

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



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

October 19, 2021

Mr. Dale Clark
Clare, City of
202 W. Fifth St.
Clare, Mi 48617

Phone: (989) 386-2321
Fax:

RE: Trace ID: 21J0264

Dear Mr. Clark:

Enclosed are your analytical results associated with your project for Quarterly Samples. The results of this report relate only to the samples listed in the body of this report.

The results were obtained from

Thank you for working with Trace. 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". The signature is fluid and cursive.

Tim Brewer
Project Manager

Enclosures



NJDEP Accreditation No. MI008

This report shall not be reproduced, except in full, without the written consent of Trace Analytical Laboratories, Inc.

October 15, 2021

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

RE: 21J0264

Order No.: 2110507

Dear Mr. Tim Brewer:

[Guide to reading Lab Result](#)

Prein&Newhof Laboratory received 2 sample(s) on 10/8/2021 on your behalf. Your test results are provided in your Prein&Newhof Laboratory analytical report. Please carefully review your analytical report, noting the following.

- You can be assured that the sample results meet the Safe Drinking Water Criteria as no analyte tested exceeds the EPA Maximum Contaminant Level unless indicated by an " * " in the "Qual" column.
- You can be assured that all samples were received and analyzed within required holding times unless noted by a "H" in the "Qual" column.
- You can be assured that all quality control data is within laboratory-defined or method-specified acceptance limits unless defined by the addition of an attached Case Narrative document.
- 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 Drinking Water Test Results and reading 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.

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

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

We are certified by the State of Michigan for Drinking Water Analysis for: Coliform Bacteria, Metals, Cyanide, Minerals, Anions, Volatile Organics, THM's, Haloacetic Acids, and PFAS.
Michigan Lab ID#: 0020

Sincerely,



Steve Bylsma
Laboratory Manager

CLIENT:	Trace Analytical Laboratories, Inc.	Collection Date	10/6/2021 2:05:00 PM
Project:	21J0264	Received Date:	10/8/2021 11:45:00 AM
Lab ID:	2110507-01	Matrix:	DRINKING WATER
Client Sample ID:	21J0264-08	Sampled By:	TQ/SD
Location:	WTP Tap		

Analyses	Result	RL	Qual	Units	MCL	Date Analyzed
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PFAS, DRINKING WATER

EPA 537.1

Analyst: **JS**

PFBS	< 2.0	2.0		ng/L	420	10/14/2021 6:06:00 PM
PFHxA	< 2.0	2.0		ng/L	400000	10/14/2021 6:06:00 PM
HFPO-DA	< 2.0	2.0		ng/L	370	10/14/2021 6:06:00 PM
PFHxS	5.1	2.0		ng/L	51	10/14/2021 6:06:00 PM
PFHpA	< 2.0	2.0		ng/L		10/14/2021 6:06:00 PM
ADONA	< 2.0	2.0		ng/L		10/14/2021 6:06:00 PM
PFOA	< 2.0	2.0		ng/L	8.0	10/14/2021 6:06:00 PM
PFOS	3.3	2.0		ng/L	16	10/14/2021 6:06:00 PM
PFNA	< 2.0	2.0		ng/L	6.0	10/14/2021 6:06:00 PM
9CI-PF3ONS	< 2.0	2.0		ng/L		10/14/2021 6:06:00 PM
PFDA	< 2.0	2.0		ng/L		10/14/2021 6:06:00 PM
NMeFOSAA	< 2.0	2.0		ng/L		10/14/2021 6:06:00 PM
NEtFOSAA	< 2.0	2.0		ng/L		10/14/2021 6:06:00 PM
PFUnA	< 2.0	2.0		ng/L		10/14/2021 6:06:00 PM
11CI-PF3OUdS	< 2.0	2.0		ng/L		10/14/2021 6:06:00 PM
PFDaA	< 2.0	2.0		ng/L		10/14/2021 6:06:00 PM
PFTrDA	< 2.0	2.0		ng/L		10/14/2021 6:06:00 PM
PFTA	< 2.0	2.0		ng/L		10/14/2021 6:06:00 PM
Surr: d5-N-EtFOSSA	103	70 - 130		%Rec		10/14/2021 6:06:00 PM
Surr: M3HFPO-DA	87.4	70 - 130		%Rec		10/14/2021 6:06:00 PM
Surr: MPFDA	101	70 - 130		%Rec		10/14/2021 6:06:00 PM
Surr: MPFHxA	97.5	70 - 130		%Rec		10/14/2021 6:06:00 PM

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

CLIENT:	Trace Analytical Laboratories, Inc.	Collection Date	10/6/2021 2:05:00 PM
Project:	21J0264	Received Date:	10/8/2021 11:45:00 AM
Lab ID:	2110507-02	Matrix:	BLANK
Client Sample ID:	Field Blank	Sampled By:	
Location:			

Analyses	Result	RL	Qual	Units	MCL	Date Analyzed
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PFAS, DRINKING WATER

EPA 537.1

Analyst: **JS**

PFBS	< 2.0	2.0		ng/L	420	10/14/2021 1:50:00 PM
PFHxA	< 2.0	2.0		ng/L	400000	10/14/2021 1:50:00 PM
HFPO-DA	< 2.0	2.0		ng/L	370	10/14/2021 1:50:00 PM
PFHxS	< 2.0	2.0		ng/L	51	10/14/2021 1:50:00 PM
PFHpA	< 2.0	2.0		ng/L		10/14/2021 1:50:00 PM
ADONA	< 2.0	2.0		ng/L		10/14/2021 1:50:00 PM
PFOA	< 2.0	2.0		ng/L	8.0	10/14/2021 1:50:00 PM
PFOS	< 2.0	2.0		ng/L	16	10/14/2021 1:50:00 PM
PFNA	< 2.0	2.0		ng/L	6.0	10/14/2021 1:50:00 PM
9CI-PF3ONS	< 2.0	2.0		ng/L		10/14/2021 1:50:00 PM
PFDA	< 2.0	2.0		ng/L		10/14/2021 1:50:00 PM
NMeFOSAA	< 2.0	2.0		ng/L		10/14/2021 1:50:00 PM
NEtFOSAA	< 2.0	2.0		ng/L		10/14/2021 1:50:00 PM
PFUnA	< 2.0	2.0		ng/L		10/14/2021 1:50:00 PM
11CI-PF3OUdS	< 2.0	2.0		ng/L		10/14/2021 1:50:00 PM
PFDoA	< 2.0	2.0		ng/L		10/14/2021 1:50:00 PM
PFTTrDA	< 2.0	2.0		ng/L		10/14/2021 1:50:00 PM
PFTA	< 2.0	2.0		ng/L		10/14/2021 1:50:00 PM
Surr: d5-N-EtFOSSA	99.1	70 - 130		%Rec		10/14/2021 1:50:00 PM
Surr: M3HFPO-DA	108	70 - 130		%Rec		10/14/2021 1:50:00 PM
Surr: MPFDA	104	70 - 130		%Rec		10/14/2021 1:50:00 PM
Surr: MPFHxA	102	70 - 130		%Rec		10/14/2021 1:50:00 PM

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

WO#: 2110507

10/15/2021

Client: Trace Analytical Laboratories, Inc.

Project: 21J0264

TestCode: PFAS-DW

Sample ID: MB-R2-3649	SampType: MBLK	TestCode: PFAS-DW	Units: ng/L	Prep Date: 10/13/2021	RunNo: 23535						
Client ID: PBW	Batch ID: 3649	TestNo: EPA 537.1		Analysis Date: 10/13/2021	SeqNo: 424680						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
PFBS	< 1.8	1.8									
PFHxA	< 1.8	1.8									
HFPO-DA	< 1.8	1.8									
PFHxS	< 1.8	1.8									
PFHpA	< 1.8	1.8									
ADONA	< 1.8	1.8									
PFOA	< 1.8	1.8									
PFOS	< 1.8	1.8									
PFNA	< 1.8	1.8									
9CI-PF3ONS	< 1.8	1.8									
PFDA	< 1.8	1.8									
NMeFOSAA	< 1.8	1.8									
NEtFOSAA	< 1.8	1.8									
PFUnA	< 1.8	1.8									
11CI-PF3OUdS	< 1.8	1.8									
PFDoA	< 1.8	1.8									
PFTTrDA	< 1.8	1.8									
PFTA	< 1.8	1.8									
Surr: d5-N-EtFOSSA	84		80.00		106	70	130				
Surr: M3HFPO-DA	190		200.0		94.3	70	130				
Surr: MPFDA	78		80.00		97.1	70	130				
Surr: MPFHxA	76		80.00		94.7	70	130				

Qualifiers: < Not Detected at the Reporting Limit
PL Permit Limit

H Holding times for preparation or analysis exceeded
RL Reporting Limit

MCL Maximum Contaminant Level

WO#: 2110507

10/15/2021

Client: Trace Analytical Laboratories, Inc.

Project: 21J0264

TestCode: PFAS-DW

Sample ID: LCS-high-3649 A	SampType: LCS-HIGH	TestCode: PFAS-DW	Units: ng/L	Prep Date: 10/13/2021	RunNo: 23535						
Client ID: BatchQC	Batch ID: 3649	TestNo: EPA 537.1		Analysis Date: 10/13/2021	SeqNo: 424681						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
PFBS	270	1.8	320.0	0	83.4	70	130				
PFHxA	270	1.8	320.0	0	83.0	70	130				
HFPO-DA	290	1.8	320.0	0	89.1	70	130				
PFHxS	290	1.8	320.0	0	90.5	70	130				
PFHpA	280	1.8	320.0	0	86.3	70	130				
ADONA	290	1.8	320.0	0	91.5	70	130				
PFOA	290	1.8	320.0	0	91.8	70	130				
PFOS	290	1.8	320.0	0	91.0	70	130				
PFNA	290	1.8	320.0	0	90.4	70	130				
9CI-PF3ONS	290	1.8	320.0	0	91.2	70	130				
PFDA	280	1.8	320.0	0	87.6	70	130				
NMeFOSAA	280	1.8	320.0	0	88.4	70	130				
NEtFOSAA	280	1.8	320.0	0	88.3	70	130				
PFUnA	280	1.8	320.0	0	88.7	70	130				
11CI-PF3OUdS	300	1.8	320.0	0	92.9	70	130				
PFDoA	310	1.8	320.0	0	95.5	70	130				
PFTTrDA	310	1.8	320.0	0	98.4	70	130				
PFTA	310	1.8	320.0	0	96.9	70	130				
Surr: d5-N-EtFOSSA	63		80.00		79.0	70	130				
Surr: M3HFPO-DA	200		200.0		100	70	130				
Surr: MPFDA	80		80.00		99.6	70	130				
Surr: MPFHxA	78		80.00		98.0	70	130				

Qualifiers: < Not Detected at the Reporting Limit
PL Permit Limit

H Holding times for preparation or analysis exceeded
RL Reporting Limit

MCL Maximum Contaminant Level

Original
Page 5 of 8

QC SUMMARY REPORT

WO#: 2110507

10/15/2021

Client: Trace Analytical Laboratories, Inc.

Project: 21J0264

TestCode: PFAS-DW

Sample ID: 2110221-01ADUP	SampType: DUP	TestCode: PFAS-DW	Units: ng/L	Prep Date: 10/13/2021	RunNo: 23535						
Client ID: BatchQC	Batch ID: 3649	TestNo: EPA 537.1		Analysis Date: 10/13/2021	SeqNo: 424691						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
PFBS	< 1.6	1.6						0	0	30	
PFHxA	< 1.6	1.6						0	0	30	
HFPO-DA	< 1.6	1.6						0	0	30	
PFHxS	< 1.6	1.6						0	0	30	
PFHpA	< 1.6	1.6						0	0	30	
ADONA	< 1.6	1.6						0	0	30	
PFOA	< 1.6	1.6						0	0	30	
PFOS	< 1.6	1.6						0	0	30	
PFNA	< 1.6	1.6						0	0	30	
9CI-PF3ONS	< 1.6	1.6						0	0	30	
PFDA	< 1.6	1.6						0	0	30	
NMeFOSAA	< 1.6	1.6						0	0	30	
NEtFOSAA	< 1.6	1.6						0	0	30	
PFUnA	< 1.6	1.6						0	0	30	
11CI-PF3OUdS	< 1.6	1.6						0	0	30	
PFDoA	< 1.6	1.6						0	0	30	
PFTTrDA	< 1.6	1.6						0	0	30	
PFTA	< 1.6	1.6						0	0	30	
Surr: d5-N-EtFOSSA	61		72.73		84.3	70	130		0	0	
Surr: M3HFPO-DA	180		181.8		102	70	130		0	0	
Surr: MPFDA	59		72.73		80.5	70	130		0	0	
Surr: MPFHxA	72		72.73		99.4	70	130		0	0	

Qualifiers: < Not Detected at the Reporting Limit
PL Permit Limit

H Holding times for preparation or analysis exceeded
RL Reporting Limit

MCL Maximum Contaminant Level

WO#: 2110507

10/15/2021

Client: Trace Analytical Laboratories, Inc.

