53	8.88		B7K0195	30-Nov-17	0.113 L	10-Dec-17 19:21	1
Combined PFOA/PFOS	317	0.895	5.53	8.88		B7K0195	30-Nov-17	0.113 L	10-Dec-17 19:21	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	120	50 - 150		B7K0195	30-Nov-17	0.113 L	10-Dec-17 19:21	1
13C2-PFHxA	IS	113	50 - 150		B7K0195	30-Nov-17	0.113 L	10-Dec-17 19:21	1
13C4-PFHpA	IS	113	50 - 150		B7K0195	30-Nov-17	0.113 L	10-Dec-17 19:21	1
18O2-PFHxS	IS	93.9	50 - 150		B7K0195	30-Nov-17	0.113 L	10-Dec-17 19:21	1
13C2-PFOA	IS	96.0	50 - 150		B7K0195	30-Nov-17	0.113 L	10-Dec-17 19:21	1
13C8-PFOS	IS	84.6	50 - 150		B7K0195	30-Nov-17	0.113 L	10-Dec-17 19:21	1
13C5-PFNA	IS	79.8	50 - 150		B7K0195	30-Nov-17	0.113 L	10-Dec-17 19:21	1
13C2-PFDA	IS	84.4	50 - 150		B7K0195	30-Nov-17	0.113 L	10-Dec-17 19:21	1
d3-MeFOSAA	IS	87.3	50 - 150		B7K0195	30-Nov-17	0.113 L	10-Dec-17 19:21	1
13C2-PFUnA	IS	108	50 - 150		B7K0195	30-Nov-17	0.113 L	10-Dec-17 19:21	1
d5-EtFOSAA	IS	85.8	50 - 150		B7K0195	30-Nov-17	0.113 L	10-Dec-17 19:21	1
13C2-PFDoA	IS	113	50 - 150		B7K0195	30-Nov-17	0.113 L	10-Dec-17 19:21	1
13C2-PFTeDA	IS	99.0	50 - 150		B7K0195	30-Nov-17	0.113 L	10-Dec-17 19:21	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation
LCL-UCL- Lower control limit - upper control limit
Results reported to the DL.
When reported, PFHxS, PFOA and PFOS include both linear and branched isomers.
Only the linear isomer is reported for all other analytes.

NW 1/7/18

Sample ID: IR86-GW53D-17D — **Modified EPA Method 537**

Client Data

Name: CH2M Hill
Project: PFAS
Matrix: Aqueous
Date Collected: 17-Nov-17 11:35

Laboratory Data

Lab Sample: 1701758-09
Date Received: 28-Nov-17 09:36
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	120	2.00	5.58	8.96		B7K0195	30-Nov-17	0.112 L	10-Dec-17 19:32	1
PFHxA	162	2.44	5.58	8.96		B7K0195	30-Nov-17	0.112 L	10-Dec-17 19:32	1
PFHpA	24.2	0.662	5.58	8.96		B7K0195	30-Nov-17	0.112 L	10-Dec-17 19:32	1
PFHxS	797	1.06	5.58	8.96		B7K0195	30-Nov-17	0.112 L	10-Dec-17 19:32	1
PFOA	74.1	0.729	5.58	8.96		B7K0195	30-Nov-17	0.112 L	10-Dec-17 19:32	1
PFOS	244	0.904	5.58	8.96		B7K0195	30-Nov-17	0.112 L	10-Dec-17 19:32	1
PFNA	ND	0.907	5.58	8.96		B7K0195	30-Nov-17	0.112 L	10-Dec-17 19:32	1
PFDA	ND	1.67	5.58	8.96		B7K0195	30-Nov-17	0.112 L	10-Dec-17 19:32	1
MeFOSAA	ND	1.85	5.58	8.96		B7K0195	30-Nov-17	0.112 L	10-Dec-17 19:32	1
PFUnA	ND	1.18	5.58	8.96		B7K0195	30-Nov-17	0.112 L	10-Dec-17 19:32	1
EtFOSAA	ND	1.53	5.58	8.96		B7K0195	30-Nov-17	0.112 L	10-Dec-17 19:32	1
PFDoA	ND	0.887	5.58	8.96		B7K0195	30-Nov-17	0.112 L	10-Dec-17 19:32	1
PFTrDA	ND	0.553	5.58	8.96		B7K0195	30-Nov-17	0.112 L	10-Dec-17 19:32	1
PFTeDA	ND	0.845	5.58	8.96		B7K0195	30-Nov-17	0.112 L	10-Dec-17 19:32	1
Combined PFOA/PFOS	318	0.904	5.58	8.96		B7K0195	30-Nov-17	0.112 L	10-Dec-17 19:32	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	119	50 - 150		B7K0195	30-Nov-17	0.112 L	10-Dec-17 19:32	1
13C2-PFHxA	IS	106	50 - 150		B7K0195	30-Nov-17	0.112 L	10-Dec-17 19:32	1
13C4-PFHpA	IS	103	50 - 150		B7K0195	30-Nov-17	0.112 L	10-Dec-17 19:32	1
18O2-PFHxS	IS	114	50 - 150		B7K0195	30-Nov-17	0.112 L	10-Dec-17 19:32	1
13C2-PFOA	IS	100	50 - 150		B7K0195	30-Nov-17	0.112 L	10-Dec-17 19:32	1
13C8-PFOS	IS	88.9	50 - 150		B7K0195	30-Nov-17	0.112 L	10-Dec-17 19:32	1
13C5-PFNA	IS	99.9	50 - 150		B7K0195	30-Nov-17	0.112 L	10-Dec-17 19:32	1
13C2-PFDA	IS	92.3	50 - 150		B7K0195	30-Nov-17	0.112 L	10-Dec-17 19:32	1
d3-MeFOSAA	IS	67.9	50 - 150		B7K0195	30-Nov-17	0.112 L	10-Dec-17 19:32	1
13C2-PFUnA	IS	90.4	50 - 150		B7K0195	30-Nov-17	0.112 L	10-Dec-17 19:32	1
d5-EtFOSAA	IS	87.4	50 - 150		B7K0195	30-Nov-17	0.112 L	10-Dec-17 19:32	1
13C2-PFDoA	IS	94.5	50 - 150		B7K0195	30-Nov-17	0.112 L	10-Dec-17 19:32	1
13C2-PFTeDA	IS	93.2	50 - 150		B7K0195	30-Nov-17	0.112 L	10-Dec-17 19:32	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation
LCL-UCL- Lower control limit - upper control limit
Results reported to the DL
When reported, PFHxS, PFOA and PFOS include both linear and branched isomers.
Only the linear isomer is reported for all other analytes.

rev 1 | 7 | 18

Vista Analytical Laboratory

10

Sample ID: USTAS4141-GW17-17D — **Modified EPA Method 537**

Client Data

Name: CH2M Hill
Project: PFAS
Matrix: Aqueous
Date Collected: 17-Nov-17 17:45

Laboratory Data

Lab Sample: 1701758-10
Date Received: 28-Nov-17 09:36
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	5.70	2.02	5.63	9.05	J	B7K0195	30-Nov-17	0.111 L	10-Dec-17 19:43	1
PFHxA	11.2	2.46	5.63	9.05		B7K0195	30-Nov-17	0.111 L	10-Dec-17 19:43	1
PFHpA	4.20	0.668	5.63	9.05	J	B7K0195	30-Nov-17	0.111 L	10-Dec-17 19:43	1
PFHxS	39.7	1.07	5.63	9.05		B7K0195	30-Nov-17	0.111 L	10-Dec-17 19:43	1
PFOA	4.74	0.736	5.63	9.05	J	B7K0195	30-Nov-17	0.111 L	10-Dec-17 19:43	1
PFOS	86.0	0.912	5.63	9.05		B7K0195	30-Nov-17	0.111 L	10-Dec-17 19:43	1
PFNA	ND	0.916	5.63	9.05		B7K0195	30-Nov-17	0.111 L	10-Dec-17 19:43	1
PFDA	ND	1.68	5.63	9.05		B7K0195	30-Nov-17	0.111 L	10-Dec-17 19:43	1
MeFOSAA	ND	1.87	5.63	9.05		B7K0195	30-Nov-17	0.111 L	10-Dec-17 19:43	1
PFUnA	ND	1.19	5.63	9.05		B7K0195	30-Nov-17	0.111 L	10-Dec-17 19:43	1
EtFOSAA	ND	1.55	5.63	9.05		B7K0195	30-Nov-17	0.111 L	10-Dec-17 19:43	1
PFDoA	ND	0.896	5.63	9.05		B7K0195	30-Nov-17	0.111 L	10-Dec-17 19:43	1
PFTrDA	ND	0.559	5.63	9.05		B7K0195	30-Nov-17	0.111 L	10-Dec-17 19:43	1
PFTeDA	ND	0.854	5.63	9.05		B7K0195	30-Nov-17	0.111 L	10-Dec-17 19:43	1
Combined PFOA/PFOS	90.7	0.912	5.63	9.05		B7K0195	30-Nov-17	0.111 L	10-Dec-17 19:43	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	109	50 - 150		B7K0195	30-Nov-17	0.111 L	10-Dec-17 19:43	1
13C2-PFHxA	IS	102	50 - 150		B7K0195	30-Nov-17	0.111 L	10-Dec-17 19:43	1
13C4-PFHpA	IS	106	50 - 150		B7K0195	30-Nov-17	0.111 L	10-Dec-17 19:43	1
18O2-PFHxS	IS	107	50 - 150		B7K0195	30-Nov-17	0.111 L	10-Dec-17 19:43	1
13C2-PFOA	IS	107	50 - 150		B7K0195	30-Nov-17	0.111 L	10-Dec-17 19:43	1
13C8-PFOS	IS	123	50 - 150		B7K0195	30-Nov-17	0.111 L	10-Dec-17 19:43	1
13C5-PFNA	IS	101	50 - 150		B7K0195	30-Nov-17	0.111 L	10-Dec-17 19:43	1
13C2-PFDA	IS	88.9	50 - 150		B7K0195	30-Nov-17	0.111 L	10-Dec-17 19:43	1
d3-MeFOSAA	IS	96.3	50 - 150		B7K0195	30-Nov-17	0.111 L	10-Dec-17 19:43	1
13C2-PFUnA	IS	108	50 - 150		B7K0195	30-Nov-17	0.111 L	10-Dec-17 19:43	1
d5-EtFOSAA	IS	95.2	50 - 150		B7K0195	30-Nov-17	0.111 L	10-Dec-17 19:43	1
13C2-PFDoA	IS	112	50 - 150		B7K0195	30-Nov-17	0.111 L	10-Dec-17 19:43	1
13C2-PFTeDA	IS	115	50 - 150		B7K0195	30-Nov-17	0.111 L	10-Dec-17 19:43	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation
LCL-UCL- Lower control limit - upper control limit
Results reported to the DL.
When reported, PFHxS, PFOA and PFOS include both linear and branched isomers.
Only the linear isomer is reported for all other analytes.

11/17/18

Vista Analytical Laboratory 11

Sample ID: IR54-GW17-17D — **Modified EPA Method 537**

Client Data

Name: CH2M Hill
Project: PFAS
Matrix: Aqueous
Date Collected: 19-Nov-17 12:25

Laboratory Data

Lab Sample: 1701758-11
Date Received: 28-Nov-17 09:36
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	585	1.93	5.39	8.63		B7K0195	30-Nov-17	0.116 L	10-Dec-17 20:28	1
PFHxA	1730	2.35	5.39	8.63		B7K0195	30-Nov-17	0.116 L	10-Dec-17 20:28	1
PFHpA	386	0.637	5.39	8.63		B7K0195	30-Nov-17	0.116 L	10-Dec-17 20:28	1
PFHxS	5810	10.2	53.9	86.3	D	B7K0195	30-Nov-17	0.116 L	12-Dec-17 19:18	10
PFOA	2840	7.02	53.9	86.3	D	B7K0195	30-Nov-17	0.116 L	12-Dec-17 19:18	10
PFOS	9680	8.70	53.9	86.3	D	B7K0195	30-Nov-17	0.116 L	12-Dec-17 19:18	10
PFNA	66.4	0.874	5.39	8.63		B7K0195	30-Nov-17	0.116 L	10-Dec-17 20:28	1
PFDA	8.47	1.61	5.39	8.63	J	B7K0195	30-Nov-17	0.116 L	10-Dec-17 20:28	1
MeFOSAA	ND	1.78	5.39	8.63		B7K0195	30-Nov-17	0.116 L	10-Dec-17 20:28	1
PFUnA	ND	1.13	5.39	8.63		B7K0195	30-Nov-17	0.116 L	10-Dec-17 20:28	1
EtFOSAA	ND	1.48	5.39	8.63		B7K0195	30-Nov-17	0.116 L	10-Dec-17 20:28	1
PFDoA	ND	0.854	5.39	8.63		B7K0195	30-Nov-17	0.116 L	10-Dec-17 20:28	1
PFTrDA	ND	0.533	5.39	8.63		B7K0195	30-Nov-17	0.116 L	10-Dec-17 20:28	1
PFTeDA	ND	0.814	5.39	8.63		B7K0195	30-Nov-17	0.116 L	10-Dec-17 20:28	1
Combined PFOA/PFOS	12500	0.870	5.39	8.63		B7K0195	30-Nov-17	0.116 L	10-Dec-17 20:28	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	99.7	50 - 150		B7K0195	30-Nov-17	0.116 L	10-Dec-17 20:28	1
13C2-PFHxA	IS	95.5	50 - 150		B7K0195	30-Nov-17	0.116 L	10-Dec-17 20:28	1
13C4-PFHpA	IS	106	50 - 150		B7K0195	30-Nov-17	0.116 L	10-Dec-17 20:28	1
18O2-PFHxS	IS	76.7	50 - 150	D	B7K0195	30-Nov-17	0.116 L	12-Dec-17 19:18	10
13C2-PFOA	IS	128	50 - 150	D	B7K0195	30-Nov-17	0.116 L	12-Dec-17 19:18	10
13C8-PFOS	IS	104	50 - 150	D	B7K0195	30-Nov-17	0.116 L	12-Dec-17 19:18	10
13C5-PFNA	IS	105	50 - 150		B7K0195	30-Nov-17	0.116 L	10-Dec-17 20:28	1
13C2-PFDA	IS	83.4	50 - 150		B7K0195	30-Nov-17	0.116 L	10-Dec-17 20:28	1
d3-MeFOSAA	IS	102	50 - 150		B7K0195	30-Nov-17	0.116 L	10-Dec-17 20:28	1
13C2-PFUnA	IS	117	50 - 150		B7K0195	30-Nov-17	0.116 L	10-Dec-17 20:28	1
d5-EtFOSAA	IS	92.9	50 - 150		B7K0195	30-Nov-17	0.116 L	10-Dec-17 20:28	1
13C2-PFDoA	IS	101	50 - 150		B7K0195	30-Nov-17	0.116 L	10-Dec-17 20:28	1
13C2-PFTeDA	IS	109	50 - 150		B7K0195	30-Nov-17	0.116 L	10-Dec-17 20:28	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation
LCL-UCL- Lower control limit - upper control limit
Results reported to the DL.
When reported, PFHxS, PFOA and PFOS include both linear and branched isomers.
Only the linear isomer is reported for all other analytes.

nw 11/7/18

Vista Analytical Laboratory 12

Sample ID: IR54-GW15-17D

Modified EPA Method 537

Client Data

Name: CH2M Hill
Project: PFAS
Matrix: Aqueous
Date Collected: 19-Nov-17 13:25

Laboratory Data

Lab Sample: 1701758-12
Date Received: 28-Nov-17 09:36
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	244	2.01	5.58	8.97		B7K0195	30-Nov-17	0.112 L	10-Dec-17 20:39	1
PFHxA	1430	2.44	5.58	8.97		B7K0195	30-Nov-17	0.112 L	10-Dec-17 20:39	1
PFHpA	320	0.663	5.58	8.97		B7K0195	30-Nov-17	0.112 L	10-Dec-17 20:39	1
PFHxS	4170	10.6	55.8	89.7	D	B7K0195	30-Nov-17	0.112 L	12-Dec-17 19:29	10
PFOA	2820	7.30	55.8	89.7	D	B7K0195	30-Nov-17	0.112 L	12-Dec-17 19:29	10
PFOS	5150	9.05	55.8	89.7	D	B7K0195	30-Nov-17	0.112 L	12-Dec-17 19:29	10
PFNA	72.6	0.908	5.58	8.97		B7K0195	30-Nov-17	0.112 L	10-Dec-17 20:39	1
PFDA	ND	1.67	5.58	8.97		B7K0195	30-Nov-17	0.112 L	10-Dec-17 20:39	1
MeFOSAA	ND	1.85	5.58	8.97		B7K0195	30-Nov-17	0.112 L	10-Dec-17 20:39	1
PFUnA	ND	1.18	5.58	8.97		B7K0195	30-Nov-17	0.112 L	10-Dec-17 20:39	1
EtFOSAA	ND	1.54	5.58	8.97		B7K0195	30-Nov-17	0.112 L	10-Dec-17 20:39	1
PFDoA	ND	0.888	5.58	8.97		B7K0195	30-Nov-17	0.112 L	10-Dec-17 20:39	1
PFTrDA	ND	0.554	5.58	8.97		B7K0195	30-Nov-17	0.112 L	10-Dec-17 20:39	1
PFTeDA	ND	0.846	5.58	8.97		B7K0195	30-Nov-17	0.112 L	10-Dec-17 20:39	1
Combined PFOA/PFOS	7970	0.905	5.58	8.97		B7K0195	30-Nov-17	0.112 L	10-Dec-17 20:39	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	119	50 - 150		B7K0195	30-Nov-17	0.112 L	10-Dec-17 20:39	1
13C2-PFHxA	IS	104	50 - 150		B7K0195	30-Nov-17	0.112 L	10-Dec-17 20:39	1
13C4-PFHpA	IS	106	50 - 150		B7K0195	30-Nov-17	0.112 L	10-Dec-17 20:39	1
18O2-PFHxS	IS	94.7	50 - 150	D	B7K0195	30-Nov-17	0.112 L	12-Dec-17 19:29	10
13C2-PFOA	IS	82.8	50 - 150	D	B7K0195	30-Nov-17	0.112 L	12-Dec-17 19:29	10
13C8-PFOS	IS	103	50 - 150	D	B7K0195	30-Nov-17	0.112 L	12-Dec-17 19:29	10
13C5-PFNA	IS	84.0	50 - 150		B7K0195	30-Nov-17	0.112 L	10-Dec-17 20:39	1
13C2-PFDA	IS	90.4	50 - 150		B7K0195	30-Nov-17	0.112 L	10-Dec-17 20:39	1
d3-MeFOSAA	IS	94.4	50 - 150		B7K0195	30-Nov-17	0.112 L	10-Dec-17 20:39	1
13C2-PFUnA	IS	90.6	50 - 150		B7K0195	30-Nov-17	0.112 L	10-Dec-17 20:39	1
d5-EtFOSAA	IS	101	50 - 150		B7K0195	30-Nov-17	0.112 L	10-Dec-17 20:39	1
13C2-PFDoA	IS	84.5	50 - 150		B7K0195	30-Nov-17	0.112 L	10-Dec-17 20:39	1
13C2-PFTeDA	IS	89.6	50 - 150		B7K0195	30-Nov-17	0.112 L	10-Dec-17 20:39	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation
LCL-UCL- Lower control limit - upper control limit
Results reported to the DL
When reported, PFHxS, PFOA and PFOS include both linear and branched isomers.
Only the linear isomer is reported for all other analytes.

NW 1/7/18

Vista Analytical Laboratory 13

Sample ID: IR54-GW15D-17D

Modified EPA Method 537

Client Data

Name: CH2M Hill
Project: PFAS
Matrix: Aqueous
Date Collected: 19-Nov-17 13:30

Laboratory Data

Lab Sample: 1701758-13
Date Received: 28-Nov-17 09:36
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	268	1.97	5.48	8.79		B7K0195	30-Nov-17	0.114 L	10-Dec-17 20:50	1
PFHxA	1590	2.40	5.48	8.79		B7K0195	30-Nov-17	0.114 L	10-Dec-17 20:50	1
PFHpA	325	0.649	5.48	8.79		B7K0195	30-Nov-17	0.114 L	10-Dec-17 20:50	1
PFHxS	4400	10.4	54.8	87.9	D	B7K0195	30-Nov-17	0.114 L	12-Dec-17 19:40	10
PFOA	2850	7.15	54.8	87.9	D	B7K0195	30-Nov-17	0.114 L	12-Dec-17 19:40	10
PFOS	4830	8.87	54.8	87.9	D	B7K0195	30-Nov-17	0.114 L	12-Dec-17 19:40	10
PFNA	64.9	0.890	5.48	8.79		B7K0195	30-Nov-17	0.114 L	10-Dec-17 20:50	1
PFDA	ND	1.64	5.48	8.79		B7K0195	30-Nov-17	0.114 L	10-Dec-17 20:50	1
MeFOSAA	ND	1.81	5.48	8.79		B7K0195	30-Nov-17	0.114 L	10-Dec-17 20:50	1
PFUnA	ND	1.15	5.48	8.79		B7K0195	30-Nov-17	0.114 L	10-Dec-17 20:50	1
EtFOSAA	ND	1.51	5.48	8.79		B7K0195	30-Nov-17	0.114 L	10-Dec-17 20:50	1
PFDoA	ND	0.870	5.48	8.79		B7K0195	30-Nov-17	0.114 L	10-Dec-17 20:50	1
PFTrDA	ND	0.543	5.48	8.79		B7K0195	30-Nov-17	0.114 L	10-Dec-17 20:50	1
PFTeDA	ND	0.830	5.48	8.79		B7K0195	30-Nov-17	0.114 L	10-Dec-17 20:50	1
Combined PFOA/PFOS	7680	0.887	5.48	8.79		B7K0195	30-Nov-17	0.114 L	10-Dec-17 20:50	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	114	50 - 150		B7K0195	30-Nov-17	0.114 L	10-Dec-17 20:50	1
13C2-PFHxA	IS	101	50 - 150		B7K0195	30-Nov-17	0.114 L	10-Dec-17 20:50	1
13C4-PFHpA	IS	110	50 - 150		B7K0195	30-Nov-17	0.114 L	10-Dec-17 20:50	1
18O2-PFHxS	IS	94.6	50 - 150	D	B7K0195	30-Nov-17	0.114 L	12-Dec-17 19:40	10
13C2-PFOA	IS	100	50 - 150	D	B7K0195	30-Nov-17	0.114 L	12-Dec-17 19:40	10
13C8-PFOS	IS	112	50 - 150	D	B7K0195	30-Nov-17	0.114 L	12-Dec-17 19:40	10
13C5-PFNA	IS	97.8	50 - 150		B7K0195	30-Nov-17	0.114 L	10-Dec-17 20:50	1
13C2-PFDA	IS	73.2	50 - 150		B7K0195	30-Nov-17	0.114 L	10-Dec-17 20:50	1
d3-MeFOSAA	IS	104	50 - 150		B7K0195	30-Nov-17	0.114 L	10-Dec-17 20:50	1
13C2-PFUnA	IS	89.5	50 - 150		B7K0195	30-Nov-17	0.114 L	10-Dec-17 20:50	1
d5-EtFOSAA	IS	109	50 - 150		B7K0195	30-Nov-17	0.114 L	10-Dec-17 20:50	1
13C2-PFDoA	IS	103	50 - 150		B7K0195	30-Nov-17	0.114 L	10-Dec-17 20:50	1
13C2-PFTeDA	IS	102	50 - 150		B7K0195	30-Nov-17	0.114 L	10-Dec-17 20:50	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation
LCL-UCL- Lower control limit - upper control limit
Results reported to the DL
When reported, PFHxS, PFOA and PFOS include both linear and branched isomers.
Only the linear isomer is reported for all other analytes.

