

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



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

May 09, 2024

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

RE: Trace Project 24D1955
Client Project Plant Tap DW PFAS 04/24/24

Dear Mr. Clark:

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 Prein and Newhof.

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 written in a cursive style with a long, sweeping underline.

Tim Brewer
Project Manager

Enclosures

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



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SAMPLE SUMMARY

Trace Project ID: 24D1955
Client Project ID: Plant Tap DW PFAS 04/24/24

Trace ID	Sample ID	Matrix	Collected By	Date Collected	Date Received
24D1955-01	Plant Tap 1420	Drinking Water	SD	04/24/24 10:35	04/25/24 11:30

May 09, 2024

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

RE: 24D1955

Order No.: 2404137

Dear Mr. Jon Mink:

[Guide to Reading Lab Result](#)

Prein&Newhof Laboratory received 2 sample(s) on 4/26/2024 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).

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

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.

Sincerely,



Steve Bylsma
Laboratory Manager

CLIENT:	Trace Analytical Laboratories, Inc.	Collection Date	4/24/2024 10:35:00 AM
Project:	24D1955	Received Date:	4/26/2024 10:00:00 AM
Lab ID:	2404I37-01	Matrix:	DRINKING WATER
Client Sample ID:	24D1955-01	Sampled By:	SD
Location:	Plant 1420		

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

EPA 537.1

Analyst: JS

PFBS	2.8	2.0		ng/L	420	5/8/2024 8:41:00 AM
PFHxA	< 2.0	2.0		ng/L	400000	5/8/2024 8:41:00 AM
HFPO-DA	< 2.0	2.0		ng/L	370	5/8/2024 8:41:00 AM
PFHxS	5.6	2.0		ng/L	51	5/8/2024 8:41:00 AM
PFHpA	< 2.0	2.0		ng/L		5/8/2024 8:41:00 AM
ADONA	< 2.0	2.0		ng/L		5/8/2024 8:41:00 AM
PFOA	< 2.0	2.0		ng/L	8.0	5/8/2024 8:41:00 AM
PFOS	4.3	2.0		ng/L	16	5/8/2024 8:41:00 AM
PFNA	< 2.0	2.0		ng/L	6.0	5/8/2024 8:41:00 AM
9CI-PF3ONS	< 2.0	2.0		ng/L		5/8/2024 8:41:00 AM
PFDA	< 2.0	2.0		ng/L		5/8/2024 8:41:00 AM
NMeFOSAA	< 2.0	2.0		ng/L		5/8/2024 8:41:00 AM
NEtFOSAA	< 2.0	2.0		ng/L		5/8/2024 8:41:00 AM
PFUnA	< 2.0	2.0		ng/L		5/8/2024 8:41:00 AM
11CI-PF3OUdS	< 2.0	2.0		ng/L		5/8/2024 8:41:00 AM
PFDaA	< 2.0	2.0		ng/L		5/8/2024 8:41:00 AM
PFTTrDA	< 2.0	2.0		ng/L		5/8/2024 8:41:00 AM
PFTA	< 2.0	2.0		ng/L		5/8/2024 8:41:00 AM
Surr: d5-N-EtFOSSA	89.1	70 - 130		%Rec		5/8/2024 8:41:00 AM
Surr: M3HFPO-DA	97.3	70 - 130		%Rec		5/8/2024 8:41:00 AM
Surr: MPFDA	104	70 - 130		%Rec		5/8/2024 8:41:00 AM
Surr: MPFHxA	89.8	70 - 130		%Rec		5/8/2024 8:41:00 AM

Qualifiers:	* Value exceeds Maximum Contaminant Level.	< Not Detected at the Reporting Limit
	H Holding times for preparation or analysis exceeded	MCL Maximum Contaminant Level
	PL Permit Limit	RL Reporting Limit

CLIENT:	Trace Analytical Laboratories, Inc.	Collection Date	4/24/2024 10:35:00 AM
Project:	24D1955	Received Date:	4/26/2024 10:00:00 AM
Lab ID:	2404I37-02	Matrix:	BLANK
Client Sample ID:	Field Blank	Sampled By:	SD
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	5/8/2024 5:15:00 AM
PFHxA	< 2.0	2.0		ng/L	400000	5/8/2024 5:15:00 AM
HFPO-DA	< 2.0	2.0		ng/L	370	5/8/2024 5:15:00 AM
PFHxS	< 2.0	2.0		ng/L	51	5/8/2024 5:15:00 AM
PFHpA	< 2.0	2.0		ng/L		5/8/2024 5:15:00 AM
ADONA	< 2.0	2.0		ng/L		5/8/2024 5:15:00 AM
PFOA	< 2.0	2.0		ng/L	8.0	5/8/2024 5:15:00 AM
PFOS	< 2.0	2.0		ng/L	16	5/8/2024 5:15:00 AM
PFNA	< 2.0	2.0		ng/L	6.0	5/8/2024 5:15:00 AM
9CI-PF3ONS	< 2.0	2.0		ng/L		5/8/2024 5:15:00 AM
PFDA	< 2.0	2.0		ng/L		5/8/2024 5:15:00 AM
NMeFOSAA	< 2.0	2.0		ng/L		5/8/2024 5:15:00 AM
NEtFOSAA	< 2.0	2.0		ng/L		5/8/2024 5:15:00 AM
PFUnA	< 2.0	2.0		ng/L		5/8/2024 5:15:00 AM
11CI-PF3OUdS	< 2.0	2.0		ng/L		5/8/2024 5:15:00 AM
PFDaA	< 2.0	2.0		ng/L		5/8/2024 5:15:00 AM
PFTTrDA	< 2.0	2.0		ng/L		5/8/2024 5:15:00 AM
PFTA	< 2.0	2.0		ng/L		5/8/2024 5:15:00 AM
Surr: d5-N-EtFOSSA	88.7	70 - 130		%Rec		5/8/2024 5:15:00 AM
Surr: M3HFPO-DA	91.4	70 - 130		%Rec		5/8/2024 5:15:00 AM
Surr: MPFDA	95.0	70 - 130		%Rec		5/8/2024 5:15:00 AM
Surr: MPFHxA	89.4	70 - 130		%Rec		5/8/2024 5:15:00 AM

Qualifiers:	* Value exceeds Maximum Contaminant Level.	< Not Detected at the Reporting Limit
	H Holding times for preparation or analysis exceeded	MCL Maximum Contaminant Level
	PL Permit Limit	RL Reporting Limit

WO#: 2404137

5/9/2024

Client: Trace Analytical Laboratories, Inc.

Project: 24D1955

TestCode: PFAS-DW

Sample ID: 2404134-01AMS	SampType: MS-HIGH	TestCode: PFAS-DW	Units: ng/L	Prep Date: 5/7/2024	RunNo: 38722						
Client ID: BatchQC	Batch ID: 6745	TestNo: EPA 537.1		Analysis Date: 5/8/2024	SeqNo: 765910						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
PFBS	140	1.8	150.0	0	90.8	70	130				
PFHxA	130	1.8	150.0	0	89.9	70	130				
HFPO-DA	130	1.8	150.0	0	84.6	70	130				
PFHxS	140	1.8	150.0	0	90.8	70	130				
PFHpA	140	1.8	150.0	0	90.4	70	130				
ADONA	140	1.8	150.0	0	91.8	70	130				
PFOA	140	1.8	150.0	0	94.2	70	130				
PFOS	140	1.8	150.0	0	91.6	70	130				
PFNA	140	1.8	150.0	0	92.8	70	130				
9CI-PF3ONS	140	1.8	150.0	0	90.9	70	130				
PFDA	140	1.8	150.0	0	93.3	70	130				
NMeFOSAA	130	1.8	150.0	0	87.6	70	130				
NEtFOSAA	120	1.8	150.0	0	82.5	70	130				
PFUnA	140	1.8	150.0	0	91.4	70	130				
11CI-PF3OUdS	140	1.8	150.0	0	91.9	70	130				
PFDoA	140	1.8	150.0	0	95.2	70	130				
PFTTrDA	180	1.8	150.0	0	121	70	130				
PFTA	170	1.8	150.0	0	116	70	130				
Surr: d5-N-EtFOSSA	270		320.0		84.8	70	130				
Surr: M3HFPO-DA	180		200.0		90.3	70	130				
Surr: MPFDA	81		80.00		101	70	130				
Surr: MPFHxA	77		80.00		96.3	70	130				

Qualifiers: * Value exceeds Maximum Contaminant Level. < Not Detected at the Reporting Limit H Holding times for preparation or analysis exceeded
MCL Maximum Contaminant Level PL Permit Limit RL Reporting Limit

WO#: 2404137

5/9/2024

Client: Trace Analytical Laboratories, Inc.

Project: 24D1955

TestCode: PFAS-DW

Sample ID: MB-R5-6745	SampType: MBLK	TestCode: PFAS-DW	Units: ng/L	Prep Date: 5/7/2024	RunNo: 38722						
Client ID: PBW	Batch ID: 6745	TestNo: EPA 537.1		Analysis Date: 5/8/2024	SeqNo: 765924						
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	300		320.0		92.5	70	130				
Surr: M3HFPO-DA	180		200.0		91.6	70	130				
Surr: MPFDA	77		80.00		95.7	70	130				
Surr: MPFHxA	74		80.00		93.0	70	130				

Qualifiers: * Value exceeds Maximum Contaminant Level.
MCL Maximum Contaminant Level

< Not Detected at the Reporting Limit
PL Permit Limit

H Holding times for preparation or analysis exceeded
RL Reporting Limit

WO#: 2404137

5/9/2024

Client: Trace Analytical Laboratories, Inc.

Project: 24D1955

TestCode: PFAS-DW

Sample ID: LCS-mid-6745 A	SampType: LCS-MID	TestCode: PFAS-DW	Units: ng/L	Prep Date: 5/7/2024	RunNo: 38722						
Client ID: BatchQC	Batch ID: 6745	TestNo: EPA 537.1		Analysis Date: 5/8/2024	SeqNo: 765925						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
PFBS	56	1.8	80.00	0	70.1	70	130				
PFHxA	56	1.8	80.00	0	70.2	70	130				
HFPO-DA	57	1.8	80.00	0	70.8	70	130				
PFHxS	57	1.8	80.00	0	70.7	70	130				
PFHpA	56	1.8	80.00	0	70.0	70	130				
ADONA	56	1.8	80.00	0	70.2	70	130				
PFOA	57	1.8	80.00	0	70.8	70	130				
PFOS	57	1.8	80.00	0	70.9	70	130				
PFNA	57	1.8	80.00	0	70.6	70	130				
9CI-PF3ONS	57	1.8	80.00	0	71.0	70	130				
PFDA	56	1.8	80.00	0	70.3	70	130				
NMeFOSAA	56	1.8	80.00	0	70.1	70	130				
NEtFOSAA	56	1.8	80.00	0	70.4	70	130				
PFUnA	56	1.8	80.00	0	70.1	70	130				
11CI-PF3OUdS	56	1.8	80.00	0	70.2	70	130				
PFDoA	56	1.8	80.00	0	70.3	70	130				
PFTTrDA	65	1.8	80.00	0	81.0	70	130				
PFTA	63	1.8	80.00	0	78.2	70	130				
Surr: d5-N-EtFOSSA	280		320.0		88.5	70	130				
Surr: M3HFPO-DA	200		200.0		98.7	70	130				
Surr: MPFDA	80		80.00		100	70	130				
Surr: MPFHxA	79		80.00		98.4	70	130				

Qualifiers:

* Value exceeds Maximum Contaminant Level.
MCL Maximum Contaminant Level

< Not Detected at the Reporting Limit
PL Permit Limit

H Holding times for preparation or analysis exceeded
RL Reporting Limit

QC SUMMARY REPORT

WO#: 2404137

5/9/2024

Client: Trace Analytical Laboratories, Inc.

Project: 24D1955

TestCode: PFAS-DW

Sample ID: 2404135-01ADUP	SampType: DUP	TestCode: PFAS-DW	Units: ng/L	Prep Date: 5/7/2024	RunNo: 38722						
Client ID: BatchQC	Batch ID: 6745	TestNo: EPA 537.1		Analysis Date: 5/8/2024	SeqNo: 765938						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
PFBS	< 1.5	1.5						0	0	30	
PFHxA	2.1	1.5						1.890	9.79	30	
HFPO-DA	< 1.5	1.5						0	0	30	
PFHxS	7.1	1.5						6.507	8.20	30	
PFHpA	4.7	1.5						4.159	11.7	30	
ADONA	< 1.5	1.5						0	0	30	
PFOA	24	1.5						22.29	8.84	30	*
PFOS	7.5	1.5						7.117	5.31	30	
PFNA	< 1.5	1.5						0	0	30	
9CI-PF3ONS	< 1.5	1.5						0	0	30	
PFDA	< 1.5	1.5						0	0	30	
NMeFOSAA	< 1.5	1.5						0	0	30	
NEtFOSAA	< 1.5	1.5						0	0	30	
PFUnA	< 1.5	1.5						0	0	30	
11CI-PF3OUdS	< 1.5	1.5						0	0	30	
PFDoA	< 1.5	1.5						0	0	30	
PFTTrDA	< 1.5	1.5						0	0	30	
PFTA	< 1.5	1.5						0	0	30	
Surr: d5-N-EtFOSSA	260		280.7		93.9	70	130		0	0	
Surr: M3HFPO-DA	180		175.4		102	70	130		0	0	
Surr: MPFDA	74		70.18		105	70	130		0	0	
Surr: MPFHxA	68		70.18		96.3	70	130		0	0	

