

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



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

July 28, 2022

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

RE: Trace Project 22G0784
Client Project Drinking Water PFAS

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.

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

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



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SAMPLE SUMMARY

Trace Project ID: 22G0784
Client Project ID: Drinking Water PFAS

| Trace ID | Sample ID | Matrix | Collected By | Date Collected | Date Received |
|------------|---------------------|----------------|--------------|----------------|----------------|
| 22G0784-01 | Treatment Plant Tap | Drinking Water | TQ | 07/13/22 10:20 | 07/20/22 11:06 |

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. |

July 27, 2022

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

RE: 22G0784

Order No.: 2207F88

Dear Mr. Tim Brewer:

[Guide to reading Lab Result](#)

Prein&Newhof Laboratory received 2 sample(s) on 7/22/2022 on your behalf. Your test results are provided in your Prein&Newhof Laboratory analytical report. Please carefully review your analytical report, noting the following.

- 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.
Project: 22G0784
Lab ID: 2207F88-01
Client Sample ID: 22G0784-01
Location:

Collection Date: 7/13/2022 10:20:00 AM
Received Date: 7/22/2022 9:40:00 AM
Matrix: DRINKING WATER
Sampled By: TQ

| Analyses | Result | RL | Qual | Units | MCL | Date Analyzed |
|----------|--------|----|------|-------|-----|---------------|
|----------|--------|----|------|-------|-----|---------------|

PFAS, DRINKING WATER

EPA 537.1

Analyst: **JS**

| | | | | | | |
|--------------------|-------|----------|--|------|--------|----------------------|
| PFBS | 3.5 | 2.0 | | ng/L | 420 | 7/26/2022 7:58:00 AM |
| PFHxA | < 2.0 | 2.0 | | ng/L | 400000 | 7/26/2022 7:58:00 AM |
| HFPO-DA | < 2.0 | 2.0 | | ng/L | 370 | 7/26/2022 7:58:00 AM |
| PFHxS | 7.1 | 2.0 | | ng/L | 51 | 7/26/2022 7:58:00 AM |
| PFHpA | < 2.0 | 2.0 | | ng/L | | 7/26/2022 7:58:00 AM |
| ADONA | < 2.0 | 2.0 | | ng/L | | 7/26/2022 7:58:00 AM |
| PFOA | < 2.0 | 2.0 | | ng/L | 8.0 | 7/26/2022 7:58:00 AM |
| PFOS | 5.0 | 2.0 | | ng/L | 16 | 7/26/2022 7:58:00 AM |
| PFNA | < 2.0 | 2.0 | | ng/L | 6.0 | 7/26/2022 7:58:00 AM |
| 9CI-PF3ONS | < 2.0 | 2.0 | | ng/L | | 7/26/2022 7:58:00 AM |
| PFDA | < 2.0 | 2.0 | | ng/L | | 7/26/2022 7:58:00 AM |
| NMeFOSAA | < 2.0 | 2.0 | | ng/L | | 7/26/2022 7:58:00 AM |
| NEtFOSAA | < 2.0 | 2.0 | | ng/L | | 7/26/2022 7:58:00 AM |
| PFUnA | < 2.0 | 2.0 | | ng/L | | 7/26/2022 7:58:00 AM |
| 11CI-PF3OUdS | < 2.0 | 2.0 | | ng/L | | 7/26/2022 7:58:00 AM |
| PFDaA | < 2.0 | 2.0 | | ng/L | | 7/26/2022 7:58:00 AM |
| PFTTrDA | < 2.0 | 2.0 | | ng/L | | 7/26/2022 7:58:00 AM |
| PFTA | < 2.0 | 2.0 | | ng/L | | 7/26/2022 7:58:00 AM |
| Surr: d5-N-EtFOSSA | 94.1 | 70 - 130 | | %Rec | | 7/26/2022 7:58:00 AM |
| Surr: M3HFPO-DA | 119 | 70 - 130 | | %Rec | | 7/26/2022 7:58:00 AM |
| Surr: MPFDA | 106 | 70 - 130 | | %Rec | | 7/26/2022 7:58:00 AM |
| Surr: MPFHxA | 108 | 70 - 130 | | %Rec | | 7/26/2022 7:58:00 AM |

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
S Spike Recovery outside accepted recovery limits

CLIENT: Trace Analytical Laboratories, Inc.
Project: 22G0784
Lab ID: 2207F88-02
Client Sample ID: Field Blank
Location:

