



5011 S. Lilley Road, Canton, MI 48188  
o 734.231.8217 f 734.348.5194 cpearse@republicservices.com

February 25, 2022

*Sent Via Email*

Mr. Jim Bakun, CPG  
Michigan Department of Environment, Great Lakes and Energy  
Warren District Office  
27700 Donald Court  
Warren, Michigan 48092

Subject: Results of PFAS and 1,4-Dioxane Sampling  
Sauk Trail Hills, Canton, Michigan

Dear Mr. Bakun:

On August 3, 2021, Sauk Trail Hills (STH) submitted a Sampling and Analysis Plan (SAP) in response to a letter dated March 18, 2021, from the Michigan Department of Environment, Great Lakes and Energy (EGLE) which requested groundwater sampling for per- and polyfluoroalkyl substances (PFAS) and 1,4-Dioxane. EGLE approved the SAP on October 8, 2021. The purpose of the sampling was to screen for the possible presence of these compounds in groundwater. This letter report provides a summary of the activities and results.

### **PFAS and 1,4-Dioxane Sampling**

On November 29 and 30, 2021, Environmental Sampling Services, Inc. (ESS) of Hartland, Michigan, completed the PFAS and 1,4-dioxane (1,4-D) sampling in accordance with the approved SAP. Dedicated Teflon containing sampling equipment was removed from the wells before the event to reduce the possibility of PFAS detections associated with such equipment.

Six groundwater wells were purged and sampled for PFAS and 1,4-D. Additional parameters were analyzed at select wells and are discussed more below. The six wells are located either upgradient of the site, are near areas where waste was historically excavated or are in the flow direction of residential wells. Well MW-27R was sampled as a background/upgradient well and the rest are considered downgradient wells. A total of eleven samples, including a duplicate, field blank, trip blank, and two equipment blanks, were submitted for analysis of PFAS by modified Method 537 with isotope dilution and 1,4-D by Method 8260 SIM to Pace Analytical Services, LLC (Pace) in West Columbia, South Carolina. Field sampling procedures and measurements are documented on the field forms in Attachment A.

## Analytical Results

The analytical data were received from Pace on January 4, 2021 (Attachment B). The data were reviewed, and the following were noted:

- No holding times were exceeded.
- The duplicate results were within acceptance limits.
- There was a low-level PFAS detection for 6:2 FTS in one equipment blank and the trip blank. This compound was not detected in the groundwater samples.
- The laboratory control sample, matrix spike, and internal standard recoveries were within the control limits with a few exceptions. However, these exceptions did not adversely affect the groundwater sample results.

The analytical PFAS results are summarized in Table 1 and included in Attachment B. In accordance with the approved SAP, the PFAS results were compared to the EGLE Drinking Water Health Based Values developed in June 2019 (which are now also drinking water MCLs) and the 1,4-D results were compared to the Part 201 Generic Cleanup Criteria and Screening Levels for Residential Drinking Water dated December 2020 as shown in the table below:

Parameter	Screening Level
PFOA	8 ng/L
PFOS	16 ng/L
PFBS	420 ng/L
PFHxS	51 ng/L
PFHxA	400,000 ng/L
PFNA	6 ng/L
GenX	370 ng/L
1,4-Dioxane	7.2 ug/L

## Discussion of Results

There were no PFAS or 1,4-D detections at or above the laboratory reporting limits in the groundwater samples.

## EGLE Split Sampling

During the PFAS and 1,4-D sampling event, EGLE collected split samples from three monitoring wells MW-21R, MW-26R, and MW-39. These split samples were analyzed by their environmental laboratory for volatile organic compounds (VOCs), 1,4-D, dissolved metals, total dissolved solids, total suspended solids, chloride, fluoride, nitrate/nitrite, nitrite, sulfate, bicarbonate and carbonate alkalinity and hexavalent chromium. The detected results are in

Table 2. There were no detections for VOCs or 1,4-D in the EGLE results at or above the quantitation limits.

STHD elected to collect additional samples for alkalinity, chloride, fluoride, and dissolved metals. These results are included in Table 2 for comparison.

In general, the comparison shows that the EGLE and STHD results are similar. The relative percent difference between the EGLE and STHD results are generally at or below 20% with a few exceptions for general indicators (iron, manganese, and sulfate). Those exceptions are highlighted in Table 2.

### Conclusions

Based on the non-detect results of the sampling event for groundwater, there were no detections for PFAS or 1,4-D and therefore no exceedances of the SAP Screening Levels. STH concludes that no further groundwater investigation of PFAS and 1,4-D is warranted.

If you have any questions regarding this submittal, please contact me via email at [cpearse@republicservices.com](mailto:cpearse@republicservices.com) or at (734) 231-8217.

Sincerely,  
Sauk Trail Hills



Christina L. Pearse  
Team Environmental Manager

### Attachments

CC: Nicole Green, Sauk Trail Hills  
Joe Montello, Sauk Trail Hills  
Patrick Sullivan, Sauk Trail Hills  
Kerri Lilly, Brown and Caldwell

# Tables



TABLE 1. PFAS and 1,4-D Sampling Results

Parameter	Units	SAP Screening Level	MW-7R	MW-21A	MW-26R	MW-39	MW-46R	MW-27R	MW-27R / Duplicate 01	Bailer Blank	Static Meter Blank	Field Blank	Trip Blank
			11/30/2021	11/29/2021	11/29/2021	11/29/2021	11/29/2021	11/29/2021	11/30/2021	11/30/2021	11/30/2021	11/29/2021	11/30/2021
1,4-Dioxane	ug/L	7.2	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9Cl-PF30NS)	ng/L	--	<4.3	<5.3	<5.1	<4.1	<3.8	<5.2	<6.1	<3.9	<4.5	<4.6	<4.0
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF30UdS)	ng/L	--	<4.3	<5.3	<5.1	<4.1	<3.8 S	<5.2	<6.1	<3.9	<4.5	<4.6	<4.0
8:2FTS	ng/L	--	<4.3	<5.3	<5.1	<4.1	<3.8	<5.2	<6.1 Q	<3.9	<4.5	<4.6	<4.0
6:2FTS	ng/L	--	<4.3	<5.3	<5.1	<4.1	<3.8	<5.2	<6.1	<3.9	<b>14</b>	<4.6	<b>4.9</b>
4:2 FTS	ng/L	--	<4.3	<5.3	<5.1	<4.1	<3.8	<5.2	<6.1	<3.9	<4.5	<4.6	<4.0
Hexafluoropropylene oxide dimer acid (GenX)	ng/L	370	<4.3	<5.3	<5.1	<4.1	<3.8	<5.2	<6.1	<3.9	<4.5	<4.6	<4.0
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ng/L	--	<4.3	<5.3	<5.1	<4.1	<3.8	<5.2	<6.1	<3.9	<4.5	<4.6	<4.0
N-ethyl perf sulf acid (NEtFOSAA)	ng/L	--	<4.3	<5.3	<5.1	<4.1	<3.8	<5.2	<6.1 Q	<3.9	<4.5	<4.6	<4.0
N-methyl perf sulf acid (NMeFOSAA)	ng/L	--	<4.3	<5.3	<5.1	<4.1	<3.8	<5.2	<6.1	<3.9	<4.5	<4.6	<4.0
Perfluorobutanesulfonic acid (PFBS)	ng/L	420	<2.1	<2.6	<2.6	<2.0	<1.9	<2.6	<3.1	<1.9	<2.3	<2.3	<2.0
Perfluorodecanesulfonic acid (PFDS)	ng/L	--	<2.1	<2.6	<2.6	<2.0	<1.9 S	<2.6	<6.1	<1.9	<2.3	<2.3	<2.0
Perfluoroheptanesulfonic Acid (PFHpS)	ng/L	--	<2.1	<2.6	<2.6	<2.0	<1.9	<2.6	<6.1	<1.9	<2.3	<2.3	<2.0
Perfluorononanesulfonic acid (PFNS)	ng/L	--	<2.1	<2.6	<2.6	<2.0	<1.9	<2.6	<3.1	<1.9	<2.3	<2.3	<2.0
Perfluorooctane Sulfonamide (FOSA)	ng/L	--	<2.1	<2.6 Q	<2.6 Q	<2.0	<1.9 Q	<2.6	<3.1	<1.9	<2.3	<2.3	<2.0
Perfluoropentanesulfonic acid (PFPeS)	ng/L	--	<2.1	<2.6	<2.6	<2.0	<1.9	<2.6	<3.1	<1.9	<2.3	<2.3	<2.0
Perfluorohexanesulfonic acid (PFHxS)	ng/L	51	<2.1	<2.6	<2.6	<2.0	<1.9	<2.6	<3.1	<1.9	<2.3	<2.3	<2.0
Perfluorobutanoic acid (PFBA)	ng/L	--	<2.1	<2.6	<2.6	<2.0	<1.9	<2.6	<3.1	<1.9	<2.3	<2.3	<2.0
Perfluorodecanoic acid (PFDA)	ng/L	--	<2.1	<2.6	<2.6	<2.0	<1.9	<2.6	<3.1	<1.9	<2.3	<2.3	<2.0
Perfluorododecanoic acid (PFDoA)	ng/L	--	<2.1 Q	<2.6 Q	<2.6	<2.0	<1.9	<2.6	<3.1 Q	<1.9	<2.3	<2.3	<2.0
Perfluoroheptanoic acid (PFHpA)	ng/L	--	<2.1	<2.6	<2.6	<2.0	<1.9	<2.6	<3.1	<1.9	<2.3	<2.3	<2.0
Perfluorohexanoic acid (PFHxA)	ng/L	400,000	<2.1	<2.6	<2.6	<2.0	<1.9	<2.6	<3.1	<1.9	<2.3	<2.3	<2.0
Perfluorononanoic acid (PFNA)	ng/L	6	<2.1	<2.6	<2.6	<2.0	<1.9	<2.6	<3.1	<1.9	<2.3	<2.3	<2.0
Perfluorooctanoic acid (PFOA)	ng/L	8	<2.1	<2.6	<2.6	<2.0	<1.9	<2.6	<3.1	<1.9	<2.3	<2.3	<2.0
Perfluoropentanoic acid (PFPA)	ng/L	--	<2.1	<2.6	<2.6	<2.0	<1.9	<2.6	<3.1	<1.9	<2.3	<2.3	<2.0
Perfluorotetradecanoic acid (PFTeA)	ng/L	--	<2.1	<2.6 Q	<2.6 Q	<2.0	<1.9	<2.6 Q	<3.1 Q	<1.9	<2.3	<2.3	<2.0
Perfluorotridecanoic Acid (PFTriA)	ng/L	--	<2.1 Q	<2.6 Q	<2.6	<2.0	<1.9	<2.6	<3.1 Q	<1.9	<2.3	<2.3	<2.0
Perfluoroundecanoic acid (PFUnA)	ng/L	--	<2.1	<2.6	<2.6	<2.0	<1.9	<2.6	<3.1 Q	<1.9	<2.3	<2.3	<2.0
Perfluorooctanesulfonic acid (PFOS)	ng/L	16	<2.1	<2.6	<2.6	<2.0	<1.9	<2.6	<3.1	<1.9	<2.3	<2.3	<2.0

## Notes:

Q - Indicates surrogate recovery was below the acceptance range

S - Indicates that the laboratory MS/MSD recovery was below the acceptance range.

**TABLE 2. EGLE and STHD Split Sampling Results.**

	Units	MW-26R			MW-39			MW-21A		
		11/29/2021			11/29/2021			11/29/2021		
		EGLE	STHD	RPD	EGLE	STHD	RPD	EGLE	STHD	RPD
<b>Volatile Organic Compounds</b>										
2-Methylnaphthalene	ug/L	4.9 J	<20.0	--	<5.0	<20.0	--	<5.0	<20.0	--
<b>Inorganics</b>										
Alkalinity-Bicarbonate	mg/L	240	233	3.0	250	237	5.3	240	217	10
Alkalinity-Carbonate	mg/L	<10	<10	--	<10	<10	--	<10	15.4	--
Alkalinity-Total	mg/L	240	233	3.0	250	237	5.3	240	233	3.0
Chloride	mg/L	110	123	11	420	466	10	80	88	10
Fluoride	mg/L	1.6	1.56	2.5	0.78	0.736	5.8	1.0	1.01	1.0
Nitrate/Nitrite-N	mg/L	0.17	NA	--	0.011	NA	--	<0.010	NA	--
Nitrate-N- Calculated	mg/L	0.14	NA	--	<0.020	NA	--	<0.020	NA	--
Nitrite-N	mg/L	0.025	NA	--	<0.010	NA	--	0.010	NA	--
Sulfate	mg/L	5	<2.0	--	6	<2.0	--	24	18.8	24
Total Dissolved Solids	mg/L	430	NA	--	980	NA	--	390	NA	--
Total Suspended Solids	mg/L	9	NA	--	17	NA	--	220	NA	--
<b>Metals</b>										
Arsenic, Dissolved	ug/L	1.5	1.5	0.0	<1.0	<1.0	--	<1.0	<1.0	--
Barium, Dissolved	ug/L	70	68.8	1.7	330	340	3.0	72	65.7	9.2
Boron, Dissolved	ug/L	960	996	3.7	800	832	3.9	770	784	1.8
Cadmium, Dissolved	ug/L	0.6	0.73	20	<0.2	<0.20	--	<0.2	<0.20	--
Calcium, Dissolved	ug/L	23,000	23,300	1.3	82,000	80,000	2.5	25,000	23,800	4.9
Iron, Dissolved	ug/L	160	116	32	930	857	8.2	<20	<50.0	--
Lithium, Dissolved	ug/L	22	23.7	7.4	53	56.2	5.9	18	<20.0	--
Magnesium, Dissolved	ug/L	9,600	9,700	1.0	37,000	36,800	0.54	15,000	15,000	0.0
Manganese, Dissolved	ug/L	27	11.5	81	23	20.1	13	8.5	6.3	30
Potassium, Dissolved	mg/L	2.0	2.25	12	4.3	4.74	10	2.0	2.18	8.6
Sodium, Dissolved	mg/L	130	136	4.5	220	221	0.45	110	112	1.8
Zinc, Dissolved	ug/L	430	512	17	<5.0	<10.0	--	<5.0	<10.0	--

Notes:

RPD - Indicates Relative Percent Difference.

J - Indicates that the result was detected at an estimated range above the method detection limit and below the laboratory reporting limit.

Highlighted cells indicate that the relative percent difference between the EGLE and STHD results was greater than 20%.

# Attachment A





# GROUNDWATER MONITORING FIELD DATA FORM

Allied Waste - Sauk Trails

Well ID: MW-7R

**GENERAL**

Weather Conditions: PCloudy Temperature 30's Wind Direction/Speed W 5-10  
 Condition of Well: Is Well Accessible Y  N   
 Is Well Locked Y  N   
 Is Well Visible Y  N   
 Is Well Labeled Y  N   
 Is Drainage Acceptable Y  N   
 General Condition of Well and Surroundings Good

**STATIC WATER LEVEL**

Date and Time of Measurement: 11-24-21 / 0923  
 Top of Casing Elevation 679.03  
 Depth to Water 45.03 Measurement taken from:  permanent survey mark  
 Elevation of Water 634.00  other/explain NEDJL TOC

**WELL PURGING**

Date and Time of Well Purging: 11-30-21 / 1030  
 CALCULATION OF 3 CASING VOLUMES  
 Length of Well 85 ft.  dedicated well wizard  
 Depth to Water 45.03 ft. Sample collection &  disposable poly-e bailer  
 Length of Water Colum 39.97 ft. Purge Equipment:  dedicated teflon bailer  
 X Conversion factor (2" Well) 0.49  other/explain \_\_\_\_\_  
 Three casing volumes 19.6 gallons  
 Volume purged prior to sampling 20 gallons Did Well purge dry? Y  N   
 pH: 1) 8.10 7 gall. 2) 8.01 13 gall. 3) 8.03 20 gall. 4) \_\_\_\_\_ gall.  
 cond. 1) 528 7 gall. 2) 536 13 gall. 3) 541 20 gall. 4) \_\_\_\_\_ gall.  
 temp. 1) 10.5 7 gall. 2) 10.5 13 gall. 3) 10.4 20 gall. 4) \_\_\_\_\_ gall.

**SAMPLE COLLECTION**

Date and Time of Sample Collection: 11-30-21 / 1130  
 Filtered Sample Y  N   
 Duplicate Collected? Y  N   
 Field Blank taken at well? Y  N  FIELD BLANK 1135 11/30/21  
 Equipment Blank taken at well? Y  N  STATIC META BLANK @ 0920 11/29/21  
 Trip Blank included with samples? Y  N   
 Appearance of Sample Clear, no odor

**FIELD ANALYSES**

pH 7 buffer value 7.00 S.U.  
 pH 4 buffer value (if applicable) — S.U.  
 pH 10 buffer value (if applicable) 10.00 S.U.  
 Measured Sample pH 8.03 S.U.  
 Standard Conductance Value 1913 / 1913 umhos/cm  
 Measured Sample Specific Conductance 541 umhos/cm  
 Measured Sample Temperature 10.4 °C

**SAMPLED BY**

James M. Wood

Compressor      Controller      PSI      CPM      ml/m

**COMMENTS:**

PFAS, 1,4 Dioxane

Reinstalled pump

**GROUNDWATER MONITORING FIELD DATA FORM**

**Allied Waste - Sauk Trails**

**Well ID: MW-21A**

**GENERAL**

Weather Conditions: P Cloudy Temperature 30's Wind Direction/Speed W 5-10

Condition of Well: Is Well Accessible Y  N  Is Well Locked Y  N

Is Well Visible Y  N  Is Drainage Acceptable Y  N

Is Well Labeled Y  N  General Condition of Well and Surroundings Good

**STATIC WATER LEVEL** Date and Time of Measurement: 11-29-21 / 1090

Top of Casing Elevation 676.74

Depth to Water 42.76 Measurement taken from:  permanent survey mark

Elevation of Water 633.98  other/explain N Edge TOC

**WELL PURGING** Date and Time of Well Purging: 11-29-21 / 1940

**CALCULATION OF 3 CASING VOLUMES**

Length of Well 71.5 ft.  dedicated well wizard

Depth to Water 42.76 ft. Sample collection &  disposable poly-e bailer

Length of Water Colum 28.74 ft. Purge Equipment:  dedicated teflon bailer

X Conversion factor (2" Well) 0.49  other/explain \_\_\_\_\_

Three casing volumes 14.1 gallons

Volume purged prior to sampling 14.5 gallons Did Well purge dry? Y  N

pH:	1) <u>8.41</u> <u>5</u> gall.	2) <u>8.38</u> <u>10</u> gall.	3) <u>8.34</u> <u>14.1</u> gall.	4) _____ gall.
cond.	1) <u>517</u> <u>5</u> gall.	2) <u>546</u> <u>10</u> gall.	3) <u>534</u> <u>14.1</u> gall.	4) _____ gall.
temp.	1) <u>11.9</u> <u>5</u> gall.	2) <u>12.0</u> <u>10</u> gall.	3) <u>12.1</u> <u>14.1</u> gall.	4) _____ gall.

**SAMPLE COLLECTION** Date and Time of Sample Collection: 11-29-21 / 1145

Filtered Sample Y  N

Duplicate Collected? Y  N

Field Blank taken at well? Y  N

Equipment Blank taken at well? Y  N

Trip Blank included with samples? Y  N

Appearance of Sample clear, no odor

**FIELD ANALYSES**

pH 7 buffer value 7.00 S.U.

pH 4 buffer value (if applicable) \_\_\_\_\_ S.U.

pH 10 buffer value (if applicable) 10.00 S.U.

Measured Sample pH 8.34 S.U.

Standard Conductance Value 1913 / 1913 umhos/cm

Measured Sample Specific Conductance 534 umhos/cm

Measured Sample Temperature 12.1 °C

**SAMPLED BY** Juan M. Wood

**COMMENTS:** Compressor Controller PSI CPM ml/m

PFAS, 1,4 Dioxane

EGLE SPLIOT

Reinstalled pump

# GROUNDWATER MONITORING FIELD DATA FORM

Allied Waste - Sauk Trails

Well ID: MW-26R

## GENERAL

Weather Conditions: P Cloudy Temperature 30's Wind Direction/Speed W 5-10  
 Condition of Well: Is Well Accessible Y / N Is Well Locked Y / N  
 Is Well Visible Y / N Is Drainage Acceptable Y / N  
 Is Well Labeled Y / N General Condition of Well and Surroundings Good

## STATIC WATER LEVEL

Date and Time of Measurement: 11-29-21 / 09:07  
 Top of Casing Elevation 676.60  
 Depth to Water 42.55 Measurement taken from: permanent survey mark  
 Elevation of Water 634.05 other/explain N Edge TDC

## WELL PURGING

Date and Time of Well Purging: 11-29-21 / 10:37

### CALCULATION OF 3 CASING VOLUMES

Length of Well 74 ft. dedicated well wizard  
 Depth to Water 42.55 ft. Sample collection & X disposable poly-e bailer  
 Length of Water Column 31.45 ft. Purge Equipment: dedicated teflon bailer  
 X Conversion factor (2" Well) 0.49 other/explain  
 Three casing volumes 15.4 gallons  
 Volume purged prior to sampling 15.5 gallons Did Well purge dry? Y / N  
 pH: 1) 8.02 5 gall. 2) 7.98 10.0 gall. 3) 7.89 15.5 gall. 4)                   gall.  
 cond. 1) 596 5 gall. 2) 576 10 gall. 3) 588 15.5 gall. 4)                   gall.  
 temp. 1) 10.8 5 gall. 2) 11.1 10.0 gall. 3) 11.2 15.5 gall. 4)                   gall.

## SAMPLE COLLECTION

Date and Time of Sample Collection: 11-29-21 / 11:15

Filtered Sample Y / N  
 Duplicate Collected? Y / N  
 Field Blank taken at well? Y / N  
 Equipment Blank taken at well? Y / N  
 Trip Blank included with samples? Y / N  
 Appearance of Sample Slightly gray / 1t brown, NO odor

## FIELD ANALYSES

pH 7 buffer value 7.00 S.U.  
 pH 4 buffer value (if applicable)          S.U.  
 pH 10 buffer value (if applicable) 10.00 S.U.  
 Measured Sample pH 7.89 S.U.  
 Standard Conductance Value 1913 / 1913 umhos/cm  
 Measured Sample Specific Conductance 588 umhos/cm  
 Measured Sample Temperature 11.2 °C

## SAMPLED BY

Juan M. Wood

## COMMENTS:

Compressor Controller PSI CPM ml/min  
 PFAS, 1,4 Dioxane  
 EGLE Split  
 Reinstalled Pump

# GROUNDWATER MONITORING FIELD DATA FORM

Allied Waste - Sauk Trails

Well ID: MW-27R

## GENERAL

Weather Conditions: P Cloudy Temperature 30's Wind Direction/Speed W 5-10  
 Condition of Well: Is Well Accessible Y  N   
 Is Well Locked Y  N   
 Is Well Visible Y  N   
 Is Well Labeled Y  N   
 Is Drainage Acceptable Y  N   
 General Condition of Well and Surroundings Good

## STATIC WATER LEVEL

Date and Time of Measurement: 11-29-21 / 0913  
 Top of Casing Elevation 678.31  
 Depth to Water 40.01 Measurement taken from:  permanent survey mark  
 Elevation of Water 638.30  other/explain N EDGE TOC

## WELL PURGING

Date and Time of Well Purging: 11-30-21 / 0930

### CALCULATION OF 3 CASING VOLUMES

Length of Well	<u>71</u> ft.				<input type="checkbox"/> dedicated well wizard
Depth to Water	<u>40.01</u> ft.				<input checked="" type="checkbox"/> disposable poly-e bailer
Length of Water Column	<u>30.90</u> ft.				<input type="checkbox"/> dedicated teflon bailer
X Conversion factor (2" Well)	<u>0.49</u>				<input type="checkbox"/> other/explain _____
Three casing volumes	<u>15.1</u> gallons				
Volume purged prior to sampling	<u>9.0155</u> gallons				
pH:	1) <u>9.11</u> <u>8</u> gall.	2) <u>10</u> gall.	3) <u>15.5</u> gall.	4) _____ gall.	Did Well purge dry? Y <input checked="" type="checkbox"/> N <input type="checkbox"/>
cond.	1) <u>476</u> <u>8</u> gall.	2) <u>10</u> gall.	3) <u>15.5</u> gall.	4) _____ gall.	
temp.	1) <u>11.6</u> <u>8</u> gall.	2) <u>10</u> gall.	3) <u>15.5</u> gall.	4) _____ gall.	

## SAMPLE COLLECTION

Date and Time of Sample Collection: 11-30-21 / 1030

Filtered Sample Y  N   
 Duplicate Collected? Y  N  Duplicate 1033  
 Field Blank taken at well? Y  N   
 Equipment Blank taken at well? Y  N  Blank Blank 0925  
 Trip Blank included with samples? Y  N   
 Appearance of Sample Sl. Silty, gray, no odor

## FIELD ANALYSES

pH 7 buffer value	<u>7.00</u>	S.U.
pH 4 buffer value (if applicable)	_____	S.U.
pH 10 buffer value (if applicable)	<u>10.00</u>	S.U.
Measured Sample pH	<u>8.78</u>	S.U.
Standard Conductance Value	<u>1413 / 1413</u>	µmhos/cm
Measured Sample Specific Conductance	<u>496</u>	µmhos/cm
Measured Sample Temperature	<u>11.5</u>	°C

## SAMPLED BY

[Signature]

## COMMENTS:

Compressor Controller PSII CPM ml/min

PFAS, 1,4 Dioxane

Reinstalled pmf ENVIRONMENTAL SAMPLING SERVICES, INC.

# GROUNDWATER MONITORING FIELD DATA FORM

Allied Waste - Sauk Trails

Well ID: MW-39

**GENERAL**

Weather Conditions: Cloudy Temperature 30's Wind Direction/Speed W 5-10  
 Condition of Well: Is Well Accessible Y  N   
 Is Well Visible Y  N   
 Is Well Labeled Y  N   
 Is Well Locked Y  N   
 Is Drainage Acceptable Y  N   
 General Condition of Well and Surroundings Good

**STATIC WATER LEVEL**

Date and Time of Measurement: 11/29/21 / 0939  
 Top of Casing Elevation 682.45  
 Depth to Water 46.33 Measurement taken from:  permanent survey mark  
 Elevation of Water 636.12  other/explain N.B.Y.T.C.

**WELL PURGING**

Date and Time of Well Purging: 11-29-21 / 0844

**CALCULATION OF 3 CASING VOLUMES**

Length of Well 83 ft.  dedicated well wizard  
 Depth to Water 46.33 ft. Sample collection &  disposable poly-e bailer  
 Length of Water Column 36.67 ft. Purge Equipment:  dedicated teflon bailer  
 X Conversion factor (2" Well) 0.49  other/explain \_\_\_\_\_  
 Three casing volumes 18 gallons  
 Volume purged prior to sampling 18 gallons Did Well purge dry? Y  N   
 pH: 1) 7.86 6 gall. 2) 7.77 12 gall. 3) 7.76 18 gall. 4) \_\_\_\_\_ gall.  
 cond. 1) 1309 6 gall. 2) 1236 12 gall. 3) 1245 18 gall. 4) \_\_\_\_\_ gall.  
 temp. 1) 11.5 6 gall. 2) 11.5 12 gall. 3) 11.6 18 gall. 4) \_\_\_\_\_ gall.

**SAMPLE COLLECTION**

Date and Time of Sample Collection: 11-29-21 / 1210  
 Filtered Sample Y  N   
 Duplicate Collected? Y  N   
 Field Blank taken at well? Y  N   
 Equipment Blank taken at well? Y  N   
 Trip Blank included with samples? Y  N   
 Appearance of Sample Sl. Silty, clear, lt grey, no odor

**FIELD ANALYSES**

pH 7 buffer value 7.00 S.U.  
 pH 4 buffer value (if applicable) \_\_\_\_\_ S.U.  
 pH 10 buffer value (if applicable) 10.00 S.U.  
 Measured Sample pH 7.76 S.U.  
 Standard Conductance Value 1245 umhos/cm  
 Measured Sample Specific Conductance 1413 / 1413 umhos/cm  
 Measured Sample Temperature 11.6 °C

**SAMPLED BY**

James M. W...

**COMMENTS:**

Compressor Controller PSI CPM ml/min  
 PFAS, 1,4 Dioxane  
 EGLE Split  
 Reinstalled Pump

# GROUNDWATER MONITORING FIELD DATA FORM

Allied Waste - Sauk Trails

Well ID: MW-46R

**GENERAL**

Weather Conditions: P Cloudy Temperature 30's Wind Direction/Speed W 5-10  
 Condition of Well: Is Well Accessible Y / N    Is Well Locked Y / N     
 Is Well Visible Y / N    Is Drainage Acceptable Y / N     
 Is Well Labeled Y / N    General Condition of Well and Surroundings Good

**STATIC WATER LEVEL**

Date and Time of Measurement: 11-29-21 / 0910  
 Top of Casing Elevation 679.14  
 Depth to Water 45.66 Measurement taken from:    permanent survey mark  
 Elevation of Water 633.48 X other/explain N Edge T/C

**WELL PURGING**

Date and Time of Well Purging: 11/29/21 / 1310  
 CALCULATION OF 3 CASING VOLUMES  
 Length of Well 75 ft.  
 Depth to Water 45.66 ft.  
 Length of Water Column 29.34 ft.  
 X Conversion factor (2" Well) 0.49  
 Three casing volumes 14.4 gallons  
 Volume purged prior to sampling 15.0 gallons  
 Did Well purge dry? Y N X  
 pH: 1) 8.09 5 gall. 2) 8.06 10 gall. 3) 8.02 15 gall. 4)       gall.  
 cond. 1) 837 5 gall. 2) 832 10 gall. 3) 836 15 gall. 4)       gall.  
 temp. 1) 11.2 5 gall. 2) 11.2 10 gall. 3) 11.1 15 gall. 4)       gall.