nw 1/7/18

Vista Analytical Laboratory 14

Sample ID: IR54-GW14-17D

Modified EPA Method 537

Client Data

Name: CH2M Hill
Project: PFAS
Matrix: Aqueous
Date Collected: 19-Nov-17 13:40

Laboratory Data

Lab Sample: 1701758-14
Date Received: 28-Nov-17 09:36
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	2440	19.3	53.9	86.2	D	B7K0195	30-Nov-17	0.116 L	12-Dec-17 19:52	10
PFHxA	12100	23.5	53.9	86.2	D	B7K0195	30-Nov-17	0.116 L	12-Dec-17 19:52	10
PFHpA	3310	6.37	53.9	86.2	D	B7K0195	30-Nov-17	0.116 L	12-Dec-17 19:52	10
PFHxS	17900	10.2	53.9	86.2	D	B7K0195	30-Nov-17	0.116 L	12-Dec-17 19:52	10
PFOA	9120	7.02	53.9	86.2	D	B7K0195	30-Nov-17	0.116 L	12-Dec-17 19:52	10
PFOS	4010	8.70	53.9	86.2	D	B7K0195	30-Nov-17	0.116 L	12-Dec-17 19:52	10
PFNA	155	0.873	5.39	8.62		B7K0195	30-Nov-17	0.116 L	10-Dec-17 21:01	1
PFDA	ND	1.61	5.39	8.62		B7K0195	30-Nov-17	0.116 L	10-Dec-17 21:01	1
MeFOSAA	ND	1.78	5.39	8.62		B7K0195	30-Nov-17	0.116 L	10-Dec-17 21:01	1
PFUnA	ND	1.13	5.39	8.62		B7K0195	30-Nov-17	0.116 L	10-Dec-17 21:01	1
EtFOSAA	ND	1.48	5.39	8.62		B7K0195	30-Nov-17	0.116 L	10-Dec-17 21:01	1
PFDoA	ND	0.854	5.39	8.62		B7K0195	30-Nov-17	0.116 L	10-Dec-17 21:01	1
PFTrDA	ND	0.532	5.39	8.62		B7K0195	30-Nov-17	0.116 L	10-Dec-17 21:01	1
PFTeDA	ND	0.814	5.39	8.62		B7K0195	30-Nov-17	0.116 L	10-Dec-17 21:01	1
Combined PFOA/PFOS	13100	0.870	5.39	8.62		B7K0195	30-Nov-17	0.116 L	10-Dec-17 21:01	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	120	50 - 150	D	B7K0195	30-Nov-17	0.116 L	12-Dec-17 19:52	10
13C2-PFHxA	IS	136	50 - 150	D	B7K0195	30-Nov-17	0.116 L	12-Dec-17 19:52	10
13C4-PFHpA	IS	111	50 - 150	D	B7K0195	30-Nov-17	0.116 L	12-Dec-17 19:52	10
18O2-PFHxS	IS	139	50 - 150	D	B7K0195	30-Nov-17	0.116 L	12-Dec-17 19:52	10
13C2-PFOA	IS	118	50 - 150	D	B7K0195	30-Nov-17	0.116 L	12-Dec-17 19:52	10
13C8-PFOS	IS	99.9	50 - 150	D	B7K0195	30-Nov-17	0.116 L	12-Dec-17 19:52	10
13C5-PFNA	IS	117	50 - 150		B7K0195	30-Nov-17	0.116 L	10-Dec-17 21:01	1
13C2-PFDA	IS	103	50 - 150		B7K0195	30-Nov-17	0.116 L	10-Dec-17 21:01	1
d3-MeFOSAA	IS	103	50 - 150		B7K0195	30-Nov-17	0.116 L	10-Dec-17 21:01	1
13C2-PFUnA	IS	120	50 - 150		B7K0195	30-Nov-17	0.116 L	10-Dec-17 21:01	1
d5-EtFOSAA	IS	112	50 - 150		B7K0195	30-Nov-17	0.116 L	10-Dec-17 21:01	1
13C2-PFDoA	IS	114	50 - 150		B7K0195	30-Nov-17	0.116 L	10-Dec-17 21:01	1
13C2-PFTeDA	IS	111	50 - 150		B7K0195	30-Nov-17	0.116 L	10-Dec-17 21:01	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation
LCL-UCL- Lower control limit - upper control limit
Results reported to the DL
When reported, PFHxS, PFOA and PFOS include both linear and branched isomers.
Only the linear isomer is reported for all other analytes.

nw1718

Sample ID: IR54-GW16-17D — **Modified EPA Method 537**

Client Data
Name: CH2M Hill
Project: PFAS
Matrix: Aqueous
Date Collected: 19-Nov-17 12:15

Laboratory Data
Lab Sample: 1701758-15
Date Received: 28-Nov-17 09:36
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	16200	18.8	52.5	84.2	D	B7K0195	30-Nov-17	0.119 L	12-Dec-17 20:14	10
PFHxA	30100	91.8	210	337	D	B7K0195	30-Nov-17	0.119 L	15-Dec-17 23:15	40
PFHpA	7040	6.22	52.5	84.2	D	B7K0195	30-Nov-17	0.119 L	12-Dec-17 20:14	10
PFHxS	101000 J	39.9	210	337	~~E, D~~	B7K0195	30-Nov-17	0.119 L	15-Dec-17 23:15	40
PFOA	25100	27.4	210	337	D	B7K0195	30-Nov-17	0.119 L	15-Dec-17 23:15	40
PFOS	30000	34.0	210	337	D	B7K0195	30-Nov-17	0.119 L	15-Dec-17 23:15	40
PFNA	206	0.853	5.25	8.42		B7K0195	30-Nov-17	0.119 L	10-Dec-17 21:12	1
PFDA	3.69	1.57	5.25	8.42	J	B7K0195	30-Nov-17	0.119 L	10-Dec-17 21:12	1
MeFOSAA	ND	1.74	5.25	8.42		B7K0195	30-Nov-17	0.119 L	10-Dec-17 21:12	1
PFUnA	ND	1.11	5.25	8.42		B7K0195	30-Nov-17	0.119 L	10-Dec-17 21:12	1
EtFOSAA	ND	1.44	5.25	8.42		B7K0195	30-Nov-17	0.119 L	10-Dec-17 21:12	1
PFDoA	ND	0.834	5.25	8.42		B7K0195	30-Nov-17	0.119 L	10-Dec-17 21:12	1
PFTrDA	ND	0.520	5.25	8.42		B7K0195	30-Nov-17	0.119 L	10-Dec-17 21:12	1
PFTeDA	ND	0.795	5.25	8.42		B7K0195	30-Nov-17	0.119 L	10-Dec-17 21:12	1
Combined PFOA/PFOS	55100	0.849	5.25	8.42		B7K0195	30-Nov-17	0.119 L	10-Dec-17 21:12	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	115	50 - 150		B7K0195	30-Nov-17	0.119 L	12-Dec-17 20:14	10
13C2-PFHxA	IS	166	50 - 150	~~D, H~~	B7K0195	30-Nov-17	0.119 L	15-Dec-17 23:15	40
13C4-PFHpA	IS	138	50 - 150	D	B7K0195	30-Nov-17	0.119 L	12-Dec-17 20:14	10
18O2-PFHxS	IS	85.0	50 - 150	D	B7K0195	30-Nov-17	0.119 L	15-Dec-17 23:15	40
13C2-PFOA	IS	128	50 - 150	D	B7K0195	30-Nov-17	0.119 L	15-Dec-17 23:15	40
13C8-PFOS	IS	48.0	50 - 150	~~D, H~~	B7K0195	30-Nov-17	0.119 L	15-Dec-17 23:15	40
13C5-PFNA	IS	101	50 - 150		B7K0195	30-Nov-17	0.119 L	10-Dec-17 21:12	1
13C2-PFDA	IS	73.4	50 - 150		B7K0195	30-Nov-17	0.119 L	10-Dec-17 21:12	1
d3-MeFOSAA	IS	109	50 - 150		B7K0195	30-Nov-17	0.119 L	10-Dec-17 21:12	1
13C2-PFUnA	IS	86.0	50 - 150		B7K0195	30-Nov-17	0.119 L	10-Dec-17 21:12	1
d5-EtFOSAA	IS	92.4	50 - 150		B7K0195	30-Nov-17	0.119 L	10-Dec-17 21:12	1
13C2-PFDoA	IS	106	50 - 150		B7K0195	30-Nov-17	0.119 L	10-Dec-17 21:12	1
13C2-PFTeDA	IS	87.4	50 - 150		B7K0195	30-Nov-17	0.119 L	10-Dec-17 21:12	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation
LCL-UCL- Lower control limit - upper control limit
Results reported to the DL
When reported, PFHxS, PFOA and PFOS include both linear and branched isomers.
Only the linear isomer is reported for all other analytes.

LR

NW 11/7/18

Vista Analytical Laboratory 16

Sample ID: IR54-FB-111917 **Modified EPA Method 537**

Client Data
Name: CH2M Hill
Project: PFAS
Matrix: Aqueous
Date Collected: 19-Nov-17 11:50

Laboratory Data
Lab Sample: 1701758-16
Date Received: 28-Nov-17 09:36
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	1.89	5.30	8.46		B7K0195	30-Nov-17	0.118 L	15-Dec-17 23:26	1
PFHxA	ND	2.31	5.30	8.46		B7K0195	30-Nov-17	0.118 L	15-Dec-17 23:26	1
PFHpA	ND	0.625	5.30	8.46		B7K0195	30-Nov-17	0.118 L	15-Dec-17 23:26	1
PFHxS	ND	1.00	5.30	8.46		B7K0195	30-Nov-17	0.118 L	15-Dec-17 23:26	1
PFOA	ND	0.689	5.30	8.46		B7K0195	30-Nov-17	0.118 L	15-Dec-17 23:26	1
PFOS	ND	0.853	5.30	8.46		B7K0195	30-Nov-17	0.118 L	15-Dec-17 23:26	1
PFNA	ND	0.857	5.30	8.46		B7K0195	30-Nov-17	0.118 L	15-Dec-17 23:26	1
PFDA	ND	1.58	5.30	8.46		B7K0195	30-Nov-17	0.118 L	15-Dec-17 23:26	1
MeFOSAA	ND	1.75	5.30	8.46		B7K0195	30-Nov-17	0.118 L	15-Dec-17 23:26	1
PFUnA	ND	1.11	5.30	8.46		B7K0195	30-Nov-17	0.118 L	15-Dec-17 23:26	1
EtFOSAA	ND	1.45	5.30	8.46		B7K0195	30-Nov-17	0.118 L	15-Dec-17 23:26	1
PFDoA	ND	0.838	5.30	8.46		B7K0195	30-Nov-17	0.118 L	15-Dec-17 23:26	1
PFTrDA	ND	0.522	5.30	8.46		B7K0195	30-Nov-17	0.118 L	15-Dec-17 23:26	1
PFTeDA	ND	0.799	5.30	8.46		B7K0195	30-Nov-17	0.118 L	15-Dec-17 23:26	1
Combined PFOA/PFOS	ND	0.853	5.30	8.46		B7K0195	30-Nov-17	0.118 L	15-Dec-17 23:26	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	96.8	50 - 150		B7K0195	30-Nov-17	0.118 L	15-Dec-17 23:26	1
13C2-PFHxA	IS	84.3	50 - 150		B7K0195	30-Nov-17	0.118 L	15-Dec-17 23:26	1
13C4-PFHpA	IS	97.2	50 - 150		B7K0195	30-Nov-17	0.118 L	15-Dec-17 23:26	1
18O2-PFHxS	IS	92.6	50 - 150		B7K0195	30-Nov-17	0.118 L	15-Dec-17 23:26	1
13C2-PFOA	IS	89.3	50 - 150		B7K0195	30-Nov-17	0.118 L	15-Dec-17 23:26	1
13C8-PFOS	IS	92.7	50 - 150		B7K0195	30-Nov-17	0.118 L	15-Dec-17 23:26	1
13C5-PFNA	IS	71.1	50 - 150		B7K0195	30-Nov-17	0.118 L	15-Dec-17 23:26	1
13C2-PFDA	IS	69.0	50 - 150		B7K0195	30-Nov-17	0.118 L	15-Dec-17 23:26	1
d3-MeFOSAA	IS	67.2	50 - 150		B7K0195	30-Nov-17	0.118 L	15-Dec-17 23:26	1
13C2-PFUnA	IS	69.1	50 - 150		B7K0195	30-Nov-17	0.118 L	15-Dec-17 23:26	1
d5-EtFOSAA	IS	60.6	50 - 150		B7K0195	30-Nov-17	0.118 L	15-Dec-17 23:26	1
13C2-PFDoA	IS	69.8	50 - 150		B7K0195	30-Nov-17	0.118 L	15-Dec-17 23:26	1
13C2-PFTeDA	IS	46.4	50 - 150	H	B7K0195	30-Nov-17	0.118 L	15-Dec-17 23:26	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation
LCL-UCL- Lower control limit - upper control limit
Results reported to the DL
When reported, PFHxS, PFOA and PFOS include both linear and branched isomers
Only the linear isomer is reported for all other analytes.

