

Report ID: S24693.01(01) Generated on 06/17/2021

Report to

Attention: Don Popma Biotech Agronomics, Inc. 1651 Beulah Highway Beulah, MI 49617

Phone: 616-835-0100 FAX: Email: dpopma@biotechag.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): S24693.01 Project: Eaton Rapids WWTP Collected Date(s): 05/27/2021

Submitted Date/Time: 05/27/2021 13:13

Sampled by: Don Popma

P.O. #:

Table of Contents

Cover Page (Page 1)

General Report Notes (Page 2)

Report Narrative (Page 2)

Laboratory Certifications (Page 3)

Qualifier Descriptions (Page 3)

Glossary of Abbreviations (Page 3)

Method Summary (Page 4)

Sample Summary (Page 5)

Maya Murshak Technical Director

Naya Mushah



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).

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.

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

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
1	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.
х	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 (1 samples)

Sample ID Sample Tag Matrix Collected Date/Time

S24693.01 Biosolids Sludge 05/27/21 11:00



Lab Sample ID: S24693.01

Sample Tag: Biosolids

Collected Date/Time: 05/27/2021 11:00

Matrix: Sludge

COC Reference: 137692

Sample Containers

#	Туре	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	15ml Centrifuge Tube	None	Yes	3.9	IR
1	250ml Plastic	None	Yes	3.9	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Initial wt. (g) / Final wt. (g) / Volume (ml)*	14.02/7.00/10	ASTM D7968-17M	06/07/21 12:00	KCV	

Inorganics

Method: SM2540B, Run Date: 05/28/21 15:35, Analyst: BJB

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Solids*	2.7	1		%	1		

Organics

28 PFAs, Method: ASTM D7968-17M, Run Date: 06/09/21 06:51, Analyst: KCV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
PFBA*	2.4	1.1		ug/kg	52.8	375-22-4	I
PFPeA*	1.8	0.53		ug/kg	52.8	2706-90-3	1
4:2 FTSA*	Not detected	0.53		ug/kg	52.8	757124-72-4	1
PFHxA*	4	0.53		ug/kg	52.8	307-24-4	1
PFBS*	1.6	0.53		ug/kg	52.8	375-73-5	1
PFHpA*	Not detected	0.53		ug/kg	52.8	375-85-9	1
PFPeS*	Not detected	0.53		ug/kg	52.8	2706-91-4	1
6:2 FTSA*	Not detected	0.53		ug/kg	52.8	27619-97-2	1
PFOA*	2.7	0.53		ug/kg	52.8	335-67-1	
PFHxS*	Not detected	1.1		ug/kg	52.8	355-46-4	Χ
PFHxS-LN*	Not detected	0.53		ug/kg	52.8	355-46-4-LN	
PFHxS-BR*	Not detected	0.53		ug/kg	52.8	355-46-4-BR	
PFNA*	Not detected	0.53		ug/kg	52.8	375-95-1	
8:2 FTSA*	Not detected	0.53		ug/kg	52.8	39108-34-4	
PFHpS*	Not detected	0.53		ug/kg	52.8	375-92-8	
PFDA*	2.7	0.53		ug/kg	52.8	335-76-2	1
N-MeFOSAA*	11	0.53		ug/kg	52.8	2355-31-9	
EtFOSAA*	4.2	0.53		ug/kg	52.8	2991-50-6	1
PFOS*	7.4	0.53		ug/kg	52.8	1763-23-1	1
PFOS-LN*	5.9	0.53		ug/kg	52.8	1763-23-1-LN	1
PFOS-BR*	1.1	0.53		ug/kg	52.8	1763-23-1-BR	1
PFUnDA*	Not detected	0.53		ug/kg	52.8	2058-94-8	1
PFNS*	Not detected	0.53		ug/kg	52.8	68259-12-1	1
PFDoDA*	Not detected	1.9		ug/kg	52.8	307-55-1	I1X
PFDS*	Not detected	0.53		ug/kg	52.8	335-77-3	1
PFTrDA*	Not detected	0.53		ug/kg	52.8	72629-94-8	I1
FOSA*	1.9	0.53		ug/kg	52.8	754-91-6	
PFTeDA*	Not detected	0.53		ug/kg	52.8	376-06-7	I1

I-Matrix interference with internal standard

X-Elevated reporting limit due to matrix interference

1-IS recovery <10%



Lab Sample ID: S24693.01 (continued)

Sample Tag: Biosolids

28 PFAs, Method: ASTM D7968-17M, Run Date: 06/09/21 06:51, Analyst: KCV (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
11CI-PF3OUdS*	Not detected	0.53		ug/kg	52.8	763051-92-9	I
9CI-PF3ONS*	Not detected	0.53		ug/kg	52.8	756426-58-1	1
ADONA*	Not detected	0.53		ug/kg	52.8	919005-14-4	
HFPO-DA*	Not detected	0.53		ug/kg	52.8	13252-13-6	

I-Matrix interference with internal standard

Merit Laboratories Login Checklist

Lab Set ID:S24693

Client:BIOTECHAGRO (Biotech Agronomics, Inc.)

Project: Eaton Rapids WWTP

Submitted:05/27/2021 13:13 Login User: REJ

Attention: Don Popma

Address: Biotech Agronomics, Inc. 1651 Beulah Highway Beulah, MI 49617

Phone: 616-835-0100 FAX: Email: dpopma@biotechag.com

Selec	tion			Description	Note
Samı	ole Receiv	/ing			
01.	X Yes	No	□ N/A	Samples are received at 4C +/- 2C Thermometer #	IR 3.9
02.	X Yes	No	□ N/A	Received on ice/ cooling process begun	
03.	Yes	X No	□ N/A	Samples shipped	
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 Conditio	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 all exception	ns is to call the client and to	notify the project manager.
Client Review By:		Date:

2680 East Lansing Dr., East Lansing, MI 48823 Phone (517) 332-0167 Fax (517) 332-4034 www.meritlabs.com

C.O.C. PAG	E #	OF
------------	-----	----

137692

D = D 0 D 3	T TO		Laboratories, Inc.	CHAI	NOF	CUS	ST	OD	Y R	EC	OF	RD								IN	VOIC	E TO		
TEI OILI IO										STODY RECORD INVOICE SAME														
COMPANY BIOTECH AGRONOMICS, INC. ADDRESS 1651 Beulah Hwy STATE ZIP, CODE.											COMPANY													
COMPANY BIO	DDRE	22			1	<u> </u>	day i		17_32					×	r', n									
ADDRESS 1651 Benjah Hwy mand to me be been to a series												, id	11111			67		1775	STATE	ZI	P CODE	Ti pili		
Beulah STATE MT ZIP, CODE 17							PHONE NO. E-MAIL ADDRESS														0			
PHONE NO. 616-835-0100 FAX NO.				P.O. NO.	P.O. NO.				E NO.				ref	E-MAIL ADDINESS										
E-MAIL ADDRESS POPMA & DIOTECHAG, COM QUOTENO.										14	a li	ANA	LYSIS	(ATTA)	CH LIS	STIF	/ORI	SPA	CE IS REC	(UIRED)	物制作	there		
ap	opma e	D101	PIDS WWTP	SAMPLER(S) - PLEAG	PRINT/SIZ	N NAN	ΔE	22			. 717		1 . 4	- 4.	deg i	7	4	* 4	Certi	fications	\$	1.59		
PROJECT NO./NAM	EAT	SAMPLER(S) - PLEAS	na	20										1 1/2 1/2 1/2	□ОН	O VAP	☐ Drink	king Water						
TURNAROUND	TIME REC	QUIRED [1 DAY 2 DAYS 3 D.	AYS STANDARD	OTF	HER .						1968							□ Dol)		ES		
DELIVERABLES	S REQUIRE	ED XSTD	LEVEL II LEVEL III	□ LEVEL IV □ E	DD 0.	THER	- 1					07				440		43	Proje	ct Loca	itions			
MATRIX GW=GROUNDWATER WW=WASTEWATER S=SOIL L=LIQUID SD=SOLID										# Containers &						2			□ Det	roit	□New	York		
	CODE. SEESEDGE SITES AND ETAC X (1)								1 1 1 1 1 1 1 1 1						A London Maria			1657		ner				
MERIT LAB NO.	DATE	AR 2021	IDENTIFICATION-D	IDENTIFICATION-DESCRIPTION			NON	HCI	H ₂ SO ₄	NaOH	MeOH	A A							Spec	ial Instr	ructions			
24693.CX			Biosolids		bs		4					K		27/47	d(0.5)	Aug.	- 29	(W.	(1) (b	elau	130 10	nd)		
29013.0	141	n.oon	9 10 10 10 10 10 10 10 10 10 10 10 10 10	each Chot Za Ach	16000	R.O.						- maz	-[1]	(1)		leal!	ar.	Un P	, gr =	بالمراج	1 12 3	1 1		
		23(\$1,100)	A SCHOOL STATE OF THE STATE OF THE							11	in	1168 197	437		p -	1,500	, han		9.0	rial Ti	11 76 151			
			-					\vdash				2512						32.						
T. Opticions		No. pd	The Carte Leaves	Appli Tor Wint Co.	10/1	+	1				+	CAT CES		22			Tel.	bi I		7 .7		2 1		
					-	-		\vdash		+	+													
- Performance	1000	tash tasa	re were set itsiyay	e tou as lead to	3/16/	NJ.	-	0				2 1 2 1	100	79 1.1		1			1. 1.5.0		n .7	77)		
37.00	Doğr.	118 215		ngeve Zulf	1913	15.7		10.38				1			10.5		- 19		100		1 1 1			
	817.4			Sept. Sept. Sept. Sept.	and in Page	111	L				-4-		- 200	043	10	, mia	abs	- 59		- X	-0.25	11-15-54		
			TRACTOR DOM	offer the hold of	18 - 0	ار دو		ling	mpa		oti.		- (-1) 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	12/20	12	H' :	Z. 1.	1 1		U o	- 1	Tall or		
	anizaca e	1 1 1 1 5	et a gain en orba	er-panalis- at	r i din	1.3			ΡĹβ [*] .		that r	1.1			41 25	E 1 1 24				300031	111	100		
	- non	1,7110.7	ic control of the control	We the second	\$10 m			1745	2 6 9-	Y	4	Hallis		13 416		8)1112								
		1	er solders - ile 168	setsek, setsät laut	néi/or	1 .8	9	1	frie !	41	27	180 /	halle.	774	l lee	13	91	Str.	uan (I-	1,178	3.67.24	nlin i		
- 148 (2-0 E)	A C. TAN		1	Sampler	DATE	TIME	_	REI	INQUIS	SHED	BY:							1	32.286	1 775	DATE	TIME		
SIGNATURE/ORGANIZATION JUNE 3/21/21 1.13									SIGNATURE/ORGANIZATION DATE TIME RECEIVED BY:															
RECEIVED BY: SIGNATURE/ORG	GANIZATION	VI.	Mysi to pints out of	51271	1 1 1	313	19.				RGANI	ZATION		WWW.HINES		ish 25		NOTE		EMP. ON AF	DDIV/AI			
RELINQUISHED	BY:		in hippor his flame ince	taventri m	DATE	TIME	2	SEA	AL NO.	11	18-1		AL INTACT	NO 🗆	INITI	ALS	5.33	NOTES		•	THIVAL			
SIGNATURE/ORG	8513 ·				DATE	TIME		SEA	AL NO.				AL INTACT ∕ES □	NO 🗆	INITI					.9				
SIGNATURE/OR	GANIZATION														401	DE1 /	DOF	CIDE				Pov 5 18		