

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673



231-773-5998 Phone
888-979-4469 Fax
www.trace-labs.com

March 18, 2022

Rick Mohr
Manistee, City of
50 9th St.
Manistee, MI 49660

RE: Trace Project 22C0292
Client Project Biosolids PFAS- 3/7/22

Enclosed are your analytical results. The results of this report relate only to the samples listed in the body of this report.

All reports were examined through Trace's validation process to ensure that requirements for quality and completeness were satisfied. All reported analytical results were obtained in accordance with the methods referenced on the reports. Every practical effort was made to meet the reporting limit specifications for this work, however, some results may have raised reporting limits to correct for percent solids.

The results were obtained from Fibertec Environmental Services.

For clients that require NELAC Accreditation, Trace certifies that these test results meet all requirements of the NELAC Standard, except for those analytes with a "N" notation. These analytes have not been evaluated by NELAC at Trace's discretion and will not be reported unless requested by client.

If you have questions concerning this report, please contact me at 231.773.5998 or by email at tbrewer@trace-labs.com.

Sincerely,

A handwritten signature in black ink that reads "Timothy W. Brewer".

Tim Brewer
Project Manager

Enclosures



NJDEP Accreditation No. MI008

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SAMPLE SUMMARY

Trace Project ID: 22C0292
Client Project ID: Biosolids PFAS- 3/7/22

Trace ID	Sample ID	Matrix	Collected By	Date Collected	Date Received
22C0292-01	Digested Sludge - Storage	Sludge	RM	03/07/22 11:30	03/08/22 10:50

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AN EXPLANATION OF TERMS AND SYMBOLS WHICH MAY OCCUR IN THIS REPORT

DEFINITIONS

LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
MS	Matrix Spike
MSD	Matrix Spike Duplicate
RPD	Relative Percent Difference
DUP	Matrix Duplicate
RDL	Reporting Detection Limit
MCL	Maximum Contamination Limit
TIC	Tentatively Identified Compound
<, ND or U	Indicates the compound was analyzed for but not detected
*	Indicates a result that exceeds its associated MCL or Surrogate control limits
N	Indicates that the compound has not been evaluated by NELAC
NA	Indicates that the compound is not available.



Friday, March 18, 2022

Fibertec Project Number: A07309
Project Identification: 22C0292 /22C0292
Submittal Date: 03/09/2022

Mr. Tim Brewer
Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444

Dear Mr. Brewer,

Thank you for selecting Fibertec Environmental Services as your analytical laboratory. The samples you submitted have been analyzed in accordance with NELAC standards and the results compiled in the attached report. Any exceptions to NELAC compliance are noted in the report. These results apply only to those samples submitted. Please note TO-15 samples will be disposed of 7 calendar days after the reporting date. All other samples will be disposed of 30 days after the reporting date.

Percent Solids for sample -001 were reported at 7.4%.

If you have any questions regarding these results or if we may be of further assistance to you, please contact me at (517) 699-0345.

Sincerely,

A handwritten signature in black ink that reads "Bailey Welch". The signature is written in a cursive, flowing style.

By Bailey Welch at 8:49 AM, Mar 18, 2022

For Daryl P. Strandbergh
Laboratory Director

Enclosures

1914 Holloway Drive
11766 E Grand River
8660 S Mackinaw Trail

Holt, MI 48842
Brighton, MI 48116
Cadillac, MI 49601

T: (517) 699-0345
T: (810) 220-3300
T: (231) 775-8368

F: (517) 699-0388
F: (810) 220-3311
F: (231) 775-8584

Client Identification:	Trace Analytical Laboratories, Inc.	Sample Description:	Digested Sludge - Storage	Chain of Custody:	N/A
Client Project Name:	22C0292	Sample No:	22C0292-01	Collect Date:	03/07/22
Client Project No:	22C0292	Sample Matrix:	Biosolids	Collect Time:	11:30

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

PFAS						Aliquot ID: A07309-001		Matrix: Biosolids		
Method: ASTM D7968-17a						Description: Digested Sludge - Storage				
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
‡ 1. ADONA	U		µg/kg	2.0	1.0	03/14/22	PS22C14I	03/15/22	SM22C14C	SKG
‡ 2. 9CI-PF3ONS	U		µg/kg	2.0	1.0	03/14/22	PS22C14I	03/15/22	SM22C14C	SKG
‡ 3. 11CI-PF3OUdS	U		µg/kg	2.0	1.0	03/14/22	PS22C14I	03/15/22	SM22C14C	SKG
‡ 4. N-EtFOSAA	4.2		µg/kg	2.0	1.0	03/14/22	PS22C14I	03/15/22	SM22C14C	SKG
‡ 5. FtS 4:2	U	EIS+	µg/kg	2.0	1.0	03/14/22	PS22C14I	03/15/22	SM22C14C	SKG
‡ 6. FtS 6:2	U		µg/kg	2.0	1.0	03/14/22	PS22C14I	03/15/22	SM22C14C	SKG
‡ 7. FtS 8:2	U	EIS-	µg/kg	2.0	1.0	03/14/22	PS22C14I	03/15/22	SM22C14C	SKG
‡ 8. HFPO-DA	U		µg/kg	2.0	1.0	03/14/22	PS22C14I	03/15/22	SM22C14C	SKG
‡ 9. N-MeFOSAA	8.5		µg/kg	2.0	1.0	03/14/22	PS22C14I	03/15/22	SM22C14C	SKG
‡ 10. PFBA	U		µg/kg	2.0	1.0	03/14/22	PS22C14I	03/15/22	SM22C14C	SKG
‡ 11. PFBS	U		µg/kg	2.0	1.0	03/14/22	PS22C14I	03/15/22	SM22C14C	SKG
‡ 12. PFDA	U		µg/kg	2.0	1.0	03/14/22	PS22C14I	03/15/22	SM22C14C	SKG
‡ 13. PFDoA	U		µg/kg	2.0	1.0	03/14/22	PS22C14I	03/15/22	SM22C14C	SKG
‡ 14. PFDS	2.5		µg/kg	2.0	1.0	03/14/22	PS22C14I	03/15/22	SM22C14C	SKG
‡ 15. PFHpA	U		µg/kg	2.0	1.0	03/14/22	PS22C14I	03/15/22	SM22C14C	SKG
‡ 16. PFHpS	U		µg/kg	2.0	1.0	03/14/22	PS22C14I	03/15/22	SM22C14C	SKG
‡ 17. PFHxA	U		µg/kg	2.0	1.0	03/14/22	PS22C14I	03/15/22	SM22C14C	SKG
‡ 18. PFHxS-Total	2.1		µg/kg	2.0	1.0	03/14/22	PS22C14I	03/15/22	SM22C14C	SKG
‡ 19. PFNA	U		µg/kg	2.0	1.0	03/14/22	PS22C14I	03/15/22	SM22C14C	SKG
‡ 20. PFNS	U		µg/kg	2.0	1.0	03/14/22	PS22C14I	03/15/22	SM22C14C	SKG
‡ 21. PFOA	U		µg/kg	2.0	1.0	03/14/22	PS22C14I	03/15/22	SM22C14C	SKG
‡ 22. PFOSA	U		µg/kg	2.0	1.0	03/14/22	PS22C14I	03/15/22	SM22C14C	SKG
‡ 23. PFOS-Total	6.3		µg/kg	2.0	1.0	03/14/22	PS22C14I	03/15/22	SM22C14C	SKG
‡ 24. PFPeA	U		µg/kg	2.0	1.0	03/14/22	PS22C14I	03/15/22	SM22C14C	SKG
‡ 25. PFPeS	U		µg/kg	2.0	1.0	03/14/22	PS22C14I	03/15/22	SM22C14C	SKG
‡ 26. PFTeA	U	EIS+	µg/kg	2.0	1.0	03/14/22	PS22C14I	03/15/22	SM22C14C	SKG
‡ 27. PFTriA	U		µg/kg	2.0	1.0	03/14/22	PS22C14I	03/15/22	SM22C14C	SKG
‡ 28. PFUnA	U		µg/kg	2.0	1.0	03/14/22	PS22C14I	03/15/22	SM22C14C	SKG

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Definitions/ Qualifiers:

- A:** Spike recovery or precision unusable due to dilution.
B: The analyte was detected in the associated method blank.
E: The analyte was detected at a concentration greater than the calibration range, therefore the result is estimated.
J: The concentration is an estimated value.
M: Modified Method
U: The analyte was not detected at or above the reporting limit.
X: Matrix Interference has resulted in a raised reporting limit or distorted result.
W: Results reported on a wet-weight basis.
***:** Value reported is outside QC limits

Exception Summary:

- EIS-** : The Isotope Dilution/Extracted Internal Standard area exceeds the lower control limit.
EIS+ : The Isotope Dilution/Extracted Internal Standard area exceeds the upper control limit.

Analysis Locations:

All analyses performed in Holt.



Accreditation Number(s):

T104704518-19-8 (TX)

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Cadillac, MI 49601

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Trace Use:	
Logged By:	NG
Checked By:	WLL
Soil Volatiles Preserved (circle if applicable):	
MeOH	Low Level Lab
Sampling Time:	

[illegible]

☐ Check this box if you would not like your samples analyzed if received outside of the conditions outlined in the Trace Sample Acceptance Policy at www.trace-labs.com/downloads. Form 70-Z-1

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22C0292

Manistee, City of
Project Manager: Tim Brewer

Sample Log In Checklist

Date: 3/08/22	Original Observation	Corrected Temperature	IR-9 (CF: +0.4°C)	IR-10 (CF: +0.4°C)	20B12743 (CF: -0.2°C)	Temp Blank	Client Sample
Time: 13:37							
Logged by: NC							
Package Description: Coder							
Package Temp °C	1.5	1.1					
Representative Sample Temp °C	3.7	3.5					

Sample Receipt

Yes	No	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Received on ice or other coolant
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Ice still present upon receipt
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Custody seals present
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Trace Courier
<input type="checkbox"/>	<input type="checkbox"/>	Client Drop-off
<input type="checkbox"/>	<input type="checkbox"/>	UPS
<input type="checkbox"/>	<input type="checkbox"/>	Fed Ex
<input type="checkbox"/>	<input type="checkbox"/>	US Mail
<input type="checkbox"/>	<input type="checkbox"/>	Other

Sample Condition

Yes	No	N/A	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	All sample containers arrived unbroken and labeled
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Sufficient sample to run requested analyses
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Correct chemical preservative added to samples
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Samples preserved at Trace
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Chemical preservation verified, check EMD pH test strip used (if applicable)
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	pH 0-2.5 (Lot: HC046681)
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	pH 11.0-13.0 (Lot: HC022540)
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Other
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Air bubbles absent from VOAs

Chain of Custody (COC)

Yes	No	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	All bottle labels agree with COC
<input checked="" type="checkbox"/>	<input type="checkbox"/>	COC filled out properly
<input checked="" type="checkbox"/>	<input type="checkbox"/>	COC signed by client

Notes: