Prein&Newhof
Engineers ▪ Surveyors ▪ Environmental ▪ Laboratory

May 20, 2022

Greenville WWTP
411 S. Lafayette
Greenville, MI 48838

RE: Summer Bio-solids 2022 PFAS

Order No.: 2205034

Dear Mr. Shawn Wheat:

Guide to reading Lab Result

Prein&Newhof Laboratory received 1 sample(s) on 5/2/2022 on your behalf. Your test results are provided in your Prein&Newhof Laboratory analytical report. Please carefully review your analytical report, noting the following.

There were no problems with the analytical events associated with this report unless noted in the Case Narrative.

Any analyte that exceeds the client provided permit level are noted on the report with an "*" in the Qual field. Quality control data is within laboratory defined or method specified acceptance limits except if noted.

When testing for PFHxS, PFOA, PFOS, MeFOSAA, and EtFOSAA results include both branched and linear isotopes. We extract a Method Blank and analyze it with the preparation batch. Method Blank analytes are within the Reporting Limit (RL).

To learn more about interpreting your Lab Report, follow the link above to view our "Guide to Reading Lab Results". If you have any concerns about your test results or need additional help, please call: 616-364-7600 or email me: sbylsma@preinnewhof.com.

We use EPA Approved Methods for all regulated parameters. EPA Lab #: MI000014

Thank you for trusting Prein&Newhof with your testing needs.

Thank you for your business.
Sincerely,

Steve Bylsma
Laboratory Manager

3260 Evergreen Drive, NE Grand Rapids, MI 49525 t.616-364-7600 f. 616-364-4222 www.preinnewhof.com

CLIENT: Greenville WWTP **Lab Order:** 2205034
Project: Summer Bio-solids 2022 PFAS

Lab ID: 2205034-01 **Matrix:** BIOSOLIDS **Collection Date:** 4/29/2022 11:40:00 AM
Client ID: Biosolids Storage **Sampler:** RB **Received Date:** 5/2/2022 12:30:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed

Qualifiers:

<	Not Detected at the Reporting Limit
MCL	Maximum Contaminant Level
RL	Reporting Limit
H	Holding times for preparation or analysis exceeded
PL	Permit Limit

3260 Evergreen Drive, NE Grand Rapids, MI 49525 t.616-364-7600 f. 616-364-4222 www.preinnewhof.com

Analytical Laboratory Report

Report ID: S35548.01(01)
Generated on 05/20/2022

Report to

Attention: Stephen Bylsma
Prein & Newhof
3260 Evergreen Drive NE
Grand Rapids, MI 49525

Phone: 616-364-7600 FAX:
Email: SBylsma@preinnewhof.com

Report produced by

Merit Laboratories, Inc.
2680 East Lansing Drive
East Lansing, MI 48823

Phone: (517) 332-0167 FAX: (517) 332-6333

Contacts for report questions:
John Laverty (johnlaverty@meritlabs.com)
Barbara Ball (bball@meritlabs.com)

Report Summary

Lab Sample ID(s): S35548.01
Project: Monitoring
Collected Date(s): 04/29/2022
Submitted Date/Time: 05/03/2022 12:10
Sampled by: Unknown
P.O. #:

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Maya Murshak
Technical Director

General Report Notes

Analytical results relate only to the samples tested, in the condition received by the laboratory.
Methods may be modified for improved performance.
Results reported on a dry weight basis where applicable.
'Not detected' indicates that parameter was not found at a level equal to or greater than the reporting limit (RL).
When MDL results are provided, then 'Not detected' indicates that parameter was not found at a level equal to or greater than the MDL.
40 CFR Part 136 Table II Required Containers, Preservation Techniques and Holding Times for the Clean Water Act specify that samples for acrolein, acrylonitrile, and 2-chlorovinylethyl ether need to be preserved at a pH in the range of 4 to 5 or if not preserved, analyzed within 3 days of sampling.
QA/QC corresponding to this analytical report is a separate document with the same Merit ID reference and is available upon request.
Full accreditation certificates are available upon request. Starred (*) analytes are not NELAP accredited.
Samples are held by the lab for 30 days from the final report date unless a written request to hold longer is provided by the client.

Limits for drinking water samples, are listed as the MCL Limits (Maximum Contaminant Level Concentrations)
PFAS requirement: Section 9.3.8 of U.S. EPA Method 537.1 states "If the method analyte(s) found in the Field Sample is present in the FRB at a concentration greater than 1/3 the MRL, then all samples collected with that FRB are invalid and must be recollected and reanalyzed."
Samples submitted without an accompanying FRB may not be acceptable for compliance purposes.
Wisconsin PFAs analysis: MDL = LOD; RL = LOQ. LOD and LOQ are adjusted for dilution.

Report Narrative

There is no additional narrative for this analytical report

Laboratory Certifications

Authority	Certification ID
Michigan DEQ	#9956
DOD ELAP/ISO 17025	#69699
WBENC	#2005110032
Ohio VAP	#CL0002
Indiana DOH	#C-MI-07
New York NELAC	#11814
North Carolina DENR	#680
North Carolina DOH	#26702
Alaska CSLAP	#17-001
Pennsylvania DEP	#68-05884
Wisconsin DNR	FID# 399147320

Qualifier Descriptions

Qualifier	Description
!	Result is outside of stated limit criteria
B	Compound also found in associated method blank
E	Concentration exceeds calibration range
F	Analysis run outside of holding time
G	Estimated result due to extraction run outside of holding time
H	Sample submitted and run outside of holding time
I	Matrix interference with internal standard
J	Estimated value less than reporting limit, but greater than MDL
L	Elevated reporting limit due to low sample amount
M	Result reported to MDL not RDL
O	Analysis performed by outside laboratory. See attached report.
R	Preliminary result
S	Surrogate recovery outside of control limits
T	No correction for total solids
X	Elevated reporting limit due to matrix interference
Y	Elevated reporting limit due to high target concentration
b	Value detected less than reporting limit, but greater than MDL
e	Reported value estimated due to interference
j	Analyte also found in associated method blank
p	Benzo(b)Fluoranthene and Benzo(k)Fluoranthene integrated as one peak.
x	Preserved from bulk sample

Glossary of Abbreviations

Abbreviation	Description
RL/RDL	Reporting Limit
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
SW	EPA SW 846 (Soil and Wastewater) Methods
E	EPA Methods
SM	Standard Methods
LN	Linear
BR	Branched

Method Summary

Method	Version
ASTM D7968-17M	ASTM Method D7968 - 17 Modified (Isotopic Dilution)
SM2540B	Standard Method 2540 B 2015

Parameter Summary

Parameter	Synonym	Cas #
PFBA	Perfluorobutanoic Acid	375-22-4
PFPeA	Perfluoropentanoic Acid	2706-90-3
4:2 FTSA	4:2 Fluorotelomer Sulfonic Acid	757124-72-4
PFHxA	Perfluorohexanoic Acid	307-24-4
PFBS	Perfluorobutane sulfonic Acid	375-73-5
PFHpA	Perfluoroheptanoic Acid	375-85-9
PFPeS	Perfluoropentane Sulfonic Acid	2706-91-4
6:2 FTSA	6:2 Fluorotelomer Sulfonic Acid	27619-97-2
PFOA	Perfluorooctanoic Acid	335-67-1
PFHxS	Perfluorohexane Sulfonic Acid	355-46-4
PFHxS-LN	Perfluorohexane Sulfonic Acid - LN	355-46-4-LN
PFHxS-BR	Perfluorohexane Sulfonic Acid - BR	355-46-4-BR
PFNA	Perfluorononanoic Acid	375-95-1
8:2 FTSA	8:2 Fluorotelomer Sulfonic Acid	39108-34-4
PFHpS	Perfluoroheptane Sulfonic Acid	375-92-8
PFDA	Perfluorodecanoic Acid	335-76-2
N-MeFOSAA	N-methyl perfluorooctanesulfonamidoacetic acid	2355-31-9
EtFOSAA	N-Ethyl Perfluorooctane Sulfonamidoacetic Acid	2991-50-6
PFOS	Perfluorooctane Sulfonic Acid	1763-23-1
PFOS-LN	Perfluorooctane Sulfonic Acid - LN	1763-23-1-LN
PFOS-BR	Perfluorooctane Sulfonic Acid - BR	1763-23-1-BR
PFUnDA	Perfluoroundecanoic Acid	2058-94-8
PFNS	Perfluorononane Sulfonic Acid	68259-12-1
PFDoDA	Perfluorododecanoic Acid	307-55-1
PFDS	Perfluorodecane Sulfonic Acid	335-77-3
PFTrDA	Perfluorotridecanoic Acid	72629-94-8
FOSA	Perfluorooctane Sulfonamide	754-91-6
PFTeDA	Perfluorotetradecanoic Acid	376-06-7
11Cl-PF3OUdS	11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	763051-92-9
9Cl-PF3ONS	9-chlorohexadecafluoro-3-oxanone1-sulfonic acid	756426-58-1
ADONA	4,8-dioxa-3H-perfluorononanoic acid	919005-14-4
HFPO-DA	Hexafluoropropylene oxide dimer	13252-13-6

Analytical Laboratory Report

Sample Summary (1 samples)

Sample ID	Sample Tag	Matrix	Collected Date/Time
S35548.01	2205034-01A - Biosolids Storage	Biosolids	04/29/22 11:40

Lab Sample ID: S35548.01
Sample Tag: 2205034-01A - Biosolids Storage
Collected Date/Time: 04/29/2022 11:40
Matrix: Biosolids
COC Reference: 924

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	15ml Centrifuge Tube	None	Yes	5.8	IR
1	250ml Plastic	None	Yes	5.8	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Initial wt. (g) / Final wt. (g) / Volume (ml)*	9.19/6.90/10	ASTM D7968-17M	05/10/22 15:00	KCV	

Inorganics

Method: SM2540B, Run Date: 05/03/22 16:32, Analyst: MAM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Solids*	4.9	1		%	1		

Organics

28 PFAs, Method: ASTM D7968-17M, Run Date: 05/11/22 02:29, Analyst: KCV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
PFBA*	Not detected	1.8		ug/kg	89.1	375-22-4	
PFPeA*	Not detected	0.89		ug/kg	89.1	2706-90-3	
4:2 FTSA*	Not detected	0.89		ug/kg	89.1	757124-72-4	I
PFHxA*	Not detected	0.89		ug/kg	89.1	307-24-4	
PFBS*	Not detected	0.89		ug/kg	89.1	375-73-5	
PFHpA*	Not detected	0.89		ug/kg	89.1	375-85-9	
PFPeS*	Not detected	0.89		ug/kg	89.1	2706-91-4	
6:2 FTSA*	Not detected	0.89		ug/kg	89.1	27619-97-2	I
PFOA*	Not detected	0.89		ug/kg	89.1	335-67-1	
PFHxS*	Not detected	0.89		ug/kg	89.1	355-46-4	
PFHxS-LN*	Not detected	0.89		ug/kg	89.1	355-46-4-LN	
PFHxS-BR*	Not detected	0.89		ug/kg	89.1	355-46-4-BR	
PFNA*	Not detected	0.89		ug/kg	89.1	375-95-1	
8:2 FTSA*	Not detected	0.89		ug/kg	89.1	39108-34-4	I
PFHpS*	Not detected	0.89		ug/kg	89.1	375-92-8	
PFDA*	Not detected	0.89		ug/kg	89.1	335-76-2	I
N-MeFOSAA*	2.3	0.89		ug/kg	89.1	2355-31-9	
EtFOSAA*	1.4	0.89		ug/kg	89.1	2991-50-6	I
PFOS*	3.3	0.89		ug/kg	89.1	1763-23-1	
PFOS-LN*	2.5	0.89		ug/kg	89.1	1763-23-1-LN	
PFOS-BR*	Not detected	0.89		ug/kg	89.1	1763-23-1-BR	
PFUnDA*	Not detected	0.89		ug/kg	89.1	2058-94-8	I
PFNS*	Not detected	0.89		ug/kg	89.1	68259-12-1	
PFDoDA*	Not detected	0.89		ug/kg	89.1	307-55-1	I
PFDS*	Not detected	0.89		ug/kg	89.1	335-77-3	
PFTrDA*	Not detected	0.89		ug/kg	89.1	72629-94-8	I
FOSA*	Not detected	0.89		ug/kg	89.1	754-91-6	
PFTeDA*	Not detected	0.89		ug/kg	89.1	376-06-7	
11Cl-PF3OUdS*	Not detected	0.89		ug/kg	89.1	763051-92-9	
9Cl-PF3ONS*	Not detected	0.89		ug/kg	89.1	756426-58-1	

I-Matrix interference with internal standard

Lab Sample ID: S35548.01 (continued)

Sample Tag: 2205034-01A - Biosolids Storage

28 PFAs, Method: ASTM D7968-17M, Run Date: 05/11/22 02:29, Analyst: KCV (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
ADONA*	Not detected	0.89		ug/kg	89.1	919005-14-4	
HFPO-DA*	Not detected	0.89		ug/kg	89.1	13252-13-6	

Merit Laboratories Login Checklist

Lab Set ID: S35548
Client: PREINNEWHOF (Prein & Newhof)
Project: Monitoring
Submitted: 05/03/2022 12:10 Login User: MMC

Attention: Stephen Bylsma
Address: Prein & Newhof
3260 Evergreen Drive NE
Grand Rapids, MI 49525

Phone: 616-364-7600 FAX:
Email: SBylsma@preinnewhof.com

Selection				Description	Note
Sample Receiving					
01.	[X] Yes	[ ] No	[ ] N/A	Samples are received at 4C +/- 2C Thermometer #	IR 5.8
02.	[X] Yes	[ ] No	[ ] N/A	Received on ice/ cooling process begun	
03.	[X] Yes	[ ] No	[ ] N/A	Samples shipped	UPS
04.	[ ] Yes	[X] No	[ ] N/A	Samples left in 24 hr. drop box	
05.	[X] Yes	[ ] No	[ ] N/A	Are there custody seals/tape or is the drop box locked	
Chain of Custody					
06.	[X] Yes	[ ] No	[ ] N/A	COC adequately filled out	
07.	[X] Yes	[ ] No	[ ] N/A	COC signed and relinquished to the lab	
08.	[X] Yes	[ ] No	[ ] N/A	Sample tag on bottles match COC	
09.	[ ] Yes	[X] No	[ ] N/A	Subcontracting needed? Subcontacted to:	
Preservation					
10.	[X] Yes	[ ] No	[ ] N/A	Do sample have correct chemical preservation	
11.	[ ] Yes	[ ] No	[X] N/A	Completed pH checks on preserved samples? (no VOAs)	
12.	[ ] Yes	[X] No	[ ] N/A	Did any samples need to be preserved in the lab?	
Bottle Conditions					
13.	[X] Yes	[ ] No	[ ] N/A	All bottles intact	
14.	[X] Yes	[ ] No	[ ] N/A	Appropriate analytical bottles are used	Centrifuge tubes overfilled
15.	[X] Yes	[ ] No	[ ] N/A	Merit bottles used	
16.	[X] Yes	[ ] No	[ ] N/A	Sufficient sample volume received	
17.	[ ] Yes	[X] No	[ ] N/A	Samples require laboratory filtration	
18.	[X] Yes	[ ] No	[ ] N/A	Samples submitted within holding time	
19.	[ ] Yes	[ ] No	[X] N/A	Do water VOC or TOX bottles contain headspace	

Corrective action for all exceptions is to call the client and to notify the project manager.

Client Review By: _____ Date: _____

Prein&Newhof
Engineers • Surveyors • Environmental • Laboratory

CHAIN OF CUSTODY RECORD

Omega COCID 924	PAGE: 1	OF: 1

ADDRESS
Prein&Newhof Laboratory
3260 Evergreen Dr NE
Grand Rapids, MI 49525
TEL: (616) 364-7600
FAX: (616) 364-4222
Website: www.preinnewhof.com

SUB CONTRATOR: **Merit Laboratory** COMPANY:

ADDRESS:

CITY, STATE, ZIP:

PHONE: FAX: EMAIL:

ACCOUNT #:

SPECIAL INSTRUCTIONS / COMMENTS:

ITEM #	SAMPLE ID	Client Sample ID	Bottle Type	MATRIX	DATE COLLECTED	NUMBER OF CONTAINERS	ANALYTICAL PARAMETERS: PFAS-SUB	COMMENTS (Methanol Preserved Weights, HOT Sample Notation, Additional Sample Description, etc.)
1	2205034-01A	Biosolids Storage		Biosolids	4/29/2022 11:40:00 AM	1	√	35548.01

Relinquished By:	Date:	Time:	Received By:	Date:	Time:
K	5/4/22	1300			
Relinquished By: UPS	Date: 5/3/22	Time: 1210	Received By: M Alcala	Date: 5/3/22	Time: 1210
Relinquished By:	Date:	Time:	Received By:	Date:	Time:

TAT: Standard ☐ **RUSH** Next BD ☐ 2nd BD ☐ 3rd BD ☐

Note: RUSH requests will incur surcharges!

REPORT TRANSMITTAL DESIRED:

☐ HARDCOPY (extra cost) ☐ FAX ☐ EMAIL ☐ ONLINE

FOR LAB USE ONLY

Temp of samples 5.8 °C Attempt to Cool ? ✓

Comments:

Prein&Newhof
Engineers ▪ Surveyors ▪ Environmental ▪ Laboratory

3260 Evergreen Drive, NE
Grand Rapids, MI 49525
t. 616-364-7600
f. 616-364-4222

Client: City of Greenville
Billing Address: 411 S. Lafayette Street
Phone Number: 616-754-5802
Project Name: Summer Bio-solids 2022
Project Number:
Email Results To: SWheat@greenvillemi.org
Sampling Personnel: RB

Wastewater	W
Drinking Water	D
Groundwater	G
Soil	S
Sludge	L
Other	X

CHAIN OF CUSTODY

No. 46042

LAB USE	Sample Information				Preservative						Analysis Requested
Lab Sample ID #	Date Collected	Time Collected	Sample Description and Location (e.g. MW-1)	MATRIX	None	H2SO4	HNO3	HCL	NaOH	Other	
50341	4/29	11:40	Bio Solids Storage Greenville	L	/			/			PFOS

Comments:

Relinquished By: (Signature)	Date / Time: 4/29/22 12:10	Received By: (Signature)	Date / Time
Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Date / Time
Received for Laboratory By: S. Diem	Date / Time: 5/2/22 1230	Data Package Relinquished By:	Date / Time