



INDIANA DEPARTMENT of ENVIRONMENTAL MANAGEMENT

We Protect Hoosiers and Our Environment.

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(800) 451-6027 • (317) 232-8603 • www.idem.IN.gov

Eric J. Holcomb
Governor

Brian C. Rockensuess
Commissioner

October 18, 2023

RE: Soil Sampling Results

#LA2425 9-1 Shallow
#LA2426 9-1 Deep
#LA2427 9-2 Shallow
#LA2428 9-2 Deep

IDEM received the results of the analysis for soil samples collected on May 31, 2023, from your property located on [REDACTED]. The analysis was performed by IDEM's contract laboratory and tested for 36 per- and polyfluoroalkyl substances (PFAS) including the compounds perfluorooctanoic acid (PFOA) and perfluorooctane sulfonate (PFOS).

None of the 36 PFAS compounds analyzed were detected above IDEM's Risk-based Closure Guide (July 2022 and all subsequent updates) (RCG) published levels for residential soil direct contact. Please note that the published soil standard is based on ingestion, inhalation and dermal exposure solely related to soil contact. A map depicting the sample locations has been included as an attachment. In addition, the analytical sheets from Pace Laboratories have also been included with this letter for your records.

If you have questions regarding this matter, please contact Lynette Schrowe of the Remediation Services Branch at 317/234-8622.

Sincerely,

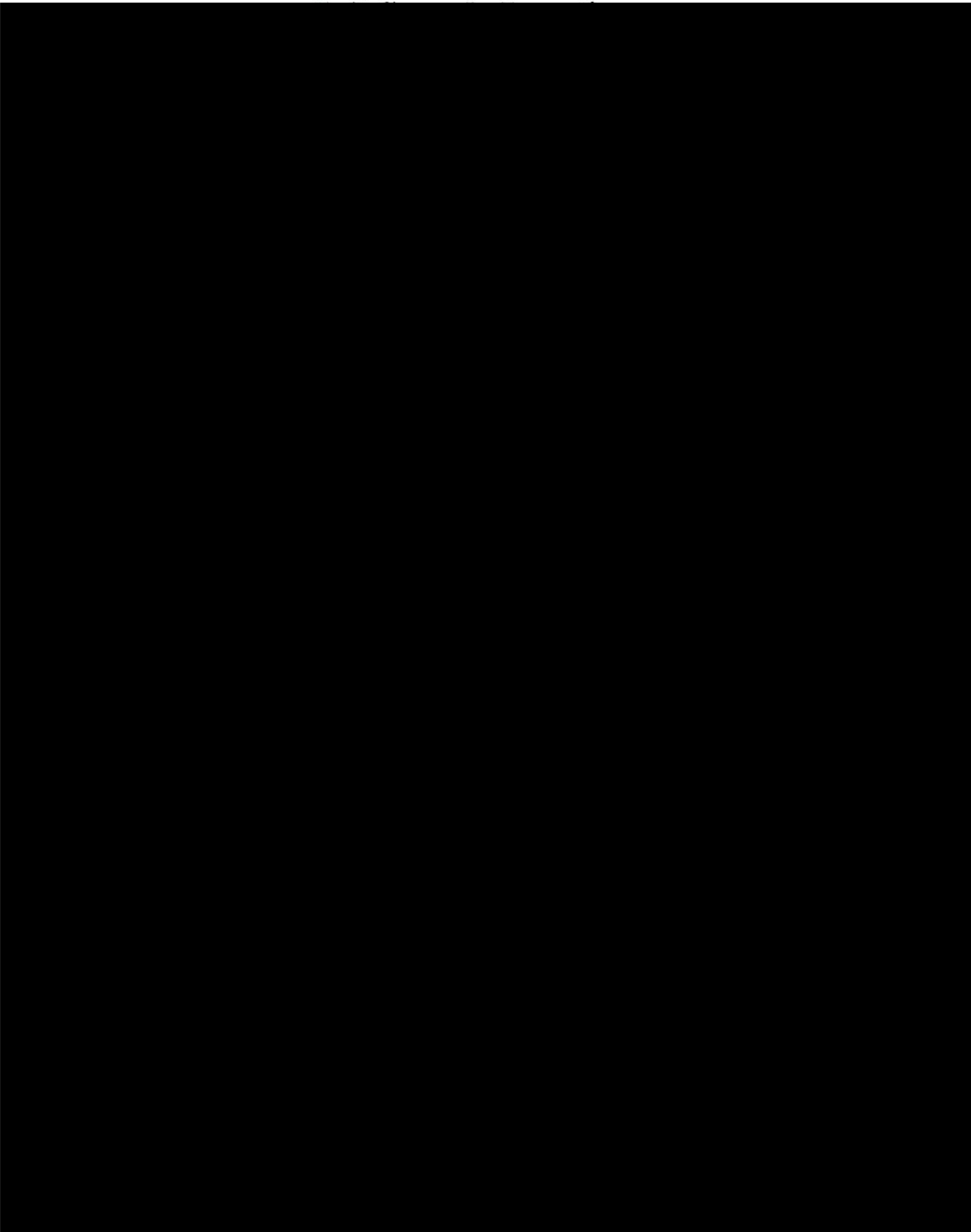
Kevin Davis, Chief
Remediation Services Branch
Office of Land Quality



Visit on.IN.gov/survey or scan the QR code to provide feedback.

We appreciate your input!







Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: LA2425-LA2489

Pace Project No.: 10655868

Sample: LA2425 Lab ID: 10655868001 Collected: 05/31/23 12:25 Received: 06/02/23 08:50 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight / %M by ASTM D2974								
Analytical Method: ASTM D2974 Pace Analytical Services - Minneapolis								
Percent Moisture	10.3	%	0.10	1		06/30/23 17:28		N2
PFAS ID SL								
Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178 Pace Analytical Services - Minneapolis								
10:2 FTS	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 17:45	120226-60-0	
11CI-PF3OUdS	ND	ug/kg	0.10	1	06/08/23 11:05	06/14/23 17:45	763051-92-9	
4:2 FTS	ND	ug/kg	0.10	1	06/08/23 11:05	06/14/23 17:45	757124-72-4	
6:2 FTS	ND	ug/kg	0.10	1	06/08/23 11:05	06/14/23 17:45	27619-97-2	
8:2 FTS	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 17:45	39108-34-4	
9CI-PF3ONS	ND	ug/kg	0.10	1	06/08/23 11:05	06/14/23 17:45	756426-58-1	
ADONA	ND	ug/kg	0.10	1	06/08/23 11:05	06/14/23 17:45	919005-14-4	
HFPO-DA	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 17:45	13252-13-6	
NEIFOSAA	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 17:45	2991-50-6	
NEIFOSA	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 17:45	4151-50-2	
NEIFOSE	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 17:45	1691-99-2	
NMeFOSAA	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 17:45	2355-31-9	
NMeFOSA	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 17:45	31506-32-8	
NMeFOSE	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 17:45	24448-09-7	
Perfluorobutanesulfonic acid	ND	ug/kg	0.097	1	06/08/23 11:05	06/14/23 17:45	375-73-5	
Perfluorodecanoic acid	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 17:45	335-76-2	
Perfluorohexanoic acid	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 17:45	307-24-4	
PFBA	0.25	ug/kg	0.11	1	06/08/23 11:05	06/14/23 17:45	375-22-4	
PFDS	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 17:45	335-77-3	
PFDoS	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 17:45	79780-39-5	
PFHpS	ND	ug/kg	0.10	1	06/08/23 11:05	06/14/23 17:45	375-92-8	
PFHxDA	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 17:45	67905-19-5	
PFNS	ND	ug/kg	0.10	1	06/08/23 11:05	06/14/23 17:45	68259-12-1	
PFODA	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 17:45	16517-11-6	
PFOSA	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 17:45	754-91-6	
PFPeA	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 17:45	2706-90-3	
PFPeS	ND	ug/kg	0.10	1	06/08/23 11:05	06/14/23 17:45	2706-91-4	
Perfluorododecanoic acid	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 17:45	307-55-1	
Perfluoroheptanoic acid	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 17:45	375-85-9	
Perfluorohexanesulfonic acid	ND	ug/kg	0.099	1	06/08/23 11:05	06/14/23 17:45	355-46-4	
Perfluorononanoic acid	0.12	ug/kg	0.11	1	06/08/23 11:05	06/14/23 17:45	375-95-1	
Perfluorooctanesulfonic acid	0.46	ug/kg	0.10	1	06/08/23 11:05	06/14/23 17:45	1763-23-1	
Perfluorooctanoic acid	0.16	ug/kg	0.11	1	06/08/23 11:05	06/14/23 17:45	335-67-1	
Perfluorotetradecanoic acid	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 17:45	376-06-7	
Perfluorotridecanoic acid	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 17:45	72629-94-8	
Perfluoroundecanoic acid	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 17:45	2058-94-8	
Surrogates								
13C24:2FTS (S)	57	%	50-150	1	06/08/23 11:05	06/14/23 17:45		
13C26:2FTS (S)	64	%	50-150	1	06/08/23 11:05	06/14/23 17:45		
13C28:2FTS (S)	49	%	50-150	1	06/08/23 11:05	06/14/23 17:45		S0
13C2-PFDoA (S)	50	%	50-150	1	06/08/23 11:05	06/14/23 17:45		

REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: LA2425-LA2489

Pace Project No.: 10655868

Sample: LA2425 Lab ID: 10655868001 Collected: 05/31/23 12:25 Received: 06/02/23 08:50 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
PFAS ID SL Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178 Pace Analytical Services - Minneapolis								
Surrogates								
13C2PFHxDA (S)	47	%	50-150	1	06/08/23 11:05	06/14/23 17:45		S0
13C2-PFTA (S)	48	%	50-150	1	06/08/23 11:05	06/14/23 17:45		S0
13C3HFPO-DA (S)	32	%	50-150	1	06/08/23 11:05	06/14/23 17:45		S0
13C3-PFBS (S)	49	%	50-150	1	06/08/23 11:05	06/14/23 17:45	375-73-5	S0
13C3-PFHxS (S)	47	%	50-150	1	06/08/23 11:05	06/14/23 17:45	355-46-4	S0
13C4-PFBA (S)	50	%	50-150	1	06/08/23 11:05	06/14/23 17:45	375-22-4	
13C4-PFHpA (S)	50	%	50-150	1	06/08/23 11:05	06/14/23 17:45	375-85-9	
13C5-PFHxA (S)	50	%	50-150	1	06/08/23 11:05	06/14/23 17:45	307-24-4	
13C5-PFPeA (S)	50	%	50-150	1	06/08/23 11:05	06/14/23 17:45	2706-90-3	
13C6-PFDA (S)	49	%	50-150	1	06/08/23 11:05	06/14/23 17:45	335-76-2	S0
13C7-PFUDa (S)	48	%	50-150	1	08/08/23 11:05	06/14/23 17:45	2058-94-8	S0
13C8-PFOA (S)	47	%	50-150	1	06/08/23 11:05	06/14/23 17:45	335-67-1	S0
13C8-PFOS (S)	45	%	50-150	1	06/08/23 11:05	06/14/23 17:45	1763-23-1	S0
13C8-PFOSA (S)	47	%	50-150	1	06/08/23 11:05	06/14/23 17:45	754-91-6	S0
13C9-PFNA (S)	48	%	50-150	1	06/08/23 11:05	06/14/23 17:45	375-95-1	S0
d3-MeFOSAA (S)	53	%	50-150	1	06/08/23 11:05	06/14/23 17:45	2355-31-9	
d3-NMeFOSA (S)	36	%	10-150	1	08/08/23 11:05	06/14/23 17:45	31506-32-8	
d5-EiFOSAA (S)	53	%	50-150	1	06/08/23 11:05	06/14/23 17:45	2991-50-6	
d5-NEiFOSA (S)	37	%	10-150	1	06/08/23 11:05	06/14/23 17:45	4151-50-2	
d7-NMeFOSE (S)	50	%	10-150	1	06/08/23 11:05	06/14/23 17:45	24448-09-7	
d9-NEiFOSE (S)	51	%	10-150	1	06/08/23 11:05	06/14/23 17:45	1691-99-2	

Sample: LA2426 Lab ID: 10655868002 Collected: 05/31/23 12:30 Received: 06/02/23 08:50 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight / %M by ASTM D2974 Analytical Method: ASTM D2974 Pace Analytical Services - Minneapolis								
Percent Moisture	17.2	%	0.10	1		06/30/23 17:28		N2
PFAS ID SL Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178 Pace Analytical Services - Minneapolis								
10:2 FTS	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 18:05	120226-60-0	
11Cl-PF3OUdS	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 18:05	763051-92-9	
4:2 FTS	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 18:05	757124-72-4	
6:2 FTS	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 18:05	27619-97-2	
8:2 FTS	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 18:05	39108-34-4	
9Cl-PF3ONS	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 18:05	756426-58-1	
ADONA	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 18:05	919005-14-4	
HFPO-DA	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 18:05	13252-13-6	
NEiFOSAA	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 18:05	2991-50-6	
NEiFOSA	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 18:05	4151-50-2	

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Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: LA2425-LA2489

Pace Project No.: 10655868

Sample: LA2426 Lab ID: 10655868002 Collected: 05/31/23 12:30 Received: 06/02/23 08:50 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
PFAS ID SL		Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178 Pace Analytical Services - Minneapolis						
NEFOSE	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 18:05	1691-99-2	
NMeFOSAA	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 18:05	2355-31-9	
NMeFOSA	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 18:05	31506-32-8	
NMeFOSE	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 18:05	24448-09-7	
Perfluorobutanesulfonic acid	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 18:05	375-73-5	
Perfluorodecanoic acid	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 18:05	335-76-2	
Perfluorohexanoic acid	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 18:05	307-24-4	
PFBA	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 18:05	375-22-4	
PFDS	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 18:05	335-77-3	
PFDoS	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 18:05	79780-39-5	
PFHpS	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 18:05	375-92-8	
PFHxDA	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 18:05	67905-19-5	
PFNS	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 18:05	68259-12-1	
PFODA	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 18:05	16517-11-6	
PFOSA	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 18:05	754-91-6	
PFPeA	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 18:05	2706-90-3	
PFPeS	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 18:05	2706-91-4	
Perfluorododecanoic acid	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 18:05	307-55-1	
Perfluoroheptanoic acid	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 18:05	375-85-9	
Perfluorohexanesulfonic acid	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 18:05	355-46-4	
Perfluorononanoic acid	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 18:05	375-95-1	
Perfluorooctanesulfonic acid	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 18:05	1763-23-1	
Perfluorooctanoic acid	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 18:05	335-67-1	
Perfluorotetradecanoic acid	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 18:05	376-06-7	
Perfluorotridecanoic acid	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 18:05	72629-94-8	
Perfluoroundecanoic acid	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 18:05	2058-94-8	
Surrogates								
13C24:2FTS (S)	80	%	50-150	1	06/08/23 11:05	06/14/23 18:05		
13C26:2FTS (S)	104	%	50-150	1	06/08/23 11:05	06/14/23 18:05		
13C28:2FTS (S)	85	%	50-150	1	06/08/23 11:05	06/14/23 18:05		
13C2-PFDoA (S)	89	%	50-150	1	06/08/23 11:05	06/14/23 18:05		
13C2-PFHxDA (S)	88	%	50-150	1	06/08/23 11:05	06/14/23 18:05		
13C2-PFTA (S)	85	%	50-150	1	06/08/23 11:05	06/14/23 18:05		
13C3HFPO-DA (S)	82	%	50-150	1	06/08/23 11:05	06/14/23 18:05		
13C3-PFBS (S)	84	%	50-150	1	06/08/23 11:05	06/14/23 18:05	375-73-5	
13C3-PFHxS (S)	80	%	50-150	1	06/08/23 11:05	06/14/23 18:05	355-46-4	
13C4-PFBA (S)	84	%	50-150	1	06/08/23 11:05	06/14/23 18:05	375-22-4	
13C4-PFHpA (S)	86	%	50-150	1	06/08/23 11:05	06/14/23 18:05	375-85-9	
13C5-PFHxA (S)	84	%	50-150	1	06/08/23 11:05	06/14/23 18:05	307-24-4	
13C5-PFPeA (S)	87	%	50-150	1	06/08/23 11:05	06/14/23 18:05	2706-90-3	
13C6-PFDA (S)	81	%	50-150	1	06/08/23 11:05	06/14/23 18:05	335-76-2	
13C7-PFUDa (S)	87	%	50-150	1	06/08/23 11:05	06/14/23 18:05	2058-94-8	
13C8-PFOA (S)	82	%	50-150	1	06/08/23 11:05	06/14/23 18:05	335-67-1	
13C8-PFOS (S)	79	%	50-150	1	06/08/23 11:05	06/14/23 18:05	1763-23-1	
13C8-PFOSA (S)	81	%	50-150	1	06/08/23 11:05	06/14/23 18:05	754-91-6	

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ANALYTICAL RESULTS

Project: LA2425-LA2489

Pace Project No.: 10655868

Sample: LA2426 Lab ID: 10655868002 Collected: 05/31/23 12:30 Received: 06/02/23 08:50 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
PFAS ID SL Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178 Pace Analytical Services - Minneapolis								
Surrogates								
13C9-PFNA (S)	87	%	50-150	1	06/08/23 11:05	06/14/23 18:05	375-95-1	
d3-MeFOSAA (S)	82	%	50-150	1	06/08/23 11:05	06/14/23 18:05	2355-31-9	
d3-NMeFOSA (S)	34	%	10-150	1	06/08/23 11:05	06/14/23 18:05	31506-32-8	
d5-EIFOSAA (S)	86	%	50-150	1	06/08/23 11:05	06/14/23 18:05	2991-50-6	
d5-NEIFOSA (S)	32	%	10-150	1	06/08/23 11:05	06/14/23 18:05	4151-50-2	
d7-NMeFOSE (S)	78	%	10-150	1	06/08/23 11:05	06/14/23 18:05	24448-09-7	
d9-NEIFOSE (S)	82	%	10-150	1	06/08/23 11:05	06/14/23 18:05	1691-99-2	

Sample: LA2427 Lab ID: 10655868003 Collected: 05/31/23 13:50 Received: 06/02/23 08:50 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight / %M by ASTM D2974 Analytical Method: ASTM D2974 Pace Analytical Services - Minneapolis								
Percent Moisture	9.6	%	0.10	1		06/30/23 17:28		N2
PFAS ID SL Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178 Pace Analytical Services - Minneapolis								
10:2 FTS	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 18:25	120226-60-0	
11Cl-PF3OUdS	ND	ug/kg	0.10	1	06/08/23 11:05	06/14/23 18:25	763051-92-9	
4:2 FTS	ND	ug/kg	0.10	1	06/08/23 11:05	06/14/23 18:25	757124-72-4	
6:2 FTS	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 18:25	27619-97-2	
8:2 FTS	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 18:25	39108-34-4	
9Cl-PF3ONS	ND	ug/kg	0.10	1	06/08/23 11:05	06/14/23 18:25	756426-58-1	
ADONA	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 18:25	919005-14-4	
HFPO-DA	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 18:25	13252-13-6	
NEIFOSAA	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 18:25	2991-50-6	
NEIFOSA	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 18:25	4151-50-2	
NEIFOSE	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 18:25	1691-99-2	
NMeFOSAA	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 18:25	2355-31-9	
NMeFOSA	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 18:25	31506-32-8	
NMeFOSE	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 18:25	24448-09-7	
Perfluorobutanesulfonic acid	ND	ug/kg	0.098	1	06/08/23 11:05	06/14/23 18:25	375-73-5	
Perfluorodecanoic acid	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 18:25	335-76-2	
Perfluorohexanoic acid	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 18:25	307-24-4	
PFBA	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 18:25	375-22-4	
PFDS	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 18:25	335-77-3	
PFDoS	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 18:25	79780-39-5	
PFFpS	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 18:25	375-92-8	
PFFxDA	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 18:25	67905-19-5	
PFNS	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 18:25	68259-12-1	
PFODA	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 18:25	16517-11-6	

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Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: LA2425-LA2489

Pace Project No.: 10655868

Sample: LA2427 Lab ID: 10655868003 Collected: 05/31/23 13:50 Received: 06/02/23 08:50 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
PFAS ID SL								
Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178								
Pace Analytical Services - Minneapolis								
PFOSA	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 18:25	754-91-6	
PFPeA	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 18:25	2706-90-3	
PFPeS	ND	ug/kg	0.10	1	06/08/23 11:05	06/14/23 18:25	2706-91-4	
Perfluorododecanoic acid	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 18:25	307-55-1	
Perfluoroheptanoic acid	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 18:25	375-85-9	
Perfluorohexanesulfonic acid	ND	ug/kg	0.10	1	06/08/23 11:05	06/14/23 18:25	355-46-4	
Perfluorononanoic acid	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 18:25	375-95-1	
Perfluorooctanesulfonic acid	0.42	ug/kg	0.10	1	06/08/23 11:05	06/14/23 18:25	1763-23-1	
Perfluorooctanoic acid	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 18:25	335-67-1	
Perfluorotetradecanoic acid	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 18:25	376-06-7	
Perfluorotridecanoic acid	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 18:25	72629-94-8	
Perfluoroundecanoic acid	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 18:25	2058-94-8	
Surrogates								
13C24:2FTS (S)	92	%	50-150	1	06/08/23 11:05	06/14/23 18:25		
13C26:2FTS (S)	111	%	50-150	1	06/08/23 11:05	06/14/23 18:25		
13C28:2FTS (S)	95	%	50-150	1	06/08/23 11:05	06/14/23 18:25		
13C2-PFDaA (S)	86	%	50-150	1	06/08/23 11:05	06/14/23 18:25		
13C2PFHxDA (S)	76	%	50-150	1	06/08/23 11:05	06/14/23 18:25		
13C2-PFTA (S)	81	%	50-150	1	06/08/23 11:05	06/14/23 18:25		
13C3HFPO-DA (S)	82	%	50-150	1	06/08/23 11:05	06/14/23 18:25		
13C3-PFBS (S)	85	%	50-150	1	06/08/23 11:05	06/14/23 18:25	375-73-5	
13C3-PFHxS (S)	80	%	50-150	1	06/08/23 11:05	06/14/23 18:25	355-46-4	
13C4-PFBA (S)	87	%	50-150	1	06/08/23 11:05	06/14/23 18:25	375-22-4	
13C4-PFHpA (S)	86	%	50-150	1	06/08/23 11:05	06/14/23 18:25	375-85-9	
13C5-PFHxA (S)	86	%	50-150	1	06/08/23 11:05	06/14/23 18:25	307-24-4	
13C5-PFPeA (S)	89	%	50-150	1	06/08/23 11:05	06/14/23 18:25	2706-90-3	
13C6-PFDA (S)	83	%	50-150	1	06/08/23 11:05	06/14/23 18:25	335-76-2	
13C7-PFUDA (S)	78	%	50-150	1	06/08/23 11:05	06/14/23 18:25	2058-94-8	
13C8-PFOA (S)	83	%	50-150	1	06/08/23 11:05	06/14/23 18:25	335-67-1	
13C8-PFOS (S)	78	%	50-150	1	06/08/23 11:05	06/14/23 18:25	1763-23-1	
13C8-PFOSA (S)	79	%	50-150	1	06/08/23 11:05	06/14/23 18:25	754-91-6	
13C9-PFNA (S)	85	%	50-150	1	06/08/23 11:05	06/14/23 18:25	375-95-1	
d3-MeFOSAA (S)	92	%	50-150	1	06/08/23 11:05	06/14/23 18:25	2355-31-9	
d3-NMeFOSA (S)	60	%	10-150	1	06/08/23 11:05	06/14/23 18:25	31506-32-8	
d5-EtFOSAA (S)	97	%	50-150	1	06/08/23 11:05	06/14/23 18:25	2991-50-6	
d5-NEtFOSA (S)	61	%	10-150	1	06/08/23 11:05	06/14/23 18:25	4151-50-2	
d7-NMeFOSE (S)	85	%	10-150	1	06/08/23 11:05	06/14/23 18:25	24448-09-7	
d9-NEtFOSE (S)	87	%	10-150	1	06/08/23 11:05	06/14/23 18:25	1691-99-2	

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ANALYTICAL RESULTS

Project: LA2425-LA2489

Pace Project No.: 10655868

Sample: LA2428 Lab ID: 10655868004 Collected: 05/31/23 12:51 Received: 06/02/23 08:50 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight / %M by ASTM D2974								
Analytical Method: ASTM D2974 Pace Analytical Services - Minneapolis								
Percent Moisture	13.4	%	0.10	1		06/30/23 17:29		N2
PFAS ID SL								
Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178 Pace Analytical Services - Minneapolis								
10:2 FTS	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 18:45	120226-60-0	
11Cl-PF3OUds	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 18:45	763051-92-9	
4:2 FTS	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 18:45	757124-72-4	
6:2 FTS	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 18:45	27619-97-2	
8:2 FTS	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 18:45	39108-34-4	
9Cl-PF3ONS	ND	ug/kg	0.10	1	06/08/23 11:05	06/14/23 18:45	756426-58-1	
ADONA	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 18:45	919005-14-4	
HFPO-DA	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 18:45	13252-13-6	
NEtFOSAA	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 18:45	2991-50-6	
NEtFOSA	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 18:45	4151-50-2	
NEtFOSE	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 18:45	1691-99-2	
NMeFOSAA	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 18:45	2355-31-9	
NMeFOSA	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 18:45	31506-32-8	
NMeFOSE	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 18:45	24448-09-7	
Perfluorobutanesulfonic acid	ND	ug/kg	0.10	1	06/08/23 11:05	06/14/23 18:45	375-73-5	
Perfluorodecanoic acid	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 18:45	335-76-2	
Perfluorohexanoic acid	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 18:45	307-24-4	
PFBA	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 18:45	375-22-4	
PFDS	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 18:45	335-77-3	
PFDoS	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 18:45	79780-39-5	
PFHpS	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 18:45	375-92-8	
PFHxDA	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 18:45	67905-19-5	
PFNS	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 18:45	68259-12-1	
PFODA	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 18:45	16517-11-6	
PFOSA	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 18:45	754-91-6	
PFPeA	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 18:45	2706-90-3	
PFPeS	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 18:45	2706-91-4	
Perfluorododecanoic acid	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 18:45	307-55-1	
Perfluoroheptanoic acid	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 18:45	375-85-9	
Perfluorohexanesulfonic acid	ND	ug/kg	0.10	1	06/08/23 11:05	06/14/23 18:45	355-46-4	
Perfluorononanoic acid	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 18:45	375-95-1	
Perfluorooctanesulfonic acid	ND	ug/kg	0.10	1	06/08/23 11:05	06/14/23 18:45	1763-23-1	
Perfluorooctanoic acid	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 18:45	335-67-1	
Perfluorotetradecanoic acid	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 18:45	376-06-7	
Perfluorotridecanoic acid	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 18:45	72629-94-8	
Perfluoroundecanoic acid	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 18:45	2058-94-8	
Surrogates								
13C24:2FTS (S)	77	%	50-150	1	06/08/23 11:05	06/14/23 18:45		
13C26:2FTS (S)	99	%	50-150	1	06/08/23 11:05	06/14/23 18:45		
13C28:2FTS (S)	79	%	50-150	1	06/08/23 11:05	06/14/23 18:45		
13C2-PFDoA (S)	90	%	50-150	1	06/08/23 11:05	06/14/23 18:45		

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Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: LA2425-LA2489

Pace Project No.: 10655868

Sample: LA2428 Lab ID: 10655868004 Collected: 05/31/23 12:51 Received: 06/02/23 08:50 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
PFAS ID SL Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178 Pace Analytical Services - Minneapolis								
Surrogates								
13C2PFHxDA (S)	82	%	50-150	1	06/08/23 11:05	06/14/23 18:45		
13C2-PFTA (S)	86	%	50-150	1	06/08/23 11:05	06/14/23 18:45		
13C3HFPO-DA (S)	82	%	50-150	1	06/08/23 11:05	06/14/23 18:45		
13C3-PFBS (S)	79	%	50-150	1	06/08/23 11:05	06/14/23 18:45	375-73-5	
13C3-PFHxS (S)	78	%	50-150	1	06/08/23 11:05	06/14/23 18:45	355-46-4	
13C4-PFBA (S)	82	%	50-150	1	06/08/23 11:05	06/14/23 18:45	375-22-4	
13C4-PFHpA (S)	85	%	50-150	1	06/08/23 11:05	06/14/23 18:45	375-85-9	
13C5-PFHxA (S)	86	%	50-150	1	06/08/23 11:05	06/14/23 18:45	307-24-4	
13C5-PFPeA (S)	85	%	50-150	1	06/08/23 11:05	06/14/23 18:45	2705-90-3	
13C6-PFDA (S)	84	%	50-150	1	06/08/23 11:05	06/14/23 18:45	335-76-2	
13C7-PFUDa (S)	84	%	50-150	1	06/08/23 11:05	06/14/23 18:45	2058-94-8	
13C8-PFOA (S)	82	%	50-150	1	06/08/23 11:05	06/14/23 18:45	335-67-1	
13C8-PFOS (S)	76	%	50-150	1	06/08/23 11:05	06/14/23 18:45	1763-23-1	
13C8-PFOSA (S)	77	%	50-150	1	06/08/23 11:05	06/14/23 18:45	754-91-6	
13C9-PFNA (S)	85	%	50-150	1	06/08/23 11:05	06/14/23 18:45	375-95-1	
d3-MeFOSAA (S)	81	%	50-150	1	06/08/23 11:05	06/14/23 18:45	2355-31-9	
d3-NMeFOSA (S)	55	%	10-150	1	06/08/23 11:05	06/14/23 18:45	31506-32-8	
d5-EtFOSAA (S)	84	%	50-150	1	06/08/23 11:05	06/14/23 18:45	2991-50-6	
d5-NEtFOSA (S)	54	%	10-150	1	06/08/23 11:05	06/14/23 18:45	4151-50-2	
d7-NMeFOSE (S)	90	%	10-150	1	06/08/23 11:05	06/14/23 18:45	24448-09-7	
d9-NEtFOSE (S)	92	%	10-150	1	06/08/23 11:05	06/14/23 18:45	1691-99-2	

Sample: LA2429 Lab ID: 10655868005 Collected: 05/31/23 13:16 Received: 06/02/23 08:50 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight / %M by ASTM D2974 Analytical Method: ASTM D2974 Pace Analytical Services - Minneapolis								
Percent Moisture	9.8	%	0.10	1		06/30/23 17:29		N2
PFAS ID SL Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178 Pace Analytical Services - Minneapolis								
10:2 FTS	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 19:05	120226-60-0	
11Cl-PF3OUdS	ND	ug/kg	0.10	1	06/08/23 11:05	06/14/23 19:05	763051-92-9	
4:2 FTS	ND	ug/kg	0.10	1	06/08/23 11:05	06/14/23 19:05	757124-72-4	
6:2 FTS	ND	ug/kg	0.10	1	06/08/23 11:05	06/14/23 19:05	27619-97-2	
8:2 FTS	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 19:05	39108-34-4	
9Cl-PF3ONS	ND	ug/kg	0.10	1	06/08/23 11:05	06/14/23 19:05	756426-58-1	
ADONA	ND	ug/kg	0.10	1	06/08/23 11:05	06/14/23 19:05	919005-14-4	
HFPO-DA	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 19:05	13252-13-6	
NEtFOSAA	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 19:05	2991-50-6	
NEtFOSA	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 19:05	4151-50-2	

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INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

We Protect Hoosiers and Our Environment.

100 N. Senate Avenue • Indianapolis, IN 46204

(800) 451-6027 • (317) 232-8603 • www.idem.IN.gov

Eric J. Holcomb
Governor

Brian C. Rockensuess
Commissioner

October 18, 2023

RE: Soil Sampling Results

#LA2429 10-1 Shallow
#LA2430 10-1 Deep
#LA2431 10-2 Shallow
#LA2432 10-2 Shallow/Duplicate
#LA2433 10-2 Deep
#LA2434 10-2 Deep/Duplicate

IDEM received the results of the analysis for soil samples collected on May 31, 2023, from your property located on [REDACTED]. The analysis was performed by IDEM's contract laboratory and tested for 36 per- and polyfluoroalkyl substances (PFAS) including the compounds perfluorooctanoic acid (PFOA) and perfluorooctane sulfonate (PFOS).

None of the 36 PFAS compounds analyzed were detected above IDEM's Risk-based Closure Guide (July 2022 and all subsequent updates) (RCG) published levels for residential soil direct contact. Please note that the published soil standard is based on ingestion, inhalation and dermal exposure solely related to soil contact. A map depicting the sample locations has been included as an attachment. In addition, the analytical sheets from Pace Laboratories have also been included with this letter for your records.

If you have questions regarding this matter, please contact Lynette Schrowe of the Remediation Services Branch at 317/234-8622.

Sincerely,

Kevin Davis, Chief
Remediation Services Branch
Office of Land Quality



Visit on.IN.gov/survey or scan the QR code to provide feedback.

We appreciate your input!





ANALYTICAL RESULTS

Project: LA2425-LA2489

Pace Project No.: 10655868

Sample: LA2429 Lab ID: 10655868005 Collected: 05/31/23 13:16 Received: 06/02/23 08:50 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
PFAS ID SL								
Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178								
Pace Analytical Services - Minneapolis								
NEFOSE	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 19:05	1691-99-2	
NMeFOSAA	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 19:05	2355-31-9	
NMeFOSA	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 19:05	31506-32-8	
NMeFOSE	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 19:05	24448-09-7	
Perfluorobutanesulfonic acid	ND	ug/kg	0.098	1	06/08/23 11:05	06/14/23 19:05	375-73-5	
Perfluorodecanoic acid	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 19:05	335-76-2	
Perfluorohexanoic acid	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 19:05	307-24-4	
PFBA	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 19:05	375-22-4	
PFDS	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 19:05	335-77-3	
PFDoS	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 19:05	79780-39-5	
PFHpS	ND	ug/kg	0.10	1	06/08/23 11:05	06/14/23 19:05	375-92-8	
PFHxDA	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 19:05	67905-19-5	
PFNS	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 19:05	68259-12-1	
PFODA	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 19:05	16517-11-6	
PFOSA	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 19:05	754-91-6	
PFPeA	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 19:05	2706-90-3	
PFPeS	ND	ug/kg	0.10	1	06/08/23 11:05	06/14/23 19:05	2706-91-4	
Perfluorododecanoic acid	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 19:05	307-55-1	
Perfluoroheptanoic acid	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 19:05	375-85-9	
Perfluorohexanesulfonic acid	ND	ug/kg	0.10	1	06/08/23 11:05	06/14/23 19:05	355-46-4	
Perfluorononanoic acid	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 19:05	375-95-1	
Perfluorooctanesulfonic acid	0.21	ug/kg	0.10	1	06/08/23 11:05	06/14/23 19:05	1763-23-1	
Perfluorooctanoic acid	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 19:05	335-67-1	
Perfluorotetradecanoic acid	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 19:05	376-06-7	
Perfluorotridecanoic acid	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 19:05	72629-94-8	
Perfluoroundecanoic acid	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 19:05	2058-94-8	
Surrogates								
13C24:2FTS (S)	86	%	50-150	1	06/08/23 11:05	06/14/23 19:05		
13C26:2FTS (S)	110	%	50-150	1	06/08/23 11:05	06/14/23 19:05		
13C28:2FTS (S)	89	%	50-150	1	06/08/23 11:05	06/14/23 19:05		
13C2-PFDoA (S)	86	%	50-150	1	06/08/23 11:05	06/14/23 19:05		
13C2-PFHxDA (S)	82	%	50-150	1	06/08/23 11:05	06/14/23 19:05		
13C2-PFTA (S)	81	%	50-150	1	06/08/23 11:05	06/14/23 19:05		
13C3HFPO-DA (S)	80	%	50-150	1	06/08/23 11:05	06/14/23 19:05		
13C3-PFBS (S)	84	%	50-150	1	06/08/23 11:05	06/14/23 19:05	375-73-5	
13C3-PFHxS (S)	81	%	50-150	1	06/08/23 11:05	06/14/23 19:05	355-46-4	
13C4-PFBA (S)	84	%	50-150	1	06/08/23 11:05	06/14/23 19:05	375-22-4	
13C4-PFHpA (S)	89	%	50-150	1	06/08/23 11:05	06/14/23 19:05	375-85-9	
13C5-PFHxA (S)	89	%	50-150	1	06/08/23 11:05	06/14/23 19:05	307-24-4	
13C5-PFPeA (S)	88	%	50-150	1	06/08/23 11:05	06/14/23 19:05	2706-90-3	
13C6-PFDA (S)	89	%	50-150	1	06/08/23 11:05	06/14/23 19:05	335-76-2	
13C7-PFUDa (S)	80	%	50-150	1	06/08/23 11:05	06/14/23 19:05	2058-94-8	
13C8-PFOA (S)	84	%	50-150	1	06/08/23 11:05	06/14/23 19:05	335-67-1	
13C8-PFOS (S)	79	%	50-150	1	06/08/23 11:05	06/14/23 19:05	1763-23-1	
13C8-PFOSA (S)	78	%	50-150	1	06/08/23 11:05	06/14/23 19:05	754-91-6	

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ANALYTICAL RESULTS

Project: LA2425-LA2489

Pace Project No.: 10655868

Sample: LA2429 Lab ID: 10655868005 Collected: 05/31/23 13:16 Received: 06/02/23 08:50 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
PFAS ID SL Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178 Pace Analytical Services - Minneapolis								
Surrogates								
13C9-PFNA (S)	87	%	50-150	1	06/08/23 11:05	06/14/23 19:05	375-95-1	
d3-MeFOSAA (S)	89	%	50-150	1	06/08/23 11:05	06/14/23 19:05	2355-31-9	
d3-NMeFOSA (S)	43	%	10-150	1	06/08/23 11:05	06/14/23 19:05	31506-32-8	
d5-ElFOSAA (S)	91	%	50-150	1	06/08/23 11:05	06/14/23 19:05	2991-50-6	
d5-NEIFOSA (S)	43	%	10-150	1	06/08/23 11:05	06/14/23 19:05	4151-50-2	
d7-NMeFOSE (S)	83	%	10-150	1	06/08/23 11:05	06/14/23 19:05	24448-09-7	
d9-NEIFOSE (S)	81	%	10-150	1	06/08/23 11:05	06/14/23 19:05	1691-99-2	

Sample: LA2430 Lab ID: 10655868006 Collected: 05/31/23 13:18 Received: 06/02/23 08:50 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight / %M by ASTM D2974 Analytical Method: ASTM D2974 Pace Analytical Services - Minneapolis								
Percent Moisture	9.5	%	0.10	1		06/30/23 17:29		N2
PFAS ID SL Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178 Pace Analytical Services - Minneapolis								
10:2 FTS	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 19:45	120226-60-0	
11Cl-PF3OUdS	ND	ug/kg	0.10	1	06/08/23 11:05	06/14/23 19:45	763051-92-9	
4:2 FTS	ND	ug/kg	0.10	1	06/08/23 11:05	06/14/23 19:45	757124-72-4	
6:2 FTS	ND	ug/kg	0.10	1	06/08/23 11:05	06/14/23 19:45	27619-97-2	
8:2 FTS	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 19:45	39108-34-4	
9Cl-PF3ONS	ND	ug/kg	0.10	1	06/08/23 11:05	06/14/23 19:45	756426-58-1	
ADONA	ND	ug/kg	0.10	1	06/08/23 11:05	06/14/23 19:45	919005-14-4	
HFPO-DA	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 19:45	13252-13-6	
NEIFOSAA	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 19:45	2991-50-6	
NEIFOSA	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 19:45	4151-50-2	
NEIFOSE	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 19:45	1691-99-2	
NMeFOSAA	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 19:45	2355-31-9	
NMeFOSA	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 19:45	31506-32-8	
NMeFOSE	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 19:45	24448-09-7	
Perfluorobutanesulfonic acid	ND	ug/kg	0.097	1	06/08/23 11:05	06/14/23 19:45	375-73-5	
Perfluorodecanoic acid	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 19:45	335-76-2	
Perfluorohexanoic acid	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 19:45	307-24-4	
PFBA	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 19:45	375-22-4	
PFDS	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 19:45	335-77-3	
PFDOS	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 19:45	79780-39-5	
PFHpS	ND	ug/kg	0.10	1	06/08/23 11:05	06/14/23 19:45	375-92-8	
PFHxDA	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 19:45	67905-19-5	
PFNS	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 19:45	68259-12-1	
PFODA	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 19:45	16517-11-6	

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ANALYTICAL RESULTS

Project: LA2425-LA2489
Pace Project No.: 10655868

Sample: LA2430 Lab ID: 10655868006 Collected: 05/31/23 13:18 Received: 06/02/23 08:50 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
PFAS ID SL								
Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178								
Pace Analytical Services - Minneapolis								
PFOSA	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 19:45	754-91-6	
PFPeA	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 19:45	2706-90-3	
PFPeS	ND	ug/kg	0.10	1	06/08/23 11:05	06/14/23 19:45	2706-91-4	
Perfluorododecanoic acid	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 19:45	307-55-1	
Perfluoroheptanoic acid	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 19:45	375-85-9	
Perfluorohexanesulfonic acid	ND	ug/kg	0.10	1	06/08/23 11:05	06/14/23 19:45	355-46-4	
Perfluorononanoic acid	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 19:45	375-95-1	
Perfluorooctanesulfonic acid	0.20	ug/kg	0.10	1	06/08/23 11:05	06/14/23 19:45	1763-23-1	
Perfluorooctanoic acid	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 19:45	335-67-1	
Perfluorotetradecanoic acid	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 19:45	376-06-7	
Perfluorotridecanoic acid	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 19:45	72629-94-8	
Perfluoroundecanoic acid	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 19:45	2058-94-8	
Surrogates								
13C24:2FTS (S)	93	%	50-150	1	06/08/23 11:05	06/14/23 19:45		
13C26:2FTS (S)	109	%	50-150	1	06/08/23 11:05	06/14/23 19:45		
13C28:2FTS (S)	97	%	50-150	1	06/08/23 11:05	06/14/23 19:45		
13C2-PFDoA (S)	88	%	50-150	1	06/08/23 11:05	06/14/23 19:45		
13C2-PFHxDA (S)	82	%	50-150	1	06/08/23 11:05	06/14/23 19:45		
13C2-PFTA (S)	81	%	50-150	1	06/08/23 11:05	06/14/23 19:45		
13C3HFPO-DA (S)	85	%	50-150	1	06/08/23 11:05	06/14/23 19:45		
13C3-PFBS (S)	85	%	50-150	1	06/08/23 11:05	06/14/23 19:45	375-73-5	
13C3-PFHxS (S)	83	%	50-150	1	06/08/23 11:05	06/14/23 19:45	355-46-4	
13C4-PFBA (S)	85	%	50-150	1	06/08/23 11:05	06/14/23 19:45	375-22-4	
13C4-PFHpA (S)	91	%	50-150	1	06/08/23 11:05	06/14/23 19:45	375-85-9	
13C5-PFHxA (S)	89	%	50-150	1	06/08/23 11:05	06/14/23 19:45	307-24-4	
13C5-PFPeA (S)	89	%	50-150	1	06/08/23 11:05	06/14/23 19:45	2706-90-3	
13C6-PFDA (S)	87	%	50-150	1	06/08/23 11:05	06/14/23 19:45	335-76-2	
13C7-PFUDa (S)	84	%	50-150	1	06/08/23 11:05	06/14/23 19:45	2058-94-8	
13C8-PFOA (S)	88	%	50-150	1	06/08/23 11:05	06/14/23 19:45	335-67-1	
13C8-PFOS (S)	79	%	50-150	1	06/08/23 11:05	06/14/23 19:45	1763-23-1	
13C8-PFOSA (S)	77	%	50-150	1	06/08/23 11:05	06/14/23 19:45	754-91-6	
13C9-PFNA (S)	89	%	50-150	1	06/08/23 11:05	06/14/23 19:45	375-95-1	
d3-MeFOSAA (S)	92	%	50-150	1	06/08/23 11:05	06/14/23 19:45	2355-31-9	
d3-NMeFOSA (S)	51	%	10-150	1	06/08/23 11:05	06/14/23 19:45	31506-32-8	
d5-EtFOSAA (S)	96	%	50-150	1	06/08/23 11:05	06/14/23 19:45	2991-50-6	
d5-NEtFOSA (S)	49	%	10-150	1	06/08/23 11:05	06/14/23 19:45	4151-50-2	
d7-NMeFOSE (S)	83	%	10-150	1	06/08/23 11:05	06/14/23 19:45	24448-09-7	
d9-NEtFOSE (S)	84	%	10-150	1	06/08/23 11:05	06/14/23 19:45	1691-99-2	