11/17/18

Vista 17
Analytical Laboratory

Sample ID: IR54-EB-111917 **Modified EPA Method 537**

Client Data

Name: CH2M Hill
Project: PFAS
Matrix: Aqueous
Date Collected: 19-Nov-17 12:00

Laboratory Data

Lab Sample: 1701758-17
Date Received: 28-Nov-17 09:36
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	2.01	5.63	8.99		B7K0195	30-Nov-17	0.111 L	10-Dec-17 21:35	1
PFHxA	ND	2.45	5.63	8.99		B7K0195	30-Nov-17	0.111 L	10-Dec-17 21:35	1
PFHpA	ND	0.664	5.63	8.99		B7K0195	30-Nov-17	0.111 L	10-Dec-17 21:35	1
PFHxS	ND	1.06	5.63	8.99		B7K0195	30-Nov-17	0.111 L	10-Dec-17 21:35	1
PFOA	ND	0.731	5.63	8.99		B7K0195	30-Nov-17	0.111 L	10-Dec-17 21:35	1
PFOS	ND	0.906	5.63	8.99		B7K0195	30-Nov-17	0.111 L	10-Dec-17 21:35	1
PFNA	ND	0.910	5.63	8.99		B7K0195	30-Nov-17	0.111 L	10-Dec-17 21:35	1
PFDA	ND	1.67	5.63	8.99		B7K0195	30-Nov-17	0.111 L	10-Dec-17 21:35	1
MeFOSAA	ND	1.85	5.63	8.99		B7K0195	30-Nov-17	0.111 L	10-Dec-17 21:35	1
PFUnA	ND	1.18	5.63	8.99		B7K0195	30-Nov-17	0.111 L	10-Dec-17 21:35	1
EtFOSAA	ND	1.54	5.63	8.99		B7K0195	30-Nov-17	0.111 L	10-Dec-17 21:35	1
PFDoA	ND	0.890	5.63	8.99		B7K0195	30-Nov-17	0.111 L	10-Dec-17 21:35	1
PFTrDA	ND	0.555	5.63	8.99		B7K0195	30-Nov-17	0.111 L	10-Dec-17 21:35	1
PFTeDA	ND	0.848	5.63	8.99		B7K0195	30-Nov-17	0.111 L	10-Dec-17 21:35	1
Combined PFOA/PFOS	ND	0.906	5.63	8.99		B7K0195	30-Nov-17	0.111 L	10-Dec-17 21:35	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	108	50 - 150		B7K0195	30-Nov-17	0.111 L	10-Dec-17 21:35	1
13C2-PFHxA	IS	102	50 - 150		B7K0195	30-Nov-17	0.111 L	10-Dec-17 21:35	1
13C4-PFHpA	IS	99.8	50 - 150		B7K0195	30-Nov-17	0.111 L	10-Dec-17 21:35	1
18O2-PFHxS	IS	100	50 - 150		B7K0195	30-Nov-17	0.111 L	10-Dec-17 21:35	1
13C2-PFOA	IS	89.7	50 - 150		B7K0195	30-Nov-17	0.111 L	10-Dec-17 21:35	1
13C8-PFOS	IS	83.9	50 - 150		B7K0195	30-Nov-17	0.111 L	10-Dec-17 21:35	1
13C5-PFNA	IS	80.0	50 - 150		B7K0195	30-Nov-17	0.111 L	10-Dec-17 21:35	1
13C2-PFDA	IS	62.1	50 - 150		B7K0195	30-Nov-17	0.111 L	10-Dec-17 21:35	1
d3-MeFOSAA	IS	85.9	50 - 150		B7K0195	30-Nov-17	0.111 L	10-Dec-17 21:35	1
13C2-PFUnA	IS	66.6	50 - 150		B7K0195	30-Nov-17	0.111 L	10-Dec-17 21:35	1
d5-EtFOSAA	IS	84.0	50 - 150		B7K0195	30-Nov-17	0.111 L	10-Dec-17 21:35	1
13C2-PFDoA	IS	80.1	50 - 150		B7K0195	30-Nov-17	0.111 L	10-Dec-17 21:35	1
13C2-PFTeDA	IS	90.9	50 - 150		B7K0195	30-Nov-17	0.111 L	10-Dec-17 21:35	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation
LCL-UCL- Lower control limit - upper control limit
Results reported to the DL.
When reported, PFHxS, PFOA and PFOS include both linear and branched isomers.
Only the linear isomer is reported for all other analytes.

rev 1: 7/18

Vista Analytical Laboratory 18

Sample ID: IR86-EB-111917 — **Modified EPA Method 537**

Client Data

Name: CH2M Hill
Project: PFAS
Matrix: Aqueous
Date Collected: 19-Nov-17 12:10

Laboratory Data

Lab Sample: 1701758-18
Date Received: 28-Nov-17 09:36
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	1.95	5.43	8.72		B7K0195	30-Nov-17	0.115 L	10-Dec-17 21:46	1
PFHxA	ND	2.38	5.43	8.72		B7K0195	30-Nov-17	0.115 L	10-Dec-17 21:46	1
PFHpA	ND	0.644	5.43	8.72		B7K0195	30-Nov-17	0.115 L	10-Dec-17 21:46	1
PFHxS	ND	1.03	5.43	8.72		B7K0195	30-Nov-17	0.115 L	10-Dec-17 21:46	1
PFOA	ND	0.710	5.43	8.72		B7K0195	30-Nov-17	0.115 L	10-Dec-17 21:46	1
PFOS	ND	0.880	5.43	8.72		B7K0195	30-Nov-17	0.115 L	10-Dec-17 21:46	1
PFNA	ND	0.883	5.43	8.72		B7K0195	30-Nov-17	0.115 L	10-Dec-17 21:46	1
PFDA	ND	1.62	5.43	8.72		B7K0195	30-Nov-17	0.115 L	10-Dec-17 21:46	1
MeFOSAA	ND	1.80	5.43	8.72		B7K0195	30-Nov-17	0.115 L	10-Dec-17 21:46	1
PFUnA	ND	1.14	5.43	8.72		B7K0195	30-Nov-17	0.115 L	10-Dec-17 21:46	1
EtFOSAA	ND	1.49	5.43	8.72		B7K0195	30-Nov-17	0.115 L	10-Dec-17 21:46	1
PFDoA	ND	0.864	5.43	8.72		B7K0195	30-Nov-17	0.115 L	10-Dec-17 21:46	1
PFTrDA	ND	0.539	5.43	8.72		B7K0195	30-Nov-17	0.115 L	10-Dec-17 21:46	1
PFTeDA	ND	0.823	5.43	8.72		B7K0195	30-Nov-17	0.115 L	10-Dec-17 21:46	1
Combined PFOA/PFOS	ND	0.880	5.43	8.72		B7K0195	30-Nov-17	0.115 L	10-Dec-17 21:46	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	108	50 - 150		B7K0195	30-Nov-17	0.115 L	10-Dec-17 21:46	1
13C2-PFHxA	IS	111	50 - 150		B7K0195	30-Nov-17	0.115 L	10-Dec-17 21:46	1
13C4-PFHpA	IS	108	50 - 150		B7K0195	30-Nov-17	0.115 L	10-Dec-17 21:46	1
18O2-PFHxS	IS	121	50 - 150		B7K0195	30-Nov-17	0.115 L	10-Dec-17 21:46	1
13C2-PFOA	IS	103	50 - 150		B7K0195	30-Nov-17	0.115 L	10-Dec-17 21:46	1
13C8-PFOS	IS	97.4	50 - 150		B7K0195	30-Nov-17	0.115 L	10-Dec-17 21:46	1
13C5-PFNA	IS	89.6	50 - 150		B7K0195	30-Nov-17	0.115 L	10-Dec-17 21:46	1
13C2-PFDA	IS	72.8	50 - 150		B7K0195	30-Nov-17	0.115 L	10-Dec-17 21:46	1
d3-MeFOSAA	IS	109	50 - 150		B7K0195	30-Nov-17	0.115 L	10-Dec-17 21:46	1
13C2-PFUnA	IS	91.6	50 - 150		B7K0195	30-Nov-17	0.115 L	10-Dec-17 21:46	1
d5-EtFOSAA	IS	98.3	50 - 150		B7K0195	30-Nov-17	0.115 L	10-Dec-17 21:46	1
13C2-PFDoA	IS	79.5	50 - 150		B7K0195	30-Nov-17	0.115 L	10-Dec-17 21:46	1
13C2-PFTeDA	IS	62.5	50 - 150		B7K0195	30-Nov-17	0.115 L	10-Dec-17 21:46	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation
LCL-UCL- Lower control limit - upper control limit
Results reported to the DL
When reported, PFHxS, PFOA and PFOS include both linear and branched isomers.
Only the linear isomer is reported for all other analytes.

nw 11/7/18

Vista 19
Analytical Laboratory

Sample ID: IR86-FB-111717 — **Modified EPA Method 537**

Client Data

Name: CH2M Hill
Project: PFAS
Matrix: Aqueous
Date Collected: 17-Nov-17 17:30

Laboratory Data

Lab Sample: 1701758-19
Date Received: 28-Nov-17 09:36
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	ND	1.90	5.30	8.49		B7K0195	30-Nov-17	0.118 L	10-Dec-17 21:57	1
PFHxA	ND	2.31	5.30	8.49		B7K0195	30-Nov-17	0.118 L	10-Dec-17 21:57	1
PFHpA	ND	0.627	5.30	8.49		B7K0195	30-Nov-17	0.118 L	10-Dec-17 21:57	1
PFHxS	ND	1.01	5.30	8.49		B7K0195	30-Nov-17	0.118 L	10-Dec-17 21:57	1
PFOA	ND	0.691	5.30	8.49		B7K0195	30-Nov-17	0.118 L	10-Dec-17 21:57	1
PFOS	ND	0.856	5.30	8.49		B7K0195	30-Nov-17	0.118 L	10-Dec-17 21:57	1
PFNA	ND	0.860	5.30	8.49		B7K0195	30-Nov-17	0.118 L	10-Dec-17 21:57	1
PFDA	ND	1.58	5.30	8.49		B7K0195	30-Nov-17	0.118 L	10-Dec-17 21:57	1
MeFOSAA	ND	1.75	5.30	8.49		B7K0195	30-Nov-17	0.118 L	10-Dec-17 21:57	1
PFUnA	ND	1.11	5.30	8.49		B7K0195	30-Nov-17	0.118 L	10-Dec-17 21:57	1
EtFOSAA	ND	1.45	5.30	8.49		B7K0195	30-Nov-17	0.118 L	10-Dec-17 21:57	1
PFDoA	ND	0.841	5.30	8.49		B7K0195	30-Nov-17	0.118 L	10-Dec-17 21:57	1
PFTrDA	ND	0.524	5.30	8.49		B7K0195	30-Nov-17	0.118 L	10-Dec-17 21:57	1
PFTeDA	ND	0.801	5.30	8.49		B7K0195	30-Nov-17	0.118 L	10-Dec-17 21:57	1
Combined PFOA/PFOS	ND	0.856	5.30	8.49		B7K0195	30-Nov-17	0.118 L	10-Dec-17 21:57	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	109	50 - 150		B7K0195	30-Nov-17	0.118 L	10-Dec-17 21:57	1
13C2-PFHxA	IS	105	50 - 150		B7K0195	30-Nov-17	0.118 L	10-Dec-17 21:57	1
13C4-PFHpA	IS	103	50 - 150		B7K0195	30-Nov-17	0.118 L	10-Dec-17 21:57	1
18O2-PFHxS	IS	94.3	50 - 150		B7K0195	30-Nov-17	0.118 L	10-Dec-17 21:57	1
13C2-PFOA	IS	89.8	50 - 150		B7K0195	30-Nov-17	0.118 L	10-Dec-17 21:57	1
13C8-PFOS	IS	104	50 - 150		B7K0195	30-Nov-17	0.118 L	10-Dec-17 21:57	1
13C5-PFNA	IS	90.8	50 - 150		B7K0195	30-Nov-17	0.118 L	10-Dec-17 21:57	1
13C2-PFDA	IS	80.0	50 - 150		B7K0195	30-Nov-17	0.118 L	10-Dec-17 21:57	1
d3-MeFOSAA	IS	101	50 - 150		B7K0195	30-Nov-17	0.118 L	10-Dec-17 21:57	1
13C2-PFUnA	IS	84.8	50 - 150		B7K0195	30-Nov-17	0.118 L	10-Dec-17 21:57	1
d5-EtFOSAA	IS	88.0	50 - 150		B7K0195	30-Nov-17	0.118 L	10-Dec-17 21:57	1
13C2-PFDoA	IS	93.7	50 - 150		B7K0195	30-Nov-17	0.118 L	10-Dec-17 21:57	1
13C2-PFTeDA	IS	64.7	50 - 150		B7K0195	30-Nov-17	0.118 L	10-Dec-17 21:57	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation
LCL-UCL- Lower control limit - upper control limit
Results reported to the DL.
When reported, PFHxS, PFOA and PFOS include both linear and branched isomers.
Only the linear isomer is reported for all other analytes.

Jw 1.7.18

LOCATION_NAME	SITE_NAME	INSTALLATION_ID	LOCATION_TYPE	LOCATION_TYPE_DESC	SDG	COORD_X	COORD_Y	ANALYTICAL_METHOD_GRP_DESC	SAMPLE_NAME	SAMPLE_MATRIX	SAMPLE_MATRIX_DESC	COLLECT_DATE
IR54-MW15	SITE 00054	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2465587.88	351030.74	Perfluoroalkyl Compounds	IR54-GW15-17D	WG	Ground water	19-Nov-17
IR54-MW15	SITE 00054	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2465587.88	351030.74	Perfluoroalkyl Compounds	IR54-GW15-17D	WG	Ground water	19-Nov-17
IR54-MW14	SITE 00054	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2465637.66	351179.5	Perfluoroalkyl Compounds	IR54-GW14-17D	WG	Ground water	19-Nov-17
IR86-MW27	SITE 00086	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2467405.87	355994.492	Perfluoroalkyl Compounds	IR86-GW27-17D	WG	Ground water	16-Nov-17
MW13	UST	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2465690.32	355404.35	Perfluoroalkyl Compounds	USTAS4141-GW13-17D	WG	Ground water	17-Nov-17
IR54-MW15	SITE 00054	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2465587.88	351030.74	Perfluoroalkyl Compounds	IR54-GW15D-17D	WG	Ground water	19-Nov-17
IR54-MW15	SITE 00054	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2465587.88	351030.74	Perfluoroalkyl Compounds	IR54-GW15D-17D	WG	Ground water	19-Nov-17
IR54-MW14	SITE 00054	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2465637.66	351179.5	Perfluoroalkyl Compounds	IR54-GW14-17D	WG	Ground water	19-Nov-17
MW17	UST	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2465482.22	355248.94	Perfluoroalkyl Compounds	USTAS4141-GW17-17D	WG	Ground water	17-Nov-17
IR86-MW27	SITE 00086	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2467405.87	355994.492	Perfluoroalkyl Compounds	IR86-GW27-17D	WG	Ground water	16-Nov-17
IR54-MW14	SITE 00054	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2465637.66	351179.5	Perfluoroalkyl Compounds	IR54-GW14-17D	WG	Ground water	19-Nov-17
IR86-MW53	SITE 00086	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2466417.4	355371.136	Perfluoroalkyl Compounds	IR86-GW53D-17D	WG	Ground water	17-Nov-17
IR86-MW27	SITE 00086	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2467405.87	355994.492	Perfluoroalkyl Compounds	IR86-GW27-17D	WG	Ground water	16-Nov-17
		CAMP_LEJEUNE_MCB			1701758			Perfluoroalkyl Compounds	IR86-EB-111917	WQ	Water for QC samples	19-Nov-17
IR86-MW47	SITE 00086	CAMP_LEJEUNE_MCB	TWP	Temporary well point	1701758	2467509.34	355697.1	Perfluoroalkyl Compounds	IR86-GW47-17D	WG	Ground water	17-Nov-17
		CAMP_LEJEUNE_MCB			1701758			Perfluoroalkyl Compounds	IR86-FB-111917	WQ	Water for QC samples	19-Nov-17
IR86-MW53	SITE 00086	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2466417.4	355371.136	Perfluoroalkyl Compounds	IR86-GW53-17D	WG	Ground water	17-Nov-17
IR54-MW15	SITE 00054	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2465587.88	351030.74	Perfluoroalkyl Compounds	IR54-GW15-17D	WG	Ground water	19-Nov-17
IR86-MW59	SITE 00086	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2468980.22	355568.64	Perfluoroalkyl Compounds	IR86-GW59-17D	WG	Ground water	16-Nov-17
IR86-MW61	SITE 00086	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2469309.43	355925.28	Perfluoroalkyl Compounds	IR86-GW61-17D	WG	Ground water	16-Nov-17
IR86-MW61	SITE 00086	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2469309.43	355925.28	Perfluoroalkyl Compounds	IR86-GW61-17D	WG	Ground water	16-Nov-17
IR86-MW53	SITE 00086	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2466417.4	355371.136	Perfluoroalkyl Compounds	IR86-GW53D-17D	WG	Ground water	17-Nov-17
MW13	UST	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2465690.32	355404.35	Perfluoroalkyl Compounds	USTAS4141-GW13-17D	WG	Ground water	17-Nov-17
MW13	UST	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2465690.32	355404.35	Perfluoroalkyl Compounds	USTAS4141-GW13-17D	WG	Ground water	17-Nov-17
MW13	UST	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2465690.32	355404.35	Perfluoroalkyl Compounds	USTAS4141-GW13-17D	WG	Ground water	17-Nov-17
IR86-MW48	SITE 00086	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2467841.91	355902.59	Perfluoroalkyl Compounds	IR86-GW48-17D	WG	Ground water	16-Nov-17
		CAMP_LEJEUNE_MCB			1701758			Perfluoroalkyl Compounds	IR86-EB-111917	WQ	Water for QC samples	19-Nov-17
MW13	UST	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2465690.32	355404.35	Perfluoroalkyl Compounds	USTAS4141-GW13-17D	WG	Ground water	17-Nov-17
		CAMP_LEJEUNE_MCB			1701758			Perfluoroalkyl Compounds	IR54-EB-111917	WQ	Water for QC samples	19-Nov-17
IR86-MW59	SITE 00086	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2468980.22	355568.64	Perfluoroalkyl Compounds	IR86-GW59-17D	WG	Ground water	16-Nov-17
IR54-MW15	SITE 00054	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2465587.88	351030.74	Perfluoroalkyl Compounds	IR54-GW15-17D	WG	Ground water	19-Nov-17
IR86-MW47	SITE 00086	CAMP_LEJEUNE_MCB	TWP	Temporary well point	1701758	2467509.34	355697.1	Perfluoroalkyl Compounds	IR86-GW47-17D	WG	Ground water	17-Nov-17
IR86-MW48	SITE 00086	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2467841.91	355902.59	Perfluoroalkyl Compounds	IR86-GW48-17D	WG	Ground water	16-Nov-17
IR86-MW58	SITE 00086	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2468610.36	355917.24	Perfluoroalkyl Compounds	IR86-GW58-17D	WG	Ground water	16-Nov-17
		CAMP_LEJEUNE_MCB			1701758			Perfluoroalkyl Compounds	IR54-FB-111917	WQ	Water for QC samples	19-Nov-17
		CAMP_LEJEUNE_MCB			1701758			Perfluoroalkyl Compounds	IR86-FB-111917	WQ	Water for QC samples	19-Nov-17
IR86-MW59	SITE 00086	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2468980.22	355568.64	Perfluoroalkyl Compounds	IR86-GW59-17D	WG	Ground water	16-Nov-17
IR54-MW16	SITE 00054	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2465504.38	350997.902	Perfluoroalkyl Compounds	IR54-GW16-17D	WG	Ground water	19-Nov-17
IR86-MW47	SITE 00086	CAMP_LEJEUNE_MCB	TWP	Temporary well point	1701758	2467509.34	355697.1	Perfluoroalkyl Compounds	IR86-GW47-17D	WG	Ground water	17-Nov-17
IR86-MW53	SITE 00086	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2466417.4	355371.136	Perfluoroalkyl Compounds	IR86-GW53D-17D	WG	Ground water	17-Nov-17

LOCATION_NAME	SITE_NAME	INSTALLATION_ID	LOCATION_TYPE	LOCATION_TYPE_DESC	SDG	COORD_X	COORD_Y	ANALYTICAL_METHOD_GRP_DESC	SAMPLE_NAME	SAMPLE_MATRIX	SAMPLE_MATRIX_DESC	COLLECT_DATE
IR54-MW14	SITE 00054	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2465637.66	351179.5	Perfluoroalkyl Compounds	IR54-GW14-17D	WG	Ground water	19-Nov-17
IR86-MW27	SITE 00086	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2467405.87	355994.492	Perfluoroalkyl Compounds	IR86-GW27-17D	WG	Ground water	16-Nov-17
IR86-MW27	SITE 00086	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2467405.87	355994.492	Perfluoroalkyl Compounds	IR86-GW27-17D	WG	Ground water	16-Nov-17
		CAMP_LEJEUNE_MCB			1701758			Perfluoroalkyl Compounds	IR86-FB-111917	WQ	Water for QC samples	19-Nov-17
IR54-MW17	SITE 00054	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2465364.72	350526.79	Perfluoroalkyl Compounds	IR54-GW17-17D	WG	Ground water	19-Nov-17
IR54-MW17	SITE 00054	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2465364.72	350526.79	Perfluoroalkyl Compounds	IR54-GW17-17D	WG	Ground water	19-Nov-17
IR86-MW47	SITE 00086	CAMP_LEJEUNE_MCB	TWP	Temporary well point	1701758	2467509.34	355697.1	Perfluoroalkyl Compounds	IR86-GW47-17D	WG	Ground water	17-Nov-17
IR86-MW59	SITE 00086	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2468980.22	355568.64	Perfluoroalkyl Compounds	IR86-GW59-17D	WG	Ground water	16-Nov-17
IR86-MW59	SITE 00086	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2468980.22	355568.64	Perfluoroalkyl Compounds	IR86-GW59-17D	WG	Ground water	16-Nov-17
IR86-MW53	SITE 00086	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2466417.4	355371.136	Perfluoroalkyl Compounds	IR86-GW53-17D	WG	Ground water	17-Nov-17
MW17	UST	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2465482.22	355248.94	Perfluoroalkyl Compounds	USTAS4141-GW17-17D	WG	Ground water	17-Nov-17
IR54-MW14	SITE 00054	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2465637.66	351179.5	Perfluoroalkyl Compounds	IR54-GW14-17D	WG	Ground water	19-Nov-17
IR54-MW16	SITE 00054	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2465504.38	350997.902	Perfluoroalkyl Compounds	IR54-GW16-17D	WG	Ground water	19-Nov-17
IR86-MW47	SITE 00086	CAMP_LEJEUNE_MCB	TWP	Temporary well point	1701758	2467509.34	355697.1	Perfluoroalkyl Compounds	IR86-GW47-17D	WG	Ground water	17-Nov-17
IR86-MW47	SITE 00086	CAMP_LEJEUNE_MCB	TWP	Temporary well point	1701758	2467509.34	355697.1	Perfluoroalkyl Compounds	IR86-GW47-17D	WG	Ground water	17-Nov-17
IR54-MW14	SITE 00054	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2465637.66	351179.5	Perfluoroalkyl Compounds	IR54-GW14-17D	WG	Ground water	19-Nov-17
IR86-MW61	SITE 00086	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2469309.43	355925.28	Perfluoroalkyl Compounds	IR86-GW61-17D	WG	Ground water	16-Nov-17
		CAMP_LEJEUNE_MCB			1701758			Perfluoroalkyl Compounds	IR54-FB-111917	WQ	Water for QC samples	19-Nov-17
MW13	UST	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2465690.32	355404.35	Perfluoroalkyl Compounds	USTAS4141-GW13-17D	WG	Ground water	17-Nov-17
		CAMP_LEJEUNE_MCB			1701758			Perfluoroalkyl Compounds	IR54-EB-111917	WQ	Water for QC samples	19-Nov-17
IR54-MW15	SITE 00054	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2465587.88	351030.74	Perfluoroalkyl Compounds	IR54-GW15D-17D	WG	Ground water	19-Nov-17
		CAMP_LEJEUNE_MCB			1701758			Perfluoroalkyl Compounds	IR54-EB-111917	WQ	Water for QC samples	19-Nov-17
IR54-MW15	SITE 00054	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2465587.88	351030.74	Perfluoroalkyl Compounds	IR54-GW15D-17D	WG	Ground water	19-Nov-17
IR86-MW58	SITE 00086	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2468610.36	355917.24	Perfluoroalkyl Compounds	IR86-GW58-17D	WG	Ground water	16-Nov-17
		CAMP_LEJEUNE_MCB			1701758			Perfluoroalkyl Compounds	IR54-EB-111917	WQ	Water for QC samples	19-Nov-17
MW13	UST	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2465690.32	355404.35	Perfluoroalkyl Compounds	USTAS4141-GW13-17D	WG	Ground water	17-Nov-17
		CAMP_LEJEUNE_MCB			1701758			Perfluoroalkyl Compounds	IR86-EB-111917	WQ	Water for QC samples	19-Nov-17
IR54-MW15	SITE 00054	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2465587.88	351030.74	Perfluoroalkyl Compounds	IR54-GW15D-17D	WG	Ground water	19-Nov-17
		CAMP_LEJEUNE_MCB			1701758			Perfluoroalkyl Compounds	IR54-EB-111917	WQ	Water for QC samples	19-Nov-17
IR86-MW59	SITE 00086	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2468980.22	355568.64	Perfluoroalkyl Compounds	IR86-GW59-17D	WG	Ground water	16-Nov-17
		CAMP_LEJEUNE_MCB			1701758			Perfluoroalkyl Compounds	IR86-FB-111917	WQ	Water for QC samples	19-Nov-17
MW17	UST	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2465482.22	355248.94	Perfluoroalkyl Compounds	USTAS4141-GW17-17D	WG	Ground water	17-Nov-17
IR86-MW58	SITE 00086	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2468610.36	355917.24	Perfluoroalkyl Compounds	IR86-GW58-17D	WG	Ground water	16-Nov-17
MW17	UST	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2465482.22	355248.94	Perfluoroalkyl Compounds	USTAS4141-GW17-17D	WG	Ground water	17-Nov-17
		CAMP_LEJEUNE_MCB			1701758			Perfluoroalkyl Compounds	IR86-FB-111917	WQ	Water for QC samples	19-Nov-17
IR86-MW53	SITE 00086	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2466417.4	355371.136	Perfluoroalkyl Compounds	IR86-GW53D-17D	WG	Ground water	17-Nov-17
IR86-MW61	SITE 00086	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2469309.43	355925.28	Perfluoroalkyl Compounds	IR86-GW61-17D	WG	Ground water	16-Nov-17
IR86-MW27	SITE 00086	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2467405.87	355994.492	Perfluoroalkyl Compounds	IR86-GW27-17D	WG	Ground water	16-Nov-17
IR86-MW61	SITE 00086	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2469309.43	355925.28	Perfluoroalkyl Compounds	IR86-GW61-17D	WG	Ground water	16-Nov-17
IR86-MW53	SITE 00086	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2466417.4	355371.136	Perfluoroalkyl Compounds	IR86-GW53D-17D	WG	Ground water	17-Nov-17

LOCATION_NAME	SITE_NAME	INSTALLATION_ID	LOCATION_TYPE	LOCATION_TYPE_DESC	SDG	COORD_X	COORD_Y	ANALYTICAL_METHOD_GRP_DESC	SAMPLE_NAME	SAMPLE_MATRIX	SAMPLE_MATRIX_DESC	COLLECT_DATE
IR86-MW48	SITE 00086	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2467841.91	355902.59	Perfluoroalkyl Compounds	IR86-GW48-17D	WG	Ground water	16-Nov-17
MW17	UST	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2465482.22	355248.94	Perfluoroalkyl Compounds	USTAS4141-GW17-17D	WG	Ground water	17-Nov-17
IR86-MW59	SITE 00086	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2468980.22	355568.64	Perfluoroalkyl Compounds	IR86-GW59-17D	WG	Ground water	16-Nov-17
IR86-MW61	SITE 00086	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2469309.43	355925.28	Perfluoroalkyl Compounds	IR86-GW61-17D	WG	Ground water	16-Nov-17
MW17	UST	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2465482.22	355248.94	Perfluoroalkyl Compounds	USTAS4141-GW17-17D	WG	Ground water	17-Nov-17
IR54-MW15	SITE 00054	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2465587.88	351030.74	Perfluoroalkyl Compounds	IR54-GW15-17D	WG	Ground water	19-Nov-17
IR54-MW15	SITE 00054	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2465587.88	351030.74	Perfluoroalkyl Compounds	IR54-GW15-17D	WG	Ground water	19-Nov-17
		CAMP_LEJEUNE_MCB			1701758			Perfluoroalkyl Compounds	IR54-EB-111917	WQ	Water for QC samples	19-Nov-17
IR86-MW47	SITE 00086	CAMP_LEJEUNE_MCB	TWP	Temporary well point	1701758	2467509.34	355697.1	Perfluoroalkyl Compounds	IR86-GW47-17D	WG	Ground water	17-Nov-17
		CAMP_LEJEUNE_MCB			1701758			Perfluoroalkyl Compounds	IR54-FB-111917	WQ	Water for QC samples	19-Nov-17
IR86-MW53	SITE 00086	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2466417.4	355371.136	Perfluoroalkyl Compounds	IR86-GW53-17D	WG	Ground water	17-Nov-17
IR86-MW58	SITE 00086	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2468610.36	355917.24	Perfluoroalkyl Compounds	IR86-GW58-17D	WG	Ground water	16-Nov-17
IR54-MW16	SITE 00054	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2465504.38	350997.902	Perfluoroalkyl Compounds	IR54-GW16-17D	WG	Ground water	19-Nov-17
IR54-MW14	SITE 00054	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2465637.66	351179.5	Perfluoroalkyl Compounds	IR54-GW14-17D	WG	Ground water	19-Nov-17
		CAMP_LEJEUNE_MCB			1701758			Perfluoroalkyl Compounds	IR54-FB-111917	WQ	Water for QC samples	19-Nov-17
IR86-MW48	SITE 00086	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2467841.91	355902.59	Perfluoroalkyl Compounds	IR86-GW48-17D	WG	Ground water	16-Nov-17
IR86-MW47	SITE 00086	CAMP_LEJEUNE_MCB	TWP	Temporary well point	1701758	2467509.34	355697.1	Perfluoroalkyl Compounds	IR86-GW47-17D	WG	Ground water	17-Nov-17
		CAMP_LEJEUNE_MCB			1701758			Perfluoroalkyl Compounds	IR86-FB-111917	WQ	Water for QC samples	19-Nov-17
		CAMP_LEJEUNE_MCB			1701758			Perfluoroalkyl Compounds	IR54-EB-111917	WQ	Water for QC samples	19-Nov-17
		CAMP_LEJEUNE_MCB			1701758			Perfluoroalkyl Compounds	IR54-EB-111917	WQ	Water for QC samples	19-Nov-17
		CAMP_LEJEUNE_MCB			1701758			Perfluoroalkyl Compounds	IR86-FB-111917	WQ	Water for QC samples	19-Nov-17
IR54-MW17	SITE 00054	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2465364.72	350526.79	Perfluoroalkyl Compounds	IR54-GW17-17D	WG	Ground water	19-Nov-17
		CAMP_LEJEUNE_MCB			1701758			Perfluoroalkyl Compounds	IR86-FB-111917	WQ	Water for QC samples	19-Nov-17
IR54-MW17	SITE 00054	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2465364.72	350526.79	Perfluoroalkyl Compounds	IR54-GW17-17D	WG	Ground water	19-Nov-17
IR86-MW58	SITE 00086	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2468610.36	355917.24	Perfluoroalkyl Compounds	IR86-GW58-17D	WG	Ground water	16-Nov-17
IR54-MW16	SITE 00054	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2465504.38	350997.902	Perfluoroalkyl Compounds	IR54-GW16-17D	WG	Ground water	19-Nov-17
IR86-MW27	SITE 00086	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2467405.87	355994.492	Perfluoroalkyl Compounds	IR86-GW27-17D	WG	Ground water	16-Nov-17
		CAMP_LEJEUNE_MCB			1701758			Perfluoroalkyl Compounds	IR54-FB-111917	WQ	Water for QC samples	19-Nov-17
IR54-MW17	SITE 00054	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2465364.72	350526.79	Perfluoroalkyl Compounds	IR54-GW17-17D	WG	Ground water	19-Nov-17
IR86-MW53	SITE 00086	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2466417.4	355371.136	Perfluoroalkyl Compounds	IR86-GW53-17D	WG	Ground water	17-Nov-17
IR86-MW59	SITE 00086	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2468980.22	355568.64	Perfluoroalkyl Compounds	IR86-GW59-17D	WG	Ground water	16-Nov-17
IR86-MW47	SITE 00086	CAMP_LEJEUNE_MCB	TWP	Temporary well point	1701758	2467509.34	355697.1	Perfluoroalkyl Compounds	IR86-GW47-17D	WG	Ground water	17-Nov-17
IR54-MW16	SITE 00054	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2465504.38	350997.902	Perfluoroalkyl Compounds	IR54-GW16-17D	WG	Ground water	19-Nov-17
IR54-MW16	SITE 00054	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2465504.38	350997.902	Perfluoroalkyl Compounds	IR54-GW16-17D	WG	Ground water	19-Nov-17
IR86-MW61	SITE 00086	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2469309.43	355925.28	Perfluoroalkyl Compounds	IR86-GW61-17D	WG	Ground water	16-Nov-17
IR86-MW61	SITE 00086	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2469309.43	355925.28	Perfluoroalkyl Compounds	IR86-GW61-17D	WG	Ground water	16-Nov-17
		CAMP_LEJEUNE_MCB			1701758			Perfluoroalkyl Compounds	IR86-FB-111917	WQ	Water for QC samples	19-Nov-17
IR86-MW58	SITE 00086	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2468610.36	355917.24	Perfluoroalkyl Compounds	IR86-GW58-17D	WG	Ground water	16-Nov-17
		CAMP_LEJEUNE_MCB			1701758			Perfluoroalkyl Compounds	IR86-EB-111917	WQ	Water for QC samples	19-Nov-17
IR86-MW59	SITE 00086	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2468980.22	355568.64	Perfluoroalkyl Compounds	IR86-GW59-17D	WG	Ground water	16-Nov-17