Qualifiers: * Value exceeds Maximum Contaminant Level. < Not Detected at the Reporting Limit H Holding times for preparation or analysis exceeded
MCL Maximum Contaminant Level PL Permit Limit RL Reporting Limit

SUBCONTRACT ORDER
24D1955

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

4137-(1-2)

Project Manager: Tim Brewer

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

PO # 24D1955

Matrix: Drinking Water | Sampled: 04/24/24 10:35 | TAT: Standard

(-1)

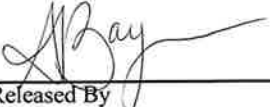


Sample ID: Plant 1420 24D1955-01

Sampled By: SD

Analysis Needed:

PFAS Drinking Water- EGLE List with Field Blank

(-2)

Released By 	Date 4/25/24	Received By 	Date 4-26-24
Released By 	Date 4-26-24	Received By SD	Date 4/26/24 10:00 5 ^c

TRACE

ANALYTICAL LABORATORIES, INC.

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

CHAIN-OF-CUSTODY RECORD

Page _____ of _____

Phone 231.773.5998
 Fax 888.979.4469
 www.trace-labs.com

Trace ID No.
AD1955

Report Results To:

Bill To:

Trace Use:

Company Name: City of Clare
 Report To: Dale Clark
 Mailing Address: 202 W. 5th St.
 City, State, Zip Code: Clare, MI 48617
 Office Phone: 989 386 2321 Cell Phone: 989 424 1225
 Email Address: dclark@cityofclare.gov
 PO #:
 Contact Name:
 Billing Address (if different):
 City, State, Zip Code:
 Phone Number:
 Billing Email Address:

Logged By: *SR*
 Checked By: *SR*
 Soil Volatiles Preserved (circle if applicable):
 MeOH Low Level Lab
 Sample Collection Time (hrs):

Requested Turnaround Times (TAT)

Matrix Key:

- Standard: 5-10 Business days
 - 3 Business Days*
 - 1 Business Day*
- * Rush TAT Requires Prior Approval
- WW = Wastewater O = Oil A = Air
 - DW = Drinking Water WI = Wipes U = Unknown
 - GW = Groundwater S = Solid
 - LW = Liquid Waste SL = Sludge

Project Name:

City of Clare

Sampled By (print):

Sven Drunkeller

Trace No.	Sample Collection Date	Sample Collection Time	Sample ID/Name	Metals Field Filtered (Y or N)	Matrix - see above →	Number of Containers	Preservation										Remarks/Notes	Possible Health Hazards?										
							Cool ≤ 4°C	Hydrochloric Acid (HCl)	Nitric Acid (HNO ₃)	Sulfuric Acid (H ₂ SO ₄)	Sodium Thiosulfate	Sodium Hydroxide (NaOH)	Ascorbic Acid	Trizma	Other	Other			Other									
1	4/21/24	10:55	Plant Tap	N	DW	2																						

Please Sign

Released By	Received By	Date	Time	Released By	Received By	Date	Time
<i>[Signature]</i>	<i>[Signature]</i>	4/23/24	11:30	<i>[Signature]</i>	<i>[Signature]</i>	4/25/24	14:40

In executing this Chain of Custody, the client acknowledges the terms as set forth at www.trace-labs.com/terms-of-agreement.
 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 70-2.2

24D1955

Clare, City of
 Project Manager: Tim Brewer

Sample Log In Checklist

Date: 4/25/24	Original Observation	Corrected Temperature	IR-9 (CF: 0.0°C)	IR-10 (CF: -0.2°C)	IR-12 (CF: 0.0°C)	SR1 (CF: -0.2°C)	SR2 (CF: -0.1°C)	Temp Blank	Client Sample
Time: 14:48									
Initials: BV									
Package Description: Cooler									
Package Temp °C	0.3	0.3				✓			
Representative Sample Temp °C	1.4	1.2				✓		✓	

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: HC311850) 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:
