PARAGON LABORATORIES

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Monday, July 19, 2021

John Henning
Saginaw Township WWTP
5790 W. Michigan Ave.
Saginaw, MI 48638

Workorder: 370125

John Henning,
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 734.469.5623.

Sincerely,

Bryant D Dugan
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
3701250001	Biosolids	Grab	SL	06/16/2021 08:30	06/16/2021 12:42	TS
3701250002	Field Blank	Grab	SL	05/16/2021 08:30	06/16/2021 12:42	
3701250003	Trip Blank		SL	05/16/2021 00:00	06/16/2021 12:42	

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

3701250002 - Field Blank - M2PFTeDA
Surrogate recovery is above the upper control limit, possibly due to matrix interferences.
3701250001 - Biosolids - M2-4:2 FTS
Surrogate recovery is below the lower control limit, possibly due to matrix interferences.
3701250001 - Biosolids - M2PFDoA
Surrogate recovery is below the lower control limit, possibly due to matrix interferences.
3701250001 - Biosolids - M2PFTeDA
Surrogate recovery is below the lower control limit, possibly due to matrix interferences.
3701250001 - Biosolids - M3PFBS
Surrogate recovery is below the lower control limit, possibly due to matrix interferences.
3701250001 - Biosolids - M4PFBA
Surrogate recovery is below the lower control limit, possibly due to matrix interferences.
3701250001 - Biosolids - M4PFHpA
Surrogate recovery is below the lower control limit, possibly due to matrix interferences.
3701250001 - Biosolids - M5PFHxA
Surrogate recovery is below the lower control limit, possibly due to matrix interferences.
3701250001 - Biosolids - M7PFUnDA
Surrogate recovery is below the lower control limit, possibly due to matrix interferences.
3701250001 - Biosolids - M8PFOSA
Surrogate recovery is below the lower control limit, possibly due to matrix interferences.

ANALYTICAL RESULTS

Lab ID:	3701250001	Date Collected:	06/16/2021 08:30	Matrix:	Sludge
Sample ID:	Biosolids	Date Received:	06/16/2021 12:42	Collector:	TS
Description:	Grab				

Parameter	Result	Qual	Unit	RL	MDL	DF	Min	Max	Analyzed	By
Individual Parameters by SM 2540 G										
Percent Total Solids	3.8		% m/m	0.10		1			06/24/2021 10:19	CTJ
Per- & Polyfluoroalkyls (PFAS) by ASTM D7968 Mod.										
11Cl-PF3OUdS	360		ng/Kg-dry	100	65	1			07/12/2021 18:54	JKP
4:2 FTSA	<100		ng/Kg-dry	100	58	1			07/12/2021 18:54	JKP
6:2 FTSA	1300		ng/Kg-dry	150	130	1			07/12/2021 18:54	JKP
8:2 FTSA	2300		ng/Kg-dry	100	50	1			07/12/2021 18:54	JKP
9Cl-PF3ONS	660		ng/Kg-dry	100	59	1			07/12/2021 18:54	JKP
ADONA	<100		ng/Kg-dry	100	68	1			07/12/2021 18:54	JKP
HFPO-DA	<150		ng/Kg-dry	150	130	1			07/12/2021 18:54	JKP
NEtFOSAA	4700		ng/Kg-dry	100	57	1			07/12/2021 18:54	JKP
NMeFOSAA	11000		ng/Kg-dry	200	190	1			07/12/2021 18:54	JKP
PFBA	580		ng/Kg-dry	25	20	1			07/12/2021 18:54	JKP
PFBS	2900		ng/Kg-dry	10	9.2	1			07/12/2021 18:54	JKP
PFDA	5900		ng/Kg-dry	15	14	1			07/12/2021 18:54	JKP
PFDS	460		ng/Kg-dry	15	15	1			07/12/2021 18:54	JKP
PFDoA	1100		ng/Kg-dry	20	17	1			07/12/2021 18:54	JKP
PFHpA	590		ng/Kg-dry	20	16	1			07/12/2021 18:54	JKP
PFHpS	<15		ng/Kg-dry	15	12	1			07/12/2021 18:54	JKP
PFHxA	3700		ng/Kg-dry	10	7.5	1			07/12/2021 18:54	JKP
PFHxS	2100		ng/Kg-dry	10	5.8	1			07/12/2021 18:54	JKP
PFNA	1700		ng/Kg-dry	10	5.2	1			07/12/2021 18:54	JKP
PFNS	<30		ng/Kg-dry	30	29	1			07/12/2021 18:54	JKP
PFOA	5000		ng/Kg-dry	10	9.3	1			07/12/2021 18:54	JKP
PFOS	16000		ng/Kg-dry	20	20	1			07/12/2021 18:54	JKP
PFOSA	1500		ng/Kg-dry	15	10	1			07/12/2021 18:54	JKP
PFPeA	2000		ng/Kg-dry	15	12	1			07/12/2021 18:54	JKP
PFPeS	<15		ng/Kg-dry	15	15	1			07/12/2021 18:54	JKP
PFTeDA	<25		ng/Kg-dry	25	23	1			07/12/2021 18:54	JKP
PFTrDA	81		ng/Kg-dry	20	10	1			07/12/2021 18:54	JKP
PFUnDA	750		ng/Kg-dry	10	8.7	1			07/12/2021 18:54	JKP
PFecHS	<15		ng/Kg-dry	15	9.6	1			07/12/2021 18:54	JKP

Surrogate	Unit	Spiked Amount	Spike Result	Spike % Recovery	Control Limits	Qual
13C-HFPO-DA (S)	ng/Kg-dry	210000	160000	76	70 - 130	
d3-NMeFOSAA (S)	ng/Kg-dry	21000	17000	82	70 - 130	
d5-NEtFOSAA (S)	ng/Kg-dry	21000	17000	79	70 - 130	
M2-4:2 FTS (S)	ng/Kg-dry	21000	14000	65	70 - 130	*
M2-6:2 FTS (S)	ng/Kg-dry	21000	25000	117	70 - 130	
M2-8:2 FTS (S)	ng/Kg-dry	21000	17000	81	70 - 130	
M2PFDoA (S)	ng/Kg-dry	21000	8600	41	70 - 130	*

M2PFTeDA (S)	ng/Kg-dry	21000	1100	5	70 - 130			*
M3PFBS (S)	ng/Kg-dry	21000	14000	67	70 - 130			*
M3PFHxS (S)	ng/Kg-dry	21000	16000	76	70 - 130			
M4PFBA (S)	ng/Kg-dry	21000	6200	29	70 - 130			*
M4PFHpA (S)	ng/Kg-dry	21000	14000	66	70 - 130			*
M5PFHxA (S)	ng/Kg-dry	21000	13000	63	70 - 130			*
M5PFPeA (S)	ng/Kg-dry	21000	16000	74	70 - 130			
M6PFDA (S)	ng/Kg-dry	21000	17000	82	70 - 130			
M7PFUnDA (S)	ng/Kg-dry	21000	15000	69	70 - 130			*
M8PFOA (S)	ng/Kg-dry	21000	17000	79	70 - 130			
M8PFOS (S)	ng/Kg-dry	21000	18000	85	70 - 130			
M8PFOSA (S)	ng/Kg-dry	21000	12000	55	70 - 130			*
M9PFNA (S)	ng/Kg-dry	21000	20000	93	70 - 130			
Sample Preparation by ASTM D7968 Mod.								
Tumble Extraction for PFAS	2.005	grams			1	06/29/2021 11:11	JKP	

ANALYTICAL RESULTS

Lab ID:	3701250002	Date Collected:	05/16/2021 08:30	Matrix:	Sludge
Sample ID:	Field Blank	Date Received:	06/16/2021 12:42	Collector:	
Description:	Grab				

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			07/12/2021 19:36	JKP
4:2 FTSA	<100		ng/Kg-dry	100	58	1			07/12/2021 19:36	JKP
6:2 FTSA	<150		ng/Kg-dry	150	130	1			07/12/2021 19:36	JKP
8:2 FTSA	<100		ng/Kg-dry	100	50	1			07/12/2021 19:36	JKP
9Cl-PF3ONS	<100		ng/Kg-dry	100	59	1			07/12/2021 19:36	JKP
ADONA	<100		ng/Kg-dry	100	68	1			07/12/2021 19:36	JKP
HFPO-DA	<150		ng/Kg-dry	150	130	1			07/12/2021 19:36	JKP
NEtFOSAA	<100		ng/Kg-dry	100	57	1			07/12/2021 19:36	JKP
NMeFOSAA	<200		ng/Kg-dry	200	190	1			07/12/2021 19:36	JKP
PFBA	<25		ng/Kg-dry	25	20	1			07/12/2021 19:36	JKP
PFBS	<10		ng/Kg-dry	10	9.2	1			07/12/2021 19:36	JKP
PFDA	<15		ng/Kg-dry	15	14	1			07/12/2021 19:36	JKP
PFDS	<15		ng/Kg-dry	15	15	1			07/12/2021 19:36	JKP
PFDoA	<20		ng/Kg-dry	20	17	1			07/12/2021 19:36	JKP
PFHpA	<20		ng/Kg-dry	20	16	1			07/12/2021 19:36	JKP
PFHpS	<15		ng/Kg-dry	15	12	1			07/12/2021 19:36	JKP
PFHxA	<10		ng/Kg-dry	10	7.5	1			07/12/2021 19:36	JKP
PFHxS	<10		ng/Kg-dry	10	5.8	1			07/12/2021 19:36	JKP
PFNA	<10		ng/Kg-dry	10	5.2	1			07/12/2021 19:36	JKP
PFNS	<30		ng/Kg-dry	30	29	1			07/12/2021 19:36	JKP
PFOA	<10		ng/Kg-dry	10	9.3	1			07/12/2021 19:36	JKP
PFOS	<20		ng/Kg-dry	20	20	1			07/12/2021 19:36	JKP
PFOSA	<15		ng/Kg-dry	15	10	1			07/12/2021 19:36	JKP
PFPeA	<15		ng/Kg-dry	15	12	1			07/12/2021 19:36	JKP
PFPeS	<15		ng/Kg-dry	15	15	1			07/12/2021 19:36	JKP
PFTeDA	<25		ng/Kg-dry	25	23	1			07/12/2021 19:36	JKP
PFTrDA	<20		ng/Kg-dry	20	10	1			07/12/2021 19:36	JKP
PFUnDA	<10		ng/Kg-dry	10	8.7	1			07/12/2021 19:36	JKP
PFecHS	<15		ng/Kg-dry	15	9.6	1			07/12/2021 19:36	JKP

Surrogate	Unit	Spiked Amount	Spike Result	Spike % Recovery	Control Limits	Qual
13C-HFPO-DA (S)	ng/Kg-dry	8000	8600	108	70 - 130	
d3-NMeFOSAA (S)	ng/Kg-dry	800	960	121	70 - 130	
d5-NEtFOSAA (S)	ng/Kg-dry	800	990	124	70 - 130	
M2-4:2 FTS (S)	ng/Kg-dry	800	580	72	70 - 130	
M2-6:2 FTS (S)	ng/Kg-dry	800	640	80	70 - 130	
M2-8:2 FTS (S)	ng/Kg-dry	800	560	70	70 - 130	
M2PFDoA (S)	ng/Kg-dry	800	1000	128	70 - 130	
M2PFTeDA (S)	ng/Kg-dry	800	1100	132	70 - 130	*
M3PFBS (S)	ng/Kg-dry	800	760	95	70 - 130	
M3PFHxS (S)	ng/Kg-dry	800	770	96	70 - 130	

M4PFBA (S)	ng/Kg-dry	800	790	99	70 - 130			
M4PFHpA (S)	ng/Kg-dry	800	770	96	70 - 130			
M5PFHxA (S)	ng/Kg-dry	800	800	99	70 - 130			
M5PFPeA (S)	ng/Kg-dry	800	840	105	70 - 130			
M6PFDA (S)	ng/Kg-dry	800	890	111	70 - 130			
M7PFUnDA (S)	ng/Kg-dry	800	910	114	70 - 130			
M8PFOA (S)	ng/Kg-dry	800	800	101	70 - 130			
M8PFOS (S)	ng/Kg-dry	800	850	106	70 - 130			
M8PFOSA (S)	ng/Kg-dry	800	580	72	70 - 130			
M9PFNA (S)	ng/Kg-dry	800	930	117	70 - 130			
Sample Preparation by ASTM D7968 Mod.								
Tumble Extraction for PFAS		2	grams			1	06/29/2021 11:11	JKP

ANALYTICAL RESULTS

Lab ID:	3701250003	Date Collected:	05/16/2021 00:00	Matrix:	Sludge
Sample ID:	Trip Blank	Date Received:	06/16/2021 12:42	Collector:	
Description:					

Parameter	Result	Qual	Unit	RL	MDL	DF	Min	Max	Analyzed	By

No results available.