LOCATION_NAME	SITE_NAME	INSTALLATION_ID	LOCATION_TYPE	LOCATION_TYPE_DESC	SDG	COORD_X	COORD_Y	ANALYTICAL_METHOD_GRP_DESC	SAMPLE_NAME	SAMPLE_MATRIX	SAMPLE_MATRIX_DESC	COLLECT_DATE
IR86-MW59	SITE 00086	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2468980.22	355568.64	Perfluoroalkyl Compounds	IR86-GW59-17D	WG	Ground water	16-Nov-17
IR54-MW17	SITE 00054	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2465364.72	350526.79	Perfluoroalkyl Compounds	IR54-GW17-17D	WG	Ground water	19-Nov-17
		CAMP_LEJEUNE_MCB			1701758			Perfluoroalkyl Compounds	IR86-EB-111917	WQ	Water for QC samples	19-Nov-17
IR86-MW27	SITE 00086	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2467405.87	355994.492	Perfluoroalkyl Compounds	IR86-GW27-17D	WG	Ground water	16-Nov-17
		CAMP_LEJEUNE_MCB			1701758			Perfluoroalkyl Compounds	IR54-EB-111917	WQ	Water for QC samples	19-Nov-17
IR54-MW17	SITE 00054	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2465364.72	350526.79	Perfluoroalkyl Compounds	IR54-GW17-17D	WG	Ground water	19-Nov-17
IR54-MW14	SITE 00054	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2465637.66	351179.5	Perfluoroalkyl Compounds	IR54-GW14-17D	WG	Ground water	19-Nov-17
		CAMP_LEJEUNE_MCB			1701758			Perfluoroalkyl Compounds	IR54-FB-111917	WQ	Water for QC samples	19-Nov-17
		CAMP_LEJEUNE_MCB			1701758			Perfluoroalkyl Compounds	IR54-EB-111917	WQ	Water for QC samples	19-Nov-17
IR54-MW15	SITE 00054	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2465587.88	351030.74	Perfluoroalkyl Compounds	IR54-GW15-17D	WG	Ground water	19-Nov-17
IR86-MW58	SITE 00086	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2468610.36	355917.24	Perfluoroalkyl Compounds	IR86-GW58-17D	WG	Ground water	16-Nov-17
IR54-MW15	SITE 00054	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2465587.88	351030.74	Perfluoroalkyl Compounds	IR54-GW15-17D	WG	Ground water	19-Nov-17
MW13	UST	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2465690.32	355404.35	Perfluoroalkyl Compounds	USTAS4141-GW13-17D	WG	Ground water	17-Nov-17
IR86-MW47	SITE 00086	CAMP_LEJEUNE_MCB	TWP	Temporary well point	1701758	2467509.34	355697.1	Perfluoroalkyl Compounds	IR86-GW47-17D	WG	Ground water	17-Nov-17
IR54-MW16	SITE 00054	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2465504.38	350997.902	Perfluoroalkyl Compounds	IR54-GW16-17D	WG	Ground water	19-Nov-17
IR54-MW17	SITE 00054	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2465364.72	350526.79	Perfluoroalkyl Compounds	IR54-GW17-17D	WG	Ground water	19-Nov-17
IR86-MW53	SITE 00086	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2466417.4	355371.136	Perfluoroalkyl Compounds	IR86-GW53D-17D	WG	Ground water	17-Nov-17
IR86-MW27	SITE 00086	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2467405.87	355994.492	Perfluoroalkyl Compounds	IR86-GW27-17D	WG	Ground water	16-Nov-17
		CAMP_LEJEUNE_MCB			1701758			Perfluoroalkyl Compounds	IR86-FB-111917	WQ	Water for QC samples	19-Nov-17
IR86-MW61	SITE 00086	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2469309.43	355925.28	Perfluoroalkyl Compounds	IR86-GW61-17D	WG	Ground water	16-Nov-17
IR86-MW61	SITE 00086	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2469309.43	355925.28	Perfluoroalkyl Compounds	IR86-GW61-17D	WG	Ground water	16-Nov-17
IR86-MW59	SITE 00086	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2468980.22	355568.64	Perfluoroalkyl Compounds	IR86-GW59-17D	WG	Ground water	16-Nov-17
		CAMP_LEJEUNE_MCB			1701758			Perfluoroalkyl Compounds	IR86-EB-111917	WQ	Water for QC samples	19-Nov-17
		CAMP_LEJEUNE_MCB			1701758			Perfluoroalkyl Compounds	IR54-FB-111917	WQ	Water for QC samples	19-Nov-17
		CAMP_LEJEUNE_MCB			1701758			Perfluoroalkyl Compounds	IR54-FB-111917	WQ	Water for QC samples	19-Nov-17
		CAMP_LEJEUNE_MCB			1701758			Perfluoroalkyl Compounds	IR54-FB-111917	WQ	Water for QC samples	19-Nov-17
IR54-MW15	SITE 00054	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2465587.88	351030.74	Perfluoroalkyl Compounds	IR54-GW15D-17D	WG	Ground water	19-Nov-17
		CAMP_LEJEUNE_MCB			1701758			Perfluoroalkyl Compounds	IR86-EB-111917	WQ	Water for QC samples	19-Nov-17
IR86-MW53	SITE 00086	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2466417.4	355371.136	Perfluoroalkyl Compounds	IR86-GW53-17D	WG	Ground water	17-Nov-17
IR54-MW15	SITE 00054	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2465587.88	351030.74	Perfluoroalkyl Compounds	IR54-GW15D-17D	WG	Ground water	19-Nov-17
IR86-MW61	SITE 00086	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2469309.43	355925.28	Perfluoroalkyl Compounds	IR86-GW61-17D	WG	Ground water	16-Nov-17
		CAMP_LEJEUNE_MCB			1701758			Perfluoroalkyl Compounds	IR86-FB-111917	WQ	Water for QC samples	19-Nov-17
IR86-MW47	SITE 00086	CAMP_LEJEUNE_MCB	TWP	Temporary well point	1701758	2467509.34	355697.1	Perfluoroalkyl Compounds	IR86-GW47-17D	WG	Ground water	17-Nov-17
		CAMP_LEJEUNE_MCB			1701758			Perfluoroalkyl Compounds	IR54-FB-111917	WQ	Water for QC samples	19-Nov-17
IR86-MW48	SITE 00086	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2467841.91	355902.59	Perfluoroalkyl Compounds	IR86-GW48-17D	WG	Ground water	16-Nov-17
IR54-MW15	SITE 00054	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2465587.88	351030.74	Perfluoroalkyl Compounds	IR54-GW15D-17D	WG	Ground water	19-Nov-17
IR86-MW27	SITE 00086	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2467405.87	355994.492	Perfluoroalkyl Compounds	IR86-GW27-17D	WG	Ground water	16-Nov-17
IR86-MW53	SITE 00086	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2466417.4	355371.136	Perfluoroalkyl Compounds	IR86-GW53-17D	WG	Ground water	17-Nov-17
IR86-MW53	SITE 00086	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2466417.4	355371.136	Perfluoroalkyl Compounds	IR86-GW53-17D	WG	Ground water	17-Nov-17
IR86-MW59	SITE 00086	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2468980.22	355568.64	Perfluoroalkyl Compounds	IR86-GW59-17D	WG	Ground water	16-Nov-17

LOCATION_NAME	SITE_NAME	INSTALLATION_ID	LOCATION_TYPE	LOCATION_TYPE_DESC	SDG	COORD_X	COORD_Y	ANALYTICAL_METHOD_GRP_DESC	SAMPLE_NAME	SAMPLE_MATRIX	SAMPLE_MATRIX_DESC	COLLECT_DATE
		CAMP_LEJEUNE_MCB			1701758			Perfluoroalkyl Compounds	IR86-FB-111917	WQ	Water for QC samples	19-Nov-17
IR54-MW17	SITE 00054	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2465364.72	350526.79	Perfluoroalkyl Compounds	IR54-GW17-17D	WG	Ground water	19-Nov-17
IR86-MW58	SITE 00086	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2468610.36	355917.24	Perfluoroalkyl Compounds	IR86-GW58-17D	WG	Ground water	16-Nov-17
		CAMP_LEJEUNE_MCB			1701758			Perfluoroalkyl Compounds	IR54-FB-111917	WQ	Water for QC samples	19-Nov-17
IR86-MW53	SITE 00086	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2466417.4	355371.136	Perfluoroalkyl Compounds	IR86-GW53-17D	WG	Ground water	17-Nov-17
MW17	UST	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2465482.22	355248.94	Perfluoroalkyl Compounds	USTAS4141-GW17-17D	WG	Ground water	17-Nov-17
		CAMP_LEJEUNE_MCB			1701758			Perfluoroalkyl Compounds	IR86-EB-111917	WQ	Water for QC samples	19-Nov-17
IR54-MW15	SITE 00054	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2465587.88	351030.74	Perfluoroalkyl Compounds	IR54-GW15D-17D	WG	Ground water	19-Nov-17
IR54-MW16	SITE 00054	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2465504.38	350997.902	Perfluoroalkyl Compounds	IR54-GW16-17D	WG	Ground water	19-Nov-17
IR86-MW48	SITE 00086	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2467841.91	355902.59	Perfluoroalkyl Compounds	IR86-GW48-17D	WG	Ground water	16-Nov-17
IR86-MW27	SITE 00086	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2467405.87	355994.492	Perfluoroalkyl Compounds	IR86-GW27-17D	WG	Ground water	16-Nov-17
IR54-MW15	SITE 00054	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2465587.88	351030.74	Perfluoroalkyl Compounds	IR54-GW15-17D	WG	Ground water	19-Nov-17
IR54-MW16	SITE 00054	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2465504.38	350997.902	Perfluoroalkyl Compounds	IR54-GW16-17D	WG	Ground water	19-Nov-17
		CAMP_LEJEUNE_MCB			1701758			Perfluoroalkyl Compounds	IR86-EB-111917	WQ	Water for QC samples	19-Nov-17
IR86-MW53	SITE 00086	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2466417.4	355371.136	Perfluoroalkyl Compounds	IR86-GW53D-17D	WG	Ground water	17-Nov-17
IR86-MW27	SITE 00086	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2467405.87	355994.492	Perfluoroalkyl Compounds	IR86-GW27-17D	WG	Ground water	16-Nov-17
MW13	UST	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2465690.32	355404.35	Perfluoroalkyl Compounds	USTAS4141-GW13-17D	WG	Ground water	17-Nov-17
IR86-MW59	SITE 00086	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2468980.22	355568.64	Perfluoroalkyl Compounds	IR86-GW59-17D	WG	Ground water	16-Nov-17
IR54-MW15	SITE 00054	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2465587.88	351030.74	Perfluoroalkyl Compounds	IR54-GW15-17D	WG	Ground water	19-Nov-17
IR54-MW14	SITE 00054	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2465637.66	351179.5	Perfluoroalkyl Compounds	IR54-GW14-17D	WG	Ground water	19-Nov-17
IR86-MW61	SITE 00086	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2469309.43	355925.28	Perfluoroalkyl Compounds	IR86-GW61-17D	WG	Ground water	16-Nov-17
IR86-MW47	SITE 00086	CAMP_LEJEUNE_MCB	TWP	Temporary well point	1701758	2467509.34	355697.1	Perfluoroalkyl Compounds	IR86-GW47-17D	WG	Ground water	17-Nov-17
MW17	UST	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2465482.22	355248.94	Perfluoroalkyl Compounds	USTAS4141-GW17-17D	WG	Ground water	17-Nov-17
IR86-MW53	SITE 00086	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2466417.4	355371.136	Perfluoroalkyl Compounds	IR86-GW53-17D	WG	Ground water	17-Nov-17
IR86-MW48	SITE 00086	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2467841.91	355902.59	Perfluoroalkyl Compounds	IR86-GW48-17D	WG	Ground water	16-Nov-17
IR54-MW16	SITE 00054	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2465504.38	350997.902	Perfluoroalkyl Compounds	IR54-GW16-17D	WG	Ground water	19-Nov-17
IR54-MW14	SITE 00054	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2465637.66	351179.5	Perfluoroalkyl Compounds	IR54-GW14-17D	WG	Ground water	19-Nov-17
IR86-MW53	SITE 00086	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2466417.4	355371.136	Perfluoroalkyl Compounds	IR86-GW53D-17D	WG	Ground water	17-Nov-17
IR54-MW16	SITE 00054	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2465504.38	350997.902	Perfluoroalkyl Compounds	IR54-GW16-17D	WG	Ground water	19-Nov-17
IR86-MW58	SITE 00086	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2468610.36	355917.24	Perfluoroalkyl Compounds	IR86-GW58-17D	WG	Ground water	16-Nov-17
IR86-MW48	SITE 00086	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2467841.91	355902.59	Perfluoroalkyl Compounds	IR86-GW48-17D	WG	Ground water	16-Nov-17
IR54-MW14	SITE 00054	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2465637.66	351179.5	Perfluoroalkyl Compounds	IR54-GW14-17D	WG	Ground water	19-Nov-17
IR86-MW48	SITE 00086	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2467841.91	355902.59	Perfluoroalkyl Compounds	IR86-GW48-17D	WG	Ground water	16-Nov-17
IR86-MW48	SITE 00086	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2467841.91	355902.59	Perfluoroalkyl Compounds	IR86-GW48-17D	WG	Ground water	16-Nov-17
IR54-MW16	SITE 00054	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2465504.38	350997.902	Perfluoroalkyl Compounds	IR54-GW16-17D	WG	Ground water	19-Nov-17
IR54-MW16	SITE 00054	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2465504.38	350997.902	Perfluoroalkyl Compounds	IR54-GW16-17D	WG	Ground water	19-Nov-17
IR86-MW58	SITE 00086	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2468610.36	355917.24	Perfluoroalkyl Compounds	IR86-GW58-17D	WG	Ground water	16-Nov-17
IR86-MW58	SITE 00086	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2468610.36	355917.24	Perfluoroalkyl Compounds	IR86-GW58-17D	WG	Ground water	16-Nov-17
		CAMP_LEJEUNE_MCB			1701758			Perfluoroalkyl Compounds	IR86-EB-111917	WQ	Water for QC samples	19-Nov-17
IR86-MW48	SITE 00086	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2467841.91	355902.59	Perfluoroalkyl Compounds	IR86-GW48-17D	WG	Ground water	16-Nov-17

