

**Notice:** This form may be used to comply with the requirements of s. NR 716.14 (2), Wis. Adm. Code; however, use of this form is not required. An alternate format may be used. The rule requires that notification be provided to 1) property owners when someone else is conducting the sampling, 2) to occupants of property belonging to the responsible person, and 3) to owners and occupants of property that does not belong to the responsible person but has been affected by contamination arising on his or her property. Notification is required within 10 business days of receiving the sample results. Personal information collected will be used for program administration and may be provided to requesters to the extent required by Wisconsin's Open Records law [ss. 19.31-19.39, Wis. Stats.].

**NOTE:** Under s. NR 716.14, Wis. Adm. Code, the responsible party must also submit sample results and other required information to the DNR. We recommend that copies of the sample results notifications be included with that submittal, along with all attachments. Using the same format used for data presentation for a closure request may be helpful to all parties. See s. NR 716.14, Wis. Adm. Code for the full list of information to be submitted to the DNR.

**Notification of Property Owners and Occupants:**

This notification form has been provided to you in order to provide the results of environmental sampling that has been conducted on property that you own or occupy. Samples were collected in accordance with the methods identified in the site investigation work plan, in accordance with s. NR. 716.09 and 716.13, Wis. Adm. Code. This sampling was conducted as a result of contamination originating at the following location.

**Site Information**

Site Name		DNR ID # (BRRTS #)	
Waupaca Foundry Plant 4		02-38-584102	
Address	City	State	ZIP Code
805 Ogden Street	Marinette	WI	

**Responsible Party**

The person(s) responsible for completing this environmental investigation is:

Property Owner

Waupaca Foundry, Inc. - Plant 4

Address	City	State	ZIP Code
805 Ogden Street	Marinette	WI	
Contact Person	Phone Number (include area code)		
Bryant Esch	(715) 258-6674		

Person or company that collected samples

AECOM

**Sample Results (Results Attached)**

Reason for Sampling:     Routine             Other (define) Initial Site Investigation

The contaminants that have been identified at this time on property that you own or occupy include:

Contaminant	In Soil?		In Groundwater?	
	Yes	No	Yes	No
Gasoline	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Diesel or Fuel Oil	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Solvents	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Heavy Metals	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Pesticides	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other: <u>PFAS</u>	<input checked="" type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>

This sampling event included sampling of a drinking water well. <div style="text-align: center;"> <input type="radio"/> Yes    <input checked="" type="radio"/> No         </div>
If yes, the sampled drinking water well had detectable contaminants. <div style="text-align: center;"> <input type="radio"/> Yes    <input type="radio"/> No         </div>

**Contaminants in Vapor**

	Yes	No
Indoor Air	<input type="radio"/>	<input checked="" type="radio"/>
Sub-slab	<input type="radio"/>	<input checked="" type="radio"/>
Exterior Soil Gas	<input type="radio"/>	<input checked="" type="radio"/>

# Site Investigation Sample Results Notification

Form 4400-249 (R 03/14)

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## Attached are:

- A map that shows the locations from which samples were collected. (The map needs to meet the requirements of s. NR 716.15 (4), Wis. Adm. Code.)
- A data table with specific contaminant levels at each sample location and whether or not the sample results exceed state standards.
- A copy of the laboratory results.

**You are not identified as the person that is responsible for this contamination.** However, your cooperation is important. Property owners may become legally responsible for contamination if they do not allow access to the person that is responsible so that person may complete the environmental investigation and clean up activities.

**Option for written exemption:** You have the option of requesting a written liability exemption from the DNR for contamination that originated on another property, or on property that you lease. To do this, you must present an adequate environmental assessment of your property and pay a \$700 fee for review of this information. If you are interested in this option, please see DNR publication # RR 589, "When Contamination Crosses a Property Line - Rights and Responsibilities of Property Owners", available at: [dnr.wi.gov/files/PDF/pubs/rr/rr589.pdf](http://dnr.wi.gov/files/PDF/pubs/rr/rr589.pdf).

## Contact Information

Please address questions regarding this notification, or requests for additional information to the contact person listed above, or to one of the following contacts:

### Environmental Consultant

Company Name		Contact Person Last Name	First Name	
AECOM		Mott	Andrew	
Address		City	State	ZIP Code
558 North Main Street		Oshkosh	WI	54902
Phone # (inc. area code)	Email			
(920) 236-6713	andrew.mott@aecom.com			

Select which agency:  Natural Resources       Agriculture, Trade and Consumer Protection

### State of Wisconsin Department of Natural Resources

Contact Person Last Name	First Name	Phone # (inc. area code)	
Neste	David	(920) 424-0399	
Address	City	State	ZIP Code
625 East Cty Y, Suite 700	Oshkosh	WI	54901
Email			
david.neste@wisconsin.gov			





**Legend**

- Monitoring Well Location
- Surface Water Sample Location
- Staff Gauge Location
- Temporary Monitoring Well Location (AECOM 9/13/20)
- Boring Location (North Shore Env. 8/21/2019)
- Temporary Monitoring Well Location, (GEI 7/2/2019)
- Construction Excavation and Dewatering System Area
- Subject Property
- WDR Historical Landfill Limits

**SITE DETAIL MAP  
PFAS SITE INVESTIGATION  
WAUPACA FOUNDRY PLANT 4  
MARINETTE, WISCONSIN**

Waupaca Foundry - Plant 4  
PFAS Site Investigation  
805 Ogden St.  
Marinette, Wisconsin  
54143  
AECOM Project# 60620421

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



**Soil Analytical Table  
Waupaca Foundry Plant 4  
Marinette, Wisconsin**

Boring Sample Depth (ft) Date Sampled By	Non - Industrial RCL (ng/g)	Industrial Direct RCL (ng/g)	GW-1	GW-2	GW-3	GW-4	GW-5	GW-5	GW-6	GW-6	GW-7	DUP	EB 4.2	River Side B-145387	Substation Side B-145388	
			4.0-5.0	4.0-5.0	4.0-5.0	3.0-5.0	0.0-1.0	4.0-5.0	0.0-1.0	4.0-5.0	3.0-4.0	4.0-5.0	4.0-5.0	Composite	Composite	
			5/19/20	5/19/20	5/19/20	5/19/20	5/20/20	5/20/20	5/20/20	5/20/20	5/20/20	5/19/20	5/20/20	9/13/2019	8/21/2019	8/21/2019
			AECOM	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM	North Shore
<b>PFAS Compounds (ng/g)</b>	<b>CAS</b>															
Potassium 9-chlorohexadecafluoro-3-oxanonane-1-sulfiric acid (9CI-PF3ONS)	756426-58-1	NL	NL	<0.19	<0.18	<0.19	<0.19	<0.18	<0.18	<0.18	<0.18	<0.18	<0.22	NA	NA	
11-Chloroeicosafuoro=3-oxaundecane-1sulfonic acid (11CI-PF3OUdS)	763051-92-9	NL	NL	<0.36	<0.36	<0.73	<0.36	<0.35	<0.36	<0.35	<0.36	<0.36	<0.22	NA	NA	
4,8-dioxa-3H-perfluoronananoic acid (ADONA)	919005-14-4	NL	NL	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.22	<0.018	<0.018	
2,3,3,3-Tetrafluoro-2-(1,1,2,2,3,3,3- heptafluoroproxy)-propanoic acid (HFPO-DA)	13252-13-6	NL	NL	<0.59	<0.58	<0.59	<0.59	<0.58	<0.59	<0.58	<0.58	<0.58	<0.44	NA	NA	
N-ethyl perfluorooctanesulfonamidoacetic Acid (EtFOSAA)	2991-50-6	NL	NL	<0.34	<0.34	<0.34	<0.35	<0.34	<0.34	<0.34	<0.34	<0.34	<0.22	<0.37	<0.37	
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	NL	NL	<1.92	<3.77	<3.89	<1.92	<1.88	<3.68	<1.88	<1.90	<1.90	<1.9	<0.54	NA	
2-(N-ethylperfluoro-1-octanesulfonamido)-ethanol (EtFOSE)	1691-99-2	NL	NL	11.00	<2.66	<5.45	<2.69	<2.64	<2.67	<2.64	<2.66	<2.66	<2.66	<0.54	NA	
N-methyl perfluorooctanesulfonamidoacetic Acid (MeFOSAA)	2355-31-9	NL	NL	<0.37	<0.36	0.64	<0.37	<0.36	<0.37	<0.36	<0.36	<0.36	<0.22	<0.39	<0.39	
N-methylperfluoro-1-octanesulfonamide (MeFOSA)	31506-32-8	NL	NL	<2.89	<5.68	<5.85	<2.89	<2.83	<5.54	<2.84	<2.82	<2.86	<2.86	<0.54	NA	
2-(N-methylperfluoro-1-octanesulfonamido)-ethanol (MeFOSE)	24448-09-7	NL	NL	<2.48	<2.46	<5.02	<2.48	<2.43	<2.46	<2.43	<2.45	<2.45	<2.45	<0.54	NA	
Perfluorobutanoic acid (PFBA)	375-22-4	NL	NL	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.87	0.08J	
Perfluoropentanoic acid (PFPeA)	2706-90-3	NL	NL	<0.20	0.33	<0.20	<0.20	<0.20	<0.20	<0.20	<0.97	<0.20	<0.2	<0.22	<0.08	
Perfluorohexanoic acid (PFHxA)	307-24-4	NL	NL	<0.11	0.30Q	<0.11	<0.11	0.17J,Q	<0.11	0.14J,Q	0.18J	<0.11	<0.11	<0.22	0.10J	
Perfluoroheptanoic acid (PFHpA)	375-85-9	NL	NL	<0.24	0.24J	<0.24	<0.24	<0.23	<0.24	<0.23	0.26Q	<0.24	<0.24	<0.22	0.03J	
Perfluorooctanoic acid (PFOA)	335-67-1	1,260	16,400	<0.24	0.34	3.54	<0.24	<0.23	<0.23	<0.23	1.32	<0.23	<0.23	0.30J	0.87	
Perfluorononanoic acid (PFNA)	375-95-1	NL	NL	<0.16	<0.15	<0.16	<0.16	<0.15	0.26Q	<0.15	<0.15	<0.15	0.242J	<0.22	<0.04	
Perfluorodecanoic acid (PFDA)	335-76-2	NL	NL	<0.23	<0.22	<0.23	<0.23	<0.22	<0.22	0.39Q	<0.22	<0.22	<0.22	<0.22	<0.02	
Perfluoroundecanoic acid (PFUnA)	2058-94-8	NL	NL	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.22	<0.04	
Perfluorododecanoic acid (PFDoA)	307-55-1	NL	NL	<0.20	<0.20	<0.41	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.2	<0.22	<0.07	
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	NL	NL	<0.20	<0.20	<0.41	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.2	<0.22	<0.05	
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	NL	NL	<0.13	<0.26	<0.27	<0.13	<0.13	<0.13	<0.13	<0.13	<0.26	<0.13	<0.22	<0.05	
Perfluorobutanesulfonic acid (PFBS)	375-73-5	NL	NL	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.44	0.05J	
Perfluoropentanesulfonic acid (PFPeS)	2706-91-4	NL	NL	<0.33	<0.33	<0.33	<0.33	<0.32	<0.33	<0.32	<0.33	<0.33	<0.33	<0.22	<0.02	
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	NL	NL	<0.20	<0.19	<0.20	<0.20	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.22	<0.03	
Perfluoroheptanesulfonic Acid (PFHpS)	375-92-8	NL	NL	<0.37	<0.37	<0.37	<0.37	<0.36	<0.37	<0.36	<0.37	<0.37	<0.37	<0.22	<0.04	
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	1,260	16,400	0.25Q	0.25Q	1.08	8.93	<0.21	0.49Q	0.65	0.38Q	<0.21	0.446	<0.22	0.28J	
Perfluorononanesulfonic acid (PFNS)	68259-12-1	NL	NL	<0.57	<0.57	<0.57	<0.58	<0.56	<0.57	<0.56	<0.57	<0.57	<0.57	<0.22	<0.02	
Perfluorodecanesulfonic acid (PFDS)	335-77-3	NL	NL	<0.35	<0.34	<0.35	<0.35	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.22	<0.04	
Perfluorooctanesulfonamide (FOSA)	754-91-6	NL	NL	<0.5	<0.50	<1.02	<0.51	<0.49	<0.5	<0.49	<0.5	<0.5	<0.5	<0.22	<0.08	
Perfluorohexadecanoic acid (PFHxDA)	67905-19-5	NL	NL	<0.17	<0.17	<0.17	<0.17	<0.17	<0.16	<0.16	<0.17	<0.17	<0.16	<0.22	NA	
Perfluorododecanesulfonic acid (PFDoS)	79780-39-5	NL	NL	<0.3	<0.59	<0.61	<0.3	<0.29	<0.3	<0.29	<0.3	<0.58	<0.3	<0.22	NA	
Perfluorooctadecanoic acid (PFODA)	16517-11-6	NL	NL	<0.5	<0.49	<0.51	<0.49	<0.49	<0.48	<0.48	<0.49	<0.49	<0.48	<0.22	NA	
4:2 FTS	757124-72-4	NL	NL	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.65	<0.37	
6:2 FTS	27619-97-2	NL	NL	<0.33	<0.32	<0.33	0.68	<0.32	<0.32	<0.32	<0.32	<0.32	<0.32	<0.65	<0.15	
8:2 FTS	39108-34-4	NL	NL	<0.36	<0.36	<0.36	<0.36	<0.35	<0.36	<0.35	<0.36	<0.36	<0.36	<0.65	<0.25	
10:2 FTS	120226-60-0	NL	NL	<0.51	<1.00	<0.5	<0.51	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.65	<0.05	

Notes:  
 (ng/g) = nanograms per gram (ppb)  
 < = analyte not detected above method detection limit  
 NA = Not Analyzed  
 NL = Generic Limit Not Established  
 J = The amount detected is below the Reporting Limit/LOQ  
 Q = The ion transition ratio is outside of the acceptance criteria  
 Soil standards are based on the US. EPAs soil residual contaminate levels (RCLs)



**Groundwater Analytical Table  
Waupaca Foundry Plant 4  
Marinette, Wisconsin**

Sample	Date Sampled By	Wisconsin Recommended GW Enforcement Standards		MW-1	MW-2	MW-3	MW-4	MW-5	MW-6	MW-7	SW-1	SW-2	SW-3	Return Pit	EB 4.2	S-MW (STR 145388)	N-MW (STR 145387)	
		Enforcement Standard (ES)	Preventive Action Limit (PAL)	5/29/20	5/29/20	5/29/20	5/29/20	5/29/20	5/29/20	5/29/20	5/29/20	5/29/20	5/29/20	5/29/20	9/17/19	9/13/19	7/2/19	7/2/19
				AECOM	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM	WFI	AECOM	GEI
<b>PFAS Compounds ( ng/L)</b>	<b>CAS</b>																	
Potassium 9-chlorohexadecafluoro-3-oxanonane-1-sulfiric acid (9CI-PF3ONS)	756426-58-1	NL	NL	<0.76	<0.73	<0.75	<0.74	<0.72	<0.76	<0.73	<0.77	<0.77	<0.78	NA	NA	NA	NA	
11-Chloroeicosafluoro=3-oxaundecane-1sulfonic acid (11CI-PF3OUdS)	763051-92-9	NL	NL	<1.25	<1.21	<1.25	<1.23	<1.20	<1.27	<1.22	<1.29	<1.28	<1.29	NA	NA	NA	NA	
4,8-dioxa-3H-perfluoronananoic acid (ADONA)	919005-14-4	NL	NL	<0.38	<0.36	<0.38	<0.37	<0.36	<0.38	<0.36	<0.39	<0.39	<0.39	NA	NA	NA	NA	
2,3,3,3-Tetrafluoro-2-(1,1,2,2,3,3,3- heptafluoropropoxy)-propanoic acid (HFPO-DA)	13252-13-6	NL	NL	<2.51	<2.42	<2.50	<2.46	<2.41	<2.54	<2.43	<2.57	<2.57	<2.58	NA	NA	NA	NA	
N-ethyl perfluorooctanesulfonamidoacetic Acid (EtFOSAA)	2991-50-6	NL	NL	0.97JQ	<0.69	130	28.4	27.0	15.2	2.22	<0.73	<0.73	<0.73	<1.70	<0.53	<2.8	<2.8	
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	NL	NL	<2.66	<2.57	<2.66	<2.6	<2.55	<2.69	<2.58	<2.73	<2.72	<2.73	NA	NA	NA	NA	
2-(N-ethylperfluoro-1-octanesulfonamido)-ethanol (EtFOSE)	1691-99-2	NL	NL	<4.91	<4.75	<4.91	<4.81	<4.71	<4.98	<4.76	<5.04	<5.03	<5.05	NA	NA	NA	NA	
N-methyl perfluorooctanesulfonamidoacetic Acid (MeFOSAA)	2355-31-9	NL	NL	<0.86	<0.83	<0.86	1.99J	<0.82	0.910	<0.83	<0.88	<0.88	<0.88	<2.80	<0.53	32	<1.7	
N-methylperfluoro-1-octanesulfonamide (MeFOSA)	31506-32-8	NL	NL	<1.99	<1.93	<1.99	<1.95	<1.91	<2.02	<1.93	<2.05	<2.04	<2.05	NA	NA	NA	NA	
2-(N-methylperfluoro-1-octanesulfonamido)-ethanol (MeFOSE)	24448-09-7	NL	NL	<3.16	<3.05	<3.15	<3.09	<3.03	<3.20	<3.06	<3.24	<3.24	<3.25	NA	NA	NA	NA	
Perfluorobutanoic acid (PFBA)	375-22-4	NL	NL	21.5	9.85	186	35.1	21.9	90.9	52.4	2.14	2.29	2.87	30	120	49	52	
Perfluoropentanoic acid (PFPeA)	2706-90-3	NL	NL	74.2	21.5	749	84.2	37.3	306	180	1.99J	3.69	2.84	91	310	120	150	
Perfluorohexanoic acid (PFHxA)	307-24-4	NL	NL	65.4	24.9	2400D	143	51.3	317	349	<1.16	2.74	2.76	120	240	110	140	
Perfluoroheptanoic acid (PFHpA)	375-85-9	NL	NL	24.0	13.7	1,320	101	32.6	224	207	<0.32	2.12JQ	1.63JQ	31	130	32	100	
Perfluorooctanoic acid (PFOA)	335-67-1	20	2	<b>88.2</b>	<b>37.1</b>	<b>20300D</b>	<b>13300D</b>	<b>332</b>	<b>1350D</b>	<b>9410D</b>	1.84J	<b>9.07</b>	<b>7.07</b>	<b>490</b>	<b>72</b>	<b>110</b>	<b>1,100</b>	
Perfluorononanoic acid (PFNA)	375-95-1	NL	NL	<0.42	<0.41	3.15Q	15.2	14.9	5.23	5.29	<0.43	<0.43	<0.43	0.57J	<0.44	1.4J	6.8	
Perfluorodecanoic acid (PFDA)	335-76-2	NL	NL	<0.78	<0.75	0.95JQ	8.20	<0.74	<0.79	<0.75	<0.80	<0.79	<0.80	<0.28	<0.44	0.98J	0.93	
Perfluoroundecanoic acid (PFUnA)	2058-94-8	NL	NL	<0.55	<0.53	<0.55	<0.54	<0.52	<0.55	<0.53	<0.56	<0.56	<0.56	<1.00	<0.44	<1.0	<1.0	
Perfluorododecanoic acid (PFDoA)	307-55-1	NL	NL	<0.41	<0.40	<0.41	<0.40	<0.40	<0.42	<0.40	<0.42	<0.42	<0.42	<0.50	<0.44	<0.50	<0.50	
Perfluorotridecanoic acid (PFTTrDA)	72629-94-8	NL	NL	<0.26	<0.25	<0.26	<0.25	<0.25	<0.26	<0.25	<0.26	<0.26	<0.26	<1.20	<0.44	<1.2	<1.2	
Perfluorotetradecanoic acid (PFTTeDA)	376-06-7	NL	NL	<0.39	<0.38	<0.39	<0.39	<0.38	<0.40	<0.38	<0.40	<0.40	<0.40	<0.26	<0.44	<0.27	<2.6	
Perfluorobutanesulfonic acid (PFBS)	375-73-5	NL	NL	6.27	<0.90	17.00	12.10	<0.89	<0.94	5.07	<0.96	<0.95	<0.96	1.1J	2.3	0.83J	1.9	
Perfluoropentanesulfonic acid (PFPeS)	2706-91-4	NL	NL	<1.26	<1.22	33.90	11.70	<1.21	2.84	7.55	<1.29	<1.29	<1.29	1.1J	<0.44	<0.27	1.2J	
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	NL	NL	20.90	<0.476	136	78.80	9.84	20.40	33.50	<0.51	<0.51	<0.51	3.7IB	1.4J	3.3*	9.9*	
Perfluoroheptanesulfonic Acid (PFHpS)	375-92-8	NL	NL	<0.49	<0.47	14.70	3.95Q	1.97J	1.22JQ	5.40	<0.50	<0.50	<0.50	<0.17	<0.44	1.8	1.7J	
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	20	2	<b>17.60</b>	<b>4.82</b>	<b>484</b>	<b>155</b>	<b>121</b>	<b>34.2</b>	<b>196</b>	1.10J	<0.43	0.61J	<b>2.9B</b>	1.1J	<b>200</b>	<b>20</b>	
Perfluorononanesulfonic acid (PFNS)	68259-12-1	NL	NL	<2.01	<1.95	<2.01	<1.97	<1.93	<2.04	<1.95	<2.07	<2.06	<2.07	<0.15	<0.44	<0.15	<0.15	
Perfluorodecanesulfonic acid (PFDS)	335-77-3	NL	NL	<0.64	<0.62	<0.64	<0.63	<0.61	<0.65	<0.62	<0.66	<0.66	<0.66	<0.29	<0.44	<0.29	<0.29	
Perfluorooctanesulfonamide (PFOSA)	754-91-6	NL	NL	11.20	19.70	4.72	3.42Q	11.70	5.60	25.40	6.87	11.40	9.68	<0.32	<0.44	1.5J	<0.32	
Perfluorohexadecanoic acid (PFHxDA)	67905-19-5	NL	NL	<0.15	<0.15	<0.15	<0.15	<0.15	<0.16	<0.15	<0.16	<0.16	<0.16	NA	NA	NA	NA	
Perfluorododecanesulfonic acid (PFDoS)	79780-39-5	NL	NL	<2.17	<2.10	<2.17	<2.13	<2.08	<2.20	<2.10	<2.23	<2.22	<2.23	NA	NA	NA	NA	
Perfluorooctadecanoic acid (PFODA)	16517-11-6	NL	NL	<3.20	<3.09	<3.19	<3.13	<3.06	<3.24	<3.10	<3.28	<3.27	<3.28	NA	NA	NA	NA	
4:2 FTS	757124-72-4	NL	NL	<0.72	<0.70	<0.70	<0.71	<0.70	1.35J	4.20	<0.74	<0.74	<0.74	<4.70	3.5	<4.8	<4.8	
6:2 FTS	27619-97-2	NL	NL	5.55	<1.01	6.87	34.40	1.57J	21.50	21.10	6.28	7.54	8.88	66	3.7J	<1.8	12J	
8:2 FTS	39108-34-4	NL	NL	<1.07	<1.04	<1.07	<1.05	<1.03	<1.09	<1.04	<1.10	<1.10	<1.10	<1.80	<0.88	<1.8	<1.8	
10:2 FTS	120226-60-0	NL	NL	<1.63	<1.57	<1.63	<1.60	<1.56	<1.65	<1.58	<1.67	<1.67	<1.67	NA	NA	NA	NA	

**Notes:**  
Following conversion of soil borings (GW) to monitoring wells the locations were renamed as "MW".  
(ng/L) = nanograms per liter (ppt)  
< = analyte not detected above method detection limit  
NA = Not Analyzed  
NL = Generic Limit Not Established  
J = The amount detected is below the Reporting Limit/LOQ  
Q = The ion transition ratio is outside of the acceptance criteria  
D = Diluted  
B = Compound was found in the [field] blank and sample  
I = Value is EMPC (estimated maximum possible concentration)  
Exceedance of the WDNR Cycle 10 proposed PAL indicated by:  
Exceedance of the WDNR Cycle 10 proposed ES indicated by:

**2**  
**20**



**Groundwater Analytical Table  
 Waupaca Foundry Plant 4  
 Marinette, Wisconsin**

Sample	Wisconsin Recommended GW Enforcement Standards		MW-1	MW-2	MW-3	MW-4	MW-5	MW-6	MW-7	SW-1	SW-2	SW-3	Return Pit	EB 4.2	S-MW (STR 145388)	N-MW (STR 145387)
	Enforcement Standard (ES)	Preventive Action Limit (PAL)	5/29/20	5/29/20	5/29/20	5/29/20	5/29/20	5/29/20	5/29/20	5/29/20	5/29/20	5/29/20	9/17/19	9/13/19	7/2/19	7/2/19
Date Sampled By			AECOM	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM	WFI	AECOM	GEI	GEI



June 19, 2020

**Vista Work Order No. 2001121**

Mr. Andrew Mott  
AECOM  
558 North Main Street  
Oshkosh, WI 54901

Dear Mr. Mott,

Enclosed are the results for the sample set received at Vista Analytical Laboratory on May 22, 2020 under your Project Name 'Waupaca Foundry Plant #4'.

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](mailto:mmaier@vista-analytical.com).

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

Sincerely,

Martha Maier  
Laboratory Director



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



**Vista Work Order No. 2001121**

**Case Narrative**

**Sample Condition on Receipt:**

Sixteen soil samples and three aqueous samples were received in good condition and within the method temperature requirements. The samples were received and stored securely in accordance with Vista standard operating procedures and EPA methodology. As directed, samples "GW4 (1'-2')", "GW1 (2'-3')", "GW3 (1'-2')", "GW2 (0'-1')", "GW7 (0.5'-1.5')", and "DUP (0'-1')" were placed on hold.

**Analytical Notes:**

**PFAS Isotope Dilution Method (Solid)**

The soil samples were extracted and analyzed for a selected list of PFAS using Vista's Isotope Dilution Method. 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 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 each preparation batch. No analytes were detected in the Method Blanks above the Reporting Limit (RL). The OPR recoveries were within the method acceptance criteria for batch B0F0021. The recovery of MeFOSA was greater than 130% in the OPR associated with batch B0F0104. This analyte was not detected in the sample. The recoveries of all other analytes were within the acceptance criteria.

The internal standard recoveries outside the acceptance criteria are flagged with an "H" qualifier.

**PFAS Isotope Dilution Method (Aqueous)**

The samples were extracted and analyzed for a selected list of PFAS using Vista's PFAS Isotope Dilution Method. 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 within the method hold times.

Quality Control

The Initial Calibration and Continuing Calibration Verifications met the 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 the Reporting Limit. The OPR recoveries were within the method acceptance criteria.

The recoveries of all internal standards in the QC and field samples were within the acceptance criteria.

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# Sample Inventory Report

Vista Sample ID	Client Sample ID	Sampled	Received	Components/Containers
2001121-01	GW4 (1'-2')	19-May-20 12:10	22-May-20 10:00	HDPE Jar, 6 oz
2001121-02	GW4 (3'-5')	19-May-20 12:15	22-May-20 10:00	HDPE Jar, 6 oz
2001121-03	GW1 (2'-3')	19-May-20 12:45	22-May-20 10:00	HDPE Jar, 6 oz
2001121-04	GW1 (4'-5')	19-May-20 12:55	22-May-20 10:00	HDPE Jar, 6 oz
2001121-05	GW3 (1'-2')	19-May-20 13:55	22-May-20 10:00	HDPE Jar, 6 oz
2001121-06	GW3 (4'-5')	19-May-20 14:00	22-May-20 10:00	HDPE Jar, 6 oz
2001121-07	GW2 (0'-1')	19-May-20 14:45	22-May-20 10:00	HDPE Jar, 6 oz
2001121-08	GW2 (4'-5')	19-May-20 14:50	22-May-20 10:00	HDPE Jar, 6 oz
2001121-09	GW7 (0.5'-1.5')	19-May-20 16:10	22-May-20 10:00	HDPE Jar, 6 oz
2001121-10	GW7 (3'-4')	19-May-20 16:15	22-May-20 10:00	HDPE Jar, 6 oz
2001121-11	GW 5 (0'-1')	20-May-20 08:10	22-May-20 10:00	HDPE Jar, 6 oz
2001121-12	GW5 (4'-5')	20-May-20 08:15	22-May-20 10:00	HDPE Jar, 6 oz
2001121-13	GW6 (0'-1')	20-May-20 10:00	22-May-20 10:00	HDPE Jar, 6 oz
2001121-14	GW6 (4'-5')	20-May-20 10:10	22-May-20 10:00	HDPE Jar, 6 oz
2001121-15	DUP (0'-1')	20-May-20 00:00	22-May-20 10:00	HDPE Jar, 6 oz
2001121-16	DUP (4'-5')	20-May-20 00:00	22-May-20 10:00	HDPE Jar, 6 oz
2001121-17	Field Blank	19-May-20 11:00	22-May-20 10:00	HDPE Bottle, 250 mL HDPE Bottle, 250 mL
2001121-18	EB-1 Rod+Sleeve-Truck Rig	19-May-20 11:30	22-May-20 10:00	HDPE Bottle, 250 mL HDPE Bottle, 250 mL
2001121-19	EB-2 Rod+Sleeve-Track Rig	19-May-20 12:20	22-May-20 10:00	HDPE Bottle, 250 mL HDPE Bottle, 250 mL

## **ANALYTICAL RESULTS**

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

Client Data				Laboratory Data			
Name:	AECOM	Matrix:	Solid	Lab Sample:	B0F0021-BLK1	Column:	BEH C18
Project:	Waupaca Foundry Plant #4						

Analyte	CAS Number	Conc. (ng/g)	MDL	RL	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBA	375-22-4	ND	0.173	0.250		B0F0021	04-Jun-20	2.00 g	10-Jun-20 13:23	1
PFPeA	2706-90-3	ND	0.199	0.250		B0F0021	04-Jun-20	2.00 g	10-Jun-20 13:23	1
PFBS	375-73-5	ND	0.152	0.250		B0F0021	04-Jun-20	2.00 g	10-Jun-20 13:23	1
4:2 FTS	757124-72-4	ND	0.180	0.250		B0F0021	04-Jun-20	2.00 g	10-Jun-20 13:23	1
PFHxA	307-24-4	ND	0.108	0.250		B0F0021	04-Jun-20	2.00 g	10-Jun-20 13:23	1
PFPeS	2706-91-4	ND	0.329	0.500		B0F0021	04-Jun-20	2.00 g	10-Jun-20 13:23	1
HFPO-DA	13252-13-6	ND	0.590	0.750		B0F0021	04-Jun-20	2.00 g	10-Jun-20 13:23	1
PFHpA	375-85-9	ND	0.239	0.250		B0F0021	04-Jun-20	2.00 g	10-Jun-20 13:23	1
ADONA	919005-14-4	ND	0.170	0.250		B0F0021	04-Jun-20	2.00 g	10-Jun-20 13:23	1
PFHxS	355-46-4	ND	0.195	0.250		B0F0021	04-Jun-20	2.00 g	10-Jun-20 13:23	1
6:2 FTS	27619-97-2	ND	0.327	0.500		B0F0021	04-Jun-20	2.00 g	10-Jun-20 13:23	1
PFOA	335-67-1	ND	0.235	0.250		B0F0021	04-Jun-20	2.00 g	10-Jun-20 13:23	1
PFHpS	375-92-8	ND	0.369	0.500		B0F0021	04-Jun-20	2.00 g	10-Jun-20 13:23	1
PFNA	375-95-1	ND	0.156	0.250		B0F0021	04-Jun-20	2.00 g	10-Jun-20 13:23	1
PFOSA	754-91-6	ND	0.504	0.750		B0F0021	04-Jun-20	2.00 g	10-Jun-20 13:23	1
PFOS	1763-23-1	ND	0.215	0.250		B0F0021	04-Jun-20	2.00 g	10-Jun-20 13:23	1
9Cl-PF3ONS	756426-58-1	ND	0.185	0.250		B0F0021	04-Jun-20	2.00 g	10-Jun-20 13:23	1
PFDA	335-76-2	ND	0.226	0.250		B0F0021	04-Jun-20	2.00 g	10-Jun-20 13:23	1
8:2 FTS	39108-34-4	ND	0.361	0.500		B0F0021	04-Jun-20	2.00 g	10-Jun-20 13:23	1
PFNS	68259-12-1	ND	0.575	0.750		B0F0021	04-Jun-20	2.00 g	10-Jun-20 13:23	1
MeFOSAA	2355-31-9	ND	0.368	0.500		B0F0021	04-Jun-20	2.00 g	10-Jun-20 13:23	1
EtFOSAA	2991-50-6	ND	0.344	0.500		B0F0021	04-Jun-20	2.00 g	10-Jun-20 13:23	1
PFUnA	2058-94-8	ND	0.129	0.250		B0F0021	04-Jun-20	2.00 g	10-Jun-20 13:23	1
PFDS	335-77-3	ND	0.345	0.500		B0F0021	04-Jun-20	2.00 g	10-Jun-20 13:23	1
11Cl-PF3OUdS	763051-92-9	ND	0.361	0.500		B0F0021	04-Jun-20	2.00 g	10-Jun-20 13:23	1
10:2 FTS	120226-60-0	ND	0.508	0.750		B0F0021	04-Jun-20	2.00 g	10-Jun-20 13:23	1
PFDoA	307-55-1	ND	0.202	0.250		B0F0021	04-Jun-20	2.00 g	10-Jun-20 13:23	1
MeFOSA	31506-32-8	ND	2.89	5.00		B0F0021	04-Jun-20	2.00 g	10-Jun-20 13:23	1
PFTrDA	72629-94-8	ND	0.201	0.250		B0F0021	04-Jun-20	2.00 g	10-Jun-20 13:23	1
PFDoS	79780-39-5	ND	0.300	0.500		B0F0021	04-Jun-20	2.00 g	10-Jun-20 13:23	1
PFTeDA	376-06-7	ND	0.132	0.250		B0F0021	04-Jun-20	2.00 g	10-Jun-20 13:23	1
EtFOSA	4151-50-2	ND	1.92	5.00		B0F0021	04-Jun-20	2.00 g	10-Jun-20 13:23	1
MeFOSE	24448-09-7	ND	2.48	5.00		B0F0021	04-Jun-20	2.00 g	10-Jun-20 13:23	1
EtFOSE	1691-99-2	ND	2.69	5.00		B0F0021	04-Jun-20	2.00 g	10-Jun-20 13:23	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	92.6	25 - 150		B0F0021	04-Jun-20	2.00 g	10-Jun-20 13:23	1
13C3-PFPeA	IS	78.1	25 - 150		B0F0021	04-Jun-20	2.00 g	10-Jun-20 13:23	1
13C3-PFBS	IS	85.0	25 - 150		B0F0021	04-Jun-20	2.00 g	10-Jun-20 13:23	1



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

<b>Client Data</b>				<b>Laboratory Data</b>			
Name:	AECOM	Matrix:	Solid	Lab Sample:	B0F0021-BLK1	Column:	BEH C18
Project:	Waupaca Foundry Plant #4						

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-HFPO-DA	IS	73.5	25 - 150		B0F0021	04-Jun-20	2.00 g	10-Jun-20 13:23	1
13C2-4:2 FTS	IS	89.3	25 - 150		B0F0021	04-Jun-20	2.00 g	10-Jun-20 13:23	1
13C2-PFHxA	IS	82.4	25 - 150		B0F0021	04-Jun-20	2.00 g	10-Jun-20 13:23	1
13C4-PFHpA	IS	78.6	25 - 150		B0F0021	04-Jun-20	2.00 g	10-Jun-20 13:23	1
13C3-PFHxS	IS	74.6	25 - 150		B0F0021	04-Jun-20	2.00 g	10-Jun-20 13:23	1
13C2-6:2 FTS	IS	84.8	25 - 150		B0F0021	04-Jun-20	2.00 g	10-Jun-20 13:23	1
13C5-PFNA	IS	57.7	25 - 150		B0F0021	04-Jun-20	2.00 g	10-Jun-20 13:23	1
13C8-PFOA	IS	32.3	10 - 150		B0F0021	04-Jun-20	2.00 g	10-Jun-20 13:23	1
13C2-PFOA	IS	71.1	25 - 150		B0F0021	04-Jun-20	2.00 g	10-Jun-20 13:23	1
13C8-PFOS	IS	59.3	25 - 150		B0F0021	04-Jun-20	2.00 g	10-Jun-20 13:23	1
13C2-PFDA	IS	53.8	25 - 150		B0F0021	04-Jun-20	2.00 g	10-Jun-20 13:23	1
13C2-8:2 FTS	IS	54.7	25 - 150		B0F0021	04-Jun-20	2.00 g	10-Jun-20 13:23	1
d3-MeFOSAA	IS	38.2	25 - 150		B0F0021	04-Jun-20	2.00 g	10-Jun-20 13:23	1
13C2-PFUnA	IS	40.7	25 - 150		B0F0021	04-Jun-20	2.00 g	10-Jun-20 13:23	1
d5-EtFOSAA	IS	36.3	25 - 150		B0F0021	04-Jun-20	2.00 g	10-Jun-20 13:23	1
13C2-10:2 FTS	IS	49.7	25 - 150		B0F0021	04-Jun-20	2.00 g	10-Jun-20 13:23	1
13C2-PFDoA	IS	36.1	25 - 150		B0F0021	04-Jun-20	2.00 g	10-Jun-20 13:23	1
d3-MeFOSA	IS	6.30	10 - 150	H	B0F0021	04-Jun-20	2.00 g	10-Jun-20 13:23	1
13C2-PFTeDA	IS	26.4	25 - 150		B0F0021	04-Jun-20	2.00 g	10-Jun-20 13:23	1
d5-EtFOSA	IS	4.80	10 - 150	H	B0F0021	04-Jun-20	2.00 g	10-Jun-20 13:23	1
d7-MeFOSE	IS	15.1	10 - 150		B0F0021	04-Jun-20	2.00 g	10-Jun-20 13:23	1
d9-EtFOSE	IS	14.2	10 - 150		B0F0021	04-Jun-20	2.00 g	10-Jun-20 13:23	1

MDL - Method Detection Limit

RL - Reporting limit

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

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**

**PFAS Isotope Dilution Method**

Client Data					Laboratory Data						
Name:	AECOM	Matrix:	Solid		Lab Sample:	B0F0021-BS1	Column:	BEH C18			
Project:	Waupaca Foundry Plant #4										

Analyte	CAS Number	Amt Found (ng/g)	Spike Amt	% Rec	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBA	375-22-4	1.19	1.00	119	50 - 150		B0F0021	04-Jun-20	2.00 g	10-Jun-20 13:34	1
PFPeA	2706-90-3	1.12	1.00	112	50 - 150		B0F0021	04-Jun-20	2.00 g	10-Jun-20 13:34	1
PFBS	375-73-5	1.02	1.00	102	50 - 150		B0F0021	04-Jun-20	2.00 g	10-Jun-20 13:34	1
4:2 FTS	757124-72-4	1.18	1.00	118	50 - 150		B0F0021	04-Jun-20	2.00 g	10-Jun-20 13:34	1
PFHxA	307-24-4	1.18	1.00	118	50 - 150		B0F0021	04-Jun-20	2.00 g	10-Jun-20 13:34	1
PFPeS	2706-91-4	1.02	1.00	102	50 - 150		B0F0021	04-Jun-20	2.00 g	10-Jun-20 13:34	1
HFPO-DA	13252-13-6	1.02	1.00	102	50 - 150		B0F0021	04-Jun-20	2.00 g	10-Jun-20 13:34	1
PFHpA	375-85-9	1.16	1.00	116	50 - 150		B0F0021	04-Jun-20	2.00 g	10-Jun-20 13:34	1
ADONA	919005-14-4	1.21	1.00	121	50 - 150		B0F0021	04-Jun-20	2.00 g	10-Jun-20 13:34	1
PFHxS	355-46-4	1.21	1.00	121	50 - 150		B0F0021	04-Jun-20	2.00 g	10-Jun-20 13:34	1
6:2 FTS	27619-97-2	1.12	1.00	112	50 - 150		B0F0021	04-Jun-20	2.00 g	10-Jun-20 13:34	1
PFOA	335-67-1	1.11	1.00	111	50 - 150		B0F0021	04-Jun-20	2.00 g	10-Jun-20 13:34	1
PFHpS	375-92-8	1.18	1.00	118	50 - 150		B0F0021	04-Jun-20	2.00 g	10-Jun-20 13:34	1
PFNA	375-95-1	0.856	1.00	85.6	50 - 150		B0F0021	04-Jun-20	2.00 g	10-Jun-20 13:34	1
PFOSA	754-91-6	1.16	1.00	116	50 - 150		B0F0021	04-Jun-20	2.00 g	10-Jun-20 13:34	1
PFOS	1763-23-1	0.988	1.00	98.8	50 - 150		B0F0021	04-Jun-20	2.00 g	10-Jun-20 13:34	1
9Cl-PF3ONS	756426-58-1	1.39	1.00	139	50 - 150		B0F0021	04-Jun-20	2.00 g	10-Jun-20 13:34	1
PFDA	335-76-2	1.17	1.00	117	50 - 150		B0F0021	04-Jun-20	2.00 g	10-Jun-20 13:34	1
8:2 FTS	39108-34-4	1.10	1.00	110	50 - 150		B0F0021	04-Jun-20	2.00 g	10-Jun-20 13:34	1
PFNS	68259-12-1	1.10	1.00	110	50 - 150		B0F0021	04-Jun-20	2.00 g	10-Jun-20 13:34	1
MeFOSAA	2355-31-9	0.897	1.00	89.7	50 - 150		B0F0021	04-Jun-20	2.00 g	10-Jun-20 13:34	1
EtFOSAA	2991-50-6	1.35	1.00	135	50 - 150		B0F0021	04-Jun-20	2.00 g	10-Jun-20 13:34	1
PFUnA	2058-94-8	1.06	1.00	106	50 - 150		B0F0021	04-Jun-20	2.00 g	10-Jun-20 13:34	1
PFDS	335-77-3	0.865	1.00	86.5	50 - 150		B0F0021	04-Jun-20	2.00 g	10-Jun-20 13:34	1
11Cl-PF3OUdS	763051-92-9	1.32	1.00	132	50 - 150		B0F0021	04-Jun-20	2.00 g	10-Jun-20 13:34	1
10:2 FTS	120226-60-0	1.10	1.00	110	50 - 150		B0F0021	04-Jun-20	2.00 g	10-Jun-20 13:34	1
PFDoA	307-55-1	1.18	1.00	118	50 - 150		B0F0021	04-Jun-20	2.00 g	10-Jun-20 13:34	1
MeFOSA	31506-32-8	6.12	5.00	122	50 - 150		B0F0021	04-Jun-20	2.00 g	10-Jun-20 13:34	1
PFTTrDA	72629-94-8	1.14	1.00	114	50 - 150		B0F0021	04-Jun-20	2.00 g	10-Jun-20 13:34	1
PFDoS	79780-39-5	1.10	1.00	110	50 - 150		B0F0021	04-Jun-20	2.00 g	10-Jun-20 13:34	1
PFTeDA	376-06-7	1.16	1.00	116	50 - 150		B0F0021	04-Jun-20	2.00 g	10-Jun-20 13:34	1
EtFOSA	4151-50-2	4.97	5.00	99.4	50 - 150	J	B0F0021	04-Jun-20	2.00 g	10-Jun-20 13:34	1
MeFOSE	24448-09-7	4.53	5.00	90.6	50 - 150	J	B0F0021	04-Jun-20	2.00 g	10-Jun-20 13:34	1
EtFOSE	1691-99-2	4.11	5.00	82.3	50 - 150	J	B0F0021	04-Jun-20	2.00 g	10-Jun-20 13:34	1

**Sample ID: OPR**

**PFAS Isotope Dilution Method**

Client Data				Laboratory Data			
Name:	AECOM	Matrix:	Solid	Lab Sample:	B0F0021-BS1	Column:	BEH C18
Project:	Waupaca Foundry Plant #4						