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ANALYTICAL RESULTS

Project: LA2425-LA2489
Pace Project No.: 10655868

Sample: LA2431 Lab ID: 10655868007 Collected: 05/31/23 13:22 Received: 06/02/23 08:50 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight / %M by ASTM D2974								
Analytical Method: ASTM D2974 Pace Analytical Services - Minneapolis								
Percent Moisture	17.9	%	0.10	1		06/30/23 17:29		N2
PFAS ID SL								
Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178 Pace Analytical Services - Minneapolis								
10:2 FTS	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 20:05	120226-60-0	
11CI-PF3OUdS	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 20:05	763051-92-9	
4:2 FTS	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 20:05	757124-72-4	
6:2 FTS	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 20:05	27619-97-2	
8:2 FTS	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 20:05	39108-34-4	
9CI-PF3ONS	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 20:05	756426-58-1	
ADONA	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 20:05	919005-14-4	
HFPO-DA	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 20:05	13252-13-6	
NEtFOSAA	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 20:05	2991-50-6	
NEtFOSA	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 20:05	4151-50-2	
NEtFOSE	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 20:05	1691-99-2	
NMeFOSAA	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 20:05	2355-31-9	
NMeFOSA	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 20:05	31506-32-8	
NMeFOSE	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 20:05	24448-09-7	
Perfluorobutanesulfonic acid	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 20:05	375-73-5	
Perfluorodecanoic acid	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 20:05	335-76-2	
Perfluorohexanoic acid	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 20:05	307-24-4	
PFBA	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 20:05	375-22-4	
PFDS	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 20:05	335-77-3	
PFDoS	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 20:05	79780-39-5	
PFHpS	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 20:05	375-92-8	
PFHxDA	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 20:05	67905-19-5	
PFNS	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 20:05	68259-12-1	
PFODA	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 20:05	16517-11-6	
PFOSA	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 20:05	754-91-6	
PFPeA	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 20:05	2706-90-3	
PFPeS	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 20:05	2706-91-4	
Perfluorododecanoic acid	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 20:05	307-55-1	
Perfluoroheptanoic acid	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 20:05	375-85-9	
Perfluorohexanesulfonic acid	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 20:05	355-46-4	
Perfluorononanoic acid	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 20:05	375-95-1	
Perfluorooctanesulfonic acid	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 20:05	1763-23-1	
Perfluorooctanoic acid	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 20:05	335-67-1	
Perfluorotetradecanoic acid	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 20:05	376-06-7	
Perfluorotridecanoic acid	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 20:05	72629-94-8	
Perfluoroundecanoic acid	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 20:05	2058-94-8	
Surrogates								
13C24:2FTS (S)	78	%	50-150	1	06/08/23 11:05	06/14/23 20:05		
13C26:2FTS (S)	101	%	50-150	1	06/08/23 11:05	06/14/23 20:05		
13C28:2FTS (S)	86	%	50-150	1	06/08/23 11:05	06/14/23 20:05		
13C2-PFDoS (S)	84	%	50-150	1	06/08/23 11:05	06/14/23 20:05		

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Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: LA2425-LA2489
Pace Project No.: 10655868

Sample: LA2431 Lab ID: 10655868007 Collected: 05/31/23 13:22 Received: 06/02/23 08:50 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
PFAS ID SL								
Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178								
Pace Analytical Services - Minneapolis								
Surrogates								
13C2PFHxDA (S)	73	%	50-150	1	06/08/23 11:05	06/14/23 20:05		
13C2-PFTA (S)	81	%	50-150	1	06/08/23 11:05	06/14/23 20:05		
13C3HFPO-DA (S)	76	%	50-150	1	06/08/23 11:05	06/14/23 20:05		
13C3-PFBS (S)	82	%	50-150	1	06/08/23 11:05	06/14/23 20:05	375-73-5	
13C3-PFHxS (S)	78	%	50-150	1	06/08/23 11:05	06/14/23 20:05	355-46-4	
13C4-PFBA (S)	80	%	50-150	1	06/08/23 11:05	06/14/23 20:05	375-22-4	
13C4-PFHpA (S)	82	%	50-150	1	06/08/23 11:05	06/14/23 20:05	375-85-9	
13C5-PFHxA (S)	83	%	50-150	1	06/08/23 11:05	06/14/23 20:05	307-24-4	
13C5-PFPeA (S)	84	%	50-150	1	06/08/23 11:05	06/14/23 20:05	2706-90-3	
13C6-PFDA (S)	77	%	50-150	1	06/08/23 11:05	06/14/23 20:05	335-76-2	
13C7-PFUDa (S)	82	%	50-150	1	06/08/23 11:05	06/14/23 20:05	2058-94-8	
13C8-PFOA (S)	79	%	50-150	1	06/08/23 11:05	06/14/23 20:05	335-67-1	
13C8-PFOS (S)	77	%	50-150	1	06/08/23 11:05	06/14/23 20:05	1763-23-1	
13C8-PFOSA (S)	75	%	50-150	1	06/08/23 11:05	06/14/23 20:05	754-91-6	
13C9-PFNA (S)	84	%	50-150	1	06/08/23 11:05	06/14/23 20:05	375-95-1	
d3-MeFOSAA (S)	88	%	50-150	1	06/08/23 11:05	06/14/23 20:05	2355-31-9	
d3-NMeFOSA (S)	0	%	10-150	1	06/08/23 11:05	06/14/23 20:05	31506-32-8	S0
d5-EiFOSAA (S)	88	%	50-150	1	06/08/23 11:05	06/14/23 20:05	2991-50-6	
d5-NEiFOSA (S)	0	%	10-150	1	06/08/23 11:05	06/14/23 20:05	4151-50-2	S0
d7-NMeFOSE (S)	20	%	10-150	1	06/08/23 11:05	06/14/23 20:05	24448-09-7	
d9-NEiFOSE (S)	15	%	10-150	1	06/08/23 11:05	06/14/23 20:05	1691-99-2	

Sample: LA2432 Lab ID: 10655868008 Collected: 05/31/23 13:24 Received: 06/02/23 08:50 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight / %M by ASTM D2974								
Analytical Method: ASTM D2974								
Pace Analytical Services - Minneapolis								
Percent Moisture	17.4	%	0.10	1		06/30/23 17:29		N2
PFAS ID SL								
Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178								
Pace Analytical Services - Minneapolis								
10:2 FTS	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 20:25	120226-60-0	
11CI-PF3OUdS	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 20:25	763051-92-9	
4:2 FTS	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 20:25	757124-72-4	
6:2 FTS	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 20:25	27619-97-2	
8:2 FTS	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 20:25	39108-34-4	
9CI-PF3ONS	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 20:25	756426-58-1	
ADONA	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 20:25	919005-14-4	
HFPO-DA	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 20:25	13252-13-6	
NEiFOSAA	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 20:25	2991-50-6	
NEiFOSA	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 20:25	4151-50-2	

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Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: LA2425-LA2489
Pace Project No.: 10655868

Sample: LA2432 Lab ID: 10655868008 Collected: 05/31/23 13:24 Received: 06/02/23 08:50 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
PFAS ID SL								
Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178								
Pace Analytical Services - Minneapolis								
NEFOSE	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 20:25	1691-99-2	
NMeFOSAA	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 20:25	2355-31-9	
NMeFOSA	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 20:25	31506-32-8	
NMeFOSE	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 20:25	24448-09-7	
Perfluorobutanesulfonic acid	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 20:25	375-73-5	
Perfluorodecanoic acid	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 20:25	335-76-2	
Perfluorohexanoic acid	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 20:25	307-24-4	
PFBA	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 20:25	375-22-4	
PFDS	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 20:25	335-77-3	
PFDoS	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 20:25	79780-39-5	
PFHpS	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 20:25	375-92-8	
PFHxDA	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 20:25	67905-19-5	
PFNS	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 20:25	68259-12-1	
PFODA	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 20:25	16517-11-6	
PFOSA	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 20:25	754-91-6	
PFPeA	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 20:25	2706-90-3	
PFPeS	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 20:25	2706-91-4	
Perfluorododecanoic acid	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 20:25	307-55-1	
Perfluoroheptanoic acid	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 20:25	375-85-9	
Perfluorohexanesulfonic acid	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 20:25	355-46-4	
Perfluorononanoic acid	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 20:25	375-95-1	
Perfluorooctanesulfonic acid	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 20:25	1763-23-1	
Perfluorooctanoic acid	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 20:25	335-67-1	
Perfluorotetradecanoic acid	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 20:25	376-06-7	
Perfluorotridecanoic acid	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 20:25	72629-94-8	
Perfluoroundecanoic acid	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 20:25	2058-94-8	
Surrogates								
13C24:2FTS (S)	81	%	50-150	1	06/08/23 11:05	06/14/23 20:25		
13C26:2FTS (S)	101	%	50-150	1	06/08/23 11:05	06/14/23 20:25		
13C28:2FTS (S)	86	%	50-150	1	06/08/23 11:05	06/14/23 20:25		
13C2-PFDuA (S)	84	%	50-150	1	06/08/23 11:05	06/14/23 20:25		
13C2PFHxDA (S)	73	%	50-150	1	06/08/23 11:05	06/14/23 20:25		
13C2-PFTA (S)	76	%	50-150	1	06/08/23 11:05	06/14/23 20:25		
13C3HFPO-DA (S)	72	%	50-150	1	06/08/23 11:05	06/14/23 20:25		
13C3-PFBS (S)	82	%	50-150	1	06/08/23 11:05	06/14/23 20:25	375-73-5	
13C3-PFHxS (S)	77	%	50-150	1	06/08/23 11:05	06/14/23 20:25	355-46-4	
13C4-PFBA (S)	79	%	50-150	1	06/08/23 11:05	06/14/23 20:25	375-22-4	
13C4-PFHpA (S)	81	%	50-150	1	06/08/23 11:05	06/14/23 20:25	375-85-9	
13C5-PFHxA (S)	80	%	50-150	1	06/08/23 11:05	06/14/23 20:25	307-24-4	
13C5-PFPeA (S)	83	%	50-150	1	06/08/23 11:05	06/14/23 20:25	2706-90-3	
13C6-PFDA (S)	74	%	50-150	1	06/08/23 11:05	06/14/23 20:25	335-76-2	
13C7-PFUDa (S)	74	%	50-150	1	06/08/23 11:05	06/14/23 20:25	2058-94-8	
13C8-PFOA (S)	77	%	50-150	1	06/08/23 11:05	06/14/23 20:25	335-67-1	
13C8-PFOS (S)	78	%	50-150	1	06/08/23 11:05	06/14/23 20:25	1763-23-1	
13C8-PFOSA (S)	72	%	50-150	1	06/08/23 11:05	06/14/23 20:25	754-91-6	

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ANALYTICAL RESULTS

Project: LA2425-LA2489
Pace Project No.: 10655868

Sample: LA2432 Lab ID: 10655868008 Collected: 05/31/23 13:24 Received: 06/02/23 08:50 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
PFAS ID SL Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178 Pace Analytical Services - Minneapolis								
Surrogates								
13C9-PFNA (S)	81	%	50-150	1	06/08/23 11:05	06/14/23 20:25	375-95-1	
d3-MeFOSAA (S)	79	%	50-150	1	06/08/23 11:05	06/14/23 20:25	2355-31-9	
d3-NMeFOSA (S)	1	%	10-150	1	06/08/23 11:05	06/14/23 20:25	31506-32-8	S0
d5-EtFOSAA (S)	84	%	50-150	1	06/08/23 11:05	06/14/23 20:25	2991-50-6	
d5-NEtFOSA (S)	1	%	10-150	1	06/08/23 11:05	06/14/23 20:25	4151-50-2	S0
d7-NMeFOSE (S)	32	%	10-150	1	06/08/23 11:05	06/14/23 20:25	24448-09-7	
d9-NEtFOSE (S)	27	%	10-150	1	06/08/23 11:05	06/14/23 20:25	1691-99-2	

Sample: LA2433 Lab ID: 10655868009 Collected: 05/31/23 13:44 Received: 06/02/23 08:50 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight / %M by ASTM D2974 Analytical Method: ASTM D2974 Pace Analytical Services - Minneapolis								
Percent Moisture	12.4	%	0.10	1		06/30/23 17:30		N2
PFAS ID SL Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178 Pace Analytical Services - Minneapolis								
10:2 FTS	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 20:45	120226-60-0	
11Cl-PF3OUdS	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 20:45	763051-92-9	
4:2 FTS	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 20:45	757124-72-4	
6:2 FTS	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 20:45	27619-97-2	
8:2 FTS	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 20:45	39108-34-4	
9Cl-PF3ONS	ND	ug/kg	0.10	1	06/08/23 11:05	06/14/23 20:45	756426-58-1	
ADONA	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 20:45	919005-14-4	
HFPO-DA	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 20:45	13252-13-6	
NEtFOSAA	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 20:45	2991-50-6	
NEtFOSA	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 20:45	4151-50-2	
NEtFOSE	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 20:45	1691-99-2	
NMeFOSAA	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 20:45	2355-31-9	
NMeFOSA	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 20:45	31506-32-8	
NMeFOSE	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 20:45	24448-09-7	
Perfluorobutanesulfonic acid	ND	ug/kg	0.10	1	06/08/23 11:05	06/14/23 20:45	375-73-5	
Perfluorodecanoic acid	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 20:45	335-76-2	
Perfluorohexanoic acid	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 20:45	307-24-4	
PFBA	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 20:45	375-22-4	
PFDS	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 20:45	335-77-3	
PFDoS	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 20:45	79780-39-5	
PFHpS	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 20:45	375-92-8	
PFHxDA	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 20:45	67905-19-5	
PFNS	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 20:45	68259-12-1	
PFODA	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 20:45	16517-11-6	

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Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: LA2425-LA2489
Pace Project No.: 10655868

Sample: LA2433 Lab ID: 10655868009 Collected: 05/31/23 13:44 Received: 06/02/23 08:50 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
PFAS ID SL								
Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178								
Pace Analytical Services - Minneapolis								
PFOSA	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 20:45	754-91-6	
PFPeA	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 20:45	2706-90-3	
PFPeS	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 20:45	2706-91-4	
Perfluorododecanoic acid	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 20:45	307-55-1	
Perfluoroheptanoic acid	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 20:45	375-85-9	
Perfluorohexanesulfonic acid	ND	ug/kg	0.10	1	06/08/23 11:05	06/14/23 20:45	355-46-4	
Perfluorononanoic acid	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 20:45	375-95-1	
Perfluorooctanesulfonic acid	0.36	ug/kg	0.10	1	06/08/23 11:05	06/14/23 20:45	1763-23-1	
Perfluorooctanoic acid	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 20:45	335-67-1	
Perfluorotetradecanoic acid	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 20:45	376-06-7	
Perfluorotridecanoic acid	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 20:45	72629-94-8	
Perfluoroundecanoic acid	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 20:45	2058-94-8	
Surrogates								
13C24:2FTS (S)	89	%	50-150	1	06/08/23 11:05	06/14/23 20:45		
13C26:2FTS (S)	108	%	50-150	1	06/08/23 11:05	06/14/23 20:45		
13C28:2FTS (S)	88	%	50-150	1	06/08/23 11:05	06/14/23 20:45		
13C2-PFDoA (S)	86	%	50-150	1	06/08/23 11:05	06/14/23 20:45		
13C2-PFHxDA (S)	76	%	50-150	1	06/08/23 11:05	06/14/23 20:45		
13C2-PFTA (S)	79	%	50-150	1	06/08/23 11:05	06/14/23 20:45		
13C3HFPO-DA (S)	77	%	50-150	1	06/08/23 11:05	06/14/23 20:45		
13C3-PFBS (S)	85	%	50-150	1	06/08/23 11:05	06/14/23 20:45	375-73-5	
13C3-PFHxS (S)	84	%	50-150	1	06/08/23 11:05	06/14/23 20:45	355-46-4	
13C4-PFBA (S)	82	%	50-150	1	06/08/23 11:05	06/14/23 20:45	375-22-4	
13C4-PFHpA (S)	87	%	50-150	1	06/08/23 11:05	06/14/23 20:45	375-85-9	
13C5-PFHxA (S)	86	%	50-150	1	06/08/23 11:05	06/14/23 20:45	307-24-4	
13C5-PFPeA (S)	85	%	50-150	1	06/08/23 11:05	06/14/23 20:45	2706-90-3	
13C6-PFDA (S)	80	%	50-150	1	06/08/23 11:05	06/14/23 20:45	335-76-2	
13C7-PFUdA (S)	80	%	50-150	1	06/08/23 11:05	06/14/23 20:45	2058-94-8	
13C8-PFOA (S)	83	%	50-150	1	06/08/23 11:05	06/14/23 20:45	335-67-1	
13C8-PFOS (S)	82	%	50-150	1	06/08/23 11:05	06/14/23 20:45	1763-23-1	
13C8-PFOSA (S)	80	%	50-150	1	06/08/23 11:05	06/14/23 20:45	754-91-6	
13C9-PFNA (S)	83	%	50-150	1	06/08/23 11:05	06/14/23 20:45	375-95-1	
d3-MeFOSAA (S)	86	%	50-150	1	06/08/23 11:05	06/14/23 20:45	2355-31-9	
d3-NMeFOSA (S)	51	%	10-150	1	06/08/23 11:05	06/14/23 20:45	31506-32-8	
d5-EIFOSAA (S)	93	%	50-150	1	06/08/23 11:05	06/14/23 20:45	2991-50-8	
d5-NEIFOSA (S)	51	%	10-150	1	06/08/23 11:05	06/14/23 20:45	4151-50-2	
d7-NMeFOSE (S)	80	%	10-150	1	06/08/23 11:05	06/14/23 20:45	24448-09-7	
d9-NEIFOSE (S)	87	%	10-150	1	06/08/23 11:05	06/14/23 20:45	1691-99-2	

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ANALYTICAL RESULTS

Project: LA2425-LA2489
Pace Project No.: 10655868

Sample: LA2434 Lab ID: 10655868010 Collected: 05/31/23 13:49 Received: 06/02/23 08:50 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight / %M by ASTM D2974								
Analytical Method: ASTM D2974								
Pace Analytical Services - Minneapolis								
Percent Moisture	17.6	%	0.10	1		06/30/23 17:30		N2
PFAS ID SL								
Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178								
Pace Analytical Services - Minneapolis								
10:2 FTS	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 21:05	120226-60-0	
11CI-PF3OUdS	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 21:05	763051-92-9	
4:2 FTS	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 21:05	757124-72-4	
6:2 FTS	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 21:05	27619-97-2	
8:2 FTS	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 21:05	39108-34-4	
9CI-PF3ONS	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 21:05	756426-58-1	
ADONA	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 21:05	919005-14-4	
HFPO-DA	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 21:05	13252-13-6	
NEIFOSAA	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 21:05	2991-50-6	
NEIFOSA	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 21:05	4151-50-2	
NEIFOSE	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 21:05	1691-99-2	
NMeFOSAA	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 21:05	2355-31-9	
NMeFOSA	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 21:05	31506-32-8	
NMeFOSE	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 21:05	24448-09-7	
Perfluorobutanesulfonic acid	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 21:05	375-73-5	
Perfluorodecanoic acid	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 21:05	335-76-2	
Perfluorohexanoic acid	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 21:05	307-24-4	
PFBA	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 21:05	375-22-4	
PFDS	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 21:05	335-77-3	
PFDoS	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 21:05	79780-39-5	
PFHpS	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 21:05	375-92-8	
PFHxDA	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 21:05	67905-19-5	
PFNS	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 21:05	68259-12-1	
PFODA	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 21:05	16517-11-6	
PFOSA	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 21:05	754-91-6	
PFPeA	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 21:05	2706-90-3	
PFPeS	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 21:05	2706-91-4	
Perfluorododecanoic acid	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 21:05	307-55-1	
Perfluoroheptanoic acid	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 21:05	375-85-9	
Perfluorohexanesulfonic acid	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 21:05	355-46-4	
Perfluorononanoic acid	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 21:05	375-95-1	
Perfluorooctanesulfonic acid	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 21:05	1763-23-1	
Perfluorooctanoic acid	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 21:05	335-67-1	
Perfluorotetradecanoic acid	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 21:05	376-06-7	
Perfluorotridecanoic acid	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 21:05	72629-94-8	
Perfluoroundecanoic acid	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 21:05	2058-94-8	
Surrogates								
13C24:2FTS (S)	78	%	50-150	1	06/08/23 11:05	06/14/23 21:05		
13C26:2FTS (S)	103	%	50-150	1	06/08/23 11:05	06/14/23 21:05		
13C28:2FTS (S)	91	%	50-150	1	06/08/23 11:05	06/14/23 21:05		
13C2-PFDaA (S)	88	%	50-150	1	06/08/23 11:05	06/14/23 21:05		

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ANALYTICAL RESULTS

Project: LA2425-LA2489
Pace Project No.: 10655868

Sample: LA2434 Lab ID: 10655868010 Collected: 05/31/23 13:49 Received: 06/02/23 08:50 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
PFAS ID SL Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178 Pace Analytical Services - Minneapolis								
Surrogates								
13C2PFHxOA (S)	73	%	50-150	1	06/08/23 11:05	06/14/23 21:05		
13C2-PFTA (S)	77	%	50-150	1	06/08/23 11:05	06/14/23 21:05		
13C3HFPO-DA (S)	70	%	50-150	1	06/08/23 11:05	06/14/23 21:05		
13C3-PFBS (S)	82	%	50-150	1	06/08/23 11:05	06/14/23 21:05	375-73-5	
13C3-PFHxS (S)	79	%	50-150	1	06/08/23 11:05	06/14/23 21:05	355-46-4	
13C4-PFBA (S)	78	%	50-150	1	06/08/23 11:05	06/14/23 21:05	375-22-4	
13C4-PFHpA (S)	81	%	50-150	1	06/08/23 11:05	06/14/23 21:05	375-85-9	
13C5-PFHxA (S)	78	%	50-150	1	06/08/23 11:05	06/14/23 21:05	307-24-4	
13C5-PFPeA (S)	80	%	50-150	1	06/08/23 11:05	06/14/23 21:05	2706-90-3	
13C6-PFDA (S)	73	%	50-150	1	06/08/23 11:05	06/14/23 21:05	335-76-2	
13C7-PFUDa (S)	76	%	50-150	1	06/08/23 11:05	06/14/23 21:05	2058-94-8	
13C8-PFOA (S)	76	%	50-150	1	06/08/23 11:05	06/14/23 21:05	335-67-1	
13C8-PFOS (S)	77	%	50-150	1	06/08/23 11:05	06/14/23 21:05	1763-23-1	
13C8-PFOSA (S)	74	%	50-150	1	06/08/23 11:05	06/14/23 21:05	754-91-6	
13C9-PFNA (S)	81	%	50-150	1	06/08/23 11:05	06/14/23 21:05	375-95-1	
d3-MeFOSAA (S)	82	%	50-150	1	06/08/23 11:05	06/14/23 21:05	2355-31-9	
d3-NMeFOSA (S)	0	%	10-150	1	06/08/23 11:05	06/14/23 21:05	31506-32-8	S0
d5-EiFOSAA (S)	87	%	50-150	1	06/08/23 11:05	06/14/23 21:05	2991-50-6	
d5-NEiFOSA (S)	0	%	10-150	1	06/08/23 11:05	06/14/23 21:05	4151-50-2	S0
d7-NMeFOSE (S)	38	%	10-150	1	06/08/23 11:05	06/14/23 21:05	24448-09-7	
d9-NEiFOSE (S)	33	%	10-150	1	06/08/23 11:05	06/14/23 21:05	1691-99-2	

Sample: LA2435 Lab ID: 10655868011 Collected: 05/31/23 15:28 Received: 06/02/23 08:50 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight / %M by ASTM D2974 Analytical Method: ASTM D2974 Pace Analytical Services - Minneapolis								
Percent Moisture	13.2	%	0.10	1		06/30/23 17:30		N2
PFAS ID SL Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178 Pace Analytical Services - Minneapolis								
10:2 FTS	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 21:25	120226-60-0	
11CI-PF3OUdS	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 21:25	763051-92-9	
4:2 FTS	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 21:25	757124-72-4	
6:2 FTS	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 21:25	27619-97-2	
8:2 FTS	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 21:25	39108-34-4	
9CI-PF3ONS	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 21:25	756426-58-1	
ADONA	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 21:25	919005-14-4	
HFPO-DA	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 21:25	13252-13-6	
NEiFOSAA	3.8	ug/kg	0.11	1	06/08/23 11:05	06/14/23 21:25	2991-50-6	
NEiFOSA	0.13	ug/kg	0.11	1	06/08/23 11:05	06/14/23 21:25	4151-50-2	

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INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

We Protect Hoosiers and Our Environment.

100 N. Senate Avenue • Indianapolis, IN 46204

(800) 451-6027 • (317) 232-8603 • www.idem.IN.gov

Eric J. Holcomb
Governor

Brian C. Rockensuess
Commissioner

October 18, 2023

RE: Soil Sampling Results

#LA2435 11-1 Shallow
#LA2436 11-2 Deep
#LA2437 11-2 Shallow
#LA2438 11-2 Deep

IDEM received the results of the analysis for soil samples collected on May 31, 2023, from your property located on [REDACTED]. The analysis was performed by IDEM's contract laboratory and tested for 36 per- and polyfluoroalkyl substances (PFAS) including the compounds perfluorooctanoic acid (PFOA) and perfluorooctane sulfonate (PFOS).

None of the 36 PFAS compounds analyzed were detected above IDEM's Risk-based Closure Guide (July 2022 and all subsequent updates) (RCG) published levels for residential soil direct contact. Please note that the published soil standard is based on ingestion, inhalation and dermal exposure solely related to soil contact. A map depicting the sample locations has been included as an attachment. In addition, the analytical sheets from Pace Laboratories have also been included with this letter for your records.

If you have questions regarding this matter, please contact Lynette Schrowe of the Remediation Services Branch at 317/234-8622.

Sincerely,

Kevin Davis, Chief
Remediation Services Branch
Office of Land Quality



Visit on.IN.gov/survey or scan the QR code to provide feedback.

We appreciate your input!





Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: LA2425-LA2489

Pace Project No.: 10655868

Sample: LA2435 Lab ID: 10655868011 Collected: 05/31/23 15:28 Received: 06/02/23 08:50 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
PFAS ID SL								
Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178								
Pace Analytical Services - Minneapolis								
NEI FOSE	0.24	ug/kg	0.11	1	06/08/23 11:05	06/14/23 21:25	1691-99-2	
NMeFOSAA	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 21:25	2355-31-9	
NMeFOSA	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 21:25	31506-32-8	
NMeFOSE	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 21:25	24448-09-7	
Perfluorobutanesulfonic acid	ND	ug/kg	0.10	1	06/08/23 11:05	06/14/23 21:25	375-73-5	
Perfluorodecanoic acid	0.37	ug/kg	0.11	1	06/08/23 11:05	06/14/23 21:25	335-76-2	
Perfluorohexanoic acid	0.25	ug/kg	0.11	1	06/08/23 11:05	06/14/23 21:25	307-24-4	
PFBA	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 21:25	375-22-4	
PFDS	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 21:25	335-77-3	
PFDoS	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 21:25	79780-39-5	
PFHpS	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 21:25	375-92-8	
PFHxDA	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 21:25	67905-19-5	
PFNS	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 21:25	68259-12-1	
PFODA	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 21:25	16517-11-6	
PFOSA	0.36	ug/kg	0.11	1	06/08/23 11:05	06/14/23 21:25	754-91-6	
PFPeA	0.30	ug/kg	0.11	1	06/08/23 11:05	06/14/23 21:25	2706-90-3	
PFPeS	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 21:25	2706-91-4	
Perfluorododecanoic acid	0.17	ug/kg	0.11	1	06/08/23 11:05	06/14/23 21:25	307-55-1	
Perfluoroheptanoic acid	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 21:25	375-85-9	
Perfluorohexanesulfonic acid	ND	ug/kg	0.10	1	06/08/23 11:05	06/14/23 21:25	355-46-4	
Perfluorononanoic acid	0.27	ug/kg	0.11	1	06/08/23 11:05	06/14/23 21:25	375-95-1	
Perfluorooctanesulfonic acid	4.6	ug/kg	0.11	1	06/08/23 11:05	06/14/23 21:25	1763-23-1	
Perfluorooctanoic acid	0.72	ug/kg	0.11	1	06/08/23 11:05	06/14/23 21:25	335-67-1	
Perfluorotetradecanoic acid	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 21:25	376-06-7	
Perfluorotridecanoic acid	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 21:25	72629-94-8	
Perfluoroundecanoic acid	0.25	ug/kg	0.11	1	06/08/23 11:05	06/14/23 21:25	2058-94-8	
Surrogates								
13C24:2FTS (S)	91	%	50-150	1	06/08/23 11:05	06/14/23 21:25		
13C26:2FTS (S)	114	%	50-150	1	06/08/23 11:05	06/14/23 21:25		
13C28:2FTS (S)	106	%	50-150	1	06/08/23 11:05	06/14/23 21:25		
13C2-PFDaA (S)	75	%	50-150	1	06/08/23 11:05	06/14/23 21:25		
13C2-PFHxDA (S)	64	%	50-150	1	06/08/23 11:05	06/14/23 21:25		
13C2-PFTA (S)	66	%	50-150	1	06/08/23 11:05	06/14/23 21:25		
13C3HFPO-DA (S)	68	%	50-150	1	06/08/23 11:05	06/14/23 21:25		
13C3-PFBS (S)	80	%	50-150	1	06/08/23 11:05	06/14/23 21:25	375-73-5	
13C3-PFHxS (S)	78	%	50-150	1	06/08/23 11:05	06/14/23 21:25	355-46-4	
13C4-PFBA (S)	76	%	50-150	1	06/08/23 11:05	06/14/23 21:25	375-22-4	
13C4-PFHpA (S)	80	%	50-150	1	06/08/23 11:05	06/14/23 21:25	375-85-9	
13C5-PFHxA (S)	79	%	50-150	1	06/08/23 11:05	06/14/23 21:25	307-24-4	
13C5-PFPeA (S)	79	%	50-150	1	06/08/23 11:05	06/14/23 21:25	2706-90-3	
13C6-PFDA (S)	74	%	50-150	1	06/08/23 11:05	06/14/23 21:25	335-76-2	
13C7-PFUDaA (S)	74	%	50-150	1	06/08/23 11:05	06/14/23 21:25	2058-94-8	
13C8-PFOA (S)	75	%	50-150	1	06/08/23 11:05	06/14/23 21:25	335-67-1	
13C8-PFOS (S)	75	%	50-150	1	06/08/23 11:05	06/14/23 21:25	1763-23-1	
13C8-PFOSA (S)	72	%	50-150	1	06/08/23 11:05	06/14/23 21:25	754-91-6	

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ANALYTICAL RESULTS

Project: LA2425-LA2489
Pace Project No.: 10655868

Sample: LA2435 Lab ID: 10655868011 Collected: 05/31/23 15:28 Received: 06/02/23 08:50 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
PFAS ID SL								
Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178								
Pace Analytical Services - Minneapolis								
Surrogates								
13C9-PFNA (S)	81	%	50-150	1	06/08/23 11:05	06/14/23 21:25	375-95-1	
d3-MeFOSAA (S)	81	%	50-150	1	06/08/23 11:05	06/14/23 21:25	2355-31-9	
d3-NMeFOSA (S)	15	%	10-150	1	06/08/23 11:05	06/14/23 21:25	31506-32-8	
d5-EiFOSAA (S)	91	%	50-150	1	06/08/23 11:05	06/14/23 21:25	2991-50-6	
d5-NEiFOSA (S)	12	%	10-150	1	06/08/23 11:05	06/14/23 21:25	4151-50-2	
d7-NMeFOSE (S)	57	%	10-150	1	06/08/23 11:05	06/14/23 21:25	24448-09-7	
d9-NEiFOSE (S)	54	%	10-150	1	06/08/23 11:05	06/14/23 21:25	1691-99-2	

Sample: LA2436 Lab ID: 10655868012 Collected: 05/31/23 15:33 Received: 06/02/23 08:50 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight / %M by ASTM D2974								
Analytical Method: ASTM D2974								
Pace Analytical Services - Minneapolis								
Percent Moisture	12.7	%	0.10	1		06/30/23 17:31		N2
PFAS ID SL								
Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178								
Pace Analytical Services - Minneapolis								
10:2 FTS	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 21:45	120226-60-0	
11Cl-PF3OUdS	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 21:45	763051-92-9	
4:2 FTS	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 21:45	757124-72-4	
6:2 FTS	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 21:45	27619-97-2	
8:2 FTS	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 21:45	39108-34-4	
9Cl-PF3ONS	ND	ug/kg	0.10	1	06/08/23 11:05	06/14/23 21:45	756426-58-1	
ADONA	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 21:45	919005-14-4	
HFPO-DA	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 21:45	13252-13-6	
NEiFOSAA	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 21:45	2991-50-6	
NEiFOSA	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 21:45	4151-50-2	
NEiFOSE	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 21:45	1691-99-2	
NMeFOSAA	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 21:45	2355-31-9	
NMeFOSA	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 21:45	31506-32-8	
NMeFOSE	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 21:45	24448-09-7	
Perfluorobutanesulfonic acid	ND	ug/kg	0.10	1	06/08/23 11:05	06/14/23 21:45	375-73-5	
Perfluorodecanoic acid	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 21:45	335-76-2	
Perfluorohexanoic acid	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 21:45	307-24-4	
PFBA	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 21:45	375-22-4	
PFDS	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 21:45	335-77-3	
PFDoS	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 21:45	79780-39-5	
PFHpS	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 21:45	375-92-8	
PFHxDA	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 21:45	67905-19-5	
PFNS	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 21:45	68259-12-1	
PFODA	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 21:45	16517-11-6	

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ANALYTICAL RESULTS

Project: LA2425-LA2489

Pace Project No.: 10655868

Sample: LA2436 Lab ID: 10655868012 Collected: 05/31/23 15:33 Received: 06/02/23 08:50 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
PFAS ID SL								
Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178								
Pace Analytical Services - Minneapolis								
PFOSA	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 21:45	754-91-6	
PFPeA	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 21:45	2706-90-3	
PFPeS	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 21:45	2706-91-4	
Perfluorododecanoic acid	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 21:45	307-55-1	
Perfluoroheptanoic acid	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 21:45	375-85-9	
Perfluorohexanesulfonic acid	ND	ug/kg	0.10	1	06/08/23 11:05	06/14/23 21:45	355-46-4	
Perfluorononanoic acid	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 21:45	375-95-1	
Perfluorooctanesulfonic acid	0.31	ug/kg	0.10	1	06/08/23 11:05	06/14/23 21:45	1763-23-1	
Perfluorooctanoic acid	0.13	ug/kg	0.11	1	06/08/23 11:05	06/14/23 21:45	335-67-1	
Perfluorotetradecanoic acid	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 21:45	376-06-7	
Perfluorotridecanoic acid	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 21:45	72629-94-8	
Perfluoroundecanoic acid	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 21:45	2058-94-8	
Surrogates								
13C24:2FTS (S)	77	%	50-150	1	06/08/23 11:05	06/14/23 21:45		
13C26:2FTS (S)	103	%	50-150	1	06/08/23 11:05	06/14/23 21:45		
13C28:2FTS (S)	79	%	50-150	1	06/08/23 11:05	06/14/23 21:45		
13C2-PFDoA (S)	84	%	50-150	1	06/08/23 11:05	06/14/23 21:45		
13C2PFHxDA (S)	77	%	50-150	1	06/08/23 11:05	06/14/23 21:45		
13C2-PFTA (S)	77	%	50-150	1	06/08/23 11:05	06/14/23 21:45		
13C3HFPO-DA (S)	72	%	50-150	1	06/08/23 11:05	06/14/23 21:45		
13C3-PFBS (S)	80	%	50-150	1	06/08/23 11:05	06/14/23 21:45	375-73-5	
13C3-PFHxS (S)	80	%	50-150	1	06/08/23 11:05	06/14/23 21:45	355-46-4	
13C4-PFBA (S)	76	%	50-150	1	06/08/23 11:05	06/14/23 21:45	375-22-4	
13C4-PFHpA (S)	80	%	50-150	1	06/08/23 11:05	06/14/23 21:45	375-85-9	
13C5-PFHxA (S)	78	%	50-150	1	06/08/23 11:05	06/14/23 21:45	307-24-4	
13C5-PFPeA (S)	78	%	50-150	1	06/08/23 11:05	06/14/23 21:45	2706-90-3	
13C6-PFDA (S)	81	%	50-150	1	06/08/23 11:05	06/14/23 21:45	335-76-2	
13C7-PFUDa (S)	75	%	50-150	1	06/08/23 11:05	06/14/23 21:45	2058-94-8	
13C8-PFOA (S)	73	%	50-150	1	06/08/23 11:05	06/14/23 21:45	335-67-1	
13C8-PFOS (S)	76	%	50-150	1	06/08/23 11:05	06/14/23 21:45	1763-23-1	
13C8-PFOSA (S)	78	%	50-150	1	06/08/23 11:05	06/14/23 21:45	754-91-6	
13C9-PFNA (S)	79	%	50-150	1	06/08/23 11:05	06/14/23 21:45	375-95-1	
d3-MeFOSAA (S)	76	%	50-150	1	06/08/23 11:05	06/14/23 21:45	2355-31-9	
d3-NMeFOSA (S)	13	%	10-150	1	06/08/23 11:05	06/14/23 21:45	31506-32-8	
d5-ElFOSAA (S)	79	%	50-150	1	06/08/23 11:05	06/14/23 21:45	2991-50-6	
d5-NElFOSA (S)	9	%	10-150	1	06/08/23 11:05	06/14/23 21:45	4151-50-2	SO
d7-NMeFOSE (S)	53	%	10-150	1	06/08/23 11:05	06/14/23 21:45	24448-09-7	
d9-NElFOSE (S)	51	%	10-150	1	06/08/23 11:05	06/14/23 21:45	1691-99-2	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: LA2425-LA2489

Pace Project No.: 10655868

Sample: LA2437 Lab ID: 10655868013 Collected: 05/31/23 15:47 Received: 06/02/23 08:50 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight / %M by ASTM D2974								
Analytical Method: ASTM D2974								
Pace Analytical Services - Minneapolis								
Percent Moisture	17.9	%	0.10	1		06/30/23 17:31		N2
PFAS ID SL								
Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178								
Pace Analytical Services - Minneapolis								
10:2 FTS	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 22:05	120226-60-0	
11CI-PF3OudS	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 22:05	763051-92-9	
4:2 FTS	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 22:05	757124-72-4	
6:2 FTS	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 22:05	27619-97-2	
8:2 FTS	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 22:05	39108-34-4	
9CI-PF3ONS	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 22:05	756426-58-1	
ADONA	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 22:05	919005-14-4	
HFPO-DA	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 22:05	13252-13-6	
NEtFOSAA	2.2	ug/kg	0.12	1	06/08/23 11:05	06/14/23 22:05	2991-50-6	
NEtFOSA	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 22:05	4151-50-2	
NEtFOSE	0.39	ug/kg	0.12	1	06/08/23 11:05	06/14/23 22:05	1691-99-2	
NMeFOSAA	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 22:05	2355-31-9	
NMeFOSA	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 22:05	31506-32-8	
NMeFOSE	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 22:05	24448-09-7	
Perfluorobutanesulfonic acid	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 22:05	375-73-5	
Perfluorodecanoic acid	0.35	ug/kg	0.12	1	06/08/23 11:05	06/14/23 22:05	335-76-2	
Perfluorohexanoic acid	0.24	ug/kg	0.12	1	06/08/23 11:05	06/14/23 22:05	307-24-4	
PFBA	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 22:05	375-22-4	
PFDS	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 22:05	335-77-3	
PFDoS	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 22:05	79780-39-5	
PFHpS	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 22:05	375-92-8	
PFHxDA	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 22:05	67905-19-5	
PFNS	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 22:05	68259-12-1	
PFODA	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 22:05	16517-11-6	
PFOSA	0.27	ug/kg	0.12	1	06/08/23 11:05	06/14/23 22:05	754-91-6	
PFPeA	0.27	ug/kg	0.12	1	06/08/23 11:05	06/14/23 22:05	2706-90-3	
PFPeS	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 22:05	2706-91-4	
Perfluorododecanoic acid	0.24	ug/kg	0.12	1	06/08/23 11:05	06/14/23 22:05	307-55-1	
Perfluoroheptanoic acid	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 22:05	375-85-9	
Perfluorohexanesulfonic acid	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 22:05	355-46-4	
Perfluorononanoic acid	0.26	ug/kg	0.12	1	06/08/23 11:05	06/14/23 22:05	375-95-1	
Perfluorooctanesulfonic acid	3.8	ug/kg	0.11	1	06/08/23 11:05	06/14/23 22:05	1763-23-1	
Perfluorooctanoic acid	0.62	ug/kg	0.12	1	06/08/23 11:05	06/14/23 22:05	335-67-1	
Perfluorotetradecanoic acid	0.18	ug/kg	0.12	1	06/08/23 11:05	06/14/23 22:05	376-06-7	
Perfluorotridecanoic acid	0.17	ug/kg	0.12	1	06/08/23 11:05	06/14/23 22:05	72629-94-8	
Perfluoroundecanoic acid	0.31	ug/kg	0.12	1	06/08/23 11:05	06/14/23 22:05	2058-94-8	
Surrogates								
13C24:2FTS (S)	96	%	50-150	1	06/08/23 11:05	06/14/23 22:05		
13C26:2FTS (S)	122	%	50-150	1	06/08/23 11:05	06/14/23 22:05		
13C28:2FTS (S)	127	%	50-150	1	06/08/23 11:05	06/14/23 22:05		
13C2-PFDoA (S)	70	%	50-150	1	06/08/23 11:05	06/14/23 22:05		

