

February 22, 2022

CH2M/Jacobs 606 Hannah Ave. Traverse City, MI 49686

RE: TC & GTSF PFAS Order No.: 2202042

Dear Mr. Justin Straub: Guide to reading Lab Result

Prein&Newhof Laboratory received 2 sample(s) on 2/1/2022 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

Str.m. Opla

Laboratory Manager

CC:

Mr. Alex Arnold

Mr. Joshua Lycka

Mr. Mark Huggard

Ms. Elizabeth Hart



Analytical Report

(continuous)

WO#: **2202042**Date Reported: **2/22/2022**

CLIENT: CH2M/Jacobs Lab Order: 2202042

Project: TC & GTSF PFAS

Lab ID: 2202042-01 **Matrix:** BIOSOLIDS **Collection Date:** 1/31/2022 10:49:00 AM

Client ID: GTSI0131221049 **Sampler:** JL/JP **Received Date:** 2/1/2022 11:30:00 AM

Analyses Result RL Qual Units DF Date Analyzed

Lab ID: 2202042-02 **Matrix:** BIOSOLIDS **Collection Date:** 1/31/2022 1:15:00 PM

Client ID: TC 5886- Biosolids Comp Sampler: JL/JP Received Date: 2/1/2022 11:30:00 AM

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



Report ID: S32541.01(01) Generated on 02/21/2022

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): S32541.01-S32541.02

Project: Monitoring

Collected Date(s): 01/31/2022

Submitted Date/Time: 02/02/2022 12:00

Sampled by: Unknown

P.O. #:

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Naya Mushah

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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 and acrylonitrile 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.

Report shall not be reproduced except in full, without the written approval of Merit Laboratories, Inc.

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

Report to Prein & Newhof Page 2 of 9 Generate
Project: Monitoring Report ID



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
В	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
Н	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
0	Analysis performed by outside laboratory. See attached report.
R	Preliminary result
S	Surrogate recovery outside of control limits
Т	No correction for total solids
X	Elevated reporting limit due to matrix interference
Υ	Elevated reporting limit due to high target concentration
b	Value detected less than reporting limit, but greater than MDL
е	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 2011

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
11CI-PF3OUdS	11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	763051-92-9
9CI-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



Sample Summary (2 samples)

Sample ID	Sample Tag	Matrix	Collected Date/Time
S32541.01	2202042-01A, GTSI0131221049	Biosolids	01/31/22 10:49
S32541.02	2202042-02A, TC 5886-Biosolids Comp	Biosolids	01/31/22 13:15

Report to Prein & Newhof Page 5 of 9 G
Project: Monitoring Report to Prein & Newhof Page 5 of 9



Lab Sample ID: S32541.01

Sample Tag: 2202042-01A, GTSI0131221049 Collected Date/Time: 01/31/2022 10:49

Matrix: Biosolids COC Reference: 834

Sample Containers

#	Туре	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	15ml Centrifuge Tube	None	Yes	6.0	IR
1	250ml Plastic	None	Yes	6.0	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Initial wt. (g) / Final wt. (g) / Volume (ml)*	12.51/7.00/10	ASTM D7968-17M	02/09/22 12:30	KCV	

Inorganics

Method: SM2540B, Run Date: 02/02/22 17:00, Analyst: MAM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Solids*	29	1		%	1		

Organics

28 PFAs, Method: ASTM D7968-17M, Run Date: 02/10/22 00:15, Analyst: KCV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
PFBA*	Not detected	24		ug/kg	62.6	375-22-4	IX
PFPeA*	5.3	0.63		ug/kg	62.6	2706-90-3	
4:2 FTSA*	Not detected	0.63		ug/kg	62.6	757124-72-4	1
PFHxA*	23	0.63		ug/kg	62.6	307-24-4	
PFBS*	17	0.63		ug/kg	62.6	375-73-5	
PFHpA*	7.3	0.63		ug/kg	62.6	375-85-9	
PFPeS*	Not detected	0.63		ug/kg	62.6	2706-91-4	
6:2 FTSA*	2.5	0.63		ug/kg	62.6	27619-97-2	1
PFOA*	37	0.63		ug/kg	62.6	335-67-1	
PFHxS*	4	0.63		ug/kg	62.6	355-46-4	
PFHxS-LN*	3.5	0.63		ug/kg	62.6	355-46-4-LN	
PFHxS-BR*	Not detected	0.63		ug/kg	62.6	355-46-4-BR	
PFNA*	4.4	0.63		ug/kg	62.6	375-95-1	
8:2 FTSA*	6.8	0.63		ug/kg	62.6	39108-34-4	1
PFHpS*	1.1	0.63		ug/kg	62.6	375-92-8	
PFDA*	24	0.63		ug/kg	62.6	335-76-2	
N-MeFOSAA*	37	0.63		ug/kg	62.6	2355-31-9	
EtFOSAA*	17	0.63		ug/kg	62.6	2991-50-6	1
PFOS*	67	0.63		ug/kg	62.6	1763-23-1	
PFOS-LN*	55	0.63		ug/kg	62.6	1763-23-1-LN	
PFOS-BR*	11	0.63		ug/kg	62.6	1763-23-1-BR	
PFUnDA*	2.3	0.63		ug/kg	62.6	2058-94-8	
PFNS*	Not detected	0.63		ug/kg	62.6	68259-12-1	
PFDoDA*	7.8	0.63		ug/kg	62.6	307-55-1	
PFDS*	2.9	0.63		ug/kg	62.6	335-77-3	
PFTrDA*	Not detected	0.63		ug/kg	62.6	72629-94-8	
FOSA*	7.8	0.63		ug/kg	62.6	754-91-6	
PFTeDA*	2.2	0.63		ug/kg	62.6	376-06-7	I 1
11Cl-PF3OUdS*	Not detected	0.63		ug/kg	62.6	763051-92-9	

I-Matrix interference with internal standard X-Elevated reporting limit due to matrix interference 1-IS recovery <10%



Lab Sample ID: S32541.01 (continued)

Sample Tag: 2202042-01A, GTSI0131221049

28 PFAs, Method: ASTM D7968-17M, Run Date: 02/10/22 00:15, Analyst: KCV (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags	
9CI-PF3ONS*	Not detected	0.63		ug/kg	62.6	756426-58-1		
ADONA*	Not detected	0.63		ug/kg	62.6	919005-14-4		
HFPO-DA*	Not detected	0.63		ug/kg	62.6	13252-13-6		



Lab Sample ID: S32541.02

Sample Tag: 2202042-02A, TC 5886-Biosolids Comp

Collected Date/Time: 01/31/2022 13:15

Matrix: Biosolids COC Reference: 834

Sample Containers

#	Туре	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	15ml Centrifuge Tube	None	Yes	6.0	IR
1	250ml Plastic	None	Yes	6.0	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Initial wt. (g) / Final wt. (g) / Volume (ml)*	12.89/7.04/10	ASTM D7968-17M	02/09/22 12:30	KCV	

Inorganics

Method: SM2540B, Run Date: 02/02/22 17:00, Analyst: MAM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Solids*	5.3	1		%	1		