**SAMPLE COLLECTION**

Date and Time of Sample Collection: 11/29/21 / 1350  
 Filtered Sample Y / N     
 Duplicate Collected? Y / N     
 Field Blank taken at well? Y / N     
 Equipment Blank taken at well? Y / N     
 Trip Blank included with samples? Y / N     
 Appearance of Sample Clear, Silty, No odor

**FIELD ANALYSES**

pH 7 buffer value 7.00 S.U.  
 pH 4 buffer value (if applicable)    S.U.  
 pH 10 buffer value (if applicable) 10.00 S.U.  
 Measured Sample pH 8.02 S.U.  
 Standard Conductance Value 1413 / 1413 umhos/cm  
 Measured Sample Specific Conductance 836 umhos/cm  
 Measured Sample Temperature 11.1 °C

**SAMPLED BY**

Jan M. Wood

Compressor \_\_\_\_\_ Controller \_\_\_\_\_ PSI \_\_\_\_\_ CPM \_\_\_\_\_ ml/min \_\_\_\_\_  
 COMMENTS:

PFAS & 1,4 Dioxane

Reinstalled Pump

# Attachment B



February 16, 2022

Environmental Manager  
Sauk Trail Hills Landfill  
5011 S. Lilley  
Canton, MI 48188

RE: Project: STHD GW PFAS/1,4-DX  
Pace Project No.: 50303995

Dear Environmental Manager:

Enclosed are the analytical results for sample(s) received by the laboratory on November 30, 2021. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

This report replaces the one issued 1/3/22. It was revised at the request of the client to report results to the reporting limit and not the method detection limit (MDL). JLR 2/16/22

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Jennifer Rice  
jennifer.rice@pacelabs.com  
(616)975-4500  
Project Manager

Enclosures

cc: Trihydro Lab Data, TriHydro  
Nicole Green



## REPORT OF LABORATORY ANALYSIS

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## SAMPLE SUMMARY

Project:               STHD GW PFAS/1,4-DX

Pace Project No.:   50303995

Lab ID	Sample ID	Matrix	Date Collected	Date Received
50303995001	MW-26R	Water	11/29/21 11:15	11/30/21 16:15
50303995002	MW-39	Water	11/29/21 12:10	11/30/21 16:15
50303995003	MW-21A	Water	11/29/21 11:45	11/30/21 16:15
50303995004	MW-46R	Water	11/29/21 13:50	11/30/21 16:15
50303995005	Static Meter Blank	Water	11/29/21 09:20	11/30/21 16:15
50303995006	Duplicate 01	Water	11/30/21 11:33	11/30/21 16:15
50303995007	Bailer Blank	Water	11/30/21 09:25	11/30/21 16:15
50303995008	MW-27R	Water	11/30/21 11:30	11/30/21 16:15
50303995009	MW-7R	Water	11/30/21 11:30	11/30/21 16:15
50303995010	Field Blank	Water	11/30/21 11:35	11/30/21 16:15
50303995011	Trip Blank	Water	11/29/21 07:00	11/30/21 16:15

## REPORT OF LABORATORY ANALYSIS

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**CHAIN-OF-CUSTODY / Analytical Request Do**  
 The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must  
 Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at https://info.pacela.com

**WO# : 50303995**



**50303995**

<b>Section A</b>		<b>Section B</b>		<b>Section C</b>	
<b>Required Client Information:</b>		<b>Required Project Information:</b>		<b>Invoice Information:</b>	
Company: Republic Services - MI	Report To: Carolyn Powrozek - KERR, LILLY	Attention:	Company Name:	Regulatory Agency	
Address: 27200 Heggeny Road - 6055 Kewaskum, WI	Copy To:	Address:	Address:	State / Location	
Farmington, MI 48324 - OK, 4131	Purchase Order #:	Pace Quote:	Pace Project Manager: jennifer.nice@pacelabs.com,		
Email: carolyn_powrozek@pacelabs.com - K1114261294.1d.02	Project #:	Pace Profile #:	Pace Profile #:		
Phone: (248)536-5440	Project Name: Sauk Trails - PFAS/1,4 Dioxane				
Requested Due Date:					

ITEM #	MATRIX	CODE	COLLECTED	DATE	TIME	DATE	TIME	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	Requested Analysis Filtered (Y/N)	
														Y/N	Y/N
1	MW 26R	DW	START	11-24-21	11:15	11-24-21	12:30	J. J. [Signature]	11-30-21	12:30	[Signature]	11-30-21	12:30	PFAS - MIID28	X
2	MW 39	WT	END	11-24-21	12:12	11-30-21	12:30	[Signature]	11-30-21	12:30	[Signature]	11-30-21	12:30	PFAS - MIID28	X
3	MW 21A	WT		11-24-21	11:45	11-30-21	11:35	[Signature]	11-30-21	11:35	[Signature]	11-30-21	11:35	PFAS - MIID28	X
4	MW 46R	WT		11-24-21	12:50	11-24-21	07:00	[Signature]	11-24-21	07:00	[Signature]	11-24-21	07:00	PFAS - MIID28	X
5	Static MTR BLANK	WT		11-24-21	09:00									PFAS - MIID28	X
6	Duplicate 01	WT		11-30-21	11:33									PFAS - MIID28	X
7	BLANK BLANK	WT		11-30-21	09:05									PFAS - MIID28	X
8	MW 27R	WT		11-30-21	11:30									PFAS - MIID28	X
9	MW 7R	WT		11-30-21	11:30									PFAS - MIID28	X
10	FIELD BLANK	WT		11-30-21	11:35									PFAS - MIID28	X
11	TRIP BLANK	WT		11-24-21	07:00									PFAS - MIID28	X
12														PFAS - MIID28	X

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	TEMP in C	Received on	Ice (Y/N)	Sealed (Y/N)	Cooler (Y/N)	Samples Intact (Y/N)
	[Signature]	11-30-21	12:30	[Signature]	11-30-21	12:30						
	[Signature]	11-30-21	10:15	[Signature]	11-30-21	10:15						



# Sample Conditions Upon Receipt Form (SCUR)

Date/Time: <u>11/30/21</u>		Evaluated by: <u>SW</u>		<b>WO#: 50303995</b> PM: JLR1      Due Date: 12/29/21 CLIENT: GR-RSC MI			
Client: <u>Republic - South Trail</u>							
Project Manager: <u>JLR</u>		Profile ID: <u>8739</u>					
Rush TAT Requested:	YES	NO <input checked="" type="checkbox"/>	Due Date:				
Lab Notified of Rush or Short Holds:		YES	NO <input checked="" type="checkbox"/>	Non Conformance Form Required: YES      NO <input checked="" type="checkbox"/>			
Samples Received Via: FedEx    UPS    Client    Pace Courier <input checked="" type="checkbox"/> Other: _____				Comments:			
Custody Seals Present and Intact:				YES	NO	NA <input checked="" type="checkbox"/>	
Received Sample Information Form(s): Drinking Waters Only				YES	NO	NA <input checked="" type="checkbox"/>	
USDA Regulated Soils: (AL, AR, CA, FL, GA, ID, LA, MS, NM, NY, NC, OK, OR, SC, TN, TX, WA or Puerto Rico)				YES	NO	N/A <input checked="" type="checkbox"/>	
Short Holds Present (< 72 Hours):				YES	NO <input checked="" type="checkbox"/>		
Samples Received in Hold:				YES <input checked="" type="checkbox"/>	NO		
Custody Signatures Present:				YES <input checked="" type="checkbox"/>	NO		
Collector Signature Present:				YES <input checked="" type="checkbox"/>	NO		
Packing Material Used:				YES <input checked="" type="checkbox"/>	NO		
Samples Collected Today and On Ice:				YES	NO	N/A <input checked="" type="checkbox"/>	
IR Gun #: <u>280</u> <u>281</u>				Digital Thermometer #: <u>282</u> <u>283</u>			
Ice Type: WET Bagged / WET Loose <input checked="" type="checkbox"/> BLUE    NONE				1. Cooler Temp Upon Receipt: <u>1.8 / 2.3</u> °C			
Ice Location: TOP    BOTTOM    MIDDLE    DISPERSED <input checked="" type="checkbox"/>				Temp should be 0-6°C (Initial/Corrected)			
Temp Blank Received:				YES	NO		
Containers Intact:				YES <input checked="" type="checkbox"/>	NO		
Correct Containers:				YES <input checked="" type="checkbox"/>	NO		
Sufficient Volume:				YES <input checked="" type="checkbox"/>	NO		
Sample pH Acceptable: All containers needing preservation are found to be in compliance with EPA recommendation pH Strip Lot #: _____ <i>Exceptions are VOA, coliform, LLHg, O&amp;G, or any container with a septum cap or preserved with HCl</i>				YES	NO	N/A <input checked="" type="checkbox"/>	
Residual Chlorine Absent: Cl <sub>2</sub> Strip Lot #: _____ (SVOC/Pest 625, PCB 608, Total/Amenable Cyanide)				YES	NO	N/A <input checked="" type="checkbox"/>	
VOA Headspace Acceptable (<6mm):				YES <input checked="" type="checkbox"/>	NO	N/A	
Trip Blank Received: <input checked="" type="checkbox"/> HCl    MeOH    TSP    OTHER				YES <input checked="" type="checkbox"/>	NO		
Comments:				2. Cooler Temp Upon Receipt: _____ °C			
				3. Cooler Temp Upon Receipt: _____ °C			
				4. Cooler Temp Upon Receipt: _____ °C			



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## Report of Analysis

**Pace Analytical Services, LLC**  
5560 Corporate Exchange Ct. SE  
Grand Rapids, MI 49512  
Attention: Jennifer Rice

Project Name: STHD GW PFAS LL - 1,4-DX SIM to RL

Lot Number: **WL02030**

Date Completed: 02/16/2022

Revision Date: 02/16/2022

02/16/2022 7:36 AM

Approved and released by:

Project Manager II: **Edward Barnett**



The electronic signature above is the equivalent of a handwritten signature.  
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# PACE ANALYTICAL SERVICES, LLC

SC DHEC No: 32010001

NELAC No: E87653

NC DENR No: 329

NC Field Parameters No: 5639

## Case Narrative Pace Analytical Services, LLC Lot Number: WL02030

### Revised report – 02/16/22

A revised report has been issued per client request to report to the LOQ only. The initial version reported as ND to the LOQ with J-flags to the DL.

**All other sample results are as reported in the original PDF report. This report supersedes and replaces any prior reports issued under this lot number.**

This Report of Analysis contains the analytical result(s) for the sample(s) listed on the Sample Summary following this Case Narrative. The sample receiving date is documented in the header information associated with each sample.

All results listed in this report relate only to the samples that are contained within this report.

Sample receipt, sample analysis, and data review have been performed in accordance with the most current approved The NELAC Institute (TNI) standards, the Pace Analytical Services, LLC ("Pace") Laboratory Quality Manual, standard operating procedures (SOPs), and Pace policies. Any exceptions to the TNI standards, the Laboratory Quality Manual, SOPs or policies are qualified on the results page or discussed below.

Pace is a TNI accredited laboratory; however, the following analyses are currently not listed on our TNI scope of accreditation:

Biological Tissue: All, Non-Potable Water: SGT-HEM EPA 1664B, Silica EPA 200.7, Boron, Calcium, Silicon, Strontium EPA 200.8, Bicarbonate, Carbonate, and Hydroxide Alkalinity SM 2320 B-2011, Fecal Coliform SM 9221 C E-2006 & SM 9222D-2006, Strontium SW-846 6010D, VOC SM 6200 B-2011, Drinking Water: VOC (excluding BTEX, MTBE, Naphthalene, & 1,2-dichloroethane) EPA 524.2, Solid Chemical Material: TOC Walkley-Black.

If you have any questions regarding this report please contact the Pace Project Manager listed on the cover page.

### VOCs via GC-MS (SIM)

The following sample pH was slightly above criteria at a pH of 3 (pH should generally be less than 2 for HCl preserved vials): WL02030-006.

### PFAS

For samples WL02030-001, WL02030-003, WL02030-006, WL02030-008, and WL02030-009, sample matrix prevented full volume from being extracted, precluding method mandated bottle rinse. Elution solvent was aliquoted directly into the reservoir, rinsing the inside. Surrogate recovery may be adversely affected.

Surrogate recovery for the following sample was outside control limits: WL02030-004. Re-extraction and/or re-analysis was performed with concurring results. The original analysis has been reported.

Surrogate recovery for the following samples was outside control limits: WL02030-001, WL02030-003, WL02030-006, WL02030-008, and WL02030-009. Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

# PACE ANALYTICAL SERVICES, LLC

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## Sample Summary

Pace Analytical Services, LLC

Lot Number: WL02030

Project Name: STHD GW PFAS LL - 1,4-DX SIM to RL

Project Number:

Sample Number	Sample ID	Matrix	Date Sampled	Date Received
001	MW-26R	Aqueous	11/29/2021 1115	12/02/2021
002	MW-39	Aqueous	11/29/2021 1210	12/02/2021
003	MW-21A	Aqueous	11/29/2021 1145	12/02/2021
004	MW-46R	Aqueous	11/29/2021 1350	12/02/2021
005	Static Meter Blank	Aqueous	11/29/2021 0920	12/02/2021
006	Duplicate 01	Aqueous	11/29/2021 1133	12/02/2021
007	Bailer Blank	Aqueous	11/29/2021 0925	12/02/2021
008	MW-27R	Aqueous	11/29/2021 1130	12/02/2021
009	MW-7R	Aqueous	11/29/2021 1130	12/02/2021
010	Field Blank	Aqueous	11/29/2021 1135	12/02/2021
011	Trip Blank	Aqueous	11/29/2021 0700	12/02/2021

(11 samples)

# PACE ANALYTICAL SERVICES, LLC

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## Detection Summary

Pace Analytical Services, LLC

Lot Number: WL02030

Project Name: STHD GW PFAS LL - 1,4-DX SIM to RL

Project Number:

Sample	Sample ID	Matrix	Parameter	Method	Result	Q	Units	Page
005	Static Meter Blank	Aqueous	6:2 FTS	PFAS by ID	14		ng/L	21
011	Trip Blank	Aqueous	6:2 FTS	PFAS by ID	4.9		ng/L	39

(2 detections)

# Volatile Organic Compounds by GC/MS (SIM)

Client: <b>Pace Analytical Services, LLC</b>	Laboratory ID: <b>WL02030-001</b>
Description: <b>MW-26R</b>	Matrix: <b>Aqueous</b>
Date Sampled: <b>11/29/2021 1115</b>	Project Name: <b>STHD GW PFAS LL - 1,4-DX</b>
Date Received: <b>12/02/2021</b>	Project Number:

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
2	5030B	8260D (SIM)	1	12/09/2021 1117	TML		25076

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
1,4-Dioxane	123-91-1	8260D (SIM)	ND		3.0	ug/L	2

Surrogate	Q	Run 2 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		98	40-170

LOQ = Limit of Quantitation      B = Detected in the method blank      E = Quantitation of compound exceeded the calibration range      Q = Surrogate failure  
 ND = Not detected at or above the LOQ      N = Recovery is out of criteria      P = The RPD between two GC columns exceeds 40%      L = LCS/LCSD failure  
 H = Out of holding time      W = Reported on wet weight basis      S = MS/MSD failure

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)  
 106 Vantage Point Drive West Columbia, SC 29172 (803) 791-9700 Fax (803) 791-9111 www.pacelabs.com



# PFAS by LC/MS/MS

Client: <b>Pace Analytical Services, LLC</b>	Laboratory ID: <b>WL02030-001</b>
Description: <b>MW-26R</b>	Matrix: <b>Aqueous</b>
Date Sampled: <b>11/29/2021 1115</b>	Project Name: <b>STHD GW PFAS LL - 1,4-DX</b>
Date Received: <b>12/02/2021</b>	Project Number:

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	SOP SPE	PFAS by ID SOP	1	12/16/2021 1925	JJG	12/15/2021 1308	25719

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9CI-PF3ONS)	756426-58-1	PFAS by ID SOP	ND		5.1	ng/L	1
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11CI-PF3...)	763051-92-9	PFAS by ID SOP	ND		5.1	ng/L	1
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID SOP	ND		5.1	ng/L	1
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	PFAS by ID SOP	ND		5.1	ng/L	1
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	PFAS by ID SOP	ND		5.1	ng/L	1
Hexafluoropropylene oxide dimer acid (GenX)	13252-13-6	PFAS by ID SOP	ND		5.1	ng/L	1
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	PFAS by ID SOP	ND		5.1	ng/L	1
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	PFAS by ID SOP	ND		5.1	ng/L	1
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	PFAS by ID SOP	ND		5.1	ng/L	1
Perfluoro-1-butanefluoric acid (PFBS)	375-73-5	PFAS by ID SOP	ND		2.6	ng/L	1
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	PFAS by ID SOP	ND		2.6	ng/L	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	PFAS by ID SOP	ND		2.6	ng/L	1
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	PFAS by ID SOP	ND		2.6	ng/L	1
Perfluoro-1-octanesulfonamide (PFOSA)	754-91-6	PFAS by ID SOP	ND	Q	2.6	ng/L	1
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4	PFAS by ID SOP	ND		2.6	ng/L	1
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	PFAS by ID SOP	ND		2.6	ng/L	1
Perfluoro-n-butanoic acid (PFBA)	375-22-4	PFAS by ID SOP	ND		2.6	ng/L	1
Perfluoro-n-decanoic acid (PFDA)	335-76-2	PFAS by ID SOP	ND		2.6	ng/L	1
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	PFAS by ID SOP	ND		2.6	ng/L	1
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9	PFAS by ID SOP	ND		2.6	ng/L	1
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	PFAS by ID SOP	ND		2.6	ng/L	1
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	PFAS by ID SOP	ND		2.6	ng/L	1
Perfluoro-n-octanoic acid (PFOA)	335-67-1	PFAS by ID SOP	ND		2.6	ng/L	1
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3	PFAS by ID SOP	ND		2.6	ng/L	1
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	PFAS by ID SOP	ND	Q	2.6	ng/L	1
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	PFAS by ID SOP	ND		2.6	ng/L	1
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	PFAS by ID SOP	ND		2.6	ng/L	1
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	PFAS by ID SOP	ND		2.6	ng/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
13C2_4:2FTS		74	50-150
13C2_6:2FTS		76	50-150
13C2_8:2FTS		69	50-150
13C2_PFDa		56	50-150
13C2_PFTeDA	N	43	50-150
13C3_PFBS		70	50-150
13C3_PFHxS		71	50-150
13C3-HFPO-DA		72	50-150
13C4_PFBA		74	50-150
13C4_PFHpA		68	50-150
13C5_PFHxA		73	50-150
13C5_PFPeA		73	50-150
13C6_PFDA		72	50-150
13C7_PFUdA		64	50-150

LOQ = Limit of Quantitation      B = Detected in the method blank      E = Quantitation of compound exceeded the calibration range      Q = Surrogate failure  
 ND = Not detected at or above the LOQ      N = Recovery is out of criteria      P = The RPD between two GC columns exceeds 40%      L = LCS/LCSD failure  
 H = Out of holding time      W = Reported on wet weight basis      S = MS/MSD failure

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)  
 106 Vantage Point Drive West Columbia, SC 29172 (803) 791-9700 Fax (803) 791-9111 www.pacelabs.com

# PFAS by LC/MS/MS

Client: <b>Pace Analytical Services, LLC</b>	Laboratory ID: <b>WL02030-001</b>
Description: <b>MW-26R</b>	Matrix: <b>Aqueous</b>
Date Sampled: <b>11/29/2021 1115</b>	Project Name: <b>STHD GW PFAS LL - 1,4-DX</b>
Date Received: <b>12/02/2021</b>	Project Number:

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
13C8_PFOA		70	50-150
13C8_PFOS		72	50-150
13C8_PFOSA	N	32	50-150
13C9_PFNA		68	50-150
d5-EtFOSAA		61	50-150
d3-MeFOSAA		67	50-150

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LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	Q = Surrogate failure
ND = Not detected at or above the LOQ	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis		S = MS/MSD failure

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# Volatile Organic Compounds by GC/MS (SIM)

Client: <b>Pace Analytical Services, LLC</b>	Laboratory ID: <b>WL02030-002</b>
Description: <b>MW-39</b>	Matrix: <b>Aqueous</b>
Date Sampled: <b>11/29/2021 1210</b>	Project Name: <b>STHD GW PFAS LL - 1,4-DX</b>
Date Received: <b>12/02/2021</b>	Project Number:

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D (SIM)	1	12/02/2021 2327	BBW		24435

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
1,4-Dioxane	123-91-1	8260D (SIM)	ND		3.0	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		91	40-170

LOQ = Limit of Quantitation      B = Detected in the method blank      E = Quantitation of compound exceeded the calibration range      Q = Surrogate failure  
 ND = Not detected at or above the LOQ      N = Recovery is out of criteria      P = The RPD between two GC columns exceeds 40%      L = LCS/LCSD failure  
 H = Out of holding time      W = Reported on wet weight basis      S = MS/MSD failure

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# PFAS by LC/MS/MS

Client: <b>Pace Analytical Services, LLC</b>	Laboratory ID: <b>WL02030-002</b>
Description: <b>MW-39</b>	Matrix: <b>Aqueous</b>
Date Sampled: <b>11/29/2021 1210</b>	Project Name: <b>STHD GW PFAS LL - 1,4-DX</b>
Date Received: <b>12/02/2021</b>	Project Number:

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	SOP SPE	PFAS by ID SOP	1	12/16/2021 1935	JJG	12/15/2021 1308	25719

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9CI-PF3ONS)	756426-58-1	PFAS by ID SOP	ND		4.1	ng/L	1
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11CI-PF3...)	763051-92-9	PFAS by ID SOP	ND		4.1	ng/L	1
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID SOP	ND		4.1	ng/L	1
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	PFAS by ID SOP	ND		4.1	ng/L	1
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	PFAS by ID SOP	ND		4.1	ng/L	1
Hexafluoropropylene oxide dimer acid (GenX)	13252-13-6	PFAS by ID SOP	ND		4.1	ng/L	1
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	PFAS by ID SOP	ND		4.1	ng/L	1
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	PFAS by ID SOP	ND		4.1	ng/L	1
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	PFAS by ID SOP	ND		4.1	ng/L	1
Perfluoro-1-butanefluoric acid (PFBS)	375-73-5	PFAS by ID SOP	ND		2.0	ng/L	1
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	PFAS by ID SOP	ND		2.0	ng/L	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	PFAS by ID SOP	ND		2.0	ng/L	1
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	PFAS by ID SOP	ND		2.0	ng/L	1
Perfluoro-1-octanesulfonamide (PFOSA)	754-91-6	PFAS by ID SOP	ND		2.0	ng/L	1
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4	PFAS by ID SOP	ND		2.0	ng/L	1
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	PFAS by ID SOP	ND		2.0	ng/L	1
Perfluoro-n-butanoic acid (PFBA)	375-22-4	PFAS by ID SOP	ND		2.0	ng/L	1
Perfluoro-n-decanoic acid (PFDA)	335-76-2	PFAS by ID SOP	ND		2.0	ng/L	1
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	PFAS by ID SOP	ND		2.0	ng/L	1
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9	PFAS by ID SOP	ND		2.0	ng/L	1
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	PFAS by ID SOP	ND		2.0	ng/L	1
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	PFAS by ID SOP	ND		2.0	ng/L	1
Perfluoro-n-octanoic acid (PFOA)	335-67-1	PFAS by ID SOP	ND		2.0	ng/L	1
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3	PFAS by ID SOP	ND		2.0	ng/L	1
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	PFAS by ID SOP	ND		2.0	ng/L	1
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	PFAS by ID SOP	ND		2.0	ng/L	1
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	PFAS by ID SOP	ND		2.0	ng/L	1
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	PFAS by ID SOP	ND		2.0	ng/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
13C2_4:2FTS		123	50-150
13C2_6:2FTS		99	50-150
13C2_8:2FTS		98	50-150
13C2_PFDa		88	50-150
13C2_PFTeDA		83	50-150
13C3_PFBS		103	50-150
13C3_PFHxS		95	50-150
13C3-HFPO-DA		98	50-150
13C4_PFBA		102	50-150
13C4_PFHpA		98	50-150
13C5_PFHxA		95	50-150
13C5_PFPeA		94	50-150
13C6_PFDA		86	50-150
13C7_PFUdA		94	50-150

LOQ = Limit of Quantitation      B = Detected in the method blank      E = Quantitation of compound exceeded the calibration range      Q = Surrogate failure  
 ND = Not detected at or above the LOQ      N = Recovery is out of criteria      P = The RPD between two GC columns exceeds 40%      L = LCS/LCSD failure  
 H = Out of holding time      W = Reported on wet weight basis      S = MS/MSD failure

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# PFAS by LC/MS/MS

Client: <b>Pace Analytical Services, LLC</b>	Laboratory ID: <b>WL02030-002</b>
Description: <b>MW-39</b>	Matrix: <b>Aqueous</b>
Date Sampled: <b>11/29/2021 1210</b>	Project Name: <b>STHD GW PFAS LL - 1,4-DX</b>
Date Received: <b>12/02/2021</b>	Project Number:

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
13C8_PFOA		93	50-150
13C8_PFOS		100	50-150
13C8_PFOSA		94	50-150
13C9_PFNA		100	50-150
d5-EtFOSAA		92	50-150
d3-MeFOSAA		91	50-150

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LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	Q = Surrogate failure
ND = Not detected at or above the LOQ	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis		S = MS/MSD failure

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# Volatile Organic Compounds by GC/MS (SIM)

Client: <b>Pace Analytical Services, LLC</b>	Laboratory ID: <b>WL02030-003</b>
Description: <b>MW-21A</b>	Matrix: <b>Aqueous</b>
Date Sampled: <b>11/29/2021 1145</b>	Project Name: <b>STHD GW PFAS LL - 1,4-DX</b>
Date Received: <b>12/02/2021</b>	Project Number:

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
2	5030B	8260D (SIM)	1	12/09/2021 1141	TML		25076

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
1,4-Dioxane	123-91-1	8260D (SIM)	ND		3.0	ug/L	2

Surrogate	Q	Run 2 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		101	40-170

LOQ = Limit of Quantitation      B = Detected in the method blank      E = Quantitation of compound exceeded the calibration range      Q = Surrogate failure  
 ND = Not detected at or above the LOQ      N = Recovery is out of criteria      P = The RPD between two GC columns exceeds 40%      L = LCS/LCSD failure  
 H = Out of holding time      W = Reported on wet weight basis      S = MS/MSD failure

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# PFAS by LC/MS/MS

Client: <b>Pace Analytical Services, LLC</b>	Laboratory ID: <b>WL02030-003</b>
Description: <b>MW-21A</b>	Matrix: <b>Aqueous</b>
Date Sampled: <b>11/29/2021 1145</b>	Project Name: <b>STHD GW PFAS LL - 1,4-DX</b>
Date Received: <b>12/02/2021</b>	Project Number:

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	SOP SPE	PFAS by ID SOP	1	12/16/2021 1956	JJG	12/15/2021 1308	25719

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9CI-PF3ONS)	756426-58-1	PFAS by ID SOP	ND		5.3	ng/L	1
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11CI-PF3...)	763051-92-9	PFAS by ID SOP	ND		5.3	ng/L	1
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID SOP	ND		5.3	ng/L	1
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	PFAS by ID SOP	ND		5.3	ng/L	1
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	PFAS by ID SOP	ND		5.3	ng/L	1
Hexafluoropropylene oxide dimer acid (GenX)	13252-13-6	PFAS by ID SOP	ND		5.3	ng/L	1
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	PFAS by ID SOP	ND		5.3	ng/L	1
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	PFAS by ID SOP	ND		5.3	ng/L	1
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	PFAS by ID SOP	ND		5.3	ng/L	1
Perfluoro-1-butanefluoric acid (PFBS)	375-73-5	PFAS by ID SOP	ND		2.6	ng/L	1
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	PFAS by ID SOP	ND		2.6	ng/L	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	PFAS by ID SOP	ND		2.6	ng/L	1
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	PFAS by ID SOP	ND		2.6	ng/L	1
Perfluoro-1-octanesulfonamide (PFOSA)	754-91-6	PFAS by ID SOP	ND	Q	2.6	ng/L	1
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4	PFAS by ID SOP	ND		2.6	ng/L	1
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	PFAS by ID SOP	ND		2.6	ng/L	1
Perfluoro-n-butanoic acid (PFBA)	375-22-4	PFAS by ID SOP	ND		2.6	ng/L	1
Perfluoro-n-decanoic acid (PFDA)	335-76-2	PFAS by ID SOP	ND		2.6	ng/L	1
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	PFAS by ID SOP	ND	Q	2.6	ng/L	1
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9	PFAS by ID SOP	ND		2.6	ng/L	1
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	PFAS by ID SOP	ND		2.6	ng/L	1
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	PFAS by ID SOP	ND		2.6	ng/L	1
Perfluoro-n-octanoic acid (PFOA)	335-67-1	PFAS by ID SOP	ND		2.6	ng/L	1
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3	PFAS by ID SOP	ND		2.6	ng/L	1
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	PFAS by ID SOP	ND	Q	2.6	ng/L	1
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	PFAS by ID SOP	ND	Q	2.6	ng/L	1
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	PFAS by ID SOP	ND		2.6	ng/L	1
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	PFAS by ID SOP	ND		2.6	ng/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
13C2_4:2FTS		75	50-150
13C2_6:2FTS		66	50-150
13C2_8:2FTS		61	50-150
13C2_PFDa	N	47	50-150
13C2_PFTeDA	N	46	50-150
13C3_PFBs		69	50-150
13C3_PFHxS		69	50-150
13C3-HFPO-DA		72	50-150
13C4_PFBa		74	50-150
13C4_PFHpA		70	50-150
13C5_PFHxA		69	50-150
13C5_PFPeA		70	50-150
13C6_PFDa		63	50-150
13C7_PFUdA		56	50-150

LOQ = Limit of Quantitation      B = Detected in the method blank      E = Quantitation of compound exceeded the calibration range      Q = Surrogate failure  
 ND = Not detected at or above the LOQ      N = Recovery is out of criteria      P = The RPD between two GC columns exceeds 40%      L = LCS/LCSD failure  
 H = Out of holding time      W = Reported on wet weight basis      S = MS/MSD failure

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# PFAS by LC/MS/MS

Client: <b>Pace Analytical Services, LLC</b>	Laboratory ID: <b>WL02030-003</b>
Description: <b>MW-21A</b>	Matrix: <b>Aqueous</b>
Date Sampled: <b>11/29/2021 1145</b>	Project Name: <b>STHD GW PFAS LL - 1,4-DX</b>
Date Received: <b>12/02/2021</b>	Project Number:

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
13C8_PFOA		69	50-150
13C8_PFOS		65	50-150
13C8_PFOSA	N	36	50-150
13C9_PFNA		67	50-150
d5-EtFOSAA		50	50-150
d3-MeFOSAA		57	50-150

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LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	Q = Surrogate failure
ND = Not detected at or above the LOQ	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis		S = MS/MSD failure

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# Volatile Organic Compounds by GC/MS (SIM)

Client: <b>Pace Analytical Services, LLC</b>	Laboratory ID: <b>WL02030-004</b>
Description: <b>MW-46R</b>	Matrix: <b>Aqueous</b>
Date Sampled: <b>11/29/2021 1350</b>	Project Name: <b>STHD GW PFAS LL - 1,4-DX</b>
Date Received: <b>12/02/2021</b>	Project Number:

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
2	5030B	8260D (SIM)	1	12/09/2021 1206	TML		25076

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
1,4-Dioxane	123-91-1	8260D (SIM)	ND		3.0	ug/L	2

Surrogate	Q	Run 2 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		99	40-170

LOQ = Limit of Quantitation      B = Detected in the method blank      E = Quantitation of compound exceeded the calibration range      Q = Surrogate failure  
 ND = Not detected at or above the LOQ      N = Recovery is out of criteria      P = The RPD between two GC columns exceeds 40%      L = LCS/LCSD failure  
 H = Out of holding time      W = Reported on wet weight basis      S = MS/MSD failure

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# PFAS by LC/MS/MS

Client: <b>Pace Analytical Services, LLC</b>	Laboratory ID: <b>WL02030-004</b>
Description: <b>MW-46R</b>	Matrix: <b>Aqueous</b>
Date Sampled: <b>11/29/2021 1350</b>	Project Name: <b>STHD GW PFAS LL - 1,4-DX</b>
Date Received: <b>12/02/2021</b>	Project Number:

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	SOP SPE	PFAS by ID SOP	1	12/16/2021 2007	JJG	12/15/2021 1308	25719

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9CI-PF3ONS)	756426-58-1	PFAS by ID SOP	ND		3.8	ng/L	1
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11CI-PF3...)	763051-92-9	PFAS by ID SOP	ND	S	3.8	ng/L	1
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID SOP	ND		3.8	ng/L	1
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	PFAS by ID SOP	ND		3.8	ng/L	1
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	PFAS by ID SOP	ND		3.8	ng/L	1
Hexafluoropropylene oxide dimer acid (GenX)	13252-13-6	PFAS by ID SOP	ND		3.8	ng/L	1
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	PFAS by ID SOP	ND		3.8	ng/L	1
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	PFAS by ID SOP	ND		3.8	ng/L	1
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	PFAS by ID SOP	ND		3.8	ng/L	1
Perfluoro-1-butanefluoronic acid (PFBS)	375-73-5	PFAS by ID SOP	ND		1.9	ng/L	1
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	PFAS by ID SOP	ND	S	1.9	ng/L	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	PFAS by ID SOP	ND		1.9	ng/L	1
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	PFAS by ID SOP	ND		1.9	ng/L	1
Perfluoro-1-octanesulfonamide (PFOSA)	754-91-6	PFAS by ID SOP	ND	Q	1.9	ng/L	1
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4	PFAS by ID SOP	ND		1.9	ng/L	1
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	PFAS by ID SOP	ND		1.9	ng/L	1
Perfluoro-n-butanoic acid (PFBA)	375-22-4	PFAS by ID SOP	ND		1.9	ng/L	1
Perfluoro-n-decanoic acid (PFDA)	335-76-2	PFAS by ID SOP	ND		1.9	ng/L	1
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	PFAS by ID SOP	ND		1.9	ng/L	1
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9	PFAS by ID SOP	ND		1.9	ng/L	1
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	PFAS by ID SOP	ND		1.9	ng/L	1
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	PFAS by ID SOP	ND		1.9	ng/L	1
Perfluoro-n-octanoic acid (PFOA)	335-67-1	PFAS by ID SOP	ND		1.9	ng/L	1
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3	PFAS by ID SOP	ND		1.9	ng/L	1
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	PFAS by ID SOP	ND		1.9	ng/L	1
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	PFAS by ID SOP	ND		1.9	ng/L	1
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	PFAS by ID SOP	ND		1.9	ng/L	1
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	PFAS by ID SOP	ND		1.9	ng/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
13C2_4:2FTS		108	50-150
13C2_6:2FTS		101	50-150
13C2_8:2FTS		97	50-150
13C2_PFDa		75	50-150
13C2_PFTeDA		60	50-150
13C3_PFBS		98	50-150
13C3_PFHxS		94	50-150
13C3-HFPO-DA		102	50-150
13C4_PFBA		106	50-150
13C4_PFHpA		96	50-150
13C5_PFHxA		94	50-150
13C5_PFPeA		99	50-150
13C6_PFDA		94	50-150
13C7_PFUdA		84	50-150

LOQ = Limit of Quantitation      B = Detected in the method blank      E = Quantitation of compound exceeded the calibration range      Q = Surrogate failure  
 ND = Not detected at or above the LOQ      N = Recovery is out of criteria      P = The RPD between two GC columns exceeds 40%      L = LCS/LCSD failure  
 H = Out of holding time      W = Reported on wet weight basis      S = MS/MSD failure

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# PFAS by LC/MS/MS

Client: <b>Pace Analytical Services, LLC</b>	Laboratory ID: <b>WL02030-004</b>
Description: <b>MW-46R</b>	Matrix: <b>Aqueous</b>
Date Sampled: <b>11/29/2021 1350</b>	Project Name: <b>STHD GW PFAS LL - 1,4-DX</b>
Date Received: <b>12/02/2021</b>	Project Number:

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
13C8_PFOA		100	50-150
13C8_PFOS		91	50-150
13C8_PFOSA	N	5.3	50-150
13C9_PFNA		98	50-150
d5-EtFOSAA		63	50-150
d3-MeFOSAA		80	50-150

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LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	Q = Surrogate failure
ND = Not detected at or above the LOQ	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis		S = MS/MSD failure

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# Volatile Organic Compounds by GC/MS (SIM)

Client: <b>Pace Analytical Services, LLC</b>	Laboratory ID: <b>WL02030-005</b>
Description: <b>Static Meter Blank</b>	Matrix: <b>Aqueous</b>
Date Sampled: <b>11/29/2021 0920</b>	Project Name: <b>STHD GW PFAS LL - 1,4-DX</b>
Date Received: <b>12/02/2021</b>	Project Number:

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D (SIM)	1	12/02/2021 2214	BBW		24435

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
1,4-Dioxane	123-91-1	8260D (SIM)	ND		3.0	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		93	40-170

LOQ = Limit of Quantitation      B = Detected in the method blank      E = Quantitation of compound exceeded the calibration range      Q = Surrogate failure  
 ND = Not detected at or above the LOQ      N = Recovery is out of criteria      P = The RPD between two GC columns exceeds 40%      L = LCS/LCSD failure  
 H = Out of holding time      W = Reported on wet weight basis      S = MS/MSD failure

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# PFAS by LC/MS/MS

Client: <b>Pace Analytical Services, LLC</b>	Laboratory ID: <b>WL02030-005</b>
Description: <b>Static Meter Blank</b>	Matrix: <b>Aqueous</b>
Date Sampled: <b>11/29/2021 0920</b>	Project Name: <b>STHD GW PFAS LL - 1,4-DX</b>
Date Received: <b>12/02/2021</b>	Project Number:

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	SOP SPE	PFAS by ID SOP	1	12/16/2021 2028	JJG	12/15/2021 1308	25719