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Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: LA2425-LA2489

Pace Project No.: 10655868

Sample: LA2437 Lab ID: 10655868013 Collected: 05/31/23 15:47 Received: 06/02/23 08:50 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
PFAS ID SL Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178 Pace Analytical Services - Minneapolis								
Surrogates								
13C2PFHxDA (S)	60	%	50-150	1	06/08/23 11:05	06/14/23 22:05		
13C2-PFTA (S)	63	%	50-150	1	06/08/23 11:05	06/14/23 22:05		
13C3HFPO-DA (S)	69	%	50-150	1	06/08/23 11:05	06/14/23 22:05		
13C3-PFBS (S)	80	%	50-150	1	06/08/23 11:05	06/14/23 22:05	375-73-5	
13C3-PFHxS (S)	78	%	50-150	1	06/08/23 11:05	06/14/23 22:05	355-46-4	
13C4-PFBA (S)	76	%	50-150	1	06/08/23 11:05	06/14/23 22:05	375-22-4	
13C4-PFHpA (S)	83	%	50-150	1	06/08/23 11:05	06/14/23 22:05	375-85-9	
13C5-PFHxA (S)	80	%	50-150	1	06/08/23 11:05	06/14/23 22:05	307-24-4	
13C5-PFPeA (S)	79	%	50-150	1	06/08/23 11:05	06/14/23 22:05	2706-90-3	
13C6-PFDA (S)	80	%	50-150	1	06/08/23 11:05	06/14/23 22:05	335-76-2	
13C7-PFUDa (S)	72	%	50-150	1	06/08/23 11:05	06/14/23 22:05	2058-94-8	
13C8-PFOA (S)	77	%	50-150	1	06/08/23 11:05	06/14/23 22:05	335-67-1	
13C8-PFOS (S)	75	%	50-150	1	06/08/23 11:05	06/14/23 22:05	1763-23-1	
13C8-PFOSA (S)	61	%	50-150	1	06/08/23 11:05	06/14/23 22:05	754-91-6	
13C9-PFNA (S)	81	%	50-150	1	06/08/23 11:05	06/14/23 22:05	375-95-1	
d3-MeFOSAA (S)	84	%	50-150	1	06/08/23 11:05	06/14/23 22:05	2355-31-9	
d3-NMeFOSA (S)	16	%	10-150	1	06/08/23 11:05	06/14/23 22:05	31506-32-8	
d5-ElFOSAA (S)	95	%	50-150	1	06/08/23 11:05	06/14/23 22:05	2991-50-6	
d5-NElFOSA (S)	15	%	10-150	1	06/08/23 11:05	06/14/23 22:05	4151-50-2	
d7-NMeFOSE (S)	51	%	10-150	1	06/08/23 11:05	06/14/23 22:05	24448-09-7	
d9-NElFOSE (S)	52	%	10-150	1	06/08/23 11:05	06/14/23 22:05	1691-99-2	

Sample: LA2438 Lab ID: 10655868014 Collected: 05/31/23 15:53 Received: 06/02/23 08:50 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight / %M by ASTM D2974 Analytical Method: ASTM D2974 Pace Analytical Services - Minneapolis								
Percent Moisture	22.0	%	0.10	1		06/30/23 17:31		N2
PFAS ID SL Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178 Pace Analytical Services - Minneapolis								
10:2 FTS	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 22:25	120226-60-0	
11Cl-PF3OUdS	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 22:25	763051-92-9	
4:2 FTS	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 22:25	757124-72-4	
6:2 FTS	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 22:25	27619-97-2	
8:2 FTS	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 22:25	39108-34-4	
9Cl-PF3ONS	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 22:25	756426-58-1	
ADONA	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 22:25	919005-14-4	
HFPO-DA	ND	ug/kg	0.13	1	06/08/23 11:05	06/14/23 22:25	13252-13-6	
NElFOSAA	ND	ug/kg	0.13	1	06/08/23 11:05	06/14/23 22:25	2991-50-6	
NElFOSA	ND	ug/kg	0.13	1	06/08/23 11:05	06/14/23 22:25	4151-50-2	

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ANALYTICAL RESULTS

Project: LA2425-LA2489
Pace Project No.: 10655868

Sample: LA2438 Lab ID: 10655868014 Collected: 05/31/23 15:53 Received: 06/02/23 08:50 Matrix: Solid
Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
PFAS ID SL								
Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178 Pace Analytical Services - Minneapolis								
NEFOSE	ND	ug/kg	0.13	1	06/08/23 11:05	06/14/23 22:25	1691-99-2	
NMeFOSAA	ND	ug/kg	0.13	1	06/08/23 11:05	06/14/23 22:25	2355-31-9	
NMeFOSA	ND	ug/kg	0.13	1	06/08/23 11:05	06/14/23 22:25	31506-32-8	
NMeFOSE	ND	ug/kg	0.13	1	06/08/23 11:05	06/14/23 22:25	24448-09-7	
Perfluorobutanesulfonic acid	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 22:25	375-73-5	
Perfluorodecanoic acid	ND	ug/kg	0.13	1	06/08/23 11:05	06/14/23 22:25	335-76-2	
Perfluorohexanoic acid	ND	ug/kg	0.13	1	06/08/23 11:05	06/14/23 22:25	307-24-4	
PFBA	ND	ug/kg	0.13	1	06/08/23 11:05	06/14/23 22:25	375-22-4	
PFDS	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 22:25	335-77-3	
PFDoS	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 22:25	79780-39-5	
PFHpS	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 22:25	375-92-8	
PFHxDA	ND	ug/kg	0.13	1	06/08/23 11:05	06/14/23 22:25	67905-19-5	
PFNS	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 22:25	68259-12-1	
PFODA	ND	ug/kg	0.13	1	06/08/23 11:05	06/14/23 22:25	16517-11-6	
PFOSA	ND	ug/kg	0.13	1	06/08/23 11:05	06/14/23 22:25	754-91-6	
PFPeA	ND	ug/kg	0.13	1	06/08/23 11:05	06/14/23 22:25	2706-90-3	
PFPeS	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 22:25	2706-91-4	
Perfluorododecanoic acid	ND	ug/kg	0.13	1	06/08/23 11:05	06/14/23 22:25	307-55-1	
Perfluoroheptanoic acid	ND	ug/kg	0.13	1	06/08/23 11:05	06/14/23 22:25	375-85-9	
Perfluorohexanesulfonic acid	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 22:25	355-46-4	
Perfluorononanoic acid	ND	ug/kg	0.13	1	06/08/23 11:05	06/14/23 22:25	375-95-1	
Perfluorooctanesulfonic acid	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 22:25	1763-23-1	
Perfluorooctanoic acid	ND	ug/kg	0.13	1	06/08/23 11:05	06/14/23 22:25	335-67-1	
Perfluorotetradecanoic acid	ND	ug/kg	0.13	1	06/08/23 11:05	06/14/23 22:25	376-06-7	
Perfluorotridecanoic acid	ND	ug/kg	0.13	1	06/08/23 11:05	06/14/23 22:25	72629-94-8	
Perfluoroundecanoic acid	ND	ug/kg	0.13	1	06/08/23 11:05	06/14/23 22:25	2058-94-8	
Surrogates								
13C24:2FTS (S)	81	%	50-150	1	06/08/23 11:05	06/14/23 22:25		
13C26:2FTS (S)	102	%	50-150	1	06/08/23 11:05	06/14/23 22:25		
13C28:2FTS (S)	92	%	50-150	1	06/08/23 11:05	06/14/23 22:25		
13C2-PFDsA (S)	83	%	50-150	1	06/08/23 11:05	06/14/23 22:25		
13C2-PFHxDA (S)	67	%	50-150	1	06/08/23 11:05	06/14/23 22:25		
13C2-PFTA (S)	74	%	50-150	1	06/08/23 11:05	06/14/23 22:25		
13C3HFPO-DA (S)	68	%	50-150	1	06/08/23 11:05	06/14/23 22:25		
13C3-PFBS (S)	79	%	50-150	1	06/08/23 11:05	06/14/23 22:25	375-73-5	
13C3-PFHxS (S)	77	%	50-150	1	06/08/23 11:05	06/14/23 22:25	355-46-4	
13C4-PFBA (S)	77	%	50-150	1	06/08/23 11:05	06/14/23 22:25	375-22-4	
13C4-PFHpA (S)	80	%	50-150	1	06/08/23 11:05	06/14/23 22:25	375-85-9	
13C5-PFHxA (S)	79	%	50-150	1	06/08/23 11:05	06/14/23 22:25	307-24-4	
13C5-PFPeA (S)	79	%	50-150	1	06/08/23 11:05	06/14/23 22:25	2706-90-3	
13C6-PFDA (S)	75	%	50-150	1	06/08/23 11:05	06/14/23 22:25	335-76-2	
13C7-PFUDa (S)	75	%	50-150	1	06/08/23 11:05	06/14/23 22:25	2058-94-8	
13C8-PFOA (S)	75	%	50-150	1	06/08/23 11:05	06/14/23 22:25	335-67-1	
13C8-PFOS (S)	78	%	50-150	1	06/08/23 11:05	06/14/23 22:25	1763-23-1	
13C8-PFOA (S)	77	%	50-150	1	06/08/23 11:05	06/14/23 22:25	754-91-6	

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1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: LA2425-LA2489

Pace Project No.: 10655868

Sample: LA2438 Lab ID: 10655868014 Collected: 05/31/23 15:53 Received: 06/02/23 08:50 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
PFAS ID SL Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178 Pace Analytical Services - Minneapolis								
Surrogates								
13C9-PFNA (S)	79	%	50-150	1	06/08/23 11:05	06/14/23 22:25	375-95-1	
d3-MeFOSAA (S)	81	%	50-150	1	06/08/23 11:05	06/14/23 22:25	2355-31-9	
d3-NMeFOSA (S)	3	%	10-150	1	06/08/23 11:05	06/14/23 22:25	31506-32-8	S0
d5-EiFOSAA (S)	91	%	50-150	1	06/08/23 11:05	06/14/23 22:25	2991-50-6	
d5-NEiFOSA (S)	1	%	10-150	1	06/08/23 11:05	06/14/23 22:25	4151-50-2	S0
d7-NMeFOSE (S)	25	%	10-150	1	06/08/23 11:05	06/14/23 22:25	24448-09-7	
d9-NEiFOSE (S)	19	%	10-150	1	06/08/23 11:05	06/14/23 22:25	1691-99-2	

Sample: LA2439 Lab ID: 10655868015 Collected: 05/31/23 16:24 Received: 06/02/23 08:50 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight / %M by ASTM D2974 Analytical Method: ASTM D2974 Pace Analytical Services - Minneapolis								
Percent Moisture	15.6	%	0.10	1		06/30/23 17:31		N2

PFAS ID SL Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178
Pace Analytical Services - Minneapolis

10:2 FTS	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 22:45	120226-60-0	
11Cl-PF3OUdS	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 22:45	763051-92-9	
4:2 FTS	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 22:45	757124-72-4	
6:2 FTS	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 22:45	27619-97-2	
8:2 FTS	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 22:45	39108-34-4	
9Cl-PF3ONS	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 22:45	756426-58-1	
ADONA	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 22:45	919005-14-4	
HFPO-DA	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 22:45	13252-13-6	
NEiFOSAA	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 22:45	2991-50-6	
NEiFOSA	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 22:45	4151-50-2	
NEiFOSE	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 22:45	1691-99-2	
NMeFOSAA	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 22:45	2355-31-9	
NMeFOSA	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 22:45	31506-32-8	
NMeFOSE	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 22:45	24448-09-7	
Perfluorobutanesulfonic acid	ND	ug/kg	0.10	1	06/08/23 11:05	06/14/23 22:45	375-73-5	
Perfluorodecanoic acid	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 22:45	335-76-2	
Perfluorohexanoic acid	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 22:45	307-24-4	
PFBA	0.14	ug/kg	0.12	1	06/08/23 11:05	06/14/23 22:45	375-22-4	
PFDS	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 22:45	335-77-3	
PFDoS	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 22:45	79780-39-5	
PFHpS	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 22:45	375-92-8	
PFHxDA	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 22:45	67905-19-5	
PFNS	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 22:45	68259-12-1	
PFODA	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 22:45	16517-11-6	

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INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

We Protect Hoosiers and Our Environment.

100 N. Senate Avenue • Indianapolis, IN 46204

(800) 451-6027 • (317) 232-8603 • www.idem.IN.gov

Eric J. Holcomb
Governor

Brian C. Rockensuess
Commissioner

October 18, 2023

RE: Soil Sampling Results

#LA2445 12-1 Shallow
#LA2446 12-1 Deep
#LA2447 12-2 Shallow
#LA2448 12-2 Deep

IDEM received the results of the analysis for soil samples collected on May 31, 2023, from your property located on [REDACTED]. The analysis was performed by IDEM's contract laboratory and tested for 36 per- and polyfluoroalkyl substances (PFAS) including the compounds perfluorooctanoic acid (PFOA) and perfluorooctane sulfonate (PFOS).

None of the 36 PFAS compounds analyzed were detected above IDEM's Risk-based Closure Guide (July 2022 and all subsequent updates) (RCG) published levels for residential soil direct contact. Please note that the published soil standard is based on ingestion, inhalation and dermal exposure solely related to soil contact. A map depicting the sample locations has been included as an attachment. In addition, the analytical sheets from Pace Laboratories have also been included with this letter for your records.

If you have questions regarding this matter, please contact Lynette Schrowe of the Remediation Services Branch at 317/234-8622.

Sincerely,

Kevin Davis, Chief
Remediation Services Branch
Office of Land Quality



Visit on.IN.gov/survey or scan the QR code to provide feedback.

We appreciate your input!





Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: LA2425-LA2489
Pace Project No.: 10655868

Sample: LA2445 Lab ID: 10655868021 Collected: 05/31/23 17:35 Received: 06/02/23 08:50 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
PFAS ID SL								
Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178								
Pace Analytical Services - Minneapolis								
PFOSA	ND	ug/kg	0.11	1	06/20/23 13:12	07/07/23 14:51	754-91-6	
PFPeA	ND	ug/kg	0.11	1	06/20/23 13:12	07/07/23 14:51	2706-90-3	
PFPeS	ND	ug/kg	0.11	1	06/20/23 13:12	07/07/23 14:51	2706-91-4	
Perfluorododecanoic acid	ND	ug/kg	0.11	1	06/20/23 13:12	07/07/23 14:51	307-55-1	
Perfluoroheptanoic acid	ND	ug/kg	0.11	1	06/20/23 13:12	07/07/23 14:51	375-85-9	
Perfluorohexanesulfonic acid	ND	ug/kg	0.10	1	06/20/23 13:12	07/07/23 14:51	355-46-4	
Perfluorononanoic acid	ND	ug/kg	0.11	1	06/20/23 13:12	07/07/23 14:51	375-95-1	
Perfluorooctanesulfonic acid	0.62	ug/kg	0.11	1	06/20/23 13:12	07/07/23 14:51	1763-23-1	
Perfluorooctanoic acid	ND	ug/kg	0.11	1	06/20/23 13:12	07/07/23 14:51	335-67-1	
Perfluorotetradecanoic acid	ND	ug/kg	0.11	1	06/20/23 13:12	07/07/23 14:51	376-06-7	
Perfluorotridecanoic acid	ND	ug/kg	0.11	1	06/20/23 13:12	07/07/23 14:51	72629-94-8	
Perfluoroundecanoic acid	ND	ug/kg	0.11	1	06/20/23 13:12	07/07/23 14:51	2058-94-8	
Surrogates								
13C24:2FTS (S)	199	%	50-150	1	06/20/23 13:12	07/07/23 14:51		SO
13C26:2FTS (S)	119	%	50-150	1	06/20/23 13:12	07/07/23 14:51		
13C28:2FTS (S)	137	%	50-150	1	06/20/23 13:12	07/07/23 14:51		
13C2-PFD _o A (S)	98	%	50-150	1	06/20/23 13:12	07/07/23 14:51		
13C2-PFH _x DA (S)	86	%	50-150	1	06/20/23 13:12	07/07/23 14:51		
13C2-PFTA (S)	103	%	50-150	1	06/20/23 13:12	07/07/23 14:51		
13C3HFPO-DA (S)	115	%	50-150	1	06/20/23 13:12	07/07/23 14:51		
13C3-PFBS (S)	117	%	50-150	1	06/20/23 13:12	07/07/23 14:51	375-73-5	
13C3-PFH _x S (S)	99	%	50-150	1	06/20/23 13:12	07/07/23 14:51	355-46-4	
13C4-PFBA (S)	123	%	50-150	1	06/20/23 13:12	07/07/23 14:51	375-22-4	
13C4-PFH _p A (S)	107	%	50-150	1	06/20/23 13:12	07/07/23 14:51	375-85-9	
13C5-PFH _x A (S)	118	%	50-150	1	06/20/23 13:12	07/07/23 14:51	307-24-4	
13C5-PFPeA (S)	131	%	50-150	1	06/20/23 13:12	07/07/23 14:51	2706-90-3	
13C6-PFDA (S)	97	%	50-150	1	06/20/23 13:12	07/07/23 14:51	335-76-2	
13C7-PFUD _o A (S)	108	%	50-150	1	06/20/23 13:12	07/07/23 14:51	2058-94-8	
13C8-PFOA (S)	102	%	50-150	1	06/20/23 13:12	07/07/23 14:51	335-67-1	
13C8-PFOS (S)	93	%	50-150	1	06/20/23 13:12	07/07/23 14:51	1763-23-1	
13C8-PFOSA (S)	80	%	50-150	1	06/20/23 13:12	07/07/23 14:51	754-91-6	
13C9-PFNA (S)	98	%	50-150	1	06/20/23 13:12	07/07/23 14:51	375-95-1	
d3-MeFOSAA (S)	99	%	50-150	1	06/20/23 13:12	07/07/23 14:51	2355-31-9	
d3-NMeFOSA (S)	19	%	10-150	1	06/20/23 13:12	07/07/23 14:51	31506-32-8	
d5-ElFOSAA (S)	107	%	50-150	1	06/20/23 13:12	07/07/23 14:51	2991-50-6	
d5-NEFOSA (S)	16	%	10-150	1	06/20/23 13:12	07/07/23 14:51	4151-50-2	
d7-NMeFOSE (S)	54	%	10-150	1	06/20/23 13:12	07/07/23 14:51	24448-09-7	
d9-NEFOSE (S)	46	%	10-150	1	06/20/23 13:12	07/07/23 14:51	1691-99-2	

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Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: LA2425-LA2489

Pace Project No.: 10655868

Sample: LA2446 Lab ID: 10655868022 Collected: 05/31/23 17:42 Received: 06/02/23 08:50 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight / %M by ASTM D2974								
Analytical Method: ASTM D2974								
Pace Analytical Services - Minneapolis								
Percent Moisture	17.4	%	0.10	1		07/02/23 05:58		N2
PFAS ID SL								
Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178								
Pace Analytical Services - Minneapolis								
10:2 FTS	ND	ug/kg	0.11	1	06/20/23 13:12	07/07/23 14:59	120226-60-0	
11Cl-PF3OUdS	ND	ug/kg	0.11	1	06/20/23 13:12	07/07/23 14:59	763051-92-9	
4:2 FTS	ND	ug/kg	0.11	1	06/20/23 13:12	07/07/23 14:59	757124-72-4	
6:2 FTS	ND	ug/kg	0.11	1	06/20/23 13:12	07/07/23 14:59	27619-97-2	
8:2 FTS	ND	ug/kg	0.11	1	06/20/23 13:12	07/07/23 14:59	39108-34-4	
9Cl-PF3ONS	ND	ug/kg	0.11	1	06/20/23 13:12	07/07/23 14:59	756426-58-1	
ADONA	ND	ug/kg	0.11	1	06/20/23 13:12	07/07/23 14:59	919005-14-4	
HFPO-DA	ND	ug/kg	0.12	1	06/20/23 13:12	07/07/23 14:59	13252-13-6	
NEtFOSAA	ND	ug/kg	0.12	1	06/20/23 13:12	07/07/23 14:59	2991-50-6	
NEtFOSA	ND	ug/kg	0.12	1	06/20/23 13:12	07/07/23 14:59	4151-50-2	
NEtFOSE	ND	ug/kg	0.12	1	06/20/23 13:12	07/07/23 14:59	1691-99-2	
NMeFOSAA	ND	ug/kg	0.12	1	06/20/23 13:12	07/07/23 14:59	2355-31-9	
NMeFOSA	ND	ug/kg	0.12	1	06/20/23 13:12	07/07/23 14:59	31506-32-8	
NMeFOSE	ND	ug/kg	0.12	1	06/20/23 13:12	07/07/23 14:59	24448-09-7	
Perfluorobutanesulfonic acid	ND	ug/kg	0.11	1	06/20/23 13:12	07/07/23 14:59	375-73-5	
Perfluorodecanoic acid	ND	ug/kg	0.12	1	06/20/23 13:12	07/07/23 14:59	335-76-2	
Perfluorohexanoic acid	ND	ug/kg	0.12	1	06/20/23 13:12	07/07/23 14:59	307-24-4	
PFBA	ND	ug/kg	0.12	1	06/20/23 13:12	07/07/23 14:59	375-22-4	
PFDS	ND	ug/kg	0.11	1	06/20/23 13:12	07/07/23 14:59	335-77-3	
PFDoS	ND	ug/kg	0.11	1	06/20/23 13:12	07/07/23 14:59	79780-39-5	
PFHpS	ND	ug/kg	0.11	1	06/20/23 13:12	07/07/23 14:59	375-92-8	
PFHxDA	ND	ug/kg	0.12	1	06/20/23 13:12	07/07/23 14:59	67905-19-5	
PFNS	ND	ug/kg	0.11	1	06/20/23 13:12	07/07/23 14:59	68259-12-1	
PFODA	ND	ug/kg	0.12	1	06/20/23 13:12	07/07/23 14:59	16517-11-6	
PFOSA	ND	ug/kg	0.12	1	06/20/23 13:12	07/07/23 14:59	754-91-6	
PFPeA	ND	ug/kg	0.12	1	06/20/23 13:12	07/07/23 14:59	2706-90-3	
PFPeS	ND	ug/kg	0.11	1	06/20/23 13:12	07/07/23 14:59	2706-91-4	
Perfluorododecanoic acid	ND	ug/kg	0.12	1	06/20/23 13:12	07/07/23 14:59	307-55-1	
Perfluoroheptanoic acid	ND	ug/kg	0.12	1	06/20/23 13:12	07/07/23 14:59	375-85-9	
Perfluorohexanesulfonic acid	ND	ug/kg	0.11	1	06/20/23 13:12	07/07/23 14:59	355-46-4	
Perfluorononanoic acid	ND	ug/kg	0.12	1	06/20/23 13:12	07/07/23 14:59	375-95-1	
Perfluorooctanesulfonic acid	ND	ug/kg	0.11	1	06/20/23 13:12	07/07/23 14:59	1763-23-1	
Perfluorooctanoic acid	ND	ug/kg	0.12	1	06/20/23 13:12	07/07/23 14:59	335-67-1	
Perfluorotetradecanoic acid	ND	ug/kg	0.12	1	06/20/23 13:12	07/07/23 14:59	376-06-7	
Perfluorotridecanoic acid	ND	ug/kg	0.12	1	06/20/23 13:12	07/07/23 14:59	72629-94-8	
Perfluoroundecanoic acid	ND	ug/kg	0.12	1	06/20/23 13:12	07/07/23 14:59	2058-94-8	
Surrogates								
13C24:2FTS (S)	165	%	50-150	1	06/20/23 13:12	07/07/23 14:59		S3
13C26:2FTS (S)	82	%	50-150	1	06/20/23 13:12	07/07/23 14:59		
13C28:2FTS (S)	85	%	50-150	1	06/20/23 13:12	07/07/23 14:59		
13C2-PFDoA (S)	96	%	50-150	1	06/20/23 13:12	07/07/23 14:59		

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ANALYTICAL RESULTS

Project: LA2425-LA2489
Pace Project No.: 10655868

Sample: LA2446 Lab ID: 10655868022 Collected: 05/31/23 17:42 Received: 06/02/23 08:50 Matrix: Solid
Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
PFAS ID SL								
Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178 Pace Analytical Services - Minneapolis								
Surrogates								
13C2PFHxDA (S)	75	%	50-150	1	06/20/23 13:12	07/07/23 14:59		
13C2-PFTA (S)	94	%	50-150	1	06/20/23 13:12	07/07/23 14:59		
13C3HFPO-DA (S)	107	%	50-150	1	06/20/23 13:12	07/07/23 14:59		
13C3-PFBS (S)	103	%	50-150	1	06/20/23 13:12	07/07/23 14:59	375-73-5	
13C3-PFHxS (S)	90	%	50-150	1	06/20/23 13:12	07/07/23 14:59	355-46-4	
13C4-PFBA (S)	111	%	50-150	1	06/20/23 13:12	07/07/23 14:59	375-22-4	
13C4-PFHpA (S)	99	%	50-150	1	06/20/23 13:12	07/07/23 14:59	375-85-9	
13C5-PFHxA (S)	103	%	50-150	1	06/20/23 13:12	07/07/23 14:59	307-24-4	
13C5-PFPeA (S)	115	%	50-150	1	06/20/23 13:12	07/07/23 14:59	2706-90-3	
13C6-PFDA (S)	93	%	50-150	1	06/20/23 13:12	07/07/23 14:59	335-76-2	
13C7-PFUDa (S)	93	%	50-150	1	06/20/23 13:12	07/07/23 14:59	2058-94-8	
13C8-PFOA (S)	89	%	50-150	1	06/20/23 13:12	07/07/23 14:59	335-67-1	
13C8-PFOS (S)	84	%	50-150	1	06/20/23 13:12	07/07/23 14:59	1763-23-1	
13C8-PFOSA (S)	76	%	50-150	1	06/20/23 13:12	07/07/23 14:59	754-91-6	
13C9-PFNA (S)	86	%	50-150	1	06/20/23 13:12	07/07/23 14:59	375-95-1	
d3-MeFOSAA (S)	72	%	50-150	1	06/20/23 13:12	07/07/23 14:59	2355-31-9	
d3-NMeFOSA (S)	11	%	10-150	1	06/20/23 13:12	07/07/23 14:59	31506-32-8	
d5-EtFOSAA (S)	79	%	50-150	1	06/20/23 13:12	07/07/23 14:59	2991-50-6	
d5-NEtFOSA (S)	10	%	10-150	1	06/20/23 13:12	07/07/23 14:59	4151-50-2	
d7-NMeFOSE (S)	58	%	10-150	1	06/20/23 13:12	07/07/23 14:59	24448-09-7	
d9-NEtFOSE (S)	55	%	10-150	1	06/20/23 13:12	07/07/23 14:59	1691-99-2	

Sample: LA2447 Lab ID: 10655868023 Collected: 05/31/23 17:50 Received: 06/02/23 08:50 Matrix: Solid
Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight / %M by ASTM D2974								
Analytical Method: ASTM D2974 Pace Analytical Services - Minneapolis								
Percent Moisture	15.7	%	0.10	1		07/02/23 05:58		N2
PFAS ID SL								
Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178 Pace Analytical Services - Minneapolis								
10:2 FTS	ND	ug/kg	0.11	1	06/20/23 13:12	07/07/23 15:06	120226-60-0	
11Cl-PF3OUdS	ND	ug/kg	0.11	1	06/20/23 13:12	07/07/23 15:06	763051-92-9	
4:2 FTS	ND	ug/kg	0.11	1	06/20/23 13:12	07/07/23 15:06	757124-72-4	
6:2 FTS	ND	ug/kg	0.11	1	06/20/23 13:12	07/07/23 15:06	27619-97-2	
8:2 FTS	ND	ug/kg	0.11	1	06/20/23 13:12	07/07/23 15:06	39108-34-4	
9Cl-PF3ONS	ND	ug/kg	0.11	1	06/20/23 13:12	07/07/23 15:06	756426-58-1	
ADONA	ND	ug/kg	0.11	1	06/20/23 13:12	07/07/23 15:06	919005-14-4	
HFPO-DA	ND	ug/kg	0.12	1	06/20/23 13:12	07/07/23 15:06	13252-13-6	
NEtFOSAA	ND	ug/kg	0.12	1	06/20/23 13:12	07/07/23 15:06	2991-50-6	
NEtFOSA	ND	ug/kg	0.12	1	06/20/23 13:12	07/07/23 15:06	4151-50-2	

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ANALYTICAL RESULTS

Project: LA2425-LA2489
Pace Project No.: 10655868

Sample: LA2447 Lab ID: 10655868023 Collected: 05/31/23 17:50 Received: 06/02/23 08:50 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
PFAS ID SL Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178 Pace Analytical Services - Minneapolis								
NEI FOSE	ND	ug/kg	0.12	1	06/20/23 13:12	07/07/23 15:06	1691-99-2	
NMeFOSAA	ND	ug/kg	0.12	1	06/20/23 13:12	07/07/23 15:06	2355-31-9	
NMeFOSA	ND	ug/kg	0.12	1	06/20/23 13:12	07/07/23 15:06	31506-32-8	
NMeFOSE	ND	ug/kg	0.12	1	06/20/23 13:12	07/07/23 15:06	24448-09-7	
Perfluorobutanesulfonic acid	ND	ug/kg	0.10	1	06/20/23 13:12	07/07/23 15:06	375-73-5	
Perfluorodecanoic acid	ND	ug/kg	0.12	1	06/20/23 13:12	07/07/23 15:06	335-76-2	
Perfluorohexanoic acid	ND	ug/kg	0.12	1	06/20/23 13:12	07/07/23 15:06	307-24-4	
PFBA	ND	ug/kg	0.12	1	06/20/23 13:12	07/07/23 15:06	375-22-4	
PFDS	ND	ug/kg	0.11	1	06/20/23 13:12	07/07/23 15:06	335-77-3	
PFDOS	ND	ug/kg	0.11	1	06/20/23 13:12	07/07/23 15:06	79780-39-5	
PFHpS	ND	ug/kg	0.11	1	06/20/23 13:12	07/07/23 15:06	375-92-8	
PFHxDA	ND	ug/kg	0.12	1	06/20/23 13:12	07/07/23 15:06	67905-19-5	
PFNS	ND	ug/kg	0.11	1	06/20/23 13:12	07/07/23 15:06	68259-12-1	
PFODA	ND	ug/kg	0.12	1	06/20/23 13:12	07/07/23 15:06	16517-11-6	
PFOSA	ND	ug/kg	0.12	1	06/20/23 13:12	07/07/23 15:06	754-91-6	
PFPeA	ND	ug/kg	0.12	1	06/20/23 13:12	07/07/23 15:06	2706-90-3	
PFPeS	ND	ug/kg	0.11	1	06/20/23 13:12	07/07/23 15:06	2706-91-4	
Perfluorododecanoic acid	ND	ug/kg	0.12	1	06/20/23 13:12	07/07/23 15:06	307-55-1	
Perfluoroheptanoic acid	ND	ug/kg	0.12	1	06/20/23 13:12	07/07/23 15:06	375-85-9	
Perfluorohexanesulfonic acid	ND	ug/kg	0.11	1	06/20/23 13:12	07/07/23 15:06	355-46-4	
Perfluorononanoic acid	0.12	ug/kg	0.12	1	06/20/23 13:12	07/07/23 15:06	375-95-1	
Perfluorooctanesulfonic acid	11.1	ug/kg	0.54	5	06/20/23 13:12	07/13/23 16:56	1763-23-1	
Perfluorooctanoic acid	0.76	ug/kg	0.12	1	06/20/23 13:12	07/07/23 15:06	335-67-1	
Perfluorotetradecanoic acid	ND	ug/kg	0.12	1	06/20/23 13:12	07/07/23 15:06	376-06-7	
Perfluorotridecanoic acid	ND	ug/kg	0.12	1	06/20/23 13:12	07/07/23 15:06	72629-94-8	
Perfluoroundecanoic acid	ND	ug/kg	0.12	1	06/20/23 13:12	07/07/23 15:06	2058-94-8	
Surrogates								
13C24:2FTS (S)	213	%	50-150	1	06/20/23 13:12	07/07/23 15:06		S0
13C26:2FTS (S)	170	%	50-150	1	06/20/23 13:12	07/07/23 15:06		S0
13C28:2FTS (S)	177	%	50-150	1	06/20/23 13:12	07/07/23 15:06		S0
13C2-PFDoA (S)	90	%	50-150	1	06/20/23 13:12	07/07/23 15:06		
13C2-PFHxDA (S)	85	%	50-150	1	06/20/23 13:12	07/07/23 15:06		
13C2-PFTA (S)	89	%	50-150	1	06/20/23 13:12	07/07/23 15:06		
13C3HFPO-DA (S)	108	%	50-150	1	06/20/23 13:12	07/07/23 15:06		
13C3-PFBS (S)	113	%	50-150	1	06/20/23 13:12	07/07/23 15:06	375-73-5	
13C3-PFHxS (S)	97	%	50-150	1	06/20/23 13:12	07/07/23 15:06	355-46-4	
13C4-PFBA (S)	118	%	50-150	1	06/20/23 13:12	07/07/23 15:06	375-22-4	
13C4-PFHpA (S)	108	%	50-150	1	06/20/23 13:12	07/07/23 15:06	375-85-9	
13C5-PFHxA (S)	113	%	50-150	1	06/20/23 13:12	07/07/23 15:06	307-24-4	
13C5-PFPeA (S)	130	%	50-150	1	06/20/23 13:12	07/07/23 15:06	2706-90-3	
13C6-PFDA (S)	106	%	50-150	1	06/20/23 13:12	07/07/23 15:06	335-76-2	
13C7-PFUDa (S)	103	%	50-150	1	06/20/23 13:12	07/07/23 15:06	2058-94-8	
13C8-PFOA (S)	98	%	50-150	1	06/20/23 13:12	07/07/23 15:06	335-67-1	
13C8-PFOS (S)	86	%	50-150	1	06/20/23 13:12	07/07/23 15:06	1763-23-1	
13C8-PFOSA (S)	74	%	50-150	1	06/20/23 13:12	07/07/23 15:06	754-91-6	

REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: LA2425-LA2489
Pace Project No.: 10655868

Sample: LA2447 Lab ID: 10655868023 Collected: 05/31/23 17:50 Received: 06/02/23 08:50 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
PFAS ID SL								
Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178 Pace Analytical Services - Minneapolis								
Surrogates								
13C9-PFNA (S)	86	%	50-150	1	06/20/23 13:12	07/07/23 15:06	375-95-1	
d3-MeFOSAA (S)	108	%	50-150	1	06/20/23 13:12	07/07/23 15:06	2355-31-9	
d3-NMeFOSA (S)	5	%	10-150	1	06/20/23 13:12	07/07/23 15:06	31506-32-8	S0
d5-EiFOSAA (S)	109	%	50-150	1	06/20/23 13:12	07/07/23 15:06	2991-50-6	
d5-NEiFOSA (S)	4	%	10-150	1	06/20/23 13:12	07/07/23 15:06	4151-50-2	S0
d7-NMeFOSE (S)	47	%	10-150	1	06/20/23 13:12	07/07/23 15:06	24448-09-7	
d9-NEiFOSE (S)	40	%	10-150	1	06/20/23 13:12	07/07/23 15:06	1691-99-2	

Sample: LA2448 Lab ID: 10655868024 Collected: 05/31/23 17:54 Received: 06/02/23 08:50 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight / %M by ASTM D2974								
Analytical Method: ASTM D2974 Pace Analytical Services - Minneapolis								
Percent Moisture	19.2	%	0.10	1		07/02/23 05:58		N2
PFAS ID SL								
Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178 Pace Analytical Services - Minneapolis								
10:2 FTS	ND	ug/kg	0.12	1	06/20/23 13:12	07/07/23 15:13	120226-60-0	
11Cl-PF3OUdS	ND	ug/kg	0.11	1	06/20/23 13:12	07/07/23 15:13	763061-92-9	
4:2 FTS	ND	ug/kg	0.11	1	06/20/23 13:12	07/07/23 15:13	757124-72-4	
6:2 FTS	ND	ug/kg	0.12	1	06/20/23 13:12	07/07/23 15:13	27619-97-2	
8:2 FTS	ND	ug/kg	0.12	1	06/20/23 13:12	07/07/23 15:13	39108-34-4	
9Cl-PF3ONS	ND	ug/kg	0.11	1	06/20/23 13:12	07/07/23 15:13	756426-58-1	
ADONA	ND	ug/kg	0.12	1	06/20/23 13:12	07/07/23 15:13	919005-14-4	
HFPO-DA	ND	ug/kg	0.12	1	06/20/23 13:12	07/07/23 15:13	13252-13-6	
NEiFOSAA	ND	ug/kg	0.12	1	06/20/23 13:12	07/07/23 15:13	2991-50-6	
NEiFOSA	ND	ug/kg	0.12	1	06/20/23 13:12	07/07/23 15:13	4151-50-2	
NEiFOSE	ND	ug/kg	0.12	1	06/20/23 13:12	07/07/23 15:13	1691-99-2	
NMeFOSAA	ND	ug/kg	0.12	1	06/20/23 13:12	07/07/23 15:13	2355-31-9	
NMeFOSA	ND	ug/kg	0.12	1	06/20/23 13:12	07/07/23 15:13	31506-32-8	
NMeFOSE	ND	ug/kg	0.12	1	06/20/23 13:12	07/07/23 15:13	24448-09-7	
Perfluorobutanesulfonic acid	ND	ug/kg	0.11	1	06/20/23 13:12	07/07/23 15:13	375-73-5	
Perfluorodecanoic acid	ND	ug/kg	0.12	1	06/20/23 13:12	07/07/23 15:13	335-76-2	
Perfluorohexanoic acid	ND	ug/kg	0.12	1	06/20/23 13:12	07/07/23 15:13	307-24-4	
PFBA	ND	ug/kg	0.12	1	06/20/23 13:12	07/07/23 15:13	375-22-4	
PFDS	ND	ug/kg	0.12	1	06/20/23 13:12	07/07/23 15:13	335-77-3	
PFDOS	ND	ug/kg	0.12	1	06/20/23 13:12	07/07/23 15:13	79780-39-5	
PFHpS	ND	ug/kg	0.12	1	06/20/23 13:12	07/07/23 15:13	375-92-8	
PFHxDA	ND	ug/kg	0.12	1	06/20/23 13:12	07/07/23 15:13	67905-19-5	
PFNS	ND	ug/kg	0.12	1	06/20/23 13:12	07/07/23 15:13	68259-12-1	
PFODA	ND	ug/kg	0.12	1	06/20/23 13:12	07/07/23 15:13	16517-11-6	

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Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: LA2425-LA2489
Pace Project No.: 10655868

Sample: LA2448 Lab ID: 10655868024 Collected: 05/31/23 17:54 Received: 06/02/23 08:50 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
PFAS ID SL								
Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178								
Pace Analytical Services - Minneapolis								
PFOSA	ND	ug/kg	0.12	1	06/20/23 13:12	07/07/23 15:13	754-91-6	
PFPeA	ND	ug/kg	0.12	1	06/20/23 13:12	07/07/23 15:13	2706-90-3	
PFPeS	ND	ug/kg	0.11	1	06/20/23 13:12	07/07/23 15:13	2706-91-4	
Perfluorododecanoic acid	ND	ug/kg	0.12	1	06/20/23 13:12	07/07/23 15:13	307-55-1	
Perfluoroheptanoic acid	ND	ug/kg	0.12	1	06/20/23 13:12	07/07/23 15:13	375-85-9	
Perfluorohexanesulfonic acid	ND	ug/kg	0.11	1	06/20/23 13:12	07/07/23 15:13	355-46-4	
Perfluorononanoic acid	ND	ug/kg	0.12	1	06/20/23 13:12	07/07/23 15:13	375-95-1	
Perfluorooctanesulfonic acid	1.9	ug/kg	0.11	1	06/20/23 13:12	07/07/23 15:13	1763-23-1	
Perfluorooctanoic acid	0.27	ug/kg	0.12	1	06/20/23 13:12	07/07/23 15:13	335-67-1	
Perfluorotetradecanoic acid	ND	ug/kg	0.12	1	06/20/23 13:12	07/07/23 15:13	376-06-7	
Perfluorotridecanoic acid	ND	ug/kg	0.12	1	06/20/23 13:12	07/07/23 15:13	72629-94-8	
Perfluoroundecanoic acid	ND	ug/kg	0.12	1	06/20/23 13:12	07/07/23 15:13	2058-94-8	
Surrogates								
13C24:2FTS (S)	186	%	50-150	1	06/20/23 13:12	07/07/23 15:13		S0
13C26:2FTS (S)	82	%	50-150	1	06/20/23 13:12	07/07/23 15:13		
13C28:2FTS (S)	94	%	50-150	1	06/20/23 13:12	07/07/23 15:13		
13C2-PFDoA (S)	100	%	50-150	1	06/20/23 13:12	07/07/23 15:13		
13C2PFHxDA (S)	72	%	50-150	1	06/20/23 13:12	07/07/23 15:13		
13C2-PFTA (S)	104	%	50-150	1	06/20/23 13:12	07/07/23 15:13		
13C3HFPO-DA (S)	115	%	50-150	1	06/20/23 13:12	07/07/23 15:13		
13C3-PFBS (S)	107	%	50-150	1	06/20/23 13:12	07/07/23 15:13	375-73-5	
13C3-PFHxS (S)	92	%	50-150	1	06/20/23 13:12	07/07/23 15:13	355-46-4	
13C4-PFBA (S)	116	%	50-150	1	06/20/23 13:12	07/07/23 15:13	375-22-4	
13C4-PFHpA (S)	103	%	50-150	1	06/20/23 13:12	07/07/23 15:13	375-85-9	
13C5-PFHxA (S)	109	%	50-150	1	06/20/23 13:12	07/07/23 15:13	307-24-4	
13C5-PFPeA (S)	120	%	50-150	1	06/20/23 13:12	07/07/23 15:13	2706-90-3	
13C6-PFDA (S)	92	%	50-150	1	06/20/23 13:12	07/07/23 15:13	335-76-2	
13C7-PFUDa (S)	100	%	50-150	1	06/20/23 13:12	07/07/23 15:13	2058-94-8	
13C8-PFOA (S)	93	%	50-150	1	06/20/23 13:12	07/07/23 15:13	335-67-1	
13C8-PFOS (S)	89	%	50-150	1	06/20/23 13:12	07/07/23 15:13	1763-23-1	
13C8-PFOSA (S)	68	%	50-150	1	06/20/23 13:12	07/07/23 15:13	754-91-6	
13C9-PFNA (S)	95	%	50-150	1	06/20/23 13:12	07/07/23 15:13	375-95-1	
d3-MeFOSAA (S)	74	%	50-150	1	06/20/23 13:12	07/07/23 15:13	2355-31-9	
d3-NMeFOSA (S)	4	%	10-150	1	06/20/23 13:12	07/07/23 15:13	31506-32-8	S0
d5-EiFOSAA (S)	88	%	50-150	1	06/20/23 13:12	07/07/23 15:13	2991-50-6	
d5-NEiFOSA (S)	3	%	10-150	1	06/20/23 13:12	07/07/23 15:13	4151-50-2	S0
d7-NMeFOSE (S)	44	%	10-150	1	06/20/23 13:12	07/07/23 15:13	24448-09-7	
d9-NEiFOSE (S)	42	%	10-150	1	06/20/23 13:12	07/07/23 15:13	1691-99-2	

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INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

We Protect Hoosiers and Our Environment.

100 N. Senate Avenue • Indianapolis, IN 46204

(800) 451-6027 • (317) 232-8603 • www.idem.IN.gov

Eric J. Holcomb
Governor

Brian C. Rockensuess
Commissioner

October 18, 2023

RE: Soil Sampling Results

#LA2439 13-1 Shallow
#LA2440 13-1 Deep
#LA2441 13-2 Shallow
#LA2442 13-2 Deep
#LA2443 13-3 Shallow
#LA2444 13-3 Deep

IDEM received the results of the analysis for soil samples collected on May 31, 2023, from your property located on [REDACTED]. The analysis was performed by IDEM's contract laboratory and tested for 36 per- and polyfluoroalkyl substances (PFAS) including the compounds perfluorooctanoic acid (PFOA) and perfluorooctane sulfonate (PFOS).

None of the 36 PFAS compounds analyzed were detected above IDEM's Remediation Closure Guide (July 2022 and all subsequent updates) (RCG) published levels for residential soil direct contact with the exception of LA2444 13-3 Deep where PFOS was detected at 300 parts per billion (ppb), exceeding the RCG direct contact published level for PFOS in residential soil of 200 ppb. Please note that the published soil standard is based on ingestion, inhalation and dermal exposure solely related to soil contact. A map depicting the sample locations has been included as an attachment. In addition, the analytical sheets from Pace Laboratories have also been included with this letter for your records.

If you have questions regarding this matter, please contact Lynette Schrowe of the Remediation Services Branch at 317/234-8622.

Sincerely,

Kevin Davis, Chief
Remediation Services Branch
Office of Land Quality



Visit on.IN.gov/survey or scan the QR code to provide feedback.

We appreciate your input!





Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: LA2425-LA2489

Pace Project No.: 10655868

Sample: LA2439 Lab ID: 10655868015 Collected: 05/31/23 16:24 Received: 06/02/23 08:50 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
PFAS ID SL								
Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178								
Pace Analytical Services - Minneapolis								
PFOSA	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 22:45	754-91-6	
PFPeA	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 22:45	2706-90-3	
PFPeS	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 22:45	2706-91-4	
Perfluorododecanoic acid	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 22:45	307-55-1	
Perfluoroheptanoic acid	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 22:45	375-85-9	
Perfluorohexanesulfonic acid	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 22:45	355-46-4	
Perfluorononanoic acid	0.13	ug/kg	0.12	1	06/08/23 11:05	06/14/23 22:45	375-95-1	
Perfluorooctanesulfonic acid	3.2	ug/kg	0.11	1	06/08/23 11:05	06/14/23 22:45	1763-23-1	
Perfluorooctanoic acid	0.30	ug/kg	0.12	1	06/08/23 11:05	06/14/23 22:45	335-67-1	
Perfluorotetradecanoic acid	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 22:45	376-06-7	
Perfluorotridecanoic acid	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 22:45	72629-94-8	
Perfluoroundecanoic acid	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 22:45	2058-94-8	
Surrogates								
13C24:2FTS (S)	88	%	50-150	1	06/08/23 11:05	06/14/23 22:45		
13C26:2FTS (S)	115	%	50-150	1	06/08/23 11:05	06/14/23 22:45		
13C28:2FTS (S)	98	%	50-150	1	06/08/23 11:05	06/14/23 22:45		
13C2-PFDoA (S)	83	%	50-150	1	06/08/23 11:05	06/14/23 22:45		
13C2-PFHxDA (S)	73	%	50-150	1	06/08/23 11:05	06/14/23 22:45		
13C2-PFTA (S)	78	%	50-150	1	06/08/23 11:05	06/14/23 22:45		
13C3HFPO-DA (S)	75	%	50-150	1	06/08/23 11:05	06/14/23 22:45		
13C3-PFBS (S)	84	%	50-150	1	06/08/23 11:05	06/14/23 22:45	375-73-5	
13C3-PFHxS (S)	84	%	50-150	1	06/08/23 11:05	06/14/23 22:45	355-46-4	
13C4-PFBA (S)	81	%	50-150	1	06/08/23 11:05	06/14/23 22:45	375-22-4	
13C4-PFHpA (S)	85	%	50-150	1	06/08/23 11:05	06/14/23 22:45	375-85-9	
13C5-PFHxA (S)	83	%	50-150	1	06/08/23 11:05	06/14/23 22:45	307-24-4	
13C5-PFPeA (S)	85	%	50-150	1	06/08/23 11:05	06/14/23 22:45	2706-90-3	
13C6-PFDA (S)	79	%	50-150	1	06/08/23 11:05	06/14/23 22:45	335-76-2	
13C7-PFUDa (S)	80	%	50-150	1	06/08/23 11:05	06/14/23 22:45	2058-94-8	
13C8-PFOA (S)	82	%	50-150	1	06/08/23 11:05	06/14/23 22:45	335-67-1	
13C8-PFOS (S)	81	%	50-150	1	06/08/23 11:05	06/14/23 22:45	1763-23-1	
13C8-PFOSA (S)	86	%	50-150	1	06/08/23 11:05	06/14/23 22:45	754-91-6	
13C9-PFNA (S)	84	%	50-150	1	06/08/23 11:05	06/14/23 22:45	375-95-1	
d3-MeFOSAA (S)	89	%	50-150	1	06/08/23 11:05	06/14/23 22:45	2355-31-9	
d3-NMeFOSA (S)	33	%	10-150	1	06/08/23 11:05	06/14/23 22:45	31506-32-8	
d5-ElFOSAA (S)	93	%	50-150	1	06/08/23 11:05	06/14/23 22:45	2991-50-6	
d5-NElFOSA (S)	28	%	10-150	1	06/08/23 11:05	06/14/23 22:45	4151-50-2	
d7-NMeFOSE (S)	77	%	10-150	1	06/08/23 11:05	06/14/23 22:45	24448-09-7	
d9-NElFOSE (S)	79	%	10-150	1	06/08/23 11:05	06/14/23 22:45	1691-99-2	

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1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: LA2425-LA2489
Pace Project No.: 10655868

Sample: LA2440 Lab ID: 10655868016 Collected: 05/31/23 16:26 Received: 06/02/23 08:50 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight / %M by ASTM D2974								
Analytical Method: ASTM D2974								
Pace Analytical Services - Minneapolis								
Percent Moisture	16.1	%	0.10	1		06/30/23 17:32		N2
PFAS ID SL								
Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178								
Pace Analytical Services - Minneapolis								
10:2 FTS	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 23:25	120226-60-0	
11CI-PF3OUdS	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 23:25	763051-92-9	
4:2 FTS	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 23:25	757124-72-4	
6:2 FTS	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 23:25	27619-97-2	
8:2 FTS	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 23:25	39108-34-4	
9CI-PF3ONS	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 23:25	756426-58-1	
ADONA	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 23:25	919005-14-4	
HFPO-DA	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 23:25	13252-13-6	
NEIFOSAA	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 23:25	2991-50-6	
NEIFOSA	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 23:25	4151-50-2	
NEIFOSE	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 23:25	1691-99-2	
NMeFOSAA	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 23:25	2355-31-9	
NMeFOSA	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 23:25	31506-32-8	
NMeFOSE	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 23:25	24448-09-7	
Perfluorobutanesulfonic acid	ND	ug/kg	0.10	1	06/08/23 11:05	06/14/23 23:25	375-73-5	
Perfluorodecanoic acid	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 23:25	335-76-2	
Perfluorohexanoic acid	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 23:25	307-24-4	
PFBA	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 23:25	375-22-4	
PFDS	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 23:25	335-77-3	
PFDOS	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 23:25	79780-39-5	
PFFpS	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 23:25	375-92-8	
PFFxDA	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 23:25	67905-19-5	
PFNS	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 23:25	68259-12-1	
PFODA	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 23:25	16517-11-6	
PFOSA	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 23:25	754-91-6	
PFPeA	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 23:25	2706-90-3	
PFPeS	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 23:25	2706-91-4	
Perfluorododecanoic acid	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 23:25	307-55-1	
Perfluoroheptanoic acid	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 23:25	375-85-9	
Perfluorohexanesulfonic acid	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 23:25	355-46-4	
Perfluorononanoic acid	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 23:25	375-95-1	
Perfluorooctanesulfonic acid	0.17	ug/kg	0.11	1	06/08/23 11:05	06/14/23 23:25	1763-23-1	
Perfluorooctanoic acid	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 23:25	335-67-1	
Perfluorotetradecanoic acid	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 23:25	376-06-7	
Perfluorotridecanoic acid	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 23:25	72629-94-8	
Perfluoroundecanoic acid	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 23:25	2058-94-8	
Surrogates								
13C24:2FTS (S)	74	%	50-150	1	06/08/23 11:05	06/14/23 23:25		
13C26:2FTS (S)	88	%	50-150	1	06/08/23 11:05	06/14/23 23:25		
13C28:2FTS (S)	90	%	50-150	1	06/08/23 11:05	06/14/23 23:25		
13C2-PFDoA (S)	86	%	50-150	1	06/08/23 11:05	06/14/23 23:25		

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ANALYTICAL RESULTS

Project: LA2425-LA2489
Pace Project No.: 10655868

Sample: LA2440 Lab ID: 10655868016 Collected: 05/31/23 16:26 Received: 06/02/23 08:50 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
PFAS ID SL Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178 Pace Analytical Services - Minneapolis								
Surrogates								
13C2PFHxDA (S)	74	%	50-150	1	06/08/23 11:05	06/14/23 23:25		
13C2-PFTA (S)	75	%	50-150	1	06/08/23 11:05	06/14/23 23:25		
13C3HFPO-DA (S)	70	%	50-150	1	06/08/23 11:05	06/14/23 23:25		
13C3-PFBS (S)	77	%	50-150	1	06/08/23 11:05	06/14/23 23:25	375-73-5	
13C3-PFHxS (S)	77	%	50-150	1	06/08/23 11:05	06/14/23 23:25	355-46-4	
13C4-PFBA (S)	75	%	50-150	1	06/08/23 11:05	06/14/23 23:25	375-22-4	
13C4-PFHpA (S)	79	%	50-150	1	06/08/23 11:05	06/14/23 23:25	375-85-9	
13C5-PFHxA (S)	77	%	50-150	1	06/08/23 11:05	06/14/23 23:25	307-24-4	
13C5-PFPeA (S)	78	%	50-150	1	06/08/23 11:05	06/14/23 23:25	2706-90-3	
13C6-PFDA (S)	78	%	50-150	1	06/08/23 11:05	06/14/23 23:25	335-76-2	
13C7-PFUDa (S)	76	%	50-150	1	06/08/23 11:05	06/14/23 23:25	2058-94-8	
13C8-PFOA (S)	77	%	50-150	1	06/08/23 11:05	06/14/23 23:25	335-67-1	
13C8-PFOS (S)	78	%	50-150	1	06/08/23 11:05	06/14/23 23:25	1763-23-1	
13C8-PFOSA (S)	82	%	50-150	1	06/08/23 11:05	06/14/23 23:25	754-91-6	
13C9-PFNA (S)	80	%	50-150	1	06/08/23 11:05	06/14/23 23:25	375-95-1	
d3-MeFOSAA (S)	79	%	50-150	1	06/08/23 11:05	06/14/23 23:25	2355-31-9	
d3-NMeFOSA (S)	41	%	10-150	1	06/08/23 11:05	06/14/23 23:25	31506-32-8	
d5-EiFOSAA (S)	79	%	50-150	1	06/08/23 11:05	06/14/23 23:25	2991-50-6	
d5-NEiFOSA (S)	33	%	10-150	1	06/08/23 11:05	06/14/23 23:25	4151-50-2	
d7-NMeFOSE (S)	76	%	10-150	1	06/08/23 11:05	06/14/23 23:25	24448-09-7	
d9-NEiFOSE (S)	79	%	10-150	1	06/08/23 11:05	06/14/23 23:25	1691-99-2	

Sample: LA2441 Lab ID: 10655868017 Collected: 05/31/23 16:58 Received: 06/02/23 08:50 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight / %M by ASTM D2974 Analytical Method: ASTM D2974 Pace Analytical Services - Minneapolis								
Percent Moisture	14.7	%	0.10	1		06/30/23 17:32		N2
PFAS ID SL Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178 Pace Analytical Services - Minneapolis								
10:2 FTS	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 23:45	120226-60-0	
11Cl-PF3OUdS	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 23:45	763051-92-9	
4:2 FTS	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 23:45	757124-72-4	
6:2 FTS	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 23:45	27619-97-2	
8:2 FTS	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 23:45	39108-34-4	
9Cl-PF3ONS	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 23:45	756426-58-1	
ADONA	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 23:45	919005-14-4	
HFPO-DA	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 23:45	13252-13-6	
NEiFOSAA	3.0	ug/kg	0.12	1	06/08/23 11:05	06/14/23 23:45	2991-50-6	M1
NEiFOSA	0.81	ug/kg	0.12	1	06/08/23 11:05	06/14/23 23:45	4151-50-2	M1

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1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: LA2425-LA2489

Pace Project No.: 10655868

Sample: LA2441 Lab ID: 10655868017 Collected: 05/31/23 16:58 Received: 06/02/23 08:50 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
PFAS ID SL								
Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178								
Pace Analytical Services - Minneapolis								
NEtFOSE	0.44	ug/kg	0.12	1	06/08/23 11:05	06/14/23 23:45	1691-99-2	
NMeFOSAA	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 23:45	2355-31-9	
NMeFOSA	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 23:45	31506-32-8	
NMeFOSE	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 23:45	24448-09-7	
Perfluorobutanesulfonic acid	ND	ug/kg	0.10	1	06/08/23 11:05	06/14/23 23:45	375-73-5	
Perfluorodecanoic acid	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 23:45	335-76-2	
Perfluorohexanoic acid	0.17	ug/kg	0.12	1	06/08/23 11:05	06/14/23 23:45	307-24-4	
PFBA	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 23:45	375-22-4	
PFDS	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 23:45	335-77-3	
PFDoS	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 23:45	79780-39-5	
PFHpS	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 23:45	375-92-8	
PFHxDA	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 23:45	67905-19-5	
PFNS	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 23:45	68259-12-1	
PFODA	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 23:45	16517-11-6	
PFOSA	2.2	ug/kg	0.12	1	06/08/23 11:05	06/14/23 23:45	754-91-6	
PFPeA	0.13	ug/kg	0.12	1	06/08/23 11:05	06/14/23 23:45	2706-90-3	
PFPeS	ND	ug/kg	0.11	1	06/08/23 11:05	06/14/23 23:45	2706-91-4	
Perfluorododecanoic acid	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 23:45	307-55-1	
Perfluoroheptanoic acid	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 23:45	375-85-9	
Perfluorohexanesulfonic acid	ND	ug/kg	0.10	1	06/08/23 11:05	06/14/23 23:45	355-46-4	
Perfluorononanoic acid	0.18	ug/kg	0.12	1	06/08/23 11:05	06/14/23 23:45	375-95-1	
Perfluorooctanesulfonic acid	36.3	ug/kg	1.1	10	06/08/23 11:05	06/15/23 12:13	1763-23-1	M1
Perfluorooctanoic acid	0.88	ug/kg	0.12	1	06/08/23 11:05	06/14/23 23:45	335-67-1	
Perfluorotetradecanoic acid	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 23:45	376-06-7	
Perfluorotridecanoic acid	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 23:45	72629-94-8	
Perfluoroundecanoic acid	ND	ug/kg	0.12	1	06/08/23 11:05	06/14/23 23:45	2058-94-8	
Surrogates								
13C24:2FTS (S)	102	%	50-150	1	06/08/23 11:05	06/14/23 23:45		
13C26:2FTS (S)	128	%	50-150	1	06/08/23 11:05	06/14/23 23:45		
13C28:2FTS (S)	118	%	50-150	1	06/08/23 11:05	06/14/23 23:45		
13C2-PFDa (S)	75	%	50-150	1	06/08/23 11:05	06/14/23 23:45		
13C2-PFHxDA (S)	69	%	50-150	1	06/08/23 11:05	06/14/23 23:45		
13C2-PFTA (S)	66	%	50-150	1	06/08/23 11:05	06/14/23 23:45		
13C3HFPO-DA (S)	73	%	50-150	1	06/08/23 11:05	06/14/23 23:45		
13C3-PFBS (S)	84	%	50-150	1	06/08/23 11:05	06/14/23 23:45	375-73-5	
13C3-PFHxS (S)	85	%	50-150	1	06/08/23 11:05	06/14/23 23:45	355-46-4	
13C4-PFBA (S)	83	%	50-150	1	06/08/23 11:05	06/14/23 23:45	375-22-4	
13C4-PFHpA (S)	90	%	50-150	1	06/08/23 11:05	06/14/23 23:45	375-85-9	
13C5-PFHxA (S)	85	%	50-150	1	06/08/23 11:05	06/14/23 23:45	307-24-4	
13C5-PFPeA (S)	84	%	50-150	1	06/08/23 11:05	06/14/23 23:45	2706-90-3	
13C6-PFDA (S)	84	%	50-150	1	06/08/23 11:05	06/14/23 23:45	335-76-2	
13C7-PFUDa (S)	77	%	50-150	1	06/08/23 11:05	06/14/23 23:45	2058-94-8	
13C8-PFOA (S)	83	%	50-150	1	06/08/23 11:05	06/14/23 23:45	335-67-1	
13C8-PFOS (S)	79	%	50-150	1	06/08/23 11:05	06/14/23 23:45	1763-23-1	
13C8-PFOSA (S)	68	%	50-150	1	06/08/23 11:05	06/14/23 23:45	754-91-6	

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Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: LA2425-LA2489

Pace Project No.: 10655868

Sample: LA2441 Lab ID: 10655868017 Collected: 05/31/23 16:58 Received: 06/02/23 08:50 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
PFAS ID SL Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178 Pace Analytical Services - Minneapolis								
Surrogates								
13C9-PFNA (S)	83	%	50-150	1	06/08/23 11:05	06/14/23 23:45	375-95-1	
d3-MeFOSAA (S)	89	%	50-150	1	06/08/23 11:05	06/14/23 23:45	2355-31-9	
d3-NMeFOSA (S)	24	%	10-150	1	06/08/23 11:05	06/14/23 23:45	31506-32-8	
d5-EiFOSAA (S)	101	%	50-150	1	06/08/23 11:05	06/14/23 23:45	2991-50-6	
d5-NEiFOSA (S)	18	%	10-150	1	06/08/23 11:05	06/14/23 23:45	4151-50-2	
d7-NMeFOSE (S)	62	%	10-150	1	06/08/23 11:05	06/14/23 23:45	24448-09-7	
d9-NEiFOSE (S)	60	%	10-150	1	06/08/23 11:05	06/14/23 23:45	1691-99-2	

Sample: LA2442 Lab ID: 10655868018 Collected: 05/31/23 17:05 Received: 06/02/23 08:50 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight / %M by ASTM D2974 Analytical Method: ASTM D2974 Pace Analytical Services - Minneapolis								
Percent Moisture	24.4	%	0.10	1		07/02/23 05:58		N2

PFAS ID SL Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178

Pace Analytical Services - Minneapolis

10:2 FTS	ND	ug/kg	0.13	1	06/20/23 13:12	07/07/23 14:30	120226-60-0	
11CI-PF3OUdS	ND	ug/kg	0.12	1	06/20/23 13:12	07/07/23 14:30	763051-92-9	
4:2 FTS	ND	ug/kg	0.12	1	06/20/23 13:12	07/07/23 14:30	757124-72-4	
6:2 FTS	ND	ug/kg	0.12	1	06/20/23 13:12	07/07/23 14:30	27619-97-2	
8:2 FTS	ND	ug/kg	0.13	1	06/20/23 13:12	07/07/23 14:30	39108-34-4	
9CI-PF3ONS	ND	ug/kg	0.12	1	06/20/23 13:12	07/07/23 14:30	756426-58-1	
ADONA	ND	ug/kg	0.12	1	06/20/23 13:12	07/07/23 14:30	919005-14-4	
HFPO-DA	ND	ug/kg	0.13	1	06/20/23 13:12	07/07/23 14:30	13252-13-6	
NEiFOSAA	ND	ug/kg	0.13	1	06/20/23 13:12	07/07/23 14:30	2991-50-6	
NEiFOSA	ND	ug/kg	0.13	1	06/20/23 13:12	07/07/23 14:30	4151-50-2	
NEiFOSE	ND	ug/kg	0.13	1	06/20/23 13:12	07/07/23 14:30	1691-99-2	
NMeFOSAA	ND	ug/kg	0.13	1	06/20/23 13:12	07/07/23 14:30	2355-31-9	
NMeFOSA	ND	ug/kg	0.13	1	06/20/23 13:12	07/07/23 14:30	31506-32-8	
NMeFOSE	ND	ug/kg	0.13	1	06/20/23 13:12	07/07/23 14:30	24448-09-7	
Perfluorobutanesulfonic acid	ND	ug/kg	0.12	1	06/20/23 13:12	07/07/23 14:30	375-73-5	
Perfluorodecanoic acid	ND	ug/kg	0.13	1	06/20/23 13:12	07/07/23 14:30	335-76-2	
Perfluorohexanoic acid	0.24	ug/kg	0.13	1	06/20/23 13:12	07/07/23 14:30	307-24-4	
PFBA	0.17	ug/kg	0.13	1	06/20/23 13:12	07/07/23 14:30	375-22-4	
PFDS	ND	ug/kg	0.13	1	06/20/23 13:12	07/07/23 14:30	335-77-3	
PFDoS	ND	ug/kg	0.13	1	06/20/23 13:12	07/07/23 14:30	79780-39-5	
PFHpS	ND	ug/kg	0.12	1	06/20/23 13:12	07/07/23 14:30	375-92-8	
PFFhDA	ND	ug/kg	0.13	1	06/20/23 13:12	07/07/23 14:30	67905-19-5	
PFNS	ND	ug/kg	0.13	1	06/20/23 13:12	07/07/23 14:30	68259-12-1	
PFODA	ND	ug/kg	0.13	1	06/20/23 13:12	07/07/23 14:30	16517-11-6	

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ANALYTICAL RESULTS

Project: LA2425-LA2489
Pace Project No.: 10655868

Sample: LA2442 Lab ID: 10655868018 Collected: 05/31/23 17:05 Received: 06/02/23 08:50 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
PFAS ID SL								
Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178								
Pace Analytical Services - Minneapolis								
PFOSA	0.18	ug/kg	0.13	1	06/20/23 13:12	07/07/23 14:30	754-91-6	
PFPeA	0.22	ug/kg	0.13	1	06/20/23 13:12	07/07/23 14:30	2706-90-3	
PFPeS	ND	ug/kg	0.12	1	06/20/23 13:12	07/07/23 14:30	2706-91-4	
Perfluorododecanoic acid	ND	ug/kg	0.13	1	06/20/23 13:12	07/07/23 14:30	307-55-1	
Perfluoroheptanoic acid	0.31	ug/kg	0.13	1	06/20/23 13:12	07/07/23 14:30	375-85-9	
Perfluorohexanesulfonic acid	ND	ug/kg	0.12	1	06/20/23 13:12	07/07/23 14:30	355-46-4	
Perfluorononanoic acid	0.20	ug/kg	0.13	1	06/20/23 13:12	07/07/23 14:30	375-95-1	
Perfluorooctanesulfonic acid	34.7	ug/kg	1.2	10	06/20/23 13:12	07/13/23 16:34	1763-23-1	
Perfluorooctanoic acid	2.3	ug/kg	0.13	1	06/20/23 13:12	07/07/23 14:30	335-67-1	
Perfluorotetradecanoic acid	ND	ug/kg	0.13	1	06/20/23 13:12	07/07/23 14:30	376-06-7	
Perfluorotridecanoic acid	ND	ug/kg	0.13	1	06/20/23 13:12	07/07/23 14:30	72629-94-8	
Perfluoroundecanoic acid	ND	ug/kg	0.13	1	06/20/23 13:12	07/07/23 14:30	2058-94-8	
Surrogates								
13C24:2FTS (S)	206	%	50-150	1	06/20/23 13:12	07/07/23 14:30		S0
13C26:2FTS (S)	105	%	50-150	1	06/20/23 13:12	07/07/23 14:30		
13C28:2FTS (S)	136	%	50-150	1	06/20/23 13:12	07/07/23 14:30		
13C2-PFDoA (S)	115	%	50-150	1	06/20/23 13:12	07/07/23 14:30		
13C2-PFHxDA (S)	80	%	50-150	1	06/20/23 13:12	07/07/23 14:30		
13C2-PFTA (S)	113	%	50-150	1	06/20/23 13:12	07/07/23 14:30		
13C3-HFPO-DA (S)	125	%	50-150	1	06/20/23 13:12	07/07/23 14:30		
13C3-PFBS (S)	120	%	50-150	1	06/20/23 13:12	07/07/23 14:30	375-73-5	
13C3-PFHxS (S)	105	%	50-150	1	06/20/23 13:12	07/07/23 14:30	355-46-4	
13C4-PFBA (S)	134	%	50-150	1	06/20/23 13:12	07/07/23 14:30	375-22-4	
13C4-PFHpA (S)	116	%	50-150	1	06/20/23 13:12	07/07/23 14:30	375-85-9	
13C5-PFHxA (S)	124	%	50-150	1	06/20/23 13:12	07/07/23 14:30	307-24-4	
13C5-PFPeA (S)	135	%	50-150	1	06/20/23 13:12	07/07/23 14:30	2706-90-3	
13C6-PFDA (S)	107	%	50-150	1	06/20/23 13:12	07/07/23 14:30	335-76-2	
13C7-PFUDa (S)	118	%	50-150	1	06/20/23 13:12	07/07/23 14:30	2058-94-8	
13C8-PFOA (S)	104	%	50-150	1	06/20/23 13:12	07/07/23 14:30	335-67-1	
13C8-PFOS (S)	82	%	50-150	1	06/20/23 13:12	07/07/23 14:30	1763-23-1	
13C8-PFOSA (S)	67	%	50-150	1	06/20/23 13:12	07/07/23 14:30	754-91-6	
13C9-PFNA (S)	82	%	50-150	1	06/20/23 13:12	07/07/23 14:30	375-95-1	
d3-MeFOSAA (S)	106	%	50-150	1	06/20/23 13:12	07/07/23 14:30	2355-31-9	
d3-NMeFOSA (S)	0	%	10-150	1	06/20/23 13:12	07/07/23 14:30	31506-32-8	S0
d5-EtFOSAA (S)	116	%	50-150	1	06/20/23 13:12	07/07/23 14:30	2991-50-6	
d5-NEtFOSA (S)	0	%	10-150	1	06/20/23 13:12	07/07/23 14:30	4151-50-2	S0
d7-NMeFOSE (S)	21	%	10-150	1	06/20/23 13:12	07/07/23 14:30	24448-09-7	
d9-NEtFOSE (S)	16	%	10-150	1	06/20/23 13:12	07/07/23 14:30	1691-99-2	

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Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: LA2425-LA2489
Pace Project No.: 10655868

Sample: LA2443 Lab ID: 10655868019 Collected: 05/31/23 17:11 Received: 06/02/23 08:50 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight / %M by ASTM D2974								
Analytical Method: ASTM D2974								
Pace Analytical Services - Minneapolis								
Percent Moisture	17.2	%	0.10	1		07/02/23 05:58		N2
PFAS ID SL								
Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178								
Pace Analytical Services - Minneapolis								
10:2 FTS	ND	ug/kg	0.12	1	06/20/23 13:12	07/07/23 14:37	120226-60-0	
11CI-PF3OUdS	ND	ug/kg	0.11	1	06/20/23 13:12	07/07/23 14:37	763051-92-9	
4:2 FTS	ND	ug/kg	0.11	1	06/20/23 13:12	07/07/23 14:37	757124-72-4	
6:2 FTS	ND	ug/kg	0.11	1	06/20/23 13:12	07/07/23 14:37	27619-97-2	
8:2 FTS	ND	ug/kg	0.12	1	06/20/23 13:12	07/07/23 14:37	39108-34-4	
9CI-PF3ONS	ND	ug/kg	0.11	1	06/20/23 13:12	07/07/23 14:37	756426-58-1	
ADONA	ND	ug/kg	0.11	1	06/20/23 13:12	07/07/23 14:37	919005-14-4	
HFPO-DA	ND	ug/kg	0.12	1	06/20/23 13:12	07/07/23 14:37	13252-13-6	
NEtFOSAA	2.8	ug/kg	0.12	1	06/20/23 13:12	07/07/23 14:37	2991-50-6	
NEtFOSA	0.17	ug/kg	0.12	1	06/20/23 13:12	07/07/23 14:37	4151-50-2	
NEtFOSE	0.59	ug/kg	0.12	1	06/20/23 13:12	07/07/23 14:37	1691-99-2	
NMeFOSAA	0.13	ug/kg	0.12	1	06/20/23 13:12	07/07/23 14:37	2355-31-9	
NMeFOSA	ND	ug/kg	0.12	1	06/20/23 13:12	07/07/23 14:37	31506-32-8	
NMeFOSE	ND	ug/kg	0.12	1	06/20/23 13:12	07/07/23 14:37	24448-09-7	
Perfluorobutanesulfonic acid	ND	ug/kg	0.11	1	06/20/23 13:12	07/07/23 14:37	375-73-5	
Perfluorodecanoic acid	ND	ug/kg	0.12	1	06/20/23 13:12	07/07/23 14:37	335-76-2	
Perfluorohexanoic acid	0.25	ug/kg	0.12	1	06/20/23 13:12	07/07/23 14:37	307-24-4	
PFBA	ND	ug/kg	0.12	1	06/20/23 13:12	07/07/23 14:37	375-22-4	
PFDS	ND	ug/kg	0.12	1	06/20/23 13:12	07/07/23 14:37	335-77-3	
PFDoS	ND	ug/kg	0.12	1	06/20/23 13:12	07/07/23 14:37	79780-39-5	
PFHpS	ND	ug/kg	0.11	1	06/20/23 13:12	07/07/23 14:37	375-92-8	
PFHxDA	ND	ug/kg	0.12	1	06/20/23 13:12	07/07/23 14:37	67905-19-5	
PFNS	ND	ug/kg	0.12	1	06/20/23 13:12	07/07/23 14:37	68259-12-1	
PFODA	ND	ug/kg	0.12	1	06/20/23 13:12	07/07/23 14:37	16517-11-6	
PFOSA	3.6	ug/kg	0.12	1	06/20/23 13:12	07/07/23 14:37	754-91-6	
PFPeA	0.24	ug/kg	0.12	1	06/20/23 13:12	07/07/23 14:37	2706-90-3	
PFPeS	ND	ug/kg	0.11	1	06/20/23 13:12	07/07/23 14:37	2706-91-4	
Perfluorododecanoic acid	ND	ug/kg	0.12	1	06/20/23 13:12	07/07/23 14:37	307-55-1	
Perfluoroheptanoic acid	0.13	ug/kg	0.12	1	06/20/23 13:12	07/07/23 14:37	375-85-9	
Perfluorohexanesulfonic acid	ND	ug/kg	0.11	1	06/20/23 13:12	07/07/23 14:37	355-46-4	
Perfluorononanoic acid	0.20	ug/kg	0.12	1	06/20/23 13:12	07/07/23 14:37	375-95-1	
Perfluorooctanesulfonic acid	56.1	ug/kg	1.1	10	06/20/23 13:12	07/13/23 16:41	1763-23-1	
Perfluorooctanoic acid	1.7	ug/kg	0.12	1	06/20/23 13:12	07/07/23 14:37	335-67-1	
Perfluorotetradecanoic acid	ND	ug/kg	0.12	1	06/20/23 13:12	07/07/23 14:37	376-06-7	
Perfluorotridecanoic acid	ND	ug/kg	0.12	1	06/20/23 13:12	07/07/23 14:37	72629-94-8	
Perfluoroundecanoic acid	ND	ug/kg	0.12	1	06/20/23 13:12	07/07/23 14:37	2058-94-8	
Surrogates								
13C24:2FTS (S)	177	%	50-150	1	06/20/23 13:12	07/07/23 14:37		S0
13C26:2FTS (S)	179	%	50-150	1	06/20/23 13:12	07/07/23 14:37		S0
13C28:2FTS (S)	298	%	50-150	1	06/20/23 13:12	07/07/23 14:37		S0
13C2-PFDaA (S)	80	%	50-150	1	06/20/23 13:12	07/07/23 14:37		

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Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: LA2425-LA2489

Pace Project No.: 10655868

Sample: LA2443 Lab ID: 10655868019 Collected: 05/31/23 17:11 Received: 06/02/23 08:50 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
PFAS ID SL Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178 Pace Analytical Services - Minneapolis								
Surrogates								
13C2PFHxDA (S)	52	%	50-150	1	06/20/23 13:12	07/07/23 14:37		
13C2-PFTA (S)	75	%	50-150	1	06/20/23 13:12	07/07/23 14:37		
13C3HFPO-DA (S)	107	%	50-150	1	06/20/23 13:12	07/07/23 14:37		
13C3-PFBS (S)	104	%	50-150	1	06/20/23 13:12	07/07/23 14:37	375-73-5	
13C3-PFHxS (S)	93	%	50-150	1	06/20/23 13:12	07/07/23 14:37	355-46-4	
13C4-PFBA (S)	114	%	50-150	1	06/20/23 13:12	07/07/23 14:37	375-22-4	
13C4-PFHxA (S)	100	%	50-150	1	06/20/23 13:12	07/07/23 14:37	375-85-9	
13C5-PFHxA (S)	108	%	50-150	1	06/20/23 13:12	07/07/23 14:37	307-24-4	
13C5-PFPeA (S)	119	%	50-150	1	06/20/23 13:12	07/07/23 14:37	2706-90-3	
13C6-PFDA (S)	93	%	50-150	1	06/20/23 13:12	07/07/23 14:37	335-76-2	
13C7-PFUDa (S)	95	%	50-150	1	06/20/23 13:12	07/07/23 14:37	2058-94-8	
13C8-PFOA (S)	93	%	50-150	1	06/20/23 13:12	07/07/23 14:37	335-67-1	
13C8-PFOS (S)	64	%	50-150	1	06/20/23 13:12	07/07/23 14:37	1763-23-1	
13C8-PFOSA (S)	80	%	50-150	1	06/20/23 13:12	07/07/23 14:37	754-91-6	
13C9-PFNA (S)	62	%	50-150	1	06/20/23 13:12	07/07/23 14:37	375-95-1	
d3-MeFOSAA (S)	99	%	50-150	1	06/20/23 13:12	07/07/23 14:37	2355-31-9	
d3-NMeFOSA (S)	33	%	10-150	1	06/20/23 13:12	07/07/23 14:37	31508-32-8	
d5-ElFOSAA (S)	107	%	50-150	1	06/20/23 13:12	07/07/23 14:37	2991-50-6	
d5-NElFOSA (S)	36	%	10-150	1	06/20/23 13:12	07/07/23 14:37	4151-50-2	
d7-NMeFOSE (S)	42	%	10-150	1	06/20/23 13:12	07/07/23 14:37	24448-09-7	
d9-NElFOSE (S)	36	%	10-150	1	06/20/23 13:12	07/07/23 14:37	1691-99-2	

Sample: LA2444 Lab ID: 10655868020 Collected: 05/31/23 17:15 Received: 06/02/23 08:50 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight / %M by ASTM D2974 Analytical Method: ASTM D2974 Pace Analytical Services - Minneapolis								
Percent Moisture	20.6	%	0.10	1		07/02/23 05:58		N2
PFAS ID SL Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178 Pace Analytical Services - Minneapolis								
10:2 FTS	ND	ug/kg	0.12	1	06/20/23 13:12	07/07/23 14:44	120226-60-0	
11Cl-PF3OUdS	ND	ug/kg	0.12	1	06/20/23 13:12	07/07/23 14:44	763051-92-9	
4:2 FTS	ND	ug/kg	0.12	1	06/20/23 13:12	07/07/23 14:44	757124-72-4	
6:2 FTS	ND	ug/kg	0.12	1	06/20/23 13:12	07/07/23 14:44	27619-97-2	
8:2 FTS	ND	ug/kg	0.12	1	06/20/23 13:12	07/07/23 14:44	39108-34-4	
9Cl-PF3ONS	ND	ug/kg	0.12	1	06/20/23 13:12	07/07/23 14:44	756426-58-1	
ADONA	ND	ug/kg	0.12	1	06/20/23 13:12	07/07/23 14:44	919005-14-4	
HFPO-DA	ND	ug/kg	0.12	1	06/20/23 13:12	07/07/23 14:44	13252-13-6	
NElFOSAA	ND	ug/kg	0.12	1	06/20/23 13:12	07/07/23 14:44	2991-50-6	
NElFOSA	ND	ug/kg	0.12	1	06/20/23 13:12	07/07/23 14:44	4151-50-2	

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1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: LA2425-LA2489
Pace Project No.: 10655868

Sample: LA2444 Lab ID: 10655868020 Collected: 05/31/23 17:15 Received: 06/02/23 08:50 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
PFAS ID SL								
Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178								
Pace Analytical Services - Minneapolis								
NEFOSE	ND	ug/kg	0.12	1	06/20/23 13:12	07/07/23 14:44	1691-99-2	
NMeFOSAA	ND	ug/kg	0.12	1	06/20/23 13:12	07/07/23 14:44	2355-31-9	
NMeFOSA	ND	ug/kg	0.12	1	06/20/23 13:12	07/07/23 14:44	31506-32-8	
NMeFOSE	ND	ug/kg	0.12	1	06/20/23 13:12	07/07/23 14:44	24448-09-7	
Perfluorobutanesulfonic acid	ND	ug/kg	0.11	1	06/20/23 13:12	07/07/23 14:44	375-73-5	
Perfluorodecanoic acid	ND	ug/kg	0.12	1	06/20/23 13:12	07/07/23 14:44	335-76-2	
Perfluorohexanoic acid	0.92	ug/kg	0.12	1	06/20/23 13:12	07/07/23 14:44	307-24-4	
PFBA	0.22	ug/kg	0.12	1	06/20/23 13:12	07/07/23 14:44	375-22-4	
PFDS	ND	ug/kg	0.12	1	06/20/23 13:12	07/07/23 14:44	335-77-3	
PFDoS	ND	ug/kg	0.12	1	06/20/23 13:12	07/07/23 14:44	79780-39-5	
PFHpS	0.93	ug/kg	0.12	1	06/20/23 13:12	07/07/23 14:44	375-92-8	
PFHxDA	ND	ug/kg	0.12	1	06/20/23 13:12	07/07/23 14:44	67905-19-5	
PFNS	0.54	ug/kg	0.12	1	06/20/23 13:12	07/07/23 14:44	68259-12-1	
PFODA	ND	ug/kg	0.12	1	06/20/23 13:12	07/07/23 14:44	16517-11-6	
PFOSA	0.58	ug/kg	0.12	1	06/20/23 13:12	07/07/23 14:44	754-91-6	
PFPeA	0.29	ug/kg	0.12	1	06/20/23 13:12	07/07/23 14:44	2706-90-3	
PFPeS	ND	ug/kg	0.12	1	06/20/23 13:12	07/07/23 14:44	2706-91-4	
Perfluorododecanoic acid	ND	ug/kg	0.12	1	06/20/23 13:12	07/07/23 14:44	307-55-1	
Perfluoroheptanoic acid	1.1	ug/kg	0.12	1	06/20/23 13:12	07/07/23 14:44	375-85-9	
Perfluorohexanesulfonic acid	ND	ug/kg	0.11	1	06/20/23 13:12	07/07/23 14:44	355-46-4	
Perfluorononanoic acid	0.50	ug/kg	0.12	1	06/20/23 13:12	07/07/23 14:44	375-95-1	
Perfluorooctanesulfonic acid	303	ug/kg	11.5	100	06/20/23 13:12	07/13/23 16:48	1763-23-1	
Perfluorooctanoic acid	7.5	ug/kg	0.12	1	06/20/23 13:12	07/07/23 14:44	335-67-1	
Perfluorotetradecanoic acid	ND	ug/kg	0.12	1	06/20/23 13:12	07/07/23 14:44	376-06-7	
Perfluorotridecanoic acid	ND	ug/kg	0.12	1	06/20/23 13:12	07/07/23 14:44	72629-94-8	
Perfluoroundecanoic acid	ND	ug/kg	0.12	1	06/20/23 13:12	07/07/23 14:44	2058-94-8	
Surrogates								
13C24:2FTS (S)	196	%	50-150	1	06/20/23 13:12	07/07/23 14:44		S0
13C26:2FTS (S)	99	%	50-150	1	06/20/23 13:12	07/07/23 14:44		
13C28:2FTS (S)	113	%	50-150	1	06/20/23 13:12	07/07/23 14:44		
13C2-PFDa (S)	103	%	50-150	1	06/20/23 13:12	07/07/23 14:44		
13C2-PFHxDA (S)	83	%	50-150	1	06/20/23 13:12	07/07/23 14:44		
13C2-PFTA (S)	95	%	50-150	1	06/20/23 13:12	07/07/23 14:44		
13C3HFPO-DA (S)	107	%	50-150	1	06/20/23 13:12	07/07/23 14:44		
13C3-PFBS (S)	112	%	50-150	1	06/20/23 13:12	07/07/23 14:44	375-73-5	
13C3-PFHxS (S)	100	%	50-150	1	06/20/23 13:12	07/07/23 14:44	355-46-4	
13C4-PFBA (S)	126	%	50-150	1	06/20/23 13:12	07/07/23 14:44	375-22-4	
13C4-PFHpA (S)	108	%	50-150	1	06/20/23 13:12	07/07/23 14:44	375-85-9	
13C5-PFHxA (S)	113	%	50-150	1	06/20/23 13:12	07/07/23 14:44	307-24-4	
13C5-PFPeA (S)	127	%	50-150	1	06/20/23 13:12	07/07/23 14:44	2706-90-3	
13C6-PFDA (S)	100	%	50-150	1	06/20/23 13:12	07/07/23 14:44	335-76-2	
13C7-PFUDa (S)	104	%	50-150	1	06/20/23 13:12	07/07/23 14:44	2058-94-8	
13C8-PFOA (S)	92	%	50-150	1	06/20/23 13:12	07/07/23 14:44	335-67-1	
13C8-PFOS (S)	32	%	50-150	1	06/20/23 13:12	07/07/23 14:44	1763-23-1	S0
13C8-PFOSA (S)	39	%	50-150	1	06/20/23 13:12	07/07/23 14:44	754-91-6	S0

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1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: LA2425-LA2489

Pace Project No.: 10655868

Sample: LA2444 Lab ID: 10655868020 Collected: 05/31/23 17:15 Received: 06/02/23 08:50 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
PFAS ID SL Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178 Pace Analytical Services - Minneapolis								
Surrogates								
13C9-PFNA (S)	34	%	50-150	1	06/20/23 13:12	07/07/23 14:44	375-95-1	S0
d3-MeFOSAA (S)	90	%	50-150	1	06/20/23 13:12	07/07/23 14:44	2355-31-9	
d3-NMeFOSA (S)	0	%	10-150	1	06/20/23 13:12	07/07/23 14:44	31506-32-8	S0
d5-ElFOSAA (S)	94	%	50-150	1	06/20/23 13:12	07/07/23 14:44	2991-50-6	
d5-NEFOSA (S)	0	%	10-150	1	06/20/23 13:12	07/07/23 14:44	4151-50-2	S0
d7-NMeFOSE (S)	8	%	10-150	1	06/20/23 13:12	07/07/23 14:44	24448-09-7	S0
d9-NEFOSE (S)	9	%	10-150	1	06/20/23 13:12	07/07/23 14:44	1691-99-2	S0

Sample: LA2445 Lab ID: 10655868021 Collected: 05/31/23 17:35 Received: 06/02/23 08:50 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight / %M by ASTM D2974 Analytical Method: ASTM D2974 Pace Analytical Services - Minneapolis								
Percent Moisture	12.3	%	0.10	1		07/02/23 05:58		N2

PFAS ID SL Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178
Pace Analytical Services - Minneapolis

10:2 FTS	ND	ug/kg	0.11	1	06/20/23 13:12	07/07/23 14:51	120226-60-0	
11CI-PF3OUdS	ND	ug/kg	0.11	1	06/20/23 13:12	07/07/23 14:51	763051-92-9	
4:2 FTS	ND	ug/kg	0.11	1	06/20/23 13:12	07/07/23 14:51	757124-72-4	
6:2 FTS	ND	ug/kg	0.11	1	06/20/23 13:12	07/07/23 14:51	27619-97-2	
8:2 FTS	ND	ug/kg	0.11	1	06/20/23 13:12	07/07/23 14:51	39108-34-4	
9CI-PF3ONS	ND	ug/kg	0.11	1	06/20/23 13:12	07/07/23 14:51	756426-58-1	
ADONA	ND	ug/kg	0.11	1	06/20/23 13:12	07/07/23 14:51	919005-14-4	
HFPO-DA	ND	ug/kg	0.11	1	06/20/23 13:12	07/07/23 14:51	13252-13-6	
NEFOSAA	ND	ug/kg	0.11	1	06/20/23 13:12	07/07/23 14:51	2991-50-6	
NEFOSA	ND	ug/kg	0.11	1	06/20/23 13:12	07/07/23 14:51	4151-50-2	
NEFOSE	ND	ug/kg	0.11	1	06/20/23 13:12	07/07/23 14:51	1691-99-2	
NMeFOSAA	ND	ug/kg	0.11	1	06/20/23 13:12	07/07/23 14:51	2355-31-9	
NMeFOSA	ND	ug/kg	0.11	1	06/20/23 13:12	07/07/23 14:51	31506-32-8	
NMeFOSE	ND	ug/kg	0.11	1	06/20/23 13:12	07/07/23 14:51	24448-09-7	
Perfluorobutanesulfonic acid	0.10	ug/kg	0.10	1	06/20/23 13:12	07/07/23 14:51	375-73-5	
Perfluorodecanoic acid	ND	ug/kg	0.11	1	06/20/23 13:12	07/07/23 14:51	335-76-2	
Perfluorohexanoic acid	ND	ug/kg	0.11	1	06/20/23 13:12	07/07/23 14:51	307-24-4	
PFBA	ND	ug/kg	0.11	1	06/20/23 13:12	07/07/23 14:51	375-22-4	
PFDS	ND	ug/kg	0.11	1	06/20/23 13:12	07/07/23 14:51	335-77-3	
PFDoS	ND	ug/kg	0.11	1	06/20/23 13:12	07/07/23 14:51	79780-39-5	
PFHpS	ND	ug/kg	0.11	1	06/20/23 13:12	07/07/23 14:51	375-92-8	
PFHxDA	ND	ug/kg	0.11	1	06/20/23 13:12	07/07/23 14:51	67905-19-5	
PFNS	ND	ug/kg	0.11	1	06/20/23 13:12	07/07/23 14:51	68259-12-1	
PFODA	ND	ug/kg	0.11	1	06/20/23 13:12	07/07/23 14:51	16517-11-6	

REPORT OF LABORATORY ANALYSIS

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INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

We Protect Hoosiers and Our Environment.

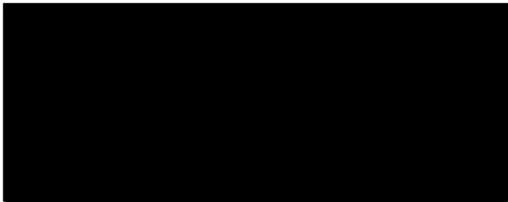
100 N. Senate Avenue • Indianapolis, IN 46204

(800) 451-6027 • (317) 232-8603 • www.idem.IN.gov

Eric J. Holcomb
Governor

Brian C. Rockensuess
Commissioner

October 18, 2023



RE: Soil Sampling Results

#LA2464 14-3 Shallow
#LA2465 14-3 Deep
#LA2466 14-1 Shallow
#LA2467 14-1 Deep
#LA2468 14-2 Shallow
#LA2469 14-2 Deep

Redacted area

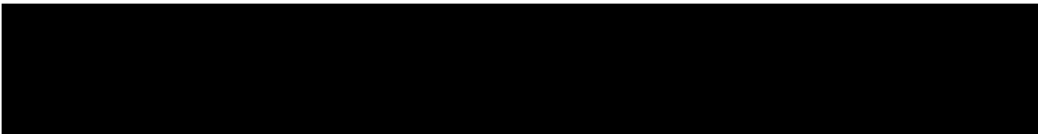
IDEM received the results of the analysis for soil samples collected on May 31, 2023, from your property located on [REDACTED]. The analysis was performed by IDEM's contract laboratory and tested for 36 per- and polyfluoroalkyl substances (PFAS) including the compounds perfluorooctanoic acid (PFOA) and perfluorooctane sulfonate (PFOS).

None of the 36 PFAS compounds analyzed were detected above IDEM's Risk-based Closure Guide (July 2022 and all subsequent updates) (RCG) published levels for residential soil direct contact. Please note that the published soil standard is based on ingestion, inhalation and dermal exposure solely related to soil contact. A map depicting the sample locations has been included as an attachment. In addition, the analytical sheets from Pace Laboratories have also been included with this letter for your records.

If you have questions regarding this matter, please contact Lynette Schrowe of the Remediation Services Branch at 317/234-8622.

Sincerely,

Kevin Davis, Chief
Remediation Services Branch
Office of Land Quality



Visit on.IN.gov/survey or scan the QR code to provide feedback.

We appreciate your input!





ANALYTICAL RESULTS

Project: LA2425-LA2489

Pace Project No.: 10655868

Sample: LA2464 Lab ID: 10655868040 Collected: 06/01/23 11:56 Received: 06/02/23 08:50 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
PFAS ID SL								
Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178								
Pace Analytical Services - Minneapolis								
10:2 FTS	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 07:56	120226-60-0	
11Cl-PF3OUdS	ND	ug/kg	0.11	1	06/22/23 09:30	07/14/23 07:56	763051-92-9	
4:2 FTS	ND	ug/kg	0.11	1	06/22/23 09:30	07/14/23 07:56	757124-72-4	
6:2 FTS	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 07:56	27619-97-2	
8:2 FTS	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 07:56	39108-34-4	
9Cl-PF3ONS	ND	ug/kg	0.11	1	06/22/23 09:30	07/14/23 07:56	756426-58-1	
ADONA	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 07:56	919005-14-4	
HFPO-DA	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 07:56	13252-13-6	
NEIFOSAA	0.13	ug/kg	0.12	1	06/22/23 09:30	07/14/23 07:56	2991-50-6	
NEIFOSA	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 07:56	4151-50-2	
NEIFOSE	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 07:56	1691-99-2	
NMeFOSAA	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 07:56	2355-31-9	
NMeFOSA	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 07:56	31506-32-8	
NMeFOSE	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 07:56	24448-09-7	
Perfluorobutanesulfonic acid	ND	ug/kg	0.11	1	06/22/23 09:30	07/14/23 07:56	375-73-5	
Perfluorodecanoic acid	0.21	ug/kg	0.12	1	06/22/23 09:30	07/14/23 07:56	335-76-2	
Perfluorohexanoic acid	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 07:56	307-24-4	
PFBA	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 07:56	375-22-4	
PFDS	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 07:56	335-77-3	
PFDoS	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 07:56	79780-39-5	
PFHpS	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 07:56	375-92-8	
PFHxDA	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 07:56	67905-19-5	
PFNS	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 07:56	68259-12-1	
PFODA	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 07:56	16517-11-6	
PFOSA	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 07:56	754-91-6	
PFPeA	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 07:56	2706-90-3	
PFPeS	ND	ug/kg	0.11	1	06/22/23 09:30	07/14/23 07:56	2706-91-4	
Perfluorododecanoic acid	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 07:56	307-55-1	
Perfluoroheptanoic acid	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 07:56	375-85-9	
Perfluorohexanesulfonic acid	ND	ug/kg	0.11	1	06/22/23 09:30	07/14/23 07:56	355-46-4	
Perfluorononanoic acid	0.18	ug/kg	0.12	1	06/22/23 09:30	07/14/23 07:56	375-95-1	
Perfluorooctanesulfonic acid	14.3	ug/kg	0.56	5	06/22/23 09:30	07/19/23 17:34	1763-23-1	
Perfluorooctanoic acid	0.50	ug/kg	0.12	1	06/22/23 09:30	07/14/23 07:56	335-67-1	
Perfluorotetradecanoic acid	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 07:56	376-06-7	
Perfluorotridecanoic acid	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 07:56	72629-94-8	
Perfluoroundecanoic acid	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 07:56	2058-94-8	
Surrogates								
13C24:2FTS (S)	118	%	50-150	1	06/22/23 09:30	07/14/23 07:56		
13C26:2FTS (S)	105	%	50-150	1	06/22/23 09:30	07/14/23 07:56		
13C28:2FTS (S)	130	%	50-150	1	06/22/23 09:30	07/14/23 07:56		
13C2-PFDa (S)	114	%	50-150	1	06/22/23 09:30	07/14/23 07:56		
13C2PFHxDA (S)	91	%	50-150	1	06/22/23 09:30	07/14/23 07:56		
13C2-PFTA (S)	102	%	50-150	1	06/22/23 09:30	07/14/23 07:56		
13C3HFPO-DA (S)	90	%	50-150	1	06/22/23 09:30	07/14/23 07:56		
13C3-PFBS (S)	92	%	50-150	1	06/22/23 09:30	07/14/23 07:56	375-73-5	

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Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: LA2425-LA2489
Pace Project No.: 10655868

Sample: LA2464 Lab ID: 10655868040 Collected: 06/01/23 11:56 Received: 06/02/23 08:50 Matrix: Solid
Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
PFAS ID SL Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178 Pace Analytical Services - Minneapolis								
Surrogates								
13C3-PFHxS (S)	93	%	50-150	1	06/22/23 09:30	07/14/23 07:56	355-46-4	
13C4-PFBA (S)	88	%	50-150	1	06/22/23 09:30	07/14/23 07:56	375-22-4	
13C4-PFHxPA (S)	94	%	50-150	1	06/22/23 09:30	07/14/23 07:56	375-85-9	
13C5-PFHxA (S)	92	%	50-150	1	06/22/23 09:30	07/14/23 07:56	307-24-4	
13C5-PFPeA (S)	89	%	50-150	1	06/22/23 09:30	07/14/23 07:56	2706-90-3	
13C6-PFDA (S)	124	%	50-150	1	06/22/23 09:30	07/14/23 07:56	335-76-2	
13C7-PFUDA (S)	115	%	50-150	1	06/22/23 09:30	07/14/23 07:56	2058-94-8	
13C8-PFOA (S)	97	%	50-150	1	06/22/23 09:30	07/14/23 07:56	335-67-1	
13C8-PFOS (S)	85	%	50-150	1	06/22/23 09:30	07/14/23 07:56	1763-23-1	
13C8-PFOSA (S)	87	%	50-150	1	06/22/23 09:30	07/14/23 07:56	754-91-6	
13C9-PFNA (S)	92	%	50-150	1	06/22/23 09:30	07/14/23 07:56	375-95-1	
d3-MeFOSAA (S)	98	%	50-150	1	06/22/23 09:30	07/14/23 07:56	2355-31-9	
d3-NMeFOSA (S)	30	%	10-150	1	06/22/23 09:30	07/14/23 07:56	31506-32-8	
d5-EiFOSAA (S)	110	%	50-150	1	06/22/23 09:30	07/14/23 07:56	2991-50-6	
d5-NEiFOSA (S)	30	%	10-150	1	06/22/23 09:30	07/14/23 07:56	4151-50-2	
d7-NMeFOSE (S)	60	%	10-150	1	06/22/23 09:30	07/14/23 07:56	24448-09-7	
d9-NEiFOSE (S)	58	%	10-150	1	06/22/23 09:30	07/14/23 07:56	1691-99-2	

Sample: LA2465 Lab ID: 10655868041 Collected: 06/01/23 12:03 Received: 06/02/23 08:50 Matrix: Solid
Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight / %M by ASTM D2974 Analytical Method: ASTM D2974 Pace Analytical Services - Minneapolis								
Percent Moisture	17.4	%	0.10	1		07/02/23 07:19		N2
PFAS ID SL Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178 Pace Analytical Services - Minneapolis								
10:2 FTS	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 08:03	120226-60-0	
11CI-PF3OUdS	ND	ug/kg	0.11	1	06/22/23 09:30	07/14/23 08:03	763051-92-9	
4:2 FTS	ND	ug/kg	0.11	1	06/22/23 09:30	07/14/23 08:03	757124-72-4	
6:2 FTS	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 08:03	27619-97-2	
8:2 FTS	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 08:03	39108-34-4	
9CI-PF3ONS	ND	ug/kg	0.11	1	06/22/23 09:30	07/14/23 08:03	756426-58-1	
ADONA	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 08:03	919005-14-4	
HFPO-DA	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 08:03	13262-13-6	
NEiFOSAA	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 08:03	2991-50-6	
NEiFOSA	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 08:03	4151-50-2	
NEiFOSE	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 08:03	1691-99-2	
NMeFOSAA	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 08:03	2355-31-9	
NMeFOSA	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 08:03	31506-32-8	
NMeFOSE	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 08:03	24448-09-7	

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Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: LA2425-LA2489
Pace Project No.: 10655868

Sample: LA2465 Lab ID: 10655868041 Collected: 06/01/23 12:03 Received: 06/02/23 08:50 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
PFAS ID SL								
Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178								
Pace Analytical Services - Minneapolis								
Perfluorobutanesulfonic acid	ND	ug/kg	0.11	1	06/22/23 09:30	07/14/23 08:03	375-73-5	
Perfluorodecanoic acid	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 08:03	335-76-2	
Perfluorohexanoic acid	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 08:03	307-24-4	
PFBA	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 08:03	375-22-4	
PFDS	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 08:03	335-77-3	
PFDoS	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 08:03	79780-39-5	
PFHpS	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 08:03	375-92-8	
PFHxDA	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 08:03	67905-19-5	
PFNS	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 08:03	68259-12-1	
PFOA	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 08:03	16517-11-6	
PFOSA	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 08:03	754-91-6	
PFPeA	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 08:03	2706-90-3	
PFPeS	ND	ug/kg	0.11	1	06/22/23 09:30	07/14/23 08:03	2706-91-4	
Perfluorododecanoic acid	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 08:03	307-55-1	
Perfluoroheptanoic acid	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 08:03	375-85-9	
Perfluorohexanesulfonic acid	ND	ug/kg	0.11	1	06/22/23 09:30	07/14/23 08:03	355-46-4	
Perfluorononanoic acid	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 08:03	375-95-1	
Perfluorooctanesulfonic acid	1.6	ug/kg	0.11	1	06/22/23 09:30	07/14/23 08:03	1763-23-1	
Perfluorooctanoic acid	0.40	ug/kg	0.12	1	06/22/23 09:30	07/14/23 08:03	335-67-1	
Perfluorotetradecanoic acid	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 08:03	376-06-7	
Perfluorotridecanoic acid	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 08:03	72629-94-8	
Perfluoroundecanoic acid	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 08:03	2058-94-8	
Surrogates								
13C24:2FTS (S)	108	%	50-150	1	06/22/23 09:30	07/14/23 08:03		
13C26:2FTS (S)	83	%	50-150	1	06/22/23 09:30	07/14/23 08:03		
13C28:2FTS (S)	95	%	50-150	1	06/22/23 09:30	07/14/23 08:03		
13C2-PFDoA (S)	101	%	50-150	1	06/22/23 09:30	07/14/23 08:03		
13C2PFHxDA (S)	88	%	50-150	1	06/22/23 09:30	07/14/23 08:03		
13C2-PFTA (S)	95	%	50-150	1	06/22/23 09:30	07/14/23 08:03		
13C3HFPO-DA (S)	85	%	50-150	1	06/22/23 09:30	07/14/23 08:03		
13C3-PFBS (S)	91	%	50-150	1	06/22/23 09:30	07/14/23 08:03	375-73-5	
13C3-PFHxS (S)	89	%	50-150	1	06/22/23 09:30	07/14/23 08:03	355-46-4	
13C4-PFBA (S)	77	%	50-150	1	06/22/23 09:30	07/14/23 08:03	375-22-4	
13C4-PFHpA (S)	88	%	50-150	1	06/22/23 09:30	07/14/23 08:03	375-85-9	
13C5-PFHxA (S)	88	%	50-150	1	06/22/23 09:30	07/14/23 08:03	307-24-4	
13C5-PFPeA (S)	80	%	50-150	1	06/22/23 09:30	07/14/23 08:03	2706-90-3	
13C6-PFDA (S)	116	%	50-150	1	06/22/23 09:30	07/14/23 08:03	335-76-2	
13C7-PFUDA (S)	104	%	50-150	1	06/22/23 09:30	07/14/23 08:03	2058-94-8	
13C8-PFOA (S)	90	%	50-150	1	06/22/23 09:30	07/14/23 08:03	335-67-1	
13C8-PFOS (S)	81	%	50-150	1	06/22/23 09:30	07/14/23 08:03	1763-23-1	
13C8-PFOA (S)	66	%	50-150	1	06/22/23 09:30	07/14/23 08:03	754-91-6	
13C9-PFNA (S)	86	%	50-150	1	06/22/23 09:30	07/14/23 08:03	375-95-1	
d3-MeFOSAA (S)	81	%	50-150	1	06/22/23 09:30	07/14/23 08:03	2355-31-9	
d3-NMeFOSA (S)	4	%	10-150	1	06/22/23 09:30	07/14/23 08:03	31506-32-8	S0
d5-ElFOSAA (S)	85	%	50-150	1	06/22/23 09:30	07/14/23 08:03	2991-50-6	

REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: LA2425-LA2489
Pace Project No.: 10655868

Sample: LA2465 Lab ID: 10655868041 Collected: 06/01/23 12:03 Received: 06/02/23 08:50 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
PFAS ID SL								
Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178								
Pace Analytical Services - Minneapolis								
Surrogates								
d5-NEIFOSA (S)	4	%	10-150	1	06/22/23 09:30	07/14/23 08:03	4151-50-2	S0
d7-NMeFOSE (S)	46	%	10-150	1	06/22/23 09:30	07/14/23 08:03	24448-09-7	
d9-NEIFOSE (S)	41	%	10-150	1	06/22/23 09:30	07/14/23 08:03	1691-99-2	

Sample: LA2466 Lab ID: 10655868042 Collected: 06/01/23 12:15 Received: 06/02/23 08:50 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight / %M by ASTM D2974								
Analytical Method: ASTM D2974								
Pace Analytical Services - Minneapolis								
Percent Moisture	15.2	%	0.10	1		07/02/23 07:21		N2

PFAS ID SL Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178

Pace Analytical Services - Minneapolis

10:2 FTS	ND	ug/kg	0.11	1	06/22/23 09:30	07/14/23 08:10	120226-60-0	
11CI-PF3OUdS	ND	ug/kg	0.11	1	06/22/23 09:30	07/14/23 08:10	763051-92-9	
4:2 FTS	ND	ug/kg	0.11	1	06/22/23 09:30	07/14/23 08:10	757124-72-4	
6:2 FTS	ND	ug/kg	0.11	1	06/22/23 09:30	07/14/23 08:10	27619-97-2	
8:2 FTS	ND	ug/kg	0.11	1	06/22/23 09:30	07/14/23 08:10	39108-34-4	
9CI-PF3ONS	ND	ug/kg	0.11	1	06/22/23 09:30	07/14/23 08:10	756426-58-1	
ADONA	ND	ug/kg	0.11	1	06/22/23 09:30	07/14/23 08:10	919005-14-4	
HFPO-DA	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 08:10	13252-13-6	
NEtFOSAA	0.47	ug/kg	0.12	1	06/22/23 09:30	07/14/23 08:10	2991-50-6	
NEtFOSA	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 08:10	4151-50-2	
NEtFOSE	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 08:10	1691-99-2	
NMeFOSAA	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 08:10	2355-31-9	
NMeFOSA	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 08:10	31506-32-8	
NMeFOSE	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 08:10	24448-09-7	
Perfluorobutanesulfonic acid	ND	ug/kg	0.11	1	06/22/23 09:30	07/14/23 08:10	375-73-5	
Perfluorodecanoic acid	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 08:10	335-76-2	
Perfluorohexanoic acid	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 08:10	307-24-4	
PFBA	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 08:10	375-22-4	
PFDS	ND	ug/kg	0.11	1	06/22/23 09:30	07/14/23 08:10	335-77-3	
PFDoS	ND	ug/kg	0.11	1	06/22/23 09:30	07/14/23 08:10	79780-39-5	
PFHpS	ND	ug/kg	0.11	1	06/22/23 09:30	07/14/23 08:10	375-92-8	
PFHxDA	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 08:10	67905-19-5	
PFNS	ND	ug/kg	0.11	1	06/22/23 09:30	07/14/23 08:10	68259-12-1	
PFODA	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 08:10	16517-11-6	
PFOSA	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 08:10	754-91-6	
PFPeA	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 08:10	2706-90-3	
PFPeS	ND	ug/kg	0.11	1	06/22/23 09:30	07/14/23 08:10	2706-91-4	
Perfluorododecanoic acid	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 08:10	307-55-1	

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1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: LA2425-LA2489

Pace Project No.: 10655868

Sample: LA2466 Lab ID: 10655868042 Collected: 06/01/23 12:15 Received: 06/02/23 08:50 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
PFAS ID SL								
Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178								
Pace Analytical Services - Minneapolis								
Perfluoroheptanoic acid	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 08:10	375-85-9	
Perfluorohexanesulfonic acid	ND	ug/kg	0.11	1	06/22/23 09:30	07/14/23 08:10	355-46-4	
Perfluorononanoic acid	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 08:10	375-95-1	
Perfluorooctanesulfonic acid	2.8	ug/kg	0.11	1	06/22/23 09:30	07/14/23 08:10	1763-23-1	
Perfluorooctanoic acid	0.15	ug/kg	0.12	1	06/22/23 09:30	07/14/23 08:10	335-67-1	
Perfluorotetradecanoic acid	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 08:10	376-06-7	
Perfluorotridecanoic acid	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 08:10	72629-94-8	
Perfluoroundecanoic acid	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 08:10	2058-94-8	
Surrogates								
13C24:2FTS (S)	116	%	50-150	1	06/22/23 09:30	07/14/23 08:10		
13C26:2FTS (S)	126	%	50-150	1	06/22/23 09:30	07/14/23 08:10		
13C28:2FTS (S)	146	%	50-150	1	06/22/23 09:30	07/14/23 08:10		
13C2-PFDoA (S)	110	%	50-150	1	06/22/23 09:30	07/14/23 08:10		
13C2-PFHxDA (S)	95	%	50-150	1	06/22/23 09:30	07/14/23 08:10		
13C2-PFTA (S)	98	%	50-150	1	06/22/23 09:30	07/14/23 08:10		
13C3HFPO-DA (S)	92	%	50-150	1	06/22/23 09:30	07/14/23 08:10		
13C3-PFBS (S)	93	%	50-150	1	06/22/23 09:30	07/14/23 08:10	375-73-5	
13C3-PFHXS (S)	94	%	50-150	1	06/22/23 09:30	07/14/23 08:10	355-46-4	
13C4-PFBA (S)	88	%	50-150	1	06/22/23 09:30	07/14/23 08:10	375-22-4	
13C4-PFHpA (S)	94	%	50-150	1	06/22/23 09:30	07/14/23 08:10	375-85-9	
13C5-PFHxA (S)	95	%	50-150	1	06/22/23 09:30	07/14/23 08:10	307-24-4	
13C5-PFPaA (S)	90	%	50-150	1	06/22/23 09:30	07/14/23 08:10	2706-90-3	
13C6-PFDA (S)	126	%	50-150	1	06/22/23 09:30	07/14/23 08:10	335-76-2	
13C7-PFUDa (S)	113	%	50-150	1	06/22/23 09:30	07/14/23 08:10	2058-94-8	
13C8-PFOA (S)	97	%	50-150	1	06/22/23 09:30	07/14/23 08:10	335-67-1	
13C8-PFOS (S)	82	%	50-150	1	06/22/23 09:30	07/14/23 08:10	1763-23-1	
13C8-PFOSA (S)	91	%	50-150	1	06/22/23 09:30	07/14/23 08:10	754-91-6	
13C9-PFNA (S)	92	%	50-150	1	06/22/23 09:30	07/14/23 08:10	375-95-1	
d3-MeFOSAA (S)	102	%	50-150	1	06/22/23 09:30	07/14/23 08:10	2355-31-9	
d3-NMeFOSA (S)	43	%	10-150	1	06/22/23 09:30	07/14/23 08:10	31506-32-8	
d5-EtFOSAA (S)	108	%	50-150	1	06/22/23 09:30	07/14/23 08:10	2991-50-6	
d5-NEIFOSA (S)	40	%	10-150	1	06/22/23 09:30	07/14/23 08:10	4151-50-2	
d7-NMeFOSE (S)	62	%	10-150	1	06/22/23 09:30	07/14/23 08:10	24448-09-7	
d9-NEIFOSE (S)	61	%	10-150	1	06/22/23 09:30	07/14/23 08:10	1691-99-2	

Sample: LA2467 Lab ID: 10655868043 Collected: 06/01/23 12:20 Received: 06/02/23 08:50 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight / %M by ASTM D2974								
Analytical Method: ASTM D2974								
Pace Analytical Services - Minneapolis								
Percent Moisture	15.1	%	0.10	1		07/02/23 07:22		N2

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ANALYTICAL RESULTS

Project: LA2425-LA2489
Pace Project No.: 10655868

Sample: LA2467 Lab ID: 10655868043 Collected: 06/01/23 12:20 Received: 06/02/23 08:50 Matrix: Solid
Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
PFAS ID SL Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178 Pace Analytical Services - Minneapolis								
10:2 FTS	ND	ug/kg	0.11	1	06/22/23 09:30	07/14/23 08:17	120226-60-0	
11Cl-PF3OUdS	ND	ug/kg	0.11	1	06/22/23 09:30	07/14/23 08:17	763051-92-9	
4:2 FTS	ND	ug/kg	0.11	1	06/22/23 09:30	07/14/23 08:17	757124-72-4	
6:2 FTS	ND	ug/kg	0.11	1	06/22/23 09:30	07/14/23 08:17	27619-97-2	
8:2 FTS	ND	ug/kg	0.11	1	06/22/23 09:30	07/14/23 08:17	39108-34-4	
9Cl-PF3ONS	ND	ug/kg	0.11	1	06/22/23 09:30	07/14/23 08:17	756426-58-1	
ADONA	ND	ug/kg	0.11	1	06/22/23 09:30	07/14/23 08:17	919005-14-4	
HFPO-DA	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 08:17	13252-13-6	
NEtFOSAA	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 08:17	2991-50-6	
NEtFOSA	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 08:17	4151-50-2	
NEtFOSE	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 08:17	1691-99-2	
NMeFOSAA	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 08:17	2355-31-9	
NMeFOSA	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 08:17	31506-32-8	
NMeFOSE	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 08:17	24448-09-7	
Perfluorobutanesulfonic acid	ND	ug/kg	0.10	1	06/22/23 09:30	07/14/23 08:17	375-73-5	
Perfluorodecanoic acid	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 08:17	335-76-2	
Perfluorohexanoic acid	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 08:17	307-24-4	
PFBA	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 08:17	375-22-4	
PFDS	ND	ug/kg	0.11	1	06/22/23 09:30	07/14/23 08:17	335-77-3	
PFDoS	ND	ug/kg	0.11	1	06/22/23 09:30	07/14/23 08:17	79780-39-5	
PFHpS	ND	ug/kg	0.11	1	06/22/23 09:30	07/14/23 08:17	375-92-8	
PFHxDA	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 08:17	67905-19-5	
PFNS	ND	ug/kg	0.11	1	06/22/23 09:30	07/14/23 08:17	68259-12-1	
PFODA	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 08:17	16517-11-6	
PFOSA	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 08:17	754-91-6	
PFPeA	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 08:17	2706-90-3	
PFPeS	ND	ug/kg	0.11	1	06/22/23 09:30	07/14/23 08:17	2706-91-4	
Perfluorododecanoic acid	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 08:17	307-55-1	
Perfluoroheptanoic acid	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 08:17	375-85-9	
Perfluorohexanesulfonic acid	ND	ug/kg	0.11	1	06/22/23 09:30	07/14/23 08:17	355-46-4	
Perfluorononanoic acid	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 08:17	375-95-1	
Perfluorooctanesulfonic acid	0.22	ug/kg	0.11	1	06/22/23 09:30	07/14/23 08:17	1763-23-1	
Perfluorooctanoic acid	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 08:17	335-67-1	
Perfluorotetradecanoic acid	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 08:17	376-06-7	
Perfluorotridecanoic acid	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 08:17	72629-94-8	
Perfluoroundecanoic acid	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 08:17	2058-94-8	
Surrogates								
13C24:2FTS (S)	112	%	50-150	1	06/22/23 09:30	07/14/23 08:17		
13C28:2FTS (S)	97	%	50-150	1	06/22/23 09:30	07/14/23 08:17		
13C28:2FTS (S)	112	%	50-150	1	06/22/23 09:30	07/14/23 08:17		
13C2-PFDoA (S)	103	%	50-150	1	06/22/23 09:30	07/14/23 08:17		
13C2-PFHxDA (S)	82	%	50-150	1	06/22/23 09:30	07/14/23 08:17		
13C2-PFTA (S)	95	%	50-150	1	06/22/23 09:30	07/14/23 08:17		
13C3-HFPO-DA (S)	89	%	50-150	1	06/22/23 09:30	07/14/23 08:17		
13C3-PFBS (S)	91	%	50-150	1	06/22/23 09:30	07/14/23 08:17	375-73-5	

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ANALYTICAL RESULTS

Project: LA2425-LA2489
Pace Project No.: 10655868

Sample: LA2467 Lab ID: 10655868043 Collected: 06/01/23 12:20 Received: 06/02/23 08:50 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
PFAS ID SL								
Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178 Pace Analytical Services - Minneapolis								
Surrogates								
13C3-PFHxS (S)	90	%	50-150	1	06/22/23 09:30	07/14/23 08:17	355-46-4	
13C4-PFBA (S)	85	%	50-150	1	06/22/23 09:30	07/14/23 08:17	375-22-4	
13C4-PFHpA (S)	91	%	50-150	1	06/22/23 09:30	07/14/23 08:17	375-85-9	
13C5-PFHxA (S)	93	%	50-150	1	06/22/23 09:30	07/14/23 08:17	307-24-4	
13C5-PFPeA (S)	88	%	50-150	1	06/22/23 09:30	07/14/23 08:17	2706-90-3	
13C6-PFDA (S)	117	%	50-150	1	06/22/23 09:30	07/14/23 08:17	335-76-2	
13C7-PFUDa (S)	107	%	50-150	1	06/22/23 09:30	07/14/23 08:17	2058-94-8	
13C8-PFOA (S)	94	%	50-150	1	06/22/23 09:30	07/14/23 08:17	335-67-1	
13C8-PFOS (S)	81	%	50-150	1	06/22/23 09:30	07/14/23 08:17	1763-23-1	
13C8-PFOSA (S)	87	%	50-150	1	06/22/23 09:30	07/14/23 08:17	754-91-6	
13C9-PFNA (S)	89	%	50-150	1	06/22/23 09:30	07/14/23 08:17	375-95-1	
d3-MeFOSAA (S)	83	%	50-150	1	06/22/23 09:30	07/14/23 08:17	2355-31-9	
d3-NMeFOSA (S)	10	%	10-150	1	06/22/23 09:30	07/14/23 08:17	31506-32-8	
d5-EtFOSAA (S)	90	%	50-150	1	06/22/23 09:30	07/14/23 08:17	2991-50-6	
d5-NEtFOSA (S)	8	%	10-150	1	06/22/23 09:30	07/14/23 08:17	4151-50-2	S0
d7-NMeFOSE (S)	57	%	10-150	1	06/22/23 09:30	07/14/23 08:17	24448-09-7	
d9-NEtFOSE (S)	58	%	10-150	1	06/22/23 09:30	07/14/23 08:17	1691-99-2	

Sample: LA2468 Lab ID: 10655868044 Collected: 06/01/23 12:31 Received: 06/02/23 08:50 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight / %M by ASTM D2974								
Analytical Method: ASTM D2974 Pace Analytical Services - Minneapolis								
Percent Moisture	16.9	%	0.10	1		07/02/23 07:23		N2
PFAS ID SL								
Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178 Pace Analytical Services - Minneapolis								
10:2 FTS	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 08:32	120226-60-0	
11Cl-PF3OUdS	ND	ug/kg	0.11	1	06/22/23 09:30	07/14/23 08:32	763051-92-9	
4:2 FTS	ND	ug/kg	0.11	1	06/22/23 09:30	07/14/23 08:32	757124-72-4	
6:2 FTS	ND	ug/kg	0.11	1	06/22/23 09:30	07/14/23 08:32	27619-97-2	
8:2 FTS	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 08:32	39108-34-4	
9Cl-PF3ONS	ND	ug/kg	0.11	1	06/22/23 09:30	07/14/23 08:32	756426-58-1	
ADONA	ND	ug/kg	0.11	1	06/22/23 09:30	07/14/23 08:32	919005-14-4	
HFPO-DA	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 08:32	13252-13-6	
NEtFOSAA	0.17	ug/kg	0.12	1	06/22/23 09:30	07/14/23 08:32	2991-50-6	
NEtFOSA	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 08:32	4151-50-2	
NEtFOSE	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 08:32	1691-99-2	
NMeFOSAA	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 08:32	2355-31-9	
NMeFOSA	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 08:32	31506-32-8	
NMeFOSE	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 08:32	24448-09-7	

REPORT OF LABORATORY ANALYSIS

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Date: 07/21/2023 10:30 AM

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ANALYTICAL RESULTS

Project: LA2425-LA2489
Pace Project No.: 10655868

Sample: LA2468 Lab ID: 10655868044 Collected: 06/01/23 12:31 Received: 06/02/23 08:50 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
PFAS ID SL								
Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178								
Pace Analytical Services - Minneapolis								
Perfluorobutanesulfonic acid	ND	ug/kg	0.11	1	06/22/23 09:30	07/14/23 08:32	375-73-5	
Perfluorodecanoic acid	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 08:32	335-76-2	
Perfluorohexanoic acid	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 08:32	307-24-4	
PFBA	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 08:32	375-22-4	
PFDS	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 08:32	335-77-3	
PFDoS	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 08:32	79780-39-5	
PFHpS	ND	ug/kg	0.11	1	06/22/23 09:30	07/14/23 08:32	375-92-8	
PFHxDA	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 08:32	67905-19-5	
PFNS	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 08:32	68259-12-1	
PFODA	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 08:32	16517-11-6	M1
PFOSA	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 08:32	754-91-6	
PFPeA	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 08:32	2706-90-3	
PFPeS	ND	ug/kg	0.11	1	06/22/23 09:30	07/14/23 08:32	2706-91-4	
Perfluorododecanoic acid	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 08:32	307-55-1	
Perfluoroheptanoic acid	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 08:32	375-85-9	
Perfluorohexanesulfonic acid	ND	ug/kg	0.11	1	06/22/23 09:30	07/14/23 08:32	355-46-4	
Perfluorononanoic acid	0.12	ug/kg	0.12	1	06/22/23 09:30	07/14/23 08:32	375-95-1	
Perfluorooctanesulfonic acid	10.8	ug/kg	0.11	1	06/22/23 09:30	07/14/23 08:32	1763-23-1	M1
Perfluorooctanoic acid	0.54	ug/kg	0.12	1	06/22/23 09:30	07/14/23 08:32	335-67-1	M1
Perfluorotetradecanoic acid	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 08:32	376-06-7	
Perfluorotridecanoic acid	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 08:32	72629-94-8	
Perfluoroundecanoic acid	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 08:32	2058-94-8	
Surrogates								
13C24:2FTS (S)	130	%	50-150	1	06/22/23 09:30	07/14/23 08:32		
13C26:2FTS (S)	128	%	50-150	1	06/22/23 09:30	07/14/23 08:32		
13C28:2FTS (S)	142	%	50-150	1	06/22/23 09:30	07/14/23 08:32		
13C2-PFDoA (S)	121	%	50-150	1	06/22/23 09:30	07/14/23 08:32		
13C2-PFHxDA (S)	102	%	50-150	1	06/22/23 09:30	07/14/23 08:32		
13C2-PFTA (S)	112	%	50-150	1	06/22/23 09:30	07/14/23 08:32		
13C3HFPO-DA (S)	99	%	50-150	1	06/22/23 09:30	07/14/23 08:32		
13C3-PFBS (S)	102	%	50-150	1	06/22/23 09:30	07/14/23 08:32	375-73-5	
13C3-PFHxS (S)	103	%	50-150	1	06/22/23 09:30	07/14/23 08:32	355-46-4	
13C4-PFBA (S)	96	%	50-150	1	06/22/23 09:30	07/14/23 08:32	375-22-4	
13C4-PFHpA (S)	104	%	50-150	1	06/22/23 09:30	07/14/23 08:32	375-85-9	
13C5-PFHxA (S)	103	%	50-150	1	06/22/23 09:30	07/14/23 08:32	307-24-4	
13C5-PFPeA (S)	99	%	50-150	1	06/22/23 09:30	07/14/23 08:32	2706-90-3	
13C6-PFDA (S)	136	%	50-150	1	06/22/23 09:30	07/14/23 08:32	335-76-2	
13C7-PFUDA (S)	121	%	50-150	1	06/22/23 09:30	07/14/23 08:32	2058-94-8	
13C8-PFOA (S)	104	%	50-150	1	06/22/23 09:30	07/14/23 08:32	335-67-1	
13C8-PFOS (S)	93	%	50-150	1	06/22/23 09:30	07/14/23 08:32	1763-23-1	
13C8-PFOSA (S)	92	%	50-150	1	06/22/23 09:30	07/14/23 08:32	754-91-6	
13C9-PFNA (S)	97	%	50-150	1	06/22/23 09:30	07/14/23 08:32	375-95-1	
d3-MeFOSAA (S)	104	%	50-150	1	06/22/23 09:30	07/14/23 08:32	2355-31-9	
d3-NMeFOSA (S)	11	%	10-150	1	06/22/23 09:30	07/14/23 08:32	31506-32-8	
d5-EiFOSAA (S)	113	%	50-150	1	06/22/23 09:30	07/14/23 08:32	2991-50-6	

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Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: LA2425-LA2489
Pace Project No.: 10655868

Sample: LA2468 Lab ID: 10655868044 Collected: 06/01/23 12:31 Received: 06/02/23 08:50 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
PFAS ID SL								
Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178								
Pace Analytical Services - Minneapolis								
Surrogates								
d5-NEIFOSA (S)	10	%	10-150	1	06/22/23 09:30	07/14/23 08:32	4151-50-2	
d7-NMeFOSE (S)	56	%	10-150	1	06/22/23 09:30	07/14/23 08:32	24448-09-7	
d9-NEIFOSE (S)	53	%	10-150	1	06/22/23 09:30	07/14/23 08:32	1691-99-2	

Sample: LA2469 Lab ID: 10655868045 Collected: 06/01/23 12:38 Received: 06/02/23 08:50 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight / %M by ASTM D2974								
Analytical Method: ASTM D2974								
Pace Analytical Services - Minneapolis								
Percent Moisture	18.6	%	0.10	1		07/02/23 07:27		N2

PFAS ID SL Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178
Pace Analytical Services - Minneapolis

10:2 FTS	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 08:54	120226-60-0	
11CI-PF3OUdS	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 08:54	763051-92-9	
4:2 FTS	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 08:54	757124-72-4	
6:2 FTS	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 08:54	27619-97-2	
8:2 FTS	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 08:54	39108-34-4	
9CI-PF3ONS	ND	ug/kg	0.11	1	06/22/23 09:30	07/14/23 08:54	756426-58-1	
ADONA	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 08:54	919005-14-4	
HFPO-DA	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 08:54	13252-13-6	
NEIFOSAA	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 08:54	2991-50-6	
NEIFOSA	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 08:54	4151-50-2	M1
NEIFOSE	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 08:54	1691-99-2	
NMeFOSAA	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 08:54	2355-31-9	
NMeFOSA	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 08:54	31506-32-8	M1,R1
NMeFOSE	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 08:54	24448-09-7	
Perfluorobutanesulfonic acid	ND	ug/kg	0.11	1	06/22/23 09:30	07/14/23 08:54	375-73-5	
Perfluorodecanoic acid	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 08:54	335-76-2	
Perfluorohexanoic acid	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 08:54	307-24-4	
PFBA	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 08:54	375-22-4	
PFDS	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 08:54	335-77-3	
PFDoS	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 08:54	79780-39-5	
PFHpS	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 08:54	375-92-8	
PFHxDA	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 08:54	67905-19-5	
PFNS	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 08:54	68259-12-1	
PFODA	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 08:54	16517-11-6	M1
PFOSA	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 08:54	754-91-6	
PFPeA	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 08:54	2706-90-3	
PFPeS	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 08:54	2706-91-4	
Perfluorododecanoic acid	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 08:54	307-55-1	

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Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: LA2425-LA2489
Pace Project No.: 10655868

Sample: LA2469 Lab ID: 10655868045 Collected: 06/01/23 12:38 Received: 06/02/23 08:50 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
PFAS ID SL								
Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178								
Pace Analytical Services - Minneapolis								
Perfluoroheptanoic acid	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 08:54	375-85-9	
Perfluorohexanesulfonic acid	ND	ug/kg	0.11	1	06/22/23 09:30	07/14/23 08:54	355-46-4	
Perfluorononanoic acid	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 08:54	375-95-1	
Perfluorooctanesulfonic acid	0.21	ug/kg	0.11	1	06/22/23 09:30	07/14/23 08:54	1763-23-1	
Perfluorooctanoic acid	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 08:54	335-67-1	
Perfluorotetradecanoic acid	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 08:54	376-06-7	
Perfluorotridecanoic acid	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 08:54	72629-94-8	
Perfluoroundecanoic acid	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 08:54	2058-94-8	
Surrogates								
13C24:2FTS (S)	111	%	50-150	1	06/22/23 09:30	07/14/23 08:54		
13C26:2FTS (S)	95	%	50-150	1	06/22/23 09:30	07/14/23 08:54		
13C28:2FTS (S)	101	%	50-150	1	06/22/23 09:30	07/14/23 08:54		
13C2-PFDoA (S)	112	%	50-150	1	06/22/23 09:30	07/14/23 08:54		
13C2PFHxDA (S)	62	%	50-150	1	06/22/23 09:30	07/14/23 08:54		
13C2-PFTA (S)	98	%	50-150	1	06/22/23 09:30	07/14/23 08:54		
13C3HFPO-DA (S)	96	%	50-150	1	06/22/23 09:30	07/14/23 08:54		
13C3-PFBS (S)	95	%	50-150	1	06/22/23 09:30	07/14/23 08:54	375-73-5	
13C3-PFHxS (S)	95	%	50-150	1	06/22/23 09:30	07/14/23 08:54	355-46-4	
13C4-PFBA (S)	90	%	50-150	1	06/22/23 09:30	07/14/23 08:54	375-22-4	
13C4-PFHpA (S)	95	%	50-150	1	06/22/23 09:30	07/14/23 08:54	375-85-9	
13C5-PFHxA (S)	98	%	50-150	1	06/22/23 09:30	07/14/23 08:54	307-24-4	
13C5-PFPeA (S)	93	%	50-150	1	06/22/23 09:30	07/14/23 08:54	2706-90-3	
13C6-PFDA (S)	124	%	50-150	1	06/22/23 09:30	07/14/23 08:54	335-76-2	
13C7-PFUDa (S)	114	%	50-150	1	06/22/23 09:30	07/14/23 08:54	2058-94-8	
13C8-PFOA (S)	97	%	50-150	1	06/22/23 09:30	07/14/23 08:54	335-67-1	
13C8-PFOS (S)	91	%	50-150	1	06/22/23 09:30	07/14/23 08:54	1763-23-1	
13C8-PFOSA (S)	59	%	50-150	1	06/22/23 09:30	07/14/23 08:54	754-91-6	
13C9-PFNA (S)	97	%	50-150	1	06/22/23 09:30	07/14/23 08:54	375-95-1	
d3-MeFOSAA (S)	83	%	50-150	1	06/22/23 09:30	07/14/23 08:54	2355-31-9	
d3-NMeFOSA (S)	0	%	10-150	1	06/22/23 09:30	07/14/23 08:54	31506-32-8	S0
d5-EtFOSAA (S)	94	%	50-150	1	06/22/23 09:30	07/14/23 08:54	2991-50-6	
d5-NEFOSA (S)	0	%	10-150	1	06/22/23 09:30	07/14/23 08:54	4151-50-2	S0
d7-NMeFOSE (S)	9	%	10-150	1	06/22/23 09:30	07/14/23 08:54	24448-09-7	S0
d9-NEFOSE (S)	6	%	10-150	1	06/22/23 09:30	07/14/23 08:54	1691-99-2	S0

Sample: LA2470 Lab ID: 10655868046 Collected: 06/01/23 12:41 Received: 06/02/23 08:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
PFAS ID NPW								
Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178								
Pace Analytical Services - Minneapolis								
10:2 FTS	ND	ng/L	2.0	1	06/23/23 09:45	07/11/23 19:23	120226-60-0	L2
11Cl-PF3OUdS	ND	ng/L	1.9	1	06/23/23 09:45	07/11/23 19:23	763051-92-9	
4:2 FTS	ND	ng/L	1.9	1	06/23/23 09:45	07/11/23 19:23	757124-72-4	

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INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

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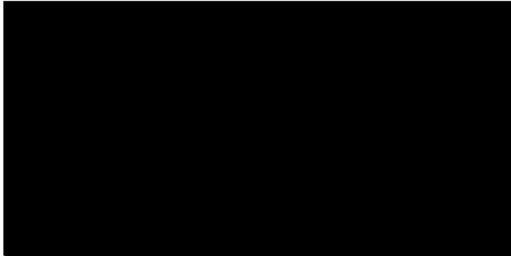
100 N. Senate Avenue • Indianapolis, IN 46204

(800) 451-6027 • (317) 232-8603 • www.idem.IN.gov

Eric J. Holcomb
Governor

Brian C. Rockensuess
Commissioner

October 18, 2023



RE: Soil Sampling Results

#LA2450 15-1 Shallow
#LA2451 15-1 Deep
#LA2452 15-2 Shallow
#LA2453 15-2 Deep

[REDACTED]

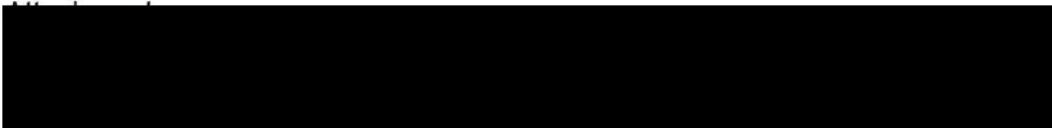
IDEM received the results of the analysis for soil samples collected on May 31, 2023, from your property located on [REDACTED]. The analysis was performed by IDEM's contract laboratory and tested for 36 per- and polyfluoroalkyl substances (PFAS) including the compounds perfluorooctanoic acid (PFOA) and perfluorooctane sulfonate (PFOS).