Organics

28 PFAs, Method: ASTM D7968-17M, Run Date: 02/10/22 00:34, Analyst: KCV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
PFBA*	Not detected	0.97		ug/kg	32.3	375-22-4	IX
PFPeA*	0.55	0.32		ug/kg	32.3	2706-90-3	
4:2 FTSA*	Not detected	0.32		ug/kg	32.3	757124-72-4	1
PFHxA*	2.4	0.32		ug/kg	32.3	307-24-4	
PFBS*	Not detected	0.32		ug/kg	32.3	375-73-5	
PFHpA*	Not detected	0.32		ug/kg	32.3	375-85-9	
PFPeS*	Not detected	0.32		ug/kg	32.3	2706-91-4	
6:2 FTSA*	0.5	0.32		ug/kg	32.3	27619-97-2	1
PFOA*	1.7	0.32		ug/kg	32.3	335-67-1	
PFHxS*	0.42	0.32		ug/kg	32.3	355-46-4	
PFHxS-LN*	0.42	0.32		ug/kg	32.3	355-46-4-LN	
PFHxS-BR*	Not detected	0.32		ug/kg	32.3	355-46-4-BR	
PFNA*	1.1	0.32		ug/kg	32.3	375-95-1	
8:2 FTSA*	1.1	0.32		ug/kg	32.3	39108-34-4	1
PFHpS*	Not detected	0.32		ug/kg	32.3	375-92-8	
PFDA*	4.9	0.32		ug/kg	32.3	335-76-2	1
N-MeFOSAA*	15	0.32		ug/kg	32.3	2355-31-9	1
EtFOSAA*	22	0.32		ug/kg	32.3	2991-50-6	1
PFOS*	12	0.32		ug/kg	32.3	1763-23-1	1
PFOS-LN*	9.7	0.32		ug/kg	32.3	1763-23-1-LN	1
PFOS-BR*	1.8	0.32		ug/kg	32.3	1763-23-1-BR	1
PFUnDA*	0.99	0.32		ug/kg	32.3	2058-94-8	l1
PFNS*	Not detected	0.32		ug/kg	32.3	68259-12-1	1
PFDoDA*	1.5	0.32		ug/kg	32.3	307-55-1	l1
PFDS*	1.7	0.32		ug/kg	32.3	335-77-3	1
PFTrDA*	Not detected	0.32		ug/kg	32.3	72629-94-8	l1
FOSA*	3.5	0.32		ug/kg	32.3	754-91-6	
PFTeDA*	Not detected	0.32		ug/kg	32.3	376-06-7	I1
11CI-PF3OUdS*	Not detected	0.32		ug/kg	32.3	763051-92-9	1

I-Matrix interference with internal standard X-Elevated reporting limit due to matrix interference 1-IS recovery <10%



Lab Sample ID: S32541.02 (continued)

Sample Tag: 2202042-02A, TC 5886-Biosolids Comp

28 PFAs, Method: ASTM D7968-17M, Run Date: 02/10/22 00:34, Analyst: KCV (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
9CI-PF3ONS*	Not detected	0.32		ug/kg	32.3	756426-58-1	1
ADONA*	Not detected	0.32		ug/kg	32.3	919005-14-4	
HFPO-DA*	Not detected	0.32		ug/kg	32.3	13252-13-6	1

I-Matrix interference with internal standard

Merit Laboratories Login Checklist

Lab Set ID:S32541

Client:PREINNEWHOF (Prein & Newhof)

Project: Monitoring

Submitted:02/02/2022 12:00 Login User: MMC

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

Phone: 616-364-7600 FAX: ${\it Email: SBylsma@preinnewhof.com}$

Selec	ction			Description	Note
Sam	ple Recei	ving			
01.	X Yes	No	□ N/A	Samples are received at 4C +/- 2C Thermometer #	IR 6.0
02.	X Yes	No	□ N/A	Received on ice/ cooling process begun	
03.	Yes	X No	□ N/A	Samples shipped	UPS
04.	Yes	X No	□ N/A	Samples left in 24 hr. drop box	
05.	Yes	No	X N/A	Are there custody seals/tape or is the drop box locked	
Chai	n of Custo	ody			
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:	
Pres	ervation				
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?	
Bottl	e Conditi	ons			
13.	X Yes	No	N/A	All bottles intact	
14.	X Yes	No	N/A	Appropriate analytical bottles are used	
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	or all exceptions is	to call the client	and to notify	the project ma	nager.
Oliant Daview Dw			Data		
Client Review By: _.			Date:		



CHAIN OF CUSTODY RECORD

Omega COCID 834

PAGE:

OF: 1

ADDRESS

Prein&Newhof Laboratory 3260 Evergreen Dr NE Grand Rapids, MI 49525

Sbylsma e preinnember. com FAX: (616) 364-7600 Website: www.preinnembof.com

SUB CO	JB CONTRATOR: Merit COMPANY:						SPE	ECIAL INSTRUCTIONS / COMMENTS:	
ADDRES	SS:								
CITY, S	TATE, ZIP:		29						
PHONE:		FAX:	EMAIL:					ANALYTICAL PARAMETERS	
ACCOU		Client Sample ID	Bottle Type	MATRIX	DATE COLLECTED	CONTAINERS	PFAS-SUB		COMMENTS Methanol Preserved Weights HOT Sample Notation Additional Sample Description, etc.
1	2202042-01A	GTSI0131221049		Biosolids	1/31/2022 10:49:00 AM	1	1		32541.01
2	2202042-02A	TC 5886- Biosolids C		Biosolids	1/31/2022 1:15:00 PM	1	V		. 02

Relinquished By:	Date:	Time: 1315	Received By:	Date:	Time:	REPORT TRANSMITT ☐ HARDCOPY (extra cost) ☐ FAX		TAL DESIRED: ☐ EMAIL ☐ ONLINE
Relinquished By: UPS Relinquished By:	Date: 2 22 Date:	Time: 1200	Received By: M Cilcolo Received By:	Date: Date:	Time:		ONLY	
	andard [RUSH	Next BD		BD 🗆	Temp of samples Comments:)℃	Attempt to Cool?



Quality Control Report

Report ID: QC-S32541-01 Generated on 02/21/2022

Report to

Attention: Stephen Bylsma

Prein & Newhof

3260 Evergreen Drive NE Grand Rapids, MI 49525

Phone: 616-364-7600 FAX:

Report Produced by

Merit Laboratories 2680 East Lansing Drive East Lansing, MI 48823

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

Report Summary

Lab Sample ID(s): S32541.01-S32541.02

Project: Monitoring

Submitted Date/Time: 02/02/2022 12:00

Sampled by: Unknown

P.O. #:

QC Report Sections

Cover Page (Page 1)

Analysis Summary (Pages 2-3)

Prep Batch Summary (Page 4)

Internal Standards per Lab Sample (Pages 5-6)

Internal Standards per QC Sample (Pages 7-11)

Batch QC Results (Pages 12-16)

Report Flag Descriptions

*: QC result is outside of indicated control limits

W: Surrogate result not applicable due to sample dilution

I certify that this data package is in compliance with the terms and conditions of the program, and project, and contractual requirements both technically and for completeness. Release of the data contained in this hardcopy data package and its computer-readable data submitted has been authorized by the Quality Assurance Manager and his/her designee, as verified by the following signature.

Barbara Ball

Quality Assurance Manager

Bartara Ball

QC Report - Analysis Summary

Lab Sample ID: S32541.01

Sample Tag: 2202042-01A

Collected Date/Time: 01/31/2022 10:49

Matrix: Biosolids COC Reference: 834

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Inorganics						
Total Solids	SM2540B	02/02/22 17:00	TS220202D	TS220202D	No	BLK/LCS/DUP
Organics - Volatiles						
28 PFAs	ASTM D7968-17M	02/10/22 00:15	AK220209	PF220209S1	Yes	BLK/LCS/LCSD/MS/DU

Report to Prein & Newhof Project: Monitoring

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Report ID: QC-S32541-01 Generated on 02/21/2022

QC Report - Analysis Summary

Lab Sample ID: S32541.02

Sample Tag: 2202042-02A

Collected Date/Time: 01/31/2022 13:15

Matrix: Biosolids COC Reference: 834

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Inorganics						
Total Solids	SM2540B	02/02/22 17:00	TS220202D	TS220202D	No	BLK/LCS/DUP
Organics - Volatiles						
28 PFAs	ASTM D7968-17M	02/10/22 00:34	AK220209	PF220209S1	Yes	BLK/LCS/LCSD/MS/DU

Report to Prein & Newhof Project: Monitoring

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Report ID: QC-S32541-01 Generated on 02/21/2022

QC Report - Prep Batch Summary

Inorganics, Prep Batch ID: TS220202D

Surrogates: No, QC Types: BLK/LCS/DUP

Sample ID	Analysis	Method	Run Date/Time	Batch ID
S32541.01	Total Solids	SM2540B	02/02/22 17:00	TS220202D
S32541.02	Total Solids	SM2540B	02/02/22 17:00	TS220202D

Organics - Volatiles, Prep Batch ID: PF220209S1

Surrogates: Yes, QC Types: BLK/LCS/LCSD/MS/DUP

Sample ID	Analysis	Method	Run Date/Time	Batch ID
S32541.01	28 PFAs	ASTM D7968-17M	02/10/22 00:15	AK220209
S32541.02	28 PFAs	ASTM D7968-17M	02/10/22 00:34	AK220209

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Lab Sample ID: S32541.01

Sample Tag: 2202042-01A

Collected Date/Time: 01/31/2022 10:49

Matrix: Biosolids COC Reference: 834

Organics - Volatiles, Analysis: 28 PFAs

Run in Batch: AK220209, Run Date: 02/10/2022 00:15, Matrix: SO, Dilution: 62.6

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA	*	338.4	50.0	150.0
M2-6:2FTSA	*	428.0	50.0	150.0
M2-8:2FTSA	*	462.5	50.0	150.0
M2PFTeDA	*	7.6	12.0	218.0
M3PFBS		75.1	50.0	150.0
M3PFHxS		78.7	50.0	150.0
M4PFHpA		67.8	50.0	150.0
M5PFHxA		51.5	50.0	150.0
M5PFPeA		52.6	50.0	150.0
M6PFDA		50.7	50.0	150.0
M7PFUnDA		64.0	50.0	150.0
M8FOSA		117.3	50.0	150.0
M8PFOA		70.4	50.0	150.0
M8PFOS		80.5	50.0	150.0
M9-PFNA		61.6	50.0	150.0
MPFBA	*	26.8	50.0	150.0
MPFDoDA		58.8	50.0	150.0
d3N-MeFOSAA		110.6	50.0	150.0
d5EtFOSAA	*	150.1	50.0	150.0
MHFPO-DA		144.6	50.0	150.0

Lab Sample ID: S32541.02

Sample Tag: 2202042-02A

Collected Date/Time: 01/31/2022 13:15

Matrix: Biosolids COC Reference: 834

Organics - Volatiles, Analysis: 28 PFAs

Run in Batch: AK220209, Run Date: 02/10/2022 00:34, Matrix: SO, Dilution: 32.3

M2-4:2FTSA * 277.5 50.0 150.0 M2-6:2FTSA * 366.8 50.0 150.0 M2-8:2FTSA * 275.1 50.0 150.0 M2PFTeDA * 0.5 12.0 218.0 M3PFBS 78.6 50.0 150.0 M3PFHxS 74.7 50.0 150.0 M4PFHpA 73.9 50.0 150.0 M5PFHxA 57.1 50.0 150.0 M5PFPeA 60.6 50.0 150.0 M6PFDA * 18.3 50.0 150.0 M7PFUNDA * 7.1 50.0 150.0 M8FOSA 90.8 50.0 150.0 M8PFOA 60.7 50.0 150.0 M8PFOS * 44.4 50.0 150.0 M9-PFNA 51.2 50.0 150.0 MPFBA * 35.2 50.0 150.0 MPFDODA * 2.4 50.0 150.0 d3N-MeFOSAA * 24.6 50.0 150.0	Internal Standard	Flags	%Rec	LCL	UCL
M2-8:2FTSA * 275.1 50.0 150.0 M2PFTeDA * 0.5 12.0 218.0 M3PFBS 78.6 50.0 150.0 M3PFHxS 74.7 50.0 150.0 M4PFHpA 73.9 50.0 150.0 M5PFHxA 57.1 50.0 150.0 M6PFDA * 18.3 50.0 150.0 M7PFUnDA * 7.1 50.0 150.0 M8FOSA 90.8 50.0 150.0 M8PFOA 60.7 50.0 150.0 M8PFOS * 44.4 50.0 150.0 M9-PFNA 51.2 50.0 150.0 MPFBA * 35.2 50.0 150.0 MPFDoDA * 2.4 50.0 150.0 d3N-MeFOSAA * 24.6 50.0 150.0	M2-4:2FTSA				150.0
M2PFTeDA * 0.5 12.0 218.0 M3PFBS 78.6 50.0 150.0 M3PFHxS 74.7 50.0 150.0 M4PFHpA 73.9 50.0 150.0 M5PFHxA 57.1 50.0 150.0 M5PFPeA 60.6 50.0 150.0 M6PFDA * 18.3 50.0 150.0 M7PFUnDA * 7.1 50.0 150.0 M8FOSA 90.8 50.0 150.0 M8PFOA 60.7 50.0 150.0 M9-PFNA 51.2 50.0 150.0 MPFBA * 35.2 50.0 150.0 MPFDoDA * 2.4 50.0 150.0 d3N-MeFOSAA * 24.6 50.0 150.0	M2-6:2FTSA	*	366.8	50.0	150.0
M3PFBS 78.6 50.0 150.0 M3PFHxS 74.7 50.0 150.0 M4PFHpA 73.9 50.0 150.0 M5PFHxA 57.1 50.0 150.0 M5PFPeA 60.6 50.0 150.0 M6PFDA * 18.3 50.0 150.0 M7PFUnDA * 7.1 50.0 150.0 M8FOSA 90.8 50.0 150.0 M8PFOA 60.7 50.0 150.0 M8PFOS * 44.4 50.0 150.0 M9-PFNA 51.2 50.0 150.0 MPFBA * 35.2 50.0 150.0 MPFDODA * 2.4 50.0 150.0 d3N-MeFOSAA * 24.6 50.0 150.0	M2-8:2FTSA	*	275.1	50.0	150.0
M3PFHxS 74.7 50.0 150.0 M4PFHpA 73.9 50.0 150.0 M5PFHxA 57.1 50.0 150.0 M5PFPeA 60.6 50.0 150.0 M6PFDA * 18.3 50.0 150.0 M7PFUnDA * 7.1 50.0 150.0 M8FOSA 90.8 50.0 150.0 M8PFOA 60.7 50.0 150.0 M8PFOS * 44.4 50.0 150.0 M9-PFNA 51.2 50.0 150.0 MPFBA * 35.2 50.0 150.0 MPFDoDA * 2.4 50.0 150.0 d3N-MeFOSAA * 24.6 50.0 150.0	M2PFTeDA	*	0.5	12.0	218.0
M4PFHpA 73.9 50.0 150.0 M5PFHxA 57.1 50.0 150.0 M5PFPeA 60.6 50.0 150.0 M6PFDA * 18.3 50.0 150.0 M7PFUnDA * 7.1 50.0 150.0 M8FOSA 90.8 50.0 150.0 M8PFOA 60.7 50.0 150.0 M8PFOS * 44.4 50.0 150.0 M9-PFNA 51.2 50.0 150.0 MPFBA * 35.2 50.0 150.0 MPFDoDA * 2.4 50.0 150.0 d3N-MeFOSAA * 24.6 50.0 150.0	M3PFBS		78.6	50.0	150.0
M5PFHxA 57.1 50.0 150.0 M5PFPeA 60.6 50.0 150.0 M6PFDA * 18.3 50.0 150.0 M7PFUnDA * 7.1 50.0 150.0 M8FOSA 90.8 50.0 150.0 M8PFOA 60.7 50.0 150.0 M8PFOS * 44.4 50.0 150.0 M9-PFNA 51.2 50.0 150.0 MPFBA * 35.2 50.0 150.0 MPFDODA * 2.4 50.0 150.0 d3N-MeFOSAA * 24.6 50.0 150.0	M3PFHxS		74.7	50.0	150.0
M5PFPeA 60.6 50.0 150.0 M6PFDA * 18.3 50.0 150.0 M7PFUnDA * 7.1 50.0 150.0 M8FOSA 90.8 50.0 150.0 M8PFOA 60.7 50.0 150.0 M8PFOS * 44.4 50.0 150.0 M9-PFNA 51.2 50.0 150.0 MPFBA * 35.2 50.0 150.0 MPFDoDA * 2.4 50.0 150.0 d3N-MeFOSAA * 24.6 50.0 150.0	M4PFHpA		73.9	50.0	150.0
M6PFDA * 18.3 50.0 150.0 M7PFUnDA * 7.1 50.0 150.0 M8FOSA 90.8 50.0 150.0 M8PFOA 60.7 50.0 150.0 M8PFOS * 44.4 50.0 150.0 M9-PFNA 51.2 50.0 150.0 MPFBA * 35.2 50.0 150.0 MPFDoDA * 2.4 50.0 150.0 d3N-MeFOSAA * 24.6 50.0 150.0	M5PFHxA		57.1	50.0	150.0
M7PFUnDA * 7.1 50.0 150.0 M8FOSA 90.8 50.0 150.0 M8PFOA 60.7 50.0 150.0 M8PFOS * 44.4 50.0 150.0 M9-PFNA 51.2 50.0 150.0 MPFBA * 35.2 50.0 150.0 MPFDoDA * 2.4 50.0 150.0 d3N-MeFOSAA * 24.6 50.0 150.0	M5PFPeA		60.6	50.0	150.0
M8FOSA 90.8 50.0 150.0 M8PFOA 60.7 50.0 150.0 M8PFOS * 44.4 50.0 150.0 M9-PFNA 51.2 50.0 150.0 MPFBA * 35.2 50.0 150.0 MPFDoDA * 2.4 50.0 150.0 d3N-MeFOSAA * 24.6 50.0 150.0	M6PFDA	*	18.3	50.0	150.0
M8PFOA 60.7 50.0 150.0 M8PFOS * 44.4 50.0 150.0 M9-PFNA 51.2 50.0 150.0 MPFBA * 35.2 50.0 150.0 MPFDoDA * 2.4 50.0 150.0 d3N-MeFOSAA * 24.6 50.0 150.0	M7PFUnDA	*	7.1	50.0	150.0
M8PFOS * 44.4 50.0 150.0 M9-PFNA 51.2 50.0 150.0 MPFBA * 35.2 50.0 150.0 MPFDoDA * 2.4 50.0 150.0 d3N-MeFOSAA * 24.6 50.0 150.0	M8FOSA		90.8	50.0	150.0
M9-PFNA 51.2 50.0 150.0 MPFBA * 35.2 50.0 150.0 MPFDoDA * 2.4 50.0 150.0 d3N-MeFOSAA * 24.6 50.0 150.0	M8PFOA		60.7	50.0	150.0
MPFBA * 35.2 50.0 150.0 MPFDoDA * 2.4 50.0 150.0 d3N-MeFOSAA * 24.6 50.0 150.0	M8PFOS	*	44.4	50.0	150.0
MPFDDDA	M9-PFNA		51.2	50.0	150.0
d3N-MeFOSAA * 24.6 50.0 150.0	MPFBA	*	35.2	50.0	150.0
USIN-INIEF USAA 24.0 SU.0 150.0	MPFDoDA	*	2.4	50.0	150.0
# 29.2 FO.0 4FO.0	d3N-MeFOSAA	*	24.6	50.0	150.0
USEIFOSAA 36.2 50.0 150.0	d5EtFOSAA	*	38.2	50.0	150.0
MHFPO-DA * 158.3 50.0 150.0	MHFPO-DA	*	158.3	50.0	150.0