Project: 21J0264

TestCode: PFAS-DW

Sample ID: 2110373-01AMS	SampType: MS-MID	TestCode: PFAS-DW	Units: ng/L	Prep Date: 10/13/2021	RunNo: 23535						
Client ID: BatchQC	Batch ID: 3649	TestNo: EPA 537.1		Analysis Date: 10/13/2021	SeqNo: 424695						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
PFBS	56	1.6	72.73	0	77.2	70	130				
PFHxA	58	1.6	72.73	0	80.4	70	130				
HFPO-DA	63	1.6	72.73	0	86.7	70	130				
PFHxS	60	1.6	72.73	0	82.1	70	130				
PFHpA	58	1.6	72.73	0	80.4	70	130				
ADONA	61	1.6	72.73	0	84.3	70	130				
PFOA	62	1.6	72.73	0	85.1	70	130				
PFOS	60	1.6	72.73	0	82.9	70	130				
PFNA	62	1.6	72.73	0	84.7	70	130				
9CI-PF3ONS	62	1.6	72.73	0	84.6	70	130				
PFDA	60	1.6	72.73	0	82.9	70	130				
NMeFOSAA	59	1.6	72.73	0	81.3	70	130				
NEtFOSAA	58	1.6	72.73	0	79.2	70	130				
PFUnA	58	1.6	72.73	0	80.4	70	130				
11CI-PF3OUdS	61	1.6	72.73	0	84.5	70	130				
PFDoA	60	1.6	72.73	0	82.7	70	130				
PFTTrDA	58	1.6	72.73	0	80.2	70	130				
PFTA	59	1.6	72.73	0	81.0	70	130				
Surr: d5-N-EtFOSSA	64		72.73		87.6	70	130				
Surr: M3HFPO-DA	170		181.8		93.7	70	130				
Surr: MPFDA	65		72.73		89.0	70	130				
Surr: MPFHxA	64		72.73		88.0	70	130				

Qualifiers: < Not Detected at the Reporting Limit
PL Permit Limit

H Holding times for preparation or analysis exceeded
RL Reporting Limit

MCL Maximum Contaminant Level

Original
Page 7 of 8

WO#: 2110507

10/15/2021

Client: Trace Analytical Laboratories, Inc.

Project: 21J0264

TestCode: PFAS-DW

Sample ID: LCS-high-3649 B	SampType: LCS-HIGH	TestCode: PFAS-DW	Units: ng/L	Prep Date: 10/13/2021	RunNo: 23535						
Client ID: BatchQC	Batch ID: 3649	TestNo: EPA 537.1		Analysis Date: 10/14/2021	SeqNo: 424872						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
PFBS	280	1.8	320.0	0	88.2	70	130				
PFHxA	270	1.8	320.0	0	85.8	70	130				
HFPO-DA	280	1.8	320.0	0	86.2	70	130				
PFHxS	310	1.8	320.0	0	96.6	70	130				
PFHpA	280	1.8	320.0	0	87.0	70	130				
ADONA	300	1.8	320.0	0	94.0	70	130				
PFOA	300	1.8	320.0	0	93.6	70	130				
PFOS	310	1.8	320.0	0	97.4	70	130				
PFNA	300	1.8	320.0	0	93.1	70	130				
9CI-PF3ONS	310	1.8	320.0	0	98.3	70	130				
PFDA	280	1.8	320.0	0	88.4	70	130				
NMeFOSAA	280	1.8	320.0	0	86.9	70	130				
NEtFOSAA	260	1.8	320.0	0	80.3	70	130				
PFUnA	280	1.8	320.0	0	88.0	70	130				
11CI-PF3OUdS	310	1.8	320.0	0	97.6	70	130				
PFDoA	280	1.8	320.0	0	87.9	70	130				
PFTTrDA	280	1.8	320.0	0	89.0	70	130				
PFTA	280	1.8	320.0	0	88.3	70	130				
Surr: d5-N-EtFOSSA	58		80.00		72.6	70	130				
Surr: M3HFPO-DA	210		200.0		103	70	130				
Surr: MPFDA	80		80.00		100	70	130				
Surr: MPFHxA	79		80.00		98.2	70	130				

Qualifiers: < Not Detected at the Reporting Limit
PL Permit Limit

H Holding times for preparation or analysis exceeded
RL Reporting Limit

MCL Maximum Contaminant Level

Original
Page 8 of 8

SUBCONTRACT ORDER

21J0264

SENDING LABORATORY:

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444
Phone: 231.773.5998

RECEIVING LABORATORY:

Prein and Newhof
3260 Evergreen Drive NE
Grand Rapids, MI 49525
Phone :(616) 364-7600