Collection Date: 7/13/2022 10:20:00 AM
Received Date: 7/22/2022 9:40:00 AM
Matrix: BLANK
Sampled By: TQ

| Analyses | Result | RL | Qual | Units | MCL | Date Analyzed |
|----------|--------|----|------|-------|-----|---------------|
|----------|--------|----|------|-------|-----|---------------|

PFAS, DRINKING WATER

EPA 537.1

Analyst: **JS**

| | | | | | | |
|--------------------|-------|----------|--|------|--------|----------------------|
| PFBS | < 2.0 | 2.0 | | ng/L | 420 | 7/26/2022 3:14:00 AM |
| PFHxA | < 2.0 | 2.0 | | ng/L | 400000 | 7/26/2022 3:14:00 AM |
| HFPO-DA | < 2.0 | 2.0 | | ng/L | 370 | 7/26/2022 3:14:00 AM |
| PFHxS | < 2.0 | 2.0 | | ng/L | 51 | 7/26/2022 3:14:00 AM |
| PFHpA | < 2.0 | 2.0 | | ng/L | | 7/26/2022 3:14:00 AM |
| ADONA | < 2.0 | 2.0 | | ng/L | | 7/26/2022 3:14:00 AM |
| PFOA | < 2.0 | 2.0 | | ng/L | 8.0 | 7/26/2022 3:14:00 AM |
| PFOS | < 2.0 | 2.0 | | ng/L | 16 | 7/26/2022 3:14:00 AM |
| PFNA | < 2.0 | 2.0 | | ng/L | 6.0 | 7/26/2022 3:14:00 AM |
| 9CI-PF3ONS | < 2.0 | 2.0 | | ng/L | | 7/26/2022 3:14:00 AM |
| PFDA | < 2.0 | 2.0 | | ng/L | | 7/26/2022 3:14:00 AM |
| NMeFOSAA | < 2.0 | 2.0 | | ng/L | | 7/26/2022 3:14:00 AM |
| NEtFOSAA | < 2.0 | 2.0 | | ng/L | | 7/26/2022 3:14:00 AM |
| PFUnA | < 2.0 | 2.0 | | ng/L | | 7/26/2022 3:14:00 AM |
| 11CI-PF3OUdS | < 2.0 | 2.0 | | ng/L | | 7/26/2022 3:14:00 AM |
| PFDoA | < 2.0 | 2.0 | | ng/L | | 7/26/2022 3:14:00 AM |
| PFTTrDA | < 2.0 | 2.0 | | ng/L | | 7/26/2022 3:14:00 AM |
| PFTA | < 2.0 | 2.0 | | ng/L | | 7/26/2022 3:14:00 AM |
| Surr: d5-N-EtFOSSA | 84.1 | 70 - 130 | | %Rec | | 7/26/2022 3:14:00 AM |
| Surr: M3HFPO-DA | 107 | 70 - 130 | | %Rec | | 7/26/2022 3:14:00 AM |
| Surr: MPFDA | 92.2 | 70 - 130 | | %Rec | | 7/26/2022 3:14:00 AM |
| Surr: MPFHxA | 119 | 70 - 130 | | %Rec | | 7/26/2022 3:14:00 AM |

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
S Spike Recovery outside accepted recovery limits

WO#: 2207F88

7/27/2022

Client: Trace Analytical Laboratories, Inc.

Project: 22G0784

TestCode: PFAS-DW

| | | | | | | | | | | | |
|-----------------------------------|---------------------------|--------------------------|--------------------|---------------------------------|----------------------|----------|-----------|-------------|------|----------|------|
| Sample ID: LCS-high-4524 A | SampType: LCS-HIGH | TestCode: PFAS-DW | Units: %Rec | Prep Date: 7/22/2022 | RunNo: 28007 | | | | | | |
| Client ID: BatchQC | Batch ID: 4524 | TestNo: EPA 537.1 | | Analysis Date: 7/26/2022 | SeqNo: 526076 | | | | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
| Surr: d5-N-EtFOSSA | 57 | | 80.00 | | 71.1 | 70 | 130 | | | | |
| Surr: M3HFPO-DA | 190 | | 200.0 | | 94.6 | 70 | 130 | | | | |
| Surr: MPFDA | 82 | | 80.00 | | 102 | 70 | 130 | | | | |
| Surr: MPFHxA | 85 | | 80.00 | | 107 | 70 | 130 | | | | |

| | | | | | | | | | | | |
|-----------------------------------|---------------------------|--------------------------|--------------------|---------------------------------|----------------------|----------|-----------|-------------|------|----------|------|
| Sample ID: LCS-high-4524 B | SampType: LCS-HIGH | TestCode: PFAS-DW | Units: %Rec | Prep Date: 7/22/2022 | RunNo: 28007 | | | | | | |
| Client ID: BatchQC | Batch ID: 4524 | TestNo: EPA 537.1 | | Analysis Date: 7/25/2022 | SeqNo: 526107 | | | | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
| Surr: d5-N-EtFOSSA | 54 | | 80.00 | | 67.0 | 70 | 130 | | | | S |
| Surr: M3HFPO-DA | 180 | | 200.0 | | 90.1 | 70 | 130 | | | | |
| Surr: MPFDA | 83 | | 80.00 | | 104 | 70 | 130 | | | | |
| Surr: MPFHxA | 85 | | 80.00 | | 107 | 70 | 130 | | | | |

| | | | | | | | | | | | |
|------------------------------|-----------------------|--------------------------|--------------------|---------------------------------|----------------------|----------|-----------|-------------|------|----------|------|
| Sample ID: MB-R9-4525 | SampType: MBLK | TestCode: PFAS-DW | Units: ng/L | Prep Date: 7/23/2022 | RunNo: 28007 | | | | | | |
| Client ID: PBW | Batch ID: 4525 | TestNo: EPA 537.1 | | Analysis Date: 7/25/2022 | SeqNo: 526108 | | | | | | |
| 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 | | | | | | | | | |

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
S Spike Recovery outside accepted recovery limits

WO#: **2207F88**

7/27/2022

Client: Trace Analytical Laboratories, Inc.

Project: 22G0784

TestCode: PFAS-DW

| Sample ID: MB-R9-4525 | SampType: MBLK | TestCode: PFAS-DW | Units: ng/L | Prep Date: 7/23/2022 | RunNo: 28007 | | | | | | |
|------------------------------|-----------------------|--------------------------|--------------------|---------------------------------|----------------------|----------|-----------|-------------|------|----------|------|
| Client ID: PBW | Batch ID: 4525 | TestNo: EPA 537.1 | | Analysis Date: 7/25/2022 | SeqNo: 526108 | | | | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
| 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 | 69 | | 80.00 | | 86.6 | 70 | 130 | | | | |
| Surr: M3HFPO-DA | 200 | | 200.0 | | 102 | 70 | 130 | | | | |
| Surr: MPFDA | 80 | | 80.00 | | 99.7 | 70 | 130 | | | | |
| Surr: MPFHxA | 78 | | 80.00 | | 98.0 | 70 | 130 | | | | |

| Sample ID: LCS-low-4525 A | SampType: LCS-LOW | TestCode: PFAS-DW | Units: ng/L | Prep Date: 7/23/2022 | RunNo: 28007 | | | | | | |
|----------------------------------|--------------------------|--------------------------|--------------------|---------------------------------|----------------------|----------|-----------|-------------|------|----------|------|
| Client ID: BatchQC | Batch ID: 4525 | TestNo: EPA 537.1 | | Analysis Date: 7/25/2022 | SeqNo: 526109 | | | | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
| PFBS | 2.2 | 1.8 | 2.000 | 0 | 110 | 50 | 150 | | | | |
| PFHxA | 2.1 | 1.8 | 2.000 | 0 | 105 | 50 | 150 | | | | |

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
S Spike Recovery outside accepted recovery limits

WO#: 2207F88

7/27/2022

Client: Trace Analytical Laboratories, Inc.

Project: 22G0784

TestCode: PFAS-DW

| Sample ID: LCS-low-4525 A | SampType: LCS-LOW | TestCode: PFAS-DW | Units: ng/L | Prep Date: 7/23/2022 | RunNo: 28007 | | | | | | |
|----------------------------------|--------------------------|--------------------------|--------------------|---------------------------------|----------------------|----------|-----------|-------------|------|----------|------|
| Client ID: BatchQC | Batch ID: 4525 | TestNo: EPA 537.1 | | Analysis Date: 7/25/2022 | SeqNo: 526109 | | | | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
| HFPO-DA | < 1.8 | 1.8 | 2.000 | 0 | 87.0 | 50 | 150 | | | | |
| PFHxS | 2.2 | 1.8 | 2.000 | 0 | 112 | 50 | 150 | | | | |
| PFHpA | < 1.8 | 1.8 | 2.000 | 0 | 86.0 | 50 | 150 | | | | |
| ADONA | 1.8 | 1.8 | 2.000 | 0 | 90.6 | 50 | 150 | | | | |
| PFOA | 2.1 | 1.8 | 2.000 | 0 | 104 | 50 | 150 | | | | |
| PFOS | 2.3 | 1.8 | 2.000 | 0 | 115 | 50 | 150 | | | | |
| PFNA | 2.1 | 1.8 | 2.000 | 0 | 107 | 50 | 150 | | | | |
| 9CI-PF3ONS | 2.1 | 1.8 | 2.000 | 0 | 105 | 50 | 150 | | | | |
| PFDA | 2.1 | 1.8 | 2.000 | 0 | 106 | 50 | 150 | | | | |
| NMeFOSAA | 2.0 | 1.8 | 2.000 | 0 | 100 | 50 | 150 | | | | |
| NEtFOSAA | 2.0 | 1.8 | 2.000 | 0 | 101 | 50 | 150 | | | | |
| PFUnA | 2.0 | 1.8 | 2.000 | 0 | 101 | 50 | 150 | | | | |
| 11CI-PF3OUdS | 2.0 | 1.8 | 2.000 | 0 | 101 | 50 | 150 | | | | |
| PFDoA | 2.1 | 1.8 | 2.000 | 0 | 107 | 50 | 150 | | | | |
| PFTTrDA | 2.1 | 1.8 | 2.000 | 0 | 103 | 50 | 150 | | | | |
| PFTA | 2.1 | 1.8 | 2.000 | 0 | 105 | 50 | 150 | | | | |
| Surr: d5-N-EtFOSSA | 74 | | 80.00 | | 92.6 | 70 | 130 | | | | |
| Surr: M3HFPO-DA | 200 | | 200.0 | | 102 | 70 | 130 | | | | |
| Surr: MPFDA | 79 | | 80.00 | | 98.6 | 70 | 130 | | | | |
| Surr: MPFHxA | 78 | | 80.00 | | 97.0 | 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
S Spike Recovery outside accepted recovery limits

WO#: **2207F88**

7/27/2022

Client: Trace Analytical Laboratories, Inc.

Project: 22G0784

TestCode: PFAS-DW

| Sample ID: 2207B41-05ADUP | SampType: DUP | TestCode: PFAS-DW | Units: ng/L | Prep Date: 7/23/2022 | RunNo: 28007 | | | | | | |
|----------------------------------|-----------------------|--------------------------|---------------------------------|-----------------------------|---------------------|----------|-----------|-------------|------|----------|------|
| Client ID: BatchQC | Batch ID: 4525 | TestNo: EPA 537.1 | Analysis Date: 7/26/2022 | SeqNo: 526128 | | | | | | | |
| 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 | 65 | | 71.43 | | 91.3 | 70 | 130 | | 0 | 0 | |
| Surr: M3HFPO-DA | 210 | | 178.6 | | 120 | 70 | 130 | | 0 | 0 | |
| Surr: MPFDA | 72 | | 71.43 | | 101 | 70 | 130 | | 0 | 0 | |
| Surr: MPFHxA | 70 | | 71.43 | | 97.7 | 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
S Spike Recovery outside accepted recovery limits

WO#: 2207F88

7/27/2022

Client: Trace Analytical Laboratories, Inc.

Project: 22G0784

TestCode: PFAS-DW

| Sample ID: 2207F88-01AMS | SampType: MSD-MID | TestCode: PFAS-DW | Units: ng/L | Prep Date: 7/23/2022 | RunNo: 28007 | | | | | | |
|---------------------------------|--------------------------|--------------------------|--------------------|---------------------------------|----------------------|----------|-----------|-------------|------|----------|------|
| Client ID: 22G0784-01 | Batch ID: 4525 | TestNo: EPA 537.1 | | Analysis Date: 7/26/2022 | SeqNo: 526134 | | | | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
| PFBS | 110 | 1.6 | 92.59 | 3.452 | 116 | 70 | 130 | | | | |
| PFHxA | 110 | 1.6 | 92.59 | 1.907 | 115 | 70 | 130 | | | | |
| HFPO-DA | 110 | 1.6 | 92.59 | 0 | 115 | 70 | 130 | | | | |
| PFHxS | 110 | 1.6 | 92.59 | 7.056 | 111 | 70 | 130 | | | | |
| PFHpA | 99 | 1.6 | 92.59 | 0 | 107 | 70 | 130 | | | | |
| ADONA | 89 | 1.6 | 92.59 | 0 | 96.0 | 70 | 130 | | | | |
| PFOA | 100 | 1.6 | 92.59 | 1.467 | 110 | 70 | 130 | | | | |
| PFOS | 100 | 1.6 | 92.59 | 5.022 | 108 | 70 | 130 | | | | |
| PFNA | 99 | 1.6 | 92.59 | 0 | 107 | 70 | 130 | | | | |
| 9CI-PF3ONS | 100 | 1.6 | 92.59 | 0 | 110 | 70 | 130 | | | | |
| PFDA | 100 | 1.6 | 92.59 | 0 | 110 | 70 | 130 | | | | |
| NMeFOSAA | 93 | 1.6 | 92.59 | 0 | 100 | 70 | 130 | | | | |
| NEtFOSAA | 85 | 1.6 | 92.59 | 0 | 92.3 | 70 | 130 | | | | |
| PFUnA | 100 | 1.6 | 92.59 | 0 | 109 | 70 | 130 | | | | |
| 11CI-PF3OUdS | 98 | 1.6 | 92.59 | 0 | 106 | 70 | 130 | | | | |
| PFDoA | 98 | 1.6 | 92.59 | 0 | 106 | 70 | 130 | | | | |
| PFTTrDA | 100 | 1.6 | 92.59 | 0 | 112 | 70 | 130 | | | | |
| PFTA | 100 | 1.6 | 92.59 | 0 | 110 | 70 | 130 | | | | |
| Surr: d5-N-EtFOSSA | 61 | | 74.07 | | 82.0 | 70 | 130 | | | | |
| Surr: M3HFPO-DA | 210 | | 185.2 | | 113 | 70 | 130 | | | | |
| Surr: MPFDA | 69 | | 74.07 | | 93.4 | 70 | 130 | | | | |
| Surr: MPFHxA | 78 | | 74.07 | | 105 | 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
S Spike Recovery outside accepted recovery limits

WO#: 2207F88

7/27/2022

Client: Trace Analytical Laboratories, Inc.

Project: 22G0784

TestCode: PFAS-DW

| Sample ID: LCS-low-4525 B | SampType: LCS-LOW | TestCode: PFAS-DW | Units: ng/L | Prep Date: 7/23/2022 | RunNo: 28007 | | | | | | |
|----------------------------------|--------------------------|--------------------------|--------------------|---------------------------------|----------------------|----------|-----------|-------------|------|----------|------|
| Client ID: BatchQC | Batch ID: 4525 | TestNo: EPA 537.1 | | Analysis Date: 7/26/2022 | SeqNo: 526135 | | | | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
| PFBS | 2.2 | 1.8 | 2.000 | 0 | 111 | 50 | 150 | | | | |
| PFHxA | 2.0 | 1.8 | 2.000 | 0 | 102 | 50 | 150 | | | | |
| HFPO-DA | 2.0 | 1.8 | 2.000 | 0 | 102 | 50 | 150 | | | | |
| PFHxS | 2.3 | 1.8 | 2.000 | 0 | 115 | 50 | 150 | | | | |
| PFHpA | 1.8 | 1.8 | 2.000 | 0 | 88.0 | 50 | 150 | | | | |
| ADONA | 1.8 | 1.8 | 2.000 | 0 | 90.6 | 50 | 150 | | | | |
| PFOA | 2.1 | 1.8 | 2.000 | 0 | 104 | 50 | 150 | | | | |
| PFOS | 2.1 | 1.8 | 2.000 | 0 | 106 | 50 | 150 | | | | |
| PFNA | 2.2 | 1.8 | 2.000 | 0 | 109 | 50 | 150 | | | | |
| 9CI-PF3ONS | 2.1 | 1.8 | 2.000 | 0 | 103 | 50 | 150 | | | | |
| PFDA | 2.2 | 1.8 | 2.000 | 0 | 108 | 50 | 150 | | | | |
| NMeFOSAA | 2.1 | 1.8 | 2.000 | 0 | 103 | 50 | 150 | | | | |
| NEtFOSAA | 2.0 | 1.8 | 2.000 | 0 | 101 | 50 | 150 | | | | |
| PFUnA | 2.1 | 1.8 | 2.000 | 0 | 105 | 50 | 150 | | | | |
| 11CI-PF3OUdS | 2.0 | 1.8 | 2.000 | 0 | 102 | 50 | 150 | | | | |
| PFDoA | 2.0 | 1.8 | 2.000 | 0 | 102 | 50 | 150 | | | | |
| PFTTrDA | 2.1 | 1.8 | 2.000 | 0 | 105 | 50 | 150 | | | | |
| PFTA | 2.2 | 1.8 | 2.000 | 0 | 108 | 50 | 150 | | | | |
| Surr: d5-N-EtFOSSA | 74 | | 80.00 | | 93.0 | 70 | 130 | | | | |
| Surr: M3HFPO-DA | 240 | | 200.0 | | 121 | 70 | 130 | | | | |
| Surr: MPFDA | 80 | | 80.00 | | 100 | 70 | 130 | | | | |
| Surr: MPFHxA | 75 | | 80.00 | | 93.6 | 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
S Spike Recovery outside accepted recovery limits

SUBCONTRACT ORDER

22G0784

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

7f88/1-2

Project Manager: Tim Brewer

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

PO # 22G0784

Sample ID: Treatment Plant Tap 22G0784-01 Matrix: Drinking Water Sampled: 07/13/22 10:20 TAT: Standard

3

Sampled By: TQ

Analysis Needed:

PFAS Drinking Water- EGLE List with Field Blank

Released By:  Date: 7/20/22 Received By:  Date: 7/22/22 0940

Released By: _____ Date: _____ Received By: _____ Date: _____

802

CHAIN-OF-CUSTODY RECORD

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

Page _____ of _____

Trace ID No. **2260784**

Report Results To:

Company Name: *City of Clare* PO #:
 Report To: *Dale Clark* Contact Name: *SAKE*
 Mailing Address: *202 W. Fifth St* Billing Address (if different):
 City, State, Zip Code: *Clare, MI 48617* City, State, Zip Code:
 Office Phone: *989-386-2321* Cell Phone: *224-1224* Phone Number:
 Email Address: *dclark@cityofclare.org* Billing Email Address:

Trace Use:

Logged By: *NE*
 Checked By: *BV*
 Soil Volatiles Preserved (circle if applicable):
 MeOH Low Level Lab
 Sampling Time:

Turnaround Requirements:

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

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

Matrix Key:

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

Project Name: *Drinking water PFAS* Sampled By: *Tom Cwick*

| Trace No. | Date Collected | Time Collected | Client Sample ID | Metals Field Filtered (Y/N) | Matrix | Number of Containers | Preservation | | | | | | Remarks | Possible Health Hazards? | | |
|-----------|----------------|----------------|----------------------------|-----------------------------|----------|----------------------|--------------|----------|------------------|--------------------------------|----------|----------|----------|--------------------------|------------------|--|
| | | | | | | | Cool | HCl | HNO ₃ | H ₂ SO ₄ | NaOH | Other | | | | |
| <i>1</i> | <i>7-13-22</i> | <i>10:20</i> | <i>Treatment Plant TAP</i> | | <i>D</i> | <i>3</i> | <i>X</i> | <i>X</i> | <i>X</i> | <i>X</i> | <i>X</i> | <i>X</i> | <i>X</i> | <i>X</i> | <i>D.W. PFAS</i> | |
| <i>1</i> | <i>7-12-22</i> | <i>10:20</i> | <i>Trip Blank</i> | | | | <i>W</i> | <i>2</i> | <i>X</i> | | | | | | | |
| | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | |

Please Sign

| Released By | Received By | Date | Time |
|-------------|-------------|----------------|--------------|
| <i>URS</i> | <i>URS</i> | <i>7/20/22</i> | <i>11:06</i> |
| | | | |
| | | | |
| | | | |

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.

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

4460784

Clare, City of
 Project Manager: Tim Brewer

Sample Log In Checklist

| | | | | | | | | | |
|-------------------------------|---------|------|----------------------|-----------------------|-------------------|-------------------|-----------------------|------------|---------------|
| Date: | 7/20/22 | | Original Observation | Corrected Temperature | IR-9 (CF: +0.1°C) | IR-10 (CF: 0.0°C) | 20B12743 (CF: -0.2°C) | Temp Blank | Client Sample |
| Time: | 11:06 | | | | | | | | |
| Logged by: | NC | | | | | | | | |
| Package Description: | Cooler | | | | | | | | |
| Package Temp °C | 7.0 | 7.0 | | | | | | | |
| Representative Sample Temp °C | 15.5 | 15.5 | | | | | | | |

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: HC176962) 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: