MICHIGAN DEPARTMENT OF ENVIRONMENT, GREAT LAKES, AND ENERGY

INTEROFFICE COMMUNICATION

TO: Christiaan Bon, Project Manager, Gaylord District Office
Remediation and Redevelopment Division

FROM: Brian Eustice, Geologist, Hydrogeology Unit, Geological Services Section
Remediation and Redevelopment Division

Brian Eustice (KZ)

DATE: July 31, 2019

SUBJECT: Camp Grayling-Lake Margrethe, Crawford County, Site ID #: N/A
Per- and Polyfluoroalkyl (PFAS) Sampling Data Package

This memorandum summarizes the methodology and findings of a marine investigation requested by the Department of Environment, Great Lakes, and Energy (EGLE), Remediation and Redevelopment Division's (RRD's), Gaylord District Office. RRD's Geological Services Section (GSS), along with district personnel, performed porewater, surface water and sediment sampling at the subject site on June 4-5, 2019. GSS received the final laboratory results on June 28, 2019.

The report includes the following:

- Site Location Map (Fig 1)
- Sample Location Map (Fig 2)
- Sampling Summary (Table 1)
- Sample Global Positioning System (GPS) Locations (Table 2)
- Porewater Analytical Summary (Table 3)
- Surface Water Analytical Summary (Table 4)
- Sediment Analytical Summary (Table 5)
- Vista Analytical Laboratory Porewater and Surface Water Results (Appendix A)
- Vista Analytical Laboratory Sediment Results (Appendix B)

The investigation area is offshore in Lake Margrethe; Sections 8, 9, 10, 15, 16, 17, 21 and 22; T26N-R04W; in Crawford County, Michigan (Fig 1).

The GSS collected seven collocated porewater, surface water, and sediment samples (PW/SW/SED-01-19 though PW/SW/SED-07-19) at locations previously sampled during the October 2018 investigation and at an additional five locations (PW/SW/SED-10-19 and PW/SW/SED-12-19 though PW/SW/SED-15-19). The five new locations are along the northeastern shoreline of the lake at areas identified as containing seeps or springs. Additionally, a surface water sample (SW-11-19) was collected on the downstream side of the dam at the lake's outflow to Portage Creek (Fig 2).

The GSS used stainless steel push point samplers with 4-inch long screens and overall lengths varying from 36-72 inches to collect porewater samples. The samplers were advanced by hand to depths ranging from 12-39 inches below lake bottom (based on refusal). Tubing was attached to top of the sampler and porewater was pumped via a peristaltic pump until at least three system volumes had been purged and water quality parameters were stabilized.

To collect water quality parameters and ensure that the porewater sampler screen was isolated from the surface water, staff used a YSI Pro Plus to monitor and compare water quality parameters (temperature, conductivity, dissolved oxygen and pH) of the surface water prior to sampling and of the porewater during purging. A summary of water depths, screened intervals, static water levels and water quality measurements for each sample location are listed in Table 1.

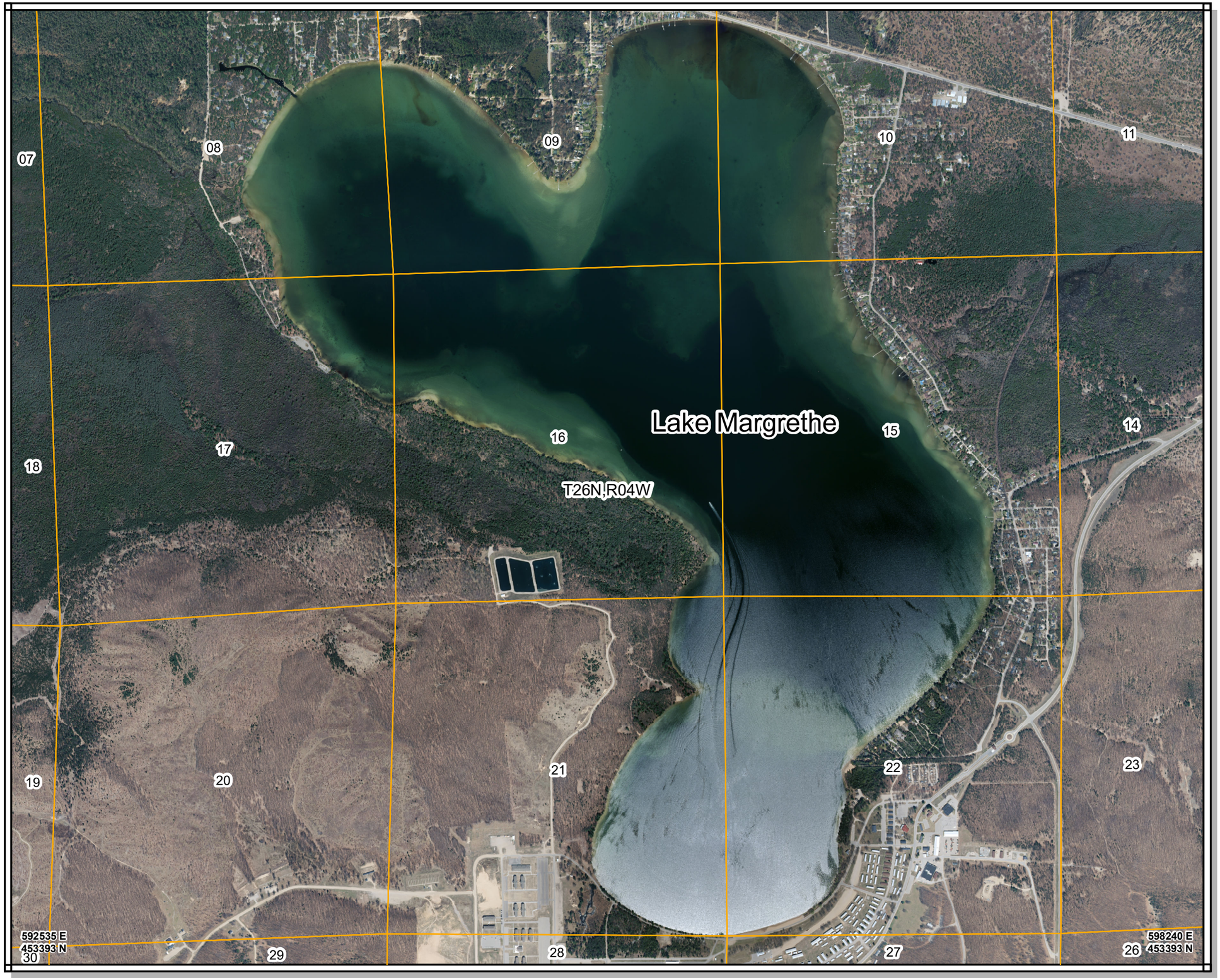
Surface water samples were collocated with porewater samples and collected by submerging the sample containers just below the lake surface and allowing them to fill. Sediment samples were collected within approximately 10 feet of the porewater sample locations using a shovel to target sandy sediment while avoiding areas with gravel, wood or other debris. Sample location coordinates were recorded using a handheld GPS unit Table 2.

Samples were submitted under Chain-of-Custody (COC) documentation to Vista Analytical Laboratories for analysis using the Modified EPA Method 537 (PFAS Isotope Dilution Method). Duplicate samples of porewater, surface water and sediment collected at the PW/SW/SED-02-19 location and an equipment blank sample collected by pumping PFAS free deionized water through the tubing and a clean sampler were also submitted for analysis. Table 3, Table 4 and Table 5 are summaries of the PFAS analytical results for porewater, surface water and sediment, respectively, and full PFAS laboratory analytical results are included in Appendix A for porewater and surface water and Appendix B for sediment.

If you have any questions, contact me at 517-242-1170.

Attachments

cc: Jeff Pincumbe, EGLE
Burrell P. Shirey, EGLE



LEGEND

Public Land Survey Sections

DATUM - NAD83
PROJECTION: MICHIGAN GEOREF
NORTHING AND EASTING COORDINATES (IN METERS)
ARE IN CORNERS OF MAP

AERIAL PHOTO SOURCE: MICHIGAN IMAGERY

0 0.25 0.5 Miles

1 in = 0.28 miles

0 725 1,450 2,175 2,900 Feet

1 inch = 1,500 feet

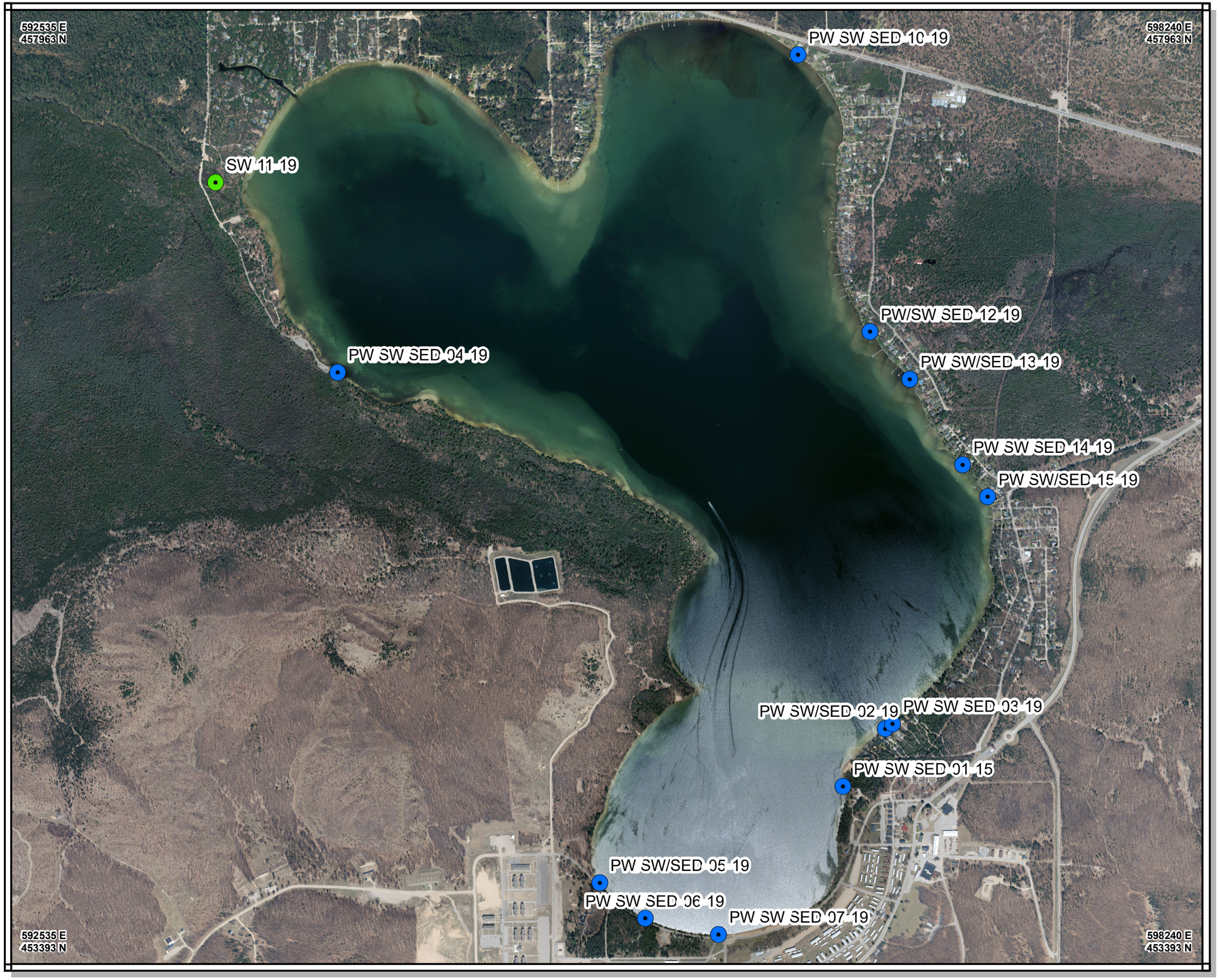
N W E S

Camp Grayling - Lake Margrethe

GRAYLING TOWNSHIP, CRAWFORD COUNTY
T26N R04W SECTIONS 15, 16, 17, 21, & 22

SITE MAP

GEOLOGIST Brian Eustice Geological Services Section	EGLE MICHIGAN DEPARTMENT OF ENVIRONMENT, GREAT LAKES, AND ENERGY	CREATION DATE July 2019
Remediation and Redevelopment Division		FIGURE 1



LEGEND

- Porewater, Surface Water, and Sediment Sample Locations
- Surface Water Sample Location

DATUM - NAD83
PROJECTION: MICHIGAN GEOREF
NORTHING AND EASTING COORDINATES (IN METERS)
ARE IN CORNERS OF MAP

AERIAL PHOTO SOURCE: MICHIGAN IMAGERY

0 0.25 0.5 Miles

1 in = 0.28 miles

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1 inch = 1,500 feet

N
W E
S

Camp Grayling - Lake Margrethe

GRAYLING TOWNSHIP, CRAWFORD COUNTY
T26N R04W SECTIONS 15, 16, 17, 21, & 22

SAMPLE LOCATION MAP

GEOLOGIST Brian Eustice Geological Services Section	EGLE MICHIGAN DEPARTMENT OF ENVIRONMENT, GREAT LAKES, AND ENERGY	CREATION DATE April 2019
Remediation and Redevelopment Division		FIGURE 2

Sampling Summary

Camp Grayling-Lake Margrethe,
Crawford County

	PW-01		PW-02		PW-03		PW-04		PW-05		PW-06		PW-07		PW-10		PW-12		PW-13		PW-14		PW-15	
Water Depth (inches)	7		18		5		8		15		8		9		6		10.5		10		16		12	
Screened Interval (inches below lakebed)	20-24"		11-15"		8-12"		19-23"		11-15"		19-23"		35-39"		32-36"		21-25"		30-34"		33-37"		33-37"	
Static Water Level in Tubing (inches above surface water)	NM		NM		NM		NM		NM		NM		NM		NM		15		6		4		9	
Water Quality Measurements	Surface Water	Porewater	Surface Water	Porewater	Surface Water	Porewater	Surface Water	Porewater	Surface Water	Porewater	Surface Water	Porewater	Surface Water	Porewater	Surface Water	Porewater	Surface Water	Porewater	Surface Water	Porewater	Surface Water	Porewater	Surface Water	Porewater
Temperature (°C)	15.7	14.8	16.5	13.1	16.7	11.7	15.2	10.5	16	14	12.2	13.2	16.3	11.2	17.3	12.2	14.6	11.4	17.2	13.7	17.3	10.1	17.3	10.7
Dissolved Oxygen (%)	86.5	16.8	97.8	29.1	93.2	3.9	82.4	2.3	81.4	3.4	82.6	4.2	84.3	60.6	90.9	12.9	62.4	19.8	70.9	5.6	72.5	34.5	90.8	6.9
Dissolved Oxygen (mg/L)	8.58	1.71	9.54	3.07	9.13	0.45	8.27	0.25	8.02	0.35	8.6	0.42	8.27	6.63	8.72	1.43	6.24	2.18	6.77	0.59	6.9	3.88	8.71	0.75
Conductivity (mS/cm)	254.7	330.6	244.4	352	250.4	305.6	234.5	252.6	243.8	291.2	264.8	310.9	244.8	295.1	255.7	239.9	240.3	269.3	257.2	284.6	260.6	353.9	263.7	394.3
pH	7.84	7.24	7.99	6.97	7.86	6.75	8.03	7.2	8.15	7.5	7.82	7.32	8.18	7.21	7.61	6.81	7.93	7.25	8.02	7.56	8.1	7.28	8.2	7.2

NM = Not Measured

Sample Location	Latitude	Longitude	Max_PDOP	Corr_Type	GPS_Date	Feat_Name	Unfilt_Pos	Horz_Prec	Std_Dev
PW/SW/SED-01-19	44.63329564	-84.78107876	2.8	Postprocessed Code	10/8/2018	Point_ge	14	1	0.000261
PW/SW/SED-02-19	44.635761712	-84.778473353	2.0	L1 Postprocessed Carrier Float	6/4/2019	Point_ge	15	0.1	0.000045
PW/SW/SED-03-19	44.635975894	-84.778038448	2.8	Postprocessed Code	6/4/2019	Point_ge	15	0.3	0.000066
PW/SW/SED-04-19	44.651468328	-84.811225323	2.0	Postprocessed Code	6/4/2019	Point_ge	31	0.4	0.000108
PW/SW/SED-05-19	44.62943145	-84.7956424	3.8	Postprocessed Carrier Float	10/8/2018	Point_ge	32	0.1	0.000084
PW/SW/SED-06-19	44.627730791	-84.793134606	2.4	L1 Postprocessed Carrier Float	6/4/2019	Point_ge	31	0.1	0.000033
PW/SW/SED-07-19	44.626985040	-84.788724504	2.4	L1 Postprocessed Carrier Float	6/4/2019	Point_ge	35	0.1	0.000137
PW/SW/SED-10-19	44.664868227	-84.783140535	2.4	L1 Postprocessed Carrier Float	6/4/2019	Point_ge	30	0.1	0.000088
SW-11-19	44.659730113	-84.818434030	1.9	L1L2 Postprocessed Carrier Float	6/5/2019	Point_ge	31	0.1	0.000032
PW/SW/SED-12-19	44.652881000	-84.779030196	3.3	L1L2 Postprocessed Carrier Float	6/5/2019	Point_ge	11	0.1	0.000026
PW/SW/SED-13-19	44.650812500	-84.776674395	6.6	Postprocessed Code	6/5/2019	Point_ge	21	0.1	0.000913
PW/SW/SED-14-19	44.647092532	-84.773576205	3.0	L1L2 Postprocessed Carrier Float	6/5/2019	Point_ge	11	0.1	0.000071
PW/SW/SED-15-19	44.645689406	-84.772078785	5.7	L1L2 Postprocessed Carrier Float	6/5/2019	Point_ge	14	0.1	0.000257

Vista Analytical Laboratory
Work Order: 1901485/1901496
Report Date: June 28, 2019
Client: EGLE-RRD-GAYLORD
Attention: Christiaan Bon
Project Name: Camp Grayling-Lake Margrethe

Sample Number			1901485-10	1901485-11	1901485-17	1901485-14	1901485-01	1901485-04	1901485-05	1901485-08	1901485-16	1901496-02	1901496-04	1901496-06	1901496-08
Sample ID			PW-01-19	PW-02-19	PW-DUP	PW-03-19	PW-04-19	PW-05-19	PW-06-19	PW-07-19	PW-10-19	PW-12-19	PW-13-19	PW-14-19	PW-15-19
Date Collected			6/4/2019	6/4/2019	6/4/2019	6/4/2019	6/4/2019	6/4/2019	6/4/2019	6/4/2019	6/4/2019	6/5/2019	6/5/2019	6/5/2019	6/5/2019
Date Received			6/6/2019	6/6/2019	6/6/2019	6/6/2019	6/6/2019	6/6/2019	6/6/2019	6/6/2019	6/6/2019	6/6/2019	6/6/2019	6/6/2019	6/6/2019
Analyte	Units	Method													
L-PFBA	ng/L	Modified EPA Method 537	ND	2.06 J	1.92 J	7.32	ND	ND	ND	ND	ND	ND	ND	ND	ND
L-PFPeA	ng/L	Modified EPA Method 537	ND	4.32	4.23	17.8	ND	ND	ND	ND	ND	ND	ND	ND	ND
L-PFBS	ng/L	Modified EPA Method 537	ND	ND	ND	2.88 J	ND	ND	ND	ND	ND	ND	ND	ND	ND
L-4:2 FTS	ng/L	Modified EPA Method 537	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
L-PFHxA	ng/L	Modified EPA Method 537	ND	4.61	3.75 J	14.7	ND	ND	ND	ND	ND	ND	ND	ND	ND
L-PFPeS	ng/L	Modified EPA Method 537	ND	1.58 J	1.40 J	3.99 J	ND	ND	ND	ND	ND	ND	ND	ND	ND
L-PFHpA	ng/L	Modified EPA Method 537	ND	6.88	6.99	23	ND	ND	ND	ND	ND	ND	ND	ND	ND
L-PFHxS	ng/L	Modified EPA Method 537	ND	39.2	46.5	77.1	ND	ND	2.63 J	1.46 J	ND	ND	ND	ND	ND
Br-PFHxS	ng/L	Modified EPA Method 537	ND	7.61 Q	8.36 Q	12	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total PFHxS	ng/L	Modified EPA Method 537	ND	46.8	54.9	89.1	ND	ND	3.40 J	1.90 J	ND	ND	ND	ND	ND
L-6:2 FTS	ng/L	Modified EPA Method 537	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
L-PFOA	ng/L	Modified EPA Method 537	ND	3.85 J	3.64 J	14.8	ND	ND	ND	ND	ND	ND	ND	ND	ND
Br-PFOA	ng/L	Modified EPA Method 537	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total PFOA	ng/L	Modified EPA Method 537	ND	3.85 J	3.64 J	14.8	ND	ND	ND	ND	ND	ND	ND	ND	ND
L-PFHpS	ng/L	Modified EPA Method 537	ND	1.58 J	ND	2.34 J	ND	ND	ND	ND	ND	ND	ND	ND	ND
L-PFNA	ng/L	Modified EPA Method 537	ND	1.74 J	1.88 J	1.60 J	ND	ND	ND	ND	ND	ND	ND	ND	ND
L-PFOSA	ng/L	Modified EPA Method 537	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
L-PFOS	ng/L	Modified EPA Method 537	ND	64.1	58.4	21.2	ND	ND	ND	ND	ND	ND	ND	ND	ND
Br-PFOS	ng/L	Modified EPA Method 537	ND	13.4 Q	13.5 J	17.9	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total PFOS	ng/L	Modified EPA Method 537	ND	77.5	71.9	39.1	ND	ND	ND	ND	ND	ND	ND	ND	ND
L-PFDA	ng/L	Modified EPA Method 537	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
L-8:2FTS	ng/L	Modified EPA Method 537	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
L-PFNS	ng/L	Modified EPA Method 537	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
L-MeFOSAA	ng/L	Modified EPA Method 537	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Br-MeFOSAA	ng/L	Modified EPA Method 537	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total MeFOSAA	ng/L	Modified EPA Method 537	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
L-EtFOSAA	ng/L	Modified EPA Method 537	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Br-EtFOSAA	ng/L	Modified EPA Method 537	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total EtFOSAA	ng/L	Modified EPA Method 537	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
L-PFUnA	ng/L	Modified EPA Method 537	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
L-PFDS	ng/L	Modified EPA Method 537	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
L-PFDoA	ng/L	Modified EPA Method 537	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
L-PFTrDA	ng/L	Modified EPA Method 537	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
L-PFTeDA	ng/L	Modified EPA Method 537	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

ND = Not Detected
J qualifier = The amount detected is below the Reporting Limit/LOQ.
Q qualifier = Ion ratio outside of the acceptance criteria.

Vista Analytical Laboratory
Work Order: 1901485/1901496
Report Date: June 28, 2019
Client: EGLE-RRD-GAYLORD
Attention: Christiaan Bon
Project Name: Camp Grayling-Lake Margrethe

Sample Number			1901485-09	1901485-12	1901485-18	1901485-13	1901485-02	1901485-03	1901485-06	1901485-07	1901485-15	1901485-20	1901496-01	1901496-03	1901496-5	1901496-07
Sample ID			SW-01-19	SW-02-19	SW-DUP	SW-03-19	SW-04-19	SW-05-19	SW-06-19	SW-07-19	SW-10-19	SW-11-19	SW-12-19	SW-13-19	SW-14-19	SW-15-19
Date Collected			6/4/2019	6/4/2019	6/4/2019	6/4/2019	6/4/2019	6/4/2019	6/4/2019	6/4/2019	6/4/2019	6/5/2019	6/5/2019	6/5/2019	6/5/2019	6/5/2019
Date Received			6/6/2019	6/6/2019	6/6/2019	6/6/2019	6/6/2019	6/6/2019	6/6/2019	6/6/2019	6/6/2019	6/6/2019	6/6/2019	6/6/2019	6/6/2019	6/6/2019
Analyte	Units	Method														
L-PFBA	ng/L	Modified EPA Method 537	1.70 J	1.97 J	1.89 J	2.12 J	1.77 J	2.99 J	1.93 J	1.59 J	2.74 J	1.49 J	1.54 J	2.05 J	1.49 J	ND
L-PFPeA	ng/L	Modified EPA Method 537	2.58 J	2.44 J	2.73 J	3.45 J	1.88 J	2.82 J	3.12 J	1.85 J	ND	2.17 J	1.97 J	ND	2.20 J	ND
L-PFBS	ng/L	Modified EPA Method 537	ND	ND	ND	ND	ND	ND	1.74 J	ND	ND	ND	ND	ND	ND	ND
L-4:2 FTS	ng/L	Modified EPA Method 537	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
L-PFHxA	ng/L	Modified EPA Method 537	2.32 J,Q	2.37 J	2.36 J	3.62 J	1.83J	2.33 J	2.65 J	1.57 J	ND	ND	1.72 J	ND	1.93 J,Q	ND
L-PFPeS	ng/L	Modified EPA Method 537	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
L-PFHpA	ng/L	Modified EPA Method 537	1.55 J	ND	ND	2.45 J	ND	1.84 J,Q	ND	ND	ND	1.43 J,Q	ND	ND	ND	ND
L-PFHxS	ng/L	Modified EPA Method 537	2.49 J	3.14 J	2.92 J	5.5	2.30 J,Q	4.38	3.30 J	2.24 J	ND	2.29 J	2.40 J,Q	ND	2.14 J,Q	ND
Br-PFHxS	ng/L	Modified EPA Method 537	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total PFHxS	ng/L	Modified EPA Method 537	3.23 J	4.12 J	3.73 J	6.64	2.30 J	4.96	3.85 J	2.24 J	ND	2.29 J	2.40 J	ND	2.54 J	ND
L-6:2 FTS	ng/L	Modified EPA Method 537	1.50 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
L-PFOA	ng/L	Modified EPA Method 537	ND	ND	ND	1.63 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Br-PFOA	ng/L	Modified EPA Method 537	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total PFOA	ng/L	Modified EPA Method 537	ND	ND	ND	1.63 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
L-PFHpS	ng/L	Modified EPA Method 537	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
L-PFNA	ng/L	Modified EPA Method 537	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
L-PFOSA	ng/L	Modified EPA Method 537	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
L-PFOS	ng/L	Modified EPA Method 537	5.62	2.23 J	ND	3.93 J	ND	3.75 J	4.37	3.53 J	ND	ND	ND	ND	ND	ND
Br-PFOS	ng/L	Modified EPA Method 537	3.24 J	ND	1.87 J	2.18 J	ND	2.87 J	2.11 J	2.45 J	ND	ND	ND	ND	ND	ND
Total PFOS	ng/L	Modified EPA Method 537	8.86	3.08 J	3.19 J	6.12	1.52 J	6.62	6.49	5.99	ND	ND	1.95 J	ND	2.24 J	ND
L-PFDA	ng/L	Modified EPA Method 537	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
L-8:2FTS	ng/L	Modified EPA Method 537	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
L-PFNS	ng/L	Modified EPA Method 537	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
L-MeFOSAA	ng/L	Modified EPA Method 537	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Br-MeFOSAA	ng/L	Modified EPA Method 537	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total MeFOSAA	ng/L	Modified EPA Method 537	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
L-EtFOSAA	ng/L	Modified EPA Method 537	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Br-EtFOSAA	ng/L	Modified EPA Method 537	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total EtFOSAA	ng/L	Modified EPA Method 537	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
L-PFUnA	ng/L	Modified EPA Method 537	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
L-PFDS	ng/L	Modified EPA Method 537	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
L-PFDoA	ng/L	Modified EPA Method 537	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
L-PFTrDA	ng/L	Modified EPA Method 537	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
L-PFTeDA	ng/L	Modified EPA Method 537	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

ND = Not Detected
J qualifier = The amount detected is below the Reporting Limit/LOQ.
Q qualifier = Ion ratio outside of the acceptance criteria.

Vista Analytical Laboratory
Work Order: 1901484
Report Date: June 28, 2019
Client: MDEQ-RRD-GAYLORD
Attention: Christiaan Bon
Project Name: Camp Grayling-Lake Margrethe

Sample Number			1901484-05	1901484-06	1901484-09	1901484-07	1901484-01	1901484-02	1901484-03	1901484-04	1901484-08	1901484-10	1901484-11	1901484-12	1901484-13
Sample ID			SED-01-19	SED-02-19	SED-DUP	SED-03-19	SED-04-19	SED-05-19	SED-06-19	SED-07-19	SED-10-19	SED-12-19	SED-13-19	SED-14-19	SED-15-19
Date Collected			6/4/2019	6/4/2019	6/4/2019	6/4/2019	6/4/2019	6/4/2019	6/4/2019	6/4/2019	6/4/2019	6/5/2019	6/5/2019	6/5/2019	6/5/2019
Date Received			6/6/2019	6/6/2019	6/6/2019	6/6/2019	6/6/2019	6/6/2019	6/6/2019	6/6/2019	6/6/2019	6/6/2019	6/6/2019	6/6/2019	6/6/2019
Analyte	Units	Method													
L-PFBA	ng/g	Modified EPA Method 537	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
L-PFPeA	ng/g	Modified EPA Method 537	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
L-PFBS	ng/g	Modified EPA Method 537	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
L-4:2 FTS	ng/g	Modified EPA Method 537	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
L-PFHxA	ng/g	Modified EPA Method 537	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
L-PFPeS	ng/g	Modified EPA Method 537	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
L-PFHpA	ng/g	Modified EPA Method 537	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
L-PFHxS	ng/g	Modified EPA Method 537	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Br-PFHxS	ng/g	Modified EPA Method 537	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total PFHxS	ng/g	Modified EPA Method 537	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
L-6:2 FTS	ng/g	Modified EPA Method 537	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
L-PFOA	ng/g	Modified EPA Method 537	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Br-PFOA	ng/g	Modified EPA Method 537	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total PFOA	ng/g	Modified EPA Method 537	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
L-PFHpS	ng/g	Modified EPA Method 537	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
L-PFNA	ng/g	Modified EPA Method 537	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
L-PFOSA	ng/g	Modified EPA Method 537	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
L-PFOS	ng/g	Modified EPA Method 537	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Br-PFOS	ng/g	Modified EPA Method 537	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total PFOS	ng/g	Modified EPA Method 537	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
L-PFDA	ng/g	Modified EPA Method 537	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
L-8:2FTS	ng/g	Modified EPA Method 537	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
L-PFNS	ng/g	Modified EPA Method 537	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
L-MeFOSAA	ng/g	Modified EPA Method 537	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Br-MeFOSAA	ng/g	Modified EPA Method 537	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total MeFOSAA	ng/g	Modified EPA Method 537	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
L-EtFOSAA	ng/g	Modified EPA Method 537	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Br-EtFOSAA	ng/g	Modified EPA Method 537	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total EtFOSAA	ng/g	Modified EPA Method 537	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
L-PFUnA	ng/g	Modified EPA Method 537	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
L-PFDS	ng/g	Modified EPA Method 537	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
L-PFDoA	ng/g	Modified EPA Method 537	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
L-PFTrDA	ng/g	Modified EPA Method 537	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
L-PFTeDA	ng/g	Modified EPA Method 537	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

ND = Not Detected

APPENDIX A

Camp Grayling-Lake Margrethe, Crawford County
Site ID #: N/A

Vista Analytical Laboratory Porewater and Surface Water Results

June 27, 2019

Vista Work Order No. 1901485

Ms. Maya Murshak
Merit Laboratories, Inc.
2680 East Lansing Drive
East Lansing, MI 48823

Dear Ms. Murshak,

Enclosed are the results for the sample set received at Vista Analytical Laboratory on June 06, 2019 under your Project Name 'Camp Grayling- Lake Margrethe'.

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,

Martha Maier
Laboratory Director

Vista Work Order No. 1901485
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. The sediment samples received in the shipment were assigned to Vista Work Order No. 1901485.

Analytical Notes:

PFAS Isotope Dilution Method

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

Laboratory ID	Sample Name
1901485-01	PW-04-19
1901485-04	PW-05-19
1901485-05	PW-06-19
1901485-11	PW-02-19
1901485-13	SW-03-19
1901485-15	SW-10-19
1901485-17	PW-DUP

The samples were extracted and analyzed for a selected list of PFAS using the PFAS Isotope Dilution Method (Modified EPA Method 537). The results for PFHxS, PFOA, PFOS, MeFOSAA and EtFOSAA include both linear and branched isomers. Results for all other analytes include the linear isomers only.

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.

The chemist noted that the extraction sorbents for samples "PW-05-19" and "PW-02-19" were discolored, suggesting that the samples were high in interferences. Sample "PW-02-19" took additional time to extract. Several internal standard recoveries were low in these samples. The labeled standard recoveries outside the acceptance criteria are listed in the table below.

QC Anomalies

LabNumber	SampleName	Analysis	Analyte	Flag	%Rec
1901485-04	PW-05-19	PFAS Isotope Dilution Method	13C8-PFOSA	H	16.0
1901485-04	PW-05-19	PFAS Isotope Dilution Method	13C2-PFTeDA	H	14.2
1901485-11	PW-02-19	PFAS Isotope Dilution Method	13C8-PFOSA	H	5.90
1901485-11	PW-02-19	PFAS Isotope Dilution Method	13C2-PFDA	H	59.8
1901485-11	PW-02-19	PFAS Isotope Dilution Method	13C2-PFUnA	H	54.0
1901485-11	PW-02-19	PFAS Isotope Dilution Method	13C2-PFDoA	H	25.2
1901485-11	PW-02-19	PFAS Isotope Dilution Method	13C2-PFTeDA	H	6.80
1901485-17	PW-DUP	PFAS Isotope Dilution Method	13C8-PFOSA	H	8.20
1901485-17	PW-DUP	PFAS Isotope Dilution Method	13C2-PFDA	H	59.2
1901485-17	PW-DUP	PFAS Isotope Dilution Method	13C2-PFUnA	H	56.3
1901485-17	PW-DUP	PFAS Isotope Dilution Method	13C2-PFDoA	H	21.5
1901485-17	PW-DUP	PFAS Isotope Dilution Method	13C2-PFTeDA	H	6.80

H = Recovery was outside laboratory acceptance criteria.

TABLE OF CONTENTS

Sample Inventory Report

Vista Sample ID	Client Sample ID	Sampled	Received	Components/Containers
1901485-01	PW-04-19	04-Jun-19 08:15	06-Jun-19 09:32	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
1901485-02	SW-04-19	04-Jun-19 08:15	06-Jun-19 09:32	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
1901485-03	SW-05-19	04-Jun-19 09:10	06-Jun-19 09:32	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
1901485-04	PW-05-19	04-Jun-19 09:15	06-Jun-19 09:32	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
1901485-05	PW-06-19	04-Jun-19 09:45	06-Jun-19 09:32	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
1901485-06	SW-06-19	04-Jun-19 09:45	06-Jun-19 09:32	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
1901485-07	SW-07-19	04-Jun-19 10:05	06-Jun-19 09:32	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
1901485-08	PW-07-19	04-Jun-19 10:25	06-Jun-19 09:32	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
1901485-09	SW-01-19	04-Jun-19 10:50	06-Jun-19 09:32	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
1901485-10	PW-01-19	04-Jun-19 10:55	06-Jun-19 09:32	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
1901485-11	PW-02-19	04-Jun-19 11:25	06-Jun-19 09:32	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
1901485-12	SW-02-19	04-Jun-19 11:30	06-Jun-19 09:32	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
1901485-13	SW-03-19	04-Jun-19 11:50	06-Jun-19 09:32	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
1901485-14	PW-03-19	04-Jun-19 11:55	06-Jun-19 09:32	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
1901485-15	SW-10-19	04-Jun-19 12:40	06-Jun-19 09:32	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
1901485-16	PW-10-19	04-Jun-19 12:50	06-Jun-19 09:32	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
1901485-17	PW-DUP	04-Jun-19 00:00	06-Jun-19 09:32	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
1901485-18	SW-DUP	04-Jun-19 00:00	06-Jun-19 09:32	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
1901485-19	EB-1-19	05-Jun-19 09:20	06-Jun-19 09:32	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
1901485-20	SW-11-19	05-Jun-19 09:55	06-Jun-19 09:32	HDPE Bottle, 250 mL

Vista Project: 1901485

Client Project: Camp Grayling- Lake Margrethe

Sample Inventory Report

Vista Sample ID	Client Sample ID	Sampled	Received	Components/Containers
1901485-20	SW-11-19	05-Jun-19 09:55	06-Jun-19 09:32	HDPE Bottle, 250 mL

ANALYTICAL RESULTS

Sample ID: Method Blank

PFAS Isotope Dilution Method

Client Data

Name: Merit Laboratories, Inc.
Project: Camp Grayling- Lake Margrethe
Matrix: Aqueous

Laboratory Data

Lab Sample: B9F0101-BLK1
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
L-PFBA	ND	1.37	2.00	4.00		B9F0101	13-Jun-19	0.250 L	20-Jun-19 02:15	1
L-PFPeA	ND	1.37	2.00	4.00		B9F0101	13-Jun-19	0.250 L	20-Jun-19 02:15	1
L-PFBS	ND	1.37	2.00	4.00		B9F0101	13-Jun-19	0.250 L	20-Jun-19 02:15	1
L-4:2 FTS	ND	1.37	2.00	4.00		B9F0101	13-Jun-19	0.250 L	20-Jun-19 02:15	1
L-PFHxA	ND	1.37	2.00	4.00		B9F0101	13-Jun-19	0.250 L	20-Jun-19 02:15	1
L-PFPeS	ND	1.37	2.00	4.00		B9F0101	13-Jun-19	0.250 L	20-Jun-19 02:15	1
L-PFHpA	ND	1.37	2.00	4.00		B9F0101	13-Jun-19	0.250 L	20-Jun-19 02:15	1
L-PFHxS	ND	1.37	2.00	4.00		B9F0101	13-Jun-19	0.250 L	20-Jun-19 02:15	1
Br-PFHxS	ND	1.37	2.00	4.00		B9F0101	13-Jun-19	0.250 L	20-Jun-19 02:15	1
Total PFHxS	ND	1.37	2.00	4.00		B9F0101	13-Jun-19	0.250 L	20-Jun-19 02:15	1
L-6:2 FTS	ND	1.37	2.00	4.00		B9F0101	13-Jun-19	0.250 L	20-Jun-19 02:15	1
L-PFOA	ND	1.37	2.00	4.00		B9F0101	13-Jun-19	0.250 L	20-Jun-19 02:15	1
Br-PFOA	ND	1.37	2.00	4.00		B9F0101	13-Jun-19	0.250 L	20-Jun-19 02:15	1
Total PFOA	ND	1.37	2.00	4.00		B9F0101	13-Jun-19	0.250 L	20-Jun-19 02:15	1
L-PFHpS	ND	1.37	2.00	4.00		B9F0101	13-Jun-19	0.250 L	20-Jun-19 02:15	1
L-PFNA	ND	1.37	2.00	4.00		B9F0101	13-Jun-19	0.250 L	20-Jun-19 02:15	1
L-PFOSA	ND	1.37	2.00	4.00		B9F0101	13-Jun-19	0.250 L	20-Jun-19 02:15	1
L-PFOS	ND	1.37	2.00	4.00		B9F0101	13-Jun-19	0.250 L	20-Jun-19 02:15	1
Br-PFOS	ND	1.37	2.00	4.00		B9F0101	13-Jun-19	0.250 L	20-Jun-19 02:15	1
Total PFOS	ND	1.37	2.00	4.00		B9F0101	13-Jun-19	0.250 L	20-Jun-19 02:15	1
L-PFDA	ND	1.37	2.00	4.00		B9F0101	13-Jun-19	0.250 L	20-Jun-19 02:15	1
L-8:2FTS	ND	1.37	2.00	4.00		B9F0101	13-Jun-19	0.250 L	20-Jun-19 02:15	1
L-PFNS	ND	1.37	2.00	4.00		B9F0101	13-Jun-19	0.250 L	20-Jun-19 02:15	1
L-MeFOSAA	ND	1.37	2.00	4.00		B9F0101	13-Jun-19	0.250 L	20-Jun-19 02:15	1
Br-MeFOSAA	ND	1.37	2.00	4.00		B9F0101	13-Jun-19	0.250 L	20-Jun-19 02:15	1
Total MeFOSAA	ND	1.37	2.00	4.00		B9F0101	13-Jun-19	0.250 L	20-Jun-19 02:15	1
L-EtFOSAA	ND	1.37	2.00	4.00		B9F0101	13-Jun-19	0.250 L	20-Jun-19 02:15	1
Br-EtFOSAA	ND	1.37	2.00	4.00		B9F0101	13-Jun-19	0.250 L	20-Jun-19 02:15	1
Total EtFOSAA	ND	1.37	2.00	4.00		B9F0101	13-Jun-19	0.250 L	20-Jun-19 02:15	1
L-PFUnA	ND	1.37	2.00	4.00		B9F0101	13-Jun-19	0.250 L	20-Jun-19 02:15	1
L-PFDS	ND	1.37	2.00	4.00		B9F0101	13-Jun-19	0.250 L	20-Jun-19 02:15	1
L-PFDoA	ND	1.37	2.00	4.00		B9F0101	13-Jun-19	0.250 L	20-Jun-19 02:15	1
L-PFTrDA	ND	1.37	2.00	4.00		B9F0101	13-Jun-19	0.250 L	20-Jun-19 02:15	1
L-PFTeDA	ND	1.37	2.00	4.00		B9F0101	13-Jun-19	0.250 L	20-Jun-19 02:15	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	89.4	60 - 130		B9F0101	13-Jun-19	0.250 L	20-Jun-19 02:15	1
13C3-PFPeA	IS	98.4	60 - 150		B9F0101	13-Jun-19	0.250 L	20-Jun-19 02:15	1
13C3-PFBS	IS	102	60 - 150		B9F0101	13-Jun-19	0.250 L	20-Jun-19 02:15	1

Sample ID: Method Blank **PFAS Isotope Dilution Method**

Client Data

Name: Merit Laboratories, Inc. Matrix: Aqueous

Project: Camp Grayling- Lake Margrethe

Laboratory Data

Lab Sample: B9F0101-BLK1 Column: BEH C18

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-4:2 FTS	IS	108	40 - 150		B9F0101	13-Jun-19	0.250 L	20-Jun-19 02:15	1
13C2-PFHxA	IS	98.5	70 - 130		B9F0101	13-Jun-19	0.250 L	20-Jun-19 02:15	1
13C4-PFHpA	IS	96.5	60 - 150		B9F0101	13-Jun-19	0.250 L	20-Jun-19 02:15	1
13C3-PFHxS	IS	97.7	60 - 130		B9F0101	13-Jun-19	0.250 L	20-Jun-19 02:15	1
13C2-6:2 FTS	IS	93.9	40 - 150		B9F0101	13-Jun-19	0.250 L	20-Jun-19 02:15	1
13C2-PFOA	IS	77.2	60 - 130		B9F0101	13-Jun-19	0.250 L	20-Jun-19 02:15	1
13C5-PFNA	IS	81.3	50 - 130		B9F0101	13-Jun-19	0.250 L	20-Jun-19 02:15	1
13C8-PFOSA	IS	54.1	20 - 150		B9F0101	13-Jun-19	0.250 L	20-Jun-19 02:15	1
13C8-PFOS	IS	86.2	60 - 130		B9F0101	13-Jun-19	0.250 L	20-Jun-19 02:15	1
13C2-PFDA	IS	78.5	60 - 130		B9F0101	13-Jun-19	0.250 L	20-Jun-19 02:15	1
13C2-8:2 FTS	IS	84.2	40 - 150		B9F0101	13-Jun-19	0.250 L	20-Jun-19 02:15	1
d3-MeFOSAA	IS	70.1	50 - 150		B9F0101	13-Jun-19	0.250 L	20-Jun-19 02:15	1
d5-EtFOSAA	IS	75.2	50 - 150		B9F0101	13-Jun-19	0.250 L	20-Jun-19 02:15	1
13C2-PFUnA	IS	76.8	60 - 130		B9F0101	13-Jun-19	0.250 L	20-Jun-19 02:15	1
13C2-PFDoA	IS	64.5	30 - 130		B9F0101	13-Jun-19	0.250 L	20-Jun-19 02:15	1
13C2-PFTeDA	IS	33.5	20 - 150		B9F0101	13-Jun-19	0.250 L	20-Jun-19 02:15	1

DL - Detection Limit LOD - Limit of Detection LOQ - Limit of quantitation Results reported to the DL.

Sample ID: OPR **PFAS Isotope Dilution Method**

Client Data

Name: Merit Laboratories, Inc.
Project: Camp Grayling- Lake Margrethe
Matrix: Aqueous

Laboratory Data

Lab Sample: B9F0101-BS1
Column: BEH C18

Analyte	Amt Found (ng/L)	Spike Amt	% Rec	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
L-PFBA	39.2	40.0	97.9	70 - 130		B9F0101	13-Jun-19	0.250 L	20-Jun-19 02:04	1
L-PFPeA	41.2	40.0	103	70 - 130		B9F0101	13-Jun-19	0.250 L	20-Jun-19 02:04	1
L-PFBS	39.6	40.0	99.0	70 - 130		B9F0101	13-Jun-19	0.250 L	20-Jun-19 02:04	1
L-4:2 FTS	42.1	40.0	105	60 - 130		B9F0101	13-Jun-19	0.250 L	20-Jun-19 02:04	1
L-PFHxA	43.2	40.0	108	70 - 130		B9F0101	13-Jun-19	0.250 L	20-Jun-19 02:04	1
L-PFPeS	45.0	40.0	112	70 - 130		B9F0101	13-Jun-19	0.250 L	20-Jun-19 02:04	1
L-PFHpA	38.9	40.0	97.3	70 - 130		B9F0101	13-Jun-19	0.250 L	20-Jun-19 02:04	1
Total PFHxS	44.2	40.0	111	70 - 130		B9F0101	13-Jun-19	0.250 L	20-Jun-19 02:04	1
L-6:2 FTS	40.9	40.0	102	60 - 130		B9F0101	13-Jun-19	0.250 L	20-Jun-19 02:04	1
Total PFOA	39.8	40.0	99.6	70 - 130		B9F0101	13-Jun-19	0.250 L	20-Jun-19 02:04	1
L-PFHpS	42.9	40.0	107	60 - 130		B9F0101	13-Jun-19	0.250 L	20-Jun-19 02:04	1
L-PFNA	39.3	40.0	98.4	70 - 130		B9F0101	13-Jun-19	0.250 L	20-Jun-19 02:04	1
L-PFOSA	42.8	40.0	107	70 - 130		B9F0101	13-Jun-19	0.250 L	20-Jun-19 02:04	1
Total PFOS	40.7	40.0	102	70 - 130		B9F0101	13-Jun-19	0.250 L	20-Jun-19 02:04	1
L-PFDA	40.7	40.0	102	70 - 130		B9F0101	13-Jun-19	0.250 L	20-Jun-19 02:04	1
L-8:2FTS	33.6	40.0	83.9	60 - 130		B9F0101	13-Jun-19	0.250 L	20-Jun-19 02:04	1
L-PFNS	37.8	40.0	94.5	70 - 130		B9F0101	13-Jun-19	0.250 L	20-Jun-19 02:04	1
Total MeFOSAA	31.8	40.0	79.6	70 - 130		B9F0101	13-Jun-19	0.250 L	20-Jun-19 02:04	1
Total EtFOSAA	37.7	40.0	94.3	70 - 130		B9F0101	13-Jun-19	0.250 L	20-Jun-19 02:04	1
L-PFUnA	39.6	40.0	99.1	70 - 130		B9F0101	13-Jun-19	0.250 L	20-Jun-19 02:04	1
L-PFDS	32.7	40.0	81.7	60 - 130		B9F0101	13-Jun-19	0.250 L	20-Jun-19 02:04	1
L-PFDoA	46.2	40.0	116	70 - 130		B9F0101	13-Jun-19	0.250 L	20-Jun-19 02:04	1
L-PFTrDA	28.3	40.0	70.8	60 - 130		B9F0101	13-Jun-19	0.250 L	20-Jun-19 02:04	1
L-PFTeDA	41.0	40.0	103	70 - 130		B9F0101	13-Jun-19	0.250 L	20-Jun-19 02:04	1

Labeled Standards	Type	% Rec	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	93.5	60- 130		B9F0101	13-Jun-19	0.250 L	20-Jun-19 02:04	1
13C3-PFPeA	IS	93.7	60- 150		B9F0101	13-Jun-19	0.250 L	20-Jun-19 02:04	1
13C3-PFBS	IS	102	60- 150		B9F0101	13-Jun-19	0.250 L	20-Jun-19 02:04	1
13C2-4:2 FTS	IS	104	40- 150		B9F0101	13-Jun-19	0.250 L	20-Jun-19 02:04	1
13C2-PFHxA	IS	92.4	70- 130		B9F0101	13-Jun-19	0.250 L	20-Jun-19 02:04	1
13C4-PFHpA	IS	90.1	60- 150		B9F0101	13-Jun-19	0.250 L	20-Jun-19 02:04	1
13C3-PFHxS	IS	94.3	60- 130		B9F0101	13-Jun-19	0.250 L	20-Jun-19 02:04	1
13C2-6:2 FTS	IS	92.2	40- 150		B9F0101	13-Jun-19	0.250 L	20-Jun-19 02:04	1
13C2-PFOA	IS	75.4	60- 130		B9F0101	13-Jun-19	0.250 L	20-Jun-19 02:04	1
13C5-PFNA	IS	74.9	50- 130		B9F0101	13-Jun-19	0.250 L	20-Jun-19 02:04	1

Sample ID: OPR **PFAS Isotope Dilution Method**

Client Data

Name: Merit Laboratories, Inc.
Project: Camp Grayling- Lake Margrethe
Matrix: Aqueous

Laboratory Data

Lab Sample: B9F0101-BS1
Column: BEH C18

Labeled Standards	Type	% Rec	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C8-PFOSA	IS	48.5	20- 150		B9F0101	13-Jun-19	0.250 L	20-Jun-19 02:04	1
13C8-PFOS	IS	84.6	60- 130		B9F0101	13-Jun-19	0.250 L	20-Jun-19 02:04	1
13C2-PFDA	IS	71.3	60- 130		B9F0101	13-Jun-19	0.250 L	20-Jun-19 02:04	1
13C2-8:2 FTS	IS	92.6	40- 150		B9F0101	13-Jun-19	0.250 L	20-Jun-19 02:04	1
d3-MeFOSAA	IS	78.3	50- 150		B9F0101	13-Jun-19	0.250 L	20-Jun-19 02:04	1
d5-EtFOSAA	IS	79.5	50- 150		B9F0101	13-Jun-19	0.250 L	20-Jun-19 02:04	1
13C2-PFUnA	IS	73.2	60- 130		B9F0101	13-Jun-19	0.250 L	20-Jun-19 02:04	1
13C2-PFDoA	IS	62.3	30- 130		B9F0101	13-Jun-19	0.250 L	20-Jun-19 02:04	1
13C2-PFTeDA	IS	32.9	20- 150		B9F0101	13-Jun-19	0.250 L	20-Jun-19 02:04	1

Sample ID: PW-04-19

PFAS Isotope Dilution Method

Client Data

Name: Merit Laboratories, Inc.
Project: Camp Grayling- Lake Margrethe
Matrix: Aqueous
Date Collected: 04-Jun-19 08:15

Laboratory Data

Lab Sample: 1901485-01
Date Received: 06-Jun-19 09:32
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
L-PFBA	ND	1.38	2.01	4.02		B9F0101	13-Jun-19	0.249 L	20-Jun-19 02:25	1
L-PFPeA	ND	1.38	2.01	4.02		B9F0101	13-Jun-19	0.249 L	20-Jun-19 02:25	1
L-PFBS	ND	1.38	2.01	4.02		B9F0101	13-Jun-19	0.249 L	20-Jun-19 02:25	1
L-4:2 FTS	ND	1.38	2.01	4.02		B9F0101	13-Jun-19	0.249 L	20-Jun-19 02:25	1
L-PFHxA	ND	1.38	2.01	4.02		B9F0101	13-Jun-19	0.249 L	20-Jun-19 02:25	1
L-PFPeS	ND	1.38	2.01	4.02		B9F0101	13-Jun-19	0.249 L	20-Jun-19 02:25	1
L-PFHpA	ND	1.38	2.01	4.02		B9F0101	13-Jun-19	0.249 L	20-Jun-19 02:25	1
L-PFHxS	ND	1.38	2.01	4.02		B9F0101	13-Jun-19	0.249 L	20-Jun-19 02:25	1
Br-PFHxS	ND	1.38	2.01	4.02		B9F0101	13-Jun-19	0.249 L	20-Jun-19 02:25	1
Total PFHxS	ND	1.38	2.01	4.02		B9F0101	13-Jun-19	0.249 L	20-Jun-19 02:25	1
L-6:2 FTS	ND	1.38	2.01	4.02		B9F0101	13-Jun-19	0.249 L	20-Jun-19 02:25	1
L-PFOA	ND	1.38	2.01	4.02		B9F0101	13-Jun-19	0.249 L	20-Jun-19 02:25	1
Br-PFOA	ND	1.38	2.01	4.02		B9F0101	13-Jun-19	0.249 L	20-Jun-19 02:25	1
Total PFOA	ND	1.38	2.01	4.02		B9F0101	13-Jun-19	0.249 L	20-Jun-19 02:25	1
L-PFHpS	ND	1.38	2.01	4.02		B9F0101	13-Jun-19	0.249 L	20-Jun-19 02:25	1
L-PFNA	ND	1.38	2.01	4.02		B9F0101	13-Jun-19	0.249 L	20-Jun-19 02:25	1
L-PFOSA	ND	1.38	2.01	4.02		B9F0101	13-Jun-19	0.249 L	20-Jun-19 02:25	1
L-PFOS	ND	1.38	2.01	4.02		B9F0101	13-Jun-19	0.249 L	20-Jun-19 02:25	1
Br-PFOS	ND	1.38	2.01	4.02		B9F0101	13-Jun-19	0.249 L	20-Jun-19 02:25	1
Total PFOS	ND	1.38	2.01	4.02		B9F0101	13-Jun-19	0.249 L	20-Jun-19 02:25	1
L-PFDA	ND	1.38	2.01	4.02		B9F0101	13-Jun-19	0.249 L	20-Jun-19 02:25	1
L-8:2FTS	ND	1.38	2.01	4.02		B9F0101	13-Jun-19	0.249 L	20-Jun-19 02:25	1
L-PFNS	ND	1.38	2.01	4.02		B9F0101	13-Jun-19	0.249 L	20-Jun-19 02:25	1
L-MeFOSAA	ND	1.38	2.01	4.02		B9F0101	13-Jun-19	0.249 L	20-Jun-19 02:25	1
Br-MeFOSAA	ND	1.38	2.01	4.02		B9F0101	13-Jun-19	0.249 L	20-Jun-19 02:25	1
Total MeFOSAA	ND	1.38	2.01	4.02		B9F0101	13-Jun-19	0.249 L	20-Jun-19 02:25	1
L-EtFOSAA	ND	1.38	2.01	4.02		B9F0101	13-Jun-19	0.249 L	20-Jun-19 02:25	1
Br-EtFOSAA	ND	1.38	2.01	4.02		B9F0101	13-Jun-19	0.249 L	20-Jun-19 02:25	1
Total EtFOSAA	ND	1.38	2.01	4.02		B9F0101	13-Jun-19	0.249 L	20-Jun-19 02:25	1
L-PFUnA	ND	1.38	2.01	4.02		B9F0101	13-Jun-19	0.249 L	20-Jun-19 02:25	1
L-PFDS	ND	1.38	2.01	4.02		B9F0101	13-Jun-19	0.249 L	20-Jun-19 02:25	1
L-PFDoA	ND	1.38	2.01	4.02		B9F0101	13-Jun-19	0.249 L	20-Jun-19 02:25	1
L-PFTrDA	ND	1.38	2.01	4.02		B9F0101	13-Jun-19	0.249 L	20-Jun-19 02:25	1
L-PFTeDA	ND	1.38	2.01	4.02		B9F0101	13-Jun-19	0.249 L	20-Jun-19 02:25	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	101	60 - 130		B9F0101	13-Jun-19	0.249 L	20-Jun-19 02:25	1
13C3-PFPeA	IS	100	60 - 150		B9F0101	13-Jun-19	0.249 L	20-Jun-19 02:25	1
13C3-PFBS	IS	110	60 - 150		B9F0101	13-Jun-19	0.249 L	20-Jun-19 02:25	1

Sample ID: PW-04-19 **PFAS Isotope Dilution Method**

Client Data

Name: Merit Laboratories, Inc.
Project: Camp Grayling- Lake Margrethe
Matrix: Aqueous
Date Collected: 04-Jun-19 08:15

Laboratory Data

Lab Sample: 1901485-01
Date Received: 06-Jun-19 09:32
Column: BEH C18

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-4:2 FTS	IS	117	40 - 150		B9F0101	13-Jun-19	0.249 L	20-Jun-19 02:25	1
13C2-PFHxA	IS	99.7	70 - 130		B9F0101	13-Jun-19	0.249 L	20-Jun-19 02:25	1
13C4-PFHpA	IS	97.1	60 - 150		B9F0101	13-Jun-19	0.249 L	20-Jun-19 02:25	1
13C3-PFHxS	IS	111	60 - 130		B9F0101	13-Jun-19	0.249 L	20-Jun-19 02:25	1
13C2-6:2 FTS	IS	106	40 - 150		B9F0101	13-Jun-19	0.249 L	20-Jun-19 02:25	1
13C2-PFOA	IS	94.2	60 - 130		B9F0101	13-Jun-19	0.249 L	20-Jun-19 02:25	1
13C5-PFNA	IS	89.2	50 - 130		B9F0101	13-Jun-19	0.249 L	20-Jun-19 02:25	1
13C8-PFOSA	IS	60.5	20 - 150		B9F0101	13-Jun-19	0.249 L	20-Jun-19 02:25	1
13C8-PFOS	IS	99.4	60 - 130		B9F0101	13-Jun-19	0.249 L	20-Jun-19 02:25	1
13C2-PFDA	IS	92.7	60 - 130		B9F0101	13-Jun-19	0.249 L	20-Jun-19 02:25	1
13C2-8:2 FTS	IS	95.9	40 - 150		B9F0101	13-Jun-19	0.249 L	20-Jun-19 02:25	1
d3-MeFOSAA	IS	92.4	50 - 150		B9F0101	13-Jun-19	0.249 L	20-Jun-19 02:25	1
d5-EtFOSAA	IS	99.1	50 - 150		B9F0101	13-Jun-19	0.249 L	20-Jun-19 02:25	1
13C2-PFUnA	IS	83.4	60 - 130		B9F0101	13-Jun-19	0.249 L	20-Jun-19 02:25	1
13C2-PFDoA	IS	60.5	30 - 130		B9F0101	13-Jun-19	0.249 L	20-Jun-19 02:25	1
13C2-PFTeDA	IS	36.2	20 - 150		B9F0101	13-Jun-19	0.249 L	20-Jun-19 02:25	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation
Results reported to the DL.