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9CI-PF3ONS)	756426-58-1	PFAS by ID SOP	ND		4.5	ng/L	1
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11CI-PF3...)	763051-92-9	PFAS by ID SOP	ND		4.5	ng/L	1
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID SOP	ND		4.5	ng/L	1
<b>1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)</b>	<b>27619-97-2</b>	<b>PFAS by ID SOP</b>	<b>14</b>		<b>4.5</b>	<b>ng/L</b>	<b>1</b>
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	PFAS by ID SOP	ND		4.5	ng/L	1
Hexafluoropropylene oxide dimer acid (GenX)	13252-13-6	PFAS by ID SOP	ND		4.5	ng/L	1
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	PFAS by ID SOP	ND		4.5	ng/L	1
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	PFAS by ID SOP	ND		4.5	ng/L	1
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	PFAS by ID SOP	ND		4.5	ng/L	1
Perfluoro-1-butanefluoronic acid (PFBS)	375-73-5	PFAS by ID SOP	ND		2.3	ng/L	1
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	PFAS by ID SOP	ND		2.3	ng/L	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	PFAS by ID SOP	ND		2.3	ng/L	1
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	PFAS by ID SOP	ND		2.3	ng/L	1
Perfluoro-1-octanesulfonamide (PFOSA)	754-91-6	PFAS by ID SOP	ND		2.3	ng/L	1
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4	PFAS by ID SOP	ND		2.3	ng/L	1
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	PFAS by ID SOP	ND		2.3	ng/L	1
Perfluoro-n-butanoic acid (PFBA)	375-22-4	PFAS by ID SOP	ND		2.3	ng/L	1
Perfluoro-n-decanoic acid (PFDA)	335-76-2	PFAS by ID SOP	ND		2.3	ng/L	1
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	PFAS by ID SOP	ND		2.3	ng/L	1
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9	PFAS by ID SOP	ND		2.3	ng/L	1
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	PFAS by ID SOP	ND		2.3	ng/L	1
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	PFAS by ID SOP	ND		2.3	ng/L	1
Perfluoro-n-octanoic acid (PFOA)	335-67-1	PFAS by ID SOP	ND		2.3	ng/L	1
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3	PFAS by ID SOP	ND		2.3	ng/L	1
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	PFAS by ID SOP	ND		2.3	ng/L	1
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	PFAS by ID SOP	ND		2.3	ng/L	1
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	PFAS by ID SOP	ND		2.3	ng/L	1
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	PFAS by ID SOP	ND		2.3	ng/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
13C2_4:2FTS		92	50-150
13C2_6:2FTS		102	50-150
13C2_8:2FTS		85	50-150
13C2_PFDa		82	50-150
13C2_PFTeDA		67	50-150
13C3_PFBS		90	50-150
13C3_PFHxS		95	50-150
13C3-HFPO-DA		95	50-150
13C4_PFBA		92	50-150
13C4_PFHpA		89	50-150
13C5_PFHxA		93	50-150
13C5_PFPeA		88	50-150
13C6_PFDA		79	50-150
13C7_PFUdA		86	50-150

LOQ = Limit of Quantitation      B = Detected in the method blank      E = Quantitation of compound exceeded the calibration range      Q = Surrogate failure  
 ND = Not detected at or above the LOQ      N = Recovery is out of criteria      P = The RPD between two GC columns exceeds 40%      L = LCS/LCSD failure  
 H = Out of holding time      W = Reported on wet weight basis      S = MS/MSD failure

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# PFAS by LC/MS/MS

Client: <b>Pace Analytical Services, LLC</b>	Laboratory ID: <b>WL02030-005</b>
Description: <b>Static Meter Blank</b>	Matrix: <b>Aqueous</b>
Date Sampled: <b>11/29/2021 0920</b>	Project Name: <b>STHD GW PFAS LL - 1,4-DX</b>
Date Received: <b>12/02/2021</b>	Project Number:

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
13C8_PFOA		95	50-150
13C8_PFOS		96	50-150
13C8_PFOSA		86	50-150
13C9_PFNA		90	50-150
d5-EtFOSAA		84	50-150
d3-MeFOSAA		91	50-150

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LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	Q = Surrogate failure
ND = Not detected at or above the LOQ	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis		S = MS/MSD failure

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# Volatile Organic Compounds by GC/MS (SIM)

Client: <b>Pace Analytical Services, LLC</b>	Laboratory ID: <b>WL02030-006</b>
Description: <b>Duplicate 01</b>	Matrix: <b>Aqueous</b>
Date Sampled: <b>11/29/2021 1133</b>	Project Name: <b>STHD GW PFAS LL - 1,4-DX</b>
Date Received: <b>12/02/2021</b>	Project Number:

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
2	5030B	8260D (SIM)	1	12/09/2021 1231	TML		25076

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
1,4-Dioxane	123-91-1	8260D (SIM)	ND		3.0	ug/L	2

Surrogate	Q	Run 2 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		99	40-170

LOQ = Limit of Quantitation      B = Detected in the method blank      E = Quantitation of compound exceeded the calibration range      Q = Surrogate failure  
 ND = Not detected at or above the LOQ      N = Recovery is out of criteria      P = The RPD between two GC columns exceeds 40%      L = LCS/LCSD failure  
 H = Out of holding time      W = Reported on wet weight basis      S = MS/MSD failure

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# PFAS by LC/MS/MS

Client: <b>Pace Analytical Services, LLC</b>	Laboratory ID: <b>WL02030-006</b>
Description: <b>Duplicate 01</b>	Matrix: <b>Aqueous</b>
Date Sampled: <b>11/29/2021 1133</b>	Project Name: <b>STHD GW PFAS LL - 1,4-DX</b>
Date Received: <b>12/02/2021</b>	Project Number:

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	SOP SPE	PFAS by ID SOP	1	12/16/2021 2039	JJG	12/15/2021 1308	25719

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9CI-PF3ONS)	756426-58-1	PFAS by ID SOP	ND		6.1	ng/L	1
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11CI-PF3...)	763051-92-9	PFAS by ID SOP	ND		6.1	ng/L	1
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID SOP	ND	Q	6.1	ng/L	1
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	PFAS by ID SOP	ND		6.1	ng/L	1
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	PFAS by ID SOP	ND		6.1	ng/L	1
Hexafluoropropylene oxide dimer acid (GenX)	13252-13-6	PFAS by ID SOP	ND		6.1	ng/L	1
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	PFAS by ID SOP	ND		6.1	ng/L	1
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	PFAS by ID SOP	ND	Q	6.1	ng/L	1
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	PFAS by ID SOP	ND		6.1	ng/L	1
Perfluoro-1-butanefluoronic acid (PFBS)	375-73-5	PFAS by ID SOP	ND		3.1	ng/L	1
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	PFAS by ID SOP	ND		3.1	ng/L	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	PFAS by ID SOP	ND		3.1	ng/L	1
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	PFAS by ID SOP	ND		3.1	ng/L	1
Perfluoro-1-octanesulfonamide (PFOSA)	754-91-6	PFAS by ID SOP	ND		3.1	ng/L	1
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4	PFAS by ID SOP	ND		3.1	ng/L	1
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	PFAS by ID SOP	ND		3.1	ng/L	1
Perfluoro-n-butanoic acid (PFBA)	375-22-4	PFAS by ID SOP	ND		3.1	ng/L	1
Perfluoro-n-decanoic acid (PFDA)	335-76-2	PFAS by ID SOP	ND		3.1	ng/L	1
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	PFAS by ID SOP	ND	Q	3.1	ng/L	1
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9	PFAS by ID SOP	ND		3.1	ng/L	1
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	PFAS by ID SOP	ND		3.1	ng/L	1
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	PFAS by ID SOP	ND		3.1	ng/L	1
Perfluoro-n-octanoic acid (PFOA)	335-67-1	PFAS by ID SOP	ND		3.1	ng/L	1
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3	PFAS by ID SOP	ND		3.1	ng/L	1
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	PFAS by ID SOP	ND	Q	3.1	ng/L	1
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	PFAS by ID SOP	ND	Q	3.1	ng/L	1
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	PFAS by ID SOP	ND	Q	3.1	ng/L	1
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	PFAS by ID SOP	ND		3.1	ng/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
13C2_4:2FTS		57	50-150
13C2_6:2FTS		59	50-150
13C2_8:2FTS	N	49	50-150
13C2_PFDa	N	43	50-150
13C2_PFTeDA	N	40	50-150
13C3_PFBS		58	50-150
13C3_PFHxS		53	50-150
13C3-HFPO-DA		59	50-150
13C4_PFBA		60	50-150
13C4_PFHpA		59	50-150
13C5_PFHxA		57	50-150
13C5_PFPeA		61	50-150
13C6_PFDA		58	50-150
13C7_PFUdA	N	49	50-150

LOQ = Limit of Quantitation      B = Detected in the method blank      E = Quantitation of compound exceeded the calibration range      Q = Surrogate failure  
 ND = Not detected at or above the LOQ      N = Recovery is out of criteria      P = The RPD between two GC columns exceeds 40%      L = LCS/LCSD failure  
 H = Out of holding time      W = Reported on wet weight basis      S = MS/MSD failure

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# PFAS by LC/MS/MS

Client: <b>Pace Analytical Services, LLC</b>	Laboratory ID: <b>WL02030-006</b>
Description: <b>Duplicate 01</b>	Matrix: <b>Aqueous</b>
Date Sampled: <b>11/29/2021 1133</b>	Project Name: <b>STHD GW PFAS LL - 1,4-DX</b>
Date Received: <b>12/02/2021</b>	Project Number:

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
13C8_PFOA		56	50-150
13C8_PFOS		55	50-150
13C8_PFOA		52	50-150
13C9_PFNA		57	50-150
d5-EtFOSAA	N	45	50-150
d3-MeFOSAA		53	50-150

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LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	Q = Surrogate failure
ND = Not detected at or above the LOQ	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis		S = MS/MSD failure

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# Volatile Organic Compounds by GC/MS (SIM)

Client: <b>Pace Analytical Services, LLC</b>	Laboratory ID: <b>WL02030-007</b>
Description: <b>Bailer Blank</b>	Matrix: <b>Aqueous</b>
Date Sampled: <b>11/29/2021 0925</b>	Project Name: <b>STHD GW PFAS LL - 1,4-DX</b>
Date Received: <b>12/02/2021</b>	Project Number:

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D (SIM)	1	12/03/2021 0137	BBW		24435

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
1,4-Dioxane	123-91-1	8260D (SIM)	ND		3.0	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		92	40-170

LOQ = Limit of Quantitation      B = Detected in the method blank      E = Quantitation of compound exceeded the calibration range      Q = Surrogate failure  
 ND = Not detected at or above the LOQ      N = Recovery is out of criteria      P = The RPD between two GC columns exceeds 40%      L = LCS/LCSD failure  
 H = Out of holding time      W = Reported on wet weight basis      S = MS/MSD failure

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# PFAS by LC/MS/MS

Client: <b>Pace Analytical Services, LLC</b>	Laboratory ID: <b>WL02030-007</b>
Description: <b>Bailer Blank</b>	Matrix: <b>Aqueous</b>
Date Sampled: <b>11/29/2021 0925</b>	Project Name: <b>STHD GW PFAS LL - 1,4-DX</b>
Date Received: <b>12/02/2021</b>	Project Number:

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	SOP SPE	PFAS by ID SOP	1	12/16/2021 2049	JJG	12/15/2021 1308	25719

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9CI-PF3ONS)	756426-58-1	PFAS by ID SOP	ND		3.9	ng/L	1
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11CI-PF3...)	763051-92-9	PFAS by ID SOP	ND		3.9	ng/L	1
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID SOP	ND		3.9	ng/L	1
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	PFAS by ID SOP	ND		3.9	ng/L	1
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	PFAS by ID SOP	ND		3.9	ng/L	1
Hexafluoropropylene oxide dimer acid (GenX)	13252-13-6	PFAS by ID SOP	ND		3.9	ng/L	1
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	PFAS by ID SOP	ND		3.9	ng/L	1
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	PFAS by ID SOP	ND		3.9	ng/L	1
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	PFAS by ID SOP	ND		3.9	ng/L	1
Perfluoro-1-butanefluoronic acid (PFBS)	375-73-5	PFAS by ID SOP	ND		1.9	ng/L	1
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	PFAS by ID SOP	ND		1.9	ng/L	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	PFAS by ID SOP	ND		1.9	ng/L	1
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	PFAS by ID SOP	ND		1.9	ng/L	1
Perfluoro-1-octanesulfonamide (PFOSA)	754-91-6	PFAS by ID SOP	ND		1.9	ng/L	1
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4	PFAS by ID SOP	ND		1.9	ng/L	1
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	PFAS by ID SOP	ND		1.9	ng/L	1
Perfluoro-n-butyric acid (PFBA)	375-22-4	PFAS by ID SOP	ND		1.9	ng/L	1
Perfluoro-n-decanoic acid (PFDA)	335-76-2	PFAS by ID SOP	ND		1.9	ng/L	1
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	PFAS by ID SOP	ND		1.9	ng/L	1
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9	PFAS by ID SOP	ND		1.9	ng/L	1
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	PFAS by ID SOP	ND		1.9	ng/L	1
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	PFAS by ID SOP	ND		1.9	ng/L	1
Perfluoro-n-octanoic acid (PFOA)	335-67-1	PFAS by ID SOP	ND		1.9	ng/L	1
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3	PFAS by ID SOP	ND		1.9	ng/L	1
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	PFAS by ID SOP	ND		1.9	ng/L	1
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	PFAS by ID SOP	ND		1.9	ng/L	1
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	PFAS by ID SOP	ND		1.9	ng/L	1
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	PFAS by ID SOP	ND		1.9	ng/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
13C2_4:2FTS		97	50-150
13C2_6:2FTS		97	50-150
13C2_8:2FTS		88	50-150
13C2_PFDa		87	50-150
13C2_PFTeDA		66	50-150
13C3_PFBS		95	50-150
13C3_PFHxS		96	50-150
13C3-HFPO-DA		99	50-150
13C4_PFBA		96	50-150
13C4_PFHpA		92	50-150
13C5_PFHxA		89	50-150
13C5_PFPeA		99	50-150
13C6_PFDA		91	50-150
13C7_PFUdA		90	50-150

LOQ = Limit of Quantitation      B = Detected in the method blank      E = Quantitation of compound exceeded the calibration range      Q = Surrogate failure  
 ND = Not detected at or above the LOQ      N = Recovery is out of criteria      P = The RPD between two GC columns exceeds 40%      L = LCS/LCSD failure  
 H = Out of holding time      W = Reported on wet weight basis      S = MS/MSD failure

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# PFAS by LC/MS/MS

Client: <b>Pace Analytical Services, LLC</b>	Laboratory ID: <b>WL02030-007</b>
Description: <b>Bailer Blank</b>	Matrix: <b>Aqueous</b>
Date Sampled: <b>11/29/2021 0925</b>	Project Name: <b>STHD GW PFAS LL - 1,4-DX</b>
Date Received: <b>12/02/2021</b>	Project Number:

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
13C8_PFOA		100	50-150
13C8_PFOS		97	50-150
13C8_PFOSA		100	50-150
13C9_PFNA		97	50-150
d5-EtFOSAA		94	50-150
d3-MeFOSAA		93	50-150

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LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	Q = Surrogate failure
ND = Not detected at or above the LOQ	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis		S = MS/MSD failure

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# Volatile Organic Compounds by GC/MS (SIM)

Client: <b>Pace Analytical Services, LLC</b>	Laboratory ID: <b>WL02030-008</b>
Description: <b>MW-27R</b>	Matrix: <b>Aqueous</b>
Date Sampled: <b>11/29/2021 1130</b>	Project Name: <b>STHD GW PFAS LL - 1,4-DX</b>
Date Received: <b>12/02/2021</b>	Project Number:

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D (SIM)	1	12/03/2021 0202	BBW		24435

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
1,4-Dioxane	123-91-1	8260D (SIM)	ND		3.0	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		92	40-170

LOQ = Limit of Quantitation      B = Detected in the method blank      E = Quantitation of compound exceeded the calibration range      Q = Surrogate failure  
 ND = Not detected at or above the LOQ      N = Recovery is out of criteria      P = The RPD between two GC columns exceeds 40%      L = LCS/LCSD failure  
 H = Out of holding time      W = Reported on wet weight basis      S = MS/MSD failure

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# PFAS by LC/MS/MS

Client: <b>Pace Analytical Services, LLC</b>	Laboratory ID: <b>WL02030-008</b>
Description: <b>MW-27R</b>	Matrix: <b>Aqueous</b>
Date Sampled: <b>11/29/2021 1130</b>	Project Name: <b>STHD GW PFAS LL - 1,4-DX</b>
Date Received: <b>12/02/2021</b>	Project Number:

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	SOP SPE	PFAS by ID SOP	1	12/16/2021 2100	JJG	12/15/2021 1308	25719

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9CI-PF3ONS)	756426-58-1	PFAS by ID SOP	ND		5.2	ng/L	1
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11CI-PF3...)	763051-92-9	PFAS by ID SOP	ND		5.2	ng/L	1
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID SOP	ND		5.2	ng/L	1
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	PFAS by ID SOP	ND		5.2	ng/L	1
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	PFAS by ID SOP	ND		5.2	ng/L	1
Hexafluoropropylene oxide dimer acid (GenX)	13252-13-6	PFAS by ID SOP	ND		5.2	ng/L	1
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	PFAS by ID SOP	ND		5.2	ng/L	1
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	PFAS by ID SOP	ND		5.2	ng/L	1
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	PFAS by ID SOP	ND		5.2	ng/L	1
Perfluoro-1-butanefluoronic acid (PFBS)	375-73-5	PFAS by ID SOP	ND		2.6	ng/L	1
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	PFAS by ID SOP	ND		2.6	ng/L	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	PFAS by ID SOP	ND		2.6	ng/L	1
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	PFAS by ID SOP	ND		2.6	ng/L	1
Perfluoro-1-octanesulfonamide (PFOSA)	754-91-6	PFAS by ID SOP	ND		2.6	ng/L	1
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4	PFAS by ID SOP	ND		2.6	ng/L	1
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	PFAS by ID SOP	ND		2.6	ng/L	1
Perfluoro-n-butanoic acid (PFBA)	375-22-4	PFAS by ID SOP	ND		2.6	ng/L	1
Perfluoro-n-decanoic acid (PFDA)	335-76-2	PFAS by ID SOP	ND		2.6	ng/L	1
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	PFAS by ID SOP	ND		2.6	ng/L	1
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9	PFAS by ID SOP	ND		2.6	ng/L	1
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	PFAS by ID SOP	ND		2.6	ng/L	1
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	PFAS by ID SOP	ND		2.6	ng/L	1
Perfluoro-n-octanoic acid (PFOA)	335-67-1	PFAS by ID SOP	ND		2.6	ng/L	1
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3	PFAS by ID SOP	ND		2.6	ng/L	1
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	PFAS by ID SOP	ND	Q	2.6	ng/L	1
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	PFAS by ID SOP	ND		2.6	ng/L	1
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	PFAS by ID SOP	ND		2.6	ng/L	1
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	PFAS by ID SOP	ND		2.6	ng/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
13C2_4:2FTS		69	50-150
13C2_6:2FTS		67	50-150
13C2_8:2FTS		60	50-150
13C2_PFDa		51	50-150
13C2_PFTeDA	N	49	50-150
13C3_PFBS		74	50-150
13C3_PFHxS		76	50-150
13C3-HFPO-DA		75	50-150
13C4_PFBA		75	50-150
13C4_PFHpA		70	50-150
13C5_PFHxA		69	50-150
13C5_PFPeA		72	50-150
13C6_PFDA		64	50-150
13C7_PFUdA		58	50-150

LOQ = Limit of Quantitation      B = Detected in the method blank      E = Quantitation of compound exceeded the calibration range      Q = Surrogate failure  
 ND = Not detected at or above the LOQ      N = Recovery is out of criteria      P = The RPD between two GC columns exceeds 40%      L = LCS/LCSD failure  
 H = Out of holding time      W = Reported on wet weight basis      S = MS/MSD failure

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# PFAS by LC/MS/MS

Client: <b>Pace Analytical Services, LLC</b>	Laboratory ID: <b>WL02030-008</b>
Description: <b>MW-27R</b>	Matrix: <b>Aqueous</b>
Date Sampled: <b>11/29/2021 1130</b>	Project Name: <b>STHD GW PFAS LL - 1,4-DX</b>
Date Received: <b>12/02/2021</b>	Project Number:

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
13C8_PFOA		70	50-150
13C8_PFOS		68	50-150
13C8_PFOSA		59	50-150
13C9_PFNA		67	50-150
d5-EtFOSAA		57	50-150
d3-MeFOSAA		65	50-150

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LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	Q = Surrogate failure
ND = Not detected at or above the LOQ	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis		S = MS/MSD failure

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# Volatile Organic Compounds by GC/MS (SIM)

Client: <b>Pace Analytical Services, LLC</b>	Laboratory ID: <b>WL02030-009</b>
Description: <b>MW-7R</b>	Matrix: <b>Aqueous</b>
Date Sampled: <b>11/29/2021 1130</b>	Project Name: <b>STHD GW PFAS LL - 1,4-DX</b>
Date Received: <b>12/02/2021</b>	Project Number:

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D (SIM)	1	12/03/2021 0226	BBW		24435

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
1,4-Dioxane	123-91-1	8260D (SIM)	ND		3.0	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		92	40-170

LOQ = Limit of Quantitation      B = Detected in the method blank      E = Quantitation of compound exceeded the calibration range      Q = Surrogate failure  
 ND = Not detected at or above the LOQ      N = Recovery is out of criteria      P = The RPD between two GC columns exceeds 40%      L = LCS/LCSD failure  
 H = Out of holding time      W = Reported on wet weight basis      S = MS/MSD failure

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# PFAS by LC/MS/MS

Client: <b>Pace Analytical Services, LLC</b>	Laboratory ID: <b>WL02030-009</b>
Description: <b>MW-7R</b>	Matrix: <b>Aqueous</b>
Date Sampled: <b>11/29/2021 1130</b>	Project Name: <b>STHD GW PFAS LL - 1,4-DX</b>
Date Received: <b>12/02/2021</b>	Project Number:

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	SOP SPE	PFAS by ID SOP	1	12/16/2021 2131	JJG	12/15/2021 1308	25719

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9CI-PF3ONS)	756426-58-1	PFAS by ID SOP	ND		4.3	ng/L	1
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11CI-PF3...)	763051-92-9	PFAS by ID SOP	ND		4.3	ng/L	1
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID SOP	ND		4.3	ng/L	1
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	PFAS by ID SOP	ND		4.3	ng/L	1
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	PFAS by ID SOP	ND		4.3	ng/L	1
Hexafluoropropylene oxide dimer acid (GenX)	13252-13-6	PFAS by ID SOP	ND		4.3	ng/L	1
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	PFAS by ID SOP	ND		4.3	ng/L	1
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	PFAS by ID SOP	ND		4.3	ng/L	1
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	PFAS by ID SOP	ND		4.3	ng/L	1
Perfluoro-1-butanefluoro-1-octanesulfonic acid (PFBS)	375-73-5	PFAS by ID SOP	ND		2.1	ng/L	1
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	PFAS by ID SOP	ND		2.1	ng/L	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	PFAS by ID SOP	ND		2.1	ng/L	1
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	PFAS by ID SOP	ND		2.1	ng/L	1
Perfluoro-1-octanesulfonamide (PFOSA)	754-91-6	PFAS by ID SOP	ND		2.1	ng/L	1
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4	PFAS by ID SOP	ND		2.1	ng/L	1
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	PFAS by ID SOP	ND		2.1	ng/L	1
Perfluoro-n-butanoic acid (PFBA)	375-22-4	PFAS by ID SOP	ND		2.1	ng/L	1
Perfluoro-n-decanoic acid (PFDA)	335-76-2	PFAS by ID SOP	ND		2.1	ng/L	1
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	PFAS by ID SOP	ND	Q	2.1	ng/L	1
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9	PFAS by ID SOP	ND		2.1	ng/L	1
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	PFAS by ID SOP	ND		2.1	ng/L	1
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	PFAS by ID SOP	ND		2.1	ng/L	1
Perfluoro-n-octanoic acid (PFOA)	335-67-1	PFAS by ID SOP	ND		2.1	ng/L	1
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3	PFAS by ID SOP	ND		2.1	ng/L	1
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	PFAS by ID SOP	ND		2.1	ng/L	1
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	PFAS by ID SOP	ND	Q	2.1	ng/L	1
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	PFAS by ID SOP	ND		2.1	ng/L	1
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	PFAS by ID SOP	ND		2.1	ng/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
13C2_4:2FTS		86	50-150
13C2_6:2FTS		90	50-150
13C2_8:2FTS		71	50-150
13C2_PFDa	N	47	50-150
13C2_PFTeDA		50	50-150
13C3_PFBS		81	50-150
13C3_PFHxS		83	50-150
13C3-HFPO-DA		83	50-150
13C4_PFBA		82	50-150
13C4_PFHpA		77	50-150
13C5_PFHxA		82	50-150
13C5_PFPeA		79	50-150
13C6_PFDA		72	50-150
13C7_PFUdA		59	50-150

LOQ = Limit of Quantitation      B = Detected in the method blank      E = Quantitation of compound exceeded the calibration range      Q = Surrogate failure  
 ND = Not detected at or above the LOQ      N = Recovery is out of criteria      P = The RPD between two GC columns exceeds 40%      L = LCS/LCSD failure  
 H = Out of holding time      W = Reported on wet weight basis      S = MS/MSD failure

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# PFAS by LC/MS/MS

Client: <b>Pace Analytical Services, LLC</b>	Laboratory ID: <b>WL02030-009</b>
Description: <b>MW-7R</b>	Matrix: <b>Aqueous</b>
Date Sampled: <b>11/29/2021 1130</b>	Project Name: <b>STHD GW PFAS LL - 1,4-DX</b>
Date Received: <b>12/02/2021</b>	Project Number:

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
13C8_PFOA		79	50-150
13C8_PFOS		75	50-150
13C8_PFOSA		75	50-150
13C9_PFNA		79	50-150
d5-EtFOSAA		54	50-150
d3-MeFOSAA		62	50-150

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LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	Q = Surrogate failure
ND = Not detected at or above the LOQ	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis		S = MS/MSD failure

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# Volatile Organic Compounds by GC/MS (SIM)

Client: <b>Pace Analytical Services, LLC</b>	Laboratory ID: <b>WL02030-010</b>
Description: <b>Field Blank</b>	Matrix: <b>Aqueous</b>
Date Sampled: <b>11/29/2021 1135</b>	Project Name: <b>STHD GW PFAS LL - 1,4-DX</b>
Date Received: <b>12/02/2021</b>	Project Number:

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D (SIM)	1	12/02/2021 2238	BBW		24435

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
1,4-Dioxane	123-91-1	8260D (SIM)	ND		3.0	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		93	40-170

LOQ = Limit of Quantitation      B = Detected in the method blank      E = Quantitation of compound exceeded the calibration range      Q = Surrogate failure  
 ND = Not detected at or above the LOQ      N = Recovery is out of criteria      P = The RPD between two GC columns exceeds 40%      L = LCS/LCSD failure  
 H = Out of holding time      W = Reported on wet weight basis      S = MS/MSD failure

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# PFAS by LC/MS/MS

Client: <b>Pace Analytical Services, LLC</b>	Laboratory ID: <b>WL02030-010</b>
Description: <b>Field Blank</b>	Matrix: <b>Aqueous</b>
Date Sampled: <b>11/29/2021 1135</b>	Project Name: <b>STHD GW PFAS LL - 1,4-DX</b>
Date Received: <b>12/02/2021</b>	Project Number:

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	SOP SPE	PFAS by ID SOP	1	12/16/2021 2142	JJG	12/15/2021 1308	25719

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9CI-PF3ONS)	756426-58-1	PFAS by ID SOP	ND		4.6	ng/L	1
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11CI-PF3...)	763051-92-9	PFAS by ID SOP	ND		4.6	ng/L	1
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID SOP	ND		4.6	ng/L	1
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	PFAS by ID SOP	ND		4.6	ng/L	1
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	PFAS by ID SOP	ND		4.6	ng/L	1
Hexafluoropropylene oxide dimer acid (GenX)	13252-13-6	PFAS by ID SOP	ND		4.6	ng/L	1
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	PFAS by ID SOP	ND		4.6	ng/L	1
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	PFAS by ID SOP	ND		4.6	ng/L	1
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	PFAS by ID SOP	ND		4.6	ng/L	1
Perfluoro-1-butanefluoronic acid (PFBS)	375-73-5	PFAS by ID SOP	ND		2.3	ng/L	1
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	PFAS by ID SOP	ND		2.3	ng/L	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	PFAS by ID SOP	ND		2.3	ng/L	1
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	PFAS by ID SOP	ND		2.3	ng/L	1
Perfluoro-1-octanesulfonamide (PFOSA)	754-91-6	PFAS by ID SOP	ND		2.3	ng/L	1
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4	PFAS by ID SOP	ND		2.3	ng/L	1
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	PFAS by ID SOP	ND		2.3	ng/L	1
Perfluoro-n-butanoic acid (PFBA)	375-22-4	PFAS by ID SOP	ND		2.3	ng/L	1
Perfluoro-n-decanoic acid (PFDA)	335-76-2	PFAS by ID SOP	ND		2.3	ng/L	1
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	PFAS by ID SOP	ND		2.3	ng/L	1
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9	PFAS by ID SOP	ND		2.3	ng/L	1
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	PFAS by ID SOP	ND		2.3	ng/L	1
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	PFAS by ID SOP	ND		2.3	ng/L	1
Perfluoro-n-octanoic acid (PFOA)	335-67-1	PFAS by ID SOP	ND		2.3	ng/L	1
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3	PFAS by ID SOP	ND		2.3	ng/L	1
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	PFAS by ID SOP	ND		2.3	ng/L	1
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	PFAS by ID SOP	ND		2.3	ng/L	1
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	PFAS by ID SOP	ND		2.3	ng/L	1
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	PFAS by ID SOP	ND		2.3	ng/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
13C2_4:2FTS		90	50-150
13C2_6:2FTS		96	50-150
13C2_8:2FTS		87	50-150
13C2_PFDa		87	50-150
13C2_PFTeDA		72	50-150
13C3_PFBS		95	50-150
13C3_PFHxS		92	50-150
13C3-HFPO-DA		97	50-150
13C4_PFBA		94	50-150
13C4_PFHpA		98	50-150
13C5_PFHxA		97	50-150
13C5_PFPeA		94	50-150
13C6_PFDA		83	50-150
13C7_PFUdA		88	50-150

LOQ = Limit of Quantitation      B = Detected in the method blank      E = Quantitation of compound exceeded the calibration range      Q = Surrogate failure  
 ND = Not detected at or above the LOQ      N = Recovery is out of criteria      P = The RPD between two GC columns exceeds 40%      L = LCS/LCSD failure  
 H = Out of holding time      W = Reported on wet weight basis      S = MS/MSD failure

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# PFAS by LC/MS/MS

Client: <b>Pace Analytical Services, LLC</b>	Laboratory ID: <b>WL02030-010</b>
Description: <b>Field Blank</b>	Matrix: <b>Aqueous</b>
Date Sampled: <b>11/29/2021 1135</b>	Project Name: <b>STHD GW PFAS LL - 1,4-DX</b>
Date Received: <b>12/02/2021</b>	Project Number:

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
13C8_PFOA		92	50-150
13C8_PFOS		94	50-150
13C8_PFOSA		88	50-150
13C9_PFNA		89	50-150
d5-EtFOSAA		88	50-150
d3-MeFOSAA		90	50-150

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LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	Q = Surrogate failure
ND = Not detected at or above the LOQ	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis		S = MS/MSD failure

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# Volatile Organic Compounds by GC/MS (SIM)

Client: <b>Pace Analytical Services, LLC</b>	Laboratory ID: <b>WL02030-011</b>
Description: <b>Trip Blank</b>	Matrix: <b>Aqueous</b>
Date Sampled: <b>11/29/2021 0700</b>	Project Name: <b>STHD GW PFAS LL - 1,4-DX</b>
Date Received: <b>12/02/2021</b>	Project Number:

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D (SIM)	1	12/02/2021 2302	BBW		24435

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
1,4-Dioxane	123-91-1	8260D (SIM)	ND		3.0	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		92	40-170

LOQ = Limit of Quantitation      B = Detected in the method blank      E = Quantitation of compound exceeded the calibration range      Q = Surrogate failure  
 ND = Not detected at or above the LOQ      N = Recovery is out of criteria      P = The RPD between two GC columns exceeds 40%      L = LCS/LCSD failure  
 H = Out of holding time      W = Reported on wet weight basis      S = MS/MSD failure

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# PFAS by LC/MS/MS

Client: <b>Pace Analytical Services, LLC</b>	Laboratory ID: <b>WL02030-011</b>
Description: <b>Trip Blank</b>	Matrix: <b>Aqueous</b>
Date Sampled: <b>11/29/2021 0700</b>	Project Name: <b>STHD GW PFAS LL - 1,4-DX</b>
Date Received: <b>12/02/2021</b>	Project Number:

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	SOP SPE	PFAS by ID SOP	1	12/16/2021 2153	JJG	12/15/2021 1308	25719

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9CI-PF3ONS)	756426-58-1	PFAS by ID SOP	ND		4.0	ng/L	1
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11CI-PF3...)	763051-92-9	PFAS by ID SOP	ND		4.0	ng/L	1
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID SOP	ND		4.0	ng/L	1
<b>1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)</b>	<b>27619-97-2</b>	<b>PFAS by ID SOP</b>	<b>4.9</b>		<b>4.0</b>	<b>ng/L</b>	<b>1</b>
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	PFAS by ID SOP	ND		4.0	ng/L	1
Hexafluoropropylene oxide dimer acid (GenX)	13252-13-6	PFAS by ID SOP	ND		4.0	ng/L	1
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	PFAS by ID SOP	ND		4.0	ng/L	1
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	PFAS by ID SOP	ND		4.0	ng/L	1
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	PFAS by ID SOP	ND		4.0	ng/L	1
Perfluoro-1-butanefluoronic acid (PFBS)	375-73-5	PFAS by ID SOP	ND		2.0	ng/L	1
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	PFAS by ID SOP	ND		2.0	ng/L	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	PFAS by ID SOP	ND		2.0	ng/L	1
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	PFAS by ID SOP	ND		2.0	ng/L	1
Perfluoro-1-octanesulfonamide (PFOSA)	754-91-6	PFAS by ID SOP	ND		2.0	ng/L	1
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4	PFAS by ID SOP	ND		2.0	ng/L	1
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	PFAS by ID SOP	ND		2.0	ng/L	1
Perfluoro-n-butanoic acid (PFBA)	375-22-4	PFAS by ID SOP	ND		2.0	ng/L	1
Perfluoro-n-decanoic acid (PFDA)	335-76-2	PFAS by ID SOP	ND		2.0	ng/L	1
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	PFAS by ID SOP	ND		2.0	ng/L	1
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9	PFAS by ID SOP	ND		2.0	ng/L	1
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	PFAS by ID SOP	ND		2.0	ng/L	1
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	PFAS by ID SOP	ND		2.0	ng/L	1
Perfluoro-n-octanoic acid (PFOA)	335-67-1	PFAS by ID SOP	ND		2.0	ng/L	1
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3	PFAS by ID SOP	ND		2.0	ng/L	1
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	PFAS by ID SOP	ND		2.0	ng/L	1
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	PFAS by ID SOP	ND		2.0	ng/L	1
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	PFAS by ID SOP	ND		2.0	ng/L	1
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	PFAS by ID SOP	ND		2.0	ng/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
13C2_4:2FTS		91	50-150
13C2_6:2FTS		92	50-150
13C2_8:2FTS		86	50-150
13C2_PFDaA		73	50-150
13C2_PFTeDA		69	50-150
13C3_PFBS		90	50-150
13C3_PFHxS		85	50-150
13C3-HFPO-DA		92	50-150
13C4_PFBA		92	50-150
13C4_PFHpA		95	50-150
13C5_PFHxA		91	50-150
13C5_PFPeA		89	50-150
13C6_PFDA		79	50-150
13C7_PFUdA		74	50-150

LOQ = Limit of Quantitation      B = Detected in the method blank      E = Quantitation of compound exceeded the calibration range      Q = Surrogate failure  
 ND = Not detected at or above the LOQ      N = Recovery is out of criteria      P = The RPD between two GC columns exceeds 40%      L = LCS/LCSD failure  
 H = Out of holding time      W = Reported on wet weight basis      S = MS/MSD failure

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# PFAS by LC/MS/MS

Client: <b>Pace Analytical Services, LLC</b>	Laboratory ID: <b>WL02030-011</b>
Description: <b>Trip Blank</b>	Matrix: <b>Aqueous</b>
Date Sampled: <b>11/29/2021 0700</b>	Project Name: <b>STHD GW PFAS LL - 1,4-DX</b>
Date Received: <b>12/02/2021</b>	Project Number:

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
13C8_PFOA		91	50-150
13C8_PFOS		77	50-150
13C8_PFOSA		73	50-150
13C9_PFNA		90	50-150
d5-EtFOSAA		78	50-150
d3-MeFOSAA		85	50-150

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LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	Q = Surrogate failure
ND = Not detected at or above the LOQ	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis		S = MS/MSD failure

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## QC Summary

# Volatile Organic Compounds by GC/MS (SIM) - MB

Sample ID: WQ24435-001

Matrix: Aqueous

Batch: 24435

Prep Method: 5030B

Analytical Method: 8260D (SIM)

Parameter	Result	Q	Dil	LOQ	Units	Analysis Date
1,4-Dioxane	ND		1	3.0	ug/L	12/02/2021 2106
Surrogate	Q	% Rec	Acceptance Limit			
1,2-Dichloroethane-d4		90	40-170			

LOQ = Limit of Quantitation

ND = Not detected at or above the LOQ

N = Recovery is out of criteria

P = The RPD between two GC columns exceeds 40%

\* = RSD is out of criteria

+ = RPD is out of criteria

**Note: Calculations are performed before rounding to avoid round-off errors in calculated results**

# Volatile Organic Compounds by GC/MS (SIM) - LCS

Sample ID: WQ24435-002

Matrix: Aqueous

Batch: 24435

Prep Method: 5030B

Analytical Method: 8260D (SIM)

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
1,4-Dioxane	50	50		1	100	70-130	12/02/2021 1918
Surrogate	Q	% Rec	Acceptance Limit				
1,2-Dichloroethane-d4		105	40-170				

LOQ = Limit of Quantitation

ND = Not detected at or above the LOQ

N = Recovery is out of criteria

P = The RPD between two GC columns exceeds 40%

\* = RSD is out of criteria

+ = RPD is out of criteria

**Note: Calculations are performed before rounding to avoid round-off errors in calculated results**

# Volatile Organic Compounds by GC/MS (SIM) - MS

Sample ID: WL02030-002MS

Matrix: Aqueous

Batch: 24435

Prep Method: 5030B

Analytical Method: 8260D (SIM)

Parameter	Sample Amount (ug/L)	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
1,4-Dioxane	ND	50	49		1	99	70-130	12/03/2021 0315
Surrogate	Q	% Rec	Acceptance Limit					
1,2-Dichloroethane-d4		109	40-170					

LOQ = Limit of Quantitation

ND = Not detected at or above the LOQ

N = Recovery is out of criteria

P = The RPD between two GC columns exceeds 40%

\* = RSD is out of criteria

+ = RPD is out of criteria

**Note: Calculations are performed before rounding to avoid round-off errors in calculated results**

# Volatile Organic Compounds by GC/MS (SIM) - Duplicate

Sample ID: WL02030-003DU

Matrix: Aqueous

Batch: 24435

Prep Method: 5030B

Analytical Method: 8260D (SIM)

Parameter	Sample Amount (ug/L)	Result (ug/L)	Q	Dil	% RPD	%RPD Limit	Analysis Date
1,4-Dioxane	ND	ND		1	0.00	20	12/03/2021 0251
Surrogate	Q	% Rec	Acceptance Limit				
1,2-Dichloroethane-d4		92	40-170				

LOQ = Limit of Quantitation

ND = Not detected at or above the LOQ

N = Recovery is out of criteria

P = The RPD between two GC columns exceeds 40%

\* = RSD is out of criteria

+ = RPD is out of criteria

**Note: Calculations are performed before rounding to avoid round-off errors in calculated results**

# Volatile Organic Compounds by GC/MS (SIM) - MB

Sample ID: WQ25076-001

Matrix: Aqueous

Batch: 25076

Prep Method: 5030B

Analytical Method: 8260D (SIM)

Parameter	Result	Q	Dil	LOQ	Units	Analysis Date
1,4-Dioxane	ND		1	3.0	ug/L	12/09/2021 1019
Surrogate	Q	% Rec	Acceptance Limit			
1,2-Dichloroethane-d4		97	40-170			

LOQ = Limit of Quantitation

ND = Not detected at or above the LOQ

N = Recovery is out of criteria

P = The RPD between two GC columns exceeds 40%

\* = RSD is out of criteria

+ = RPD is out of criteria

**Note: Calculations are performed before rounding to avoid round-off errors in calculated results**

# Volatile Organic Compounds by GC/MS (SIM) - LCS

Sample ID: WQ25076-002

Matrix: Aqueous

Batch: 25076

Prep Method: 5030B

Analytical Method: 8260D (SIM)

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
1,4-Dioxane	50	47		1	94	70-130	12/09/2021 0930
Surrogate	Q	% Rec	Acceptance Limit				
1,2-Dichloroethane-d4		112	40-170				

LOQ = Limit of Quantitation

ND = Not detected at or above the LOQ

N = Recovery is out of criteria

P = The RPD between two GC columns exceeds 40%

\* = RSD is out of criteria

+ = RPD is out of criteria

**Note: Calculations are performed before rounding to avoid round-off errors in calculated results**

# PFAS by LC/MS/MS - MB

Sample ID: WQ25719-001

Matrix: Aqueous

Batch: 25719

Prep Method: SOP SPE

Analytical Method: PFAS by ID SOP

Prep Date: 12/15/2021 1308

Parameter	Result	Q	Dil	LOQ	Units	Analysis Date
9CI-PF3ONS	ND		1	4.4	ng/L	12/16/2021 1843
11CI-PF3OUdS	ND		1	4.4	ng/L	12/16/2021 1843
8:2 FTS	ND		1	4.4	ng/L	12/16/2021 1843
6:2 FTS	ND		1	4.4	ng/L	12/16/2021 1843
4:2 FTS	ND		1	4.4	ng/L	12/16/2021 1843
GenX	ND		1	4.4	ng/L	12/16/2021 1843
ADONA	ND		1	4.4	ng/L	12/16/2021 1843
EtFOSAA	ND		1	4.4	ng/L	12/16/2021 1843
MeFOSAA	ND		1	4.4	ng/L	12/16/2021 1843
PFBS	ND		1	2.2	ng/L	12/16/2021 1843
PFDS	ND		1	2.2	ng/L	12/16/2021 1843
PFHpS	ND		1	2.2	ng/L	12/16/2021 1843
PFNS	ND		1	2.2	ng/L	12/16/2021 1843
PFOSA	ND		1	2.2	ng/L	12/16/2021 1843
PFPeS	ND		1	2.2	ng/L	12/16/2021 1843
PFHxS	ND		1	2.2	ng/L	12/16/2021 1843
PFBA	ND		1	2.2	ng/L	12/16/2021 1843
PFDA	ND		1	2.2	ng/L	12/16/2021 1843
PFDaA	ND		1	2.2	ng/L	12/16/2021 1843
PFHpA	ND		1	2.2	ng/L	12/16/2021 1843
PFHxA	ND		1	2.2	ng/L	12/16/2021 1843
PFNA	ND		1	2.2	ng/L	12/16/2021 1843
PFOA	ND		1	2.2	ng/L	12/16/2021 1843
PFPeA	ND		1	2.2	ng/L	12/16/2021 1843
PFTeDA	ND		1	2.2	ng/L	12/16/2021 1843
PFTrDA	ND		1	2.2	ng/L	12/16/2021 1843
PFUdA	ND		1	2.2	ng/L	12/16/2021 1843
PFOS	ND		1	2.2	ng/L	12/16/2021 1843

Surrogate	Q	% Rec	Acceptance Limit
13C2_4:2FTS		99	50-150
13C2_6:2FTS		100	50-150
13C2_8:2FTS		91	50-150
13C2_PFDaA		93	50-150
13C2_PFTeDA		88	50-150
13C3_PFBs		98	50-150
13C3_PFHxS		97	50-150
13C3-HFPO-DA		99	50-150
13C4_PFBa		97	50-150
13C4_PFHpA		96	50-150
13C5_PFHxA		94	50-150
13C5_PFPeA		98	50-150

LOQ = Limit of Quantitation

ND = Not detected at or above the LOQ

N = Recovery is out of criteria

P = The RPD between two GC columns exceeds 40%

\* = RSD is out of criteria

+ = RPD is out of criteria

**Note: Calculations are performed before rounding to avoid round-off errors in calculated results**



# PFAS by LC/MS/MS - MB

Sample ID: WQ25719-001

Matrix: Aqueous

Batch: 25719

Prep Method: SOP SPE

Analytical Method: PFAS by ID SOP

Prep Date: 12/15/2021 1308

Surrogate	Q	% Rec	Acceptance Limit
13C6_PFDA		90	50-150
13C7_PFUdA		94	50-150
13C8_PFOA		93	50-150
13C8_PFOS		104	50-150
13C8_PFOSA		101	50-150
13C9_PFNA		104	50-150
d5-EtFOSAA		99	50-150
d3-MeFOSAA		104	50-150

LOQ = Limit of Quantitation

ND = Not detected at or above the LOQ

N = Recovery is out of criteria

P = The RPD between two GC columns exceeds 40%

\* = RSD is out of criteria

+ = RPD is out of criteria

**Note: Calculations are performed before rounding to avoid round-off errors in calculated results**

# PFAS by LC/MS/MS - LCS

Sample ID: WQ25719-002

Matrix: Aqueous

Batch: 25719

Prep Method: SOP SPE

Analytical Method: PFAS by ID SOP

Prep Date: 12/15/2021 1308

Parameter	Spike Amount (ng/L)	Result (ng/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
9CI-PF3ONS	15	13		1	87	50-150	12/16/2021 1853
11CI-PF3OUdS	15	12		1	78	50-150	12/16/2021 1853
8:2 FTS	15	11		1	72	50-150	12/16/2021 1853
6:2 FTS	15	16		1	107	50-150	12/16/2021 1853
4:2 FTS	15	15		1	101	50-150	12/16/2021 1853
GenX	32	32		1	100	50-150	12/16/2021 1853
ADONA	15	13		1	87	50-150	12/16/2021 1853
EtFOSAA	16	14		1	91	50-150	12/16/2021 1853
MeFOSAA	16	15		1	91	50-150	12/16/2021 1853
PFBS	14	12		1	84	50-150	12/16/2021 1853
PFDS	15	14		1	88	50-150	12/16/2021 1853
PFHpS	15	14		1	92	50-150	12/16/2021 1853
PFNS	15	12		1	77	50-150	12/16/2021 1853
PFOSA	16	15		1	91	50-150	12/16/2021 1853
PFPeS	15	13		1	88	50-150	12/16/2021 1853
PFHxS	15	13		1	87	50-150	12/16/2021 1853
PFBA	16	14		1	91	50-150	12/16/2021 1853
PFDA	16	14		1	87	50-150	12/16/2021 1853
PFDaA	16	14		1	87	50-150	12/16/2021 1853
PFHpA	16	14		1	86	50-150	12/16/2021 1853
PFHxA	16	13		1	84	50-150	12/16/2021 1853
PFNA	16	14		1	89	50-150	12/16/2021 1853
PFOA	16	14		1	87	50-150	12/16/2021 1853
PFPeA	16	15		1	96	50-150	12/16/2021 1853
PFTeDA	16	15		1	93	50-150	12/16/2021 1853
PFTTrDA	16	13		1	82	50-150	12/16/2021 1853
PFUdA	16	13		1	81	50-150	12/16/2021 1853
PFOS	15	13		1	89	50-150	12/16/2021 1853

Surrogate	Q	% Rec	Acceptance Limit
13C2_4:2FTS		88	50-150
13C2_6:2FTS		90	50-150
13C2_8:2FTS		93	50-150
13C2_PFDaA		85	50-150
13C2_PFTeDA		74	50-150
13C3_PFBS		93	50-150
13C3_PFHxS		93	50-150
13C3-HFPO-DA		92	50-150
13C4_PFBA		92	50-150
13C4_PFHpA		92	50-150
13C5_PFHxA		98	50-150
13C5_PFPeA		90	50-150

LOQ = Limit of Quantitation

ND = Not detected at or above the LOQ

N = Recovery is out of criteria

P = The RPD between two GC columns exceeds 40%

\* = RSD is out of criteria

+ = RPD is out of criteria

**Note: Calculations are performed before rounding to avoid round-off errors in calculated results**

**PFAS by LC/MS/MS - LCS**

**Sample ID:** WQ25719-002

**Matrix:** Aqueous

**Batch:** 25719

**Prep Method:** SOP SPE

**Analytical Method:** PFAS by ID SOP

**Prep Date:** 12/15/2021 1308

Surrogate	Q	% Rec	Acceptance Limit
13C6_PFDA		91	50-150
13C7_PFUdA		90	50-150
13C8_PFOA		89	50-150
13C8_PFOS		99	50-150
13C8_PFOSA		91	50-150
13C9_PFNA		97	50-150
d5-EtFOSAA		87	50-150
d3-MeFOSAA		93	50-150

LOQ = Limit of Quantitation

ND = Not detected at or above the LOQ

N = Recovery is out of criteria

P = The RPD between two GC columns exceeds 40%

\* = RSD is out of criteria

+ = RPD is out of criteria

**Note: Calculations are performed before rounding to avoid round-off errors in calculated results**

# PFAS by LC/MS/MS - Duplicate

Sample ID: WL02030-002DU

Matrix: Aqueous

Batch: 25719

Prep Method: SOP SPE

Analytical Method: PFAS by ID SOP

Prep Date: 12/15/2021 1308

Parameter	Sample Amount (ng/L)	Result (ng/L)	Q	Dil	% RPD	%RPD Limit	Analysis Date
9CI-PF3ONS	ND	ND		1	0.00	20	12/16/2021 1946
11CI-PF3OUdS	ND	ND		1	0.00	20	12/16/2021 1946
8:2 FTS	ND	ND		1	0.00	20	12/16/2021 1946
6:2 FTS	ND	2.9	+	1	110	20	12/16/2021 1946
4:2 FTS	ND	ND		1	0.00	20	12/16/2021 1946
GenX	ND	ND		1	0.00	20	12/16/2021 1946
ADONA	ND	ND		1	0.00	20	12/16/2021 1946
EtFOSAA	ND	ND		1	0.00	20	12/16/2021 1946
MeFOSAA	ND	ND		1	0.00	20	12/16/2021 1946
PFBS	ND	ND		1	0.00	20	12/16/2021 1946
PFDS	ND	ND		1	0.00	20	12/16/2021 1946
PFHpS	ND	ND		1	0.00	20	12/16/2021 1946
PFNS	ND	ND		1	0.00	20	12/16/2021 1946
PFOSA	ND	ND		1	0.00	20	12/16/2021 1946
PFPeS	ND	ND		1	0.00	20	12/16/2021 1946
PFHxS	ND	ND		1	0.00	20	12/16/2021 1946
PFBA	ND	ND		1	0.00	20	12/16/2021 1946
PFDA	ND	ND		1	0.00	20	12/16/2021 1946
PFDaA	ND	ND		1	0.00	20	12/16/2021 1946
PFHpA	ND	ND		1	0.00	20	12/16/2021 1946
PFHxA	ND	ND		1	0.00	20	12/16/2021 1946
PFNA	ND	ND		1	0.00	20	12/16/2021 1946
PFOA	ND	ND		1	0.00	20	12/16/2021 1946
PFPeA	ND	ND		1	0.00	20	12/16/2021 1946
PFTeDA	ND	ND		1	0.00	20	12/16/2021 1946
PFTrDA	ND	ND		1	0.00	20	12/16/2021 1946
PFUdA	ND	ND		1	0.00	20	12/16/2021 1946
PFOS	ND	ND		1	0.00	20	12/16/2021 1946

Surrogate	Q	% Rec	Acceptance Limit
13C2_4:2FTS		115	50-150
13C2_6:2FTS		104	50-150
13C2_8:2FTS		108	50-150
13C2_PFDaA		86	50-150
13C2_PFTeDA		85	50-150
13C3_PFBS		97	50-150
13C3_PFHxS		95	50-150
13C3-HFPO-DA		98	50-150
13C4_PFBA		107	50-150
13C4_PFHpA		95	50-150
13C5_PFHxA		95	50-150
13C5_PFPeA		98	50-150

LOQ = Limit of Quantitation

ND = Not detected at or above the LOQ

N = Recovery is out of criteria

P = The RPD between two GC columns exceeds 40%

\* = RSD is out of criteria

+ = RPD is out of criteria

**Note: Calculations are performed before rounding to avoid round-off errors in calculated results**

# PFAS by LC/MS/MS - Duplicate

Sample ID: WL02030-002DU

Batch: 25719

Analytical Method: PFAS by ID SOP

Matrix: Aqueous

Prep Method: SOP SPE

Prep Date: 12/15/2021 1308

Surrogate	Q	% Rec	Acceptance Limit
13C6_PFDA		96	50-150
13C7_PFUdA		93	50-150
13C8_PFOA		92	50-150
13C8_PFOS		99	50-150
13C8_PFOSA		91	50-150
13C9_PFNA		97	50-150
d5-EtFOSAA		92	50-150
d3-MeFOSAA		96	50-150

LOQ = Limit of Quantitation

ND = Not detected at or above the LOQ

N = Recovery is out of criteria

P = The RPD between two GC columns exceeds 40%

\* = RSD is out of criteria

+ = RPD is out of criteria

**Note: Calculations are performed before rounding to avoid round-off errors in calculated results**

# PFAS by LC/MS/MS - MS

Sample ID: WL02030-004MS

Matrix: Aqueous

Batch: 25719

Prep Method: SOP SPE

Analytical Method: PFAS by ID SOP

Prep Date: 12/15/2021 1308

Parameter	Sample Amount (ng/L)	Spike Amount (ng/L)	Result (ng/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
9CI-PF3ONS	ND	14	10		1	72	50-150	12/16/2021 2018
11CI-PF3OUdS	ND	14	3.6	N	1	26	50-150	12/16/2021 2018
8:2 FTS	ND	14	14		1	94	50-150	12/16/2021 2018
6:2 FTS	ND	14	13		1	90	50-150	12/16/2021 2018
4:2 FTS	ND	14	14		1	103	50-150	12/16/2021 2018
GenX	ND	30	27		1	91	50-150	12/16/2021 2018
ADONA	ND	14	13		1	92	50-150	12/16/2021 2018
EtFOSAA	ND	15	15		1	99	50-150	12/16/2021 2018
MeFOSAA	ND	15	13		1	89	50-150	12/16/2021 2018
PFBS	ND	13	11		1	79	50-150	12/16/2021 2018
PFDS	ND	15	5.3	N	1	36	50-150	12/16/2021 2018
PFHpS	ND	14	12		1	85	50-150	12/16/2021 2018
PFNS	ND	14	9.5		1	65	50-150	12/16/2021 2018
PFOSA	ND	15	13		1	87	50-150	12/16/2021 2018
PFPeS	ND	14	13		1	89	50-150	12/16/2021 2018
PFHxS	ND	14	12		1	89	50-150	12/16/2021 2018
PFBA	ND	15	13		1	88	50-150	12/16/2021 2018
PFDA	ND	15	12		1	81	50-150	12/16/2021 2018
PFDoA	ND	15	13		1	89	50-150	12/16/2021 2018
PFHpA	ND	15	13		1	88	50-150	12/16/2021 2018
PFHxA	ND	15	13		1	86	50-150	12/16/2021 2018
PFNA	ND	15	12		1	82	50-150	12/16/2021 2018
PFOA	ND	15	13		1	85	50-150	12/16/2021 2018
PFPeA	ND	15	14		1	91	50-150	12/16/2021 2018
PFTeDA	ND	15	14		1	93	50-150	12/16/2021 2018
PFTTrDA	ND	15	11		1	71	50-150	12/16/2021 2018
PFUdA	ND	15	13		1	85	50-150	12/16/2021 2018
PFOS	ND	14	12		1	87	50-150	12/16/2021 2018

Surrogate	Q	% Rec	Acceptance Limit
13C2_4:2FTS		86	50-150
13C2_6:2FTS		87	50-150
13C2_8:2FTS		81	50-150
13C2_PFDoA		66	50-150
13C2_PFTeDA	N	39	50-150
13C3_PFBS		90	50-150
13C3_PFHxS		84	50-150
13C3-HFPO-DA		91	50-150
13C4_PFBA		97	50-150
13C4_PFHpA		91	50-150
13C5_PFHxA		86	50-150
13C5_PFPeA		88	50-150

LOQ = Limit of Quantitation

ND = Not detected at or above the LOQ

N = Recovery is out of criteria

P = The RPD between two GC columns exceeds 40%

\* = RSD is out of criteria

+ = RPD is out of criteria

**Note: Calculations are performed before rounding to avoid round-off errors in calculated results**

# PFAS by LC/MS/MS - MS

Sample ID: WL02030-004MS

Batch: 25719

Analytical Method: PFAS by ID SOP

Matrix: Aqueous

Prep Method: SOP SPE

Prep Date: 12/15/2021 1308

Surrogate	Q	% Rec	Acceptance Limit
13C6_PFDA		85	50-150
13C7_PFUdA		78	50-150
13C8_PFOA		89	50-150
13C8_PFOS		69	50-150
13C8_PFOSA	N	6.4	50-150
13C9_PFNA		86	50-150
d5-EtFOSAA	N	45	50-150
d3-MeFOSAA		68	50-150

LOQ = Limit of Quantitation

ND = Not detected at or above the LOQ

N = Recovery is out of criteria

P = The RPD between two GC columns exceeds 40%

\* = RSD is out of criteria

+ = RPD is out of criteria

**Note: Calculations are performed before rounding to avoid round-off errors in calculated results**

**Chain of Custody  
and  
Miscellaneous Documents**



**Internal Transfer Chain of Custody**

Samples Pre-Logged into eCOC.

State Of Origin: MI  Yes  No  
 Cert. Needed:  Yes  No

Owner Received Date: 11/30/2021 Results Requested By: 12/29/2021

www.pacelabs.com

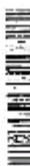


Workorder: 50303995 Workorder Name: STHD GW PFAS/1,4-DX

Report To: (Subcontract to)

Jennifer Rice  
 Pace Analytical Grand Rapids  
 105 Vantage Point Drive  
 West Columbia, SC 29172  
 4171 40th St. SE  
 Grand Rapids, MI 49512  
 Phone (616)875-4500

Pace Analytical West Columbia  
 105 Vantage Point Drive  
 West Columbia, SC 29172  
 Phone (803)791-9700



L02030

MEW

**Preserved Containers**

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	H2	Unpreserved	Comments
1	MW-29K	PS	11/29/2021 11:15	50303995001	Water	3	2	
2	MW-39	PS	11/29/2021 12:10	50303995002	Water	3	2	
3	MW-21A	PS	11/29/2021 11:45	50303995003	Water	3	2	
4	MW-46R	PS	11/29/2021 13:50	50303995004	Water	3	2	
5	Slab: Meter Blank	PS	11/29/2021 08:20	50303995005	Water	3	2	
6	Duplicate 01	PS	11/30/2021 11:33	50303995006	Water	3	2	
7	Bailer Blank	PS	11/30/2021 09:25	50303995007	Water	3	2	
8	MW-21R	PS	11/30/2021 11:30	50303995008	Water	3	2	
9	MW-7R	PS	11/30/2021 11:30	50303995009	Water	3	2	
10	Field blank	PS	11/30/2021 11:35	50303995010	Water	3	2	
11	Trip Blank	PS	11/29/2021 07:00	50303995011	Water	3	2	

Transfers	Released By	Date/Time	Received By	Date/Time
1	J.D. Jordin	12/18/21 16:30		
2	Fedex	12/21/2021 10:40	Jay Graham	12/21/2021
3				

Cooler Temperature on Receipt 4.4 °C Custody Seal Y or N Received on Ice Y or N Samples Intact Y or N

\*\*\*In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document.  
 This chain of custody is considered complete as is since this information is available in the owner laboratory.

# PACE ANALYTICAL SERVICES, LLC



Ship To:  
 Pace Analytical West  
 Columbia  
 106 Vantage Point Drive  
 West Columbia, SC 29172  
 Phone (803)791-9700

INTER\_LABORATORY WORK ORDER # 50303995  
 (To be completed by sending lab)

Sending Project No	50303995
Receiving Project No	
Check Box for Consolidated Invoice	<input type="checkbox"/>
Date Prepared	12/01/21
REQUESTED COMPLETION DATE	12/29/2021

Sending Region	IR50-Indianapolis	Sending Project Mgr.	Jennifer Rice
Receiving Region	IR77-West Columbia	External Client	Republic Services - MI
State of Sample Origin	MI	QC Deliverable	STD REPORT

All questions should be addressed to sending project manager.

Requested Reportable Units \_\_\_\_\_ Report Wet or Dry Weight?  Dry Weight  IRWO Lab Need to run?  Cert. Needed \_\_\_\_\_

WORK REQUESTED						
Method Description	Container type	Quantity of Containers	Preservative	Quantity of Samples	Unit Price	Amount
1,4-Dioxane B26DSIM	VGBH		HCL	11	\$60.00	\$660.00
PFAS MI D28 Low Level	BPJU		Unpreserved	11	\$275.00	\$3,025.00
TOTAL						\$3,685.00

Special Requirements: Report C, QC Limits (C), Michigan DEQ (723), Michigan Standard RL (1148), TRIHYDRO (180)

Receiving Region Department	Acctg. Code	Totals from above	Revenue Allocation	
			Receiving Region	Client Services Dept. Sending Region
Dioxin Low Resolution*	36	\$3,025.00	\$2,722.50	\$302.50
GC/MS Volatiles	34	\$660.00	\$528.00	\$132.00
TOTAL		\$3,685.00	\$3,250.50	\$434.50

\* Custom Revenue Allocation

**FOR ANALYTICAL WORK COMPLETED THIS SECTION ALSO**

Return Samples to Sending Region:  Yes  No

**DISPOSITION OF FORM**

Original sent to the receiving lab - Copy kept at the sending lab.  
 When work completed: Original sent to the ADM at the receiving laboratory. Copies are made to corporate as needed.

W0# : 50303995



### CHAIN-OF-CUSTODY / Analytical Request Do

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be filled out. Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at <http://www.pacelabs.com>

Section A  
Company: Republic Services - MI  
Address: 27800 Highway 100, Livonia, MI 48150  
Phone: (481) 555-5400  
Fax: (481) 555-5400  
Requestor Name: [Blank]  
Requestor Title: [Blank]

Section B  
Project Name: [Blank]  
Project #: [Blank]

Section C  
Requestor Agency: [Blank]

**Required Client Information:**  
 Company: Republic Services - MI  
 Address: 27800 Highway 100, Livonia, MI 48150  
 Phone: (481) 555-5400  
 Fax: (481) 555-5400  
 Requestor Name: [Blank]  
 Requestor Title: [Blank]

**Required Project Information:**  
 Project Name: [Blank]  
 Project #: [Blank]

**Requester Agency/Institution (VIN):** [Blank]

ITEM #	SAMPLE ID One character per box. (A-Z, 0-9, /, -) Sample IDs must be unique	MATRIX (DO NOT use wild cards in list)	COLLECTED		DATE	TIME	APPROXIMATE AT COLLECTION	# OF CONTAINERS	PRESERVATIVES			ANALYSIS TEST	REMARKS (Y/N)
			START	END					UNPRESERVED	COOL	REF		
1	MUJ 2-1R	DRINKING WATER	11/20/11 11:55	11/20/11 12:00	11/20/11	12:00	5						
2	MUJ 3R	DRINKING WATER	11/20/11 12:00	11/20/11 12:05	11/20/11	12:05	5						
3	MUJ 4A	DRINKING WATER	11/20/11 12:05	11/20/11 12:10	11/20/11	12:10	5						
4	MUJ 4R	DRINKING WATER	11/20/11 12:10	11/20/11 12:15	11/20/11	12:15	5						
5	STRIP BLANK BLANK	DRINKING WATER	11/20/11 12:15	11/20/11 12:20	11/20/11	12:20	5						
6	DUPUR 01	DRINKING WATER	11/20/11 12:20	11/20/11 12:25	11/20/11	12:25	5						
7	BLANK BLANK	DRINKING WATER	11/20/11 12:25	11/20/11 12:30	11/20/11	12:30	5						
8	MUJ 2R	DRINKING WATER	11/20/11 12:30	11/20/11 12:35	11/20/11	12:35	5						
9	MUJ 3R	DRINKING WATER	11/20/11 12:35	11/20/11 12:40	11/20/11	12:40	5						
10	FIELD BLANK	DRINKING WATER	11/20/11 12:40	11/20/11 12:45	11/20/11	12:45	5						
11	TRIP BLANK	DRINKING WATER	11/20/11 12:45	11/20/11 12:50	11/20/11	12:50	5						

**ADDITIONAL COMMENTS:** [Blank]

**RELINQUISH TO BY (AFFILIATION):** [Signature]

**DATE:** 11/20/11

**TIME:** 12:50

**APPROXIMATE AT COLLECTION:** 11/20/11 12:50

**DATE:** 11/20/11

**TIME:** 12:50

**APPROXIMATE AT COLLECTION:** 11/20/11 12:50

**SAMPLER NAME AND SIGNATURE:** [Signature]

**PRINT NAME OF SAMPLER:** [Blank]

**SIGNATURE OF SAMPLER:** [Signature]

**DATE SIGNED:** 11/20/11

# PACE ANALYTICAL SERVICES, LLC



## Sample Conditions Upon Receipt Form (SCUR)

Date/Time: <u>11/30/21</u>	Evaluated by: <u>DW</u>	<b>WO#: 50303995</b>	
Client: <u>Republic Fork Trail</u>	Project Manager: <u>DR</u>	PM: <u>JLR1</u>	Due Date: <u>12/29/21</u>
Profile ID: <u>DT-39</u>	Rush TAT Requested: <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	CLIENT: <u>GR-RSC NI</u>	
Due Date:	Lab Notified of Rush or Short Holds: <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	Non Conformance Form Required: <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	
Samples Received Via: <input checked="" type="checkbox"/> FedEx <input type="checkbox"/> UPS <input type="checkbox"/> Client <input checked="" type="checkbox"/> Pace Courier <input type="checkbox"/> Other			Comments:
Custody Seals Present and Intact:	YES	NO	<u>N/A</u>
Received Sample Information Form(s): Drinking Waters Only	YES	NO	<u>N/A</u>
USDA Regulated Soils: (AL, AR, CA, FL, GA, ID, LA, MS, NM, NY, NC, OK, OR, SC, TN, TX, WA or Puerto Rico)	YES	NO	<u>N/A</u>
Short Holds Present (< 72 Hours):	YES	<input checked="" type="checkbox"/> NO	
Samples Received in Hold:	<input checked="" type="checkbox"/> YES	NO	
Custody Signatures Present:	<input checked="" type="checkbox"/> YES	NO	
Collector Signature Present:	<input checked="" type="checkbox"/> YES	NO	
Packing Material Used:	<input checked="" type="checkbox"/> YES	NO	
Samples Collected Today and On Ice:	YES	NO	<u>N/A</u>
IR Gun #: <u>280 281</u>	Digital Thermometer #: <u>282 283</u>		
Ice Type: <input checked="" type="checkbox"/> WET Bagged / <input type="checkbox"/> WET Loose <input type="checkbox"/> BLUE <input type="checkbox"/> NONE	1. Cooler Temp Upon Receipt: <u>1.0 / 2.3</u> °C		
Ice Location: <input type="checkbox"/> TOP <input type="checkbox"/> BOTTOM <input type="checkbox"/> MIDDLE <input checked="" type="checkbox"/> DISPERSED	Temp should be 0-6°C (Initial/Corrected)		
Temp Blank Received:	<input checked="" type="checkbox"/> YES	NO	
Containers Intact:	<input checked="" type="checkbox"/> YES	NO	
Correct Containers:	<input checked="" type="checkbox"/> YES	NO	
Sufficient Volume:	<input checked="" type="checkbox"/> YES	NO	
Sample pH Acceptable: All containers needing preservation are found to be in compliance with EPA recommendation pH Strip Lot #: _____ Exceptions are VOA, coliform, LLHg, O&G, or any container with a septum cap or preserved with HCl	YES	NO	<u>N/A</u>
Residual Chlorine Absent: Cl <sub>2</sub> Strip Lot #: _____ (SVOC/Pest 625, PCB 608, Total/Amenable Cyanide)	YES	NO	<u>N/A</u>
VOA Headspace Acceptable (<6mm):	<input checked="" type="checkbox"/> YES	NO	<u>N/A</u>
Trip Blank Received: <input checked="" type="checkbox"/> HCl <input type="checkbox"/> MeOH <input type="checkbox"/> TSP <input type="checkbox"/> OTHER	<input checked="" type="checkbox"/> YES	NO	
Comments:	2. Cooler Temp Upon Receipt: _____ °C		
	3. Cooler Temp Upon Receipt: _____ °C		
	4. Cooler Temp Upon Receipt: _____ °C		