10507/1-2

Project Manager: Tim Brewer

Note Our New Email address: TraceSubOut@trace-labs.com

PO # 21J0264

Matrix: Drinking Water

Sampled: 10/06/21 14:05

TAT: Standard

Sample ID: Water Treatment Plant Tap + Blank 21J0264-08

Sampled By: TQ/SD

Analysis Needed:

PFAS Drinking Water- EGLE List with Field Blank

6^{ic}

Released By Hayley Schutt Date 10/07/21

Received By SD Date 10/8/21 1145

Released By

Date

Received By

Date

TRACE

ANALYTICAL LABORATORIES, INC.

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

Phone 231.773.5998
 Fax 888.979.4469
 www.trace-labs.com

CHAIN-OF-CUSTODY RECORD

Page _____ of _____

Trace ID No.
 21J0264

Report Results To:

Company Name: City of Clare PO #
 Report To: Dele Clarke Contact Name: Stm E
 Mailing Address: 202 W. K. Felt St Billing Address (if different):
 City, State, Zip Code: Clare MI 48617 City, State, Zip Code:
 Office Phone: 985-386-2321 Cell Phone: 434-1225 Phone Number:
 Email Address: dele@cityofclare.org Billing Email Address:

Trace Use:

Logged By: [Signature]
 Checked By: [Signature]
 Soil Volatiles Preserved (circle if applicable):
 MeOH Low Level Lab
 Sampling Time:

Turnaround Requirements:

Standard, 5-10 Days
 3 Day*
 1 Day*

Matrix Key:

S = Soil / Solid
 W = Water
 SL = Sludge
 OI = Oil
 WI = Wipes
 LW = Liquid Waste
 A = Air
 D = Drinking Water

*Results provided end of business day, requires prior approval.

Trace No.	Date Collected	Time Collected	Client Sample ID	Sampled By: <u>T. Quirk / S. Ormiller</u>	Metals Field Filtered (Y/N)	Matrix	Number of Containers	Preservation						Analysis Requested	Remarks	Possible Health Hazards?	
								Cool	HCl	HNO ₃	H ₂ SO ₄	NaOH	Other				
1	10-6-21	8:40	WWTP Final Effluent			W	1	X									
2	10-6-21	1:20	WWTP Final Effluent			W	1	X									
3	10-6-21	1:20	WWTP Final Effluent D08			W	1	X									
4	10-6-21	1:25	Field Blank			W	1	X									
5	10-6-21	1:32	WWTP Inflow			W	1	X									
6	10-6-21	1:52	Collection #1			W	1	X									
7	10-6-21	1:12	WWTP Final Effluent			W	2	X									
8	10-6-21	2:05	Wastewater Treatment Plant Top + Blank			D	2	X									

Please Sign

Released By	Received By	Date	Time	Released By	Received By	Date	Time
<u>[Signature]</u>	<u>[Signature]</u>	10-7-21	11:30	<u>[Signature]</u>	<u>[Signature]</u>	10/07/21	16:37

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

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full, without the written consent of Trace Analytical Laboratories, Inc.

21J0264

Clare, City of
 Project Manager: Tim Brewer

Sample Log In Checklist

Date: 10/07/21	Original Observation	Corrected Temperature	IR-9 (CF: +0.1°C)	IR-10 (CF: +0.1°C)	20B12743 (CF: -0.4°C)	Temp Blank	Client Sample
Time: 16:37							
Logged by: <i>skl</i>							
Package Description: <i>Cooler</i>							
Package Temp °C	-1.2	-1.1					
Representative Sample Temp °C	3.7	3.3					

Sample Receipt

- Yes No
- Received on ice or other coolant
- Ice still present upon receipt
- Custody seals present
- Trace Courier Client Drop-off
- Yes No Custody seals intact (if applicable)
- UPS Fed Ex US Mail Other

Sample Condition

- Yes No N/A
- All sample containers arrived unbroken and labeled
- Sufficient sample to run requested analyses
- Correct chemical preservative added to samples
- Samples preserved at Trace
- Chemical preservation verified, check EMD pH test strip used (if applicable)
- pH 0-2.5 (Lot: HC029115) pH 11.0-13.0 (Lot: HC022540) Other
- Air bubbles absent from VOAs

Chain of Custody (COC)

- Yes No
- All bottle labels agree with COC
- COC filled out properly
- COC signed by client

Notes:

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full, without the written consent of Trace Analytical Laboratories, Inc.