



GRETCHEN WHITMER
GOVERNOR

STATE OF MICHIGAN
DEPARTMENT OF
ENVIRONMENT, GREAT LAKES, AND ENERGY
LANSING



PHILLIP D. ROOS
DIRECTOR

May 1, 2024

VIA EMAIL

Brendan Mullen, Cleanup Manager
RACER Trust
500 Woodward Avenue, Suite 2650
Detroit, Michigan 48226

Dear Brendan:

SUBJECT: 2024 Operation and Maintenance Inspection Report; RACER Trust Coldwater Road Landfill; MID 005 356 860; Waste Data System Number 393431

The Department of Environment, Great Lakes, and Energy (EGLE), Materials Management Division (MMD), has completed an Operation and Maintenance (O&M), Inspection for the RACER Trust Coldwater Road Landfill, located in Genesee County. The O&M inspection included a field audit of the groundwater sampling and analysis procedures outlined in the October 28, 2014, Postclosure Plan (PCP), and split sampling of groundwater on November 8, 2023; records review; groundwater contour map confirmation; Stiff/Piper diagram evaluations; and completion of O&M checklists. Please refer to the enclosed O&M Inspection Report for the detailed review of each of these inspection items.

No violations were noted during this groundwater O&M inspection, and findings documented good compliance with the facility PCP specifications. The findings of this inspection do not preclude, nor limit, EGLE's ability to initiate any other enforcement action, under state or federal law, as deemed appropriate.

Should you require further information, please contact me at 517-281-7726 or SanabriaN@Michigan.gov.

The MMD has established an electronic mailbox; EGLE-MMD-HWS@Michigan.gov, for submittals to the Hazardous Waste Section (HWS). Please direct submissions to that mailbox unless otherwise directed by HWS. If you have problems using that mailbox, please contact Nicole Vincent, Information Management Assistant, at 517-643-5222 or VincentN1@Michigan.gov.

Sincerely,

Nicole Sanabria, Senior Geologist
Corrective Action Unit
Hazardous Waste Section
Materials Management Division
517-281-7726

Enclosure

Brendan Mullen

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May 1, 2024

cc: Clifford Yantz, Senior Hydrogeologist, Ramboll
Kevin Schneider, Environmental Scientist, Ramboll
Kimberly M. Tyson, EGLE
Dale Bridgford, EGLE
Christina Hebert, EGLE
Oonagh McKenna, EGLE
HWS/C&E File

Operation and Maintenance Inspection Report

April 2024

**RACER Coldwater Road Landfill
Flint, Michigan
MID 005 356 860**



MICHIGAN DEPARTMENT OF
ENVIRONMENT, GREAT LAKES, AND ENERGY

**Conducted by the
Materials Management Division**

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Inspection Conducted by:

Nicole Sanabria, Senior Geologist

Christina Hebert, Environmental Quality Analyst

Oonagh McKenna, Environmental Engineer

Field Inspection Guide

Part Two

The field inspector will complete four tasks during the field inspection. They are:

1) review the operating record to identify evidence of deficiencies in the owner/operator's sampling and/or operation and maintenance programs; 2) visually inspect each well and piezometer for evidence of damage or deterioration; 3) obtain measurements from the operations record of depths of water levels and well depths for each well and piezometer; and 4) visually observe the owner/operator's field crew as they collect groundwater samples.

Name of Inspector(s) **Nicole Sanabria, Christina Hebert, Oonagh McKenna**

Date(s) of Inspection **November 8, 2023**

1. Review the operating record of the facility. Does the operating record:	Y/N
Include annual reports of groundwater monitoring results including groundwater level data from each well and piezometer in the monitoring system?	Y
Include an inventory of all sampling devices and purging equipment in use at the facility and information on model number, serial number and manufacturers name?	Y
Include detailed operating, calibration and maintenance procedures for each sampling device?	Y
Describe decision criteria to be used to replace or repair sampling equipment and/or monitoring wells?	Y
Include schedules for performing operation and maintenance activities related to the ground-water monitoring system?	Y
Include records for ground-water monitoring which provide information on 1) the date, exact place and time of sampling or measurements; 2) the individual(s) who performed the sampling or measurements; 3) the date(s) analyses were performed; 4) the analytical techniques or methods used; and 5) the results of such analyses?	Y
Include records of all monitoring information including all calibration and maintenance records?	Y
Include records of monitoring information including determination of ground-water surface elevations?	Y
Include a determination of ground-water flow rate and direction(s) in the uppermost aquifer on an annual basis (e.g. prepare a potentiometric map annually using data collected during the year)?	Y
Provide for more frequent and intensive inspection of wells constructed of non-inert casing such as PVC? (Refer to Appendix A for permit example.)	Y

COMMENTS ON OPERATING RECORD

Information stored on-site in Landfill Leachate Accumulation Building. All necessary documents were present.

2. Visually inspect each well and piezometer and complete the table below (one line entry for each well or piezometer):

Well/ Piezometer	Survey Mark Present?	Standing or Ponded Water?	Evidence of Collision Damage?	Evidence of Frost Heaving?	Evidence of Casing Degradation?	Lock in Place?	Evidence of Well Subsidence?	Photograph Taken?
B-24R	Y	N	N	N	N	Y	N	Y
B-18A	Y	N	N	N	N	Y	N	Y
B-9	Y	N	N	N	N	Y	N	Y

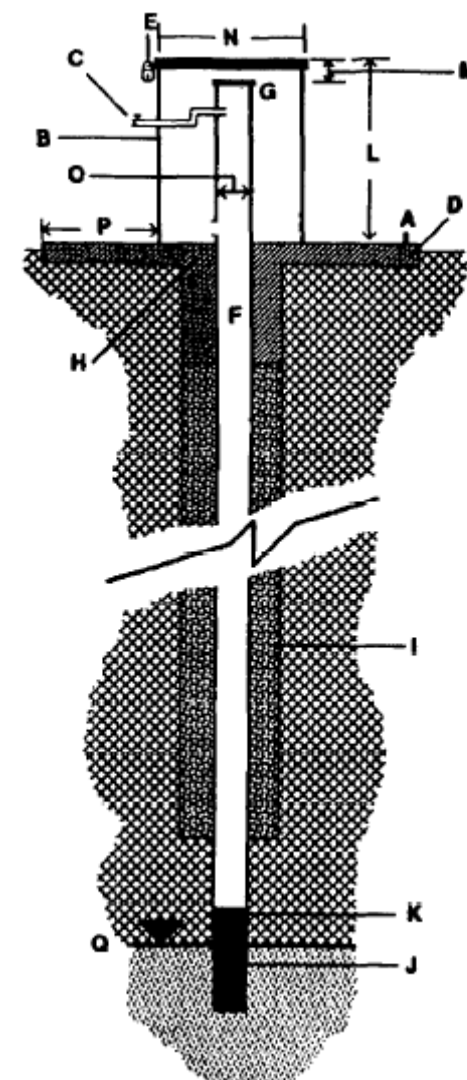
3. Obtain data on depth to standing water and depth to the bottom of each monitoring well and piezometer in the owner/operator's monitoring system. Record depth measurements to the nearest 0.01 feet. Record the measurements

[illegible]

Key:

- A – survey elevation mark
- B – protective outer casing
- C – gas vent
- D – concrete apron
- E – fitted lock
- F – primary casing material
- G – cap for primary casing
- H – bore hole seal
- I – annular space seal
- J – well screen
- K – filter pack
- L – height of riser
- M – elevation difference
- N – diameter of outer casing
- O – diameter of primary casing
- P – radius of apron
- Q – water level below surface

1. The field inspector has several options in collecting ground water elevation data. The inspector may:
 - a. obtain past data from the operating record; and/or
 - b. take his/her own depth measurements; and/or
 - c. obtain data from the owner/operator's sampling crew.



4. Observe the owner/operator's staff as they collect ground-water samples at several wells. Complete the following table for each well (Note: revise or add to the table if permit conditions dictate a different requirement the owner/operator must follow):

Position/Title	Name	Sampling Experience (years and type)
Senior Project Scientist	Kevin Schneider	10+ all media

Well Identification Number <u>ALL</u>	Y/N	Photograph Taken Y/N
Did the sampling crew measure static water levels in the well and wells depths prior to the sampling event?	Y	Y
Did the sampling crew use a steel tape or electronic device to take depth measurements?	Y	Y
Did the sampling crew record depths to +/- 0.01 feet?	Y	N
Did the sampling crew follow these procedures: 1. remove locking and protective cap; 2. sample the air in the well head for organic vapors; 3. determine the static water level; and 4. lower an interface probe into the well to detect immiscible layers.	Y	N
If immiscible samples were collected, were they collected prior to well purging?	N/A	N/A
Did the sampling crew evacuate low yielding wells to dryness prior to sampling?	Y	N
Did the sampling crew evacuate high yielding wells so that at least three casing volumes were removed?	N/A	N/A
Did the sampling crew collect the purge water for storage and analysis or for shipment off-site to a RCRA treatment facility?	N	N
Were sampling devices constructed of fluorocarbon resins or stainless steel?	Y	N

(cont.)

Well Identification Number <u>ALL</u>	Y/N	Photograph Taken Y/N
If the sampling crew used dedicated samplers, did they disassemble and thoroughly clean the devices between samples?	N/A	N
If samples were collected for organic analyses, did the cleaning procedure include the following steps: 1. non phosphate detergent wash 2. tap water rinse 3. distilled/deionized water rinse 4. acetone rinse 5. pesticide-grade hexane rinse?	N/A	N
If samples are collected for inorganic analyses, does the cleaning procedure include the following steps: 1. dilute acid rinse (HNO ₃ or HCL) 2. distilled/de-ionized water rinse?	N/A	N
Did the sampling crew take trip blanks, field blanks and equipment blanks?	Y	N
If the sampling crew used bailers, were they bottom valve bailers?	N/A	N
If the sampling crew used bailers, was "teflon" coated wire, single strand stainless steel wire or monofilament used to raise and lower the bailer?	N/A	N
If the sampling crew used bailers, did they lower the bailer slowly to the well?	N/A	N
If the sampling crew used bailers, were the bailer contents transferred to the sample container to minimize agitation and aeration?	N/A	N
Did the sampling crew take care to avoid placing clean sampling equipment, hoses, and lines on the ground or other contaminated surfaces prior to insertion in the well?	Y	Y
If the sampling crew used dedicated bladder pumps: Was the compressed gas from an oilless compressor certified quality commercial compressed gas cylinder? If not, was a suitable oil removal purification system installed and maintained?	Y	N
Was the bladder pump controller capable of throttling the bladder pump discharge flow to 100 mi/min or less for continuous periods of at least 20-30 seconds without restricting liquid discharge?	Y	N

(cont.)

Well Identification Number <u>ALL</u>	Y/N	Photograph Taken Y/N
Were samples taken from the bladder pump discharge tube, and not from any purge device discharge tube?	Y	N
Was the bladder pump discharge flow checked for the presence of gas bubbles before each sample collection, as a test for bladder integrity?	Y	N
Was bladder pump flow performance monitored regularly for dropoff in flow rate and discharge volume per cycle?	Y	N
Was the bladder pump incorporated in a combination sample-purge pump design which can expose the bladder pump interior and discharge tubing to the pump drive gas? If so, were operating procedures established and followed to prevent at all times the entry of drive gas into the sample flow or into the bladder pump interior?	Y	N
Did the sampling crew collect and containerize samples in the order of the volatilization sensitivity of the parameters?	Y	N
Did the sampling crew measure the following parameters in the field: pH, temperature, specific conductance?	Y	Y
Did the sampling crew sample background wells before sampling downgradient wells?	N/A	N/A
Did the sampling crew use fluorocarbon resin or polyethylene containers with polypropylene caps for samples requiring metals analysis?	Y	Y
Did the sampling crew use glass bottles with fluorocarbon resin-lined caps for samples requiring metals analysis?	N	N
If metals were analytes of concern, did the sampling crew use containers cleaned with nonphosphate detergent and water, and rinsed with nitric acid, tap water, hydrochloric acid, tap water and finally Type II water?	Y	N
If organics were the analytes of concern, did the sampling crew use containers cleaned with nonphosphate detergent, rinsed with tap water, distilled water, acetone, and finally pesticide quality hexane?	Y	N
Did the sampling crew filter samples requiring analysis for organics?	N	N

COMMENTS ON SAMPLING PROGRAM

Samples collected according to EGLE approved sampling and analysis plan. No issues noted.

After working through Part Two, the field inspector will have:

- assessed whether the owner/operator's sampling crew departed from written sampling and analysis procedures as contained in the owner/operator's sampling and analysis plan (interim status) or in the owner/operator's RCRA permit (permit status);
- identified deficiencies in the way the owner/operator's sampling crew collected ground-water samples;
- identified deficiencies in the owner/operator's program to ensure on-going maintenance of sampling devices and monitoring wells/piezometers;
- identified deficiencies in the owner/operator's operating record (Does the operating record have all the information in it that is required?); and
- collected field data that will allow the enforcement official to construct potentiometric maps and assess the viability of individual wells.

Sampling and Analysis Inspection

SAMPLING AND ANALYSIS INSPECTION

On November 8, 2023, a sampling and analysis inspection was conducted at the RACER Trust Coldwater Road Landfill as part of an Operation and Maintenance (O&M) inspection. The Department of Environment, Great Lakes, and Energy (EGLE), Materials Management Division (MMD), Hazardous Waste Section (HWS), staff involved in the sampling were Christina Hebert, Environmental Quality Analyst, Nicole Sanabria, Senior Geologist, and Oonagh McKenna, Environmental Engineer. Kevin Schneider of Ramboll participated in the sampling event on behalf of the facility.

Site monitoring wells were found to be in generally good condition, effectively secured and functioning properly. Static water levels in all site monitoring wells had been measured by Ramboll two days previous, and therefore, Ramboll and the MMD did not compare static water levels on the day of the sampling. All landfill monitoring wells had measurable water; this was not always the case in previous monitoring events.

The facility's approved Postclosure Plan (PCP), which includes sampling and analysis procedures, and associated monitoring documentation was stored on-site in the Leachate Accumulation Building immediately adjacent to the landfill. The current version of the PCP is dated October 28, 2014.

Sampling was conducted using low-flow purging and sample collection methods, and samples collected for metals analysis were filtered in the field to be comparable to historically collected samples. Purging rates were on the order of 100 milliliters/minute to prevent excess drawdown at what are historically low yielding wells. Drawdown conditions stabilized under low-flow pumping conditions. Purging continued until indicator parameters (i.e., temperature, dissolved oxygen, pH, turbidity, and specific conductivity) stabilized within ten percent for three consecutive readings. Turbidity was typically the limiting factor in well stabilization during this sampling event. Turbidity values, both historically and during this sampling event, have been high relative to most naturally occurring groundwater systems, especially since low-flow sampling procedures are being used. Based on a recommendation from the 2008 O&M inspection, the facility redeveloped several monitoring wells in an attempt to address the observed high turbidity. However, turbidity at most monitoring wells at this site remains elevated, and likely reflects actual perched groundwater conditions. Purge water was disposed of by pouring it on the ground away from the well, as these wells have no history of contamination.

Split sampling of the groundwater was performed at monitoring wells MW B-24R, MW B-18A, and MW B-9. Monitoring wells were sampled by Ramboll using an electric submersible pump, in accordance with the procedures discussed above. New pump tubing was used at each location and the flow through cell and associated tubing were decontaminated between each use at each well. Gloves were worn by all personnel during sampling. Pursuant to the PCP, the facility collected samples for total organic halides, dissolved metals, and total organic carbon analysis. Samples for volatile organics (EGLE Scan 8260+), dissolved metals, total alkalinity, carbonate alkalinity,

bicarbonate alkalinity, chloride, and sulfate were taken by the MMD. Dissolved metals samples were filtered through a 0.45-micron filter in the field. The MMD also collected total metals samples for groundwater quality parameters (sodium, calcium, potassium, and magnesium). Quality control samples collected by Ramboll included one duplicate. The MMD collected a field blank for volatile organics and one duplicate at MW B-9. Methylene chloride was detected in the MMD field blank at 6.9 micrograms per liter. As methylene chloride is a common lab contaminant and was not detected in any of the groundwater samples, this detection should not impact the validity of the results.

No violations were noted during this groundwater O&M inspection, and findings documented good compliance with the groundwater sampling and analysis procedures outlined in the approved PCP.

Monitor Well Data Sheets



Michigan Department of Environment, Great Lakes, & Energy
Materials Management Division

Monitor Well Data Sheet

Facility: Coldwater Rd Landfill EPA ID #: MI 005 356 860
Location: Flint, MI Date: 11/8/23
Facility Contact: _____ Facility Phone # () - _____
Facility Sampling Staff: Kevin Scheider
DEQ Staff Present: Sanabria, Hebert, McKenna

WELL INFORMATION

Monitor Well ID: <u>B-24 R</u>	Cap Locked: ☒
Depth: <u>30.41 feet</u>	Casing Material: <u>Steel</u>
Diameter: <u>2 inch</u>	Well Condition: <u>Good</u>
Concrete Pad: ☐	Protective Barrier: _____
Screen Material <u>pvc</u>	Other Well Info: _____
Location of TOC Survey Mark: _____	

SAMPLING INFORMATION

	DEQ	FACILITY
Static Water Level:		<u>13.05 ft</u>
Method:	<u>Solinst Electronic</u>	
Measured By:		<u>KS</u>
Stabilized pH:		<u>7.29</u>
Stabilized Conductance:		<u>0 mS/cm</u>
Temperature:		<u>7.94 °C</u>
Purge Method: <u>Peristaltic</u>	Volume Purged: <u>10 gallons</u>	
Fate of Purge Water: _____	Appearance: _____	
Recovery Rate: _____	Appearance: <u>clear</u>	
Sampling Method: <u>Purge dry</u>	Turbidity: <u>28.2 NTU</u>	
Time Sample Was Collected: _____		
DEQ Sampler: <u>Hebert / Sanabria</u>		
Sample Bottles Collected: ☒ VOCs ☐ ON ☐ BNA ☒ MN ☐ GA ☐ GB ☐ GG ☐ GN		
☐ Dioxins ☐ Rads ☒ MA(D)s		
☐ Other _____		

Additional Notes (External Sources of Contamination, Precautions Taken, Replicates and/or Blanks, Decon Procedures, Filtering Procedures)

☐ Standing Water

☐ Frost Heaving

☐ Collision Damage

☐ Well Subsidence

☐ Casing Degradation

☒ Photograph Taken



Michigan Department of Environment, Great Lakes, & Energy Materials Management Division

Monitor Well Data Sheet

Facility: Coldwater Rd Landfill EPA ID #: MI 005 356 860
Location: Flint, MI Date: 11/8/23
Facility Contact: _____ Facility Phone # () - _____
Facility Sampling Staff: Kevin Schneider
DEQ Staff Present: Sanabria, Hebert, McKenna

WELL INFORMATION

Monitor Well ID: <u>B-18A</u>	Cap Locked: ☒
Depth: <u>43.58 feet</u>	Casing Material: <u>Steel</u>
Diameter: <u>2 inch</u>	Well Condition: <u>Good</u>
Concrete Pad: ☐	Protective Barrier: _____
Screen Material <u>pvc</u>	Other Well Info: _____
Location of TOC Survey Mark: _____	

SAMPLING INFORMATION

	DEQ	FACILITY
Static Water Level:		<u>28.92 ft</u>
Method:	<u>Solinst Electronic</u>	
Measured By:		<u>KS</u>
Stabilized pH:		<u>6.86</u>
Stabilized Conductance:		<u>0.85 mS/cm</u>
Temperature:		<u>8.19°C</u>
Purge Method: <u>peristaltic</u>	Volume Purged: <u>5.75 gallons</u>	
Fate of Purge Water: _____	Appearance: _____	
Recovery Rate: _____		
Sampling Method: <u>Purge Dry</u>	Appearance: <u>light gray</u>	
Time Sample Was Collected: _____	Turbidity: <u>179 NTU</u>	
DEQ Sampler: <u>Sanabria/Hebert</u>		
Sample Bottles Collected: ☒ VOCs ☐ ON ☐ BNA ☒ MN ☐ GA ☐ GB ☐ GG ☐ GN		
☐ Dioxins ☐ Rads ☒ MA(D)s	Cd, Cr, Cu, Ni, Pb, Zn, Ca, Mg, Na, K, Hg, As, Se, Sb, Al, Mn, Fe, Ag, Ba, Be, Mo, Ti, V, Co, Li	
☐ Other _____		

Additional Notes (External Sources of Contamination, Precautions Taken, Replicates and/or Blanks, Decon Procedures, Filtering Procedures)

- | | |
|---|--|
| ☐ Standing Water | ☐ Frost Heaving |
| ☐ Collision Damage | ☐ Well Subsidence |
| ☐ Casing Degradation | ☒ Photograph Taken |



Michigan Department of Environment, Great Lakes, & Energy
Materials Management Division

Monitor Well Data Sheet

Facility: Coldwater Rd Landfill EPA ID #: MI 005 356 860
Location: Flint, MI Date: 11/8/23
Facility Contact: _____ Facility Phone # () - _____
Facility Sampling Staff: Kevin Schneider
DEQ Staff Present: Sanabria, Hebert, McKenna

WELL INFORMATION

Monitor Well ID: <u>B-9</u>	Cap Locked: ☒
Depth: <u>25.21 feet</u>	Casing Material: <u>Steel</u>
Diameter: <u>2 inch</u>	Well Condition: <u>Good</u>
Concrete Pad: ☐	Protective Barrier: _____
Screen Material <u>PVC</u>	Other Well Info: _____
Location of TOC Survey Mark: _____	

SAMPLING INFORMATION

	DEQ	FACILITY
Static Water Level:		<u>6.85 ft</u>
Method:	<u>Solinst Electronic</u>	
Measured By:		<u>KS</u>
Stabilized pH:		<u>6.66</u>
Stabilized Conductance:		<u>2.15 mS/cm</u>
Temperature:		<u>9.89 °C</u>
Purge Method: <u>Peristaltic</u>	Volume Purged: <u>5.5 gallons</u>	
Fate of Purge Water: _____	Appearance: _____	
Recovery Rate: _____		
Sampling Method: <u>Purge dry</u>	Appearance: <u>brown</u>	
Time Sample Was Collected: _____	Turbidity: <u>39.3 NTU</u>	
DEQ Sampler: <u>Sanabria / Hebert</u>		
Sample Bottles Collected: ☒ VOCs ☐ ON ☐ BNA ☒ MN ☐ GA ☐ GB ☐ GG ☐ GN		
☐ Dioxins ☐ Rads ☒ MA(D)s		
☐ Other _____		

Additional Notes (External Sources of Contamination, Precautions Taken, Replicates and/or Blanks, Decon Procedures, Filtering Procedures)

Field blank collected at B-9, prior to groundwater
sample collection.

One duplicate sample collected

- | | |
|---|--|
| ☐ Standing Water | ☐ Frost Heaving |
| ☐ Collision Damage | ☐ Well Subsidence |
| ☐ Casing Degradation | ☒ Photograph Taken |

Groundwater Flow Evaluation

GROUNDWATER FLOW EVALUATION

Geology and Hydrogeology:

The facility is located on unconsolidated glacial sediments consisting of till (clay/sand/silt/gravel mixture) with occasional outwash layers. The outwash deposits are silt and sand layers of varying thickness and lateral extent within the till units. The site is located on an end moraine of the Saginaw Glacial Lobe and is, thus, a local topographic high.

The general stratigraphy at the site starting at the surface is an Upper Perched Zone consisting of clay and silt with lenticular sand layers. The next lower unit is continuous clay till layer or Aquiclude. The first usable aquifer at the site is found under the clay till at an elevation of about 700 to 750 feet and is called the Drift Aquifer. Under the Drift Aquifer is another extensive clay layer that is underlain by bedrock. The unconsolidated glacial drift sediments range in thickness from approximately 100 to 200 feet in the area. The bedrock is the Pennsylvanian Age Saginaw Formation that consists of sandstone, shale, and limestone.

Groundwater can be found in two zones of the glacial drift sediments: the Upper Perched Zone and the Drift Aquifer. The Upper Perched Zone is relatively heterogeneous; therefore, groundwater flow direction has been difficult to evaluate and somewhat variable. The Upper Perched Zone is not used as a potable water source in the area. Groundwater in the Drift Aquifer has been documented to flow to the south-southeast in previous investigations. The Drift Aquifer is used as a potable water source for some residences located north (upgradient) of the facility.

Groundwater Flow Evaluation:

Static water elevations were measured in both the shallow Upper Perched Zone and the deeper Drift Aquifer monitoring wells two days prior to the sampling. Static water elevations data was collected by Ramboll using an electronic water level tape.

The attached Static Water Elevations Table (**Table 1**) provided by Ramboll provides the monitoring well, the unit monitored, the well depth in feet, the screened interval in feet below the top-of-casing, the top-of-casing elevation in feet relative to mean sea level (MSL), the depth to water in feet, and the static water elevation in feet relative to MSL. The results of the measurements for both the Upper Perched Zone and the Drift Aquifer are provided below.

Upper Perched Zone:

Due to the heterogeneous, discontinuous, and intermittent nature of the Upper Perched Zone (silt/clay), a groundwater elevation contour map was not constructed for this unit. However, **Figure 2** provides the groundwater static water elevations on a site map for visual comparison. The variability in static water elevations noted in **Figure 2** and the Static Water Elevations Table are due to the presence of separate discrete perched

sand zones at the site. The elevations, where available, are relatively consistent with historical data.

Drift Aquifer:

A static water level elevation map for the Drift Aquifer is shown in **Figure 3**. This fine sand and silt aquifer is found at an elevation of between 700 to 750 feet MSL and is thicker to the north. The static water elevations of all five landfill monitoring wells are relatively consistent with recent data, and based on drift aquifer wells, the contours of groundwater flow are generally to the south. Based on the static water elevations in closely located MW B-27D and MW B-23DR, it also appears that there is a downward vertical gradient in the Drift Aquifer.

Geochemical Evaluation

GEOCHEMICAL EVALUATION

Sampling Data:

A full United States Environmental Protection Agency (U.S. EPA) SW-846 Method 8260 B volatile organic compound (VOC) scan was performed by the MMD, and all results were non-detect. The facility did not analyze samples for VOCs as part of this semi-annual sampling event. Analytical results are included as part of this report.

A data comparison between MMD and facility metals data was not able to be conducted as part of this O&M. The EGLE lab equipment for metals analysis was down, so the samples were sent to Fibertec for analysis. There appears to have been some miscommunication between labs, and only select dissolved metals were analyzed, including calcium, potassium, magnesium, and sodium. Both the MMD data and the data collected by the facility were within historical ranges for these monitoring wells.

Stiff and Piper Diagrams:

Stiff and Piper Diagrams were generated from the data collected by the MMD and are included as **Figure 4** and **Figure 5**. Monitoring wells included in the split sampling and used to generate the data were MW B-18A, MW B-9 (and its duplicate sample), and MW B-24R. As in previous samplings, groundwater chemistry in MW B-18A and MW B-24R is dominated by bicarbonate alkalinity with similar levels in all wells sampled. MW B-9 is dominated by bicarbonate alkalinity and sulfate. Differences between wells sampled, though noticeable on the Stiff Diagrams, are due to small variations in the relatively low levels of cations and are not significant. All data are comparable to historical data, and none of these data suggest an impact on groundwater quality from the regulated unit.

Ion charge balances for the EGLE Laboratory data were also calculated for each well and are included in **Table 2**. These data indicate that ion charges were imbalanced by from 0.82 to 3.63 percent. These imbalances were uniformly the result of cation dominance. In general, the ion balances demonstrate that the analytical data were of good quality; charge differences in all monitoring wells were below 10 percent.

Tables

TABLE 1
RACER Trust - Coldwater Road
Depth to Groundwater Levels in Monitoring Wells

November 6, 2023

Well ID	Top of Casing Elevation (ft)*	Depth to Water (ft)	Static Water Elevation (ft)
<i>Landfill Monitoring Wells</i>			
B-7	813.63	14.32	799.31
B-9	807.45	7.28	800.17
B-18A	810.85	19.90	790.95
B-19A	812.66	9.63	803.03
B-19AR	811.80	39.47	772.33
B-20D	815.14	70.64	744.50
B-21D	821.07	81.06	740.01
B-22D	822.15	84.72	737.43
B-23DR	812.12	86.25	725.87
B-24R	816.04	11.96	804.08
B-27D	812.70	75.75	736.95
B-28	816.46	4.50	811.96
OBG MW-16D	807.43	58.64	748.79
<i>former WWTP Monitoring Wells</i>			
OBG MW-1	811.56	4.25	807.31
OBG MW-2	813.77	7.44	806.33
OBG MW-3	810.09	4.13	805.96
OBG MW-4	812.66	5.64	807.02
OBG MW-5	816.04	7.17	808.87
OBG MW-6	815.75	11.72	804.03
OBG MW-7	813.47	7.67	805.80
OBG MW-8	817.50	8.63	808.87
OBG MW-9	809.97	3.53	806.44
OBG MW-10	811.54	5.50	806.04
<i>Additional Site Monitoring Wells</i>			
OBG MW-11	801.94	7.32	794.62
OBG MW-12D	797.13	48.10	749.03
OBG MW-12S	796.88	9.26	787.62
OBG MW-13	801.81	6.90	794.91
OBG MW-14	810.98	7.62	803.36
OBG MW-15D	810.68	79.08	731.60
OBG MW-17D	800.09	51.36	748.73
OBG MW-17S	800.51	11.98	788.53
OBG MW-18D	800.17	51.03	749.14
OBG MW-18S	799.32	15.62	783.70
OBG MW-19D	795.37	48.43	746.94
OBG MW-20	783.93	27.21	756.72
OBG MW-21	797.49	5.11	792.38
OBG MW-22	794.11	3.23	790.88
OBG MW-23 (D)	776.76	28.90	747.86
OBG MW-24	781.50	5.73	775.77
OBG MW-25R	783.12	5.60	781.01
OBG MW-26R	--	--	--
OBG MW-27R (D)	--	--	--
OBG MW-28	800.35	13.34	787.01
OBG MW-29 (D)	773.28	25.73	747.55
<i>Piezometers</i>			
PZ-3R	785.36	7.46	780.91
<i>Peregrine Site Wells</i>			
MW-19-13	807.85	2.12	805.73
MW-20-13	810.81	4.49	806.32
MW-15-10	808.15	76.30	731.85
MW-16-10	798.64	66.60	732.04
PFW-1	809.51	77.31	732.20

Notes

Casing elevations were provided by Norwy & Hale Surveyors and are in feet relative to National Geodetic Vertical Datum

-- No data.

Top of casing elevations were resurveyed in June 2017, except for OBG MW-25R and PZ-3R that were surveyed in April 2023.

R - Indicates a replacement well location.

Monitoring wells OBG MW-25, PZ-2, and PZ-3 were abandon on July 7, 2020 as part of the onsite berm construction. PZ-1 was abandoned on December 21, 2022 due to being flooded during high Middle Pond levels. Monitoring wells OBG MW-25R and PZ-3R were replaced on December 21, 2022.

Monitoring wells OBG MW-26, and OBG MW-27 were abandon and replaced in October 2023. The monitoring wells have not yet been resurveyed.

Table 2: Analytical Charge Balance Calculations

**Coldwater Road Landfill
MMD Data - Major Ion Chemistry of Groundwater**

		MONITOR WELL	MONITOR WELL	MONITOR WELL	MONITOR WELL
		B-24R	B-9	B-9 DUP	B-18A
Major Ion Chemistry (mg/L)					
Anions:	Bicarbonate, HCO ₃	450.000	620.000	620.000	480.000
	Carbonate, CO ₃	0.000	0.000	0.000	0.000
	Chloride, Cl	48.000	80.000	83.000	29.000
	Sulfate, SO ₄	280.000	890.000	880.000	110.000
Cations:	Calcium, Ca	150.000	280.000	260.000	110.000
	Iron, Fe				
	Potassium, K	1.800	1.900	1.900	2.600
	Magnesium, Mg	53.000	170.000	160.000	53.000
	Sodium, Na	46.000	56.000	57.000	30.000
Major Ion Chemistry (epm)					
Anions:	Bicarbonate, HCO ₃	7.37	10.16	10.16	7.87
	Carbonate, CO ₃	0.00	0.00	0.00	0.00
	Chloride, Cl	1.35	2.26	2.34	0.82
	Sulfate, SO ₄	5.83	18.53	18.32	2.29
Cations:	Calcium, Ca	7.49	13.97	12.97	5.49
	Iron, Fe	0.00	0.00	0.00	0.00
	Potassium, K	0.05	0.05	0.05	0.07
	Magnesium, Mg	4.36	13.99	13.16	4.36
	Sodium, Na	2.00	2.44	2.48	1.30
Total Anions:		14.56	30.95	30.82	10.97
Total Cations:		13.89	30.44	28.67	11.22
Charge Balance:		0.67	0.50	2.16	0.25
% Ion Imbalance		2.34	0.82	3.63	1.11
Major Ion Chemistry (% epm)					
Anions:	Bicarbonate, HCO ₃	50.66	32.83	32.96	71.68
	Carbonate, CO ₃	0.00	0.00	0.00	0.00
	Chloride, Cl	9.30	7.29	7.60	7.45
	Sulfate, SO ₄	40.04	59.88	59.44	20.87
Cations:	Calcium, Ca	53.88	45.90	45.26	48.92
	Iron, Fe	0.00	0.00	0.00	0.00
	Potassium, K	0.33	0.16	0.17	0.59
	Magnesium, Mg	31.39	45.94	45.92	38.86
	Sodium, Na	14.40	8.00	8.65	11.63

Figures

Figure 1 - Facility Map

GM Coldwater Road Facility

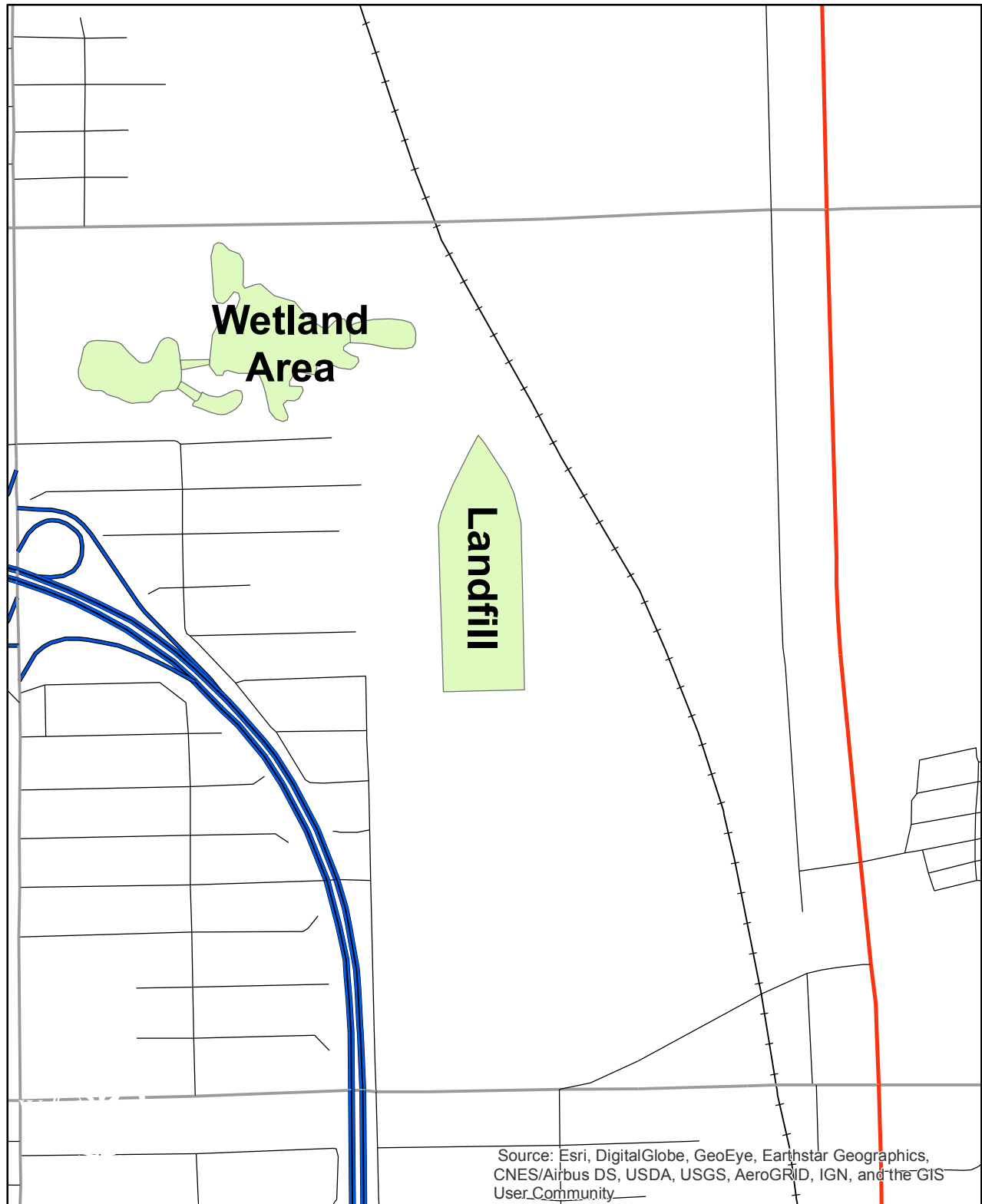


Figure 2 - Perched Aquifer Static Water Elevations November 6, 2023

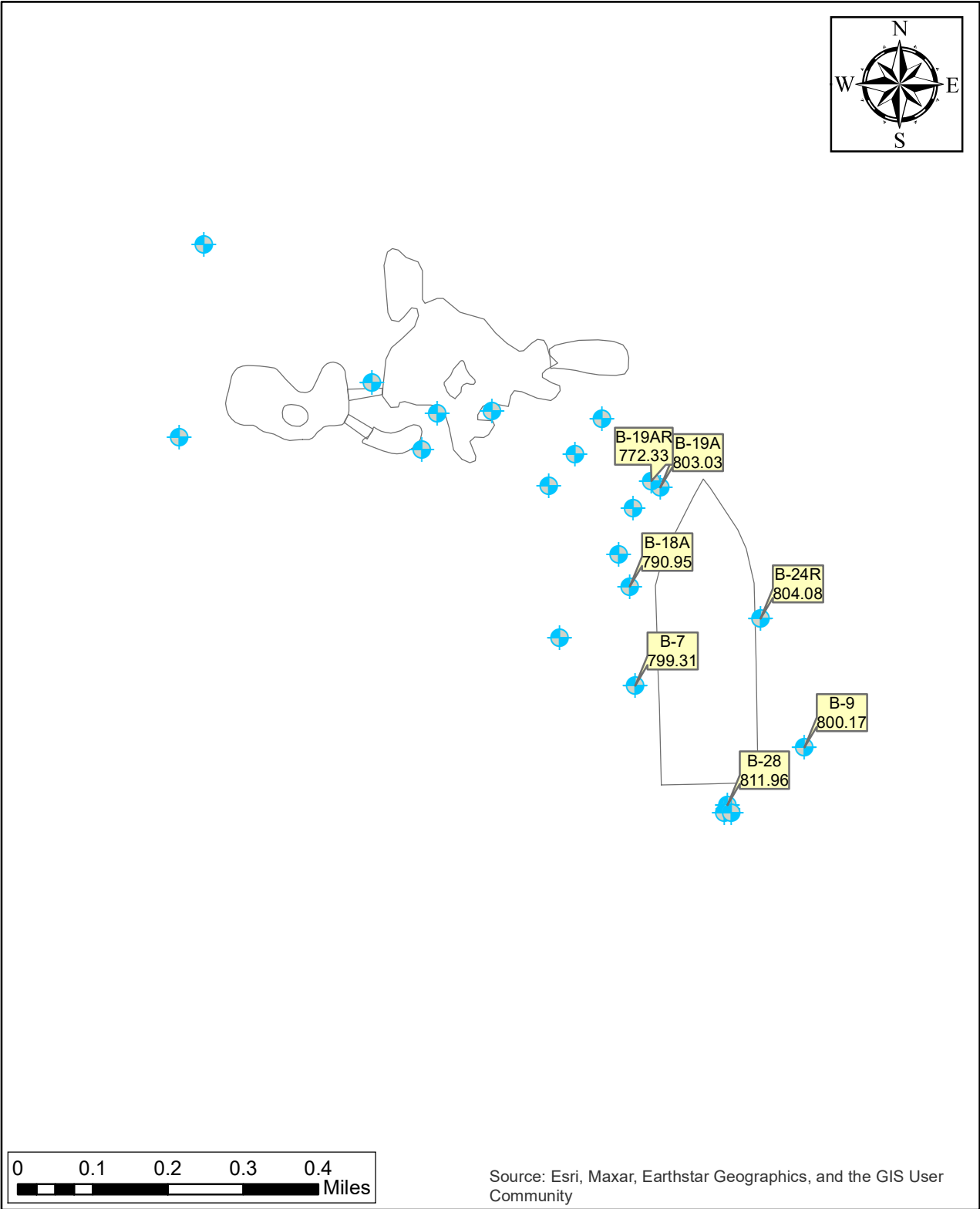
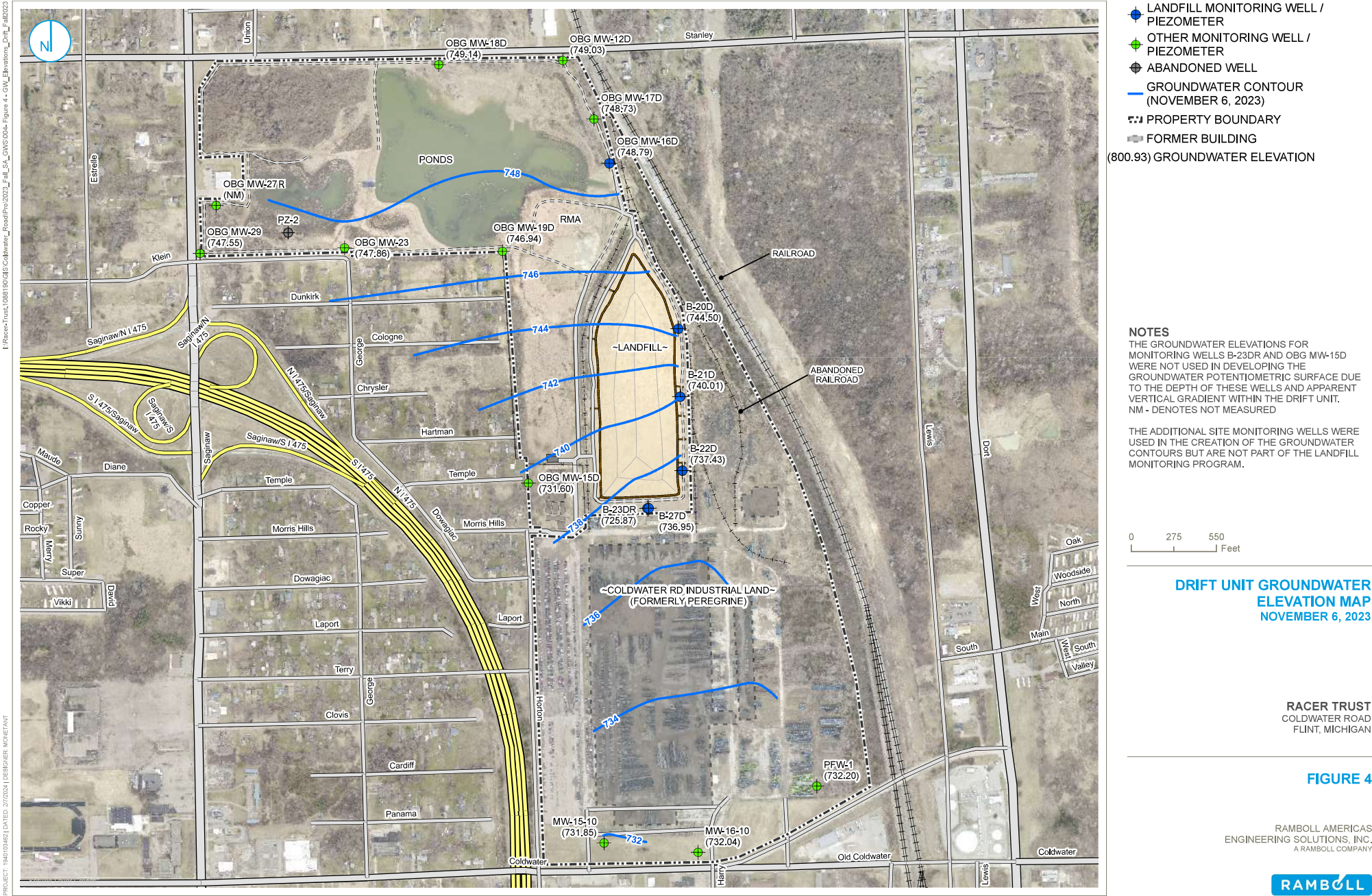


Figure 3 - Drift Aquifer Static Water Elevations, November 6, 2023



PROJECT: 1940100462 [DATED: 27/02/2024] [DESIGNER: MOHETANT] I:\RacerTrust\1081190\GIS\Collateral_RoadPro\2023_Fall_SA_GWS\004-Figure 4 - GW_Elevation_Drift_Fall2023

Figure 4
Stiff Diagram
2024 Coldwater Road Landfill O&M

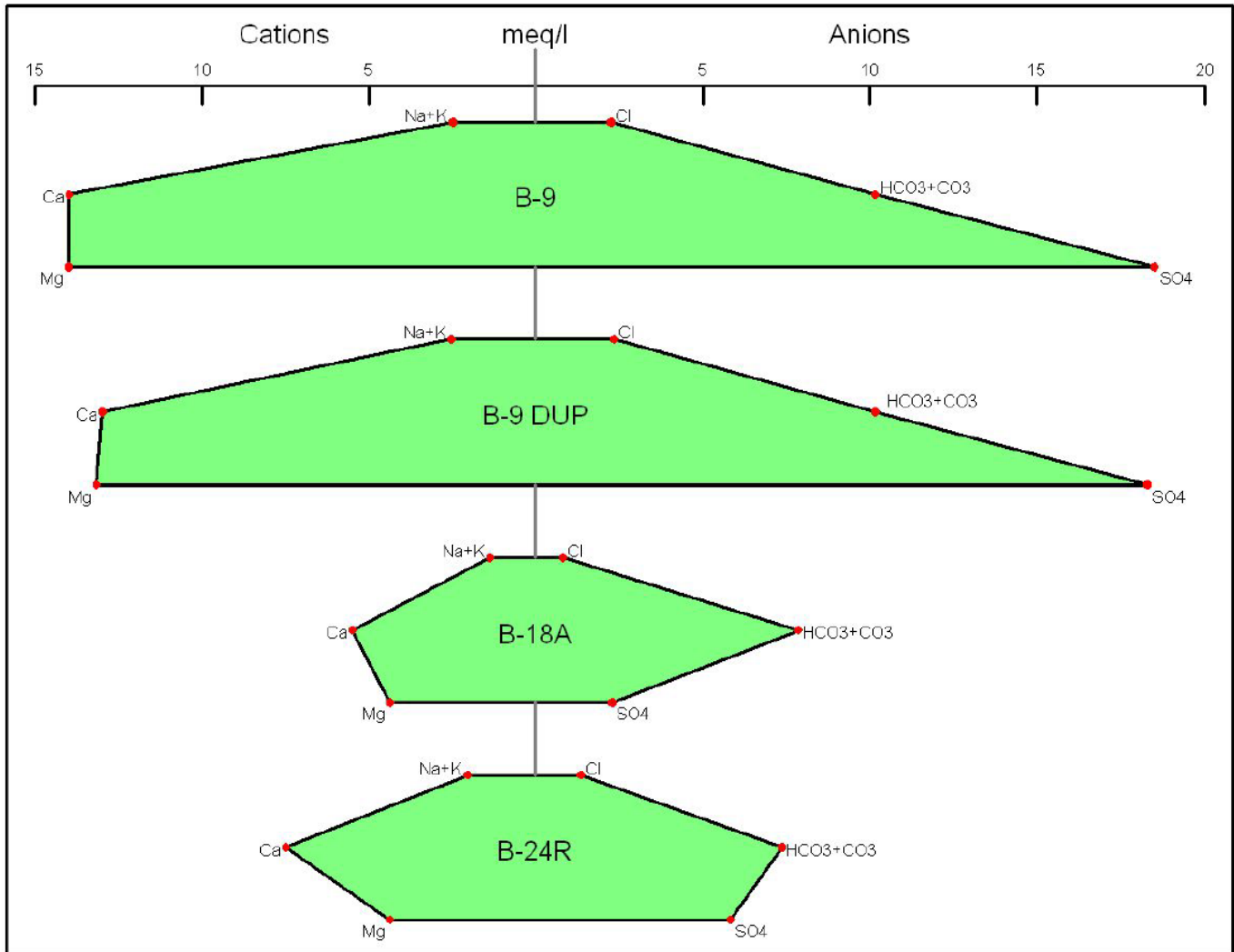
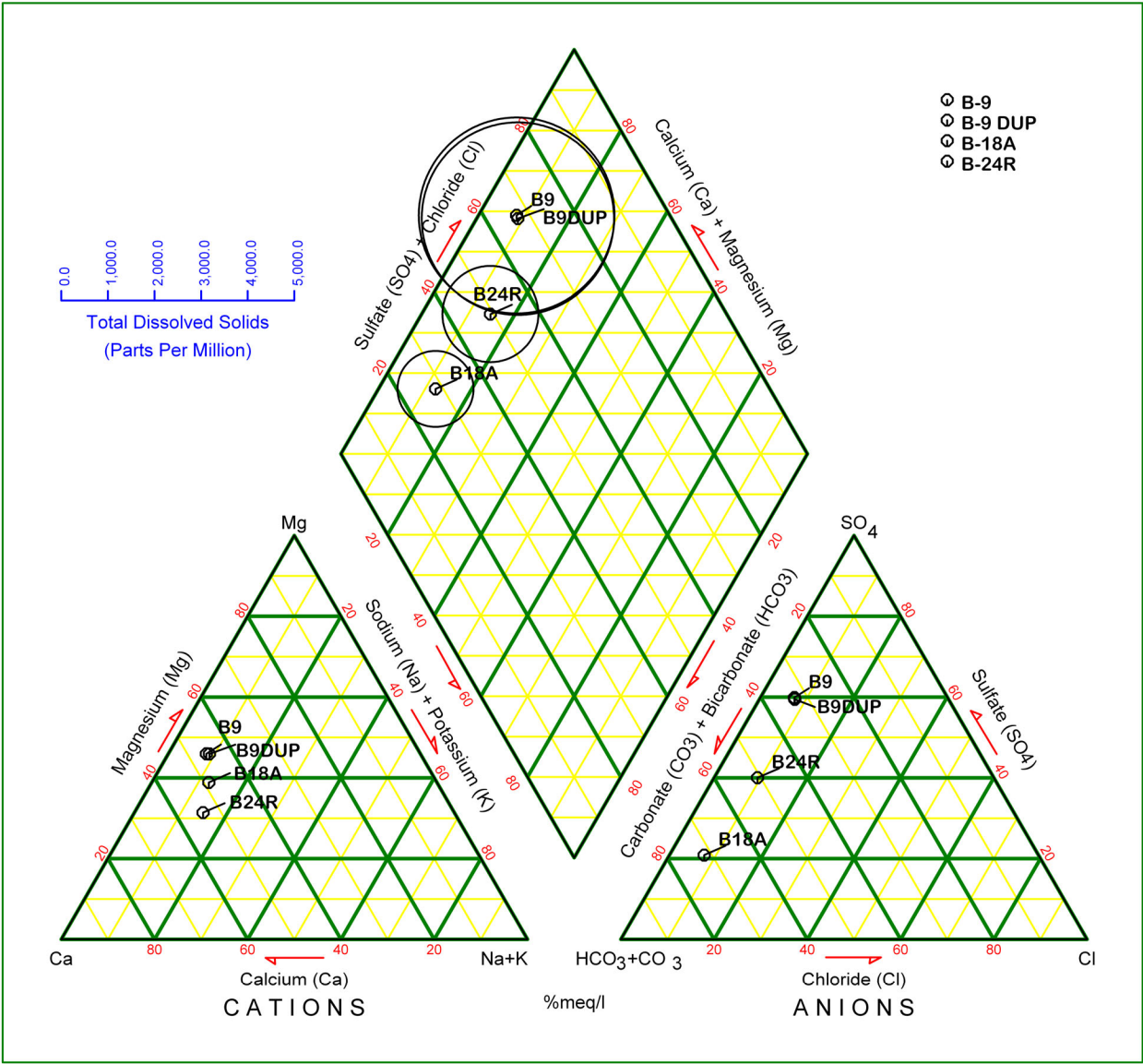


Figure 5
Piper Diagram
2024 Coldwater Road Landfill O&M



Appendix A

Laboratory Data

29 November 2023

Work Order: 2311112

Price: \$775.00

Nicole Sanabria
EGLE-MMD-LANSING
525 W. Allegan, P.O. Box 30242
Lansing, MI 48909-7742
RE: COLDWATER RD. 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

EGLE-MMD-LANSING
525 W. Allegan, P.O. Box 30242
Lansing MI, 48909-7742

Project: COLDWATER RD. LANDFILL
Site Code: 393431
Project Manager: Nicole Sanabria

Reported:
11/29/2023

Analytical Report for Samples

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received	Qualifier
B-9	2311112-01	Water	11/08/2023	11/08/2023	
B-18A	2311112-02	Water	11/08/2023	11/08/2023	
B-24R	2311112-03	Water	11/08/2023	11/08/2023	
B-9 DUP	2311112-04	Water	11/08/2023	11/08/2023	
FB	2311112-05	Water	11/08/2023	11/08/2023	

Notes and Definitions

T Reported value is less than the reporting limit (RL). Result is estimated.
A09 Result is estimated due to high recovery of batch QC.
A06 Result is estimated due to high continuing calibration standard criteria failure.
A04 Result is estimated due to high matrix spike recovery.
ND Indicates the analyte was not detected at or above the method reporting limit (RL)
RL Reporting Limit
NA Not Applicable

*****Case Narrative*****

Samples were received **11/8/2023 3:30:00PM** for client **EGLE-MMD-LANSING** as a part of project **COLDWATER RD. LANDFILL**.

Samples were logged and designated as Work Order # **2311112** on **11/8/2023 3:17:00PM**.

This Report was created **11/29/2023 3:31:17PM**.

Additional Notes/Narrative (if applicable):

Client ID: B-9
Lab ID: 231112-01

CAS #	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Analyst	Qualifier
Organics-Volatiles										
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	ug/L	1	11/13/23	B3K1322	8260	KB	
71-55-6	1,1,1-Trichloroethane	ND	1.0	ug/L	1	11/13/23	B3K1322	8260	KB	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	1	11/13/23	B3K1322	8260	KB	
79-00-5	1,1,2-Trichloroethane	ND	1.0	ug/L	1	11/13/23	B3K1322	8260	KB	
76-13-1	1,1,2-Trichlorotrifluoroethane	ND	1.0	ug/L	1	11/13/23	B3K1322	8260	KB	
75-34-3	1,1-Dichloroethane	ND	1.0	ug/L	1	11/13/23	B3K1322	8260	KB	
75-35-4	1,1-Dichloroethylene	ND	1.0	ug/L	1	11/13/23	B3K1322	8260	KB	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	ug/L	1	11/13/23	B3K1322	8260	KB	
96-18-4	1,2,3-Trichloropropane	ND	1.0	ug/L	1	11/13/23	B3K1322	8260	KB	
526-73-8	1,2,3-Trimethylbenzene	ND	1.0	ug/L	1	11/13/23	B3K1322	8260	KB	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	ug/L	1	11/13/23	B3K1322	8260	KB	
95-63-6	1,2,4-Trimethylbenzene	ND	1.0	ug/L	1	11/13/23	B3K1322	8260	KB	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5.0	ug/L	1	11/13/23	B3K1322	8260	KB	
106-93-4	1,2-Dibromoethane	ND	1.0	ug/L	1	11/13/23	B3K1322	8260	KB	
95-50-1	1,2-Dichlorobenzene	ND	1.0	ug/L	1	11/13/23	B3K1322	8260	KB	
107-06-2	1,2-Dichloroethane	ND	1.0	ug/L	1	11/13/23	B3K1322	8260	KB	
78-87-5	1,2-Dichloropropane	ND	1.0	ug/L	1	11/13/23	B3K1322	8260	KB	
108-67-8	1,3,5-Trimethylbenzene	ND	1.0	ug/L	1	11/13/23	B3K1322	8260	KB	
541-73-1	1,3-Dichlorobenzene	ND	1.0	ug/L	1	11/13/23	B3K1322	8260	KB	
106-46-7	1,4-Dichlorobenzene	ND	1.0	ug/L	1	11/13/23	B3K1322	8260	KB	
540-84-1	2,2,4-Trimethylpentane	ND	5.0	ug/L	1	11/13/23	B3K1322	8260	KB	
78-93-3	2-Butanone (MEK)	ND	5.0	ug/L	1	11/13/23	B3K1322	8260	KB	
91-57-6	2-Methylnaphthalene	ND	5.0	ug/L	1	11/13/23	B3K1322	8260	KB	
67-64-1	2-Propanone (acetone)	ND	20	ug/L	1	11/13/23	B3K1322	8260	KB	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	ug/L	1	11/13/23	B3K1322	8260	KB	
107-13-1	Acrylonitrile	ND	5.0	ug/L	1	11/13/23	B3K1322	8260	KB	
71-43-2	Benzene	ND	1.0	ug/L	1	11/13/23	B3K1322	8260	KB	
74-97-5	Bromochloromethane	ND	1.0	ug/L	1	11/13/23	B3K1322	8260	KB	
75-27-4	Bromodichloromethane	ND	1.0	ug/L	1	11/13/23	B3K1322	8260	KB	
75-25-2	Bromoform	ND	1.0	ug/L	1	11/13/23	B3K1322	8260	KB	
74-83-9	Bromomethane	ND	5.0	ug/L	1	11/13/23	B3K1322	8260	KB	
75-15-0	Carbon disulfide	ND	1.0	ug/L	1	11/13/23	B3K1322	8260	KB	
56-23-5	Carbon tetrachloride	ND	1.0	ug/L	1	11/13/23	B3K1322	8260	KB	
108-90-7	Chlorobenzene	ND	1.0	ug/L	1	11/13/23	B3K1322	8260	KB	
75-00-3	Chloroethane	ND	5.0	ug/L	1	11/13/23	B3K1322	8260	KB	
67-66-3	Chloroform	ND	1.0	ug/L	1	11/13/23	B3K1322	8260	KB	
74-87-3	Chloromethane	ND	5.0	ug/L	1	11/13/23	B3K1322	8260	KB	
156-59-2	cis-1,2-Dichloroethylene	ND	1.0	ug/L	1	11/13/23	B3K1322	8260	KB	
10061-01-5	cis-1,3-Dichloropropylene	ND	1.0	ug/L	1	11/13/23	B3K1322	8260	KB	
110-82-7	Cyclohexane	ND	5.0	ug/L	1	11/13/23	B3K1322	8260	KB	
124-48-1	Dibromochloromethane	ND	1.0	ug/L	1	11/13/23	B3K1322	8260	KB	
74-95-3	Dibromomethane	ND	1.0	ug/L	1	11/13/23	B3K1322	8260	KB	

Client ID: B-9
Lab ID: 231112-01

CAS #	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Analyst	Qualifier
Organics-Volatiles										
75-71-8	Dichlorodifluoromethane	ND	5.0	ug/L	1	11/13/23	B3K1322	8260	KB	
60-29-7	Diethyl ether	ND	5.0	ug/L	1	11/13/23	B3K1322	8260	KB	
108-20-3	Diisopropyl Ether	ND	5.0	ug/L	1	11/13/23	B3K1322	8260	KB	
100-41-4	Ethylbenzene	ND	1.0	ug/L	1	11/13/23	B3K1322	8260	KB	
637-92-3	Ethyltertiarybutylether	ND	5.0	ug/L	1	11/13/23	B3K1322	8260	KB	
67-72-1	Hexachloroethane	ND	5.0	ug/L	1	11/13/23	B3K1322	8260	KB	
110-54-3	Hexane	ND	1.0	ug/L	1	11/13/23	B3K1322	8260	KB	
98-82-8	Isopropylbenzene	ND	1.0	ug/L	1	11/13/23	B3K1322	8260	KB	
1330-20-7	m & p - Xylene	ND	2.0	ug/L	1	11/13/23	B3K1322	8260	KB	
96-37-7	Methylcyclopentane	ND	1.0	ug/L	1	11/13/23	B3K1322	8260	KB	
75-09-2	Methylene chloride	ND	5.0	ug/L	1	11/13/23	B3K1322	8260	KB	
1634-04-4	Methyltertiarybutylether	ND	1.0	ug/L	1	11/13/23	B3K1322	8260	KB	
91-20-3	Naphthalene	ND	5.0	ug/L	1	11/13/23	B3K1322	8260	KB	
104-51-8	n-Butylbenzene	ND	1.0	ug/L	1	11/13/23	B3K1322	8260	KB	
142-82-5	n-Heptane	ND	1.0	ug/L	1	11/13/23	B3K1322	8260	KB	
103-65-1	n-Propylbenzene	ND	1.0	ug/L	1	11/13/23	B3K1322	8260	KB	
95-47-6	o-Xylene	ND	1.0	ug/L	1	11/13/23	B3K1322	8260	KB	
135-98-8	sec-Butylbenzene	ND	1.0	ug/L	1	11/13/23	B3K1322	8260	KB	
100-42-5	Styrene	ND	1.0	ug/L	1	11/13/23	B3K1322	8260	KB	
98-06-6	tert-Butylbenzene	ND	1.0	ug/L	1	11/13/23	B3K1322	8260	KB	
75-65-0	tertiary Butyl Alcohol	ND	50	ug/L	1	11/13/23	B3K1322	8260	KB	
994-05-8	tertiaryAmylmethylether	ND	5.0	ug/L	1	11/13/23	B3K1322	8260	KB	
127-18-4	Tetrachloroethylene	ND	1.0	ug/L	1	11/13/23	B3K1322	8260	KB	
109-99-9	Tetrahydrofuran	ND	5.0	ug/L	1	11/13/23	B3K1322	8260	KB	
108-88-3	Toluene	ND	1.0	ug/L	1	11/13/23	B3K1322	8260	KB	
156-60-5	trans-1,2-Dichloroethylene	ND	1.0	ug/L	1	11/13/23	B3K1322	8260	KB	
10061-02-6	trans-1,3-Dichloropropylene	ND	1.0	ug/L	1	11/13/23	B3K1322	8260	KB	
79-01-6	Trichloroethylene	ND	1.0	ug/L	1	11/13/23	B3K1322	8260	KB	
75-69-4	Trichlorofluoromethane	ND	1.0	ug/L	1	11/13/23	B3K1322	8260	KB	
75-01-4	Vinyl chloride	ND	1.0	ug/L	1	11/13/23	B3K1322	8260	KB	
Surrogate: Bromofluorobenzene			117 %	85-115	11/13/23	B3K1322	8260	KB		
Surrogate: Dibromofluoromethane			102 %	83-115	11/13/23	B3K1322	8260	KB		
Surrogate: Toluene-d8			93.8 %	85-115	11/13/23	B3K1322	8260	KB		

Client ID: B-9
Lab ID: 231112-01

CAS #	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Analyst	Qualifier
Inorganics-General Chemistry										
	Alkalinity-Bicarbonate	620	10	mg/L	2	11/21/23	[CALC]	2320 B	AM	
	Alkalinity-Carbonate	ND	10	mg/L	1	11/21/23	[CALC]	2320 B	AM	
	Alkalinity-Total	620	100	mg/L	2	11/16/23	B3K1607	310.2	JH	
16887-00-6	Chloride	80	4.0	mg/L	1	11/27/23	B3K2724	4500 Cl- E	MB	
	Conductivity	2750		umhos/cm	1	11/13/23	B3K1328	120.1	JP1	
18785-72-3	Sulfate	890	250	mg/L	50	11/28/23	B3K2809	ASTM D516-16	MB	

Client ID: B-18A
Lab ID: 231112-02

CAS #	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Analyst	Qualifier
Organics-Volatiles										
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	ug/L	1	11/13/23	B3K1322	8260	KB	
71-55-6	1,1,1-Trichloroethane	ND	1.0	ug/L	1	11/13/23	B3K1322	8260	KB	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	1	11/13/23	B3K1322	8260	KB	
79-00-5	1,1,2-Trichloroethane	ND	1.0	ug/L	1	11/13/23	B3K1322	8260	KB	
76-13-1	1,1,2-Trichlorotrifluoroethane	ND	1.0	ug/L	1	11/13/23	B3K1322	8260	KB	
75-34-3	1,1-Dichloroethane	ND	1.0	ug/L	1	11/13/23	B3K1322	8260	KB	
75-35-4	1,1-Dichloroethylene	ND	1.0	ug/L	1	11/13/23	B3K1322	8260	KB	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	ug/L	1	11/13/23	B3K1322	8260	KB	
96-18-4	1,2,3-Trichloropropane	ND	1.0	ug/L	1	11/13/23	B3K1322	8260	KB	
526-73-8	1,2,3-Trimethylbenzene	ND	1.0	ug/L	1	11/13/23	B3K1322	8260	KB	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	ug/L	1	11/13/23	B3K1322	8260	KB	
95-63-6	1,2,4-Trimethylbenzene	ND	1.0	ug/L	1	11/13/23	B3K1322	8260	KB	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5.0	ug/L	1	11/13/23	B3K1322	8260	KB	
106-93-4	1,2-Dibromoethane	ND	1.0	ug/L	1	11/13/23	B3K1322	8260	KB	
95-50-1	1,2-Dichlorobenzene	ND	1.0	ug/L	1	11/13/23	B3K1322	8260	KB	
107-06-2	1,2-Dichloroethane	ND	1.0	ug/L	1	11/13/23	B3K1322	8260	KB	
78-87-5	1,2-Dichloropropane	ND	1.0	ug/L	1	11/13/23	B3K1322	8260	KB	
108-67-8	1,3,5-Trimethylbenzene	ND	1.0	ug/L	1	11/13/23	B3K1322	8260	KB	
541-73-1	1,3-Dichlorobenzene	ND	1.0	ug/L	1	11/13/23	B3K1322	8260	KB	
106-46-7	1,4-Dichlorobenzene	ND	1.0	ug/L	1	11/13/23	B3K1322	8260	KB	
540-84-1	2,2,4-Trimethylpentane	ND	5.0	ug/L	1	11/13/23	B3K1322	8260	KB	
78-93-3	2-Butanone (MEK)	ND	5.0	ug/L	1	11/13/23	B3K1322	8260	KB	
91-57-6	2-Methylnaphthalene	ND	5.0	ug/L	1	11/13/23	B3K1322	8260	KB	
67-64-1	2-Propanone (acetone)	ND	20	ug/L	1	11/13/23	B3K1322	8260	KB	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	ug/L	1	11/13/23	B3K1322	8260	KB	
107-13-1	Acrylonitrile	ND	5.0	ug/L	1	11/13/23	B3K1322	8260	KB	
71-43-2	Benzene	ND	1.0	ug/L	1	11/13/23	B3K1322	8260	KB	
74-97-5	Bromochloromethane	ND	1.0	ug/L	1	11/13/23	B3K1322	8260	KB	
75-27-4	Bromodichloromethane	ND	1.0	ug/L	1	11/13/23	B3K1322	8260	KB	
75-25-2	Bromoform	ND	1.0	ug/L	1	11/13/23	B3K1322	8260	KB	
74-83-9	Bromomethane	ND	5.0	ug/L	1	11/13/23	B3K1322	8260	KB	
75-15-0	Carbon disulfide	ND	1.0	ug/L	1	11/13/23	B3K1322	8260	KB	
56-23-5	Carbon tetrachloride	ND	1.0	ug/L	1	11/13/23	B3K1322	8260	KB	
108-90-7	Chlorobenzene	ND	1.0	ug/L	1	11/13/23	B3K1322	8260	KB	
75-00-3	Chloroethane	ND	5.0	ug/L	1	11/13/23	B3K1322	8260	KB	
67-66-3	Chloroform	ND	1.0	ug/L	1	11/13/23	B3K1322	8260	KB	
74-87-3	Chloromethane	ND	5.0	ug/L	1	11/13/23	B3K1322	8260	KB	
156-59-2	cis-1,2-Dichloroethylene	ND	1.0	ug/L	1	11/13/23	B3K1322	8260	KB	
10061-01-5	cis-1,3-Dichloropropylene	ND	1.0	ug/L	1	11/13/23	B3K1322	8260	KB	
110-82-7	Cyclohexane	ND	5.0	ug/L	1	11/13/23	B3K1322	8260	KB	
124-48-1	Dibromochloromethane	ND	1.0	ug/L	1	11/13/23	B3K1322	8260	KB	
74-95-3	Dibromomethane	ND	1.0	ug/L	1	11/13/23	B3K1322	8260	KB	

Client ID: B-18A
Lab ID: 231112-02

CAS #	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Analyst	Qualifier
Organics-Volatiles										
75-71-8	Dichlorodifluoromethane	ND	5.0	ug/L	1	11/13/23	B3K1322	8260	KB	
60-29-7	Diethyl ether	ND	5.0	ug/L	1	11/13/23	B3K1322	8260	KB	
108-20-3	Diisopropyl Ether	ND	5.0	ug/L	1	11/13/23	B3K1322	8260	KB	
100-41-4	Ethylbenzene	ND	1.0	ug/L	1	11/13/23	B3K1322	8260	KB	
637-92-3	Ethyltertiarybutylether	ND	5.0	ug/L	1	11/13/23	B3K1322	8260	KB	
67-72-1	Hexachloroethane	ND	5.0	ug/L	1	11/13/23	B3K1322	8260	KB	
110-54-3	Hexane	ND	1.0	ug/L	1	11/13/23	B3K1322	8260	KB	
98-82-8	Isopropylbenzene	ND	1.0	ug/L	1	11/13/23	B3K1322	8260	KB	
1330-20-7	m & p - Xylene	ND	2.0	ug/L	1	11/13/23	B3K1322	8260	KB	
96-37-7	Methylcyclopentane	ND	1.0	ug/L	1	11/13/23	B3K1322	8260	KB	
75-09-2	Methylene chloride	ND	5.0	ug/L	1	11/13/23	B3K1322	8260	KB	
1634-04-4	Methyltertiarybutylether	ND	1.0	ug/L	1	11/13/23	B3K1322	8260	KB	
91-20-3	Naphthalene	ND	5.0	ug/L	1	11/13/23	B3K1322	8260	KB	
104-51-8	n-Butylbenzene	ND	1.0	ug/L	1	11/13/23	B3K1322	8260	KB	
142-82-5	n-Heptane	ND	1.0	ug/L	1	11/13/23	B3K1322	8260	KB	
103-65-1	n-Propylbenzene	ND	1.0	ug/L	1	11/13/23	B3K1322	8260	KB	
95-47-6	o-Xylene	ND	1.0	ug/L	1	11/13/23	B3K1322	8260	KB	
135-98-8	sec-Butylbenzene	ND	1.0	ug/L	1	11/13/23	B3K1322	8260	KB	
100-42-5	Styrene	ND	1.0	ug/L	1	11/13/23	B3K1322	8260	KB	
98-06-6	tert-Butylbenzene	ND	1.0	ug/L	1	11/13/23	B3K1322	8260	KB	
75-65-0	tertiary Butyl Alcohol	ND	50	ug/L	1	11/13/23	B3K1322	8260	KB	
994-05-8	tertiaryAmylmethylether	ND	5.0	ug/L	1	11/13/23	B3K1322	8260	KB	
127-18-4	Tetrachloroethylene	ND	1.0	ug/L	1	11/13/23	B3K1322	8260	KB	
109-99-9	Tetrahydrofuran	ND	5.0	ug/L	1	11/13/23	B3K1322	8260	KB	
108-88-3	Toluene	ND	1.0	ug/L	1	11/13/23	B3K1322	8260	KB	
156-60-5	trans-1,2-Dichloroethylene	ND	1.0	ug/L	1	11/13/23	B3K1322	8260	KB	
10061-02-6	trans-1,3-Dichloropropylene	ND	1.0	ug/L	1	11/13/23	B3K1322	8260	KB	
79-01-6	Trichloroethylene	ND	1.0	ug/L	1	11/13/23	B3K1322	8260	KB	
75-69-4	Trichlorofluoromethane	ND	1.0	ug/L	1	11/13/23	B3K1322	8260	KB	
75-01-4	Vinyl chloride	ND	1.0	ug/L	1	11/13/23	B3K1322	8260	KB	
Surrogate: Bromofluorobenzene			91.6 %	85-115	11/13/23	B3K1322	8260	KB		
Surrogate: Dibromofluoromethane			98.9 %	83-115	11/13/23	B3K1322	8260	KB		
Surrogate: Toluene-d8			86.6 %	85-115	11/13/23	B3K1322	8260	KB		

Client ID: B-18A

Lab ID: 2311112-02

CAS #	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Analyst	Qualifier
Inorganics-General Chemistry										
	Alkalinity-Bicarbonate	480	10	mg/L	2	11/21/23	[CALC]	2320 B	AM	
	Alkalinity-Carbonate	ND	10	mg/L	1	11/21/23	[CALC]	2320 B	AM	
	Alkalinity-Total	480	100	mg/L	2	11/16/23	B3K1607	310.2	JH	
16887-00-6	Chloride	29	4.0	mg/L	1	11/27/23	B3K2724	4500 Cl- E	MB	
	Conductivity	1110		umhos/cm	1	11/13/23	B3K1328	120.1	JP1	
18785-72-3	Sulfate	110	50	mg/L	10	11/28/23	B3K2809	ASTM D516-16	MB	

Client ID: B-24R
Lab ID: 231112-03

CAS #	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Analyst	Qualifier
Organics-Volatiles										
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	ug/L	1	11/14/23	B3K1329	8260	KB	
71-55-6	1,1,1-Trichloroethane	ND	1.0	ug/L	1	11/14/23	B3K1329	8260	KB	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	1	11/14/23	B3K1329	8260	KB	
79-00-5	1,1,2-Trichloroethane	ND	1.0	ug/L	1	11/14/23	B3K1329	8260	KB	
76-13-1	1,1,2-Trichlorotrifluoroethane	ND	1.0	ug/L	1	11/14/23	B3K1329	8260	KB	
75-34-3	1,1-Dichloroethane	ND	1.0	ug/L	1	11/14/23	B3K1329	8260	KB	
75-35-4	1,1-Dichloroethylene	ND	1.0	ug/L	1	11/14/23	B3K1329	8260	KB	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	ug/L	1	11/14/23	B3K1329	8260	KB	
96-18-4	1,2,3-Trichloropropane	ND	1.0	ug/L	1	11/14/23	B3K1329	8260	KB	
526-73-8	1,2,3-Trimethylbenzene	ND	1.0	ug/L	1	11/14/23	B3K1329	8260	KB	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	ug/L	1	11/14/23	B3K1329	8260	KB	
95-63-6	1,2,4-Trimethylbenzene	ND	1.0	ug/L	1	11/14/23	B3K1329	8260	KB	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5.0	ug/L	1	11/14/23	B3K1329	8260	KB	
106-93-4	1,2-Dibromoethane	ND	1.0	ug/L	1	11/14/23	B3K1329	8260	KB	
95-50-1	1,2-Dichlorobenzene	ND	1.0	ug/L	1	11/14/23	B3K1329	8260	KB	
107-06-2	1,2-Dichloroethane	ND	1.0	ug/L	1	11/14/23	B3K1329	8260	KB	
78-87-5	1,2-Dichloropropane	ND	1.0	ug/L	1	11/14/23	B3K1329	8260	KB	
108-67-8	1,3,5-Trimethylbenzene	ND	1.0	ug/L	1	11/14/23	B3K1329	8260	KB	
541-73-1	1,3-Dichlorobenzene	ND	1.0	ug/L	1	11/14/23	B3K1329	8260	KB	
106-46-7	1,4-Dichlorobenzene	ND	1.0	ug/L	1	11/14/23	B3K1329	8260	KB	
540-84-1	2,2,4-Trimethylpentane	ND	5.0	ug/L	1	11/14/23	B3K1329	8260	KB	
78-93-3	2-Butanone (MEK)	ND	5.0	ug/L	1	11/14/23	B3K1329	8260	KB	
91-57-6	2-Methylnaphthalene	ND	5.0	ug/L	1	11/14/23	B3K1329	8260	KB	
67-64-1	2-Propanone (acetone)	ND	20	ug/L	1	11/14/23	B3K1329	8260	KB	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	ug/L	1	11/14/23	B3K1329	8260	KB	
107-13-1	Acrylonitrile	ND	5.0	ug/L	1	11/14/23	B3K1329	8260	KB	
71-43-2	Benzene	ND	1.0	ug/L	1	11/14/23	B3K1329	8260	KB	
74-97-5	Bromochloromethane	ND	1.0	ug/L	1	11/14/23	B3K1329	8260	KB	
75-27-4	Bromodichloromethane	ND	1.0	ug/L	1	11/14/23	B3K1329	8260	KB	
75-25-2	Bromoform	ND	1.0	ug/L	1	11/14/23	B3K1329	8260	KB	
74-83-9	Bromomethane	ND	5.0	ug/L	1	11/14/23	B3K1329	8260	KB	
75-15-0	Carbon disulfide	ND	1.0	ug/L	1	11/14/23	B3K1329	8260	KB	
56-23-5	Carbon tetrachloride	ND	1.0	ug/L	1	11/14/23	B3K1329	8260	KB	
108-90-7	Chlorobenzene	ND	1.0	ug/L	1	11/14/23	B3K1329	8260	KB	
75-00-3	Chloroethane	ND	5.0	ug/L	1	11/14/23	B3K1329	8260	KB	
67-66-3	Chloroform	ND	1.0	ug/L	1	11/14/23	B3K1329	8260	KB	
74-87-3	Chloromethane	ND	5.0	ug/L	1	11/14/23	B3K1329	8260	KB	
156-59-2	cis-1,2-Dichloroethylene	ND	1.0	ug/L	1	11/14/23	B3K1329	8260	KB	
10061-01-5	cis-1,3-Dichloropropylene	ND	1.0	ug/L	1	11/14/23	B3K1329	8260	KB	
110-82-7	Cyclohexane	ND	5.0	ug/L	1	11/14/23	B3K1329	8260	KB	
124-48-1	Dibromochloromethane	ND	1.0	ug/L	1	11/14/23	B3K1329	8260	KB	
74-95-3	Dibromomethane	ND	1.0	ug/L	1	11/14/23	B3K1329	8260	KB	

Client ID: B-24R
Lab ID: 231112-03

CAS #	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Analyst	Qualifier
Organics-Volatiles										
75-71-8	Dichlorodifluoromethane	ND	5.0	ug/L	1	11/14/23	B3K1329	8260	KB	
60-29-7	Diethyl ether	ND	5.0	ug/L	1	11/14/23	B3K1329	8260	KB	
108-20-3	Diisopropyl Ether	ND	5.0	ug/L	1	11/14/23	B3K1329	8260	KB	
100-41-4	Ethylbenzene	ND	1.0	ug/L	1	11/14/23	B3K1329	8260	KB	
637-92-3	Ethyltertiarybutylether	ND	5.0	ug/L	1	11/14/23	B3K1329	8260	KB	
67-72-1	Hexachloroethane	ND	5.0	ug/L	1	11/14/23	B3K1329	8260	KB	
110-54-3	Hexane	ND	1.0	ug/L	1	11/14/23	B3K1329	8260	KB	
98-82-8	Isopropylbenzene	ND	1.0	ug/L	1	11/14/23	B3K1329	8260	KB	
1330-20-7	m & p - Xylene	ND	2.0	ug/L	1	11/14/23	B3K1329	8260	KB	
96-37-7	Methylcyclopentane	ND	1.0	ug/L	1	11/14/23	B3K1329	8260	KB	
75-09-2	Methylene chloride	ND	5.0	ug/L	1	11/14/23	B3K1329	8260	KB	
1634-04-4	Methyltertiarybutylether	ND	1.0	ug/L	1	11/14/23	B3K1329	8260	KB	
91-20-3	Naphthalene	ND	5.0	ug/L	1	11/14/23	B3K1329	8260	KB	
104-51-8	n-Butylbenzene	ND	1.0	ug/L	1	11/14/23	B3K1329	8260	KB	
142-82-5	n-Heptane	ND	1.0	ug/L	1	11/14/23	B3K1329	8260	KB	
103-65-1	n-Propylbenzene	ND	1.0	ug/L	1	11/14/23	B3K1329	8260	KB	
95-47-6	o-Xylene	ND	1.0	ug/L	1	11/14/23	B3K1329	8260	KB	
135-98-8	sec-Butylbenzene	ND	1.0	ug/L	1	11/14/23	B3K1329	8260	KB	
100-42-5	Styrene	ND	1.0	ug/L	1	11/14/23	B3K1329	8260	KB	
98-06-6	tert-Butylbenzene	ND	1.0	ug/L	1	11/14/23	B3K1329	8260	KB	
75-65-0	tertiary Butyl Alcohol	ND	50	ug/L	1	11/14/23	B3K1329	8260	KB	
994-05-8	tertiaryAmylmethylether	ND	5.0	ug/L	1	11/14/23	B3K1329	8260	KB	
127-18-4	Tetrachloroethylene	ND	1.0	ug/L	1	11/14/23	B3K1329	8260	KB	
109-99-9	Tetrahydrofuran	ND	5.0	ug/L	1	11/14/23	B3K1329	8260	KB	
108-88-3	Toluene	ND	1.0	ug/L	1	11/14/23	B3K1329	8260	KB	
156-60-5	trans-1,2-Dichloroethylene	ND	1.0	ug/L	1	11/14/23	B3K1329	8260	KB	
10061-02-6	trans-1,3-Dichloropropylene	ND	1.0	ug/L	1	11/14/23	B3K1329	8260	KB	
79-01-6	Trichloroethylene	ND	1.0	ug/L	1	11/14/23	B3K1329	8260	KB	
75-69-4	Trichlorofluoromethane	ND	1.0	ug/L	1	11/14/23	B3K1329	8260	KB	
75-01-4	Vinyl chloride	ND	1.0	ug/L	1	11/14/23	B3K1329	8260	KB	
Surrogate: Bromofluorobenzene			91.1 %	85-115	11/14/23	B3K1329	8260	KB		
Surrogate: Dibromofluoromethane			103 %	83-115	11/14/23	B3K1329	8260	KB		
Surrogate: Toluene-d8			94.3 %	85-115	11/14/23	B3K1329	8260	KB		

Client ID: B-24R

Lab ID: 2311112-03

CAS #	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Analyst	Qualifier
Inorganics-General Chemistry										
	Alkalinity-Bicarbonate	450	10	mg/L	1	11/21/23	[CALC]	2320 B	AM	
	Alkalinity-Carbonate	ND	10	mg/L	1	11/21/23	[CALC]	2320 B	AM	
	Alkalinity-Total	450	50	mg/L	1	11/16/23	B3K1607	310.2	JH	
16887-00-6	Chloride	48	4.0	mg/L	1	11/27/23	B3K2724	4500 Cl- E	MB	
	Conductivity	1370		umhos/cm	1	11/13/23	B3K1328	120.1	JP1	
18785-72-3	Sulfate	280	50	mg/L	10	11/28/23	B3K2809	ASTM D516-16	MB	

Client ID: B-9 DUP

Lab ID: 231112-04

CAS #	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Analyst	Qualifier
Organics-Volatiles										
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	ug/L	1	11/14/23	B3K1329	8260	KB	
71-55-6	1,1,1-Trichloroethane	ND	1.0	ug/L	1	11/14/23	B3K1329	8260	KB	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	1	11/14/23	B3K1329	8260	KB	
79-00-5	1,1,2-Trichloroethane	ND	1.0	ug/L	1	11/14/23	B3K1329	8260	KB	
76-13-1	1,1,2-Trichlorotrifluoroethane	ND	1.0	ug/L	1	11/14/23	B3K1329	8260	KB	
75-34-3	1,1-Dichloroethane	ND	1.0	ug/L	1	11/14/23	B3K1329	8260	KB	
75-35-4	1,1-Dichloroethylene	ND	1.0	ug/L	1	11/14/23	B3K1329	8260	KB	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	ug/L	1	11/14/23	B3K1329	8260	KB	
96-18-4	1,2,3-Trichloropropane	ND	1.0	ug/L	1	11/14/23	B3K1329	8260	KB	
526-73-8	1,2,3-Trimethylbenzene	ND	1.0	ug/L	1	11/14/23	B3K1329	8260	KB	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	ug/L	1	11/14/23	B3K1329	8260	KB	
95-63-6	1,2,4-Trimethylbenzene	ND	1.0	ug/L	1	11/14/23	B3K1329	8260	KB	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5.0	ug/L	1	11/14/23	B3K1329	8260	KB	
106-93-4	1,2-Dibromoethane	ND	1.0	ug/L	1	11/14/23	B3K1329	8260	KB	
95-50-1	1,2-Dichlorobenzene	ND	1.0	ug/L	1	11/14/23	B3K1329	8260	KB	
107-06-2	1,2-Dichloroethane	ND	1.0	ug/L	1	11/14/23	B3K1329	8260	KB	
78-87-5	1,2-Dichloropropane	ND	1.0	ug/L	1	11/14/23	B3K1329	8260	KB	
108-67-8	1,3,5-Trimethylbenzene	ND	1.0	ug/L	1	11/14/23	B3K1329	8260	KB	
541-73-1	1,3-Dichlorobenzene	ND	1.0	ug/L	1	11/14/23	B3K1329	8260	KB	
106-46-7	1,4-Dichlorobenzene	ND	1.0	ug/L	1	11/14/23	B3K1329	8260	KB	
540-84-1	2,2,4-Trimethylpentane	ND	5.0	ug/L	1	11/14/23	B3K1329	8260	KB	
78-93-3	2-Butanone (MEK)	ND	5.0	ug/L	1	11/14/23	B3K1329	8260	KB	
91-57-6	2-Methylnaphthalene	ND	5.0	ug/L	1	11/14/23	B3K1329	8260	KB	
67-64-1	2-Propanone (acetone)	ND	20	ug/L	1	11/14/23	B3K1329	8260	KB	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	ug/L	1	11/14/23	B3K1329	8260	KB	
107-13-1	Acrylonitrile	ND	5.0	ug/L	1	11/14/23	B3K1329	8260	KB	
71-43-2	Benzene	ND	1.0	ug/L	1	11/14/23	B3K1329	8260	KB	
74-97-5	Bromochloromethane	ND	1.0	ug/L	1	11/14/23	B3K1329	8260	KB	
75-27-4	Bromodichloromethane	ND	1.0	ug/L	1	11/14/23	B3K1329	8260	KB	
75-25-2	Bromoform	ND	1.0	ug/L	1	11/14/23	B3K1329	8260	KB	
74-83-9	Bromomethane	ND	5.0	ug/L	1	11/14/23	B3K1329	8260	KB	
75-15-0	Carbon disulfide	ND	1.0	ug/L	1	11/14/23	B3K1329	8260	KB	
56-23-5	Carbon tetrachloride	ND	1.0	ug/L	1	11/14/23	B3K1329	8260	KB	
108-90-7	Chlorobenzene	ND	1.0	ug/L	1	11/14/23	B3K1329	8260	KB	
75-00-3	Chloroethane	ND	5.0	ug/L	1	11/14/23	B3K1329	8260	KB	
67-66-3	Chloroform	ND	1.0	ug/L	1	11/14/23	B3K1329	8260	KB	
74-87-3	Chloromethane	ND	5.0	ug/L	1	11/14/23	B3K1329	8260	KB	
156-59-2	cis-1,2-Dichloroethylene	ND	1.0	ug/L	1	11/14/23	B3K1329	8260	KB	
10061-01-5	cis-1,3-Dichloropropylene	ND	1.0	ug/L	1	11/14/23	B3K1329	8260	KB	
110-82-7	Cyclohexane	ND	5.0	ug/L	1	11/14/23	B3K1329	8260	KB	
124-48-1	Dibromochloromethane	ND	1.0	ug/L	1	11/14/23	B3K1329	8260	KB	
74-95-3	Dibromomethane	ND	1.0	ug/L	1	11/14/23	B3K1329	8260	KB	

Client ID: B-9 DUP

Lab ID: 231112-04

CAS #	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Analyst	Qualifier
Organics-Volatiles										
75-71-8	Dichlorodifluoromethane	ND	5.0	ug/L	1	11/14/23	B3K1329	8260	KB	
60-29-7	Diethyl ether	ND	5.0	ug/L	1	11/14/23	B3K1329	8260	KB	
108-20-3	Diisopropyl Ether	ND	5.0	ug/L	1	11/14/23	B3K1329	8260	KB	
100-41-4	Ethylbenzene	ND	1.0	ug/L	1	11/14/23	B3K1329	8260	KB	
637-92-3	Ethyltertiarybutylether	ND	5.0	ug/L	1	11/14/23	B3K1329	8260	KB	
67-72-1	Hexachloroethane	ND	5.0	ug/L	1	11/14/23	B3K1329	8260	KB	
110-54-3	Hexane	ND	1.0	ug/L	1	11/14/23	B3K1329	8260	KB	
98-82-8	Isopropylbenzene	ND	1.0	ug/L	1	11/14/23	B3K1329	8260	KB	
1330-20-7	m & p - Xylene	ND	2.0	ug/L	1	11/14/23	B3K1329	8260	KB	
96-37-7	Methylcyclopentane	ND	1.0	ug/L	1	11/14/23	B3K1329	8260	KB	
75-09-2	Methylene chloride	ND	5.0	ug/L	1	11/14/23	B3K1329	8260	KB	
1634-04-4	Methyltertiarybutylether	ND	1.0	ug/L	1	11/14/23	B3K1329	8260	KB	
91-20-3	Naphthalene	ND	5.0	ug/L	1	11/14/23	B3K1329	8260	KB	
104-51-8	n-Butylbenzene	ND	1.0	ug/L	1	11/14/23	B3K1329	8260	KB	
142-82-5	n-Heptane	ND	1.0	ug/L	1	11/14/23	B3K1329	8260	KB	
103-65-1	n-Propylbenzene	ND	1.0	ug/L	1	11/14/23	B3K1329	8260	KB	
95-47-6	o-Xylene	ND	1.0	ug/L	1	11/14/23	B3K1329	8260	KB	
135-98-8	sec-Butylbenzene	ND	1.0	ug/L	1	11/14/23	B3K1329	8260	KB	
100-42-5	Styrene	ND	1.0	ug/L	1	11/14/23	B3K1329	8260	KB	
98-06-6	tert-Butylbenzene	ND	1.0	ug/L	1	11/14/23	B3K1329	8260	KB	
75-65-0	tertiary Butyl Alcohol	ND	50	ug/L	1	11/14/23	B3K1329	8260	KB	
994-05-8	tertiaryAmylmethylether	ND	5.0	ug/L	1	11/14/23	B3K1329	8260	KB	
127-18-4	Tetrachloroethylene	ND	1.0	ug/L	1	11/14/23	B3K1329	8260	KB	
109-99-9	Tetrahydrofuran	ND	5.0	ug/L	1	11/14/23	B3K1329	8260	KB	
108-88-3	Toluene	ND	1.0	ug/L	1	11/14/23	B3K1329	8260	KB	
156-60-5	trans-1,2-Dichloroethylene	ND	1.0	ug/L	1	11/14/23	B3K1329	8260	KB	
10061-02-6	trans-1,3-Dichloropropylene	ND	1.0	ug/L	1	11/14/23	B3K1329	8260	KB	
79-01-6	Trichloroethylene	ND	1.0	ug/L	1	11/14/23	B3K1329	8260	KB	
75-69-4	Trichlorofluoromethane	ND	1.0	ug/L	1	11/14/23	B3K1329	8260	KB	
75-01-4	Vinyl chloride	ND	1.0	ug/L	1	11/14/23	B3K1329	8260	KB	
Surrogate: Bromofluorobenzene			86.9 %	85-115	11/14/23	B3K1329	8260	KB		
Surrogate: Dibromofluoromethane			96.9 %	83-115	11/14/23	B3K1329	8260	KB		
Surrogate: Toluene-d8			89.9 %	85-115	11/14/23	B3K1329	8260	KB		

Client ID: B-9 DUP

Lab ID: 2311112-04

CAS #	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Analyst	Qualifier
Inorganics-General Chemistry										
	Alkalinity-Bicarbonate	620	10	mg/L	2	11/21/23	[CALC]	2320 B	AM	
	Alkalinity-Carbonate	ND	10	mg/L	1	11/21/23	[CALC]	2320 B	AM	
	Alkalinity-Total	620	100	mg/L	2	11/16/23	B3K1607	310.2	JH	
16887-00-6	Chloride	83	4.0	mg/L	1	11/27/23	B3K2724	4500 Cl- E	MB	
	Conductivity	2740		umhos/cm	1	11/13/23	B3K1328	120.1	JP1	
18785-72-3	Sulfate	880	250	mg/L	50	11/28/23	B3K2809	ASTM D516-16	MB	

Client ID: FB
Lab ID: 231112-05

CAS #	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Analyst	Qualifier
Organics-Volatiles										
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	ug/L	1	11/14/23	B3K1329	8260	KB	
71-55-6	1,1,1-Trichloroethane	ND	1.0	ug/L	1	11/14/23	B3K1329	8260	KB	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	1	11/14/23	B3K1329	8260	KB	
79-00-5	1,1,2-Trichloroethane	ND	1.0	ug/L	1	11/14/23	B3K1329	8260	KB	
76-13-1	1,1,2-Trichlorotrifluoroethane	ND	1.0	ug/L	1	11/14/23	B3K1329	8260	KB	
75-34-3	1,1-Dichloroethane	ND	1.0	ug/L	1	11/14/23	B3K1329	8260	KB	
75-35-4	1,1-Dichloroethylene	ND	1.0	ug/L	1	11/14/23	B3K1329	8260	KB	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	ug/L	1	11/14/23	B3K1329	8260	KB	
96-18-4	1,2,3-Trichloropropane	ND	1.0	ug/L	1	11/14/23	B3K1329	8260	KB	
526-73-8	1,2,3-Trimethylbenzene	ND	1.0	ug/L	1	11/14/23	B3K1329	8260	KB	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	ug/L	1	11/14/23	B3K1329	8260	KB	
95-63-6	1,2,4-Trimethylbenzene	ND	1.0	ug/L	1	11/14/23	B3K1329	8260	KB	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5.0	ug/L	1	11/14/23	B3K1329	8260	KB	
106-93-4	1,2-Dibromoethane	ND	1.0	ug/L	1	11/14/23	B3K1329	8260	KB	
95-50-1	1,2-Dichlorobenzene	ND	1.0	ug/L	1	11/14/23	B3K1329	8260	KB	
107-06-2	1,2-Dichloroethane	ND	1.0	ug/L	1	11/14/23	B3K1329	8260	KB	
78-87-5	1,2-Dichloropropane	ND	1.0	ug/L	1	11/14/23	B3K1329	8260	KB	
108-67-8	1,3,5-Trimethylbenzene	ND	1.0	ug/L	1	11/14/23	B3K1329	8260	KB	
541-73-1	1,3-Dichlorobenzene	ND	1.0	ug/L	1	11/14/23	B3K1329	8260	KB	
106-46-7	1,4-Dichlorobenzene	ND	1.0	ug/L	1	11/14/23	B3K1329	8260	KB	
540-84-1	2,2,4-Trimethylpentane	ND	5.0	ug/L	1	11/14/23	B3K1329	8260	KB	
78-93-3	2-Butanone (MEK)	ND	5.0	ug/L	1	11/14/23	B3K1329	8260	KB	
91-57-6	2-Methylnaphthalene	ND	5.0	ug/L	1	11/14/23	B3K1329	8260	KB	
67-64-1	2-Propanone (acetone)	ND	20	ug/L	1	11/14/23	B3K1329	8260	KB	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	ug/L	1	11/14/23	B3K1329	8260	KB	
107-13-1	Acrylonitrile	ND	5.0	ug/L	1	11/14/23	B3K1329	8260	KB	
71-43-2	Benzene	ND	1.0	ug/L	1	11/14/23	B3K1329	8260	KB	
74-97-5	Bromochloromethane	ND	1.0	ug/L	1	11/14/23	B3K1329	8260	KB	
75-27-4	Bromodichloromethane	ND	1.0	ug/L	1	11/14/23	B3K1329	8260	KB	
75-25-2	Bromoform	ND	1.0	ug/L	1	11/14/23	B3K1329	8260	KB	
74-83-9	Bromomethane	ND	5.0	ug/L	1	11/14/23	B3K1329	8260	KB	
75-15-0	Carbon disulfide	ND	1.0	ug/L	1	11/14/23	B3K1329	8260	KB	
56-23-5	Carbon tetrachloride	ND	1.0	ug/L	1	11/14/23	B3K1329	8260	KB	
108-90-7	Chlorobenzene	ND	1.0	ug/L	1	11/14/23	B3K1329	8260	KB	
75-00-3	Chloroethane	ND	5.0	ug/L	1	11/14/23	B3K1329	8260	KB	
67-66-3	Chloroform	ND	1.0	ug/L	1	11/14/23	B3K1329	8260	KB	
74-87-3	Chloromethane	ND	5.0	ug/L	1	11/14/23	B3K1329	8260	KB	
156-59-2	cis-1,2-Dichloroethylene	ND	1.0	ug/L	1	11/14/23	B3K1329	8260	KB	
10061-01-5	cis-1,3-Dichloropropylene	ND	1.0	ug/L	1	11/14/23	B3K1329	8260	KB	
110-82-7	Cyclohexane	ND	5.0	ug/L	1	11/14/23	B3K1329	8260	KB	
124-48-1	Dibromochloromethane	ND	1.0	ug/L	1	11/14/23	B3K1329	8260	KB	
74-95-3	Dibromomethane	ND	1.0	ug/L	1	11/14/23	B3K1329	8260	KB	

Client ID: FB
Lab ID: 231112-05

CAS #	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Analyst	Qualifier
Organics-Volatiles										
75-71-8	Dichlorodifluoromethane	ND	5.0	ug/L	1	11/14/23	B3K1329	8260	KB	
60-29-7	Diethyl ether	ND	5.0	ug/L	1	11/14/23	B3K1329	8260	KB	
108-20-3	Diisopropyl Ether	ND	5.0	ug/L	1	11/14/23	B3K1329	8260	KB	
100-41-4	Ethylbenzene	ND	1.0	ug/L	1	11/14/23	B3K1329	8260	KB	
637-92-3	Ethyltertiarybutylether	ND	5.0	ug/L	1	11/14/23	B3K1329	8260	KB	
67-72-1	Hexachloroethane	ND	5.0	ug/L	1	11/14/23	B3K1329	8260	KB	
110-54-3	Hexane	ND	1.0	ug/L	1	11/14/23	B3K1329	8260	KB	
98-82-8	Isopropylbenzene	ND	1.0	ug/L	1	11/14/23	B3K1329	8260	KB	
1330-20-7	m & p - Xylene	ND	2.0	ug/L	1	11/14/23	B3K1329	8260	KB	
96-37-7	Methylcyclopentane	ND	1.0	ug/L	1	11/14/23	B3K1329	8260	KB	
75-09-2	Methylene chloride	6.9	5.0	ug/L	1	11/14/23	B3K1329	8260	KB	
1634-04-4	Methyltertiarybutylether	ND	1.0	ug/L	1	11/14/23	B3K1329	8260	KB	
91-20-3	Naphthalene	ND	5.0	ug/L	1	11/14/23	B3K1329	8260	KB	
104-51-8	n-Butylbenzene	ND	1.0	ug/L	1	11/14/23	B3K1329	8260	KB	
142-82-5	n-Heptane	ND	1.0	ug/L	1	11/14/23	B3K1329	8260	KB	
103-65-1	n-Propylbenzene	ND	1.0	ug/L	1	11/14/23	B3K1329	8260	KB	
95-47-6	o-Xylene	ND	1.0	ug/L	1	11/14/23	B3K1329	8260	KB	
135-98-8	sec-Butylbenzene	ND	1.0	ug/L	1	11/14/23	B3K1329	8260	KB	
100-42-5	Styrene	ND	1.0	ug/L	1	11/14/23	B3K1329	8260	KB	
98-06-6	tert-Butylbenzene	ND	1.0	ug/L	1	11/14/23	B3K1329	8260	KB	
75-65-0	tertiary Butyl Alcohol	ND	50	ug/L	1	11/14/23	B3K1329	8260	KB	
994-05-8	tertiaryAmylmethylether	ND	5.0	ug/L	1	11/14/23	B3K1329	8260	KB	
127-18-4	Tetrachloroethylene	ND	1.0	ug/L	1	11/14/23	B3K1329	8260	KB	
109-99-9	Tetrahydrofuran	ND	5.0	ug/L	1	11/14/23	B3K1329	8260	KB	
108-88-3	Toluene	ND	1.0	ug/L	1	11/14/23	B3K1329	8260	KB	
156-60-5	trans-1,2-Dichloroethylene	ND	1.0	ug/L	1	11/14/23	B3K1329	8260	KB	
10061-02-6	trans-1,3-Dichloropropylene	ND	1.0	ug/L	1	11/14/23	B3K1329	8260	KB	
79-01-6	Trichloroethylene	ND	1.0	ug/L	1	11/14/23	B3K1329	8260	KB	
75-69-4	Trichlorofluoromethane	ND	1.0	ug/L	1	11/14/23	B3K1329	8260	KB	
75-01-4	Vinyl chloride	ND	1.0	ug/L	1	11/14/23	B3K1329	8260	KB	
Surrogate: Bromofluorobenzene			99.8 %	85-115		11/14/23	B3K1329	8260	KB	
Surrogate: Dibromofluoromethane			106 %	83-115		11/14/23	B3K1329	8260	KB	
Surrogate: Toluene-d8			91.7 %	85-115		11/14/23	B3K1329	8260	KB	

Analysis Request Sheet

Lab Work Order Number 231112		Project Name Coldwater Road		Matrix WATER	
Location ID 393431		Program I100		Project TAT Days RO 4.1	
Dept-Division-District EGLE MMD		Activity I100		Project Due Date	
State Project Manager Nicole Sanabria		Funding Source		Sample Collector Nicole Sanabria	
State Project Manager Email SanabriaN@Michigan.gov		Location Code 5008		Sample Collector Phone 517-281-7726	
State Project Manager Phone 517-281-7726		Overflow Lab Choice 1 Fibertec		Contract Firm	
		Overflow Lab Choice 2		Contract Firm Primary Contact	
				Primary Contact Phone	

Lab Use Only	Field Sample Identification	Collection Date	Collection Time	Bottle Count	Comments
1	01 B-9	11/8/23	12:30	5	Metals Sent to Fibertec
2	02 B-18A	11/8/23	11:10	5	Did not receive GA
3	03 B-24R	11/8/23	10:04	5	bottle
4	04 B-9 DUP	11/8/23	12:30	5	
5	05 FB	11/8/23	11:55	84	
6					
7					
8					
9					
10					

ORGANIC CHEMISTRY	MAD - DISSOLVED METALS	MA - TOTAL METALS	GENERAL CHEMISTRY
VOA - Volatile Organic Acids Volatiles - Full List 1 2 3 4 5 6 7 8 9 10 BTEX/MTBE/TMB only 1 2 3 4 5 6 7 8 9 10 Chlorinated only 1 2 3 4 5 6 7 8 9 10 GRO 1 2 3 4 5 6 7 8 9 10 1,4 Dioxane 1 2 3 4 5 6 7 8 9 10 METH - Methane, Ethane, Ethene Methane, Ethane, Ethene 1 2 3 4 5 6 7 8 9 10 ON - Pesticides, PCBs Pesticides & PCBs 1 2 3 4 5 6 7 8 9 10 Pesticides only 1 2 3 4 5 6 7 8 9 10 PCBs only 1 2 3 4 5 6 7 8 9 10 Toxaphene 1 2 3 4 5 6 7 8 9 10 Chlordane 1 2 3 4 5 6 7 8 9 10 BNA - Base Neutral Acids BNAs 1 2 3 4 5 6 7 8 9 10 Benzidines 1 2 3 4 5 6 7 8 9 10 PNAs only 1 2 3 4 5 6 7 8 9 10 BNs only 1 2 3 4 5 6 7 8 9 10 Acids only 1 2 3 4 5 6 7 8 9 10 Organic Specialty Requests Library search - Volatiles 1 2 3 4 5 6 7 8 9 10 Library search - SemiVols 1 2 3 4 5 6 7 8 9 10 Finger Print 1 2 3 4 5 6 7 8 9 10 DRO / ORO 1 2 3 4 5 6 7 8 9 10	Diss - Silver - Ag 1 2 3 4 5 6 7 8 9 10 Diss - Aluminum - Al 1 2 3 4 5 6 7 8 9 10 Diss - Arsenic - As 1 2 3 4 5 6 7 8 9 10 Diss - Boron - B 1 2 3 4 5 6 7 8 9 10 Diss - Barium - Ba 1 2 3 4 5 6 7 8 9 10 Diss - Beryllium - Be 1 2 3 4 5 6 7 8 9 10 Diss - Cadmium - Cd 1 2 3 4 5 6 7 8 9 10 Diss - Cobalt - Co 1 2 3 4 5 6 7 8 9 10 Diss - Chromium - Cr 1 2 3 4 5 6 7 8 9 10 Diss - Copper - Cu 1 2 3 4 5 6 7 8 9 10 Diss - Iron - Fe 1 2 3 4 5 6 7 8 9 10 Diss - Mercury - Hg 1 2 3 4 5 6 7 8 9 10 Diss - Lithium - Li 1 2 3 4 5 6 7 8 9 10 Diss - Manganese - Mn 1 2 3 4 5 6 7 8 9 10 Diss - Molybdenum - Mo 1 2 3 4 5 6 7 8 9 10 Diss - Nickel - Ni 1 2 3 4 5 6 7 8 9 10 Diss - Lead - Pb 1 2 3 4 5 6 7 8 9 10 Diss - Antimony - Sb 1 2 3 4 5 6 7 8 9 10 Diss - Selenium - Se 1 2 3 4 5 6 7 8 9 10 Diss - Strontium - Sr 1 2 3 4 5 6 7 8 9 10 Diss - Titanium - Ti 1 2 3 4 5 6 7 8 9 10 Diss - Thallium - Tl 1 2 3 4 5 6 7 8 9 10 Diss - Uranium - U 1 2 3 4 5 6 7 8 9 10 Diss - Vanadium - V 1 2 3 4 5 6 7 8 9 10 Diss - Zinc - Zn 1 2 3 4 5 6 7 8 9 10 Diss - Calcium - Ca 1 2 3 4 5 6 7 8 9 10 Diss - Potassium - K 1 2 3 4 5 6 7 8 9 10 Diss - Magnesium - Mg 1 2 3 4 5 6 7 8 9 10 Diss - Sodium - Na 1 2 3 4 5 6 7 8 9 10 Diss - Hardness - Ca, Mg 1 2 3 4 5 6 7 8 9 10 MD - Metals Dissolved Lab Filtration 1 2 3 4 5 6 7 8 9 10	Silver - Ag 1 2 3 4 5 6 7 8 9 10 Aluminum - Al 1 2 3 4 5 6 7 8 9 10 Arsenic - As 1 2 3 4 5 6 7 8 9 10 Boron - B 1 2 3 4 5 6 7 8 9 10 Barium - Ba 1 2 3 4 5 6 7 8 9 10 Beryllium - Be 1 2 3 4 5 6 7 8 9 10 Cadmium - Cd 1 2 3 4 5 6 7 8 9 10 Cobalt - Co 1 2 3 4 5 6 7 8 9 10 Chromium - Cr 1 2 3 4 5 6 7 8 9 10 Copper - Cu 1 2 3 4 5 6 7 8 9 10 Iron - Fe 1 2 3 4 5 6 7 8 9 10 Mercury - Hg 1 2 3 4 5 6 7 8 9 10 Lithium - Li 1 2 3 4 5 6 7 8 9 10 Manganese - Mn 1 2 3 4 5 6 7 8 9 10 Molybdenum - Mo 1 2 3 4 5 6 7 8 9 10 Nickel - Ni 1 2 3 4 5 6 7 8 9 10 Lead - Pb 1 2 3 4 5 6 7 8 9 10 Antimony - Sb 1 2 3 4 5 6 7 8 9 10 Selenium - Se 1 2 3 4 5 6 7 8 9 10 Strontium - Sr 1 2 3 4 5 6 7 8 9 10 Titanium - Ti 1 2 3 4 5 6 7 8 9 10 Thallium - Tl 1 2 3 4 5 6 7 8 9 10 Uranium - U 1 2 3 4 5 6 7 8 9 10 Vanadium - V 1 2 3 4 5 6 7 8 9 10 Zinc - Zn 1 2 3 4 5 6 7 8 9 10 Calcium - Ca 1 2 3 4 5 6 7 8 9 10 Potassium - K 1 2 3 4 5 6 7 8 9 10 Magnesium - Mg 1 2 3 4 5 6 7 8 9 10 Sodium - Na 1 2 3 4 5 6 7 8 9 10 Hardness - Ca, Mg 1 2 3 4 5 6 7 8 9 10 LHG - Low Level Mercury Mercury Low Level - Hg 1 2 3 4 5 6 7 8 9 10	GB Total Cyanide - CN 1 2 3 4 5 6 7 8 9 10 GCN Available Cyanide - CN 1 2 3 4 5 6 7 8 9 10 (Amenable / Weak Acid Dissociable) CA Chlorophyll 1 2 3 4 5 6 7 8 9 10 GN Ortho Phosphate - OP 1 2 3 4 5 6 7 8 9 10 GN Diss Ortho Phosphate - *FF 1 2 3 4 5 6 7 8 9 10 GN Nitrite - NO ₂ 1 2 3 4 5 6 7 8 9 10 GN Nitrate - NO ₃ (Calc.) 1 2 3 4 5 6 7 8 9 10 GN Suspended Solids - SS 1 2 3 4 5 6 7 8 9 10 GN Dissolved Solids - TDS 1 2 3 4 5 6 7 8 9 10 MN Diss Solids - TDS (Calc.) 1 2 3 4 5 6 7 8 9 10 GN Turbidity 1 2 3 4 5 6 7 8 9 10 MN Total Alkalinity 1 2 3 4 5 6 7 8 9 10 MN Bicarb/Carb Alkalinity 1 2 3 4 5 6 7 8 9 10 (Includes Total Alkalinity) MN Chloride - Cl 1 2 3 4 5 6 7 8 9 10 MN Fluoride - F 1 2 3 4 5 6 7 8 9 10 MN Sulfate - SO ₄ 1 2 3 4 5 6 7 8 9 10 MN Diss Chromium 6 - *FF 1 2 3 4 5 6 7 8 9 10 MN Conductivity 1 2 3 4 5 6 7 8 9 10 MN pH 1 2 3 4 5 6 7 8 9 10 GA Chem Oxyg Dem - COD 1 2 3 4 5 6 7 8 9 10 GA Diss Org Carbon - DOC - *FF 1 2 3 4 5 6 7 8 9 10 GN Diss Org Carbon - DOC (LF) 1 2 3 4 5 6 7 8 9 10 (Lab - Filtered & Preserved) GA Total Org Carbon - TOC 1 2 3 4 5 6 7 8 9 10 GA Ammonia - NH ₃ 1 2 3 4 5 6 7 8 9 10 GA Nitrate+Nitrite - NO ₃ +NO ₂ 1 2 3 4 5 6 7 8 9 10 GA Kjeldahl Nitrogen - KN 1 2 3 4 5 6 7 8 9 10 GA Total Phosphorus - TP 1 2 3 4 5 6 7 8 9 10 * (FF) - Field Filtered

Chain of Custody	Requisitioned by	Received By	Date / Time
	Print Name & Org. Nicole Sanabria		11/8/23 1530
	Signature: Nicole Sanabria		
	Print Name & Org.		
	Signature:		
	Print Name		

Tuesday, November 28, 2023

Fibertec Project Number: A18381
Project Identification: Coldwater Road (393431) /393431
Submittal Date: 11/13/2023

Ms. Nicole Sanabria
EGLE - Lansing District Office
525 W. Allegan Street
Constitution Hall-3N
Lansing, MI 48909

Dear Ms. Sanabria,

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

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

Sincerely,



By Sue Ricketts at 11:15 AM, Nov 28, 2023

For Heather L. Smith
Director of Laboratory Operations

Enclosures

1914 Holloway Drive
11766 E. Grand River
8660 S. Mackinaw Trail

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

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

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

Analytical Laboratory Report
Laboratory Project Number: A18381
Laboratory Sample Number: A18381-001

Order: A18381
Date: 11/28/23

Client Identification: EGLE - Lansing District Office	Sample Description: B-9	Chain of Custody: N/A
Client Project Name: Coldwater Road (393431)	Sample No:	Collect Date: 11/08/23
Client Project No: 393431	Sample Matrix: Ground Water	Collect Time: 12:30

Sample Comments:

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

Trace Elements by ICP/MS, Dissolved
Method: EPA 3005A (Dissolved)/EPA 6020A

Aliquot ID: A18381-001 **Matrix: Ground Water**
Description: B-9

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
1. Calcium	280000		µg/L	2400	100	11/17/23	PT23K17A	11/17/23	T423K17A	RJM
2. Magnesium	170000		µg/L	800	100	11/17/23	PT23K17A	11/17/23	T423K17A	RJM
3. Potassium	1900		µg/L	1000	10	11/17/23	PT23K17A	11/17/23	T423K17A	RJM
4. Sodium	56000		µg/L	1000	10	11/17/23	PT23K17A	11/17/23	T423K17A	RJM

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Analytical Laboratory Report
Laboratory Project Number: A18381
Laboratory Sample Number: A18381-002

Order: A18381
Date: 11/28/23

Client Identification: EGLE - Lansing District Office	Sample Description: B-18A	Chain of Custody: N/A
Client Project Name: Coldwater Road (393431)	Sample No:	Collect Date: 11/08/23
Client Project No: 393431	Sample Matrix: Ground Water	Collect Time: 11:10

Sample Comments:

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

Trace Elements by ICP/MS, Dissolved
Method: EPA 3005A (Dissolved)/EPA 6020A

Aliquot ID: A18381-002
Description: B-18A

Matrix: Ground Water

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
1. Calcium	110000		µg/L	1000	10	11/17/23	PT23K17A	11/17/23	T423K17A	RJM
2. Magnesium	53000		µg/L	800	100	11/17/23	PT23K17A	11/17/23	T423K17A	RJM
3. Potassium	2600		µg/L	1000	10	11/17/23	PT23K17A	11/17/23	T423K17A	RJM
4. Sodium	30000		µg/L	1000	10	11/17/23	PT23K17A	11/17/23	T423K17A	RJM

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Analytical Laboratory Report
Laboratory Project Number: A18381
Laboratory Sample Number: A18381-003

Order: A18381
Date: 11/28/23

Client Identification: EGLE - Lansing District Office	Sample Description: B-24R	Chain of Custody: N/A
Client Project Name: Coldwater Road (393431)	Sample No:	Collect Date: 11/08/23
Client Project No: 393431	Sample Matrix: Ground Water	Collect Time: 10:04

Sample Comments:

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

Trace Elements by ICP/MS, Dissolved
Method: EPA 3005A (Dissolved)/EPA 6020A

Aliquot ID: A18381-003
Description: B-24R

Matrix: Ground Water

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
1. Calcium	150000		µg/L	2400	100	11/17/23	PT23K17A	11/17/23	T423K17A	RJM
2. Magnesium	53000		µg/L	800	100	11/17/23	PT23K17A	11/17/23	T423K17A	RJM
3. Potassium	1800		µg/L	1000	10	11/17/23	PT23K17A	11/17/23	T423K17A	RJM
4. Sodium	46000		µg/L	1000	10	11/17/23	PT23K17A	11/17/23	T423K17A	RJM

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Analytical Laboratory Report
Laboratory Project Number: A18381
Laboratory Sample Number: A18381-004

Order: A18381
Date: 11/28/23

Client Identification:	EGLE - Lansing District Office	Sample Description:	B-9 DUP	Chain of Custody:	N/A
Client Project Name:	Coldwater Road (393431)	Sample No:		Collect Date:	11/08/23
Client Project No:	393431	Sample Matrix:	Ground Water	Collect Time:	12:30

Sample Comments:

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

Trace Elements by ICP/MS, Dissolved
Method: EPA 3005A (Dissolved)/EPA 6020A

Aliquot ID: A18381-004
Description: B-9 DUP
Matrix: Ground Water

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
1. Calcium	260000		µg/L	2400	100	11/17/23	PT23K17A	11/17/23	T423K17A	RJM
2. Magnesium	160000		µg/L	800	100	11/17/23	PT23K17A	11/17/23	T423K17A	RJM
3. Potassium	1900		µg/L	1000	10	11/17/23	PT23K17A	11/17/23	T423K17A	RJM
4. Sodium	57000		µg/L	1000	10	11/17/23	PT23K17A	11/17/23	T423K17A	RJM

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Analytical Laboratory Report
Laboratory Project Number: A18381
Laboratory Sample Number: A18381-005

Order: A18381
Date: 11/28/23

Client Identification: EGLE - Lansing District Office	Sample Description: FB	Chain of Custody: N/A
Client Project Name: Coldwater Road (393431)	Sample No:	Collect Date: 11/08/23
Client Project No: 393431	Sample Matrix: Blank: Field	Collect Time: 11:55

Sample Comments:

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

Trace Elements by ICP/MS, Dissolved
Method: EPA 0200.8 (Dissolved)/EPA 6020A

Aliquot ID: A18381-005
Description: FB

Matrix: Blank: Field

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
1. Calcium	U		µg/L	1000	10	11/17/23	PT23K17A	11/17/23	T423K17A	RJM
2. Magnesium	U		µg/L	300	10	11/17/23	PT23K17A	11/17/23	T423K17A	RJM
3. Potassium	U		µg/L	1000	10	11/17/23	PT23K17A	11/17/23	T423K17A	RJM
4. Sodium	U		µg/L	1000	10	11/17/23	PT23K17A	11/17/23	T423K17A	RJM

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Definitions/ Qualifiers:

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

Exception Summary:

Analysis Locations:

All analyses performed in Holt.



Accreditation Number(s):

T104704518-23-15 (TX)

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Analytical Laboratory Report

Report ID: S55608.01(01)
Generated on 11/29/2023

Report to
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Ann Arbor, MI 48105

Phone: 313-333-0211 FAX:
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Report Summary
Lab Sample ID(s): S55608.01-S55608.07
Project: RACER Coldwater Road
Collected Date(s): 11/08/2023
Submitted Date/Time: 11/10/2023 08:15
Sampled by: Kevin Schneider
P.O. #: 1940006516 TASK001

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Maya Murshak
Technical Director



Analytical Laboratory Report

General Report Notes

Analytical results relate only to the samples tested, in the condition received by the laboratory.

Methods may be modified for improved performance.

Results reported on a dry weight basis where applicable.

'Not detected' indicates that parameter was not found at a level equal to or greater than the reporting limit (RL).

When MDL results are provided, then 'Not detected' indicates that parameter was not found at a level equal to or greater than the MDL.

40 CFR Part 136 Table II Required Containers, Preservation Techniques and Holding Times for the Clean Water Act specify that samples for acrolein and acrylonitrile, and 2-chloroethylvinyl ether need to be preserved at a pH in the range of 4 to 5 or if not preserved, analyzed within 3 days of sampling.

QA/QC corresponding to this analytical report is a separate document with the same Merit ID reference and is available upon request.

Starred (*) analytes are not NY NELAP accredited.

Samples are held by the lab for 30 days from the final report date unless a written request to hold longer is provided by the client.

Report shall not be reproduced except in full, without the written approval of Merit Laboratories, Inc.

Limits for drinking water samples, are listed as the MCL Limits (Maximum Contaminant Level Concentrations)

PFAS requirement: Section 9.3.8 of U.S. EPA Method 537.1 states "If the method analyte(s) found in the Field Sample is present in the FRB at a concentration greater than 1/3 the MRL, then all samples collected with that FRB are invalid and must be recollected and reanalyzed."

Samples submitted without an accompanying FRB may not be acceptable for compliance purposes.

Wisconsin PFAs analysis: MDL = LOD; RL = LOQ. LOD and LOQ are adjusted for dilution.

All accreditations/certifications held by this laboratory are listed on page 3. Not all accreditations/certifications are applicable to this report.

For a specific list of accredited analytes, please feel free to contact the laboratory or visit <https://www.meritlabs.com/certifications>.

Report Narrative

There is no additional narrative for this analytical report

Laboratory Accreditations (For Reference Only)

Authority	Accreditation ID
Michigan DEQ	#9956
DOD ELAP & ISO/IEC 17025:2017	#69699 PJLA Testing
WBENC	#2005110032
Ohio VAP	#CL0002
Indiana DOH	#C-MI-07
New York NELAC	#11814
North Carolina DENR	#680
North Carolina DOH	#26702
Pennsylvania DEP	#68-05884
Wisconsin DNR	FID# 399147320

Qualifier Descriptions

Qualifier	Description
!	Result is outside of stated limit criteria
B	Compound also found in associated method blank
E	Concentration exceeds calibration range
F	Analysis run outside of holding time
G	Estimated result due to extraction run outside of holding time
H	Sample submitted and run outside of holding time
I	Matrix interference with internal standard
J	Estimated value less than reporting limit, but greater than MDL
L	Elevated reporting limit due to low sample amount
M	Result reported to MDL not RDL
O	Analysis performed by outside laboratory. See attached report.
R	Preliminary result
S	Surrogate recovery outside of control limits
T	No correction for total solids
X	Elevated reporting limit due to matrix interference
Y	Elevated reporting limit due to high target concentration
b	Value detected less than reporting limit, but greater than MDL
e	Reported value estimated due to interference
j	Analyte also found in associated method blank
p	Benzo(b)Fluoranthene and Benzo(k)Fluoranthene integrated as one peak.
x	Preserved from bulk sample

Glossary of Abbreviations

Abbreviation	Description
RL/RDL	Reporting Limit
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
SW	EPA SW 846 (Soil and Wastewater) Methods
E	EPA Methods
SM	Standard Methods
LN	Linear
BR	Branched



Method Summary

Method	Version
E120.1	EPA Method 120.1 Revision 1982
E200.8	EPA Method 200.8 Revision 5.4
SM5310C	Standard Method 5310C 2011
SW3015A	SW 846 Method 3015A Revision 1 February 2007
SW9020B	SW 846 Method 9020B Revision 2 September 1994



Analytical Laboratory Report

Sample Summary (7 samples)

Sample ID	Sample Tag	Matrix	Collected Date/Time
S55608.01	B-24R	Groundwater	11/08/23 10:04
S55608.02	B-18A	Groundwater	11/08/23 11:04
S55608.03	B-9	Groundwater	11/08/23 12:20
S55608.04	B-19AR	Groundwater	11/08/23 15:10
S55608.05	B-28	Groundwater	11/08/23 15:10
S55608.06	B-7	Groundwater	11/08/23 15:36
S55608.07	GW-DUP-110923	Groundwater	11/08/23 00:01



Analytical Laboratory Report

Lab Sample ID: S55608.01

Sample Tag: B-24R

Collected Date/Time: 11/08/2023 10:04

Matrix: Groundwater

COC Reference: 165444

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	40ml Glass	H2SO4	Yes	4.7	IR
1	8oz Glass	H2SO4	Yes	4.7	IR
1	125ml Plastic	HNO3	Yes	4.7	IR
1	250ml Plastic	None	Yes	4.7	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Metal Digestion	Completed	SW3015A	11/10/23 13:00	CCM	

Inorganics

Method: E120.1, Run Date: 11/15/23 16:23, Analyst: SSM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Conductivity	1,330	1		umhos/cm	1		

Method: SM5310C, Run Date: 11/13/23 17:53, Analyst: PJH

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
TOC	3.2	1		mg/L	1		

Metals

Method: E200.8, Run Date: 11/10/23 14:19, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Chromium, Dissolved	Not detected	0.005		mg/L	5	7440-47-3	
Copper, Dissolved	Not detected	0.005		mg/L	5	7440-50-8	
Nickel, Dissolved	Not detected	0.005		mg/L	5	7440-02-0	
Zinc, Dissolved	0.006	0.005		mg/L	5	7440-66-6	

Organics

Method: SW9020B, Run Date: 11/29/23 04:30, Analyst: GEL

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
TOX*	Completed	3,000		ug/L	1		O

O-Analysis performed by outside laboratory. See attached report.



Analytical Laboratory Report

Lab Sample ID: S55608.02

Sample Tag: B-18A

Collected Date/Time: 11/08/2023 11:04

Matrix: Groundwater

COC Reference: 165444

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	40ml Glass	H2SO4	Yes	4.7	IR
1	8oz Glass	H2SO4	Yes	4.7	IR
1	125ml Plastic	HNO3	Yes	4.7	IR
1	250ml Plastic	None	Yes	4.7	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Metal Digestion	Completed	SW3015A	11/10/23 13:00	CCM	

Inorganics

Method: E120.1, Run Date: 11/15/23 16:28, Analyst: SSM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Conductivity	1,080	1		umhos/cm	1		

Method: SM5310C, Run Date: 11/13/23 18:09, Analyst: PJH

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
TOC	1.4	1		mg/L	1		

Metals

Method: E200.8, Run Date: 11/10/23 14:21, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Chromium, Dissolved	Not detected	0.005		mg/L	5	7440-47-3	
Copper, Dissolved	Not detected	0.005		mg/L	5	7440-50-8	
Nickel, Dissolved	0.005	0.005		mg/L	5	7440-02-0	
Zinc, Dissolved	0.013	0.005		mg/L	5	7440-66-6	

Organics

Method: SW9020B, Run Date: 11/25/23 02:10, Analyst: GEL

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
TOX*	Completed	3,000		ug/L	1		O

O-Analysis performed by outside laboratory. See attached report.



Analytical Laboratory Report

Lab Sample ID: S55608.03

Sample Tag: B-9

Collected Date/Time: 11/08/2023 12:20

Matrix: Groundwater

COC Reference: 165444

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	40ml Glass	H2SO4	Yes	4.7	IR
1	8oz Glass	H2SO4	Yes	4.7	IR
1	125ml Plastic	HNO3	Yes	4.7	IR
1	250ml Plastic	None	Yes	4.7	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Metal Digestion	Completed	SW3015A	11/10/23 13:00	CCM	

Inorganics

Method: E120.1, Run Date: 11/15/23 16:34, Analyst: SSM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Conductivity	2,630	1		umhos/cm	1		

Method: SM5310C, Run Date: 11/13/23 18:25, Analyst: PJH

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
TOC	1.9	1		mg/L	1		

Metals

Method: E200.8, Run Date: 11/10/23 14:22, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Chromium, Dissolved	Not detected	0.005		mg/L	5	7440-47-3	
Copper, Dissolved	Not detected	0.005		mg/L	5	7440-50-8	
Nickel, Dissolved	0.006	0.005		mg/L	5	7440-02-0	
Zinc, Dissolved	Not detected	0.005		mg/L	5	7440-66-6	

Organics

Method: SW9020B, Run Date: 11/29/23 05:08, Analyst: GEL

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
TOX*	Completed	3,000		ug/L	1		O

O-Analysis performed by outside laboratory. See attached report.



Analytical Laboratory Report

Lab Sample ID: S55608.04

Sample Tag: B-19AR

Collected Date/Time: 11/08/2023 15:10

Matrix: Groundwater

COC Reference: 165444

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	40ml Glass	H2SO4	Yes	4.7	IR
1	8oz Glass	H2SO4	Yes	4.7	IR
1	125ml Plastic	HNO3	Yes	4.7	IR
1	250ml Plastic	None	Yes	4.7	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Metal Digestion	Completed	SW3015A	11/10/23 13:00	CCM	

Inorganics

Method: E120.1, Run Date: 11/15/23 16:54, Analyst: SSM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Conductivity	1,240	1		umhos/cm	1		

Method: SM5310C, Run Date: 11/13/23 18:41, Analyst: PJH

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
TOC	1.6	1		mg/L	1		

Metals

Method: E200.8, Run Date: 11/10/23 14:24, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Chromium, Dissolved	Not detected	0.005		mg/L	5	7440-47-3	
Copper, Dissolved	Not detected	0.005		mg/L	5	7440-50-8	
Nickel, Dissolved	Not detected	0.005		mg/L	5	7440-02-0	
Zinc, Dissolved	Not detected	0.005		mg/L	5	7440-66-6	

Organics

Method: SW9020B, Run Date: 11/25/23 03:25, Analyst: GEL

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
TOX*	Completed	3,000		ug/L	1		O

O-Analysis performed by outside laboratory. See attached report.



Analytical Laboratory Report

Lab Sample ID: S55608.05

Sample Tag: B-28

Collected Date/Time: 11/08/2023 15:10

Matrix: Groundwater

COC Reference: 165444

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	40ml Glass	H2SO4	Yes	4.7	IR
1	8oz Glass	H2SO4	Yes	4.7	IR
1	125ml Plastic	HNO3	Yes	4.7	IR
1	250ml Plastic	None	Yes	4.7	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Metal Digestion	Completed	SW3015A	11/10/23 13:00	CCM	

Inorganics

Method: E120.1, Run Date: 11/15/23 16:55, Analyst: SSM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Conductivity	946	1		umhos/cm	1		

Method: SM5310C, Run Date: 11/13/23 18:57, Analyst: PJH

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
TOC	1.6	1		mg/L	1		

Metals

Method: E200.8, Run Date: 11/10/23 14:25, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Chromium, Dissolved	Not detected	0.005		mg/L	5	7440-47-3	
Copper, Dissolved	Not detected	0.005		mg/L	5	7440-50-8	
Nickel, Dissolved	Not detected	0.005		mg/L	5	7440-02-0	
Zinc, Dissolved	Not detected	0.005		mg/L	5	7440-66-6	

Organics

Method: SW9020B, Run Date: 11/25/23 03:52, Analyst: GEL

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
TOX*	Completed	3,000		ug/L	1		O

O-Analysis performed by outside laboratory. See attached report.



Analytical Laboratory Report

Lab Sample ID: S55608.06

Sample Tag: B-7

Collected Date/Time: 11/08/2023 15:36

Matrix: Groundwater

COC Reference: 165444

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	40ml Glass	H2SO4	Yes	4.7	IR
1	8oz Glass	H2SO4	Yes	4.7	IR
1	125ml Plastic	HNO3	Yes	4.7	IR
1	250ml Plastic	None	Yes	4.7	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Metal Digestion	Completed	SW3015A	11/10/23 13:00	CCM	

Inorganics

Method: E120.1, Run Date: 11/15/23 16:57, Analyst: SSM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Conductivity	1,010	1		umhos/cm	1		

Method: SM5310C, Run Date: 11/13/23 19:13, Analyst: PJH

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
TOC	5.4	1		mg/L	1		

Metals

Method: E200.8, Run Date: 11/10/23 14:27, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Chromium, Dissolved	Not detected	0.005		mg/L	5	7440-47-3	
Copper, Dissolved	Not detected	0.005		mg/L	5	7440-50-8	
Nickel, Dissolved	Not detected	0.005		mg/L	5	7440-02-0	
Zinc, Dissolved	Not detected	0.005		mg/L	5	7440-66-6	

Organics

Method: SW9020B, Run Date: 11/29/23 06:05, Analyst: GEL

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
TOX*	Completed	3,000		ug/L	1		O

O-Analysis performed by outside laboratory. See attached report.



Analytical Laboratory Report

Lab Sample ID: S55608.07

Sample Tag: GW-DUP-110923

Collected Date/Time: 11/08/2023 00:01

Matrix: Groundwater

COC Reference: 165444

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	40ml Glass	H2SO4	Yes	4.7	IR
1	8oz Glass	H2SO4	Yes	4.7	IR
1	125ml Plastic	HNO3	Yes	4.7	IR
1	250ml Plastic	None	Yes	4.7	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Metal Digestion	Completed	SW3015A	11/10/23 13:00	CCM	

Inorganics

Method: E120.1, Run Date: 11/15/23 16:58, Analyst: SSM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Conductivity	1,230	1		umhos/cm	1		

Method: SM5310C, Run Date: 11/13/23 19:29, Analyst: PJH

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
TOC	1.6	1		mg/L	1		

Metals

Method: E200.8, Run Date: 11/10/23 14:28, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Chromium, Dissolved	Not detected	0.005		mg/L	5	7440-47-3	
Copper, Dissolved	Not detected	0.005		mg/L	5	7440-50-8	
Nickel, Dissolved	Not detected	0.005		mg/L	5	7440-02-0	
Zinc, Dissolved	0.005	0.005		mg/L	5	7440-66-6	

Organics

Method: SW9020B, Run Date: 11/29/23 06:38, Analyst: GEL

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
TOX*	Completed	3,000		ug/L	1		O

O-Analysis performed by outside laboratory. See attached report.

Merit Laboratories Login Checklist

Lab Set ID:S55608

Client:RAMBOLL (Ramboll Americas)

Project: RACER Coldwater Road

Submitted: 11/10/2023 08:15 Login User: MMC

Attention: Clifford Yantz

Address: Ramboll Americas
2090 Commonwealth Blvd
Ann Arbor, MI 48105

Phone: 313-333-0211

FAX:

Email: Clifford.Yantz@ramboll.com

Selection	Description	Note
Sample Receiving		
01.	☒ Yes ☐ No ☐ N/A	Samples are received at 4C +/- 2C Thermometer # IR 4.7
02.	☒ Yes ☐ No ☐ N/A	Received on ice/ cooling process begun
03.	☐ Yes ☒ No ☐ N/A	Samples shipped
04.	☒ Yes ☐ No ☐ N/A	Samples left in 24 hr. drop box
05.	☒ Yes ☐ No ☐ N/A	Are there custody seals/tape or is the drop box locked
Chain of Custody		
06.	☒ Yes ☐ No ☐ N/A	COC adequately filled out
07.	☒ Yes ☐ No ☐ N/A	COC signed and relinquished to the lab
08.	☒ Yes ☐ No ☐ N/A	Sample tag on bottles match COC
09.	☒ Yes ☐ No ☐ N/A	Subcontracting needed? Subcontacted to: GEL
Preservation		
10.	☒ Yes ☐ No ☐ N/A	Do sample have correct chemical preservation
11.	☒ Yes ☐ No ☐ N/A	Completed pH checks on preserved samples? (no VOAs)
12.	☐ Yes ☒ No ☐ N/A	Did any samples need to be preserved in the lab?
Bottle Conditions		
13.	☒ Yes ☐ No ☐ N/A	All bottles intact
14.	☒ Yes ☐ No ☐ N/A	Appropriate analytical bottles are used
15.	☒ Yes ☐ No ☐ N/A	Merit bottles used
16.	☒ Yes ☐ No ☐ N/A	Sufficient sample volume received
17.	☐ Yes ☒ No ☐ N/A	Samples require laboratory filtration
18.	☒ Yes ☐ No ☐ N/A	Samples submitted within holding time
19.	☐ Yes ☒ No ☐ N/A	Do water VOC or TOX bottles contain headspace

Corrective action for all exceptions is to call the client and to notify the project manager.

Client Review By: _____ Date: _____

Merit Laboratories Bottle Preservation Check

Lab Set ID: S55608 Submitted: 11/10/2023 08:15

Client: RAMBOLL (Ramboll Americas)

Project: RACER Coldwater Road

Attention: Clifford Yantz

Address: Ramboll Americas
2090 Commonwealth Blvd
Ann Arbor, MI 48105

Initial Preservation Check: 11/10/2023 08:33 MMC

Preservation Recheck (E200.8): N/A

Phone: 313-333-0211

FAX:

Email: Clifford.Yantz@ramboll.com

Sample ID	Bottle / Preservation	pH (Orig)	Add ml	pH (New)	Notes
S55608.01	125ml Plastic HNO3	<2			
S55608.02	125ml Plastic HNO3	<2			
S55608.03	125ml Plastic HNO3	<2			
S55608.04	125ml Plastic HNO3	<2			
S55608.05	125ml Plastic HNO3	<2			
S55608.06	125ml Plastic HNO3	<2			
S55608.07	125ml Plastic HNO3	<2			

Appendix B

Inspection Photos



Sampling at monitoring well B-24R



Sampling at monitoring well B-18A



Sampling at monitoring well B-9