Organics - Volatiles, Prep Batch ID: PF220209S1

QC Types: BLK/LCS/LCSD/MS/DUP

Blank (BLK)

Lab Sample ID: AK220209.BLK220209S

Run in Batch: AK220209, Run Date: 02/09/2022 19:22, Prep Date: 02/09/2022, Matrix: SO, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		110.7	50.0	150.0
M2-6:2FTSA		99.1	50.0	150.0
M2-8:2FTSA	*	187.6	50.0	150.0
M2PFTeDA		175.8	12.0	218.0
M3PFBS		98.1	50.0	150.0
M3PFHxS		104.8	50.0	150.0
M4PFHpA		86.8	50.0	150.0
M5PFHxA		96.2	50.0	150.0
M5PFPeA		104.3	50.0	150.0
M6PFDA		94.2	50.0	150.0
M7PFUnDA		111.0	50.0	150.0
M8FOSA		104.7	50.0	150.0
M8PFOA		95.7	50.0	150.0
M8PFOS		109.2	50.0	150.0
M9-PFNA		92.1	50.0	150.0
MPFBA		103.8	50.0	150.0
MPFDoDA		124.4	50.0	150.0
d3N-MeFOSAA	*	218.6	50.0	150.0
d5EtFOSAA		122.7	50.0	150.0
MHFPO-DA		100.9	50.0	150.0

Laboratory Control Sample (LCS)

Lab Sample ID: AK220209.LCS220209S

Run in Batch: AK220209, Run Date: 02/09/2022 18:43, Prep Date: 02/09/2022, Matrix: SO, Dilution: 1

