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Tuesday, April 19, 2022

Robert Roznowski
Alpena WWTP (SUEZ)
210 Harbor Drive
Alpena, MI 49707

Workorder: 376708
Project Name: Alpena MI Suez

Robert Roznowski,
Paragon Laboratories, Inc. received the samples associated with the workorder listed above for the analyses presented in the following report. The analyses pertain only to the aliquot of sample received.

This material is confidential and is intended solely for the person to whom it is addressed. If this is received in error, please contact the number below.

Please note that any unused portion of the sample(s) will be discarded 40 days after sample receipt, unless requested otherwise.

We appreciate the opportunity to assist you. If you have any questions concerning this report, please contact me at 734.469.5622.

Sincerely,

Kelsey Q Katynski
Account Coordinator

GLOSSARY

Abbreviation	Meaning	Explanation
ID	Identification	Preceeded by "Lab", it describes the unique 10-digit sample number assigned by the laboratory. Preceeded by "Sample", it describes the client-specified sample identifier.
Qual	Qualifier	Column that populates with an asterisk (*) when a related narrative comment appears in the Workorder Summary.
RL	Reporting Limit	The value at or above which a result is routinely reported.
MDL	Method Detection Limit	The minimum measured concentration that can be reported with 99% confidence that the measured concentration is distinguishable from method blank results.
DF	Dilution Factor	The dilution applied to the sample during analysis to arrive at the final reported analyte result.
Min	Minimum	The minimum value that a result can be to meet the applicable specification, regulatory, permit, or client-specified limit.
Max	Maximum	The maximum value that a result can be to meet the applicable specification, regulatory, permit, or client-specified limit.
(S)	Surrogate	A compound that is added to the sample to mimic one or more compounds of interest. Its recovery is used to evaluate the efficiency of recovering the compound(s) of interest.
<	Less Than	Symbol that indicates that a result is less than the value following it.
>	Greater Than	Symbol that indicates that a result is greater than the value following it.

SAMPLE SUMMARY

Lab ID	Sample ID	Sample Description	Matrix	Date Collected	Date Received	Collector
3767080001	Alpena WRP Bio Solids	Grab	SO	04/05/2022 13:30	04/06/2022 09:43	John Nun
3767080002	Trip Blank		SO		04/06/2022 09:43	John Nun
3767080003	Field Blank		SO		04/06/2022 09:43	John Nun

WORKORDER SUMMARY

Accreditations

Paragon Laboratories, Inc. is certified by the Michigan Department of Environment, Great Lakes, and Energy to analyze Drinking Water. (EGLE Lab No. 9901 Expires 2/25/2023)

Workorder Narrative

General Comment: No suspected contamination during sampling process, therefore the trip blank was not analyzed.

Surrogate Results Narrative

3767080001 - Alpena WRP Bio Solids - 13C-HFPO-DA
Surrogate recovery is below the lower control limit, possibly due to matrix interferences.
Surrogate recovery is below the lower control limit, possibly due to matrix interferences.
3767080001 - Alpena WRP Bio Solids - M2-6:2 FTS
Surrogate recovery is above the upper control limit, possibly due to matrix interferences.
Surrogate results reported from 20x dilution due to surrogate recovery exceeding the calibration range; Surrogate recovery without dilution: 30371.02ng/kg
3767080001 - Alpena WRP Bio Solids - M2-8:2 FTS
Surrogate recovery is above the upper control limit, possibly due to matrix interferences.
3767080001 - Alpena WRP Bio Solids - M2PFDoA
Surrogate recovery is below the lower control limit, possibly due to matrix interferences.
Surrogate recovery is below the lower control limit, possibly due to matrix interferences.
3767080001 - Alpena WRP Bio Solids - M2PFTeDA
Surrogate recovery is below the lower control limit, possibly due to matrix interferences.
Surrogate recovery is below the lower control limit, possibly due to matrix interferences.
3767080001 - Alpena WRP Bio Solids - M3PFBS
Surrogate recovery is below the lower control limit, possibly due to matrix interferences.
3767080001 - Alpena WRP Bio Solids - M5PFHxA
Surrogate recovery is below the lower control limit, possibly due to matrix interferences.
3767080001 - Alpena WRP Bio Solids - M7PFUnDA
Surrogate recovery is below the lower control limit, possibly due to matrix interferences.
3767080001 - Alpena WRP Bio Solids - M8PFOSA
Surrogate recovery is below the lower control limit, possibly due to matrix interferences.
Surrogate recovery is below the lower control limit, possibly due to matrix interferences.
3767080003 - Field Blank - M2-6:2 FTS
Surrogate recovery is above the upper control limit, possibly due to matrix interferences.
3767080003 - Field Blank - M2-8:2 FTS
Surrogate recovery is above the upper control limit, possibly due to matrix interferences.

ANALYTICAL RESULTS

Lab ID:	3767080001	Date Collected:	04/05/2022 13:30	Matrix:	Solid
Sample ID:	Alpena WRP Bio Solids	Date Received:	04/06/2022 09:43	Collector:	John Nunez
Description:	Grab				

Parameter	Result	Qual	Unit	RL	MDL	DF	Min	Max	Analyzed	By
Individual Parameters by SM 2540 G										
Percent Total Solids	4.9		% m/m	0.10		1			04/08/2022 15:49	LDP
Per- & Polyfluoroalkyls (PFAS) by ASTM D7968 Mod.										
11Cl-PF3OUdS	150		ng/Kg-dry	100	65	1			04/11/2022 15:48	JKP
4:2 FTSA	<100		ng/Kg-dry	100	58	1			04/11/2022 15:48	JKP
6:2 FTSA	<150		ng/Kg-dry	150	130	1			04/11/2022 15:48	JKP
8:2 FTSA	980		ng/Kg-dry	100	50	1			04/11/2022 15:48	JKP
9Cl-PF3ONS	<100		ng/Kg-dry	100	59	1			04/11/2022 15:48	JKP
ADONA	<100		ng/Kg-dry	100	68	1			04/11/2022 15:48	JKP
HFPO-DA	<150		ng/Kg-dry	150	130	1			04/11/2022 15:48	JKP
NEtFOSAA	10000		ng/Kg-dry	100	57	1			04/11/2022 15:48	JKP
NMeFOSAA	18000		ng/Kg-dry	200	190	1			04/11/2022 15:48	JKP
PFBA	630		ng/Kg-dry	25	20	1			04/11/2022 15:48	JKP
PFBS	9400		ng/Kg-dry	10	9.2	1			04/11/2022 15:48	JKP
PFDA	5500		ng/Kg-dry	15	14	1			04/11/2022 15:48	JKP
PFDS	750		ng/Kg-dry	15	15	1			04/11/2022 15:48	JKP
PFDoA	670		ng/Kg-dry	20	17	1			04/11/2022 15:48	JKP
PFHpA	230		ng/Kg-dry	20	16	1			04/11/2022 15:48	JKP
PFHpS	<15		ng/Kg-dry	15	12	1			04/11/2022 15:48	JKP
PFHxA	1700		ng/Kg-dry	10	7.5	1			04/11/2022 15:48	JKP
PFHxS	1900		ng/Kg-dry	10	5.8	1			04/11/2022 15:48	JKP
PFNA	740		ng/Kg-dry	10	5.2	1			04/11/2022 15:48	JKP
PFNS	<30		ng/Kg-dry	30	29	1			04/11/2022 15:48	JKP
PFOA	1500		ng/Kg-dry	10	9.3	1			04/11/2022 15:48	JKP
PFOS	19000		ng/Kg-dry	20	20	1			04/11/2022 15:48	JKP
PFOSA	1400		ng/Kg-dry	15	10	1			04/11/2022 15:48	JKP
PFPeA	2100		ng/Kg-dry	15	12	1			04/11/2022 15:48	JKP
PFPeS	<15		ng/Kg-dry	15	15	1			04/11/2022 15:48	JKP
PFTeDA	29		ng/Kg-dry	25	23	1			04/11/2022 15:48	JKP
PFTrDA	<20		ng/Kg-dry	20	10	1			04/11/2022 15:48	JKP
PFUnDA	870		ng/Kg-dry	10	8.7	1			04/11/2022 15:48	JKP
PFecHS	310		ng/Kg-dry	15	9.6	1			04/11/2022 15:48	JKP