None of the 36 PFAS compounds analyzed were detected above IDEM's Risk-based Closure Guide (July 2022 and all subsequent updates) (RCG) published levels for residential soil direct contact. Please note that the published soil standard is based on ingestion, inhalation and dermal exposure solely related to soil contact. A map depicting the sample locations has been included as an attachment. In addition, the analytical sheets from Pace Laboratories have also been included with this letter for your records.

If you have questions regarding this matter, please contact Lynette Schrowe of the Remediation Services Branch at 317/234-8622.

Sincerely,

Kevin Davis, Chief
Remediation Services Branch
Office of Land Quality



Visit on.IN.gov/survey or scan the QR code to provide feedback.

We appreciate your input!





ANALYTICAL RESULTS

Project: LA2425-LA2489
Pace Project No.: 10655868

Sample: LA2449		Lab ID: 10655868025		Collected: 05/31/23 17:43		Received: 06/02/23 08:50		Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual	
PFAS ID NPW									
Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178									
Pace Analytical Services - Minneapolis									
10:2 FTS	ND	ng/L	2.0	1	06/23/23 09:45	07/11/23 19:16	120226-60-0	L2	
11CI-PF3OUds	ND	ng/L	1.9	1	06/23/23 09:45	07/11/23 19:16	763051-92-9		
4:2 FTS	ND	ng/L	1.9	1	06/23/23 09:45	07/11/23 19:16	757124-72-4		
6:2 FTS	ND	ng/L	1.9	1	06/23/23 09:45	07/11/23 19:16	27619-97-2		
8:2 FTS	ND	ng/L	2.0	1	06/23/23 09:45	07/11/23 19:16	39108-34-4		
9CI-PF3ONS	ND	ng/L	1.9	1	06/23/23 09:45	07/11/23 19:16	756426-58-1		
ADONA	ND	ng/L	1.9	1	06/23/23 09:45	07/11/23 19:16	919005-14-4		
HFPO-DA	ND	ng/L	2.0	1	06/23/23 09:45	07/11/23 19:16	13252-13-6		
NEIFOSAA	ND	ng/L	2.0	1	06/23/23 09:45	07/11/23 19:16	2991-50-6		
NEIFOSA	ND	ng/L	2.0	1	06/23/23 09:45	07/11/23 19:16	4151-50-2		
NEIFOSE	ND	ng/L	2.0	1	06/23/23 09:45	07/11/23 19:16	1691-99-2		
NMeFOSAA	ND	ng/L	2.0	1	06/23/23 09:45	07/11/23 19:16	2355-31-9		
NMeFOSA	ND	ng/L	2.0	1	06/23/23 09:45	07/11/23 19:16	31506-32-8		
NMeFOSE	ND	ng/L	2.0	1	06/23/23 09:45	07/11/23 19:16	24448-09-7		
Perfluorobutanesulfonic acid	ND	ng/L	1.8	1	06/23/23 09:45	07/11/23 19:16	375-73-5		
Perfluorodecanoic acid	ND	ng/L	2.0	1	06/23/23 09:45	07/11/23 19:16	335-76-2		
Perfluorohexanoic acid	ND	ng/L	2.0	1	06/23/23 09:45	07/11/23 19:16	307-24-4		
PFBA	ND	ng/L	2.0	1	06/23/23 09:45	07/11/23 19:16	375-22-4		
PFDS	ND	ng/L	2.0	1	06/23/23 09:45	07/11/23 19:16	335-77-3		
PFDoS	ND	ng/L	2.0	1	06/23/23 09:45	07/11/23 19:16	79780-39-5		
PFHpS	ND	ng/L	1.9	1	06/23/23 09:45	07/11/23 19:16	375-92-8		
PFHxDA	ND	ng/L	2.0	1	06/23/23 09:45	07/11/23 19:16	67905-19-5		
PFNS	ND	ng/L	1.9	1	06/23/23 09:45	07/11/23 19:16	68259-12-1		
PFODA	ND	ng/L	2.0	1	06/23/23 09:45	07/11/23 19:16	16517-11-6		
PFOSA	ND	ng/L	2.0	1	06/23/23 09:45	07/11/23 19:16	754-91-6		
PFPeA	ND	ng/L	2.0	1	06/23/23 09:45	07/11/23 19:16	2706-90-3		
PFPeS	ND	ng/L	1.9	1	06/23/23 09:45	07/11/23 19:16	2706-91-4		
Perfluorododecanoic acid	ND	ng/L	2.0	1	06/23/23 09:45	07/11/23 19:16	307-55-1		
Perfluoroheptanoic acid	ND	ng/L	2.0	1	06/23/23 09:45	07/11/23 19:16	375-85-9		
Perfluorohexanesulfonic acid	ND	ng/L	1.8	1	06/23/23 09:45	07/11/23 19:16	355-46-4		
Perfluorononanoic acid	ND	ng/L	2.0	1	06/23/23 09:45	07/11/23 19:16	375-95-1		
Perfluorooctanesulfonic acid	ND	ng/L	1.9	1	06/23/23 09:45	07/11/23 19:16	1763-23-1		
Perfluorooctanoic acid	ND	ng/L	2.0	1	06/23/23 09:45	07/11/23 19:16	335-67-1		
Perfluorotetradecanoic acid	ND	ng/L	2.0	1	06/23/23 09:45	07/11/23 19:16	376-06-7		
Perfluorotridecanoic acid	ND	ng/L	2.0	1	06/23/23 09:45	07/11/23 19:16	72629-94-8		
Perfluoroundecanoic acid	ND	ng/L	2.0	1	06/23/23 09:45	07/11/23 19:16	2058-94-8		
Surrogates									
13C26:2FTS (S)	89	%	50-150	1	06/23/23 09:45	07/11/23 19:16			
13C28:2FTS (S)	561	%	50-150	1	06/23/23 09:45	07/11/23 19:16		S3	
13C24:2FTS (S)	85	%	50-150	1	06/23/23 09:45	07/11/23 19:16			
13C2-PFDoA (S)	87	%	50-150	1	06/23/23 09:45	07/11/23 19:16			
13C2PFHxDA (S)	76	%	50-150	1	06/23/23 09:45	07/11/23 19:16			
13C2-PFTA (S)	90	%	50-150	1	06/23/23 09:45	07/11/23 19:16			
13C3HFPO-DA (S)	109	%	50-150	1	06/23/23 09:45	07/11/23 19:16			
13C3-PFBS (S)	118	%	50-150	1	06/23/23 09:45	07/11/23 19:16	375-73-5		
13C3-PFHxS (S)	105	%	50-150	1	06/23/23 09:45	07/11/23 19:16	355-46-4		

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1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: LA2425-LA2489
Pace Project No.: 10655868

Sample: LA2449	Lab ID: 10655868025	Collected: 05/31/23 17:43	Received: 06/02/23 08:50	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
PFAS ID NPW	Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178 Pace Analytical Services - Minneapolis							
Surrogates								
13C4-PFBA (S)	122	%	50-150	1	06/23/23 09:45	07/11/23 19:16	375-22-4	
13C4-PFHpA (S)	105	%	50-150	1	06/23/23 09:45	07/11/23 19:16	375-85-9	
13C5-PFHxA (S)	112	%	50-150	1	06/23/23 09:45	07/11/23 19:16	307-24-4	
13C5-PFPeA (S)	126	%	50-150	1	06/23/23 09:45	07/11/23 19:16	2706-90-3	
13C6-PFDA (S)	112	%	50-150	1	06/23/23 09:45	07/11/23 19:16	335-76-2	
13C7-PFUdA (S)	90	%	50-150	1	06/23/23 09:45	07/11/23 19:16	2058-94-8	
13C8-PFOA (S)	98	%	50-150	1	06/23/23 09:45	07/11/23 19:16	335-67-1	
13C8-PFOS (S)	90	%	50-150	1	06/23/23 09:45	07/11/23 19:16	1763-23-1	
13C8-PFOSA (S)	80	%	50-150	1	06/23/23 09:45	07/11/23 19:16	754-91-6	
13C9-PFNA (S)	89	%	50-150	1	06/23/23 09:45	07/11/23 19:16	375-95-1	
d3-MeFOSAA (S)	85	%	50-150	1	06/23/23 09:45	07/11/23 19:16	2355-31-9	
d3-NMeFOSA (S)	59	%	10-150	1	06/23/23 09:45	07/11/23 19:16	31506-32-8	
d5-EiFOSAA (S)	93	%	50-150	1	06/23/23 09:45	07/11/23 19:16	2991-50-6	
d5-NEiFOSA (S)	63	%	10-150	1	06/23/23 09:45	07/11/23 19:16	4151-50-2	
d7-NMeFOSE (S)	71	%	10-150	1	06/23/23 09:45	07/11/23 19:16	24448-09-7	
d9-NEiFOSE (S)	65	%	10-150	1	06/23/23 09:45	07/11/23 19:16	1691-99-2	

Sample: LA2450 Lab ID: 10655868026 Collected: 06/01/23 09:21 Received: 06/02/23 08:50 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight / %M by ASTM D2974								
Analytical Method: ASTM D2974 Pace Analytical Services - Minneapolis								
Percent Moisture	13.7	%	0.10	1		07/02/23 05:59		N2
PFAS ID SL								
Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178 Pace Analytical Services - Minneapolis								
10:2 FTS	ND	ug/kg	0.11	1	06/20/23 13:12	07/10/23 07:35	120226-60-0	
11Cl-PF3OUdS	ND	ug/kg	0.11	1	06/20/23 13:12	07/10/23 07:35	763051-92-9	
4:2 FTS	ND	ug/kg	0.11	1	06/20/23 13:12	07/10/23 07:35	757124-72-4	
6:2 FTS	ND	ug/kg	0.11	1	06/20/23 13:12	07/10/23 07:35	27619-97-2	
8:2 FTS	ND	ug/kg	0.11	1	06/20/23 13:12	07/10/23 07:35	39108-34-4	
9Cl-PF3ONS	ND	ug/kg	0.10	1	06/20/23 13:12	07/10/23 07:35	756426-58-1	
ADONA	ND	ug/kg	0.11	1	06/20/23 13:12	07/10/23 07:35	919005-14-4	
HFPO-DA	ND	ug/kg	0.11	1	06/20/23 13:12	07/10/23 07:35	13252-13-6	
NEiFOSAA	0.19	ug/kg	0.11	1	06/20/23 13:12	07/10/23 07:35	2991-50-6	M1
NEiFOSA	ND	ug/kg	0.11	1	06/20/23 13:12	07/10/23 07:35	4151-50-2	
NEiFOSE	ND	ug/kg	0.11	1	06/20/23 13:12	07/10/23 07:35	1691-99-2	M1
NMeFOSAA	ND	ug/kg	0.11	1	06/20/23 13:12	07/10/23 07:35	2355-31-9	
NMeFOSA	ND	ug/kg	0.11	1	06/20/23 13:12	07/10/23 07:35	31506-32-8	
NMeFOSE	ND	ug/kg	0.11	1	06/20/23 13:12	07/10/23 07:35	24448-09-7	
Perfluorobutanesulfonic acid	ND	ug/kg	0.10	1	06/20/23 13:12	07/10/23 07:35	375-73-5	
Perfluorodecanol acid	ND	ug/kg	0.11	1	06/20/23 13:12	07/10/23 07:35	335-76-2	

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1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: LA2425-LA2489

Pace Project No.: 10655868

Sample: LA2450 Lab ID: 10655868026 Collected: 06/01/23 09:21 Received: 06/02/23 08:50 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
PFAS ID SL								
Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178								
Pace Analytical Services - Minneapolis								
Perfluorohexanoic acid	ND	ug/kg	0.11	1	06/20/23 13:12	07/10/23 07:35	307-24-4	
PFBA	ND	ug/kg	0.11	1	06/20/23 13:12	07/10/23 07:35	375-22-4	
PFDS	ND	ug/kg	0.11	1	06/20/23 13:12	07/10/23 07:35	335-77-3	
PFDoS	ND	ug/kg	0.11	1	06/20/23 13:12	07/10/23 07:35	79780-39-5	
PFHpS	ND	ug/kg	0.11	1	06/20/23 13:12	07/10/23 07:35	375-92-8	
PFHxDA	ND	ug/kg	0.11	1	06/20/23 13:12	07/10/23 07:35	67905-19-5	
PFNS	ND	ug/kg	0.11	1	06/20/23 13:12	07/10/23 07:35	68259-12-1	
PFODA	ND	ug/kg	0.11	1	06/20/23 13:12	07/10/23 07:35	16517-11-6	
PFOSA	ND	ug/kg	0.11	1	06/20/23 13:12	07/10/23 07:35	754-91-6	
PFPeA	ND	ug/kg	0.11	1	06/20/23 13:12	07/10/23 07:35	2706-90-3	
PFPeS	ND	ug/kg	0.11	1	06/20/23 13:12	07/10/23 07:35	2706-91-4	
Perfluorododecanoic acid	ND	ug/kg	0.11	1	06/20/23 13:12	07/10/23 07:35	307-55-1	
Perfluoroheptanoic acid	ND	ug/kg	0.11	1	06/20/23 13:12	07/10/23 07:35	375-85-9	
Perfluorohexanesulfonic acid	ND	ug/kg	0.10	1	06/20/23 13:12	07/10/23 07:35	355-46-4	
Perfluorononanoic acid	0.12	ug/kg	0.11	1	06/20/23 13:12	07/10/23 07:35	375-95-1	
Perfluorooctanesulfonic acid	6.6	ug/kg	0.10	1	06/20/23 13:12	07/10/23 07:35	1763-23-1	M1
Perfluorooctanoic acid	0.60	ug/kg	0.11	1	06/20/23 13:12	07/10/23 07:35	335-67-1	
Perfluorotetradecanoic acid	ND	ug/kg	0.11	1	06/20/23 13:12	07/10/23 07:35	376-06-7	
Perfluorotridecanoic acid	ND	ug/kg	0.11	1	06/20/23 13:12	07/10/23 07:35	72629-94-8	
Perfluoroundecanoic acid	ND	ug/kg	0.11	1	06/20/23 13:12	07/10/23 07:35	2058-94-8	
Surrogates								
13C24:2FTS (S)	121	%	50-150	1	06/20/23 13:12	07/10/23 07:35		
13C26:2FTS (S)	73	%	50-150	1	06/20/23 13:12	07/10/23 07:35		
13C28:2FTS (S)	112	%	50-150	1	06/20/23 13:12	07/10/23 07:35		
13C2-PFDoA (S)	92	%	50-150	1	06/20/23 13:12	07/10/23 07:35		
13C2-PFHxDA (S)	74	%	50-150	1	06/20/23 13:12	07/10/23 07:35		
13C2-PFTA (S)	88	%	50-150	1	06/20/23 13:12	07/10/23 07:35		
13C3HFPO-DA (S)	113	%	50-150	1	06/20/23 13:12	07/10/23 07:35		
13C3-PFBS (S)	89	%	50-150	1	06/20/23 13:12	07/10/23 07:35	375-73-5	
13C3-PFHxS (S)	83	%	50-150	1	06/20/23 13:12	07/10/23 07:35	355-46-4	
13C4-PFBA (S)	108	%	50-150	1	06/20/23 13:12	07/10/23 07:35	375-22-4	
13C4-PFHpA (S)	95	%	50-150	1	06/20/23 13:12	07/10/23 07:35	375-85-9	
13C5-PFHxA (S)	84	%	50-150	1	06/20/23 13:12	07/10/23 07:35	307-24-4	
13C5-PFPeA (S)	97	%	50-150	1	06/20/23 13:12	07/10/23 07:35	2706-90-3	
13C6-PFDA (S)	92	%	50-150	1	06/20/23 13:12	07/10/23 07:35	335-76-2	
13C7-PFUdA (S)	88	%	50-150	1	06/20/23 13:12	07/10/23 07:35	2058-94-8	
13C8-PFOA (S)	94	%	50-150	1	06/20/23 13:12	07/10/23 07:35	335-67-1	
13C8-PFOS (S)	77	%	50-150	1	06/20/23 13:12	07/10/23 07:35	1763-23-1	
13C8-PFOA (S)	73	%	50-150	1	06/20/23 13:12	07/10/23 07:35	754-91-6	
13C9-PFNA (S)	78	%	50-150	1	06/20/23 13:12	07/10/23 07:35	375-95-1	
d3-MeFOSAA (S)	83	%	50-150	1	06/20/23 13:12	07/10/23 07:35	2355-31-9	
d3-NMeFOSA (S)	30	%	10-150	1	06/20/23 13:12	07/10/23 07:35	31506-32-8	
d5-ElFOSAA (S)	90	%	50-150	1	06/20/23 13:12	07/10/23 07:35	2991-50-6	
d5-NElFOSA (S)	27	%	10-150	1	06/20/23 13:12	07/10/23 07:35	4151-50-2	
d7-NMeFOSE (S)	46	%	10-150	1	06/20/23 13:12	07/10/23 07:35	24448-09-7	

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Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: LA2425-LA2489
Pace Project No.: 10655868

Sample: LA2450 Lab ID: 10655868026 Collected: 06/01/23 09:21 Received: 06/02/23 08:50 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
PFAS ID SL								
Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178 Pace Analytical Services - Minneapolis								
Surrogates								
d9-NEIPOSE (S)	38	%	10-150	1	06/20/23 13:12	07/10/23 07:35	1691-99-2	

Sample: LA2451 Lab ID: 10655868027 Collected: 06/01/23 09:27 Received: 06/02/23 08:50 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight / %M by ASTM D2974								
Analytical Method: ASTM D2974 Pace Analytical Services - Minneapolis								
Percent Moisture	16.1	%	0.10	1		07/02/23 06:00		N2
PFAS ID SL								
Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178 Pace Analytical Services - Minneapolis								

10:2 FTS	ND	ug/kg	0.11	1	06/20/23 13:12	07/10/23 07:57	120226-60-0	
11CI-PF3OUdS	ND	ug/kg	0.11	1	06/20/23 13:12	07/10/23 07:57	763051-92-9	
4:2 FTS	ND	ug/kg	0.11	1	06/20/23 13:12	07/10/23 07:57	757124-72-4	
6:2 FTS	ND	ug/kg	0.11	1	06/20/23 13:12	07/10/23 07:57	27619-97-2	
8:2 FTS	ND	ug/kg	0.11	1	06/20/23 13:12	07/10/23 07:57	39108-34-4	
9CI-PF3ONS	ND	ug/kg	0.11	1	06/20/23 13:12	07/10/23 07:57	756426-58-1	
ADONA	ND	ug/kg	0.11	1	06/20/23 13:12	07/10/23 07:57	919005-14-4	
HFPO-DA	ND	ug/kg	0.12	1	06/20/23 13:12	07/10/23 07:57	13252-13-6	
NEIPOSAA	ND	ug/kg	0.12	1	06/20/23 13:12	07/10/23 07:57	2991-50-6	
NEIPOSE	ND	ug/kg	0.12	1	06/20/23 13:12	07/10/23 07:57	4161-50-2	M1
NEIPOSE	ND	ug/kg	0.12	1	06/20/23 13:12	07/10/23 07:57	1691-99-2	
NMeFOSAA	ND	ug/kg	0.12	1	06/20/23 13:12	07/10/23 07:57	2355-31-9	
NMeFOSA	ND	ug/kg	0.12	1	06/20/23 13:12	07/10/23 07:57	31506-32-8	M1
NMeFOSE	ND	ug/kg	0.12	1	06/20/23 13:12	07/10/23 07:57	24448-09-7	
Perfluorobutanesulfonic acid	ND	ug/kg	0.10	1	06/20/23 13:12	07/10/23 07:57	375-73-5	
Perfluorodecanoic acid	ND	ug/kg	0.12	1	06/20/23 13:12	07/10/23 07:57	335-76-2	
Perfluorohexanoic acid	ND	ug/kg	0.12	1	06/20/23 13:12	07/10/23 07:57	307-24-4	
PFBA	ND	ug/kg	0.12	1	06/20/23 13:12	07/10/23 07:57	375-22-4	
PFDS	ND	ug/kg	0.11	1	06/20/23 13:12	07/10/23 07:57	335-77-3	M1
PFDoS	ND	ug/kg	0.11	1	06/20/23 13:12	07/10/23 07:57	79780-39-5	
PFHpS	ND	ug/kg	0.11	1	06/20/23 13:12	07/10/23 07:57	375-92-8	
PFHxDA	ND	ug/kg	0.12	1	06/20/23 13:12	07/10/23 07:57	67905-19-5	
PFNS	ND	ug/kg	0.11	1	06/20/23 13:12	07/10/23 07:57	68259-12-1	
PFODA	ND	ug/kg	0.12	1	06/20/23 13:12	07/10/23 07:57	16517-11-6	M1
PFOSA	ND	ug/kg	0.12	1	06/20/23 13:12	07/10/23 07:57	754-91-6	
PFPeA	ND	ug/kg	0.12	1	06/20/23 13:12	07/10/23 07:57	2706-90-3	
PFPeS	ND	ug/kg	0.11	1	06/20/23 13:12	07/10/23 07:57	2706-91-4	
Perfluorododecanoic acid	ND	ug/kg	0.12	1	06/20/23 13:12	07/10/23 07:57	307-55-1	
Perfluoroheptanoic acid	ND	ug/kg	0.12	1	06/20/23 13:12	07/10/23 07:57	375-85-9	
Perfluorohexanesulfonic acid	ND	ug/kg	0.11	1	06/20/23 13:12	07/10/23 07:57	355-46-4	

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ANALYTICAL RESULTS

Project: LA2425-LA2489
Pace Project No.: 10655868

Sample: LA2451 Lab ID: 10655868027 Collected: 06/01/23 09:27 Received: 06/02/23 08:50 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
PFAS ID SL								
Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178 Pace Analytical Services - Minneapolis								
Perfluorononanoic acid	ND	ug/kg	0.12	1	06/20/23 13:12	07/10/23 07:57	375-95-1	
Perfluorooctanesulfonic acid	0.70	ug/kg	0.11	1	06/20/23 13:12	07/10/23 07:57	1763-23-1	M1
Perfluorooctanoic acid	0.13	ug/kg	0.12	1	06/20/23 13:12	07/10/23 07:57	335-67-1	M1
Perfluorotetradecanoic acid	ND	ug/kg	0.12	1	06/20/23 13:12	07/10/23 07:57	376-06-7	
Perfluorotridecanoic acid	ND	ug/kg	0.12	1	06/20/23 13:12	07/10/23 07:57	72629-94-8	
Perfluoroundecanoic acid	ND	ug/kg	0.12	1	06/20/23 13:12	07/10/23 07:57	2058-94-8	
Surrogates								
13C24:2FTS (S)	101	%	50-150	1	06/20/23 13:12	07/10/23 07:57		
13C26:2FTS (S)	45	%	50-150	1	06/20/23 13:12	07/10/23 07:57		S0
13C28:2FTS (S)	56	%	50-150	1	06/20/23 13:12	07/10/23 07:57		
13C2-PFDoA (S)	85	%	50-150	1	06/20/23 13:12	07/10/23 07:57		
13C2-PFHxDA (S)	66	%	50-150	1	06/20/23 13:12	07/10/23 07:57		
13C2-PFTA (S)	87	%	50-150	1	06/20/23 13:12	07/10/23 07:57		
13C3HFPO-DA (S)	102	%	50-150	1	06/20/23 13:12	07/10/23 07:57		
13C3-PFBS (S)	83	%	50-150	1	06/20/23 13:12	07/10/23 07:57	375-73-5	
13C3-PFHxS (S)	80	%	50-150	1	06/20/23 13:12	07/10/23 07:57	355-46-4	
13C4-PFBA (S)	99	%	50-150	1	06/20/23 13:12	07/10/23 07:57	375-22-4	
13C4-PFHpA (S)	78	%	50-150	1	06/20/23 13:12	07/10/23 07:57	375-85-9	
13C5-PFHxA (S)	79	%	50-150	1	06/20/23 13:12	07/10/23 07:57	307-24-4	
13C5-PFPeA (S)	85	%	50-150	1	06/20/23 13:12	07/10/23 07:57	2706-90-3	
13C6-PFDA (S)	78	%	50-150	1	06/20/23 13:12	07/10/23 07:57	335-76-2	
13C7-PFUDa (S)	75	%	50-150	1	06/20/23 13:12	07/10/23 07:57	2058-94-8	
13C8-PFOA (S)	77	%	50-150	1	06/20/23 13:12	07/10/23 07:57	335-67-1	
13C8-PFOS (S)	70	%	50-150	1	06/20/23 13:12	07/10/23 07:57	1763-23-1	
13C8-PFOA (S)	59	%	50-150	1	06/20/23 13:12	07/10/23 07:57	754-91-6	
13C9-PFNA (S)	70	%	50-150	1	06/20/23 13:12	07/10/23 07:57	375-95-1	
d3-MeFOSAA (S)	62	%	50-150	1	06/20/23 13:12	07/10/23 07:57	2355-31-9	
d3-NMeFOSA (S)	10	%	10-150	1	06/20/23 13:12	07/10/23 07:57	31506-32-8	
d5-ElFOSAA (S)	64	%	50-150	1	06/20/23 13:12	07/10/23 07:57	2991-50-6	
d5-NEFOSA (S)	9	%	10-150	1	06/20/23 13:12	07/10/23 07:57	4151-50-2	S0
d7-NMeFOSE (S)	34	%	10-150	1	06/20/23 13:12	07/10/23 07:57	24448-09-7	
d9-NEFOSE (S)	32	%	10-150	1	06/20/23 13:12	07/10/23 07:57	1691-99-2	

Sample: LA2452 Lab ID: 10655868028 Collected: 06/01/23 09:28 Received: 06/02/23 08:50 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight / %M by ASTM D2974								
Analytical Method: ASTM D2974 Pace Analytical Services - Minneapolis								
Percent Moisture	25.5	%	0.10	1		07/02/23 06:02		N2

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ANALYTICAL RESULTS

Project: LA2425-LA2489

Pace Project No.: 10655868

Sample: LA2452 Lab ID: 10655868028 Collected: 06/01/23 09:28 Received: 06/02/23 08:50 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
PFAS ID SL								
Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178								
Pace Analytical Services - Minneapolis								
10:2 FTS	ND	ug/kg	0.13	1	06/20/23 13:12	07/10/23 08:37	120226-60-0	
11CI-PF3OUdS	ND	ug/kg	0.13	1	06/20/23 13:12	07/10/23 08:37	763051-82-9	
4:2 FTS	ND	ug/kg	0.13	1	06/20/23 13:12	07/10/23 08:37	757124-72-4	
6:2 FTS	ND	ug/kg	0.13	1	06/20/23 13:12	07/10/23 08:37	27619-97-2	
8:2 FTS	ND	ug/kg	0.13	1	06/20/23 13:12	07/10/23 08:37	39108-34-4	
9CI-PF3ONS	ND	ug/kg	0.12	1	06/20/23 13:12	07/10/23 08:37	756426-58-1	
ADONA	ND	ug/kg	0.13	1	06/20/23 13:12	07/10/23 08:37	919005-14-4	
HFPO-DA	ND	ug/kg	0.13	1	06/20/23 13:12	07/10/23 08:37	13252-13-6	
NEIFOSAA	32.2	ug/kg	2.7	20	06/20/23 13:12	07/13/23 17:03	2991-50-6	
NEIFOSA	0.57	ug/kg	0.13	1	06/20/23 13:12	07/10/23 08:37	4151-50-2	
NEIFOSE	3.1	ug/kg	0.13	1	06/20/23 13:12	07/10/23 08:37	1691-99-2	
NMeFOSAA	0.19	ug/kg	0.13	1	06/20/23 13:12	07/10/23 08:37	2355-31-9	
NMeFOSA	0.17	ug/kg	0.13	1	06/20/23 13:12	07/10/23 08:37	31506-32-8	
NMeFOSE	ND	ug/kg	0.13	1	06/20/23 13:12	07/10/23 08:37	24448-09-7	
Perfluorobutanesulfonic acid	ND	ug/kg	0.12	1	06/20/23 13:12	07/10/23 08:37	375-73-5	
Perfluorodecanoic acid	0.95	ug/kg	0.13	1	06/20/23 13:12	07/10/23 08:37	335-76-2	
Perfluorohexanoic acid	0.79	ug/kg	0.13	1	06/20/23 13:12	07/10/23 08:37	307-24-4	
PFBA	0.32	ug/kg	0.13	1	06/20/23 13:12	07/10/23 08:37	375-22-4	
PFDS	ND	ug/kg	0.13	1	06/20/23 13:12	07/10/23 08:37	335-77-3	
PFDoS	ND	ug/kg	0.13	1	06/20/23 13:12	07/10/23 08:37	79780-39-5	
PFHpS	0.47	ug/kg	0.13	1	06/20/23 13:12	07/10/23 08:37	375-92-8	
PFHxDA	0.25	ug/kg	0.13	1	06/20/23 13:12	07/10/23 08:37	67905-19-5	
PFNS	0.21	ug/kg	0.13	1	06/20/23 13:12	07/10/23 08:37	68259-12-1	
PFODA	ND	ug/kg	0.13	1	06/20/23 13:12	07/10/23 08:37	16517-11-6	
PFOSA	8.4	ug/kg	0.13	1	06/20/23 13:12	07/10/23 08:37	754-91-6	
PFPeA	1.2	ug/kg	0.13	1	06/20/23 13:12	07/10/23 08:37	2706-90-3	
PFPeS	ND	ug/kg	0.13	1	06/20/23 13:12	07/10/23 08:37	2706-91-4	
Perfluorododecanoic acid	0.70	ug/kg	0.13	1	06/20/23 13:12	07/10/23 08:37	307-55-1	
Perfluoroheptanoic acid	0.24	ug/kg	0.13	1	06/20/23 13:12	07/10/23 08:37	375-85-9	
Perfluorohexanesulfonic acid	ND	ug/kg	0.12	1	06/20/23 13:12	07/10/23 08:37	355-46-4	
Perfluorononanoic acid	0.86	ug/kg	0.13	1	06/20/23 13:12	07/10/23 08:37	375-95-1	
Perfluorooctanesulfonic acid	179	ug/kg	2.5	20	06/20/23 13:12	07/13/23 17:03	1763-23-1	
Perfluorooctanoic acid	5.6	ug/kg	0.13	1	06/20/23 13:12	07/10/23 08:37	335-67-1	
Perfluorotetradecanoic acid	0.37	ug/kg	0.13	1	06/20/23 13:12	07/10/23 08:37	376-06-7	
Perfluorotridecanoic acid	0.26	ug/kg	0.13	1	06/20/23 13:12	07/10/23 08:37	72629-94-8	
Perfluoroundecanoic acid	0.67	ug/kg	0.13	1	06/20/23 13:12	07/10/23 08:37	2058-94-8	
Surrogates								
13C24:2FTS (S)	100	%	50-150	1	06/20/23 13:12	07/10/23 08:37		
13C26:2FTS (S)	210	%	50-150	1	06/20/23 13:12	07/10/23 08:37		S0
13C28:2FTS (S)	335	%	50-150	1	06/20/23 13:12	07/10/23 08:37		S0
13C2-PFDoA (S)	62	%	50-150	1	06/20/23 13:12	07/10/23 08:37		
13C2PFHxDA (S)	27	%	50-150	1	06/20/23 13:12	07/10/23 08:37		S0
13C2-PFTA (S)	53	%	50-150	1	06/20/23 13:12	07/10/23 08:37		
13C3HFPO-DA (S)	99	%	50-150	1	06/20/23 13:12	07/10/23 08:37		
13C3-PFBS (S)	80	%	50-150	1	06/20/23 13:12	07/10/23 08:37	375-73-5	

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Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)807-1700

ANALYTICAL RESULTS

Project: LA2425-LA2489
Pace Project No.: 10655868

Sample: LA2452 Lab ID: 10655868028 Collected: 06/01/23 09:28 Received: 06/02/23 08:50 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
PFAS ID SL								
Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178 Pace Analytical Services - Minneapolis								
Surrogates								
13C3-PFHxS (S)	72	%	50-150	1	06/20/23 13:12	07/10/23 08:37	355-46-4	
13C4-PFBA (S)	98	%	50-150	1	06/20/23 13:12	07/10/23 08:37	375-22-4	
13C4-PFHxPA (S)	85	%	50-150	1	06/20/23 13:12	07/10/23 08:37	375-85-9	
13C5-PFHxPA (S)	75	%	50-150	1	06/20/23 13:12	07/10/23 08:37	307-24-4	
13C5-PFPeA (S)	92	%	50-150	1	06/20/23 13:12	07/10/23 08:37	2706-90-3	
13C6-PFDA (S)	90	%	50-150	1	06/20/23 13:12	07/10/23 08:37	335-76-2	
13C7-PFUDa (S)	73	%	50-150	1	06/20/23 13:12	07/10/23 08:37	2058-94-8	
13C8-PFOA (S)	80	%	50-150	1	06/20/23 13:12	07/10/23 08:37	335-67-1	
13C8-PFOS (S)	41	%	50-150	1	06/20/23 13:12	07/10/23 08:37	1763-23-1	S0
13C8-PFOSA (S)	49	%	50-150	1	06/20/23 13:12	07/10/23 08:37	754-91-6	S0
13C9-PFNA (S)	36	%	50-150	1	06/20/23 13:12	07/10/23 08:37	375-95-1	S0
d3-MeFOSAA (S)	90	%	50-150	1	06/20/23 13:12	07/10/23 08:37	2355-31-9	
d3-NMeFOSA (S)	9	%	10-150	1	06/20/23 13:12	07/10/23 08:37	31506-32-8	S0
d5-EiFOSAA (S)	90	%	50-150	1	06/20/23 13:12	07/10/23 08:37	2991-50-6	
d5-NEiFOSA (S)	8	%	10-150	1	06/20/23 13:12	07/10/23 08:37	4151-50-2	S0
d7-NMeFOSE (S)	19	%	10-150	1	06/20/23 13:12	07/10/23 08:37	24448-09-7	
d9-NEiFOSE (S)	11	%	10-150	1	06/20/23 13:12	07/10/23 08:37	1691-99-2	

Sample: LA2453 Lab ID: 10655868029 Collected: 06/01/23 09:43 Received: 06/02/23 08:50 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight / %M by ASTM D2974								
Analytical Method: ASTM D2974 Pace Analytical Services - Minneapolis								
Percent Moisture	15.8	%	0.10	1		07/02/23 08:23		N2
PFAS ID SL								
Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178 Pace Analytical Services - Minneapolis								
10:2 FTS	ND	ug/kg	0.12	1	06/20/23 13:12	07/10/23 08:44	120226-60-0	
11CI-PF3OUdS	ND	ug/kg	0.11	1	06/20/23 13:12	07/10/23 08:44	763051-92-9	
4:2 FTS	ND	ug/kg	0.11	1	06/20/23 13:12	07/10/23 08:44	757124-72-4	
6:2 FTS	ND	ug/kg	0.11	1	06/20/23 13:12	07/10/23 08:44	27619-97-2	
8:2 FTS	ND	ug/kg	0.12	1	06/20/23 13:12	07/10/23 08:44	39108-34-4	
9CI-PF3ONS	ND	ug/kg	0.11	1	06/20/23 13:12	07/10/23 08:44	756426-58-1	
ADONA	ND	ug/kg	0.11	1	06/20/23 13:12	07/10/23 08:44	919005-14-4	
HFPO-DA	ND	ug/kg	0.12	1	06/20/23 13:12	07/10/23 08:44	13252-13-6	
NEiFOSAA	0.59	ug/kg	0.12	1	06/20/23 13:12	07/10/23 08:44	2991-50-6	
NEiFOSA	ND	ug/kg	0.12	1	06/20/23 13:12	07/10/23 08:44	4151-50-2	
NEiFOSE	ND	ug/kg	0.12	1	06/20/23 13:12	07/10/23 08:44	1691-99-2	
NMeFOSAA	ND	ug/kg	0.12	1	06/20/23 13:12	07/10/23 08:44	2355-31-9	
NMeFOSA	ND	ug/kg	0.12	1	06/20/23 13:12	07/10/23 08:44	31506-32-8	
NMeFOSE	ND	ug/kg	0.12	1	06/20/23 13:12	07/10/23 08:44	24448-09-7	

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Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: LA2425-LA2489
Pace Project No.: 10655868

Sample: LA2453 Lab ID: 10655868029 Collected: 06/01/23 09:43 Received: 06/02/23 08:50 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
PFAS ID SL								
Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178								
Pace Analytical Services - Minneapolis								
Perfluorobutanesulfonic acid	ND	ug/kg	0.11	1	06/20/23 13:12	07/10/23 08:44	375-73-5	
Perfluorodecanoic acid	ND	ug/kg	0.12	1	06/20/23 13:12	07/10/23 08:44	335-76-2	
Perfluorohexanoic acid	0.39	ug/kg	0.12	1	06/20/23 13:12	07/10/23 08:44	307-24-4	
PFBA	ND	ug/kg	0.12	1	06/20/23 13:12	07/10/23 08:44	375-22-4	
PFDS	ND	ug/kg	0.12	1	06/20/23 13:12	07/10/23 08:44	335-77-3	
PFDOS	ND	ug/kg	0.12	1	06/20/23 13:12	07/10/23 08:44	79780-39-5	
PFHpS	0.74	ug/kg	0.11	1	06/20/23 13:12	07/10/23 08:44	375-92-8	
PFHxDA	ND	ug/kg	0.12	1	06/20/23 13:12	07/10/23 08:44	67905-19-5	
PFNS	ND	ug/kg	0.11	1	06/20/23 13:12	07/10/23 08:44	68259-12-1	
PFODA	ND	ug/kg	0.12	1	06/20/23 13:12	07/10/23 08:44	16517-11-6	
PFOSA	0.67	ug/kg	0.12	1	06/20/23 13:12	07/10/23 08:44	754-91-6	
PFPeA	0.30	ug/kg	0.12	1	06/20/23 13:12	07/10/23 08:44	2706-90-3	
PFPeS	ND	ug/kg	0.11	1	06/20/23 13:12	07/10/23 08:44	2706-91-4	
Perfluorododecanoic acid	ND	ug/kg	0.12	1	06/20/23 13:12	07/10/23 08:44	307-55-1	
Perfluoroheptanoic acid	0.30	ug/kg	0.12	1	06/20/23 13:12	07/10/23 08:44	375-85-9	
Perfluorohexanesulfonic acid	ND	ug/kg	0.11	1	06/20/23 13:12	07/10/23 08:44	355-46-4	
Perfluorononanoic acid	0.27	ug/kg	0.12	1	06/20/23 13:12	07/10/23 08:44	375-95-1	
Perfluorooctanesulfonic acid	105	ug/kg	2.2	20	06/20/23 13:12	07/13/23 17:10	1763-23-1	
Perfluorooctanoic acid	4.1	ug/kg	0.12	1	06/20/23 13:12	07/10/23 08:44	335-67-1	
Perfluorotetradecanoic acid	ND	ug/kg	0.12	1	06/20/23 13:12	07/10/23 08:44	376-06-7	
Perfluorotridecanoic acid	ND	ug/kg	0.12	1	06/20/23 13:12	07/10/23 08:44	72629-94-8	
Perfluoroundecanoic acid	ND	ug/kg	0.12	1	06/20/23 13:12	07/10/23 08:44	2058-94-8	
Surrogates								
13C24:2FTS (S)	92	%	50-150	1	06/20/23 13:12	07/10/23 08:44		S0
13C26:2FTS (S)	43	%	50-150	1	06/20/23 13:12	07/10/23 08:44		
13C28:2FTS (S)	72	%	50-150	1	06/20/23 13:12	07/10/23 08:44		
13C2-PFDoA (S)	85	%	50-150	1	06/20/23 13:12	07/10/23 08:44		
13C2PFHxDA (S)	65	%	50-150	1	06/20/23 13:12	07/10/23 08:44		
13C2-PFTA (S)	85	%	50-150	1	06/20/23 13:12	07/10/23 08:44		
13C3HFPO-DA (S)	107	%	50-150	1	06/20/23 13:12	07/10/23 08:44		
13C3-PFBS (S)	82	%	50-150	1	06/20/23 13:12	07/10/23 08:44	375-73-5	
13C3-PFHxS (S)	79	%	50-150	1	06/20/23 13:12	07/10/23 08:44	355-46-4	
13C4-PFBA (S)	100	%	50-150	1	06/20/23 13:12	07/10/23 08:44	375-22-4	
13C4-PFHpA (S)	79	%	50-150	1	06/20/23 13:12	07/10/23 08:44	375-85-9	
13C5-PFHxA (S)	79	%	50-150	1	06/20/23 13:12	07/10/23 08:44	307-24-4	
13C5-PFPeA (S)	91	%	50-150	1	06/20/23 13:12	07/10/23 08:44	2706-90-3	
13C6-PFDA (S)	89	%	50-150	1	06/20/23 13:12	07/10/23 08:44	335-76-2	
13C7-PFUDa (S)	80	%	50-150	1	06/20/23 13:12	07/10/23 08:44	2058-94-8	
13C8-PFOA (S)	81	%	50-150	1	06/20/23 13:12	07/10/23 08:44	335-67-1	
13C8-PFOS (S)	43	%	50-150	1	06/20/23 13:12	07/10/23 08:44	1763-23-1	S0
13C8-PFOSA (S)	55	%	50-150	1	06/20/23 13:12	07/10/23 08:44	754-91-6	
13C9-PFNA (S)	52	%	50-150	1	06/20/23 13:12	07/10/23 08:44	375-95-1	
d3-MeFOSAA (S)	63	%	50-150	1	06/20/23 13:12	07/10/23 08:44	2355-31-9	
d3-NMeFOSA (S)	7	%	10-150	1	06/20/23 13:12	07/10/23 08:44	31506-32-8	S0
d5-EtFOSAA (S)	60	%	50-150	1	06/20/23 13:12	07/10/23 08:44	2991-50-6	

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ANALYTICAL RESULTS

Project: LA2425-LA2489
Pace Project No.: 10655868

Sample: LA2453 Lab ID: 10655868029 Collected: 06/01/23 09:43 Received: 06/02/23 08:50 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
PFAS ID SL Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178 Pace Analytical Services - Minneapolis								
Surrogates								
d5-NEIFOSA (S)	6	%	10-150	1	06/20/23 13:12	07/10/23 08:44	4151-50-2	S0
d7-NMeFOSE (S)	28	%	10-150	1	06/20/23 13:12	07/10/23 08:44	24448-09-7	
d9-NEIFOSE (S)	22	%	10-150	1	06/20/23 13:12	07/10/23 08:44	1691-99-2	

Sample: LA2454 Lab ID: 10655868030 Collected: 06/01/23 10:38 Received: 06/02/23 08:50 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight / %M by ASTM D2974 Analytical Method: ASTM D2974 Pace Analytical Services - Minneapolis								
Percent Moisture	17.2	%	0.10	1		07/02/23 06:24		N2
PFAS ID SL Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178 Pace Analytical Services - Minneapolis								
10:2 FTS	ND	ug/kg	0.12	1	06/20/23 13:12	07/10/23 08:51	120226-60-0	
11CI-PF3OUdS	ND	ug/kg	0.11	1	06/20/23 13:12	07/10/23 08:51	763051-92-9	
4:2 FTS	ND	ug/kg	0.11	1	06/20/23 13:12	07/10/23 08:51	757124-72-4	
6:2 FTS	ND	ug/kg	0.11	1	06/20/23 13:12	07/10/23 08:51	27619-97-2	
8:2 FTS	ND	ug/kg	0.12	1	06/20/23 13:12	07/10/23 08:51	39108-34-4	
9CI-PF3ONS	ND	ug/kg	0.11	1	06/20/23 13:12	07/10/23 08:51	756426-58-1	
ADONA	ND	ug/kg	0.11	1	06/20/23 13:12	07/10/23 08:51	919005-14-4	
HFPO-DA	ND	ug/kg	0.12	1	06/20/23 13:12	07/10/23 08:51	13252-13-6	
NEIFOSAA	ND	ug/kg	0.12	1	06/20/23 13:12	07/10/23 08:51	2991-50-6	
NEIFOSA	ND	ug/kg	0.12	1	06/20/23 13:12	07/10/23 08:51	4151-50-2	
NEIFOSE	ND	ug/kg	0.12	1	06/20/23 13:12	07/10/23 08:51	1691-99-2	
NMeFOSAA	ND	ug/kg	0.12	1	06/20/23 13:12	07/10/23 08:51	2355-31-9	
NMeFOSA	ND	ug/kg	0.12	1	06/20/23 13:12	07/10/23 08:51	31506-32-8	
NMeFOSE	ND	ug/kg	0.12	1	06/20/23 13:12	07/10/23 08:51	24448-09-7	
Perfluorobutanesulfonic acid	ND	ug/kg	0.11	1	06/20/23 13:12	07/10/23 08:51	375-73-5	
Perfluorodecanoic acid	ND	ug/kg	0.12	1	06/20/23 13:12	07/10/23 08:51	335-76-2	
Perfluorohexanoic acid	ND	ug/kg	0.12	1	06/20/23 13:12	07/10/23 08:51	307-24-4	
PFBA	ND	ug/kg	0.12	1	06/20/23 13:12	07/10/23 08:51	375-22-4	
PFDS	ND	ug/kg	0.12	1	06/20/23 13:12	07/10/23 08:51	335-77-3	
PFDoS	ND	ug/kg	0.12	1	06/20/23 13:12	07/10/23 08:51	79780-39-5	
PFHpS	ND	ug/kg	0.11	1	06/20/23 13:12	07/10/23 08:51	375-92-8	
PFHxDA	ND	ug/kg	0.12	1	06/20/23 13:12	07/10/23 08:51	67905-19-5	
PFNS	ND	ug/kg	0.12	1	06/20/23 13:12	07/10/23 08:51	68259-12-1	
PFODA	ND	ug/kg	0.12	1	06/20/23 13:12	07/10/23 08:51	16517-11-6	
PFOSA	ND	ug/kg	0.12	1	06/20/23 13:12	07/10/23 08:51	754-91-6	
PFPeA	ND	ug/kg	0.12	1	06/20/23 13:12	07/10/23 08:51	2706-90-3	
PFPeS	ND	ug/kg	0.11	1	06/20/23 13:12	07/10/23 08:51	2706-91-4	
Perfluorododecanoic acid	ND	ug/kg	0.12	1	06/20/23 13:12	07/10/23 08:51	307-55-1	

REPORT OF LABORATORY ANALYSIS

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INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

We Protect Hoosiers and Our Environment.

100 N. Senate Avenue • Indianapolis, IN 46204

(800) 451-6027 • (317) 232-8603 • www.idem.IN.gov

Eric J. Holcomb
Governor

Brian C. Rockensuess
Commissioner

October 18, 2023

RE: Soil Sampling Results

#LA2454 16-1 Shallow
#LA2455 16-1 Deep
#LA2456 16-2 Shallow
#LA2457 16-2 Shallow/Duplicate
#LA2458 16-2 Deep
#LA2459 16-2 Deep/Duplicate

IDEM received the results of the analysis for soil samples collected on May 31, 2023, from your property located on [REDACTED]. The analysis was performed by IDEM's contract laboratory and tested for 36 per- and polyfluoroalkyl substances (PFAS) including the compounds perfluorooctanoic acid (PFOA) and perfluorooctane sulfonate (PFOS).

None of the 36 PFAS compounds analyzed were detected above IDEM's Risk-based Closure Guide (July 2022 and all subsequent updates) (RCG) published levels for residential soil direct contact. Please note that the published soil standard is based on ingestion, inhalation and dermal exposure solely related to soil contact. A map depicting the sample locations has been included as an attachment. In addition, the analytical sheets from Pace Laboratories have also been included with this letter for your records.

If you have questions regarding this matter, please contact Lynette Schrowe of the Remediation Services Branch at 317/234-8622.

Sincerely,

Kevin Davis, Chief
Remediation Services Branch
Office of Land Quality



Visit on.IN.gov/survey or scan the QR code to provide feedback.

We appreciate your input!





Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: LA2425-LA2489
Pace Project No.: 10655868

Sample: LA2454 Lab ID: 10655868030 Collected: 06/01/23 10:38 Received: 06/02/23 08:50 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
PFAS ID SL								
Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178								
Pace Analytical Services - Minneapolis								
Perfluoroheptanoic acid	ND	ug/kg	0.12	1	06/20/23 13:12	07/10/23 08:51	375-85-9	
Perfluorohexanesulfonic acid	ND	ug/kg	0.11	1	06/20/23 13:12	07/10/23 08:51	355-46-4	
Perfluorononanoic acid	0.14	ug/kg	0.12	1	06/20/23 13:12	07/10/23 08:51	375-95-1	
Perfluorooctanesulfonic acid	3.0	ug/kg	0.11	1	06/20/23 13:12	07/10/23 08:51	1763-23-1	
Perfluorooctanoic acid	0.46	ug/kg	0.12	1	06/20/23 13:12	07/10/23 08:51	335-67-1	
Perfluorotetradecanoic acid	ND	ug/kg	0.12	1	06/20/23 13:12	07/10/23 08:51	376-06-7	
Perfluorotridecanoic acid	ND	ug/kg	0.12	1	06/20/23 13:12	07/10/23 08:51	72629-94-8	
Perfluoroundecanoic acid	ND	ug/kg	0.12	1	06/20/23 13:12	07/10/23 08:51	2058-94-8	
Surrogates								
13C24:2FTS (S)	88	%	50-150	1	06/20/23 13:12	07/10/23 08:51		
13C26:2FTS (S)	68	%	50-150	1	06/20/23 13:12	07/10/23 08:51		
13C28:2FTS (S)	124	%	50-150	1	06/20/23 13:12	07/10/23 08:51		
13C2-PFDoA (S)	86	%	50-150	1	06/20/23 13:12	07/10/23 08:51		
13C2-PFHxDA (S)	63	%	50-150	1	06/20/23 13:12	07/10/23 08:51		
13C2-PFTA (S)	75	%	50-150	1	06/20/23 13:12	07/10/23 08:51		
13C3HFPO-DA (S)	95	%	50-150	1	06/20/23 13:12	07/10/23 08:51		
13C3-PFBS (S)	76	%	50-150	1	06/20/23 13:12	07/10/23 08:51	375-73-5	
13C3-PFHxS (S)	75	%	50-150	1	06/20/23 13:12	07/10/23 08:51	355-46-4	
13C4-PFBA (S)	94	%	50-150	1	06/20/23 13:12	07/10/23 08:51	375-22-4	
13C4-PFHpA (S)	80	%	50-150	1	06/20/23 13:12	07/10/23 08:51	375-85-9	
13C5-PFHxA (S)	75	%	50-150	1	06/20/23 13:12	07/10/23 08:51	307-24-4	
13C5-PFPeA (S)	87	%	50-150	1	06/20/23 13:12	07/10/23 08:51	2706-90-3	
13C6-PFDA (S)	87	%	50-150	1	06/20/23 13:12	07/10/23 08:51	335-76-2	
13C7-PFUDa (S)	82	%	50-150	1	06/20/23 13:12	07/10/23 08:51	2058-94-8	
13C8-PFOA (S)	84	%	50-150	1	06/20/23 13:12	07/10/23 08:51	335-67-1	
13C8-PFOS (S)	70	%	50-150	1	06/20/23 13:12	07/10/23 08:51	1763-23-1	
13C8-PFOA (S)	63	%	50-150	1	06/20/23 13:12	07/10/23 08:51	754-91-6	
13C9-PFNA (S)	86	%	50-150	1	06/20/23 13:12	07/10/23 08:51	375-95-1	
d3-MeFOSAA (S)	73	%	50-150	1	06/20/23 13:12	07/10/23 08:51	2355-31-9	
d3-NMeFOSA (S)	17	%	10-150	1	06/20/23 13:12	07/10/23 08:51	31506-32-8	
d5-ElFOSAA (S)	78	%	50-150	1	06/20/23 13:12	07/10/23 08:51	2991-50-6	
d5-NElFOSA (S)	18	%	10-150	1	06/20/23 13:12	07/10/23 08:51	4151-50-2	
d7-NMeFOSE (S)	37	%	10-150	1	06/20/23 13:12	07/10/23 08:51	24448-09-7	
d9-NElFOSE (S)	27	%	10-150	1	06/20/23 13:12	07/10/23 08:51	1691-99-2	

Sample: LA2455 Lab ID: 10655868031 Collected: 06/01/23 10:44 Received: 06/02/23 08:50 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight / %M by ASTM D2974								
Analytical Method: ASTM D2974								
Pace Analytical Services - Minneapolis								
Percent Moisture	20.3	%	0.10	1		07/02/23 06:25		N2

REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: LA2425-LA2489
Pace Project No.: 10655868

Sample: LA2455 Lab ID: 10655868031 Collected: 06/01/23 10:44 Received: 06/02/23 08:50 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
PFAS ID SL								
Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178								
Pace Analytical Services - Minneapolis								
10:2 FTS	ND	ug/kg	0.12	1	06/20/23 13:12	07/10/23 08:59	120226-60-0	
11Cl-PF3OUdS	ND	ug/kg	0.12	1	06/20/23 13:12	07/10/23 08:59	763051-92-9	
4:2 FTS	ND	ug/kg	0.12	1	06/20/23 13:12	07/10/23 08:59	757124-72-4	
6:2 FTS	ND	ug/kg	0.12	1	06/20/23 13:12	07/10/23 08:59	27619-97-2	
8:2 FTS	ND	ug/kg	0.12	1	06/20/23 13:12	07/10/23 08:59	39108-34-4	
9Cl-PF3ONS	ND	ug/kg	0.12	1	06/20/23 13:12	07/10/23 08:59	756426-58-1	
ADONA	ND	ug/kg	0.12	1	06/20/23 13:12	07/10/23 08:59	919005-14-4	
HFPO-DA	ND	ug/kg	0.12	1	06/20/23 13:12	07/10/23 08:59	13252-13-6	
NEtFOSAA	ND	ug/kg	0.12	1	06/20/23 13:12	07/10/23 08:59	2991-50-6	
NEtFOSA	ND	ug/kg	0.12	1	06/20/23 13:12	07/10/23 08:59	4151-50-2	
NEtFOSE	ND	ug/kg	0.12	1	06/20/23 13:12	07/10/23 08:59	1691-09-2	
NMeFOSAA	ND	ug/kg	0.12	1	06/20/23 13:12	07/10/23 08:59	2355-31-9	
NMeFOSA	ND	ug/kg	0.12	1	06/20/23 13:12	07/10/23 08:59	31506-32-8	
NMeFOSE	ND	ug/kg	0.12	1	06/20/23 13:12	07/10/23 08:59	24448-09-7	
Perfluorobutanesulfonic acid	ND	ug/kg	0.11	1	06/20/23 13:12	07/10/23 08:59	375-73-5	
Perfluorodecanoic acid	ND	ug/kg	0.12	1	06/20/23 13:12	07/10/23 08:59	335-76-2	
Perfluorohexanoic acid	ND	ug/kg	0.12	1	06/20/23 13:12	07/10/23 08:59	307-24-4	
PFBA	ND	ug/kg	0.12	1	06/20/23 13:12	07/10/23 08:59	375-22-4	
PFDS	ND	ug/kg	0.12	1	06/20/23 13:12	07/10/23 08:59	335-77-3	
PFDoS	ND	ug/kg	0.12	1	06/20/23 13:12	07/10/23 08:59	79780-39-5	
PFHpS	ND	ug/kg	0.12	1	06/20/23 13:12	07/10/23 08:59	375-92-8	
PFHxDA	ND	ug/kg	0.12	1	06/20/23 13:12	07/10/23 08:59	67905-19-5	
PFNS	ND	ug/kg	0.12	1	06/20/23 13:12	07/10/23 08:59	68259-12-1	
PFODA	ND	ug/kg	0.12	1	06/20/23 13:12	07/10/23 08:59	16517-11-6	
PFOSA	ND	ug/kg	0.12	1	06/20/23 13:12	07/10/23 08:59	754-91-6	
PFPeA	ND	ug/kg	0.12	1	06/20/23 13:12	07/10/23 08:59	2706-90-3	
PFPeS	ND	ug/kg	0.12	1	06/20/23 13:12	07/10/23 08:59	2706-91-4	
Perfluorododecanoic acid	ND	ug/kg	0.12	1	06/20/23 13:12	07/10/23 08:59	307-55-1	
Perfluoroheptanoic acid	ND	ug/kg	0.12	1	06/20/23 13:12	07/10/23 08:59	375-85-9	
Perfluorohexanesulfonic acid	ND	ug/kg	0.11	1	06/20/23 13:12	07/10/23 08:59	355-46-4	
Perfluorononanoic acid	ND	ug/kg	0.12	1	06/20/23 13:12	07/10/23 08:59	375-95-1	
Perfluorooctanesulfonic acid	0.27	ug/kg	0.12	1	06/20/23 13:12	07/10/23 08:59	1763-23-1	
Perfluorooctanoic acid	ND	ug/kg	0.12	1	06/20/23 13:12	07/10/23 08:59	335-67-1	
Perfluorotetradecanoic acid	ND	ug/kg	0.12	1	06/20/23 13:12	07/10/23 08:59	376-06-7	
Perfluorotridecanoic acid	ND	ug/kg	0.12	1	06/20/23 13:12	07/10/23 08:59	72629-94-8	
Perfluoroundecanoic acid	ND	ug/kg	0.12	1	06/20/23 13:12	07/10/23 08:59	2058-94-8	
Surrogates								
13C24:2FTS (S)	96	%	50-150	1	06/20/23 13:12	07/10/23 08:59		
13C26:2FTS (S)	48	%	50-150	1	06/20/23 13:12	07/10/23 08:59		S0
13C28:2FTS (S)	70	%	50-150	1	06/20/23 13:12	07/10/23 08:59		
13C2-PFDoA (S)	79	%	50-150	1	06/20/23 13:12	07/10/23 08:59		
13C2-PFHxDA (S)	66	%	50-150	1	06/20/23 13:12	07/10/23 08:59		
13C2-PFTA (S)	81	%	50-150	1	06/20/23 13:12	07/10/23 08:59		
13C3HFPO-DA (S)	104	%	50-150	1	06/20/23 13:12	07/10/23 08:59		
13C3-PFBS (S)	73	%	50-150	1	06/20/23 13:12	07/10/23 08:59	375-73-5	

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Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: LA2425-LA2489

Pace Project No.: 10655868

Sample: LA2455 Lab ID: 10655868031 Collected: 06/01/23 10:44 Received: 06/02/23 08:50 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
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PFAS ID SL Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178
Pace Analytical Services - Minneapolis

Surrogates

13C3-PFHxS (S)	65	%	50-150	1	06/20/23 13:12	07/10/23 08:59	355-46-4	
13C4-PFBA (S)	97	%	50-150	1	06/20/23 13:12	07/10/23 08:59	375-22-4	
13C4-PFHxA (S)	75	%	50-150	1	06/20/23 13:12	07/10/23 08:59	375-85-9	
13C5-PFHxA (S)	78	%	50-150	1	06/20/23 13:12	07/10/23 08:59	307-24-4	
13C5-PFPeA (S)	86	%	50-150	1	06/20/23 13:12	07/10/23 08:59	2706-90-3	
13C6-PFDA (S)	86	%	50-150	1	06/20/23 13:12	07/10/23 08:59	335-76-2	
13C7-PFUDA (S)	76	%	50-150	1	06/20/23 13:12	07/10/23 08:59	2058-94-8	
13C8-PFOA (S)	82	%	50-150	1	06/20/23 13:12	07/10/23 08:59	335-67-1	
13C8-PFOS (S)	69	%	50-150	1	06/20/23 13:12	07/10/23 08:59	1763-23-1	
13C8-PFOSA (S)	61	%	50-150	1	06/20/23 13:12	07/10/23 08:59	754-91-6	
13C9-PFNA (S)	79	%	50-150	1	06/20/23 13:12	07/10/23 08:59	375-95-1	
d3-MeFOSAA (S)	57	%	50-150	1	06/20/23 13:12	07/10/23 08:59	2355-31-9	
d3-NMeFOSA (S)	2	%	10-150	1	06/20/23 13:12	07/10/23 08:59	31506-32-8	S0
d5-EtFOSAA (S)	65	%	50-150	1	06/20/23 13:12	07/10/23 08:59	2991-50-6	
d5-NEtFOSA (S)	1	%	10-150	1	06/20/23 13:12	07/10/23 08:59	4151-50-2	S0
d7-NMeFOSE (S)	22	%	10-150	1	06/20/23 13:12	07/10/23 08:59	24448-09-7	
d9-NEtFOSE (S)	17	%	10-150	1	06/20/23 13:12	07/10/23 08:59	1691-99-2	

Sample: LA2456 Lab ID: 10655868032 Collected: 06/01/23 10:14 Received: 06/02/23 08:50 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
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Dry Weight / %M by ASTM D2974 Analytical Method: ASTM D2974
Pace Analytical Services - Minneapolis

Percent Moisture	12.3	%	0.10	1		07/02/23 06:27		N2
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PFAS ID SL Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178
Pace Analytical Services - Minneapolis

10:2 FTS	ND	ug/kg	0.11	1	06/20/23 13:12	07/10/23 09:06	120226-60-0	
11Cl-PF3OUds	ND	ug/kg	0.11	1	06/20/23 13:12	07/10/23 09:06	763051-92-9	
4:2 FTS	ND	ug/kg	0.11	1	06/20/23 13:12	07/10/23 09:06	757124-72-4	
6:2 FTS	ND	ug/kg	0.11	1	06/20/23 13:12	07/10/23 09:06	27619-97-2	
8:2 FTS	ND	ug/kg	0.11	1	06/20/23 13:12	07/10/23 09:06	39108-34-4	
9Cl-PF3ONS	ND	ug/kg	0.11	1	06/20/23 13:12	07/10/23 09:06	756426-58-1	
ADONA	ND	ug/kg	0.11	1	06/20/23 13:12	07/10/23 09:06	919005-14-4	
HFPO-DA	ND	ug/kg	0.11	1	06/20/23 13:12	07/10/23 09:06	13252-13-6	
NEtFOSAA	0.19	ug/kg	0.11	1	06/20/23 13:12	07/10/23 09:06	2991-50-6	
NEtFOSA	ND	ug/kg	0.11	1	06/20/23 13:12	07/10/23 09:06	4151-50-2	
NEtFOSE	ND	ug/kg	0.11	1	06/20/23 13:12	07/10/23 09:06	1691-99-2	
NMeFOSAA	ND	ug/kg	0.11	1	06/20/23 13:12	07/10/23 09:06	2355-31-9	
NMeFOSA	ND	ug/kg	0.11	1	06/20/23 13:12	07/10/23 09:06	31506-32-8	
NMeFOSE	ND	ug/kg	0.11	1	06/20/23 13:12	07/10/23 09:06	24448-09-7	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: LA2425-LA2489
Pace Project No.: 10655868

Sample: LA2456 Lab ID: 10655868032 Collected: 06/01/23 10:14 Received: 06/02/23 08:50 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
PFAS ID SL								
Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178								
Pace Analytical Services - Minneapolis								
Perfluorobutanesulfonic acid	ND	ug/kg	0.10	1	06/20/23 13:12	07/10/23 09:06	375-73-5	
Perfluorodecanoic acid	0.30	ug/kg	0.11	1	06/20/23 13:12	07/10/23 09:06	335-76-2	
Perfluorohexanoic acid	0.66	ug/kg	0.11	1	06/20/23 13:12	07/10/23 09:06	307-24-4	
PFBA	0.34	ug/kg	0.11	1	06/20/23 13:12	07/10/23 09:06	375-22-4	
PFDS	ND	ug/kg	0.11	1	06/20/23 13:12	07/10/23 09:06	335-77-3	
PFDoS	ND	ug/kg	0.11	1	06/20/23 13:12	07/10/23 09:06	79780-39-5	
PFHpS	ND	ug/kg	0.11	1	06/20/23 13:12	07/10/23 09:06	375-92-8	
PFHxDA	ND	ug/kg	0.11	1	06/20/23 13:12	07/10/23 09:06	67905-19-5	
PFNS	ND	ug/kg	0.11	1	06/20/23 13:12	07/10/23 09:06	68259-12-1	
PFODA	ND	ug/kg	0.11	1	06/20/23 13:12	07/10/23 09:06	16517-11-6	
PFOSA	ND	ug/kg	0.11	1	06/20/23 13:12	07/10/23 09:06	754-91-6	
PFPeA	0.83	ug/kg	0.11	1	06/20/23 13:12	07/10/23 09:06	2706-90-3	
PFPeS	ND	ug/kg	0.11	1	06/20/23 13:12	07/10/23 09:06	2706-91-4	
Perfluorododecanoic acid	ND	ug/kg	0.11	1	06/20/23 13:12	07/10/23 09:06	307-55-1	
Perfluoroheptanoic acid	0.23	ug/kg	0.11	1	06/20/23 13:12	07/10/23 09:06	375-85-9	
Perfluorohexanesulfonic acid	ND	ug/kg	0.10	1	06/20/23 13:12	07/10/23 09:06	355-46-4	
Perfluorononanoic acid	0.41	ug/kg	0.11	1	06/20/23 13:12	07/10/23 09:06	375-95-1	
Perfluorooctanesulfonic acid	8.1	ug/kg	0.11	1	06/20/23 13:12	07/10/23 09:06	1763-23-1	
Perfluorooctanoic acid	1.8	ug/kg	0.11	1	06/20/23 13:12	07/10/23 09:06	335-67-1	
Perfluorotetradecanoic acid	ND	ug/kg	0.11	1	06/20/23 13:12	07/10/23 09:06	376-06-7	
Perfluorotridecanoic acid	ND	ug/kg	0.11	1	06/20/23 13:12	07/10/23 09:06	72629-94-8	
Perfluoroundecanoic acid	0.19	ug/kg	0.11	1	06/20/23 13:12	07/10/23 09:06	2058-94-8	
Surrogates								
13C24:2FTS (S)	107	%	50-150	1	06/20/23 13:12	07/10/23 09:06		
13C26:2FTS (S)	75	%	50-150	1	06/20/23 13:12	07/10/23 09:06		
13C28:2FTS (S)	135	%	50-150	1	06/20/23 13:12	07/10/23 09:06		
13C2-PFDa (S)	91	%	50-150	1	06/20/23 13:12	07/10/23 09:06		
13C2-PFHxDA (S)	56	%	50-150	1	06/20/23 13:12	07/10/23 09:06		
13C2-PFTA (S)	78	%	50-150	1	06/20/23 13:12	07/10/23 09:06		
13C3HFPO-DA (S)	107	%	50-150	1	06/20/23 13:12	07/10/23 09:06		
13C3-PFBS (S)	84	%	50-150	1	06/20/23 13:12	07/10/23 09:06	375-73-5	
13C3-PFHxS (S)	83	%	50-150	1	06/20/23 13:12	07/10/23 09:06	355-46-4	
13C4-PFBA (S)	100	%	50-150	1	06/20/23 13:12	07/10/23 09:06	375-22-4	
13C4-PFHpA (S)	88	%	50-150	1	06/20/23 13:12	07/10/23 09:06	375-85-9	
13C5-PFHxA (S)	84	%	50-150	1	06/20/23 13:12	07/10/23 09:06	307-24-4	
13C5-PFPeA (S)	96	%	50-150	1	06/20/23 13:12	07/10/23 09:06	2706-90-3	
13C6-PFDA (S)	94	%	50-150	1	06/20/23 13:12	07/10/23 09:06	335-76-2	
13C7-PFUDa (S)	93	%	50-150	1	06/20/23 13:12	07/10/23 09:06	2058-94-8	
13C8-PFOA (S)	91	%	50-150	1	06/20/23 13:12	07/10/23 09:06	335-67-1	
13C8-PFOS (S)	75	%	50-150	1	06/20/23 13:12	07/10/23 09:06	1763-23-1	
13C8-PFOSA (S)	76	%	50-150	1	06/20/23 13:12	07/10/23 09:06	754-91-6	
13C9-PFNA (S)	86	%	50-150	1	06/20/23 13:12	07/10/23 09:06	375-95-1	
d3-MeFOSAA (S)	81	%	50-150	1	06/20/23 13:12	07/10/23 09:06	2355-31-9	
d3-NMeFOSAA (S)	23	%	10-150	1	06/20/23 13:12	07/10/23 09:06	31506-32-8	
d5-EtFOSAA (S)	93	%	50-150	1	06/20/23 13:12	07/10/23 09:06	2991-50-6	

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ANALYTICAL RESULTS

Project: LA2425-LA2489
Pace Project No.: 10655868

Sample: LA2456 Lab ID: 10655868032 Collected: 06/01/23 10:14 Received: 06/02/23 08:50 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
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PFAS ID SL Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178
Pace Analytical Services - Minneapolis

Surrogates

d5-NEtFOSA (S)	14	%	10-150	1	06/20/23 13:12	07/10/23 09:06	4151-50-2	
d7-NMeFOSE (S)	31	%	10-150	1	06/20/23 13:12	07/10/23 09:06	24448-09-7	
d9-NEtFOSE (S)	14	%	10-150	1	06/20/23 13:12	07/10/23 09:06	1691-99-2	

Sample: LA2457 Lab ID: 10655868033 Collected: 06/01/23 10:16 Received: 06/02/23 08:50 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
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Dry Weight / %M by ASTM D2974 Analytical Method: ASTM D2974
Pace Analytical Services - Minneapolis

Percent Moisture	12.4	%	0.10	1		07/02/23 08:29		N2
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PFAS ID SL Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178
Pace Analytical Services - Minneapolis

10:2 FTS	ND	ug/kg	0.11	1	06/20/23 13:12	07/10/23 09:13	120226-60-0	
11CI-PF3OUdS	ND	ug/kg	0.10	1	06/20/23 13:12	07/10/23 09:13	763051-92-9	
4:2 FTS	ND	ug/kg	0.10	1	06/20/23 13:12	07/10/23 09:13	757124-72-4	
6:2 FTS	ND	ug/kg	0.11	1	06/20/23 13:12	07/10/23 09:13	27619-97-2	
8:2 FTS	ND	ug/kg	0.11	1	06/20/23 13:12	07/10/23 09:13	39108-34-4	
9CI-PF3ONS	ND	ug/kg	0.10	1	06/20/23 13:12	07/10/23 09:13	756426-58-1	
ADONA	ND	ug/kg	0.11	1	06/20/23 13:12	07/10/23 09:13	919005-14-4	
HFPO-DA	ND	ug/kg	0.11	1	06/20/23 13:12	07/10/23 09:13	13252-13-6	
NEtFOSAA	0.21	ug/kg	0.11	1	06/20/23 13:12	07/10/23 09:13	2991-50-6	
NEtFOSA	ND	ug/kg	0.11	1	06/20/23 13:12	07/10/23 09:13	4151-50-2	
NEtFOSE	ND	ug/kg	0.11	1	06/20/23 13:12	07/10/23 09:13	1691-99-2	
NMeFOSAA	ND	ug/kg	0.11	1	06/20/23 13:12	07/10/23 09:13	2355-31-9	
NMeFOSA	ND	ug/kg	0.11	1	06/20/23 13:12	07/10/23 09:13	31506-32-8	
NMeFOSE	ND	ug/kg	0.11	1	06/20/23 13:12	07/10/23 09:13	24448-09-7	
Perfluorobutanesulfonic acid	ND	ug/kg	0.099	1	06/20/23 13:12	07/10/23 09:13	375-73-5	
Perfluorodecanoic acid	0.28	ug/kg	0.11	1	06/20/23 13:12	07/10/23 09:13	335-76-2	
Perfluorohexanoic acid	0.62	ug/kg	0.11	1	06/20/23 13:12	07/10/23 09:13	307-24-4	
PFBA	0.34	ug/kg	0.11	1	06/20/23 13:12	07/10/23 09:13	375-22-4	
PFDS	ND	ug/kg	0.11	1	06/20/23 13:12	07/10/23 09:13	335-77-3	
PFDoS	ND	ug/kg	0.11	1	06/20/23 13:12	07/10/23 09:13	79780-39-5	
PFHpS	ND	ug/kg	0.11	1	06/20/23 13:12	07/10/23 09:13	375-92-8	
PFHxDA	ND	ug/kg	0.11	1	06/20/23 13:12	07/10/23 09:13	67905-19-5	
PFNS	ND	ug/kg	0.11	1	06/20/23 13:12	07/10/23 09:13	68259-12-1	
PFODA	ND	ug/kg	0.11	1	06/20/23 13:12	07/10/23 09:13	16517-11-6	
PFOSA	ND	ug/kg	0.11	1	06/20/23 13:12	07/10/23 09:13	754-91-6	
PFPeA	0.81	ug/kg	0.11	1	06/20/23 13:12	07/10/23 09:13	2706-90-3	
PFPeS	ND	ug/kg	0.10	1	06/20/23 13:12	07/10/23 09:13	2706-91-4	
Perfluorododecanoic acid	ND	ug/kg	0.11	1	06/20/23 13:12	07/10/23 09:13	307-55-1	

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Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: LA2425-LA2489
Pace Project No.: 10655868

Sample: LA2457 Lab ID: 10655868033 Collected: 06/01/23 10:16 Received: 06/02/23 08:50 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
PFAS ID SL								
Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178								
Pace Analytical Services - Minneapolis								
Perfluoroheptanoic acid	0.22	ug/kg	0.11	1	06/20/23 13:12	07/10/23 09:13	375-85-9	
Perfluorohexanesulfonic acid	ND	ug/kg	0.10	1	06/20/23 13:12	07/10/23 09:13	355-46-4	
Perfluorononanoic acid	0.40	ug/kg	0.11	1	06/20/23 13:12	07/10/23 09:13	375-95-1	
Perfluorooctanesulfonic acid	8.7	ug/kg	0.10	1	06/20/23 13:12	07/10/23 09:13	1763-23-1	
Perfluorooctanoic acid	1.6	ug/kg	0.11	1	06/20/23 13:12	07/10/23 09:13	335-67-1	
Perfluorotetradecanoic acid	ND	ug/kg	0.11	1	06/20/23 13:12	07/10/23 09:13	376-08-7	
Perfluorotridecanoic acid	ND	ug/kg	0.11	1	06/20/23 13:12	07/10/23 09:13	72629-94-8	
Perfluoroundecanoic acid	0.18	ug/kg	0.11	1	06/20/23 13:12	07/10/23 09:13	2058-94-8	
Surrogates								
13C24:2FTS (S)	115	%	50-150	1	06/20/23 13:12	07/10/23 09:13		
13C26:2FTS (S)	90	%	50-150	1	06/20/23 13:12	07/10/23 09:13		
13C28:2FTS (S)	133	%	50-150	1	06/20/23 13:12	07/10/23 09:13		
13C2-PFDoA (S)	93	%	50-150	1	06/20/23 13:12	07/10/23 09:13		
13C2PFHxDA (S)	55	%	50-150	1	06/20/23 13:12	07/10/23 09:13		
13C2-PFTA (S)	79	%	50-150	1	06/20/23 13:12	07/10/23 09:13		
13C3HFPO-DA (S)	116	%	50-150	1	06/20/23 13:12	07/10/23 09:13		
13C3-PFBS (S)	86	%	50-150	1	06/20/23 13:12	07/10/23 09:13	375-73-5	
13C3-PFHxS (S)	86	%	50-150	1	06/20/23 13:12	07/10/23 09:13	355-46-4	
13C4-PFBA (S)	104	%	50-150	1	06/20/23 13:12	07/10/23 09:13	375-22-4	
13C4-PFHpA (S)	92	%	50-150	1	06/20/23 13:12	07/10/23 09:13	375-85-9	
13C5-PFHxA (S)	89	%	50-150	1	06/20/23 13:12	07/10/23 09:13	307-24-4	
13C5-PFPeA (S)	98	%	50-150	1	06/20/23 13:12	07/10/23 09:13	2706-90-3	
13C6-PFDA (S)	101	%	50-150	1	06/20/23 13:12	07/10/23 09:13	335-76-2	
13C7-PFUDa (S)	94	%	50-150	1	06/20/23 13:12	07/10/23 09:13	2058-94-8	
13C8-PFOA (S)	94	%	50-150	1	06/20/23 13:12	07/10/23 09:13	335-67-1	
13C8-PFOS (S)	75	%	50-150	1	06/20/23 13:12	07/10/23 09:13	1763-23-1	
13C8-PFOSA (S)	77	%	50-150	1	06/20/23 13:12	07/10/23 09:13	754-91-6	
13C9-PFNA (S)	89	%	50-150	1	06/20/23 13:12	07/10/23 09:13	375-95-1	
d3-MeFOSAA (S)	86	%	50-150	1	06/20/23 13:12	07/10/23 09:13	2355-31-9	
d3-NMeFOSA (S)	19	%	10-150	1	06/20/23 13:12	07/10/23 09:13	31506-32-8	
d5-EiFOSAA (S)	93	%	50-150	1	06/20/23 13:12	07/10/23 09:13	2991-50-6	
d5-NEiFOSA (S)	12	%	10-150	1	06/20/23 13:12	07/10/23 09:13	4151-50-2	
d7-NMeFOSE (S)	31	%	10-150	1	06/20/23 13:12	07/10/23 09:13	24448-09-7	
d9-NEiFOSE (S)	13	%	10-150	1	06/20/23 13:12	07/10/23 09:13	1691-99-2	

Sample: LA2458 Lab ID: 10655868034 Collected: 06/01/23 10:00 Received: 06/02/23 08:50 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight / %M by ASTM D2974								
Analytical Method: ASTM D2974								
Pace Analytical Services - Minneapolis								
Percent Moisture	29.2	%	0.10	1		07/02/23 06:30		N2

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Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
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ANALYTICAL RESULTS

Project: LA2425-LA2489

Pace Project No.: 10655868

Sample: LA2458 Lab ID: 10655868034 Collected: 06/01/23 10:00 Received: 06/02/23 08:50 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
PFAS ID SL								
Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178								
Pace Analytical Services - Minneapolis								
10:2 FTS	ND	ug/kg	0.14	1	06/22/23 09:30	07/14/23 07:12	120226-60-0	
11Cl-PF3OUdS	ND	ug/kg	0.13	1	06/22/23 09:30	07/14/23 07:12	763051-92-9	
4:2 FTS	ND	ug/kg	0.13	1	06/22/23 09:30	07/14/23 07:12	757124-72-4	
6:2 FTS	ND	ug/kg	0.13	1	06/22/23 09:30	07/14/23 07:12	27619-97-2	
8:2 FTS	ND	ug/kg	0.14	1	06/22/23 09:30	07/14/23 07:12	39108-34-4	
9Cl-PF3ONS	ND	ug/kg	0.13	1	06/22/23 09:30	07/14/23 07:12	756426-58-1	
ADONA	ND	ug/kg	0.13	1	06/22/23 09:30	07/14/23 07:12	919005-14-4	
HFPO-DA	ND	ug/kg	0.14	1	06/22/23 09:30	07/14/23 07:12	13252-13-6	
NEIFOSAA	ND	ug/kg	0.14	1	06/22/23 09:30	07/14/23 07:12	2991-50-6	
NEIFOSA	ND	ug/kg	0.14	1	06/22/23 09:30	07/14/23 07:12	4151-50-2	
NEIFOSE	ND	ug/kg	0.14	1	06/22/23 09:30	07/14/23 07:12	1691-99-2	
NMeFOSAA	ND	ug/kg	0.14	1	06/22/23 09:30	07/14/23 07:12	2355-31-9	
NMeFOSA	ND	ug/kg	0.14	1	06/22/23 09:30	07/14/23 07:12	31506-32-8	
NMeFOSE	ND	ug/kg	0.14	1	06/22/23 09:30	07/14/23 07:12	24448-09-7	
Perfluorobutanesulfonic acid	ND	ug/kg	0.13	1	06/22/23 09:30	07/14/23 07:12	375-73-5	
Perfluorodecanoic acid	ND	ug/kg	0.14	1	06/22/23 09:30	07/14/23 07:12	335-76-2	
Perfluorohexanoic acid	0.17	ug/kg	0.14	1	06/22/23 09:30	07/14/23 07:12	307-24-4	
PFBA	ND	ug/kg	0.14	1	06/22/23 09:30	07/14/23 07:12	375-22-4	
PFDS	ND	ug/kg	0.14	1	06/22/23 09:30	07/14/23 07:12	335-77-3	
PFDoS	ND	ug/kg	0.14	1	06/22/23 09:30	07/14/23 07:12	79780-39-5	
PFHpS	ND	ug/kg	0.13	1	06/22/23 09:30	07/14/23 07:12	375-92-8	
PFHxDA	ND	ug/kg	0.14	1	06/22/23 09:30	07/14/23 07:12	67905-19-5	
PFNS	ND	ug/kg	0.14	1	06/22/23 09:30	07/14/23 07:12	68259-12-1	
PFODA	ND	ug/kg	0.14	1	06/22/23 09:30	07/14/23 07:12	16517-11-6	
PFOSA	ND	ug/kg	0.14	1	06/22/23 09:30	07/14/23 07:12	754-91-6	
PFPeA	0.15	ug/kg	0.14	1	06/22/23 09:30	07/14/23 07:12	2706-90-3	
PFPeS	ND	ug/kg	0.13	1	06/22/23 09:30	07/14/23 07:12	2706-91-4	
Perfluorododecanoic acid	ND	ug/kg	0.14	1	06/22/23 09:30	07/14/23 07:12	307-55-1	
Perfluoroheptanoic acid	ND	ug/kg	0.14	1	06/22/23 09:30	07/14/23 07:12	375-85-9	
Perfluorohexanesulfonic acid	ND	ug/kg	0.13	1	06/22/23 09:30	07/14/23 07:12	355-46-4	
Perfluorononanoic acid	ND	ug/kg	0.14	1	06/22/23 09:30	07/14/23 07:12	375-96-1	
Perfluorooctanesulfonic acid	0.54	ug/kg	0.13	1	06/22/23 09:30	07/14/23 07:12	1763-23-1	
Perfluorooctanoic acid	0.26	ug/kg	0.14	1	06/22/23 09:30	07/14/23 07:12	335-67-1	
Perfluorotetradecanoic acid	ND	ug/kg	0.14	1	06/22/23 09:30	07/14/23 07:12	376-06-7	
Perfluorotridecanoic acid	ND	ug/kg	0.14	1	06/22/23 09:30	07/14/23 07:12	72629-94-8	
Perfluoroundecanoic acid	ND	ug/kg	0.14	1	06/22/23 09:30	07/14/23 07:12	2058-94-8	
Surrogates								
13C24:2FTS (S)	127	%	50-150	1	06/22/23 09:30	07/14/23 07:12		
13C26:2FTS (S)	98	%	50-150	1	06/22/23 09:30	07/14/23 07:12		
13C28:2FTS (S)	110	%	50-150	1	06/22/23 09:30	07/14/23 07:12		
13C2-PFDoA (S)	109	%	50-150	1	06/22/23 09:30	07/14/23 07:12		
13C2-PFHxDA (S)	23	%	50-150	1	06/22/23 09:30	07/14/23 07:12		S0
13C2-PFTA (S)	79	%	50-150	1	06/22/23 09:30	07/14/23 07:12		
13C3HFPO-DA (S)	94	%	50-150	1	06/22/23 09:30	07/14/23 07:12		
13C3-PFBS (S)	98	%	50-150	1	06/22/23 09:30	07/14/23 07:12	375-73-5	

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ANALYTICAL RESULTS

Project: LA2425-LA2489
Pace Project No.: 10655868

Sample: LA2458 Lab ID: 10655868034 Collected: 06/01/23 10:00 Received: 06/02/23 08:50 Matrix: Solid
Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
PFAS ID SL Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178 Pace Analytical Services - Minneapolis								
Surrogates								
13C3-PFHxS (S)	97	%	50-150	1	06/22/23 09:30	07/14/23 07:12	355-46-4	
13C4-PFBA (S)	93	%	50-150	1	06/22/23 09:30	07/14/23 07:12	375-22-4	
13C4-PFHxA (S)	98	%	50-150	1	06/22/23 09:30	07/14/23 07:12	375-85-9	
13C5-PFHxA (S)	101	%	50-150	1	06/22/23 09:30	07/14/23 07:12	307-24-4	
13C5-PFPeA (S)	94	%	50-150	1	06/22/23 09:30	07/14/23 07:12	2706-90-3	
13C6-PFDA (S)	122	%	50-150	1	06/22/23 09:30	07/14/23 07:12	335-76-2	
13C7-PFUDA (S)	112	%	50-150	1	06/22/23 09:30	07/14/23 07:12	2058-94-8	
13C8-PFOA (S)	100	%	50-150	1	06/22/23 09:30	07/14/23 07:12	335-67-1	
13C8-PFOS (S)	88	%	50-150	1	06/22/23 09:30	07/14/23 07:12	1763-23-1	
13C8-PFOSA (S)	84	%	50-150	1	06/22/23 09:30	07/14/23 07:12	754-91-6	
13C9-PFNA (S)	92	%	50-150	1	06/22/23 09:30	07/14/23 07:12	375-95-1	
d3-MeFOSAA (S)	97	%	50-150	1	06/22/23 09:30	07/14/23 07:12	2355-31-9	
d3-NMeFOSA (S)	1	%	10-150	1	06/22/23 09:30	07/14/23 07:12	31506-32-8	S0
d5-EiFOSAA (S)	106	%	50-150	1	06/22/23 09:30	07/14/23 07:12	2991-50-6	
d5-NEiFOSA (S)	0	%	10-150	1	06/22/23 09:30	07/14/23 07:12	4151-50-2	S0
d7-NMeFOSE (S)	2	%	10-150	1	06/22/23 09:30	07/14/23 07:12	24448-09-7	S0
d9-NEiFOSE (S)	2	%	10-150	1	06/22/23 09:30	07/14/23 07:12	1691-99-2	S0

Sample: LA2459 Lab ID: 10655868035 Collected: 06/01/23 10:22 Received: 06/02/23 08:50 Matrix: Solid
Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight / %M by ASTM D2974 Analytical Method: ASTM D2974 Pace Analytical Services - Minneapolis								
Percent Moisture	16.7	%	0.10	1		07/02/23 06:32		N2
PFAS ID SL Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178 Pace Analytical Services - Minneapolis								
10:2 FTS	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 07:19	120226-60-0	
11Cl-PF3OUdS	ND	ug/kg	0.11	1	06/22/23 09:30	07/14/23 07:19	763051-92-9	
4:2 FTS	ND	ug/kg	0.11	1	06/22/23 09:30	07/14/23 07:19	757124-72-4	
6:2 FTS	ND	ug/kg	0.11	1	06/22/23 09:30	07/14/23 07:19	27619-97-2	
8:2 FTS	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 07:19	39108-34-4	
9Cl-PF3ONS	ND	ug/kg	0.11	1	06/22/23 09:30	07/14/23 07:19	756426-58-1	
ADONA	ND	ug/kg	0.11	1	06/22/23 09:30	07/14/23 07:19	919005-14-4	
HFPO-DA	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 07:19	13252-13-6	
NEiFOSAA	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 07:19	2991-50-6	
NEiFOSA	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 07:19	4151-50-2	
NEiFOSE	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 07:19	1691-99-2	
NMeFOSAA	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 07:19	2355-31-9	
NMeFOSA	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 07:19	31506-32-8	
NMeFOSE	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 07:19	24448-09-7	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: LA2425-LA2489

Pace Project No.: 10655868

Sample: LA2459 Lab ID: 10655868035 Collected: 06/01/23 10:22 Received: 06/02/23 08:50 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
PFAS ID SL								
Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178								
Pace Analytical Services - Minneapolis								
Perfluorobutanesulfonic acid	ND	ug/kg	0.11	1	06/22/23 09:30	07/14/23 07:19	375-73-5	
Perfluorodecanoic acid	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 07:19	335-76-2	
Perfluorohexanoic acid	0.25	ug/kg	0.12	1	06/22/23 09:30	07/14/23 07:19	307-24-4	
PFBA	0.14	ug/kg	0.12	1	06/22/23 09:30	07/14/23 07:19	375-22-4	
PFDS	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 07:19	335-77-3	
PFDoS	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 07:19	79780-39-5	
PFHpS	ND	ug/kg	0.11	1	06/22/23 09:30	07/14/23 07:19	375-92-8	
PFHxDA	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 07:19	67905-19-5	
PFNS	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 07:19	68259-12-1	
PFODA	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 07:19	16517-11-6	
PFOSA	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 07:19	754-91-6	
PFPeA	0.23	ug/kg	0.12	1	06/22/23 09:30	07/14/23 07:19	2706-90-3	
PFPeS	ND	ug/kg	0.11	1	06/22/23 09:30	07/14/23 07:19	2706-91-4	
Perfluorododecanoic acid	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 07:19	307-55-1	
Perfluoroheptanoic acid	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 07:19	375-85-9	
Perfluorohexanesulfonic acid	ND	ug/kg	0.11	1	06/22/23 09:30	07/14/23 07:19	355-46-4	
Perfluorononanoic acid	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 07:19	375-95-1	
Perfluorooctanesulfonic acid	1.1	ug/kg	0.11	1	06/22/23 09:30	07/14/23 07:19	1763-23-1	
Perfluorooctanoic acid	0.39	ug/kg	0.12	1	06/22/23 09:30	07/14/23 07:19	335-67-1	
Perfluorotetradecanoic acid	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 07:19	376-06-7	
Perfluorotridecanoic acid	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 07:19	72629-94-8	
Perfluoroundecanoic acid	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 07:19	2058-94-8	
Surrogates								
13C24:2FTS (S)	107	%	50-150	1	06/22/23 09:30	07/14/23 07:19		
13C26:2FTS (S)	101	%	50-150	1	06/22/23 09:30	07/14/23 07:19		
13C28:2FTS (S)	112	%	50-150	1	06/22/23 09:30	07/14/23 07:19		
13C2-PFDoA (S)	100	%	50-150	1	06/22/23 09:30	07/14/23 07:19		
13C2-PFHxDA (S)	88	%	50-150	1	06/22/23 09:30	07/14/23 07:19		
13C2-PFTA (S)	97	%	50-150	1	06/22/23 09:30	07/14/23 07:19		
13C3HFPO-DA (S)	85	%	50-150	1	06/22/23 09:30	07/14/23 07:19		
13C3-PFBS (S)	86	%	50-150	1	06/22/23 09:30	07/14/23 07:19	375-73-5	
13C3-PFHxS (S)	86	%	50-150	1	06/22/23 09:30	07/14/23 07:19	355-46-4	
13C4-PFBA (S)	84	%	50-150	1	06/22/23 09:30	07/14/23 07:19	375-22-4	
13C4-PFHpA (S)	86	%	50-150	1	06/22/23 09:30	07/14/23 07:19	375-85-9	
13C5-PFHxA (S)	88	%	50-150	1	06/22/23 09:30	07/14/23 07:19	307-24-4	
13C5-PFPeA (S)	83	%	50-150	1	06/22/23 09:30	07/14/23 07:19	2706-90-3	
13C6-PFDA (S)	110	%	50-150	1	06/22/23 09:30	07/14/23 07:19	335-76-2	
13C7-PFUDA (S)	100	%	50-150	1	06/22/23 09:30	07/14/23 07:19	2058-94-8	
13C8-PFOA (S)	89	%	50-150	1	06/22/23 09:30	07/14/23 07:19	335-67-1	
13C8-PFOS (S)	73	%	50-150	1	06/22/23 09:30	07/14/23 07:19	1763-23-1	
13C8-PFOSA (S)	83	%	50-150	1	06/22/23 09:30	07/14/23 07:19	754-91-6	
13C9-PFNA (S)	83	%	50-150	1	06/22/23 09:30	07/14/23 07:19	375-95-1	
d3-MeFOSAA (S)	80	%	50-150	1	06/22/23 09:30	07/14/23 07:19	2355-31-9	
d3-NMeFOSA (S)	64	%	10-150	1	06/22/23 09:30	07/14/23 07:19	31506-32-8	
d5-EiFOSAA (S)	87	%	50-150	1	06/22/23 09:30	07/14/23 07:19	2991-50-6	

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Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: LA2425-LA2489
Pace Project No.: 10655868

Sample: LA2459 Lab ID: 10655868035 Collected: 06/01/23 10:22 Received: 06/02/23 08:50 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
PFAS ID SL								
Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178								
Pace Analytical Services - Minneapolis								
Surrogates								
d5-NEIFOSA (S)	59	%	10-150	1	06/22/23 09:30	07/14/23 07:19	4151-50-2	
d7-NMeFOSE (S)	63	%	10-150	1	06/22/23 09:30	07/14/23 07:19	24448-09-7	
d9-NEIFOSE (S)	59	%	10-150	1	06/22/23 09:30	07/14/23 07:19	1691-99-2	

Sample: LA2460 Lab ID: 10655868036 Collected: 06/01/23 11:01 Received: 06/02/23 08:50 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight / %M by ASTM D2974								
Analytical Method: ASTM D2974								
Pace Analytical Services - Minneapolis								
Percent Moisture	15.2	%	0.10	1		07/02/23 08:33		N2
PFAS ID SL								
Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178								
Pace Analytical Services - Minneapolis								
10:2 FTS	ND	ug/kg	0.11	1	06/22/23 09:30	07/14/23 07:27	120226-60-0	
11Cl-PF3OUdS	ND	ug/kg	0.11	1	06/22/23 09:30	07/14/23 07:27	763051-92-9	
4:2 FTS	ND	ug/kg	0.11	1	06/22/23 09:30	07/14/23 07:27	757124-72-4	
6:2 FTS	ND	ug/kg	0.11	1	06/22/23 09:30	07/14/23 07:27	27619-97-2	
8:2 FTS	ND	ug/kg	0.11	1	06/22/23 09:30	07/14/23 07:27	39108-34-4	
9Cl-PF3ONS	ND	ug/kg	0.11	1	06/22/23 09:30	07/14/23 07:27	756426-58-1	
ADONA	ND	ug/kg	0.11	1	06/22/23 09:30	07/14/23 07:27	919005-14-4	
HFPO-DA	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 07:27	13252-13-6	
NEtFOSAA	0.48	ug/kg	0.12	1	06/22/23 09:30	07/14/23 07:27	2991-50-6	
NEtFOSA	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 07:27	4151-50-2	
NEtFOSE	0.13	ug/kg	0.12	1	06/22/23 09:30	07/14/23 07:27	1691-99-2	
NMeFOSAA	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 07:27	2355-31-9	
NMeFOSA	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 07:27	31506-32-8	
NMeFOSE	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 07:27	24448-09-7	
Perfluorobutanesulfonic acid	ND	ug/kg	0.11	1	06/22/23 09:30	07/14/23 07:27	375-73-5	
Perfluorodecanoic acid	0.65	ug/kg	0.12	1	06/22/23 09:30	07/14/23 07:27	335-76-2	
Perfluorohexanoic acid	0.56	ug/kg	0.12	1	06/22/23 09:30	07/14/23 07:27	307-24-4	
PFBA	0.33	ug/kg	0.12	1	06/22/23 09:30	07/14/23 07:27	375-22-4	
PFDS	ND	ug/kg	0.11	1	06/22/23 09:30	07/14/23 07:27	335-77-3	
PFDoS	ND	ug/kg	0.11	1	06/22/23 09:30	07/14/23 07:27	79780-39-5	
PFFHpS	ND	ug/kg	0.11	1	06/22/23 09:30	07/14/23 07:27	375-92-8	
PFFHxDA	0.30	ug/kg	0.12	1	06/22/23 09:30	07/14/23 07:27	67905-19-5	
PFNS	ND	ug/kg	0.11	1	06/22/23 09:30	07/14/23 07:27	68259-12-1	
PFODA	0.15	ug/kg	0.12	1	06/22/23 09:30	07/14/23 07:27	16517-11-6	
PFOSA	0.22	ug/kg	0.12	1	06/22/23 09:30	07/14/23 07:27	754-91-6	
PFPeA	0.88	ug/kg	0.12	1	06/22/23 09:30	07/14/23 07:27	2706-90-3	
PFPeS	ND	ug/kg	0.11	1	06/22/23 09:30	07/14/23 07:27	2706-91-4	
Perfluorododecanoic acid	0.41	ug/kg	0.12	1	06/22/23 09:30	07/14/23 07:27	307-55-1	

REPORT OF LABORATORY ANALYSIS

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INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

We Protect Hoosiers and Our Environment.

100 N. Senate Avenue • Indianapolis, IN 46204

(800) 451-6027 • (317) 232-8603 • www.idem.IN.gov

Eric J. Holcomb
Governor

Brian C. Rockensuess
Commissioner

October 18, 2023



RE: Soil Sampling Results



#LA2460 17-1 Shallow
#LA2461 17-1 Deep
#LA2462 17-2 Shallow
#LA2463 17-2 Deep



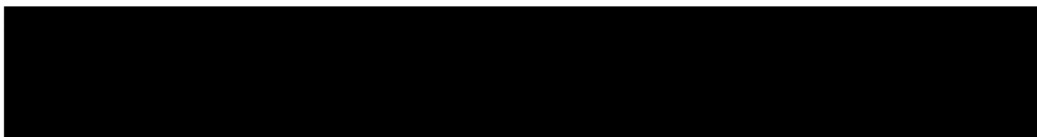
IDEM received the results of the analysis for soil samples collected on May 31, 2023, from your property located on [REDACTED]. The analysis was performed by IDEM's contract laboratory and tested for 36 per- and polyfluoroalkyl substances (PFAS) including the compounds perfluorooctanoic acid (PFOA) and perfluorooctane sulfonate (PFOS).

None of the 36 PFAS compounds analyzed were detected above IDEM's Risk-based Closure Guide (July 2022 and all subsequent updates) (RCG) published levels for residential soil direct contact. Please note that the published soil standard is based on ingestion, inhalation and dermal exposure solely related to soil contact. A map depicting the sample locations has been included as an attachment. In addition, the analytical sheets from Pace Laboratories have also been included with this letter for your records.

If you have questions regarding this matter, please contact Lynette Schrowe of the Remediation Services Branch at 317/234-8622.

Sincerely,

Kevin Davis, Chief
Remediation Services Branch
Office of Land Quality



Visit on.IN.gov/survey or scan the QR code to provide feedback.

We appreciate your input!





Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: LA2425-LA2489

Pace Project No.: 10655868

Sample: LA2460 Lab ID: 10655868036 Collected: 06/01/23 11:01 Received: 06/02/23 08:50 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
PFAS ID SL Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178 Pace Analytical Services - Minneapolis								
Perfluoroheptanoic acid	0.21	ug/kg	0.12	1	06/22/23 09:30	07/14/23 07:27	375-85-9	
Perfluorohexanesulfonic acid	ND	ug/kg	0.11	1	06/22/23 09:30	07/14/23 07:27	355-46-4	
Perfluorononanoic acid	0.45	ug/kg	0.12	1	06/22/23 09:30	07/14/23 07:27	375-95-1	
Perfluorooctanesulfonic acid	8.2	ug/kg	0.11	1	06/22/23 09:30	07/14/23 07:27	1763-23-1	
Perfluorooctanoic acid	1.1	ug/kg	0.12	1	06/22/23 09:30	07/14/23 07:27	335-67-1	
Perfluorotetradecanoic acid	0.37	ug/kg	0.12	1	06/22/23 09:30	07/14/23 07:27	376-06-7	
Perfluorotridecanoic acid	0.32	ug/kg	0.12	1	06/22/23 09:30	07/14/23 07:27	72629-94-8	
Perfluoroundecanoic acid	0.43	ug/kg	0.12	1	06/22/23 09:30	07/14/23 07:27	2058-94-8	
Surrogates								
13C24:2FTS (S)	139	%	50-150	1	06/22/23 09:30	07/14/23 07:27		
13C26:2FTS (S)	229	%	50-150	1	06/22/23 09:30	07/14/23 07:27		S0
13C28:2FTS (S)	187	%	50-150	1	06/22/23 09:30	07/14/23 07:27		S0
13C2-PFDoA (S)	110	%	50-150	1	06/22/23 09:30	07/14/23 07:27		
13C2-PFHxDA (S)	91	%	50-150	1	06/22/23 09:30	07/14/23 07:27		
13C2-PFTA (S)	102	%	50-150	1	06/22/23 09:30	07/14/23 07:27		
13C3HFPO-DA (S)	87	%	50-150	1	06/22/23 09:30	07/14/23 07:27		
13C3-PFBS (S)	94	%	50-150	1	06/22/23 09:30	07/14/23 07:27	375-73-5	
13C3-PFHxS (S)	76	%	50-150	1	06/22/23 09:30	07/14/23 07:27	355-46-4	
13C4-PFBA (S)	91	%	50-150	1	06/22/23 09:30	07/14/23 07:27	375-22-4	
13C4-PFHpA (S)	82	%	50-150	1	06/22/23 09:30	07/14/23 07:27	375-85-9	
13C5-PFHxA (S)	94	%	50-150	1	06/22/23 09:30	07/14/23 07:27	307-24-4	
13C5-PFPeA (S)	90	%	50-150	1	06/22/23 09:30	07/14/23 07:27	2706-90-3	
13C6-PFDA (S)	125	%	50-150	1	06/22/23 09:30	07/14/23 07:27	335-76-2	
13C7-PFUDa (S)	114	%	50-150	1	06/22/23 09:30	07/14/23 07:27	2058-94-8	
13C8-PFOA (S)	99	%	50-150	1	06/22/23 09:30	07/14/23 07:27	335-67-1	
13C8-PFOS (S)	81	%	50-150	1	06/22/23 09:30	07/14/23 07:27	1763-23-1	
13C8-PFOSA (S)	86	%	50-150	1	06/22/23 09:30	07/14/23 07:27	754-91-6	
13C9-PFNA (S)	87	%	50-150	1	06/22/23 09:30	07/14/23 07:27	375-95-1	
d3-MeFOSAA (S)	106	%	50-150	1	06/22/23 09:30	07/14/23 07:27	2355-31-9	
d3-NMeFOSA (S)	35	%	10-150	1	06/22/23 09:30	07/14/23 07:27	31508-32-8	
d5-ElFOSAA (S)	124	%	50-150	1	06/22/23 09:30	07/14/23 07:27	2991-50-6	
d5-NEFOSA (S)	33	%	10-150	1	06/22/23 09:30	07/14/23 07:27	4151-50-2	
d7-NMeFOSE (S)	52	%	10-150	1	06/22/23 09:30	07/14/23 07:27	24448-09-7	
d9-NEFOSE (S)	52	%	10-150	1	06/22/23 09:30	07/14/23 07:27	1691-99-2	

Sample: LA2461 Lab ID: 10655868037 Collected: 06/01/23 11:05 Received: 06/02/23 08:50 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight / %M by ASTM D2974 Analytical Method: ASTM D2974 Pace Analytical Services - Minneapolis								
Percent Moisture	15.4	%	0.10	1		07/02/23 06:34		N2

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ANALYTICAL RESULTS

Project: LA2425-LA2489

Pace Project No.: 10655868

Sample: LA2461 Lab ID: 10655868037 Collected: 06/01/23 11:05 Received: 06/02/23 08:50 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
PFAS ID SL								
Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178								
Pace Analytical Services - Minneapolis								
10:2 FTS	ND	ug/kg	0.11	1	06/22/23 09:30	07/14/23 07:34	120226-60-0	
11CI-PF3OUdS	ND	ug/kg	0.11	1	06/22/23 09:30	07/14/23 07:34	763051-92-9	
4:2 FTS	ND	ug/kg	0.11	1	06/22/23 09:30	07/14/23 07:34	757124-72-4	
6:2 FTS	ND	ug/kg	0.11	1	06/22/23 09:30	07/14/23 07:34	27619-97-2	
8:2 FTS	ND	ug/kg	0.11	1	06/22/23 09:30	07/14/23 07:34	39108-34-4	
9CI-PF3ONS	ND	ug/kg	0.11	1	06/22/23 09:30	07/14/23 07:34	756426-58-1	
ADONA	ND	ug/kg	0.11	1	06/22/23 09:30	07/14/23 07:34	919005-14-4	
HFPO-DA	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 07:34	13252-13-6	
NEtFOSAA	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 07:34	2991-50-6	
NEtFOSA	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 07:34	4151-50-2	
NEtFOSE	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 07:34	1691-99-2	
NMeFOSAA	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 07:34	2355-31-9	
NMeFOSA	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 07:34	31506-32-8	
NMeFOSE	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 07:34	24448-09-7	
Perfluorobutanesulfonic acid	ND	ug/kg	0.11	1	06/22/23 09:30	07/14/23 07:34	375-73-5	
Perfluorodecanoic acid	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 07:34	335-76-2	
Perfluorohexanoic acid	0.47	ug/kg	0.12	1	06/22/23 09:30	07/14/23 07:34	307-24-4	
PFBA	0.21	ug/kg	0.12	1	06/22/23 09:30	07/14/23 07:34	375-22-4	
PFDS	ND	ug/kg	0.11	1	06/22/23 09:30	07/14/23 07:34	335-77-3	
PFDoS	ND	ug/kg	0.11	1	06/22/23 09:30	07/14/23 07:34	79780-39-5	
PFHpS	ND	ug/kg	0.11	1	06/22/23 09:30	07/14/23 07:34	375-92-8	
PFHxDA	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 07:34	67905-19-5	
PFNS	ND	ug/kg	0.11	1	06/22/23 09:30	07/14/23 07:34	68259-12-1	
PFODA	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 07:34	16517-11-6	
PFOSA	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 07:34	754-91-6	
PFPeA	0.50	ug/kg	0.12	1	06/22/23 09:30	07/14/23 07:34	2706-90-3	
PFPeS	ND	ug/kg	0.11	1	06/22/23 09:30	07/14/23 07:34	2706-91-4	
Perfluorododecanoic acid	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 07:34	307-55-1	
Perfluoroheptanoic acid	0.19	ug/kg	0.12	1	06/22/23 09:30	07/14/23 07:34	375-85-9	
Perfluorohexanesulfonic acid	ND	ug/kg	0.11	1	06/22/23 09:30	07/14/23 07:34	355-46-4	
Perfluorononanoic acid	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 07:34	375-95-1	
Perfluorooctanesulfonic acid	1.3	ug/kg	0.11	1	06/22/23 09:30	07/14/23 07:34	1763-23-1	
Perfluorooctanoic acid	0.63	ug/kg	0.12	1	06/22/23 09:30	07/14/23 07:34	335-67-1	
Perfluorotetradecanoic acid	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 07:34	376-06-7	
Perfluorotridecanoic acid	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 07:34	72629-94-8	
Perfluoroundecanoic acid	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 07:34	2058-94-8	
Surrogates								
13C24:2FTS (S)	121	%	50-150	1	06/22/23 09:30	07/14/23 07:34		
13C26:2FTS (S)	106	%	50-150	1	06/22/23 09:30	07/14/23 07:34		
13C28:2FTS (S)	106	%	50-150	1	06/22/23 09:30	07/14/23 07:34		
13C2-PFDoA (S)	109	%	50-150	1	06/22/23 09:30	07/14/23 07:34		
13C2-PFHxDA (S)	93	%	50-150	1	06/22/23 09:30	07/14/23 07:34		
13C2-PFTA (S)	102	%	50-150	1	06/22/23 09:30	07/14/23 07:34		
13C3HFPO-DA (S)	90	%	50-150	1	06/22/23 09:30	07/14/23 07:34		
13C3-PFBS (S)	93	%	50-150	1	06/22/23 09:30	07/14/23 07:34	375-73-5	

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Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: LA2425-LA2489

Pace Project No.: 10655868

Sample: LA2461 Lab ID: 10655868037 Collected: 06/01/23 11:05 Received: 06/02/23 08:50 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
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PFAS ID SL

Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178

Pace Analytical Services - Minneapolis

Surrogates

13C3-PFHxS (S)	92	%	50-150	1	06/22/23 09:30	07/14/23 07:34	355-46-4	
13C4-PFBA (S)	90	%	50-150	1	06/22/23 09:30	07/14/23 07:34	375-22-4	
13C4-PFHxPA (S)	92	%	50-150	1	06/22/23 09:30	07/14/23 07:34	375-85-9	
13C5-PFHxA (S)	94	%	50-150	1	06/22/23 09:30	07/14/23 07:34	307-24-4	
13C5-PFPeA (S)	90	%	50-150	1	06/22/23 09:30	07/14/23 07:34	2706-90-3	
13C6-PFDA (S)	119	%	50-150	1	06/22/23 09:30	07/14/23 07:34	335-76-2	
13C7-PFUDA (S)	109	%	50-150	1	06/22/23 09:30	07/14/23 07:34	2058-94-8	
13C8-PFOA (S)	94	%	50-150	1	06/22/23 09:30	07/14/23 07:34	335-67-1	
13C8-PFOS (S)	84	%	50-150	1	06/22/23 09:30	07/14/23 07:34	1763-23-1	
13C8-PFOSA (S)	86	%	50-150	1	06/22/23 09:30	07/14/23 07:34	754-91-6	
13C9-PFNA (S)	89	%	50-150	1	06/22/23 09:30	07/14/23 07:34	375-95-1	
d3-MeFOSAA (S)	94	%	50-150	1	06/22/23 09:30	07/14/23 07:34	2355-31-9	
d3-NMeFOSA (S)	11	%	10-150	1	06/22/23 09:30	07/14/23 07:34	31506-32-8	
d5-EiFOSAA (S)	106	%	50-150	1	06/22/23 09:30	07/14/23 07:34	2991-50-6	
d5-NEiFOSA (S)	10	%	10-150	1	06/22/23 09:30	07/14/23 07:34	4151-50-2	
d7-NMeFOSE (S)	51	%	10-150	1	06/22/23 09:30	07/14/23 07:34	24448-09-7	
d9-NEiFOSE (S)	48	%	10-150	1	06/22/23 09:30	07/14/23 07:34	1691-99-2	

Sample: LA2462

Lab ID: 10655868038 Collected: 06/01/23 11:18 Received: 06/02/23 08:50 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
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Dry Weight / %M by ASTM D2974

Analytical Method: ASTM D2974

Pace Analytical Services - Minneapolis

Percent Moisture

13.7

%

0.10

1

07/02/23 06:36

N2

PFAS ID SL

Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178

Pace Analytical Services - Minneapolis

10:2 FTS	ND	ug/kg	0.11	1	06/22/23 09:30	07/14/23 07:41	120226-60-0	
11Cl-PF3OUdS	ND	ug/kg	0.11	1	06/22/23 09:30	07/14/23 07:41	763051-92-9	
4:2 FTS	ND	ug/kg	0.11	1	06/22/23 09:30	07/14/23 07:41	757124-72-4	
6:2 FTS	ND	ug/kg	0.11	1	06/22/23 09:30	07/14/23 07:41	27619-97-2	
8:2 FTS	ND	ug/kg	0.11	1	06/22/23 09:30	07/14/23 07:41	39108-34-4	
9Cl-PF3ONS	ND	ug/kg	0.11	1	06/22/23 09:30	07/14/23 07:41	756426-58-1	
ADONA	ND	ug/kg	0.11	1	06/22/23 09:30	07/14/23 07:41	919005-14-4	
HFPO-DA	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 07:41	13252-13-6	
NEiFOSAA	1.2	ug/kg	0.12	1	06/22/23 09:30	07/14/23 07:41	2991-50-6	
NEiFOSA	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 07:41	4151-50-2	
NEiFOSE	0.16	ug/kg	0.12	1	06/22/23 09:30	07/14/23 07:41	1691-99-2	
NMeFOSAA	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 07:41	2355-31-9	
NMeFOSA	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 07:41	31506-32-8	
NMeFOSE	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 07:41	24448-09-7	

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Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: LA2425-LA2489

Pace Project No.: 10655868

Sample: LA2462 Lab ID: 10655868038 Collected: 06/01/23 11:18 Received: 06/02/23 08:50 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
PFAS ID SL								
Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178								
Pace Analytical Services - Minneapolis								
Perfluorobutanesulfonic acid	ND	ug/kg	0.10	1	06/22/23 09:30	07/14/23 07:41	375-73-5	
Perfluorodecanoic acid	0.39	ug/kg	0.12	1	06/22/23 09:30	07/14/23 07:41	335-76-2	
Perfluorohexanoic acid	0.40	ug/kg	0.12	1	06/22/23 09:30	07/14/23 07:41	307-24-4	
PFBA	0.21	ug/kg	0.12	1	06/22/23 09:30	07/14/23 07:41	375-22-4	
PFDS	ND	ug/kg	0.11	1	06/22/23 09:30	07/14/23 07:41	335-77-3	
PFDoS	ND	ug/kg	0.11	1	06/22/23 09:30	07/14/23 07:41	79780-39-5	
PFHpS	ND	ug/kg	0.11	1	06/22/23 09:30	07/14/23 07:41	375-92-8	
PFHxDA	0.20	ug/kg	0.12	1	06/22/23 09:30	07/14/23 07:41	67905-19-5	
PFNS	ND	ug/kg	0.11	1	06/22/23 09:30	07/14/23 07:41	68259-12-1	
PFODA	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 07:41	16517-11-6	
PFOSA	0.15	ug/kg	0.12	1	06/22/23 09:30	07/14/23 07:41	754-91-6	
PFPeA	0.41	ug/kg	0.12	1	06/22/23 09:30	07/14/23 07:41	2706-90-3	
PFPeS	ND	ug/kg	0.11	1	06/22/23 09:30	07/14/23 07:41	2706-91-4	
Perfluorododecanoic acid	0.29	ug/kg	0.12	1	06/22/23 09:30	07/14/23 07:41	307-55-1	
Perfluoroheptanoic acid	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 07:41	375-85-9	
Perfluorohexanesulfonic acid	ND	ug/kg	0.11	1	06/22/23 09:30	07/14/23 07:41	355-46-4	
Perfluorononanoic acid	0.32	ug/kg	0.12	1	06/22/23 09:30	07/14/23 07:41	375-95-1	
Perfluorooctanesulfonic acid	5.5	ug/kg	0.11	1	06/22/23 09:30	07/14/23 07:41	1763-23-1	
Perfluorooctanoic acid	0.81	ug/kg	0.12	1	06/22/23 09:30	07/14/23 07:41	335-67-1	
Perfluorotetradecanoic acid	0.26	ug/kg	0.12	1	06/22/23 09:30	07/14/23 07:41	376-06-7	
Perfluorotridecanoic acid	0.22	ug/kg	0.12	1	06/22/23 09:30	07/14/23 07:41	72629-94-8	
Perfluoroundecanoic acid	0.31	ug/kg	0.12	1	06/22/23 09:30	07/14/23 07:41	2058-94-8	
Surrogates								
13C24:2FTS (S)	129	%	50-150	1	06/22/23 09:30	07/14/23 07:41		
13C26:2FTS (S)	170	%	50-150	1	06/22/23 09:30	07/14/23 07:41		S0
13C28:2FTS (S)	179	%	50-150	1	06/22/23 09:30	07/14/23 07:41		S0
13C2-PFDoA (S)	115	%	50-150	1	06/22/23 09:30	07/14/23 07:41		
13C2-PFHxDA (S)	99	%	50-150	1	06/22/23 09:30	07/14/23 07:41		
13C2-PFTA (S)	104	%	50-150	1	06/22/23 09:30	07/14/23 07:41		
13C3HFPO-DA (S)	92	%	50-150	1	06/22/23 09:30	07/14/23 07:41		
13C3-PFBS (S)	96	%	50-150	1	06/22/23 09:30	07/14/23 07:41	375-73-5	
13C3-PFHxS (S)	98	%	50-150	1	06/22/23 09:30	07/14/23 07:41	355-46-4	
13C4-PFBA (S)	92	%	50-150	1	06/22/23 09:30	07/14/23 07:41	375-22-4	
13C4-PFHxA (S)	95	%	50-150	1	06/22/23 09:30	07/14/23 07:41	375-85-9	
13C5-PFHxA (S)	97	%	50-150	1	06/22/23 09:30	07/14/23 07:41	307-24-4	
13C5-PFPeA (S)	93	%	50-150	1	06/22/23 09:30	07/14/23 07:41	2706-90-3	
13C6-PFDA (S)	133	%	50-150	1	06/22/23 09:30	07/14/23 07:41	335-76-2	
13C7-PFUDA (S)	120	%	50-150	1	06/22/23 09:30	07/14/23 07:41	2058-94-8	
13C8-PFOA (S)	103	%	50-150	1	06/22/23 09:30	07/14/23 07:41	335-67-1	
13C8-PFOS (S)	87	%	50-150	1	06/22/23 09:30	07/14/23 07:41	1763-23-1	
13C8-PFOSA (S)	93	%	50-150	1	06/22/23 09:30	07/14/23 07:41	754-91-6	
13C9-PFNA (S)	93	%	50-150	1	06/22/23 09:30	07/14/23 07:41	375-95-1	
d3-MeFOSAA (S)	112	%	50-150	1	06/22/23 09:30	07/14/23 07:41	2355-31-9	
d3-NMeFOSA (S)	47	%	10-150	1	06/22/23 09:30	07/14/23 07:41	31506-32-8	
d5-EiFOSAA (S)	125	%	50-150	1	06/22/23 09:30	07/14/23 07:41	2991-50-6	

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ANALYTICAL RESULTS

Project: LA2425-LA2489

Pace Project No.: 10655868

Sample: LA2462 Lab ID: 10655868038 Collected: 06/01/23 11:18 Received: 06/02/23 08:50 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
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PFAS ID SL Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178
Pace Analytical Services - Minneapolis

Surrogates

d5-NEIFOSA (S)	50	%	10-150	1	06/22/23 09:30	07/14/23 07:41	4151-50-2	
d7-NMeFOSE (S)	62	%	10-150	1	06/22/23 09:30	07/14/23 07:41	24448-09-7	
d9-NEIFOSE (S)	63	%	10-150	1	06/22/23 09:30	07/14/23 07:41	1691-99-2	

Sample: LA2463 Lab ID: 10655868039 Collected: 06/01/23 11:21 Received: 06/02/23 08:50 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
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Dry Weight / %M by ASTM D2974 Analytical Method: ASTM D2974
Pace Analytical Services - Minneapolis

Percent Moisture	16.6	%	0.10	1		07/02/23 07:16		N2
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PFAS ID SL Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178
Pace Analytical Services - Minneapolis

10:2 FTS	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 07:48	120226-60-0	
11CI-PF3OUdS	ND	ug/kg	0.11	1	06/22/23 09:30	07/14/23 07:48	763051-92-9	
4:2 FTS	ND	ug/kg	0.11	1	06/22/23 09:30	07/14/23 07:48	757124-72-4	
6:2 FTS	ND	ug/kg	0.11	1	06/22/23 09:30	07/14/23 07:48	27619-97-2	
8:2 FTS	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 07:48	39108-34-4	
9CI-PF3ONS	ND	ug/kg	0.11	1	06/22/23 09:30	07/14/23 07:48	756426-58-1	
ADONA	ND	ug/kg	0.11	1	06/22/23 09:30	07/14/23 07:48	919005-14-4	
HFPO-DA	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 07:48	13252-13-6	
NEIFOSAA	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 07:48	2991-50-6	
NEIFOSA	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 07:48	4151-50-2	
NEIFOSE	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 07:48	1691-99-2	
NMeFOSAA	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 07:48	2355-31-9	
NMeFOSE	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 07:48	31506-32-8	
NMeFOSE	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 07:48	24448-09-7	
Perfluorobutanesulfonic acid	ND	ug/kg	0.11	1	06/22/23 09:30	07/14/23 07:48	375-73-5	
Perfluorodecanoic acid	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 07:48	335-76-2	
Perfluorohexanoic acid	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 07:48	307-24-4	
PFBA	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 07:48	375-22-4	
PFDS	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 07:48	335-77-3	
PFDoS	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 07:48	79780-39-5	
PFHpS	ND	ug/kg	0.11	1	06/22/23 09:30	07/14/23 07:48	375-92-8	
PFHxDA	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 07:48	67905-19-5	
PFNS	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 07:48	68259-12-1	
PFODA	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 07:48	16517-11-6	
PFOSA	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 07:48	754-91-6	
PFPeA	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 07:48	2706-90-3	
PFPeS	ND	ug/kg	0.11	1	06/22/23 09:30	07/14/23 07:48	2706-91-4	
Perfluorododecanoic acid	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 07:48	307-55-1	

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Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: LA2425-LA2489

Pace Project No.: 10655868

Sample: LA2463 Lab ID: 10655868039 Collected: 06/01/23 11:21 Received: 06/02/23 08:50 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
PFAS ID SL								
Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178								
Pace Analytical Services - Minneapolis								
Perfluoroheptanoic acid	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 07:48	375-85-9	
Perfluorohexanesulfonic acid	ND	ug/kg	0.11	1	06/22/23 09:30	07/14/23 07:48	355-48-4	
Perfluorononanoic acid	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 07:48	375-95-1	
Perfluorooctanesulfonic acid	0.29	ug/kg	0.11	1	06/22/23 09:30	07/14/23 07:48	1763-23-1	
Perfluorooctanoic acid	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 07:48	335-67-1	
Perfluorotetradecanoic acid	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 07:48	376-06-7	
Perfluorotridecanoic acid	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 07:48	72629-94-8	
Perfluoroundecanoic acid	ND	ug/kg	0.12	1	06/22/23 09:30	07/14/23 07:48	2058-94-8	
Surrogates								
13C24:2FTS (S)	109	%	50-150	1	06/22/23 09:30	07/14/23 07:48		
13C26:2FTS (S)	101	%	50-150	1	06/22/23 09:30	07/14/23 07:48		
13C28:2FTS (S)	103	%	50-150	1	06/22/23 09:30	07/14/23 07:48		
13C2-PFDoA (S)	103	%	50-150	1	06/22/23 09:30	07/14/23 07:48		
13C2-PFHxDA (S)	89	%	50-150	1	06/22/23 09:30	07/14/23 07:48		
13C2-PFTA (S)	101	%	50-150	1	06/22/23 09:30	07/14/23 07:48		
13C3HFPO-DA (S)	86	%	50-150	1	06/22/23 09:30	07/14/23 07:48		
13C3-PFBS (S)	91	%	50-150	1	06/22/23 09:30	07/14/23 07:48	375-73-5	
13C3-PFHxS (S)	89	%	50-150	1	06/22/23 09:30	07/14/23 07:48	355-46-4	
13C4-PFBA (S)	84	%	50-150	1	06/22/23 09:30	07/14/23 07:48	375-22-4	
13C4-PFHpA (S)	89	%	50-150	1	06/22/23 09:30	07/14/23 07:48	375-85-9	
13C5-PFHxA (S)	90	%	50-150	1	06/22/23 09:30	07/14/23 07:48	307-24-4	
13C5-PFPeA (S)	85	%	50-150	1	06/22/23 09:30	07/14/23 07:48	2706-90-3	
13C6-PFDA (S)	115	%	50-150	1	06/22/23 09:30	07/14/23 07:48	335-76-2	
13C7-PFUDa (S)	106	%	50-150	1	06/22/23 09:30	07/14/23 07:48	2058-94-8	
13C8-PFOA (S)	91	%	50-150	1	06/22/23 09:30	07/14/23 07:48	335-67-1	
13C8-PFOS (S)	87	%	50-150	1	06/22/23 09:30	07/14/23 07:48	1763-23-1	
13C8-PFOSA (S)	76	%	50-150	1	06/22/23 09:30	07/14/23 07:48	754-91-6	
13C9-PFNA (S)	88	%	50-150	1	06/22/23 09:30	07/14/23 07:48	375-95-1	
d3-MeFOSAA (S)	82	%	50-150	1	06/22/23 09:30	07/14/23 07:48	2355-31-9	
d3-NMeFOSA (S)	12	%	10-150	1	06/22/23 09:30	07/14/23 07:48	31506-32-8	
d5-ElFOSAA (S)	87	%	50-150	1	06/22/23 09:30	07/14/23 07:48	2991-50-6	
d5-NEIFOSA (S)	11	%	10-150	1	06/22/23 09:30	07/14/23 07:48	4151-50-2	
d7-NMeFOSE (S)	50	%	10-150	1	06/22/23 09:30	07/14/23 07:48	24448-09-7	
d9-NEIFOSE (S)	46	%	10-150	1	06/22/23 09:30	07/14/23 07:48	1691-99-2	

Sample: LA2464 Lab ID: 10655868040 Collected: 06/01/23 11:56 Received: 06/02/23 08:50 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight / %M by ASTM D2974								
Analytical Method: ASTM D2974								
Pace Analytical Services - Minneapolis								
Percent Moisture	17.5	%	0.10	1		07/02/23 07:18		N2

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