M2-4:2FTSA 107.4 50.0 150.0 M2-6:2FTSA 100.5 50.0 150.0 M2-8:2FTSA 102.2 50.0 150.0 M2PFTeDA 129.3 12.0 218.0 M3PFBS 93.7 50.0 150.0 M3PFHxS 98.5 50.0 150.0 M4PFHpA 92.5 50.0 150.0 M5PFHxA 94.8 50.0 150.0 M5PFPeA 102.1 50.0 150.0 M6PFDA 86.1 50.0 150.0 M7PFUnDA 100.2 50.0 150.0 M8FOSA 99.3 50.0 150.0 M8PFOS 97.6 50.0 150.0 M9-PFNA 78.0 50.0 150.0 MPFBA 99.1 50.0 150.0 MPFDoDA 100.3 50.0 150.0 d3N-MeFOSAA 109.0 50.0 150.0 d5EtFOSAA 103.5 50.0 150.0 MHFPO-DA 93.7 50.0 150.0	Internal Standard	Flags	%Rec	LCL	UCL	
M2-8:2FTSA 102.2 50.0 150.0 M2PFTeDA 129.3 12.0 218.0 M3PFBS 93.7 50.0 150.0 M3PFHxS 98.5 50.0 150.0 M4PFHpA 92.5 50.0 150.0 M5PFP4xA 94.8 50.0 150.0 M5PFPeA 102.1 50.0 150.0 M6PFDA 86.1 50.0 150.0 M7PFUnDA 100.2 50.0 150.0 M8FOSA 99.3 50.0 150.0 M8PFOA 97.0 50.0 150.0 M9-PFNA 78.0 50.0 150.0 MPFDA 99.1 50.0 150.0 MPFDODA 100.3 50.0 150.0 d3N-MeFOSAA 109.0 50.0 150.0 d5EtFOSAA 103.5 50.0 150.0	M2-4:2FTSA		107.4	50.0	150.0	
M2PFTeDA 129.3 12.0 218.0 M3PFBS 93.7 50.0 150.0 M3PFHxS 98.5 50.0 150.0 M4PFHpA 92.5 50.0 150.0 M5PFHxA 94.8 50.0 150.0 M5PFPeA 102.1 50.0 150.0 M6PFDA 86.1 50.0 150.0 M7PFUnDA 100.2 50.0 150.0 M8FOSA 99.3 50.0 150.0 M8PFOS 97.6 50.0 150.0 M9-PFNA 78.0 50.0 150.0 MPFBA 99.1 50.0 150.0 MPFDODA 100.3 50.0 150.0 d3N-MeFOSAA 109.0 50.0 150.0 d5EtFOSAA 103.5 50.0 150.0	M2-6:2FTSA		100.5	50.0	150.0	
M3PFBS 93.7 50.0 150.0 M3PFHxS 98.5 50.0 150.0 M4PFHpA 92.5 50.0 150.0 M5PFHxA 94.8 50.0 150.0 M5PFPeA 102.1 50.0 150.0 M6PFDA 86.1 50.0 150.0 M7PFUnDA 100.2 50.0 150.0 M8FOSA 99.3 50.0 150.0 M8PFOA 97.0 50.0 150.0 M8PFOS 97.6 50.0 150.0 M9-PFNA 78.0 50.0 150.0 MPFBA 99.1 50.0 150.0 MPFDoDA 100.3 50.0 150.0 d3N-MeFOSAA 109.0 50.0 150.0 d5EtFOSAA 103.5 50.0 150.0	M2-8:2FTSA		102.2	50.0	150.0	
M3PFHxS 98.5 50.0 150.0 M4PFHpA 92.5 50.0 150.0 M5PFHxA 94.8 50.0 150.0 M5PFPeA 102.1 50.0 150.0 M6PFDA 86.1 50.0 150.0 M7PFUnDA 100.2 50.0 150.0 M8FOSA 99.3 50.0 150.0 M8PFOA 97.0 50.0 150.0 M8PFOS 97.6 50.0 150.0 M9-PFNA 78.0 50.0 150.0 MPFDoDA 100.3 50.0 150.0 d3N-MeFOSAA 109.0 50.0 150.0 d5EtFOSAA 103.5 50.0 150.0	M2PFTeDA		129.3	12.0	218.0	
M4PFHpA 92.5 50.0 150.0 M5PFHxA 94.8 50.0 150.0 M5PFPeA 102.1 50.0 150.0 M6PFDA 86.1 50.0 150.0 M7PFUnDA 100.2 50.0 150.0 M8FOSA 99.3 50.0 150.0 M8PFOA 97.0 50.0 150.0 M8PFOS 97.6 50.0 150.0 M9-PFNA 78.0 50.0 150.0 MPFDoDA 100.3 50.0 150.0 d3N-MeFOSAA 109.0 50.0 150.0 d5EtFOSAA 103.5 50.0 150.0	M3PFBS		93.7	50.0	150.0	
M5PFHxA 94.8 50.0 150.0 M5PFPeA 102.1 50.0 150.0 M6PFDA 86.1 50.0 150.0 M7PFUnDA 100.2 50.0 150.0 M8FOSA 99.3 50.0 150.0 M8PFOA 97.0 50.0 150.0 M8PFOS 97.6 50.0 150.0 M9-PFNA 78.0 50.0 150.0 MPFBA 99.1 50.0 150.0 MPFDoDA 100.3 50.0 150.0 d3N-MeFOSAA 109.0 50.0 150.0 d5EtFOSAA 103.5 50.0 150.0	M3PFHxS		98.5	50.0	150.0	
M5PFPeA 102.1 50.0 150.0 M6PFDA 86.1 50.0 150.0 M7PFUnDA 100.2 50.0 150.0 M8FOSA 99.3 50.0 150.0 M8PFOA 97.0 50.0 150.0 M8PFOS 97.6 50.0 150.0 M9-PFNA 78.0 50.0 150.0 MPFBA 99.1 50.0 150.0 MPFDoDA 100.3 50.0 150.0 d3N-MeFOSAA 109.0 50.0 150.0 d5EtFOSAA 103.5 50.0 150.0	M4PFHpA		92.5	50.0	150.0	
M6PFDA 86.1 50.0 150.0 M7PFUnDA 100.2 50.0 150.0 M8FOSA 99.3 50.0 150.0 M8PFOA 97.0 50.0 150.0 M8PFOS 97.6 50.0 150.0 M9-PFNA 78.0 50.0 150.0 MPFBA 99.1 50.0 150.0 MPFDoDA 100.3 50.0 150.0 d3N-MeFOSAA 109.0 50.0 150.0 d5EtFOSAA 103.5 50.0 150.0	M5PFHxA		94.8	50.0	150.0	
M7PFUnDA 100.2 50.0 150.0 M8FOSA 99.3 50.0 150.0 M8PFOA 97.0 50.0 150.0 M8PFOS 97.6 50.0 150.0 M9-PFNA 78.0 50.0 150.0 MPFBA 99.1 50.0 150.0 MPFDoDA 100.3 50.0 150.0 d3N-MeFOSAA 109.0 50.0 150.0 d5EtFOSAA 103.5 50.0 150.0	M5PFPeA		102.1	50.0	150.0	
M8FOSA 99.3 50.0 150.0 M8PFOA 97.0 50.0 150.0 M8PFOS 97.6 50.0 150.0 M9-PFNA 78.0 50.0 150.0 MPFBA 99.1 50.0 150.0 MPFDoDA 100.3 50.0 150.0 d3N-MeFOSAA 109.0 50.0 150.0 d5EtFOSAA 103.5 50.0 150.0	M6PFDA		86.1	50.0	150.0	
M8PFOA 97.0 50.0 150.0 M8PFOS 97.6 50.0 150.0 M9-PFNA 78.0 50.0 150.0 MPFBA 99.1 50.0 150.0 MPFDoDA 100.3 50.0 150.0 d3N-MeFOSAA 109.0 50.0 150.0 d5EtFOSAA 103.5 50.0 150.0	M7PFUnDA		100.2	50.0	150.0	
M8PFOS 97.6 50.0 150.0 M9-PFNA 78.0 50.0 150.0 MPFBA 99.1 50.0 150.0 MPFDoDA 100.3 50.0 150.0 d3N-MeFOSAA 109.0 50.0 150.0 d5EtFOSAA 103.5 50.0 150.0	M8FOSA		99.3	50.0	150.0	
M9-PFNA 78.0 50.0 150.0 MPFBA 99.1 50.0 150.0 MPFDoDA 100.3 50.0 150.0 d3N-MeFOSAA 109.0 50.0 150.0 d5EtFOSAA 103.5 50.0 150.0	M8PFOA		97.0	50.0	150.0	
MPFBA 99.1 50.0 150.0 MPFDoDA 100.3 50.0 150.0 d3N-MeFOSAA 109.0 50.0 150.0 d5EtFOSAA 103.5 50.0 150.0	M8PFOS		97.6	50.0	150.0	
MPFDoDA 100.3 50.0 150.0 d3N-MeFOSAA 109.0 50.0 150.0 d5EtFOSAA 103.5 50.0 150.0	M9-PFNA		78.0	50.0	150.0	
d3N-MeFOSAA 109.0 50.0 150.0 d5EtFOSAA 103.5 50.0 150.0	MPFBA		99.1	50.0	150.0	
d5EtFOSAA 103.5 50.0 150.0	MPFDoDA		100.3	50.0	150.0	
	d3N-MeFOSAA		109.0	50.0	150.0	
MHFPO-DA 93.7 50.0 150.0	d5EtFOSAA		103.5	50.0	150.0	
	MHFPO-DA		93.7	50.0	150.0	

Laboratory Control Sample Duplicate (LCSD)

Lab Sample ID: AK220209.LCSD220209S, Parent Sample ID: AK220209.LCS220209S

Run in Batch: AK220209, Run Date: 02/09/2022 19:03, Prep Date: 02/09/2022, Matrix: SO, Dilution: 1

M2-6:2FTSA 121.0 50.0 150.0 M2-8:2FTSA 103.2 50.0 150.0 M2PFTeDA 131.2 12.0 218.0 M3PFBS 92.3 50.0 150.0 M3PFHXS 93.5 50.0 150.0 M4PFHpA 96.2 50.0 150.0 M5PFHXA 101.5 50.0 150.0 M5PFPeA 103.8 50.0 150.0 M6PFDA 91.7 50.0 150.0 M7PFUnDA 104.5 50.0 150.0 M8FOSA 100.1 50.0 150.0 M8PFOS 103.6 50.0 150.0 M8PFOS 103.6 50.0 150.0 MPFBA 101.1 50.0 150.0 MPFDODA 104.9 50.0 150.0 d3N-MeFOSAA 110.2 50.0 150.0 d5EtFOSAA 110.3 50.0 150.0	Internal Standard	Flags	%Rec	LCL	UCL
M2-8:2FTSA 103.2 50.0 150.0 M2PFTeDA 131.2 12.0 218.0 M3PFBS 92.3 50.0 150.0 M3PFHxS 93.5 50.0 150.0 M4PFHpA 96.2 50.0 150.0 M5PFHxA 101.5 50.0 150.0 M5PFPeA 103.8 50.0 150.0 M6PFDA 91.7 50.0 150.0 M7PFUnDA 104.5 50.0 150.0 M8FOSA 100.1 50.0 150.0 M8PFOA 87.9 50.0 150.0 M9-PFNA 84.2 50.0 150.0 MPFBA 101.1 50.0 150.0 MPFDODA 104.9 50.0 150.0 d3N-MeFOSAA 110.2 50.0 150.0 d5EtFOSAA 110.3 50.0 150.0	M2-4:2FTSA		100.2	50.0	150.0
M2PFTeDA 131.2 12.0 218.0 M3PFBS 92.3 50.0 150.0 M3PFHxS 93.5 50.0 150.0 M4PFHpA 96.2 50.0 150.0 M5PFHxA 101.5 50.0 150.0 M5PFPeA 103.8 50.0 150.0 M6PFDA 91.7 50.0 150.0 M7PFUnDA 104.5 50.0 150.0 M8FOSA 100.1 50.0 150.0 M8PFOS 103.6 50.0 150.0 M9-PFNA 84.2 50.0 150.0 MPFBA 101.1 50.0 150.0 MPFDODA 104.9 50.0 150.0 d3N-MeFOSAA 110.2 50.0 150.0 d5EtFOSAA 110.3 50.0 150.0	M2-6:2FTSA		121.0	50.0	150.0
M3PFBS 92.3 50.0 150.0 M3PFHxS 93.5 50.0 150.0 M4PFHpA 96.2 50.0 150.0 M5PFHxA 101.5 50.0 150.0 M5PFPeA 103.8 50.0 150.0 M6PFDA 91.7 50.0 150.0 M7PFUnDA 104.5 50.0 150.0 M8FOSA 100.1 50.0 150.0 M8PFOA 87.9 50.0 150.0 M8PFOS 103.6 50.0 150.0 M9-PFNA 84.2 50.0 150.0 MPFBA 101.1 50.0 150.0 MPFDODA 104.9 50.0 150.0 d3N-MeFOSAA 110.2 50.0 150.0 d5EtFOSAA 110.3 50.0 150.0	M2-8:2FTSA		103.2	50.0	150.0
M3PFHxS 93.5 50.0 150.0 M4PFHpA 96.2 50.0 150.0 M5PFHxA 101.5 50.0 150.0 M5PFPeA 103.8 50.0 150.0 M6PFDA 91.7 50.0 150.0 M7PFUnDA 104.5 50.0 150.0 M8FOSA 100.1 50.0 150.0 M8PFOA 87.9 50.0 150.0 M8PFOS 103.6 50.0 150.0 M9-PFNA 84.2 50.0 150.0 MPFDA 101.1 50.0 150.0 MPFDODA 104.9 50.0 150.0 d3N-MeFOSAA 110.2 50.0 150.0 d5EtFOSAA 110.3 50.0 150.0	M2PFTeDA		131.2	12.0	218.0
M4PFHpA 96.2 50.0 150.0 M5PFHxA 101.5 50.0 150.0 M5PFPeA 103.8 50.0 150.0 M6PFDA 91.7 50.0 150.0 M7PFUnDA 104.5 50.0 150.0 M8FOSA 100.1 50.0 150.0 M8PFOA 87.9 50.0 150.0 M8PFOS 103.6 50.0 150.0 M9-PFNA 84.2 50.0 150.0 MPFDA 101.1 50.0 150.0 MPFDODA 104.9 50.0 150.0 d3N-MeFOSAA 110.2 50.0 150.0 d5EtFOSAA 110.3 50.0 150.0	M3PFBS		92.3	50.0	150.0
M5PFHxA 101.5 50.0 150.0 M5PFPeA 103.8 50.0 150.0 M6PFDA 91.7 50.0 150.0 M7PFUnDA 104.5 50.0 150.0 M8FOSA 100.1 50.0 150.0 M8PFOA 87.9 50.0 150.0 M8PFOS 103.6 50.0 150.0 M9-PFNA 84.2 50.0 150.0 MPFBA 101.1 50.0 150.0 MPFDoDA 104.9 50.0 150.0 d3N-MeFOSAA 110.2 50.0 150.0 d5EtFOSAA 110.3 50.0 150.0	M3PFHxS		93.5	50.0	150.0
M5PFPeA 103.8 50.0 150.0 M6PFDA 91.7 50.0 150.0 M7PFUnDA 104.5 50.0 150.0 M8FOSA 100.1 50.0 150.0 M8PFOA 87.9 50.0 150.0 M8PFOS 103.6 50.0 150.0 M9-PFNA 84.2 50.0 150.0 MPFBA 101.1 50.0 150.0 MPFDoDA 104.9 50.0 150.0 d3N-MeFOSAA 110.2 50.0 150.0 d5EtFOSAA 110.3 50.0 150.0	M4PFHpA		96.2	50.0	150.0
M6PFDA 91.7 50.0 150.0 M7PFUnDA 104.5 50.0 150.0 M8FOSA 100.1 50.0 150.0 M8PFOA 87.9 50.0 150.0 M8PFOS 103.6 50.0 150.0 M9-PFNA 84.2 50.0 150.0 MPFBA 101.1 50.0 150.0 MPFDoDA 104.9 50.0 150.0 d3N-MeFOSAA 110.2 50.0 150.0 d5EtFOSAA 110.3 50.0 150.0	M5PFHxA		101.5	50.0	150.0
M7PFUnDA 104.5 50.0 150.0 M8FOSA 100.1 50.0 150.0 M8PFOA 87.9 50.0 150.0 M8PFOS 103.6 50.0 150.0 M9-PFNA 84.2 50.0 150.0 MPFBA 101.1 50.0 150.0 MPFDoDA 104.9 50.0 150.0 d3N-MeFOSAA 110.2 50.0 150.0 d5EtFOSAA 110.3 50.0 150.0	M5PFPeA		103.8	50.0	150.0
M8FOSA 100.1 50.0 150.0 M8PFOA 87.9 50.0 150.0 M8PFOS 103.6 50.0 150.0 M9-PFNA 84.2 50.0 150.0 MPFBA 101.1 50.0 150.0 MPFDoDA 104.9 50.0 150.0 d3N-MeFOSAA 110.2 50.0 150.0 d5EtFOSAA 110.3 50.0 150.0	M6PFDA		91.7	50.0	150.0
M8PFOA 87.9 50.0 150.0 M8PFOS 103.6 50.0 150.0 M9-PFNA 84.2 50.0 150.0 MPFBA 101.1 50.0 150.0 MPFDoDA 104.9 50.0 150.0 d3N-MeFOSAA 110.2 50.0 150.0 d5EtFOSAA 110.3 50.0 150.0	M7PFUnDA		104.5	50.0	150.0
M8PFOS 103.6 50.0 150.0 M9-PFNA 84.2 50.0 150.0 MPFBA 101.1 50.0 150.0 MPFDoDA 104.9 50.0 150.0 d3N-MeFOSAA 110.2 50.0 150.0 d5EtFOSAA 110.3 50.0 150.0	M8FOSA		100.1	50.0	150.0
M9-PFNA 84.2 50.0 150.0 MPFBA 101.1 50.0 150.0 MPFDoDA 104.9 50.0 150.0 d3N-MeFOSAA 110.2 50.0 150.0 d5EtFOSAA 110.3 50.0 150.0	M8PFOA		87.9	50.0	150.0
MPFBA 101.1 50.0 150.0 MPFDoDA 104.9 50.0 150.0 d3N-MeFOSAA 110.2 50.0 150.0 d5EtFOSAA 110.3 50.0 150.0	M8PFOS		103.6	50.0	150.0
MPFDoDA 104.9 50.0 150.0 d3N-MeFOSAA 110.2 50.0 150.0 d5EtFOSAA 110.3 50.0 150.0	M9-PFNA		84.2	50.0	150.0
d3N-MeFOSAA 110.2 50.0 150.0 d5EtFOSAA 110.3 50.0 150.0	MPFBA		101.1	50.0	150.0
d5EtFOSAA 110.3 50.0 150.0	MPFDoDA		104.9	50.0	150.0
	d3N-MeFOSAA		110.2	50.0	150.0
MHFPO-DA 97.3 50.0 150.0	d5EtFOSAA		110.3	50.0	150.0
	MHFPO-DA		97.3	50.0	150.0

Matrix Spike (MS)

Lab Sample ID: AK220209.3224307M, Parent Sample ID: S32243.07

Run in Batch: AK220209, Run Date: 02/09/2022 20:21, Prep Date: 02/09/2022, Matrix: SO, Dilution: 13.2

Internal Standard	Flags	%Rec	LCL	UCL	
M2-4:2FTSA		134.6	50.0	150.0	
M2-6:2FTSA		135.1	50.0	150.0	
M2-8:2FTSA	*	160.9	50.0	150.0	
M2PFTeDA		173.3	12.0	218.0	
M3PFBS		110.7	50.0	150.0	
M3PFHxS		108.5	50.0	150.0	
M4PFHpA		99.1	50.0	150.0	
M5PFHxA		102.5	50.0	150.0	
M5PFPeA		111.1	50.0	150.0	
M6PFDA		99.4	50.0	150.0	
M7PFUnDA		123.0	50.0	150.0	
M8FOSA		107.1	50.0	150.0	
M8PFOA		103.5	50.0	150.0	
M8PFOS		112.4	50.0	150.0	
M9-PFNA		88.2	50.0	150.0	
MPFBA		110.4	50.0	150.0	
MPFDoDA		142.5	50.0	150.0	
d3N-MeFOSAA		132.0	50.0	150.0	
d5EtFOSAA		131.9	50.0	150.0	
MHFPO-DA		112.9	50.0	150.0	

Duplicate (DUP)

Lab Sample ID: AK220209.3224309D, Parent Sample ID: S32243.09

Run in Batch: AK220209, Run Date: 02/09/2022 21:00, Prep Date: 02/09/2022, Matrix: SO, Dilution: 13.4

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA	*	199.7	50.0	150.0
M2-6:2FTSA	*	222.0	50.0	150.0
M2-8:2FTSA	*	239.7	50.0	150.0
M2PFTeDA		136.4	12.0	218.0
M3PFBS		100.1	50.0	150.0
M3PFHxS		99.5	50.0	150.0
M4PFHpA		99.2	50.0	150.0
M5PFHxA		97.1	50.0	150.0
M5PFPeA		105.4	50.0	150.0
M6PFDA		100.0	50.0	150.0
M7PFUnDA		114.4	50.0	150.0
M8FOSA		101.9	50.0	150.0
M8PFOA		99.5	50.0	150.0
M8PFOS		97.5	50.0	150.0
M9-PFNA		96.7	50.0	150.0
MPFBA		104.8	50.0	150.0
MPFDoDA		123.7	50.0	150.0
d3N-MeFOSAA		137.3	50.0	150.0
d5EtFOSAA	*	163.0	50.0	150.0
MHFPO-DA		101.0	50.0	150.0

Inorganics, Prep Batch ID: TS220202D

Surrogates: No, QC Types: BLK/LCS/DUP

Blank (BLK)

Lab Sample ID: TS220202D.LRB1

Run in Batch: TS220202D, Run Date: 02/02/2022 17:00, Prep Date: 02/02/2022, Matrix: Liquid, Dilution: 1

Analyte	Flags Conc	RDL	Units
Total Solids	ND	1	%

Laboratory Control Sample (LCS)

Lab Sample ID: TS220202D.LCS1

Run in Batch: TS220202D, Run Date: 02/02/2022 17:00, Prep Date: 02/02/2022, Matrix: Liquid, Dilution: 1

Analyte	Flags % Rec	LCL	UCL
Total Solids	100	90	110

Duplicate (DUP)

Lab Sample ID: TS220202D.DP1, Parent Sample ID: S32522.07

Run in Batch: TS220202D, Run Date: 02/02/2022 17:00, Prep Date: 02/02/2022, Matrix: Soil, Dilution: 1

Analyte	Flags RPD	RPD CL
Total Solids	1	5

Duplicate (DUP)

Lab Sample ID: TS220202D.DP2, Parent Sample ID: S32525.01

Run in Batch: TS220202D, Run Date: 02/02/2022 17:00, Prep Date: 02/02/2022, Matrix: Soil, Dilution: 1

Analyte	Flags RPD	RPD CL
Total Solids	0	5

Report to Prein & Newhof Project: Monitoring

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Report ID: QC-S32541-01 Generated on 02/21/2022

Organics - Volatiles, Prep Batch ID: PF220209S1

Surrogates: Yes, QC Types: BLK/LCS/LCSD/MS/DUP

Blank (BLK)

Lab Sample ID: AK220209.BLK220209S

Run in Batch: AK220209, Run Date: 02/09/2022 19:22, Prep Date: 02/09/2022, Matrix: SO, Dilution: 1

Analyte	Flags	Conc	RDL	Units
PFBA		ND	5	ng/kg
PFPeA		ND	2	ng/kg
4:2 FTSA		ND	1	ng/kg
PFHxA		ND	1	ng/kg
PFBS		ND	1	ng/kg
HFPO-DA		ND	1	ng/kg
PFHpA		ND	1	ng/kg
PFPeS		ND	1	ng/kg
ADONA		ND	1	ng/kg
6:2 FTSA		ND	1	ng/kg
PFOA		ND	1	ng/kg
PFHxS-BR		ND	1	ng/kg
PFHxS		ND	1	ng/kg
PFHxS-LN		ND	1	ng/kg
PFNA		ND	1	ng/kg
8:2 FTSA		ND	1	ng/kg
PFHpS		ND	1	ng/kg
N-MeFOSAA		ND	1	ng/kg
PFDA		ND	1	ng/kg
PFOS-BR		ND	1	ng/kg
PFOS		ND	1	ng/kg
EtFOSAA		ND	2	ng/kg
PFOS-LN		ND	1	ng/kg
PFUnDA		ND	1	ng/kg
9CL-PF3ONS		ND	1	ng/kg
PFNS		ND	1	ng/kg
PFDoDA		ND	1	ng/kg
PFDS		ND	1	ng/kg
PFTrDA		ND	1	ng/kg
11CL-PF3OUdS		ND	1	ng/kg
FOSA		ND	1	ng/kg
PFTeDA		ND	2	ng/kg

Laboratory Control Sample (LCS)

Lab Sample ID: AK220209.LCS220209S

Run in Batch: AK220209, Run Date: 02/09/2022 18:43, Prep Date: 02/09/2022, Matrix: SO, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
PFBA		102.2	70.0	130.0
PFPeA		94.6	70.0	130.0
4:2 FTSA		101.0	70.0	130.0
PFHxA		104.4	70.0	130.0
PFBS		111.6	70.0	130.0
HFPO-DA		98.2	70.0	130.0
PFHpA		93.8	70.0	130.0
PFPeS		102.2	70.0	130.0
ADONA		106.0	70.0	130.0

Organics - Volatiles, Prep Batch ID: PF220209S1 (continued)

Surrogates: Yes, QC Types: BLK/LCS/LCSD/MS/DUP

Laboratory Control Sample (LCS) (continued)

Lab Sample ID: AK220209.LCS220209S

Run in Batch: AK220209, Run Date: 02/09/2022 18:43, Prep Date: 02/09/2022, Matrix: SO, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
6:2 FTSA		103.0	70.0	130.0
PFOA		81.8	70.0	130.0
PFHxS		110.2	70.0	130.0
PFNA		112.6	70.0	130.0
8:2 FTSA		95.0	70.0	130.0
PFHpS		121.0	70.0	130.0
N-MeFOSAA		76.0	70.0	130.0
PFDA		98.2	70.0	130.0
PFOS		79.0	70.0	130.0
EtFOSAA		100.6	70.0	130.0
PFUnDA		100.0	70.0	130.0
9CL-PF3ONS		104.2	70.0	130.0
PFNS		102.0	70.0	130.0
PFDoDA		109.6	70.0	130.0
PFDS		111.4	70.0	130.0
PFTrDA		122.4	70.0	130.0
11CL-PF3OUdS	*	136.0	70.0	130.0
FOSA		112.0	70.0	130.0
PFTeDA		86.2	70.0	130.0

Laboratory Control Sample Duplicate (LCSD)

Lab Sample ID: AK220209.LCSD220209S, Parent Sample ID: AK220209.LCS220209S

Run in Batch: AK220209, Run Date: 02/09/2022 19:03, Prep Date: 02/09/2022, Matrix: SO, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL	RPD	RPD CL
PFBA		102.2	70.0	130.0	0.0	30.0
PFPeA		96.8	70.0	130.0	2.3	30.0
4:2 FTSA		116.4	70.0	130.0	14.2	30.0
PFHxA		93.8	70.0	130.0	10.7	30.0
PFBS	*	131.2	70.0	130.0	16.1	30.0
HFPO-DA		101.2	70.0	130.0	3.0	30.0
PFHpA		91.8	70.0	130.0	2.2	30.0
PFPeS		110.8	70.0	130.0	8.1	30.0
ADONA		119.4	70.0	130.0	11.9	30.0
6:2 FTSA		86.8	70.0	130.0	17.1	30.0
PFOA		106.4	70.0	130.0	26.1	30.0
PFHxS		117.8	70.0	130.0	6.7	30.0
PFNA		89.2	70.0	130.0	23.2	30.0
8:2 FTSA		95.0	70.0	130.0	0.0	30.0
PFHpS		116.2	70.0	130.0	4.0	30.0
N-MeFOSAA		73.0	70.0	130.0	4.0	30.0
PFDA		99.0	70.0	130.0	0.8	30.0
PFOS		85.8	70.0	130.0	8.3	30.0
EtFOSAA		101.8	70.0	130.0	1.2	30.0
PFUnDA		88.0	70.0	130.0	12.8	30.0
9CL-PF3ONS		97.4	70.0	130.0	6.7	30.0
PFNS		115.4	70.0	130.0	12.3	30.0

Organics - Volatiles, Prep Batch ID: PF220209S1 (continued)

Surrogates: Yes, QC Types: BLK/LCS/LCSD/MS/DUP

Laboratory Control Sample Duplicate (LCSD) (continued)

Lab Sample ID: AK220209.LCSD220209S, Parent Sample ID: AK220209.LCS220209S

Run in Batch: AK220209, Run Date: 02/09/2022 19:03, Prep Date: 02/09/2022, Matrix: SO, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL	RPD	RPD CL
PFDoDA		104.0	70.0	130.0	5.2	30.0
PFDS		94.6	70.0	130.0	16.3	30.0
PFTrDA		126.0	70.0	130.0	2.9	30.0
11CL-PF3OUdS	*	131.2	70.0	130.0	3.6	30.0
FOSA		110.0	70.0	130.0	1.8	30.0
PFTeDA		83.8	70.0	130.0	2.8	30.0

Matrix Spike (MS)

Lab Sample ID: AK220209.3224307M, Parent Sample ID: S32243.07

Run in Batch: AK220209, Run Date: 02/09/2022 20:21, Prep Date: 02/09/2022, Matrix: SO, Dilution: 13.2

Analyte	Flags	% Rec	LCL	UCL
PFBA		100.0	70.0	130.0
PFPeA		92.4	70.0	130.0
4:2 FTSA		110.6	70.0	130.0
PFHxA		103.0	70.0	130.0
PFBS		109.1	70.0	130.0
PFHpA		98.5	70.0	130.0
PFPeS		89.4	70.0	130.0
6:2 FTSA		106.1	70.0	130.0
PFOA		87.9	70.0	130.0
PFHxS		115.2	70.0	130.0
PFNA		95.5	70.0	130.0
8:2 FTSA		92.4	70.0	130.0
PFHpS		106.1	70.0	130.0
PFDA		93.9	70.0	130.0
N-MeFOSAA		74.2	70.0	130.0
EtFOSAA		98.5	70.0	130.0
PFOS	*	139.2	70.0	130.0
PFUnDA		90.9	70.0	130.0
PFNS		90.9	70.0	130.0
PFDoDA		93.9	70.0	130.0
PFDS		100.0	70.0	130.0
PFTrDA		106.1	70.0	130.0
FOSA		95.5	70.0	130.0
PFTeDA		78.8	70.0	130.0
11CL-PF3OUdS	*	130.3	70.0	130.0
9CL-PF3ONS		87.9	70.0	130.0
ADONA		106.1	70.0	130.0
HFPO-DA		86.4	70.0	130.0

Duplicate (DUP)

Lab Sample ID: AK220209.3224309D, Parent Sample ID: S32243.09

Run in Batch: AK220209, Run Date: 02/09/2022 21:00, Prep Date: 02/09/2022, Matrix: SO, Dilution: 13.4

Analyte	Flags	RPD	RPD CL
PFBA		NC	30.0
PFPeA		NC	30.0

Organics - Volatiles, Prep Batch ID: PF220209S1 (continued)

Surrogates: Yes, QC Types: BLK/LCS/LCSD/MS/DUP

Duplicate (DUP) (continued)

Lab Sample ID: AK220209.3224309D, Parent Sample ID: S32243.09

Run in Batch: AK220209, Run Date: 02/09/2022 21:00, Prep Date: 02/09/2022, Matrix: SO, Dilution: 13.4

Run in Batch: AK220209,	Run Date: 02/09/2022 21:00,	Prep Da	te: 02/09/2022,	Matrix: SO,	Dilution: 13.4	4		
Analyte	Flags	RPD	RPD CL					
4:2 FTSA		NC	30.0					
PFHxA		NC	30.0					
PFBS		NC	30.0					
PFHpA		NC	30.0					
PFPeS		NC	30.0					
6:2 FTSA		NC	30.0					
PFOA		22.2	30.0					
PFHxS		NC	30.0					
PFHxS-LN		NC	30.0					
PFHxS-BR		NC	30.0					
PFNA		28.0	30.0					
8:2 FTSA		NC	30.0					
PFHpS		NC	30.0					
PFDA		NC	30.0					
N-MeFOSAA		NC	30.0					
EtFOSAA		NC	30.0					
PFOS		21.1	30.0					
PFOS-LN		25.0	30.0					
PFOS-BR		NC	30.0					
PFUnDA		NC	30.0					
PFNS		NC	30.0					
PFDoDA		NC	30.0					
PFDS		NC	30.0					
PFTrDA		NC	30.0					
FOSA		NC	30.0					
PFTeDA		NC	30.0					
11CL-PF3OUdS		NC	30.0					
9CL-PF3ONS		NC	30.0					
ADONA		NC	30.0					
HFPO-DA		NC	30.0					



CHAIN OF CUSTODY RECORD

Omega COCID 834

PAGE:

OF: 1

ADDRESS

Prein&Newhof Laboratory 3260 Evergreen Dr NE Grand Rapids, MI 49525

Sbylsma e preinnember. com FAX: (616) 364-7600 Website: www.preinnembof.com

SUB CO	^{NTRATOR:} Merit	C	OMPANY:				SP	ECIAL INSTRUCTIONS / COMMENTS:	
ADDRES	SS:							4	
CITY, S	TATE, ZIP:								
PHONE:		FAX:	EMAIL:					ANALYTICAL PARAMETERS	
ACCOU		Client Sample ID	Bottle Type	MATRIX	DATE COLLECTED	CONTAINERS	PFAS-SUB		COMMENTS Methanol Preserved Weights HOT Sample Notation Additional Sample Description, etc.
1	2202042-01A	GTSI0131221049		Biosolids	1/31/2022 10:49:00 AM	1	1		32541.01
2	2202042-02A	TC 5886- Biosolids C		Biosolids	1/31/2022 1:15:00 PM	1	V		. 02

Relinquished By:	Date:	Time: 1315	Received By:	Date:	Time:	REPORT	REPORT TRANSMITTAL DESIRED: HARDCOPY (extra cost)				
Relinquished By: UPS Relinquished By:	Date: 2 22 Date:	Time: 1200 Time:	Received By: M Clilcolo Received By:	Date: Date:	Time:		FOR LAB USE				
	andard [RUSH	Next BD		BD 🗆	Temp of samples Comments:)℃	Attempt to Cool?			

PREIN & NEWHOF

t 616-364-7600 f. 616-364-4222 Grand Rapids, WI 49525 3260 Evergreen Dr NE Relinquished By: Name/Date/Time Relinquished By: Name/Date/Pine 72hc2. Lab Sample ID Josh Wed 21/31/22 1/31/22 Date 1:150 10:49 CHAIN OF CUSTODY Time M 1/31/22 2:000 6-15-1013122 1049 TC5886- Sirvedity comp Sample Description Sampler Send Results to 多 PAZ Client Jacobs Project TC & G-TSF PFAS Received By: Name/Date/Time Received for Laboratory By: Name/Date/Time JL/JP Josh Lych Analysis Requested 2 Preservative 2/1/22 1130 Field + Brosolids Slutge Sludge Matrix

Temp on Receipt_