LOCATION_NAME	SITE_NAME	INSTALLATION_ID	LOCATION_TYPE	LOCATION_TYPE_DESC	SDG	COORD_X	COORD_Y	ANALYTICAL_METHOD_GRP_DESC	SAMPLE_NAME	SAMPLE_MATRIX	SAMPLE_MATRIX_DESC	COLLECT_DATE
IR54-MW15	SITE 00054	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2465587.88	351030.74	Perfluoroalkyl Compounds	IR54-GW15-17D	WG	Ground water	19-Nov-17
IR86-MW27	SITE 00086	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2467405.87	355994.492	Perfluoroalkyl Compounds	IR86-GW27-17D	WG	Ground water	16-Nov-17
IR54-MW17	SITE 00054	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2465364.72	350526.79	Perfluoroalkyl Compounds	IR54-GW17-17D	WG	Ground water	19-Nov-17
IR86-MW53	SITE 00086	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2466417.4	355371.136	Perfluoroalkyl Compounds	IR86-GW53D-17D	WG	Ground water	17-Nov-17
MW17	UST	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2465482.22	355248.94	Perfluoroalkyl Compounds	USTAS4141-GW17-17D	WG	Ground water	17-Nov-17
IR54-MW15	SITE 00054	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2465587.88	351030.74	Perfluoroalkyl Compounds	IR54-GW15-17D	WG	Ground water	19-Nov-17
		CAMP_LEJEUNE_MCB			1701758			Perfluoroalkyl Compounds	IR86-EB-111917	WQ	Water for QC samples	19-Nov-17
MW13	UST	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2465690.32	355404.35	Perfluoroalkyl Compounds	USTAS4141-GW13-17D	WG	Ground water	17-Nov-17
MW17	UST	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2465482.22	355248.94	Perfluoroalkyl Compounds	USTAS4141-GW17-17D	WG	Ground water	17-Nov-17
		CAMP_LEJEUNE_MCB			1701758			Perfluoroalkyl Compounds	IR86-FB-111917	WQ	Water for QC samples	19-Nov-17
IR54-MW14	SITE 00054	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2465637.66	351179.5	Perfluoroalkyl Compounds	IR54-GW14-17D	WG	Ground water	19-Nov-17
IR86-MW58	SITE 00086	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2468610.36	355917.24	Perfluoroalkyl Compounds	IR86-GW58-17D	WG	Ground water	16-Nov-17
IR86-MW61	SITE 00086	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2469309.43	355925.28	Perfluoroalkyl Compounds	IR86-GW61-17D	WG	Ground water	16-Nov-17
IR86-MW58	SITE 00086	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2468610.36	355917.24	Perfluoroalkyl Compounds	IR86-GW58-17D	WG	Ground water	16-Nov-17
IR54-MW14	SITE 00054	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2465637.66	351179.5	Perfluoroalkyl Compounds	IR54-GW14-17D	WG	Ground water	19-Nov-17
IR86-MW53	SITE 00086	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2466417.4	355371.136	Perfluoroalkyl Compounds	IR86-GW53-17D	WG	Ground water	17-Nov-17
MW13	UST	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2465690.32	355404.35	Perfluoroalkyl Compounds	USTAS4141-GW13-17D	WG	Ground water	17-Nov-17
IR54-MW16	SITE 00054	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2465504.38	350997.902	Perfluoroalkyl Compounds	IR54-GW16-17D	WG	Ground water	19-Nov-17
IR86-MW48	SITE 00086	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2467841.91	355902.59	Perfluoroalkyl Compounds	IR86-GW48-17D	WG	Ground water	16-Nov-17
MW13	UST	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2465690.32	355404.35	Perfluoroalkyl Compounds	USTAS4141-GW13-17D	WG	Ground water	17-Nov-17
IR86-MW27	SITE 00086	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2467405.87	355994.492	Perfluoroalkyl Compounds	IR86-GW27-17D	WG	Ground water	16-Nov-17
IR86-MW53	SITE 00086	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2466417.4	355371.136	Perfluoroalkyl Compounds	IR86-GW53-17D	WG	Ground water	17-Nov-17
MW17	UST	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2465482.22	355248.94	Perfluoroalkyl Compounds	USTAS4141-GW17-17D	WG	Ground water	17-Nov-17
MW13	UST	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2465690.32	355404.35	Perfluoroalkyl Compounds	USTAS4141-GW13-17D	WG	Ground water	17-Nov-17
IR54-MW17	SITE 00054	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2465364.72	350526.79	Perfluoroalkyl Compounds	IR54-GW17-17D	WG	Ground water	19-Nov-17
		CAMP_LEJEUNE_MCB			1701758			Perfluoroalkyl Compounds	IR54-FB-111917	WQ	Water for QC samples	19-Nov-17
IR54-MW15	SITE 00054	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2465587.88	351030.74	Perfluoroalkyl Compounds	IR54-GW15D-17D	WG	Ground water	19-Nov-17
		CAMP_LEJEUNE_MCB			1701758			Perfluoroalkyl Compounds	IR86-EB-111917	WQ	Water for QC samples	19-Nov-17
IR86-MW61	SITE 00086	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2469309.43	355925.28	Perfluoroalkyl Compounds	IR86-GW61-17D	WG	Ground water	16-Nov-17
IR54-MW15	SITE 00054	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2465587.88	351030.74	Perfluoroalkyl Compounds	IR54-GW15-17D	WG	Ground water	19-Nov-17
IR54-MW15	SITE 00054	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2465587.88	351030.74	Perfluoroalkyl Compounds	IR54-GW15D-17D	WG	Ground water	19-Nov-17
MW17	UST	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2465482.22	355248.94	Perfluoroalkyl Compounds	USTAS4141-GW17-17D	WG	Ground water	17-Nov-17
IR86-MW48	SITE 00086	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2467841.91	355902.59	Perfluoroalkyl Compounds	IR86-GW48-17D	WG	Ground water	16-Nov-17
IR54-MW17	SITE 00054	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2465364.72	350526.79	Perfluoroalkyl Compounds	IR54-GW17-17D	WG	Ground water	19-Nov-17
IR86-MW48	SITE 00086	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2467841.91	355902.59	Perfluoroalkyl Compounds	IR86-GW48-17D	WG	Ground water	16-Nov-17
MW17	UST	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2465482.22	355248.94	Perfluoroalkyl Compounds	USTAS4141-GW17-17D	WG	Ground water	17-Nov-17
IR86-MW53	SITE 00086	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2466417.4	355371.136	Perfluoroalkyl Compounds	IR86-GW53D-17D	WG	Ground water	17-Nov-17
		CAMP_LEJEUNE_MCB			1701758			Perfluoroalkyl Compounds	IR54-EB-111917	WQ	Water for QC samples	19-Nov-17
IR54-MW14	SITE 00054	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2465637.66	351179.5	Perfluoroalkyl Compounds	IR54-GW14-17D	WG	Ground water	19-Nov-17
IR86-MW53	SITE 00086	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2466417.4	355371.136	Perfluoroalkyl Compounds	IR86-GW53D-17D	WG	Ground water	17-Nov-17

LOCATION_NAME	SITE_NAME	INSTALLATION_ID	LOCATION_TYPE	LOCATION_TYPE_DESC	SDG	COORD_X	COORD_Y	ANALYTICAL_METHOD_GRP_DESC	SAMPLE_NAME	SAMPLE_MATRIX	SAMPLE_MATRIX_DESC	COLLECT_DATE
		CAMP_LEJEUNE_MCB			1701758			Perfluoroalkyl Compounds	IR54-EB-111917	WQ	Water for QC samples	19-Nov-17
IR54-MW15	SITE 00054	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2465587.88	351030.74	Perfluoroalkyl Compounds	IR54-GW15-17D	WG	Ground water	19-Nov-17
IR86-MW58	SITE 00086	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2468610.36	355917.24	Perfluoroalkyl Compounds	IR86-GW58-17D	WG	Ground water	16-Nov-17
IR54-MW15	SITE 00054	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2465587.88	351030.74	Perfluoroalkyl Compounds	IR54-GW15D-17D	WG	Ground water	19-Nov-17
		CAMP_LEJEUNE_MCB			1701758			Perfluoroalkyl Compounds	IR86-EB-111917	WQ	Water for QC samples	19-Nov-17
IR86-MW53	SITE 00086	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2466417.4	355371.136	Perfluoroalkyl Compounds	IR86-GW53D-17D	WG	Ground water	17-Nov-17
		CAMP_LEJEUNE_MCB			1701758			Perfluoroalkyl Compounds	IR54-FB-111917	WQ	Water for QC samples	19-Nov-17
IR54-MW17	SITE 00054	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2465364.72	350526.79	Perfluoroalkyl Compounds	IR54-GW17-17D	WG	Ground water	19-Nov-17
IR86-MW53	SITE 00086	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2466417.4	355371.136	Perfluoroalkyl Compounds	IR86-GW53-17D	WG	Ground water	17-Nov-17
		CAMP_LEJEUNE_MCB			1701758			Perfluoroalkyl Compounds	IR54-FB-111917	WQ	Water for QC samples	19-Nov-17
IR86-MW47	SITE 00086	CAMP_LEJEUNE_MCB	TWP	Temporary well point	1701758	2467509.34	355697.1	Perfluoroalkyl Compounds	IR86-GW47-17D	WG	Ground water	17-Nov-17
IR86-MW47	SITE 00086	CAMP_LEJEUNE_MCB	TWP	Temporary well point	1701758	2467509.34	355697.1	Perfluoroalkyl Compounds	IR86-GW47-17D	WG	Ground water	17-Nov-17
IR86-MW59	SITE 00086	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2468980.22	355568.64	Perfluoroalkyl Compounds	IR86-GW59-17D	WG	Ground water	16-Nov-17
		CAMP_LEJEUNE_MCB			1701758			Perfluoroalkyl Compounds	IR86-EB-111917	WQ	Water for QC samples	19-Nov-17
IR54-MW15	SITE 00054	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2465587.88	351030.74	Perfluoroalkyl Compounds	IR54-GW15D-17D	WG	Ground water	19-Nov-17
		CAMP_LEJEUNE_MCB			1701758			Perfluoroalkyl Compounds	IR54-EB-111917	WQ	Water for QC samples	19-Nov-17
		CAMP_LEJEUNE_MCB			1701758			Perfluoroalkyl Compounds	IR86-FB-111917	WQ	Water for QC samples	19-Nov-17
IR54-MW17	SITE 00054	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2465364.72	350526.79	Perfluoroalkyl Compounds	IR54-GW17-17D	WG	Ground water	19-Nov-17
MW13	UST	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2465690.32	355404.35	Perfluoroalkyl Compounds	USTAS4141-GW13-17D	WG	Ground water	17-Nov-17
IR86-MW53	SITE 00086	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2466417.4	355371.136	Perfluoroalkyl Compounds	IR86-GW53D-17D	WG	Ground water	17-Nov-17
		CAMP_LEJEUNE_MCB			1701758			Perfluoroalkyl Compounds	IR54-EB-111917	WQ	Water for QC samples	19-Nov-17
IR86-MW53	SITE 00086	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2466417.4	355371.136	Perfluoroalkyl Compounds	IR86-GW53-17D	WG	Ground water	17-Nov-17
IR86-MW53	SITE 00086	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2466417.4	355371.136	Perfluoroalkyl Compounds	IR86-GW53-17D	WG	Ground water	17-Nov-17
MW17	UST	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2465482.22	355248.94	Perfluoroalkyl Compounds	USTAS4141-GW17-17D	WG	Ground water	17-Nov-17
IR86-MW53	SITE 00086	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2466417.4	355371.136	Perfluoroalkyl Compounds	IR86-GW53D-17D	WG	Ground water	17-Nov-17
IR54-MW15	SITE 00054	CAMP_LEJEUNE_MCB	WLM	Monitoring well	1701758	2465587.88	351030.74	Perfluoroalkyl Compounds	IR54-GW15D-17D	WG	Ground water	19-Nov-17