Surrogate	Unit	Spiked Amount	Spike Result	Spike % Recovery	Control Limits	Qual
13C-HFPO-DA (S)	ng/Kg-dry	160000	94000	57	70 - 130	*
d3-NMeFOSAA (S)	ng/Kg-dry	16000	12000	71	70 - 130	
d5-NEtFOSAA (S)	ng/Kg-dry	16000	14000	85	70 - 130	
M2-4:2 FTS (S)	ng/Kg-dry	16000	21000	129	70 - 130	
M2-6:2 FTS (S)	ng/Kg-dry	16000	21000	127	70 - 130	*
M2-8:2 FTS (S)	ng/Kg-dry	16000	25000	153	70 - 130	*
M2PFDoA (S)	ng/Kg-dry	16000	3700	23	70 - 130	*

M2PFTeDA (S)	ng/Kg-dry	16000	1400	8	70 - 130			*
M3PFBS (S)	ng/Kg-dry	16000	11000	69	70 - 130			*
M3PFHxS (S)	ng/Kg-dry	16000	12000	76	70 - 130			
M4PFBA (S)	ng/Kg-dry	16000	15000	94	70 - 130			
M4PFHpA (S)	ng/Kg-dry	16000	16000	95	70 - 130			
M5PFHxA (S)	ng/Kg-dry	16000	11000	69	70 - 130			*
M5PFPeA (S)	ng/Kg-dry	16000	13000	79	70 - 130			
M6PFDA (S)	ng/Kg-dry	16000	12000	73	70 - 130			
M7PFUnDA (S)	ng/Kg-dry	16000	8100	49	70 - 130			*
M8PFOA (S)	ng/Kg-dry	16000	14000	88	70 - 130			
M8PFOS (S)	ng/Kg-dry	16000	13000	81	70 - 130			
M8PFOSA (S)	ng/Kg-dry	16000	5300	33	70 - 130			*
M9PFNA (S)	ng/Kg-dry	16000	15000	92	70 - 130			
Sample Preparation by ASTM D7968 Mod.								
Tumble Extraction for PFAS	2.0013	grams			1	04/08/2022 10:42	JKP	

ANALYTICAL RESULTS

Lab ID:	3767080002	Date Collected:		Matrix:	Solid
Sample ID:	Trip Blank	Date Received:	04/06/2022 09:43	Collector:	John Nunez
Description:					

Parameter	Result	Qual	Unit	RL	MDL	DF	Min	Max	Analyzed	By

No results available.

ANALYTICAL RESULTS

Lab ID:	3767080003	Date Collected:		Matrix:	Solid
Sample ID:	Field Blank	Date Received:	04/06/2022 09:43	Collector:	John Nunez
Description:					

Parameter	Result	Qual	Unit	RL	MDL	DF	Min	Max	Analyzed	By
Per- & Polyfluoroalkyls (PFAS) by ASTM D7968 Mod.										
11Cl-PF3OUdS	<100		ng/Kg-dry	100	65	1			04/11/2022 16:29	JKP
4:2 FTSA	<100		ng/Kg-dry	100	58	1			04/11/2022 16:29	JKP
6:2 FTSA	<150		ng/Kg-dry	150	130	1			04/11/2022 16:29	JKP
8:2 FTSA	<100		ng/Kg-dry	100	50	1			04/11/2022 16:29	JKP
9Cl-PF3ONS	<100		ng/Kg-dry	100	59	1			04/11/2022 16:29	JKP
ADONA	<100		ng/Kg-dry	100	68	1			04/11/2022 16:29	JKP
HFPO-DA	<150		ng/Kg-dry	150	130	1			04/11/2022 16:29	JKP
NEtFOSAA	<100		ng/Kg-dry	100	57	1			04/11/2022 16:29	JKP
NMeFOSAA	<200		ng/Kg-dry	200	190	1			04/11/2022 16:29	JKP
PFBA	<25		ng/Kg-dry	25	20	1			04/11/2022 16:29	JKP
PFBS	11		ng/Kg-dry	10	9.2	1			04/11/2022 16:29	JKP
PFDA	<15		ng/Kg-dry	15	14	1			04/11/2022 16:29	JKP
PFDS	<15		ng/Kg-dry	15	15	1			04/11/2022 16:29	JKP
PFDoA	<20		ng/Kg-dry	20	17	1			04/11/2022 16:29	JKP
PFHpA	<20		ng/Kg-dry	20	16	1			04/11/2022 16:29	JKP
PFHpS	<15		ng/Kg-dry	15	12	1			04/11/2022 16:29	JKP
PFHxA	<10		ng/Kg-dry	10	7.5	1			04/11/2022 16:29	JKP
PFHxS	<10		ng/Kg-dry	10	5.8	1			04/11/2022 16:29	JKP
PFNA	<10		ng/Kg-dry	10	5.2	1			04/11/2022 16:29	JKP
PFNS	<30		ng/Kg-dry	30	29	1			04/11/2022 16:29	JKP
PFOA	<10		ng/Kg-dry	10	9.3	1			04/11/2022 16:29	JKP
PFOS	<20		ng/Kg-dry	20	20	1			04/11/2022 16:29	JKP
PFOSA	<15		ng/Kg-dry	15	10	1			04/11/2022 16:29	JKP
PFPeA	<15		ng/Kg-dry	15	12	1			04/11/2022 16:29	JKP
PFPeS	<15		ng/Kg-dry	15	15	1			04/11/2022 16:29	JKP
PFTeDA	<25		ng/Kg-dry	25	23	1			04/11/2022 16:29	JKP
PFTrDA	<20		ng/Kg-dry	20	10	1			04/11/2022 16:29	JKP
PFUnDA	<10		ng/Kg-dry	10	8.7	1			04/11/2022 16:29	JKP
PFecHS	<15		ng/Kg-dry	15	9.6	1			04/11/2022 16:29	JKP

Surrogate	Unit	Spiked Amount	Spike Result	Spike % Recovery	Control Limits	Qual
13C-HFPO-DA (S)	ng/Kg-dry	8000	7400	92	70 - 130	
d3-NMeFOSAA (S)	ng/Kg-dry	800	1000	125	70 - 130	
d5-NEtFOSAA (S)	ng/Kg-dry	800	1000	128	70 - 130	
M2-4:2 FTS (S)	ng/Kg-dry	800	1000	127	70 - 130	
M2-6:2 FTS (S)	ng/Kg-dry	800	1100	135	70 - 130	*
M2-8:2 FTS (S)	ng/Kg-dry	800	1000	131	70 - 130	*
M2PFDoA (S)	ng/Kg-dry	800	950	119	70 - 130	
M2PFTeDA (S)	ng/Kg-dry	800	800	100	70 - 130	
M3PFBS (S)	ng/Kg-dry	800	840	105	70 - 130	
M3PFHxS (S)	ng/Kg-dry	800	890	111	70 - 130	

M4PFBA (S)	ng/Kg-dry	800	980	122	70 - 130
M4PFHpA (S)	ng/Kg-dry	800	980	122	70 - 130
M5PFHxA (S)	ng/Kg-dry	800	880	110	70 - 130
M5PFPeA (S)	ng/Kg-dry	800	780	97	70 - 130
M6PFDA (S)	ng/Kg-dry	800	950	119	70 - 130
M7PFUnDA (S)	ng/Kg-dry	800	950	118	70 - 130
M8PFOA (S)	ng/Kg-dry	800	940	118	70 - 130
M8PFOS (S)	ng/Kg-dry	800	920	115	70 - 130
M8PFOSA (S)	ng/Kg-dry	800	880	109	70 - 130
M9PFNA (S)	ng/Kg-dry	800	930	116	70 - 130

Sample Preparation by ASTM D7968 Mod.

Tumble Extraction for PFAS	2.0053	grams		1	04/08/2022 10:42 JKP