Sample ID: SW-04-19 **PFAS Isotope Dilution Method**

Client Data

Name: Merit Laboratories, Inc.
Project: Camp Grayling- Lake Margrethe
Matrix: Aqueous
Date Collected: 04-Jun-19 08:15

Laboratory Data

Lab Sample: 1901485-02
Date Received: 06-Jun-19 09:32
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
L-PFBA	1.77	1.49	2.17	4.35	J	B9F0101	13-Jun-19	0.230 L	20-Jun-19 02:36	1
L-PFPeA	1.88	1.49	2.17	4.35	J	B9F0101	13-Jun-19	0.230 L	20-Jun-19 02:36	1
L-PFBS	ND	1.49	2.17	4.35		B9F0101	13-Jun-19	0.230 L	20-Jun-19 02:36	1
L-4:2 FTS	ND	1.49	2.17	4.35		B9F0101	13-Jun-19	0.230 L	20-Jun-19 02:36	1
L-PFHxA	1.83	1.49	2.17	4.35	J	B9F0101	13-Jun-19	0.230 L	20-Jun-19 02:36	1
L-PFPeS	ND	1.49	2.17	4.35		B9F0101	13-Jun-19	0.230 L	20-Jun-19 02:36	1
L-PFHpA	ND	1.49	2.17	4.35		B9F0101	13-Jun-19	0.230 L	20-Jun-19 02:36	1
L-PFHxS	2.30	1.49	2.17	4.35	J, Q	B9F0101	13-Jun-19	0.230 L	20-Jun-19 02:36	1
Br-PFHxS	ND	1.49	2.17	4.35		B9F0101	13-Jun-19	0.230 L	20-Jun-19 02:36	1
Total PFHxS	2.30	1.49	2.17	4.35	J	B9F0101	13-Jun-19	0.230 L	20-Jun-19 02:36	1
L-6:2 FTS	ND	1.49	2.17	4.35		B9F0101	13-Jun-19	0.230 L	20-Jun-19 02:36	1
L-PFOA	ND	1.49	2.17	4.35		B9F0101	13-Jun-19	0.230 L	20-Jun-19 02:36	1
Br-PFOA	ND	1.49	2.17	4.35		B9F0101	13-Jun-19	0.230 L	20-Jun-19 02:36	1
Total PFOA	ND	1.49	2.17	4.35		B9F0101	13-Jun-19	0.230 L	20-Jun-19 02:36	1
L-PFHpS	ND	1.49	2.17	4.35		B9F0101	13-Jun-19	0.230 L	20-Jun-19 02:36	1
L-PFNA	ND	1.49	2.17	4.35		B9F0101	13-Jun-19	0.230 L	20-Jun-19 02:36	1
L-PFOSA	ND	1.49	2.17	4.35		B9F0101	13-Jun-19	0.230 L	20-Jun-19 02:36	1
L-PFOS	ND	1.49	2.17	4.35		B9F0101	13-Jun-19	0.230 L	20-Jun-19 02:36	1
Br-PFOS	ND	1.49	2.17	4.35		B9F0101	13-Jun-19	0.230 L	20-Jun-19 02:36	1
Total PFOS	1.52	1.49	2.17	4.35	J	B9F0101	13-Jun-19	0.230 L	20-Jun-19 02:36	1
L-PFDA	ND	1.49	2.17	4.35		B9F0101	13-Jun-19	0.230 L	20-Jun-19 02:36	1
L-8:2FTS	ND	1.49	2.17	4.35		B9F0101	13-Jun-19	0.230 L	20-Jun-19 02:36	1
L-PFNS	ND	1.49	2.17	4.35		B9F0101	13-Jun-19	0.230 L	20-Jun-19 02:36	1
L-MeFOSAA	ND	1.49	2.17	4.35		B9F0101	13-Jun-19	0.230 L	20-Jun-19 02:36	1
Br-MeFOSAA	ND	1.49	2.17	4.35		B9F0101	13-Jun-19	0.230 L	20-Jun-19 02:36	1
Total MeFOSAA	ND	1.49	2.17	4.35		B9F0101	13-Jun-19	0.230 L	20-Jun-19 02:36	1
L-EtFOSAA	ND	1.49	2.17	4.35		B9F0101	13-Jun-19	0.230 L	20-Jun-19 02:36	1
Br-EtFOSAA	ND	1.49	2.17	4.35		B9F0101	13-Jun-19	0.230 L	20-Jun-19 02:36	1
Total EtFOSAA	ND	1.49	2.17	4.35		B9F0101	13-Jun-19	0.230 L	20-Jun-19 02:36	1
L-PFUnA	ND	1.49	2.17	4.35		B9F0101	13-Jun-19	0.230 L	20-Jun-19 02:36	1
L-PFDS	ND	1.49	2.17	4.35		B9F0101	13-Jun-19	0.230 L	20-Jun-19 02:36	1
L-PFDoA	ND	1.49	2.17	4.35		B9F0101	13-Jun-19	0.230 L	20-Jun-19 02:36	1
L-PFTrDA	ND	1.49	2.17	4.35		B9F0101	13-Jun-19	0.230 L	20-Jun-19 02:36	1
L-PFTeDA	ND	1.49	2.17	4.35		B9F0101	13-Jun-19	0.230 L	20-Jun-19 02:36	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	102	60 - 130		B9F0101	13-Jun-19	0.230 L	20-Jun-19 02:36	1
13C3-PFPeA	IS	108	60 - 150		B9F0101	13-Jun-19	0.230 L	20-Jun-19 02:36	1
13C3-PFBS	IS	113	60 - 150		B9F0101	13-Jun-19	0.230 L	20-Jun-19 02:36	1

Sample ID: SW-04-19 **PFAS Isotope Dilution Method**

Client Data

Name: Merit Laboratories, Inc.
Project: Camp Grayling- Lake Margrethe
Matrix: Aqueous
Date Collected: 04-Jun-19 08:15

Laboratory Data

Lab Sample: 1901485-02
Date Received: 06-Jun-19 09:32
Column: BEH C18

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-4:2 FTS	IS	115	40 - 150		B9F0101	13-Jun-19	0.230 L	20-Jun-19 02:36	1
13C2-PFHxA	IS	105	70 - 130		B9F0101	13-Jun-19	0.230 L	20-Jun-19 02:36	1
13C4-PFHpA	IS	106	60 - 150		B9F0101	13-Jun-19	0.230 L	20-Jun-19 02:36	1
13C3-PFHxS	IS	110	60 - 130		B9F0101	13-Jun-19	0.230 L	20-Jun-19 02:36	1
13C2-6:2 FTS	IS	106	40 - 150		B9F0101	13-Jun-19	0.230 L	20-Jun-19 02:36	1
13C2-PFOA	IS	99.0	60 - 130		B9F0101	13-Jun-19	0.230 L	20-Jun-19 02:36	1
13C5-PFNA	IS	100	50 - 130		B9F0101	13-Jun-19	0.230 L	20-Jun-19 02:36	1
13C8-PFOSA	IS	66.3	20 - 150		B9F0101	13-Jun-19	0.230 L	20-Jun-19 02:36	1
13C8-PFOS	IS	105	60 - 130		B9F0101	13-Jun-19	0.230 L	20-Jun-19 02:36	1
13C2-PFDA	IS	102	60 - 130		B9F0101	13-Jun-19	0.230 L	20-Jun-19 02:36	1
13C2-8:2 FTS	IS	106	40 - 150		B9F0101	13-Jun-19	0.230 L	20-Jun-19 02:36	1
d3-MeFOSAA	IS	93.6	50 - 150		B9F0101	13-Jun-19	0.230 L	20-Jun-19 02:36	1
d5-EtFOSAA	IS	96.5	50 - 150		B9F0101	13-Jun-19	0.230 L	20-Jun-19 02:36	1
13C2-PFUnA	IS	78.1	60 - 130		B9F0101	13-Jun-19	0.230 L	20-Jun-19 02:36	1
13C2-PFDoA	IS	90.8	30 - 130		B9F0101	13-Jun-19	0.230 L	20-Jun-19 02:36	1
13C2-PFTeDA	IS	68.8	20 - 150		B9F0101	13-Jun-19	0.230 L	20-Jun-19 02:36	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation
Results reported to the DL.

Sample ID: SW-05-19 **PFAS Isotope Dilution Method**

Client Data

Name: Merit Laboratories, Inc.
Project: Camp Grayling- Lake Margrethe
Matrix: Aqueous
Date Collected: 04-Jun-19 09:10

Laboratory Data

Lab Sample: 1901485-03
Date Received: 06-Jun-19 09:32
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
L-PFBA	2.99	1.45	2.11	4.22	J	B9F0101	13-Jun-19	0.237 L	20-Jun-19 02:47	1
L-PFPeA	2.82	1.45	2.11	4.22	J	B9F0101	13-Jun-19	0.237 L	20-Jun-19 02:47	1
L-PFBS	ND	1.45	2.11	4.22		B9F0101	13-Jun-19	0.237 L	20-Jun-19 02:47	1
L-4:2 FTS	ND	1.45	2.11	4.22		B9F0101	13-Jun-19	0.237 L	20-Jun-19 02:47	1
L-PFHxA	2.33	1.45	2.11	4.22	J	B9F0101	13-Jun-19	0.237 L	20-Jun-19 02:47	1
L-PFPeS	ND	1.45	2.11	4.22		B9F0101	13-Jun-19	0.237 L	20-Jun-19 02:47	1
L-PFHpA	1.84	1.45	2.11	4.22	J, Q	B9F0101	13-Jun-19	0.237 L	20-Jun-19 02:47	1
L-PFHxS	4.38	1.45	2.11	4.22		B9F0101	13-Jun-19	0.237 L	20-Jun-19 02:47	1
Br-PFHxS	ND	1.45	2.11	4.22		B9F0101	13-Jun-19	0.237 L	20-Jun-19 02:47	1
Total PFHxS	4.96	1.45	2.11	4.22		B9F0101	13-Jun-19	0.237 L	20-Jun-19 02:47	1
L-6:2 FTS	ND	1.45	2.11	4.22		B9F0101	13-Jun-19	0.237 L	20-Jun-19 02:47	1
L-PFOA	ND	1.45	2.11	4.22		B9F0101	13-Jun-19	0.237 L	20-Jun-19 02:47	1
Br-PFOA	ND	1.45	2.11	4.22		B9F0101	13-Jun-19	0.237 L	20-Jun-19 02:47	1
Total PFOA	ND	1.45	2.11	4.22		B9F0101	13-Jun-19	0.237 L	20-Jun-19 02:47	1
L-PFHpS	ND	1.45	2.11	4.22		B9F0101	13-Jun-19	0.237 L	20-Jun-19 02:47	1
L-PFNA	ND	1.45	2.11	4.22		B9F0101	13-Jun-19	0.237 L	20-Jun-19 02:47	1
L-PFOSA	ND	1.45	2.11	4.22		B9F0101	13-Jun-19	0.237 L	20-Jun-19 02:47	1
L-PFOS	3.75	1.45	2.11	4.22	J	B9F0101	13-Jun-19	0.237 L	20-Jun-19 02:47	1
Br-PFOS	2.87	1.45	2.11	4.22	J	B9F0101	13-Jun-19	0.237 L	20-Jun-19 02:47	1
Total PFOS	6.62	1.45	2.11	4.22		B9F0101	13-Jun-19	0.237 L	20-Jun-19 02:47	1
L-PFDA	ND	1.45	2.11	4.22		B9F0101	13-Jun-19	0.237 L	20-Jun-19 02:47	1
L-8:2FTS	ND	1.45	2.11	4.22		B9F0101	13-Jun-19	0.237 L	20-Jun-19 02:47	1
L-PFNS	ND	1.45	2.11	4.22		B9F0101	13-Jun-19	0.237 L	20-Jun-19 02:47	1
L-MeFOSAA	ND	1.45	2.11	4.22		B9F0101	13-Jun-19	0.237 L	20-Jun-19 02:47	1
Br-MeFOSAA	ND	1.45	2.11	4.22		B9F0101	13-Jun-19	0.237 L	20-Jun-19 02:47	1
Total MeFOSAA	ND	1.45	2.11	4.22		B9F0101	13-Jun-19	0.237 L	20-Jun-19 02:47	1
L-EtFOSAA	ND	1.45	2.11	4.22		B9F0101	13-Jun-19	0.237 L	20-Jun-19 02:47	1
Br-EtFOSAA	ND	1.45	2.11	4.22		B9F0101	13-Jun-19	0.237 L	20-Jun-19 02:47	1
Total EtFOSAA	ND	1.45	2.11	4.22		B9F0101	13-Jun-19	0.237 L	20-Jun-19 02:47	1
L-PFUnA	ND	1.45	2.11	4.22		B9F0101	13-Jun-19	0.237 L	20-Jun-19 02:47	1
L-PFDS	ND	1.45	2.11	4.22		B9F0101	13-Jun-19	0.237 L	20-Jun-19 02:47	1
L-PFDoA	ND	1.45	2.11	4.22		B9F0101	13-Jun-19	0.237 L	20-Jun-19 02:47	1
L-PFTrDA	ND	1.45	2.11	4.22		B9F0101	13-Jun-19	0.237 L	20-Jun-19 02:47	1
L-PFTeDA	ND	1.45	2.11	4.22		B9F0101	13-Jun-19	0.237 L	20-Jun-19 02:47	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	96.9	60 - 130		B9F0101	13-Jun-19	0.237 L	20-Jun-19 02:47	1
13C3-PFPeA	IS	92.3	60 - 150		B9F0101	13-Jun-19	0.237 L	20-Jun-19 02:47	1
13C3-PFBS	IS	104	60 - 150		B9F0101	13-Jun-19	0.237 L	20-Jun-19 02:47	1

Sample ID: SW-05-19 **PFAS Isotope Dilution Method**

Client Data

Name: Merit Laboratories, Inc.
Project: Camp Grayling- Lake Margrethe
Matrix: Aqueous
Date Collected: 04-Jun-19 09:10

Laboratory Data

Lab Sample: 1901485-03
Date Received: 06-Jun-19 09:32
Column: BEH C18

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-4:2 FTS	IS	103	40 - 150		B9F0101	13-Jun-19	0.237 L	20-Jun-19 02:47	1
13C2-PFHxA	IS	94.0	70 - 130		B9F0101	13-Jun-19	0.237 L	20-Jun-19 02:47	1
13C4-PFHpA	IS	95.7	60 - 150		B9F0101	13-Jun-19	0.237 L	20-Jun-19 02:47	1
13C3-PFHxS	IS	102	60 - 130		B9F0101	13-Jun-19	0.237 L	20-Jun-19 02:47	1
13C2-6:2 FTS	IS	93.9	40 - 150		B9F0101	13-Jun-19	0.237 L	20-Jun-19 02:47	1
13C2-PFOA	IS	89.5	60 - 130		B9F0101	13-Jun-19	0.237 L	20-Jun-19 02:47	1
13C5-PFNA	IS	87.4	50 - 130		B9F0101	13-Jun-19	0.237 L	20-Jun-19 02:47	1
13C8-PFOSA	IS	48.9	20 - 150		B9F0101	13-Jun-19	0.237 L	20-Jun-19 02:47	1
13C8-PFOS	IS	95.0	60 - 130		B9F0101	13-Jun-19	0.237 L	20-Jun-19 02:47	1
13C2-PFDA	IS	90.4	60 - 130		B9F0101	13-Jun-19	0.237 L	20-Jun-19 02:47	1
13C2-8:2 FTS	IS	94.3	40 - 150		B9F0101	13-Jun-19	0.237 L	20-Jun-19 02:47	1
d3-MeFOSAA	IS	89.9	50 - 150		B9F0101	13-Jun-19	0.237 L	20-Jun-19 02:47	1
d5-EtFOSAA	IS	87.4	50 - 150		B9F0101	13-Jun-19	0.237 L	20-Jun-19 02:47	1
13C2-PFUnA	IS	76.7	60 - 130		B9F0101	13-Jun-19	0.237 L	20-Jun-19 02:47	1
13C2-PFDoA	IS	70.7	30 - 130		B9F0101	13-Jun-19	0.237 L	20-Jun-19 02:47	1
13C2-PFTeDA	IS	56.7	20 - 150		B9F0101	13-Jun-19	0.237 L	20-Jun-19 02:47	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation
Results reported to the DL.

Sample ID: PW-05-19

PFAS Isotope Dilution Method

Client Data

Name: Merit Laboratories, Inc.
Project: Camp Grayling- Lake Margrethe
Matrix: Aqueous
Date Collected: 04-Jun-19 09:15

Laboratory Data

Lab Sample: 1901485-04
Date Received: 06-Jun-19 09:32
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
L-PFBA	ND	1.38	2.02	4.03		B9F0101	13-Jun-19	0.248 L	20-Jun-19 12:33	1
L-PFPeA	ND	1.38	2.02	4.03		B9F0101	13-Jun-19	0.248 L	20-Jun-19 12:33	1
L-PFBS	ND	1.38	2.02	4.03		B9F0101	13-Jun-19	0.248 L	20-Jun-19 12:33	1
L-4:2 FTS	ND	1.38	2.02	4.03		B9F0101	13-Jun-19	0.248 L	20-Jun-19 12:33	1
L-PFHxA	ND	1.38	2.02	4.03		B9F0101	13-Jun-19	0.248 L	20-Jun-19 12:33	1
L-PFPeS	ND	1.38	2.02	4.03		B9F0101	13-Jun-19	0.248 L	20-Jun-19 12:33	1
L-PFHpA	ND	1.38	2.02	4.03		B9F0101	13-Jun-19	0.248 L	20-Jun-19 12:33	1
L-PFHxS	ND	1.38	2.02	4.03		B9F0101	13-Jun-19	0.248 L	20-Jun-19 12:33	1
Br-PFHxS	ND	1.38	2.02	4.03		B9F0101	13-Jun-19	0.248 L	20-Jun-19 12:33	1
Total PFHxS	ND	1.38	2.02	4.03		B9F0101	13-Jun-19	0.248 L	20-Jun-19 12:33	1
L-6:2 FTS	ND	1.38	2.02	4.03		B9F0101	13-Jun-19	0.248 L	20-Jun-19 12:33	1
L-PFOA	ND	1.38	2.02	4.03		B9F0101	13-Jun-19	0.248 L	20-Jun-19 12:33	1
Br-PFOA	ND	1.38	2.02	4.03		B9F0101	13-Jun-19	0.248 L	20-Jun-19 12:33	1
Total PFOA	ND	1.38	2.02	4.03		B9F0101	13-Jun-19	0.248 L	20-Jun-19 12:33	1
L-PFHpS	ND	1.38	2.02	4.03		B9F0101	13-Jun-19	0.248 L	20-Jun-19 12:33	1
L-PFNA	ND	1.38	2.02	4.03		B9F0101	13-Jun-19	0.248 L	20-Jun-19 12:33	1
L-PFOSA	ND	1.38	2.02	4.03		B9F0101	13-Jun-19	0.248 L	20-Jun-19 12:33	1
L-PFOS	ND	1.38	2.02	4.03		B9F0101	13-Jun-19	0.248 L	20-Jun-19 12:33	1
Br-PFOS	ND	1.38	2.02	4.03		B9F0101	13-Jun-19	0.248 L	20-Jun-19 12:33	1
Total PFOS	ND	1.38	2.02	4.03		B9F0101	13-Jun-19	0.248 L	20-Jun-19 12:33	1
L-PFDA	ND	1.38	2.02	4.03		B9F0101	13-Jun-19	0.248 L	20-Jun-19 12:33	1
L-8:2FTS	ND	1.38	2.02	4.03		B9F0101	13-Jun-19	0.248 L	20-Jun-19 12:33	1
L-PFNS	ND	1.38	2.02	4.03		B9F0101	13-Jun-19	0.248 L	20-Jun-19 12:33	1
L-MeFOSAA	ND	1.38	2.02	4.03		B9F0101	13-Jun-19	0.248 L	20-Jun-19 12:33	1
Br-MeFOSAA	ND	1.38	2.02	4.03		B9F0101	13-Jun-19	0.248 L	20-Jun-19 12:33	1
Total MeFOSAA	ND	1.38	2.02	4.03		B9F0101	13-Jun-19	0.248 L	20-Jun-19 12:33	1
L-EtFOSAA	ND	1.38	2.02	4.03		B9F0101	13-Jun-19	0.248 L	20-Jun-19 12:33	1
Br-EtFOSAA	ND	1.38	2.02	4.03		B9F0101	13-Jun-19	0.248 L	20-Jun-19 12:33	1
Total EtFOSAA	ND	1.38	2.02	4.03		B9F0101	13-Jun-19	0.248 L	20-Jun-19 12:33	1
L-PFUnA	ND	1.38	2.02	4.03		B9F0101	13-Jun-19	0.248 L	20-Jun-19 12:33	1
L-PFDS	ND	1.38	2.02	4.03		B9F0101	13-Jun-19	0.248 L	20-Jun-19 12:33	1
L-PFDoA	ND	1.38	2.02	4.03		B9F0101	13-Jun-19	0.248 L	20-Jun-19 12:33	1
L-PFTrDA	ND	1.38	2.02	4.03		B9F0101	13-Jun-19	0.248 L	20-Jun-19 12:33	1
L-PFTeDA	ND	1.38	2.02	4.03		B9F0101	13-Jun-19	0.248 L	20-Jun-19 12:33	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	93.9	60 - 130		B9F0101	13-Jun-19	0.248 L	20-Jun-19 12:33	1
13C3-PFPeA	IS	96.3	60 - 150		B9F0101	13-Jun-19	0.248 L	20-Jun-19 12:33	1
13C3-PFBS	IS	96.9	60 - 150		B9F0101	13-Jun-19	0.248 L	20-Jun-19 12:33	1

Sample ID: PW-05-19 **PFAS Isotope Dilution Method**

Client Data

Name: Merit Laboratories, Inc.
Project: Camp Grayling- Lake Margrethe
Matrix: Aqueous
Date Collected: 04-Jun-19 09:15

Laboratory Data

Lab Sample: 1901485-04
Date Received: 06-Jun-19 09:32
Column: BEH C18

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-4:2 FTS	IS	104	40 - 150		B9F0101	13-Jun-19	0.248 L	20-Jun-19 12:33	1
13C2-PFHxA	IS	89.6	70 - 130		B9F0101	13-Jun-19	0.248 L	20-Jun-19 12:33	1
13C4-PFHpA	IS	90.2	60 - 150		B9F0101	13-Jun-19	0.248 L	20-Jun-19 12:33	1
13C3-PFHxS	IS	94.2	60 - 130		B9F0101	13-Jun-19	0.248 L	20-Jun-19 12:33	1
13C2-6:2 FTS	IS	108	40 - 150		B9F0101	13-Jun-19	0.248 L	20-Jun-19 12:33	1
13C2-PFOA	IS	96.9	60 - 130		B9F0101	13-Jun-19	0.248 L	20-Jun-19 12:33	1
13C5-PFNA	IS	83.1	50 - 130		B9F0101	13-Jun-19	0.248 L	20-Jun-19 12:33	1
13C8-PFOSA	IS	16.0	20 - 150	H	B9F0101	13-Jun-19	0.248 L	20-Jun-19 12:33	1
13C8-PFOS	IS	89.8	60 - 130		B9F0101	13-Jun-19	0.248 L	20-Jun-19 12:33	1
13C2-PFDA	IS	83.5	60 - 130		B9F0101	13-Jun-19	0.248 L	20-Jun-19 12:33	1
13C2-8:2 FTS	IS	94.1	40 - 150		B9F0101	13-Jun-19	0.248 L	20-Jun-19 12:33	1
d3-MeFOSAA	IS	75.0	50 - 150		B9F0101	13-Jun-19	0.248 L	20-Jun-19 12:33	1
d5-EtFOSAA	IS	76.7	50 - 150		B9F0101	13-Jun-19	0.248 L	20-Jun-19 12:33	1
13C2-PFUnA	IS	73.5	60 - 130		B9F0101	13-Jun-19	0.248 L	20-Jun-19 12:33	1
13C2-PFDoA	IS	48.7	30 - 130		B9F0101	13-Jun-19	0.248 L	20-Jun-19 12:33	1
13C2-PFTeDA	IS	14.2	20 - 150	H	B9F0101	13-Jun-19	0.248 L	20-Jun-19 12:33	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation
Results reported to the DL.

Sample ID: PW-06-19

PFAS Isotope Dilution Method

Client Data

Name: Merit Laboratories, Inc.
Project: Camp Grayling- Lake Margrethe
Matrix: Aqueous
Date Collected: 04-Jun-19 09:45

Laboratory Data

Lab Sample: 1901485-05
Date Received: 06-Jun-19 09:32
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
L-PFBA	ND	1.43	2.09	4.19		B9F0101	13-Jun-19	0.239 L	20-Jun-19 03:08	1
L-PFPeA	ND	1.43	2.09	4.19		B9F0101	13-Jun-19	0.239 L	20-Jun-19 03:08	1
L-PFBS	ND	1.43	2.09	4.19		B9F0101	13-Jun-19	0.239 L	20-Jun-19 03:08	1
L-4:2 FTS	ND	1.43	2.09	4.19		B9F0101	13-Jun-19	0.239 L	20-Jun-19 03:08	1
L-PFHxA	ND	1.43	2.09	4.19		B9F0101	13-Jun-19	0.239 L	20-Jun-19 03:08	1
L-PFPeS	ND	1.43	2.09	4.19		B9F0101	13-Jun-19	0.239 L	20-Jun-19 03:08	1
L-PFHpA	ND	1.43	2.09	4.19		B9F0101	13-Jun-19	0.239 L	20-Jun-19 03:08	1
L-PFHxS	2.63	1.43	2.09	4.19	J	B9F0101	13-Jun-19	0.239 L	20-Jun-19 03:08	1
Br-PFHxS	ND	1.43	2.09	4.19		B9F0101	13-Jun-19	0.239 L	20-Jun-19 03:08	1
Total PFHxS	3.40	1.43	2.09	4.19	J	B9F0101	13-Jun-19	0.239 L	20-Jun-19 03:08	1
L-6:2 FTS	ND	1.43	2.09	4.19		B9F0101	13-Jun-19	0.239 L	20-Jun-19 03:08	1
L-PFOA	ND	1.43	2.09	4.19		B9F0101	13-Jun-19	0.239 L	20-Jun-19 03:08	1
Br-PFOA	ND	1.43	2.09	4.19		B9F0101	13-Jun-19	0.239 L	20-Jun-19 03:08	1
Total PFOA	ND	1.43	2.09	4.19		B9F0101	13-Jun-19	0.239 L	20-Jun-19 03:08	1
L-PFHpS	ND	1.43	2.09	4.19		B9F0101	13-Jun-19	0.239 L	20-Jun-19 03:08	1
L-PFNA	ND	1.43	2.09	4.19		B9F0101	13-Jun-19	0.239 L	20-Jun-19 03:08	1
L-PFOSA	ND	1.43	2.09	4.19		B9F0101	13-Jun-19	0.239 L	20-Jun-19 03:08	1
L-PFOS	ND	1.43	2.09	4.19		B9F0101	13-Jun-19	0.239 L	20-Jun-19 03:08	1
Br-PFOS	ND	1.43	2.09	4.19		B9F0101	13-Jun-19	0.239 L	20-Jun-19 03:08	1
Total PFOS	ND	1.43	2.09	4.19		B9F0101	13-Jun-19	0.239 L	20-Jun-19 03:08	1
L-PFDA	ND	1.43	2.09	4.19		B9F0101	13-Jun-19	0.239 L	20-Jun-19 03:08	1
L-8:2FTS	ND	1.43	2.09	4.19		B9F0101	13-Jun-19	0.239 L	20-Jun-19 03:08	1
L-PFNS	ND	1.43	2.09	4.19		B9F0101	13-Jun-19	0.239 L	20-Jun-19 03:08	1
L-MeFOSAA	ND	1.43	2.09	4.19		B9F0101	13-Jun-19	0.239 L	20-Jun-19 03:08	1
Br-MeFOSAA	ND	1.43	2.09	4.19		B9F0101	13-Jun-19	0.239 L	20-Jun-19 03:08	1
Total MeFOSAA	ND	1.43	2.09	4.19		B9F0101	13-Jun-19	0.239 L	20-Jun-19 03:08	1
L-EtFOSAA	ND	1.43	2.09	4.19		B9F0101	13-Jun-19	0.239 L	20-Jun-19 03:08	1
Br-EtFOSAA	ND	1.43	2.09	4.19		B9F0101	13-Jun-19	0.239 L	20-Jun-19 03:08	1
Total EtFOSAA	ND	1.43	2.09	4.19		B9F0101	13-Jun-19	0.239 L	20-Jun-19 03:08	1
L-PFUnA	ND	1.43	2.09	4.19		B9F0101	13-Jun-19	0.239 L	20-Jun-19 03:08	1
L-PFDS	ND	1.43	2.09	4.19		B9F0101	13-Jun-19	0.239 L	20-Jun-19 03:08	1
L-PFDoA	ND	1.43	2.09	4.19		B9F0101	13-Jun-19	0.239 L	20-Jun-19 03:08	1
L-PFTrDA	ND	1.43	2.09	4.19		B9F0101	13-Jun-19	0.239 L	20-Jun-19 03:08	1
L-PFTeDA	ND	1.43	2.09	4.19		B9F0101	13-Jun-19	0.239 L	20-Jun-19 03:08	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	96.8	60 - 130		B9F0101	13-Jun-19	0.239 L	20-Jun-19 03:08	1
13C3-PFPeA	IS	102	60 - 150		B9F0101	13-Jun-19	0.239 L	20-Jun-19 03:08	1
13C3-PFBS	IS	114	60 - 150		B9F0101	13-Jun-19	0.239 L	20-Jun-19 03:08	1

Sample ID: PW-06-19 **PFAS Isotope Dilution Method**

Client Data

Name: Merit Laboratories, Inc.
Project: Camp Grayling- Lake Margrethe
Matrix: Aqueous
Date Collected: 04-Jun-19 09:45

Laboratory Data

Lab Sample: 1901485-05
Date Received: 06-Jun-19 09:32
Column: BEH C18

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-4:2 FTS	IS	108	40 - 150		B9F0101	13-Jun-19	0.239 L	20-Jun-19 03:08	1
13C2-PFHxA	IS	103	70 - 130		B9F0101	13-Jun-19	0.239 L	20-Jun-19 03:08	1
13C4-PFHpA	IS	102	60 - 150		B9F0101	13-Jun-19	0.239 L	20-Jun-19 03:08	1
13C3-PFHxS	IS	99.9	60 - 130		B9F0101	13-Jun-19	0.239 L	20-Jun-19 03:08	1
13C2-6:2 FTS	IS	108	40 - 150		B9F0101	13-Jun-19	0.239 L	20-Jun-19 03:08	1
13C2-PFOA	IS	101	60 - 130		B9F0101	13-Jun-19	0.239 L	20-Jun-19 03:08	1
13C5-PFNA	IS	97.1	50 - 130		B9F0101	13-Jun-19	0.239 L	20-Jun-19 03:08	1
13C8-PFOSA	IS	63.6	20 - 150		B9F0101	13-Jun-19	0.239 L	20-Jun-19 03:08	1
13C8-PFOS	IS	97.1	60 - 130		B9F0101	13-Jun-19	0.239 L	20-Jun-19 03:08	1
13C2-PFDA	IS	89.2	60 - 130		B9F0101	13-Jun-19	0.239 L	20-Jun-19 03:08	1
13C2-8:2 FTS	IS	111	40 - 150		B9F0101	13-Jun-19	0.239 L	20-Jun-19 03:08	1
d3-MeFOSAA	IS	95.4	50 - 150		B9F0101	13-Jun-19	0.239 L	20-Jun-19 03:08	1
d5-EtFOSAA	IS	98.0	50 - 150		B9F0101	13-Jun-19	0.239 L	20-Jun-19 03:08	1
13C2-PFUnA	IS	89.5	60 - 130		B9F0101	13-Jun-19	0.239 L	20-Jun-19 03:08	1
13C2-PFDoA	IS	69.2	30 - 130		B9F0101	13-Jun-19	0.239 L	20-Jun-19 03:08	1
13C2-PFTeDA	IS	55.5	20 - 150		B9F0101	13-Jun-19	0.239 L	20-Jun-19 03:08	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation
Results reported to the DL.

Sample ID: SW-06-19

PFAS Isotope Dilution Method

Client Data

Name: Merit Laboratories, Inc.
Project: Camp Grayling- Lake Margrethe
Matrix: Aqueous
Date Collected: 04-Jun-19 09:45

Laboratory Data

Lab Sample: 1901485-06
Date Received: 06-Jun-19 09:32
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
L-PFBA	1.93	1.42	2.07	4.14	J	B9F0101	13-Jun-19	0.241 L	20-Jun-19 03:18	1
L-PFPeA	3.12	1.42	2.07	4.14	J	B9F0101	13-Jun-19	0.241 L	20-Jun-19 03:18	1
L-PFBS	1.74	1.42	2.07	4.14	J	B9F0101	13-Jun-19	0.241 L	20-Jun-19 03:18	1
L-4:2 FTS	ND	1.42	2.07	4.14		B9F0101	13-Jun-19	0.241 L	20-Jun-19 03:18	1
L-PFHxA	2.65	1.42	2.07	4.14	J	B9F0101	13-Jun-19	0.241 L	20-Jun-19 03:18	1
L-PFPeS	ND	1.42	2.07	4.14		B9F0101	13-Jun-19	0.241 L	20-Jun-19 03:18	1
L-PFHpA	ND	1.42	2.07	4.14		B9F0101	13-Jun-19	0.241 L	20-Jun-19 03:18	1
L-PFHxS	3.30	1.42	2.07	4.14	J	B9F0101	13-Jun-19	0.241 L	20-Jun-19 03:18	1
Br-PFHxS	ND	1.42	2.07	4.14		B9F0101	13-Jun-19	0.241 L	20-Jun-19 03:18	1
Total PFHxS	3.85	1.42	2.07	4.14	J	B9F0101	13-Jun-19	0.241 L	20-Jun-19 03:18	1
L-6:2 FTS	ND	1.42	2.07	4.14		B9F0101	13-Jun-19	0.241 L	20-Jun-19 03:18	1
L-PFOA	ND	1.42	2.07	4.14		B9F0101	13-Jun-19	0.241 L	20-Jun-19 03:18	1
Br-PFOA	ND	1.42	2.07	4.14		B9F0101	13-Jun-19	0.241 L	20-Jun-19 03:18	1
Total PFOA	ND	1.42	2.07	4.14		B9F0101	13-Jun-19	0.241 L	20-Jun-19 03:18	1
L-PFHpS	ND	1.42	2.07	4.14		B9F0101	13-Jun-19	0.241 L	20-Jun-19 03:18	1
L-PFNA	ND	1.42	2.07	4.14		B9F0101	13-Jun-19	0.241 L	20-Jun-19 03:18	1
L-PFOSA	ND	1.42	2.07	4.14		B9F0101	13-Jun-19	0.241 L	20-Jun-19 03:18	1
L-PFOS	4.37	1.42	2.07	4.14		B9F0101	13-Jun-19	0.241 L	20-Jun-19 03:18	1
Br-PFOS	2.11	1.42	2.07	4.14	J	B9F0101	13-Jun-19	0.241 L	20-Jun-19 03:18	1
Total PFOS	6.49	1.42	2.07	4.14		B9F0101	13-Jun-19	0.241 L	20-Jun-19 03:18	1
L-PFDA	ND	1.42	2.07	4.14		B9F0101	13-Jun-19	0.241 L	20-Jun-19 03:18	1
L-8:2FTS	ND	1.42	2.07	4.14		B9F0101	13-Jun-19	0.241 L	20-Jun-19 03:18	1
L-PFNS	ND	1.42	2.07	4.14		B9F0101	13-Jun-19	0.241 L	20-Jun-19 03:18	1
L-MeFOSAA	ND	1.42	2.07	4.14		B9F0101	13-Jun-19	0.241 L	20-Jun-19 03:18	1
Br-MeFOSAA	ND	1.42	2.07	4.14		B9F0101	13-Jun-19	0.241 L	20-Jun-19 03:18	1
Total MeFOSAA	ND	1.42	2.07	4.14		B9F0101	13-Jun-19	0.241 L	20-Jun-19 03:18	1
L-EtFOSAA	ND	1.42	2.07	4.14		B9F0101	13-Jun-19	0.241 L	20-Jun-19 03:18	1
Br-EtFOSAA	ND	1.42	2.07	4.14		B9F0101	13-Jun-19	0.241 L	20-Jun-19 03:18	1
Total EtFOSAA	ND	1.42	2.07	4.14		B9F0101	13-Jun-19	0.241 L	20-Jun-19 03:18	1
L-PFUnA	ND	1.42	2.07	4.14		B9F0101	13-Jun-19	0.241 L	20-Jun-19 03:18	1
L-PFDS	ND	1.42	2.07	4.14		B9F0101	13-Jun-19	0.241 L	20-Jun-19 03:18	1
L-PFDoA	ND	1.42	2.07	4.14		B9F0101	13-Jun-19	0.241 L	20-Jun-19 03:18	1
L-PFTrDA	ND	1.42	2.07	4.14		B9F0101	13-Jun-19	0.241 L	20-Jun-19 03:18	1
L-PFTeDA	ND	1.42	2.07	4.14		B9F0101	13-Jun-19	0.241 L	20-Jun-19 03:18	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	94.9	60 - 130		B9F0101	13-Jun-19	0.241 L	20-Jun-19 03:18	1
13C3-PFPeA	IS	97.0	60 - 150		B9F0101	13-Jun-19	0.241 L	20-Jun-19 03:18	1
13C3-PFBS	IS	94.3	60 - 150		B9F0101	13-Jun-19	0.241 L	20-Jun-19 03:18	1

Sample ID: SW-06-19 **PFAS Isotope Dilution Method**

Client Data

Name: Merit Laboratories, Inc.
Project: Camp Grayling- Lake Margrethe
Matrix: Aqueous
Date Collected: 04-Jun-19 09:45

Laboratory Data

Lab Sample: 1901485-06
Date Received: 06-Jun-19 09:32
Column: BEH C18

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-4:2 FTS	IS	98.6	40 - 150		B9F0101	13-Jun-19	0.241 L	20-Jun-19 03:18	1
13C2-PFHxA	IS	94.7	70 - 130		B9F0101	13-Jun-19	0.241 L	20-Jun-19 03:18	1
13C4-PFHpA	IS	97.8	60 - 150		B9F0101	13-Jun-19	0.241 L	20-Jun-19 03:18	1
13C3-PFHxS	IS	92.2	60 - 130		B9F0101	13-Jun-19	0.241 L	20-Jun-19 03:18	1
13C2-6:2 FTS	IS	93.9	40 - 150		B9F0101	13-Jun-19	0.241 L	20-Jun-19 03:18	1
13C2-PFOA	IS	92.0	60 - 130		B9F0101	13-Jun-19	0.241 L	20-Jun-19 03:18	1
13C5-PFNA	IS	89.3	50 - 130		B9F0101	13-Jun-19	0.241 L	20-Jun-19 03:18	1
13C8-PFOSA	IS	61.7	20 - 150		B9F0101	13-Jun-19	0.241 L	20-Jun-19 03:18	1
13C8-PFOS	IS	91.1	60 - 130		B9F0101	13-Jun-19	0.241 L	20-Jun-19 03:18	1
13C2-PFDA	IS	85.3	60 - 130		B9F0101	13-Jun-19	0.241 L	20-Jun-19 03:18	1
13C2-8:2 FTS	IS	94.1	40 - 150		B9F0101	13-Jun-19	0.241 L	20-Jun-19 03:18	1
d3-MeFOSAA	IS	81.1	50 - 150		B9F0101	13-Jun-19	0.241 L	20-Jun-19 03:18	1
d5-EtFOSAA	IS	87.4	50 - 150		B9F0101	13-Jun-19	0.241 L	20-Jun-19 03:18	1
13C2-PFUnA	IS	74.4	60 - 130		B9F0101	13-Jun-19	0.241 L	20-Jun-19 03:18	1
13C2-PFDoA	IS	74.6	30 - 130		B9F0101	13-Jun-19	0.241 L	20-Jun-19 03:18	1
13C2-PFTeDA	IS	57.3	20 - 150		B9F0101	13-Jun-19	0.241 L	20-Jun-19 03:18	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation
Results reported to the DL.

Sample ID: SW-07-19 **PFAS Isotope Dilution Method**

Client Data

Name: Merit Laboratories, Inc.
Project: Camp Grayling- Lake Margrethe
Matrix: Aqueous
Date Collected: 04-Jun-19 10:05

Laboratory Data

Lab Sample: 1901485-07
Date Received: 06-Jun-19 09:32
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
L-PFBA	1.59	1.51	2.20	4.40	J	B9F0101	13-Jun-19	0.227 L	20-Jun-19 03:29	1
L-PFPeA	1.85	1.51	2.20	4.40	J	B9F0101	13-Jun-19	0.227 L	20-Jun-19 03:29	1
L-PFBS	ND	1.51	2.20	4.40		B9F0101	13-Jun-19	0.227 L	20-Jun-19 03:29	1
L-4:2 FTS	ND	1.51	2.20	4.40		B9F0101	13-Jun-19	0.227 L	20-Jun-19 03:29	1
L-PFHxA	1.57	1.51	2.20	4.40	J	B9F0101	13-Jun-19	0.227 L	20-Jun-19 03:29	1
L-PFPeS	ND	1.51	2.20	4.40		B9F0101	13-Jun-19	0.227 L	20-Jun-19 03:29	1
L-PFHpA	ND	1.51	2.20	4.40		B9F0101	13-Jun-19	0.227 L	20-Jun-19 03:29	1
L-PFHxS	2.24	1.51	2.20	4.40	J	B9F0101	13-Jun-19	0.227 L	20-Jun-19 03:29	1
Br-PFHxS	ND	1.51	2.20	4.40		B9F0101	13-Jun-19	0.227 L	20-Jun-19 03:29	1
Total PFHxS	2.24	1.51	2.20	4.40	J	B9F0101	13-Jun-19	0.227 L	20-Jun-19 03:29	1
L-6:2 FTS	ND	1.51	2.20	4.40		B9F0101	13-Jun-19	0.227 L	20-Jun-19 03:29	1
L-PFOA	ND	1.51	2.20	4.40		B9F0101	13-Jun-19	0.227 L	20-Jun-19 03:29	1
Br-PFOA	ND	1.51	2.20	4.40		B9F0101	13-Jun-19	0.227 L	20-Jun-19 03:29	1
Total PFOA	ND	1.51	2.20	4.40		B9F0101	13-Jun-19	0.227 L	20-Jun-19 03:29	1
L-PFHpS	ND	1.51	2.20	4.40		B9F0101	13-Jun-19	0.227 L	20-Jun-19 03:29	1
L-PFNA	ND	1.51	2.20	4.40		B9F0101	13-Jun-19	0.227 L	20-Jun-19 03:29	1
L-PFOSA	ND	1.51	2.20	4.40		B9F0101	13-Jun-19	0.227 L	20-Jun-19 03:29	1
L-PFOS	3.53	1.51	2.20	4.40	J	B9F0101	13-Jun-19	0.227 L	20-Jun-19 03:29	1
Br-PFOS	2.45	1.51	2.20	4.40	J	B9F0101	13-Jun-19	0.227 L	20-Jun-19 03:29	1
Total PFOS	5.99	1.51	2.20	4.40		B9F0101	13-Jun-19	0.227 L	20-Jun-19 03:29	1
L-PFDA	ND	1.51	2.20	4.40		B9F0101	13-Jun-19	0.227 L	20-Jun-19 03:29	1
L-8:2FTS	ND	1.51	2.20	4.40		B9F0101	13-Jun-19	0.227 L	20-Jun-19 03:29	1
L-PFNS	ND	1.51	2.20	4.40		B9F0101	13-Jun-19	0.227 L	20-Jun-19 03:29	1
L-MeFOSAA	ND	1.51	2.20	4.40		B9F0101	13-Jun-19	0.227 L	20-Jun-19 03:29	1
Br-MeFOSAA	ND	1.51	2.20	4.40		B9F0101	13-Jun-19	0.227 L	20-Jun-19 03:29	1
Total MeFOSAA	ND	1.51	2.20	4.40		B9F0101	13-Jun-19	0.227 L	20-Jun-19 03:29	1
L-EtFOSAA	ND	1.51	2.20	4.40		B9F0101	13-Jun-19	0.227 L	20-Jun-19 03:29	1
Br-EtFOSAA	ND	1.51	2.20	4.40		B9F0101	13-Jun-19	0.227 L	20-Jun-19 03:29	1
Total EtFOSAA	ND	1.51	2.20	4.40		B9F0101	13-Jun-19	0.227 L	20-Jun-19 03:29	1
L-PFUnA	ND	1.51	2.20	4.40		B9F0101	13-Jun-19	0.227 L	20-Jun-19 03:29	1
L-PFDS	ND	1.51	2.20	4.40		B9F0101	13-Jun-19	0.227 L	20-Jun-19 03:29	1
L-PFDoA	ND	1.51	2.20	4.40		B9F0101	13-Jun-19	0.227 L	20-Jun-19 03:29	1
L-PFTrDA	ND	1.51	2.20	4.40		B9F0101	13-Jun-19	0.227 L	20-Jun-19 03:29	1
L-PFTeDA	ND	1.51	2.20	4.40		B9F0101	13-Jun-19	0.227 L	20-Jun-19 03:29	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	98.4	60 - 130		B9F0101	13-Jun-19	0.227 L	20-Jun-19 03:29	1
13C3-PFPeA	IS	102	60 - 150		B9F0101	13-Jun-19	0.227 L	20-Jun-19 03:29	1
13C3-PFBS	IS	95.5	60 - 150		B9F0101	13-Jun-19	0.227 L	20-Jun-19 03:29	1

Sample ID: SW-07-19 **PFAS Isotope Dilution Method**

Client Data

Name: Merit Laboratories, Inc.
Project: Camp Grayling- Lake Margrethe
Matrix: Aqueous
Date Collected: 04-Jun-19 10:05

Laboratory Data

Lab Sample: 1901485-07
Date Received: 06-Jun-19 09:32
Column: BEH C18

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-4:2 FTS	IS	103	40 - 150		B9F0101	13-Jun-19	0.227 L	20-Jun-19 03:29	1
13C2-PFHxA	IS	97.9	70 - 130		B9F0101	13-Jun-19	0.227 L	20-Jun-19 03:29	1
13C4-PFHpA	IS	99.4	60 - 150		B9F0101	13-Jun-19	0.227 L	20-Jun-19 03:29	1
13C3-PFHxS	IS	92.7	60 - 130		B9F0101	13-Jun-19	0.227 L	20-Jun-19 03:29	1
13C2-6:2 FTS	IS	102	40 - 150		B9F0101	13-Jun-19	0.227 L	20-Jun-19 03:29	1
13C2-PFOA	IS	95.4	60 - 130		B9F0101	13-Jun-19	0.227 L	20-Jun-19 03:29	1
13C5-PFNA	IS	86.6	50 - 130		B9F0101	13-Jun-19	0.227 L	20-Jun-19 03:29	1
13C8-PFOSA	IS	71.9	20 - 150		B9F0101	13-Jun-19	0.227 L	20-Jun-19 03:29	1
13C8-PFOS	IS	93.9	60 - 130		B9F0101	13-Jun-19	0.227 L	20-Jun-19 03:29	1
13C2-PFDA	IS	85.8	60 - 130		B9F0101	13-Jun-19	0.227 L	20-Jun-19 03:29	1
13C2-8:2 FTS	IS	94.4	40 - 150		B9F0101	13-Jun-19	0.227 L	20-Jun-19 03:29	1
d3-MeFOSAA	IS	84.3	50 - 150		B9F0101	13-Jun-19	0.227 L	20-Jun-19 03:29	1
d5-EtFOSAA	IS	84.4	50 - 150		B9F0101	13-Jun-19	0.227 L	20-Jun-19 03:29	1
13C2-PFUnA	IS	81.7	60 - 130		B9F0101	13-Jun-19	0.227 L	20-Jun-19 03:29	1
13C2-PFDoA	IS	71.8	30 - 130		B9F0101	13-Jun-19	0.227 L	20-Jun-19 03:29	1
13C2-PFTeDA	IS	57.1	20 - 150		B9F0101	13-Jun-19	0.227 L	20-Jun-19 03:29	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation
Results reported to the DL.

Sample ID: PW-07-19

PFAS Isotope Dilution Method

Client Data

Name: Merit Laboratories, Inc.
Project: Camp Grayling- Lake Margrethe
Matrix: Aqueous
Date Collected: 04-Jun-19 10:25

Laboratory Data

Lab Sample: 1901485-08
Date Received: 06-Jun-19 09:32
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
L-PFBA	ND	1.36	1.99	3.98		B9F0101	13-Jun-19	0.251 L	20-Jun-19 04:11	1
L-PFPeA	ND	1.36	1.99	3.98		B9F0101	13-Jun-19	0.251 L	20-Jun-19 04:11	1
L-PFBS	ND	1.36	1.99	3.98		B9F0101	13-Jun-19	0.251 L	20-Jun-19 04:11	1
L-4:2 FTS	ND	1.36	1.99	3.98		B9F0101	13-Jun-19	0.251 L	20-Jun-19 04:11	1
L-PFHxA	ND	1.36	1.99	3.98		B9F0101	13-Jun-19	0.251 L	20-Jun-19 04:11	1
L-PFPeS	ND	1.36	1.99	3.98		B9F0101	13-Jun-19	0.251 L	20-Jun-19 04:11	1
L-PFHpA	ND	1.36	1.99	3.98		B9F0101	13-Jun-19	0.251 L	20-Jun-19 04:11	1
L-PFHxS	1.46	1.36	1.99	3.98	J	B9F0101	13-Jun-19	0.251 L	20-Jun-19 04:11	1
Br-PFHxS	ND	1.36	1.99	3.98		B9F0101	13-Jun-19	0.251 L	20-Jun-19 04:11	1
Total PFHxS	1.90	1.36	1.99	3.98	J	B9F0101	13-Jun-19	0.251 L	20-Jun-19 04:11	1
L-6:2 FTS	ND	1.36	1.99	3.98		B9F0101	13-Jun-19	0.251 L	20-Jun-19 04:11	1
L-PFOA	ND	1.36	1.99	3.98		B9F0101	13-Jun-19	0.251 L	20-Jun-19 04:11	1
Br-PFOA	ND	1.36	1.99	3.98		B9F0101	13-Jun-19	0.251 L	20-Jun-19 04:11	1
Total PFOA	ND	1.36	1.99	3.98		B9F0101	13-Jun-19	0.251 L	20-Jun-19 04:11	1
L-PFHpS	ND	1.36	1.99	3.98		B9F0101	13-Jun-19	0.251 L	20-Jun-19 04:11	1
L-PFNA	ND	1.36	1.99	3.98		B9F0101	13-Jun-19	0.251 L	20-Jun-19 04:11	1
L-PFOSA	ND	1.36	1.99	3.98		B9F0101	13-Jun-19	0.251 L	20-Jun-19 04:11	1
L-PFOS	ND	1.36	1.99	3.98		B9F0101	13-Jun-19	0.251 L	20-Jun-19 04:11	1
Br-PFOS	ND	1.36	1.99	3.98		B9F0101	13-Jun-19	0.251 L	20-Jun-19 04:11	1
Total PFOS	ND	1.36	1.99	3.98		B9F0101	13-Jun-19	0.251 L	20-Jun-19 04:11	1
L-PFDA	ND	1.36	1.99	3.98		B9F0101	13-Jun-19	0.251 L	20-Jun-19 04:11	1
L-8:2FTS	ND	1.36	1.99	3.98		B9F0101	13-Jun-19	0.251 L	20-Jun-19 04:11	1
L-PFNS	ND	1.36	1.99	3.98		B9F0101	13-Jun-19	0.251 L	20-Jun-19 04:11	1
L-MeFOSAA	ND	1.36	1.99	3.98		B9F0101	13-Jun-19	0.251 L	20-Jun-19 04:11	1
Br-MeFOSAA	ND	1.36	1.99	3.98		B9F0101	13-Jun-19	0.251 L	20-Jun-19 04:11	1
Total MeFOSAA	ND	1.36	1.99	3.98		B9F0101	13-Jun-19	0.251 L	20-Jun-19 04:11	1
L-EtFOSAA	ND	1.36	1.99	3.98		B9F0101	13-Jun-19	0.251 L	20-Jun-19 04:11	1
Br-EtFOSAA	ND	1.36	1.99	3.98		B9F0101	13-Jun-19	0.251 L	20-Jun-19 04:11	1
Total EtFOSAA	ND	1.36	1.99	3.98		B9F0101	13-Jun-19	0.251 L	20-Jun-19 04:11	1
L-PFUnA	ND	1.36	1.99	3.98		B9F0101	13-Jun-19	0.251 L	20-Jun-19 04:11	1
L-PFDS	ND	1.36	1.99	3.98		B9F0101	13-Jun-19	0.251 L	20-Jun-19 04:11	1
L-PFDoA	ND	1.36	1.99	3.98		B9F0101	13-Jun-19	0.251 L	20-Jun-19 04:11	1
L-PFTrDA	ND	1.36	1.99	3.98		B9F0101	13-Jun-19	0.251 L	20-Jun-19 04:11	1
L-PFTeDA	ND	1.36	1.99	3.98		B9F0101	13-Jun-19	0.251 L	20-Jun-19 04:11	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	99.7	60 - 130		B9F0101	13-Jun-19	0.251 L	20-Jun-19 04:11	1
13C3-PFPeA	IS	103	60 - 150		B9F0101	13-Jun-19	0.251 L	20-Jun-19 04:11	1
13C3-PFBS	IS	106	60 - 150		B9F0101	13-Jun-19	0.251 L	20-Jun-19 04:11	1

Sample ID: PW-07-19 **PFAS Isotope Dilution Method**

Client Data

Name: Merit Laboratories, Inc.
Project: Camp Grayling- Lake Margrethe
Matrix: Aqueous
Date Collected: 04-Jun-19 10:25

Laboratory Data

Lab Sample: 1901485-08
Date Received: 06-Jun-19 09:32
Column: BEH C18

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-4:2 FTS	IS	101	40 - 150		B9F0101	13-Jun-19	0.251 L	20-Jun-19 04:11	1
13C2-PFHxA	IS	104	70 - 130		B9F0101	13-Jun-19	0.251 L	20-Jun-19 04:11	1
13C4-PFHpA	IS	103	60 - 150		B9F0101	13-Jun-19	0.251 L	20-Jun-19 04:11	1
13C3-PFHxS	IS	97.0	60 - 130		B9F0101	13-Jun-19	0.251 L	20-Jun-19 04:11	1
13C2-6:2 FTS	IS	101	40 - 150		B9F0101	13-Jun-19	0.251 L	20-Jun-19 04:11	1
13C2-PFOA	IS	93.2	60 - 130		B9F0101	13-Jun-19	0.251 L	20-Jun-19 04:11	1
13C5-PFNA	IS	95.8	50 - 130		B9F0101	13-Jun-19	0.251 L	20-Jun-19 04:11	1
13C8-PFOSA	IS	57.6	20 - 150		B9F0101	13-Jun-19	0.251 L	20-Jun-19 04:11	1
13C8-PFOS	IS	97.6	60 - 130		B9F0101	13-Jun-19	0.251 L	20-Jun-19 04:11	1
13C2-PFDA	IS	87.2	60 - 130		B9F0101	13-Jun-19	0.251 L	20-Jun-19 04:11	1
13C2-8:2 FTS	IS	85.6	40 - 150		B9F0101	13-Jun-19	0.251 L	20-Jun-19 04:11	1
d3-MeFOSAA	IS	68.7	50 - 150		B9F0101	13-Jun-19	0.251 L	20-Jun-19 04:11	1
d5-EtFOSAA	IS	76.6	50 - 150		B9F0101	13-Jun-19	0.251 L	20-Jun-19 04:11	1
13C2-PFUnA	IS	75.2	60 - 130		B9F0101	13-Jun-19	0.251 L	20-Jun-19 04:11	1
13C2-PFDoA	IS	74.3	30 - 130		B9F0101	13-Jun-19	0.251 L	20-Jun-19 04:11	1
13C2-PFTeDA	IS	71.3	20 - 150		B9F0101	13-Jun-19	0.251 L	20-Jun-19 04:11	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation
Results reported to the DL.

Sample ID: SW-01-19

PFAS Isotope Dilution Method

Client Data

Name: Merit Laboratories, Inc.
Project: Camp Grayling- Lake Margrethe
Matrix: Aqueous
Date Collected: 04-Jun-19 10:50

Laboratory Data

Lab Sample: 1901485-09
Date Received: 06-Jun-19 09:32
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
L-PFBA	1.70	1.43	2.09	4.18	J	B9F0101	13-Jun-19	0.239 L	20-Jun-19 04:22	1
L-PFPeA	2.58	1.43	2.09	4.18	J	B9F0101	13-Jun-19	0.239 L	20-Jun-19 04:22	1
L-PFBS	ND	1.43	2.09	4.18		B9F0101	13-Jun-19	0.239 L	20-Jun-19 04:22	1
L-4:2 FTS	ND	1.43	2.09	4.18		B9F0101	13-Jun-19	0.239 L	20-Jun-19 04:22	1
L-PFHxA	2.32	1.43	2.09	4.18	J, Q	B9F0101	13-Jun-19	0.239 L	20-Jun-19 04:22	1
L-PFPeS	ND	1.43	2.09	4.18		B9F0101	13-Jun-19	0.239 L	20-Jun-19 04:22	1
L-PFHpA	1.55	1.43	2.09	4.18	J	B9F0101	13-Jun-19	0.239 L	20-Jun-19 04:22	1
L-PFHxS	2.49	1.43	2.09	4.18	J	B9F0101	13-Jun-19	0.239 L	20-Jun-19 04:22	1
Br-PFHxS	ND	1.43	2.09	4.18		B9F0101	13-Jun-19	0.239 L	20-Jun-19 04:22	1
Total PFHxS	3.23	1.43	2.09	4.18	J	B9F0101	13-Jun-19	0.239 L	20-Jun-19 04:22	1
L-6:2 FTS	1.50	1.43	2.09	4.18	J	B9F0101	13-Jun-19	0.239 L	20-Jun-19 04:22	1
L-PFOA	ND	1.43	2.09	4.18		B9F0101	13-Jun-19	0.239 L	20-Jun-19 04:22	1
Br-PFOA	ND	1.43	2.09	4.18		B9F0101	13-Jun-19	0.239 L	20-Jun-19 04:22	1
Total PFOA	ND	1.43	2.09	4.18		B9F0101	13-Jun-19	0.239 L	20-Jun-19 04:22	1
L-PFHpS	ND	1.43	2.09	4.18		B9F0101	13-Jun-19	0.239 L	20-Jun-19 04:22	1
L-PFNA	ND	1.43	2.09	4.18		B9F0101	13-Jun-19	0.239 L	20-Jun-19 04:22	1
L-PFOSA	ND	1.43	2.09	4.18		B9F0101	13-Jun-19	0.239 L	20-Jun-19 04:22	1
L-PFOS	5.62	1.43	2.09	4.18		B9F0101	13-Jun-19	0.239 L	20-Jun-19 04:22	1
Br-PFOS	3.24	1.43	2.09	4.18	J	B9F0101	13-Jun-19	0.239 L	20-Jun-19 04:22	1
Total PFOS	8.86	1.43	2.09	4.18		B9F0101	13-Jun-19	0.239 L	20-Jun-19 04:22	1
L-PFDA	ND	1.43	2.09	4.18		B9F0101	13-Jun-19	0.239 L	20-Jun-19 04:22	1
L-8:2FTS	ND	1.43	2.09	4.18		B9F0101	13-Jun-19	0.239 L	20-Jun-19 04:22	1
L-PFNS	ND	1.43	2.09	4.18		B9F0101	13-Jun-19	0.239 L	20-Jun-19 04:22	1
L-MeFOSAA	ND	1.43	2.09	4.18		B9F0101	13-Jun-19	0.239 L	20-Jun-19 04:22	1
Br-MeFOSAA	ND	1.43	2.09	4.18		B9F0101	13-Jun-19	0.239 L	20-Jun-19 04:22	1
Total MeFOSAA	ND	1.43	2.09	4.18		B9F0101	13-Jun-19	0.239 L	20-Jun-19 04:22	1
L-EtFOSAA	ND	1.43	2.09	4.18		B9F0101	13-Jun-19	0.239 L	20-Jun-19 04:22	1
Br-EtFOSAA	ND	1.43	2.09	4.18		B9F0101	13-Jun-19	0.239 L	20-Jun-19 04:22	1
Total EtFOSAA	ND	1.43	2.09	4.18		B9F0101	13-Jun-19	0.239 L	20-Jun-19 04:22	1
L-PFUnA	ND	1.43	2.09	4.18		B9F0101	13-Jun-19	0.239 L	20-Jun-19 04:22	1
L-PFDS	ND	1.43	2.09	4.18		B9F0101	13-Jun-19	0.239 L	20-Jun-19 04:22	1
L-PFDoA	ND	1.43	2.09	4.18		B9F0101	13-Jun-19	0.239 L	20-Jun-19 04:22	1
L-PFTrDA	ND	1.43	2.09	4.18		B9F0101	13-Jun-19	0.239 L	20-Jun-19 04:22	1
L-PFTeDA	ND	1.43	2.09	4.18		B9F0101	13-Jun-19	0.239 L	20-Jun-19 04:22	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	86.0	60 - 130		B9F0101	13-Jun-19	0.239 L	20-Jun-19 04:22	1
13C3-PFPeA	IS	89.0	60 - 150		B9F0101	13-Jun-19	0.239 L	20-Jun-19 04:22	1
13C3-PFBS	IS	93.5	60 - 150		B9F0101	13-Jun-19	0.239 L	20-Jun-19 04:22	1

Sample ID: SW-01-19 **PFAS Isotope Dilution Method**

Client Data

Name: Merit Laboratories, Inc.
Project: Camp Grayling- Lake Margrethe
Matrix: Aqueous
Date Collected: 04-Jun-19 10:50

Laboratory Data

Lab Sample: 1901485-09
Date Received: 06-Jun-19 09:32
Column: BEH C18

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-4:2 FTS	IS	88.2	40 - 150		B9F0101	13-Jun-19	0.239 L	20-Jun-19 04:22	1
13C2-PFHxA	IS	86.8	70 - 130		B9F0101	13-Jun-19	0.239 L	20-Jun-19 04:22	1
13C4-PFHpA	IS	88.4	60 - 150		B9F0101	13-Jun-19	0.239 L	20-Jun-19 04:22	1
13C3-PFHxS	IS	91.7	60 - 130		B9F0101	13-Jun-19	0.239 L	20-Jun-19 04:22	1
13C2-6:2 FTS	IS	77.6	40 - 150		B9F0101	13-Jun-19	0.239 L	20-Jun-19 04:22	1
13C2-PFOA	IS	72.4	60 - 130		B9F0101	13-Jun-19	0.239 L	20-Jun-19 04:22	1
13C5-PFNA	IS	71.1	50 - 130		B9F0101	13-Jun-19	0.239 L	20-Jun-19 04:22	1
13C8-PFOSA	IS	49.9	20 - 150		B9F0101	13-Jun-19	0.239 L	20-Jun-19 04:22	1
13C8-PFOS	IS	82.7	60 - 130		B9F0101	13-Jun-19	0.239 L	20-Jun-19 04:22	1
13C2-PFDA	IS	77.4	60 - 130		B9F0101	13-Jun-19	0.239 L	20-Jun-19 04:22	1
13C2-8:2 FTS	IS	88.1	40 - 150		B9F0101	13-Jun-19	0.239 L	20-Jun-19 04:22	1
d3-MeFOSAA	IS	70.7	50 - 150		B9F0101	13-Jun-19	0.239 L	20-Jun-19 04:22	1
d5-EtFOSAA	IS	65.1	50 - 150		B9F0101	13-Jun-19	0.239 L	20-Jun-19 04:22	1
13C2-PFUnA	IS	69.6	60 - 130		B9F0101	13-Jun-19	0.239 L	20-Jun-19 04:22	1
13C2-PFDoA	IS	58.9	30 - 130		B9F0101	13-Jun-19	0.239 L	20-Jun-19 04:22	1
13C2-PFTeDA	IS	45.8	20 - 150		B9F0101	13-Jun-19	0.239 L	20-Jun-19 04:22	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation
Results reported to the DL.

Sample ID: PW-01-19

PFAS Isotope Dilution Method

Client Data

Name: Merit Laboratories, Inc.
Project: Camp Grayling- Lake Margrethe
Matrix: Aqueous
Date Collected: 04-Jun-19 10:55

Laboratory Data

Lab Sample: 1901485-10
Date Received: 06-Jun-19 09:32
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
L-PFBA	ND	1.39	2.02	4.05		B9F0101	13-Jun-19	0.247 L	20-Jun-19 04:32	1
L-PFPeA	ND	1.39	2.02	4.05		B9F0101	13-Jun-19	0.247 L	20-Jun-19 04:32	1
L-PFBS	ND	1.39	2.02	4.05		B9F0101	13-Jun-19	0.247 L	20-Jun-19 04:32	1
L-4:2 FTS	ND	1.39	2.02	4.05		B9F0101	13-Jun-19	0.247 L	20-Jun-19 04:32	1
L-PFHxA	ND	1.39	2.02	4.05		B9F0101	13-Jun-19	0.247 L	20-Jun-19 04:32	1
L-PFPeS	ND	1.39	2.02	4.05		B9F0101	13-Jun-19	0.247 L	20-Jun-19 04:32	1
L-PFHpA	ND	1.39	2.02	4.05		B9F0101	13-Jun-19	0.247 L	20-Jun-19 04:32	1
L-PFHxS	ND	1.39	2.02	4.05		B9F0101	13-Jun-19	0.247 L	20-Jun-19 04:32	1
Br-PFHxS	ND	1.39	2.02	4.05		B9F0101	13-Jun-19	0.247 L	20-Jun-19 04:32	1
Total PFHxS	ND	1.39	2.02	4.05		B9F0101	13-Jun-19	0.247 L	20-Jun-19 04:32	1
L-6:2 FTS	ND	1.39	2.02	4.05		B9F0101	13-Jun-19	0.247 L	20-Jun-19 04:32	1
L-PFOA	ND	1.39	2.02	4.05		B9F0101	13-Jun-19	0.247 L	20-Jun-19 04:32	1
Br-PFOA	ND	1.39	2.02	4.05		B9F0101	13-Jun-19	0.247 L	20-Jun-19 04:32	1
Total PFOA	ND	1.39	2.02	4.05		B9F0101	13-Jun-19	0.247 L	20-Jun-19 04:32	1
L-PFHpS	ND	1.39	2.02	4.05		B9F0101	13-Jun-19	0.247 L	20-Jun-19 04:32	1
L-PFNA	ND	1.39	2.02	4.05		B9F0101	13-Jun-19	0.247 L	20-Jun-19 04:32	1
L-PFOSA	ND	1.39	2.02	4.05		B9F0101	13-Jun-19	0.247 L	20-Jun-19 04:32	1
L-PFOS	ND	1.39	2.02	4.05		B9F0101	13-Jun-19	0.247 L	20-Jun-19 04:32	1
Br-PFOS	ND	1.39	2.02	4.05		B9F0101	13-Jun-19	0.247 L	20-Jun-19 04:32	1
Total PFOS	ND	1.39	2.02	4.05		B9F0101	13-Jun-19	0.247 L	20-Jun-19 04:32	1
L-PFDA	ND	1.39	2.02	4.05		B9F0101	13-Jun-19	0.247 L	20-Jun-19 04:32	1
L-8:2FTS	ND	1.39	2.02	4.05		B9F0101	13-Jun-19	0.247 L	20-Jun-19 04:32	1
L-PFNS	ND	1.39	2.02	4.05		B9F0101	13-Jun-19	0.247 L	20-Jun-19 04:32	1
L-MeFOSAA	ND	1.39	2.02	4.05		B9F0101	13-Jun-19	0.247 L	20-Jun-19 04:32	1
Br-MeFOSAA	ND	1.39	2.02	4.05		B9F0101	13-Jun-19	0.247 L	20-Jun-19 04:32	1
Total MeFOSAA	ND	1.39	2.02	4.05		B9F0101	13-Jun-19	0.247 L	20-Jun-19 04:32	1
L-EtFOSAA	ND	1.39	2.02	4.05		B9F0101	13-Jun-19	0.247 L	20-Jun-19 04:32	1
Br-EtFOSAA	ND	1.39	2.02	4.05		B9F0101	13-Jun-19	0.247 L	20-Jun-19 04:32	1
Total EtFOSAA	ND	1.39	2.02	4.05		B9F0101	13-Jun-19	0.247 L	20-Jun-19 04:32	1
L-PFUnA	ND	1.39	2.02	4.05		B9F0101	13-Jun-19	0.247 L	20-Jun-19 04:32	1
L-PFDS	ND	1.39	2.02	4.05		B9F0101	13-Jun-19	0.247 L	20-Jun-19 04:32	1
L-PFDoA	ND	1.39	2.02	4.05		B9F0101	13-Jun-19	0.247 L	20-Jun-19 04:32	1
L-PFTrDA	ND	1.39	2.02	4.05		B9F0101	13-Jun-19	0.247 L	20-Jun-19 04:32	1
L-PFTeDA	ND	1.39	2.02	4.05		B9F0101	13-Jun-19	0.247 L	20-Jun-19 04:32	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	106	60 - 130		B9F0101	13-Jun-19	0.247 L	20-Jun-19 04:32	1
13C3-PFPeA	IS	109	60 - 150		B9F0101	13-Jun-19	0.247 L	20-Jun-19 04:32	1
13C3-PFBS	IS	112	60 - 150		B9F0101	13-Jun-19	0.247 L	20-Jun-19 04:32	1

Sample ID: PW-01-19 **PFAS Isotope Dilution Method**

Client Data

Name: Merit Laboratories, Inc.
Project: Camp Grayling- Lake Margrethe
Matrix: Aqueous
Date Collected: 04-Jun-19 10:55

Laboratory Data

Lab Sample: 1901485-10
Date Received: 06-Jun-19 09:32
Column: BEH C18

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-4:2 FTS	IS	117	40 - 150		B9F0101	13-Jun-19	0.247 L	20-Jun-19 04:32	1
13C2-PFHxA	IS	101	70 - 130		B9F0101	13-Jun-19	0.247 L	20-Jun-19 04:32	1
13C4-PFHpA	IS	108	60 - 150		B9F0101	13-Jun-19	0.247 L	20-Jun-19 04:32	1
13C3-PFHxS	IS	106	60 - 130		B9F0101	13-Jun-19	0.247 L	20-Jun-19 04:32	1
13C2-6:2 FTS	IS	109	40 - 150		B9F0101	13-Jun-19	0.247 L	20-Jun-19 04:32	1
13C2-PFOA	IS	101	60 - 130		B9F0101	13-Jun-19	0.247 L	20-Jun-19 04:32	1
13C5-PFNA	IS	95.2	50 - 130		B9F0101	13-Jun-19	0.247 L	20-Jun-19 04:32	1
13C8-PFOSA	IS	62.9	20 - 150		B9F0101	13-Jun-19	0.247 L	20-Jun-19 04:32	1
13C8-PFOS	IS	100	60 - 130		B9F0101	13-Jun-19	0.247 L	20-Jun-19 04:32	1
13C2-PFDA	IS	100	60 - 130		B9F0101	13-Jun-19	0.247 L	20-Jun-19 04:32	1
13C2-8:2 FTS	IS	101	40 - 150		B9F0101	13-Jun-19	0.247 L	20-Jun-19 04:32	1
d3-MeFOSAA	IS	87.9	50 - 150		B9F0101	13-Jun-19	0.247 L	20-Jun-19 04:32	1
d5-EtFOSAA	IS	102	50 - 150		B9F0101	13-Jun-19	0.247 L	20-Jun-19 04:32	1
13C2-PFUnA	IS	88.8	60 - 130		B9F0101	13-Jun-19	0.247 L	20-Jun-19 04:32	1
13C2-PFDoA	IS	81.2	30 - 130		B9F0101	13-Jun-19	0.247 L	20-Jun-19 04:32	1
13C2-PFTeDA	IS	82.4	20 - 150		B9F0101	13-Jun-19	0.247 L	20-Jun-19 04:32	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation
Results reported to the DL.

Sample ID: PW-02-19

PFAS Isotope Dilution Method

Client Data

Name: Merit Laboratories, Inc.
Project: Camp Grayling- Lake Margrethe
Matrix: Aqueous
Date Collected: 04-Jun-19 11:25

Laboratory Data

Lab Sample: 1901485-11
Date Received: 06-Jun-19 09:32
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
L-PFBA	2.06	1.39	2.02	4.05	J	B9F0101	13-Jun-19	0.247 L	20-Jun-19 12:43	1
L-PFPeA	4.32	1.39	2.02	4.05		B9F0101	13-Jun-19	0.247 L	20-Jun-19 12:43	1
L-PFBS	ND	1.39	2.02	4.05		B9F0101	13-Jun-19	0.247 L	20-Jun-19 12:43	1
L-4:2 FTS	ND	1.39	2.02	4.05		B9F0101	13-Jun-19	0.247 L	20-Jun-19 12:43	1
L-PFHxA	4.61	1.39	2.02	4.05		B9F0101	13-Jun-19	0.247 L	20-Jun-19 12:43	1
L-PFPeS	1.58	1.39	2.02	4.05	J	B9F0101	13-Jun-19	0.247 L	20-Jun-19 12:43	1
L-PFHpA	6.88	1.39	2.02	4.05		B9F0101	13-Jun-19	0.247 L	20-Jun-19 12:43	1
L-PFHxS	39.2	1.39	2.02	4.05		B9F0101	13-Jun-19	0.247 L	20-Jun-19 12:43	1
Br-PFHxS	7.61	1.39	2.02	4.05	Q	B9F0101	13-Jun-19	0.247 L	20-Jun-19 12:43	1
Total PFHxS	46.8	1.39	2.02	4.05		B9F0101	13-Jun-19	0.247 L	20-Jun-19 12:43	1
L-6:2 FTS	ND	1.39	2.02	4.05		B9F0101	13-Jun-19	0.247 L	20-Jun-19 12:43	1
L-PFOA	3.85	1.39	2.02	4.05	J	B9F0101	13-Jun-19	0.247 L	20-Jun-19 12:43	1
Br-PFOA	ND	1.39	2.02	4.05		B9F0101	13-Jun-19	0.247 L	20-Jun-19 12:43	1
Total PFOA	3.85	1.39	2.02	4.05	J	B9F0101	13-Jun-19	0.247 L	20-Jun-19 12:43	1
L-PFHpS	1.58	1.39	2.02	4.05	J	B9F0101	13-Jun-19	0.247 L	20-Jun-19 12:43	1
L-PFNA	1.74	1.39	2.02	4.05	J	B9F0101	13-Jun-19	0.247 L	20-Jun-19 12:43	1
L-PFOSA	ND	1.39	2.02	4.05		B9F0101	13-Jun-19	0.247 L	20-Jun-19 12:43	1
L-PFOS	64.1	1.39	2.02	4.05		B9F0101	13-Jun-19	0.247 L	20-Jun-19 12:43	1
Br-PFOS	13.4	1.39	2.02	4.05	Q	B9F0101	13-Jun-19	0.247 L	20-Jun-19 12:43	1
Total PFOS	77.5	1.39	2.02	4.05		B9F0101	13-Jun-19	0.247 L	20-Jun-19 12:43	1
L-PFDA	ND	1.39	2.02	4.05		B9F0101	13-Jun-19	0.247 L	20-Jun-19 12:43	1
L-8:2FTS	ND	1.39	2.02	4.05		B9F0101	13-Jun-19	0.247 L	20-Jun-19 12:43	1
L-PFNS	ND	1.39	2.02	4.05		B9F0101	13-Jun-19	0.247 L	20-Jun-19 12:43	1
L-MeFOSAA	ND	1.39	2.02	4.05		B9F0101	13-Jun-19	0.247 L	20-Jun-19 12:43	1
Br-MeFOSAA	ND	1.39	2.02	4.05		B9F0101	13-Jun-19	0.247 L	20-Jun-19 12:43	1
Total MeFOSAA	ND	1.39	2.02	4.05		B9F0101	13-Jun-19	0.247 L	20-Jun-19 12:43	1
L-EtFOSAA	ND	1.39	2.02	4.05		B9F0101	13-Jun-19	0.247 L	20-Jun-19 12:43	1
Br-EtFOSAA	ND	1.39	2.02	4.05		B9F0101	13-Jun-19	0.247 L	20-Jun-19 12:43	1
Total EtFOSAA	ND	1.39	2.02	4.05		B9F0101	13-Jun-19	0.247 L	20-Jun-19 12:43	1
L-PFUnA	ND	1.39	2.02	4.05		B9F0101	13-Jun-19	0.247 L	20-Jun-19 12:43	1
L-PFDS	ND	1.39	2.02	4.05		B9F0101	13-Jun-19	0.247 L	20-Jun-19 12:43	1
L-PFDoA	ND	1.39	2.02	4.05		B9F0101	13-Jun-19	0.247 L	20-Jun-19 12:43	1
L-PFTrDA	ND	1.39	2.02	4.05		B9F0101	13-Jun-19	0.247 L	20-Jun-19 12:43	1
L-PFTeDA	ND	1.39	2.02	4.05		B9F0101	13-Jun-19	0.247 L	20-Jun-19 12:43	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	76.8	60 - 130		B9F0101	13-Jun-19	0.247 L	20-Jun-19 12:43	1
13C3-PFPeA	IS	77.7	60 - 150		B9F0101	13-Jun-19	0.247 L	20-Jun-19 12:43	1
13C3-PFBS	IS	75.3	60 - 150		B9F0101	13-Jun-19	0.247 L	20-Jun-19 12:43	1

Sample ID: PW-02-19

PFAS Isotope Dilution Method

Client Data

Name: Merit Laboratories, Inc.
Project: Camp Grayling- Lake Margrethe
Matrix: Aqueous
Date Collected: 04-Jun-19 11:25

Laboratory Data

Lab Sample: 1901485-11
Date Received: 06-Jun-19 09:32
Column: BEH C18

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-4:2 FTS	IS	77.0	40 - 150		B9F0101	13-Jun-19	0.247 L	20-Jun-19 12:43	1
13C2-PFHxA	IS	75.6	70 - 130		B9F0101	13-Jun-19	0.247 L	20-Jun-19 12:43	1
13C4-PFHpA	IS	78.1	60 - 150		B9F0101	13-Jun-19	0.247 L	20-Jun-19 12:43	1
13C3-PFHxS	IS	71.4	60 - 130		B9F0101	13-Jun-19	0.247 L	20-Jun-19 12:43	1
13C2-6:2 FTS	IS	81.7	40 - 150		B9F0101	13-Jun-19	0.247 L	20-Jun-19 12:43	1
13C2-PFOA	IS	65.3	60 - 130		B9F0101	13-Jun-19	0.247 L	20-Jun-19 12:43	1
13C5-PFNA	IS	63.8	50 - 130		B9F0101	13-Jun-19	0.247 L	20-Jun-19 12:43	1
13C8-PFOSA	IS	5.90	20 - 150	H	B9F0101	13-Jun-19	0.247 L	20-Jun-19 12:43	1
13C8-PFOS	IS	60.8	60 - 130		B9F0101	13-Jun-19	0.247 L	20-Jun-19 12:43	1
13C2-PFDA	IS	59.8	60 - 130	H	B9F0101	13-Jun-19	0.247 L	20-Jun-19 12:43	1
13C2-8:2 FTS	IS	52.8	40 - 150		B9F0101	13-Jun-19	0.247 L	20-Jun-19 12:43	1
d3-MeFOSAA	IS	61.4	50 - 150		B9F0101	13-Jun-19	0.247 L	20-Jun-19 12:43	1
d5-EtFOSAA	IS	56.7	50 - 150		B9F0101	13-Jun-19	0.247 L	20-Jun-19 12:43	1
13C2-PFUnA	IS	54.0	60 - 130	H	B9F0101	13-Jun-19	0.247 L	20-Jun-19 12:43	1
13C2-PFDoA	IS	25.2	30 - 130	H	B9F0101	13-Jun-19	0.247 L	20-Jun-19 12:43	1
13C2-PFTeDA	IS	6.80	20 - 150	H	B9F0101	13-Jun-19	0.247 L	20-Jun-19 12:43	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation
Results reported to the DL.

Sample ID: SW-02-19

PFAS Isotope Dilution Method

Client Data

Name: Merit Laboratories, Inc.
Project: Camp Grayling- Lake Margrethe
Matrix: Aqueous
Date Collected: 04-Jun-19 11:30

Laboratory Data

Lab Sample: 1901485-12
Date Received: 06-Jun-19 09:32
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
L-PFBA	1.97	1.42	2.07	4.14	J	B9F0101	13-Jun-19	0.242 L	20-Jun-19 04:54	1
L-PFPeA	2.44	1.42	2.07	4.14	J	B9F0101	13-Jun-19	0.242 L	20-Jun-19 04:54	1
L-PFBS	ND	1.42	2.07	4.14		B9F0101	13-Jun-19	0.242 L	20-Jun-19 04:54	1
L-4:2 FTS	ND	1.42	2.07	4.14		B9F0101	13-Jun-19	0.242 L	20-Jun-19 04:54	1
L-PFHxA	2.37	1.42	2.07	4.14	J	B9F0101	13-Jun-19	0.242 L	20-Jun-19 04:54	1
L-PFPeS	ND	1.42	2.07	4.14		B9F0101	13-Jun-19	0.242 L	20-Jun-19 04:54	1
L-PFHpA	ND	1.42	2.07	4.14		B9F0101	13-Jun-19	0.242 L	20-Jun-19 04:54	1
L-PFHxS	3.14	1.42	2.07	4.14	J	B9F0101	13-Jun-19	0.242 L	20-Jun-19 04:54	1
Br-PFHxS	ND	1.42	2.07	4.14		B9F0101	13-Jun-19	0.242 L	20-Jun-19 04:54	1
Total PFHxS	4.12	1.42	2.07	4.14	J	B9F0101	13-Jun-19	0.242 L	20-Jun-19 04:54	1
L-6:2 FTS	ND	1.42	2.07	4.14		B9F0101	13-Jun-19	0.242 L	20-Jun-19 04:54	1
L-PFOA	ND	1.42	2.07	4.14		B9F0101	13-Jun-19	0.242 L	20-Jun-19 04:54	1
Br-PFOA	ND	1.42	2.07	4.14		B9F0101	13-Jun-19	0.242 L	20-Jun-19 04:54	1
Total PFOA	ND	1.42	2.07	4.14		B9F0101	13-Jun-19	0.242 L	20-Jun-19 04:54	1
L-PFHpS	ND	1.42	2.07	4.14		B9F0101	13-Jun-19	0.242 L	20-Jun-19 04:54	1
L-PFNA	ND	1.42	2.07	4.14		B9F0101	13-Jun-19	0.242 L	20-Jun-19 04:54	1
L-PFOSA	ND	1.42	2.07	4.14		B9F0101	13-Jun-19	0.242 L	20-Jun-19 04:54	1
L-PFOS	2.23	1.42	2.07	4.14	J	B9F0101	13-Jun-19	0.242 L	20-Jun-19 04:54	1
Br-PFOS	ND	1.42	2.07	4.14		B9F0101	13-Jun-19	0.242 L	20-Jun-19 04:54	1
Total PFOS	3.08	1.42	2.07	4.14	J	B9F0101	13-Jun-19	0.242 L	20-Jun-19 04:54	1
L-PFDA	ND	1.42	2.07	4.14		B9F0101	13-Jun-19	0.242 L	20-Jun-19 04:54	1
L-8:2FTS	ND	1.42	2.07	4.14		B9F0101	13-Jun-19	0.242 L	20-Jun-19 04:54	1
L-PFNS	ND	1.42	2.07	4.14		B9F0101	13-Jun-19	0.242 L	20-Jun-19 04:54	1
L-MeFOSAA	ND	1.42	2.07	4.14		B9F0101	13-Jun-19	0.242 L	20-Jun-19 04:54	1
Br-MeFOSAA	ND	1.42	2.07	4.14		B9F0101	13-Jun-19	0.242 L	20-Jun-19 04:54	1
Total MeFOSAA	ND	1.42	2.07	4.14		B9F0101	13-Jun-19	0.242 L	20-Jun-19 04:54	1
L-EtFOSAA	ND	1.42	2.07	4.14		B9F0101	13-Jun-19	0.242 L	20-Jun-19 04:54	1
Br-EtFOSAA	ND	1.42	2.07	4.14		B9F0101	13-Jun-19	0.242 L	20-Jun-19 04:54	1
Total EtFOSAA	ND	1.42	2.07	4.14		B9F0101	13-Jun-19	0.242 L	20-Jun-19 04:54	1
L-PFUnA	ND	1.42	2.07	4.14		B9F0101	13-Jun-19	0.242 L	20-Jun-19 04:54	1
L-PFDS	ND	1.42	2.07	4.14		B9F0101	13-Jun-19	0.242 L	20-Jun-19 04:54	1
L-PFDoA	ND	1.42	2.07	4.14		B9F0101	13-Jun-19	0.242 L	20-Jun-19 04:54	1
L-PFTrDA	ND	1.42	2.07	4.14		B9F0101	13-Jun-19	0.242 L	20-Jun-19 04:54	1
L-PFTeDA	ND	1.42	2.07	4.14		B9F0101	13-Jun-19	0.242 L	20-Jun-19 04:54	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	98.9	60 - 130		B9F0101	13-Jun-19	0.242 L	20-Jun-19 04:54	1
13C3-PFPeA	IS	98.4	60 - 150		B9F0101	13-Jun-19	0.242 L	20-Jun-19 04:54	1
13C3-PFBS	IS	98.9	60 - 150		B9F0101	13-Jun-19	0.242 L	20-Jun-19 04:54	1

Sample ID: SW-02-19

PFAS Isotope Dilution Method

Client Data

Name: Merit Laboratories, Inc.
Project: Camp Grayling- Lake Margrethe
Matrix: Aqueous
Date Collected: 04-Jun-19 11:30

Laboratory Data

Lab Sample: 1901485-12
Date Received: 06-Jun-19 09:32
Column: BEH C18

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-4:2 FTS	IS	96.5	40 - 150		B9F0101	13-Jun-19	0.242 L	20-Jun-19 04:54	1
13C2-PFHxA	IS	99.0	70 - 130		B9F0101	13-Jun-19	0.242 L	20-Jun-19 04:54	1
13C4-PFHpA	IS	100	60 - 150		B9F0101	13-Jun-19	0.242 L	20-Jun-19 04:54	1
13C3-PFHxS	IS	98.4	60 - 130		B9F0101	13-Jun-19	0.242 L	20-Jun-19 04:54	1
13C2-6:2 FTS	IS	108	40 - 150		B9F0101	13-Jun-19	0.242 L	20-Jun-19 04:54	1
13C2-PFOA	IS	93.8	60 - 130		B9F0101	13-Jun-19	0.242 L	20-Jun-19 04:54	1
13C5-PFNA	IS	95.3	50 - 130		B9F0101	13-Jun-19	0.242 L	20-Jun-19 04:54	1
13C8-PFOSA	IS	38.4	20 - 150		B9F0101	13-Jun-19	0.242 L	20-Jun-19 04:54	1
13C8-PFOS	IS	98.2	60 - 130		B9F0101	13-Jun-19	0.242 L	20-Jun-19 04:54	1
13C2-PFDA	IS	92.0	60 - 130		B9F0101	13-Jun-19	0.242 L	20-Jun-19 04:54	1
13C2-8:2 FTS	IS	89.5	40 - 150		B9F0101	13-Jun-19	0.242 L	20-Jun-19 04:54	1
d3-MeFOSAA	IS	96.5	50 - 150		B9F0101	13-Jun-19	0.242 L	20-Jun-19 04:54	1
d5-EtFOSAA	IS	87.1	50 - 150		B9F0101	13-Jun-19	0.242 L	20-Jun-19 04:54	1
13C2-PFUnA	IS	81.3	60 - 130		B9F0101	13-Jun-19	0.242 L	20-Jun-19 04:54	1
13C2-PFDoA	IS	77.1	30 - 130		B9F0101	13-Jun-19	0.242 L	20-Jun-19 04:54	1
13C2-PFTeDA	IS	67.2	20 - 150		B9F0101	13-Jun-19	0.242 L	20-Jun-19 04:54	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation
Results reported to the DL.

Sample ID: SW-03-19

PFAS Isotope Dilution Method

Client Data

Name: Merit Laboratories, Inc.
Project: Camp Grayling- Lake Margrethe
Matrix: Aqueous
Date Collected: 04-Jun-19 11:50

Laboratory Data

Lab Sample: 1901485-13
Date Received: 06-Jun-19 09:32
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
L-PFBA	2.12	1.43	2.08	4.17	J	B9F0101	13-Jun-19	0.240 L	20-Jun-19 05:04	1
L-PFPeA	3.45	1.43	2.08	4.17	J	B9F0101	13-Jun-19	0.240 L	20-Jun-19 05:04	1
L-PFBS	ND	1.43	2.08	4.17		B9F0101	13-Jun-19	0.240 L	20-Jun-19 05:04	1
L-4:2 FTS	ND	1.43	2.08	4.17		B9F0101	13-Jun-19	0.240 L	20-Jun-19 05:04	1
L-PFHxA	3.62	1.43	2.08	4.17	J	B9F0101	13-Jun-19	0.240 L	20-Jun-19 05:04	1
L-PFPeS	ND	1.43	2.08	4.17		B9F0101	13-Jun-19	0.240 L	20-Jun-19 05:04	1
L-PFHpA	2.45	1.43	2.08	4.17	J	B9F0101	13-Jun-19	0.240 L	20-Jun-19 05:04	1
L-PFHxS	5.50	1.43	2.08	4.17		B9F0101	13-Jun-19	0.240 L	20-Jun-19 05:04	1
Br-PFHxS	ND	1.43	2.08	4.17		B9F0101	13-Jun-19	0.240 L	20-Jun-19 05:04	1
Total PFHxS	6.64	1.43	2.08	4.17		B9F0101	13-Jun-19	0.240 L	20-Jun-19 05:04	1
L-6:2 FTS	ND	1.43	2.08	4.17		B9F0101	13-Jun-19	0.240 L	20-Jun-19 05:04	1
L-PFOA	1.63	1.43	2.08	4.17	J	B9F0101	13-Jun-19	0.240 L	20-Jun-19 05:04	1
Br-PFOA	ND	1.43	2.08	4.17		B9F0101	13-Jun-19	0.240 L	20-Jun-19 05:04	1
Total PFOA	1.63	1.43	2.08	4.17	J	B9F0101	13-Jun-19	0.240 L	20-Jun-19 05:04	1
L-PFHpS	ND	1.43	2.08	4.17		B9F0101	13-Jun-19	0.240 L	20-Jun-19 05:04	1
L-PFNA	ND	1.43	2.08	4.17		B9F0101	13-Jun-19	0.240 L	20-Jun-19 05:04	1
L-PFOSA	ND	1.43	2.08	4.17		B9F0101	13-Jun-19	0.240 L	20-Jun-19 05:04	1
L-PFOS	3.93	1.43	2.08	4.17	J	B9F0101	13-Jun-19	0.240 L	20-Jun-19 05:04	1
Br-PFOS	2.18	1.43	2.08	4.17	J	B9F0101	13-Jun-19	0.240 L	20-Jun-19 05:04	1
Total PFOS	6.12	1.43	2.08	4.17		B9F0101	13-Jun-19	0.240 L	20-Jun-19 05:04	1
L-PFDA	ND	1.43	2.08	4.17		B9F0101	13-Jun-19	0.240 L	20-Jun-19 05:04	1
L-8:2FTS	ND	1.43	2.08	4.17		B9F0101	13-Jun-19	0.240 L	20-Jun-19 05:04	1
L-PFNS	ND	1.43	2.08	4.17		B9F0101	13-Jun-19	0.240 L	20-Jun-19 05:04	1
L-MeFOSAA	ND	1.43	2.08	4.17		B9F0101	13-Jun-19	0.240 L	20-Jun-19 05:04	1
Br-MeFOSAA	ND	1.43	2.08	4.17		B9F0101	13-Jun-19	0.240 L	20-Jun-19 05:04	1
Total MeFOSAA	ND	1.43	2.08	4.17		B9F0101	13-Jun-19	0.240 L	20-Jun-19 05:04	1
L-EtFOSAA	ND	1.43	2.08	4.17		B9F0101	13-Jun-19	0.240 L	20-Jun-19 05:04	1
Br-EtFOSAA	ND	1.43	2.08	4.17		B9F0101	13-Jun-19	0.240 L	20-Jun-19 05:04	1
Total EtFOSAA	ND	1.43	2.08	4.17		B9F0101	13-Jun-19	0.240 L	20-Jun-19 05:04	1
L-PFUnA	ND	1.43	2.08	4.17		B9F0101	13-Jun-19	0.240 L	20-Jun-19 05:04	1
L-PFDS	ND	1.43	2.08	4.17		B9F0101	13-Jun-19	0.240 L	20-Jun-19 05:04	1
L-PFDoA	ND	1.43	2.08	4.17		B9F0101	13-Jun-19	0.240 L	20-Jun-19 05:04	1
L-PFTrDA	ND	1.43	2.08	4.17		B9F0101	13-Jun-19	0.240 L	20-Jun-19 05:04	1
L-PFTeDA	ND	1.43	2.08	4.17		B9F0101	13-Jun-19	0.240 L	20-Jun-19 05:04	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	95.6	60 - 130		B9F0101	13-Jun-19	0.240 L	20-Jun-19 05:04	1
13C3-PFPeA	IS	100	60 - 150		B9F0101	13-Jun-19	0.240 L	20-Jun-19 05:04	1
13C3-PFBS	IS	104	60 - 150		B9F0101	13-Jun-19	0.240 L	20-Jun-19 05:04	1

Sample ID: SW-03-19 **PFAS Isotope Dilution Method**

Client Data

Name: Merit Laboratories, Inc.
Project: Camp Grayling- Lake Margrethe
Matrix: Aqueous
Date Collected: 04-Jun-19 11:50

Laboratory Data

Lab Sample: 1901485-13
Date Received: 06-Jun-19 09:32
Column: BEH C18

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-4:2 FTS	IS	105	40 - 150		B9F0101	13-Jun-19	0.240 L	20-Jun-19 05:04	1
13C2-PFHxA	IS	96.5	70 - 130		B9F0101	13-Jun-19	0.240 L	20-Jun-19 05:04	1
13C4-PFHpA	IS	104	60 - 150		B9F0101	13-Jun-19	0.240 L	20-Jun-19 05:04	1
13C3-PFHxS	IS	102	60 - 130		B9F0101	13-Jun-19	0.240 L	20-Jun-19 05:04	1
13C2-6:2 FTS	IS	96.6	40 - 150		B9F0101	13-Jun-19	0.240 L	20-Jun-19 05:04	1
13C2-PFOA	IS	94.9	60 - 130		B9F0101	13-Jun-19	0.240 L	20-Jun-19 05:04	1
13C5-PFNA	IS	86.8	50 - 130		B9F0101	13-Jun-19	0.240 L	20-Jun-19 05:04	1
13C8-PFOSA	IS	43.3	20 - 150		B9F0101	13-Jun-19	0.240 L	20-Jun-19 05:04	1
13C8-PFOS	IS	89.5	60 - 130		B9F0101	13-Jun-19	0.240 L	20-Jun-19 05:04	1
13C2-PFDA	IS	91.8	60 - 130		B9F0101	13-Jun-19	0.240 L	20-Jun-19 05:04	1
13C2-8:2 FTS	IS	91.0	40 - 150		B9F0101	13-Jun-19	0.240 L	20-Jun-19 05:04	1
d3-MeFOSAA	IS	85.6	50 - 150		B9F0101	13-Jun-19	0.240 L	20-Jun-19 05:04	1
d5-EtFOSAA	IS	94.7	50 - 150		B9F0101	13-Jun-19	0.240 L	20-Jun-19 05:04	1
13C2-PFUnA	IS	80.7	60 - 130		B9F0101	13-Jun-19	0.240 L	20-Jun-19 05:04	1
13C2-PFDoA	IS	70.7	30 - 130		B9F0101	13-Jun-19	0.240 L	20-Jun-19 05:04	1
13C2-PFTeDA	IS	70.4	20 - 150		B9F0101	13-Jun-19	0.240 L	20-Jun-19 05:04	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation
Results reported to the DL.

Sample ID: PW-03-19

PFAS Isotope Dilution Method

Client Data

Name: Merit Laboratories, Inc.
Project: Camp Grayling- Lake Margrethe
Matrix: Aqueous
Date Collected: 04-Jun-19 11:55

Laboratory Data

Lab Sample: 1901485-14
Date Received: 06-Jun-19 09:32
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
L-PFBA	7.32	1.40	2.04	4.08		B9F0101	13-Jun-19	0.245 L	20-Jun-19 05:15	1
L-PFPeA	17.8	1.40	2.04	4.08		B9F0101	13-Jun-19	0.245 L	20-Jun-19 05:15	1
L-PFBS	2.88	1.40	2.04	4.08	J	B9F0101	13-Jun-19	0.245 L	20-Jun-19 05:15	1
L-4:2 FTS	ND	1.40	2.04	4.08		B9F0101	13-Jun-19	0.245 L	20-Jun-19 05:15	1
L-PFHxA	14.7	1.40	2.04	4.08		B9F0101	13-Jun-19	0.245 L	20-Jun-19 05:15	1
L-PFPeS	3.99	1.40	2.04	4.08	J	B9F0101	13-Jun-19	0.245 L	20-Jun-19 05:15	1
L-PFHpA	23.0	1.40	2.04	4.08		B9F0101	13-Jun-19	0.245 L	20-Jun-19 05:15	1
L-PFHxS	77.1	1.40	2.04	4.08		B9F0101	13-Jun-19	0.245 L	20-Jun-19 05:15	1
Br-PFHxS	12.0	1.40	2.04	4.08		B9F0101	13-Jun-19	0.245 L	20-Jun-19 05:15	1
Total PFHxS	89.1	1.40	2.04	4.08		B9F0101	13-Jun-19	0.245 L	20-Jun-19 05:15	1
L-6:2 FTS	ND	1.40	2.04	4.08		B9F0101	13-Jun-19	0.245 L	20-Jun-19 05:15	1
L-PFOA	14.8	1.40	2.04	4.08		B9F0101	13-Jun-19	0.245 L	20-Jun-19 05:15	1
Br-PFOA	ND	1.40	2.04	4.08		B9F0101	13-Jun-19	0.245 L	20-Jun-19 05:15	1
Total PFOA	14.8	1.40	2.04	4.08		B9F0101	13-Jun-19	0.245 L	20-Jun-19 05:15	1
L-PFHpS	2.43	1.40	2.04	4.08	J	B9F0101	13-Jun-19	0.245 L	20-Jun-19 05:15	1
L-PFNA	1.60	1.40	2.04	4.08	J	B9F0101	13-Jun-19	0.245 L	20-Jun-19 05:15	1
L-PFOSA	ND	1.40	2.04	4.08		B9F0101	13-Jun-19	0.245 L	20-Jun-19 05:15	1
L-PFOS	21.2	1.40	2.04	4.08		B9F0101	13-Jun-19	0.245 L	20-Jun-19 05:15	1
Br-PFOS	17.9	1.40	2.04	4.08		B9F0101	13-Jun-19	0.245 L	20-Jun-19 05:15	1
Total PFOS	39.1	1.40	2.04	4.08		B9F0101	13-Jun-19	0.245 L	20-Jun-19 05:15	1
L-PFDA	ND	1.40	2.04	4.08		B9F0101	13-Jun-19	0.245 L	20-Jun-19 05:15	1
L-8:2FTS	ND	1.40	2.04	4.08		B9F0101	13-Jun-19	0.245 L	20-Jun-19 05:15	1
L-PFNS	ND	1.40	2.04	4.08		B9F0101	13-Jun-19	0.245 L	20-Jun-19 05:15	1
L-MeFOSAA	ND	1.40	2.04	4.08		B9F0101	13-Jun-19	0.245 L	20-Jun-19 05:15	1
Br-MeFOSAA	ND	1.40	2.04	4.08		B9F0101	13-Jun-19	0.245 L	20-Jun-19 05:15	1
Total MeFOSAA	ND	1.40	2.04	4.08		B9F0101	13-Jun-19	0.245 L	20-Jun-19 05:15	1
L-EtFOSAA	ND	1.40	2.04	4.08		B9F0101	13-Jun-19	0.245 L	20-Jun-19 05:15	1
Br-EtFOSAA	ND	1.40	2.04	4.08		B9F0101	13-Jun-19	0.245 L	20-Jun-19 05:15	1
Total EtFOSAA	ND	1.40	2.04	4.08		B9F0101	13-Jun-19	0.245 L	20-Jun-19 05:15	1
L-PFUnA	ND	1.40	2.04	4.08		B9F0101	13-Jun-19	0.245 L	20-Jun-19 05:15	1
L-PFDS	ND	1.40	2.04	4.08		B9F0101	13-Jun-19	0.245 L	20-Jun-19 05:15	1
L-PFDoA	ND	1.40	2.04	4.08		B9F0101	13-Jun-19	0.245 L	20-Jun-19 05:15	1
L-PFTrDA	ND	1.40	2.04	4.08		B9F0101	13-Jun-19	0.245 L	20-Jun-19 05:15	1
L-PFTeDA	ND	1.40	2.04	4.08		B9F0101	13-Jun-19	0.245 L	20-Jun-19 05:15	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	101	60 - 130		B9F0101	13-Jun-19	0.245 L	20-Jun-19 05:15	1
13C3-PFPeA	IS	106	60 - 150		B9F0101	13-Jun-19	0.245 L	20-Jun-19 05:15	1
13C3-PFBS	IS	104	60 - 150		B9F0101	13-Jun-19	0.245 L	20-Jun-19 05:15	1

Sample ID: PW-03-19 **PFAS Isotope Dilution Method**

Client Data

Name: Merit Laboratories, Inc.
Project: Camp Grayling- Lake Margrethe
Matrix: Aqueous
Date Collected: 04-Jun-19 11:55

Laboratory Data

Lab Sample: 1901485-14
Date Received: 06-Jun-19 09:32
Column: BEH C18

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-4:2 FTS	IS	104	40 - 150		B9F0101	13-Jun-19	0.245 L	20-Jun-19 05:15	1
13C2-PFHxA	IS	104	70 - 130		B9F0101	13-Jun-19	0.245 L	20-Jun-19 05:15	1
13C4-PFHpA	IS	102	60 - 150		B9F0101	13-Jun-19	0.245 L	20-Jun-19 05:15	1
13C3-PFHxS	IS	99.0	60 - 130		B9F0101	13-Jun-19	0.245 L	20-Jun-19 05:15	1
13C2-6:2 FTS	IS	104	40 - 150		B9F0101	13-Jun-19	0.245 L	20-Jun-19 05:15	1
13C2-PFOA	IS	91.9	60 - 130		B9F0101	13-Jun-19	0.245 L	20-Jun-19 05:15	1
13C5-PFNA	IS	92.0	50 - 130		B9F0101	13-Jun-19	0.245 L	20-Jun-19 05:15	1
13C8-PFOSA	IS	22.5	20 - 150		B9F0101	13-Jun-19	0.245 L	20-Jun-19 05:15	1
13C8-PFOS	IS	99.1	60 - 130		B9F0101	13-Jun-19	0.245 L	20-Jun-19 05:15	1
13C2-PFDA	IS	90.1	60 - 130		B9F0101	13-Jun-19	0.245 L	20-Jun-19 05:15	1
13C2-8:2 FTS	IS	88.1	40 - 150		B9F0101	13-Jun-19	0.245 L	20-Jun-19 05:15	1
d3-MeFOSAA	IS	83.4	50 - 150		B9F0101	13-Jun-19	0.245 L	20-Jun-19 05:15	1
d5-EtFOSAA	IS	83.1	50 - 150		B9F0101	13-Jun-19	0.245 L	20-Jun-19 05:15	1
13C2-PFUnA	IS	82.2	60 - 130		B9F0101	13-Jun-19	0.245 L	20-Jun-19 05:15	1
13C2-PFDoA	IS	74.4	30 - 130		B9F0101	13-Jun-19	0.245 L	20-Jun-19 05:15	1
13C2-PFTeDA	IS	78.6	20 - 150		B9F0101	13-Jun-19	0.245 L	20-Jun-19 05:15	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation
Results reported to the DL.

Sample ID: SW-10-19

PFAS Isotope Dilution Method

Client Data

Name: Merit Laboratories, Inc.
Project: Camp Grayling- Lake Margrethe
Matrix: Aqueous
Date Collected: 04-Jun-19 12:40

Laboratory Data

Lab Sample: 1901485-15
Date Received: 06-Jun-19 09:32
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
L-PFBA	2.74	1.46	2.13	4.25	J	B9F0101	13-Jun-19	0.235 L	20-Jun-19 05:25	1
L-PFPeA	ND	1.46	2.13	4.25		B9F0101	13-Jun-19	0.235 L	20-Jun-19 05:25	1
L-PFBS	ND	1.46	2.13	4.25		B9F0101	13-Jun-19	0.235 L	20-Jun-19 05:25	1
L-4:2 FTS	ND	1.46	2.13	4.25		B9F0101	13-Jun-19	0.235 L	20-Jun-19 05:25	1
L-PFHxA	ND	1.46	2.13	4.25		B9F0101	13-Jun-19	0.235 L	20-Jun-19 05:25	1
L-PFPeS	ND	1.46	2.13	4.25		B9F0101	13-Jun-19	0.235 L	20-Jun-19 05:25	1
L-PFHpA	ND	1.46	2.13	4.25		B9F0101	13-Jun-19	0.235 L	20-Jun-19 05:25	1
L-PFHxS	ND	1.46	2.13	4.25		B9F0101	13-Jun-19	0.235 L	20-Jun-19 05:25	1
Br-PFHxS	ND	1.46	2.13	4.25		B9F0101	13-Jun-19	0.235 L	20-Jun-19 05:25	1
Total PFHxS	ND	1.46	2.13	4.25		B9F0101	13-Jun-19	0.235 L	20-Jun-19 05:25	1
L-6:2 FTS	ND	1.46	2.13	4.25		B9F0101	13-Jun-19	0.235 L	20-Jun-19 05:25	1
L-PFOA	ND	1.46	2.13	4.25		B9F0101	13-Jun-19	0.235 L	20-Jun-19 05:25	1
Br-PFOA	ND	1.46	2.13	4.25		B9F0101	13-Jun-19	0.235 L	20-Jun-19 05:25	1
Total PFOA	ND	1.46	2.13	4.25		B9F0101	13-Jun-19	0.235 L	20-Jun-19 05:25	1
L-PFHpS	ND	1.46	2.13	4.25		B9F0101	13-Jun-19	0.235 L	20-Jun-19 05:25	1
L-PFNA	ND	1.46	2.13	4.25		B9F0101	13-Jun-19	0.235 L	20-Jun-19 05:25	1
L-PFOSA	ND	1.46	2.13	4.25		B9F0101	13-Jun-19	0.235 L	20-Jun-19 05:25	1
L-PFOS	ND	1.46	2.13	4.25		B9F0101	13-Jun-19	0.235 L	20-Jun-19 05:25	1
Br-PFOS	ND	1.46	2.13	4.25		B9F0101	13-Jun-19	0.235 L	20-Jun-19 05:25	1
Total PFOS	ND	1.46	2.13	4.25		B9F0101	13-Jun-19	0.235 L	20-Jun-19 05:25	1
L-PFDA	ND	1.46	2.13	4.25		B9F0101	13-Jun-19	0.235 L	20-Jun-19 05:25	1
L-8:2FTS	ND	1.46	2.13	4.25		B9F0101	13-Jun-19	0.235 L	20-Jun-19 05:25	1
L-PFNS	ND	1.46	2.13	4.25		B9F0101	13-Jun-19	0.235 L	20-Jun-19 05:25	1
L-MeFOSAA	ND	1.46	2.13	4.25		B9F0101	13-Jun-19	0.235 L	20-Jun-19 05:25	1
Br-MeFOSAA	ND	1.46	2.13	4.25		B9F0101	13-Jun-19	0.235 L	20-Jun-19 05:25	1
Total MeFOSAA	ND	1.46	2.13	4.25		B9F0101	13-Jun-19	0.235 L	20-Jun-19 05:25	1
L-EtFOSAA	ND	1.46	2.13	4.25		B9F0101	13-Jun-19	0.235 L	20-Jun-19 05:25	1
Br-EtFOSAA	ND	1.46	2.13	4.25		B9F0101	13-Jun-19	0.235 L	20-Jun-19 05:25	1
Total EtFOSAA	ND	1.46	2.13	4.25		B9F0101	13-Jun-19	0.235 L	20-Jun-19 05:25	1
L-PFUnA	ND	1.46	2.13	4.25		B9F0101	13-Jun-19	0.235 L	20-Jun-19 05:25	1
L-PFDS	ND	1.46	2.13	4.25		B9F0101	13-Jun-19	0.235 L	20-Jun-19 05:25	1
L-PFDoA	ND	1.46	2.13	4.25		B9F0101	13-Jun-19	0.235 L	20-Jun-19 05:25	1
L-PFTrDA	ND	1.46	2.13	4.25		B9F0101	13-Jun-19	0.235 L	20-Jun-19 05:25	1
L-PFTeDA	ND	1.46	2.13	4.25		B9F0101	13-Jun-19	0.235 L	20-Jun-19 05:25	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	90.7	60 - 130		B9F0101	13-Jun-19	0.235 L	20-Jun-19 05:25	1
13C3-PFPeA	IS	88.1	60 - 150		B9F0101	13-Jun-19	0.235 L	20-Jun-19 05:25	1
13C3-PFBS	IS	102	60 - 150		B9F0101	13-Jun-19	0.235 L	20-Jun-19 05:25	1

Sample ID: SW-10-19 **PFAS Isotope Dilution Method**

Client Data

Name: Merit Laboratories, Inc.
Project: Camp Grayling- Lake Margrethe
Matrix: Aqueous
Date Collected: 04-Jun-19 12:40

Laboratory Data

Lab Sample: 1901485-15
Date Received: 06-Jun-19 09:32
Column: BEH C18

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-4:2 FTS	IS	87.5	40 - 150		B9F0101	13-Jun-19	0.235 L	20-Jun-19 05:25	1
13C2-PFHxA	IS	95.9	70 - 130		B9F0101	13-Jun-19	0.235 L	20-Jun-19 05:25	1
13C4-PFHpA	IS	93.4	60 - 150		B9F0101	13-Jun-19	0.235 L	20-Jun-19 05:25	1
13C3-PFHxS	IS	93.3	60 - 130		B9F0101	13-Jun-19	0.235 L	20-Jun-19 05:25	1
13C2-6:2 FTS	IS	89.7	40 - 150		B9F0101	13-Jun-19	0.235 L	20-Jun-19 05:25	1
13C2-PFOA	IS	84.2	60 - 130		B9F0101	13-Jun-19	0.235 L	20-Jun-19 05:25	1
13C5-PFNA	IS	84.8	50 - 130		B9F0101	13-Jun-19	0.235 L	20-Jun-19 05:25	1
13C8-PFOSA	IS	22.6	20 - 150		B9F0101	13-Jun-19	0.235 L	20-Jun-19 05:25	1
13C8-PFOS	IS	87.4	60 - 130		B9F0101	13-Jun-19	0.235 L	20-Jun-19 05:25	1
13C2-PFDA	IS	80.2	60 - 130		B9F0101	13-Jun-19	0.235 L	20-Jun-19 05:25	1
13C2-8:2 FTS	IS	84.9	40 - 150		B9F0101	13-Jun-19	0.235 L	20-Jun-19 05:25	1
d3-MeFOSAA	IS	72.6	50 - 150		B9F0101	13-Jun-19	0.235 L	20-Jun-19 05:25	1
d5-EtFOSAA	IS	75.0	50 - 150		B9F0101	13-Jun-19	0.235 L	20-Jun-19 05:25	1
13C2-PFUnA	IS	75.5	60 - 130		B9F0101	13-Jun-19	0.235 L	20-Jun-19 05:25	1
13C2-PFDoA	IS	61.1	30 - 130		B9F0101	13-Jun-19	0.235 L	20-Jun-19 05:25	1
13C2-PFTeDA	IS	48.8	20 - 150		B9F0101	13-Jun-19	0.235 L	20-Jun-19 05:25	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation
Results reported to the DL.

Sample ID: PW-10-19

PFAS Isotope Dilution Method

Client Data

Name: Merit Laboratories, Inc.
Project: Camp Grayling- Lake Margrethe
Matrix: Aqueous
Date Collected: 04-Jun-19 12:50

Laboratory Data

Lab Sample: 1901485-16
Date Received: 06-Jun-19 09:32
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
L-PFBA	ND	1.46	2.13	4.26		B9F0101	13-Jun-19	0.235 L	20-Jun-19 05:36	1
L-PFPeA	ND	1.46	2.13	4.26		B9F0101	13-Jun-19	0.235 L	20-Jun-19 05:36	1
L-PFBS	ND	1.46	2.13	4.26		B9F0101	13-Jun-19	0.235 L	20-Jun-19 05:36	1
L-4:2 FTS	ND	1.46	2.13	4.26		B9F0101	13-Jun-19	0.235 L	20-Jun-19 05:36	1
L-PFHxA	ND	1.46	2.13	4.26		B9F0101	13-Jun-19	0.235 L	20-Jun-19 05:36	1
L-PFPeS	ND	1.46	2.13	4.26		B9F0101	13-Jun-19	0.235 L	20-Jun-19 05:36	1
L-PFHpA	ND	1.46	2.13	4.26		B9F0101	13-Jun-19	0.235 L	20-Jun-19 05:36	1
L-PFHxS	ND	1.46	2.13	4.26		B9F0101	13-Jun-19	0.235 L	20-Jun-19 05:36	1
Br-PFHxS	ND	1.46	2.13	4.26		B9F0101	13-Jun-19	0.235 L	20-Jun-19 05:36	1
Total PFHxS	ND	1.46	2.13	4.26		B9F0101	13-Jun-19	0.235 L	20-Jun-19 05:36	1
L-6:2 FTS	ND	1.46	2.13	4.26		B9F0101	13-Jun-19	0.235 L	20-Jun-19 05:36	1
L-PFOA	ND	1.46	2.13	4.26		B9F0101	13-Jun-19	0.235 L	20-Jun-19 05:36	1
Br-PFOA	ND	1.46	2.13	4.26		B9F0101	13-Jun-19	0.235 L	20-Jun-19 05:36	1
Total PFOA	ND	1.46	2.13	4.26		B9F0101	13-Jun-19	0.235 L	20-Jun-19 05:36	1
L-PFHpS	ND	1.46	2.13	4.26		B9F0101	13-Jun-19	0.235 L	20-Jun-19 05:36	1
L-PFNA	ND	1.46	2.13	4.26		B9F0101	13-Jun-19	0.235 L	20-Jun-19 05:36	1
L-PFOSA	ND	1.46	2.13	4.26		B9F0101	13-Jun-19	0.235 L	20-Jun-19 05:36	1
L-PFOS	ND	1.46	2.13	4.26		B9F0101	13-Jun-19	0.235 L	20-Jun-19 05:36	1
Br-PFOS	ND	1.46	2.13	4.26		B9F0101	13-Jun-19	0.235 L	20-Jun-19 05:36	1
Total PFOS	ND	1.46	2.13	4.26		B9F0101	13-Jun-19	0.235 L	20-Jun-19 05:36	1
L-PFDA	ND	1.46	2.13	4.26		B9F0101	13-Jun-19	0.235 L	20-Jun-19 05:36	1
L-8:2FTS	ND	1.46	2.13	4.26		B9F0101	13-Jun-19	0.235 L	20-Jun-19 05:36	1
L-PFNS	ND	1.46	2.13	4.26		B9F0101	13-Jun-19	0.235 L	20-Jun-19 05:36	1
L-MeFOSAA	ND	1.46	2.13	4.26		B9F0101	13-Jun-19	0.235 L	20-Jun-19 05:36	1
Br-MeFOSAA	ND	1.46	2.13	4.26		B9F0101	13-Jun-19	0.235 L	20-Jun-19 05:36	1
Total MeFOSAA	ND	1.46	2.13	4.26		B9F0101	13-Jun-19	0.235 L	20-Jun-19 05:36	1
L-EtFOSAA	ND	1.46	2.13	4.26		B9F0101	13-Jun-19	0.235 L	20-Jun-19 05:36	1
Br-EtFOSAA	ND	1.46	2.13	4.26		B9F0101	13-Jun-19	0.235 L	20-Jun-19 05:36	1
Total EtFOSAA	ND	1.46	2.13	4.26		B9F0101	13-Jun-19	0.235 L	20-Jun-19 05:36	1
L-PFUnA	ND	1.46	2.13	4.26		B9F0101	13-Jun-19	0.235 L	20-Jun-19 05:36	1
L-PFDS	ND	1.46	2.13	4.26		B9F0101	13-Jun-19	0.235 L	20-Jun-19 05:36	1
L-PFDoA	ND	1.46	2.13	4.26		B9F0101	13-Jun-19	0.235 L	20-Jun-19 05:36	1
L-PFTrDA	ND	1.46	2.13	4.26		B9F0101	13-Jun-19	0.235 L	20-Jun-19 05:36	1
L-PFTeDA	ND	1.46	2.13	4.26		B9F0101	13-Jun-19	0.235 L	20-Jun-19 05:36	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	106	60 - 130		B9F0101	13-Jun-19	0.235 L	20-Jun-19 05:36	1
13C3-PFPeA	IS	106	60 - 150		B9F0101	13-Jun-19	0.235 L	20-Jun-19 05:36	1
13C3-PFBS	IS	100	60 - 150		B9F0101	13-Jun-19	0.235 L	20-Jun-19 05:36	1

Sample ID: PW-10-19 **PFAS Isotope Dilution Method**

Client Data

Name: Merit Laboratories, Inc.
Project: Camp Grayling- Lake Margrethe
Matrix: Aqueous
Date Collected: 04-Jun-19 12:50

Laboratory Data

Lab Sample: 1901485-16
Date Received: 06-Jun-19 09:32
Column: BEH C18

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-4:2 FTS	IS	90.7	40 - 150		B9F0101	13-Jun-19	0.235 L	20-Jun-19 05:36	1
13C2-PFHxA	IS	103	70 - 130		B9F0101	13-Jun-19	0.235 L	20-Jun-19 05:36	1
13C4-PFHpA	IS	110	60 - 150		B9F0101	13-Jun-19	0.235 L	20-Jun-19 05:36	1
13C3-PFHxS	IS	96.8	60 - 130		B9F0101	13-Jun-19	0.235 L	20-Jun-19 05:36	1
13C2-6:2 FTS	IS	102	40 - 150		B9F0101	13-Jun-19	0.235 L	20-Jun-19 05:36	1
13C2-PFOA	IS	89.3	60 - 130		B9F0101	13-Jun-19	0.235 L	20-Jun-19 05:36	1
13C5-PFNA	IS	96.8	50 - 130		B9F0101	13-Jun-19	0.235 L	20-Jun-19 05:36	1
13C8-PFOSA	IS	65.2	20 - 150		B9F0101	13-Jun-19	0.235 L	20-Jun-19 05:36	1
13C8-PFOS	IS	101	60 - 130		B9F0101	13-Jun-19	0.235 L	20-Jun-19 05:36	1
13C2-PFDA	IS	91.6	60 - 130		B9F0101	13-Jun-19	0.235 L	20-Jun-19 05:36	1
13C2-8:2 FTS	IS	94.7	40 - 150		B9F0101	13-Jun-19	0.235 L	20-Jun-19 05:36	1
d3-MeFOSAA	IS	103	50 - 150		B9F0101	13-Jun-19	0.235 L	20-Jun-19 05:36	1
d5-EtFOSAA	IS	97.0	50 - 150		B9F0101	13-Jun-19	0.235 L	20-Jun-19 05:36	1
13C2-PFUnA	IS	81.5	60 - 130		B9F0101	13-Jun-19	0.235 L	20-Jun-19 05:36	1
13C2-PFDoA	IS	82.4	30 - 130		B9F0101	13-Jun-19	0.235 L	20-Jun-19 05:36	1
13C2-PFTeDA	IS	71.1	20 - 150		B9F0101	13-Jun-19	0.235 L	20-Jun-19 05:36	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation
Results reported to the DL.

Sample ID: PW-DUP **PFAS Isotope Dilution Method**

Client Data

Name: Merit Laboratories, Inc.
Project: Camp Grayling- Lake Margrethe
Matrix: Aqueous
Date Collected: 04-Jun-19 00:00

Laboratory Data

Lab Sample: 1901485-17
Date Received: 06-Jun-19 09:32
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
L-PFBA	1.92	1.40	2.04	4.09	J	B9F0101	13-Jun-19	0.245 L	20-Jun-19 12:54	1
L-PFPeA	4.23	1.40	2.04	4.09		B9F0101	13-Jun-19	0.245 L	20-Jun-19 12:54	1
L-PFBS	ND	1.40	2.04	4.09		B9F0101	13-Jun-19	0.245 L	20-Jun-19 12:54	1
L-4:2 FTS	ND	1.40	2.04	4.09		B9F0101	13-Jun-19	0.245 L	20-Jun-19 12:54	1
L-PFHxA	3.75	1.40	2.04	4.09	J	B9F0101	13-Jun-19	0.245 L	20-Jun-19 12:54	1
L-PFPeS	1.40	1.40	2.04	4.09	J	B9F0101	13-Jun-19	0.245 L	20-Jun-19 12:54	1
L-PFHpA	6.99	1.40	2.04	4.09		B9F0101	13-Jun-19	0.245 L	20-Jun-19 12:54	1
L-PFHxS	46.5	1.40	2.04	4.09		B9F0101	13-Jun-19	0.245 L	20-Jun-19 12:54	1
Br-PFHxS	8.36	1.40	2.04	4.09	Q	B9F0101	13-Jun-19	0.245 L	20-Jun-19 12:54	1
Total PFHxS	54.9	1.40	2.04	4.09		B9F0101	13-Jun-19	0.245 L	20-Jun-19 12:54	1
L-6:2 FTS	ND	1.40	2.04	4.09		B9F0101	13-Jun-19	0.245 L	20-Jun-19 12:54	1
L-PFOA	3.64	1.40	2.04	4.09	J	B9F0101	13-Jun-19	0.245 L	20-Jun-19 12:54	1
Br-PFOA	ND	1.40	2.04	4.09		B9F0101	13-Jun-19	0.245 L	20-Jun-19 12:54	1
Total PFOA	3.64	1.40	2.04	4.09	J	B9F0101	13-Jun-19	0.245 L	20-Jun-19 12:54	1
L-PFHpS	ND	1.40	2.04	4.09		B9F0101	13-Jun-19	0.245 L	20-Jun-19 12:54	1
L-PFNA	1.88	1.40	2.04	4.09	J	B9F0101	13-Jun-19	0.245 L	20-Jun-19 12:54	1
L-PFOSA	ND	1.40	2.04	4.09		B9F0101	13-Jun-19	0.245 L	20-Jun-19 12:54	1
L-PFOS	58.4	1.40	2.04	4.09		B9F0101	13-Jun-19	0.245 L	20-Jun-19 12:54	1
Br-PFOS	13.5	1.40	2.04	4.09	Q	B9F0101	13-Jun-19	0.245 L	20-Jun-19 12:54	1
Total PFOS	71.9	1.40	2.04	4.09		B9F0101	13-Jun-19	0.245 L	20-Jun-19 12:54	1
L-PFDA	ND	1.40	2.04	4.09		B9F0101	13-Jun-19	0.245 L	20-Jun-19 12:54	1
L-8:2FTS	ND	1.40	2.04	4.09		B9F0101	13-Jun-19	0.245 L	20-Jun-19 12:54	1
L-PFNS	ND	1.40	2.04	4.09		B9F0101	13-Jun-19	0.245 L	20-Jun-19 12:54	1
L-MeFOSAA	ND	1.40	2.04	4.09		B9F0101	13-Jun-19	0.245 L	20-Jun-19 12:54	1
Br-MeFOSAA	ND	1.40	2.04	4.09		B9F0101	13-Jun-19	0.245 L	20-Jun-19 12:54	1
Total MeFOSAA	ND	1.40	2.04	4.09		B9F0101	13-Jun-19	0.245 L	20-Jun-19 12:54	1
L-EtFOSAA	ND	1.40	2.04	4.09		B9F0101	13-Jun-19	0.245 L	20-Jun-19 12:54	1
Br-EtFOSAA	ND	1.40	2.04	4.09		B9F0101	13-Jun-19	0.245 L	20-Jun-19 12:54	1
Total EtFOSAA	ND	1.40	2.04	4.09		B9F0101	13-Jun-19	0.245 L	20-Jun-19 12:54	1
L-PFUnA	ND	1.40	2.04	4.09		B9F0101	13-Jun-19	0.245 L	20-Jun-19 12:54	1
L-PFDS	ND	1.40	2.04	4.09		B9F0101	13-Jun-19	0.245 L	20-Jun-19 12:54	1
L-PFDoA	ND	1.40	2.04	4.09		B9F0101	13-Jun-19	0.245 L	20-Jun-19 12:54	1
L-PFTrDA	ND	1.40	2.04	4.09		B9F0101	13-Jun-19	0.245 L	20-Jun-19 12:54	1
L-PFTeDA	ND	1.40	2.04	4.09		B9F0101	13-Jun-19	0.245 L	20-Jun-19 12:54	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	98.8	60 - 130		B9F0101	13-Jun-19	0.245 L	20-Jun-19 12:54	1
13C3-PFPeA	IS	103	60 - 150		B9F0101	13-Jun-19	0.245 L	20-Jun-19 12:54	1
13C3-PFBS	IS	101	60 - 150		B9F0101	13-Jun-19	0.245 L	20-Jun-19 12:54	1

Sample ID: PW-DUP **PFAS Isotope Dilution Method**

Client Data

Name: Merit Laboratories, Inc.
Project: Camp Grayling- Lake Margrethe
Matrix: Aqueous
Date Collected: 04-Jun-19 00:00

Laboratory Data

Lab Sample: 1901485-17
Date Received: 06-Jun-19 09:32
Column: BEH C18

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-4:2 FTS	IS	94.0	40 - 150		B9F0101	13-Jun-19	0.245 L	20-Jun-19 12:54	1
13C2-PFHxA	IS	96.2	70 - 130		B9F0101	13-Jun-19	0.245 L	20-Jun-19 12:54	1
13C4-PFHpA	IS	92.4	60 - 150		B9F0101	13-Jun-19	0.245 L	20-Jun-19 12:54	1
13C3-PFHxS	IS	85.2	60 - 130		B9F0101	13-Jun-19	0.245 L	20-Jun-19 12:54	1
13C2-6:2 FTS	IS	103	40 - 150		B9F0101	13-Jun-19	0.245 L	20-Jun-19 12:54	1
13C2-PFOA	IS	81.9	60 - 130		B9F0101	13-Jun-19	0.245 L	20-Jun-19 12:54	1
13C5-PFNA	IS	69.2	50 - 130		B9F0101	13-Jun-19	0.245 L	20-Jun-19 12:54	1
13C8-PFOSA	IS	8.20	20 - 150	H	B9F0101	13-Jun-19	0.245 L	20-Jun-19 12:54	1
13C8-PFOS	IS	73.7	60 - 130		B9F0101	13-Jun-19	0.245 L	20-Jun-19 12:54	1
13C2-PFDA	IS	59.2	60 - 130	H	B9F0101	13-Jun-19	0.245 L	20-Jun-19 12:54	1
13C2-8:2 FTS	IS	70.3	40 - 150		B9F0101	13-Jun-19	0.245 L	20-Jun-19 12:54	1
d3-MeFOSAA	IS	58.6	50 - 150		B9F0101	13-Jun-19	0.245 L	20-Jun-19 12:54	1
d5-EtFOSAA	IS	57.5	50 - 150		B9F0101	13-Jun-19	0.245 L	20-Jun-19 12:54	1
13C2-PFUnA	IS	56.3	60 - 130	H	B9F0101	13-Jun-19	0.245 L	20-Jun-19 12:54	1
13C2-PFDoA	IS	21.5	30 - 130	H	B9F0101	13-Jun-19	0.245 L	20-Jun-19 12:54	1
13C2-PFTeDA	IS	6.80	20 - 150	H	B9F0101	13-Jun-19	0.245 L	20-Jun-19 12:54	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation
Results reported to the DL.

Sample ID: SW-DUP **PFAS Isotope Dilution Method**

Client Data

Name: Merit Laboratories, Inc.
Project: Camp Grayling- Lake Margrethe
Matrix: Aqueous
Date Collected: 04-Jun-19 00:00

Laboratory Data

Lab Sample: 1901485-18
Date Received: 06-Jun-19 09:32
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
L-PFBA	1.89	1.47	2.14	4.28	J	B9F0101	13-Jun-19	0.234 L	20-Jun-19 06:29	1
L-PFPeA	2.73	1.47	2.14	4.28	J	B9F0101	13-Jun-19	0.234 L	20-Jun-19 06:29	1
L-PFBS	ND	1.47	2.14	4.28		B9F0101	13-Jun-19	0.234 L	20-Jun-19 06:29	1
L-4:2 FTS	ND	1.47	2.14	4.28		B9F0101	13-Jun-19	0.234 L	20-Jun-19 06:29	1
L-PFHxA	2.36	1.47	2.14	4.28	J	B9F0101	13-Jun-19	0.234 L	20-Jun-19 06:29	1
L-PFPeS	ND	1.47	2.14	4.28		B9F0101	13-Jun-19	0.234 L	20-Jun-19 06:29	1
L-PFHpA	ND	1.47	2.14	4.28		B9F0101	13-Jun-19	0.234 L	20-Jun-19 06:29	1
L-PFHxS	2.92	1.47	2.14	4.28	J	B9F0101	13-Jun-19	0.234 L	20-Jun-19 06:29	1
Br-PFHxS	ND	1.47	2.14	4.28		B9F0101	13-Jun-19	0.234 L	20-Jun-19 06:29	1
Total PFHxS	3.73	1.47	2.14	4.28	J	B9F0101	13-Jun-19	0.234 L	20-Jun-19 06:29	1
L-6:2 FTS	ND	1.47	2.14	4.28		B9F0101	13-Jun-19	0.234 L	20-Jun-19 06:29	1
L-PFOA	ND	1.47	2.14	4.28		B9F0101	13-Jun-19	0.234 L	20-Jun-19 06:29	1
Br-PFOA	ND	1.47	2.14	4.28		B9F0101	13-Jun-19	0.234 L	20-Jun-19 06:29	1
Total PFOA	ND	1.47	2.14	4.28		B9F0101	13-Jun-19	0.234 L	20-Jun-19 06:29	1
L-PFHpS	ND	1.47	2.14	4.28		B9F0101	13-Jun-19	0.234 L	20-Jun-19 06:29	1
L-PFNA	ND	1.47	2.14	4.28		B9F0101	13-Jun-19	0.234 L	20-Jun-19 06:29	1
L-PFOSA	ND	1.47	2.14	4.28		B9F0101	13-Jun-19	0.234 L	20-Jun-19 06:29	1
L-PFOS	ND	1.47	2.14	4.28		B9F0101	13-Jun-19	0.234 L	20-Jun-19 06:29	1
Br-PFOS	1.87	1.47	2.14	4.28	J	B9F0101	13-Jun-19	0.234 L	20-Jun-19 06:29	1
Total PFOS	3.19	1.47	2.14	4.28	J	B9F0101	13-Jun-19	0.234 L	20-Jun-19 06:29	1
L-PFDA	ND	1.47	2.14	4.28		B9F0101	13-Jun-19	0.234 L	20-Jun-19 06:29	1
L-8:2FTS	ND	1.47	2.14	4.28		B9F0101	13-Jun-19	0.234 L	20-Jun-19 06:29	1
L-PFNS	ND	1.47	2.14	4.28		B9F0101	13-Jun-19	0.234 L	20-Jun-19 06:29	1
L-MeFOSAA	ND	1.47	2.14	4.28		B9F0101	13-Jun-19	0.234 L	20-Jun-19 06:29	1
Br-MeFOSAA	ND	1.47	2.14	4.28		B9F0101	13-Jun-19	0.234 L	20-Jun-19 06:29	1
Total MeFOSAA	ND	1.47	2.14	4.28		B9F0101	13-Jun-19	0.234 L	20-Jun-19 06:29	1
L-EtFOSAA	ND	1.47	2.14	4.28		B9F0101	13-Jun-19	0.234 L	20-Jun-19 06:29	1
Br-EtFOSAA	ND	1.47	2.14	4.28		B9F0101	13-Jun-19	0.234 L	20-Jun-19 06:29	1
Total EtFOSAA	ND	1.47	2.14	4.28		B9F0101	13-Jun-19	0.234 L	20-Jun-19 06:29	1
L-PFUnA	ND	1.47	2.14	4.28		B9F0101	13-Jun-19	0.234 L	20-Jun-19 06:29	1
L-PFDS	ND	1.47	2.14	4.28		B9F0101	13-Jun-19	0.234 L	20-Jun-19 06:29	1
L-PFDoA	ND	1.47	2.14	4.28		B9F0101	13-Jun-19	0.234 L	20-Jun-19 06:29	1
L-PFTrDA	ND	1.47	2.14	4.28		B9F0101	13-Jun-19	0.234 L	20-Jun-19 06:29	1
L-PFTeDA	ND	1.47	2.14	4.28		B9F0101	13-Jun-19	0.234 L	20-Jun-19 06:29	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	98.7	60 - 130		B9F0101	13-Jun-19	0.234 L	20-Jun-19 06:29	1
13C3-PFPeA	IS	104	60 - 150		B9F0101	13-Jun-19	0.234 L	20-Jun-19 06:29	1
13C3-PFBS	IS	105	60 - 150		B9F0101	13-Jun-19	0.234 L	20-Jun-19 06:29	1

Sample ID: SW-DUP **PFAS Isotope Dilution Method**

Client Data

Name: Merit Laboratories, Inc.
Project: Camp Grayling- Lake Margrethe
Matrix: Aqueous
Date Collected: 04-Jun-19 00:00

Laboratory Data

Lab Sample: 1901485-18
Date Received: 06-Jun-19 09:32
Column: BEH C18

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-4:2 FTS	IS	102	40 - 150		B9F0101	13-Jun-19	0.234 L	20-Jun-19 06:29	1
13C2-PFHxA	IS	101	70 - 130		B9F0101	13-Jun-19	0.234 L	20-Jun-19 06:29	1
13C4-PFHpA	IS	102	60 - 150		B9F0101	13-Jun-19	0.234 L	20-Jun-19 06:29	1
13C3-PFHxS	IS	97.6	60 - 130		B9F0101	13-Jun-19	0.234 L	20-Jun-19 06:29	1
13C2-6:2 FTS	IS	96.1	40 - 150		B9F0101	13-Jun-19	0.234 L	20-Jun-19 06:29	1
13C2-PFOA	IS	97.0	60 - 130		B9F0101	13-Jun-19	0.234 L	20-Jun-19 06:29	1
13C5-PFNA	IS	87.4	50 - 130		B9F0101	13-Jun-19	0.234 L	20-Jun-19 06:29	1
13C8-PFOSA	IS	62.2	20 - 150		B9F0101	13-Jun-19	0.234 L	20-Jun-19 06:29	1
13C8-PFOS	IS	95.7	60 - 130		B9F0101	13-Jun-19	0.234 L	20-Jun-19 06:29	1
13C2-PFDA	IS	88.4	60 - 130		B9F0101	13-Jun-19	0.234 L	20-Jun-19 06:29	1
13C2-8:2 FTS	IS	105	40 - 150		B9F0101	13-Jun-19	0.234 L	20-Jun-19 06:29	1
d3-MeFOSAA	IS	83.1	50 - 150		B9F0101	13-Jun-19	0.234 L	20-Jun-19 06:29	1
d5-EtFOSAA	IS	93.0	50 - 150		B9F0101	13-Jun-19	0.234 L	20-Jun-19 06:29	1
13C2-PFUnA	IS	78.9	60 - 130		B9F0101	13-Jun-19	0.234 L	20-Jun-19 06:29	1
13C2-PFDoA	IS	71.4	30 - 130		B9F0101	13-Jun-19	0.234 L	20-Jun-19 06:29	1
13C2-PFTeDA	IS	62.0	20 - 150		B9F0101	13-Jun-19	0.234 L	20-Jun-19 06:29	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation
Results reported to the DL.

Sample ID: EB-1-19

PFAS Isotope Dilution Method

Client Data

Name: Merit Laboratories, Inc.
Project: Camp Grayling- Lake Margrethe
Matrix: Aqueous
Date Collected: 05-Jun-19 09:20

Laboratory Data

Lab Sample: 1901485-19
Date Received: 06-Jun-19 09:32
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
L-PFBA	ND	1.41	2.06	4.11		B9F0101	13-Jun-19	0.243 L	20-Jun-19 06:40	1
L-PFPeA	ND	1.41	2.06	4.11		B9F0101	13-Jun-19	0.243 L	20-Jun-19 06:40	1
L-PFBS	ND	1.41	2.06	4.11		B9F0101	13-Jun-19	0.243 L	20-Jun-19 06:40	1
L-4:2 FTS	ND	1.41	2.06	4.11		B9F0101	13-Jun-19	0.243 L	20-Jun-19 06:40	1
L-PFHxA	ND	1.41	2.06	4.11		B9F0101	13-Jun-19	0.243 L	20-Jun-19 06:40	1
L-PFPeS	ND	1.41	2.06	4.11		B9F0101	13-Jun-19	0.243 L	20-Jun-19 06:40	1
L-PFHpA	ND	1.41	2.06	4.11		B9F0101	13-Jun-19	0.243 L	20-Jun-19 06:40	1
L-PFHxS	ND	1.41	2.06	4.11		B9F0101	13-Jun-19	0.243 L	20-Jun-19 06:40	1
Br-PFHxS	ND	1.41	2.06	4.11		B9F0101	13-Jun-19	0.243 L	20-Jun-19 06:40	1
Total PFHxS	ND	1.41	2.06	4.11		B9F0101	13-Jun-19	0.243 L	20-Jun-19 06:40	1
L-6:2 FTS	ND	1.41	2.06	4.11		B9F0101	13-Jun-19	0.243 L	20-Jun-19 06:40	1
L-PFOA	ND	1.41	2.06	4.11		B9F0101	13-Jun-19	0.243 L	20-Jun-19 06:40	1
Br-PFOA	ND	1.41	2.06	4.11		B9F0101	13-Jun-19	0.243 L	20-Jun-19 06:40	1
Total PFOA	ND	1.41	2.06	4.11		B9F0101	13-Jun-19	0.243 L	20-Jun-19 06:40	1
L-PFHpS	ND	1.41	2.06	4.11		B9F0101	13-Jun-19	0.243 L	20-Jun-19 06:40	1
L-PFNA	ND	1.41	2.06	4.11		B9F0101	13-Jun-19	0.243 L	20-Jun-19 06:40	1
L-PFOSA	ND	1.41	2.06	4.11		B9F0101	13-Jun-19	0.243 L	20-Jun-19 06:40	1
L-PFOS	ND	1.41	2.06	4.11		B9F0101	13-Jun-19	0.243 L	20-Jun-19 06:40	1
Br-PFOS	ND	1.41	2.06	4.11		B9F0101	13-Jun-19	0.243 L	20-Jun-19 06:40	1
Total PFOS	ND	1.41	2.06	4.11		B9F0101	13-Jun-19	0.243 L	20-Jun-19 06:40	1
L-PFDA	ND	1.41	2.06	4.11		B9F0101	13-Jun-19	0.243 L	20-Jun-19 06:40	1
L-8:2FTS	ND	1.41	2.06	4.11		B9F0101	13-Jun-19	0.243 L	20-Jun-19 06:40	1
L-PFNS	ND	1.41	2.06	4.11		B9F0101	13-Jun-19	0.243 L	20-Jun-19 06:40	1
L-MeFOSAA	ND	1.41	2.06	4.11		B9F0101	13-Jun-19	0.243 L	20-Jun-19 06:40	1
Br-MeFOSAA	ND	1.41	2.06	4.11		B9F0101	13-Jun-19	0.243 L	20-Jun-19 06:40	1
Total MeFOSAA	ND	1.41	2.06	4.11		B9F0101	13-Jun-19	0.243 L	20-Jun-19 06:40	1
L-EtFOSAA	ND	1.41	2.06	4.11		B9F0101	13-Jun-19	0.243 L	20-Jun-19 06:40	1
Br-EtFOSAA	ND	1.41	2.06	4.11		B9F0101	13-Jun-19	0.243 L	20-Jun-19 06:40	1
Total EtFOSAA	ND	1.41	2.06	4.11		B9F0101	13-Jun-19	0.243 L	20-Jun-19 06:40	1
L-PFUnA	ND	1.41	2.06	4.11		B9F0101	13-Jun-19	0.243 L	20-Jun-19 06:40	1
L-PFDS	ND	1.41	2.06	4.11		B9F0101	13-Jun-19	0.243 L	20-Jun-19 06:40	1
L-PFDoA	ND	1.41	2.06	4.11		B9F0101	13-Jun-19	0.243 L	20-Jun-19 06:40	1
L-PFTrDA	ND	1.41	2.06	4.11		B9F0101	13-Jun-19	0.243 L	20-Jun-19 06:40	1
L-PFTeDA	ND	1.41	2.06	4.11		B9F0101	13-Jun-19	0.243 L	20-Jun-19 06:40	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	101	60 - 130		B9F0101	13-Jun-19	0.243 L	20-Jun-19 06:40	1
13C3-PFPeA	IS	92.3	60 - 150		B9F0101	13-Jun-19	0.243 L	20-Jun-19 06:40	1
13C3-PFBS	IS	99.0	60 - 150		B9F0101	13-Jun-19	0.243 L	20-Jun-19 06:40	1

Sample ID: EB-1-19 **PFAS Isotope Dilution Method**

Client Data

Name: Merit Laboratories, Inc.
Project: Camp Grayling- Lake Margrethe
Matrix: Aqueous
Date Collected: 05-Jun-19 09:20

Laboratory Data

Lab Sample: 1901485-19
Date Received: 06-Jun-19 09:32
Column: BEH C18

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-4:2 FTS	IS	97.9	40 - 150		B9F0101	13-Jun-19	0.243 L	20-Jun-19 06:40	1
13C2-PFHxA	IS	92.6	70 - 130		B9F0101	13-Jun-19	0.243 L	20-Jun-19 06:40	1
13C4-PFHpA	IS	99.9	60 - 150		B9F0101	13-Jun-19	0.243 L	20-Jun-19 06:40	1
13C3-PFHxS	IS	92.3	60 - 130		B9F0101	13-Jun-19	0.243 L	20-Jun-19 06:40	1
13C2-6:2 FTS	IS	105	40 - 150		B9F0101	13-Jun-19	0.243 L	20-Jun-19 06:40	1
13C2-PFOA	IS	100	60 - 130		B9F0101	13-Jun-19	0.243 L	20-Jun-19 06:40	1
13C5-PFNA	IS	90.5	50 - 130		B9F0101	13-Jun-19	0.243 L	20-Jun-19 06:40	1
13C8-PFOSA	IS	56.7	20 - 150		B9F0101	13-Jun-19	0.243 L	20-Jun-19 06:40	1
13C8-PFOS	IS	96.1	60 - 130		B9F0101	13-Jun-19	0.243 L	20-Jun-19 06:40	1
13C2-PFDA	IS	88.5	60 - 130		B9F0101	13-Jun-19	0.243 L	20-Jun-19 06:40	1
13C2-8:2 FTS	IS	94.4	40 - 150		B9F0101	13-Jun-19	0.243 L	20-Jun-19 06:40	1
d3-MeFOSAA	IS	81.2	50 - 150		B9F0101	13-Jun-19	0.243 L	20-Jun-19 06:40	1
d5-EtFOSAA	IS	86.4	50 - 150		B9F0101	13-Jun-19	0.243 L	20-Jun-19 06:40	1
13C2-PFUnA	IS	79.8	60 - 130		B9F0101	13-Jun-19	0.243 L	20-Jun-19 06:40	1
13C2-PFDoA	IS	78.0	30 - 130		B9F0101	13-Jun-19	0.243 L	20-Jun-19 06:40	1
13C2-PFTeDA	IS	80.9	20 - 150		B9F0101	13-Jun-19	0.243 L	20-Jun-19 06:40	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation
Results reported to the DL.

Sample ID: SW-11-19

PFAS Isotope Dilution Method

Client Data

Name: Merit Laboratories, Inc.
Project: Camp Grayling- Lake Margrethe
Matrix: Aqueous
Date Collected: 05-Jun-19 09:55

Laboratory Data

Lab Sample: 1901485-20
Date Received: 06-Jun-19 09:32
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
L-PFBA	1.49	1.41	2.07	4.12	J	B9F0101	13-Jun-19	0.242 L	20-Jun-19 06:50	1
L-PFPeA	2.17	1.41	2.07	4.12	J	B9F0101	13-Jun-19	0.242 L	20-Jun-19 06:50	1
L-PFBS	ND	1.41	2.07	4.12		B9F0101	13-Jun-19	0.242 L	20-Jun-19 06:50	1
L-4:2 FTS	ND	1.41	2.07	4.12		B9F0101	13-Jun-19	0.242 L	20-Jun-19 06:50	1
L-PFHxA	ND	1.41	2.07	4.12		B9F0101	13-Jun-19	0.242 L	20-Jun-19 06:50	1
L-PFPeS	ND	1.41	2.07	4.12		B9F0101	13-Jun-19	0.242 L	20-Jun-19 06:50	1
L-PFHpA	1.43	1.41	2.07	4.12	J, Q	B9F0101	13-Jun-19	0.242 L	20-Jun-19 06:50	1
L-PFHxS	2.29	1.41	2.07	4.12	J	B9F0101	13-Jun-19	0.242 L	20-Jun-19 06:50	1
Br-PFHxS	ND	1.41	2.07	4.12		B9F0101	13-Jun-19	0.242 L	20-Jun-19 06:50	1
Total PFHxS	2.29	1.41	2.07	4.12	J	B9F0101	13-Jun-19	0.242 L	20-Jun-19 06:50	1
L-6:2 FTS	ND	1.41	2.07	4.12		B9F0101	13-Jun-19	0.242 L	20-Jun-19 06:50	1
L-PFOA	ND	1.41	2.07	4.12		B9F0101	13-Jun-19	0.242 L	20-Jun-19 06:50	1
Br-PFOA	ND	1.41	2.07	4.12		B9F0101	13-Jun-19	0.242 L	20-Jun-19 06:50	1
Total PFOA	ND	1.41	2.07	4.12		B9F0101	13-Jun-19	0.242 L	20-Jun-19 06:50	1
L-PFHpS	ND	1.41	2.07	4.12		B9F0101	13-Jun-19	0.242 L	20-Jun-19 06:50	1
L-PFNA	ND	1.41	2.07	4.12		B9F0101	13-Jun-19	0.242 L	20-Jun-19 06:50	1
L-PFOSA	ND	1.41	2.07	4.12		B9F0101	13-Jun-19	0.242 L	20-Jun-19 06:50	1
L-PFOS	ND	1.41	2.07	4.12		B9F0101	13-Jun-19	0.242 L	20-Jun-19 06:50	1
Br-PFOS	ND	1.41	2.07	4.12		B9F0101	13-Jun-19	0.242 L	20-Jun-19 06:50	1
Total PFOS	ND	1.41	2.07	4.12		B9F0101	13-Jun-19	0.242 L	20-Jun-19 06:50	1
L-PFDA	ND	1.41	2.07	4.12		B9F0101	13-Jun-19	0.242 L	20-Jun-19 06:50	1
L-8:2FTS	ND	1.41	2.07	4.12		B9F0101	13-Jun-19	0.242 L	20-Jun-19 06:50	1
L-PFNS	ND	1.41	2.07	4.12		B9F0101	13-Jun-19	0.242 L	20-Jun-19 06:50	1
L-MeFOSAA	ND	1.41	2.07	4.12		B9F0101	13-Jun-19	0.242 L	20-Jun-19 06:50	1
Br-MeFOSAA	ND	1.41	2.07	4.12		B9F0101	13-Jun-19	0.242 L	20-Jun-19 06:50	1
Total MeFOSAA	ND	1.41	2.07	4.12		B9F0101	13-Jun-19	0.242 L	20-Jun-19 06:50	1
L-EtFOSAA	ND	1.41	2.07	4.12		B9F0101	13-Jun-19	0.242 L	20-Jun-19 06:50	1
Br-EtFOSAA	ND	1.41	2.07	4.12		B9F0101	13-Jun-19	0.242 L	20-Jun-19 06:50	1
Total EtFOSAA	ND	1.41	2.07	4.12		B9F0101	13-Jun-19	0.242 L	20-Jun-19 06:50	1
L-PFUnA	ND	1.41	2.07	4.12		B9F0101	13-Jun-19	0.242 L	20-Jun-19 06:50	1
L-PFDS	ND	1.41	2.07	4.12		B9F0101	13-Jun-19	0.242 L	20-Jun-19 06:50	1
L-PFDoA	ND	1.41	2.07	4.12		B9F0101	13-Jun-19	0.242 L	20-Jun-19 06:50	1
L-PFTrDA	ND	1.41	2.07	4.12		B9F0101	13-Jun-19	0.242 L	20-Jun-19 06:50	1
L-PFTeDA	ND	1.41	2.07	4.12		B9F0101	13-Jun-19	0.242 L	20-Jun-19 06:50	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	96.5	60 - 130		B9F0101	13-Jun-19	0.242 L	20-Jun-19 06:50	1
13C3-PFPeA	IS	104	60 - 150		B9F0101	13-Jun-19	0.242 L	20-Jun-19 06:50	1
13C3-PFBS	IS	98.2	60 - 150		B9F0101	13-Jun-19	0.242 L	20-Jun-19 06:50	1

Sample ID: SW-11-19 **PFAS Isotope Dilution Method**

Client Data

Name: Merit Laboratories, Inc.
Project: Camp Grayling- Lake Margrethe
Matrix: Aqueous
Date Collected: 05-Jun-19 09:55

Laboratory Data

Lab Sample: 1901485-20
Date Received: 06-Jun-19 09:32
Column: BEH C18

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-4:2 FTS	IS	94.6	40 - 150		B9F0101	13-Jun-19	0.242 L	20-Jun-19 06:50	1
13C2-PFHxA	IS	102	70 - 130		B9F0101	13-Jun-19	0.242 L	20-Jun-19 06:50	1
13C4-PFHpA	IS	105	60 - 150		B9F0101	13-Jun-19	0.242 L	20-Jun-19 06:50	1
13C3-PFHxS	IS	92.9	60 - 130		B9F0101	13-Jun-19	0.242 L	20-Jun-19 06:50	1
13C2-6:2 FTS	IS	88.9	40 - 150		B9F0101	13-Jun-19	0.242 L	20-Jun-19 06:50	1
13C2-PFOA	IS	88.3	60 - 130		B9F0101	13-Jun-19	0.242 L	20-Jun-19 06:50	1
13C5-PFNA	IS	88.3	50 - 130		B9F0101	13-Jun-19	0.242 L	20-Jun-19 06:50	1
13C8-PFOSA	IS	28.5	20 - 150		B9F0101	13-Jun-19	0.242 L	20-Jun-19 06:50	1
13C8-PFOS	IS	84.8	60 - 130		B9F0101	13-Jun-19	0.242 L	20-Jun-19 06:50	1
13C2-PFDA	IS	90.6	60 - 130		B9F0101	13-Jun-19	0.242 L	20-Jun-19 06:50	1
13C2-8:2 FTS	IS	84.4	40 - 150		B9F0101	13-Jun-19	0.242 L	20-Jun-19 06:50	1
d3-MeFOSAA	IS	79.5	50 - 150		B9F0101	13-Jun-19	0.242 L	20-Jun-19 06:50	1
d5-EtFOSAA	IS	71.1	50 - 150		B9F0101	13-Jun-19	0.242 L	20-Jun-19 06:50	1
13C2-PFUnA	IS	65.8	60 - 130		B9F0101	13-Jun-19	0.242 L	20-Jun-19 06:50	1
13C2-PFDoA	IS	75.7	30 - 130		B9F0101	13-Jun-19	0.242 L	20-Jun-19 06:50	1
13C2-PFTeDA	IS	62.1	20 - 150		B9F0101	13-Jun-19	0.242 L	20-Jun-19 06:50	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation
Results reported to the DL.

DATA QUALIFIERS & ABBREVIATIONS

B	This compound was also detected in the method blank
Conc.	Concentration
D	Dilution
DL	Detection limit
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
LOD	Limits of Detection
LOQ	Limits of Quantitation
M	Estimated Maximum Possible Concentration (CA Region 2 projects only)
NA	Not applicable
ND	Not Detected
P	The reported concentration may include contribution from chlorinated diphenyl ether(s).
Q	The ion transition ratio is outside of the acceptance criteria.
TEQ	Toxic Equivalency
U	Not Detected (specific projects only)
*	See Cover Letter

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

Vista Analytical Laboratory Certifications

Accrediting Authority	Certificate Number
Alaska Department of Environmental Conservation	17-013
Arkansas Department of Environmental Quality	19-013-0
California Department of Health – ELAP	2892
DoD ELAP - A2LA Accredited - ISO/IEC 17025:2005	3091.01
Florida Department of Health	E87777-20
Hawaii Department of Health	N/A
Louisiana Department of Environmental Quality	01977
Maine Department of Health	2018017
Michigan Department of Environmental Quality	9932
Minnesota Department of Health	1521520
New Hampshire Environmental Accreditation Program	207718-B
New Jersey Department of Environmental Protection	180001
New York Department of Health	11411
Oregon Laboratory Accreditation Program	4042-010
Pennsylvania Department of Environmental Protection	015
Texas Commission on Environmental Quality	T104704189-19-10
Virginia Department of General Services	10272
Washington Department of Ecology	C584-19
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
Determination of Polychlorinated p-Dioxins & Polychlorinated Dibenzofurans	EPA TO-9A

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 1613/1613B
1,4-Dioxane (1,4-Diethyleneoxide) analysis by GC/HRMS	EPA 522
Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS	EPA 537
Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS	ISO 25101 2009

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 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

Vista Analytical Laboratory

CHAIN OF CUSTODY

For Laboratory Use Only
Work Order #: 1901485 Temp: 5.3 °C
Storage ID: WK-2 ; R-13 Storage Secured: Yes ☑ No ☐

Project ID: Camp Grayling - Lake Margrethe PO#: 60563409 Sampler: Brian Evdige (name)

TAT (check one): Standard: x 21 days; Rush (surcharge may apply): ☐ 14 days ☐ 7 days Specify:

Invoice to: Name	Company	Address	City	State	Ph#	Fax#
Randy Rothe	EGLE-RRD	2100 ~~M-21~~ M-32	Gaylord	MI	989-705-3416	

Relinquished by (printed name and signature)	Date	Time	Received by (printed name and signature)	Date	Time
Brian Evdige	6/5/19	1530	UPS		
Relinquished by (printed name and signature)	Date	Time	Received by (printed name and signature)	Date	Time
UPS			B. Benedict	06/06/19	0932

SHIP TO: Vista Analytical Laboratory
1104 Windfield Way
El Dorado Hills, CA 95762
(916) 673-1520 * Fax (916) 673-0106

ATTN: Jennifer Miller

Method of Shipment: UPS
Tracking No.:

Add Analysis(es) Requested

Sample ID	Date	Time	Location/Sample Description	Container(s) Quantity	Type	Matrix	Mod. EPA Method 537: PFOA/ PFOS	UCMR3 PFAS List:6	537 List: 14	Full List of 24	Other: Please List Below	Branch and Linear	EPA Method 537(DW only): PFOA/ PFOS	UCMR3 PFAS List:6	PFAS List: 14	Comments
PW-04-19	6/4/19	0815		2	P	AQ				X		X				
*SED-04-19		0820		1	PJ	SD				X		X				
SW-04-19		0815		2	P	AQ				X		X				
*SED-05-19		0905		1	PJ	SD				X		X				
SW-05-19		0910		2	P	AQ				X		X				
PW-05-19		0915		2	P	AQ				X		X				
*SED-06-19		0920		1	PJ	SD				X		X				
PW-06-19		0945		2	P	AQ				X		X				
SW-06-19		0940		2	P	AQ				X		X				
*SED-07-19	6/4/19	1010		1	PJ	SD				X		X				

Special Instructions/Comments: **Send Results and Acknowledgements to:**

Bonc@michigan.gov
~~Dorin.Bogdan@aecom.com~~
~~Robert.Kennedy@aecom.com~~
~~Jeremiah.Morse@aecom.com~~
custicob@michigan.gov

*WO# 1901484

SEND DOCUMENTATION AND RESULTS TO:

Name: Randy Rothe
Company: MDEQ
Address: 2100 ~~M-21~~ M-32
City: Gaylord State: MI Zip: 49735
Phone: 989-705-3416 Fax:
Email: ROTHER@michigan.gov

Container Types: P= HDPE, PJ= HDPE Jar
O = Other:

Bottle Preservation Type: T = Thiosulfate,
TZ = Trizma:

Matrix Types: AQ = Aqueous, DW = Drinking Water, EF = Effluent, PP = Pulp/Paper, SD = Sediment, SL = Sludge, SO = Soil, WW = Wastewater, B = Blood/Serum, O = Other:

Vista Analytical Laboratory

CHAIN OF CUSTODY

For Laboratory Use Only
Work Order #: 1901485 Temp: 5.3 °C
Storage ID: WR-2; R-13 Storage Secured: Yes ☑ No ☐

Project ID: Camp Grayling - Lake Margrethe PO#: 60563409 Sampler: Brian Enstice (name)

TAT (check one): Standard: x 21 days; Rush (surcharge may apply): ☐ 14 days ☐ 7 days Specify:

Invoice to: Name	Company	Address	City	State	Ph#	Fax#
Randy Rothe	EGLE-RRD	2100 ~~M-21~~ M-32	Gaylord	MI	989-705-3416	

Relinquished by (printed name and signature)	Date	Time	Received by (printed name and signature)	Date	Time
Brian Enstice	6/5/19	1730	UPS		
Relinquished by (printed name and signature)	Date	Time	Received by (printed name and signature)	Date	Time
UPS			B. Benedict	06/06/19	0932

SHIP TO: Vista Analytical Laboratory
1104 Windfield Way
El Dorado Hills, CA 95762
(916) 673-1520 * Fax (916) 673-0106

ATTN: Jennifer Miller

Method of Shipment:

Tracking No.:

Add Analysis(es) Requested

Sample ID	Date	Time	Location/Sample Description	Container(s) Quantity	Type	Matrix	Mod. EPA Method 537: PFOA/ PFOS	UCMR3 PFAS List:6	537 List: 14	Full List of 24	Other: Please List Below	Branch and Linear	EPA Method 537(DW only): PFOA/ PFOS	UCMR3 PFAS List:6	PFAS List: 14	Comments
SW-07-19	6/4/19	1005		2	P	AQ				X		X				
PW-07-19	↑	1025		2	P	AQ				X		X				
*SED-01-19		1045		1	PJ	SD				X		X				
SW-01-19		1050		2	P	AQ				X		X				
PW-01-19		1055		2	P	AQ				X		X				
PW-02-19		1125		2	P	AQ				X		X				
*SED-02-19		1115		1	PJ	SD				X		X				
SW-02-19		1130		2	P	AQ				X		X				
SW-03-19	↓	1150		2	P	AQ				X		X				
*SED-03-19	6/4/19	1150		1	PJ	SD				X		X				

Special Instructions/Comments: **Send Results and Acknowledgements to:**

Bonc@michigan.gov
~~Dorin.Bogdan@aecom.com~~
~~Robert.Kennedy@aecom.com~~
~~Jeremiah.Morse@aecom.com~~
enstice@michigan.gov

* WO #1901484

SEND DOCUMENTATION AND RESULTS TO:

Name: Randy Rothe
Company: MDEQ
Address: 2100 ~~M-21~~ M-32
City: Gaylord State: MI Zip: 49735
Phone: 989-705-3416 Fax:
Email: ROTHER@michigan.gov

Container Types: P= HDPE, PJ= HDPE Jar, O = Other:

Bottle Preservation Type: T = Thiosulfate, TZ = Trizma:

Matrix Types: AQ = Aqueous, DW = Drinking Water, EF = Effluent, PP = Pulp/Paper, SD = Sediment, SL = Sludge, SO = Soil, WW = Wastewater, B = Blood/Serum, O = Other:

Vista Analytical Laboratory

CHAIN OF CUSTODY

For Laboratory Use Only
Work Order #: 1901485 Temp: 5.3 °C
Storage ID: WR-2; R-13 Storage Secured: Yes ☑ No ☐

Project ID: Camp Grayling - Lake Margrethe PO#: 60563409 Sampler: Brian Eustice (name)

TAT (check one): Standard: x 21 days; Rush (surcharge may apply): ☐ 14 days ☐ 7 days Specify:

Invoice to: Name	Company	Address	City	State	Ph#	Fax#
Randy Rothe	EGLE-RRD	2100 ~~M-21~~ M-32	Gaylord	MI	989-705-3416	

Relinquished by (printed name and signature)	Date	Time	Received by (printed name and signature)	Date	Time
Brian Eustice	6/5/19	1530	UPS		
Relinquished by (printed name and signature) UPS	Date	Time	Received by (printed name and signature) B. Benedict Beth Bennett	06/06/19	0932

SHIP TO: Vista Analytical Laboratory
1104 Windfield Way
El Dorado Hills, CA 95762
(916) 673-1520 * Fax (916) 673-0106

ATTN: Jennifer Miller

Method of Shipment: UPS

Tracking No.:

Add Analysis(es) Requested

Sample ID	Date	Time	Location/Sample Description	Container(s) Quantity	Type	Matrix	Mod. EPA Method 537: PFOA/ PFOS	UCMR3 PFAS List:6	537 List: 14	Full List of 24	Other: Please List Below	Branch and Linear	EPA Method 537(DW only): PFOA/ PFOS	UCMR3 PFAS List:6	PFAS List: 14	Comments
PW-03-19	6/4/19	1155		2	P	AQ				X		Y				
* SED-10-19	↑	1235		1	PJ	SD				Y		X				
SW-10-19		1240		2	P	AQ				X		Y				
PW-10-19		1250		2	P	AQ				Y		X				
PW-DUP		-		2	P	AQ				Y		Y				
* SED-DUP	↓	-		1	PJ	SD				X		Y				
SW-DUP	6/4/19	-		2	P	AQ				Y		Y				
EB-1-19	6/5/19	0920		2	P	AQ				Y		Y				
SW-11-19	6/5/19	0955		2	P	AQ				X		X				
* SED-12-19	6/5/19	1100		1	PJ	SD				Y		Y				

Special Instructions/Comments: **Send Results and Acknowledgements to:**

Bonc@michigan.gov
~~Dorin.Bogdan@aecom.com~~
~~Robert.Kennedy@aecom.com~~
~~Jeremiah.Morse@aecom.com~~
e.vstice@michigan.gov

* WO# 1901484

SEND DOCUMENTATION AND RESULTS TO:

Name: Randy Rothe
Company: MDEQ
Address: 2100 ~~M-21~~ M-32
City: Gaylord State: MI Zip: 49735
Phone: 989-705-3416 Fax:
Email: ROTHER@michigan.gov

Container Types: P= HDPE, PJ= HDPE Jar, O = Other:

Bottle Preservation Type: T = Thiosulfate, TZ = Trizma:

Matrix Types: AQ = Aqueous, DW = Drinking Water, EF = Effluent, PP = Pulp/Paper, SD = Sediment, SL = Sludge, SO = Soil, WW = Wastewater, B = Blood/Serum, O = Other:

Vista Analytical Laboratory

Sample Log-In Checklist

Page # 1 of 1

Vista Work Order #: 1901485 TAT Std

Samples Arrival:	**Date/Time** 06/06/19 0932	**Initials:** JBB	**Location:** WR-2 **Shelf/Rack:** NA
Logged In:	**Date/Time** 06/07/19 1430	**Initials:** JBB	**Location:** WR-2/E-7 R-13 **Shelf/Rack:** A 2

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

Temp °C: 5.3 (uncorrected)	**Probe used:** Y / N	**Thermometer ID:** IR-3
Temp °C: 5.3 (corrected)		

	YES	NO	NA
Adequate Sample Volume Received?	✓		
Holding Time Acceptable?	✓		
Shipping Container(s) Intact?	✓		
Shipping Custody Seals Intact? Picture taken		✓	
Shipping Documentation Present?	✓		
Airbill — Trk # 460 7257225	✓		
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	Other	Yes	No	NA
Shipping Container	Vista	Client	Retain	Return	Dispose		

Comments:

June 27, 2019

Vista Work Order No. 1901496

Ms. Maya Murshak
Merit Laboratories, Inc.
2680 East Lansing Drive
East Lansing, MI 48823

Dear Ms. Murshak,

Enclosed are the results for the sample set received at Vista Analytical Laboratory on June 06, 2019 under your Project Name 'Camp Grayling- Lake Margrethe'.

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,

Martha Maier
Laboratory Director

Vista Work Order No. 1901496
Case Narrative

Sample Condition on Receipt:

Nine aqueous samples and two sediment 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. The matrix for sample "SW-15-19" was identified as sediment on the COC. As directed by the client, sample "SW-15-19" was processed as an aqueous sample.

Analytical Notes:

PFAS Isotope Dilution Method

Samples "PW-13-19" and "PW-15-19" contained particulate and were centrifuged prior to extraction.

The samples were extracted and analyzed for a selected list of PFAS using the PFAS Isotope Dilution Method (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.

Sample "PW-15-19" was re-extracted due to low recoveries of several internal standards. The recoveries were similar in the re-extraction, suggesting that they were caused by a matrix effect.

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

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

QC Anomalies

LabNumber	SampleName	Analysis	Analyte	Flag	%Rec
1901496-08	PW-15-19	PFAS Isotope Dilution Method	13C8-PFOSA	H	12.3
1901496-08	PW-15-19	PFAS Isotope Dilution Method	13C2-PFDA	H	54.7
1901496-08	PW-15-19	PFAS Isotope Dilution Method	d5-EtFOSAA	H	47.3
1901496-08	PW-15-19	PFAS Isotope Dilution Method	13C2-PFUnA	H	44.6
1901496-08	PW-15-19	PFAS Isotope Dilution Method	13C2-PFDoA	H	15.2
1901496-08	PW-15-19	PFAS Isotope Dilution Method	13C2-PFTeDA	H	14.8
B9F0102-BS1	B9F0102-BS1	PFAS Isotope Dilution Method	13C2-PFUnA	H	57.5

H = Recovery was outside laboratory acceptance criteria.

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Sample Inventory Report

Vista Sample ID	Client Sample ID	Sampled	Received	Components/Containers
1901496-01	SW-12-19	05-Jun-19 11:05	06-Jun-19 09:32	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
1901496-02	PW-12-19	05-Jun-19 11:10	06-Jun-19 09:32	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
1901496-03	SW-13-19	05-Jun-19 11:35	06-Jun-19 09:32	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
1901496-04	PW-13-19	05-Jun-19 11:40	06-Jun-19 09:32	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
1901496-05	SW-14-19	05-Jun-19 12:45	06-Jun-19 09:32	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
1901496-06	PW-14-19	05-Jun-19 12:50	06-Jun-19 09:32	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
1901496-07	SW-15-19	05-Jun-19 13:15	06-Jun-19 09:32	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
1901496-08	PW-15-19	05-Jun-19 13:25	06-Jun-19 09:32	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL

ANALYTICAL RESULTS

Sample ID: Method Blank

PFAS Isotope Dilution Method

Client Data

Name: Merit Laboratories, Inc.
Project: Camp Grayling- Lake Margrethe
Matrix: Aqueous

Laboratory Data

Lab Sample: B9F0102-BLK1
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
L-PFBA	ND	1.37	2.00	4.00		B9F0102	13-Jun-19	0.250 L	15-Jun-19 19:39	1
L-PFPeA	ND	1.37	2.00	4.00		B9F0102	13-Jun-19	0.250 L	15-Jun-19 19:39	1
L-PFBS	ND	1.37	2.00	4.00		B9F0102	13-Jun-19	0.250 L	15-Jun-19 19:39	1
L-4:2 FTS	ND	1.37	2.00	4.00		B9F0102	13-Jun-19	0.250 L	15-Jun-19 19:39	1
L-PFHxA	ND	1.37	2.00	4.00		B9F0102	13-Jun-19	0.250 L	15-Jun-19 19:39	1
L-PFPeS	ND	1.37	2.00	4.00		B9F0102	13-Jun-19	0.250 L	15-Jun-19 19:39	1
L-PFHpA	ND	1.37	2.00	4.00		B9F0102	13-Jun-19	0.250 L	15-Jun-19 19:39	1
L-PFHxS	ND	1.37	2.00	4.00		B9F0102	13-Jun-19	0.250 L	15-Jun-19 19:39	1
Br-PFHxS	ND	1.37	2.00	4.00		B9F0102	13-Jun-19	0.250 L	15-Jun-19 19:39	1
Total PFHxS	ND	1.37	2.00	4.00		B9F0102	13-Jun-19	0.250 L	15-Jun-19 19:39	1
L-6:2 FTS	ND	1.37	2.00	4.00		B9F0102	13-Jun-19	0.250 L	15-Jun-19 19:39	1
L-PFOA	ND	1.37	2.00	4.00		B9F0102	13-Jun-19	0.250 L	15-Jun-19 19:39	1
Br-PFOA	ND	1.37	2.00	4.00		B9F0102	13-Jun-19	0.250 L	15-Jun-19 19:39	1
Total PFOA	ND	1.37	2.00	4.00		B9F0102	13-Jun-19	0.250 L	15-Jun-19 19:39	1
L-PFHpS	ND	1.37	2.00	4.00		B9F0102	13-Jun-19	0.250 L	15-Jun-19 19:39	1
L-PFNA	ND	1.37	2.00	4.00		B9F0102	13-Jun-19	0.250 L	15-Jun-19 19:39	1
L-PFOSA	ND	1.37	2.00	4.00		B9F0102	13-Jun-19	0.250 L	15-Jun-19 19:39	1
L-PFOS	ND	1.37	2.00	4.00		B9F0102	13-Jun-19	0.250 L	15-Jun-19 19:39	1
Br-PFOS	ND	1.37	2.00	4.00		B9F0102	13-Jun-19	0.250 L	15-Jun-19 19:39	1
Total PFOS	ND	1.37	2.00	4.00		B9F0102	13-Jun-19	0.250 L	15-Jun-19 19:39	1
L-PFDA	ND	1.37	2.00	4.00		B9F0102	13-Jun-19	0.250 L	15-Jun-19 19:39	1
L-8:2FTS	ND	1.37	2.00	4.00		B9F0102	13-Jun-19	0.250 L	15-Jun-19 19:39	1
L-PFNS	ND	1.37	2.00	4.00		B9F0102	13-Jun-19	0.250 L	15-Jun-19 19:39	1
L-MeFOSAA	ND	1.37	2.00	4.00		B9F0102	13-Jun-19	0.250 L	15-Jun-19 19:39	1
Br-MeFOSAA	ND	1.37	2.00	4.00		B9F0102	13-Jun-19	0.250 L	15-Jun-19 19:39	1
Total MeFOSAA	ND	1.37	2.00	4.00		B9F0102	13-Jun-19	0.250 L	15-Jun-19 19:39	1
L-EtFOSAA	ND	1.37	2.00	4.00		B9F0102	13-Jun-19	0.250 L	15-Jun-19 19:39	1
Br-EtFOSAA	ND	1.37	2.00	4.00		B9F0102	13-Jun-19	0.250 L	15-Jun-19 19:39	1
Total EtFOSAA	ND	1.37	2.00	4.00		B9F0102	13-Jun-19	0.250 L	15-Jun-19 19:39	1
L-PFUnA	ND	1.37	2.00	4.00		B9F0102	13-Jun-19	0.250 L	15-Jun-19 19:39	1
L-PFDS	ND	1.37	2.00	4.00		B9F0102	13-Jun-19	0.250 L	15-Jun-19 19:39	1
L-PFDoA	ND	1.37	2.00	4.00		B9F0102	13-Jun-19	0.250 L	15-Jun-19 19:39	1
L-PFTrDA	ND	1.37	2.00	4.00		B9F0102	13-Jun-19	0.250 L	15-Jun-19 19:39	1
L-PFTeDA	ND	1.37	2.00	4.00		B9F0102	13-Jun-19	0.250 L	15-Jun-19 19:39	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	95.6	60 - 130		B9F0102	13-Jun-19	0.250 L	15-Jun-19 19:39	1
13C3-PFPeA	IS	92.6	60 - 150		B9F0102	13-Jun-19	0.250 L	15-Jun-19 19:39	1
13C3-PFBS	IS	101	60 - 150		B9F0102	13-Jun-19	0.250 L	15-Jun-19 19:39	1

Sample ID: Method Blank **PFAS Isotope Dilution Method**

Client Data

Name: Merit Laboratories, Inc. Matrix: Aqueous

Project: Camp Grayling- Lake Margrethe

Laboratory Data

Lab Sample: B9F0102-BLK1 Column: BEH C18

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-4:2 FTS	IS	111	40 - 150		B9F0102	13-Jun-19	0.250 L	15-Jun-19 19:39	1
13C2-PFHxA	IS	92.2	70 - 130		B9F0102	13-Jun-19	0.250 L	15-Jun-19 19:39	1
13C4-PFHpA	IS	86.2	60 - 150		B9F0102	13-Jun-19	0.250 L	15-Jun-19 19:39	1
13C3-PFHxS	IS	95.5	60 - 130		B9F0102	13-Jun-19	0.250 L	15-Jun-19 19:39	1
13C2-6:2 FTS	IS	103	40 - 150		B9F0102	13-Jun-19	0.250 L	15-Jun-19 19:39	1
13C2-PFOA	IS	79.4	60 - 130		B9F0102	13-Jun-19	0.250 L	15-Jun-19 19:39	1
13C5-PFNA	IS	77.0	50 - 130		B9F0102	13-Jun-19	0.250 L	15-Jun-19 19:39	1
13C8-PFOSA	IS	61.9	20 - 150		B9F0102	13-Jun-19	0.250 L	15-Jun-19 19:39	1
13C8-PFOS	IS	89.1	60 - 130		B9F0102	13-Jun-19	0.250 L	15-Jun-19 19:39	1
13C2-PFDA	IS	82.1	60 - 130		B9F0102	13-Jun-19	0.250 L	15-Jun-19 19:39	1
13C2-8:2 FTS	IS	98.7	40 - 150		B9F0102	13-Jun-19	0.250 L	15-Jun-19 19:39	1
d3-MeFOSAA	IS	77.4	50 - 150		B9F0102	13-Jun-19	0.250 L	15-Jun-19 19:39	1
d5-EtFOSAA	IS	79.3	50 - 150		B9F0102	13-Jun-19	0.250 L	15-Jun-19 19:39	1
13C2-PFUnA	IS	73.5	60 - 130		B9F0102	13-Jun-19	0.250 L	15-Jun-19 19:39	1
13C2-PFDoA	IS	58.0	30 - 130		B9F0102	13-Jun-19	0.250 L	15-Jun-19 19:39	1
13C2-PFTeDA	IS	25.6	20 - 150		B9F0102	13-Jun-19	0.250 L	15-Jun-19 19:39	1

DL - Detection Limit LOD - Limit of Detection Results reported to the DL.

LOQ - Limit of quantitation

Sample ID: OPR **PFAS Isotope Dilution Method**

Client Data

Name: Merit Laboratories, Inc.
Project: Camp Grayling- Lake Margrethe
Matrix: Aqueous

Laboratory Data

Lab Sample: B9F0102-BS1
Column: BEH C18

Analyte	Amt Found (ng/L)	Spike Amt	% Rec	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
L-PFBA	40.1	40.0	100	70 - 130		B9F0102	13-Jun-19	0.250 L	15-Jun-19 19:28	1
L-PFPeA	40.0	40.0	99.9	70 - 130		B9F0102	13-Jun-19	0.250 L	15-Jun-19 19:28	1
L-PFBS	41.8	40.0	105	70 - 130		B9F0102	13-Jun-19	0.250 L	15-Jun-19 19:28	1
L-4:2 FTS	43.7	40.0	109	60 - 130		B9F0102	13-Jun-19	0.250 L	15-Jun-19 19:28	1
L-PFHxA	41.3	40.0	103	70 - 130		B9F0102	13-Jun-19	0.250 L	15-Jun-19 19:28	1
L-PFPeS	43.1	40.0	108	70 - 130		B9F0102	13-Jun-19	0.250 L	15-Jun-19 19:28	1
L-PFHpA	39.9	40.0	99.7	70 - 130		B9F0102	13-Jun-19	0.250 L	15-Jun-19 19:28	1
Total PFHxS	42.7	40.0	107	70 - 130		B9F0102	13-Jun-19	0.250 L	15-Jun-19 19:28	1
L-6:2 FTS	40.6	40.0	101	60 - 130		B9F0102	13-Jun-19	0.250 L	15-Jun-19 19:28	1
Total PFOA	40.6	40.0	101	70 - 130		B9F0102	13-Jun-19	0.250 L	15-Jun-19 19:28	1
L-PFHpS	50.7	40.0	127	60 - 130		B9F0102	13-Jun-19	0.250 L	15-Jun-19 19:28	1
L-PFNA	40.3	40.0	101	70 - 130		B9F0102	13-Jun-19	0.250 L	15-Jun-19 19:28	1
L-PFOSA	37.4	40.0	93.4	70 - 130		B9F0102	13-Jun-19	0.250 L	15-Jun-19 19:28	1
Total PFOS	40.4	40.0	101	70 - 130		B9F0102	13-Jun-19	0.250 L	15-Jun-19 19:28	1
L-PFDA	43.4	40.0	109	70 - 130		B9F0102	13-Jun-19	0.250 L	15-Jun-19 19:28	1
L-8:2FTS	41.7	40.0	104	60 - 130		B9F0102	13-Jun-19	0.250 L	15-Jun-19 19:28	1
L-PFNS	40.2	40.0	101	70 - 130		B9F0102	13-Jun-19	0.250 L	15-Jun-19 19:28	1
Total MeFOSAA	35.8	40.0	89.6	70 - 130		B9F0102	13-Jun-19	0.250 L	15-Jun-19 19:28	1
Total EtFOSAA	37.3	40.0	93.3	70 - 130		B9F0102	13-Jun-19	0.250 L	15-Jun-19 19:28	1
L-PFUnA	41.5	40.0	104	70 - 130		B9F0102	13-Jun-19	0.250 L	15-Jun-19 19:28	1
L-PFDS	25.5	40.0	63.7	60 - 130		B9F0102	13-Jun-19	0.250 L	15-Jun-19 19:28	1
L-PFDoA	44.2	40.0	110	70 - 130		B9F0102	13-Jun-19	0.250 L	15-Jun-19 19:28	1
L-PFTrDA	32.0	40.0	80.0	60 - 130		B9F0102	13-Jun-19	0.250 L	15-Jun-19 19:28	1
L-PFTeDA	43.1	40.0	108	70 - 130		B9F0102	13-Jun-19	0.250 L	15-Jun-19 19:28	1

Labeled Standards	Type	% Rec	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	97.6	60- 130		B9F0102	13-Jun-19	0.250 L	15-Jun-19 19:28	1
13C3-PFPeA	IS	90.3	60- 150		B9F0102	13-Jun-19	0.250 L	15-Jun-19 19:28	1
13C3-PFBS	IS	94.4	60- 150		B9F0102	13-Jun-19	0.250 L	15-Jun-19 19:28	1
13C2-4:2 FTS	IS	92.6	40- 150		B9F0102	13-Jun-19	0.250 L	15-Jun-19 19:28	1
13C2-PFHxA	IS	93.6	70- 130		B9F0102	13-Jun-19	0.250 L	15-Jun-19 19:28	1
13C4-PFHpA	IS	88.0	60- 150		B9F0102	13-Jun-19	0.250 L	15-Jun-19 19:28	1
13C3-PFHxS	IS	84.0	60- 130		B9F0102	13-Jun-19	0.250 L	15-Jun-19 19:28	1
13C2-6:2 FTS	IS	100	40- 150		B9F0102	13-Jun-19	0.250 L	15-Jun-19 19:28	1
13C2-PFOA	IS	80.7	60- 130		B9F0102	13-Jun-19	0.250 L	15-Jun-19 19:28	1
13C5-PFNA	IS	76.1	50- 130		B9F0102	13-Jun-19	0.250 L	15-Jun-19 19:28	1

Sample ID: OPR **PFAS Isotope Dilution Method**

Client Data

Name: Merit Laboratories, Inc.
Project: Camp Grayling- Lake Margrethe
Matrix: Aqueous

Laboratory Data

Lab Sample: B9F0102-BS1
Column: BEH C18

Labeled Standards	Type	% Rec	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C8-PFOSA	IS	64.2	20- 150		B9F0102	13-Jun-19	0.250 L	15-Jun-19 19:28	1
13C8-PFOS	IS	73.8	60- 130		B9F0102	13-Jun-19	0.250 L	15-Jun-19 19:28	1
13C2-PFDA	IS	69.2	60- 130		B9F0102	13-Jun-19	0.250 L	15-Jun-19 19:28	1
13C2-8:2 FTS	IS	83.5	40- 150		B9F0102	13-Jun-19	0.250 L	15-Jun-19 19:28	1
d3-MeFOSAA	IS	78.8	50- 150		B9F0102	13-Jun-19	0.250 L	15-Jun-19 19:28	1
d5-EtFOSAA	IS	78.3	50- 150		B9F0102	13-Jun-19	0.250 L	15-Jun-19 19:28	1
13C2-PFUnA	IS	57.5	60- 130	H	B9F0102	13-Jun-19	0.250 L	15-Jun-19 19:28	1
13C2-PFDoA	IS	37.7	30- 130		B9F0102	13-Jun-19	0.250 L	15-Jun-19 19:28	1
13C2-PFTeDA	IS	28.6	20- 150		B9F0102	13-Jun-19	0.250 L	15-Jun-19 19:28	1

Sample ID: Method Blank — **PFAS Isotope Dilution Method**

Client Data

Name: Merit Laboratories, Inc. Matrix: Aqueous

Project: Camp Grayling- Lake Margrethe

Laboratory Data

Lab Sample: B9F0149-BLK1 Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
L-PFTeDA	ND	1.37	2.00	4.00		B9F0149	17-Jun-19	0.250 L	19-Jun-19 07:04	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFTeDA	IS	45.1	20 - 150		B9F0149	17-Jun-19	0.250 L	19-Jun-19 07:04	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation
Results reported to the DL.

Sample ID: OPR **PFAS Isotope Dilution Method**

Client Data

Name: Merit Laboratories, Inc.
Project: Camp Grayling- Lake Margrethe
Matrix: Aqueous

Laboratory Data

Lab Sample: B9F0149-BS1
Column: BEH C18

Analyte	Amt Found (ng/L)	Spike Amt	% Rec	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
L-PFTeDA	40.9	40.0	102	70 - 130		B9F0149	17-Jun-19	0.250 L	19-Jun-19 06:53	1
Labeled Standards	**Type**		**% Rec**	**Limits**	**Qualifiers**	**Batch**	**Extracted**	**Samp Size**	**Analyzed**	**Dilution**
13C2-PFTeDA	IS		39.6	20- 150		B9F0149	17-Jun-19	0.250 L	19-Jun-19 06:53	1

Sample ID: SW-12-19

PFAS Isotope Dilution Method

Client Data

Name: Merit Laboratories, Inc.
Project: Camp Grayling- Lake Margrethe
Matrix: Aqueous
Date Collected: 05-Jun-19 11:05

Laboratory Data

Lab Sample: 1901496-01
Date Received: 06-Jun-19 09:32
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
L-PFBA	1.54	1.47	2.14	4.28	J	B9F0102	13-Jun-19	0.234 L	15-Jun-19 20:21	1
L-PFPeA	1.97	1.47	2.14	4.28	J	B9F0102	13-Jun-19	0.234 L	15-Jun-19 20:21	1
L-PFBS	ND	1.47	2.14	4.28		B9F0102	13-Jun-19	0.234 L	15-Jun-19 20:21	1
L-4:2 FTS	ND	1.47	2.14	4.28		B9F0102	13-Jun-19	0.234 L	15-Jun-19 20:21	1
L-PFHxA	1.72	1.47	2.14	4.28	J	B9F0102	13-Jun-19	0.234 L	15-Jun-19 20:21	1
L-PFPeS	ND	1.47	2.14	4.28		B9F0102	13-Jun-19	0.234 L	15-Jun-19 20:21	1
L-PFHpA	ND	1.47	2.14	4.28		B9F0102	13-Jun-19	0.234 L	15-Jun-19 20:21	1
L-PFHxS	2.40	1.47	2.14	4.28	J, Q	B9F0102	13-Jun-19	0.234 L	15-Jun-19 20:21	1
Br-PFHxS	ND	1.47	2.14	4.28		B9F0102	13-Jun-19	0.234 L	15-Jun-19 20:21	1
Total PFHxS	2.40	1.47	2.14	4.28	J	B9F0102	13-Jun-19	0.234 L	15-Jun-19 20:21	1
L-6:2 FTS	ND	1.47	2.14	4.28		B9F0102	13-Jun-19	0.234 L	15-Jun-19 20:21	1
L-PFOA	ND	1.47	2.14	4.28		B9F0102	13-Jun-19	0.234 L	15-Jun-19 20:21	1
Br-PFOA	ND	1.47	2.14	4.28		B9F0102	13-Jun-19	0.234 L	15-Jun-19 20:21	1
Total PFOA	ND	1.47	2.14	4.28		B9F0102	13-Jun-19	0.234 L	15-Jun-19 20:21	1
L-PFHpS	ND	1.47	2.14	4.28		B9F0102	13-Jun-19	0.234 L	15-Jun-19 20:21	1
L-PFNA	ND	1.47	2.14	4.28		B9F0102	13-Jun-19	0.234 L	15-Jun-19 20:21	1
L-PFOSA	ND	1.47	2.14	4.28		B9F0102	13-Jun-19	0.234 L	15-Jun-19 20:21	1
L-PFOS	ND	1.47	2.14	4.28		B9F0102	13-Jun-19	0.234 L	15-Jun-19 20:21	1
Br-PFOS	ND	1.47	2.14	4.28		B9F0102	13-Jun-19	0.234 L	15-Jun-19 20:21	1
Total PFOS	1.95	1.47	2.14	4.28	J	B9F0102	13-Jun-19	0.234 L	15-Jun-19 20:21	1
L-PFDA	ND	1.47	2.14	4.28		B9F0102	13-Jun-19	0.234 L	15-Jun-19 20:21	1
L-8:2FTS	ND	1.47	2.14	4.28		B9F0102	13-Jun-19	0.234 L	15-Jun-19 20:21	1
L-PFNS	ND	1.47	2.14	4.28		B9F0102	13-Jun-19	0.234 L	15-Jun-19 20:21	1
L-MeFOSAA	ND	1.47	2.14	4.28		B9F0102	13-Jun-19	0.234 L	15-Jun-19 20:21	1
Br-MeFOSAA	ND	1.47	2.14	4.28		B9F0102	13-Jun-19	0.234 L	15-Jun-19 20:21	1
Total MeFOSAA	ND	1.47	2.14	4.28		B9F0102	13-Jun-19	0.234 L	15-Jun-19 20:21	1
L-EtFOSAA	ND	1.47	2.14	4.28		B9F0102	13-Jun-19	0.234 L	15-Jun-19 20:21	1
Br-EtFOSAA	ND	1.47	2.14	4.28		B9F0102	13-Jun-19	0.234 L	15-Jun-19 20:21	1
Total EtFOSAA	ND	1.47	2.14	4.28		B9F0102	13-Jun-19	0.234 L	15-Jun-19 20:21	1
L-PFUnA	ND	1.47	2.14	4.28		B9F0102	13-Jun-19	0.234 L	15-Jun-19 20:21	1
L-PFDS	ND	1.47	2.14	4.28		B9F0102	13-Jun-19	0.234 L	15-Jun-19 20:21	1
L-PFDoA	ND	1.47	2.14	4.28		B9F0102	13-Jun-19	0.234 L	15-Jun-19 20:21	1
L-PFTrDA	ND	1.47	2.14	4.28		B9F0102	13-Jun-19	0.234 L	15-Jun-19 20:21	1
L-PFTeDA	ND	1.47	2.14	4.28		B9F0102	13-Jun-19	0.234 L	15-Jun-19 20:21	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	99.8	60 - 130		B9F0102	13-Jun-19	0.234 L	15-Jun-19 20:21	1
13C3-PFPeA	IS	93.9	60 - 150		B9F0102	13-Jun-19	0.234 L	15-Jun-19 20:21	1
13C3-PFBS	IS	95.8	60 - 150		B9F0102	13-Jun-19	0.234 L	15-Jun-19 20:21	1

Sample ID: SW-12-19

PFAS Isotope Dilution Method

Client Data

Name: Merit Laboratories, Inc.
Project: Camp Grayling- Lake Margrethe
Matrix: Aqueous
Date Collected: 05-Jun-19 11:05

Laboratory Data

Lab Sample: 1901496-01
Date Received: 06-Jun-19 09:32
Column: BEH C18

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-4:2 FTS	IS	102	40 - 150		B9F0102	13-Jun-19	0.234 L	15-Jun-19 20:21	1
13C2-PFHxA	IS	99.1	70 - 130		B9F0102	13-Jun-19	0.234 L	15-Jun-19 20:21	1
13C4-PFHpA	IS	92.1	60 - 150		B9F0102	13-Jun-19	0.234 L	15-Jun-19 20:21	1
13C3-PFHxS	IS	97.7	60 - 130		B9F0102	13-Jun-19	0.234 L	15-Jun-19 20:21	1
13C2-6:2 FTS	IS	98.2	40 - 150		B9F0102	13-Jun-19	0.234 L	15-Jun-19 20:21	1
13C2-PFOA	IS	97.1	60 - 130		B9F0102	13-Jun-19	0.234 L	15-Jun-19 20:21	1
13C5-PFNA	IS	90.7	50 - 130		B9F0102	13-Jun-19	0.234 L	15-Jun-19 20:21	1
13C8-PFOSA	IS	58.3	20 - 150		B9F0102	13-Jun-19	0.234 L	15-Jun-19 20:21	1
13C8-PFOS	IS	91.5	60 - 130		B9F0102	13-Jun-19	0.234 L	15-Jun-19 20:21	1
13C2-PFDA	IS	85.9	60 - 130		B9F0102	13-Jun-19	0.234 L	15-Jun-19 20:21	1
13C2-8:2 FTS	IS	90.7	40 - 150		B9F0102	13-Jun-19	0.234 L	15-Jun-19 20:21	1
d3-MeFOSAA	IS	85.6	50 - 150		B9F0102	13-Jun-19	0.234 L	15-Jun-19 20:21	1
d5-EtFOSAA	IS	86.3	50 - 150		B9F0102	13-Jun-19	0.234 L	15-Jun-19 20:21	1
13C2-PFUnA	IS	81.3	60 - 130		B9F0102	13-Jun-19	0.234 L	15-Jun-19 20:21	1
13C2-PFDoA	IS	75.2	30 - 130		B9F0102	13-Jun-19	0.234 L	15-Jun-19 20:21	1
13C2-PFTeDA	IS	68.0	20 - 150		B9F0102	13-Jun-19	0.234 L	15-Jun-19 20:21	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation
Results reported to the DL.

Sample ID: PW-12-19 **PFAS Isotope Dilution Method**

Client Data

Name: Merit Laboratories, Inc.
Project: Camp Grayling- Lake Margrethe
Matrix: Aqueous
Date Collected: 05-Jun-19 11:10

Laboratory Data

Lab Sample: 1901496-02
Date Received: 06-Jun-19 09:32
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
L-PFBA	ND	1.33	1.94	3.87		B9F0102	13-Jun-19	0.258 L	15-Jun-19 20:32	1
L-PFPeA	ND	1.33	1.94	3.87		B9F0102	13-Jun-19	0.258 L	15-Jun-19 20:32	1
L-PFBS	ND	1.33	1.94	3.87		B9F0102	13-Jun-19	0.258 L	15-Jun-19 20:32	1
L-4:2 FTS	ND	1.33	1.94	3.87		B9F0102	13-Jun-19	0.258 L	15-Jun-19 20:32	1
L-PFHxA	ND	1.33	1.94	3.87		B9F0102	13-Jun-19	0.258 L	15-Jun-19 20:32	1
L-PFPeS	ND	1.33	1.94	3.87		B9F0102	13-Jun-19	0.258 L	15-Jun-19 20:32	1
L-PFHpA	ND	1.33	1.94	3.87		B9F0102	13-Jun-19	0.258 L	15-Jun-19 20:32	1
L-PFHxS	ND	1.33	1.94	3.87		B9F0102	13-Jun-19	0.258 L	15-Jun-19 20:32	1
Br-PFHxS	ND	1.33	1.94	3.87		B9F0102	13-Jun-19	0.258 L	15-Jun-19 20:32	1
Total PFHxS	ND	1.33	1.94	3.87		B9F0102	13-Jun-19	0.258 L	15-Jun-19 20:32	1
L-6:2 FTS	ND	1.33	1.94	3.87		B9F0102	13-Jun-19	0.258 L	15-Jun-19 20:32	1
L-PFOA	ND	1.33	1.94	3.87		B9F0102	13-Jun-19	0.258 L	15-Jun-19 20:32	1
Br-PFOA	ND	1.33	1.94	3.87		B9F0102	13-Jun-19	0.258 L	15-Jun-19 20:32	1
Total PFOA	ND	1.33	1.94	3.87		B9F0102	13-Jun-19	0.258 L	15-Jun-19 20:32	1
L-PFHpS	ND	1.33	1.94	3.87		B9F0102	13-Jun-19	0.258 L	15-Jun-19 20:32	1
L-PFNA	ND	1.33	1.94	3.87		B9F0102	13-Jun-19	0.258 L	15-Jun-19 20:32	1
L-PFOSA	ND	1.33	1.94	3.87		B9F0102	13-Jun-19	0.258 L	15-Jun-19 20:32	1
L-PFOS	ND	1.33	1.94	3.87		B9F0102	13-Jun-19	0.258 L	15-Jun-19 20:32	1
Br-PFOS	ND	1.33	1.94	3.87		B9F0102	13-Jun-19	0.258 L	15-Jun-19 20:32	1
Total PFOS	ND	1.33	1.94	3.87		B9F0102	13-Jun-19	0.258 L	15-Jun-19 20:32	1
L-PFDA	ND	1.33	1.94	3.87		B9F0102	13-Jun-19	0.258 L	15-Jun-19 20:32	1
L-8:2FTS	ND	1.33	1.94	3.87		B9F0102	13-Jun-19	0.258 L	15-Jun-19 20:32	1
L-PFNS	ND	1.33	1.94	3.87		B9F0102	13-Jun-19	0.258 L	15-Jun-19 20:32	1
L-MeFOSAA	ND	1.33	1.94	3.87		B9F0102	13-Jun-19	0.258 L	15-Jun-19 20:32	1
Br-MeFOSAA	ND	1.33	1.94	3.87		B9F0102	13-Jun-19	0.258 L	15-Jun-19 20:32	1
Total MeFOSAA	ND	1.33	1.94	3.87		B9F0102	13-Jun-19	0.258 L	15-Jun-19 20:32	1
L-EtFOSAA	ND	1.33	1.94	3.87		B9F0102	13-Jun-19	0.258 L	15-Jun-19 20:32	1
Br-EtFOSAA	ND	1.33	1.94	3.87		B9F0102	13-Jun-19	0.258 L	15-Jun-19 20:32	1
Total EtFOSAA	ND	1.33	1.94	3.87		B9F0102	13-Jun-19	0.258 L	15-Jun-19 20:32	1
L-PFUnA	ND	1.33	1.94	3.87		B9F0102	13-Jun-19	0.258 L	15-Jun-19 20:32	1
L-PFDS	ND	1.33	1.94	3.87		B9F0102	13-Jun-19	0.258 L	15-Jun-19 20:32	1
L-PFDoA	ND	1.33	1.94	3.87		B9F0102	13-Jun-19	0.258 L	15-Jun-19 20:32	1
L-PFTrDA	ND	1.33	1.94	3.87		B9F0102	13-Jun-19	0.258 L	15-Jun-19 20:32	1
L-PFTeDA	ND	1.33	1.94	3.87		B9F0102	13-Jun-19	0.258 L	15-Jun-19 20:32	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	101	60 - 130		B9F0102	13-Jun-19	0.258 L	15-Jun-19 20:32	1
13C3-PFPeA	IS	94.8	60 - 150		B9F0102	13-Jun-19	0.258 L	15-Jun-19 20:32	1
13C3-PFBS	IS	93.3	60 - 150		B9F0102	13-Jun-19	0.258 L	15-Jun-19 20:32	1

Sample ID: PW-12-19 **PFAS Isotope Dilution Method**

Client Data

Name: Merit Laboratories, Inc.
Project: Camp Grayling- Lake Margrethe
Matrix: Aqueous
Date Collected: 05-Jun-19 11:10

Laboratory Data

Lab Sample: 1901496-02
Date Received: 06-Jun-19 09:32
Column: BEH C18

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-4:2 FTS	IS	102	40 - 150		B9F0102	13-Jun-19	0.258 L	15-Jun-19 20:32	1
13C2-PFHxA	IS	96.7	70 - 130		B9F0102	13-Jun-19	0.258 L	15-Jun-19 20:32	1
13C4-PFHpA	IS	96.9	60 - 150		B9F0102	13-Jun-19	0.258 L	15-Jun-19 20:32	1
13C3-PFHxS	IS	93.4	60 - 130		B9F0102	13-Jun-19	0.258 L	15-Jun-19 20:32	1
13C2-6:2 FTS	IS	116	40 - 150		B9F0102	13-Jun-19	0.258 L	15-Jun-19 20:32	1
13C2-PFOA	IS	90.8	60 - 130		B9F0102	13-Jun-19	0.258 L	15-Jun-19 20:32	1
13C5-PFNA	IS	97.6	50 - 130		B9F0102	13-Jun-19	0.258 L	15-Jun-19 20:32	1
13C8-PFOSA	IS	68.8	20 - 150		B9F0102	13-Jun-19	0.258 L	15-Jun-19 20:32	1
13C8-PFOS	IS	106	60 - 130		B9F0102	13-Jun-19	0.258 L	15-Jun-19 20:32	1
13C2-PFDA	IS	83.7	60 - 130		B9F0102	13-Jun-19	0.258 L	15-Jun-19 20:32	1
13C2-8:2 FTS	IS	105	40 - 150		B9F0102	13-Jun-19	0.258 L	15-Jun-19 20:32	1
d3-MeFOSAA	IS	81.4	50 - 150		B9F0102	13-Jun-19	0.258 L	15-Jun-19 20:32	1
d5-EtFOSAA	IS	83.5	50 - 150		B9F0102	13-Jun-19	0.258 L	15-Jun-19 20:32	1
13C2-PFUnA	IS	76.1	60 - 130		B9F0102	13-Jun-19	0.258 L	15-Jun-19 20:32	1
13C2-PFDoA	IS	75.1	30 - 130		B9F0102	13-Jun-19	0.258 L	15-Jun-19 20:32	1
13C2-PFTeDA	IS	76.2	20 - 150		B9F0102	13-Jun-19	0.258 L	15-Jun-19 20:32	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation
Results reported to the DL.

Sample ID: SW-13-19

PFAS Isotope Dilution Method

Client Data

Name: Merit Laboratories, Inc.
Project: Camp Grayling- Lake Margrethe
Matrix: Aqueous
Date Collected: 05-Jun-19 11:35

Laboratory Data

Lab Sample: 1901496-03
Date Received: 06-Jun-19 09:32
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
L-PFBA	2.05	1.38	2.02	4.03	J	B9F0102	13-Jun-19	0.248 L	15-Jun-19 20:43	1
L-PFPeA	ND	1.38	2.02	4.03		B9F0102	13-Jun-19	0.248 L	15-Jun-19 20:43	1
L-PFBS	ND	1.38	2.02	4.03		B9F0102	13-Jun-19	0.248 L	15-Jun-19 20:43	1
L-4:2 FTS	ND	1.38	2.02	4.03		B9F0102	13-Jun-19	0.248 L	15-Jun-19 20:43	1
L-PFHxA	ND	1.38	2.02	4.03		B9F0102	13-Jun-19	0.248 L	15-Jun-19 20:43	1
L-PFPeS	ND	1.38	2.02	4.03		B9F0102	13-Jun-19	0.248 L	15-Jun-19 20:43	1
L-PFHpA	ND	1.38	2.02	4.03		B9F0102	13-Jun-19	0.248 L	15-Jun-19 20:43	1
L-PFHxS	ND	1.38	2.02	4.03		B9F0102	13-Jun-19	0.248 L	15-Jun-19 20:43	1
Br-PFHxS	ND	1.38	2.02	4.03		B9F0102	13-Jun-19	0.248 L	15-Jun-19 20:43	1
Total PFHxS	ND	1.38	2.02	4.03		B9F0102	13-Jun-19	0.248 L	15-Jun-19 20:43	1
L-6:2 FTS	ND	1.38	2.02	4.03		B9F0102	13-Jun-19	0.248 L	15-Jun-19 20:43	1
L-PFOA	ND	1.38	2.02	4.03		B9F0102	13-Jun-19	0.248 L	15-Jun-19 20:43	1
Br-PFOA	ND	1.38	2.02	4.03		B9F0102	13-Jun-19	0.248 L	15-Jun-19 20:43	1
Total PFOA	ND	1.38	2.02	4.03		B9F0102	13-Jun-19	0.248 L	15-Jun-19 20:43	1
L-PFHpS	ND	1.38	2.02	4.03		B9F0102	13-Jun-19	0.248 L	15-Jun-19 20:43	1
L-PFNA	ND	1.38	2.02	4.03		B9F0102	13-Jun-19	0.248 L	15-Jun-19 20:43	1
L-PFOSA	ND	1.38	2.02	4.03		B9F0102	13-Jun-19	0.248 L	15-Jun-19 20:43	1
L-PFOS	ND	1.38	2.02	4.03		B9F0102	13-Jun-19	0.248 L	15-Jun-19 20:43	1
Br-PFOS	ND	1.38	2.02	4.03		B9F0102	13-Jun-19	0.248 L	15-Jun-19 20:43	1
Total PFOS	ND	1.38	2.02	4.03		B9F0102	13-Jun-19	0.248 L	15-Jun-19 20:43	1
L-PFDA	ND	1.38	2.02	4.03		B9F0102	13-Jun-19	0.248 L	15-Jun-19 20:43	1
L-8:2FTS	ND	1.38	2.02	4.03		B9F0102	13-Jun-19	0.248 L	15-Jun-19 20:43	1
L-PFNS	ND	1.38	2.02	4.03		B9F0102	13-Jun-19	0.248 L	15-Jun-19 20:43	1
L-MeFOSAA	ND	1.38	2.02	4.03		B9F0102	13-Jun-19	0.248 L	15-Jun-19 20:43	1
Br-MeFOSAA	ND	1.38	2.02	4.03		B9F0102	13-Jun-19	0.248 L	15-Jun-19 20:43	1
Total MeFOSAA	ND	1.38	2.02	4.03		B9F0102	13-Jun-19	0.248 L	15-Jun-19 20:43	1
L-EtFOSAA	ND	1.38	2.02	4.03		B9F0102	13-Jun-19	0.248 L	15-Jun-19 20:43	1
Br-EtFOSAA	ND	1.38	2.02	4.03		B9F0102	13-Jun-19	0.248 L	15-Jun-19 20:43	1
Total EtFOSAA	ND	1.38	2.02	4.03		B9F0102	13-Jun-19	0.248 L	15-Jun-19 20:43	1
L-PFUnA	ND	1.38	2.02	4.03		B9F0102	13-Jun-19	0.248 L	15-Jun-19 20:43	1
L-PFDS	ND	1.38	2.02	4.03		B9F0102	13-Jun-19	0.248 L	15-Jun-19 20:43	1
L-PFDoA	ND	1.38	2.02	4.03		B9F0102	13-Jun-19	0.248 L	15-Jun-19 20:43	1
L-PFTrDA	ND	1.38	2.02	4.03		B9F0102	13-Jun-19	0.248 L	15-Jun-19 20:43	1
L-PFTeDA	ND	1.38	2.02	4.03		B9F0102	13-Jun-19	0.248 L	15-Jun-19 20:43	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	98.2	60 - 130		B9F0102	13-Jun-19	0.248 L	15-Jun-19 20:43	1
13C3-PFPeA	IS	95.3	60 - 150		B9F0102	13-Jun-19	0.248 L	15-Jun-19 20:43	1
13C3-PFBS	IS	98.5	60 - 150		B9F0102	13-Jun-19	0.248 L	15-Jun-19 20:43	1

Sample ID: SW-13-19 **PFAS Isotope Dilution Method**

Client Data

Name: Merit Laboratories, Inc.
Project: Camp Grayling- Lake Margrethe
Matrix: Aqueous
Date Collected: 05-Jun-19 11:35

Laboratory Data

Lab Sample: 1901496-03
Date Received: 06-Jun-19 09:32
Column: BEH C18

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-4:2 FTS	IS	101	40 - 150		B9F0102	13-Jun-19	0.248 L	15-Jun-19 20:43	1
13C2-PFHxA	IS	93.8	70 - 130		B9F0102	13-Jun-19	0.248 L	15-Jun-19 20:43	1
13C4-PFHpA	IS	95.3	60 - 150		B9F0102	13-Jun-19	0.248 L	15-Jun-19 20:43	1
13C3-PFHxS	IS	96.7	60 - 130		B9F0102	13-Jun-19	0.248 L	15-Jun-19 20:43	1
13C2-6:2 FTS	IS	97.6	40 - 150		B9F0102	13-Jun-19	0.248 L	15-Jun-19 20:43	1
13C2-PFOA	IS	89.1	60 - 130		B9F0102	13-Jun-19	0.248 L	15-Jun-19 20:43	1
13C5-PFNA	IS	93.7	50 - 130		B9F0102	13-Jun-19	0.248 L	15-Jun-19 20:43	1
13C8-PFOSA	IS	79.3	20 - 150		B9F0102	13-Jun-19	0.248 L	15-Jun-19 20:43	1
13C8-PFOS	IS	95.7	60 - 130		B9F0102	13-Jun-19	0.248 L	15-Jun-19 20:43	1
13C2-PFDA	IS	84.4	60 - 130		B9F0102	13-Jun-19	0.248 L	15-Jun-19 20:43	1
13C2-8:2 FTS	IS	94.0	40 - 150		B9F0102	13-Jun-19	0.248 L	15-Jun-19 20:43	1
d3-MeFOSAA	IS	93.3	50 - 150		B9F0102	13-Jun-19	0.248 L	15-Jun-19 20:43	1
d5-EtFOSAA	IS	95.5	50 - 150		B9F0102	13-Jun-19	0.248 L	15-Jun-19 20:43	1
13C2-PFUnA	IS	79.5	60 - 130		B9F0102	13-Jun-19	0.248 L	15-Jun-19 20:43	1
13C2-PFDoA	IS	63.8	30 - 130		B9F0102	13-Jun-19	0.248 L	15-Jun-19 20:43	1
13C2-PFTeDA	IS	44.5	20 - 150		B9F0102	13-Jun-19	0.248 L	15-Jun-19 20:43	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation
Results reported to the DL.

Sample ID: PW-13-19

PFAS Isotope Dilution Method

Client Data

Name: Merit Laboratories, Inc.
Project: Camp Grayling- Lake Margrethe
Matrix: Aqueous
Date Collected: 05-Jun-19 11:40

Laboratory Data

Lab Sample: 1901496-04
Date Received: 06-Jun-19 09:32
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
L-PFBA	ND	1.38	2.02	4.04		B9F0102	13-Jun-19	0.247 L	15-Jun-19 20:53	1
L-PFPeA	ND	1.38	2.02	4.04		B9F0102	13-Jun-19	0.247 L	15-Jun-19 20:53	1
L-PFBS	ND	1.38	2.02	4.04		B9F0102	13-Jun-19	0.247 L	15-Jun-19 20:53	1
L-4:2 FTS	ND	1.38	2.02	4.04		B9F0102	13-Jun-19	0.247 L	15-Jun-19 20:53	1
L-PFHxA	ND	1.38	2.02	4.04		B9F0102	13-Jun-19	0.247 L	15-Jun-19 20:53	1
L-PFPeS	ND	1.38	2.02	4.04		B9F0102	13-Jun-19	0.247 L	15-Jun-19 20:53	1
L-PFHpA	ND	1.38	2.02	4.04		B9F0102	13-Jun-19	0.247 L	15-Jun-19 20:53	1
L-PFHxS	ND	1.38	2.02	4.04		B9F0102	13-Jun-19	0.247 L	15-Jun-19 20:53	1
Br-PFHxS	ND	1.38	2.02	4.04		B9F0102	13-Jun-19	0.247 L	15-Jun-19 20:53	1
Total PFHxS	ND	1.38	2.02	4.04		B9F0102	13-Jun-19	0.247 L	15-Jun-19 20:53	1
L-6:2 FTS	ND	1.38	2.02	4.04		B9F0102	13-Jun-19	0.247 L	15-Jun-19 20:53	1
L-PFOA	ND	1.38	2.02	4.04		B9F0102	13-Jun-19	0.247 L	15-Jun-19 20:53	1
Br-PFOA	ND	1.38	2.02	4.04		B9F0102	13-Jun-19	0.247 L	15-Jun-19 20:53	1
Total PFOA	ND	1.38	2.02	4.04		B9F0102	13-Jun-19	0.247 L	15-Jun-19 20:53	1
L-PFHpS	ND	1.38	2.02	4.04		B9F0102	13-Jun-19	0.247 L	15-Jun-19 20:53	1
L-PFNA	ND	1.38	2.02	4.04		B9F0102	13-Jun-19	0.247 L	15-Jun-19 20:53	1
L-PFOSA	ND	1.38	2.02	4.04		B9F0102	13-Jun-19	0.247 L	15-Jun-19 20:53	1
L-PFOS	ND	1.38	2.02	4.04		B9F0102	13-Jun-19	0.247 L	15-Jun-19 20:53	1
Br-PFOS	ND	1.38	2.02	4.04		B9F0102	13-Jun-19	0.247 L	15-Jun-19 20:53	1
Total PFOS	ND	1.38	2.02	4.04		B9F0102	13-Jun-19	0.247 L	15-Jun-19 20:53	1
L-PFDA	ND	1.38	2.02	4.04		B9F0102	13-Jun-19	0.247 L	15-Jun-19 20:53	1
L-8:2FTS	ND	1.38	2.02	4.04		B9F0102	13-Jun-19	0.247 L	15-Jun-19 20:53	1
L-PFNS	ND	1.38	2.02	4.04		B9F0102	13-Jun-19	0.247 L	15-Jun-19 20:53	1
L-MeFOSAA	ND	1.38	2.02	4.04		B9F0102	13-Jun-19	0.247 L	15-Jun-19 20:53	1
Br-MeFOSAA	ND	1.38	2.02	4.04		B9F0102	13-Jun-19	0.247 L	15-Jun-19 20:53	1
Total MeFOSAA	ND	1.38	2.02	4.04		B9F0102	13-Jun-19	0.247 L	15-Jun-19 20:53	1
L-EtFOSAA	ND	1.38	2.02	4.04		B9F0102	13-Jun-19	0.247 L	15-Jun-19 20:53	1
Br-EtFOSAA	ND	1.38	2.02	4.04		B9F0102	13-Jun-19	0.247 L	15-Jun-19 20:53	1
Total EtFOSAA	ND	1.38	2.02	4.04		B9F0102	13-Jun-19	0.247 L	15-Jun-19 20:53	1
L-PFUnA	ND	1.38	2.02	4.04		B9F0102	13-Jun-19	0.247 L	15-Jun-19 20:53	1
L-PFDS	ND	1.38	2.02	4.04		B9F0102	13-Jun-19	0.247 L	15-Jun-19 20:53	1
L-PFDoA	ND	1.38	2.02	4.04		B9F0102	13-Jun-19	0.247 L	15-Jun-19 20:53	1
L-PFTrDA	ND	1.38	2.02	4.04		B9F0102	13-Jun-19	0.247 L	15-Jun-19 20:53	1
L-PFTeDA	ND	1.38	2.02	4.04		B9F0102	13-Jun-19	0.247 L	15-Jun-19 20:53	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	96.7	60 - 130		B9F0102	13-Jun-19	0.247 L	15-Jun-19 20:53	1
13C3-PFPeA	IS	94.5	60 - 150		B9F0102	13-Jun-19	0.247 L	15-Jun-19 20:53	1
13C3-PFBS	IS	93.4	60 - 150		B9F0102	13-Jun-19	0.247 L	15-Jun-19 20:53	1

Sample ID: PW-13-19 **PFAS Isotope Dilution Method**

Client Data

Name: Merit Laboratories, Inc.
Project: Camp Grayling- Lake Margrethe
Matrix: Aqueous
Date Collected: 05-Jun-19 11:40

Laboratory Data

Lab Sample: 1901496-04
Date Received: 06-Jun-19 09:32
Column: BEH C18

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-4:2 FTS	IS	94.5	40 - 150		B9F0102	13-Jun-19	0.247 L	15-Jun-19 20:53	1
13C2-PFHxA	IS	98.3	70 - 130		B9F0102	13-Jun-19	0.247 L	15-Jun-19 20:53	1
13C4-PFHpA	IS	94.5	60 - 150		B9F0102	13-Jun-19	0.247 L	15-Jun-19 20:53	1
13C3-PFHxS	IS	88.9	60 - 130		B9F0102	13-Jun-19	0.247 L	15-Jun-19 20:53	1
13C2-6:2 FTS	IS	98.4	40 - 150		B9F0102	13-Jun-19	0.247 L	15-Jun-19 20:53	1
13C2-PFOA	IS	89.5	60 - 130		B9F0102	13-Jun-19	0.247 L	15-Jun-19 20:53	1
13C5-PFNA	IS	91.0	50 - 130		B9F0102	13-Jun-19	0.247 L	15-Jun-19 20:53	1
13C8-PFOSA	IS	20.0	20 - 150		B9F0102	13-Jun-19	0.247 L	15-Jun-19 20:53	1
13C8-PFOS	IS	94.8	60 - 130		B9F0102	13-Jun-19	0.247 L	15-Jun-19 20:53	1
13C2-PFDA	IS	86.3	60 - 130		B9F0102	13-Jun-19	0.247 L	15-Jun-19 20:53	1
13C2-8:2 FTS	IS	95.2	40 - 150		B9F0102	13-Jun-19	0.247 L	15-Jun-19 20:53	1
d3-MeFOSAA	IS	82.6	50 - 150		B9F0102	13-Jun-19	0.247 L	15-Jun-19 20:53	1
d5-EtFOSAA	IS	82.1	50 - 150		B9F0102	13-Jun-19	0.247 L	15-Jun-19 20:53	1
13C2-PFUnA	IS	73.6	60 - 130		B9F0102	13-Jun-19	0.247 L	15-Jun-19 20:53	1
13C2-PFDoA	IS	75.2	30 - 130		B9F0102	13-Jun-19	0.247 L	15-Jun-19 20:53	1
13C2-PFTeDA	IS	76.7	20 - 150		B9F0102	13-Jun-19	0.247 L	15-Jun-19 20:53	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation
Results reported to the DL.

Sample ID: SW-14-19

PFAS Isotope Dilution Method

Client Data

Name: Merit Laboratories, Inc.
Project: Camp Grayling- Lake Margrethe
Matrix: Aqueous
Date Collected: 05-Jun-19 12:45

Laboratory Data

Lab Sample: 1901496-05
Date Received: 06-Jun-19 09:32
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
L-PFBA	1.49	1.49	2.17	4.35	J	B9F0102	13-Jun-19	0.230 L	15-Jun-19 21:04	1
L-PFPeA	2.20	1.49	2.17	4.35	J	B9F0102	13-Jun-19	0.230 L	15-Jun-19 21:04	1
L-PFBS	ND	1.49	2.17	4.35		B9F0102	13-Jun-19	0.230 L	15-Jun-19 21:04	1
L-4:2 FTS	ND	1.49	2.17	4.35		B9F0102	13-Jun-19	0.230 L	15-Jun-19 21:04	1
L-PFHxA	1.93	1.49	2.17	4.35	J, Q	B9F0102	13-Jun-19	0.230 L	15-Jun-19 21:04	1
L-PFPeS	ND	1.49	2.17	4.35		B9F0102	13-Jun-19	0.230 L	15-Jun-19 21:04	1
L-PFHpA	ND	1.49	2.17	4.35		B9F0102	13-Jun-19	0.230 L	15-Jun-19 21:04	1
L-PFHxS	2.14	1.49	2.17	4.35	J, Q	B9F0102	13-Jun-19	0.230 L	15-Jun-19 21:04	1
Br-PFHxS	ND	1.49	2.17	4.35		B9F0102	13-Jun-19	0.230 L	15-Jun-19 21:04	1
Total PFHxS	2.54	1.49	2.17	4.35	J	B9F0102	13-Jun-19	0.230 L	15-Jun-19 21:04	1
L-6:2 FTS	ND	1.49	2.17	4.35		B9F0102	13-Jun-19	0.230 L	15-Jun-19 21:04	1
L-PFOA	ND	1.49	2.17	4.35		B9F0102	13-Jun-19	0.230 L	15-Jun-19 21:04	1
Br-PFOA	ND	1.49	2.17	4.35		B9F0102	13-Jun-19	0.230 L	15-Jun-19 21:04	1
Total PFOA	ND	1.49	2.17	4.35		B9F0102	13-Jun-19	0.230 L	15-Jun-19 21:04	1
L-PFHpS	ND	1.49	2.17	4.35		B9F0102	13-Jun-19	0.230 L	15-Jun-19 21:04	1
L-PFNA	ND	1.49	2.17	4.35		B9F0102	13-Jun-19	0.230 L	15-Jun-19 21:04	1
L-PFOSA	ND	1.49	2.17	4.35		B9F0102	13-Jun-19	0.230 L	15-Jun-19 21:04	1
L-PFOS	ND	1.49	2.17	4.35		B9F0102	13-Jun-19	0.230 L	15-Jun-19 21:04	1
Br-PFOS	ND	1.49	2.17	4.35		B9F0102	13-Jun-19	0.230 L	15-Jun-19 21:04	1
Total PFOS	2.24	1.49	2.17	4.35	J	B9F0102	13-Jun-19	0.230 L	15-Jun-19 21:04	1
L-PFDA	ND	1.49	2.17	4.35		B9F0102	13-Jun-19	0.230 L	15-Jun-19 21:04	1
L-8:2FTS	ND	1.49	2.17	4.35		B9F0102	13-Jun-19	0.230 L	15-Jun-19 21:04	1
L-PFNS	ND	1.49	2.17	4.35		B9F0102	13-Jun-19	0.230 L	15-Jun-19 21:04	1
L-MeFOSAA	ND	1.49	2.17	4.35		B9F0102	13-Jun-19	0.230 L	15-Jun-19 21:04	1
Br-MeFOSAA	ND	1.49	2.17	4.35		B9F0102	13-Jun-19	0.230 L	15-Jun-19 21:04	1
Total MeFOSAA	ND	1.49	2.17	4.35		B9F0102	13-Jun-19	0.230 L	15-Jun-19 21:04	1
L-EtFOSAA	ND	1.49	2.17	4.35		B9F0102	13-Jun-19	0.230 L	15-Jun-19 21:04	1
Br-EtFOSAA	ND	1.49	2.17	4.35		B9F0102	13-Jun-19	0.230 L	15-Jun-19 21:04	1
Total EtFOSAA	ND	1.49	2.17	4.35		B9F0102	13-Jun-19	0.230 L	15-Jun-19 21:04	1
L-PFUnA	ND	1.49	2.17	4.35		B9F0102	13-Jun-19	0.230 L	15-Jun-19 21:04	1
L-PFDS	ND	1.49	2.17	4.35		B9F0102	13-Jun-19	0.230 L	15-Jun-19 21:04	1
L-PFDoA	ND	1.49	2.17	4.35		B9F0102	13-Jun-19	0.230 L	15-Jun-19 21:04	1
L-PFTrDA	ND	1.49	2.17	4.35		B9F0102	13-Jun-19	0.230 L	15-Jun-19 21:04	1
L-PFTeDA	ND	1.49	2.17	4.35		B9F0102	13-Jun-19	0.230 L	15-Jun-19 21:04	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	98.4	60 - 130		B9F0102	13-Jun-19	0.230 L	15-Jun-19 21:04	1
13C3-PFPeA	IS	94.2	60 - 150		B9F0102	13-Jun-19	0.230 L	15-Jun-19 21:04	1
13C3-PFBS	IS	101	60 - 150		B9F0102	13-Jun-19	0.230 L	15-Jun-19 21:04	1

Sample ID: SW-14-19

PFAS Isotope Dilution Method

Client Data

Name: Merit Laboratories, Inc.
Project: Camp Grayling- Lake Margrethe
Matrix: Aqueous
Date Collected: 05-Jun-19 12:45

Laboratory Data

Lab Sample: 1901496-05
Date Received: 06-Jun-19 09:32
Column: BEH C18

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-4:2 FTS	IS	97.8	40 - 150		B9F0102	13-Jun-19	0.230 L	15-Jun-19 21:04	1
13C2-PFHxA	IS	94.5	70 - 130		B9F0102	13-Jun-19	0.230 L	15-Jun-19 21:04	1
13C4-PFHpA	IS	89.7	60 - 150		B9F0102	13-Jun-19	0.230 L	15-Jun-19 21:04	1
13C3-PFHxS	IS	92.7	60 - 130		B9F0102	13-Jun-19	0.230 L	15-Jun-19 21:04	1
13C2-6:2 FTS	IS	97.4	40 - 150		B9F0102	13-Jun-19	0.230 L	15-Jun-19 21:04	1
13C2-PFOA	IS	92.2	60 - 130		B9F0102	13-Jun-19	0.230 L	15-Jun-19 21:04	1
13C5-PFNA	IS	87.2	50 - 130		B9F0102	13-Jun-19	0.230 L	15-Jun-19 21:04	1
13C8-PFOSA	IS	47.8	20 - 150		B9F0102	13-Jun-19	0.230 L	15-Jun-19 21:04	1
13C8-PFOS	IS	89.3	60 - 130		B9F0102	13-Jun-19	0.230 L	15-Jun-19 21:04	1
13C2-PFDA	IS	88.3	60 - 130		B9F0102	13-Jun-19	0.230 L	15-Jun-19 21:04	1
13C2-8:2 FTS	IS	85.2	40 - 150		B9F0102	13-Jun-19	0.230 L	15-Jun-19 21:04	1
d3-MeFOSAA	IS	83.4	50 - 150		B9F0102	13-Jun-19	0.230 L	15-Jun-19 21:04	1
d5-EtFOSAA	IS	84.1	50 - 150		B9F0102	13-Jun-19	0.230 L	15-Jun-19 21:04	1
13C2-PFUnA	IS	73.4	60 - 130		B9F0102	13-Jun-19	0.230 L	15-Jun-19 21:04	1
13C2-PFDoA	IS	75.1	30 - 130		B9F0102	13-Jun-19	0.230 L	15-Jun-19 21:04	1
13C2-PFTeDA	IS	67.8	20 - 150		B9F0102	13-Jun-19	0.230 L	15-Jun-19 21:04	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation
Results reported to the DL.

Sample ID: PW-14-19 **PFAS Isotope Dilution Method**

Client Data

Name: Merit Laboratories, Inc.
Project: Camp Grayling- Lake Margrethe
Matrix: Aqueous
Date Collected: 05-Jun-19 12:50

Laboratory Data

Lab Sample: 1901496-06
Date Received: 06-Jun-19 09:32
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
L-PFBA	ND	1.34	1.96	3.92		B9F0102	13-Jun-19	0.255 L	15-Jun-19 21:14	1
L-PFPeA	ND	1.34	1.96	3.92		B9F0102	13-Jun-19	0.255 L	15-Jun-19 21:14	1
L-PFBS	ND	1.34	1.96	3.92		B9F0102	13-Jun-19	0.255 L	15-Jun-19 21:14	1
L-4:2 FTS	ND	1.34	1.96	3.92		B9F0102	13-Jun-19	0.255 L	15-Jun-19 21:14	1
L-PFHxA	ND	1.34	1.96	3.92		B9F0102	13-Jun-19	0.255 L	15-Jun-19 21:14	1
L-PFPeS	ND	1.34	1.96	3.92		B9F0102	13-Jun-19	0.255 L	15-Jun-19 21:14	1
L-PFHpA	ND	1.34	1.96	3.92		B9F0102	13-Jun-19	0.255 L	15-Jun-19 21:14	1
L-PFHxS	ND	1.34	1.96	3.92		B9F0102	13-Jun-19	0.255 L	15-Jun-19 21:14	1
Br-PFHxS	ND	1.34	1.96	3.92		B9F0102	13-Jun-19	0.255 L	15-Jun-19 21:14	1
Total PFHxS	ND	1.34	1.96	3.92		B9F0102	13-Jun-19	0.255 L	15-Jun-19 21:14	1
L-6:2 FTS	ND	1.34	1.96	3.92		B9F0102	13-Jun-19	0.255 L	15-Jun-19 21:14	1
L-PFOA	ND	1.34	1.96	3.92		B9F0102	13-Jun-19	0.255 L	15-Jun-19 21:14	1
Br-PFOA	ND	1.34	1.96	3.92		B9F0102	13-Jun-19	0.255 L	15-Jun-19 21:14	1
Total PFOA	ND	1.34	1.96	3.92		B9F0102	13-Jun-19	0.255 L	15-Jun-19 21:14	1
L-PFHpS	ND	1.34	1.96	3.92		B9F0102	13-Jun-19	0.255 L	15-Jun-19 21:14	1
L-PFNA	ND	1.34	1.96	3.92		B9F0102	13-Jun-19	0.255 L	15-Jun-19 21:14	1
L-PFOSA	ND	1.34	1.96	3.92		B9F0102	13-Jun-19	0.255 L	15-Jun-19 21:14	1
L-PFOS	ND	1.34	1.96	3.92		B9F0102	13-Jun-19	0.255 L	15-Jun-19 21:14	1
Br-PFOS	ND	1.34	1.96	3.92		B9F0102	13-Jun-19	0.255 L	15-Jun-19 21:14	1
Total PFOS	ND	1.34	1.96	3.92		B9F0102	13-Jun-19	0.255 L	15-Jun-19 21:14	1
L-PFDA	ND	1.34	1.96	3.92		B9F0102	13-Jun-19	0.255 L	15-Jun-19 21:14	1
L-8:2FTS	ND	1.34	1.96	3.92		B9F0102	13-Jun-19	0.255 L	15-Jun-19 21:14	1
L-PFNS	ND	1.34	1.96	3.92		B9F0102	13-Jun-19	0.255 L	15-Jun-19 21:14	1
L-MeFOSAA	ND	1.34	1.96	3.92		B9F0102	13-Jun-19	0.255 L	15-Jun-19 21:14	1
Br-MeFOSAA	ND	1.34	1.96	3.92		B9F0102	13-Jun-19	0.255 L	15-Jun-19 21:14	1
Total MeFOSAA	ND	1.34	1.96	3.92		B9F0102	13-Jun-19	0.255 L	15-Jun-19 21:14	1
L-EtFOSAA	ND	1.34	1.96	3.92		B9F0102	13-Jun-19	0.255 L	15-Jun-19 21:14	1
Br-EtFOSAA	ND	1.34	1.96	3.92		B9F0102	13-Jun-19	0.255 L	15-Jun-19 21:14	1
Total EtFOSAA	ND	1.34	1.96	3.92		B9F0102	13-Jun-19	0.255 L	15-Jun-19 21:14	1
L-PFUnA	ND	1.34	1.96	3.92		B9F0102	13-Jun-19	0.255 L	15-Jun-19 21:14	1
L-PFDS	ND	1.34	1.96	3.92		B9F0102	13-Jun-19	0.255 L	15-Jun-19 21:14	1
L-PFDoA	ND	1.34	1.96	3.92		B9F0102	13-Jun-19	0.255 L	15-Jun-19 21:14	1
L-PFTrDA	ND	1.34	1.96	3.92		B9F0102	13-Jun-19	0.255 L	15-Jun-19 21:14	1
L-PFTeDA	ND	1.34	1.96	3.92		B9F0102	13-Jun-19	0.255 L	15-Jun-19 21:14	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	98.5	60 - 130		B9F0102	13-Jun-19	0.255 L	15-Jun-19 21:14	1
13C3-PFPeA	IS	94.7	60 - 150		B9F0102	13-Jun-19	0.255 L	15-Jun-19 21:14	1
13C3-PFBS	IS	88.7	60 - 150		B9F0102	13-Jun-19	0.255 L	15-Jun-19 21:14	1

Sample ID: PW-14-19 **PFAS Isotope Dilution Method**

Client Data

Name: Merit Laboratories, Inc.
Project: Camp Grayling- Lake Margrethe
Matrix: Aqueous
Date Collected: 05-Jun-19 12:50

Laboratory Data

Lab Sample: 1901496-06
Date Received: 06-Jun-19 09:32
Column: BEH C18

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-4:2 FTS	IS	92.5	40 - 150		B9F0102	13-Jun-19	0.255 L	15-Jun-19 21:14	1
13C2-PFHxA	IS	98.3	70 - 130		B9F0102	13-Jun-19	0.255 L	15-Jun-19 21:14	1
13C4-PFHpA	IS	97.9	60 - 150		B9F0102	13-Jun-19	0.255 L	15-Jun-19 21:14	1
13C3-PFHxS	IS	88.3	60 - 130		B9F0102	13-Jun-19	0.255 L	15-Jun-19 21:14	1
13C2-6:2 FTS	IS	96.1	40 - 150		B9F0102	13-Jun-19	0.255 L	15-Jun-19 21:14	1
13C2-PFOA	IS	92.8	60 - 130		B9F0102	13-Jun-19	0.255 L	15-Jun-19 21:14	1
13C5-PFNA	IS	86.7	50 - 130		B9F0102	13-Jun-19	0.255 L	15-Jun-19 21:14	1
13C8-PFOSA	IS	65.1	20 - 150		B9F0102	13-Jun-19	0.255 L	15-Jun-19 21:14	1
13C8-PFOS	IS	87.6	60 - 130		B9F0102	13-Jun-19	0.255 L	15-Jun-19 21:14	1
13C2-PFDA	IS	81.1	60 - 130		B9F0102	13-Jun-19	0.255 L	15-Jun-19 21:14	1
13C2-8:2 FTS	IS	85.0	40 - 150		B9F0102	13-Jun-19	0.255 L	15-Jun-19 21:14	1
d3-MeFOSAA	IS	81.5	50 - 150		B9F0102	13-Jun-19	0.255 L	15-Jun-19 21:14	1
d5-EtFOSAA	IS	83.6	50 - 150		B9F0102	13-Jun-19	0.255 L	15-Jun-19 21:14	1
13C2-PFUnA	IS	74.8	60 - 130		B9F0102	13-Jun-19	0.255 L	15-Jun-19 21:14	1
13C2-PFDoA	IS	71.7	30 - 130		B9F0102	13-Jun-19	0.255 L	15-Jun-19 21:14	1
13C2-PFTeDA	IS	78.7	20 - 150		B9F0102	13-Jun-19	0.255 L	15-Jun-19 21:14	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation
Results reported to the DL.

Sample ID: SW-15-19

PFAS Isotope Dilution Method

Client Data

Name: Merit Laboratories, Inc.
Project: Camp Grayling- Lake Margrethe
Matrix: Aqueous
Date Collected: 05-Jun-19 13:15

Laboratory Data

Lab Sample: 1901496-07
Date Received: 06-Jun-19 09:32
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
L-PFBA	ND	1.45	2.12	4.24		B9F0102	13-Jun-19	0.236 L	15-Jun-19 21:57	1
L-PFPeA	ND	1.45	2.12	4.24		B9F0102	13-Jun-19	0.236 L	15-Jun-19 21:57	1
L-PFBS	ND	1.45	2.12	4.24		B9F0102	13-Jun-19	0.236 L	15-Jun-19 21:57	1
L-4:2 FTS	ND	1.45	2.12	4.24		B9F0102	13-Jun-19	0.236 L	15-Jun-19 21:57	1
L-PFHxA	ND	1.45	2.12	4.24		B9F0102	13-Jun-19	0.236 L	15-Jun-19 21:57	1
L-PFPeS	ND	1.45	2.12	4.24		B9F0102	13-Jun-19	0.236 L	15-Jun-19 21:57	1
L-PFHpA	ND	1.45	2.12	4.24		B9F0102	13-Jun-19	0.236 L	15-Jun-19 21:57	1
L-PFHxS	ND	1.45	2.12	4.24		B9F0102	13-Jun-19	0.236 L	15-Jun-19 21:57	1
Br-PFHxS	ND	1.45	2.12	4.24		B9F0102	13-Jun-19	0.236 L	15-Jun-19 21:57	1
Total PFHxS	ND	1.45	2.12	4.24		B9F0102	13-Jun-19	0.236 L	15-Jun-19 21:57	1
L-6:2 FTS	ND	1.45	2.12	4.24		B9F0102	13-Jun-19	0.236 L	15-Jun-19 21:57	1
L-PFOA	ND	1.45	2.12	4.24		B9F0102	13-Jun-19	0.236 L	15-Jun-19 21:57	1
Br-PFOA	ND	1.45	2.12	4.24		B9F0102	13-Jun-19	0.236 L	15-Jun-19 21:57	1
Total PFOA	ND	1.45	2.12	4.24		B9F0102	13-Jun-19	0.236 L	15-Jun-19 21:57	1
L-PFHpS	ND	1.45	2.12	4.24		B9F0102	13-Jun-19	0.236 L	15-Jun-19 21:57	1
L-PFNA	ND	1.45	2.12	4.24		B9F0102	13-Jun-19	0.236 L	15-Jun-19 21:57	1
L-PFOSA	ND	1.45	2.12	4.24		B9F0102	13-Jun-19	0.236 L	15-Jun-19 21:57	1
L-PFOS	ND	1.45	2.12	4.24		B9F0102	13-Jun-19	0.236 L	15-Jun-19 21:57	1
Br-PFOS	ND	1.45	2.12	4.24		B9F0102	13-Jun-19	0.236 L	15-Jun-19 21:57	1
Total PFOS	ND	1.45	2.12	4.24		B9F0102	13-Jun-19	0.236 L	15-Jun-19 21:57	1
L-PFDA	ND	1.45	2.12	4.24		B9F0102	13-Jun-19	0.236 L	15-Jun-19 21:57	1
L-8:2FTS	ND	1.45	2.12	4.24		B9F0102	13-Jun-19	0.236 L	15-Jun-19 21:57	1
L-PFNS	ND	1.45	2.12	4.24		B9F0102	13-Jun-19	0.236 L	15-Jun-19 21:57	1
L-MeFOSAA	ND	1.45	2.12	4.24		B9F0102	13-Jun-19	0.236 L	15-Jun-19 21:57	1
Br-MeFOSAA	ND	1.45	2.12	4.24		B9F0102	13-Jun-19	0.236 L	15-Jun-19 21:57	1
Total MeFOSAA	ND	1.45	2.12	4.24		B9F0102	13-Jun-19	0.236 L	15-Jun-19 21:57	1
L-EtFOSAA	ND	1.45	2.12	4.24		B9F0102	13-Jun-19	0.236 L	15-Jun-19 21:57	1
Br-EtFOSAA	ND	1.45	2.12	4.24		B9F0102	13-Jun-19	0.236 L	15-Jun-19 21:57	1
Total EtFOSAA	ND	1.45	2.12	4.24		B9F0102	13-Jun-19	0.236 L	15-Jun-19 21:57	1
L-PFUnA	ND	1.45	2.12	4.24		B9F0102	13-Jun-19	0.236 L	15-Jun-19 21:57	1
L-PFDS	ND	1.45	2.12	4.24		B9F0102	13-Jun-19	0.236 L	15-Jun-19 21:57	1
L-PFDoA	ND	1.45	2.12	4.24		B9F0102	13-Jun-19	0.236 L	15-Jun-19 21:57	1
L-PFTrDA	ND	1.45	2.12	4.24		B9F0102	13-Jun-19	0.236 L	15-Jun-19 21:57	1
L-PFTeDA	ND	1.45	2.12	4.24		B9F0102	13-Jun-19	0.236 L	15-Jun-19 21:57	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	96.6	60 - 130		B9F0102	13-Jun-19	0.236 L	15-Jun-19 21:57	1
13C3-PFPeA	IS	95.9	60 - 150		B9F0102	13-Jun-19	0.236 L	15-Jun-19 21:57	1
13C3-PFBS	IS	93.2	60 - 150		B9F0102	13-Jun-19	0.236 L	15-Jun-19 21:57	1

Sample ID: SW-15-19 **PFAS Isotope Dilution Method**

Client Data

Name: Merit Laboratories, Inc.
Project: Camp Grayling- Lake Margrethe
Matrix: Aqueous
Date Collected: 05-Jun-19 13:15

Laboratory Data

Lab Sample: 1901496-07
Date Received: 06-Jun-19 09:32
Column: BEH C18

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-4:2 FTS	IS	97.1	40 - 150		B9F0102	13-Jun-19	0.236 L	15-Jun-19 21:57	1
13C2-PFHxA	IS	95.4	70 - 130		B9F0102	13-Jun-19	0.236 L	15-Jun-19 21:57	1
13C4-PFHpA	IS	93.1	60 - 150		B9F0102	13-Jun-19	0.236 L	15-Jun-19 21:57	1
13C3-PFHxS	IS	92.0	60 - 130		B9F0102	13-Jun-19	0.236 L	15-Jun-19 21:57	1
13C2-6:2 FTS	IS	95.1	40 - 150		B9F0102	13-Jun-19	0.236 L	15-Jun-19 21:57	1
13C2-PFOA	IS	90.2	60 - 130		B9F0102	13-Jun-19	0.236 L	15-Jun-19 21:57	1
13C5-PFNA	IS	88.2	50 - 130		B9F0102	13-Jun-19	0.236 L	15-Jun-19 21:57	1
13C8-PFOSA	IS	59.6	20 - 150		B9F0102	13-Jun-19	0.236 L	15-Jun-19 21:57	1
13C8-PFOS	IS	94.0	60 - 130		B9F0102	13-Jun-19	0.236 L	15-Jun-19 21:57	1
13C2-PFDA	IS	80.4	60 - 130		B9F0102	13-Jun-19	0.236 L	15-Jun-19 21:57	1
13C2-8:2 FTS	IS	104	40 - 150		B9F0102	13-Jun-19	0.236 L	15-Jun-19 21:57	1
d3-MeFOSAA	IS	87.9	50 - 150		B9F0102	13-Jun-19	0.236 L	15-Jun-19 21:57	1
d5-EtFOSAA	IS	90.7	50 - 150		B9F0102	13-Jun-19	0.236 L	15-Jun-19 21:57	1
13C2-PFUnA	IS	86.1	60 - 130		B9F0102	13-Jun-19	0.236 L	15-Jun-19 21:57	1
13C2-PFDoA	IS	76.9	30 - 130		B9F0102	13-Jun-19	0.236 L	15-Jun-19 21:57	1
13C2-PFTeDA	IS	81.2	20 - 150		B9F0102	13-Jun-19	0.236 L	15-Jun-19 21:57	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation
Results reported to the DL.

Sample ID: PW-15-19 **PFAS Isotope Dilution Method**

Client Data

Name: Merit Laboratories, Inc.
Project: Camp Grayling- Lake Margrethe
Matrix: Aqueous
Date Collected: 05-Jun-19 13:25

Laboratory Data

Lab Sample: 1901496-08
Date Received: 06-Jun-19 09:32
Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
L-PFBA	ND	1.38	2.02	4.03		B9F0102	13-Jun-19	0.248 L	15-Jun-19 22:07	1
L-PFPeA	ND	1.38	2.02	4.03		B9F0102	13-Jun-19	0.248 L	15-Jun-19 22:07	1
L-PFBS	ND	1.38	2.02	4.03		B9F0102	13-Jun-19	0.248 L	15-Jun-19 22:07	1
L-4:2 FTS	ND	1.38	2.02	4.03		B9F0102	13-Jun-19	0.248 L	15-Jun-19 22:07	1
L-PFHxA	ND	1.38	2.02	4.03		B9F0102	13-Jun-19	0.248 L	15-Jun-19 22:07	1
L-PFPeS	ND	1.38	2.02	4.03		B9F0102	13-Jun-19	0.248 L	15-Jun-19 22:07	1
L-PFHpA	ND	1.38	2.02	4.03		B9F0102	13-Jun-19	0.248 L	15-Jun-19 22:07	1
L-PFHxS	ND	1.38	2.02	4.03		B9F0102	13-Jun-19	0.248 L	15-Jun-19 22:07	1
Br-PFHxS	ND	1.38	2.02	4.03		B9F0102	13-Jun-19	0.248 L	15-Jun-19 22:07	1
Total PFHxS	ND	1.38	2.02	4.03		B9F0102	13-Jun-19	0.248 L	15-Jun-19 22:07	1
L-6:2 FTS	ND	1.38	2.02	4.03		B9F0102	13-Jun-19	0.248 L	15-Jun-19 22:07	1
L-PFOA	ND	1.38	2.02	4.03		B9F0102	13-Jun-19	0.248 L	15-Jun-19 22:07	1
Br-PFOA	ND	1.38	2.02	4.03		B9F0102	13-Jun-19	0.248 L	15-Jun-19 22:07	1
Total PFOA	ND	1.38	2.02	4.03		B9F0102	13-Jun-19	0.248 L	15-Jun-19 22:07	1
L-PFHpS	ND	1.38	2.02	4.03		B9F0102	13-Jun-19	0.248 L	15-Jun-19 22:07	1
L-PFNA	ND	1.38	2.02	4.03		B9F0102	13-Jun-19	0.248 L	15-Jun-19 22:07	1
L-PFOSA	ND	1.38	2.02	4.03		B9F0102	13-Jun-19	0.248 L	15-Jun-19 22:07	1
L-PFOS	ND	1.38	2.02	4.03		B9F0102	13-Jun-19	0.248 L	15-Jun-19 22:07	1
Br-PFOS	ND	1.38	2.02	4.03		B9F0102	13-Jun-19	0.248 L	15-Jun-19 22:07	1
Total PFOS	ND	1.38	2.02	4.03		B9F0102	13-Jun-19	0.248 L	15-Jun-19 22:07	1
L-PFDA	ND	1.38	2.02	4.03		B9F0102	13-Jun-19	0.248 L	15-Jun-19 22:07	1
L-8:2FTS	ND	1.38	2.02	4.03		B9F0102	13-Jun-19	0.248 L	15-Jun-19 22:07	1
L-PFNS	ND	1.38	2.02	4.03		B9F0102	13-Jun-19	0.248 L	15-Jun-19 22:07	1
L-MeFOSAA	ND	1.38	2.02	4.03		B9F0102	13-Jun-19	0.248 L	15-Jun-19 22:07	1
Br-MeFOSAA	ND	1.38	2.02	4.03		B9F0102	13-Jun-19	0.248 L	15-Jun-19 22:07	1
Total MeFOSAA	ND	1.38	2.02	4.03		B9F0102	13-Jun-19	0.248 L	15-Jun-19 22:07	1
L-EtFOSAA	ND	1.38	2.02	4.03		B9F0102	13-Jun-19	0.248 L	15-Jun-19 22:07	1
Br-EtFOSAA	ND	1.38	2.02	4.03		B9F0102	13-Jun-19	0.248 L	15-Jun-19 22:07	1
Total EtFOSAA	ND	1.38	2.02	4.03		B9F0102	13-Jun-19	0.248 L	15-Jun-19 22:07	1
L-PFUnA	ND	1.38	2.02	4.03		B9F0102	13-Jun-19	0.248 L	15-Jun-19 22:07	1
L-PFDS	ND	1.38	2.02	4.03		B9F0102	13-Jun-19	0.248 L	15-Jun-19 22:07	1
L-PFDoA	ND	1.38	2.02	4.03		B9F0102	13-Jun-19	0.248 L	15-Jun-19 22:07	1
L-PFTrDA	ND	1.38	2.02	4.03		B9F0102	13-Jun-19	0.248 L	15-Jun-19 22:07	1
L-PFTeDA	ND	1.37	2.00	4.00		B9F0149	17-Jun-19	0.250 L	22-Jun-19 12:23	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	90.3	60 - 130		B9F0102	13-Jun-19	0.248 L	15-Jun-19 22:07	1
13C3-PFPeA	IS	86.1	60 - 150		B9F0102	13-Jun-19	0.248 L	15-Jun-19 22:07	1
13C3-PFBS	IS	92.6	60 - 150		B9F0102	13-Jun-19	0.248 L	15-Jun-19 22:07	1

Sample ID: PW-15-19

PFAS Isotope Dilution Method

Client Data

Name: Merit Laboratories, Inc.
Project: Camp Grayling- Lake Margrethe
Matrix: Aqueous
Date Collected: 05-Jun-19 13:25

Laboratory Data

Lab Sample: 1901496-08
Date Received: 06-Jun-19 09:32
Column: BEH C18

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-4:2 FTS	IS	93.0	40 - 150		B9F0102	13-Jun-19	0.248 L	15-Jun-19 22:07	1
13C2-PFHxA	IS	87.3	70 - 130		B9F0102	13-Jun-19	0.248 L	15-Jun-19 22:07	1
13C4-PFHpA	IS	76.7	60 - 150		B9F0102	13-Jun-19	0.248 L	15-Jun-19 22:07	1
13C3-PFHxS	IS	82.1	60 - 130		B9F0102	13-Jun-19	0.248 L	15-Jun-19 22:07	1
13C2-6:2 FTS	IS	87.9	40 - 150		B9F0102	13-Jun-19	0.248 L	15-Jun-19 22:07	1
13C2-PFOA	IS	72.6	60 - 130		B9F0102	13-Jun-19	0.248 L	15-Jun-19 22:07	1
13C5-PFNA	IS	65.8	50 - 130		B9F0102	13-Jun-19	0.248 L	15-Jun-19 22:07	1
13C8-PFOSA	IS	12.3	20 - 150	H	B9F0102	13-Jun-19	0.248 L	15-Jun-19 22:07	1
13C8-PFOS	IS	61.7	60 - 130		B9F0102	13-Jun-19	0.248 L	15-Jun-19 22:07	1
13C2-PFDA	IS	54.7	60 - 130	H	B9F0102	13-Jun-19	0.248 L	15-Jun-19 22:07	1
13C2-8:2 FTS	IS	49.6	40 - 150		B9F0102	13-Jun-19	0.248 L	15-Jun-19 22:07	1
d3-MeFOSAA	IS	53.2	50 - 150		B9F0102	13-Jun-19	0.248 L	15-Jun-19 22:07	1
d5-EtFOSAA	IS	47.3	50 - 150	H	B9F0102	13-Jun-19	0.248 L	15-Jun-19 22:07	1
13C2-PFUnA	IS	44.6	60 - 130	H	B9F0102	13-Jun-19	0.248 L	15-Jun-19 22:07	1
13C2-PFDoA	IS	15.2	30 - 130	H	B9F0102	13-Jun-19	0.248 L	15-Jun-19 22:07	1
13C2-PFTeDA	IS	14.8	20 - 150	H	B9F0149	17-Jun-19	0.250 L	22-Jun-19 12:23	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation
Results reported to the DL.

DATA QUALIFIERS & ABBREVIATIONS

B	This compound was also detected in the method blank
Conc.	Concentration
D	Dilution
DL	Detection limit
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
LOD	Limits of Detection
LOQ	Limits of Quantitation
M	Estimated Maximum Possible Concentration (CA Region 2 projects only)
NA	Not applicable
ND	Not Detected
P	The reported concentration may include contribution from chlorinated diphenyl ether(s).
Q	The ion transition ratio is outside of the acceptance criteria.
TEQ	Toxic Equivalency
U	Not Detected (specific projects only)
*	See Cover Letter

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

Vista Analytical Laboratory Certifications

Accrediting Authority	Certificate Number
Alaska Department of Environmental Conservation	17-013
Arkansas Department of Environmental Quality	19-013-0
California Department of Health – ELAP	2892
DoD ELAP - A2LA Accredited - ISO/IEC 17025:2005	3091.01
Florida Department of Health	E87777-20
Hawaii Department of Health	N/A
Louisiana Department of Environmental Quality	01977
Maine Department of Health	2018017
Michigan Department of Environmental Quality	9932
Minnesota Department of Health	1521520
New Hampshire Environmental Accreditation Program	207718-B
New Jersey Department of Environmental Protection	180001
New York Department of Health	11411
Oregon Laboratory Accreditation Program	4042-010
Pennsylvania Department of Environmental Protection	015
Texas Commission on Environmental Quality	T104704189-19-10
Virginia Department of General Services	10272
Washington Department of Ecology	C584-19
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
Determination of Polychlorinated p-Dioxins & Polychlorinated Dibenzofurans	EPA TO-9A

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 1613/1613B
1,4-Dioxane (1,4-Diethyleneoxide) analysis by GC/HRMS	EPA 522
Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS	EPA 537
Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS	ISO 25101 2009

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 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

Vista Analytical Laboratory

CHAIN OF CUSTODY

For Laboratory Use Only
Work Order #: 1901496 Temp: 5.3 °C
Storage ID: WR-2 ; R-13 Storage Secured: Yes ☑ No ☐

Project ID: **Camp Grayling - Lake Margrethe** PO#: **60563409** Sampler: Brian Evatice (name)

TAT (check one): Standard: x 21 days; Rush (surcharge may apply): ☐ 14 days ☐ 7 days Specify:

Invoice to: Name	Company	Address	City	State	Ph#	Fax#
Randy Rothe	EGLE-RRD	2100 ~~M-21~~ M-32	Gaylord	MI	989-705-3416	

Relinquished by (printed name and signature)	Date	Time	Received by (printed name and signature)	Date	Time
Brian Evatice	6/5/19	1530	UPS		
Relinquished by (printed name and signature)	Date	Time	Received by (printed name and signature)	Date	Time
UPS			B. Benedict	06/06/19	0932

SHIP TO: Vista Analytical Laboratory
1104 Windfield Way
El Dorado Hills, CA 95762
(916) 673-1520 * Fax (916) 673-0106

ATTN: Jennifer Miller

Method of Shipment: UPS
Tracking No.:

Add Analysis(es) Requested

Sample ID	Date	Time	Location/Sample Description	Container(s) Quantity	Type	Matrix	Mod. EPA Method 537: PFOA/ PFOS	UCMR3 PFAS List:6	537 List: 14	Full List of 24	Other: Please List Below	Branch and Linear	EPA Method 537(DW only): PFOA/ PFOS	UCMR3 PFAS List:6	PFAS List: 14	Comments
SW-12-19	6/5/19	1105		2	P	AQ				X		X				
PW-12-19	↑	1110		2	P	AQ				X		X				
* SED-13-19		1130		1	PJ	SO				X		X				
SW-13-19		1135		2	P	AQ				X		X				
PW-13-19		1140		2	P	AQ				X		X				
SW-14-19		1245		2	P	AQ				X		X				
* SED-14-19		1240		1	PJ	SO				X		X				
PW-14-19		1250		2	P	AQ				X		X				
* SED-15-19	↓	1311		1	PJ	AQ				X		X				
SW-15-19	6/5/19	1315		2	P	SO				X		X				

Special Instructions/Comments: **Send Results and Acknowledgements to:**

Bonc@michigan.gov
~~Derin.Bogdan@aecom.com~~
Robert.Kennedy@aecom.com
~~Jeremiah.Morse@aecom.com~~
evatice@michigan.gov

* WO# 1901484

SEND DOCUMENTATION AND RESULTS TO:

Name: Randy Rothe
Company: MDEQ
Address: 2100 ~~M-21~~ M-32
City: Gaylord State: MI Zip: 49735
Phone: 989-705-3416 Fax:
Email: ROTHER@michigan.gov

Container Types: P= HDPE, PJ= HDPE Jar, O = Other:

Bottle Preservation Type: T = Thiosulfate, TZ = Trizma:

Matrix Types: AQ = Aqueous, DW = Drinking Water, EF = Effluent, PP = Pulp/Paper, SD = Sediment, SL = Sludge, SO = Soil, WW = Wastewater, B = Blood/Serum, O = Other:

Rev. No.: 0
Rev. Date: 06/27/2017

ID: LR - 537COC

Vista Analytical Laboratory

CHAIN OF CUSTODY

For Laboratory Use Only
Work Order #: 1901496 Temp: 5.3 °C
Storage ID: WR-2 ; R-13 Storage Secured: Yes ☐ No ☐

Project ID: Camp Grayling - Lake Margrethe PO#: 6056340? Sampler: B. Eustice (name)

TAT (check one): Standard: ☐ 21 days Rush (surcharge may apply) ☐ 14 days ☐ 7 days Specify:

Invoice to: Name	Company	Address	City	State	Ph#	Fax#
Randy Rothe	EGLE-RRD	2100 W. M-32	Gaylord	MI	989-705-7416	

Relinquished by (printed name and signature)	Date	Time	Received by (printed name and signature)	Date	Time
Brian Eustice	6/5/19	1570	UPS		
Relinquished by (printed name and signature)	Date	Time	Received by (printed name and signature)	Date	Time
UPS			B. Benedict	06/06/19	0932

SHIP TO: Vista Analytical Laboratory
1104 Windfield Way
El Dorado Hills, CA 95762
(916) 673-1520 * Fax (916) 673-0106

Method of Shipment: UPS

ATTN: _____ Tracking No.: _____

Sample ID	Date	Time	Location/Sample Description	Container(s) Quantity	Type	Matrix	Add Analysis(es) Requested: Mod. EPA Method 537 PFOA/PFOS	UCMR3 PFAS List 6	537 List: 14	Full List of 26	Other: Please List Below: Branch and Linear	EPA Method 537(DW only) PFOA/PFOS	UCMR3 PFAS List 6	PFAS List: 14	Comments
PW-15-19	6/5/19	1325		2	P	AQ				X	X				
											X				
											X				
											X				
											X				
											X				
											X				
											X				
											X				
											X				

Special Instructions/Comments: Send results + Acknowledgement to
Rothe@michigan.gov
~~Paula Bogdanowicz@michigan.gov~~
~~Robert Brady@michigan.gov~~
~~Jennifer Moore@michigan.gov~~
Eustice@michigan.gov

SEND DOCUMENTATION AND RESULTS TO:

Name: Randy Rothe
Company: EGLE - RRD
Address: 2100 W. M-32
City: Gaylord State: MI Zip: 49735
Phone: 989-705-7416 Fax:
Email: Rothe@michigan.gov

Container Types: P= HDPE, PJ= HDPE Jar
O = Other: _____

Bottle Preservation Type: T = Thiosulfate,
TZ = Trizma: _____

Matrix Types: AQ = Aqueous, DW = Drinking Water, EF = Effluent, PP = Pulp/Paper, SD = Sediment, SL = Sludge, SO = Soil, WW = Wastewater, B = Blood/Serum, O = Other: _____

Page: 1 of 1

Vista Analytical Laboratory

Sample Log-In Checklist

Page # 1 of 1

Vista Work Order #: 1901496 TAT ~~Std~~

Samples Arrival:	**Date/Time** 06/06/19 0932	**Initials:** BLB	**Location:** WR-2 **Shelf/Rack:** NA
Logged In:	**Date/Time** 06/07/19 1505	**Initials:** BLB	**Location:** WR-2 / R-13 **Shelf/Rack:** E7 / A2

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

Temp °C: 5.3 (uncorrected)	**Probe used:** Y (N)	**Thermometer ID:** IR-3
Temp °C: 5.3 (corrected)		

	YES	NO	NA
Adequate Sample Volume Received?	✓		
Holding Time Acceptable?	✓		
Shipping Container(s) Intact?	✓		
Shipping Custody Seals Intact? Picture taken		✓	
Shipping Documentation Present?	✓		
Airbill — Trk # 460 7257225	✓		
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)	Other		Yes	No	NA
Shipping Container	(Vista)	Client	(Retain)	Return		Dispose	

Comments: ~~✓~~ Sample matrix on COC for sample "SED-15-19" is AQ (WO# 1901484)
"SW-15-19" is SED

Chain of Custody Anomaly/Sample Acceptance Form

Vista Analytical Laboratory

Client: Merit Laboratories, Inc.
Contact: Maya Murshak
Email: mayamurshak@meritlabs.com
Phone: (517) 827-2744

Workorder Number: ~~1901486~~ 1901496 06/27/19
Date Received: 07-Jun-19 09:45
Documented by/date: K. Elric 06/27/19

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.

- [ ] Sample Collection Date and/or Time not provided
- [ ] Temperature outside Method Requirement (WI-PHT)
  Temperature _____°C Ice Present? Yes No Melted
- [ ] Sample ID Not Reconcilable
- [ ] Sample Holding Time Missed
- [ ] Insufficient Sample Size
- [ ] All Sample Container(s) Broken
- [ ] Drinking Water Incorrect Container Type
- [ ] Chain-of-Custody not received, illegible or destroyed
- [X] Other: **Sample Matrix discrepancy, see below**

Comments/Samples Affected:

✓ **Chain of Custody ID:** SW-15-19 **COC Matrix:** SED
Sample appears to be an Aqueous sample.

Client Authorization

Proceed with Analysis: (YES) NO Signature and Date _____ 06/27/19

Client Comments/Instructions Per Brian Eustice via email on 06/27/19, report the sample as aqueous.

APPENDIX B

Camp Grayling-Lake Margrethe, Crawford County
Site ID #: N/A

Vista Analytical Laboratory Sediment Results

June 28, 2019

Vista Work Order No. 1901484

Ms. Maya Murshak
Merit Laboratories, Inc.
2680 East Lansing Drive
East Lansing, MI 48823

Dear Ms. Murshak,

Enclosed are the results for the sample set received at Vista Analytical Laboratory on June 06, 2019 under your Project Name 'Camp Grayling- Lake Margrethe'.

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,

Martha Maier
Laboratory Director

Vista Work Order No. 1901484
Case Narrative

Sample Condition on Receipt:

Thirteen sediment 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. The matrix for sample "SED-15-19" was identified as aqueous on the COC. As directed by the client, sample "SED-15-19" was processed as an sediment sample.

Analytical Notes:

VAL-PFAS Method

The samples were extracted and analyzed for a selected list of PFAS using VAL Method PFAS.

Holding Times

The samples were extracted and analyzed within the 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.

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

QC Anomalies

LabNumber	SampleName	Analysis	Analyte	Flag	%Rec
B9F0182-BLK1	B9F0182-BLK1	VAL - PFAS	13C2-PFUnA	H	57.3

H = Recovery was outside laboratory acceptance criteria.

TABLE OF CONTENTS

Sample Inventory Report

Vista Sample ID	Client Sample ID	Sampled	Received	Components/Containers
1901484-01	SED-04-19	04-Jun-19 08:20	06-Jun-19 09:32	HDPE Jar, 6 oz
1901484-02	SED-05-19	04-Jun-19 09:05	06-Jun-19 09:32	HDPE Jar, 6 oz
1901484-03	SED-06-19	04-Jun-19 09:30	06-Jun-19 09:32	HDPE Jar, 6 oz
1901484-04	SED-07-19	04-Jun-19 10:10	06-Jun-19 09:32	HDPE Jar, 6 oz
1901484-05	SED-01-19	04-Jun-19 10:45	06-Jun-19 09:32	HDPE Jar, 6 oz
1901484-06	SED-02-19	04-Jun-19 11:15	06-Jun-19 09:32	HDPE Jar, 6 oz
1901484-07	SED-03-19	04-Jun-19 11:50	06-Jun-19 09:32	HDPE Jar, 6 oz
1901484-08	SED-10-19	04-Jun-19 12:35	06-Jun-19 09:32	HDPE Jar, 6 oz
1901484-09	SED-DUP	04-Jun-19 00:00	06-Jun-19 09:32	HDPE Jar, 6 oz
1901484-10	SED-12-19	05-Jun-19 11:00	06-Jun-19 09:32	HDPE Jar, 6 oz
1901484-11	SED-13-19	05-Jun-19 11:30	06-Jun-19 09:32	HDPE Jar, 6 oz
1901484-12	SED-14-19	05-Jun-19 12:40	06-Jun-19 09:32	HDPE Jar, 6 oz
1901484-13	SED-15-19	05-Jun-19 13:11	06-Jun-19 09:32	HDPE Jar, 6 oz

ANALYTICAL RESULTS

Sample ID: Method Blank

VAL - PFAS

Client Data

Name: Merit Laboratories, Inc.
Project: Camp Grayling- Lake Margrethe
Matrix: Solid

Laboratory Data

Lab Sample: B9F0182-BLK1
Column: BEH C18

Analyte	Conc. (ng/g)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
L-PFBA	ND	0.845	1.00	2.00		B9F0182	24-Jun-19	1.00 g	27-Jun-19 13:23	1
L-PFPeA	ND	0.845	1.00	2.00		B9F0182	24-Jun-19	1.00 g	27-Jun-19 13:23	1
L-PFBS	ND	0.845	1.00	2.00		B9F0182	24-Jun-19	1.00 g	27-Jun-19 13:23	1
L-4:2 FTS	ND	0.845	1.00	2.00		B9F0182	24-Jun-19	1.00 g	27-Jun-19 13:23	1
L-PFHxA	ND	0.845	1.00	2.00		B9F0182	24-Jun-19	1.00 g	27-Jun-19 13:23	1
L-PFPeS	ND	0.845	1.00	2.00		B9F0182	24-Jun-19	1.00 g	27-Jun-19 13:23	1
L-PFHpA	ND	0.845	1.00	2.00		B9F0182	24-Jun-19	1.00 g	27-Jun-19 13:23	1
L-PFHxS	ND	0.845	1.00	2.00		B9F0182	24-Jun-19	1.00 g	27-Jun-19 13:23	1
Br-PFHxS	ND	0.845	1.00	2.00		B9F0182	24-Jun-19	1.00 g	27-Jun-19 13:23	1
Total PFHxS	ND	0.845	1.00	2.00		B9F0182	24-Jun-19	1.00 g	27-Jun-19 13:23	1
L-6:2 FTS	ND	0.845	1.00	2.00		B9F0182	24-Jun-19	1.00 g	27-Jun-19 13:23	1
L-PFOA	ND	0.845	1.00	2.00		B9F0182	24-Jun-19	1.00 g	27-Jun-19 13:23	1
Br-PFOA	ND	0.845	1.00	2.00		B9F0182	24-Jun-19	1.00 g	27-Jun-19 13:23	1
Total PFOA	ND	0.845	1.00	2.00		B9F0182	24-Jun-19	1.00 g	27-Jun-19 13:23	1
L-PFHpS	ND	0.845	1.00	2.00		B9F0182	24-Jun-19	1.00 g	27-Jun-19 13:23	1
L-PFNA	ND	0.845	1.00	2.00		B9F0182	24-Jun-19	1.00 g	27-Jun-19 13:23	1
L-PFOSA	ND	0.845	1.00	2.00		B9F0182	24-Jun-19	1.00 g	27-Jun-19 13:23	1
L-PFOS	ND	0.845	1.00	2.00		B9F0182	24-Jun-19	1.00 g	27-Jun-19 13:23	1
Br-PFOS	ND	0.845	1.00	2.00		B9F0182	24-Jun-19	1.00 g	27-Jun-19 13:23	1
Total PFOS	ND	0.845	1.00	2.00		B9F0182	24-Jun-19	1.00 g	27-Jun-19 13:23	1
L-PFDA	ND	0.845	1.00	2.00		B9F0182	24-Jun-19	1.00 g	27-Jun-19 13:23	1
L-8:2FTS	ND	0.845	1.00	2.00		B9F0182	24-Jun-19	1.00 g	27-Jun-19 13:23	1
L-PFNS	ND	0.845	1.00	2.00		B9F0182	24-Jun-19	1.00 g	27-Jun-19 13:23	1
L-MeFOSAA	ND	0.845	1.00	2.00		B9F0182	24-Jun-19	1.00 g	27-Jun-19 13:23	1
Br-MeFOSAA	ND	0.845	1.00	2.00		B9F0182	24-Jun-19	1.00 g	27-Jun-19 13:23	1
Total MeFOSAA	ND	0.845	1.00	2.00		B9F0182	24-Jun-19	1.00 g	27-Jun-19 13:23	1
L-EtFOSAA	ND	0.845	1.00	2.00		B9F0182	24-Jun-19	1.00 g	27-Jun-19 13:23	1
Br-EtFOSAA	ND	0.845	1.00	2.00		B9F0182	24-Jun-19	1.00 g	27-Jun-19 13:23	1
Total EtFOSAA	ND	0.845	1.00	2.00		B9F0182	24-Jun-19	1.00 g	27-Jun-19 13:23	1
L-PFUnA	ND	0.845	1.00	2.00		B9F0182	24-Jun-19	1.00 g	27-Jun-19 13:23	1
L-PFDS	ND	0.845	1.00	2.00		B9F0182	24-Jun-19	1.00 g	27-Jun-19 13:23	1
L-PFDoA	ND	0.845	1.00	2.00		B9F0182	24-Jun-19	1.00 g	27-Jun-19 13:23	1
L-PFTrDA	ND	0.845	1.00	2.00		B9F0182	24-Jun-19	1.00 g	27-Jun-19 13:23	1
L-PFTeDA	ND	0.845	1.00	2.00		B9F0182	24-Jun-19	1.00 g	27-Jun-19 13:23	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	93.5	60 - 130		B9F0182	24-Jun-19	1.00 g	27-Jun-19 13:23	1
13C3-PFPeA	IS	91.5	60 - 150		B9F0182	24-Jun-19	1.00 g	27-Jun-19 13:23	1
13C3-PFBS	IS	109	60 - 150		B9F0182	24-Jun-19	1.00 g	27-Jun-19 13:23	1

Sample ID: Method Blank

VAL - PFAS

Client Data

Name: Merit Laboratories, Inc.
Project: Camp Grayling- Lake Margrethe
Matrix: Solid

Laboratory Data

Lab Sample: B9F0182-BLK1
Column: BEH C18

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-4:2 FTS	IS	99.3	40 - 150		B9F0182	24-Jun-19	1.00 g	27-Jun-19 13:23	1
13C2-PFHxA	IS	92.1	70 - 130		B9F0182	24-Jun-19	1.00 g	27-Jun-19 13:23	1
13C4-PFHpA	IS	95.2	60 - 150		B9F0182	24-Jun-19	1.00 g	27-Jun-19 13:23	1
13C3-PFHxS	IS	94.2	60 - 130		B9F0182	24-Jun-19	1.00 g	27-Jun-19 13:23	1
13C2-6:2 FTS	IS	90.2	40 - 150		B9F0182	24-Jun-19	1.00 g	27-Jun-19 13:23	1
13C2-PFOA	IS	79.0	60 - 130		B9F0182	24-Jun-19	1.00 g	27-Jun-19 13:23	1
13C5-PFNA	IS	79.3	50 - 130		B9F0182	24-Jun-19	1.00 g	27-Jun-19 13:23	1
13C8-PFOSA	IS	37.6	20 - 150		B9F0182	24-Jun-19	1.00 g	27-Jun-19 13:23	1
13C8-PFOS	IS	86.3	60 - 130		B9F0182	24-Jun-19	1.00 g	27-Jun-19 13:23	1
13C2-PFDA	IS	65.3	60 - 130		B9F0182	24-Jun-19	1.00 g	27-Jun-19 13:23	1
13C2-8:2 FTS	IS	94.6	40 - 150		B9F0182	24-Jun-19	1.00 g	27-Jun-19 13:23	1
d3-MeFOSAA	IS	61.1	50 - 150		B9F0182	24-Jun-19	1.00 g	27-Jun-19 13:23	1
d5-EtFOSAA	IS	63.5	50 - 150		B9F0182	24-Jun-19	1.00 g	27-Jun-19 13:23	1
13C2-PFUnA	IS	57.3	60 - 130	H	B9F0182	24-Jun-19	1.00 g	27-Jun-19 13:23	1
13C2-PFDoA	IS	57.4	30 - 130		B9F0182	24-Jun-19	1.00 g	27-Jun-19 13:23	1
13C2-PFTeDA	IS	62.6	20 - 150		B9F0182	24-Jun-19	1.00 g	27-Jun-19 13:23	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation

The results are reported in dry weight.
The sample size is reported in wet weight.
Results reported to the DL.

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

Sample ID: OPR **VAL - PFAS**

Client Data

Name: Merit Laboratories, Inc.
Project: Camp Grayling- Lake Margrethe
Matrix: Solid

Laboratory Data

Lab Sample: B9F0182-BS1
Column: BEH C18

Analyte	Amt Found (ng/g)	Spike Amt	% Rec	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
L-PFBA	10.1	10.0	101	70 - 130		B9F0182	24-Jun-19	1.00 g	27-Jun-19 13:12	1
L-PFPeA	9.93	10.0	99.3	70 - 130		B9F0182	24-Jun-19	1.00 g	27-Jun-19 13:12	1
L-PFBS	9.93	10.0	99.3	70 - 130		B9F0182	24-Jun-19	1.00 g	27-Jun-19 13:12	1
L-4:2 FTS	11.0	10.0	110	60 - 130		B9F0182	24-Jun-19	1.00 g	27-Jun-19 13:12	1
L-PFHxA	10.2	10.0	102	70 - 130		B9F0182	24-Jun-19	1.00 g	27-Jun-19 13:12	1
L-PFPeS	10.4	10.0	104	70 - 130		B9F0182	24-Jun-19	1.00 g	27-Jun-19 13:12	1
L-PFHpA	9.68	10.0	96.8	70 - 130		B9F0182	24-Jun-19	1.00 g	27-Jun-19 13:12	1
Total PFHxS	9.15	10.0	91.5	70 - 130		B9F0182	24-Jun-19	1.00 g	27-Jun-19 13:12	1
L-6:2 FTS	10.9	10.0	109	60 - 130		B9F0182	24-Jun-19	1.00 g	27-Jun-19 13:12	1
Total PFOA	10.2	10.0	102	70 - 130		B9F0182	24-Jun-19	1.00 g	27-Jun-19 13:12	1
L-PFHpS	11.5	10.0	115	60 - 130		B9F0182	24-Jun-19	1.00 g	27-Jun-19 13:12	1
L-PFNA	9.72	10.0	97.2	70 - 130		B9F0182	24-Jun-19	1.00 g	27-Jun-19 13:12	1
L-PFOSA	9.64	10.0	96.4	70 - 130		B9F0182	24-Jun-19	1.00 g	27-Jun-19 13:12	1
Total PFOS	10.1	10.0	101	70 - 130		B9F0182	24-Jun-19	1.00 g	27-Jun-19 13:12	1
L-PFDA	10.6	10.0	106	70 - 130		B9F0182	24-Jun-19	1.00 g	27-Jun-19 13:12	1
L-8:2FTS	12.0	10.0	120	60 - 130		B9F0182	24-Jun-19	1.00 g	27-Jun-19 13:12	1
L-PFNS	9.84	10.0	98.4	70 - 130		B9F0182	24-Jun-19	1.00 g	27-Jun-19 13:12	1
Total MeFOSAA	11.4	10.0	114	70 - 130		B9F0182	24-Jun-19	1.00 g	27-Jun-19 13:12	1
Total EtFOSAA	9.81	10.0	98.1	70 - 130		B9F0182	24-Jun-19	1.00 g	27-Jun-19 13:12	1
L-PFUnA	10.4	10.0	104	70 - 130		B9F0182	24-Jun-19	1.00 g	27-Jun-19 13:12	1
L-PFDS	8.90	10.0	89.0	60 - 130		B9F0182	24-Jun-19	1.00 g	27-Jun-19 13:12	1
L-PFDoA	10.4	10.0	104	70 - 130		B9F0182	24-Jun-19	1.00 g	27-Jun-19 13:12	1
L-PFTrDA	10.4	10.0	104	60 - 130		B9F0182	24-Jun-19	1.00 g	27-Jun-19 13:12	1
L-PFTeDA	10.9	10.0	109	70 - 130		B9F0182	24-Jun-19	1.00 g	27-Jun-19 13:12	1

Labeled Standards	Type	% Rec	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	98.8	60- 130		B9F0182	24-Jun-19	1.00 g	27-Jun-19 13:12	1
13C3-PFPeA	IS	92.6	60- 150		B9F0182	24-Jun-19	1.00 g	27-Jun-19 13:12	1
13C3-PFBS	IS	99.8	60- 150		B9F0182	24-Jun-19	1.00 g	27-Jun-19 13:12	1
13C2-4:2 FTS	IS	97.0	40- 150		B9F0182	24-Jun-19	1.00 g	27-Jun-19 13:12	1
13C2-PFHxA	IS	96.5	70- 130		B9F0182	24-Jun-19	1.00 g	27-Jun-19 13:12	1
13C4-PFHpA	IS	99.0	60- 150		B9F0182	24-Jun-19	1.00 g	27-Jun-19 13:12	1
13C3-PFHxS	IS	96.9	60- 130		B9F0182	24-Jun-19	1.00 g	27-Jun-19 13:12	1
13C2-6:2 FTS	IS	94.8	40- 150		B9F0182	24-Jun-19	1.00 g	27-Jun-19 13:12	1
13C2-PFOA	IS	95.5	60- 130		B9F0182	24-Jun-19	1.00 g	27-Jun-19 13:12	1
13C5-PFNA	IS	89.0	50- 130		B9F0182	24-Jun-19	1.00 g	27-Jun-19 13:12	1

Sample ID: OPR **VAL - PFAS**

Client Data

Name: Merit Laboratories, Inc.
Project: Camp Grayling- Lake Margrethe
Matrix: Solid

Laboratory Data

Lab Sample: B9F0182-BS1
Column: BEH C18

Labeled Standards	Type	% Rec	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C8-PFOSA	IS	50.8	20- 150		B9F0182	24-Jun-19	1.00 g	27-Jun-19 13:12	1
13C8-PFOS	IS	91.0	60- 130		B9F0182	24-Jun-19	1.00 g	27-Jun-19 13:12	1
13C2-PFDA	IS	74.4	60- 130		B9F0182	24-Jun-19	1.00 g	27-Jun-19 13:12	1
13C2-8:2 FTS	IS	90.7	40- 150		B9F0182	24-Jun-19	1.00 g	27-Jun-19 13:12	1
d3-MeFOSAA	IS	64.6	50- 150		B9F0182	24-Jun-19	1.00 g	27-Jun-19 13:12	1
d5-EtFOSAA	IS	68.2	50- 150		B9F0182	24-Jun-19	1.00 g	27-Jun-19 13:12	1
13C2-PFUnA	IS	62.6	60- 130		B9F0182	24-Jun-19	1.00 g	27-Jun-19 13:12	1
13C2-PFDoA	IS	65.9	30- 130		B9F0182	24-Jun-19	1.00 g	27-Jun-19 13:12	1
13C2-PFTeDA	IS	66.9	20- 150		B9F0182	24-Jun-19	1.00 g	27-Jun-19 13:12	1

Sample ID: SED-04-19

VAL - PFAS

Client Data

Name: Merit Laboratories, Inc.
Project: Camp Grayling- Lake Margrethe
Matrix: Sediment
Date Collected: 04-Jun-19 08:20

Laboratory Data

Lab Sample: 1901484-01
Date Received: 06-Jun-19 09:32
% Solids: 77.6
Column: BEH C18

Analyte	Conc. (ng/g)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
L-PFBA	ND	0.778	0.920	1.84		B9F0182	24-Jun-19	1.40 g	27-Jun-19 13:33	1
L-PFPeA	ND	0.778	0.920	1.84		B9F0182	24-Jun-19	1.40 g	27-Jun-19 13:33	1
L-PFBS	ND	0.778	0.920	1.84		B9F0182	24-Jun-19	1.40 g	27-Jun-19 13:33	1
L-4:2 FTS	ND	0.778	0.920	1.84		B9F0182	24-Jun-19	1.40 g	27-Jun-19 13:33	1
L-PFHxA	ND	0.778	0.920	1.84		B9F0182	24-Jun-19	1.40 g	27-Jun-19 13:33	1
L-PFPeS	ND	0.778	0.920	1.84		B9F0182	24-Jun-19	1.40 g	27-Jun-19 13:33	1
L-PFHpA	ND	0.778	0.920	1.84		B9F0182	24-Jun-19	1.40 g	27-Jun-19 13:33	1
L-PFHxS	ND	0.778	0.920	1.84		B9F0182	24-Jun-19	1.40 g	27-Jun-19 13:33	1
Br-PFHxS	ND	0.778	0.920	1.84		B9F0182	24-Jun-19	1.40 g	27-Jun-19 13:33	1
Total PFHxS	ND	0.778	0.920	1.84		B9F0182	24-Jun-19	1.40 g	27-Jun-19 13:33	1
L-6:2 FTS	ND	0.778	0.920	1.84		B9F0182	24-Jun-19	1.40 g	27-Jun-19 13:33	1
L-PFOA	ND	0.778	0.920	1.84		B9F0182	24-Jun-19	1.40 g	27-Jun-19 13:33	1
Br-PFOA	ND	0.778	0.920	1.84		B9F0182	24-Jun-19	1.40 g	27-Jun-19 13:33	1
Total PFOA	ND	0.778	0.920	1.84		B9F0182	24-Jun-19	1.40 g	27-Jun-19 13:33	1
L-PFHpS	ND	0.778	0.920	1.84		B9F0182	24-Jun-19	1.40 g	27-Jun-19 13:33	1
L-PFNA	ND	0.778	0.920	1.84		B9F0182	24-Jun-19	1.40 g	27-Jun-19 13:33	1
L-PFOSA	ND	0.778	0.920	1.84		B9F0182	24-Jun-19	1.40 g	27-Jun-19 13:33	1
L-PFOS	ND	0.778	0.920	1.84		B9F0182	24-Jun-19	1.40 g	27-Jun-19 13:33	1
Br-PFOS	ND	0.778	0.920	1.84		B9F0182	24-Jun-19	1.40 g	27-Jun-19 13:33	1
Total PFOS	ND	0.778	0.920	1.84		B9F0182	24-Jun-19	1.40 g	27-Jun-19 13:33	1
L-PFDA	ND	0.778	0.920	1.84		B9F0182	24-Jun-19	1.40 g	27-Jun-19 13:33	1
L-8:2FTS	ND	0.778	0.920	1.84		B9F0182	24-Jun-19	1.40 g	27-Jun-19 13:33	1
L-PFNS	ND	0.778	0.920	1.84		B9F0182	24-Jun-19	1.40 g	27-Jun-19 13:33	1
L-MeFOSAA	ND	0.778	0.920	1.84		B9F0182	24-Jun-19	1.40 g	27-Jun-19 13:33	1
Br-MeFOSAA	ND	0.778	0.920	1.84		B9F0182	24-Jun-19	1.40 g	27-Jun-19 13:33	1
Total MeFOSAA	ND	0.778	0.920	1.84		B9F0182	24-Jun-19	1.40 g	27-Jun-19 13:33	1
L-EtFOSAA	ND	0.778	0.920	1.84		B9F0182	24-Jun-19	1.40 g	27-Jun-19 13:33	1
Br-EtFOSAA	ND	0.778	0.920	1.84		B9F0182	24-Jun-19	1.40 g	27-Jun-19 13:33	1
Total EtFOSAA	ND	0.778	0.920	1.84		B9F0182	24-Jun-19	1.40 g	27-Jun-19 13:33	1
L-PFUnA	ND	0.778	0.920	1.84		B9F0182	24-Jun-19	1.40 g	27-Jun-19 13:33	1
L-PFDS	ND	0.778	0.920	1.84		B9F0182	24-Jun-19	1.40 g	27-Jun-19 13:33	1
L-PFDoA	ND	0.778	0.920	1.84		B9F0182	24-Jun-19	1.40 g	27-Jun-19 13:33	1
L-PFTrDA	ND	0.778	0.920	1.84		B9F0182	24-Jun-19	1.40 g	27-Jun-19 13:33	1
L-PFTeDA	ND	0.778	0.920	1.84		B9F0182	24-Jun-19	1.40 g	27-Jun-19 13:33	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	96.9	60 - 130		B9F0182	24-Jun-19	1.40 g	27-Jun-19 13:33	1
13C3-PFPeA	IS	89.9	60 - 150		B9F0182	24-Jun-19	1.40 g	27-Jun-19 13:33	1
13C3-PFBS	IS	88.5	60 - 150		B9F0182	24-Jun-19	1.40 g	27-Jun-19 13:33	1

Sample ID: SED-04-19

VAL - PFAS

Client Data

Name: Merit Laboratories, Inc.
Project: Camp Grayling- Lake Margrethe
Matrix: Sediment
Date Collected: 04-Jun-19 08:20

Laboratory Data

Lab Sample: 1901484-01
Date Received: 06-Jun-19 09:32
% Solids: 77.6
Column: BEH C18

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-4:2 FTS	IS	97.9	40 - 150		B9F0182	24-Jun-19	1.40 g	27-Jun-19 13:33	1
13C2-PFHxA	IS	90.8	70 - 130		B9F0182	24-Jun-19	1.40 g	27-Jun-19 13:33	1
13C4-PFHpA	IS	88.7	60 - 150		B9F0182	24-Jun-19	1.40 g	27-Jun-19 13:33	1
13C3-PFHxS	IS	93.9	60 - 130		B9F0182	24-Jun-19	1.40 g	27-Jun-19 13:33	1
13C2-6:2 FTS	IS	88.9	40 - 150		B9F0182	24-Jun-19	1.40 g	27-Jun-19 13:33	1
13C2-PFOA	IS	88.0	60 - 130		B9F0182	24-Jun-19	1.40 g	27-Jun-19 13:33	1
13C5-PFNA	IS	86.1	50 - 130		B9F0182	24-Jun-19	1.40 g	27-Jun-19 13:33	1
13C8-PFOSA	IS	61.6	20 - 150		B9F0182	24-Jun-19	1.40 g	27-Jun-19 13:33	1
13C8-PFOS	IS	85.9	60 - 130		B9F0182	24-Jun-19	1.40 g	27-Jun-19 13:33	1
13C2-PFDA	IS	73.3	60 - 130		B9F0182	24-Jun-19	1.40 g	27-Jun-19 13:33	1
13C2-8:2 FTS	IS	84.1	40 - 150		B9F0182	24-Jun-19	1.40 g	27-Jun-19 13:33	1
d3-MeFOSAA	IS	71.1	50 - 150		B9F0182	24-Jun-19	1.40 g	27-Jun-19 13:33	1
d5-EtFOSAA	IS	68.7	50 - 150		B9F0182	24-Jun-19	1.40 g	27-Jun-19 13:33	1
13C2-PFUnA	IS	71.3	60 - 130		B9F0182	24-Jun-19	1.40 g	27-Jun-19 13:33	1
13C2-PFDoA	IS	73.9	30 - 130		B9F0182	24-Jun-19	1.40 g	27-Jun-19 13:33	1
13C2-PFTeDA	IS	78.1	20 - 150		B9F0182	24-Jun-19	1.40 g	27-Jun-19 13:33	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation

The results are reported in dry weight.
The sample size is reported in wet weight.
Results reported to the DL.