F-GR-C-007-rev.04, 28Jun2021

# PACE ANALYTICAL SERVICES, LLC



**Samples Receipt Checklist (SRC) (ME0018C-15)**  
Issuing Authority: Pace ENV - WCOL

Revised: 9/29/2020  
Page 1 of 1

## Sample Receipt Checklist (SRC)

Client: Pace Cooler Inspected by/date: JRG2 / 12/02/2021 Lot #: WL02030

Means of receipt: <input type="checkbox"/> Pace <input type="checkbox"/> Client <input type="checkbox"/> UPS <input checked="" type="checkbox"/> FedEx <input type="checkbox"/> Other: _____	
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	1. Were custody seals present on the cooler?
<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA	2. If custody seals were present, were they intact and unbroken?
pH Strip ID: <u>NA</u> Chlorine Strip ID: <u>NA</u> Tested by: <u>NA</u>	
Original temperature upon receipt / Derived (Corrected) temperature upon receipt %Solid Snap-Cup ID: <u>NA</u> 4.4 / 4.4 °C NA / NA °C NA / NA °C NA / NA °C	
Method: <input checked="" type="checkbox"/> Temperature Blank <input type="checkbox"/> Against Bottles IR Gun ID: <u>6</u> IR Gun Correction Factor: <u>0</u> °C	
Method of coolant: <input checked="" type="checkbox"/> Wet Ice <input type="checkbox"/> Ice Packs <input type="checkbox"/> Dry Ice <input type="checkbox"/> None	
<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA	3. If temperature of any cooler exceeded 6.0°C, was Project Manager Notified? PM was Notified by: phone / email / face-to-face (circle one).
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA	4. Is the commercial courier's packing slip attached to this form?
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	5. Were proper custody procedures (relinquished/received) followed?
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	6. Were sample IDs listed on the COC?
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	7. Were sample IDs listed on all sample containers?
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	8. Was collection date & time listed on the COC?
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	9. Was collection date & time listed on all sample containers?
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	10. Did all container label information (ID, date, time) agree with the COC?
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	11. Were tests to be performed listed on the COC?
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	12. Did all samples arrive in the proper containers for each test and/or in good condition (unbroken, lids on, etc.)?
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	13. Was adequate sample volume available?
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	14. Were all samples received within 1/2 the holding time or 48 hours, whichever comes first?
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	15. Were any samples containers missing/excess (circle one) samples Not listed on COC?
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> NA	16. For VOA and RSK-175 samples, were bubbles present >"pea-size" (1/4" or 6mm in diameter) in any of the VOA vials?
<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA	17. Were all DRO/metals/nutrient samples received at a pH of < 2?
<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA	18. Were all cyanide samples received at a pH > 12 and sulfide samples received at a pH > 9?
<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA	19. Were all applicable NH <sub>3</sub> /TKN/cyanide/phenol/625.1/608.3 (< 0.5mg/L) samples free of residual chlorine?
<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA	20. Were client remarks/requests (i.e. requested dilutions, MS/MSD designations, etc...) correctly transcribed from the COC into the comment section in LIMS?
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	21. Was the quote number listed on the container label? If yes, Quote # _____
<b>Sample Preservation</b> (Must be completed for any sample(s) incorrectly preserved or with headspace.)	
Sample(s) <u>NA</u> were received incorrectly preserved and were adjusted accordingly in sample receiving with <u>NA</u> mL of circle one: H <sub>2</sub> SO <sub>4</sub> , HNO <sub>3</sub> , HCl, NaOH using SR # <u>NA</u>	
Time of preservation <u>NA</u> . If more than one preservative is needed, please note in the comments below.	
Sample(s) <u>NA</u> were received with bubbles >6 mm in diameter.	
Samples(s) <u>NA</u> were received with TRC > 0.5 mg/L (if #19 is <i>no</i> ) and were adjusted accordingly in sample receiving with sodium thiosulfate (Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> ) with Shealy ID: <u>NA</u>	
SR barcode labels applied by: <u>JRG2</u> Date: <u>12/02/2021</u>	

Comments:  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

# Attachment C



December 16, 2021

Environmental Manager  
Sauk Trail Hills Landfill  
5011 S. Lilley  
Canton, MI 48188

RE: Project: Sauk Trail Hills EGLE Split  
Pace Project No.: 50303992

Dear Environmental Manager:

Enclosed are the analytical results for sample(s) received by the laboratory on November 30, 2021. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Grand Rapids
- Pace Analytical Services - Indianapolis

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Jennifer Rice  
jennifer.rice@pacelabs.com  
(616)975-4500  
Project Manager

Enclosures

cc: Trihydro Lab Data, TriHydro  
Nicole Green



## REPORT OF LABORATORY ANALYSIS

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## CERTIFICATIONS

Project: Sauk Trail Hills EGLE Split  
Pace Project No.: 50303992

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### **Pace Analytical Services Indianapolis**

7726 Moller Road, Indianapolis, IN 46268  
Illinois Accreditation #: 200074  
Indiana Drinking Water Laboratory #: C-49-06  
Kansas/TNI Certification #: E-10177  
Kentucky UST Agency Interest #: 80226  
Kentucky WW Laboratory ID #: 98019

Michigan Drinking Water Laboratory #9050  
Ohio VAP Certified Laboratory #: CL0065  
Oklahoma Laboratory #: 9204  
Texas Certification #: T104704355  
Wisconsin Laboratory #: 999788130  
USDA Soil Permit #: P330-19-00257

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### **Pace Analytical Services Grand Rapids**

4171 40th Street SE, Kentwood, MI 49512  
Minnesota/TNI Laboratory #026-999-161

Michigan Drinking Water Laboratory #0034

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## REPORT OF LABORATORY ANALYSIS

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## SAMPLE SUMMARY

Project: Sauk Trail Hills EGLE Split

Pace Project No.: 50303992

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Lab ID	Sample ID	Matrix	Date Collected	Date Received
50303992001	MW-26R	Water	11/29/21 11:15	11/30/21 16:15
50303992002	MW-39	Water	11/29/21 12:10	11/30/21 16:15
50303992003	MW-21A	Water	11/29/21 11:45	11/30/21 16:15

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### SAMPLE ANALYTE COUNT

Project: Sauk Trail Hills EGLE Split  
Pace Project No.: 50303992

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory		
50303992001	MW-26R	EPA 300.0	BK1	2	PASI-I		
			JLR1	6	PASI-GR		
		EPA 6010	RAM	6	PASI-I		
		EPA 6020	DMT	12	PASI-I		
		EPA 7470	ILP	1	PASI-I		
		EPA 5030B/8260	ALA	72	PASI-I		
		SM 2320B	SWJ	3	PASI-I		
		SM 4500-CI-E	SKK	1	PASI-I		
		50303992002	MW-39	EPA 300.0	BK1	2	PASI-I
					JLR1	6	PASI-GR
EPA 6010	RAM			6	PASI-I		
EPA 6020	DMT			12	PASI-I		
EPA 7470	ILP			1	PASI-I		
EPA 5030B/8260	ALA			72	PASI-I		
SM 2320B	SWJ			3	PASI-I		
SM 4500-CI-E	SKK			1	PASI-I		
50303992003	MW-21A			EPA 300.0	BK1	2	PASI-I
					JLR1	6	PASI-GR
		EPA 6010	RAM	6	PASI-I		
		EPA 6020	DMT	12	PASI-I		
		EPA 7470	ILP	1	PASI-I		
		EPA 5030B/8260	ALA	72	PASI-I		
		SM 2320B	SWJ	3	PASI-I		
		SM 4500-CI-E	SKK	1	PASI-I		

PASI-GR = Pace Analytical Services - Grand Rapids

PASI-I = Pace Analytical Services - Indianapolis

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS

Project: Sauk Trail Hills EGLE Split

Pace Project No.: 50303992

Sample: MW-26R	Lab ID: 50303992001	Collected: 11/29/21 11:15	Received: 11/30/21 16:15	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>300.0 IC Anions 28 Days</b>								
Analytical Method: EPA 300.0								
Pace Analytical Services - Indianapolis								
Fluoride	1560	ug/L	100	1		12/03/21 02:52	16984-48-8	
Sulfate	<2000	ug/L	2000	1		12/03/21 02:52	14808-79-8	
<b>Field Data</b>								
Analytical Method:								
Pace Analytical Services - Grand Rapids								
Field pH	7.89	Std. Units		1		11/29/21 11:15		
Field Temperature	11.2	deg C		1		11/29/21 11:15		
Field Specific Conductance	588	umhos/cm		1		11/29/21 11:15		
Elevation Water Level	634.05	ft/msl		1		11/29/21 11:15		
Collar Elevation	676.60	ft/msl		1		11/29/21 11:15		
Depth to Water	42.55	feet		1		11/29/21 11:15		
<b>6010 MET ICP, Dissolved</b>								
Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Pace Analytical Services - Indianapolis								
Calcium, Dissolved	23300	ug/L	1000	1	12/14/21 15:34	12/14/21 16:02	7440-70-2	
Iron, Dissolved	116	ug/L	50.0	1	12/14/21 15:34	12/14/21 16:02	7439-89-6	
Lithium, Dissolved	23.7	ug/L	20.0	1	12/14/21 15:34	12/14/21 16:02	7439-93-2	
Magnesium, Dissolved	9700	ug/L	1000	1	12/14/21 15:34	12/14/21 16:02	7439-95-4	
Potassium, Dissolved	2250	ug/L	500	1	12/14/21 15:34	12/14/21 16:02	7440-09-7	
Sodium, Dissolved	136000	ug/L	1000	1	12/14/21 15:34	12/14/21 16:02	7440-23-5	
<b>6020 MET ICPMS, Dissolved</b>								
Analytical Method: EPA 6020 Preparation Method: EPA 200.2								
Pace Analytical Services - Indianapolis								
Arsenic, Dissolved	1.5	ug/L	1.0	1	12/08/21 09:47	12/09/21 02:38	7440-38-2	
Barium, Dissolved	68.8	ug/L	5.0	1	12/08/21 09:47	12/09/21 02:38	7440-39-3	
Boron, Dissolved	996	ug/L	400	20	12/08/21 09:47	12/10/21 01:28	7440-42-8	N2
Cadmium, Dissolved	0.73	ug/L	0.20	1	12/08/21 09:47	12/09/21 02:38	7440-43-9	
Chromium, Dissolved	<1.0	ug/L	1.0	1	12/08/21 09:47	12/09/21 02:38	7440-47-3	
Copper, Dissolved	<1.0	ug/L	1.0	1	12/08/21 09:47	12/09/21 02:38	7440-50-8	
Lead, Dissolved	<1.0	ug/L	1.0	1	12/08/21 09:47	12/09/21 02:38	7439-92-1	
Manganese, Dissolved	11.5	ug/L	1.0	1	12/08/21 09:47	12/09/21 02:38	7439-96-5	
Nickel, Dissolved	<2.0	ug/L	2.0	1	12/08/21 09:47	12/09/21 02:38	7440-02-0	
Selenium, Dissolved	<1.0	ug/L	1.0	1	12/08/21 09:47	12/09/21 02:38	7782-49-2	
Silver, Dissolved	<0.20	ug/L	0.20	1	12/08/21 09:47	12/09/21 02:38	7440-22-4	
Zinc, Dissolved	512	ug/L	50.0	5	12/08/21 09:47	12/10/21 03:44	7440-66-6	
<b>7470 Mercury, Dissolved</b>								
Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Pace Analytical Services - Indianapolis								
Mercury, Dissolved	<0.20	ug/L	0.20	1	12/05/21 18:00	12/06/21 12:29	7439-97-6	
<b>8260 MSV Low Level</b>								
Analytical Method: EPA 5030B/8260								
Pace Analytical Services - Indianapolis								
Acetone	<20.0	ug/L	20.0	1		12/03/21 13:09	67-64-1	
Acrylonitrile	<5.0	ug/L	5.0	1		12/03/21 13:09	107-13-1	
tert-Amylmethyl ether	<5.0	ug/L	5.0	1		12/03/21 13:09	994-05-8	N2

### REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: Sauk Trail Hills EGLE Split

Pace Project No.: 50303992

Sample: MW-26R	Lab ID: 50303992001	Collected: 11/29/21 11:15	Received: 11/30/21 16:15	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>8260 MSV Low Level</b>		Analytical Method: EPA 5030B/8260 Pace Analytical Services - Indianapolis						
Benzene	<1.0	ug/L	1.0	1		12/03/21 13:09	71-43-2	
Bromochloromethane	<1.0	ug/L	1.0	1		12/03/21 13:09	74-97-5	
Bromodichloromethane	<1.0	ug/L	1.0	1		12/03/21 13:09	75-27-4	
Bromoform	<1.0	ug/L	1.0	1		12/03/21 13:09	75-25-2	
Bromomethane	<5.0	ug/L	5.0	1		12/03/21 13:09	74-83-9	
2-Butanone (MEK)	<5.0	ug/L	5.0	1		12/03/21 13:09	78-93-3	
tert-Butyl Alcohol	<10.0	ug/L	10.0	1		12/03/21 13:09	75-65-0	
n-Butylbenzene	<1.0	ug/L	1.0	1		12/03/21 13:09	104-51-8	
sec-Butylbenzene	<1.0	ug/L	1.0	1		12/03/21 13:09	135-98-8	
tert-Butylbenzene	<1.0	ug/L	1.0	1		12/03/21 13:09	98-06-6	
Carbon disulfide	<1.0	ug/L	1.0	1		12/03/21 13:09	75-15-0	
Carbon tetrachloride	<1.0	ug/L	1.0	1		12/03/21 13:09	56-23-5	
Chlorobenzene	<1.0	ug/L	1.0	1		12/03/21 13:09	108-90-7	
Chloroethane	<1.0	ug/L	1.0	1		12/03/21 13:09	75-00-3	
Chloroform	<1.0	ug/L	1.0	1		12/03/21 13:09	67-66-3	
Chloromethane	<5.0	ug/L	5.0	1		12/03/21 13:09	74-87-3	
Cyclohexane	<20.0	ug/L	20.0	1		12/03/21 13:09	110-82-7	
Dibromochloromethane	<1.0	ug/L	1.0	1		12/03/21 13:09	124-48-1	
1,2-Dibromoethane (EDB)	<1.0	ug/L	1.0	1		12/03/21 13:09	106-93-4	
Dibromomethane	<1.0	ug/L	1.0	1		12/03/21 13:09	74-95-3	
1,2-Dichlorobenzene	<1.0	ug/L	1.0	1		12/03/21 13:09	95-50-1	
1,3-Dichlorobenzene	<1.0	ug/L	1.0	1		12/03/21 13:09	541-73-1	
1,4-Dichlorobenzene	<1.0	ug/L	1.0	1		12/03/21 13:09	106-46-7	
Dichlorodifluoromethane	<2.0	ug/L	2.0	1		12/03/21 13:09	75-71-8	
1,1-Dichloroethane	<1.0	ug/L	1.0	1		12/03/21 13:09	75-34-3	
1,2-Dichloroethane	<1.0	ug/L	1.0	1		12/03/21 13:09	107-06-2	
1,1-Dichloroethene	<1.0	ug/L	1.0	1		12/03/21 13:09	75-35-4	
cis-1,2-Dichloroethene	<1.0	ug/L	1.0	1		12/03/21 13:09	156-59-2	
trans-1,2-Dichloroethene	<1.0	ug/L	1.0	1		12/03/21 13:09	156-60-5	
1,2-Dichloropropane	<1.0	ug/L	1.0	1		12/03/21 13:09	78-87-5	
cis-1,3-Dichloropropene	<1.0	ug/L	1.0	1		12/03/21 13:09	10061-01-5	
trans-1,3-Dichloropropene	<1.0	ug/L	1.0	1		12/03/21 13:09	10061-02-6	
Diethyl ether (Ethyl ether)	<5.0	ug/L	5.0	1		12/03/21 13:09	60-29-7	
Diisopropyl ether	<5.0	ug/L	5.0	1		12/03/21 13:09	108-20-3	N2
Ethylbenzene	<1.0	ug/L	1.0	1		12/03/21 13:09	100-41-4	
Ethyl-tert-butyl ether	<5.0	ug/L	5.0	1		12/03/21 13:09	637-92-3	N2
Hexachloroethane	<5.0	ug/L	5.0	1		12/03/21 13:09	67-72-1	N2
n-Hexane	<5.0	ug/L	5.0	1		12/03/21 13:09	110-54-3	
Isopropylbenzene (Cumene)	<1.0	ug/L	1.0	1		12/03/21 13:09	98-82-8	
Methylene Chloride	<5.0	ug/L	5.0	1		12/03/21 13:09	75-09-2	
2-Methylnaphthalene	<20.0	ug/L	20.0	1		12/03/21 13:09	91-57-6	
4-Methyl-2-pentanone (MIBK)	<5.0	ug/L	5.0	1		12/03/21 13:09	108-10-1	
Methyl-tert-butyl ether	<4.0	ug/L	4.0	1		12/03/21 13:09	1634-04-4	
Naphthalene	<1.0	ug/L	1.0	1		12/03/21 13:09	91-20-3	
n-Propylbenzene	<1.0	ug/L	1.0	1		12/03/21 13:09	103-65-1	
Styrene	<1.0	ug/L	1.0	1		12/03/21 13:09	100-42-5	

### REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: Sauk Trail Hills EGLE Split  
Pace Project No.: 50303992

Sample: MW-26R	Lab ID: 50303992001	Collected: 11/29/21 11:15	Received: 11/30/21 16:15	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>8260 MSV Low Level</b>		Analytical Method: EPA 5030B/8260 Pace Analytical Services - Indianapolis						
1,1,1,2-Tetrachloroethane	<1.0	ug/L	1.0	1		12/03/21 13:09	630-20-6	
1,1,2,2-Tetrachloroethane	<1.0	ug/L	1.0	1		12/03/21 13:09	79-34-5	
Tetrachloroethene	<1.0	ug/L	1.0	1		12/03/21 13:09	127-18-4	
Tetrahydrofuran	<12.5	ug/L	12.5	1		12/03/21 13:09	109-99-9	
Toluene	<1.0	ug/L	1.0	1		12/03/21 13:09	108-88-3	
1,2,3-Trichlorobenzene	<1.0	ug/L	1.0	1		12/03/21 13:09	87-61-6	
1,2,4-Trichlorobenzene	<1.0	ug/L	1.0	1		12/03/21 13:09	120-82-1	
1,1,1-Trichloroethane	<1.0	ug/L	1.0	1		12/03/21 13:09	71-55-6	
1,1,2-Trichloroethane	<1.0	ug/L	1.0	1		12/03/21 13:09	79-00-5	
Trichloroethene	<1.0	ug/L	1.0	1		12/03/21 13:09	79-01-6	
Trichlorofluoromethane	<1.0	ug/L	1.0	1		12/03/21 13:09	75-69-4	
1,2,3-Trichloropropane	<1.0	ug/L	1.0	1		12/03/21 13:09	96-18-4	
1,2,3-Trimethylbenzene	<5.0	ug/L	5.0	1		12/03/21 13:09	526-73-8	N2
1,2,4-Trimethylbenzene	<5.0	ug/L	5.0	1		12/03/21 13:09	95-63-6	
1,3,5-Trimethylbenzene	<5.0	ug/L	5.0	1		12/03/21 13:09	108-67-8	
2,2,4-Trimethylpentane	<20.0	ug/L	20.0	1		12/03/21 13:09	540-84-1	N2
Vinyl chloride	<1.0	ug/L	1.0	1		12/03/21 13:09	75-01-4	
Xylene (Total)	<2.0	ug/L	2.0	1		12/03/21 13:09	1330-20-7	
m&p-Xylene	<2.0	ug/L	2.0	1		12/03/21 13:09	179601-23-1	
o-Xylene	<1.0	ug/L	1.0	1		12/03/21 13:09	95-47-6	
<b>Surrogates</b>								
4-Bromofluorobenzene (S)	100	%	78-117	1		12/03/21 13:09	460-00-4	
Dibromofluoromethane (S)	100	%	78-120	1		12/03/21 13:09	1868-53-7	
Toluene-d8 (S)	98	%	77-118	1		12/03/21 13:09	2037-26-5	
<b>2320B Alkalinity</b>		Analytical Method: SM 2320B Pace Analytical Services - Indianapolis						
Alkalinity, Total as CaCO3	<b>233000</b>	ug/L	10000	1		12/03/21 16:25		
Alkalinity,Bicarbonate (CaCO3)	<b>233000</b>	ug/L	10000	1		12/03/21 16:25		
Alkalinity,Carbonate (CaCO3)	<10000	ug/L	10000	1		12/03/21 16:25		
<b>4500 Chloride</b>		Analytical Method: SM 4500-Cl-E Pace Analytical Services - Indianapolis						
Chloride	<b>123000</b>	ug/L	4000	4		12/14/21 11:32	16887-00-6	

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## ANALYTICAL RESULTS

Project: Sauk Trail Hills EGLE Split

Pace Project No.: 50303992

Sample: MW-39	Lab ID: 50303992002	Collected: 11/29/21 12:10	Received: 11/30/21 16:15	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>300.0 IC Anions 28 Days</b>								
Analytical Method: EPA 300.0								
Pace Analytical Services - Indianapolis								
Fluoride	736	ug/L	100	1		12/03/21 03:41	16984-48-8	
Sulfate	<2000	ug/L	2000	1		12/03/21 03:41	14808-79-8	
<b>Field Data</b>								
Analytical Method:								
Pace Analytical Services - Grand Rapids								
Field pH	7.76	Std. Units		1		11/29/21 12:10		
Field Temperature	11.6	deg C		1		11/29/21 12:10		
Field Specific Conductance	1245	umhos/cm		1		11/29/21 12:10		
Elevation Water Level	636.12	ft/msl		1		11/29/21 12:10		
Collar Elevation	682.45	ft/msl		1		11/29/21 12:10		
Depth to Water	46.33	feet		1		11/29/21 12:10		
<b>6010 MET ICP, Dissolved</b>								
Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Pace Analytical Services - Indianapolis								
Calcium, Dissolved	80000	ug/L	1000	1	12/14/21 15:34	12/14/21 16:04	7440-70-2	
Iron, Dissolved	857	ug/L	50.0	1	12/14/21 15:34	12/14/21 16:04	7439-89-6	
Lithium, Dissolved	56.2	ug/L	20.0	1	12/14/21 15:34	12/14/21 16:04	7439-93-2	
Magnesium, Dissolved	36800	ug/L	1000	1	12/14/21 15:34	12/14/21 16:04	7439-95-4	
Potassium, Dissolved	4740	ug/L	500	1	12/14/21 15:34	12/14/21 16:04	7440-09-7	
Sodium, Dissolved	221000	ug/L	5000	5	12/14/21 15:34	12/15/21 11:41	7440-23-5	
<b>6020 MET ICPMS, Dissolved</b>								
Analytical Method: EPA 6020 Preparation Method: EPA 200.2								
Pace Analytical Services - Indianapolis								
Arsenic, Dissolved	<1.0	ug/L	1.0	1	12/08/21 09:47	12/09/21 02:42	7440-38-2	
Barium, Dissolved	340	ug/L	10.0	2	12/08/21 09:47	12/10/21 03:49	7440-39-3	
Boron, Dissolved	832	ug/L	400	20	12/08/21 09:47	12/10/21 01:32	7440-42-8	N2
Cadmium, Dissolved	<0.20	ug/L	0.20	1	12/08/21 09:47	12/09/21 02:42	7440-43-9	
Chromium, Dissolved	<1.0	ug/L	1.0	1	12/08/21 09:47	12/09/21 02:42	7440-47-3	
Copper, Dissolved	<1.0	ug/L	1.0	1	12/08/21 09:47	12/09/21 02:42	7440-50-8	
Lead, Dissolved	<1.0	ug/L	1.0	1	12/08/21 09:47	12/09/21 02:42	7439-92-1	
Manganese, Dissolved	20.1	ug/L	1.0	1	12/08/21 09:47	12/09/21 02:42	7439-96-5	
Nickel, Dissolved	<2.0	ug/L	2.0	1	12/08/21 09:47	12/09/21 02:42	7440-02-0	
Selenium, Dissolved	<1.0	ug/L	1.0	1	12/08/21 09:47	12/09/21 02:42	7782-49-2	
Silver, Dissolved	<0.20	ug/L	0.20	1	12/08/21 09:47	12/09/21 02:42	7440-22-4	
Zinc, Dissolved	<10.0	ug/L	10.0	1	12/08/21 09:47	12/09/21 02:42	7440-66-6	
<b>7470 Mercury, Dissolved</b>								
Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Pace Analytical Services - Indianapolis								
Mercury, Dissolved	<0.20	ug/L	0.20	1	12/05/21 18:00	12/06/21 12:31	7439-97-6	
<b>8260 MSV Low Level</b>								
Analytical Method: EPA 5030B/8260								
Pace Analytical Services - Indianapolis								
Acetone	<20.0	ug/L	20.0	1		12/03/21 13:38	67-64-1	
Acrylonitrile	<5.0	ug/L	5.0	1		12/03/21 13:38	107-13-1	
tert-Amylmethyl ether	<5.0	ug/L	5.0	1		12/03/21 13:38	994-05-8	N2

## REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS

Project: Sauk Trail Hills EGLE Split

Pace Project No.: 50303992

Sample: MW-39	Lab ID: 50303992002	Collected: 11/29/21 12:10	Received: 11/30/21 16:15	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>8260 MSV Low Level</b>		Analytical Method: EPA 5030B/8260 Pace Analytical Services - Indianapolis						
Benzene	<1.0	ug/L	1.0	1		12/03/21 13:38	71-43-2	
Bromochloromethane	<1.0	ug/L	1.0	1		12/03/21 13:38	74-97-5	
Bromodichloromethane	<1.0	ug/L	1.0	1		12/03/21 13:38	75-27-4	
Bromoform	<1.0	ug/L	1.0	1		12/03/21 13:38	75-25-2	
Bromomethane	<5.0	ug/L	5.0	1		12/03/21 13:38	74-83-9	
2-Butanone (MEK)	<5.0	ug/L	5.0	1		12/03/21 13:38	78-93-3	
tert-Butyl Alcohol	<10.0	ug/L	10.0	1		12/03/21 13:38	75-65-0	
n-Butylbenzene	<1.0	ug/L	1.0	1		12/03/21 13:38	104-51-8	
sec-Butylbenzene	<1.0	ug/L	1.0	1		12/03/21 13:38	135-98-8	
tert-Butylbenzene	<1.0	ug/L	1.0	1		12/03/21 13:38	98-06-6	
Carbon disulfide	<1.0	ug/L	1.0	1		12/03/21 13:38	75-15-0	
Carbon tetrachloride	<1.0	ug/L	1.0	1		12/03/21 13:38	56-23-5	
Chlorobenzene	<1.0	ug/L	1.0	1		12/03/21 13:38	108-90-7	
Chloroethane	<1.0	ug/L	1.0	1		12/03/21 13:38	75-00-3	
Chloroform	<1.0	ug/L	1.0	1		12/03/21 13:38	67-66-3	
Chloromethane	<5.0	ug/L	5.0	1		12/03/21 13:38	74-87-3	
Cyclohexane	<20.0	ug/L	20.0	1		12/03/21 13:38	110-82-7	
Dibromochloromethane	<1.0	ug/L	1.0	1		12/03/21 13:38	124-48-1	
1,2-Dibromoethane (EDB)	<1.0	ug/L	1.0	1		12/03/21 13:38	106-93-4	
Dibromomethane	<1.0	ug/L	1.0	1		12/03/21 13:38	74-95-3	
1,2-Dichlorobenzene	<1.0	ug/L	1.0	1		12/03/21 13:38	95-50-1	
1,3-Dichlorobenzene	<1.0	ug/L	1.0	1		12/03/21 13:38	541-73-1	
1,4-Dichlorobenzene	<1.0	ug/L	1.0	1		12/03/21 13:38	106-46-7	
Dichlorodifluoromethane	<2.0	ug/L	2.0	1		12/03/21 13:38	75-71-8	
1,1-Dichloroethane	<1.0	ug/L	1.0	1		12/03/21 13:38	75-34-3	
1,2-Dichloroethane	<1.0	ug/L	1.0	1		12/03/21 13:38	107-06-2	
1,1-Dichloroethene	<1.0	ug/L	1.0	1		12/03/21 13:38	75-35-4	
cis-1,2-Dichloroethene	<1.0	ug/L	1.0	1		12/03/21 13:38	156-59-2	
trans-1,2-Dichloroethene	<1.0	ug/L	1.0	1		12/03/21 13:38	156-60-5	
1,2-Dichloropropane	<1.0	ug/L	1.0	1		12/03/21 13:38	78-87-5	
cis-1,3-Dichloropropene	<1.0	ug/L	1.0	1		12/03/21 13:38	10061-01-5	
trans-1,3-Dichloropropene	<1.0	ug/L	1.0	1		12/03/21 13:38	10061-02-6	
Diethyl ether (Ethyl ether)	<5.0	ug/L	5.0	1		12/03/21 13:38	60-29-7	
Diisopropyl ether	<5.0	ug/L	5.0	1		12/03/21 13:38	108-20-3	N2
Ethylbenzene	<1.0	ug/L	1.0	1		12/03/21 13:38	100-41-4	
Ethyl-tert-butyl ether	<5.0	ug/L	5.0	1		12/03/21 13:38	637-92-3	N2
Hexachloroethane	<5.0	ug/L	5.0	1		12/03/21 13:38	67-72-1	N2
n-Hexane	<5.0	ug/L	5.0	1		12/03/21 13:38	110-54-3	
Isopropylbenzene (Cumene)	<1.0	ug/L	1.0	1		12/03/21 13:38	98-82-8	
Methylene Chloride	<5.0	ug/L	5.0	1		12/03/21 13:38	75-09-2	
2-Methylnaphthalene	<20.0	ug/L	20.0	1		12/03/21 13:38	91-57-6	
4-Methyl-2-pentanone (MIBK)	<5.0	ug/L	5.0	1		12/03/21 13:38	108-10-1	
Methyl-tert-butyl ether	<4.0	ug/L	4.0	1		12/03/21 13:38	1634-04-4	
Naphthalene	<1.0	ug/L	1.0	1		12/03/21 13:38	91-20-3	
n-Propylbenzene	<1.0	ug/L	1.0	1		12/03/21 13:38	103-65-1	
Styrene	<1.0	ug/L	1.0	1		12/03/21 13:38	100-42-5	

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### ANALYTICAL RESULTS

Project: Sauk Trail Hills EGLE Split

Pace Project No.: 50303992

Sample: MW-39	Lab ID: 50303992002	Collected: 11/29/21 12:10	Received: 11/30/21 16:15	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>8260 MSV Low Level</b>								
Analytical Method: EPA 5030B/8260								
Pace Analytical Services - Indianapolis								
1,1,1,2-Tetrachloroethane	<1.0	ug/L	1.0	1		12/03/21 13:38	630-20-6	
1,1,2,2-Tetrachloroethane	<1.0	ug/L	1.0	1		12/03/21 13:38	79-34-5	
Tetrachloroethene	<1.0	ug/L	1.0	1		12/03/21 13:38	127-18-4	
Tetrahydrofuran	<12.5	ug/L	12.5	1		12/03/21 13:38	109-99-9	
Toluene	<1.0	ug/L	1.0	1		12/03/21 13:38	108-88-3	
1,2,3-Trichlorobenzene	<1.0	ug/L	1.0	1		12/03/21 13:38	87-61-6	
1,2,4-Trichlorobenzene	<1.0	ug/L	1.0	1		12/03/21 13:38	120-82-1	
1,1,1-Trichloroethane	<1.0	ug/L	1.0	1		12/03/21 13:38	71-55-6	
1,1,2-Trichloroethane	<1.0	ug/L	1.0	1		12/03/21 13:38	79-00-5	
Trichloroethene	<1.0	ug/L	1.0	1		12/03/21 13:38	79-01-6	
Trichlorofluoromethane	<1.0	ug/L	1.0	1		12/03/21 13:38	75-69-4	
1,2,3-Trichloropropane	<1.0	ug/L	1.0	1		12/03/21 13:38	96-18-4	
1,2,3-Trimethylbenzene	<5.0	ug/L	5.0	1		12/03/21 13:38	526-73-8	N2
1,2,4-Trimethylbenzene	<5.0	ug/L	5.0	1		12/03/21 13:38	95-63-6	
1,3,5-Trimethylbenzene	<5.0	ug/L	5.0	1		12/03/21 13:38	108-67-8	
2,2,4-Trimethylpentane	<20.0	ug/L	20.0	1		12/03/21 13:38	540-84-1	N2
Vinyl chloride	<1.0	ug/L	1.0	1		12/03/21 13:38	75-01-4	
Xylene (Total)	<2.0	ug/L	2.0	1		12/03/21 13:38	1330-20-7	
m&p-Xylene	<2.0	ug/L	2.0	1		12/03/21 13:38	179601-23-1	
o-Xylene	<1.0	ug/L	1.0	1		12/03/21 13:38	95-47-6	
<b>Surrogates</b>								
4-Bromofluorobenzene (S)	100	%	78-117	1		12/03/21 13:38	460-00-4	
Dibromofluoromethane (S)	99	%	78-120	1		12/03/21 13:38	1868-53-7	
Toluene-d8 (S)	97	%	77-118	1		12/03/21 13:38	2037-26-5	
<b>2320B Alkalinity</b>								
Analytical Method: SM 2320B								
Pace Analytical Services - Indianapolis								
Alkalinity, Total as CaCO3	<b>237000</b>	ug/L	10000	1		12/03/21 16:25		
Alkalinity,Bicarbonate (CaCO3)	<b>237000</b>	ug/L	10000	1		12/03/21 16:25		
Alkalinity,Carbonate (CaCO3)	<10000	ug/L	10000	1		12/03/21 16:25		
<b>4500 Chloride</b>								
Analytical Method: SM 4500-Cl-E								
Pace Analytical Services - Indianapolis								
Chloride	<b>466000</b>	ug/L	10000	10		12/14/21 11:33	16887-00-6	

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### ANALYTICAL RESULTS

Project: Sauk Trail Hills EGLE Split

Pace Project No.: 50303992

Sample: MW-21A	Lab ID: 50303992003	Collected: 11/29/21 11:45	Received: 11/30/21 16:15	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>300.0 IC Anions 28 Days</b>								
Analytical Method: EPA 300.0								
Pace Analytical Services - Indianapolis								
Fluoride	1010	ug/L	100	1		12/03/21 04:30	16984-48-8	
Sulfate	18800	ug/L	2000	1		12/03/21 04:30	14808-79-8	
<b>Field Data</b>								
Analytical Method:								
Pace Analytical Services - Grand Rapids								
Field pH	8.34	Std. Units		1		11/29/21 11:45		
Field Temperature	12.1	deg C		1		11/29/21 11:45		
Field Specific Conductance	534	umhos/cm		1		11/29/21 11:45		
Elevation Water Level	633.98	ft/msl		1		11/29/21 11:45		
Collar Elevation	676.74	ft/msl		1		11/29/21 11:45		
Depth to Water	42.76	feet		1		11/29/21 11:45		
<b>6010 MET ICP, Dissolved</b>								
Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Pace Analytical Services - Indianapolis								
Calcium, Dissolved	23800	ug/L	1000	1	12/14/21 15:34	12/14/21 16:11	7440-70-2	
Iron, Dissolved	<50.0	ug/L	50.0	1	12/14/21 15:34	12/14/21 16:11	7439-89-6	
Lithium, Dissolved	<20.0	ug/L	20.0	1	12/14/21 15:34	12/14/21 16:11	7439-93-2	
Magnesium, Dissolved	15000	ug/L	1000	1	12/14/21 15:34	12/14/21 16:11	7439-95-4	
Potassium, Dissolved	2180	ug/L	500	1	12/14/21 15:34	12/14/21 16:11	7440-09-7	
Sodium, Dissolved	112000	ug/L	1000	1	12/14/21 15:34	12/14/21 16:11	7440-23-5	
<b>6020 MET ICPMS, Dissolved</b>								
Analytical Method: EPA 6020 Preparation Method: EPA 200.2								
Pace Analytical Services - Indianapolis								
Arsenic, Dissolved	<1.0	ug/L	1.0	1	12/08/21 09:47	12/09/21 02:46	7440-38-2	
Barium, Dissolved	65.7	ug/L	5.0	1	12/08/21 09:47	12/09/21 02:46	7440-39-3	
Boron, Dissolved	784	ug/L	400	20	12/08/21 09:47	12/10/21 01:36	7440-42-8	N2
Cadmium, Dissolved	<0.20	ug/L	0.20	1	12/08/21 09:47	12/09/21 02:46	7440-43-9	
Chromium, Dissolved	<1.0	ug/L	1.0	1	12/08/21 09:47	12/09/21 02:46	7440-47-3	
Copper, Dissolved	<1.0	ug/L	1.0	1	12/08/21 09:47	12/09/21 02:46	7440-50-8	
Lead, Dissolved	<1.0	ug/L	1.0	1	12/08/21 09:47	12/09/21 02:46	7439-92-1	
Manganese, Dissolved	6.3	ug/L	1.0	1	12/08/21 09:47	12/09/21 02:46	7439-96-5	
Nickel, Dissolved	<2.0	ug/L	2.0	1	12/08/21 09:47	12/09/21 02:46	7440-02-0	
Selenium, Dissolved	<1.0	ug/L	1.0	1	12/08/21 09:47	12/09/21 02:46	7782-49-2	
Silver, Dissolved	<0.20	ug/L	0.20	1	12/08/21 09:47	12/09/21 02:46	7440-22-4	
Zinc, Dissolved	<10.0	ug/L	10.0	1	12/08/21 09:47	12/09/21 02:46	7440-66-6	
<b>7470 Mercury, Dissolved</b>								
Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Pace Analytical Services - Indianapolis								
Mercury, Dissolved	<0.20	ug/L	0.20	1	12/05/21 18:00	12/06/21 12:34	7439-97-6	
<b>8260 MSV Low Level</b>								
Analytical Method: EPA 5030B/8260								
Pace Analytical Services - Indianapolis								
Acetone	<20.0	ug/L	20.0	1		12/03/21 14:08	67-64-1	
Acrylonitrile	<5.0	ug/L	5.0	1		12/03/21 14:08	107-13-1	
tert-Amylmethyl ether	<5.0	ug/L	5.0	1		12/03/21 14:08	994-05-8	N2

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### ANALYTICAL RESULTS

Project: Sauk Trail Hills EGLE Split

Pace Project No.: 50303992

Sample: MW-21A	Lab ID: 50303992003	Collected: 11/29/21 11:45	Received: 11/30/21 16:15	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>8260 MSV Low Level</b>		Analytical Method: EPA 5030B/8260 Pace Analytical Services - Indianapolis						
Benzene	<1.0	ug/L	1.0	1		12/03/21 14:08	71-43-2	
Bromochloromethane	<1.0	ug/L	1.0	1		12/03/21 14:08	74-97-5	
Bromodichloromethane	<1.0	ug/L	1.0	1		12/03/21 14:08	75-27-4	
Bromoform	<1.0	ug/L	1.0	1		12/03/21 14:08	75-25-2	
Bromomethane	<5.0	ug/L	5.0	1		12/03/21 14:08	74-83-9	
2-Butanone (MEK)	<5.0	ug/L	5.0	1		12/03/21 14:08	78-93-3	
tert-Butyl Alcohol	<10.0	ug/L	10.0	1		12/03/21 14:08	75-65-0	
n-Butylbenzene	<1.0	ug/L	1.0	1		12/03/21 14:08	104-51-8	
sec-Butylbenzene	<1.0	ug/L	1.0	1		12/03/21 14:08	135-98-8	
tert-Butylbenzene	<1.0	ug/L	1.0	1		12/03/21 14:08	98-06-6	
Carbon disulfide	<1.0	ug/L	1.0	1		12/03/21 14:08	75-15-0	
Carbon tetrachloride	<1.0	ug/L	1.0	1		12/03/21 14:08	56-23-5	
Chlorobenzene	<1.0	ug/L	1.0	1		12/03/21 14:08	108-90-7	
Chloroethane	<1.0	ug/L	1.0	1		12/03/21 14:08	75-00-3	
Chloroform	<1.0	ug/L	1.0	1		12/03/21 14:08	67-66-3	
Chloromethane	<5.0	ug/L	5.0	1		12/03/21 14:08	74-87-3	
Cyclohexane	<20.0	ug/L	20.0	1		12/03/21 14:08	110-82-7	
Dibromochloromethane	<1.0	ug/L	1.0	1		12/03/21 14:08	124-48-1	
1,2-Dibromoethane (EDB)	<1.0	ug/L	1.0	1		12/03/21 14:08	106-93-4	
Dibromomethane	<1.0	ug/L	1.0	1		12/03/21 14:08	74-95-3	
1,2-Dichlorobenzene	<1.0	ug/L	1.0	1		12/03/21 14:08	95-50-1	
1,3-Dichlorobenzene	<1.0	ug/L	1.0	1		12/03/21 14:08	541-73-1	
1,4-Dichlorobenzene	<1.0	ug/L	1.0	1		12/03/21 14:08	106-46-7	
Dichlorodifluoromethane	<2.0	ug/L	2.0	1		12/03/21 14:08	75-71-8	
1,1-Dichloroethane	<1.0	ug/L	1.0	1		12/03/21 14:08	75-34-3	
1,2-Dichloroethane	<1.0	ug/L	1.0	1		12/03/21 14:08	107-06-2	
1,1-Dichloroethene	<1.0	ug/L	1.0	1		12/03/21 14:08	75-35-4	
cis-1,2-Dichloroethene	<1.0	ug/L	1.0	1		12/03/21 14:08	156-59-2	
trans-1,2-Dichloroethene	<1.0	ug/L	1.0	1		12/03/21 14:08	156-60-5	
1,2-Dichloropropane	<1.0	ug/L	1.0	1		12/03/21 14:08	78-87-5	
cis-1,3-Dichloropropene	<1.0	ug/L	1.0	1		12/03/21 14:08	10061-01-5	
trans-1,3-Dichloropropene	<1.0	ug/L	1.0	1		12/03/21 14:08	10061-02-6	
Diethyl ether (Ethyl ether)	<5.0	ug/L	5.0	1		12/03/21 14:08	60-29-7	
Diisopropyl ether	<5.0	ug/L	5.0	1		12/03/21 14:08	108-20-3	N2
Ethylbenzene	<1.0	ug/L	1.0	1		12/03/21 14:08	100-41-4	
Ethyl-tert-butyl ether	<5.0	ug/L	5.0	1		12/03/21 14:08	637-92-3	N2
Hexachloroethane	<5.0	ug/L	5.0	1		12/03/21 14:08	67-72-1	N2
n-Hexane	<5.0	ug/L	5.0	1		12/03/21 14:08	110-54-3	
Isopropylbenzene (Cumene)	<1.0	ug/L	1.0	1		12/03/21 14:08	98-82-8	
Methylene Chloride	<5.0	ug/L	5.0	1		12/03/21 14:08	75-09-2	
2-Methylnaphthalene	<20.0	ug/L	20.0	1		12/03/21 14:08	91-57-6	
4-Methyl-2-pentanone (MIBK)	<5.0	ug/L	5.0	1		12/03/21 14:08	108-10-1	
Methyl-tert-butyl ether	<4.0	ug/L	4.0	1		12/03/21 14:08	1634-04-4	
Naphthalene	<1.0	ug/L	1.0	1		12/03/21 14:08	91-20-3	
n-Propylbenzene	<1.0	ug/L	1.0	1		12/03/21 14:08	103-65-1	
Styrene	<1.0	ug/L	1.0	1		12/03/21 14:08	100-42-5	

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### ANALYTICAL RESULTS

Project: Sauk Trail Hills EGLE Split  
Pace Project No.: 50303992

Sample: MW-21A	Lab ID: 50303992003	Collected: 11/29/21 11:45	Received: 11/30/21 16:15	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>8260 MSV Low Level</b>		Analytical Method: EPA 5030B/8260 Pace Analytical Services - Indianapolis						
1,1,1,2-Tetrachloroethane	<1.0	ug/L	1.0	1		12/03/21 14:08	630-20-6	
1,1,2,2-Tetrachloroethane	<1.0	ug/L	1.0	1		12/03/21 14:08	79-34-5	
Tetrachloroethene	<1.0	ug/L	1.0	1		12/03/21 14:08	127-18-4	
Tetrahydrofuran	<12.5	ug/L	12.5	1		12/03/21 14:08	109-99-9	
Toluene	<1.0	ug/L	1.0	1		12/03/21 14:08	108-88-3	
1,2,3-Trichlorobenzene	<1.0	ug/L	1.0	1		12/03/21 14:08	87-61-6	
1,2,4-Trichlorobenzene	<1.0	ug/L	1.0	1		12/03/21 14:08	120-82-1	
1,1,1-Trichloroethane	<1.0	ug/L	1.0	1		12/03/21 14:08	71-55-6	
1,1,2-Trichloroethane	<1.0	ug/L	1.0	1		12/03/21 14:08	79-00-5	
Trichloroethene	<1.0	ug/L	1.0	1		12/03/21 14:08	79-01-6	
Trichlorofluoromethane	<1.0	ug/L	1.0	1		12/03/21 14:08	75-69-4	
1,2,3-Trichloropropane	<1.0	ug/L	1.0	1		12/03/21 14:08	96-18-4	
1,2,3-Trimethylbenzene	<5.0	ug/L	5.0	1		12/03/21 14:08	526-73-8	N2
1,2,4-Trimethylbenzene	<5.0	ug/L	5.0	1		12/03/21 14:08	95-63-6	
1,3,5-Trimethylbenzene	<5.0	ug/L	5.0	1		12/03/21 14:08	108-67-8	
2,2,4-Trimethylpentane	<20.0	ug/L	20.0	1		12/03/21 14:08	540-84-1	N2
Vinyl chloride	<1.0	ug/L	1.0	1		12/03/21 14:08	75-01-4	
Xylene (Total)	<2.0	ug/L	2.0	1		12/03/21 14:08	1330-20-7	
m&p-Xylene	<2.0	ug/L	2.0	1		12/03/21 14:08	179601-23-1	
o-Xylene	<1.0	ug/L	1.0	1		12/03/21 14:08	95-47-6	
<b>Surrogates</b>								
4-Bromofluorobenzene (S)	99	%	78-117	1		12/03/21 14:08	460-00-4	
Dibromofluoromethane (S)	100	%	78-120	1		12/03/21 14:08	1868-53-7	
Toluene-d8 (S)	98	%	77-118	1		12/03/21 14:08	2037-26-5	
<b>2320B Alkalinity</b>		Analytical Method: SM 2320B Pace Analytical Services - Indianapolis						
Alkalinity, Total as CaCO3	<b>233000</b>	ug/L	10000	1		12/03/21 16:25		
Alkalinity,Bicarbonate (CaCO3)	<b>217000</b>	ug/L	10000	1		12/03/21 16:25		
Alkalinity,Carbonate (CaCO3)	<b>15400</b>	ug/L	10000	1		12/03/21 16:25		
<b>4500 Chloride</b>		Analytical Method: SM 4500-Cl-E Pace Analytical Services - Indianapolis						
Chloride	<b>88000</b>	ug/L	2000	2		12/14/21 11:37	16887-00-6	

### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA

Project: Sauk Trail Hills EGLE Split  
Pace Project No.: 50303992

QC Batch: 653169 Analysis Method: EPA 300.0  
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions  
Laboratory: Pace Analytical Services - Indianapolis  
Associated Lab Samples: 50303992001, 50303992002, 50303992003

METHOD BLANK: 3009499 Matrix: Water  
Associated Lab Samples: 50303992001, 50303992002, 50303992003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Fluoride	ug/L	<100	100	12/02/21 09:49	
Sulfate	ug/L	<2000	2000	12/02/21 09:49	

LABORATORY CONTROL SAMPLE: 3009500

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Fluoride	ug/L	500	462	92	90-110	
Sulfate	ug/L	2500	2360	94	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3009501 3009502

Parameter	Units	50304042007		3009501		3009502		% Rec Limits	RPD	Max RPD	Qual
		MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.	MS Result	MSD Result				
Fluoride	ug/L	ND	5000	5000	4620	4610	92	92	80-120	0	15 D3
Sulfate	ug/L	4920 mg/L	2500000	2500000	7480000	7500000	103	103	80-120	0	15

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3011288 3011289

Parameter	Units	50304081002		3011288		3011289		% Rec Limits	RPD	Max RPD	Qual
		MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.	MS Result	MSD Result				
Fluoride	ug/L	ND	500	500	475	487	79	81	80-120	2	15 M0
Sulfate	ug/L	259 mg/L	250000	250000	524000	639000	106	152	80-120	20	15 M0,R1

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### QUALITY CONTROL DATA

Project: Sauk Trail Hills EGLE Split  
Pace Project No.: 50303992

QC Batch: 653341 Analysis Method: EPA 7470  
QC Batch Method: EPA 7470 Analysis Description: 7470 Mercury Dissolved  
Laboratory: Pace Analytical Services - Indianapolis  
Associated Lab Samples: 50303992001, 50303992002, 50303992003

METHOD BLANK: 3010179 Matrix: Water  
Associated Lab Samples: 50303992001, 50303992002, 50303992003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury, Dissolved	ug/L	<0.20	0.20	12/06/21 11:25	

LABORATORY CONTROL SAMPLE: 3010180

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury, Dissolved	ug/L	5	4.6	92	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3010181 3010182

Parameter	Units	3010181		3010182		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		50302717003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result						
Mercury, Dissolved	ug/L	ND	5	5	4.8	4.8	97	95	75-125	2	20

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### QUALITY CONTROL DATA

Project: Sauk Trail Hills EGLE Split  
Pace Project No.: 50303992

QC Batch: 654850 Analysis Method: EPA 6010  
QC Batch Method: EPA 3010 Analysis Description: 6010 MET Dissolved  
Laboratory: Pace Analytical Services - Indianapolis  
Associated Lab Samples: 50303992001, 50303992002, 50303992003

METHOD BLANK: 3018634 Matrix: Water  
Associated Lab Samples: 50303992001, 50303992002, 50303992003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Calcium, Dissolved	ug/L	<1000	1000	12/15/21 11:35	
Iron, Dissolved	ug/L	<50.0	50.0	12/15/21 11:35	
Lithium, Dissolved	ug/L	<20.0	20.0	12/15/21 11:35	
Magnesium, Dissolved	ug/L	<1000	1000	12/15/21 11:35	
Potassium, Dissolved	ug/L	<500	500	12/15/21 11:35	
Sodium, Dissolved	ug/L	<1000	1000	12/15/21 11:35	

LABORATORY CONTROL SAMPLE: 3018635

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Calcium, Dissolved	ug/L	5000	4990	100	80-120	
Iron, Dissolved	ug/L	2500	2510	101	80-120	
Lithium, Dissolved	ug/L	1000	934	93	80-120	
Magnesium, Dissolved	ug/L	5000	4790	96	80-120	
Potassium, Dissolved	ug/L	5000	4830	97	80-120	
Sodium, Dissolved	ug/L	5000	4740	95	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3018636 3018637

Parameter	Units	50303895001		3018636		3018637		% Rec	% Rec	% Rec Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec						
Calcium, Dissolved	ug/L	91.6 mg/L	10000	10000	99400	99100	78	74	75-125	0	20	P6	
Iron, Dissolved	ug/L	ND	10000	10000	10200	9880	102	99	75-125	3	20		
Lithium, Dissolved	ug/L	ND	1000	1000	996	950	99	94	75-125	5	20		
Magnesium, Dissolved	ug/L	13.2 mg/L	10000	10000	22600	22400	95	92	75-125	1	20		
Potassium, Dissolved	ug/L	1.1 mg/L	10000	10000	11000	10600	99	95	75-125	4	20		
Sodium, Dissolved	ug/L	22.5 mg/L	10000	10000	31800	31400	94	89	75-125	2	20		

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### QUALITY CONTROL DATA

Project: Sauk Trail Hills EGLE Split  
Pace Project No.: 50303992

QC Batch: 653677 Analysis Method: EPA 6020  
QC Batch Method: EPA 200.2 Analysis Description: 6020 MET Dissolved  
Laboratory: Pace Analytical Services - Indianapolis  
Associated Lab Samples: 50303992001, 50303992002, 50303992003

METHOD BLANK: 3012787 Matrix: Water  
Associated Lab Samples: 50303992001, 50303992002, 50303992003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic, Dissolved	ug/L	<1.0	1.0	12/09/21 01:15	
Barium, Dissolved	ug/L	<5.0	5.0	12/09/21 01:15	
Boron, Dissolved	ug/L	<20.0	20.0	12/10/21 01:19	N2
Cadmium, Dissolved	ug/L	<0.20	0.20	12/09/21 01:15	
Chromium, Dissolved	ug/L	<1.0	1.0	12/09/21 01:15	
Copper, Dissolved	ug/L	<1.0	1.0	12/09/21 01:15	
Lead, Dissolved	ug/L	<1.0	1.0	12/09/21 01:15	
Manganese, Dissolved	ug/L	<1.0	1.0	12/09/21 01:15	
Nickel, Dissolved	ug/L	<2.0	2.0	12/09/21 01:15	
Selenium, Dissolved	ug/L	<1.0	1.0	12/09/21 01:15	
Silver, Dissolved	ug/L	<0.20	0.20	12/09/21 01:15	
Zinc, Dissolved	ug/L	<10.0	10.0	12/09/21 01:15	

LABORATORY CONTROL SAMPLE: 3012788

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic, Dissolved	ug/L	40	38.6	96	80-120	
Barium, Dissolved	ug/L	40	38.9	97	80-120	
Boron, Dissolved	ug/L	40	41.1	103	80-120	N2
Cadmium, Dissolved	ug/L	40	38.5	96	80-120	
Chromium, Dissolved	ug/L	40	41.3	103	80-120	
Copper, Dissolved	ug/L	40	40.3	101	80-120	
Lead, Dissolved	ug/L	40	39.9	100	80-120	
Manganese, Dissolved	ug/L	40	42.0	105	80-120	
Nickel, Dissolved	ug/L	40	39.4	98	80-120	
Selenium, Dissolved	ug/L	40	39.8	99	80-120	
Silver, Dissolved	ug/L	40	40.4	101	80-120	
Zinc, Dissolved	ug/L	40	40.6	101	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3012789 3012790

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
		50303895001 Result	Spike Conc.	Spike Conc.	Result							Result
Arsenic, Dissolved	ug/L	ND	40	40	39.3	39.8	98	99	75-125	1	20	
Barium, Dissolved	ug/L	0.065 mg/L	40	40	106	107	103	106	75-125	1	20	
Boron, Dissolved	ug/L	0.13 mg/L	40	40	174	176	105	110	75-125	1	20	N2

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### QUALITY CONTROL DATA

Project: Sauk Trail Hills EGLE Split

Pace Project No.: 50303992

Parameter	Units	3012789		3012790		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		50303895001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result								
Cadmium, Dissolved	ug/L	ND	40	40	38.0	38.2	95	95	75-125	0	20		
Chromium, Dissolved	ug/L	ND	40	40	41.7	41.0	104	102	75-125	2	20		
Copper, Dissolved	ug/L	ND	40	40	37.3	37.3	92	92	75-125	0	20		
Lead, Dissolved	ug/L	ND	40	40	39.8	40.1	99	100	75-125	1	20		
Manganese, Dissolved	ug/L	0.0082 mg/L	40	40	48.4	48.3	101	100	75-125	0	20		
Nickel, Dissolved	ug/L	0.00068 mg/L	40	40	36.8	36.8	90	90	75-125	0	20		
Selenium, Dissolved	ug/L	ND	40	40	39.6	40.8	99	102	75-125	3	20		
Silver, Dissolved	ug/L	ND	40	40	39.1	39.6	98	99	75-125	1	20		
Zinc, Dissolved	ug/L	ND	40	40	38.9	39.0	93	94	75-125	0	20		

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### QUALITY CONTROL DATA

Project: Sauk Trail Hills EGLE Split  
Pace Project No.: 50303992

QC Batch: 653533 Analysis Method: EPA 5030B/8260  
QC Batch Method: EPA 5030B/8260 Analysis Description: 8260 MSV Low Level  
Laboratory: Pace Analytical Services - Indianapolis  
Associated Lab Samples: 50303992001, 50303992002, 50303992003

METHOD BLANK: 3011690 Matrix: Water  
Associated Lab Samples: 50303992001, 50303992002, 50303992003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<1.0	1.0	12/03/21 12:40	
1,1,1-Trichloroethane	ug/L	<1.0	1.0	12/03/21 12:40	
1,1,2,2-Tetrachloroethane	ug/L	<1.0	1.0	12/03/21 12:40	
1,1,2-Trichloroethane	ug/L	<1.0	1.0	12/03/21 12:40	
1,1-Dichloroethane	ug/L	<1.0	1.0	12/03/21 12:40	
1,1-Dichloroethene	ug/L	<1.0	1.0	12/03/21 12:40	
1,2,3-Trichlorobenzene	ug/L	<1.0	1.0	12/03/21 12:40	
1,2,3-Trichloropropane	ug/L	<1.0	1.0	12/03/21 12:40	
1,2,3-Trimethylbenzene	ug/L	<5.0	5.0	12/03/21 12:40	N2
1,2,4-Trichlorobenzene	ug/L	<1.0	1.0	12/03/21 12:40	
1,2,4-Trimethylbenzene	ug/L	<5.0	5.0	12/03/21 12:40	
1,2-Dibromoethane (EDB)	ug/L	<1.0	1.0	12/03/21 12:40	
1,2-Dichlorobenzene	ug/L	<1.0	1.0	12/03/21 12:40	
1,2-Dichloroethane	ug/L	<1.0	1.0	12/03/21 12:40	
1,2-Dichloropropane	ug/L	<1.0	1.0	12/03/21 12:40	
1,3,5-Trimethylbenzene	ug/L	<5.0	5.0	12/03/21 12:40	
1,3-Dichlorobenzene	ug/L	<1.0	1.0	12/03/21 12:40	
1,4-Dichlorobenzene	ug/L	<1.0	1.0	12/03/21 12:40	
2,2,4-Trimethylpentane	ug/L	<20.0	20.0	12/03/21 12:40	N2
2-Butanone (MEK)	ug/L	<5.0	5.0	12/03/21 12:40	
2-Methylnaphthalene	ug/L	<20.0	20.0	12/03/21 12:40	
4-Methyl-2-pentanone (MIBK)	ug/L	<5.0	5.0	12/03/21 12:40	
Acetone	ug/L	<20.0	20.0	12/03/21 12:40	
Acrylonitrile	ug/L	<5.0	5.0	12/03/21 12:40	
Benzene	ug/L	<1.0	1.0	12/03/21 12:40	
Bromochloromethane	ug/L	<1.0	1.0	12/03/21 12:40	
Bromodichloromethane	ug/L	<1.0	1.0	12/03/21 12:40	
Bromoform	ug/L	<1.0	1.0	12/03/21 12:40	
Bromomethane	ug/L	<5.0	5.0	12/03/21 12:40	
Carbon disulfide	ug/L	<1.0	1.0	12/03/21 12:40	
Carbon tetrachloride	ug/L	<1.0	1.0	12/03/21 12:40	
Chlorobenzene	ug/L	<1.0	1.0	12/03/21 12:40	
Chloroethane	ug/L	<1.0	1.0	12/03/21 12:40	
Chloroform	ug/L	<1.0	1.0	12/03/21 12:40	
Chloromethane	ug/L	<5.0	5.0	12/03/21 12:40	
cis-1,2-Dichloroethene	ug/L	<1.0	1.0	12/03/21 12:40	
cis-1,3-Dichloropropene	ug/L	<1.0	1.0	12/03/21 12:40	
Cyclohexane	ug/L	<20.0	20.0	12/03/21 12:40	
Dibromochloromethane	ug/L	<1.0	1.0	12/03/21 12:40	
Dibromomethane	ug/L	<1.0	1.0	12/03/21 12:40	

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### QUALITY CONTROL DATA

Project: Sauk Trail Hills EGLE Split  
Pace Project No.: 50303992

METHOD BLANK: 3011690 Matrix: Water  
Associated Lab Samples: 50303992001, 50303992002, 50303992003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Dichlorodifluoromethane	ug/L	<2.0	2.0	12/03/21 12:40	
Diethyl ether (Ethyl ether)	ug/L	<5.0	5.0	12/03/21 12:40	
Diisopropyl ether	ug/L	<5.0	5.0	12/03/21 12:40	N2
Ethyl-tert-butyl ether	ug/L	<5.0	5.0	12/03/21 12:40	N2
Ethylbenzene	ug/L	<1.0	1.0	12/03/21 12:40	
Hexachloroethane	ug/L	<5.0	5.0	12/03/21 12:40	N2
Isopropylbenzene (Cumene)	ug/L	<1.0	1.0	12/03/21 12:40	
m&p-Xylene	ug/L	<2.0	2.0	12/03/21 12:40	
Methyl-tert-butyl ether	ug/L	<4.0	4.0	12/03/21 12:40	
Methylene Chloride	ug/L	<5.0	5.0	12/03/21 12:40	
n-Butylbenzene	ug/L	<1.0	1.0	12/03/21 12:40	
n-Hexane	ug/L	<5.0	5.0	12/03/21 12:40	
n-Propylbenzene	ug/L	<1.0	1.0	12/03/21 12:40	
Naphthalene	ug/L	<1.0	1.0	12/03/21 12:40	
o-Xylene	ug/L	<1.0	1.0	12/03/21 12:40	
sec-Butylbenzene	ug/L	<1.0	1.0	12/03/21 12:40	
Styrene	ug/L	<1.0	1.0	12/03/21 12:40	
tert-Amylmethyl ether	ug/L	<5.0	5.0	12/03/21 12:40	N2
tert-Butyl Alcohol	ug/L	<10.0	10.0	12/03/21 12:40	
tert-Butylbenzene	ug/L	<1.0	1.0	12/03/21 12:40	
Tetrachloroethene	ug/L	<1.0	1.0	12/03/21 12:40	
Tetrahydrofuran	ug/L	<12.5	12.5	12/03/21 12:40	
Toluene	ug/L	<1.0	1.0	12/03/21 12:40	
trans-1,2-Dichloroethene	ug/L	<1.0	1.0	12/03/21 12:40	
trans-1,3-Dichloropropene	ug/L	<1.0	1.0	12/03/21 12:40	
Trichloroethene	ug/L	<1.0	1.0	12/03/21 12:40	
Trichlorofluoromethane	ug/L	<1.0	1.0	12/03/21 12:40	
Vinyl chloride	ug/L	<1.0	1.0	12/03/21 12:40	
Xylene (Total)	ug/L	<2.0	2.0	12/03/21 12:40	
4-Bromofluorobenzene (S)	%	97	78-117	12/03/21 12:40	
Dibromofluoromethane (S)	%	100	78-120	12/03/21 12:40	
Toluene-d8 (S)	%	97	77-118	12/03/21 12:40	

LABORATORY CONTROL SAMPLE: 3011691

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	50	43.5	87	76-125	
1,1,1-Trichloroethane	ug/L	50	45.4	91	73-132	
1,1,2,2-Tetrachloroethane	ug/L	50	47.6	95	65-131	
1,1,2-Trichloroethane	ug/L	50	46.0	92	74-127	
1,1-Dichloroethane	ug/L	50	47.0	94	73-133	
1,1-Dichloroethene	ug/L	50	47.6	95	67-136	
1,2,3-Trichlorobenzene	ug/L	50	44.3	89	58-136	
1,2,3-Trichloropropane	ug/L	50	44.7	89	69-126	

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### QUALITY CONTROL DATA

Project: Sauk Trail Hills EGLE Split

Pace Project No.: 50303992

LABORATORY CONTROL SAMPLE: 3011691

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2,3-Trimethylbenzene	ug/L	50	49.4	99	75-114	N2
1,2,4-Trichlorobenzene	ug/L	50	43.4	87	48-149	
1,2,4-Trimethylbenzene	ug/L	50	47.9	96	68-122	
1,2-Dibromoethane (EDB)	ug/L	50	43.1	86	76-126	
1,2-Dichlorobenzene	ug/L	50	44.1	88	75-114	
1,2-Dichloroethane	ug/L	50	44.9	90	69-135	
1,2-Dichloropropane	ug/L	50	48.4	97	78-134	
1,3,5-Trimethylbenzene	ug/L	50	48.6	97	68-120	
1,3-Dichlorobenzene	ug/L	50	47.2	94	70-119	
1,4-Dichlorobenzene	ug/L	50	45.3	91	69-117	
2,2,4-Trimethylpentane	ug/L	50	44.2	88	66-139	N2
2-Butanone (MEK)	ug/L	250	277	111	56-164	
2-Methylnaphthalene	ug/L	50	47.4	95	62-129	
4-Methyl-2-pentanone (MIBK)	ug/L	250	227	91	64-134	
Acetone	ug/L	250	233	93	46-140	
Acrylonitrile	ug/L	250	226	91	68-132	
Benzene	ug/L	50	46.0	92	77-128	
Bromochloromethane	ug/L	50	45.2	90	71-124	
Bromodichloromethane	ug/L	50	44.5	89	70-124	
Bromoform	ug/L	50	42.8	86	65-116	
Bromomethane	ug/L	50	41.4	83	10-200	
Carbon disulfide	ug/L	50	43.4	87	70-131	
Carbon tetrachloride	ug/L	50	46.2	92	61-139	
Chlorobenzene	ug/L	50	43.3	87	76-124	
Chloroethane	ug/L	50	67.5	135	56-142	
Chloroform	ug/L	50	50.4	101	77-120	
Chloromethane	ug/L	50	45.8	92	29-141	
cis-1,2-Dichloroethene	ug/L	50	46.6	93	72-127	
cis-1,3-Dichloropropene	ug/L	50	46.0	92	71-131	
Cyclohexane	ug/L	50	46.4	93	58-141	
Dibromochloromethane	ug/L	50	41.7	83	69-132	
Dibromomethane	ug/L	50	46.4	93	76-130	
Dichlorodifluoromethane	ug/L	50	36.7	73	23-139	
Diethyl ether (Ethyl ether)	ug/L	50	41.9	84	74-126	
Diisopropyl ether	ug/L	50	47.6	95	62-129	N2
Ethyl-tert-butyl ether	ug/L	50	45.0	90	66-121	N2
Ethylbenzene	ug/L	50	44.1	88	76-119	
Hexachloroethane	ug/L	50	36.8	74	50-150	N2
Isopropylbenzene (Cumene)	ug/L	50	47.8	96	77-128	
m&p-Xylene	ug/L	100	84.8	85	71-118	
Methyl-tert-butyl ether	ug/L	50	46.2	92	75-129	
Methylene Chloride	ug/L	50	50.4	101	72-129	
n-Butylbenzene	ug/L	50	46.1	92	59-128	
n-Hexane	ug/L	50	48.2	96	75-141	
n-Propylbenzene	ug/L	50	50.2	100	71-116	
Naphthalene	ug/L	50	45.1	90	67-136	
o-Xylene	ug/L	50	43.9	88	71-120	

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### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA

Project: Sauk Trail Hills EGLE Split  
Pace Project No.: 50303992

LABORATORY CONTROL SAMPLE: 3011691

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
sec-Butylbenzene	ug/L	50	49.4	99	70-119	
Styrene	ug/L	50	45.6	91	66-123	
tert-Amylmethyl ether	ug/L	50	44.5	89	70-121	N2
tert-Butyl Alcohol	ug/L	250	176	70	34-184	
tert-Butylbenzene	ug/L	50	49.1	98	54-133	
Tetrachloroethene	ug/L	50	45.0	90	70-124	
Tetrahydrofuran	ug/L	250	226	90	62-126	
Toluene	ug/L	50	43.6	87	72-117	
trans-1,2-Dichloroethene	ug/L	50	45.1	90	75-133	
trans-1,3-Dichloropropene	ug/L	50	45.1	90	75-111	
Trichloroethene	ug/L	50	44.9	90	75-130	
Trichlorofluoromethane	ug/L	50	54.9	110	63-162	
Vinyl chloride	ug/L	50	56.6	113	51-140	
Xylene (Total)	ug/L	150	129	86	73-117	
4-Bromofluorobenzene (S)	%			100	78-117	
Dibromofluoromethane (S)	%			100	78-120	
Toluene-d8 (S)	%			97	77-118	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3011692 3011693

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
		50304184006 Result	Spike Conc.	Spike Conc.	MS Result							MSD Result
1,1,1,2-Tetrachloroethane	ug/L	ND	50	50	46.1	45.2	92	90	40-147	2	20	
1,1,1-Trichloroethane	ug/L	ND	50	50	50.3	47.9	101	96	53-161	5	20	
1,1,2,2-Tetrachloroethane	ug/L	ND	50	50	50.7	47.9	101	96	58-134	6	20	
1,1,2-Trichloroethane	ug/L	ND	50	50	49.4	47.1	99	94	60-141	5	20	
1,1-Dichloroethane	ug/L	ND	50	50	51.6	48.8	103	98	67-140	6	20	
1,1-Dichloroethene	ug/L	ND	50	50	52.0	50.0	104	100	59-154	4	20	
1,2,3-Trichlorobenzene	ug/L	ND	50	50	41.2	38.8	82	78	10-151	6	20	
1,2,3-Trichloropropane	ug/L	ND	50	50	47.2	44.9	94	90	63-140	5	20	
1,2,3-Trimethylbenzene	ug/L	ND	50	50	50.7	49.0	101	98	72-122	3	20	N2
1,2,4-Trichlorobenzene	ug/L	ND	50	50	40.4	39.9	81	80	10-156	1	20	
1,2,4-Trimethylbenzene	ug/L	ND	50	50	48.9	47.2	98	94	11-145	4	20	
1,2-Dibromoethane (EDB)	ug/L	ND	50	50	46.0	43.6	92	87	54-144	5	20	
1,2-Dichlorobenzene	ug/L	ND	50	50	45.1	43.6	90	87	17-145	3	20	
1,2-Dichloroethane	ug/L	ND	50	50	49.1	46.5	98	93	66-130	5	20	
1,2-Dichloropropane	ug/L	ND	50	50	52.8	50.0	106	100	65-136	6	20	
1,3,5-Trimethylbenzene	ug/L	ND	50	50	49.7	47.5	99	95	11-143	4	20	
1,3-Dichlorobenzene	ug/L	ND	50	50	47.6	45.8	95	92	10-146	4	20	
1,4-Dichlorobenzene	ug/L	ND	50	50	45.4	44.2	91	88	17-141	3	20	
2,2,4-Trimethylpentane	ug/L	ND	50	50	41.7	40.3	83	81	55-137	3	20	N2
2-Butanone (MEK)	ug/L	ND	250	250	305	290	122	116	49-173	5	20	
2-Methylnaphthalene	ug/L	ND	50	50	38.4	39.4	77	79	15-141	3	20	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	250	250	247	237	99	95	59-139	4	20	

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### QUALITY CONTROL DATA

Project: Sauk Trail Hills EGLE Split

Pace Project No.: 50303992

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3011692 3011693												
Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
		50304184006 Result	Spike Conc.	Spike Conc.	MS Result							
Acetone	ug/L	ND	250	250	258	249	103	99	44-171	4	20	
Acrylonitrile	ug/L	ND	250	250	245	230	98	92	60-145	6	20	
Benzene	ug/L	ND	50	50	50.0	47.7	100	95	69-128	5	20	
Bromochloromethane	ug/L	ND	50	50	50.1	47.0	100	94	58-138	6	20	
Bromodichloromethane	ug/L	ND	50	50	48.3	46.2	97	92	51-138	4	20	
Bromoform	ug/L	ND	50	50	44.4	42.5	89	85	43-130	4	20	
Bromomethane	ug/L	ND	50	50	25.1	36.0	50	72	10-195	36	20	R1
Carbon disulfide	ug/L	ND	50	50	45.6	43.8	91	88	37-149	4	20	
Carbon tetrachloride	ug/L	ND	50	50	50.7	48.7	101	97	39-155	4	20	
Chlorobenzene	ug/L	ND	50	50	45.6	44.1	91	88	28-147	3	20	
Chloroethane	ug/L	ND	50	50	78.3	70.0	157	140	58-158	11	20	
Chloroform	ug/L	ND	50	50	54.7	52.3	109	105	54-141	5	20	
Chloromethane	ug/L	ND	50	50	52.1	48.3	104	97	41-145	8	20	
cis-1,2-Dichloroethene	ug/L	ND	50	50	50.4	48.1	101	96	45-150	5	20	
cis-1,3-Dichloropropene	ug/L	ND	50	50	47.7	46.5	95	93	42-139	2	20	
Cyclohexane	ug/L	ND	50	50	50.7	48.5	101	97	57-158	4	20	
Dibromochloromethane	ug/L	ND	50	50	43.7	42.7	87	85	48-139	2	20	
Dibromomethane	ug/L	ND	50	50	50.9	47.8	102	96	58-140	6	20	
Dichlorodifluoromethane	ug/L	ND	50	50	38.3	35.5	77	71	45-161	8	20	
Diethyl ether (Ethyl ether)	ug/L	ND	50	50	43.0	41.1	86	82	59-143	5	20	
Diisopropyl ether	ug/L	ND	50	50	52.3	49.6	105	99	67-131	5	20	N2
Ethyl-tert-butyl ether	ug/L	ND	50	50	49.2	47.0	98	94	71-125	5	20	N2
Ethylbenzene	ug/L	ND	50	50	46.6	45.1	93	90	36-144	3	20	
Hexachloroethane	ug/L	ND	50	50	36.6	36.4	73	73	50-150	1	20	N2
Isopropylbenzene (Cumene)	ug/L	ND	50	50	49.7	48.8	99	98	21-148	2	20	
m&p-Xylene	ug/L	ND	100	100	87.8	85.8	88	86	32-139	2	20	
Methyl-tert-butyl ether	ug/L	ND	50	50	50.5	47.6	101	95	72-135	6	20	
Methylene Chloride	ug/L	ND	50	50	52.3	49.7	105	99	58-136	5	20	
n-Butylbenzene	ug/L	ND	50	50	44.0	42.4	88	85	10-147	4	20	
n-Hexane	ug/L	ND	50	50	44.6	43.8	89	88	52-157	2	20	
n-Propylbenzene	ug/L	ND	50	50	50.4	49.0	101	98	11-141	3	20	
Naphthalene	ug/L	ND	50	50	44.3	44.6	89	89	45-134	1	20	
o-Xylene	ug/L	ND	50	50	46.3	44.9	93	90	36-139	3	20	
sec-Butylbenzene	ug/L	ND	50	50	49.9	48.4	100	97	10-148	3	20	
Styrene	ug/L	ND	50	50	47.5	46.2	95	92	19-143	3	20	
tert-Amylmethyl ether	ug/L	ND	50	50	47.9	45.9	96	92	73-128	4	20	N2
tert-Butyl Alcohol	ug/L	ND	250	250	196	198	78	79	15-183	1	20	
tert-Butylbenzene	ug/L	ND	50	50	50.0	48.4	100	97	14-123	3	20	
Tetrachloroethene	ug/L	ND	50	50	45.5	45.8	91	92	26-148	1	20	
Tetrahydrofuran	ug/L	ND	250	250	256	241	102	96	38-152	6	20	
Toluene	ug/L	ND	50	50	46.7	45.1	93	90	46-134	3	20	
trans-1,2-Dichloroethene	ug/L	ND	50	50	49.0	46.8	98	94	43-155	4	20	
trans-1,3-Dichloropropene	ug/L	ND	50	50	46.1	44.9	92	90	39-132	3	20	
Trichloroethene	ug/L	ND	50	50	49.0	46.3	98	93	35-151	6	20	
Trichlorofluoromethane	ug/L	ND	50	50	60.4	57.6	121	115	55-170	5	20	

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### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA

Project: Sauk Trail Hills EGLE Split

Pace Project No.: 50303992

Parameter	Units	3011692		3011693		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	RPD	Qual
		50304184006 Result	MS Spike Conc.	MSD Spike Conc.	MS Result								
Vinyl chloride	ug/L	ND	50	50	61.8	58.4	124	117	59-146	6	20		
Xylene (Total)	ug/L	ND	150	150	134	131	89	87	32-140	3	20		
4-Bromofluorobenzene (S)	%						99	101	78-117				
Dibromofluoromethane (S)	%						101	100	78-120				
Toluene-d8 (S)	%						97	98	77-118				

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### QUALITY CONTROL DATA

Project: Sauk Trail Hills EGLE Split

Pace Project No.: 50303992

QC Batch:	653483	Analysis Method:	SM 2320B
QC Batch Method:	SM 2320B	Analysis Description:	2320B Alkalinity
		Laboratory:	Pace Analytical Services - Indianapolis

Associated Lab Samples: 50303992001, 50303992002, 50303992003

METHOD BLANK: 3011233 Matrix: Water

Associated Lab Samples: 50303992001, 50303992002, 50303992003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Alkalinity, Total as CaCO <sub>3</sub>	ug/L	<10000	10000	12/03/21 16:25	
Alkalinity,Bicarbonate (CaCO <sub>3</sub> )	ug/L	<10000	10000	12/03/21 16:25	
Alkalinity,Carbonate (CaCO <sub>3</sub> )	ug/L	<10000	10000	12/03/21 16:25	

LABORATORY CONTROL SAMPLE: 3011234

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO <sub>3</sub>	ug/L	50000	52800	106	90-110	

SAMPLE DUPLICATE: 3011235

Parameter	Units	50303992001 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO <sub>3</sub>	ug/L	233000	236000	1	20	
Alkalinity,Bicarbonate (CaCO <sub>3</sub> )	ug/L	233000	236000	1	20	
Alkalinity,Carbonate (CaCO <sub>3</sub> )	ug/L	<10000	<10000		20	

SAMPLE DUPLICATE: 3011236

Parameter	Units	50304175001 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO <sub>3</sub>	ug/L	279 mg/L	287000	3	20	
Alkalinity,Bicarbonate (CaCO <sub>3</sub> )	ug/L	279 mg/L	287000	3	20	
Alkalinity,Carbonate (CaCO <sub>3</sub> )	ug/L	ND	<10000		20	

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### QUALITY CONTROL DATA

Project: Sauk Trail Hills EGLE Split  
Pace Project No.: 50303992

QC Batch: 654731 Analysis Method: SM 4500-Cl-E  
QC Batch Method: SM 4500-Cl-E Analysis Description: 4500 Chloride  
Laboratory: Pace Analytical Services - Indianapolis  
Associated Lab Samples: 50303992001, 50303992002

METHOD BLANK: 3018232 Matrix: Water  
Associated Lab Samples: 50303992001, 50303992002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	ug/L	<1000	1000	12/14/21 11:06	

LABORATORY CONTROL SAMPLE: 3018233

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	ug/L	20000	20700	104	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3018234 3018235

Parameter	Units	50303806001		3018235		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Chloride	ug/L	496 mg/L	800000	800000	1340000	1340000	105	105	90-110	0	20

MATRIX SPIKE SAMPLE: 3018236

Parameter	Units	50303992002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	ug/L	466000	200000	647000	91	90-110	

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### QUALITY CONTROL DATA

Project: Sauk Trail Hills EGLE Split  
Pace Project No.: 50303992

QC Batch: 654732      Analysis Method: SM 4500-Cl-E  
QC Batch Method: SM 4500-Cl-E      Analysis Description: 4500 Chloride  
Laboratory: Pace Analytical Services - Indianapolis  
Associated Lab Samples: 50303992003

METHOD BLANK: 3018242      Matrix: Water  
Associated Lab Samples: 50303992003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	ug/L	<1000	1000	12/14/21 11:35	

LABORATORY CONTROL SAMPLE: 3018243

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	ug/L	20000	20300	102	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3018244      3018245

Parameter	Units	50303992003		3018245		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Chloride	ug/L	88000	40000	40000	126000	124000	96	90	90-110	2	20

MATRIX SPIKE SAMPLE: 3018246

Parameter	Units	50304097003 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	ug/L	1.3 mg/L	20000	21900	103	90-110	

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## QUALIFIERS

Project: Sauk Trail Hills EGLE Split

Pace Project No.: 50303992

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### DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

### ANALYTE QUALIFIERS

D3 Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.

M0 Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.

N2 The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.

P6 Matrix spike recovery was outside laboratory control limits due to a parent sample concentration notably higher than the spike level.

R1 RPD value was outside control limits.

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### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Sauk Trail Hills EGLE Split  
Pace Project No.: 50303992

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
50303992001	MW-26R	EPA 300.0	653169		
50303992002	MW-39	EPA 300.0	653169		
50303992003	MW-21A	EPA 300.0	653169		
50303992001	MW-26R				
50303992002	MW-39				
50303992003	MW-21A				
50303992001	MW-26R	EPA 3010	654850	EPA 6010	654851
50303992002	MW-39	EPA 3010	654850	EPA 6010	654851
50303992003	MW-21A	EPA 3010	654850	EPA 6010	654851
50303992001	MW-26R	EPA 200.2	653677	EPA 6020	654064
50303992002	MW-39	EPA 200.2	653677	EPA 6020	654064
50303992003	MW-21A	EPA 200.2	653677	EPA 6020	654064
50303992001	MW-26R	EPA 7470	653341	EPA 7470	653660
50303992002	MW-39	EPA 7470	653341	EPA 7470	653660
50303992003	MW-21A	EPA 7470	653341	EPA 7470	653660
50303992001	MW-26R	EPA 5030B/8260	653533		
50303992002	MW-39	EPA 5030B/8260	653533		
50303992003	MW-21A	EPA 5030B/8260	653533		
50303992001	MW-26R	SM 2320B	653483		
50303992002	MW-39	SM 2320B	653483		
50303992003	MW-21A	SM 2320B	653483		
50303992001	MW-26R	SM 4500-CI-E	654731		
50303992002	MW-39	SM 4500-CI-E	654731		
50303992003	MW-21A	SM 4500-CI-E	654732		

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# WO#: 50303992



50303992

### CHAIN-OF-CUSTODY / Analytical Request Form

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed and acceptance of the Pace Terms and Conditions found at <https://info.pacelabs.com>

**Section A**  
**Required Client Information:**  
 Company: Republic Services - MI  
 Address: 6055 Rockside Woods Blvd  
 Independence, OH 44131  
 Email: [kilily@brwncl.com](mailto:kilily@brwncl.com)  
 Phone: (614)410-3079 Fax:  
 Requested Due Date:

**Section B**  
**Required Project Information:**  
 Report To: Kerri Lilly  
 Copy To:  
 Purchase Order #: **6685815**  
 Project Name: Sauk Trail Hills **Chry GW**  
 Pace Project Manager: [jennifer.nice@pacelabs.com](mailto:jennifer.nice@pacelabs.com)  
 Pace Profile #: 8139

**Section C**  
**Invoice Information:**  
 Attention:  
 Company Name:  
 Address:  
 Pace Quote:  
 State / Location:

#	ITEM	MATRIX	CODE	COLLECTED		SAMPLE TYPE (G=GRAB C=COMP)	MATRIX CODE (see valid codes to left)	PRESERVATIVES		ANALYSES TEST	REQUESTED ANALYSIS FILTERED (Y/N)											RESIDUAL CHLORINE (Y/N)				
				START	END			UNPRESERVED	H2SO4		HNO3	HCl	NaOH	Na2SO3	Methanol	Other	Dissolved Metals	Chloride	Alkalinity	Alkalinity, Cl	NH3, N+N, TIN		TOC	VOC's		
1	MW 26R	Drinking Water	DW	11-24-21 11:15		WT 6		Unpreserved				X	X	X	X	X	X	X	X	X	X	X	X	X	X	
2	MW 39	Waste Water	WW	11-30-21 12:10		WT 6		Unpreserved				X	X	X	X	X	X	X	X	X	X	X	X	X	X	
3	MW 21A	Product	P	11-30-21 11:45		WT 6		Unpreserved				X	X	X	X	X	X	X	X	X	X	X	X	X	X	
4		Solid	SL																							
5		Oil	OL																							
6		Wipe	WP																							
7		Air	AR																							
8		Other	OT																							
9		Tissue	TS																							
10																										
11																										
12																										

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	TEMP IN C	Ice Received on	Sealed	Custody	Samples
		11-30-21	12:30		11-30-21	13:00					
		11-30-21	11:45		11/30/21	16:15					



## Sample Conditions Upon Receipt Form (SCUR)

WO#: 50303992

PM: JLR1      Due Date: 12/14/21

CLIENT: GR-RSC MI

Date/Time: <u>11/30/21</u>	Evaluated by: <u>JN</u>		
Client: <u>REPUBLIC - SAWK TRAIL</u>			
Project Manager: <u>JLR</u>	Profile ID: <u>8139</u>		
Rush TAT Requested: YES <input checked="" type="checkbox"/> NO <input checked="" type="checkbox"/>	Due Date:		
Lab Notified of Rush or Short Holds: YES <input checked="" type="checkbox"/> NO <input checked="" type="checkbox"/>	Non Conformance Form Required: YES <input checked="" type="checkbox"/> NO <input checked="" type="checkbox"/>		
Samples Received Via: FedEx <input type="checkbox"/> UPS <input type="checkbox"/> Client <input checked="" type="checkbox"/> Pace Courier <input checked="" type="checkbox"/> Other: _____			Comments:
Custody Seals Present and Intact:	YES <input type="checkbox"/> NO <input type="checkbox"/> NA <input checked="" type="checkbox"/>		
Received Sample Information Form(s): Drinking Waters Only	YES <input type="checkbox"/> NO <input type="checkbox"/> NA <input checked="" type="checkbox"/>		
USDA Regulated Soils: (AL, AR, CA, FL, GA, ID, LA, MS, NM, NY, NC, OK, OR, SC, TN, TX, WA or Puerto Rico)	YES <input type="checkbox"/> NO <input type="checkbox"/> N/A <input checked="" type="checkbox"/>		
Short Holds Present (< 72 Hours):	YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>		
Samples Received in Hold:	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>		
Custody Signatures Present:	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>		
Collector Signature Present:	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>		
Packing Material Used:	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>		
Samples Collected Today and On Ice:	YES <input type="checkbox"/> NO <input type="checkbox"/> N/A <input checked="" type="checkbox"/>		
IR Gun #: <u>280</u> <u>281</u>	Digital Thermometer #: <u>282</u> <u>283</u>		
Ice Type: WET Bagged / WET Loose <input checked="" type="checkbox"/> BLUE <input type="checkbox"/> NONE <input type="checkbox"/>	1. Cooler Temp Upon Receipt: <u>1.2 / 1.7</u> °C		
Ice Location: TOP <input type="checkbox"/> BOTTOM <input type="checkbox"/> MIDDLE <input type="checkbox"/> DISPERSED <input checked="" type="checkbox"/>	Temp should be 0-6°C (Initial/Corrected)		
Temp Blank Received:	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>		
Containers Intact:	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>		
Correct Containers:	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>		
Sufficient Volume:	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>		
Sample pH Acceptable: All containers needing preservation are found to be in compliance with EPA recommendation pH Strip Lot #: <u>HCL164522</u> <i>Exceptions are VOA, coliform, LLHg, O&amp;G, or any container with a septum cap or preserved with HCl</i>	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> N/A <input type="checkbox"/>		
Residual Chlorine Absent: Cl <sub>2</sub> Strip Lot #: _____ (SVOC/Pest 625, PCB 608, Total/Amenable/Available Cyanide)	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> N/A <input checked="" type="checkbox"/>		
VOA Headspace Acceptable (<6mm):	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> N/A <input type="checkbox"/>		
Trip Blank Received: HCl <input type="checkbox"/> MeOH <input type="checkbox"/> TSP <input type="checkbox"/> OTHER <input type="checkbox"/>	YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>		
Comments:	2. Cooler Temp Upon Receipt: _____ °C		
	3. Cooler Temp Upon Receipt: _____ °C		
	4. Cooler Temp Upon Receipt: _____ °C		



**MICHIGAN DEPARTMENT OF  
ENVIRONMENT, GREAT LAKES, AND ENERGY  
ENVIRONMENTAL LABORATORY**

P.O. Box 30270  
Lansing, MI 48909  
TEL: (517) 335-9800  
FAX: (517) 335-9600

22 December 2021

Work Order: 2111204

Price: \$1,909.50

Jim Bakun  
EGLE-MMD-SE MICHIGAN  
27700 Donald Court  
Warren, MI 48092-2793  
RE: SAUK TRAILS LANDFILL

This is the official environmental laboratory report for testing conducted by the Michigan Department of Environment, Great Lakes, and Energy. Analyses performed by the laboratory were conducted using methods published by the U.S. Environmental Protection Agency, Standard Methods for the Examination of Water and Wastewater, ASTM, or other published or approved reference methods.

Kirby Shane  
Laboratory Director



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EGLE-MMD-SE MICHIGAN  
27700 Donald Court  
Warren MI, 48092-2793

Project: SAUK TRAILS LANDFILL  
Site Code: 410118  
Project Manager: Jim Bakun

Reported:  
12/22/2021

**Analytical Report for Samples**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received	Qualifier
MW-26R	2111204-01	Water	11/29/2021	11/30/2021	
MW-21R	2111204-02	Water	11/29/2021	11/30/2021	
MW-39	2111204-03	Water	11/29/2021	11/30/2021	

**Notes and Definitions**

- Y18 Sample was extracted/analyzed past USEPA maximum allowable holding time due to laboratory error. Data is estimated.
- Y09 Sample was received and extracted/analyzed past USEPA maximum allowable holding time. Data is estimated.
- X3 Spike recovery is not applicable due to elevated target analyte concentration in the source sample.
- T Reported value is less than the reporting limit (RL). Result is estimated.
- PI Result is estimated due to possible interference.
- H Recommended laboratory holding time was exceeded.
- A06 Result is estimated due to high continuing calibration standard criteria failure.
- A03 Result(s) and reporting limit(s) are estimated due to low matrix spike recovery.
- ND Indicates compound analyzed for but not detected at or above the reporting limit (RL).
- RL Reporting Limit
- NA Not Applicable



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Client ID: MW-26R

Lab ID: 2111204-01

CAS #	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Qualifier
<b>Organics-Volatiles</b>									
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	ug/L	1	12/03/21	B1L0301	8260	
71-55-6	1,1,1-Trichloroethane	ND	1.0	ug/L	1	12/03/21	B1L0301	8260	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	1	12/03/21	B1L0301	8260	
79-00-5	1,1,2-Trichloroethane	ND	1.0	ug/L	1	12/03/21	B1L0301	8260	
75-34-3	1,1-Dichloroethane	ND	1.0	ug/L	1	12/03/21	B1L0301	8260	
75-35-4	1,1-Dichloroethylene	ND	1.0	ug/L	1	12/03/21	B1L0301	8260	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	ug/L	1	12/03/21	B1L0301	8260	
96-18-4	1,2,3-Trichloropropane	ND	1.0	ug/L	1	12/03/21	B1L0301	8260	
526-73-8	1,2,3-Trimethylbenzene	ND	1.0	ug/L	1	12/03/21	B1L0301	8260	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	ug/L	1	12/03/21	B1L0301	8260	
95-63-6	1,2,4-Trimethylbenzene	ND	1.0	ug/L	1	12/03/21	B1L0301	8260	
106-93-4	1,2-Dibromoethane	ND	1.0	ug/L	1	12/03/21	B1L0301	8260	
95-50-1	1,2-Dichlorobenzene	ND	1.0	ug/L	1	12/03/21	B1L0301	8260	
107-06-2	1,2-Dichloroethane	ND	1.0	ug/L	1	12/03/21	B1L0301	8260	
78-87-5	1,2-Dichloropropane	ND	1.0	ug/L	1	12/03/21	B1L0301	8260	
108-67-8	1,3,5-Trimethylbenzene	ND	1.0	ug/L	1	12/03/21	B1L0301	8260	
541-73-1	1,3-Dichlorobenzene	ND	1.0	ug/L	1	12/03/21	B1L0301	8260	
106-46-7	1,4-Dichlorobenzene	ND	1.0	ug/L	1	12/03/21	B1L0301	8260	
540-84-1	2,2,4-Trimethylpentane	ND	5.0	ug/L	1	12/03/21	B1L0301	8260	
78-93-3	2-Butanone (MEK)	ND	5.0	ug/L	1	12/03/21	B1L0301	8260	
91-57-6	<b>2-Methylnaphthalene</b>	<b>4.9</b>	5.0	ug/L	1	12/03/21	B1L0301	8260	T
67-64-1	2-Propanone (acetone)	ND	20	ug/L	1	12/03/21	B1L0301	8260	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	ug/L	1	12/03/21	B1L0301	8260	
107-13-1	Acrylonitrile	ND	5.0	ug/L	1	12/03/21	B1L0301	8260	
71-43-2	Benzene	ND	1.0	ug/L	1	12/03/21	B1L0301	8260	
74-97-5	Bromochloromethane	ND	1.0	ug/L	1	12/03/21	B1L0301	8260	
75-27-4	Bromodichloromethane	ND	1.0	ug/L	1	12/03/21	B1L0301	8260	
75-25-2	Bromoform	ND	1.0	ug/L	1	12/03/21	B1L0301	8260	
74-83-9	Bromomethane	ND	5.0	ug/L	1	12/03/21	B1L0301	8260	
75-15-0	Carbon disulfide	ND	1.0	ug/L	1	12/03/21	B1L0301	8260	
56-23-5	Carbon tetrachloride	ND	1.0	ug/L	1	12/03/21	B1L0301	8260	
108-90-7	Chlorobenzene	ND	1.0	ug/L	1	12/03/21	B1L0301	8260	
75-00-3	Chloroethane	ND	5.0	ug/L	1	12/03/21	B1L0301	8260	
67-66-3	Chloroform	ND	1.0	ug/L	1	12/03/21	B1L0301	8260	
74-87-3	Chloromethane	ND	5.0	ug/L	1	12/03/21	B1L0301	8260	
156-59-2	cis-1,2-Dichloroethylene	ND	1.0	ug/L	1	12/03/21	B1L0301	8260	
10061-01-5	cis-1,3-Dichloropropylene	ND	1.0	ug/L	1	12/03/21	B1L0301	8260	
110-82-7	Cyclohexane	ND	5.0	ug/L	1	12/03/21	B1L0301	8260	
124-48-1	Dibromochloromethane	ND	1.0	ug/L	1	12/03/21	B1L0301	8260	
74-95-3	Dibromomethane	ND	1.0	ug/L	1	12/03/21	B1L0301	8260	





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Client ID: MW-26R

Lab ID: 2111204-01

CAS #	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Qualifier
<b>Organics-Volatiles</b>									
75-71-8	Dichlorodifluoromethane	ND	5.0	ug/L	1	12/03/21	B1L0301	8260	
60-29-7	Diethyl ether	ND	5.0	ug/L	1	12/03/21	B1L0301	8260	
108-20-3	Diisopropyl Ether	ND	5.0	ug/L	1	12/03/21	B1L0301	8260	
100-41-4	Ethylbenzene	ND	1.0	ug/L	1	12/03/21	B1L0301	8260	
637-92-3	Ethyltertiarybutylether	ND	5.0	ug/L	1	12/03/21	B1L0301	8260	
67-72-1	Hexachloroethane	ND	5.0	ug/L	1	12/03/21	B1L0301	8260	
110-54-3	Hexane	ND	1.0	ug/L	1	12/03/21	B1L0301	8260	
98-82-8	Isopropylbenzene	ND	1.0	ug/L	1	12/03/21	B1L0301	8260	
1330-20-7	m & p - Xylene	ND	2.0	ug/L	1	12/03/21	B1L0301	8260	
75-09-2	Methylene chloride	ND	5.0	ug/L	1	12/03/21	B1L0301	8260	
1634-04-4	Methyltertiarybutylether	ND	1.0	ug/L	1	12/03/21	B1L0301	8260	
91-20-3	Naphthalene	ND	5.0	ug/L	1	12/03/21	B1L0301	8260	
104-51-8	n-Butylbenzene	ND	1.0	ug/L	1	12/03/21	B1L0301	8260	
103-65-1	n-Propylbenzene	ND	1.0	ug/L	1	12/03/21	B1L0301	8260	
95-47-6	o-Xylene	ND	1.0	ug/L	1	12/03/21	B1L0301	8260	
135-98-8	sec-Butylbenzene	ND	1.0	ug/L	1	12/03/21	B1L0301	8260	
100-42-5	Styrene	ND	1.0	ug/L	1	12/03/21	B1L0301	8260	
98-06-6	tert-Butylbenzene	ND	1.0	ug/L	1	12/03/21	B1L0301	8260	
75-65-0	tertiary Butyl Alcohol	ND	50	ug/L	1	12/03/21	B1L0301	8260	
994-05-8	tertiaryAmylmethylether	ND	5.0	ug/L	1	12/03/21	B1L0301	8260	
127-18-4	Tetrachloroethylene	ND	1.0	ug/L	1	12/03/21	B1L0301	8260	
109-99-9	Tetrahydrofuran	ND	5.0	ug/L	1	12/03/21	B1L0301	8260	
108-88-3	Toluene	ND	1.0	ug/L	1	12/03/21	B1L0301	8260	
156-60-5	trans-1,2-Dichloroethylene	ND	1.0	ug/L	1	12/03/21	B1L0301	8260	
10061-02-6	trans-1,3-Dichloropropylene	ND	1.0	ug/L	1	12/03/21	B1L0301	8260	
79-01-6	Trichloroethylene	ND	1.0	ug/L	1	12/03/21	B1L0301	8260	
75-69-4	Trichlorofluoromethane	ND	1.0	ug/L	1	12/03/21	B1L0301	8260	
75-01-4	Vinyl chloride	ND	1.0	ug/L	1	12/03/21	B1L0301	8260	
<i>Surrogate: Bromofluorobenzene</i>			104 %	85-115		12/03/21	B1L0301	8260	
<i>Surrogate: Dibromofluoromethane</i>			102 %	82.7-115		12/03/21	B1L0301	8260	
<i>Surrogate: Toluene-d8</i>			98.2 %	85-115		12/03/21	B1L0301	8260	



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Client ID: MW-26R

Lab ID: 2111204-01

CAS #	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Qualifier
<b>Organics-Dioxane</b>									
123-91-1	1,4-dioxane	ND	1.0	ug/L	1	12/06/21	B1L0818	8260 Modified	
<b>Inorganics-General Chemistry</b>									
	<b>Alkalinity-Bicarbonate</b>	<b>240</b>	10	mg/L	1	12/03/21	[CALC]	2320 B	
	Alkalinity-Carbonate	ND	10	mg/L	1	12/03/21	[CALC]	2320 B	
	<b>Alkalinity-Total</b>	<b>240</b>	20	mg/L	1	12/01/21	B1L0124	310.2	
16887-00-6	<b>Chloride</b>	<b>110</b>	4.0	mg/L	1	12/07/21	B1L0702	4500 Cl- E	
	<b>Conductivity</b>	<b>781</b>		umhos/cm	1	12/03/21	B1L0602	120.1	
16984-48-8	<b>Fluoride</b>	<b>1.6</b>	0.10	mg/L	1	12/06/21	B1L0105	10-109-12-2-A	
18540-29-9	Hexavalent Chromium, Dissolved	ND	5	ug/L	1	12/01/21	B1L0120	I-1230-85	Y09
	<b>Nitrate/Nitrite-N</b>	<b>0.17</b>	0.010	mg/L	1	12/01/21	B1L0106	353.2	
14797-55-8	<b>Nitrate-N - Calculated</b>	<b>0.14</b>	0.020	mg/L	1	12/01/21	[CALC]	353.2	
14797-65-0	<b>Nitrite-N</b>	<b>0.025</b>	0.010	mg/L	1	12/01/21	B1L0106	353.2	
	<b>pH</b>	<b>7.7</b>		pH Units	1	12/03/21	B1L0602	4500 H+ B	H
18785-72-3	<b>Sulfate</b>	<b>5</b>	5	mg/L	1	12/02/21	B1L0117	375.2	
	<b>TDS-Calculated</b>	<b>508</b>		mg/L	1	12/03/21	[CALC]	Calculated	
TDS	<b>Total Dissolved Solids</b>	<b>430</b>	20	mg/L	1	12/01/21	B1L0111	2540 C	
TSS	<b>Total Suspended Solids</b>	<b>9</b>	4	mg/L	1	12/03/21	B1L0312	2540 D	
	<b>Turbidity</b>	<b>104</b>	5.0	NTU	5	12/01/21	B1L0114	180.1	
<b>Inorganics-Metals</b>									
7440-38-2	<b>Arsenic, Dissolved</b>	<b>1.5</b>	1.0	ug/L	1	12/13/21	B1L0209	200.8	
7440-39-3	<b>Barium, Dissolved</b>	<b>70</b>	5.0	ug/L	1	12/09/21	B1L0209	200.8	
7440-42-8	<b>Boron, Dissolved</b>	<b>960</b>	20	ug/L	1	12/06/21	B1L0209	200.7	
7440-43-9	<b>Cadmium, Dissolved</b>	<b>0.6</b>	0.2	ug/L	1	12/13/21	B1L0209	200.8	
7440-70-2	<b>Calcium, Dissolved</b>	<b>23</b>	1.0	mg/L	1	12/06/21	B1L0209	200.7	
7440-47-3	Chromium, Dissolved	ND	1.0	ug/L	1	12/09/21	B1L0209	200.8	
7440-50-8	Copper, Dissolved	ND	1.0	ug/L	1	12/09/21	B1L0209	200.8	
7439-89-6	<b>Iron, Dissolved</b>	<b>160</b>	20	ug/L	1	12/10/21	B1L0209	200.7	
7439-92-1	Lead, Dissolved	ND	1.0	ug/L	1	12/09/21	B1L0209	200.8	
7439-93-2	<b>Lithium, Dissolved</b>	<b>22</b>	10	ug/L	1	12/06/21	B1L0209	200.7	
7439-95-4	<b>Magnesium, Dissolved</b>	<b>9.6</b>	0.5	mg/L	1	12/06/21	B1L0209	200.7	
7439-96-5	<b>Manganese, Dissolved</b>	<b>27</b>	5.0	ug/L	1	12/13/21	B1L0209	200.8	
7439-97-6	Mercury, Dissolved	ND	0.2	ug/L	1	12/01/21	B1L0123	245.1	
7440-02-0	Nickel, Dissolved	ND	2.0	ug/L	1	12/09/21	B1L0209	200.8	
7440-09-7	<b>Potassium, Dissolved</b>	<b>2.0</b>	0.2	mg/L	1	12/06/21	B1L0209	200.7	
7782-49-2	Selenium, Dissolved	ND	1.0	ug/L	1	12/13/21	B1L0209	200.8	
7440-22-4	Silver, Dissolved	ND	0.2	ug/L	1	12/14/21	B1L0209	200.8	
7440-23-5	<b>Sodium, Dissolved</b>	<b>130</b>	1.0	mg/L	1	12/06/21	B1L0209	200.7	



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Client ID: MW-26R

Lab ID: 2111204-01

CAS #	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Qualifier
<b>Inorganics-Metals</b>									
7440-66-6	Zinc, Dissolved	430	5.0	ug/L	1	12/09/21	B1L0209	200.8	



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P.O. Box 30270  
Lansing, MI 48909  
TEL: (517) 335-9800  
FAX: (517) 335-9600

Client ID: MW-21R

Lab ID: 2111204-02

CAS #	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Qualifier
<b>Organics-Volatiles</b>									
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	ug/L	1	12/03/21	B1L0301	8260	
71-55-6	1,1,1-Trichloroethane	ND	1.0	ug/L	1	12/03/21	B1L0301	8260	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	1	12/03/21	B1L0301	8260	
79-00-5	1,1,2-Trichloroethane	ND	1.0	ug/L	1	12/03/21	B1L0301	8260	
75-34-3	1,1-Dichloroethane	ND	1.0	ug/L	1	12/03/21	B1L0301	8260	
75-35-4	1,1-Dichloroethylene	ND	1.0	ug/L	1	12/03/21	B1L0301	8260	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	ug/L	1	12/03/21	B1L0301	8260	
96-18-4	1,2,3-Trichloropropane	ND	1.0	ug/L	1	12/03/21	B1L0301	8260	
526-73-8	1,2,3-Trimethylbenzene	ND	1.0	ug/L	1	12/03/21	B1L0301	8260	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	ug/L	1	12/03/21	B1L0301	8260	
95-63-6	1,2,4-Trimethylbenzene	ND	1.0	ug/L	1	12/03/21	B1L0301	8260	
106-93-4	1,2-Dibromoethane	ND	1.0	ug/L	1	12/03/21	B1L0301	8260	
95-50-1	1,2-Dichlorobenzene	ND	1.0	ug/L	1	12/03/21	B1L0301	8260	
107-06-2	1,2-Dichloroethane	ND	1.0	ug/L	1	12/03/21	B1L0301	8260	
78-87-5	1,2-Dichloropropane	ND	1.0	ug/L	1	12/03/21	B1L0301	8260	
108-67-8	1,3,5-Trimethylbenzene	ND	1.0	ug/L	1	12/03/21	B1L0301	8260	
541-73-1	1,3-Dichlorobenzene	ND	1.0	ug/L	1	12/03/21	B1L0301	8260	
106-46-7	1,4-Dichlorobenzene	ND	1.0	ug/L	1	12/03/21	B1L0301	8260	
540-84-1	2,2,4-Trimethylpentane	ND	5.0	ug/L	1	12/03/21	B1L0301	8260	
78-93-3	2-Butanone (MEK)	ND	5.0	ug/L	1	12/03/21	B1L0301	8260	
91-57-6	2-Methylnaphthalene	ND	5.0	ug/L	1	12/03/21	B1L0301	8260	
67-64-1	2-Propanone (acetone)	ND	20	ug/L	1	12/03/21	B1L0301	8260	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	ug/L	1	12/03/21	B1L0301	8260	
107-13-1	Acrylonitrile	ND	5.0	ug/L	1	12/03/21	B1L0301	8260	
71-43-2	Benzene	ND	1.0	ug/L	1	12/03/21	B1L0301	8260	
74-97-5	Bromochloromethane	ND	1.0	ug/L	1	12/03/21	B1L0301	8260	
75-27-4	Bromodichloromethane	ND	1.0	ug/L	1	12/03/21	B1L0301	8260	
75-25-2	Bromoform	ND	1.0	ug/L	1	12/03/21	B1L0301	8260	
74-83-9	Bromomethane	ND	5.0	ug/L	1	12/03/21	B1L0301	8260	
75-15-0	Carbon disulfide	ND	1.0	ug/L	1	12/03/21	B1L0301	8260	
56-23-5	Carbon tetrachloride	ND	1.0	ug/L	1	12/03/21	B1L0301	8260	
108-90-7	Chlorobenzene	ND	1.0	ug/L	1	12/03/21	B1L0301	8260	
75-00-3	Chloroethane	ND	5.0	ug/L	1	12/03/21	B1L0301	8260	
67-66-3	Chloroform	ND	1.0	ug/L	1	12/03/21	B1L0301	8260	
74-87-3	Chloromethane	ND	5.0	ug/L	1	12/03/21	B1L0301	8260	
156-59-2	cis-1,2-Dichloroethylene	ND	1.0	ug/L	1	12/03/21	B1L0301	8260	
10061-01-5	cis-1,3-Dichloropropylene	ND	1.0	ug/L	1	12/03/21	B1L0301	8260	
110-82-7	Cyclohexane	ND	5.0	ug/L	1	12/03/21	B1L0301	8260	
124-48-1	Dibromochloromethane	ND	1.0	ug/L	1	12/03/21	B1L0301	8260	
74-95-3	Dibromomethane	ND	1.0	ug/L	1	12/03/21	B1L0301	8260	



MICHIGAN DEPARTMENT OF  
ENVIRONMENT, GREAT LAKES, AND ENERGY

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ENVIRONMENTAL LABORATORY

P.O. Box 30270  
Lansing, MI 48909  
TEL: (517) 335-9800  
FAX: (517) 335-9600

Client ID: MW-21R

Lab ID: 2111204-02

CAS #	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Qualifier
<b>Organics-Volatiles</b>									
75-71-8	Dichlorodifluoromethane	ND	5.0	ug/L	1	12/03/21	B1L0301	8260	
60-29-7	Diethyl ether	ND	5.0	ug/L	1	12/03/21	B1L0301	8260	
108-20-3	Diisopropyl Ether	ND	5.0	ug/L	1	12/03/21	B1L0301	8260	
100-41-4	Ethylbenzene	ND	1.0	ug/L	1	12/03/21	B1L0301	8260	
637-92-3	Ethyltertiarybutylether	ND	5.0	ug/L	1	12/03/21	B1L0301	8260	
67-72-1	Hexachloroethane	ND	5.0	ug/L	1	12/03/21	B1L0301	8260	
110-54-3	Hexane	ND	1.0	ug/L	1	12/03/21	B1L0301	8260	
98-82-8	Isopropylbenzene	ND	1.0	ug/L	1	12/03/21	B1L0301	8260	
1330-20-7	m & p - Xylene	ND	2.0	ug/L	1	12/03/21	B1L0301	8260	
75-09-2	Methylene chloride	ND	5.0	ug/L	1	12/03/21	B1L0301	8260	
1634-04-4	Methyltertiarybutylether	ND	1.0	ug/L	1	12/03/21	B1L0301	8260	
91-20-3	Naphthalene	ND	5.0	ug/L	1	12/03/21	B1L0301	8260	
104-51-8	n-Butylbenzene	ND	1.0	ug/L	1	12/03/21	B1L0301	8260	
103-65-1	n-Propylbenzene	ND	1.0	ug/L	1	12/03/21	B1L0301	8260	
95-47-6	o-Xylene	ND	1.0	ug/L	1	12/03/21	B1L0301	8260	
135-98-8	sec-Butylbenzene	ND	1.0	ug/L	1	12/03/21	B1L0301	8260	
100-42-5	Styrene	ND	1.0	ug/L	1	12/03/21	B1L0301	8260	
98-06-6	tert-Butylbenzene	ND	1.0	ug/L	1	12/03/21	B1L0301	8260	
75-65-0	tertiary Butyl Alcohol	ND	50	ug/L	1	12/03/21	B1L0301	8260	
994-05-8	tertiaryAmylmeylether	ND	5.0	ug/L	1	12/03/21	B1L0301	8260	
127-18-4	Tetrachloroethylene	ND	1.0	ug/L	1	12/03/21	B1L0301	8260	
109-99-9	Tetrahydrofuran	ND	5.0	ug/L	1	12/03/21	B1L0301	8260	
108-88-3	Toluene	ND	1.0	ug/L	1	12/03/21	B1L0301	8260	
156-60-5	trans-1,2-Dichloroethylene	ND	1.0	ug/L	1	12/03/21	B1L0301	8260	
10061-02-6	trans-1,3-Dichloropropylene	ND	1.0	ug/L	1	12/03/21	B1L0301	8260	
79-01-6	Trichloroethylene	ND	1.0	ug/L	1	12/03/21	B1L0301	8260	
75-69-4	Trichlorofluoromethane	ND	1.0	ug/L	1	12/03/21	B1L0301	8260	
75-01-4	Vinyl chloride	ND	1.0	ug/L	1	12/03/21	B1L0301	8260	
<i>Surrogate: Bromofluorobenzene</i>			<i>102 %</i>	<i>85-115</i>		<i>12/03/21</i>	<i>B1L0301</i>	<i>8260</i>	
<i>Surrogate: Dibromofluoromethane</i>			<i>97.7 %</i>	<i>82.7-115</i>		<i>12/03/21</i>	<i>B1L0301</i>	<i>8260</i>	
<i>Surrogate: Toluene-d8</i>			<i>98.7 %</i>	<i>85-115</i>		<i>12/03/21</i>	<i>B1L0301</i>	<i>8260</i>	



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P.O. Box 30270  
Lansing, MI 48909  
TEL: (517) 335-9800  
FAX: (517) 335-9600

Client ID: MW-21R

Lab ID: 2111204-02

CAS #	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Qualifier
<b>Organics-Dioxane</b>									
123-91-1	1,4-dioxane	ND	1.0	ug/L	1	12/06/21	B1L0818	8260 Modified	
<b>Inorganics-General Chemistry</b>									
	<b>Alkalinity-Bicarbonate</b>	<b>240</b>	10	mg/L	1	12/03/21	[CALC]	2320 B	
	Alkalinity-Carbonate	ND	10	mg/L	1	12/03/21	[CALC]	2320 B	
	<b>Alkalinity-Total</b>	<b>240</b>	20	mg/L	1	12/01/21	B1L0124	310.2	
16887-00-6	<b>Chloride</b>	<b>80</b>	4.0	mg/L	1	12/07/21	B1L0702	4500 Cl- E	
	<b>Conductivity</b>	<b>716</b>		umhos/cm	1	12/03/21	B1L0602	120.1	
16984-48-8	<b>Fluoride</b>	<b>1.0</b>	0.10	mg/L	1	12/06/21	B1L0105	10-109-12-2-A	
18540-29-9	Hexavalent Chromium, Dissolved	ND	5	ug/L	1	12/01/21	B1L0120	I-1230-85	Y09
	Nitrate/Nitrite-N	ND	0.010	mg/L	1	12/01/21	B1L0106	353.2	
14797-55-8	Nitrate-N - Calculated	ND	0.020	mg/L	1	12/01/21	[CALC]	353.2	
14797-65-0	<b>Nitrite-N</b>	<b>0.010</b>	0.010	mg/L	1	12/01/21	B1L0106	353.2	PI
	<b>pH</b>	<b>8.4</b>		pH Units	1	12/03/21	B1L0602	4500 H+ B	H
18785-72-3	<b>Sulfate</b>	<b>24</b>	5	mg/L	1	12/02/21	B1L0117	375.2	
	<b>TDS-Calculated</b>	<b>465</b>		mg/L	1	12/03/21	[CALC]	Calculated	
TDS	<b>Total Dissolved Solids</b>	<b>390</b>	20	mg/L	1	12/01/21	B1L0111	2540 C	
TSS	<b>Total Suspended Solids</b>	<b>220</b>	4	mg/L	1	12/03/21	B1L0312	2540 D	
	<b>Turbidity</b>	<b>158</b>	5.0	NTU	5	12/01/21	B1L0114	180.1	
<b>Inorganics-Metals</b>									
7440-38-2	Arsenic, Dissolved	ND	1.0	ug/L	1	12/13/21	B1L0209	200.8	
7440-39-3	<b>Barium, Dissolved</b>	<b>72</b>	5.0	ug/L	1	12/09/21	B1L0209	200.8	
7440-42-8	<b>Boron, Dissolved</b>	<b>770</b>	20	ug/L	1	12/06/21	B1L0209	200.7	
7440-43-9	Cadmium, Dissolved	ND	0.2	ug/L	1	12/13/21	B1L0209	200.8	
7440-70-2	<b>Calcium, Dissolved</b>	<b>25</b>	1.0	mg/L	1	12/06/21	B1L0209	200.7	
7440-47-3	Chromium, Dissolved	ND	1.0	ug/L	1	12/09/21	B1L0209	200.8	
7440-50-8	Copper, Dissolved	ND	1.0	ug/L	1	12/09/21	B1L0209	200.8	
7439-89-6	Iron, Dissolved	ND	20	ug/L	1	12/06/21	B1L0209	200.7	
7439-92-1	Lead, Dissolved	ND	1.0	ug/L	1	12/09/21	B1L0209	200.8	
7439-93-2	<b>Lithium, Dissolved</b>	<b>18</b>	10	ug/L	1	12/06/21	B1L0209	200.7	
7439-95-4	<b>Magnesium, Dissolved</b>	<b>15</b>	0.5	mg/L	1	12/06/21	B1L0209	200.7	
7439-96-5	<b>Manganese, Dissolved</b>	<b>8.5</b>	5.0	ug/L	1	12/13/21	B1L0209	200.8	
7439-97-6	Mercury, Dissolved	ND	0.2	ug/L	1	12/01/21	B1L0123	245.1	
7440-02-0	Nickel, Dissolved	ND	2.0	ug/L	1	12/09/21	B1L0209	200.8	
7440-09-7	<b>Potassium, Dissolved</b>	<b>2.0</b>	0.2	mg/L	1	12/06/21	B1L0209	200.7	
7782-49-2	Selenium, Dissolved	ND	1.0	ug/L	1	12/13/21	B1L0209	200.8	
7440-22-4	Silver, Dissolved	ND	0.2	ug/L	1	12/14/21	B1L0209	200.8	
7440-23-5	<b>Sodium, Dissolved</b>	<b>110</b>	1.0	mg/L	1	12/06/21	B1L0209	200.7	
7440-66-6	Zinc, Dissolved	ND	5.0	ug/L	1	12/09/21	B1L0209	200.8	



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ENVIRONMENTAL LABORATORY

P.O. Box 30270  
Lansing, MI 48909  
TEL: (517) 335-9800  
FAX: (517) 335-9600

Client ID: MW-39

Lab ID: 2111204-03

CAS #	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Qualifier
<b>Organics-Volatiles</b>									
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	ug/L	1	12/03/21	B1L0301	8260	
71-55-6	1,1,1-Trichloroethane	ND	1.0	ug/L	1	12/03/21	B1L0301	8260	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	1	12/03/21	B1L0301	8260	
79-00-5	1,1,2-Trichloroethane	ND	1.0	ug/L	1	12/03/21	B1L0301	8260	
75-34-3	1,1-Dichloroethane	ND	1.0	ug/L	1	12/03/21	B1L0301	8260	
75-35-4	1,1-Dichloroethylene	ND	1.0	ug/L	1	12/03/21	B1L0301	8260	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	ug/L	1	12/03/21	B1L0301	8260	
96-18-4	1,2,3-Trichloropropane	ND	1.0	ug/L	1	12/03/21	B1L0301	8260	
526-73-8	1,2,3-Trimethylbenzene	ND	1.0	ug/L	1	12/03/21	B1L0301	8260	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	ug/L	1	12/03/21	B1L0301	8260	
95-63-6	1,2,4-Trimethylbenzene	ND	1.0	ug/L	1	12/03/21	B1L0301	8260	
106-93-4	1,2-Dibromoethane	ND	1.0	ug/L	1	12/03/21	B1L0301	8260	
95-50-1	1,2-Dichlorobenzene	ND	1.0	ug/L	1	12/03/21	B1L0301	8260	
107-06-2	1,2-Dichloroethane	ND	1.0	ug/L	1	12/03/21	B1L0301	8260	
78-87-5	1,2-Dichloropropane	ND	1.0	ug/L	1	12/03/21	B1L0301	8260	
108-67-8	1,3,5-Trimethylbenzene	ND	1.0	ug/L	1	12/03/21	B1L0301	8260	
541-73-1	1,3-Dichlorobenzene	ND	1.0	ug/L	1	12/03/21	B1L0301	8260	
106-46-7	1,4-Dichlorobenzene	ND	1.0	ug/L	1	12/03/21	B1L0301	8260	
540-84-1	2,2,4-Trimethylpentane	ND	5.0	ug/L	1	12/03/21	B1L0301	8260	
78-93-3	2-Butanone (MEK)	ND	5.0	ug/L	1	12/03/21	B1L0301	8260	
91-57-6	2-Methylnaphthalene	ND	5.0	ug/L	1	12/03/21	B1L0301	8260	
67-64-1	2-Propanone (acetone)	ND	20	ug/L	1	12/03/21	B1L0301	8260	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	ug/L	1	12/03/21	B1L0301	8260	
107-13-1	Acrylonitrile	ND	5.0	ug/L	1	12/03/21	B1L0301	8260	
71-43-2	Benzene	ND	1.0	ug/L	1	12/03/21	B1L0301	8260	
74-97-5	Bromochloromethane	ND	1.0	ug/L	1	12/03/21	B1L0301	8260	
75-27-4	Bromodichloromethane	ND	1.0	ug/L	1	12/03/21	B1L0301	8260	
75-25-2	Bromoform	ND	1.0	ug/L	1	12/03/21	B1L0301	8260	
74-83-9	Bromomethane	ND	5.0	ug/L	1	12/03/21	B1L0301	8260	
75-15-0	Carbon disulfide	ND	1.0	ug/L	1	12/03/21	B1L0301	8260	
56-23-5	Carbon tetrachloride	ND	1.0	ug/L	1	12/03/21	B1L0301	8260	
108-90-7	Chlorobenzene	ND	1.0	ug/L	1	12/03/21	B1L0301	8260	
75-00-3	Chloroethane	ND	5.0	ug/L	1	12/03/21	B1L0301	8260	
67-66-3	Chloroform	ND	1.0	ug/L	1	12/03/21	B1L0301	8260	
74-87-3	Chloromethane	ND	5.0	ug/L	1	12/03/21	B1L0301	8260	
156-59-2	cis-1,2-Dichloroethylene	ND	1.0	ug/L	1	12/03/21	B1L0301	8260	
10061-01-5	cis-1,3-Dichloropropylene	ND	1.0	ug/L	1	12/03/21	B1L0301	8260	
110-82-7	Cyclohexane	ND	5.0	ug/L	1	12/03/21	B1L0301	8260	
124-48-1	Dibromochloromethane	ND	1.0	ug/L	1	12/03/21	B1L0301	8260	
74-95-3	Dibromomethane	ND	1.0	ug/L	1	12/03/21	B1L0301	8260	



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P.O. Box 30270  
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TEL: (517) 335-9800  
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Client ID: MW-39

Lab ID: 2111204-03

CAS #	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Qualifier
<b>Organics-Volatiles</b>									
75-71-8	Dichlorodifluoromethane	ND	5.0	ug/L	1	12/03/21	B1L0301	8260	
60-29-7	Diethyl ether	ND	5.0	ug/L	1	12/03/21	B1L0301	8260	
108-20-3	Diisopropyl Ether	ND	5.0	ug/L	1	12/03/21	B1L0301	8260	
100-41-4	Ethylbenzene	ND	1.0	ug/L	1	12/03/21	B1L0301	8260	
637-92-3	Ethyltertiarybutylether	ND	5.0	ug/L	1	12/03/21	B1L0301	8260	
67-72-1	Hexachloroethane	ND	5.0	ug/L	1	12/03/21	B1L0301	8260	
110-54-3	Hexane	ND	1.0	ug/L	1	12/03/21	B1L0301	8260	
98-82-8	Isopropylbenzene	ND	1.0	ug/L	1	12/03/21	B1L0301	8260	
1330-20-7	m & p - Xylene	ND	2.0	ug/L	1	12/03/21	B1L0301	8260	
75-09-2	Methylene chloride	ND	5.0	ug/L	1	12/03/21	B1L0301	8260	
1634-04-4	Methyltertiarybutylether	ND	1.0	ug/L	1	12/03/21	B1L0301	8260	
91-20-3	Naphthalene	ND	5.0	ug/L	1	12/03/21	B1L0301	8260	
104-51-8	n-Butylbenzene	ND	1.0	ug/L	1	12/03/21	B1L0301	8260	
103-65-1	n-Propylbenzene	ND	1.0	ug/L	1	12/03/21	B1L0301	8260	
95-47-6	o-Xylene	ND	1.0	ug/L	1	12/03/21	B1L0301	8260	
135-98-8	sec-Butylbenzene	ND	1.0	ug/L	1	12/03/21	B1L0301	8260	
100-42-5	Styrene	ND	1.0	ug/L	1	12/03/21	B1L0301	8260	
98-06-6	tert-Butylbenzene	ND	1.0	ug/L	1	12/03/21	B1L0301	8260	
75-65-0	tertiary Butyl Alcohol	ND	50	ug/L	1	12/03/21	B1L0301	8260	
994-05-8	tertiaryAmylmeylether	ND	5.0	ug/L	1	12/03/21	B1L0301	8260	
127-18-4	Tetrachloroethylene	ND	1.0	ug/L	1	12/03/21	B1L0301	8260	
109-99-9	Tetrahydrofuran	ND	5.0	ug/L	1	12/03/21	B1L0301	8260	
108-88-3	Toluene	ND	1.0	ug/L	1	12/03/21	B1L0301	8260	
156-60-5	trans-1,2-Dichloroethylene	ND	1.0	ug/L	1	12/03/21	B1L0301	8260	
10061-02-6	trans-1,3-Dichloropropylene	ND	1.0	ug/L	1	12/03/21	B1L0301	8260	
79-01-6	Trichloroethylene	ND	1.0	ug/L	1	12/03/21	B1L0301	8260	
75-69-4	Trichlorofluoromethane	ND	1.0	ug/L	1	12/03/21	B1L0301	8260	
75-01-4	Vinyl chloride	ND	1.0	ug/L	1	12/03/21	B1L0301	8260	
Surrogate: Bromofluorobenzene			102 %	85-115		12/03/21	B1L0301	8260	
Surrogate: Dibromofluoromethane			99.3 %	82.7-115		12/03/21	B1L0301	8260	
Surrogate: Toluene-d8			99.4 %	85-115		12/03/21	B1L0301	8260	





MICHIGAN DEPARTMENT OF  
ENVIRONMENT, GREAT LAKES, AND ENERGY

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ENVIRONMENT, GREAT LAKES, AND ENERGY  
ENVIRONMENTAL LABORATORY

P.O. Box 30270  
Lansing, MI 48909  
TEL: (517) 335-9800  
FAX: (517) 335-9600

Client ID: MW-39

Lab ID: 2111204-03

CAS #	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Qualifier
<b>Organics-Dioxane</b>									
123-91-1	1,4-dioxane	ND	1.0	ug/L	1	12/06/21	B1L0818	8260 Modified	
<b>Inorganics-General Chemistry</b>									
	<b>Alkalinity-Bicarbonate</b>	<b>250</b>	10	mg/L	1	12/03/21	[CALC]	2320 B	
	Alkalinity-Carbonate	ND	10	mg/L	1	12/03/21	[CALC]	2320 B	
	<b>Alkalinity-Total</b>	<b>250</b>	20	mg/L	1	12/01/21	B1L0124	310.2	
16887-00-6	<b>Chloride</b>	<b>420</b>	40	mg/L	10	12/07/21	B1L0702	4500 Cl- E	
	<b>Conductivity</b>	<b>1780</b>		umhos/cm	1	12/03/21	B1L0602	120.1	
16984-48-8	<b>Fluoride</b>	<b>0.78</b>	0.10	mg/L	1	12/06/21	B1L0105	10-109-12-2-A	
18540-29-9	Hexavalent Chromium, Dissolved	ND	5	ug/L	1	12/01/21	B1L0120	I-1230-85	Y09
	<b>Nitrate/Nitrite-N</b>	<b>0.011</b>	0.010	mg/L	1	12/01/21	B1L0106	353.2	
14797-55-8	Nitrate-N - Calculated	ND	0.020	mg/L	1	12/01/21	[CALC]	353.2	
14797-65-0	Nitrite-N	ND	0.010	mg/L	1	12/01/21	B1L0106	353.2	
	<b>pH</b>	<b>7.5</b>		pH Units	1	12/03/21	B1L0602	4500 H+ B	H
18785-72-3	<b>Sulfate</b>	<b>6</b>	5	mg/L	1	12/02/21	B1L0117	375.2	
	<b>TDS-Calculated</b>	<b>1150</b>		mg/L	1	12/03/21	[CALC]	Calculated	
TDS	<b>Total Dissolved Solids</b>	<b>980</b>	20	mg/L	1	12/01/21	B1L0111	2540 C	
TSS	<b>Total Suspended Solids</b>	<b>17</b>	4	mg/L	1	12/03/21	B1L0312	2540 D	
	<b>Turbidity</b>	<b>6.4</b>	1.0	NTU	1	12/01/21	B1L0114	180.1	
<b>Inorganics-Metals</b>									
7440-38-2	Arsenic, Dissolved	ND	1.0	ug/L	1	12/13/21	B1L0209	200.8	
7440-39-3	<b>Barium, Dissolved</b>	<b>330</b>	5.0	ug/L	1	12/09/21	B1L0209	200.8	
7440-42-8	<b>Boron, Dissolved</b>	<b>800</b>	20	ug/L	1	12/06/21	B1L0209	200.7	
7440-43-9	Cadmium, Dissolved	ND	0.2	ug/L	1	12/13/21	B1L0209	200.8	
7440-70-2	<b>Calcium, Dissolved</b>	<b>82</b>	1.0	mg/L	1	12/06/21	B1L0209	200.7	
7440-47-3	Chromium, Dissolved	ND	1.0	ug/L	1	12/09/21	B1L0209	200.8	
7440-50-8	Copper, Dissolved	ND	1.0	ug/L	1	12/09/21	B1L0209	200.8	
7439-89-6	<b>Iron, Dissolved</b>	<b>930</b>	20	ug/L	1	12/06/21	B1L0209	200.7	
7439-92-1	Lead, Dissolved	ND	1.0	ug/L	1	12/09/21	B1L0209	200.8	
7439-93-2	<b>Lithium, Dissolved</b>	<b>53</b>	10	ug/L	1	12/06/21	B1L0209	200.7	
7439-95-4	<b>Magnesium, Dissolved</b>	<b>37</b>	0.5	mg/L	1	12/06/21	B1L0209	200.7	
7439-96-5	<b>Manganese, Dissolved</b>	<b>23</b>	5.0	ug/L	1	12/13/21	B1L0209	200.8	
7439-97-6	Mercury, Dissolved	ND	0.2	ug/L	1	12/01/21	B1L0123	245.1	
7440-02-0	Nickel, Dissolved	ND	2.0	ug/L	1	12/09/21	B1L0209	200.8	
7440-09-7	<b>Potassium, Dissolved</b>	<b>4.3</b>	0.2	mg/L	1	12/06/21	B1L0209	200.7	
7782-49-2	Selenium, Dissolved	ND	1.0	ug/L	1	12/13/21	B1L0209	200.8	
7440-22-4	Silver, Dissolved	ND	0.2	ug/L	1	12/14/21	B1L0209	200.8	
7440-23-5	<b>Sodium, Dissolved</b>	<b>220</b>	1.0	mg/L	1	12/06/21	B1L0209	200.7	
7440-66-6	Zinc, Dissolved	ND	5.0	ug/L	1	12/09/21	B1L0209	200.8	



# Analysis Request Sheet

Lab Work Order Number

Project Name

Matrix

2111201

SAUK TRAIL HILLS LF

WATER

Location ID	Program	CC Email 1	Project TAT Days	Sample Collector
Dept-Division-District	Activity	CC Email 2	Project Due Date	Sample Collector Phone
State Project Manager	Funding Source	CC Email 3	Accept Analysis hold time codes	Contract Firm
State Project Manager Email	Location Code	Overflow Lab Choice 1		Contract Firm Primary Contact
State Project Manager Phone	SUD Location Code	Overflow Lab Choice 2		Primary Contact Phone

Lab Use Only	Field Sample Identification	Collection Date	Collection Time	Bottle Count	Comments
01	MW - 26R	11/29/21	1130	6	
02	MW - 21R	11/29/21	1200	6	
03	MW - 39	11/29/21	1225	6	

ORGANIC CHEMISTRY	MAD - DISSOLVED METALS	MA - TOTAL METALS	GENERAL CHEMISTRY
VOA - Volatile Organic Acidic	Diss - Silver - Ag	Silver - Ag	GB Total Cyanide - CN
Volatiles - Full List	Diss - Aluminum - Al	Aluminum - Al	GCN Available Cyanide - CN
BTEX/MTBE/TMB only	Diss - Arsenic - As	Arsenic - As	(Amenable / Weak Acid Dissociable)
Chlorinated only	Diss - Boron - B	Boron - B	CA Chlorophyll
GRO	Diss - Barium - Ba	Barium - Ba	GN Ortho Phosphate - OP
1,4 Dioxane	Diss - Beryllium - Be	Beryllium - Be	GN Diss Ortho Phosphate - *FF
METH - Methane, Ethane, Ethene	Diss - Cadmium - Cd	Cadmium - Cd	GN Nitrite - NO <sub>2</sub>
Methane, Ethane, Ethene	Diss - Cobalt - Co	Cobalt - Co	GN Nitrate - NO <sub>3</sub> (Calc.)
ON - Pesticides, PCBs	Diss - Chromium - Cr	Chromium - Cr	GN Suspended Solids - SS
Pesticides & PCBs	Diss - Copper - Cu	Copper - Cu	GN Dissolved Solids - TDS
Pesticides only	Diss - Iron - Fe	Iron - Fe	MN Diss Solids - TDS (Calc.)
PCBs only	Diss - Mercury - Hg	Mercury - Hg	GN Turbidity
Toxaphene	Diss - Lithium - Li	Lithium - Li	MN Total Alkalinity
Chlordane	Diss - Manganese - Mn	Manganese - Mn	MN Bicarb/Carb Alkalinity
BNA - Base Neutral Acids	Diss - Molybdenum - Mo	Molybdenum - Mo	(Includes Total Alkalinity)
BNAs	Diss - Nickel - Ni	Nickel - Ni	MN Chloride - Cl
Benzidines	Diss - Lead - Pb	Lead - Pb	MN Fluoride - F
PNAs only	Diss - Antimony - Sb	Antimony - Sb	MN Sulfate - SO <sub>4</sub>
BNs only	Diss - Selenium - Se	Selenium - Se	MN Diss Chromium 6 - *FF
Acids only	Diss - Strontium - Sr	Strontium - Sr	MN Conductivity
Organic Specialty Requests	Diss - Titanium - Ti	Titanium - Ti	MN pH
Library search - Volatiles	Diss - Thallium - Tl	Thallium - Tl	GA Chem Oxyg Dem - COD
Library search - SemVolts	Diss - Uranium - U	Uranium - U	GA Diss Org Carbon - DOC - *FF
Finger Print	Diss - Vanadium - V	Vanadium - V	GN Diss Org Carbon - DOC (LF)
DRO / ORO	Diss - Zinc - Zn	Zinc - Zn	(Lab - Filtered & Preserved)
METALS CHEMISTRY PACKAGES	Diss - Calcium - Ca	Calcium - Ca	GA Total Org Carbon - TOC
OpMemo2 - Total	Diss - Potassium - K	Potassium - K	GA Ammonia - NH <sub>3</sub>
OpMemo2 - Dissolved	Diss - Magnesium - Mg	Magnesium - Mg	GA Nitrate+Nitrite - NO <sub>3</sub> +NO <sub>2</sub>
(Sb,As,Ba,Ba,Cd,Cr,Cu,Co,Fe,Pb,Mn,Hg,Mo,Ni,Se,Ag,Tl,V,Zn)	Diss - Sodium - Na	Sodium - Na	GA Kjeldahl Nitrogen - KN
Michigan10 - Total	Diss - Hardness - Ca, Mg	Hardness - Ca, Mg	GA Total Phosphorus - TP
Michigan10 - Dissolved	MD - Metals Dissolved	LHG - Low Level Mercury	
(As,Ba,Cd,Cr,Cu,Pb,Hg,Se,Ag,Zn)	Lab Filtration	Mercury Low Level - Hg	

Chain of Custody	Relinquished by	Received By	Date / Time
	Print Name & Org. Signature: Jim Bakun EGLE	Lobby	
	Print Name & Org. Signature: Lobby	Melissa Smith	
	Print Name		11/30/21 1:00