Labeled Standards	Type	% Rec	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	86.9	25- 150		B0F0021	04-Jun-20	2.00 g	10-Jun-20 13:34	1
13C3-PFPeA	IS	75.1	25- 150		B0F0021	04-Jun-20	2.00 g	10-Jun-20 13:34	1
13C3-PFBS	IS	80.3	25- 150		B0F0021	04-Jun-20	2.00 g	10-Jun-20 13:34	1
13C3-HFPO-DA	IS	76.6	25- 150		B0F0021	04-Jun-20	2.00 g	10-Jun-20 13:34	1
13C2-4:2 FTS	IS	78.8	25- 150		B0F0021	04-Jun-20	2.00 g	10-Jun-20 13:34	1
13C2-PFHxA	IS	76.4	25- 150		B0F0021	04-Jun-20	2.00 g	10-Jun-20 13:34	1
13C4-PFHpA	IS	68.4	25- 150		B0F0021	04-Jun-20	2.00 g	10-Jun-20 13:34	1
13C3-PFHxS	IS	74.2	25- 150		B0F0021	04-Jun-20	2.00 g	10-Jun-20 13:34	1
13C2-6:2 FTS	IS	73.1	25- 150		B0F0021	04-Jun-20	2.00 g	10-Jun-20 13:34	1
13C5-PFNA	IS	69.9	25- 150		B0F0021	04-Jun-20	2.00 g	10-Jun-20 13:34	1
13C8-PFOA	IS	33.8	10- 150		B0F0021	04-Jun-20	2.00 g	10-Jun-20 13:34	1
13C2-PFOA	IS	68.9	25- 150		B0F0021	04-Jun-20	2.00 g	10-Jun-20 13:34	1
13C8-PFOS	IS	61.0	25- 150		B0F0021	04-Jun-20	2.00 g	10-Jun-20 13:34	1
13C2-PFDA	IS	59.3	25- 150		B0F0021	04-Jun-20	2.00 g	10-Jun-20 13:34	1
13C2-8:2 FTS	IS	69.5	25- 150		B0F0021	04-Jun-20	2.00 g	10-Jun-20 13:34	1
d3-MeFOSAA	IS	38.9	25- 150		B0F0021	04-Jun-20	2.00 g	10-Jun-20 13:34	1
13C2-PFUnA	IS	39.8	25- 150		B0F0021	04-Jun-20	2.00 g	10-Jun-20 13:34	1
d5-EtFOSAA	IS	35.3	25- 150		B0F0021	04-Jun-20	2.00 g	10-Jun-20 13:34	1
13C2-10:2 FTS	IS	40.4	25- 150		B0F0021	04-Jun-20	2.00 g	10-Jun-20 13:34	1
13C2-PFDoA	IS	35.8	25- 150		B0F0021	04-Jun-20	2.00 g	10-Jun-20 13:34	1
d3-MeFOSA	IS	9.70	10- 150	H	B0F0021	04-Jun-20	2.00 g	10-Jun-20 13:34	1
13C2-PFTeDA	IS	38.0	25- 150		B0F0021	04-Jun-20	2.00 g	10-Jun-20 13:34	1
d5-EtFOSA	IS	8.20	10- 150	H	B0F0021	04-Jun-20	2.00 g	10-Jun-20 13:34	1
d7-MeFOSE	IS	18.3	10- 150		B0F0021	04-Jun-20	2.00 g	10-Jun-20 13:34	1
d9-EtFOSE	IS	19.4	10- 150		B0F0021	04-Jun-20	2.00 g	10-Jun-20 13:34	1



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

<b>Client Data</b>				<b>Laboratory Data</b>						
Name:	AECOM	Matrix:	Solid	Lab Sample:	B0F0104-BLK1	Column:	BEH C18			
Project:	Waupaca Foundry Plant #4									

Analyte	CAS Number	Conc. (ng/g)	MDL	RL	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFOSA	754-91-6	ND	1.01	1.50		B0F0104	12-Jun-20	1.00 g	15-Jun-20 19:24	1
11Cl-PF3OUdS	763051-92-9	ND	0.722	1.00		B0F0104	12-Jun-20	1.00 g	15-Jun-20 19:24	1
10:2 FTS	120226-60-0	ND	1.02	1.50		B0F0104	12-Jun-20	1.00 g	15-Jun-20 19:24	1
PFDoA	307-55-1	ND	0.404	0.500		B0F0104	12-Jun-20	1.00 g	15-Jun-20 19:24	1
MeFOSA	31506-32-8	ND	5.78	10.0		B0F0104	12-Jun-20	1.00 g	15-Jun-20 19:24	1
PFTeDA	72629-94-8	ND	0.402	0.500		B0F0104	12-Jun-20	1.00 g	15-Jun-20 19:24	1
PFDoS	79780-39-5	ND	0.600	1.00		B0F0104	12-Jun-20	1.00 g	15-Jun-20 19:24	1
PFTeDA	376-06-7	ND	0.264	0.500		B0F0104	12-Jun-20	1.00 g	15-Jun-20 19:24	1
EtFOSA	4151-50-2	ND	3.84	10.0		B0F0104	12-Jun-20	1.00 g	15-Jun-20 19:24	1
PFHxDA	67905-19-5	ND	0.170	0.500		B0F0104	12-Jun-20	1.00 g	15-Jun-20 19:24	1
PFODA	16517-11-6	ND	0.500	1.00		B0F0104	12-Jun-20	1.00 g	15-Jun-20 19:24	1
MeFOSE	24448-09-7	ND	4.96	10.0		B0F0104	12-Jun-20	1.00 g	15-Jun-20 19:24	1
EtFOSE	1691-99-2	ND	5.38	10.0		B0F0104	12-Jun-20	1.00 g	15-Jun-20 19:24	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C8-PFOA	IS	38.1	10 - 150		B0F0104	12-Jun-20	1.00 g	15-Jun-20 19:24	1
13C2-10:2 FTS	IS	47.9	25 - 150		B0F0104	12-Jun-20	1.00 g	15-Jun-20 19:24	1
13C2-PFDoA	IS	38.1	25 - 150		B0F0104	12-Jun-20	1.00 g	15-Jun-20 19:24	1
d3-MeFOSA	IS	5.90	10 - 150	H	B0F0104	12-Jun-20	1.00 g	15-Jun-20 19:24	1
13C2-PFTeDA	IS	42.0	25 - 150		B0F0104	12-Jun-20	1.00 g	15-Jun-20 19:24	1
d5-EtFOSA	IS	4.70	10 - 150	H	B0F0104	12-Jun-20	1.00 g	15-Jun-20 19:24	1
13C2-PFHxDA	IS	52.2	25 - 150		B0F0104	12-Jun-20	1.00 g	15-Jun-20 19:24	1
d7-MeFOSE	IS	19.7	10 - 150		B0F0104	12-Jun-20	1.00 g	15-Jun-20 19:24	1
d9-EtFOSE	IS	16.8	10 - 150		B0F0104	12-Jun-20	1.00 g	15-Jun-20 19:24	1

MDL - Method Detection Limit

RL - Reporting limit

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

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**

**PFAS Isotope Dilution Method**

Client Data					Laboratory Data						
Name:	AECOM	Matrix:	Solid		Lab Sample:	B0F0104-BS1	Column:	BEH C18			
Project:	Waupaca Foundry Plant #4										

Analyte	CAS Number	Amt Found (ng/g)	Spike Amt	% Rec	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFOSA	754-91-6	2.31	2.00	115	50 - 150		B0F0104	12-Jun-20	1.00 g	15-Jun-20 19:35	1
11Cl-PF3OUdS	763051-92-9	1.87	2.00	93.4	50 - 150		B0F0104	12-Jun-20	1.00 g	15-Jun-20 19:35	1
10:2 FTS	120226-60-0	2.35	2.00	117	50 - 150		B0F0104	12-Jun-20	1.00 g	15-Jun-20 19:35	1
PFDoA	307-55-1	2.06	2.00	103	50 - 150		B0F0104	12-Jun-20	1.00 g	15-Jun-20 19:35	1
MeFOSA	31506-32-8	17.3	10.0	173	50 - 150	H	B0F0104	12-Jun-20	1.00 g	15-Jun-20 19:35	1
PFTrDA	72629-94-8	1.63	2.00	81.6	50 - 150		B0F0104	12-Jun-20	1.00 g	15-Jun-20 19:35	1
PFDoS	79780-39-5	1.98	2.00	98.8	50 - 150		B0F0104	12-Jun-20	1.00 g	15-Jun-20 19:35	1
PFTeDA	376-06-7	2.31	2.00	115	50 - 150		B0F0104	12-Jun-20	1.00 g	15-Jun-20 19:35	1
EtFOSA	4151-50-2	10.3	10.0	103	50 - 150		B0F0104	12-Jun-20	1.00 g	15-Jun-20 19:35	1
PFHxDA	67905-19-5	2.28	2.00	114	50 - 150		B0F0104	12-Jun-20	1.00 g	15-Jun-20 19:35	1
PFODA	16517-11-6	1.68	2.00	84.0	50 - 150		B0F0104	12-Jun-20	1.00 g	15-Jun-20 19:35	1
MeFOSE	24448-09-7	9.61	10.0	96.1	50 - 150	J	B0F0104	12-Jun-20	1.00 g	15-Jun-20 19:35	1
EtFOSE	1691-99-2	11.9	10.0	119	50 - 150		B0F0104	12-Jun-20	1.00 g	15-Jun-20 19:35	1
Labeled Standards		Type		% Rec	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C8-PFOSA		IS		39.0	10- 150		B0F0104	12-Jun-20	1.00 g	15-Jun-20 19:35	1
13C2-10:2 FTS		IS		54.6	25- 150		B0F0104	12-Jun-20	1.00 g	15-Jun-20 19:35	1
13C2-PFDoA		IS		44.8	25- 150		B0F0104	12-Jun-20	1.00 g	15-Jun-20 19:35	1
d3-MeFOSA		IS		5.10	10- 150	H	B0F0104	12-Jun-20	1.00 g	15-Jun-20 19:35	1
13C2-PFTeDA		IS		55.0	25- 150		B0F0104	12-Jun-20	1.00 g	15-Jun-20 19:35	1
d5-EtFOSA		IS		4.30	10- 150	H	B0F0104	12-Jun-20	1.00 g	15-Jun-20 19:35	1
13C2-PFHxDA		IS		54.1	25- 150		B0F0104	12-Jun-20	1.00 g	15-Jun-20 19:35	1
d7-MeFOSE		IS		27.4	10- 150		B0F0104	12-Jun-20	1.00 g	15-Jun-20 19:35	1
d9-EtFOSE		IS		21.5	10- 150		B0F0104	12-Jun-20	1.00 g	15-Jun-20 19:35	1

**Sample ID: GW4 (3'-5')**
**PFAS Isotope Dilution Method**

Client Data				Laboratory Data			
Name:	AECOM	Matrix:	Soil	Lab Sample:	2001121-02	Column:	BEH C18
Project:	Waupaca Foundry Plant #4	Date Collected:	19-May-20 12:15	Date Received:	22-May-20 10:00		
				% Solids:	88.4		

Analyte	CAS Number	Conc. (ng/g)	MDL	RL	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBA	375-22-4	ND	0.173	0.250		B0F0021	04-Jun-20	2.26 g	10-Jun-20 13:44	1
PFPeA	2706-90-3	ND	0.199	0.250		B0F0021	04-Jun-20	2.26 g	10-Jun-20 13:44	1
PFBS	375-73-5	ND	0.152	0.250		B0F0021	04-Jun-20	2.26 g	10-Jun-20 13:44	1
4:2 FTS	757124-72-4	ND	0.180	0.250		B0F0021	04-Jun-20	2.26 g	10-Jun-20 13:44	1
PFHxA	307-24-4	ND	0.108	0.250		B0F0021	04-Jun-20	2.26 g	10-Jun-20 13:44	1
PFPeS	2706-91-4	ND	0.330	0.501		B0F0021	04-Jun-20	2.26 g	10-Jun-20 13:44	1
HFPO-DA	13252-13-6	ND	0.591	0.751		B0F0021	04-Jun-20	2.26 g	10-Jun-20 13:44	1
PFHpA	375-85-9	ND	0.239	0.250		B0F0021	04-Jun-20	2.26 g	10-Jun-20 13:44	1
ADONA	919005-14-4	ND	0.170	0.250		B0F0021	04-Jun-20	2.26 g	10-Jun-20 13:44	1
PFHxS	355-46-4	ND	0.195	0.250		B0F0021	04-Jun-20	2.26 g	10-Jun-20 13:44	1
6:2 FTS	27619-97-2	0.680	0.327	0.501		B0F0021	04-Jun-20	2.26 g	10-Jun-20 13:44	1
PFOA	335-67-1	ND	0.235	0.250		B0F0021	04-Jun-20	2.26 g	10-Jun-20 13:44	1
PFHpS	375-92-8	ND	0.370	0.501		B0F0021	04-Jun-20	2.26 g	10-Jun-20 13:44	1
PFNA	375-95-1	ND	0.156	0.250		B0F0021	04-Jun-20	2.26 g	10-Jun-20 13:44	1
PFOSA	754-91-6	ND	0.505	0.751		B0F0021	04-Jun-20	2.26 g	10-Jun-20 13:44	1
PFOS	1763-23-1	8.93	0.215	0.250		B0F0021	04-Jun-20	2.26 g	10-Jun-20 13:44	1
9Cl-PF3ONS	756426-58-1	ND	0.185	0.250		B0F0021	04-Jun-20	2.26 g	10-Jun-20 13:44	1
PFDA	335-76-2	ND	0.226	0.250		B0F0021	04-Jun-20	2.26 g	10-Jun-20 13:44	1
8:2 FTS	39108-34-4	ND	0.362	0.501		B0F0021	04-Jun-20	2.26 g	10-Jun-20 13:44	1
PFNS	68259-12-1	ND	0.576	0.751		B0F0021	04-Jun-20	2.26 g	10-Jun-20 13:44	1
MeFOSAA	2355-31-9	ND	0.369	0.501		B0F0021	04-Jun-20	2.26 g	10-Jun-20 13:44	1
EtFOSAA	2991-50-6	ND	0.345	0.501		B0F0021	04-Jun-20	2.26 g	10-Jun-20 13:44	1
PFUnA	2058-94-8	ND	0.129	0.250		B0F0021	04-Jun-20	2.26 g	10-Jun-20 13:44	1
PFDS	335-77-3	ND	0.346	0.501		B0F0021	04-Jun-20	2.26 g	10-Jun-20 13:44	1
11Cl-PF3OUdS	763051-92-9	ND	0.362	0.501		B0F0021	04-Jun-20	2.26 g	10-Jun-20 13:44	1
10:2 FTS	120226-60-0	ND	0.509	0.751		B0F0021	04-Jun-20	2.26 g	10-Jun-20 13:44	1
PFDoA	307-55-1	ND	0.202	0.250		B0F0021	04-Jun-20	2.26 g	10-Jun-20 13:44	1
MeFOSA	31506-32-8	ND	2.89	5.01		B0F0021	04-Jun-20	2.26 g	10-Jun-20 13:44	1
PFTTrDA	72629-94-8	ND	0.201	0.250		B0F0021	04-Jun-20	2.26 g	10-Jun-20 13:44	1
PFDoS	79780-39-5	ND	0.300	0.501		B0F0021	04-Jun-20	2.26 g	10-Jun-20 13:44	1
PFTeDA	376-06-7	ND	0.132	0.250		B0F0021	04-Jun-20	2.26 g	10-Jun-20 13:44	1
EtFOSA	4151-50-2	ND	1.92	5.01		B0F0021	04-Jun-20	2.26 g	10-Jun-20 13:44	1
PFHxDA	67905-19-5	ND	0.166	0.488		B0F0104	12-Jun-20	1.16 g	15-Jun-20 19:45	1
PFODA	16517-11-6	ND	0.488	0.976		B0F0104	12-Jun-20	1.16 g	15-Jun-20 19:45	1
MeFOSE	24448-09-7	ND	2.48	5.01		B0F0021	04-Jun-20	2.26 g	10-Jun-20 13:44	1
EtFOSE	1691-99-2	ND	2.69	5.01		B0F0021	04-Jun-20	2.26 g	10-Jun-20 13:44	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	94.1	25 - 150		B0F0021	04-Jun-20	2.26 g	10-Jun-20 13:44	1



**Sample ID: GW4 (3'-5')** **PFAS Isotope Dilution Method**

Client Data				Laboratory Data			
Name:	AECOM	Matrix:	Soil	Lab Sample:	2001121-02	Column:	BEH C18
Project:	Waupaca Foundry Plant #4	Date Collected:	19-May-20 12:15	Date Received:	22-May-20 10:00		
				% Solids:	88.4		

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFPeA	IS	75.5	25 - 150		B0F0021	04-Jun-20	2.26 g	10-Jun-20 13:44	1
13C3-PFBS	IS	82.0	25 - 150		B0F0021	04-Jun-20	2.26 g	10-Jun-20 13:44	1
13C3-HFPO-DA	IS	71.4	25 - 150		B0F0021	04-Jun-20	2.26 g	10-Jun-20 13:44	1
13C2-4:2 FTS	IS	107	25 - 150		B0F0021	04-Jun-20	2.26 g	10-Jun-20 13:44	1
13C2-PFHxA	IS	78.4	25 - 150		B0F0021	04-Jun-20	2.26 g	10-Jun-20 13:44	1
13C4-PFHpA	IS	76.8	25 - 150		B0F0021	04-Jun-20	2.26 g	10-Jun-20 13:44	1
13C3-PFHxS	IS	80.7	25 - 150		B0F0021	04-Jun-20	2.26 g	10-Jun-20 13:44	1
13C2-6:2 FTS	IS	95.1	25 - 150		B0F0021	04-Jun-20	2.26 g	10-Jun-20 13:44	1
13C5-PFNA	IS	67.5	25 - 150		B0F0021	04-Jun-20	2.26 g	10-Jun-20 13:44	1
13C8-PFOA	IS	32.0	10 - 150		B0F0021	04-Jun-20	2.26 g	10-Jun-20 13:44	1
13C2-PFOA	IS	70.4	25 - 150		B0F0021	04-Jun-20	2.26 g	10-Jun-20 13:44	1
13C8-PFOS	IS	70.0	25 - 150		B0F0021	04-Jun-20	2.26 g	10-Jun-20 13:44	1
13C2-PFDA	IS	62.2	25 - 150		B0F0021	04-Jun-20	2.26 g	10-Jun-20 13:44	1
13C2-8:2 FTS	IS	80.9	25 - 150		B0F0021	04-Jun-20	2.26 g	10-Jun-20 13:44	1
d3-MeFOSAA	IS	62.9	25 - 150		B0F0021	04-Jun-20	2.26 g	10-Jun-20 13:44	1
13C2-PFUnA	IS	58.5	25 - 150		B0F0021	04-Jun-20	2.26 g	10-Jun-20 13:44	1
d5-EtFOSAA	IS	56.9	25 - 150		B0F0021	04-Jun-20	2.26 g	10-Jun-20 13:44	1
13C2-10:2 FTS	IS	75.0	25 - 150		B0F0021	04-Jun-20	2.26 g	10-Jun-20 13:44	1
13C2-PFDoA	IS	62.2	25 - 150		B0F0021	04-Jun-20	2.26 g	10-Jun-20 13:44	1
d3-MeFOSA	IS	15.9	10 - 150		B0F0021	04-Jun-20	2.26 g	10-Jun-20 13:44	1
13C2-PFTeDA	IS	46.7	25 - 150		B0F0021	04-Jun-20	2.26 g	10-Jun-20 13:44	1
d5-EtFOSA	IS	14.7	10 - 150		B0F0021	04-Jun-20	2.26 g	10-Jun-20 13:44	1
13C2-PFHxDA	IS	68.7	25 - 150		B0F0104	12-Jun-20	1.16 g	15-Jun-20 19:45	1
d7-MeFOSE	IS	27.3	10 - 150		B0F0021	04-Jun-20	2.26 g	10-Jun-20 13:44	1
d9-EtFOSE	IS	26.7	10 - 150		B0F0021	04-Jun-20	2.26 g	10-Jun-20 13:44	1

MDL - Method Detection Limit

RL - Reporting limit

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

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: GW1 (4'-5')**
**PFAS Isotope Dilution Method**

Client Data				Laboratory Data			
Name:	AECOM	Matrix:	Soil	Lab Sample:	2001121-04	Column:	BEH C18
Project:	Waupaca Foundry Plant #4	Date Collected:	19-May-20 12:55	Date Received:	22-May-20 10:00		
				% Solids:	91.0		

Analyte	CAS Number	Conc. (ng/g)	MDL	RL	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBA	375-22-4	ND	0.173	0.250		B0F0021	04-Jun-20	2.20 g	10-Jun-20 14:25	1
PFPeA	2706-90-3	ND	0.199	0.250		B0F0021	04-Jun-20	2.20 g	10-Jun-20 14:25	1
PFBS	375-73-5	ND	0.152	0.250		B0F0021	04-Jun-20	2.20 g	10-Jun-20 14:25	1
4:2 FTS	757124-72-4	ND	0.180	0.250		B0F0021	04-Jun-20	2.20 g	10-Jun-20 14:25	1
PFHxA	307-24-4	ND	0.108	0.250		B0F0021	04-Jun-20	2.20 g	10-Jun-20 14:25	1
PFPeS	2706-91-4	ND	0.329	0.499		B0F0021	04-Jun-20	2.20 g	10-Jun-20 14:25	1
HFPO-DA	13252-13-6	ND	0.589	0.749		B0F0021	04-Jun-20	2.20 g	10-Jun-20 14:25	1
PFHpA	375-85-9	ND	0.239	0.250		B0F0021	04-Jun-20	2.20 g	10-Jun-20 14:25	1
ADONA	919005-14-4	ND	0.170	0.250		B0F0021	04-Jun-20	2.20 g	10-Jun-20 14:25	1
PFHxS	355-46-4	ND	0.195	0.250		B0F0021	04-Jun-20	2.20 g	10-Jun-20 14:25	1
6:2 FTS	27619-97-2	ND	0.327	0.499		B0F0021	04-Jun-20	2.20 g	10-Jun-20 14:25	1
PFOA	335-67-1	ND	0.235	0.250		B0F0021	04-Jun-20	2.20 g	10-Jun-20 14:25	1
PFHpS	375-92-8	ND	0.369	0.499		B0F0021	04-Jun-20	2.20 g	10-Jun-20 14:25	1
PFNA	375-95-1	ND	0.156	0.250		B0F0021	04-Jun-20	2.20 g	10-Jun-20 14:25	1
PFOSA	754-91-6	ND	0.503	0.749		B0F0021	04-Jun-20	2.20 g	10-Jun-20 14:25	1
PFOS	1763-23-1	0.251	0.215	0.250	Q	B0F0021	04-Jun-20	2.20 g	10-Jun-20 14:25	1
9Cl-PF3ONS	756426-58-1	ND	0.185	0.250		B0F0021	04-Jun-20	2.20 g	10-Jun-20 14:25	1
PFDA	335-76-2	ND	0.226	0.250		B0F0021	04-Jun-20	2.20 g	10-Jun-20 14:25	1
8:2 FTS	39108-34-4	ND	0.361	0.499		B0F0021	04-Jun-20	2.20 g	10-Jun-20 14:25	1
PFNS	68259-12-1	ND	0.574	0.749		B0F0021	04-Jun-20	2.20 g	10-Jun-20 14:25	1
MeFOSAA	2355-31-9	ND	0.368	0.499		B0F0021	04-Jun-20	2.20 g	10-Jun-20 14:25	1
EtFOSAA	2991-50-6	ND	0.344	0.499		B0F0021	04-Jun-20	2.20 g	10-Jun-20 14:25	1
PFUnA	2058-94-8	ND	0.129	0.250		B0F0021	04-Jun-20	2.20 g	10-Jun-20 14:25	1
PFDS	335-77-3	ND	0.345	0.499		B0F0021	04-Jun-20	2.20 g	10-Jun-20 14:25	1
11Cl-PF3OUdS	763051-92-9	ND	0.361	0.499		B0F0021	04-Jun-20	2.20 g	10-Jun-20 14:25	1
10:2 FTS	120226-60-0	ND	0.507	0.749		B0F0021	04-Jun-20	2.20 g	10-Jun-20 14:25	1
PFDoA	307-55-1	ND	0.202	0.250		B0F0021	04-Jun-20	2.20 g	10-Jun-20 14:25	1
MeFOSA	31506-32-8	ND	2.89	4.99		B0F0021	04-Jun-20	2.20 g	10-Jun-20 14:25	1
PFTrDA	72629-94-8	ND	0.201	0.250		B0F0021	04-Jun-20	2.20 g	10-Jun-20 14:25	1
PFDoS	79780-39-5	ND	0.300	0.499		B0F0021	04-Jun-20	2.20 g	10-Jun-20 14:25	1
PFTeDA	376-06-7	ND	0.132	0.250		B0F0021	04-Jun-20	2.20 g	10-Jun-20 14:25	1
EtFOSA	4151-50-2	ND	1.92	4.99		B0F0021	04-Jun-20	2.20 g	10-Jun-20 14:25	1
PFHxDA	67905-19-5	ND	0.168	0.495		B0F0104	12-Jun-20	1.11 g	15-Jun-20 19:55	1
PFODA	16517-11-6	ND	0.495	0.990		B0F0104	12-Jun-20	1.11 g	15-Jun-20 19:55	1
MeFOSE	24448-09-7	ND	2.48	4.99		B0F0021	04-Jun-20	2.20 g	10-Jun-20 14:25	1
EtFOSE	1691-99-2	11.0	2.69	4.99		B0F0021	04-Jun-20	2.20 g	10-Jun-20 14:25	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	93.0	25 - 150		B0F0021	04-Jun-20	2.20 g	10-Jun-20 14:25	1

**Sample ID: GW1 (4'-5')**
**PFAS Isotope Dilution Method**

Client Data				Laboratory Data			
Name:	AECOM	Matrix:	Soil	Lab Sample:	2001121-04	Column:	BEH C18
Project:	Waupaca Foundry Plant #4	Date Collected:	19-May-20 12:55	Date Received:	22-May-20 10:00		
				% Solids:	91.0		

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFPeA	IS	77.6	25 - 150		B0F0021	04-Jun-20	2.20 g	10-Jun-20 14:25	1
13C3-PFBS	IS	81.3	25 - 150		B0F0021	04-Jun-20	2.20 g	10-Jun-20 14:25	1
13C3-HFPO-DA	IS	77.0	25 - 150		B0F0021	04-Jun-20	2.20 g	10-Jun-20 14:25	1
13C2-4:2 FTS	IS	108	25 - 150		B0F0021	04-Jun-20	2.20 g	10-Jun-20 14:25	1
13C2-PFHxA	IS	76.1	25 - 150		B0F0021	04-Jun-20	2.20 g	10-Jun-20 14:25	1
13C4-PFHpA	IS	79.7	25 - 150		B0F0021	04-Jun-20	2.20 g	10-Jun-20 14:25	1
13C3-PFHxS	IS	83.0	25 - 150		B0F0021	04-Jun-20	2.20 g	10-Jun-20 14:25	1
13C2-6:2 FTS	IS	79.9	25 - 150		B0F0021	04-Jun-20	2.20 g	10-Jun-20 14:25	1
13C5-PFNA	IS	70.0	25 - 150		B0F0021	04-Jun-20	2.20 g	10-Jun-20 14:25	1
13C8-PFOA	IS	45.1	10 - 150		B0F0021	04-Jun-20	2.20 g	10-Jun-20 14:25	1
13C2-PFOA	IS	67.6	25 - 150		B0F0021	04-Jun-20	2.20 g	10-Jun-20 14:25	1
13C8-PFOS	IS	78.1	25 - 150		B0F0021	04-Jun-20	2.20 g	10-Jun-20 14:25	1
13C2-PFDA	IS	59.3	25 - 150		B0F0021	04-Jun-20	2.20 g	10-Jun-20 14:25	1
13C2-8:2 FTS	IS	92.0	25 - 150		B0F0021	04-Jun-20	2.20 g	10-Jun-20 14:25	1
d3-MeFOSAA	IS	62.3	25 - 150		B0F0021	04-Jun-20	2.20 g	10-Jun-20 14:25	1
13C2-PFUnA	IS	55.8	25 - 150		B0F0021	04-Jun-20	2.20 g	10-Jun-20 14:25	1
d5-EtFOSAA	IS	61.3	25 - 150		B0F0021	04-Jun-20	2.20 g	10-Jun-20 14:25	1
13C2-10:2 FTS	IS	63.8	25 - 150		B0F0021	04-Jun-20	2.20 g	10-Jun-20 14:25	1
13C2-PFDoA	IS	59.3	25 - 150		B0F0021	04-Jun-20	2.20 g	10-Jun-20 14:25	1
d3-MeFOSA	IS	23.2	10 - 150		B0F0021	04-Jun-20	2.20 g	10-Jun-20 14:25	1
13C2-PFTeDA	IS	40.6	25 - 150		B0F0021	04-Jun-20	2.20 g	10-Jun-20 14:25	1
d5-EtFOSA	IS	20.7	10 - 150		B0F0021	04-Jun-20	2.20 g	10-Jun-20 14:25	1
13C2-PFHxDA	IS	52.7	25 - 150		B0F0104	12-Jun-20	1.11 g	15-Jun-20 19:55	1
d7-MeFOSE	IS	35.1	10 - 150		B0F0021	04-Jun-20	2.20 g	10-Jun-20 14:25	1
d9-EtFOSE	IS	41.0	10 - 150		B0F0021	04-Jun-20	2.20 g	10-Jun-20 14:25	1

MDL - Method Detection Limit

RL - Reporting limit

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

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: GW3 (4'-5')**
**PFAS Isotope Dilution Method**

Client Data				Laboratory Data			
Name:	AECOM	Matrix:	Soil	Lab Sample:	2001121-06	Column:	BEH C18
Project:	Waupaca Foundry Plant #4	Date Collected:	19-May-20 14:00	Date Received:	22-May-20 10:00		
				% Solids:	90.6		

Analyte	CAS Number	Conc. (ng/g)	MDL	RL	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBA	375-22-4	ND	0.173	0.250		B0F0021	04-Jun-20	2.21 g	10-Jun-20 14:36	1
PFPeA	2706-90-3	ND	0.199	0.250		B0F0021	04-Jun-20	2.21 g	10-Jun-20 14:36	1
PFBS	375-73-5	ND	0.152	0.250		B0F0021	04-Jun-20	2.21 g	10-Jun-20 14:36	1
4:2 FTS	757124-72-4	ND	0.180	0.250		B0F0021	04-Jun-20	2.21 g	10-Jun-20 14:36	1
PFHxA	307-24-4	ND	0.108	0.250		B0F0021	04-Jun-20	2.21 g	10-Jun-20 14:36	1
PFPeS	2706-91-4	ND	0.329	0.499		B0F0021	04-Jun-20	2.21 g	10-Jun-20 14:36	1
HFPO-DA	13252-13-6	ND	0.589	0.749		B0F0021	04-Jun-20	2.21 g	10-Jun-20 14:36	1
PFHpA	375-85-9	ND	0.239	0.250		B0F0021	04-Jun-20	2.21 g	10-Jun-20 14:36	1
ADONA	919005-14-4	ND	0.170	0.250		B0F0021	04-Jun-20	2.21 g	10-Jun-20 14:36	1
PFHxS	355-46-4	ND	0.195	0.250		B0F0021	04-Jun-20	2.21 g	10-Jun-20 14:36	1
6:2 FTS	27619-97-2	ND	0.327	0.499		B0F0021	04-Jun-20	2.21 g	10-Jun-20 14:36	1
PFOA	335-67-1	3.54	0.235	0.250		B0F0021	04-Jun-20	2.21 g	10-Jun-20 14:36	1
PFHpS	375-92-8	ND	0.369	0.499		B0F0021	04-Jun-20	2.21 g	10-Jun-20 14:36	1
PFNA	375-95-1	ND	0.156	0.250		B0F0021	04-Jun-20	2.21 g	10-Jun-20 14:36	1
PFOSA	754-91-6	ND	1.02	1.52		B0F0104	12-Jun-20	1.09 g	15-Jun-20 20:06	1
PFOS	1763-23-1	1.08	0.215	0.250		B0F0021	04-Jun-20	2.21 g	10-Jun-20 14:36	1
9Cl-PF3ONS	756426-58-1	ND	0.185	0.250		B0F0021	04-Jun-20	2.21 g	10-Jun-20 14:36	1
PFDA	335-76-2	ND	0.226	0.250		B0F0021	04-Jun-20	2.21 g	10-Jun-20 14:36	1
8:2 FTS	39108-34-4	ND	0.361	0.499		B0F0021	04-Jun-20	2.21 g	10-Jun-20 14:36	1
PFNS	68259-12-1	ND	0.574	0.749		B0F0021	04-Jun-20	2.21 g	10-Jun-20 14:36	1
MeFOSAA	2355-31-9	0.635	0.368	0.499		B0F0021	04-Jun-20	2.21 g	10-Jun-20 14:36	1
EtFOSAA	2991-50-6	ND	0.344	0.499		B0F0021	04-Jun-20	2.21 g	10-Jun-20 14:36	1
PFUnA	2058-94-8	ND	0.129	0.250		B0F0021	04-Jun-20	2.21 g	10-Jun-20 14:36	1
PFDS	335-77-3	ND	0.345	0.499		B0F0021	04-Jun-20	2.21 g	10-Jun-20 14:36	1
11Cl-PF3OUdS	763051-92-9	ND	0.731	1.01		B0F0104	12-Jun-20	1.09 g	15-Jun-20 20:06	1
10:2 FTS	120226-60-0	ND	0.507	0.749		B0F0021	04-Jun-20	2.21 g	10-Jun-20 14:36	1
PFDoA	307-55-1	ND	0.409	0.506		B0F0104	12-Jun-20	1.09 g	15-Jun-20 20:06	1
MeFOSA	31506-32-8	ND	5.85	10.1		B0F0104	12-Jun-20	1.09 g	15-Jun-20 20:06	1
PFTrDA	72629-94-8	ND	0.407	0.506		B0F0104	12-Jun-20	1.09 g	15-Jun-20 20:06	1
PFDoS	79780-39-5	ND	0.608	1.01		B0F0104	12-Jun-20	1.09 g	15-Jun-20 20:06	1
PFTeDA	376-06-7	ND	0.267	0.506		B0F0104	12-Jun-20	1.09 g	15-Jun-20 20:06	1
EtFOSA	4151-50-2	ND	3.89	10.1		B0F0104	12-Jun-20	1.09 g	15-Jun-20 20:06	1
PFHxDA	67905-19-5	ND	0.172	0.506		B0F0104	12-Jun-20	1.09 g	15-Jun-20 20:06	1
PFODA	16517-11-6	ND	0.506	1.01		B0F0104	12-Jun-20	1.09 g	15-Jun-20 20:06	1
MeFOSE	24448-09-7	ND	5.02	10.1		B0F0104	12-Jun-20	1.09 g	15-Jun-20 20:06	1
EtFOSE	1691-99-2	ND	5.45	10.1		B0F0104	12-Jun-20	1.09 g	15-Jun-20 20:06	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	86.2	25 - 150		B0F0021	04-Jun-20	2.21 g	10-Jun-20 14:36	1



**Sample ID: GW3 (4'-5')** **PFAS Isotope Dilution Method**

Client Data				Laboratory Data			
Name:	AECOM	Matrix:	Soil	Lab Sample:	2001121-06	Column:	BEH C18
Project:	Waupaca Foundry Plant #4	Date Collected:	19-May-20 14:00	Date Received:	22-May-20 10:00		
				% Solids:	90.6		

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFPeA	IS	72.5	25 - 150		B0F0021	04-Jun-20	2.21 g	10-Jun-20 14:36	1
13C3-PFBS	IS	74.1	25 - 150		B0F0021	04-Jun-20	2.21 g	10-Jun-20 14:36	1
13C3-HFPO-DA	IS	72.8	25 - 150		B0F0021	04-Jun-20	2.21 g	10-Jun-20 14:36	1
13C2-4:2 FTS	IS	82.0	25 - 150		B0F0021	04-Jun-20	2.21 g	10-Jun-20 14:36	1
13C2-PFHxA	IS	77.1	25 - 150		B0F0021	04-Jun-20	2.21 g	10-Jun-20 14:36	1
13C4-PFHpA	IS	71.2	25 - 150		B0F0021	04-Jun-20	2.21 g	10-Jun-20 14:36	1
13C3-PFHxS	IS	70.1	25 - 150		B0F0021	04-Jun-20	2.21 g	10-Jun-20 14:36	1
13C2-6:2 FTS	IS	83.2	25 - 150		B0F0021	04-Jun-20	2.21 g	10-Jun-20 14:36	1
13C5-PFNA	IS	59.3	25 - 150		B0F0021	04-Jun-20	2.21 g	10-Jun-20 14:36	1
13C8-PFOA	IS	55.9	10 - 150		B0F0104	12-Jun-20	1.09 g	15-Jun-20 20:06	1
13C2-PFOA	IS	61.9	25 - 150		B0F0021	04-Jun-20	2.21 g	10-Jun-20 14:36	1
13C8-PFOS	IS	54.9	25 - 150		B0F0021	04-Jun-20	2.21 g	10-Jun-20 14:36	1
13C2-PFDA	IS	51.1	25 - 150		B0F0021	04-Jun-20	2.21 g	10-Jun-20 14:36	1
13C2-8:2 FTS	IS	79.0	25 - 150		B0F0021	04-Jun-20	2.21 g	10-Jun-20 14:36	1
d3-MeFOSAA	IS	36.2	25 - 150		B0F0021	04-Jun-20	2.21 g	10-Jun-20 14:36	1
13C2-PFUnA	IS	36.6	25 - 150		B0F0021	04-Jun-20	2.21 g	10-Jun-20 14:36	1
d5-EtFOSAA	IS	28.7	25 - 150		B0F0021	04-Jun-20	2.21 g	10-Jun-20 14:36	1
13C2-10:2 FTS	IS	33.5	25 - 150		B0F0021	04-Jun-20	2.21 g	10-Jun-20 14:36	1
13C2-PFDoA	IS	52.3	25 - 150		B0F0104	12-Jun-20	1.09 g	15-Jun-20 20:06	1
d3-MeFOSA	IS	27.3	10 - 150		B0F0104	12-Jun-20	1.09 g	15-Jun-20 20:06	1
13C2-PFTeDA	IS	44.3	25 - 150		B0F0104	12-Jun-20	1.09 g	15-Jun-20 20:06	1
d5-EtFOSA	IS	24.7	10 - 150		B0F0104	12-Jun-20	1.09 g	15-Jun-20 20:06	1
13C2-PFHxDA	IS	17.5	25 - 150	H	B0F0104	12-Jun-20	1.09 g	15-Jun-20 20:06	1
d7-MeFOSE	IS	44.7	10 - 150		B0F0104	12-Jun-20	1.09 g	15-Jun-20 20:06	1
d9-EtFOSE	IS	35.0	10 - 150		B0F0104	12-Jun-20	1.09 g	15-Jun-20 20:06	1

MDL - Method Detection Limit

RL - Reporting limit

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

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: GW2 (4'-5')**
**PFAS Isotope Dilution Method**

Client Data				Laboratory Data			
Name:	AECOM	Matrix:	Soil	Lab Sample:	2001121-08	Column:	BEH C18
Project:	Waupaca Foundry Plant #4	Date Collected:	19-May-20 14:50	Date Received:	22-May-20 10:00		
				% Solids:	77.7		

Analyte	CAS Number	Conc. (ng/g)	MDL	RL	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBA	375-22-4	ND	0.171	0.248		B0F0021	04-Jun-20	2.60 g	10-Jun-20 14:46	1
PFPeA	2706-90-3	0.326	0.197	0.248		B0F0021	04-Jun-20	2.60 g	10-Jun-20 14:46	1
PFBS	375-73-5	ND	0.151	0.248		B0F0021	04-Jun-20	2.60 g	10-Jun-20 14:46	1
4:2 FTS	757124-72-4	ND	0.178	0.248		B0F0021	04-Jun-20	2.60 g	10-Jun-20 14:46	1
PFHxA	307-24-4	0.301	0.107	0.248	Q	B0F0021	04-Jun-20	2.60 g	10-Jun-20 14:46	1
PFPeS	2706-91-4	ND	0.326	0.495		B0F0021	04-Jun-20	2.60 g	10-Jun-20 14:46	1
HFPO-DA	13252-13-6	ND	0.584	0.743		B0F0021	04-Jun-20	2.60 g	10-Jun-20 14:46	1
PFHpA	375-85-9	0.239	0.237	0.248	J	B0F0021	04-Jun-20	2.60 g	10-Jun-20 14:46	1
ADONA	919005-14-4	ND	0.168	0.248		B0F0021	04-Jun-20	2.60 g	10-Jun-20 14:46	1
PFHxS	355-46-4	ND	0.193	0.248		B0F0021	04-Jun-20	2.60 g	10-Jun-20 14:46	1
6:2 FTS	27619-97-2	ND	0.324	0.495		B0F0021	04-Jun-20	2.60 g	10-Jun-20 14:46	1
PFOA	335-67-1	0.338	0.233	0.248		B0F0021	04-Jun-20	2.60 g	10-Jun-20 14:46	1
PFHpS	375-92-8	ND	0.365	0.495		B0F0021	04-Jun-20	2.60 g	10-Jun-20 14:46	1
PFNA	375-95-1	ND	0.154	0.248		B0F0021	04-Jun-20	2.60 g	10-Jun-20 14:46	1
PFOSA	754-91-6	ND	0.499	0.743		B0F0021	04-Jun-20	2.60 g	10-Jun-20 14:46	1
PFOS	1763-23-1	0.271	0.213	0.248	Q	B0F0021	04-Jun-20	2.60 g	10-Jun-20 14:46	1
9Cl-PF3ONS	756426-58-1	ND	0.183	0.248		B0F0021	04-Jun-20	2.60 g	10-Jun-20 14:46	1
PFDA	335-76-2	ND	0.224	0.248		B0F0021	04-Jun-20	2.60 g	10-Jun-20 14:46	1
8:2 FTS	39108-34-4	ND	0.357	0.495		B0F0021	04-Jun-20	2.60 g	10-Jun-20 14:46	1
PFNS	68259-12-1	ND	0.569	0.743		B0F0021	04-Jun-20	2.60 g	10-Jun-20 14:46	1
MeFOSAA	2355-31-9	ND	0.364	0.495		B0F0021	04-Jun-20	2.60 g	10-Jun-20 14:46	1
EtFOSAA	2991-50-6	ND	0.341	0.495		B0F0021	04-Jun-20	2.60 g	10-Jun-20 14:46	1
PFUnA	2058-94-8	ND	0.128	0.248		B0F0021	04-Jun-20	2.60 g	10-Jun-20 14:46	1
PFDS	335-77-3	ND	0.342	0.495		B0F0021	04-Jun-20	2.60 g	10-Jun-20 14:46	1
11Cl-PF3OUdS	763051-92-9	ND	0.357	0.495		B0F0021	04-Jun-20	2.60 g	10-Jun-20 14:46	1
10:2 FTS	120226-60-0	ND	0.998	1.47		B0F0104	12-Jun-20	1.31 g	15-Jun-20 20:16	1
PFDoA	307-55-1	ND	0.200	0.248		B0F0021	04-Jun-20	2.60 g	10-Jun-20 14:46	1
MeFOSA	31506-32-8	ND	5.68	9.83		B0F0104	12-Jun-20	1.31 g	15-Jun-20 20:16	1
PFTrDA	72629-94-8	ND	0.199	0.248		B0F0021	04-Jun-20	2.60 g	10-Jun-20 14:46	1
PFDoS	79780-39-5	ND	0.590	0.983		B0F0104	12-Jun-20	1.31 g	15-Jun-20 20:16	1
PFTeDA	376-06-7	ND	0.259	0.491		B0F0104	12-Jun-20	1.31 g	15-Jun-20 20:16	1
EtFOSA	4151-50-2	ND	3.77	9.83		B0F0104	12-Jun-20	1.31 g	15-Jun-20 20:16	1
PFHxDA	67905-19-5	ND	0.167	0.491		B0F0104	12-Jun-20	1.31 g	15-Jun-20 20:16	1
PFODA	16517-11-6	ND	0.491	0.983		B0F0104	12-Jun-20	1.31 g	15-Jun-20 20:16	1
MeFOSE	24448-09-7	ND	2.46	4.95		B0F0021	04-Jun-20	2.60 g	10-Jun-20 14:46	1
EtFOSE	1691-99-2	ND	2.66	4.95		B0F0021	04-Jun-20	2.60 g	10-Jun-20 14:46	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	89.3	25 - 150		B0F0021	04-Jun-20	2.60 g	10-Jun-20 14:46	1

**Sample ID: GW2 (4'-5')** **PFAS Isotope Dilution Method**

Client Data				Laboratory Data			
Name:	AECOM	Matrix:	Soil	Lab Sample:	2001121-08	Column:	BEH C18
Project:	Waupaca Foundry Plant #4	Date Collected:	19-May-20 14:50	Date Received:	22-May-20 10:00		
				% Solids:	77.7		

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFPeA	IS	79.4	25 - 150		B0F0021	04-Jun-20	2.60 g	10-Jun-20 14:46	1
13C3-PFBS	IS	89.2	25 - 150		B0F0021	04-Jun-20	2.60 g	10-Jun-20 14:46	1
13C3-HFPO-DA	IS	78.7	25 - 150		B0F0021	04-Jun-20	2.60 g	10-Jun-20 14:46	1
13C2-4:2 FTS	IS	108	25 - 150		B0F0021	04-Jun-20	2.60 g	10-Jun-20 14:46	1
13C2-PFHxA	IS	77.9	25 - 150		B0F0021	04-Jun-20	2.60 g	10-Jun-20 14:46	1
13C4-PFHpA	IS	75.0	25 - 150		B0F0021	04-Jun-20	2.60 g	10-Jun-20 14:46	1
13C3-PFHxS	IS	80.3	25 - 150		B0F0021	04-Jun-20	2.60 g	10-Jun-20 14:46	1
13C2-6:2 FTS	IS	90.2	25 - 150		B0F0021	04-Jun-20	2.60 g	10-Jun-20 14:46	1
13C5-PFNA	IS	66.5	25 - 150		B0F0021	04-Jun-20	2.60 g	10-Jun-20 14:46	1
13C8-PFOA	IS	29.9	10 - 150		B0F0021	04-Jun-20	2.60 g	10-Jun-20 14:46	1
13C2-PFOA	IS	72.1	25 - 150		B0F0021	04-Jun-20	2.60 g	10-Jun-20 14:46	1
13C8-PFOS	IS	76.1	25 - 150		B0F0021	04-Jun-20	2.60 g	10-Jun-20 14:46	1
13C2-PFDA	IS	42.8	25 - 150		B0F0021	04-Jun-20	2.60 g	10-Jun-20 14:46	1
13C2-8:2 FTS	IS	81.6	25 - 150		B0F0021	04-Jun-20	2.60 g	10-Jun-20 14:46	1
d3-MeFOSAA	IS	45.8	25 - 150		B0F0021	04-Jun-20	2.60 g	10-Jun-20 14:46	1
13C2-PFUnA	IS	51.7	25 - 150		B0F0021	04-Jun-20	2.60 g	10-Jun-20 14:46	1
d5-EtFOSAA	IS	48.7	25 - 150		B0F0021	04-Jun-20	2.60 g	10-Jun-20 14:46	1
13C2-10:2 FTS	IS	77.8	25 - 150		B0F0104	12-Jun-20	1.31 g	15-Jun-20 20:16	1
13C2-PFDoA	IS	42.8	25 - 150		B0F0021	04-Jun-20	2.60 g	10-Jun-20 14:46	1
d3-MeFOSA	IS	14.1	10 - 150		B0F0104	12-Jun-20	1.31 g	15-Jun-20 20:16	1
13C2-PFTeDA	IS	60.3	25 - 150		B0F0104	12-Jun-20	1.31 g	15-Jun-20 20:16	1
d5-EtFOSA	IS	12.7	10 - 150		B0F0104	12-Jun-20	1.31 g	15-Jun-20 20:16	1
13C2-PFHxDA	IS	70.0	25 - 150		B0F0104	12-Jun-20	1.31 g	15-Jun-20 20:16	1
d7-MeFOSE	IS	21.0	10 - 150		B0F0021	04-Jun-20	2.60 g	10-Jun-20 14:46	1
d9-EtFOSE	IS	16.7	10 - 150		B0F0021	04-Jun-20	2.60 g	10-Jun-20 14:46	1

MDL - Method Detection Limit

RL - Reporting limit

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

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: GW7 (3'-4')**
**PFAS Isotope Dilution Method**

Client Data				Laboratory Data			
Name:	AECOM	Matrix:	Soil	Lab Sample:	2001121-10	Column:	BEH C18
Project:	Waupaca Foundry Plant #4	Date Collected:	19-May-20 16:15	Date Received:	22-May-20 10:00		
				% Solids:	93.5		

Analyte	CAS Number	Conc. (ng/g)	MDL	RL	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBA	375-22-4	ND	0.171	0.247		B0F0021	04-Jun-20	2.16 g	10-Jun-20 14:57	1
PFPeA	2706-90-3	ND	0.197	0.247		B0F0021	04-Jun-20	2.16 g	10-Jun-20 14:57	1
PFBS	375-73-5	ND	0.150	0.247		B0F0021	04-Jun-20	2.16 g	10-Jun-20 14:57	1
4:2 FTS	757124-72-4	ND	0.178	0.247		B0F0021	04-Jun-20	2.16 g	10-Jun-20 14:57	1
PFHxA	307-24-4	ND	0.107	0.247		B0F0021	04-Jun-20	2.16 g	10-Jun-20 14:57	1
PFPeS	2706-91-4	ND	0.326	0.495		B0F0021	04-Jun-20	2.16 g	10-Jun-20 14:57	1
HFPO-DA	13252-13-6	ND	0.584	0.742		B0F0021	04-Jun-20	2.16 g	10-Jun-20 14:57	1
PFHpA	375-85-9	ND	0.237	0.247		B0F0021	04-Jun-20	2.16 g	10-Jun-20 14:57	1
ADONA	919005-14-4	ND	0.168	0.247		B0F0021	04-Jun-20	2.16 g	10-Jun-20 14:57	1
PFHxS	355-46-4	ND	0.193	0.247		B0F0021	04-Jun-20	2.16 g	10-Jun-20 14:57	1
6:2 FTS	27619-97-2	ND	0.324	0.495		B0F0021	04-Jun-20	2.16 g	10-Jun-20 14:57	1
PFOA	335-67-1	ND	0.233	0.247		B0F0021	04-Jun-20	2.16 g	10-Jun-20 14:57	1
PFHpS	375-92-8	ND	0.365	0.495		B0F0021	04-Jun-20	2.16 g	10-Jun-20 14:57	1
PFNA	375-95-1	ND	0.154	0.247		B0F0021	04-Jun-20	2.16 g	10-Jun-20 14:57	1
PFOSA	754-91-6	ND	0.499	0.742		B0F0021	04-Jun-20	2.16 g	10-Jun-20 14:57	1
PFOS	1763-23-1	ND	0.213	0.247		B0F0021	04-Jun-20	2.16 g	10-Jun-20 14:57	1
9Cl-PF3ONS	756426-58-1	ND	0.183	0.247		B0F0021	04-Jun-20	2.16 g	10-Jun-20 14:57	1
PFDA	335-76-2	ND	0.224	0.247		B0F0021	04-Jun-20	2.16 g	10-Jun-20 14:57	1
8:2 FTS	39108-34-4	ND	0.357	0.495		B0F0021	04-Jun-20	2.16 g	10-Jun-20 14:57	1
PFNS	68259-12-1	ND	0.569	0.742		B0F0021	04-Jun-20	2.16 g	10-Jun-20 14:57	1
MeFOSAA	2355-31-9	ND	0.364	0.495		B0F0021	04-Jun-20	2.16 g	10-Jun-20 14:57	1
EtFOSAA	2991-50-6	ND	0.340	0.495		B0F0021	04-Jun-20	2.16 g	10-Jun-20 14:57	1
PFUnA	2058-94-8	ND	0.128	0.247		B0F0021	04-Jun-20	2.16 g	10-Jun-20 14:57	1
PFDS	335-77-3	ND	0.341	0.495		B0F0021	04-Jun-20	2.16 g	10-Jun-20 14:57	1
11Cl-PF3OUdS	763051-92-9	ND	0.357	0.495		B0F0021	04-Jun-20	2.16 g	10-Jun-20 14:57	1
10:2 FTS	120226-60-0	ND	0.503	0.742		B0F0021	04-Jun-20	2.16 g	10-Jun-20 14:57	1
PFDoA	307-55-1	ND	0.200	0.247		B0F0021	04-Jun-20	2.16 g	10-Jun-20 14:57	1
MeFOSA	31506-32-8	ND	2.86	4.95		B0F0021	04-Jun-20	2.16 g	10-Jun-20 14:57	1
PFTTrDA	72629-94-8	ND	0.199	0.247		B0F0021	04-Jun-20	2.16 g	10-Jun-20 14:57	1
PFDoS	79780-39-5	ND	0.583	0.972		B0F0104	12-Jun-20	1.10 g	15-Jun-20 20:58	1
PFTeDA	376-06-7	ND	0.257	0.486		B0F0104	12-Jun-20	1.10 g	15-Jun-20 20:58	1
EtFOSA	4151-50-2	ND	1.90	4.95		B0F0021	04-Jun-20	2.16 g	10-Jun-20 14:57	1
PFHxDA	67905-19-5	ND	0.165	0.486		B0F0104	12-Jun-20	1.10 g	15-Jun-20 20:58	1
PFODA	16517-11-6	ND	0.486	0.972		B0F0104	12-Jun-20	1.10 g	15-Jun-20 20:58	1
MeFOSE	24448-09-7	ND	2.45	4.95		B0F0021	04-Jun-20	2.16 g	10-Jun-20 14:57	1
EtFOSE	1691-99-2	ND	2.66	4.95		B0F0021	04-Jun-20	2.16 g	10-Jun-20 14:57	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	92.4	25 - 150		B0F0021	04-Jun-20	2.16 g	10-Jun-20 14:57	1

**Sample ID: GW7 (3'-4')**
**PFAS Isotope Dilution Method**

Client Data				Laboratory Data			
Name:	AECOM	Matrix:	Soil	Lab Sample:	2001121-10	Column:	BEH C18
Project:	Waupaca Foundry Plant #4	Date Collected:	19-May-20 16:15	Date Received:	22-May-20 10:00		
				% Solids:	93.5		

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFPeA	IS	78.9	25 - 150		B0F0021	04-Jun-20	2.16 g	10-Jun-20 14:57	1
13C3-PFBS	IS	88.2	25 - 150		B0F0021	04-Jun-20	2.16 g	10-Jun-20 14:57	1
13C3-HFPO-DA	IS	83.2	25 - 150		B0F0021	04-Jun-20	2.16 g	10-Jun-20 14:57	1
13C2-4:2 FTS	IS	99.5	25 - 150		B0F0021	04-Jun-20	2.16 g	10-Jun-20 14:57	1
13C2-PFHxA	IS	81.7	25 - 150		B0F0021	04-Jun-20	2.16 g	10-Jun-20 14:57	1
13C4-PFHpA	IS	70.5	25 - 150		B0F0021	04-Jun-20	2.16 g	10-Jun-20 14:57	1
13C3-PFHxS	IS	78.3	25 - 150		B0F0021	04-Jun-20	2.16 g	10-Jun-20 14:57	1
13C2-6:2 FTS	IS	93.2	25 - 150		B0F0021	04-Jun-20	2.16 g	10-Jun-20 14:57	1
13C5-PFNA	IS	78.7	25 - 150		B0F0021	04-Jun-20	2.16 g	10-Jun-20 14:57	1
13C8-PFOA	IS	40.4	10 - 150		B0F0021	04-Jun-20	2.16 g	10-Jun-20 14:57	1
13C2-PFOA	IS	67.9	25 - 150		B0F0021	04-Jun-20	2.16 g	10-Jun-20 14:57	1
13C8-PFOS	IS	74.3	25 - 150		B0F0021	04-Jun-20	2.16 g	10-Jun-20 14:57	1
13C2-PFDA	IS	57.4	25 - 150		B0F0021	04-Jun-20	2.16 g	10-Jun-20 14:57	1
13C2-8:2 FTS	IS	76.2	25 - 150		B0F0021	04-Jun-20	2.16 g	10-Jun-20 14:57	1
d3-MeFOSAA	IS	50.7	25 - 150		B0F0021	04-Jun-20	2.16 g	10-Jun-20 14:57	1
13C2-PFUnA	IS	44.9	25 - 150		B0F0021	04-Jun-20	2.16 g	10-Jun-20 14:57	1
d5-EtFOSAA	IS	51.7	25 - 150		B0F0021	04-Jun-20	2.16 g	10-Jun-20 14:57	1
13C2-10:2 FTS	IS	46.6	25 - 150		B0F0021	04-Jun-20	2.16 g	10-Jun-20 14:57	1
13C2-PFDoA	IS	47.2	25 - 150		B0F0021	04-Jun-20	2.16 g	10-Jun-20 14:57	1
d3-MeFOSA	IS	16.0	10 - 150		B0F0021	04-Jun-20	2.16 g	10-Jun-20 14:57	1
13C2-PFTeDA	IS	60.4	25 - 150		B0F0104	12-Jun-20	1.10 g	15-Jun-20 20:58	1
d5-EtFOSA	IS	11.2	10 - 150		B0F0021	04-Jun-20	2.16 g	10-Jun-20 14:57	1
13C2-PFHxDA	IS	54.1	25 - 150		B0F0104	12-Jun-20	1.10 g	15-Jun-20 20:58	1
d7-MeFOSE	IS	30.2	10 - 150		B0F0021	04-Jun-20	2.16 g	10-Jun-20 14:57	1
d9-EtFOSE	IS	27.1	10 - 150		B0F0021	04-Jun-20	2.16 g	10-Jun-20 14:57	1

MDL - Method Detection Limit

RL - Reporting limit

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

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: GW 5 (0'-1')**
**PFAS Isotope Dilution Method**

Client Data				Laboratory Data			
Name:	AECOM	Matrix:	Soil	Lab Sample:	2001121-11	Column:	BEH C18
Project:	Waupaca Foundry Plant #4	Date Collected:	20-May-20 08:10	Date Received:	22-May-20 10:00		
				% Solids:	94.4		

Analyte	CAS Number	Conc. (ng/g)	MDL	RL	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBA	375-22-4	ND	0.170	0.245		B0F0021	04-Jun-20	2.16 g	10-Jun-20 15:07	1
PFPeA	2706-90-3	ND	0.195	0.245		B0F0021	04-Jun-20	2.16 g	10-Jun-20 15:07	1
PFBS	375-73-5	ND	0.149	0.245		B0F0021	04-Jun-20	2.16 g	10-Jun-20 15:07	1
4:2 FTS	757124-72-4	ND	0.176	0.245		B0F0021	04-Jun-20	2.16 g	10-Jun-20 15:07	1
PFHxA	307-24-4	0.170	0.106	0.245	J, Q	B0F0021	04-Jun-20	2.16 g	10-Jun-20 15:07	1
PFPeS	2706-91-4	ND	0.323	0.490		B0F0021	04-Jun-20	2.16 g	10-Jun-20 15:07	1
HFPO-DA	13252-13-6	ND	0.578	0.735		B0F0021	04-Jun-20	2.16 g	10-Jun-20 15:07	1
PFHpA	375-85-9	ND	0.234	0.245		B0F0021	04-Jun-20	2.16 g	10-Jun-20 15:07	1
ADONA	919005-14-4	ND	0.167	0.245		B0F0021	04-Jun-20	2.16 g	10-Jun-20 15:07	1
PFHxS	355-46-4	ND	0.191	0.245		B0F0021	04-Jun-20	2.16 g	10-Jun-20 15:07	1
6:2 FTS	27619-97-2	ND	0.321	0.490		B0F0021	04-Jun-20	2.16 g	10-Jun-20 15:07	1
PFOA	335-67-1	ND	0.230	0.245		B0F0021	04-Jun-20	2.16 g	10-Jun-20 15:07	1
PFHpS	375-92-8	ND	0.362	0.490		B0F0021	04-Jun-20	2.16 g	10-Jun-20 15:07	1
PFNA	375-95-1	ND	0.153	0.245		B0F0021	04-Jun-20	2.16 g	10-Jun-20 15:07	1
PFOSA	754-91-6	ND	0.494	0.735		B0F0021	04-Jun-20	2.16 g	10-Jun-20 15:07	1
PFOS	1763-23-1	ND	0.211	0.245		B0F0021	04-Jun-20	2.16 g	10-Jun-20 15:07	1
9Cl-PF3ONS	756426-58-1	ND	0.181	0.245		B0F0021	04-Jun-20	2.16 g	10-Jun-20 15:07	1
PFDA	335-76-2	ND	0.222	0.245		B0F0021	04-Jun-20	2.16 g	10-Jun-20 15:07	1
8:2 FTS	39108-34-4	ND	0.354	0.490		B0F0021	04-Jun-20	2.16 g	10-Jun-20 15:07	1
PFNS	68259-12-1	ND	0.564	0.735		B0F0021	04-Jun-20	2.16 g	10-Jun-20 15:07	1
MeFOSAA	2355-31-9	ND	0.361	0.490		B0F0021	04-Jun-20	2.16 g	10-Jun-20 15:07	1
EtFOSAA	2991-50-6	ND	0.337	0.490		B0F0021	04-Jun-20	2.16 g	10-Jun-20 15:07	1
PFUnA	2058-94-8	ND	0.126	0.245		B0F0021	04-Jun-20	2.16 g	10-Jun-20 15:07	1
PFDS	335-77-3	ND	0.338	0.490		B0F0021	04-Jun-20	2.16 g	10-Jun-20 15:07	1
11Cl-PF3OUdS	763051-92-9	ND	0.354	0.490		B0F0021	04-Jun-20	2.16 g	10-Jun-20 15:07	1
10:2 FTS	120226-60-0	ND	0.498	0.735		B0F0021	04-Jun-20	2.16 g	10-Jun-20 15:07	1
PFDoA	307-55-1	ND	0.198	0.245		B0F0021	04-Jun-20	2.16 g	10-Jun-20 15:07	1
MeFOSA	31506-32-8	ND	2.83	4.90		B0F0021	04-Jun-20	2.16 g	10-Jun-20 15:07	1
PFTTrDA	72629-94-8	ND	0.197	0.245		B0F0021	04-Jun-20	2.16 g	10-Jun-20 15:07	1
PFDoS	79780-39-5	ND	0.294	0.490		B0F0021	04-Jun-20	2.16 g	10-Jun-20 15:07	1
PFTeDA	376-06-7	ND	0.129	0.245		B0F0021	04-Jun-20	2.16 g	10-Jun-20 15:07	1
EtFOSA	4151-50-2	ND	1.88	4.90		B0F0021	04-Jun-20	2.16 g	10-Jun-20 15:07	1
PFHxDA	67905-19-5	ND	0.167	0.490		B0F0104	12-Jun-20	1.08 g	15-Jun-20 21:08	1
PFODA	16517-11-6	ND	0.490	0.980		B0F0104	12-Jun-20	1.08 g	15-Jun-20 21:08	1
MeFOSE	24448-09-7	ND	2.43	4.90		B0F0021	04-Jun-20	2.16 g	10-Jun-20 15:07	1
EtFOSE	1691-99-2	ND	2.64	4.90		B0F0021	04-Jun-20	2.16 g	10-Jun-20 15:07	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	89.0	25 - 150		B0F0021	04-Jun-20	2.16 g	10-Jun-20 15:07	1

**Sample ID: GW 5 (0'-1')** **PFAS Isotope Dilution Method**

Client Data				Laboratory Data			
Name:	AECOM	Matrix:	Soil	Lab Sample:	2001121-11	Column:	BEH C18
Project:	Waupaca Foundry Plant #4	Date Collected:	20-May-20 08:10	Date Received:	22-May-20 10:00		
				% Solids:	94.4		

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFPeA	IS	75.2	25 - 150		B0F0021	04-Jun-20	2.16 g	10-Jun-20 15:07	1
13C3-PFBS	IS	80.9	25 - 150		B0F0021	04-Jun-20	2.16 g	10-Jun-20 15:07	1
13C3-HFPO-DA	IS	77.9	25 - 150		B0F0021	04-Jun-20	2.16 g	10-Jun-20 15:07	1
13C2-4:2 FTS	IS	87.1	25 - 150		B0F0021	04-Jun-20	2.16 g	10-Jun-20 15:07	1
13C2-PFHxA	IS	78.7	25 - 150		B0F0021	04-Jun-20	2.16 g	10-Jun-20 15:07	1
13C4-PFHpA	IS	76.9	25 - 150		B0F0021	04-Jun-20	2.16 g	10-Jun-20 15:07	1
13C3-PFHxS	IS	73.6	25 - 150		B0F0021	04-Jun-20	2.16 g	10-Jun-20 15:07	1
13C2-6:2 FTS	IS	77.1	25 - 150		B0F0021	04-Jun-20	2.16 g	10-Jun-20 15:07	1
13C5-PFNA	IS	65.9	25 - 150		B0F0021	04-Jun-20	2.16 g	10-Jun-20 15:07	1
13C8-PFOA	IS	38.2	10 - 150		B0F0021	04-Jun-20	2.16 g	10-Jun-20 15:07	1
13C2-PFOA	IS	69.8	25 - 150		B0F0021	04-Jun-20	2.16 g	10-Jun-20 15:07	1
13C8-PFOS	IS	65.5	25 - 150		B0F0021	04-Jun-20	2.16 g	10-Jun-20 15:07	1
13C2-PFDA	IS	50.2	25 - 150		B0F0021	04-Jun-20	2.16 g	10-Jun-20 15:07	1
13C2-8:2 FTS	IS	69.1	25 - 150		B0F0021	04-Jun-20	2.16 g	10-Jun-20 15:07	1
d3-MeFOSAA	IS	51.8	25 - 150		B0F0021	04-Jun-20	2.16 g	10-Jun-20 15:07	1
13C2-PFUnA	IS	54.2	25 - 150		B0F0021	04-Jun-20	2.16 g	10-Jun-20 15:07	1
d5-EtFOSAA	IS	41.5	25 - 150		B0F0021	04-Jun-20	2.16 g	10-Jun-20 15:07	1
13C2-10:2 FTS	IS	42.9	25 - 150		B0F0021	04-Jun-20	2.16 g	10-Jun-20 15:07	1
13C2-PFDoA	IS	50.2	25 - 150		B0F0021	04-Jun-20	2.16 g	10-Jun-20 15:07	1
d3-MeFOSA	IS	13.7	10 - 150		B0F0021	04-Jun-20	2.16 g	10-Jun-20 15:07	1
13C2-PFTeDA	IS	29.0	25 - 150		B0F0021	04-Jun-20	2.16 g	10-Jun-20 15:07	1
d5-EtFOSA	IS	12.4	10 - 150		B0F0021	04-Jun-20	2.16 g	10-Jun-20 15:07	1
13C2-PFHxDA	IS	45.7	25 - 150		B0F0104	12-Jun-20	1.08 g	15-Jun-20 21:08	1
d7-MeFOSE	IS	34.4	10 - 150		B0F0021	04-Jun-20	2.16 g	10-Jun-20 15:07	1
d9-EtFOSE	IS	32.8	10 - 150		B0F0021	04-Jun-20	2.16 g	10-Jun-20 15:07	1

MDL - Method Detection Limit

RL - Reporting limit

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

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: GW5 (4'-5')**
**PFAS Isotope Dilution Method**

Client Data				Laboratory Data			
Name:	AECOM	Matrix:	Soil	Lab Sample:	2001121-12	Column:	BEH C18
Project:	Waupaca Foundry Plant #4	Date Collected:	20-May-20 08:15	Date Received:	22-May-20 10:00		
				% Solids:	90.8		

Analyte	CAS Number	Conc. (ng/g)	MDL	RL	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBA	375-22-4	ND	0.172	0.248		B0F0021	04-Jun-20	2.22 g	10-Jun-20 15:17	1
PFPeA	2706-90-3	ND	0.198	0.248		B0F0021	04-Jun-20	2.22 g	10-Jun-20 15:17	1
PFBS	375-73-5	ND	0.151	0.248		B0F0021	04-Jun-20	2.22 g	10-Jun-20 15:17	1
4:2 FTS	757124-72-4	ND	0.179	0.248		B0F0021	04-Jun-20	2.22 g	10-Jun-20 15:17	1
PFHxA	307-24-4	ND	0.107	0.248		B0F0021	04-Jun-20	2.22 g	10-Jun-20 15:17	1
PFPeS	2706-91-4	ND	0.327	0.496		B0F0021	04-Jun-20	2.22 g	10-Jun-20 15:17	1
HFPO-DA	13252-13-6	ND	0.586	0.745		B0F0021	04-Jun-20	2.22 g	10-Jun-20 15:17	1
PFHpA	375-85-9	ND	0.237	0.248		B0F0021	04-Jun-20	2.22 g	10-Jun-20 15:17	1
ADONA	919005-14-4	ND	0.169	0.248		B0F0021	04-Jun-20	2.22 g	10-Jun-20 15:17	1
PFHxS	355-46-4	ND	0.194	0.248		B0F0021	04-Jun-20	2.22 g	10-Jun-20 15:17	1
6:2 FTS	27619-97-2	ND	0.325	0.496		B0F0021	04-Jun-20	2.22 g	10-Jun-20 15:17	1
PFOA	335-67-1	ND	0.233	0.248		B0F0021	04-Jun-20	2.22 g	10-Jun-20 15:17	1
PFHpS	375-92-8	ND	0.366	0.496		B0F0021	04-Jun-20	2.22 g	10-Jun-20 15:17	1
PFNA	375-95-1	0.260	0.155	0.248	Q	B0F0021	04-Jun-20	2.22 g	10-Jun-20 15:17	1
PFOSA	754-91-6	ND	0.500	0.745		B0F0021	04-Jun-20	2.22 g	10-Jun-20 15:17	1
PFOS	1763-23-1	0.493	0.213	0.248	Q	B0F0021	04-Jun-20	2.22 g	10-Jun-20 15:17	1
9Cl-PF3ONS	756426-58-1	ND	0.184	0.248		B0F0021	04-Jun-20	2.22 g	10-Jun-20 15:17	1
PFDA	335-76-2	ND	0.224	0.248		B0F0021	04-Jun-20	2.22 g	10-Jun-20 15:17	1
8:2 FTS	39108-34-4	ND	0.358	0.496		B0F0021	04-Jun-20	2.22 g	10-Jun-20 15:17	1
PFNS	68259-12-1	ND	0.571	0.745		B0F0021	04-Jun-20	2.22 g	10-Jun-20 15:17	1
MeFOSAA	2355-31-9	ND	0.365	0.496		B0F0021	04-Jun-20	2.22 g	10-Jun-20 15:17	1
EtFOSAA	2991-50-6	ND	0.341	0.496		B0F0021	04-Jun-20	2.22 g	10-Jun-20 15:17	1
PFUnA	2058-94-8	ND	0.128	0.248		B0F0021	04-Jun-20	2.22 g	10-Jun-20 15:17	1
PFDS	335-77-3	ND	0.342	0.496		B0F0021	04-Jun-20	2.22 g	10-Jun-20 15:17	1
11Cl-PF3OUdS	763051-92-9	ND	0.358	0.496		B0F0021	04-Jun-20	2.22 g	10-Jun-20 15:17	1
10:2 FTS	120226-60-0	ND	0.504	0.745		B0F0021	04-Jun-20	2.22 g	10-Jun-20 15:17	1
PFDoA	307-55-1	ND	0.201	0.248		B0F0021	04-Jun-20	2.22 g	10-Jun-20 15:17	1
MeFOSA	31506-32-8	ND	5.54	9.58		B0F0104	12-Jun-20	1.15 g	15-Jun-20 21:18	1
PFTrDA	72629-94-8	ND	0.200	0.248		B0F0021	04-Jun-20	2.22 g	10-Jun-20 15:17	1
PFDoS	79780-39-5	ND	0.298	0.496		B0F0021	04-Jun-20	2.22 g	10-Jun-20 15:17	1
PFTeDA	376-06-7	ND	0.131	0.248		B0F0021	04-Jun-20	2.22 g	10-Jun-20 15:17	1
EtFOSA	4151-50-2	ND	3.68	9.58		B0F0104	12-Jun-20	1.15 g	15-Jun-20 21:18	1
PFHxDA	67905-19-5	ND	0.163	0.479		B0F0104	12-Jun-20	1.15 g	15-Jun-20 21:18	1
PFODA	16517-11-6	ND	0.479	0.958		B0F0104	12-Jun-20	1.15 g	15-Jun-20 21:18	1
MeFOSE	24448-09-7	ND	2.46	4.96		B0F0021	04-Jun-20	2.22 g	10-Jun-20 15:17	1
EtFOSE	1691-99-2	ND	2.67	4.96		B0F0021	04-Jun-20	2.22 g	10-Jun-20 15:17	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	88.1	25 - 150		B0F0021	04-Jun-20	2.22 g	10-Jun-20 15:17	1

**Sample ID: GW5 (4'-5')**
**PFAS Isotope Dilution Method**

Client Data				Laboratory Data			
Name:	AECOM	Matrix:	Soil	Lab Sample:	2001121-12	Column:	BEH C18
Project:	Waupaca Foundry Plant #4	Date Collected:	20-May-20 08:15	Date Received:	22-May-20 10:00		
				% Solids:	90.8		

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFPeA	IS	77.6	25 - 150		B0F0021	04-Jun-20	2.22 g	10-Jun-20 15:17	1
13C3-PFBS	IS	80.2	25 - 150		B0F0021	04-Jun-20	2.22 g	10-Jun-20 15:17	1
13C3-HFPO-DA	IS	81.3	25 - 150		B0F0021	04-Jun-20	2.22 g	10-Jun-20 15:17	1
13C2-4:2 FTS	IS	96.4	25 - 150		B0F0021	04-Jun-20	2.22 g	10-Jun-20 15:17	1
13C2-PFHxA	IS	79.0	25 - 150		B0F0021	04-Jun-20	2.22 g	10-Jun-20 15:17	1
13C4-PFHpA	IS	78.8	25 - 150		B0F0021	04-Jun-20	2.22 g	10-Jun-20 15:17	1
13C3-PFHxS	IS	77.3	25 - 150		B0F0021	04-Jun-20	2.22 g	10-Jun-20 15:17	1
13C2-6:2 FTS	IS	82.7	25 - 150		B0F0021	04-Jun-20	2.22 g	10-Jun-20 15:17	1
13C5-PFNA	IS	67.5	25 - 150		B0F0021	04-Jun-20	2.22 g	10-Jun-20 15:17	1
13C8-PFOA	IS	49.7	10 - 150		B0F0021	04-Jun-20	2.22 g	10-Jun-20 15:17	1
13C2-PFOA	IS	68.9	25 - 150		B0F0021	04-Jun-20	2.22 g	10-Jun-20 15:17	1
13C8-PFOS	IS	71.5	25 - 150		B0F0021	04-Jun-20	2.22 g	10-Jun-20 15:17	1
13C2-PFDA	IS	65.3	25 - 150		B0F0021	04-Jun-20	2.22 g	10-Jun-20 15:17	1
13C2-8:2 FTS	IS	84.4	25 - 150		B0F0021	04-Jun-20	2.22 g	10-Jun-20 15:17	1
d3-MeFOSAA	IS	63.9	25 - 150		B0F0021	04-Jun-20	2.22 g	10-Jun-20 15:17	1
13C2-PFUnA	IS	66.9	25 - 150		B0F0021	04-Jun-20	2.22 g	10-Jun-20 15:17	1
d5-EtFOSAA	IS	65.3	25 - 150		B0F0021	04-Jun-20	2.22 g	10-Jun-20 15:17	1
13C2-10:2 FTS	IS	67.5	25 - 150		B0F0021	04-Jun-20	2.22 g	10-Jun-20 15:17	1
13C2-PFDoA	IS	65.3	25 - 150		B0F0021	04-Jun-20	2.22 g	10-Jun-20 15:17	1
d3-MeFOSA	IS	34.5	10 - 150		B0F0104	12-Jun-20	1.15 g	15-Jun-20 21:18	1
13C2-PFTeDA	IS	45.5	25 - 150		B0F0021	04-Jun-20	2.22 g	10-Jun-20 15:17	1
d5-EtFOSA	IS	28.3	10 - 150		B0F0104	12-Jun-20	1.15 g	15-Jun-20 21:18	1
13C2-PFHxDA	IS	41.3	25 - 150		B0F0104	12-Jun-20	1.15 g	15-Jun-20 21:18	1
d7-MeFOSE	IS	39.6	10 - 150		B0F0021	04-Jun-20	2.22 g	10-Jun-20 15:17	1
d9-EtFOSE	IS	46.1	10 - 150		B0F0021	04-Jun-20	2.22 g	10-Jun-20 15:17	1

MDL - Method Detection Limit

RL - Reporting limit

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

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: GW6 (0'-1')**
**PFAS Isotope Dilution Method**

Client Data				Laboratory Data			
Name:	AECOM	Matrix:	Soil	Lab Sample:	2001121-13	Column:	BEH C18
Project:	Waupaca Foundry Plant #4	Date Collected:	20-May-20 10:00	Date Received:	22-May-20 10:00		
				% Solids:	92.7		

Analyte	CAS Number	Conc. (ng/g)	MDL	RL	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBA	375-22-4	ND	0.170	0.245		B0F0021	04-Jun-20	2.20 g	10-Jun-20 15:28	1
PFPeA	2706-90-3	ND	0.195	0.245		B0F0021	04-Jun-20	2.20 g	10-Jun-20 15:28	1
PFBS	375-73-5	ND	0.149	0.245		B0F0021	04-Jun-20	2.20 g	10-Jun-20 15:28	1
4:2 FTS	757124-72-4	ND	0.177	0.245		B0F0021	04-Jun-20	2.20 g	10-Jun-20 15:28	1
PFHxA	307-24-4	0.142	0.106	0.245	J, Q	B0F0021	04-Jun-20	2.20 g	10-Jun-20 15:28	1
PFPeS	2706-91-4	ND	0.323	0.491		B0F0021	04-Jun-20	2.20 g	10-Jun-20 15:28	1
HFPO-DA	13252-13-6	ND	0.579	0.736		B0F0021	04-Jun-20	2.20 g	10-Jun-20 15:28	1
PFHpA	375-85-9	ND	0.234	0.245		B0F0021	04-Jun-20	2.20 g	10-Jun-20 15:28	1
ADONA	919005-14-4	ND	0.167	0.245		B0F0021	04-Jun-20	2.20 g	10-Jun-20 15:28	1
PFHxS	355-46-4	ND	0.191	0.245		B0F0021	04-Jun-20	2.20 g	10-Jun-20 15:28	1
6:2 FTS	27619-97-2	ND	0.321	0.491		B0F0021	04-Jun-20	2.20 g	10-Jun-20 15:28	1
PFOA	335-67-1	ND	0.231	0.245		B0F0021	04-Jun-20	2.20 g	10-Jun-20 15:28	1
PFHpS	375-92-8	ND	0.362	0.491		B0F0021	04-Jun-20	2.20 g	10-Jun-20 15:28	1
PFNA	375-95-1	ND	0.153	0.245		B0F0021	04-Jun-20	2.20 g	10-Jun-20 15:28	1
PFOSA	754-91-6	ND	0.494	0.736		B0F0021	04-Jun-20	2.20 g	10-Jun-20 15:28	1
PFOS	1763-23-1	0.652	0.211	0.245		B0F0021	04-Jun-20	2.20 g	10-Jun-20 15:28	1
9Cl-PF3ONS	756426-58-1	ND	0.181	0.245		B0F0021	04-Jun-20	2.20 g	10-Jun-20 15:28	1
PFDA	335-76-2	0.388	0.222	0.245	Q	B0F0021	04-Jun-20	2.20 g	10-Jun-20 15:28	1
8:2 FTS	39108-34-4	ND	0.354	0.491		B0F0021	04-Jun-20	2.20 g	10-Jun-20 15:28	1
PFNS	68259-12-1	ND	0.564	0.736		B0F0021	04-Jun-20	2.20 g	10-Jun-20 15:28	1
MeFOSAA	2355-31-9	ND	0.361	0.491		B0F0021	04-Jun-20	2.20 g	10-Jun-20 15:28	1
EtFOSAA	2991-50-6	ND	0.337	0.491		B0F0021	04-Jun-20	2.20 g	10-Jun-20 15:28	1
PFUnA	2058-94-8	ND	0.127	0.245		B0F0021	04-Jun-20	2.20 g	10-Jun-20 15:28	1
PFDS	335-77-3	ND	0.338	0.491		B0F0021	04-Jun-20	2.20 g	10-Jun-20 15:28	1
11Cl-PF3OUdS	763051-92-9	ND	0.354	0.491		B0F0021	04-Jun-20	2.20 g	10-Jun-20 15:28	1
10:2 FTS	120226-60-0	ND	0.498	0.736		B0F0021	04-Jun-20	2.20 g	10-Jun-20 15:28	1
PFDoA	307-55-1	ND	0.198	0.245		B0F0021	04-Jun-20	2.20 g	10-Jun-20 15:28	1
MeFOSA	31506-32-8	ND	2.84	4.91		B0F0021	04-Jun-20	2.20 g	10-Jun-20 15:28	1
PFTrDA	72629-94-8	ND	0.197	0.245		B0F0021	04-Jun-20	2.20 g	10-Jun-20 15:28	1
PFDoS	79780-39-5	ND	0.294	0.491		B0F0021	04-Jun-20	2.20 g	10-Jun-20 15:28	1
PFTeDA	376-06-7	ND	0.129	0.245		B0F0021	04-Jun-20	2.20 g	10-Jun-20 15:28	1
EtFOSA	4151-50-2	ND	1.88	4.91		B0F0021	04-Jun-20	2.20 g	10-Jun-20 15:28	1
PFHxDA	67905-19-5	ND	0.164	0.482		B0F0104	12-Jun-20	1.12 g	15-Jun-20 21:29	1
PFODA	16517-11-6	ND	0.482	0.964		B0F0104	12-Jun-20	1.12 g	15-Jun-20 21:29	1
MeFOSE	24448-09-7	ND	2.43	4.91		B0F0021	04-Jun-20	2.20 g	10-Jun-20 15:28	1
EtFOSE	1691-99-2	ND	2.64	4.91		B0F0021	04-Jun-20	2.20 g	10-Jun-20 15:28	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	86.5	25 - 150			B0F0021	04-Jun-20	2.20 g	10-Jun-20 15:28	1



**Sample ID: GW6 (0'-1')** **PFAS Isotope Dilution Method**

Client Data				Laboratory Data			
Name:	AECOM	Matrix:	Soil	Lab Sample:	2001121-13	Column:	BEH C18
Project:	Waupaca Foundry Plant #4	Date Collected:	20-May-20 10:00	Date Received:	22-May-20 10:00		
				% Solids:	92.7		

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFPeA	IS	75.0	25 - 150		B0F0021	04-Jun-20	2.20 g	10-Jun-20 15:28	1
13C3-PFBS	IS	84.1	25 - 150		B0F0021	04-Jun-20	2.20 g	10-Jun-20 15:28	1
13C3-HFPO-DA	IS	78.0	25 - 150		B0F0021	04-Jun-20	2.20 g	10-Jun-20 15:28	1
13C2-4:2 FTS	IS	91.0	25 - 150		B0F0021	04-Jun-20	2.20 g	10-Jun-20 15:28	1
13C2-PFHxA	IS	77.2	25 - 150		B0F0021	04-Jun-20	2.20 g	10-Jun-20 15:28	1
13C4-PFHpA	IS	76.0	25 - 150		B0F0021	04-Jun-20	2.20 g	10-Jun-20 15:28	1
13C3-PFHxS	IS	73.8	25 - 150		B0F0021	04-Jun-20	2.20 g	10-Jun-20 15:28	1
13C2-6:2 FTS	IS	87.5	25 - 150		B0F0021	04-Jun-20	2.20 g	10-Jun-20 15:28	1
13C5-PFNA	IS	65.4	25 - 150		B0F0021	04-Jun-20	2.20 g	10-Jun-20 15:28	1
13C8-PFOA	IS	42.3	10 - 150		B0F0021	04-Jun-20	2.20 g	10-Jun-20 15:28	1
13C2-PFOA	IS	68.9	25 - 150		B0F0021	04-Jun-20	2.20 g	10-Jun-20 15:28	1
13C8-PFOS	IS	74.3	25 - 150		B0F0021	04-Jun-20	2.20 g	10-Jun-20 15:28	1
13C2-PFDA	IS	64.4	25 - 150		B0F0021	04-Jun-20	2.20 g	10-Jun-20 15:28	1
13C2-8:2 FTS	IS	79.1	25 - 150		B0F0021	04-Jun-20	2.20 g	10-Jun-20 15:28	1
d3-MeFOSAA	IS	55.5	25 - 150		B0F0021	04-Jun-20	2.20 g	10-Jun-20 15:28	1
13C2-PFUnA	IS	52.7	25 - 150		B0F0021	04-Jun-20	2.20 g	10-Jun-20 15:28	1
d5-EtFOSAA	IS	51.3	25 - 150		B0F0021	04-Jun-20	2.20 g	10-Jun-20 15:28	1
13C2-10:2 FTS	IS	58.0	25 - 150		B0F0021	04-Jun-20	2.20 g	10-Jun-20 15:28	1
13C2-PFDoA	IS	53.2	25 - 150		B0F0021	04-Jun-20	2.20 g	10-Jun-20 15:28	1
d3-MeFOSA	IS	21.4	10 - 150		B0F0021	04-Jun-20	2.20 g	10-Jun-20 15:28	1
13C2-PFTeDA	IS	35.0	25 - 150		B0F0021	04-Jun-20	2.20 g	10-Jun-20 15:28	1
d5-EtFOSA	IS	17.2	10 - 150		B0F0021	04-Jun-20	2.20 g	10-Jun-20 15:28	1
13C2-PFHxDA	IS	36.0	25 - 150		B0F0104	12-Jun-20	1.12 g	15-Jun-20 21:29	1
d7-MeFOSE	IS	33.8	10 - 150		B0F0021	04-Jun-20	2.20 g	10-Jun-20 15:28	1
d9-EtFOSE	IS	36.5	10 - 150		B0F0021	04-Jun-20	2.20 g	10-Jun-20 15:28	1

MDL - Method Detection Limit

RL - Reporting limit

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

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: GW6 (4'-5')**
**PFAS Isotope Dilution Method**

Client Data				Laboratory Data			
Name:	AECOM	Matrix:	Soil	Lab Sample:	2001121-14	Column:	BEH C18
Project:	Waupaca Foundry Plant #4	Date Collected:	20-May-20 10:10	Date Received:	22-May-20 10:00		
				% Solids:	84.6		

Analyte	CAS Number	Conc. (ng/g)	MDL	RL	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBA	375-22-4	ND	0.171	0.247		B0F0021	04-Jun-20	2.39 g	10-Jun-20 15:38	1
PFPeA	2706-90-3	ND	0.197	0.247		B0F0021	04-Jun-20	2.39 g	10-Jun-20 15:38	1
PFBS	375-73-5	ND	0.150	0.247		B0F0021	04-Jun-20	2.39 g	10-Jun-20 15:38	1
4:2 FTS	757124-72-4	ND	0.178	0.247		B0F0021	04-Jun-20	2.39 g	10-Jun-20 15:38	1
PFHxA	307-24-4	0.178	0.107	0.247	J	B0F0021	04-Jun-20	2.39 g	10-Jun-20 15:38	1
PFPeS	2706-91-4	ND	0.326	0.495		B0F0021	04-Jun-20	2.39 g	10-Jun-20 15:38	1
HFPO-DA	13252-13-6	ND	0.584	0.742		B0F0021	04-Jun-20	2.39 g	10-Jun-20 15:38	1
PFHpA	375-85-9	0.261	0.237	0.247	Q	B0F0021	04-Jun-20	2.39 g	10-Jun-20 15:38	1
ADONA	919005-14-4	ND	0.168	0.247		B0F0021	04-Jun-20	2.39 g	10-Jun-20 15:38	1
PFHxS	355-46-4	ND	0.193	0.247		B0F0021	04-Jun-20	2.39 g	10-Jun-20 15:38	1
6:2 FTS	27619-97-2	ND	0.324	0.495		B0F0021	04-Jun-20	2.39 g	10-Jun-20 15:38	1
PFOA	335-67-1	1.32	0.233	0.247		B0F0021	04-Jun-20	2.39 g	10-Jun-20 15:38	1
PFHpS	375-92-8	ND	0.365	0.495		B0F0021	04-Jun-20	2.39 g	10-Jun-20 15:38	1
PFNA	375-95-1	ND	0.154	0.247		B0F0021	04-Jun-20	2.39 g	10-Jun-20 15:38	1
PFOSA	754-91-6	ND	0.499	0.742		B0F0021	04-Jun-20	2.39 g	10-Jun-20 15:38	1
PFOS	1763-23-1	0.383	0.213	0.247	Q	B0F0021	04-Jun-20	2.39 g	10-Jun-20 15:38	1
9Cl-PF3ONS	756426-58-1	ND	0.183	0.247		B0F0021	04-Jun-20	2.39 g	10-Jun-20 15:38	1
PFDA	335-76-2	ND	0.224	0.247		B0F0021	04-Jun-20	2.39 g	10-Jun-20 15:38	1
8:2 FTS	39108-34-4	ND	0.357	0.495		B0F0021	04-Jun-20	2.39 g	10-Jun-20 15:38	1
PFNS	68259-12-1	ND	0.569	0.742		B0F0021	04-Jun-20	2.39 g	10-Jun-20 15:38	1
MeFOSAA	2355-31-9	ND	0.364	0.495		B0F0021	04-Jun-20	2.39 g	10-Jun-20 15:38	1
EtFOSAA	2991-50-6	ND	0.340	0.495		B0F0021	04-Jun-20	2.39 g	10-Jun-20 15:38	1
PFUnA	2058-94-8	ND	0.128	0.247		B0F0021	04-Jun-20	2.39 g	10-Jun-20 15:38	1
PFDS	335-77-3	ND	0.341	0.495		B0F0021	04-Jun-20	2.39 g	10-Jun-20 15:38	1
11Cl-PF3OUdS	763051-92-9	ND	0.357	0.495		B0F0021	04-Jun-20	2.39 g	10-Jun-20 15:38	1
10:2 FTS	120226-60-0	ND	0.503	0.742		B0F0021	04-Jun-20	2.39 g	10-Jun-20 15:38	1
PFDoA	307-55-1	ND	0.200	0.247		B0F0021	04-Jun-20	2.39 g	10-Jun-20 15:38	1
MeFOSA	31506-32-8	ND	2.86	4.95		B0F0021	04-Jun-20	2.39 g	10-Jun-20 15:38	1
PFTrDA	72629-94-8	ND	0.199	0.247		B0F0021	04-Jun-20	2.39 g	10-Jun-20 15:38	1
PFDoS	79780-39-5	ND	0.297	0.495		B0F0021	04-Jun-20	2.39 g	10-Jun-20 15:38	1
PFTeDA	376-06-7	ND	0.131	0.247		B0F0021	04-Jun-20	2.39 g	10-Jun-20 15:38	1
EtFOSA	4151-50-2	ND	1.90	4.95		B0F0021	04-Jun-20	2.39 g	10-Jun-20 15:38	1
PFHxDA	67905-19-5	ND	0.168	0.493		B0F0104	12-Jun-20	1.20 g	15-Jun-20 21:39	1
PFODA	16517-11-6	ND	0.493	0.986		B0F0104	12-Jun-20	1.20 g	15-Jun-20 21:39	1
MeFOSE	24448-09-7	ND	2.45	4.95		B0F0021	04-Jun-20	2.39 g	10-Jun-20 15:38	1
EtFOSE	1691-99-2	ND	2.66	4.95		B0F0021	04-Jun-20	2.39 g	10-Jun-20 15:38	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	82.0	25 - 150		B0F0021	04-Jun-20	2.39 g	10-Jun-20 15:38	1

**Sample ID: GW6 (4'-5')** **PFAS Isotope Dilution Method**

Client Data				Laboratory Data			
Name:	AECOM	Matrix:	Soil	Lab Sample:	2001121-14	Column:	BEH C18
Project:	Waupaca Foundry Plant #4	Date Collected:	20-May-20 10:10	Date Received:	22-May-20 10:00		
				% Solids:	84.6		

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFPeA	IS	65.7	25 - 150		B0F0021	04-Jun-20	2.39 g	10-Jun-20 15:38	1
13C3-PFBS	IS	76.7	25 - 150		B0F0021	04-Jun-20	2.39 g	10-Jun-20 15:38	1
13C3-HFPO-DA	IS	65.3	25 - 150		B0F0021	04-Jun-20	2.39 g	10-Jun-20 15:38	1
13C2-4:2 FTS	IS	89.5	25 - 150		B0F0021	04-Jun-20	2.39 g	10-Jun-20 15:38	1
13C2-PFHxA	IS	68.3	25 - 150		B0F0021	04-Jun-20	2.39 g	10-Jun-20 15:38	1
13C4-PFHpA	IS	72.2	25 - 150		B0F0021	04-Jun-20	2.39 g	10-Jun-20 15:38	1
13C3-PFHxS	IS	72.4	25 - 150		B0F0021	04-Jun-20	2.39 g	10-Jun-20 15:38	1
13C2-6:2 FTS	IS	80.9	25 - 150		B0F0021	04-Jun-20	2.39 g	10-Jun-20 15:38	1
13C5-PFNA	IS	67.1	25 - 150		B0F0021	04-Jun-20	2.39 g	10-Jun-20 15:38	1
13C8-PFOA	IS	33.4	10 - 150		B0F0021	04-Jun-20	2.39 g	10-Jun-20 15:38	1
13C2-PFOA	IS	61.8	25 - 150		B0F0021	04-Jun-20	2.39 g	10-Jun-20 15:38	1
13C8-PFOS	IS	66.4	25 - 150		B0F0021	04-Jun-20	2.39 g	10-Jun-20 15:38	1
13C2-PFDA	IS	63.7	25 - 150		B0F0021	04-Jun-20	2.39 g	10-Jun-20 15:38	1
13C2-8:2 FTS	IS	96.7	25 - 150		B0F0021	04-Jun-20	2.39 g	10-Jun-20 15:38	1
d3-MeFOSAA	IS	59.7	25 - 150		B0F0021	04-Jun-20	2.39 g	10-Jun-20 15:38	1
13C2-PFUnA	IS	57.8	25 - 150		B0F0021	04-Jun-20	2.39 g	10-Jun-20 15:38	1
d5-EtFOSAA	IS	59.2	25 - 150		B0F0021	04-Jun-20	2.39 g	10-Jun-20 15:38	1
13C2-10:2 FTS	IS	63.9	25 - 150		B0F0021	04-Jun-20	2.39 g	10-Jun-20 15:38	1
13C2-PFDoA	IS	59.7	25 - 150		B0F0021	04-Jun-20	2.39 g	10-Jun-20 15:38	1
d3-MeFOSA	IS	15.9	10 - 150		B0F0021	04-Jun-20	2.39 g	10-Jun-20 15:38	1
13C2-PFTeDA	IS	41.3	25 - 150		B0F0021	04-Jun-20	2.39 g	10-Jun-20 15:38	1
d5-EtFOSA	IS	16.0	10 - 150		B0F0021	04-Jun-20	2.39 g	10-Jun-20 15:38	1
13C2-PFHxDA	IS	57.9	25 - 150		B0F0104	12-Jun-20	1.20 g	15-Jun-20 21:39	1
d7-MeFOSE	IS	36.4	10 - 150		B0F0021	04-Jun-20	2.39 g	10-Jun-20 15:38	1
d9-EtFOSE	IS	40.0	10 - 150		B0F0021	04-Jun-20	2.39 g	10-Jun-20 15:38	1

MDL - Method Detection Limit

RL - Reporting limit

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

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: DUP (4'-5')**
**PFAS Isotope Dilution Method**

Client Data				Laboratory Data			
Name:	AECOM	Matrix:	Soil	Lab Sample:	2001121-16	Column:	BEH C18
Project:	Waupaca Foundry Plant #4	Date Collected:	20-May-20 00:00	Date Received:	22-May-20 10:00		
				% Solids:	93.5		

Analyte	CAS Number	Conc. (ng/g)	MDL	RL	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBA	375-22-4	ND	0.171	0.247		B0F0021	04-Jun-20	2.16 g	10-Jun-20 15:48	1
PFPeA	2706-90-3	ND	0.197	0.247		B0F0021	04-Jun-20	2.16 g	10-Jun-20 15:48	1
PFBS	375-73-5	ND	0.150	0.247		B0F0021	04-Jun-20	2.16 g	10-Jun-20 15:48	1
4:2 FTS	757124-72-4	ND	0.178	0.247		B0F0021	04-Jun-20	2.16 g	10-Jun-20 15:48	1
PFHxA	307-24-4	ND	0.107	0.247		B0F0021	04-Jun-20	2.16 g	10-Jun-20 15:48	1
PFPeS	2706-91-4	ND	0.326	0.495		B0F0021	04-Jun-20	2.16 g	10-Jun-20 15:48	1
HFPO-DA	13252-13-6	ND	0.584	0.742		B0F0021	04-Jun-20	2.16 g	10-Jun-20 15:48	1
PFHpA	375-85-9	ND	0.237	0.247		B0F0021	04-Jun-20	2.16 g	10-Jun-20 15:48	1
ADONA	919005-14-4	ND	0.168	0.247		B0F0021	04-Jun-20	2.16 g	10-Jun-20 15:48	1
PFHxS	355-46-4	ND	0.193	0.247		B0F0021	04-Jun-20	2.16 g	10-Jun-20 15:48	1
6:2 FTS	27619-97-2	ND	0.324	0.495		B0F0021	04-Jun-20	2.16 g	10-Jun-20 15:48	1
PFOA	335-67-1	ND	0.233	0.247		B0F0021	04-Jun-20	2.16 g	10-Jun-20 15:48	1
PFHpS	375-92-8	ND	0.365	0.495		B0F0021	04-Jun-20	2.16 g	10-Jun-20 15:48	1
PFNA	375-95-1	0.242	0.154	0.247	J	B0F0021	04-Jun-20	2.16 g	10-Jun-20 15:48	1
PFOSA	754-91-6	ND	0.499	0.742		B0F0021	04-Jun-20	2.16 g	10-Jun-20 15:48	1
PFOS	1763-23-1	0.446	0.213	0.247		B0F0021	04-Jun-20	2.16 g	10-Jun-20 15:48	1
9Cl-PF3ONS	756426-58-1	ND	0.183	0.247		B0F0021	04-Jun-20	2.16 g	10-Jun-20 15:48	1
PFDA	335-76-2	ND	0.224	0.247		B0F0021	04-Jun-20	2.16 g	10-Jun-20 15:48	1
8:2 FTS	39108-34-4	ND	0.357	0.495		B0F0021	04-Jun-20	2.16 g	10-Jun-20 15:48	1
PFNS	68259-12-1	ND	0.569	0.742		B0F0021	04-Jun-20	2.16 g	10-Jun-20 15:48	1
MeFOSAA	2355-31-9	ND	0.364	0.495		B0F0021	04-Jun-20	2.16 g	10-Jun-20 15:48	1
EtFOSAA	2991-50-6	ND	0.340	0.495		B0F0021	04-Jun-20	2.16 g	10-Jun-20 15:48	1
PFUnA	2058-94-8	ND	0.128	0.247		B0F0021	04-Jun-20	2.16 g	10-Jun-20 15:48	1
PFDS	335-77-3	ND	0.341	0.495		B0F0021	04-Jun-20	2.16 g	10-Jun-20 15:48	1
11Cl-PF3OUdS	763051-92-9	ND	0.357	0.495		B0F0021	04-Jun-20	2.16 g	10-Jun-20 15:48	1
10:2 FTS	120226-60-0	ND	0.503	0.742		B0F0021	04-Jun-20	2.16 g	10-Jun-20 15:48	1
PFDoA	307-55-1	ND	0.200	0.247		B0F0021	04-Jun-20	2.16 g	10-Jun-20 15:48	1
MeFOSA	31506-32-8	ND	2.86	4.95		B0F0021	04-Jun-20	2.16 g	10-Jun-20 15:48	1
PFTrDA	72629-94-8	ND	0.199	0.247		B0F0021	04-Jun-20	2.16 g	10-Jun-20 15:48	1
PFDoS	79780-39-5	ND	0.297	0.495		B0F0021	04-Jun-20	2.16 g	10-Jun-20 15:48	1
PFTeDA	376-06-7	ND	0.131	0.247		B0F0021	04-Jun-20	2.16 g	10-Jun-20 15:48	1
EtFOSA	4151-50-2	ND	1.90	4.95		B0F0021	04-Jun-20	2.16 g	10-Jun-20 15:48	1
PFHxDA	67905-19-5	ND	0.164	0.482		B0F0104	12-Jun-20	1.11 g	15-Jun-20 21:49	1
PFODA	16517-11-6	ND	0.482	0.963		B0F0104	12-Jun-20	1.11 g	15-Jun-20 21:49	1
MeFOSE	24448-09-7	ND	2.45	4.95		B0F0021	04-Jun-20	2.16 g	10-Jun-20 15:48	1
EtFOSE	1691-99-2	ND	2.66	4.95		B0F0021	04-Jun-20	2.16 g	10-Jun-20 15:48	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	86.1	25 - 150		B0F0021	04-Jun-20	2.16 g	10-Jun-20 15:48	1

**Sample ID: DUP (4'-5')**
**PFAS Isotope Dilution Method**

Client Data				Laboratory Data			
Name:	AECOM	Matrix:	Soil	Lab Sample:	2001121-16	Column:	BEH C18
Project:	Waupaca Foundry Plant #4	Date Collected:	20-May-20 00:00	Date Received:	22-May-20 10:00		
				% Solids:	93.5		

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFPeA	IS	72.2	25 - 150		B0F0021	04-Jun-20	2.16 g	10-Jun-20 15:48	1
13C3-PFBS	IS	83.5	25 - 150		B0F0021	04-Jun-20	2.16 g	10-Jun-20 15:48	1
13C3-HFPO-DA	IS	70.2	25 - 150		B0F0021	04-Jun-20	2.16 g	10-Jun-20 15:48	1
13C2-4:2 FTS	IS	104	25 - 150		B0F0021	04-Jun-20	2.16 g	10-Jun-20 15:48	1
13C2-PFHxA	IS	75.5	25 - 150		B0F0021	04-Jun-20	2.16 g	10-Jun-20 15:48	1
13C4-PFHpA	IS	72.1	25 - 150		B0F0021	04-Jun-20	2.16 g	10-Jun-20 15:48	1
13C3-PFHxS	IS	76.6	25 - 150		B0F0021	04-Jun-20	2.16 g	10-Jun-20 15:48	1
13C2-6:2 FTS	IS	65.7	25 - 150		B0F0021	04-Jun-20	2.16 g	10-Jun-20 15:48	1
13C5-PFNA	IS	66.3	25 - 150		B0F0021	04-Jun-20	2.16 g	10-Jun-20 15:48	1
13C8-PFOA	IS	40.4	10 - 150		B0F0021	04-Jun-20	2.16 g	10-Jun-20 15:48	1
13C2-PFOA	IS	62.2	25 - 150		B0F0021	04-Jun-20	2.16 g	10-Jun-20 15:48	1
13C8-PFOS	IS	80.4	25 - 150		B0F0021	04-Jun-20	2.16 g	10-Jun-20 15:48	1
13C2-PFDA	IS	65.2	25 - 150		B0F0021	04-Jun-20	2.16 g	10-Jun-20 15:48	1
13C2-8:2 FTS	IS	72.3	25 - 150		B0F0021	04-Jun-20	2.16 g	10-Jun-20 15:48	1
d3-MeFOSAA	IS	46.6	25 - 150		B0F0021	04-Jun-20	2.16 g	10-Jun-20 15:48	1
13C2-PFUnA	IS	51.8	25 - 150		B0F0021	04-Jun-20	2.16 g	10-Jun-20 15:48	1
d5-EtFOSAA	IS	49.7	25 - 150		B0F0021	04-Jun-20	2.16 g	10-Jun-20 15:48	1
13C2-10:2 FTS	IS	53.3	25 - 150		B0F0021	04-Jun-20	2.16 g	10-Jun-20 15:48	1
13C2-PFDoA	IS	52.4	25 - 150		B0F0021	04-Jun-20	2.16 g	10-Jun-20 15:48	1
d3-MeFOSA	IS	17.1	10 - 150		B0F0021	04-Jun-20	2.16 g	10-Jun-20 15:48	1
13C2-PFTeDA	IS	25.1	25 - 150		B0F0021	04-Jun-20	2.16 g	10-Jun-20 15:48	1
d5-EtFOSA	IS	15.5	10 - 150		B0F0021	04-Jun-20	2.16 g	10-Jun-20 15:48	1
13C2-PFHxDA	IS	48.3	25 - 150		B0F0104	12-Jun-20	1.11 g	15-Jun-20 21:49	1
d7-MeFOSE	IS	28.9	10 - 150		B0F0021	04-Jun-20	2.16 g	10-Jun-20 15:48	1
d9-EtFOSE	IS	30.4	10 - 150		B0F0021	04-Jun-20	2.16 g	10-Jun-20 15:48	1

MDL - Method Detection Limit

RL - Reporting limit

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

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: Method Blank					PFAS Isotope Dilution Method					
Client Data				Laboratory Data						
Name:	AECOM	Matrix:	Aqueous	Lab Sample:	B0E0217-BLK1	Column:	BEH C18			
Project:	Waupaca Foundry Plant #4									
Analyte	CAS Number	Conc. (ng/L)	MDL	RL	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBA	375-22-4	ND	0.365	2.00		B0E0217	01-Jun-20	0.250 L	04-Jun-20 16:21	1
PFPeA	2706-90-3	ND	0.640	2.00		B0E0217	01-Jun-20	0.250 L	04-Jun-20 16:21	1
PFBS	375-73-5	ND	0.895	2.00		B0E0217	01-Jun-20	0.250 L	04-Jun-20 16:21	1
4:2 FTS	757124-72-4	ND	0.695	2.00		B0E0217	01-Jun-20	0.250 L	04-Jun-20 16:21	1
PFHxA	307-24-4	ND	1.09	2.00		B0E0217	01-Jun-20	0.250 L	04-Jun-20 16:21	1
PFPeS	2706-91-4	ND	1.21	2.00		B0E0217	01-Jun-20	0.250 L	04-Jun-20 16:21	1
HFPO-DA	13252-13-6	ND	2.41	2.50		B0E0217	01-Jun-20	0.250 L	04-Jun-20 16:21	1
PFHpA	375-85-9	ND	0.296	2.00		B0E0217	01-Jun-20	0.250 L	04-Jun-20 16:21	1
ADONA	919005-14-4	ND	0.361	2.00		B0E0217	01-Jun-20	0.250 L	04-Jun-20 16:21	1
PFHxS	355-46-4	ND	0.474	2.00		B0E0217	01-Jun-20	0.250 L	04-Jun-20 16:21	1
6:2 FTS	27619-97-2	ND	1.00	2.00		B0E0217	01-Jun-20	0.250 L	04-Jun-20 16:21	1
PFOA	335-67-1	ND	0.326	2.00		B0E0217	01-Jun-20	0.250 L	04-Jun-20 16:21	1
PFHpS	375-92-8	ND	0.469	2.00		B0E0217	01-Jun-20	0.250 L	04-Jun-20 16:21	1
PFNA	375-95-1	ND	0.405	2.00		B0E0217	01-Jun-20	0.250 L	04-Jun-20 16:21	1
PFOSA	754-91-6	ND	0.885	2.00		B0E0217	01-Jun-20	0.250 L	04-Jun-20 16:21	1
PFOS	1763-23-1	1.09	0.404	2.00	J	B0E0217	01-Jun-20	0.250 L	04-Jun-20 16:21	1
9Cl-PF3ONS	756426-58-1	ND	0.725	2.00		B0E0217	01-Jun-20	0.250 L	04-Jun-20 16:21	1
PFDA	335-76-2	ND	0.745	2.00		B0E0217	01-Jun-20	0.250 L	04-Jun-20 16:21	1
8:2 FTS	39108-34-4	ND	1.03	2.00		B0E0217	01-Jun-20	0.250 L	04-Jun-20 16:21	1
PFNS	68259-12-1	ND	1.94	2.00		B0E0217	01-Jun-20	0.250 L	04-Jun-20 16:21	1
MeFOSAA	2355-31-9	ND	0.825	2.00		B0E0217	01-Jun-20	0.250 L	04-Jun-20 16:21	1
EtFOSAA	2991-50-6	ND	0.685	2.00		B0E0217	01-Jun-20	0.250 L	04-Jun-20 16:21	1
PFUnA	2058-94-8	ND	0.525	2.00		B0E0217	01-Jun-20	0.250 L	04-Jun-20 16:21	1
PFDS	335-77-3	ND	0.615	2.00		B0E0217	01-Jun-20	0.250 L	04-Jun-20 16:21	1
11Cl-PF3OUdS	763051-92-9	ND	1.21	2.00		B0E0217	01-Jun-20	0.250 L	04-Jun-20 16:21	1
10:2 FTS	120226-60-0	ND	1.57	2.00		B0E0217	01-Jun-20	0.250 L	04-Jun-20 16:21	1
PFDoA	307-55-1	ND	0.396	2.00		B0E0217	01-Jun-20	0.250 L	04-Jun-20 16:21	1
MeFOSA	31506-32-8	ND	1.92	10.0		B0E0217	01-Jun-20	0.250 L	04-Jun-20 16:21	1
PFTrDA	72629-94-8	ND	0.247	2.00		B0E0217	01-Jun-20	0.250 L	04-Jun-20 16:21	1
PFDoS	79780-39-5	ND	2.09	2.50		B0E0217	01-Jun-20	0.250 L	04-Jun-20 16:21	1
PFTeDA	376-06-7	ND	0.378	2.00		B0E0217	01-Jun-20	0.250 L	04-Jun-20 16:21	1
EtFOSA	4151-50-2	ND	2.56	10.0		B0E0217	01-Jun-20	0.250 L	04-Jun-20 16:21	1
PFHxDA	67905-19-5	ND	0.147	2.00		B0E0217	01-Jun-20	0.250 L	04-Jun-20 16:21	1
PFODA	16517-11-6	ND	3.07	3.50		B0E0217	01-Jun-20	0.250 L	04-Jun-20 16:21	1
MeFOSE	24448-09-7	ND	3.04	10.0		B0E0217	01-Jun-20	0.250 L	04-Jun-20 16:21	1
EtFOSE	1691-99-2	ND	4.72	10.0		B0E0217	01-Jun-20	0.250 L	04-Jun-20 16:21	1
Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C3-PFBA	IS	85.2	25 - 150		B0E0217	01-Jun-20	0.250 L	04-Jun-20 16:21	1	



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

<b>Client Data</b>				<b>Laboratory Data</b>			
Name:	AECOM	Matrix:	Aqueous	Lab Sample:	B0E0217-BLK1	Column:	BEH C18
Project:	Waupaca Foundry Plant #4						

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFPeA	IS	65.0	25 - 150		B0E0217	01-Jun-20	0.250 L	04-Jun-20 16:21	1
13C3-PFBS	IS	70.4	25 - 150		B0E0217	01-Jun-20	0.250 L	04-Jun-20 16:21	1
13C3-HFPO-DA	IS	69.2	25 - 150		B0E0217	01-Jun-20	0.250 L	04-Jun-20 16:21	1
13C2-4:2 FTS	IS	60.6	25 - 150		B0E0217	01-Jun-20	0.250 L	04-Jun-20 16:21	1
13C2-PFHxA	IS	69.3	25 - 150		B0E0217	01-Jun-20	0.250 L	04-Jun-20 16:21	1
13C4-PFHpA	IS	70.5	25 - 150		B0E0217	01-Jun-20	0.250 L	04-Jun-20 16:21	1
13C3-PFHxS	IS	71.0	25 - 150		B0E0217	01-Jun-20	0.250 L	04-Jun-20 16:21	1
13C2-6:2 FTS	IS	70.5	25 - 150		B0E0217	01-Jun-20	0.250 L	04-Jun-20 16:21	1
13C5-PFNA	IS	70.3	25 - 150		B0E0217	01-Jun-20	0.250 L	04-Jun-20 16:21	1
13C8-PFOA	IS	40.0	10 - 150		B0E0217	01-Jun-20	0.250 L	04-Jun-20 16:21	1
13C2-PFOA	IS	68.9	25 - 150		B0E0217	01-Jun-20	0.250 L	04-Jun-20 16:21	1
13C8-PFOS	IS	62.1	25 - 150		B0E0217	01-Jun-20	0.250 L	04-Jun-20 16:21	1
13C2-PFDA	IS	71.4	25 - 150		B0E0217	01-Jun-20	0.250 L	04-Jun-20 16:21	1
13C2-8:2 FTS	IS	69.2	25 - 150		B0E0217	01-Jun-20	0.250 L	04-Jun-20 16:21	1
d3-MeFOSAA	IS	59.1	25 - 150		B0E0217	01-Jun-20	0.250 L	04-Jun-20 16:21	1
13C2-PFUnA	IS	71.2	25 - 150		B0E0217	01-Jun-20	0.250 L	04-Jun-20 16:21	1
d5-EtFOSAA	IS	59.9	25 - 150		B0E0217	01-Jun-20	0.250 L	04-Jun-20 16:21	1
13C2-10:2 FTS	IS	69.0	25 - 150		B0E0217	01-Jun-20	0.250 L	04-Jun-20 16:21	1
13C2-PFDoA	IS	63.8	25 - 150		B0E0217	01-Jun-20	0.250 L	04-Jun-20 16:21	1
d3-MeFOSA	IS	25.6	10 - 150		B0E0217	01-Jun-20	0.250 L	04-Jun-20 16:21	1
13C2-PFTeDA	IS	55.9	25 - 150		B0E0217	01-Jun-20	0.250 L	04-Jun-20 16:21	1
d5-EtFOSA	IS	24.0	10 - 150		B0E0217	01-Jun-20	0.250 L	04-Jun-20 16:21	1
13C2-PFHxDA	IS	52.8	25 - 150		B0E0217	01-Jun-20	0.250 L	04-Jun-20 16:21	1
d7-MeFOSE	IS	35.5	10 - 150		B0E0217	01-Jun-20	0.250 L	04-Jun-20 16:21	1
d9-EtFOSE	IS	36.6	10 - 150		B0E0217	01-Jun-20	0.250 L	04-Jun-20 16:21	1

MDL - Method Detection Limit

RL - Reporting limit

Results reported to MDL.

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**

**PFAS Isotope Dilution Method**

Client Data					Laboratory Data							
Name:	AECOM	Matrix:	Aqueous		Lab Sample:	B0E0217-BS1	Column:	BEH C18				
Project:	Waupaca Foundry Plant #4											

Analyte	CAS Number	Amt Found (ng/L)	Spike Amt	% Rec	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBA	375-22-4	8.53	8.00	107	50 - 150		B0E0217	01-Jun-20	0.250 L	04-Jun-20 16:31	1
PFPeA	2706-90-3	9.10	8.00	114	50 - 150		B0E0217	01-Jun-20	0.250 L	04-Jun-20 16:31	1
PFBS	375-73-5	7.98	8.00	99.8	50 - 150		B0E0217	01-Jun-20	0.250 L	04-Jun-20 16:31	1
4:2 FTS	757124-72-4	7.09	8.00	88.6	50 - 150		B0E0217	01-Jun-20	0.250 L	04-Jun-20 16:31	1
PFHxA	307-24-4	8.79	8.00	110	50 - 150		B0E0217	01-Jun-20	0.250 L	04-Jun-20 16:31	1
PFPeS	2706-91-4	8.61	8.00	108	50 - 150		B0E0217	01-Jun-20	0.250 L	04-Jun-20 16:31	1
HFPO-DA	13252-13-6	8.98	8.00	112	50 - 150		B0E0217	01-Jun-20	0.250 L	04-Jun-20 16:31	1
PFHpA	375-85-9	8.95	8.00	112	50 - 150		B0E0217	01-Jun-20	0.250 L	04-Jun-20 16:31	1
ADONA	919005-14-4	9.05	8.00	113	50 - 150		B0E0217	01-Jun-20	0.250 L	04-Jun-20 16:31	1
PFHxS	355-46-4	8.58	8.00	107	50 - 150		B0E0217	01-Jun-20	0.250 L	04-Jun-20 16:31	1
6:2 FTS	27619-97-2	8.89	8.00	111	50 - 150		B0E0217	01-Jun-20	0.250 L	04-Jun-20 16:31	1
PFOA	335-67-1	9.58	8.00	120	50 - 150		B0E0217	01-Jun-20	0.250 L	04-Jun-20 16:31	1
PFHpS	375-92-8	9.21	8.00	115	50 - 150		B0E0217	01-Jun-20	0.250 L	04-Jun-20 16:31	1
PFNA	375-95-1	8.94	8.00	112	50 - 150		B0E0217	01-Jun-20	0.250 L	04-Jun-20 16:31	1
PFOSA	754-91-6	8.32	8.00	104	50 - 150		B0E0217	01-Jun-20	0.250 L	04-Jun-20 16:31	1
PFOS	1763-23-1	9.59	8.00	120	50 - 150	B	B0E0217	01-Jun-20	0.250 L	04-Jun-20 16:31	1
9Cl-PF3ONS	756426-58-1	7.80	8.00	97.5	50 - 150		B0E0217	01-Jun-20	0.250 L	04-Jun-20 16:31	1
PFDA	335-76-2	8.77	8.00	110	50 - 150		B0E0217	01-Jun-20	0.250 L	04-Jun-20 16:31	1
8:2 FTS	39108-34-4	10.0	8.00	125	50 - 150		B0E0217	01-Jun-20	0.250 L	04-Jun-20 16:31	1
PFNS	68259-12-1	9.07	8.00	113	50 - 150		B0E0217	01-Jun-20	0.250 L	04-Jun-20 16:31	1
MeFOSAA	2355-31-9	8.44	8.00	105	50 - 150		B0E0217	01-Jun-20	0.250 L	04-Jun-20 16:31	1
EtFOSAA	2991-50-6	7.20	8.00	90.0	50 - 150		B0E0217	01-Jun-20	0.250 L	04-Jun-20 16:31	1
PFUnA	2058-94-8	9.12	8.00	114	50 - 150		B0E0217	01-Jun-20	0.250 L	04-Jun-20 16:31	1
PFDS	335-77-3	8.37	8.00	105	50 - 150		B0E0217	01-Jun-20	0.250 L	04-Jun-20 16:31	1
11Cl-PF3OUdS	763051-92-9	9.92	8.00	124	50 - 150		B0E0217	01-Jun-20	0.250 L	04-Jun-20 16:31	1
10:2 FTS	120226-60-0	10.4	8.00	130	50 - 150		B0E0217	01-Jun-20	0.250 L	04-Jun-20 16:31	1
PFDoA	307-55-1	10.0	8.00	125	50 - 150		B0E0217	01-Jun-20	0.250 L	04-Jun-20 16:31	1
MeFOSA	31506-32-8	42.6	40.0	106	50 - 150		B0E0217	01-Jun-20	0.250 L	04-Jun-20 16:31	1
PFTTrDA	72629-94-8	9.13	8.00	114	50 - 150		B0E0217	01-Jun-20	0.250 L	04-Jun-20 16:31	1
PFDoS	79780-39-5	8.44	8.00	106	50 - 150		B0E0217	01-Jun-20	0.250 L	04-Jun-20 16:31	1
PFTTeDA	376-06-7	8.33	8.00	104	50 - 150		B0E0217	01-Jun-20	0.250 L	04-Jun-20 16:31	1
EtFOSA	4151-50-2	44.7	40.0	112	50 - 150		B0E0217	01-Jun-20	0.250 L	04-Jun-20 16:31	1
PFHxDA	67905-19-5	8.54	8.00	107	50 - 150		B0E0217	01-Jun-20	0.250 L	04-Jun-20 16:31	1
PFODA	16517-11-6	4.50	8.00	56.2	50 - 150		B0E0217	01-Jun-20	0.250 L	04-Jun-20 16:31	1

Sample ID: OPR						PFAS Isotope Dilution Method					
Client Data					Laboratory Data						
Name:	AECOM	Matrix:	Aqueous			Lab Sample:	B0E0217-BS1	Column:	BEH C18		
Project:	Waupaca Foundry Plant #4										
Analyte	CAS Number	Amt Found (ng/L)	Spike Amt	% Rec	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
MeFOSE	24448-09-7	36.7	40.0	91.7	50 - 150		B0E0217	01-Jun-20	0.250 L	04-Jun-20 16:31	1
EtFOSE	1691-99-2	41.0	40.0	102	50 - 150		B0E0217	01-Jun-20	0.250 L	04-Jun-20 16:31	1
Labeled Standards		Type		% Rec	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA		IS		92.0	25- 150		B0E0217	01-Jun-20	0.250 L	04-Jun-20 16:31	1
13C3-PFPeA		IS		68.7	25- 150		B0E0217	01-Jun-20	0.250 L	04-Jun-20 16:31	1
13C3-PFBS		IS		75.0	25- 150		B0E0217	01-Jun-20	0.250 L	04-Jun-20 16:31	1
13C3-HFPO-DA		IS		70.2	25- 150		B0E0217	01-Jun-20	0.250 L	04-Jun-20 16:31	1
13C2-4:2 FTS		IS		74.1	25- 150		B0E0217	01-Jun-20	0.250 L	04-Jun-20 16:31	1
13C2-PFHxA		IS		71.9	25- 150		B0E0217	01-Jun-20	0.250 L	04-Jun-20 16:31	1
13C4-PFHpA		IS		76.5	25- 150		B0E0217	01-Jun-20	0.250 L	04-Jun-20 16:31	1
13C3-PFHxS		IS		86.9	25- 150		B0E0217	01-Jun-20	0.250 L	04-Jun-20 16:31	1
13C2-6:2 FTS		IS		69.4	25- 150		B0E0217	01-Jun-20	0.250 L	04-Jun-20 16:31	1
13C5-PFNA		IS		73.4	25- 150		B0E0217	01-Jun-20	0.250 L	04-Jun-20 16:31	1
13C8-PFOA		IS		39.5	10- 150		B0E0217	01-Jun-20	0.250 L	04-Jun-20 16:31	1
13C2-PFOA		IS		75.3	25- 150		B0E0217	01-Jun-20	0.250 L	04-Jun-20 16:31	1
13C8-PFOS		IS		71.1	25- 150		B0E0217	01-Jun-20	0.250 L	04-Jun-20 16:31	1
13C2-PFDA		IS		72.7	25- 150		B0E0217	01-Jun-20	0.250 L	04-Jun-20 16:31	1
13C2-8:2 FTS		IS		65.3	25- 150		B0E0217	01-Jun-20	0.250 L	04-Jun-20 16:31	1
d3-MeFOSAA		IS		62.8	25- 150		B0E0217	01-Jun-20	0.250 L	04-Jun-20 16:31	1
13C2-PFUnA		IS		73.7	25- 150		B0E0217	01-Jun-20	0.250 L	04-Jun-20 16:31	1
d5-EtFOSAA		IS		60.8	25- 150		B0E0217	01-Jun-20	0.250 L	04-Jun-20 16:31	1
13C2-10:2 FTS		IS		56.2	25- 150		B0E0217	01-Jun-20	0.250 L	04-Jun-20 16:31	1
13C2-PFDoA		IS		65.9	25- 150		B0E0217	01-Jun-20	0.250 L	04-Jun-20 16:31	1
d3-MeFOSA		IS		21.2	10- 150		B0E0217	01-Jun-20	0.250 L	04-Jun-20 16:31	1
13C2-PFTeDA		IS		58.2	25- 150		B0E0217	01-Jun-20	0.250 L	04-Jun-20 16:31	1
d5-EtFOSA		IS		20.1	10- 150		B0E0217	01-Jun-20	0.250 L	04-Jun-20 16:31	1
13C2-PFHxDA		IS		49.8	25- 150		B0E0217	01-Jun-20	0.250 L	04-Jun-20 16:31	1
d7-MeFOSE		IS		36.1	10- 150		B0E0217	01-Jun-20	0.250 L	04-Jun-20 16:31	1
d9-EtFOSE		IS		34.3	10- 150		B0E0217	01-Jun-20	0.250 L	04-Jun-20 16:31	1

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

Client Data				Laboratory Data			
Name:	AECOM	Matrix:	Aqueous	Lab Sample:	2001121-17	Column:	BEH C18
Project:	Waupaca Foundry Plant #4	Date Collected:	19-May-20 11:00	Date Received:	22-May-20 10:00		
Location:	Field Blank						

Analyte	CAS Number	Conc. (ng/L)	MDL	RL	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBA	375-22-4	ND	0.368	2.02		B0E0217	01-Jun-20	0.248 L	12-Jun-20 13:25	1
PFPeA	2706-90-3	ND	0.645	2.02		B0E0217	01-Jun-20	0.248 L	12-Jun-20 13:25	1
PFBS	375-73-5	ND	0.902	2.02		B0E0217	01-Jun-20	0.248 L	12-Jun-20 13:25	1
4:2 FTS	757124-72-4	ND	0.701	2.02		B0E0217	01-Jun-20	0.248 L	12-Jun-20 13:25	1
PFHxA	307-24-4	ND	1.10	2.02		B0E0217	01-Jun-20	0.248 L	12-Jun-20 13:25	1
PFPeS	2706-91-4	ND	1.22	2.02		B0E0217	01-Jun-20	0.248 L	12-Jun-20 13:25	1
HFPO-DA	13252-13-6	ND	2.43	2.52		B0E0217	01-Jun-20	0.248 L	12-Jun-20 13:25	1
PFHpA	375-85-9	ND	0.298	2.02		B0E0217	01-Jun-20	0.248 L	12-Jun-20 13:25	1
ADONA	919005-14-4	ND	0.364	2.02		B0E0217	01-Jun-20	0.248 L	12-Jun-20 13:25	1
PFHxS	355-46-4	ND	0.477	2.02		B0E0217	01-Jun-20	0.248 L	12-Jun-20 13:25	1
6:2 FTS	27619-97-2	ND	1.01	2.02		B0E0217	01-Jun-20	0.248 L	12-Jun-20 13:25	1
PFOA	335-67-1	ND	0.328	2.02		B0E0217	01-Jun-20	0.248 L	12-Jun-20 13:25	1
PFHpS	375-92-8	ND	0.472	2.02		B0E0217	01-Jun-20	0.248 L	12-Jun-20 13:25	1
PFNA	375-95-1	ND	0.408	2.02		B0E0217	01-Jun-20	0.248 L	12-Jun-20 13:25	1
PFOSA	754-91-6	ND	0.892	2.02		B0E0217	01-Jun-20	0.248 L	12-Jun-20 13:25	1
PFOS	1763-23-1	ND	0.407	2.02		B0E0217	01-Jun-20	0.248 L	12-Jun-20 13:25	1
9CI-PF3ONS	756426-58-1	ND	0.731	2.02		B0E0217	01-Jun-20	0.248 L	12-Jun-20 13:25	1
PFDA	335-76-2	ND	0.751	2.02		B0E0217	01-Jun-20	0.248 L	12-Jun-20 13:25	1
8:2 FTS	39108-34-4	ND	1.04	2.02		B0E0217	01-Jun-20	0.248 L	12-Jun-20 13:25	1
PFNS	68259-12-1	ND	1.95	2.02		B0E0217	01-Jun-20	0.248 L	12-Jun-20 13:25	1
MeFOSAA	2355-31-9	ND	0.832	2.02		B0E0217	01-Jun-20	0.248 L	12-Jun-20 13:25	1
EtFOSAA	2991-50-6	ND	0.691	2.02		B0E0217	01-Jun-20	0.248 L	12-Jun-20 13:25	1
PFUnA	2058-94-8	ND	0.529	2.02		B0E0217	01-Jun-20	0.248 L	12-Jun-20 13:25	1
PFDS	335-77-3	ND	0.620	2.02		B0E0217	01-Jun-20	0.248 L	12-Jun-20 13:25	1
11CI-PF3OUdS	763051-92-9	ND	1.22	2.02		B0E0217	01-Jun-20	0.248 L	12-Jun-20 13:25	1
10:2 FTS	120226-60-0	ND	1.58	2.02		B0E0217	01-Jun-20	0.248 L	12-Jun-20 13:25	1
PFDoA	307-55-1	ND	0.399	2.02		B0E0217	01-Jun-20	0.248 L	12-Jun-20 13:25	1
MeFOSA	31506-32-8	ND	1.93	10.1		B0E0217	01-Jun-20	0.248 L	12-Jun-20 13:25	1
PFTTrDA	72629-94-8	ND	0.249	2.02		B0E0217	01-Jun-20	0.248 L	12-Jun-20 13:25	1
PFDoS	79780-39-5	ND	2.10	2.52		B0E0217	01-Jun-20	0.248 L	12-Jun-20 13:25	1
PFTeDA	376-06-7	ND	0.381	2.02		B0E0217	01-Jun-20	0.248 L	12-Jun-20 13:25	1
EtFOSA	4151-50-2	ND	2.58	10.1		B0E0217	01-Jun-20	0.248 L	12-Jun-20 13:25	1
PFHxDA	67905-19-5	ND	0.148	2.02		B0E0217	01-Jun-20	0.248 L	12-Jun-20 13:25	1
PFODA	16517-11-6	ND	3.10	3.53		B0E0217	01-Jun-20	0.248 L	12-Jun-20 13:25	1
MeFOSE	24448-09-7	ND	3.06	10.1		B0E0217	01-Jun-20	0.248 L	12-Jun-20 13:25	1
EtFOSE	1691-99-2	ND	4.76	10.1		B0E0217	01-Jun-20	0.248 L	12-Jun-20 13:25	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	125	25 - 150		B0E0217	01-Jun-20	0.248 L	12-Jun-20 13:25	1

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

Client Data				Laboratory Data			
Name:	AECOM	Matrix:	Aqueous	Lab Sample:	2001121-17	Column:	BEH C18
Project:	Waupaca Foundry Plant #4	Date Collected:	19-May-20 11:00	Date Received:	22-May-20 10:00		
Location:	Field Blank						

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFPeA	IS	80.5	25 - 150		B0E0217	01-Jun-20	0.248 L	12-Jun-20 13:25	1
13C3-PFBS	IS	82.7	25 - 150		B0E0217	01-Jun-20	0.248 L	12-Jun-20 13:25	1
13C3-HFPO-DA	IS	74.3	25 - 150		B0E0217	01-Jun-20	0.248 L	12-Jun-20 13:25	1
13C2-4:2 FTS	IS	76.9	25 - 150		B0E0217	01-Jun-20	0.248 L	12-Jun-20 13:25	1
13C2-PFHxA	IS	76.4	25 - 150		B0E0217	01-Jun-20	0.248 L	12-Jun-20 13:25	1
13C4-PFHpA	IS	79.2	25 - 150		B0E0217	01-Jun-20	0.248 L	12-Jun-20 13:25	1
13C3-PFHxS	IS	78.9	25 - 150		B0E0217	01-Jun-20	0.248 L	12-Jun-20 13:25	1
13C2-6:2 FTS	IS	77.8	25 - 150		B0E0217	01-Jun-20	0.248 L	12-Jun-20 13:25	1
13C5-PFNA	IS	79.4	25 - 150		B0E0217	01-Jun-20	0.248 L	12-Jun-20 13:25	1
13C8-PFOA	IS	50.9	10 - 150		B0E0217	01-Jun-20	0.248 L	12-Jun-20 13:25	1
13C2-PFOA	IS	79.3	25 - 150		B0E0217	01-Jun-20	0.248 L	12-Jun-20 13:25	1
13C8-PFOS	IS	83.7	25 - 150		B0E0217	01-Jun-20	0.248 L	12-Jun-20 13:25	1
13C2-PFDA	IS	80.6	25 - 150		B0E0217	01-Jun-20	0.248 L	12-Jun-20 13:25	1
13C2-8:2 FTS	IS	76.0	25 - 150		B0E0217	01-Jun-20	0.248 L	12-Jun-20 13:25	1
d3-MeFOSAA	IS	68.1	25 - 150		B0E0217	01-Jun-20	0.248 L	12-Jun-20 13:25	1
13C2-PFUnA	IS	72.9	25 - 150		B0E0217	01-Jun-20	0.248 L	12-Jun-20 13:25	1
d5-EtFOSAA	IS	64.1	25 - 150		B0E0217	01-Jun-20	0.248 L	12-Jun-20 13:25	1
13C2-10:2 FTS	IS	85.5	25 - 150		B0E0217	01-Jun-20	0.248 L	12-Jun-20 13:25	1
13C2-PFDoA	IS	71.8	25 - 150		B0E0217	01-Jun-20	0.248 L	12-Jun-20 13:25	1
d3-MeFOSA	IS	24.9	10 - 150		B0E0217	01-Jun-20	0.248 L	12-Jun-20 13:25	1
13C2-PFTeDA	IS	71.5	25 - 150		B0E0217	01-Jun-20	0.248 L	12-Jun-20 13:25	1
d5-EtFOSA	IS	22.7	10 - 150		B0E0217	01-Jun-20	0.248 L	12-Jun-20 13:25	1
13C2-PFHxDA	IS	66.2	25 - 150		B0E0217	01-Jun-20	0.248 L	12-Jun-20 13:25	1
d7-MeFOSE	IS	37.0	10 - 150		B0E0217	01-Jun-20	0.248 L	12-Jun-20 13:25	1
d9-EtFOSE	IS	39.9	10 - 150		B0E0217	01-Jun-20	0.248 L	12-Jun-20 13:25	1

MDL - Method Detection Limit

RL - Reporting limit

Results reported to MDL.

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: EB-1 Rod+Sleeve-Truck Rig**
**PFAS Isotope Dilution Method**

Client Data				Laboratory Data			
Name:	AECOM	Matrix:	Aqueous	Lab Sample:	2001121-18	Column:	BEH C18
Project:	Waupaca Foundry Plant #4	Date Collected:	19-May-20 11:30	Date Received:	22-May-20 10:00		
Location:	Equipment Blank						

Analyte	CAS Number	Conc. (ng/L)	MDL	RL	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBA	375-22-4	ND	0.370	2.03		B0E0217	01-Jun-20	0.247 L	04-Jun-20 17:13	1
PFPeA	2706-90-3	ND	0.649	2.03		B0E0217	01-Jun-20	0.247 L	04-Jun-20 17:13	1
PFBS	375-73-5	ND	0.907	2.03		B0E0217	01-Jun-20	0.247 L	04-Jun-20 17:13	1
4:2 FTS	757124-72-4	ND	0.705	2.03		B0E0217	01-Jun-20	0.247 L	04-Jun-20 17:13	1
PFHxA	307-24-4	ND	1.11	2.03		B0E0217	01-Jun-20	0.247 L	04-Jun-20 17:13	1
PFPeS	2706-91-4	ND	1.23	2.03		B0E0217	01-Jun-20	0.247 L	04-Jun-20 17:13	1
HFPO-DA	13252-13-6	ND	2.44	2.53		B0E0217	01-Jun-20	0.247 L	04-Jun-20 17:13	1
PFHpA	375-85-9	ND	0.300	2.03		B0E0217	01-Jun-20	0.247 L	04-Jun-20 17:13	1
ADONA	919005-14-4	ND	0.366	2.03		B0E0217	01-Jun-20	0.247 L	04-Jun-20 17:13	1
PFHxS	355-46-4	ND	0.480	2.03		B0E0217	01-Jun-20	0.247 L	04-Jun-20 17:13	1
6:2 FTS	27619-97-2	ND	1.01	2.03		B0E0217	01-Jun-20	0.247 L	04-Jun-20 17:13	1
PFOA	335-67-1	ND	0.330	2.03		B0E0217	01-Jun-20	0.247 L	04-Jun-20 17:13	1
PFHpS	375-92-8	ND	0.475	2.03		B0E0217	01-Jun-20	0.247 L	04-Jun-20 17:13	1
PFNA	375-95-1	ND	0.411	2.03		B0E0217	01-Jun-20	0.247 L	04-Jun-20 17:13	1
PFOSA	754-91-6	ND	0.897	2.03		B0E0217	01-Jun-20	0.247 L	04-Jun-20 17:13	1
PFOS	1763-23-1	ND	0.409	2.03		B0E0217	01-Jun-20	0.247 L	04-Jun-20 17:13	1
9Cl-PF3ONS	756426-58-1	ND	0.735	2.03		B0E0217	01-Jun-20	0.247 L	04-Jun-20 17:13	1
PFDA	335-76-2	ND	0.755	2.03		B0E0217	01-Jun-20	0.247 L	04-Jun-20 17:13	1
8:2 FTS	39108-34-4	ND	1.04	2.03		B0E0217	01-Jun-20	0.247 L	04-Jun-20 17:13	1
PFNS	68259-12-1	ND	1.96	2.03		B0E0217	01-Jun-20	0.247 L	04-Jun-20 17:13	1
MeFOSAA	2355-31-9	ND	0.836	2.03		B0E0217	01-Jun-20	0.247 L	04-Jun-20 17:13	1
EtFOSAA	2991-50-6	ND	0.695	2.03		B0E0217	01-Jun-20	0.247 L	04-Jun-20 17:13	1
PFUnA	2058-94-8	ND	0.532	2.03		B0E0217	01-Jun-20	0.247 L	04-Jun-20 17:13	1
PFDS	335-77-3	ND	0.624	2.03		B0E0217	01-Jun-20	0.247 L	04-Jun-20 17:13	1
11Cl-PF3OUdS	763051-92-9	ND	1.22	2.03		B0E0217	01-Jun-20	0.247 L	04-Jun-20 17:13	1
10:2 FTS	120226-60-0	ND	1.59	2.03		B0E0217	01-Jun-20	0.247 L	04-Jun-20 17:13	1
PFDoA	307-55-1	ND	0.401	2.03		B0E0217	01-Jun-20	0.247 L	04-Jun-20 17:13	1
MeFOSA	31506-32-8	ND	1.94	10.1		B0E0217	01-Jun-20	0.247 L	04-Jun-20 17:13	1
PFTTrDA	72629-94-8	ND	0.250	2.03		B0E0217	01-Jun-20	0.247 L	04-Jun-20 17:13	1
PFDoS	79780-39-5	ND	2.11	2.53		B0E0217	01-Jun-20	0.247 L	04-Jun-20 17:13	1
PFTeDA	376-06-7	ND	0.383	2.03		B0E0217	01-Jun-20	0.247 L	04-Jun-20 17:13	1
EtFOSA	4151-50-2	ND	2.59	10.1		B0E0217	01-Jun-20	0.247 L	04-Jun-20 17:13	1
PFHxDA	67905-19-5	ND	0.149	2.03		B0E0217	01-Jun-20	0.247 L	04-Jun-20 17:13	1
PFODA	16517-11-6	ND	3.11	3.55		B0E0217	01-Jun-20	0.247 L	04-Jun-20 17:13	1
MeFOSE	24448-09-7	ND	3.08	10.1		B0E0217	01-Jun-20	0.247 L	04-Jun-20 17:13	1
EtFOSE	1691-99-2	ND	4.79	10.1		B0E0217	01-Jun-20	0.247 L	04-Jun-20 17:13	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	93.4	25 - 150		B0E0217	01-Jun-20	0.247 L	04-Jun-20 17:13	1



**Sample ID: EB-1 Rod+Sleeve-Truck Rig** **PFAS Isotope Dilution Method**

Client Data				Laboratory Data			
Name:	AECOM	Matrix:	Aqueous	Lab Sample:	2001121-18	Column:	BEH C18
Project:	Waupaca Foundry Plant #4	Date Collected:	19-May-20 11:30	Date Received:	22-May-20 10:00		
Location:	Equipment Blank						

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFPeA	IS	75.0	25 - 150		B0E0217	01-Jun-20	0.247 L	04-Jun-20 17:13	1
13C3-PFBS	IS	74.8	25 - 150		B0E0217	01-Jun-20	0.247 L	04-Jun-20 17:13	1
13C3-HFPO-DA	IS	76.9	25 - 150		B0E0217	01-Jun-20	0.247 L	04-Jun-20 17:13	1
13C2-4:2 FTS	IS	71.0	25 - 150		B0E0217	01-Jun-20	0.247 L	04-Jun-20 17:13	1
13C2-PFHxA	IS	73.1	25 - 150		B0E0217	01-Jun-20	0.247 L	04-Jun-20 17:13	1
13C4-PFHpA	IS	79.0	25 - 150		B0E0217	01-Jun-20	0.247 L	04-Jun-20 17:13	1
13C3-PFHxS	IS	82.6	25 - 150		B0E0217	01-Jun-20	0.247 L	04-Jun-20 17:13	1
13C2-6:2 FTS	IS	73.2	25 - 150		B0E0217	01-Jun-20	0.247 L	04-Jun-20 17:13	1
13C5-PFNA	IS	74.3	25 - 150		B0E0217	01-Jun-20	0.247 L	04-Jun-20 17:13	1
13C8-PFOA	IS	54.6	10 - 150		B0E0217	01-Jun-20	0.247 L	04-Jun-20 17:13	1
13C2-PFOA	IS	72.3	25 - 150		B0E0217	01-Jun-20	0.247 L	04-Jun-20 17:13	1
13C8-PFOS	IS	64.7	25 - 150		B0E0217	01-Jun-20	0.247 L	04-Jun-20 17:13	1
13C2-PFDA	IS	76.3	25 - 150		B0E0217	01-Jun-20	0.247 L	04-Jun-20 17:13	1
13C2-8:2 FTS	IS	64.3	25 - 150		B0E0217	01-Jun-20	0.247 L	04-Jun-20 17:13	1
d3-MeFOSAA	IS	77.4	25 - 150		B0E0217	01-Jun-20	0.247 L	04-Jun-20 17:13	1
13C2-PFUnA	IS	70.9	25 - 150		B0E0217	01-Jun-20	0.247 L	04-Jun-20 17:13	1
d5-EtFOSAA	IS	70.8	25 - 150		B0E0217	01-Jun-20	0.247 L	04-Jun-20 17:13	1
13C2-10:2 FTS	IS	67.7	25 - 150		B0E0217	01-Jun-20	0.247 L	04-Jun-20 17:13	1
13C2-PFDoA	IS	73.5	25 - 150		B0E0217	01-Jun-20	0.247 L	04-Jun-20 17:13	1
d3-MeFOSA	IS	33.7	10 - 150		B0E0217	01-Jun-20	0.247 L	04-Jun-20 17:13	1
13C2-PFTeDA	IS	60.8	25 - 150		B0E0217	01-Jun-20	0.247 L	04-Jun-20 17:13	1
d5-EtFOSA	IS	28.9	10 - 150		B0E0217	01-Jun-20	0.247 L	04-Jun-20 17:13	1
13C2-PFHxDA	IS	53.5	25 - 150		B0E0217	01-Jun-20	0.247 L	04-Jun-20 17:13	1
d7-MeFOSE	IS	43.0	10 - 150		B0E0217	01-Jun-20	0.247 L	04-Jun-20 17:13	1
d9-EtFOSE	IS	42.1	10 - 150		B0E0217	01-Jun-20	0.247 L	04-Jun-20 17:13	1

MDL - Method Detection Limit

RL - Reporting limit

Results reported to MDL.

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: EB-2 Rod+Sleeve-Track Rig**
**PFAS Isotope Dilution Method**

Client Data				Laboratory Data			
Name:	AECOM	Matrix:	Aqueous	Lab Sample:	2001121-19	Column:	BEH C18
Project:	Waupaca Foundry Plant #4	Date Collected:	19-May-20 12:20	Date Received:	22-May-20 10:00		
Location:	Equipment Blank						

Analyte	CAS Number	Conc. (ng/L)	MDL	RL	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBA	375-22-4	ND	0.357	1.96		B0E0217	01-Jun-20	0.255 L	04-Jun-20 17:24	1
PFPeA	2706-90-3	ND	0.627	1.96		B0E0217	01-Jun-20	0.255 L	04-Jun-20 17:24	1
PFBS	375-73-5	ND	0.877	1.96		B0E0217	01-Jun-20	0.255 L	04-Jun-20 17:24	1
4:2 FTS	757124-72-4	ND	0.681	1.96		B0E0217	01-Jun-20	0.255 L	04-Jun-20 17:24	1
PFHxA	307-24-4	ND	1.07	1.96		B0E0217	01-Jun-20	0.255 L	04-Jun-20 17:24	1
PFPeS	2706-91-4	ND	1.19	1.96		B0E0217	01-Jun-20	0.255 L	04-Jun-20 17:24	1
HFPO-DA	13252-13-6	ND	2.36	2.45		B0E0217	01-Jun-20	0.255 L	04-Jun-20 17:24	1
PFHpA	375-85-9	ND	0.289	1.96		B0E0217	01-Jun-20	0.255 L	04-Jun-20 17:24	1
ADONA	919005-14-4	ND	0.354	1.96		B0E0217	01-Jun-20	0.255 L	04-Jun-20 17:24	1
PFHxS	355-46-4	ND	0.464	1.96		B0E0217	01-Jun-20	0.255 L	04-Jun-20 17:24	1
6:2 FTS	27619-97-2	ND	0.980	1.96		B0E0217	01-Jun-20	0.255 L	04-Jun-20 17:24	1
PFOA	335-67-1	ND	0.319	1.96		B0E0217	01-Jun-20	0.255 L	04-Jun-20 17:24	1
PFHpS	375-92-8	ND	0.459	1.96		B0E0217	01-Jun-20	0.255 L	04-Jun-20 17:24	1
PFNA	375-95-1	ND	0.397	1.96		B0E0217	01-Jun-20	0.255 L	04-Jun-20 17:24	1
PFOSA	754-91-6	ND	0.867	1.96		B0E0217	01-Jun-20	0.255 L	04-Jun-20 17:24	1
PFOS	1763-23-1	ND	0.395	1.96		B0E0217	01-Jun-20	0.255 L	04-Jun-20 17:24	1
9Cl-PF3ONS	756426-58-1	ND	0.710	1.96		B0E0217	01-Jun-20	0.255 L	04-Jun-20 17:24	1
PFDA	335-76-2	ND	0.730	1.96		B0E0217	01-Jun-20	0.255 L	04-Jun-20 17:24	1
8:2 FTS	39108-34-4	ND	1.01	1.96		B0E0217	01-Jun-20	0.255 L	04-Jun-20 17:24	1
PFNS	68259-12-1	ND	1.90	1.96		B0E0217	01-Jun-20	0.255 L	04-Jun-20 17:24	1
MeFOSAA	2355-31-9	ND	0.808	1.96		B0E0217	01-Jun-20	0.255 L	04-Jun-20 17:24	1
EtFOSAA	2991-50-6	ND	0.671	1.96		B0E0217	01-Jun-20	0.255 L	04-Jun-20 17:24	1
PFUnA	2058-94-8	ND	0.514	1.96		B0E0217	01-Jun-20	0.255 L	04-Jun-20 17:24	1
PFDS	335-77-3	ND	0.602	1.96		B0E0217	01-Jun-20	0.255 L	04-Jun-20 17:24	1
11Cl-PF3OUdS	763051-92-9	ND	1.18	1.96		B0E0217	01-Jun-20	0.255 L	04-Jun-20 17:24	1
10:2 FTS	120226-60-0	ND	1.53	1.96		B0E0217	01-Jun-20	0.255 L	04-Jun-20 17:24	1
PFDoA	307-55-1	ND	0.388	1.96		B0E0217	01-Jun-20	0.255 L	04-Jun-20 17:24	1
MeFOSA	31506-32-8	ND	1.88	9.80		B0E0217	01-Jun-20	0.255 L	04-Jun-20 17:24	1
PFTTrDA	72629-94-8	ND	0.242	1.96		B0E0217	01-Jun-20	0.255 L	04-Jun-20 17:24	1
PFDoS	79780-39-5	ND	2.04	2.45		B0E0217	01-Jun-20	0.255 L	04-Jun-20 17:24	1
PFTeDA	376-06-7	ND	0.370	1.96		B0E0217	01-Jun-20	0.255 L	04-Jun-20 17:24	1
EtFOSA	4151-50-2	ND	2.50	9.80		B0E0217	01-Jun-20	0.255 L	04-Jun-20 17:24	1
PFHxDA	67905-19-5	ND	0.144	1.96		B0E0217	01-Jun-20	0.255 L	04-Jun-20 17:24	1
PFODA	16517-11-6	ND	3.01	3.43		B0E0217	01-Jun-20	0.255 L	04-Jun-20 17:24	1
MeFOSE	24448-09-7	ND	2.97	9.80		B0E0217	01-Jun-20	0.255 L	04-Jun-20 17:24	1
EtFOSE	1691-99-2	ND	4.62	9.80		B0E0217	01-Jun-20	0.255 L	04-Jun-20 17:24	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	85.0	25 - 150		B0E0217	01-Jun-20	0.255 L	04-Jun-20 17:24	1

**Sample ID: EB-2 Rod+Sleeve-Track Rig** **PFAS Isotope Dilution Method**

Client Data				Laboratory Data			
Name:	AECOM	Matrix:	Aqueous	Lab Sample:	2001121-19	Column:	BEH C18
Project:	Waupaca Foundry Plant #4	Date Collected:	19-May-20 12:20	Date Received:	22-May-20 10:00		
Location:	Equipment Blank						

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFPeA	IS	64.9	25 - 150		B0E0217	01-Jun-20	0.255 L	04-Jun-20 17:24	1
13C3-PFBS	IS	72.9	25 - 150		B0E0217	01-Jun-20	0.255 L	04-Jun-20 17:24	1
13C3-HFPO-DA	IS	65.5	25 - 150		B0E0217	01-Jun-20	0.255 L	04-Jun-20 17:24	1
13C2-4:2 FTS	IS	70.9	25 - 150		B0E0217	01-Jun-20	0.255 L	04-Jun-20 17:24	1
13C2-PFHxA	IS	65.9	25 - 150		B0E0217	01-Jun-20	0.255 L	04-Jun-20 17:24	1
13C4-PFHpA	IS	71.5	25 - 150		B0E0217	01-Jun-20	0.255 L	04-Jun-20 17:24	1
13C3-PFHxS	IS	79.1	25 - 150		B0E0217	01-Jun-20	0.255 L	04-Jun-20 17:24	1
13C2-6:2 FTS	IS	68.0	25 - 150		B0E0217	01-Jun-20	0.255 L	04-Jun-20 17:24	1
13C5-PFNA	IS	69.8	25 - 150		B0E0217	01-Jun-20	0.255 L	04-Jun-20 17:24	1
13C8-PFOA	IS	40.9	10 - 150		B0E0217	01-Jun-20	0.255 L	04-Jun-20 17:24	1
13C2-PFOA	IS	65.8	25 - 150		B0E0217	01-Jun-20	0.255 L	04-Jun-20 17:24	1
13C8-PFOS	IS	63.6	25 - 150		B0E0217	01-Jun-20	0.255 L	04-Jun-20 17:24	1
13C2-PFDA	IS	68.8	25 - 150		B0E0217	01-Jun-20	0.255 L	04-Jun-20 17:24	1
13C2-8:2 FTS	IS	68.7	25 - 150		B0E0217	01-Jun-20	0.255 L	04-Jun-20 17:24	1
d3-MeFOSAA	IS	66.9	25 - 150		B0E0217	01-Jun-20	0.255 L	04-Jun-20 17:24	1
13C2-PFUnA	IS	74.6	25 - 150		B0E0217	01-Jun-20	0.255 L	04-Jun-20 17:24	1
d5-EtFOSAA	IS	70.8	25 - 150		B0E0217	01-Jun-20	0.255 L	04-Jun-20 17:24	1
13C2-10:2 FTS	IS	64.5	25 - 150		B0E0217	01-Jun-20	0.255 L	04-Jun-20 17:24	1
13C2-PFDoA	IS	65.5	25 - 150		B0E0217	01-Jun-20	0.255 L	04-Jun-20 17:24	1
d3-MeFOSA	IS	16.9	10 - 150		B0E0217	01-Jun-20	0.255 L	04-Jun-20 17:24	1
13C2-PFTeDA	IS	56.7	25 - 150		B0E0217	01-Jun-20	0.255 L	04-Jun-20 17:24	1
d5-EtFOSA	IS	16.1	10 - 150		B0E0217	01-Jun-20	0.255 L	04-Jun-20 17:24	1
13C2-PFHxDA	IS	47.1	25 - 150		B0E0217	01-Jun-20	0.255 L	04-Jun-20 17:24	1
d7-MeFOSE	IS	36.1	10 - 150		B0E0217	01-Jun-20	0.255 L	04-Jun-20 17:24	1
d9-EtFOSE	IS	35.0	10 - 150		B0E0217	01-Jun-20	0.255 L	04-Jun-20 17:24	1

MDL - Method Detection Limit

RL - Reporting limit

Results reported to MDL.

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
CRS	Cleanup Recovery Standard
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
IS	Internal Standard
J	The amount detected is below the Reporting Limit/LOQ
LOD	Limit of Detection
LOQ	Limit of Quantitation
M	Estimated Maximum Possible Concentration (CA Region 2 projects only)
NA	Not applicable
ND	Not Detected
OPR	Ongoing Precision and Recovery sample
P	The reported concentration may include contribution from chlorinated diphenyl ether(s).
Q	The ion transition ratio is outside of the acceptance criteria.
RL	Reporting Limit
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	E87777-23
Hawaii Department of Health	N/A
Louisiana Department of Environmental Quality	01977
Maine Department of Health	2018017
Massachusetts Department of Environmental Protection	N/A
Michigan Department of Environmental Quality	9932
Minnesota Department of Health	1521520
New Hampshire Environmental Accreditation Program	207718-B
New Jersey Department of Environmental Protection	190001
New York Department of Health	11411
Oregon Laboratory Accreditation Program	4042-010
Pennsylvania Department of Environmental Protection	016
Texas Commission on Environmental Quality	T104704189-19-10
Vermont Department of Health	VT-4042
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



# CHAIN OF CUSTODY

**For Laboratory Use Only**  
 Work Order #: 2001121 Temp: 2.6 °C  
 Storage ID: WR-2 R-13 Storage Secured: Yes  No

Project ID: Waupaca Foundry Plant #4 PO#: \_\_\_\_\_ Sampler: Janel Dean  
 (name)

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

Relinquished by (printed name and signature) Janel Dean Date 5-21-20 Time 1610 Received by (printed name and signature) FedEx Date 5-21-20 Time 1610  
 Relinquished by (printed name and signature) FedEx Date 05/22/2020 Time 10:00 Received by (printed name and signature) Hayden Gunn Date 05/22/2020 Time 10:00

SHIP TO: Vista Analytical Laboratory  
 1104 Windfield Way  
 El Dorado Hills, CA 95762  
 (916) 673-1520 \* Fax (916) 673-0106  
 Method of Shipment: Fedex  
 Tracking No.: \_\_\_\_\_  
 ATTN: Jennifer Miller

Quantity	Type	Matrix	PFON/PFOS	UCMR3 PFAS List: 6	537:1 List: 14 or 18 (Circle One)	EPA Draft List of 24	OTHER: Please attach analyte list	PFON/PFOS	UCMR3 PFAS List: 6	537:1 List of 14	537:1 List of 18	EPA Method 537 (DW only)	Comments
1	PJ	SO					PFAS-36-Wiscensi						
1													
1													
1													
1													
1													
1													
1													
1													
1													
1	PJ	SO					PFAS-36-Wiscensi						

Sample ID	Date	Time	Location/ Sample Description
<del>GW4</del> GW4 (1'-2')	5-19-20	1210	
GW4 (3'-5')		1215	
GW1 (2'-3')		1245	
GW1 (4'-5')		1255	
GW3 (1'-2')		1355	
GW3 (4'-5')		1400	
GW2 (0'-1')		1445	
GW2 (4'-5')		1450	
GW7 (0.5'-1.5')		1610	
GW7 (3'-4')	5-19-20	1615	

Special Instructions/Comments:  
Aecom Project # 60620421

SEND DOCUMENTATION AND RESULTS TO:  
 Name: Andrew Motte  
 Company: AECOM  
 Address: 558 N. Main St.  
 City: CoshKosh WI 54901  
 Phone: 920-236-6717 920-379-6024  
 Email: andrew.motte@aecom.com

Container Types: P= HDPE, PJ= HDPE Jar      Bottle Preservation Type: \_\_\_\_\_  
 PY= Polypropylene, O = Other: \_\_\_\_\_      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: \_\_\_\_\_



# CHAIN OF CUSTODY

**For Laboratory Use Only**  
 Work Order #: 2001121 Temp: 2.6 °C  
 Storage ID: WR-2 R-13 Storage Secured: Yes  No

Project ID: Waipaca Foundry Plant #4 PO#: \_\_\_\_\_ Sampler: Janel Dean  
 (name)

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

Relinquished by (printed name and signature) Janel Dean Date 5-21-20 Time 16:00 Received by (printed name and signature) Fedex Date 5-21-20 Time 16:00  
 Relinquished by (printed name and signature) FedEx Date 05/22/2020 Time 10:00 Received by (printed name and signature) Hayden Gann Date 05/22/2020 Time 10:00

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

Quantity	Type	Matrix	PFON/ PFOS	UCMR3 PFAS List:6	537.1 List: 14 or 18 (Circle One)	EPA Draft List of 24	OTHER: Please attach analyte list	PFON/ PFOS	UCMR3 PFAS List:6	537.1 List of 14	537.1 List of 18	EPA Method 537 (DW only)	Comments
1	PJ	SO					PFAS-36-WI						
1													
1													
1													
1	PJ	SO					PFAS-36-WI						

Special Instructions/Comments:  
Aecom Project Number 606204d1

SEND DOCUMENTATION AND RESULTS TO:  
 Name: Andrew Mott  
 Company: AECOM  
 Address: 558 N. Main St.  
 City: Oshkosh WI 54901  
 Phone: 920.236.6713 920.379.6024  
 Email: andrew.mott@aecom.com

Container Types: P= HDPE, PJ= HDPE Jar  
 PY= Polypropylene, O = Other: \_\_\_\_\_  
 Bottle Preservation Type: 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: \_\_\_\_\_



# CHAIN OF CUSTODY

**For Laboratory Use Only**  
 Work Order #: 2001121 Temp: 2.6 °C  
 Storage ID: WK-2 R13 Storage Secured: Yes  No

Project ID: Waupaca County Pond 4 PO#: \_\_\_\_\_ Sampler: Janel Dean  
 (name)

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

Relinquished by (printed name and signature) Janel Dean Date 5-21-20 Time 16:10  
 Received by (printed name and signature) Janel Dean Date 5-21-20 Time 16:10  
 Relinquished by (printed name and signature) \_\_\_\_\_ Date \_\_\_\_\_ Time \_\_\_\_\_  
 Received by (printed name and signature) Hayden Grant Date 05/22/2020 Time 10:00

SHIP TO: Vista Analytical Laboratory  
 1104 Windfield Way  
 El Dorado Hills, CA 95762  
 (916) 673-1520 \* Fax (916) 673-0106  
 Method of Shipment: Fedex  
 Tracking No.: \_\_\_\_\_  
 ATTN: Jennifer Miller

Add Analysis(es) Requested		Container(s)	PFAS by Isotope Dilution	EPA Method 537 (DW only)
Quantity	Type	Matrix	PFAS/ PFOS	UCMR3 PFAS Lists
			537.1 List: 14 or 18 (Circle One)	
			EPA Draft List of 24	
			OTHER: Please attach analyte list	
			PFAS/ PFOS	UCMR3 PFAS Lists
			537.1 List of 14	537.1 List of 18

Sample ID	Date	Time	Location/ Sample Description	Quantity	Type	Matrix	PFAS/ PFOS	UCMR3 PFAS Lists	537.1 List: 14 or 18 (Circle One)	EPA Draft List of 24	OTHER: Please attach analyte list	PFAS/ PFOS	UCMR3 PFAS Lists	537.1 List of 14	537.1 List of 18	Comments
Field Blank	5-19-20	1100	Field	2	P	AQ						PFAS-36 Wisconsin				
EB-1 Rod+Slam-Truck Rig	5-19-20	1130	Equipment Blank	2	P	AQ						PFAS-36 Wisconsin				
EB-2 Rod+Slam-Truck Rig	5-19-20	1220	Equipment Blank	2	P	AQ						PFAS-36 Wisconsin				

Special Instructions/Comments:  
AECOM project number 60620421

SEND DOCUMENTATION AND RESULTS TO:  
 Name: Andrew Mott  
 Company: AECOM  
 Address: 558 N. Main St.  
 City: Onkara WI 54901  
 Phone: 920-236-6713 920-779-6024  
 Email: andrew.mott@aecom.com

Container Types: P= HDPE, PJ= HDPE Jar  
 Bottle Preservation Type: \_\_\_\_\_  
 PY= Polypropylene, O = Other: \_\_\_\_\_  
 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: \_\_\_\_\_



## Sample Log-In Checklist

 Page # 1 of 1

 Vista Work Order #: 2001121 TAT Std

Samples Arrival:	Date/Time <u>05/22/2020 10:00</u>	Initials: <u>HDC</u>	Location: <u>WR-2</u> Shelf/Rack: <u>NA</u>
Delivered By:	<input checked="" type="checkbox"/> FedEx	<input type="checkbox"/> UPS	<input type="checkbox"/> On Trac
	<input type="checkbox"/> GLS	<input type="checkbox"/> DHL	<input type="checkbox"/> Hand Delivered
	<input type="checkbox"/> Other		
Preservation:	<input checked="" type="checkbox"/> Ice	<input type="checkbox"/> Blue Ice	<input type="checkbox"/> Dry Ice
	<input type="checkbox"/> None		
Temp °C: <u>2.6</u> (uncorrected)	Probe used: Y / <input checked="" type="checkbox"/> N		Thermometer ID: <u>IR-3</u>
Temp °C: <u>2.6</u> (corrected)			

	YES	NO	NA
Shipping Container(s) Intact?	✓		
Shipping Custody Seals Intact?	✓		
Airbill <u>—</u> Trk # <u>3930 9551 6215</u>	✓		
Shipping Documentation Present?	✓		
Shipping Container	<input type="checkbox"/> Vista	<input checked="" type="checkbox"/> Client	<input type="checkbox"/> Retain
	<input type="checkbox"/> Return	<input type="checkbox"/> Dispose	
Chain of Custody / Sample Documentation Present?	✓		
Chain of Custody / Sample Documentation Complete?		✓	
Holding Time Acceptable?	✓		
Logged In:	Date/Time <u>05/22/20 1540</u>	Initials: <u>BAB</u>	Location: <u>WR-2 / R13</u> Shelf/Rack: <u>E5 / A1</u>
COC Anomaly/Sample Acceptance Form completed?			
		✓	✓

Comments:

# CoC/Label Reconciliation Report WO# 2001121

LabNumber	CoC Sample ID	SampleAlias	Sample Date/Time	Container	BaseMatrix	Sample Comments
2001121-01	A GW4 (1'-2')		19-May-20 12:10	HDPE Jar, 6 oz	Solid	
2001121-02	A GW4 (3'-5')		19-May-20 12:15	HDPE Jar, 6 oz	Solid	
2001121-03	A GW1 (2'-3')		19-May-20 12:45	HDPE Jar, 6 oz	Solid	
2001121-04	A GW1 (4'-5')		19-May-20 12:55	HDPE Jar, 6 oz	Solid	
2001121-05	A GW3 (1'-2')		19-May-20 13:55	HDPE Jar, 6 oz	Solid	
2001121-06	A GW3 (4'-5')		19-May-20 14:00	HDPE Jar, 6 oz	Solid	
2001121-07	A GW2 (0'-1')		19-May-20 14:45	HDPE Jar, 6 oz	Solid	
2001121-08	A GW2 (4'-5')		19-May-20 14:50	HDPE Jar, 6 oz	Solid	
2001121-09	A GW7 (0.5'-1.5')		19-May-20 16:10	HDPE Jar, 6 oz	Solid	
2001121-10	A GW7 (3'-4')		19-May-20 16:15	HDPE Jar, 6 oz	Solid	
2001121-11	A GW 5 (0'-1')		20-May-20 08:10	HDPE Jar, 6 oz	Solid	
2001121-12	A GW5 (4'-5')		20-May-20 08:15	HDPE Jar, 6 oz	Solid	
2001121-13	A GW6 (0'-1')		20-May-20 10:00	HDPE Jar, 5 oz	Solid	
2001121-14	A GW6 (4'-5')		20-May-20 10:10	HDPE Jar, 6 oz	Solid	
2001121-15	A DUP (0'-1')		20-May-20 00:00	HDPE Jar, 6 oz	Solid	
2001121-16	A DUP (4'-5')		20-May-20 00:00	HDPE Jar, 6 oz	Solid	
2001121-17	A Field Blank	Field Blank	19-May-20 11:00	HDPE Bottle, 250 mL	Aqueous	
2001121-17	B Field Blank	Field Blank	19-May-20 11:00	HDPE Bottle, 250 mL	Aqueous	
2001121-18	A EB-1 Rod+Sleeve-Truck Rig	Equipment Blank	19-May-20 11:30	HDPE Bottle, 250 mL	Aqueous	
2001121-18	B EB-1 Rod+Sleeve-Truck Rig	Equipment Blank	19-May-20 11:30	HDPE Bottle, 250 mL	Aqueous	
2001121-19	A EB-2 Rod+Sleeve-Truck Rig	Equipment Blank	19-May-20 12:20	HDPE Bottle, 250 mL	Aqueous	
2001121-19	B EB-2 Rod+Sleeve-Truck Rig	Equipment Blank	19-May-20 12:20	HDPE Bottle, 250 mL	Aqueous	

Checkmarks indicate that information on the COC reconciled with the sample label. Any discrepancies are noted in the following columns.

- Ⓐ Label collection date/time lined out.
- Ⓑ Collection time on label: 1530 COC: 1450 Cap time: 1450
- Ⓒ Label ID: "GW-7" COC: "GW7"



	Yes	No	NA
Sample Container Intact?	✓		
Sample Custody Seals Intact?			✓
Adequate Sample Volume?	✓		
Container Type Appropriate for Analysis(es)	✓		
Preservation Documented: Na2S2O3 Trizma <u>None</u> Other	✓		
If Chlorinated or Drinking Water Samples, Acceptable Preservation?			✓

Comments:

Verified by/Date: PSB 5/26/20

June 26, 2020

**Vista Work Order No. 2001183**

Mr. Andrew Mott  
AECOM  
558 North Main Street  
Oshkosh, WI 54901

Dear Mr. Mott,

Enclosed are the results for the sample set received at Vista Analytical Laboratory on June 02, 2020 under your Project Name 'Waupaca Foundry Plant 4'.

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](mailto:mmaier@vista-analytical.com).

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

Sincerely,

Martha Maier  
Laboratory Director



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

## Vista Work Order No. 2001183

### Case Narrative

#### Sample Condition on Receipt:

Thirteen 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 Field and Equipment Blanks were not listed on the CoC. Authorization to proceed with the analyses was received by email on June 3, 2020.

#### Analytical Notes:

#### PFAS Isotope Dilution Method

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

<u>Laboratory ID</u>	<u>Sample Name</u>
2001183-02	MW-1
2001183-03	MW-4
2001183-04	MW-3
2001183-06	MW-6
2001183-07	MW-5
2001183-11	DUP-1

The samples were extracted and analyzed for a selected list of PFAS using Vista's PFAS Isotope Dilution Method. 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 hold times.

#### Quality Control

The Initial Calibration and Continuing Calibration Verifications met the 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 the Reporting Limit. The OPR recoveries were within the method acceptance criteria.

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

## QC Anomalies

LabNumber	SampleName	Analysis	Analyte	Flag	%Rec
2001183-01	MW-2	PFAS Isotope Dilution Method	13C2-PFHxDA	H	15.9
2001183-02	MW-1	PFAS Isotope Dilution Method	13C2-PFHxDA	H	24.5
2001183-03	MW-4	PFAS Isotope Dilution Method	13C3-PFBA	H	19.3
2001183-04	MW-3	PFAS Isotope Dilution Method	13C3-PFBA	H	14.6

H = Recovery was outside laboratory acceptance criteria.

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# Sample Inventory Report

Vista Sample ID	Client Sample ID	Sampled	Received	Components/Containers
2001183-01	MW-2	29-May-20 12:00	02-Jun-20 09:29	HDPE Bottle, 250 mL HDPE Bottle, 250 mL
2001183-02	MW-1	29-May-20 12:40	02-Jun-20 09:29	HDPE Bottle, 250 mL HDPE Bottle, 250 mL
2001183-03	MW-4	29-May-20 13:20	02-Jun-20 09:29	HDPE Bottle, 250 mL HDPE Bottle, 250 mL
2001183-04	MW-3	29-May-20 14:10	02-Jun-20 09:29	HDPE Bottle, 250 mL HDPE Bottle, 250 mL
2001183-05	MW-7	29-May-20 15:05	02-Jun-20 09:29	HDPE Bottle, 250 mL HDPE Bottle, 250 mL
2001183-06	MW-6	29-May-20 16:00	02-Jun-20 09:29	HDPE Bottle, 250 mL HDPE Bottle, 250 mL
2001183-07	MW-5	29-May-20 16:50	02-Jun-20 09:29	HDPE Bottle, 250 mL HDPE Bottle, 250 mL
2001183-08	SW-3	29-May-20 17:25	02-Jun-20 09:29	HDPE Bottle, 250 mL HDPE Bottle, 250 mL
2001183-09	SW-2	29-May-20 17:35	02-Jun-20 09:29	HDPE Bottle, 250 mL HDPE Bottle, 250 mL
2001183-10	SW-1	29-May-20 17:45	02-Jun-20 09:29	HDPE Bottle, 250 mL HDPE Bottle, 250 mL
2001183-11	DUP-1	29-May-20 00:00	02-Jun-20 09:29	HDPE Bottle, 250 mL HDPE Bottle, 250 mL
2001183-12	Field Blank	29-May-20 08:20	02-Jun-20 09:29	HDPE Bottle, 250 mL HDPE Bottle, 250 mL
2001183-13	Equipment Blank	29-May-20 08:35	02-Jun-20 09:29	HDPE Bottle, 250 mL HDPE Bottle, 250 mL



## **ANALYTICAL RESULTS**

Sample ID: Method Blank					PFAS Isotope Dilution Method					
Client Data				Laboratory Data						
Name:	AECOM	Matrix:	Aqueous	Lab Sample:	B0F0030-BLK1	Column:	BEH C18			
Project:	Waupaca Foundry Plant 4									
Analyte	CAS Number	Conc. (ng/L)	MDL	RL	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBA	375-22-4	ND	0.365	2.00		B0F0030	13-Jun-20	0.250 L	15-Jun-20 16:17	1
PFPeA	2706-90-3	ND	0.640	2.00		B0F0030	13-Jun-20	0.250 L	15-Jun-20 16:17	1
PFBS	375-73-5	ND	0.895	2.00		B0F0030	13-Jun-20	0.250 L	15-Jun-20 16:17	1
4:2 FTS	757124-72-4	ND	0.695	2.00		B0F0030	13-Jun-20	0.250 L	15-Jun-20 16:17	1
PFHxA	307-24-4	ND	1.09	2.00		B0F0030	13-Jun-20	0.250 L	15-Jun-20 16:17	1
PFPeS	2706-91-4	ND	1.21	2.00		B0F0030	13-Jun-20	0.250 L	15-Jun-20 16:17	1
HFPO-DA	13252-13-6	ND	2.41	2.50		B0F0030	13-Jun-20	0.250 L	15-Jun-20 16:17	1
PFHpA	375-85-9	ND	0.296	2.00		B0F0030	13-Jun-20	0.250 L	15-Jun-20 16:17	1
ADONA	919005-14-4	ND	0.361	2.00		B0F0030	13-Jun-20	0.250 L	15-Jun-20 16:17	1
PFHxS	355-46-4	ND	0.474	2.00		B0F0030	13-Jun-20	0.250 L	15-Jun-20 16:17	1
6:2 FTS	27619-97-2	ND	1.00	2.00		B0F0030	13-Jun-20	0.250 L	15-Jun-20 16:17	1
PFOA	335-67-1	ND	0.326	2.00		B0F0030	13-Jun-20	0.250 L	15-Jun-20 16:17	1
PFHpS	375-92-8	ND	0.469	2.00		B0F0030	13-Jun-20	0.250 L	15-Jun-20 16:17	1
PFNA	375-95-1	ND	0.405	2.00		B0F0030	13-Jun-20	0.250 L	15-Jun-20 16:17	1
PFOSA	754-91-6	ND	0.885	2.00		B0F0030	13-Jun-20	0.250 L	15-Jun-20 16:17	1
PFOS	1763-23-1	ND	0.404	2.00		B0F0030	13-Jun-20	0.250 L	15-Jun-20 16:17	1
9Cl-PF3ONS	756426-58-1	ND	0.725	2.00		B0F0030	13-Jun-20	0.250 L	15-Jun-20 16:17	1
PFDA	335-76-2	ND	0.745	2.00		B0F0030	13-Jun-20	0.250 L	15-Jun-20 16:17	1
8:2 FTS	39108-34-4	ND	1.03	2.00		B0F0030	13-Jun-20	0.250 L	15-Jun-20 16:17	1
PFNS	68259-12-1	ND	1.94	2.00		B0F0030	13-Jun-20	0.250 L	18-Jun-20 15:23	1
MeFOSAA	2355-31-9	ND	0.825	2.00		B0F0030	13-Jun-20	0.250 L	15-Jun-20 16:17	1
EtFOSAA	2991-50-6	ND	0.685	2.00		B0F0030	13-Jun-20	0.250 L	15-Jun-20 16:17	1
PFUnA	2058-94-8	ND	0.525	2.00		B0F0030	13-Jun-20	0.250 L	15-Jun-20 16:17	1
PFDS	335-77-3	ND	0.615	2.00		B0F0030	13-Jun-20	0.250 L	15-Jun-20 16:17	1
11Cl-PF3OUdS	763051-92-9	ND	1.21	2.00		B0F0030	13-Jun-20	0.250 L	15-Jun-20 16:17	1
10:2 FTS	120226-60-0	ND	1.57	2.00		B0F0030	13-Jun-20	0.250 L	15-Jun-20 16:17	1
PFDoA	307-55-1	ND	0.396	2.00		B0F0030	13-Jun-20	0.250 L	15-Jun-20 16:17	1
MeFOSA	31506-32-8	ND	1.92	10.0		B0F0030	13-Jun-20	0.250 L	15-Jun-20 16:17	1
PFTTrDA	72629-94-8	ND	0.247	2.00		B0F0030	13-Jun-20	0.250 L	15-Jun-20 16:17	1
PFDoS	79780-39-5	ND	2.09	2.50		B0F0030	13-Jun-20	0.250 L	15-Jun-20 16:17	1
PFTeDA	376-06-7	ND	0.378	2.00		B0F0030	13-Jun-20	0.250 L	15-Jun-20 16:17	1
EtFOSA	4151-50-2	ND	2.56	10.0		B0F0030	13-Jun-20	0.250 L	15-Jun-20 16:17	1
PFHxDA	67905-19-5	ND	0.147	2.00		B0F0030	13-Jun-20	0.250 L	15-Jun-20 16:17	1
PFODA	16517-11-6	ND	3.07	3.50		B0F0030	13-Jun-20	0.250 L	15-Jun-20 16:17	1
MeFOSE	24448-09-7	ND	3.04	10.0		B0F0030	13-Jun-20	0.250 L	15-Jun-20 16:17	1
EtFOSE	1691-99-2	ND	4.72	10.0		B0F0030	13-Jun-20	0.250 L	15-Jun-20 16:17	1
Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C3-PFBA	IS	74.7	25 - 150		B0F0030	13-Jun-20	0.250 L	15-Jun-20 16:17	1	

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

<b>Client Data</b>	<b>Laboratory Data</b>
Name: AECOM	Lab Sample: B0F0030-BLK1
Project: Waupaca Foundry Plant 4	Column: BEH C18
Matrix: Aqueous	

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFPeA	IS	62.0	25 - 150		B0F0030	13-Jun-20	0.250 L	15-Jun-20 16:17	1
13C3-PFBS	IS	66.4	25 - 150		B0F0030	13-Jun-20	0.250 L	15-Jun-20 16:17	1
13C3-HFPO-DA	IS	65.7	25 - 150		B0F0030	13-Jun-20	0.250 L	15-Jun-20 16:17	1
13C2-4:2 FTS	IS	57.8	25 - 150		B0F0030	13-Jun-20	0.250 L	15-Jun-20 16:17	1
13C2-PFHxA	IS	69.2	25 - 150		B0F0030	13-Jun-20	0.250 L	15-Jun-20 16:17	1
13C4-PFHpA	IS	63.6	25 - 150		B0F0030	13-Jun-20	0.250 L	15-Jun-20 16:17	1
13C3-PFHxS	IS	70.2	25 - 150		B0F0030	13-Jun-20	0.250 L	15-Jun-20 16:17	1
13C2-6:2 FTS	IS	68.5	25 - 150		B0F0030	13-Jun-20	0.250 L	15-Jun-20 16:17	1
13C5-PFNA	IS	68.5	25 - 150		B0F0030	13-Jun-20	0.250 L	15-Jun-20 16:17	1
13C8-PFOA	IS	36.6	10 - 150		B0F0030	13-Jun-20	0.250 L	15-Jun-20 16:17	1
13C2-PFOA	IS	77.0	25 - 150		B0F0030	13-Jun-20	0.250 L	15-Jun-20 16:17	1
13C8-PFOS	IS	69.9	25 - 150		B0F0030	13-Jun-20	0.250 L	15-Jun-20 16:17	1
13C2-PFDA	IS	63.6	25 - 150		B0F0030	13-Jun-20	0.250 L	15-Jun-20 16:17	1
13C2-8:2 FTS	IS	107	25 - 150		B0F0030	13-Jun-20	0.250 L	15-Jun-20 16:17	1
d3-MeFOSAA	IS	66.3	25 - 150		B0F0030	13-Jun-20	0.250 L	15-Jun-20 16:17	1
13C2-PFUnA	IS	71.9	25 - 150		B0F0030	13-Jun-20	0.250 L	15-Jun-20 16:17	1
d5-EtFOSAA	IS	47.2	25 - 150		B0F0030	13-Jun-20	0.250 L	15-Jun-20 16:17	1
13C2-10:2 FTS	IS	51.8	25 - 150		B0F0030	13-Jun-20	0.250 L	15-Jun-20 16:17	1
13C2-PFDoA	IS	47.8	25 - 150		B0F0030	13-Jun-20	0.250 L	15-Jun-20 16:17	1
d3-MeFOSA	IS	13.0	10 - 150		B0F0030	13-Jun-20	0.250 L	15-Jun-20 16:17	1
13C2-PFTeDA	IS	60.7	25 - 150		B0F0030	13-Jun-20	0.250 L	15-Jun-20 16:17	1
d5-EtFOSA	IS	13.5	10 - 150		B0F0030	13-Jun-20	0.250 L	15-Jun-20 16:17	1
13C2-PFHxDA	IS	47.6	25 - 150		B0F0030	13-Jun-20	0.250 L	15-Jun-20 16:17	1
d7-MeFOSE	IS	28.1	10 - 150		B0F0030	13-Jun-20	0.250 L	15-Jun-20 16:17	1
d9-EtFOSE	IS	22.7	10 - 150		B0F0030	13-Jun-20	0.250 L	15-Jun-20 16:17	1

MDL - Method Detection Limit

RL - Reporting limit

Results reported to MDL.

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**

**PFAS Isotope Dilution Method**

Client Data					Laboratory Data							
Name:	AECOM	Matrix:	Aqueous		Lab Sample:	B0F0030-BS1	Column:	BEH C18				
Project:	Waupaca Foundry Plant 4											

Analyte	CAS Number	Amt Found (ng/L)	Spike Amt	% Rec	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBA	375-22-4	8.46	8.00	106	50 - 150		B0F0030	13-Jun-20	0.250 L	15-Jun-20 16:28	1
PFPeA	2706-90-3	8.83	8.00	110	50 - 150		B0F0030	13-Jun-20	0.250 L	15-Jun-20 16:28	1
PFBS	375-73-5	9.42	8.00	118	50 - 150		B0F0030	13-Jun-20	0.250 L	15-Jun-20 16:28	1
4:2 FTS	757124-72-4	9.03	8.00	113	50 - 150		B0F0030	13-Jun-20	0.250 L	15-Jun-20 16:28	1
PFHxA	307-24-4	9.68	8.00	121	50 - 150		B0F0030	13-Jun-20	0.250 L	15-Jun-20 16:28	1
PFPeS	2706-91-4	10.6	8.00	133	50 - 150		B0F0030	13-Jun-20	0.250 L	15-Jun-20 16:28	1
HFPO-DA	13252-13-6	9.94	8.00	124	50 - 150		B0F0030	13-Jun-20	0.250 L	15-Jun-20 16:28	1
PFHpA	375-85-9	6.89	8.00	86.1	50 - 150		B0F0030	13-Jun-20	0.250 L	15-Jun-20 16:28	1
ADONA	919005-14-4	8.07	8.00	101	50 - 150		B0F0030	13-Jun-20	0.250 L	15-Jun-20 16:28	1
PFHxS	355-46-4	9.24	8.00	115	50 - 150		B0F0030	13-Jun-20	0.250 L	15-Jun-20 16:28	1
6:2 FTS	27619-97-2	4.99	8.00	62.4	50 - 150		B0F0030	13-Jun-20	0.250 L	15-Jun-20 16:28	1
PFOA	335-67-1	7.92	8.00	99.0	50 - 150		B0F0030	13-Jun-20	0.250 L	15-Jun-20 16:28	1
PFHpS	375-92-8	8.01	8.00	100	50 - 150		B0F0030	13-Jun-20	0.250 L	15-Jun-20 16:28	1
PFNA	375-95-1	7.91	8.00	98.9	50 - 150		B0F0030	13-Jun-20	0.250 L	15-Jun-20 16:28	1
PFOSA	754-91-6	7.76	8.00	97.0	50 - 150		B0F0030	13-Jun-20	0.250 L	15-Jun-20 16:28	1
PFOS	1763-23-1	7.45	8.00	93.1	50 - 150		B0F0030	13-Jun-20	0.250 L	15-Jun-20 16:28	1
9Cl-PF3ONS	756426-58-1	6.46	8.00	80.7	50 - 150		B0F0030	13-Jun-20	0.250 L	15-Jun-20 16:28	1
PFDA	335-76-2	8.14	8.00	102	50 - 150		B0F0030	13-Jun-20	0.250 L	15-Jun-20 16:28	1
8:2 FTS	39108-34-4	8.95	8.00	112	50 - 150		B0F0030	13-Jun-20	0.250 L	15-Jun-20 16:28	1
PFNS	68259-12-1	7.11	8.00	88.9	50 - 150		B0F0030	13-Jun-20	0.250 L	18-Jun-20 15:33	1
MeFOSAA	2355-31-9	10.1	8.00	126	50 - 150		B0F0030	13-Jun-20	0.250 L	15-Jun-20 16:28	1
EtFOSAA	2991-50-6	9.22	8.00	115	50 - 150		B0F0030	13-Jun-20	0.250 L	15-Jun-20 16:28	1
PFUnA	2058-94-8	8.83	8.00	110	50 - 150		B0F0030	13-Jun-20	0.250 L	15-Jun-20 16:28	1
PFDS	335-77-3	6.26	8.00	78.3	50 - 150		B0F0030	13-Jun-20	0.250 L	15-Jun-20 16:28	1
11Cl-PF3OUdS	763051-92-9	9.15	8.00	114	50 - 150		B0F0030	13-Jun-20	0.250 L	15-Jun-20 16:28	1
10:2 FTS	120226-60-0	8.41	8.00	105	50 - 150		B0F0030	13-Jun-20	0.250 L	15-Jun-20 16:28	1
PFDoA	307-55-1	9.28	8.00	116	50 - 150		B0F0030	13-Jun-20	0.250 L	15-Jun-20 16:28	1
MeFOSA	31506-32-8	42.7	40.0	107	50 - 150		B0F0030	13-Jun-20	0.250 L	15-Jun-20 16:28	1
PFTTrDA	72629-94-8	8.17	8.00	102	50 - 150		B0F0030	13-Jun-20	0.250 L	15-Jun-20 16:28	1
PFDoS	79780-39-5	6.91	8.00	86.4	50 - 150		B0F0030	13-Jun-20	0.250 L	15-Jun-20 16:28	1
PFTTeDA	376-06-7	9.08	8.00	113	50 - 150		B0F0030	13-Jun-20	0.250 L	15-Jun-20 16:28	1
EtFOSA	4151-50-2	38.7	40.0	96.7	50 - 150		B0F0030	13-Jun-20	0.250 L	15-Jun-20 16:28	1
PFHxDA	67905-19-5	9.44	8.00	118	50 - 150		B0F0030	13-Jun-20	0.250 L	15-Jun-20 16:28	1
PFODA	16517-11-6	4.32	8.00	54.0	50 - 150		B0F0030	13-Jun-20	0.250 L	15-Jun-20 16:28	1

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

Client Data					Laboratory Data						
Name:	AECOM	Matrix:	Aqueous		Lab Sample:	B0F0030-BS1		Column:	BEH C18		
Project:	Waupaca Foundry Plant 4										

Analyte	CAS Number	Amt Found (ng/L)	Spike Amt	% Rec	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
MeFOSE	24448-09-7	36.2	40.0	90.6	50 - 150		B0F0030	13-Jun-20	0.250 L	15-Jun-20 16:28	1
EtFOSE	1691-99-2	48.1	40.0	120	50 - 150		B0F0030	13-Jun-20	0.250 L	15-Jun-20 16:28	1
Labeled Standards		Type		% Rec	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA		IS		83.1	25- 150		B0F0030	13-Jun-20	0.250 L	15-Jun-20 16:28	1
13C3-PFPeA		IS		70.6	25- 150		B0F0030	13-Jun-20	0.250 L	15-Jun-20 16:28	1
13C3-PFBS		IS		65.5	25- 150		B0F0030	13-Jun-20	0.250 L	15-Jun-20 16:28	1
13C3-HFPO-DA		IS		64.6	25- 150		B0F0030	13-Jun-20	0.250 L	15-Jun-20 16:28	1
13C2-4:2 FTS		IS		65.0	25- 150		B0F0030	13-Jun-20	0.250 L	15-Jun-20 16:28	1
13C2-PFHxA		IS		72.2	25- 150		B0F0030	13-Jun-20	0.250 L	15-Jun-20 16:28	1
13C4-PFHpA		IS		67.5	25- 150		B0F0030	13-Jun-20	0.250 L	15-Jun-20 16:28	1
13C3-PFHxS		IS		81.2	25- 150		B0F0030	13-Jun-20	0.250 L	15-Jun-20 16:28	1
13C2-6:2 FTS		IS		75.6	25- 150		B0F0030	13-Jun-20	0.250 L	15-Jun-20 16:28	1
13C5-PFNA		IS		66.5	25- 150		B0F0030	13-Jun-20	0.250 L	15-Jun-20 16:28	1
13C8-PFOA		IS		50.8	10- 150		B0F0030	13-Jun-20	0.250 L	15-Jun-20 16:28	1
13C2-PFOA		IS		83.2	25- 150		B0F0030	13-Jun-20	0.250 L	15-Jun-20 16:28	1
13C8-PFOS		IS		76.9	25- 150		B0F0030	13-Jun-20	0.250 L	15-Jun-20 16:28	1
13C2-PFDA		IS		74.3	25- 150		B0F0030	13-Jun-20	0.250 L	15-Jun-20 16:28	1
13C2-8:2 FTS		IS		103	25- 150		B0F0030	13-Jun-20	0.250 L	15-Jun-20 16:28	1
d3-MeFOSAA		IS		66.6	25- 150		B0F0030	13-Jun-20	0.250 L	15-Jun-20 16:28	1
13C2-PFUnA		IS		74.7	25- 150		B0F0030	13-Jun-20	0.250 L	15-Jun-20 16:28	1
d5-EtFOSAA		IS		58.1	25- 150		B0F0030	13-Jun-20	0.250 L	15-Jun-20 16:28	1
13C2-10:2 FTS		IS		71.8	25- 150		B0F0030	13-Jun-20	0.250 L	15-Jun-20 16:28	1
13C2-PFDoA		IS		56.9	25- 150		B0F0030	13-Jun-20	0.250 L	15-Jun-20 16:28	1
d3-MeFOSA		IS		16.7	10- 150		B0F0030	13-Jun-20	0.250 L	15-Jun-20 16:28	1
13C2-PFTeDA		IS		57.0	25- 150		B0F0030	13-Jun-20	0.250 L	15-Jun-20 16:28	1
d5-EtFOSA		IS		14.7	10- 150		B0F0030	13-Jun-20	0.250 L	15-Jun-20 16:28	1
13C2-PFHxDA		IS		45.6	25- 150		B0F0030	13-Jun-20	0.250 L	15-Jun-20 16:28	1
d7-MeFOSE		IS		40.1	10- 150		B0F0030	13-Jun-20	0.250 L	15-Jun-20 16:28	1
d9-EtFOSE		IS		27.3	10- 150		B0F0030	13-Jun-20	0.250 L	15-Jun-20 16:28	1

**Sample ID: MW-2**
**PFAS Isotope Dilution Method**

Client Data				Laboratory Data			
Name:	AECOM	Matrix:	Aqueous	Lab Sample:	2001183-01	Column:	BEH C18
Project:	Waupaca Foundry Plant 4	Date Collected:	29-May-20 12:00	Date Received:	02-Jun-20 09:29		

Analyte	CAS Number	Conc. (ng/L)	MDL	RL	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBA	375-22-4	9.85	0.367	2.01		B0F0030	13-Jun-20	0.249 L	15-Jun-20 16:38	1
PFPeA	2706-90-3	21.5	0.644	2.01		B0F0030	13-Jun-20	0.249 L	15-Jun-20 16:38	1
PFBS	375-73-5	ND	0.900	2.01		B0F0030	13-Jun-20	0.249 L	15-Jun-20 16:38	1
4:2 FTS	757124-72-4	ND	0.699	2.01		B0F0030	13-Jun-20	0.249 L	15-Jun-20 16:38	1
PFHxA	307-24-4	24.9	1.10	2.01		B0F0030	13-Jun-20	0.249 L	15-Jun-20 16:38	1
PFPeS	2706-91-4	ND	1.22	2.01		B0F0030	13-Jun-20	0.249 L	15-Jun-20 16:38	1
HFPO-DA	13252-13-6	ND	2.42	2.51		B0F0030	13-Jun-20	0.249 L	15-Jun-20 16:38	1
PFHpA	375-85-9	13.7	0.297	2.01		B0F0030	13-Jun-20	0.249 L	15-Jun-20 16:38	1
ADONA	919005-14-4	ND	0.363	2.01		B0F0030	13-Jun-20	0.249 L	15-Jun-20 16:38	1
PFHxS	355-46-4	ND	0.476	2.01		B0F0030	13-Jun-20	0.249 L	15-Jun-20 16:38	1
6:2 FTS	27619-97-2	ND	1.01	2.01		B0F0030	13-Jun-20	0.249 L	15-Jun-20 16:38	1
PFOA	335-67-1	37.1	0.327	2.01		B0F0030	13-Jun-20	0.249 L	15-Jun-20 16:38	1
PFHpS	375-92-8	ND	0.471	2.01		B0F0030	13-Jun-20	0.249 L	15-Jun-20 16:38	1
PFNA	375-95-1	ND	0.407	2.01		B0F0030	13-Jun-20	0.249 L	15-Jun-20 16:38	1
PFOSA	754-91-6	19.7	0.890	2.01		B0F0030	13-Jun-20	0.249 L	15-Jun-20 16:38	1
PFOS	1763-23-1	4.82	0.406	2.01		B0F0030	13-Jun-20	0.249 L	15-Jun-20 16:38	1
9Cl-PF3ONS	756426-58-1	ND	0.729	2.01		B0F0030	13-Jun-20	0.249 L	15-Jun-20 16:38	1
PFDA	335-76-2	ND	0.749	2.01		B0F0030	13-Jun-20	0.249 L	15-Jun-20 16:38	1
8:2 FTS	39108-34-4	ND	1.04	2.01		B0F0030	13-Jun-20	0.249 L	15-Jun-20 16:38	1
PFNS	68259-12-1	ND	1.95	2.01		B0F0030	13-Jun-20	0.249 L	18-Jun-20 15:44	1
MeFOSAA	2355-31-9	ND	0.830	2.01		B0F0030	13-Jun-20	0.249 L	15-Jun-20 16:38	1
EtFOSAA	2991-50-6	ND	0.689	2.01		B0F0030	13-Jun-20	0.249 L	15-Jun-20 16:38	1
PFUnA	2058-94-8	ND	0.528	2.01		B0F0030	13-Jun-20	0.249 L	15-Jun-20 16:38	1
PFDS	335-77-3	ND	0.619	2.01		B0F0030	13-Jun-20	0.249 L	15-Jun-20 16:38	1
11Cl-PF3OUdS	763051-92-9	ND	1.21	2.01		B0F0030	13-Jun-20	0.249 L	15-Jun-20 16:38	1
10:2 FTS	120226-60-0	ND	1.57	2.01		B0F0030	13-Jun-20	0.249 L	15-Jun-20 16:38	1
PFDoA	307-55-1	ND	0.398	2.01		B0F0030	13-Jun-20	0.249 L	15-Jun-20 16:38	1
MeFOSA	31506-32-8	ND	1.93	10.1		B0F0030	13-Jun-20	0.249 L	15-Jun-20 16:38	1
PFTTrDA	72629-94-8	ND	0.248	2.01		B0F0030	13-Jun-20	0.249 L	15-Jun-20 16:38	1
PFDoS	79780-39-5	ND	2.10	2.51		B0F0030	13-Jun-20	0.249 L	15-Jun-20 16:38	1
PFTeDA	376-06-7	ND	0.380	2.01		B0F0030	13-Jun-20	0.249 L	15-Jun-20 16:38	1
EtFOSA	4151-50-2	ND	2.57	10.1		B0F0030	13-Jun-20	0.249 L	15-Jun-20 16:38	1
PFHxDA	67905-19-5	ND	0.148	2.01		B0F0030	13-Jun-20	0.249 L	15-Jun-20 16:38	1
PFODA	16517-11-6	ND	3.09	3.52		B0F0030	13-Jun-20	0.249 L	15-Jun-20 16:38	1
MeFOSE	24448-09-7	ND	3.05	10.1		B0F0030	13-Jun-20	0.249 L	15-Jun-20 16:38	1
EtFOSE	1691-99-2	ND	4.75	10.1		B0F0030	13-Jun-20	0.249 L	15-Jun-20 16:38	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	70.0	25 - 150		B0F0030	13-Jun-20	0.249 L	15-Jun-20 16:38	1

**Sample ID: MW-2** **PFAS Isotope Dilution Method**

Client Data				Laboratory Data			
Name:	AECOM	Matrix:	Aqueous	Lab Sample:	2001183-01	Column:	BEH C18
Project:	Waupaca Foundry Plant 4	Date Collected:	29-May-20 12:00	Date Received:	02-Jun-20 09:29		

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFPeA	IS	61.5	25 - 150		B0F0030	13-Jun-20	0.249 L	15-Jun-20 16:38	1
13C3-PFBS	IS	54.9	25 - 150		B0F0030	13-Jun-20	0.249 L	15-Jun-20 16:38	1
13C3-HFPO-DA	IS	60.7	25 - 150		B0F0030	13-Jun-20	0.249 L	15-Jun-20 16:38	1
13C2-4:2 FTS	IS	74.6	25 - 150		B0F0030	13-Jun-20	0.249 L	15-Jun-20 16:38	1
13C2-PFHxA	IS	56.6	25 - 150		B0F0030	13-Jun-20	0.249 L	15-Jun-20 16:38	1
13C4-PFHpA	IS	63.0	25 - 150		B0F0030	13-Jun-20	0.249 L	15-Jun-20 16:38	1
13C3-PFHxS	IS	56.0	25 - 150		B0F0030	13-Jun-20	0.249 L	15-Jun-20 16:38	1
13C2-6:2 FTS	IS	75.2	25 - 150		B0F0030	13-Jun-20	0.249 L	15-Jun-20 16:38	1
13C5-PFNA	IS	64.7	25 - 150		B0F0030	13-Jun-20	0.249 L	15-Jun-20 16:38	1
13C8-PFOA	IS	57.3	10 - 150		B0F0030	13-Jun-20	0.249 L	15-Jun-20 16:38	1
13C2-PFOA	IS	70.5	25 - 150		B0F0030	13-Jun-20	0.249 L	15-Jun-20 16:38	1
13C8-PFOS	IS	63.6	25 - 150		B0F0030	13-Jun-20	0.249 L	15-Jun-20 16:38	1
13C2-PFDA	IS	62.7	25 - 150		B0F0030	13-Jun-20	0.249 L	15-Jun-20 16:38	1
13C2-8:2 FTS	IS	65.9	25 - 150		B0F0030	13-Jun-20	0.249 L	15-Jun-20 16:38	1
d3-MeFOSAA	IS	62.7	25 - 150		B0F0030	13-Jun-20	0.249 L	15-Jun-20 16:38	1
13C2-PFUnA	IS	65.2	25 - 150		B0F0030	13-Jun-20	0.249 L	15-Jun-20 16:38	1
d5-EtFOSAA	IS	58.4	25 - 150		B0F0030	13-Jun-20	0.249 L	15-Jun-20 16:38	1
13C2-10:2 FTS	IS	48.0	25 - 150		B0F0030	13-Jun-20	0.249 L	15-Jun-20 16:38	1
13C2-PFDoA	IS	56.6	25 - 150		B0F0030	13-Jun-20	0.249 L	15-Jun-20 16:38	1
d3-MeFOSA	IS	27.9	10 - 150		B0F0030	13-Jun-20	0.249 L	15-Jun-20 16:38	1
13C2-PFTeDA	IS	43.5	25 - 150		B0F0030	13-Jun-20	0.249 L	15-Jun-20 16:38	1
d5-EtFOSA	IS	24.4	10 - 150		B0F0030	13-Jun-20	0.249 L	15-Jun-20 16:38	1
13C2-PFHxDA	IS	15.9	25 - 150	H	B0F0030	13-Jun-20	0.249 L	15-Jun-20 16:38	1
d7-MeFOSE	IS	52.9	10 - 150		B0F0030	13-Jun-20	0.249 L	15-Jun-20 16:38	1
d9-EtFOSE	IS	37.6	10 - 150		B0F0030	13-Jun-20	0.249 L	15-Jun-20 16:38	1

MDL - Method Detection Limit

RL - Reporting limit

Results reported to MDL.

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: MW-1**
**PFAS Isotope Dilution Method**

Client Data				Laboratory Data			
Name:	AECOM	Matrix:	Aqueous	Lab Sample:	2001183-02	Column:	BEH C18
Project:	Waupaca Foundry Plant 4	Date Collected:	29-May-20 12:40	Date Received:	02-Jun-20 09:29		

Analyte	CAS Number	Conc. (ng/L)	MDL	RL	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBA	375-22-4	21.5	0.379	2.08		B0F0030	13-Jun-20	0.240 L	15-Jun-20 16:48	1
PFPeA	2706-90-3	74.2	0.666	2.08		B0F0030	13-Jun-20	0.240 L	15-Jun-20 16:48	1
PFBS	375-73-5	6.27	0.932	2.08		B0F0030	13-Jun-20	0.240 L	15-Jun-20 16:48	1
4:2 FTS	757124-72-4	ND	0.723	2.08		B0F0030	13-Jun-20	0.240 L	15-Jun-20 16:48	1
PFHxA	307-24-4	65.4	1.13	2.08		B0F0030	13-Jun-20	0.240 L	15-Jun-20 16:48	1
PFPeS	2706-91-4	ND	1.26	2.08		B0F0030	13-Jun-20	0.240 L	15-Jun-20 16:48	1
HFPO-DA	13252-13-6	ND	2.51	2.60		B0F0030	13-Jun-20	0.240 L	15-Jun-20 16:48	1
PFHpA	375-85-9	24.0	0.308	2.08		B0F0030	13-Jun-20	0.240 L	15-Jun-20 16:48	1
ADONA	919005-14-4	ND	0.376	2.08		B0F0030	13-Jun-20	0.240 L	15-Jun-20 16:48	1
PFHxS	355-46-4	20.9	0.493	2.08		B0F0030	13-Jun-20	0.240 L	15-Jun-20 16:48	1
6:2 FTS	27619-97-2	5.55	1.04	2.08		B0F0030	13-Jun-20	0.240 L	15-Jun-20 16:48	1
PFOA	335-67-1	88.2	0.339	2.08		B0F0030	13-Jun-20	0.240 L	15-Jun-20 16:48	1
PFHpS	375-92-8	ND	0.488	2.08		B0F0030	13-Jun-20	0.240 L	15-Jun-20 16:48	1
PFNA	375-95-1	ND	0.422	2.08		B0F0030	13-Jun-20	0.240 L	15-Jun-20 16:48	1
PFOSA	754-91-6	11.2	0.921	2.08		B0F0030	13-Jun-20	0.240 L	15-Jun-20 16:48	1
PFOS	1763-23-1	17.6	0.420	2.08		B0F0030	13-Jun-20	0.240 L	15-Jun-20 16:48	1
9Cl-PF3ONS	756426-58-1	ND	0.755	2.08		B0F0030	13-Jun-20	0.240 L	15-Jun-20 16:48	1
PFDA	335-76-2	ND	0.775	2.08		B0F0030	13-Jun-20	0.240 L	15-Jun-20 16:48	1
8:2 FTS	39108-34-4	ND	1.07	2.08		B0F0030	13-Jun-20	0.240 L	15-Jun-20 16:48	1
PFNS	68259-12-1	ND	2.01	2.08		B0F0030	13-Jun-20	0.240 L	18-Jun-20 15:54	1
MeFOSAA	2355-31-9	ND	0.859	2.08		B0F0030	13-Jun-20	0.240 L	15-Jun-20 16:48	1
EtFOSAA	2991-50-6	0.986	0.713	2.08	J, Q	B0F0030	13-Jun-20	0.240 L	15-Jun-20 16:48	1
PFUnA	2058-94-8	ND	0.546	2.08		B0F0030	13-Jun-20	0.240 L	15-Jun-20 16:48	1
PFDS	335-77-3	ND	0.640	2.08		B0F0030	13-Jun-20	0.240 L	15-Jun-20 16:48	1
11Cl-PF3OUdS	763051-92-9	ND	1.25	2.08		B0F0030	13-Jun-20	0.240 L	15-Jun-20 16:48	1
10:2 FTS	120226-60-0	ND	1.63	2.08		B0F0030	13-Jun-20	0.240 L	15-Jun-20 16:48	1
PFDoA	307-55-1	ND	0.412	2.08		B0F0030	13-Jun-20	0.240 L	15-Jun-20 16:48	1
MeFOSA	31506-32-8	ND	1.99	10.4		B0F0030	13-Jun-20	0.240 L	15-Jun-20 16:48	1
PFTrDA	72629-94-8	ND	0.257	2.08		B0F0030	13-Jun-20	0.240 L	15-Jun-20 16:48	1
PFDoS	79780-39-5	ND	2.17	2.60		B0F0030	13-Jun-20	0.240 L	15-Jun-20 16:48	1
PFTeDA	376-06-7	ND	0.393	2.08		B0F0030	13-Jun-20	0.240 L	15-Jun-20 16:48	1
EtFOSA	4151-50-2	ND	2.66	10.4		B0F0030	13-Jun-20	0.240 L	15-Jun-20 16:48	1
PFHxDA	67905-19-5	ND	0.153	2.08		B0F0030	13-Jun-20	0.240 L	15-Jun-20 16:48	1
PFODA	16517-11-6	ND	3.20	3.64		B0F0030	13-Jun-20	0.240 L	15-Jun-20 16:48	1
MeFOSE	24448-09-7	ND	3.16	10.4		B0F0030	13-Jun-20	0.240 L	15-Jun-20 16:48	1
EtFOSE	1691-99-2	ND	4.91	10.4		B0F0030	13-Jun-20	0.240 L	15-Jun-20 16:48	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	37.1	25 - 150			B0F0030	13-Jun-20	0.240 L	15-Jun-20 16:48	1

**Sample ID: MW-1** **PFAS Isotope Dilution Method**

Client Data				Laboratory Data			
Name:	AECOM	Matrix:	Aqueous	Lab Sample:	2001183-02	Column:	BEH C18
Project:	Waupaca Foundry Plant 4	Date Collected:	29-May-20 12:40	Date Received:	02-Jun-20 09:29		

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFPeA	IS	61.7	25 - 150		B0F0030	13-Jun-20	0.240 L	15-Jun-20 16:48	1
13C3-PFBS	IS	53.6	25 - 150		B0F0030	13-Jun-20	0.240 L	15-Jun-20 16:48	1
13C3-HFPO-DA	IS	62.2	25 - 150		B0F0030	13-Jun-20	0.240 L	15-Jun-20 16:48	1
13C2-4:2 FTS	IS	87.3	25 - 150		B0F0030	13-Jun-20	0.240 L	15-Jun-20 16:48	1
13C2-PFHxA	IS	70.7	25 - 150		B0F0030	13-Jun-20	0.240 L	15-Jun-20 16:48	1
13C4-PFHpA	IS	66.2	25 - 150		B0F0030	13-Jun-20	0.240 L	15-Jun-20 16:48	1
13C3-PFHxS	IS	61.7	25 - 150		B0F0030	13-Jun-20	0.240 L	15-Jun-20 16:48	1
13C2-6:2 FTS	IS	69.5	25 - 150		B0F0030	13-Jun-20	0.240 L	15-Jun-20 16:48	1
13C5-PFNA	IS	66.0	25 - 150		B0F0030	13-Jun-20	0.240 L	15-Jun-20 16:48	1
13C8-PFOA	IS	70.2	10 - 150		B0F0030	13-Jun-20	0.240 L	15-Jun-20 16:48	1
13C2-PFOA	IS	78.3	25 - 150		B0F0030	13-Jun-20	0.240 L	15-Jun-20 16:48	1
13C8-PFOS	IS	74.7	25 - 150		B0F0030	13-Jun-20	0.240 L	15-Jun-20 16:48	1
13C2-PFDA	IS	64.6	25 - 150		B0F0030	13-Jun-20	0.240 L	15-Jun-20 16:48	1
13C2-8:2 FTS	IS	89.0	25 - 150		B0F0030	13-Jun-20	0.240 L	15-Jun-20 16:48	1
d3-MeFOSAA	IS	66.8	25 - 150		B0F0030	13-Jun-20	0.240 L	15-Jun-20 16:48	1
13C2-PFUnA	IS	77.9	25 - 150		B0F0030	13-Jun-20	0.240 L	15-Jun-20 16:48	1
d5-EtFOSAA	IS	52.9	25 - 150		B0F0030	13-Jun-20	0.240 L	15-Jun-20 16:48	1
13C2-10:2 FTS	IS	70.1	25 - 150		B0F0030	13-Jun-20	0.240 L	15-Jun-20 16:48	1
13C2-PFDoA	IS	47.7	25 - 150		B0F0030	13-Jun-20	0.240 L	15-Jun-20 16:48	1
d3-MeFOSA	IS	29.1	10 - 150		B0F0030	13-Jun-20	0.240 L	15-Jun-20 16:48	1
13C2-PFTeDA	IS	44.2	25 - 150		B0F0030	13-Jun-20	0.240 L	15-Jun-20 16:48	1
d5-EtFOSA	IS	26.7	10 - 150		B0F0030	13-Jun-20	0.240 L	15-Jun-20 16:48	1
13C2-PFHxDA	IS	24.5	25 - 150	H	B0F0030	13-Jun-20	0.240 L	15-Jun-20 16:48	1
d7-MeFOSE	IS	53.1	10 - 150		B0F0030	13-Jun-20	0.240 L	15-Jun-20 16:48	1
d9-EtFOSE	IS	42.5	10 - 150		B0F0030	13-Jun-20	0.240 L	15-Jun-20 16:48	1

MDL - Method Detection Limit

RL - Reporting limit

Results reported to MDL.

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: MW-4**
**PFAS Isotope Dilution Method**

Client Data				Laboratory Data			
Name:	AECOM	Matrix:	Aqueous	Lab Sample:	2001183-03	Column:	BEH C18
Project:	Waupaca Foundry Plant 4	Date Collected:	29-May-20 13:20	Date Received:	02-Jun-20 09:29		

Analyte	CAS Number	Conc. (ng/L)	MDL	RL	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBA	375-22-4	35.1	0.372	2.04		B0F0030	13-Jun-20	0.245 L	15-Jun-20 16:59	1
PFPeA	2706-90-3	84.2	0.652	2.04		B0F0030	13-Jun-20	0.245 L	15-Jun-20 16:59	1
PFBS	375-73-5	12.1	0.912	2.04		B0F0030	13-Jun-20	0.245 L	15-Jun-20 16:59	1
4:2 FTS	757124-72-4	ND	0.708	2.04		B0F0030	13-Jun-20	0.245 L	15-Jun-20 16:59	1
PFHxA	307-24-4	143	1.11	2.04		B0F0030	13-Jun-20	0.245 L	15-Jun-20 16:59	1
PFPeS	2706-91-4	11.7	1.23	2.04		B0F0030	13-Jun-20	0.245 L	15-Jun-20 16:59	1
HFPO-DA	13252-13-6	ND	2.46	2.55		B0F0030	13-Jun-20	0.245 L	15-Jun-20 16:59	1
PFHpA	375-85-9	101	0.301	2.04		B0F0030	13-Jun-20	0.245 L	15-Jun-20 16:59	1
ADONA	919005-14-4	ND	0.368	2.04		B0F0030	13-Jun-20	0.245 L	15-Jun-20 16:59	1
PFHxS	355-46-4	78.8	0.483	2.04		B0F0030	13-Jun-20	0.245 L	15-Jun-20 16:59	1
6:2 FTS	27619-97-2	34.4	1.02	2.04		B0F0030	13-Jun-20	0.245 L	15-Jun-20 16:59	1
PFOA	335-67-1	13300	3.32	20.4	D	B0F0030	13-Jun-20	0.245 L	20-Jun-20 14:27	10
PFHpS	375-92-8	3.95	0.478	2.04	Q	B0F0030	13-Jun-20	0.245 L	15-Jun-20 16:59	1
PFNA	375-95-1	15.2	0.413	2.04		B0F0030	13-Jun-20	0.245 L	15-Jun-20 16:59	1
PFOSA	754-91-6	3.42	0.902	2.04	Q	B0F0030	13-Jun-20	0.245 L	15-Jun-20 16:59	1
PFOS	1763-23-1	155	0.411	2.04		B0F0030	13-Jun-20	0.245 L	15-Jun-20 16:59	1
9Cl-PF3ONS	756426-58-1	ND	0.739	2.04		B0F0030	13-Jun-20	0.245 L	15-Jun-20 16:59	1
PFDA	335-76-2	8.20	0.759	2.04		B0F0030	13-Jun-20	0.245 L	15-Jun-20 16:59	1
8:2 FTS	39108-34-4	ND	1.05	2.04		B0F0030	13-Jun-20	0.245 L	15-Jun-20 16:59	1
PFNS	68259-12-1	ND	1.97	2.04		B0F0030	13-Jun-20	0.245 L	18-Jun-20 16:05	1
MeFOSAA	2355-31-9	1.99	0.841	2.04	J	B0F0030	13-Jun-20	0.245 L	15-Jun-20 16:59	1
EtFOSAA	2991-50-6	28.4	0.698	2.04		B0F0030	13-Jun-20	0.245 L	15-Jun-20 16:59	1
PFUnA	2058-94-8	ND	0.535	2.04		B0F0030	13-Jun-20	0.245 L	15-Jun-20 16:59	1
PFDS	335-77-3	ND	0.627	2.04		B0F0030	13-Jun-20	0.245 L	15-Jun-20 16:59	1
11Cl-PF3OUdS	763051-92-9	ND	1.23	2.04		B0F0030	13-Jun-20	0.245 L	15-Jun-20 16:59	1
10:2 FTS	120226-60-0	ND	1.60	2.04		B0F0030	13-Jun-20	0.245 L	15-Jun-20 16:59	1
PFDoA	307-55-1	ND	0.404	2.04		B0F0030	13-Jun-20	0.245 L	15-Jun-20 16:59	1
MeFOSA	31506-32-8	ND	1.95	10.2		B0F0030	13-Jun-20	0.245 L	15-Jun-20 16:59	1
PFTTrDA	72629-94-8	ND	0.252	2.04		B0F0030	13-Jun-20	0.245 L	15-Jun-20 16:59	1
PFDoS	79780-39-5	ND	2.13	2.55		B0F0030	13-Jun-20	0.245 L	15-Jun-20 16:59	1
PFTeDA	376-06-7	ND	0.385	2.04		B0F0030	13-Jun-20	0.245 L	15-Jun-20 16:59	1
EtFOSA	4151-50-2	ND	2.60	10.2		B0F0030	13-Jun-20	0.245 L	15-Jun-20 16:59	1
PFHxDA	67905-19-5	ND	0.150	2.04		B0F0030	13-Jun-20	0.245 L	15-Jun-20 16:59	1
PFODA	16517-11-6	ND	3.13	3.57		B0F0030	13-Jun-20	0.245 L	15-Jun-20 16:59	1
MeFOSE	24448-09-7	ND	3.09	10.2		B0F0030	13-Jun-20	0.245 L	15-Jun-20 16:59	1
EtFOSE	1691-99-2	ND	4.81	10.2		B0F0030	13-Jun-20	0.245 L	15-Jun-20 16:59	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	19.3	25 - 150	H	B0F0030	13-Jun-20	0.245 L	15-Jun-20 16:59	1

**Sample ID: MW-4** **PFAS Isotope Dilution Method**

Client Data				Laboratory Data			
Name:	AECOM	Matrix:	Aqueous	Lab Sample:	2001183-03	Column:	BEH C18
Project:	Waupaca Foundry Plant 4	Date Collected:	29-May-20 13:20	Date Received:	02-Jun-20 09:29		

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFPeA	IS	45.1	25 - 150		B0F0030	13-Jun-20	0.245 L	15-Jun-20 16:59	1
13C3-PFBS	IS	53.5	25 - 150		B0F0030	13-Jun-20	0.245 L	15-Jun-20 16:59	1
13C3-HFPO-DA	IS	41.1	25 - 150		B0F0030	13-Jun-20	0.245 L	15-Jun-20 16:59	1
13C2-4:2 FTS	IS	65.3	25 - 150		B0F0030	13-Jun-20	0.245 L	15-Jun-20 16:59	1
13C2-PFHxA	IS	54.4	25 - 150		B0F0030	13-Jun-20	0.245 L	15-Jun-20 16:59	1
13C4-PFHpA	IS	55.7	25 - 150		B0F0030	13-Jun-20	0.245 L	15-Jun-20 16:59	1
13C3-PFHxS	IS	66.5	25 - 150		B0F0030	13-Jun-20	0.245 L	15-Jun-20 16:59	1
13C2-6:2 FTS	IS	80.4	25 - 150		B0F0030	13-Jun-20	0.245 L	15-Jun-20 16:59	1
13C5-PFNA	IS	69.9	25 - 150		B0F0030	13-Jun-20	0.245 L	15-Jun-20 16:59	1
13C8-PFOA	IS	54.3	10 - 150		B0F0030	13-Jun-20	0.245 L	15-Jun-20 16:59	1
13C2-PFOA	IS	145	25 - 150	D	B0F0030	13-Jun-20	0.245 L	20-Jun-20 14:27	10
13C8-PFOS	IS	79.4	25 - 150		B0F0030	13-Jun-20	0.245 L	15-Jun-20 16:59	1
13C2-PFDA	IS	67.0	25 - 150		B0F0030	13-Jun-20	0.245 L	15-Jun-20 16:59	1
13C2-8:2 FTS	IS	99.3	25 - 150		B0F0030	13-Jun-20	0.245 L	15-Jun-20 16:59	1
d3-MeFOSAA	IS	71.4	25 - 150		B0F0030	13-Jun-20	0.245 L	15-Jun-20 16:59	1
13C2-PFUnA	IS	73.0	25 - 150		B0F0030	13-Jun-20	0.245 L	15-Jun-20 16:59	1
d5-EtFOSAA	IS	64.6	25 - 150		B0F0030	13-Jun-20	0.245 L	15-Jun-20 16:59	1
13C2-10:2 FTS	IS	55.5	25 - 150		B0F0030	13-Jun-20	0.245 L	15-Jun-20 16:59	1
13C2-PFDoA	IS	53.0	25 - 150		B0F0030	13-Jun-20	0.245 L	15-Jun-20 16:59	1
d3-MeFOSA	IS	27.6	10 - 150		B0F0030	13-Jun-20	0.245 L	15-Jun-20 16:59	1
13C2-PFTeDA	IS	44.2	25 - 150		B0F0030	13-Jun-20	0.245 L	15-Jun-20 16:59	1
d5-EtFOSA	IS	23.5	10 - 150		B0F0030	13-Jun-20	0.245 L	15-Jun-20 16:59	1
13C2-PFHxDA	IS	33.9	25 - 150		B0F0030	13-Jun-20	0.245 L	15-Jun-20 16:59	1
d7-MeFOSE	IS	47.8	10 - 150		B0F0030	13-Jun-20	0.245 L	15-Jun-20 16:59	1
d9-EtFOSE	IS	44.4	10 - 150		B0F0030	13-Jun-20	0.245 L	15-Jun-20 16:59	1

MDL - Method Detection Limit

RL - Reporting limit

Results reported to MDL.