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

Sample ID: SED-05-19

VAL - PFAS

Client Data

Name: Merit Laboratories, Inc.
Project: Camp Grayling- Lake Margrethe
Matrix: Sediment
Date Collected: 04-Jun-19 09:05

Laboratory Data

Lab Sample: 1901484-02
Date Received: 06-Jun-19 09:32
% Solids: 78.1
Column: BEH C18

Analyte	Conc. (ng/g)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
L-PFBA	ND	0.826	0.977	1.95		B9F0182	24-Jun-19	1.31 g	27-Jun-19 13:44	1
L-PFPeA	ND	0.826	0.977	1.95		B9F0182	24-Jun-19	1.31 g	27-Jun-19 13:44	1
L-PFBS	ND	0.826	0.977	1.95		B9F0182	24-Jun-19	1.31 g	27-Jun-19 13:44	1
L-4:2 FTS	ND	0.826	0.977	1.95		B9F0182	24-Jun-19	1.31 g	27-Jun-19 13:44	1
L-PFHxA	ND	0.826	0.977	1.95		B9F0182	24-Jun-19	1.31 g	27-Jun-19 13:44	1
L-PFPeS	ND	0.826	0.977	1.95		B9F0182	24-Jun-19	1.31 g	27-Jun-19 13:44	1
L-PFHpA	ND	0.826	0.977	1.95		B9F0182	24-Jun-19	1.31 g	27-Jun-19 13:44	1
L-PFHxS	ND	0.826	0.977	1.95		B9F0182	24-Jun-19	1.31 g	27-Jun-19 13:44	1
Br-PFHxS	ND	0.826	0.977	1.95		B9F0182	24-Jun-19	1.31 g	27-Jun-19 13:44	1
Total PFHxS	ND	0.826	0.977	1.95		B9F0182	24-Jun-19	1.31 g	27-Jun-19 13:44	1
L-6:2 FTS	ND	0.826	0.977	1.95		B9F0182	24-Jun-19	1.31 g	27-Jun-19 13:44	1
L-PFOA	ND	0.826	0.977	1.95		B9F0182	24-Jun-19	1.31 g	27-Jun-19 13:44	1
Br-PFOA	ND	0.826	0.977	1.95		B9F0182	24-Jun-19	1.31 g	27-Jun-19 13:44	1
Total PFOA	ND	0.826	0.977	1.95		B9F0182	24-Jun-19	1.31 g	27-Jun-19 13:44	1
L-PFHpS	ND	0.826	0.977	1.95		B9F0182	24-Jun-19	1.31 g	27-Jun-19 13:44	1
L-PFNA	ND	0.826	0.977	1.95		B9F0182	24-Jun-19	1.31 g	27-Jun-19 13:44	1
L-PFOSA	ND	0.826	0.977	1.95		B9F0182	24-Jun-19	1.31 g	27-Jun-19 13:44	1
L-PFOS	ND	0.826	0.977	1.95		B9F0182	24-Jun-19	1.31 g	27-Jun-19 13:44	1
Br-PFOS	ND	0.826	0.977	1.95		B9F0182	24-Jun-19	1.31 g	27-Jun-19 13:44	1
Total PFOS	ND	0.826	0.977	1.95		B9F0182	24-Jun-19	1.31 g	27-Jun-19 13:44	1
L-PFDA	ND	0.826	0.977	1.95		B9F0182	24-Jun-19	1.31 g	27-Jun-19 13:44	1
L-8:2FTS	ND	0.826	0.977	1.95		B9F0182	24-Jun-19	1.31 g	27-Jun-19 13:44	1
L-PFNS	ND	0.826	0.977	1.95		B9F0182	24-Jun-19	1.31 g	27-Jun-19 13:44	1
L-MeFOSAA	ND	0.826	0.977	1.95		B9F0182	24-Jun-19	1.31 g	27-Jun-19 13:44	1
Br-MeFOSAA	ND	0.826	0.977	1.95		B9F0182	24-Jun-19	1.31 g	27-Jun-19 13:44	1
Total MeFOSAA	ND	0.826	0.977	1.95		B9F0182	24-Jun-19	1.31 g	27-Jun-19 13:44	1
L-EtFOSAA	ND	0.826	0.977	1.95		B9F0182	24-Jun-19	1.31 g	27-Jun-19 13:44	1
Br-EtFOSAA	ND	0.826	0.977	1.95		B9F0182	24-Jun-19	1.31 g	27-Jun-19 13:44	1
Total EtFOSAA	ND	0.826	0.977	1.95		B9F0182	24-Jun-19	1.31 g	27-Jun-19 13:44	1
L-PFUnA	ND	0.826	0.977	1.95		B9F0182	24-Jun-19	1.31 g	27-Jun-19 13:44	1
L-PFDS	ND	0.826	0.977	1.95		B9F0182	24-Jun-19	1.31 g	27-Jun-19 13:44	1
L-PFDoA	ND	0.826	0.977	1.95		B9F0182	24-Jun-19	1.31 g	27-Jun-19 13:44	1
L-PFTrDA	ND	0.826	0.977	1.95		B9F0182	24-Jun-19	1.31 g	27-Jun-19 13:44	1
L-PFTeDA	ND	0.826	0.977	1.95		B9F0182	24-Jun-19	1.31 g	27-Jun-19 13:44	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	98.1	60 - 130		B9F0182	24-Jun-19	1.31 g	27-Jun-19 13:44	1
13C3-PFPeA	IS	90.1	60 - 150		B9F0182	24-Jun-19	1.31 g	27-Jun-19 13:44	1
13C3-PFBS	IS	108	60 - 150		B9F0182	24-Jun-19	1.31 g	27-Jun-19 13:44	1

Sample ID: SED-05-19

VAL - PFAS

Client Data

Name: Merit Laboratories, Inc.
Project: Camp Grayling- Lake Margrethe
Matrix: Sediment
Date Collected: 04-Jun-19 09:05

Laboratory Data

Lab Sample: 1901484-02
Date Received: 06-Jun-19 09:32
% Solids: 78.1
Column: BEH C18

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-4:2 FTS	IS	110	40 - 150		B9F0182	24-Jun-19	1.31 g	27-Jun-19 13:44	1
13C2-PFHxA	IS	98.9	70 - 130		B9F0182	24-Jun-19	1.31 g	27-Jun-19 13:44	1
13C4-PFHpA	IS	94.0	60 - 150		B9F0182	24-Jun-19	1.31 g	27-Jun-19 13:44	1
13C3-PFHxS	IS	101	60 - 130		B9F0182	24-Jun-19	1.31 g	27-Jun-19 13:44	1
13C2-6:2 FTS	IS	103	40 - 150		B9F0182	24-Jun-19	1.31 g	27-Jun-19 13:44	1
13C2-PFOA	IS	89.6	60 - 130		B9F0182	24-Jun-19	1.31 g	27-Jun-19 13:44	1
13C5-PFNA	IS	92.1	50 - 130		B9F0182	24-Jun-19	1.31 g	27-Jun-19 13:44	1
13C8-PFOSA	IS	60.5	20 - 150		B9F0182	24-Jun-19	1.31 g	27-Jun-19 13:44	1
13C8-PFOS	IS	95.3	60 - 130		B9F0182	24-Jun-19	1.31 g	27-Jun-19 13:44	1
13C2-PFDA	IS	75.1	60 - 130		B9F0182	24-Jun-19	1.31 g	27-Jun-19 13:44	1
13C2-8:2 FTS	IS	103	40 - 150		B9F0182	24-Jun-19	1.31 g	27-Jun-19 13:44	1
d3-MeFOSAA	IS	67.0	50 - 150		B9F0182	24-Jun-19	1.31 g	27-Jun-19 13:44	1
d5-EtFOSAA	IS	70.4	50 - 150		B9F0182	24-Jun-19	1.31 g	27-Jun-19 13:44	1
13C2-PFUnA	IS	72.2	60 - 130		B9F0182	24-Jun-19	1.31 g	27-Jun-19 13:44	1
13C2-PFDoA	IS	70.9	30 - 130		B9F0182	24-Jun-19	1.31 g	27-Jun-19 13:44	1
13C2-PFTeDA	IS	83.6	20 - 150		B9F0182	24-Jun-19	1.31 g	27-Jun-19 13:44	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation

The results are reported in dry weight.
The sample size is reported in wet weight.
Results reported to the DL.

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

Sample ID: SED-06-19

VAL - PFAS

Client Data

Name: Merit Laboratories, Inc.
Project: Camp Grayling- Lake Margrethe
Matrix: Sediment
Date Collected: 04-Jun-19 09:30

Laboratory Data

Lab Sample: 1901484-03
Date Received: 06-Jun-19 09:32
% Solids: 79.7
Column: BEH C18

Analyte	Conc. (ng/g)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
L-PFBA	ND	0.848	1.00	2.01		B9F0182	24-Jun-19	1.25 g	27-Jun-19 13:54	1
L-PFPeA	ND	0.848	1.00	2.01		B9F0182	24-Jun-19	1.25 g	27-Jun-19 13:54	1
L-PFBS	ND	0.848	1.00	2.01		B9F0182	24-Jun-19	1.25 g	27-Jun-19 13:54	1
L-4:2 FTS	ND	0.848	1.00	2.01		B9F0182	24-Jun-19	1.25 g	27-Jun-19 13:54	1
L-PFHxA	ND	0.848	1.00	2.01		B9F0182	24-Jun-19	1.25 g	27-Jun-19 13:54	1
L-PFPeS	ND	0.848	1.00	2.01		B9F0182	24-Jun-19	1.25 g	27-Jun-19 13:54	1
L-PFHpA	ND	0.848	1.00	2.01		B9F0182	24-Jun-19	1.25 g	27-Jun-19 13:54	1
L-PFHxS	ND	0.848	1.00	2.01		B9F0182	24-Jun-19	1.25 g	27-Jun-19 13:54	1
Br-PFHxS	ND	0.848	1.00	2.01		B9F0182	24-Jun-19	1.25 g	27-Jun-19 13:54	1
Total PFHxS	ND	0.848	1.00	2.01		B9F0182	24-Jun-19	1.25 g	27-Jun-19 13:54	1
L-6:2 FTS	ND	0.848	1.00	2.01		B9F0182	24-Jun-19	1.25 g	27-Jun-19 13:54	1
L-PFOA	ND	0.848	1.00	2.01		B9F0182	24-Jun-19	1.25 g	27-Jun-19 13:54	1
Br-PFOA	ND	0.848	1.00	2.01		B9F0182	24-Jun-19	1.25 g	27-Jun-19 13:54	1
Total PFOA	ND	0.848	1.00	2.01		B9F0182	24-Jun-19	1.25 g	27-Jun-19 13:54	1
L-PFHpS	ND	0.848	1.00	2.01		B9F0182	24-Jun-19	1.25 g	27-Jun-19 13:54	1
L-PFNA	ND	0.848	1.00	2.01		B9F0182	24-Jun-19	1.25 g	27-Jun-19 13:54	1
L-PFOSA	ND	0.848	1.00	2.01		B9F0182	24-Jun-19	1.25 g	27-Jun-19 13:54	1
L-PFOS	ND	0.848	1.00	2.01		B9F0182	24-Jun-19	1.25 g	27-Jun-19 13:54	1
Br-PFOS	ND	0.848	1.00	2.01		B9F0182	24-Jun-19	1.25 g	27-Jun-19 13:54	1
Total PFOS	ND	0.848	1.00	2.01		B9F0182	24-Jun-19	1.25 g	27-Jun-19 13:54	1
L-PFDA	ND	0.848	1.00	2.01		B9F0182	24-Jun-19	1.25 g	27-Jun-19 13:54	1
L-8:2FTS	ND	0.848	1.00	2.01		B9F0182	24-Jun-19	1.25 g	27-Jun-19 13:54	1
L-PFNS	ND	0.848	1.00	2.01		B9F0182	24-Jun-19	1.25 g	27-Jun-19 13:54	1
L-MeFOSAA	ND	0.848	1.00	2.01		B9F0182	24-Jun-19	1.25 g	27-Jun-19 13:54	1
Br-MeFOSAA	ND	0.848	1.00	2.01		B9F0182	24-Jun-19	1.25 g	27-Jun-19 13:54	1
Total MeFOSAA	ND	0.848	1.00	2.01		B9F0182	24-Jun-19	1.25 g	27-Jun-19 13:54	1
L-EtFOSAA	ND	0.848	1.00	2.01		B9F0182	24-Jun-19	1.25 g	27-Jun-19 13:54	1
Br-EtFOSAA	ND	0.848	1.00	2.01		B9F0182	24-Jun-19	1.25 g	27-Jun-19 13:54	1
Total EtFOSAA	ND	0.848	1.00	2.01		B9F0182	24-Jun-19	1.25 g	27-Jun-19 13:54	1
L-PFUnA	ND	0.848	1.00	2.01		B9F0182	24-Jun-19	1.25 g	27-Jun-19 13:54	1
L-PFDS	ND	0.848	1.00	2.01		B9F0182	24-Jun-19	1.25 g	27-Jun-19 13:54	1
L-PFDoA	ND	0.848	1.00	2.01		B9F0182	24-Jun-19	1.25 g	27-Jun-19 13:54	1
L-PFTrDA	ND	0.848	1.00	2.01		B9F0182	24-Jun-19	1.25 g	27-Jun-19 13:54	1
L-PFTeDA	ND	0.848	1.00	2.01		B9F0182	24-Jun-19	1.25 g	27-Jun-19 13:54	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	92.2	60 - 130		B9F0182	24-Jun-19	1.25 g	27-Jun-19 13:54	1
13C3-PFPeA	IS	85.4	60 - 150		B9F0182	24-Jun-19	1.25 g	27-Jun-19 13:54	1
13C3-PFBS	IS	93.3	60 - 150		B9F0182	24-Jun-19	1.25 g	27-Jun-19 13:54	1

Sample ID: SED-06-19

VAL - PFAS

Client Data

Name: Merit Laboratories, Inc.
Project: Camp Grayling- Lake Margrethe
Matrix: Sediment
Date Collected: 04-Jun-19 09:30

Laboratory Data

Lab Sample: 1901484-03
Date Received: 06-Jun-19 09:32
% Solids: 79.7
Column: BEH C18

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-4:2 FTS	IS	96.2	40 - 150		B9F0182	24-Jun-19	1.25 g	27-Jun-19 13:54	1
13C2-PFHxA	IS	89.4	70 - 130		B9F0182	24-Jun-19	1.25 g	27-Jun-19 13:54	1
13C4-PFHpA	IS	87.5	60 - 150		B9F0182	24-Jun-19	1.25 g	27-Jun-19 13:54	1
13C3-PFHxS	IS	92.1	60 - 130		B9F0182	24-Jun-19	1.25 g	27-Jun-19 13:54	1
13C2-6:2 FTS	IS	100	40 - 150		B9F0182	24-Jun-19	1.25 g	27-Jun-19 13:54	1
13C2-PFOA	IS	85.4	60 - 130		B9F0182	24-Jun-19	1.25 g	27-Jun-19 13:54	1
13C5-PFNA	IS	80.6	50 - 130		B9F0182	24-Jun-19	1.25 g	27-Jun-19 13:54	1
13C8-PFOSA	IS	46.5	20 - 150		B9F0182	24-Jun-19	1.25 g	27-Jun-19 13:54	1
13C8-PFOS	IS	85.7	60 - 130		B9F0182	24-Jun-19	1.25 g	27-Jun-19 13:54	1
13C2-PFDA	IS	70.2	60 - 130		B9F0182	24-Jun-19	1.25 g	27-Jun-19 13:54	1
13C2-8:2 FTS	IS	89.2	40 - 150		B9F0182	24-Jun-19	1.25 g	27-Jun-19 13:54	1
d3-MeFOSAA	IS	67.9	50 - 150		B9F0182	24-Jun-19	1.25 g	27-Jun-19 13:54	1
d5-EtFOSAA	IS	65.4	50 - 150		B9F0182	24-Jun-19	1.25 g	27-Jun-19 13:54	1
13C2-PFUnA	IS	68.4	60 - 130		B9F0182	24-Jun-19	1.25 g	27-Jun-19 13:54	1
13C2-PFDoA	IS	71.1	30 - 130		B9F0182	24-Jun-19	1.25 g	27-Jun-19 13:54	1
13C2-PFTeDA	IS	78.5	20 - 150		B9F0182	24-Jun-19	1.25 g	27-Jun-19 13:54	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation

The results are reported in dry weight.
The sample size is reported in wet weight.
Results reported to the DL.

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

Sample ID: SED-07-19

VAL - PFAS

Client Data

Name: Merit Laboratories, Inc.
Project: Camp Grayling- Lake Margrethe
Matrix: Sediment
Date Collected: 04-Jun-19 10:10

Laboratory Data

Lab Sample: 1901484-04
Date Received: 06-Jun-19 09:32
% Solids: 83.3
Column: BEH C18

Analyte	Conc. (ng/g)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
L-PFBA	ND	0.775	0.917	1.83		B9F0182	24-Jun-19	1.31 g	27-Jun-19 14:05	1
L-PFPeA	ND	0.775	0.917	1.83		B9F0182	24-Jun-19	1.31 g	27-Jun-19 14:05	1
L-PFBS	ND	0.775	0.917	1.83		B9F0182	24-Jun-19	1.31 g	27-Jun-19 14:05	1
L-4:2 FTS	ND	0.775	0.917	1.83		B9F0182	24-Jun-19	1.31 g	27-Jun-19 14:05	1
L-PFHxA	ND	0.775	0.917	1.83		B9F0182	24-Jun-19	1.31 g	27-Jun-19 14:05	1
L-PFPeS	ND	0.775	0.917	1.83		B9F0182	24-Jun-19	1.31 g	27-Jun-19 14:05	1
L-PFHpA	ND	0.775	0.917	1.83		B9F0182	24-Jun-19	1.31 g	27-Jun-19 14:05	1
L-PFHxS	ND	0.775	0.917	1.83		B9F0182	24-Jun-19	1.31 g	27-Jun-19 14:05	1
Br-PFHxS	ND	0.775	0.917	1.83		B9F0182	24-Jun-19	1.31 g	27-Jun-19 14:05	1
Total PFHxS	ND	0.775	0.917	1.83		B9F0182	24-Jun-19	1.31 g	27-Jun-19 14:05	1
L-6:2 FTS	ND	0.775	0.917	1.83		B9F0182	24-Jun-19	1.31 g	27-Jun-19 14:05	1
L-PFOA	ND	0.775	0.917	1.83		B9F0182	24-Jun-19	1.31 g	27-Jun-19 14:05	1
Br-PFOA	ND	0.775	0.917	1.83		B9F0182	24-Jun-19	1.31 g	27-Jun-19 14:05	1
Total PFOA	ND	0.775	0.917	1.83		B9F0182	24-Jun-19	1.31 g	27-Jun-19 14:05	1
L-PFHpS	ND	0.775	0.917	1.83		B9F0182	24-Jun-19	1.31 g	27-Jun-19 14:05	1
L-PFNA	ND	0.775	0.917	1.83		B9F0182	24-Jun-19	1.31 g	27-Jun-19 14:05	1
L-PFOSA	ND	0.775	0.917	1.83		B9F0182	24-Jun-19	1.31 g	27-Jun-19 14:05	1
L-PFOS	ND	0.775	0.917	1.83		B9F0182	24-Jun-19	1.31 g	27-Jun-19 14:05	1
Br-PFOS	ND	0.775	0.917	1.83		B9F0182	24-Jun-19	1.31 g	27-Jun-19 14:05	1
Total PFOS	ND	0.775	0.917	1.83		B9F0182	24-Jun-19	1.31 g	27-Jun-19 14:05	1
L-PFDA	ND	0.775	0.917	1.83		B9F0182	24-Jun-19	1.31 g	27-Jun-19 14:05	1
L-8:2FTS	ND	0.775	0.917	1.83		B9F0182	24-Jun-19	1.31 g	27-Jun-19 14:05	1
L-PFNS	ND	0.775	0.917	1.83		B9F0182	24-Jun-19	1.31 g	27-Jun-19 14:05	1
L-MeFOSAA	ND	0.775	0.917	1.83		B9F0182	24-Jun-19	1.31 g	27-Jun-19 14:05	1
Br-MeFOSAA	ND	0.775	0.917	1.83		B9F0182	24-Jun-19	1.31 g	27-Jun-19 14:05	1
Total MeFOSAA	ND	0.775	0.917	1.83		B9F0182	24-Jun-19	1.31 g	27-Jun-19 14:05	1
L-EtFOSAA	ND	0.775	0.917	1.83		B9F0182	24-Jun-19	1.31 g	27-Jun-19 14:05	1
Br-EtFOSAA	ND	0.775	0.917	1.83		B9F0182	24-Jun-19	1.31 g	27-Jun-19 14:05	1
Total EtFOSAA	ND	0.775	0.917	1.83		B9F0182	24-Jun-19	1.31 g	27-Jun-19 14:05	1
L-PFUnA	ND	0.775	0.917	1.83		B9F0182	24-Jun-19	1.31 g	27-Jun-19 14:05	1
L-PFDS	ND	0.775	0.917	1.83		B9F0182	24-Jun-19	1.31 g	27-Jun-19 14:05	1
L-PFDoA	ND	0.775	0.917	1.83		B9F0182	24-Jun-19	1.31 g	27-Jun-19 14:05	1
L-PFTrDA	ND	0.775	0.917	1.83		B9F0182	24-Jun-19	1.31 g	27-Jun-19 14:05	1
L-PFTeDA	ND	0.775	0.917	1.83		B9F0182	24-Jun-19	1.31 g	27-Jun-19 14:05	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	95.1	60 - 130		B9F0182	24-Jun-19	1.31 g	27-Jun-19 14:05	1
13C3-PFPeA	IS	86.1	60 - 150		B9F0182	24-Jun-19	1.31 g	27-Jun-19 14:05	1
13C3-PFBS	IS	101	60 - 150		B9F0182	24-Jun-19	1.31 g	27-Jun-19 14:05	1

Sample ID: SED-07-19

VAL - PFAS

Client Data

Name: Merit Laboratories, Inc.
Project: Camp Grayling- Lake Margrethe
Matrix: Sediment
Date Collected: 04-Jun-19 10:10

Laboratory Data

Lab Sample: 1901484-04
Date Received: 06-Jun-19 09:32
% Solids: 83.3
Column: BEH C18

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-4:2 FTS	IS	107	40 - 150		B9F0182	24-Jun-19	1.31 g	27-Jun-19 14:05	1
13C2-PFHxA	IS	87.5	70 - 130		B9F0182	24-Jun-19	1.31 g	27-Jun-19 14:05	1
13C4-PFHpA	IS	90.4	60 - 150		B9F0182	24-Jun-19	1.31 g	27-Jun-19 14:05	1
13C3-PFHxS	IS	102	60 - 130		B9F0182	24-Jun-19	1.31 g	27-Jun-19 14:05	1
13C2-6:2 FTS	IS	98.8	40 - 150		B9F0182	24-Jun-19	1.31 g	27-Jun-19 14:05	1
13C2-PFOA	IS	87.2	60 - 130		B9F0182	24-Jun-19	1.31 g	27-Jun-19 14:05	1
13C5-PFNA	IS	82.2	50 - 130		B9F0182	24-Jun-19	1.31 g	27-Jun-19 14:05	1
13C8-PFOSA	IS	47.3	20 - 150		B9F0182	24-Jun-19	1.31 g	27-Jun-19 14:05	1
13C8-PFOS	IS	89.2	60 - 130		B9F0182	24-Jun-19	1.31 g	27-Jun-19 14:05	1
13C2-PFDA	IS	71.6	60 - 130		B9F0182	24-Jun-19	1.31 g	27-Jun-19 14:05	1
13C2-8:2 FTS	IS	95.0	40 - 150		B9F0182	24-Jun-19	1.31 g	27-Jun-19 14:05	1
d3-MeFOSAA	IS	66.5	50 - 150		B9F0182	24-Jun-19	1.31 g	27-Jun-19 14:05	1
d5-EtFOSAA	IS	68.0	50 - 150		B9F0182	24-Jun-19	1.31 g	27-Jun-19 14:05	1
13C2-PFUnA	IS	64.8	60 - 130		B9F0182	24-Jun-19	1.31 g	27-Jun-19 14:05	1
13C2-PFDoA	IS	68.6	30 - 130		B9F0182	24-Jun-19	1.31 g	27-Jun-19 14:05	1
13C2-PFTeDA	IS	73.7	20 - 150		B9F0182	24-Jun-19	1.31 g	27-Jun-19 14:05	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation

The results are reported in dry weight.
The sample size is reported in wet weight.
Results reported to the DL.

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

Sample ID: SED-01-19

VAL - PFAS

Client Data

Name: Merit Laboratories, Inc.
Project: Camp Grayling- Lake Margrethe
Matrix: Sediment
Date Collected: 04-Jun-19 10:45

Laboratory Data

Lab Sample: 1901484-05
Date Received: 06-Jun-19 09:32
% Solids: 84.0
Column: BEH C18

Analyte	Conc. (ng/g)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
L-PFBA	ND	0.846	1.00	2.00		B9F0182	24-Jun-19	1.19 g	27-Jun-19 14:16	1
L-PFPeA	ND	0.846	1.00	2.00		B9F0182	24-Jun-19	1.19 g	27-Jun-19 14:16	1
L-PFBS	ND	0.846	1.00	2.00		B9F0182	24-Jun-19	1.19 g	27-Jun-19 14:16	1
L-4:2 FTS	ND	0.846	1.00	2.00		B9F0182	24-Jun-19	1.19 g	27-Jun-19 14:16	1
L-PFHxA	ND	0.846	1.00	2.00		B9F0182	24-Jun-19	1.19 g	27-Jun-19 14:16	1
L-PFPeS	ND	0.846	1.00	2.00		B9F0182	24-Jun-19	1.19 g	27-Jun-19 14:16	1
L-PFHpA	ND	0.846	1.00	2.00		B9F0182	24-Jun-19	1.19 g	27-Jun-19 14:16	1
L-PFHxS	ND	0.846	1.00	2.00		B9F0182	24-Jun-19	1.19 g	27-Jun-19 14:16	1
Br-PFHxS	ND	0.846	1.00	2.00		B9F0182	24-Jun-19	1.19 g	27-Jun-19 14:16	1
Total PFHxS	ND	0.846	1.00	2.00		B9F0182	24-Jun-19	1.19 g	27-Jun-19 14:16	1
L-6:2 FTS	ND	0.846	1.00	2.00		B9F0182	24-Jun-19	1.19 g	27-Jun-19 14:16	1
L-PFOA	ND	0.846	1.00	2.00		B9F0182	24-Jun-19	1.19 g	27-Jun-19 14:16	1
Br-PFOA	ND	0.846	1.00	2.00		B9F0182	24-Jun-19	1.19 g	27-Jun-19 14:16	1
Total PFOA	ND	0.846	1.00	2.00		B9F0182	24-Jun-19	1.19 g	27-Jun-19 14:16	1
L-PFHpS	ND	0.846	1.00	2.00		B9F0182	24-Jun-19	1.19 g	27-Jun-19 14:16	1
L-PFNA	ND	0.846	1.00	2.00		B9F0182	24-Jun-19	1.19 g	27-Jun-19 14:16	1
L-PFOSA	ND	0.846	1.00	2.00		B9F0182	24-Jun-19	1.19 g	27-Jun-19 14:16	1
L-PFOS	ND	0.846	1.00	2.00		B9F0182	24-Jun-19	1.19 g	27-Jun-19 14:16	1
Br-PFOS	ND	0.846	1.00	2.00		B9F0182	24-Jun-19	1.19 g	27-Jun-19 14:16	1
Total PFOS	ND	0.846	1.00	2.00		B9F0182	24-Jun-19	1.19 g	27-Jun-19 14:16	1
L-PFDA	ND	0.846	1.00	2.00		B9F0182	24-Jun-19	1.19 g	27-Jun-19 14:16	1
L-8:2FTS	ND	0.846	1.00	2.00		B9F0182	24-Jun-19	1.19 g	27-Jun-19 14:16	1
L-PFNS	ND	0.846	1.00	2.00		B9F0182	24-Jun-19	1.19 g	27-Jun-19 14:16	1
L-MeFOSAA	ND	0.846	1.00	2.00		B9F0182	24-Jun-19	1.19 g	27-Jun-19 14:16	1
Br-MeFOSAA	ND	0.846	1.00	2.00		B9F0182	24-Jun-19	1.19 g	27-Jun-19 14:16	1
Total MeFOSAA	ND	0.846	1.00	2.00		B9F0182	24-Jun-19	1.19 g	27-Jun-19 14:16	1
L-EtFOSAA	ND	0.846	1.00	2.00		B9F0182	24-Jun-19	1.19 g	27-Jun-19 14:16	1
Br-EtFOSAA	ND	0.846	1.00	2.00		B9F0182	24-Jun-19	1.19 g	27-Jun-19 14:16	1
Total EtFOSAA	ND	0.846	1.00	2.00		B9F0182	24-Jun-19	1.19 g	27-Jun-19 14:16	1
L-PFUnA	ND	0.846	1.00	2.00		B9F0182	24-Jun-19	1.19 g	27-Jun-19 14:16	1
L-PFDS	ND	0.846	1.00	2.00		B9F0182	24-Jun-19	1.19 g	27-Jun-19 14:16	1
L-PFDoA	ND	0.846	1.00	2.00		B9F0182	24-Jun-19	1.19 g	27-Jun-19 14:16	1
L-PFTrDA	ND	0.846	1.00	2.00		B9F0182	24-Jun-19	1.19 g	27-Jun-19 14:16	1
L-PFTeDA	ND	0.846	1.00	2.00		B9F0182	24-Jun-19	1.19 g	27-Jun-19 14:16	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	96.9	60 - 130		B9F0182	24-Jun-19	1.19 g	27-Jun-19 14:16	1
13C3-PFPeA	IS	91.9	60 - 150		B9F0182	24-Jun-19	1.19 g	27-Jun-19 14:16	1
13C3-PFBS	IS	106	60 - 150		B9F0182	24-Jun-19	1.19 g	27-Jun-19 14:16	1

Sample ID: SED-01-19

VAL - PFAS

Client Data

Name: Merit Laboratories, Inc.
Project: Camp Grayling- Lake Margrethe
Matrix: Sediment
Date Collected: 04-Jun-19 10:45

Laboratory Data

Lab Sample: 1901484-05
Date Received: 06-Jun-19 09:32
% Solids: 84.0
Column: BEH C18

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-4:2 FTS	IS	106	40 - 150		B9F0182	24-Jun-19	1.19 g	27-Jun-19 14:16	1
13C2-PFHxA	IS	96.0	70 - 130		B9F0182	24-Jun-19	1.19 g	27-Jun-19 14:16	1
13C4-PFHpA	IS	95.0	60 - 150		B9F0182	24-Jun-19	1.19 g	27-Jun-19 14:16	1
13C3-PFHxS	IS	98.5	60 - 130		B9F0182	24-Jun-19	1.19 g	27-Jun-19 14:16	1
13C2-6:2 FTS	IS	116	40 - 150		B9F0182	24-Jun-19	1.19 g	27-Jun-19 14:16	1
13C2-PFOA	IS	91.6	60 - 130		B9F0182	24-Jun-19	1.19 g	27-Jun-19 14:16	1
13C5-PFNA	IS	85.5	50 - 130		B9F0182	24-Jun-19	1.19 g	27-Jun-19 14:16	1
13C8-PFOSA	IS	58.0	20 - 150		B9F0182	24-Jun-19	1.19 g	27-Jun-19 14:16	1
13C8-PFOS	IS	93.4	60 - 130		B9F0182	24-Jun-19	1.19 g	27-Jun-19 14:16	1
13C2-PFDA	IS	77.9	60 - 130		B9F0182	24-Jun-19	1.19 g	27-Jun-19 14:16	1
13C2-8:2 FTS	IS	103	40 - 150		B9F0182	24-Jun-19	1.19 g	27-Jun-19 14:16	1
d3-MeFOSAA	IS	69.1	50 - 150		B9F0182	24-Jun-19	1.19 g	27-Jun-19 14:16	1
d5-EtFOSAA	IS	73.8	50 - 150		B9F0182	24-Jun-19	1.19 g	27-Jun-19 14:16	1
13C2-PFUnA	IS	74.1	60 - 130		B9F0182	24-Jun-19	1.19 g	27-Jun-19 14:16	1
13C2-PFDoA	IS	78.0	30 - 130		B9F0182	24-Jun-19	1.19 g	27-Jun-19 14:16	1
13C2-PFTeDA	IS	77.5	20 - 150		B9F0182	24-Jun-19	1.19 g	27-Jun-19 14:16	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation

The results are reported in dry weight.
The sample size is reported in wet weight.
Results reported to the DL.

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

Sample ID: SED-02-19

VAL - PFAS

Client Data

Name: Merit Laboratories, Inc.
Project: Camp Grayling- Lake Margrethe
Matrix: Sediment
Date Collected: 04-Jun-19 11:15

Laboratory Data

Lab Sample: 1901484-06
Date Received: 06-Jun-19 09:32
% Solids: 84.1
Column: BEH C18

Analyte	Conc. (ng/g)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
L-PFBA	ND	0.852	1.01	2.02		B9F0182	24-Jun-19	1.18 g	27-Jun-19 14:26	1
L-PFPeA	ND	0.852	1.01	2.02		B9F0182	24-Jun-19	1.18 g	27-Jun-19 14:26	1
L-PFBS	ND	0.852	1.01	2.02		B9F0182	24-Jun-19	1.18 g	27-Jun-19 14:26	1
L-4:2 FTS	ND	0.852	1.01	2.02		B9F0182	24-Jun-19	1.18 g	27-Jun-19 14:26	1
L-PFHxA	ND	0.852	1.01	2.02		B9F0182	24-Jun-19	1.18 g	27-Jun-19 14:26	1
L-PFPeS	ND	0.852	1.01	2.02		B9F0182	24-Jun-19	1.18 g	27-Jun-19 14:26	1
L-PFHpA	ND	0.852	1.01	2.02		B9F0182	24-Jun-19	1.18 g	27-Jun-19 14:26	1
L-PFHxS	ND	0.852	1.01	2.02		B9F0182	24-Jun-19	1.18 g	27-Jun-19 14:26	1
Br-PFHxS	ND	0.852	1.01	2.02		B9F0182	24-Jun-19	1.18 g	27-Jun-19 14:26	1
Total PFHxS	ND	0.852	1.01	2.02		B9F0182	24-Jun-19	1.18 g	27-Jun-19 14:26	1
L-6:2 FTS	ND	0.852	1.01	2.02		B9F0182	24-Jun-19	1.18 g	27-Jun-19 14:26	1
L-PFOA	ND	0.852	1.01	2.02		B9F0182	24-Jun-19	1.18 g	27-Jun-19 14:26	1
Br-PFOA	ND	0.852	1.01	2.02		B9F0182	24-Jun-19	1.18 g	27-Jun-19 14:26	1
Total PFOA	ND	0.852	1.01	2.02		B9F0182	24-Jun-19	1.18 g	27-Jun-19 14:26	1
L-PFHpS	ND	0.852	1.01	2.02		B9F0182	24-Jun-19	1.18 g	27-Jun-19 14:26	1
L-PFNA	ND	0.852	1.01	2.02		B9F0182	24-Jun-19	1.18 g	27-Jun-19 14:26	1
L-PFOSA	ND	0.852	1.01	2.02		B9F0182	24-Jun-19	1.18 g	27-Jun-19 14:26	1
L-PFOS	ND	0.852	1.01	2.02		B9F0182	24-Jun-19	1.18 g	27-Jun-19 14:26	1
Br-PFOS	ND	0.852	1.01	2.02		B9F0182	24-Jun-19	1.18 g	27-Jun-19 14:26	1
Total PFOS	ND	0.852	1.01	2.02		B9F0182	24-Jun-19	1.18 g	27-Jun-19 14:26	1
L-PFDA	ND	0.852	1.01	2.02		B9F0182	24-Jun-19	1.18 g	27-Jun-19 14:26	1
L-8:2FTS	ND	0.852	1.01	2.02		B9F0182	24-Jun-19	1.18 g	27-Jun-19 14:26	1
L-PFNS	ND	0.852	1.01	2.02		B9F0182	24-Jun-19	1.18 g	27-Jun-19 14:26	1
L-MeFOSAA	ND	0.852	1.01	2.02		B9F0182	24-Jun-19	1.18 g	27-Jun-19 14:26	1
Br-MeFOSAA	ND	0.852	1.01	2.02		B9F0182	24-Jun-19	1.18 g	27-Jun-19 14:26	1
Total MeFOSAA	ND	0.852	1.01	2.02		B9F0182	24-Jun-19	1.18 g	27-Jun-19 14:26	1
L-EtFOSAA	ND	0.852	1.01	2.02		B9F0182	24-Jun-19	1.18 g	27-Jun-19 14:26	1
Br-EtFOSAA	ND	0.852	1.01	2.02		B9F0182	24-Jun-19	1.18 g	27-Jun-19 14:26	1
Total EtFOSAA	ND	0.852	1.01	2.02		B9F0182	24-Jun-19	1.18 g	27-Jun-19 14:26	1
L-PFUnA	ND	0.852	1.01	2.02		B9F0182	24-Jun-19	1.18 g	27-Jun-19 14:26	1
L-PFDS	ND	0.852	1.01	2.02		B9F0182	24-Jun-19	1.18 g	27-Jun-19 14:26	1
L-PFDoA	ND	0.852	1.01	2.02		B9F0182	24-Jun-19	1.18 g	27-Jun-19 14:26	1
L-PFTrDA	ND	0.852	1.01	2.02		B9F0182	24-Jun-19	1.18 g	27-Jun-19 14:26	1
L-PFTeDA	ND	0.852	1.01	2.02		B9F0182	24-Jun-19	1.18 g	27-Jun-19 14:26	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	98.3	60 - 130		B9F0182	24-Jun-19	1.18 g	27-Jun-19 14:26	1
13C3-PFPeA	IS	95.5	60 - 150		B9F0182	24-Jun-19	1.18 g	27-Jun-19 14:26	1
13C3-PFBS	IS	101	60 - 150		B9F0182	24-Jun-19	1.18 g	27-Jun-19 14:26	1

Sample ID: SED-02-19 **VAL - PFAS**

Client Data

Name: Merit Laboratories, Inc.
Project: Camp Grayling- Lake Margrethe
Matrix: Sediment
Date Collected: 04-Jun-19 11:15

Laboratory Data

Lab Sample: 1901484-06
Date Received: 06-Jun-19 09:32
% Solids: 84.1
Column: BEH C18

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-4:2 FTS	IS	112	40 - 150		B9F0182	24-Jun-19	1.18 g	27-Jun-19 14:26	1
13C2-PFHxA	IS	97.2	70 - 130		B9F0182	24-Jun-19	1.18 g	27-Jun-19 14:26	1
13C4-PFHpA	IS	98.7	60 - 150		B9F0182	24-Jun-19	1.18 g	27-Jun-19 14:26	1
13C3-PFHxS	IS	105	60 - 130		B9F0182	24-Jun-19	1.18 g	27-Jun-19 14:26	1
13C2-6:2 FTS	IS	87.7	40 - 150		B9F0182	24-Jun-19	1.18 g	27-Jun-19 14:26	1
13C2-PFOA	IS	91.7	60 - 130		B9F0182	24-Jun-19	1.18 g	27-Jun-19 14:26	1
13C5-PFNA	IS	88.7	50 - 130		B9F0182	24-Jun-19	1.18 g	27-Jun-19 14:26	1
13C8-PFOSA	IS	23.1	20 - 150		B9F0182	24-Jun-19	1.18 g	27-Jun-19 14:26	1
13C8-PFOS	IS	90.0	60 - 130		B9F0182	24-Jun-19	1.18 g	27-Jun-19 14:26	1
13C2-PFDA	IS	75.6	60 - 130		B9F0182	24-Jun-19	1.18 g	27-Jun-19 14:26	1
13C2-8:2 FTS	IS	89.9	40 - 150		B9F0182	24-Jun-19	1.18 g	27-Jun-19 14:26	1
d3-MeFOSAA	IS	66.9	50 - 150		B9F0182	24-Jun-19	1.18 g	27-Jun-19 14:26	1
d5-EtFOSAA	IS	68.5	50 - 150		B9F0182	24-Jun-19	1.18 g	27-Jun-19 14:26	1
13C2-PFUnA	IS	70.6	60 - 130		B9F0182	24-Jun-19	1.18 g	27-Jun-19 14:26	1
13C2-PFDoA	IS	73.3	30 - 130		B9F0182	24-Jun-19	1.18 g	27-Jun-19 14:26	1
13C2-PFTeDA	IS	78.5	20 - 150		B9F0182	24-Jun-19	1.18 g	27-Jun-19 14:26	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation

The results are reported in dry weight.
The sample size is reported in wet weight.
Results reported to the DL.

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

Sample ID: SED-03-19

VAL - PFAS

Client Data

Name: Merit Laboratories, Inc.
Project: Camp Grayling- Lake Margrethe
Matrix: Sediment
Date Collected: 04-Jun-19 11:50

Laboratory Data

Lab Sample: 1901484-07
Date Received: 06-Jun-19 09:32
% Solids: 85.6
Column: BEH C18

Analyte	Conc. (ng/g)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
L-PFBA	ND	0.830	0.982	1.96		B9F0182	24-Jun-19	1.19 g	27-Jun-19 14:38	1
L-PFPeA	ND	0.830	0.982	1.96		B9F0182	24-Jun-19	1.19 g	27-Jun-19 14:38	1
L-PFBS	ND	0.830	0.982	1.96		B9F0182	24-Jun-19	1.19 g	27-Jun-19 14:38	1
L-4:2 FTS	ND	0.830	0.982	1.96		B9F0182	24-Jun-19	1.19 g	27-Jun-19 14:38	1
L-PFHxA	ND	0.830	0.982	1.96		B9F0182	24-Jun-19	1.19 g	27-Jun-19 14:38	1
L-PFPeS	ND	0.830	0.982	1.96		B9F0182	24-Jun-19	1.19 g	27-Jun-19 14:38	1
L-PFHpA	ND	0.830	0.982	1.96		B9F0182	24-Jun-19	1.19 g	27-Jun-19 14:38	1
L-PFHxS	ND	0.830	0.982	1.96		B9F0182	24-Jun-19	1.19 g	27-Jun-19 14:38	1
Br-PFHxS	ND	0.830	0.982	1.96		B9F0182	24-Jun-19	1.19 g	27-Jun-19 14:38	1
Total PFHxS	ND	0.830	0.982	1.96		B9F0182	24-Jun-19	1.19 g	27-Jun-19 14:38	1
L-6:2 FTS	ND	0.830	0.982	1.96		B9F0182	24-Jun-19	1.19 g	27-Jun-19 14:38	1
L-PFOA	ND	0.830	0.982	1.96		B9F0182	24-Jun-19	1.19 g	27-Jun-19 14:38	1
Br-PFOA	ND	0.830	0.982	1.96		B9F0182	24-Jun-19	1.19 g	27-Jun-19 14:38	1
Total PFOA	ND	0.830	0.982	1.96		B9F0182	24-Jun-19	1.19 g	27-Jun-19 14:38	1
L-PFHpS	ND	0.830	0.982	1.96		B9F0182	24-Jun-19	1.19 g	27-Jun-19 14:38	1
L-PFNA	ND	0.830	0.982	1.96		B9F0182	24-Jun-19	1.19 g	27-Jun-19 14:38	1
L-PFOSA	ND	0.830	0.982	1.96		B9F0182	24-Jun-19	1.19 g	27-Jun-19 14:38	1
L-PFOS	ND	0.830	0.982	1.96		B9F0182	24-Jun-19	1.19 g	27-Jun-19 14:38	1
Br-PFOS	ND	0.830	0.982	1.96		B9F0182	24-Jun-19	1.19 g	27-Jun-19 14:38	1
Total PFOS	ND	0.830	0.982	1.96		B9F0182	24-Jun-19	1.19 g	27-Jun-19 14:38	1
L-PFDA	ND	0.830	0.982	1.96		B9F0182	24-Jun-19	1.19 g	27-Jun-19 14:38	1
L-8:2FTS	ND	0.830	0.982	1.96		B9F0182	24-Jun-19	1.19 g	27-Jun-19 14:38	1
L-PFNS	ND	0.830	0.982	1.96		B9F0182	24-Jun-19	1.19 g	27-Jun-19 14:38	1
L-MeFOSAA	ND	0.830	0.982	1.96		B9F0182	24-Jun-19	1.19 g	27-Jun-19 14:38	1
Br-MeFOSAA	ND	0.830	0.982	1.96		B9F0182	24-Jun-19	1.19 g	27-Jun-19 14:38	1
Total MeFOSAA	ND	0.830	0.982	1.96		B9F0182	24-Jun-19	1.19 g	27-Jun-19 14:38	1
L-EtFOSAA	ND	0.830	0.982	1.96		B9F0182	24-Jun-19	1.19 g	27-Jun-19 14:38	1
Br-EtFOSAA	ND	0.830	0.982	1.96		B9F0182	24-Jun-19	1.19 g	27-Jun-19 14:38	1
Total EtFOSAA	ND	0.830	0.982	1.96		B9F0182	24-Jun-19	1.19 g	27-Jun-19 14:38	1
L-PFUnA	ND	0.830	0.982	1.96		B9F0182	24-Jun-19	1.19 g	27-Jun-19 14:38	1
L-PFDS	ND	0.830	0.982	1.96		B9F0182	24-Jun-19	1.19 g	27-Jun-19 14:38	1
L-PFDoA	ND	0.830	0.982	1.96		B9F0182	24-Jun-19	1.19 g	27-Jun-19 14:38	1
L-PFTrDA	ND	0.830	0.982	1.96		B9F0182	24-Jun-19	1.19 g	27-Jun-19 14:38	1
L-PFTeDA	ND	0.830	0.982	1.96		B9F0182	24-Jun-19	1.19 g	27-Jun-19 14:38	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	102	60 - 130		B9F0182	24-Jun-19	1.19 g	27-Jun-19 14:38	1
13C3-PFPeA	IS	97.4	60 - 150		B9F0182	24-Jun-19	1.19 g	27-Jun-19 14:38	1
13C3-PFBS	IS	98.7	60 - 150		B9F0182	24-Jun-19	1.19 g	27-Jun-19 14:38	1

Sample ID: SED-03-19

VAL - PFAS

Client Data

Name: Merit Laboratories, Inc.
Project: Camp Grayling- Lake Margrethe
Matrix: Sediment
Date Collected: 04-Jun-19 11:50

Laboratory Data

Lab Sample: 1901484-07
Date Received: 06-Jun-19 09:32
% Solids: 85.6
Column: BEH C18

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-4:2 FTS	IS	99.6	40 - 150		B9F0182	24-Jun-19	1.19 g	27-Jun-19 14:38	1
13C2-PFHxA	IS	98.3	70 - 130		B9F0182	24-Jun-19	1.19 g	27-Jun-19 14:38	1
13C4-PFHpA	IS	100	60 - 150		B9F0182	24-Jun-19	1.19 g	27-Jun-19 14:38	1
13C3-PFHxS	IS	99.4	60 - 130		B9F0182	24-Jun-19	1.19 g	27-Jun-19 14:38	1
13C2-6:2 FTS	IS	102	40 - 150		B9F0182	24-Jun-19	1.19 g	27-Jun-19 14:38	1
13C2-PFOA	IS	91.3	60 - 130		B9F0182	24-Jun-19	1.19 g	27-Jun-19 14:38	1
13C5-PFNA	IS	85.3	50 - 130		B9F0182	24-Jun-19	1.19 g	27-Jun-19 14:38	1
13C8-PFOSA	IS	56.2	20 - 150		B9F0182	24-Jun-19	1.19 g	27-Jun-19 14:38	1
13C8-PFOS	IS	95.5	60 - 130		B9F0182	24-Jun-19	1.19 g	27-Jun-19 14:38	1
13C2-PFDA	IS	72.2	60 - 130		B9F0182	24-Jun-19	1.19 g	27-Jun-19 14:38	1
13C2-8:2 FTS	IS	102	40 - 150		B9F0182	24-Jun-19	1.19 g	27-Jun-19 14:38	1
d3-MeFOSAA	IS	73.0	50 - 150		B9F0182	24-Jun-19	1.19 g	27-Jun-19 14:38	1
d5-EtFOSAA	IS	71.3	50 - 150		B9F0182	24-Jun-19	1.19 g	27-Jun-19 14:38	1
13C2-PFUnA	IS	70.1	60 - 130		B9F0182	24-Jun-19	1.19 g	27-Jun-19 14:38	1
13C2-PFDoA	IS	72.4	30 - 130		B9F0182	24-Jun-19	1.19 g	27-Jun-19 14:38	1
13C2-PFTeDA	IS	73.1	20 - 150		B9F0182	24-Jun-19	1.19 g	27-Jun-19 14:38	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation

The results are reported in dry weight.
The sample size is reported in wet weight.
Results reported to the DL.

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

Sample ID: SED-10-19

VAL - PFAS

Client Data

Name: Merit Laboratories, Inc.
Project: Camp Grayling- Lake Margrethe
Matrix: Sediment
Date Collected: 04-Jun-19 12:35

Laboratory Data

Lab Sample: 1901484-08
Date Received: 06-Jun-19 09:32
% Solids: 80.4
Column: BEH C18

Analyte	Conc. (ng/g)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
L-PFBA	ND	0.841	0.995	1.99		B9F0182	24-Jun-19	1.25 g	27-Jun-19 14:49	1
L-PFPeA	ND	0.841	0.995	1.99		B9F0182	24-Jun-19	1.25 g	27-Jun-19 14:49	1
L-PFBS	ND	0.841	0.995	1.99		B9F0182	24-Jun-19	1.25 g	27-Jun-19 14:49	1
L-4:2 FTS	ND	0.841	0.995	1.99		B9F0182	24-Jun-19	1.25 g	27-Jun-19 14:49	1
L-PFHxA	ND	0.841	0.995	1.99		B9F0182	24-Jun-19	1.25 g	27-Jun-19 14:49	1
L-PFPeS	ND	0.841	0.995	1.99		B9F0182	24-Jun-19	1.25 g	27-Jun-19 14:49	1
L-PFHpA	ND	0.841	0.995	1.99		B9F0182	24-Jun-19	1.25 g	27-Jun-19 14:49	1
L-PFHxS	ND	0.841	0.995	1.99		B9F0182	24-Jun-19	1.25 g	27-Jun-19 14:49	1
Br-PFHxS	ND	0.841	0.995	1.99		B9F0182	24-Jun-19	1.25 g	27-Jun-19 14:49	1
Total PFHxS	ND	0.841	0.995	1.99		B9F0182	24-Jun-19	1.25 g	27-Jun-19 14:49	1
L-6:2 FTS	ND	0.841	0.995	1.99		B9F0182	24-Jun-19	1.25 g	27-Jun-19 14:49	1
L-PFOA	ND	0.841	0.995	1.99		B9F0182	24-Jun-19	1.25 g	27-Jun-19 14:49	1
Br-PFOA	ND	0.841	0.995	1.99		B9F0182	24-Jun-19	1.25 g	27-Jun-19 14:49	1
Total PFOA	ND	0.841	0.995	1.99		B9F0182	24-Jun-19	1.25 g	27-Jun-19 14:49	1
L-PFHpS	ND	0.841	0.995	1.99		B9F0182	24-Jun-19	1.25 g	27-Jun-19 14:49	1
L-PFNA	ND	0.841	0.995	1.99		B9F0182	24-Jun-19	1.25 g	27-Jun-19 14:49	1
L-PFOSA	ND	0.841	0.995	1.99		B9F0182	24-Jun-19	1.25 g	27-Jun-19 14:49	1
L-PFOS	ND	0.841	0.995	1.99		B9F0182	24-Jun-19	1.25 g	27-Jun-19 14:49	1
Br-PFOS	ND	0.841	0.995	1.99		B9F0182	24-Jun-19	1.25 g	27-Jun-19 14:49	1
Total PFOS	ND	0.841	0.995	1.99		B9F0182	24-Jun-19	1.25 g	27-Jun-19 14:49	1
L-PFDA	ND	0.841	0.995	1.99		B9F0182	24-Jun-19	1.25 g	27-Jun-19 14:49	1
L-8:2FTS	ND	0.841	0.995	1.99		B9F0182	24-Jun-19	1.25 g	27-Jun-19 14:49	1
L-PFNS	ND	0.841	0.995	1.99		B9F0182	24-Jun-19	1.25 g	27-Jun-19 14:49	1
L-MeFOSAA	ND	0.841	0.995	1.99		B9F0182	24-Jun-19	1.25 g	27-Jun-19 14:49	1
Br-MeFOSAA	ND	0.841	0.995	1.99		B9F0182	24-Jun-19	1.25 g	27-Jun-19 14:49	1
Total MeFOSAA	ND	0.841	0.995	1.99		B9F0182	24-Jun-19	1.25 g	27-Jun-19 14:49	1
L-EtFOSAA	ND	0.841	0.995	1.99		B9F0182	24-Jun-19	1.25 g	27-Jun-19 14:49	1
Br-EtFOSAA	ND	0.841	0.995	1.99		B9F0182	24-Jun-19	1.25 g	27-Jun-19 14:49	1
Total EtFOSAA	ND	0.841	0.995	1.99		B9F0182	24-Jun-19	1.25 g	27-Jun-19 14:49	1
L-PFUnA	ND	0.841	0.995	1.99		B9F0182	24-Jun-19	1.25 g	27-Jun-19 14:49	1
L-PFDS	ND	0.841	0.995	1.99		B9F0182	24-Jun-19	1.25 g	27-Jun-19 14:49	1
L-PFDoA	ND	0.841	0.995	1.99		B9F0182	24-Jun-19	1.25 g	27-Jun-19 14:49	1
L-PFTrDA	ND	0.841	0.995	1.99		B9F0182	24-Jun-19	1.25 g	27-Jun-19 14:49	1
L-PFTeDA	ND	0.841	0.995	1.99		B9F0182	24-Jun-19	1.25 g	27-Jun-19 14:49	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	98.7	60 - 130		B9F0182	24-Jun-19	1.25 g	27-Jun-19 14:49	1
13C3-PFPeA	IS	94.0	60 - 150		B9F0182	24-Jun-19	1.25 g	27-Jun-19 14:49	1
13C3-PFBS	IS	106	60 - 150		B9F0182	24-Jun-19	1.25 g	27-Jun-19 14:49	1

Sample ID: SED-10-19

VAL - PFAS

Client Data

Name: Merit Laboratories, Inc.
Project: Camp Grayling- Lake Margrethe
Matrix: Sediment
Date Collected: 04-Jun-19 12:35

Laboratory Data

Lab Sample: 1901484-08
Date Received: 06-Jun-19 09:32
% Solids: 80.4
Column: BEH C18

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-4:2 FTS	IS	109	40 - 150		B9F0182	24-Jun-19	1.25 g	27-Jun-19 14:49	1
13C2-PFHxA	IS	98.4	70 - 130		B9F0182	24-Jun-19	1.25 g	27-Jun-19 14:49	1
13C4-PFHpA	IS	92.6	60 - 150		B9F0182	24-Jun-19	1.25 g	27-Jun-19 14:49	1
13C3-PFHxS	IS	100	60 - 130		B9F0182	24-Jun-19	1.25 g	27-Jun-19 14:49	1
13C2-6:2 FTS	IS	111	40 - 150		B9F0182	24-Jun-19	1.25 g	27-Jun-19 14:49	1
13C2-PFOA	IS	89.6	60 - 130		B9F0182	24-Jun-19	1.25 g	27-Jun-19 14:49	1
13C5-PFNA	IS	87.0	50 - 130		B9F0182	24-Jun-19	1.25 g	27-Jun-19 14:49	1
13C8-PFOSA	IS	52.8	20 - 150		B9F0182	24-Jun-19	1.25 g	27-Jun-19 14:49	1
13C8-PFOS	IS	95.9	60 - 130		B9F0182	24-Jun-19	1.25 g	27-Jun-19 14:49	1
13C2-PFDA	IS	73.5	60 - 130		B9F0182	24-Jun-19	1.25 g	27-Jun-19 14:49	1
13C2-8:2 FTS	IS	97.7	40 - 150		B9F0182	24-Jun-19	1.25 g	27-Jun-19 14:49	1
d3-MeFOSAA	IS	74.5	50 - 150		B9F0182	24-Jun-19	1.25 g	27-Jun-19 14:49	1
d5-EtFOSAA	IS	67.7	50 - 150		B9F0182	24-Jun-19	1.25 g	27-Jun-19 14:49	1
13C2-PFUnA	IS	71.3	60 - 130		B9F0182	24-Jun-19	1.25 g	27-Jun-19 14:49	1
13C2-PFDoA	IS	71.8	30 - 130		B9F0182	24-Jun-19	1.25 g	27-Jun-19 14:49	1
13C2-PFTeDA	IS	77.8	20 - 150		B9F0182	24-Jun-19	1.25 g	27-Jun-19 14:49	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation

The results are reported in dry weight.
The sample size is reported in wet weight.
Results reported to the DL.

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

Sample ID: SED-DUP

VAL - PFAS

Client Data

Name: Merit Laboratories, Inc.
Project: Camp Grayling- Lake Margrethe
Matrix: Sediment
Date Collected: 04-Jun-19 00:00

Laboratory Data

Lab Sample: 1901484-09
Date Received: 06-Jun-19 09:32
% Solids: 83.3
Column: BEH C18

Analyte	Conc. (ng/g)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
L-PFBA	ND	0.831	0.984	1.97		B9F0182	24-Jun-19	1.22 g	27-Jun-19 14:59	1
L-PFPeA	ND	0.831	0.984	1.97		B9F0182	24-Jun-19	1.22 g	27-Jun-19 14:59	1
L-PFBS	ND	0.831	0.984	1.97		B9F0182	24-Jun-19	1.22 g	27-Jun-19 14:59	1
L-4:2 FTS	ND	0.831	0.984	1.97		B9F0182	24-Jun-19	1.22 g	27-Jun-19 14:59	1
L-PFHxA	ND	0.831	0.984	1.97		B9F0182	24-Jun-19	1.22 g	27-Jun-19 14:59	1
L-PFPeS	ND	0.831	0.984	1.97		B9F0182	24-Jun-19	1.22 g	27-Jun-19 14:59	1
L-PFHpA	ND	0.831	0.984	1.97		B9F0182	24-Jun-19	1.22 g	27-Jun-19 14:59	1
L-PFHxS	ND	0.831	0.984	1.97		B9F0182	24-Jun-19	1.22 g	27-Jun-19 14:59	1
Br-PFHxS	ND	0.831	0.984	1.97		B9F0182	24-Jun-19	1.22 g	27-Jun-19 14:59	1
Total PFHxS	ND	0.831	0.984	1.97		B9F0182	24-Jun-19	1.22 g	27-Jun-19 14:59	1
L-6:2 FTS	ND	0.831	0.984	1.97		B9F0182	24-Jun-19	1.22 g	27-Jun-19 14:59	1
L-PFOA	ND	0.831	0.984	1.97		B9F0182	24-Jun-19	1.22 g	27-Jun-19 14:59	1
Br-PFOA	ND	0.831	0.984	1.97		B9F0182	24-Jun-19	1.22 g	27-Jun-19 14:59	1
Total PFOA	ND	0.831	0.984	1.97		B9F0182	24-Jun-19	1.22 g	27-Jun-19 14:59	1
L-PFHpS	ND	0.831	0.984	1.97		B9F0182	24-Jun-19	1.22 g	27-Jun-19 14:59	1
L-PFNA	ND	0.831	0.984	1.97		B9F0182	24-Jun-19	1.22 g	27-Jun-19 14:59	1
L-PFOSA	ND	0.831	0.984	1.97		B9F0182	24-Jun-19	1.22 g	27-Jun-19 14:59	1
L-PFOS	ND	0.831	0.984	1.97		B9F0182	24-Jun-19	1.22 g	27-Jun-19 14:59	1
Br-PFOS	ND	0.831	0.984	1.97		B9F0182	24-Jun-19	1.22 g	27-Jun-19 14:59	1
Total PFOS	ND	0.831	0.984	1.97		B9F0182	24-Jun-19	1.22 g	27-Jun-19 14:59	1
L-PFDA	ND	0.831	0.984	1.97		B9F0182	24-Jun-19	1.22 g	27-Jun-19 14:59	1
L-8:2FTS	ND	0.831	0.984	1.97		B9F0182	24-Jun-19	1.22 g	27-Jun-19 14:59	1
L-PFNS	ND	0.831	0.984	1.97		B9F0182	24-Jun-19	1.22 g	27-Jun-19 14:59	1
L-MeFOSAA	ND	0.831	0.984	1.97		B9F0182	24-Jun-19	1.22 g	27-Jun-19 14:59	1
Br-MeFOSAA	ND	0.831	0.984	1.97		B9F0182	24-Jun-19	1.22 g	27-Jun-19 14:59	1
Total MeFOSAA	ND	0.831	0.984	1.97		B9F0182	24-Jun-19	1.22 g	27-Jun-19 14:59	1
L-EtFOSAA	ND	0.831	0.984	1.97		B9F0182	24-Jun-19	1.22 g	27-Jun-19 14:59	1
Br-EtFOSAA	ND	0.831	0.984	1.97		B9F0182	24-Jun-19	1.22 g	27-Jun-19 14:59	1
Total EtFOSAA	ND	0.831	0.984	1.97		B9F0182	24-Jun-19	1.22 g	27-Jun-19 14:59	1
L-PFUnA	ND	0.831	0.984	1.97		B9F0182	24-Jun-19	1.22 g	27-Jun-19 14:59	1
L-PFDS	ND	0.831	0.984	1.97		B9F0182	24-Jun-19	1.22 g	27-Jun-19 14:59	1
L-PFDoA	ND	0.831	0.984	1.97		B9F0182	24-Jun-19	1.22 g	27-Jun-19 14:59	1
L-PFTrDA	ND	0.831	0.984	1.97		B9F0182	24-Jun-19	1.22 g	27-Jun-19 14:59	1
L-PFTeDA	ND	0.831	0.984	1.97		B9F0182	24-Jun-19	1.22 g	27-Jun-19 14:59	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	96.0	60 - 130		B9F0182	24-Jun-19	1.22 g	27-Jun-19 14:59	1
13C3-PFPeA	IS	90.5	60 - 150		B9F0182	24-Jun-19	1.22 g	27-Jun-19 14:59	1
13C3-PFBS	IS	109	60 - 150		B9F0182	24-Jun-19	1.22 g	27-Jun-19 14:59	1

Sample ID: SED-DUP

VAL - PFAS

Client Data

Name: Merit Laboratories, Inc.
Project: Camp Grayling- Lake Margrethe
Matrix: Sediment
Date Collected: 04-Jun-19 00:00

Laboratory Data

Lab Sample: 1901484-09
Date Received: 06-Jun-19 09:32
% Solids: 83.3
Column: BEH C18

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-4:2 FTS	IS	113	40 - 150		B9F0182	24-Jun-19	1.22 g	27-Jun-19 14:59	1
13C2-PFHxA	IS	90.5	70 - 130		B9F0182	24-Jun-19	1.22 g	27-Jun-19 14:59	1
13C4-PFHpA	IS	88.1	60 - 150		B9F0182	24-Jun-19	1.22 g	27-Jun-19 14:59	1
13C3-PFHxS	IS	102	60 - 130		B9F0182	24-Jun-19	1.22 g	27-Jun-19 14:59	1
13C2-6:2 FTS	IS	108	40 - 150		B9F0182	24-Jun-19	1.22 g	27-Jun-19 14:59	1
13C2-PFOA	IS	85.8	60 - 130		B9F0182	24-Jun-19	1.22 g	27-Jun-19 14:59	1
13C5-PFNA	IS	85.1	50 - 130		B9F0182	24-Jun-19	1.22 g	27-Jun-19 14:59	1
13C8-PFOSA	IS	25.4	20 - 150		B9F0182	24-Jun-19	1.22 g	27-Jun-19 14:59	1
13C8-PFOS	IS	95.1	60 - 130		B9F0182	24-Jun-19	1.22 g	27-Jun-19 14:59	1
13C2-PFDA	IS	75.9	60 - 130		B9F0182	24-Jun-19	1.22 g	27-Jun-19 14:59	1
13C2-8:2 FTS	IS	91.4	40 - 150		B9F0182	24-Jun-19	1.22 g	27-Jun-19 14:59	1
d3-MeFOSAA	IS	70.0	50 - 150		B9F0182	24-Jun-19	1.22 g	27-Jun-19 14:59	1
d5-EtFOSAA	IS	70.9	50 - 150		B9F0182	24-Jun-19	1.22 g	27-Jun-19 14:59	1
13C2-PFUnA	IS	70.5	60 - 130		B9F0182	24-Jun-19	1.22 g	27-Jun-19 14:59	1
13C2-PFDoA	IS	71.8	30 - 130		B9F0182	24-Jun-19	1.22 g	27-Jun-19 14:59	1
13C2-PFTeDA	IS	75.9	20 - 150		B9F0182	24-Jun-19	1.22 g	27-Jun-19 14:59	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation

The results are reported in dry weight.
The sample size is reported in wet weight.
Results reported to the DL.

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

Sample ID: SED-12-19

VAL - PFAS

Client Data

Name: Merit Laboratories, Inc.
Project: Camp Grayling- Lake Margrethe
Matrix: Sediment
Date Collected: 05-Jun-19 11:00

Laboratory Data

Lab Sample: 1901484-10
Date Received: 06-Jun-19 09:32
% Solids: 81.8
Column: BEH C18

Analyte	Conc. (ng/g)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
L-PFBA	ND	0.826	0.978	1.96		B9F0182	24-Jun-19	1.25 g	27-Jun-19 15:10	1
L-PFPeA	ND	0.826	0.978	1.96		B9F0182	24-Jun-19	1.25 g	27-Jun-19 15:10	1
L-PFBS	ND	0.826	0.978	1.96		B9F0182	24-Jun-19	1.25 g	27-Jun-19 15:10	1
L-4:2 FTS	ND	0.826	0.978	1.96		B9F0182	24-Jun-19	1.25 g	27-Jun-19 15:10	1
L-PFHxA	ND	0.826	0.978	1.96		B9F0182	24-Jun-19	1.25 g	27-Jun-19 15:10	1
L-PFPeS	ND	0.826	0.978	1.96		B9F0182	24-Jun-19	1.25 g	27-Jun-19 15:10	1
L-PFHpA	ND	0.826	0.978	1.96		B9F0182	24-Jun-19	1.25 g	27-Jun-19 15:10	1
L-PFHxS	ND	0.826	0.978	1.96		B9F0182	24-Jun-19	1.25 g	27-Jun-19 15:10	1
Br-PFHxS	ND	0.826	0.978	1.96		B9F0182	24-Jun-19	1.25 g	27-Jun-19 15:10	1
Total PFHxS	ND	0.826	0.978	1.96		B9F0182	24-Jun-19	1.25 g	27-Jun-19 15:10	1
L-6:2 FTS	ND	0.826	0.978	1.96		B9F0182	24-Jun-19	1.25 g	27-Jun-19 15:10	1
L-PFOA	ND	0.826	0.978	1.96		B9F0182	24-Jun-19	1.25 g	27-Jun-19 15:10	1
Br-PFOA	ND	0.826	0.978	1.96		B9F0182	24-Jun-19	1.25 g	27-Jun-19 15:10	1
Total PFOA	ND	0.826	0.978	1.96		B9F0182	24-Jun-19	1.25 g	27-Jun-19 15:10	1
L-PFHpS	ND	0.826	0.978	1.96		B9F0182	24-Jun-19	1.25 g	27-Jun-19 15:10	1
L-PFNA	ND	0.826	0.978	1.96		B9F0182	24-Jun-19	1.25 g	27-Jun-19 15:10	1
L-PFOSA	ND	0.826	0.978	1.96		B9F0182	24-Jun-19	1.25 g	27-Jun-19 15:10	1
L-PFOS	ND	0.826	0.978	1.96		B9F0182	24-Jun-19	1.25 g	27-Jun-19 15:10	1
Br-PFOS	ND	0.826	0.978	1.96		B9F0182	24-Jun-19	1.25 g	27-Jun-19 15:10	1
Total PFOS	ND	0.826	0.978	1.96		B9F0182	24-Jun-19	1.25 g	27-Jun-19 15:10	1
L-PFDA	ND	0.826	0.978	1.96		B9F0182	24-Jun-19	1.25 g	27-Jun-19 15:10	1
L-8:2FTS	ND	0.826	0.978	1.96		B9F0182	24-Jun-19	1.25 g	27-Jun-19 15:10	1
L-PFNS	ND	0.826	0.978	1.96		B9F0182	24-Jun-19	1.25 g	27-Jun-19 15:10	1
L-MeFOSAA	ND	0.826	0.978	1.96		B9F0182	24-Jun-19	1.25 g	27-Jun-19 15:10	1
Br-MeFOSAA	ND	0.826	0.978	1.96		B9F0182	24-Jun-19	1.25 g	27-Jun-19 15:10	1
Total MeFOSAA	ND	0.826	0.978	1.96		B9F0182	24-Jun-19	1.25 g	27-Jun-19 15:10	1
L-EtFOSAA	ND	0.826	0.978	1.96		B9F0182	24-Jun-19	1.25 g	27-Jun-19 15:10	1
Br-EtFOSAA	ND	0.826	0.978	1.96		B9F0182	24-Jun-19	1.25 g	27-Jun-19 15:10	1
Total EtFOSAA	ND	0.826	0.978	1.96		B9F0182	24-Jun-19	1.25 g	27-Jun-19 15:10	1
L-PFUnA	ND	0.826	0.978	1.96		B9F0182	24-Jun-19	1.25 g	27-Jun-19 15:10	1
L-PFDS	ND	0.826	0.978	1.96		B9F0182	24-Jun-19	1.25 g	27-Jun-19 15:10	1
L-PFDoA	ND	0.826	0.978	1.96		B9F0182	24-Jun-19	1.25 g	27-Jun-19 15:10	1
L-PFTrDA	ND	0.826	0.978	1.96		B9F0182	24-Jun-19	1.25 g	27-Jun-19 15:10	1
L-PFTeDA	ND	0.826	0.978	1.96		B9F0182	24-Jun-19	1.25 g	27-Jun-19 15:10	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	101	60 - 130		B9F0182	24-Jun-19	1.25 g	27-Jun-19 15:10	1
13C3-PFPeA	IS	95.6	60 - 150		B9F0182	24-Jun-19	1.25 g	27-Jun-19 15:10	1
13C3-PFBS	IS	103	60 - 150		B9F0182	24-Jun-19	1.25 g	27-Jun-19 15:10	1

Sample ID: SED-12-19

VAL - PFAS

Client Data

Name: Merit Laboratories, Inc.
Project: Camp Grayling- Lake Margrethe
Matrix: Sediment
Date Collected: 05-Jun-19 11:00

Laboratory Data

Lab Sample: 1901484-10
Date Received: 06-Jun-19 09:32
% Solids: 81.8
Column: BEH C18

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-4:2 FTS	IS	98.6	40 - 150		B9F0182	24-Jun-19	1.25 g	27-Jun-19 15:10	1
13C2-PFHxA	IS	98.9	70 - 130		B9F0182	24-Jun-19	1.25 g	27-Jun-19 15:10	1
13C4-PFHpA	IS	96.3	60 - 150		B9F0182	24-Jun-19	1.25 g	27-Jun-19 15:10	1
13C3-PFHxS	IS	102	60 - 130		B9F0182	24-Jun-19	1.25 g	27-Jun-19 15:10	1
13C2-6:2 FTS	IS	110	40 - 150		B9F0182	24-Jun-19	1.25 g	27-Jun-19 15:10	1
13C2-PFOA	IS	89.8	60 - 130		B9F0182	24-Jun-19	1.25 g	27-Jun-19 15:10	1
13C5-PFNA	IS	87.3	50 - 130		B9F0182	24-Jun-19	1.25 g	27-Jun-19 15:10	1
13C8-PFOSA	IS	61.7	20 - 150		B9F0182	24-Jun-19	1.25 g	27-Jun-19 15:10	1
13C8-PFOS	IS	94.3	60 - 130		B9F0182	24-Jun-19	1.25 g	27-Jun-19 15:10	1
13C2-PFDA	IS	77.6	60 - 130		B9F0182	24-Jun-19	1.25 g	27-Jun-19 15:10	1
13C2-8:2 FTS	IS	110	40 - 150		B9F0182	24-Jun-19	1.25 g	27-Jun-19 15:10	1
d3-MeFOSAA	IS	71.5	50 - 150		B9F0182	24-Jun-19	1.25 g	27-Jun-19 15:10	1
d5-EtFOSAA	IS	77.4	50 - 150		B9F0182	24-Jun-19	1.25 g	27-Jun-19 15:10	1
13C2-PFUnA	IS	79.7	60 - 130		B9F0182	24-Jun-19	1.25 g	27-Jun-19 15:10	1
13C2-PFDoA	IS	79.2	30 - 130		B9F0182	24-Jun-19	1.25 g	27-Jun-19 15:10	1
13C2-PFTeDA	IS	82.9	20 - 150		B9F0182	24-Jun-19	1.25 g	27-Jun-19 15:10	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation

The results are reported in dry weight.
The sample size is reported in wet weight.
Results reported to the DL.

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

Sample ID: SED-13-19

VAL - PFAS

Client Data

Name: Merit Laboratories, Inc.
Project: Camp Grayling- Lake Margrethe
Matrix: Sediment
Date Collected: 05-Jun-19 11:30

Laboratory Data

Lab Sample: 1901484-11
Date Received: 06-Jun-19 09:32
% Solids: 81.4
Column: BEH C18

Analyte	Conc. (ng/g)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
L-PFBA	ND	0.805	0.953	1.91		B9F0182	24-Jun-19	1.29 g	27-Jun-19 15:52	1
L-PFPeA	ND	0.805	0.953	1.91		B9F0182	24-Jun-19	1.29 g	27-Jun-19 15:52	1
L-PFBS	ND	0.805	0.953	1.91		B9F0182	24-Jun-19	1.29 g	27-Jun-19 15:52	1
L-4:2 FTS	ND	0.805	0.953	1.91		B9F0182	24-Jun-19	1.29 g	27-Jun-19 15:52	1
L-PFHxA	ND	0.805	0.953	1.91		B9F0182	24-Jun-19	1.29 g	27-Jun-19 15:52	1
L-PFPeS	ND	0.805	0.953	1.91		B9F0182	24-Jun-19	1.29 g	27-Jun-19 15:52	1
L-PFHpA	ND	0.805	0.953	1.91		B9F0182	24-Jun-19	1.29 g	27-Jun-19 15:52	1
L-PFHxS	ND	0.805	0.953	1.91		B9F0182	24-Jun-19	1.29 g	27-Jun-19 15:52	1
Br-PFHxS	ND	0.805	0.953	1.91		B9F0182	24-Jun-19	1.29 g	27-Jun-19 15:52	1
Total PFHxS	ND	0.805	0.953	1.91		B9F0182	24-Jun-19	1.29 g	27-Jun-19 15:52	1
L-6:2 FTS	ND	0.805	0.953	1.91		B9F0182	24-Jun-19	1.29 g	27-Jun-19 15:52	1
L-PFOA	ND	0.805	0.953	1.91		B9F0182	24-Jun-19	1.29 g	27-Jun-19 15:52	1
Br-PFOA	ND	0.805	0.953	1.91		B9F0182	24-Jun-19	1.29 g	27-Jun-19 15:52	1
Total PFOA	ND	0.805	0.953	1.91		B9F0182	24-Jun-19	1.29 g	27-Jun-19 15:52	1
L-PFHpS	ND	0.805	0.953	1.91		B9F0182	24-Jun-19	1.29 g	27-Jun-19 15:52	1
L-PFNA	ND	0.805	0.953	1.91		B9F0182	24-Jun-19	1.29 g	27-Jun-19 15:52	1
L-PFOSA	ND	0.805	0.953	1.91		B9F0182	24-Jun-19	1.29 g	27-Jun-19 15:52	1
L-PFOS	ND	0.805	0.953	1.91		B9F0182	24-Jun-19	1.29 g	27-Jun-19 15:52	1
Br-PFOS	ND	0.805	0.953	1.91		B9F0182	24-Jun-19	1.29 g	27-Jun-19 15:52	1
Total PFOS	ND	0.805	0.953	1.91		B9F0182	24-Jun-19	1.29 g	27-Jun-19 15:52	1
L-PFDA	ND	0.805	0.953	1.91		B9F0182	24-Jun-19	1.29 g	27-Jun-19 15:52	1
L-8:2FTS	ND	0.805	0.953	1.91		B9F0182	24-Jun-19	1.29 g	27-Jun-19 15:52	1
L-PFNS	ND	0.805	0.953	1.91		B9F0182	24-Jun-19	1.29 g	27-Jun-19 15:52	1
L-MeFOSAA	ND	0.805	0.953	1.91		B9F0182	24-Jun-19	1.29 g	27-Jun-19 15:52	1
Br-MeFOSAA	ND	0.805	0.953	1.91		B9F0182	24-Jun-19	1.29 g	27-Jun-19 15:52	1
Total MeFOSAA	ND	0.805	0.953	1.91		B9F0182	24-Jun-19	1.29 g	27-Jun-19 15:52	1
L-EtFOSAA	ND	0.805	0.953	1.91		B9F0182	24-Jun-19	1.29 g	27-Jun-19 15:52	1
Br-EtFOSAA	ND	0.805	0.953	1.91		B9F0182	24-Jun-19	1.29 g	27-Jun-19 15:52	1
Total EtFOSAA	ND	0.805	0.953	1.91		B9F0182	24-Jun-19	1.29 g	27-Jun-19 15:52	1
L-PFUnA	ND	0.805	0.953	1.91		B9F0182	24-Jun-19	1.29 g	27-Jun-19 15:52	1
L-PFDS	ND	0.805	0.953	1.91		B9F0182	24-Jun-19	1.29 g	27-Jun-19 15:52	1
L-PFDoA	ND	0.805	0.953	1.91		B9F0182	24-Jun-19	1.29 g	27-Jun-19 15:52	1
L-PFTrDA	ND	0.805	0.953	1.91		B9F0182	24-Jun-19	1.29 g	27-Jun-19 15:52	1
L-PFTeDA	ND	0.805	0.953	1.91		B9F0182	24-Jun-19	1.29 g	27-Jun-19 15:52	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	99.5	60 - 130		B9F0182	24-Jun-19	1.29 g	27-Jun-19 15:52	1
13C3-PFPeA	IS	94.0	60 - 150		B9F0182	24-Jun-19	1.29 g	27-Jun-19 15:52	1
13C3-PFBS	IS	107	60 - 150		B9F0182	24-Jun-19	1.29 g	27-Jun-19 15:52	1

Sample ID: SED-13-19

VAL - PFAS

Client Data

Name: Merit Laboratories, Inc.
Project: Camp Grayling- Lake Margrethe
Matrix: Sediment
Date Collected: 05-Jun-19 11:30

Laboratory Data

Lab Sample: 1901484-11
Date Received: 06-Jun-19 09:32
% Solids: 81.4
Column: BEH C18

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-4:2 FTS	IS	113	40 - 150		B9F0182	24-Jun-19	1.29 g	27-Jun-19 15:52	1
13C2-PFHxA	IS	93.6	70 - 130		B9F0182	24-Jun-19	1.29 g	27-Jun-19 15:52	1
13C4-PFHpA	IS	95.4	60 - 150		B9F0182	24-Jun-19	1.29 g	27-Jun-19 15:52	1
13C3-PFHxS	IS	102	60 - 130		B9F0182	24-Jun-19	1.29 g	27-Jun-19 15:52	1
13C2-6:2 FTS	IS	108	40 - 150		B9F0182	24-Jun-19	1.29 g	27-Jun-19 15:52	1
13C2-PFOA	IS	87.5	60 - 130		B9F0182	24-Jun-19	1.29 g	27-Jun-19 15:52	1
13C5-PFNA	IS	84.1	50 - 130		B9F0182	24-Jun-19	1.29 g	27-Jun-19 15:52	1
13C8-PFOSA	IS	60.8	20 - 150		B9F0182	24-Jun-19	1.29 g	27-Jun-19 15:52	1
13C8-PFOS	IS	91.0	60 - 130		B9F0182	24-Jun-19	1.29 g	27-Jun-19 15:52	1
13C2-PFDA	IS	76.9	60 - 130		B9F0182	24-Jun-19	1.29 g	27-Jun-19 15:52	1
13C2-8:2 FTS	IS	98.1	40 - 150		B9F0182	24-Jun-19	1.29 g	27-Jun-19 15:52	1
d3-MeFOSAA	IS	74.0	50 - 150		B9F0182	24-Jun-19	1.29 g	27-Jun-19 15:52	1
d5-EtFOSAA	IS	75.4	50 - 150		B9F0182	24-Jun-19	1.29 g	27-Jun-19 15:52	1
13C2-PFUnA	IS	72.0	60 - 130		B9F0182	24-Jun-19	1.29 g	27-Jun-19 15:52	1
13C2-PFDoA	IS	73.7	30 - 130		B9F0182	24-Jun-19	1.29 g	27-Jun-19 15:52	1
13C2-PFTeDA	IS	81.8	20 - 150		B9F0182	24-Jun-19	1.29 g	27-Jun-19 15:52	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation

The results are reported in dry weight.
The sample size is reported in wet weight.
Results reported to the DL.

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

Sample ID: SED-14-19

VAL - PFAS

Client Data

Name: Merit Laboratories, Inc.
Project: Camp Grayling- Lake Margrethe
Matrix: Sediment
Date Collected: 05-Jun-19 12:40

Laboratory Data

Lab Sample: 1901484-12
Date Received: 06-Jun-19 09:32
% Solids: 81.8
Column: BEH C18

Analyte	Conc. (ng/g)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
L-PFBA	ND	0.807	0.955	1.91		B9F0182	24-Jun-19	1.28 g	27-Jun-19 16:03	1
L-PFPeA	ND	0.807	0.955	1.91		B9F0182	24-Jun-19	1.28 g	27-Jun-19 16:03	1
L-PFBS	ND	0.807	0.955	1.91		B9F0182	24-Jun-19	1.28 g	27-Jun-19 16:03	1
L-4:2 FTS	ND	0.807	0.955	1.91		B9F0182	24-Jun-19	1.28 g	27-Jun-19 16:03	1
L-PFHxA	ND	0.807	0.955	1.91		B9F0182	24-Jun-19	1.28 g	27-Jun-19 16:03	1
L-PFPeS	ND	0.807	0.955	1.91		B9F0182	24-Jun-19	1.28 g	27-Jun-19 16:03	1
L-PFHpA	ND	0.807	0.955	1.91		B9F0182	24-Jun-19	1.28 g	27-Jun-19 16:03	1
L-PFHxS	ND	0.807	0.955	1.91		B9F0182	24-Jun-19	1.28 g	27-Jun-19 16:03	1
Br-PFHxS	ND	0.807	0.955	1.91		B9F0182	24-Jun-19	1.28 g	27-Jun-19 16:03	1
Total PFHxS	ND	0.807	0.955	1.91		B9F0182	24-Jun-19	1.28 g	27-Jun-19 16:03	1
L-6:2 FTS	ND	0.807	0.955	1.91		B9F0182	24-Jun-19	1.28 g	27-Jun-19 16:03	1
L-PFOA	ND	0.807	0.955	1.91		B9F0182	24-Jun-19	1.28 g	27-Jun-19 16:03	1
Br-PFOA	ND	0.807	0.955	1.91		B9F0182	24-Jun-19	1.28 g	27-Jun-19 16:03	1
Total PFOA	ND	0.807	0.955	1.91		B9F0182	24-Jun-19	1.28 g	27-Jun-19 16:03	1
L-PFHpS	ND	0.807	0.955	1.91		B9F0182	24-Jun-19	1.28 g	27-Jun-19 16:03	1
L-PFNA	ND	0.807	0.955	1.91		B9F0182	24-Jun-19	1.28 g	27-Jun-19 16:03	1
L-PFOSA	ND	0.807	0.955	1.91		B9F0182	24-Jun-19	1.28 g	27-Jun-19 16:03	1
L-PFOS	ND	0.807	0.955	1.91		B9F0182	24-Jun-19	1.28 g	27-Jun-19 16:03	1
Br-PFOS	ND	0.807	0.955	1.91		B9F0182	24-Jun-19	1.28 g	27-Jun-19 16:03	1
Total PFOS	ND	0.807	0.955	1.91		B9F0182	24-Jun-19	1.28 g	27-Jun-19 16:03	1
L-PFDA	ND	0.807	0.955	1.91		B9F0182	24-Jun-19	1.28 g	27-Jun-19 16:03	1
L-8:2FTS	ND	0.807	0.955	1.91		B9F0182	24-Jun-19	1.28 g	27-Jun-19 16:03	1
L-PFNS	ND	0.807	0.955	1.91		B9F0182	24-Jun-19	1.28 g	27-Jun-19 16:03	1
L-MeFOSAA	ND	0.807	0.955	1.91		B9F0182	24-Jun-19	1.28 g	27-Jun-19 16:03	1
Br-MeFOSAA	ND	0.807	0.955	1.91		B9F0182	24-Jun-19	1.28 g	27-Jun-19 16:03	1
Total MeFOSAA	ND	0.807	0.955	1.91		B9F0182	24-Jun-19	1.28 g	27-Jun-19 16:03	1
L-EtFOSAA	ND	0.807	0.955	1.91		B9F0182	24-Jun-19	1.28 g	27-Jun-19 16:03	1
Br-EtFOSAA	ND	0.807	0.955	1.91		B9F0182	24-Jun-19	1.28 g	27-Jun-19 16:03	1
Total EtFOSAA	ND	0.807	0.955	1.91		B9F0182	24-Jun-19	1.28 g	27-Jun-19 16:03	1
L-PFUnA	ND	0.807	0.955	1.91		B9F0182	24-Jun-19	1.28 g	27-Jun-19 16:03	1
L-PFDS	ND	0.807	0.955	1.91		B9F0182	24-Jun-19	1.28 g	27-Jun-19 16:03	1
L-PFDoA	ND	0.807	0.955	1.91		B9F0182	24-Jun-19	1.28 g	27-Jun-19 16:03	1
L-PFTrDA	ND	0.807	0.955	1.91		B9F0182	24-Jun-19	1.28 g	27-Jun-19 16:03	1
L-PFTeDA	ND	0.807	0.955	1.91		B9F0182	24-Jun-19	1.28 g	27-Jun-19 16:03	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	96.4	60 - 130		B9F0182	24-Jun-19	1.28 g	27-Jun-19 16:03	1
13C3-PFPeA	IS	94.1	60 - 150		B9F0182	24-Jun-19	1.28 g	27-Jun-19 16:03	1
13C3-PFBS	IS	101	60 - 150		B9F0182	24-Jun-19	1.28 g	27-Jun-19 16:03	1

Sample ID: SED-14-19

VAL - PFAS

Client Data

Name: Merit Laboratories, Inc.
Project: Camp Grayling- Lake Margrethe
Matrix: Sediment
Date Collected: 05-Jun-19 12:40

Laboratory Data

Lab Sample: 1901484-12
Date Received: 06-Jun-19 09:32
% Solids: 81.8
Column: BEH C18

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-4:2 FTS	IS	99.7	40 - 150		B9F0182	24-Jun-19	1.28 g	27-Jun-19 16:03	1
13C2-PFHxA	IS	95.4	70 - 130		B9F0182	24-Jun-19	1.28 g	27-Jun-19 16:03	1
13C4-PFHpA	IS	94.9	60 - 150		B9F0182	24-Jun-19	1.28 g	27-Jun-19 16:03	1
13C3-PFHxS	IS	96.2	60 - 130		B9F0182	24-Jun-19	1.28 g	27-Jun-19 16:03	1
13C2-6:2 FTS	IS	98.9	40 - 150		B9F0182	24-Jun-19	1.28 g	27-Jun-19 16:03	1
13C2-PFOA	IS	86.4	60 - 130		B9F0182	24-Jun-19	1.28 g	27-Jun-19 16:03	1
13C5-PFNA	IS	87.0	50 - 130		B9F0182	24-Jun-19	1.28 g	27-Jun-19 16:03	1
13C8-PFOSA	IS	47.2	20 - 150		B9F0182	24-Jun-19	1.28 g	27-Jun-19 16:03	1
13C8-PFOS	IS	94.9	60 - 130		B9F0182	24-Jun-19	1.28 g	27-Jun-19 16:03	1
13C2-PFDA	IS	75.4	60 - 130		B9F0182	24-Jun-19	1.28 g	27-Jun-19 16:03	1
13C2-8:2 FTS	IS	99.3	40 - 150		B9F0182	24-Jun-19	1.28 g	27-Jun-19 16:03	1
d3-MeFOSAA	IS	71.7	50 - 150		B9F0182	24-Jun-19	1.28 g	27-Jun-19 16:03	1
d5-EtFOSAA	IS	74.6	50 - 150		B9F0182	24-Jun-19	1.28 g	27-Jun-19 16:03	1
13C2-PFUnA	IS	76.6	60 - 130		B9F0182	24-Jun-19	1.28 g	27-Jun-19 16:03	1
13C2-PFDoA	IS	76.8	30 - 130		B9F0182	24-Jun-19	1.28 g	27-Jun-19 16:03	1
13C2-PFTeDA	IS	78.7	20 - 150		B9F0182	24-Jun-19	1.28 g	27-Jun-19 16:03	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation

The results are reported in dry weight.
The sample size is reported in wet weight.
Results reported to the DL.

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

Sample ID: SED-15-19

VAL - PFAS

Client Data

Name: Merit Laboratories, Inc.
Project: Camp Grayling- Lake Margrethe
Matrix: Sediment
Date Collected: 05-Jun-19 13:11

Laboratory Data

Lab Sample: 1901484-13
Date Received: 06-Jun-19 09:32
% Solids: 85.7
Column: BEH C18

Analyte	Conc. (ng/g)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
L-PFBA	ND	0.835	0.989	1.98		B9F0182	24-Jun-19	1.18 g	27-Jun-19 16:13	1
L-PFPeA	ND	0.835	0.989	1.98		B9F0182	24-Jun-19	1.18 g	27-Jun-19 16:13	1
L-PFBS	ND	0.835	0.989	1.98		B9F0182	24-Jun-19	1.18 g	27-Jun-19 16:13	1
L-4:2 FTS	ND	0.835	0.989	1.98		B9F0182	24-Jun-19	1.18 g	27-Jun-19 16:13	1
L-PFHxA	ND	0.835	0.989	1.98		B9F0182	24-Jun-19	1.18 g	27-Jun-19 16:13	1
L-PFPeS	ND	0.835	0.989	1.98		B9F0182	24-Jun-19	1.18 g	27-Jun-19 16:13	1
L-PFHpA	ND	0.835	0.989	1.98		B9F0182	24-Jun-19	1.18 g	27-Jun-19 16:13	1
L-PFHxS	ND	0.835	0.989	1.98		B9F0182	24-Jun-19	1.18 g	27-Jun-19 16:13	1
Br-PFHxS	ND	0.835	0.989	1.98		B9F0182	24-Jun-19	1.18 g	27-Jun-19 16:13	1
Total PFHxS	ND	0.835	0.989	1.98		B9F0182	24-Jun-19	1.18 g	27-Jun-19 16:13	1
L-6:2 FTS	ND	0.835	0.989	1.98		B9F0182	24-Jun-19	1.18 g	27-Jun-19 16:13	1
L-PFOA	ND	0.835	0.989	1.98		B9F0182	24-Jun-19	1.18 g	27-Jun-19 16:13	1
Br-PFOA	ND	0.835	0.989	1.98		B9F0182	24-Jun-19	1.18 g	27-Jun-19 16:13	1
Total PFOA	ND	0.835	0.989	1.98		B9F0182	24-Jun-19	1.18 g	27-Jun-19 16:13	1
L-PFHpS	ND	0.835	0.989	1.98		B9F0182	24-Jun-19	1.18 g	27-Jun-19 16:13	1
L-PFNA	ND	0.835	0.989	1.98		B9F0182	24-Jun-19	1.18 g	27-Jun-19 16:13	1
L-PFOSA	ND	0.835	0.989	1.98		B9F0182	24-Jun-19	1.18 g	27-Jun-19 16:13	1
L-PFOS	ND	0.835	0.989	1.98		B9F0182	24-Jun-19	1.18 g	27-Jun-19 16:13	1
Br-PFOS	ND	0.835	0.989	1.98		B9F0182	24-Jun-19	1.18 g	27-Jun-19 16:13	1
Total PFOS	ND	0.835	0.989	1.98		B9F0182	24-Jun-19	1.18 g	27-Jun-19 16:13	1
L-PFDA	ND	0.835	0.989	1.98		B9F0182	24-Jun-19	1.18 g	27-Jun-19 16:13	1
L-8:2FTS	ND	0.835	0.989	1.98		B9F0182	24-Jun-19	1.18 g	27-Jun-19 16:13	1
L-PFNS	ND	0.835	0.989	1.98		B9F0182	24-Jun-19	1.18 g	27-Jun-19 16:13	1
L-MeFOSAA	ND	0.835	0.989	1.98		B9F0182	24-Jun-19	1.18 g	27-Jun-19 16:13	1
Br-MeFOSAA	ND	0.835	0.989	1.98		B9F0182	24-Jun-19	1.18 g	27-Jun-19 16:13	1
Total MeFOSAA	ND	0.835	0.989	1.98		B9F0182	24-Jun-19	1.18 g	27-Jun-19 16:13	1
L-EtFOSAA	ND	0.835	0.989	1.98		B9F0182	24-Jun-19	1.18 g	27-Jun-19 16:13	1
Br-EtFOSAA	ND	0.835	0.989	1.98		B9F0182	24-Jun-19	1.18 g	27-Jun-19 16:13	1
Total EtFOSAA	ND	0.835	0.989	1.98		B9F0182	24-Jun-19	1.18 g	27-Jun-19 16:13	1
L-PFUnA	ND	0.835	0.989	1.98		B9F0182	24-Jun-19	1.18 g	27-Jun-19 16:13	1
L-PFDS	ND	0.835	0.989	1.98		B9F0182	24-Jun-19	1.18 g	27-Jun-19 16:13	1
L-PFDoA	ND	0.835	0.989	1.98		B9F0182	24-Jun-19	1.18 g	27-Jun-19 16:13	1
L-PFTrDA	ND	0.835	0.989	1.98		B9F0182	24-Jun-19	1.18 g	27-Jun-19 16:13	1
L-PFTeDA	ND	0.835	0.989	1.98		B9F0182	24-Jun-19	1.18 g	27-Jun-19 16:13	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	95.1	60 - 130		B9F0182	24-Jun-19	1.18 g	27-Jun-19 16:13	1
13C3-PFPeA	IS	85.5	60 - 150		B9F0182	24-Jun-19	1.18 g	27-Jun-19 16:13	1
13C3-PFBS	IS	96.6	60 - 150		B9F0182	24-Jun-19	1.18 g	27-Jun-19 16:13	1

Sample ID: SED-15-19

VAL - PFAS

Client Data

Name: Merit Laboratories, Inc.
Project: Camp Grayling- Lake Margrethe
Matrix: Sediment
Date Collected: 05-Jun-19 13:11

Laboratory Data

Lab Sample: 1901484-13
Date Received: 06-Jun-19 09:32
% Solids: 85.7
Column: BEH C18

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-4:2 FTS	IS	100	40 - 150		B9F0182	24-Jun-19	1.18 g	27-Jun-19 16:13	1
13C2-PFHxA	IS	89.4	70 - 130		B9F0182	24-Jun-19	1.18 g	27-Jun-19 16:13	1
13C4-PFHpA	IS	85.4	60 - 150		B9F0182	24-Jun-19	1.18 g	27-Jun-19 16:13	1
13C3-PFHxS	IS	95.1	60 - 130		B9F0182	24-Jun-19	1.18 g	27-Jun-19 16:13	1
13C2-6:2 FTS	IS	100	40 - 150		B9F0182	24-Jun-19	1.18 g	27-Jun-19 16:13	1
13C2-PFOA	IS	91.7	60 - 130		B9F0182	24-Jun-19	1.18 g	27-Jun-19 16:13	1
13C5-PFNA	IS	82.5	50 - 130		B9F0182	24-Jun-19	1.18 g	27-Jun-19 16:13	1
13C8-PFOSA	IS	54.9	20 - 150		B9F0182	24-Jun-19	1.18 g	27-Jun-19 16:13	1
13C8-PFOS	IS	89.3	60 - 130		B9F0182	24-Jun-19	1.18 g	27-Jun-19 16:13	1
13C2-PFDA	IS	72.1	60 - 130		B9F0182	24-Jun-19	1.18 g	27-Jun-19 16:13	1
13C2-8:2 FTS	IS	95.1	40 - 150		B9F0182	24-Jun-19	1.18 g	27-Jun-19 16:13	1
d3-MeFOSAA	IS	69.8	50 - 150		B9F0182	24-Jun-19	1.18 g	27-Jun-19 16:13	1
d5-EtFOSAA	IS	72.8	50 - 150		B9F0182	24-Jun-19	1.18 g	27-Jun-19 16:13	1
13C2-PFUnA	IS	69.2	60 - 130		B9F0182	24-Jun-19	1.18 g	27-Jun-19 16:13	1
13C2-PFDoA	IS	73.2	30 - 130		B9F0182	24-Jun-19	1.18 g	27-Jun-19 16:13	1
13C2-PFTeDA	IS	74.9	20 - 150		B9F0182	24-Jun-19	1.18 g	27-Jun-19 16:13	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation

The results are reported in dry weight.
The sample size is reported in wet weight.
Results reported to the DL.

When reported, PFHxS, PFOA, PFOS, MeFOSAA and EtFOSAA 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
Conc.	Concentration
D	Dilution
DL	Detection limit
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
LOD	Limits of Detection
LOQ	Limits of Quantitation
M	Estimated Maximum Possible Concentration (CA Region 2 projects only)
NA	Not applicable
ND	Not Detected
P	The reported concentration may include contribution from chlorinated diphenyl ether(s).
Q	The ion transition ratio is outside of the acceptance criteria.
TEQ	Toxic Equivalency
U	Not Detected (specific projects only)
*	See Cover Letter

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

Vista Analytical Laboratory Certifications

Accrediting Authority	Certificate Number
Alaska Department of Environmental Conservation	17-013
Arkansas Department of Environmental Quality	19-013-0
California Department of Health – ELAP	2892
DoD ELAP - A2LA Accredited - ISO/IEC 17025:2005	3091.01
Florida Department of Health	E87777-20
Hawaii Department of Health	N/A
Louisiana Department of Environmental Quality	01977
Maine Department of Health	2018017
Michigan Department of Environmental Quality	9932
Minnesota Department of Health	1521520
New Hampshire Environmental Accreditation Program	207718-B
New Jersey Department of Environmental Protection	180001
New York Department of Health	11411
Oregon Laboratory Accreditation Program	4042-010
Pennsylvania Department of Environmental Protection	015
Texas Commission on Environmental Quality	T104704189-19-10
Virginia Department of General Services	10272
Washington Department of Ecology	C584-19
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
Determination of Polychlorinated p-Dioxins & Polychlorinated Dibenzofurans	EPA TO-9A

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 1613/1613B
1,4-Dioxane (1,4-Diethyleneoxide) analysis by GC/HRMS	EPA 522
Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS	EPA 537
Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS	ISO 25101 2009

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 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

Vista Analytical Laboratory

CHAIN OF CUSTODY

For Laboratory Use Only
Work Order #: 1901484 Temp: 5.3 °C
Storage ID: WR-2 ; R-13 Storage Secured: Yes ☑ No ☐

Project ID: **Camp Grayling - Lake Margrethe** PO#: **60563409** Sampler: Brian Eustice (name)

TAT (check one): Standard: x 21 days; Rush (surcharge may apply): ☐ 14 days ☐ 7 days Specify:

Invoice to: Name	Company	Address	City	State	Ph#	Fax#
Randy Rothe	EGLE-RRD	2100 ~~M-21~~ M-32	Gaylord	MI	989-705-3416	

Relinquished by (printed name and signature)	Date	Time	Received by (printed name and signature)	Date	Time
Brian Eustice	6/5/19	1530	UPS		
UPS			B. Benedict	06/06/19	0932

SHIP TO: Vista Analytical Laboratory
1104 Windfield Way
El Dorado Hills, CA 95762
(916) 673-1520 * Fax (916) 673-0106

ATTN: Jennifer Miller

Method of Shipment: UPS
Tracking No.:

Add Analysis(es) Requested

Sample ID	Date	Time	Location/Sample Description	Container(s) Quantity	Type	Matrix	Mod. EPA Method 537: PFOA/ PFOS	UCMR3 PFAS List:6	537 List: 14	Full List of 24	Other: Please List Below	Branch and Linear	EPA Method 537(DW only): PFOA/ PFOS	UCMR3 PFAS List:6	PFAS List: 14	Comments
*PW-04-19	6/4/19	0815		2	P	AQ				X		X				
SED-04-19		0820		1	PJ	SD				X		X				
*SW-04-19		0815		2	P	AQ				X		X				
SED-05-19		0905		1	PJ	SD				X		X				
*SW-05-19		0910		2	P	AQ				X		X				
*PW-05-19		0915		2	P	AQ				X		X				
SED-06-19		0920		1	PJ	SD				X		X				
*PW-06-19		0945		2	P	AQ				X		X				
*SW-06-19		0945		2	P	AQ				X		X				
SED-07-19	6/4/19	1010		1	PJ	SD				X		X				

Special Instructions/Comments: **Send Results and Acknowledgements to:**

* WO# 1901485

Bonc@michigan.gov
~~Dorin.Bogdan@aecom.com~~
~~Robert.Kennedy@aecom.com~~
~~Jeremiah.Morse@aecom.com~~
eusticeb@michigan.gov

SEND DOCUMENTATION AND RESULTS TO:

Name: **Randy Rothe**
Company: **MDEQ**
Address: **2100 ~~M-21~~ M-32**
City: **Gaylord** State: **MI** Zip: **49735**
Phone: **989-705-3416** Fax:
Email: **ROTHER@michigan.gov**

Container Types: P= HDPE, PJ= HDPE Jar, O = Other:

Bottle Preservation Type: T = Thiosulfate, TZ = Trizma:

Matrix Types: AQ = Aqueous, DW = Drinking Water, EF = Effluent, PP = Pulp/Paper, SD = Sediment, SL = Sludge, SO = Soil, WW = Wastewater, B = Blood/Serum, O = Other:

Vista Analytical Laboratory

CHAIN OF CUSTODY

For Laboratory Use Only
Work Order #: 1901484 Temp: 5.3 °C
Storage ID: WR-2; R-13 Storage Secured: Yes [x] No [ ]

TAT (check one): Standard: [x] 21 days; Rush (surcharge may apply): [ ] 14 days [ ] 7 days Specify:

Project ID: Camp Grayling - Lake Margrethe PO#: 60563409 Sampler: Brian Eustice (name)

Invoice to: Name	Company	Address	City	State	Ph#	Fax#
Randy Rothe	EGLE-RRD	2100 ~~M-21~~ M-32	Gaylord	MI	989-705-3416	

Relinquished by (printed name and signature)	Date	Time	Received by (printed name and signature)	Date	Time
Brian Eustice	6/5/19	1530	UPS		
Relinquished by (printed name and signature) UPS	Date	Time	Received by (printed name and signature) B. Benedict Bethe Bennett	06/06/19	0932

SHIP TO: Vista Analytical Laboratory
1104 Windfield Way
El Dorado Hills, CA 95762
(916) 673-1520 * Fax (916) 673-0106

ATTN: Jennifer Miller

Method of Shipment: UPS

Tracking No.:

Add Analysis(es) Requested

Sample ID	Date	Time	Location/Sample Description	Container(s) Quantity	Type	Matrix	Mod. EPA Method 537: PFOA/ PFOS	UCMR3 PFAS List:6	537 List: 14	Full List of 24	Other: Please List Below	Branch and Linear	EPA Method 537(DW only): PFOA/ PFOS	UCMR3 PFAS List:6	PFAS List: 14	Comments
*PW-03-19	6/4/19	1155		2	P	AQ				X		Y				
SED-10-19	↑	1235		1	PJ	SD				Y		X				
*SW-10-19		1240		2	P	AQ				X		Y				
*PW-10-19		1250		2	P	AQ				Y		X				
*PW-DUP		-		2	P	AQ				Y		Y				
SED-DUP	↓	-		1	PJ	SD				X		X				
*SW-DUP	6/4/19	-		2	P	AQ				Y		X				
*EB-1-19	6/5/19	0920		2	P	AQ				Y		Y				
*SW-11-19	6/5/19	0955		2	P	AQ				Y		X				
SED-12-19	6/5/19	1100		1	PJ	SD				Y		Y				

Special Instructions/Comments: * WO # 1901485

Send Results and Acknowledgements to:
Bonc@michigan.gov
~~Dorin.Bogdan@aecom.com~~
~~Robert.Kennedy@aecom.com~~
~~Jeremiah.Morse@aecom.com~~
e.usticeb@michigan.gov

SEND DOCUMENTATION AND RESULTS TO:
Name: Randy Rothe
Company: MDEQ
Address: 2100 ~~M-21~~ M-72
City: Gaylord State: MI Zip: 49735
Phone: 989-705-3416 Fax:
Email: ROTHER@michigan.gov

Container Types: P= HDPE, PJ= HDPE Jar, O = Other:

Bottle Preservation Type: T = Thiosulfate, TZ = Trizma:

Matrix Types: AQ = Aqueous, DW = Drinking Water, EF = Effluent, PP = Pulp/Paper, SD = Sediment, SL = Sludge, SO = Soil, WW = Wastewater, B = Blood/Serum, O = Other:

Vista Analytical Laboratory

CHAIN OF CUSTODY

For Laboratory Use Only
Work Order #: 1901484 Temp: 5.3 °C
Storage ID: WR-2; R-13 Storage Secured: Yes ☑ No ☐

Project ID: Camp Grayling - Lake Margrethe PO#: 60563409 Sampler: Brian Eviticc (name)

TAT (check one): Standard: x 21 days; Rush (surcharge may apply): ☐ 14 days ☐ 7 days Specify:

Invoice to: Name	Company	Address	City	State	Ph#	Fax#
Randy Rothe	EGLE-RRD	2100 ~~M-21~~ M-32	Gaylord	MI	989-705-3416	

Relinquished by (printed name and signature)	Date	Time	Received by (printed name and signature)	Date	Time
Brian Eviticc	6/5/19	1730	UPS		
Relinquished by (printed name and signature)	Date	Time	Received by (printed name and signature)	Date	Time
UPS			B. Benedict	06/06/19 ~~0932~~	0932

SHIP TO: Vista Analytical Laboratory
1104 Windfield Way
El Dorado Hills, CA 95762
(916) 673-1520 * Fax (916) 673-0106

ATTN: Jennifer Miller

Method of Shipment:

Tracking No.:

Add Analysis(es) Requested

Sample ID	Date	Time	Location/Sample Description	Container(s) Quantity	Type	Matrix	Mod. EPA Method 537: PFOA/ PFOS	UCMR3 PFAS List:6	537 List: 14	Full List of 24	Other: Please List Below	Branch and Linear	EPA Method 537(DW only): PFOA/ PFOS	UCMR3 PFAS List:6	PFAS List: 14	Comments
*SW-07-19	6/4/19	1005		2	P	AQ				X		X				
*PW-07-19	↑	1025		2	P	AQ				X		X				
SED-01-19		1045		1	PJ	SD				X		X				
*SW-01-19		1050		2	P	AQ				X		X				
*PW-01-19		1055		2	P	AQ				X		X				
*PW-02-19		1125		2	P	AQ				X		X				
SED-02-19		1115		1	PJ	SD				X		X				
*SW-02-19		1130		2	P	AQ				X		X				
*SW-03-19	↓	1150		2	P	AQ				X		X				
SED-03-19	6/4/19	1150		1	PJ	SD				X		X				

Special Instructions/Comments: **Send Results and Acknowledgements to:**

Bonc@michigan.gov
~~Dorin.Bogdan@aecom.com~~
~~Robert.Kennedy@aecom.com~~
~~Jeremiah.Morse@aecom.com~~
evitticeb@michigan.gov

*WO#: 1901485

SEND DOCUMENTATION AND RESULTS TO:

Name: Randy Rothe
Company: MDEQ
Address: 2100 ~~M-21~~ M-32
City: Gaylord State: MI Zip: 49735
Phone: 989-705-3416 Fax:
Email: ROTHER@michigan.gov

Container Types: P= HDPE, PJ= HDPE Jar, O = Other:

Bottle Preservation Type: T = Thiosulfate, TZ = Trizma:

Matrix Types: AQ = Aqueous, DW = Drinking Water, EF = Effluent, PP = Pulp/Paper, SD = Sediment, SL = Sludge, SO = Soil, WW = Wastewater, B = Blood/Serum, O = Other:

Vista Analytical Laboratory

CHAIN OF CUSTODY

For Laboratory Use Only
Work Order #: 1901484 Temp: 5.3 °C
Storage ID: WR-2 ; R-13 Storage Secured: Yes ☑ No ☐

Project ID: **Camp Grayling - Lake Margrethe** PO#: **60563409** Sampler: Brian Evstice (name)

TAT (check one): Standard: x 21 days; Rush (surcharge may apply): ☐ 14 days ☐ 7 days Specify:

Invoice to: Name	Company	Address	City	State	Ph#	Fax#
Randy Rothe	**EGLE-RRD**	**2100 ~~M-21~~** M-32	**Gaylord**	**MI**	**989-705-3416**	

Relinquished by (printed name and signature)	Date	Time	Received by (printed name and signature)	Date	Time
Brian Evstice	6/5/19	1530	UPS		
Relinquished by (printed name and signature)	Date	Time	Received by (printed name and signature)	Date	Time
UPS			B. Benedict	06/06/19	0932

SHIP TO: Vista Analytical Laboratory
1104 Windfield Way
El Dorado Hills, CA 95762
(916) 673-1520 * Fax (916) 673-0106

ATTN: Jennifer Miller

Method of Shipment: UPS
Tracking No.:

Add Analysis(es) Requested

Sample ID	Date	Time	Location/Sample Description	Container(s) Quantity	Type	Matrix	Mod. EPA Method 537: PFOA/PFOS	UCMR3 PFAS List:6	537 List: 14	Full List of 24	Other: Please List Below	Branch and Linear	EPA Method 537(DW only): PFOA/PFOS	UCMR3 PFAS List:6	PFAS List: 14	Comments
*SW-12-19	6/5/19	1105		2	P	AQ				X		X				
*PW-12-19	↑	1110		2	P	AQ				X		X				
SED-13-19		1130		1	PJ	SD				X		X				
*SW-13-19		1135		2	P	AQ				X		X				
*PW-13-19		1140		2	P	AQ				X		X				
*SW-14-19		1245		2	P	AQ				X		X				
SED-14-19		1240		1	PJ	SD				X		X				
*PW-14-19		1250		2	P	AQ				X		X				
SED-15-19	↓	1311		1	PJ	AQ				X		X				
*SW-15-19	6/5/19	1315		2	P	SD				X		X				

Special Instructions/Comments: **Send Results and Acknowledgements to:**

* WO# 1901496

Bonc@michigan.gov
~~Derin.Bogdan@aecom.com~~
~~Robert.Kennedy@aecom.com~~
~~Jeremiah.Morse@aecom.com~~
evstice@michigan.gov

SEND DOCUMENTATION AND RESULTS TO:

Name: **Randy Rothe**
Company: **MDEQ**
Address: **2100 ~~M-21~~** M-32
City: **Gaylord** State: **MI** Zip: **49735**
Phone: **989-705-3416** Fax:
Email: ROTHER@michigan.gov

Container Types: P= HDPE, PJ= HDPE Jar, O = Other:

Bottle Preservation Type: T = Thiosulfate, TZ = Trizma:

Matrix Types: AQ = Aqueous, DW = Drinking Water, EF = Effluent, PP = Pulp/Paper, SD = Sediment, SL = Sludge, SO = Soil, WW = Wastewater, B = Blood/Serum, O = Other:

Vista Analytical Laboratory

Sample Log-In Checklist

Page # 1 of 1

Vista Work Order #: 1901484 TAT Std

Samples Arrival:	**Date/Time** 06/06/19 0932	**Initials:** VBLB	**Location:** WR-2 **Shelf/Rack:** NA
Logged In:	**Date/Time** 06/07/19 1414	**Initials:** VBLB	**Location:** R-13 **Shelf/Rack:** A4

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

Temp °C: 5.3 (uncorrected)	**Probe used:** Y (N)	**Thermometer ID:** IR-3
Temp °C: 5.3 (corrected)		

	YES	NO	NA
Adequate Sample Volume Received?	✓		
Holding Time Acceptable?	✓		
Shipping Container(s) Intact?	✓		
Shipping Custody Seals Intact? Picture taken		✓	
Shipping Documentation Present?	✓		
Airbill — Trk # 460 7257225	✓		
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)	Other	Yes	No	NA
Shipping Container	(Vista)	Client	(Retain)	Return		Dispose	

Comments: *SAMPLE SED-15-19 HAS COC MATRIX AS AQ -

Chain of Custody Anomaly/Sample Acceptance Form

Vista Analytical Laboratory

Client:	Merit Laboratories, Inc.	Workorder Number:	1901484
Contact:	Maya Murshak	Date Received:	06-Jun-19 09:32
Email:	mayamurshak@meritlabs.com	Documented by/date:	B.Benedict 06/27/2019
Phone:	(517) 827-2744		

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.

- [ ] Sample Collection Date and/or Time not provided
- [ ] Temperature outside Method Requirement (WI-PHT)
  Temperature _____°C Ice Present? Yes No Melted
- [ ] Sample ID Not Reconcilable
- [ ] Sample Holding Time Missed
- [ ] Insufficient Sample Size
- [ ] All Sample Container(s) Broken
- [ ] Drinking Water Incorrect Container Type
- [ ] Chain-of-Custody not received, illegible or destroyed
- [X] Other: **Sample Matrix discrepancy, see below**

Comments/Samples Affected:

✓ **Chain of Custody ID:** **COC Matrix:**
SED-15-19 AQ
Sample appears to be a Sediment Sample.

Client Authorization

Proceed with Analysis: (YES) NO Signature and Date [signature] 06/27/19

Client Comments/Instructions Per Brian Eustice via email on 06/27/19, report the sample as sediment.