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: MW-3**
**PFAS Isotope Dilution Method**

Client Data				Laboratory Data			
Name:	AECOM	Matrix:	Aqueous	Lab Sample:	2001183-04	Column:	BEH C18
Project:	Waupaca Foundry Plant 4	Date Collected:	29-May-20 14:10	Date Received:	02-Jun-20 09:29		

Analyte	CAS Number	Conc. (ng/L)	MDL	RL	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBA	375-22-4	186	0.379	2.08		B0F0030	13-Jun-20	0.241 L	15-Jun-20 17:09	1
PFPeA	2706-90-3	749	0.665	2.08		B0F0030	13-Jun-20	0.241 L	15-Jun-20 17:09	1
PFBS	375-73-5	17.0	0.930	2.08		B0F0030	13-Jun-20	0.241 L	15-Jun-20 17:09	1
4:2 FTS	757124-72-4	ND	0.722	2.08		B0F0030	13-Jun-20	0.241 L	15-Jun-20 17:09	1
PFHxA	307-24-4	2400	5.66	10.4	D	B0F0030	13-Jun-20	0.241 L	16-Jun-20 15:48	5
PFPeS	2706-91-4	33.9	1.26	2.08		B0F0030	13-Jun-20	0.241 L	15-Jun-20 17:09	1
HFPO-DA	13252-13-6	ND	2.50	2.60		B0F0030	13-Jun-20	0.241 L	15-Jun-20 17:09	1
PFHpA	375-85-9	1320	0.307	2.08		B0F0030	13-Jun-20	0.241 L	15-Jun-20 17:09	1
ADONA	919005-14-4	ND	0.375	2.08		B0F0030	13-Jun-20	0.241 L	15-Jun-20 17:09	1
PFHxS	355-46-4	136	0.492	2.08		B0F0030	13-Jun-20	0.241 L	15-Jun-20 17:09	1
6:2 FTS	27619-97-2	6.87	1.04	2.08		B0F0030	13-Jun-20	0.241 L	15-Jun-20 17:09	1
PFOA	335-67-1	20300	6.77	41.6	D	B0F0030	13-Jun-20	0.241 L	23-Jun-20 16:26	20
PFHpS	375-92-8	14.7	0.487	2.08		B0F0030	13-Jun-20	0.241 L	15-Jun-20 17:09	1
PFNA	375-95-1	3.15	0.421	2.08	Q	B0F0030	13-Jun-20	0.241 L	15-Jun-20 17:09	1
PFOSA	754-91-6	4.72	0.920	2.08		B0F0030	13-Jun-20	0.241 L	15-Jun-20 17:09	1
PFOS	1763-23-1	484	0.419	2.08		B0F0030	13-Jun-20	0.241 L	15-Jun-20 17:09	1
9Cl-PF3ONS	756426-58-1	ND	0.754	2.08		B0F0030	13-Jun-20	0.241 L	15-Jun-20 17:09	1
PFDA	335-76-2	0.950	0.774	2.08	J, Q	B0F0030	13-Jun-20	0.241 L	15-Jun-20 17:09	1
8:2 FTS	39108-34-4	ND	1.07	2.08		B0F0030	13-Jun-20	0.241 L	15-Jun-20 17:09	1
PFNS	68259-12-1	ND	2.01	2.08		B0F0030	13-Jun-20	0.241 L	18-Jun-20 16:15	1
MeFOSAA	2355-31-9	ND	0.857	2.08		B0F0030	13-Jun-20	0.241 L	15-Jun-20 17:09	1
EtFOSAA	2991-50-6	130	0.712	2.08		B0F0030	13-Jun-20	0.241 L	15-Jun-20 17:09	1
PFUnA	2058-94-8	ND	0.546	2.08		B0F0030	13-Jun-20	0.241 L	15-Jun-20 17:09	1
PFDS	335-77-3	ND	0.639	2.08		B0F0030	13-Jun-20	0.241 L	15-Jun-20 17:09	1
11Cl-PF3OUdS	763051-92-9	ND	1.25	2.08		B0F0030	13-Jun-20	0.241 L	15-Jun-20 17:09	1
10:2 FTS	120226-60-0	ND	1.63	2.08		B0F0030	13-Jun-20	0.241 L	15-Jun-20 17:09	1
PFDoA	307-55-1	ND	0.412	2.08		B0F0030	13-Jun-20	0.241 L	15-Jun-20 17:09	1
MeFOSA	31506-32-8	ND	1.99	10.4		B0F0030	13-Jun-20	0.241 L	15-Jun-20 17:09	1
PFTrDA	72629-94-8	ND	0.257	2.08		B0F0030	13-Jun-20	0.241 L	15-Jun-20 17:09	1
PFDoS	79780-39-5	ND	2.17	2.60		B0F0030	13-Jun-20	0.241 L	15-Jun-20 17:09	1
PFTeDA	376-06-7	ND	0.392	2.08		B0F0030	13-Jun-20	0.241 L	15-Jun-20 17:09	1
EtFOSA	4151-50-2	ND	2.66	10.4		B0F0030	13-Jun-20	0.241 L	15-Jun-20 17:09	1
PFHxDA	67905-19-5	ND	0.153	2.08		B0F0030	13-Jun-20	0.241 L	15-Jun-20 17:09	1
PFODA	16517-11-6	ND	3.19	3.64		B0F0030	13-Jun-20	0.241 L	15-Jun-20 17:09	1
MeFOSE	24448-09-7	ND	3.15	10.4		B0F0030	13-Jun-20	0.241 L	15-Jun-20 17:09	1
EtFOSE	1691-99-2	ND	4.91	10.4		B0F0030	13-Jun-20	0.241 L	15-Jun-20 17:09	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	14.6	25 - 150	H	B0F0030	13-Jun-20	0.241 L	15-Jun-20 17:09	1

**Sample ID: MW-3** **PFAS Isotope Dilution Method**

Client Data				Laboratory Data			
Name:	AECOM	Matrix:	Aqueous	Lab Sample:	2001183-04	Column:	BEH C18
Project:	Waupaca Foundry Plant 4	Date Collected:	29-May-20 14:10	Date Received:	02-Jun-20 09:29		

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFPeA	IS	39.3	25 - 150		B0F0030	13-Jun-20	0.241 L	15-Jun-20 17:09	1
13C3-PFBS	IS	62.3	25 - 150		B0F0030	13-Jun-20	0.241 L	15-Jun-20 17:09	1
13C3-HFPO-DA	IS	49.3	25 - 150		B0F0030	13-Jun-20	0.241 L	15-Jun-20 17:09	1
13C2-4:2 FTS	IS	79.3	25 - 150		B0F0030	13-Jun-20	0.241 L	15-Jun-20 17:09	1
13C2-PFHxA	IS	88.2	25 - 150	D	B0F0030	13-Jun-20	0.241 L	16-Jun-20 15:48	5
13C4-PFHpA	IS	55.1	25 - 150		B0F0030	13-Jun-20	0.241 L	15-Jun-20 17:09	1
13C3-PFHxS	IS	71.9	25 - 150		B0F0030	13-Jun-20	0.241 L	15-Jun-20 17:09	1
13C2-6:2 FTS	IS	84.4	25 - 150		B0F0030	13-Jun-20	0.241 L	15-Jun-20 17:09	1
13C5-PFNA	IS	75.7	25 - 150		B0F0030	13-Jun-20	0.241 L	15-Jun-20 17:09	1
13C8-PFOA	IS	64.6	10 - 150		B0F0030	13-Jun-20	0.241 L	15-Jun-20 17:09	1
13C2-PFOA	IS	102	25 - 150	D	B0F0030	13-Jun-20	0.241 L	23-Jun-20 16:26	20
13C8-PFOS	IS	83.9	25 - 150		B0F0030	13-Jun-20	0.241 L	15-Jun-20 17:09	1
13C2-PFDA	IS	65.6	25 - 150		B0F0030	13-Jun-20	0.241 L	15-Jun-20 17:09	1
13C2-8:2 FTS	IS	147	25 - 150		B0F0030	13-Jun-20	0.241 L	15-Jun-20 17:09	1
d3-MeFOSAA	IS	79.8	25 - 150		B0F0030	13-Jun-20	0.241 L	15-Jun-20 17:09	1
13C2-PFUnA	IS	62.9	25 - 150		B0F0030	13-Jun-20	0.241 L	15-Jun-20 17:09	1
d5-EtFOSAA	IS	69.5	25 - 150		B0F0030	13-Jun-20	0.241 L	15-Jun-20 17:09	1
13C2-10:2 FTS	IS	84.3	25 - 150		B0F0030	13-Jun-20	0.241 L	15-Jun-20 17:09	1
13C2-PFDoA	IS	62.3	25 - 150		B0F0030	13-Jun-20	0.241 L	15-Jun-20 17:09	1
d3-MeFOSA	IS	31.3	10 - 150		B0F0030	13-Jun-20	0.241 L	15-Jun-20 17:09	1
13C2-PFTeDA	IS	44.6	25 - 150		B0F0030	13-Jun-20	0.241 L	15-Jun-20 17:09	1
d5-EtFOSA	IS	26.0	10 - 150		B0F0030	13-Jun-20	0.241 L	15-Jun-20 17:09	1
13C2-PFHxDA	IS	37.5	25 - 150		B0F0030	13-Jun-20	0.241 L	15-Jun-20 17:09	1
d7-MeFOSE	IS	54.1	10 - 150		B0F0030	13-Jun-20	0.241 L	15-Jun-20 17:09	1
d9-EtFOSE	IS	40.8	10 - 150		B0F0030	13-Jun-20	0.241 L	15-Jun-20 17:09	1

MDL - Method Detection Limit

RL - Reporting limit

Results reported to MDL.

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: MW-7**
**PFAS Isotope Dilution Method**

Client Data				Laboratory Data			
Name:	AECOM	Matrix:	Aqueous	Lab Sample:	2001183-05	Column:	BEH C18
Project:	Waupaca Foundry Plant 4	Date Collected:	29-May-20 15:05	Date Received:	02-Jun-20 09:29		

Analyte	CAS Number	Conc. (ng/L)	MDL	RL	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBA	375-22-4	52.4	0.368	2.02		B0F0030	13-Jun-20	0.248 L	16-Jun-20 16:20	1
PFPeA	2706-90-3	180	0.645	2.02		B0F0030	13-Jun-20	0.248 L	16-Jun-20 16:20	1
PFBS	375-73-5	5.07	0.903	2.02		B0F0030	13-Jun-20	0.248 L	16-Jun-20 16:20	1
4:2 FTS	757124-72-4	ND	0.701	2.02		B0F0030	13-Jun-20	0.248 L	16-Jun-20 16:20	1
PFHxA	307-24-4	349	1.10	2.02		B0F0030	13-Jun-20	0.248 L	16-Jun-20 16:20	1
PFPeS	2706-91-4	7.55	1.22	2.02		B0F0030	13-Jun-20	0.248 L	16-Jun-20 16:20	1
HFPO-DA	13252-13-6	ND	2.43	2.52		B0F0030	13-Jun-20	0.248 L	16-Jun-20 16:20	1
PFHpA	375-85-9	207	0.298	2.02		B0F0030	13-Jun-20	0.248 L	16-Jun-20 16:20	1
ADONA	919005-14-4	ND	0.364	2.02		B0F0030	13-Jun-20	0.248 L	16-Jun-20 16:20	1
PFHxS	355-46-4	33.5	0.477	2.02		B0F0030	13-Jun-20	0.248 L	16-Jun-20 16:20	1
6:2 FTS	27619-97-2	21.1	1.01	2.02		B0F0030	13-Jun-20	0.248 L	16-Jun-20 16:20	1
PFOA	335-67-1	9410	3.28	20.2	D	B0F0030	13-Jun-20	0.248 L	24-Jun-20 17:49	10
PFHpS	375-92-8	5.40	0.472	2.02		B0F0030	13-Jun-20	0.248 L	16-Jun-20 16:20	1
PFNA	375-95-1	5.29	0.408	2.02		B0F0030	13-Jun-20	0.248 L	16-Jun-20 16:20	1
PFOSA	754-91-6	25.4	0.892	2.02		B0F0030	13-Jun-20	0.248 L	16-Jun-20 16:20	1
PFOS	1763-23-1	196	0.407	2.02		B0F0030	13-Jun-20	0.248 L	16-Jun-20 16:20	1
9Cl-PF3ONS	756426-58-1	ND	0.731	2.02		B0F0030	13-Jun-20	0.248 L	16-Jun-20 16:20	1
PFDA	335-76-2	ND	0.751	2.02		B0F0030	13-Jun-20	0.248 L	16-Jun-20 16:20	1
8:2 FTS	39108-34-4	ND	1.04	2.02		B0F0030	13-Jun-20	0.248 L	16-Jun-20 16:20	1
PFNS	68259-12-1	ND	1.95	2.02		B0F0030	13-Jun-20	0.248 L	18-Jun-20 16:36	1
MeFOSAA	2355-31-9	ND	0.832	2.02		B0F0030	13-Jun-20	0.248 L	16-Jun-20 16:20	1
EtFOSAA	2991-50-6	2.22	0.691	2.02		B0F0030	13-Jun-20	0.248 L	16-Jun-20 16:20	1
PFUnA	2058-94-8	ND	0.529	2.02		B0F0030	13-Jun-20	0.248 L	16-Jun-20 16:20	1
PFDS	335-77-3	ND	0.620	2.02		B0F0030	13-Jun-20	0.248 L	16-Jun-20 16:20	1
11Cl-PF3OUdS	763051-92-9	ND	1.22	2.02		B0F0030	13-Jun-20	0.248 L	16-Jun-20 16:20	1
10:2 FTS	120226-60-0	ND	1.58	2.02		B0F0030	13-Jun-20	0.248 L	16-Jun-20 16:20	1
PFDoA	307-55-1	ND	0.399	2.02		B0F0030	13-Jun-20	0.248 L	16-Jun-20 16:20	1
MeFOSA	31506-32-8	ND	1.93	10.1		B0F0030	13-Jun-20	0.248 L	16-Jun-20 16:20	1
PFTTrDA	72629-94-8	ND	0.249	2.02		B0F0030	13-Jun-20	0.248 L	16-Jun-20 16:20	1
PFDoS	79780-39-5	ND	2.10	2.52		B0F0030	13-Jun-20	0.248 L	16-Jun-20 16:20	1
PFTeDA	376-06-7	ND	0.381	2.02		B0F0030	13-Jun-20	0.248 L	16-Jun-20 16:20	1
EtFOSA	4151-50-2	ND	2.58	10.1		B0F0030	13-Jun-20	0.248 L	16-Jun-20 16:20	1
PFHxDA	67905-19-5	ND	0.148	2.02		B0F0030	13-Jun-20	0.248 L	16-Jun-20 16:20	1
PFODA	16517-11-6	ND	3.10	3.53		B0F0030	13-Jun-20	0.248 L	16-Jun-20 16:20	1
MeFOSE	24448-09-7	ND	3.06	10.1		B0F0030	13-Jun-20	0.248 L	16-Jun-20 16:20	1
EtFOSE	1691-99-2	ND	4.76	10.1		B0F0030	13-Jun-20	0.248 L	16-Jun-20 16:20	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	64.4	25 - 150		B0F0030	13-Jun-20	0.248 L	16-Jun-20 16:20	1



**Sample ID: MW-7** **PFAS Isotope Dilution Method**

Client Data				Laboratory Data			
Name:	AECOM	Matrix:	Aqueous	Lab Sample:	2001183-05	Column:	BEH C18
Project:	Waupaca Foundry Plant 4	Date Collected:	29-May-20 15:05	Date Received:	02-Jun-20 09:29		

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFPeA	IS	68.3	25 - 150		B0F0030	13-Jun-20	0.248 L	16-Jun-20 16:20	1
13C3-PFBS	IS	74.8	25 - 150		B0F0030	13-Jun-20	0.248 L	16-Jun-20 16:20	1
13C3-HFPO-DA	IS	65.7	25 - 150		B0F0030	13-Jun-20	0.248 L	16-Jun-20 16:20	1
13C2-4:2 FTS	IS	96.2	25 - 150		B0F0030	13-Jun-20	0.248 L	16-Jun-20 16:20	1
13C2-PFHxA	IS	67.4	25 - 150		B0F0030	13-Jun-20	0.248 L	16-Jun-20 16:20	1
13C4-PFHpA	IS	71.5	25 - 150		B0F0030	13-Jun-20	0.248 L	16-Jun-20 16:20	1
13C3-PFHxS	IS	77.0	25 - 150		B0F0030	13-Jun-20	0.248 L	16-Jun-20 16:20	1
13C2-6:2 FTS	IS	88.8	25 - 150		B0F0030	13-Jun-20	0.248 L	16-Jun-20 16:20	1
13C5-PFNA	IS	72.8	25 - 150		B0F0030	13-Jun-20	0.248 L	16-Jun-20 16:20	1
13C8-PFOA	IS	49.8	10 - 150		B0F0030	13-Jun-20	0.248 L	16-Jun-20 16:20	1
13C2-PFOA	IS	67.0	25 - 150	D	B0F0030	13-Jun-20	0.248 L	24-Jun-20 17:49	10
13C8-PFOS	IS	70.8	25 - 150		B0F0030	13-Jun-20	0.248 L	16-Jun-20 16:20	1
13C2-PFDA	IS	59.4	25 - 150		B0F0030	13-Jun-20	0.248 L	16-Jun-20 16:20	1
13C2-8:2 FTS	IS	71.6	25 - 150		B0F0030	13-Jun-20	0.248 L	16-Jun-20 16:20	1
d3-MeFOSAA	IS	66.2	25 - 150		B0F0030	13-Jun-20	0.248 L	16-Jun-20 16:20	1
13C2-PFUnA	IS	78.8	25 - 150		B0F0030	13-Jun-20	0.248 L	16-Jun-20 16:20	1
d5-EtFOSAA	IS	79.8	25 - 150		B0F0030	13-Jun-20	0.248 L	16-Jun-20 16:20	1
13C2-10:2 FTS	IS	83.6	25 - 150		B0F0030	13-Jun-20	0.248 L	16-Jun-20 16:20	1
13C2-PFDoA	IS	58.4	25 - 150		B0F0030	13-Jun-20	0.248 L	16-Jun-20 16:20	1
d3-MeFOSA	IS	22.0	10 - 150		B0F0030	13-Jun-20	0.248 L	16-Jun-20 16:20	1
13C2-PFTeDA	IS	69.5	25 - 150		B0F0030	13-Jun-20	0.248 L	16-Jun-20 16:20	1
d5-EtFOSA	IS	22.1	10 - 150		B0F0030	13-Jun-20	0.248 L	16-Jun-20 16:20	1
13C2-PFHxDA	IS	54.3	25 - 150		B0F0030	13-Jun-20	0.248 L	16-Jun-20 16:20	1
d7-MeFOSE	IS	44.1	10 - 150		B0F0030	13-Jun-20	0.248 L	16-Jun-20 16:20	1
d9-EtFOSE	IS	45.0	10 - 150		B0F0030	13-Jun-20	0.248 L	16-Jun-20 16:20	1

MDL - Method Detection Limit

RL - Reporting limit

Results reported to MDL.

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: MW-6**
**PFAS Isotope Dilution Method**

Client Data				Laboratory Data			
Name:	AECOM	Matrix:	Aqueous	Lab Sample:	2001183-06	Column:	BEH C18
Project:	Waupaca Foundry Plant 4	Date Collected:	29-May-20 16:00	Date Received:	02-Jun-20 09:29		

Analyte	CAS Number	Conc. (ng/L)	MDL	RL	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBA	375-22-4	90.9	0.384	2.11		B0F0030	13-Jun-20	0.237 L	15-Jun-20 18:01	1
PFPeA	2706-90-3	306	0.675	2.11		B0F0030	13-Jun-20	0.237 L	15-Jun-20 18:01	1
PFBS	375-73-5	ND	0.944	2.11		B0F0030	13-Jun-20	0.237 L	15-Jun-20 18:01	1
4:2 FTS	757124-72-4	1.35	0.733	2.11	J	B0F0030	13-Jun-20	0.237 L	15-Jun-20 18:01	1
PFHxA	307-24-4	317	1.15	2.11		B0F0030	13-Jun-20	0.237 L	15-Jun-20 18:01	1
PFPeS	2706-91-4	2.84	1.28	2.11		B0F0030	13-Jun-20	0.237 L	15-Jun-20 18:01	1
HFPO-DA	13252-13-6	ND	2.54	2.64		B0F0030	13-Jun-20	0.237 L	15-Jun-20 18:01	1
PFHpA	375-85-9	224	0.312	2.11		B0F0030	13-Jun-20	0.237 L	15-Jun-20 18:01	1
ADONA	919005-14-4	ND	0.381	2.11		B0F0030	13-Jun-20	0.237 L	15-Jun-20 18:01	1
PFHxS	355-46-4	20.4	0.499	2.11		B0F0030	13-Jun-20	0.237 L	15-Jun-20 18:01	1
6:2 FTS	27619-97-2	21.5	1.05	2.11		B0F0030	13-Jun-20	0.237 L	15-Jun-20 18:01	1
PFOA	335-67-1	1350	1.72	10.5	D	B0F0030	13-Jun-20	0.237 L	20-Jun-20 14:58	5
PFHpS	375-92-8	1.22	0.494	2.11	J	B0F0030	13-Jun-20	0.237 L	15-Jun-20 18:01	1
PFNA	375-95-1	5.23	0.427	2.11		B0F0030	13-Jun-20	0.237 L	15-Jun-20 18:01	1
PFOSA	754-91-6	5.60	0.933	2.11		B0F0030	13-Jun-20	0.237 L	15-Jun-20 18:01	1
PFOS	1763-23-1	34.2	0.425	2.11		B0F0030	13-Jun-20	0.237 L	15-Jun-20 18:01	1
9Cl-PF3ONS	756426-58-1	ND	0.764	2.11		B0F0030	13-Jun-20	0.237 L	15-Jun-20 18:01	1
PFDA	335-76-2	ND	0.786	2.11		B0F0030	13-Jun-20	0.237 L	15-Jun-20 18:01	1
8:2 FTS	39108-34-4	ND	1.09	2.11		B0F0030	13-Jun-20	0.237 L	15-Jun-20 18:01	1
PFNS	68259-12-1	ND	2.04	2.11		B0F0030	13-Jun-20	0.237 L	18-Jun-20 16:46	1
MeFOSAA	2355-31-9	0.909	0.870	2.11	J, Q	B0F0030	13-Jun-20	0.237 L	15-Jun-20 18:01	1
EtFOSAA	2991-50-6	15.2	0.722	2.11		B0F0030	13-Jun-20	0.237 L	15-Jun-20 18:01	1
PFUnA	2058-94-8	ND	0.554	2.11		B0F0030	13-Jun-20	0.237 L	15-Jun-20 18:01	1
PFDS	335-77-3	ND	0.648	2.11		B0F0030	13-Jun-20	0.237 L	15-Jun-20 18:01	1
11Cl-PF3OUdS	763051-92-9	ND	1.27	2.11		B0F0030	13-Jun-20	0.237 L	15-Jun-20 18:01	1
10:2 FTS	120226-60-0	ND	1.65	2.11		B0F0030	13-Jun-20	0.237 L	15-Jun-20 18:01	1
PFDoA	307-55-1	ND	0.418	2.11		B0F0030	13-Jun-20	0.237 L	15-Jun-20 18:01	1
MeFOSA	31506-32-8	ND	2.02	10.5		B0F0030	13-Jun-20	0.237 L	15-Jun-20 18:01	1
PFTrDA	72629-94-8	ND	0.260	2.11		B0F0030	13-Jun-20	0.237 L	15-Jun-20 18:01	1
PFDoS	79780-39-5	ND	2.20	2.64		B0F0030	13-Jun-20	0.237 L	15-Jun-20 18:01	1
PFTeDA	376-06-7	ND	0.398	2.11		B0F0030	13-Jun-20	0.237 L	15-Jun-20 18:01	1
EtFOSA	4151-50-2	ND	2.69	10.5		B0F0030	13-Jun-20	0.237 L	15-Jun-20 18:01	1
PFHxDA	67905-19-5	ND	0.155	2.11		B0F0030	13-Jun-20	0.237 L	15-Jun-20 18:01	1
PFODA	16517-11-6	ND	3.24	3.69		B0F0030	13-Jun-20	0.237 L	15-Jun-20 18:01	1
MeFOSE	24448-09-7	ND	3.20	10.5		B0F0030	13-Jun-20	0.237 L	15-Jun-20 18:01	1
EtFOSE	1691-99-2	ND	4.98	10.5		B0F0030	13-Jun-20	0.237 L	15-Jun-20 18:01	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	61.9	25 - 150		B0F0030	13-Jun-20	0.237 L	15-Jun-20 18:01	1

**Sample ID: MW-6** **PFAS Isotope Dilution Method**

Client Data				Laboratory Data			
Name:	AECOM	Matrix:	Aqueous	Lab Sample:	2001183-06	Column:	BEH C18
Project:	Waupaca Foundry Plant 4	Date Collected:	29-May-20 16:00	Date Received:	02-Jun-20 09:29		

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFPeA	IS	69.7	25 - 150		B0F0030	13-Jun-20	0.237 L	15-Jun-20 18:01	1
13C3-PFBS	IS	70.0	25 - 150		B0F0030	13-Jun-20	0.237 L	15-Jun-20 18:01	1
13C3-HFPO-DA	IS	55.6	25 - 150		B0F0030	13-Jun-20	0.237 L	15-Jun-20 18:01	1
13C2-4:2 FTS	IS	91.8	25 - 150		B0F0030	13-Jun-20	0.237 L	15-Jun-20 18:01	1
13C2-PFHxA	IS	73.8	25 - 150		B0F0030	13-Jun-20	0.237 L	15-Jun-20 18:01	1
13C4-PFHpA	IS	61.0	25 - 150		B0F0030	13-Jun-20	0.237 L	15-Jun-20 18:01	1
13C3-PFHxS	IS	77.6	25 - 150		B0F0030	13-Jun-20	0.237 L	15-Jun-20 18:01	1
13C2-6:2 FTS	IS	89.4	25 - 150		B0F0030	13-Jun-20	0.237 L	15-Jun-20 18:01	1
13C5-PFNA	IS	73.3	25 - 150		B0F0030	13-Jun-20	0.237 L	15-Jun-20 18:01	1
13C8-PFOA	IS	71.8	10 - 150		B0F0030	13-Jun-20	0.237 L	15-Jun-20 18:01	1
13C2-PFOA	IS	74.5	25 - 150	D	B0F0030	13-Jun-20	0.237 L	20-Jun-20 14:58	5
13C8-PFOS	IS	85.9	25 - 150		B0F0030	13-Jun-20	0.237 L	15-Jun-20 18:01	1
13C2-PFDA	IS	65.0	25 - 150		B0F0030	13-Jun-20	0.237 L	15-Jun-20 18:01	1
13C2-8:2 FTS	IS	118	25 - 150		B0F0030	13-Jun-20	0.237 L	15-Jun-20 18:01	1
d3-MeFOSAA	IS	78.8	25 - 150		B0F0030	13-Jun-20	0.237 L	15-Jun-20 18:01	1
13C2-PFUnA	IS	59.4	25 - 150		B0F0030	13-Jun-20	0.237 L	15-Jun-20 18:01	1
d5-EtFOSAA	IS	67.7	25 - 150		B0F0030	13-Jun-20	0.237 L	15-Jun-20 18:01	1
13C2-10:2 FTS	IS	70.7	25 - 150		B0F0030	13-Jun-20	0.237 L	15-Jun-20 18:01	1
13C2-PFDoA	IS	54.7	25 - 150		B0F0030	13-Jun-20	0.237 L	15-Jun-20 18:01	1
d3-MeFOSA	IS	37.2	10 - 150		B0F0030	13-Jun-20	0.237 L	15-Jun-20 18:01	1
13C2-PFTeDA	IS	49.3	25 - 150		B0F0030	13-Jun-20	0.237 L	15-Jun-20 18:01	1
d5-EtFOSA	IS	32.4	10 - 150		B0F0030	13-Jun-20	0.237 L	15-Jun-20 18:01	1
13C2-PFHxDA	IS	45.6	25 - 150		B0F0030	13-Jun-20	0.237 L	15-Jun-20 18:01	1
d7-MeFOSE	IS	54.1	10 - 150		B0F0030	13-Jun-20	0.237 L	15-Jun-20 18:01	1
d9-EtFOSE	IS	43.6	10 - 150		B0F0030	13-Jun-20	0.237 L	15-Jun-20 18:01	1

MDL - Method Detection Limit

RL - Reporting limit

Results reported to MDL.

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: MW-5**

**PFAS Isotope Dilution Method**

Client Data				Laboratory Data			
Name:	AECOM	Matrix:	Aqueous	Lab Sample:	2001183-07	Column:	BEH C18
Project:	Waupaca Foundry Plant 4	Date Collected:	29-May-20 16:50	Date Received:	02-Jun-20 09:29		

Analyte	CAS Number	Conc. (ng/L)	MDL	RL	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBA	375-22-4	21.9	0.364	2.00		B0F0030	13-Jun-20	0.250 L	25-Jun-20 20:00	1
PFPeA	2706-90-3	37.3	0.639	2.00		B0F0030	13-Jun-20	0.250 L	25-Jun-20 20:00	1
PFBS	375-73-5	ND	0.893	2.00		B0F0030	13-Jun-20	0.250 L	25-Jun-20 20:00	1
4:2 FTS	757124-72-4	ND	0.694	2.00		B0F0030	13-Jun-20	0.250 L	25-Jun-20 20:00	1
PFHxA	307-24-4	51.3	1.09	2.00		B0F0030	13-Jun-20	0.250 L	25-Jun-20 20:00	1
PFPeS	2706-91-4	ND	1.21	2.00		B0F0030	13-Jun-20	0.250 L	25-Jun-20 20:00	1
HFPO-DA	13252-13-6	ND	2.41	2.50		B0F0030	13-Jun-20	0.250 L	25-Jun-20 20:00	1
PFHpA	375-85-9	32.6	0.295	2.00		B0F0030	13-Jun-20	0.250 L	25-Jun-20 20:00	1
ADONA	919005-14-4	ND	0.360	2.00		B0F0030	13-Jun-20	0.250 L	25-Jun-20 20:00	1
PFHxS	355-46-4	9.84	0.473	2.00		B0F0030	13-Jun-20	0.250 L	25-Jun-20 20:00	1
6:2 FTS	27619-97-2	1.57	0.998	2.00	J	B0F0030	13-Jun-20	0.250 L	25-Jun-20 20:00	1
PFOA	335-67-1	332	0.325	2.00		B0F0030	13-Jun-20	0.250 L	25-Jun-20 20:00	1
PFHpS	375-92-8	1.97	0.468	2.00	J	B0F0030	13-Jun-20	0.250 L	25-Jun-20 20:00	1
PFNA	375-95-1	14.9	0.404	2.00		B0F0030	13-Jun-20	0.250 L	25-Jun-20 20:00	1
PFOSA	754-91-6	11.7	0.883	2.00		B0F0030	13-Jun-20	0.250 L	25-Jun-20 20:00	1
PFOS	1763-23-1	121	0.403	2.00		B0F0030	13-Jun-20	0.250 L	25-Jun-20 20:00	1
9Cl-PF3ONS	756426-58-1	ND	0.724	2.00		B0F0030	13-Jun-20	0.250 L	25-Jun-20 20:00	1
PFDA	335-76-2	ND	0.744	2.00		B0F0030	13-Jun-20	0.250 L	25-Jun-20 20:00	1
8:2 FTS	39108-34-4	ND	1.03	2.00		B0F0030	13-Jun-20	0.250 L	25-Jun-20 20:00	1
PFNS	68259-12-1	ND	1.93	2.00		B0F0030	13-Jun-20	0.250 L	18-Jun-20 16:57	1
MeFOSAA	2355-31-9	ND	0.824	2.00		B0F0030	13-Jun-20	0.250 L	25-Jun-20 20:00	1
EtFOSAA	2991-50-6	27.0	0.684	2.00		B0F0030	13-Jun-20	0.250 L	25-Jun-20 20:00	1
PFUnA	2058-94-8	ND	0.524	2.00		B0F0030	13-Jun-20	0.250 L	25-Jun-20 20:00	1
PFDS	335-77-3	ND	0.614	2.00		B0F0030	13-Jun-20	0.250 L	25-Jun-20 20:00	1
11Cl-PF3OUdS	763051-92-9	ND	1.20	2.00		B0F0030	13-Jun-20	0.250 L	25-Jun-20 20:00	1
10:2 FTS	120226-60-0	ND	1.56	2.00		B0F0030	13-Jun-20	0.250 L	25-Jun-20 20:00	1
PFDoA	307-55-1	ND	0.395	2.00		B0F0030	13-Jun-20	0.250 L	25-Jun-20 20:00	1
MeFOSA	31506-32-8	ND	1.91	9.98		B0F0030	13-Jun-20	0.250 L	25-Jun-20 20:00	1
PFTrDA	72629-94-8	ND	0.247	2.00		B0F0030	13-Jun-20	0.250 L	25-Jun-20 20:00	1
PFDoS	79780-39-5	ND	2.08	2.50		B0F0030	13-Jun-20	0.250 L	25-Jun-20 20:00	1
PFTeDA	376-06-7	ND	0.377	2.00		B0F0030	13-Jun-20	0.250 L	25-Jun-20 20:00	1
EtFOSA	4151-50-2	ND	2.55	9.98		B0F0030	13-Jun-20	0.250 L	25-Jun-20 20:00	1
PFHxDA	67905-19-5	ND	0.147	2.00		B0F0030	13-Jun-20	0.250 L	25-Jun-20 20:00	1
PFODA	16517-11-6	ND	3.06	3.49		B0F0030	13-Jun-20	0.250 L	25-Jun-20 20:00	1
MeFOSE	24448-09-7	ND	3.03	9.98		B0F0030	13-Jun-20	0.250 L	25-Jun-20 20:00	1
EtFOSE	1691-99-2	ND	4.71	9.98		B0F0030	13-Jun-20	0.250 L	25-Jun-20 20:00	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	66.2	25 - 150		B0F0030	13-Jun-20	0.250 L	25-Jun-20 20:00	1

**Sample ID: MW-5** **PFAS Isotope Dilution Method**

Client Data				Laboratory Data			
Name:	AECOM	Matrix:	Aqueous	Lab Sample:	2001183-07	Column:	BEH C18
Project:	Waupaca Foundry Plant 4	Date Collected:	29-May-20 16:50	Date Received:	02-Jun-20 09:29		

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFPeA	IS	82.7	25 - 150		B0F0030	13-Jun-20	0.250 L	25-Jun-20 20:00	1
13C3-PFBS	IS	87.8	25 - 150		B0F0030	13-Jun-20	0.250 L	25-Jun-20 20:00	1
13C3-HFPO-DA	IS	82.7	25 - 150		B0F0030	13-Jun-20	0.250 L	25-Jun-20 20:00	1
13C2-4:2 FTS	IS	95.7	25 - 150		B0F0030	13-Jun-20	0.250 L	25-Jun-20 20:00	1
13C2-PFHxA	IS	82.6	25 - 150		B0F0030	13-Jun-20	0.250 L	25-Jun-20 20:00	1
13C4-PFHpA	IS	76.8	25 - 150		B0F0030	13-Jun-20	0.250 L	25-Jun-20 20:00	1
13C3-PFHxS	IS	88.4	25 - 150		B0F0030	13-Jun-20	0.250 L	25-Jun-20 20:00	1
13C2-6:2 FTS	IS	94.9	25 - 150		B0F0030	13-Jun-20	0.250 L	25-Jun-20 20:00	1
13C5-PFNA	IS	80.0	25 - 150		B0F0030	13-Jun-20	0.250 L	25-Jun-20 20:00	1
13C8-PFOA	IS	53.5	10 - 150		B0F0030	13-Jun-20	0.250 L	25-Jun-20 20:00	1
13C2-PFOA	IS	82.5	25 - 150		B0F0030	13-Jun-20	0.250 L	25-Jun-20 20:00	1
13C8-PFOS	IS	82.1	25 - 150		B0F0030	13-Jun-20	0.250 L	25-Jun-20 20:00	1
13C2-PFDA	IS	83.2	25 - 150		B0F0030	13-Jun-20	0.250 L	25-Jun-20 20:00	1
13C2-8:2 FTS	IS	89.8	25 - 150		B0F0030	13-Jun-20	0.250 L	25-Jun-20 20:00	1
d3-MeFOSAA	IS	82.7	25 - 150		B0F0030	13-Jun-20	0.250 L	25-Jun-20 20:00	1
13C2-PFUnA	IS	74.1	25 - 150		B0F0030	13-Jun-20	0.250 L	25-Jun-20 20:00	1
d5-EtFOSAA	IS	79.7	25 - 150		B0F0030	13-Jun-20	0.250 L	25-Jun-20 20:00	1
13C2-10:2 FTS	IS	69.1	25 - 150		B0F0030	13-Jun-20	0.250 L	25-Jun-20 20:00	1
13C2-PFDoA	IS	69.7	25 - 150		B0F0030	13-Jun-20	0.250 L	25-Jun-20 20:00	1
d3-MeFOSA	IS	26.5	10 - 150		B0F0030	13-Jun-20	0.250 L	25-Jun-20 20:00	1
13C2-PFTeDA	IS	55.3	25 - 150		B0F0030	13-Jun-20	0.250 L	25-Jun-20 20:00	1
d5-EtFOSA	IS	26.0	10 - 150		B0F0030	13-Jun-20	0.250 L	25-Jun-20 20:00	1
13C2-PFHxDA	IS	38.8	25 - 150		B0F0030	13-Jun-20	0.250 L	25-Jun-20 20:00	1
d7-MeFOSE	IS	50.9	10 - 150		B0F0030	13-Jun-20	0.250 L	25-Jun-20 20:00	1
d9-EtFOSE	IS	40.5	10 - 150		B0F0030	13-Jun-20	0.250 L	25-Jun-20 20:00	1

MDL - Method Detection Limit

RL - Reporting limit

Results reported to MDL.

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: SW-3**
**PFAS Isotope Dilution Method**

Client Data				Laboratory Data			
Name:	AECOM	Matrix:	Aqueous	Lab Sample:	2001183-08	Column:	BEH C18
Project:	Waupaca Foundry Plant 4	Date Collected:	29-May-20 17:25	Date Received:	02-Jun-20 09:29		

Analyte	CAS Number	Conc. (ng/L)	MDL	RL	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBA	375-22-4	2.87	0.390	2.14		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:22	1
PFPeA	2706-90-3	2.84	0.685	2.14		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:22	1
PFBS	375-73-5	ND	0.957	2.14		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:22	1
4:2 FTS	757124-72-4	ND	0.743	2.14		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:22	1
PFHxA	307-24-4	2.76	1.17	2.14		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:22	1
PFPeS	2706-91-4	ND	1.29	2.14		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:22	1
HFPO-DA	13252-13-6	ND	2.58	2.67		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:22	1
PFHpA	375-85-9	1.63	0.316	2.14	J, Q	B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:22	1
ADONA	919005-14-4	ND	0.386	2.14		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:22	1
PFHxS	355-46-4	ND	0.506	2.14		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:22	1
6:2 FTS	27619-97-2	8.88	1.07	2.14		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:22	1
PFOA	335-67-1	7.07	0.348	2.14		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:22	1
PFHpS	375-92-8	ND	0.501	2.14		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:22	1
PFNA	375-95-1	ND	0.433	2.14		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:22	1
PFOSA	754-91-6	9.68	0.947	2.14		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:22	1
PFOS	1763-23-1	0.612	0.432	2.14	J	B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:22	1
9Cl-PF3ONS	756426-58-1	ND	0.776	2.14		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:22	1
PFDA	335-76-2	ND	0.797	2.14		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:22	1
8:2 FTS	39108-34-4	ND	1.10	2.14		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:22	1
PFNS	68259-12-1	ND	2.07	2.14		B0F0030	13-Jun-20	0.234 L	18-Jun-20 17:07	1
MeFOSAA	2355-31-9	ND	0.882	2.14		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:22	1
EtFOSAA	2991-50-6	ND	0.733	2.14		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:22	1
PFUnA	2058-94-8	ND	0.562	2.14		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:22	1
PFDS	335-77-3	ND	0.658	2.14		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:22	1
11Cl-PF3OUdS	763051-92-9	ND	1.29	2.14		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:22	1
10:2 FTS	120226-60-0	ND	1.67	2.14		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:22	1
PFDoA	307-55-1	ND	0.424	2.14		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:22	1
MeFOSA	31506-32-8	ND	2.05	10.7		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:22	1
PFTTrDA	72629-94-8	ND	0.264	2.14		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:22	1
PFDoS	79780-39-5	ND	2.23	2.67		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:22	1
PFTeDA	376-06-7	ND	0.404	2.14		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:22	1
EtFOSA	4151-50-2	ND	2.73	10.7		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:22	1
PFHxDA	67905-19-5	ND	0.157	2.14		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:22	1
PFODA	16517-11-6	ND	3.28	3.74		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:22	1
MeFOSE	24448-09-7	ND	3.25	10.7		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:22	1
EtFOSE	1691-99-2	ND	5.05	10.7		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:22	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	65.8	25 - 150			B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:22	1

**Sample ID: SW-3** **PFAS Isotope Dilution Method**

Client Data				Laboratory Data			
Name:	AECOM	Matrix:	Aqueous	Lab Sample:	2001183-08	Column:	BEH C18
Project:	Waupaca Foundry Plant 4	Date Collected:	29-May-20 17:25	Date Received:	02-Jun-20 09:29		

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFPeA	IS	73.0	25 - 150		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:22	1
13C3-PFBS	IS	74.1	25 - 150		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:22	1
13C3-HFPO-DA	IS	70.4	25 - 150		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:22	1
13C2-4:2 FTS	IS	86.3	25 - 150		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:22	1
13C2-PFHxA	IS	70.5	25 - 150		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:22	1
13C4-PFHpA	IS	71.1	25 - 150		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:22	1
13C3-PFHxS	IS	79.7	25 - 150		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:22	1
13C2-6:2 FTS	IS	60.4	25 - 150		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:22	1
13C5-PFNA	IS	76.3	25 - 150		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:22	1
13C8-PFOA	IS	78.7	10 - 150		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:22	1
13C2-PFOA	IS	75.1	25 - 150		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:22	1
13C8-PFOS	IS	74.7	25 - 150		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:22	1
13C2-PFDA	IS	68.0	25 - 150		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:22	1
13C2-8:2 FTS	IS	124	25 - 150		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:22	1
d3-MeFOSAA	IS	75.1	25 - 150		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:22	1
13C2-PFUnA	IS	80.5	25 - 150		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:22	1
d5-EtFOSAA	IS	74.4	25 - 150		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:22	1
13C2-10:2 FTS	IS	72.9	25 - 150		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:22	1
13C2-PFDoA	IS	65.4	25 - 150		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:22	1
d3-MeFOSA	IS	22.4	10 - 150		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:22	1
13C2-PFTeDA	IS	46.6	25 - 150		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:22	1
d5-EtFOSA	IS	21.3	10 - 150		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:22	1
13C2-PFHxDA	IS	56.0	25 - 150		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:22	1
d7-MeFOSE	IS	52.8	10 - 150		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:22	1
d9-EtFOSE	IS	46.8	10 - 150		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:22	1

MDL - Method Detection Limit

RL - Reporting limit

Results reported to MDL.

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: SW-2**
**PFAS Isotope Dilution Method**

Client Data				Laboratory Data			
Name:	AECOM	Matrix:	Aqueous	Lab Sample:	2001183-09	Column:	BEH C18
Project:	Waupaca Foundry Plant 4	Date Collected:	29-May-20 17:35	Date Received:	02-Jun-20 09:29		

Analyte	CAS Number	Conc. (ng/L)	MDL	RL	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBA	375-22-4	2.29	0.389	2.13		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:32	1
PFPeA	2706-90-3	3.69	0.682	2.13		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:32	1
PFBS	375-73-5	ND	0.954	2.13		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:32	1
4:2 FTS	757124-72-4	ND	0.741	2.13		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:32	1
PFHxA	307-24-4	2.74	1.16	2.13		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:32	1
PFPeS	2706-91-4	ND	1.29	2.13		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:32	1
HFPO-DA	13252-13-6	ND	2.57	2.67		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:32	1
PFHpA	375-85-9	2.12	0.315	2.13	J, Q	B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:32	1
ADONA	919005-14-4	ND	0.385	2.13		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:32	1
PFHxS	355-46-4	ND	0.505	2.13		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:32	1
6:2 FTS	27619-97-2	7.54	1.07	2.13		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:32	1
PFOA	335-67-1	9.07	0.347	2.13		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:32	1
PFHpS	375-92-8	ND	0.499	2.13		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:32	1
PFNA	375-95-1	ND	0.432	2.13		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:32	1
PFOSA	754-91-6	11.4	0.944	2.13		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:32	1
PFOS	1763-23-1	ND	0.430	2.13		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:32	1
9CI-PF3ONS	756426-58-1	ND	0.773	2.13		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:32	1
PFDA	335-76-2	ND	0.794	2.13		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:32	1
8:2 FTS	39108-34-4	ND	1.10	2.13		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:32	1
PFNS	68259-12-1	ND	2.06	2.13		B0F0030	13-Jun-20	0.234 L	18-Jun-20 17:17	1
MeFOSAA	2355-31-9	ND	0.880	2.13		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:32	1
EtFOSAA	2991-50-6	ND	0.730	2.13		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:32	1
PFUnA	2058-94-8	ND	0.560	2.13		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:32	1
PFDS	335-77-3	ND	0.656	2.13		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:32	1
11CI-PF3OUdS	763051-92-9	ND	1.28	2.13		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:32	1
10:2 FTS	120226-60-0	ND	1.67	2.13		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:32	1
PFDoA	307-55-1	ND	0.422	2.13		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:32	1
MeFOSA	31506-32-8	ND	2.04	10.7		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:32	1
PFTTrDA	72629-94-8	ND	0.263	2.13		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:32	1
PFDoS	79780-39-5	ND	2.22	2.67		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:32	1
PFTeDA	376-06-7	ND	0.402	2.13		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:32	1
EtFOSA	4151-50-2	ND	2.72	10.7		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:32	1
PFHxDA	67905-19-5	ND	0.157	2.13		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:32	1
PFODA	16517-11-6	ND	3.27	3.73		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:32	1
MeFOSE	24448-09-7	ND	3.24	10.7		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:32	1
EtFOSE	1691-99-2	ND	5.03	10.7		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:32	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	66.5	25 - 150		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:32	1



**Sample ID: SW-2** **PFAS Isotope Dilution Method**

Client Data				Laboratory Data			
Name:	AECOM	Matrix:	Aqueous	Lab Sample:	2001183-09	Column:	BEH C18
Project:	Waupaca Foundry Plant 4	Date Collected:	29-May-20 17:35	Date Received:	02-Jun-20 09:29		

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFPeA	IS	74.3	25 - 150		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:32	1
13C3-PFBS	IS	53.8	25 - 150		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:32	1
13C3-HFPO-DA	IS	67.2	25 - 150		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:32	1
13C2-4:2 FTS	IS	95.0	25 - 150		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:32	1
13C2-PFHxA	IS	69.7	25 - 150		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:32	1
13C4-PFHpA	IS	65.4	25 - 150		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:32	1
13C3-PFHxS	IS	69.2	25 - 150		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:32	1
13C2-6:2 FTS	IS	64.9	25 - 150		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:32	1
13C5-PFNA	IS	65.8	25 - 150		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:32	1
13C8-PFOA	IS	68.6	10 - 150		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:32	1
13C2-PFOA	IS	82.2	25 - 150		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:32	1
13C8-PFOS	IS	81.6	25 - 150		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:32	1
13C2-PFDA	IS	55.7	25 - 150		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:32	1
13C2-8:2 FTS	IS	130	25 - 150		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:32	1
d3-MeFOSAA	IS	62.2	25 - 150		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:32	1
13C2-PFUnA	IS	75.8	25 - 150		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:32	1
d5-EtFOSAA	IS	58.9	25 - 150		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:32	1
13C2-10:2 FTS	IS	56.9	25 - 150		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:32	1
13C2-PFDoA	IS	61.9	25 - 150		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:32	1
d3-MeFOSA	IS	39.1	10 - 150		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:32	1
13C2-PFTeDA	IS	52.6	25 - 150		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:32	1
d5-EtFOSA	IS	35.3	10 - 150		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:32	1
13C2-PFHxDA	IS	42.7	25 - 150		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:32	1
d7-MeFOSE	IS	56.6	10 - 150		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:32	1
d9-EtFOSE	IS	47.5	10 - 150		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:32	1

MDL - Method Detection Limit

RL - Reporting limit

Results reported to MDL.

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: SW-1**
**PFAS Isotope Dilution Method**

Client Data				Laboratory Data			
Name:	AECOM	Matrix:	Aqueous	Lab Sample:	2001183-10	Column:	BEH C18
Project:	Waupaca Foundry Plant 4	Date Collected:	29-May-20 17:45	Date Received:	02-Jun-20 09:29		

Analyte	CAS Number	Conc. (ng/L)	MDL	RL	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBA	375-22-4	2.14	0.389	2.14		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:43	1
PFPeA	2706-90-3	1.99	0.684	2.14	J	B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:43	1
PFBS	375-73-5	ND	0.956	2.14		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:43	1
4:2 FTS	757124-72-4	ND	0.742	2.14		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:43	1
PFHxA	307-24-4	ND	1.16	2.14		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:43	1
PFPeS	2706-91-4	ND	1.29	2.14		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:43	1
HFPO-DA	13252-13-6	ND	2.57	2.67		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:43	1
PFHpA	375-85-9	ND	0.316	2.14		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:43	1
ADONA	919005-14-4	ND	0.386	2.14		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:43	1
PFHxS	355-46-4	ND	0.506	2.14		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:43	1
6:2 FTS	27619-97-2	6.28	1.07	2.14		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:43	1
PFOA	335-67-1	1.84	0.348	2.14	J	B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:43	1
PFHpS	375-92-8	ND	0.500	2.14		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:43	1
PFNA	375-95-1	ND	0.433	2.14		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:43	1
PFOSA	754-91-6	6.87	0.945	2.14		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:43	1
PFOS	1763-23-1	1.10	0.431	2.14	J	B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:43	1
9Cl-PF3ONS	756426-58-1	ND	0.774	2.14		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:43	1
PFDA	335-76-2	ND	0.796	2.14		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:43	1
8:2 FTS	39108-34-4	ND	1.10	2.14		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:43	1
PFNS	68259-12-1	ND	2.07	2.14		B0F0030	13-Jun-20	0.234 L	18-Jun-20 17:28	1
MeFOSAA	2355-31-9	ND	0.881	2.14		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:43	1
EtFOSAA	2991-50-6	ND	0.732	2.14		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:43	1
PFUnA	2058-94-8	ND	0.561	2.14		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:43	1
PFDS	335-77-3	ND	0.657	2.14		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:43	1
11Cl-PF3OUdS	763051-92-9	ND	1.29	2.14		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:43	1
10:2 FTS	120226-60-0	ND	1.67	2.14		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:43	1
PFDoA	307-55-1	ND	0.423	2.14		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:43	1
MeFOSA	31506-32-8	ND	2.05	10.7		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:43	1
PFTTrDA	72629-94-8	ND	0.264	2.14		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:43	1
PFDoS	79780-39-5	ND	2.23	2.67		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:43	1
PFTeDA	376-06-7	ND	0.403	2.14		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:43	1
EtFOSA	4151-50-2	ND	2.73	10.7		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:43	1
PFHxDA	67905-19-5	ND	0.157	2.14		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:43	1
PFODA	16517-11-6	ND	3.28	3.74		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:43	1
MeFOSE	24448-09-7	ND	3.24	10.7		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:43	1
EtFOSE	1691-99-2	ND	5.04	10.7		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:43	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	67.5	25 - 150			B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:43	1

**Sample ID: SW-1** **PFAS Isotope Dilution Method**

Client Data				Laboratory Data			
Name:	AECOM	Matrix:	Aqueous	Lab Sample:	2001183-10	Column:	BEH C18
Project:	Waupaca Foundry Plant 4	Date Collected:	29-May-20 17:45	Date Received:	02-Jun-20 09:29		

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFPeA	IS	75.3	25 - 150		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:43	1
13C3-PFBS	IS	69.5	25 - 150		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:43	1
13C3-HFPO-DA	IS	68.9	25 - 150		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:43	1
13C2-4:2 FTS	IS	85.8	25 - 150		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:43	1
13C2-PFHxA	IS	80.2	25 - 150		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:43	1
13C4-PFHpA	IS	72.2	25 - 150		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:43	1
13C3-PFHxS	IS	69.0	25 - 150		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:43	1
13C2-6:2 FTS	IS	78.5	25 - 150		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:43	1
13C5-PFNA	IS	78.8	25 - 150		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:43	1
13C8-PFOA	IS	77.9	10 - 150		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:43	1
13C2-PFOA	IS	91.3	25 - 150		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:43	1
13C8-PFOS	IS	78.4	25 - 150		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:43	1
13C2-PFDA	IS	82.6	25 - 150		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:43	1
13C2-8:2 FTS	IS	91.9	25 - 150		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:43	1
d3-MeFOSAA	IS	81.0	25 - 150		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:43	1
13C2-PFUnA	IS	60.2	25 - 150		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:43	1
d5-EtFOSAA	IS	67.8	25 - 150		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:43	1
13C2-10:2 FTS	IS	48.6	25 - 150		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:43	1
13C2-PFDoA	IS	56.0	25 - 150		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:43	1
d3-MeFOSA	IS	19.5	10 - 150		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:43	1
13C2-PFTeDA	IS	56.7	25 - 150		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:43	1
d5-EtFOSA	IS	18.5	10 - 150		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:43	1
13C2-PFHxDA	IS	50.7	25 - 150		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:43	1
d7-MeFOSE	IS	50.1	10 - 150		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:43	1
d9-EtFOSE	IS	42.6	10 - 150		B0F0030	13-Jun-20	0.234 L	15-Jun-20 18:43	1

MDL - Method Detection Limit

RL - Reporting limit

Results reported to MDL.

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: DUP-1**
**PFAS Isotope Dilution Method**

Client Data				Laboratory Data			
Name:	AECOM	Matrix:	Aqueous	Lab Sample:	2001183-11	Column:	BEH C18
Project:	Waupaca Foundry Plant 4	Date Collected:	29-May-20 00:00	Date Received:	02-Jun-20 09:29		

Analyte	CAS Number	Conc. (ng/L)	MDL	RL	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBA	375-22-4	24.3	0.388	2.13		B0F0030	13-Jun-20	0.235 L	15-Jun-20 18:53	1
PFPeA	2706-90-3	55.8	0.682	2.13		B0F0030	13-Jun-20	0.235 L	15-Jun-20 18:53	1
PFBS	375-73-5	ND	0.954	2.13		B0F0030	13-Jun-20	0.235 L	15-Jun-20 18:53	1
4:2 FTS	757124-72-4	ND	0.741	2.13		B0F0030	13-Jun-20	0.235 L	15-Jun-20 18:53	1
PFHxA	307-24-4	66.4	1.16	2.13		B0F0030	13-Jun-20	0.235 L	15-Jun-20 18:53	1
PFPeS	2706-91-4	ND	1.29	2.13		B0F0030	13-Jun-20	0.235 L	15-Jun-20 18:53	1
HFPO-DA	13252-13-6	ND	2.57	2.66		B0F0030	13-Jun-20	0.235 L	15-Jun-20 18:53	1
PFHpA	375-85-9	31.5	0.315	2.13		B0F0030	13-Jun-20	0.235 L	15-Jun-20 18:53	1
ADONA	919005-14-4	ND	0.385	2.13		B0F0030	13-Jun-20	0.235 L	15-Jun-20 18:53	1
PFHxS	355-46-4	12.2	0.505	2.13		B0F0030	13-Jun-20	0.235 L	15-Jun-20 18:53	1
6:2 FTS	27619-97-2	2.52	1.07	2.13	Q	B0F0030	13-Jun-20	0.235 L	15-Jun-20 18:53	1
PFOA	335-67-1	401	0.347	2.13		B0F0030	13-Jun-20	0.235 L	15-Jun-20 18:53	1
PFHpS	375-92-8	2.15	0.499	2.13		B0F0030	13-Jun-20	0.235 L	15-Jun-20 18:53	1
PFNA	375-95-1	17.8	0.432	2.13		B0F0030	13-Jun-20	0.235 L	15-Jun-20 18:53	1
PFOSA	754-91-6	14.3	0.943	2.13		B0F0030	13-Jun-20	0.235 L	15-Jun-20 18:53	1
PFOS	1763-23-1	137	0.430	2.13		B0F0030	13-Jun-20	0.235 L	15-Jun-20 18:53	1
9CI-PF3ONS	756426-58-1	ND	0.773	2.13		B0F0030	13-Jun-20	0.235 L	15-Jun-20 18:53	1
PFDA	335-76-2	1.48	0.794	2.13	J, Q	B0F0030	13-Jun-20	0.235 L	15-Jun-20 18:53	1
8:2 FTS	39108-34-4	ND	1.10	2.13		B0F0030	13-Jun-20	0.235 L	15-Jun-20 18:53	1
PFNS	68259-12-1	ND	2.06	2.13		B0F0030	13-Jun-20	0.235 L	18-Jun-20 18:09	1
MeFOSAA	2355-31-9	ND	0.879	2.13		B0F0030	13-Jun-20	0.235 L	15-Jun-20 18:53	1
EtFOSAA	2991-50-6	32.2	0.730	2.13		B0F0030	13-Jun-20	0.235 L	15-Jun-20 18:53	1
PFUnA	2058-94-8	ND	0.559	2.13		B0F0030	13-Jun-20	0.235 L	15-Jun-20 18:53	1
PFDS	335-77-3	ND	0.655	2.13		B0F0030	13-Jun-20	0.235 L	15-Jun-20 18:53	1
11CI-PF3OUdS	763051-92-9	ND	1.28	2.13		B0F0030	13-Jun-20	0.235 L	15-Jun-20 18:53	1
10:2 FTS	120226-60-0	ND	1.67	2.13		B0F0030	13-Jun-20	0.235 L	15-Jun-20 18:53	1
PFDoA	307-55-1	ND	0.422	2.13		B0F0030	13-Jun-20	0.235 L	15-Jun-20 18:53	1
MeFOSA	31506-32-8	ND	2.04	10.7		B0F0030	13-Jun-20	0.235 L	15-Jun-20 18:53	1
PFTTrDA	72629-94-8	ND	0.263	2.13		B0F0030	13-Jun-20	0.235 L	15-Jun-20 18:53	1
PFDoS	79780-39-5	ND	2.22	2.66		B0F0030	13-Jun-20	0.235 L	15-Jun-20 18:53	1
PFTeDA	376-06-7	ND	0.402	2.13		B0F0030	13-Jun-20	0.235 L	15-Jun-20 18:53	1
EtFOSA	4151-50-2	ND	2.72	10.7		B0F0030	13-Jun-20	0.235 L	15-Jun-20 18:53	1
PFHxDA	67905-19-5	ND	0.157	2.13		B0F0030	13-Jun-20	0.235 L	15-Jun-20 18:53	1
PFODA	16517-11-6	ND	3.27	3.73		B0F0030	13-Jun-20	0.235 L	15-Jun-20 18:53	1
MeFOSE	24448-09-7	ND	3.23	10.7		B0F0030	13-Jun-20	0.235 L	15-Jun-20 18:53	1
EtFOSE	1691-99-2	ND	5.03	10.7		B0F0030	13-Jun-20	0.235 L	15-Jun-20 18:53	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	59.0	25 - 150		B0F0030	13-Jun-20	0.235 L	15-Jun-20 18:53	1

**Sample ID: DUP-1** **PFAS Isotope Dilution Method**

Client Data				Laboratory Data			
Name:	AECOM	Matrix:	Aqueous	Lab Sample:	2001183-11	Column:	BEH C18
Project:	Waupaca Foundry Plant 4	Date Collected:	29-May-20 00:00	Date Received:	02-Jun-20 09:29		

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFPeA	IS	64.3	25 - 150		B0F0030	13-Jun-20	0.235 L	15-Jun-20 18:53	1
13C3-PFBS	IS	67.7	25 - 150		B0F0030	13-Jun-20	0.235 L	15-Jun-20 18:53	1
13C3-HFPO-DA	IS	77.6	25 - 150		B0F0030	13-Jun-20	0.235 L	15-Jun-20 18:53	1
13C2-4:2 FTS	IS	88.1	25 - 150		B0F0030	13-Jun-20	0.235 L	15-Jun-20 18:53	1
13C2-PFHxA	IS	72.8	25 - 150		B0F0030	13-Jun-20	0.235 L	15-Jun-20 18:53	1
13C4-PFHpA	IS	70.6	25 - 150		B0F0030	13-Jun-20	0.235 L	15-Jun-20 18:53	1
13C3-PFHxS	IS	68.7	25 - 150		B0F0030	13-Jun-20	0.235 L	15-Jun-20 18:53	1
13C2-6:2 FTS	IS	77.3	25 - 150		B0F0030	13-Jun-20	0.235 L	15-Jun-20 18:53	1
13C5-PFNA	IS	71.9	25 - 150		B0F0030	13-Jun-20	0.235 L	15-Jun-20 18:53	1
13C8-PFOA	IS	64.7	10 - 150		B0F0030	13-Jun-20	0.235 L	15-Jun-20 18:53	1
13C2-PFOA	IS	74.4	25 - 150		B0F0030	13-Jun-20	0.235 L	15-Jun-20 18:53	1
13C8-PFOS	IS	80.5	25 - 150		B0F0030	13-Jun-20	0.235 L	15-Jun-20 18:53	1
13C2-PFDA	IS	80.4	25 - 150		B0F0030	13-Jun-20	0.235 L	15-Jun-20 18:53	1
13C2-8:2 FTS	IS	115	25 - 150		B0F0030	13-Jun-20	0.235 L	15-Jun-20 18:53	1
d3-MeFOSAA	IS	74.0	25 - 150		B0F0030	13-Jun-20	0.235 L	15-Jun-20 18:53	1
13C2-PFUnA	IS	83.6	25 - 150		B0F0030	13-Jun-20	0.235 L	15-Jun-20 18:53	1
d5-EtFOSAA	IS	71.8	25 - 150		B0F0030	13-Jun-20	0.235 L	15-Jun-20 18:53	1
13C2-10:2 FTS	IS	74.3	25 - 150		B0F0030	13-Jun-20	0.235 L	15-Jun-20 18:53	1
13C2-PFDoA	IS	62.0	25 - 150		B0F0030	13-Jun-20	0.235 L	15-Jun-20 18:53	1
d3-MeFOSA	IS	12.5	10 - 150		B0F0030	13-Jun-20	0.235 L	15-Jun-20 18:53	1
13C2-PFTeDA	IS	53.9	25 - 150		B0F0030	13-Jun-20	0.235 L	15-Jun-20 18:53	1
d5-EtFOSA	IS	13.8	10 - 150		B0F0030	13-Jun-20	0.235 L	15-Jun-20 18:53	1
13C2-PFHxDA	IS	56.1	25 - 150		B0F0030	13-Jun-20	0.235 L	15-Jun-20 18:53	1
d7-MeFOSE	IS	43.6	10 - 150		B0F0030	13-Jun-20	0.235 L	15-Jun-20 18:53	1
d9-EtFOSE	IS	37.0	10 - 150		B0F0030	13-Jun-20	0.235 L	15-Jun-20 18:53	1

MDL - Method Detection Limit

RL - Reporting limit

Results reported to MDL.

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: Field Blank**
**PFAS Isotope Dilution Method**

Client Data				Laboratory Data			
Name:	AECOM	Matrix:	Aqueous	Lab Sample:	2001183-12	Column:	BEH C18
Project:	Waupaca Foundry Plant 4	Date Collected:	29-May-20 08:20	Date Received:	02-Jun-20 09:29		

Analyte	CAS Number	Conc. (ng/L)	MDL	RL	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBA	375-22-4	ND	0.367	2.01		B0F0030	13-Jun-20	0.249 L	15-Jun-20 19:03	1
PFPeA	2706-90-3	ND	0.644	2.01		B0F0030	13-Jun-20	0.249 L	15-Jun-20 19:03	1
PFBS	375-73-5	ND	0.900	2.01		B0F0030	13-Jun-20	0.249 L	15-Jun-20 19:03	1
4:2 FTS	757124-72-4	ND	0.699	2.01		B0F0030	13-Jun-20	0.249 L	15-Jun-20 19:03	1
PFHxA	307-24-4	ND	1.10	2.01		B0F0030	13-Jun-20	0.249 L	15-Jun-20 19:03	1
PFPeS	2706-91-4	ND	1.22	2.01		B0F0030	13-Jun-20	0.249 L	15-Jun-20 19:03	1
HFPO-DA	13252-13-6	ND	2.42	2.51		B0F0030	13-Jun-20	0.249 L	15-Jun-20 19:03	1
PFHpA	375-85-9	ND	0.297	2.01		B0F0030	13-Jun-20	0.249 L	15-Jun-20 19:03	1
ADONA	919005-14-4	ND	0.363	2.01		B0F0030	13-Jun-20	0.249 L	15-Jun-20 19:03	1
PFHxS	355-46-4	ND	0.476	2.01		B0F0030	13-Jun-20	0.249 L	15-Jun-20 19:03	1
6:2 FTS	27619-97-2	ND	1.01	2.01		B0F0030	13-Jun-20	0.249 L	15-Jun-20 19:03	1
PFOA	335-67-1	ND	0.327	2.01		B0F0030	13-Jun-20	0.249 L	15-Jun-20 19:03	1
PFHpS	375-92-8	ND	0.471	2.01		B0F0030	13-Jun-20	0.249 L	15-Jun-20 19:03	1
PFNA	375-95-1	ND	0.407	2.01		B0F0030	13-Jun-20	0.249 L	15-Jun-20 19:03	1
PFOSA	754-91-6	ND	0.890	2.01		B0F0030	13-Jun-20	0.249 L	15-Jun-20 19:03	1
PFOS	1763-23-1	ND	0.406	2.01		B0F0030	13-Jun-20	0.249 L	15-Jun-20 19:03	1
9Cl-PF3ONS	756426-58-1	ND	0.729	2.01		B0F0030	13-Jun-20	0.249 L	15-Jun-20 19:03	1
PFDA	335-76-2	ND	0.749	2.01		B0F0030	13-Jun-20	0.249 L	15-Jun-20 19:03	1
8:2 FTS	39108-34-4	ND	1.04	2.01		B0F0030	13-Jun-20	0.249 L	15-Jun-20 19:03	1
PFNS	68259-12-1	ND	1.95	2.01		B0F0030	13-Jun-20	0.249 L	18-Jun-20 18:20	1
MeFOSAA	2355-31-9	ND	0.830	2.01		B0F0030	13-Jun-20	0.249 L	15-Jun-20 19:03	1
EtFOSAA	2991-50-6	ND	0.689	2.01		B0F0030	13-Jun-20	0.249 L	15-Jun-20 19:03	1
PFUnA	2058-94-8	ND	0.528	2.01		B0F0030	13-Jun-20	0.249 L	15-Jun-20 19:03	1
PFDS	335-77-3	ND	0.619	2.01		B0F0030	13-Jun-20	0.249 L	15-Jun-20 19:03	1
11Cl-PF3OUdS	763051-92-9	ND	1.21	2.01		B0F0030	13-Jun-20	0.249 L	15-Jun-20 19:03	1
10:2 FTS	120226-60-0	ND	1.57	2.01		B0F0030	13-Jun-20	0.249 L	15-Jun-20 19:03	1
PFDoA	307-55-1	ND	0.398	2.01		B0F0030	13-Jun-20	0.249 L	15-Jun-20 19:03	1
MeFOSA	31506-32-8	ND	1.93	10.1		B0F0030	13-Jun-20	0.249 L	15-Jun-20 19:03	1
PFTrDA	72629-94-8	ND	0.248	2.01		B0F0030	13-Jun-20	0.249 L	15-Jun-20 19:03	1
PFDoS	79780-39-5	ND	2.10	2.51		B0F0030	13-Jun-20	0.249 L	15-Jun-20 19:03	1
PFTeDA	376-06-7	ND	0.380	2.01		B0F0030	13-Jun-20	0.249 L	15-Jun-20 19:03	1
EtFOSA	4151-50-2	ND	2.57	10.1		B0F0030	13-Jun-20	0.249 L	15-Jun-20 19:03	1
PFHxDA	67905-19-5	ND	0.148	2.01		B0F0030	13-Jun-20	0.249 L	15-Jun-20 19:03	1
PFODA	16517-11-6	ND	3.09	3.52		B0F0030	13-Jun-20	0.249 L	15-Jun-20 19:03	1
MeFOSE	24448-09-7	ND	3.05	10.1		B0F0030	13-Jun-20	0.249 L	15-Jun-20 19:03	1
EtFOSE	1691-99-2	ND	4.75	10.1		B0F0030	13-Jun-20	0.249 L	15-Jun-20 19:03	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	86.5	25 - 150			B0F0030	13-Jun-20	0.249 L	15-Jun-20 19:03	1

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

Client Data				Laboratory Data			
Name:	AECOM	Matrix:	Aqueous	Lab Sample:	2001183-12	Column:	BEH C18
Project:	Waupaca Foundry Plant 4	Date Collected:	29-May-20 08:20	Date Received:	02-Jun-20 09:29		

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFPeA	IS	73.2	25 - 150		B0F0030	13-Jun-20	0.249 L	15-Jun-20 19:03	1
13C3-PFBS	IS	67.0	25 - 150		B0F0030	13-Jun-20	0.249 L	15-Jun-20 19:03	1
13C3-HFPO-DA	IS	68.9	25 - 150		B0F0030	13-Jun-20	0.249 L	15-Jun-20 19:03	1
13C2-4:2 FTS	IS	103	25 - 150		B0F0030	13-Jun-20	0.249 L	15-Jun-20 19:03	1
13C2-PFHxA	IS	64.1	25 - 150		B0F0030	13-Jun-20	0.249 L	15-Jun-20 19:03	1
13C4-PFHpA	IS	74.8	25 - 150		B0F0030	13-Jun-20	0.249 L	15-Jun-20 19:03	1
13C3-PFHxS	IS	89.8	25 - 150		B0F0030	13-Jun-20	0.249 L	15-Jun-20 19:03	1
13C2-6:2 FTS	IS	64.1	25 - 150		B0F0030	13-Jun-20	0.249 L	15-Jun-20 19:03	1
13C5-PFNA	IS	68.9	25 - 150		B0F0030	13-Jun-20	0.249 L	15-Jun-20 19:03	1
13C8-PFOA	IS	54.0	10 - 150		B0F0030	13-Jun-20	0.249 L	15-Jun-20 19:03	1
13C2-PFOA	IS	87.3	25 - 150		B0F0030	13-Jun-20	0.249 L	15-Jun-20 19:03	1
13C8-PFOS	IS	87.0	25 - 150		B0F0030	13-Jun-20	0.249 L	15-Jun-20 19:03	1
13C2-PFDA	IS	61.0	25 - 150		B0F0030	13-Jun-20	0.249 L	15-Jun-20 19:03	1
13C2-8:2 FTS	IS	79.8	25 - 150		B0F0030	13-Jun-20	0.249 L	15-Jun-20 19:03	1
d3-MeFOSAA	IS	75.8	25 - 150		B0F0030	13-Jun-20	0.249 L	15-Jun-20 19:03	1
13C2-PFUnA	IS	72.5	25 - 150		B0F0030	13-Jun-20	0.249 L	15-Jun-20 19:03	1
d5-EtFOSAA	IS	49.2	25 - 150		B0F0030	13-Jun-20	0.249 L	15-Jun-20 19:03	1
13C2-10:2 FTS	IS	65.1	25 - 150		B0F0030	13-Jun-20	0.249 L	15-Jun-20 19:03	1
13C2-PFDoA	IS	60.8	25 - 150		B0F0030	13-Jun-20	0.249 L	15-Jun-20 19:03	1
d3-MeFOSA	IS	14.3	10 - 150		B0F0030	13-Jun-20	0.249 L	15-Jun-20 19:03	1
13C2-PFTeDA	IS	46.1	25 - 150		B0F0030	13-Jun-20	0.249 L	15-Jun-20 19:03	1
d5-EtFOSA	IS	14.1	10 - 150		B0F0030	13-Jun-20	0.249 L	15-Jun-20 19:03	1
13C2-PFHxDA	IS	56.2	25 - 150		B0F0030	13-Jun-20	0.249 L	15-Jun-20 19:03	1
d7-MeFOSE	IS	41.9	10 - 150		B0F0030	13-Jun-20	0.249 L	15-Jun-20 19:03	1
d9-EtFOSE	IS	34.7	10 - 150		B0F0030	13-Jun-20	0.249 L	15-Jun-20 19:03	1

MDL - Method Detection Limit

RL - Reporting limit

Results reported to MDL.

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: Equipment Blank** **PFAS Isotope Dilution Method**

Client Data				Laboratory Data			
Name:	AECOM	Matrix:	Aqueous	Lab Sample:	2001183-13	Column:	BEH C18
Project:	Waupaca Foundry Plant 4	Date Collected:	29-May-20 08:35	Date Received:	02-Jun-20 09:29		

Analyte	CAS Number	Conc. (ng/L)	MDL	RL	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBA	375-22-4	ND	0.367	2.01		B0F0030	13-Jun-20	0.249 L	15-Jun-20 19:14	1
PFPeA	2706-90-3	ND	0.644	2.01		B0F0030	13-Jun-20	0.249 L	15-Jun-20 19:14	1
PFBS	375-73-5	ND	0.900	2.01		B0F0030	13-Jun-20	0.249 L	15-Jun-20 19:14	1
4:2 FTS	757124-72-4	ND	0.699	2.01		B0F0030	13-Jun-20	0.249 L	15-Jun-20 19:14	1
PFHxA	307-24-4	ND	1.10	2.01		B0F0030	13-Jun-20	0.249 L	15-Jun-20 19:14	1
PFPeS	2706-91-4	ND	1.22	2.01		B0F0030	13-Jun-20	0.249 L	15-Jun-20 19:14	1
HFPO-DA	13252-13-6	ND	2.42	2.51		B0F0030	13-Jun-20	0.249 L	15-Jun-20 19:14	1
PFHpA	375-85-9	ND	0.297	2.01		B0F0030	13-Jun-20	0.249 L	15-Jun-20 19:14	1
ADONA	919005-14-4	ND	0.363	2.01		B0F0030	13-Jun-20	0.249 L	15-Jun-20 19:14	1
PFHxS	355-46-4	ND	0.476	2.01		B0F0030	13-Jun-20	0.249 L	15-Jun-20 19:14	1
6:2 FTS	27619-97-2	ND	1.01	2.01		B0F0030	13-Jun-20	0.249 L	15-Jun-20 19:14	1
PFOA	335-67-1	ND	0.327	2.01		B0F0030	13-Jun-20	0.249 L	15-Jun-20 19:14	1
PFHpS	375-92-8	ND	0.471	2.01		B0F0030	13-Jun-20	0.249 L	15-Jun-20 19:14	1
PFNA	375-95-1	ND	0.407	2.01		B0F0030	13-Jun-20	0.249 L	15-Jun-20 19:14	1
PFOSA	754-91-6	ND	0.890	2.01		B0F0030	13-Jun-20	0.249 L	15-Jun-20 19:14	1
PFOS	1763-23-1	ND	0.406	2.01		B0F0030	13-Jun-20	0.249 L	15-Jun-20 19:14	1
9Cl-PF3ONS	756426-58-1	ND	0.729	2.01		B0F0030	13-Jun-20	0.249 L	15-Jun-20 19:14	1
PFDA	335-76-2	ND	0.749	2.01		B0F0030	13-Jun-20	0.249 L	15-Jun-20 19:14	1
8:2 FTS	39108-34-4	ND	1.04	2.01		B0F0030	13-Jun-20	0.249 L	15-Jun-20 19:14	1
PFNS	68259-12-1	ND	1.95	2.01		B0F0030	13-Jun-20	0.249 L	18-Jun-20 18:30	1
MeFOSAA	2355-31-9	ND	0.830	2.01		B0F0030	13-Jun-20	0.249 L	15-Jun-20 19:14	1
EtFOSAA	2991-50-6	ND	0.689	2.01		B0F0030	13-Jun-20	0.249 L	15-Jun-20 19:14	1
PFUnA	2058-94-8	ND	0.528	2.01		B0F0030	13-Jun-20	0.249 L	15-Jun-20 19:14	1
PFDS	335-77-3	ND	0.619	2.01		B0F0030	13-Jun-20	0.249 L	15-Jun-20 19:14	1
11Cl-PF3OUdS	763051-92-9	ND	1.21	2.01		B0F0030	13-Jun-20	0.249 L	15-Jun-20 19:14	1
10:2 FTS	120226-60-0	ND	1.57	2.01		B0F0030	13-Jun-20	0.249 L	15-Jun-20 19:14	1
PFDoA	307-55-1	ND	0.398	2.01		B0F0030	13-Jun-20	0.249 L	15-Jun-20 19:14	1
MeFOSA	31506-32-8	ND	1.93	10.1		B0F0030	13-Jun-20	0.249 L	15-Jun-20 19:14	1
PFTTrDA	72629-94-8	ND	0.248	2.01		B0F0030	13-Jun-20	0.249 L	15-Jun-20 19:14	1
PFDoS	79780-39-5	ND	2.10	2.51		B0F0030	13-Jun-20	0.249 L	15-Jun-20 19:14	1
PFTeDA	376-06-7	ND	0.380	2.01		B0F0030	13-Jun-20	0.249 L	15-Jun-20 19:14	1
EtFOSA	4151-50-2	ND	2.57	10.1		B0F0030	13-Jun-20	0.249 L	15-Jun-20 19:14	1
PFHxDA	67905-19-5	ND	0.148	2.01		B0F0030	13-Jun-20	0.249 L	15-Jun-20 19:14	1
PFODA	16517-11-6	ND	3.09	3.52		B0F0030	13-Jun-20	0.249 L	15-Jun-20 19:14	1
MeFOSE	24448-09-7	ND	3.05	10.1		B0F0030	13-Jun-20	0.249 L	15-Jun-20 19:14	1
EtFOSE	1691-99-2	ND	4.75	10.1		B0F0030	13-Jun-20	0.249 L	15-Jun-20 19:14	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	80.7	25 - 150			B0F0030	13-Jun-20	0.249 L	15-Jun-20 19:14	1



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

Client Data				Laboratory Data			
Name:	AECOM	Matrix:	Aqueous	Lab Sample:	2001183-13	Column:	BEH C18
Project:	Waupaca Foundry Plant 4	Date Collected:	29-May-20 08:35	Date Received:	02-Jun-20 09:29		

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFPeA	IS	70.6	25 - 150		B0F0030	13-Jun-20	0.249 L	15-Jun-20 19:14	1
13C3-PFBS	IS	70.2	25 - 150		B0F0030	13-Jun-20	0.249 L	15-Jun-20 19:14	1
13C3-HFPO-DA	IS	67.9	25 - 150		B0F0030	13-Jun-20	0.249 L	15-Jun-20 19:14	1
13C2-4:2 FTS	IS	79.5	25 - 150		B0F0030	13-Jun-20	0.249 L	15-Jun-20 19:14	1
13C2-PFHxA	IS	76.9	25 - 150		B0F0030	13-Jun-20	0.249 L	15-Jun-20 19:14	1
13C4-PFHpA	IS	63.1	25 - 150		B0F0030	13-Jun-20	0.249 L	15-Jun-20 19:14	1
13C3-PFHxS	IS	61.6	25 - 150		B0F0030	13-Jun-20	0.249 L	15-Jun-20 19:14	1
13C2-6:2 FTS	IS	52.3	25 - 150		B0F0030	13-Jun-20	0.249 L	15-Jun-20 19:14	1
13C5-PFNA	IS	65.4	25 - 150		B0F0030	13-Jun-20	0.249 L	15-Jun-20 19:14	1
13C8-PFOA	IS	48.1	10 - 150		B0F0030	13-Jun-20	0.249 L	15-Jun-20 19:14	1
13C2-PFOA	IS	76.6	25 - 150		B0F0030	13-Jun-20	0.249 L	15-Jun-20 19:14	1
13C8-PFOS	IS	72.2	25 - 150		B0F0030	13-Jun-20	0.249 L	15-Jun-20 19:14	1
13C2-PFDA	IS	69.4	25 - 150		B0F0030	13-Jun-20	0.249 L	15-Jun-20 19:14	1
13C2-8:2 FTS	IS	90.5	25 - 150		B0F0030	13-Jun-20	0.249 L	15-Jun-20 19:14	1
d3-MeFOSAA	IS	70.8	25 - 150		B0F0030	13-Jun-20	0.249 L	15-Jun-20 19:14	1
13C2-PFUnA	IS	61.1	25 - 150		B0F0030	13-Jun-20	0.249 L	15-Jun-20 19:14	1
d5-EtFOSAA	IS	51.4	25 - 150		B0F0030	13-Jun-20	0.249 L	15-Jun-20 19:14	1
13C2-10:2 FTS	IS	66.8	25 - 150		B0F0030	13-Jun-20	0.249 L	15-Jun-20 19:14	1
13C2-PFDoA	IS	58.4	25 - 150		B0F0030	13-Jun-20	0.249 L	15-Jun-20 19:14	1
d3-MeFOSA	IS	18.3	10 - 150		B0F0030	13-Jun-20	0.249 L	15-Jun-20 19:14	1
13C2-PFTeDA	IS	57.3	25 - 150		B0F0030	13-Jun-20	0.249 L	15-Jun-20 19:14	1
d5-EtFOSA	IS	17.0	10 - 150		B0F0030	13-Jun-20	0.249 L	15-Jun-20 19:14	1
13C2-PFHxDA	IS	57.6	25 - 150		B0F0030	13-Jun-20	0.249 L	15-Jun-20 19:14	1
d7-MeFOSE	IS	33.2	10 - 150		B0F0030	13-Jun-20	0.249 L	15-Jun-20 19:14	1
d9-EtFOSE	IS	26.9	10 - 150		B0F0030	13-Jun-20	0.249 L	15-Jun-20 19:14	1

MDL - Method Detection Limit

RL - Reporting limit

Results reported to MDL.

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
CRS	Cleanup Recovery Standard
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
IS	Internal Standard
J	The amount detected is below the Reporting Limit/LOQ
LOD	Limit of Detection
LOQ	Limit of Quantitation
M	Estimated Maximum Possible Concentration (CA Region 2 projects only)
NA	Not applicable
ND	Not Detected
OPR	Ongoing Precision and Recovery sample
P	The reported concentration may include contribution from chlorinated diphenyl ether(s).
Q	The ion transition ratio is outside of the acceptance criteria.
RL	Reporting Limit
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	E87777-23
Hawaii Department of Health	N/A
Louisiana Department of Environmental Quality	01977
Maine Department of Health	2018017
Massachusetts Department of Environmental Protection	N/A
Michigan Department of Environmental Quality	9932
Minnesota Department of Health	1521520
New Hampshire Environmental Accreditation Program	207718-B
New Jersey Department of Environmental Protection	190001
New York Department of Health	11411
Oregon Laboratory Accreditation Program	4042-010
Pennsylvania Department of Environmental Protection	016
Texas Commission on Environmental Quality	T104704189-19-10
Vermont Department of Health	VT-4042
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



# CHAIN OF CUSTODY

**For Laboratory Use Only**  
 Work Order #: 2001183 Temp: 2.0 °C  
 Storage ID: WR-2 R-13 Storage Secured: Yes  No

Project ID: ~~6062044~~ PO#: 6062042 Sampler: Jacob Dean  
 (name)

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

Relinquished by (printed name and signature) Jacob Dean Jacob Dean Date 5.1.20 Time 1005 Received by (printed name and signature) [Signature] Date 5.1.20 Time 1005  
 Relinquished by (printed name and signature) [Signature] Date 5.1.20 Time 1006 Received by (printed name and signature) Fedex Date 5.1.20 Time 1006  
Fedex 06/02/20 0929 Kinsey Scardina Kinsey Scardina 06/02/20 0929

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: FedEx  
 Tracking No.: \_\_\_\_\_

Quantity	Type	Matrix	PFOA/ PFOS	UCMR3 PFAS List:6	537.1 List: 14 or 18 (Circle One)	EPA Draft List of 24	OTHER: Please attach analyte list	PFOA/ PFOS	UCMR3 PFAS List:6	537.1 List of 14	537.1 List of 18	EPA Method 537 (DW only)	Comments
2	P	AQ					WI-36 Comp						

Sample ID	Date	Time	Location/ Sample Description
MW-2	5-29-20	12:00	
MW-1		12:40	
MW-4		13:20	
MW-3		14:10	
MW-7		15:05	
MW-6		16:00	
MW-5		16:50	
SW-3		17:25	
SW-2		17:35	
SW-1		17:45	

Special Instructions/Comments:  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**SEND DOCUMENTATION AND RESULTS TO:**  
 Name: Andrew Mott  
 Company: AECOM  
 Address: 558 N Main St.  
 City: Oshkosh WI 54901  
 Phone: \_\_\_\_\_  
 Email: andrew.mott@aecom.com

Container Types: P= HDPE, PJ= HDPE Jar      Bottle Preservation Type:      Matrix Types: AQ = Aqueous, DW = Drinking Water, EF = Effluent, PP = Pulp/Paper, SD = Sediment,  
 PY= Polypropylene, O = Other: \_\_\_\_\_      TZ = Trizma: \_\_\_\_\_      SL = Sludge, SO = Soil, WW = Wastewater, B = Blood/Serum, O = Other: \_\_\_\_\_





## Sample Log-In Checklist

Page # 1 of 1

Vista Work Order #: 2001183

TAT 21

Samples Arrival:	Date/Time <u>06/02/20 0929</u>	Initials: <u>AKS</u>	Location: <u>WR-2</u>
			Shelf/Rack: <u>N/A</u>
Delivered By:	<input checked="" type="checkbox"/> FedEx	<input type="checkbox"/> UPS	<input type="checkbox"/> On Trac
		<input type="checkbox"/> GLS	<input type="checkbox"/> DHL
		<input type="checkbox"/> Hand Delivered	<input type="checkbox"/> Other
Preservation:	<input checked="" type="checkbox"/> Ice	<input type="checkbox"/> Blue Ice	<input type="checkbox"/> Dry Ice
	<input type="checkbox"/> None		
Temp °C: <u>2.0</u> (uncorrected)	Probe used: Y / <input checked="" type="checkbox"/> N		Thermometer ID: <u>1R-4</u>
Temp °C: <u>2.0</u> (corrected)			

	YES	NO	NA
Shipping Container(s) Intact?	<input checked="" type="checkbox"/>		
Shipping Custody Seals Intact?	<input checked="" type="checkbox"/>		
Airbill <u>✓</u>			
Trk # <u>3934 0338 5047</u>	<input checked="" type="checkbox"/>		
Shipping Documentation Present?	<input checked="" type="checkbox"/>		
Shipping Container	<input type="checkbox"/> Vista	<input checked="" type="checkbox"/> Client	<input type="checkbox"/> Retain
			<input checked="" type="checkbox"/> Return
			<input type="checkbox"/> Dispose
Chain of Custody / Sample Documentation Present?	<input checked="" type="checkbox"/>		
Chain of Custody / Sample Documentation Complete?	<input checked="" type="checkbox"/>		
Holding Time Acceptable?	<input checked="" type="checkbox"/>		
Logged In:	Date/Time <u>06/02/20 06 1212</u>	Initials: <u>CM</u>	Location: <u>R-13 WR-2</u>
			Shelf/Rack: <u>A-3 E-3</u>
COC Anomaly/Sample Acceptance Form completed?	<input checked="" type="checkbox"/>		

Comments:

# CoC/Label Reconciliation Report WO# 2001183

LabNumber	CoC Sample ID	SampleAlias	Sample Date/Time	Container	BaseMatrix	Sample Comments
2001183-01	A MW-2		29-May-20 12:00	HDPE Bottle, 250 mL	Aqueous	
2001183-01	B MW-2		29-May-20 12:00	HDPE Bottle, 250 mL	Aqueous	
2001183-02	A MW-1		29-May-20 12:40	HDPE Bottle, 250 mL	Aqueous	
2001183-02	B MW-1		29-May-20 12:40	HDPE Bottle, 250 mL	Aqueous	
2001183-03	A MW-4		29-May-20 13:20	HDPE Bottle, 250 mL	Aqueous	
2001183-03	B MW-4		29-May-20 13:20	HDPE Bottle, 250 mL	Aqueous	
2001183-04	A MW-3		29-May-20 14:10	HDPE Bottle, 250 mL	Aqueous	
2001183-04	B MW-3		29-May-20 14:10	HDPE Bottle, 250 mL	Aqueous	
2001183-05	A MW-7		29-May-20 15:05	HDPE Bottle, 250 mL	Aqueous	
2001183-05	B MW-7		29-May-20 15:05	HDPE Bottle, 250 mL	Aqueous	
2001183-06	A MW-6		29-May-20 16:00	HDPE Bottle, 250 mL	Aqueous	
2001183-06	B MW-6		29-May-20 16:00	HDPE Bottle, 250 mL	Aqueous	
2001183-07	A MW-5		29-May-20 16:50	HDPE Bottle, 250 mL	Aqueous	
2001183-07	B MW-5		29-May-20 16:50	HDPE Bottle, 250 mL	Aqueous	
2001183-08	A SW-3		29-May-20 17:25	HDPE Bottle, 250 mL	Aqueous	
2001183-08	B SW-3		29-May-20 17:25	HDPE Bottle, 250 mL	Aqueous	
2001183-09	A SW-2		29-May-20 17:35	HDPE Bottle, 250 mL	Aqueous	
2001183-09	B SW-2		29-May-20 17:35	HDPE Bottle, 250 mL	Aqueous	
2001183-10	A SW-1		29-May-20 17:45	HDPE Bottle, 250 mL	Aqueous	
2001183-10	B SW-1		29-May-20 17:45	HDPE Bottle, 250 mL	Aqueous	
2001183-11	A DUP-1		29-May-20 00:00	HDPE Bottle, 250 mL	Aqueous	
2001183-11	B DUP-1		29-May-20 00:00	HDPE Bottle, 250 mL	Aqueous	
2001183-12	A Field Blank		29-May-20 08:20	HDPE Bottle, 250 mL	Aqueous	
2001183-12	B Field Blank		29-May-20 08:20	HDPE Bottle, 250 mL	Aqueous	
2001183-13	A Equipment Blank		29-May-20 08:35	HDPE Bottle, 250 mL	Aqueous	
2001183-13	B Equipment Blank		29-May-20 08:35	HDPE Bottle, 250 mL	Aqueous	

Checkmarks indicate that information on the COC reconciled with the sample label.  
Any discrepancies are noted in the following columns.

	Yes	No	NA
Sample Container Intact?	✓		
Sample Custody Seals Intact?			✓
Adequate Sample Volume?	✓		
Container Type Appropriate for Analysis(es)	✓		
Preservation Documented: Na2S2O3 Trizma None Other		✓	✓
If Chlorinated or Drinking Water Samples, Acceptable Preservation?			✓

Comments:

Ⓐ samples not listed on COC

Ⓑ No time on label

Verified by/Date: CM 06/02/20



# ANOMALY FORM

Vista Work Order

2001183

Initial/Date The following checked issues were noted during sample receipt and login:

- 1. The samples were received out of temperature at (WI-PHT): \_\_\_\_\_  
Was Ice present: Yes No Melted Blue Ice
- 2. The Chain-of-Custody (CoC) was not relinquished properly.
- 3. The CoC did not include collection time(s). 00:00 will be used unless notified otherwise.
- 4. The sample(s) did not include a sample collection time. All or Sample Name: \_\_\_\_\_
- 5. A sample ID discrepancy was found. See the Reconciliation report.  
The CoC Sample ID will be used unless notified otherwise.
- 6. A sample date and/or time discrepancy was found. See the Reconciliation report.  
The CoC Sample date/time will be used unless notified otherwise.
- 7. The CoC did not include a sample matrix. The following sample matrix will be used: \_\_\_\_\_
- 8. Insufficient volume received for analysis. All or Sample Name: \_\_\_\_\_
- 9. The backup bottle was received broken. Sample Name: \_\_\_\_\_
- 10. CoC not received, illegible or destroyed.
- 11. The sample(s) were received out of holding time. All or Sample Name: \_\_\_\_\_
- 12. The CoC did not include an analysis. All or Sample Name: \_\_\_\_\_
- 13. Sample(s) received without collection date. All or Sample Name: \_\_\_\_\_
- 14. Sample(s) not received. All or Sample Name: \_\_\_\_\_
- 15. Sample(s) received broken. All or Sample Name: \_\_\_\_\_
- 16. An incorrect container-type was used. All or Sample Name: \_\_\_\_\_

On 06/02/20  17. Other: Samples received not listed on COC  
• see reconciliation report

Bolded items require sign-off

Client Contacted: was 06/03/20  
06/02/20 Andrew Mott

Date of Contact: 06/02/20

Vista Client Manager: Jade White

Resolution: Per client email on 06/03/20. analyze samples not listed on COC that were received.